## 9.2.1. SPURIOUS RADIATION PLOTS

### LTE Band 12 (ANT A+B)

10 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-15
**Test Engineer:** 51078
**Configuration:** EUT / Z-Position, AC Adapter, HF
**Location:** Chamber 1
**Mode:** LTE_QPSK Band 12 Harmonics, 10MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 704.MHz | | | | | | | | | |
| 1408.00 | -15.5 | V | 3.0 | 46.2 | 1.0 | -60.8 | -13.0 | -47.8 | |
| 2112.00 | -6.3 | V | 3.0 | 46.8 | 1.0 | -52.0 | -13.0 | -39.0 | |
| 2816.00 | -10.6 | V | 3.0 | 47.0 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1408.00 | -16.8 | H | 3.0 | 46.2 | 1.0 | -62.1 | -13.0 | -49.1 | |
| 2112.00 | -6.7 | H | 3.0 | 46.8 | 1.0 | -52.5 | -13.0 | -39.5 | |
| 2816.00 | -10.7 | H | 3.0 | 47.0 | 1.0 | -56.7 | -13.0 | -43.7 | |
| Mid Ch, 707.5MHz | | | | | | | | | |
| 1415.00 | -15.6 | V | 3.0 | 46.2 | 1.0 | -60.8 | -13.0 | -47.8 | |
| 2122.50 | -6.6 | V | 3.0 | 46.8 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 2830.00 | -10.6 | V | 3.0 | 47.0 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 1415.00 | -17.0 | H | 3.0 | 46.2 | 1.0 | -62.2 | -13.0 | -49.2 | |
| 2122.50 | -10.3 | H | 3.0 | 46.8 | 1.0 | -56.1 | -13.0 | -43.1 | |
| 2830.00 | -10.7 | H | 3.0 | 47.0 | 1.0 | -56.7 | -13.0 | -43.7 | |
| High Ch, 711MHz | | | | | | | | | |
| 1422.00 | -15.5 | V | 3.0 | 46.2 | 1.0 | -60.7 | -13.0 | -47.7 | |
| 2133.00 | -9.7 | V | 3.0 | 46.8 | 1.0 | -55.5 | -13.0 | -42.5 | |
| 2844.00 | -10.4 | V | 3.0 | 47.0 | 1.0 | -56.4 | -13.0 | -43.4 | |
| 1422.00 | -17.0 | H | 3.0 | 46.2 | 1.0 | -62.2 | -13.0 | -49.2 | |
| 2133.00 | -10.7 | H | 3.0 | 46.8 | 1.0 | -56.5 | -13.0 | -43.5 | |
| 2844.00 | -10.6 | H | 3.0 | 47.0 | 1.0 | -56.6 | -13.0 | -43.6 | |

### LTE Band 12 (ANT A)

1.4 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-15
**Test Engineer:** 51078
**Configuration:** EUT / AC Adapter, Z-Position, FF
**Location:** Chamber 2
**Mode:** LTE_QPSK Band 12 Harmonics, 1.4MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 699.7MHz | | | | | | | | | |
| 1399.40 | -16.5 | V | 3.0 | 40.7 | 1.0 | -56.2 | -13.0 | -43.2 | |
| 2099.10 | -13.5 | V | 3.0 | 40.8 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 2798.80 | -11.6 | V | 3.0 | 41.8 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 1399.40 | -17.5 | H | 3.0 | 40.7 | 1.0 | -57.3 | -13.0 | -44.3 | |
| 2099.10 | -13.7 | H | 3.0 | 40.8 | 1.0 | -53.5 | -13.0 | -40.5 | |
| 2798.80 | -11.7 | H | 3.0 | 41.8 | 1.0 | -52.5 | -13.0 | -39.5 | |
| Mid Ch, 707.5MHz | | | | | | | | | |
| 1415.00 | -16.4 | V | 3.0 | 40.7 | 1.0 | -56.1 | -13.0 | -43.1 | |
| 2122.50 | -13.4 | V | 3.0 | 40.8 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 2830.00 | -11.4 | V | 3.0 | 41.8 | 1.0 | -52.2 | -13.0 | -39.2 | |
| 1415.00 | -17.4 | H | 3.0 | 40.7 | 1.0 | -57.2 | -13.0 | -44.2 | |
| 2122.50 | -13.6 | H | 3.0 | 40.8 | 1.0 | -53.4 | -13.0 | -40.4 | |
| 2830.00 | -11.5 | H | 3.0 | 41.8 | 1.0 | -52.3 | -13.0 | -39.3 | |
| High Ch, 715.3MHz | | | | | | | | | |
| 1430.60 | -16.2 | V | 3.0 | 40.7 | 1.0 | -55.9 | -13.0 | -42.9 | |
| 2145.90 | -13.4 | V | 3.0 | 40.8 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 2861.20 | -11.1 | V | 3.0 | 41.8 | 1.0 | -52.0 | -13.0 | -39.0 | |
| 1430.60 | -16.9 | H | 3.0 | 40.7 | 1.0 | -56.6 | -13.0 | -43.6 | |
| 2145.90 | -13.4 | H | 3.0 | 40.8 | 1.0 | -53.3 | -13.0 | -40.3 | |
| 2861.20 | -11.2 | H | 3.0 | 41.8 | 1.0 | -52.1 | -13.0 | -39.1 | |


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## LTE Band 13 (ANT A+B)

5 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-14
**Test Engineer:** 51078
**Configuration:** EUT / AC Adapter, X-Position, HF
**Location:** Chamber 1
**Mode:** LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 779.5MHz | | | | | | | | | |
| 1558.40 | -19.5 | V | 3.0 | 46.3 | 1.0 | -64.9 | -40.0 | -24.9 | |
| 2337.60 | -11.0 | V | 3.0 | 46.8 | 1.0 | -56.8 | -13.0 | -43.8 | |
| 3116.80 | -11.4 | V | 3.0 | 46.9 | 1.0 | -57.3 | -13.0 | -44.3 | |
| 1558.40 | -20.0 | H | 3.0 | 46.3 | 1.0 | -65.4 | -40.0 | -25.4 | |
| 2337.60 | -11.9 | H | 3.0 | 46.8 | 1.0 | -57.7 | -13.0 | -44.7 | |
| 3116.80 | -9.9 | H | 3.0 | 46.9 | 1.0 | -55.8 | -13.0 | -42.8 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1564.00 | -18.3 | V | 3.0 | 46.4 | 1.0 | -63.7 | -40.0 | -23.7 | |
| 2346.00 | -6.7 | V | 3.0 | 46.8 | 1.0 | -52.5 | -13.0 | -39.5 | |
| 3128.00 | -9.9 | V | 3.0 | 46.9 | 1.0 | -55.8 | -13.0 | -42.8 | |
| 1564.00 | -19.1 | H | 3.0 | 46.4 | 1.0 | -64.5 | -40.0 | -24.5 | |
| 2346.00 | -6.9 | H | 3.0 | 46.8 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 3128.00 | -9.8 | H | 3.0 | 46.9 | 1.0 | -55.7 | -13.0 | -42.7 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1569.00 | -18.8 | V | 3.0 | 46.4 | 1.0 | -64.2 | -40.0 | -40.0 | |
| 2353.50 | -11.4 | V | 3.0 | 46.8 | 1.0 | -57.3 | -13.0 | -44.3 | |
| 3138.00 | -9.9 | V | 3.0 | 46.9 | 1.0 | -55.8 | -13.0 | -42.8 | |
| 1569.00 | -20.2 | H | 3.0 | 46.4 | 1.0 | -65.6 | -40.0 | -25.6 | |
| 2353.50 | -11.4 | H | 3.0 | 46.8 | 1.0 | -57.3 | -13.0 | -44.3 | |
| 3138.00 | -9.9 | H | 3.0 | 46.9 | 1.0 | -55.7 | -13.0 | -42.7 | |

## LTE Band 13 (ANT A)

5 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-15
**Test Engineer:** 51078
**Configuration:** EUT / AC Adapter, Z-Position, FF
**Location:** Chamber 2
**Mode:** LTE_QPSK Band 13 Harmonics, 5MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 779.5MHz | | | | | | | | | |
| 1559.00 | -26.5 | V | 3.0 | 40.7 | 1.0 | -66.2 | -40.0 | -26.2 | |
| 2338.50 | -12.6 | V | 3.0 | 41.1 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 3118.00 | -10.3 | V | 3.0 | 42.0 | 1.0 | -51.3 | -13.0 | -38.3 | |
| 1559.00 | -26.7 | H | 3.0 | 40.7 | 1.0 | -66.4 | -40.0 | -26.4 | |
| 2338.50 | -12.7 | H | 3.0 | 41.1 | 1.0 | -52.8 | -13.0 | -39.8 | |
| 3118.00 | -10.4 | H | 3.0 | 42.0 | 1.0 | -51.5 | -13.0 | -38.5 | |
| Mid Ch, 782MHz | | | | | | | | | |
| 1564.00 | -25.4 | V | 3.0 | 40.7 | 1.0 | -65.1 | -40.0 | -25.1 | |
| 2346.00 | -12.5 | V | 3.0 | 41.1 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 3128.00 | -10.1 | V | 3.0 | 42.0 | 1.0 | -51.1 | -13.0 | -38.1 | |
| 1564.00 | -25.9 | H | 3.0 | 40.7 | 1.0 | -65.6 | -40.0 | -25.6 | |
| 2346.00 | -12.6 | H | 3.0 | 41.1 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 3128.00 | -10.4 | H | 3.0 | 42.0 | 1.0 | -51.4 | -13.0 | -38.4 | |
| High Ch, 784.5MHz | | | | | | | | | |
| 1569.00 | -27.0 | V | 3.0 | 40.7 | 1.0 | -66.7 | -40.0 | -26.7 | |
| 2353.50 | -12.5 | V | 3.0 | 41.1 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 3138.00 | -9.9 | V | 3.0 | 42.0 | 1.0 | -50.9 | -13.0 | -37.9 | |
| 1569.00 | -27.1 | H | 3.0 | 40.7 | 1.0 | -66.8 | -40.0 | -26.8 | |
| 2353.50 | -12.5 | H | 3.0 | 41.1 | 1.0 | -52.6 | -13.0 | -39.6 | |
| 3138.00 | -10.2 | H | 3.0 | 42.0 | 1.0 | -51.2 | -13.0 | -38.2 | |


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## LTE Band 41 (ANT B)

5 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-16
**Test Engineer:** 51078
**Configuration:** EUT / AC Adapter, Z-Position, Open
**Location:** Chamber 1
**Mode:** LTE_QPSK Band 41 Harmonics, 5MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 2498.5MHz | | | | | | | | | |
| 4997.00 | -12.7 | V | 3.0 | 46.2 | 1.0 | -57.9 | -25.0 | -32.9 | |
| 7495.50 | -8.8 | V | 3.0 | 45.5 | 1.0 | -53.3 | -25.0 | -28.3 | |
| 9994.00 | -10.2 | V | 3.0 | 45.5 | 1.0 | -54.7 | -25.0 | -29.7 | |
| 4997.00 | -10.8 | H | 3.0 | 46.2 | 1.0 | -56.1 | -25.0 | -31.1 | |
| 7495.50 | -8.4 | H | 3.0 | 45.5 | 1.0 | -52.9 | -25.0 | -27.9 | |
| 9994.00 | -9.9 | H | 3.0 | 45.5 | 1.0 | -54.4 | -25.0 | -29.4 | |
| Mid Ch, 2593MHz | | | | | | | | | |
| 5186.00 | -13.2 | V | 3.0 | 46.1 | 1.0 | -58.2 | -25.0 | -33.2 | |
| 7779.00 | -9.9 | V | 3.0 | 45.6 | 1.0 | -54.5 | -25.0 | -29.5 | |
| 10372.00 | -9.6 | V | 3.0 | 45.9 | 1.0 | -54.5 | -25.0 | -29.5 | |
| 5186.00 | -12.7 | H | 3.0 | 46.1 | 1.0 | -57.7 | -25.0 | -32.7 | |
| 7779.00 | -8.0 | H | 3.0 | 45.6 | 1.0 | -52.6 | -25.0 | -27.6 | |
| 10372.00 | -9.6 | H | 3.0 | 45.9 | 1.0 | -54.4 | -25.0 | -29.4 | |
| High Ch, 2687.5MHz | | | | | | | | | |
| 5375.00 | -11.4 | V | 3.0 | 45.9 | 1.0 | -56.3 | -25.0 | -31.3 | |
| 8062.50 | -8.9 | V | 3.0 | 45.6 | 1.0 | -53.5 | -25.0 | -28.5 | |
| 10750.00 | -9.4 | V | 3.0 | 46.2 | 1.0 | -54.6 | -25.0 | -29.6 | |
| 5375.00 | -11.4 | H | 3.0 | 45.9 | 1.0 | -56.3 | -25.0 | -31.3 | |
| 8062.50 | -8.4 | H | 3.0 | 45.6 | 1.0 | -53.0 | -25.0 | -28.0 | |
| 10750.00 | -9.2 | H | 3.0 | 46.2 | 1.0 | -54.4 | -25.0 | -29.4 | |

## LTE Band 41 (ANT F)

5 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-21
**Test Engineer:** 19568
**Configuration:** EUT / AC Adapter, Z-Position, HF
**Location:** Chamber 2
**Mode:** LTE_QPSK Band 41 Harmonics, 5MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 2498.5MHz | | | | | | | | | |
| 4997.00 | -15.7 | V | 3.0 | 42.8 | 1.0 | -57.5 | -25.0 | -32.5 | |
| 7495.50 | -16.4 | V | 3.0 | 42.4 | 1.0 | -57.8 | -25.0 | -32.8 | |
| 9994.00 | -14.9 | V | 3.0 | 40.9 | 1.0 | -54.8 | -25.0 | -29.8 | |
| 4997.00 | -17.5 | H | 3.0 | 42.8 | 1.0 | -59.3 | -25.0 | -34.3 | |
| 7495.50 | -15.3 | H | 3.0 | 42.4 | 1.0 | -56.8 | -25.0 | -31.8 | |
| 9994.00 | -14.6 | H | 3.0 | 40.9 | 1.0 | -54.5 | -25.0 | -29.5 | |
| Mid Ch, 2593MHz | | | | | | | | | |
| 5186.00 | -12.0 | V | 3.0 | 42.8 | 1.0 | -53.9 | -25.0 | -28.9 | |
| 7779.00 | -15.6 | V | 3.0 | 42.3 | 1.0 | -56.9 | -25.0 | -31.9 | |
| 10372.00 | -14.5 | V | 3.0 | 41.0 | 1.0 | -54.5 | -25.0 | -29.5 | |
| 5186.00 | -16.2 | H | 3.0 | 42.8 | 1.0 | -58.0 | -25.0 | -33.0 | |
| 7779.00 | -16.3 | H | 3.0 | 42.3 | 1.0 | -57.6 | -25.0 | -32.6 | |
| 10372.00 | -14.3 | H | 3.0 | 41.0 | 1.0 | -54.4 | -25.0 | -29.4 | |
| High Ch, 2687.5MHz | | | | | | | | | |
| 5375.00 | -16.6 | V | 3.0 | 42.9 | 1.0 | -58.5 | -25.0 | -33.5 | |
| 8062.50 | -16.2 | V | 3.0 | 42.2 | 1.0 | -57.4 | -25.0 | -32.4 | |
| 10750.00 | -13.7 | V | 3.0 | 41.2 | 1.0 | -53.9 | -25.0 | -28.9 | |
| 5375.00 | -18.2 | H | 3.0 | 42.9 | 1.0 | -60.1 | -25.0 | -35.1 | |
| 8062.50 | -15.7 | H | 3.0 | 42.2 | 1.0 | -56.8 | -25.0 | -31.8 | |
| 10750.00 | -13.3 | H | 3.0 | 41.2 | 1.0 | -53.5 | -25.0 | -28.5 | |


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## LTE Band 41(UL CA, ANT B)

20+20 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-19
**Test Engineer:** 24542
**Configuration:** EUT / AC Adapter, Z-Position, Open
**Location:** Chamber 2
**Mode:** LTE_QPSK Band 41 Harmonics, 20+20MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, PCC : 2506MHz SCC : 2525.8MHz | | | | | | | | | |
| 5031.80 | -18.7 | V | 3.0 | 42.8 | 1.0 | -60.4 | -25.0 | -35.4 | |
| 7547.70 | -13.6 | V | 3.0 | 42.4 | 1.0 | -55.0 | -25.0 | -30.0 | |
| 10063.60 | -13.6 | V | 3.0 | 40.9 | 1.0 | -53.5 | -25.0 | -28.5 | |
| 5031.80 | -18.0 | H | 3.0 | 42.8 | 1.0 | -59.8 | -25.0 | -34.8 | |
| 7547.70 | -9.6 | H | 3.0 | 42.4 | 1.0 | -51.0 | -25.0 | -26.0 | |
| 10063.60 | -13.0 | H | 3.0 | 40.9 | 1.0 | -52.9 | -25.0 | -27.9 | |
| Mid Ch, PCC : 2583.1MHz SCC : 2602.9MHz | | | | | | | | | |
| 5186.00 | -18.8 | V | 3.0 | 42.8 | 1.0 | -60.6 | -25.0 | -35.6 | |
| 7779.00 | -16.7 | V | 3.0 | 42.3 | 1.0 | -57.9 | -25.0 | -32.9 | |
| 10372.00 | -12.3 | V | 3.0 | 41.0 | 1.0 | -52.3 | -25.0 | -27.3 | |
| 5186.00 | -18.7 | H | 3.0 | 42.8 | 1.0 | -60.5 | -25.0 | -35.5 | |
| 7779.00 | -14.5 | H | 3.0 | 42.3 | 1.0 | -55.8 | -25.0 | -30.8 | |
| 10372.00 | -11.7 | H | 3.0 | 41.0 | 1.0 | -51.7 | -25.0 | -26.7 | |
| High Ch, PCC : 2660.2MHz SCC : 2680MHz | | | | | | | | | |
| 5340.20 | -18.9 | V | 3.0 | 42.8 | 1.0 | -60.8 | -25.0 | -35.8 | |
| 8010.30 | -15.6 | V | 3.0 | 42.2 | 1.0 | -56.7 | -25.0 | -31.7 | |
| 10680.40 | -12.3 | V | 3.0 | 41.1 | 1.0 | -52.4 | -25.0 | -27.4 | |
| 5340.20 | -18.7 | H | 3.0 | 42.8 | 1.0 | -60.6 | -25.0 | -35.6 | |
| 8010.30 | -14.1 | H | 3.0 | 42.2 | 1.0 | -55.3 | -25.0 | -30.3 | |
| 10680.40 | -11.9 | H | 3.0 | 41.1 | 1.0 | -52.0 | -25.0 | -27.0 | |

## LTE Band 41(UL CA, ANT F)

20+20 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-20
**Test Engineer:** 19568
**Configuration:** EUT / AC Adapter, Z-Position, HF
**Location:** Chamber 2
**Mode:** LTE_QPSK Band 41 Harmonics, 20+20MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, PCC : 2506MHz SCC : 2525.8MHz | | | | | | | | | |
| 5031.80 | -16.4 | V | 3.0 | 42.8 | 1.0 | -58.2 | -25.0 | -33.2 | |
| 7547.70 | -16.3 | V | 3.0 | 42.4 | 1.0 | -57.8 | -25.0 | -32.8 | |
| 10063.60 | -13.3 | V | 3.0 | 40.9 | 1.0 | -53.2 | -25.0 | -25.0 | |
| 5031.80 | -17.5 | H | 3.0 | 42.8 | 1.0 | -59.2 | -25.0 | -34.2 | |
| 7547.70 | -16.3 | H | 3.0 | 42.4 | 1.0 | -57.7 | -25.0 | -32.7 | |
| 10063.60 | -13.2 | H | 3.0 | 40.9 | 1.0 | -53.1 | -25.0 | -28.1 | |
| Mid Ch, PCC : 2583.1MHz SCC : 2602.9MHz | | | | | | | | | |
| 5186.00 | -14.0 | V | 3.0 | 42.8 | 1.0 | -55.8 | -25.0 | -30.8 | |
| 7779.00 | -16.2 | V | 3.0 | 42.3 | 1.0 | -57.5 | -25.0 | -32.5 | |
| 15558.00 | -5.6 | V | 3.0 | 43.5 | 1.0 | -48.1 | -25.0 | -23.1 | |
| 5186.00 | -16.7 | H | 3.0 | 42.8 | 1.0 | -58.5 | -25.0 | -33.5 | |
| 7779.00 | -16.2 | H | 3.0 | 42.3 | 1.0 | -57.5 | -25.0 | -32.5 | |
| 10372.00 | -12.7 | H | 3.0 | 41.0 | 1.0 | -52.7 | -25.0 | -27.7 | |
| High Ch, PCC : 2660.2MHz SCC : 2680MHz | | | | | | | | | |
| 5340.20 | -14.4 | V | 3.0 | 42.8 | 1.0 | -56.2 | -25.0 | -31.2 | |
| 8010.30 | -16.1 | V | 3.0 | 42.2 | 1.0 | -57.3 | -25.0 | -32.3 | |
| 10680.40 | -11.9 | V | 3.0 | 41.1 | 1.0 | -52.1 | -25.0 | -27.1 | |
| 5340.20 | -14.3 | H | 3.0 | 42.8 | 1.0 | -56.1 | -25.0 | -31.1 | |
| 8010.30 | -16.2 | H | 3.0 | 42.2 | 1.0 | -57.4 | -25.0 | -32.4 | |
| 10680.40 | -11.8 | H | 3.0 | 41.1 | 1.0 | -51.9 | -25.0 | -26.9 | |


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## LTE Band 66 (ANT B)

15 MHz

QPSK

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-20
**Test Engineer:** 24542
**Configuration:** EUT / AC Adapter, Y-Position, Open
**Location:** Chamber 1
**Mode:** LTE_QPSK Band 66 Harmonics, 15MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 1717.5MHz | | | | | | | | | |
| 3435.00 | -8.9 | V | 3.0 | 46.4 | 1.0 | -54.3 | -13.0 | -41.3 | |
| 5152.50 | -7.6 | V | 3.0 | 46.1 | 1.0 | -52.7 | -13.0 | -39.7 | |
| 6870.00 | -4.1 | V | 3.0 | 45.5 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 8587.50 | -3.1 | V | 3.0 | 45.6 | 1.0 | -47.6 | -13.0 | -34.6 | |
| 10305.00 | -0.6 | V | 3.0 | 45.8 | 1.0 | -45.4 | -13.0 | -32.4 | |
| 3435.00 | -8.4 | H | 3.0 | 46.4 | 1.0 | -53.8 | -13.0 | -40.8 | |
| 5152.50 | -7.4 | H | 3.0 | 46.1 | 1.0 | -52.5 | -13.0 | -39.5 | |
| 6870.00 | -4.6 | H | 3.0 | 45.5 | 1.0 | -49.1 | -13.0 | -36.1 | |
| 8587.50 | -2.7 | H | 3.0 | 45.6 | 1.0 | -47.3 | -13.0 | -34.3 | |
| 10305.00 | -0.5 | H | 3.0 | 45.8 | 1.0 | -45.4 | -13.0 | -32.4 | |
| Mid Ch, 1745MHz | | | | | | | | | |
| 3490.00 | -8.5 | V | 3.0 | 46.3 | 1.0 | -53.8 | -13.0 | -40.8 | |
| 5235.00 | -7.4 | V | 3.0 | 46.0 | 1.0 | -52.4 | -13.0 | -39.4 | |
| 6980.00 | -3.9 | V | 3.0 | 45.5 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 8725.00 | -2.8 | V | 3.0 | 45.5 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 10470.00 | -0.4 | V | 3.0 | 46.0 | 1.0 | -45.3 | -13.0 | -32.3 | |
| 3490.00 | -8.3 | H | 3.0 | 46.3 | 1.0 | -53.7 | -13.0 | -40.7 | |
| 5235.00 | -5.4 | H | 3.0 | 46.0 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 6980.00 | -4.1 | H | 3.0 | 45.5 | 1.0 | -48.6 | -13.0 | -35.6 | |
| 8725.00 | -3.0 | H | 3.0 | 45.5 | 1.0 | -47.5 | -13.0 | -34.5 | |
| 10470.00 | -0.1 | H | 3.0 | 46.0 | 1.0 | -45.1 | -13.0 | -32.1 | |
| High Ch, 1772.5MHz | | | | | | | | | |
| 3545.00 | -8.2 | V | 3.0 | 46.3 | 1.0 | -53.4 | -13.0 | -40.4 | |
| 5317.50 | -7.1 | V | 3.0 | 46.0 | 1.0 | -52.1 | -13.0 | -39.1 | |
| 7090.00 | -3.8 | V | 3.0 | 45.5 | 1.0 | -48.3 | -13.0 | -35.3 | |
| 8862.50 | -2.8 | V | 3.0 | 45.5 | 1.0 | -47.3 | -13.0 | -34.3 | |
| 10635.00 | -0.2 | V | 3.0 | 46.1 | 1.0 | -45.3 | -13.0 | -32.3 | |
| 3545.00 | -7.9 | H | 3.0 | 46.3 | 1.0 | -53.2 | -13.0 | -40.2 | |
| 5317.50 | -6.6 | H | 3.0 | 46.0 | 1.0 | -51.6 | -13.0 | -38.6 | |
| 7090.00 | -3.9 | H | 3.0 | 45.5 | 1.0 | -48.4 | -13.0 | -35.4 | |
| 8862.50 | -2.9 | H | 3.0 | 45.5 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 10635.00 | -0.1 | H | 3.0 | 46.1 | 1.0 | -45.2 | -13.0 | -32.2 | |


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## NR Band n41 (ANT B)

90 MHz

DFT-s_OFDM

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-19
**Test Engineer:** 19568
**Configuration:** EUT / AC Adapter, Z-Position, HF
**Location:** Chamber 2
**Mode:** 5G NR_QPSK NR n41 Harmonics, 90MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 2541.01MHz | | | | | | | | | |
| 5082.02 | -18.4 | V | 3.0 | 42.8 | 1.0 | -60.1 | -25.0 | -35.1 | |
| 7623.03 | -14.3 | V | 3.0 | 42.4 | 1.0 | -55.7 | -25.0 | -30.7 | |
| 10164.04 | -13.2 | V | 3.0 | 40.9 | 1.0 | -53.1 | -25.0 | -28.1 | |
| 5082.02 | -17.9 | H | 3.0 | 42.8 | 1.0 | -59.7 | -25.0 | -34.7 | |
| 7623.03 | -15.6 | H | 3.0 | 42.4 | 1.0 | -57.0 | -25.0 | -32.0 | |
| 10164.04 | -12.9 | H | 3.0 | 40.9 | 1.0 | -52.9 | -25.0 | -27.9 | |
| Mid Ch, 2592.99MHz | | | | | | | | | |
| 5185.98 | -16.5 | V | 3.0 | 42.8 | 1.0 | -58.3 | -25.0 | -33.3 | |
| 7778.97 | -14.7 | V | 3.0 | 42.3 | 1.0 | -56.0 | -25.0 | -31.0 | |
| 10371.96 | -12.7 | V | 3.0 | 41.0 | 1.0 | -52.7 | -25.0 | -27.7 | |
| 5185.98 | -16.8 | H | 3.0 | 42.8 | 1.0 | -58.6 | -25.0 | -33.6 | |
| 7778.97 | -15.4 | H | 3.0 | 42.3 | 1.0 | -56.7 | -25.0 | -31.7 | |
| 10371.96 | -12.5 | H | 3.0 | 41.0 | 1.0 | -52.5 | -25.0 | -27.5 | |
| High Ch, 2645MHz | | | | | | | | | |
| 5290.00 | -16.1 | V | 3.0 | 42.8 | 1.0 | -57.9 | -25.0 | -32.9 | |
| 7935.00 | -14.9 | V | 3.0 | 42.2 | 1.0 | -56.1 | -25.0 | -31.1 | |
| 10580.00 | -12.3 | V | 3.0 | 41.1 | 1.0 | -52.4 | -25.0 | -27.4 | |
| 5290.00 | -16.2 | H | 3.0 | 42.8 | 1.0 | -58.1 | -25.0 | -33.1 | |
| 7935.00 | -14.8 | H | 3.0 | 42.2 | 1.0 | -56.1 | -25.0 | -31.1 | |
| 10580.00 | -12.0 | H | 3.0 | 41.1 | 1.0 | -52.1 | -25.0 | -27.1 | |

## NR Band n41 (ANT F)

40 MHz

DFT-s_OFDM

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-22
**Test Engineer:** 19568
**Configuration:** EUT / AC Adapter, Z-Position, HF
**Location:** Chamber 2
**Mode:** 5G NR_QPSK NR n41 Harmonics, 40MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 2516.01MHz | | | | | | | | | |
| 5032.02 | -18.2 | V | 3.0 | 42.8 | 1.0 | -60.0 | -25.0 | -35.0 | |
| 7548.03 | -18.1 | V | 3.0 | 42.4 | 1.0 | -59.5 | -25.0 | -34.5 | |
| 10064.04 | -14.8 | V | 3.0 | 40.9 | 1.0 | -54.7 | -25.0 | -29.7 | |
| 5032.02 | -19.7 | H | 3.0 | 42.8 | 1.0 | -61.4 | -25.0 | -36.4 | |
| 7548.03 | -18.2 | H | 3.0 | 42.4 | 1.0 | -59.6 | -25.0 | -34.6 | |
| 10064.04 | -14.9 | H | 3.0 | 40.9 | 1.0 | -54.7 | -25.0 | -29.7 | |
| Mid Ch, 2592.99MHz | | | | | | | | | |
| 5185.98 | -17.3 | V | 3.0 | 42.8 | 1.0 | -59.1 | -25.0 | -34.1 | |
| 7778.97 | -18.2 | V | 3.0 | 42.3 | 1.0 | -59.5 | -25.0 | -34.5 | |
| 10371.96 | -14.6 | V | 3.0 | 41.0 | 1.0 | -54.6 | -25.0 | -29.6 | |
| 5185.98 | -15.6 | H | 3.0 | 42.8 | 1.0 | -57.4 | -25.0 | -32.4 | |
| 7778.97 | -18.2 | H | 3.0 | 42.3 | 1.0 | -59.5 | -25.0 | -34.5 | |
| 10371.96 | -14.4 | H | 3.0 | 41.0 | 1.0 | -54.4 | -25.0 | -29.4 | |
| High Ch, 2670MHz | | | | | | | | | |
| 5340.00 | -18.3 | V | 3.0 | 42.8 | 1.0 | -60.1 | -25.0 | -35.1 | |
| 8010.00 | -18.5 | V | 3.0 | 42.2 | 1.0 | -59.7 | -25.0 | -34.7 | |
| 10680.00 | -13.9 | V | 3.0 | 41.1 | 1.0 | -54.1 | -25.0 | -29.1 | |
| 5340.00 | -17.5 | H | 3.0 | 42.8 | 1.0 | -59.4 | -25.0 | -34.4 | |
| 8010.00 | -17.5 | H | 3.0 | 42.2 | 1.0 | -58.7 | -25.0 | -33.7 | |
| 10680.00 | -13.8 | H | 3.0 | 41.1 | 1.0 | -53.9 | -25.0 | -28.9 | |


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## NR Band n66 (ANT B)

30 MHz

DFT-s_OFDM

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

**Company:** Samsung
**Project #:** 4790841160
**Date:** 2023-06-21
**Test Engineer:** 24542
**Configuration:** EUT / AC Adapter, Y-Position, Open
**Location:** Chamber 2
**Mode:** 5G NR_QPSK NR n66 Harmonics, 30MHz Bandwidth
**Test Votage:** AC 120 V, 60 Hz

| f MHz | SG reading (dBm) | Ant. Pol. (H/V) | Distance (m) | Preamp (dB) | Filter (dB) | EIRP (dBm) | Limit (dBm) | Delta (dB) | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Low Ch, 1725MHz | | | | | | | | | |
| 3450.00 | -8.8 | V | 3.0 | 42.1 | 1.0 | -49.9 | -13.0 | -36.9 | |
| 5175.00 | -8.7 | V | 3.0 | 42.8 | 1.0 | -50.5 | -13.0 | -37.5 | |
| 6900.00 | -5.9 | V | 3.0 | 42.7 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 8625.00 | -4.6 | V | 3.0 | 41.9 | 1.0 | -45.5 | -13.0 | -32.5 | |
| 10350.00 | -1.6 | V | 3.0 | 41.0 | 1.0 | -41.6 | -13.0 | -28.6 | |
| 3450.00 | -9.0 | H | 3.0 | 42.1 | 1.0 | -50.1 | -13.0 | -37.1 | |
| 5175.00 | -8.5 | H | 3.0 | 42.8 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 6900.00 | -6.0 | H | 3.0 | 42.7 | 1.0 | -47.7 | -13.0 | -34.7 | |
| 8625.00 | -4.5 | H | 3.0 | 41.9 | 1.0 | -45.5 | -13.0 | -32.5 | |
| 10350.00 | -1.4 | H | 3.0 | 41.0 | 1.0 | -41.4 | -13.0 | -28.4 | |
| Mid Ch, 1745MHz | | | | | | | | | |
| 3490.00 | -8.8 | V | 3.0 | 42.1 | 1.0 | -49.8 | -13.0 | -36.8 | |
| 5235.00 | -8.8 | V | 3.0 | 42.8 | 1.0 | -50.6 | -13.0 | -37.6 | |
| 6980.00 | -5.9 | V | 3.0 | 42.7 | 1.0 | -47.5 | -13.0 | -34.5 | |
| 8725.00 | -4.4 | V | 3.0 | 41.9 | 1.0 | -45.3 | -13.0 | -32.3 | |
| 10470.00 | -1.1 | V | 3.0 | 41.1 | 1.0 | -41.1 | -13.0 | -28.1 | |
| 3490.00 | -9.0 | H | 3.0 | 42.1 | 1.0 | -50.0 | -13.0 | -37.0 | |
| 5235.00 | -8.6 | H | 3.0 | 42.8 | 1.0 | -50.4 | -13.0 | -37.4 | |
| 6980.00 | -5.7 | H | 3.0 | 42.7 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 8725.00 | -4.3 | H | 3.0 | 41.9 | 1.0 | -45.2 | -13.0 | -32.2 | |
| 10470.00 | -0.9 | H | 3.0 | 41.1 | 1.0 | -40.9 | -13.0 | -27.9 | |
| High Ch, 1765MHz | | | | | | | | | |
| 3530.00 | -8.3 | V | 3.0 | 42.1 | 1.0 | -49.4 | -13.0 | -36.4 | |
| 5295.00 | -8.4 | V | 3.0 | 42.8 | 1.0 | -50.3 | -13.0 | -37.3 | |
| 7060.00 | -5.7 | V | 3.0 | 42.7 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 8825.00 | -3.9 | V | 3.0 | 41.8 | 1.0 | -44.8 | -13.0 | -31.8 | |
| 10590.00 | -0.8 | V | 3.0 | 41.1 | 1.0 | -40.9 | -13.0 | -27.9 | |
| 3530.00 | -8.6 | H | 3.0 | 42.1 | 1.0 | -49.7 | -13.0 | -36.7 | |
| 5295.00 | -8.3 | H | 3.0 | 42.8 | 1.0 | -50.2 | -13.0 | -37.2 | |
| 7060.00 | -5.7 | H | 3.0 | 42.7 | 1.0 | -47.4 | -13.0 | -34.4 | |
| 8825.00 | -3.9 | H | 3.0 | 41.8 | 1.0 | -44.7 | -13.0 | -31.7 | |
| 10590.00 | -0.6 | H | 3.0 | 41.1 | 1.0 | -40.7 | -13.0 | -27.7 | |

# END OF REPORT


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