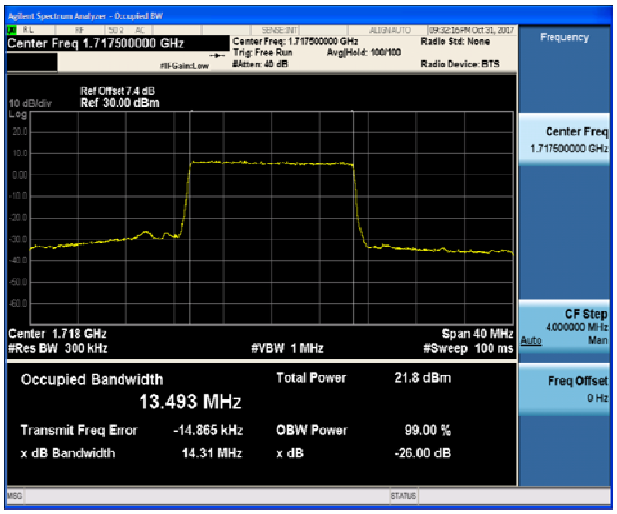
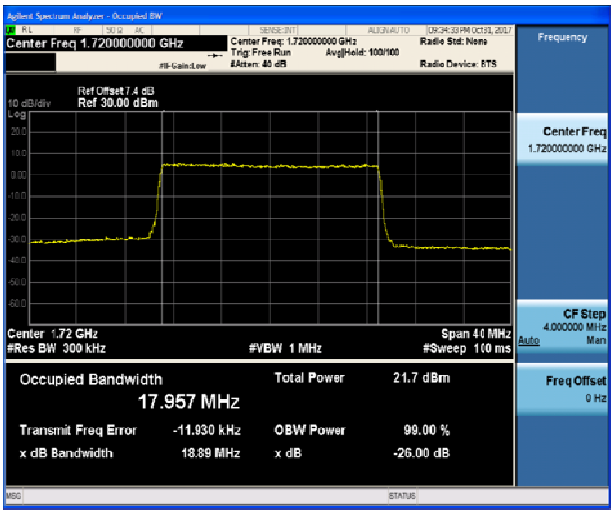
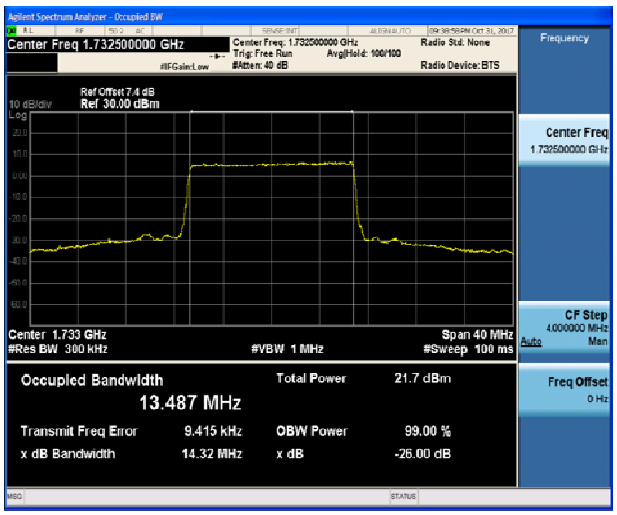
LTE Band 4 16QAM 15MHz CH-Low



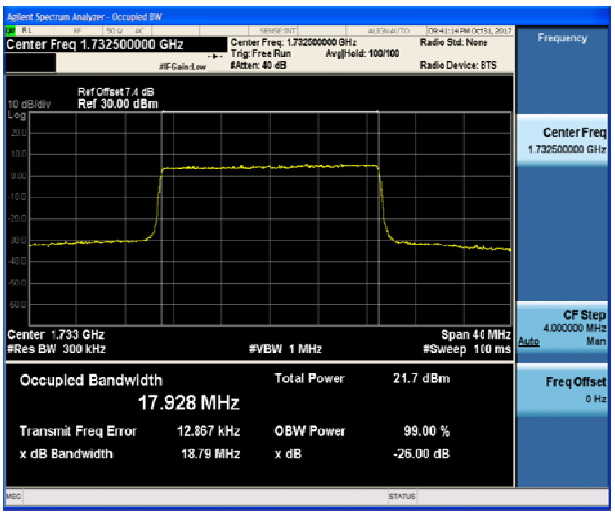
LTE Band 4 16QAM 20MHz CH-Low



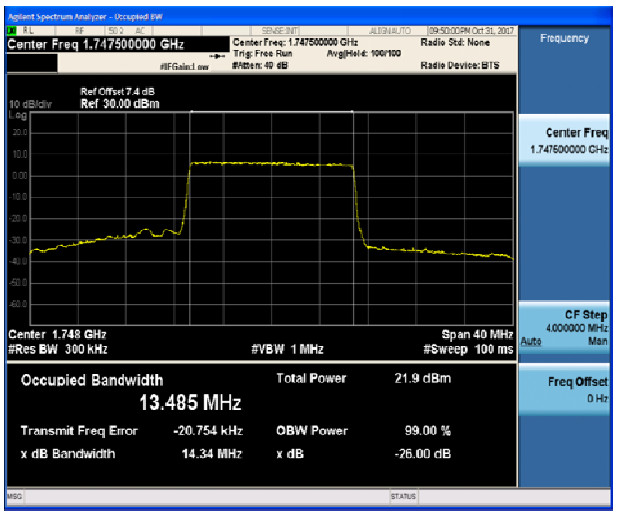
LTE Band 4 16QAM 15MHz CH-Middle



LTE Band 4 16QAM 20MHz CH-Middle



LTE Band 4 16QAM 15MHz CH-High



LTE Band 4 16QAM 20MHz CH-High

LTE Band 7 QPSK 5MHz CH-Low

LTE Band 7 QPSK 10MHz CH-Low

LTE Band 7 QPSK 5MHz CH-Middle

LTE Band 7 QPSK 10MHz CH-Middle

LTE Band 7 QPSK 5MHz CH-High

LTE Band 7 QPSK 10MHz CH-High

LTE Band 7 QPSK 15MHz CH-Low

LTE Band 7 QPSK 20MHz CH-Low

LTE Band 7 QPSK 15MHz CH-Middle

LTE Band 7 QPSK 20MHz CH-Middle

LTE Band 7 QPSK 15MHz CH-High

LTE Band 7 QPSK 20MHz CH-High

LTE Band 7 16QAM 5MHz CH-Low

LTE Band 7 16QAM 10MHz CH-Low

LTE Band 7 16QAM 5MHz CH-Middle

LTE Band 7 16QAM 10MHz CH-Middle

LTE Band 7 16QAM 5MHz CH-High

LTE Band 7 16QAM 10MHz CH-High

LTE Band 7 16QAM 15MHz CH-Low

LTE Band 7 16QAM 20MHz CH-Low

LTE Band 7 16QAM 15MHz CH-Middle

LTE Band 7 16QAM 20MHz CH-Middle

LTE Band 7 16QAM 15MHz CH-High

LTE Band 7 16QAM 20MHz CH-High

5.4 Band Edge Compliance

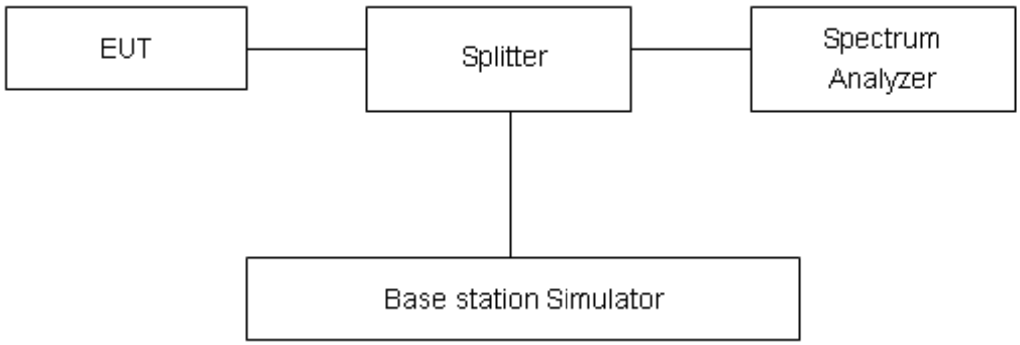
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.
The testing follows KDB 971168 v02r02 Section 6.0
1.The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. For LTE Band 41 Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
RBW is set to 51 kHz, VBW is set to 160 kHz for WCDMA Band IV.
RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4 (1.4MHz).
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4 (3MHz).
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/7 (5MHz).
RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 4/7 (10MHz).
RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4/7 (15MHz).
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4/7 (20MHz) on spectrum analyzer.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(h)/ specifies that " for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB"
Part 27.53(m) (4)/ specifies that "for BRS and EBS stations. 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)(4) 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.
Example:
The limit line is derived from 43 + 10log (P) dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log (P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

Test Result

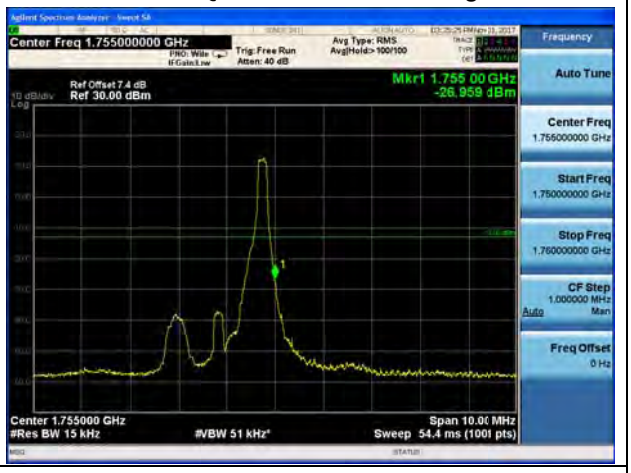
All the test traces in the plots shows the test results clearly.

WCDMA Band IV CH-Low

WCDMA Band IV CH-High

LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB

LTE Band 4 QPSK 1.4MHz CH-High, 1 RB



LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB

LTE Band 4 QPSK 1.4MHz CH-High, 100%RB

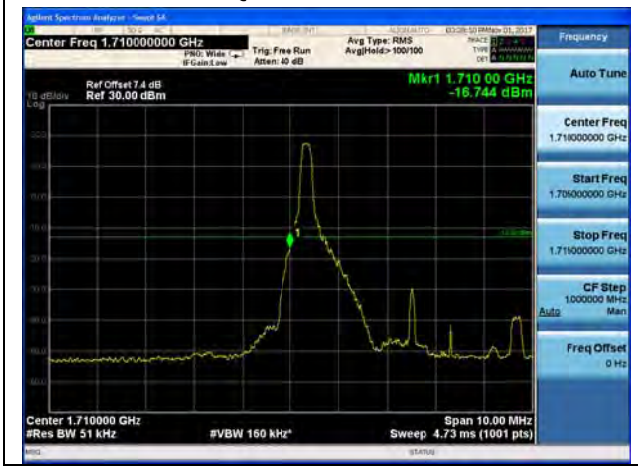
LTE Band 4 QPSK 3MHz CH-Low, 1 RB

LTE Band 4 QPSK 3MHz CH-High, 1 RB

LTE Band 4 QPSK 3MHz CH-Low, 100%RB

LTE Band 4 QPSK 3MHz CH-High, 100%RB

LTE Band 4 QPSK 5MHz CH-Low, 1 RB

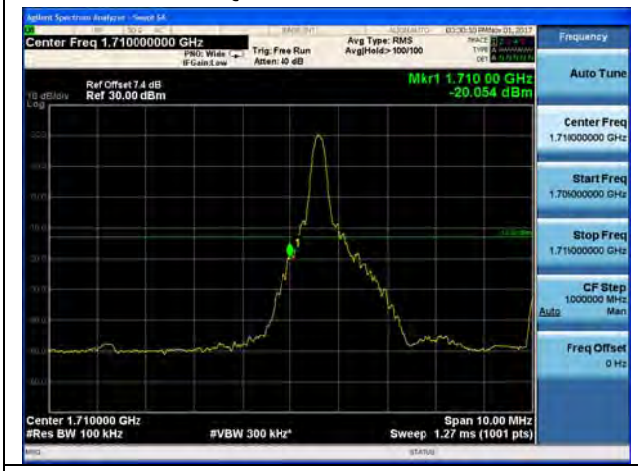


LTE Band 4 QPSK 5MHz CH-High, 1 RB

LTE Band 4 QPSK 5MHz CH-Low, 100%RB

LTE Band 4 QPSK 5MHz CH-High, 100%RB

LTE Band 4 QPSK 10MHz CH-Low, 1 RB



LTE Band 4 QPSK 10MHz CH-High, 1 RB

LTE Band 4 QPSK 10MHz CH-Low, 100%RB

LTE Band 4 QPSK 10MHz CH-High, 100%RB

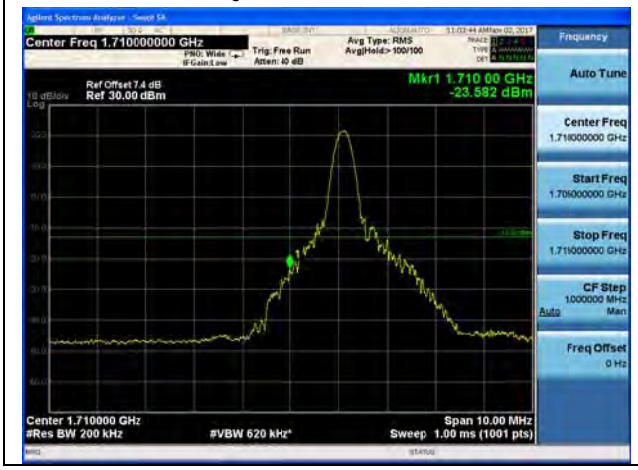
LTE Band 4 QPSK 15MHz CH-Low, 1 RB

LTE Band 4 QPSK 15MHz CH-High, 1 RB

LTE Band 4 QPSK 15MHz CH-Low, 100%RB

LTE Band 4 QPSK 15MHz CH-High, 100%RB

LTE Band 4 QPSK 20MHz CH-Low, 1 RB



LTE Band 4 QPSK 20MHz CH-High, 1 RB

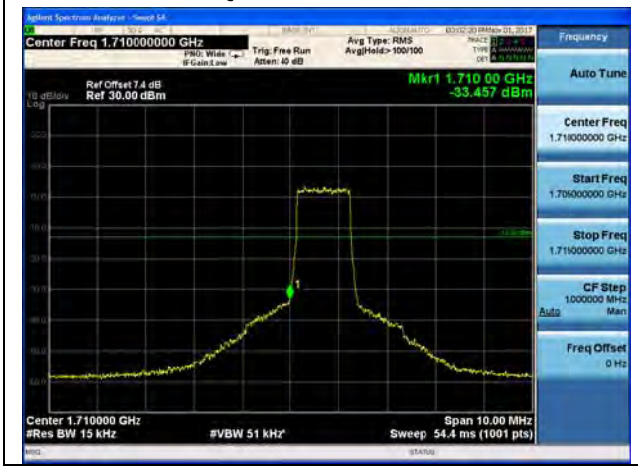
LTE Band 4 QPSK 20MHz CH-Low, 100%RB

LTE Band 4 QPSK 20MHz CH-High, 100%RB

LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB

LTE Band 4 16QAM 1.4MHz CH-High, 1 RB

LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 4 16QAM 1.4MHz CH-High, 100%RB

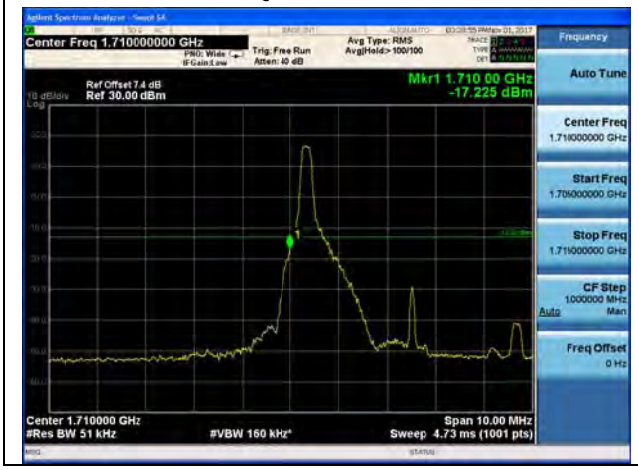
LTE Band 4 16QAM 3MHz CH-Low, 1 RB

LTE Band 4 16QAM 3MHz CH-High, 1 RB

LTE Band 4 16QAM 3MHz CH-Low, 100%RB

LTE Band 4 16QAM 3MHz CH-High, 100%RB

LTE Band 4 16QAM 5MHz CH-Low, 1 RB



LTE Band 4 16QAM 5MHz CH-High, 1 RB

LTE Band 4 16QAM 5MHz CH-Low, 100%RB

LTE Band 4 16QAM 5MHz CH-High, 100%RB

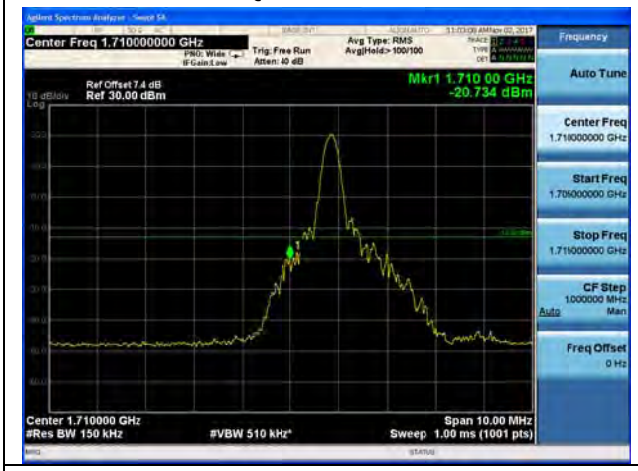
LTE Band 4 16QAM 10MHz CH-Low, 1 RB

LTE Band 4 16QAM 10MHz CH-High, 1 RB

LTE Band 4 16QAM 10MHz CH-Low, 100%RB

LTE Band 4 16QAM 10MHz CH-High, 100%RB

LTE Band 4 16QAM 15MHz CH-Low, 1 RB

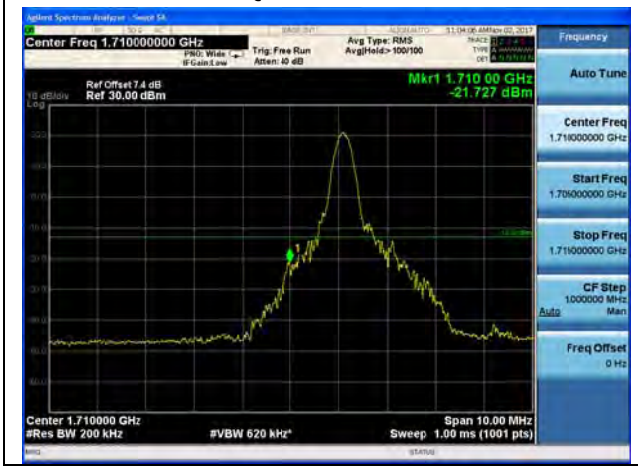


LTE Band 4 16QAM 15MHz CH-High, 1 RB

LTE Band 4 16QAM 15MHz CH-Low, 100%RB

LTE Band 4 16QAM 15MHz CH-High, 100%RB

LTE Band 4 16QAM 20MHz CH-Low, 1 RB

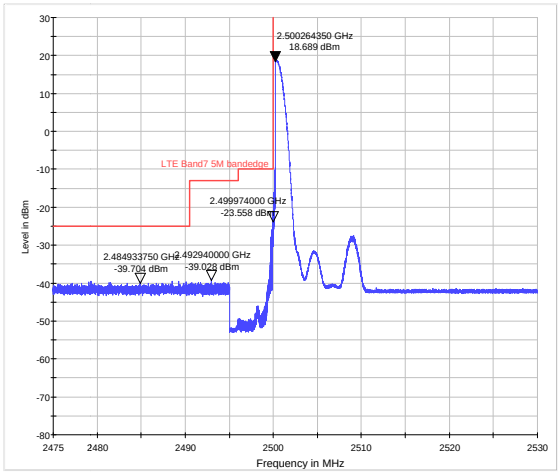


LTE Band 4 16QAM 20MHz CH-High, 1 RB

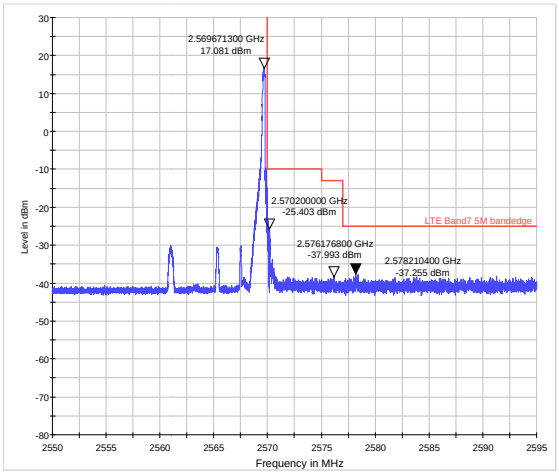
LTE Band 4 16QAM 20MHz CH-Low, 100%RB

LTE Band 4 16QAM 20MHz CH-High, 100%RB

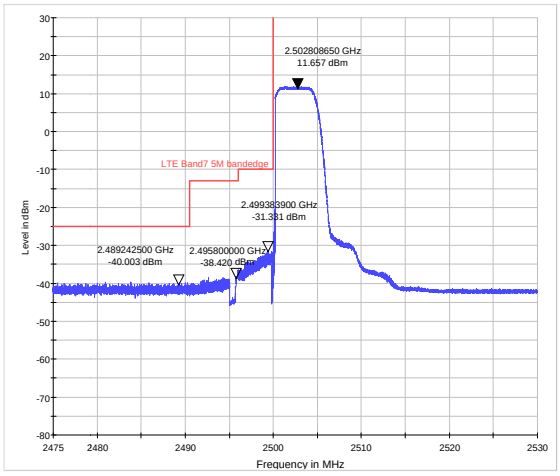
LTE Band 7 QPSK 5MHz CH-Low, 1 RB



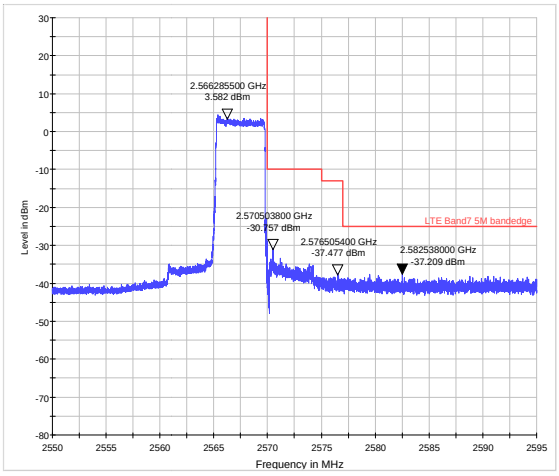
LTE Band 7 QPSK 5MHz CH-High, 1 RB



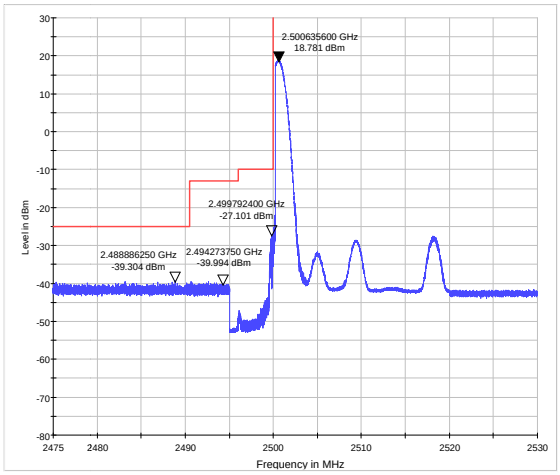
LTE Band 7 QPSK 5MHz CH-Low, 100%RB



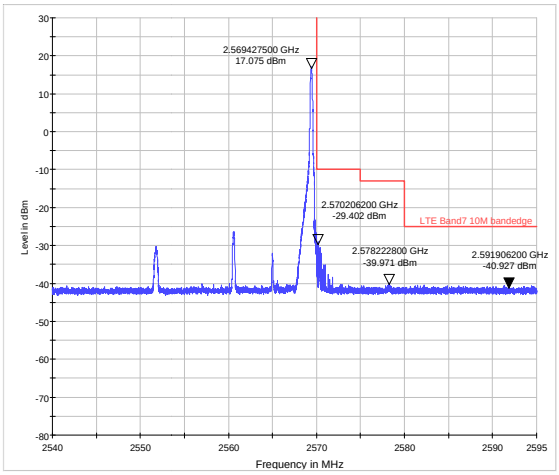
LTE Band 7 QPSK 5MHz CH-High, 100%RB



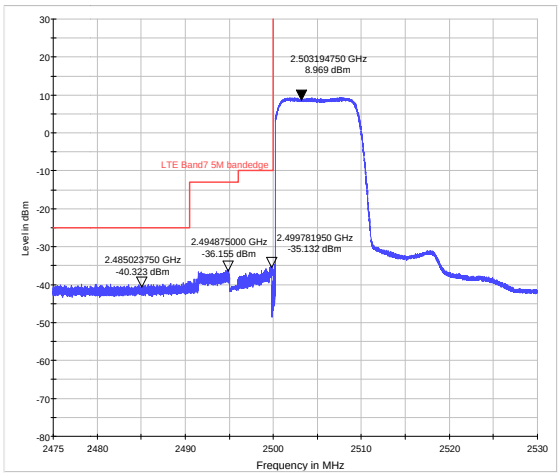
LTE Band 7 QPSK 10MHz CH-Low, 1 RB



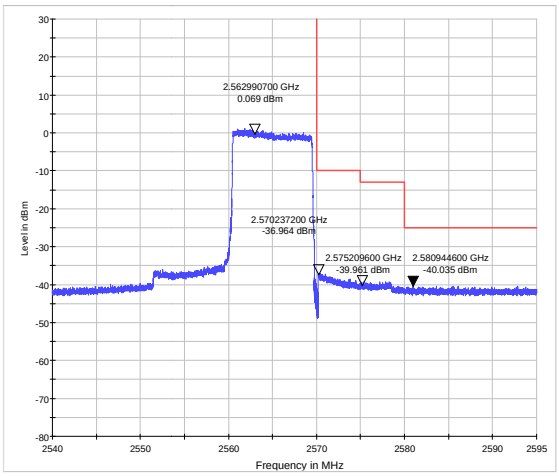
LTE Band 7 QPSK 10MHz CH-High, 1 RB



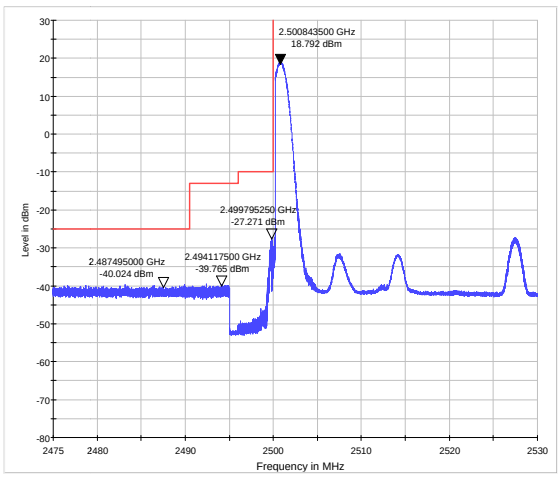
LTE Band 7 QPSK 10MHz CH-Low, 100%RB



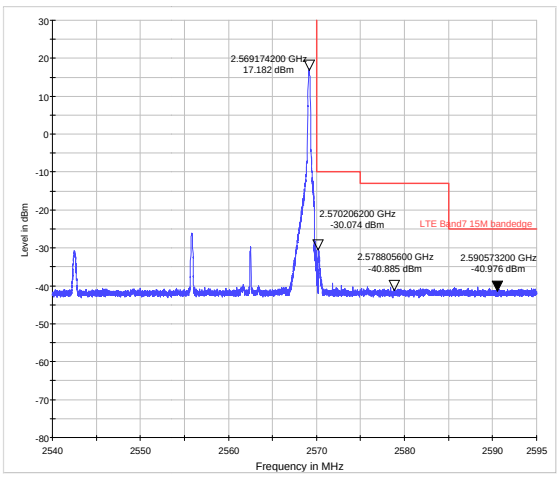
LTE Band 7 QPSK 10MHz CH-High, 100%RB



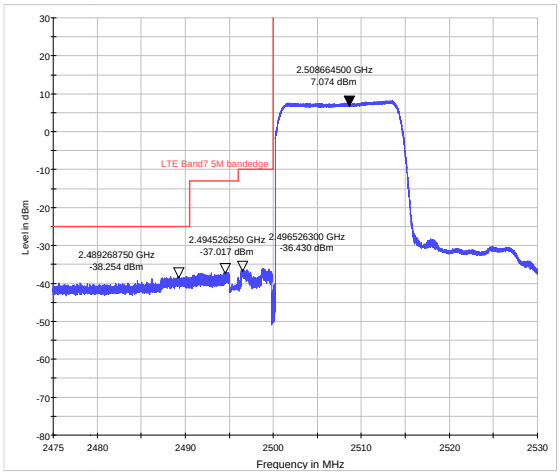
LTE Band 7 QPSK 15MHz CH-Low, 1 RB



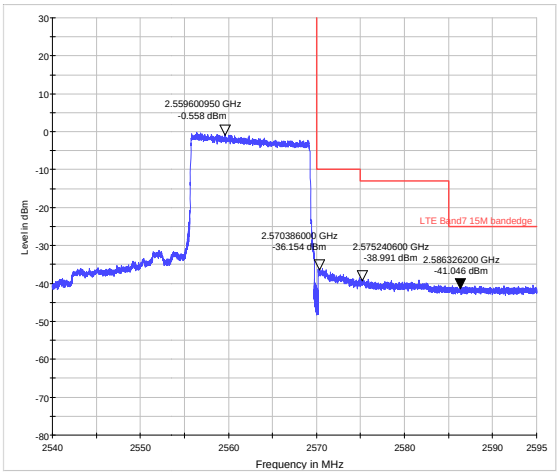
LTE Band 7 QPSK 15MHz CH-High, 1 RB



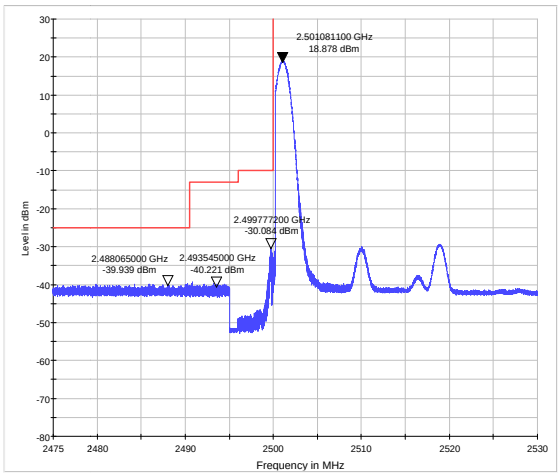
LTE Band 7 QPSK 15MHz CH-Low, 100%RB



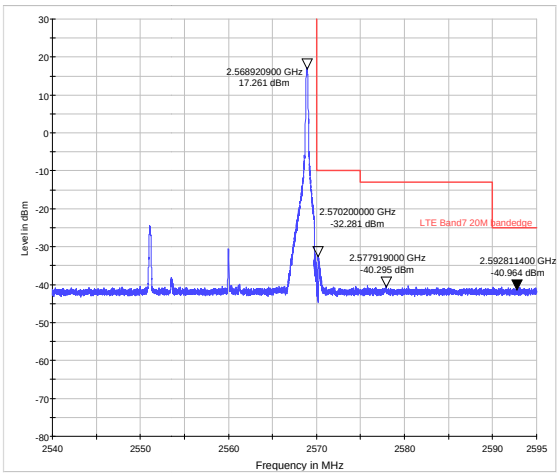
LTE Band 7 QPSK 15MHz CH-High, 100%RB



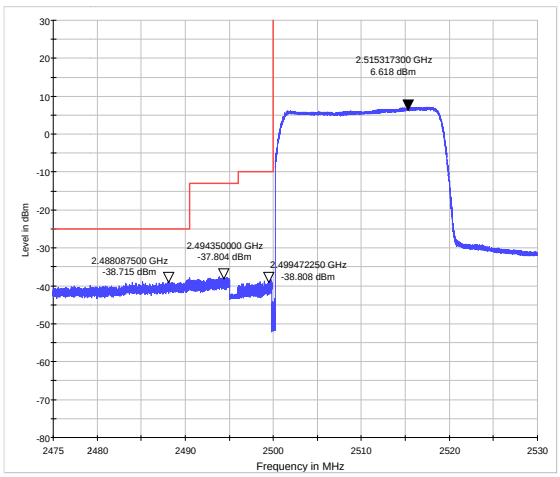
LTE Band 7 QPSK 20MHz CH-Low, 1 RB



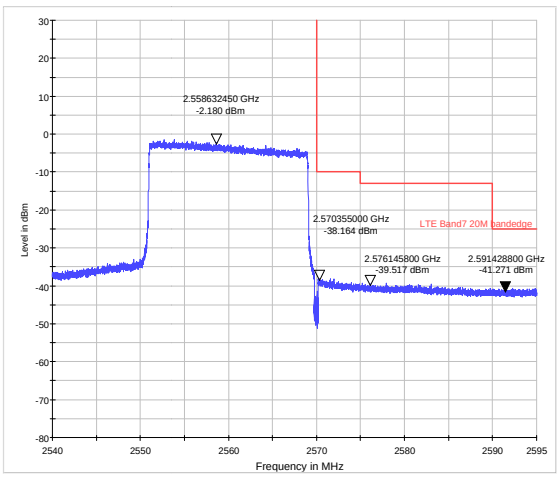
LTE Band 7 QPSK 20MHz CH-High, 1 RB



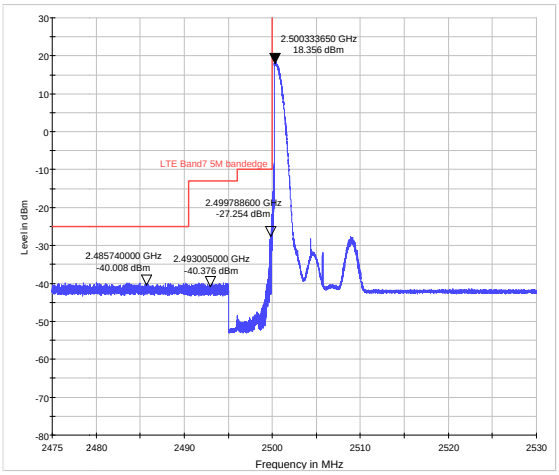
LTE Band 7 QPSK 20MHz CH-Low, 100%RB



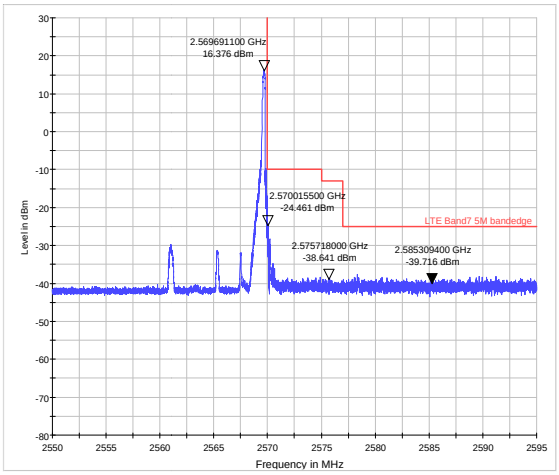
LTE Band 7 QPSK 20MHz CH-High, 100%RB



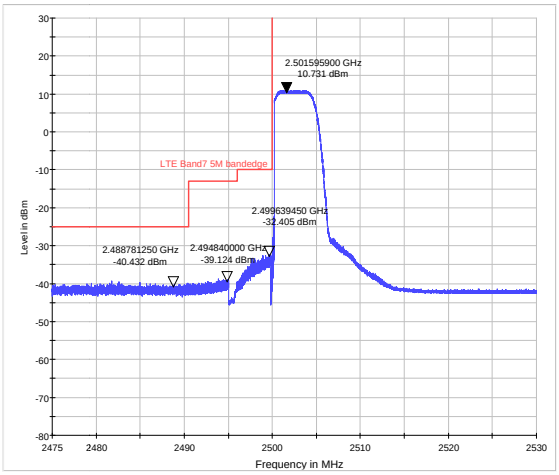
LTE Band 7 16QAM 5MHz CH-Low, 1 RB



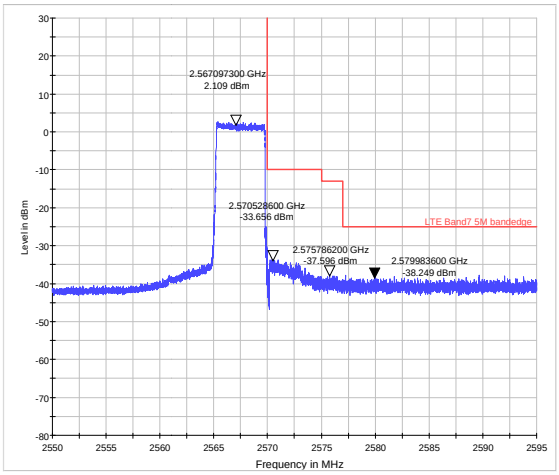
LTE Band 7 16QAM 5MHz CH-High, 1 RB



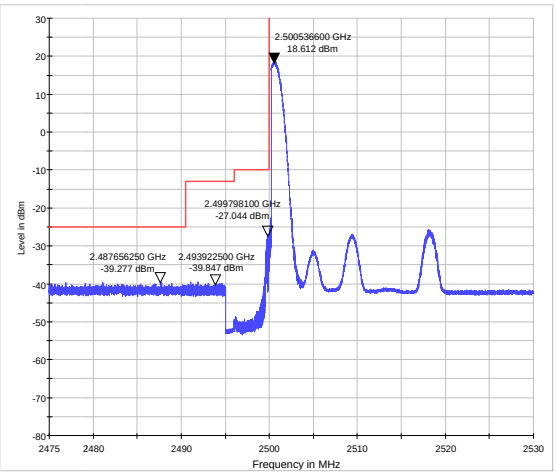
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



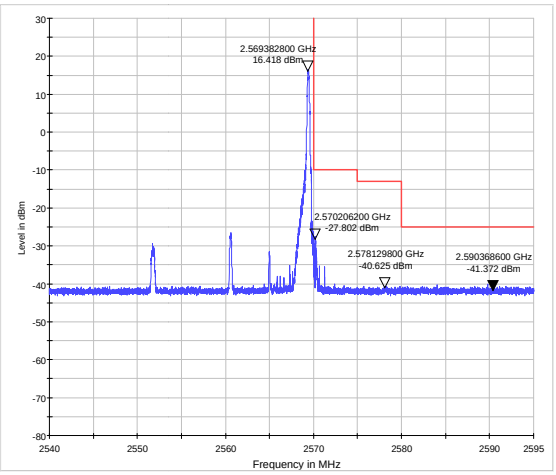
LTE Band 7 16QAM 5MHz CH-High, 100%RB



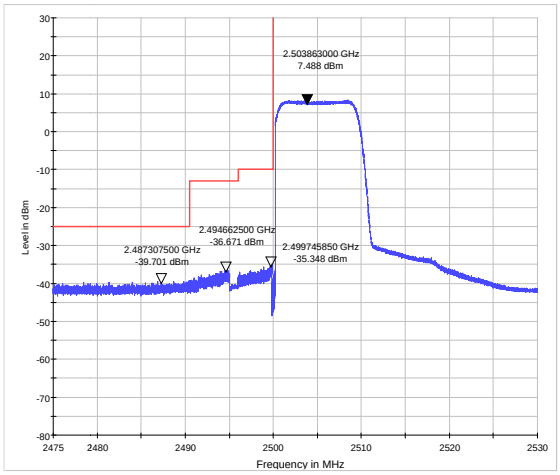
LTE Band 7 16QAM 10MHz CH-Low, 1 RB



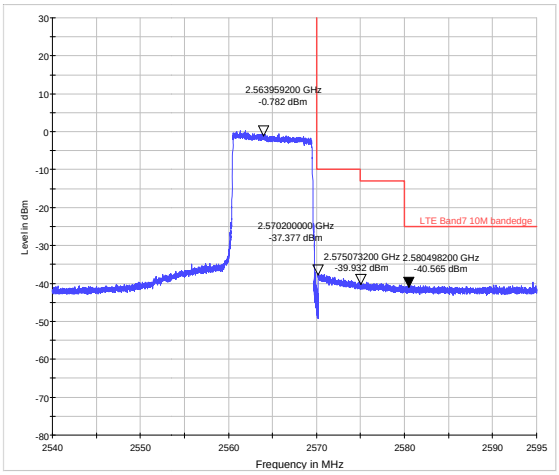
LTE Band 7 16QAM 10MHz CH-High, 1 RB



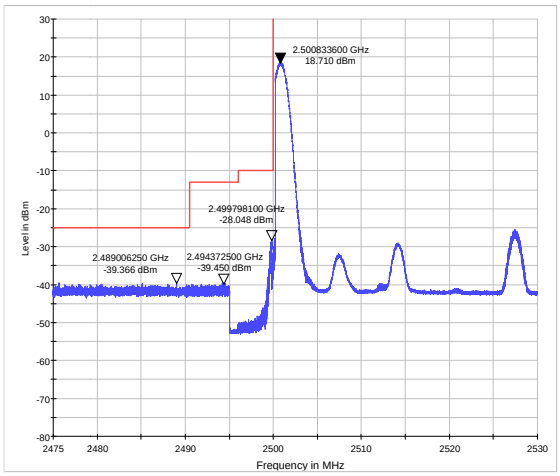
LTE Band 7 16QAM 10MHz CH-Low, 100%RB



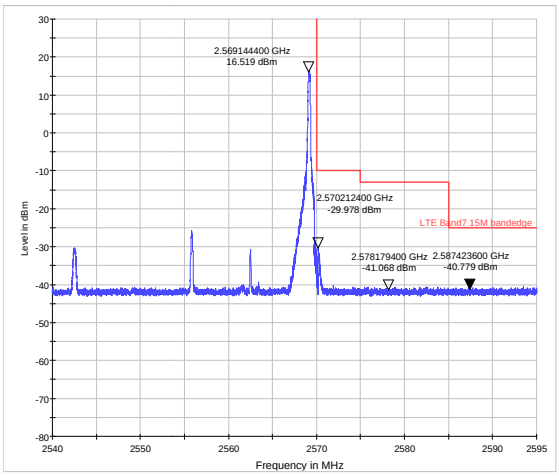
LTE Band 7 16QAM 10MHz CH-High, 100%RB



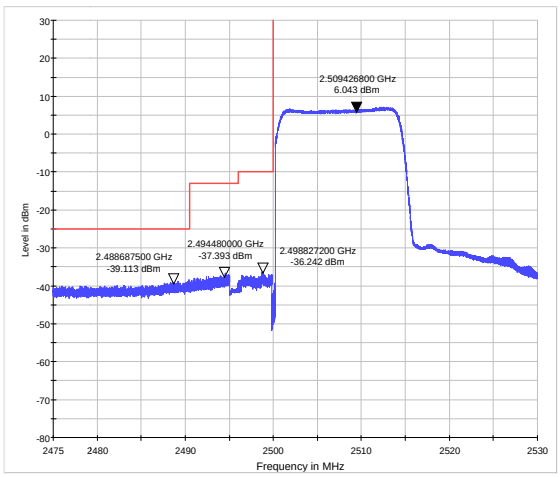
LTE Band 7 16QAM 15MHz CH-Low, 1 RB



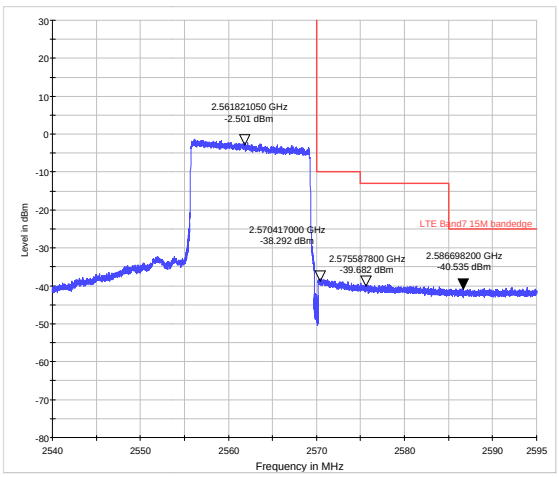
LTE Band 7 16QAM 15MHz CH-High, 1 RB



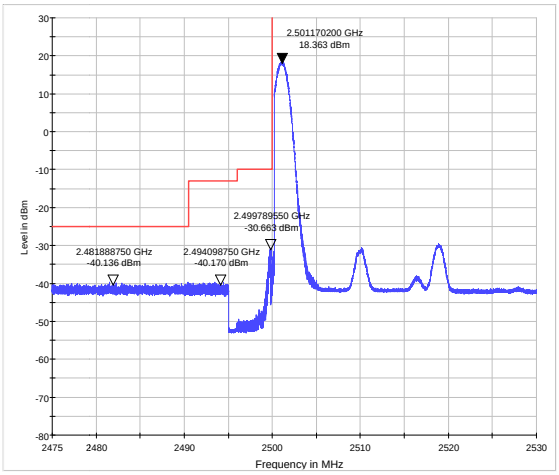
LTE Band 7 16QAM 15MHz CH-Low, 100%RB



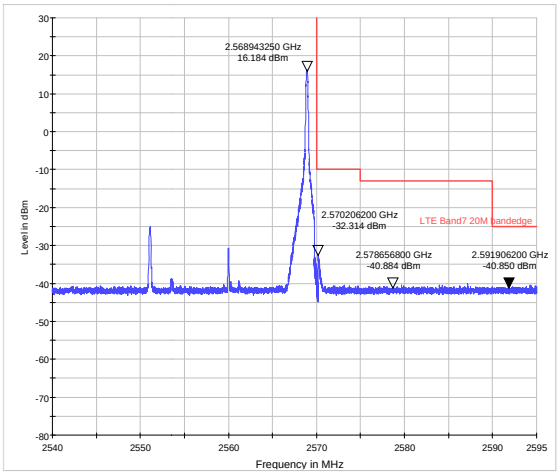
LTE Band 7 16QAM 15MHz CH-High, 100%RB



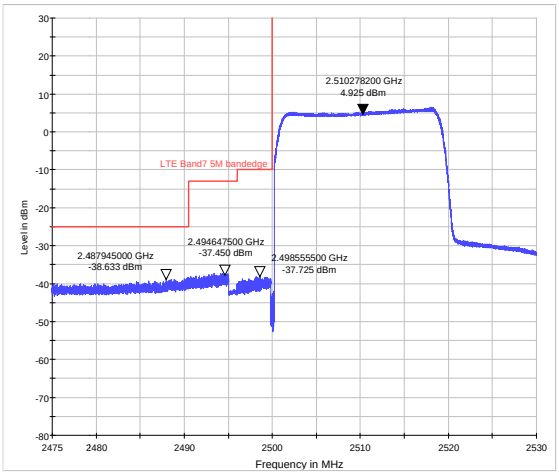
LTE Band 7 16QAM 20MHz CH-Low, 1 RB



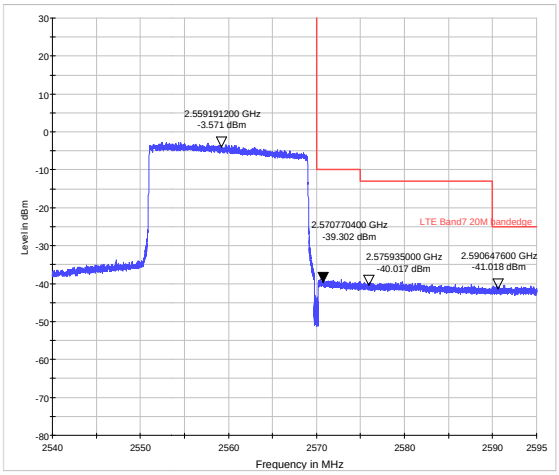
LTE Band 7 16QAM 20MHz CH-High, 1 RB



LTE Band 7 16QAM 20MHz CH-Low, 100%RB



LTE Band 7 16QAM 20MHz CH-High, 100%RB



5.5 Peak-to-Average Power Ratio (PAPR)

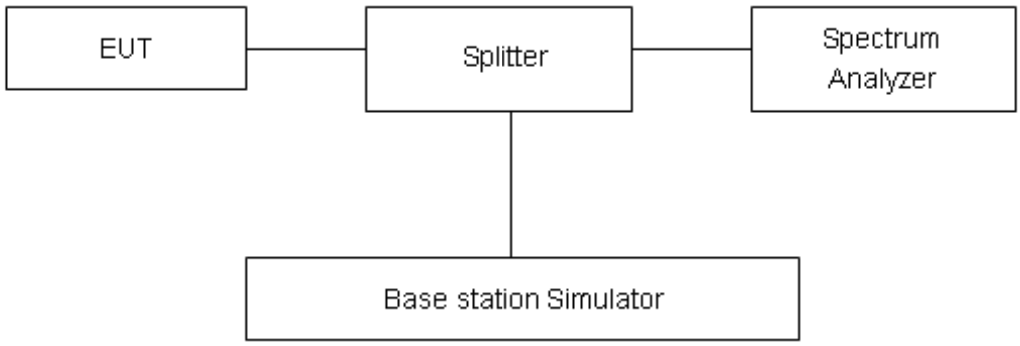
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

Mode	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
WCDMA Band IV (RMC)	1312	1712.4	25.85	23.13	2.72	≤13	PASS
	1413	1732.6	26.02	23.19	2.83	≤13	PASS
	1513	1752.6	25.88	23.12	2.76	≤13	PASS

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	26.60	21.32	5.28	≤13	PASS
		20175	1732.5	26.96	21.39	5.57	≤13	PASS
		20393	1754.3	26.89	21.45	5.44	≤13	PASS
	3	19965	1711.5	26.78	21.35	5.43	≤13	PASS
		20175	1732.5	27.05	21.43	5.62	≤13	PASS
		20385	1753.5	26.96	21.48	5.48	≤13	PASS
	5	19975	1712.5	26.85	21.33	5.52	≤13	PASS
		20175	1732.5	27.20	21.42	5.78	≤13	PASS
		20375	1752.5	27.00	21.46	5.54	≤13	PASS
	10	20000	1715	26.91	21.41	5.50	≤13	PASS
		20175	1732.5	27.08	21.44	5.64	≤13	PASS
		20350	1750	26.96	21.50	5.46	≤13	PASS
	15	20025	1717.5	27.22	21.39	5.83	≤13	PASS
		20175	1732.5	27.35	21.40	5.95	≤13	PASS
		20325	1747.5	27.14	21.45	5.69	≤13	PASS
	20	20050	1720	26.99	21.36	5.63	≤13	PASS
		20175	1732.5	27.04	21.35	5.69	≤13	PASS
		20300	1745	26.99	21.41	5.58	≤13	PASS
16QAM	1.4	19957	1710.7	26.28	20.33	5.95	≤13	PASS
		20175	1732.5	26.84	20.46	6.38	≤13	PASS
		20393	1754.3	26.62	20.50	6.12	≤13	PASS
	3	19965	1711.5	26.57	20.36	6.21	≤13	PASS
		20175	1732.5	26.93	20.50	6.43	≤13	PASS
		20385	1753.5	26.78	20.53	6.25	≤13	PASS
	5	19975	1712.5	26.48	20.34	6.14	≤13	PASS
		20175	1732.5	26.90	20.46	6.44	≤13	PASS
		20375	1752.5	26.71	20.48	6.23	≤13	PASS
	10	20000	1715	26.57	20.37	6.20	≤13	PASS
		20175	1732.5	26.94	20.51	6.43	≤13	PASS
		20350	1750	26.73	20.52	6.21	≤13	PASS

	15	20025	1717.5	26.68	20.34	6.34	≤13	PASS
		20175	1732.5	26.94	20.46	6.48	≤13	PASS
		20325	1747.5	26.71	20.48	6.23	≤13	PASS
	20	20050	1720	26.68	20.32	6.36	≤13	PASS
		20175	1732.5	26.86	20.42	6.44	≤13	PASS
		20300	1745	26.71	20.45	6.26	≤13	PASS

LTE Band 7								
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**Peak (dBm)**	**Avg (dBm)**	**PAPR (dB)**	**Limit (dB)**	**Conclusion**
QPSK	5	20775	2502.5	26.70	21.42	5.28	≤13	PASS
		21100	2535	27.09	21.66	5.43	≤13	PASS
		21425	2567.5	26.80	21.36	5.44	≤13	PASS
	10	20800	2505	26.70	21.50	5.20	≤13	PASS
		21100	2535	27.00	21.68	5.32	≤13	PASS
		21400	2565	26.72	21.40	5.32	≤13	PASS
	15	20825	2507.5	26.53	21.48	5.05	≤13	PASS
		21100	2535	26.90	21.64	5.26	≤13	PASS
		21375	2562.5	26.45	21.35	5.10	≤13	PASS
	20	20850	2510	26.38	21.45	4.93	≤13	PASS
		21100	2535	26.70	21.59	5.11	≤13	PASS
		21350	2560	26.35	21.31	5.04	≤13	PASS
16QAM	5	20775	2502.5	26.25	20.35	5.90	≤13	PASS
		21100	2535	26.70	20.61	6.09	≤13	PASS
		21425	2567.5	26.50	20.35	6.15	≤13	PASS
	10	20800	2505	26.28	20.38	5.90	≤13	PASS
		21100	2535	26.75	20.66	6.09	≤13	PASS
		21400	2565	26.49	20.39	6.10	≤13	PASS
	15	20825	2507.5	26.03	20.35	5.68	≤13	PASS
		21100	2535	26.51	20.61	5.90	≤13	PASS
		21375	2562.5	26.14	20.35	5.79	≤13	PASS
	20	20850	2510	26.02	20.33	5.69	≤13	PASS
		21100	2535	26.44	20.57	5.87	≤13	PASS
		21350	2560	26.05	20.32	5.73	≤13	PASS

5.6 Frequency Stability

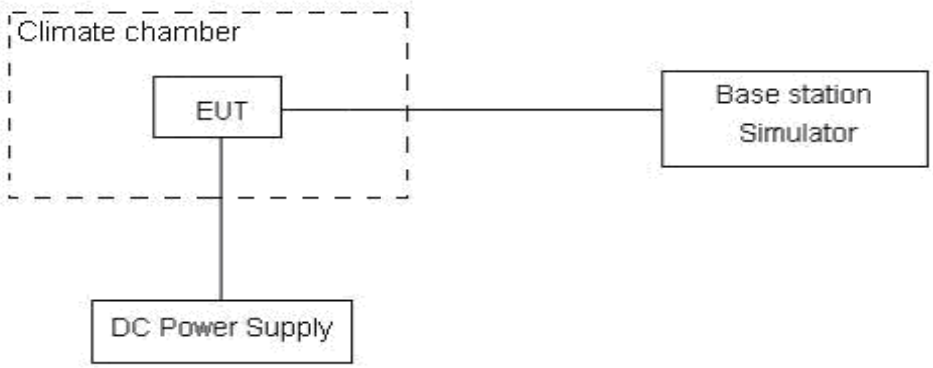
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency Stability (Temperature Variation)
   The temperature inside the climate chamber is varied from -30°C to +55°C in 10°C step size.
   (1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.
   (2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.
   (3) Repeat the above measurements at 10°C increments from -30°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.
2. Frequency Stability (Voltage Variation)
   The frequency stability shall be measured with variation of primary supply voltage as follows:
   (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
   (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.
   This transceiver is specified to operate with an input voltage of between 3.8 V and 4.35 V, with a nominal voltage of 4.0V.

Test setup



Limits

No specific frequency stability requirements in part 27.54

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Result

WCDMA Band IV

Test status	WCDMA Band IV Channel 1413 RMC
	Test Results (ppm)
-30°C/Normal Voltage	-0.002524
-20°C/Normal Voltage	-0.002426
-10°C/Normal Voltage	-0.002981
0°C/Normal Voltage	-0.001737
10°C/Normal Voltage	-0.002503
20°C/Normal Voltage	-0.001578
30°C/Normal Voltage	-0.002447
40°C/Normal Voltage	-0.002009
50°C/Normal Voltage	-0.002316
55°C/Normal Voltage	-0.002935
20°C/Min Voltage	-0.003460
20°C/Max Voltage	-0.003706

Bandwidth	Test status	LTE Band 4 Channel 20175 Test Results (ppm)	
		QPSK	16QAM
1.4MHz	-30°C/Normal Voltage	-0.00381	-0.001310
	-20°C/Normal Voltage	0.00152	-0.000098
	-10°C/Normal Voltage	-0.00055	0.003013
	0°C/Normal Voltage	-0.00287	-0.005772
	10°C/Normal Voltage	0.00313	-0.005795
	20°C/Normal Voltage	0.00408	-0.003515
	30°C/Normal Voltage	-0.00358	-0.002066
	40°C/Normal Voltage	0.00211	0.005662
	50°C/Normal Voltage	-0.00522	0.008514
	55°C/Normal Voltage	-0.00877	-0.000335
	20°C/Min Voltage	0.00225	-0.003227
	20°C/Max Voltage	0.00719	0.002955
3MHz	-30°C/Normal Voltage	0.00380	-0.003105
	-20°C/Normal Voltage	0.00565	-0.002280
	-10°C/Normal Voltage	0.00501	-0.001380
	0°C/Normal Voltage	-0.00266	-0.001310
	10°C/Normal Voltage	-0.00668	-0.000098
	20°C/Normal Voltage	0.00478	0.003013
	30°C/Normal Voltage	0.00666	-0.005772

	40°C/Normal Voltage	-0.00207	-0.005795
	50°C/Normal Voltage	0.00566	0.002361
	55°C/Normal Voltage	0.00851	0.002442
	20°C/Min Voltage	-0.00033	0.005743
	20°C/Max Voltage	-0.00323	0.005056
5MHz	-30°C/Normal Voltage	0.00515	-0.002586
	-20°C/Normal Voltage	0.00700	-0.001760
	-10°C/Normal Voltage	0.00636	-0.000860
	0°C/Normal Voltage	-0.00130	-0.000791
	10°C/Normal Voltage	-0.00533	0.000421
	20°C/Normal Voltage	0.00613	0.003532
	30°C/Normal Voltage	0.00801	-0.005253
	40°C/Normal Voltage	-0.00072	-0.005276
	50°C/Normal Voltage	0.00701	0.002880
	55°C/Normal Voltage	0.00986	0.002961
	20°C/Min Voltage	0.00102	0.006263
	20°C/Max Voltage	-0.00188	0.005576
10MHz	-30°C/Normal Voltage	-0.00246	-0.001755
	-20°C/Normal Voltage	0.00287	-0.000929
	-10°C/Normal Voltage	0.00080	-0.000029
	0°C/Normal Voltage	-0.00152	0.000040
	10°C/Normal Voltage	0.00448	0.001253
	20°C/Normal Voltage	0.00543	0.004364
	30°C/Normal Voltage	-0.00223	-0.004421
	40°C/Normal Voltage	0.00346	-0.004444
	50°C/Normal Voltage	-0.00387	0.003711
	55°C/Normal Voltage	-0.00742	0.003792
	20°C/Min Voltage	0.00360	0.007094
	20°C/Max Voltage	0.00854	0.006407
15MHz	-30°C/Normal Voltage	-0.00391	0.003706
	-20°C/Normal Voltage	0.00142	0.005547
	-10°C/Normal Voltage	-0.00065	0.004912
	0°C/Normal Voltage	-0.00297	-0.002753
	10°C/Normal Voltage	0.00303	-0.006782
	20°C/Normal Voltage	0.00398	0.004681
	30°C/Normal Voltage	-0.00368	0.006557
	40°C/Normal Voltage	0.00201	-0.002165
	50°C/Normal Voltage	-0.00532	0.005564
	55°C/Normal Voltage	-0.00887	0.008416
	20°C/Min Voltage	0.00215	-0.000433

	20°C/Max Voltage	0.00709	-0.003325
20MHz	-30°C/Normal Voltage	-0.00320	0.005287
	-20°C/Normal Voltage	-0.00238	0.002326
	-10°C/Normal Voltage	-0.00148	0.001847
	0°C/Normal Voltage	-0.00141	-0.002436
	10°C/Normal Voltage	-0.00020	-0.005385
	20°C/Normal Voltage	0.00291	0.003983
	30°C/Normal Voltage	-0.00587	0.002193
	40°C/Normal Voltage	-0.00589	0.003532
	50°C/Normal Voltage	0.00226	-0.004848
	55°C/Normal Voltage	0.00234	-0.005680
	20°C/Min Voltage	0.00565	-0.005172
	20°C/Max Voltage	0.00496	-0.003227

Bandwidth	Test status	LTE Band 7 Channel 21100 Test Results (ppm)	
		QPSK	16QAM
5MHz	-30°C/Normal Voltage	0.00154	-0.003179
	-20°C/Normal Voltage	0.00280	-0.002615
	-10°C/Normal Voltage	0.00237	-0.002000
	0°C/Normal Voltage	-0.00287	-0.001953
	10°C/Normal Voltage	-0.00563	-0.001124
	20°C/Normal Voltage	0.00221	0.001002
	30°C/Normal Voltage	0.00349	-0.005002
	40°C/Normal Voltage	-0.00247	-0.005018
	50°C/Normal Voltage	0.00281	0.000556
	55°C/Normal Voltage	0.00476	0.000611
	20°C/Min Voltage	-0.00129	0.002868
	20°C/Max Voltage	-0.00326	0.002398
10MHz	-30°C/Normal Voltage	0.00262	-0.003661
	-20°C/Normal Voltage	0.00060	-0.000020
	-10°C/Normal Voltage	0.00027	-0.001436
	0°C/Normal Voltage	-0.00265	-0.003018
	10°C/Normal Voltage	-0.00467	0.001081
	20°C/Normal Voltage	0.00173	0.001728
	30°C/Normal Voltage	0.00051	-0.003503
	40°C/Normal Voltage	0.00142	0.000387
	50°C/Normal Voltage	-0.00430	-0.004623
	55°C/Normal Voltage	-0.00487	-0.007053
	20°C/Min Voltage	-0.00452	0.000481
	20°C/Max Voltage	-0.00320	0.003858

15MHz	-30°C/Normal Voltage	0.00247	-0.002256
	-20°C/Normal Voltage	0.00372	-0.001692
	-10°C/Normal Voltage	0.00329	-0.001077
	0°C/Normal Voltage	-0.00195	-0.001030
	10°C/Normal Voltage	-0.00470	-0.000201
	20°C/Normal Voltage	0.00313	0.001925
	30°C/Normal Voltage	0.00441	-0.004079
	40°C/Normal Voltage	-0.00155	-0.004095
	50°C/Normal Voltage	0.00374	0.001479
	55°C/Normal Voltage	0.00568	0.001535
	20°C/Min Voltage	-0.00036	0.003791
	20°C/Max Voltage	-0.00234	0.003321
20MHz	-30°C/Normal Voltage	0.00355	-0.002738
	-20°C/Normal Voltage	0.00152	0.000903
	-10°C/Normal Voltage	0.00120	-0.000513
	0°C/Normal Voltage	-0.00173	-0.002095
	10°C/Normal Voltage	-0.00375	0.002004
	20°C/Normal Voltage	0.00265	0.002651
	30°C/Normal Voltage	0.00143	-0.002580
	40°C/Normal Voltage	0.00235	0.001310
	50°C/Normal Voltage	-0.00338	-0.003700
	55°C/Normal Voltage	-0.00395	-0.006130
	20°C/Min Voltage	-0.00360	0.001404
	20°C/Max Voltage	-0.00227	0.004781

5.7 Spurious Emissions at Antenna Terminals

Ambient condition

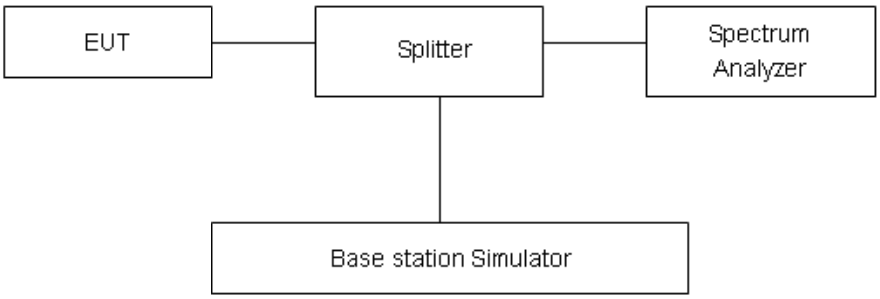
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 1MHz and VBW3MHz， Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB..”

Rule Part 27.53(m) 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)(4) of this section.

LTE B4 Limit	-13 dBm
LTE B7 Limit	-25 dBm

Measurement Uncertainty

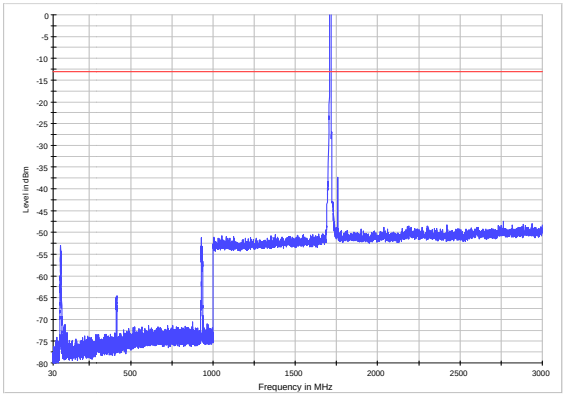
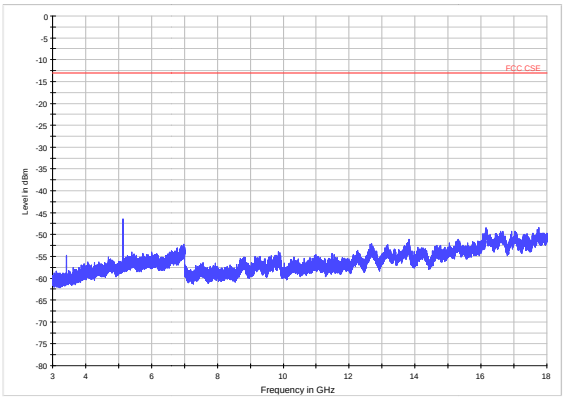
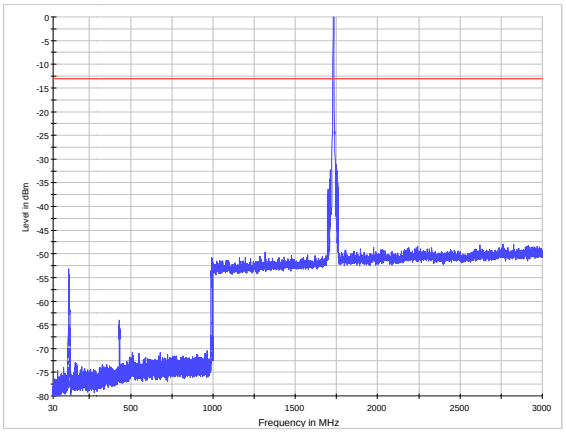
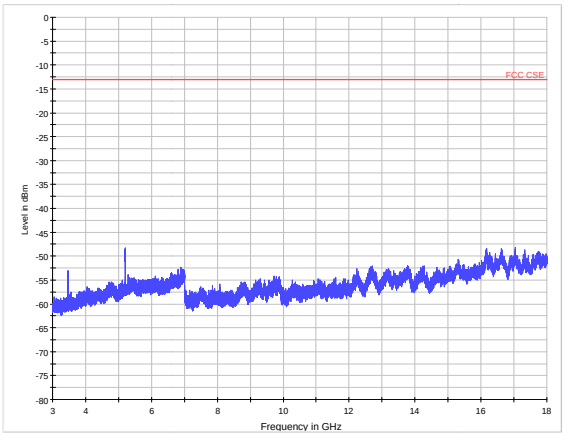
The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-18GHz	1.407 dB

Test Result

Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

The signal beyond the limit is carrier.

WCDMA Band IV CH-Low 30MHz~3GHz	WCDMA Band IV CH-Low 3GHz ~18GHz
	
WCDMA Band IV CH-Middle 30MHz~3GHz	WCDMA Band IV CH-Middle 3GHz ~18GHz
	
WCDMA Band IV CH-High 30MHz~3GHz	WCDMA Band IV CH-High 3GHz ~18GHz