LTE band 26/5

| Trace 1 | Mean 19.66 dBm | Peak 24.67 dBm | Crest 5.01 dB | 10% 2.32 dB | 1% 4.14 dB | 0.1% 4.67 dB | 0.01% 4.96 dB |

3 ㎒ QPSK Low Channel - Full RB

| Trace 1 | Mean 18.76 dBm | Peak 24.73 dBm | Crest 5.96 dB | 10% 2.90 dB | 1% 4.90 dB | 0.1% 5.65 dB | 0.01% 5.91 dB |

3 ㎒ 16QAM Low Channel - Full RB

| Trace 1 | Mean 19.82 dBm | Peak 24.80 dBm | Crest 4.98 dB | 10% 2.32 dB | 1% 3.94 dB | 0.1% 4.61 dB | 0.01% 4.93 dB |

3 ㎒ QPSK Middle Channel - Full RB

| Trace 1 | Mean 18.61 dBm | Peak 24.65 dBm | Crest 6.04 dB | 10% 2.93 dB | 1% 4.81 dB | 0.1% 5.57 dB | 0.01% 5.91 dB |

3 ㎒ 16QAM Middle Channel - Full RB

| Trace 1 | Mean 19.60 dBm | Peak 24.58 dBm | Crest 4.98 dB | 10% 2.41 dB | 1% 4.20 dB | 0.1% 4.72 dB | 0.01% 4.87 dB |

3 ㎒ QPSK High Channel - Full RB

| Trace 1 | Mean 18.57 dBm | Peak 24.61 dBm | Crest 6.04 dB | 10% 2.93 dB | 1% 4.81 dB | 0.1% 5.68 dB | 0.01% 5.94 dB |

3 ㎒ 16QAM High Channel - Full RB

LTE band 26/5

5 ㎒ QPSK Low Channel - Full RB

5 ㎒ 16QAM Low Channel - Full RB

5 ㎒ QPSK Middle Channel - Full RB

5 ㎒ 16QAM Middle Channel - Full RB

5 ㎒ QPSK High Channel - Full RB

5 ㎒ 16QAM High Channel - Full RB

LTE band 26/5

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	17.67 dBm	23.34 dBm	5.66 dB	2.81 dB	4.23 dB	4.99 dB	5.48 dB

10 ㎒ QPSK Low Channel - Full RB

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	16.70 dBm	23.20 dBm	6.50 dB	3.13 dB	4.99 dB	5.86 dB	6.29 dB

10 ㎒ 16QAM Low Channel - Full RB

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	19.63 dBm	24.60 dBm	4.97 dB	2.23 dB	3.91 dB	4.52 dB	4.87 dB

10 ㎒ QPSK Middle Channel - Full RB

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	18.55 dBm	24.58 dBm	6.02 dB	2.93 dB	4.72 dB	5.54 dB	5.97 dB

10 ㎒ 16QAM Middle Channel - Full RB

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	19.77 dBm	25.13 dBm	5.36 dB	2.35 dB	4.06 dB	4.72 dB	5.19 dB

10 ㎒ QPSK High Channel - Full RB

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	18.58 dBm	24.88 dBm	6.30 dB	2.93 dB	4.96 dB	5.77 dB	6.26 dB

10 ㎒ 16QAM High Channel - Full RB

LTE band 26

Spectrum					
Ref Level 7.00 dBm					
Att 25 dB AQT 1 ms RBW 20 MHz					
SGL Count 100/100 TDF					
●1Sa Clrw					

CF 831.5 MHz   Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function   Samples: 64000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	20.03 dBm	25.16 dBm	5.13 dB	2.29 dB	4.06 dB	4.67 dB	4.99 dB

15 ㎒ QPSK Low Channel - Full RB

CF 831.5 MHz   Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function   Samples: 64000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	19.05 dBm	25.21 dBm	6.16 dB	2.84 dB	4.72 dB	5.54 dB	5.91 dB

15 ㎒ 16QAM Low Channel - Full RB

CF 841.5 MHz   Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function   Samples: 64000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	20.08 dBm	25.86 dBm	5.78 dB	2.43 dB	4.20 dB	5.01 dB	5.45 dB

15 ㎒ QPSK High Channel - Full RB

CF 841.5 MHz   Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function   Samples: 64000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	19.09 dBm	25.64 dBm	6.55 dB	3.01 dB	4.93 dB	5.74 dB	6.17 dB

15 ㎒ 16QAM High Channel - Full RB

6. Spurious Emissions at Antenna Terminal

6.1. Limit

- §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 + 10log(P) ㏈.

- §27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than 40 + 10 $\log_{10}$ (P) ㏈ on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 $\log_{10}$ (P) ㏈ on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 $\log_{10}$ (P) ㏈ 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 $\log_{10}$ (P) ㏈ on all frequencies between 2 490.5 ㎒ and 2 496 ㎒ and 55 + 10 $\log_{10}$ (P) ㏈ at or below 2 490.5 ㎒. Mobile Satellite Service licensees operating on frequencies below 2 495 ㎒ 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

6.2. Test Procedure

The test follows section 5.7 of ANSI C63.26-2015.

1. Start frequency was set to 9 ㎑ and stop frequency was set to at least 10* the fundamental frequency.
2. Detector = Peak.
3. Trace mode = Max hold.
4. Sweep time = Auto couple.
5. The trace was allowed to stabilize.
6. Please see notes below for RBW and VBW settings.
7. For plots showing conducted spurious emissions from 9 ㎑ to 26 ㎓, all path loss of wide frequency range was investigated and compensated to spectrum analyzer as correction factor.

```
┌─────────┐      ┌──────────────┐      ┌──────────────┐
│         │      │ Directional  │      │   Mobile     │
│   EUT   │──────│  Coupler     │──────│  Test Unit   │
│         │      │              │      │              │
└─────────┘      └──────────────┘      └──────────────┘
                         │
                 ┌──────────────┐
                 │  Spectrum    │
                 │  Analyzer    │
                 └──────────────┘
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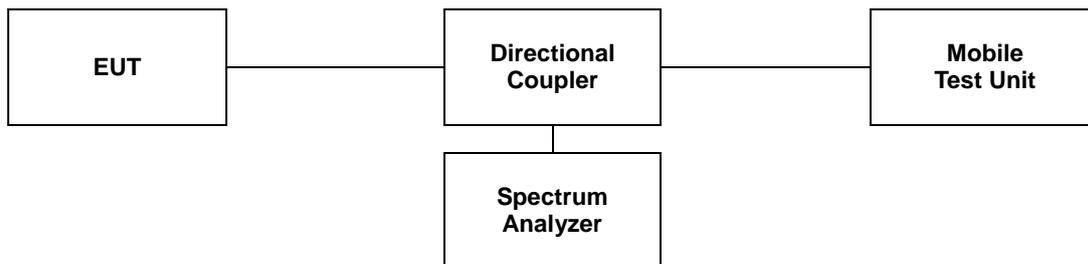
Note;

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 ㎑ or greater for frequencies less than 1 ㎓ and frequencies greater than 1 ㎓. However, in the 1 ㎒ bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two point, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 ㏈ below the transmitter power.

6.3. Test Results

Ambient temperature   : (23 ± 1) ℃
Relative humidity   : 47   % R.H.
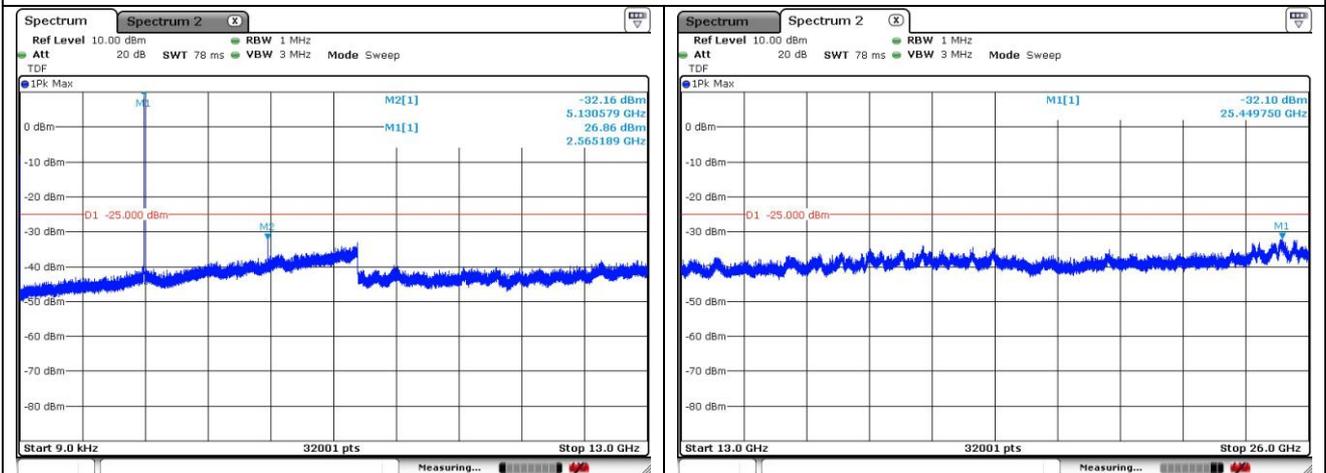
- Test plots
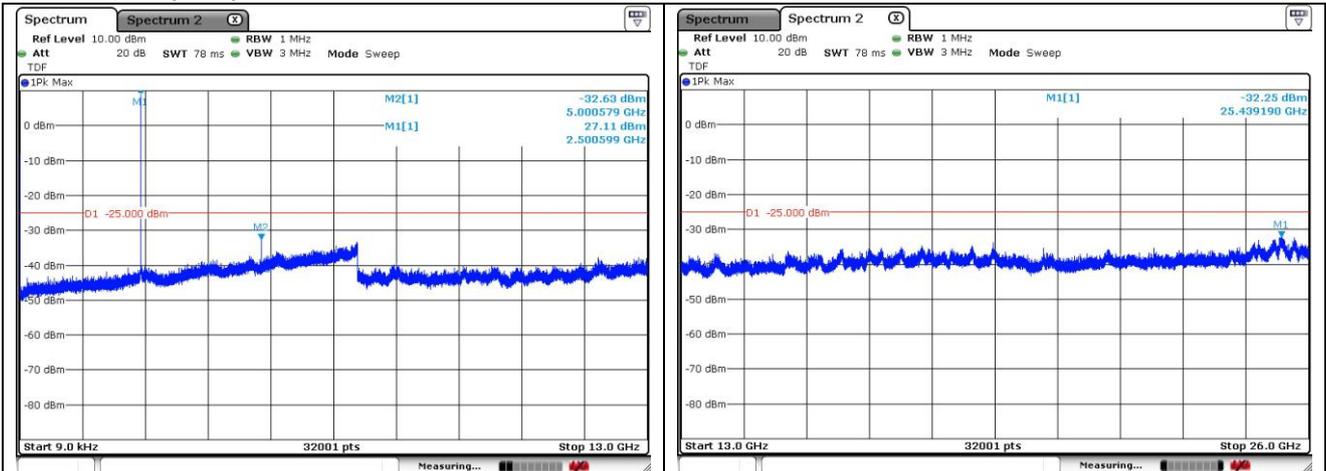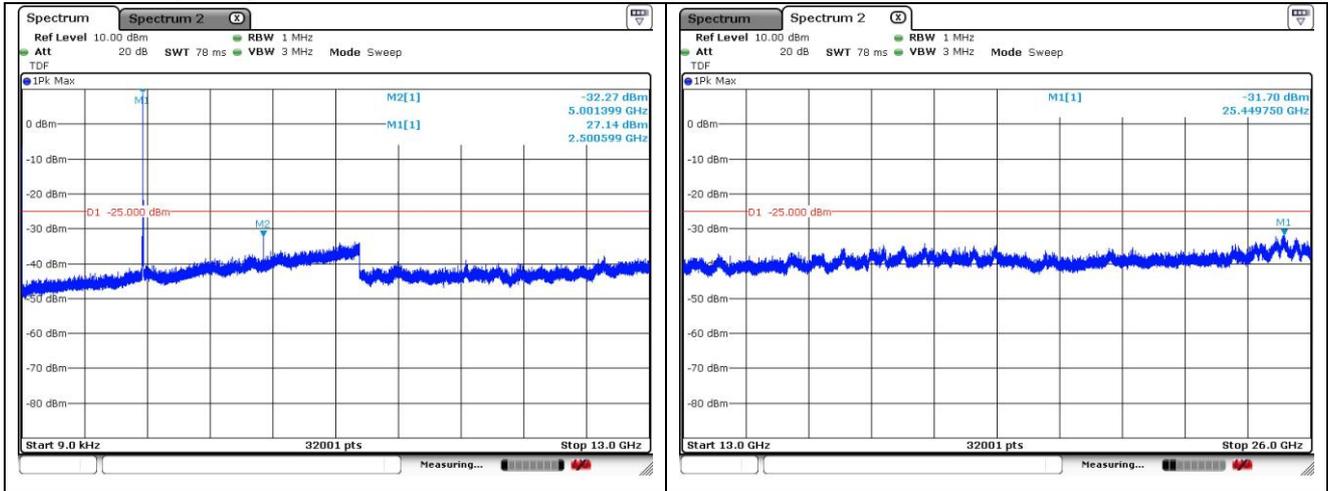
LTE band 7 (5 ㎒)
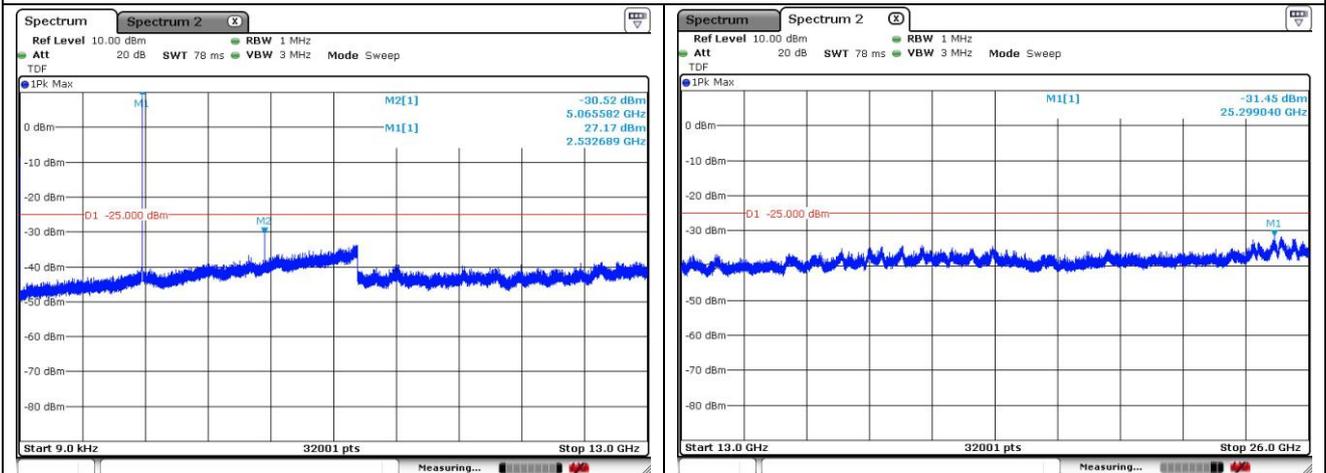
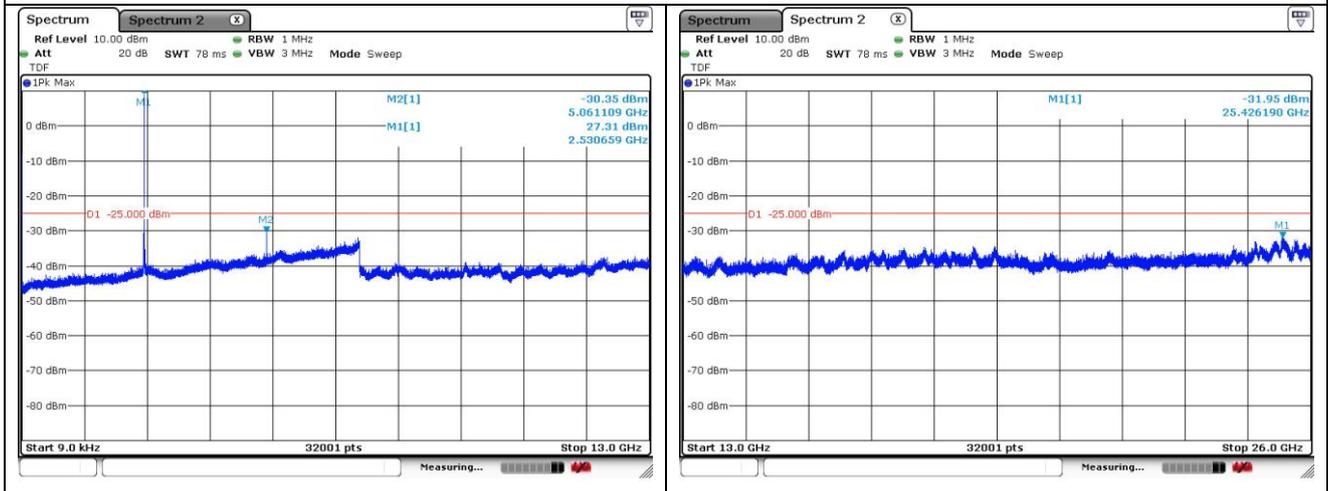QPSK Low Channel

QPSK Middle Channel
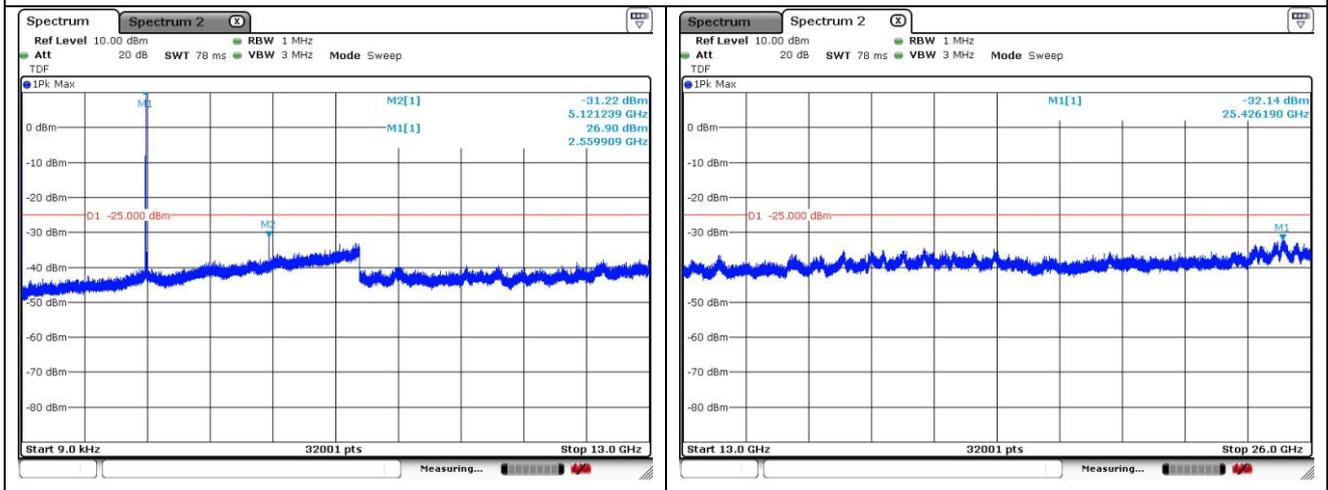

QPSK High Channel

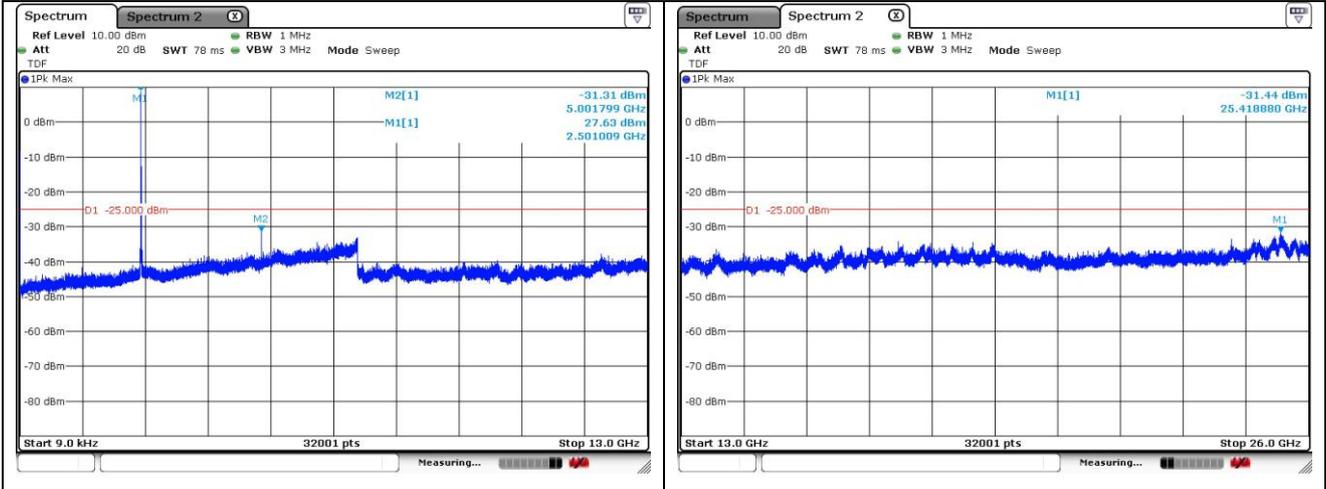**LTE band 7 (10 ㎒)**

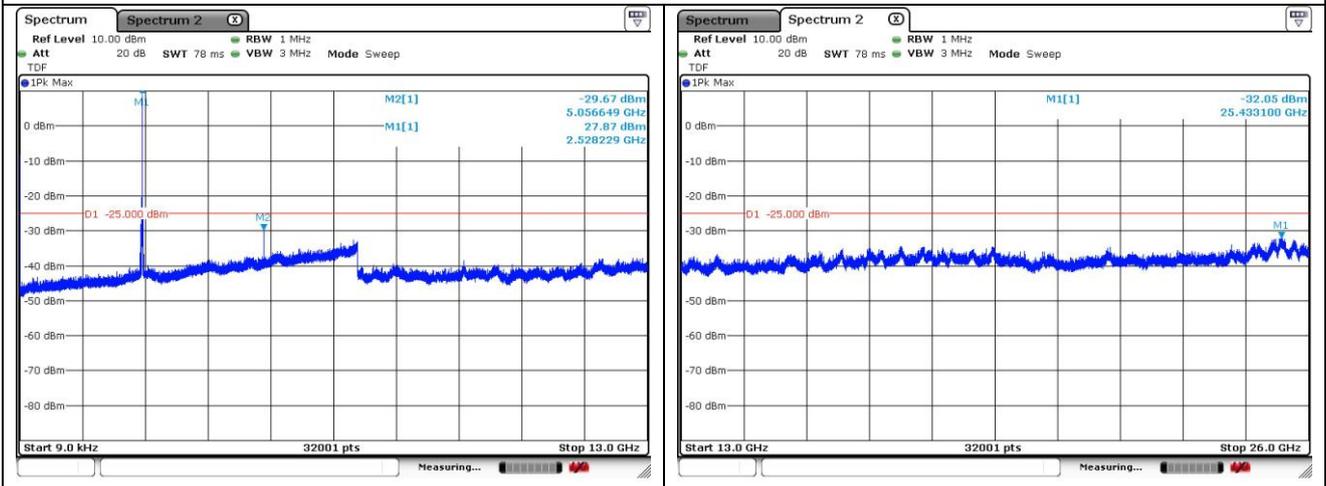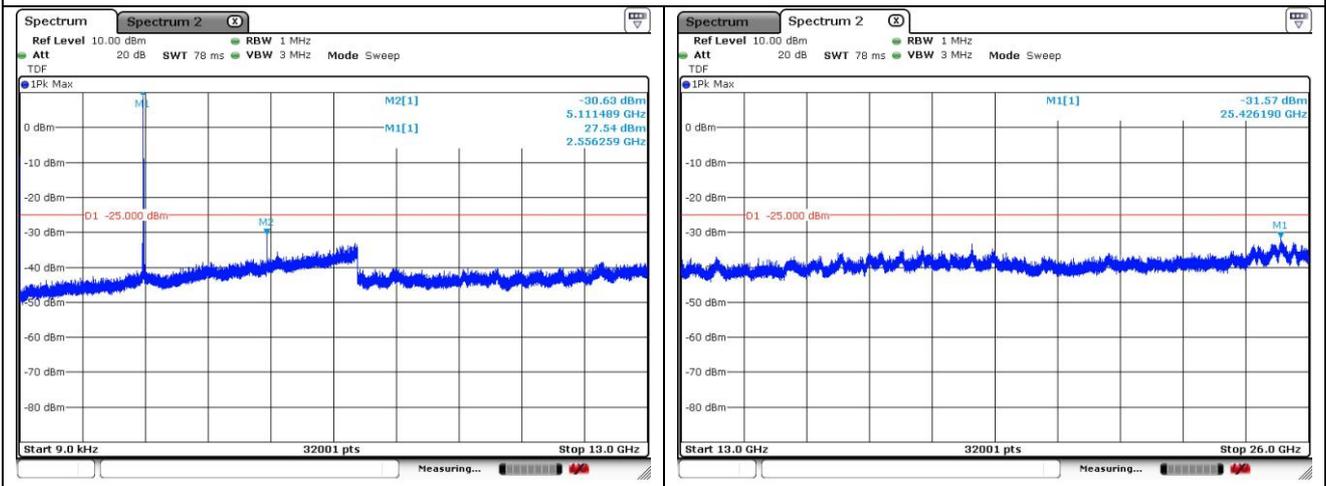QPSK Low Channel

QPSK Middle Channel

QPSK High Channel

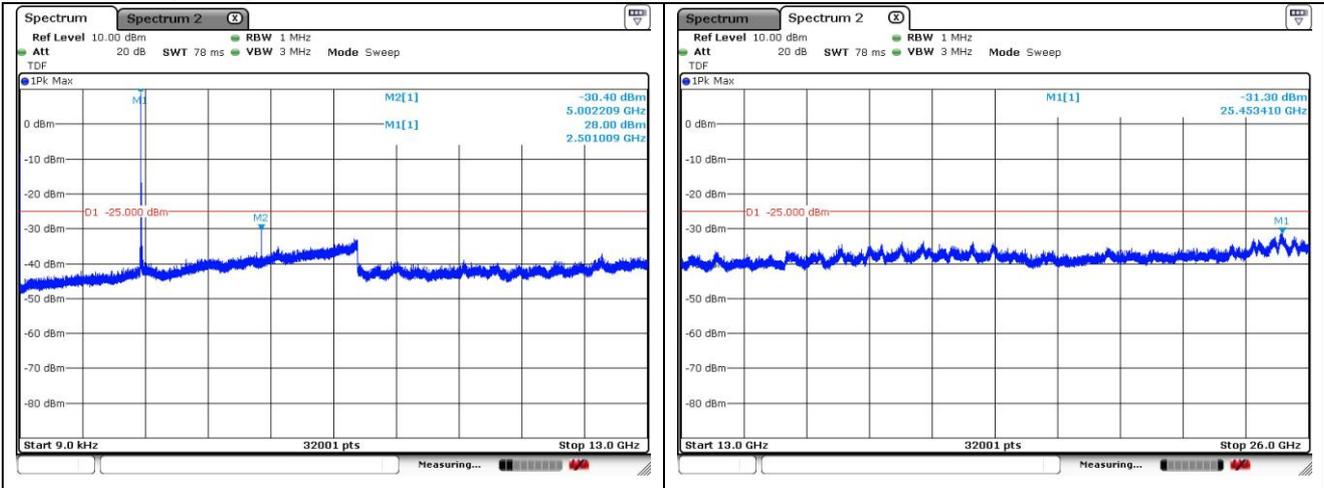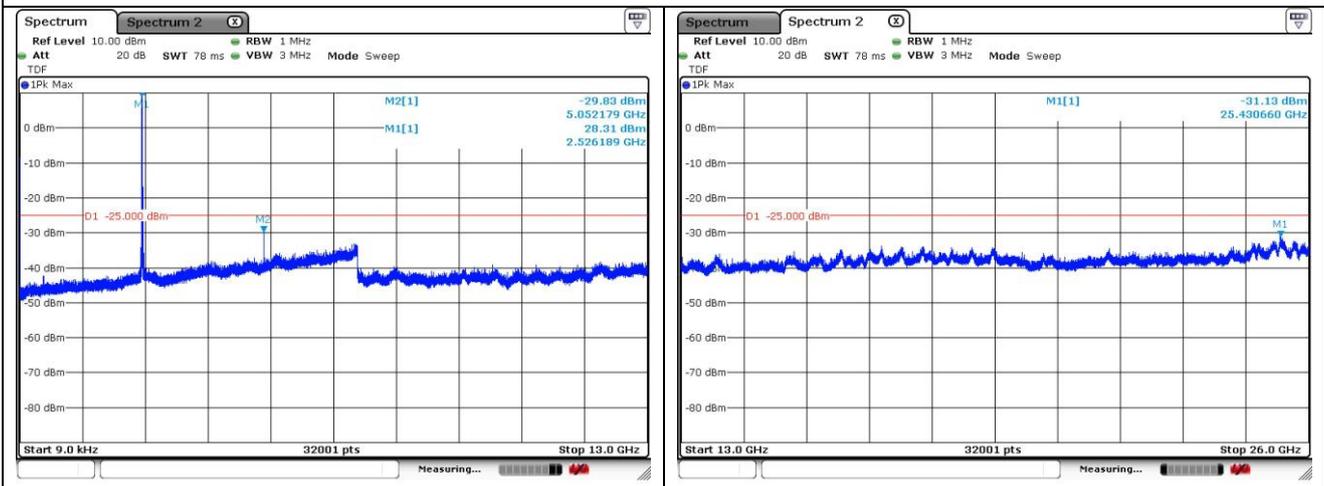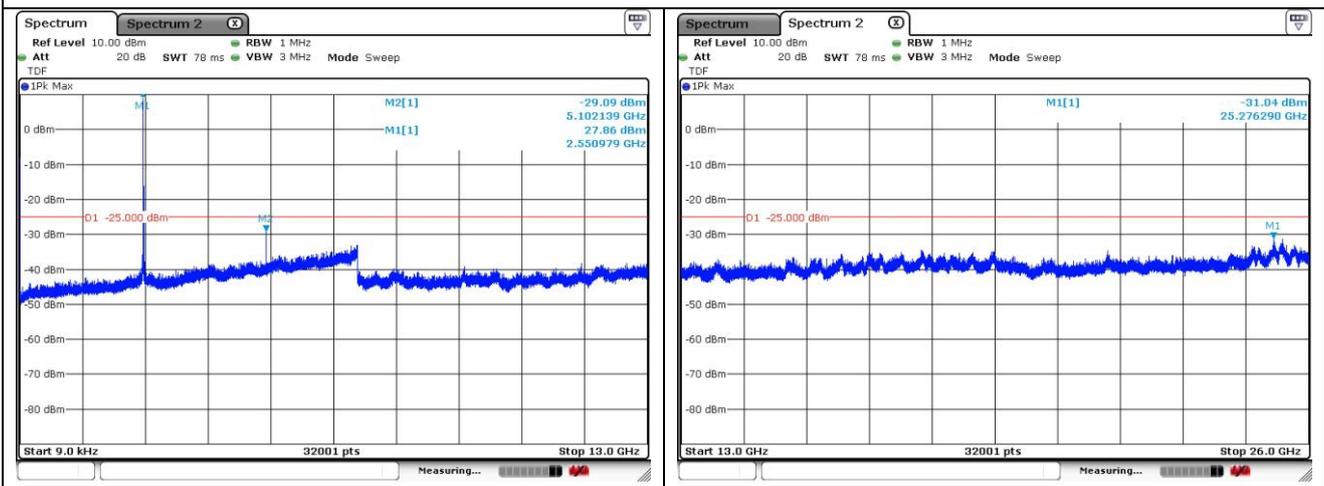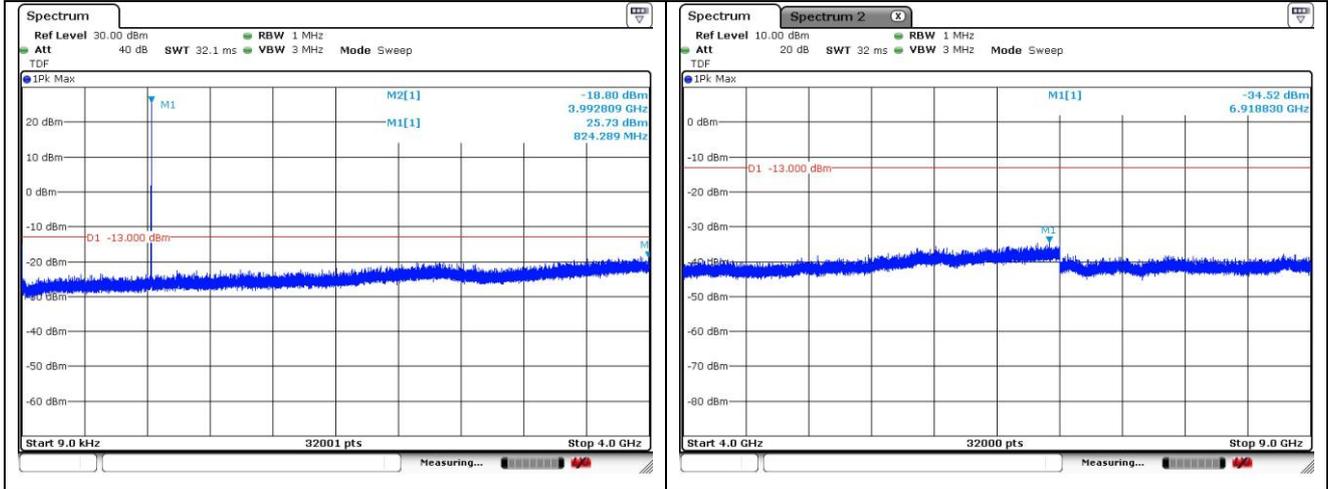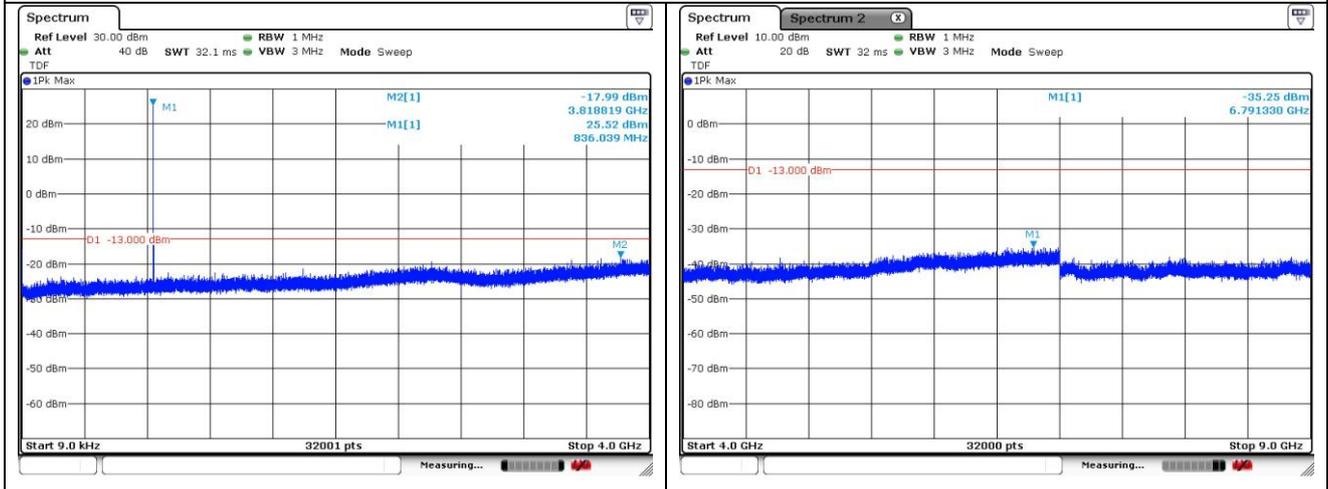**LTE band 7 (15 ㎒)**

QPSK Low Channel

QPSK Middle Channel

QPSK High Channel

LTE band 7 (20 ㎒)

QPSK Low Channel

QPSK Middle Channel

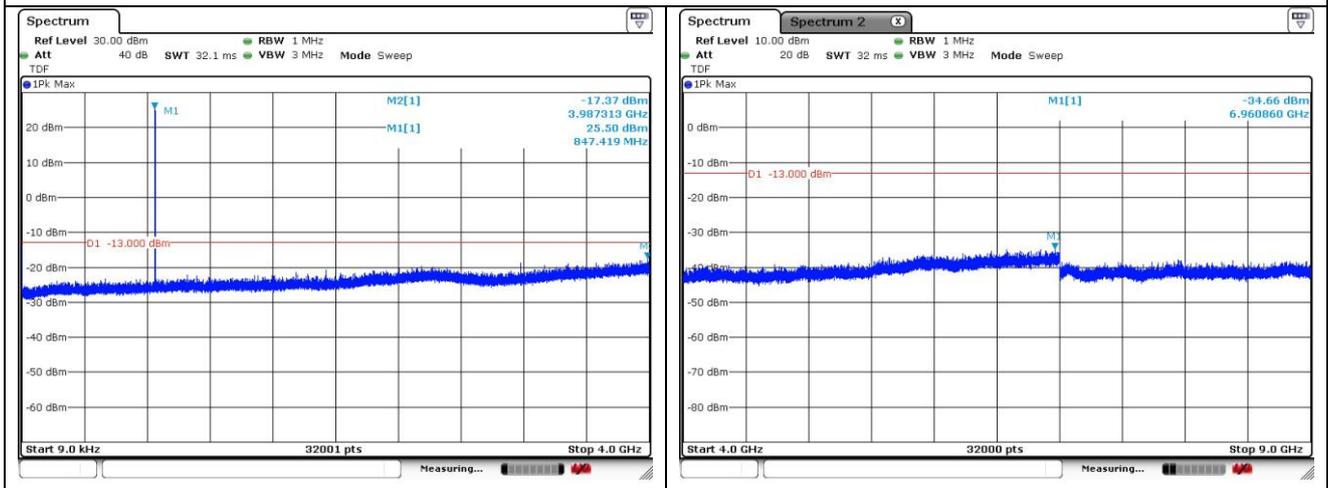

QPSK High Channel
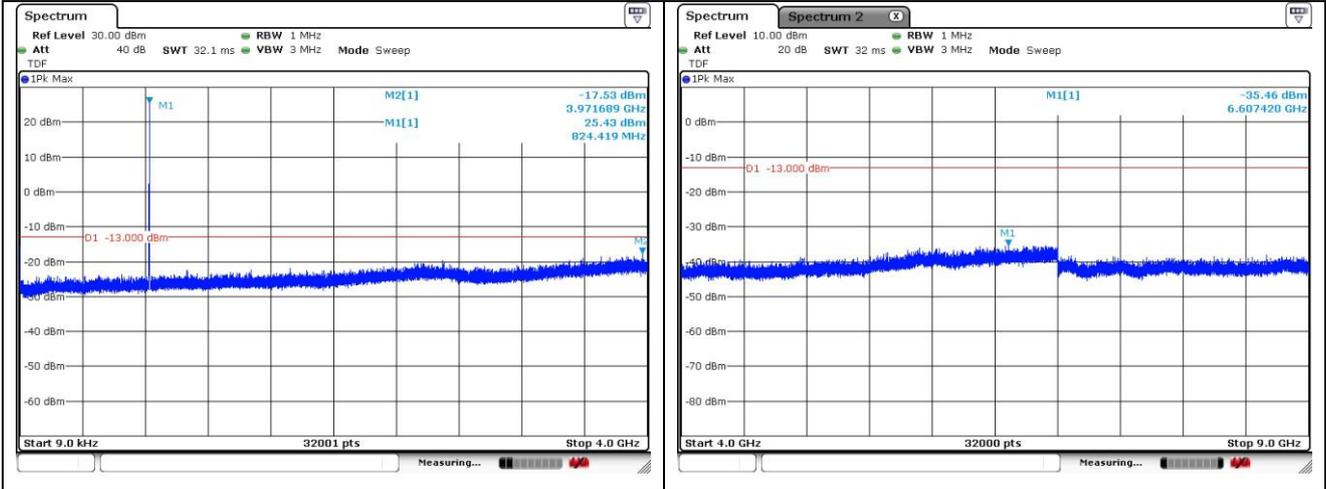
LTE band 26/5 (1.4 ㎒)
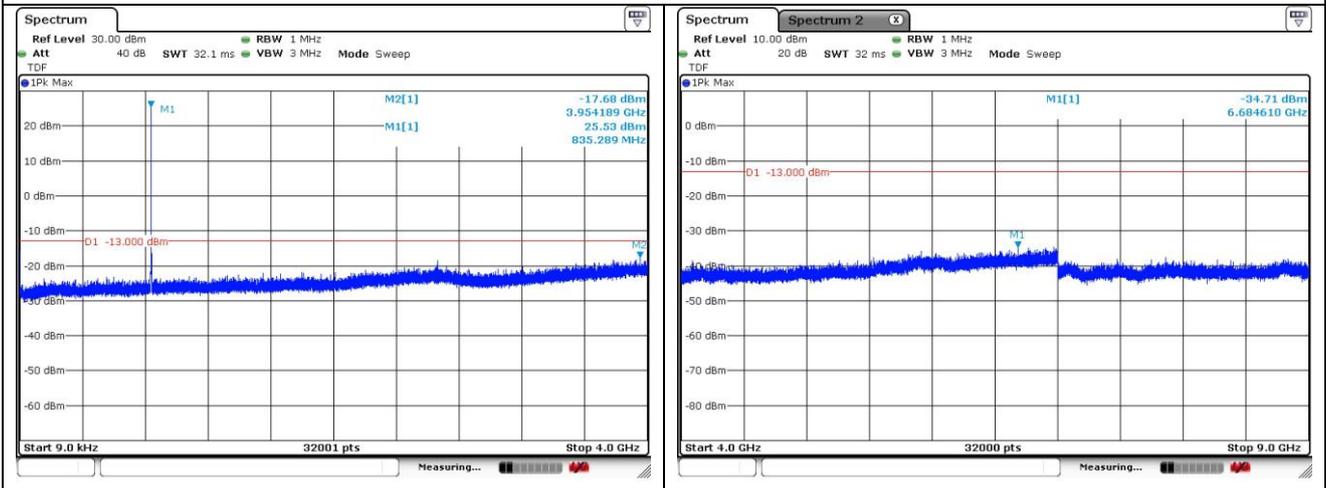

QPSK Low Channel

QPSK Middle Channel

QPSK High Channel

LTE band 26/5 (3 ㎒)

QPSK Low Channel

QPSK Middle Channel

QPSK High Channel

LTE band 26/5 (5 ㎒)

QPSK Low Channel

QPSK Middle Channel

QPSK High Channel
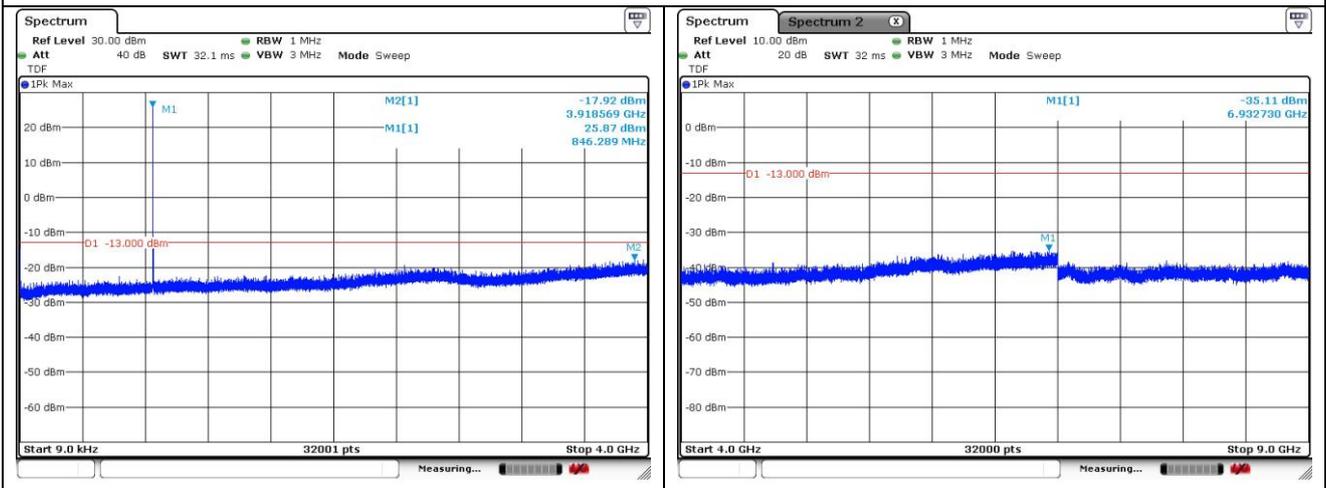
LTE band 26/5 (10 ㎒)
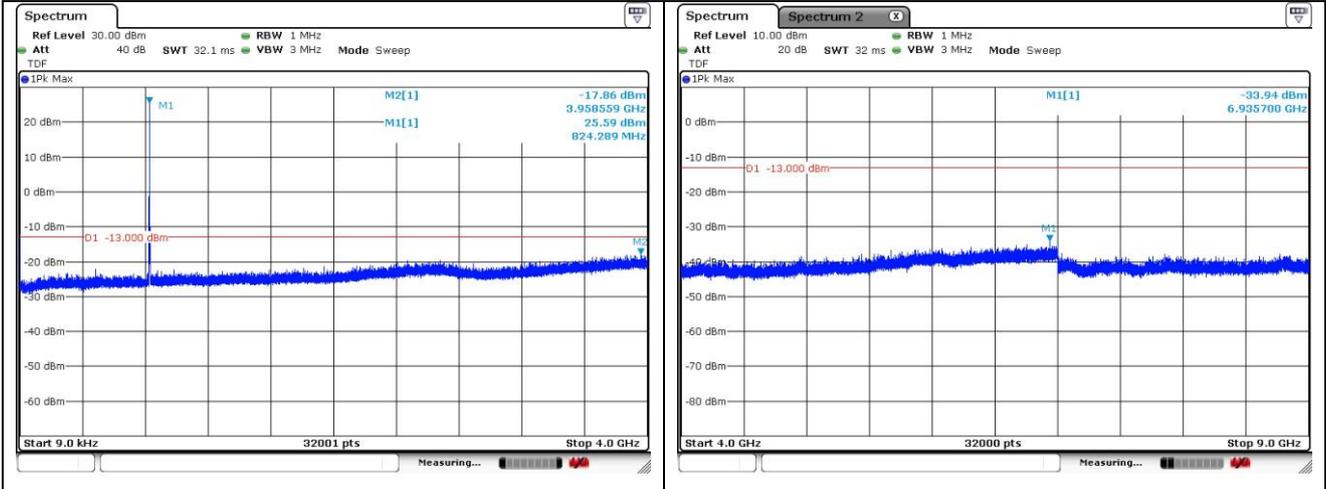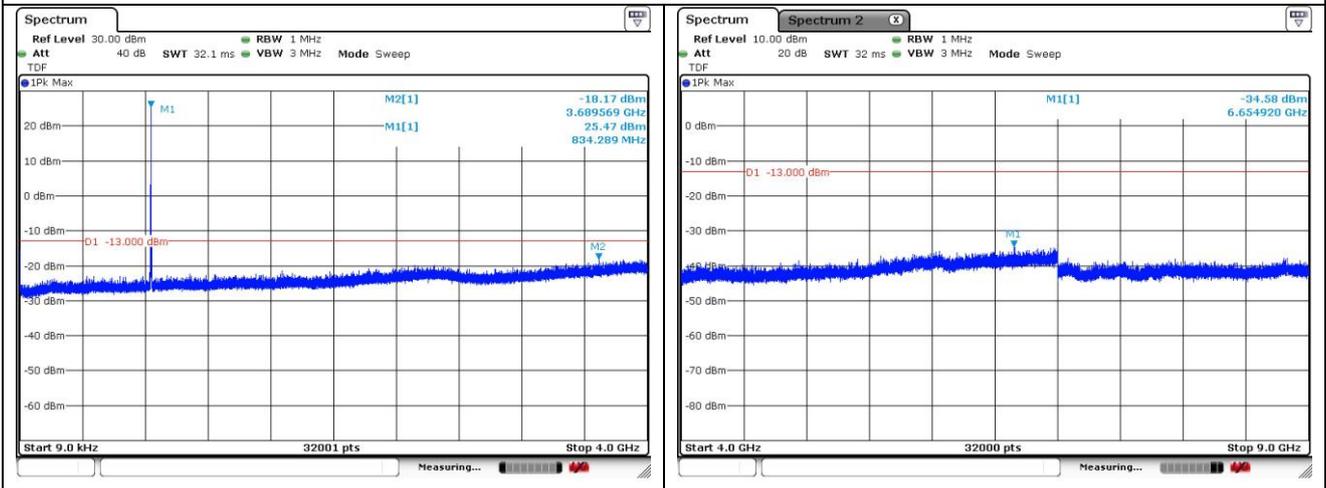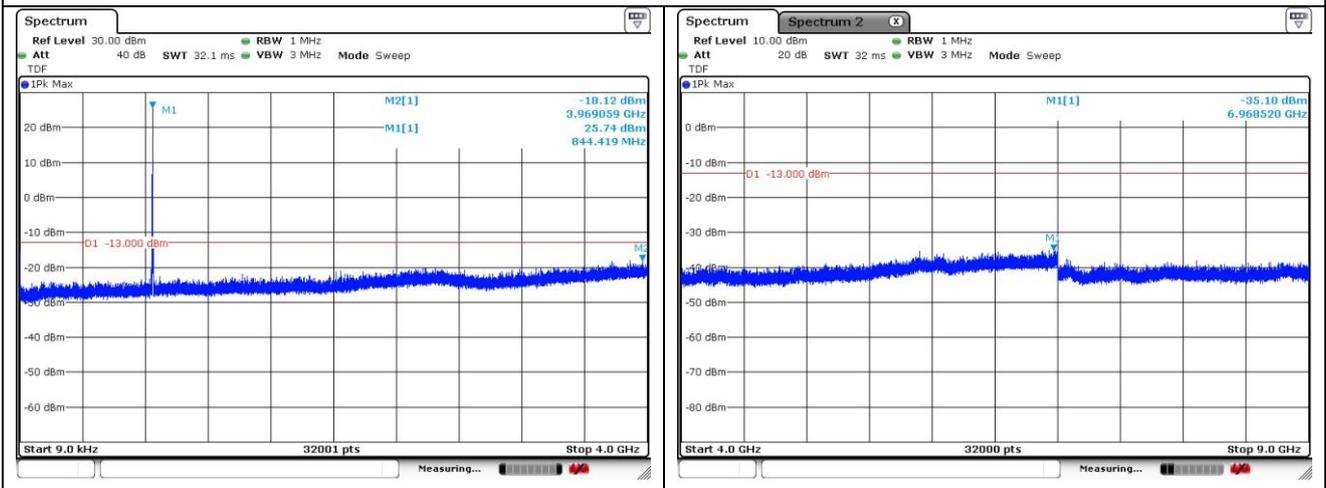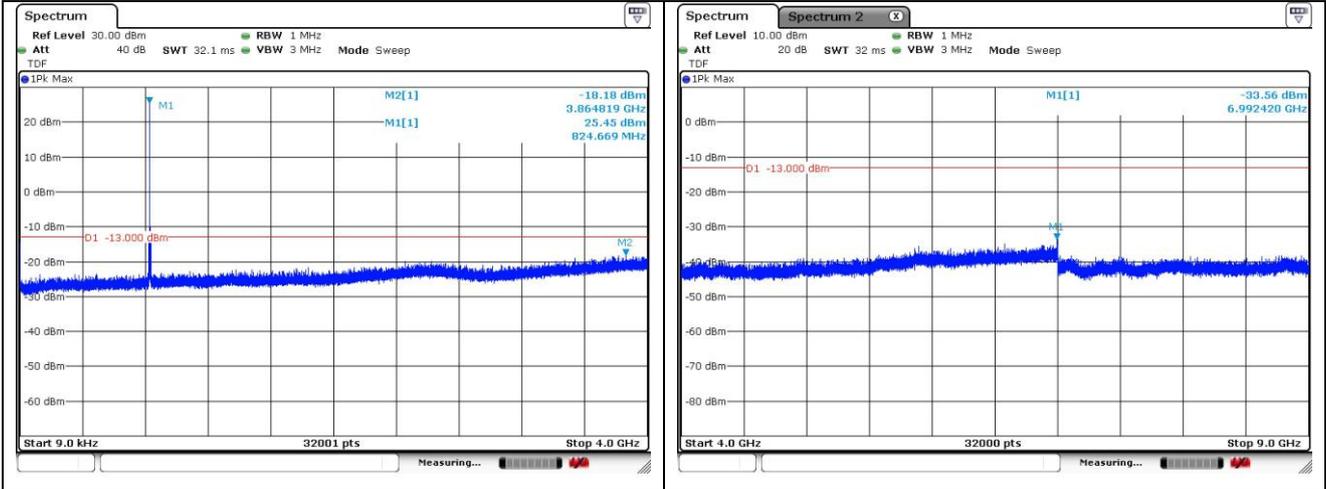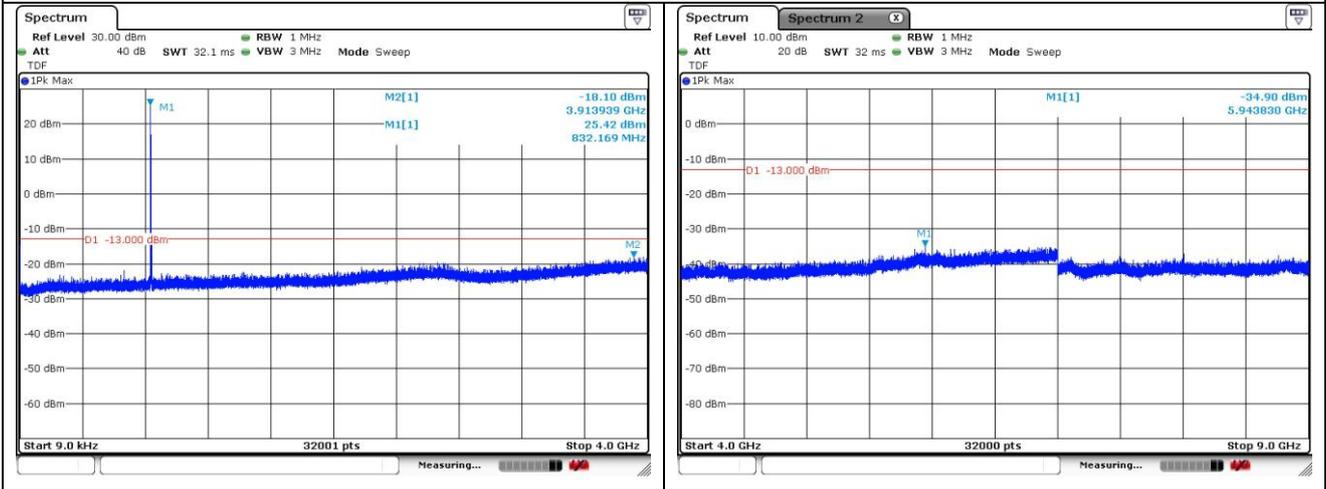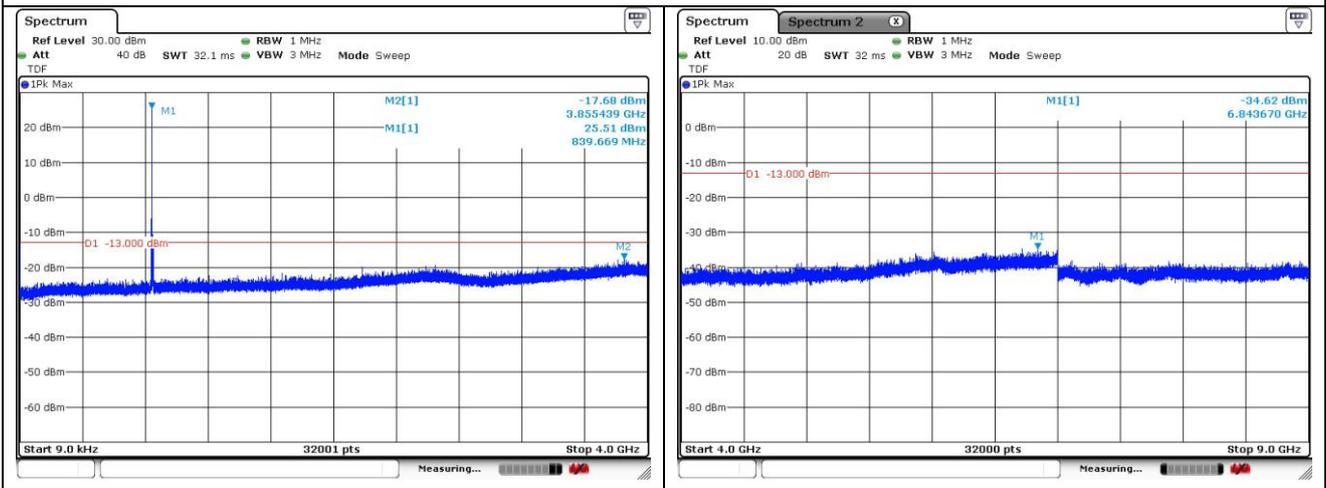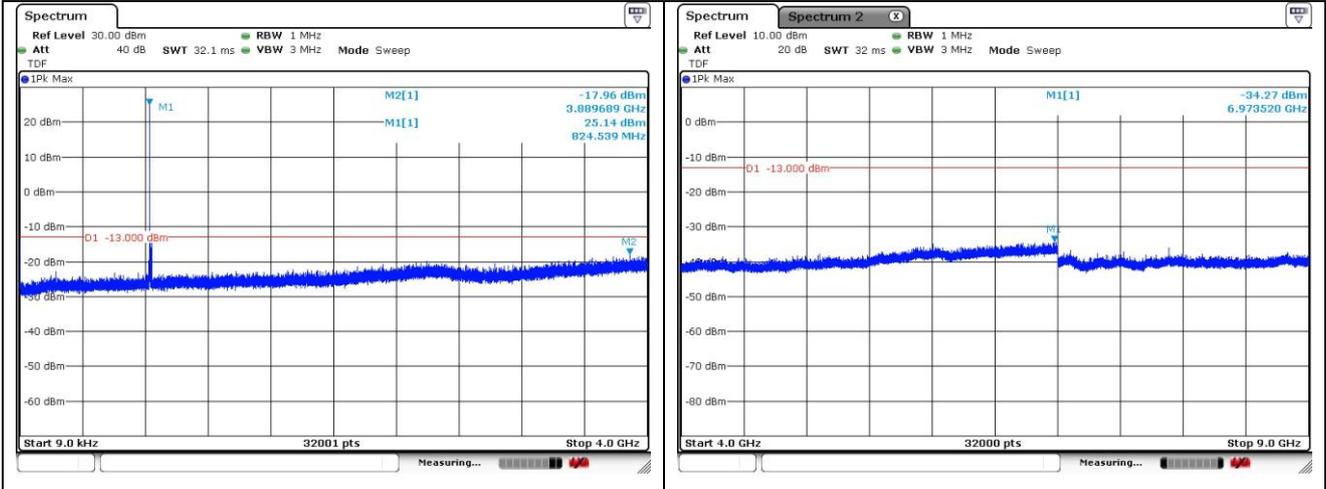

QPSK Low Channel

QPSK Middle Channel

QPSK High Channel

LTE band 26 (15 ㎒)

QPSK Low Channel
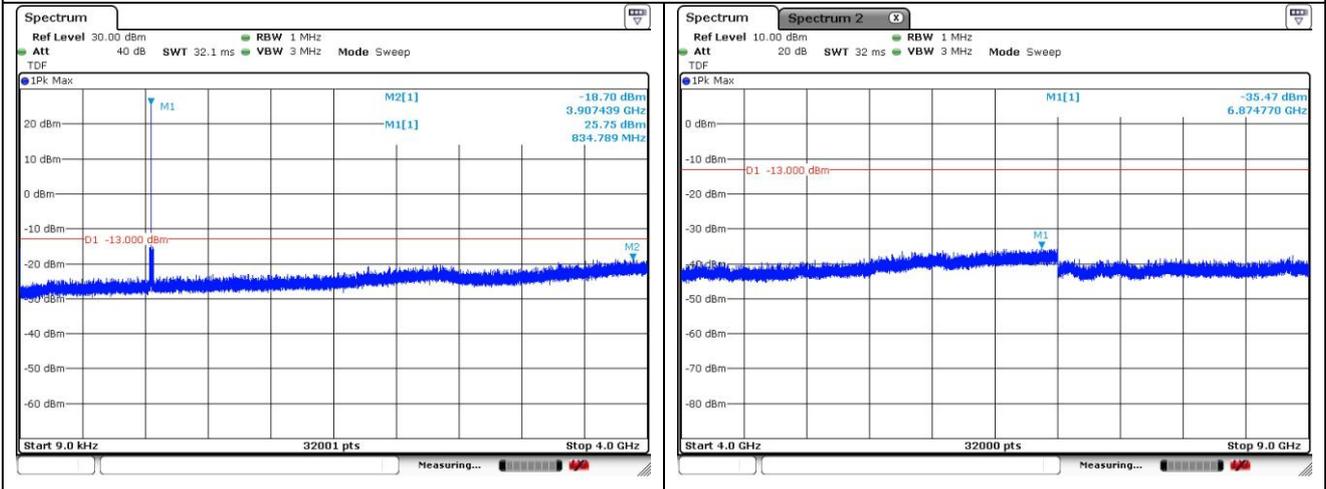
QPSK High Channel

7. Band Edge

7.1. Limit

- §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 + 10log(P) ㏈.

- §27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log_{10} (P)$ ㏈ on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log_{10} (P)$ ㏈ on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log_{10} (P)$ ㏈ 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 $43 + 10 \log_{10} (P)$ ㏈ on all frequencies between 2490.5 ㎒ and 2496 ㎒ and $55 + 10 \log_{10} (P)$ ㏈ at or below 2490.5 ㎒. Mobile Satellite Service licensees operating on frequencies below 2495 ㎒ 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.

7.2. Test Procedure

The test follows section 5.7 of ANSI C63.26-2015.

a. Span was set large enough so as to capture all out of band emissions near the band edge.
b. RBW ≥ 1 % of OBW
c. VBW ≥ 3 x RBW.
d. Detector = RMS.
e. Trace mode = Average.
f. Sweep time = Auto.
g. The trace was allowed to stabilize.
h. All path loss of frequency range was investigated and compensated to spectrum analyzer as TDF function.
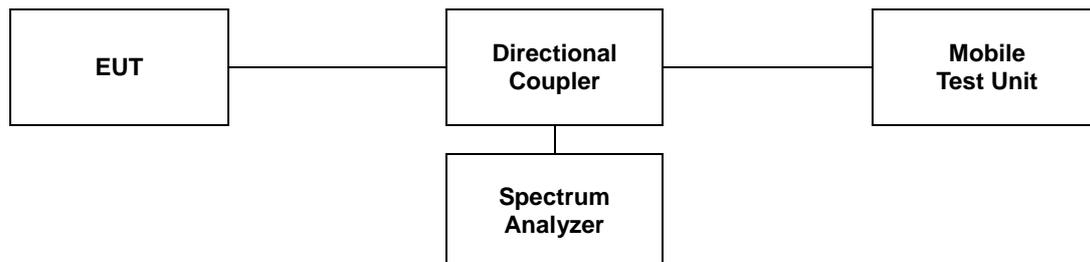
7.3. Test Results

Ambient temperature   : (23 ± 1) ℃
Relative humidity   : 47   % R.H.
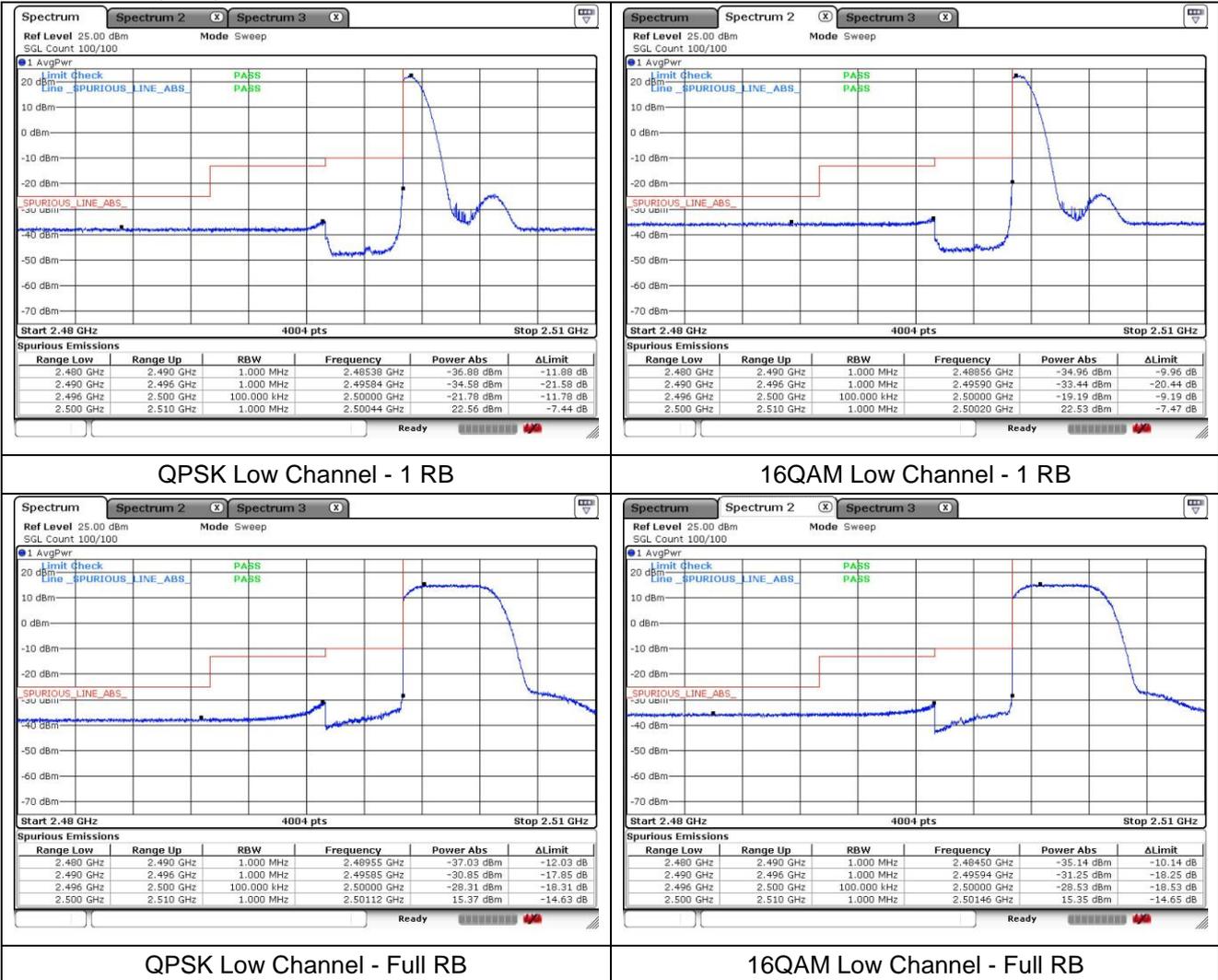
- Test plots
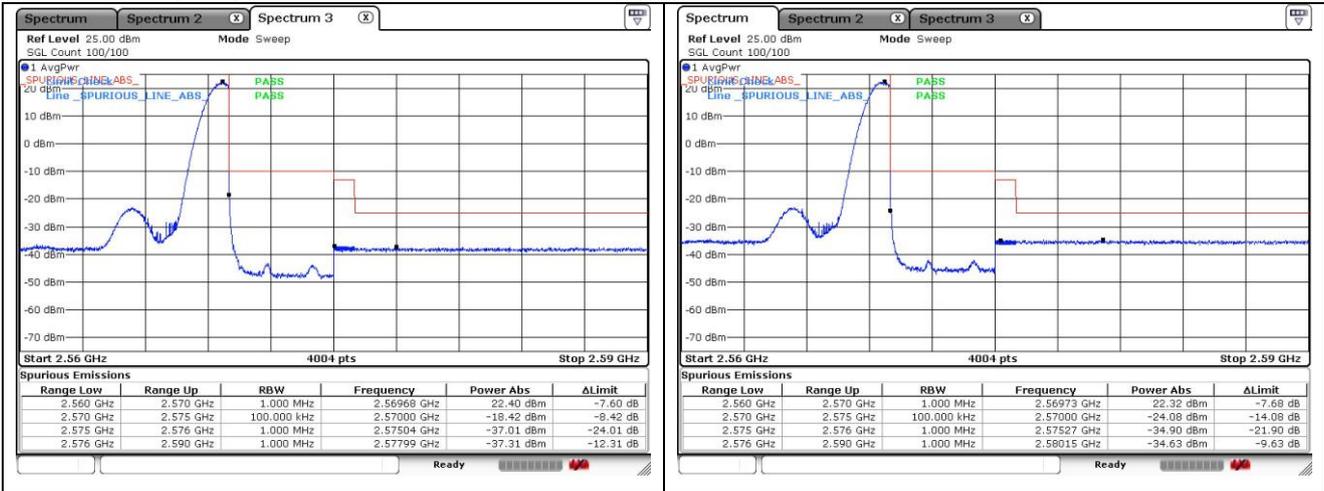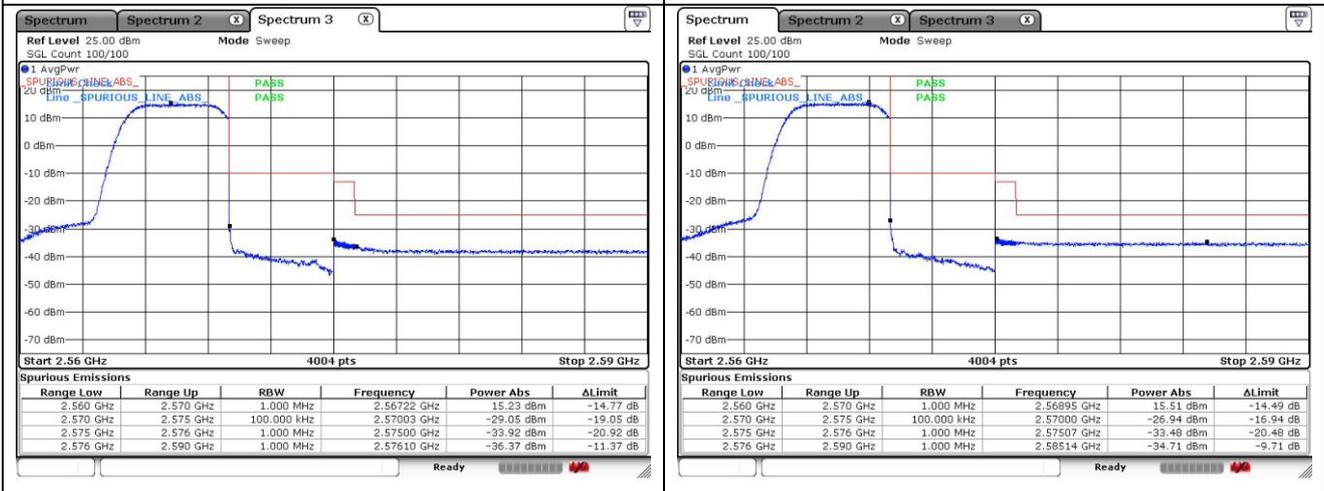
LTE band 7 (5 ㎒)

QPSK Low Channel - 1 RB

16QAM Low Channel - 1 RB
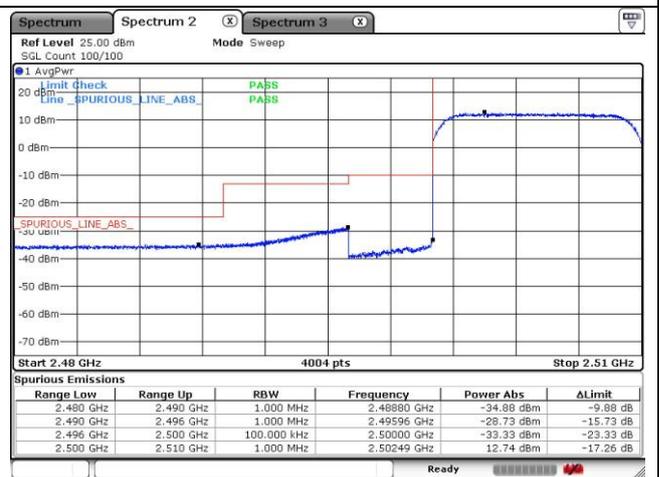
QPSK Low Channel - Full RB

16QAM Low Channel - Full RB

LTE band 7 (5 ㎒)

Spurious Emissions					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	1.000 MHz	2.56968 GHz	22.40 dBm	-7.60 dB
2.570 GHz	2.575 GHz	100.000 kHz	2.57000 GHz	-18.42 dBm	-8.42 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57504 GHz	-37.01 dBm	-24.01 dB
2.576 GHz	2.590 GHz	1.000 MHz	2.57799 GHz	-37.31 dBm	-12.31 dB

QPSK High Channel - 1 RB

Spurious Emissions					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	1.000 MHz	2.56973 GHz	22.32 dBm	-7.68 dB
2.570 GHz	2.575 GHz	100.000 kHz	2.57000 GHz	-24.08 dBm	-14.08 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57527 GHz	-34.90 dBm	-21.90 dB
2.576 GHz	2.590 GHz	1.000 MHz	2.58015 GHz	-34.63 dBm	-9.63 dB

16QAM High Channel - 1 RB

Spurious Emissions					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	1.000 MHz	2.56722 GHz	15.23 dBm	-14.77 dB
2.570 GHz	2.575 GHz	100.000 kHz	2.57003 GHz	-29.05 dBm	-19.05 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57500 GHz	-33.92 dBm	-20.92 dB
2.576 GHz	2.590 GHz	1.000 MHz	2.57610 GHz	-36.37 dBm	-11.37 dB

QPSK High Channel - Full RB

Spurious Emissions					
Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.560 GHz	2.570 GHz	1.000 MHz	2.56895 GHz	15.51 dBm	-14.49 dB
2.570 GHz	2.575 GHz	100.000 kHz	2.57000 GHz	-26.94 dBm	-16.94 dB
2.575 GHz	2.576 GHz	1.000 MHz	2.57507 GHz	-33.48 dBm	-20.48 dB
2.576 GHz	2.590 GHz	1.000 MHz	2.58514 GHz	-34.71 dBm	-9.71 dB

16QAM High Channel - Full RB

LTE band 7 (10 ㎒)

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.480 GHz	2.490 GHz	1.000 MHz	2.48331 GHz	-37.09 dBm	-12.09 dB
2.490 GHz	2.496 GHz	1.000 MHz	2.49171 GHz	-36.15 dBm	-23.15 dB
2.496 GHz	2.500 GHz	100.000 kHz	2.50000 GHz	-34.50 dBm	-24.50 dB
2.500 GHz	2.510 GHz	1.000 MHz	2.50057 GHz	22.32 dBm	-7.68 dB

QPSK Low Channel - 1 RB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.480 GHz	2.490 GHz	1.000 MHz	2.48767 GHz	-34.98 dBm	-9.98 dB
2.490 GHz	2.496 GHz	1.000 MHz	2.49163 GHz	-34.66 dBm	-21.66 dB
2.496 GHz	2.500 GHz	100.000 kHz	2.49999 GHz	-35.98 dBm	-25.98 dB
2.500 GHz	2.510 GHz	1.000 MHz	2.50066 GHz	22.21 dBm	-7.79 dB

16QAM Low Channel - 1 RB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.480 GHz	2.490 GHz	1.000 MHz	2.48992 GHz	-36.67 dBm	-11.67 dB
2.490 GHz	2.496 GHz	1.000 MHz	2.49600 GHz	-28.30 dBm	-15.30 dB
2.496 GHz	2.500 GHz	100.000 kHz	2.50000 GHz	-32.18 dBm	-22.18 dB
2.500 GHz	2.510 GHz	1.000 MHz	2.50500 GHz	12.49 dBm	-17.51 dB

QPSK Low Channel - Full RB

Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
2.480 GHz	2.490 GHz	1.000 MHz	2.48880 GHz	-34.88 dBm	-9.88 dB
2.490 GHz	2.496 GHz	1.000 MHz	2.49596 GHz	-28.73 dBm	-15.73 dB
2.496 GHz	2.500 GHz	100.000 kHz	2.50000 GHz	-33.33 dBm	-23.33 dB
2.500 GHz	2.510 GHz	1.000 MHz	2.50249 GHz	12.74 dBm	-17.26 dB

16QAM Low Channel - Full RB