



	0°C/3.7 V	0.01081	-0.00411	PASS
	-10°C/3.7 V	0.01041	-0.00169	PASS
	-20°C/3.7 V	0.00593	-0.00219	PASS
	-30°C/3.7 V	0.00240	0.00111	PASS
	20°C/4.20V	0.00287	0.00108	PASS
	20°C/3.5V	0.00136	0.00247	PASS
20MHz	50°C/3.7 V	0.00033	0.00317	PASS
	40°C/3.7 V	0.00059	0.00299	PASS
	30°C/3.7 V	0.00051	0.00117	PASS
	20°C/3.7 V	-0.00078	-0.00052	PASS
	10°C/3.7 V	0.00130	0.00079	PASS
	0°C/3.7 V	0.00097	0.00028	PASS
	-10°C/3.7 V	-0.00047	-0.00161	PASS
	-20°C/3.7 V	0.00049	0.00081	PASS
	-30°C/3.7 V	0.00060	-0.00011	PASS
	20°C/4.20V	-0.00210	-0.00046	PASS
	20°C/3.5V	-0.00159	0.00872	PASS

4.7 Spurious Emissions at Antenna Terminals

Ambient condition

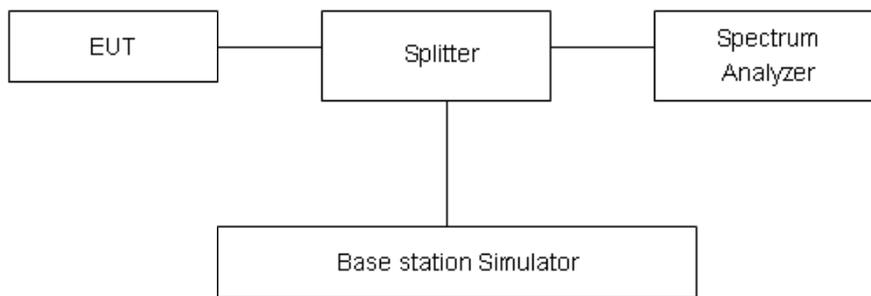
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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. RBW and VBW are set to 100 kHz for the carrier frequency, or RBW and VBW are set to 1MHz (other frequency), Sweep is set to ATUO.

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

Test setup



Limits

LTE -4 Rule Part 27.53(h) specifies that “the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log₁₀(P) dB.”

LTE -7 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 -4 Limit	-13 dBm
LTE -7 Limit	-25 dBm

Measurement Uncertainty

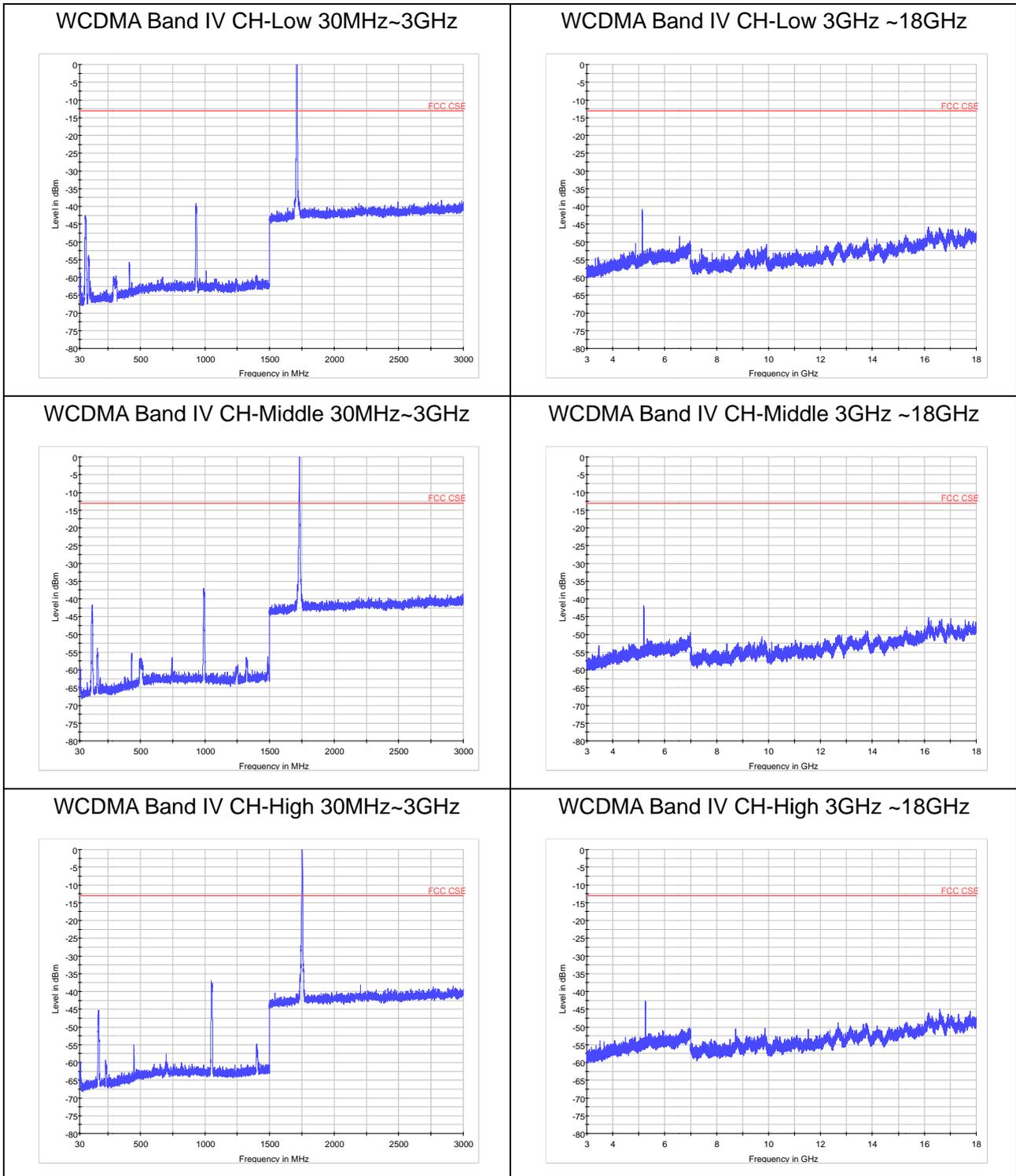
The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-12.75GHz	1.407 dB



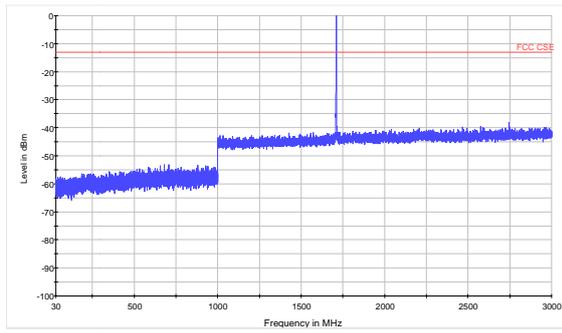
Test Result: PASS

If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.
The signal beyond the limit is carrier in the following plots.

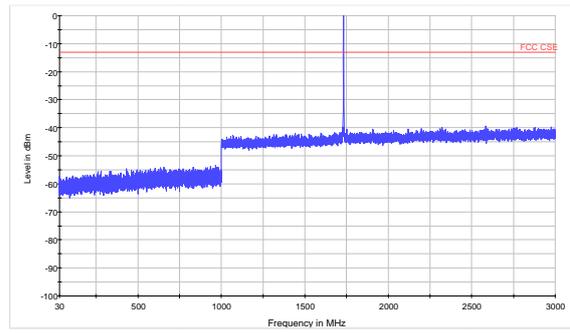




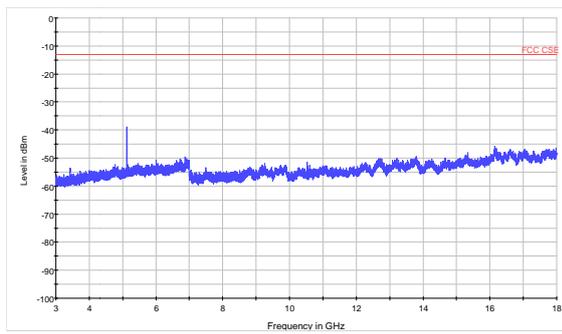
LTE Band 4 1.4MHz CH-Low 30MHz~3GHz



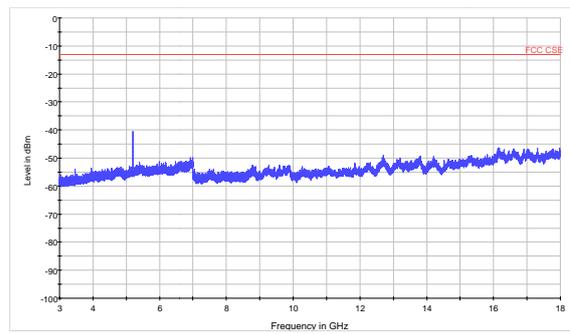
LTE Band 4 1.4MHz CH-Middle 30MHz~3GHz



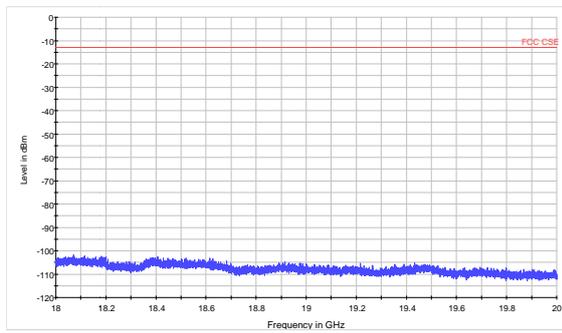
LTE Band 4 1.4MHz CH-Low 3GHz~18GHz



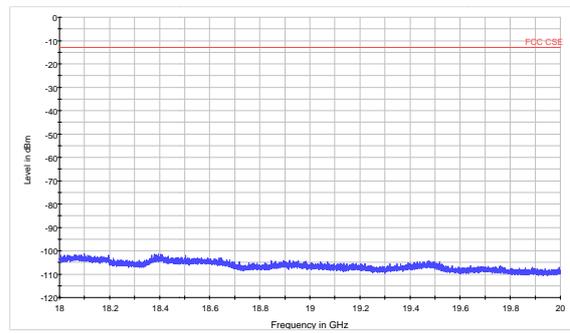
LTE Band 4 1.4MHz CH-Middle 3GHz~18GHz



LTE Band 4 1.4MHz CH-Low 18GHz~20GHz

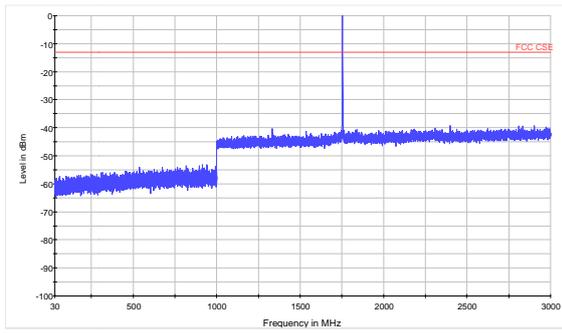


LTE Band 4 1.4MHz CH-Middle 18GHz~20GHz

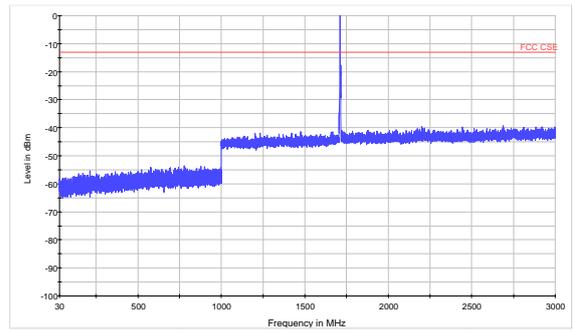




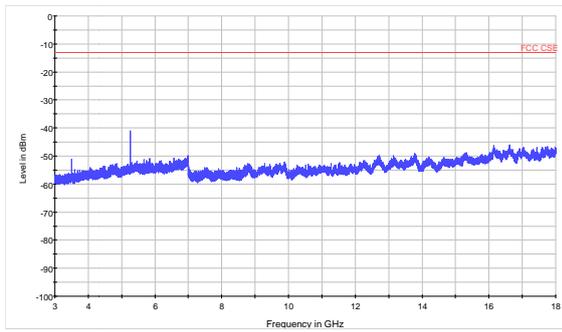
LTE Band 4 1.4MHz CH-High 30MHz~3GHz



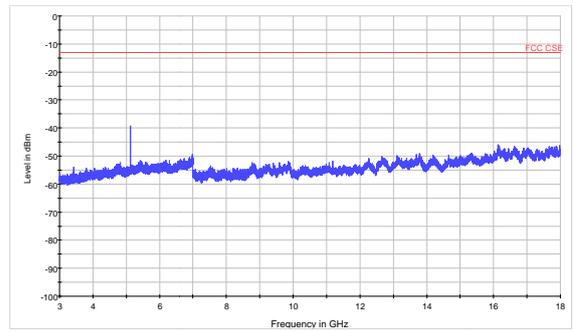
LTE Band 4 3MHz CH-Low 30MHz~3GHz



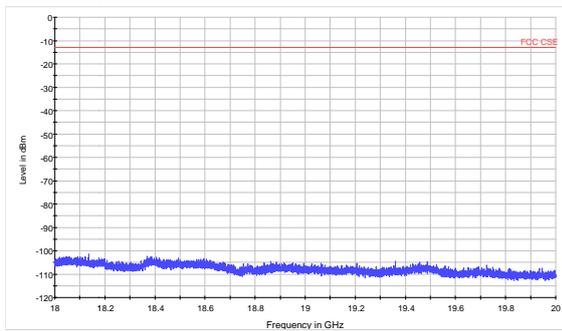
LTE Band 4 1.4MHz CH-High 3GHz~18GHz



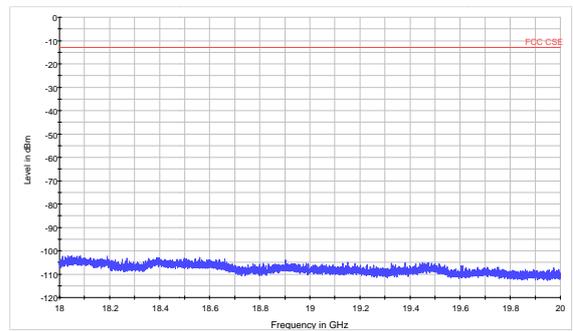
LTE Band 4 3MHz CH-Low 3GHz~18GHz



LTE Band 4 1.4MHz CH-High 18GHz~20GHz

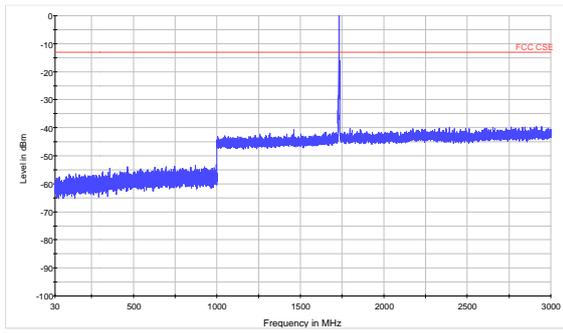


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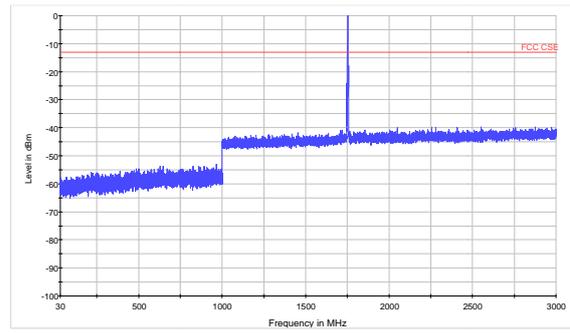




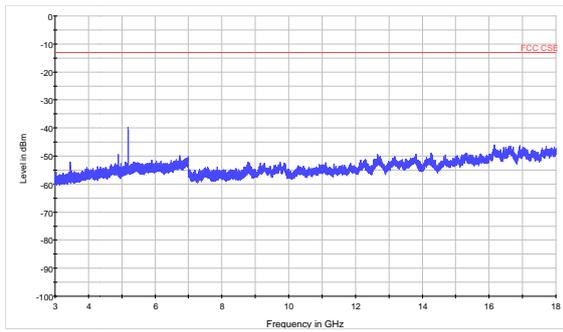
LTE Band 4 3MHz CH-Middle 30MHz~3GHz



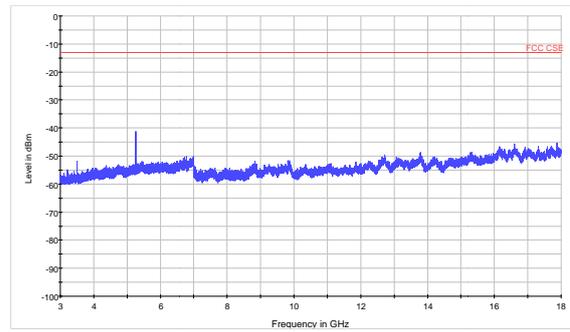
LTE Band 4 3MHz CH-High 30MHz~3GHz



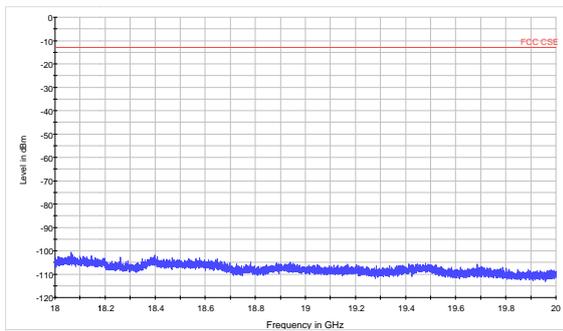
LTE Band 4 3MHz CH-Middle 3GHz~18GHz



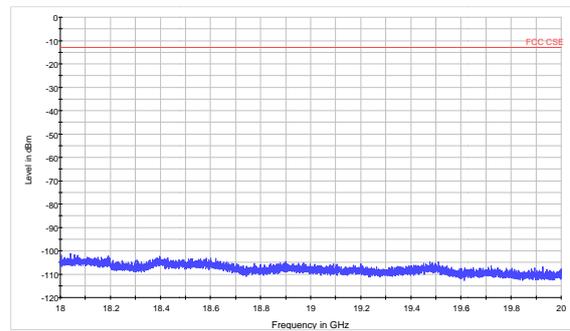
LTE Band 4 3MHz CH-High 3GHz~18GHz



LTE Band 4 3MHz CH-Middle 18GHz~20GHz

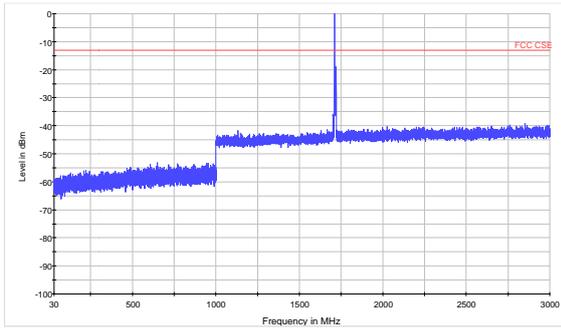


LTE Band 4 3MHz CH-High 18GHz~20GHz

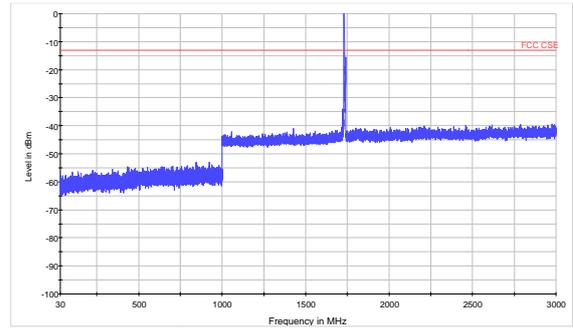




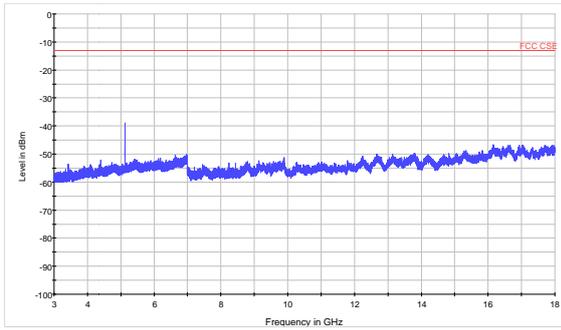
LTE Band 4 5MHz CH-Low 30MHz~3GHz



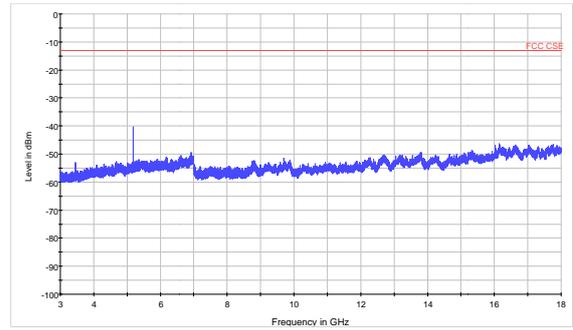
LTE Band 4 5MHz CH-Middle 30MHz~3GHz



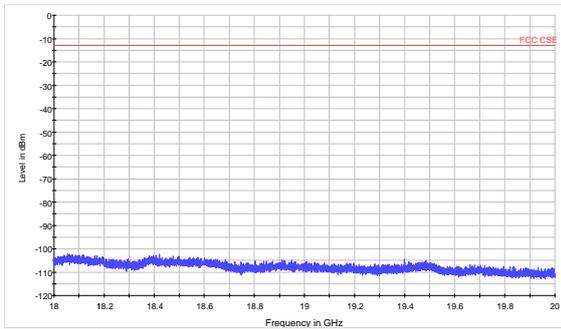
LTE Band 4 5MHz CH-Low 3GHz~18GHz



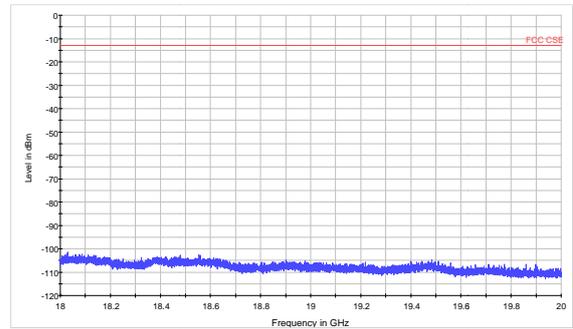
LTE Band 4 5MHz CH-Middle 3GHz~18GHz



LTE Band 4 5MHz CH-Low 18GHz~20GHz

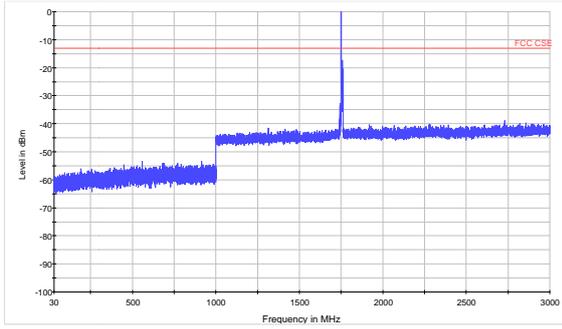


LTE Band 4 5MHz CH-Middle 18GHz~20GHz

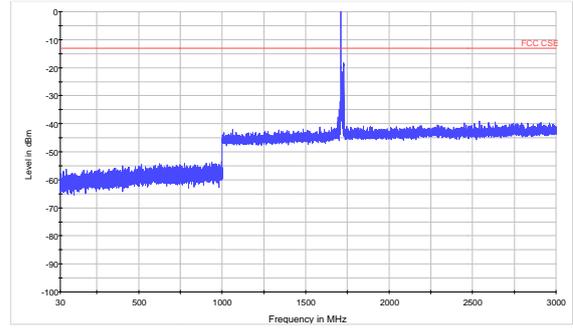




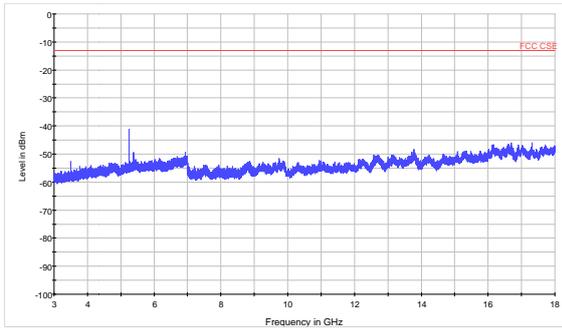
LTE Band 4 5MHz CH-High 30MHz~3GHz



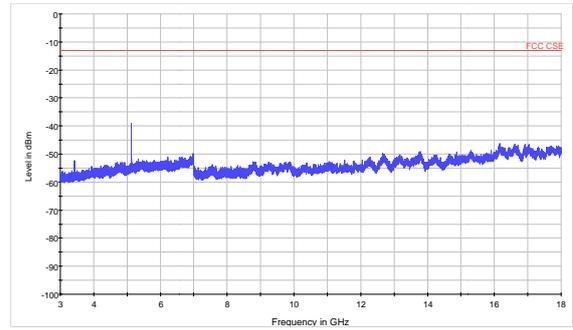
LTE Band 4 10MHz CH-Low 30MHz~3GHz



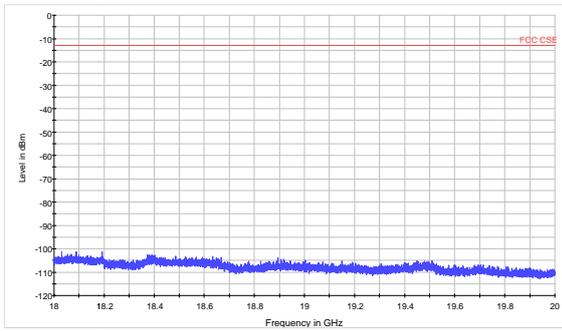
LTE Band 4 5MHz CH-High 3GHz~18GHz



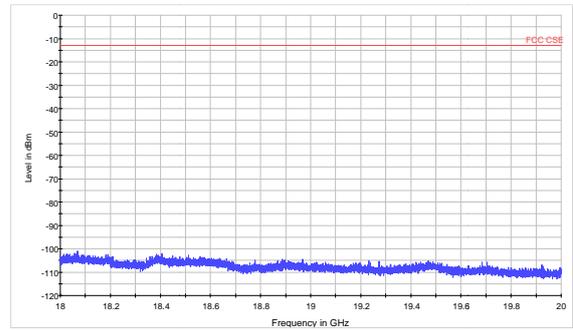
LTE Band 4 10MHz CH-Low 3GHz~18GHz



LTE Band 4 5MHz CH-High 18GHz~20GHz

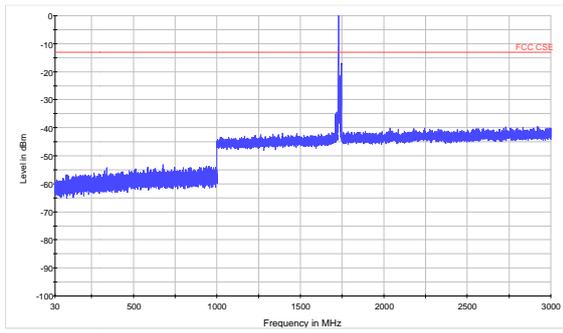


LTE Band 4 10MHz CH-Low 18GHz~20GHz

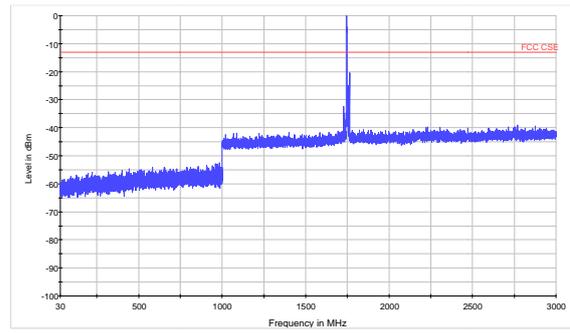




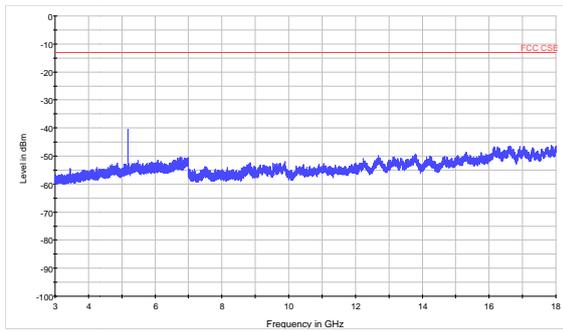
LTE Band 4 10MHz CH-Middle 30MHz~3GHz



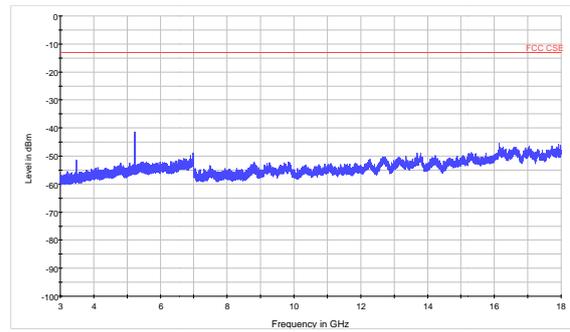
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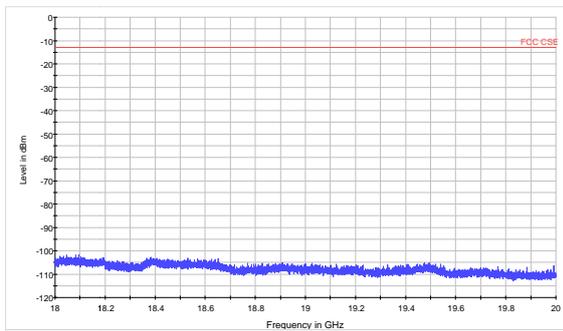
LTE Band 4 10MHz CH-Middle 3GHz~18GHz



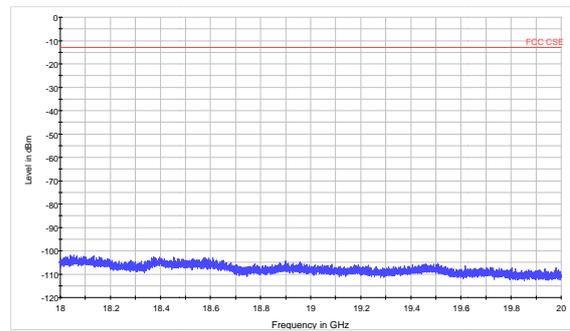
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LTE Band 4 10MHz CH-Middle 18GHz~20GHz

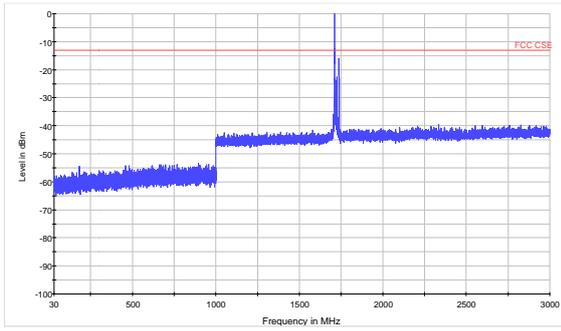


LTE Band 4 10MHz CH-High 18GHz~20GHz

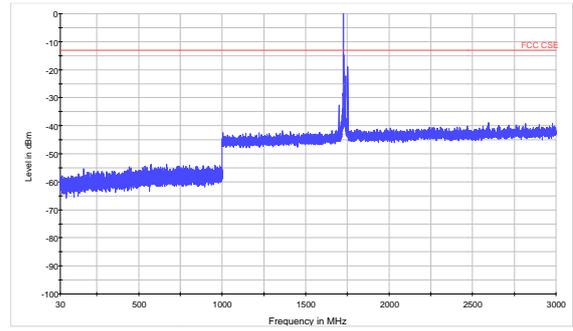




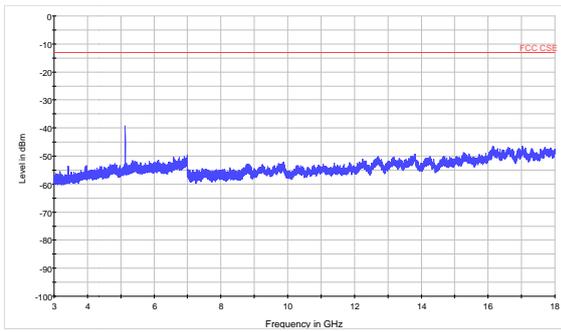
LTE Band 4 15MHz CH-Low 30MHz~3GHz



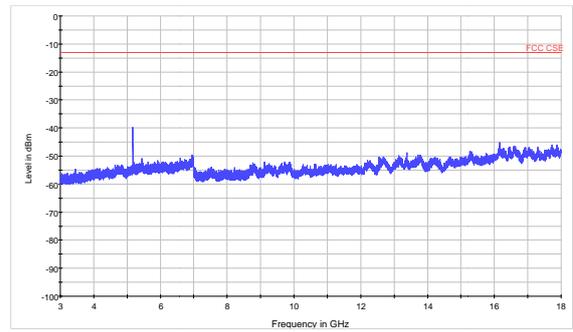
LTE Band 4 15MHz CH-Middle 30MHz~3GHz



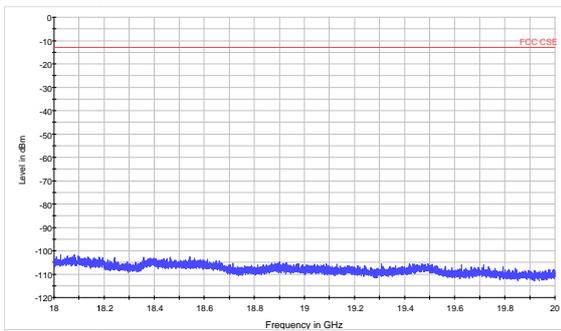
LTE Band 4 15MHz CH-Low 3GHz~18GHz



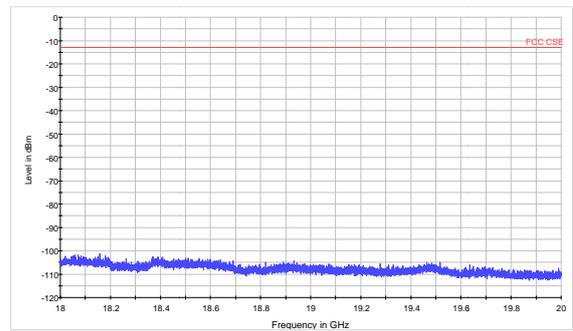
LTE Band 4 15MHz CH-Middle 3GHz~18GHz



LTE Band 4 15MHz CH-Low 18GHz~20GHz

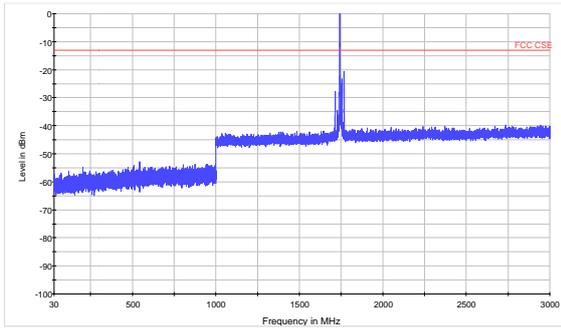


LTE Band 4 15MHz CH-Middle 18GHz~20GHz

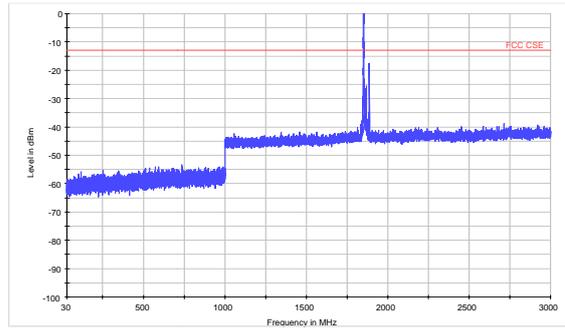




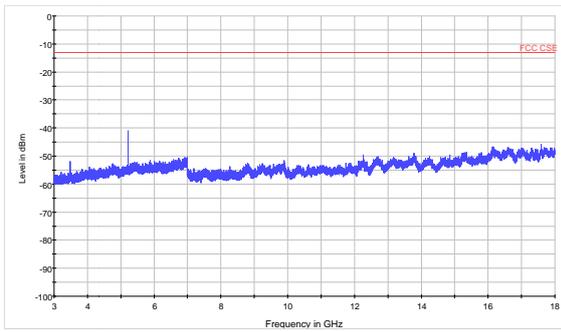
LTE Band 4 15MHz CH-High 30MHz~3GHz



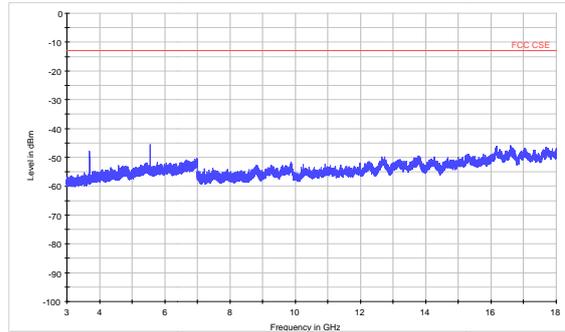
LTE Band 4 20MHz CH-Low 30MHz~3GHz



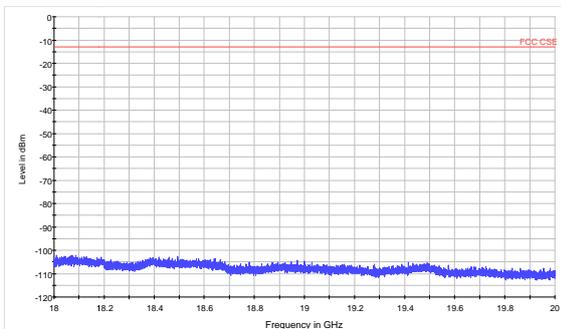
LTE Band 4 15MHz CH-High 3GHz~18GHz



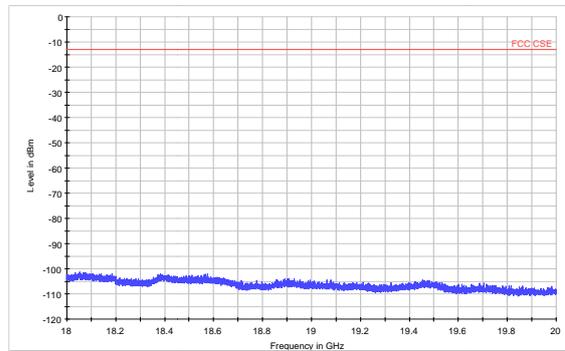
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LTE Band 4 15MHz CH-High 18GHz~20GHz

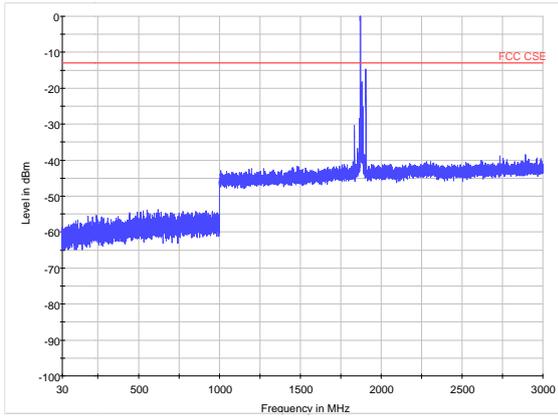


LTE Band 4 20MHz CH-Low 18GHz~20GHz

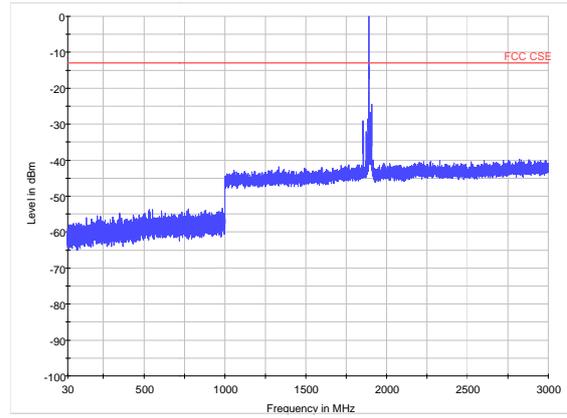




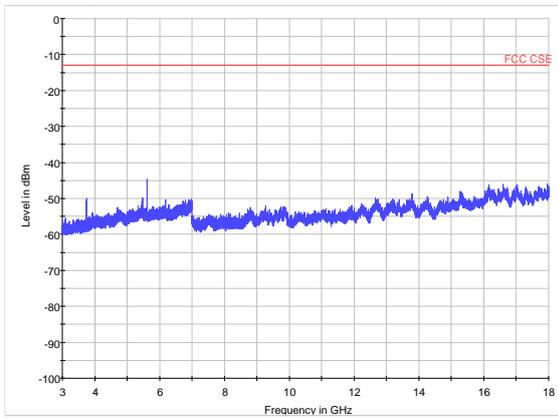
LTE Band 4 20MHz CH-Middle 30MHz~3GHz



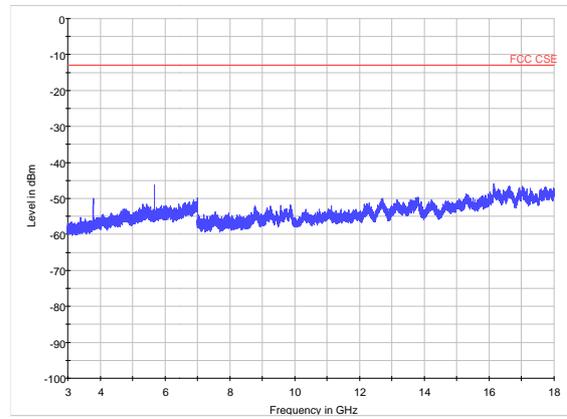
LTE Band 4 20MHz CH-High 30MHz~3GHz



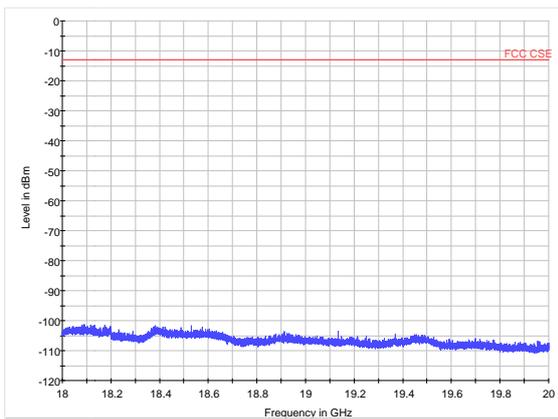
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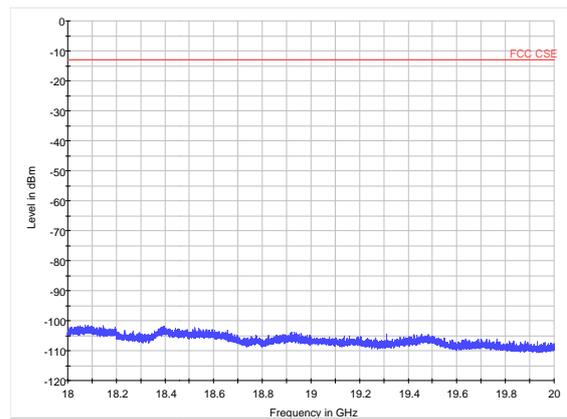
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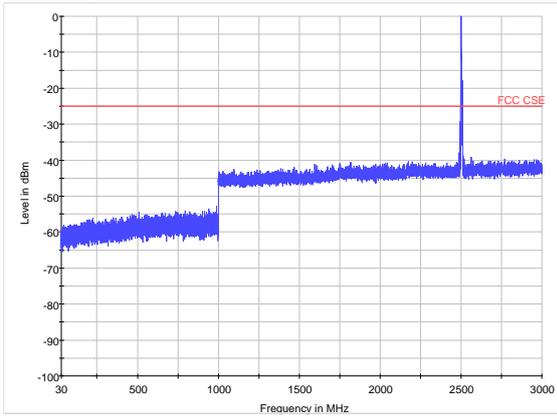


LTE Band 4 20MHz CH-High 18GHz~20GHz

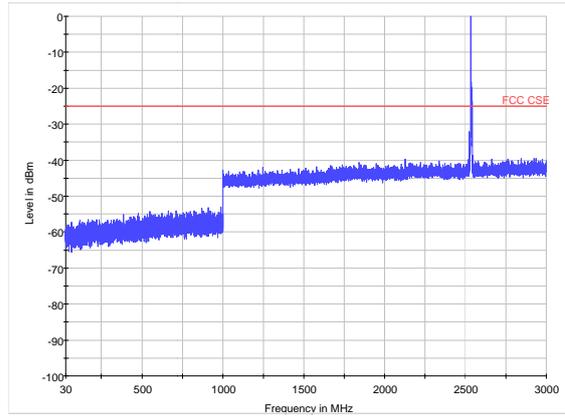




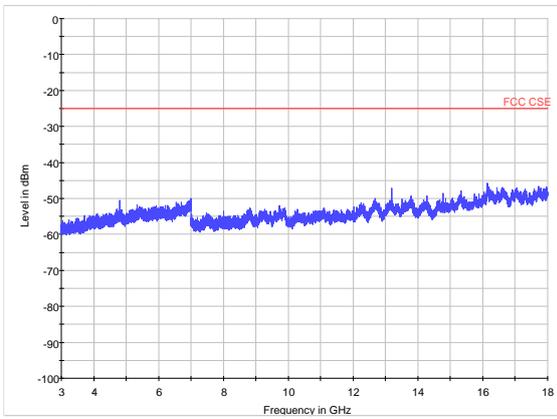
LTE Band 7 5MHz CH-Low 30MHz~3GHz



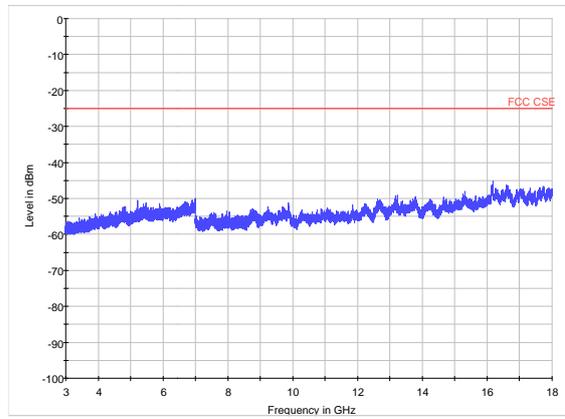
LTE Band 7 5MHz CH-Middle 30MHz~3GHz



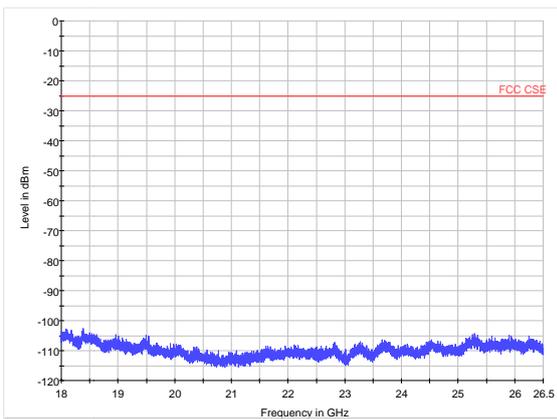
LTE Band 7 5MHz CH-Low 3GHz~18GHz



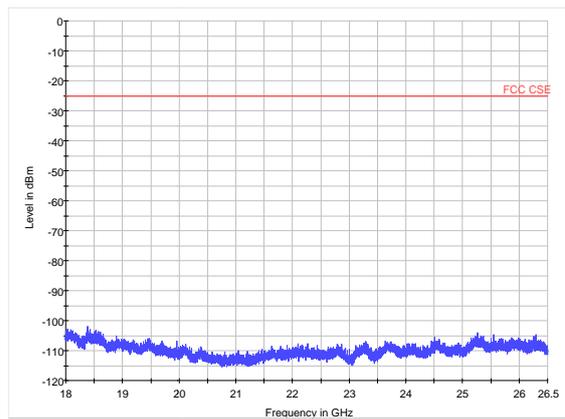
LTE Band 7 5MHz CH-Middle 3GHz~18GHz



LTE Band 7 5MHz CH-Low 18GHz~26.5GHz

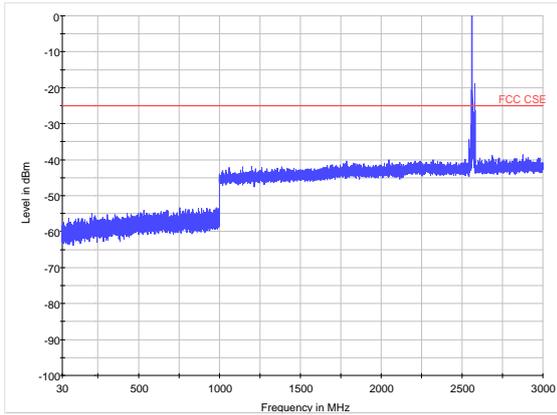


LTE Band 7 5MHz CH-Middle 18GHz~26.5GHz

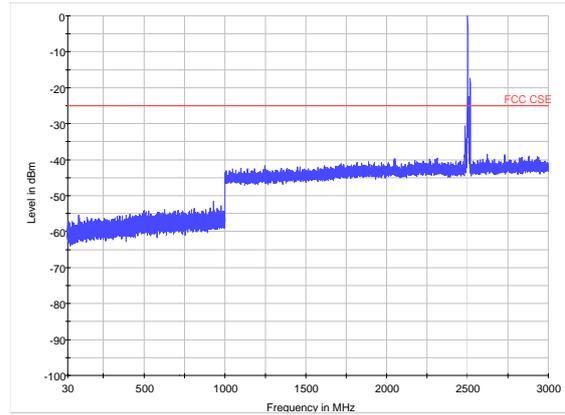




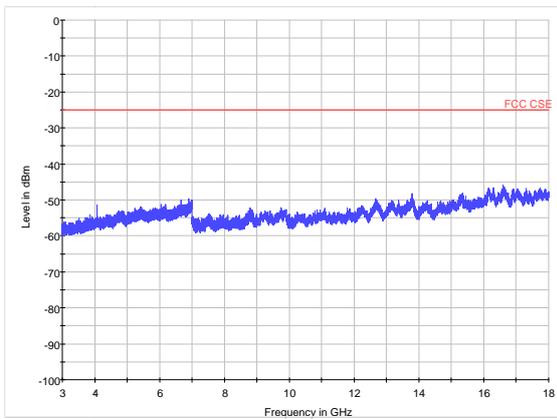
LTE Band 7 5MHz CH-High 30MHz~3GHz



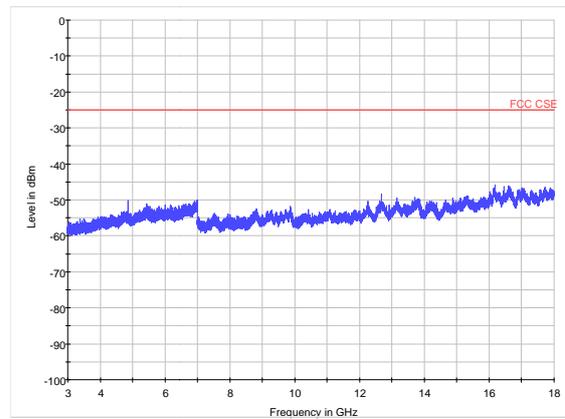
LTE Band 7 10MHz CH-Low 30MHz~3GHz



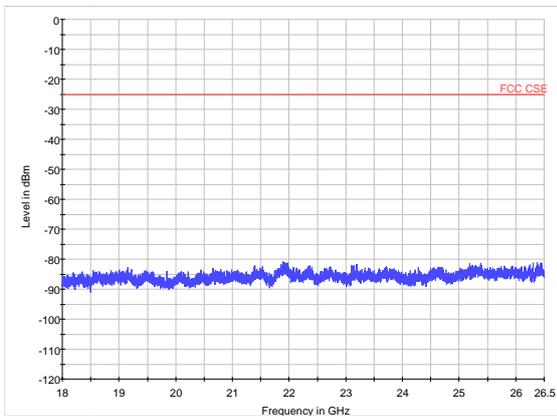
LTE Band 7 5MHz CH-High 3GHz~18GHz



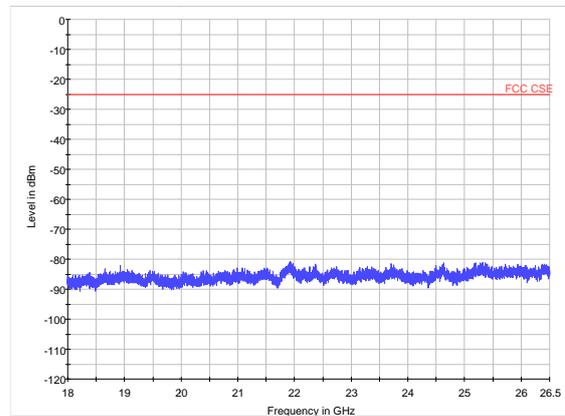
LTE Band 7 10MHz CH-Low 3GHz~18GHz



LTE Band 7 5MHz CH-High 18GHz~26.5GHz

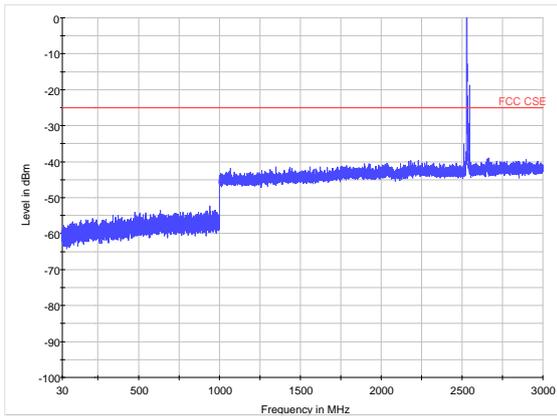


LTE Band 7 10MHz C CH-Low 18GHz~26.5GHz

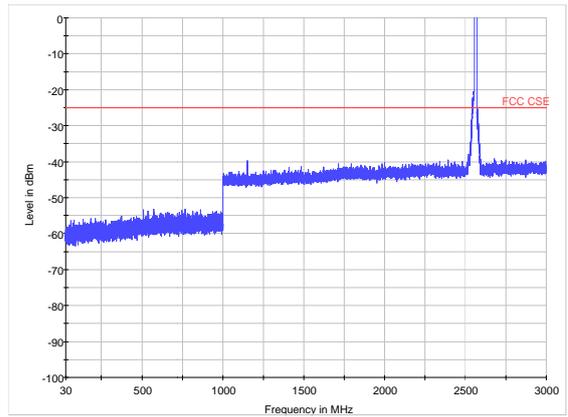




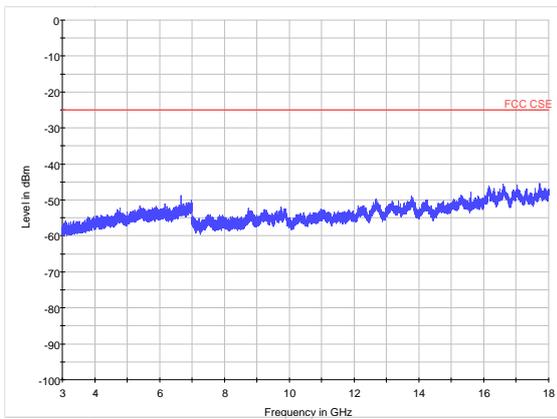
LTE Band 7 10MHz CH-Middle 30MHz~3GHz



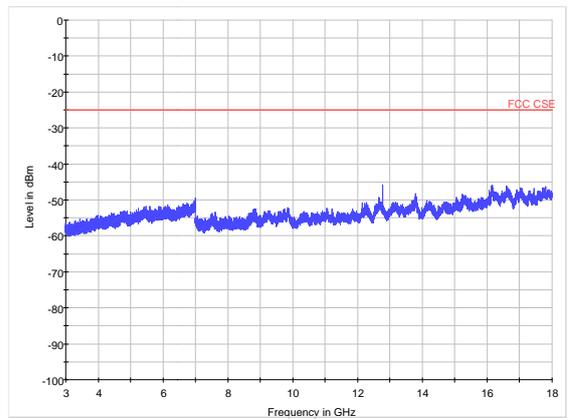
LTE Band 7 10MHz CH-High 30MHz~3GHz



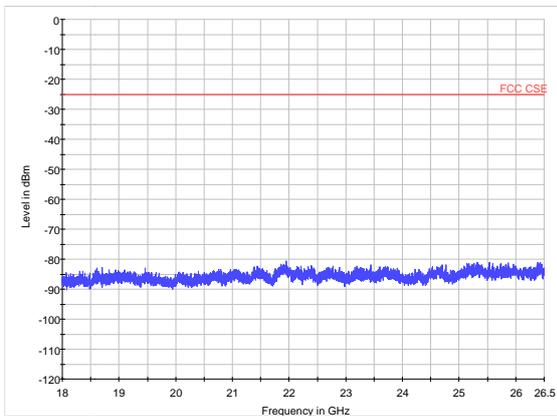
LTE Band 7 10MHz CH-Middle 3GHz~18GHz



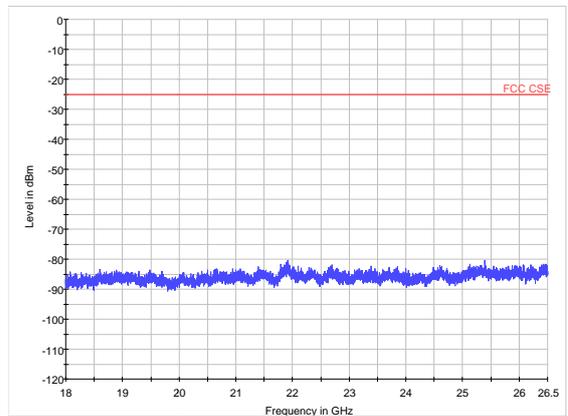
LTE Band 7 10MHz CH-High 3GHz~18GHz



LTE Band 7 10MHz CH-Middle 18GHz~26.5GHz

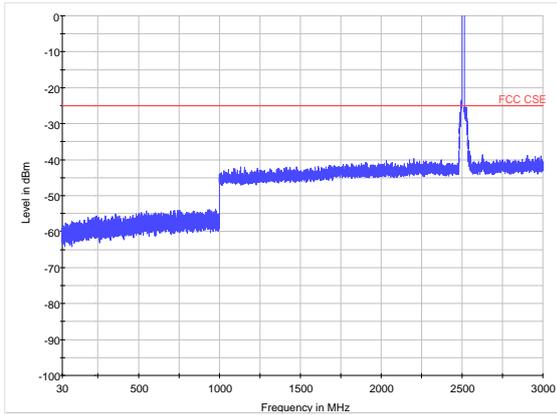


LTE Band 7 10MHz CH-High 18GHz~26.5GHz

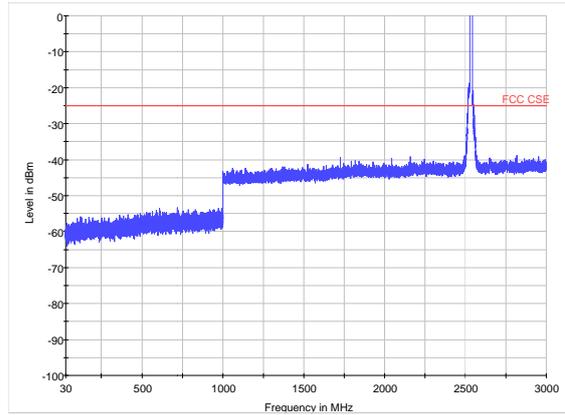




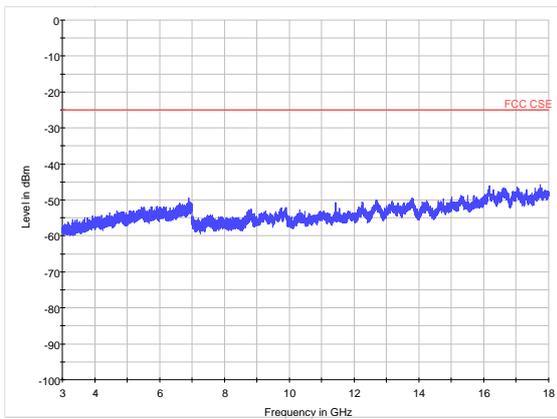
LTE Band 7 15MHz CH-Low 30MHz~3GHz



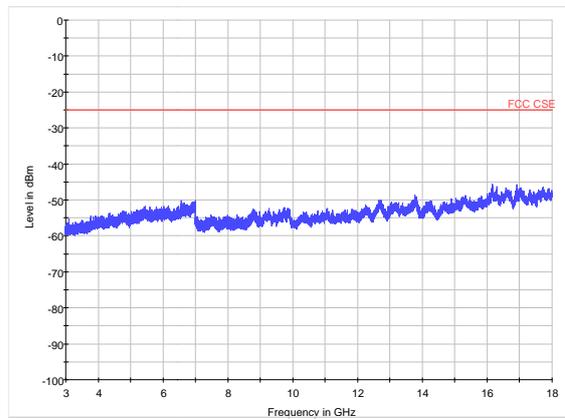
LTE Band 7 15MHz CH-Middle 30MHz~3GHz



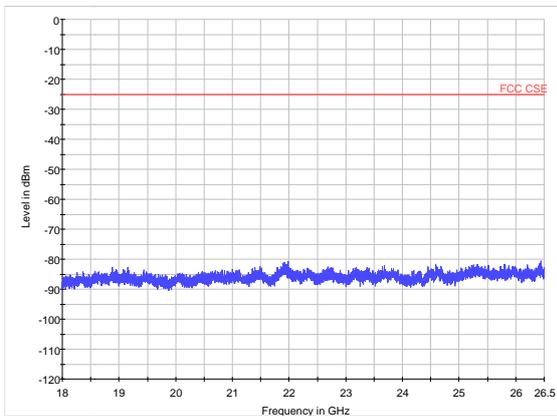
LTE Band 7 15MHz CH-Low 3GHz~18GHz



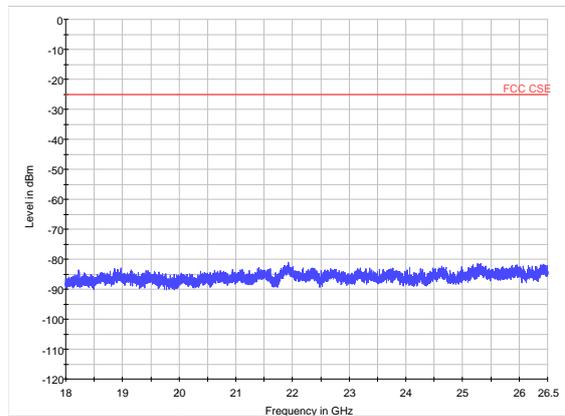
LTE Band 7 15MHz CH-Middle 3GHz~18GHz



LTE Band 7 15MHz CH-Low 18GHz~26.5GHz

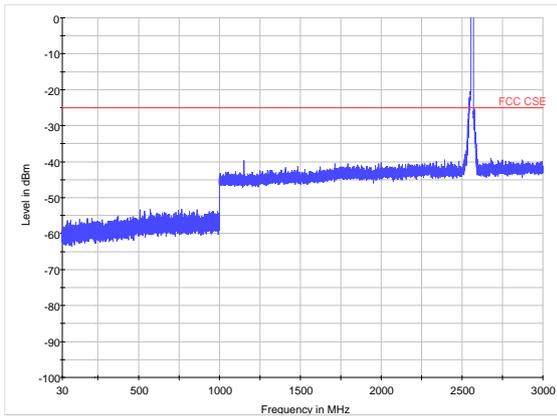


LTE Band 7 15MHz CH-Middle 18GHz~26.5GHz

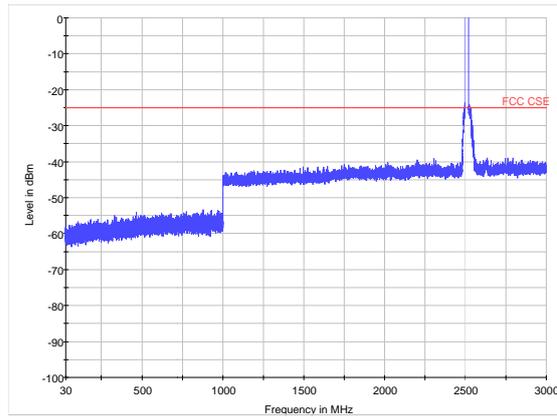




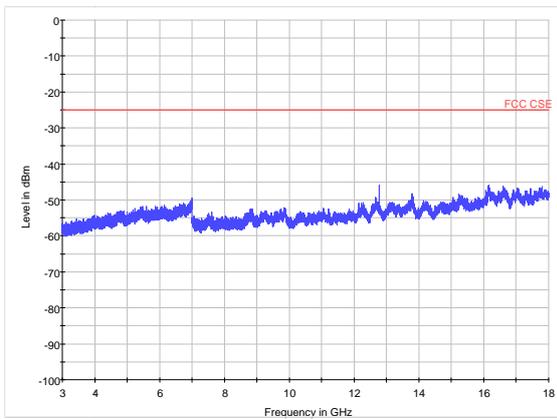
LTE Band 7 15MHz CH-High 30MHz~3GHz



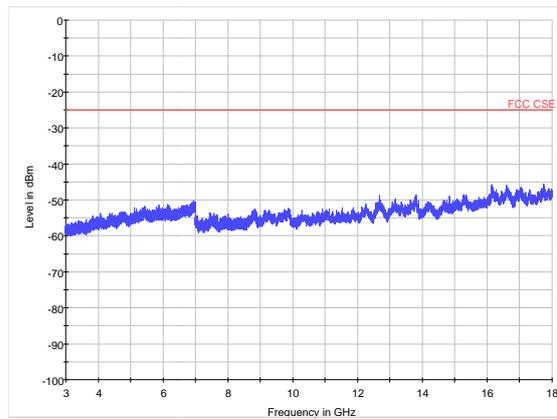
LTE Band 7 20MHz CH-Low 30MHz~3GHz



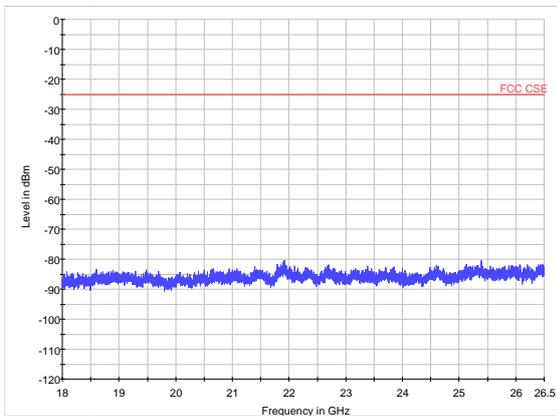
LTE Band 7 15MHz CH-High 3GHz~18GHz



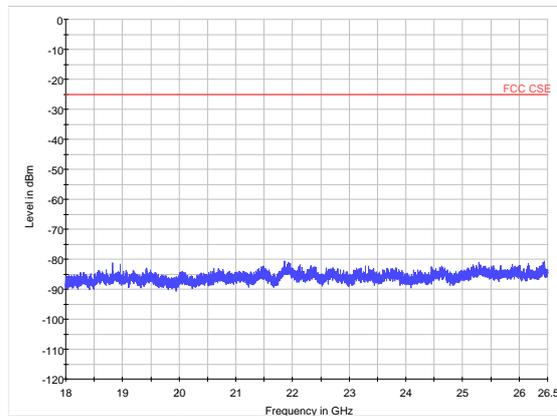
LTE Band 7 20MHz CH-Low 3GHz~18GHz



LTE Band 7 15MHz CH-High 18GHz~26.5GHz

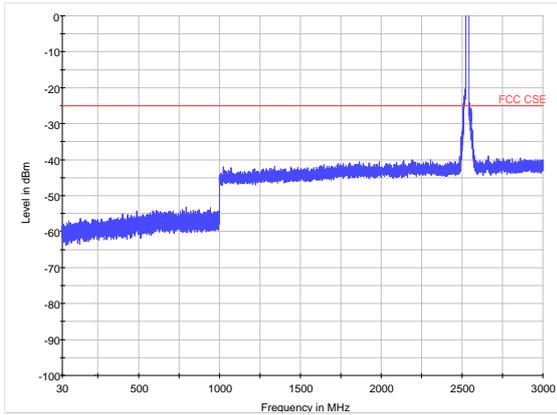


LTE Band 7 20MHz CH-Low 18GHz~26.5GHz

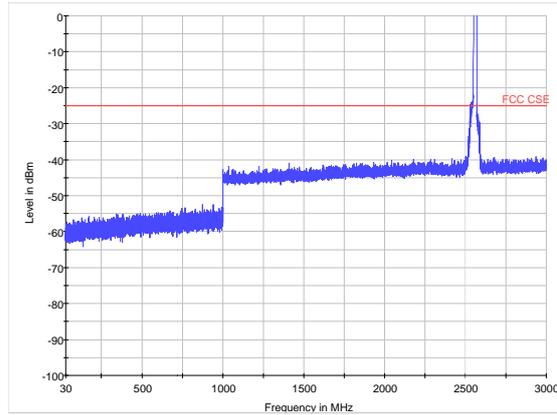




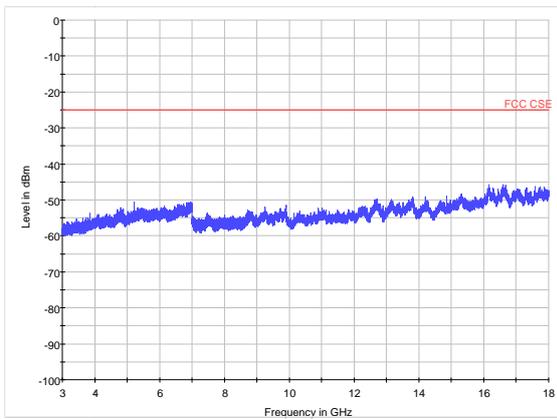
LTE Band 7 20MHz CH-Middle 30MHz~3GHz



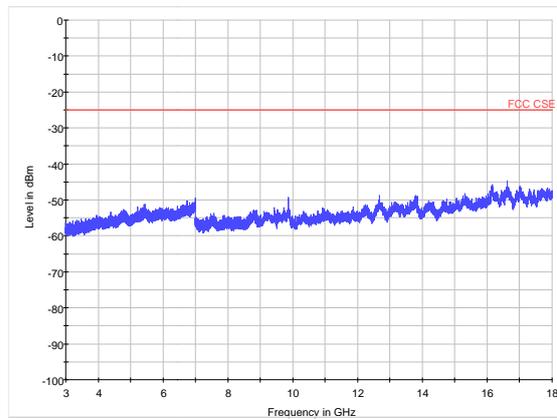
LTE Band 7 20MHz CH-High 30MHz~3GHz



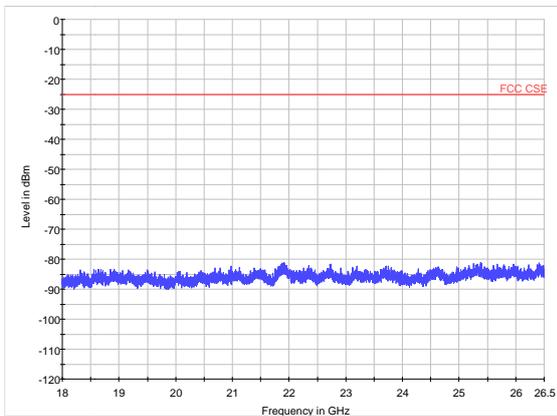
LTE Band 7 20MHz CH-Middle 3GHz~18GHz



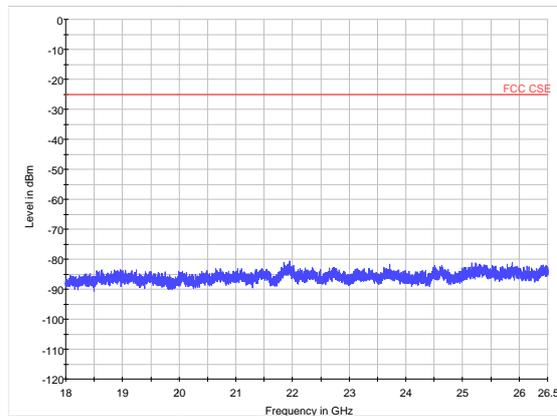
LTE Band 7 20MHz CH-High 3GHz~18GHz



LTE Band 7 20MHz CH-Middle 18GHz~26.5GHz



LTE Band 7 20MHz CH-High 18GHz~26.5GHz





4.8 Radiates Spurious Emission

Ambient condition

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

Method of Measurement

1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. Above 30MHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz for above 1GHz and RBW=100kHz, VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$

The measurement results are amend as described below:

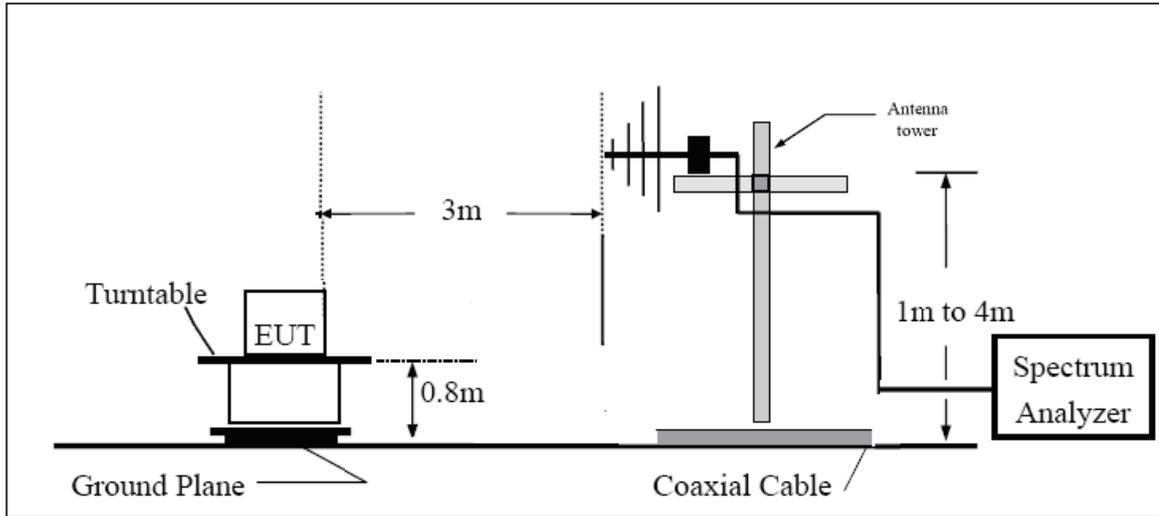
$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$

7. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi)

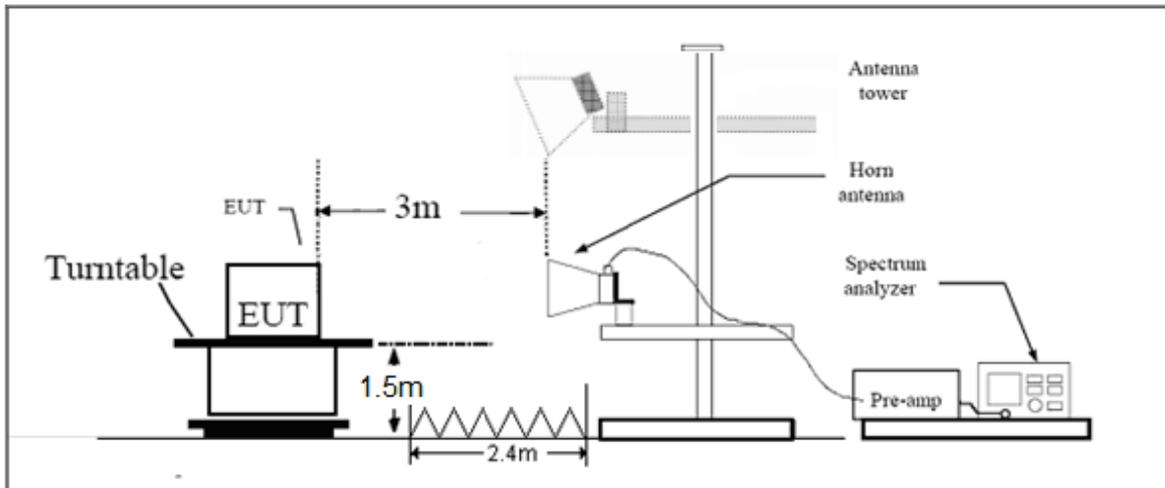
and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15\text{dBi}$.

Test setup

30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

LTE -4 Rule Part 27.53(h) specifies that “the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB.”

LTE -7 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 -4 Limit	-13 dBm
LTE -7 Limit	-25 dBm



Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

Test Result

WCDMA Band IV CH1312

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3422.3	-25.90	2.6	10.15	Vertical	-20.5	-13	7.50	45
3	5133.4	-36.00	2.4	11.35	Vertical	-29.2	-13	16.20	225
4	6844.5	-40.90	4.5	10.85	Vertical	-36.7	-13	23.70	90
5	8562.0	-47.70	5.1	11.35	Vertical	-43.6	-13	30.60	45
6	10274.4	-45.00	5.3	11.95	Vertical	-40.5	-13	27.50	135
7	11986.8	-45.30	5.5	13.55	Vertical	-39.4	-13	26.40	45
8	13699.2	-43.70	6.3	13.75	Vertical	-38.4	-13	25.40	0
9	15411.6	-43.90	6.7	13.85	Vertical	-38.9	-13	25.90	135
10	17124.0	-41.60	6.8	14.25	Vertical	-36.3	-13	23.30	225

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.

WCDMA Band IV CH1413

Harmonic	TX ch.1413 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3462.4	-28.20	2.6	10.75	Vertical	-22.2	-13	9.20	135
3	5194.1	-37.90	2.4	11.05	Vertical	-31.4	-13	18.40	0
4	6925.5	-42.90	4.5	11.15	Vertical	-38.4	-13	25.40	225
5	8663.0	-47.40	5.1	11.35	Vertical	-43.3	-13	30.30	90
6	10395.6	-44.20	5.3	11.95	Vertical	-39.7	-13	26.70	135
7	12128.2	-45.40	5.5	13.55	Vertical	-39.5	-13	26.50	90
8	13860.8	-41.30	6.3	13.75	Vertical	-36.0	-13	23.00	270
9	15593.4	-44.90	6.7	13.85	Vertical	-39.9	-13	26.90	45
10	17326.0	-43.40	6.8	14.25	Vertical	-38.1	-13	25.10	0

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.



WCDMA Band IV CH1513

Harmonic	TX ch.1513 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3502.5	-26.60	2.6	10.15	Vertical	-21.2	-13	8.20	180
3	5254.1	-37.20	2.4	11.05	Vertical	-30.7	-13	17.70	315
4	7010.4	-46.40	4.5	11.15	Vertical	-41.9	-13	28.90	270
5	8763.0	-47.10	5.1	11.35	Vertical	-43.0	-13	30.00	0
6	10515.6	-44.00	5.3	11.95	Vertical	-39.5	-13	26.50	180
7	12268.2	-45.30	5.5	13.55	Vertical	-39.4	-13	26.40	225
8	14020.8	-43.30	6.3	13.75	Vertical	-38.0	-13	25.00	90
9	15773.4	-43.40	6.7	13.85	Vertical	-38.4	-13	25.40	135
10	17526.0	-43.30	6.8	14.25	Vertical	-38.0	-13	25.00	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 1.4MHz CH19957, RB 1

Harmonic	CH19957 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3421.4	-27.80	2.6	10.15	Vertical	-22.4	-13	9.40	90
3	5132.1	-38.20	2.4	11.35	Vertical	-31.4	-13	18.40	135
4	6842.8	-43.70	4.5	10.85	Vertical	-39.5	-13	26.50	225
5	8553.5	-45.80	5.1	11.35	Vertical	-41.7	-13	28.70	225
6	10264.2	-43.80	5.3	11.95	Vertical	-39.3	-13	26.30	90
7	11974.9	-44.10	5.5	13.55	Vertical	-38.2	-13	25.20	90
8	13685.6	-41.20	6.3	13.75	Vertical	-35.9	-13	22.90	45
9	15396.3	-42.50	6.7	13.85	Vertical	-37.5	-13	24.50	225
10	17107.0	-39.80	6.8	14.25	Vertical	-34.5	-13	21.50	90

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 1.4MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-28.00	2.6	10.75	Vertical	-22.0	-13	9.00	45
3	5197.5	-35.80	2.4	11.05	Vertical	-29.3	-13	16.30	135
4	6930.0	-44.10	4.5	11.15	Vertical	-39.6	-13	26.60	0
5	8662.5	-45.20	5.1	11.35	Vertical	-41.1	-13	28.10	90
6	10395.0	-42.50	5.3	11.95	Vertical	-38.0	-13	25.00	135
7	12127.5	-44.50	5.5	13.55	Vertical	-38.6	-13	25.60	270
8	13860.0	-40.90	6.3	13.75	Vertical	-35.6	-13	22.60	225
9	15592.5	-43.00	6.7	13.85	Vertical	-38.0	-13	25.00	45
10	17325.0	-41.70	6.8	14.25	Vertical	-36.4	-13	23.40	135

- Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 1.4MHz CH20393, RB 1

Harmonic	CH20393 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3508.6	-29.70	2.6	10.15	Vertical	-24.3	-13	11.30	225
3	5262.9	-37.80	2.4	11.05	Vertical	-31.3	-13	18.30	135
4	7017.2	-46.60	4.5	11.15	Vertical	-42.1	-13	29.10	0
5	8771.5	-45.10	5.1	11.35	Vertical	-41.0	-13	28.00	45
6	10525.8	-42.30	5.3	11.95	Vertical	-37.8	-13	24.80	90
7	12280.1	-44.50	5.5	13.55	Vertical	-38.6	-13	25.60	225
8	14034.4	-40.40	6.3	13.75	Vertical	-35.1	-13	22.10	90
9	15788.7	-42.60	6.7	13.85	Vertical	-37.6	-13	24.60	90
10	17543.0	-40.90	6.8	14.25	Vertical	-35.6	-13	22.60	135

- Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 3MHz CH19965, RB 1

Harmonic	CH19965 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3423.0	-28.90	2.6	10.15	Vertical	-23.5	-13	10.50	225
3	5134.5	-33.30	2.4	11.35	Vertical	-26.5	-13	13.50	225
4	6846.0	-43.20	4.5	10.85	Vertical	-39.0	-13	26.00	135
5	8557.5	-46.00	5.1	11.35	Vertical	-41.9	-13	28.90	0
6	10269.0	-44.40	5.3	11.95	Vertical	-39.9	-13	26.90	45
7	11980.5	-42.60	5.5	13.55	Vertical	-36.7	-13	23.70	90
8	13692.0	-41.20	6.3	13.75	Vertical	-35.9	-13	22.90	45
9	15403.5	-42.10	6.7	13.85	Vertical	-37.1	-13	24.10	225
10	17115.0	-40.20	6.8	14.25	Vertical	-34.9	-13	21.90	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 3MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-28.80	2.6	10.75	Vertical	-22.8	-13	9.80	135
3	5197.5	-33.20	2.4	11.05	Vertical	-26.7	-13	13.70	225
4	6930.0	-43.00	4.5	11.15	Vertical	-38.5	-13	25.50	90
5	8662.5	-45.70	5.1	11.35	Vertical	-41.6	-13	28.60	225
6	10395.0	-43.90	5.3	11.95	Vertical	-39.4	-13	26.40	135
7	12127.5	-43.60	5.5	13.55	Vertical	-37.7	-13	24.70	225
8	13860.0	-41.20	6.3	13.75	Vertical	-35.9	-13	22.90	90
9	15592.5	-42.80	6.7	13.85	Vertical	-37.8	-13	24.80	225
10	17325.0	-39.70	6.8	14.25	Vertical	-34.4	-13	21.40	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 3MHz CH20385, RB 1

Harmonic	CH20385 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3507.0	-24.50	2.6	10.15	Vertical	-19.1	-13	6.10	45
3	5260.5	-33.00	2.4	11.05	Vertical	-26.5	-13	13.50	135
4	7014.0	-40.50	4.5	11.15	Vertical	-36.0	-13	23.00	0
5	8767.5	-46.40	5.1	11.35	Vertical	-42.3	-13	29.30	90
6	10521.0	-42.30	5.3	11.95	Vertical	-37.8	-13	24.80	135
7	12274.5	-43.80	5.5	13.55	Vertical	-37.9	-13	24.90	45
8	14028.0	-40.60	6.3	13.75	Vertical	-35.3	-13	22.30	270
9	15781.5	-43.10	6.7	13.85	Vertical	-38.1	-13	25.10	225
10	17535.0	-41.30	6.8	14.25	Vertical	-36.0	-13	23.00	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 5MHz CH19975, RB 1

Harmonic	CH19975 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3425.0	-25.40	2.6	10.15	Vertical	-20.0	-13	7.00	225
3	5137.5	-33.40	2.4	11.35	Vertical	-26.6	-13	13.60	135
4	6850.0	-41.70	4.5	10.85	Vertical	-37.5	-13	24.50	0
5	8562.5	-45.20	5.1	11.35	Vertical	-41.1	-13	28.10	45
6	10275.0	-45.10	5.3	11.95	Vertical	-40.6	-13	27.60	45
7	11987.5	-43.10	5.5	13.55	Vertical	-37.2	-13	24.20	90
8	13700.0	-40.70	6.3	13.75	Vertical	-35.4	-13	22.40	225
9	15412.5	-43.30	6.7	13.85	Vertical	-38.3	-13	25.30	90
10	17125.0	-40.20	6.8	14.25	Vertical	-34.9	-13	21.90	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 5MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-24.60	2.6	10.75	Vertical	-18.6	-13	5.60	225
3	5197.5	-29.90	2.4	11.05	Vertical	-23.4	-13	10.40	225
4	6930.0	-42.10	4.5	11.15	Vertical	-37.6	-13	24.60	90
5	8662.5	-44.70	5.1	11.35	Vertical	-40.6	-13	27.60	45
6	10395.0	-44.70	5.3	11.95	Vertical	-40.2	-13	27.20	225
7	12127.5	-42.90	5.5	13.55	Vertical	-37.0	-13	24.00	90
8	13860.0	-40.50	6.3	13.75	Vertical	-35.2	-13	22.20	45
9	15592.5	-44.10	6.7	13.85	Vertical	-39.1	-13	26.10	45
10	17325.0	-38.70	6.8	14.25	Vertical	-33.4	-13	20.40	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 5MHz CH20375, RB 1

Harmonic	CH20375 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3505.0	-24.40	2.6	10.15	Vertical	-19.0	-13	6.00	0
3	5257.5	-33.30	2.4	11.05	Vertical	-26.8	-13	13.80	90
4	7010.0	-43.20	4.5	11.15	Vertical	-38.7	-13	25.70	135
5	8762.5	-44.00	5.1	11.35	Vertical	-39.9	-13	26.90	270
6	10515.0	-43.40	5.3	11.95	Vertical	-38.9	-13	25.90	45
7	12267.5	-45.20	5.5	13.55	Vertical	-39.3	-13	26.30	225
8	14020.0	-40.10	6.3	13.75	Vertical	-34.8	-13	21.80	135
9	15772.5	-41.80	6.7	13.85	Vertical	-36.8	-13	23.80	225
10	17525.0	-40.40	6.8	14.25	Vertical	-35.1	-13	22.10	135

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 10MHz CH20000, RB 1

Harmonic	CH20000 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3430.0	-24.30	2.6	10.15	Vertical	-18.9	-13	5.90	0
3	5145.0	-32.50	2.4	11.35	Vertical	-25.7	-13	12.70	45
4	6860.0	-44.70	4.5	10.85	Vertical	-40.5	-13	27.50	45
5	8575.0	-46.00	5.1	11.35	Vertical	-41.9	-13	28.90	90
6	10290.0	-44.70	5.3	11.95	Vertical	-40.2	-13	27.20	225
7	12005.0	-45.30	5.5	13.55	Vertical	-39.4	-13	26.40	90
8	13720.0	-41.10	6.3	13.75	Vertical	-35.8	-13	22.80	135
9	15435.0	-42.30	6.7	13.85	Vertical	-37.3	-13	24.30	225
10	17150.0	-40.90	6.8	14.25	Vertical	-35.6	-13	22.60	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 10MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-25.40	2.6	10.75	Vertical	-19.4	-13	6.40	90
3	5197.5	-29.00	2.4	11.05	Vertical	-22.5	-13	9.50	45
4	6930.0	-41.90	4.5	11.15	Vertical	-37.4	-13	24.40	225
5	8662.5	-44.30	5.1	11.35	Vertical	-40.2	-13	27.20	90
6	10395.0	-43.50	5.3	11.95	Vertical	-39.0	-13	26.00	45
7	12127.5	-45.10	5.5	13.55	Vertical	-39.2	-13	26.20	180
8	13860.0	-40.80	6.3	13.75	Vertical	-35.5	-13	22.50	135
9	15592.5	-43.30	6.7	13.85	Vertical	-38.3	-13	25.30	0
10	17325.0	-40.79	6.8	14.25	Vertical	-35.49	-13	22.49	45

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 10MHz CH20350, RB 1

Harmonic	CH20350 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3500.0	-57.10	2.6	10.15	Vertical	-51.7	-13	38.70	0
3	5250.0	-48.40	2.4	11.05	Vertical	-41.9	-13	28.90	45
4	7000.0	-45.40	4.5	11.15	Vertical	-40.9	-13	27.90	45
5	8750.0	-44.50	5.1	11.35	Vertical	-40.4	-13	27.40	90
6	10500.0	-44.30	5.3	11.95	Vertical	-39.8	-13	26.80	225
7	12250.0	-45.50	5.5	13.55	Vertical	-39.6	-13	26.60	90
8	14000.0	-40.80	6.3	13.75	Vertical	-35.5	-13	22.50	135
9	15750.0	-43.10	6.7	13.85	Vertical	-38.1	-13	25.10	225
10	17500.0	-41.00	6.8	14.25	Vertical	-35.7	-13	22.70	225

- Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 15MHz CH20025, RB 1

Harmonic	CH20025 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3435.0	-21.40	2.6	10.15	Vertical	-16.0	-13	3.00	90
3	5152.5	-35.70	2.4	11.35	Vertical	-28.9	-13	15.90	45
4	6870.0	-40.20	4.5	10.85	Vertical	-36.0	-13	23.00	135
5	8587.5	-44.90	5.1	11.35	Vertical	-40.8	-13	27.80	225
6	10305.0	-46.00	5.3	11.95	Vertical	-41.5	-13	28.50	90
7	12022.5	-45.00	5.5	13.55	Vertical	-39.1	-13	26.10	45
8	13740.0	-41.90	6.3	13.75	Vertical	-36.6	-13	23.60	135
9	15457.5	-42.90	6.7	13.85	Vertical	-37.9	-13	24.90	0
10	17175.0	-40.90	6.8	14.25	Vertical	-35.6	-13	22.60	0

- Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 15MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-22.70	2.6	10.75	Vertical	-16.7	-13	3.70	45.0
3	5197.5	-34.90	2.4	11.05	Vertical	-28.4	-13	15.40	90
4	6930.0	-41.50	4.5	11.15	Vertical	-37.0	-13	24.00	45
5	8662.5	-46.20	5.1	11.35	Vertical	-42.1	-13	29.10	225
6	10395.0	-43.20	5.3	11.95	Vertical	-38.7	-13	25.70	90
7	12127.5	-44.50	5.5	13.55	Vertical	-38.6	-13	25.60	135
8	13860.0	-41.10	6.3	13.75	Vertical	-35.8	-13	22.80	225
9	15592.5	-42.70	6.7	13.85	Vertical	-37.7	-13	24.70	225
10	17325.0	-41.00	6.8	14.25	Vertical	-35.7	-13	22.70	90

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 15MHz CH20325, RB 1

Harmonic	CH20325 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3495.0	-23.70	2.6	10.15	Vertical	-18.3	-13	5.30	45
3	5242.5	-36.00	2.4	11.05	Vertical	-29.5	-13	16.50	225
4	6990.0	-37.90	4.5	11.15	Vertical	-33.4	-13	20.40	90
5	8737.5	-46.20	5.1	11.35	Vertical	-42.1	-13	29.10	45
6	10485.0	-43.50	5.3	11.95	Vertical	-39.0	-13	26.00	135
7	12232.5	-45.10	5.5	13.55	Vertical	-39.2	-13	26.20	45
8	13980.0	-40.80	6.3	13.75	Vertical	-35.5	-13	22.50	0
9	15727.5	-43.30	6.7	13.85	Vertical	-38.3	-13	25.30	135
10	17475.0	-40.79	6.8	14.25	Vertical	-35.49	-13	22.49	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 20MHz CH20050, RB 1

Harmonic	CH20050 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3440.0	-21.50	2.6	10.15	Vertical	-16.1	-13	3.10	135
3	5160.0	-31.40	2.4	11.35	Vertical	-24.6	-13	11.60	0
4	6880.0	-40.20	4.5	10.85	Vertical	-36.0	-13	23.00	45
5	8600.0	-45.20	5.1	11.35	Vertical	-41.1	-13	28.10	225
6	10320.0	-42.50	5.3	11.95	Vertical	-38.0	-13	25.00	90
7	12040.0	-44.50	5.5	13.55	Vertical	-38.6	-13	25.60	225
8	13760.0	-40.90	6.3	13.75	Vertical	-35.6	-13	22.60	90
9	15480.0	-43.00	6.7	13.85	Vertical	-38.0	-13	25.00	135
10	17200.0	-41.70	6.8	14.25	Vertical	-36.4	-13	23.40	225

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 4 QPSK Bandwidth = 20MHz CH20175, RB 1

Harmonic	CH20175 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3465.0	-24.60	2.6	10.75	Vertical	-18.6	-13	5.60	225
3	5197.5	-33.80	2.4	11.05	Vertical	-27.3	-13	14.30	90
4	6930.0	-41.40	4.5	11.15	Vertical	-36.9	-13	23.90	45
5	8662.5	-47.40	5.1	11.35	Vertical	-43.3	-13	30.30	225
6	10395.0	-44.70	5.3	11.95	Vertical	-40.2	-13	27.20	45
7	12127.5	-45.00	5.5	13.55	Vertical	-39.1	-13	26.10	90
8	13860.0	-45.60	6.3	13.75	Vertical	-40.3	-13	27.30	45
9	15592.5	-44.60	6.7	13.85	Vertical	-39.6	-13	26.60	135
10	17325.0	-46.60	6.8	14.25	Vertical	-41.3	-13	28.30	0

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 4 QPSK Bandwidth = 20MHz CH20300, RB 1

Harmonic	CH20300 Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3490.0	-24.70	2.6	10.15	Vertical	-19.3	-13	6.30	90
3	5235.0	-32.00	2.4	11.05	Vertical	-25.5	-13	12.50	135
4	6980.0	-39.90	4.5	11.15	Vertical	-35.4	-13	22.40	45
5	8725.0	-45.60	5.1	11.35	Vertical	-41.5	-13	28.50	270
6	10470.0	-44.80	5.3	11.95	Vertical	-40.3	-13	27.30	225
7	12215.0	-42.80	5.5	13.55	Vertical	-36.9	-13	23.90	135
8	13960.0	-40.30	6.3	13.75	Vertical	-35.0	-13	22.00	225
9	15705.0	-42.10	6.7	13.85	Vertical	-37.1	-13	24.10	135
10	17450.0	-40.30	6.8	14.25	Vertical	-35.0	-13	22.00	0

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 5MHz CH20775, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5005.0	-52.55	2.00	9.15	Vertical	-45.4	-25	20.40	225
3	7507.5	-46.15	2.50	11.35	Vertical	-37.3	-25	12.30	225
4	10010.0	-46.95	4.20	12.05	Vertical	-39.1	-25	14.10	90
5	12512.5	-46.55	5.20	12.85	Vertical	-38.9	-25	13.90	45
6	15015.0	-45.03	5.50	14.23	Vertical	-36.3	-25	11.30	135
7	17517.5	-43.55	5.70	14.15	Vertical	-35.1	-25	10.10	225
8	20020.0	-44.06	6.30	13.76	Vertical	-36.6	-25	11.60	90
9	22522.5	-44.05	6.80	14.05	Vertical	-36.8	-25	11.80	45
10	25025.0	-91.2	6.90	14.84	Vertical	-85.4	-25	60.40	0

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



LTE Band 7 QPSK Bandwidth = 5MHz CH21100, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5070.0	-50.95	2.00	9.15	Vertical	-43.8	-25	18.80	135
3	7605.0	-47.75	2.50	11.35	Vertical	-38.9	-25	13.90	0
4	10140.0	-45.55	4.20	12.05	Vertical	-37.7	-25	12.70	0
5	12675.0	-44.95	5.20	12.85	Vertical	-37.3	-25	12.30	45
6	15210.0	-44.93	5.50	14.23	Vertical	-36.2	-25	11.20	90
7	17745.0	-43.85	5.70	14.15	Vertical	-35.4	-25	10.40	45
8	20280.0	-43.16	6.30	13.76	Vertical	-35.7	-25	10.70	225
9	22815.0	-43.15	6.80	14.05	Vertical	-35.9	-25	10.90	90
10	25230.0	-91.7	6.90	14.84	Vertical	-85.9	-25	60.9	90

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 5MHz CH21425, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5135.0	-51.55	2.00	9.15	Vertical	-44.4	-25	19.40	135
3	7702.5	-46.45	2.50	11.35	Vertical	-37.6	-25	12.60	225
4	10270.0	-47.15	4.20	12.05	Vertical	-39.3	-25	14.30	225
5	12837.5	-45.95	5.20	12.85	Vertical	-38.3	-25	13.30	90
6	15405.0	-47.73	5.50	14.23	Vertical	-39.0	-25	14.00	45
7	17972.5	-42.45	5.70	14.15	Vertical	-34.0	-25	9.00	225
8	20540.0	-44.66	6.30	13.76	Vertical	-37.2	-25	12.20	90
9	23107.5	-43.35	6.80	14.05	Vertical	-36.1	-25	11.10	45
10	25675.0	-89.3	6.90	14.84	Vertical	-83.5	-25	58.5	270

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 10MHz CH20800, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5010.0	-52.25	2.00	9.15	Vertical	-45.1	-25	20.10	135
3	7515.0	-47.85	2.50	11.35	Vertical	-39.0	-25	14.00	45
4	10020.0	-46.65	4.20	12.05	Vertical	-38.8	-25	13.80	0
5	12525.0	-47.45	5.20	12.85	Vertical	-39.8	-25	14.80	135
6	15030.0	-44.03	5.50	14.23	Vertical	-35.3	-25	10.30	225
7	17535.0	-42.75	5.70	14.15	Vertical	-34.3	-25	9.30	135
8	20040.0	-44.26	6.30	13.76	Vertical	-36.8	-25	11.80	0
9	22545.0	-44.95	6.80	14.05	Vertical	-37.7	-25	12.70	45
10	25050.0	-88.1	6.90	14.84	Vertical	-82.3	-25	57.3	0

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 10MHz CH21100, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5135.0	-51.35	2.00	9.15	Vertical	-44.2	-25	19.20	225
3	7702.5	-47.55	2.50	11.35	Vertical	-38.7	-25	13.70	90
4	10270.0	-45.75	4.20	12.05	Vertical	-37.9	-25	12.90	225
5	12837.5	-46.05	5.20	12.85	Vertical	-38.4	-25	13.40	90
6	15405.0	-46.43	5.50	14.23	Vertical	-37.7	-25	12.70	135
7	17972.5	-43.25	5.70	14.15	Vertical	-34.8	-25	9.80	225
8	20540.0	-44.76	6.30	13.76	Vertical	-37.3	-25	12.30	225
9	23107.5	-43.45	6.80	14.05	Vertical	-36.2	-25	11.20	90
10	25230.0	-89.3	6.90	14.84	Vertical	-83.5	-25	58.5	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 10MHz CH21400, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5130.0	-50.05	2.00	9.15	Vertical	-42.9	-25	17.90	45
3	7695.0	-47.35	2.50	11.35	Vertical	-38.5	-25	13.50	225
4	10260.0	-47.55	4.20	12.05	Vertical	-39.7	-25	14.70	45
5	12825.0	-45.15	5.20	12.85	Vertical	-37.5	-25	12.50	270
6	15390.0	-45.03	5.50	14.23	Vertical	-36.3	-25	11.30	225
7	17955.0	-41.85	5.70	14.15	Vertical	-33.4	-25	8.40	135
8	20520.0	-43.86	6.30	13.76	Vertical	-36.4	-25	11.40	225
9	23085.0	-45.05	6.80	14.05	Vertical	-37.8	-25	12.80	135
10	25230.0	-89.3	6.90	14.84	Vertical	-83.5	-25	58.5	45

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 15MHz CH20825, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5015.0	-53.75	2.00	10.15	Vertical	-45.6	-25	20.60	0
3	7522.5	-47.55	2.50	11.35	Vertical	-38.7	-25	13.70	45
4	10030.0	-46.95	4.20	12.05	Vertical	-39.1	-25	14.10	90
5	12537.5	-49.25	5.20	14.85	Vertical	-39.6	-25	14.60	225
6	15045.0	-44.03	5.50	13.23	Vertical	-36.3	-25	11.30	90
7	17552.5	-41.95	5.70	12.15	Vertical	-35.5	-25	10.50	135
8	20060.0	-41.86	6.30	13.76	Vertical	-34.4	-25	9.40	225
9	22567.5	-42.45	6.80	14.05	Vertical	-35.2	-25	10.20	225
10	25075.0	-89.0	6.90	14.84	Vertical	-83.2	-25	58.2	0

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
 2. The worst emission was found in the antenna is vertical position.



LTE Band 7 QPSK Bandwidth = 15MHz CH21100, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5135.0	-53.15	2.00	10.15	Vertical	-45.0	-25	20.00	90
3	7702.5	-47.65	2.50	11.35	Vertical	-38.8	-25	13.80	45
4	10270.0	-46.45	4.20	12.05	Vertical	-38.6	-25	13.60	225
5	12837.5	-47.45	5.20	14.85	Vertical	-37.8	-25	12.80	90
6	15405.0	-45.13	5.50	13.23	Vertical	-37.4	-25	12.40	45
7	17972.5	-41.95	5.70	12.15	Vertical	-35.5	-25	10.50	45
8	20540.0	-41.96	6.30	13.76	Vertical	-34.5	-25	9.50	90
9	23107.5	-43.55	6.80	14.05	Vertical	-36.3	-25	11.30	225
10	25230.0	-89.0	6.90	14.84	Vertical	-83.2	-25	58.2	180

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 15MHz CH21375, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5125.0	-49.85	2.00	10.15	Vertical	-41.7	-25	16.70	90
3	7687.5	-45.85	2.50	11.35	Vertical	-37.0	-25	12.00	135
4	10250.0	-44.65	4.20	12.05	Vertical	-36.8	-25	11.80	225
5	12812.5	-47.05	5.20	14.85	Vertical	-37.4	-25	12.40	225
6	15375.0	-43.73	5.50	13.23	Vertical	-36.0	-25	11.00	90
7	17937.5	-41.55	5.70	12.15	Vertical	-35.1	-25	10.10	45
8	20500.0	-44.16	6.30	13.76	Vertical	-36.7	-25	11.70	135
9	23062.5	-40.45	6.80	14.05	Vertical	-33.2	-25	8.20	225
10	25625.0	-89.3	6.90	14.84	Vertical	-83.5	-25	58.5	45

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.



LTE Band 7 QPSK Bandwidth = 20MHz CH20850, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5002.5	-48.35	2.00	10.15	Vertical	-40.2	-25	15.20	225
3	7503.0	-45.55	2.50	11.35	Vertical	-36.7	-25	11.70	135
4	10040.0	-49.55	4.20	12.05	Vertical	-41.7	-25	16.70	225
5	12550.0	-51.55	5.20	14.85	Vertical	-41.9	-25	16.90	135
6	15060.0	-46.03	5.50	13.23	Vertical	-38.3	-25	13.30	0
7	17570.0	-44.55	5.70	12.15	Vertical	-38.1	-25	13.10	45
8	20080.0	-43.96	6.30	13.76	Vertical	-36.5	-25	11.50	90
9	22590.0	-44.45	6.80	14.05	Vertical	-37.2	-25	12.20	225
10	25100.0	-87.5	6.90	14.84	Vertical	-81.7	-25	56.7	90

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.

LTE Band 7 QPSK Bandwidth = 20MHz CH21100, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5052.4	-49.55	2.00	10.15	Vertical	-41.4	-25	16.40	90
3	7578.4	-48.25	2.50	11.35	Vertical	-39.4	-25	14.40	135
4	10140.0	-49.15	4.20	12.05	Vertical	-41.3	-25	16.30	225
5	12675.0	-48.95	5.20	14.85	Vertical	-39.3	-25	14.30	225
6	15210.0	-46.33	5.50	13.23	Vertical	-38.6	-25	13.60	90
7	17745.0	-43.15	5.70	12.15	Vertical	-36.7	-25	11.70	45
8	20280.0	-42.76	6.30	13.76	Vertical	-35.3	-25	10.30	225
9	22815.0	-41.45	6.80	14.05	Vertical	-34.2	-25	9.20	90
10	25230.0	-87.0	6.90	14.84	Vertical	-81.2	-25	56.2	45

- Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is vertical position.



LTE Band 7 QPSK Bandwidth = 20MHz CH21350, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5102.5	-51.65	2.00	10.15	Vertical	-43.5	-25	18.50	45
3	7653.4	-47.95	2.50	11.35	Vertical	-39.1	-25	14.10	0
4	10240.0	-49.35	4.20	12.05	Vertical	-41.5	-25	16.50	0
5	12800.0	-47.75	5.20	14.85	Vertical	-38.1	-25	13.10	90
6	15360.0	-46.13	5.50	13.23	Vertical	-38.4	-25	13.40	135
7	17920.0	-42.35	5.70	12.15	Vertical	-35.9	-25	10.90	270
8	20480.0	-43.66	6.30	13.76	Vertical	-36.2	-25	11.20	225
9	23040.0	-41.45	6.80	14.05	Vertical	-34.2	-25	9.20	135
10	25600.0	-87.0	6.90	14.84	Vertical	-81.2	-25	56.2	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is vertical position.



5 Main Test Instruments

Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time
Base Station Simulator	CMW500	R&S	113645	2016-05-21	2017-05-20
Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
Universal Radio Communication Tester	E5515C	Agilent	MY48367192	2016-05-21	2017-05-20
Spectrum Analyzer	N9010A	Agilent	MY47191109	2016-05-21	2017-05-20
Signal Analyzer	FSV30	R&S	100815	2015-12-17	2016-12-16
Signal Analyzer	FSV30	R&S	100815	2016-12-17	2017-12-16
Signal generator	SMB 100A	R&S	102594	2016-05-22	2017-05-21
Signal generator	SMR27	R&S	100365	2016-05-22	2017-05-21
EMI Test Receiver	ESCI	R&S	100948	2016-06-01	2017-05-31
Trilog Antenna	VUBL 9163	SCHWARZBECK	9163-201	2014-12-06	2017-12-05
Trilog Antenna	VUBL 9163	SCHWARZBECK	9163-391	2014-12-06	2017-12-05
Horn Antenna	HF907	R&S	100126	2014-12-06	2017-12-05
Horn Antenna	HF907	R&S	100125	2014-12-06	2017-12-05
Horn Antenna	3160-09	ETS-Lindgren	00102643	2015-01-30	2018-01-29
Horn Antenna	3160-09	ETS-Lindgren	00102644	2014-12-06	2017-12-05
Climatic Chamber	PT-30B	Re Ce	20101891	2016-07-17	2017-07-16
RF Cable	SMA 15cm	Agilent	0001	2016-12-06	2017-03-05

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



Front Side



Back Side

a: EUT



b: Battery



c: Adapter



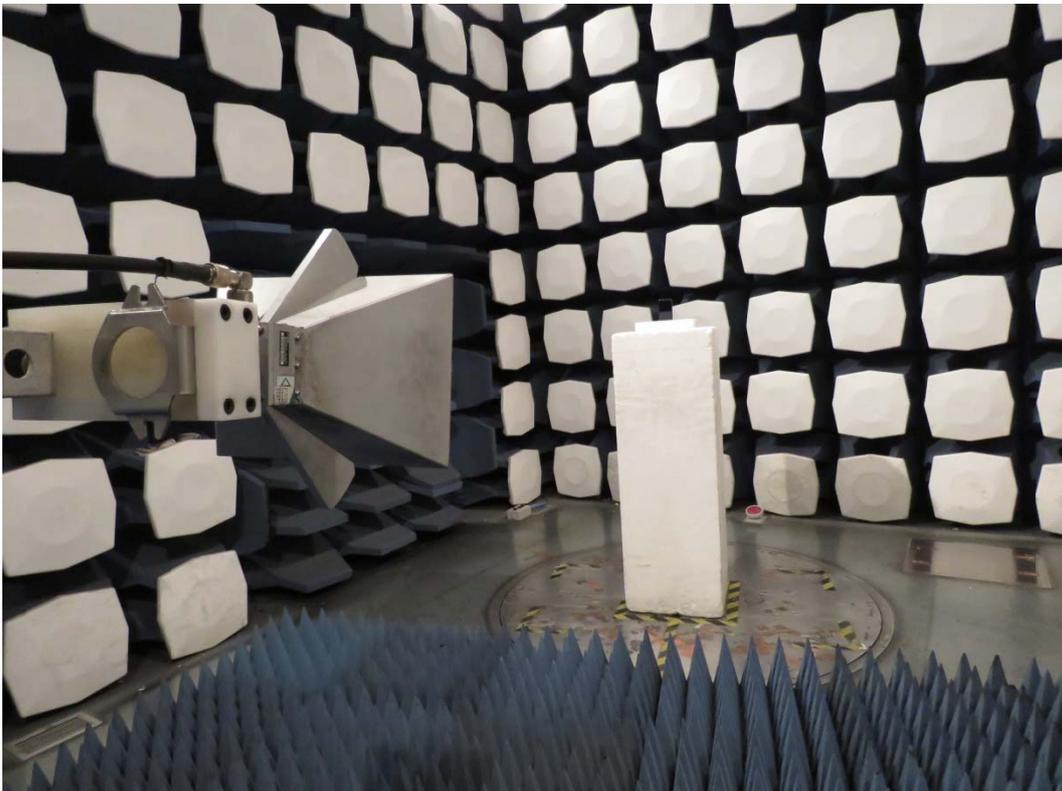
d: USB Cable



e: Earphone

Picture 1 EUT and Accessory

A.2 Test Setup





Picture 2: Radiated Spurious Emissions Test setup