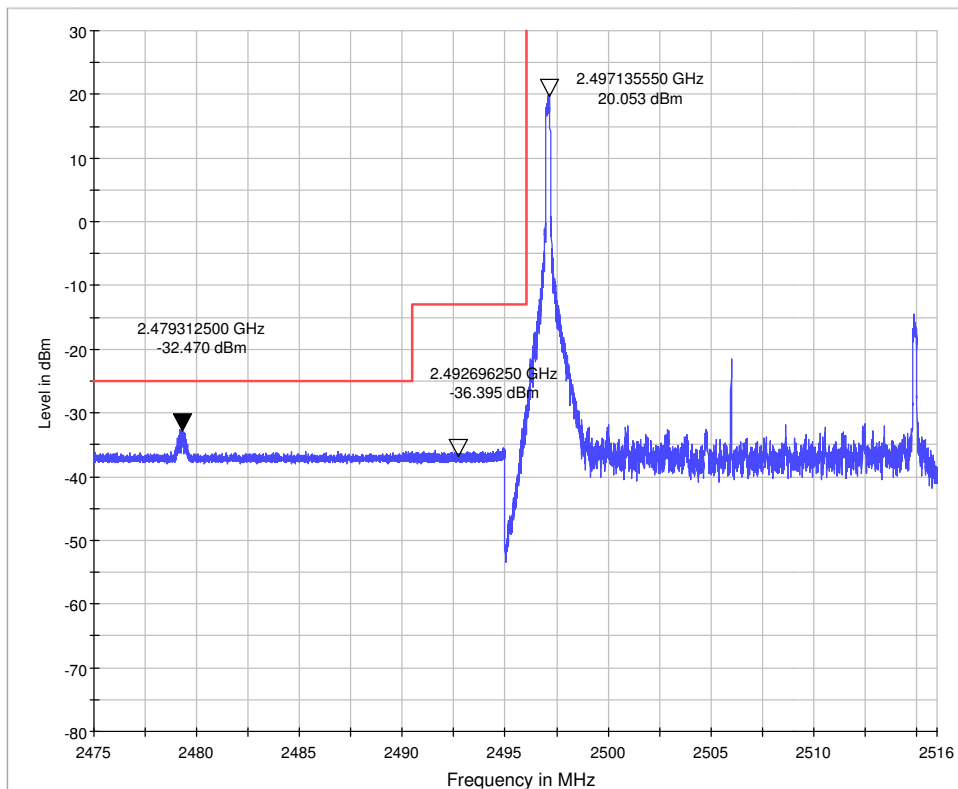
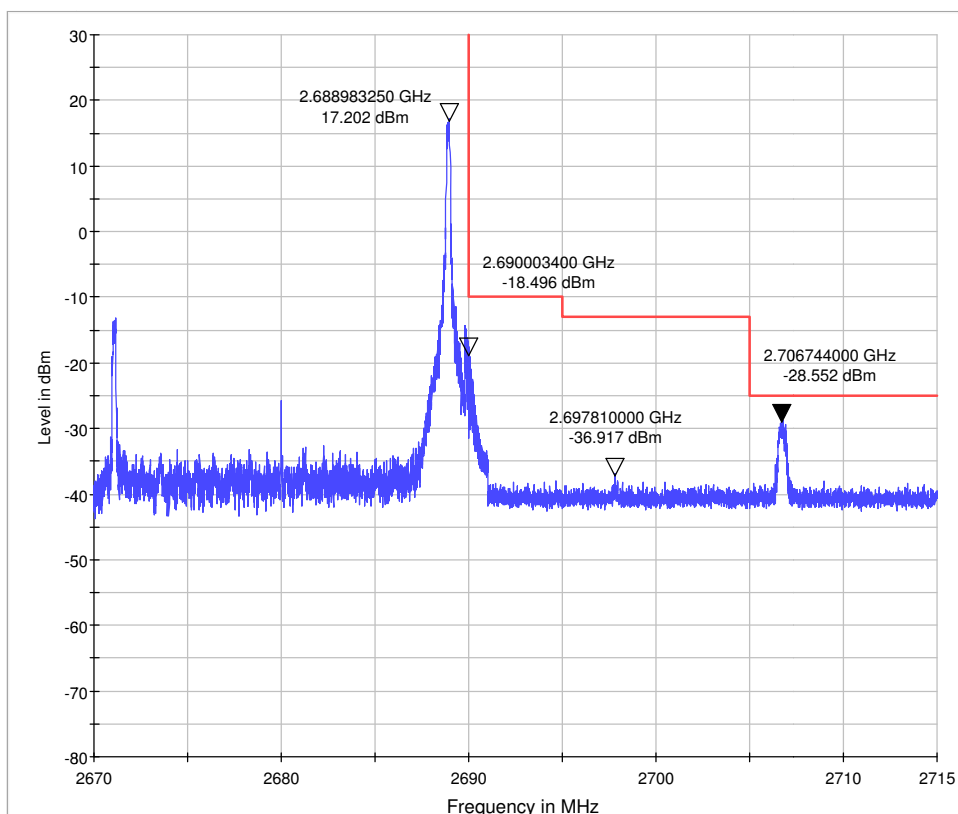


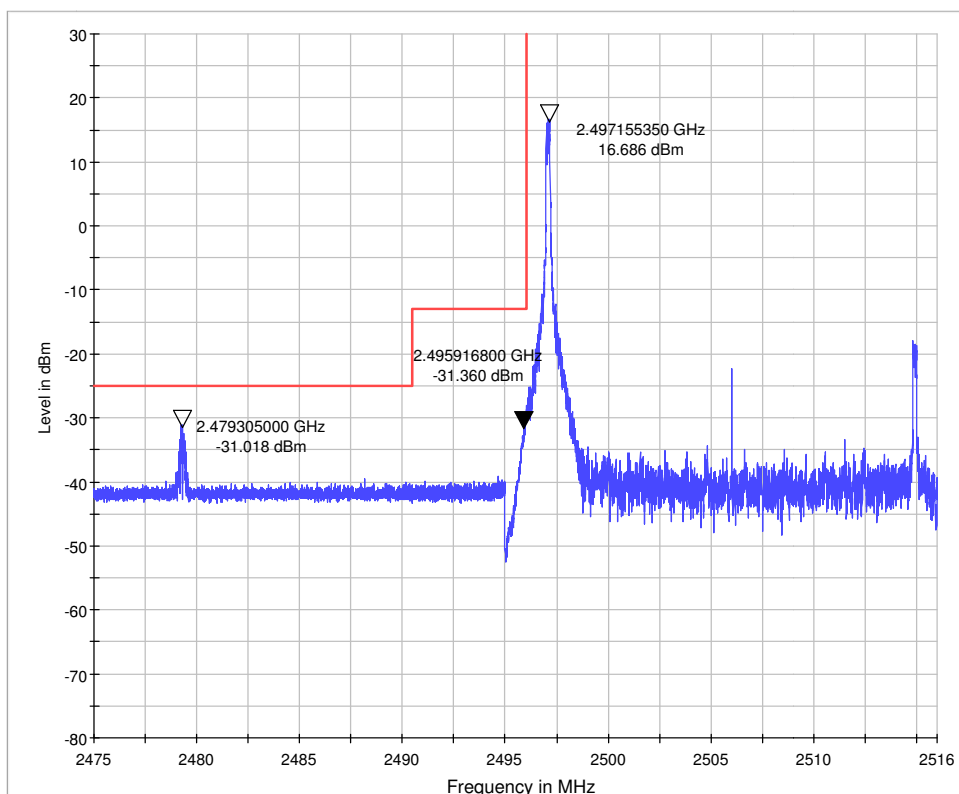
LTE Band 41 QPSK Bandwidth = 20MHz CH39750, RB 1



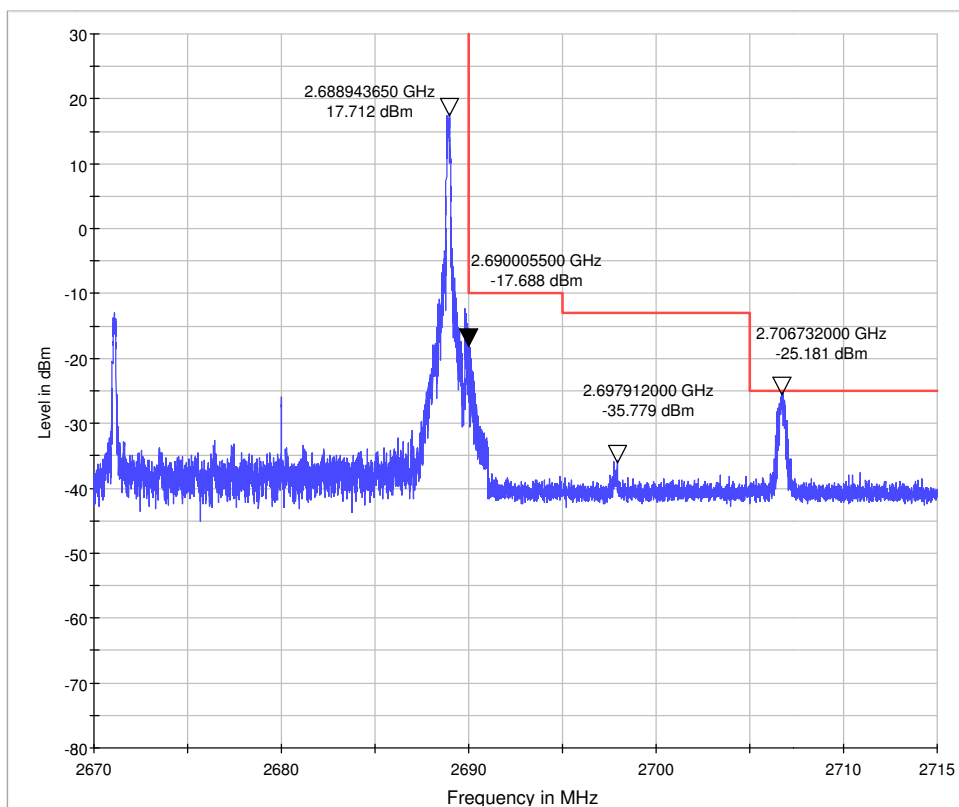
LTE Band 41 QPSK Bandwidth = 20MHz CH41490, RB 1



LTE Band 41 16QAM Bandwidth = 20MHz CH39750, RB 1

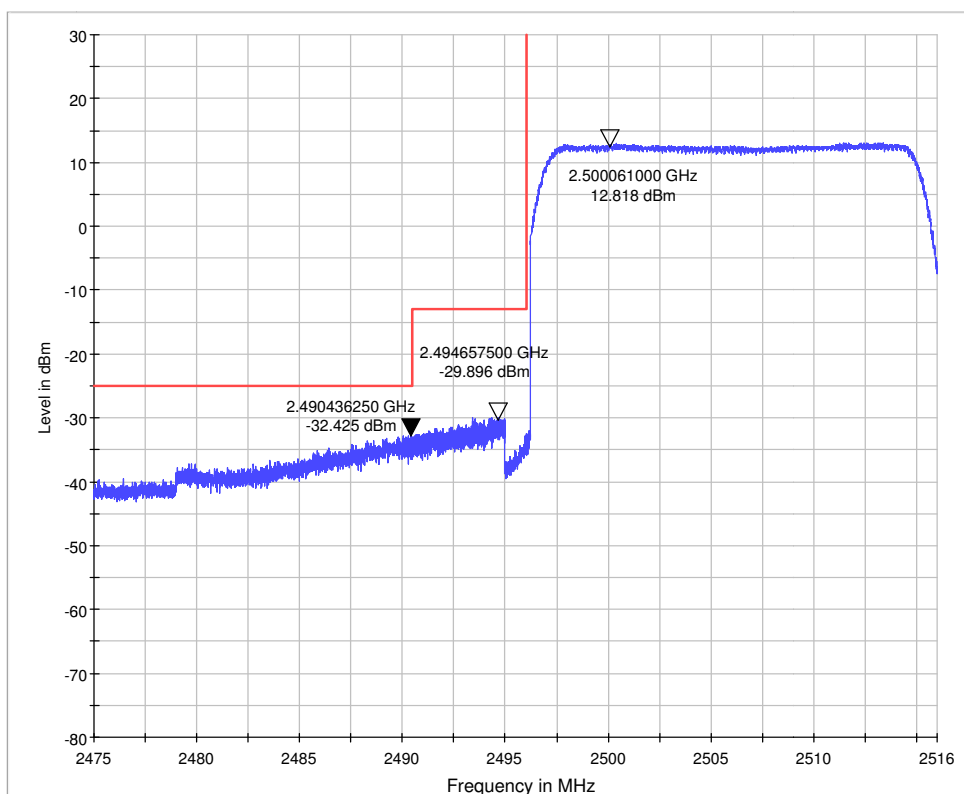


LTE Band 41 16QAM Bandwidth = 20MHz CH41490, RB 1

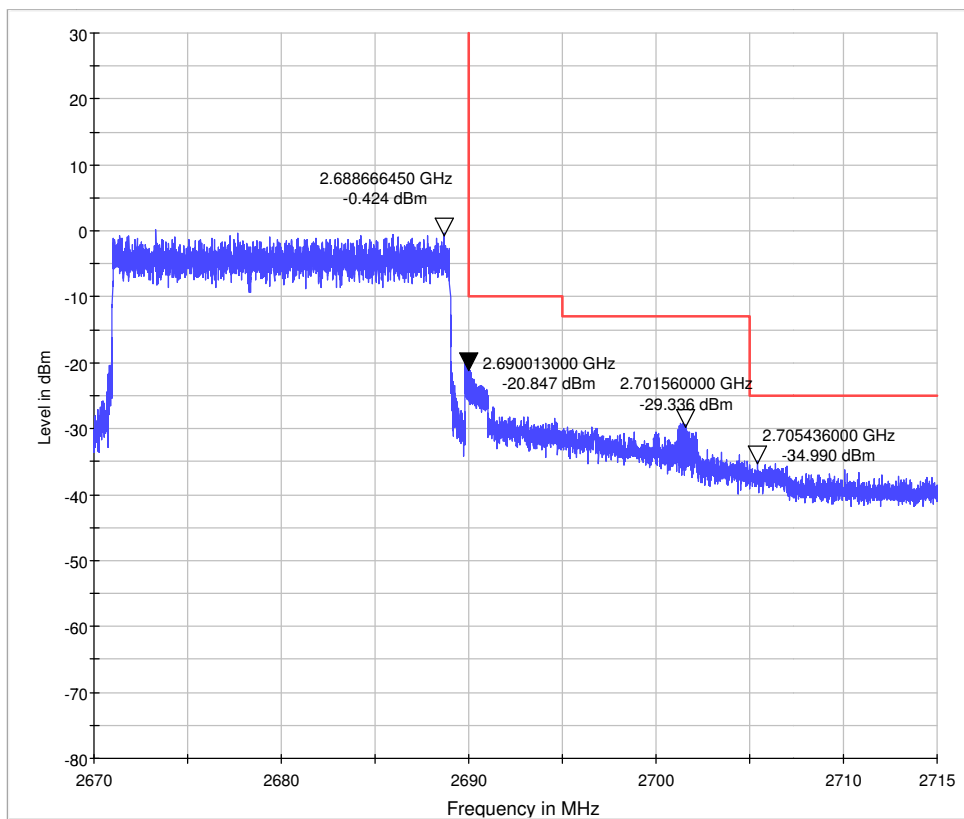




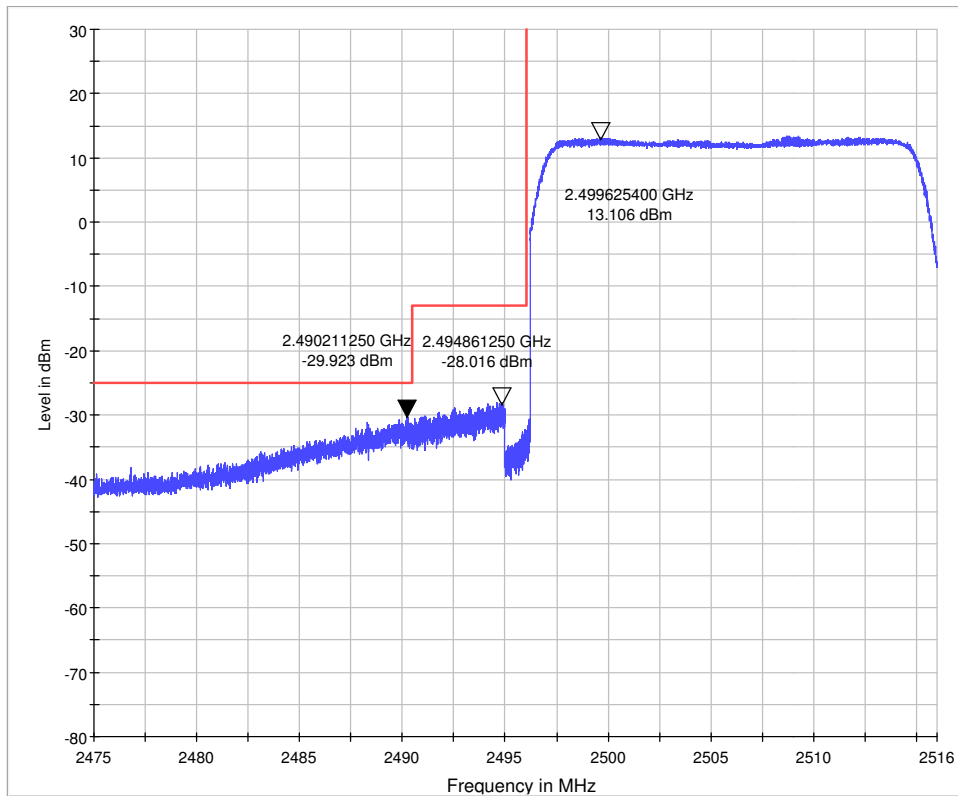
LTE Band 41 QPSK Bandwidth = 20MHz CH39750, RB 100



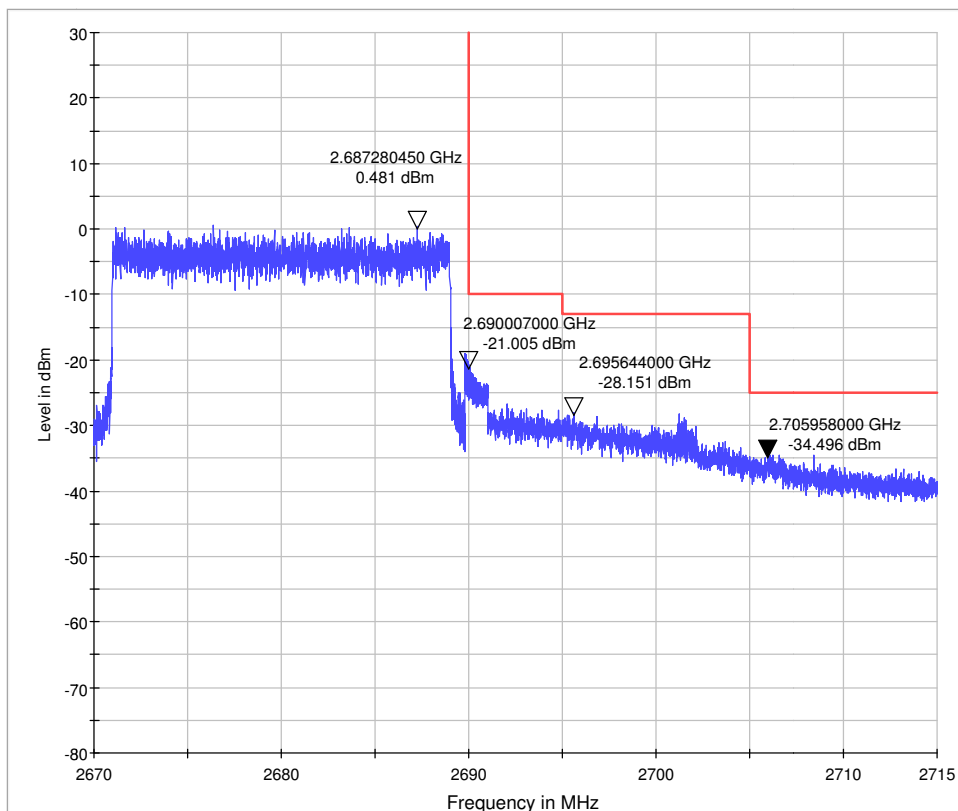
LTE Band 41 QPSK Bandwidth = 20MHz CH41490, RB 100



LTE Band 41 16QAM Bandwidth = 20MHz CH39750, RB 100



LTE Band 41 16QAM Bandwidth = 20MHz CH41490, RB 100



4.5 Peak-to-Average Power Ratio (PAPR)

Ambient condition

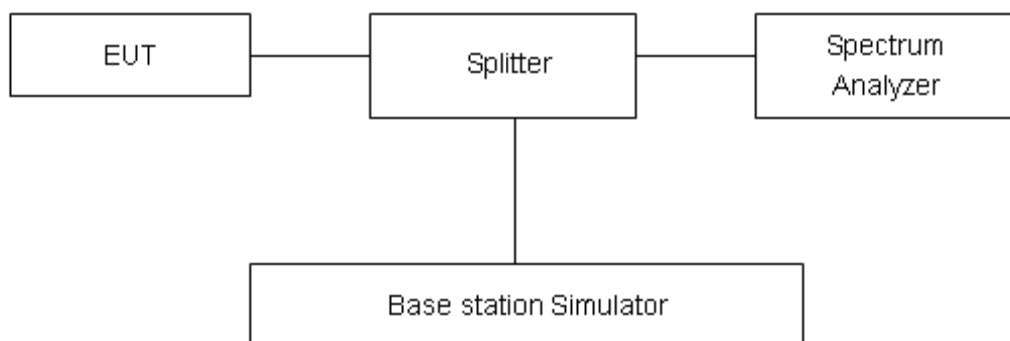
Temperature	Relative humidity
21°C ~25°C	40%~60%

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:

$$\text{PAPR (dB)} = \text{PPk (dBm)} - \text{PAvg (dBm)}.$$

Test Setup



Limits

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.in Part27.50(d).

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.



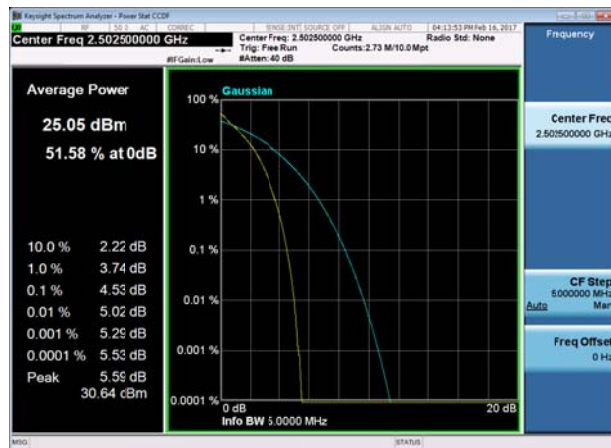
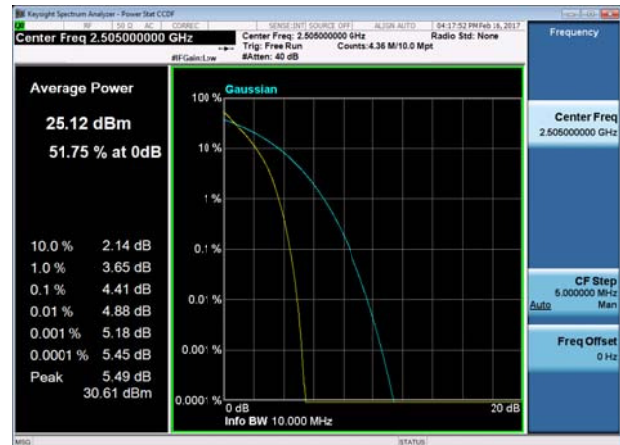
Test Results

LTE Band 7					
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	PAPR (dB)	Conclusion
QPSK	5	20775	2502.5	4.53	PASS
		21100	2535	4.52	PASS
		21425	2567.5	4.33	PASS
	10	20800	2505	4.41	PASS
		21100	2535	4.33	PASS
		21400	2565	4.15	PASS
	15	20825	2507.5	4.73	PASS
		21100	2535	4.71	PASS
		21375	2562.5	4.51	PASS
	20	20850	2510	4.30	PASS
		21100	2535	4.46	PASS
		21350	2560	4.18	PASS
16QAM	5	20775	2502.5	4.85	PASS
		21100	2535	4.79	PASS
		21425	2567.5	4.66	PASS
	10	20800	2505	4.74	PASS
		21100	2535	4.64	PASS
		21400	2565	4.46	PASS
	15	20825	2507.5	4.99	PASS
		21100	2535	4.96	PASS
		21375	2562.5	4.77	PASS
	20	20850	2510	4.60	PASS
		21100	2535	4.71	PASS
		21350	2560	4.46	PASS

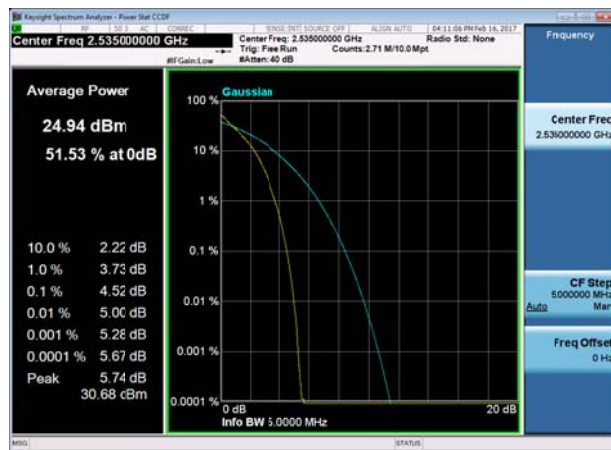
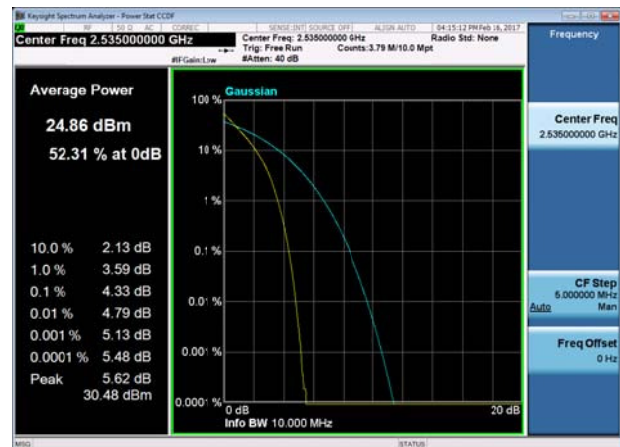
LTE Band 41					
Modulation	Bandwidth ((MHz))	Channel	Frequency (MHz)	PAPR (dB)	Conclusion
QPSK	5	39675	2498.5	9.18	PASS
		40620	2593	9.12	PASS
		41565	2687.5	9.53	PASS
	10	39700	2501	8.94	PASS
		40620	2593	8.98	PASS
		41540	2685	10.02	PASS
	15	39725	2503.5	9.37	PASS
		40620	2593	8.93	PASS
		41515	2682.5	10.03	PASS
	20	39750	2506	9.45	PASS
		40620	2593	9.47	PASS
		41490	2680	10.32	PASS
16QAM	5	39675	2498.5	9.74	PASS
		40620	2593	9.45	PASS
		41565	2687.5	10.26	PASS
	10	39700	2501	9.75	PASS
		40620	2593	9.70	PASS
		41540	2685	10.51	PASS
	15	39725	2503.5	9.80	PASS
		40620	2593	9.90	PASS
		41515	2682.5	10.32	PASS
	20	39750	2506	9.70	PASS
		40620	2593	9.43	PASS
		41490	2680	10.12	PASS



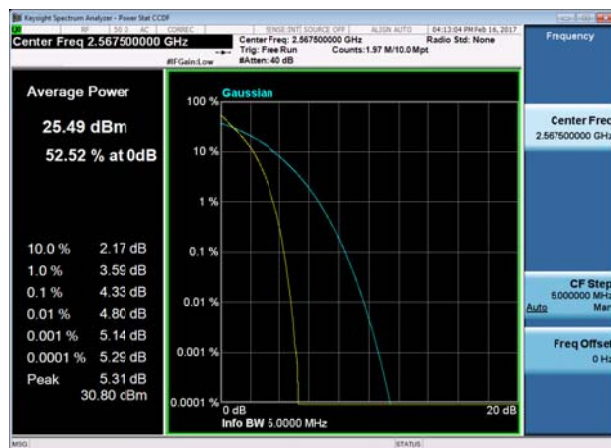
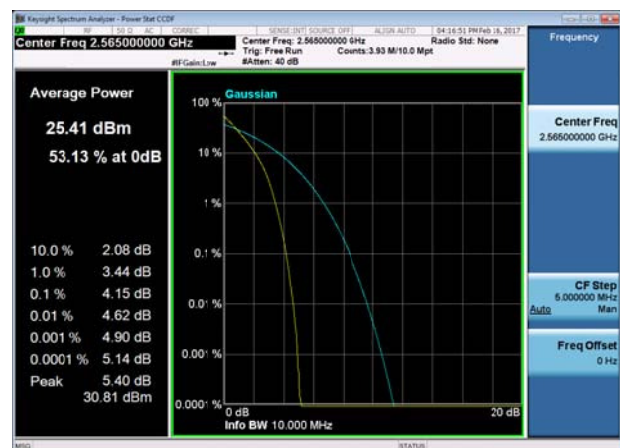
LTE Band 7 QPSK Bandwidth = 5MHz CH20775

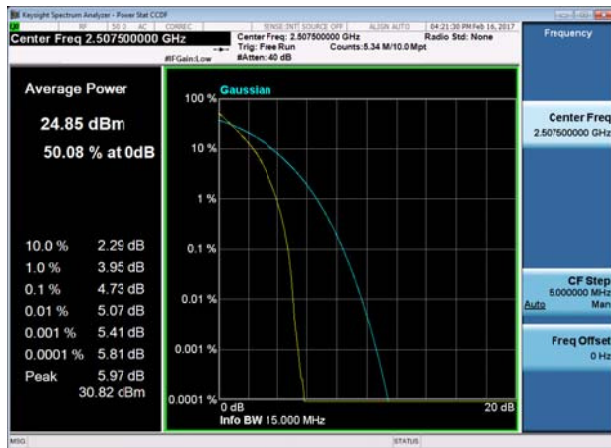
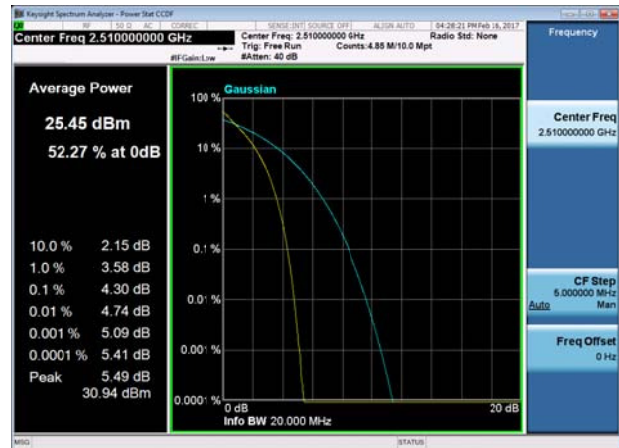
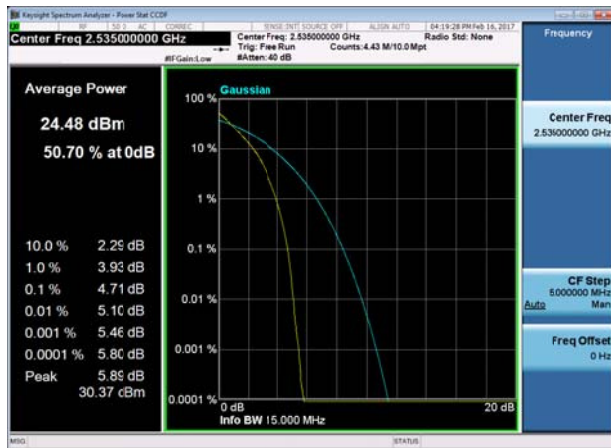
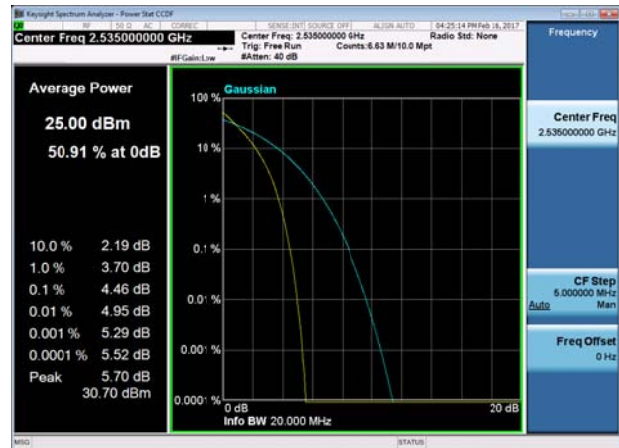
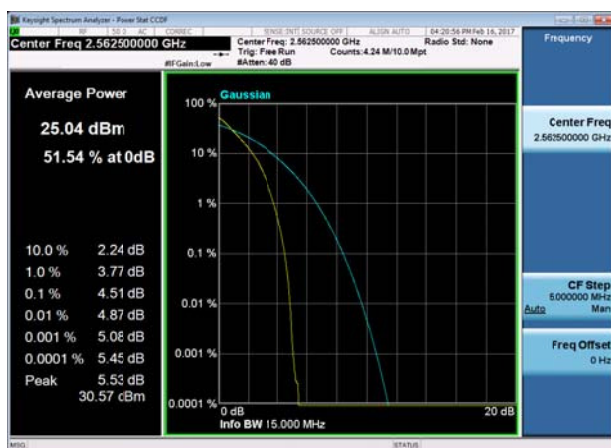
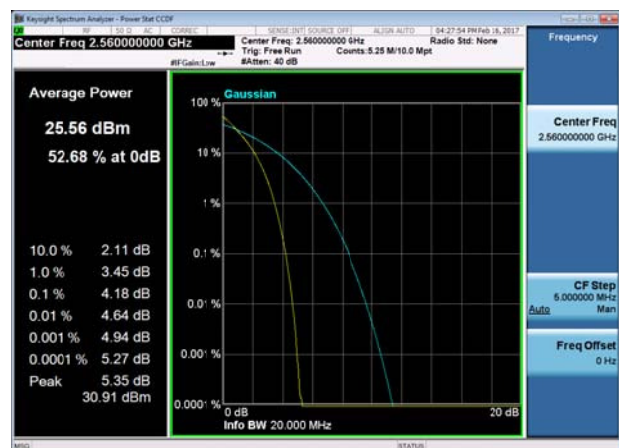
LTE Band 7 QPSK Bandwidth = 10MHz
CH20800

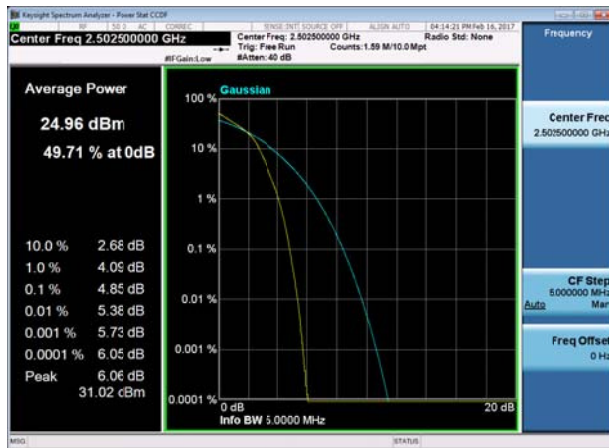
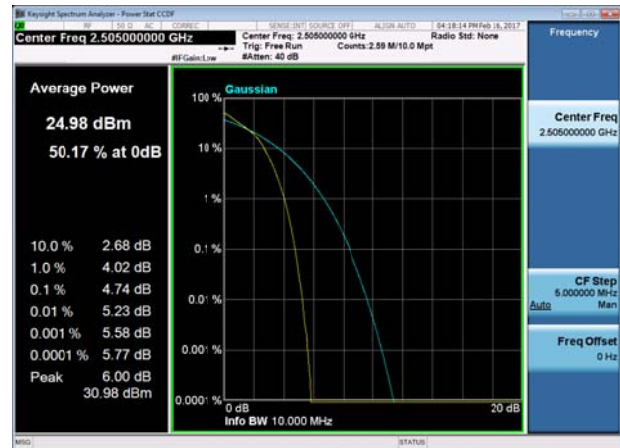
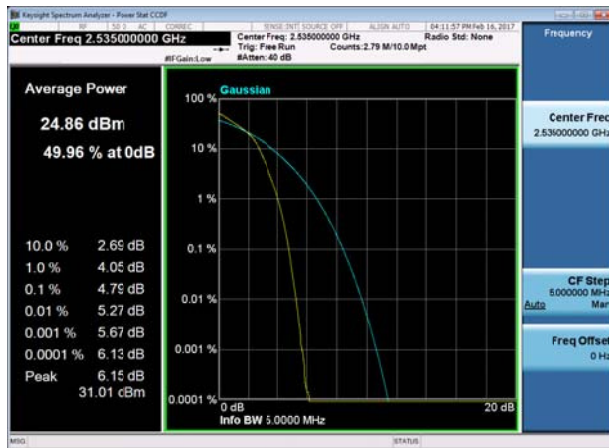
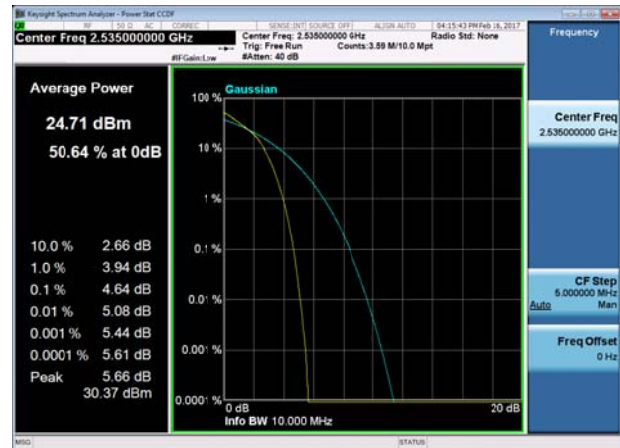
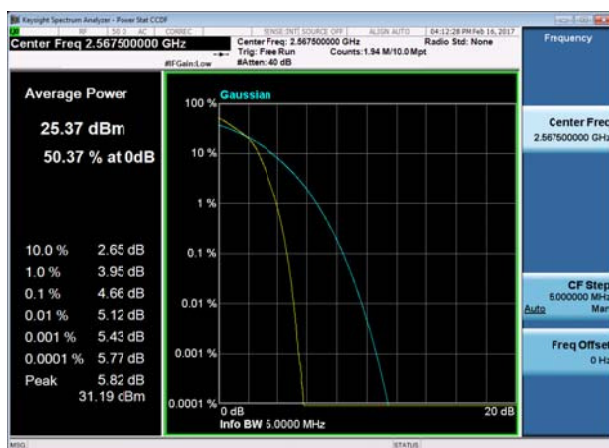
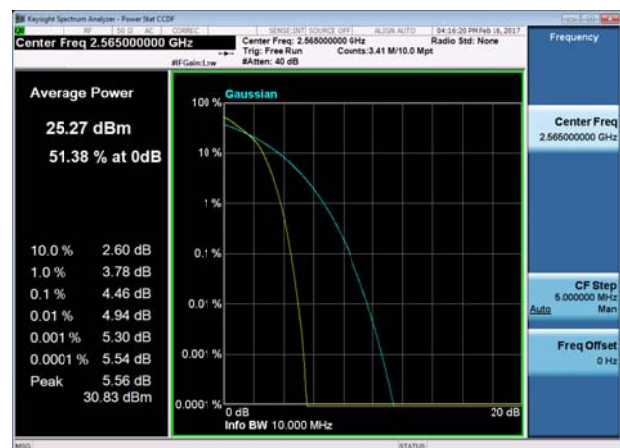
LTE Band 7 QPSK Bandwidth = 5MHz CH21100

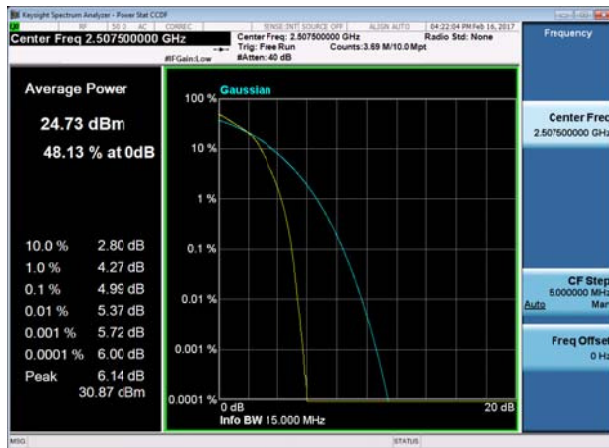
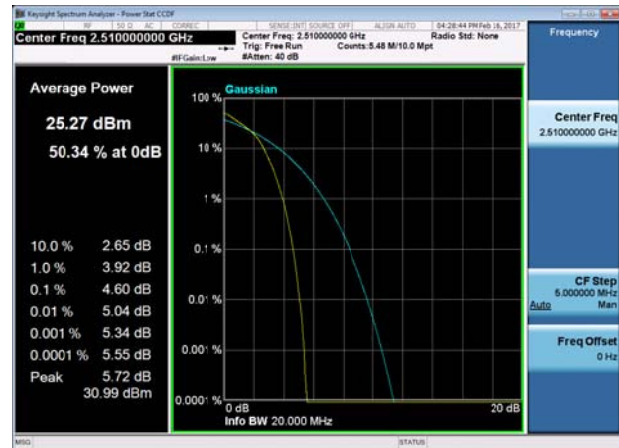
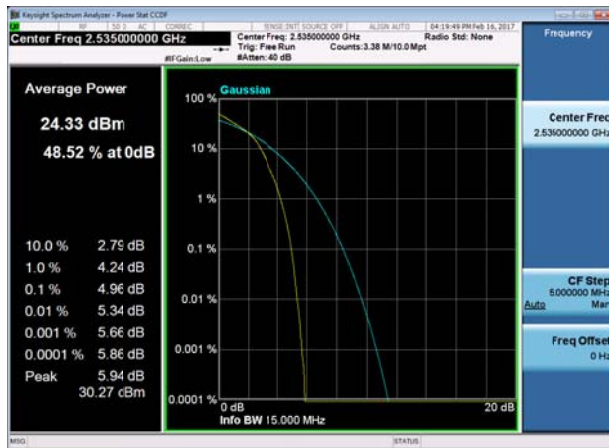
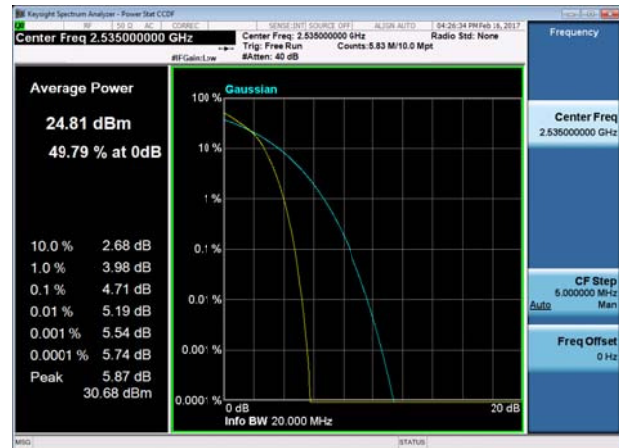
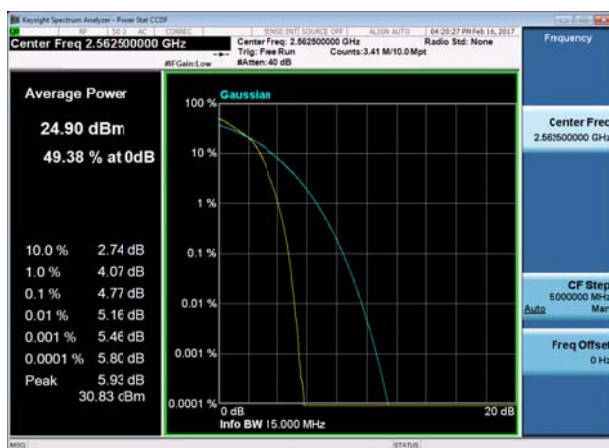
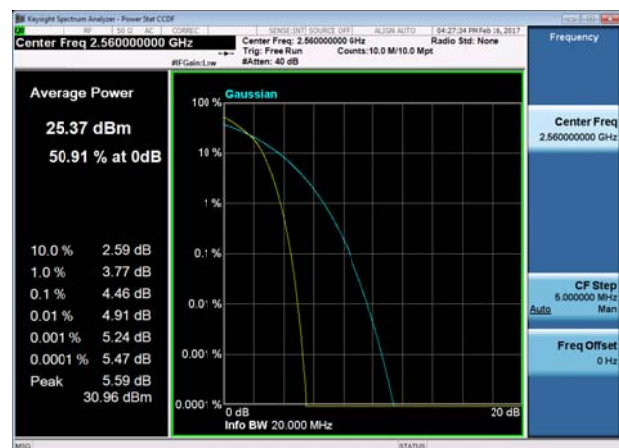
LTE Band 7 QPSK Bandwidth = 10MHz
CH21100

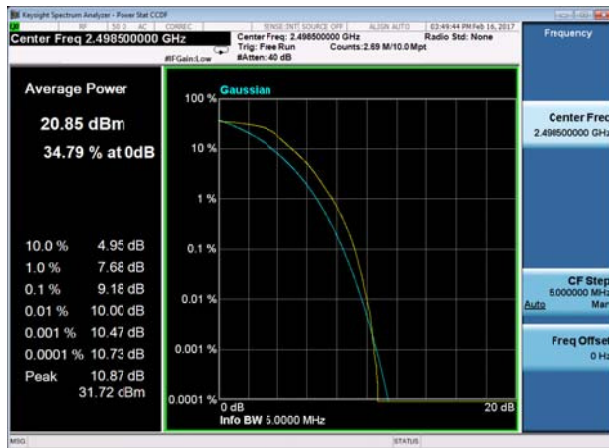
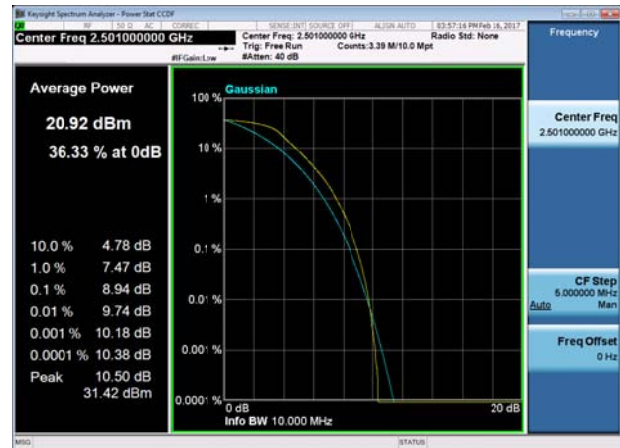
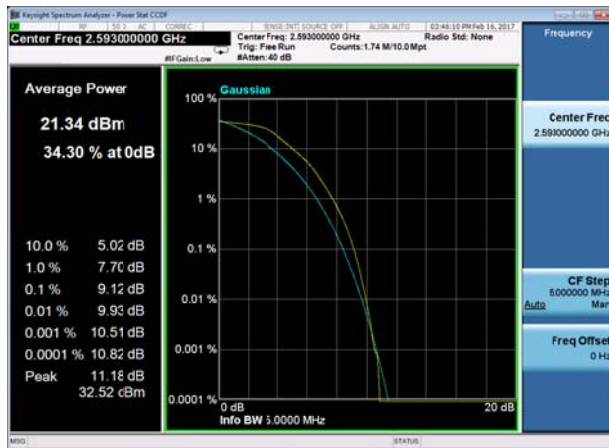
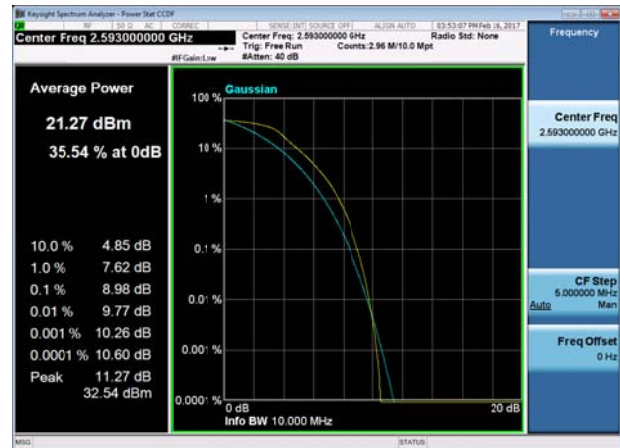
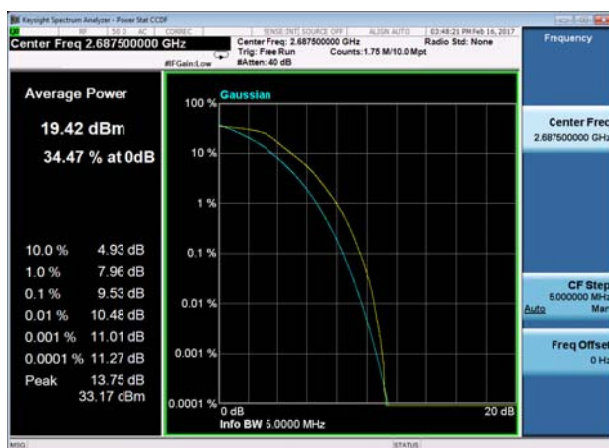
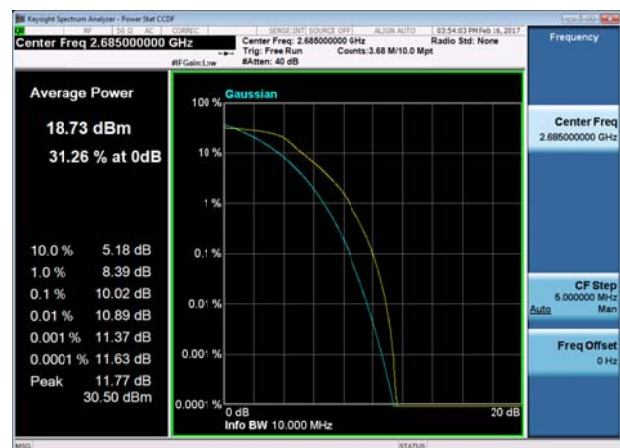
LTE Band 7 QPSK Bandwidth = 5MHz CH21425

LTE Band 7 QPSK Bandwidth = 10MHz
CH21400

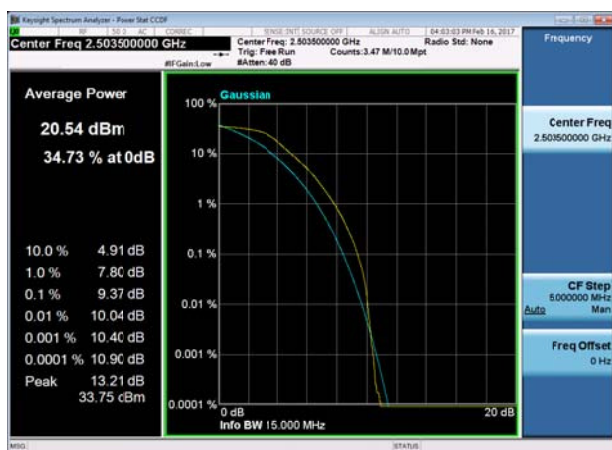
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CH20825LTE Band 7 QPSK Bandwidth = 20MHz
CH20850LTE Band 7 QPSK Bandwidth = 15MHz
CH21100LTE Band 7 QPSK Bandwidth = 20MHz
CH21100LTE Band 7 QPSK Bandwidth = 15MHz
CH21375LTE Band 7 QPSK Bandwidth = 20MHz
CH21350

LTE Band 7 16QAM Bandwidth = 5MHz
CH20775LTE Band 7 16QAM Bandwidth = 10MHz
CH20800LTE Band 7 16QAM Bandwidth = 5MHz
CH21100LTE Band 7 16QAM Bandwidth = 10MHz
CH21100LTE Band 7 16QAM Bandwidth = 5MHz
CH21425LTE Band 7 16QAM Bandwidth = 10MHz
CH21400

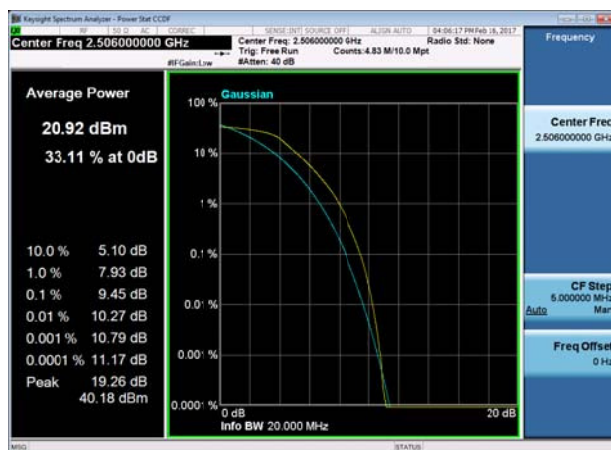
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CH20825LTE Band 7 16QAM Bandwidth = 20MHz
CH20850LTE Band 7 16QAM Bandwidth = 15MHz
CH21100LTE Band 7 16QAM Bandwidth = 20MHz
CH21100LTE Band 7 16QAM Bandwidth = 15MHz
CH21375LTE Band 7 16QAM Bandwidth = 20MHz
CH21350

LTE Band 41 QPSK Bandwidth = 5MHz
CH39675LTE Band 41 QPSK Bandwidth = 10MHz
CH39700LTE Band 41 QPSK Bandwidth = 5MHz
CH40620LTE Band 41 QPSK Bandwidth = 10MHz
CH40620LTE Band 41 QPSK Bandwidth = 5MHz
CH41565LTE Band 41 QPSK Bandwidth = 10MHz
CH41540

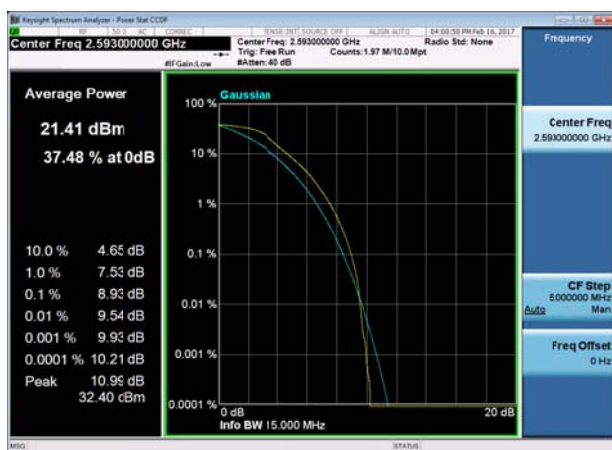
LTE Band 41 QPSK Bandwidth = 15MHz
CH39725



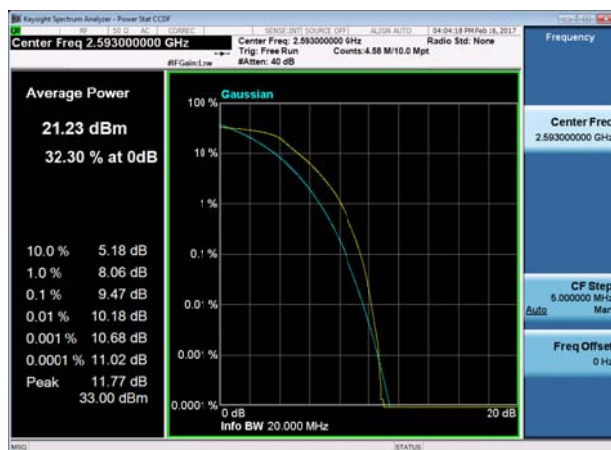
LTE Band 41 QPSK Bandwidth = 20MHz
CH39750



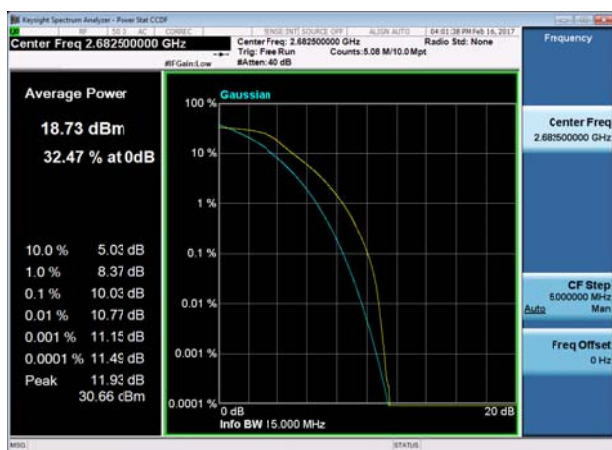
LTE Band 41 QPSK Bandwidth = 15MHz
CH40620



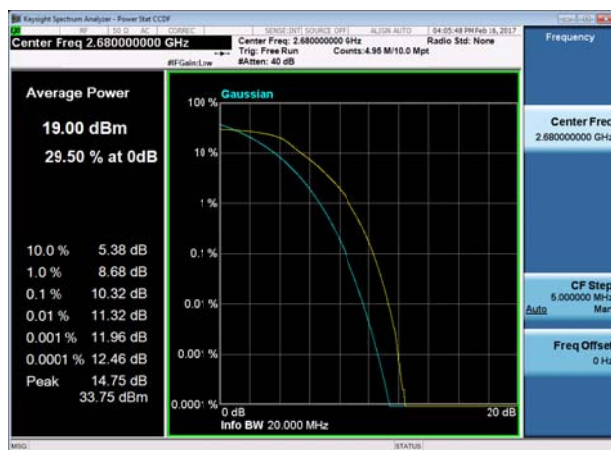
LTE Band 41 QPSK Bandwidth = 20MHz
CH40620

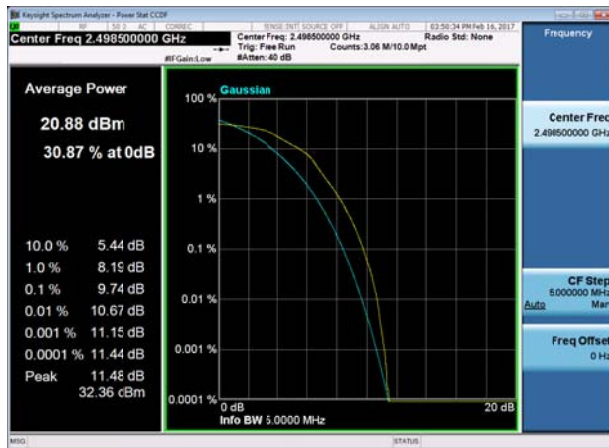
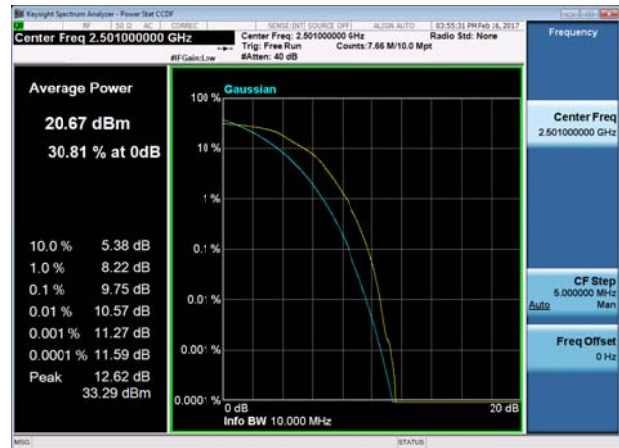
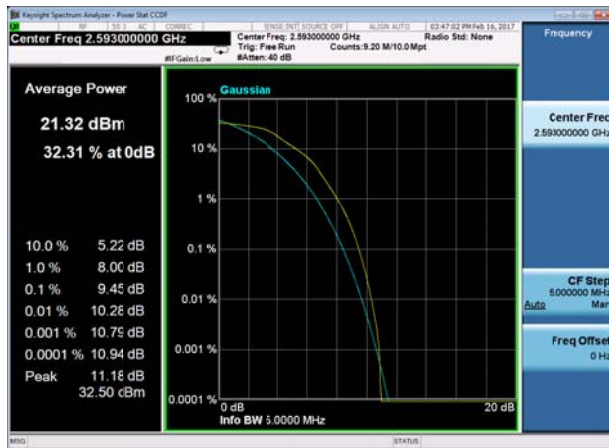
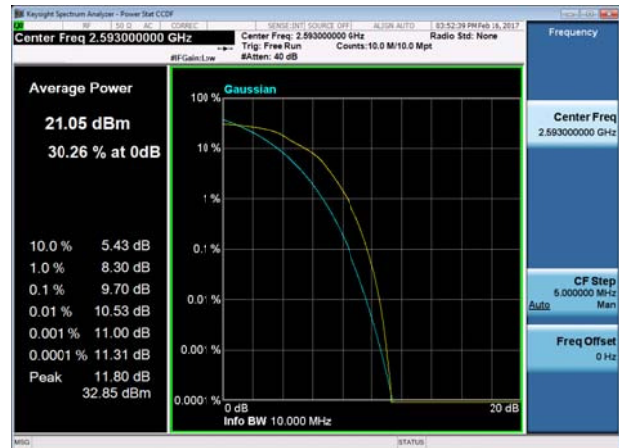
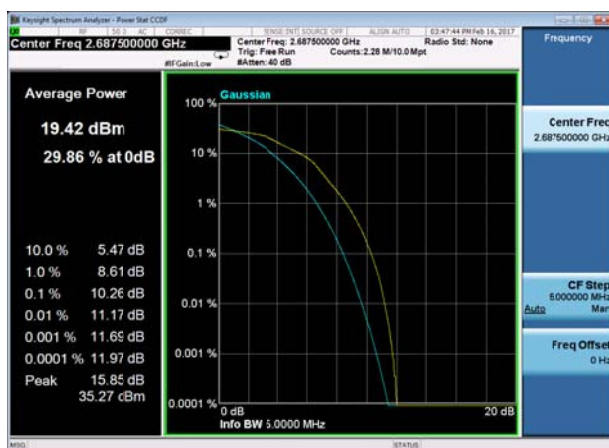
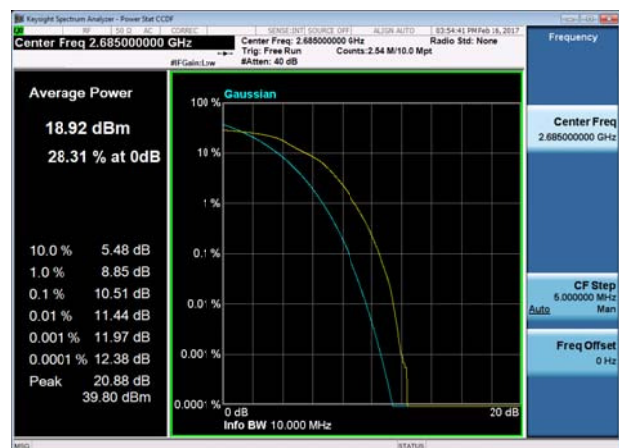


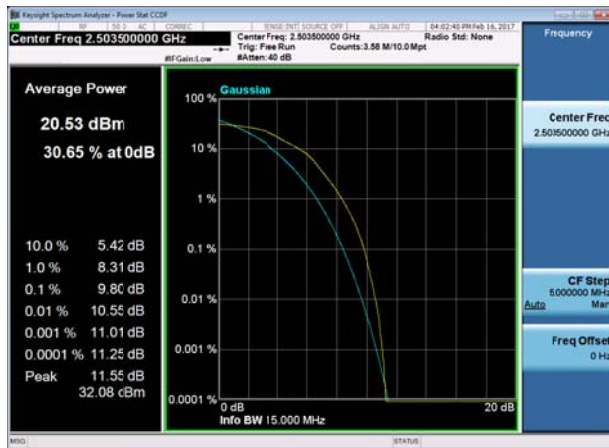
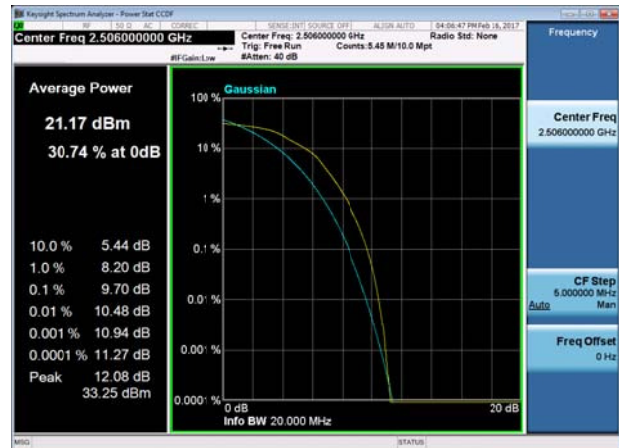
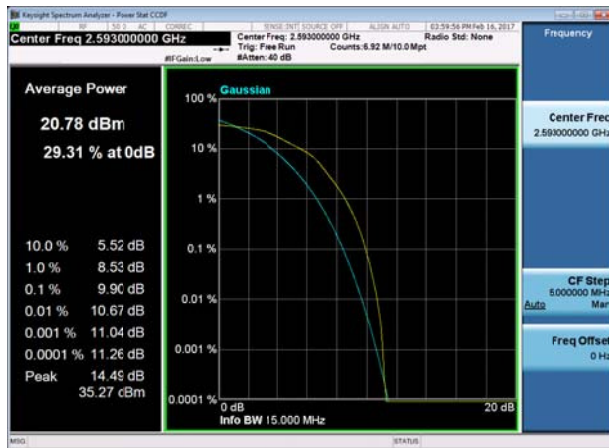
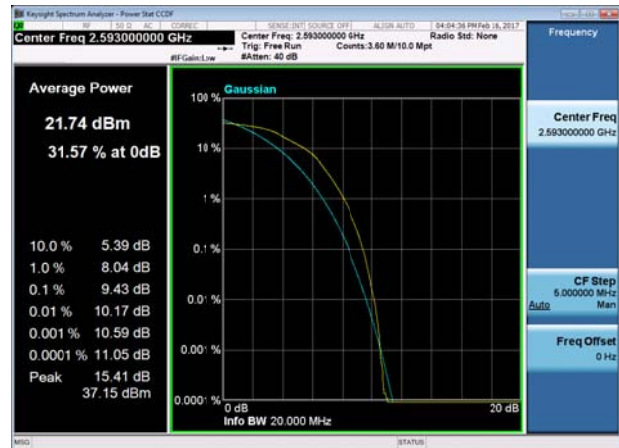
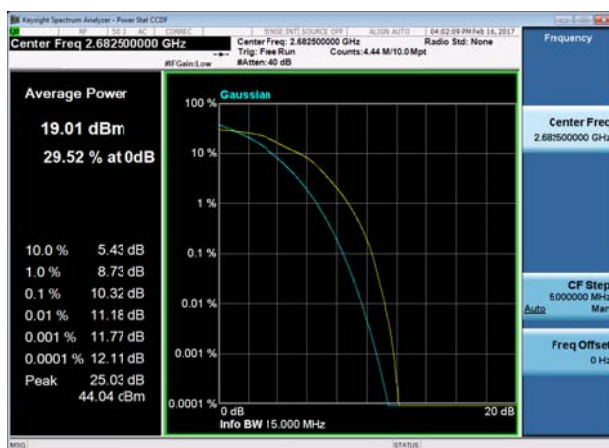
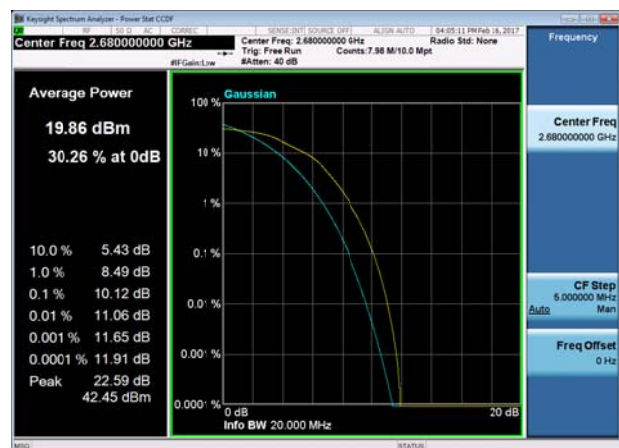
LTE Band 41 QPSK Bandwidth = 15MHz
CH41515



LTE Band 41 QPSK Bandwidth = 20MHz
CH41490



LTE Band 41 16QAM Bandwidth = 5MHz
CH39675LTE Band 41 16QAM Bandwidth = 10MHz
CH39700LTE Band 41 16QAM Bandwidth = 5MHz
CH40620LTE Band 41 16QAM Bandwidth = 10MHz
CH40620LTE Band 41 16QAM Bandwidth = 5MHz
CH41565LTE Band 41 16QAM Bandwidth = 10MHz
CH41540

LTE Band 41 16QAM Bandwidth = 15MHz
CH39725LTE Band 41 16QAM Bandwidth = 20MHz
CH39750LTE Band 41 16QAM Bandwidth = 15MHz
CH40620LTE Band 41 16QAM Bandwidth = 20MHz
CH40620LTE Band 41 16QAM Bandwidth = 15MHz
CH41515LTE Band 41 16QAM Bandwidth = 20MHz
CH41490

4.6 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)

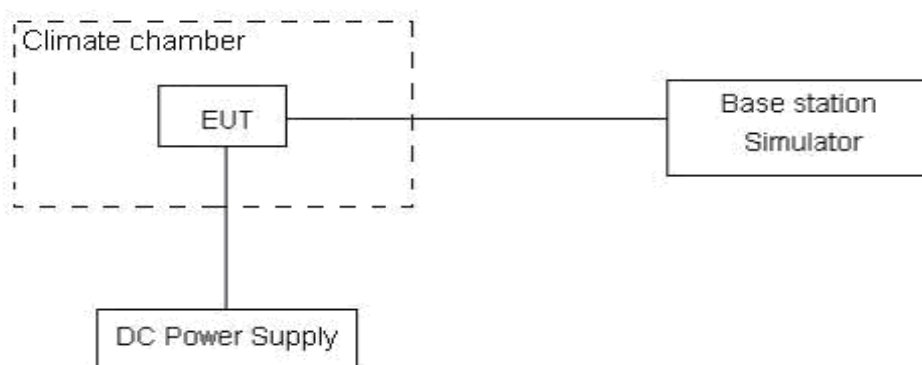
The frequency stability shall be measured with variation of primary supply voltage as follows:

(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 9 V and 15 V, with a nominal voltage of 12V.

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 $k = 3$, $U=0.01\text{ppm}$.

Test Result

Bandwidth	Test status	LTE Band 7 Channel 21100 Test Results (ppm)		
		QPSK	16QAM	Conclusion
5MHz	50°C/Normal Voltage	0.00321	0.00274	PASS
	40°C/Normal Voltage	0.00199	0.00207	PASS
	30°C/Normal Voltage	0.00069	-0.00181	PASS
	20°C/Normal Voltage	-0.00012	0.00114	PASS
	10°C/Normal Voltage	0.00067	-0.00174	PASS
	0°C/Normal Voltage	-0.00117	0.00207	PASS
	-10°C/Normal Voltage	-0.00115	-0.00127	PASS
	-20°C/Normal Voltage	0.00007	-0.00222	PASS
	-30°C/Normal Voltage	0.00075	-0.00144	PASS
	20°C/Maximum Voltage	0.00140	-0.00139	PASS
	20°C/Minimum Voltage	0.00065	-0.00107	PASS
10MHz	50°C/Normal Voltage	0.00016	-0.00062	PASS
	40°C/Normal Voltage	0.00062	-0.00426	PASS
	30°C/Normal Voltage	-0.00304	-0.00269	PASS
	20°C/Normal Voltage	-0.00120	0.00286	PASS
	10°C/Normal Voltage	-0.00263	0.00286	PASS
	0°C/Normal Voltage	0.00029	-0.00272	PASS
	-10°C/Normal Voltage	0.00068	-0.00130	PASS
	-20°C/Normal Voltage	0.00021	-0.00106	PASS
	-30°C/Normal Voltage	-0.00042	0.00243	PASS
	20°C/Maximum Voltage	-0.00077	-0.00320	PASS
	20°C/Minimum Voltage	0.00189	0.00163	PASS
15MHz	50°C/Normal Voltage	-0.00050	0.00250	PASS
	40°C/Normal Voltage	-0.00042	0.00034	PASS
	30°C/Normal Voltage	0.00080	0.00195	PASS
	20°C/Normal Voltage	0.00008	0.00159	PASS
	10°C/Normal Voltage	-0.00047	0.00166	PASS
	0°C/Normal Voltage	0.00054	-0.00267	PASS
	-10°C/Normal Voltage	-0.00217	0.00124	PASS
	-20°C/Normal Voltage	-0.00141	-0.00170	PASS
	-30°C/Normal Voltage	0.00171	0.00127	PASS
	20°C/Maximum Voltage	0.00151	0.00214	PASS
	20°C/Minimum Voltage	0.00196	0.00116	PASS
20MHz	50°C/Normal Voltage	-0.00116	-0.00187	PASS
	40°C/Normal Voltage	-0.00108	-0.00116	PASS
	30°C/Normal Voltage	-0.00051	-0.00190	PASS



	20°C/Normal Voltage	-0.00047	0.00191	PASS
	10°C/Normal Voltage	-0.00120	-0.00068	PASS
	0°C/Normal Voltage	-0.00189	0.00180	PASS
	-10°C/Normal Voltage	0.00115	0.00008	PASS
	-20°C/Normal Voltage	-0.00190	0.00139	PASS
	-30°C/Normal Voltage	-0.00176	0.00152	PASS
	20°C/Maximum Voltage	-0.00055	-0.00095	PASS
	20°C/Minimum Voltage	-0.00077	-0.00123	PASS

Bandwidth	Test status	LTE Band 41 Channel 40620 Test Results (ppm)		
		QPSK	16QAM	Conclusion
5MHz	50°C/Normal Voltage	0.01151	0.01349	PASS
	40°C/Normal Voltage	0.01169	0.01084	PASS
	30°C/Normal Voltage	0.00926	0.01145	PASS
	20°C/Normal Voltage	0.00949	0.01002	PASS
	10°C/Normal Voltage	0.01016	0.01200	PASS
	0°C/Normal Voltage	0.00685	0.01479	PASS
	-10°C/Normal Voltage	0.01042	0.01035	PASS
	-20°C/Normal Voltage	0.01069	0.01002	PASS
	-30°C/Normal Voltage	0.01206	0.01100	PASS
	20°C/Maximum Voltage	0.01230	0.01068	PASS
	20°C/Minimum Voltage	0.00967	0.00845	PASS
10MHz	50°C/Normal Voltage	0.00877	0.00558	PASS
	40°C/Normal Voltage	0.00861	0.00627	PASS
	30°C/Normal Voltage	0.00988	0.00715	PASS
	20°C/Normal Voltage	0.01049	0.00657	PASS
	10°C/Normal Voltage	0.01052	0.00949	PASS
	0°C/Normal Voltage	0.00862	0.00515	PASS
	-10°C/Normal Voltage	0.00939	0.00797	PASS
	-20°C/Normal Voltage	0.01028	0.00853	PASS
	-30°C/Normal Voltage	0.00944	0.00971	PASS
	20°C/Maximum Voltage	0.00913	0.00862	PASS
	20°C/Minimum Voltage	0.00998	0.01007	PASS
15MHz	50°C/Normal Voltage	0.01223	0.01172	PASS
	40°C/Normal Voltage	0.01026	0.01236	PASS
	30°C/Normal Voltage	0.00912	0.00964	PASS
	20°C/Normal Voltage	0.01118	0.00826	PASS
	10°C/Normal Voltage	0.01140	0.01024	PASS



	0°C/Normal Voltage	0.01063	0.01236	PASS
	-10°C/Normal Voltage	0.01113	0.00990	PASS
	-20°C/Normal Voltage	0.01138	0.00784	PASS
	-30°C/Normal Voltage	0.00911	0.01084	PASS
	20°C/Maximum Voltage	0.01024	0.00785	PASS
	20°C/Minimum Voltage	0.00941	0.00835	PASS
20MHz	50°C/Normal Voltage	0.00994	0.01132	PASS
	40°C/Normal Voltage	0.00819	0.01071	PASS
	30°C/Normal Voltage	0.00897	0.01108	PASS
	20°C/Normal Voltage	0.00909	0.00931	PASS
	10°C/Normal Voltage	0.01132	0.01103	PASS
	0°C/Normal Voltage	0.00861	0.00761	PASS
	-10°C/Normal Voltage	0.01087	0.00942	PASS
	-20°C/Normal Voltage	0.00877	0.01006	PASS
	-30°C/Normal Voltage	0.00926	0.00850	PASS
	20°C/Maximum Voltage	0.01010	0.01012	PASS
	20°C/Minimum Voltage	0.00864	0.00882	PASS

4.7 Spurious Emissions at Antenna Terminals

Ambient condition

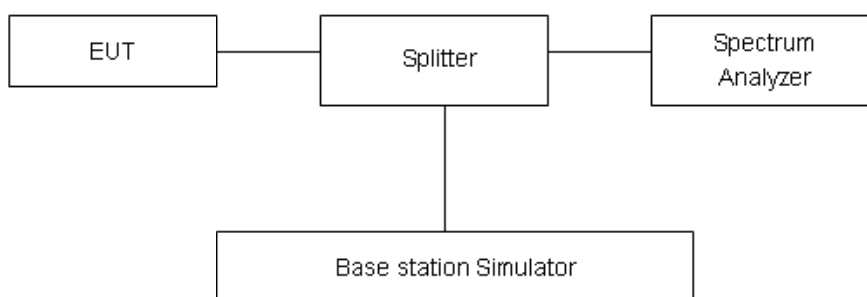
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 -7/41 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 -7/41 Limit	-25 dBm
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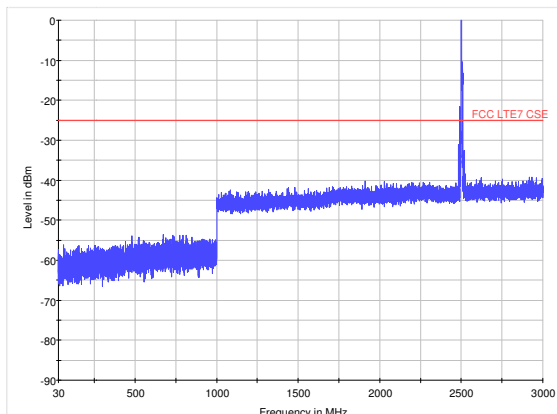
Measurement Uncertainty

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

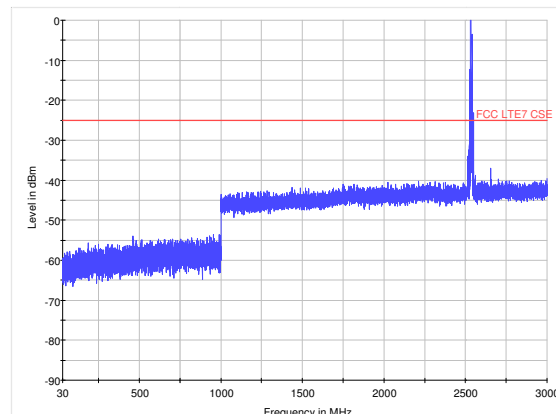
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-12.75GHz	1.407 dB

Test Result: PASS

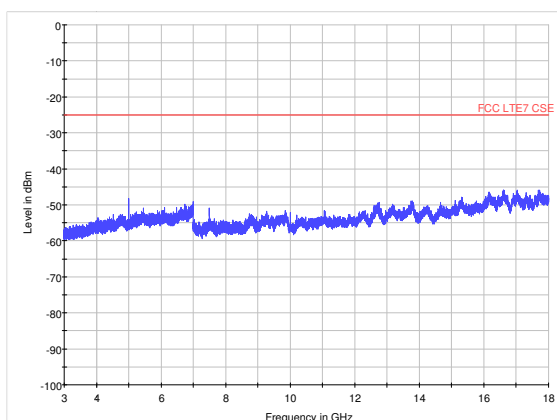
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.
The signal beyond the limit is carrier in the following plots.



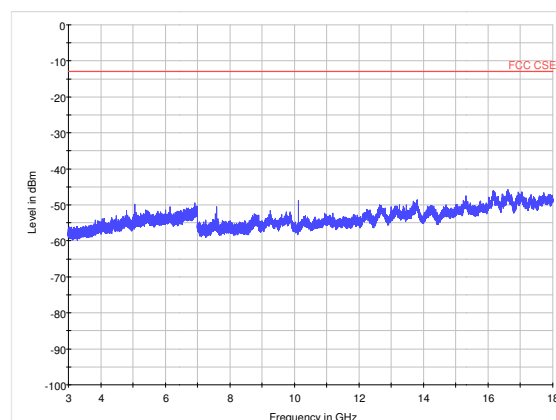
LTE Band 7 5MHz CH20775 30MHz~3GHz



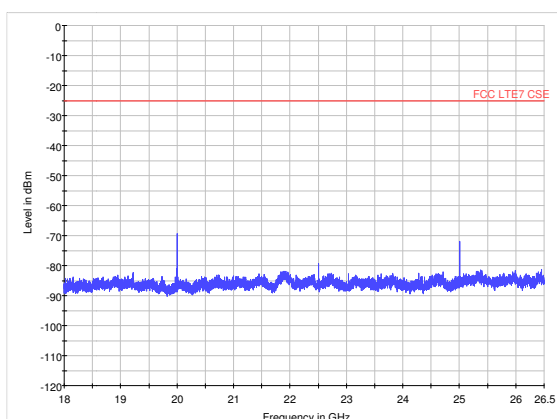
LTE Band 7 5MHz CH21100 30MHz~3GHz



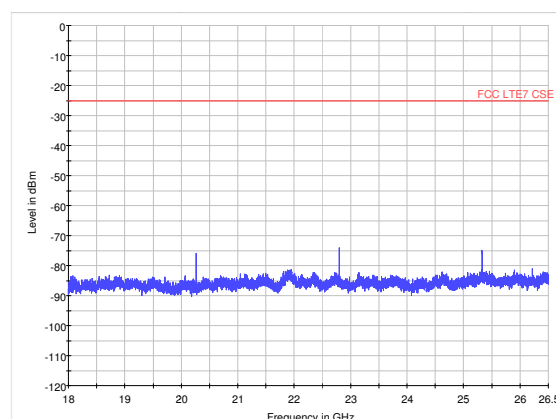
LTE Band 7 5MHz CH20775 3GHz~18GHz



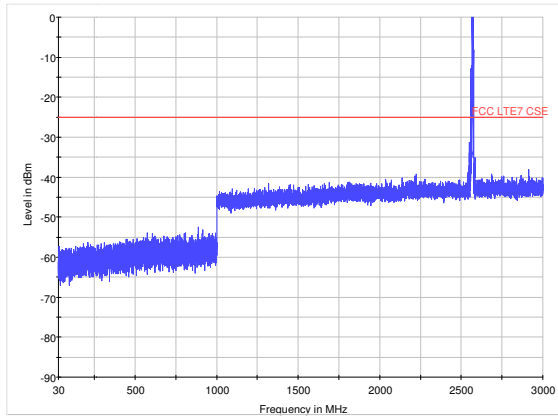
LTE Band 7 5MHz CH21100 3GHz~18GHz



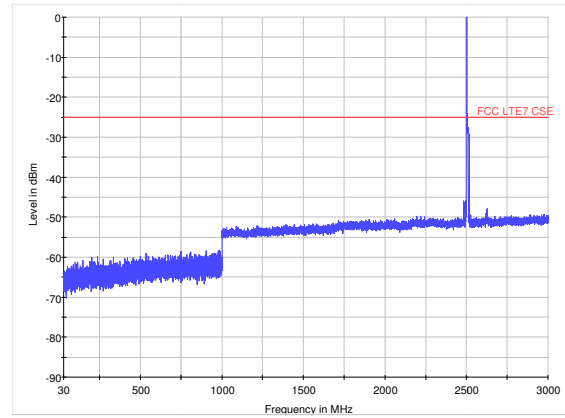
LTE Band 7 5MHz CH20775 18GHz~26.5GHz



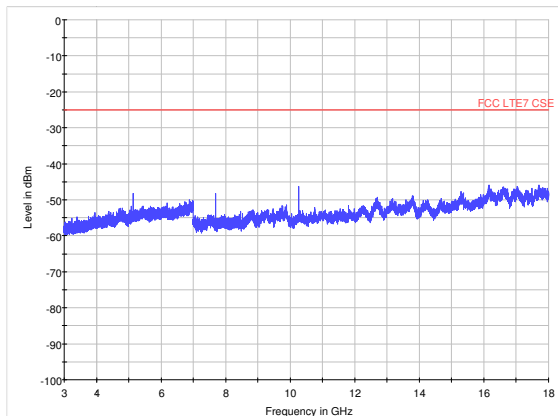
LTE Band 7 5MHz CH21100 18GHz~26.5GHz



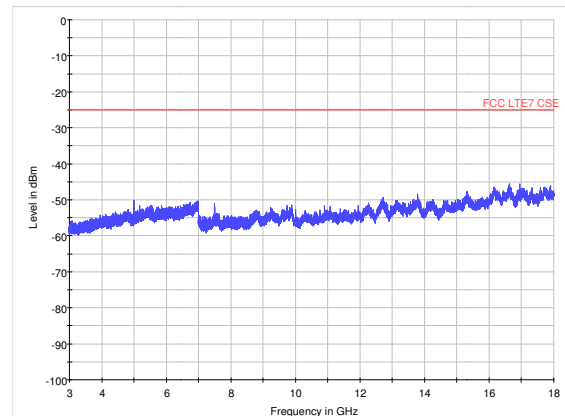
LTE Band 7 5MHz CH21425 30MHz~3GHz



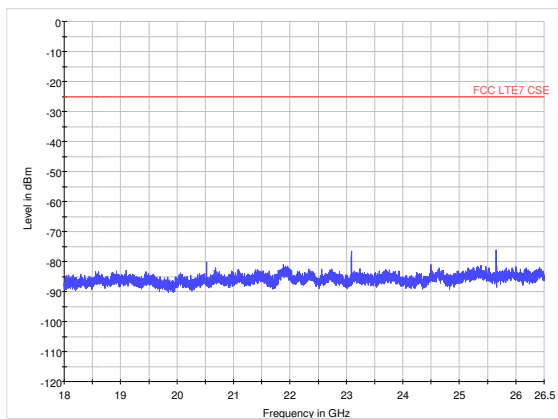
LTE Band 7 10MHz CH39700 30MHz~3GHz



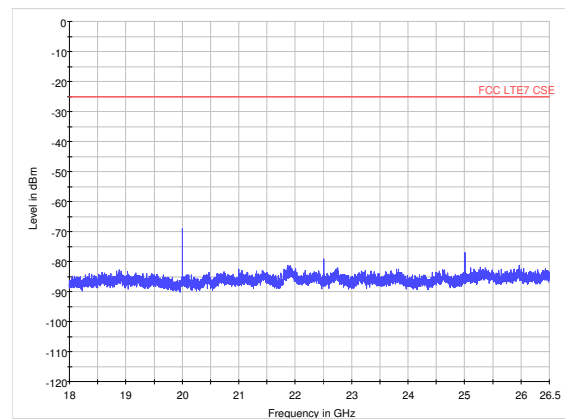
LTE Band 7 5MHz CH21425 3GHz~18GHz



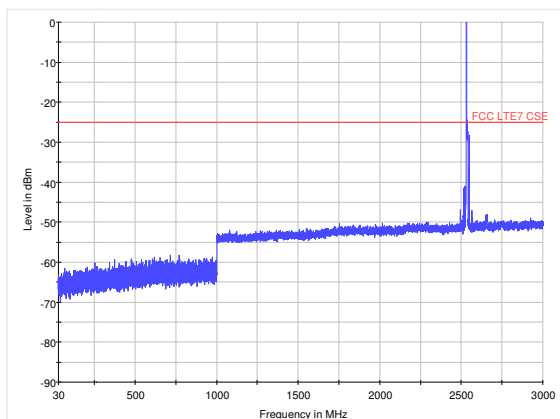
LTE Band 7 10MHz CH39700 3GHz~18GHz



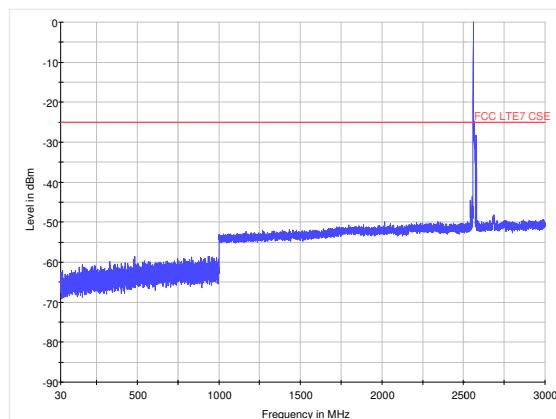
LTE Band 7 5MHz CH21425 18GHz~26.5GHz



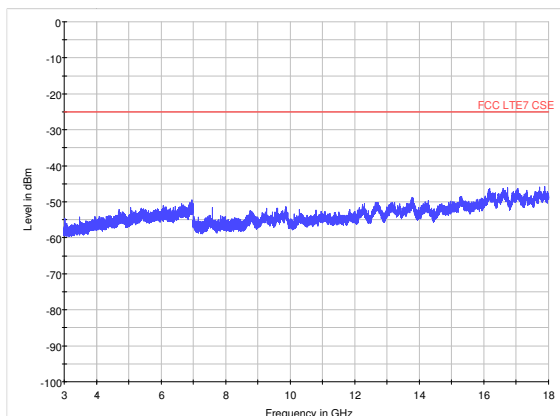
LTE Band 7 10MHz CH39700 18GHz~26.5GHz



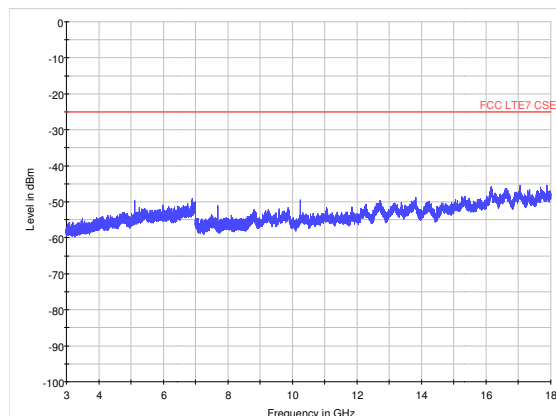
LTE Band 7 10MHz CH21100 30MHz~3GHz



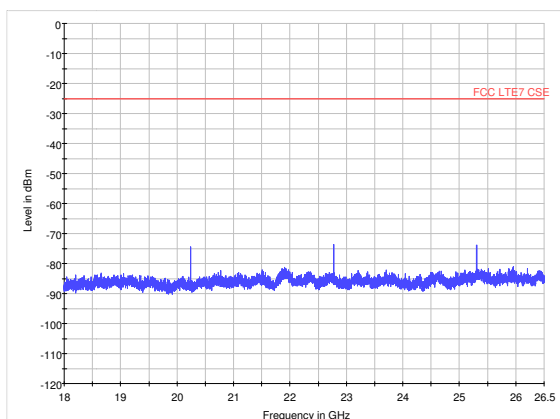
LTE Band 7 10MHz CH41540 30MHz~3GHz



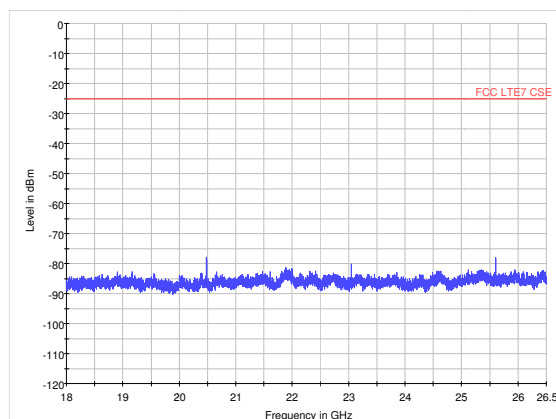
LTE Band 7 10MHz CH21100 3GHz~18GHz



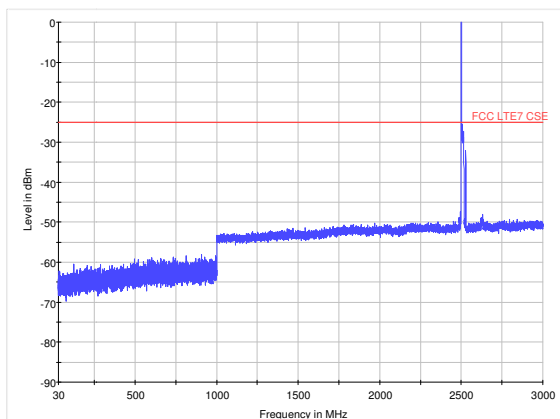
LTE Band 7 10MHz CH41540 3GHz~18GHz



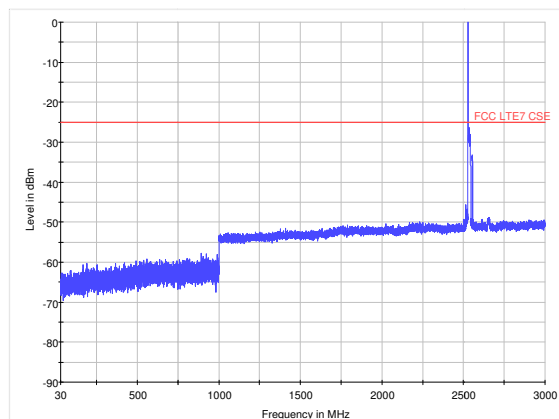
LTE Band 7 10MHz CH21100 18GHz~26.5GHz



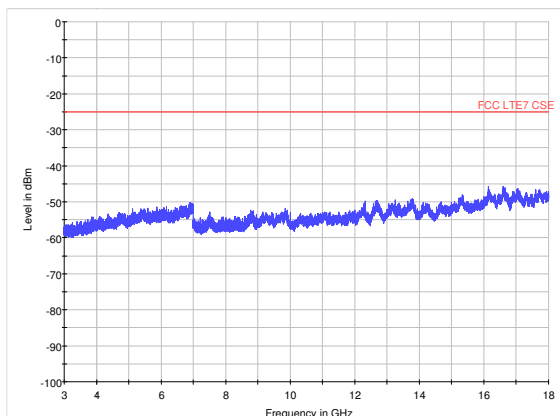
LTE Band 7 10MHz CH41540 18GHz~26.5GHz



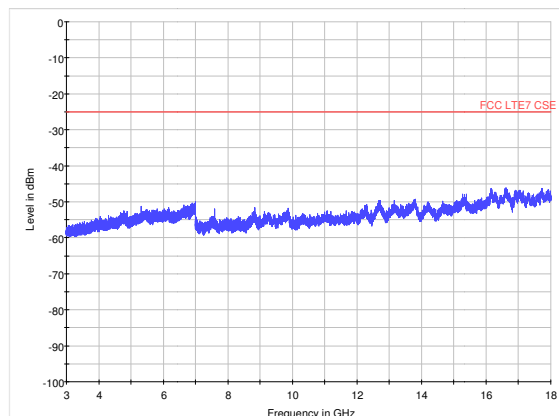
LTE Band 7 15MHz CH39725 30MHz~3GHz



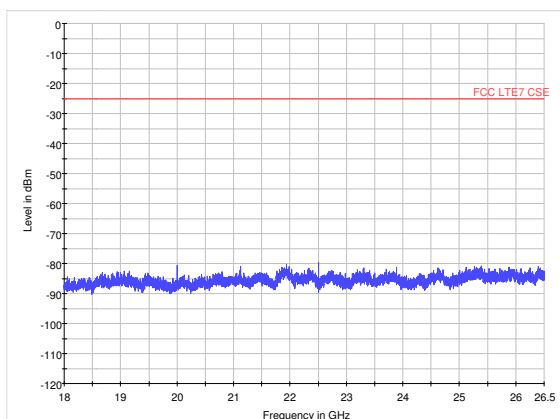
LTE Band 7 15MHz CH21100 30MHz~3GHz



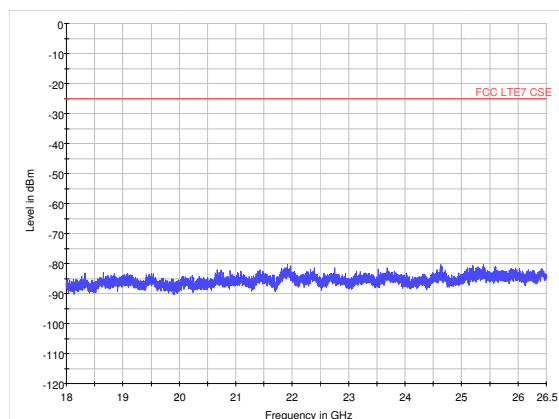
LTE Band 7 15MHz CH39725 3GHz~18GHz



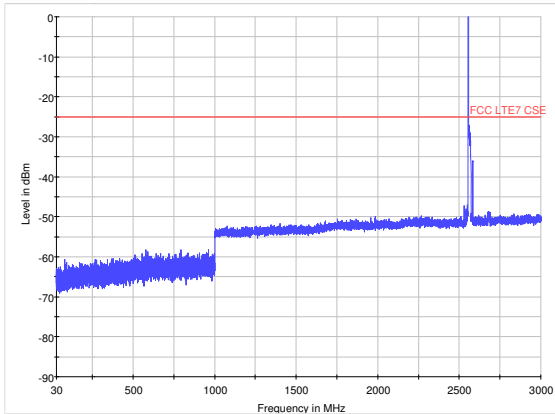
LTE Band 7 15MHz CH21100 3GHz~18GHz



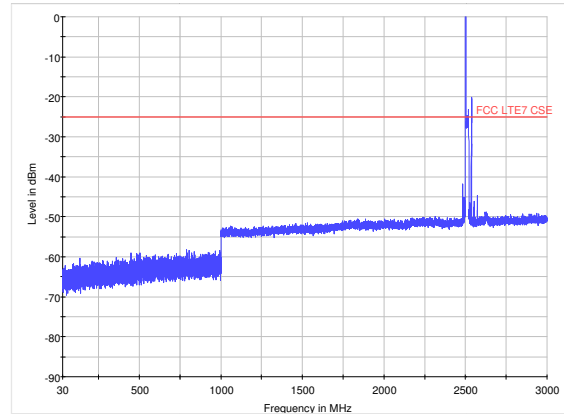
LTE Band 7 15MHz CH39725 18GHz~26.5GHz



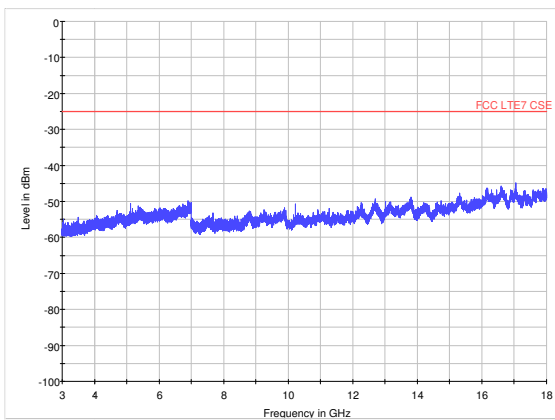
LTE Band 7 15MHz CH21100 18GHz~26.5GHz



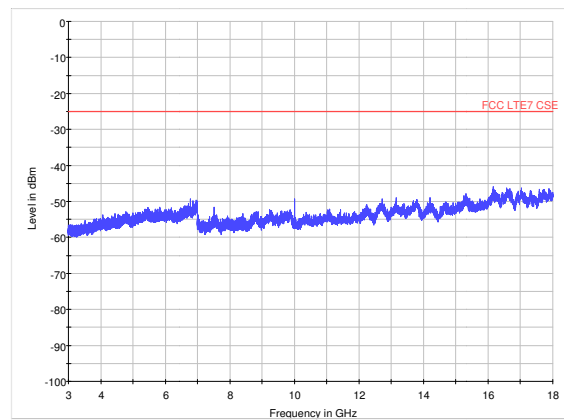
LTE Band 7 15MHz CH41515 30MHz~3GHz



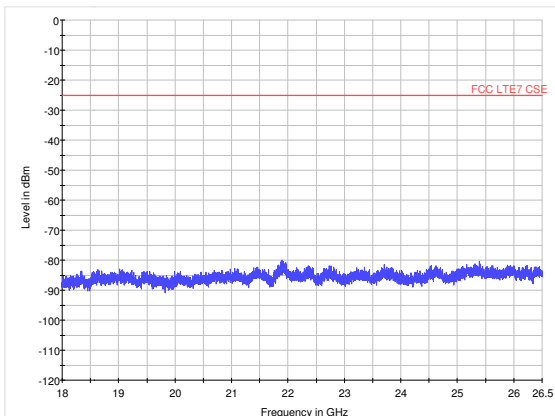
LTE Band 7 20MHz CH39750 30MHz~3GHz



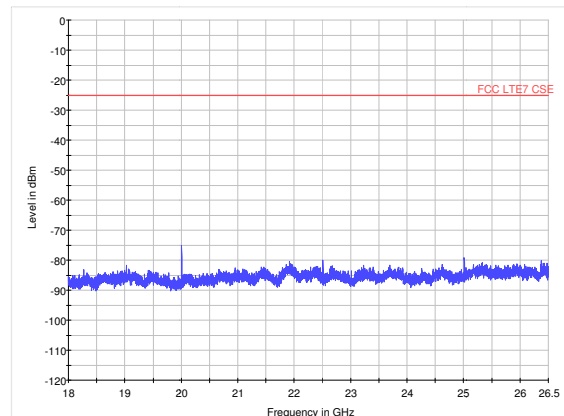
LTE Band 7 15MHz CH41515 3GHz~18GHz



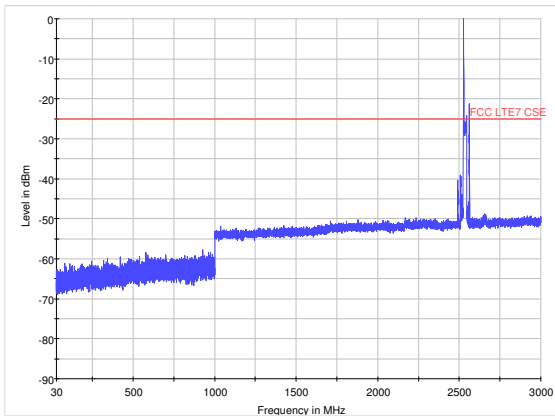
LTE Band 7 20MHz CH39750 3GHz~18GHz



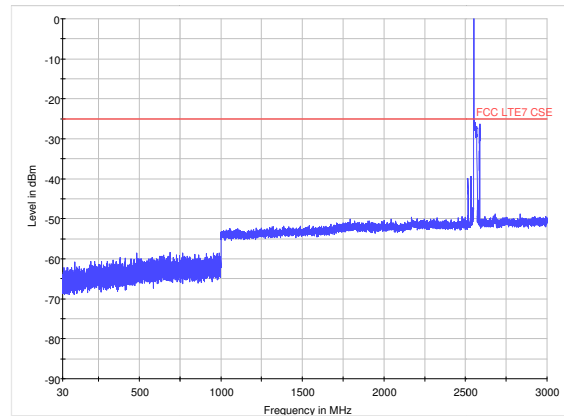
LTE Band 7 15MHz CH41515 18GHz~26.5GHz



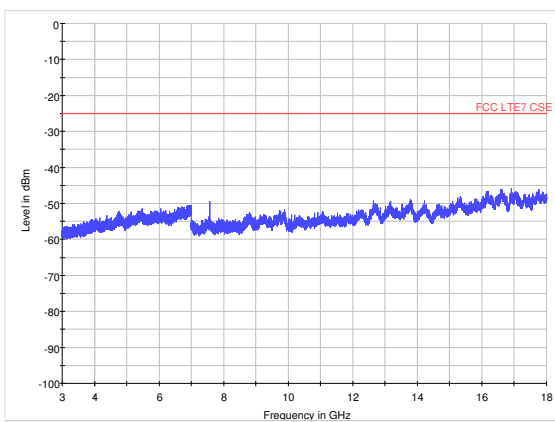
LTE Band 7 20MHz CH39750 18GHz~26.5GHz



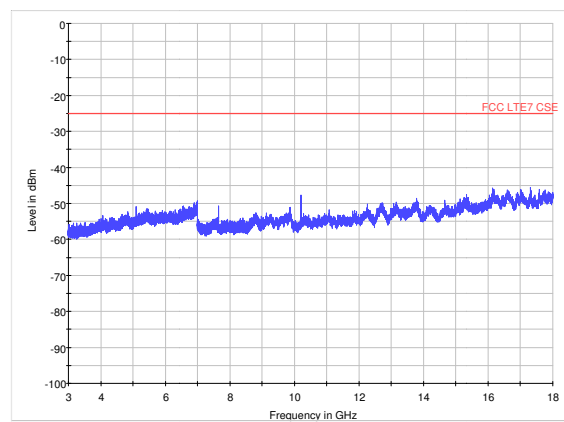
LTE Band 7 20MHz CH21100 30MHz~3GHz



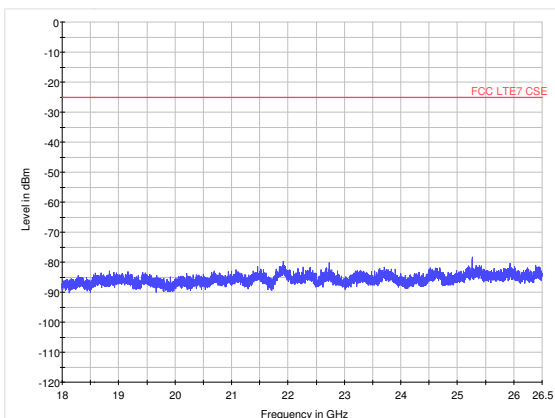
LTE Band 7 20MHz CH41490 30MHz~3GHz



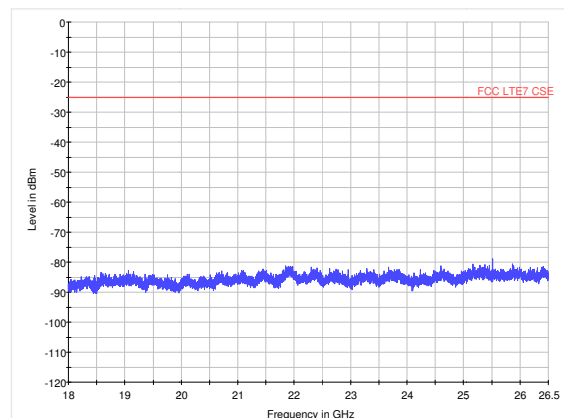
LTE Band 7 20MHz CH21100 3GHz~18GHz



LTE Band 7 20MHz CH41490 3GHz~18GHz

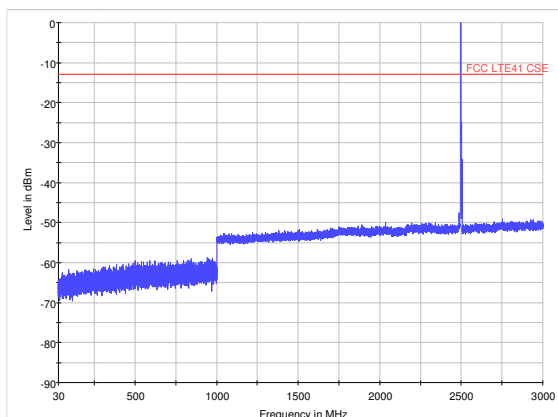


LTE Band 7 20MHz CH21100 18GHz~26.5GHz

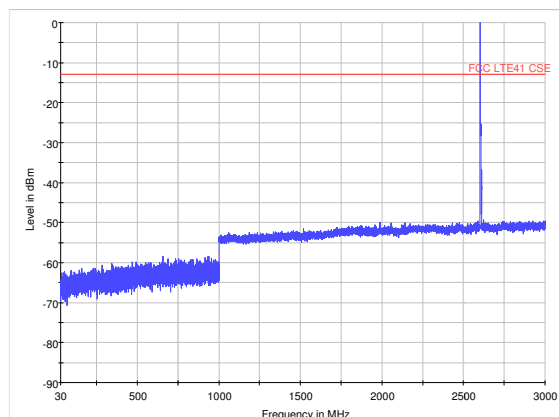


LTE Band 7 20MHz CH41490 18GHz~26.5GHz

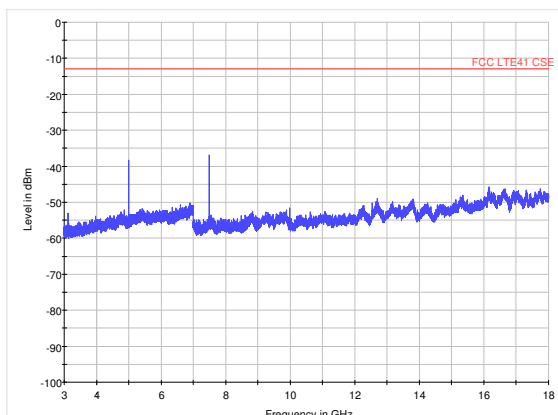
Note: For LTE Band 41, sweep from 26.5GHz to 30GHz, and the emissions more than 20 dB below the permissible value are not reported.



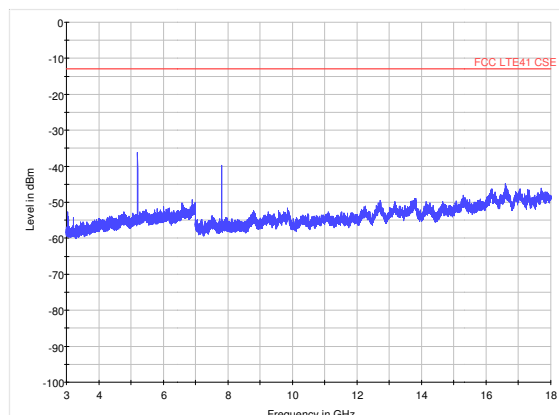
LTE Band 41 5MHz CH39675 30MHz~3GHz



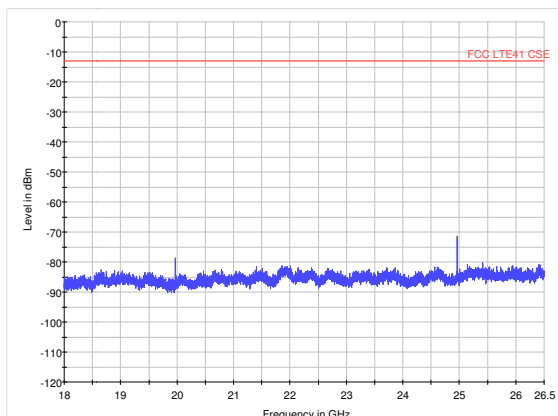
LTE Band 41 5MHz CH40620 30MHz~3GHz



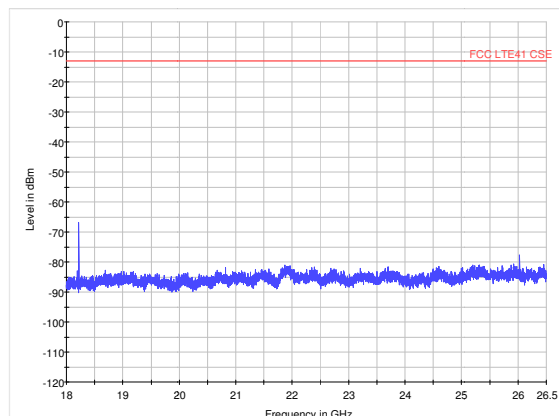
LTE Band 41 5MHz CH39675 3GHz~18GHz



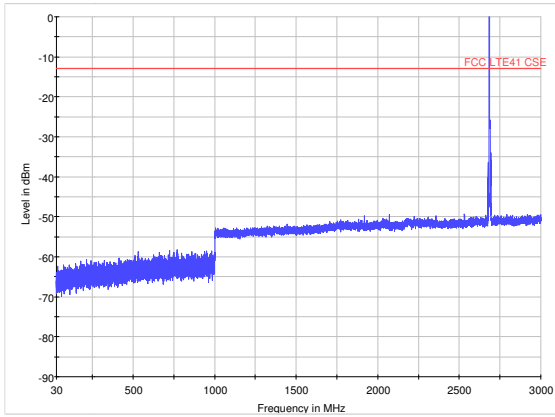
LTE Band 41 5MHz CH40620 3GHz~18GHz



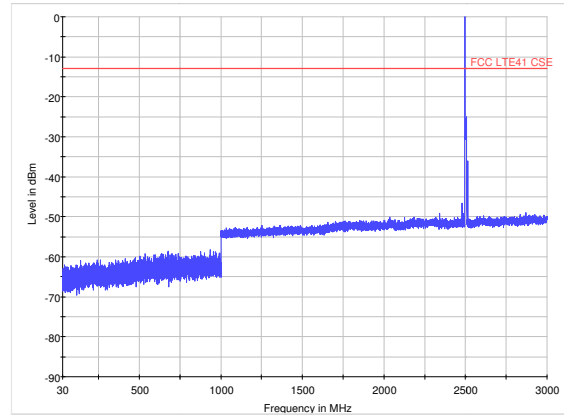
LTE Band 41 5MHz CH39675 18GHz~26.5GHz



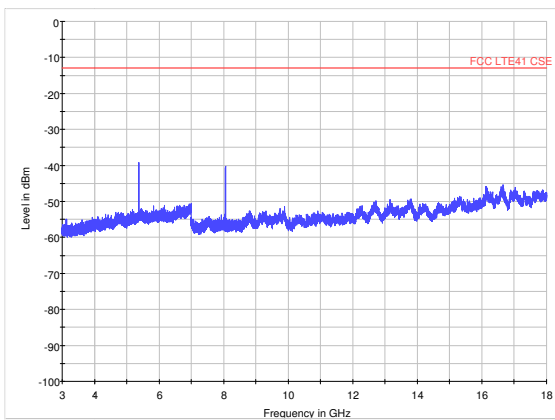
LTE Band 41 5MHz CH40620 18GHz~26.5GHz



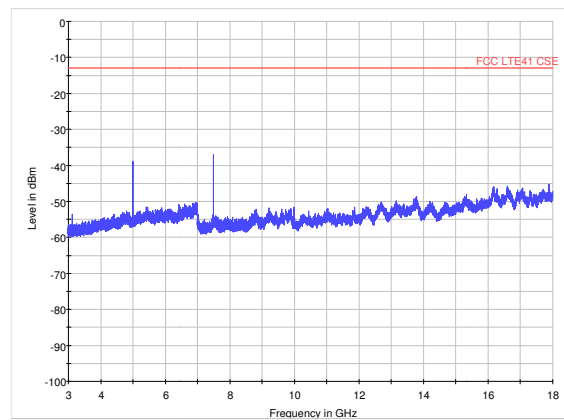
LTE Band 41 5MHz CH41565 30MHz~3GHz



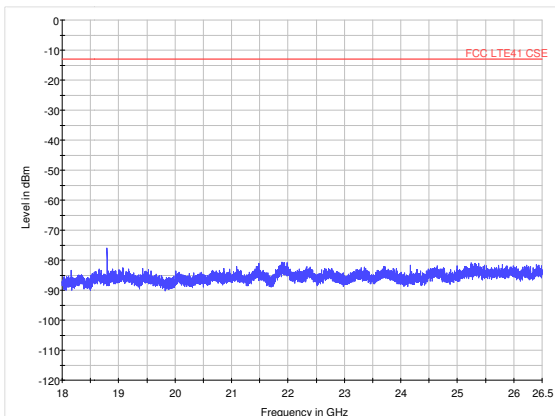
LTE Band 41 10MHz CH39700 30MHz~3GHz



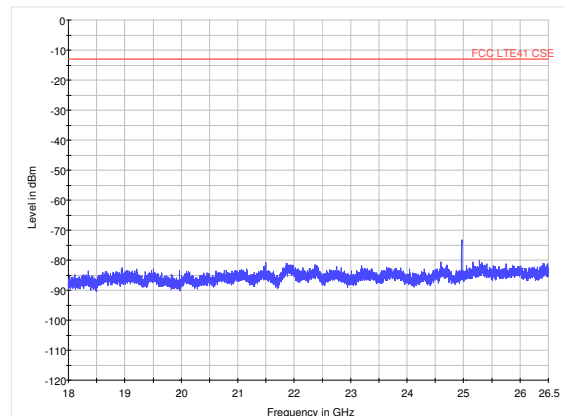
LTE Band 41 5MHz CH41565 3GHz~18GHz



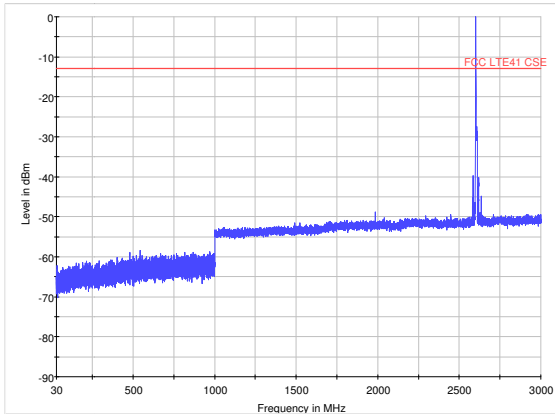
LTE Band 41 10MHz CH39700 3GHz~18GHz



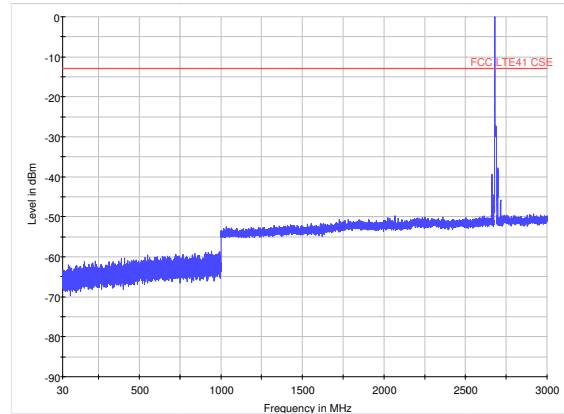
LTE Band 41 5MHz CH41565 18GHz~26.5GHz



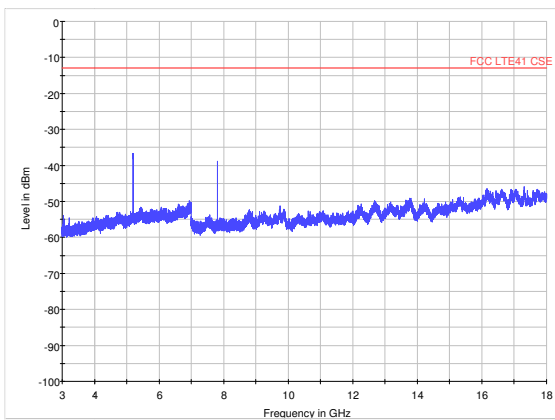
LTE Band 41 10MHz CH39700 18GHz~26.5GHz



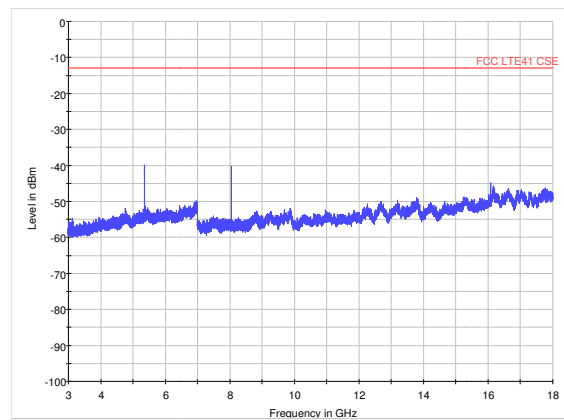
LTE Band 41 10MHz CH40620 30MHz~3GHz



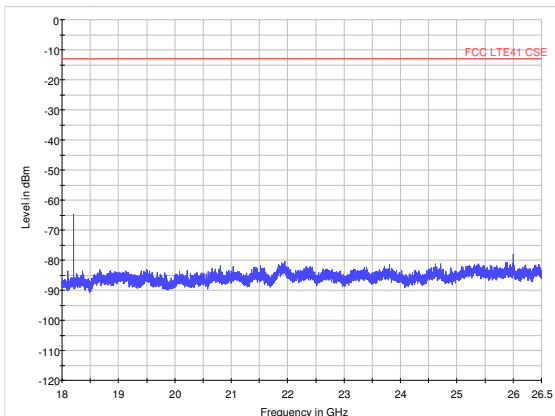
LTE Band 41 10MHz CH41540 30MHz~3GHz



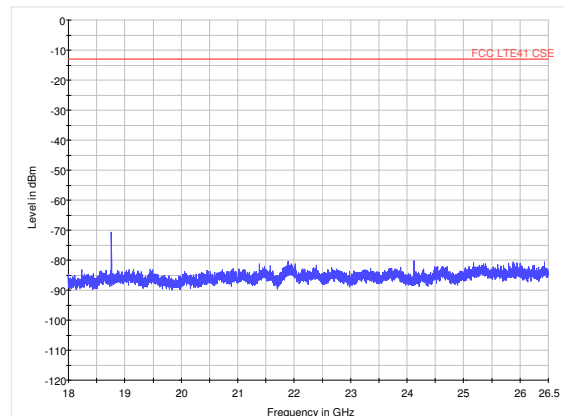
LTE Band 41 10MHz CH40620 3GHz~18GHz



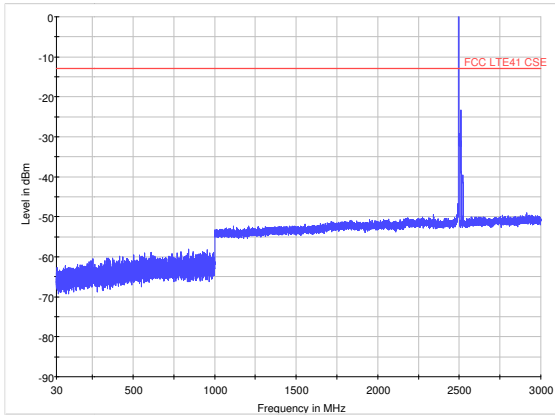
LTE Band 41 10MHz CH41540 3GHz~18GHz



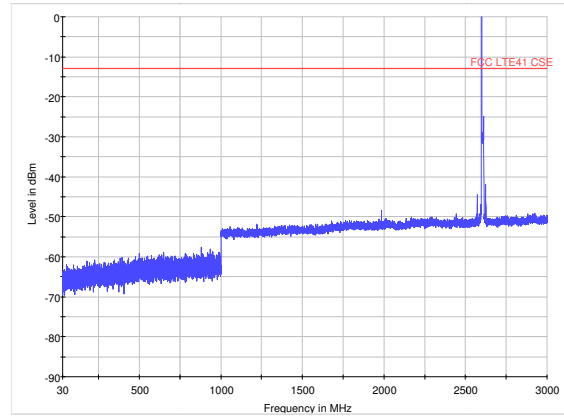
LTE Band 41 10MHz CH40620 18GHz~26.5GHz



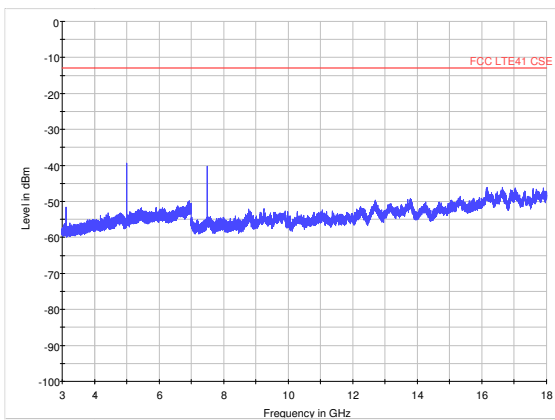
LTE Band 41 10MHz CH41540 18GHz~26.5GHz



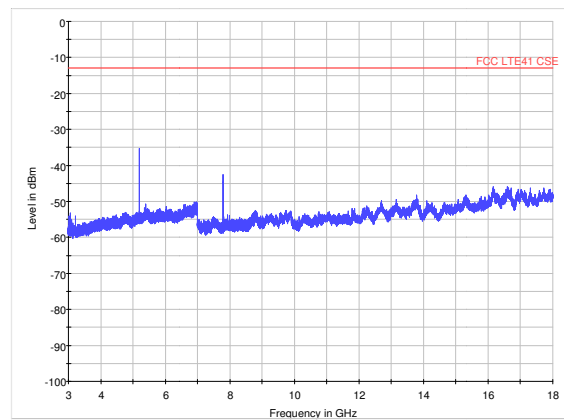
LTE Band 41 15MHz CH39725 30MHz~3GHz



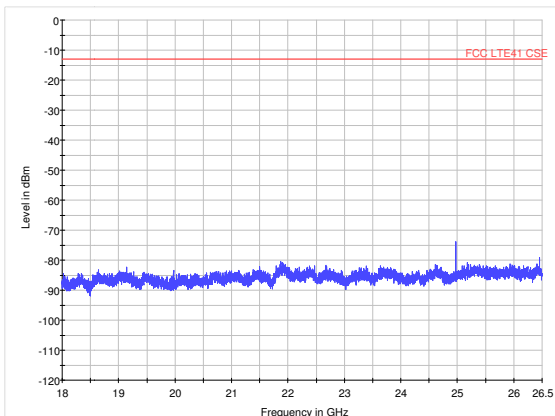
LTE Band 41 15MHz CH40620 30MHz~3GHz



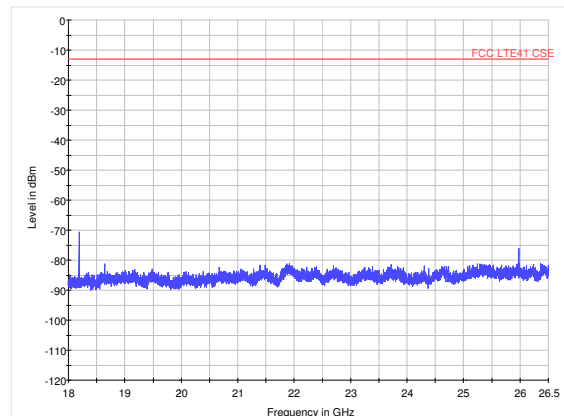
LTE Band 41 15MHz CH39725 3GHz~18GHz



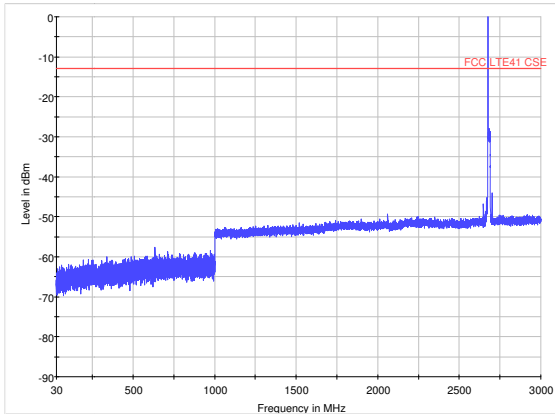
LTE Band 41 15MHz CH40620 3GHz~18GHz



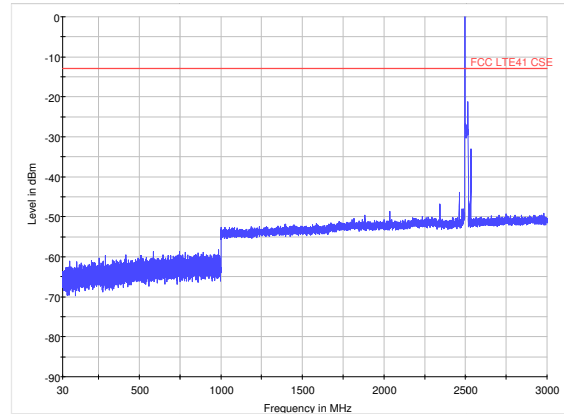
LTE Band 41 15MHz CH39725 18GHz~26.5GHz



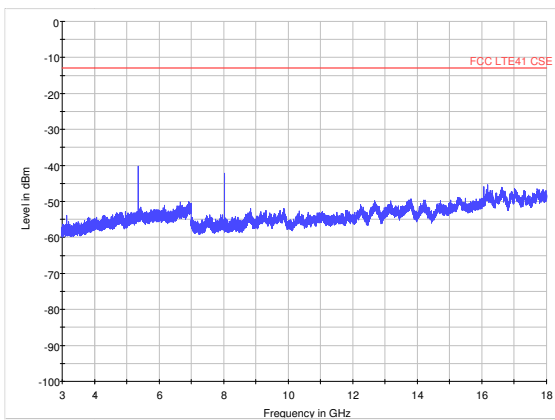
LTE Band 41 15MHz CH40620 18GHz~26.5GHz



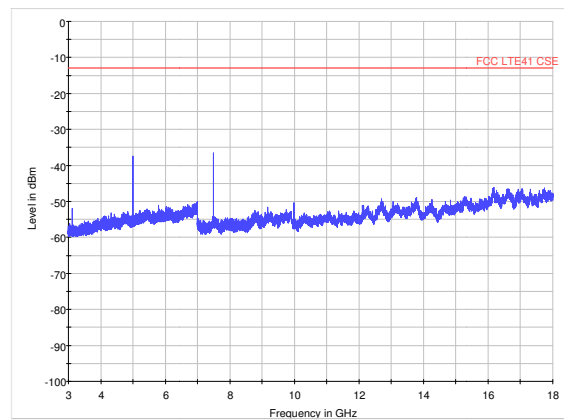
LTE Band 41 15MHz CH41515 30MHz~3GHz



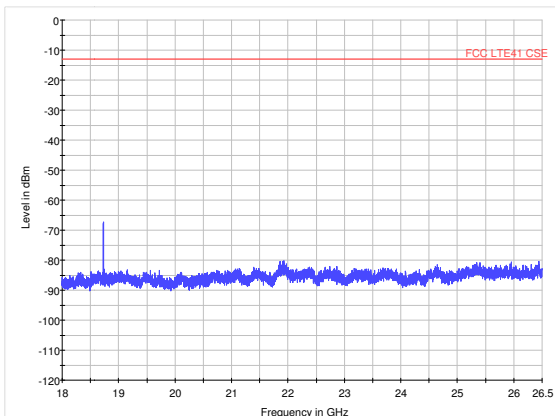
LTE Band 41 20MHz CH39750 30MHz~3GHz



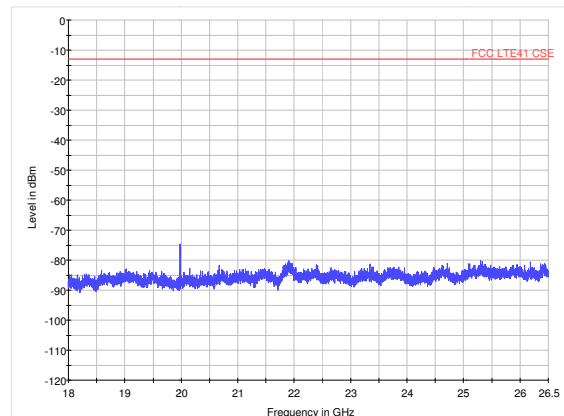
LTE Band 41 15MHz CH41515 3GHz~18GHz



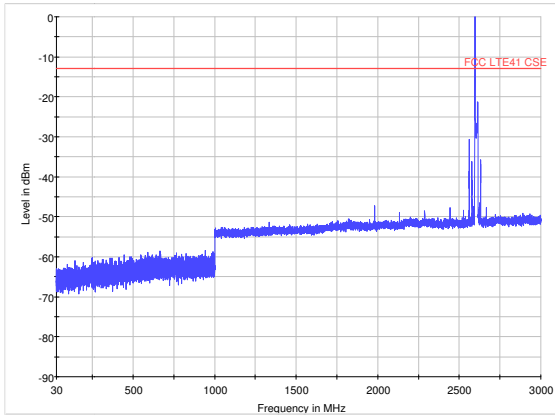
LTE Band 41 20MHz CH39750 3GHz~18GHz



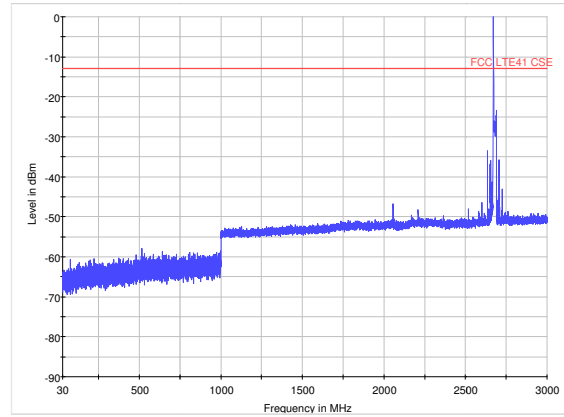
LTE Band 41 15MHz CH41515 18GHz~26.5GHz



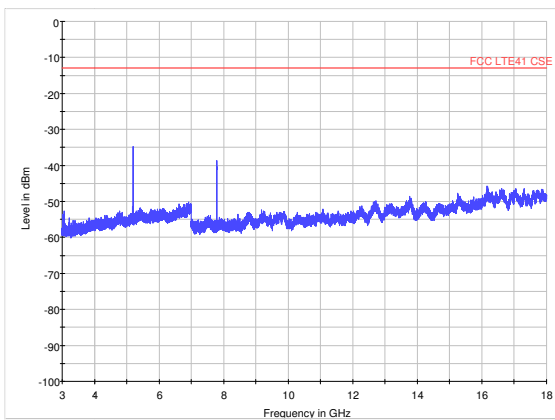
LTE Band 41 20MHz CH39750 18GHz~26.5GHz



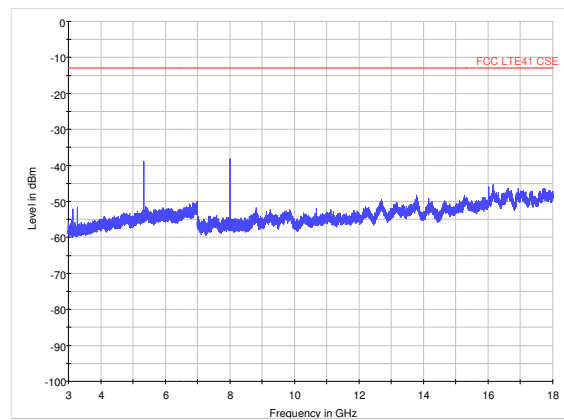
LTE Band 41 20MHz CH40620 30MHz~3GHz



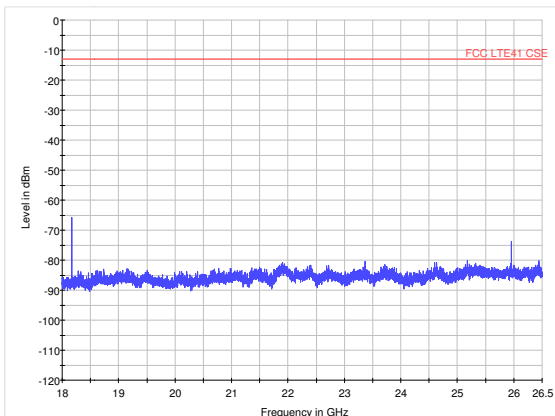
LTE Band 41 20MHz CH41490 30MHz~3GHz



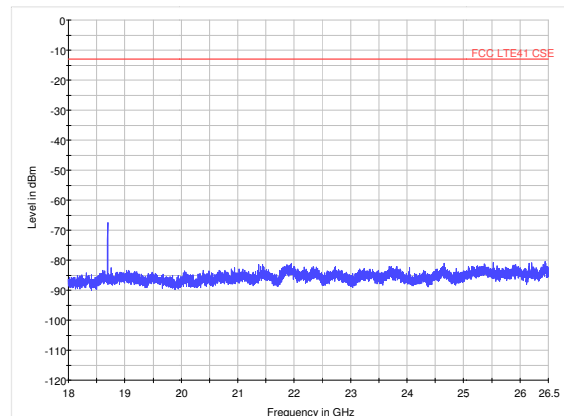
LTE Band 41 20MHz CH40620 3GHz~18GHz



LTE Band 41 20MHz CH41490 3GHz~18GHz



LTE Band 41 20MHz CH40620 18GHz~26.5GHz



LTE Band 41 20MHz CH41490 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

The measurements procedures in TIA -603-D are used.

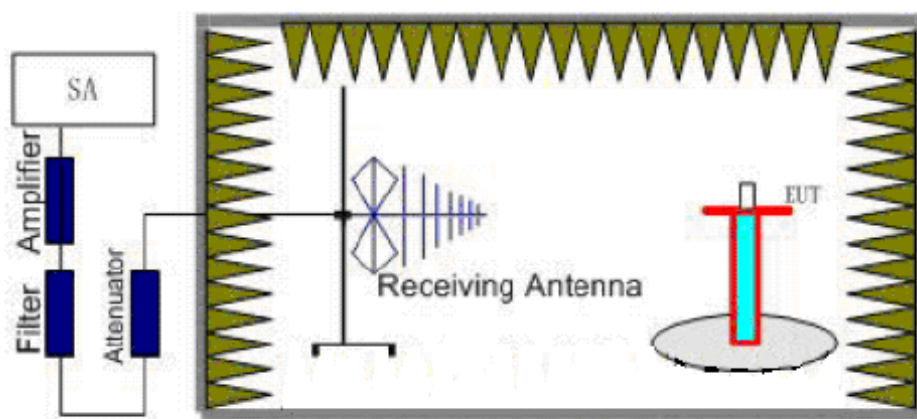
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment.

The emissions less than 20 dB below the permissible value are reported.

The procedure of Radiates Spurious Emission is as follows:

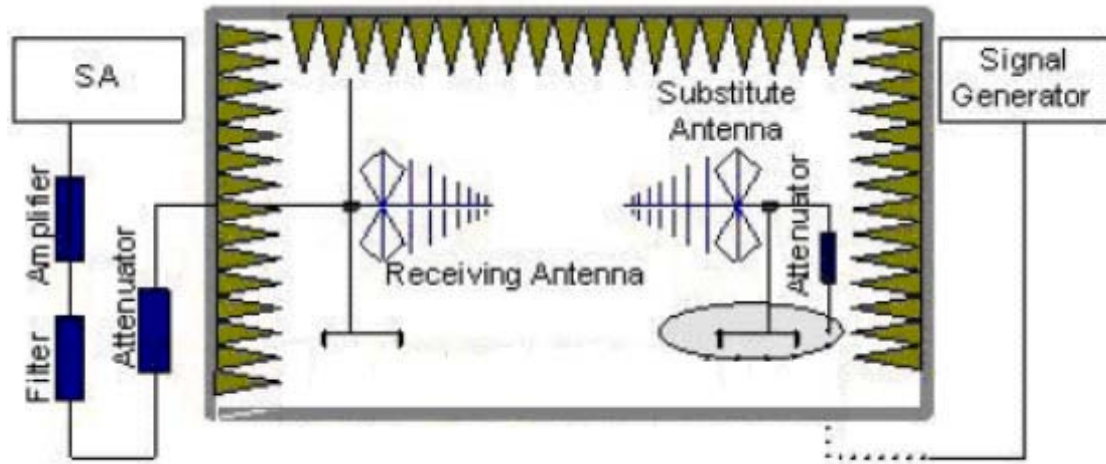
Step 1:

The measurement is carried out in the semi-anechoic chamber. EUT was placed on a 1.5 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used while RBW and VBW are both set to 1MHz. During the measurement, the highest emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna moved up and down over a range from 1 to 4 meters in both horizontally and vertically polarized orientations. The test setup refers to figure below.



Step 2:

A dipole antenna shall be substituted in place of the EUT. The antenna will be driven by a signal generator with a adjustable S.G. applied through a Tx cable. Adjust the level of the signal generator output until the value of the receiver reach the previously recorded analyzer power level (LVL). Then The E.R.P. /E.I.R.P. of the EUT can be calculated through the level of the signal generator, Tx cable loss and the gain of the substitution antenna. The test setup refers to figure below.



E.R.P (peak power) =S.G. - Tx Cable loss + Substitution antenna gain – 2.15.

EIRP= E.R.P+2.15

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), The worst emission was found in position (Z axis, vertical polarization) and the worst case was recorded.

Limits

LTE -7/41 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 -7/41 Limit	-25 dBm
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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

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	-39.27	2.00	9.15	Vertical	-32.12	-25	7.12	45
3	7507.5	-40.60	2.50	11.35	Vertical	-31.75	-25	6.75	90
4	10010.0	-37.41	4.20	12.05	Vertical	-29.56	-25	4.56	135
5	12512.5	-48.85	5.20	12.85	Vertical	-41.20	-25	16.20	270
6	15015.0	-49.23	5.50	14.23	Vertical	-40.50	-25	15.50	225
7	17517.5	-48.45	5.70	14.15	Vertical	-40.00	-25	15.00	315
8	20020.0	-46.96	6.30	13.76	Vertical	-39.50	-25	14.50	270
9	22522.5	-46.35	6.80	14.05	Vertical	-39.10	-25	14.10	0
10	25025.0	-46.14	6.90	14.84	Vertical	-38.20	-25	13.20	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 = 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	-41.27	2.00	9.15	Vertical	-34.12	-25	9.12	90
3	7605.0	-43.66	2.50	11.35	Vertical	-34.81	-25	9.81	315
4	10140.0	-34.25	4.20	12.05	Vertical	-26.40	-25	1.40	270
5	12675.0	-48.15	5.20	12.85	Vertical	-40.50	-25	15.50	45
6	15210.0	-49.73	5.50	14.23	Vertical	-41.00	-25	16.00	90
7	17745.0	-48.55	5.70	14.15	Vertical	-40.10	-25	15.10	135
8	20280.0	-45.66	6.30	13.76	Vertical	-38.20	-25	13.20	270
9	22815.0	-45.35	6.80	14.05	Vertical	-38.10	-25	13.10	225
10	25350.0	-45.14	6.90	14.84	Vertical	-37.20	-25	12.20	315

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	-42.71	2.00	9.15	Vertical	-35.56	-25	10.56	270
3	7702.5	-48.88	2.50	11.35	Vertical	-40.03	-25	15.03	0
4	10270.0	-34.05	4.20	12.05	Vertical	-26.20	-25	1.20	45
5	12837.5	-49.75	5.20	12.85	Vertical	-42.10	-25	17.10	90
6	15405.0	-49.93	5.50	14.23	Vertical	-41.20	-25	16.20	315
7	17972.5	-48.65	5.70	14.15	Vertical	-40.20	-25	15.20	270
8	20540.0	-46.66	6.30	13.76	Vertical	-39.20	-25	14.20	45
9	23107.5	-46.75	6.80	14.05	Vertical	-39.50	-25	14.50	90
10	25675.0	-43.54	6.90	14.84	Vertical	-35.60	-25	10.60	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 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	-37.27	2.00	9.15	Vertical	-30.12	-25	5.12	270
3	7515.0	-42.24	2.50	11.35	Vertical	-33.39	-25	8.39	225
4	10020.0	-37.10	4.20	12.05	Vertical	-29.25	-25	4.25	315
5	12525.0	-48.85	5.20	12.85	Vertical	-41.20	-25	16.20	270
6	15030.0	-49.23	5.50	14.23	Vertical	-40.50	-25	15.50	0
7	17535.0	-49.05	5.70	14.15	Vertical	-40.60	-25	15.60	45
8	20040.0	-47.06	6.30	13.76	Vertical	-39.60	-25	14.60	90
9	22545.0	-45.75	6.80	14.05	Vertical	-38.50	-25	13.50	315
10	25050.0	-46.04	6.90	14.84	Vertical	-38.10	-25	13.10	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 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	-40.02	2.00	9.15	Vertical	-32.87	-25	7.87	45
3	7605.0	-42.49	2.50	11.35	Vertical	-33.64	-25	8.64	90
4	10140.0	-37.17	4.20	12.05	Vertical	-29.32	-25	4.32	135
5	12675.0	-48.85	5.20	12.85	Vertical	-41.20	-25	16.20	270
6	15210.0	-49.73	5.50	14.23	Vertical	-41.00	-25	16.00	225
7	17745.0	-47.35	5.70	14.15	Vertical	-38.90	-25	13.90	315
8	20280.0	-45.96	6.30	13.76	Vertical	-38.50	-25	13.50	270
9	22815.0	-45.45	6.80	14.05	Vertical	-38.20	-25	13.20	0
10	25350.0	-45.44	6.90	14.84	Vertical	-37.50	-25	12.50	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	5132.0	-40.56	2.00	10.15	Vertical	-32.41	-25	7.41	90
3	7698.0	-47.40	2.50	11.35	Vertical	-38.55	-25	13.55	315
4	10264.0	-40.28	4.20	12.05	Vertical	-32.43	-25	7.43	270
5	12830.0	-51.75	5.20	14.85	Vertical	-42.10	-25	17.10	45
6	15396.0	-49.33	5.50	13.23	Vertical	-41.60	-25	16.60	90
7	17962.0	-47.65	5.70	12.15	Vertical	-41.20	-25	16.20	135
8	20528.0	-47.96	6.30	13.76	Vertical	-40.50	-25	15.50	270
9	23094.0	-45.65	6.80	14.05	Vertical	-38.40	-25	13.40	225
10	25660.0	-45.94	6.90	14.84	Vertical	-38.00	-25	13.00	315

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	-38.83	2.00	10.15	Vertical	-30.68	-25	5.68	270
3	7522.5	-44.04	2.50	11.35	Vertical	-35.19	-25	10.19	0
4	10030.0	-37.70	4.20	12.05	Vertical	-29.85	-25	4.85	45
5	12537.5	-52.15	5.20	14.85	Vertical	-42.50	-25	17.50	90
6	15045.0	-49.23	5.50	13.23	Vertical	-41.50	-25	16.50	315
7	17552.5	-48.05	5.70	12.15	Vertical	-41.60	-25	16.60	270
8	20060.0	-46.96	6.30	13.76	Vertical	-39.50	-25	14.50	45
9	22567.5	-45.45	6.80	14.05	Vertical	-38.20	-25	13.20	90
10	25075.0	-45.84	6.90	14.84	Vertical	-37.90	-25	12.90	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 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	5070.0	-39.31	2.00	10.15	Vertical	-31.16	-25	6.16	270
3	7605.0	-46.33	2.50	11.35	Vertical	-37.48	-25	12.48	225
4	10140.0	-39.60	4.20	12.05	Vertical	-31.75	-25	6.75	315
5	12675.0	-52.15	5.20	14.85	Vertical	-42.50	-25	17.50	270
6	15210.0	-49.33	5.50	13.23	Vertical	-41.60	-25	16.60	0
7	17745.0	-47.45	5.70	12.15	Vertical	-41.00	-25	16.00	45
8	20280.0	-47.96	6.30	13.76	Vertical	-40.50	-25	15.50	90
9	22815.0	-45.85	6.80	14.05	Vertical	-38.60	-25	13.60	315
10	25350.0	-46.04	6.90	14.84	Vertical	-38.10	-25	13.10	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 = 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	-41.65	2.00	10.15	Vertical	-33.50	-25	8.50	45
3	7687.5	-47.05	2.50	11.35	Vertical	-38.20	-25	13.20	90
4	10250.0	-42.35	4.20	12.05	Vertical	-34.50	-25	9.50	135
5	12812.5	-52.75	5.20	14.85	Vertical	-43.10	-25	18.10	270
6	15375.0	-50.13	5.50	13.23	Vertical	-42.40	-25	17.40	225
7	17937.5	-47.95	5.70	12.15	Vertical	-41.50	-25	16.50	315
8	20500.0	-48.06	6.30	13.76	Vertical	-40.60	-25	15.60	270
9	23062.5	-47.35	6.80	14.05	Vertical	-40.10	-25	15.10	0
10	25625.0	-47.14	6.90	14.84	Vertical	-39.20	-25	14.20	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	5020.0	-39.16	2.00	10.15	Vertical	-31.01	-25	6.01	90
3	7530.0	-40.18	2.50	11.35	Vertical	-31.33	-25	6.33	315
4	10040.0	-34.80	4.20	12.05	Vertical	-26.95	-25	1.95	270
5	12550.0	-51.75	5.20	14.85	Vertical	-42.10	-25	17.10	45
6	15060.0	-49.53	5.50	13.23	Vertical	-41.80	-25	16.80	90
7	17570.0	-47.55	5.70	12.15	Vertical	-41.10	-25	16.10	135
8	20080.0	-47.96	6.30	13.76	Vertical	-40.50	-25	15.50	270
9	22590.0	-47.25	6.80	14.05	Vertical	-40.00	-25	15.00	225
10	25100.0	-46.14	6.90	14.84	Vertical	-38.20	-25	13.20	315

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	5070.0	-40.07	2.00	10.15	Vertical	-31.92	-25	6.92	270
3	7605.0	-42.36	2.50	11.35	Vertical	-33.51	-25	8.51	0
4	10140.0	-38.34	4.20	12.05	Vertical	-30.49	-25	5.49	45
5	12675.0	-52.15	5.20	14.85	Vertical	-42.50	-25	17.50	90
6	15210.0	-49.53	5.50	13.23	Vertical	-41.80	-25	16.80	315
7	17745.0	-47.55	5.70	12.15	Vertical	-41.10	-25	16.10	270
8	20280.0	-47.66	6.30	13.76	Vertical	-40.20	-25	15.20	45
9	22815.0	-46.35	6.80	14.05	Vertical	-39.10	-25	14.10	90
10	25350.0	-46.44	6.90	14.84	Vertical	-38.50	-25	13.50	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 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	5120.0	-43.39	2.00	10.15	Vertical	-35.24	-25	10.24	270
3	7680.0	-46.29	2.50	11.35	Vertical	-37.44	-25	12.44	225
4	10240.0	-38.07	4.20	12.05	Vertical	-30.22	-25	5.22	315
5	12800.0	-52.75	5.20	14.85	Vertical	-43.10	-25	18.10	270
6	15360.0	-50.43	5.50	13.23	Vertical	-42.70	-25	17.70	0
7	17920.0	-47.45	5.70	12.15	Vertical	-41.00	-25	16.00	45
8	20480.0	-46.66	6.30	13.76	Vertical	-39.20	-25	14.20	90
9	23040.0	-46.35	6.80	14.05	Vertical	-39.10	-25	14.10	315
10	25600.0	-46.54	6.90	14.84	Vertical	-38.60	-25	13.60	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 41 QPSK Bandwidth = 5MHz CH39675, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	4997.0	-39.66	2.00	9.15	Vertical	-32.51	-25	7.51	270
3	7495.5	-41.16	2.50	11.35	Vertical	-32.31	-25	7.31	0
4	9994.0	-42.26	4.20	12.05	Vertical	-34.41	-25	9.41	45
5	12492.5	-49.95	5.20	12.85	Vertical	-42.3	-25	17.30	90
6	14991.0	-51.83	5.50	14.23	Vertical	-43.1	-25	18.10	315
7	17489.5	-49.95	5.70	14.15	Vertical	-41.5	-25	16.50	270
8	19988.0	-48.36	6.30	13.76	Vertical	-40.9	-25	15.90	45
9	22486.5	-48.25	6.80	14.05	Vertical	-41	-25	16.00	90
10	24985.0	-47.44	6.90	14.84	Vertical	-39.5	-25	14.50	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 41 QPSK Bandwidth = 5MHz CH40620, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-44.59	2.00	9.15	Vertical	-37.44	-25	12.44	45
3	7779.0	-46.86	2.50	11.35	Vertical	-38.01	-25	13.01	90
4	10372.0	-35.75	4.20	12.05	Vertical	-27.90	-25	2.90	315
5	12965.0	-49.95	5.20	12.85	Vertical	-42.30	-25	17.30	270
6	15558.0	-50.83	5.50	14.23	Vertical	-42.10	-25	17.10	45
7	18151.0	-48.55	5.70	14.15	Vertical	-40.10	-25	15.10	90
8	20744.0	-46.96	6.30	13.76	Vertical	-39.50	-25	14.50	135
9	23337.0	-46.25	6.80	14.05	Vertical	-39.00	-25	14.00	270
10	25930.0	-46.34	6.90	14.84	Vertical	-38.40	-25	13.40	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 41 QPSK Bandwidth = 5MHz CH41565, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5375.0	-44.84	2.00	9.15	Vertical	-37.69	-25	12.69	270
3	8062.5	-48.36	2.50	11.35	Vertical	-39.51	-25	14.51	225
4	10750.0	-37.34	4.20	12.05	Vertical	-29.49	-25	4.49	315
5	13437.5	-49.75	5.20	12.85	Vertical	-42.10	-25	17.10	270
6	16125.0	-50.23	5.50	14.23	Vertical	-41.50	-25	16.50	0
7	18812.5	-48.95	5.70	14.15	Vertical	-40.50	-25	15.50	45
8	21500.0	-47.06	6.30	13.76	Vertical	-39.60	-25	14.60	90
9	24187.5	-46.75	6.80	14.05	Vertical	-39.50	-25	14.50	315
10	26875.0	-46.94	6.90	14.84	Vertical	-39.00	-25	14.00	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 41 QPSK Bandwidth = 10MHz CH39700, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5002.0	-39.94	2.00	9.15	Vertical	-32.79	-25	7.79	315
3	7503.0	-42.79	2.50	11.35	Vertical	-33.94	-25	8.94	270
4	10004.0	-40.90	4.20	12.05	Vertical	-33.05	-25	8.05	0
5	12505.0	-50.15	5.20	12.85	Vertical	-42.50	-25	17.50	45
6	15006.0	-50.83	5.50	14.23	Vertical	-42.10	-25	17.10	90
7	17507.0	-49.95	5.70	14.15	Vertical	-41.50	-25	16.50	315
8	20008.0	-48.46	6.30	13.76	Vertical	-41.00	-25	16.00	270
9	22509.0	-46.75	6.80	14.05	Vertical	-39.50	-25	14.50	45
10	25010.0	-46.94	6.90	14.84	Vertical	-39.00	-25	14.00	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 41 QPSK Bandwidth = 10MHz CH40620, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-49.40	2.00	9.15	Vertical	-42.25	-25	17.25	135
3	7779.0	-47.82	2.50	11.35	Vertical	-38.97	-25	13.97	270
4	10372.0	-44.79	4.20	12.05	Vertical	-36.94	-25	11.94	45
5	12965.0	-50.15	5.20	12.85	Vertical	-42.50	-25	17.50	90
6	15558.0	-50.83	5.50	14.23	Vertical	-42.10	-25	17.10	135
7	18151.0	-51.05	5.70	14.15	Vertical	-42.60	-25	17.60	270
8	20744.0	-48.96	6.30	13.76	Vertical	-41.50	-25	16.50	225
9	23337.0	-47.85	6.80	14.05	Vertical	-40.60	-25	15.60	315
10	25930.0	-47.94	6.90	14.84	Vertical	-40.00	-25	15.00	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 41 QPSK Bandwidth = 10MHz CH41540, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5370.0	-46.83	2.00	10.15	Vertical	-38.68	-25	13.68	0
3	8055.0	-50.62	2.50	11.35	Vertical	-41.77	-25	16.77	45
4	10740.0	-40.20	4.20	12.05	Vertical	-32.35	-25	7.35	90
5	13425.0	-46.01	5.20	14.85	Vertical	-36.36	-25	11.36	315
6	16110.0	-48.96	5.50	13.23	Vertical	-41.23	-25	16.23	270
7	18795.0	-45.81	5.70	12.15	Vertical	-39.36	-25	14.36	45
8	21480.0	-49.61	6.30	13.76	Vertical	-42.15	-25	17.15	90
9	24165.0	-48.77	6.80	14.05	Vertical	-41.52	-25	16.52	135
10	26850.0	-50.27	6.90	14.84	Vertical	-42.33	-25	17.33	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 41 QPSK Bandwidth = 15MHz CH39725, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5007.0	-42.74	2.00	10.15	Vertical	-34.59	-25	9.59	225
3	7510.5	-45.34	2.50	11.35	Vertical	-36.49	-25	11.49	315
4	10014.0	-41.94	4.20	12.05	Vertical	-34.09	-25	9.09	270
5	12517.5	-47.52	5.20	14.85	Vertical	-37.87	-25	12.87	0
6	15021.0	-46.15	5.50	13.23	Vertical	-38.42	-25	13.42	45
7	17524.5	-43.22	5.70	12.15	Vertical	-36.77	-25	11.77	90
8	20028.0	-47.02	6.30	13.76	Vertical	-39.56	-25	14.56	315
9	22531.5	-48.40	6.80	14.05	Vertical	-41.15	-25	16.15	270
10	25035.0	-48.62	6.90	14.84	Vertical	-40.68	-25	15.68	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 41 QPSK Bandwidth = 15MHz CH40620, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-47.58	2.00	10.15	Vertical	-39.43	-25	14.43	90
3	7779.0	-48.66	2.50	11.35	Vertical	-39.81	-25	14.81	135
4	10372.0	-36.21	4.20	12.05	Vertical	-28.36	-25	3.36	270
5	12965.0	-47.39	5.20	14.85	Vertical	-37.74	-25	12.74	225
6	15558.0	-47.96	5.50	13.23	Vertical	-40.23	-25	15.23	315
7	18151.0	-46.01	5.70	12.15	Vertical	-39.56	-25	14.56	270
8	20744.0	-48.58	6.30	13.76	Vertical	-41.12	-25	16.12	0
9	23337.0	-49.03	6.80	14.05	Vertical	-41.78	-25	16.78	45
10	25930.0	-50.09	6.90	14.84	Vertical	-42.15	-25	17.15	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 41 QPSK Bandwidth = 15MHz CH41515, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5365.0	-46.10	2.00	10.15	Vertical	-37.95	-25	12.95	315
3	8047.5	-50.89	2.50	11.35	Vertical	-42.04	-25	17.04	270
4	10730.0	-42.36	4.20	12.05	Vertical	-34.51	-25	9.51	45
5	13412.5	-46.86	5.20	14.85	Vertical	-37.21	-25	12.21	90
6	16095.0	-44.23	5.50	13.23	Vertical	-36.50	-25	11.50	135
7	18777.5	-46.02	5.70	12.15	Vertical	-39.57	-25	14.57	270
8	21460.0	-47.32	6.30	13.76	Vertical	-39.86	-25	14.86	225
9	24142.5	-47.51	6.80	14.05	Vertical	-40.26	-25	15.26	315
10	26825.0	-49.06	6.90	14.84	Vertical	-41.12	-25	16.12	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 41 QPSK Bandwidth = 20MHz CH39750, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5012.0	-41.54	2.00	10.15	Vertical	-33.39	-25	8.39	0
3	7518.0	-41.71	2.50	11.35	Vertical	-32.86	-25	7.86	45
4	10024.0	-41.04	4.20	12.05	Vertical	-33.19	-25	8.19	90
5	12530.0	-48.93	5.20	14.85	Vertical	-39.28	-25	14.28	315
6	15036.0	-43.87	5.50	13.23	Vertical	-36.14	-25	11.14	270
7	17542.0	-44.70	5.70	12.15	Vertical	-38.25	-25	13.25	45
8	20048.0	-48.68	6.30	13.76	Vertical	-41.22	-25	16.22	90
9	22554.0	-47.90	6.80	14.05	Vertical	-40.65	-25	15.65	135
10	25060.0	-47.56	6.90	14.84	Vertical	-39.62	-25	14.62	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 41 QPSK Bandwidth = 20MHz CH40620, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5186.0	-45.08	2.00	10.15	Vertical	-36.93	-25	11.93	225
3	7779.0	-46.14	2.50	11.35	Vertical	-37.29	-25	12.29	315
4	10372.0	-34.43	4.20	12.05	Vertical	-26.58	-25	1.58	270
5	12965.0	-47.05	5.20	14.85	Vertical	-37.40	-25	12.40	0
6	15558.0	-45.10	5.50	13.23	Vertical	-37.37	-25	12.37	45
7	18151.0	-44.87	5.70	12.15	Vertical	-38.42	-25	13.42	90
8	20744.0	-48.91	6.30	13.76	Vertical	-41.45	-25	16.45	315
9	23337.0	-47.81	6.80	14.05	Vertical	-40.56	-25	15.56	270
10	25930.0	-49.18	6.90	14.84	Vertical	-41.24	-25	16.24	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 41 QPSK Bandwidth = 20MHz CH41490, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5360.0	-45.06	2.00	10.15	Vertical	-36.91	-25	11.91	90
3	8040.0	-48.20	2.50	11.35	Vertical	-39.35	-25	14.35	135
4	10720.0	-35.83	4.20	12.05	Vertical	-27.98	-25	2.98	270
5	13400.0	-45.83	5.20	14.85	Vertical	-36.18	-25	11.18	225
6	16080.0	-44.18	5.50	13.23	Vertical	-36.45	-25	11.45	315
7	18760.0	-44.97	5.70	12.15	Vertical	-38.52	-25	13.52	270
8	21440.0	-46.91	6.30	13.76	Vertical	-39.45	-25	14.45	0
9	24120.0	-47.37	6.80	14.05	Vertical	-40.12	-25	15.12	45
10	26800.0	-49.19	6.90	14.84	Vertical	-41.25	-25	16.25	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.

5 Main Test Equipment

Name of Equipment	Type/Model	Manufacturer	Serial Number	Last Cal.	Cal. Due Date
Base Station Simulator	CMW500	R&S	113645	2016-05-21	2017-05-20
Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	2016-05-21	2017-05-20
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	2016-12-16	2017-12-15
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	2016-09-05	2017-03-05

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



Front Side



Back Side

a: EUT



Adapter 1



Adapter 2

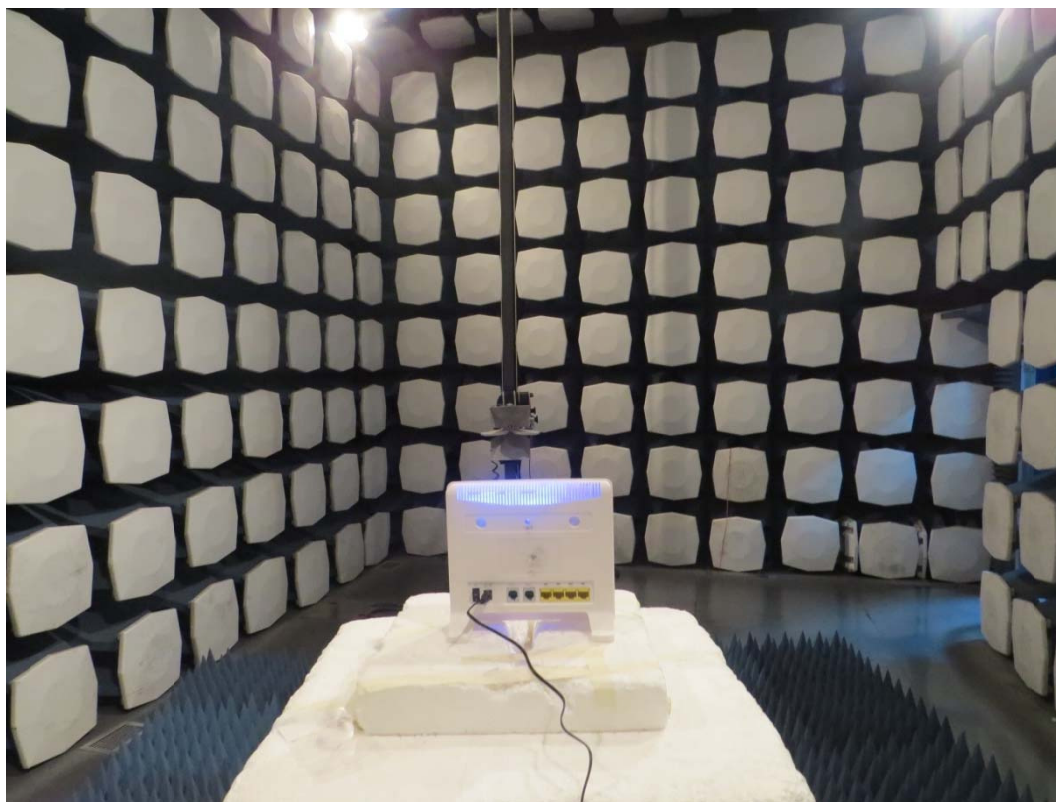
b: Adapter



c: Cable

Picture 1 Constituents of EUT

A.2 Test Setup



Picture 2: Radiated Spurious Emissions Test setup