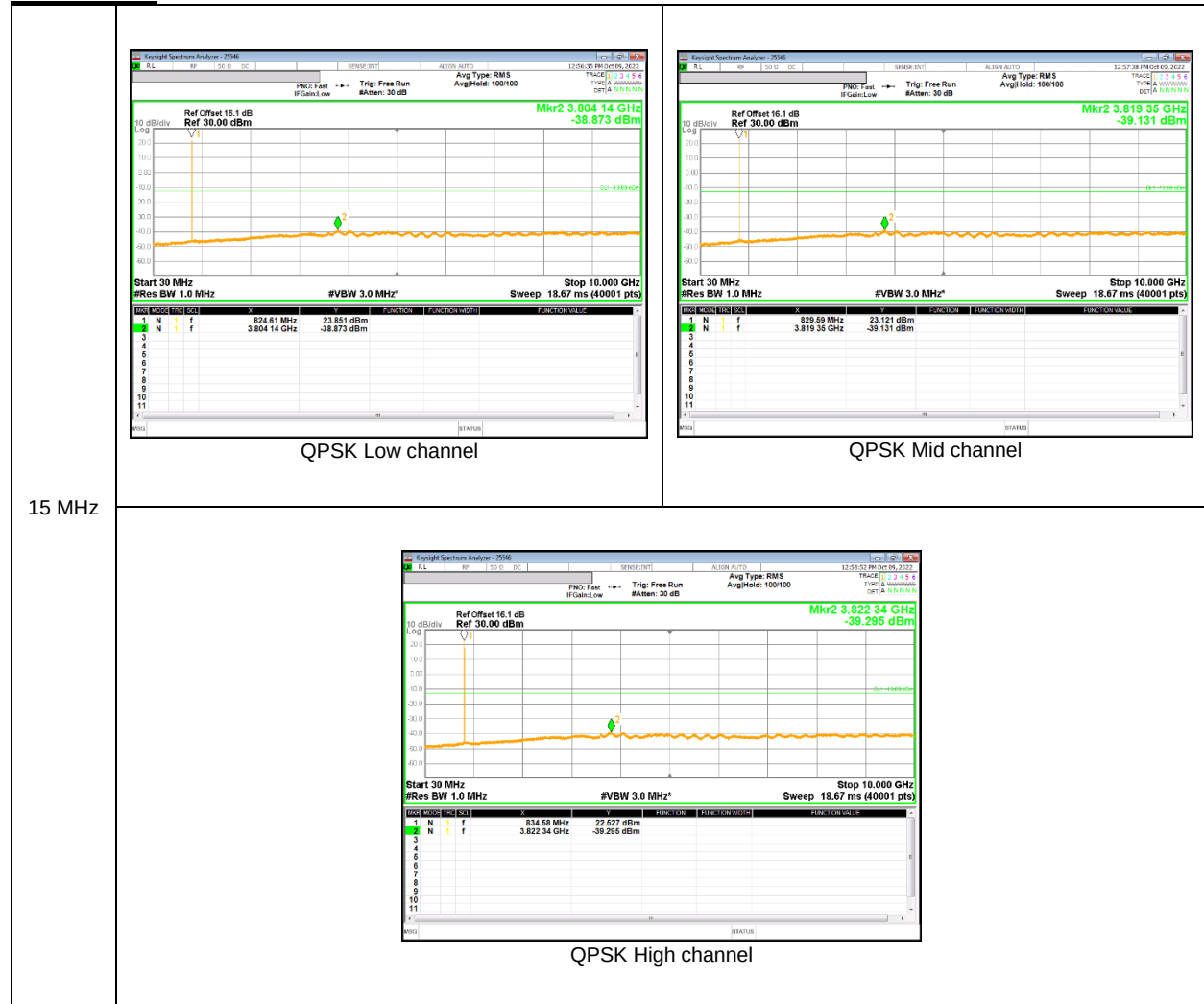


# LTE Band 66



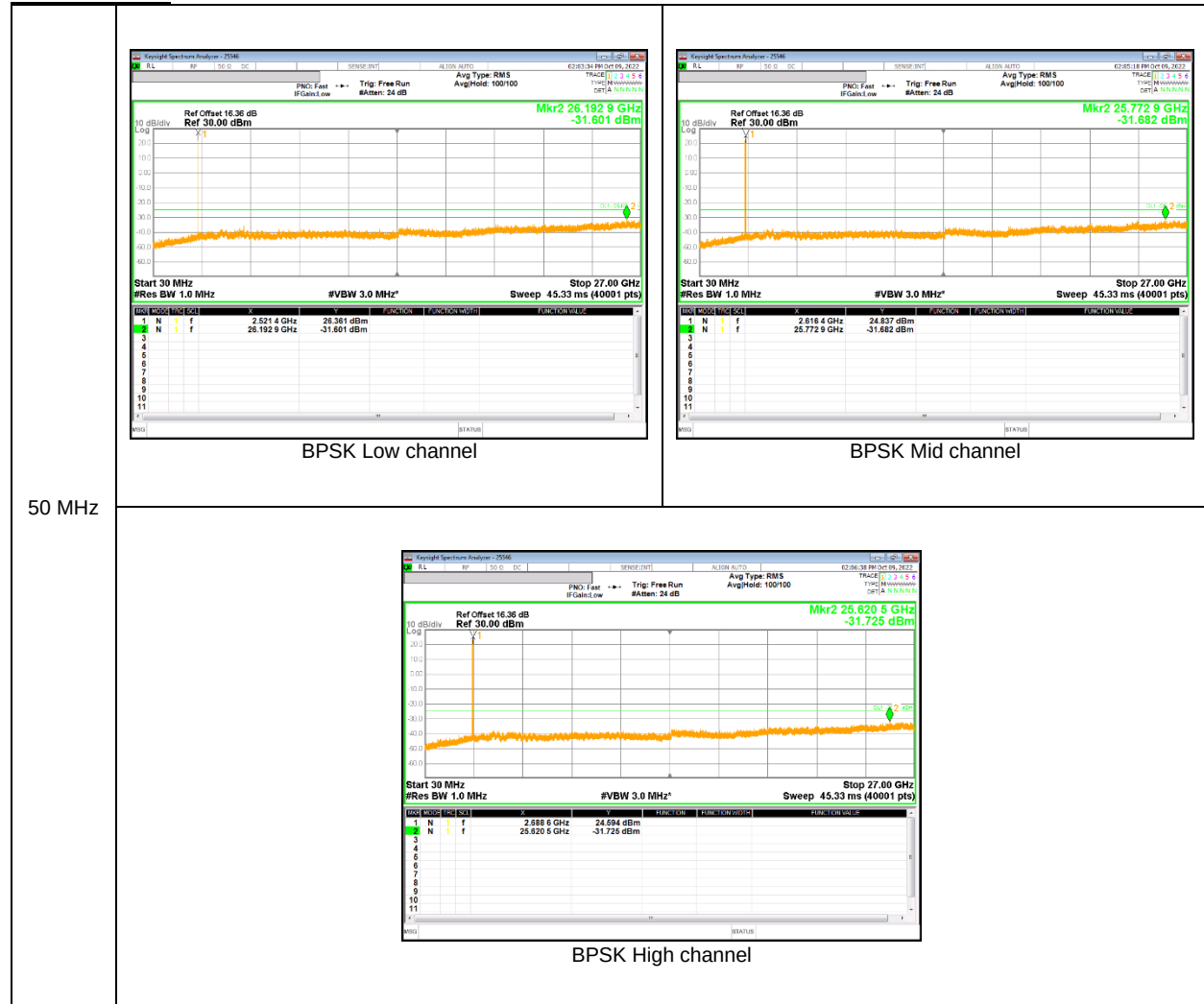
NR Band n5



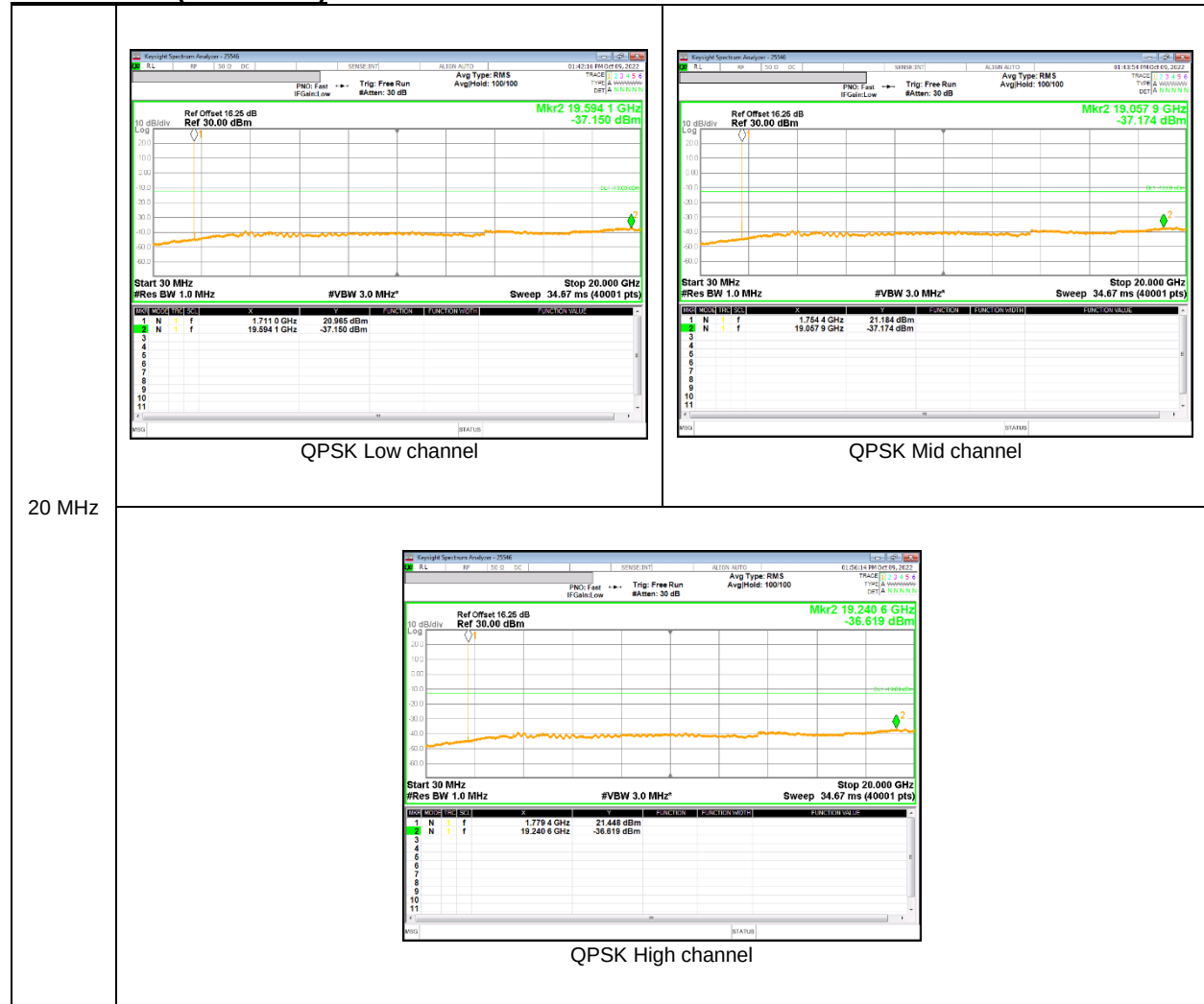
# NR Band n25



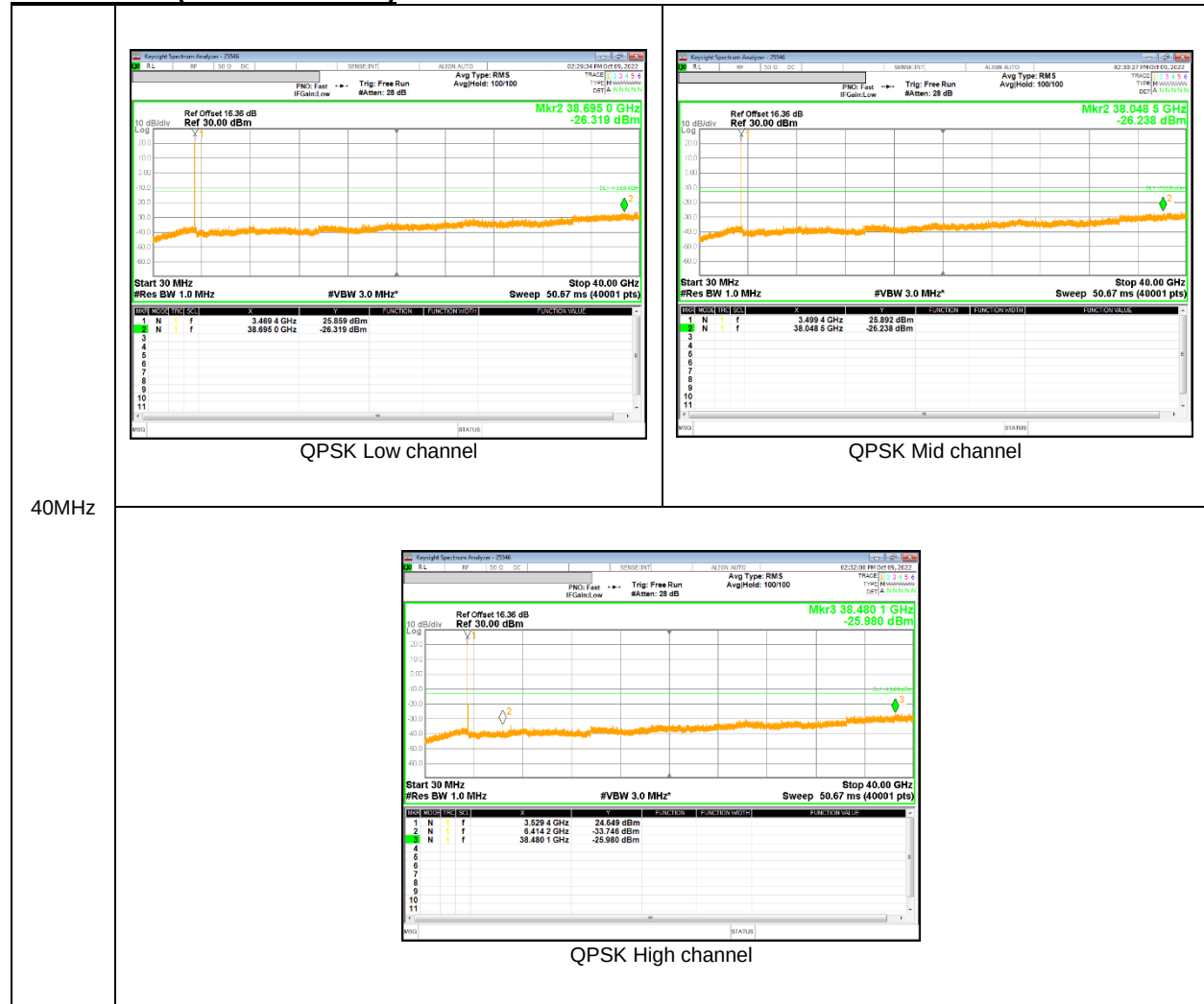
NR Band n41



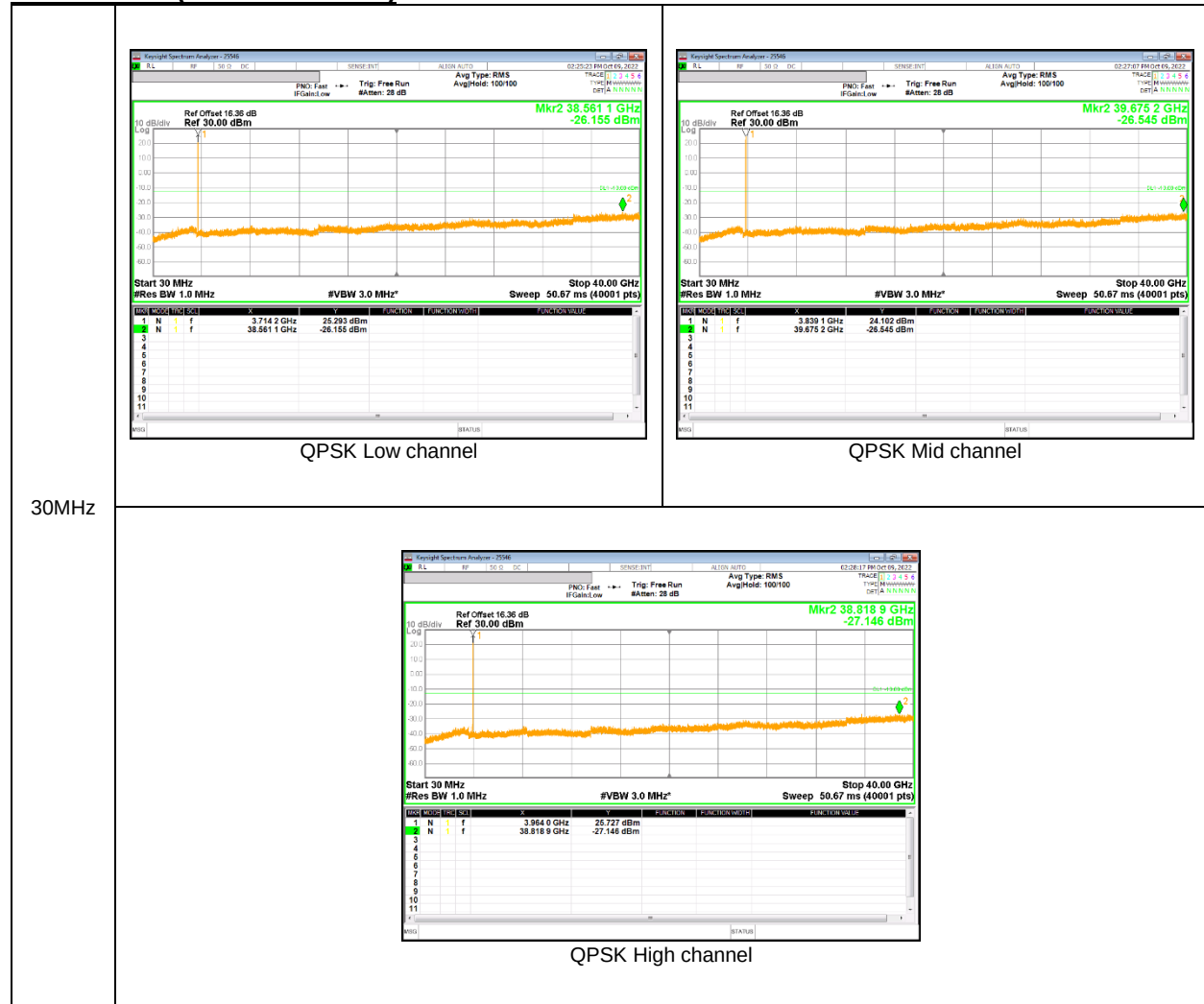
NR Band n66 (Main1 ANT)



NR Band n77 (3450 – 3550 MHz)



NR Band n77 (3700 – 3980 MHz)



## **9.4. FREQUENCY STABILITY**

### **RULE PART(S)**

FCC: §2.1055, §22.355, §24.235, §27.54 and §90.213

### **LIMITS**

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

§90.213 - The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### **TEST PROCEDURE**

Per KDB 971168 D01 Power Meas License Digital Systems v03r01

### **RESULTS**

See the following pages.

### **NOTE**

Test were performed each lowest or highest frequency on the modulation condition of more wide bandwidth. (Please refer to section 9.1.1 OBW results)



### 9.4.1. FREQUENCY STABILITY RESULTS

#### GSM 850, Channel 128/251, Frequency 824.2/848.8 MHz

|               |            |
|---------------|------------|
| Test Date     | 2022-09-19 |
| Test Engineer | 25546      |

| Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C |                              |                                               |              |                     |              |             |
|------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|--------------|---------------------|--------------|-------------|
| Limit: +- 2.5 ppm =                                                                |                              | Low Channel                                   | 2060.500     | Hz                  | High Channel | 2122.000    |
|                                                                                    |                              | Frequency Deviation Measured with Time Elapse |              |                     |              |             |
| Power Supply [Vdc]                                                                 | Environment Temperature [°C] | Low Channel                                   |              | High Channel        |              | Limit [ppm] |
|                                                                                    |                              | [MHz]                                         | Delta [ppm]  | [MHz]               | Delta [ppm]  |             |
| 3.88                                                                               | 50                           | 824.20003758                                  | -0.010       | 848.80003680        | -0.006       | 2.5         |
| 3.88                                                                               | 40                           | 824.20003261                                  | -0.004       | 848.80003075        | 0.001        | 2.5         |
| 3.88                                                                               | 30                           | 824.20002864                                  | 0.001        | 848.80003240        | -0.001       | 2.5         |
| <b>3.88</b>                                                                        | <b>20</b>                    | <b>824.20002932</b>                           | <b>0.000</b> | <b>848.80003165</b> | <b>0.000</b> | <b>2.5</b>  |
| 3.88                                                                               | 10                           | 824.20003164                                  | -0.003       | 848.80002841        | 0.004        | 2.5         |
| 3.88                                                                               | 0                            | 824.20003547                                  | -0.007       | 848.80003269        | -0.001       | 2.5         |
| 3.88                                                                               | -10                          | 824.20002726                                  | 0.002        | 848.80003076        | 0.001        | 2.5         |
| 3.88                                                                               | -20                          | 824.20003265                                  | -0.004       | 848.80003216        | -0.001       | 2.5         |
| 3.88                                                                               | -30                          | 824.20003349                                  | -0.005       | 848.80003030        | 0.002        | 2.5         |

| Reference Frequency : GSM850 Low Channel 824.2 MHz / High Channel 848.8 MHz @ 20°C |                              |                                               |             |              |              |             |
|------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|-------------|--------------|--------------|-------------|
| Limit: +- 2.5 ppm =                                                                |                              | Low Channel                                   | 2060.500    | Hz           | High Channel | 2122.000    |
|                                                                                    |                              | Frequency Deviation Measured with Time Elapse |             |              |              |             |
| Power Supply [Vdc]                                                                 | Environment Temperature [°C] | Low Channel                                   |             | High Channel |              | Limit [ppm] |
|                                                                                    |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm]  |             |
| 3.88                                                                               | 20                           | 824.20002932                                  | 0           | 848.80003165 | 0            | 2.5         |
| 4.40                                                                               | 20                           | 824.20002865                                  | 0.001       | 848.80003246 | -0.001       | 2.5         |
| 3.70                                                                               | 20                           | 824.20003574                                  | -0.008      | 848.80003184 | 0.000        | 2.5         |

#### GSM 1900, Channel 512/810, Frequency 1850.0/1910.0 MHz (Lowest Frequency:GPRS / Highest Frequency: GPRS)

|               |            |
|---------------|------------|
| Test Date     | 2022-09-19 |
| Test Engineer | 25546      |

| Limit          |           | 1850               | 1910                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 1850.0776          | 1909.9223           |            |                           |
| Extreme (50C)  |           | 1850.0776          | 1909.9224           | 35.7       | 0.019                     |
| Extreme (40C)  |           | 1850.0776          | 1909.9224           | 37.6       | 0.020                     |
| Extreme (30C)  |           | 1850.0776          | 1909.9223           | 30.4       | 0.016                     |
| Extreme (10C)  |           | 1850.0776          | 1909.9223           | 34.1       | 0.018                     |
| Extreme (0C)   |           | 1850.0776          | 1909.9224           | 35.7       | 0.019                     |
| Extreme (-10C) |           | 1850.0776          | 1909.9223           | 32.9       | 0.018                     |
| Extreme (-20C) |           | 1850.0776          | 1909.9223           | 33.1       | 0.018                     |
| Extreme (-30C) |           | 1850.0776          | 1909.9223           | 32.5       | 0.017                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 1850.0776          | 1909.9224           | 35.4       | 0.019                     |
|                | -15%      | 1850.0776          | 1909.9223           | 32.7       | 0.017                     |
|                | End Point | 1850.0776          | 1909.9224           | 40.3       | 0.021                     |

### WCDMA Band 5

|               |            |
|---------------|------------|
| Test Date     | 2022-09-21 |
| Test Engineer | 25546      |

| Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C |                              |                                               |              |                     |              |             |
|------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|--------------|---------------------|--------------|-------------|
| Limit: +/- 2.5 ppm =                                                                     |                              | Low Channel                                   | 2066.000     | Hz                  | High Channel | 2116.500    |
|                                                                                          |                              | Frequency Deviation Measured with Time Elapse |              |                     |              |             |
| Power Supply [Vdc]                                                                       | Environment Temperature [°C] | Low Channel                                   |              | High Channel        |              | Limit [ppm] |
|                                                                                          |                              | [MHz]                                         | Delta [ppm]  | [MHz]               | Delta [ppm]  |             |
| 3.88                                                                                     | 50                           | 826.40002342                                  | -0.008       | 846.60001765        | 0.007        | 2.5         |
| 3.88                                                                                     | 40                           | 826.40001964                                  | -0.004       | 846.60002331        | 0.000        | 2.5         |
| 3.88                                                                                     | 30                           | 826.40002095                                  | -0.005       | 846.60002246        | 0.001        | 2.5         |
| <b>3.88</b>                                                                              | <b>20</b>                    | <b>826.40001643</b>                           | <b>0.000</b> | <b>846.60002365</b> | <b>0.000</b> | <b>2.5</b>  |
| 3.88                                                                                     | 10                           | 826.40001716                                  | -0.001       | 846.60002135        | 0.003        | 2.5         |
| 3.88                                                                                     | 0                            | 826.40002095                                  | -0.005       | 846.60002041        | 0.004        | 2.5         |
| 3.88                                                                                     | -10                          | 826.40002143                                  | -0.006       | 846.60002436        | -0.001       | 2.5         |
| 3.88                                                                                     | -20                          | 826.40002357                                  | -0.009       | 846.60002210        | 0.002        | 2.5         |
| 3.88                                                                                     | -30                          | 826.40002065                                  | -0.005       | 846.60002464        | -0.001       | 2.5         |

| Reference Frequency : WCDMA Band 5 Low Channel 826.4 MHz / High Channel 846.6 MHz @ 20°C |                              |                                               |             |              |              |             |
|------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|-------------|--------------|--------------|-------------|
| Limit: +/- 2.5 ppm =                                                                     |                              | Low Channel                                   | 2066.000    | Hz           | High Channel | 2116.500    |
|                                                                                          |                              | Frequency Deviation Measured with Time Elapse |             |              |              |             |
| Power Supply [Vdc]                                                                       | Environment Temperature [°C] | Low Channel                                   |             | High Channel |              | Limit [ppm] |
|                                                                                          |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm]  |             |
| 3.88                                                                                     | 20                           | 826.40001643                                  | 0           | 846.60002365 | 0            | 2.5         |
| 4.40                                                                                     | 20                           | 826.40001332                                  | 0.004       | 846.60001574 | 0.009        | 2.5         |
| 3.70                                                                                     | 20                           | 826.40001553                                  | 0.001       | 846.60001168 | 0.014        | 2.5         |

### WCDMA Band 4 (Lowest Frequency: HSDPA/ Highest Frequency: HSDPA)

|               |            |
|---------------|------------|
| Test Date     | 2022-09-20 |
| Test Engineer | 25546      |

| Limit          |           | 1710                  | 1755                   | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|-----------------------|------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>End of OBW | F high @<br>End of OBW |               |                                 |
| Temperature    | Voltage   | (MHz)                 | (MHz)                  |               |                                 |
| Normal (20C)   | Normal    | 1710.3204             | 1754.6783              |               |                                 |
| Extreme (50C)  |           | 1710.3204             | 1754.6783              | 29.3          | 0.017                           |
| Extreme (40C)  |           | 1710.3204             | 1754.6783              | 32.2          | 0.019                           |
| Extreme (30C)  |           | 1710.3204             | 1754.6783              | 30.5          | 0.018                           |
| Extreme (10C)  |           | 1710.3204             | 1754.6783              | 29.5          | 0.017                           |
| Extreme (0C)   |           | 1710.3204             | 1754.6783              | 27.7          | 0.016                           |
| Extreme (-10C) |           | 1710.3204             | 1754.6783              | 28.7          | 0.017                           |
| Extreme (-20C) |           | 1710.3204             | 1754.6783              | 29.8          | 0.017                           |
| Extreme (-30C) |           | 1710.3204             | 1754.6783              | 25.4          | 0.015                           |
|                |           |                       |                        |               |                                 |
| 20C            | 15%       | 1710.3204             | 1754.6783              | 23.7          | 0.014                           |
|                | -15%      | 1710.3204             | 1754.6783              | 24.5          | 0.014                           |
|                | End Point | 1710.3204             | 1754.6783              | 21.6          | 0.012                           |

**WCDMA Band 2 (Lowest Frequency: HSDPA / Highest Frequency: HSDPA)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-20 |
| Test Engineer | 25546      |

| Limit          |           | 1850               | 1910                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 1850.3225          | 1909.6731           |            |                           |
| Extreme (50C)  |           | 1850.3225          | 1909.6731           | 30.4       | 0.016                     |
| Extreme (40C)  |           | 1850.3225          | 1909.6731           | 32.3       | 0.017                     |
| Extreme (30C)  |           | 1850.3225          | 1909.6731           | 31.5       | 0.017                     |
| Extreme (10C)  |           | 1850.3225          | 1909.6731           | 35.8       | 0.019                     |
| Extreme (0C)   |           | 1850.3225          | 1909.6731           | 35.0       | 0.019                     |
| Extreme (-10C) |           | 1850.3225          | 1909.6731           | 31.4       | 0.017                     |
| Extreme (-20C) |           | 1850.3225          | 1909.6731           | 30.6       | 0.016                     |
| Extreme (-30C) |           | 1850.3225          | 1909.6731           | 29.4       | 0.016                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 1850.3225          | 1909.6731           | 21.4       | 0.011                     |
|                | -15%      | 1850.3225          | 1909.6731           | 26.7       | 0.014                     |
|                | End Point | 1850.3225          | 1909.6731           | 24.7       | 0.013                     |

**LTE Band 5**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-21 |
| Test Engineer | 25546      |

| Reference Frequency : LTE Band 5 Low Channel 824.7 MHz / High Channel 848.3 MHz @ 20°C |                              |                                               |             |              |             |             |
|----------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|-------------|--------------|-------------|-------------|
| Limit: +/- 2.5 ppm =                                                                   | Low Channel                  | 2061.750                                      | Hz          | High Channel | 2120.750    | Hz          |
| Power Supply [Vdc]                                                                     | Environment Temperature [°C] | Frequency Deviation Measured with Time Elapse |             |              |             | Limit [ppm] |
|                                                                                        |                              | Low Channel                                   |             | High Channel |             |             |
|                                                                                        |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                                                                                   | 50                           | 824.70002343                                  | -0.012      | 848.30002035 | 0.003       | 2.5         |
| 3.88                                                                                   | 40                           | 824.70002032                                  | -0.008      | 848.30001542 | 0.009       | 2.5         |
| 3.88                                                                                   | 30                           | 824.70001164                                  | 0.002       | 848.30001669 | 0.007       | 2.5         |
| 3.88                                                                                   | 20                           | 824.70001360                                  | 0.000       | 848.30002264 | 0.000       | 2.5         |
| 3.88                                                                                   | 10                           | 824.70002435                                  | -0.013      | 848.30001850 | 0.005       | 2.5         |
| 3.88                                                                                   | 0                            | 824.70002249                                  | -0.011      | 848.30002065 | 0.002       | 2.5         |
| 3.88                                                                                   | -10                          | 824.70002398                                  | -0.013      | 848.30002496 | -0.003      | 2.5         |
| 3.88                                                                                   | -20                          | 824.70001826                                  | -0.006      | 848.30002268 | 0.000       | 2.5         |
| 3.88                                                                                   | -30                          | 824.70001549                                  | -0.002      | 848.30001653 | 0.007       | 2.5         |
|                                                                                        |                              |                                               |             |              |             |             |
| Reference Frequency : LTE Band 5 Low Channel 824.7 MHz / High Channel 848.3 MHz @ 20°C |                              |                                               |             |              |             |             |
| Limit: +/- 2.5 ppm =                                                                   | Low Channel                  | 2061.750                                      | Hz          | High Channel | 2120.750    | Hz          |
| Power Supply [Vdc]                                                                     | Environment Temperature [°C] | Frequency Deviation Measured with Time Elapse |             |              |             | Limit [ppm] |
|                                                                                        |                              | Low Channel                                   |             | High Channel |             |             |
|                                                                                        |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                                                                                   | 20                           | 824.70001680                                  | 0           | 848.30000845 | 0           | 2.5         |
| 4.40                                                                                   | 20                           | 824.70001332                                  | 0.004       | 848.30002132 | -0.015      | 2.5         |
| 3.70                                                                                   | 20                           | 824.70002045                                  | -0.004      | 848.30001518 | -0.008      | 2.5         |

**LTE Band 12 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-22 |
| Test Engineer | 25546      |

| Limit          |           | 699                | 716                 | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 699.1550           | 715.8453            |            |                           |
| Extreme (50C)  |           | 699.1550           | 715.8453            | 35.4       | 0.050                     |
| Extreme (40C)  |           | 699.1550           | 715.8453            | 30.4       | 0.043                     |
| Extreme (30C)  |           | 699.1550           | 715.8453            | 29.5       | 0.042                     |
| Extreme (10C)  |           | 699.1550           | 715.8453            | 31.6       | 0.045                     |
| Extreme (0C)   |           | 699.1550           | 715.8453            | 28.4       | 0.040                     |
| Extreme (-10C) |           | 699.1550           | 715.8453            | 25.7       | 0.036                     |
| Extreme (-20C) |           | 699.1550           | 715.8453            | 29.5       | 0.042                     |
| Extreme (-30C) |           | 699.1550           | 715.8453            | 31.7       | 0.045                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 699.1550           | 715.8453            | 23.3       | 0.033                     |
|                | -15%      | 699.1550           | 715.8453            | 26.7       | 0.038                     |
|                | End Point | 699.1550           | 715.8453            | 32.8       | 0.046                     |

**LTE Band 13 (Lowest Frequency: QPSK / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-22 |
| Test Engineer | 25546      |

| Limit          |           | 777                | 787                 | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 777.2511           | 786.7509            |            |                           |
| Extreme (50C)  |           | 777.2511           | 786.7509            | 10.3       | 0.013                     |
| Extreme (40C)  |           | 777.2511           | 786.7509            | 11.7       | 0.015                     |
| Extreme (30C)  |           | 777.2511           | 786.7509            | 13.5       | 0.017                     |
| Extreme (10C)  |           | 777.2511           | 786.7509            | 15.7       | 0.020                     |
| Extreme (0C)   |           | 777.2511           | 786.7509            | 13.2       | 0.017                     |
| Extreme (-10C) |           | 777.2511           | 786.7509            | 10.3       | 0.013                     |
| Extreme (-20C) |           | 777.2511           | 786.7509            | 11.7       | 0.015                     |
| Extreme (-30C) |           | 777.2511           | 786.7509            | 12.7       | 0.016                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 777.2511           | 786.7509            | 11.3       | 0.014                     |
|                | -15%      | 777.2511           | 786.7509            | 13.3       | 0.017                     |
|                | End Point | 777.2511           | 786.7509            | 15.4       | 0.020                     |

**LTE Band 25 (Lowest Frequency: QPSK / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-23 |
| Test Engineer | 25546      |

| Limit          |           | 1850               | 1915                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 1850.1533          | 1914.8466           |            |                           |
| Extreme (50C)  |           | 1850.1533          | 1914.8466           | 31.2       | 0.017                     |
| Extreme (40C)  |           | 1850.1533          | 1914.8466           | 35.5       | 0.019                     |
| Extreme (30C)  |           | 1850.1533          | 1914.8466           | 36.0       | 0.019                     |
| Extreme (10C)  |           | 1850.1533          | 1914.8466           | 31.2       | 0.017                     |
| Extreme (0C)   |           | 1850.1533          | 1914.8466           | 28.7       | 0.015                     |
| Extreme (-10C) |           | 1850.1533          | 1914.8466           | 27.6       | 0.015                     |
| Extreme (-20C) |           | 1850.1533          | 1914.8466           | 33.6       | 0.018                     |
| Extreme (-30C) |           | 1850.1533          | 1914.8466           | 32.8       | 0.017                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 1850.1533          | 1914.8466           | 33.5       | 0.018                     |
|                | -15%      | 1850.1533          | 1914.8466           | 20.7       | 0.011                     |
|                | End Point | 1850.1533          | 1914.8466           | 23.7       | 0.013                     |

**LTE Band 26**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-23 |
| Test Engineer | 25546      |

| Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C |                              |                                               |             |              |             |             |
|-----------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|-------------|--------------|-------------|-------------|
| Limit: +- 2.5 ppm =                                                                     | Low Channel                  | 2036.750                                      | Hz          | High Channel | 2120.750    | Hz          |
| Power Supply [Vdc]                                                                      | Environment Temperature [°C] | Frequency Deviation Measured with Time Elapse |             |              |             | Limit [ppm] |
|                                                                                         |                              | Low Channel                                   |             | High Channel |             |             |
|                                                                                         |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                                                                                    | 50                           | 814.70002435                                  | -0.009      | 848.30002185 | -0.002      | 2.5         |
| 3.88                                                                                    | 40                           | 814.70002341                                  | -0.008      | 848.30001942 | 0.001       | 2.5         |
| 3.88                                                                                    | 30                           | 814.70002048                                  | -0.005      | 848.30002365 | -0.004      | 2.5         |
| 3.88                                                                                    | 20                           | 814.70001666                                  | 0.000       | 848.30001999 | 0.000       | 2.5         |
| 3.88                                                                                    | 10                           | 814.70001841                                  | -0.002      | 848.30002332 | -0.004      | 2.5         |
| 3.88                                                                                    | 0                            | 814.70002036                                  | -0.005      | 848.30002574 | -0.007      | 2.5         |
| 3.88                                                                                    | -10                          | 814.70002545                                  | -0.011      | 848.30002684 | -0.008      | 2.5         |
| 3.88                                                                                    | -20                          | 814.70002368                                  | -0.009      | 848.30002013 | 0.000       | 2.5         |
| 3.88                                                                                    | -30                          | 814.70002187                                  | -0.006      | 848.30002368 | -0.004      | 2.5         |

|                      | Reference Frequency : LTE Band 26 Low Channel 814.7 MHz / High Channel 848.3 MHz @ 20°C |                                               |             |              |             |             |
|----------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------|-------------|--------------|-------------|-------------|
| Limit: +/- 2.5 ppm = | Low Channel                                                                             | 2036.750                                      | Hz          | High Channel | 2120.750    | Hz          |
| Power Supply [Vdc]   | Environment Temperature [°C]                                                            | Frequency Deviation Measured with Time Elapse |             |              |             | Limit [ppm] |
|                      |                                                                                         | Low Channel                                   |             | High Channel |             |             |
|                      |                                                                                         | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                 | 20                                                                                      | 814.70001666                                  | 0           | 848.30001999 | 0           | 2.5         |
| 4.40                 | 20                                                                                      | 814.70001567                                  | 0.001       | 848.30002006 | 0.000       | 2.5         |
| 3.70                 | 20                                                                                      | 814.70002568                                  | -0.011      | 848.30002148 | -0.002      | 2.5         |

**LTE Band 41(PC2) (Lowest Frequency: QPSK / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-26 |
| Test Engineer | 25546      |

| Limit          |           | 2496                  | 2690                   | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|-----------------------|------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>End of OBW | F high @<br>End of OBW |               |                                 |
| Temperature    | Voltage   | (MHz)                 | (MHz)                  |               |                                 |
| Normal (20C)   | Normal    | 2496.2554             | 2689.7475              |               |                                 |
| Extreme (50C)  |           | 2496.2554             | 2689.7475              | 20.7          | 0.008                           |
| Extreme (40C)  |           | 2496.2554             | 2689.7475              | 21.8          | 0.008                           |
| Extreme (30C)  |           | 2496.2554             | 2689.7475              | 20.4          | 0.008                           |
| Extreme (10C)  |           | 2496.2554             | 2689.7475              | 19.5          | 0.008                           |
| Extreme (0C)   |           | 2496.2554             | 2689.7475              | 18.5          | 0.007                           |
| Extreme (-10C) |           | 2496.2554             | 2689.7475              | 23.6          | 0.009                           |
| Extreme (-20C) |           | 2496.2554             | 2689.7475              | 22.3          | 0.009                           |
| Extreme (-30C) |           | 2496.2554             | 2689.7475              | 21.2          | 0.008                           |
|                |           |                       |                        |               |                                 |
| 20C            | 15%       | 2496.2554             | 2689.7475              | 15.7          | 0.006                           |
|                | -15%      | 2496.2554             | 2689.7475              | 17.5          | 0.007                           |
|                | End Point | 2496.2554             | 2689.7475              | 15.4          | 0.006                           |

**LTE Band 66 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-26 |
| Test Engineer | 25546      |

| Limit          |           | 1710                  | 1780                   | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|-----------------------|------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>End of OBW | F high @<br>End of OBW |               |                                 |
| Temperature    | Voltage   | (MHz)                 | (MHz)                  |               |                                 |
| Normal (20C)   | Normal    | 1710.1543             | 1779.8477              |               |                                 |
| Extreme (50C)  |           | 1710.1543             | 1779.8477              | 32.4          | 0.019                           |
| Extreme (40C)  |           | 1710.1543             | 1779.8477              | 33.7          | 0.019                           |
| Extreme (30C)  |           | 1710.1543             | 1779.8477              | 35.4          | 0.020                           |
| Extreme (10C)  |           | 1710.1543             | 1779.8477              | 40.7          | 0.023                           |
| Extreme (0C)   |           | 1710.1543             | 1779.8477              | 30.0          | 0.017                           |
| Extreme (-10C) |           | 1710.1543             | 1779.8477              | 32.7          | 0.019                           |
| Extreme (-20C) |           | 1710.1543             | 1779.8477              | 32.3          | 0.018                           |
| Extreme (-30C) |           | 1710.1543             | 1779.8477              | 30.4          | 0.017                           |
|                |           |                       |                        |               |                                 |
| 20C            | 15%       | 1710.1543             | 1779.8477              | 21.3          | 0.012                           |
|                | -15%      | 1710.1543             | 1779.8477              | 22.7          | 0.013                           |
|                | End Point | 1710.1543             | 1779.8477              | 25.5          | 0.015                           |

### 5G NR Band n5

|               |            |
|---------------|------------|
| Test Date     | 2022-09-27 |
| Test Engineer | 25546      |

| Reference Frequency : n5 Low Channel 826.5 MHz / High Channel 846.5 MHz @ 20°C |                              |                                               |             |              |             |             |
|--------------------------------------------------------------------------------|------------------------------|-----------------------------------------------|-------------|--------------|-------------|-------------|
| Limit: +/- 2.5 ppm =                                                           | Low Channel                  | 2066.250                                      | Hz          | High Channel | 2116.250    | Hz          |
| Power Supply [Vdc]                                                             | Environment Temperature [°C] | Frequency Deviation Measured with Time Elapse |             |              |             |             |
|                                                                                |                              | Low Channel                                   |             | High Channel |             | Limit [ppm] |
|                                                                                |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                                                                           | 50                           | 826.50001764                                  | 0.006       | 846.50002323 | -0.007      | 2.5         |
| 3.88                                                                           | 40                           | 826.50002348                                  | -0.001      | 846.50001958 | -0.003      | 2.5         |
| 3.88                                                                           | 30                           | 826.50002016                                  | 0.003       | 846.50002599 | -0.010      | 2.5         |
| 3.88                                                                           | 20                           | 826.50002248                                  | 0.000       | 846.50001735 | 0.000       | 2.5         |
| 3.88                                                                           | 10                           | 826.50002396                                  | -0.002      | 846.50001857 | -0.001      | 2.5         |
| 3.88                                                                           | 0                            | 826.50001943                                  | 0.004       | 846.50002542 | -0.010      | 2.5         |
| 3.88                                                                           | -10                          | 826.50002166                                  | 0.001       | 846.50002369 | -0.007      | 2.5         |
| 3.88                                                                           | -20                          | 826.50002547                                  | -0.004      | 846.50002474 | -0.009      | 2.5         |
| 3.88                                                                           | -30                          | 826.50002468                                  | -0.003      | 846.50002061 | -0.004      | 2.5         |
|                                                                                |                              |                                               |             |              |             |             |
| Reference Frequency : n5 Low Channel 826.5 MHz / High Channel 846.5 MHz @ 20°C |                              |                                               |             |              |             |             |
| Limit: +/- 2.5 ppm =                                                           | Low Channel                  | 2066.250                                      | Hz          | High Channel | 2116.250    | Hz          |
| Power Supply [Vdc]                                                             | Environment Temperature [°C] | Frequency Deviation Measured with Time Elapse |             |              |             |             |
|                                                                                |                              | Low Channel                                   |             | High Channel |             | Limit [ppm] |
|                                                                                |                              | [MHz]                                         | Delta [ppm] | [MHz]        | Delta [ppm] |             |
| 3.88                                                                           | 20                           | 826.50002248                                  | 0           | 846.50001735 | 0           | 2.5         |
| 4.40                                                                           | 20                           | 826.50001345                                  | 0.011       | 846.50002336 | -0.007      | 2.5         |
| 3.70                                                                           | 20                           | 826.50002648                                  | -0.005      | 846.50001540 | 0.002       | 2.5         |

### 5G NR Band n25 (Lowest Frequency:16QAM / Highest Frequency: 16QAM)

|               |            |
|---------------|------------|
| Test Date     | 2022-09-27 |
| Test Engineer | 25546      |

| Limit          |           | 1850               | 1915                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 1850.2541          | 1914.7503           |            |                           |
| Extreme (50C)  |           | 1850.2541          | 1914.7503           | 35.1       | 0.019                     |
| Extreme (40C)  |           | 1850.2541          | 1914.7503           | 35.0       | 0.019                     |
| Extreme (30C)  |           | 1850.2541          | 1914.7503           | 42.7       | 0.023                     |
| Extreme (10C)  |           | 1850.2541          | 1914.7503           | 39.8       | 0.021                     |
| Extreme (0C)   |           | 1850.2541          | 1914.7503           | 33.7       | 0.018                     |
| Extreme (-10C) |           | 1850.2541          | 1914.7503           | 35.5       | 0.019                     |
| Extreme (-20C) |           | 1850.2541          | 1914.7503           | 34.5       | 0.018                     |
| Extreme (-30C) |           | 1850.2541          | 1914.7503           | 33.0       | 0.018                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 1850.2541          | 1914.7503           | 23.4       | 0.012                     |
|                | -15%      | 1850.2541          | 1914.7503           | 20.5       | 0.011                     |
|                | End Point | 1850.2541          | 1914.7503           | 21.7       | 0.012                     |

**5G NR Band n41 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-28 |
| Test Engineer | 25546      |

| Normal (20C)   |           | 2496               | 2690                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 2501.7081          | 2684.3190           |            |                           |
| Extreme (50C)  |           | 2501.7081          | 2684.3190           | 30.5       | 0.012                     |
| Extreme (40C)  |           | 2501.7081          | 2684.3190           | 31.3       | 0.012                     |
| Extreme (30C)  |           | 2501.7081          | 2684.3190           | 29.4       | 0.011                     |
| Extreme (10C)  |           | 2501.7081          | 2684.3190           | 34.0       | 0.013                     |
| Extreme (0C)   |           | 2501.7081          | 2684.3190           | 32.3       | 0.012                     |
| Extreme (-10C) |           | 2501.7081          | 2684.3190           | 30.7       | 0.012                     |
| Extreme (-20C) |           | 2501.7081          | 2684.3190           | 27.6       | 0.011                     |
| Extreme (-30C) |           | 2501.7081          | 2684.3190           | 26.5       | 0.010                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 2501.7081          | 2684.3190           | 23.6       | 0.009                     |
|                | -15%      | 2501.7081          | 2684.3190           | 21.2       | 0.008                     |
|                | End Point | 2501.7081          | 2684.3190           | 20.5       | 0.008                     |

**5G NR Band n66 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-28 |
| Test Engineer | 25546      |

| Limit          |           | 1710               | 1780                | Delta (Hz) | Frequency Stability (ppm) |
|----------------|-----------|--------------------|---------------------|------------|---------------------------|
| Condition      |           | F low @ End of OBW | F high @ End of OBW |            |                           |
| Temperature    | Voltage   | (MHz)              | (MHz)               |            |                           |
| Normal (20C)   | Normal    | 1710.2570          | 1779.7435           |            |                           |
| Extreme (50C)  |           | 1710.2570          | 1779.7435           | 36.0       | 0.021                     |
| Extreme (40C)  |           | 1710.2570          | 1779.7435           | 32.5       | 0.019                     |
| Extreme (30C)  |           | 1710.2570          | 1779.7435           | 33.4       | 0.019                     |
| Extreme (10C)  |           | 1710.2570          | 1779.7435           | 28.3       | 0.016                     |
| Extreme (0C)   |           | 1710.2570          | 1779.7435           | 29.7       | 0.017                     |
| Extreme (-10C) |           | 1710.2570          | 1779.7435           | 32.4       | 0.019                     |
| Extreme (-20C) |           | 1710.2570          | 1779.7435           | 29.0       | 0.017                     |
| Extreme (-30C) |           | 1710.2570          | 1779.7435           | 28.5       | 0.016                     |
|                |           |                    |                     |            |                           |
| 20C            | 15%       | 1710.2570          | 1779.7435           | 21.7       | 0.012                     |
|                | -15%      | 1710.2570          | 1779.7435           | 23.7       | 0.014                     |
|                | End Point | 1710.2570          | 1779.7435           | 32.5       | 0.019                     |



**NR Band n77 (Lowest Frequency:16QAM / Highest Frequency: QPSK)**

|               |            |
|---------------|------------|
| Test Date     | 2022-09-29 |
| Test Engineer | 25546      |

| Limit          |           | 3450                  | 3550                   | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|-----------------------|------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>End of OBW | F high @<br>End of OBW |               |                                 |
| Temperature    | Voltage   | (MHz)                 | (MHz)                  |               |                                 |
| Normal (20C)   | Normal    | 3455.6971             | 3544.3101              |               |                                 |
| Extreme (50C)  |           | 3455.6971             | 3544.3101              | 27.0          | 0.008                           |
| Extreme (40C)  |           | 3455.6971             | 3544.3101              | 27.7          | 0.008                           |
| Extreme (30C)  |           | 3455.6971             | 3544.3101              | 28.7          | 0.008                           |
| Extreme (10C)  |           | 3455.6971             | 3544.3101              | 32.5          | 0.009                           |
| Extreme (0C)   |           | 3455.6971             | 3544.3101              | 30.4          | 0.009                           |
| Extreme (-10C) |           | 3455.6971             | 3544.3101              | 32.0          | 0.009                           |
| Extreme (-20C) |           | 3455.6971             | 3544.3101              | 30.4          | 0.009                           |
| Extreme (-30C) |           | 3455.6971             | 3544.3101              | 29.3          | 0.008                           |
|                |           |                       |                        |               |                                 |
| 20C            | 15%       | 3455.6971             | 3544.3101              | 23.4          | 0.007                           |
|                | -15%      | 3455.6971             | 3544.3101              | 24.7          | 0.007                           |
|                | End Point | 3455.6971             | 3544.3101              | 25.3          | 0.007                           |

|               |            |
|---------------|------------|
| Test Date     | 2022-09-29 |
| Test Engineer | 25546      |

| Limit          |           | 3700                  | 3980                   | Delta<br>(Hz) | Frequency<br>Stability<br>(ppm) |
|----------------|-----------|-----------------------|------------------------|---------------|---------------------------------|
| Condition      |           | F low @<br>End of OBW | F high @<br>End of OBW |               |                                 |
| Temperature    | Voltage   | (MHz)                 | (MHz)                  |               |                                 |
| Normal (20C)   | Normal    | 3705.6973             | 3974.3033              |               |                                 |
| Extreme (50C)  |           | 3705.6973             | 3974.3033              | 23.7          | 0.006                           |
| Extreme (40C)  |           | 3705.6973             | 3974.3033              | 22.5          | 0.006                           |
| Extreme (30C)  |           | 3705.6973             | 3974.3033              | 19.4          | 0.005                           |
| Extreme (10C)  |           | 3705.6973             | 3974.3033              | 23.0          | 0.006                           |
| Extreme (0C)   |           | 3705.6973             | 3974.3033              | 24.7          | 0.006                           |
| Extreme (-10C) |           | 3705.6973             | 3974.3033              | 23.4          | 0.006                           |
| Extreme (-20C) |           | 3705.6973             | 3974.3033              | 20.2          | 0.005                           |
| Extreme (-30C) |           | 3705.6973             | 3974.3033              | 20.0          | 0.005                           |
|                |           |                       |                        |               |                                 |
| 20C            | 15%       | 3705.6973             | 3974.3033              | 17.6          | 0.005                           |
|                | -15%      | 3705.6973             | 3974.3033              | 20.4          | 0.005                           |
|                | End Point | 3705.6973             | 3974.3033              | 19.7          | 0.005                           |

## **9.5. RADIATED POWER (ERP & EIRP)**

### **RULE PART(S)**

FCC: §2.1046, §22.913, §24.232, §27.50, and §90.635

### **LIMITS**

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50:

(b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

(d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

(h) The following power limits shall apply in the BRS and EBS:

(2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

(j)(3) Mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(k)(3) Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

90.635(b) The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

### **TEST PROCEDURE**

ANSI / TIA / EIA 603 E Clause 2.2.17; ESU40 setting reference to 971168 D01 v03r01

For radiated output power measurement with a ESU40:

- a) Set the RBW  $\geq$  OBW;
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 2 \times$  RBW;
- d) Sweep time = auto couple or 1 second;
- e) Detector = rms;
- f) Ensure that the number of measurement points  $\geq$  span/RBW;
- g) Trace mode = max hold(GSM,WCDMA), average(LTE, 5G NR);

### **TEST RESULTS**

See the following pages.

### 9.5.1. ERP/EIRP Results

#### GSM

| Band    | Mode   | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | ERP<br>(dBm) | ERP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|---------|--------|------------|---------------------|--------------------|--------------------|-----------------------|--------------|-------------|----------------|---------------|
| GSM 850 | GPRS   | 824.20     | 29.17               | V                  | 3.11               | -0.82                 | 25.24        | 334.20      | 38.50          | -13.26        |
|         |        | 824.20     | 33.46               | H                  | 3.11               | -0.82                 | 29.54        | 899.50      | 38.50          | -8.96         |
|         |        | 836.60     | 27.48               | V                  | 3.13               | -0.93                 | 23.42        | 219.79      | 38.50          | -15.08        |
|         |        | 836.60     | 33.20               | H                  | 3.13               | -0.93                 | 29.14        | 820.35      | 38.50          | -9.36         |
|         |        | 848.80     | 25.97               | V                  | 3.15               | -1.04                 | 21.78        | 150.66      | 38.50          | -16.72        |
|         | EGPRS  | 848.80     | 32.68               | H                  | 3.15               | -1.04                 | 28.49        | 706.32      | 38.50          | -10.01        |
|         |        | 824.20     | 23.60               | V                  | 3.11               | -0.82                 | 19.67        | 92.68       | 38.50          | -18.83        |
|         |        | 824.20     | 28.11               | H                  | 3.11               | -0.82                 | 24.19        | 262.42      | 38.50          | -14.31        |
|         |        | 836.60     | 22.35               | V                  | 3.13               | -0.93                 | 18.29        | 67.45       | 38.50          | -20.21        |
|         |        | 836.60     | 27.59               | H                  | 3.13               | -0.93                 | 23.53        | 225.42      | 38.50          | -14.97        |
|         | 848.80 | 20.84      | V                   | 3.15               | -1.04              | 16.65                 | 46.24        | 38.50       | -21.85         |               |
|         | 848.80 | 27.28      | H                   | 3.15               | -1.04              | 23.09                 | 203.70       | 38.50       | -15.41         |               |

| Band     | Mode    | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|----------|---------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| GSM 1900 | GPRS    | 1850.20    | 24.00               | V                  | 4.62               | 9.52                  | 28.91         | 778.04       | 33.00          | -4.09         |
|          |         | 1850.20    | 20.19               | H                  | 4.62               | 9.52                  | 25.09         | 322.85       | 33.00          | -7.91         |
|          |         | 1880.00    | 26.09               | V                  | 4.65               | 9.29                  | 30.73         | 1183.04      | 33.00          | -2.27         |
|          |         | 1880.00    | 21.81               | H                  | 4.65               | 9.29                  | 26.45         | 441.57       | 33.00          | -6.55         |
|          |         | 1909.80    | 26.73               | V                  | 4.68               | 9.00                  | 31.05         | 1273.50      | 33.00          | -1.95         |
|          | EGPRS   | 1909.80    | 20.41               | H                  | 4.68               | 9.00                  | 24.73         | 297.17       | 33.00          | -8.27         |
|          |         | 1850.20    | 20.63               | V                  | 4.62               | 9.52                  | 25.54         | 358.10       | 33.00          | -7.46         |
|          |         | 1850.20    | 16.85               | H                  | 4.62               | 9.52                  | 21.75         | 149.62       | 33.00          | -11.25        |
|          |         | 1880.00    | 22.94               | V                  | 4.65               | 9.29                  | 27.58         | 572.80       | 33.00          | -5.42         |
|          |         | 1880.00    | 18.69               | H                  | 4.65               | 9.29                  | 23.33         | 215.28       | 33.00          | -9.67         |
|          | 1909.80 | 22.83      | V                   | 4.68               | 9.00               | 27.15                 | 518.80        | 33.00        | -5.85          |               |
|          | 1909.80 | 17.80      | H                   | 4.68               | 9.00               | 22.12                 | 162.93        | 33.00        | -10.88         |               |

**WCDMA**

| Band   | Mode  | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | ERP<br>(dBm) | ERP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|--------|-------|------------|---------------------|--------------------|--------------------|-----------------------|--------------|-------------|----------------|---------------|
| Band 5 | REL99 | 826.40     | 20.00               | V                  | 3.11               | -0.84                 | 16.05        | 40.27       | 38.50          | -22.45        |
|        |       | 826.40     | 23.96               | H                  | 3.11               | -0.84                 | 20.02        | 100.46      | 38.50          | -18.48        |
|        |       | 836.60     | 18.31               | V                  | 3.13               | -0.93                 | 14.25        | 26.61       | 38.50          | -24.25        |
|        |       | 836.60     | 23.72               | H                  | 3.13               | -0.93                 | 19.66        | 92.47       | 38.50          | -18.84        |
|        |       | 846.60     | 16.40               | V                  | 3.14               | -1.02                 | 12.24        | 16.75       | 38.50          | -26.26        |
|        |       | 846.60     | 23.13               | H                  | 3.14               | -1.02                 | 18.97        | 78.89       | 38.50          | -19.53        |
|        | HSDPA | 826.40     | 19.08               | V                  | 3.11               | -0.84                 | 15.13        | 32.58       | 38.50          | -23.37        |
|        |       | 826.40     | 22.95               | H                  | 3.11               | -0.84                 | 19.01        | 79.62       | 38.50          | -19.49        |
|        |       | 836.60     | 17.17               | V                  | 3.13               | -0.93                 | 13.11        | 20.46       | 38.50          | -25.39        |
|        |       | 836.60     | 22.61               | H                  | 3.13               | -0.93                 | 18.55        | 71.61       | 38.50          | -19.95        |
|        |       | 846.60     | 15.52               | V                  | 3.14               | -1.02                 | 11.36        | 13.68       | 38.50          | -27.14        |
|        |       | 846.60     | 22.06               | H                  | 3.14               | -1.02                 | 17.90        | 61.66       | 38.50          | -20.60        |

| Band   | Mode  | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|--------|-------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| Band 4 | REL99 | 1712.40    | 18.39               | V                  | 4.44               | 9.51                  | 23.46         | 221.82       | 30.00          | -6.54         |
|        |       | 1712.40    | 9.62                | H                  | 4.44               | 9.51                  | 14.69         | 29.44        | 30.00          | -15.31        |
|        |       | 1732.60    | 18.94               | V                  | 4.46               | 9.60                  | 24.08         | 255.86       | 30.00          | -5.92         |
|        |       | 1732.60    | 10.50               | H                  | 4.46               | 9.60                  | 15.64         | 36.64        | 30.00          | -14.36        |
|        |       | 1752.60    | 18.55               | V                  | 4.48               | 9.68                  | 23.75         | 237.14       | 30.00          | -6.25         |
|        |       | 1752.60    | 10.88               | H                  | 4.48               | 9.68                  | 16.08         | 40.55        | 30.00          | -13.92        |
|        | HSDPA | 1712.40    | 17.88               | V                  | 4.44               | 9.51                  | 22.95         | 197.24       | 30.00          | -7.05         |
|        |       | 1712.40    | 8.64                | H                  | 4.44               | 9.51                  | 13.71         | 23.50        | 30.00          | -16.29        |
|        |       | 1732.60    | 18.22               | V                  | 4.46               | 9.60                  | 23.36         | 216.77       | 30.00          | -6.64         |
|        |       | 1732.60    | 9.64                | H                  | 4.46               | 9.60                  | 14.78         | 30.06        | 30.00          | -15.22        |
|        |       | 1752.60    | 17.81               | V                  | 4.48               | 9.68                  | 23.01         | 199.99       | 30.00          | -6.99         |
|        |       | 1752.60    | 9.40                | H                  | 4.48               | 9.68                  | 14.60         | 28.84        | 30.00          | -15.40        |

| Band   | Mode  | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|--------|-------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| Band 2 | REL99 | 1852.40    | 10.76               | V                  | 4.62               | 9.51                  | 15.64         | 36.64        | 33.00          | -17.36        |
|        |       | 1852.40    | 18.14               | H                  | 4.62               | 9.51                  | 23.03         | 200.91       | 33.00          | -9.97         |
|        |       | 1880.00    | 11.27               | V                  | 4.65               | 9.29                  | 15.90         | 38.90        | 33.00          | -17.10        |
|        |       | 1880.00    | 19.71               | H                  | 4.65               | 9.29                  | 24.35         | 272.27       | 33.00          | -8.65         |
|        |       | 1907.60    | 12.26               | V                  | 4.68               | 9.03                  | 16.60         | 45.71        | 33.00          | -16.40        |
|        |       | 1907.60    | 20.84               | H                  | 4.68               | 9.03                  | 25.18         | 329.61       | 33.00          | -7.82         |
|        | HSDPA | 1852.40    | 10.19               | V                  | 4.62               | 9.51                  | 15.07         | 32.14        | 33.00          | -17.93        |
|        |       | 1852.40    | 16.79               | H                  | 4.62               | 9.51                  | 21.68         | 147.23       | 33.00          | -11.32        |
|        |       | 1880.00    | 10.46               | V                  | 4.65               | 9.29                  | 15.09         | 32.28        | 33.00          | -17.91        |
|        |       | 1880.00    | 19.11               | H                  | 4.65               | 9.29                  | 23.75         | 237.14       | 33.00          | -9.25         |
|        |       | 1907.60    | 11.73               | V                  | 4.68               | 9.03                  | 16.07         | 40.46        | 33.00          | -16.93        |
|        |       | 1907.60    | 19.98               | H                  | 4.68               | 9.03                  | 24.32         | 270.40       | 33.00          | -8.68         |

### LTE Band 5

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 1.4      | QPSK       | 824.70  | 27.11            | V               | 3.11            | -0.82              | 23.18     | 207.97   | 38.50       | -15.32     | 1/3  |
|          |            | 836.50  | 26.65            | V               | 3.13            | -0.93              | 22.59     | 181.55   | 38.50       | -15.91     | 1/3  |
|          |            | 848.30  | 25.17            | V               | 3.15            | -1.03              | 20.98     | 125.31   | 38.50       | -17.52     | 1/3  |
|          | 16-QAM     | 824.70  | 25.85            | V               | 3.11            | -0.82              | 21.92     | 155.60   | 38.50       | -16.58     | 1/3  |
|          |            | 836.50  | 25.63            | V               | 3.13            | -0.93              | 21.57     | 143.55   | 38.50       | -16.93     | 1/5  |
|          |            | 848.30  | 24.19            | V               | 3.15            | -1.03              | 20.00     | 100.00   | 38.50       | -18.50     | 1/3  |
| 3        | QPSK       | 825.50  | 27.20            | V               | 3.10            | -0.83              | 23.27     | 212.32   | 38.50       | -15.23     | 1/8  |
|          |            | 836.50  | 26.53            | V               | 3.13            | -0.93              | 22.47     | 176.60   | 38.50       | -16.03     | 1/8  |
|          |            | 847.50  | 25.30            | V               | 3.15            | -1.03              | 21.12     | 129.42   | 38.50       | -17.38     | 1/8  |
|          | 16-QAM     | 825.50  | 26.09            | V               | 3.10            | -0.83              | 22.16     | 164.44   | 38.50       | -16.34     | 1/8  |
|          |            | 836.50  | 25.57            | V               | 3.13            | -0.93              | 21.51     | 141.58   | 38.50       | -16.99     | 1/8  |
|          |            | 847.50  | 24.21            | V               | 3.15            | -1.03              | 20.03     | 100.69   | 38.50       | -18.47     | 1/8  |
| 5        | QPSK       | 826.50  | 27.36            | V               | 3.11            | -0.84              | 23.41     | 219.28   | 38.50       | -15.09     | 1/12 |
|          |            | 836.50  | 26.46            | V               | 3.13            | -0.93              | 22.40     | 173.78   | 38.50       | -16.10     | 1/12 |
|          |            | 846.50  | 25.28            | V               | 3.14            | -1.02              | 21.11     | 129.12   | 38.50       | -17.39     | 1/12 |
|          | 16-QAM     | 826.50  | 26.11            | V               | 3.11            | -0.84              | 22.16     | 164.44   | 38.50       | -16.22     | 1/12 |
|          |            | 836.50  | 25.29            | V               | 3.13            | -0.93              | 21.23     | 132.74   | 38.50       | -17.13     | 1/12 |
|          |            | 846.50  | 24.19            | V               | 3.14            | -1.02              | 20.02     | 100.46   | 38.50       | -18.36     | 1/12 |
| 10       | QPSK       | 829.00  | 27.53            | V               | 3.11            | -0.86              | 23.56     | 226.99   | 38.50       | -14.94     | 1/0  |
|          |            | 836.50  | 26.59            | V               | 3.13            | -0.93              | 22.53     | 179.06   | 38.50       | -15.97     | 1/25 |
|          |            | 844.00  | 25.47            | V               | 3.14            | -1.00              | 21.33     | 135.83   | 38.50       | -17.17     | 1/0  |
|          | 16-QAM     | 829.00  | 26.25            | V               | 3.11            | -0.86              | 22.28     | 169.04   | 38.50       | -16.22     | 1/0  |
|          |            | 836.50  | 25.43            | V               | 3.13            | -0.93              | 21.37     | 137.09   | 38.50       | -17.13     | 1/0  |
|          |            | 844.00  | 24.28            | V               | 3.14            | -1.00              | 20.14     | 103.28   | 38.50       | -18.36     | 1/0  |

### LTE Band 12

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 1.4      | QPSK       | 699.70  | 21.69            | H               | 2.87            | -0.80              | 18.02     | 63.39    | 34.77       | -16.75     | 1/3  |
|          |            | 707.50  | 21.87            | H               | 2.89            | -0.79              | 18.20     | 66.07    | 34.77       | -16.57     | 1/5  |
|          |            | 715.30  | 21.76            | H               | 2.90            | -0.77              | 18.09     | 64.42    | 34.77       | -16.68     | 1/3  |
|          | 16-QAM     | 699.70  | 20.51            | H               | 2.87            | -0.80              | 16.84     | 48.31    | 34.77       | -17.93     | 1/3  |
|          |            | 707.50  | 20.76            | H               | 2.89            | -0.79              | 17.09     | 51.17    | 34.77       | -17.68     | 1/5  |
|          |            | 715.30  | 20.53            | H               | 2.90            | -0.77              | 16.86     | 48.53    | 34.77       | -17.91     | 1/3  |
| 3        | QPSK       | 700.50  | 21.62            | H               | 2.88            | -0.80              | 17.95     | 62.37    | 34.77       | -16.82     | 1/8  |
|          |            | 707.50  | 21.92            | H               | 2.89            | -0.79              | 18.25     | 66.83    | 34.77       | -16.52     | 1/8  |
|          |            | 714.50  | 22.04            | H               | 2.90            | -0.77              | 18.37     | 68.71    | 34.77       | -16.40     | 1/8  |
|          | 16-QAM     | 700.50  | 20.71            | H               | 2.88            | -0.80              | 17.04     | 50.58    | 34.77       | -17.73     | 1/8  |
|          |            | 707.50  | 20.80            | H               | 2.89            | -0.79              | 17.13     | 51.64    | 34.77       | -17.64     | 1/8  |
|          |            | 714.50  | 20.86            | H               | 2.90            | -0.77              | 17.19     | 52.36    | 34.77       | -17.58     | 1/8  |
| 5        | QPSK       | 701.50  | 21.68            | H               | 2.88            | -0.80              | 18.00     | 63.10    | 34.77       | -16.77     | 1/24 |
|          |            | 707.50  | 22.26            | H               | 2.89            | -0.79              | 18.59     | 72.28    | 34.77       | -16.18     | 1/12 |
|          |            | 713.50  | 22.28            | H               | 2.90            | -0.77              | 18.60     | 72.44    | 34.77       | -16.17     | 1/12 |
|          | 16-QAM     | 701.50  | 20.52            | H               | 2.88            | -0.80              | 16.84     | 48.31    | 34.77       | -17.93     | 1/12 |
|          |            | 707.50  | 20.81            | H               | 2.89            | -0.79              | 17.14     | 51.76    | 34.77       | -17.63     | 1/12 |
|          |            | 713.50  | 21.07            | H               | 2.90            | -0.77              | 17.39     | 54.83    | 34.77       | -17.38     | 1/12 |
| 10       | QPSK       | 704.00  | 21.77            | H               | 2.88            | -0.79              | 18.10     | 64.57    | 34.77       | -16.67     | 1/49 |
|          |            | 707.50  | 22.13            | H               | 2.89            | -0.79              | 18.46     | 70.15    | 34.77       | -16.31     | 1/49 |
|          |            | 711.00  | 21.94            | H               | 2.89            | -0.78              | 18.26     | 66.99    | 34.77       | -16.51     | 1/25 |
|          | 16-QAM     | 704.00  | 20.74            | H               | 2.88            | -0.79              | 17.07     | 50.93    | 34.77       | -17.70     | 1/49 |
|          |            | 707.50  | 20.83            | H               | 2.89            | -0.79              | 17.16     | 52.00    | 34.77       | -17.61     | 1/49 |
|          |            | 711.00  | 20.54            | H               | 2.89            | -0.78              | 16.86     | 48.53    | 34.77       | -17.91     | 1/49 |

### LTE Band 13

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 5        | QPSK       | 779.50  | 23.76            | V               | 3.02            | -0.64              | 20.10     | 102.33   | 34.77       | -14.67     | 1/12 |
|          |            | 782.00  | 24.19            | V               | 3.02            | -0.64              | 20.53     | 112.98   | 34.77       | -14.24     | 1/12 |
|          |            | 784.50  | 24.59            | V               | 3.04            | -0.63              | 20.92     | 123.59   | 34.77       | -13.85     | 1/12 |
|          | 16-QAM     | 779.50  | 22.81            | V               | 3.02            | -0.64              | 19.15     | 82.22    | 34.77       | -15.62     | 1/12 |
|          |            | 782.00  | 23.08            | V               | 3.02            | -0.64              | 19.42     | 87.50    | 34.77       | -15.35     | 1/12 |
|          |            | 784.50  | 23.26            | V               | 3.04            | -0.63              | 19.59     | 90.99    | 34.77       | -15.18     | 1/12 |
| 10       | QPSK       | 782.00  | 23.47            | V               | 3.02            | -0.64              | 19.81     | 95.72    | 34.77       | -14.96     | 1/0  |
|          | 16-QAM     | 782.00  | 22.36            | V               | 3.02            | -0.64              | 18.70     | 74.13    | 34.77       | -16.07     | 1/0  |

**LTE Band 25**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|------|
| 1.4      | QPSK       | 1850.70 | 17.30            | H               | 4.62            | 9.52               | 22.20      | 165.96    | 33.00       | -10.80     | 1/3  |
|          |            | 1882.50 | 19.51            | H               | 4.65            | 9.27               | 24.12      | 258.23    | 33.00       | -8.88      | 1/3  |
|          |            | 1914.30 | 21.13            | H               | 4.70            | 8.94               | 25.37      | 344.35    | 33.00       | -7.63      | 1/3  |
|          | 16-QAM     | 1850.70 | 16.48            | H               | 4.62            | 9.52               | 21.38      | 137.40    | 33.00       | -11.62     | 1/0  |
|          |            | 1882.50 | 18.74            | H               | 4.65            | 9.27               | 23.35      | 216.27    | 33.00       | -9.65      | 1/3  |
|          |            | 1914.30 | 20.43            | H               | 4.70            | 8.94               | 24.67      | 293.09    | 33.00       | -8.33      | 1/3  |
| 3        | QPSK       | 1851.50 | 17.93            | H               | 4.62            | 9.51               | 22.81      | 190.99    | 33.00       | -10.19     | 1/8  |
|          |            | 1882.50 | 19.51            | H               | 4.65            | 9.27               | 24.12      | 258.23    | 33.00       | -8.88      | 1/8  |
|          |            | 1913.50 | 21.22            | H               | 4.69            | 8.95               | 25.47      | 352.37    | 33.00       | -7.53      | 1/8  |
|          | 16-QAM     | 1851.50 | 17.17            | H               | 4.62            | 9.51               | 22.05      | 160.32    | 33.00       | -10.95     | 1/8  |
|          |            | 1882.50 | 18.72            | H               | 4.65            | 9.27               | 23.33      | 215.28    | 33.00       | -9.67      | 1/8  |
|          |            | 1913.50 | 20.34            | H               | 4.69            | 8.95               | 24.59      | 287.74    | 33.00       | -8.41      | 1/8  |
| 5        | QPSK       | 1852.50 | 17.77            | H               | 4.62            | 9.50               | 22.65      | 184.08    | 33.00       | -10.35     | 1/12 |
|          |            | 1882.50 | 19.65            | H               | 4.65            | 9.27               | 24.26      | 266.69    | 33.00       | -8.74      | 1/12 |
|          |            | 1912.50 | 21.31            | H               | 4.69            | 8.96               | 25.58      | 361.41    | 33.00       | -7.42      | 1/12 |
|          | 16-QAM     | 1852.50 | 17.02            | H               | 4.62            | 9.50               | 21.90      | 154.88    | 33.00       | -11.10     | 1/12 |
|          |            | 1882.50 | 18.65            | H               | 4.65            | 9.27               | 23.26      | 211.84    | 33.00       | -9.74      | 1/12 |
|          |            | 1912.50 | 20.48            | H               | 4.69            | 8.96               | 24.75      | 298.54    | 33.00       | -8.25      | 1/12 |
| 10       | QPSK       | 1855.00 | 18.14            | H               | 4.62            | 9.48               | 23.00      | 199.53    | 33.00       | -10.00     | 1/25 |
|          |            | 1882.50 | 19.56            | H               | 4.65            | 9.27               | 24.17      | 261.22    | 33.00       | -8.83      | 1/25 |
|          |            | 1910.00 | 21.20            | H               | 4.68            | 8.99               | 25.52      | 356.45    | 33.00       | -7.48      | 1/25 |
|          | 16-QAM     | 1855.00 | 17.28            | H               | 4.62            | 9.48               | 22.14      | 163.68    | 33.00       | -10.86     | 1/49 |
|          |            | 1882.50 | 18.71            | H               | 4.65            | 9.27               | 23.32      | 214.78    | 33.00       | -9.68      | 1/49 |
|          |            | 1910.00 | 20.44            | H               | 4.68            | 8.99               | 24.76      | 299.23    | 33.00       | -8.24      | 1/25 |
| 15       | QPSK       | 1857.50 | 17.69            | H               | 4.63            | 9.47               | 22.53      | 179.06    | 33.00       | -10.47     | 1/74 |
|          |            | 1882.50 | 19.72            | H               | 4.65            | 9.27               | 24.33      | 271.02    | 33.00       | -8.67      | 1/37 |
|          |            | 1907.50 | 21.04            | H               | 4.69            | 9.03               | 25.39      | 345.94    | 33.00       | -7.61      | 1/37 |
|          | 16-QAM     | 1857.50 | 17.93            | H               | 4.63            | 9.47               | 22.77      | 189.23    | 33.00       | -10.23     | 1/0  |
|          |            | 1882.50 | 18.81            | H               | 4.65            | 9.27               | 23.42      | 219.79    | 33.00       | -9.58      | 1/37 |
|          |            | 1907.50 | 20.11            | H               | 4.69            | 9.03               | 24.46      | 279.25    | 33.00       | -8.54      | 1/37 |
| 20       | QPSK       | 1860.00 | 18.08            | H               | 4.63            | 9.45               | 22.90      | 194.98    | 33.00       | -10.10     | 1/49 |
|          |            | 1882.50 | 19.03            | H               | 4.65            | 9.27               | 23.64      | 231.21    | 33.00       | -9.36      | 1/0  |
|          |            | 1905.00 | 20.72            | H               | 4.68            | 9.06               | 25.10      | 323.59    | 33.00       | -7.90      | 1/99 |
|          | 16-QAM     | 1860.00 | 17.26            | H               | 4.63            | 9.45               | 22.08      | 161.44    | 33.00       | -10.92     | 1/49 |
|          |            | 1882.50 | 18.24            | H               | 4.65            | 9.27               | 22.85      | 192.75    | 33.00       | -10.15     | 1/49 |
|          |            | 1905.00 | 19.92            | H               | 4.68            | 9.06               | 24.30      | 269.15    | 33.00       | -8.70      | 1/49 |

**LTE Band 26**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 1.4      | QPSK       | 814.70  | 26.18            | V               | 3.09            | -0.73              | 22.36     | 172.19   | 50.00       | -27.64     | 1/3  |
|          |            | 823.30  | 26.43            | V               | 3.10            | -0.81              | 22.52     | 178.65   | 50.00       | -27.48     | 1/3  |
|          |            | 824.70  | 25.68            | V               | 3.11            | -0.82              | 21.75     | 149.62   | 38.50       | -16.75     | 1/0  |
|          |            | 831.50  | 25.57            | V               | 3.11            | -0.88              | 21.57     | 143.55   | 38.50       | -16.93     | 1/3  |
|          |            | 848.30  | 23.28            | V               | 3.15            | -1.03              | 19.09     | 81.10    | 38.50       | -19.41     | 1/3  |
|          | 16-QAM     | 814.70  | 25.10            | V               | 3.09            | -0.73              | 21.28     | 134.28   | 50.00       | -28.72     | 1/0  |
|          |            | 822.50  | 25.54            | V               | 3.10            | -0.81              | 21.63     | 145.55   | 50.00       | -28.37     | 1/3  |
|          |            | 824.70  | 24.48            | V               | 3.11            | -0.82              | 20.55     | 113.50   | 38.50       | -17.95     | 1/3  |
|          |            | 831.50  | 24.67            | V               | 3.11            | -0.88              | 20.67     | 116.68   | 38.50       | -17.83     | 1/0  |
|          |            | 848.30  | 22.03            | V               | 3.15            | -1.03              | 17.84     | 60.81    | 38.50       | -20.66     | 1/0  |
| 3        | QPSK       | 815.50  | 26.28            | V               | 3.08            | -0.74              | 22.46     | 176.20   | 50.00       | -27.54     | 1/8  |
|          |            | 822.50  | 26.79            | V               | 3.10            | -0.80              | 22.89     | 194.54   | 50.00       | -27.11     | 1/8  |
|          |            | 825.50  | 26.80            | V               | 3.10            | -0.83              | 22.87     | 193.64   | 38.50       | -15.63     | 1/8  |
|          |            | 831.50  | 25.80            | V               | 3.11            | -0.88              | 21.80     | 151.36   | 38.50       | -16.70     | 1/8  |
|          |            | 847.50  | 23.41            | V               | 3.15            | -1.03              | 19.23     | 83.75    | 38.50       | -19.27     | 1/8  |
|          | 16-QAM     | 815.50  | 25.12            | V               | 3.08            | -0.74              | 21.30     | 134.90   | 50.00       | -28.70     | 1/0  |
|          |            | 822.50  | 25.82            | V               | 3.10            | -0.79              | 21.93     | 155.96   | 50.00       | -28.07     | 1/8  |
|          |            | 825.50  | 25.69            | V               | 3.10            | -0.83              | 21.76     | 149.97   | 38.50       | -16.74     | 1/8  |
|          |            | 831.50  | 24.79            | V               | 3.11            | -0.88              | 20.79     | 119.95   | 38.50       | -17.71     | 1/8  |
|          |            | 847.50  | 22.34            | V               | 3.15            | -1.03              | 18.16     | 65.46    | 38.50       | -20.34     | 1/8  |
| 5        | QPSK       | 816.50  | 26.27            | V               | 3.09            | -0.75              | 22.44     | 175.39   | 50.00       | -27.56     | 1/12 |
|          |            | 821.50  | 26.82            | V               | 3.10            | -0.79              | 22.92     | 195.88   | 50.00       | -27.08     | 1/12 |
|          |            | 826.50  | 25.85            | V               | 3.11            | -0.84              | 21.90     | 154.88   | 38.50       | -16.60     | 1/12 |
|          |            | 831.50  | 25.97            | V               | 3.11            | -0.88              | 21.97     | 157.40   | 38.50       | -16.53     | 1/12 |
|          |            | 846.50  | 23.44            | V               | 3.14            | -1.02              | 19.27     | 84.53    | 38.50       | -19.23     | 1/12 |
|          | 16-QAM     | 816.50  | 25.20            | V               | 3.09            | -0.75              | 21.37     | 137.09   | 50.00       | -28.63     | 1/12 |
|          |            | 821.50  | 25.54            | V               | 3.11            | -0.88              | 21.54     | 142.56   | 50.00       | -28.46     | 1/12 |
|          |            | 826.50  | 24.77            | V               | 3.11            | -0.84              | 20.82     | 120.78   | 38.50       | -17.68     | 1/12 |
|          |            | 831.50  | 24.95            | V               | 3.11            | -0.88              | 20.95     | 124.45   | 38.50       | -17.55     | 1/12 |
|          |            | 846.50  | 22.22            | V               | 3.14            | -1.02              | 18.05     | 63.83    | 38.50       | -20.45     | 1/12 |
| 10       | QPSK       | 819.00  | 26.45            | V               | 3.09            | -0.77              | 22.59     | 181.55   | 50.00       | -27.41     | 1/25 |
|          |            | 829.00  | 25.83            | V               | 3.11            | -0.86              | 21.86     | 153.46   | 38.50       | -16.64     | 1/25 |
|          |            | 831.50  | 25.90            | V               | 3.11            | -0.88              | 21.90     | 154.88   | 38.50       | -16.60     | 1/0  |
|          |            | 844.00  | 23.83            | V               | 3.14            | -1.00              | 19.69     | 93.11    | 38.50       | -18.81     | 1/25 |
|          | 16-QAM     | 819.00  | 25.60            | V               | 3.09            | -0.77              | 21.74     | 149.28   | 50.00       | -28.26     | 1/0  |
|          |            | 829.00  | 24.96            | V               | 3.11            | -0.86              | 20.99     | 125.60   | 38.50       | -17.51     | 1/25 |
|          |            | 831.50  | 24.70            | V               | 3.11            | -0.88              | 20.70     | 117.49   | 38.50       | -17.80     | 1/25 |
|          |            | 844.00  | 22.91            | V               | 3.14            | -1.00              | 18.77     | 75.34    | 38.50       | -19.73     | 1/0  |
| 15       | QPSK       | 821.50  | 26.50            | V               | 3.10            | -0.79              | 22.60     | 181.97   | 50.00       | -27.40     | 1/0  |
|          |            | 831.50  | 25.62            | V               | 3.11            | -0.88              | 21.62     | 145.21   | 38.50       | -16.88     | 1/0  |
|          |            | 841.50  | 23.81            | V               | 3.13            | -0.97              | 19.70     | 93.33    | 38.50       | -18.80     | 1/74 |
|          | 16-QAM     | 821.50  | 25.59            | V               | 3.10            | -0.79              | 21.69     | 147.57   | 50.00       | -28.31     | 1/0  |
|          |            | 831.50  | 24.64            | V               | 3.11            | -0.88              | 20.64     | 115.88   | 38.50       | -17.86     | 1/0  |
|          |            | 841.50  | 22.50            | V               | 3.13            | -0.97              | 18.39     | 69.02    | 38.50       | -20.11     | 1/0  |

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain #REF! | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 1.4      | QPSK       | 824.00  | 26.84            | V               | 3.10            | -0.82              | 22.92     | 195.88   | 38.50       | -15.58     | 1/0  |
|          | 16-QAM     |         | 25.26            | V               | 3.10            | -0.82              | 21.34     | 136.14   | 38.50       | -17.16     | 1/3  |
| 3        | QPSK       |         | 27.02            | V               | 3.10            | -0.82              | 23.10     | 204.17   | 38.50       | -15.40     | 1/8  |
|          | 16-QAM     |         | 26.00            | V               | 3.10            | -0.82              | 22.08     | 161.44   | 38.50       | -16.42     | 1/8  |
| 5        | QPSK       |         | 27.04            | V               | 3.10            | -0.82              | 23.13     | 205.59   | 38.50       | -15.37     | 1/12 |
|          | 16-QAM     |         | 25.85            | V               | 3.10            | -0.82              | 21.94     | 156.31   | 38.50       | -16.56     | 1/12 |
| 10       | QPSK       |         | 27.29            | V               | 3.10            | -0.82              | 23.37     | 217.27   | 38.50       | -15.13     | 1/0  |
|          | 16-QAM     |         | 26.37            | V               | 3.10            | -0.82              | 22.45     | 175.79   | 38.50       | -16.05     | 1/0  |
| 15       | QPSK       |         | 26.46            | V               | 3.10            | -0.82              | 22.54     | 179.47   | 38.50       | -15.96     | 1/0  |
|          | 16-QAM     |         | 25.45            | V               | 3.10            | -0.82              | 21.53     | 142.23   | 38.50       | -16.97     | 1/0  |

**LTE Band 41(PC2)**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|------|
| 5        | QPSK       | 2498.50 | 19.90            | H               | 5.36            | 10.00              | 24.54      | 284.45    | 33.00       | -8.46      | 1/12 |
|          |            | 2593.00 | 18.78            | H               | 5.47            | 9.91               | 23.22      | 209.89    | 33.00       | -9.78      | 1/12 |
|          |            | 2687.50 | 20.32            | H               | 5.57            | 9.87               | 24.63      | 290.40    | 33.00       | -8.37      | 1/0  |
|          | 16-QAM     | 2498.50 | 19.17            | H               | 5.36            | 10.00              | 23.81      | 240.44    | 33.00       | -9.19      | 1/12 |
|          |            | 2593.00 | 17.96            | H               | 5.47            | 9.91               | 22.40      | 173.78    | 33.00       | -10.60     | 1/12 |
|          |            | 2687.50 | 19.60            | H               | 5.57            | 9.87               | 23.91      | 246.04    | 33.00       | -9.09      | 1/0  |
| 10       | QPSK       | 2501.00 | 19.78            | H               | 5.38            | 10.00              | 24.40      | 275.42    | 33.00       | -8.60      | 1/25 |
|          |            | 2593.00 | 18.80            | H               | 5.47            | 9.91               | 23.24      | 210.86    | 33.00       | -9.76      | 1/49 |
|          |            | 2685.00 | 20.16            | H               | 5.56            | 9.87               | 24.48      | 280.54    | 33.00       | -8.52      | 1/0  |
|          | 16-QAM     | 2501.00 | 19.06            | H               | 5.38            | 10.00              | 23.68      | 233.35    | 33.00       | -9.32      | 1/25 |
|          |            | 2593.00 | 18.03            | H               | 5.47            | 9.91               | 22.47      | 176.60    | 33.00       | -10.53     | 1/49 |
|          |            | 2685.00 | 19.38            | H               | 5.56            | 9.87               | 23.70      | 234.42    | 33.00       | -9.30      | 1/0  |
| 15       | QPSK       | 2503.50 | 19.67            | H               | 5.37            | 9.99               | 24.29      | 268.53    | 33.00       | -8.71      | 1/74 |
|          |            | 2593.00 | 18.58            | H               | 5.47            | 9.91               | 23.02      | 200.45    | 33.00       | -9.98      | 1/74 |
|          |            | 2682.50 | 19.92            | H               | 5.56            | 9.87               | 24.23      | 264.85    | 33.00       | -8.77      | 1/0  |
|          | 16-QAM     | 2503.50 | 18.94            | H               | 5.37            | 9.99               | 23.56      | 226.99    | 33.00       | -9.44      | 1/0  |
|          |            | 2593.00 | 17.82            | H               | 5.47            | 9.91               | 22.26      | 168.27    | 33.00       | -10.74     | 1/74 |
|          |            | 2682.50 | 18.98            | H               | 5.56            | 9.87               | 23.29      | 213.30    | 33.00       | -9.71      | 1/0  |
| 20       | QPSK       | 2506.00 | 19.53            | H               | 5.37            | 9.99               | 24.15      | 260.02    | 33.00       | -8.85      | 1/99 |
|          |            | 2593.00 | 18.72            | H               | 5.47            | 9.91               | 23.16      | 207.01    | 33.00       | -9.84      | 1/99 |
|          |            | 2680.00 | 19.76            | H               | 5.56            | 9.87               | 24.07      | 255.27    | 33.00       | -8.93      | 1/0  |
|          | 16-QAM     | 2506.00 | 18.78            | H               | 5.37            | 9.99               | 23.40      | 218.78    | 33.00       | -9.60      | 1/99 |
|          |            | 2593.00 | 17.98            | H               | 5.47            | 9.91               | 22.42      | 174.58    | 33.00       | -10.58     | 1/99 |
|          |            | 2680.00 | 18.92            | H               | 5.56            | 9.87               | 23.23      | 210.38    | 33.00       | -9.77      | 1/0  |

**LTE Band 66**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|------|
| 1.4      | QPSK       | 1710.70 | 18.13            | V               | 4.43            | 9.50               | 23.20      | 208.93    | 30.00       | -6.80      | 1/3  |
|          |            | 1745.00 | 18.17            | V               | 4.47            | 9.66               | 23.35      | 216.27    | 30.00       | -6.65      | 1/3  |
|          |            | 1779.30 | 16.83            | V               | 4.52            | 9.68               | 21.99      | 158.12    | 30.00       | -8.01      | 1/5  |
|          | 16-QAM     | 1710.70 | 17.35            | V               | 4.43            | 9.50               | 22.42      | 174.58    | 30.00       | -7.58      | 1/3  |
|          |            | 1745.00 | 17.12            | V               | 4.47            | 9.66               | 22.31      | 170.22    | 30.00       | -7.69      | 1/5  |
|          |            | 1779.30 | 16.10            | V               | 4.52            | 9.68               | 21.26      | 133.66    | 30.00       | -8.74      | 1/3  |
| 3        | QPSK       | 1711.50 | 18.23            | V               | 4.44            | 9.51               | 23.30      | 213.80    | 30.00       | -6.70      | 1/8  |
|          |            | 1745.00 | 18.29            | V               | 4.47            | 9.66               | 23.47      | 222.33    | 30.00       | -6.53      | 1/8  |
|          |            | 1778.50 | 16.88            | V               | 4.52            | 9.68               | 22.04      | 159.96    | 30.00       | -7.96      | 1/8  |
|          | 16-QAM     | 1711.50 | 17.29            | V               | 4.44            | 9.51               | 22.36      | 172.19    | 30.00       | -7.64      | 1/8  |
|          |            | 1745.00 | 17.13            | V               | 4.47            | 9.66               | 22.32      | 170.61    | 30.00       | -7.68      | 1/8  |
|          |            | 1778.50 | 16.03            | V               | 4.52            | 9.68               | 21.19      | 131.52    | 30.00       | -8.81      | 1/8  |
| 5        | QPSK       | 1712.50 | 18.45            | V               | 4.44            | 9.51               | 23.53      | 225.42    | 30.00       | -6.47      | 1/12 |
|          |            | 1745.00 | 16.93            | V               | 4.47            | 9.66               | 22.12      | 162.93    | 30.00       | -7.88      | 1/12 |
|          |            | 1777.50 | 17.05            | V               | 4.52            | 9.68               | 22.21      | 166.34    | 30.00       | -7.79      | 1/12 |
|          | 16-QAM     | 1712.50 | 17.46            | V               | 4.44            | 9.51               | 22.53      | 179.06    | 30.00       | -7.47      | 1/12 |
|          |            | 1745.00 | 16.09            | V               | 4.47            | 9.66               | 21.27      | 133.97    | 30.00       | -8.73      | 1/12 |
|          |            | 1777.50 | 16.10            | V               | 4.52            | 9.68               | 21.26      | 133.66    | 30.00       | -8.74      | 1/12 |
| 10       | QPSK       | 1715.00 | 18.37            | V               | 4.44            | 9.52               | 23.45      | 221.31    | 30.00       | -6.55      | 1/49 |
|          |            | 1745.00 | 18.09            | V               | 4.47            | 9.66               | 23.27      | 212.32    | 30.00       | -6.73      | 1/25 |
|          |            | 1775.00 | 16.83            | V               | 4.51            | 9.68               | 22.00      | 158.49    | 30.00       | -8.00      | 1/25 |
|          | 16-QAM     | 1715.00 | 17.47            | V               | 4.44            | 9.52               | 22.56      | 180.30    | 30.00       | -7.44      | 1/49 |
|          |            | 1745.00 | 17.17            | V               | 4.47            | 9.66               | 22.35      | 171.79    | 30.00       | -7.65      | 1/25 |
|          |            | 1775.00 | 15.86            | V               | 4.51            | 9.68               | 21.03      | 126.77    | 30.00       | -8.97      | 1/49 |
| 15       | QPSK       | 1717.50 | 18.37            | V               | 4.44            | 9.53               | 23.46      | 221.82    | 30.00       | -6.54      | 1/74 |
|          |            | 1745.00 | 18.09            | V               | 4.47            | 9.66               | 23.27      | 212.32    | 30.00       | -6.73      | 1/37 |
|          |            | 1772.50 | 17.01            | V               | 4.51            | 9.68               | 22.18      | 165.20    | 30.00       | -7.82      | 1/37 |
|          | 16-QAM     | 1717.50 | 17.38            | V               | 4.44            | 9.53               | 22.47      | 176.60    | 30.00       | -7.53      | 1/74 |
|          |            | 1745.00 | 16.88            | V               | 4.47            | 9.66               | 22.07      | 161.06    | 30.00       | -7.93      | 1/37 |
|          |            | 1772.50 | 15.89            | V               | 4.51            | 9.68               | 21.06      | 127.64    | 30.00       | -8.94      | 1/37 |
| 20       | QPSK       | 1720.00 | 18.37            | V               | 4.44            | 9.55               | 23.47      | 222.33    | 30.00       | -6.53      | 1/99 |
|          |            | 1745.00 | 18.33            | V               | 4.47            | 9.66               | 23.51      | 224.39    | 30.00       | -6.49      | 1/49 |
|          |            | 1770.00 | 17.35            | V               | 4.51            | 9.68               | 22.52      | 178.65    | 30.00       | -7.48      | 1/0  |
|          | 16-QAM     | 1720.00 | 17.47            | V               | 4.44            | 9.55               | 22.58      | 181.13    | 30.00       | -7.42      | 1/99 |
|          |            | 1745.00 | 17.14            | V               | 4.47            | 9.66               | 22.33      | 171.00    | 30.00       | -7.67      | 1/49 |
|          |            | 1770.00 | 16.32            | V               | 4.51            | 9.68               | 21.49      | 140.93    | 30.00       | -8.51      | 1/49 |



**5G NR n5**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 5        | QPSK       | 826.50  | 25.85            | V               | 3.11            | -0.84              | 21.90     | 154.88   | 38.50       | -16.60     | 1/1  |
|          |            | 836.50  | 25.12            | V               | 3.13            | -0.93              | 21.06     | 127.64   | 38.50       | -17.44     | 1/1  |
|          |            | 846.50  | 23.81            | V               | 3.14            | -1.02              | 19.64     | 92.04    | 38.50       | -18.86     | 1/1  |
|          | 16-QAM     | 826.50  | 24.47            | V               | 3.11            | -0.84              | 20.52     | 112.72   | 38.50       | -17.98     | 1/1  |
|          |            | 836.50  | 23.76            | V               | 3.13            | -0.93              | 19.70     | 93.33    | 38.50       | -18.80     | 1/1  |
|          |            | 846.50  | 22.45            | V               | 3.14            | -1.02              | 18.28     | 67.30    | 38.50       | -20.22     | 1/1  |
| 10       | QPSK       | 829.00  | 25.83            | V               | 3.11            | -0.86              | 21.86     | 153.46   | 38.50       | -16.64     | 1/26 |
|          |            | 836.50  | 24.97            | V               | 3.13            | -0.93              | 20.91     | 123.31   | 38.50       | -17.59     | 1/1  |
|          |            | 844.00  | 23.94            | V               | 3.14            | -1.00              | 19.80     | 95.50    | 38.50       | -18.70     | 1/1  |
|          | 16-QAM     | 829.00  | 24.77            | V               | 3.11            | -0.86              | 20.80     | 120.23   | 38.50       | -17.70     | 1/26 |
|          |            | 836.50  | 23.83            | V               | 3.13            | -0.93              | 19.77     | 94.84    | 38.50       | -18.73     | 1/1  |
|          |            | 844.00  | 22.73            | V               | 3.14            | -1.00              | 18.59     | 72.28    | 38.50       | -19.91     | 1/1  |
| 15       | QPSK       | 831.50  | 25.92            | V               | 3.11            | -0.88              | 21.92     | 155.60   | 38.50       | -16.58     | 1/1  |
|          |            | 836.50  | 25.14            | V               | 3.13            | -0.93              | 21.08     | 128.23   | 38.50       | -17.42     | 1/1  |
|          |            | 841.50  | 24.69            | V               | 3.13            | -0.97              | 20.58     | 114.29   | 38.50       | -17.92     | 1/1  |
|          | 16-QAM     | 831.50  | 25.03            | V               | 3.11            | -0.88              | 21.03     | 126.77   | 38.50       | -17.47     | 1/1  |
|          |            | 836.50  | 23.95            | V               | 3.13            | -0.93              | 19.89     | 97.50    | 38.50       | -18.61     | 1/1  |
|          |            | 841.50  | 23.40            | V               | 3.13            | -0.97              | 19.29     | 84.92    | 38.50       | -19.21     | 1/1  |
| 20       | QPSK       | 834.00  | 25.47            | V               | 3.12            | -0.91              | 21.44     | 139.32   | 38.50       | -17.06     | 1/1  |
|          |            | 836.50  | 25.28            | V               | 3.13            | -0.93              | 21.22     | 132.43   | 38.50       | -17.28     | 1/1  |
|          |            | 839.00  | 24.88            | V               | 3.13            | -0.95              | 20.79     | 119.95   | 38.50       | -17.71     | 1/1  |
|          | 16-QAM     | 834.00  | 24.26            | V               | 3.12            | -0.91              | 20.23     | 105.44   | 38.50       | -18.27     | 1/1  |
|          |            | 836.50  | 24.07            | V               | 3.13            | -0.93              | 20.01     | 100.23   | 38.50       | -18.49     | 1/1  |
|          |            | 839.00  | 22.37            | V               | 3.13            | -0.95              | 18.28     | 67.30    | 38.50       | -20.22     | 1/1  |

**5G NR n25**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB    |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|-------|
| 5        | QPSK       | 1852.50 | 16.97            | H               | 4.62            | 9.50               | 21.86      | 153.46    | 33.00       | -11.14     | 1/23  |
|          |            | 1882.50 | 18.78            | H               | 4.65            | 9.27               | 23.40      | 218.78    | 33.00       | -9.60      | 1/1   |
|          |            | 1912.50 | 20.64            | H               | 4.69            | 8.96               | 24.92      | 310.46    | 33.00       | -8.08      | 1/13  |
|          | 16-QAM     | 1852.50 | 15.82            | H               | 4.62            | 9.50               | 20.71      | 117.76    | 33.00       | -12.29     | 1/23  |
|          |            | 1882.50 | 17.73            | H               | 4.65            | 9.27               | 22.35      | 171.79    | 33.00       | -10.65     | 1/1   |
|          |            | 1912.50 | 19.46            | H               | 4.69            | 8.96               | 23.73      | 236.05    | 33.00       | -9.27      | 1/13  |
| 10       | QPSK       | 1855.00 | 16.97            | H               | 4.62            | 9.48               | 21.83      | 152.41    | 33.00       | -11.17     | 1/26  |
|          |            | 1882.50 | 18.73            | H               | 4.65            | 9.27               | 23.34      | 215.77    | 33.00       | -9.66      | 1/26  |
|          |            | 1910.00 | 20.10            | H               | 4.68            | 8.99               | 24.42      | 276.69    | 33.00       | -8.58      | 1/1   |
|          | 16-QAM     | 1855.00 | 16.14            | H               | 4.62            | 9.48               | 21.00      | 125.89    | 33.00       | -12.00     | 1/26  |
|          |            | 1882.50 | 17.91            | H               | 4.65            | 9.27               | 22.52      | 178.65    | 33.00       | -10.48     | 1/26  |
|          |            | 1910.00 | 19.28            | H               | 4.68            | 8.99               | 23.60      | 229.09    | 33.00       | -9.40      | 1/1   |
| 15       | QPSK       | 1857.50 | 17.70            | H               | 4.63            | 9.47               | 22.54      | 179.47    | 33.00       | -10.46     | 1/77  |
|          |            | 1882.50 | 18.92            | H               | 4.65            | 9.27               | 23.53      | 225.42    | 33.00       | -9.47      | 1/1   |
|          |            | 1907.50 | 20.53            | H               | 4.69            | 9.03               | 24.88      | 307.61    | 33.00       | -8.12      | 1/77  |
|          | 16-QAM     | 1857.50 | 16.74            | H               | 4.63            | 9.47               | 21.58      | 143.88    | 33.00       | -11.42     | 1/77  |
|          |            | 1882.50 | 17.62            | H               | 4.65            | 9.27               | 22.23      | 167.11    | 33.00       | -10.77     | 1/1   |
|          |            | 1907.50 | 19.69            | H               | 4.69            | 9.03               | 24.04      | 253.51    | 33.00       | -8.96      | 1/77  |
| 20       | QPSK       | 1860.00 | 17.62            | H               | 4.63            | 9.45               | 22.44      | 175.39    | 33.00       | -10.56     | 1/104 |
|          |            | 1882.50 | 18.91            | H               | 4.65            | 9.27               | 23.52      | 224.91    | 33.00       | -9.48      | 1/104 |
|          |            | 1905.00 | 20.21            | H               | 4.68            | 9.06               | 24.60      | 288.40    | 33.00       | -8.40      | 1/104 |
|          | 16-QAM     | 1860.00 | 16.75            | H               | 4.63            | 9.45               | 21.57      | 143.55    | 33.00       | -11.43     | 1/104 |
|          |            | 1882.50 | 17.85            | H               | 4.65            | 9.27               | 22.46      | 176.20    | 33.00       | -10.54     | 1/104 |
|          |            | 1905.00 | 19.40            | H               | 4.68            | 9.06               | 23.79      | 239.33    | 33.00       | -9.21      | 1/104 |

**5G NR n41**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB    |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|-------|
| 10       | BPSK       | 2501.01 | 15.91            | H               | 5.38            | 10.00              | 20.53      | 112.98    | 33.00       | -12.47     | 1/22  |
|          |            | 2592.99 | 15.86            | H               | 5.47            | 9.91               | 20.30      | 107.15    | 33.00       | -12.70     | 1/22  |
|          |            | 2685.00 | 14.03            | H               | 5.56            | 9.87               | 18.35      | 68.39     | 33.00       | -14.65     | 1/22  |
|          | 16-QAM     | 2501.01 | 14.80            | H               | 5.38            | 10.00              | 19.42      | 87.50     | 33.00       | -13.58     | 1/22  |
|          |            | 2592.99 | 14.90            | H               | 5.47            | 9.91               | 19.34      | 85.90     | 33.00       | -13.66     | 1/22  |
|          |            | 2685.00 | 13.18            | H               | 5.56            | 9.87               | 17.50      | 56.23     | 33.00       | -15.50     | 1/22  |
| 15       | BPSK       | 2503.51 | 16.06            | H               | 5.37            | 9.99               | 20.68      | 116.95    | 33.00       | -12.32     | 1/1   |
|          |            | 2592.99 | 15.85            | H               | 5.47            | 9.91               | 20.29      | 106.91    | 33.00       | -12.71     | 1/1   |
|          |            | 2682.50 | 13.97            | H               | 5.56            | 9.87               | 18.29      | 67.45     | 33.00       | -14.71     | 1/1   |
|          | 16-QAM     | 2503.51 | 14.92            | H               | 5.37            | 9.99               | 19.54      | 89.95     | 33.00       | -13.46     | 1/1   |
|          |            | 2592.99 | 14.85            | H               | 5.47            | 9.91               | 19.29      | 84.92     | 33.00       | -13.71     | 1/1   |
|          |            | 2682.50 | 12.97            | H               | 5.56            | 9.87               | 17.29      | 53.58     | 33.00       | -15.71     | 1/1   |
| 20       | BPSK       | 2506.01 | 16.10            | H               | 5.37            | 9.99               | 20.72      | 118.03    | 33.00       | -12.28     | 1/49  |
|          |            | 2592.99 | 15.88            | H               | 5.47            | 9.91               | 20.32      | 107.65    | 33.00       | -12.68     | 1/1   |
|          |            | 2680.00 | 14.11            | H               | 5.56            | 9.87               | 18.43      | 69.66     | 33.00       | -14.57     | 1/26  |
|          | 16-QAM     | 2506.01 | 15.25            | H               | 5.37            | 9.99               | 19.87      | 97.05     | 33.00       | -13.13     | 1/49  |
|          |            | 2592.99 | 14.93            | H               | 5.47            | 9.91               | 19.37      | 86.50     | 33.00       | -13.63     | 1/1   |
|          |            | 2680.00 | 13.28            | H               | 5.56            | 9.87               | 17.60      | 57.54     | 33.00       | -15.40     | 1/26  |
| 30       | BPSK       | 2511.01 | 16.38            | H               | 5.39            | 9.98               | 20.97      | 125.03    | 33.00       | -12.03     | 1/76  |
|          |            | 2592.99 | 15.90            | H               | 5.47            | 9.91               | 20.34      | 108.14    | 33.00       | -12.66     | 1/76  |
|          |            | 2675.00 | 14.06            | H               | 5.56            | 9.87               | 18.37      | 68.71     | 33.00       | -14.63     | 1/76  |
|          | 16-QAM     | 2511.01 | 15.46            | H               | 5.39            | 9.98               | 20.05      | 101.16    | 33.00       | -12.95     | 1/76  |
|          |            | 2592.99 | 14.76            | H               | 5.47            | 9.91               | 19.20      | 83.18     | 33.00       | -13.80     | 1/76  |
|          |            | 2675.00 | 12.98            | H               | 5.56            | 9.87               | 17.29      | 53.58     | 33.00       | -15.71     | 1/76  |
| 40       | BPSK       | 2516.01 | 16.80            | H               | 5.38            | 9.97               | 21.39      | 137.72    | 33.00       | -11.61     | 1/104 |
|          |            | 2592.99 | 16.07            | H               | 5.47            | 9.91               | 20.51      | 112.46    | 33.00       | -12.49     | 1/104 |
|          |            | 2670.00 | 13.86            | H               | 5.55            | 9.87               | 18.19      | 65.92     | 33.00       | -14.81     | 1/104 |
|          | 16-QAM     | 2516.01 | 15.90            | H               | 5.38            | 9.97               | 20.49      | 111.94    | 33.00       | -12.51     | 1/104 |
|          |            | 2592.99 | 14.96            | H               | 5.47            | 9.91               | 19.40      | 87.10     | 33.00       | -13.60     | 1/104 |
|          |            | 2670.00 | 12.90            | H               | 5.55            | 9.87               | 17.23      | 52.84     | 33.00       | -15.77     | 1/104 |
| 50       | QPSK       | 2521.01 | 16.87            | H               | 5.40            | 9.96               | 21.44      | 139.32    | 33.00       | -11.56     | 1/67  |
|          |            | 2592.99 | 16.07            | H               | 5.47            | 9.91               | 20.51      | 112.46    | 33.00       | -12.49     | 1/131 |
|          |            | 2665.00 | 13.84            | H               | 5.55            | 9.87               | 18.16      | 65.46     | 33.00       | -14.84     | 1/131 |
|          | 16-QAM     | 2521.01 | 15.82            | H               | 5.40            | 9.96               | 20.39      | 109.40    | 33.00       | -12.61     | 1/67  |
|          |            | 2592.99 | 15.32            | H               | 5.47            | 9.91               | 19.76      | 94.62     | 33.00       | -13.24     | 1/131 |
|          |            | 2665.00 | 12.90            | H               | 5.55            | 9.87               | 17.22      | 52.72     | 33.00       | -15.78     | 1/131 |
| 60       | BPSK       | 2526.01 | 16.83            | H               | 5.38            | 9.95               | 21.40      | 138.04    | 33.00       | -11.60     | 1/81  |
|          |            | 2592.99 | 15.99            | H               | 5.47            | 9.91               | 20.43      | 110.41    | 33.00       | -12.57     | 1/81  |
|          |            | 2660.00 | 13.96            | H               | 5.56            | 9.87               | 18.27      | 67.14     | 33.00       | -14.73     | 1/160 |
|          | 16-QAM     | 2526.01 | 15.89            | H               | 5.38            | 9.95               | 20.46      | 111.17    | 33.00       | -12.54     | 1/81  |
|          |            | 2592.99 | 15.09            | H               | 5.47            | 9.91               | 19.53      | 89.74     | 33.00       | -13.47     | 1/81  |
|          |            | 2660.00 | 12.82            | H               | 5.56            | 9.87               | 17.13      | 51.64     | 33.00       | -15.87     | 1/160 |
| 70       | BPSK       | 2531.01 | 16.08            | H               | 5.39            | 9.94               | 20.63      | 115.61    | 33.00       | -12.37     | 1/95  |
|          |            | 2592.99 | 14.74            | H               | 5.47            | 9.91               | 19.18      | 82.79     | 33.00       | -13.82     | 1/95  |
|          |            | 2655.00 | 13.36            | H               | 5.54            | 9.87               | 17.68      | 58.61     | 33.00       | -15.32     | 1/1   |
|          | 16-QAM     | 2531.01 | 15.18            | H               | 5.39            | 9.94               | 19.73      | 93.97     | 33.00       | -13.27     | 1/95  |
|          |            | 2592.99 | 13.83            | H               | 5.47            | 9.91               | 18.27      | 67.14     | 33.00       | -14.73     | 1/95  |
|          |            | 2655.00 | 11.35            | H               | 5.54            | 9.87               | 15.67      | 36.90     | 33.00       | -17.33     | 1/1   |
| 80       | BPSK       | 2536.01 | 16.75            | H               | 5.41            | 9.93               | 21.28      | 134.28    | 33.00       | -11.72     | 1/215 |
|          |            | 2592.99 | 15.86            | H               | 5.47            | 9.91               | 20.30      | 107.15    | 33.00       | -12.70     | 1/215 |
|          |            | 2650.00 | 13.89            | H               | 5.53            | 9.87               | 18.23      | 66.53     | 33.00       | -14.77     | 1/215 |
|          | 16-QAM     | 2536.01 | 15.72            | H               | 5.41            | 9.93               | 20.25      | 105.93    | 33.00       | -12.75     | 1/215 |
|          |            | 2592.99 | 15.08            | H               | 5.47            | 9.91               | 19.52      | 89.54     | 33.00       | -13.48     | 1/215 |
|          |            | 2650.00 | 12.78            | H               | 5.53            | 9.87               | 17.12      | 51.52     | 33.00       | -15.88     | 1/215 |
| 90       | BPSK       | 2541.01 | 16.69            | H               | 5.43            | 9.92               | 21.19      | 131.52    | 33.00       | -11.81     | 1/243 |
|          |            | 2592.99 | 14.87            | H               | 5.47            | 9.91               | 19.31      | 85.31     | 33.00       | -13.69     | 1/243 |
|          |            | 2645.00 | 14.01            | H               | 5.53            | 9.87               | 18.35      | 68.39     | 33.00       | -14.65     | 1/243 |
|          | 16-QAM     | 2541.01 | 15.55            | H               | 5.43            | 9.92               | 20.05      | 101.16    | 33.00       | -12.95     | 1/243 |
|          |            | 2592.99 | 13.76            | H               | 5.47            | 9.91               | 18.20      | 66.07     | 33.00       | -14.80     | 1/243 |
|          |            | 2645.00 | 12.66            | H               | 5.53            | 9.87               | 17.00      | 50.12     | 33.00       | -16.00     | 1/243 |
| 100      | BPSK       | 2546.01 | 15.55            | H               | 5.42            | 9.91               | 20.04      | 100.93    | 33.00       | -12.96     | 1/271 |
|          |            | 2592.99 | 15.47            | H               | 5.47            | 9.91               | 19.91      | 97.95     | 33.00       | -13.09     | 1/271 |
|          |            | 2640.00 | 15.80            | H               | 5.52            | 9.88               | 20.16      | 103.75    | 33.00       | -12.84     | 1/271 |
|          | 16-QAM     | 2546.01 | 15.58            | H               | 5.42            | 9.91               | 20.07      | 101.62    | 33.00       | -12.93     | 1/271 |
|          |            | 2592.99 | 14.38            | H               | 5.47            | 9.91               | 18.82      | 76.21     | 33.00       | -14.18     | 1/271 |
|          |            | 2640.00 | 14.76            | H               | 5.52            | 9.88               | 19.12      | 81.66     | 33.00       | -13.88     | 1/271 |

**5G NR n41(SRS1)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 2501.01    | 12.05               | H                  | 5.38               | 10.00                 | 16.67         | 46.45        | 33.00          | -16.33        |
|             | 2592.99    | 12.08               | H                  | 5.47               | 9.91                  | 16.52         | 44.87        | 33.00          | -16.48        |
|             | 2685.00    | 14.05               | H                  | 5.56               | 9.87                  | 18.37         | 68.71        | 33.00          | -14.63        |
| 15          | 2503.51    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2682.50    |                     |                    |                    |                       |               |              |                |               |
| 20          | 2506.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2680.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 2511.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2675.00    |                     |                    |                    |                       |               |              |                |               |
| 40          | 2516.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2670.00    |                     |                    |                    |                       |               |              |                |               |
| 50          | 2521.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2665.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 2526.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2660.00    |                     |                    |                    |                       |               |              |                |               |
| 70          | 2531.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2655.00    |                     |                    |                    |                       |               |              |                |               |
| 80          | 2536.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2650.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 2541.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2645.00    |                     |                    |                    |                       |               |              |                |               |
| 100         | 2546.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2640.00    |                     |                    |                    |                       |               |              |                |               |

**5G NR n41(SRS2)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 2501.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2685.00    |                     |                    |                    |                       |               |              |                |               |
| 15          | 2503.51    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2682.50    |                     |                    |                    |                       |               |              |                |               |
| 20          | 2506.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2680.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 2511.01    | 9.07                | H                  | 5.39               | 9.98                  | 13.66         | 23.23        | 33.00          | -19.34        |
|             | 2592.99    | 9.23                | H                  | 5.47               | 9.91                  | 13.67         | 23.28        | 33.00          | -19.33        |
|             | 2675.00    | 9.58                | H                  | 5.56               | 9.87                  | 13.89         | 24.49        | 33.00          | -19.11        |
| 40          | 2516.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2670.00    |                     |                    |                    |                       |               |              |                |               |
| 50          | 2521.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2665.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 2526.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2660.00    |                     |                    |                    |                       |               |              |                |               |
| 70          | 2531.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2655.00    |                     |                    |                    |                       |               |              |                |               |
| 80          | 2536.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2650.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 2541.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2645.00    |                     |                    |                    |                       |               |              |                |               |
| 100         | 2546.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2640.00    |                     |                    |                    |                       |               |              |                |               |

**5G NR n41(SRS3)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 2501.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2685.00    |                     |                    |                    |                       |               |              |                |               |
| 15          | 2503.51    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2682.50    |                     |                    |                    |                       |               |              |                |               |
| 20          | 2506.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2680.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 2511.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2675.00    |                     |                    |                    |                       |               |              |                |               |
| 40          | 2516.01    | 8.20                | V                  | 5.38               | 9.97                  | 12.79         | 19.01        | 33.00          | -20.21        |
|             | 2592.99    | 10.33               | V                  | 5.47               | 9.91                  | 14.78         | 30.06        | 33.00          | -18.22        |
|             | 2670.00    | 7.44                | V                  | 5.55               | 9.87                  | 11.77         | 15.03        | 33.00          | -21.23        |
| 50          | 2521.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2665.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 2526.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2660.00    |                     |                    |                    |                       |               |              |                |               |
| 70          | 2531.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2655.00    |                     |                    |                    |                       |               |              |                |               |
| 80          | 2536.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2650.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 2541.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2645.00    |                     |                    |                    |                       |               |              |                |               |
| 100         | 2546.01    |                     |                    |                    |                       |               |              |                |               |
|             | 2592.99    |                     |                    |                    |                       |               |              |                |               |
|             | 2640.00    |                     |                    |                    |                       |               |              |                |               |

**5G NR n66 (Main1 ANT)**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB    |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|-------|
| 5        | QPSK       | 1712.50 | 18.06            | V               | 4.44            | 9.51               | 23.13      | 205.59    | 30.00       | -6.87      | 1/1   |
|          |            | 1745.00 | 17.82            | V               | 4.47            | 9.66               | 23.00      | 199.53    | 30.00       | -7.00      | 1/13  |
|          |            | 1777.50 | 16.81            | V               | 4.52            | 9.68               | 21.97      | 157.40    | 30.00       | -8.03      | 1/13  |
|          | 16-QAM     | 1712.50 | 17.00            | V               | 4.44            | 9.51               | 22.08      | 161.44    | 30.00       | -7.92      | 1/1   |
|          |            | 1745.00 | 16.78            | V               | 4.47            | 9.66               | 21.97      | 157.40    | 30.00       | -8.03      | 1/13  |
|          |            | 1777.50 | 15.90            | V               | 4.52            | 9.68               | 21.06      | 127.64    | 30.00       | -8.94      | 1/13  |
| 10       | QPSK       | 1715.00 | 17.78            | V               | 4.44            | 9.52               | 22.87      | 193.64    | 30.00       | -7.13      | 1/50  |
|          |            | 1745.00 | 17.69            | V               | 4.47            | 9.66               | 22.87      | 193.64    | 30.00       | -7.13      | 1/26  |
|          |            | 1775.00 | 16.54            | V               | 4.51            | 9.68               | 21.71      | 148.25    | 30.00       | -8.29      | 1/26  |
|          | 16-QAM     | 1715.00 | 16.75            | V               | 4.44            | 9.52               | 21.84      | 152.76    | 30.00       | -8.16      | 1/50  |
|          |            | 1745.00 | 16.51            | V               | 4.47            | 9.66               | 21.69      | 147.57    | 30.00       | -8.31      | 1/26  |
|          |            | 1775.00 | 15.42            | V               | 4.51            | 9.68               | 20.59      | 114.55    | 30.00       | -9.41      | 1/26  |
| 15       | QPSK       | 1717.50 | 18.01            | V               | 4.44            | 9.53               | 23.10      | 204.17    | 30.00       | -6.90      | 1/77  |
|          |            | 1745.00 | 18.06            | V               | 4.47            | 9.66               | 23.24      | 210.86    | 30.00       | -6.76      | 1/1   |
|          |            | 1772.50 | 15.95            | V               | 4.51            | 9.68               | 21.12      | 129.42    | 30.00       | -8.88      | 1/77  |
|          | 16-QAM     | 1717.50 | 16.73            | V               | 4.44            | 9.53               | 21.82      | 152.05    | 30.00       | -8.18      | 1/77  |
|          |            | 1745.00 | 17.13            | V               | 4.47            | 9.66               | 22.31      | 170.22    | 30.00       | -7.69      | 1/1   |
|          |            | 1772.50 | 14.84            | V               | 4.51            | 9.68               | 20.02      | 100.46    | 30.00       | -9.98      | 1/77  |
| 20       | QPSK       | 1720.00 | 18.40            | V               | 4.44            | 9.55               | 23.50      | 223.87    | 30.00       | -6.50      | 1/1   |
|          |            | 1745.00 | 17.55            | V               | 4.47            | 9.66               | 22.74      | 187.93    | 30.00       | -7.26      | 1/104 |
|          |            | 1770.00 | 16.53            | V               | 4.51            | 9.68               | 21.71      | 148.25    | 30.00       | -8.29      | 1/104 |
|          | 16-QAM     | 1720.00 | 17.45            | V               | 4.44            | 9.55               | 22.55      | 179.89    | 30.00       | -7.45      | 1/1   |
|          |            | 1745.00 | 16.47            | V               | 4.47            | 9.66               | 21.65      | 146.22    | 30.00       | -8.35      | 1/104 |
|          |            | 1770.00 | 15.57            | V               | 4.51            | 9.68               | 20.75      | 118.85    | 30.00       | -9.25      | 1/104 |

**5G NR n66 (Sub2 ANT)**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | ERP (dBm) | ERP (mW) | Limit (dBm) | Delta (dB) | RB   |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|-----------|----------|-------------|------------|------|
| 5        | QPSK       |         |                  |                 |                 |                    |           |          |             |            |      |
|          | 16-QAM     |         |                  |                 |                 |                    |           |          |             |            |      |
| 10       | QPSK       | 1715.00 | 14.11            | V               | 4.44            | 9.52               | 19.20     | 83.18    | 30.00       | -10.80     | 1/26 |
|          |            | 1745.00 | 15.04            | V               | 4.47            | 9.66               | 20.22     | 105.20   | 30.00       | -9.78      | 1/26 |
|          |            | 1775.00 | 14.33            | V               | 4.51            | 9.68               | 19.50     | 89.13    | 30.00       | -10.50     | 1/26 |
|          | 16-QAM     | 1715.00 | 13.13            | V               | 4.44            | 9.52               | 18.22     | 66.37    | 30.00       | -11.78     | 1/26 |
|          |            | 1745.00 | 14.01            | V               | 4.47            | 9.66               | 19.19     | 82.99    | 30.00       | -10.81     | 1/26 |
|          |            | 1775.00 | 13.34            | V               | 4.51            | 9.68               | 18.51     | 70.96    | 30.00       | -11.49     | 1/26 |
| 15       | QPSK       |         |                  |                 |                 |                    |           |          |             |            |      |
|          | 16-QAM     |         |                  |                 |                 |                    |           |          |             |            |      |
| 20       | QPSK       |         |                  |                 |                 |                    |           |          |             |            |      |
|          | 16-QAM     |         |                  |                 |                 |                    |           |          |             |            |      |

**5G NR n77 (3450 ~ 3550 MHz)**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB    |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|-------|
| 10       | QPSK       | 3455.01 | 20.12            | H               | 6.31            | 10.61              | 24.43      | 277.33    | 30.00       | -5.57      | 1/12  |
|          |            | 3499.98 | 20.08            | H               | 6.36            | 10.67              | 24.39      | 274.79    | 30.00       | -5.61      | 1/12  |
|          |            | 3544.98 | 20.02            | H               | 6.39            | 10.75              | 24.37      | 273.53    | 30.00       | -5.63      | 1/22  |
|          | 16-QAM     | 3455.01 | 19.20            | H               | 6.31            | 10.61              | 23.51      | 224.39    | 30.00       | -6.49      | 1/12  |
|          |            | 3499.98 | 19.19            | H               | 6.36            | 10.67              | 23.50      | 223.87    | 30.00       | -6.50      | 1/12  |
|          |            | 3544.98 | 18.96            | H               | 6.39            | 10.75              | 23.31      | 214.29    | 30.00       | -6.69      | 1/22  |
| 15       | QPSK       | 3460.02 | 20.42            | H               | 6.32            | 10.62              | 24.72      | 296.48    | 30.00       | -5.28      | 1/19  |
|          |            | 3499.98 | 20.17            | H               | 6.36            | 10.67              | 24.48      | 280.54    | 30.00       | -5.52      | 1/36  |
|          |            | 3540.00 | 20.27            | H               | 6.38            | 10.74              | 24.64      | 291.07    | 30.00       | -5.36      | 1/36  |
|          | 16-QAM     | 3460.02 | 19.33            | H               | 6.32            | 10.62              | 23.63      | 230.67    | 30.00       | -6.37      | 1/19  |
|          |            | 3499.98 | 19.16            | H               | 6.36            | 10.67              | 23.47      | 222.33    | 30.00       | -6.53      | 1/36  |
|          |            | 3540.00 | 19.23            | H               | 6.38            | 10.74              | 23.60      | 229.09    | 30.00       | -6.40      | 1/36  |
| 20       | QPSK       | 3460.02 | 20.10            | H               | 6.32            | 10.62              | 24.40      | 275.42    | 30.00       | -5.60      | 1/49  |
|          |            | 3499.98 | 20.32            | H               | 6.36            | 10.67              | 24.63      | 290.40    | 30.00       | -5.37      | 1/49  |
|          |            | 3540.00 | 20.09            | H               | 6.38            | 10.74              | 24.46      | 279.25    | 30.00       | -5.54      | 1/1   |
|          | 16-QAM     | 3460.02 | 19.24            | H               | 6.32            | 10.62              | 23.54      | 225.94    | 30.00       | -6.46      | 1/49  |
|          |            | 3499.98 | 19.34            | H               | 6.36            | 10.67              | 23.65      | 231.74    | 30.00       | -6.35      | 1/49  |
|          |            | 3540.00 | 19.06            | H               | 6.38            | 10.74              | 23.43      | 220.29    | 30.00       | -6.57      | 1/1   |
| 30       | QPSK       | 3465.00 | 20.36            | H               | 6.32            | 10.63              | 24.66      | 292.42    | 30.00       | -5.34      | 1/76  |
|          |            | 3499.98 | 20.25            | H               | 6.36            | 10.67              | 24.56      | 285.76    | 30.00       | -5.44      | 1/39  |
|          |            | 3535.02 | 19.64            | H               | 6.38            | 10.73              | 23.99      | 250.61    | 30.00       | -6.01      | 1/76  |
|          | 16-QAM     | 3465.00 | 19.30            | H               | 6.32            | 10.63              | 23.60      | 229.09    | 30.00       | -6.40      | 1/76  |
|          |            | 3499.98 | 19.25            | H               | 6.36            | 10.67              | 23.56      | 226.99    | 30.00       | -6.44      | 1/39  |
|          |            | 3535.02 | 18.54            | H               | 6.38            | 10.73              | 22.89      | 194.54    | 30.00       | -7.11      | 1/76  |
| 40       | QPSK       | 3470.01 | 20.52            | H               | 6.33            | 10.63              | 24.82      | 303.39    | 30.00       | -5.18      | 1/104 |
|          |            | 3499.98 | 20.23            | H               | 6.36            | 10.67              | 24.54      | 284.45    | 30.00       | -5.46      | 1/104 |
|          |            | 3529.98 | 19.59            | H               | 6.38            | 10.72              | 23.94      | 247.74    | 30.00       | -6.06      | 1/53  |
|          | 16-QAM     | 3470.01 | 19.57            | H               | 6.33            | 10.63              | 23.87      | 243.78    | 30.00       | -6.13      | 1/104 |
|          |            | 3499.98 | 19.32            | H               | 6.36            | 10.67              | 23.63      | 230.67    | 30.00       | -6.37      | 1/104 |
|          |            | 3529.98 | 18.58            | H               | 6.38            | 10.72              | 22.93      | 196.34    | 30.00       | -7.07      | 1/53  |
| 50       | QPSK       | 3475.02 | 20.46            | H               | 6.34            | 10.64              | 24.77      | 299.92    | 30.00       | -5.23      | 1/131 |
|          |            | 3499.98 | 20.23            | H               | 6.36            | 10.67              | 24.54      | 284.45    | 30.00       | -5.46      | 1/131 |
|          |            | 3525.00 | 19.63            | H               | 6.38            | 10.71              | 23.97      | 249.46    | 30.00       | -6.03      | 1/1   |
|          | 16-QAM     | 3475.02 | 19.30            | H               | 6.34            | 10.64              | 23.61      | 229.61    | 30.00       | -6.39      | 1/131 |
|          |            | 3499.98 | 19.11            | H               | 6.36            | 10.67              | 23.42      | 219.79    | 30.00       | -6.58      | 1/131 |
|          |            | 3525.00 | 18.60            | H               | 6.38            | 10.71              | 22.94      | 196.79    | 30.00       | -7.06      | 1/1   |
| 60       | QPSK       | 3480.00 | 20.50            | H               | 6.34            | 10.65              | 24.80      | 302.00    | 30.00       | -5.20      | 1/81  |
|          |            | 3499.98 | 20.07            | H               | 6.36            | 10.67              | 24.38      | 274.16    | 30.00       | -5.62      | 1/100 |
|          |            | 3519.99 | 20.13            | H               | 6.38            | 10.71              | 24.46      | 279.25    | 30.00       | -5.54      | 1/81  |
|          | 16-QAM     | 3480.00 | 19.53            | H               | 6.34            | 10.65              | 23.83      | 241.55    | 30.00       | -6.17      | 1/81  |
|          |            | 3499.98 | 19.08            | H               | 6.36            | 10.67              | 23.39      | 218.27    | 30.00       | -6.61      | 1/100 |
|          |            | 3519.99 | 19.09            | H               | 6.38            | 10.71              | 23.42      | 219.79    | 30.00       | -6.58      | 1/81  |
| 70       | QPSK       | 3485.01 | 19.88            | H               | 6.34            | 10.65              | 24.18      | 261.82    | 30.00       | -5.82      | 1/188 |
|          |            | 3499.98 | 18.68            | H               | 6.36            | 10.67              | 22.99      | 199.07    | 30.00       | -7.01      | 1/188 |
|          |            | 3514.98 | 19.69            | H               | 6.37            | 10.70              | 24.01      | 251.77    | 30.00       | -5.99      | 1/109 |
|          | 16-QAM     | 3485.01 | 18.98            | H               | 6.34            | 10.65              | 23.28      | 212.81    | 30.00       | -6.72      | 1/188 |
|          |            | 3499.98 | 17.68            | H               | 6.36            | 10.67              | 21.99      | 158.12    | 30.00       | -8.01      | 1/188 |
|          |            | 3514.98 | 18.89            | H               | 6.37            | 10.70              | 23.21      | 209.41    | 30.00       | -6.79      | 1/109 |
| 80       | QPSK       | 3490.02 | 19.71            | H               | 6.35            | 10.66              | 24.02      | 252.35    | 30.00       | -5.98      | 1/109 |
|          |            | 3499.98 | 19.49            | H               | 6.36            | 10.67              | 23.80      | 239.88    | 30.00       | -6.20      | 1/215 |
|          |            | 3510.00 | 19.62            | H               | 6.37            | 10.69              | 23.94      | 247.74    | 30.00       | -6.06      | 1/109 |
|          | 16-QAM     | 3490.00 | 18.72            | H               | 6.35            | 10.66              | 23.03      | 200.91    | 30.00       | -6.97      | 1/109 |
|          |            | 3499.98 | 18.48            | H               | 6.36            | 10.67              | 22.79      | 190.11    | 30.00       | -7.21      | 1/215 |
|          |            | 3509.00 | 18.58            | H               | 6.37            | 10.69              | 22.90      | 194.98    | 30.00       | -7.10      | 1/109 |
| 90       | QPSK       | 3495.00 | 19.27            | H               | 6.35            | 10.66              | 23.58      | 228.03    | 30.00       | -6.42      | 1/243 |
|          |            | 3499.98 | 19.61            | H               | 6.36            | 10.67              | 23.93      | 247.17    | 30.00       | -6.07      | 1/243 |
|          |            | 3504.99 | 19.37            | H               | 6.37            | 10.68              | 23.68      | 233.35    | 30.00       | -6.32      | 1/243 |
|          | 16-QAM     | 3495.00 | 18.31            | H               | 6.35            | 10.66              | 22.62      | 182.81    | 30.00       | -7.38      | 1/243 |
|          |            | 3499.98 | 18.69            | H               | 6.36            | 10.67              | 23.00      | 199.53    | 30.00       | -7.00      | 1/243 |
|          |            | 3504.99 | 18.45            | H               | 6.37            | 10.68              | 22.76      | 188.80    | 30.00       | -7.24      | 1/243 |
| 100      | QPSK       | 3499.98 | 19.36            | H               | 6.36            | 10.67              | 23.67      | 232.81    | 30.00       | -6.33      | 1/271 |
|          | 16-QAM     | 3499.98 | 18.26            | H               | 6.36            | 10.67              | 22.57      | 180.72    | 30.00       | -7.43      | 1/271 |

**5G NR n77 (3450 ~ 3550 MHz, SRS1)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3455.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3544.98    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3457.50    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3542.49    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3460.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3540.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3465.00    | 11.61               | H                  | 6.32               | 10.63                 | 15.91         | 38.99        | 30.00          | -14.09        |
|             | 3499.98    | 11.88               | H                  | 6.36               | 10.67                 | 16.19         | 41.59        | 30.00          | -13.81        |
|             | 3535.02    | 11.48               | H                  | 6.38               | 10.73                 | 15.83         | 38.28        | 30.00          | -14.17        |
| 40          | 3470.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3529.98    |                     |                    |                    |                       |               |              |                |               |
| 50          | 3475.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3525.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3480.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3519.99    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3485.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3514.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3490.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3510.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3495.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3504.99    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3499.98    |                     |                    |                    |                       |               |              |                |               |



**5G NR n77 (3450 ~ 3550 MHz, SRS2)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3455.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3544.98    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3457.50    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3542.49    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3460.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3540.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3465.00    | 20.01               | H                  | 6.32               | 10.63                 | 24.31         | 269.77       | 30.00          | -5.69         |
|             | 3499.98    | 19.93               | H                  | 6.36               | 10.67                 | 24.24         | 265.46       | 30.00          | -5.76         |
|             | 3535.02    | 19.35               | H                  | 6.38               | 10.73                 | 23.70         | 234.42       | 30.00          | -6.30         |
| 40          | 3470.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3529.98    |                     |                    |                    |                       |               |              |                |               |
| 50          | 3475.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3525.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3480.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3519.99    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3485.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3514.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3490.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3510.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3495.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3504.99    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3499.98    |                     |                    |                    |                       |               |              |                |               |

**5G NR n77 (3450 ~ 3550 MHz, SRS3)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3455.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3544.98    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3457.50    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3542.49    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3460.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3540.00    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3465.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3535.02    |                     |                    |                    |                       |               |              |                |               |
| 40          | 3470.01    | 10.13               | H                  | 6.33               | 10.63                 | 14.43         | 27.74        | 30.00          | -15.57        |
|             | 3499.98    | 10.13               | H                  | 6.36               | 10.67                 | 14.44         | 27.81        | 30.00          | -15.56        |
|             | 3529.98    | 10.16               | H                  | 6.38               | 10.72                 | 14.51         | 28.23        | 30.00          | -15.49        |
| 50          | 3475.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3525.00    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3480.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3519.99    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3485.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3514.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3490.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3510.00    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3495.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3499.98    |                     |                    |                    |                       |               |              |                |               |
|             | 3504.99    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3499.98    |                     |                    |                    |                       |               |              |                |               |

**5G NR n77 (3700 ~ 3980 MHz)**

| BW (MHz) | Modulation | f (MHz) | SG reading (dBm) | Ant. Pol. (H/V) | Cable Loss (dB) | Antenna Gain (dBi) | EIRP (dBm) | EIRP (mW) | Limit (dBm) | Delta (dB) | RB    |
|----------|------------|---------|------------------|-----------------|-----------------|--------------------|------------|-----------|-------------|------------|-------|
| 10       | QPSK       | 3705.00 | 18.53            | H               | 6.54            | 10.81              | 22.80      | 190.55    | 30.00       | -7.20      | 1/22  |
|          |            | 3840.00 | 18.35            | H               | 6.65            | 10.65              | 22.34      | 171.40    | 30.00       | -7.66      | 1/12  |
|          |            | 3975.00 | 18.17            | H               | 6.77            | 10.63              | 22.03      | 159.59    | 30.00       | -7.97      | 1/22  |
|          | 16-QAM     | 3705.00 | 17.20            | H               | 6.54            | 10.81              | 21.47      | 140.28    | 30.00       | -8.53      | 1/22  |
|          |            | 3840.00 | 17.16            | H               | 6.65            | 10.65              | 21.15      | 130.32    | 30.00       | -8.85      | 1/12  |
|          |            | 3975.00 | 17.26            | H               | 6.77            | 10.63              | 21.12      | 129.42    | 30.00       | -8.88      | 1/22  |
| 15       | QPSK       | 3707.50 | 18.79            | H               | 6.55            | 10.81              | 23.05      | 201.84    | 30.00       | -6.95      | 1/19  |
|          |            | 3840.00 | 19.13            | H               | 6.65            | 10.65              | 23.12      | 205.12    | 30.00       | -6.88      | 1/1   |
|          |            | 3972.50 | 18.77            | H               | 6.78            | 10.63              | 22.62      | 182.81    | 30.00       | -7.38      | 1/36  |
|          | 16-QAM     | 3707.50 | 17.86            | H               | 6.55            | 10.81              | 22.12      | 162.93    | 30.00       | -7.88      | 1/19  |
|          |            | 3840.00 | 18.26            | H               | 6.65            | 10.65              | 22.25      | 167.88    | 30.00       | -7.75      | 1/1   |
|          |            | 3972.50 | 17.87            | H               | 6.78            | 10.63              | 21.72      | 148.59    | 30.00       | -8.28      | 1/36  |
| 20       | QPSK       | 3710.00 | 18.85            | H               | 6.54            | 10.80              | 23.11      | 204.64    | 30.00       | -6.89      | 1/49  |
|          |            | 3840.00 | 19.08            | H               | 6.65            | 10.65              | 23.07      | 202.77    | 30.00       | -6.93      | 1/1   |
|          |            | 3970.00 | 18.78            | H               | 6.77            | 10.62              | 22.64      | 183.65    | 30.00       | -7.36      | 1/26  |
|          | 16-QAM     | 3710.00 | 17.91            | H               | 6.54            | 10.80              | 22.17      | 164.82    | 30.00       | -7.83      | 1/49  |
|          |            | 3840.00 | 18.01            | H               | 6.65            | 10.65              | 22.00      | 158.49    | 30.00       | -8.00      | 1/1   |
|          |            | 3970.00 | 17.77            | H               | 6.77            | 10.62              | 21.63      | 145.55    | 30.00       | -8.37      | 1/26  |
| 30       | QPSK       | 3715.00 | 18.95            | H               | 6.55            | 10.80              | 23.20      | 208.93    | 30.00       | -6.80      | 1/39  |
|          |            | 3840.00 | 19.15            | H               | 6.65            | 10.65              | 23.14      | 206.06    | 30.00       | -6.86      | 1/76  |
|          |            | 3965.00 | 18.77            | H               | 6.77            | 10.62              | 22.62      | 182.81    | 30.00       | -7.38      | 1/39  |
|          | 16-QAM     | 3715.00 | 17.88            | H               | 6.55            | 10.80              | 22.13      | 163.31    | 30.00       | -7.87      | 1/39  |
|          |            | 3840.00 | 18.19            | H               | 6.65            | 10.65              | 22.18      | 165.20    | 30.00       | -7.82      | 1/76  |
|          |            | 3965.00 | 17.71            | H               | 6.77            | 10.62              | 21.56      | 143.22    | 30.00       | -8.44      | 1/39  |
| 40       | QPSK       | 3720.00 | 18.46            | H               | 6.55            | 10.79              | 22.70      | 186.21    | 30.00       | -7.30      | 1/53  |
|          |            | 3840.00 | 19.01            | H               | 6.65            | 10.65              | 23.00      | 199.53    | 30.00       | -7.00      | 1/104 |
|          |            | 3960.00 | 18.62            | H               | 6.77            | 10.62              | 22.47      | 176.60    | 30.00       | -7.53      | 1/104 |
|          | 16-QAM     | 3720.00 | 17.48            | H               | 6.55            | 10.79              | 21.72      | 148.59    | 30.00       | -8.28      | 1/53  |
|          |            | 3840.00 | 18.01            | H               | 6.65            | 10.65              | 22.00      | 158.49    | 30.00       | -8.00      | 1/104 |
|          |            | 3960.00 | 17.84            | H               | 6.77            | 10.62              | 21.69      | 147.57    | 30.00       | -8.31      | 1/104 |
| 50       | QPSK       | 3725.00 | 18.56            | H               | 6.56            | 10.79              | 22.78      | 189.67    | 30.00       | -7.22      | 1/131 |
|          |            | 3840.00 | 18.87            | H               | 6.65            | 10.65              | 22.86      | 193.20    | 30.00       | -7.14      | 1/131 |
|          |            | 3955.00 | 18.28            | H               | 6.75            | 10.62              | 22.15      | 164.06    | 30.00       | -7.85      | 1/131 |
|          | 16-QAM     | 3725.00 | 17.64            | H               | 6.56            | 10.79              | 21.86      | 153.46    | 30.00       | -8.14      | 1/131 |
|          |            | 3840.00 | 18.10            | H               | 6.65            | 10.65              | 22.09      | 161.81    | 30.00       | -7.91      | 1/131 |
|          |            | 3955.00 | 17.16            | H               | 6.75            | 10.62              | 21.03      | 126.77    | 30.00       | -8.97      | 1/131 |
| 60       | QPSK       | 3730.00 | 18.24            | H               | 6.56            | 10.78              | 22.45      | 175.79    | 30.00       | -7.55      | 1/160 |
|          |            | 3840.00 | 18.80            | H               | 6.65            | 10.65              | 22.79      | 190.11    | 30.00       | -7.21      | 1/81  |
|          |            | 3950.00 | 18.27            | H               | 6.75            | 10.62              | 22.14      | 163.68    | 30.00       | -7.86      | 1/81  |
|          | 16-QAM     | 3730.00 | 17.27            | H               | 6.56            | 10.78              | 21.48      | 140.60    | 30.00       | -8.52      | 1/160 |
|          |            | 3840.00 | 17.73            | H               | 6.65            | 10.65              | 21.72      | 148.59    | 30.00       | -8.28      | 1/81  |
|          |            | 3950.00 | 17.31            | H               | 6.75            | 10.62              | 21.18      | 131.22    | 30.00       | -8.82      | 1/81  |
| 70       | QPSK       | 3735.00 | 18.41            | H               | 6.57            | 10.77              | 22.61      | 182.39    | 30.00       | -7.39      | 1/109 |
|          |            | 3840.00 | 18.82            | H               | 6.65            | 10.65              | 22.81      | 190.99    | 30.00       | -7.19      | 1/109 |
|          |            | 3945.00 | 17.03            | H               | 6.75            | 10.62              | 20.90      | 123.03    | 30.00       | -9.10      | 1/1   |
|          | 16-QAM     | 3735.00 | 17.42            | H               | 6.57            | 10.77              | 21.62      | 145.21    | 30.00       | -8.38      | 1/109 |
|          |            | 3840.00 | 17.95            | H               | 6.65            | 10.65              | 21.94      | 156.31    | 30.00       | -8.06      | 1/109 |
|          |            | 3945.00 | 16.08            | H               | 6.75            | 10.62              | 19.95      | 98.86     | 30.00       | -10.05     | 1/1   |
| 80       | QPSK       | 3740.00 | 18.33            | H               | 6.58            | 10.77              | 22.52      | 178.65    | 30.00       | -7.48      | 1/109 |
|          |            | 3840.00 | 19.12            | H               | 6.65            | 10.65              | 23.11      | 204.64    | 30.00       | -6.89      | 1/215 |
|          |            | 3940.00 | 18.38            | H               | 6.74            | 10.62              | 22.25      | 167.88    | 30.00       | -7.75      | 1/1   |
|          | 16-QAM     | 3740.00 | 17.29            | H               | 6.58            | 10.77              | 21.48      | 140.60    | 30.00       | -8.52      | 1/109 |
|          |            | 3840.00 | 17.85            | H               | 6.65            | 10.65              | 21.84      | 152.76    | 30.00       | -8.16      | 1/215 |
|          |            | 3940.00 | 17.27            | H               | 6.74            | 10.62              | 21.14      | 130.02    | 30.00       | -8.86      | 1/1   |
| 90       | QPSK       | 3745.02 | 17.73            | H               | 6.57            | 10.70              | 21.86      | 153.46    | 30.00       | -8.14      | 1/123 |
|          |            | 3840.00 | 17.76            | H               | 6.65            | 10.58              | 21.68      | 147.23    | 30.00       | -8.32      | 1/243 |
|          |            | 3934.98 | 17.21            | H               | 6.75            | 10.48              | 20.93      | 123.88    | 30.00       | -9.07      | 1/1   |
|          | 16-QAM     | 3745.02 | 16.76            | H               | 6.57            | 10.70              | 20.89      | 122.74    | 30.00       | -9.11      | 1/123 |
|          |            | 3840.00 | 16.84            | H               | 6.65            | 10.58              | 20.76      | 119.12    | 30.00       | -9.24      | 1/243 |
|          |            | 3934.98 | 16.42            | H               | 6.75            | 10.48              | 20.15      | 103.51    | 30.00       | -9.85      | 1/1   |
| 100      | QPSK       | 3750.00 | 18.86            | H               | 6.58            | 10.75              | 23.03      | 200.91    | 30.00       | -6.97      | 1/271 |
|          |            | 3840.00 | 18.70            | H               | 6.65            | 10.65              | 22.69      | 185.78    | 30.00       | -7.31      | 1/137 |
|          |            | 3930.00 | 18.01            | H               | 6.75            | 10.62              | 21.88      | 154.17    | 30.00       | -8.12      | 1/271 |
|          | 16-QAM     | 3750.00 | 17.94            | H               | 6.58            | 10.75              | 22.11      | 162.55    | 30.00       | -7.89      | 1/137 |
|          |            | 3840.00 | 17.81            | H               | 6.65            | 10.65              | 21.80      | 151.36    | 30.00       | -8.20      | 1/137 |
|          |            | 3930.00 | 16.83            | H               | 6.75            | 10.62              | 20.70      | 117.49    | 30.00       | -9.30      | 1/1   |

**5G NR n77 (3700 ~ 3980 MHz, SRS1)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3705.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3975.00    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3707.52    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3972.48    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3710.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3969.99    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3715.02    | 9.24                | H                  | 6.55               | 10.73                 | 13.43         | 22.03        | 30.00          | -16.57        |
|             | 3840.00    | 8.18                | H                  | 6.65               | 10.58                 | 12.10         | 16.22        | 30.00          | -17.90        |
|             | 3964.98    | 8.39                | H                  | 6.77               | 10.46                 | 12.08         | 16.14        | 30.00          | -17.92        |
| 40          | 3720.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3960.00    |                     |                    |                    |                       |               |              |                |               |
| 50          | 3725.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3954.99    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3730.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3949.98    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3735.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3944.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3740.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3939.99    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3745.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3934.98    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3750.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3930.00    |                     |                    |                    |                       |               |              |                |               |

**5G NR n77 (3700 ~ 3980 MHz, SRS2)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3705.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3975.00    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3707.52    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3972.48    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3710.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3969.99    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3715.02    | 17.50               | H                  | 6.55               | 10.73                 | 21.69         | 147.57       | 30.00          | -8.31         |
|             | 3840.00    | 15.89               | H                  | 6.65               | 10.58                 | 19.81         | 95.72        | 30.00          | -10.19        |
|             | 3964.98    | 14.05               | H                  | 6.77               | 10.46                 | 17.74         | 59.43        | 30.00          | -12.26        |
| 40          | 3720.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3960.00    |                     |                    |                    |                       |               |              |                |               |
| 50          | 3725.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3954.99    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3730.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3949.98    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3735.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3944.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3740.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3939.99    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3745.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3934.98    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3750.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3930.00    |                     |                    |                    |                       |               |              |                |               |

**5G NR n77 (3700 ~ 3980 MHz, SRS3)**

| BW<br>(MHz) | f<br>(MHz) | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Cable Loss<br>(dB) | Antenna Gain<br>(dBi) | EIRP<br>(dBm) | EIRP<br>(mW) | Limit<br>(dBm) | Delta<br>(dB) |
|-------------|------------|---------------------|--------------------|--------------------|-----------------------|---------------|--------------|----------------|---------------|
| 10          | 3705.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3975.00    |                     |                    |                    |                       |               |              |                |               |
| 15          | 3707.52    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3972.48    |                     |                    |                    |                       |               |              |                |               |
| 20          | 3710.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3969.99    |                     |                    |                    |                       |               |              |                |               |
| 30          | 3715.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3964.98    |                     |                    |                    |                       |               |              |                |               |
| 40          | 3720.00    | 9.11                | H                  | 6.55               | 10.73                 | 13.28         | 21.28        | 30.00          | -16.72        |
|             | 3840.00    | 10.60               | H                  | 6.65               | 10.58                 | 14.52         | 28.31        | 30.00          | -15.48        |
|             | 3960.00    | 9.70                | H                  | 6.77               | 10.47                 | 13.40         | 21.88        | 30.00          | -16.60        |
| 50          | 3725.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3954.99    |                     |                    |                    |                       |               |              |                |               |
| 60          | 3730.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3949.98    |                     |                    |                    |                       |               |              |                |               |
| 70          | 3735.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3944.98    |                     |                    |                    |                       |               |              |                |               |
| 80          | 3740.01    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3939.99    |                     |                    |                    |                       |               |              |                |               |
| 90          | 3745.02    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3934.98    |                     |                    |                    |                       |               |              |                |               |
| 100         | 3750.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3840.00    |                     |                    |                    |                       |               |              |                |               |
|             | 3930.00    |                     |                    |                    |                       |               |              |                |               |

## 9.6. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238, §27.53 and §90.691

### LIMIT

Part 22.917(a) & Part 24.238(a) & Part 27.53(h) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

Part 27.53:

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB.

(h) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

(m) (4) For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

(l)(2) For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed  $-13$  dBm/MHz. Compliance with this paragraph (l)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(n)(2) For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed  $-13$  dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

Part 90.691(a):

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz. (NOTE : Use 100kHz reference bandwidth)

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

### **TEST PROCEDURE**

ANSI / TIA / EIA 603 E Clause 2.2.12; ESU40 setting reference to 971168 D01 v03r01

For peak power measurement with a ESU40:

- a) Set the RBW = 100 KHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 1.5$  times the OBW;
- d) Sweep time = auto couple;
- e) Detector = rms;
- f) Ensure that the number of measurement points  $\geq$  span/RBW;
- g) Trace mode = average(WCDMA, LTE FDD, 5G NR FDD), Maxhold(GSM, LTE TDD, 5G NR TDD);

### **RESULTS**

See the following pages.

#### **NOTE1**

5G NR: All Waveforms (CP-OFDM vs DFT-s\_OFDM) and modulations ( $\pi/2$  BPSK, QPSK, 16QAM, 64QAM, 256QAM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

#### **NOTE2**

Please refer to section 5.4 for bandwidth and RB setting about LTE, 5G NR bands.



## 9.6.1. SPURIOUS RADIATION PLOTS

### GSM850

|                     | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                         |                     |                    |                 |                |                |               |                |               |       |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                     | f<br>MHz                                                                                                                                                                                                                     | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| GSM850<br><br>GPRS  | Company: Samsung<br>Project #: 4790541052<br>Date: 9/14/2022<br>Test Engineer: 25770<br>Configuration: EUT / AC Adapter, Y-Position<br>Location: Chamber 1<br>Mode: GPRS 850 MHz Harmonics<br>Test Voltage: AC 120 V, 60 Hz  |                     |                    |                 |                |                |               |                |               |       |
|                     | Low Ch, 824.2MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                     | 1648.40                                                                                                                                                                                                                      | -10.4               | V                  | 3.0             | 45.6           | 1.0            | -55.0         | -13.0          | -42.0         |       |
|                     | 2472.60                                                                                                                                                                                                                      | -5.9                | V                  | 3.0             | 45.4           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                     | 3296.80                                                                                                                                                                                                                      | -4.9                | V                  | 3.0             | 45.7           | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                     | 1648.40                                                                                                                                                                                                                      | -11.1               | H                  | 3.0             | 45.6           | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                     | 2472.60                                                                                                                                                                                                                      | -6.7                | H                  | 3.0             | 45.4           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                     | 3296.80                                                                                                                                                                                                                      | -4.4                | H                  | 3.0             | 45.7           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                     | Mid Ch, 836.6MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                     | 1673.20                                                                                                                                                                                                                      | -10.5               | V                  | 3.0             | 45.6           | 1.0            | -55.1         | -13.0          | -42.1         |       |
|                     | 2509.80                                                                                                                                                                                                                      | -5.6                | V                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                     | 3346.40                                                                                                                                                                                                                      | -4.8                | V                  | 3.0             | 45.7           | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                     | 1673.20                                                                                                                                                                                                                      | -11.4               | H                  | 3.0             | 45.6           | 1.0            | -56.0         | -13.0          | -43.0         |       |
|                     | 2509.80                                                                                                                                                                                                                      | -4.6                | H                  | 3.0             | 45.5           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                     | 3346.40                                                                                                                                                                                                                      | -4.7                | H                  | 3.0             | 45.7           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                     | High Ch, 848.8MHz                                                                                                                                                                                                            |                     |                    |                 |                |                |               |                |               |       |
|                     | 1697.60                                                                                                                                                                                                                      | -10.3               | V                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |
|                     | 2546.40                                                                                                                                                                                                                      | -6.6                | V                  | 3.0             | 45.5           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                     | 3395.20                                                                                                                                                                                                                      | -4.3                | V                  | 3.0             | 45.7           | 1.0            | -49.0         | -13.0          | -36.0         |       |
|                     | 1697.60                                                                                                                                                                                                                      | -11.4               | H                  | 3.0             | 45.6           | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                     | 2546.40                                                                                                                                                                                                                      | -6.7                | H                  | 3.0             | 45.5           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                     | 3395.20                                                                                                                                                                                                                      | -3.9                | H                  | 3.0             | 45.7           | 1.0            | -48.6         | -13.0          | -35.6         |       |
| GSM850<br><br>EGPRS | Company: Samsung<br>Project #: 4790541052<br>Date: 9/15/2022<br>Test Engineer: 25770<br>Configuration: EUT / AC Adapter, Y-Position<br>Location: Chamber 1<br>Mode: EGPRS 850 MHz Harmonics<br>Test Voltage: AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                     | Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                     | Low Ch, 824.2MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                     | 1648.40                                                                                                                                                                                                                      | -10.6               | V                  | 3.0             | 45.6           | 1.0            | -55.2         | -13.0          | -42.2         |       |
|                     | 2472.60                                                                                                                                                                                                                      | -6.9                | V                  | 3.0             | 45.4           | 1.0            | -51.3         | -13.0          | -38.3         |       |
|                     | 3296.80                                                                                                                                                                                                                      | -4.5                | V                  | 3.0             | 45.7           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                     | 1648.40                                                                                                                                                                                                                      | -11.2               | H                  | 3.0             | 45.6           | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                     | 2472.60                                                                                                                                                                                                                      | -7.6                | H                  | 3.0             | 45.4           | 1.0            | -52.1         | -13.0          | -39.1         |       |
|                     | 3296.80                                                                                                                                                                                                                      | -4.4                | H                  | 3.0             | 45.7           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                     | Mid Ch, 836.6MHz                                                                                                                                                                                                             |                     |                    |                 |                |                |               |                |               |       |
|                     | 1673.20                                                                                                                                                                                                                      | -10.9               | V                  | 3.0             | 45.6           | 1.0            | -55.5         | -13.0          | -42.5         |       |
|                     | 2509.80                                                                                                                                                                                                                      | -6.6                | V                  | 3.0             | 45.5           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                     | 3346.40                                                                                                                                                                                                                      | -5.0                | V                  | 3.0             | 45.7           | 1.0            | -49.7         | -13.0          | -36.7         |       |
|                     | 1673.20                                                                                                                                                                                                                      | -11.9               | H                  | 3.0             | 45.6           | 1.0            | -56.5         | -13.0          | -43.5         |       |
|                     | 2509.80                                                                                                                                                                                                                      | -6.5                | H                  | 3.0             | 45.5           | 1.0            | -51.0         | -13.0          | -38.0         |       |
|                     | 3346.40                                                                                                                                                                                                                      | -4.9                | H                  | 3.0             | 45.7           | 1.0            | -49.6         | -13.0          | -36.6         |       |
|                     | High Ch, 848.8MHz                                                                                                                                                                                                            |                     |                    |                 |                |                |               |                |               |       |
|                     | 1697.60                                                                                                                                                                                                                      | -10.5               | V                  | 3.0             | 45.6           | 1.0            | -55.1         | -13.0          | -42.1         |       |
|                     | 2546.40                                                                                                                                                                                                                      | -7.1                | V                  | 3.0             | 45.5           | 1.0            | -51.6         | -13.0          | -38.6         |       |
|                     | 3395.20                                                                                                                                                                                                                      | -4.8                | V                  | 3.0             | 45.7           | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                     | 1697.60                                                                                                                                                                                                                      | -11.4               | H                  | 3.0             | 45.6           | 1.0            | -56.0         | -13.0          | -43.0         |       |
|                     | 2546.40                                                                                                                                                                                                                      | -6.9                | H                  | 3.0             | 45.5           | 1.0            | -51.4         | -13.0          | -38.4         |       |
|                     | 3395.20                                                                                                                                                                                                                      | -4.0                | H                  | 3.0             | 45.7           | 1.0            | -48.7         | -13.0          | -35.7         |       |

**GSM1900**

|                      |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|----------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| GSM1900<br><br>GPRS  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                      | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                      | Project #: 4790541052                                                                |                     |                    |                 |                |                |               |                |               |       |
|                      | Date: 9/7/2022                                                                       |                     |                    |                 |                |                |               |                |               |       |
|                      | Test Engineer: 25770                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                      | Configuration: EUT / AC Adapter, Y-Position                                          |                     |                    |                 |                |                |               |                |               |       |
|                      | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                      | Mode: GPRS 1900 MHz Harmonics                                                        |                     |                    |                 |                |                |               |                |               |       |
|                      | Test Votage: AC 120 V, 60 Hz                                                         |                     |                    |                 |                |                |               |                |               |       |
|                      |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                      | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                      | Low Ch, 1850.2MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                      | 3700.40                                                                              | -8.1                | V                  | 3.0             | 45.8           | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                      | 5550.60                                                                              | -5.3                | V                  | 3.0             | 45.7           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                      | 7400.80                                                                              | -3.0                | V                  | 3.0             | 44.6           | 1.0            | -46.5         | -13.0          | -33.5         |       |
|                      | 3700.40                                                                              | -8.7                | H                  | 3.0             | 45.8           | 1.0            | -53.5         | -13.0          | -40.5         |       |
|                      | 5550.60                                                                              | -5.1                | H                  | 3.0             | 45.7           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                      | 7400.80                                                                              | -2.7                | H                  | 3.0             | 44.6           | 1.0            | -46.3         | -13.0          | -33.3         |       |
|                      | Mid Ch, 1880MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                      | 3760.00                                                                              | -8.0                | V                  | 3.0             | 45.8           | 1.0            | -52.8         | -13.0          | -39.8         |       |
|                      | 5640.00                                                                              | -5.2                | V                  | 3.0             | 45.7           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                      | 7520.00                                                                              | -2.9                | V                  | 3.0             | 44.5           | 1.0            | -46.4         | -13.0          | -33.4         |       |
|                      | 3760.00                                                                              | -8.3                | H                  | 3.0             | 45.8           | 1.0            | -53.1         | -13.0          | -40.1         |       |
|                      | 5640.00                                                                              | -5.2                | H                  | 3.0             | 45.7           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                      | 7520.00                                                                              | -2.7                | H                  | 3.0             | 44.5           | 1.0            | -46.2         | -13.0          | -33.2         |       |
|                      | High Ch, 1909.8MHz                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                      | 3819.60                                                                              | -7.9                | V                  | 3.0             | 45.8           | 1.0            | -52.7         | -13.0          | -39.7         |       |
| 5729.40              | -4.9                                                                                 | V                   | 3.0                | 45.7            | 1.0            | -49.7          | -13.0         | -36.7          |               |       |
| 7639.20              | -2.9                                                                                 | V                   | 3.0                | 44.4            | 1.0            | -46.3          | -13.0         | -33.3          |               |       |
| 3819.60              | -8.2                                                                                 | H                   | 3.0                | 45.8            | 1.0            | -53.1          | -13.0         | -40.1          |               |       |
| 5729.40              | -5.0                                                                                 | H                   | 3.0                | 45.7            | 1.0            | -49.7          | -13.0         | -36.7          |               |       |
| 7639.20              | -2.5                                                                                 | H                   | 3.0                | 44.4            | 1.0            | -45.9          | -13.0         | -32.9          |               |       |
|                      |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
| GSM1900<br><br>EGPRS | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|                      | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                      | Project #: 4790541052                                                                |                     |                    |                 |                |                |               |                |               |       |
|                      | Date: 9/7/2022                                                                       |                     |                    |                 |                |                |               |                |               |       |
|                      | Test Engineer: 25770                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                      | Configuration: EUT / AC Adapter, Y-Position                                          |                     |                    |                 |                |                |               |                |               |       |
|                      | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                      | Mode: EGPRS 1900 MHz Harmonics                                                       |                     |                    |                 |                |                |               |                |               |       |
|                      | Test Votage: AC 120 V, 60 Hz                                                         |                     |                    |                 |                |                |               |                |               |       |
|                      |                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                      | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                      | Low Ch, 1850.2MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                      | 3700.40                                                                              | -8.4                | V                  | 3.0             | 45.8           | 1.0            | -53.2         | -13.0          | -40.2         |       |
|                      | 5550.60                                                                              | -5.4                | V                  | 3.0             | 45.7           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                      | 7400.80                                                                              | -3.0                | V                  | 3.0             | 44.6           | 1.0            | -46.6         | -13.0          | -33.6         |       |
|                      | 3700.40                                                                              | -8.1                | H                  | 3.0             | 45.8           | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                      | 5550.60                                                                              | -5.1                | H                  | 3.0             | 45.7           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                      | 7400.80                                                                              | -2.4                | H                  | 3.0             | 44.6           | 1.0            | -46.0         | -13.0          | -33.0         |       |
|                      | Mid Ch, 1880MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                      | 3760.00                                                                              | -8.1                | V                  | 3.0             | 45.8           | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                      | 5640.00                                                                              | -4.9                | V                  | 3.0             | 45.7           | 1.0            | -49.7         | -13.0          | -36.7         |       |
|                      | 7520.00                                                                              | -2.7                | V                  | 3.0             | 44.5           | 1.0            | -46.2         | -13.0          | -33.2         |       |
|                      | 3760.00                                                                              | -8.2                | H                  | 3.0             | 45.8           | 1.0            | -53.1         | -13.0          | -40.1         |       |
|                      | 5640.00                                                                              | -5.2                | H                  | 3.0             | 45.7           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                      | 7520.00                                                                              | -2.6                | H                  | 3.0             | 44.5           | 1.0            | -46.1         | -13.0          | -33.1         |       |
|                      | High Ch, 1909.8MHz                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                      | 3819.60                                                                              | -8.0                | V                  | 3.0             | 45.8           | 1.0            | -52.9         | -13.0          | -39.9         |       |
| 5729.40              | -5.0                                                                                 | V                   | 3.0                | 45.7            | 1.0            | -49.7          | -13.0         | -36.7          |               |       |
| 7639.20              | -2.8                                                                                 | V                   | 3.0                | 44.4            | 1.0            | -46.2          | -13.0         | -33.2          |               |       |
| 3819.60              | -7.9                                                                                 | H                   | 3.0                | 45.8            | 1.0            | -52.8          | -13.0         | -39.8          |               |       |
| 5729.40              | -5.2                                                                                 | H                   | 3.0                | 45.7            | 1.0            | -49.9          | -13.0         | -36.9          |               |       |
| 7639.20              | -2.9                                                                                 | H                   | 3.0                | 44.4            | 1.0            | -46.4          | -13.0         | -33.4          |               |       |
|                      |                                                                                      |                     |                    |                 |                |                |               |                |               |       |

**WCDMA Band 5**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Band 5<br>REL99 | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/14/2022<br/> <b>Test Engineer:</b> 25770<br/> <b>Configuration:</b> EUT / AC Adapter, X-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> Rel99 Band 5 Harmonics<br/> <b>Test Voltage:</b> AC 120 V, 60 Hz </p> |                     |                    |                 |                |                |               |                |               |       |
|                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                          | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                 | <b>Low Ch, 826.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                 | 1652.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.7               | V                  | 3.0             | 45.6           | 1.0            | -60.3         | -13.0          | -47.3         |       |
|                 | 2479.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.3               | V                  | 3.0             | 45.5           | 1.0            | -56.8         | -13.0          | -43.8         |       |
|                 | 3305.60                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.9                | V                  | 3.0             | 45.7           | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                 | 1652.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.6               | H                  | 3.0             | 45.6           | 1.0            | -61.3         | -13.0          | -48.3         |       |
|                 | 2479.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.8               | H                  | 3.0             | 45.5           | 1.0            | -57.2         | -13.0          | -44.2         |       |
|                 | 3305.60                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.9                | H                  | 3.0             | 45.7           | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                 | <b>Mid Ch, 836.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                 | 1673.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.5               | V                  | 3.0             | 45.6           | 1.0            | -60.1         | -13.0          | -47.1         |       |
|                 | 2509.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.2               | V                  | 3.0             | 45.5           | 1.0            | -56.7         | -13.0          | -43.7         |       |
|                 | 3346.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.8                | V                  | 3.0             | 45.7           | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                 | 1673.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.6               | H                  | 3.0             | 45.6           | 1.0            | -61.2         | -13.0          | -48.2         |       |
|                 | 2509.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.8               | H                  | 3.0             | 45.5           | 1.0            | -57.3         | -13.0          | -44.3         |       |
|                 | 3346.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.8                | H                  | 3.0             | 45.7           | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                 | <b>High Ch, 846.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                 |                |                |               |                |               |       |
|                 | 1693.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.5               | V                  | 3.0             | 45.6           | 1.0            | -60.1         | -13.0          | -47.1         |       |
|                 | 2539.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.1               | V                  | 3.0             | 45.5           | 1.0            | -56.6         | -13.0          | -43.6         |       |
|                 | 3386.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.5                | V                  | 3.0             | 45.7           | 1.0            | -54.2         | -13.0          | -41.2         |       |
|                 | 1693.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.5               | H                  | 3.0             | 45.6           | 1.0            | -61.1         | -13.0          | -48.1         |       |
|                 | 2539.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.6               | H                  | 3.0             | 45.5           | 1.0            | -57.1         | -13.0          | -44.1         |       |
|                 | 3386.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.4                | H                  | 3.0             | 45.7           | 1.0            | -54.1         | -13.0          | -41.1         |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
| Band 5<br>HSDPA | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/14/2022<br/> <b>Test Engineer:</b> 25770<br/> <b>Configuration:</b> EUT / AC Adapter, X-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> HSDPA Band 5 Harmonics<br/> <b>Test Voltage:</b> AC 120 V, 60 Hz </p> |                     |                    |                 |                |                |               |                |               |       |
|                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                          | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                 | <b>Low Ch, 826.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                 | 1652.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.7               | V                  | 3.0             | 45.6           | 1.0            | -60.3         | -13.0          | -47.3         |       |
|                 | 2479.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.2               | V                  | 3.0             | 45.5           | 1.0            | -56.7         | -13.0          | -43.7         |       |
|                 | 3305.60                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.9                | V                  | 3.0             | 45.7           | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                 | 1652.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.7               | H                  | 3.0             | 45.6           | 1.0            | -61.3         | -13.0          | -48.3         |       |
|                 | 2479.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.7               | H                  | 3.0             | 45.5           | 1.0            | -57.2         | -13.0          | -44.2         |       |
|                 | 3305.60                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.9                | H                  | 3.0             | 45.7           | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                 | <b>Mid Ch, 836.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|                 | 1673.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.6               | V                  | 3.0             | 45.6           | 1.0            | -60.2         | -13.0          | -47.2         |       |
|                 | 2509.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.4               | V                  | 3.0             | 45.5           | 1.0            | -56.9         | -13.0          | -43.9         |       |
|                 | 3346.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.7                | V                  | 3.0             | 45.7           | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                 | 1673.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.7               | H                  | 3.0             | 45.6           | 1.0            | -61.3         | -13.0          | -48.3         |       |
|                 | 2509.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.9               | H                  | 3.0             | 45.5           | 1.0            | -57.3         | -13.0          | -44.3         |       |
|                 | 3346.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.7                | H                  | 3.0             | 45.7           | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                 | <b>High Ch, 846.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                 |                |                |               |                |               |       |
|                 | 1693.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -15.5               | V                  | 3.0             | 45.6           | 1.0            | -60.1         | -13.0          | -47.1         |       |
|                 | 2539.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.3               | V                  | 3.0             | 45.5           | 1.0            | -56.8         | -13.0          | -43.8         |       |
|                 | 3386.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.5                | V                  | 3.0             | 45.7           | 1.0            | -54.2         | -13.0          | -41.2         |       |
|                 | 1693.20                                                                                                                                                                                                                                                                                                                                                                                                                                           | -16.1               | H                  | 3.0             | 45.6           | 1.0            | -60.7         | -13.0          | -47.7         |       |
|                 | 2539.80                                                                                                                                                                                                                                                                                                                                                                                                                                           | -12.7               | H                  | 3.0             | 45.5           | 1.0            | -57.2         | -13.0          | -44.2         |       |
|                 | 3386.40                                                                                                                                                                                                                                                                                                                                                                                                                                           | -9.6                | H                  | 3.0             | 45.7           | 1.0            | -54.3         | -13.0          | -41.3         |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |

**WCDMA Band 4**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |                            |                         |                              |                        |                       |                        |                       |              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------|-------------------------|------------------------------|------------------------|-----------------------|------------------------|-----------------------|--------------|
| Band 4<br>REL99 | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/19/2022<br/> <b>Test Engineer:</b> 19568<br/> <b>Configuration:</b> EUT / AC Adapter, Y-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> Rel99 Band 4 Harmonics<br/> <b>Test Votage:</b> AC 120 V, 60 Hz </p> |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | <b>f<br/>MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>SG reading<br/>(dBm)</b> | <b>Ant. Pol.<br/>(H/V)</b> | <b>Distance<br/>(m)</b> | <b>Preamplifier<br/>(dB)</b> | <b>Filter<br/>(dB)</b> | <b>EIRP<br/>(dBm)</b> | <b>Limit<br/>(dBm)</b> | <b>Delta<br/>(dB)</b> | <b>Notes</b> |
|                 | <b>Low Ch, 1712.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3424.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5137.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -9.2                        | V                          | 3.0                     | 45.8                         | 1.0                    | -54.0                 | -13.0                  | -41.0                 |              |
|                 | 6849.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.0                        | V                          | 3.0                     | 44.9                         | 1.0                    | -49.9                 | -13.0                  | -36.9                 |              |
|                 | 3424.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5137.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -9.0                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.9                 | -13.0                  | -40.9                 |              |
|                 | 6849.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.1                        | H                          | 3.0                     | 44.9                         | 1.0                    | -50.0                 | -13.0                  | -37.0                 |              |
|                 | <b>Mid Ch, 1732.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3465.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.3                 | -13.0                  | -40.3                 |              |
|                 | 5197.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.8                        | V                          | 3.0                     | 45.8                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 6930.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.0                        | V                          | 3.0                     | 44.8                         | 1.0                    | -49.9                 | -13.0                  | -36.9                 |              |
|                 | 3465.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.7                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.4                 | -13.0                  | -40.4                 |              |
|                 | 5197.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.8                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.5                 | -13.0                  | -40.5                 |              |
|                 | 6930.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.1                        | H                          | 3.0                     | 44.8                         | 1.0                    | -49.9                 | -13.0                  | -36.9                 |              |
|                 | <b>High Ch, 1752.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3505.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.3                 | -13.0                  | -40.3                 |              |
|                 | 5257.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.7                        | V                          | 3.0                     | 45.8                         | 1.0                    | -53.5                 | -13.0                  | -40.5                 |              |
|                 | 7010.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.8                        | V                          | 3.0                     | 44.8                         | 1.0                    | -49.6                 | -13.0                  | -36.6                 |              |
|                 | 3505.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.4                 | -13.0                  | -40.4                 |              |
|                 | 5257.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.4                 | -13.0                  | -40.4                 |              |
|                 | 7010.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                        | H                          | 3.0                     | 44.8                         | 1.0                    | -49.7                 | -13.0                  | -36.7                 |              |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |                            |                         |                              |                        |                       |                        |                       |              |
| Band 4<br>HSDPA | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/19/2022<br/> <b>Test Engineer:</b> 19568<br/> <b>Configuration:</b> EUT / AC Adapter, Y-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> HSDPA Band 4 Harmonics<br/> <b>Test Votage:</b> AC 120 V, 60 Hz </p> |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | <b>f<br/>MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>SG reading<br/>(dBm)</b> | <b>Ant. Pol.<br/>(H/V)</b> | <b>Distance<br/>(m)</b> | <b>Preamplifier<br/>(dB)</b> | <b>Filter<br/>(dB)</b> | <b>EIRP<br/>(dBm)</b> | <b>Limit<br/>(dBm)</b> | <b>Delta<br/>(dB)</b> | <b>Notes</b> |
|                 | <b>Low Ch, 1712.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3424.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5137.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -9.2                        | V                          | 3.0                     | 45.8                         | 1.0                    | -54.0                 | -13.0                  | -41.0                 |              |
|                 | 6849.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.1                        | V                          | 3.0                     | 44.9                         | 1.0                    | -50.0                 | -13.0                  | -37.0                 |              |
|                 | 3424.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5137.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -9.1                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.9                 | -13.0                  | -40.9                 |              |
|                 | 6849.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.2                        | H                          | 3.0                     | 44.9                         | 1.0                    | -50.1                 | -13.0                  | -37.1                 |              |
|                 | <b>Mid Ch, 1732.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3465.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.8                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5197.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | V                          | 3.0                     | 45.8                         | 1.0                    | -53.7                 | -13.0                  | -40.7                 |              |
|                 | 6930.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                        | V                          | 3.0                     | 44.8                         | 1.0                    | -49.7                 | -13.0                  | -36.7                 |              |
|                 | 3465.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.9                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 5197.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.8                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.6                 | -13.0                  | -40.6                 |              |
|                 | 6930.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.1                        | H                          | 3.0                     | 44.8                         | 1.0                    | -49.9                 | -13.0                  | -36.9                 |              |
|                 | <b>High Ch, 1752.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |                             |                            |                         |                              |                        |                       |                        |                       |              |
|                 | 3505.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | V                          | 3.0                     | 45.7                         | 1.0                    | -53.4                 | -13.0                  | -40.4                 |              |
|                 | 5257.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.8                        | V                          | 3.0                     | 45.8                         | 1.0                    | -53.5                 | -13.0                  | -40.5                 |              |
|                 | 7010.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                        | V                          | 3.0                     | 44.8                         | 1.0                    | -49.6                 | -13.0                  | -36.6                 |              |
|                 | 3505.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.6                        | H                          | 3.0                     | 45.7                         | 1.0                    | -53.4                 | -13.0                  | -40.4                 |              |
|                 | 5257.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.7                        | H                          | 3.0                     | 45.8                         | 1.0                    | -53.5                 | -13.0                  | -40.5                 |              |
|                 | 7010.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.0                        | H                          | 3.0                     | 44.8                         | 1.0                    | -49.8                 | -13.0                  | -36.8                 |              |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |                            |                         |                              |                        |                       |                        |                       |              |

**WCDMA Band 2**

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                    |                 |                      |                |               |                |               |       |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------------|----------------|---------------|----------------|---------------|-------|
| Band 2<br>REL99 | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/19/2022<br/> <b>Test Engineer:</b> 19568<br/> <b>Configuration:</b> EUT / AC Adapter, Z-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> Rel99 Band 2 Harmonics<br/> <b>Test Votage:</b> AC 120 V, 60 Hz </p> |                     |                    |                 |                      |                |               |                |               |       |
|                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                 | <b>Low Ch, 1852.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3704.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | V                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5557.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.2                | V                  | 3.0             | 45.7                 | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                 | 7409.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.8                | V                  | 3.0             | 44.6                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                 | 3704.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | H                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5557.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.1                | H                  | 3.0             | 45.7                 | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                 | 7409.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.8                | H                  | 3.0             | 44.6                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                 | <b>Mid Ch, 1880MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | V                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.8                | V                  | 3.0             | 45.7                 | 1.0            | -52.5         | -13.0          | -39.5         |       |
|                 | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.8                | V                  | 3.0             | 44.5                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                 | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | H                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.7                | H                  | 3.0             | 45.7                 | 1.0            | -52.5         | -13.0          | -39.5         |       |
|                 | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -6.0                | H                  | 3.0             | 44.5                 | 1.0            | -49.5         | -13.0          | -36.5         |       |
|                 | <b>High Ch, 1907.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3815.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.8               | V                  | 3.0             | 45.8                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                 | 5722.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.8                | V                  | 3.0             | 45.7                 | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                 | 7630.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.5                | V                  | 3.0             | 44.4                 | 1.0            | -48.9         | -13.0          | -35.9         |       |
|                 | 3815.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | H                  | 3.0             | 45.8                 | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                 | 5722.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.0                | H                  | 3.0             | 45.7                 | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                 | 7630.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.5                | H                  | 3.0             | 44.4                 | 1.0            | -48.9         | -13.0          | -35.9         |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                    |                 |                      |                |               |                |               |       |
| Band 2<br>HSDPA | <p style="text-align: center;"><b>UL Verification Services, Inc.</b><br/><b>Above 1GHz High Frequency Substitution Measurement</b></p> <p> <b>Company:</b> Samsung<br/> <b>Project #:</b> 4790541052<br/> <b>Date:</b> 9/19/2022<br/> <b>Test Engineer:</b> 19568<br/> <b>Configuration:</b> EUT / AC Adapter, Z-Position<br/> <b>Location:</b> Chamber 1<br/> <b>Mode:</b> HSDPA Band 2 Harmonics<br/> <b>Test Votage:</b> AC 120 V, 60 Hz </p> |                     |                    |                 |                      |                |               |                |               |       |
|                 | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                         | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                 | <b>Low Ch, 1852.4MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3704.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -11.0               | V                  | 3.0             | 45.8                 | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                 | 5557.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.2                | V                  | 3.0             | 45.7                 | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                 | 7409.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.7                | V                  | 3.0             | 44.6                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                 | 3704.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | H                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5557.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -8.1                | H                  | 3.0             | 45.7                 | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                 | 7409.60                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                | H                  | 3.0             | 44.6                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                 | <b>Mid Ch, 1880MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.8               | V                  | 3.0             | 45.8                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                 | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.8                | V                  | 3.0             | 45.7                 | 1.0            | -52.5         | -13.0          | -39.5         |       |
|                 | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                | V                  | 3.0             | 44.5                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                 | 3760.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.9               | H                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5640.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.8                | H                  | 3.0             | 45.7                 | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                 | 7520.00                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.9                | H                  | 3.0             | 44.5                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                 | <b>High Ch, 1907.6MHz</b>                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                    |                 |                      |                |               |                |               |       |
|                 | 3815.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.8               | V                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5722.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.8                | V                  | 3.0             | 45.7                 | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                 | 7630.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.5                | V                  | 3.0             | 44.4                 | 1.0            | -48.9         | -13.0          | -35.9         |       |
|                 | 3815.20                                                                                                                                                                                                                                                                                                                                                                                                                                          | -10.8               | H                  | 3.0             | 45.8                 | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                 | 5722.80                                                                                                                                                                                                                                                                                                                                                                                                                                          | -7.9                | H                  | 3.0             | 45.7                 | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                 | 7630.40                                                                                                                                                                                                                                                                                                                                                                                                                                          | -5.5                | H                  | 3.0             | 44.4                 | 1.0            | -48.9         | -13.0          | -35.9         |       |
|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                    |                 |                      |                |               |                |               |       |

**LTE Band 4 ULCA**

|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| LTE<br>Band 4<br>ULCA<br><br>Sub2 ANT<br><br>10MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                            |                     |                    |                 |                |                |               |                |               |       |
|                                                                | Company: Samsung<br>Project #: 4790541052<br>Date: 2022-11-09<br>Test Engineer: 26087<br>Configuration: EUT / AC Adapter, Y-Position<br>Location: Chamber 1<br>Mode: LTE_QPSK Band 4 Harmonics, 10MHz Bandwidth<br>Test Votage: AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                                | f<br>MHz                                                                                                                                                                                                                                        | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                                | Low Ch, 1715MHz                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                | 3430.00                                                                                                                                                                                                                                         | -8.4                | V                  | 3.0             | 46.4           | 1.0            | -53.9         | -13.0          | -40.9         |       |
|                                                                | 5145.00                                                                                                                                                                                                                                         | -8.7                | V                  | 3.0             | 46.1           | 1.0            | -53.8         | -13.0          | -40.8         |       |
|                                                                | 6860.00                                                                                                                                                                                                                                         | -5.4                | V                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                | 3430.00                                                                                                                                                                                                                                         | -8.4                | H                  | 3.0             | 46.4           | 1.0            | -53.8         | -13.0          | -40.8         |       |
|                                                                | 5145.00                                                                                                                                                                                                                                         | -8.6                | H                  | 3.0             | 46.1           | 1.0            | -53.8         | -13.0          | -40.8         |       |
|                                                                | 6860.00                                                                                                                                                                                                                                         | -5.6                | H                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                | Mid Ch, 1732.5MHz                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                                                | 3465.00                                                                                                                                                                                                                                         | -8.4                | V                  | 3.0             | 46.4           | 1.0            | -53.7         | -13.0          | -40.7         |       |
|                                                                | 5197.50                                                                                                                                                                                                                                         | -8.4                | V                  | 3.0             | 46.1           | 1.0            | -53.5         | -13.0          | -40.5         |       |
|                                                                | 6930.00                                                                                                                                                                                                                                         | -5.3                | V                  | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                | 3465.00                                                                                                                                                                                                                                         | -8.2                | H                  | 3.0             | 46.4           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                                                | 5197.50                                                                                                                                                                                                                                         | -8.3                | H                  | 3.0             | 46.1           | 1.0            | -53.4         | -13.0          | -40.4         |       |
|                                                                | 6930.00                                                                                                                                                                                                                                         | -5.5                | H                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                | High Ch, 1750MHz                                                                                                                                                                                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                                                | 3500.00                                                                                                                                                                                                                                         | -8.3                | V                  | 3.0             | 46.3           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                                                | 5250.00                                                                                                                                                                                                                                         | -8.3                | V                  | 3.0             | 46.0           | 1.0            | -53.3         | -13.0          | -40.3         |       |
|                                                                | 7000.00                                                                                                                                                                                                                                         | -5.4                | V                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                | 3500.00                                                                                                                                                                                                                                         | -8.0                | H                  | 3.0             | 46.3           | 1.0            | -53.3         | -13.0          | -40.3         |       |
|                                                                | 5250.00                                                                                                                                                                                                                                         | -8.2                | H                  | 3.0             | 46.0           | 1.0            | -53.2         | -13.0          | -40.2         |       |
|                                                                | 7000.00                                                                                                                                                                                                                                         | -5.5                | H                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                |                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |

**LTE Band 5**

|                                        | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                                                                   |                     |                    |                 |                      |                |               |                |               |       |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------------|----------------|---------------|----------------|---------------|-------|
|                                        | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 9/15/2022<br><b>Test Engineer:</b> 25770<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> LTE_QPSK Band 5 Harmonics, 10MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                      |                |               |                |               |       |
|                                        | f<br>MHz                                                                                                                                                                                                                                                                                               | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| LTE<br>Band 5<br><br>10MHz<br><br>QPSK | <b>Low Ch, 829MHz</b>                                                                                                                                                                                                                                                                                  |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 1658.00                                                                                                                                                                                                                                                                                                | -15.6               | V                  | 3.0             | 45.6                 | 1.0            | -60.2         | -13.0          | -47.2         |       |
|                                        | 2487.00                                                                                                                                                                                                                                                                                                | -12.3               | V                  | 3.0             | 45.5                 | 1.0            | -56.7         | -13.0          | -43.7         |       |
|                                        | 3316.00                                                                                                                                                                                                                                                                                                | -9.9                | V                  | 3.0             | 45.7                 | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                                        | 1658.00                                                                                                                                                                                                                                                                                                | -16.5               | H                  | 3.0             | 45.6                 | 1.0            | -61.1         | -13.0          | -48.1         |       |
|                                        | 2487.00                                                                                                                                                                                                                                                                                                | -12.7               | H                  | 3.0             | 45.5                 | 1.0            | -57.1         | -13.0          | -44.1         |       |
|                                        | 3316.00                                                                                                                                                                                                                                                                                                | -9.7                | H                  | 3.0             | 45.7                 | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                                        | <b>Mid Ch, 836.5MHz</b>                                                                                                                                                                                                                                                                                |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 1673.00                                                                                                                                                                                                                                                                                                | -15.6               | V                  | 3.0             | 45.6                 | 1.0            | -60.2         | -13.0          | -47.2         |       |
|                                        | 2509.50                                                                                                                                                                                                                                                                                                | -12.2               | V                  | 3.0             | 45.5                 | 1.0            | -56.6         | -13.0          | -43.6         |       |
|                                        | 3346.00                                                                                                                                                                                                                                                                                                | -9.7                | V                  | 3.0             | 45.7                 | 1.0            | -54.4         | -13.0          | -41.4         |       |
|                                        | 1673.00                                                                                                                                                                                                                                                                                                | -16.4               | H                  | 3.0             | 45.6                 | 1.0            | -61.0         | -13.0          | -48.0         |       |
|                                        | 2509.50                                                                                                                                                                                                                                                                                                | -12.6               | H                  | 3.0             | 45.5                 | 1.0            | -57.0         | -13.0          | -44.0         |       |
|                                        | 3346.00                                                                                                                                                                                                                                                                                                | -9.7                | H                  | 3.0             | 45.7                 | 1.0            | -54.3         | -13.0          | -41.3         |       |
|                                        | <b>High Ch, 844MHz</b>                                                                                                                                                                                                                                                                                 |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 1688.00                                                                                                                                                                                                                                                                                                | -15.5               | V                  | 3.0             | 45.6                 | 1.0            | -60.1         | -13.0          | -47.1         |       |
|                                        | 2532.00                                                                                                                                                                                                                                                                                                | -12.2               | V                  | 3.0             | 45.5                 | 1.0            | -56.7         | -13.0          | -43.7         |       |
|                                        | 3376.00                                                                                                                                                                                                                                                                                                | -9.5                | V                  | 3.0             | 45.7                 | 1.0            | -54.2         | -13.0          | -41.2         |       |
|                                        | 1688.00                                                                                                                                                                                                                                                                                                | -16.4               | H                  | 3.0             | 45.6                 | 1.0            | -61.0         | -13.0          | -48.0         |       |
|                                        | 2532.00                                                                                                                                                                                                                                                                                                | -12.7               | H                  | 3.0             | 45.5                 | 1.0            | -57.1         | -13.0          | -44.1         |       |
|                                        | 3376.00                                                                                                                                                                                                                                                                                                | -9.5                | H                  | 3.0             | 45.7                 | 1.0            | -54.2         | -13.0          | -41.2         |       |
|                                        |                                                                                                                                                                                                                                                                                                        |                     |                    |                 |                      |                |               |                |               |       |
|                                        |                                                                                                                                                                                                                                                                                                        |                     |                    |                 |                      |                |               |                |               |       |

**LTE Band 12**

| LTE<br>Band 12<br><br>5MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                           |                     |                    |                 |                |                |               |                |               |       |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                                        | Company: Samsung<br>Project #: 4790541052<br>Date: 9/20/2022<br>Test Engineer: 25770<br>Configuration: EUT / AC Adapter, X-Position<br>Location: Chamber 1<br>Mode: LTE_QPSK Band 12 Harmonics, 5MHz Bandwidth<br>Test Votage: AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                        | f<br>MHz                                                                                                                                                                                                                                       | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                        | Low Ch, 701.5MHz                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                        | 1403.00                                                                                                                                                                                                                                        | -16.9               | V                  | 3.0             | 45.8           | 1.0            | -61.7         | -13.0          | -48.7         |       |
|                                        | 2104.50                                                                                                                                                                                                                                        | -13.5               | V                  | 3.0             | 45.4           | 1.0            | -57.9         | -13.0          | -44.9         |       |
|                                        | 2806.00                                                                                                                                                                                                                                        | -11.2               | V                  | 3.0             | 45.5           | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                                        | 1403.00                                                                                                                                                                                                                                        | -16.8               | H                  | 3.0             | 45.8           | 1.0            | -61.6         | -13.0          | -48.6         |       |
|                                        | 2104.50                                                                                                                                                                                                                                        | -14.5               | H                  | 3.0             | 45.4           | 1.0            | -58.8         | -13.0          | -45.8         |       |
|                                        | 2806.00                                                                                                                                                                                                                                        | -11.4               | H                  | 3.0             | 45.5           | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                                        | Mid Ch, 707.5MHz                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                        | 1415.00                                                                                                                                                                                                                                        | -16.9               | V                  | 3.0             | 45.8           | 1.0            | -61.7         | -13.0          | -48.7         |       |
|                                        | 2122.50                                                                                                                                                                                                                                        | -13.7               | V                  | 3.0             | 45.4           | 1.0            | -58.0         | -13.0          | -45.0         |       |
|                                        | 2830.00                                                                                                                                                                                                                                        | -11.2               | V                  | 3.0             | 45.5           | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                                        | 1415.00                                                                                                                                                                                                                                        | -16.3               | H                  | 3.0             | 45.8           | 1.0            | -61.2         | -13.0          | -48.2         |       |
|                                        | 2122.50                                                                                                                                                                                                                                        | -14.2               | H                  | 3.0             | 45.4           | 1.0            | -58.6         | -13.0          | -45.6         |       |
|                                        | 2830.00                                                                                                                                                                                                                                        | -11.3               | H                  | 3.0             | 45.5           | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                                        | High Ch, 713.5MHz                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                        | 1427.00                                                                                                                                                                                                                                        | -16.7               | V                  | 3.0             | 45.8           | 1.0            | -61.5         | -13.0          | -48.5         |       |
|                                        | 2140.50                                                                                                                                                                                                                                        | -13.4               | V                  | 3.0             | 45.4           | 1.0            | -57.8         | -13.0          | -44.8         |       |
|                                        | 2854.00                                                                                                                                                                                                                                        | -11.1               | V                  | 3.0             | 45.5           | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                                        | 1427.00                                                                                                                                                                                                                                        | -17.5               | H                  | 3.0             | 45.8           | 1.0            | -62.3         | -13.0          | -49.3         |       |
|                                        | 2140.50                                                                                                                                                                                                                                        | -14.3               | H                  | 3.0             | 45.4           | 1.0            | -58.7         | -13.0          | -45.7         |       |
|                                        | 2854.00                                                                                                                                                                                                                                        | -11.2               | H                  | 3.0             | 45.5           | 1.0            | -55.7         | -13.0          | -42.7         |       |



**LTE Band 13**

| <div>LTE<br/>Band 13</div> <div>5MHz</div> <div>QPSK</div> | <div>UL Verification Services, Inc.</div> <div>Above 1GHz High Frequency Substitution Measurement</div> <div> <div>Company: Samsung</div> <div>Project #: 4790541052</div> <div>Date: 2022-09-16</div> <div>Test Engineer: 25770</div> <div>Configuration: EUT / AC Adapter, Z-Position</div> <div>Location: Chamber 1</div> <div>Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth</div> <div>Test Votage: AC 120 V, 60 Hz</div> </div> |                     |                    |                 |                |                |               |                |               |       |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                                                            | f<br>MHz                                                                                                                                                                                                                                                                                                                                                                                                                                | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                            | Low Ch, 779.5MHz                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                    |                 |                |                |               |                |               |       |
|                                                            | 1559.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -16.0               | V                  | 3.0             | 45.7           | 1.0            | -60.7         | -40.0          | -20.7         |       |
|                                                            | 2338.50                                                                                                                                                                                                                                                                                                                                                                                                                                 | -12.5               | V                  | 3.0             | 45.4           | 1.0            | -56.9         | -13.0          | -43.9         |       |
|                                                            | 3118.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.3               | V                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |
|                                                            | 1559.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -16.9               | H                  | 3.0             | 45.7           | 1.0            | -61.6         | -40.0          | -21.6         |       |
|                                                            | 2338.50                                                                                                                                                                                                                                                                                                                                                                                                                                 | -13.1               | H                  | 3.0             | 45.4           | 1.0            | -57.5         | -13.0          | -44.5         |       |
|                                                            | 3118.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.3               | H                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |
|                                                            | Mid Ch, 782MHz                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                    |                 |                |                |               |                |               |       |
|                                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -15.9               | V                  | 3.0             | 45.7           | 1.0            | -60.6         | -40.0          | -20.6         |       |
|                                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -12.5               | V                  | 3.0             | 45.4           | 1.0            | -56.9         | -13.0          | -43.9         |       |
|                                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.3               | V                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |
|                                                            | 1564.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -17.0               | H                  | 3.0             | 45.7           | 1.0            | -61.7         | -40.0          | -21.7         |       |
|                                                            | 2346.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -13.1               | H                  | 3.0             | 45.4           | 1.0            | -57.5         | -13.0          | -44.5         |       |
|                                                            | 3128.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.4               | H                  | 3.0             | 45.6           | 1.0            | -55.0         | -13.0          | -42.0         |       |
|                                                            | High Ch, 784.5MHz                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                    |                 |                |                |               |                |               |       |
|                                                            | 1569.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -16.0               | V                  | 3.0             | 45.7           | 1.0            | -60.7         | -40.0          | -20.7         |       |
|                                                            | 2353.50                                                                                                                                                                                                                                                                                                                                                                                                                                 | -12.5               | V                  | 3.0             | 45.4           | 1.0            | -56.9         | -13.0          | -43.9         |       |
|                                                            | 3138.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.2               | V                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |
|                                                            | 1569.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -16.9               | H                  | 3.0             | 45.7           | 1.0            | -61.5         | -40.0          | -21.5         |       |
|                                                            | 2353.50                                                                                                                                                                                                                                                                                                                                                                                                                                 | -13.1               | H                  | 3.0             | 45.4           | 1.0            | -57.6         | -13.0          | -44.6         |       |
|                                                            | 3138.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | -10.2               | H                  | 3.0             | 45.6           | 1.0            | -54.9         | -13.0          | -41.9         |       |

**LTE Band 25**

| LTE<br>Band 25<br><br>5MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                           |                     |                    |                 |                      |                |               |                |               |       |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------------|----------------|---------------|----------------|---------------|-------|
|                                        | Company: Samsung<br>Project #: 4790541052<br>Date: 9/21/2022<br>Test Engineer: 25546<br>Configuration: EUT / AC Adapter, X-Position<br>Location: Chamber 1<br>Mode: LTE_QPSK Band 25 Harmonics, 5MHz Bandwidth<br>Test Votage: AC 120 V, 60 Hz |                     |                    |                 |                      |                |               |                |               |       |
|                                        | f<br>MHz                                                                                                                                                                                                                                       | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                        | <b>Low Ch, 1852.5MHz</b>                                                                                                                                                                                                                       |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 3705.00                                                                                                                                                                                                                                        | -11.1               | V                  | 3.0             | 45.8                 | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                                        | 5557.50                                                                                                                                                                                                                                        | -8.0                | V                  | 3.0             | 45.7                 | 1.0            | -52.8         | -13.0          | -39.8         |       |
|                                        | 7410.00                                                                                                                                                                                                                                        | -5.8                | V                  | 3.0             | 44.6                 | 1.0            | -49.3         | -13.0          | -36.3         |       |
|                                        | 3705.00                                                                                                                                                                                                                                        | -11.1               | H                  | 3.0             | 45.8                 | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                                        | 5557.50                                                                                                                                                                                                                                        | -8.0                | H                  | 3.0             | 45.7                 | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                                        | 7410.00                                                                                                                                                                                                                                        | -5.8                | H                  | 3.0             | 44.6                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                        | <b>Mid Ch, 1882.5MHz</b>                                                                                                                                                                                                                       |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 3765.00                                                                                                                                                                                                                                        | -10.8               | V                  | 3.0             | 45.8                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                                        | 5647.50                                                                                                                                                                                                                                        | -7.9                | V                  | 3.0             | 45.7                 | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                                        | 7530.00                                                                                                                                                                                                                                        | -5.9                | V                  | 3.0             | 44.5                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                        | 3765.00                                                                                                                                                                                                                                        | -10.8               | H                  | 3.0             | 45.8                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                                        | 5647.50                                                                                                                                                                                                                                        | -7.9                | H                  | 3.0             | 45.7                 | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                                        | 7530.00                                                                                                                                                                                                                                        | -5.9                | H                  | 3.0             | 44.5                 | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                                        | <b>High Ch, 1912.5MHz</b>                                                                                                                                                                                                                      |                     |                    |                 |                      |                |               |                |               |       |
|                                        | 3825.00                                                                                                                                                                                                                                        | -10.7               | V                  | 3.0             | 45.9                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                                        | 5737.50                                                                                                                                                                                                                                        | -7.9                | V                  | 3.0             | 45.7                 | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                                        | 7650.00                                                                                                                                                                                                                                        | -5.7                | V                  | 3.0             | 44.4                 | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                                        | 3825.00                                                                                                                                                                                                                                        | -10.8               | H                  | 3.0             | 45.9                 | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                                        | 5737.50                                                                                                                                                                                                                                        | -7.9                | H                  | 3.0             | 45.7                 | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                                        | 7650.00                                                                                                                                                                                                                                        | -5.8                | H                  | 3.0             | 44.4                 | 1.0            | -49.2         | -13.0          | -36.2         |       |

**LTE Band 26 (Part 90)**

|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|------------------------|-----------------------|-----------------------|----------------------|-----------------------|----------------------|--------------|
| LTE<br>Band 26<br><br>5MHz<br><br>QPSK | <b>UL Verification Services, Inc.</b><br><b>Above 1GHz High Frequency Substitution Measurement</b>                                                                                                                                                                                                      |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-09-27<br><b>Test Engineer:</b> 25770<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> LTE_QPSK Band 26 Harmonics, 5MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        | <b>f</b><br>MHz                                                                                                                                                                                                                                                                                         | <b>SG reading</b><br>(dBm) | <b>Ant. Pol.</b><br>(H/V) | <b>Distance</b><br>(m) | <b>Preamp</b><br>(dB) | <b>Filter</b><br>(dB) | <b>EIRP</b><br>(dBm) | <b>Limit</b><br>(dBm) | <b>Delta</b><br>(dB) | <b>Notes</b> |
|                                        | Low Ch, 816.5MHz                                                                                                                                                                                                                                                                                        |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        | 1633.00                                                                                                                                                                                                                                                                                                 | -14.7                      | V                         | 3.0                    | 46.4                  | 1.0                   | -60.1                | -13.0                 | -47.1                |              |
|                                        | 2449.50                                                                                                                                                                                                                                                                                                 | -11.5                      | V                         | 3.0                    | 46.9                  | 1.0                   | -57.4                | -13.0                 | -44.4                |              |
|                                        | 3266.00                                                                                                                                                                                                                                                                                                 | -9.3                       | V                         | 3.0                    | 46.7                  | 1.0                   | -55.0                | -13.0                 | -42.0                |              |
|                                        | 1633.00                                                                                                                                                                                                                                                                                                 | -15.7                      | H                         | 3.0                    | 46.4                  | 1.0                   | -61.2                | -13.0                 | -48.2                |              |
|                                        | 2449.50                                                                                                                                                                                                                                                                                                 | -12.0                      | H                         | 3.0                    | 46.9                  | 1.0                   | -57.9                | -13.0                 | -44.9                |              |
|                                        | 3266.00                                                                                                                                                                                                                                                                                                 | -9.4                       | H                         | 3.0                    | 46.7                  | 1.0                   | -55.1                | -13.0                 | -42.1                |              |
|                                        | Mid Ch, 821.5MHz                                                                                                                                                                                                                                                                                        |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        | 1643.00                                                                                                                                                                                                                                                                                                 | -14.5                      | V                         | 3.0                    | 46.4                  | 1.0                   | -59.9                | -13.0                 | -46.9                |              |
|                                        | 2464.50                                                                                                                                                                                                                                                                                                 | -11.4                      | V                         | 3.0                    | 46.9                  | 1.0                   | -57.3                | -13.0                 | -44.3                |              |
|                                        | 3286.00                                                                                                                                                                                                                                                                                                 | -9.4                       | V                         | 3.0                    | 46.6                  | 1.0                   | -55.0                | -13.0                 | -42.0                |              |
|                                        | 1643.00                                                                                                                                                                                                                                                                                                 | -15.7                      | H                         | 3.0                    | 46.4                  | 1.0                   | -61.1                | -13.0                 | -48.1                |              |
|                                        | 2464.50                                                                                                                                                                                                                                                                                                 | -12.1                      | H                         | 3.0                    | 46.9                  | 1.0                   | -57.9                | -13.0                 | -44.9                |              |
|                                        | 3286.00                                                                                                                                                                                                                                                                                                 | -9.4                       | H                         | 3.0                    | 46.6                  | 1.0                   | -55.0                | -13.0                 | -42.0                |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                        |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |

**LTE Band 26 (Straddle)**

|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------|------------------------|-----------------------|-----------------------|----------------------|-----------------------|----------------------|--------------|
| LTE<br>Band 26<br><br>10 MHz<br><br>QPSK | <b>UL Verification Services, Inc.</b><br><b>Above 1GHz High Frequency Substitution Measurement</b>                                                                                                                                                                                                      |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 9/27/2022<br><b>Test Engineer:</b> 25770<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> LTE_QPSK Band 26 Harmonics, 10MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          | <b>f</b><br>MHz                                                                                                                                                                                                                                                                                         | <b>SG reading</b><br>(dBm) | <b>Ant. Pol.</b><br>(H/V) | <b>Distance</b><br>(m) | <b>Preamp</b><br>(dB) | <b>Filter</b><br>(dB) | <b>EIRP</b><br>(dBm) | <b>Limit</b><br>(dBm) | <b>Delta</b><br>(dB) | <b>Notes</b> |
|                                          | Straddle Ch, 824MHz                                                                                                                                                                                                                                                                                     |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          | 1648.00                                                                                                                                                                                                                                                                                                 | -15.9                      | V                         | 3.0                    | 45.6                  | 1.0                   | -60.5                | -13.0                 | -47.5                |              |
|                                          | 2472.00                                                                                                                                                                                                                                                                                                 | -12.1                      | V                         | 3.0                    | 45.4                  | 1.0                   | -56.5                | -13.0                 | -43.5                |              |
|                                          | 3296.00                                                                                                                                                                                                                                                                                                 | -9.9                       | V                         | 3.0                    | 45.7                  | 1.0                   | -54.6                | -13.0                 | -41.6                |              |
|                                          | 1648.00                                                                                                                                                                                                                                                                                                 | -16.8                      | H                         | 3.0                    | 45.6                  | 1.0                   | -61.4                | -13.0                 | -48.4                |              |
|                                          | 2472.00                                                                                                                                                                                                                                                                                                 | -12.4                      | H                         | 3.0                    | 45.4                  | 1.0                   | -56.9                | -13.0                 | -43.9                |              |
|                                          | 3296.00                                                                                                                                                                                                                                                                                                 | -10.0                      | H                         | 3.0                    | 45.7                  | 1.0                   | -54.7                | -13.0                 | -41.7                |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |
|                                          |                                                                                                                                                                                                                                                                                                         |                            |                           |                        |                       |                       |                      |                       |                      |              |

**LTE Band 26 (Part 22)**

|                                        |                                                                                                                                                                                                                                                                                                         |                   |                  |                 |               |               |              |              |              |              |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|-----------------|---------------|---------------|--------------|--------------|--------------|--------------|
| LTE<br>Band 26<br><br>3MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                                                                    |                   |                  |                 |               |               |              |              |              |              |
|                                        | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-09-27<br><b>Test Engineer:</b> 25770<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> LTE_QPSK Band 26 Harmonics, 3MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                   |                  |                 |               |               |              |              |              |              |
|                                        | <b>f</b>                                                                                                                                                                                                                                                                                                | <b>SG reading</b> | <b>Ant. Pol.</b> | <b>Distance</b> | <b>Preamp</b> | <b>Filter</b> | <b>EIRP</b>  | <b>Limit</b> | <b>Delta</b> | <b>Notes</b> |
|                                        | <b>MHz</b>                                                                                                                                                                                                                                                                                              | <b>(dBm)</b>      | <b>(H/V)</b>     | <b>(m)</b>      | <b>(dB)</b>   | <b>(dB)</b>   | <b>(dBm)</b> | <b>(dBm)</b> | <b>(dB)</b>  |              |
|                                        | Low Ch, 825.5MHz                                                                                                                                                                                                                                                                                        |                   |                  |                 |               |               |              |              |              |              |
|                                        | 1651.00                                                                                                                                                                                                                                                                                                 | -15.8             | V                | 3.0             | 45.6          | 1.0           | -60.4        | -13.0        | -47.4        |              |
|                                        | 2476.50                                                                                                                                                                                                                                                                                                 | -12.3             | V                | 3.0             | 45.4          | 1.0           | -56.8        | -13.0        | -43.8        |              |
|                                        | 3302.00                                                                                                                                                                                                                                                                                                 | -10.0             | V                | 3.0             | 45.7          | 1.0           | -54.7        | -13.0        | -41.7        |              |
|                                        | 1651.00                                                                                                                                                                                                                                                                                                 | -16.7             | H                | 3.0             | 45.6          | 1.0           | -61.4        | -13.0        | -48.4        |              |
|                                        | 2476.50                                                                                                                                                                                                                                                                                                 | -12.9             | H                | 3.0             | 45.4          | 1.0           | -57.3        | -13.0        | -44.3        |              |
|                                        | 3302.00                                                                                                                                                                                                                                                                                                 | -9.9              | H                | 3.0             | 45.7          | 1.0           | -54.6        | -13.0        | -41.6        |              |
|                                        | Mid Ch, 831.5MHz                                                                                                                                                                                                                                                                                        |                   |                  |                 |               |               |              |              |              |              |
|                                        | 1663.00                                                                                                                                                                                                                                                                                                 | -15.7             | V                | 3.0             | 45.6          | 1.0           | -60.4        | -13.0        | -47.4        |              |
|                                        | 2494.50                                                                                                                                                                                                                                                                                                 | -12.3             | V                | 3.0             | 45.5          | 1.0           | -56.8        | -13.0        | -43.8        |              |
|                                        | 3326.00                                                                                                                                                                                                                                                                                                 | -9.8              | V                | 3.0             | 45.7          | 1.0           | -54.4        | -13.0        | -41.4        |              |
|                                        | 1663.00                                                                                                                                                                                                                                                                                                 | -16.5             | H                | 3.0             | 45.6          | 1.0           | -61.1        | -13.0        | -48.1        |              |
|                                        | 2494.50                                                                                                                                                                                                                                                                                                 | -12.9             | H                | 3.0             | 45.5          | 1.0           | -57.3        | -13.0        | -44.3        |              |
|                                        | 3326.00                                                                                                                                                                                                                                                                                                 | -10.0             | H                | 3.0             | 45.7          | 1.0           | -54.7        | -13.0        | -41.7        |              |
|                                        | High Ch, 847.5MHz                                                                                                                                                                                                                                                                                       |                   |                  |                 |               |               |              |              |              |              |
|                                        | 1695.00                                                                                                                                                                                                                                                                                                 | -15.6             | V                | 3.0             | 45.6          | 1.0           | -60.2        | -13.0        | -47.2        |              |
|                                        | 2542.50                                                                                                                                                                                                                                                                                                 | -12.1             | V                | 3.0             | 45.5          | 1.0           | -56.6        | -13.0        | -43.6        |              |
|                                        | 3390.00                                                                                                                                                                                                                                                                                                 | -9.6              | V                | 3.0             | 45.7          | 1.0           | -54.3        | -13.0        | -41.3        |              |
|                                        | 1695.00                                                                                                                                                                                                                                                                                                 | -16.5             | H                | 3.0             | 45.6          | 1.0           | -61.1        | -13.0        | -48.1        |              |
|                                        | 2542.50                                                                                                                                                                                                                                                                                                 | -12.7             | H                | 3.0             | 45.5          | 1.0           | -57.2        | -13.0        | -44.2        |              |
|                                        | 3390.00                                                                                                                                                                                                                                                                                                 | -9.5              | H                | 3.0             | 45.7          | 1.0           | -54.2        | -13.0        | -41.2        |              |

**LTE Band 41(PC2)**

| LTE<br>Band<br>41(PC2)<br><br>5 MHz<br><br>QPSK | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                                                 | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 9/27/2022<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> LTE_QPSK Band 41 Harmonics, 5MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                 | f<br>MHz                                                                                                                                                                                                                                                                                               | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                 | <b>Low Ch, 2498.5MHz</b>                                                                                                                                                                                                                                                                               |                     |                    |                 |                |                |               |                |               |       |
|                                                 | 4997.00                                                                                                                                                                                                                                                                                                | -17.0               | V                  | 3.0             | 45.8           | 1.0            | -61.8         | -25.0          | -36.8         |       |
|                                                 | 7495.50                                                                                                                                                                                                                                                                                                | -15.2               | V                  | 3.0             | 44.5           | 1.0            | -58.7         | -25.0          | -33.7         |       |
|                                                 | 9994.00                                                                                                                                                                                                                                                                                                | -10.8               | V                  | 3.0             | 42.6           | 1.0            | -52.4         | -25.0          | -27.4         |       |
|                                                 | 4997.00                                                                                                                                                                                                                                                                                                | -16.8               | H                  | 3.0             | 45.8           | 1.0            | -61.6         | -25.0          | -36.6         |       |
|                                                 | 7495.50                                                                                                                                                                                                                                                                                                | -15.1               | H                  | 3.0             | 44.5           | 1.0            | -58.6         | -25.0          | -33.6         |       |
|                                                 | 9994.00                                                                                                                                                                                                                                                                                                | -11.0               | H                  | 3.0             | 42.6           | 1.0            | -52.6         | -25.0          | -27.6         |       |
|                                                 | <b>Mid Ch, 2593MHz</b>                                                                                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                 | 5186.00                                                                                                                                                                                                                                                                                                | -16.3               | V                  | 3.0             | 45.8           | 1.0            | -61.1         | -25.0          | -36.1         |       |
|                                                 | 7779.00                                                                                                                                                                                                                                                                                                | -15.5               | V                  | 3.0             | 44.4           | 1.0            | -58.8         | -25.0          | -33.8         |       |
|                                                 | 10372.00                                                                                                                                                                                                                                                                                               | -10.8               | V                  | 3.0             | 42.7           | 1.0            | -52.5         | -25.0          | -27.5         |       |
|                                                 | 5186.00                                                                                                                                                                                                                                                                                                | -16.8               | H                  | 3.0             | 45.8           | 1.0            | -61.6         | -25.0          | -36.6         |       |
|                                                 | 7779.00                                                                                                                                                                                                                                                                                                | -15.6               | H                  | 3.0             | 44.4           | 1.0            | -59.0         | -25.0          | -34.0         |       |
|                                                 | 10372.00                                                                                                                                                                                                                                                                                               | -10.6               | H                  | 3.0             | 42.7           | 1.0            | -52.3         | -25.0          | -27.3         |       |
|                                                 | <b>High Ch, 2687.5MHz</b>                                                                                                                                                                                                                                                                              |                     |                    |                 |                |                |               |                |               |       |
|                                                 | 5375.00                                                                                                                                                                                                                                                                                                | -11.1               | V                  | 3.0             | 45.8           | 1.0            | -55.9         | -25.0          | -30.9         |       |
|                                                 | 8062.50                                                                                                                                                                                                                                                                                                | -15.3               | V                  | 3.0             | 44.2           | 1.0            | -58.5         | -25.0          | -33.5         |       |
|                                                 | 10750.00                                                                                                                                                                                                                                                                                               | -10.2               | V                  | 3.0             | 42.8           | 1.0            | -52.0         | -25.0          | -27.0         |       |
|                                                 | 5375.00                                                                                                                                                                                                                                                                                                | -9.1                | H                  | 3.0             | 45.8           | 1.0            | -53.9         | -25.0          | -28.9         |       |
|                                                 | 8062.50                                                                                                                                                                                                                                                                                                | -15.7               | H                  | 3.0             | 44.2           | 1.0            | -58.9         | -25.0          | -33.9         |       |
|                                                 | 10750.00                                                                                                                                                                                                                                                                                               | -10.3               | H                  | 3.0             | 42.8           | 1.0            | -52.1         | -25.0          | -27.1         |       |

**LTE Band 66**

LTE

Band 66

5MHz

QPSK

UL Verification Services, Inc.

Above 1GHz High Frequency Substitution Measurement

Company: Samsung

Project #: 4790541052

Date: 2022-09-16

Test Engineer: 19568

Configuration: EUT / AC Adapter, Y-Position

Location: Chamber 1

Mode: LTE\_QPSK Band 66 Harmonics, 5MHz Bandwidth

Test Votage: AC 120 V, 60 Hz

| f<br>MHz           | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|--------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Low Ch, 1712.5MHz  |                     |                    |                 |                |                |               |                |               |       |
| 3425.00            | -9.1                | V                  | 3.0             | 45.7           | 1.0            | -53.8         | -13.0          | -40.8         |       |
| 5137.50            | -9.2                | V                  | 3.0             | 45.8           | 1.0            | -54.0         | -13.0          | -41.0         |       |
| 6850.00            | -6.1                | V                  | 3.0             | 44.9           | 1.0            | -50.0         | -13.0          | -37.0         |       |
| 3425.00            | -9.1                | H                  | 3.0             | 45.7           | 1.0            | -53.8         | -13.0          | -40.8         |       |
| 5137.50            | -9.1                | H                  | 3.0             | 45.8           | 1.0            | -53.9         | -13.0          | -40.9         |       |
| 6850.00            | -6.2                | H                  | 3.0             | 44.9           | 1.0            | -50.1         | -13.0          | -37.1         |       |
| Mid Ch, 1745MHz    |                     |                    |                 |                |                |               |                |               |       |
| 3490.00            | -8.7                | V                  | 3.0             | 45.7           | 1.0            | -53.5         | -13.0          | -40.5         |       |
| 5235.00            | -8.7                | V                  | 3.0             | 45.8           | 1.0            | -53.5         | -13.0          | -40.5         |       |
| 6980.00            | -6.0                | V                  | 3.0             | 44.8           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| 3490.00            | -8.8                | H                  | 3.0             | 45.7           | 1.0            | -53.5         | -13.0          | -40.5         |       |
| 5235.00            | -8.7                | H                  | 3.0             | 45.8           | 1.0            | -53.4         | -13.0          | -40.4         |       |
| 6980.00            | -5.8                | H                  | 3.0             | 44.8           | 1.0            | -49.6         | -13.0          | -36.6         |       |
| High Ch, 1777.5MHz |                     |                    |                 |                |                |               |                |               |       |
| 3555.00            | -8.4                | V                  | 3.0             | 45.8           | 1.0            | -53.1         | -13.0          | -40.1         |       |
| 5332.50            | -8.4                | V                  | 3.0             | 45.8           | 1.0            | -53.2         | -13.0          | -40.2         |       |
| 7110.00            | -5.9                | V                  | 3.0             | 44.7           | 1.0            | -49.6         | -13.0          | -36.6         |       |
| 3555.00            | -8.5                | H                  | 3.0             | 45.8           | 1.0            | -53.2         | -13.0          | -40.2         |       |
| 5332.50            | -8.4                | H                  | 3.0             | 45.8           | 1.0            | -53.1         | -13.0          | -40.1         |       |
| 7110.00            | -5.9                | H                  | 3.0             | 44.7           | 1.0            | -49.6         | -13.0          | -36.6         |       |
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**NR Band n5**

|                   | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                      |                |               |                |               |       |
|-------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------------|----------------|---------------|----------------|---------------|-------|
|                   | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamplifier<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| 15MHz<br><br>QPSK | Company: Samsung                                                                     |                     |                    |                 |                      |                |               |                |               |       |
|                   | Project #: 4790541052                                                                |                     |                    |                 |                      |                |               |                |               |       |
|                   | Date: 9/26/2022                                                                      |                     |                    |                 |                      |                |               |                |               |       |
|                   | Test Engineer: 51078                                                                 |                     |                    |                 |                      |                |               |                |               |       |
|                   | Configuration: EUT / AC Adapter, Z-Position                                          |                     |                    |                 |                      |                |               |                |               |       |
|                   | Location: Chamber 1                                                                  |                     |                    |                 |                      |                |               |                |               |       |
|                   | Mode: 5G NR_QPSK NR n5 Harmonics, 15MHz Bandwidth                                    |                     |                    |                 |                      |                |               |                |               |       |
|                   | Test Voltage: AC 120 V, 60 Hz                                                        |                     |                    |                 |                      |                |               |                |               |       |
|                   | Low Ch, 831.5MHz                                                                     |                     |                    |                 |                      |                |               |                |               |       |
|                   | 1663.00                                                                              | -15.6               | V                  | 3.0             | 45.6                 | 1.0            | -60.2         | -13.0          | -47.2         |       |
|                   | 2494.50                                                                              | -12.3               | V                  | 3.0             | 45.5                 | 1.0            | -56.8         | -13.0          | -43.8         |       |
|                   | 3326.00                                                                              | -9.8                | V                  | 3.0             | 45.7                 | 1.0            | -54.5         | -13.0          | -41.5         |       |
|                   | 1663.00                                                                              | -16.7               | H                  | 3.0             | 45.6                 | 1.0            | -61.4         | -13.0          | -48.4         |       |
|                   | 2494.50                                                                              | -12.8               | H                  | 3.0             | 45.5                 | 1.0            | -57.3         | -13.0          | -44.3         |       |
|                   | 3326.00                                                                              | -9.9                | H                  | 3.0             | 45.7                 | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                   | Mid Ch, 836.5MHz                                                                     |                     |                    |                 |                      |                |               |                |               |       |
|                   | 1673.00                                                                              | -15.7               | V                  | 3.0             | 45.6                 | 1.0            | -60.3         | -13.0          | -47.3         |       |
|                   | 2509.50                                                                              | -12.3               | V                  | 3.0             | 45.5                 | 1.0            | -56.8         | -13.0          | -43.8         |       |
|                   | 3346.00                                                                              | -9.6                | V                  | 3.0             | 45.7                 | 1.0            | -54.3         | -13.0          | -41.3         |       |
|                   | 1673.00                                                                              | -16.6               | H                  | 3.0             | 45.6                 | 1.0            | -61.2         | -13.0          | -48.2         |       |
|                   | 2509.50                                                                              | -12.8               | H                  | 3.0             | 45.5                 | 1.0            | -57.2         | -13.0          | -44.2         |       |
|                   | 3346.00                                                                              | -9.8                | H                  | 3.0             | 45.7                 | 1.0            | -54.5         | -13.0          | -41.5         |       |
|                   | High Ch, 841.5MHz                                                                    |                     |                    |                 |                      |                |               |                |               |       |
|                   | 1683.00                                                                              | -15.5               | V                  | 3.0             | 45.6                 | 1.0            | -60.1         | -13.0          | -47.1         |       |
|                   | 2524.50                                                                              | -12.1               | V                  | 3.0             | 45.5                 | 1.0            | -56.6         | -13.0          | -43.6         |       |
|                   | 3366.00                                                                              | -9.6                | V                  | 3.0             | 45.7                 | 1.0            | -54.3         | -13.0          | -41.3         |       |
|                   | 1683.00                                                                              | -16.5               | H                  | 3.0             | 45.6                 | 1.0            | -61.1         | -13.0          | -48.1         |       |
|                   | 2524.50                                                                              | -12.6               | H                  | 3.0             | 45.5                 | 1.0            | -57.1         | -13.0          | -44.1         |       |
|                   | 3366.00                                                                              | -9.6                | H                  | 3.0             | 45.7                 | 1.0            | -54.3         | -13.0          | -41.3         |       |

**NR Band n25**

|                  | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                  | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| 5MHz<br><br>QPSK | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                  | Project #: 4790541052                                                                |                     |                    |                 |                |                |               |                |               |       |
|                  | Date: 9/16/2022                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                  | Test Engineer: 19568                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                  | Configuration: EUT / AC Adapter, X-Position                                          |                     |                    |                 |                |                |               |                |               |       |
|                  | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                  | Mode: 5G NR_QPSK NR n25 Harmonics, 5MHz Bandwidth                                    |                     |                    |                 |                |                |               |                |               |       |
|                  | Test Voltage: AC 120 V, 60 Hz                                                        |                     |                    |                 |                |                |               |                |               |       |
|                  | Low Ch, 1852.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                  | 3705.00                                                                              | -11.1               | V                  | 3.0             | 45.8           | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                  | 5557.50                                                                              | -8.1                | V                  | 3.0             | 45.7           | 1.0            | -52.9         | -13.0          | -39.9         |       |
|                  | 7410.00                                                                              | -5.7                | V                  | 3.0             | 44.6           | 1.0            | -49.2         | -13.0          | -36.2         |       |
|                  | 3705.00                                                                              | -11.1               | H                  | 3.0             | 45.8           | 1.0            | -55.9         | -13.0          | -42.9         |       |
|                  | 5557.50                                                                              | -7.9                | H                  | 3.0             | 45.7           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                  | 7410.00                                                                              | -5.8                | H                  | 3.0             | 44.6           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                  | Mid Ch, 1882.5MHz                                                                    |                     |                    |                 |                |                |               |                |               |       |
|                  | 3765.00                                                                              | -10.8               | V                  | 3.0             | 45.8           | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                  | 5647.50                                                                              | -7.9                | V                  | 3.0             | 45.7           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                  | 7530.00                                                                              | -5.9                | V                  | 3.0             | 44.5           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                  | 3765.00                                                                              | -10.8               | H                  | 3.0             | 45.8           | 1.0            | -55.6         | -13.0          | -42.6         |       |
|                  | 5647.50                                                                              | -7.8                | H                  | 3.0             | 45.7           | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                  | 7530.00                                                                              | -6.0                | H                  | 3.0             | 44.5           | 1.0            | -49.4         | -13.0          | -36.4         |       |
|                  | High Ch, 1912.5MHz                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                  | 3825.00                                                                              | -10.8               | V                  | 3.0             | 45.9           | 1.0            | -55.7         | -13.0          | -42.7         |       |
|                  | 5737.50                                                                              | -7.9                | V                  | 3.0             | 45.7           | 1.0            | -52.6         | -13.0          | -39.6         |       |
|                  | 7650.00                                                                              | -5.7                | V                  | 3.0             | 44.4           | 1.0            | -49.1         | -13.0          | -36.1         |       |
|                  | 3825.00                                                                              | -10.9               | H                  | 3.0             | 45.9           | 1.0            | -55.8         | -13.0          | -42.8         |       |
|                  | 5737.50                                                                              | -7.9                | H                  | 3.0             | 45.7           | 1.0            | -52.7         | -13.0          | -39.7         |       |
|                  | 7650.00                                                                              | -5.8                | H                  | 3.0             | 44.4           | 1.0            | -49.2         | -13.0          | -36.2         |       |



**NR Band n41**

| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                                              |                 |                |                |               |                |               |       |
|--------------------------------------------------------------------------------------|---------------------|----------------------------------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| Company:                                                                             |                     | Samsung                                      |                 |                |                |               |                |               |       |
| Project #:                                                                           |                     | 4790541052                                   |                 |                |                |               |                |               |       |
| Date:                                                                                |                     | 2022-10-26                                   |                 |                |                |               |                |               |       |
| Test Engineer:                                                                       |                     | 51078                                        |                 |                |                |               |                |               |       |
| Configuration:                                                                       |                     | EUT                                          |                 |                |                |               |                |               |       |
| Location:                                                                            |                     | Chamber 1                                    |                 |                |                |               |                |               |       |
| Mode:                                                                                |                     | 5G NR_BPSK NR n41 Harmonics, 50MHz Bandwidth |                 |                |                |               |                |               |       |
| Test Voltage:                                                                        |                     | AC 120 V, 60 Hz                              |                 |                |                |               |                |               |       |
| f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V)                           | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| Low Ch, 2521.01MHz                                                                   |                     |                                              |                 |                |                |               |                |               |       |
| 5042.02                                                                              | 0.0                 | V                                            | 3.0             | 46.2           | 1.0            | -45.2         | -25.0          | -20.2         |       |
| 7563.03                                                                              | 0.0                 | V                                            | 3.0             | 45.5           | 1.0            | -44.5         | -25.0          | -19.5         |       |
| 10084.04                                                                             | 0.0                 | V                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 12605.05                                                                             | 0.0                 | V                                            | 3.0             | 47.1           | 1.0            | -46.1         | -25.0          | -21.1         |       |
| 15126.06                                                                             | 0.0                 | V                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| 5042.02                                                                              | 0.0                 | H                                            | 3.0             | 46.2           | 1.0            | -45.2         | -25.0          | -20.2         |       |
| 7563.03                                                                              | 0.0                 | H                                            | 3.0             | 45.5           | 1.0            | -44.5         | -25.0          | -19.5         |       |
| 10084.04                                                                             | 0.0                 | H                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 12605.05                                                                             | 0.0                 | H                                            | 3.0             | 47.1           | 1.0            | -46.1         | -25.0          | -21.1         |       |
| 15126.06                                                                             | 0.0                 | H                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| Mid Ch, 2592.99MHz                                                                   |                     |                                              |                 |                |                |               |                |               |       |
| 5185.98                                                                              | 0.0                 | V                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| 7778.97                                                                              | 0.0                 | V                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 10371.96                                                                             | 0.0                 | V                                            | 3.0             | 45.9           | 1.0            | -44.9         | -25.0          | -19.9         |       |
| 12964.95                                                                             | 0.0                 | V                                            | 3.0             | 46.9           | 1.0            | -45.9         | -25.0          | -20.9         |       |
| 15557.94                                                                             | 0.0                 | V                                            | 3.0             | 45.9           | 1.0            | -44.9         | -25.0          | -19.9         |       |
| 5185.98                                                                              | 0.0                 | H                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| 7778.97                                                                              | 0.0                 | H                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 10371.96                                                                             | 0.0                 | H                                            | 3.0             | 45.9           | 1.0            | -44.9         | -25.0          | -19.9         |       |
| 12964.95                                                                             | 0.0                 | H                                            | 3.0             | 46.9           | 1.0            | -45.9         | -25.0          | -20.9         |       |
| 15557.94                                                                             | 0.0                 | H                                            | 3.0             | 45.9           | 1.0            | -44.9         | -25.0          | -19.9         |       |
| High Ch, 2665MHz                                                                     |                     |                                              |                 |                |                |               |                |               |       |
| 5330.00                                                                              | 0.0                 | V                                            | 3.0             | 46.0           | 1.0            | -45.0         | -25.0          | -20.0         |       |
| 7995.00                                                                              | 0.0                 | V                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 10660.00                                                                             | 0.0                 | V                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| 13325.00                                                                             | 0.0                 | V                                            | 3.0             | 46.8           | 1.0            | -45.8         | -25.0          | -20.8         |       |
| 15990.00                                                                             | 0.0                 | V                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 5330.00                                                                              | 0.0                 | H                                            | 3.0             | 46.0           | 1.0            | -45.0         | -25.0          | -20.0         |       |
| 7995.00                                                                              | 0.0                 | H                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |
| 10660.00                                                                             | 0.0                 | H                                            | 3.0             | 46.1           | 1.0            | -45.1         | -25.0          | -20.1         |       |
| 13325.00                                                                             | 0.0                 | H                                            | 3.0             | 46.8           | 1.0            | -45.8         | -25.0          | -20.8         |       |
| 15990.00                                                                             | 0.0                 | H                                            | 3.0             | 45.6           | 1.0            | -44.6         | -25.0          | -19.6         |       |

NR n41  
50MHz  
BPSK

| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                                                                                                                                                                                                                                                                                                    |                  |                 |              |             |             |            |             |            |
|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|--------------|-------------|-------------|------------|-------------|------------|
| NR n41<br>SRS1<br>10MHz                                                              | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-10-06<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> 5G NR_n41 Harmonics, 10MHz Bandwidth<br><b>Test Voltage:</b> AC 120 V, 60 Hz |                  |                 |              |             |             |            |             |            |
|                                                                                      | f MHz                                                                                                                                                                                                                                                                                              | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) |
|                                                                                      | Low Ch, 2501.01MHz                                                                                                                                                                                                                                                                                 |                  |                 |              |             |             |            |             |            |
|                                                                                      | 5002.02                                                                                                                                                                                                                                                                                            | -16.8            | V               | 3.0          | 46.2        | 1.0         | -62.0      | -25.0       | -37.0      |
|                                                                                      | 7503.03                                                                                                                                                                                                                                                                                            | -15.1            | V               | 3.0          | 45.5        | 1.0         | -59.7      | -25.0       | -34.7      |
|                                                                                      | 10004.04                                                                                                                                                                                                                                                                                           | -11.2            | V               | 3.0          | 45.6        | 1.0         | -55.7      | -25.0       | -30.7      |
|                                                                                      | 12505.05                                                                                                                                                                                                                                                                                           | -9.3             | V               | 3.0          | 47.1        | 1.0         | -55.4      | -25.0       | -30.4      |
|                                                                                      | 15006.06                                                                                                                                                                                                                                                                                           | -9.9             | V               | 3.0          | 46.1        | 1.0         | -55.1      | -25.0       | -30.1      |
|                                                                                      | 5002.02                                                                                                                                                                                                                                                                                            | -16.7            | H               | 3.0          | 46.2        | 1.0         | -61.9      | -25.0       | -36.9      |
|                                                                                      | 7503.03                                                                                                                                                                                                                                                                                            | -15.2            | H               | 3.0          | 45.5        | 1.0         | -59.7      | -25.0       | -34.7      |
|                                                                                      | 10004.04                                                                                                                                                                                                                                                                                           | -11.5            | H               | 3.0          | 45.6        | 1.0         | -56.0      | -25.0       | -31.0      |
|                                                                                      | 12505.05                                                                                                                                                                                                                                                                                           | -8.3             | H               | 3.0          | 47.1        | 1.0         | -54.4      | -25.0       | -29.4      |
|                                                                                      | 15006.06                                                                                                                                                                                                                                                                                           | -9.9             | H               | 3.0          | 46.1        | 1.0         | -55.0      | -25.0       | -30.0      |
|                                                                                      | Mid Ch, 2592.99MHz                                                                                                                                                                                                                                                                                 |                  |                 |              |             |             |            |             |            |
|                                                                                      | 5185.98                                                                                                                                                                                                                                                                                            | -16.7            | V               | 3.0          | 46.1        | 1.0         | -61.8      | -25.0       | -36.8      |
|                                                                                      | 7778.97                                                                                                                                                                                                                                                                                            | -14.1            | V               | 3.0          | 45.6        | 1.0         | -58.7      | -25.0       | -33.7      |
|                                                                                      | 10371.96                                                                                                                                                                                                                                                                                           | -10.1            | V               | 3.0          | 45.9        | 1.0         | -55.0      | -25.0       | -30.0      |
|                                                                                      | 12964.95                                                                                                                                                                                                                                                                                           | -8.2             | V               | 3.0          | 46.9        | 1.0         | -54.1      | -25.0       | -29.1      |
|                                                                                      | 15557.94                                                                                                                                                                                                                                                                                           | -9.5             | V               | 3.0          | 45.9        | 1.0         | -54.3      | -25.0       | -29.3      |
|                                                                                      | 5185.98                                                                                                                                                                                                                                                                                            | -16.5            | H               | 3.0          | 46.1        | 1.0         | -61.6      | -25.0       | -36.6      |
|                                                                                      | 7778.97                                                                                                                                                                                                                                                                                            | -12.9            | H               | 3.0          | 45.6        | 1.0         | -57.5      | -25.0       | -32.5      |
|                                                                                      | 10371.96                                                                                                                                                                                                                                                                                           | -9.1             | H               | 3.0          | 45.9        | 1.0         | -54.0      | -25.0       | -29.0      |
|                                                                                      | 12964.95                                                                                                                                                                                                                                                                                           | -8.4             | H               | 3.0          | 46.9        | 1.0         | -54.3      | -25.0       | -29.3      |
|                                                                                      | 15557.94                                                                                                                                                                                                                                                                                           | -9.4             | H               | 3.0          | 45.9        | 1.0         | -54.3      | -25.0       | -29.3      |
|                                                                                      | High Ch, 2685MHz                                                                                                                                                                                                                                                                                   |                  |                 |              |             |             |            |             |            |
|                                                                                      | 5370.00                                                                                                                                                                                                                                                                                            | -16.2            | V               | 3.0          | 45.9        | 1.0         | -61.1      | -25.0       | -36.1      |
|                                                                                      | 8055.00                                                                                                                                                                                                                                                                                            | -14.2            | V               | 3.0          | 45.6        | 1.0         | -58.7      | -25.0       | -33.7      |
|                                                                                      | 10740.00                                                                                                                                                                                                                                                                                           | -9.6             | V               | 3.0          | 46.2        | 1.0         | -54.8      | -25.0       | -29.8      |
|                                                                                      | 13425.00                                                                                                                                                                                                                                                                                           | -8.8             | V               | 3.0          | 46.7        | 1.0         | -54.6      | -25.0       | -29.6      |
|                                                                                      | 16110.00                                                                                                                                                                                                                                                                                           | -9.1             | V               | 3.0          | 45.6        | 1.0         | -53.6      | -25.0       | -28.6      |
|                                                                                      | 5370.00                                                                                                                                                                                                                                                                                            | -16.2            | H               | 3.0          | 45.9        | 1.0         | -61.1      | -25.0       | -36.1      |
|                                                                                      | 8055.00                                                                                                                                                                                                                                                                                            | -13.6            | H               | 3.0          | 45.6        | 1.0         | -58.2      | -25.0       | -33.2      |
|                                                                                      | 10740.00                                                                                                                                                                                                                                                                                           | -7.4             | H               | 3.0          | 46.2        | 1.0         | -52.5      | -25.0       | -27.5      |
|                                                                                      | 13425.00                                                                                                                                                                                                                                                                                           | -8.1             | H               | 3.0          | 46.7        | 1.0         | -53.9      | -25.0       | -28.9      |
|                                                                                      | 16110.00                                                                                                                                                                                                                                                                                           | -9.1             | H               | 3.0          | 45.6        | 1.0         | -53.7      | -25.0       | -28.7      |

|                                 |                                                                                      |       |                                      |                    |                 |                |                |               |                |               |       |
|---------------------------------|--------------------------------------------------------------------------------------|-------|--------------------------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| NR n41<br><br>SRS2<br><br>30MHz | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |       |                                      |                    |                 |                |                |               |                |               |       |
|                                 | Company:                                                                             |       | Samsung                              |                    |                 |                |                |               |                |               |       |
|                                 | Project #:                                                                           |       | 4790541052                           |                    |                 |                |                |               |                |               |       |
|                                 | Date:                                                                                |       | 2022-10-07                           |                    |                 |                |                |               |                |               |       |
|                                 | Test Engineer:                                                                       |       | 51078                                |                    |                 |                |                |               |                |               |       |
|                                 | Configuration:                                                                       |       | EUT, Y-Position                      |                    |                 |                |                |               |                |               |       |
|                                 | Location:                                                                            |       | Chamber 1                            |                    |                 |                |                |               |                |               |       |
|                                 | Mode:                                                                                |       | 5G NR_n41 Harmonics, 30MHz Bandwidth |                    |                 |                |                |               |                |               |       |
|                                 | Test Votage:                                                                         |       | AC 120 V, 60 Hz                      |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                             |       | SG reading<br>(dBm)                  | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                 | Low Ch, 2511MHz                                                                      |       |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5022.00                                                                              |       | -12.1                                | V                  | 3.0             | 46.2           | 1.0            | -57.3         | -25.0          | -32.3         |       |
|                                 | 7533.00                                                                              |       | -14.2                                | V                  | 3.0             | 45.5           | 1.0            | -58.8         | -25.0          | -33.8         |       |
|                                 | 10044.00                                                                             |       | -10.8                                | V                  | 3.0             | 45.6           | 1.0            | -55.4         | -25.0          | -30.4         |       |
|                                 | 12555.00                                                                             |       | -8.4                                 | V                  | 3.0             | 47.1           | 1.0            | -54.4         | -25.0          | -29.4         |       |
|                                 | 15066.00                                                                             |       | -9.8                                 | V                  | 3.0             | 46.1           | 1.0            | -54.9         | -25.0          | -29.9         |       |
|                                 | 5022.00                                                                              |       | -12.7                                | H                  | 3.0             | 46.2           | 1.0            | -58.0         | -25.0          | -33.0         |       |
|                                 | 7533.00                                                                              |       | -13.5                                | H                  | 3.0             | 45.5           | 1.0            | -58.0         | -25.0          | -33.0         |       |
|                                 | 10044.00                                                                             |       | -10.9                                | H                  | 3.0             | 45.6           | 1.0            | -55.5         | -25.0          | -30.5         |       |
|                                 | 12555.00                                                                             |       | -8.8                                 | H                  | 3.0             | 47.1           | 1.0            | -54.9         | -25.0          | -29.9         |       |
|                                 | 15066.00                                                                             |       | -9.7                                 | H                  | 3.0             | 46.1           | 1.0            | -54.9         | -25.0          | -29.9         |       |
|                                 | Mid Ch, 2592.99MHz                                                                   |       |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5185.98                                                                              |       | -13.4                                | V                  | 3.0             | 46.1           | 1.0            | -58.5         | -25.0          | -33.5         |       |
|                                 | 7778.97                                                                              |       | -12.4                                | V                  | 3.0             | 45.6           | 1.0            | -56.9         | -25.0          | -31.9         |       |
|                                 | 10371.96                                                                             |       | -9.5                                 | V                  | 3.0             | 45.9           | 1.0            | -54.4         | -25.0          | -29.4         |       |
|                                 | 12964.95                                                                             |       | -8.6                                 | V                  | 3.0             | 46.9           | 1.0            | -54.5         | -25.0          | -29.5         |       |
|                                 | 15557.94                                                                             |       | -9.4                                 | V                  | 3.0             | 45.9           | 1.0            | -54.3         | -25.0          | -29.3         |       |
|                                 | 5185.98                                                                              |       | -15.0                                | H                  | 3.0             | 46.1           | 1.0            | -60.1         | -25.0          | -35.1         |       |
|                                 | 7778.97                                                                              |       | -13.7                                | H                  | 3.0             | 45.6           | 1.0            | -58.3         | -25.0          | -33.3         |       |
|                                 | 10371.96                                                                             |       | -10.4                                | H                  | 3.0             | 45.9           | 1.0            | -55.3         | -25.0          | -30.3         |       |
|                                 | 12964.95                                                                             |       | -8.5                                 | H                  | 3.0             | 46.9           | 1.0            | -54.4         | -25.0          | -29.4         |       |
|                                 | 15557.94                                                                             |       | -9.4                                 | H                  | 3.0             | 45.9           | 1.0            | -54.3         | -25.0          | -29.3         |       |
|                                 | High Ch, 2675MHz                                                                     |       |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5350.00                                                                              |       | -16.1                                | V                  | 3.0             | 45.9           | 1.0            | -61.0         | -25.0          | -36.0         |       |
|                                 | 8025.00                                                                              |       | -13.3                                | V                  | 3.0             | 45.6           | 1.0            | -57.9         | -25.0          | -32.9         |       |
| 10700.00                        |                                                                                      | -10.0 | V                                    | 3.0                | 46.2            | 1.0            | -55.1          | -25.0         | -30.1          |               |       |
| 13375.00                        |                                                                                      | -8.9  | V                                    | 3.0                | 46.8            | 1.0            | -54.7          | -25.0         | -29.7          |               |       |
| 16050.00                        |                                                                                      | -8.9  | V                                    | 3.0                | 45.6            | 1.0            | -53.5          | -25.0         | -28.5          |               |       |
| 5350.00                         |                                                                                      | -16.0 | H                                    | 3.0                | 45.9            | 1.0            | -61.0          | -25.0         | -36.0          |               |       |
| 8025.00                         |                                                                                      | -13.9 | H                                    | 3.0                | 45.6            | 1.0            | -58.5          | -25.0         | -33.5          |               |       |
| 10700.00                        |                                                                                      | -10.0 | H                                    | 3.0                | 46.2            | 1.0            | -55.2          | -25.0         | -30.2          |               |       |
| 13375.00                        |                                                                                      | -9.2  | H                                    | 3.0                | 46.8            | 1.0            | -55.0          | -25.0         | -30.0          |               |       |
| 16050.00                        |                                                                                      | -8.9  | H                                    | 3.0                | 45.6            | 1.0            | -53.5          | -25.0         | -28.5          |               |       |

|                                 |                                                                                      |      |                                      |                    |                 |                |                |               |                |               |       |
|---------------------------------|--------------------------------------------------------------------------------------|------|--------------------------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| NR n41<br><br>SRS3<br><br>40MHz | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |      |                                      |                    |                 |                |                |               |                |               |       |
|                                 | Company:                                                                             |      | Samsung                              |                    |                 |                |                |               |                |               |       |
|                                 | Project #:                                                                           |      | 4790541052                           |                    |                 |                |                |               |                |               |       |
|                                 | Date:                                                                                |      | 2022-10-11                           |                    |                 |                |                |               |                |               |       |
|                                 | Test Engineer:                                                                       |      | 25546                                |                    |                 |                |                |               |                |               |       |
|                                 | Configuration:                                                                       |      | EUT, Z-Position                      |                    |                 |                |                |               |                |               |       |
|                                 | Location:                                                                            |      | Chamber 1                            |                    |                 |                |                |               |                |               |       |
|                                 | Mode:                                                                                |      | 5G NR_n41 Harmonics, 40MHz Bandwidth |                    |                 |                |                |               |                |               |       |
|                                 | Test Votage:                                                                         |      | AC 120 V, 60 Hz                      |                    |                 |                |                |               |                |               |       |
|                                 | f<br>MHz                                                                             |      | SG reading<br>(dBm)                  | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                 | Low Ch, 2516.01MHz                                                                   |      |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5032.02                                                                              |      | -16.6                                | V                  | 3.0             | 46.2           | 1.0            | -61.8         | -25.0          | -36.8         |       |
|                                 | 7548.03                                                                              |      | -13.9                                | V                  | 3.0             | 45.5           | 1.0            | -58.5         | -25.0          | -33.5         |       |
|                                 | 10064.04                                                                             |      | -10.4                                | V                  | 3.0             | 45.6           | 1.0            | -55.0         | -25.0          | -30.0         |       |
|                                 | 12580.05                                                                             |      | -8.6                                 | V                  | 3.0             | 47.1           | 1.0            | -54.7         | -25.0          | -29.7         |       |
|                                 | 15096.06                                                                             |      | -9.7                                 | V                  | 3.0             | 46.1           | 1.0            | -54.8         | -25.0          | -29.8         |       |
|                                 | 5032.02                                                                              |      | -16.6                                | H                  | 3.0             | 46.2           | 1.0            | -61.8         | -25.0          | -36.8         |       |
|                                 | 7548.03                                                                              |      | -13.7                                | H                  | 3.0             | 45.5           | 1.0            | -58.3         | -25.0          | -33.3         |       |
|                                 | 10064.04                                                                             |      | -10.0                                | H                  | 3.0             | 45.6           | 1.0            | -54.6         | -25.0          | -29.6         |       |
|                                 | 12580.05                                                                             |      | -8.0                                 | H                  | 3.0             | 47.1           | 1.0            | -54.0         | -25.0          | -29.0         |       |
|                                 | 15096.06                                                                             |      | -9.6                                 | H                  | 3.0             | 46.1           | 1.0            | -54.7         | -25.0          | -29.7         |       |
|                                 | Mid Ch, 2592.99MHz                                                                   |      |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5185.98                                                                              |      | -16.6                                | V                  | 3.0             | 46.1           | 1.0            | -61.7         | -25.0          | -36.7         |       |
|                                 | 7778.97                                                                              |      | -13.4                                | V                  | 3.0             | 45.6           | 1.0            | -57.9         | -25.0          | -32.9         |       |
|                                 | 10371.96                                                                             |      | -10.3                                | V                  | 3.0             | 45.9           | 1.0            | -55.2         | -25.0          | -30.2         |       |
|                                 | 12964.95                                                                             |      | -8.7                                 | V                  | 3.0             | 46.9           | 1.0            | -54.6         | -25.0          | -29.6         |       |
|                                 | 15557.94                                                                             |      | -9.4                                 | V                  | 3.0             | 45.9           | 1.0            | -54.3         | -25.0          | -29.3         |       |
|                                 | 5185.98                                                                              |      | -16.4                                | H                  | 3.0             | 46.1           | 1.0            | -61.5         | -25.0          | -36.5         |       |
|                                 | 7778.97                                                                              |      | -12.1                                | H                  | 3.0             | 45.6           | 1.0            | -56.7         | -25.0          | -31.7         |       |
|                                 | 10371.96                                                                             |      | -8.8                                 | H                  | 3.0             | 45.9           | 1.0            | -53.7         | -25.0          | -28.7         |       |
|                                 | 12964.95                                                                             |      | -8.4                                 | H                  | 3.0             | 46.9           | 1.0            | -54.4         | -25.0          | -29.4         |       |
|                                 | 15557.94                                                                             |      | -9.4                                 | H                  | 3.0             | 45.9           | 1.0            | -54.3         | -25.0          | -29.3         |       |
|                                 | High Ch, 2670MHz                                                                     |      |                                      |                    |                 |                |                |               |                |               |       |
|                                 | 5340.00                                                                              |      | -16.2                                | V                  | 3.0             | 45.9           | 1.0            | -61.2         | -25.0          | -36.2         |       |
|                                 | 8010.00                                                                              |      | -14.1                                | V                  | 3.0             | 45.6           | 1.0            | -58.7         | -25.0          | -33.7         |       |
|                                 | 10680.00                                                                             |      | -9.1                                 | V                  | 3.0             | 46.1           | 1.0            | -54.2         | -25.0          | -29.2         |       |
|                                 | 13350.00                                                                             |      | -8.9                                 | V                  | 3.0             | 46.8           | 1.0            | -54.6         | -25.0          | -29.6         |       |
|                                 | 16020.00                                                                             |      | -8.9                                 | V                  | 3.0             | 45.6           | 1.0            | -53.6         | -25.0          | -28.6         |       |
|                                 | 5340.00                                                                              |      | -16.2                                | H                  | 3.0             | 45.9           | 1.0            | -61.2         | -25.0          | -36.2         |       |
|                                 | 8010.00                                                                              |      | -14.1                                | H                  | 3.0             | 45.6           | 1.0            | -58.7         | -25.0          | -33.7         |       |
|                                 | 10680.00                                                                             |      | -8.5                                 | H                  | 3.0             | 46.1           | 1.0            | -53.6         | -25.0          | -28.6         |       |
|                                 | 13350.00                                                                             |      | -8.1                                 | H                  | 3.0             | 46.8           | 1.0            | -53.8         | -25.0          | -28.8         |       |
| 16020.00                        |                                                                                      | -9.0 | H                                    | 3.0                | 45.6            | 1.0            | -53.6          | -25.0         | -28.6          |               |       |
|                                 |                                                                                      |      |                                      |                    |                 |                |                |               |                |               |       |

**NR Band n66**

| NR n66                                           | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                    |                 |                |                |               |                |               |       |
|--------------------------------------------------|--------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
|                                                  | f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| Main1<br>ANT<br><br>20 MHz<br><br>QPSK           | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Project #: 4790541052                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Date: 9/16/2022                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Test Engineer: 25546                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Configuration: EUT / AC Adapter, Y-Position                                          |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Mode: 5G NR_QPSK NR n66 Harmonics, 20MHz Bandwidth                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Test Voltage: AC 120 V, 60 Hz                                                        |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Low Ch, 1720MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3440.00                                                                              | -10.3               | V                  | 3.0             | 45.7           | 1.0            | -55.0         | -13.0          | -42.0         |       |
|                                                  | 5160.00                                                                              | -10.6               | V                  | 3.0             | 45.8           | 1.0            | -55.4         | -13.0          | -42.4         |       |
|                                                  | 6880.00                                                                              | -7.2                | V                  | 3.0             | 44.9           | 1.0            | -51.1         | -13.0          | -38.1         |       |
|                                                  | 3440.00                                                                              | -10.3               | H                  | 3.0             | 45.7           | 1.0            | -55.0         | -13.0          | -42.0         |       |
|                                                  | 5160.00                                                                              | -10.5               | H                  | 3.0             | 45.8           | 1.0            | -55.3         | -13.0          | -42.3         |       |
|                                                  | 6880.00                                                                              | -7.3                | H                  | 3.0             | 44.9           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                                  | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3490.00                                                                              | -10.1               | V                  | 3.0             | 45.7           | 1.0            | -54.8         | -13.0          | -41.8         |       |
|                                                  | 5235.00                                                                              | -10.0               | V                  | 3.0             | 45.8           | 1.0            | -54.8         | -13.0          | -41.8         |       |
|                                                  | 6980.00                                                                              | -7.4                | V                  | 3.0             | 44.8           | 1.0            | -51.2         | -13.0          | -38.2         |       |
|                                                  | 3490.00                                                                              | -10.1               | H                  | 3.0             | 45.7           | 1.0            | -54.8         | -13.0          | -41.8         |       |
|                                                  | 5235.00                                                                              | -10.0               | H                  | 3.0             | 45.8           | 1.0            | -54.8         | -13.0          | -41.8         |       |
|                                                  | 6980.00                                                                              | -7.5                | H                  | 3.0             | 44.8           | 1.0            | -51.3         | -13.0          | -38.3         |       |
|                                                  | High Ch, 1770MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3540.00                                                                              | -9.9                | V                  | 3.0             | 45.8           | 1.0            | -54.6         | -13.0          | -41.6         |       |
|                                                  | 5310.00                                                                              | -10.0               | V                  | 3.0             | 45.8           | 1.0            | -54.7         | -13.0          | -41.7         |       |
|                                                  | 7080.00                                                                              | -7.1                | V                  | 3.0             | 44.7           | 1.0            | -50.9         | -13.0          | -37.9         |       |
|                                                  | 3540.00                                                                              | -9.9                | H                  | 3.0             | 45.8           | 1.0            | -54.7         | -13.0          | -41.7         |       |
|                                                  | 5310.00                                                                              | -9.9                | H                  | 3.0             | 45.8           | 1.0            | -54.7         | -13.0          | -41.7         |       |
|                                                  | 7080.00                                                                              | -7.2                | H                  | 3.0             | 44.7           | 1.0            | -51.0         | -13.0          | -38.0         |       |
| NR n66<br><br>Sub2 ANT<br><br>10 MHz<br><br>QPSK | Company: Samsung                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Project #: 4790541052                                                                |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Date: 2022-10-19                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Test Engineer: 25546                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Configuration: EUT, Y-Position                                                       |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Location: Chamber 1                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Mode: 5G NR_QPSK NR n66 Harmonics, 10MHz Bandwidth                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Test Voltage: AC 120 V, 60 Hz                                                        |                     |                    |                 |                |                |               |                |               |       |
|                                                  | Low Ch, 1715MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3430.00                                                                              | -8.4                | V                  | 3.0             | 46.4           | 1.0            | -53.9         | -13.0          | -40.9         |       |
|                                                  | 5145.00                                                                              | -5.2                | V                  | 3.0             | 46.1           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                                  | 6860.00                                                                              | -5.5                | V                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                  | 3430.00                                                                              | -8.5                | H                  | 3.0             | 46.4           | 1.0            | -53.9         | -13.0          | -40.9         |       |
|                                                  | 5145.00                                                                              | -2.8                | H                  | 3.0             | 46.1           | 1.0            | -47.9         | -13.0          | -34.9         |       |
|                                                  | 6860.00                                                                              | -5.5                | H                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                  | Mid Ch, 1745MHz                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3490.00                                                                              | -8.2                | V                  | 3.0             | 46.3           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                                  | 5235.00                                                                              | -6.4                | V                  | 3.0             | 46.0           | 1.0            | -51.4         | -13.0          | -38.4         |       |
|                                                  | 6980.00                                                                              | -5.6                | V                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                  | 3490.00                                                                              | -8.2                | H                  | 3.0             | 46.3           | 1.0            | -53.6         | -13.0          | -40.6         |       |
|                                                  | 5235.00                                                                              | -3.2                | H                  | 3.0             | 46.0           | 1.0            | -48.2         | -13.0          | -35.2         |       |
|                                                  | 6980.00                                                                              | -5.6                | H                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                  | High Ch, 1775MHz                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                  | 3550.00                                                                              | -7.7                | V                  | 3.0             | 46.3           | 1.0            | -53.0         | -13.0          | -40.0         |       |
|                                                  | 5325.00                                                                              | -5.8                | V                  | 3.0             | 46.0           | 1.0            | -50.7         | -13.0          | -37.7         |       |
|                                                  | 7100.00                                                                              | -5.2                | V                  | 3.0             | 45.5           | 1.0            | -49.7         | -13.0          | -36.7         |       |
|                                                  | 3550.00                                                                              | -7.9                | H                  | 3.0             | 46.3           | 1.0            | -53.1         | -13.0          | -40.1         |       |
|                                                  | 5325.00                                                                              | -3.2                | H                  | 3.0             | 46.0           | 1.0            | -48.1         | -13.0          | -35.1         |       |
|                                                  | 7100.00                                                                              | -5.3                | H                  | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |

**NR Band n77 (3450 – 3550 MHz)**

| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                                                 |                 |                |                |               |                |               |       |
|--------------------------------------------------------------------------------------|---------------------|-------------------------------------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| <b>Company:</b>                                                                      |                     | Samsung                                         |                 |                |                |               |                |               |       |
| <b>Project #:</b>                                                                    |                     | 4790541052                                      |                 |                |                |               |                |               |       |
| <b>Date:</b>                                                                         |                     | 2022-10-27                                      |                 |                |                |               |                |               |       |
| <b>Test Engineer:</b>                                                                |                     | 51078                                           |                 |                |                |               |                |               |       |
| <b>Configuration:</b>                                                                |                     | EUT / AC Adapter, Z-Position                    |                 |                |                |               |                |               |       |
| <b>Location:</b>                                                                     |                     | Chamber 1                                       |                 |                |                |               |                |               |       |
| <b>Mode:</b>                                                                         |                     | 5G_NR_QPSK NR n77 LO Harmonics, 40MHz Bandwidth |                 |                |                |               |                |               |       |
| <b>Test Votage:</b>                                                                  |                     | AC 120 V, 60 Hz                                 |                 |                |                |               |                |               |       |
| f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V)                              | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| Low Ch, 3470MHz                                                                      |                     |                                                 |                 |                |                |               |                |               |       |
| 6940.02                                                                              | -2.3                | V                                               | 3.0             | 45.5           | 1.0            | -46.7         | -13.0          | -33.7         |       |
| 10410.03                                                                             | 7.7                 | V                                               | 3.0             | 45.9           | 1.0            | -37.2         | -13.0          | -24.2         |       |
| 13880.04                                                                             | 5.7                 | V                                               | 3.0             | 46.6           | 1.0            | -39.9         | -13.0          | -26.9         |       |
| 6940.02                                                                              | -2.5                | H                                               | 3.0             | 45.5           | 1.0            | -47.0         | -13.0          | -34.0         |       |
| 10410.03                                                                             | 7.5                 | H                                               | 3.0             | 45.9           | 1.0            | -37.4         | -13.0          | -24.4         |       |
| 13880.04                                                                             | 5.4                 | H                                               | 3.0             | 46.6           | 1.0            | -40.2         | -13.0          | -27.2         |       |
| Mid Ch, 3499.98MHz                                                                   |                     |                                                 |                 |                |                |               |                |               |       |
| 6999.96                                                                              | -2.8                | V                                               | 3.0             | 45.5           | 1.0            | -47.3         | -13.0          | -34.3         |       |
| 10499.94                                                                             | 7.2                 | V                                               | 3.0             | 46.0           | 1.0            | -37.8         | -13.0          | -24.8         |       |
| 13999.92                                                                             | 5.2                 | V                                               | 3.0             | 46.5           | 1.0            | -40.3         | -13.0          | -27.3         |       |
| 6999.96                                                                              | -2.9                | H                                               | 3.0             | 45.5           | 1.0            | -47.4         | -13.0          | -34.4         |       |
| 10499.94                                                                             | 6.8                 | H                                               | 3.0             | 46.0           | 1.0            | -38.2         | -13.0          | -25.2         |       |
| 13999.92                                                                             | 5.5                 | H                                               | 3.0             | 46.5           | 1.0            | -40.0         | -13.0          | -27.0         |       |
| High Ch, 3529.98MHz                                                                  |                     |                                                 |                 |                |                |               |                |               |       |
| 7059.96                                                                              | -2.6                | V                                               | 3.0             | 45.5           | 1.0            | -47.1         | -13.0          | -34.1         |       |
| 10589.94                                                                             | 8.8                 | V                                               | 3.0             | 46.1           | 1.0            | -36.3         | -13.0          | -23.3         |       |
| 14119.92                                                                             | 5.0                 | V                                               | 3.0             | 46.5           | 1.0            | -40.5         | -13.0          | -27.5         |       |
| 7059.96                                                                              | -2.8                | H                                               | 3.0             | 45.5           | 1.0            | -47.3         | -13.0          | -34.3         |       |
| 10589.94                                                                             | 7.0                 | H                                               | 3.0             | 46.1           | 1.0            | -38.1         | -13.0          | -25.1         |       |
| 14119.92                                                                             | 5.6                 | H                                               | 3.0             | 46.5           | 1.0            | -39.8         | -13.0          | -26.8         |       |
|                                                                                      |                     |                                                 |                 |                |                |               |                |               |       |
| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                     |                                                 |                 |                |                |               |                |               |       |
| <b>Company:</b>                                                                      |                     | Samsung                                         |                 |                |                |               |                |               |       |
| <b>Project #:</b>                                                                    |                     | 4790541052                                      |                 |                |                |               |                |               |       |
| <b>Date:</b>                                                                         |                     | 2022-10-06                                      |                 |                |                |               |                |               |       |
| <b>Test Engineer:</b>                                                                |                     | 51078                                           |                 |                |                |               |                |               |       |
| <b>Configuration:</b>                                                                |                     | EUT / AC Adapter, X-Position                    |                 |                |                |               |                |               |       |
| <b>Location:</b>                                                                     |                     | Chamber 1                                       |                 |                |                |               |                |               |       |
| <b>Mode:</b>                                                                         |                     | 5G NR_n77 LO Harmonics, 30MHz Bandwidth         |                 |                |                |               |                |               |       |
| <b>Test Votage:</b>                                                                  |                     | AC 120 V, 60 Hz                                 |                 |                |                |               |                |               |       |
| f<br>MHz                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V)                              | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
| Low Ch, 3465MHz                                                                      |                     |                                                 |                 |                |                |               |                |               |       |
| 6930.00                                                                              | -5.3                | V                                               | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| 10395.00                                                                             | 0.4                 | V                                               | 3.0             | 45.9           | 1.0            | -44.5         | -13.0          | -31.5         |       |
| 13860.00                                                                             | 2.6                 | V                                               | 3.0             | 46.6           | 1.0            | -42.9         | -13.0          | -29.9         |       |
| 6930.00                                                                              | -5.4                | H                                               | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| 10395.00                                                                             | 0.3                 | H                                               | 3.0             | 45.9           | 1.0            | -44.6         | -13.0          | -31.6         |       |
| 13860.00                                                                             | 2.8                 | H                                               | 3.0             | 46.6           | 1.0            | -42.8         | -13.0          | -29.8         |       |
| Mid Ch, 3499.98MHz                                                                   |                     |                                                 |                 |                |                |               |                |               |       |
| 6999.96                                                                              | -5.7                | V                                               | 3.0             | 45.5           | 1.0            | -50.2         | -13.0          | -37.2         |       |
| 10499.94                                                                             | 0.3                 | V                                               | 3.0             | 46.0           | 1.0            | -44.7         | -13.0          | -31.7         |       |
| 13999.92                                                                             | 2.6                 | V                                               | 3.0             | 46.5           | 1.0            | -42.9         | -13.0          | -29.9         |       |
| 6999.96                                                                              | -5.8                | H                                               | 3.0             | 45.5           | 1.0            | -50.3         | -13.0          | -37.3         |       |
| 10499.94                                                                             | 0.1                 | H                                               | 3.0             | 46.0           | 1.0            | -44.9         | -13.0          | -31.9         |       |
| 13999.92                                                                             | 2.8                 | H                                               | 3.0             | 46.5           | 1.0            | -42.7         | -13.0          | -29.7         |       |
| High Ch, 3535.02MHz                                                                  |                     |                                                 |                 |                |                |               |                |               |       |
| 7070.04                                                                              | -5.3                | V                                               | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| 10605.06                                                                             | 0.7                 | V                                               | 3.0             | 46.1           | 1.0            | -44.4         | -13.0          | -31.4         |       |
| 14140.08                                                                             | 2.7                 | V                                               | 3.0             | 46.5           | 1.0            | -42.8         | -13.0          | -29.8         |       |
| 7070.04                                                                              | -5.3                | H                                               | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
| 10605.06                                                                             | 0.6                 | H                                               | 3.0             | 46.1           | 1.0            | -44.5         | -13.0          | -31.5         |       |
| 14140.08                                                                             | 2.8                 | H                                               | 3.0             | 46.5           | 1.0            | -42.7         | -13.0          | -29.7         |       |
|                                                                                      |                     |                                                 |                 |                |                |               |                |               |       |

| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| NR n77<br><br>SRS2<br><br>30MHz                                                      | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-10-06<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> 5G NR_n77 LO Harmonics, 30MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | f<br>MHz                                                                                                                                                                                                                                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                                                      | Low Ch, 3465MHz                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 6930.00                                                                                                                                                                                                                                                                                              | -5.2                | V                  | 3.0             | 45.5           | 1.0            | -49.7         | -13.0          | -36.7         |       |
|                                                                                      | 10395.00                                                                                                                                                                                                                                                                                             | 0.4                 | V                  | 3.0             | 45.9           | 1.0            | -44.5         | -13.0          | -31.5         |       |
|                                                                                      | 13860.00                                                                                                                                                                                                                                                                                             | 2.6                 | V                  | 3.0             | 46.6           | 1.0            | -43.0         | -13.0          | -30.0         |       |
|                                                                                      | 6930.00                                                                                                                                                                                                                                                                                              | -5.4                | H                  | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                                      | 10395.00                                                                                                                                                                                                                                                                                             | 0.3                 | H                  | 3.0             | 45.9           | 1.0            | -44.6         | -13.0          | -31.6         |       |
|                                                                                      | 13860.00                                                                                                                                                                                                                                                                                             | 2.8                 | H                  | 3.0             | 46.6           | 1.0            | -42.8         | -13.0          | -29.8         |       |
|                                                                                      | Mid Ch, 3499.98MHz                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 6999.96                                                                                                                                                                                                                                                                                              | -5.7                | V                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 10499.94                                                                                                                                                                                                                                                                                             | 0.2                 | V                  | 3.0             | 46.0           | 1.0            | -44.7         | -13.0          | -31.7         |       |
|                                                                                      | 13999.92                                                                                                                                                                                                                                                                                             | 2.6                 | V                  | 3.0             | 46.5           | 1.0            | -42.9         | -13.0          | -29.9         |       |
|                                                                                      | 6999.96                                                                                                                                                                                                                                                                                              | -5.7                | H                  | 3.0             | 45.5           | 1.0            | -50.2         | -13.0          | -37.2         |       |
|                                                                                      | 10499.94                                                                                                                                                                                                                                                                                             | 0.2                 | H                  | 3.0             | 46.0           | 1.0            | -44.8         | -13.0          | -31.8         |       |
|                                                                                      | 13999.92                                                                                                                                                                                                                                                                                             | 2.8                 | H                  | 3.0             | 46.5           | 1.0            | -42.7         | -13.0          | -29.7         |       |
|                                                                                      | High Ch, 3535.02MHz                                                                                                                                                                                                                                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7070.04                                                                                                                                                                                                                                                                                              | -5.5                | V                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                                      | 10605.06                                                                                                                                                                                                                                                                                             | 0.5                 | V                  | 3.0             | 46.1           | 1.0            | -44.6         | -13.0          | -31.6         |       |
|                                                                                      | 14140.08                                                                                                                                                                                                                                                                                             | 2.6                 | V                  | 3.0             | 46.5           | 1.0            | -42.8         | -13.0          | -29.8         |       |
|                                                                                      | 7070.04                                                                                                                                                                                                                                                                                              | -5.6                | H                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 10605.06                                                                                                                                                                                                                                                                                             | 0.4                 | H                  | 3.0             | 46.1           | 1.0            | -44.6         | -13.0          | -31.6         |       |
|                                                                                      | 14140.08                                                                                                                                                                                                                                                                                             | 2.7                 | H                  | 3.0             | 46.5           | 1.0            | -42.8         | -13.0          | -29.8         |       |
| NR n77<br><br>SRS3<br><br>40 MHz                                                     | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-10-06<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Y-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> 5G NR_n77 LO Harmonics, 40MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | f<br>MHz                                                                                                                                                                                                                                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                                                      | Low Ch, 3470.01MHz                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 6940.02                                                                                                                                                                                                                                                                                              | -5.3                | V                  | 3.0             | 45.5           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                                      | 10410.03                                                                                                                                                                                                                                                                                             | 0.4                 | V                  | 3.0             | 45.9           | 1.0            | -44.5         | -13.0          | -31.5         |       |
|                                                                                      | 13880.04                                                                                                                                                                                                                                                                                             | 2.5                 | V                  | 3.0             | 46.6           | 1.0            | -43.0         | -13.0          | -30.0         |       |
|                                                                                      | 6940.02                                                                                                                                                                                                                                                                                              | -5.5                | H                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                                      | 10410.03                                                                                                                                                                                                                                                                                             | 0.4                 | H                  | 3.0             | 45.9           | 1.0            | -44.5         | -13.0          | -31.5         |       |
|                                                                                      | 13880.04                                                                                                                                                                                                                                                                                             | 2.7                 | H                  | 3.0             | 46.6           | 1.0            | -42.8         | -13.0          | -29.8         |       |
|                                                                                      | Mid Ch, 3499.98MHz                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 6999.96                                                                                                                                                                                                                                                                                              | -5.7                | V                  | 3.0             | 45.5           | 1.0            | -50.2         | -13.0          | -37.2         |       |
|                                                                                      | 10499.94                                                                                                                                                                                                                                                                                             | 0.2                 | V                  | 3.0             | 46.0           | 1.0            | -44.8         | -13.0          | -31.8         |       |
|                                                                                      | 13999.92                                                                                                                                                                                                                                                                                             | 2.7                 | V                  | 3.0             | 46.5           | 1.0            | -42.9         | -13.0          | -29.9         |       |
|                                                                                      | 6999.96                                                                                                                                                                                                                                                                                              | -5.8                | H                  | 3.0             | 45.5           | 1.0            | -50.3         | -13.0          | -37.3         |       |
|                                                                                      | 10499.94                                                                                                                                                                                                                                                                                             | 0.0                 | H                  | 3.0             | 46.0           | 1.0            | -44.9         | -13.0          | -31.9         |       |
|                                                                                      | 13999.92                                                                                                                                                                                                                                                                                             | 2.8                 | H                  | 3.0             | 46.5           | 1.0            | -42.8         | -13.0          | -29.8         |       |
|                                                                                      | High Ch, 3529.98MHz                                                                                                                                                                                                                                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7059.96                                                                                                                                                                                                                                                                                              | -5.6                | V                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 10589.94                                                                                                                                                                                                                                                                                             | 0.3                 | V                  | 3.0             | 46.1           | 1.0            | -44.7         | -13.0          | -31.7         |       |
|                                                                                      | 14119.92                                                                                                                                                                                                                                                                                             | 2.3                 | V                  | 3.0             | 46.5           | 1.0            | -43.2         | -13.0          | -30.2         |       |
|                                                                                      | 7059.96                                                                                                                                                                                                                                                                                              | -5.6                | H                  | 3.0             | 45.5           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 10589.94                                                                                                                                                                                                                                                                                             | 0.3                 | H                  | 3.0             | 46.1           | 1.0            | -44.8         | -13.0          | -31.8         |       |
|                                                                                      | 14119.92                                                                                                                                                                                                                                                                                             | 2.5                 | H                  | 3.0             | 46.5           | 1.0            | -43.0         | -13.0          | -30.0         |       |

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| UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement |                                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-----------------|----------------|----------------|---------------|----------------|---------------|-------|
| NR n77<br><br>SRS2<br><br>30 MHz                                                     | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-10-06<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Z-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> 5G NR_n77 UP Harmonics, 30MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | f<br>MHz                                                                                                                                                                                                                                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                                                      | Low Ch, 3715.02MHz                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7430.04                                                                                                                                                                                                                                                                                              | -5.4                | V                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                                      | 11145.06                                                                                                                                                                                                                                                                                             | 0.8                 | V                  | 3.0             | 46.5           | 1.0            | -44.7         | -13.0          | -31.7         |       |
|                                                                                      | 14860.08                                                                                                                                                                                                                                                                                             | 3.4                 | V                  | 3.0             | 46.2           | 1.0            | -41.8         | -13.0          | -28.8         |       |
|                                                                                      | 7430.04                                                                                                                                                                                                                                                                                              | -5.4                | H                  | 3.0             | 45.5           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                                      | 11145.06                                                                                                                                                                                                                                                                                             | 0.8                 | H                  | 3.0             | 46.5           | 1.0            | -44.8         | -13.0          | -31.8         |       |
|                                                                                      | 14860.08                                                                                                                                                                                                                                                                                             | 3.6                 | H                  | 3.0             | 46.2           | 1.0            | -41.6         | -13.0          | -28.6         |       |
|                                                                                      | Mid Ch, 3840MHz                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7680.00                                                                                                                                                                                                                                                                                              | -5.4                | V                  | 3.0             | 45.6           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                                      | 11520.00                                                                                                                                                                                                                                                                                             | 1.9                 | V                  | 3.0             | 46.9           | 1.0            | -44.0         | -13.0          | -31.0         |       |
|                                                                                      | 15360.00                                                                                                                                                                                                                                                                                             | 3.8                 | V                  | 3.0             | 46.0           | 1.0            | -41.2         | -13.0          | -28.2         |       |
|                                                                                      | 7680.00                                                                                                                                                                                                                                                                                              | -5.5                | H                  | 3.0             | 45.6           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 11520.00                                                                                                                                                                                                                                                                                             | 2.0                 | H                  | 3.0             | 46.9           | 1.0            | -43.9         | -13.0          | -30.9         |       |
|                                                                                      | 15360.00                                                                                                                                                                                                                                                                                             | 4.0                 | H                  | 3.0             | 46.0           | 1.0            | -41.0         | -13.0          | -28.0         |       |
|                                                                                      | High Ch, 3964.98MHz                                                                                                                                                                                                                                                                                  |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7929.96                                                                                                                                                                                                                                                                                              | -5.2                | V                  | 3.0             | 45.6           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                                      | 11894.94                                                                                                                                                                                                                                                                                             | 2.1                 | V                  | 3.0             | 47.2           | 1.0            | -44.1         | -13.0          | -31.1         |       |
|                                                                                      | 15859.92                                                                                                                                                                                                                                                                                             | 4.2                 | V                  | 3.0             | 45.7           | 1.0            | -40.5         | -13.0          | -27.5         |       |
|                                                                                      | 7929.96                                                                                                                                                                                                                                                                                              | -5.2                | H                  | 3.0             | 45.6           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                                      | 11894.94                                                                                                                                                                                                                                                                                             | 2.3                 | H                  | 3.0             | 47.2           | 1.0            | -43.9         | -13.0          | -30.9         |       |
|                                                                                      | 15859.92                                                                                                                                                                                                                                                                                             | 4.1                 | H                  | 3.0             | 45.7           | 1.0            | -40.6         | -13.0          | -27.6         |       |
| NR n77<br><br>SRS3<br><br>40 MHz                                                     | UL Verification Services, Inc.<br>Above 1GHz High Frequency Substitution Measurement                                                                                                                                                                                                                 |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | <b>Company:</b> Samsung<br><b>Project #:</b> 4790541052<br><b>Date:</b> 2022-10-06<br><b>Test Engineer:</b> 51078<br><b>Configuration:</b> EUT / AC Adapter, Y-Position<br><b>Location:</b> Chamber 1<br><b>Mode:</b> 5G NR_n77 UP Harmonics, 40MHz Bandwidth<br><b>Test Votage:</b> AC 120 V, 60 Hz |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | f<br>MHz                                                                                                                                                                                                                                                                                             | SG reading<br>(dBm) | Ant. Pol.<br>(H/V) | Distance<br>(m) | Preamp<br>(dB) | Filter<br>(dB) | EIRP<br>(dBm) | Limit<br>(dBm) | Delta<br>(dB) | Notes |
|                                                                                      | Low Ch, 3720.02MHz                                                                                                                                                                                                                                                                                   |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7440.04                                                                                                                                                                                                                                                                                              | -5.4                | V                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                                      | 11160.06                                                                                                                                                                                                                                                                                             | 0.8                 | V                  | 3.0             | 46.6           | 1.0            | -44.7         | -13.0          | -31.7         |       |
|                                                                                      | 14880.08                                                                                                                                                                                                                                                                                             | 3.5                 | V                  | 3.0             | 46.2           | 1.0            | -41.7         | -13.0          | -28.7         |       |
|                                                                                      | 7440.04                                                                                                                                                                                                                                                                                              | -5.4                | H                  | 3.0             | 45.5           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                                      | 11160.06                                                                                                                                                                                                                                                                                             | 1.0                 | H                  | 3.0             | 46.6           | 1.0            | -44.6         | -13.0          | -31.6         |       |
|                                                                                      | 14880.08                                                                                                                                                                                                                                                                                             | 3.6                 | H                  | 3.0             | 46.2           | 1.0            | -41.6         | -13.0          | -28.6         |       |
|                                                                                      | Mid Ch, 3840MHz                                                                                                                                                                                                                                                                                      |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7680.00                                                                                                                                                                                                                                                                                              | -5.4                | V                  | 3.0             | 45.6           | 1.0            | -50.0         | -13.0          | -37.0         |       |
|                                                                                      | 11520.00                                                                                                                                                                                                                                                                                             | 1.9                 | V                  | 3.0             | 46.9           | 1.0            | -44.0         | -13.0          | -31.0         |       |
|                                                                                      | 15360.00                                                                                                                                                                                                                                                                                             | 3.8                 | V                  | 3.0             | 46.0           | 1.0            | -41.2         | -13.0          | -28.2         |       |
|                                                                                      | 7680.00                                                                                                                                                                                                                                                                                              | -5.5                | H                  | 3.0             | 45.6           | 1.0            | -50.1         | -13.0          | -37.1         |       |
|                                                                                      | 11520.00                                                                                                                                                                                                                                                                                             | 2.0                 | H                  | 3.0             | 46.9           | 1.0            | -43.9         | -13.0          | -30.9         |       |
|                                                                                      | 15360.00                                                                                                                                                                                                                                                                                             | 3.9                 | H                  | 3.0             | 46.0           | 1.0            | -41.1         | -13.0          | -28.1         |       |
|                                                                                      | High Ch, 3960MHz                                                                                                                                                                                                                                                                                     |                     |                    |                 |                |                |               |                |               |       |
|                                                                                      | 7920.00                                                                                                                                                                                                                                                                                              | -5.3                | V                  | 3.0             | 45.6           | 1.0            | -49.9         | -13.0          | -36.9         |       |
|                                                                                      | 11880.00                                                                                                                                                                                                                                                                                             | 2.0                 | V                  | 3.0             | 47.2           | 1.0            | -44.2         | -13.0          | -31.2         |       |
|                                                                                      | 15840.00                                                                                                                                                                                                                                                                                             | 4.0                 | V                  | 3.0             | 45.7           | 1.0            | -40.7         | -13.0          | -27.7         |       |
|                                                                                      | 7920.00                                                                                                                                                                                                                                                                                              | -5.2                | H                  | 3.0             | 45.6           | 1.0            | -49.8         | -13.0          | -36.8         |       |
|                                                                                      | 11880.00                                                                                                                                                                                                                                                                                             | 2.2                 | H                  | 3.0             | 47.2           | 1.0            | -43.9         | -13.0          | -30.9         |       |
|                                                                                      | 15840.00                                                                                                                                                                                                                                                                                             | 4.1                 | H                  | 3.0             | 45.7           | 1.0            | -40.6         | -13.0          | -27.6         |       |

END OF REPORT