

|                                 |  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |       |                         |                  |                 |              |             |             |             |             |            |       |
|---------------------------------|--|---|-------|-------------------------|------------------|-----------------|--------------|-------------|-------------|-------------|-------------|------------|-------|
| LTE<br>Band 4<br>10MHz<br>QPSK  |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Date: 08-25-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Test Engineer: YH Lim   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Mode: TX LTE BAND 4, 10MHz BW, QPSK   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                 |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 27 |             |            |       |
|                                 |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                 |  |   |       | Low Channel (1715MHz)   |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | 3.4300                  | -1.9             | V               | 3.0          | 40.2        | 1.0         | -41.1       | -13.0       | -28.1      |       |
|                                 |  |   |       | 5.1450                  | -11.0            | V               | 3.0          | 40.9        | 1.0         | -50.9       | -13.0       | -37.9      |       |
|                                 |  |   |       | 6.8600                  | -7.7             | V               | 3.0          | 41.0        | 1.0         | -47.7       | -13.0       | -34.7      |       |
|                                 |  |   |       | 3.4300                  | -2.7             | H               | 3.0          | 40.2        | 1.0         | -42.0       | -13.0       | -29.0      |       |
|                                 |  |   |       | 5.1450                  | -9.5             | H               | 3.0          | 40.9        | 1.0         | -49.4       | -13.0       | -36.4      |       |
|                                 |  |   |       | 6.8600                  | -1.0             | H               | 3.0          | 41.0        | 1.0         | -40.9       | -13.0       | -27.9      |       |
|                                 |  |   |       | Mid Channel (1732.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | 3.4650                  | -6.6             | V               | 3.0          | 40.3        | 1.0         | -45.8       | -13.0       | -32.8      |       |
|                                 |  |   |       | 5.1975                  | -16.4            | V               | 3.0          | 40.9        | 1.0         | -56.3       | -13.0       | -43.3      |       |
|                                 |  |   |       | 6.9300                  | 2.7              | V               | 3.0          | 41.0        | 1.0         | -37.3       | -13.0       | -24.3      |       |
|                                 |  |   |       | 3.4650                  | -9.4             | H               | 3.0          | 40.3        | 1.0         | -48.7       | -13.0       | -35.7      |       |
|                                 |  |   |       | 5.1975                  | -11.9            | H               | 3.0          | 40.9        | 1.0         | -51.8       | -13.0       | -38.8      |       |
|                                 |  |   |       | 6.9300                  | 5.9              | H               | 3.0          | 41.0        | 1.0         | -34.1       | -13.0       | -21.1      |       |
|                                 |  |   |       | High Channel (1750MHz)  |                  |                 |              |             |             |             |             |            |       |
|                                 |  | 3.5000  | -1.3  | V                       | 3.0              | 40.3            | 1.0          | -40.6       | -13.0       | -27.6       |             |            |       |
|                                 |  | 5.2500  | -12.5 | V                       | 3.0              | 40.9            | 1.0          | -52.4       | -13.0       | -39.4       |             |            |       |
|                                 |  | 7.0000  | 0.2   | V                       | 3.0              | 41.0            | 1.0          | -39.8       | -13.0       | -26.8       |             |            |       |
|                                 |  | 3.5000  | -2.1  | H                       | 3.0              | 40.3            | 1.0          | -41.4       | -13.0       | -28.4       |             |            |       |
|                                 |  | 5.2500  | -12.4 | H                       | 3.0              | 40.9            | 1.0          | -52.3       | -13.0       | -39.3       |             |            |       |
|                                 |  | 7.0000  | 3.4   | H                       | 3.0              | 41.0            | 1.0          | -36.6       | -13.0       | -23.6       |             |            |       |
|                                 |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |
| LTE<br>Band 4<br>10MHz<br>16QAM |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Date: 08-25-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Test Engineer: YH Lim   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  | Mode: TX LTE BAND 4, 10MHz BW, 16QAM  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                 |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 27 |             |            |       |
|                                 |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                 |  |   |       | Low Channel (1715MHz)   |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | 3.4300                  | -2.2             | V               | 3.0          | 40.2        | 1.0         | -41.4       | -13.0       | -28.4      |       |
|                                 |  |   |       | 5.1450                  | -11.2            | V               | 3.0          | 40.9        | 1.0         | -51.1       | -13.0       | -38.1      |       |
|                                 |  |   |       | 6.8600                  | -8.6             | V               | 3.0          | 41.0        | 1.0         | -48.6       | -13.0       | -35.6      |       |
|                                 |  |   |       | 3.4300                  | -3.1             | H               | 3.0          | 40.2        | 1.0         | -42.3       | -13.0       | -29.3      |       |
|                                 |  |   |       | 5.1450                  | -9.7             | H               | 3.0          | 40.9        | 1.0         | -49.6       | -13.0       | -36.6      |       |
|                                 |  |   |       | 6.8600                  | -1.6             | H               | 3.0          | 41.0        | 1.0         | -41.6       | -13.0       | -28.6      |       |
|                                 |  |   |       | Mid Channel (1732.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                 |  |   |       | 3.4650                  | -7.2             | V               | 3.0          | 40.3        | 1.0         | -46.5       | -13.0       | -33.5      |       |
|                                 |  |   |       | 5.1975                  | -17.4            | V               | 3.0          | 40.9        | 1.0         | -57.2       | -13.0       | -44.2      |       |
|                                 |  |   |       | 6.9300                  | 2.0              | V               | 3.0          | 41.0        | 1.0         | -38.0       | -13.0       | -25.0      |       |
|                                 |  |   |       | 3.4650                  | -10.3            | H               | 3.0          | 40.3        | 1.0         | -49.6       | -13.0       | -36.6      |       |
|                                 |  |   |       | 5.1975                  | -12.3            | H               | 3.0          | 40.9        | 1.0         | -52.2       | -13.0       | -39.2      |       |
|                                 |  |   |       | 6.9300                  | 4.1              | H               | 3.0          | 41.0        | 1.0         | -35.9       | -13.0       | -22.9      |       |
|                                 |  |   |       | High Channel (1750MHz)  |                  |                 |              |             |             |             |             |            |       |
|                                 |  | 3.5000  | -3.1  | V                       | 3.0              | 40.3            | 1.0          | -42.4       | -13.0       | -29.4       |             |            |       |
|                                 |  | 5.2500  | -13.1 | V                       | 3.0              | 40.9            | 1.0          | -53.0       | -13.0       | -40.0       |             |            |       |
|                                 |  | 7.0000  | -1.5  | V                       | 3.0              | 41.0            | 1.0          | -41.5       | -13.0       | -28.5       |             |            |       |
|                                 |  | 3.5000  | -3.6  | H                       | 3.0              | 40.3            | 1.0          | -42.8       | -13.0       | -29.8       |             |            |       |
|                                 |  | 5.2500  | -13.7 | H                       | 3.0              | 40.9            | 1.0          | -53.6       | -13.0       | -40.6       |             |            |       |
|                                 |  | 7.0000  | 0.5   | H                       | 3.0              | 41.0            | 1.0          | -39.6       | -13.0       | -26.6       |             |            |       |
|                                 |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |

|   |       | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement |                 |                      |              |                  |             |                    |             |            |       |
|---|-------|--|-----------------|----------------------|--------------|------------------|-------------|--------------------|-------------|------------|-------|
| LTE<br>Band 4<br>5MHz<br>QPSK   |       | Company: Samsung   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Project #: 16K23793  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Date: 08-25-16   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Test Engineer: Chan Park   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Configuration: EUT / AC Adapter / Cradle / Z Position                                |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Mode: TX LTE BAND 4, 5MHz BW, QPSK   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Chamber: Chamber 2   |                 | Pre-amplifier: AFS42 |              | Filter: Filter 1 |             | Limit: FCC Part 27 |             |            |       |
|   |       | f GHz  | SGreading (dBm) | Ant. Pol. (H/V)      | Distance (m) | Preamp (dB)      | Filter (dB) | ERP (dBm)          | Limit (dBm) | Delta (dB) | Notes |
|   |       | Low Channel (1712.5MHz)  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.4250   | -2.3            | V                    | 3.0          | 40.2             | 1.0         | -41.5              | -13.0       | -28.5      |       |
|   |       | 5.1375   | -7.0            | V                    | 3.0          | 40.9             | 1.0         | -46.9              | -13.0       | -33.9      |       |
|   |       | 6.8500   | -2.8            | V                    | 3.0          | 41.0             | 1.0         | -42.8              | -13.0       | -29.8      |       |
|   |       | 3.4250   | -2.4            | H                    | 3.0          | 40.2             | 1.0         | -41.6              | -13.0       | -28.6      |       |
|   |       | 5.1375   | -6.9            | H                    | 3.0          | 40.9             | 1.0         | -46.7              | -13.0       | -33.7      |       |
|   |       | 6.8500   | 2.1             | H                    | 3.0          | 41.0             | 1.0         | -37.9              | -13.0       | -24.9      |       |
|   |       | Mid Channel (1732.5MHz)  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.4650   | -5.6            | V                    | 3.0          | 40.3             | 1.0         | -44.9              | -13.0       | -31.9      |       |
|   |       | 5.1975   | -8.6            | V                    | 3.0          | 40.9             | 1.0         | -48.5              | -13.0       | -35.5      |       |
|   |       | 6.9300   | 6.2             | V                    | 3.0          | 41.0             | 1.0         | -33.8              | -13.0       | -20.8      |       |
|   |       | 3.4650   | -9.6            | H                    | 3.0          | 40.3             | 1.0         | -48.8              | -13.0       | -35.8      |       |
|   |       | 5.1975   | -9.1            | H                    | 3.0          | 40.9             | 1.0         | -49.0              | -13.0       | -36.0      |       |
|   |       | 6.9300   | 9.0             | H                    | 3.0          | 41.0             | 1.0         | -31.0              | -13.0       | -18.0      |       |
|   |       | High Channel (1752.5MHz)   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.5050   | 0.4             | V                    | 3.0          | 40.3             | 1.0         | -38.8              | -13.0       | -25.8      |       |
| 5.2575  | -12.4 | V  | 3.0             | 40.9                 | 1.0          | -52.3            | -13.0       | -39.3              |             |            |       |
| 7.0100  | 4.7   | V  | 3.0             | 41.0                 | 1.0          | -35.3            | -13.0       | -22.3              |             |            |       |
| 3.5050  | -3.7  | H  | 3.0             | 40.3                 | 1.0          | -43.0            | -13.0       | -30.0              |             |            |       |
| 5.2575  | -11.6 | H  | 3.0             | 40.9                 | 1.0          | -51.5            | -13.0       | -38.5              |             |            |       |
| 7.0100  | 6.5   | H  | 3.0             | 41.0                 | 1.0          | -33.5            | -13.0       | -20.5              |             |            |       |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |  |                 |                      |              |                  |             |                    |             |            |       |
| LTE<br>Band 4<br>5MHz<br>16QAM  |       | Company: Samsung   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Project #: 16K23793  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Date: 08-25-16   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Test Engineer: Chan Park   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Configuration: EUT / AC Adapter / Cradle / Z Position                                |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Mode: TX LTE BAND 7, 5MHz BW, 16QAM  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | Chamber: Chamber 2   |                 | Pre-amplifier: AFS42 |              | Filter: Filter 1 |             | Limit: FCC Part 27 |             |            |       |
|   |       | f GHz  | SGreading (dBm) | Ant. Pol. (H/V)      | Distance (m) | Preamp (dB)      | Filter (dB) | ERP (dBm)          | Limit (dBm) | Delta (dB) | Notes |
|   |       | Low Channel (1712.5MHz)  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.4250   | -1.6            | V                    | 3.0          | 40.2             | 1.0         | -40.8              | -13.0       | -27.8      |       |
|   |       | 5.1375   | -6.9            | V                    | 3.0          | 40.9             | 1.0         | -46.8              | -13.0       | -33.8      |       |
|   |       | 6.8500   | -2.5            | V                    | 3.0          | 41.0             | 1.0         | -42.4              | -13.0       | -29.4      |       |
|   |       | 3.4250   | -2.5            | H                    | 3.0          | 40.2             | 1.0         | -41.7              | -13.0       | -28.7      |       |
|   |       | 5.1375   | -6.7            | H                    | 3.0          | 40.9             | 1.0         | -46.6              | -13.0       | -33.6      |       |
|   |       | 6.8500   | 2.7             | H                    | 3.0          | 41.0             | 1.0         | -37.2              | -13.0       | -24.2      |       |
|   |       | Mid Channel (1732.5MHz)  |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.4650   | -8.7            | V                    | 3.0          | 40.3             | 1.0         | -48.0              | -13.0       | -35.0      |       |
|   |       | 5.1975   | -10.4           | V                    | 3.0          | 40.9             | 1.0         | -50.2              | -13.0       | -37.2      |       |
|   |       | 6.9300   | 0.8             | V                    | 3.0          | 41.0             | 1.0         | -39.2              | -13.0       | -26.2      |       |
|   |       | 3.4650   | -9.9            | H                    | 3.0          | 40.3             | 1.0         | -49.2              | -13.0       | -36.2      |       |
|   |       | 5.1975   | -10.2           | H                    | 3.0          | 40.9             | 1.0         | -50.1              | -13.0       | -37.1      |       |
|   |       | 6.9300   | 4.6             | H                    | 3.0          | 41.0             | 1.0         | -35.4              | -13.0       | -22.4      |       |
|   |       | High Channel (1752.5MHz)   |                 |                      |              |                  |             |                    |             |            |       |
|   |       | 3.5050   | 0.0             | V                    | 3.0          | 40.3             | 1.0         | -39.3              | -13.0       | -26.3      |       |
| 5.2575  | -11.8 | V  | 3.0             | 40.9                 | 1.0          | -51.7            | -13.0       | -38.7              |             |            |       |
| 7.0100  | 5.6   | V  | 3.0             | 41.0                 | 1.0          | -34.4            | -13.0       | -21.4              |             |            |       |
| 3.5050  | -4.0  | H  | 3.0             | 40.3                 | 1.0          | -43.3            | -13.0       | -30.3              |             |            |       |
| 5.2575  | -11.9 | H  | 3.0             | 40.9                 | 1.0          | -51.7            | -13.0       | -38.7              |             |            |       |
| 7.0100  | 6.8   | H  | 3.0             | 41.0                 | 1.0          | -33.2            | -13.0       | -20.2              |             |            |       |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |  |                 |                      |              |                  |             |                    |             |            |       |

|                                |  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |       |                         |                  |                 |              |             |             |             |             |            |       |
|--------------------------------|--|---|-------|-------------------------|------------------|-----------------|--------------|-------------|-------------|-------------|-------------|------------|-------|
| LTE<br>Band 4<br>3MHz<br>QPSK  |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Date: 08-25-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Test Engineer: Chan Park  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Mode: TX LTE BAND 4, 3MHz BW,QPSK   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 27 |             |            |       |
|                                |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   |       | Low Channel (1711.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.4230                  | -4.0             | V               | 3.0          | 40.2        | 1.0         | -43.2       | -13.0       | -30.2      |       |
|                                |  |   |       | 5.1345                  | -6.1             | V               | 3.0          | 40.9        | 1.0         | -46.0       | -13.0       | -33.0      |       |
|                                |  |   |       | 6.8460                  | 3.3              | V               | 3.0          | 41.0        | 1.0         | -36.7       | -13.0       | -23.7      |       |
|                                |  |   |       | 3.4230                  | -2.7             | H               | 3.0          | 40.2        | 1.0         | -42.0       | -13.0       | -29.0      |       |
|                                |  |   |       | 5.1345                  | -7.5             | H               | 3.0          | 40.9        | 1.0         | -47.4       | -13.0       | -34.4      |       |
|                                |  |   |       | 6.8460                  | 7.9              | H               | 3.0          | 41.0        | 1.0         | -32.1       | -13.0       | -19.1      |       |
|                                |  |   |       | Mid Channel (1732.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.4650                  | -7.7             | V               | 3.0          | 40.3        | 1.0         | -47.0       | -13.0       | -34.0      |       |
|                                |  |   |       | 5.1975                  | -15.0            | V               | 3.0          | 40.9        | 1.0         | -54.8       | -13.0       | -41.8      |       |
|                                |  |   |       | 6.9300                  | 123.3            | V               | 3.0          | 41.0        | 1.0         | 83.3        | -13.0       | 96.3       |       |
|                                |  | 3.4650  | -8.7  | H                       | 3.0              | 40.3            | 1.0          | -47.9       | -13.0       | -34.9       |             |            |       |
|                                |  | 5.1975  | -9.6  | H                       | 3.0              | 40.9            | 1.0          | -49.5       | -13.0       | -36.5       |             |            |       |
|                                |  | 6.9300  | 9.3   | H                       | 3.0              | 41.0            | 1.0          | -30.7       | -13.0       | -17.7       |             |            |       |
|                                |  | High Channel (1753.5MHz)  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | 3.5070  | -1.8  | V                       | 3.0              | 40.3            | 1.0          | -41.1       | -13.0       | -28.1       |             |            |       |
|                                |  | 5.2605  | -13.5 | V                       | 3.0              | 40.9            | 1.0          | -53.3       | -13.0       | -40.3       |             |            |       |
|                                |  | 7.0140  | -2.2  | V                       | 3.0              | 41.0            | 1.0          | -42.2       | -13.0       | -29.2       |             |            |       |
|                                |  | 3.5070  | -1.7  | H                       | 3.0              | 40.3            | 1.0          | -41.0       | -13.0       | -28.0       |             |            |       |
|                                |  | 5.2605  | -14.1 | H                       | 3.0              | 40.9            | 1.0          | -53.9       | -13.0       | -40.9       |             |            |       |
|                                |  | 7.0140  | -4.5  | H                       | 3.0              | 41.0            | 1.0          | -44.6       | -13.0       | -31.6       |             |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |
| LTE<br>Band 4<br>3MHz<br>16QAM |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Date: 08-25-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Test Engineer: Chan Park  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Mode: TX LTE BAND 4, 3MHz BW,16QAM  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 27 |             |            |       |
|                                |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   |       | Low Channel (1711.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.4230                  | -4.4             | V               | 3.0          | 40.2        | 1.0         | -43.6       | -13.0       | -30.6      |       |
|                                |  |   |       | 5.1345                  | -5.9             | V               | 3.0          | 40.9        | 1.0         | -45.8       | -13.0       | -32.8      |       |
|                                |  |   |       | 6.8460                  | 3.9              | V               | 3.0          | 41.0        | 1.0         | -36.1       | -13.0       | -23.1      |       |
|                                |  |   |       | 3.4230                  | -2.0             | H               | 3.0          | 40.2        | 1.0         | -41.2       | -13.0       | -28.2      |       |
|                                |  |   |       | 5.1345                  | -8.6             | H               | 3.0          | 40.9        | 1.0         | -48.5       | -13.0       | -35.5      |       |
|                                |  |   |       | 6.8460                  | 8.4              | H               | 3.0          | 41.0        | 1.0         | -31.6       | -13.0       | -18.6      |       |
|                                |  |   |       | Mid Channel (1732.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.4650                  | -6.9             | V               | 3.0          | 40.3        | 1.0         | -46.2       | -13.0       | -33.2      |       |
|                                |  |   |       | 5.1975                  | -14.9            | V               | 3.0          | 40.9        | 1.0         | -54.8       | -13.0       | -41.8      |       |
|                                |  |   |       | 6.9300                  | 1.7              | V               | 3.0          | 41.0        | 1.0         | -38.3       | -13.0       | -25.3      |       |
|                                |  | 3.4650  | -9.7  | H                       | 3.0              | 40.3            | 1.0          | -48.9       | -13.0       | -35.9       |             |            |       |
|                                |  | 5.1975  | -9.9  | H                       | 3.0              | 40.9            | 1.0          | -49.8       | -13.0       | -36.8       |             |            |       |
|                                |  | 6.9300  | 9.0   | H                       | 3.0              | 41.0            | 1.0          | -31.0       | -13.0       | -18.0       |             |            |       |
|                                |  | High Channel (1752.5MHz)  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | 3.5070  | -3.0  | V                       | 3.0              | 40.3            | 1.0          | -42.3       | -13.0       | -29.3       |             |            |       |
|                                |  | 5.2605  | -14.6 | V                       | 3.0              | 40.9            | 1.0          | -54.5       | -13.0       | -41.5       |             |            |       |
|                                |  | 7.0140  | -4.9  | V                       | 3.0              | 41.0            | 1.0          | -44.9       | -13.0       | -31.9       |             |            |       |
|                                |  | 3.5070  | -2.4  | H                       | 3.0              | 40.3            | 1.0          | -41.7       | -13.0       | -28.7       |             |            |       |
|                                |  | 5.2605  | -15.1 | H                       | 3.0              | 40.9            | 1.0          | -55.0       | -13.0       | -42.0       |             |            |       |
|                                |  | 7.0140  | -6.9  | H                       | 3.0              | 41.0            | 1.0          | -46.9       | -13.0       | -33.9       |             |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |

|                                  |                          | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement                  |   |   |                 |   |                |   |                |               |       |  |
|----------------------------------|--------------------------|---|---|---|-----------------|---|----------------|---|----------------|---------------|-------|--|
|                                  |                          | Company: Samsung  |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Project #: 16K23793   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Date: 08-24-16  |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Test Engineer: YH Lim   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Configuration: EUT / AC Adapter / Cradle / Z Position   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Mode: TX LTE BAND 4, 1.4MHz BW, QPSK  |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Chamber</div><br>Chamber 2 |   | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Pre-amplifier</div><br>AFS42 |                 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter</div><br>Filter 1 |                | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Limit</div><br>FCC Part 27 |                |               |       |  |
| LTE<br>Band 4<br>1.4MHz<br>QPSK  |                          | f<br>GHz  | SG reading<br>(dBm)   | Ant. Pol.<br>(H/V)  | Distance<br>(m) | Preamp<br>(dB)  | Filter<br>(dB) | ERP<br>(dBm)  | Limit<br>(dBm) | Delta<br>(dB) | Notes |  |
|                                  | Low Channel (1710.7MHz)  |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.4214  | -7.6  | V   | 3.0             | 40.2  | 1.0            | -46.8   | -13.0          | -33.8         |       |  |
|                                  |                          | 5.1321  | -10.9   | V   | 3.0             | 40.9  | 1.0            | -50.8   | -13.0          | -37.8         |       |  |
|                                  |                          | 6.8428  | -1.3  | V   | 3.0             | 41.0  | 1.0            | -41.2   | -13.0          | -28.2         |       |  |
|                                  |                          | 3.4214  | -8.3  | H   | 3.0             | 40.2  | 1.0            | -47.5   | -13.0          | -34.5         |       |  |
|                                  |                          | 5.1321  | -8.9  | H   | 3.0             | 40.9  | 1.0            | -48.8   | -13.0          | -35.8         |       |  |
|                                  |                          | 6.8428  | 5.9   | H   | 3.0             | 41.0  | 1.0            | -34.1   | -13.0          | -21.1         |       |  |
|                                  | Mid Channel (1732.5MHz)  |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.4650  | -8.8  | V   | 3.0             | 40.3  | 1.0            | -48.0   | -13.0          | -35.0         |       |  |
|                                  |                          | 5.1975  | -15.4   | V   | 3.0             | 40.9  | 1.0            | -55.3   | -13.0          | -42.3         |       |  |
|                                  |                          | 6.9300  | -1.4  | V   | 3.0             | 41.0  | 1.0            | -41.4   | -13.0          | -28.4         |       |  |
|                                  |                          | 3.4650  | -8.7  | H   | 3.0             | 40.3  | 1.0            | -48.0   | -13.0          | -35.0         |       |  |
|                                  |                          | 5.1975  | -11.2   | H   | 3.0             | 40.9  | 1.0            | -51.1   | -13.0          | -38.1         |       |  |
|                                  |                          | 6.9300  | 4.1   | H   | 3.0             | 41.0  | 1.0            | -35.9   | -13.0          | -22.9         |       |  |
|                                  | High Channel (1754.3MHz) |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.5086  | -3.2  | V   | 3.0             | 40.3  | 1.0            | -42.5   | -13.0          | -29.5         |       |  |
|                                  |                          | 5.2629  | -14.8   | V   | 3.0             | 40.9  | 1.0            | -54.7   | -13.0          | -41.7         |       |  |
|                                  |                          | 7.0172  | -0.6  | V   | 3.0             | 41.0  | 1.0            | -40.6   | -13.0          | -27.6         |       |  |
|                                  |                          | 3.5086  | -1.1  | H   | 3.0             | 40.3  | 1.0            | -40.4   | -13.0          | -27.4         |       |  |
|                                  |                          | 5.2629  | -11.4   | H   | 3.0             | 40.9  | 1.0            | -51.2   | -13.0          | -38.2         |       |  |
|                                  |                          | 7.0172  | 2.2   | H   | 3.0             | 41.0  | 1.0            | -37.8   | -13.0          | -24.8         |       |  |
|                                  |                          |   | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |   |                 |   |                |   |                |               |       |  |
|                                  |                          |   | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |   |                 |   |                |   |                |               |       |  |
|                                  |                          |   | Company: Samsung  |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Project #: 16K23793   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Date: 08-24-16  |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Test Engineer: YH Lim   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Configuration: EUT / AC Adapter / Cradle / Z Position   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | Mode: TX LTE BAND 4, 1.4MHz BW, 16QAM   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Chamber</div><br>Chamber 2 |   | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Pre-amplifier</div><br>AFS42 |                 | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter</div><br>Filter 1 |                | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Limit</div><br>FCC Part 27 |                |               |       |  |
| LTE<br>Band 4<br>1.4MHz<br>16QAM |                          | f<br>GHz  | SG reading<br>(dBm)   | Ant. Pol.<br>(H/V)  | Distance<br>(m) | Preamp<br>(dB)  | Filter<br>(dB) | ERP<br>(dBm)  | Limit<br>(dBm) | Delta<br>(dB) | Notes |  |
|                                  | Low Channel (1710.7MHz)  |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.4214  | -7.8  | V   | 3.0             | 40.2  | 1.0            | -47.0   | -13.0          | -34.0         |       |  |
|                                  |                          | 5.1321  | -11.9   | V   | 3.0             | 40.9  | 1.0            | -51.8   | -13.0          | -38.8         |       |  |
|                                  |                          | 6.8428  | -2.5  | V   | 3.0             | 41.0  | 1.0            | -42.5   | -13.0          | -29.5         |       |  |
|                                  |                          | 3.4214  | -8.6  | H   | 3.0             | 40.2  | 1.0            | -47.8   | -13.0          | -34.8         |       |  |
|                                  |                          | 5.1321  | -9.0  | H   | 3.0             | 40.9  | 1.0            | -48.9   | -13.0          | -35.9         |       |  |
|                                  |                          | 6.8428  | 3.6   | H   | 3.0             | 41.0  | 1.0            | -36.4   | -13.0          | -23.4         |       |  |
|                                  | Mid Channel (1732.5MHz)  |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.4650  | -8.9  | V   | 3.0             | 40.3  | 1.0            | -48.1   | -13.0          | -35.1         |       |  |
|                                  |                          | 5.1975  | -15.5   | V   | 3.0             | 40.9  | 1.0            | -55.3   | -13.0          | -42.3         |       |  |
|                                  |                          | 6.9300  | -2.6  | V   | 3.0             | 41.0  | 1.0            | -42.6   | -13.0          | -29.6         |       |  |
|                                  |                          | 3.4650  | -8.4  | H   | 3.0             | 40.3  | 1.0            | -47.6   | -13.0          | -34.6         |       |  |
|                                  |                          | 5.1975  | -12.8   | H   | 3.0             | 40.9  | 1.0            | -52.7   | -13.0          | -39.7         |       |  |
|                                  |                          | 6.9300  | 5.0   | H   | 3.0             | 41.0  | 1.0            | -35.0   | -13.0          | -22.0         |       |  |
|                                  | High Channel (1754.3MHz) |   |   |   |                 |   |                |   |                |               |       |  |
|                                  |                          | 3.5086  | -4.0  | V   | 3.0             | 40.3  | 1.0            | -43.3   | -13.0          | -30.3         |       |  |
|                                  |                          | 5.2629  | -15.3   | V   | 3.0             | 40.9  | 1.0            | -55.1   | -13.0          | -42.1         |       |  |
|                                  |                          | 7.0172  | -1.3  | V   | 3.0             | 41.0  | 1.0            | -41.3   | -13.0          | -28.3         |       |  |
|                                  |                          | 3.5086  | -2.1  | H   | 3.0             | 40.3  | 1.0            | -41.4   | -13.0          | -28.4         |       |  |
|                                  |                          | 5.2629  | -12.8   | H   | 3.0             | 40.9  | 1.0            | -52.6   | -13.0          | -39.6         |       |  |
|                                  |                          | 7.0172  | 1.6   | H   | 3.0             | 41.0  | 1.0            | -38.4   | -13.0          | -25.4         |       |  |
|                                  |                          |   | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |   |                 |   |                |   |                |               |       |  |

**LTE Band 2**

|   |                       | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement |   |              |             |             |             |             |            |                                      |  |
|---|-----------------------|--|---|--------------|-------------|-------------|-------------|-------------|------------|--------------------------------------|--|
| LTE<br>Band 2<br>20MHz<br>QPSK  | Company: Samsung      |  | Project #: 16K23793                                   |              |             |             |             |             |            | Date: 08-24-16                       |  |
|   | Test Engineer: YH Lim |  | Configuration: EUT / AC Adapter / Cradle / Z Position |              |             |             |             |             |            | Mode: TX LTE BAND 2, 20MHz BW, QPSK  |  |
|   | Chamber               |  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |                                      |  |
|   | Chamber 2             |  | AFS42   |              | Filter 1    |             | FCC Part 24 |             |            |                                      |  |
|   | f GHz                 | SG reading (dBm)   | Ant. Pol. (H/V)                                       | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes                                |  |
|   | Low Channel (1860MHz) |  |   |              |             |             |             |             |            |                                      |  |
|   | 3.7200                | -14.4  | V   | 3.0          | 40.5        | 1.0         | -53.9       | -13.0       | -40.9      |                                      |  |
|   | 5.5800                | -16.6  | V   | 3.0          | 40.8        | 1.0         | -56.4       | -13.0       | -43.4      |                                      |  |
|   | 7.4400                | -13.1  | V   | 3.0          | 40.8        | 1.0         | -52.9       | -13.0       | -39.9      |                                      |  |
|   | 3.7200                | -11.5  | H   | 3.0          | 40.5        | 1.0         | -51.0       | -13.0       | -38.0      |                                      |  |
|   | 5.5800                | -17.8  | H   | 3.0          | 40.8        | 1.0         | -57.6       | -13.0       | -44.6      |                                      |  |
|   | 7.4400                | -10.1  | H   | 3.0          | 40.8        | 1.0         | -49.8       | -13.0       | -36.8      |                                      |  |
|   | Mid Channel (1880MHz) |  |   |              |             |             |             |             |            |                                      |  |
|   | 3.7600                | -14.6  | V   | 3.0          | 40.5        | 1.0         | -54.2       | -13.0       | -41.2      |                                      |  |
|   | 5.6400                | -17.4  | V   | 3.0          | 40.8        | 1.0         | -57.2       | -13.0       | -44.2      |                                      |  |
| 7.5200  | -11.2                 | V  | 3.0   | 40.7         | 1.0         | -50.9       | -13.0       | -37.9       |            |                                      |  |
| 3.7600  | -12.4                 | H  | 3.0   | 40.5         | 1.0         | -51.9       | -13.0       | -38.9       |            |                                      |  |
| 5.6400  | -18.1                 | H  | 3.0   | 40.8         | 1.0         | -57.9       | -13.0       | -44.9       |            |                                      |  |
| 7.5200  | -7.0                  | H  | 3.0   | 40.7         | 1.0         | -46.7       | -13.0       | -33.7       |            |                                      |  |
| High Channel (1900MHz)  |                       |  |   |              |             |             |             |             |            |                                      |  |
| 3.8000  | -13.8                 | V  | 3.0   | 40.6         | 1.0         | -53.4       | -13.0       | -40.4       |            |                                      |  |
| 5.7000  | -14.5                 | V  | 3.0   | 40.8         | 1.0         | -54.3       | -13.0       | -41.3       |            |                                      |  |
| 7.6000  | -13.1                 | V  | 3.0   | 40.7         | 1.0         | -52.8       | -13.0       | -39.8       |            |                                      |  |
| 3.8000  | -11.8                 | H  | 3.0   | 40.6         | 1.0         | -51.4       | -13.0       | -38.4       |            |                                      |  |
| 5.7000  | -14.6                 | H  | 3.0   | 40.8         | 1.0         | -54.4       | -13.0       | -41.4       |            |                                      |  |
| 7.6000  | -11.8                 | H  | 3.0   | 40.7         | 1.0         | -51.5       | -13.0       | -38.5       |            |                                      |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                       |  |   |              |             |             |             |             |            |                                      |  |
| LTE<br>Band 2<br>20MHz<br>16QAM   | Company: Samsung      |  | Project #: 16K23793                                   |              |             |             |             |             |            | Date: 08-24-16                       |  |
|   | Test Engineer: YH Lim |  | Configuration: EUT / AC Adapter / Cradle / Z Position |              |             |             |             |             |            | Mode: TX LTE BAND 2, 20MHz BW, 16QAM |  |
|   | Chamber               |  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |                                      |  |
|   | Chamber 2             |  | AFS42   |              | Filter 1    |             | FCC Part 24 |             |            |                                      |  |
|   | f GHz                 | SG reading (dBm)   | Ant. Pol. (H/V)                                       | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes                                |  |
|   | Low Channel (1860MHz) |  |   |              |             |             |             |             |            |                                      |  |
|   | 3.7200                | -15.0  | V   | 3.0          | 40.5        | 1.0         | -54.5       | -13.0       | -41.5      |                                      |  |
|   | 5.5800                | -17.0  | V   | 3.0          | 40.8        | 1.0         | -56.8       | -13.0       | -43.8      |                                      |  |
|   | 7.4400                | -13.8  | V   | 3.0          | 40.8        | 1.0         | -53.6       | -13.0       | -40.6      |                                      |  |
|   | 3.7200                | -11.7  | H   | 3.0          | 40.5        | 1.0         | -51.2       | -13.0       | -38.2      |                                      |  |
|   | 5.5800                | -17.8  | H   | 3.0          | 40.8        | 1.0         | -57.6       | -13.0       | -44.6      |                                      |  |
|   | 7.4400                | -11.2  | H   | 3.0          | 40.8        | 1.0         | -51.0       | -13.0       | -38.0      |                                      |  |
|   | Mid Channel (1880MHz) |  |   |              |             |             |             |             |            |                                      |  |
|   | 3.7600                | -15.8  | V   | 3.0          | 40.5        | 1.0         | -55.4       | -13.0       | -42.4      |                                      |  |
|   | 5.6400                | -16.3  | V   | 3.0          | 40.8        | 1.0         | -56.1       | -13.0       | -43.1      |                                      |  |
| 7.5200  | -12.3                 | V  | 3.0   | 40.7         | 1.0         | -52.0       | -13.0       | -39.0       |            |                                      |  |
| 3.7600  | -13.0                 | H  | 3.0   | 40.5         | 1.0         | -52.5       | -13.0       | -39.5       |            |                                      |  |
| 5.6400  | -19.2                 | H  | 3.0   | 40.8         | 1.0         | -59.0       | -13.0       | -46.0       |            |                                      |  |
| 7.5200  | -8.5                  | H  | 3.0   | 40.7         | 1.0         | -48.3       | -13.0       | -35.3       |            |                                      |  |
| High Channel (1900MHz)  |                       |  |   |              |             |             |             |             |            |                                      |  |
| 3.8000  | -14.3                 | V  | 3.0   | 40.6         | 1.0         | -53.8       | -13.0       | -40.8       |            |                                      |  |
| 5.7000  | -14.7                 | V  | 3.0   | 40.8         | 1.0         | -54.4       | -13.0       | -41.4       |            |                                      |  |
| 7.6000  | -13.7                 | V  | 3.0   | 40.7         | 1.0         | -53.4       | -13.0       | -40.4       |            |                                      |  |
| 3.8000  | -11.8                 | H  | 3.0   | 40.6         | 1.0         | -51.4       | -13.0       | -38.4       |            |                                      |  |
| 5.7000  | -14.8                 | H  | 3.0   | 40.8         | 1.0         | -54.6       | -13.0       | -41.6       |            |                                      |  |
| 7.6000  | -11.4                 | H  | 3.0   | 40.7         | 1.0         | -51.1       | -13.0       | -38.1       |            |                                      |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                       |  |   |              |             |             |             |             |            |                                      |  |

|   |   | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement |                      |              |                  |             |                    |             |            |       |  |
|---|---|--|----------------------|--------------|------------------|-------------|--------------------|-------------|------------|-------|--|
| LTE<br>Band 2<br>15MHz<br>QPSK  | Company: Samsung                                      |  |                      |              |                  |             |                    |             |            |       |  |
|   | Project#: 16K23793                                    |  |                      |              |                  |             |                    |             |            |       |  |
|   | Date: 08-24-16  |  |                      |              |                  |             |                    |             |            |       |  |
|   | Test Engineer: YH Lim                                 |  |                      |              |                  |             |                    |             |            |       |  |
|   | Configuration: EUT / AC Adapter / Cradle / Z Position |  |                      |              |                  |             |                    |             |            |       |  |
|   | Mode: TX LTE BAND 2, 15MHz BW, QPSK                   |  |                      |              |                  |             |                    |             |            |       |  |
|   | Chamber: Chamber 2                                    |  | Pre-amplifier: AFS42 |              | Filter: Filter 1 |             | Limit: FCC Part 24 |             |            |       |  |
|   | f GHz   | SGreading (dBm)  | Ant. Pol. (H/V)      | Distance (m) | Preamp (dB)      | Filter (dB) | ERP (dBm)          | Limit (dBm) | Delta (dB) | Notes |  |
|   | Low Channel (1857.5MHz)                               |  |                      |              |                  |             |                    |             |            |       |  |
|   | 3.7150  | -13.1  | V                    | 3.0          | 40.5             | 1.0         | -52.6              | -13.0       | -39.6      |       |  |
|   | 5.5725  | -17.7  | V                    | 3.0          | 40.8             | 1.0         | -57.5              | -13.0       | -44.5      |       |  |
|   | 7.4300  | -10.5  | V                    | 3.0          | 40.8             | 1.0         | -50.3              | -13.0       | -37.3      |       |  |
|   | 3.7150  | -11.6  | H                    | 3.0          | 40.5             | 1.0         | -51.1              | -13.0       | -38.1      |       |  |
|   | 5.5725  | -20.1  | H                    | 3.0          | 40.8             | 1.0         | -59.9              | -13.0       | -46.9      |       |  |
|   | 7.4300  | -10.7  | H                    | 3.0          | 40.8             | 1.0         | -50.4              | -13.0       | -37.4      |       |  |
| Mid Channel (1880MHz)   |   |  |                      |              |                  |             |                    |             |            |       |  |
| 3.7600  | -15.3   | V  | 3.0                  | 40.5         | 1.0              | -54.9       | -13.0              | -41.9       |            |       |  |
| 5.6400  | -17.5   | V  | 3.0                  | 40.8         | 1.0              | -57.3       | -13.0              | -44.3       |            |       |  |
| 7.5200  | -11.6   | V  | 3.0                  | 40.7         | 1.0              | -51.3       | -13.0              | -38.3       |            |       |  |
| 3.7600  | -10.5   | H  | 3.0                  | 40.5         | 1.0              | -50.0       | -13.0              | -37.0       |            |       |  |
| 5.6400  | -18.9   | H  | 3.0                  | 40.8         | 1.0              | -58.7       | -13.0              | -45.7       |            |       |  |
| 7.5200  | -9.0  | H  | 3.0                  | 40.7         | 1.0              | -48.7       | -13.0              | -35.7       |            |       |  |
| High Channel (1902.5MHz)  |   |  |                      |              |                  |             |                    |             |            |       |  |
| 3.8050  | -13.3   | V  | 3.0                  | 40.6         | 1.0              | -52.9       | -13.0              | -39.9       |            |       |  |
| 5.7075  | -16.8   | V  | 3.0                  | 40.8         | 1.0              | -56.6       | -13.0              | -43.6       |            |       |  |
| 7.6100  | -10.2   | V  | 3.0                  | 40.7         | 1.0              | -49.9       | -13.0              | -36.9       |            |       |  |
| 3.8050  | -11.7   | H  | 3.0                  | 40.6         | 1.0              | -51.3       | -13.0              | -38.3       |            |       |  |
| 5.7075  | -19.4   | H  | 3.0                  | 40.8         | 1.0              | -59.2       | -13.0              | -46.2       |            |       |  |
| 7.6100  | -8.6  | H  | 3.0                  | 40.7         | 1.0              | -48.3       | -13.0              | -35.3       |            |       |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |   |  |                      |              |                  |             |                    |             |            |       |  |
| LTE<br>Band 2<br>15MHz<br>16QAM   | Company: Samsung                                      |  |                      |              |                  |             |                    |             |            |       |  |
|   | Project#: 16K23793                                    |  |                      |              |                  |             |                    |             |            |       |  |
|   | Date: 08-24-16  |  |                      |              |                  |             |                    |             |            |       |  |
|   | Test Engineer: YH Lim                                 |  |                      |              |                  |             |                    |             |            |       |  |
|   | Configuration: EUT / AC Adapter / Cradle / Z Position |  |                      |              |                  |             |                    |             |            |       |  |
|   | Mode: TX LTE BAND 2, 15MHz BW, 16QAM                  |  |                      |              |                  |             |                    |             |            |       |  |
|   | Chamber: Chamber 2                                    |  | Pre-amplifier: AFS42 |              | Filter: Filter 1 |             | Limit: FCC Part 24 |             |            |       |  |
|   | f GHz   | SGreading (dBm)  | Ant. Pol. (H/V)      | Distance (m) | Preamp (dB)      | Filter (dB) | ERP (dBm)          | Limit (dBm) | Delta (dB) | Notes |  |
|   | Low Channel (1857.5MHz)                               |  |                      |              |                  |             |                    |             |            |       |  |
|   | 3.7150  | -12.9  | V                    | 3.0          | 40.5             | 1.0         | -52.4              | -13.0       | -39.4      |       |  |
|   | 5.5725  | -18.2  | V                    | 3.0          | 40.8             | 1.0         | -58.0              | -13.0       | -45.0      |       |  |
|   | 7.4300  | -10.8  | V                    | 3.0          | 40.8             | 1.0         | -50.6              | -13.0       | -37.6      |       |  |
|   | 3.7150  | -12.0  | H                    | 3.0          | 40.5             | 1.0         | -51.5              | -13.0       | -38.5      |       |  |
|   | 5.5725  | -20.2  | H                    | 3.0          | 40.8             | 1.0         | -60.0              | -13.0       | -47.0      |       |  |
|   | 7.4300  | -10.4  | H                    | 3.0          | 40.8             | 1.0         | -50.2              | -13.0       | -37.2      |       |  |
| Mid Channel (1880MHz)   |   |  |                      |              |                  |             |                    |             |            |       |  |
| 3.7600  | -16.6   | V  | 3.0                  | 40.5         | 1.0              | -56.1       | -13.0              | -43.1       |            |       |  |
| 5.6400  | -17.7   | V  | 3.0                  | 40.8         | 1.0              | -57.5       | -13.0              | -44.5       |            |       |  |
| 7.5200  | -13.2   | V  | 3.0                  | 40.7         | 1.0              | -52.9       | -13.0              | -39.9       |            |       |  |
| 3.7600  | -10.8   | H  | 3.0                  | 40.5         | 1.0              | -50.3       | -13.0              | -37.3       |            |       |  |
| 5.6400  | -19.1   | H  | 3.0                  | 40.8         | 1.0              | -58.9       | -13.0              | -45.9       |            |       |  |
| 7.5200  | -9.1  | H  | 3.0                  | 40.7         | 1.0              | -48.9       | -13.0              | -35.9       |            |       |  |
| High Channel (1902.5MHz)  |   |  |                      |              |                  |             |                    |             |            |       |  |
| 3.8050  | -14.2   | V  | 3.0                  | 40.6         | 1.0              | -53.8       | -13.0              | -40.8       |            |       |  |
| 5.7075  | -18.2   | V  | 3.0                  | 40.8         | 1.0              | -58.0       | -13.0              | -45.0       |            |       |  |
| 7.6100  | -11.6   | V  | 3.0                  | 40.7         | 1.0              | -51.3       | -13.0              | -38.3       |            |       |  |
| 3.8050  | -12.0   | H  | 3.0                  | 40.6         | 1.0              | -51.6       | -13.0              | -38.6       |            |       |  |
| 5.7075  | -19.9   | H  | 3.0                  | 40.8         | 1.0              | -59.7       | -13.0              | -46.7       |            |       |  |
| 7.6100  | -9.0  | H  | 3.0                  | 40.7         | 1.0              | -48.7       | -13.0              | -35.7       |            |       |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |   |  |                      |              |                  |             |                    |             |            |       |  |

|   |                  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement                  |              |   |             |   |             |   |       |  |  |
|---|------------------|---|--------------|---|-------------|---|-------------|---|-------|--|--|
|   |                  | Company: Samsung  |              |   |             |   |             |   |       |  |  |
|   |                  | Project #: 16K23793   |              |   |             |   |             |   |       |  |  |
|   |                  | Date: 08-24-16  |              |   |             |   |             |   |       |  |  |
|   |                  | Test Engineer: YH Lim   |              |   |             |   |             |   |       |  |  |
|   |                  | Configuration: EUT / AC Adapter / Cradle / Z Position   |              |   |             |   |             |   |       |  |  |
|   |                  | Mode: TX LTE BAND 2, 10MHz BW,QPSK  |              |   |             |   |             |   |       |  |  |
|   |                  | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Chamber</div><br>Chamber 2 |              | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Pre-amplifier</div><br>AFS42 |             | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter</div><br>Filter 1 |             | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Limit</div><br>FCC Part 24 |       |  |  |
| f GHz   | SG reading (dBm) | Ant. Pol. (H/V)   | Distance (m) | Preamp (dB)   | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB)  | Notes |  |  |
| Low Channel (1855MHz)   |                  |   |              |   |             |   |             |   |       |  |  |
| 3.7100  | -13.4            | V   | 3.0          | 40.5  | 1.0         | -52.9   | -13.0       | -39.9   |       |  |  |
| 5.5650  | -14.0            | V   | 3.0          | 40.8  | 1.0         | -53.8   | -13.0       | -40.8   |       |  |  |
| 7.4200  | -7.9             | V   | 3.0          | 40.8  | 1.0         | -47.7   | -13.0       | -34.7   |       |  |  |
| 3.7100  | -11.9            | H   | 3.0          | 40.5  | 1.0         | -51.4   | -13.0       | -38.4   |       |  |  |
| 5.5650  | -20.0            | H   | 3.0          | 40.8  | 1.0         | -59.8   | -13.0       | -46.8   |       |  |  |
| 7.4200  | -5.4             | H   | 3.0          | 40.8  | 1.0         | -45.1   | -13.0       | -32.1   |       |  |  |
| Mid Channel (1880MHz)   |                  |   |              |   |             |   |             |   |       |  |  |
| 3.7600  | -11.8            | V   | 3.0          | 40.5  | 1.0         | -51.3   | -13.0       | -38.3   |       |  |  |
| 5.6400  | -15.8            | V   | 3.0          | 40.8  | 1.0         | -55.6   | -13.0       | -42.6   |       |  |  |
| 7.5200  | -5.7             | V   | 3.0          | 40.7  | 1.0         | -45.4   | -13.0       | -32.4   |       |  |  |
| 3.7600  | -11.2            | H   | 3.0          | 40.5  | 1.0         | -50.7   | -13.0       | -37.7   |       |  |  |
| 5.6400  | -18.2            | H   | 3.0          | 40.8  | 1.0         | -58.0   | -13.0       | -45.0   |       |  |  |
| 7.5200  | -4.7             | H   | 3.0          | 40.7  | 1.0         | -44.4   | -13.0       | -31.4   |       |  |  |
| High Channel (1905MHz)  |                  |   |              |   |             |   |             |   |       |  |  |
| 3.8100  | -12.4            | V   | 3.0          | 40.6  | 1.0         | -52.0   | -13.0       | -39.0   |       |  |  |
| 5.7150  | -12.5            | V   | 3.0          | 40.8  | 1.0         | -52.3   | -13.0       | -39.3   |       |  |  |
| 7.6200  | -7.3             | V   | 3.0          | 40.7  | 1.0         | -47.0   | -13.0       | -34.0   |       |  |  |
| 3.8100  | -13.7            | H   | 3.0          | 40.6  | 1.0         | -53.3   | -13.0       | -40.3   |       |  |  |
| 5.7150  | -17.1            | H   | 3.0          | 40.8  | 1.0         | -56.9   | -13.0       | -43.9   |       |  |  |
| 7.6200  | -8.1             | H   | 3.0          | 40.7  | 1.0         | -47.7   | -13.0       | -34.7   |       |  |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                  |   |              |   |             |   |             |   |       |  |  |
|   |                  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement                  |              |   |             |   |             |   |       |  |  |
|   |                  | Company: Samsung  |              |   |             |   |             |   |       |  |  |
|   |                  | Project #: 16K23793   |              |   |             |   |             |   |       |  |  |
|   |                  | Date: 08-24-16  |              |   |             |   |             |   |       |  |  |
|   |                  | Test Engineer: YH Lim   |              |   |             |   |             |   |       |  |  |
|   |                  | Configuration: EUT / AC Adapter / Cradle / Z Position   |              |   |             |   |             |   |       |  |  |
|   |                  | Mode: TX LTE BAND 2, 10MHz BW,16QAM   |              |   |             |   |             |   |       |  |  |
|   |                  | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Chamber</div><br>Chamber 2 |              | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Pre-amplifier</div><br>AFS42 |             | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Filter</div><br>Filter 1 |             | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Limit</div><br>FCC Part 24 |       |  |  |
| f GHz   | SG reading (dBm) | Ant. Pol. (H/V)   | Distance (m) | Preamp (dB)   | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB)  | Notes |  |  |
| Low Channel (1855MHz)   |                  |   |              |   |             |   |             |   |       |  |  |
| 3.7100  | -14.4            | V   | 3.0          | 40.5  | 1.0         | -53.9   | -13.0       | -40.9   |       |  |  |
| 5.5650  | -14.8            | V   | 3.0          | 40.8  | 1.0         | -54.6   | -13.0       | -41.6   |       |  |  |
| 7.4200  | -9.6             | V   | 3.0          | 40.8  | 1.0         | -49.4   | -13.0       | -36.4   |       |  |  |
| 3.7100  | -13.2            | H   | 3.0          | 40.5  | 1.0         | -52.7   | -13.0       | -39.7   |       |  |  |
| 5.5650  | -20.3            | H   | 3.0          | 40.8  | 1.0         | -60.1   | -13.0       | -47.1   |       |  |  |
| 7.4200  | -6.2             | H   | 3.0          | 40.8  | 1.0         | -46.0   | -13.0       | -33.0   |       |  |  |
| Mid Channel (1880MHz)   |                  |   |              |   |             |   |             |   |       |  |  |
| 3.7600  | -12.3            | V   | 3.0          | 40.5  | 1.0         | -51.9   | -13.0       | -38.9   |       |  |  |
| 5.6400  | -16.3            | V   | 3.0          | 40.8  | 1.0         | -56.1   | -13.0       | -43.1   |       |  |  |
| 7.5200  | -7.1             | V   | 3.0          | 40.7  | 1.0         | -46.8   | -13.0       | -33.8   |       |  |  |
| 3.7600  | -10.8            | H   | 3.0          | 40.5  | 1.0         | -50.4   | -13.0       | -37.4   |       |  |  |
| 5.6400  | -18.8            | H   | 3.0          | 40.8  | 1.0         | -58.6   | -13.0       | -45.6   |       |  |  |
| 7.5200  | -7.1             | H   | 3.0          | 40.7  | 1.0         | -46.9   | -13.0       | -33.9   |       |  |  |
| High Channel (1905MHz)  |                  |   |              |   |             |   |             |   |       |  |  |
| 3.8100  | -12.9            | V   | 3.0          | 40.6  | 1.0         | -52.5   | -13.0       | -39.5   |       |  |  |
| 5.7150  | -12.5            | V   | 3.0          | 40.8  | 1.0         | -52.3   | -13.0       | -39.3   |       |  |  |
| 7.6200  | -9.2             | V   | 3.0          | 40.7  | 1.0         | -48.9   | -13.0       | -35.9   |       |  |  |
| 3.8100  | -14.2            | H   | 3.0          | 40.6  | 1.0         | -53.8   | -13.0       | -40.8   |       |  |  |
| 5.7150  | -17.2            | H   | 3.0          | 40.8  | 1.0         | -57.0   | -13.0       | -44.0   |       |  |  |
| 7.6200  | -8.2             | H   | 3.0          | 40.7  | 1.0         | -47.9   | -13.0       | -34.9   |       |  |  |
| Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                  |   |              |   |             |   |             |   |       |  |  |

|                                |  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |       |                         |                  |                 |              |             |             |             |             |            |       |
|--------------------------------|--|---|-------|-------------------------|------------------|-----------------|--------------|-------------|-------------|-------------|-------------|------------|-------|
| LTE<br>Band 2<br>5MHz<br>QPSK  |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Date: 08-24-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Test Engineer: Chan Park  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Mode: TX LTE BAND 2, 5MHz BW, QPSK  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 24 |             |            |       |
|                                |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   |       | Low Channel (1852.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.7050                  | -10.0            | V               | 3.0          | 40.5        | 1.0         | -49.5       | -13.0       | -36.5      |       |
|                                |  |   |       | 5.5575                  | -14.5            | V               | 3.0          | 40.8        | 1.0         | -54.3       | -13.0       | -41.3      |       |
|                                |  |   |       | 7.4100                  | -1.0             | V               | 3.0          | 40.8        | 1.0         | -40.7       | -13.0       | -27.7      |       |
|                                |  |   |       | 3.7050                  | -10.3            | H               | 3.0          | 40.5        | 1.0         | -49.8       | -13.0       | -36.8      |       |
|                                |  |   |       | 5.5575                  | -15.2            | H               | 3.0          | 40.8        | 1.0         | -55.0       | -13.0       | -42.0      |       |
|                                |  |   |       | 7.4100                  | -3.4             | H               | 3.0          | 40.8        | 1.0         | -43.2       | -13.0       | -30.2      |       |
|                                |  |   |       | Mid Channel (1880MHz)   |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.7600                  | -12.5            | V               | 3.0          | 40.5        | 1.0         | -52.0       | -13.0       | -39.0      |       |
|                                |  |   |       | 5.6400                  | -13.9            | V               | 3.0          | 40.8        | 1.0         | -53.7       | -13.0       | -40.7      |       |
|                                |  |   |       | 7.5200                  | -6.9             | V               | 3.0          | 40.7        | 1.0         | -46.7       | -13.0       | -33.7      |       |
|                                |  | 3.7600  | -10.3 | H                       | 3.0              | 40.5            | 1.0          | -49.8       | -13.0       | -36.8       |             |            |       |
|                                |  | 5.6400  | -14.7 | H                       | 3.0              | 40.8            | 1.0          | -54.5       | -13.0       | -41.5       |             |            |       |
|                                |  | 7.5200  | -2.3  | H                       | 3.0              | 40.7            | 1.0          | -42.0       | -13.0       | -29.0       |             |            |       |
|                                |  | High Channel (1907.5MHz)  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | 3.8150  | -13.2 | V                       | 3.0              | 40.6            | 1.0          | -52.8       | -13.0       | -39.8       |             |            |       |
|                                |  | 5.7225  | -16.3 | V                       | 3.0              | 40.8            | 1.0          | -56.1       | -13.0       | -43.1       |             |            |       |
|                                |  | 7.6300  | -9.4  | V                       | 3.0              | 40.7            | 1.0          | -49.1       | -13.0       | -36.1       |             |            |       |
|                                |  | 3.8150  | -10.1 | H                       | 3.0              | 40.6            | 1.0          | -49.7       | -13.0       | -36.7       |             |            |       |
|                                |  | 5.7225  | -17.0 | H                       | 3.0              | 40.8            | 1.0          | -56.8       | -13.0       | -43.8       |             |            |       |
|                                |  | 7.6300  | -8.1  | H                       | 3.0              | 40.7            | 1.0          | -47.7       | -13.0       | -34.7       |             |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |
| LTE<br>Band 2<br>5MHz<br>16QAM |  | Company: Samsung  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Project #: 16K23793   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Date: 08-24-16  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Test Engineer: Chan Park  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | Mode: TX LTE BAND 2, 5MHz BW, 16QAM   |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | Chamber                 |                  | Pre-amplifier   |              | Filter      |             | Limit       |             |            |       |
|                                |  |   |       | Chamber 2               |                  | AFS42           |              | Filter 1    |             | FCC Part 24 |             |            |       |
|                                |  |   |       | f GHz                   | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   |       | Low Channel (1852.5MHz) |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.7050                  | -13.0            | V               | 3.0          | 40.5        | 1.0         | -52.4       | -13.0       | -39.4      |       |
|                                |  |   |       | 5.5575                  | -15.1            | V               | 3.0          | 40.8        | 1.0         | -54.9       | -13.0       | -41.9      |       |
|                                |  |   |       | 7.4100                  | -2.7             | V               | 3.0          | 40.8        | 1.0         | -42.5       | -13.0       | -29.5      |       |
|                                |  |   |       | 3.7050                  | -9.4             | H               | 3.0          | 40.5        | 1.0         | -48.9       | -13.0       | -35.9      |       |
|                                |  |   |       | 5.5575                  | -16.1            | H               | 3.0          | 40.8        | 1.0         | -56.0       | -13.0       | -43.0      |       |
|                                |  |   |       | 7.4100                  | -2.7             | H               | 3.0          | 40.8        | 1.0         | -42.4       | -13.0       | -29.4      |       |
|                                |  |   |       | Mid Channel (1880MHz)   |                  |                 |              |             |             |             |             |            |       |
|                                |  |   |       | 3.7600                  | -14.1            | V               | 3.0          | 40.5        | 1.0         | -53.6       | -13.0       | -40.6      |       |
|                                |  |   |       | 5.6400                  | -14.2            | V               | 3.0          | 40.8        | 1.0         | -54.0       | -13.0       | -41.0      |       |
|                                |  |   |       | 7.5200                  | -7.0             | V               | 3.0          | 40.7        | 1.0         | -46.7       | -13.0       | -33.7      |       |
|                                |  | 3.7600  | -11.6 | H                       | 3.0              | 40.5            | 1.0          | -51.1       | -13.0       | -38.1       |             |            |       |
|                                |  | 5.6400  | -15.0 | H                       | 3.0              | 40.8            | 1.0          | -54.8       | -13.0       | -41.8       |             |            |       |
|                                |  | 7.5200  | -2.4  | H                       | 3.0              | 40.7            | 1.0          | -42.1       | -13.0       | -29.1       |             |            |       |
|                                |  | High Channel (1907.5MHz)  |       |                         |                  |                 |              |             |             |             |             |            |       |
|                                |  | 3.8150  | -14.2 | V                       | 3.0              | 40.6            | 1.0          | -53.7       | -13.0       | -40.7       |             |            |       |
|                                |  | 5.7225  | -16.7 | V                       | 3.0              | 40.8            | 1.0          | -56.5       | -13.0       | -43.5       |             |            |       |
|                                |  | 7.6300  | -10.0 | V                       | 3.0              | 40.7            | 1.0          | -49.7       | -13.0       | -36.7       |             |            |       |
|                                |  | 3.8150  | -10.6 | H                       | 3.0              | 40.6            | 1.0          | -50.2       | -13.0       | -37.2       |             |            |       |
|                                |  | 5.7225  | -18.4 | H                       | 3.0              | 40.8            | 1.0          | -58.1       | -13.0       | -45.1       |             |            |       |
|                                |  | 7.6300  | -8.5  | H                       | 3.0              | 40.7            | 1.0          | -48.2       | -13.0       | -35.2       |             |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                         |                  |                 |              |             |             |             |             |            |       |

|                                |  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |                             |                 |                               |              |                           |             |                             |             |            |       |
|--------------------------------|--|---|-----------------------------|-----------------|-------------------------------|--------------|---------------------------|-------------|-----------------------------|-------------|------------|-------|
| LTE<br>Band 2<br>3MHz<br>QPSK  | Company: Samsung<br>Project #: 16K23793<br>Date: 08-24-16<br>Test Engineer: Chan Park<br>Configuration: EUT / AC Adapter / Cradle / Z Position<br>Mode: TX LTE BAND 2, 3MHz BW,QPSK  |   | <b>Chamber</b><br>Chamber 2 |                 | <b>Pre-amplifier</b><br>AFS42 |              | <b>Filter</b><br>Filter 1 |             | <b>Limit</b><br>FCC Part 24 |             |            |       |
|                                |  |   | f GHz                       | SGreading (dBm) | Ant. Pol. (H/V)               | Distance (m) | Preamp (dB)               | Filter (dB) | ERP (dBm)                   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   | Low Channel (1851.5MHz)     |                 |                               |              |                           |             |                             |             |            |       |
|                                |  |   | 3.7030                      | -11.6           | V                             | 3.0          | 40.5                      | 1.0         | -51.1                       | -13.0       | -38.1      |       |
|                                |  |   | 5.5545                      | -10.5           | V                             | 3.0          | 40.8                      | 1.0         | -50.3                       | -13.0       | -37.3      |       |
|                                |  |   | 7.4060                      | -6.1            | V                             | 3.0          | 40.8                      | 1.0         | -45.8                       | -13.0       | -32.8      |       |
|                                |  |   | 3.7030                      | -9.8            | H                             | 3.0          | 40.5                      | 1.0         | -49.3                       | -13.0       | -36.3      |       |
|                                |  |   | 5.5545                      | -16.8           | H                             | 3.0          | 40.8                      | 1.0         | -56.6                       | -13.0       | -43.6      |       |
|                                |  |   | 7.4060                      | -2.6            | H                             | 3.0          | 40.8                      | 1.0         | -42.4                       | -13.0       | -29.4      |       |
|                                |  |   | Mid Channel (1880MHz)       |                 |                               |              |                           |             |                             |             |            |       |
|                                |  |   | 3.7600                      | -13.5           | V                             | 3.0          | 40.5                      | 1.0         | -53.0                       | -13.0       | -40.0      |       |
|                                |  |   | 5.6400                      | -14.1           | V                             | 3.0          | 40.8                      | 1.0         | -53.9                       | -13.0       | -40.9      |       |
|                                |  |   | 7.5200                      | -6.4            | V                             | 3.0          | 40.7                      | 1.0         | -46.1                       | -13.0       | -33.1      |       |
|                                |  |   | 3.7600                      | -10.8           | H                             | 3.0          | 40.5                      | 1.0         | -50.3                       | -13.0       | -37.3      |       |
|                                |  |   | 5.6400                      | -17.6           | H                             | 3.0          | 40.8                      | 1.0         | -57.4                       | -13.0       | -44.4      |       |
|                                |  | 7.5200  | -5.3                        | H               | 3.0                           | 40.7         | 1.0                       | -45.0       | -13.0                       | -32.0       |            |       |
|                                |  | High Channel (1908.5MHz)  |                             |                 |                               |              |                           |             |                             |             |            |       |
|                                |  | 3.8170  | -10.9                       | V               | 3.0                           | 40.6         | 1.0                       | -50.5       | -13.0                       | -37.5       |            |       |
|                                |  | 5.7255  | -13.8                       | V               | 3.0                           | 40.8         | 1.0                       | -53.6       | -13.0                       | -40.6       |            |       |
|                                |  | 7.6340  | -5.0                        | V               | 3.0                           | 40.7         | 1.0                       | -44.7       | -13.0                       | -31.7       |            |       |
|                                |  | 3.8170  | -8.3                        | H               | 3.0                           | 40.6         | 1.0                       | -47.9       | -13.0                       | -34.9       |            |       |
|                                |  | 5.7255  | -14.8                       | H               | 3.0                           | 40.8         | 1.0                       | -54.6       | -13.0                       | -41.6       |            |       |
|                                |  | 7.6340  | -4.8                        | H               | 3.0                           | 40.7         | 1.0                       | -44.5       | -13.0                       | -31.5       |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                             |                 |                               |              |                           |             |                             |             |            |       |
| LTE<br>Band 2<br>3MHz<br>16QAM | Company: Samsung<br>Project #: 16K23793<br>Date: 08-24-16<br>Test Engineer: Chan Park<br>Configuration: EUT / AC Adapter / Cradle / Z Position<br>Mode: TX LTE BAND 2, 3MHz BW,16QAM |   | <b>Chamber</b><br>Chamber 2 |                 | <b>Pre-amplifier</b><br>AFS42 |              | <b>Filter</b><br>Filter 1 |             | <b>Limit</b><br>FCC Part 24 |             |            |       |
|                                |  |   | f GHz                       | SGreading (dBm) | Ant. Pol. (H/V)               | Distance (m) | Preamp (dB)               | Filter (dB) | ERP (dBm)                   | Limit (dBm) | Delta (dB) | Notes |
|                                |  |   | Low Channel (1851.5MHz)     |                 |                               |              |                           |             |                             |             |            |       |
|                                |  |   | 3.703                       | -11.2           | V                             | 3.0          | 40.5                      | 1.0         | -50.7                       | -13.0       | -37.7      |       |
|                                |  |   | 5.555                       | -11.1           | V                             | 3.0          | 40.8                      | 1.0         | -50.9                       | -13.0       | -37.9      |       |
|                                |  |   | 7.406                       | -5.8            | V                             | 3.0          | 40.8                      | 1.0         | -45.6                       | -13.0       | -32.6      |       |
|                                |  |   | 3.703                       | -13.7           | H                             | 3.0          | 40.5                      | 1.0         | -53.2                       | -13.0       | -40.2      |       |
|                                |  |   | 5.555                       | -17.0           | H                             | 3.0          | 40.8                      | 1.0         | -56.8                       | -13.0       | -43.8      |       |
|                                |  |   | 7.406                       | -6.6            | H                             | 3.0          | 40.8                      | 1.0         | -46.4                       | -13.0       | -33.4      |       |
|                                |  |   | Mid Channel (1880MHz)       |                 |                               |              |                           |             |                             |             |            |       |
|                                |  |   | 3.760                       | -14.0           | V                             | 3.0          | 40.5                      | 1.0         | -53.6                       | -13.0       | -40.6      |       |
|                                |  |   | 5.640                       | -13.8           | V                             | 3.0          | 40.8                      | 1.0         | -53.6                       | -13.0       | -40.6      |       |
|                                |  |   | 7.520                       | -7.2            | V                             | 3.0          | 40.7                      | 1.0         | -46.9                       | -13.0       | -33.9      |       |
|                                |  |   | 3.760                       | -11.2           | H                             | 3.0          | 40.5                      | 1.0         | -50.8                       | -13.0       | -37.8      |       |
|                                |  |   | 5.640                       | -18.2           | H                             | 3.0          | 40.8                      | 1.0         | -58.0                       | -13.0       | -45.0      |       |
|                                |  | 7.520   | -5.4                        | H               | 3.0                           | 40.7         | 1.0                       | -45.2       | -13.0                       | -32.2       |            |       |
|                                |  | High Channel (1908.5MHz)  |                             |                 |                               |              |                           |             |                             |             |            |       |
|                                |  | 3.817   | -12.2                       | V               | 3.0                           | 40.6         | 1.0                       | -51.8       | -13.0                       | -38.8       |            |       |
|                                |  | 5.726   | -14.9                       | V               | 3.0                           | 40.8         | 1.0                       | -54.7       | -13.0                       | -41.7       |            |       |
|                                |  | 7.634   | -6.5                        | V               | 3.0                           | 40.7         | 1.0                       | -46.2       | -13.0                       | -33.2       |            |       |
|                                |  | 3.817   | -9.4                        | H               | 3.0                           | 40.6         | 1.0                       | -49.0       | -13.0                       | -36.0       |            |       |
|                                |  | 5.726   | -16.8                       | H               | 3.0                           | 40.8         | 1.0                       | -56.5       | -13.0                       | -43.5       |            |       |
|                                |  | 7.634   | -7.3                        | H               | 3.0                           | 40.7         | 1.0                       | -46.9       | -13.0                       | -33.9       |            |       |
|                                |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |                             |                 |                               |              |                           |             |                             |             |            |       |

|                                  |  | UL Korea, Ltd Suwon Laboratory<br>Above 1GHz High Frequency Substitution Measurement  |       |                          |                 |                |              |             |             |             |             |            |       |
|----------------------------------|--|---|-------|--------------------------|-----------------|----------------|--------------|-------------|-------------|-------------|-------------|------------|-------|
| LTE<br>Band 2<br>1.4MHz<br>QPSK  |  | Company: Samsung  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Project #: 16K23793   |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Date: 08-24-16  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Test Engineer: Chan Park  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Mode: TX LTE BAND 2, 1.4MHz BW,QPSK   |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | Chamber                  |                 | Pre-amplifier  |              | Filter      |             | Limit       |             |            |       |
|                                  |  |   |       | Chamber 2                |                 | AFS42          |              | Filter 1    |             | FCC Part 24 |             |            |       |
|                                  |  |   |       | f GHz                    | SGreading (dBm) | Ant. Pol. (HV) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                  |  |   |       | Low Channel (1850.7MHz)  |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | 3.7014                   | -10.6           | V              | 3.0          | 40.5        | 1.0         | -50.1       | -13.0       | -37.1      |       |
|                                  |  |   |       | 5.5521                   | -13.8           | V              | 3.0          | 40.8        | 1.0         | -53.7       | -13.0       | -40.7      |       |
|                                  |  |   |       | 7.4028                   | -5.0            | V              | 3.0          | 40.8        | 1.0         | -44.8       | -13.0       | -31.8      |       |
|                                  |  |   |       | 3.7014                   | -9.6            | H              | 3.0          | 40.5        | 1.0         | -49.1       | -13.0       | -36.1      |       |
|                                  |  |   |       | 5.5521                   | -16.9           | H              | 3.0          | 40.8        | 1.0         | -56.7       | -13.0       | -43.7      |       |
|                                  |  |   |       | 7.4028                   | -3.6            | H              | 3.0          | 40.8        | 1.0         | -43.4       | -13.0       | -30.4      |       |
|                                  |  |   |       | Mid Channel (1880MHz)    |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | 3.7600                   | -13.4           | V              | 3.0          | 40.5        | 1.0         | -53.0       | -13.0       | -40.0      |       |
|                                  |  |   |       | 5.6400                   | -15.4           | V              | 3.0          | 40.8        | 1.0         | -55.2       | -13.0       | -42.2      |       |
|                                  |  |   |       | 7.5200                   | -7.5            | V              | 3.0          | 40.7        | 1.0         | -47.3       | -13.0       | -34.3      |       |
|                                  |  |   |       | 3.7600                   | -11.9           | H              | 3.0          | 40.5        | 1.0         | -51.5       | -13.0       | -38.5      |       |
|                                  |  |   |       | 5.6400                   | -16.1           | H              | 3.0          | 40.8        | 1.0         | -55.9       | -13.0       | -42.9      |       |
|                                  |  |   |       | 7.5200                   | -3.8            | H              | 3.0          | 40.7        | 1.0         | -43.6       | -13.0       | -30.6      |       |
|                                  |  |   |       | High Channel (1909.3MHz) |                 |                |              |             |             |             |             |            |       |
|                                  |  | 3.8186  | -9.5  | V                        | 3.0             | 40.6           | 1.0          | -49.1       | -13.0       | -36.1       |             |            |       |
|                                  |  | 5.7279  | -12.7 | V                        | 3.0             | 40.8           | 1.0          | -52.5       | -13.0       | -39.5       |             |            |       |
|                                  |  | 7.6372  | -5.5  | V                        | 3.0             | 40.7           | 1.0          | -45.1       | -13.0       | -32.1       |             |            |       |
|                                  |  | 3.8186  | -12.0 | H                        | 3.0             | 40.6           | 1.0          | -51.6       | -13.0       | -38.6       |             |            |       |
|                                  |  | 5.7279  | -14.0 | H                        | 3.0             | 40.8           | 1.0          | -53.8       | -13.0       | -40.8       |             |            |       |
|                                  |  | 7.6372  | -2.3  | H                        | 3.0             | 40.7           | 1.0          | -42.0       | -13.0       | -29.0       |             |            |       |
|                                  |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                          |                 |                |              |             |             |             |             |            |       |
| LTE<br>Band 2<br>1.4MHz<br>16QAM |  | Company: Samsung  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Project #: 16K23793   |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Date: 08-24-16  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Test Engineer: Chan Park  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Configuration: EUT / AC Adapter / Cradle / Z Position                                 |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  | Mode: TX LTE BAND 2, 1.4MHz BW,16QAM  |       |                          |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | Chamber                  |                 | Pre-amplifier  |              | Filter      |             | Limit       |             |            |       |
|                                  |  |   |       | Chamber 2                |                 | AFS42          |              | Filter 1    |             | FCC Part 24 |             |            |       |
|                                  |  |   |       | f GHz                    | SGreading (dBm) | Ant. Pol. (HV) | Distance (m) | Preamp (dB) | Filter (dB) | ERP (dBm)   | Limit (dBm) | Delta (dB) | Notes |
|                                  |  |   |       | Low Channel (1850.7MHz)  |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | 3.7014                   | -12.2           | V              | 3.0          | 40.5        | 1.0         | -51.7       | -13.0       | -38.7      |       |
|                                  |  |   |       | 5.5521                   | -14.5           | V              | 3.0          | 40.8        | 1.0         | -54.3       | -13.0       | -41.3      |       |
|                                  |  |   |       | 7.4028                   | -8.3            | V              | 3.0          | 40.8        | 1.0         | -48.0       | -13.0       | -35.0      |       |
|                                  |  |   |       | 3.7014                   | -14.0           | H              | 3.0          | 40.5        | 1.0         | -53.5       | -13.0       | -40.5      |       |
|                                  |  |   |       | 5.5521                   | -17.2           | H              | 3.0          | 40.8        | 1.0         | -57.0       | -13.0       | -44.0      |       |
|                                  |  |   |       | 7.4028                   | -2.5            | H              | 3.0          | 40.8        | 1.0         | -42.3       | -13.0       | -29.3      |       |
|                                  |  |   |       | Mid Channel (1880MHz)    |                 |                |              |             |             |             |             |            |       |
|                                  |  |   |       | 3.7600                   | -14.6           | V              | 3.0          | 40.5        | 1.0         | -54.1       | -13.0       | -41.1      |       |
|                                  |  |   |       | 5.6400                   | -15.9           | V              | 3.0          | 40.8        | 1.0         | -55.7       | -13.0       | -42.7      |       |
|                                  |  |   |       | 7.5200                   | -7.9            | V              | 3.0          | 40.7        | 1.0         | -47.7       | -13.0       | -34.7      |       |
|                                  |  |   |       | 3.7600                   | -11.6           | H              | 3.0          | 40.5        | 1.0         | -51.1       | -13.0       | -38.1      |       |
|                                  |  |   |       | 5.6400                   | -15.9           | H              | 3.0          | 40.8        | 1.0         | -55.7       | -13.0       | -42.7      |       |
|                                  |  |   |       | 7.5200                   | -3.4            | H              | 3.0          | 40.7        | 1.0         | -43.1       | -13.0       | -30.1      |       |
|                                  |  |   |       | High Channel (1909.3MHz) |                 |                |              |             |             |             |             |            |       |
|                                  |  | 3.8186  | -10.6 | V                        | 3.0             | 40.6           | 1.0          | -50.2       | -13.0       | -37.2       |             |            |       |
|                                  |  | 5.7279  | -13.5 | V                        | 3.0             | 40.8           | 1.0          | -53.3       | -13.0       | -40.3       |             |            |       |
|                                  |  | 7.6372  | -5.7  | V                        | 3.0             | 40.7           | 1.0          | -45.4       | -13.0       | -32.4       |             |            |       |
|                                  |  | 3.8186  | -12.0 | H                        | 3.0             | 40.6           | 1.0          | -51.6       | -13.0       | -38.6       |             |            |       |
|                                  |  | 5.7279  | -14.5 | H                        | 3.0             | 40.8           | 1.0          | -54.3       | -13.0       | -41.3       |             |            |       |
|                                  |  | 7.6372  | -1.8  | H                        | 3.0             | 40.7           | 1.0          | -41.5       | -13.0       | -28.5       |             |            |       |
|                                  |  | Rev. 03.03.09<br>Note: No other emissions were detected above the system noise floor. |       |                          |                 |                |              |             |             |             |             |            |       |