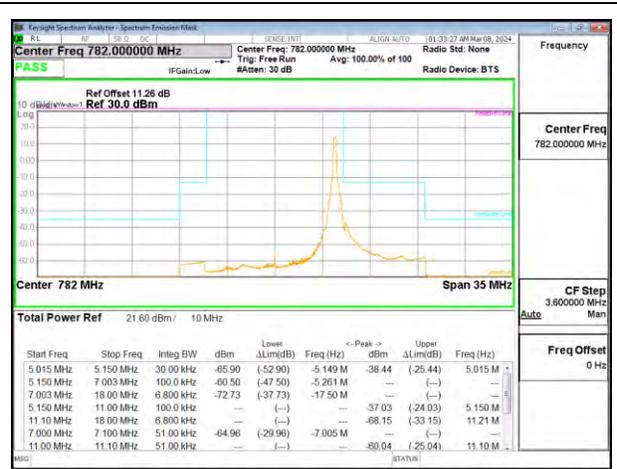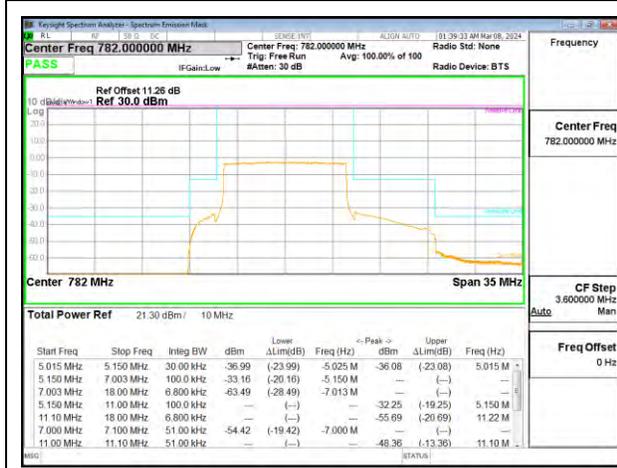LTE Band 13 10MHz 16QAM Low Channel RB1-0

LTE Band 13 10MHz 16QAM Low Channel RB1-49

LTE Band 13 10MHz 16QAM Low Channel RB50-0

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## 9.2.5. LTE BAND 41 AND 5G NR n41 EMISSION MASK

LIMITS

FCC: §27.53

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

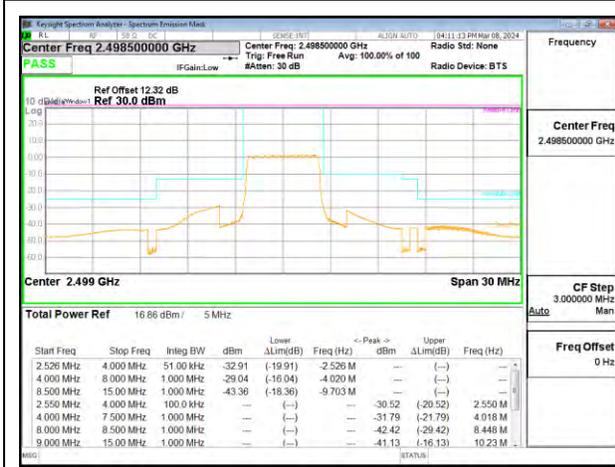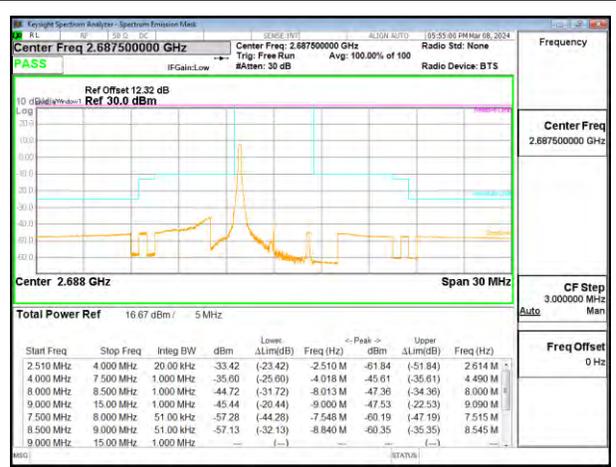| Test Engineer ID:	85502	Test Date:	2024-03-06	EUT Serial Number:	QV7700DSLQ

LTE BAND 41
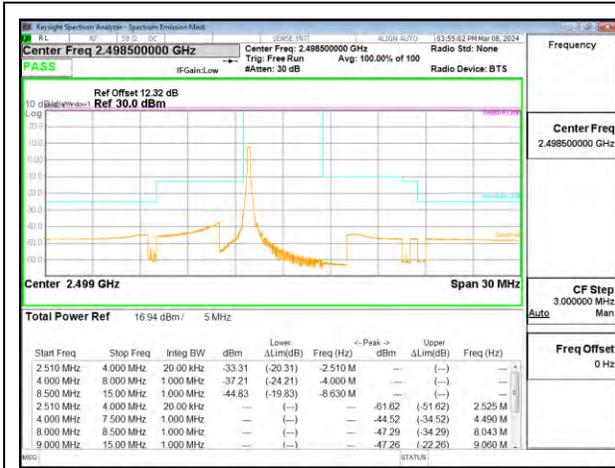
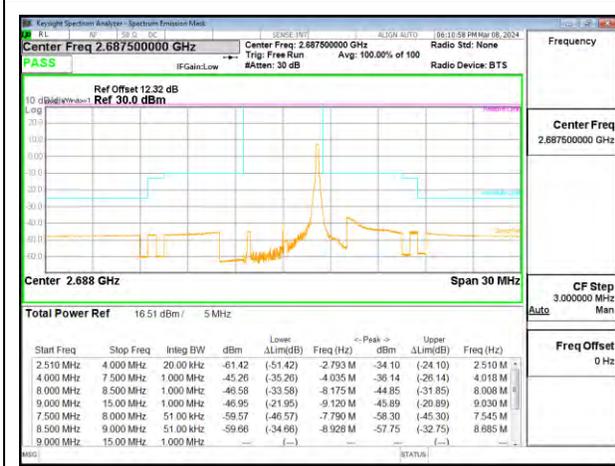LTE Band 41 5MHz 16QAM Low Channel RB1-0
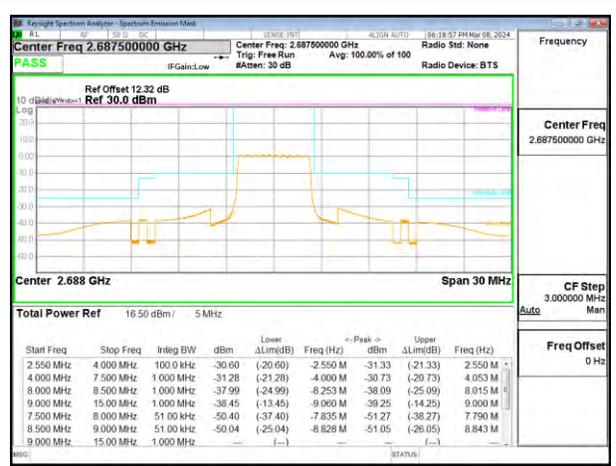
LTE Band 41 5MHz 16QAM Low Channel RB1-24

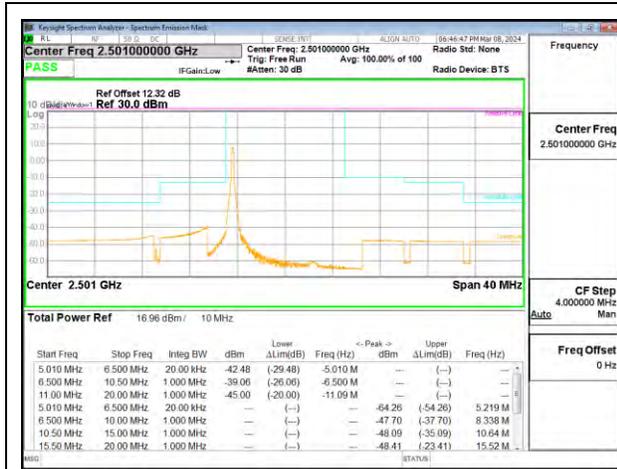LTE Band 41 5MHz 16QAM Low Channel RB25-0
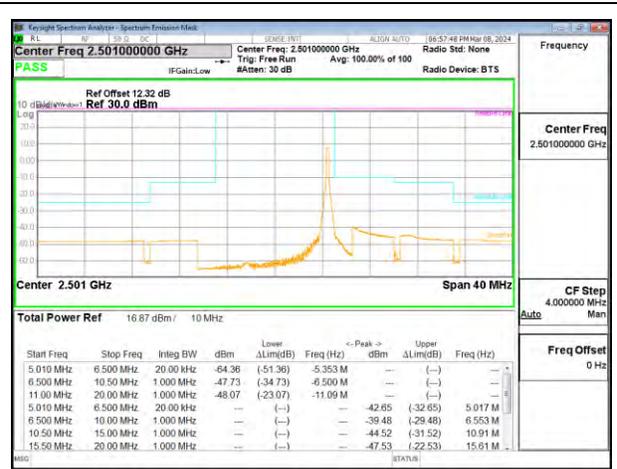
LTE Band 41 5MHz 16QAM High Channel RB1-0

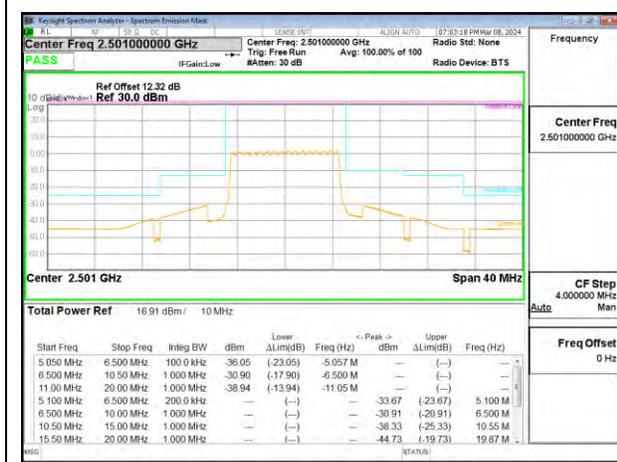LTE Band 41 5MHz 16QAM High Channel RB1-24

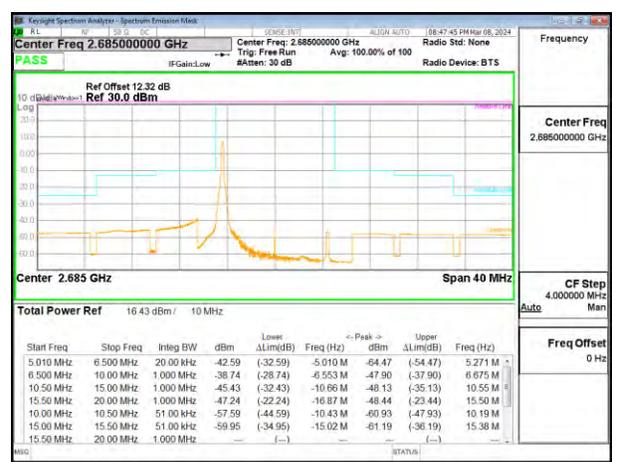LTE Band 41 5MHz 16QAM High Channel RB25-0

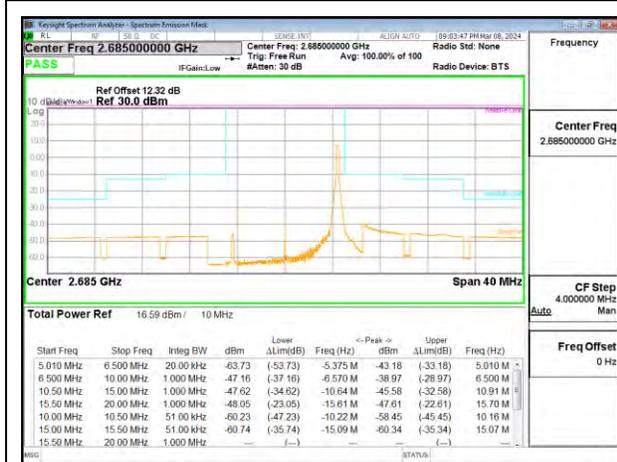LTE Band 41 10MHz 16QAM Low Channel RB1-0

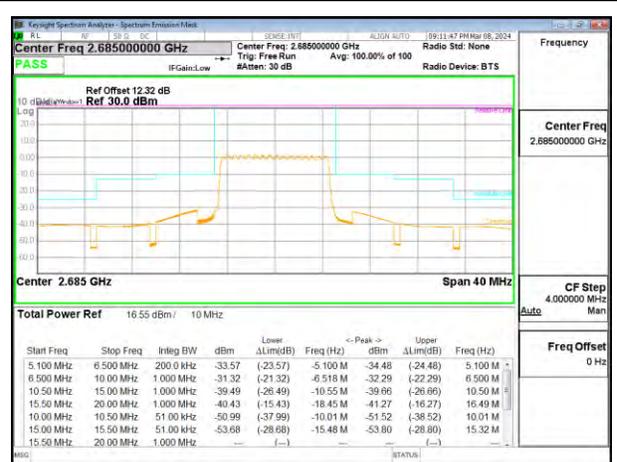LTE Band 41 10MHz 16QAM Low Channel RB1-49

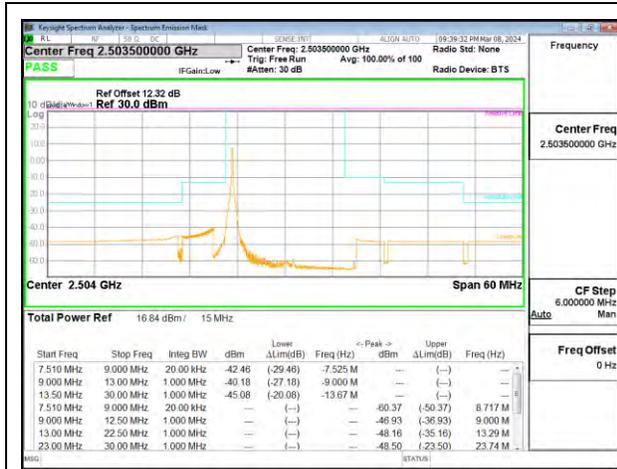LTE Band 41 10MHz 16QAM Low Channel RB50-0

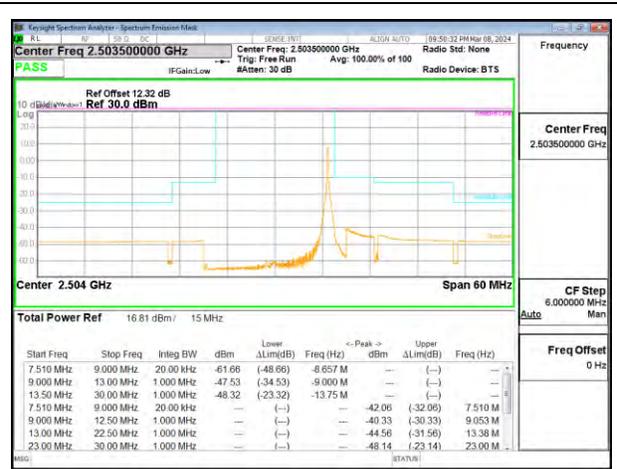LTE Band 41 10MHz 16QAM High Channel RB1-0
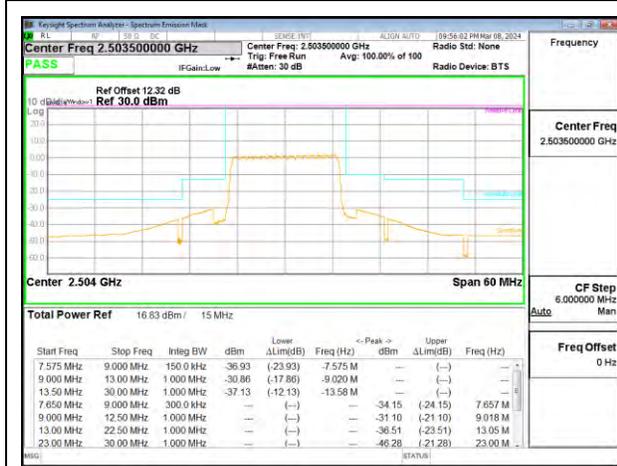

LTE Band 41 10MHz 16QAM High Channel RB1-49

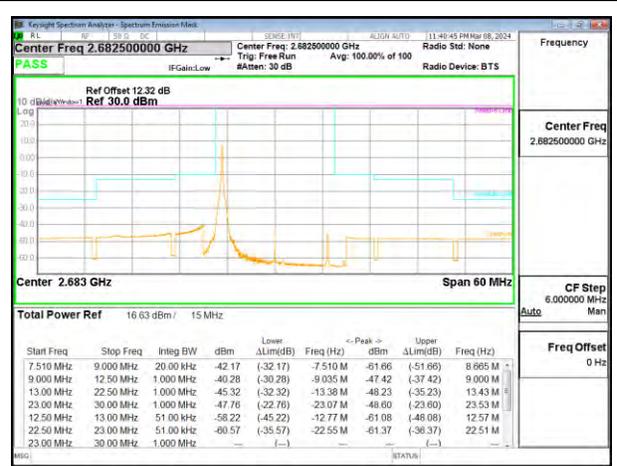LTE Band 41 10MHz 16QAM High Channel RB50-0

LTE Band 41 15MHz 16QAM Low Channel RB1-0
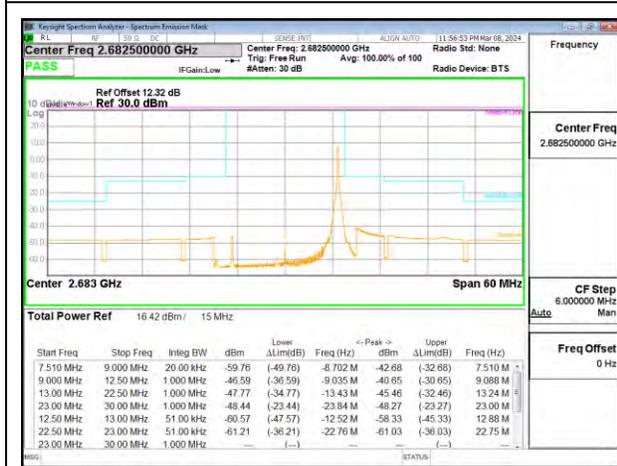

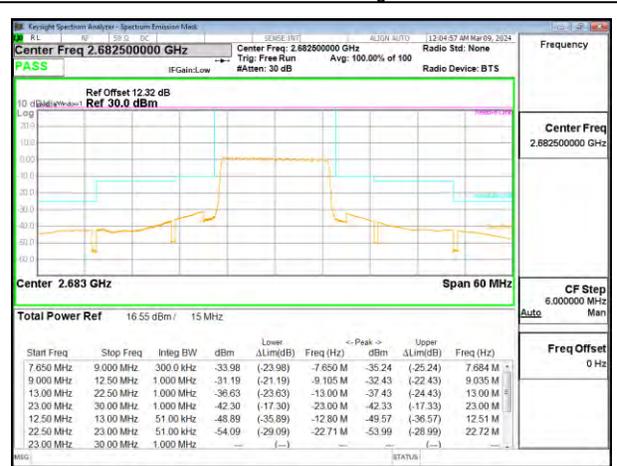LTE Band 41 15MHz 16QAM Low Channel RB1-74

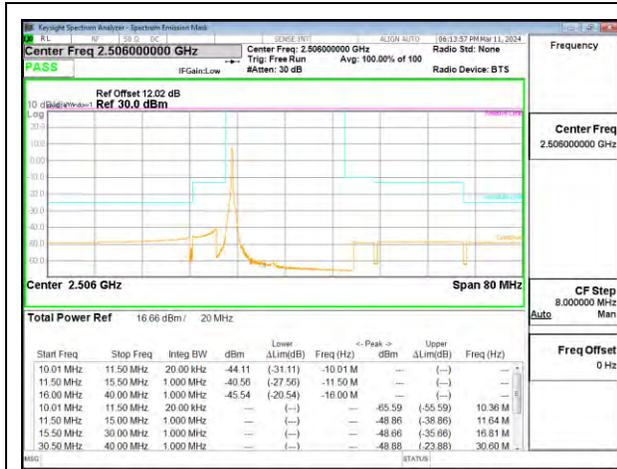LTE Band 41 15MHz 16QAM Low Channel RB75-0

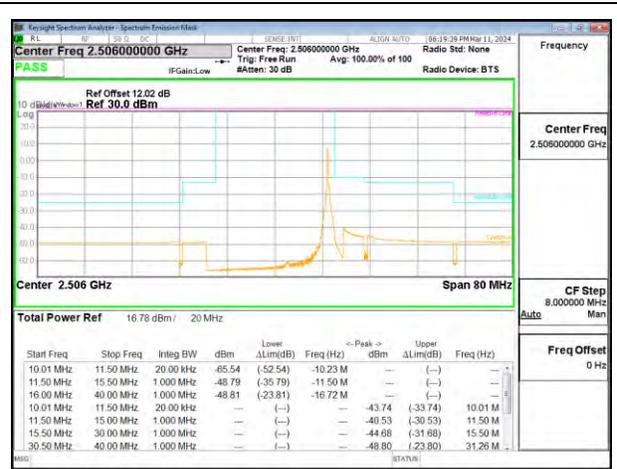LTE Band 41 15MHz 16QAM High Channel RB1-0

LTE Band 41 15MHz 16QAM High Channel RB1-74

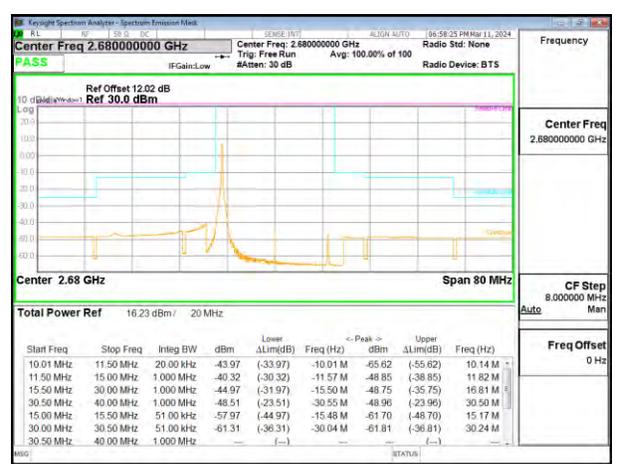LTE Band 41 15MHz 16QAM High Channel RB75-0
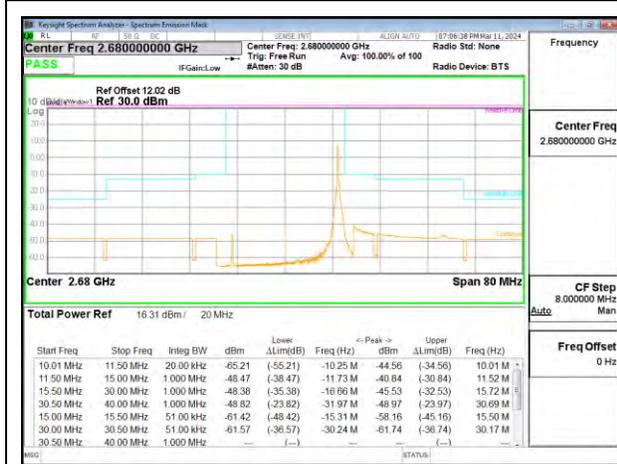
LTE Band 41 20MHz 16QAM Low Channel RB1-0

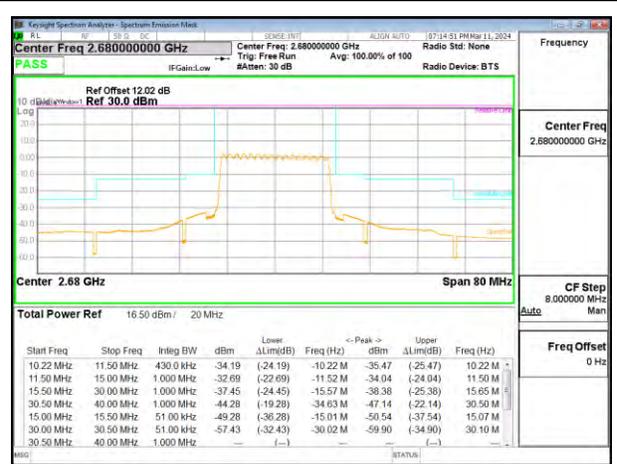LTE Band 41 20MHz 16QAM Low Channel RB1-99

LTE Band 41 20MHz 16QAM Low Channel RB100-0

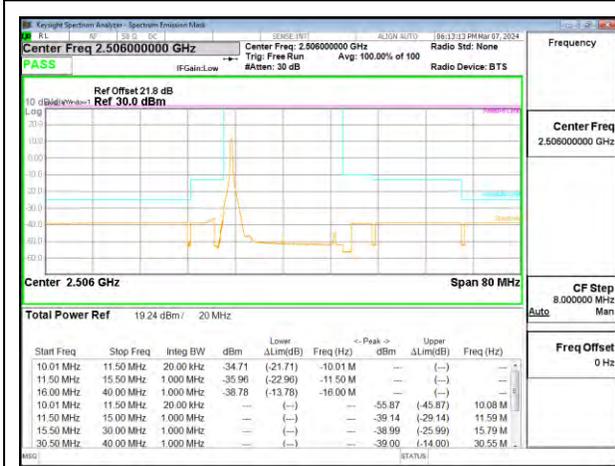LTE Band 41 20MHz 16QAM High Channel RB1-0

LTE Band 41 20MHz 16QAM High Channel RB1-99

LTE Band 41 20MHz 16QAM High Channel RB100-0

5G NR n41

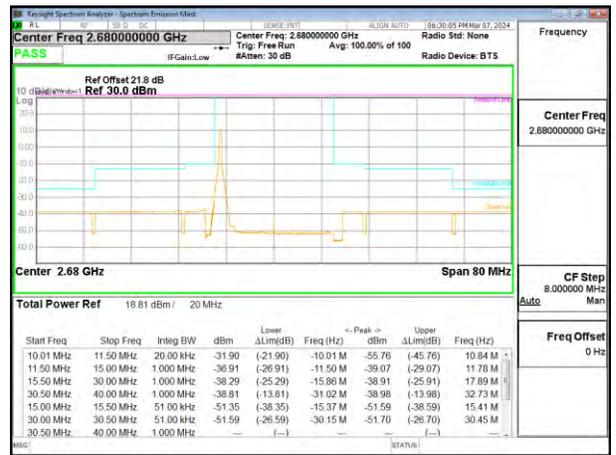| Test Engineer ID:	22797/85502	Test Date:	2024-03-06	EUT Serial Number:	<QV77000KL2>

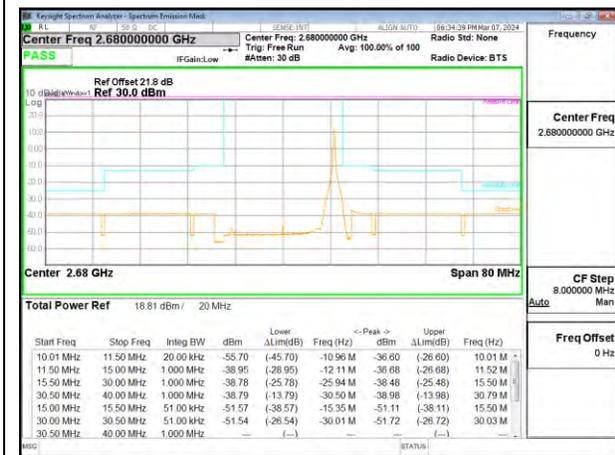5G NR n41 20MHz QPSK Low Channel RB1-0

5G NR n41 20MHz QPSK Low Channel RB1-49

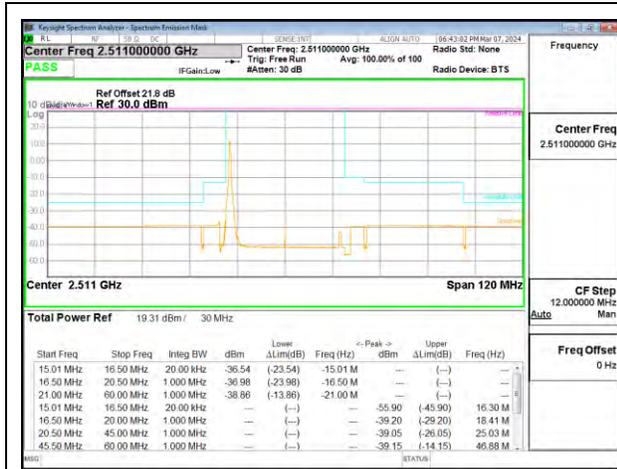5G NR n41 20MHz QPSK Low Channel RB50-0

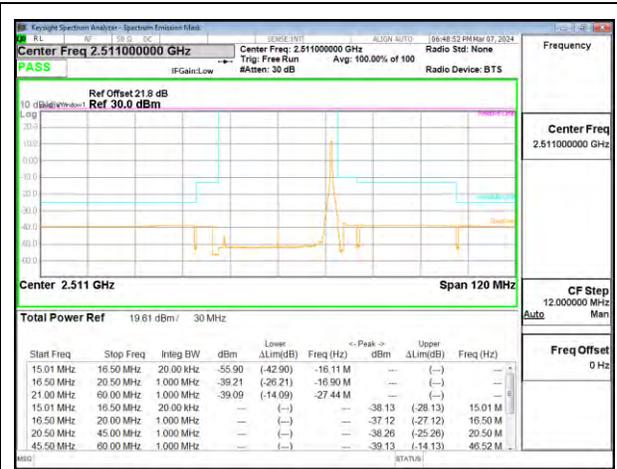5G NR n41 20MHz QPSK High Channel RB1-0

5G NR n41 20MHz QPSK High Channel RB1-49

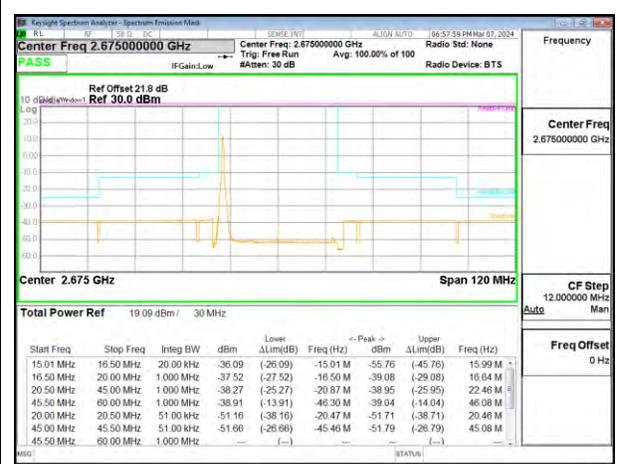5G NR n41 20MHz QPSK High Channel RB50-0
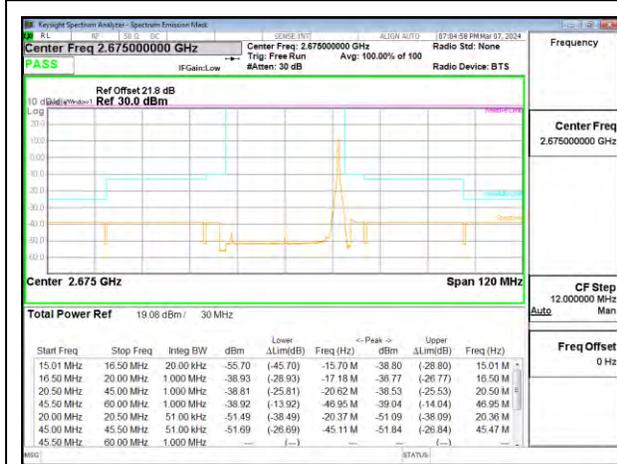
5G NR n41 30MHz QPSK Low Channel RB1-0
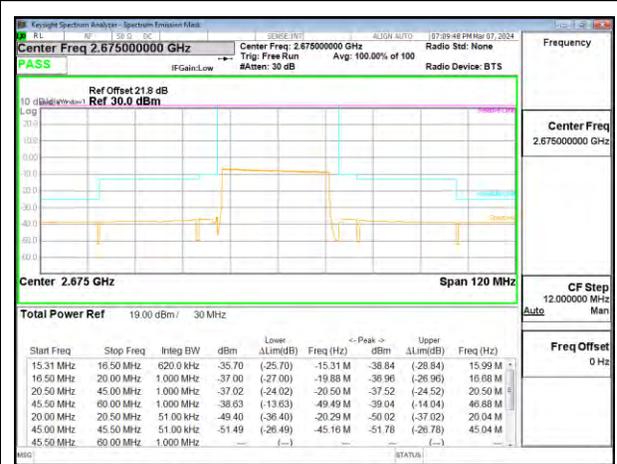

5G NR n41 30MHz QPSK Low Channel RB1-76

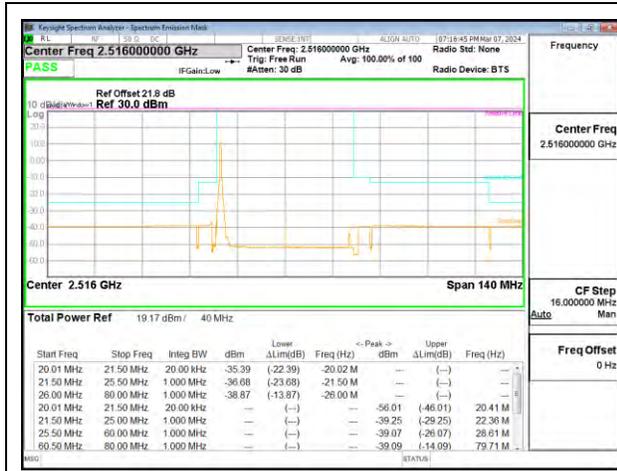5G NR n41 30MHz QPSK Low Channel RB75-0

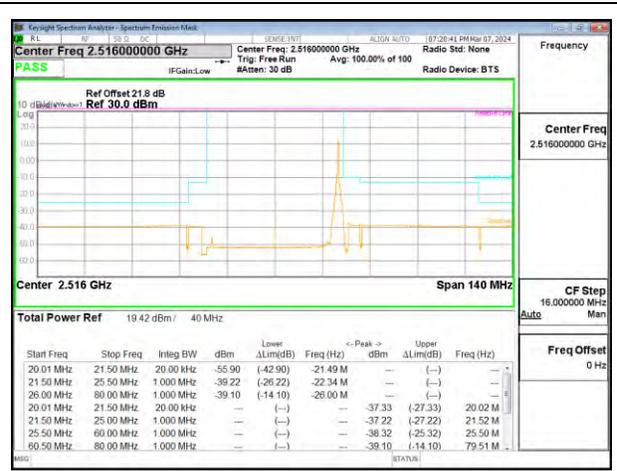5G NR n41 30MHz QPSK High Channel RB1-0

5G NR n41 30MHz QPSK High Channel RB1-76

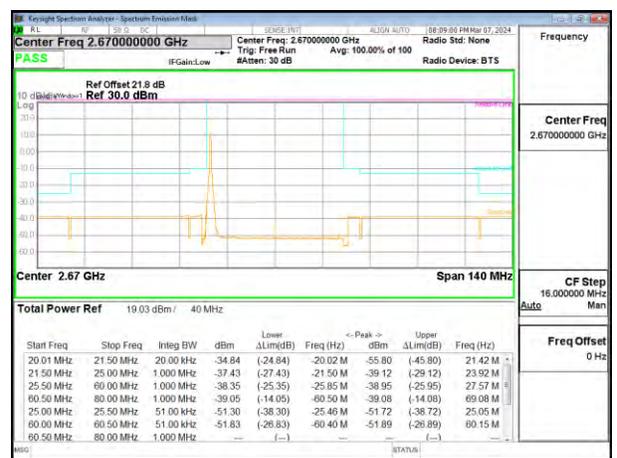5G NR n41 30MHz QPSK High Channel RB75-0
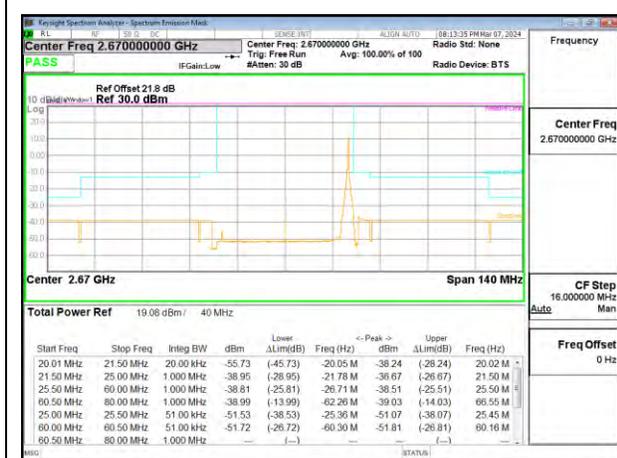
5G NR n41 40MHz QPSK Low Channel RB1-0

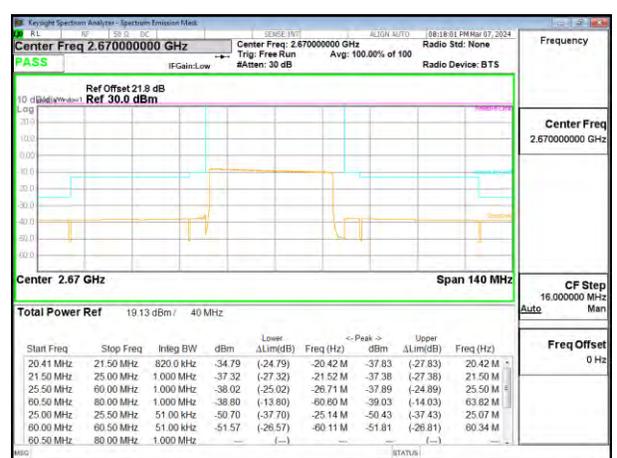5G NR n41 40MHz QPSK Low Channel RB1-104

5G NR n41 40MHz QPSK Low Channel RB100-0

5G NR n41 40MHz QPSK High Channel RB1-0

5G NR n41 40MHz QPSK High Channel RB1-104

5G NR n41 40MHz QPSK High Channel RB100-0

UL LLC.

12 Laboratory Drive, Research Triangle Park, NC 27709, USA

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5G NR n41 50MHz QPSK Low Channel RB1-0

5G NR n41 50MHz QPSK Low Channel RB1-131
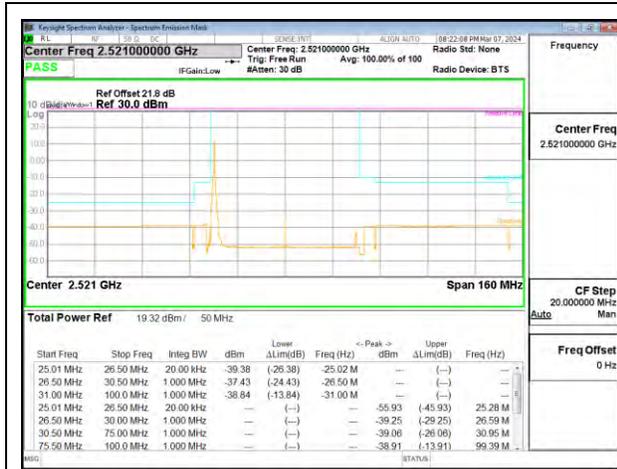

5G NR n41 50MHz QPSK Low Channel RB128-0

5G NR n41 50MHz QPSK High Channel RB1-0

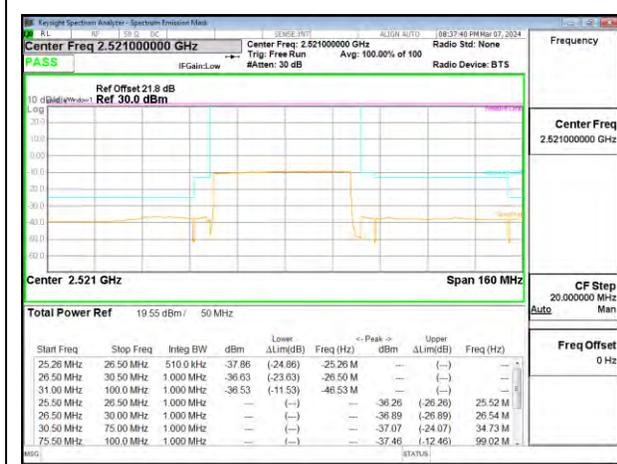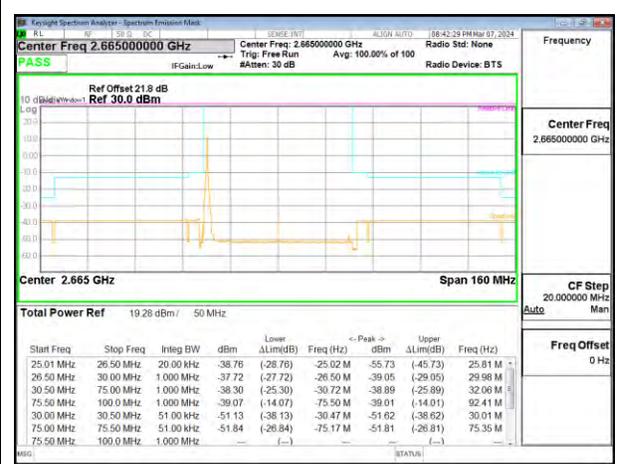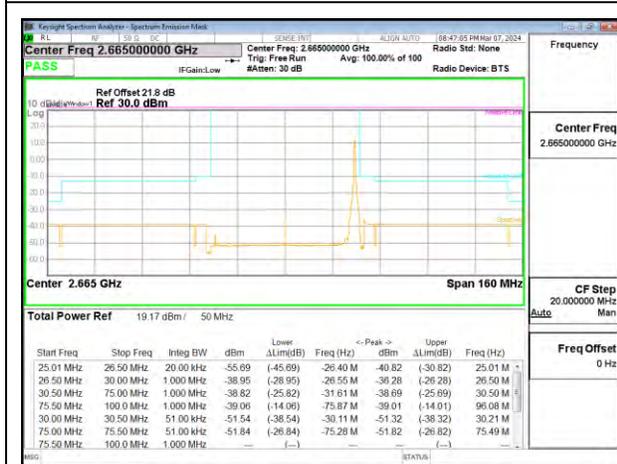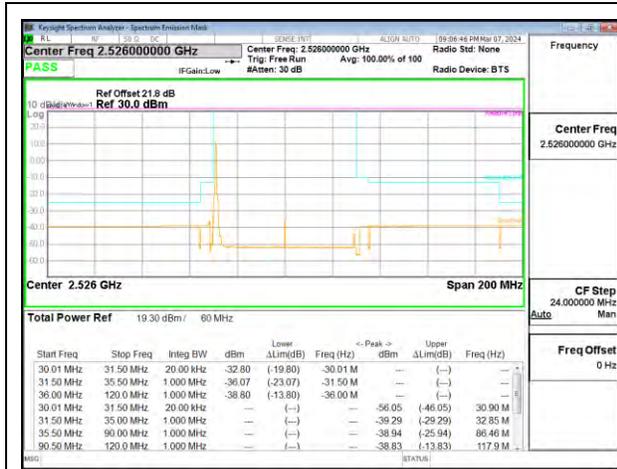

5G NR n41 50MHz QPSK High Channel RB1-131

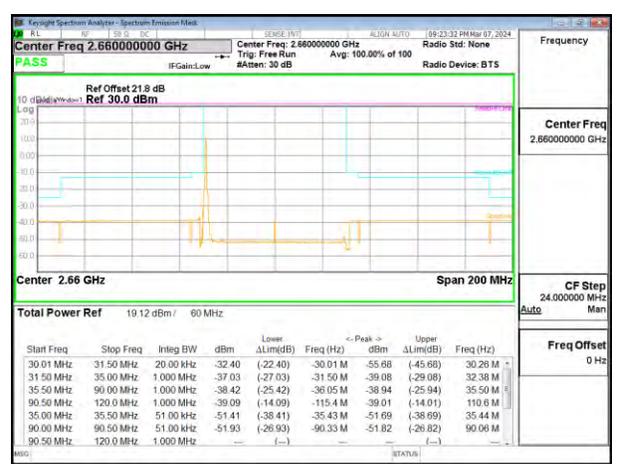5G NR n41 50MHz QPSK High Channel RB128-0

5G NR n41 60MHz QPSK Low Channel RB1-0

5G NR n41 60MHz QPSK Low Channel RB1-160

5G NR n41 60MHz QPSK Low Channel RB162-0

5G NR n41 60MHz QPSK High Channel RB1-0

5G NR n41 60MHz QPSK High Channel RB1-160

5G NR n41 60MHz QPSK High Channel RB162-0

5G NR n41 70MHz QPSK Low Channel RB1-0
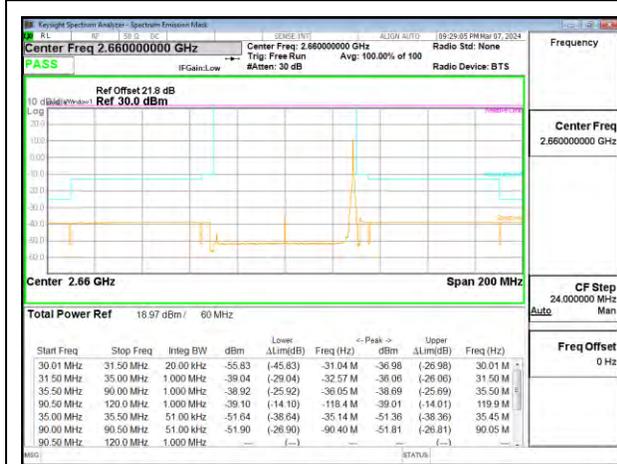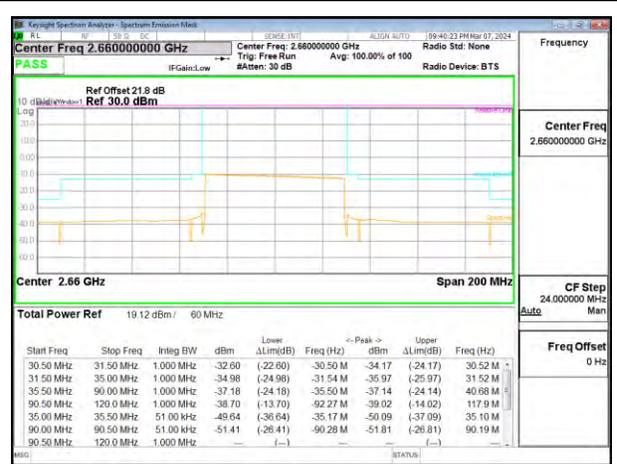

5G NR n41 70MHz QPSK Low Channel RB1-170
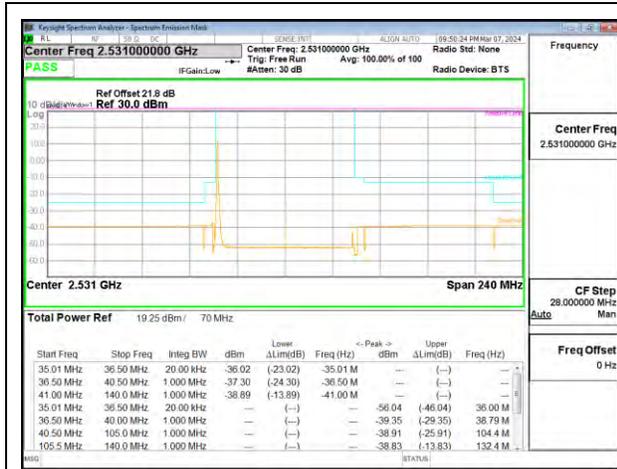

5G NR n41 70MHz QPSK Low Channel RB162-0

5G NR n41 70MHz QPSK High Channel RB1-0

5G NR n41 70MHz QPSK High Channel RB1-170

5G NR n41 70MHz QPSK High Channel RB162-0

5G NR n41 80MHz QPSK Low Channel RB1-0

5G NR n41 80MHz QPSK Low Channel RB1-215

5G NR n41 80MHz QPSK Low Channel RB216-0

5G NR n41 80MHz QPSK High Channel RB1-0

5G NR n41 80MHz QPSK High Channel RB1-215

5G NR n41 80MHz QPSK High Channel RB216-0

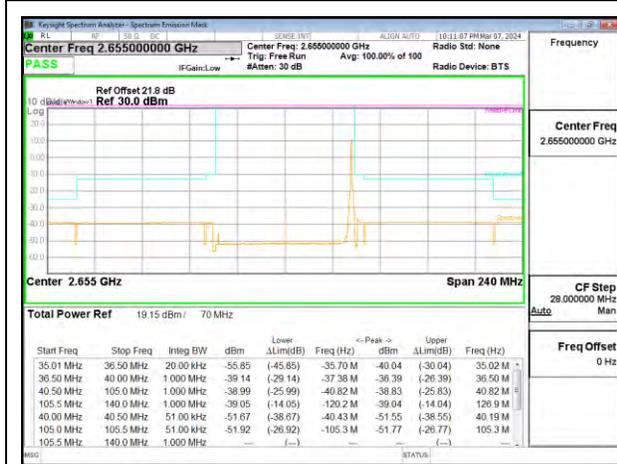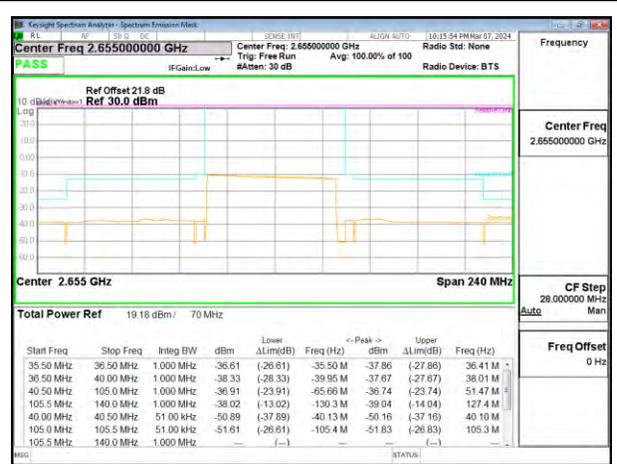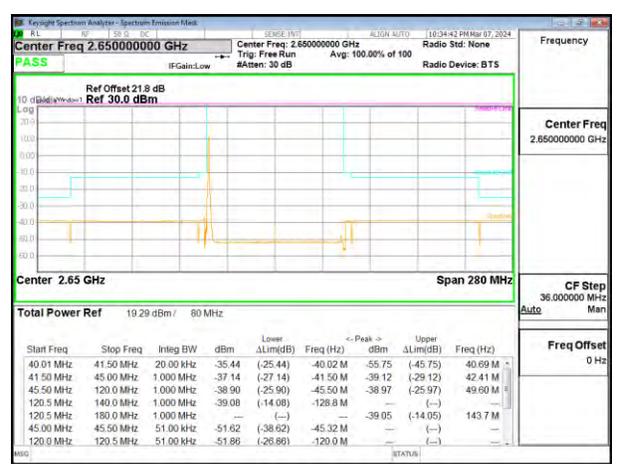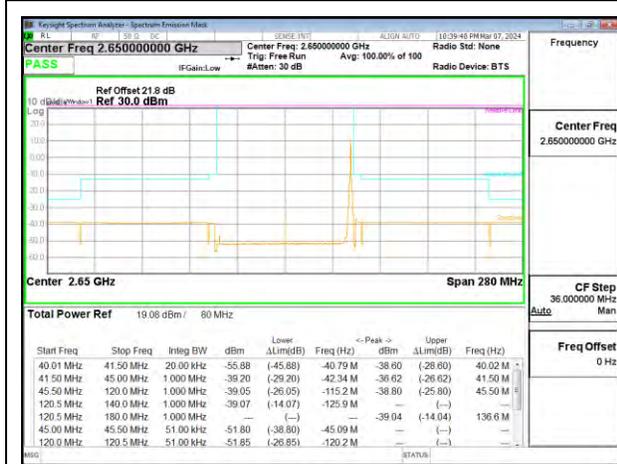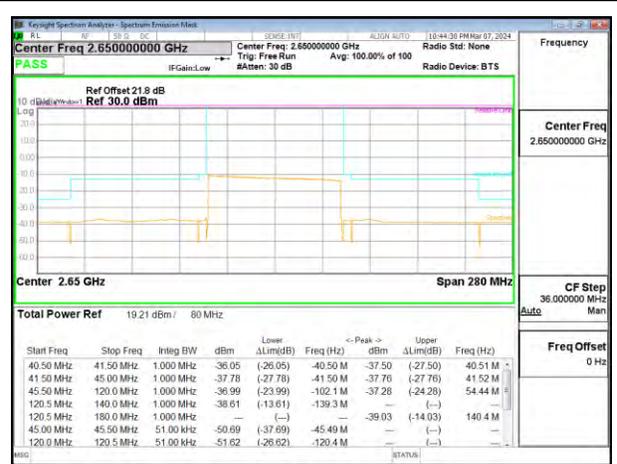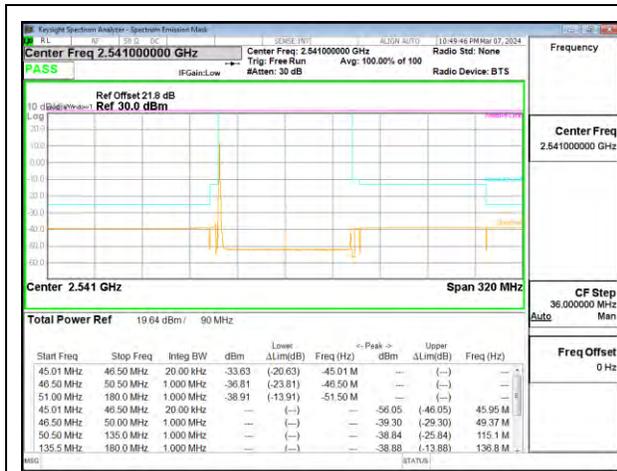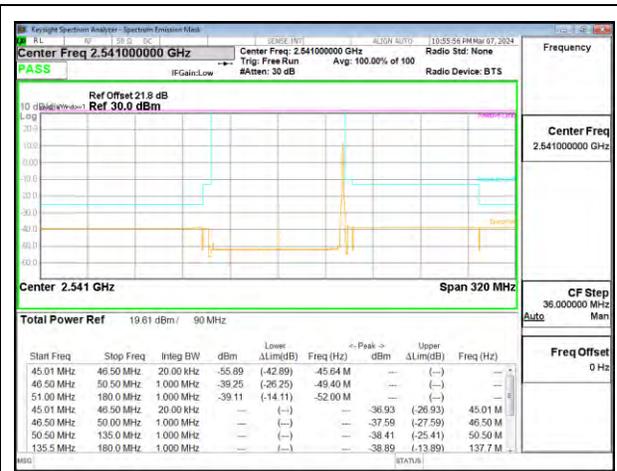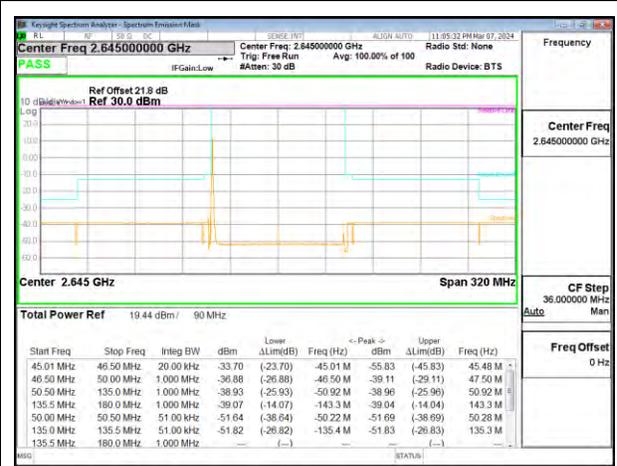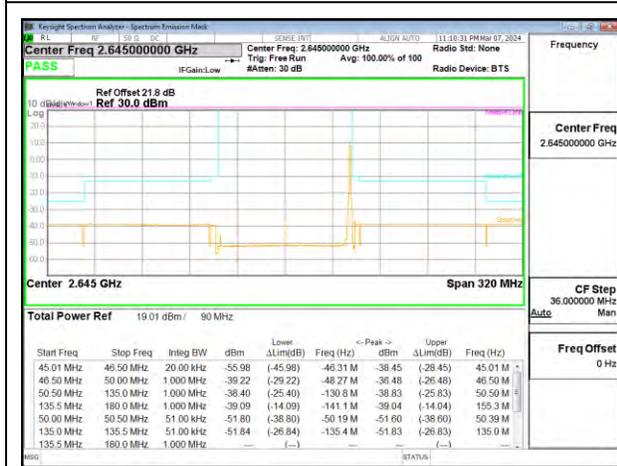5G NR n41 90MHz QPSK Low Channel RB1-0

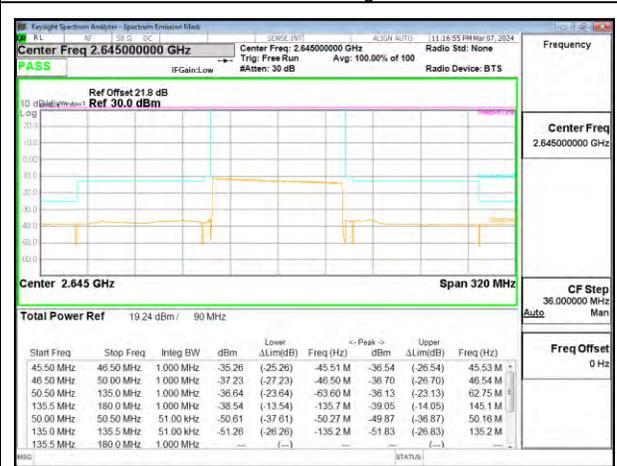5G NR n41 90MHz QPSK Low Channel RB1-243

5G NR n41 90MHz QPSK Low Channel RB243-0

5G NR n41 90MHz QPSK High Channel RB1-0

5G NR n41 90MHz QPSK High Channel RB1-243

5G NR n41 90MHz QPSK High Channel RB243-0

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5G NR n41 100MHz QPSK Low Channel RB1-0

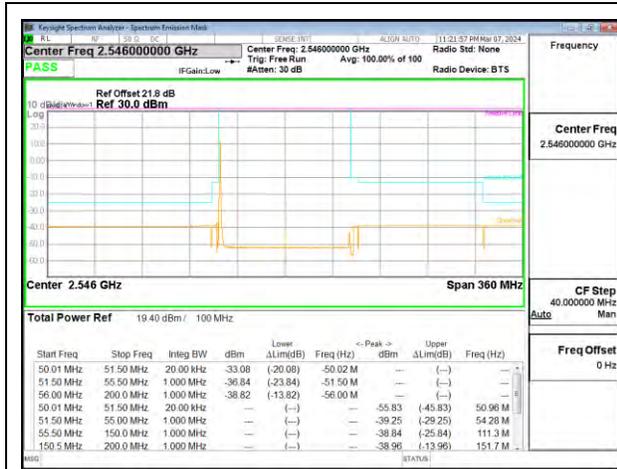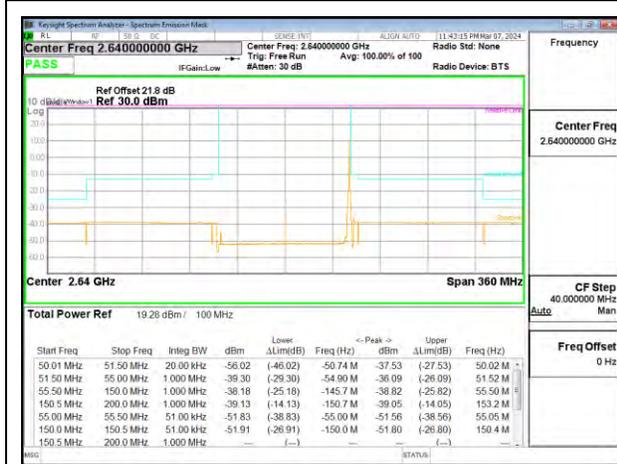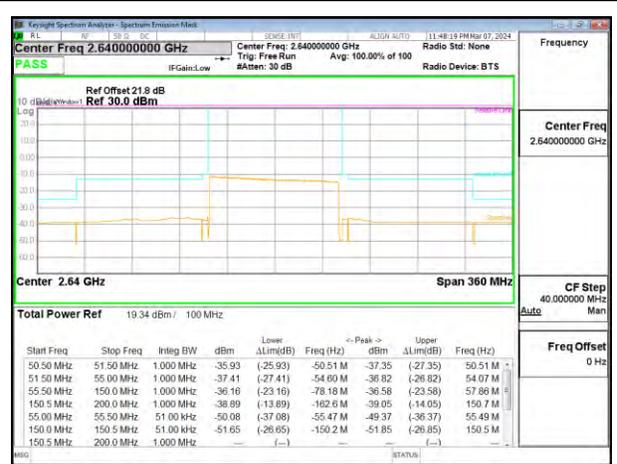5G NR n41 100MHz QPSK Low Channel RB1-271

5G NR n41 100MHz QPSK Low Channel RB270-0

5G NR n41 100MHz QPSK High Channel RB1-0

5G NR n41 100MHz QPSK High Channel RB1-271

5G NR n41 100MHz QPSK High Channel RB270-0

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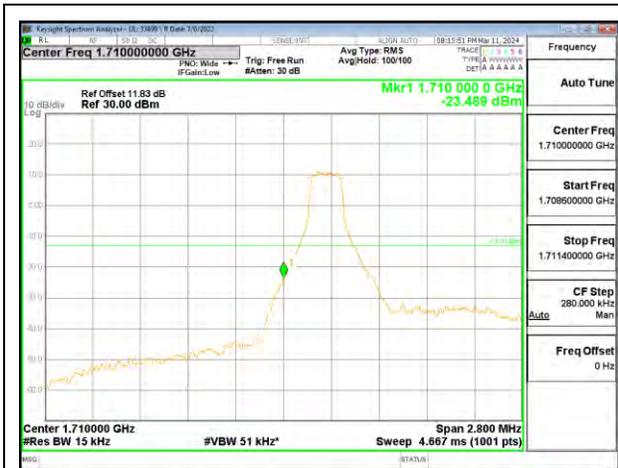## 9.2.6. LTE BAND 66 AND 5G NR n66 EMISSION MASK
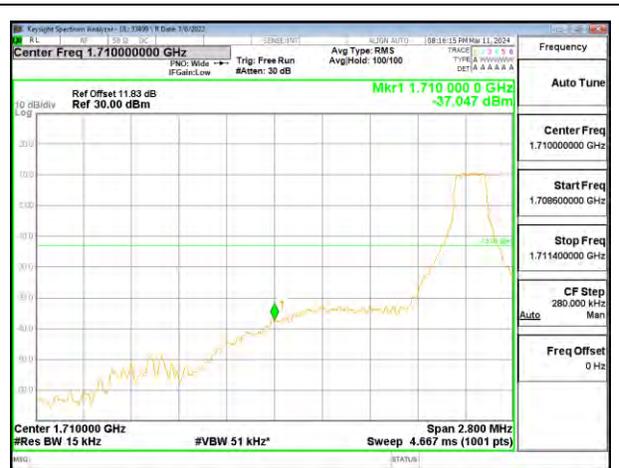
LIMITS

FCC: §27.53(h)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

Test Engineer ID:	33499/85502	Test Date:	2024-03-11 2024-03-18	EUT Serial Number:	QV77000KL2 QV7700DSLQ

LTE BAND 66

LTE Band 66 1.4MHz QPSK Low Channel RB1-0

LTE Band 66 1.4MHz QPSK Low Channel RB1-5

LTE Band 66 1.4MHz QPSK Low Channel RB6-0

LTE Band 66 1.4MHz QPSK High Channel RB1-0

LTE Band 66 1.4MHz QPSK High Channel RB1-5

LTE Band 66 1.4MHz QPSK High Channel RB6-0

LTE Band 66 3MHz QPSK Low Channel RB1-0

LTE Band 66 3MHz QPSK Low Channel RB1-14
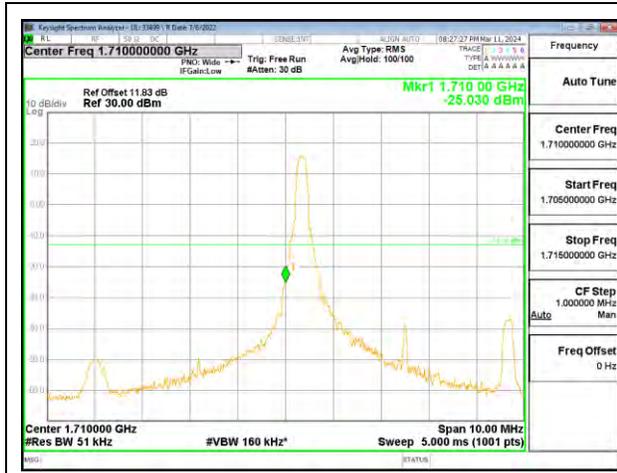

LTE Band 66 3MHz QPSK Low Channel RB15-0

LTE Band 66 3MHz QPSK High Channel RB1-0
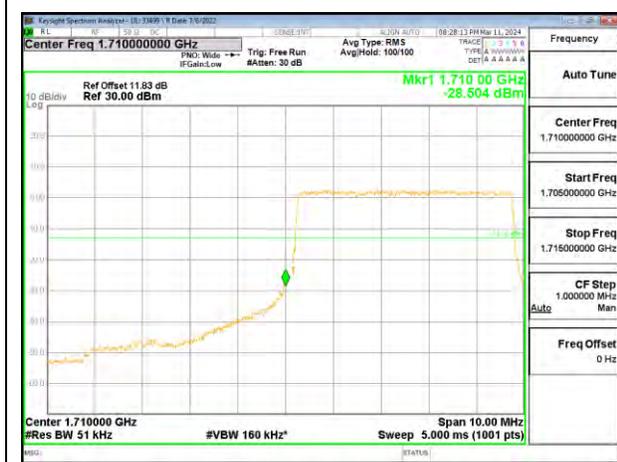

LTE Band 66 3MHz QPSK High Channel RB1-14

LTE Band 66 3MHz QPSK High Channel RB15-0

LTE Band 66 5MHz QPSK Low Channel RB1-0

LTE Band 66 5MHz QPSK Low Channel RB1-24
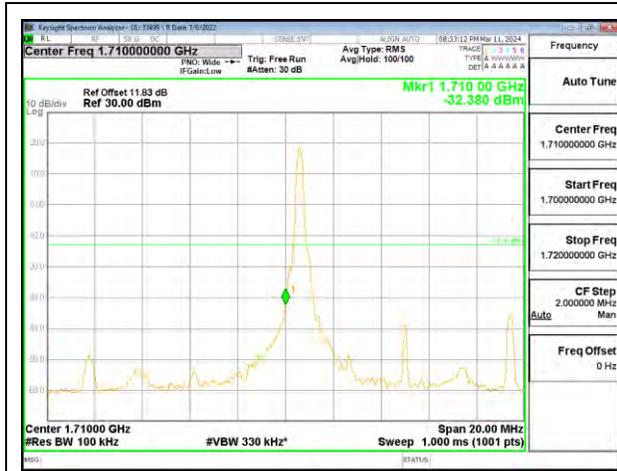

LTE Band 66 5MHz QPSK Low Channel RB25-0

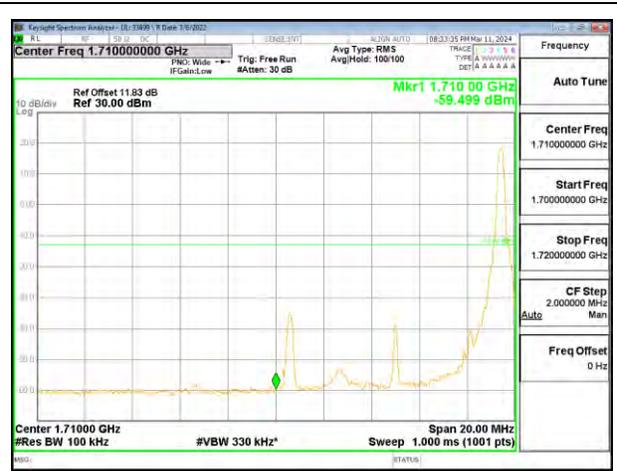LTE Band 66 5MHz QPSK High Channel RB1-0

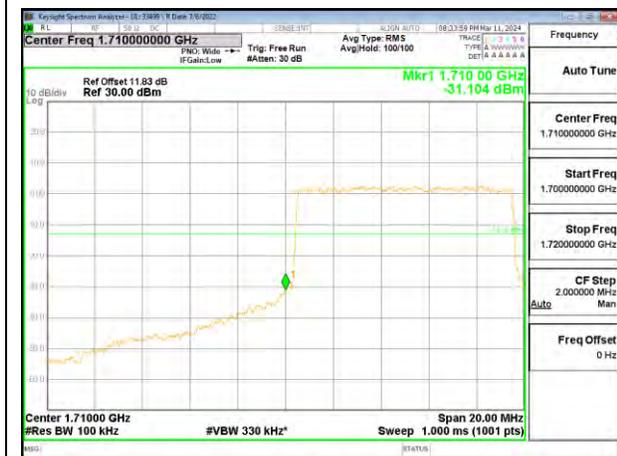LTE Band 66 5MHz QPSK High Channel RB1-24

LTE Band 66 5MHz QPSK High Channel RB25-0
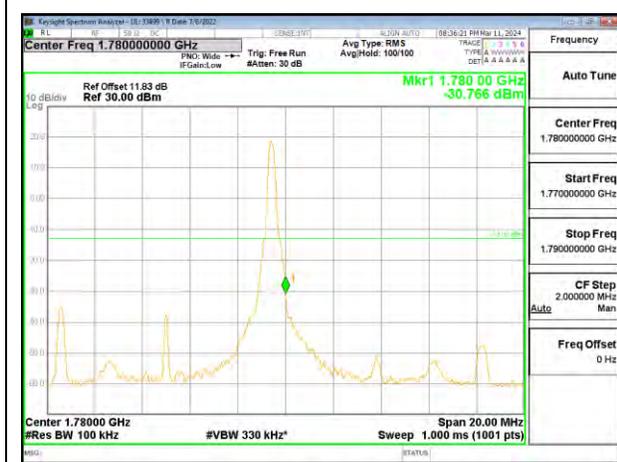
LTE Band 66 10MHz QPSK Low Channel RB1-0

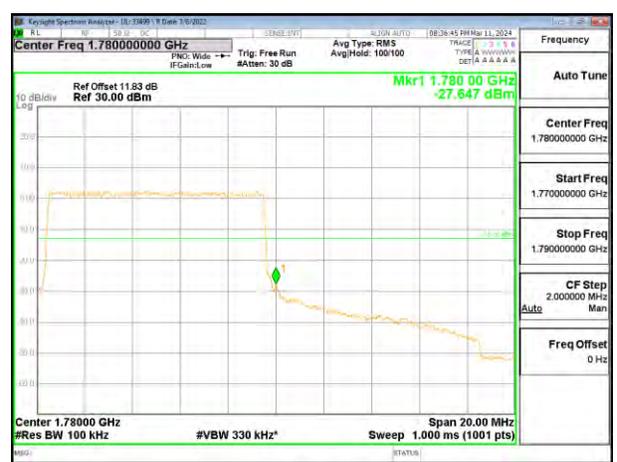LTE Band 66 10MHz QPSK Low Channel RB1-49
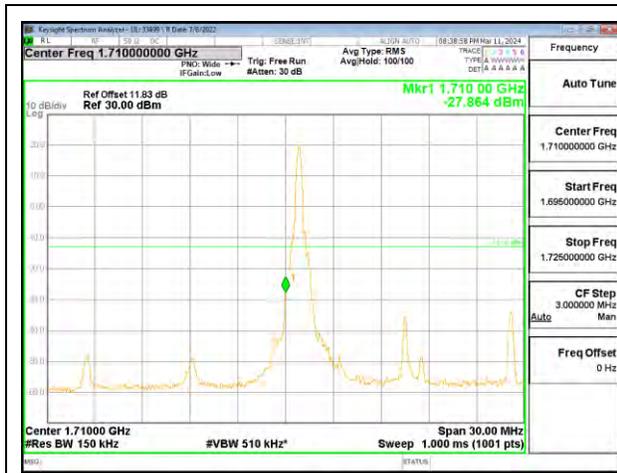

LTE Band 66 10MHz QPSK Low Channel RB50-0

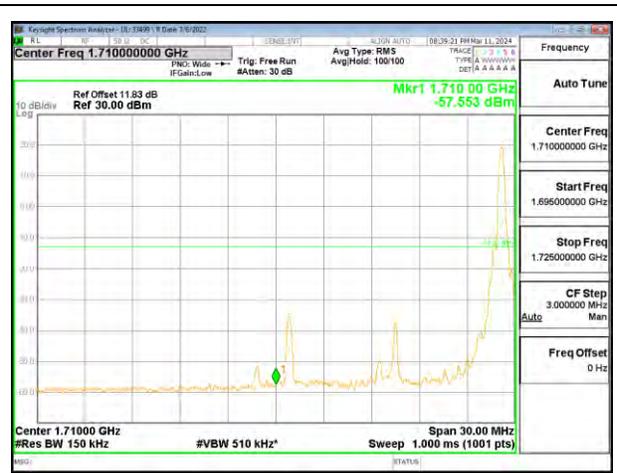LTE Band 66 10MHz QPSK High Channel RB1-0

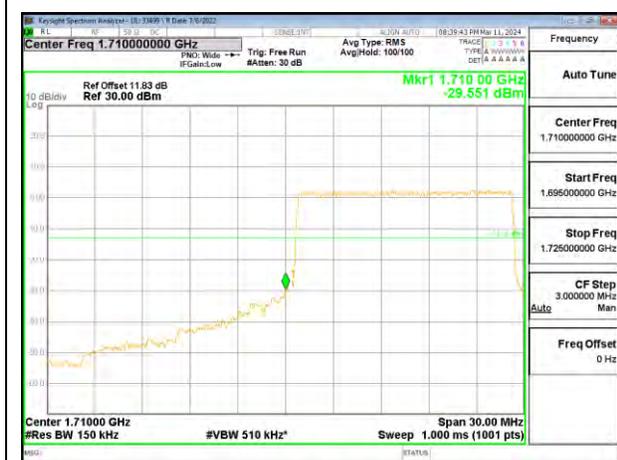LTE Band 66 10MHz QPSK High Channel RB1-49

LTE Band 66 10MHz QPSK High Channel RB50-0

LTE Band 66 15MHz QPSK Low Channel RB1-0
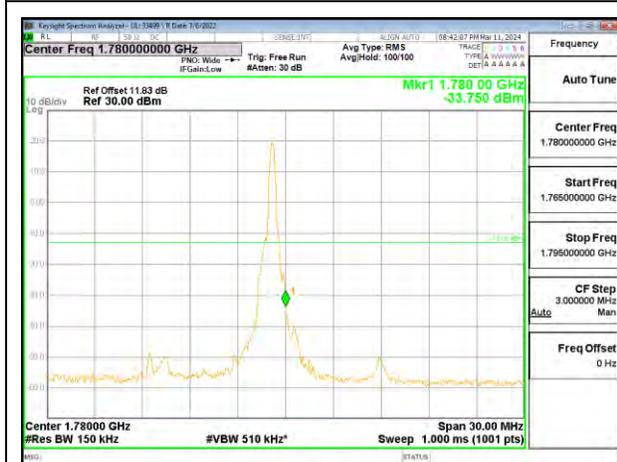

LTE Band 66 15MHz QPSK Low Channel RB1-74

LTE Band 66 15MHz QPSK Low Channel RB75-0
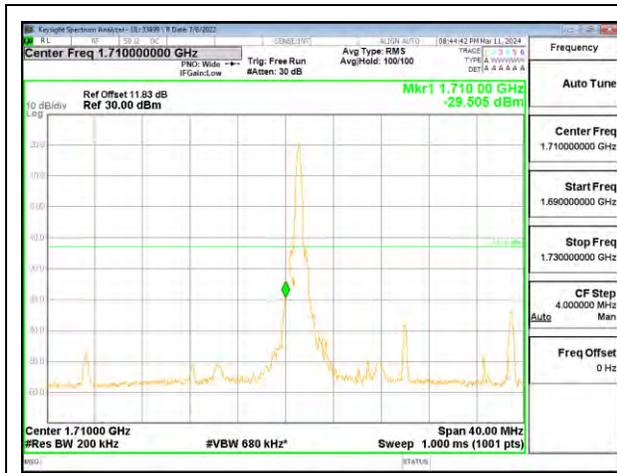

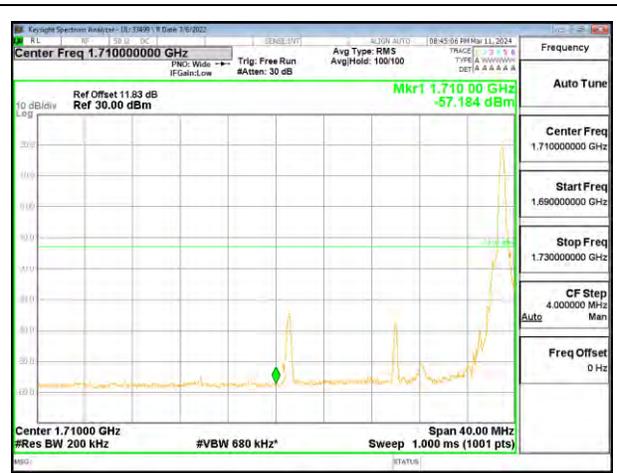LTE Band 66 15MHz QPSK High Channel RB1-0

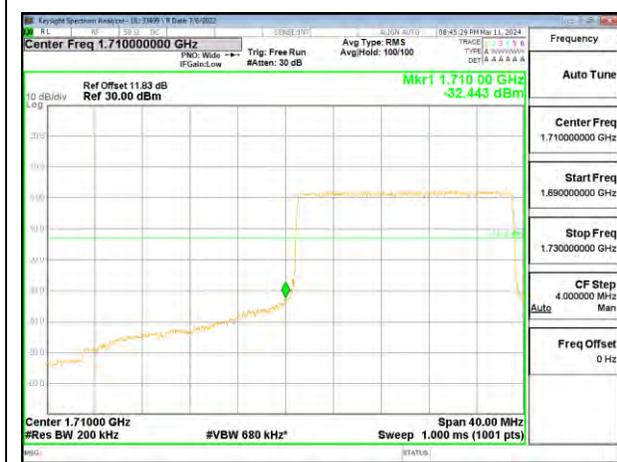LTE Band 66 15MHz QPSK High Channel RB1-74

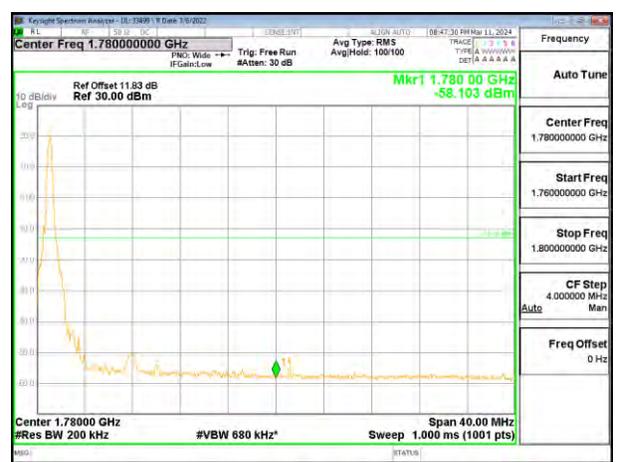LTE Band 66 15MHz QPSK High Channel RB75-0

LTE Band 66 20MHz QPSK Low Channel RB1-0
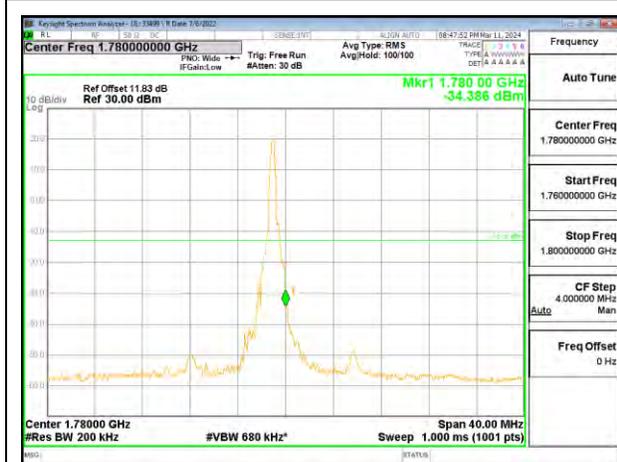

LTE Band 66 20MHz QPSK Low Channel RB1-99

LTE Band 66 20MHz QPSK Low Channel RB100-0

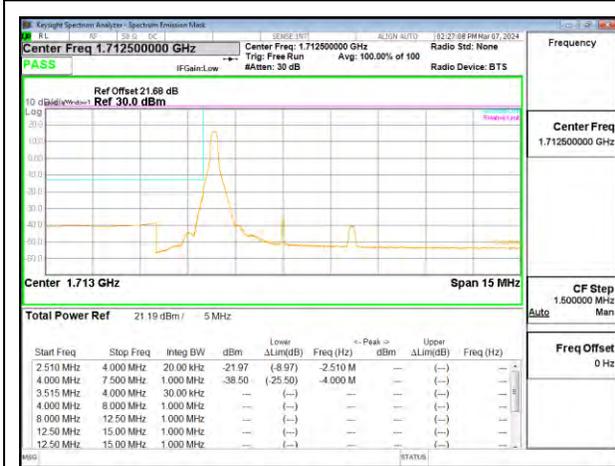LTE Band 66 20MHz QPSK High Channel RB1-0
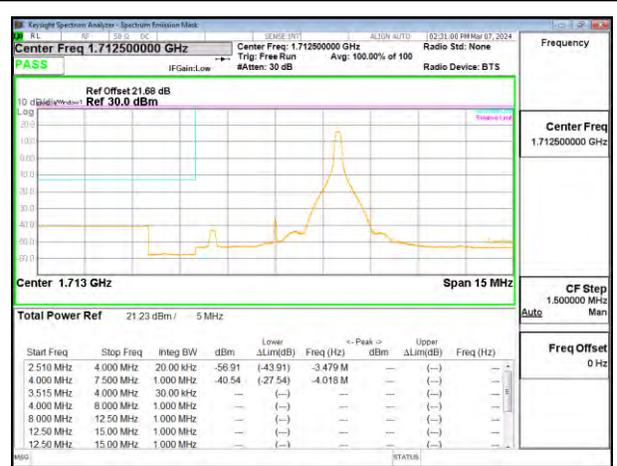

LTE Band 66 20MHz QPSK High Channel RB1-99

LTE Band 66 20MHz QPSK High Channel RB100-0

5G FR1 n66

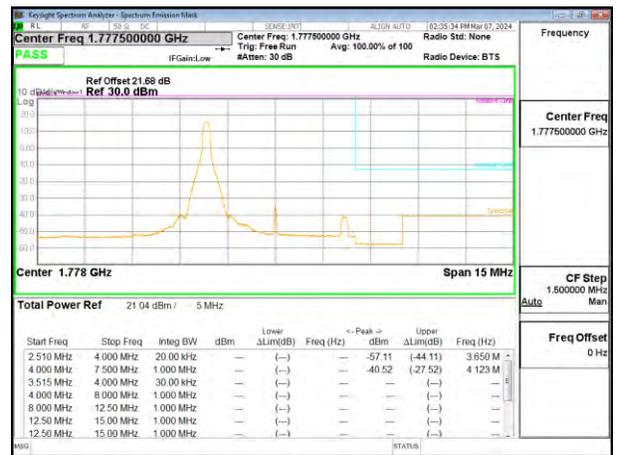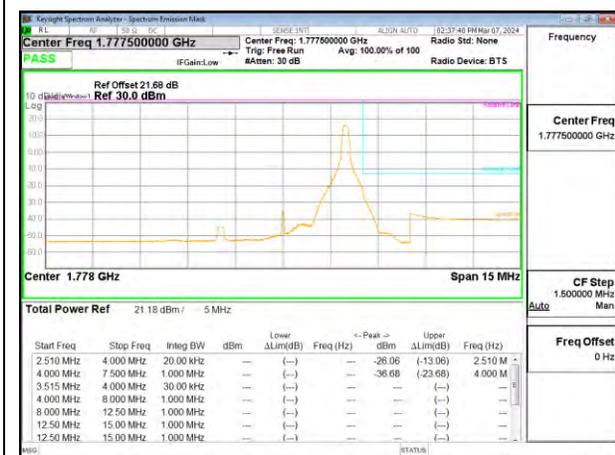| Test Engineer ID:	22797/85502	Test Date:	2024-03-07	EUT Serial Number:	<QV77000KL2>

5G NR n66 5MHz BPSK Low Channel RB1-0

5G NR n66 5MHz BPSK Low Channel RB1-24

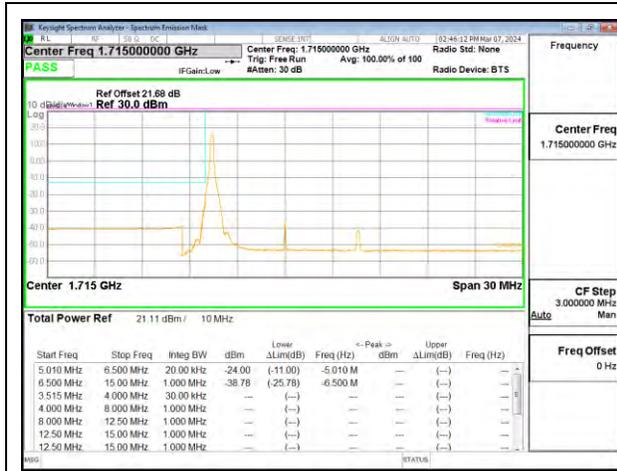5G NR n66 5MHz BPSK Low Channel RB25-0

5G NR n66 5MHz BPSK High Channel RB1-0

5G NR n66 5MHz BPSK High Channel RB1-24

5G NR n66 5MHz BPSK High Channel RB25-0

5G NR n66 10MHz BPSK Low Channel RB1-0

5G NR n66 10MHz BPSK Low Channel RB1-50

5G NR n66 10MHz BPSK Low Channel RB50-0

5G NR n66 10MHz BPSK High Channel RB1-0

5G NR n66 10MHz BPSK High Channel RB1-50

5G NR n66 10MHz BPSK High Channel RB50-0

5G NR n66 15MHz BPSK Low Channel RB1-0

5G NR n66 15MHz BPSK Low Channel RB1-77

5G NR n66 15MHz BPSK Low Channel RB75-0

5G NR n66 15MHz BPSK High Channel RB1-0

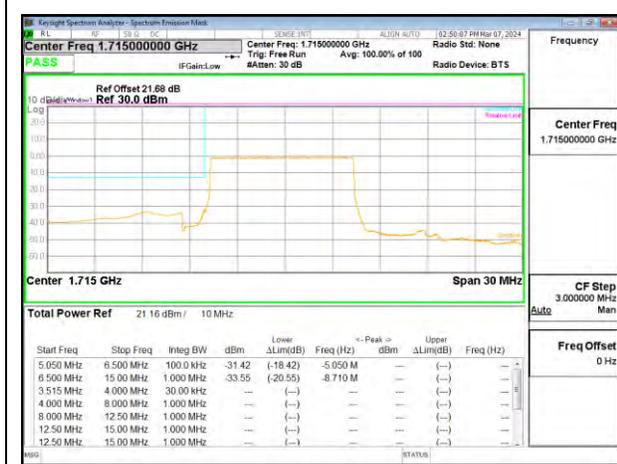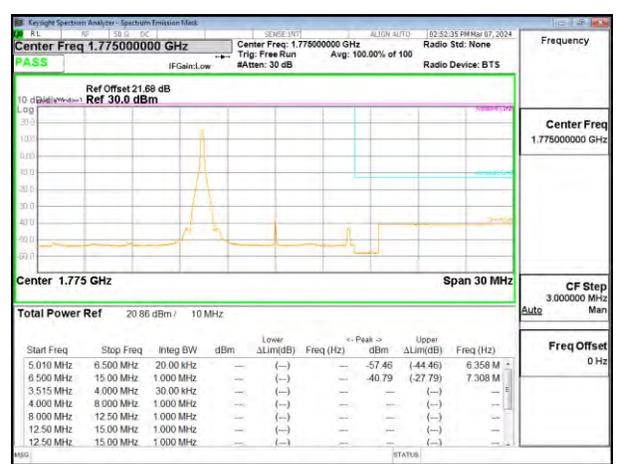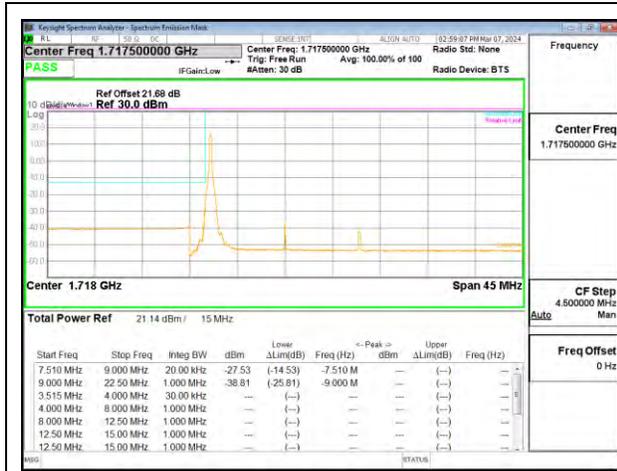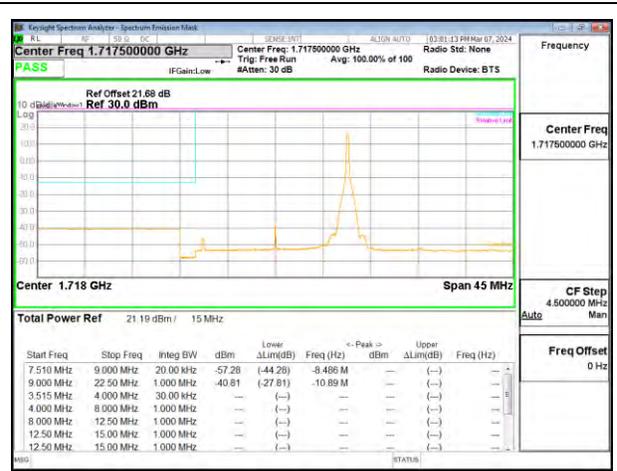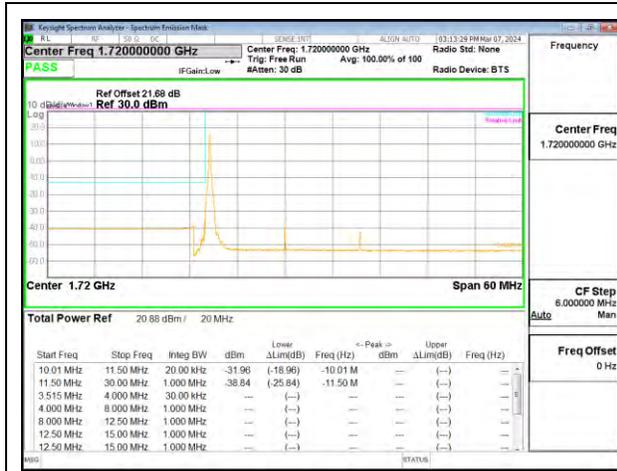5G NR n66 15MHz BPSK High Channel RB1-77

5G NR n66 15MHz BPSK High Channel RB75-0

5G NR n66 20MHz BPSK Low Channel RB1-0

5G NR n66 20MHz BPSK Low Channel RB1-104

5G NR n66 20MHz BPSK Low Channel RB100-0

5G NR n66 20MHz BPSK High Channel RB1-0

5G NR n66 20MHz BPSK High Channel RB1-104

5G NR n66 20MHz BPSK High Channel RB100-0

9.3.   OUT OF BAND EMISSIONS

TEST PROCEDURE

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:
- Set display line at -13 dBm, -25dBm and -40dBm according to the band Limit
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz. (NOTE: Worst case set RBW/VBW to 1MHz/3MHz)
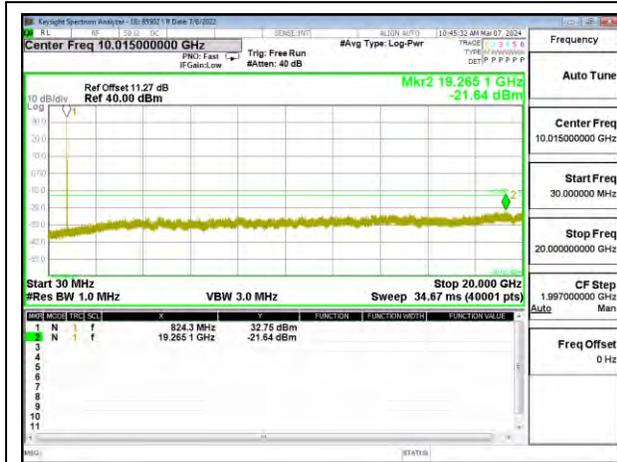
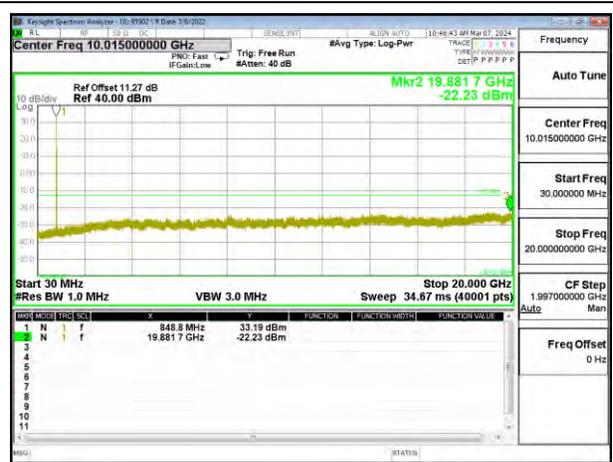**RESULTS**

9.3.1. GSM 850

LIMITS

FCC: §22.917 (a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
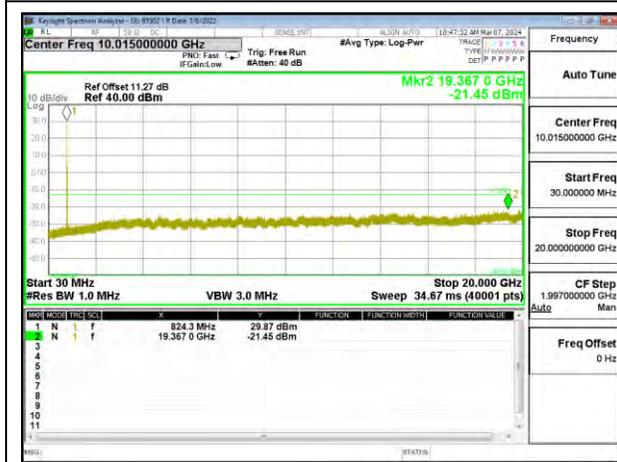
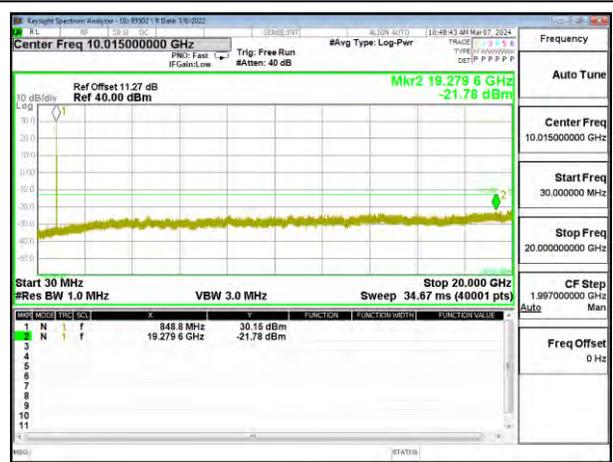| Test Engineer ID:	85502	Test Date:	2024-03-07	EUT Serial Number:	QV7700DSLQ

GSM 850 GPRS Low Channel

GSM 850 GPRS High Channel

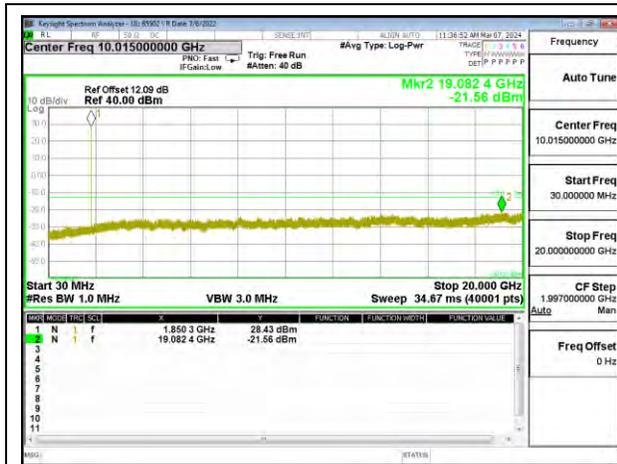
GSM 850 EGPRS Low Channel

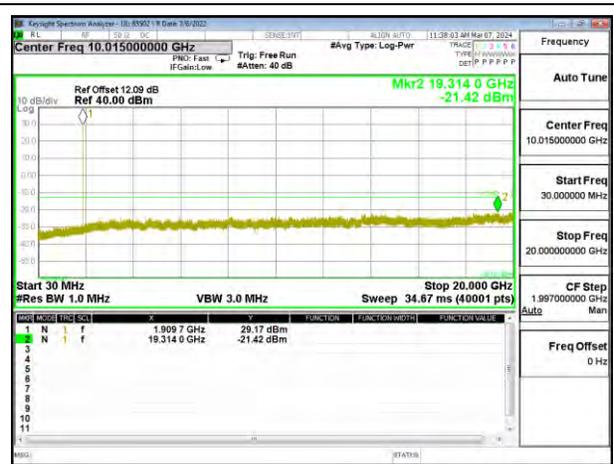GSM 850 EGPRS High Channel

9.3.2. GSM 1900

LIMITS

FCC: §24.238
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.
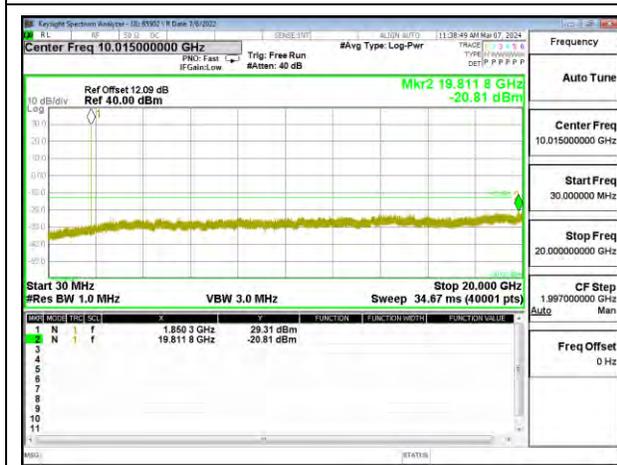
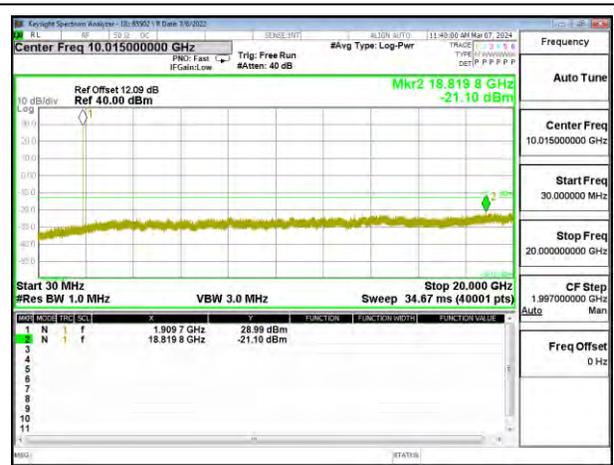| Test Engineer ID:	85502	Test Date:	2024-03-07	EUT Serial Number:	QV7700DSLQ

GSM 1900 GPRS Low Channel

GSM 1900 GPRS High Channel

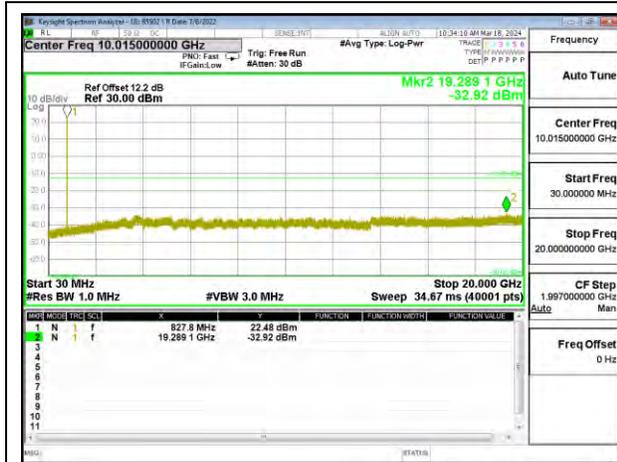GSM 1900 EGPRS Low Channel

GSM 1900 EGPRS High Channel

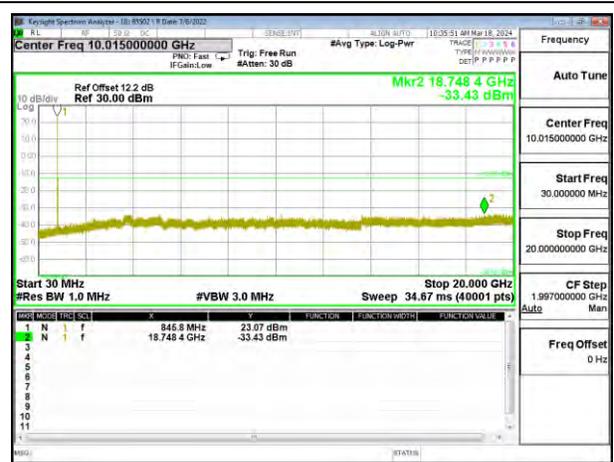## 9.3.3. WCDMA BAND 5

LIMITS

FCC: §22.917 (a)
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.
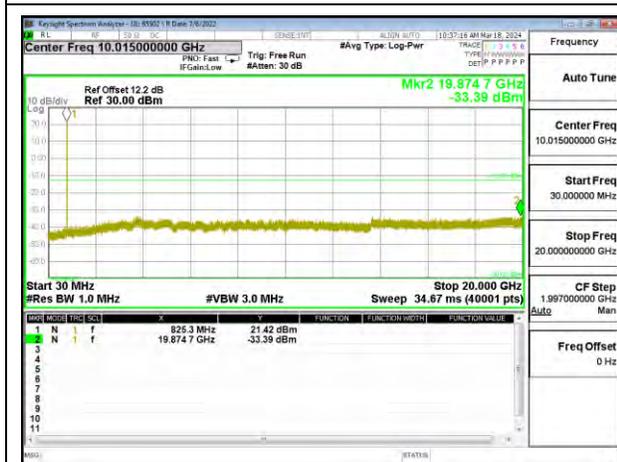
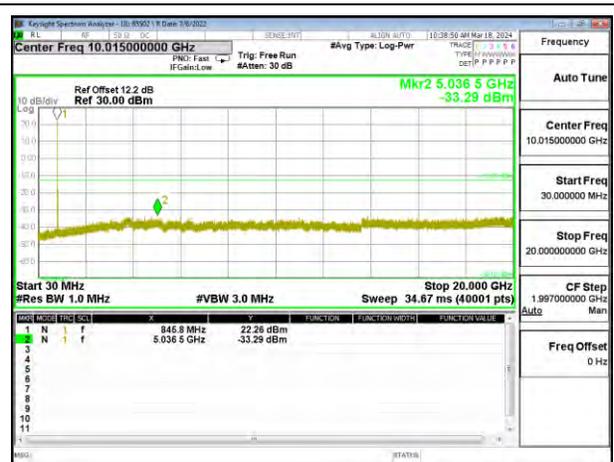| Test Engineer ID:	85502	Test Date:	2024-03-18	EUT Serial Number:	QV770018L2

WCDMA Band 5 Rel 99 Low Channel

WCDMA Band 5 Rel 99 High Channel

WCDMA Band 5 HSDPA Low Channel

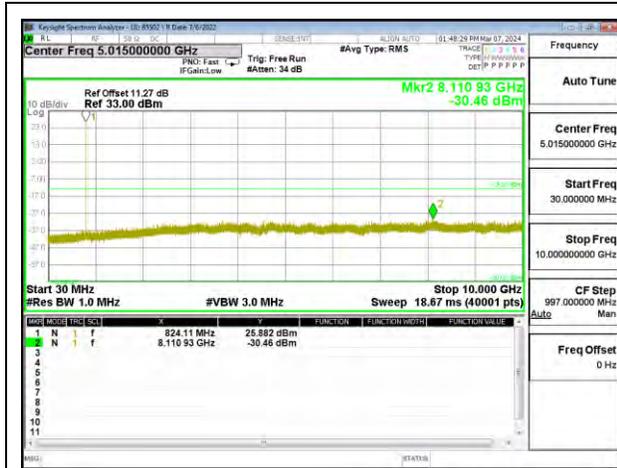WCDMA Band 5 HSDPA High Channel

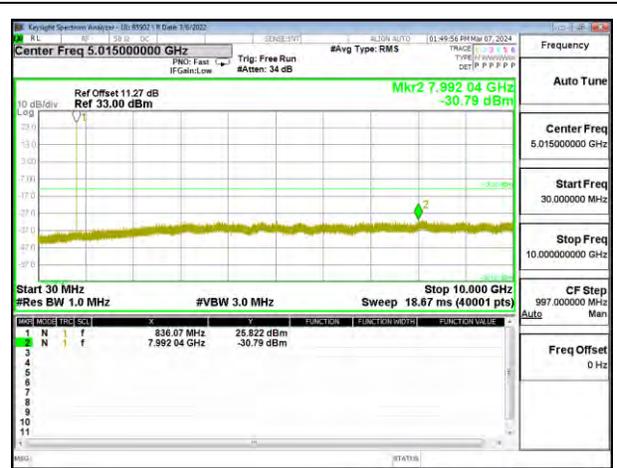## 9.3.4. LTE BAND 5 AND 5G NR n5

LIMITS

FCC: §22.917 (a)

The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

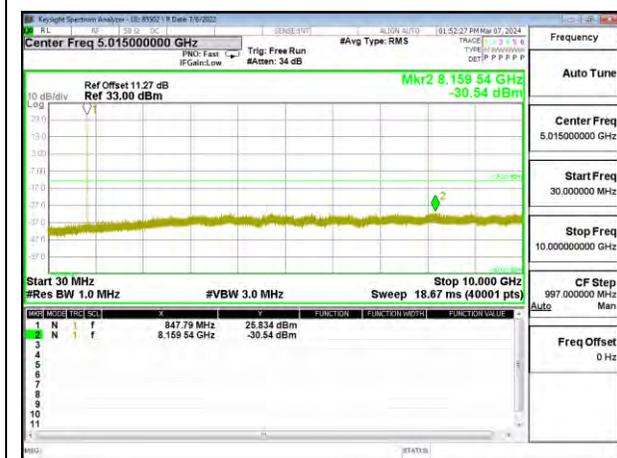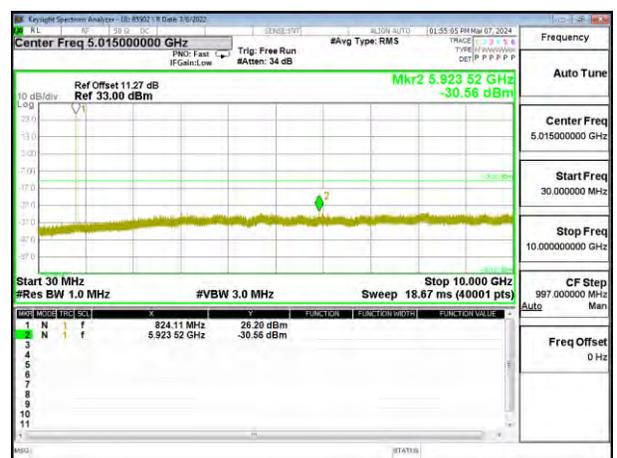| Test Engineer ID:	85502	Test Date:	2024-03-07	EUT Serial Number:	QV7700DSLQ

LTE BAND 5
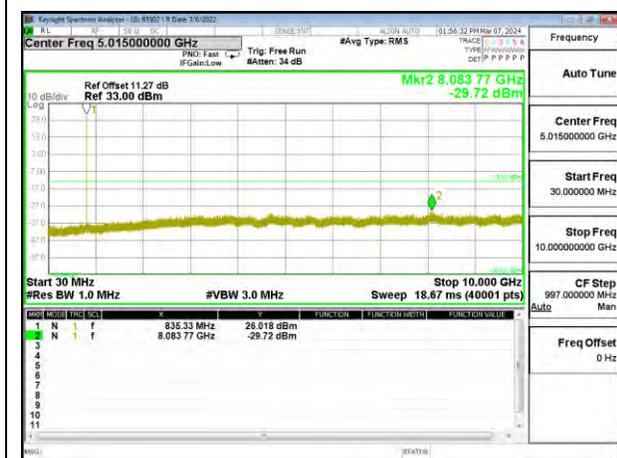

LTE B5 1.4MHz 16QAM Low Channel RB1-0

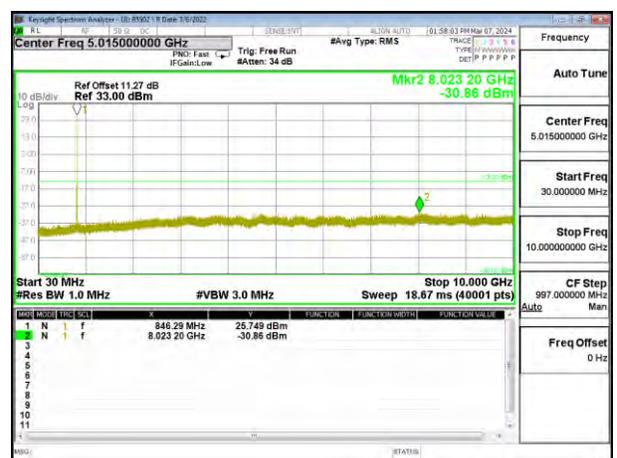LTE B5 1.4MHz 16QAM Middle Channel RB1-0
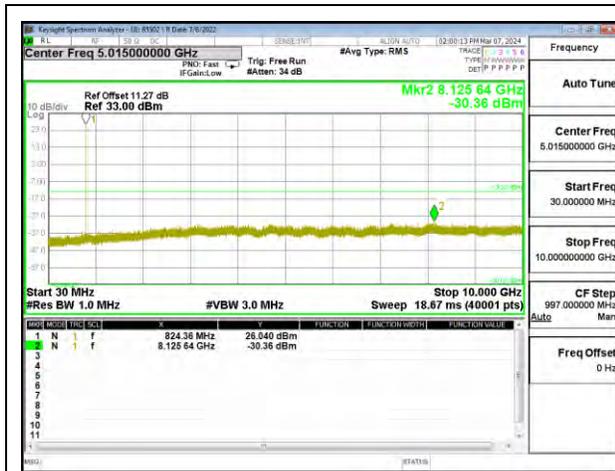

LTE B5 1.4MHz 16QAM High Channel RB1-0

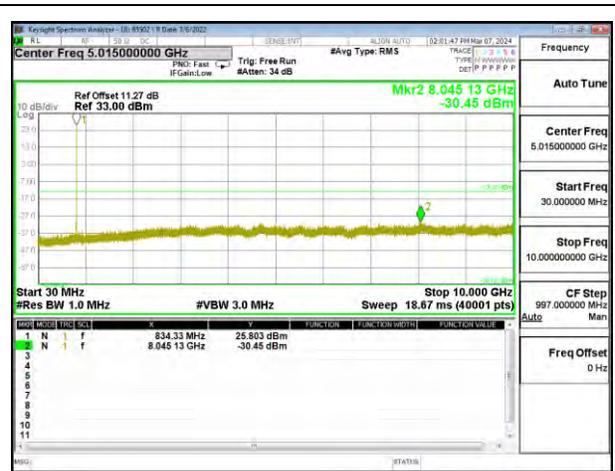LTE B5 3MHz 16QAM Low Channel RB1-0

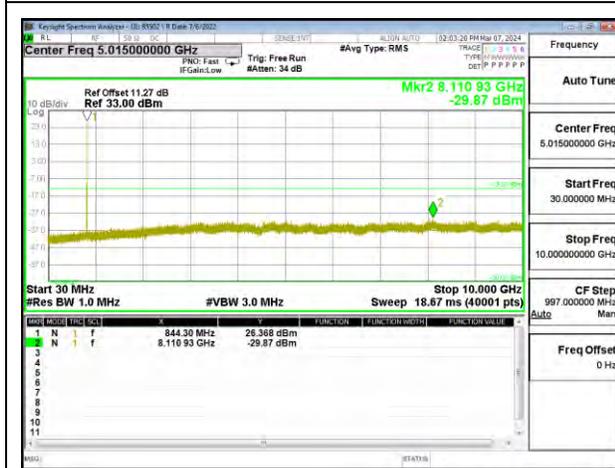LTE B5 3MHz 16QAM Middle Channel RB1-0

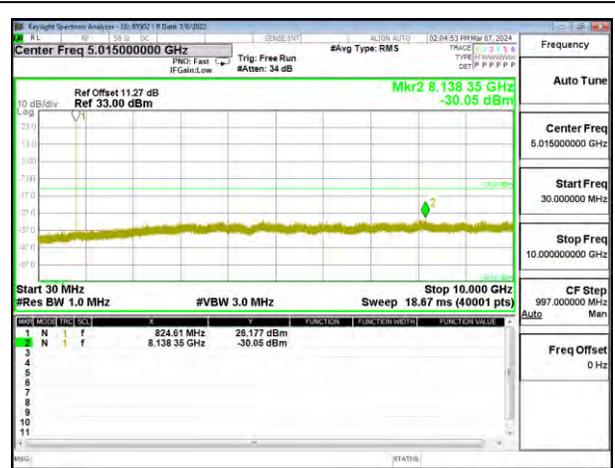LTE B5 3MHz 16QAM High Channel RB1-0

LTE B5 5MHz 16QAM Low Channel RB1-0
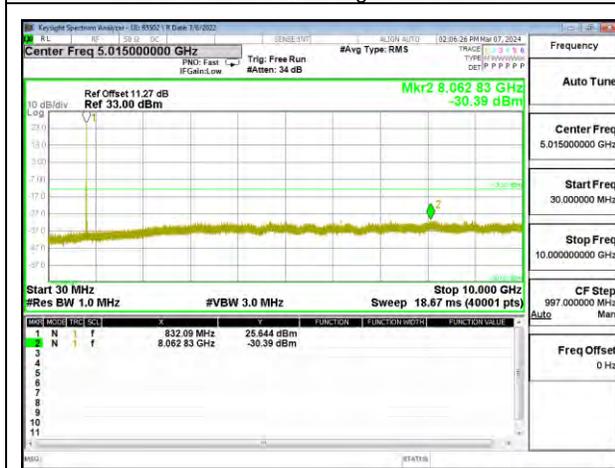

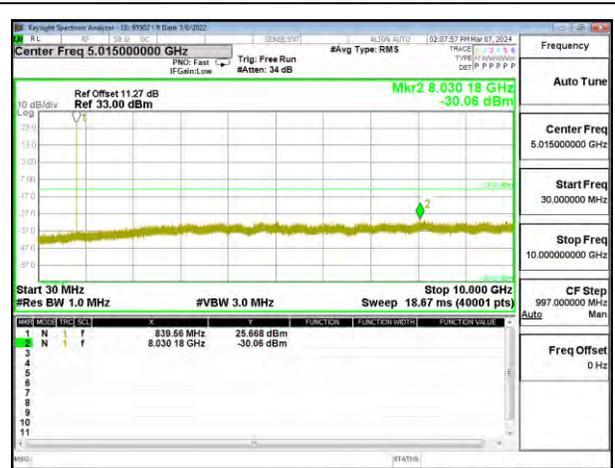LTE B5 5MHz 16QAM Middle Channel RB1-0

LTE B5 5MHz 16QAM High Channel RB1-0
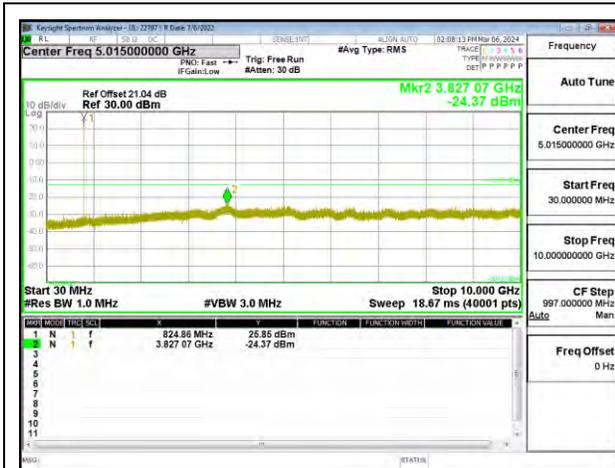

LTE B5 10MHz 16QAM Low Channel RB1-0

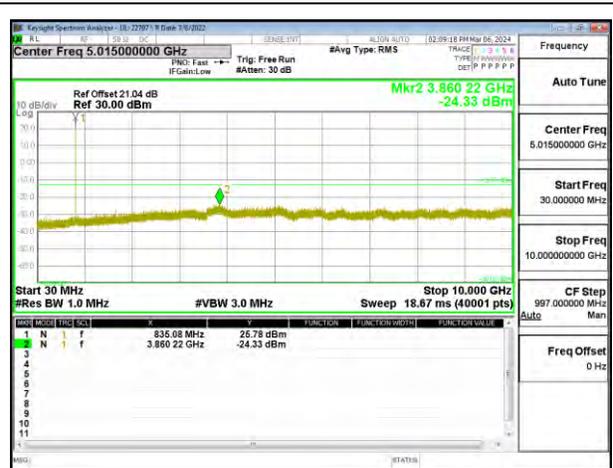LTE B5 10MHz 16QAM Middle Channel RB1-0

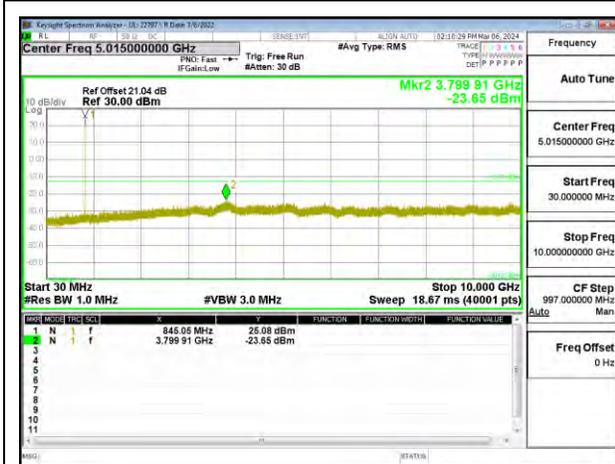LTE B5 10MHz 16QAM High Channel RB1-0

5G NR n5

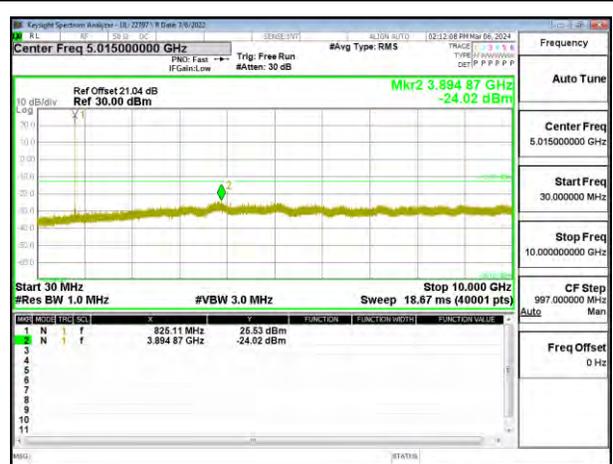| Test Engineer ID:	22797/85502	Test Date:	2024-03-06	EUT Serial Number:	<QV77000KL2>

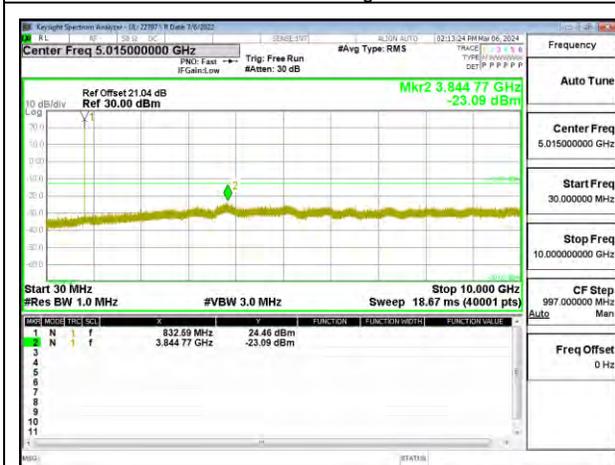5G NR N5   5MHz BPSK Low Channel RB1-0

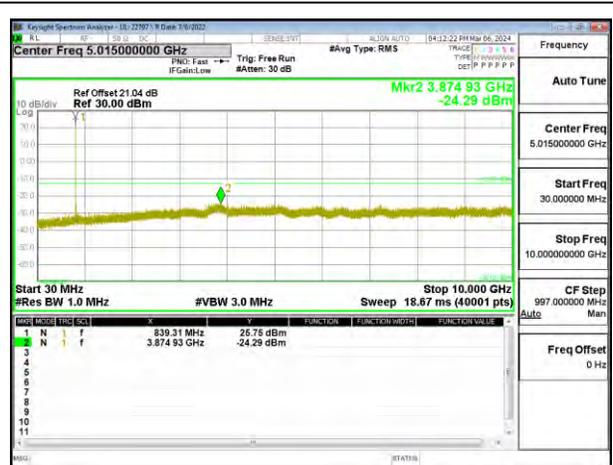5G NR N5   5MHz BPSK Middle Channel RB1-0

5G NR N5   5MHz BPSK High Channel RB1-0

5G NR N5   10MHz BPSK Low Channel RB1-0

5G NR N5   10MHz BPSK Middle Channel RB1-0

5G NR N5   10MHz BPSK High Channel RB1-0

5G NR N5   15MHz BPSK Low Channel RB1-0

5G NR N5   15MHz BPSK Middle Channel RB1-0

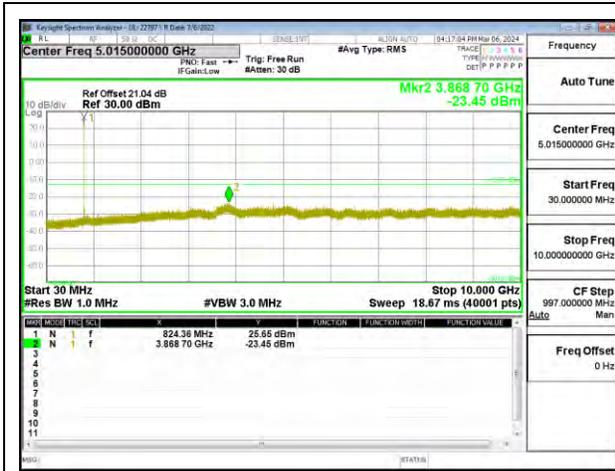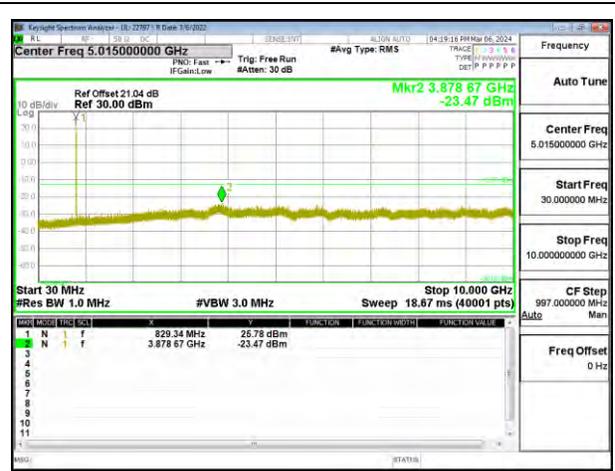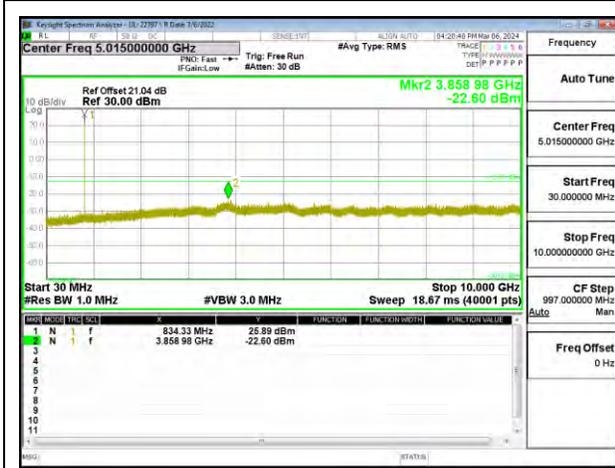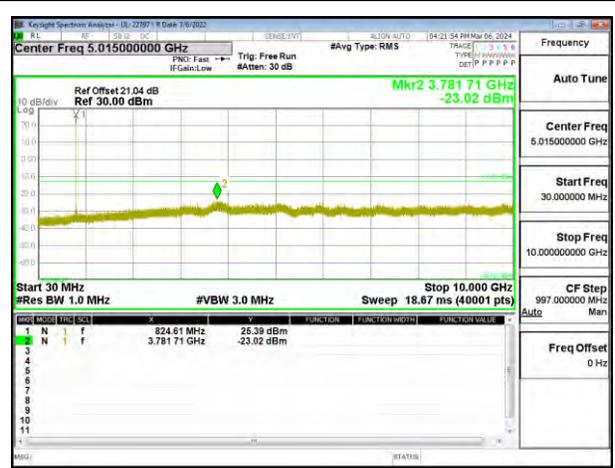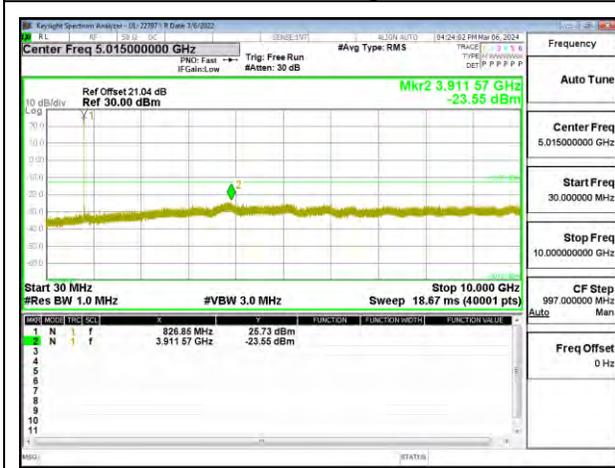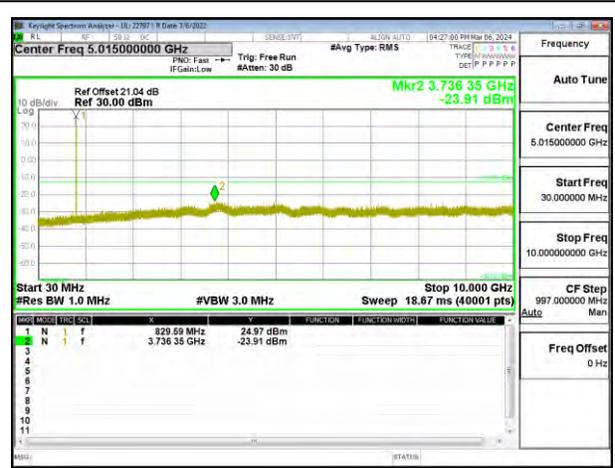5G NR N5 1 5MHz BPSK High Channel RB1-0

5G NR N5   20MHz BPSK Low Channel RB1-0

5G NR N5   20MHz BPSK Middle Channel RB1-0

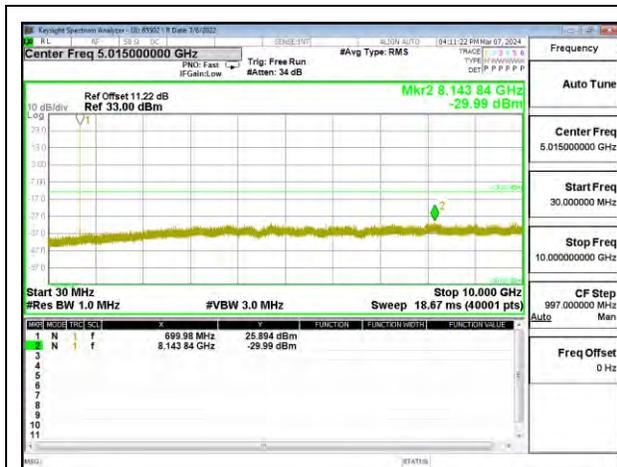5G NR N5 200MHz BPSK High Channel RB1-0
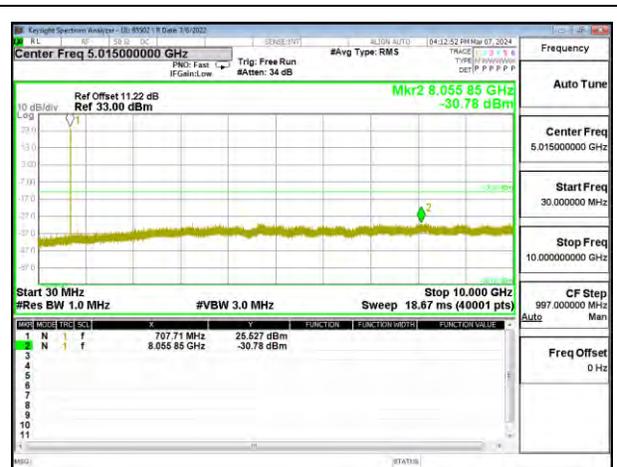
9.3.5. LTE BAND 12

LIMITS

FCC: §27.53 (g)
The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts.

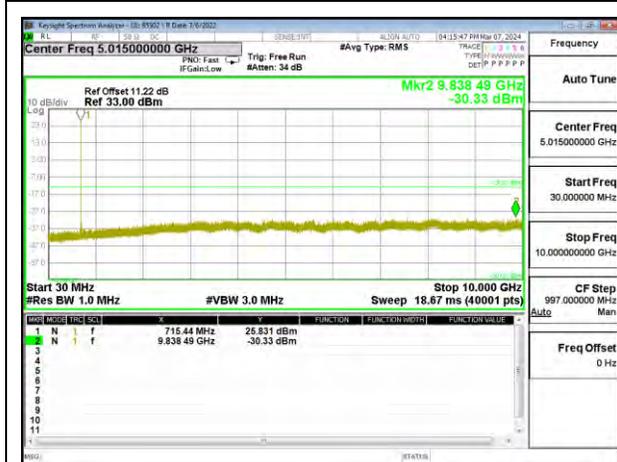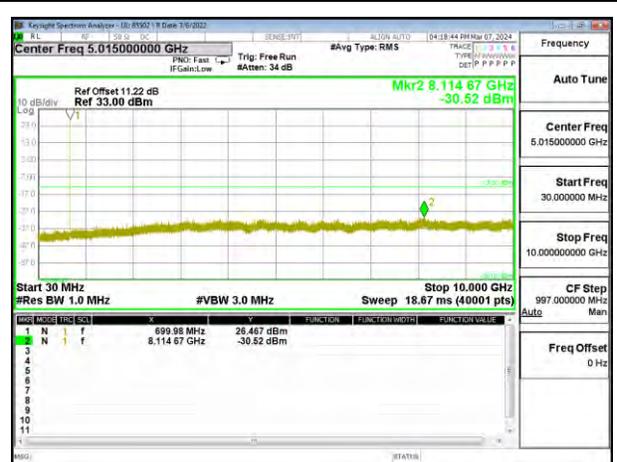| Test Engineer ID:	85502	Test Date:	2024-03-08	EUT Serial Number:	QV7700DSLQ

LTE BAND 12

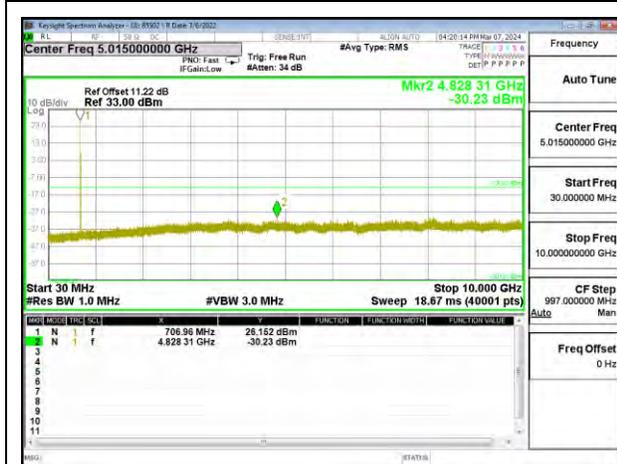LTE B12 1.4MHz 16QAM Low Channel RB1-0

LTE B12 1.4MHz 16QAM Middle Channel RB1-0
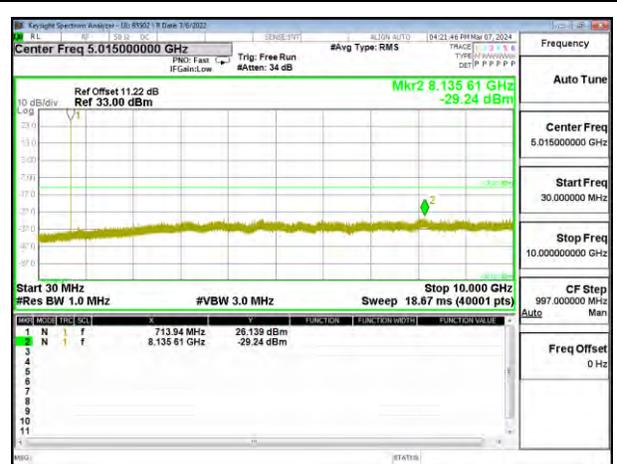

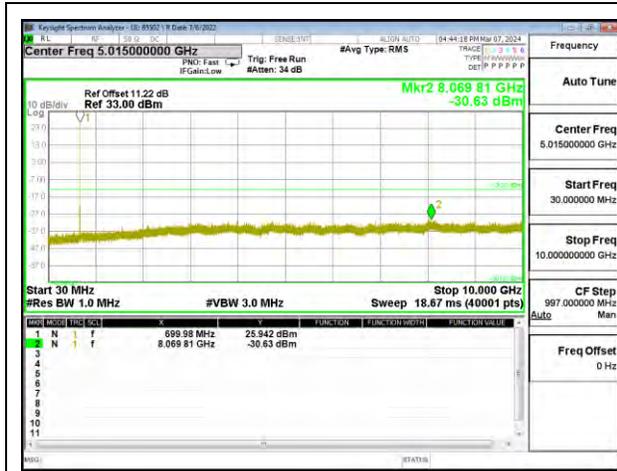LTE B12 1.4MHz 16QAM High Channel RB1-0

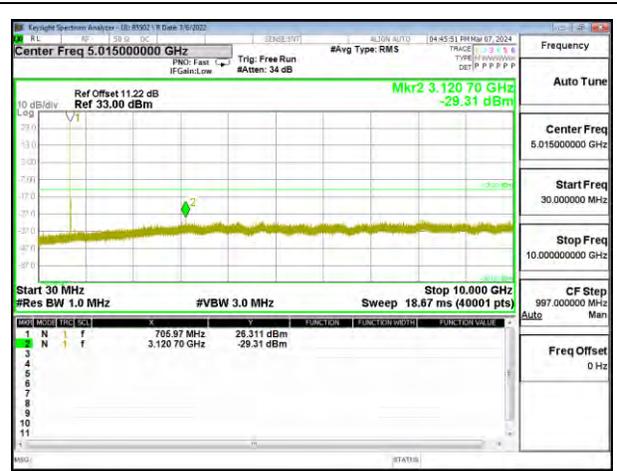LTE B12 3MHz 16QAM Low Channel RB1-0
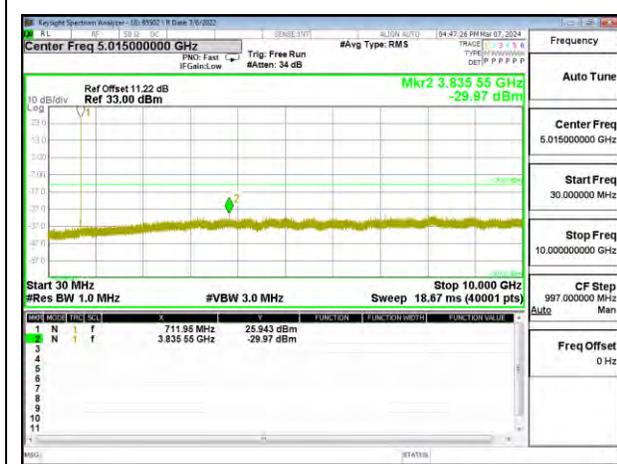

LTE B12 3MHz 16QAM Middle Channel RB1-0

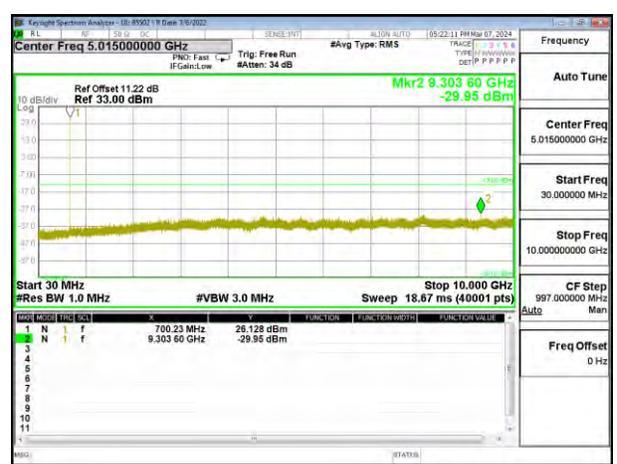LTE B12 3MHz 16QAM High Channel RB1-0

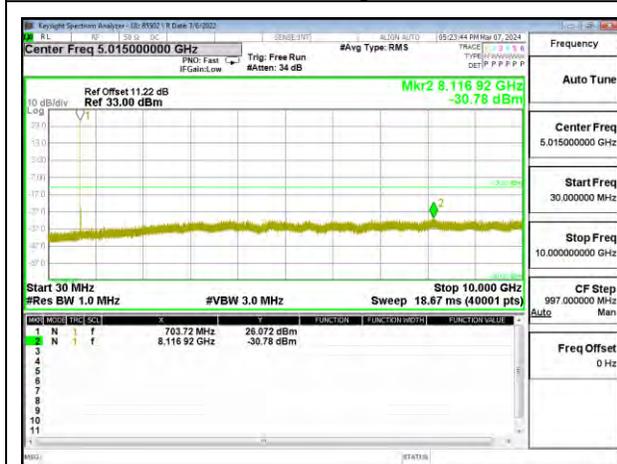LTE B12 5MHz 16QAM Low Channel RB1-0

LTE B12 5MHz 16QAM Middle Channel RB1-0
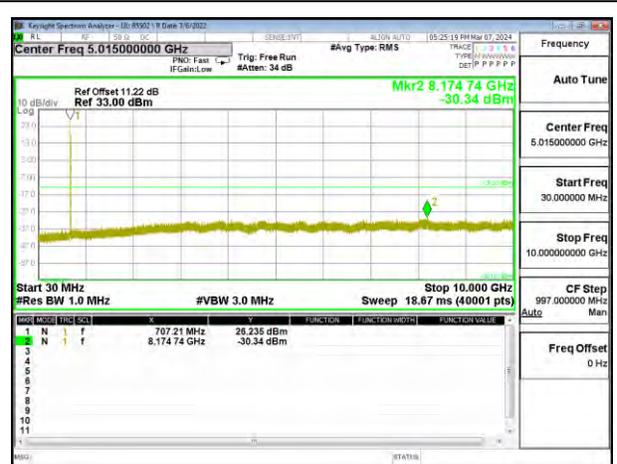

LTE B12 5MHz 16QAM High Channel RB1-0

LTE B12 10MHz 16QAM Low Channel RB1-0

LTE B12 10MHz 16QAM Middle Channel RB1-0

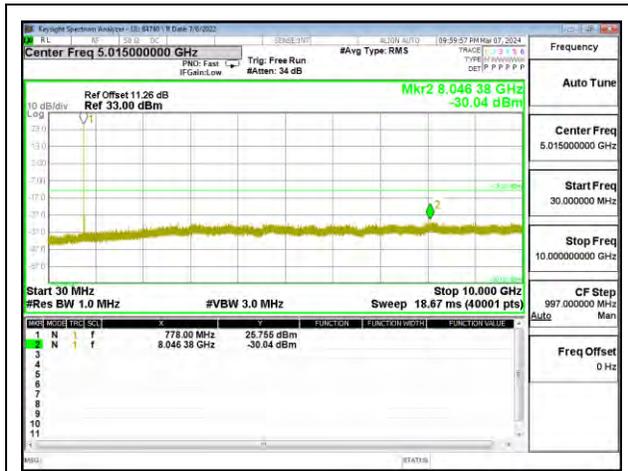LTE B12 10MHz 16QAM High Channel RB1-0

9.3.6. LTE BAND 13
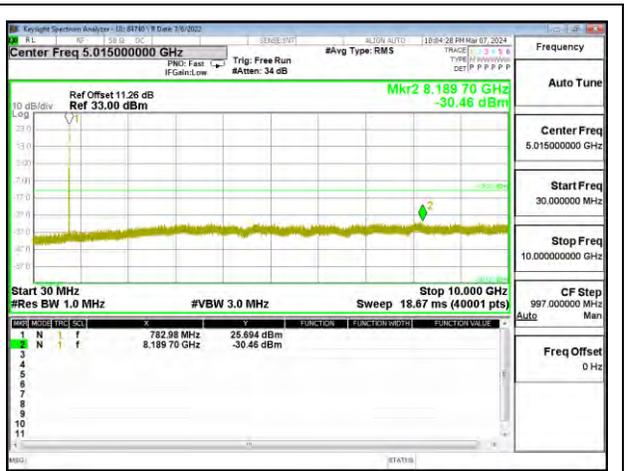
LIMITS

FCC: §27.53 (c), (f)

The minimum permissible attenuation level of any spurious emissions is 43 + 10 log (P) dB where transmitting power (P) in Watts. The band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

Note: Radiated data in section 9.1.6 confirms a compliance for the emissions in GPS 1559-1610 MHz band were wideband emissions therefore the -40dBm/MHz limit was used.
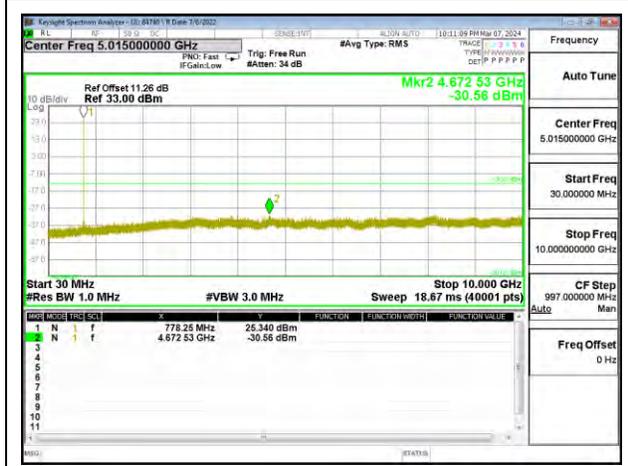
Test Engineer ID:	85502	Test Date:	2024-03-08	EUT Serial Number:	QV7700DSLQ

LTE B13 5MHz 16QAM Low Channel RB1-0

LTE B13 5MHz 16QAM High Channel RB1-0

LTE B13 10MHz 16QAM Middle Channel RB1-0

9.3.7. LTE BAND 41 AND 5G NR n41

LIMITS

FCC: §27.53 (m)
The minimum permissible attenuation level of any spurious emissions is 55 + 10 log (P) dB where transmitting power (P) in Watts.

Test Engineer ID:	85502	Test Date:	2024-03-08	EUT Serial Number:	QV7700DSLQ