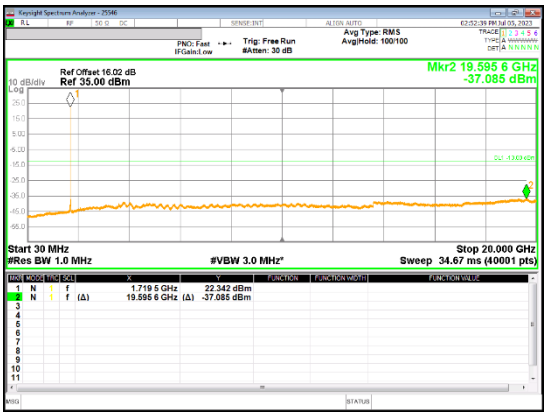
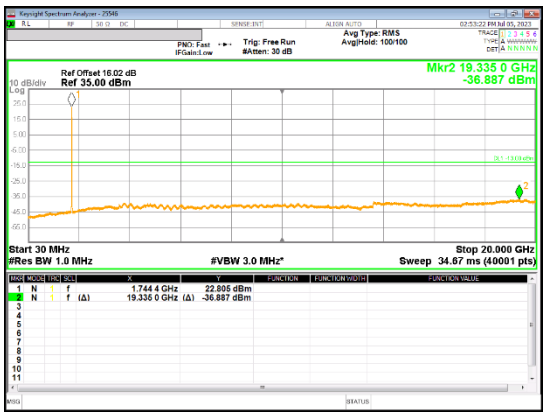
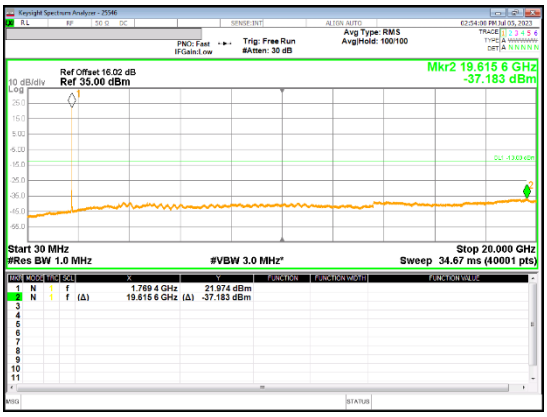
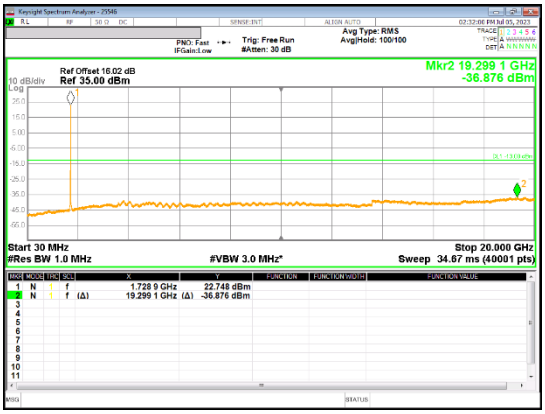
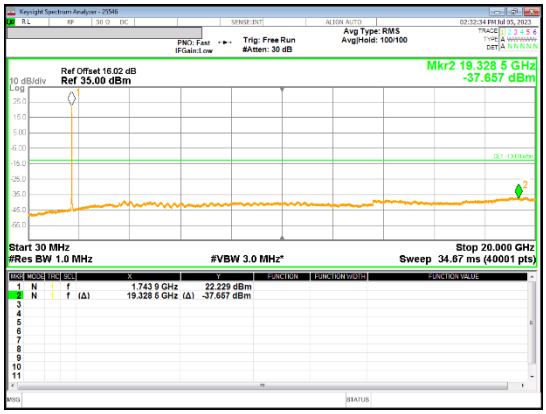
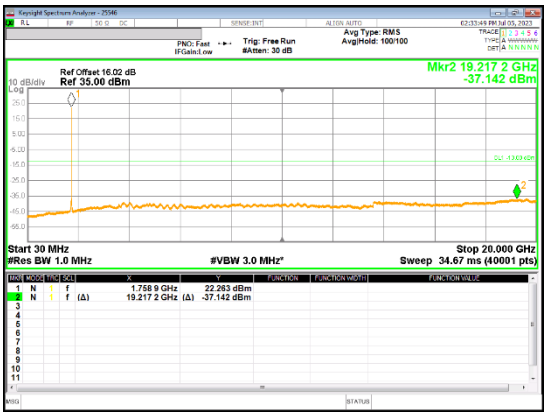
LTE Band 66B (UL CA)

10+10 MHz QPSK	 Low channel	 Mid channel
	 High channel	

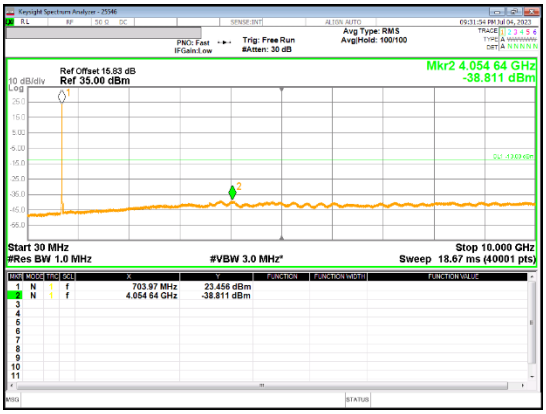
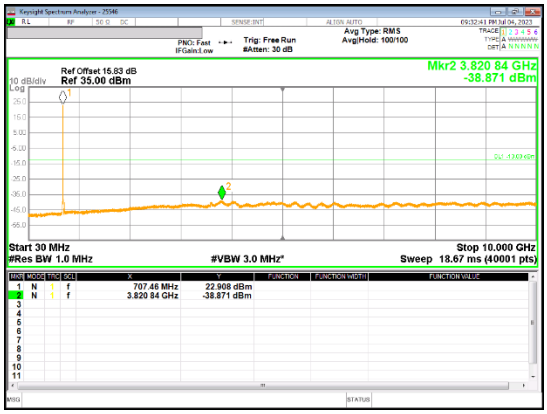
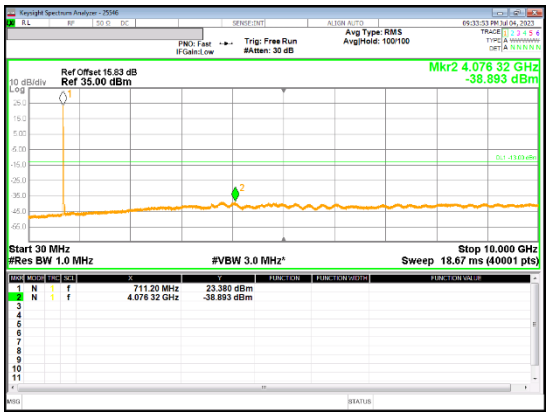
LTE Band 66C (UL CA)

20+20 MHz QPSK	 Low channel	 Mid channel
	 High channel	

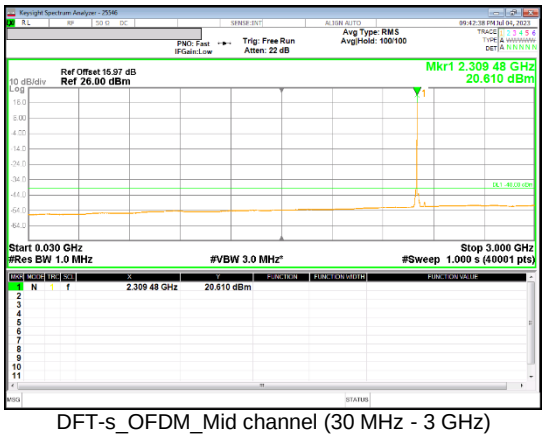
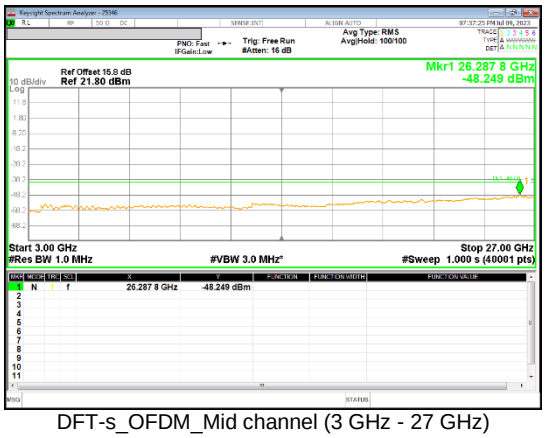
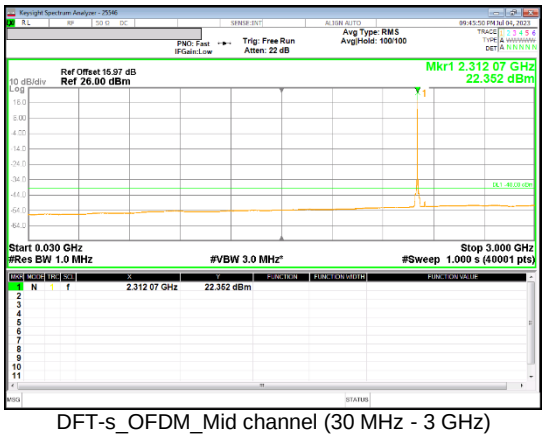
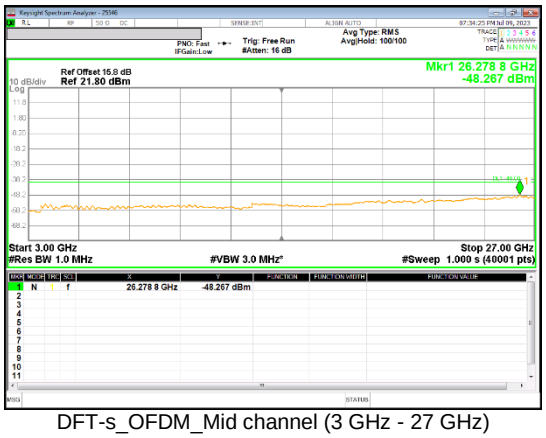
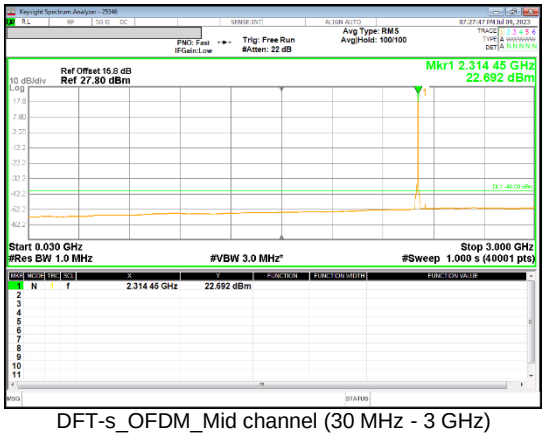
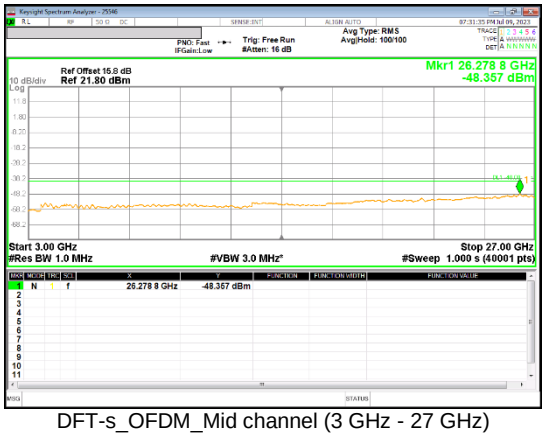
LTE Band 71

10 MHz QPSK	 Low channel	 Mid channel
	 High channel	

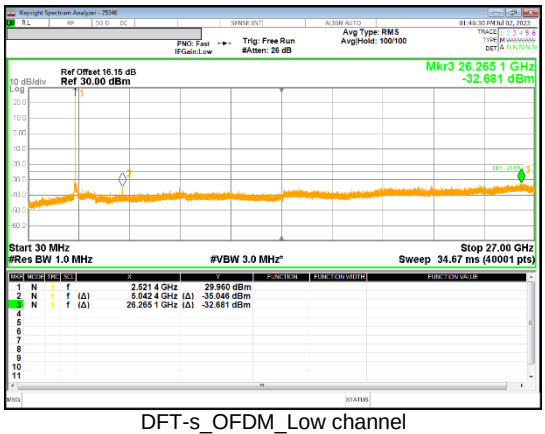
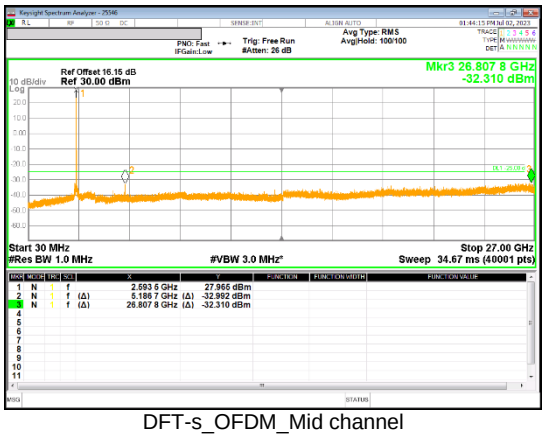
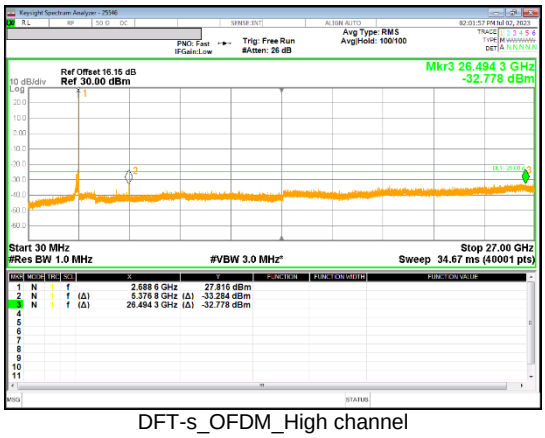
NR Band n12

10 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

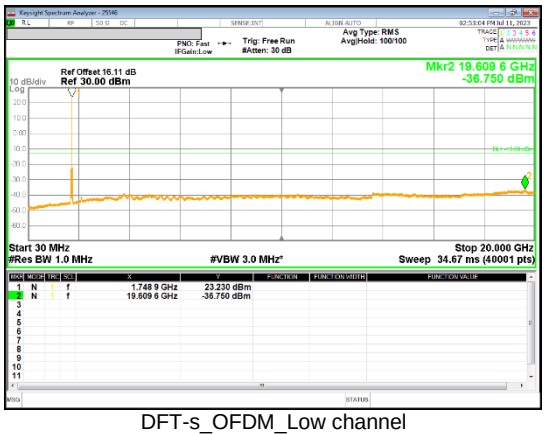
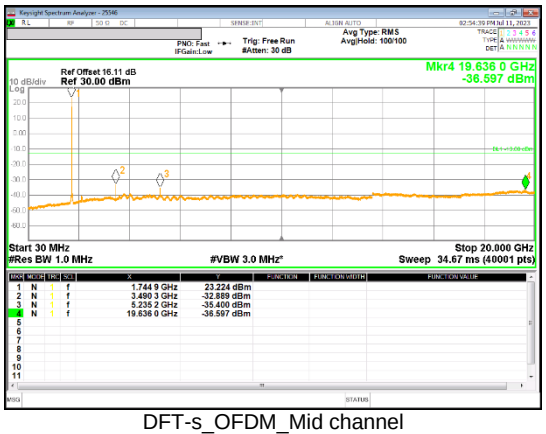
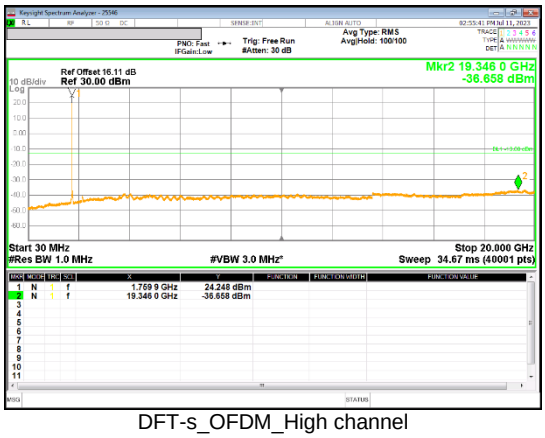
NR Band n30

5 MHz QPSK	 DFT-s_OFDM_Mid channel (30 MHz - 3 GHz)	 DFT-s_OFDM_Mid channel (3 GHz - 27 GHz)
	 DFT-s_OFDM_Mid channel (30 MHz - 3 GHz)	 DFT-s_OFDM_Mid channel (3 GHz - 27 GHz)
	 DFT-s_OFDM_Mid channel (30 MHz - 3 GHz)	 DFT-s_OFDM_Mid channel (3 GHz - 27 GHz)

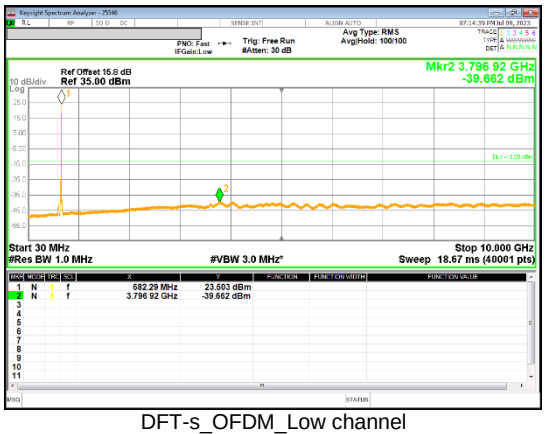
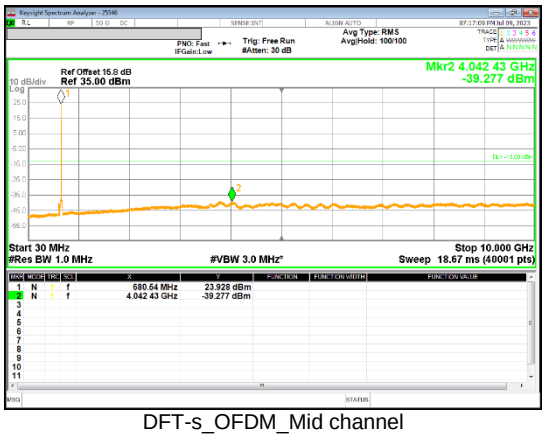
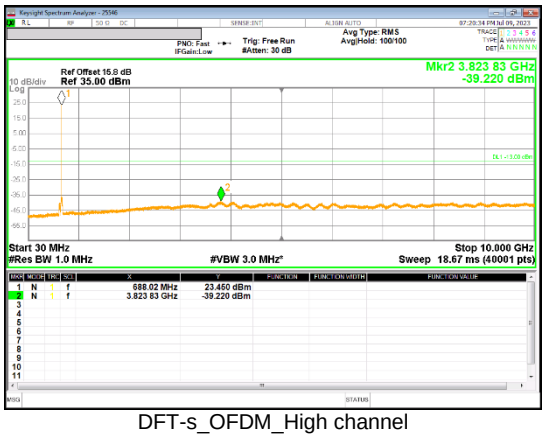
NR Band n41(PC2)

50 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

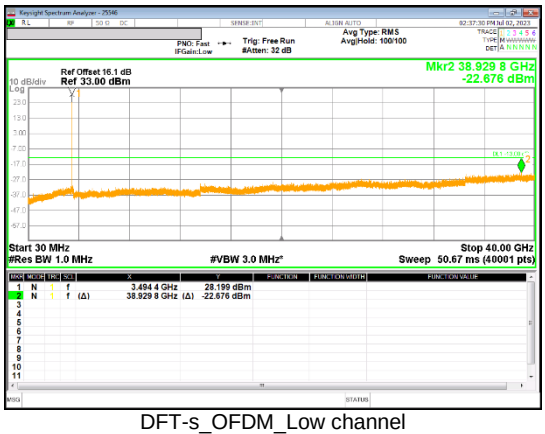
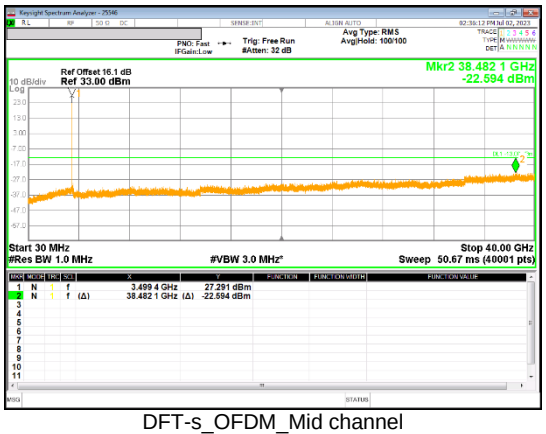
NR Band n66

40 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

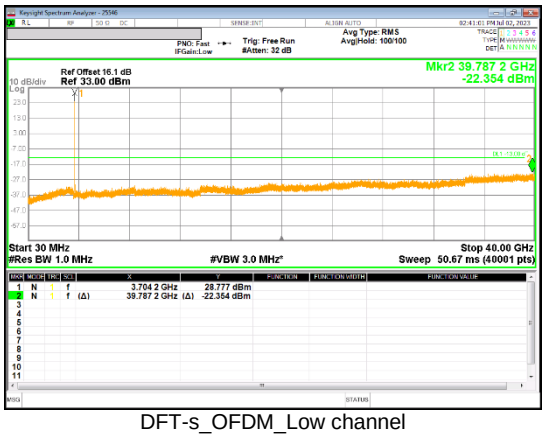
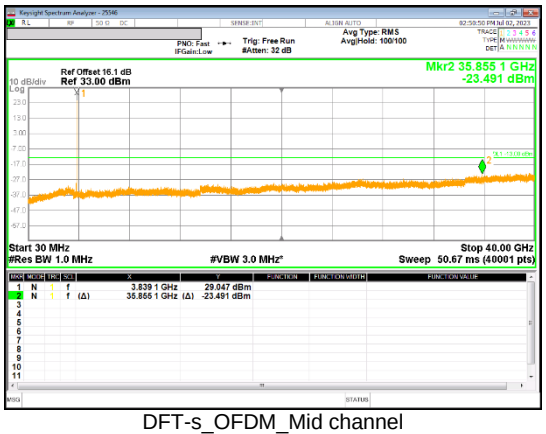
NR Band n71

20 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

NR Band n77(PC2, 3450 – 3550 MHz)

90 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

NR Band n77(PC2, 3700 – 3980 MHz)

10 MHz QPSK	 DFT-s_OFDM_Low channel	 DFT-s_OFDM_Mid channel
	 DFT-s_OFDM_High channel	

8.6. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §27.54

LIMITS

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

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)

8.6.1. FREQUENCY STABILITY RESULTS

WCDMA Band 4 (Lowest Frequency: Rel99/ Highest Frequency: Rel99)

Test Date	2023-06-13
Test Engineer	19568

Limit		1710	1755	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	1710.3191	1754.6861		
Extreme (50C)		1710.3191	1754.6861	5.9	0.003
Extreme (40C)		1710.3191	1754.6861	5.5	0.003
Extreme (30C)		1710.3191	1754.6861	6.2	0.004
Extreme (10C)		1710.3191	1754.6861	6.0	0.003
Extreme (0C)		1710.3191	1754.6861	6.5	0.004
Extreme (-10C)		1710.3191	1754.6861	6.4	0.004
Extreme (-20C)		1710.3191	1754.6861	6.7	0.004
Extreme (-30C)		1710.3191	1754.6861	6.2	0.004
20C	15%	1710.3191	1754.6861	5.7	0.003
	-15%	1710.3191	1754.6861	6.3	0.004
	End Point	1710.3191	1754.6861	7.0	0.004

LTE Band 7 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)

Test Date	2023-06-15
Test Engineer	19568

Limit		2500	2570	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2500.2423	2569.7550		
Extreme (50C)		2500.2423	2569.7550	6.2	0.002
Extreme (40C)		2500.2423	2569.7550	6.3	0.002
Extreme (30C)		2500.2423	2569.7550	13.5	0.005
Extreme (10C)		2500.2423	2569.7550	73.2	0.029
Extreme (0C)		2500.2423	2569.7550	68.6	0.027
Extreme (-10C)		2500.2423	2569.7550	11.7	0.005
Extreme (-20C)		2500.2423	2569.7550	12.6	0.005
Extreme (-30C)		2500.2423	2569.7550	14.5	0.006
20C	15%	2500.2423	2569.7550	6.4	0.003
	-15%	2500.2423	2569.7550	6.9	0.003
	End Point	2500.2423	2569.7550	6.8	0.003

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

Test Date	2023-06-16
Test Engineer	19568

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	699.1546	715.8443		
Extreme (50C)		699.1546	715.8443	6.5	0.009
Extreme (40C)		699.1546	715.8443	6.7	0.010
Extreme (30C)		699.1546	715.8443	3.5	0.005
Extreme (10C)		699.1546	715.8443	4.2	0.006
Extreme (0C)		699.1546	715.8443	4.4	0.006
Extreme (-10C)		699.1546	715.8443	4.0	0.006
Extreme (-20C)		699.1546	715.8443	4.2	0.006
Extreme (-30C)		699.1546	715.8443	4.7	0.007
20C	15%	699.1546	715.8443	4.1	0.006
	-15%	699.1546	715.8443	3.5	0.005
	End Point	699.1546	715.8443	3.8	0.005

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

Test Date	2023-06-19
Test Engineer	19568

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	777.2461	786.7522		
Extreme (50C)		777.2461	786.7522	4.3	0.006
Extreme (40C)		777.2461	786.7522	4.5	0.006
Extreme (30C)		777.2461	786.7522	4.6	0.006
Extreme (10C)		777.2461	786.7522	3.3	0.004
Extreme (0C)		777.2461	786.7522	4.6	0.006
Extreme (-10C)		777.2461	786.7522	4.1	0.005
Extreme (-20C)		777.2461	786.7522	3.8	0.005
Extreme (-30C)		777.2461	786.7522	4.0	0.005
20C	15%	777.2461	786.7522	3.9	0.005
	-15%	777.2461	786.7522	3.7	0.005
	End Point	777.2461	786.7522	4.5	0.006

LTE Band 30 (Lowest Frequency: QPSK / Highest Frequency: QPSK)

Test Date	2023-06-23
Test Engineer	19568

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2305.2499	2314.7515		
Extreme (50C)		2305.2499	2314.7515	5.2	0.002
Extreme (40C)		2305.2499	2314.7515	5.6	0.002
Extreme (30C)		2305.2499	2314.7515	5.5	0.002
Extreme (10C)		2305.2499	2314.7515	7.7	0.003
Extreme (0C)		2305.2499	2314.7515	8.5	0.004
Extreme (-10C)		2305.2499	2314.7515	5.8	0.002
Extreme (-20C)		2305.2499	2314.7515	5.2	0.002
Extreme (-30C)		2305.2499	2314.7515	4.8	0.002
20C	15%	2305.2499	2314.7515	6.4	0.003
	-15%	2305.2499	2314.7515	7.2	0.003
	End Point	2305.2499	2314.7515	7.7	0.003

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

Test Date	2023-06-27
Test Engineer	19568

Limit		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	2496.2566	2689.7520		
Extreme (50C)		2496.2566	2689.7520	11.2	0.004
Extreme (40C)		2496.2566	2689.7520	13.1	0.005
Extreme (30C)		2496.2566	2689.7520	11.4	0.004
Extreme (10C)		2496.2566	2689.7520	12.8	0.005
Extreme (0C)		2496.2566	2689.7520	14.6	0.006
Extreme (-10C)		2496.2566	2689.7520	16.1	0.006
Extreme (-20C)		2496.2566	2689.7520	18.1	0.007
Extreme (-30C)		2496.2566	2689.7520	18.5	0.007
20C	15%	2496.2566	2689.7520	13.1	0.005
	-15%	2496.2566	2689.7520	14.3	0.006
	End Point	2496.2566	2689.7520	13.1	0.005

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

Test Date	2023-06-28
Test Engineer	19568

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	1710.1564	1779.8439		
Extreme (50C)		1710.1564	1779.8439	4.8	0.003
Extreme (40C)		1710.1564	1779.8439	4.2	0.002
Extreme (30C)		1710.1564	1779.8439	22.0	0.013
Extreme (10C)		1710.1564	1779.8439	3.9	0.002
Extreme (0C)		1710.1564	1779.8439	5.8	0.003
Extreme (-10C)		1710.1564	1779.8439	5.2	0.003
Extreme (-20C)		1710.1564	1779.8439	6.0	0.003
Extreme (-30C)		1710.1564	1779.8439	6.9	0.004
20C	15%	1710.1564	1779.8439	5.1	0.003
	-15%	1710.1564	1779.8439	5.5	0.003
	End Point	1710.1564	1779.8439	5.1	0.003

LTE Band 71 (Lowest Frequency: 16QAM / Highest Frequency: QPSK)

Test Date	2023-06-29
Test Engineer	19568

Limit		663	698	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	663.2497	697.7481		
Extreme (50C)		663.2497	697.7481	9.9	0.015
Extreme (40C)		663.2497	697.7481	10.0	0.015
Extreme (30C)		663.2497	697.7481	8.7	0.013
Extreme (10C)		663.2497	697.7481	12.1	0.018
Extreme (0C)		663.2497	697.7481	6.7	0.010
Extreme (-10C)		663.2497	697.7481	7.7	0.011
Extreme (-20C)		663.2497	697.7481	7.3	0.011
Extreme (-30C)		663.2497	697.7481	11.2	0.016
20C	15%	663.2497	697.7481	4.3	0.006
	-15%	663.2497	697.7481	4.1	0.006
	End Point	663.2497	697.7481	4.2	0.006

5G NR Band n12 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)

Test Date	2023-07-04
Test Engineer	19568

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	699.2624	715.7369		
Extreme (50C)		699.2624	715.7369	10.4	0.015
Extreme (40C)		699.2624	715.7369	23.7	0.033
Extreme (30C)		699.2624	715.7369	19.4	0.027
Extreme (10C)		699.2624	715.7369	6.5	0.009
Extreme (0C)		699.2624	715.7369	13.4	0.019
Extreme (-10C)		699.2624	715.7369	19.6	0.028
Extreme (-20C)		699.2624	715.7369	25.4	0.036
Extreme (-30C)		699.2624	715.7369	20.6	0.029
20C	15%	699.2624	715.7369	16.0	0.023
	-15%	699.2624	715.7369	24.7	0.035
	End Point	699.2624	715.7369	19.5	0.028

5G NR Band n30 (Lowest Frequency: QPSK / Highest Frequency: QPSK)

Test Date	2023-04-12
Test Engineer	19568

Limit		2305	2315	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	2305.2561	2314.7475		
Extreme (50C)		2305.2561	2314.7475	35.7	0.015
Extreme (40C)		2305.2561	2314.7475	28.0	0.012
Extreme (30C)		2305.2561	2314.7475	15.7	0.007
Extreme (10C)		2305.2561	2314.7475	39.7	0.017
Extreme (0C)		2305.2561	2314.7475	48.5	0.021
Extreme (-10C)		2305.2561	2314.7475	35.6	0.015
Extreme (-20C)		2305.2561	2314.7475	23.1	0.010
Extreme (-30C)		2305.2561	2314.7475	16.7	0.007
20C	15%	2305.2561	2314.7475	16.6	0.007
	-15%	2305.2561	2314.7475	23.5	0.010
	End Point	2305.2561	2314.7475	20.6	0.009

5G NR Band n41(PC2) (Lowest Frequency: 16QAM / Highest Frequency: QPSK)

Test Date	2023-07-06
Test Engineer	19568

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	2496.7164	2689.2942		
Extreme (50C)		2496.7164	2689.2942	19.0	0.007
Extreme (40C)		2496.7164	2689.2942	28.0	0.011
Extreme (30C)		2496.7164	2689.2942	35.7	0.014
Extreme (10C)		2496.7164	2689.2942	25.7	0.010
Extreme (0C)		2496.7164	2689.2942	16.4	0.006
Extreme (-10C)		2496.7164	2689.2942	13.3	0.005
Extreme (-20C)		2496.7164	2689.2942	11.7	0.004
Extreme (-30C)		2496.7164	2689.2942	14.9	0.006
20C	15%	2496.7164	2689.2942	11.2	0.004
	-15%	2496.7164	2689.2942	16.5	0.006
	End Point	2496.7164	2689.2942	13.5	0.005

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

Test Date	2023-07-07
Test Engineer	19568

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	1710.2628	1779.7421		
Extreme (50C)		1710.2628	1779.7421	23.3	0.013
Extreme (40C)		1710.2628	1779.7421	13.4	0.008
Extreme (30C)		1710.2628	1779.7421	16.2	0.009
Extreme (10C)		1710.2628	1779.7421	12.3	0.007
Extreme (0C)		1710.2628	1779.7421	20.5	0.012
Extreme (-10C)		1710.2628	1779.7421	12.6	0.007
Extreme (-20C)		1710.2628	1779.7421	23.0	0.013
Extreme (-30C)		1710.2628	1779.7421	30.3	0.017
20C	15%	1710.2628	1779.7421	27.4	0.016
	-15%	1710.2628	1779.7421	20.7	0.012
	End Point	1710.2628	1779.7421	22.7	0.013

5G NR Band n71 (Lowest Frequency: 16QAM / Highest Frequency: 16QAM)

Test Date	2023-07-10
Test Engineer	19568

Limit		663	698	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	663.2577	697.7485		
Extreme (50C)		663.2577	697.7485	13.2	0.019
Extreme (40C)		663.2577	697.7485	10.2	0.015
Extreme (30C)		663.2577	697.7485	29.3	0.043
Extreme (10C)		663.2577	697.7485	35.5	0.052
Extreme (0C)		663.2577	697.7485	15.3	0.023
Extreme (-10C)		663.2577	697.7485	19.3	0.028
Extreme (-20C)		663.2577	697.7485	25.4	0.037
Extreme (-30C)		663.2577	697.7485	23.2	0.034
20C	15%	663.2577	697.7485	11.7	0.017
	-15%	663.2577	697.7485	15.5	0.023
	End Point	663.2577	697.7485	13.3	0.020

NR Band n77(PC2)_3450 – 3550 MHz
(Lowest Frequency: QPSK / Highest Frequency: 16QAM)

Test Date	2023-07-11
Test Engineer	19568

Limit		3450	3550	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	3450.7182	3549.2738		
Extreme (50C)		3450.7182	3549.2738	29.4	0.008
Extreme (40C)		3450.7182	3549.2738	34.6	0.010
Extreme (30C)		3450.7182	3549.2738	48.2	0.014
Extreme (10C)		3450.7182	3549.2738	40.3	0.012
Extreme (0C)		3450.7182	3549.2738	45.5	0.013
Extreme (-10C)		3450.7182	3549.2738	37.2	0.011
Extreme (-20C)		3450.7182	3549.2738	27.2	0.008
Extreme (-30C)		3450.7182	3549.2738	29.8	0.009
20C	15%	3450.7182	3549.2738	35.4	0.010
	-15%	3450.7182	3549.2738	30.3	0.009
	End Point	3450.7182	3549.2738	37.2	0.011

NR Band n77(PC2)_3700 – 3980 MHz
(Lowest Frequency: QPSK / Highest Frequency: QPSK)

Test Date	2023-07-11
Test Engineer	19568

Limit		3700	3980	Delta (Hz)	Frequency Stability (ppm)
Condition		F low @ End of OBW	F high @ End of OBW		
Temperature	Voltage	(MHz)	(MHz)		
Normal (20C)	Normal	3700.7020	3979.2926		
Extreme (50C)		3700.7020	3979.2926	33.4	0.009
Extreme (40C)		3700.7020	3979.2926	37.2	0.010
Extreme (30C)		3700.7020	3979.2926	45.0	0.012
Extreme (10C)		3700.7020	3979.2926	48.4	0.013
Extreme (0C)		3700.7021	3979.2927	50.5	0.013
Extreme (-10C)		3700.7020	3979.2926	37.4	0.010
Extreme (-20C)		3700.7020	3979.2926	32.2	0.008
Extreme (-30C)		3700.7020	3979.2926	36.5	0.009
20C	15%	3700.7020	3979.2926	32.5	0.008
	-15%	3700.7020	3979.2926	33.1	0.009
	End Point	3700.7020	3979.2926	30.8	0.008

9. RADIATED RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §27.50

LIMITS

27.50:

(a)(3) Mobile and portable stations. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

(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.

(c) (10) - Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band 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.

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 ≥ OBW;
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 2 x RBW;
d) Sweep time = auto couple or 1 second;
e) Detector = rms;
f) Ensure that the number of measurement points ≥ span/RBW;
g) Trace Mode = max hold(WCDMA), average(LTE, 5G NR);

NOTE1

LTE Band 41(PC2) A-MPR is implemented in this EUT when operating on HPUE per the A-MPR specification in 3GPP TS 36.101 (Table 6.2.4-4a). Also only Emission mask test item were performd A-MPR condition.

NOTE2

LTE Band 41(PC2) A-MPR is implemented in this EUT when operating on HPUE per the A-MPR specification in 3GPP TS 36.101 (Table 6.2.4-4a). Also only Emission mask test item were performd A-MPR condition.

NOTE3

LTE Band 41C(PC2) A-MPR is implemented in this EUT when operating on HPUE per the AMPR specification in 3GPP TS 36.101 (Table 6.2.4A,10-1, Table 6.2.4A,10-2). Conducted output power verification data are shown Appendix A. Also only Emission mask test item were performd A-MPR condition (Especially low channel side).

NOTE4

5GNR Band n41(PC2) A-MPR is implemented in this EUT when operating on HPUE per the A-MPR specification in 3GPP TS 38.101 (Clause 6.2.3.2). Also only Emission mask test item were performd A-MPR condition.

TEST RESULTS

See the following pages.

9.1.1. ERP/EIRP Results

WCDMA

Band	Mode	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
Band 4	REL99	1712.40	20.83	H	4.31	9.22	25.74	374.97	33.00	-4.26
		1732.60	21.12	H	4.33	9.30	26.09	406.44	33.00	-3.91
		1752.60	20.52	H	4.36	9.38	25.54	358.10	33.00	-4.46
	HSDPA	1712.40	20.32	H	4.31	9.22	25.23	333.43	33.00	-4.77
		1732.60	20.60	H	4.33	9.30	25.57	360.58	33.00	-4.43
		1752.60	20.03	H	4.36	9.38	25.05	319.89	33.00	-4.95

LTE Band 7

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
20	QPSK	2510.00	19.07	H	5.25	9.98	23.80	239.88	33.00	-9.20	1/99
		2535.00	18.83	H	5.28	9.93	23.49	223.36	33.00	-9.51	1/0
		2560.00	19.44	H	5.30	9.91	24.05	254.10	33.00	-8.95	1/0
	16-QAM	2510.00	18.21	H	5.25	9.98	22.94	196.79	33.00	-10.06	1/49
		2535.00	17.99	H	5.28	9.93	22.65	184.08	33.00	-10.35	1/99
		2560.00	18.51	H	5.30	9.91	23.12	205.12	33.00	-9.88	1/49
15	QPSK	2507.50	18.90	H	5.25	9.99	23.64	231.21	33.00	-9.36	1/37
		2535.00	19.48	H	5.28	9.93	24.14	259.42	33.00	-8.86	1/37
		2562.50	19.02	H	5.30	9.91	23.62	230.14	33.00	-9.38	1/37
	16-QAM	2507.50	17.95	H	5.25	9.99	22.69	185.78	33.00	-10.31	1/37
		2535.00	18.50	H	5.28	9.93	23.16	207.01	33.00	-9.84	1/37
		2562.50	18.11	H	5.30	9.91	22.71	186.64	33.00	-10.29	1/0
10	QPSK	2505.00	18.71	H	5.24	9.99	23.46	221.82	33.00	-9.54	1/49
		2535.00	19.38	H	5.28	9.93	24.04	253.51	33.00	-8.96	1/25
		2565.00	19.19	H	5.31	9.91	23.79	239.33	33.00	-9.21	1/49
	16-QAM	2505.00	18.01	H	5.24	9.99	22.76	188.80	33.00	-10.24	1/25
		2535.00	18.43	H	5.28	9.93	23.09	203.70	33.00	-9.91	1/25
		2565.00	18.26	H	5.31	9.91	22.86	193.20	33.00	-10.14	1/0
5	QPSK	2502.50	18.55	H	5.24	10.00	23.30	213.80	33.00	-9.70	1/24
		2535.00	19.30	H	5.28	9.93	23.96	248.89	33.00	-9.04	1/12
		2567.50	19.17	H	5.31	9.91	23.77	238.23	33.00	-9.23	1/12
	16-QAM	2502.50	17.50	H	5.24	10.00	22.25	167.88	33.00	-10.75	1/24
		2535.00	18.36	H	5.28	9.93	23.02	200.45	33.00	-9.98	1/12
		2567.50	18.29	H	5.31	9.91	22.89	194.54	33.00	-10.11	1/12

LTE Band 7 (ANT SUB2)

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
20	QPSK	2510.00	16.21	H	5.25	9.98	20.94	124.17	33.00	-12.06	1/0
		2535.00	17.03	H	5.28	9.93	21.69	147.57	33.00	-11.31	1/49
		2560.00	16.01	H	5.30	9.91	20.62	115.35	33.00	-12.38	1/0
	16-QAM	2510.00	15.23	H	5.25	9.98	19.96	99.08	33.00	-13.04	1/49
		2535.00	16.02	H	5.28	9.93	20.68	116.95	33.00	-12.32	1/49
		2560.00	15.27	H	5.30	9.91	19.88	97.27	33.00	-13.12	1/49

LTE Band 12

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
10	QPSK	704.00	22.50	V	2.79	-1.34	18.37	68.71	34.77	-16.40	1/25
		707.50	22.74	V	2.79	-1.34	18.61	72.61	34.77	-16.16	1/25
		711.00	22.96	V	2.80	-1.33	18.83	76.38	34.77	-15.94	1/0
	16-QAM	704.00	21.48	V	2.79	-1.34	17.35	54.33	34.77	-17.42	1/25
		707.50	21.82	V	2.79	-1.34	17.69	58.75	34.77	-17.08	1/0
		711.00	22.01	V	2.80	-1.33	17.88	61.38	34.77	-16.89	1/0
5	QPSK	701.50	21.14	V	2.78	-1.35	17.01	50.23	34.77	-17.76	1/0
		707.50	21.68	V	2.79	-1.34	17.55	56.89	34.77	-17.22	1/0
		713.50	21.74	V	2.81	-1.32	17.62	57.81	34.77	-17.15	1/0
	16-QAM	701.50	20.21	V	2.78	-1.35	16.08	40.55	34.77	-18.69	1/0
		707.50	20.69	V	2.79	-1.34	16.56	45.29	34.77	-18.21	1/0
		713.50	20.61	V	2.81	-1.32	16.49	44.57	34.77	-18.28	1/24
3	QPSK	700.50	21.13	V	2.78	-1.35	17.00	50.12	34.77	-17.77	1/14
		707.50	21.78	V	2.79	-1.34	17.65	58.21	34.77	-17.12	1/0
		714.50	22.05	V	2.81	-1.32	17.92	61.94	34.77	-16.85	1/0
	16-QAM	700.50	20.17	V	2.78	-1.35	16.04	40.18	34.77	-18.73	1/0
		707.50	20.72	V	2.79	-1.34	16.59	45.60	34.77	-18.18	1/0
		714.50	20.98	V	2.81	-1.32	16.85	48.42	34.77	-17.92	1/0
1.4	QPSK	699.70	21.01	V	2.78	-1.35	16.88	48.75	34.77	-17.89	1/5
		707.50	21.75	V	2.79	-1.34	17.62	57.81	34.77	-17.15	1/5
		715.30	22.10	V	2.81	-1.32	17.97	62.66	34.77	-16.80	1/5
	16-QAM	699.70	19.89	V	2.78	-1.35	15.77	37.76	34.77	-19.01	1/5
		707.50	20.63	V	2.79	-1.34	16.50	44.67	34.77	-18.27	1/3
		715.30	20.86	V	2.81	-1.32	16.73	47.10	34.77	-18.04	1/3

LTE Band 13

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
10	QPSK	782.00	27.97	V	2.93	-1.19	23.85	242.66	34.77	-10.92	1/0
	16-QAM	782.00	27.06	V	2.93	-1.19	22.94	196.79	34.77	-11.83	1/25
5	QPSK	779.50	27.85	V	2.93	-1.19	23.73	236.05	34.77	-11.04	1/12
		782.00	28.00	V	2.93	-1.19	23.88	244.34	34.77	-10.89	1/24
		784.50	28.34	V	2.94	-1.18	24.22	264.24	34.77	-10.55	1/0
	16-QAM	779.50	26.78	V	2.93	-1.19	22.66	184.50	34.77	-12.11	1/0
		782.00	26.83	V	2.93	-1.19	22.71	186.64	34.77	-12.06	1/24
		784.50	27.33	V	2.94	-1.18	23.21	209.41	34.77	-11.56	1/12

LTE Band 30

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	2310.00	17.68	H	5.03	9.71	22.37	172.58	24.00	-1.63	1/25
	16-QAM	2310.00	17.27	H	5.03	9.71	21.96	157.04	24.00	-2.04	1/25
5	QPSK	2307.50	18.05	H	5.02	9.70	22.73	187.50	24.00	-1.27	1/24
		2310.00	18.23	H	5.03	9.71	22.92	195.88	24.00	-1.08	1/24
		2312.50	18.12	H	5.03	9.73	22.81	190.99	24.00	-1.19	1/24
	16-QAM	2307.50	17.33	H	5.02	9.70	22.01	158.85	24.00	-1.99	1/24
		2310.00	17.29	H	5.03	9.71	21.98	157.76	24.00	-2.02	1/24
		2312.50	17.47	H	5.03	9.73	22.16	164.44	24.00	-1.84	1/24

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
20	QPSK	2506.00	20.05	H	5.25	9.99	24.79	301.30	33.00	-8.21	1/49
		2593.00	20.24	H	5.34	9.91	24.82	303.39	33.00	-8.18	1/49
		2680.00	19.78	H	5.43	9.87	24.22	264.24	33.00	-8.78	1/49
	16-QAM	2506.00	19.20	H	5.25	9.99	23.94	247.74	33.00	-9.06	1/99
		2593.00	19.15	H	5.34	9.91	23.73	236.05	33.00	-9.27	1/49
		2680.00	18.89	H	5.43	9.87	23.33	215.28	33.00	-9.67	1/49
15	QPSK	2503.50	19.89	H	5.24	9.99	24.64	291.07	33.00	-8.36	1/37
		2593.00	20.57	H	5.34	9.91	25.15	327.34	33.00	-7.85	1//0
		2682.50	19.89	H	5.43	9.87	24.34	271.64	33.00	-8.66	1/37
	16-QAM	2503.50	18.95	H	5.24	9.99	23.70	234.42	33.00	-9.30	1/37
		2593.00	19.70	H	5.34	9.91	24.28	267.92	33.00	-8.72	1/0
		2682.50	18.93	H	5.43	9.87	23.38	217.77	33.00	-9.62	1/0
10	QPSK	2501.00	19.65	H	5.24	10.00	24.40	275.42	33.00	-8.60	1/25
		2593.00	20.14	H	5.34	9.91	24.72	296.48	33.00	-8.28	1/25
		2685.00	19.72	H	5.43	9.87	24.16	260.62	33.00	-8.84	1/25
	16-QAM	2501.00	18.53	H	5.24	10.00	23.28	212.81	-9.72	-8.60	1/49
		2593.00	19.22	H	5.34	9.91	23.80	239.88	-9.20	-8.28	1/49
		2685.00	18.94	H	5.43	9.87	23.38	217.77	-9.62	-8.84	1/25
5	QPSK	2498.50	19.42	H	5.23	10.00	24.19	262.42	33.00	-8.81	1/24
		2593.00	20.28	H	5.34	9.91	24.86	306.20	33.00	-8.14	1/24
		2687.50	19.90	H	5.44	9.87	24.33	271.02	33.00	-8.67	1/24
	16-QAM	2498.50	18.61	H	5.23	10.00	23.38	217.77	33.00	-9.62	1/12
		2593.00	19.32	H	5.34	9.91	23.90	245.47	33.00	-9.10	1/12
		2687.50	19.06	H	5.44	9.87	23.49	223.36	33.00	-9.51	1/12

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
20	QPSK	1720.00	20.46	H	4.32	9.55	25.69	370.68	30.00	-4.31	1/99
		1745.00	21.06	H	4.35	9.66	26.37	433.51	30.00	-3.63	1/0
		1770.00	19.95	H	4.38	9.68	25.25	334.97	30.00	-4.75	1/49
	16-QAM	1720.00	19.97	H	4.32	9.55	25.20	331.13	30.00	-4.80	1/99
		1745.00	20.50	H	4.35	9.66	25.81	381.07	30.00	-4.19	1/99
		1770.00	19.42	H	4.38	9.68	24.72	296.48	30.00	-5.28	1/49
15	QPSK	1717.50	21.26	H	4.31	9.53	26.48	444.63	30.00	-3.52	1/0
		1745.00	21.35	H	4.35	9.66	26.66	463.45	30.00	-3.34	1/37
		1772.50	20.23	H	4.38	9.68	25.53	357.27	30.00	-4.47	1/0
	16-QAM	1717.50	20.79	H	4.31	9.53	26.01	399.02	30.00	-3.99	1/74
		1745.00	20.72	H	4.35	9.66	26.03	400.87	30.00	-3.97	1/37
		1772.50	19.57	H	4.38	9.68	24.87	306.90	30.00	-5.13	1/0
10	QPSK	1715.00	20.58	H	4.31	9.52	25.79	379.31	30.00	-4.21	1/0
		1745.00	21.29	H	4.35	9.66	26.60	457.09	30.00	-3.40	1/0
		1775.00	19.87	H	4.38	9.68	25.17	328.85	30.00	-4.83	1/0
	16-QAM	1715.00	20.16	H	4.31	9.52	25.37	344.35	30.00	-4.63	1/49
		1745.00	20.71	H	4.35	9.66	26.02	399.94	30.00	-3.98	1/25
		1775.00	19.48	H	4.38	9.68	24.78	300.61	30.00	-5.22	1/25
5	QPSK	1712.50	20.53	H	4.31	9.51	25.73	374.11	30.00	-4.27	1/24
		1745.00	20.63	H	4.35	9.66	25.94	392.64	30.00	-4.06	1/24
		1777.50	20.23	H	4.39	9.68	25.52	356.45	30.00	-4.48	1/24
	16-QAM	1712.50	20.20	H	4.31	9.51	25.40	346.74	30.00	-4.60	1/24
		1745.00	20.38	H	4.35	9.66	25.69	370.68	30.00	-4.31	1/0
		1777.50	19.48	H	4.39	9.68	24.77	299.92	30.00	-5.23	1/0
3	QPSK	1711.50	20.67	H	4.31	9.51	25.87	386.37	30.00	-4.13	1/0
		1745.00	21.46	H	4.35	9.66	26.77	475.34	30.00	-3.23	1/0
		1778.50	19.67	H	4.39	9.68	24.96	313.33	30.00	-5.04	1/14
	16-QAM	1711.50	20.11	H	4.31	9.51	25.31	339.63	30.00	-4.69	1/8
		1745.00	21.12	H	4.35	9.66	26.43	439.54	30.00	-3.57	1/14
		1778.50	19.27	H	4.39	9.68	24.56	285.76	30.00	-5.44	1/8
1.4	QPSK	1710.70	20.51	H	4.31	9.50	25.71	372.39	30.00	-4.29	1/5
		1745.00	21.28	H	4.35	9.66	26.59	456.04	30.00	-3.41	1/0
		1779.30	19.69	H	4.39	9.68	24.98	314.77	30.00	-5.02	1/0
	16-QAM	1710.70	20.04	H	4.31	9.50	25.24	334.20	30.00	-4.76	1/5
		1745.00	20.77	H	4.35	9.66	26.08	405.51	30.00	-3.92	1/5
		1779.30	19.35	H	4.39	9.68	24.64	291.07	30.00	-5.36	1/3

LTE Band 66 (ANT SUB2)

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
20	QPSK	1720.00	14.36	H	4.32	9.55	19.59	90.99	30.00	-10.41	1/99
		1745.00	14.32	H	4.35	9.66	19.63	91.83	30.00	-10.37	1/99
		1770.00	14.31	H	4.38	9.68	19.61	91.41	30.00	-10.39	1/0
	16-QAM	1720.00	14.20	H	4.32	9.55	19.43	87.70	30.00	-10.57	1/99
		1745.00	13.85	H	4.35	9.66	19.16	82.41	30.00	-10.84	1/49
		1770.00	13.68	H	4.38	9.68	18.98	79.07	30.00	-11.02	1/49

LTE Band 71

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	673.00	22.90	V	2.73	-1.43	18.74	74.82	34.77	-16.03	1/49
		680.50	23.05	V	2.74	-1.41	18.90	77.62	34.77	-15.87	1/0
		688.00	21.27	V	2.76	-1.39	17.13	51.64	34.77	-17.64	1/49
	16-QAM	673.00	21.62	V	2.73	-1.43	17.46	55.72	34.77	-17.31	1/49
		680.50	21.87	V	2.74	-1.41	17.72	59.16	34.77	-17.05	1/49
		688.00	20.31	V	2.76	-1.39	16.17	41.40	34.77	-18.60	1/49
15	QPSK	670.50	22.52	V	2.72	-1.44	18.36	68.55	34.77	-16.41	1/0
		680.50	22.01	V	2.74	-1.41	17.86	61.09	34.77	-16.91	1/0
		690.50	21.33	V	2.76	-1.38	17.18	52.24	34.77	-17.59	1/0
	16-QAM	670.50	21.34	V	2.72	-1.44	17.18	52.24	34.77	-17.59	1/37
		680.50	20.84	V	2.74	-1.41	16.69	46.67	34.77	-18.08	1/0
		690.50	20.20	V	2.76	-1.38	16.05	40.27	34.77	-18.72	1/0
10	QPSK	668.00	22.48	V	2.72	-1.45	18.32	67.92	34.77	-16.45	1/0
		680.50	22.15	V	2.74	-1.41	18.00	63.10	34.77	-16.77	1/0
		693.00	21.73	V	2.77	-1.37	17.59	57.41	34.77	-17.18	1/0
	16-QAM	668.00	21.41	V	2.72	-1.45	17.25	53.09	34.77	-17.52	1/25
		680.50	20.87	V	2.74	-1.41	16.72	46.99	34.77	-18.05	1/0
		693.00	20.39	V	2.77	-1.37	16.25	42.17	34.77	-18.52	1/0
5	QPSK	665.50	22.81	V	2.71	-1.45	18.64	73.11	34.77	-16.13	1/24
		680.50	22.67	V	2.74	-1.41	18.52	71.12	34.77	-16.25	1/0
		695.50	22.12	V	2.77	-1.36	17.99	62.95	34.77	-16.78	1/0
	16-QAM	665.50	21.67	V	2.71	-1.45	17.50	56.23	34.77	-17.27	1/24
		680.50	21.52	V	2.74	-1.41	17.37	54.58	34.77	-17.40	1/0
		695.50	21.11	V	2.77	-1.36	16.98	49.89	34.77	-17.79	1/0

5G NR n12

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
15	QPSK	706.50	22.35	H	2.79	-1.34	18.23	66.53	33.00	-16.54	1/40
		707.50	22.34	H	2.79	-1.34	18.22	66.37	33.00	-16.55	1/40
		708.50	22.34	H	2.80	-1.33	18.22	66.37	33.00	-16.55	1/40
	16-QAM	706.50	21.43	H	2.79	-1.34	17.31	53.83	33.00	-17.46	1/40
		707.50	21.29	H	2.79	-1.34	17.17	52.12	33.00	-17.60	1/40
		708.50	21.39	H	2.80	-1.33	17.27	53.33	33.00	-17.50	1/40
10	QPSK	704.00	22.30	H	2.79	-1.34	18.17	65.61	33.00	-16.60	1/26
		707.50	22.34	H	2.79	-1.34	18.22	66.37	33.00	-16.55	1/26
		711.00	22.51	H	2.80	-1.33	18.38	68.87	33.00	-16.39	1/1
	16-QAM	704.00	21.17	H	2.79	-1.34	17.04	50.58	33.00	-17.73	1/26
		707.50	21.23	H	2.79	-1.34	17.11	51.40	33.00	-17.66	1/26
		711.00	21.52	H	2.80	-1.33	17.39	54.83	33.00	-17.38	1/26
5	QPSK	701.50	21.99	H	2.78	-1.35	17.86	61.09	33.00	-16.91	1/23
		707.50	22.40	H	2.79	-1.34	18.28	67.30	33.00	-16.49	1/23
		713.50	22.73	H	2.81	-1.32	18.60	72.44	33.00	-16.17	1/1
	16-QAM	701.50	20.94	H	2.78	-1.35	16.81	47.97	33.00	-17.96	1/23
		707.50	21.46	H	2.79	-1.34	17.34	54.20	33.00	-17.43	1/23
		713.50	21.73	H	2.81	-1.32	17.60	57.54	33.00	-17.17	1/1

5G NR n30

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	2310.00	17.87	H	5.03	9.71	22.56	180.30	24.00	-1.44	1/50
	16QAM	2310.00	16.83	H	5.03	9.71	21.52	141.91	24.00	-2.48	1/50
5	QPSK	2307.50	17.70	H	5.02	9.70	22.38	172.98	24.00	-1.62	1/23
		2310.00	17.60	H	5.03	9.71	22.29	169.43	24.00	-1.71	1/23
		2312.50	17.86	H	5.03	9.73	22.55	179.89	24.00	-1.45	1/23
	16-QAM	2311.10	16.73	H	5.02	9.70	21.41	138.36	24.00	-2.59	1/23
		2310.00	16.65	H	5.03	9.71	21.34	136.14	24.00	-2.66	1/23
		2308.90	16.81	H	5.03	9.73	21.50	141.25	24.00	-2.50	1/23

5G NR n41(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
100	QPSK	2546.01	20.55	H	5.29	9.91	25.17	328.85	33.00	-7.83	1/271
		2592.99	20.25	H	5.34	9.91	24.83	304.09	33.00	-8.17	1/137
		2640.00	19.96	H	5.39	9.88	24.45	278.61	33.00	-8.55	1/1
	16-QAM	2546.01	19.03	H	5.29	9.91	23.65	231.74	33.00	-9.35	1/271
		2592.99	19.23	H	5.34	9.91	23.81	240.44	33.00	-9.19	1/137
		2640.00	18.76	H	5.39	9.88	23.25	211.35	33.00	-9.75	1/1
90	QPSK	2541.00	21.05	H	5.28	9.92	25.69	370.68	33.00	-7.31	1/123
		2592.99	20.64	H	5.34	9.91	25.22	332.66	33.00	-7.78	1/123
		2644.98	20.31	H	5.40	9.87	24.79	301.30	33.00	-8.21	1/1
	16-QAM	2541.00	20.13	H	5.28	9.92	24.77	299.92	33.00	-8.23	1/123
		2592.99	19.28	H	5.34	9.91	23.86	243.22	33.00	-9.14	1/123
		2644.98	19.32	H	5.40	9.87	23.80	239.88	33.00	-9.20	1/1
80	QPSK	2536.02	21.02	H	5.28	9.93	25.68	369.83	33.00	-7.32	1/109
		2592.99	20.62	H	5.34	9.91	25.20	331.13	33.00	-7.80	1/109
		2649.99	20.11	H	5.41	9.87	24.57	286.42	33.00	-8.43	1/1
	16-QAM	2536.02	20.10	H	5.28	9.93	24.76	299.23	33.00	-8.24	1/109
		2592.99	19.61	H	5.34	9.91	24.19	262.42	33.00	-8.81	1/109
		2649.99	19.15	H	5.41	9.87	23.61	229.61	33.00	-9.39	1/1
70	QPSK	2531.02	21.10	H	5.28	9.94	25.77	377.57	33.00	-7.23	1/95
		2593.99	20.10	H	5.34	9.91	24.68	293.76	33.00	-8.32	1/95
		2654.98	20.17	H	5.41	9.87	24.63	290.40	33.00	-8.37	1/188
	16-QAM	2531.02	20.00	H	5.28	9.94	24.67	293.09	33.00	-8.33	1/95
		2593.99	19.24	H	5.34	9.91	23.82	240.99	33.00	-9.18	1/95
		2654.98	19.25	H	5.41	9.87	23.71	234.96	33.00	-9.29	1/188
60	QPSK	2526.00	20.60	H	5.27	9.95	25.29	338.06	33.00	-7.71	1/81
		2592.99	20.23	H	5.34	9.91	24.81	302.69	33.00	-8.19	1/81
		2659.98	19.87	H	5.41	9.87	24.32	270.40	33.00	-8.68	1/160
	16-QAM	2526.00	19.50	H	5.27	9.95	24.19	262.42	33.00	-8.81	1/81
		2592.99	19.25	H	5.34	9.91	23.83	241.55	33.00	-9.17	1/81
		2659.98	18.89	H	5.41	9.87	23.34	215.77	33.00	-9.66	1/160
50	QPSK	2521.01	20.51	H	5.26	9.96	25.21	331.89	33.00	-7.79	1/67
		2592.99	20.28	H	5.34	9.91	24.86	306.20	33.00	-8.14	1/67
		2665.00	20.11	H	5.42	9.87	24.55	285.10	33.00	-8.45	1/131
	16-QAM	2521.01	19.65	H	5.26	9.96	24.35	272.27	33.00	-8.65	1/67
		2592.99	19.52	H	5.34	9.91	24.10	257.04	33.00	-8.90	1/67
		2665.00	19.17	H	5.42	9.87	23.61	229.61	33.00	-9.39	1/131
40	QPSK	2516.01	20.55	H	5.26	9.97	25.26	335.74	33.00	-7.74	1/53
		2592.99	20.32	H	5.34	9.91	24.90	309.03	33.00	-8.10	1/53
		2670.00	19.72	H	5.43	9.87	24.17	261.22	33.00	-8.83	1/104
	16-QAM	2516.01	19.64	H	5.26	9.97	24.35	272.27	33.00	-8.65	1/53
		2592.99	19.25	H	5.34	9.91	23.83	241.55	33.00	-9.17	1/53
		2670.00	18.96	H	5.43	9.87	23.41	219.28	33.00	-9.59	1/104
30	QPSK	2511.00	20.38	H	5.25	9.98	25.10	323.59	33.00	-7.90	1/76
		2592.99	20.33	H	5.34	9.91	24.91	309.74	33.00	-8.09	1/39
		2675.00	19.75	H	5.43	9.87	24.20	263.03	33.00	-8.80	1/39
	16-QAM	2511.00	19.41	H	5.25	9.98	24.13	258.82	33.00	-8.87	1/76
		2592.99	19.35	H	5.34	9.91	23.93	247.17	33.00	-9.07	1/39
		2675.00	18.85	H	5.43	9.87	23.30	213.80	33.00	-9.70	1/39
20	QPSK	2506.02	19.92	H	5.25	9.99	24.66	292.42	33.00	-8.34	1/1
		2592.99	20.23	H	5.34	9.91	24.81	302.69	33.00	-8.19	1/1
		2679.99	19.36	H	5.43	9.87	23.80	239.88	33.00	-9.20	1/1
	16-QAM	2506.02	19.02	H	5.25	9.99	23.76	237.68	33.00	-9.24	1/1
		2592.99	19.25	H	5.34	9.91	23.83	241.55	33.00	-9.17	1/1
		2679.99	18.49	H	5.43	9.87	22.93	196.34	33.00	-10.07	1/1
15	QPSK	2503.50	19.85	H	5.24	9.99	24.60	288.40	33.00	-8.40	1/36
		2592.99	20.31	H	5.34	9.91	24.89	308.32	33.00	-8.11	1/36
		2682.48	19.86	H	5.43	9.87	24.31	269.77	33.00	-8.69	1/1
	16-QAM	2503.50	18.93	H	5.24	9.99	23.68	233.35	33.00	-9.32	1/36
		2592.99	19.40	H	5.34	9.91	23.98	250.03	33.00	-9.02	1/36
		2682.48	18.93	H	5.43	9.87	23.38	217.77	33.00	-9.62	1/1
10	QPSK	2501.01	19.67	H	5.24	10.00	24.42	276.69	33.00	-8.58	1/22
		2592.99	20.31	H	5.34	9.91	24.89	308.32	33.00	-8.11	1/22
		2685.00	19.89	H	5.43	9.87	24.33	271.02	33.00	-8.67	1/22
	16-QAM	2501.01	18.75	H	5.24	10.00	23.50	223.87	33.00	-9.50	1/22
		2592.99	19.41	H	5.34	9.91	23.99	250.61	33.00	-9.01	1/22
		2685.00	18.81	H	5.43	9.87	23.25	211.35	33.00	-9.75	1/22

5G NR n41(PC2, SRS1, ANT SUB2)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	2501.01	13.65	H	5.24	10.00	18.40	69.18	33.00	-14.60
	2592.99	14.58	H	5.34	9.91	19.16	82.41	33.00	-13.84
	2685.00	14.24	H	5.43	9.87	18.68	73.79	33.00	-14.32

5G NR n41(PC2, SRS2, ANT SUB4)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
10	2501.01	11.60	H	5.24	10.00	16.35	43.15	33.00	-16.65
	2592.99	13.80	H	5.34	9.91	18.38	68.87	33.00	-14.62
	2685.00	9.54	H	5.43	9.87	13.98	25.00	33.00	-19.02

5G NR n41(PC2, SRS3, ANT SUB1)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
50	2521.01	15.52	H	5.26	9.96	20.22	105.20	33.00	-12.78
	2592.99	18.46	V	5.34	9.91	23.04	201.37	33.00	-9.96
	2665.00	15.43	V	5.42	9.87	19.88	97.27	33.00	-13.12

5G NR n66

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
40	QPSK	1730.00	19.22	H	4.33	9.59	24.48	280.54	30.00	-5.52	1/214
		1745.00	20.55	H	4.35	9.66	25.86	385.48	30.00	-4.14	1/108
		1760.00	18.40	H	4.37	9.68	23.72	235.50	30.00	-6.28	1/108
	16-QAM	1730.00	18.44	H	4.33	9.59	23.70	234.42	30.00	-6.30	1/214
		1745.00	20.01	H	4.35	9.66	25.32	340.41	30.00	-4.68	1/108
		1760.00	17.89	H	4.37	9.68	23.21	209.41	30.00	-6.79	1/108
30	QPSK	1725.00	19.52	H	4.32	9.57	24.77	299.92	30.00	-5.23	1/80
		1745.00	19.82	H	4.35	9.66	25.13	325.84	30.00	-4.87	1/80
		1765.00	19.00	H	4.37	9.68	24.31	269.77	30.00	-5.69	1/158
	16-QAM	1725.00	18.90	H	4.32	9.57	24.15	260.02	30.00	-5.85	1/80
		1745.00	19.32	H	4.35	9.66	24.63	290.40	30.00	-5.37	1/80
		1765.00	18.50	H	4.37	9.68	23.81	240.44	30.00	-6.19	1/158
25	QPSK	1722.50	19.40	H	4.32	9.56	24.64	291.07	30.00	-5.36	1/67
		1745.00	19.86	H	4.35	9.66	25.17	328.85	30.00	-4.83	1/67
		1767.50	19.43	H	4.38	9.68	24.73	297.17	30.00	-5.27	1/1
	16-QAM	1722.50	18.90	H	4.32	9.56	24.14	259.42	30.00	-5.86	1/67
		1745.00	19.33	H	4.35	9.66	24.64	291.07	30.00	-5.36	1/67
		1767.50	18.67	H	4.38	9.68	23.97	249.46	30.00	-6.03	1/1
20	QPSK	1720.00	19.67	H	4.32	9.55	24.90	309.03	30.00	-5.10	1/104
		1745.00	20.09	H	4.35	9.66	25.40	346.74	30.00	-4.60	1/53
		1770.00	19.04	H	4.38	9.68	24.34	271.64	30.00	-5.66	1/53
	16-QAM	1720.00	19.18	H	4.32	9.55	24.41	276.06	30.00	-5.59	1/104
		1745.00	19.37	H	4.35	9.66	24.68	293.76	30.00	-5.32	1/53
		1770.00	18.44	H	4.38	9.68	23.74	236.59	30.00	-6.26	1/53
15	QPSK	1717.50	19.93	H	4.31	9.53	25.15	327.34	30.00	-4.85	1/77
		1745.00	19.99	H	4.35	9.66	25.30	338.84	30.00	-4.70	1/40
		1772.50	17.98	H	4.38	9.68	23.28	212.81	30.00	-6.72	1/40
	16-QAM	1717.50	19.34	H	4.31	9.53	24.56	285.76	30.00	-5.44	1/77
		1745.00	19.36	H	4.35	9.66	24.67	293.09	30.00	-5.33	1/40
		1772.50	17.45	H	4.38	9.68	22.75	188.36	30.00	-7.25	1/40
10	QPSK	1715.00	20.76	H	4.31	9.52	25.97	395.37	30.00	-4.03	1/50
		1745.00	20.15	H	4.35	9.66	25.46	351.56	30.00	-4.54	1/26
		1775.00	17.86	H	4.38	9.68	23.16	207.01	30.00	-6.84	1/26
	16-QAM	1715.00	20.27	H	4.31	9.52	25.48	353.18	30.00	-4.52	1/50
		1745.00	19.61	H	4.35	9.66	24.92	310.46	30.00	-5.08	1/26
		1775.00	17.38	H	4.38	9.68	22.68	185.35	30.00	-7.32	1/26
5	QPSK	1712.50	21.03	H	4.31	9.51	26.23	419.76	30.00	-3.77	1/23
		1745.00	20.08	H	4.35	9.66	25.39	345.94	30.00	-4.61	1/23
		1777.50	17.83	H	4.39	9.68	23.12	205.12	30.00	-6.88	1/23
	16-QAM	1712.50	20.59	H	4.31	9.51	25.79	379.31	30.00	-4.21	1/23
		1745.00	19.55	H	4.35	9.66	24.86	306.20	30.00	-5.14	1/23
		1777.50	17.25	H	4.39	9.68	22.54	179.47	30.00	-7.46	1/23

5G NR n71

BW (MHz)	Modulation	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	ERP (mW)	Limit (dBm)	Delta (dB)	RB
20	QPSK	673.00	23.20	V	2.73	-1.43	19.04	80.17	34.77	-15.73	1/104
		680.50	22.72	V	2.74	-1.41	18.57	71.94	34.77	-16.20	1/53
		688.00	21.41	V	2.76	-1.39	17.27	53.33	34.77	-17.50	1/53
	16-QAM	673.00	22.20	V	2.73	-1.43	18.04	63.68	34.77	-16.73	1/104
		680.50	21.73	V	2.74	-1.41	17.58	57.28	34.77	-17.19	1/53
		688.00	20.57	V	2.76	-1.39	16.43	43.95	34.77	-18.34	1/53
15	QPSK	670.50	23.06	V	2.72	-1.44	18.90	77.62	34.77	-15.87	1/77
		680.50	22.21	V	2.74	-1.41	18.06	63.97	34.77	-16.71	1/77
		690.50	21.33	V	2.76	-1.38	17.18	52.24	34.77	-17.59	1/1
	16-QAM	670.50	21.99	V	2.72	-1.44	17.83	60.67	34.77	-16.94	1/77
		680.50	21.07	V	2.74	-1.41	16.92	49.20	34.77	-17.85	1/77
		690.50	20.34	V	2.76	-1.38	16.19	41.59	34.77	-18.58	1/1
10	QPSK	668.00	23.29	V	2.72	-1.45	19.13	81.85	34.77	-15.64	1/50
		680.50	22.38	V	2.74	-1.41	18.23	66.53	34.77	-16.54	1/50
		693.00	21.48	V	2.77	-1.37	17.34	54.20	34.77	-17.43	1/26
	16-QAM	668.00	22.37	V	2.72	-1.45	18.21	66.22	34.77	-16.56	1/50
		680.50	21.36	V	2.74	-1.41	17.21	52.60	34.77	-17.56	1/50
		693.00	20.54	V	2.77	-1.37	16.40	43.65	34.77	-18.37	1/26
5	QPSK	665.50	23.21	V	2.71	-1.45	19.04	80.17	34.77	-15.73	1/23
		680.50	22.13	V	2.74	-1.41	17.98	62.81	34.77	-16.79	1/23
		695.50	21.55	V	2.77	-1.36	17.42	55.21	34.77	-17.35	1/1
	16-QAM	665.50	22.16	V	2.71	-1.45	17.99	62.95	34.77	-16.78	1/23
		680.50	21.27	V	2.74	-1.41	17.12	51.52	34.77	-17.65	1/23
		695.50	20.63	V	2.77	-1.36	16.50	44.67	34.77	-18.27	1/1

5G NR n77(PC2, 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
100	QPSK	3499.98	23.79	H	6.21	10.67	28.25	668.34	30.00	-1.75	1/137
	16-QAM	3499.98	22.92	H	6.25	10.76	27.43	553.35	30.00	-2.57	1/137
90	QPSK	3495.00	23.92	H	6.21	10.66	28.38	688.65	30.00	-1.62	1/123
		3499.98	23.92	H	6.21	10.67	28.38	688.65	30.00	-1.62	1/243
		3504.99	23.84	H	6.21	10.68	28.31	677.64	30.00	-1.69	1/123
	16-QAM	3495.00	22.96	H	6.21	10.66	27.42	552.08	30.00	-2.58	1/123
		3499.98	23.03	H	6.25	10.76	27.54	567.54	30.00	-2.46	1/243
		3504.99	22.90	H	6.21	10.68	27.37	545.76	30.00	-2.63	1/123
80	QPSK	3490.02	23.98	H	6.20	10.66	28.44	698.23	30.00	-1.56	1/109
		3499.98	23.98	H	6.21	10.67	28.44	698.23	30.00	-1.56	1/109
		3510.00	23.84	H	6.22	10.69	28.31	677.64	30.00	-1.69	1/109
	16-QAM	3490.02	22.98	H	6.20	10.66	27.44	554.63	30.00	-2.56	1/109
		3499.98	23.07	H	6.21	10.67	27.54	567.54	30.00	-2.46	1/109
		3510.00	22.93	H	6.22	10.69	27.40	549.54	30.00	-2.60	1/109
70	QPSK	3485.01	23.87	H	6.20	10.65	28.32	679.20	30.00	-1.68	1/187
		3499.98	23.93	H	6.21	10.67	28.39	690.24	30.00	-1.61	1/95
		3514.98	23.64	H	6.22	10.70	28.11	647.14	30.00	-1.89	1/95
	16-QAM	3485.01	23.02	H	6.20	10.65	27.47	558.47	30.00	-2.53	1/187
		3499.98	23.07	H	6.21	10.67	27.53	566.24	30.00	-2.47	1/95
		3514.98	22.89	H	6.22	10.70	27.36	544.50	30.00	-2.64	1/95
60	QPSK	3480.00	23.86	H	6.19	10.65	28.31	677.64	30.00	-1.69	1/160
		3499.98	23.93	H	6.21	10.67	28.39	690.24	30.00	-1.61	1/81
		3519.99	23.87	H	6.23	10.71	28.35	683.91	30.00	-1.65	1/81
	16-QAM	3480.00	22.91	H	6.19	10.65	27.36	544.50	30.00	-2.64	1/160
		3499.98	22.99	H	6.25	10.76	27.50	562.34	30.00	-2.50	1/81
		3514.98	22.90	H	6.23	10.71	27.38	547.02	30.00	-2.62	1/81
50	QPSK	3475.02	23.78	H	6.18	10.64	28.24	666.81	30.00	-1.76	1/131
		3499.98	23.95	H	6.21	10.67	28.41	693.43	30.00	-1.59	1/67
		3525.00	24.02	H	6.23	10.71	28.51	709.58	30.00	-1.49	1/67
	16-QAM	3475.02	22.73	H	6.18	10.64	27.19	523.60	30.00	-2.81	1/131
		3499.98	23.15	H	6.21	10.67	27.61	576.77	30.00	-2.39	1/67
		3525.00	23.08	H	6.23	10.71	27.57	571.48	30.00	-2.43	1/67
40	QPSK	3470.01	23.99	H	6.18	10.63	28.44	698.23	30.00	-1.56	1/104
		3499.98	23.98	H	6.21	10.67	28.44	698.23	30.00	-1.56	1/104
		3529.98	23.94	H	6.23	10.72	28.43	696.63	30.00	-1.57	1/1
	16-QAM	3470.01	23.05	H	6.18	10.63	27.50	562.34	30.00	-2.50	1/104
		3499.98	23.10	H	6.21	10.67	27.56	570.16	30.00	-2.44	1/104
		3529.98	23.02	H	6.23	10.72	27.51	563.64	30.00	-2.49	1/1
30	QPSK	3465.00	23.58	H	6.17	10.63	28.03	635.33	30.00	-1.97	1/76
		3499.98	23.78	H	6.21	10.67	28.24	666.81	30.00	-1.76	1/76
		3535.02	23.55	H	6.24	10.73	28.04	636.80	30.00	-1.96	1/1
	16-QAM	3465.00	22.70	H	6.17	10.63	27.15	518.80	30.00	-2.85	1/76
		3499.98	22.77	H	6.21	10.67	27.24	529.66	30.00	-2.76	1/76
		3535.02	22.61	H	6.24	10.73	27.10	512.86	30.00	-2.90	1/1
25	QPSK	3462.51	24.10	H	6.17	10.62	28.37	687.07	30.00	-1.44	1/63
		3499.98	23.82	H	6.21	10.67	28.28	672.98	30.00	-1.72	1/63
		3537.48	23.44	H	6.24	10.74	27.97	626.61	30.00	-2.06	1/1
	16-QAM	3462.51	23.32	H	6.17	10.62	27.78	599.79	30.00	-2.22	1/63
		3499.98	22.95	H	6.21	10.67	27.41	550.81	30.00	-2.59	1/63
		3537.48	22.36	H	6.24	10.74	26.86	485.29	30.00	-3.14	1/1
20	QPSK	3460.02	23.51	H	6.17	10.62	27.96	625.17	30.00	-2.04	1/49
		3499.98	23.82	H	6.21	10.67	28.28	672.98	30.00	-1.72	1/49
		3540.00	23.74	H	6.24	10.74	28.24	666.81	30.00	-1.76	1/1
	16-QAM	3460.02	22.45	H	6.17	10.62	26.90	489.78	30.00	-3.10	1/49
		3499.98	22.92	H	6.21	10.67	27.39	548.28	30.00	-2.61	1/49
		3540.00	22.84	H	6.24	10.74	27.34	542.00	30.00	-2.66	1/1
15	QPSK	3457.50	23.64	H	6.17	10.62	28.09	644.17	30.00	-1.91	1/36
		3499.98	23.83	H	6.21	10.67	28.29	674.53	30.00	-1.71	1/36
		3542.49	23.64	H	6.24	10.75	28.15	653.13	30.00	-1.85	1/1
	16-QAM	3457.50	22.54	H	6.17	10.62	26.99	500.03	30.00	-3.01	1/36
		3499.98	22.89	H	6.21	10.67	27.36	544.50	30.00	-2.64	1/36
		3542.49	22.68	H	6.24	10.75	27.19	523.60	30.00	-2.81	1/1
10	QPSK	3455.01	23.47	H	6.16	10.61	27.92	619.44	30.00	-2.08	1/22
		3499.98	23.73	H	6.21	10.67	28.19	659.17	30.00	-1.81	1/12
		3544.98	23.65	H	6.24	10.75	28.15	653.13	30.00	-1.85	1/1
	16-QAM	3455.01	22.36	H	6.16	10.61	26.81	479.73	30.00	-3.19	1/22
		3499.98	23.38	H	6.50	10.58	27.45	555.90	30.00	-2.55	1/12
		3544.98	22.84	H	6.24	10.75	27.34	542.00	30.00	-2.66	1/1

5G NR n77(PC2, 3450-3550 MHz, SRS1, ANT SUB2)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
15	3457.50	14.86	H	6.17	10.62	19.31	85.31	30.00	-10.69
	3499.98	14.52	H	6.21	10.67	18.98	79.07	30.00	-11.02
	3542.49	14.29	H	6.24	10.75	18.79	75.68	30.00	-11.21

5G NR n77(PC2,3450-3550 MHz, SRS2, ANT SUB4)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
15	3457.50	19.90	H	6.17	10.62	24.35	272.27	30.00	-5.65
	3499.98	19.20	H	6.21	10.67	23.66	232.27	30.00	-6.34
	3542.49	17.36	H	6.24	10.74	21.86	153.46	30.00	-8.14

5G NR n77(PC2,3450-3550 MHz, SRS3, ANT SUB3)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
90	3495.00	19.36	H	6.21	10.66	23.82	240.97	30.00	-6.18
	3499.98	19.45	H	6.21	10.67	23.91	246.19	30.00	-6.09
	3504.99	19.45	H	6.21	10.68	23.92	246.59	30.00	-6.08

5G NR n77(PC2,3700-3980 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
100	QPSK	3750.00	23.18	H	6.43	10.69	27.44	554.63	30.00	-2.56	1/271
		3840.00	24.61	H	6.50	10.58	28.69	739.61	30.00	-1.31	1/137
		3930.00	23.67	H	6.58	10.48	27.56	570.16	30.00	-2.44	1/271
	16-QAM	3750.00	22.30	H	6.43	10.69	26.56	452.90	30.00	-20.12	1/271
		3840.00	23.36	H	6.50	10.58	27.44	554.63	30.00	-19.18	1/137
		3930.00	22.73	H	6.58	10.48	26.62	459.20	30.00	-20.28	1/271
90	QPSK	3745.02	22.95	H	6.43	10.70	27.22	527.23	30.00	-2.78	1/243
		3840.00	24.39	H	6.50	10.58	28.47	703.07	30.00	-1.53	1/123
		3934.98	23.33	H	6.59	10.48	27.22	527.23	30.00	-2.78	1/243
	16-QAM	3745.02	21.87	H	6.43	10.70	26.14	411.15	30.00	-3.86	1/243
		3840.00	23.61	H	6.50	10.58	27.69	587.49	30.00	-2.31	1/123
		3934.98	22.35	H	6.59	10.48	26.24	420.73	30.00	-3.76	1/243
80	QPSK	3740.01	23.21	H	6.42	10.70	27.50	562.34	30.00	-2.50	1/1
		3840.00	24.44	H	6.50	10.58	28.52	711.21	30.00	-1.48	1/109
		3939.99	23.86	H	6.59	10.47	27.74	594.29	30.00	-2.26	1/215
	16-QAM	3740.01	22.10	H	6.42	10.70	26.39	435.51	30.00	-3.61	1/1
		3840.00	23.45	H	6.50	10.58	27.53	566.24	30.00	-2.47	1/109
		3939.99	22.79	H	6.59	10.47	26.67	464.52	30.00	-3.33	1/215
70	QPSK	3735.00	23.27	H	6.41	10.71	27.56	570.16	30.00	-2.44	1/187
		3840.00	24.28	H	6.50	10.58	28.36	685.49	30.00	-1.64	1/95
		3945.00	23.85	H	6.60	10.47	27.73	592.93	30.00	-2.27	1/187
	16-QAM	3735.00	22.21	H	6.41	10.71	26.50	446.68	30.00	-3.50	1/187
		3840.00	23.23	H	6.50	10.58	27.31	538.27	30.00	-2.69	1/95
		3945.00	22.82	H	6.60	10.47	26.70	467.74	30.00	-3.30	1/187
60	QPSK	3730.02	23.46	H	6.41	10.72	27.77	598.41	30.00	-2.23	1/1
		3840.00	24.14	H	6.50	10.58	28.22	663.74	30.00	-1.78	1/81
		3949.98	23.88	H	6.60	10.47	27.75	595.66	30.00	-2.25	1/160
	16-QAM	3730.02	22.45	H	6.41	10.72	26.76	474.24	30.00	-3.24	1/1
		3840.00	23.22	H	6.50	10.58	27.30	537.03	30.00	-2.70	1/81
		3949.98	22.87	H	6.60	10.47	26.74	472.06	30.00	-3.26	1/160
50	QPSK	3725.01	23.72	H	6.41	10.72	28.04	636.80	30.00	-1.96	1/1
		3840.00	24.49	H	6.50	10.58	28.57	719.45	30.00	-1.43	1/67
		3954.99	23.19	H	6.60	10.47	27.06	508.16	30.00	-2.94	1/131
	16-QAM	3725.01	22.78	H	6.41	10.72	27.10	512.86	30.00	-2.90	1/1
		3840.00	23.54	H	6.50	10.58	27.62	578.10	30.00	-2.38	1/67
		3954.99	22.21	H	6.60	10.47	26.08	405.51	30.00	-3.92	1/131
40	QPSK	3720.02	23.56	H	6.40	10.73	27.89	615.18	30.00	-2.11	1/1
		3840.00	24.33	H	6.50	10.58	28.41	693.43	30.00	-1.59	1/53
		3960.00	23.92	H	6.60	10.47	27.78	599.79	30.00	-2.22	1/104
	16-QAM	3720.02	22.69	H	6.40	10.73	27.02	503.50	30.00	-2.98	1/1
		3840.00	23.45	H	6.50	10.58	27.53	566.24	30.00	-2.47	1/53
		3960.00	22.95	H	6.60	10.47	26.81	479.73	30.00	-3.19	1/104
30	QPSK	3715.02	23.59	H	6.40	10.73	27.93	620.87	30.00	-2.07	1/1
		3840.00	24.46	H	6.50	10.58	28.54	714.50	30.00	-1.46	1/39
		3964.98	23.89	H	6.61	10.46	27.74	594.29	30.00	-2.26	1/76
	16-QAM	3715.02	22.61	H	6.40	10.73	26.95	495.45	30.00	-3.05	1/1
		3840.00	23.48	H	6.50	10.58	27.56	570.16	30.00	-2.44	1/39
		3964.98	22.93	H	6.61	10.46	26.78	476.43	30.00	-3.22	1/76
25	QPSK	3712.50	22.85	H	6.40	10.74	27.19	523.60	30.00	-2.81	1/1
		3840.00	23.52	H	6.50	10.58	27.60	575.44	30.00	-2.40	1/32
		3967.50	23.78	H	6.61	10.46	27.63	579.43	30.00	-2.37	1/1
	16-QAM	3710.01	21.94	H	6.40	10.74	26.28	424.62	30.00	-3.72	1/1
		3840.00	22.67	H	6.50	10.58	26.75	473.15	30.00	-3.25	1/32
		3969.99	23.00	H	6.61	10.46	26.85	484.17	30.00	-3.15	1/1
20	QPSK	3710.01	23.33	H	6.39	10.74	27.68	586.14	30.00	-2.32	1/1
		3840.00	24.56	H	6.50	10.58	28.64	731.14	30.00	-1.36	1/26
		3969.99	23.43	H	6.61	10.46	27.28	534.56	30.00	-2.72	1/49
	16-QAM	3710.01	22.40	H	6.39	10.74	26.75	473.15	30.00	-3.25	1/1
		3840.00	23.52	H	6.50	10.58	27.60	575.44	30.00	-2.40	1/26
		3969.99	22.44	H	6.61	10.46	26.29	425.60	30.00	-3.71	1/49
15	QPSK	3707.52	24.07	H	6.39	10.74	28.42	695.02	30.00	-1.58	1/1
		3840.00	24.62	H	6.50	10.58	28.70	741.31	30.00	-1.30	1/19
		3972.48	23.12	H	6.62	10.46	26.97	497.74	30.00	-3.03	1/36
	16-QAM	3707.52	23.14	H	6.39	10.74	27.49	561.05	30.00	-2.51	1/1
		3840.00	23.72	H	6.50	10.58	27.80	602.56	30.00	-2.20	1/19
		3972.48	22.13	H	6.62	10.46	25.98	396.28	30.00	-4.02	1/36
10	QPSK	3705.00	24.48	H	6.39	10.74	28.84	765.60	30.00	-1.16	1/12
		3840.00	24.45	H	6.50	10.58	28.53	712.85	30.00	-1.47	1/12
		3975.00	23.76	H	6.62	10.46	27.60	575.44	30.00	-2.40	1/22
	16-QAM	3705.00	23.53	H	6.39	10.74	27.89	615.18	30.00	-2.11	1/12
		3840.00	23.54	H	6.50	10.58	27.62	578.10	30.00	-2.38	1/12
		3975.00	22.64	H	6.62	10.46	26.48	444.63	30.00	-3.52	1/22

5G NR n77(PC2,3700-3980 MHz, SRS1, ANT SUB2)

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
40	3720.00	16.86	H	6.40	10.73	21.19	131.52	30.00	-8.81
	3840.00	16.09	H	6.50	10.58	20.17	103.99	30.00	-9.83
	3960.00	15.96	H	6.60	10.47	19.82	95.94	30.00	-10.18

5G NR n77(PC2,3700-3980 MHz, SRS2 ANT SUB4

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
60	3730.02	13.68	V	6.41	10.72	17.98	62.81	30.00	-12.02
	3840.00	15.63	V	6.50	10.58	19.70	93.33	30.00	-10.30
	3949.98	14.08	H	6.60	10.47	17.95	62.37	30.00	-12.05

5G NR n77(PC2,3700-3980 MHz, SRS3 ANT SUB3

BW (MHz)	f (MHz)	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (dBm)	Delta (dB)
50	3725.01	17.67	V	6.41	10.72	21.99	158.12	30.00	-8.01
	3840.00	17.60	V	6.50	10.58	21.67	146.89	30.00	-8.33
	3954.99	17.44	V	6.60	10.47	21.30	134.90	30.00	-8.70

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9.2. RADIATIED SPURIOUS EMISSION

RULE PART(S)

FCC: §2.1053, §27. 53

LIMIT

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:
(c)(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

(f) For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(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.

(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 that 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.

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 1 GHz and 1 MHz for emissions above 1 GHz
b) Set VBW ≥ 3 × RBW;
c) Set span ≥ 1.5 times the OBW;
d) Sweep time = auto couple;
e) Detector = rms;
f) Ensure that the number of measurement points ≥ span/RBW;
g) Trace Mode = average(WCDMA, LTE FDD, 5G NR FDD), Maxhold(LTE TDD, 5G NR TDD);

NOTE1

5G NR: All Waveforms (CP-OFDM vs DFT-s_OFDM) and modulations (π/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.

RESULTS

See the following pages.

9.2.1. SPURIOUS RADIATION PLOTS

WCDMA Band 4

REL99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-06-13
Test Engineer:	24542
Configuration:	EUT, Y-Position
Location:	Chamber 1
Mode:	Rel99 Band 4 Harmonics
Test Votage:	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)	Notes
Low Ch, 1712.4MHz									
3424.80	-8.8	V	3.0	46.4	1.0	-54.3	-13.0	-41.3	
5137.20	-7.7	V	3.0	46.1	1.0	-52.8	-13.0	-39.8	
6849.60	-3.3	V	3.0	45.5	1.0	-47.8	-13.0	-34.8	
3424.80	-8.4	H	3.0	46.4	1.0	-53.9	-13.0	-40.9	
5137.20	-7.4	H	3.0	46.1	1.0	-52.5	-13.0	-39.5	
6849.60	-4.5	H	3.0	45.5	1.0	-48.9	-13.0	-35.9	
Mid Ch, 1732.6MHz									
3465.20	-8.6	V	3.0	46.4	1.0	-53.9	-13.0	-40.9	
5197.80	-7.3	V	3.0	46.1	1.0	-52.4	-13.0	-39.4	
6930.40	-3.5	V	3.0	45.5	1.0	-48.0	-13.0	-35.0	
3465.20	-8.3	H	3.0	46.4	1.0	-53.7	-13.0	-40.7	
5197.80	-7.1	H	3.0	46.1	1.0	-52.2	-13.0	-39.2	
6930.40	-4.2	H	3.0	45.5	1.0	-48.6	-13.0	-35.6	
High Ch, 1752.6MHz									
3505.20	-8.5	V	3.0	46.3	1.0	-53.8	-13.0	-40.8	
5257.80	-7.3	V	3.0	46.0	1.0	-52.3	-13.0	-39.3	
7010.40	-2.9	V	3.0	45.5	1.0	-47.3	-13.0	-34.3	
3505.20	-8.2	H	3.0	46.3	1.0	-53.5	-13.0	-40.5	
5257.80	-7.1	H	3.0	46.0	1.0	-52.1	-13.0	-39.1	
7010.40	-3.6	H	3.0	45.5	1.0	-48.1	-13.0	-35.1	

LTE Band 7

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-26
Test Engineer: 26087
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 7 Harmonics, 15MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

15 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2507.5MHz									
5015.00	-13.2	V	3.0	46.2	1.0	-58.4	-25.0	-33.4	
7522.50	-6.1	V	3.0	45.5	1.0	-50.7	-25.0	-25.7	
10030.00	-12.7	V	3.0	45.6	1.0	-57.2	-25.0	-32.2	
5015.00	-8.3	H	3.0	46.2	1.0	-53.5	-25.0	-28.5	
7522.50	-3.4	H	3.0	45.5	1.0	-47.9	-25.0	-22.9	
10030.00	-12.6	H	3.0	45.6	1.0	-57.1	-25.0	-32.1	
Mid Ch, 2535MHz									
5070.00	-9.5	V	3.0	46.2	1.0	-54.7	-25.0	-29.7	
7605.00	-1.4	V	3.0	45.6	1.0	-46.0	-25.0	-21.0	
10140.00	-12.6	V	3.0	45.7	1.0	-57.2	-25.0	-32.2	
5070.00	-6.5	H	3.0	46.2	1.0	-51.7	-25.0	-26.7	
7605.00	-3.1	H	3.0	45.6	1.0	-47.7	-25.0	-22.7	
10140.00	-12.1	H	3.0	45.7	1.0	-56.8	-25.0	-31.8	
High Ch, 2562.5MHz									
5125.00	-13.4	V	3.0	46.1	1.0	-58.6	-25.0	-33.6	
7687.50	-4.5	V	3.0	45.6	1.0	-49.0	-25.0	-24.0	
10250.00	-12.5	V	3.0	45.8	1.0	-57.3	-25.0	-32.3	
5125.00	-9.5	H	3.0	46.1	1.0	-54.6	-25.0	-29.6	
7687.50	-4.7	H	3.0	45.6	1.0	-49.2	-25.0	-24.2	
10250.00	-12.3	H	3.0	45.8	1.0	-57.1	-25.0	-32.1	

LTE Band 7 ANT SUB2

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-28
Test Engineer: 26087
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: LTE_QPSK Band 7 Harmonics, 20MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

20 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2510MHz									
5020.00	-15.5	V	3.0	46.2	1.0	-60.7	-25.0	-35.7	
7530.00	-11.0	V	3.0	45.5	1.0	-55.5	-25.0	-30.5	
10040.00	-10.0	V	3.0	45.6	1.0	-54.6	-25.0	-29.6	
12550.00	-8.2	V	3.0	47.1	1.0	-54.3	-25.0	-29.3	
15060.00	-8.8	V	3.0	46.1	1.0	-53.9	-25.0	-28.9	
5020.00	-14.9	H	3.0	46.2	1.0	-60.1	-25.0	-35.1	
7530.00	-13.3	H	3.0	45.5	1.0	-57.9	-25.0	-32.9	
10040.00	-10.6	H	3.0	45.6	1.0	-55.1	-25.0	-30.1	
12550.00	-6.2	H	3.0	47.1	1.0	-52.3	-25.0	-27.3	
15060.00	-8.7	H	3.0	46.1	1.0	-53.8	-25.0	-28.8	
Mid Ch, 2535MHz									
5070.00	-15.5	V	3.0	46.2	1.0	-60.6	-25.0	-35.6	
7605.00	-10.0	V	3.0	45.6	1.0	-54.6	-25.0	-29.6	
10140.00	-10.0	V	3.0	45.7	1.0	-54.7	-25.0	-29.7	
12675.00	-8.0	V	3.0	47.0	1.0	-54.0	-25.0	-29.0	
15210.00	-8.5	V	3.0	46.0	1.0	-53.6	-25.0	-28.6	
5070.00	-14.6	H	3.0	46.2	1.0	-59.8	-25.0	-34.8	
7605.00	-10.7	H	3.0	45.6	1.0	-55.3	-25.0	-30.3	
10140.00	-9.6	H	3.0	45.7	1.0	-54.3	-25.0	-29.3	
12675.00	-5.7	H	3.0	47.0	1.0	-51.7	-25.0	-26.7	
15210.00	-8.4	H	3.0	46.0	1.0	-53.4	-25.0	-28.4	
High Ch, 2560MHz									
5120.00	-15.5	V	3.0	46.1	1.0	-60.7	-25.0	-35.7	
7680.00	-10.5	V	3.0	45.6	1.0	-55.1	-25.0	-30.1	
10240.00	-10.3	V	3.0	45.8	1.0	-55.1	-25.0	-30.1	
12800.00	-8.9	V	3.0	47.0	1.0	-54.9	-25.0	-29.9	
15360.00	-8.2	V	3.0	46.0	1.0	-53.1	-25.0	-28.1	
5120.00	-14.5	H	3.0	46.1	1.0	-59.6	-25.0	-34.6	
7680.00	-11.7	H	3.0	45.6	1.0	-56.2	-25.0	-31.2	
10240.00	-10.3	H	3.0	45.8	1.0	-55.0	-25.0	-30.0	
12800.00	-7.5	H	3.0	47.0	1.0	-53.5	-25.0	-28.5	
15360.00	-8.1	H	3.0	46.0	1.0	-53.0	-25.0	-28.0	

LTE Band 12

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-12
Test Engineer: 24542
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

10 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 704MHz									
1408.00	-15.6	V	3.0	46.2	1.0	-60.8	-13.0	-47.8	
2112.00	-12.8	V	3.0	46.8	1.0	-58.5	-13.0	-45.5	
2816.00	-10.6	V	3.0	47.0	1.0	-56.6	-13.0	-43.6	
1408.00	-17.0	H	3.0	46.2	1.0	-62.2	-13.0	-49.2	
2112.00	-13.3	H	3.0	46.8	1.0	-59.1	-13.0	-46.1	
2816.00	-10.8	H	3.0	47.0	1.0	-56.8	-13.0	-43.8	
Mid Ch, 707.5MHz									
1415.00	-15.5	V	3.0	46.2	1.0	-60.7	-13.0	-47.7	
2122.50	-12.9	V	3.0	46.8	1.0	-58.6	-13.0	-45.6	
2830.00	-10.7	V	3.0	47.0	1.0	-56.7	-13.0	-43.7	
1415.00	-16.8	H	3.0	46.2	1.0	-62.0	-13.0	-49.0	
2122.50	-13.3	H	3.0	46.8	1.0	-59.0	-13.0	-46.0	
2830.00	-10.6	H	3.0	47.0	1.0	-56.6	-13.0	-43.6	
High Ch, 711MHz									
1422.00	-15.5	V	3.0	46.2	1.0	-60.7	-13.0	-47.7	
2133.00	-12.6	V	3.0	46.8	1.0	-58.4	-13.0	-45.4	
2844.00	-10.4	V	3.0	47.0	1.0	-56.4	-13.0	-43.4	
1422.00	-17.0	H	3.0	46.2	1.0	-62.3	-13.0	-49.3	
2133.00	-13.3	H	3.0	46.8	1.0	-59.0	-13.0	-46.0	
2844.00	-10.6	H	3.0	47.0	1.0	-56.6	-13.0	-43.6	

LTE Band 13

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-05
Test Engineer: 24542
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 779.5MHz									
1559.00	-17.3	V	3.0	46.3	1.0	-62.7	-40.0	-22.7	
2338.50	-12.2	V	3.0	46.8	1.0	-58.0	-13.0	-45.0	
3118.00	-10.2	V	3.0	46.9	1.0	-56.1	-13.0	-43.1	
1559.00	-20.6	H	3.0	46.3	1.0	-65.9	-40.0	-25.9	
2338.50	-12.5	H	3.0	46.8	1.0	-58.3	-13.0	-45.3	
3118.00	-10.1	H	3.0	46.9	1.0	-56.0	-13.0	-43.0	
Mid Ch, 782MHz									
1564.00	-17.4	V	3.0	46.4	1.0	-62.7	-40.0	-22.7	
2346.00	-12.0	V	3.0	46.8	1.0	-57.8	-13.0	-44.8	
3128.00	-10.0	V	3.0	46.9	1.0	-55.9	-13.0	-42.9	
1564.00	-20.5	H	3.0	46.4	1.0	-65.9	-40.0	-25.9	
2346.00	-12.3	H	3.0	46.8	1.0	-58.1	-13.0	-45.1	
3128.00	-10.0	H	3.0	46.9	1.0	-55.9	-13.0	-42.9	
High Ch, 784.5MHz									
1569.00	-17.0	V	3.0	46.4	1.0	-62.3	-40.0	-22.3	
2353.50	-12.2	V	3.0	46.8	1.0	-58.0	-13.0	-45.0	
3138.00	-10.1	V	3.0	46.9	1.0	-55.9	-13.0	-42.9	
1569.00	-20.7	H	3.0	46.4	1.0	-66.1	-40.0	-26.1	
2353.50	-12.4	H	3.0	46.8	1.0	-58.3	-13.0	-45.3	
3138.00	-10.0	H	3.0	46.9	1.0	-55.8	-13.0	-42.8	

LTE Band 30

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-07-13
Test Engineer: 19568
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: LTE_QPSK Band 30 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2307.5MHz									
4615.00	-25.5	V	3.0	42.5	1.0	-67.0	-40.0	-27.0	
6922.50	-18.1	V	3.0	42.7	1.0	-59.8	-40.0	-19.8	
9230.00	-23.0	V	3.0	41.6	1.0	-63.6	-40.0	-23.6	
4615.00	-25.6	H	3.0	42.5	1.0	-67.1	-40.0	-27.1	
6922.50	-22.5	H	3.0	42.7	1.0	-64.3	-40.0	-24.3	
9230.00	-23.0	H	3.0	41.6	1.0	-63.5	-40.0	-23.5	
Mid Ch, 2310MHz									
4620.00	-24.1	V	3.0	42.5	1.0	-65.6	-40.0	-25.6	
6930.00	-15.4	V	3.0	42.7	1.0	-57.1	-40.0	-17.1	
9240.00	-23.2	V	3.0	41.5	1.0	-63.8	-40.0	-23.8	
4620.00	-25.2	H	3.0	42.5	1.0	-66.7	-40.0	-26.7	
6930.00	-17.9	H	3.0	42.7	1.0	-59.6	-40.0	-19.6	
9240.00	-23.2	H	3.0	41.5	1.0	-63.7	-40.0	-23.7	
High Ch, 2312.5MHz									
4625.00	-24.4	V	3.0	42.5	1.0	-66.0	-40.0	-26.0	
6937.50	-17.5	V	3.0	42.7	1.0	-59.2	-40.0	-19.2	
9250.00	-23.5	V	3.0	41.5	1.0	-64.0	-40.0	-24.0	
4625.00	-24.8	H	3.0	42.5	1.0	-66.3	-40.0	-26.3	
6937.50	-20.6	H	3.0	42.7	1.0	-62.3	-40.0	-22.3	
9250.00	-23.4	H	3.0	41.5	1.0	-64.0	-40.0	-24.0	

LTE Band 41(PC2)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-13
Test Engineer: 24542
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 41 Harmonics, 15MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

15 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2503.5MHz									
5007.00	-5.2	V	3.0	46.2	1.0	-50.4	-25.0	-25.4	
7510.50	4.7	V	3.0	45.5	1.0	-39.8	-25.0	-14.8	
10014.00	-10.2	V	3.0	45.6	1.0	-54.7	-25.0	-29.7	
5007.00	-2.4	H	3.0	46.2	1.0	-47.6	-25.0	-22.6	
7510.50	0.7	H	3.0	45.5	1.0	-43.9	-25.0	-18.9	
10014.00	-11.3	H	3.0	45.6	1.0	-55.9	-25.0	-30.9	
Mid Ch, 2593MHz									
5186.00	-2.4	V	3.0	46.1	1.0	-47.5	-25.0	-22.5	
7779.00	-1.6	V	3.0	45.6	1.0	-46.2	-25.0	-21.2	
10372.00	-10.7	V	3.0	45.9	1.0	-55.6	-25.0	-30.6	
5186.00	-2.3	H	3.0	46.1	1.0	-47.4	-25.0	-22.4	
7779.00	-6.6	H	3.0	45.6	1.0	-51.1	-25.0	-26.1	
10372.00	-11.0	H	3.0	45.9	1.0	-55.9	-25.0	-30.9	
High Ch, 2682.5MHz									
5365.00	-4.8	V	3.0	45.9	1.0	-49.7	-25.0	-24.7	
8047.50	-3.3	V	3.0	45.6	1.0	-47.9	-25.0	-22.9	
10730.00	-10.1	V	3.0	46.2	1.0	-55.2	-25.0	-30.2	
5365.00	-9.1	H	3.0	45.9	1.0	-54.0	-25.0	-29.0	
8047.50	-6.1	H	3.0	45.6	1.0	-50.7	-25.0	-25.7	
10730.00	-9.5	H	3.0	46.2	1.0	-54.7	-25.0	-29.7	

LTE Band 41(UL CA)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-07-17
Test Engineer: 26087
Configuration: EUT / AC Adpater, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 41 Harmonics, 20+20MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

20+20 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, PCC : 2506 MHz SCC : 2525.8MHz									
5031.80	-9.0	V	3.0	46.2	1.0	-54.2	-25.0	-29.2	
7547.70	2.0	V	3.0	45.5	1.0	-42.6	-25.0	-17.6	
10063.60	-10.2	V	3.0	45.6	1.0	-54.8	-25.0	-29.8	
5031.80	-10.2	H	3.0	46.2	1.0	-55.5	-25.0	-30.5	
7547.70	1.3	H	3.0	45.5	1.0	-43.2	-25.0	-18.2	
10063.60	-10.2	H	3.0	45.6	1.0	-54.8	-25.0	-29.8	
Mid Ch, PCC : 2583.1MHz SCC : 2602.9MHz									
5186.00	-4.9	V	3.0	46.1	1.0	-50.0	-25.0	-25.0	
7779.00	0.6	V	3.0	45.6	1.0	-44.0	-25.0	-19.0	
10372.00	-9.6	V	3.0	45.9	1.0	-54.5	-25.0	-29.5	
5186.00	-4.1	H	3.0	46.1	1.0	-49.2	-25.0	-24.2	
7779.00	0.6	H	3.0	45.6	1.0	-44.0	-25.0	-19.0	
10372.00	-9.6	H	3.0	45.9	1.0	-54.5	-25.0	-29.5	
High Ch, PCC : 2660.2MHz SCC : 2680MHz									
5342.20	-9.2	V	3.0	45.9	1.0	-54.2	-25.0	-29.2	
8013.30	-7.3	V	3.0	45.6	1.0	-51.9	-25.0	-26.9	
10684.40	-9.3	V	3.0	46.1	1.0	-54.4	-25.0	-29.4	
5342.20	-5.6	H	3.0	45.9	1.0	-50.5	-25.0	-25.5	
8013.30	-3.8	H	3.0	45.6	1.0	-48.4	-25.0	-23.4	
10684.40	-9.5	H	3.0	46.1	1.0	-54.6	-25.0	-29.6	

LTE Band 66

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-12
Test Engineer: 51078
Configuration: EUT, X-Position
Location: Chamber 1
Mode: LTE_QPSK Band 66 Harmonics, 3MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

3 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1711.5MHz									
3423.00	-8.9	V	3.0	46.4	1.0	-54.4	-13.0	-41.4	
5134.50	-6.2	V	3.0	46.1	1.0	-51.3	-13.0	-38.3	
6846.00	-3.2	V	3.0	45.5	1.0	-47.7	-13.0	-34.7	
8557.50	-2.5	V	3.0	45.6	1.0	-47.1	-13.0	-34.1	
10269.00	-1.1	V	3.0	45.8	1.0	-45.8	-13.0	-32.8	
3423.00	-8.7	H	3.0	46.4	1.0	-54.1	-13.0	-41.1	
5134.50	-4.1	H	3.0	46.1	1.0	-49.2	-13.0	-36.2	
6846.00	-4.7	H	3.0	45.5	1.0	-49.1	-13.0	-36.1	
8557.50	-2.9	H	3.0	45.6	1.0	-47.5	-13.0	-34.5	
10269.00	-0.9	H	3.0	45.8	1.0	-45.7	-13.0	-32.7	
Mid Ch, 1745MHz									
3490.00	-8.6	V	3.0	46.3	1.0	-53.9	-13.0	-40.9	
5235.00	2.8	V	3.0	46.0	1.0	-42.2	-13.0	-29.2	
6980.00	0.4	V	3.0	45.5	1.0	-44.1	-13.0	-31.1	
8725.00	-2.8	V	3.0	45.5	1.0	-47.3	-13.0	-34.3	
10470.00	-1.0	V	3.0	46.0	1.0	-45.9	-13.0	-32.9	
3490.00	-8.4	H	3.0	46.3	1.0	-53.7	-13.0	-40.7	
5235.00	-3.4	H	3.0	46.0	1.0	-48.5	-13.0	-35.5	
6980.00	-2.9	H	3.0	45.5	1.0	-47.3	-13.0	-34.3	
8725.00	-3.0	H	3.0	45.5	1.0	-47.6	-13.0	-34.6	
10470.00	-0.8	H	3.0	46.0	1.0	-45.8	-13.0	-32.8	
High Ch, 1778.5MHz									
3557.00	-8.2	V	3.0	46.3	1.0	-53.5	-13.0	-40.5	
5335.50	-7.0	V	3.0	46.0	1.0	-51.9	-13.0	-38.9	
7114.00	4.1	V	3.0	45.5	1.0	-40.4	-13.0	-27.4	
8892.50	-2.8	V	3.0	45.5	1.0	-47.4	-13.0	-34.4	
10671.00	-0.2	V	3.0	46.1	1.0	-45.4	-13.0	-32.4	
3557.00	-8.0	H	3.0	46.3	1.0	-53.3	-13.0	-40.3	
5335.50	-6.9	H	3.0	46.0	1.0	-51.8	-13.0	-38.8	
7114.00	-2.4	H	3.0	45.5	1.0	-46.9	-13.0	-33.9	
8892.50	-2.8	H	3.0	45.5	1.0	-47.4	-13.0	-34.4	
10671.00	-0.2	H	3.0	46.1	1.0	-45.3	-13.0	-32.3	

LTE Band 66 ANT SUB2

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-13
Test Engineer:	19568
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 2
Mode:	LTE_QPSK Band 66 Harmonics, 20MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

20 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1720MHz									
3440.00	-9.0	V	3.0	42.1	1.0	-50.0	-13.0	-37.0	
5160.00	-8.7	V	3.0	42.8	1.0	-50.5	-13.0	-37.5	
6880.00	-5.9	V	3.0	42.7	1.0	-47.6	-13.0	-34.6	
3440.00	-9.1	H	3.0	42.1	1.0	-50.2	-13.0	-37.2	
5160.00	-8.7	H	3.0	42.8	1.0	-50.5	-13.0	-37.5	
6880.00	-5.9	H	3.0	42.7	1.0	-47.6	-13.0	-34.6	
Mid Ch, 1745MHz									
3490.00	-8.7	V	3.0	42.1	1.0	-49.8	-13.0	-36.8	
5235.00	-8.0	V	3.0	42.8	1.0	-49.8	-13.0	-36.8	
6980.00	-5.9	V	3.0	42.7	1.0	-47.6	-13.0	-34.6	
3490.00	-8.9	H	3.0	42.1	1.0	-50.0	-13.0	-37.0	
5235.00	-8.4	H	3.0	42.8	1.0	-50.3	-13.0	-37.3	
6980.00	-5.9	H	3.0	42.7	1.0	-47.6	-13.0	-34.6	
High Ch, 1770MHz									
3540.00	-8.0	V	3.0	42.1	1.0	-49.0	-13.0	-36.0	
5310.00	-7.9	V	3.0	42.8	1.0	-49.7	-13.0	-36.7	
7080.00	-5.7	V	3.0	42.6	1.0	-47.4	-13.0	-34.4	
3540.00	-8.8	H	3.0	42.1	1.0	-49.8	-13.0	-36.8	
5310.00	-8.1	H	3.0	42.8	1.0	-49.9	-13.0	-36.9	
7080.00	-5.6	H	3.0	42.6	1.0	-47.3	-13.0	-34.3	

LTE Band 66B (UL CA)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-28
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: LTE_QPSK Band 66 Harmonics, 10+10MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

10+10 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, PCC : 1715MHz SCC : 1724.9MHz									
3440.00	-8.9	V	3.0	42.1	1.0	-49.9	-13.0	-36.9	
5160.00	-8.9	V	3.0	42.8	1.0	-50.7	-13.0	-37.7	
6880.00	-4.9	V	3.0	42.7	1.0	-46.7	-13.0	-33.7	
8600.00	-4.6	V	3.0	41.9	1.0	-45.5	-13.0	-32.5	
10320.00	-1.6	V	3.0	41.0	1.0	-41.6	-13.0	-28.6	
3440.00	-9.1	H	3.0	42.1	1.0	-50.1	-13.0	-37.1	
5160.00	-8.7	H	3.0	42.8	1.0	-50.5	-13.0	-37.5	
6880.00	-5.8	H	3.0	42.7	1.0	-47.5	-13.0	-34.5	
8600.00	-4.6	H	3.0	41.9	1.0	-45.5	-13.0	-32.5	
10320.00	-1.5	H	3.0	41.0	1.0	-41.5	-13.0	-28.5	
Low Ch, PCC : 1740.1MHz SCC : 1750MHz									
3490.00	-8.7	V	3.0	42.1	1.0	-49.8	-13.0	-36.8	
5235.00	-6.3	V	3.0	42.8	1.0	-48.1	-13.0	-35.1	
6980.00	-4.9	V	3.0	42.7	1.0	-46.6	-13.0	-33.6	
8725.00	-4.3	V	3.0	41.9	1.0	-45.2	-13.0	-32.2	
10470.00	-1.5	V	3.0	41.1	1.0	-41.5	-13.0	-28.5	
3490.00	-9.0	H	3.0	42.1	1.0	-50.1	-13.0	-37.1	
5235.00	-7.2	H	3.0	42.8	1.0	-49.0	-13.0	-36.0	
6980.00	-5.5	H	3.0	42.7	1.0	-47.2	-13.0	-34.2	
8725.00	-4.2	H	3.0	41.9	1.0	-45.1	-13.0	-32.1	
10470.00	-1.2	H	3.0	41.1	1.0	-41.3	-13.0	-28.3	
Low Ch, PCC : 1765.1MHz SCC : 1775MHz									
3540.00	-7.9	V	3.0	42.1	1.0	-49.0	-13.0	-36.0	
5310.00	-8.1	V	3.0	42.8	1.0	-49.9	-13.0	-36.9	
7080.00	-5.4	V	3.0	42.6	1.0	-47.1	-13.0	-34.1	
8850.00	-4.0	V	3.0	41.8	1.0	-44.9	-13.0	-31.9	
10620.00	-0.8	V	3.0	41.1	1.0	-40.9	-13.0	-27.9	
3540.00	-8.1	H	3.0	42.1	1.0	-49.2	-13.0	-36.2	
5310.00	-8.2	H	3.0	42.8	1.0	-50.1	-13.0	-37.1	
7080.00	-5.5	H	3.0	42.6	1.0	-47.2	-13.0	-34.2	
8850.00	-3.9	H	3.0	41.8	1.0	-44.8	-13.0	-31.8	
10620.00	-0.6	H	3.0	41.1	1.0	-40.7	-13.0	-27.7	

LTE Band 66C (UL CA)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-06-28
Test Engineer:	26087
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 2
Mode:	LTE_QPSK Band 66 Harmonics, 20+20MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

20+20MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, PCC : 1720MHz SCC : 1739.8MHz									
3459.80	-8.6	V	3.0	42.1	1.0	-49.7	-13.0	-36.7	
5189.70	-8.3	V	3.0	42.8	1.0	-50.1	-13.0	-37.1	
6919.60	-5.0	V	3.0	42.7	1.0	-46.7	-13.0	-33.7	
8649.50	-4.4	V	3.0	41.9	1.0	-45.4	-13.0	-32.4	
10379.40	-1.5	V	3.0	41.0	1.0	-41.5	-13.0	-28.5	
3459.80	-9.0	H	3.0	42.1	1.0	-50.1	-13.0	-37.1	
5189.70	-8.3	H	3.0	42.8	1.0	-50.1	-13.0	-37.1	
6919.60	-5.7	H	3.0	42.7	1.0	-47.4	-13.0	-34.4	
8649.50	-4.4	H	3.0	41.9	1.0	-45.3	-13.0	-32.3	
10379.40	-1.2	H	3.0	41.0	1.0	-41.2	-13.0	-28.2	
Mid Ch, PCC : 1735.1MHz SCC : 1754.9MHz									
3490.00	-8.6	V	3.0	42.1	1.0	-49.7	-13.0	-36.7	
5235.00	-8.6	V	3.0	42.8	1.0	-50.4	-13.0	-37.4	
6980.00	-5.3	V	3.0	42.7	1.0	-47.0	-13.0	-34.0	
8725.00	-4.2	V	3.0	41.9	1.0	-45.1	-13.0	-32.1	
10470.00	-1.1	V	3.0	41.1	1.0	-41.1	-13.0	-28.1	
3490.00	-8.9	H	3.0	42.1	1.0	-49.9	-13.0	-36.9	
5235.00	-8.5	H	3.0	42.8	1.0	-50.3	-13.0	-37.3	
6980.00	-5.7	H	3.0	42.7	1.0	-47.4	-13.0	-34.4	
8725.00	-4.1	H	3.0	41.9	1.0	-45.0	-13.0	-32.0	
10470.00	-0.9	H	3.0	41.1	1.0	-41.0	-13.0	-28.0	
High Ch, PCC : 1750.2MHz SCC : 1770MHz									
3520.20	-8.8	V	3.0	42.1	1.0	-49.9	-13.0	-36.9	
5280.30	-8.0	V	3.0	42.8	1.0	-49.8	-13.0	-36.8	
7040.40	-4.9	V	3.0	42.7	1.0	-46.5	-13.0	-33.5	
8800.50	-4.2	V	3.0	41.9	1.0	-45.0	-13.0	-32.0	
10560.60	-0.9	V	3.0	41.1	1.0	-41.0	-13.0	-28.0	
3520.20	-9.1	H	3.0	42.1	1.0	-50.2	-13.0	-37.2	
5280.30	-8.1	H	3.0	42.8	1.0	-49.9	-13.0	-36.9	
7040.40	-5.5	H	3.0	42.7	1.0	-47.2	-13.0	-34.2	
8800.50	-4.1	H	3.0	41.9	1.0	-44.9	-13.0	-31.9	
10560.60	-0.7	H	3.0	41.1	1.0	-40.8	-13.0	-27.8	

1

LTE Band 71

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-12
Test Engineer: 51078
Configuration: EUT / AC Adapter, Y-Position
Location: Chamber 1
Mode: LTE_QPSK Band 71 Harmonics, 20MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

20 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 673MHz									
1346.00	-14.3	V	3.0	46.2	1.0	-59.5	-13.0	-46.5	
2019.00	-13.5	V	3.0	46.7	1.0	-59.2	-13.0	-46.2	
2692.00	-11.3	V	3.0	47.0	1.0	-57.2	-13.0	-44.2	
1346.00	-17.3	H	3.0	46.2	1.0	-62.5	-13.0	-49.5	
2019.00	-13.9	H	3.0	46.7	1.0	-59.6	-13.0	-46.6	
2692.00	-11.5	H	3.0	47.0	1.0	-57.4	-13.0	-44.4	
Mid Ch, 680.5MHz									
1361.00	-15.9	V	3.0	46.2	1.0	-61.1	-13.0	-48.1	
2041.50	-11.2	V	3.0	46.7	1.0	-57.0	-13.0	-44.0	
2722.00	-11.0	V	3.0	47.0	1.0	-57.0	-13.0	-44.0	
1361.00	-17.4	H	3.0	46.2	1.0	-62.6	-13.0	-49.6	
2041.50	-13.2	H	3.0	46.7	1.0	-58.9	-13.0	-45.9	
2722.00	-11.3	H	3.0	47.0	1.0	-57.2	-13.0	-44.2	
High Ch, 688MHz									
1376.00	-15.7	V	3.0	46.2	1.0	-60.9	-13.0	-47.9	
2064.00	-13.1	V	3.0	46.8	1.0	-58.9	-13.0	-45.9	
2752.00	-10.9	V	3.0	47.0	1.0	-56.8	-13.0	-43.8	
1376.00	-17.2	H	3.0	46.2	1.0	-62.4	-13.0	-49.4	
2064.00	-13.5	H	3.0	46.8	1.0	-59.2	-13.0	-46.2	
2752.00	-11.0	H	3.0	47.0	1.0	-57.0	-13.0	-44.0	

NR Band n12

5 MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-23
Test Engineer: 26087
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n12 Harmonics, 5MHz Bandwidth
Test Votage: 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)	Notes
Low Ch, 701.5MHz									
1403.00	-15.2	V	3.0	46.2	1.0	-60.4	-13.0	-47.4	
2104.50	-10.2	V	3.0	46.8	1.0	-56.0	-13.0	-43.0	
2806.00	-9.7	V	3.0	47.0	1.0	-55.6	-13.0	-42.6	
1403.00	-16.7	H	3.0	46.2	1.0	-61.9	-13.0	-48.9	
2104.50	-10.7	H	3.0	46.8	1.0	-56.5	-13.0	-43.5	
2806.00	-10.4	H	3.0	47.0	1.0	-56.4	-13.0	-43.4	
Mid Ch, 707.5MHz									
1415.00	-15.3	V	3.0	46.2	1.0	-60.6	-13.0	-47.6	
2122.50	-10.1	V	3.0	46.8	1.0	-55.9	-13.0	-42.9	
2830.00	-10.3	V	3.0	47.0	1.0	-56.3	-13.0	-43.3	
1415.00	-16.7	H	3.0	46.2	1.0	-61.9	-13.0	-48.9	
2122.50	-6.9	H	3.0	46.8	1.0	-52.7	-13.0	-39.7	
2830.00	-10.4	H	3.0	47.0	1.0	-56.4	-13.0	-43.4	
High Ch, 713.5MHz									
1427.00	-15.2	V	3.0	46.2	1.0	-60.4	-13.0	-47.4	
2140.50	-12.5	V	3.0	46.8	1.0	-58.2	-13.0	-45.2	
2854.00	-10.3	V	3.0	47.0	1.0	-56.3	-13.0	-43.3	
1427.00	-16.6	H	3.0	46.2	1.0	-61.8	-13.0	-48.8	
2140.50	-11.4	H	3.0	46.8	1.0	-57.2	-13.0	-44.2	
2854.00	-10.3	H	3.0	47.0	1.0	-56.3	-13.0	-43.3	

NR Band n30

10 MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-07-17
Test Engineer: 26087
Configuration: EUT / X-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n30 Harmonics, 10MHz Bandwidth
Test Votage: 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)	Notes
Mid Ch, 2310MHz									
4620.00	-23.3	V	3.0	42.5	1.0	-64.8	-40.0	-24.8	
6930.00	-5.5	V	3.0	42.7	1.0	-47.2	-40.0	-7.2	
9240.00	-23.6	V	3.0	41.5	1.0	-64.1	-40.0	-24.1	
4620.00	-24.7	H	3.0	42.5	1.0	-66.2	-40.0	-26.2	
6930.00	-12.6	H	3.0	42.7	1.0	-54.3	-40.0	-14.3	
9240.00	-23.5	H	3.0	41.5	1.0	-64.0	-40.0	-24.0	

NR Band n41(PC2)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-07-17
Test Engineer: 26087
Configuration: EUT / Z-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n41 Harmonics, 70MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

70 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2531.01MHz									
5062.02	-7.5	V	3.0	46.2	1.0	-52.7	-25.0	-27.7	
7593.03	2.0	V	3.0	45.5	1.0	-42.6	-25.0	-17.6	
10124.04	-10.1	V	3.0	45.7	1.0	-54.7	-25.0	-29.7	
5062.02	-4.6	H	3.0	46.2	1.0	-49.8	-25.0	-24.8	
7593.03	1.3	H	3.0	45.5	1.0	-43.2	-25.0	-18.2	
10124.04	-9.8	H	3.0	45.7	1.0	-54.4	-25.0	-29.4	
Mid Ch, 2592.99MHz									
5185.98	-2.7	V	3.0	46.1	1.0	-47.8	-25.0	-22.8	
7778.97	3.9	V	3.0	45.6	1.0	-40.6	-25.0	-15.6	
10371.96	-9.6	V	3.0	45.9	1.0	-54.5	-25.0	-29.5	
5185.98	-5.1	H	3.0	46.1	1.0	-50.2	-25.0	-25.2	
7778.97	0.9	H	3.0	45.6	1.0	-43.7	-25.0	-18.7	
10371.96	-9.2	H	3.0	45.9	1.0	-54.1	-25.0	-29.1	
High Ch, 2655MHz									
5310.00	-5.6	V	3.0	46.0	1.0	-50.6	-25.0	-25.6	
7965.00	-3.4	V	3.0	45.6	1.0	-48.0	-25.0	-23.0	
10620.00	-9.1	V	3.0	46.1	1.0	-54.2	-25.0	-29.2	
5310.00	-6.4	H	3.0	46.0	1.0	-51.4	-25.0	-26.4	
7965.00	-4.0	H	3.0	45.6	1.0	-48.6	-25.0	-23.6	
10620.00	-9.1	H	3.0	46.1	1.0	-54.2	-25.0	-29.2	

NR Band n41(PC2, SRS1, ANT SUB2)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-12
Test Engineer:	26087
Configuration:	EUT / AC Adapter, Z-Position
Location:	Chamber 1
Mode:	5G NR n41(SRS) Harmonics, 10MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

10 MHz

SRS1

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.01MHz									
5002.02	-10.0	V	3.0	46.2	1.0	-55.2	-25.0	-30.2	
7503.03	5.4	V	3.0	45.5	1.0	-39.1	-25.0	-14.1	
10004.04	-10.1	V	3.0	45.6	1.0	-54.7	-25.0	-29.7	
5002.02	-9.5	H	3.0	46.2	1.0	-54.7	-25.0	-29.7	
7503.03	4.0	H	3.0	45.5	1.0	-40.6	-25.0	-15.6	
10004.04	-10.2	H	3.0	45.6	1.0	-54.7	-25.0	-29.7	
Mid Ch, 2592.99MHz									
5185.98	-6.5	V	3.0	46.1	1.0	-51.6	-25.0	-26.6	
7778.97	-4.2	V	3.0	45.6	1.0	-48.8	-25.0	-23.8	
10371.96	-12.2	V	3.0	45.9	1.0	-57.1	-25.0	-32.1	
5185.98	-6.7	H	3.0	46.1	1.0	-51.7	-25.0	-26.7	
7778.97	-4.0	H	3.0	45.6	1.0	-48.5	-25.0	-23.5	
10371.96	-11.7	H	3.0	45.9	1.0	-56.5	-25.0	-31.5	
High Ch, 2685MHz									
5370.00	-7.9	V	3.0	45.9	1.0	-52.9	-25.0	-27.9	
8055.00	-5.6	V	3.0	45.6	1.0	-50.2	-25.0	-25.2	
10740.00	-9.2	V	3.0	46.2	1.0	-54.4	-25.0	-29.4	
5370.00	-6.6	H	3.0	45.9	1.0	-51.6	-25.0	-26.6	
8055.00	-4.4	H	3.0	45.6	1.0	-49.0	-25.0	-24.0	
10740.00	-9.2	H	3.0	46.2	1.0	-54.4	-25.0	-29.4	

NR Band n41(PC2, SRS2, ANT SUB4)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-12
Test Engineer:	24542
Configuration:	EUT / AC Adapter, Z-Position
Location:	Chamber 1
Mode:	5G NR n41(SRS) Harmonics, 10MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

10 MHz

SRS2

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2501.01MHz									
5002.02	-10.3	V	3.0	46.2	1.0	-55.5	-25.0	-30.5	
7503.03	9.1	V	3.0	45.5	1.0	-35.4	-25.0	-10.4	
10004.04	-10.3	V	3.0	45.6	1.0	-54.8	-25.0	-29.8	
5002.02	-9.2	H	3.0	46.2	1.0	-54.5	-25.0	-29.5	
7503.03	7.0	H	3.0	45.5	1.0	-37.6	-25.0	-12.6	
10004.04	-9.7	H	3.0	45.6	1.0	-54.3	-25.0	-29.3	
Mid Ch, 2592.99MHz									
5185.98	-6.3	V	3.0	46.1	1.0	-51.4	-25.0	-26.4	
7778.97	0.1	V	3.0	45.6	1.0	-44.5	-25.0	-19.5	
10371.96	-9.5	V	3.0	45.9	1.0	-54.3	-25.0	-29.3	
5185.98	-5.5	H	3.0	46.1	1.0	-50.6	-25.0	-25.6	
7778.97	1.7	H	3.0	45.6	1.0	-42.8	-25.0	-17.8	
10371.96	-9.6	H	3.0	45.9	1.0	-54.5	-25.0	-29.5	
High Ch, 2685MHz									
5370.00	-7.3	V	3.0	45.9	1.0	-52.2	-25.0	-27.2	
8055.00	-4.4	V	3.0	45.6	1.0	-49.0	-25.0	-24.0	
10740.00	-9.4	V	3.0	46.2	1.0	-54.6	-25.0	-29.6	
5370.00	-5.6	H	3.0	45.9	1.0	-50.6	-25.0	-25.6	
8055.00	-3.3	H	3.0	45.6	1.0	-47.9	-25.0	-22.9	
10740.00	-9.5	H	3.0	46.2	1.0	-54.7	-25.0	-29.7	

NR Band n41(PC2, SRS3, ANT SUB1)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-07-12
Test Engineer: 26087
Configuration: EUT / AC Adapter, Z-Position
Location: Chamber 1
Mode: 5G NR_NR n41 Harmonics, 50MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

50 MHz

SRS3

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 2521.01MHz									
5042.02	-11.0	V	3.0	46.2	1.0	-56.2	-25.0	-31.2	
7563.03	-11.6	V	3.0	45.5	1.0	-56.1	-25.0	-31.1	
10084.04	-10.2	V	3.0	45.6	1.0	-54.9	-25.0	-29.9	
5042.02	-9.0	H	3.0	46.2	1.0	-54.2	-25.0	-29.2	
7563.03	-11.8	H	3.0	45.5	1.0	-56.4	-25.0	-31.4	
10084.04	-9.7	H	3.0	45.6	1.0	-54.3	-25.0	-29.3	
Mid Ch, 2592.99MHz									
5185.98	-7.7	V	3.0	46.1	1.0	-52.8	-25.0	-27.8	
7778.97	-11.1	V	3.0	45.6	1.0	-55.7	-25.0	-30.7	
10371.96	-9.6	V	3.0	45.9	1.0	-54.5	-25.0	-29.5	
5185.98	-5.8	H	3.0	46.1	1.0	-50.9	-25.0	-25.9	
7778.97	-11.2	H	3.0	45.6	1.0	-55.7	-25.0	-30.7	
10371.96	-9.4	H	3.0	45.9	1.0	-54.3	-25.0	-29.3	
High Ch, 2665MHz									
5330.00	-7.5	V	3.0	46.0	1.0	-52.5	-25.0	-27.5	
7995.00	-11.2	V	3.0	45.6	1.0	-55.8	-25.0	-30.8	
10660.00	-9.1	V	3.0	46.1	1.0	-54.2	-25.0	-29.2	
5330.00	-6.5	H	3.0	46.0	1.0	-51.5	-25.0	-26.5	
7995.00	-11.2	H	3.0	45.6	1.0	-55.8	-25.0	-30.8	
10660.00	-9.2	H	3.0	46.1	1.0	-54.4	-25.0	-29.4	

NR Band n66

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-20
Test Engineer: 24542
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n66 Harmonics, 5MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

5 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1712.5MHz									
3425.00	-9.1	V	3.0	42.1	1.0	-50.1	-13.0	-37.1	
5137.50	-7.9	V	3.0	42.8	1.0	-49.7	-13.0	-36.7	
6850.00	-4.8	V	3.0	42.7	1.0	-46.5	-13.0	-33.5	
3425.00	-9.2	H	3.0	42.1	1.0	-50.2	-13.0	-37.2	
5137.50	-7.6	H	3.0	42.8	1.0	-49.4	-13.0	-36.4	
6850.00	-5.9	H	3.0	42.7	1.0	-47.6	-13.0	-34.6	
Mid Ch, 1745MHz									
3490.00	-8.8	V	3.0	42.1	1.0	-49.9	-13.0	-36.9	
5235.00	-8.7	V	3.0	42.8	1.0	-50.5	-13.0	-37.5	
6980.00	-4.4	V	3.0	42.7	1.0	-46.1	-13.0	-33.1	
3490.00	-8.9	H	3.0	42.1	1.0	-50.0	-13.0	-37.0	
5235.00	-7.4	H	3.0	42.8	1.0	-49.2	-13.0	-36.2	
6980.00	-5.5	H	3.0	42.7	1.0	-47.2	-13.0	-34.2	
High Ch, 1777.5MHz									
3555.00	-7.4	V	3.0	42.1	1.0	-48.4	-13.0	-35.4	
5332.50	-7.7	V	3.0	42.8	1.0	-49.5	-13.0	-36.5	
7110.00	-5.3	V	3.0	42.6	1.0	-46.9	-13.0	-33.9	
3555.00	-7.7	H	3.0	42.1	1.0	-48.7	-13.0	-35.7	
5332.50	-7.2	H	3.0	42.8	1.0	-49.0	-13.0	-36.0	
7110.00	-5.5	H	3.0	42.6	1.0	-47.2	-13.0	-34.2	

NR Band n71

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-06-23
Test Engineer:	24542
Configuration:	EUT / AC Adapter, X-Position
Location:	Chamber 1
Mode:	5G NR_QPSK NR n71 Harmonics, 10MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

10 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 668MHz									
1336.00	-15.7	V	3.0	46.2	1.0	-60.9	-13.0	-47.9	
2004.00	-11.4	V	3.0	46.7	1.0	-57.1	-13.0	-44.1	
2672.00	-11.0	V	3.0	46.9	1.0	-56.9	-13.0	-43.9	
1336.00	-15.4	H	3.0	46.2	1.0	-60.5	-13.0	-47.5	
2004.00	-9.6	H	3.0	46.7	1.0	-55.3	-13.0	-42.3	
2672.00	-11.3	H	3.0	46.9	1.0	-57.3	-13.0	-44.3	
Mid Ch, 680.5MHz									
1361.00	-15.8	V	3.0	46.2	1.0	-61.0	-13.0	-48.0	
2041.50	-8.2	V	3.0	46.7	1.0	-54.0	-13.0	-41.0	
2722.00	-11.0	V	3.0	47.0	1.0	-56.9	-13.0	-43.9	
1361.00	-17.1	H	3.0	46.2	1.0	-62.3	-13.0	-49.3	
2041.50	-8.8	H	3.0	46.7	1.0	-54.5	-13.0	-41.5	
2722.00	-11.1	H	3.0	47.0	1.0	-57.0	-13.0	-44.0	
High Ch, 693MHz									
1386.00	-15.2	V	3.0	46.2	1.0	-60.4	-13.0	-47.4	
2079.00	-11.6	V	3.0	46.8	1.0	-57.3	-13.0	-44.3	
2772.00	-10.6	V	3.0	47.0	1.0	-56.6	-13.0	-43.6	
1386.00	-13.4	H	3.0	46.2	1.0	-58.6	-13.0	-45.6	
2079.00	-10.6	H	3.0	46.8	1.0	-56.4	-13.0	-43.4	
2772.00	-10.7	H	3.0	47.0	1.0	-56.7	-13.0	-43.7	

NR Band n77(PC2, 3450 - 3550 MHz)

50 MHz

QPSK

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-30
Test Engineer: 26087
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 1
Mode: 5G NR_QPSK NR n77 LO Harmonics, 50MHz Bandwidth
Test Votage: 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)	Notes
Low Ch, 3475.02MHz									
6950.00	-0.1	V	3.0	45.5	1.0	-44.6	-13.0	-31.6	
10425.00	1.8	V	3.0	45.9	1.0	-43.1	-13.0	-30.1	
13900.00	6.1	V	3.0	46.6	1.0	-39.5	-13.0	-26.5	
6950.00	0.6	H	3.0	45.5	1.0	-43.9	-13.0	-30.9	
10425.00	2.1	H	3.0	45.9	1.0	-42.8	-13.0	-29.8	
13900.00	6.2	H	3.0	46.6	1.0	-39.4	-13.0	-26.4	
Mid Ch, 3499.98MHz									
6999.96	-0.2	V	3.0	45.5	1.0	-44.6	-13.0	-31.6	
10499.94	2.3	V	3.0	46.0	1.0	-42.7	-13.0	-29.7	
13999.92	6.2	V	3.0	46.5	1.0	-39.3	-13.0	-26.3	
6999.96	1.5	H	3.0	45.5	1.0	-43.0	-13.0	-30.0	
10499.94	2.2	H	3.0	46.0	1.0	-42.7	-13.0	-29.7	
13999.92	6.2	H	3.0	46.5	1.0	-39.3	-13.0	-26.3	
High Ch, 3524MHz									
7048.00	1.5	V	3.0	45.5	1.0	-43.0	-13.0	-30.0	
10572.00	2.3	V	3.0	46.0	1.0	-42.7	-13.0	-29.7	
14096.00	6.6	V	3.0	46.5	1.0	-38.9	-13.0	-25.9	
7048.00	1.3	H	3.0	45.5	1.0	-43.2	-13.0	-30.2	
10572.00	2.6	H	3.0	46.0	1.0	-42.5	-13.0	-29.5	
14096.00	6.7	H	3.0	46.5	1.0	-38.8	-13.0	-25.8	

NR Band n77 (PC2, 3450-3550 MHz, SRS1, ANT SUB2)

15 MHz

SRS1

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-13
Test Engineer:	24542
Configuration:	EUT / AC Adapter, X-Position
Location:	Chamber 1
Mode:	5G NR n77 LO(SRS) Harmonics, 15MHz Bandwidth
Test Votage:	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)	Notes
Low Ch, 3457.5MHz									
6915.00	-1.5	V	3.0	45.5	1.0	-45.9	-13.0	-32.9	
10372.50	2.0	V	3.0	45.9	1.0	-42.9	-13.0	-29.9	
13830.00	6.0	V	3.0	46.6	1.0	-39.6	-13.0	-26.6	
6915.00	-1.8	H	3.0	45.5	1.0	-46.3	-13.0	-33.3	
10372.50	2.0	H	3.0	45.9	1.0	-42.9	-13.0	-29.9	
13830.00	5.7	H	3.0	46.6	1.0	-39.8	-13.0	-26.8	
Mid Ch, 3499.98MHz									
6999.96	-1.4	V	3.0	45.5	1.0	-45.9	-13.0	-32.9	
10499.94	2.3	V	3.0	46.0	1.0	-42.6	-13.0	-29.6	
13999.92	6.1	V	3.0	46.5	1.0	-39.4	-13.0	-26.4	
6999.96	-1.7	H	3.0	45.5	1.0	-46.2	-13.0	-33.2	
10499.94	2.4	H	3.0	46.0	1.0	-42.6	-13.0	-29.6	
13999.92	6.3	H	3.0	46.5	1.0	-39.2	-13.0	-26.2	
High Ch, 3542.52MHz									
7085.04	-0.9	V	3.0	45.5	1.0	-45.4	-13.0	-32.4	
10627.56	2.6	V	3.0	46.1	1.0	-42.5	-13.0	-29.5	
14170.08	6.6	V	3.0	46.5	1.0	-38.8	-13.0	-25.8	
7085.04	-1.7	H	3.0	45.5	1.0	-46.2	-13.0	-33.2	
10627.56	2.9	H	3.0	46.1	1.0	-42.2	-13.0	-29.2	
14170.08	6.4	H	3.0	46.5	1.0	-39.1	-13.0	-26.1	

NR Band n77 (PC2, 3450-3550 MHz, SRS2, ANT SUB4)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-13
Test Engineer:	24542
Configuration:	EUT / AC Adapter, X-Position
Location:	Chamber 1
Mode:	5G NR n77 LO(SRS) Harmonics, 15MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

15 MHz

SRS2

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3457.5MHz									
6915.00	-1.4	V	3.0	45.5	1.0	-45.9	-13.0	-32.9	
10372.50	1.9	V	3.0	45.9	1.0	-43.0	-13.0	-30.0	
13830.00	6.3	V	3.0	46.6	1.0	-39.2	-13.0	-26.2	
6915.00	-1.5	H	3.0	45.5	1.0	-45.9	-13.0	-32.9	
10372.50	2.2	H	3.0	45.9	1.0	-42.7	-13.0	-29.7	
13830.00	5.8	H	3.0	46.6	1.0	-39.7	-13.0	-26.7	
Mid Ch, 3499.98MHz									
6999.96	-1.5	V	3.0	45.5	1.0	-46.0	-13.0	-33.0	
10499.94	3.0	V	3.0	46.0	1.0	-42.0	-13.0	-29.0	
13999.92	6.0	V	3.0	46.5	1.0	-39.5	-13.0	-26.5	
6999.96	-1.7	H	3.0	45.5	1.0	-46.2	-13.0	-33.2	
10499.94	3.0	H	3.0	46.0	1.0	-42.0	-13.0	-29.0	
13999.92	6.5	H	3.0	46.5	1.0	-39.0	-13.0	-26.0	
High Ch, 3542.5MHz									
7085.00	-1.4	V	3.0	45.5	1.0	-45.9	-13.0	-32.9	
10627.50	2.9	V	3.0	46.1	1.0	-42.1	-13.0	-29.1	
14170.00	6.6	V	3.0	46.5	1.0	-38.8	-13.0	-25.8	
7085.00	-1.0	H	3.0	45.5	1.0	-45.5	-13.0	-32.5	
10627.50	2.9	H	3.0	46.1	1.0	-42.2	-13.0	-29.2	
14170.00	6.9	H	3.0	46.5	1.0	-38.6	-13.0	-25.6	

NR Band n77 (PC2, 3450-3550 MHz, SRS3, ANT SUB3)

90 MHz

SRS3

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-13
Test Engineer:	26087
Configuration:	EUT / AC Adapter, X-Position
Location:	Chamber 1
Mode:	5G NR n77 LO(SRS) Harmonics, 90MHz Bandwidth
Test Votage:	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)	Notes
Low Ch, 3495MHz									
6990.00	-1.7	V	3.0	45.5	1.0	-46.2	-13.0	-33.2	
10485.00	2.1	V	3.0	46.0	1.0	-42.9	-13.0	-29.9	
13980.00	6.2	V	3.0	46.5	1.0	-39.3	-13.0	-26.3	
6990.00	-2.0	H	3.0	45.5	1.0	-46.5	-13.0	-33.5	
10485.00	2.1	H	3.0	46.0	1.0	-42.8	-13.0	-29.8	
13980.00	6.0	H	3.0	46.5	1.0	-39.5	-13.0	-26.5	
Mid Ch, 3499.98MHz									
6999.96	-1.8	V	3.0	45.5	1.0	-46.3	-13.0	-33.3	
10499.94	2.0	V	3.0	46.0	1.0	-43.0	-13.0	-30.0	
13999.92	5.9	V	3.0	46.5	1.0	-39.7	-13.0	-26.7	
6999.96	-2.1	H	3.0	45.5	1.0	-46.6	-13.0	-33.6	
10499.94	2.7	H	3.0	46.0	1.0	-42.3	-13.0	-29.3	
13999.92	6.4	H	3.0	46.5	1.0	-39.2	-13.0	-26.2	
High Ch, 3504MHz									
7008.00	-1.3	V	3.0	45.5	1.0	-45.8	-13.0	-32.8	
10512.00	2.2	V	3.0	46.0	1.0	-42.8	-13.0	-29.8	
14016.00	6.0	V	3.0	46.5	1.0	-39.5	-13.0	-26.5	
7008.00	-1.9	H	3.0	45.5	1.0	-46.4	-13.0	-33.4	
10512.00	2.2	H	3.0	46.0	1.0	-42.8	-13.0	-29.8	
14016.00	6.3	H	3.0	46.5	1.0	-39.2	-13.0	-26.2	

NR Band n77(PC2, 3700-3980 MHz)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Samsung
Project #: 4790841154
Date: 2023-06-21
Test Engineer: 24542
Configuration: EUT / AC Adapter, X-Position
Location: Chamber 2
Mode: 5G NR_QPSK NR n77 UP Harmonics, 10MHz Bandwidth
Test Votage: AC 120 V, 60 Hz

10 MHz

QPSK

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3705MHz									
7410.00	1.4	V	3.0	42.5	1.0	-40.1	-13.0	-27.1	
11115.00	3.3	V	3.0	41.3	1.0	-37.0	-13.0	-24.0	
14820.00	9.6	V	3.0	43.6	1.0	-33.0	-13.0	-20.0	
7410.00	-0.4	H	3.0	42.5	1.0	-41.9	-13.0	-28.9	
11115.00	3.4	H	3.0	41.3	1.0	-36.9	-13.0	-23.9	
14820.00	9.6	H	3.0	43.6	1.0	-33.0	-13.0	-20.0	
Mid Ch, 3840MHz									
7680.00	2.6	V	3.0	42.3	1.0	-38.8	-13.0	-25.8	
11520.00	4.0	V	3.0	41.5	1.0	-36.5	-13.0	-23.5	
15360.00	9.6	V	3.0	43.6	1.0	-32.9	-13.0	-19.9	
7680.00	0.9	H	3.0	42.3	1.0	-40.4	-13.0	-27.4	
11520.00	4.6	H	3.0	41.5	1.0	-35.9	-13.0	-22.9	
15360.00	9.9	H	3.0	43.6	1.0	-32.7	-13.0	-19.7	
High Ch, 3975MHz									
7950.00	0.5	V	3.0	42.2	1.0	-40.7	-13.0	-27.7	
11925.00	4.8	V	3.0	41.7	1.0	-35.9	-13.0	-22.9	
15900.00	10.2	V	3.0	43.4	1.0	-32.2	-13.0	-19.2	
7950.00	-2.1	H	3.0	42.2	1.0	-43.3	-13.0	-30.3	
11925.00	5.1	H	3.0	41.7	1.0	-35.6	-13.0	-22.6	
15900.00	10.4	H	3.0	43.4	1.0	-32.0	-13.0	-19.0	

NR Band n77 (PC2, 3700-3980 MHz, SRS1, ANT SUB2)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-12
Test Engineer:	26087
Configuration:	EUT / AC Aadpter, Z-Position
Location:	Chamber 1
Mode:	5G NR n77 UP(SRS) Harmonics, 40MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

40 MHz

SRS1

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3720MHz									
7440.00	-1.1	V	3.0	45.5	1.0	-45.6	-13.0	-32.6	
11160.00	3.5	V	3.0	46.6	1.0	-42.1	-13.0	-29.1	
14880.00	6.8	V	3.0	46.2	1.0	-38.4	-13.0	-25.4	
7440.00	-1.3	H	3.0	45.5	1.0	-45.8	-13.0	-32.8	
11160.00	3.1	H	3.0	46.6	1.0	-42.4	-13.0	-29.4	
14880.00	7.3	H	3.0	46.2	1.0	-37.9	-13.0	-24.9	
Mid Ch, 3840MHz									
7680.00	-1.1	V	3.0	45.6	1.0	-45.7	-13.0	-32.7	
11520.00	3.9	V	3.0	46.9	1.0	-42.0	-13.0	-29.0	
15360.00	7.7	V	3.0	46.0	1.0	-37.3	-13.0	-24.3	
7680.00	-1.3	H	3.0	45.6	1.0	-45.8	-13.0	-32.8	
11520.00	3.8	H	3.0	46.9	1.0	-42.0	-13.0	-29.0	
15360.00	7.9	H	3.0	46.0	1.0	-37.0	-13.0	-24.0	
High Ch, 3960MHz									
7920.00	-0.8	V	3.0	45.6	1.0	-45.3	-13.0	-32.3	
11880.00	4.1	V	3.0	47.2	1.0	-42.1	-13.0	-29.1	
15840.00	8.5	V	3.0	45.7	1.0	-36.2	-13.0	-23.2	
7920.00	-0.7	H	3.0	45.6	1.0	-45.3	-13.0	-32.3	
11880.00	4.4	H	3.0	47.2	1.0	-41.8	-13.0	-28.8	
15840.00	8.5	H	3.0	45.7	1.0	-36.1	-13.0	-23.1	

NR Band n77 (PC2, 3700-3980 MHz, SRS2, ANT SUB4)

60 MHz

SRS2

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-12
Test Engineer:	26087
Configuration:	EUT / AC Adapter, Y-Position
Location:	Chamber 1
Mode:	5G NR n77 UP(SRS) Harmonics, 60MHz Bandwidth
Test Votage:	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)	Notes
Low Ch, 3730MHz									
7460.00	-1.4	V	3.0	45.5	1.0	-45.9	-13.0	-32.9	
11190.00	3.1	V	3.0	46.6	1.0	-42.5	-13.0	-29.5	
14920.00	7.1	V	3.0	46.2	1.0	-38.0	-13.0	-25.0	
7460.00	-1.4	H	3.0	45.5	1.0	-46.0	-13.0	-33.0	
11190.00	3.2	H	3.0	46.6	1.0	-42.4	-13.0	-29.4	
14920.00	6.9	H	3.0	46.2	1.0	-38.3	-13.0	-25.3	
Mid Ch, 3840MHz									
7680.00	-1.0	V	3.0	45.6	1.0	-45.5	-13.0	-32.5	
11520.00	3.5	V	3.0	46.9	1.0	-42.4	-13.0	-29.4	
15360.00	7.9	V	3.0	46.0	1.0	-37.0	-13.0	-24.0	
7680.00	-1.1	H	3.0	45.6	1.0	-45.7	-13.0	-32.7	
11520.00	3.4	H	3.0	46.9	1.0	-42.4	-13.0	-29.4	
15360.00	7.7	H	3.0	46.0	1.0	-37.2	-13.0	-24.2	
High Ch, 3950MHz									
7900.00	-1.0	V	3.0	45.6	1.0	-45.6	-13.0	-32.6	
11850.00	3.7	V	3.0	47.2	1.0	-42.4	-13.0	-29.4	
15800.00	8.6	V	3.0	45.7	1.0	-36.1	-13.0	-23.1	
7900.00	-0.8	H	3.0	45.6	1.0	-45.4	-13.0	-32.4	
11850.00	3.9	H	3.0	47.2	1.0	-42.3	-13.0	-29.3	
15800.00	8.8	H	3.0	45.7	1.0	-35.9	-13.0	-22.9	

NR Band n77 (PC2, 3700-3980 MHz, SRS3, ANT SUB3)

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company:	Samsung
Project #:	4790841154
Date:	2023-07-13
Test Engineer:	24542
Configuration:	EUT / AC Adapter, Z-Position
Location:	Chamber 1
Mode:	5G NR n77 UP(SRS) Harmonics, 50MHz Bandwidth
Test Votage:	AC 120 V, 60 Hz

50 MHz

SRS3

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 3725MHz									
7450.00	0.5	V	3.0	45.5	1.0	-44.0	-13.0	-31.0	
11175.00	3.4	V	3.0	46.6	1.0	-42.2	-13.0	-29.2	
14900.00	7.1	V	3.0	46.2	1.0	-38.1	-13.0	-25.1	
7450.00	0.1	H	3.0	45.5	1.0	-44.5	-13.0	-31.5	
11175.00	3.9	H	3.0	46.6	1.0	-41.6	-13.0	-28.6	
14900.00	7.2	H	3.0	46.2	1.0	-38.0	-13.0	-25.0	
Mid Ch, 3840MHz									
7680.00	0.7	V	3.0	45.6	1.0	-43.8	-13.0	-30.8	
11520.00	3.7	V	3.0	46.9	1.0	-42.2	-13.0	-29.2	
15360.00	7.9	V	3.0	46.0	1.0	-37.1	-13.0	-24.1	
7680.00	1.1	H	3.0	45.6	1.0	-43.5	-13.0	-30.5	
11520.00	3.7	H	3.0	46.9	1.0	-42.1	-13.0	-29.1	
15360.00	8.0	H	3.0	46.0	1.0	-36.9	-13.0	-23.9	
High Ch, 3955MHz									
7910.00	0.1	V	3.0	45.6	1.0	-44.4	-13.0	-31.4	
11865.00	4.7	V	3.0	47.2	1.0	-41.5	-13.0	-28.5	
15820.00	8.7	V	3.0	45.7	1.0	-36.0	-13.0	-23.0	
7910.00	-0.8	H	3.0	45.6	1.0	-45.4	-13.0	-32.4	
11865.00	4.5	H	3.0	47.2	1.0	-41.7	-13.0	-28.7	
15820.00	8.9	H	3.0	45.7	1.0	-35.8	-13.0	-22.8	

END OF REPORT