

2.6. Band Edge

2.6.1. Requirement

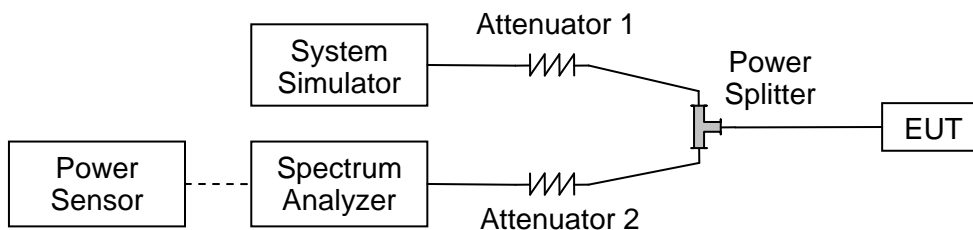
According to FCC section 22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC section 24.238(a), The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC section 27.53(g), For operations in the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC section 27.53(h), For operations in the 1710–1755MHz bands, 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.

2.6.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

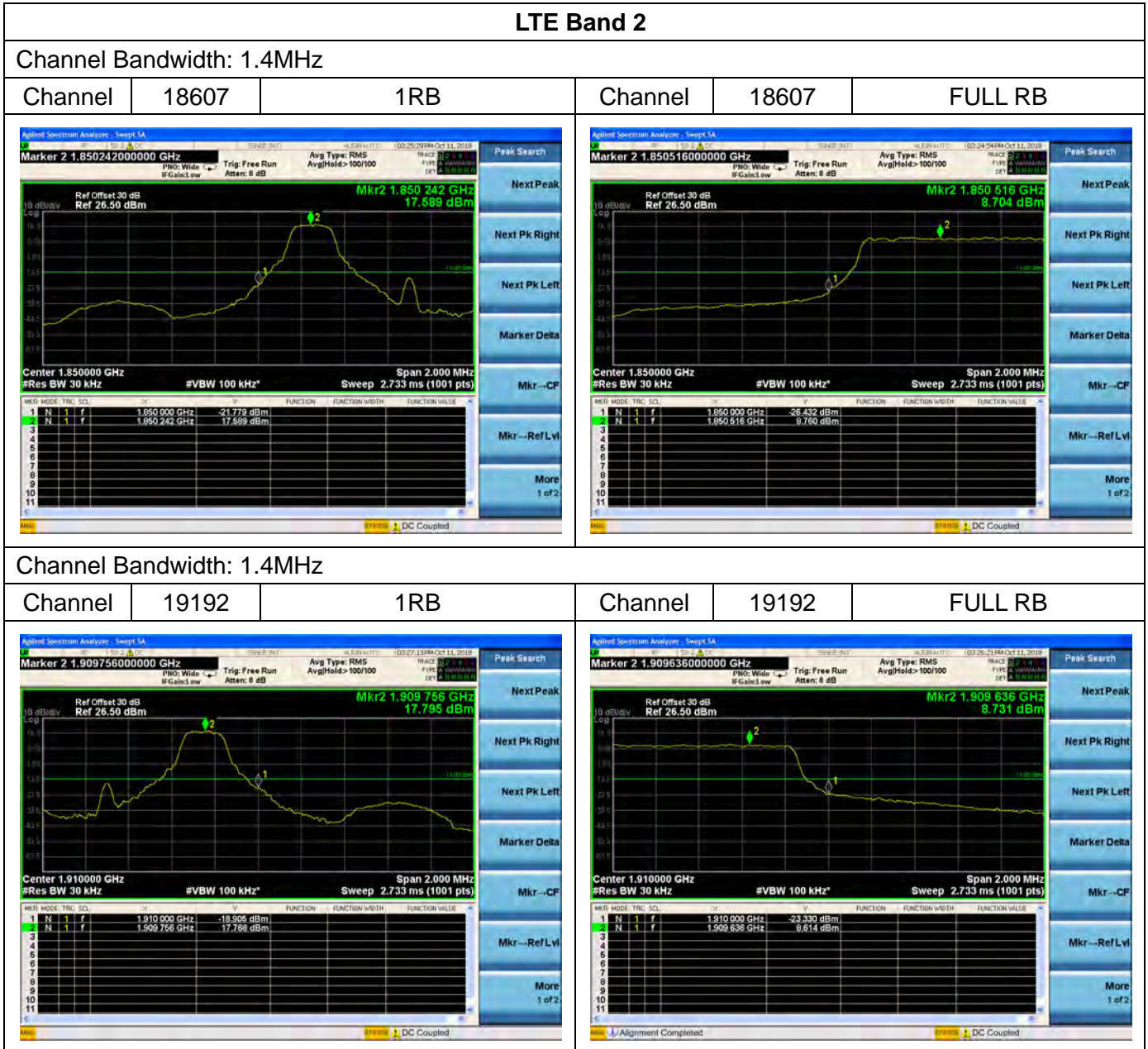
2.6.3. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.



2.6.4. Test Result

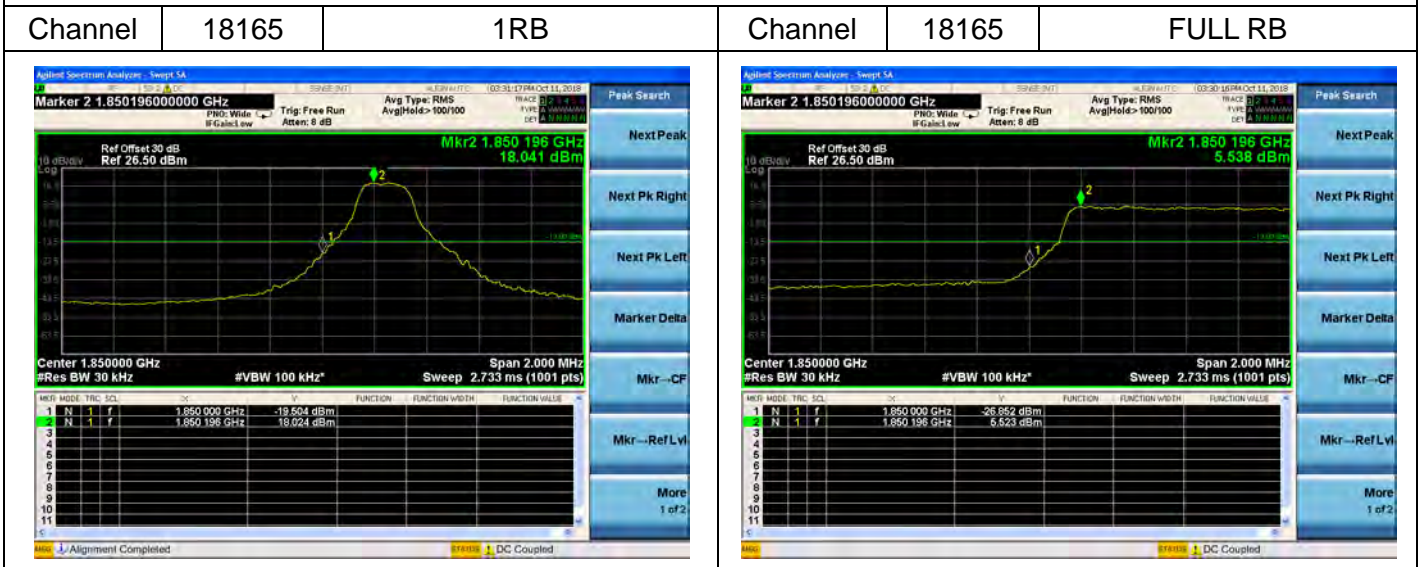
The center frequency of spectrum is the band edge frequency and span is 2MHz, Record the max trace into the test report.



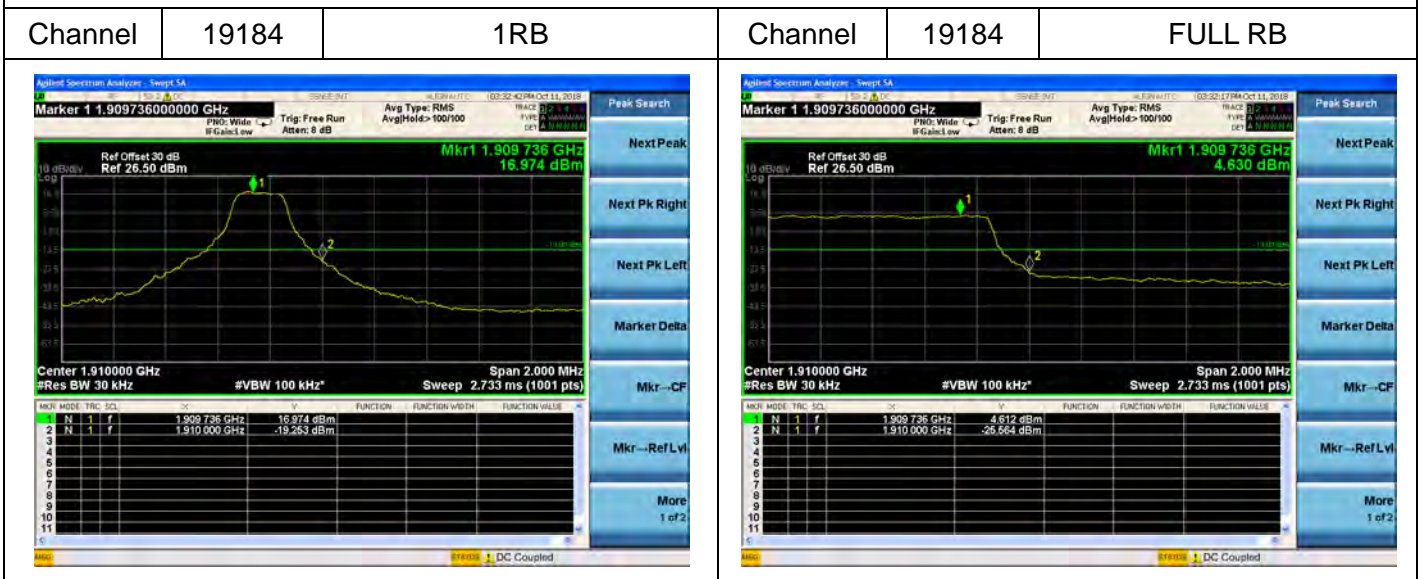


LTE Band 2

Channel Bandwidth: 3MHz



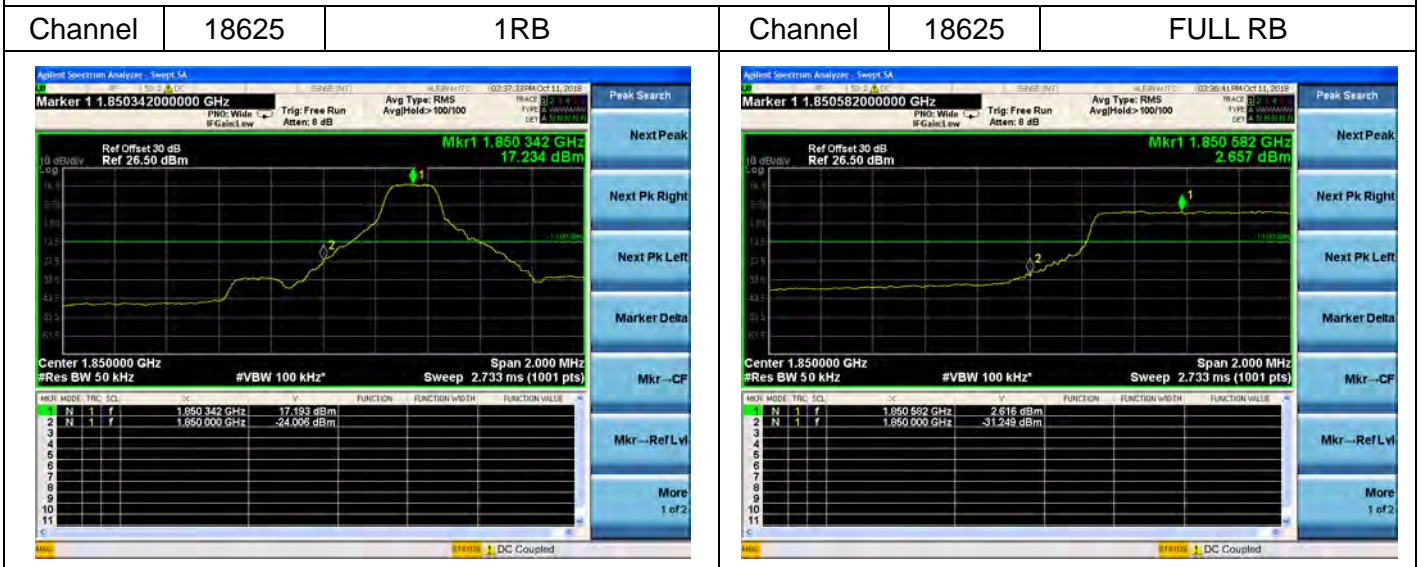
Channel Bandwidth: 3MHz



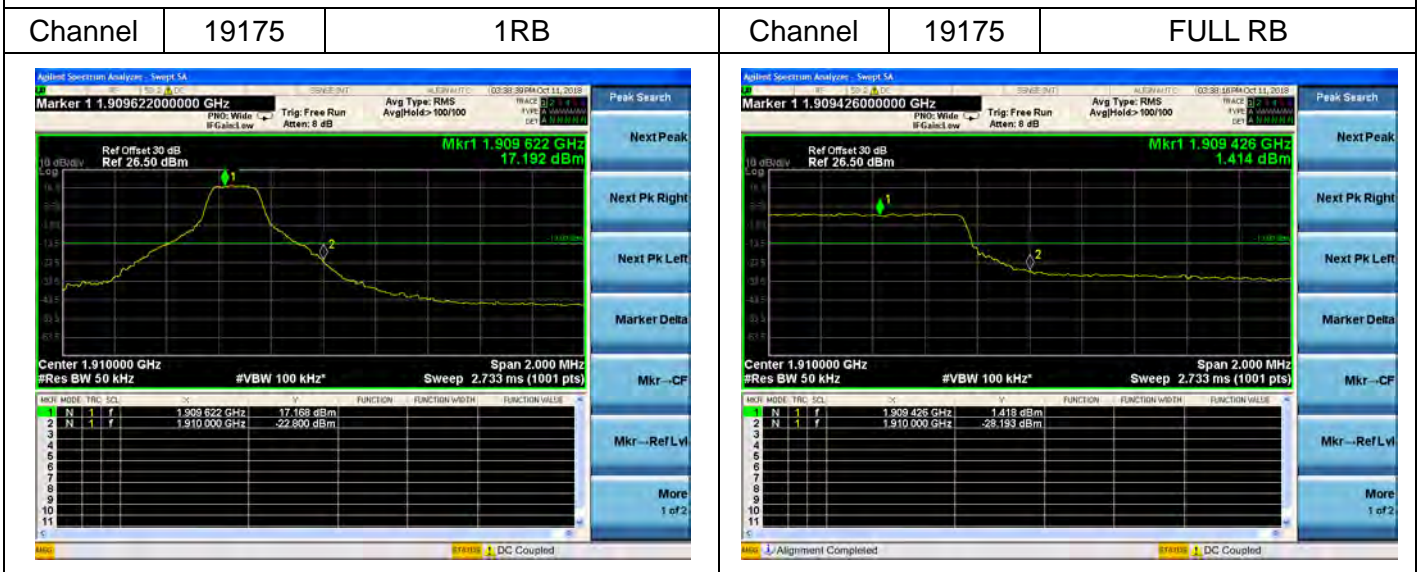


LTE Band 2

Channel Bandwidth: 5MHz



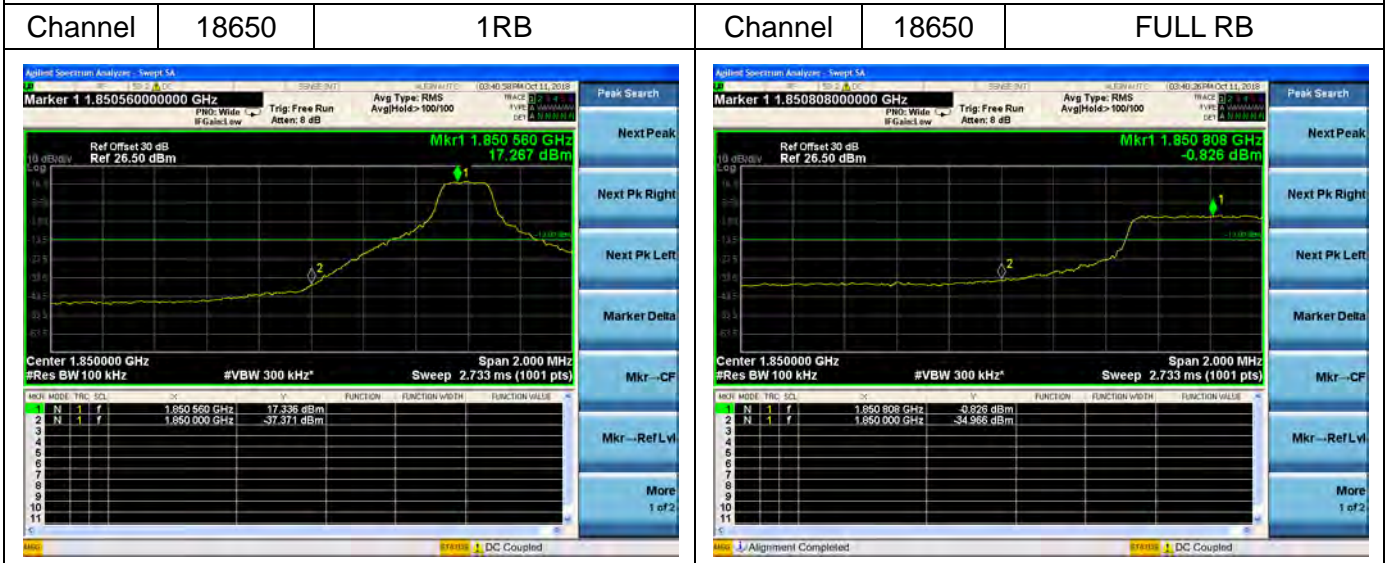
Channel Bandwidth: 5MHz



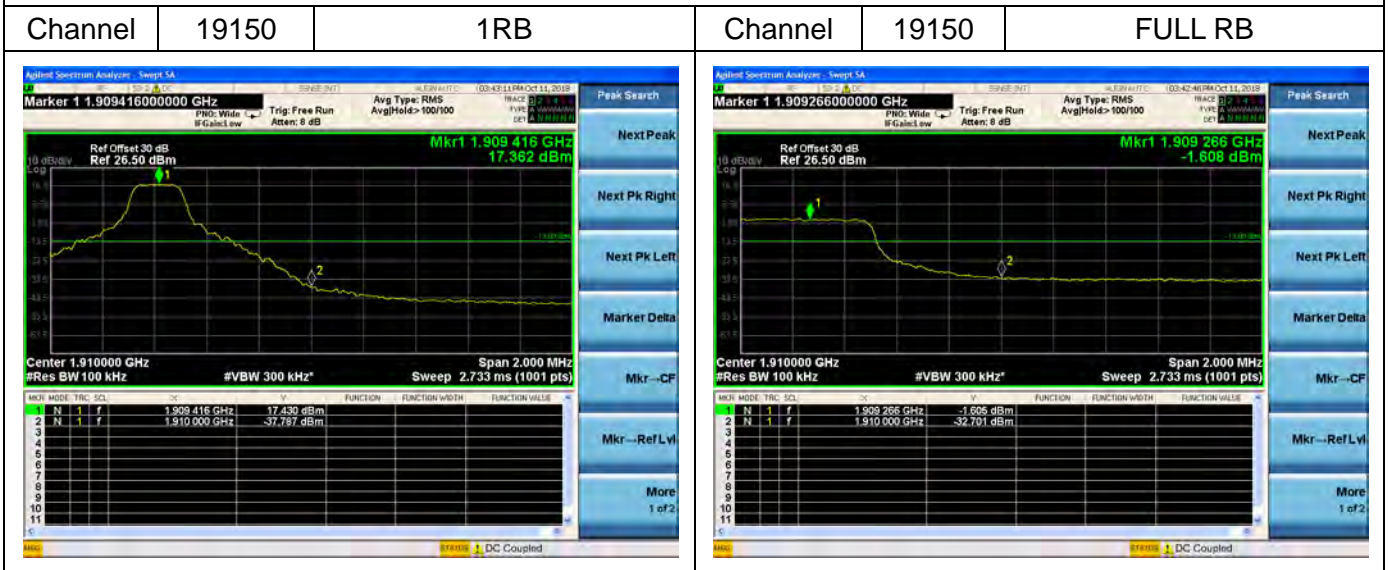


LTE Band 2

Channel Bandwidth: 10MHz



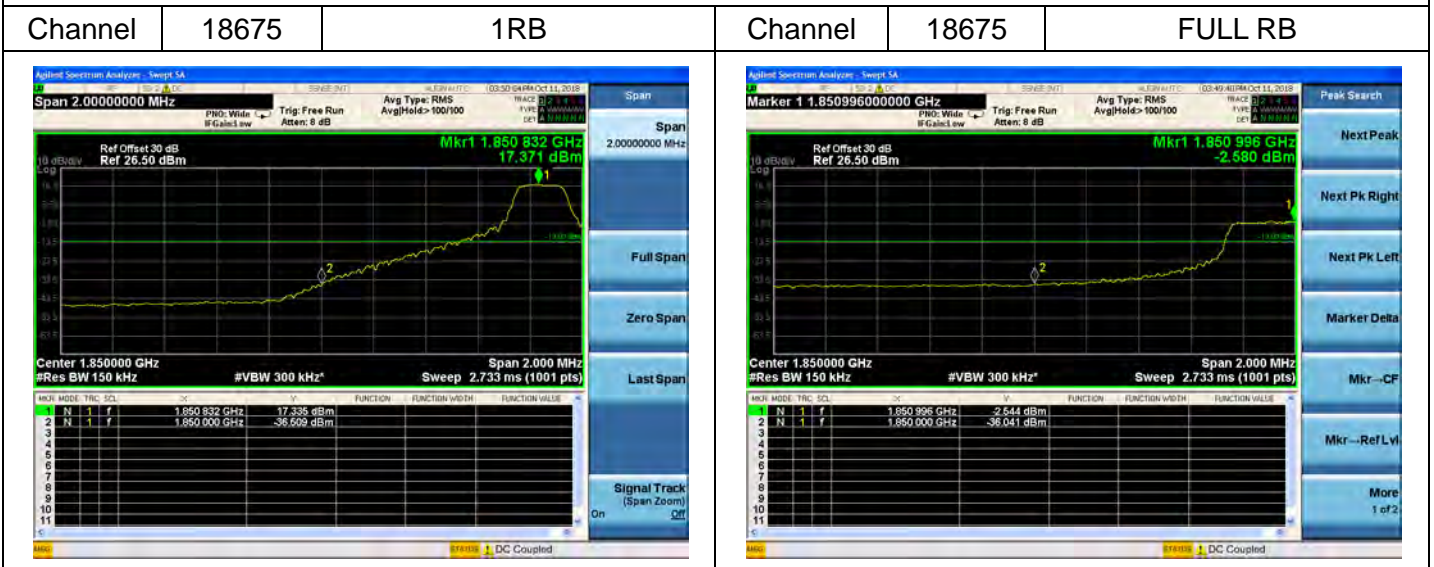
Channel Bandwidth: 10MHz



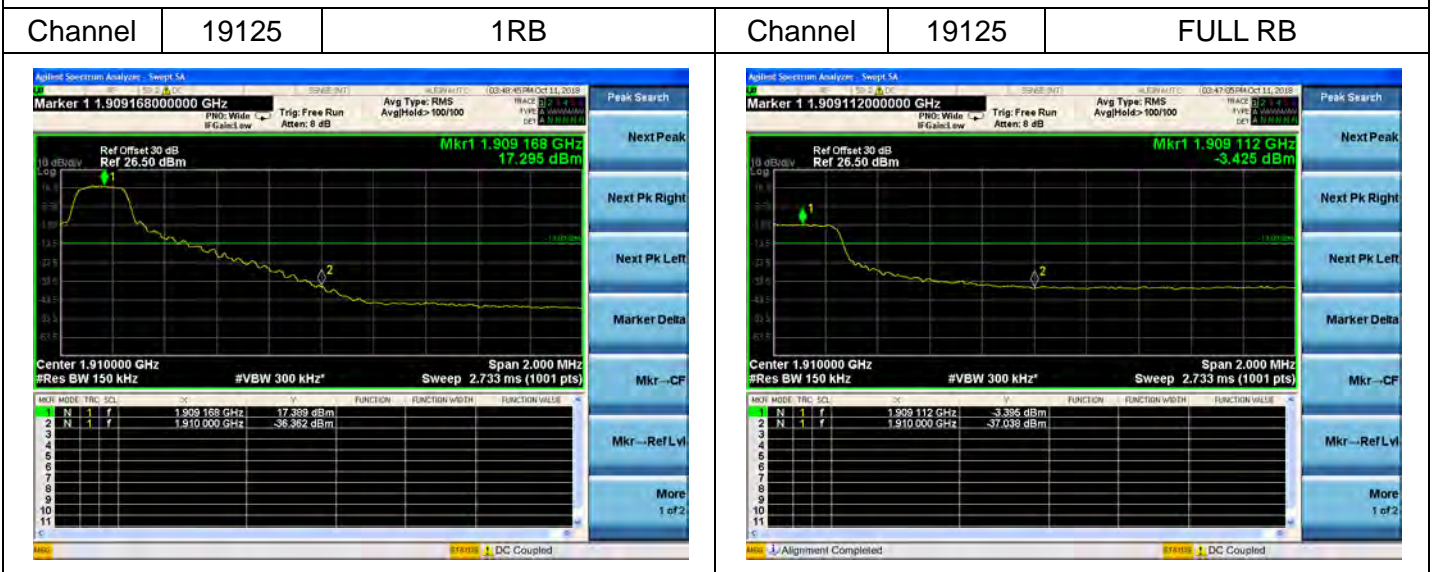


LTE Band 2

Channel Bandwidth: 15MHz



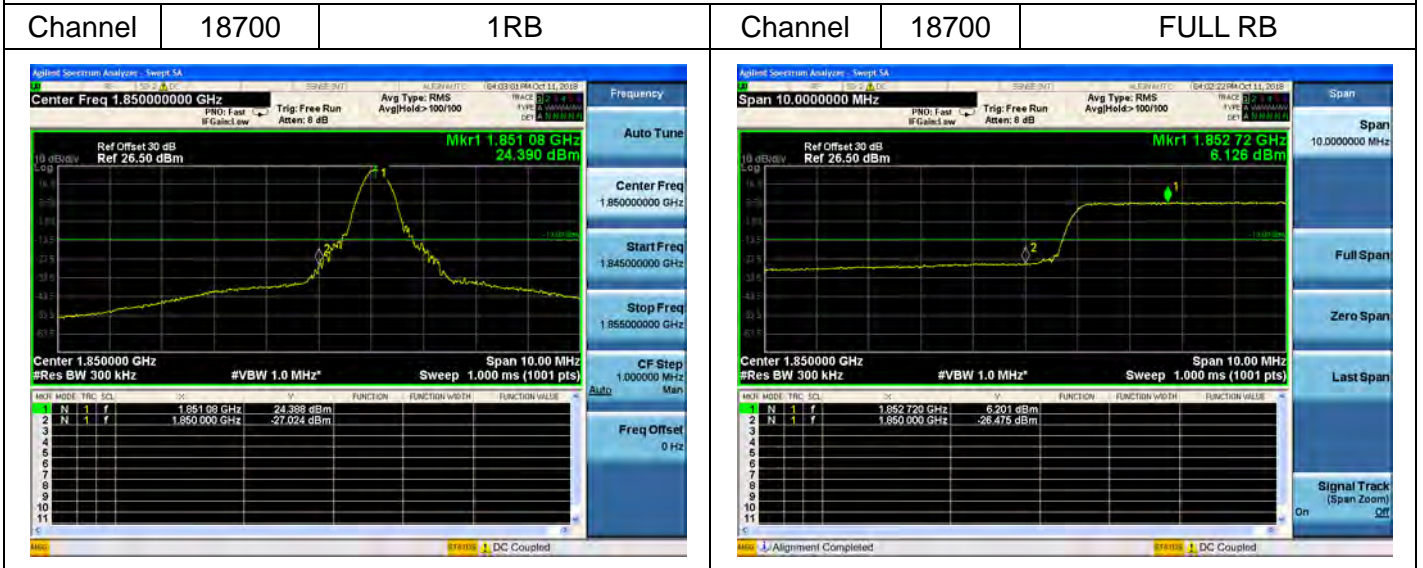
Channel Bandwidth: 15MHz



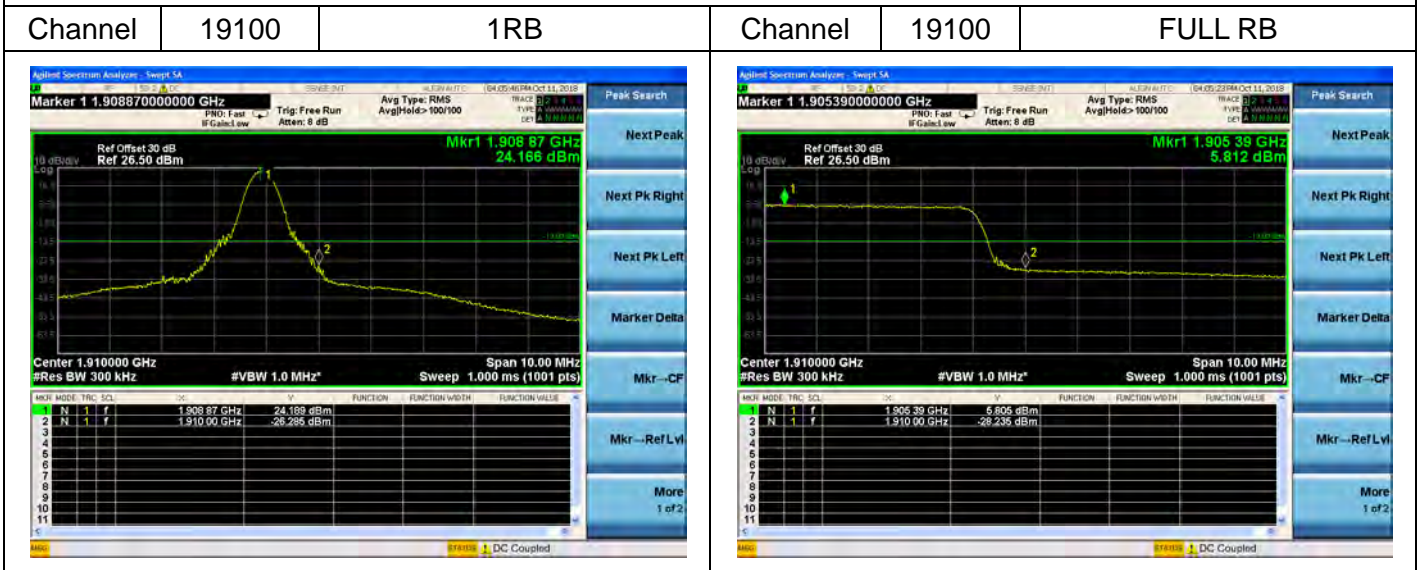


LTE Band 2

Channel Bandwidth: 20MHz



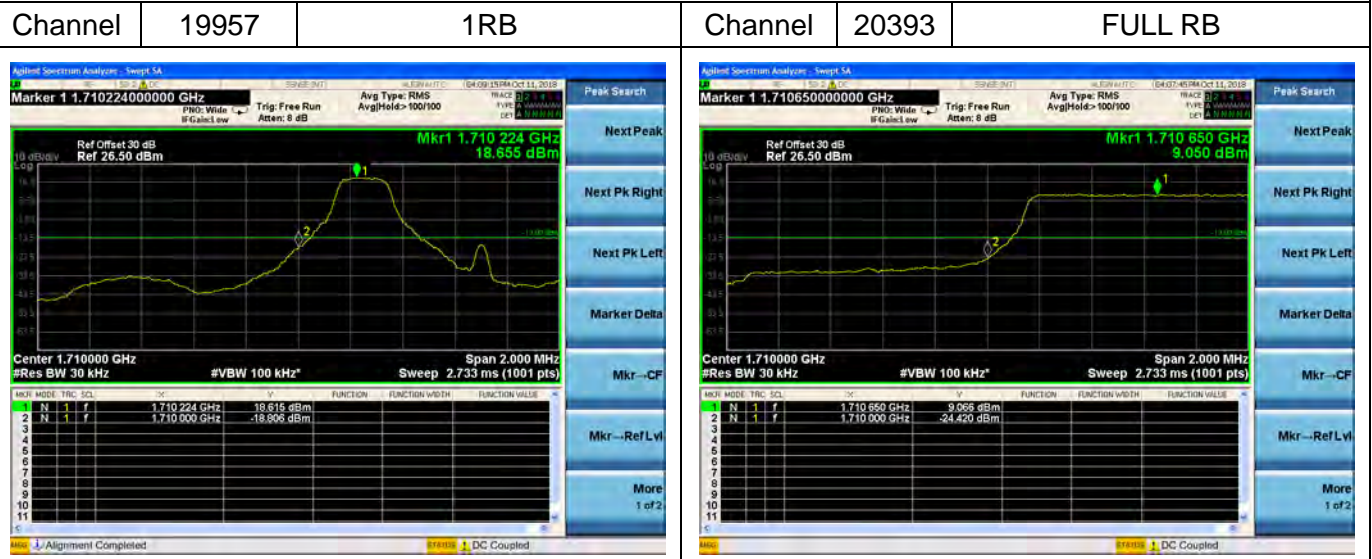
Channel Bandwidth: 20MHz



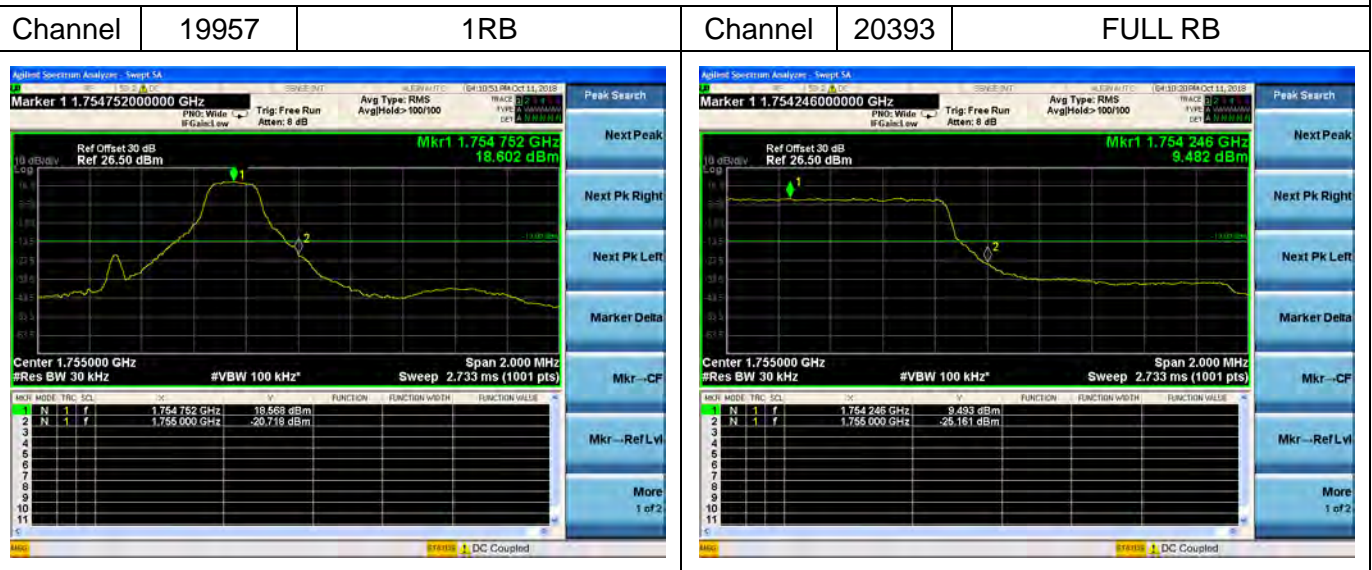


LTE Band 4

Channel Bandwidth: 1.4MHz



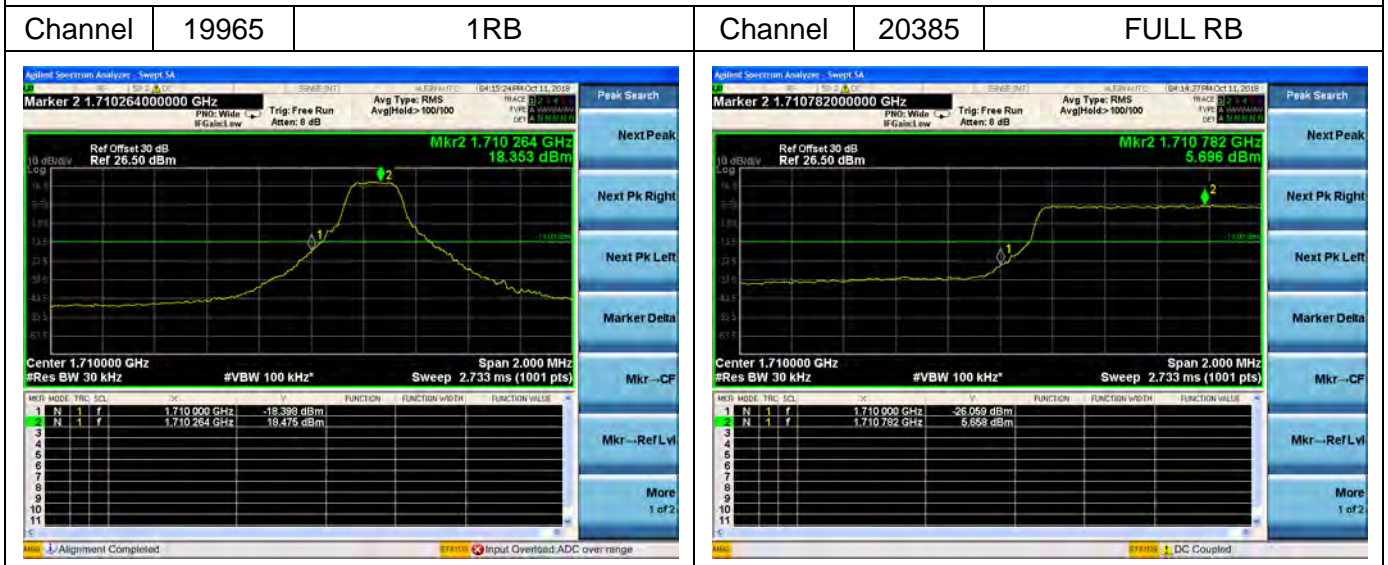
Channel Bandwidth: 1.4MHz



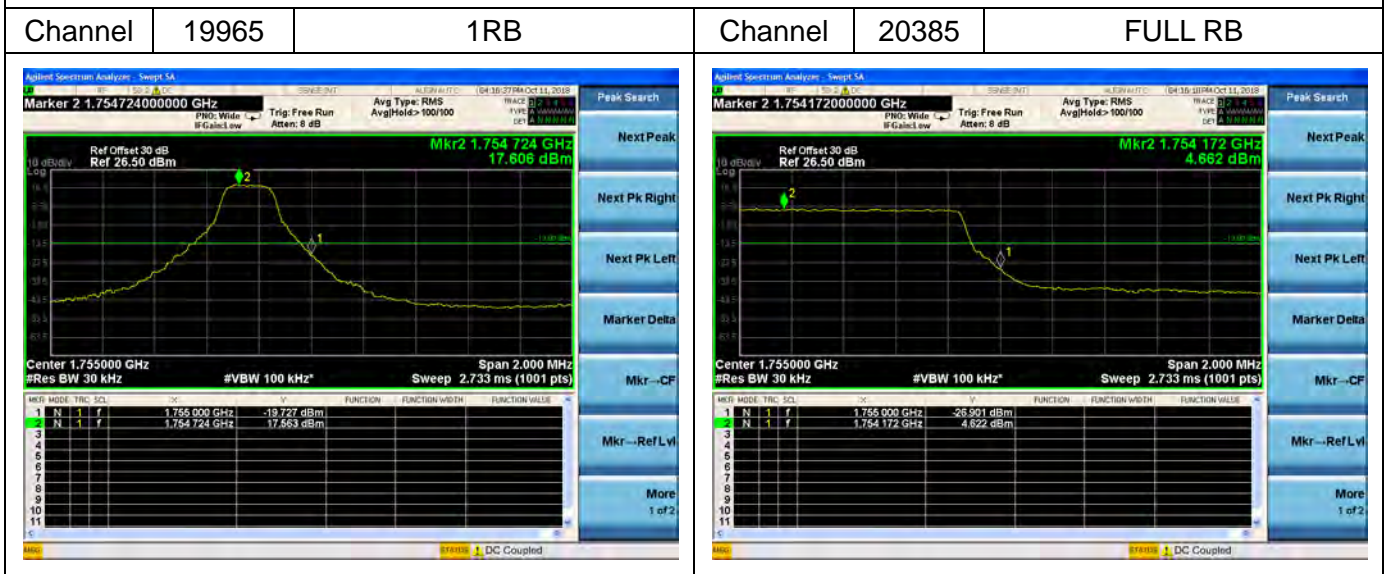


LTE Band 4

Channel Bandwidth: 3MHz



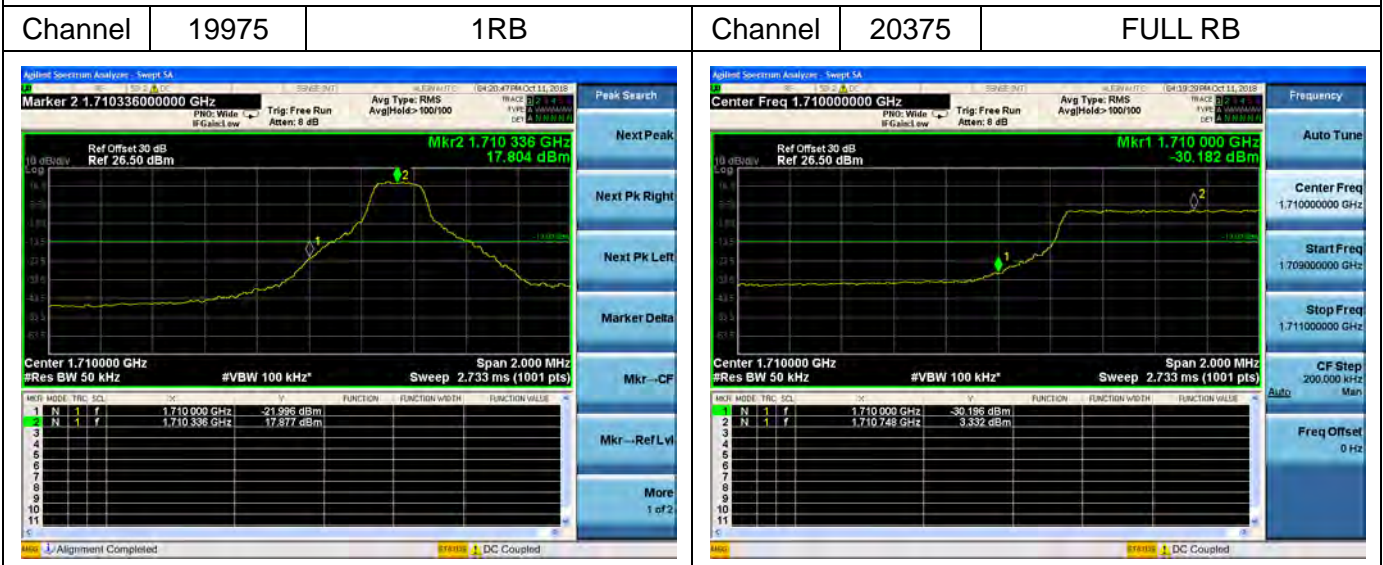
Channel Bandwidth: 3MHz



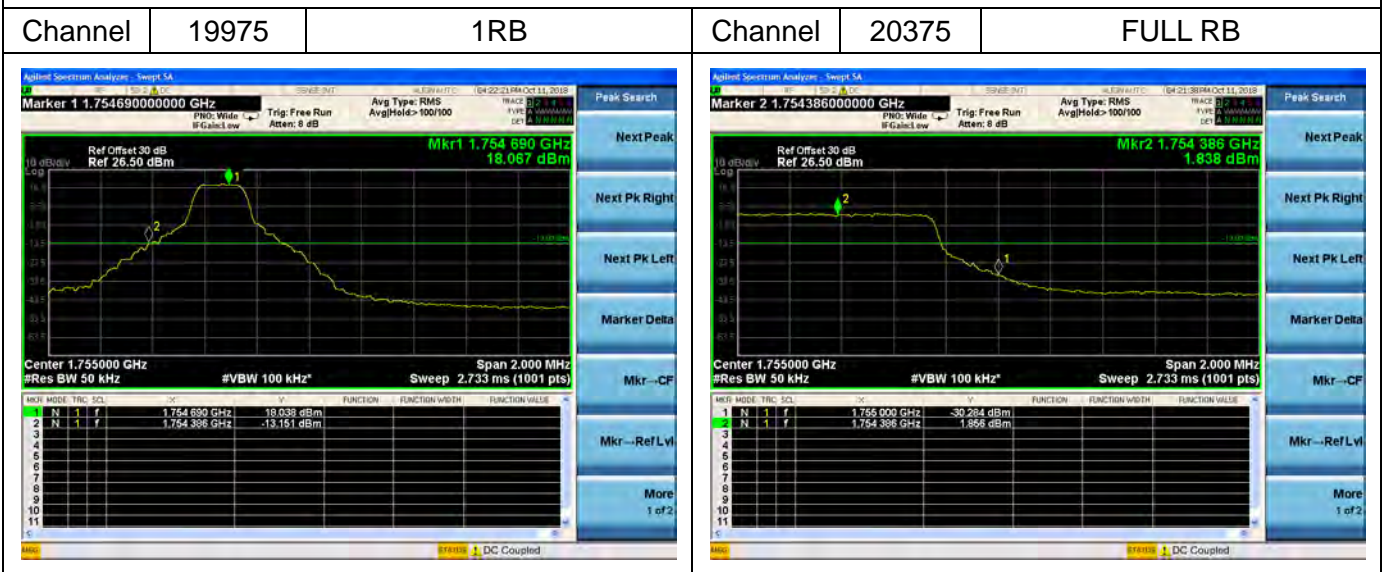


LTE Band 4

Channel Bandwidth: 5MHz



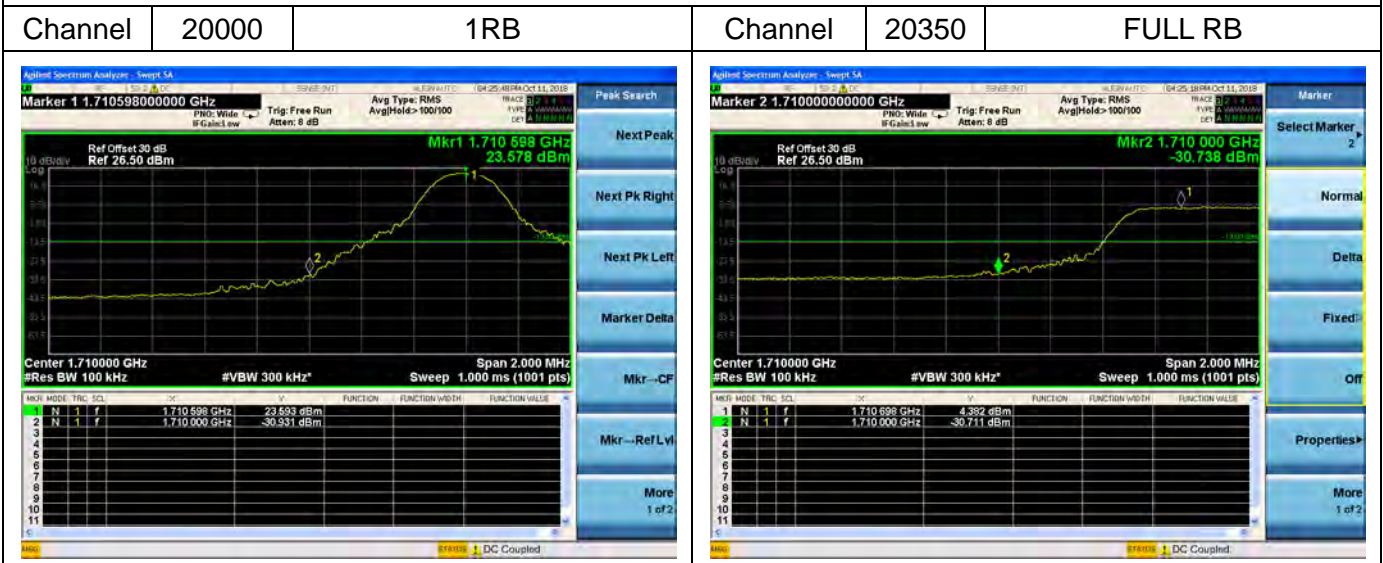
Channel Bandwidth: 5MHz



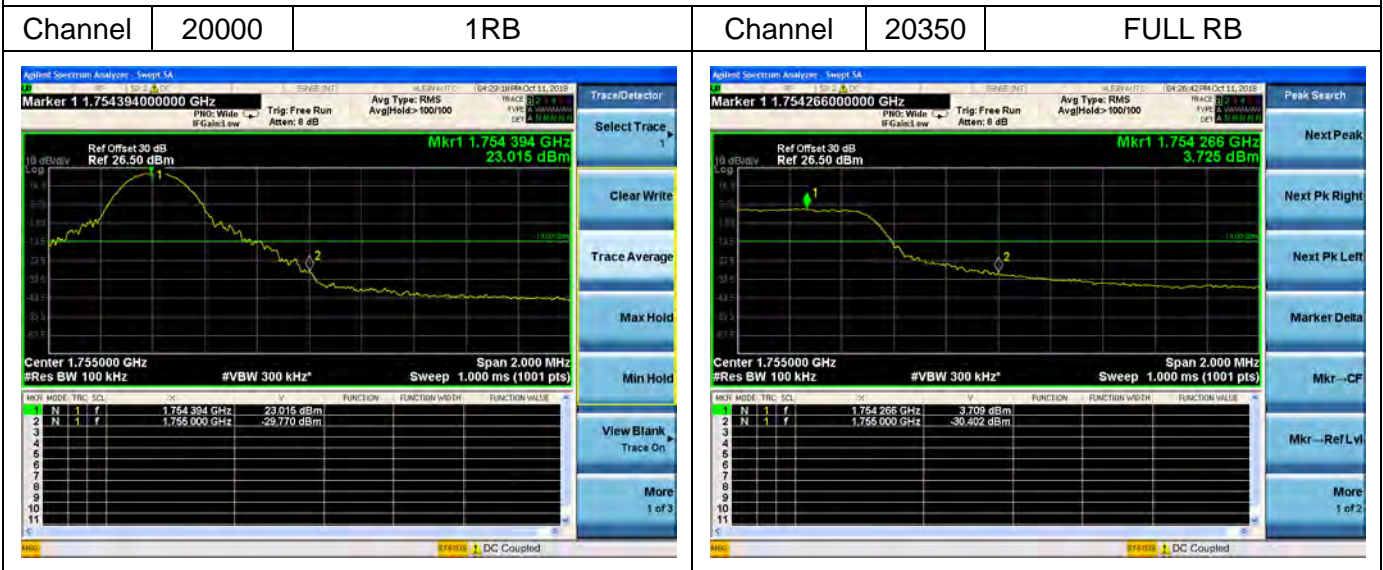


LTE Band 4

Channel Bandwidth: 10MHz



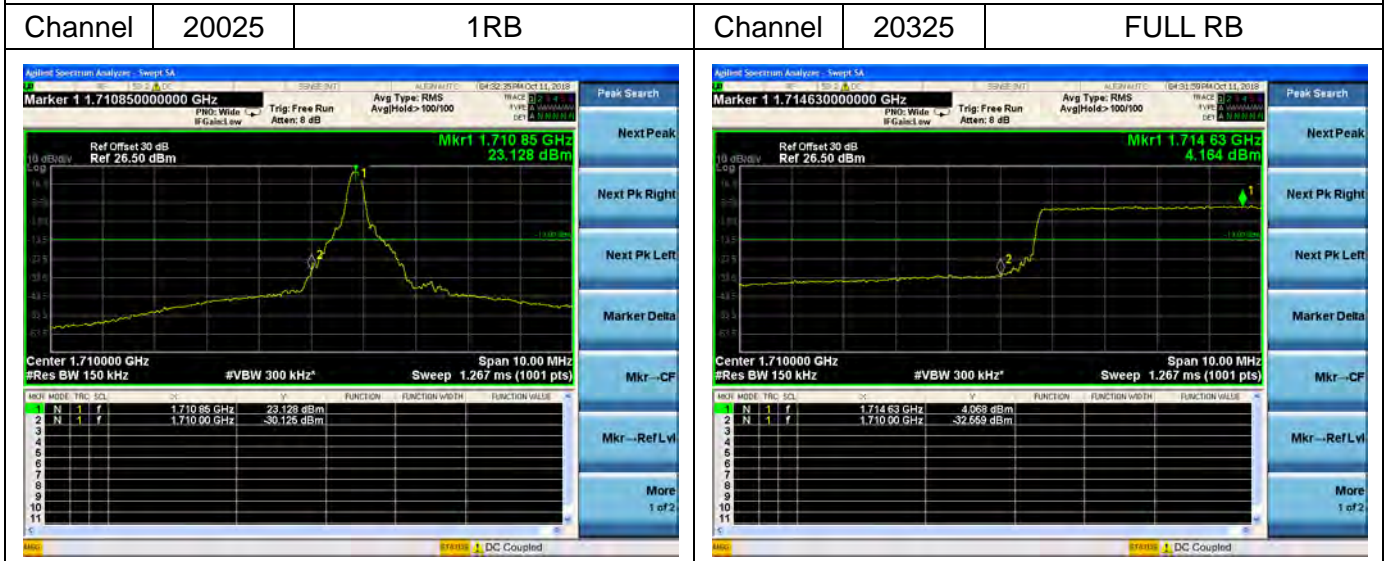
Channel Bandwidth: 10MHz



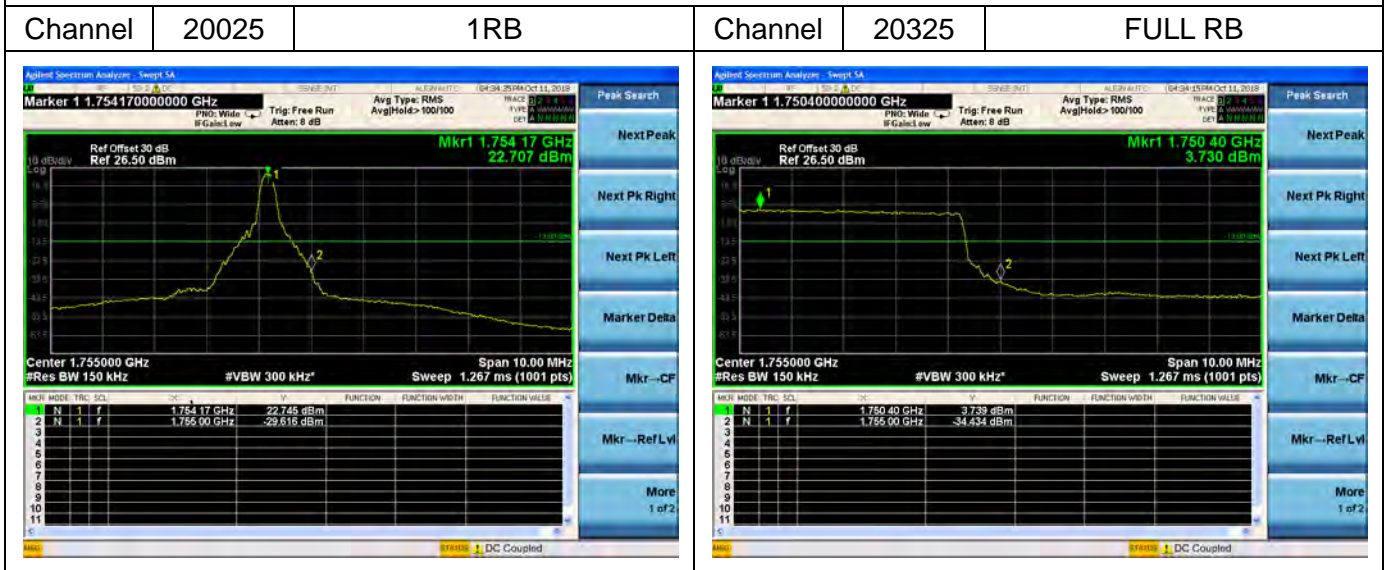


LTE Band 4

Channel Bandwidth: 15MHz



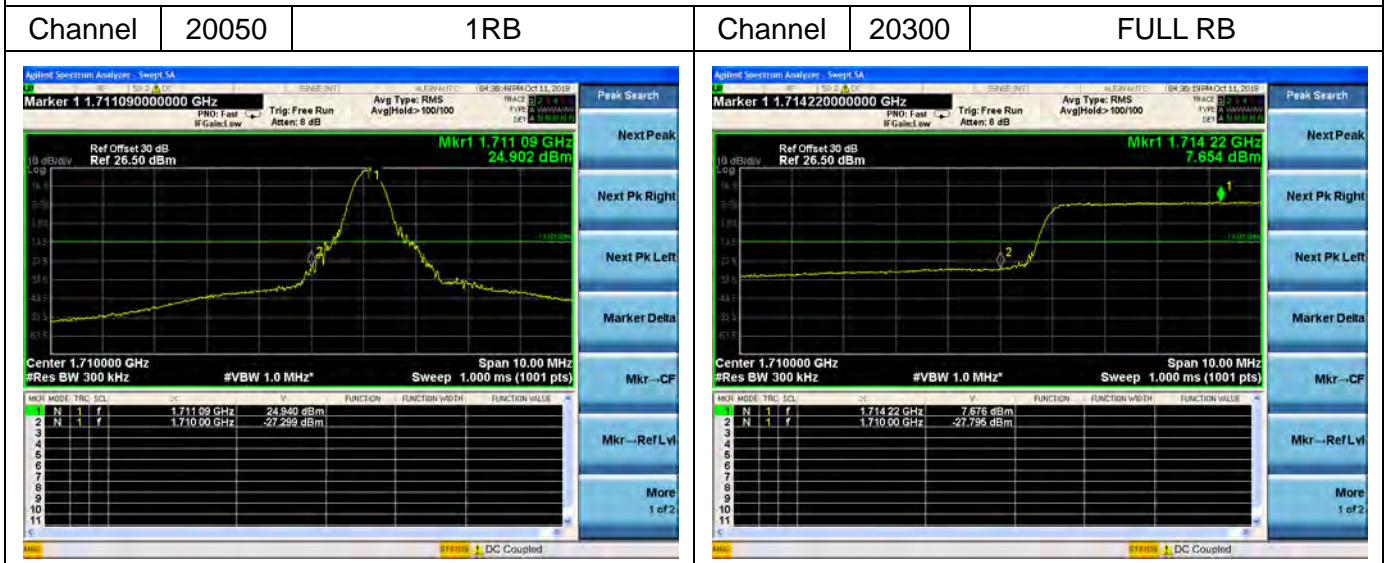
Channel Bandwidth: 15MHz



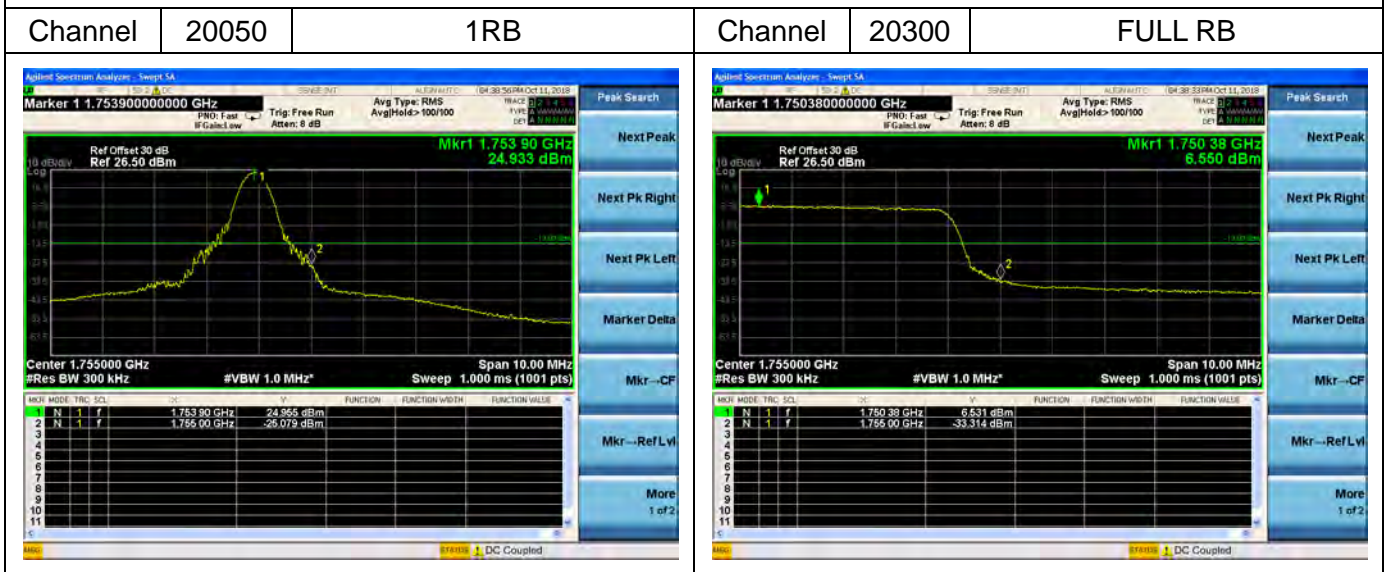


LTE Band 4

Channel Bandwidth: 20MHz



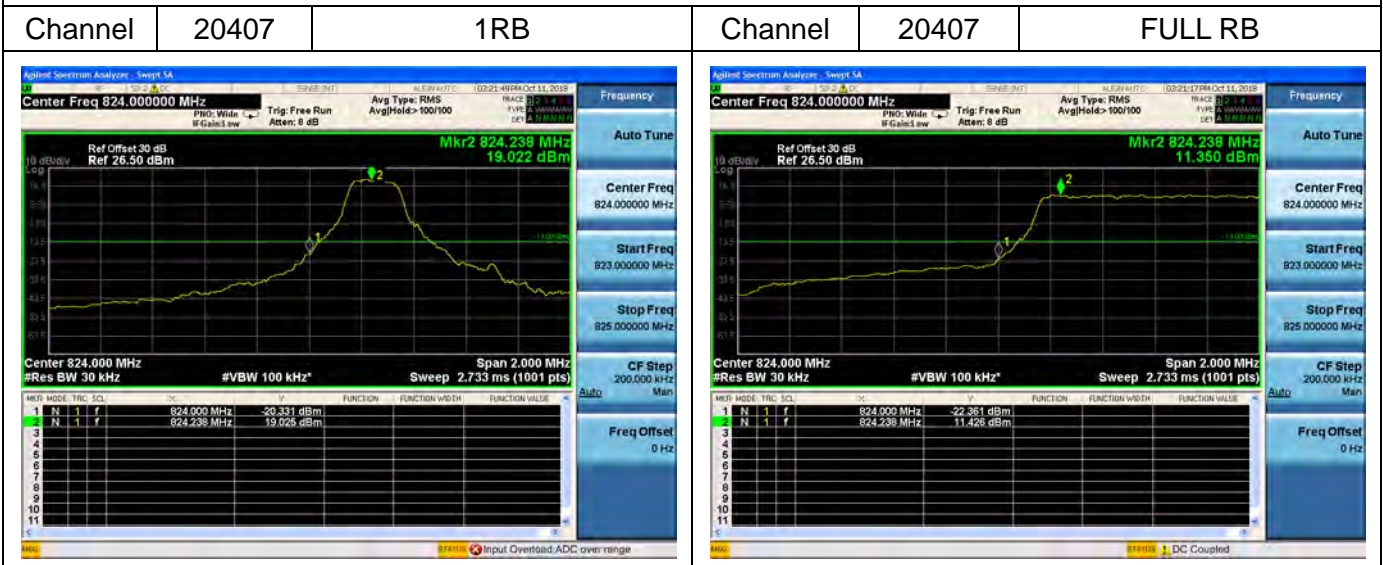
Channel Bandwidth: 20MHz



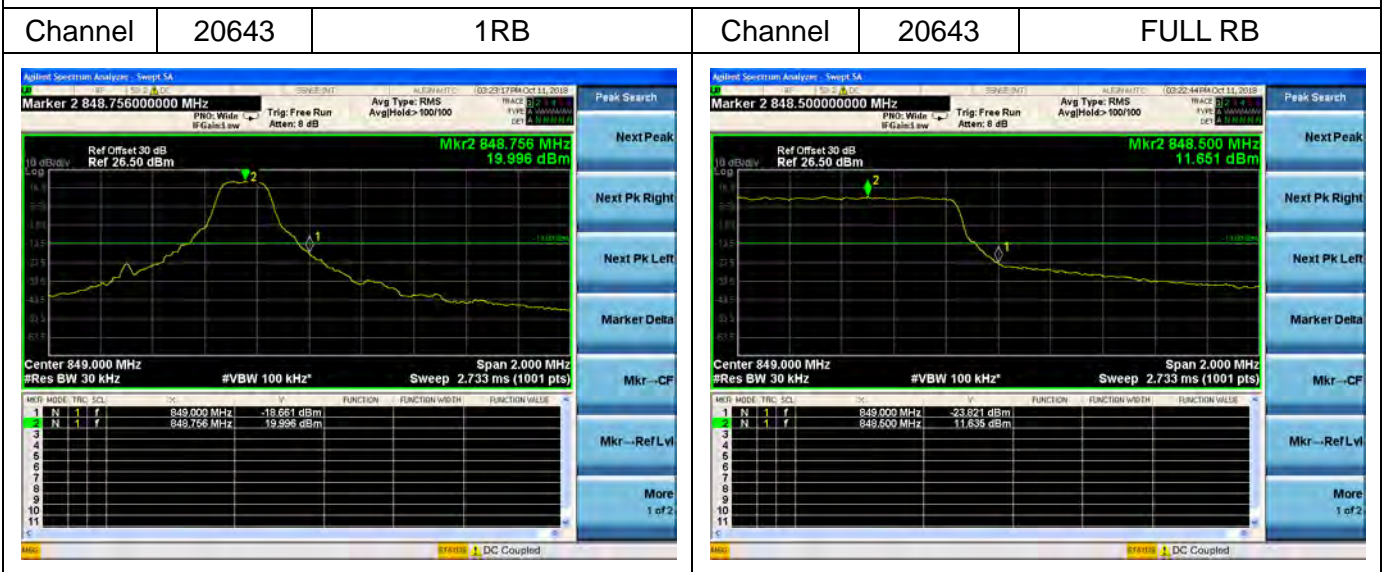


LTE Band 5

Channel Bandwidth: 1.4MHz



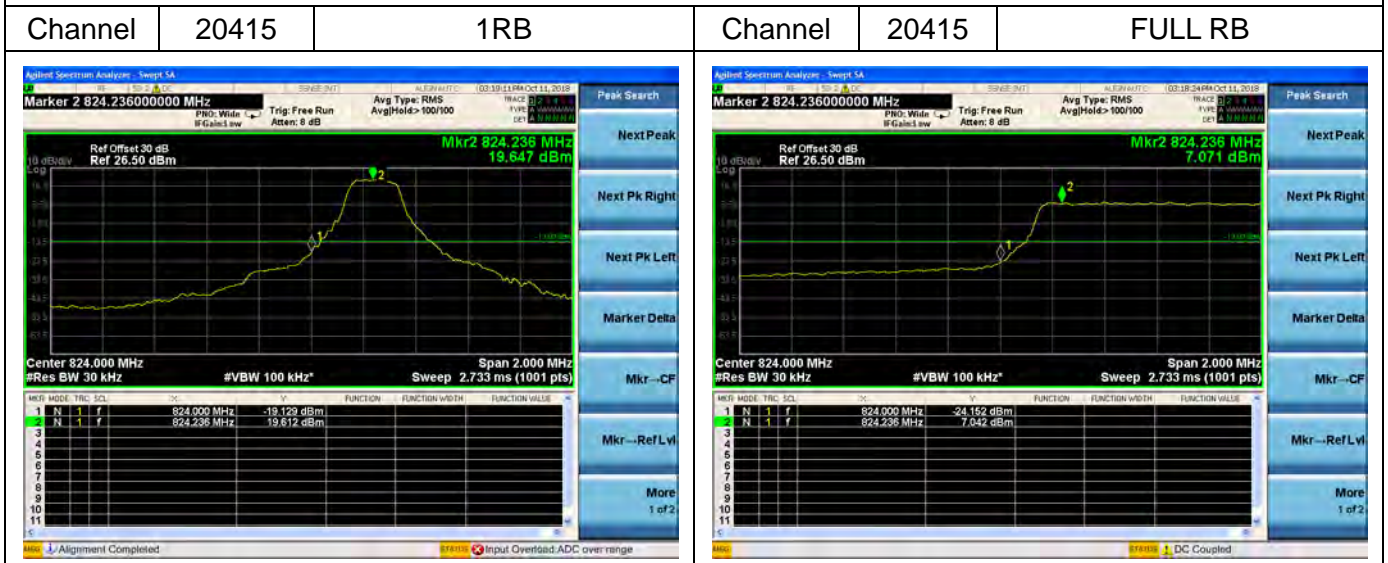
Channel Bandwidth: 1.4MHz



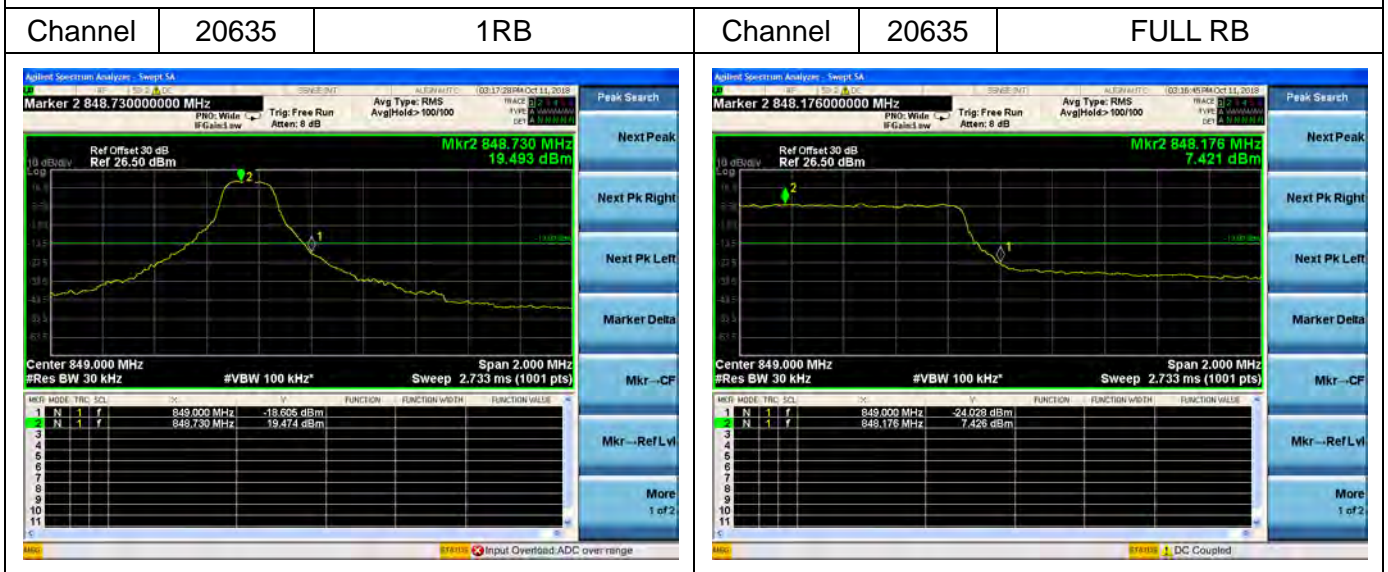


LTE Band 5

Channel Bandwidth: 3MHz



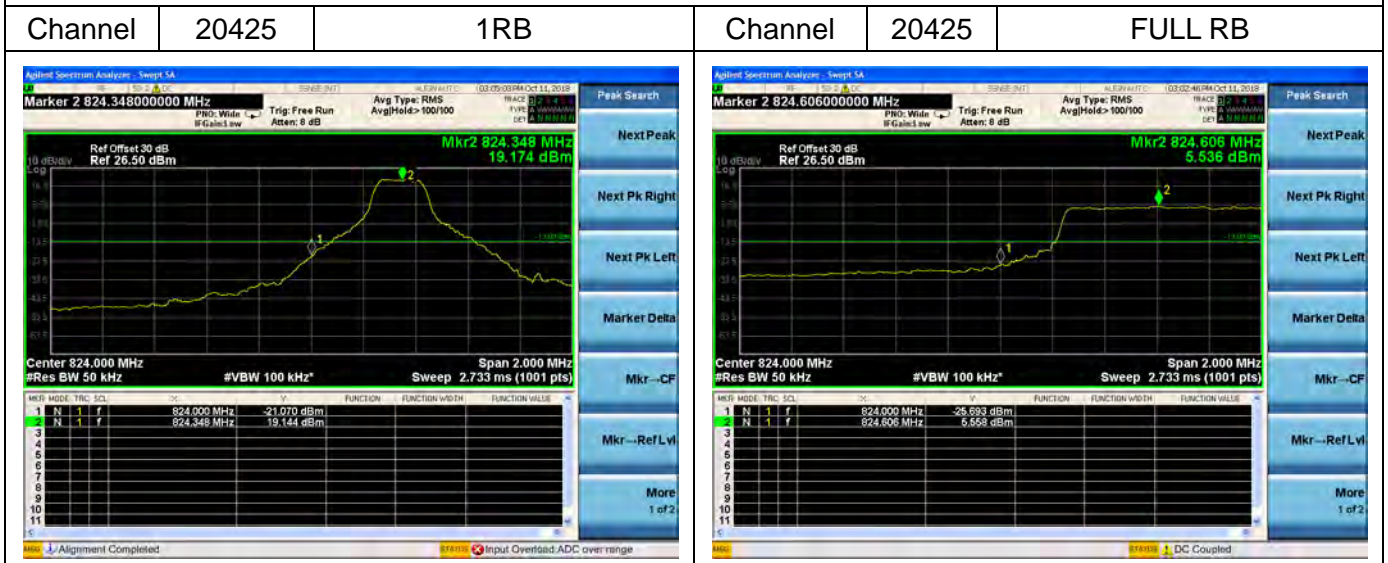
Channel Bandwidth: 3MHz



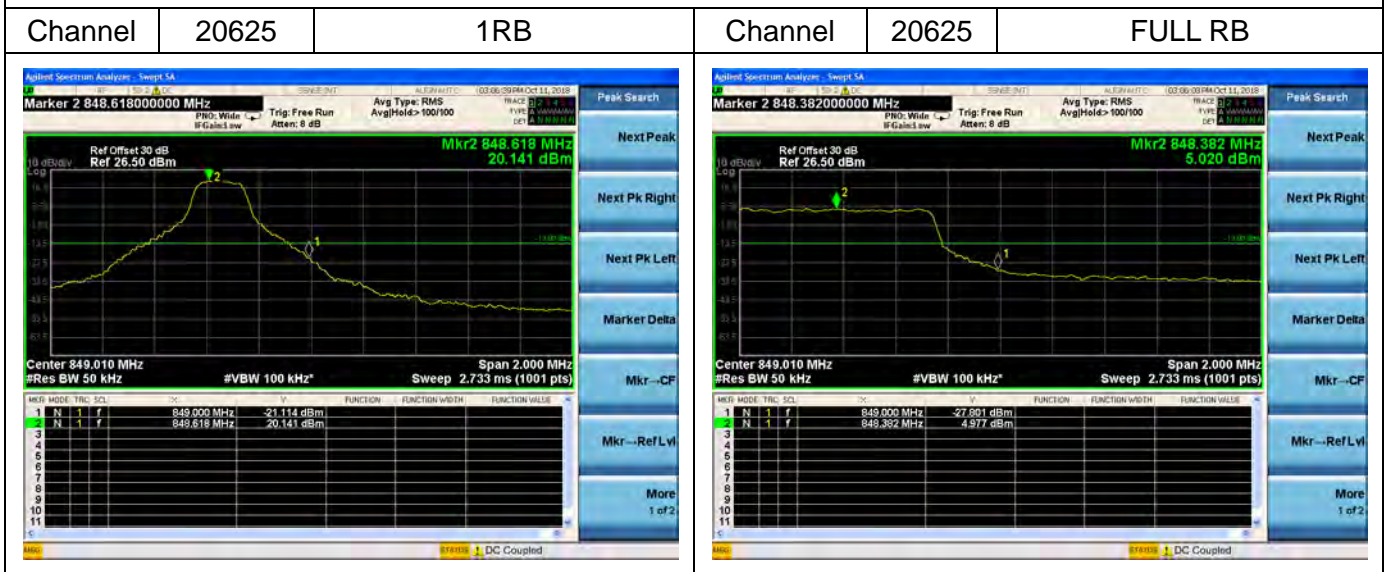


LTE Band 5

Channel Bandwidth: 5MHz



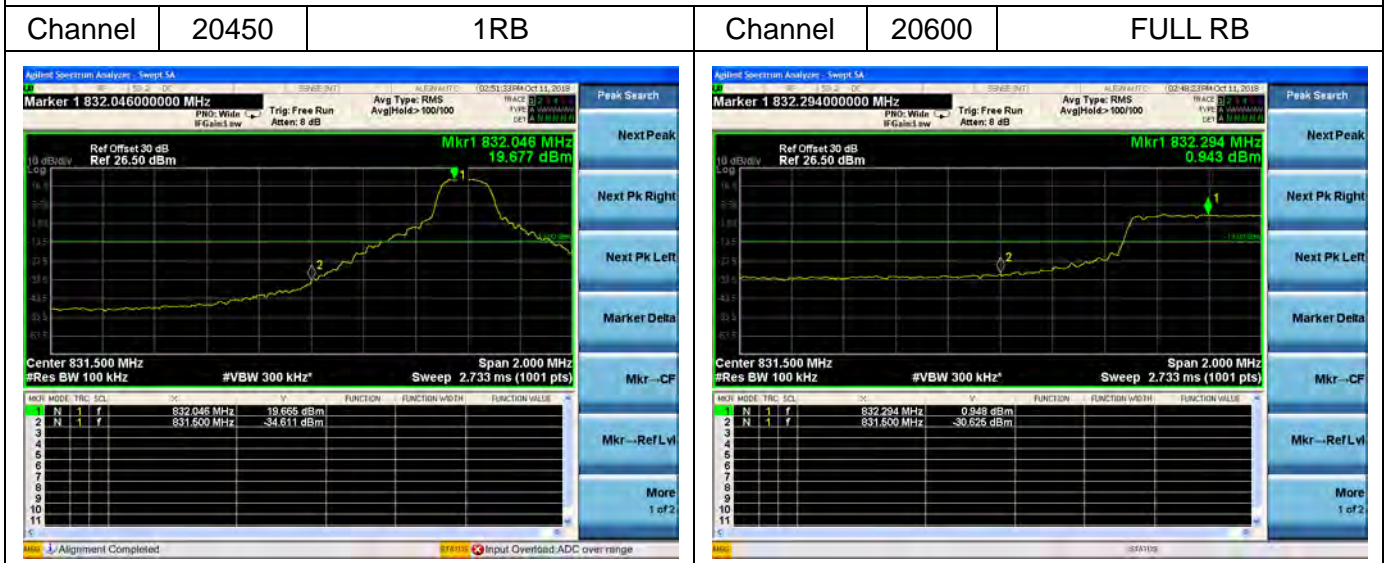
Channel Bandwidth: 5MHz



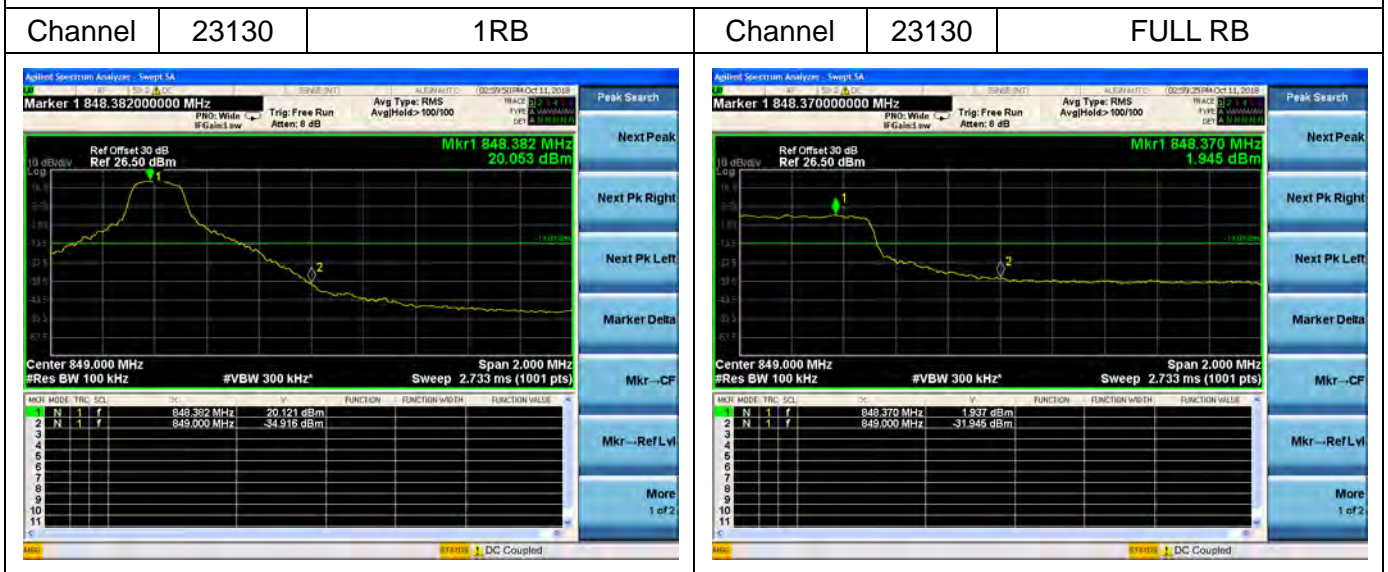


LTE Band 5

Channel Bandwidth: 10MHz



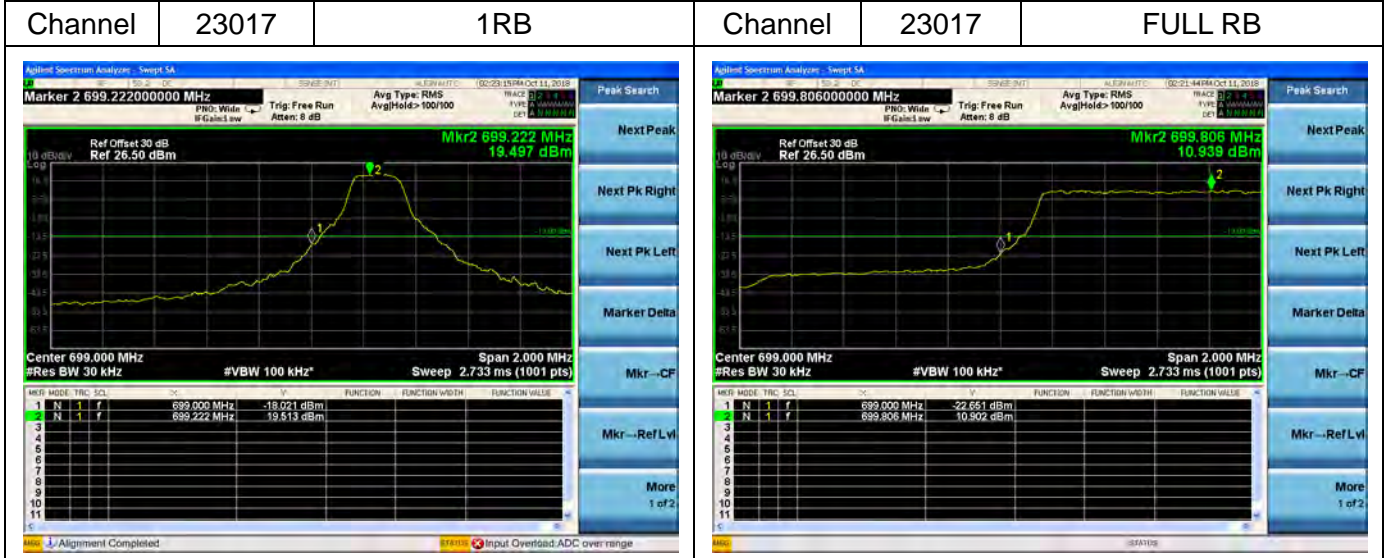
Channel Bandwidth: 10MHz



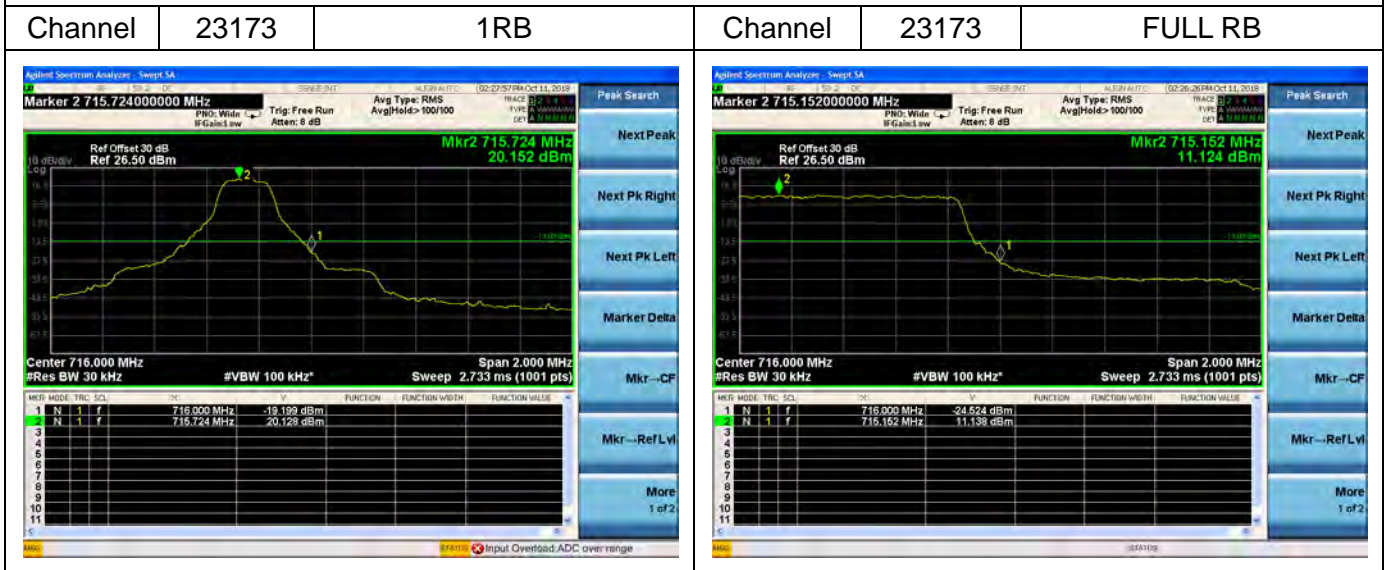


LTE Band 12

Channel Bandwidth: 1.4MHz



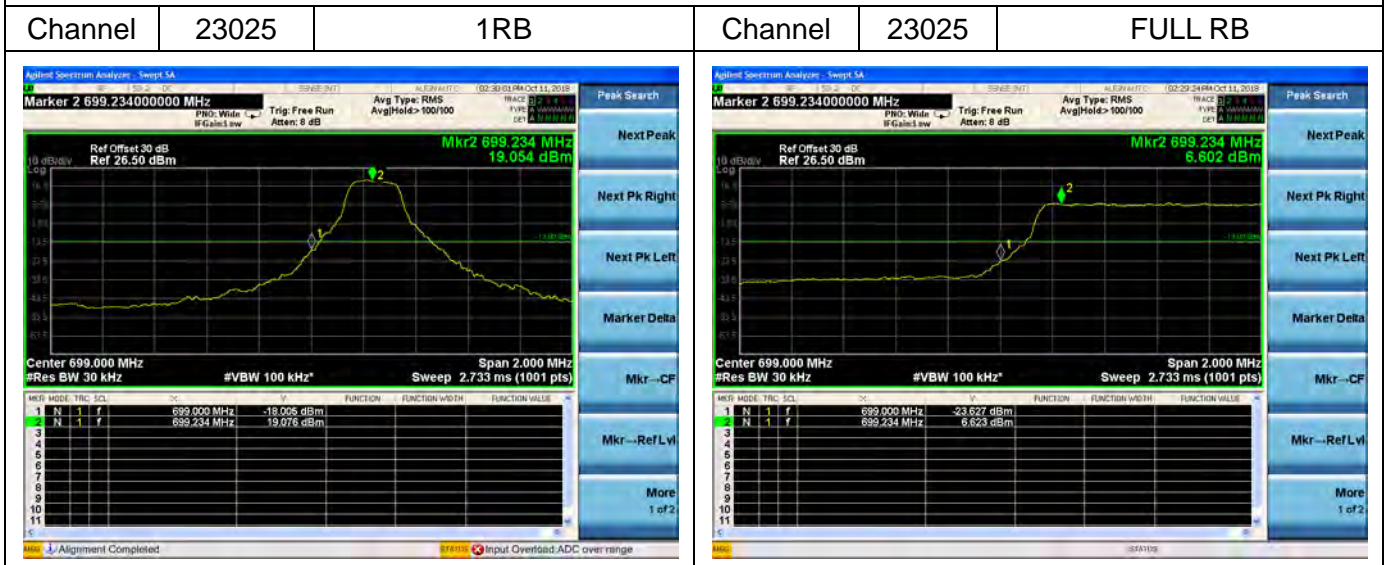
Channel Bandwidth: 1.4MHz



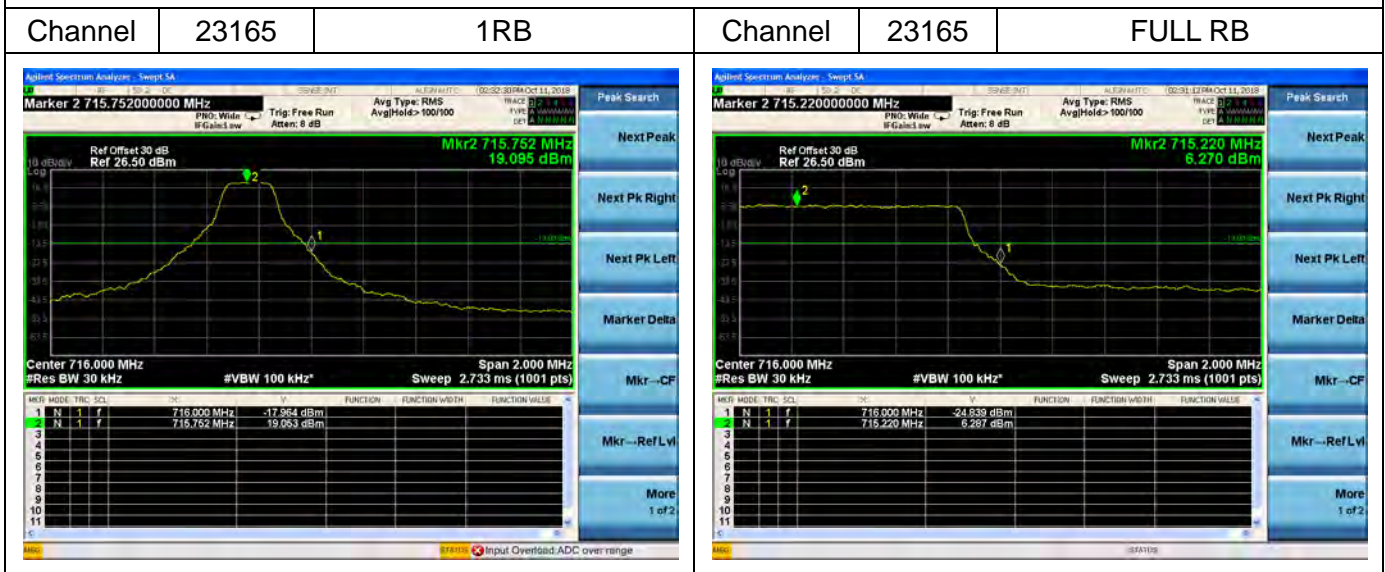


LTE Band 12

Channel Bandwidth: 3MHz



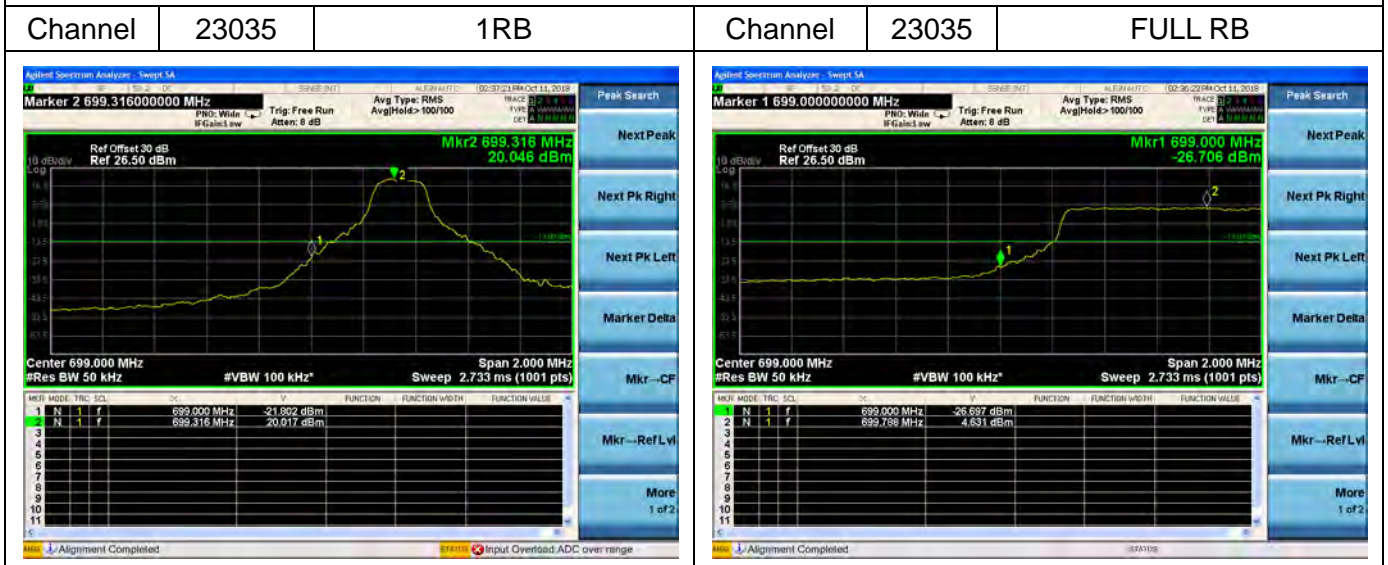
Channel Bandwidth: 3MHz



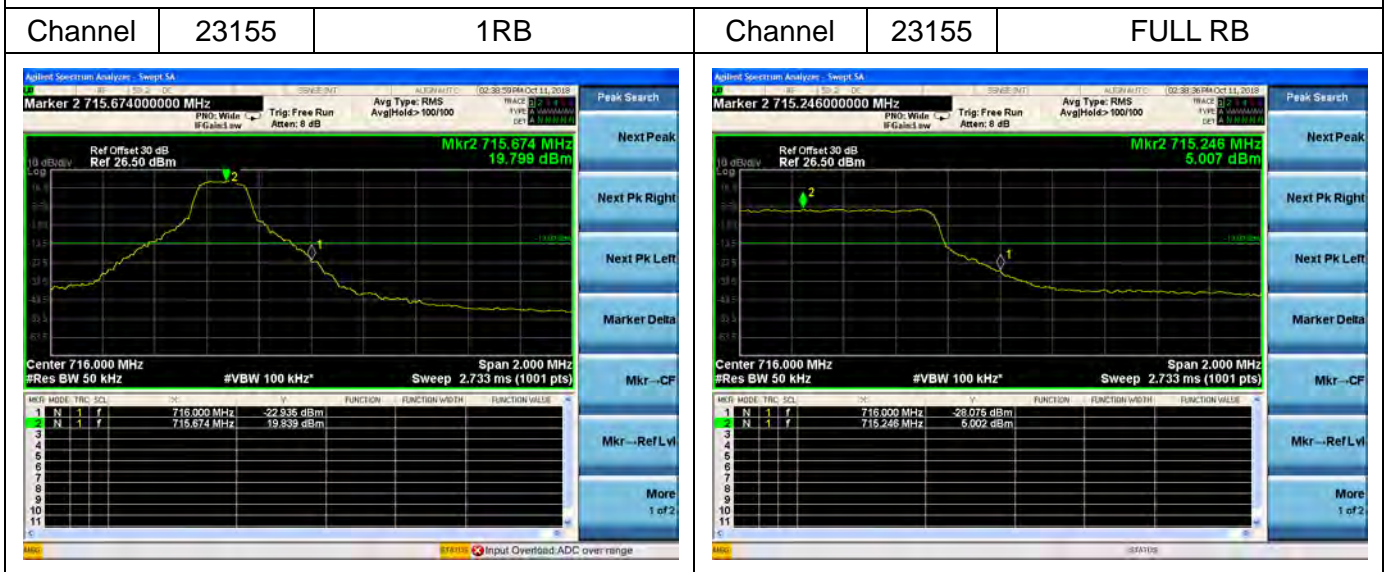


LTE Band 12

Channel Bandwidth: 5MHz



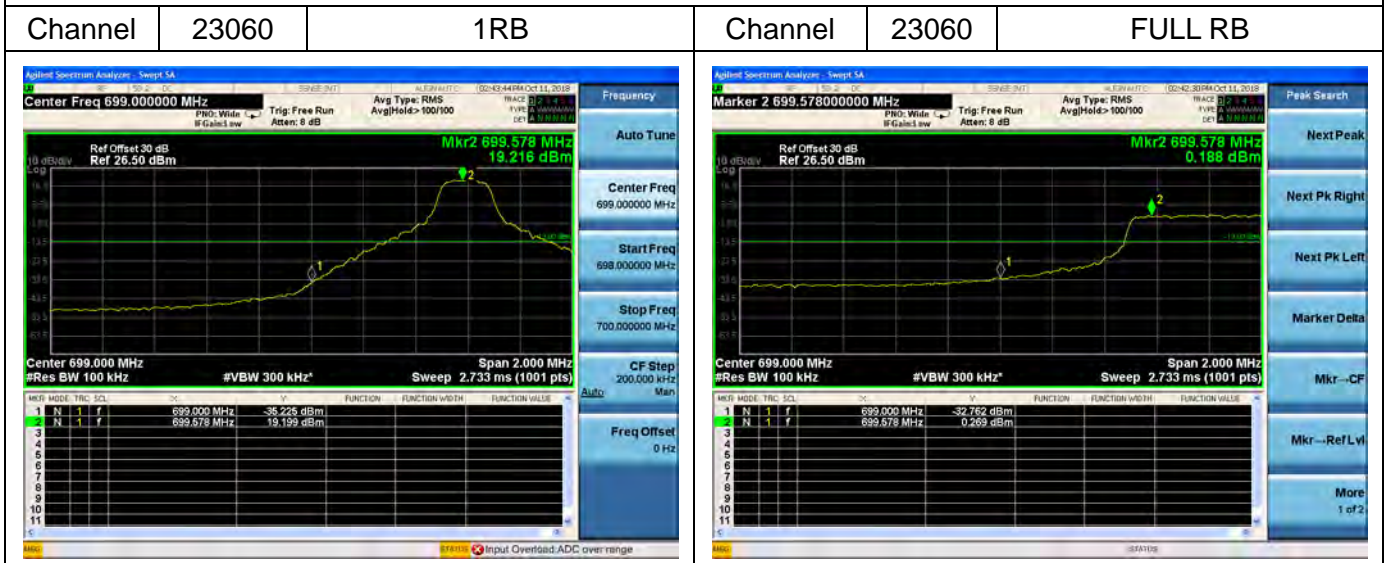
Channel Bandwidth: 5MHz



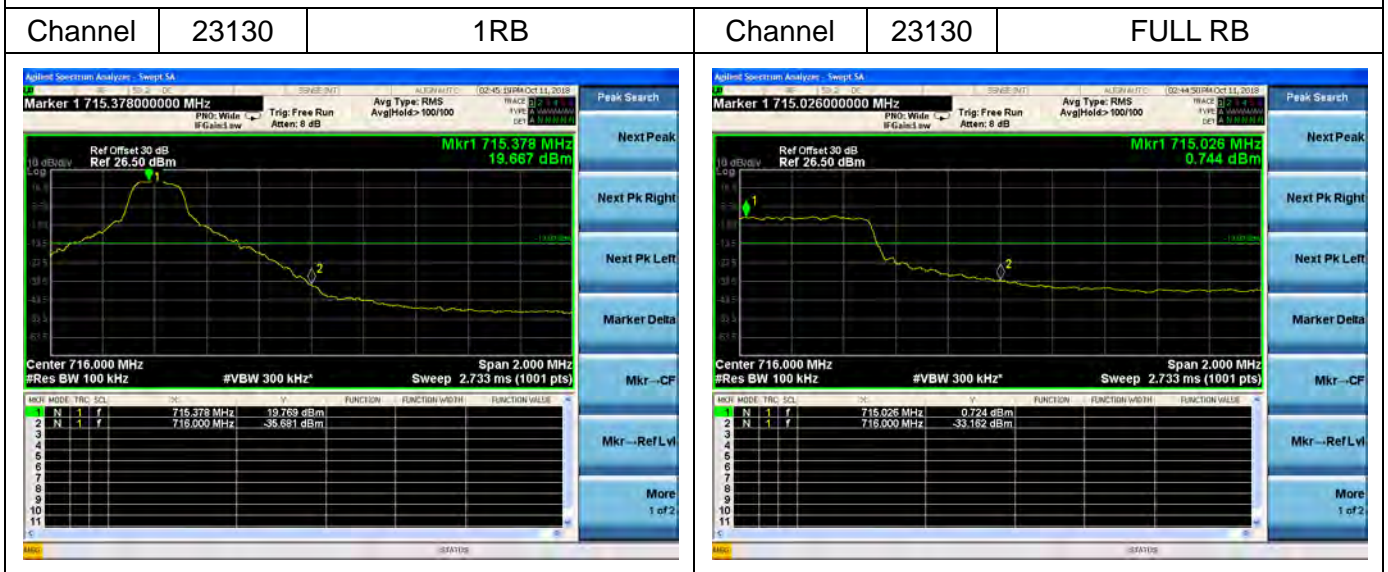


LTE Band 12

Channel Bandwidth: 10MHz



Channel Bandwidth: 10MHz



2.7. Transmitter Radiated Power (EIRP/ERP)

2.7.1. Requirement

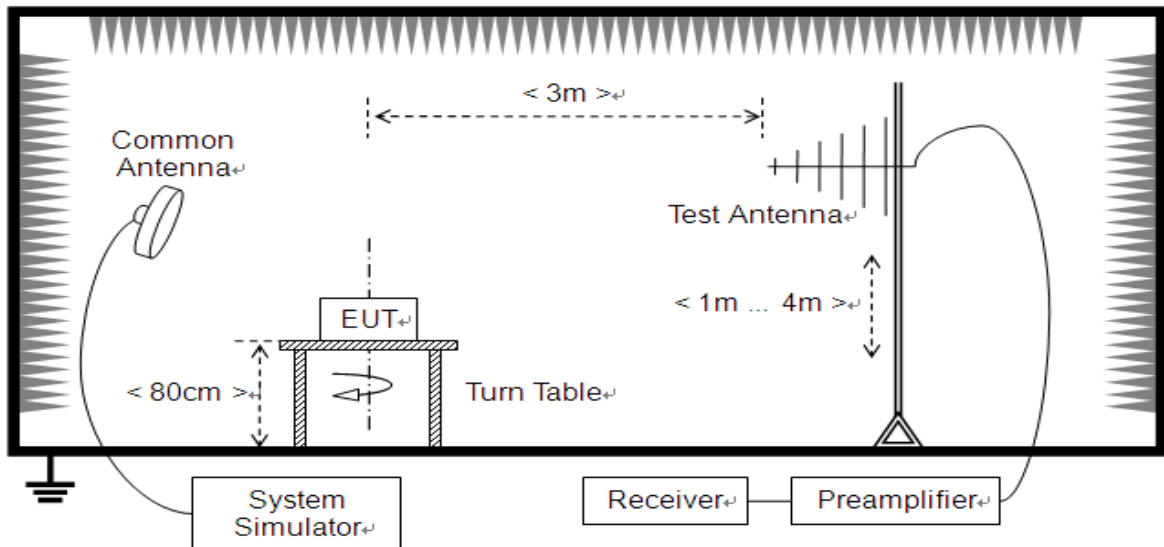
According to FCC section 24.232 (c) for LTE Band 2, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

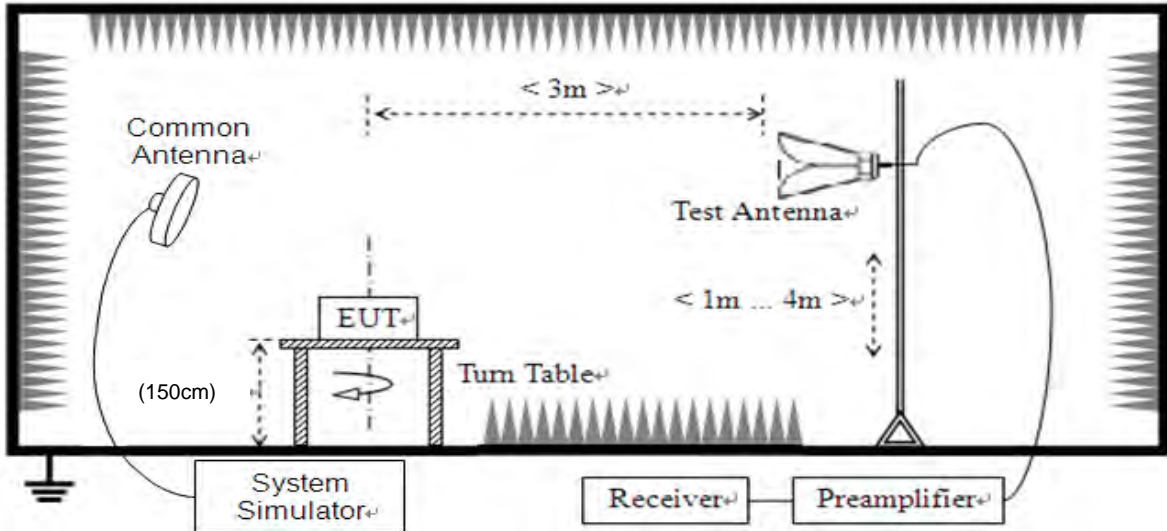
According to FCC section22.913 (a.2) for LTE Band 5, the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (c) for LTE Band 12, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2. Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

2.7.3. Test procedure

KDB 971168 D01v03 Section 51&5.2 and ANSI/TIA-603-E-2016.



2.7.4. Test Result

The EUT was verified under all configurations (RB size and offset) and the worst case radiated power reported for each modulation/channel bandwidth.

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT} .

Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



LTE Band2						
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	23.41	23.48	23.44
20	QPSK	1	49	23.93	23.44	23.71
20	QPSK	1	99	23.85	23.71	24.16
20	QPSK	50	0	23.94	24.16	23.93
20	QPSK	50	24	23.79	23.93	24.10
20	QPSK	50	50	24.05	24.10	23.79
20	QPSK	100	0	23.56	23.79	24.05
20	16QAM	1	0	23.61	24.05	23.56
20	16QAM	1	49	23.56	23.93	23.61
20	16QAM	1	99	23.87	24.10	23.56
20	16QAM	50	0	24.11	23.79	23.87
20	16QAM	50	24	24.10	24.05	24.11
20	16QAM	50	50	23.79	23.56	23.98
20	16QAM	100	0	24.05	23.61	23.97
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	23.76	24.05	23.67
15	QPSK	1	37	23.55	23.56	23.65
15	QPSK	1	74	23.93	23.61	23.71
15	QPSK	36	0	23.85	23.56	23.83
15	QPSK	36	20	23.94	23.87	23.57
15	QPSK	36	39	23.97	24.11	23.84
15	QPSK	75	0	23.26	23.98	24.00
15	16QAM	1	0	23.48	23.97	23.86
15	16QAM	1	37	23.44	23.90	24.13
15	16QAM	1	74	23.71	24.06	23.84
15	16QAM	36	0	24.16	23.67	23.54
15	16QAM	36	20	23.93	23.65	23.97
15	16QAM	36	39	24.10	23.71	24.06
15	16QAM	75	0	23.79	23.83	23.83



Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	23.53	23.85	24.10
10	QPSK	1	25	23.93	23.94	23.79
10	QPSK	1	49	23.85	23.97	24.05
10	QPSK	25	0	23.94	23.26	23.56
10	QPSK	25	12	23.97	23.55	23.61
10	QPSK	25	25	23.26	23.93	23.56
10	QPSK	50	0	23.48	23.85	24.05
10	16QAM	1	0	23.44	23.94	23.56
10	16QAM	1	25	23.71	23.97	23.61
10	16QAM	1	49	24.16	23.26	23.56
10	16QAM	25	0	23.93	23.48	23.87
10	16QAM	25	12	24.10	23.44	24.11
10	16QAM	25	25	23.79	23.56	23.98
10	16QAM	50	0	24.05	23.61	23.97
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	23.45	23.85	23.44
5	QPSK	1	12	23.93	23.94	23.71
5	QPSK	1	24	23.85	23.97	24.16
5	QPSK	12	0	23.94	23.26	23.93
5	QPSK	12	7	23.97	23.48	24.10
5	QPSK	12	13	23.26	23.44	23.79
5	QPSK	25	0	23.48	23.71	24.05
5	16QAM	1	0	23.44	24.16	23.56
5	16QAM	1	12	23.71	23.93	23.61
5	16QAM	1	24	24.16	24.10	23.56
5	16QAM	12	0	23.93	23.79	23.87
5	16QAM	12	7	24.10	24.05	24.11
5	16QAM	12	13	23.79	23.56	23.98
5	16QAM	25	0	24.05	23.61	23.97



Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	23.21	23.26	23.44
3	QPSK	1	8	23.93	23.48	23.85
3	QPSK	1	14	23.85	23.44	23.94
3	QPSK	8	0	23.94	23.71	23.97
3	QPSK	8	4	23.97	23.48	23.26
3	QPSK	8	7	23.26	23.44	23.79
3	QPSK	15	0	23.48	23.71	24.05
3	16QAM	1	0	23.44	23.56	23.56
3	16QAM	1	8	23.71	23.61	23.61
3	16QAM	1	14	24.16	23.56	23.56
3	16QAM	8	0	23.93	23.87	23.87
3	16QAM	8	4	24.10	24.11	24.11
3	16QAM	8	7	23.79	23.56	23.98
3	16QAM	15	0	24.05	23.61	23.97
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	23.47	24.16	23.87
1.4	QPSK	1	3	23.93	23.93	24.11
1.4	QPSK	1	5	23.85	24.10	23.98
1.4	QPSK	3	0	23.94	23.79	23.97
1.4	QPSK	3	1	23.97	24.05	24.10
1.4	QPSK	3	3	23.26	23.56	23.79
1.4	QPSK	6	0	23.48	23.61	24.05
1.4	16QAM	1	0	23.44	23.56	23.56
1.4	16QAM	1	3	23.71	23.93	23.61
1.4	16QAM	1	5	24.16	24.10	23.56
1.4	16QAM	3	0	23.93	23.79	23.87
1.4	16QAM	3	1	24.10	24.05	24.11
1.4	16QAM	3	3	23.79	23.56	23.98
1.4	16QAM	6	0	24.05	23.61	23.97



LTE Band4						
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	23.81	24.27	23.99
20	QPSK	1	49	23.99	23.99	24.40
20	QPSK	1	99	24.27	24.25	24.12
20	QPSK	50	0	23.99	24.24	23.81
20	QPSK	50	24	24.25	24.25	23.99
20	QPSK	50	50	24.24	24.31	24.25
20	QPSK	100	0	24.25	24.49	24.24
20	16QAM	1	0	24.31	24.03	24.25
20	16QAM	1	49	24.49	23.74	24.31
20	16QAM	1	99	24.36	24.14	24.49
20	16QAM	50	0	24.26	23.92	24.03
20	16QAM	50	24	24.50	23.76	23.74
20	16QAM	50	50	24.01	24.13	23.76
20	16QAM	100	0	23.59	24.23	24.13
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	24.11	24.27	23.99
15	QPSK	1	37	24.12	23.99	24.40
15	QPSK	1	74	24.23	24.25	24.12
15	QPSK	36	0	23.75	24.24	23.81
15	QPSK	36	20	23.74	24.25	23.99
15	QPSK	36	39	24.04	24.31	24.25
15	QPSK	75	0	23.91	24.49	24.24
15	16QAM	1	0	23.78	24.03	24.25
15	16QAM	1	37	24.12	23.74	24.31
15	16QAM	1	74	24.36	24.14	23.74
15	16QAM	36	0	24.26	23.92	24.03
15	16QAM	36	20	24.50	23.76	23.92
15	16QAM	36	39	24.01	24.13	23.76
15	16QAM	75	0	23.59	24.23	24.13



Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	23.76	24.27	23.99
10	QPSK	1	25	24.13	23.99	24.40
10	QPSK	1	49	24.23	24.25	24.11
10	QPSK	25	0	24.24	24.24	24.12
10	QPSK	25	12	24.25	24.25	24.23
10	QPSK	25	25	24.31	24.31	23.75
10	QPSK	50	0	24.49	24.49	23.74
10	16QAM	1	0	24.03	24.03	24.04
10	16QAM	1	25	23.74	23.74	23.91
10	16QAM	1	49	24.14	24.14	23.78
10	16QAM	25	0	24.26	23.92	24.03
10	16QAM	25	12	24.50	23.76	23.92
10	16QAM	25	25	24.01	24.13	23.76
10	16QAM	50	0	23.59	24.23	24.13
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	24.12	24.24	24.24
5	QPSK	1	12	23.81	24.25	24.25
5	QPSK	1	24	23.99	24.31	24.31
5	QPSK	12	0	24.25	23.74	24.49
5	QPSK	12	7	23.74	24.25	23.99
5	QPSK	12	13	24.04	24.31	24.25
5	QPSK	25	0	23.91	24.49	24.24
5	16QAM	1	0	23.78	24.03	24.25
5	16QAM	1	12	24.12	23.74	24.31
5	16QAM	1	24	24.36	24.14	23.74
5	16QAM	12	0	24.26	23.92	24.03
5	16QAM	12	7	24.50	23.76	23.92
5	16QAM	12	13	24.01	24.13	23.76
5	16QAM	25	0	23.59	24.23	24.13



Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	24.24	23.99	23.99
3	QPSK	1	8	24.25	24.40	24.40
3	QPSK	1	14	24.31	24.12	24.12
3	QPSK	8	0	24.49	23.81	23.81
3	QPSK	8	4	24.03	23.99	23.99
3	QPSK	8	7	23.74	24.25	24.25
3	QPSK	15	0	24.14	24.24	24.24
3	16QAM	1	0	23.78	24.25	24.25
3	16QAM	1	8	24.25	24.31	24.31
3	16QAM	1	14	24.31	24.14	23.74
3	16QAM	8	0	23.74	23.92	24.03
3	16QAM	8	4	24.03	23.76	23.92
3	16QAM	8	7	23.92	24.13	23.76
3	16QAM	15	0	23.76	24.23	24.13
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	24.25	24.40	24.31
1.4	QPSK	1	3	24.24	24.12	23.74
1.4	QPSK	1	5	24.25	23.81	24.03
1.4	QPSK	3	0	24.31	23.99	23.92
1.4	QPSK	3	1	24.49	24.25	23.76
1.4	QPSK	3	3	24.03	24.24	24.13
1.4	QPSK	6	0	23.74	24.25	24.24
1.4	16QAM	1	0	24.14	24.31	24.25
1.4	16QAM	1	3	23.92	23.74	24.31
1.4	16QAM	1	5	24.36	24.03	23.74
1.4	16QAM	3	0	24.26	23.92	24.03
1.4	16QAM	3	1	24.50	23.76	23.92
1.4	16QAM	3	3	24.01	24.13	23.76
1.4	16QAM	6	0	23.59	24.23	24.13



LTE Band5						
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	25.24	25.24	25.02
10	QPSK	1	25	24.89	25.26	24.97
10	QPSK	1	49	25.02	25.18	25.13
10	QPSK	25	0	25.39	25.23	25.25
10	QPSK	25	12	24.24	24.97	25.31
10	QPSK	25	25	24.25	25.13	25.10
10	QPSK	50	0	24.31	25.25	25.24
10	16QAM	1	0	23.74	25.31	24.89
10	16QAM	1	25	25.13	25.10	25.31
10	16QAM	1	49	25.25	25.24	25.10
10	16QAM	25	0	25.15	24.89	25.24
10	16QAM	25	12	25.00	25.02	25.26
10	16QAM	25	25	24.94	25.23	25.18
10	16QAM	50	0	25.07	25.26	25.23
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	24.74	25.31	25.26
5	QPSK	1	12	24.95	25.02	25.18
5	QPSK	1	24	25.02	25.23	25.23
5	QPSK	12	0	24.97	25.26	24.25
5	QPSK	12	7	25.13	24.24	24.31
5	QPSK	12	13	25.25	24.25	23.74
5	QPSK	25	0	25.31	24.31	25.13
5	16QAM	1	0	25.10	23.74	25.25
5	16QAM	1	12	25.35	25.13	25.31
5	16QAM	1	24	25.24	25.25	25.10
5	16QAM	12	0	25.15	25.31	25.24
5	16QAM	12	7	25.00	25.02	25.26
5	16QAM	12	13	24.94	25.23	25.18
5	16QAM	25	0	25.07	25.26	25.23



Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	24.97	25.18	25.26
3	QPSK	1	8	25.21	24.74	25.18
3	QPSK	1	14	25.07	24.95	24.24
3	QPSK	8	0	25.39	25.02	24.25
3	QPSK	8	4	24.82	24.97	24.31
3	QPSK	8	7	25.18	25.13	23.74
3	QPSK	15	0	24.92	25.25	25.13
3	16QAM	1	0	25.10	25.31	25.25
3	16QAM	1	8	25.35	25.10	25.31
3	16QAM	1	14	25.24	25.24	25.10
3	16QAM	8	0	25.15	24.89	25.24
3	16QAM	8	4	25.00	25.02	25.26
3	16QAM	8	7	24.94	25.23	25.18
3	16QAM	15	0	25.07	25.26	25.23
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	24.95	24.31	25.26
1.4	QPSK	1	3	25.02	23.74	25.18
1.4	QPSK	1	5	24.97	25.13	24.24
1.4	QPSK	3	0	25.13	25.25	24.25
1.4	QPSK	3	1	25.25	25.31	24.31
1.4	QPSK	3	3	25.31	25.10	23.74
1.4	QPSK	6	0	25.10	25.13	25.13
1.4	16QAM	1	0	25.10	25.31	25.25
1.4	16QAM	1	3	25.35	25.10	25.31
1.4	16QAM	1	5	25.24	25.24	25.10
1.4	16QAM	3	0	25.15	24.89	25.24
1.4	16QAM	3	1	25.00	25.02	25.26
1.4	16QAM	3	3	24.94	25.23	25.18
1.4	16QAM	6	0	25.07	25.26	25.23



LTE Band12						
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.
Channel				23060	23095	23130
Frequency (MHz)				704	707.5	711
10	QPSK	1	0	24.08	24.55	24.55
10	QPSK	1	25	24.51	24.48	24.66
10	QPSK	1	49	24.31	24.55	24.59
10	QPSK	25	0	24.72	24.66	24.47
10	QPSK	25	12	24.70	24.59	24.79
10	QPSK	25	25	24.80	24.47	24.36
10	QPSK	50	0	24.57	24.70	24.35
10	16QAM	1	0	24.51	24.38	24.63
10	16QAM	1	25	24.67	24.35	24.14
10	16QAM	1	49	24.77	24.63	24.13
10	16QAM	25	0	24.52	24.14	24.51
10	16QAM	25	12	24.64	24.13	24.33
10	16QAM	25	25	24.26	24.51	24.25
10	16QAM	50	0	24.21	24.33	24.73
Channel				23035	23095	23155
Frequency (MHz)				701.5	707.5	713.5
5	QPSK	1	0	24.16	24.55	24.55
5	QPSK	1	12	24.51	24.48	24.66
5	QPSK	1	24	24.31	24.56	24.59
5	QPSK	12	0	24.72	24.66	24.47
5	QPSK	12	7	24.70	24.59	24.70
5	QPSK	12	13	24.80	24.47	24.36
5	QPSK	25	0	24.45	24.70	24.35
5	16QAM	1	0	24.51	24.36	24.63
5	16QAM	1	12	24.67	24.35	24.14
5	16QAM	1	24	24.77	24.68	24.13
5	16QAM	12	0	24.52	24.14	24.51
5	16QAM	12	7	24.64	24.13	24.33
5	16QAM	12	13	24.26	24.51	24.25
5	16QAM	25	0			



Channel				23025	23095	23165
Frequency (MHz)				700.5	707.5	714.5
3	QPSK	1	0	24.27	24.55	24.55
3	QPSK	1	8	24.51	24.48	24.66
3	QPSK	1	14	24.31	24.55	24.59
3	QPSK	8	0	24.72	24.66	24.47
3	QPSK	8	4	24.70	24.59	24.70
3	QPSK	8	7	24.80	24.47	24.36
3	QPSK	15	0	24.45	24.70	24.35
3	16QAM	1	0	24.51	24.36	24.63
3	16QAM	1	8	24.67	24.35	24.14
3	16QAM	1	14	24.77	24.63	24.13
3	16QAM	8	0	24.52	24.14	24.51
3	16QAM	8	4	24.64	24.13	24.33
3	16QAM	8	7	24.26	24.51	24.25
3	16QAM	15	0	24.21	24.33	24.73
Channel				23017	23095	23173
Frequency (MHz)				699.7	707.5	715.3
1.4	QPSK	1	0	24.23	24.55	24.55
1.4	QPSK	1	3	24.51	24.48	24.66
1.4	QPSK	1	5	24.31	24.55	24.59
1.4	QPSK	3	0	24.72	24.66	24.47
1.4	QPSK	3	1	24.70	24.59	24.70
1.4	QPSK	3	3	24.80	24.47	24.36
1.4	QPSK	6	0	24.45	24.70	24.35
1.4	16QAM	1	0	24.51	24.36	24.63
1.4	16QAM	1	3	24.67	24.35	24.14
1.4	16QAM	1	5	24.77	24.63	24.13
1.4	16QAM	3	0	24.52	24.54	24.51
1.4	16QAM	3	1	24.64	24.13	24.33
1.4	16QAM	3	3	24.26	24.51	24.25
1.4	16QAM	6	0	24.21	24.33	24.73

2.8. Radiated Spurious Emissions

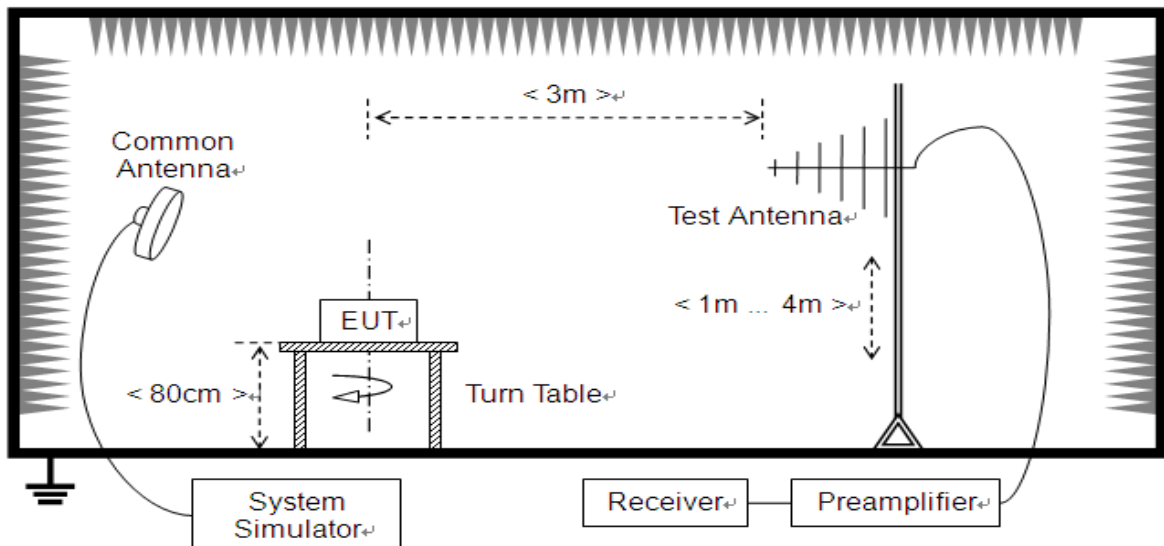
2.8.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm.

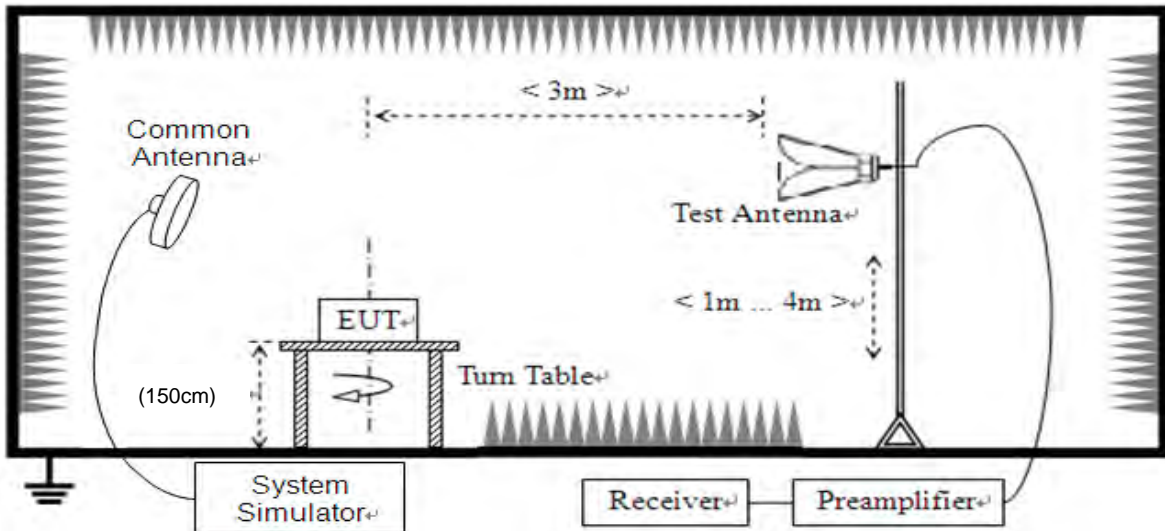
Additional requirement for LTE Band 7:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. This calculated to be -25dBm.

2.8.2. Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.8.3. Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.



2.8.4. Test Result

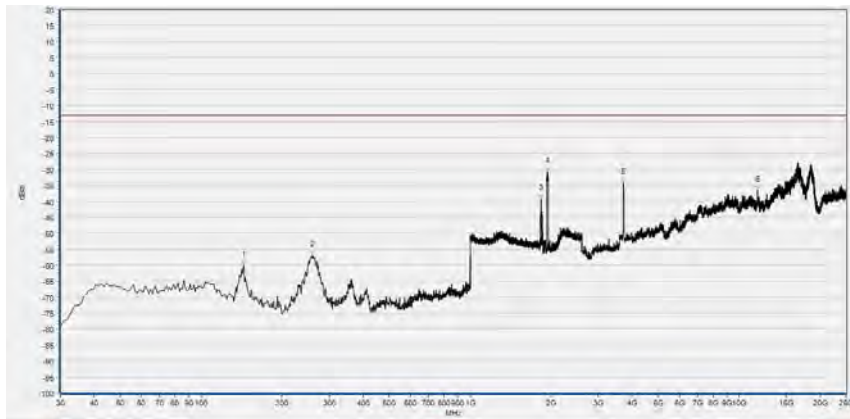
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. Test Antenna height is varied from 1m to 4m above the ground, and the Turn Table is actuated to turn from 0° to 360°, both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

Note1: The power of the EUT transmitting frequency should be ignored.

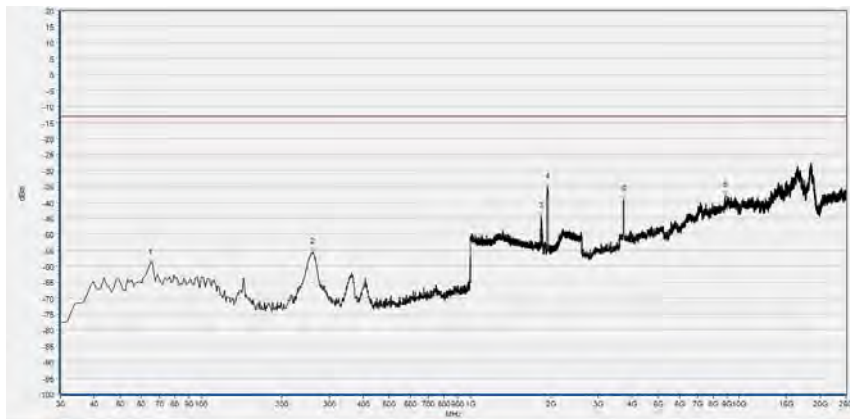
Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note3: All bandwidth and test channel were considered and evaluated respectively by performing full test for each band, only the worst cases were recorded in this test report.

LTE Band 2 20MHz BW, Low Channel, QPSK



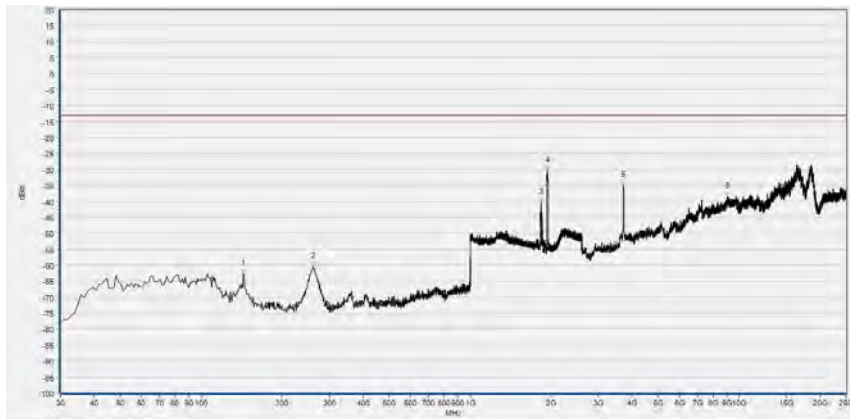
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-60.08	-13.00	Horizontal	PASS
2	258.920	-56.82	-13.00	Horizontal	PASS
3	1833.613	-39.20	-13.00	Horizontal	N/A
4	1941.817	-30.79	-13.00	Horizontal	N/A
5	3720.204	-34.11	-13.00	Horizontal	PASS
6	11716.421	-36.53	-13.00	Horizontal	PASS



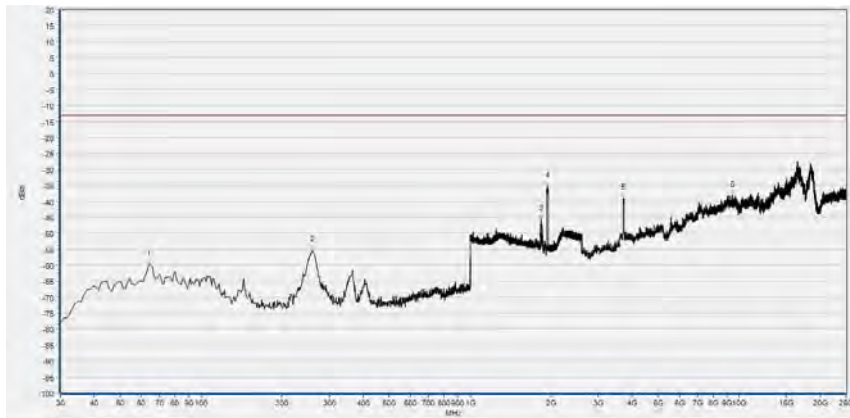
No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	64.920	-59.02	-13.00	Vertical	PASS
2	258.920	-55.58	-13.00	Vertical	PASS
3	1833.613	-44.37	-13.00	Vertical	N/A
4	1939.896	-35.28	-13.00	Vertical	N/A
5	3724.277	-39.12	-13.00	Vertical	PASS
6	8917.949	-37.90	-13.00	Vertical	PASS



LTE Band 2 20MHz BW, Low Channel, 16QAM

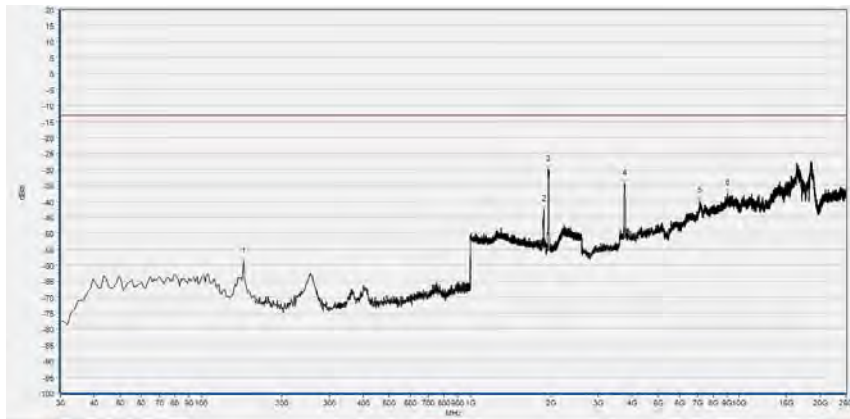


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	143.490	-62.74	-13.00	Horizontal	PASS
2	260.860	-60.49	-13.00	Horizontal	PASS
3	1832.973	-40.35	-13.00	Horizontal	N/A
4	1943.737	-30.45	-13.00	Horizontal	N/A
5	3720.204	-34.86	-13.00	Horizontal	PASS
6	9072.740	-38.44	-13.00	Horizontal	PASS

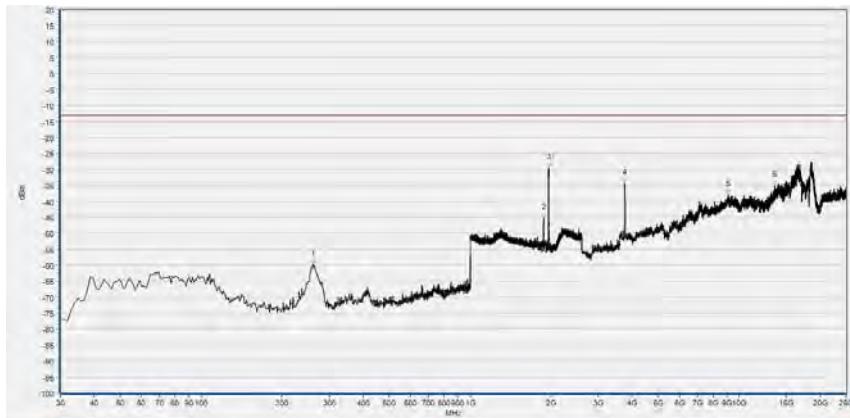


Num.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	63.950	-59.70	-13.00	Vertical	PASS
2	258.920	-55.28	-13.00	Vertical	PASS
3	1832.973	-45.49	-13.00	Vertical	N/A
4	1945.658	-35.26	-13.00	Vertical	N/A
5	3720.204	-38.92	-13.00	Vertical	PASS
6	9467.867	-38.16	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, QPSK

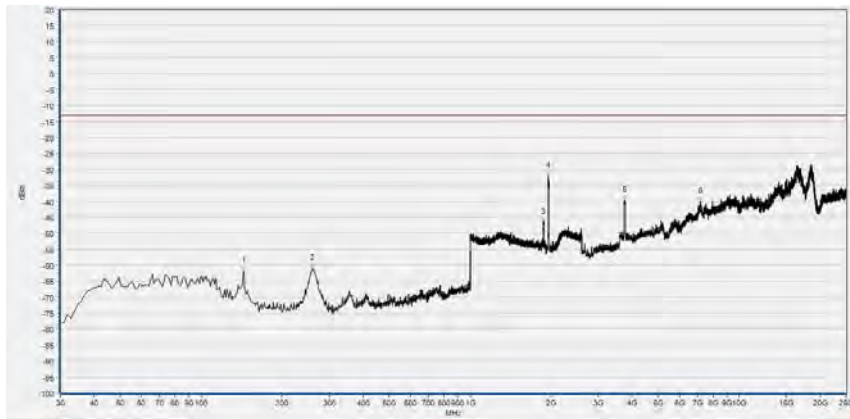


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-58.93	-13.00	Horizontal	PASS
2	1879.072	-42.52	-13.00	Horizontal	N/A
3	1953.341	-30.04	-13.00	Horizontal	N/A
4	3760.938	-34.50	-13.00	Horizontal	PASS
5	7145.990	-39.96	-13.00	Horizontal	PASS
6	9084.961	-37.51	-13.00	Horizontal	PASS

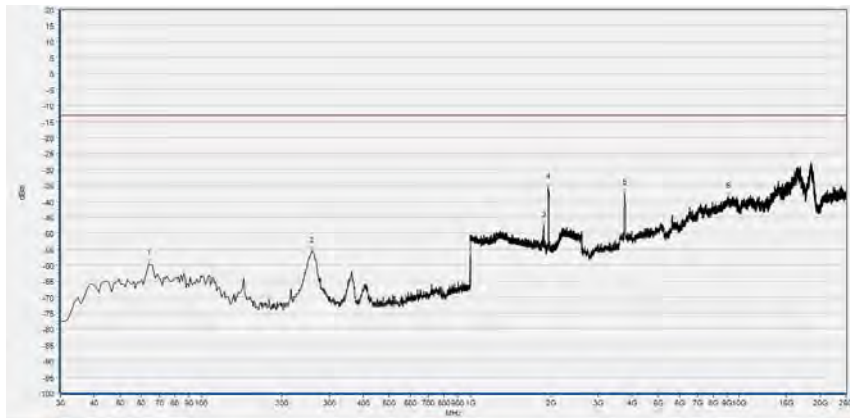


No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	260.860	-59.87	-13.00	Vertical	PASS
2	1878.431	-45.19	-13.00	Vertical	N/A
3	1962.305	-29.65	-13.00	Vertical	N/A
4	3760.938	-34.23	-13.00	Vertical	PASS
5	9113.475	-37.85	-13.00	Vertical	PASS
6	13590.216	-35.08	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, 16QAM

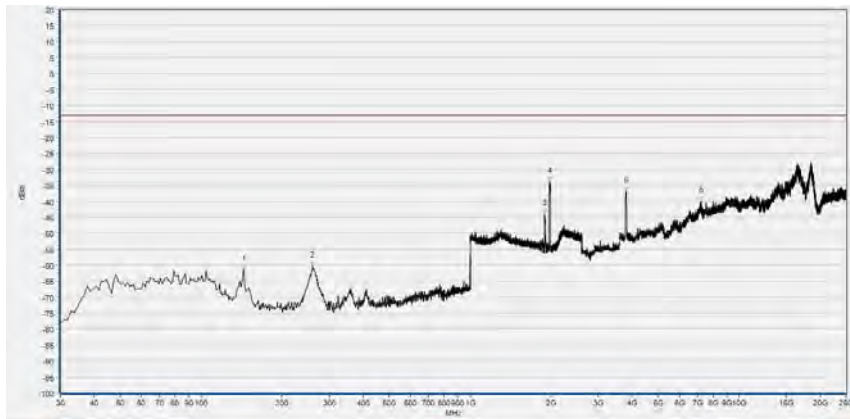


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-61.68	-13.00	Horizontal	PASS
2	259.890	-61.14	-13.00	Horizontal	PASS
3	1875.870	-46.49	-13.00	Horizontal	N/A
4	1955.902	-32.16	-13.00	Horizontal	N/A
5	3752.791	-39.70	-13.00	Horizontal	PASS
6	7198.945	-40.18	-13.00	Horizontal	PASS

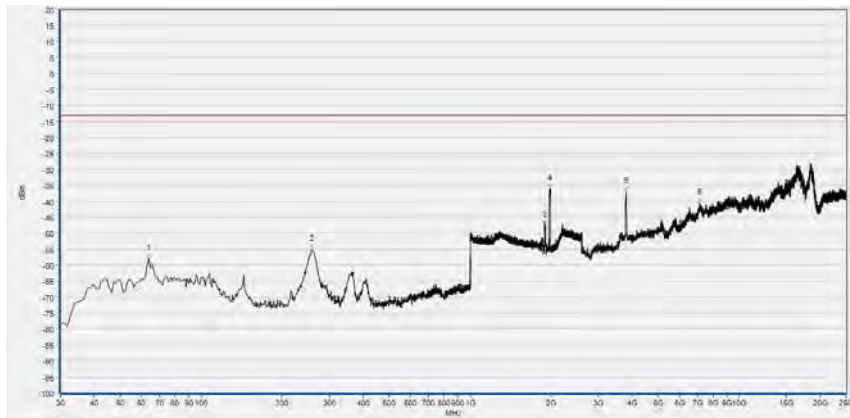


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	63.950	-59.39	-13.00	Vertical	PASS
2	257.950	-55.59	-13.00	Vertical	PASS
3	1877.151	-47.41	-13.00	Vertical	N/A
4	1957.823	-35.56	-13.00	Vertical	N/A
5	3760.938	-37.35	-13.00	Vertical	PASS
6	9141.989	-38.53	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, High Channel, QPSK

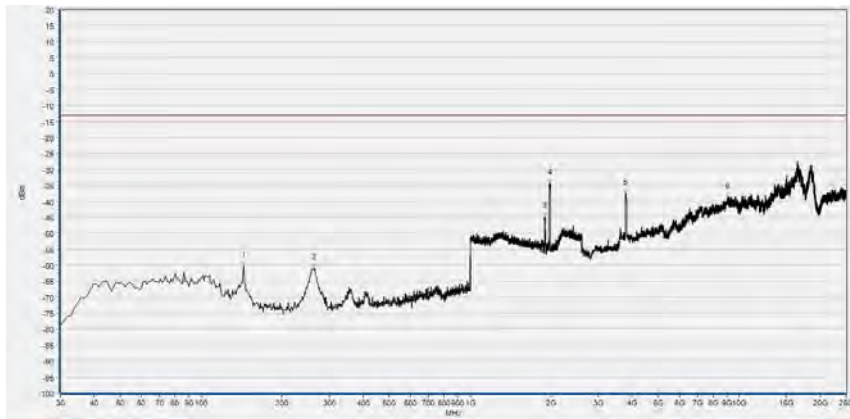


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-61.24	-13.00	Horizontal	PASS
2	259.890	-60.31	-13.00	Horizontal	PASS
3	1898.920	-44.02	-13.00	Horizontal	N/A
4	1971.909	-33.90	-13.00	Horizontal	N/A
5	3813.893	-36.73	-13.00	Horizontal	PASS
6	7231.533	-39.79	-13.00	Horizontal	PASS

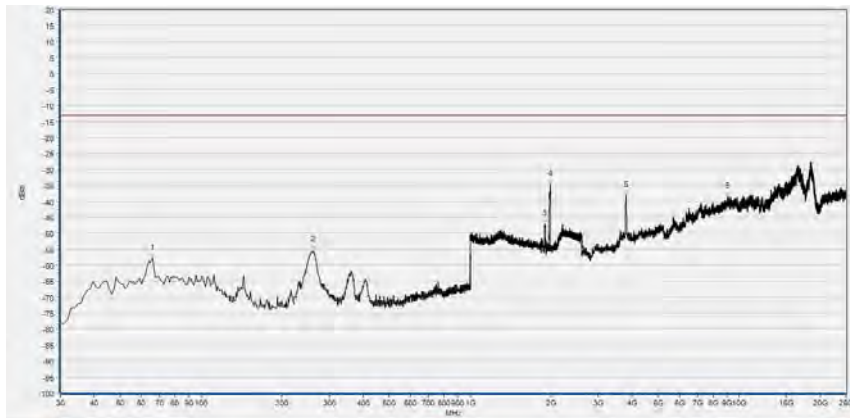


No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	63.950	-57.89	-13.00	Vertical	PASS
2	257.950	-55.02	-13.00	Vertical	PASS
3	1899.560	-47.39	-13.00	Vertical	N/A
4	1982.153	-36.03	-13.00	Vertical	N/A
5	3801.673	-36.95	-13.00	Vertical	PASS
6	7125.623	-40.58	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, High Channel, 16QAM

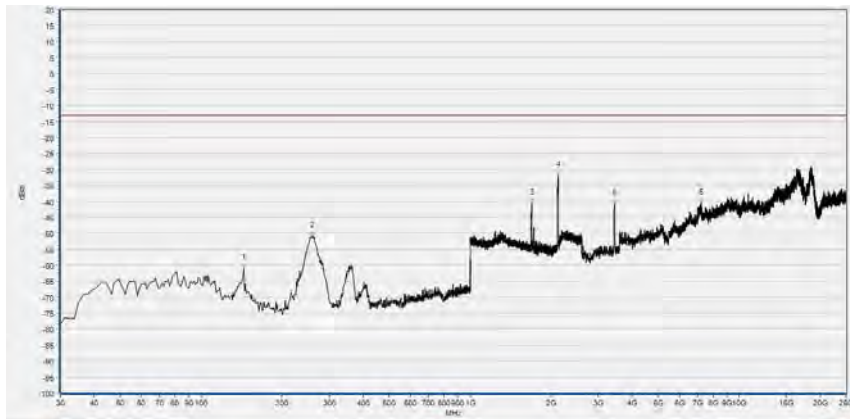


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-60.33	-13.00	Horizontal	PASS
2	262.800	-60.90	-13.00	Horizontal	PASS
3	1898.920	-44.85	-13.00	Horizontal	N/A
4	1971.909	-34.20	-13.00	Horizontal	N/A
5	3789.453	-37.33	-13.00	Horizontal	PASS
6	9080.887	-38.82	-13.00	Horizontal	PASS

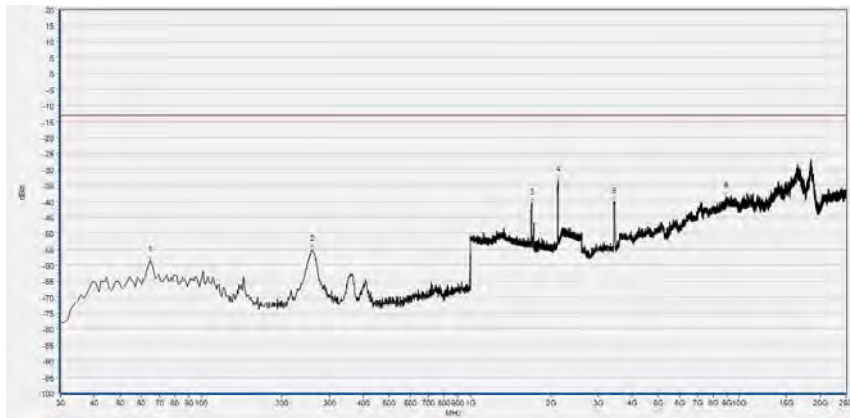


Num.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	65.890	-57.86	-13.00	Vertical	PASS
2	260.860	-55.33	-13.00	Vertical	PASS
3	1898.279	-47.27	-13.00	Vertical	N/A
4	1985.354	-34.76	-13.00	Vertical	N/A
5	3801.673	-38.03	-13.00	Vertical	PASS
6	9084.961	-38.54	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Low Channel, QPSK

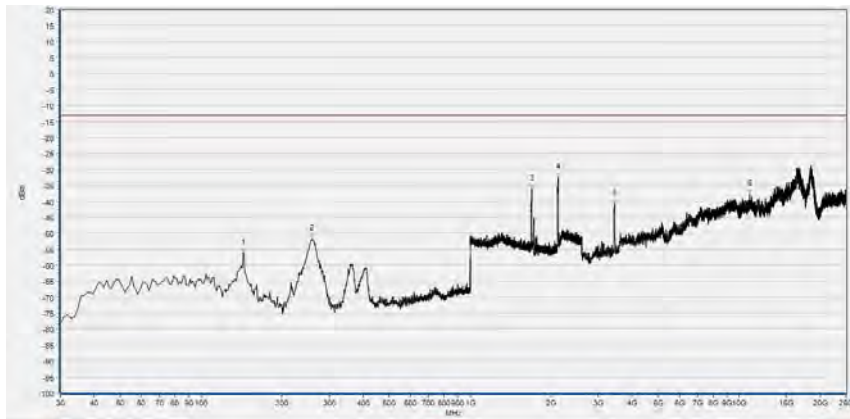


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-60.88	-13.00	Horizontal	PASS
2	258.920	-50.90	-13.00	Horizontal	PASS
3	1693.397	-40.54	-13.00	Horizontal	N/A
4	2128.131	-31.95	-13.00	Horizontal	N/A
5	3439.134	-40.87	-13.00	Horizontal	PASS
6	7219.313	-40.66	-13.00	Horizontal	PASS

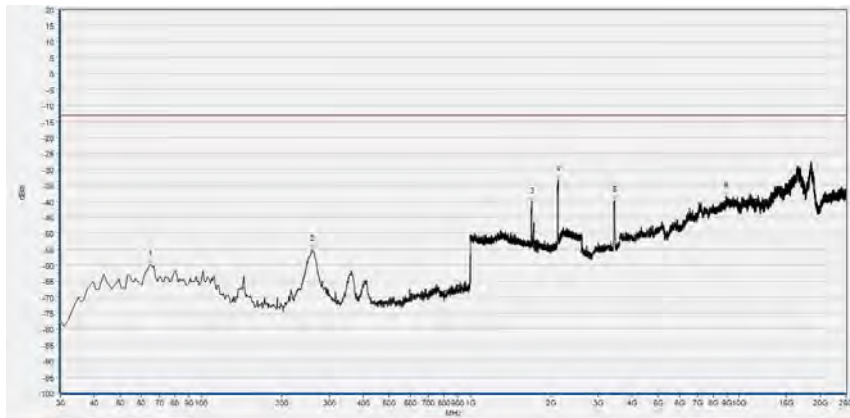


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	64.920	-58.40	-13.00	Vertical	PASS
2	258.920	-55.11	-13.00	Vertical	PASS
3	1693.397	-40.45	-13.00	Vertical	N/A
4	2124.930	-33.38	-13.00	Vertical	N/A
5	3430.987	-40.08	-13.00	Vertical	PASS
6	8974.977	-38.39	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Low Channel, 16QAM

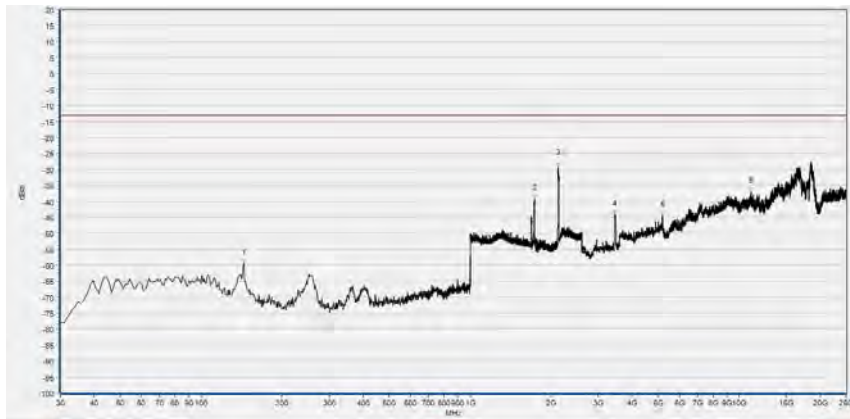


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	143.490	-56.30	-13.00	Horizontal	PASS
2	257.950	-51.67	-13.00	Horizontal	PASS
3	1694.038	-36.10	-13.00	Horizontal	N/A
4	2126.851	-32.48	-13.00	Horizontal	N/A
5	3443.208	-40.89	-13.00	Horizontal	PASS
6	10966.903	-37.63	-13.00	Horizontal	PASS

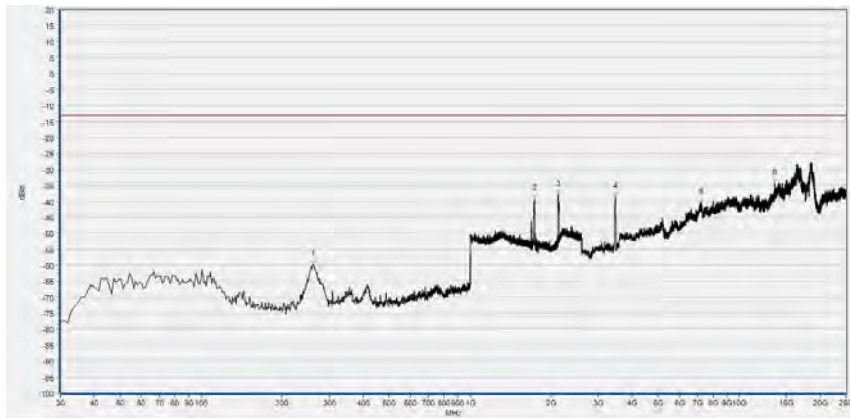


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	64.920	-59.73	-13.00	Vertical	PASS
2	258.920	-55.13	-13.00	Vertical	PASS
3	1692.757	-40.02	-13.00	Vertical	N/A
4	2127.491	-33.22	-13.00	Vertical	N/A
5	3439.134	-39.76	-13.00	Vertical	PASS
6	8966.830	-38.43	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, QPSK

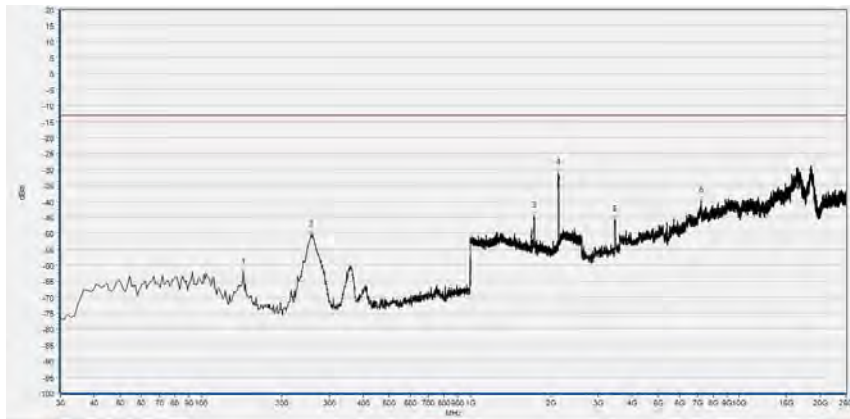


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-59.29	-13.00	Horizontal	PASS
2	1734.374	-39.13	-13.00	Horizontal	N/A
3	2125.570	-29.40	-13.00	Horizontal	N/A
4	3455.428	-44.05	-13.00	Horizontal	PASS
5	5202.946	-44.33	-13.00	Horizontal	PASS
6	11080.960	-37.07	-13.00	Horizontal	PASS

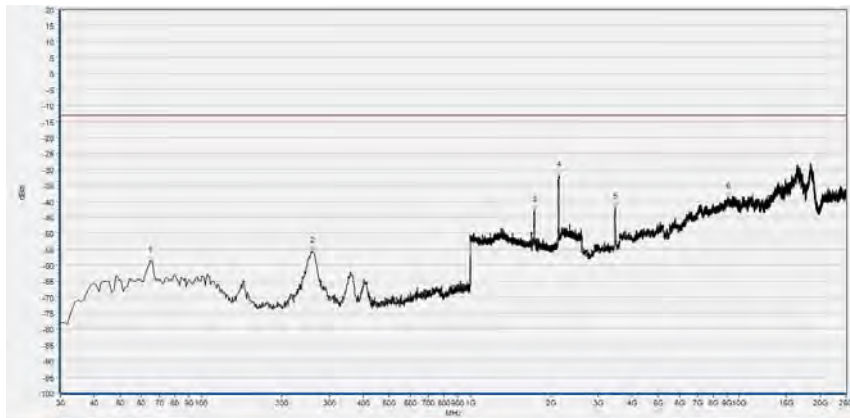


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	260.860	-59.68	-13.00	Vertical	PASS
2	1734.374	-39.29	-13.00	Vertical	N/A
3	2125.570	-37.97	-13.00	Vertical	N/A
4	3475.796	-38.65	-13.00	Vertical	PASS
5	7239.680	-40.33	-13.00	Vertical	PASS
6	13594.290	-34.27	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, 16QAM

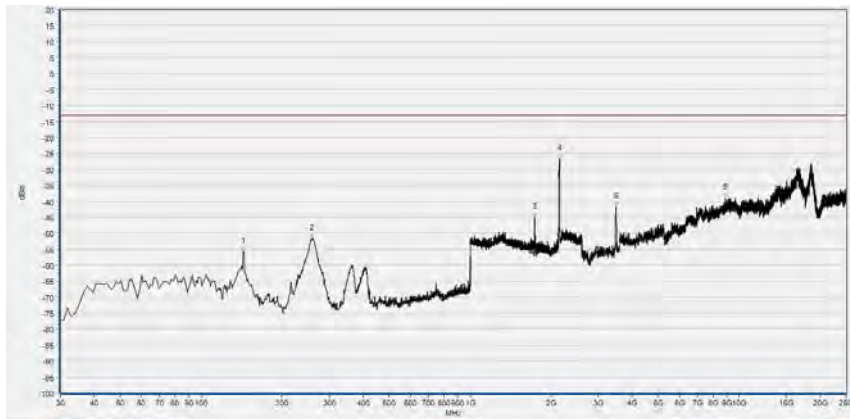


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	143.490	-62.29	-13.00	Horizontal	PASS
2	256.010	-50.36	-13.00	Horizontal	PASS
3	1733.093	-44.57	-13.00	Horizontal	N/A
4	2133.894	-31.21	-13.00	Horizontal	N/A
5	3451.355	-45.79	-13.00	Horizontal	PASS
6	7211.166	-39.94	-13.00	Horizontal	PASS

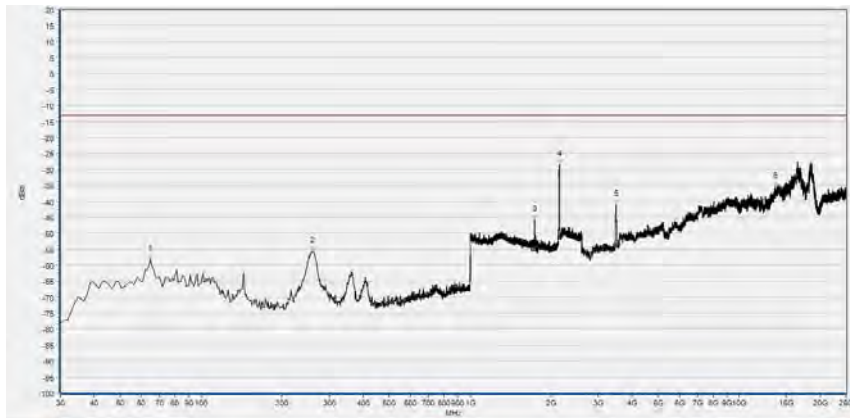


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	64.920	-58.55	-13.00	Vertical	PASS
2	258.920	-55.46	-13.00	Vertical	PASS
3	1733.733	-42.87	-13.00	Vertical	N/A
4	2139.016	-31.78	-13.00	Vertical	N/A
5	3459.502	-41.93	-13.00	Vertical	PASS
6	9093.108	-38.87	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, High Channel, QPSK

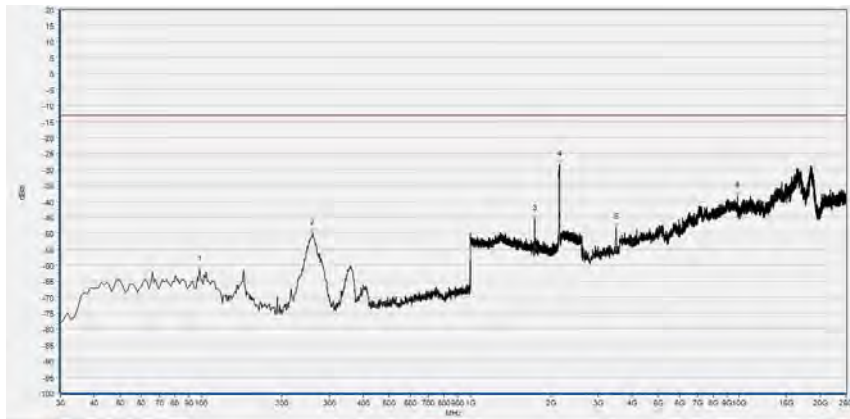


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	143.490	-55.75	-13.00	Horizontal	PASS
2	257.950	-51.78	-13.00	Horizontal	PASS
3	1736.295	-45.08	-13.00	Horizontal	N/A
4	2153.101	-26.66	-13.00	Horizontal	N/A
5	3483.943	-41.63	-13.00	Horizontal	PASS
6	8909.802	-39.04	-13.00	Horizontal	PASS

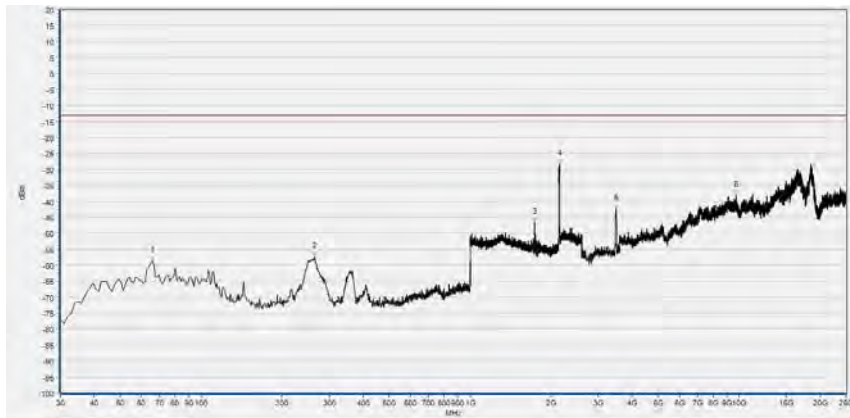


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	64.920	-58.26	-13.00	Vertical	PASS
2	259.890	-55.54	-13.00	Vertical	PASS
3	1736.295	-45.71	-13.00	Vertical	N/A
4	2151.180	-28.46	-13.00	Vertical	N/A
5	3488.016	-40.91	-13.00	Vertical	PASS
6	13606.510	-35.53	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, High Channel, 16QAM



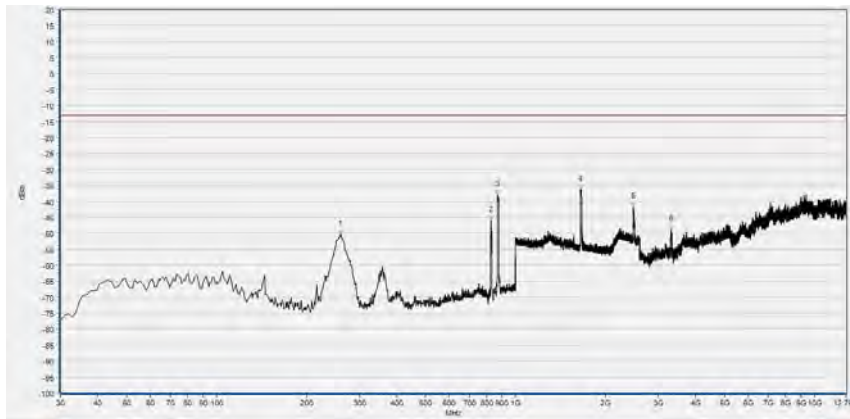
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	98.870	-61.28	-13.00	Horizontal	PASS
2	259.890	-49.89	-13.00	Horizontal	PASS
3	1736.295	-45.46	-13.00	Horizontal	N/A
4	2153.101	-28.48	-13.00	Horizontal	N/A
5	3496.163	-48.21	-13.00	Horizontal	PASS
6	9842.626	-38.27	-13.00	Horizontal	PASS



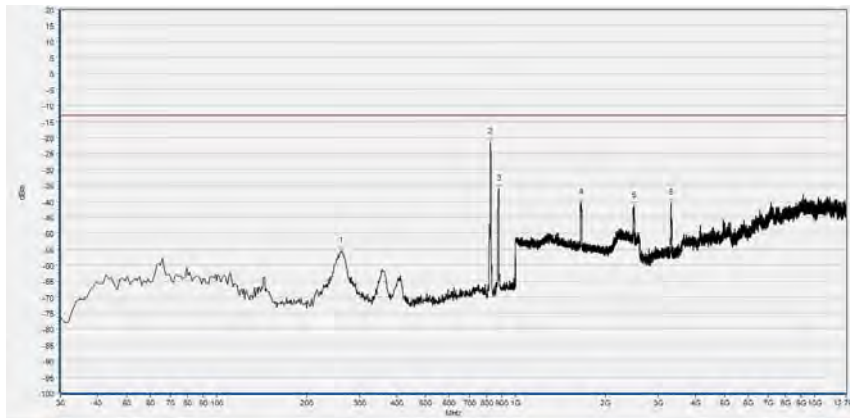
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	65.890	-58.76	-13.00	Vertical	PASS
2	263.770	-57.29	-13.00	Vertical	PASS
3	1736.295	-46.58	-13.00	Vertical	N/A
4	2153.101	-28.37	-13.00	Vertical	N/A
5	3492.089	-42.37	-13.00	Vertical	PASS
6	9740.789	-38.01	-13.00	Vertical	PASS



LTE Band 5 10MHz BW, Low Channel, QPSK

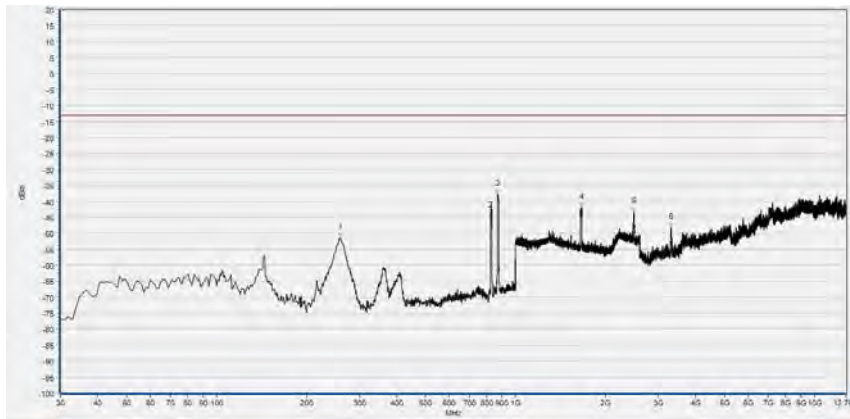


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	259.890	-50.48	-13.00	Horizontal	PASS
2	827.340	-45.82	-13.00	Horizontal	N/A
3	871.960	-37.79	-13.00	Horizontal	N/A
4	1651.140	-36.39	-13.00	Horizontal	PASS
5	2478.992	-41.63	-13.00	Horizontal	PASS
6	3316.167	-48.72	-13.00	Horizontal	PASS

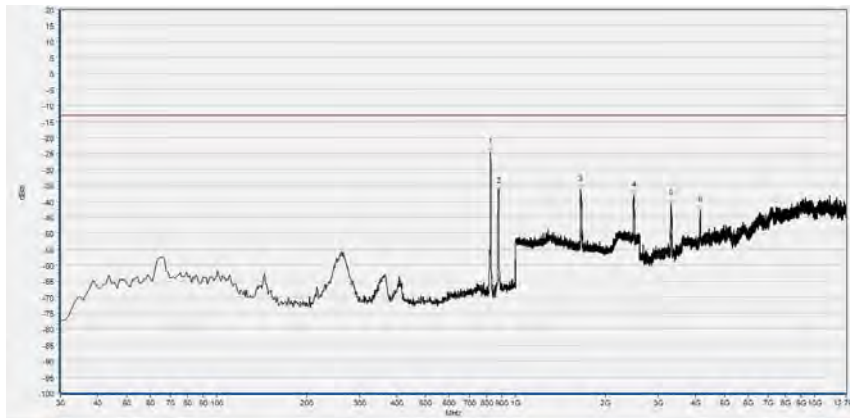


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	260.860	-55.53	-13.00	Vertical	PASS
2	824.430	-21.49	-13.00	Vertical	N/A
3	877.780	-36.20	-13.00	Vertical	N/A
4	1654.342	-40.40	-13.00	Vertical	PASS
5	2484.754	-41.49	-13.00	Vertical	PASS
6	3316.167	-40.55	-13.00	Vertical	PASS

LTE Band 5 10MHz BW, Low Channel, 16QAM

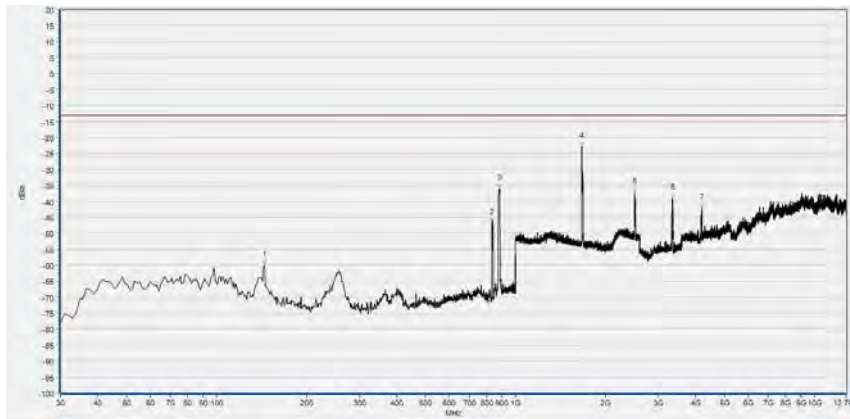


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	259.890	-51.27	-13.00	Horizontal	PASS
2	825.400	-44.48	-13.00	Horizontal	N/A
3	870.020	-37.61	-13.00	Horizontal	N/A
4	1665.226	-41.95	-13.00	Horizontal	PASS
5	2487.315	-43.34	-13.00	Horizontal	PASS
6	3316.167	-48.12	-13.00	Horizontal	PASS

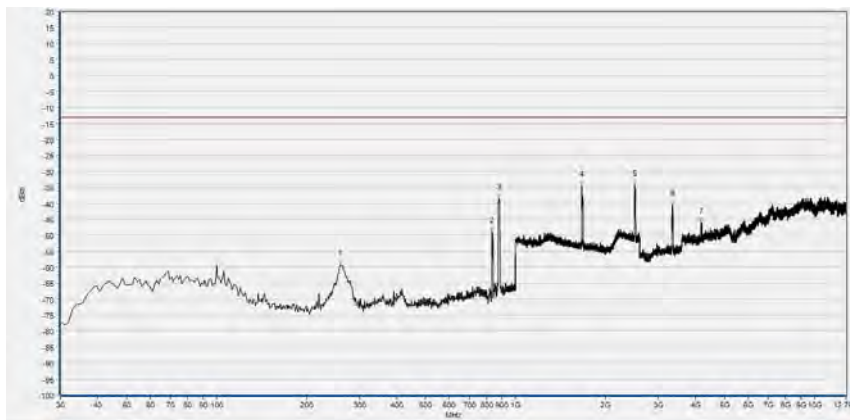


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	825.400	-24.67	-13.00	Vertical	N/A
2	878.750	-37.04	-13.00	Vertical	N/A
3	1650.500	-36.22	-13.00	Vertical	PASS
4	2486.675	-38.16	-13.00	Vertical	PASS
5	3316.167	-40.81	-13.00	Vertical	PASS
6	4141.235	-42.88	-13.00	Vertical	PASS

LTE Band 5 10MHz BW, Mid Channel, QPSK

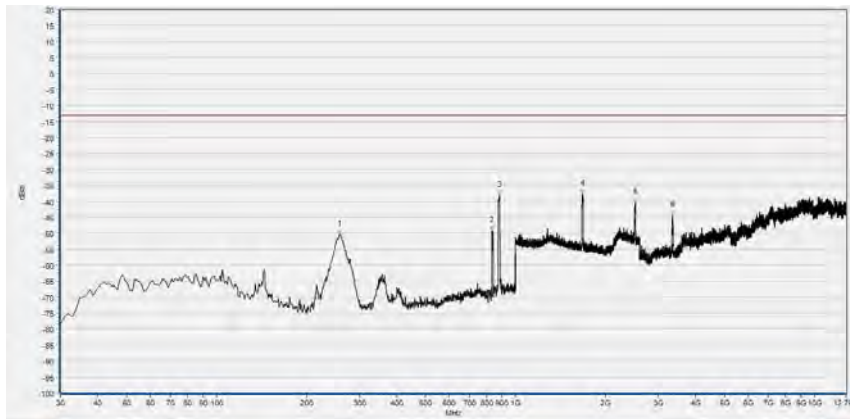


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	144.460	-60.08	-13.00	Horizontal	PASS
2	834.130	-46.76	-13.00	Horizontal	N/A
3	885.540	-35.86	-13.00	Horizontal	N/A
4	1666.507	-22.85	-13.00	Horizontal	PASS
5	2497.559	-37.10	-13.00	Horizontal	PASS
6	3345.699	-38.93	-13.00	Horizontal	PASS
7	4192.917	-42.16	-13.00	Horizontal	PASS

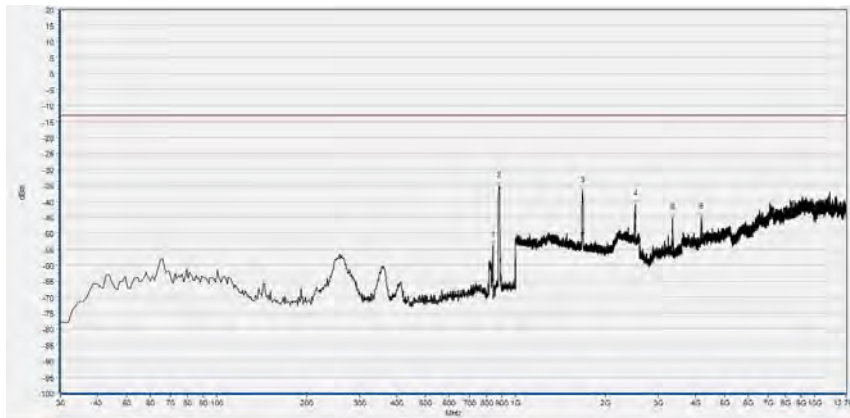


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	259.890	-59.17	-13.00	Vertical	PASS
2	834.130	-48.89	-13.00	Vertical	N/A
3	880.690	-38.32	-13.00	Vertical	N/A
4	1664.586	-34.37	-13.00	Vertical	PASS
5	2497.559	-34.06	-13.00	Vertical	PASS
6	3345.699	-40.33	-13.00	Vertical	PASS
7	4183.688	-45.90	-13.00	Vertical	PASS

LTE Band 5 10MHz BW, Mid Channel, 16QAM

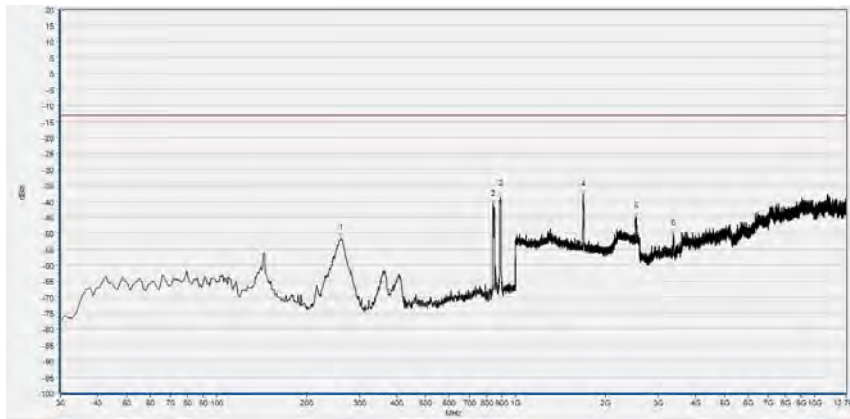


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	257.950	-50.36	-13.00	Horizontal	PASS
2	834.130	-49.26	-13.00	Horizontal	N/A
3	884.570	-38.17	-13.00	Horizontal	N/A
4	1676.110	-37.74	-13.00	Horizontal	PASS
5	2513.565	-40.33	-13.00	Horizontal	PASS
6	3354.928	-44.27	-13.00	Horizontal	PASS

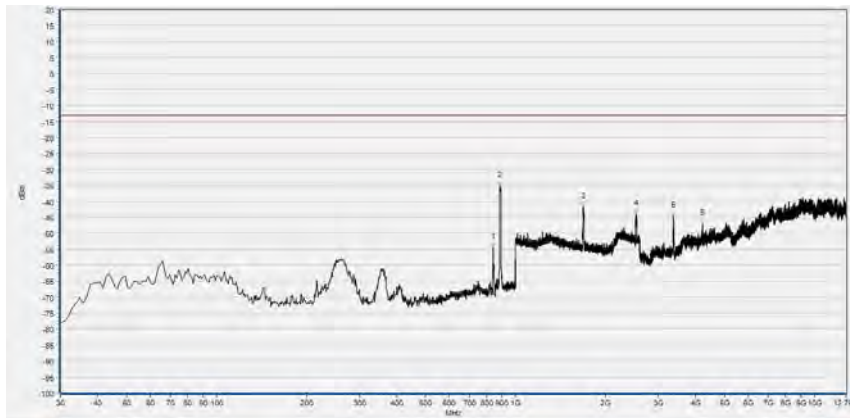


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	839.950	-53.73	-13.00	Vertical	N/A
2	881.660	-35.30	-13.00	Vertical	N/A
3	1676.751	-36.68	-13.00	Vertical	PASS
4	2512.285	-41.03	-13.00	Vertical	PASS
5	3354.928	-45.25	-13.00	Vertical	PASS
6	4183.688	-45.11	-13.00	Vertical	PASS

LTE Band 5 10MHz BW, High Channel, QPSK



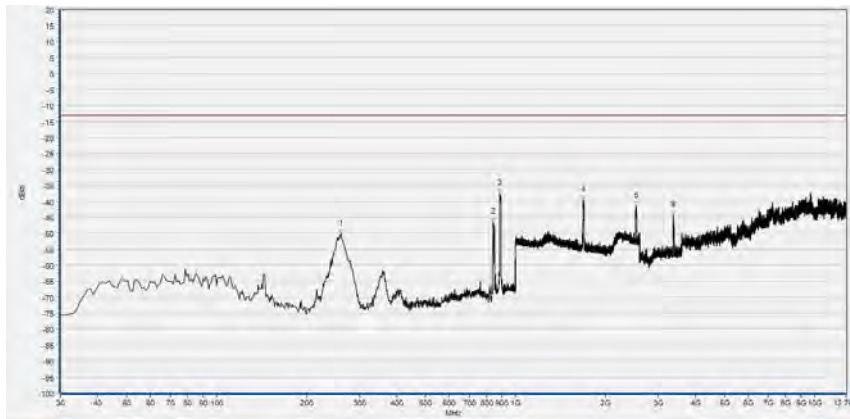
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	260.860	-51.44	-13.00	Horizontal	PASS
2	841.890	-41.03	-13.00	Horizontal	N/A
3	890.390	-38.70	-13.00	Horizontal	N/A
4	1683.153	-37.97	-13.00	Horizontal	PASS
5	2523.810	-44.74	-13.00	Horizontal	PASS
6	3375.232	-50.26	-13.00	Horizontal	PASS



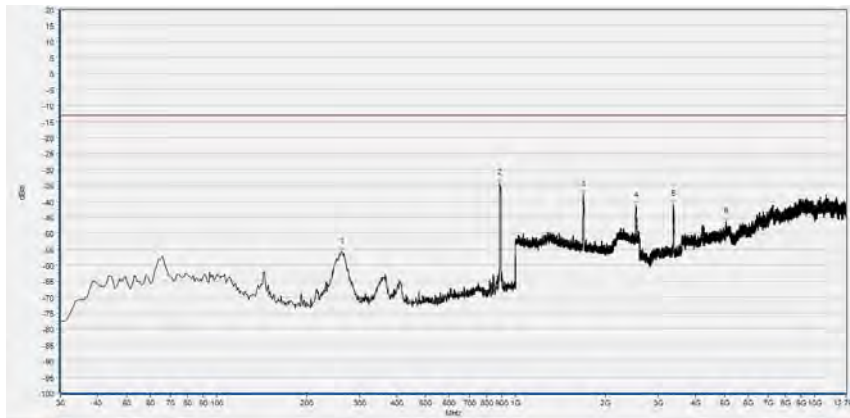
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	839.950	-54.43	-13.00	Vertical	PASS
2	886.510	-35.13	-13.00	Vertical	N/A
3	1682.513	-41.61	-13.00	Vertical	N/A
4	2532.133	-43.87	-13.00	Vertical	PASS
5	3375.232	-44.47	-13.00	Vertical	PASS
6	4213.221	-46.95	-13.00	Vertical	PASS



LTE Band 5 10MHz BW, High Channel, 16QAM

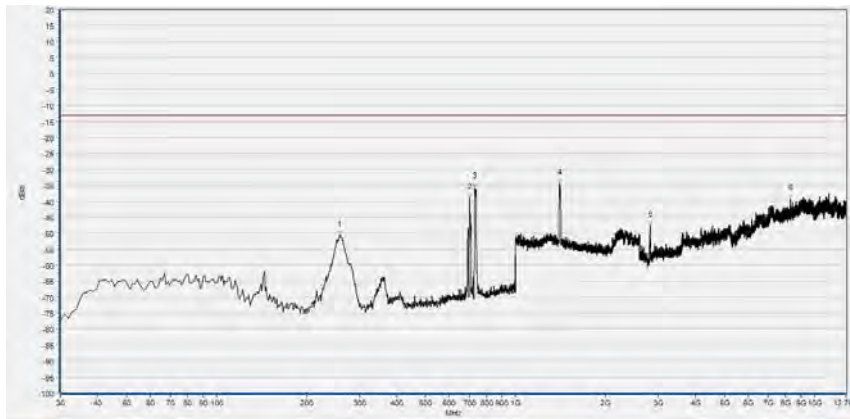


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	260.860	-50.12	-13.00	Horizontal	PASS
2	842.860	-46.57	-13.00	Horizontal	N/A
3	886.510	-37.54	-13.00	Horizontal	N/A
4	1683.794	-39.58	-13.00	Horizontal	PASS
5	2528.291	-41.55	-13.00	Horizontal	PASS
6	3375.232	-44.42	-13.00	Horizontal	PASS

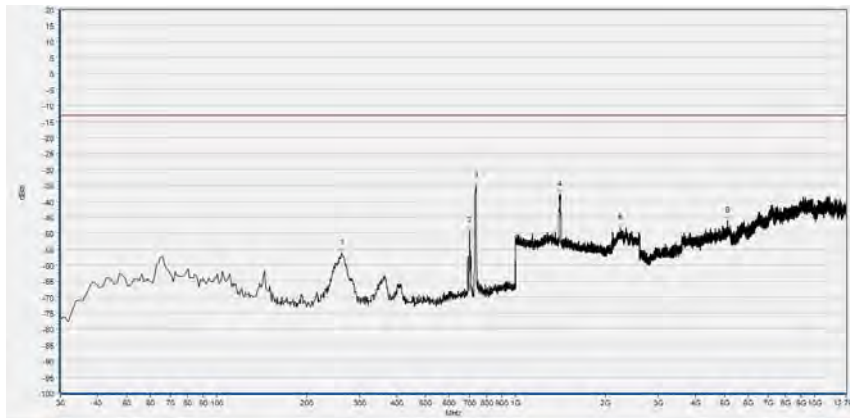


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	261.830	-55.69	-13.00	Vertical	PASS
2	885.540	-34.27	-13.00	Vertical	N/A
3	1680.592	-37.80	-13.00	Vertical	N/A
4	2528.932	-41.52	-13.00	Vertical	PASS
5	3375.232	-40.98	-13.00	Vertical	PASS
6	5064.130	-46.26	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, Low Channel, QPSK



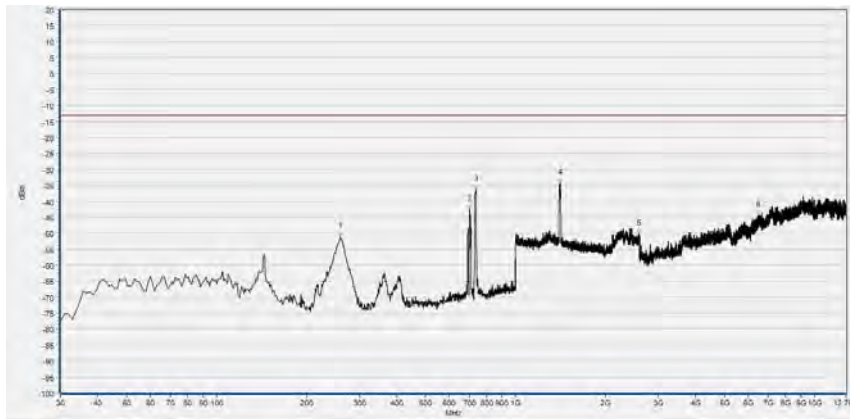
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	257.950	-50.54	-13.00	Horizontal	PASS
2	702.210	-38.84	-13.00	Horizontal	N/A
3	731.310	-35.81	-13.00	Horizontal	N/A
4	1404.002	-34.30	-13.00	Horizontal	PASS
5	2815.957	-47.58	-13.00	Horizontal	PASS
6	8309.029	-39.27	-13.00	Horizontal	PASS



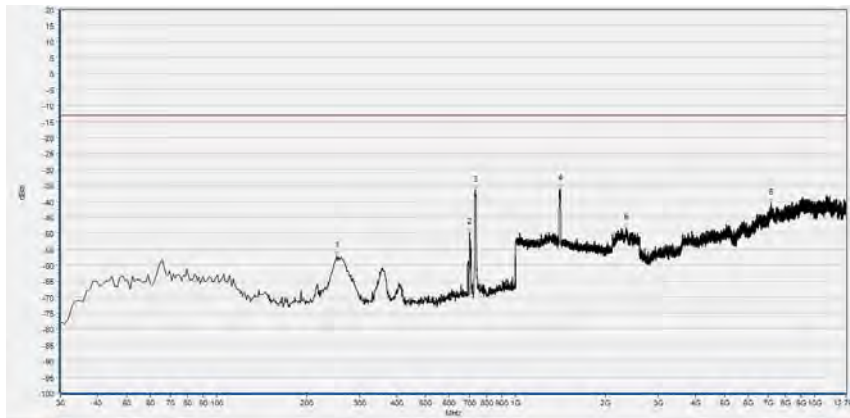
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	261.830	-56.28	-13.00	Vertical	PASS
2	702.210	-49.20	-13.00	Vertical	N/A
3	737.130	-35.30	-13.00	Vertical	N/A
4	1406.563	-37.95	-13.00	Vertical	PASS
5	2237.615	-48.46	-13.00	Vertical	PASS
6	5126.887	-46.25	-13.00	Vertical	PASS



LTE Band 12 10MHz BW, Low Channel, 16QAM

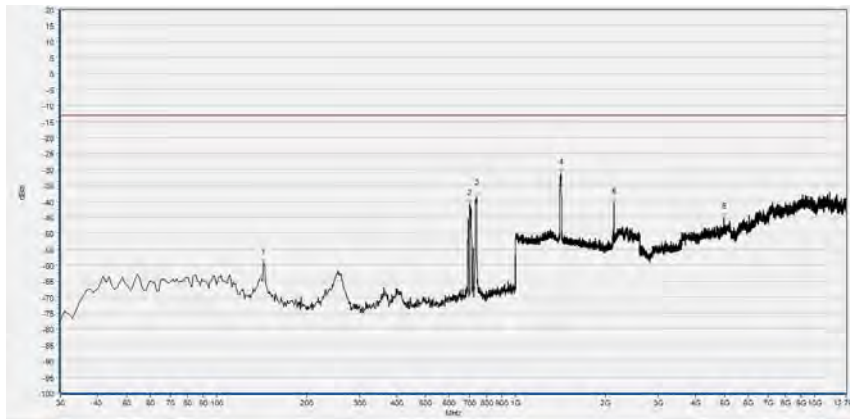


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	258.920	-51.05	-13.00	Horizontal	PASS
2	702.210	-42.29	-13.00	Horizontal	N/A
3	737.130	-36.22	-13.00	Horizontal	N/A
4	1407.843	-34.34	-13.00	Horizontal	PASS
5	2585.274	-50.08	-13.00	Horizontal	PASS
6	6468.776	-44.39	-13.00	Horizontal	PASS

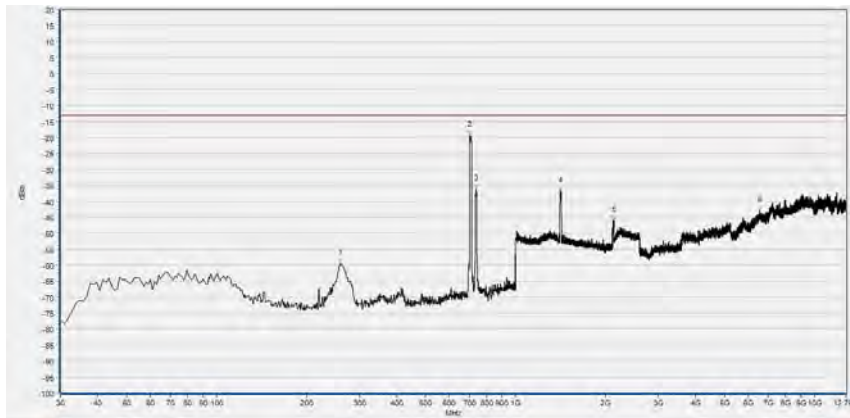


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	252.130	-56.99	-13.00	Vertical	PASS
2	702.210	-49.73	-13.00	Vertical	N/A
3	733.250	-36.52	-13.00	Vertical	N/A
4	1407.843	-36.13	-13.00	Vertical	PASS
5	2341.337	-48.36	-13.00	Vertical	PASS
6	7159.102	-40.53	-13.00	Vertical	PASS

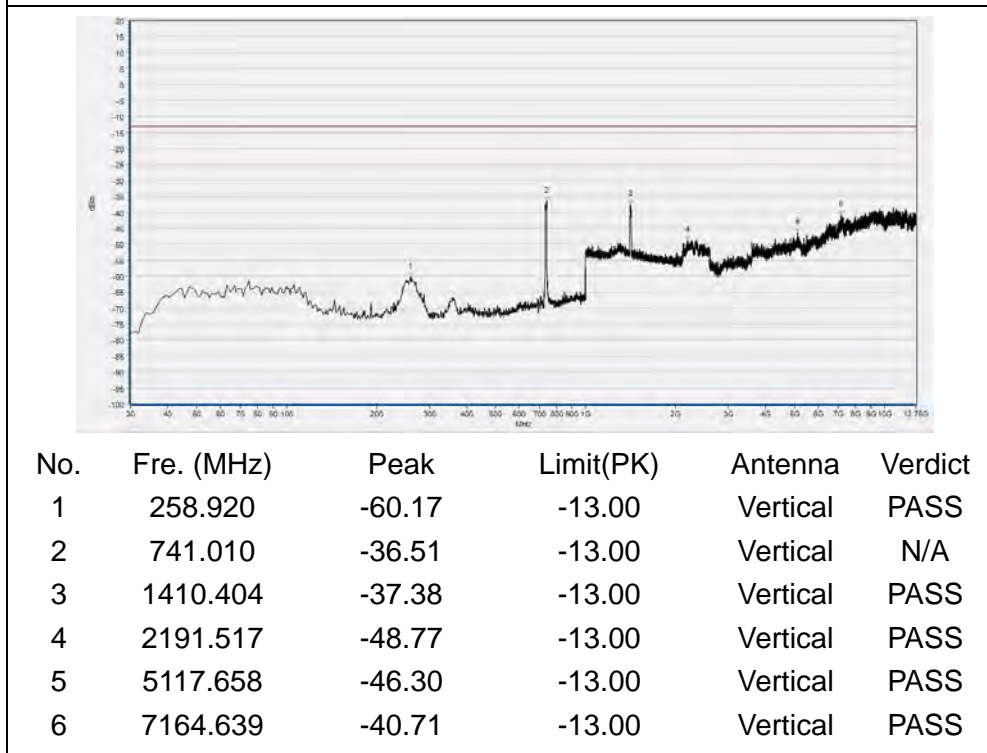
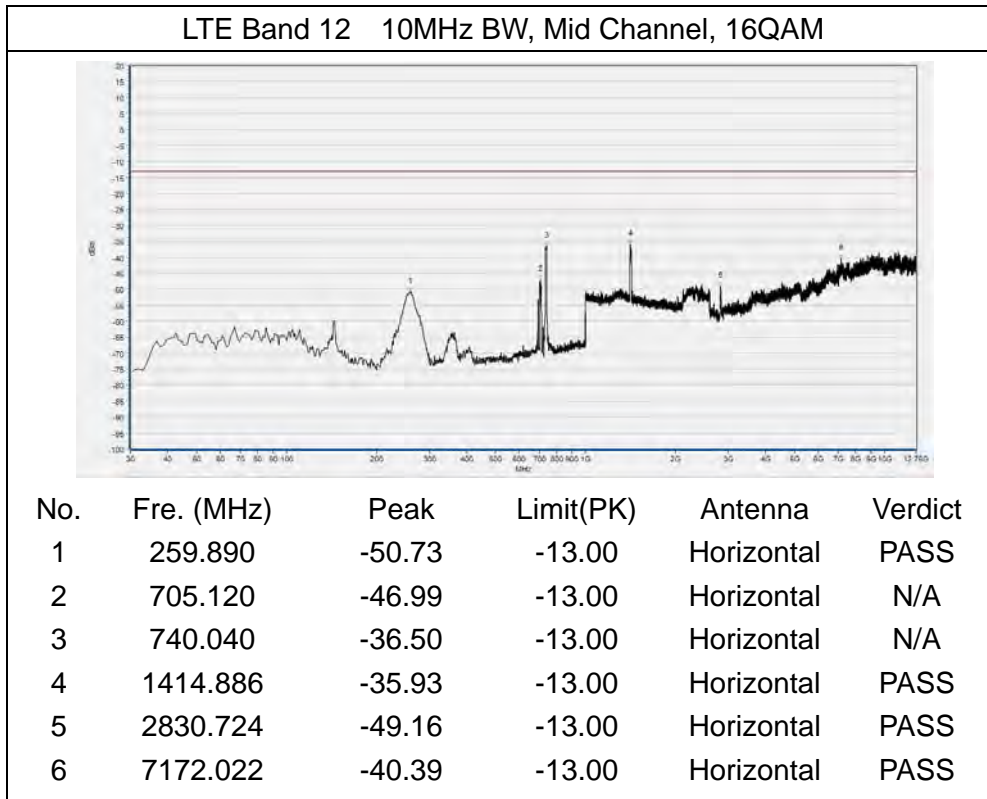
LTE Band 12 10MHz BW, Mid Channel, QPSK



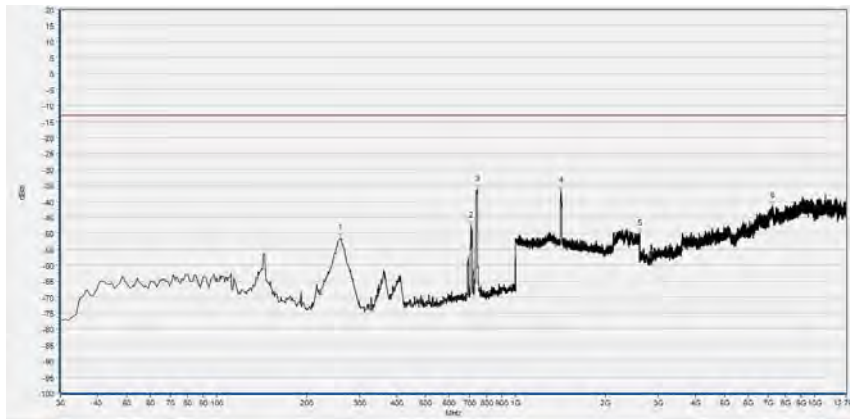
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	143.490	-59.31	-13.00	Horizontal	PASS
2	703.180	-40.79	-13.00	Horizontal	N/A
3	740.040	-38.84	-13.00	Horizontal	N/A
4	1419.368	-31.08	-13.00	Horizontal	PASS
5	2134.534	-40.44	-13.00	Horizontal	PASS
6	4969.995	-45.11	-13.00	Horizontal	PASS



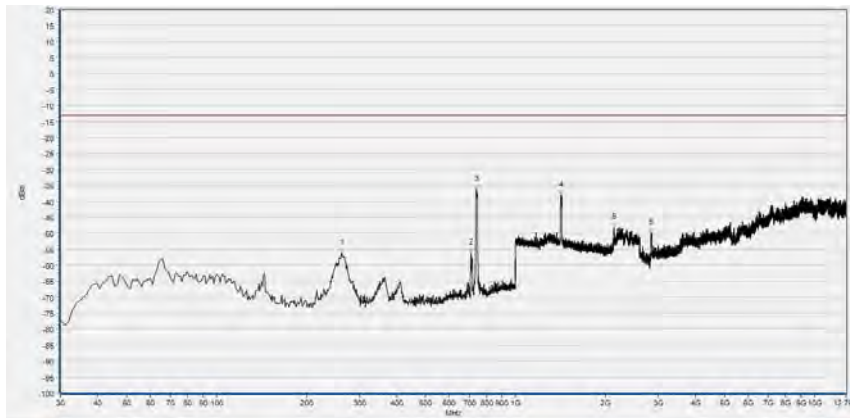
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	259.890	-59.36	-13.00	Vertical	PASS
2	703.180	-19.29	-13.00	Vertical	N/A
3	738.100	-36.19	-13.00	Vertical	N/A
4	1410.404	-36.79	-13.00	Vertical	PASS
5	2127.491	-45.89	-13.00	Vertical	PASS
6	6555.528	-42.90	-13.00	Vertical	PASS



LTE Band 12 10MHz BW, High Channel, QPSK

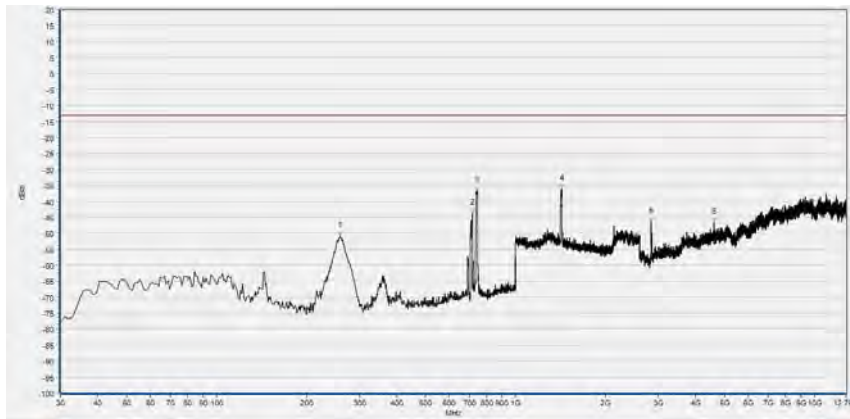


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	259.890	-51.40	-13.00	Horizontal	PASS
2	708.030	-47.80	-13.00	Horizontal	N/A
3	743.920	-36.25	-13.00	Horizontal	N/A
4	1420.008	-36.76	-13.00	Horizontal	PASS
5	2598.719	-50.18	-13.00	Horizontal	PASS
6	7227.396	-41.37	-13.00	Horizontal	PASS

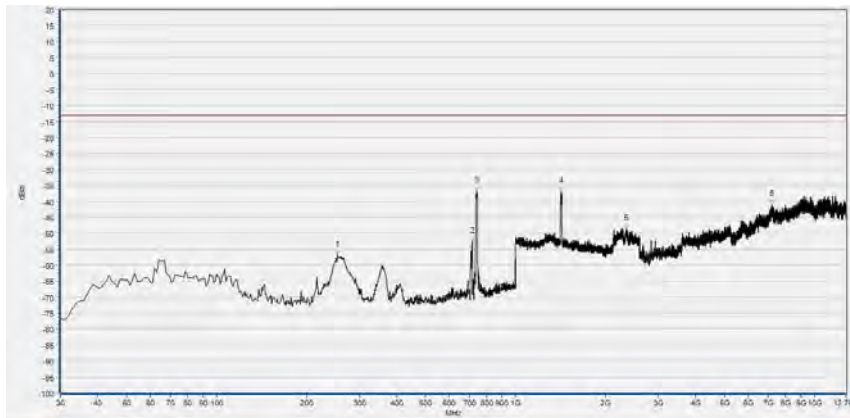


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	261.830	-56.16	-13.00	Vertical	PASS
2	709.000	-56.23	-13.00	Vertical	N/A
3	740.040	-36.36	-13.00	Vertical	N/A
4	1420.648	-38.17	-13.00	Vertical	PASS
5	2134.534	-48.15	-13.00	Vertical	PASS
6	2839.953	-49.89	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, High Channel, 16QAM



No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	258.920	-50.75	-13.00	Horizontal	PASS
2	715.790	-43.61	-13.00	Horizontal	N/A
3	740.040	-36.80	-13.00	Horizontal	N/A
4	1426.411	-36.03	-13.00	Horizontal	PASS
5	2843.644	-46.26	-13.00	Horizontal	PASS
6	4602.682	-46.53	-13.00	Horizontal	PASS



No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	254.070	-56.90	-13.00	Vertical	PASS
2	715.790	-52.60	-13.00	Vertical	N/A
3	741.010	-36.75	-13.00	Vertical	N/A
4	1421.929	-37.05	-13.00	Vertical	PASS
5	2347.739	-48.55	-13.00	Vertical	PASS
6	7199.709	-40.96	-13.00	Vertical	PASS



Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Output Power	± 2.22 dB
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	± 2.77 dB
Band Edge	± 2.77 dB
Equivalent Isotropic Radiated Power	± 2.22 dB
Radiated Spurious Emissions	± 6 dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, Guangdong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
USB Power Sensor	MY54210011	U2021XA	Agilent	2018.04.17	2019.04.16
System Simulator	152038	CMW500	R&S	2018.05.08	2019.05.07
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2018.04.17	2019.04.16

4.2 Auxiliary Test Equipment

Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal. Due
Computer	T430i	Think Pad	Lenovo	N/A	N/A

**4.3 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
System Simulator	152038	CMW500	R&S	2018.08.04	2019.08.03
Receiver	MY54130016	N9038A	Agilent	2018.05.18	2019.05.17
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2018.08.06	2019.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2018.08.02	2019.08.01
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

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