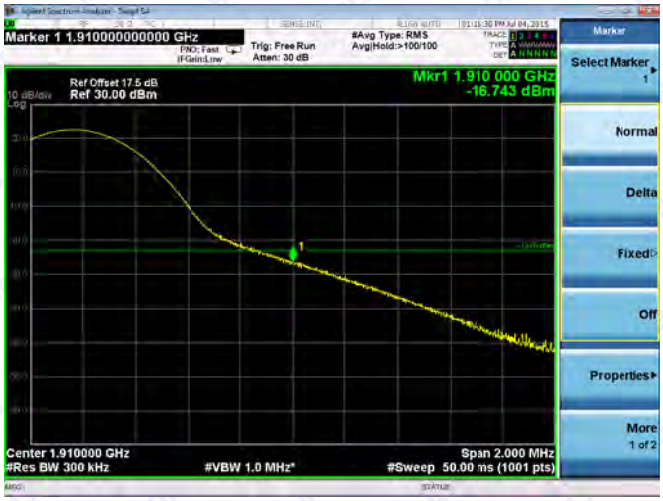
LTE Band 2

Channel Bandwidth: 15MHz

Channel	18675	RB Size 1	RB Offset 0	Channel	18675	RB Size 75	RB Offset 0

Channel Bandwidth: 15MHz

Channel	19125	RB Size 1	RB Offset 74	Channel	19125	RB Size 75	RB Offset 0



LTE Band 2

Channel Bandwidth: 20MHz

Channel	18700	RB Size 1	RB Offset 0	Channel	18700	RB Size 100	RB Offset 0

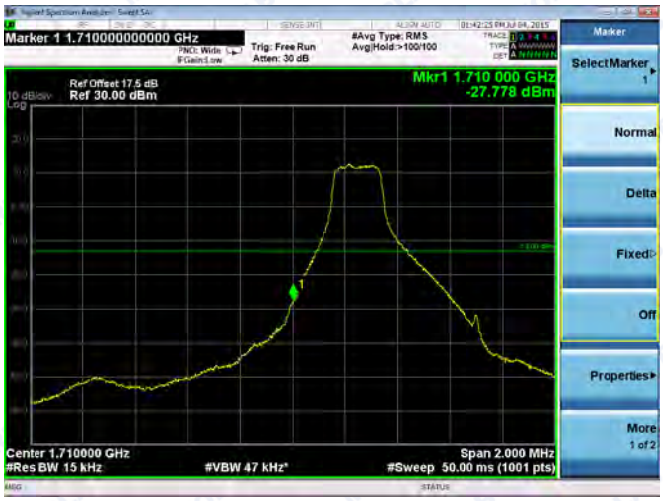
Channel Bandwidth: 20MHz

Channel	19100	RB Size 1	RB Offset 99	Channel	19100	RB Size 100	RB Offset 0

LTE Band 4

Channel Bandwidth: 1.4MHz

Channel	19957	RB Size 1	RB Offset 0	Channel	20393	RB Size 6	RB Offset 0



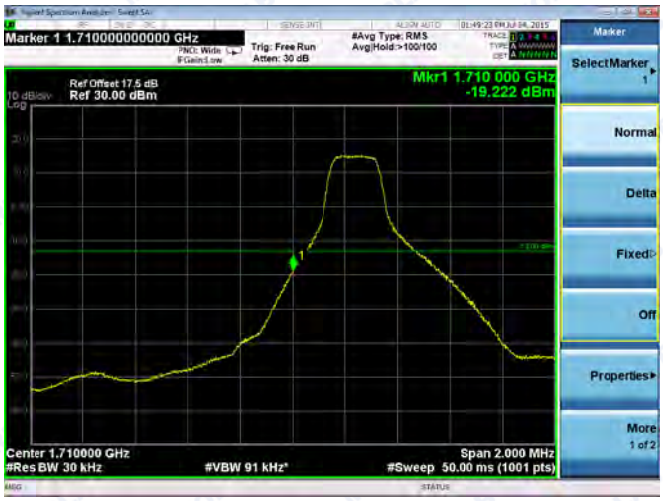
Channel Bandwidth: 1.4MHz

Channel	19957	RB Size 1	RB Offset 5	Channel	20393	RB Size 6	RB Offset 0

LTE Band 4

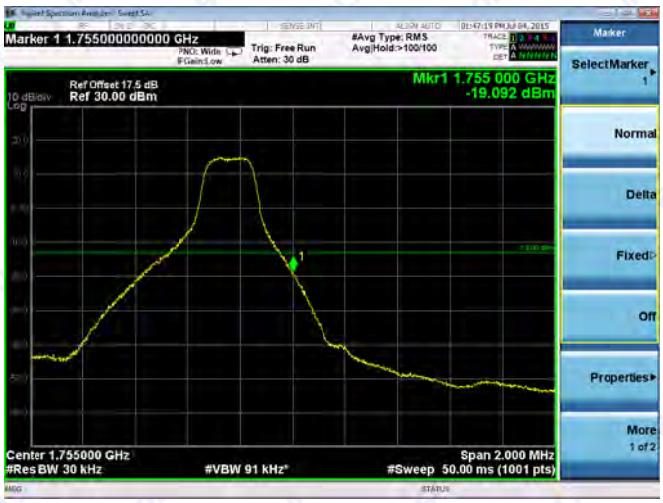
Channel Bandwidth: 3MHz

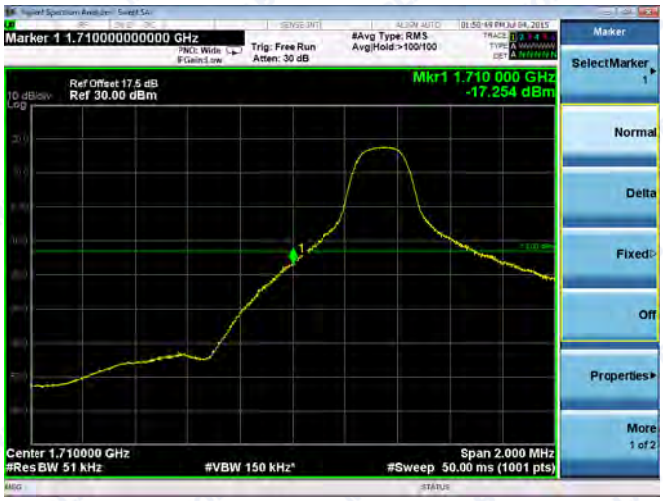
Channel	19965	RB Size 1	RB Offset 0	Channel	20385	RB Size 15	RB Offset 0



Channel Bandwidth: 3MHz

Channel	19965	RB Size 1	RB Offset 14	Channel	20385	RB Size 15	RB Offset 0



LTE Band 4							
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 0	Channel	20375	RB Size 25	RB Offset 0
							
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 24	Channel	20375	RB Size 25	RB Offset 0

LTE Band 4							
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 0	Channel	20350	RB Size 50	RB Offset 0
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 49	Channel	20350	RB Size 50	RB Offset 0

LTE Band 4

Channel Bandwidth: 15MHz

Channel	20025	RB Size 1	RB Offset 0	Channel	20325	RB Size 75	RB Offset 0

Channel Bandwidth: 15MHz

Channel	20025	RB Size 1	RB Offset 74	Channel	20325	RB Size 75	RB Offset 0

LTE Band 4

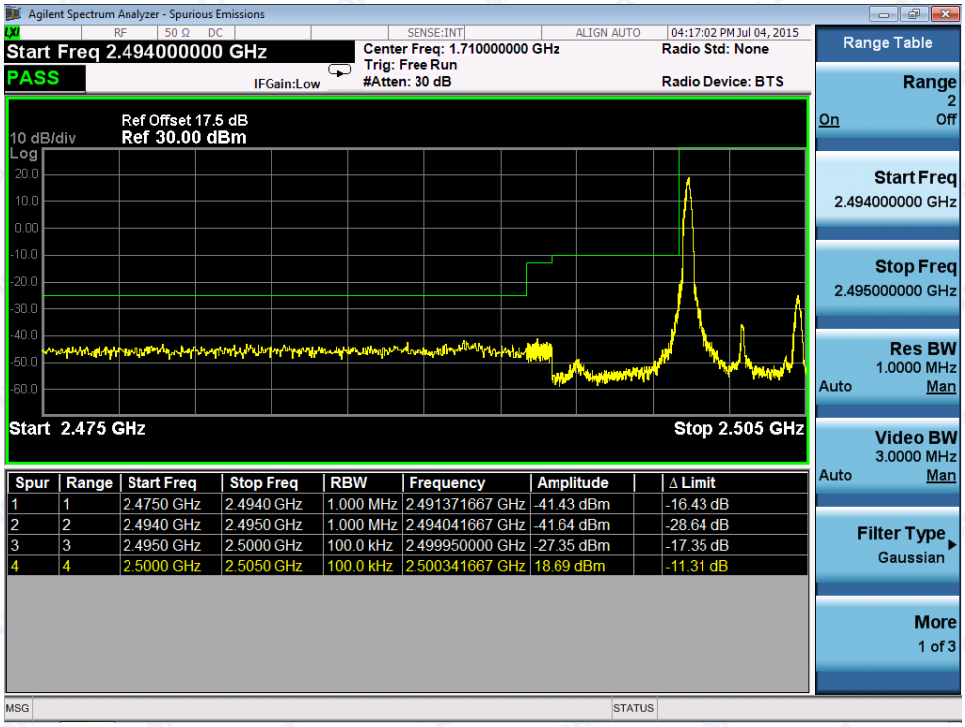
Channel Bandwidth: 20MHz

Channel	20050	RB Size 1	RB Offset 0	Channel	20300	RB Size 100	RB Offset 0

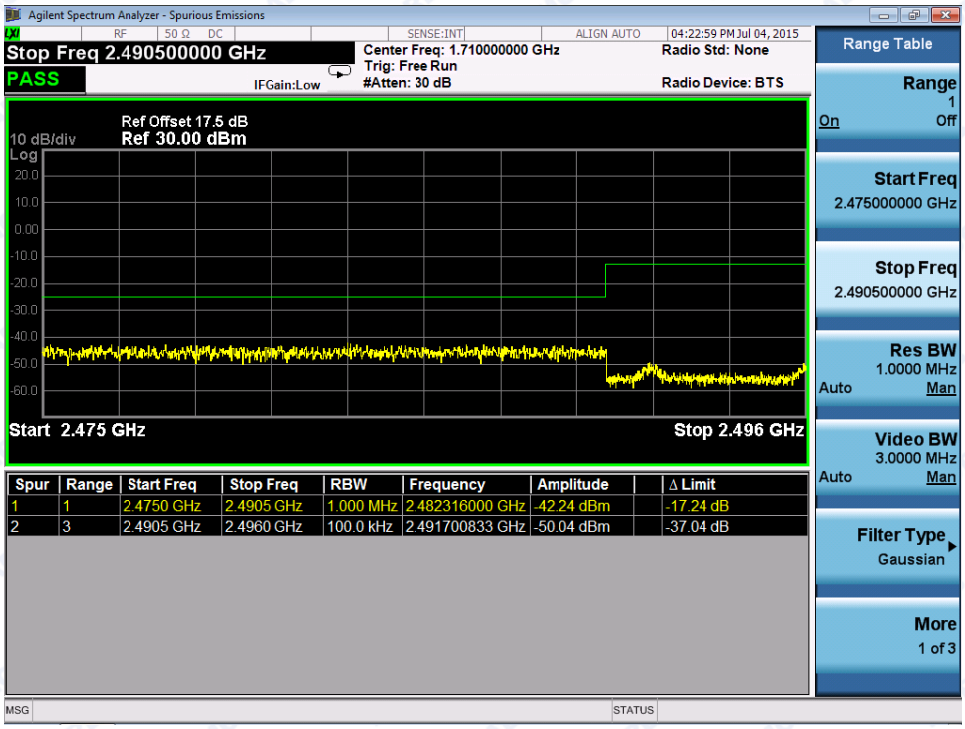
Channel Bandwidth: 20MHz

Channel	20050	RB Size 1	RB Offset 99	Channel	20300	RB Size 100	RB Offset 0

LTE Band 7			
Channel Bandwidth: 5MHz X=5.124Hz			
Channel	20775	RB Size 1	RB Offset 0

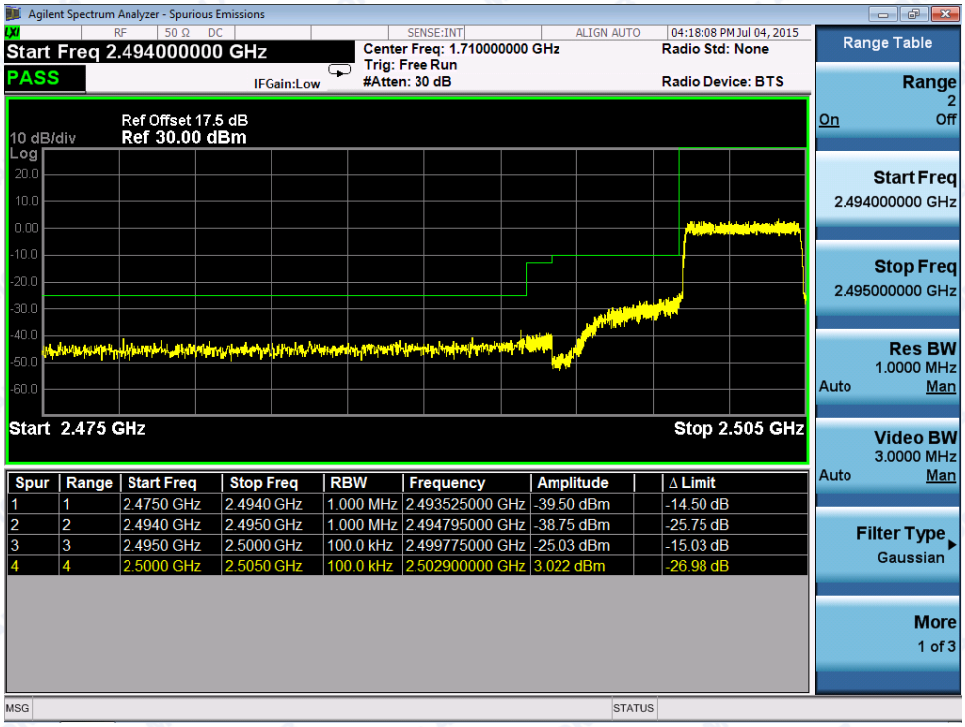


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4940 GHz	1.000 MHz	2.491371667 GHz	-41.43 dBm	-16.43 dB
2	2	2.4940 GHz	2.4950 GHz	1.000 MHz	2.494041667 GHz	-41.64 dBm	-28.64 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.499950000 GHz	-27.35 dBm	-17.35 dB
4	4	2.5000 GHz	2.5050 GHz	100.0 kHz	2.500341667 GHz	18.69 dBm	-11.31 dB

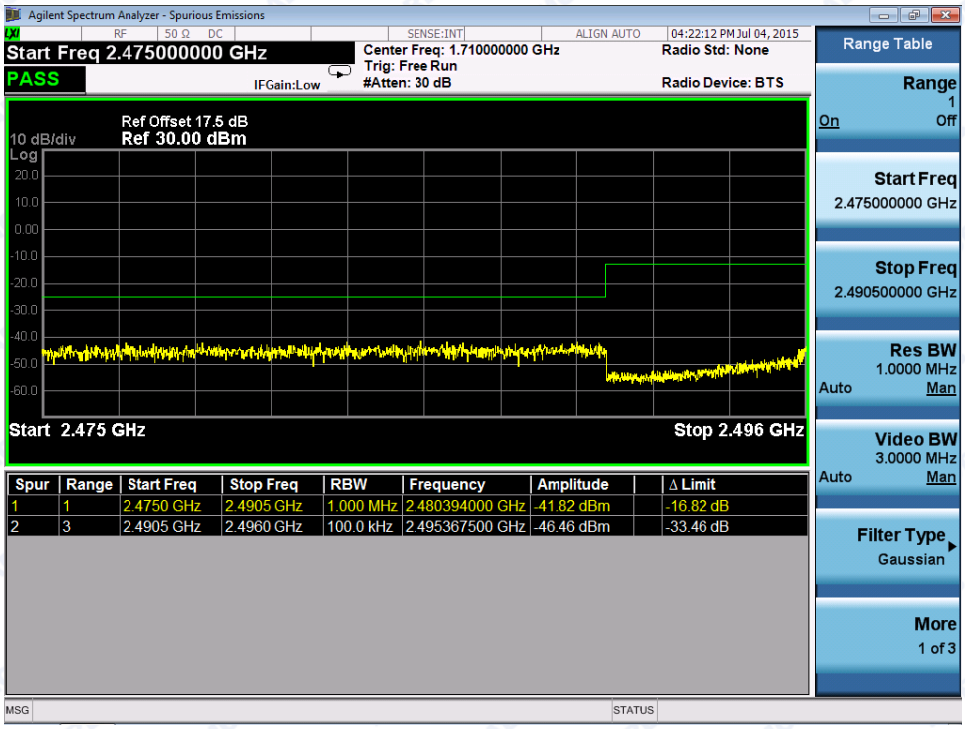


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.482316000 GHz	-42.24 dBm	-17.24 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.491700833 GHz	-50.04 dBm	-37.04 dB

LTE Band 7			
Channel Bandwidth: 5MHz X=5.124MHz			
Channel	20775	RB Size 25	RB Offset 0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4940 GHz	1.000 MHz	2.493525000 GHz	-39.50 dBm	-14.50 dB
2	2	2.4940 GHz	2.4950 GHz	1.000 MHz	2.494795000 GHz	-38.75 dBm	-25.75 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.499775000 GHz	-25.03 dBm	-15.03 dB
4	4	2.5000 GHz	2.5050 GHz	100.0 kHz	2.502900000 GHz	3.022 dBm	-26.98 dB

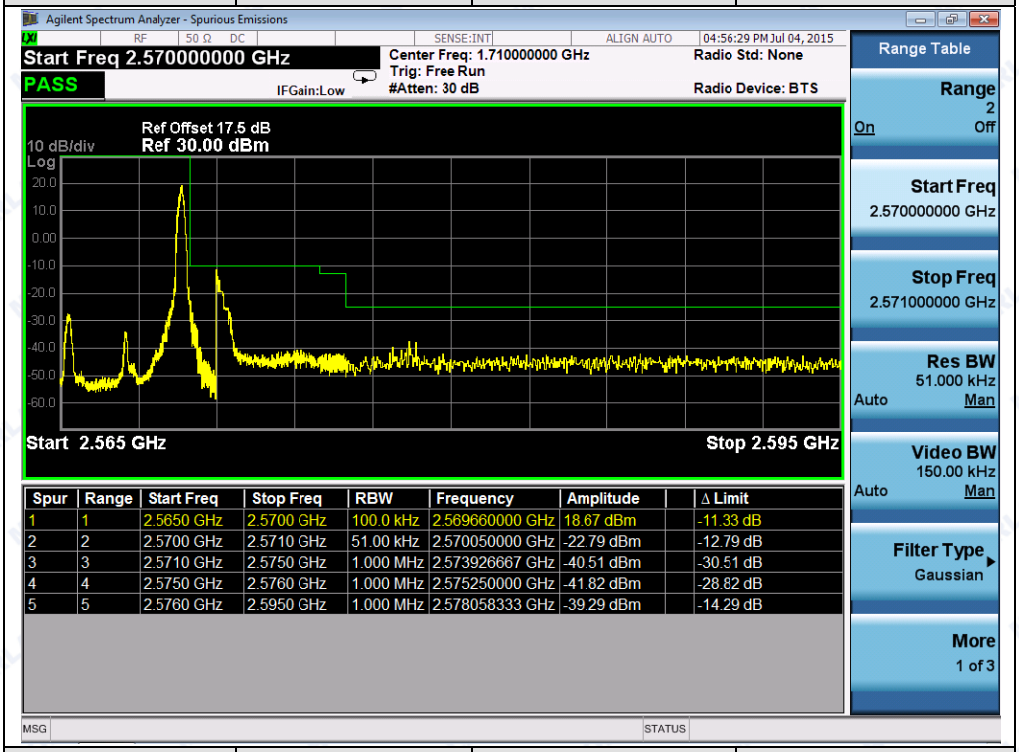


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.480394000 GHz	-41.82 dBm	-16.82 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.495367500 GHz	-46.46 dBm	-33.46 dB

LTE Band 7

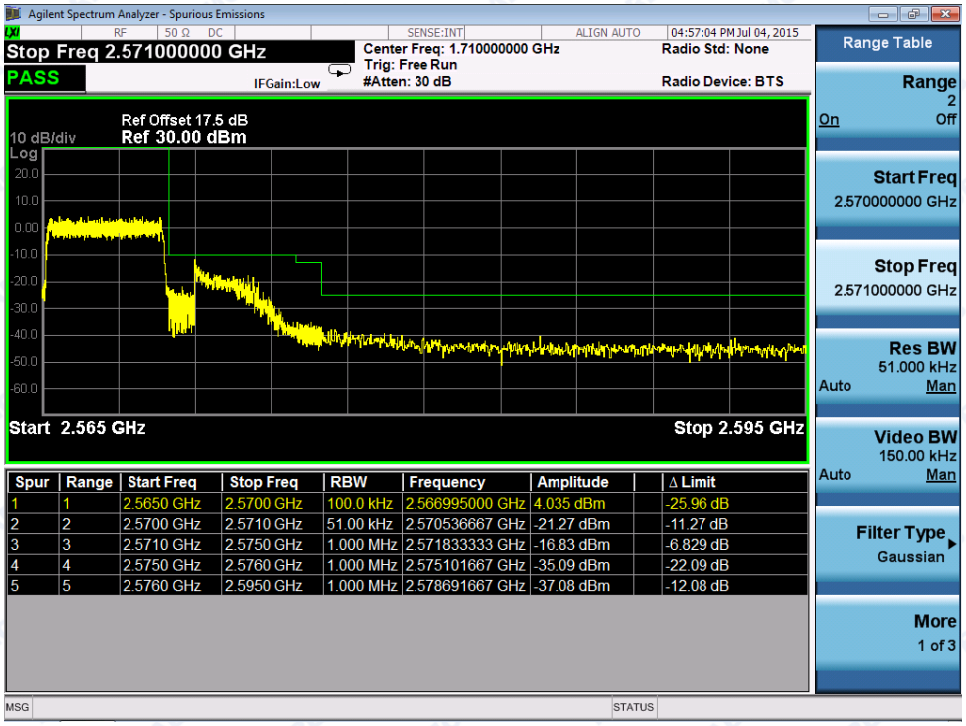
Channel Bandwidth: 5MHz X=5.132MHz

Channel	21425	RB Size 1	RB Offset 24



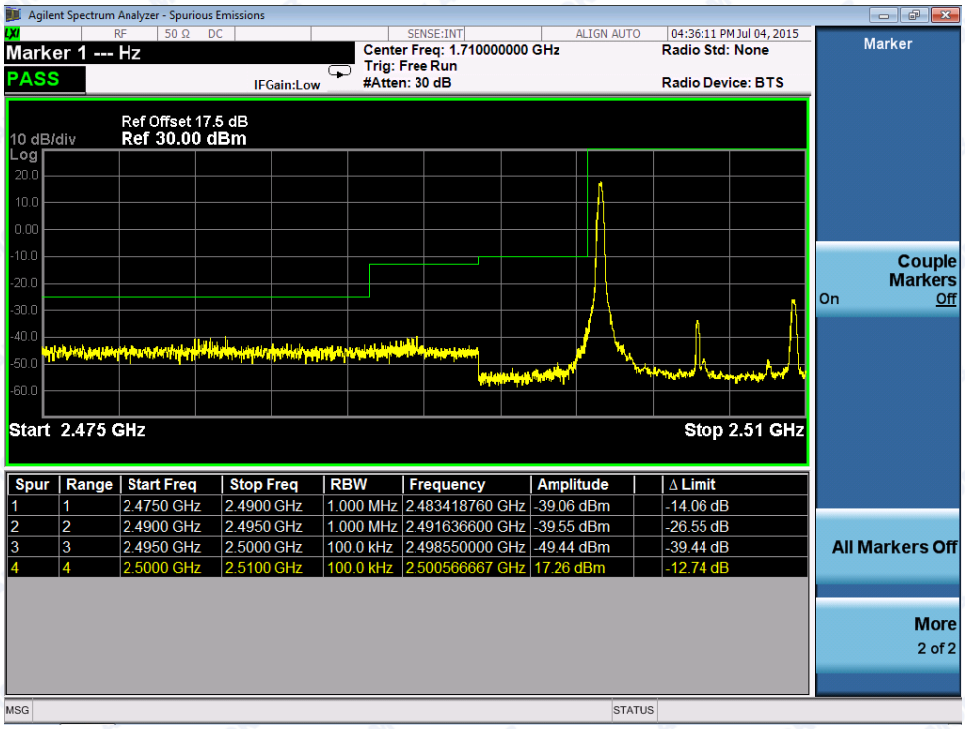
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5650 GHz	2.5700 GHz	100.0 kHz	2.569660000 GHz	18.67 dBm	-11.33 dB
2	2	2.5700 GHz	2.5710 GHz	51.00 kHz	2.570050000 GHz	-22.79 dBm	-12.79 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.573926667 GHz	-40.51 dBm	-30.51 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575250000 GHz	-41.82 dBm	-28.82 dB
5	5	2.5760 GHz	2.5950 GHz	1.000 MHz	2.578058333 GHz	-39.29 dBm	-14.29 dB

Channel	21425	RB Size 25	RB Offset 0

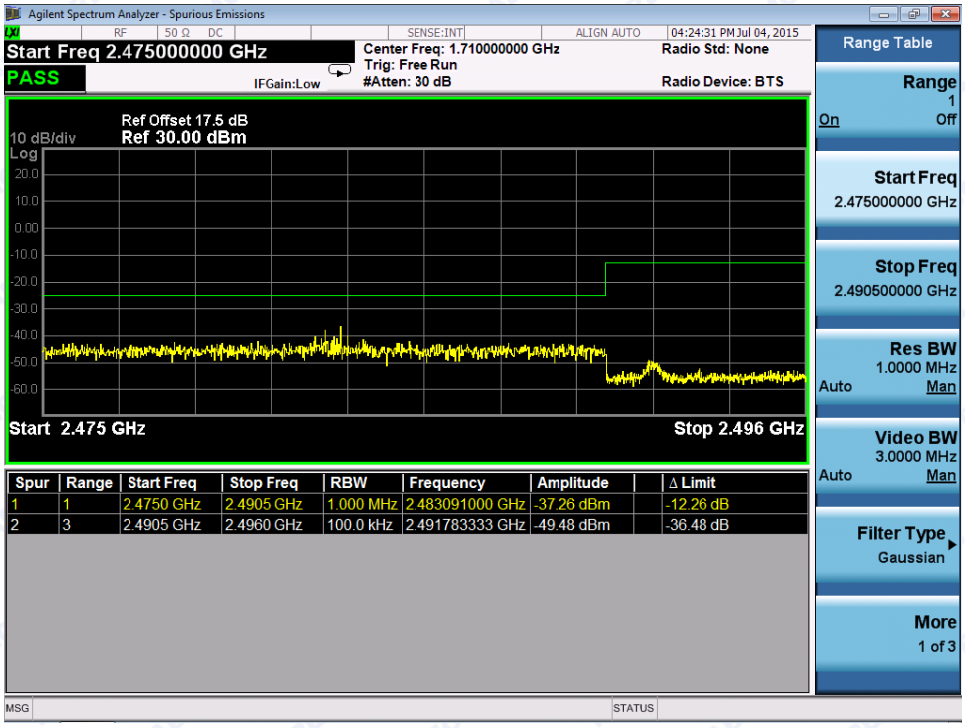


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5650 GHz	2.5700 GHz	100.0 kHz	2.566995000 GHz	4.035 dBm	-25.96 dB
2	2	2.5700 GHz	2.5710 GHz	51.00 kHz	2.570536667 GHz	-21.27 dBm	-11.27 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571833333 GHz	-16.83 dBm	-6.829 dB
4	4	2.5750 GHz	2.5760 GHz	1.000 MHz	2.575101667 GHz	-35.09 dBm	-22.09 dB
5	5	2.5760 GHz	2.5950 GHz	1.000 MHz	2.578691667 GHz	-37.08 dBm	-12.08 dB

LTE Band 7			
Channel Bandwidth: 10MHz X=10.02 MHz			
Channel	20800	RB Size 1	RB Offset 0

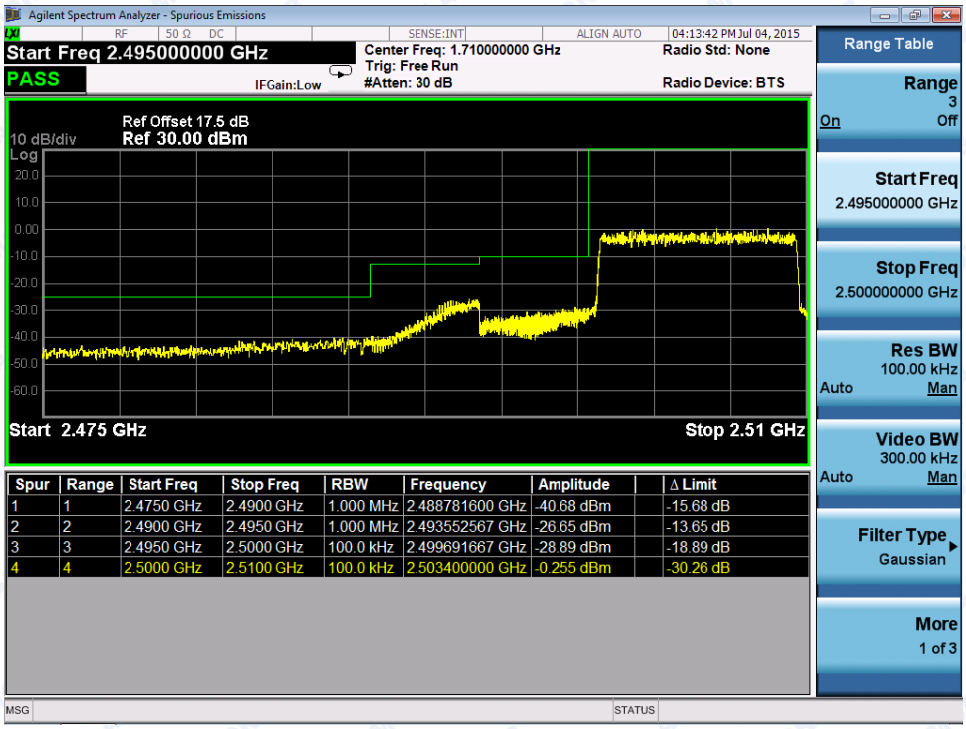


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4900 GHz	1.000 MHz	2.483418760 GHz	-39.06 dBm	-14.06 dB
2	2	2.4900 GHz	2.4950 GHz	1.000 MHz	2.491636600 GHz	-39.55 dBm	-26.55 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.498550000 GHz	-49.44 dBm	-39.44 dB
4	4	2.5000 GHz	2.5100 GHz	100.0 kHz	2.500566667 GHz	17.26 dBm	-12.74 dB

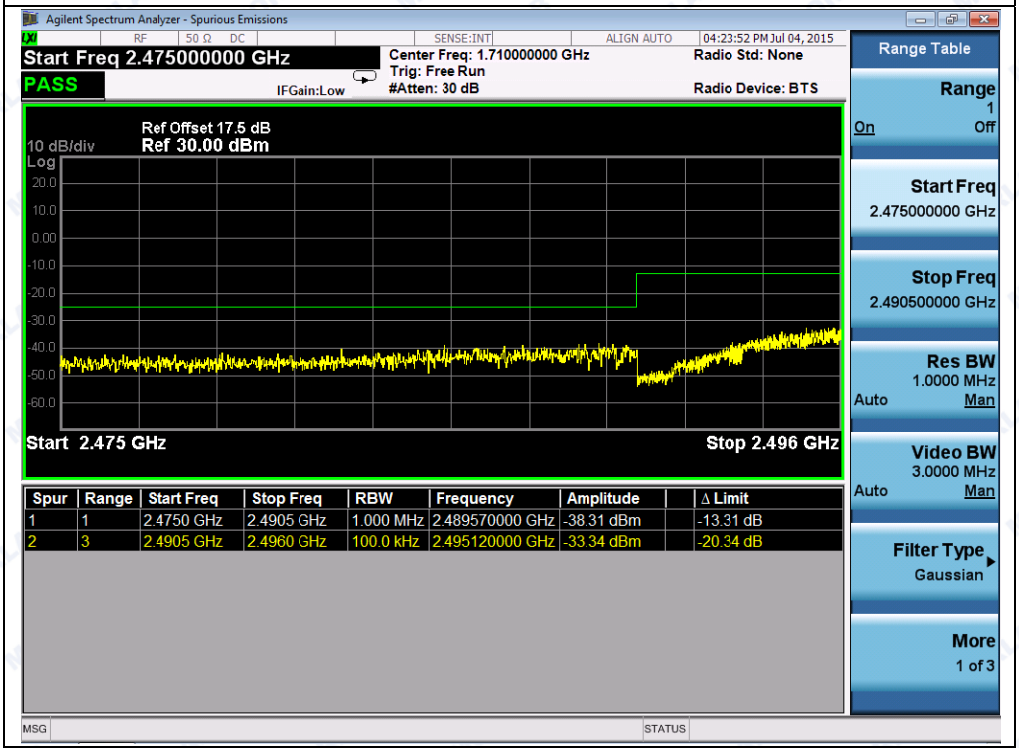


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.483091000 GHz	-37.26 dBm	-12.26 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.491783333 GHz	-49.48 dBm	-36.48 dB

LTE Band 7			
Channel Bandwidth: 10MHz X=10.02 MHz			
Channel	20800	RB Size 50	RB Offset 0

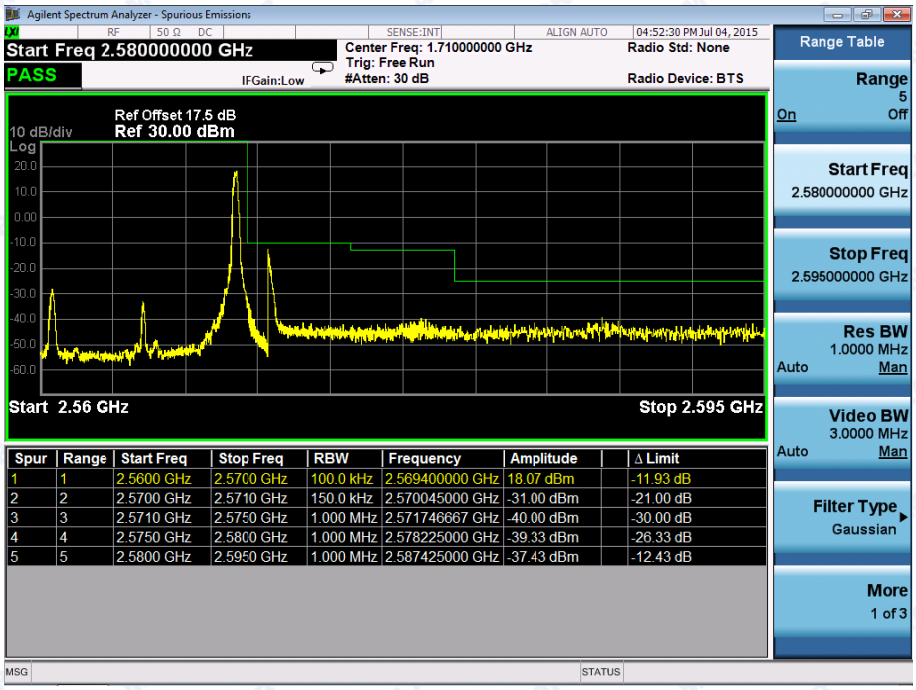


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4900 GHz	1.000 MHz	2.488781600 GHz	-40.68 dBm	-15.68 dB
2	2	2.4900 GHz	2.4950 GHz	1.000 MHz	2.493552567 GHz	-26.65 dBm	-13.65 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.499691667 GHz	-28.89 dBm	-18.89 dB
4	4	2.5000 GHz	2.5100 GHz	100.0 kHz	2.503400000 GHz	-0.255 dBm	-30.26 dB



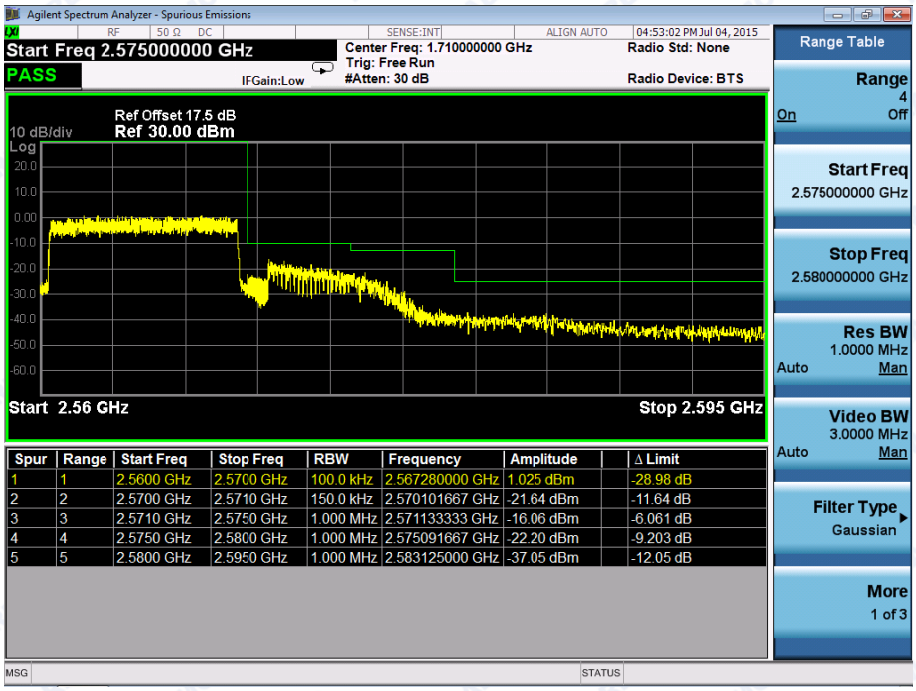
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.489570000 GHz	-38.31 dBm	-13.31 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.495120000 GHz	-33.34 dBm	-20.34 dB

LTE Band 7			
Channel Bandwidth: 10MHz X=10.05 MHz			
Channel	21400	RB Size 1	RB Offset 49



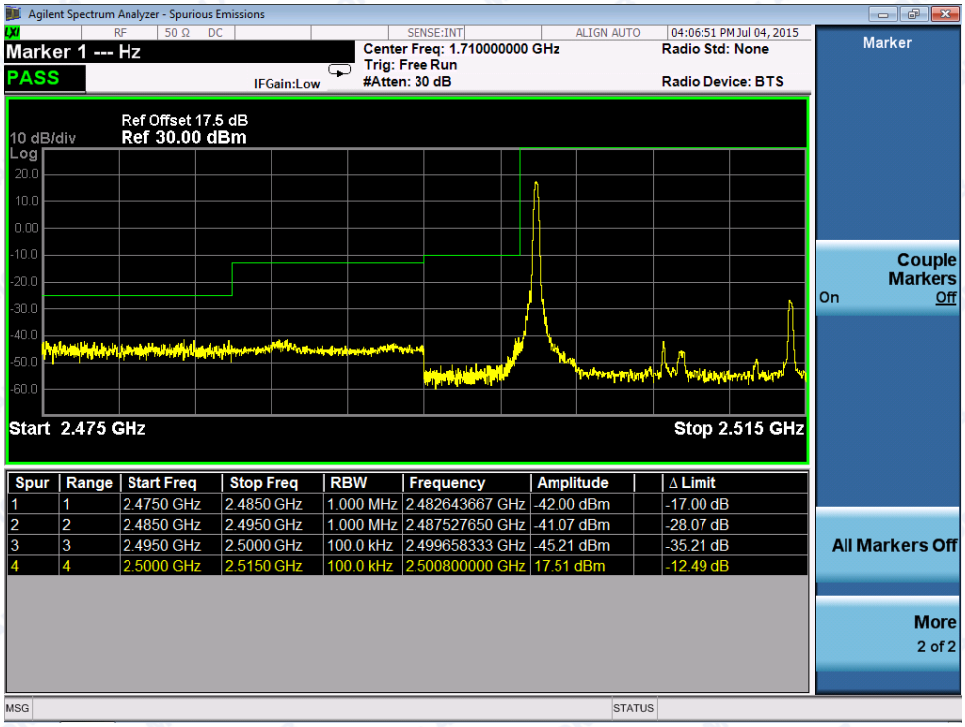
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	100.0 kHz	2.569400000 GHz	18.07 dBm	-11.93 dB
2	2	2.5700 GHz	2.5710 GHz	150.0 kHz	2.570045000 GHz	-31.00 dBm	-21.00 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571746667 GHz	-40.00 dBm	-30.00 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.578225000 GHz	-39.33 dBm	-26.33 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.587425000 GHz	-37.43 dBm	-12.43 dB

Channel	21400	RB Size 50	RB Offset 0

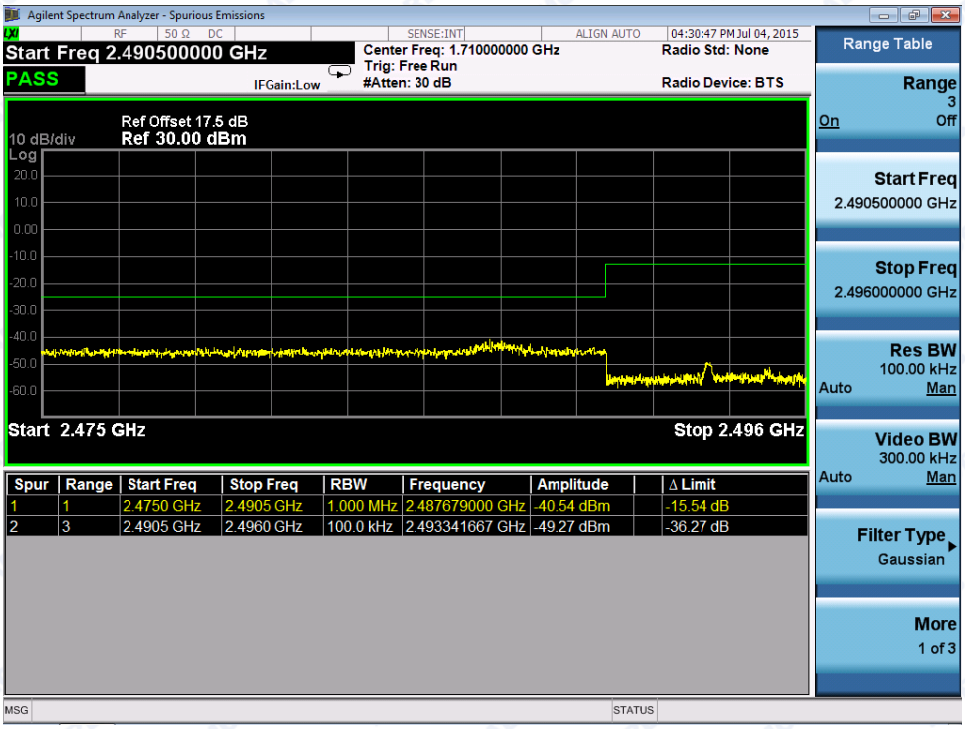


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5600 GHz	2.5700 GHz	100.0 kHz	2.567280000 GHz	1.025 dBm	-28.98 dB
2	2	2.5700 GHz	2.5710 GHz	150.0 kHz	2.570101667 GHz	-21.64 dBm	-11.64 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571133333 GHz	-16.06 dBm	-6.061 dB
4	4	2.5750 GHz	2.5800 GHz	1.000 MHz	2.575091667 GHz	-22.20 dBm	-9.203 dB
5	5	2.5800 GHz	2.5950 GHz	1.000 MHz	2.583125000 GHz	-37.05 dBm	-12.05 dB

LTE Band 7			
Channel Bandwidth: 15MHz X=15.03 MHz			
Channel	20825	RB Size 1	RB Offset 0

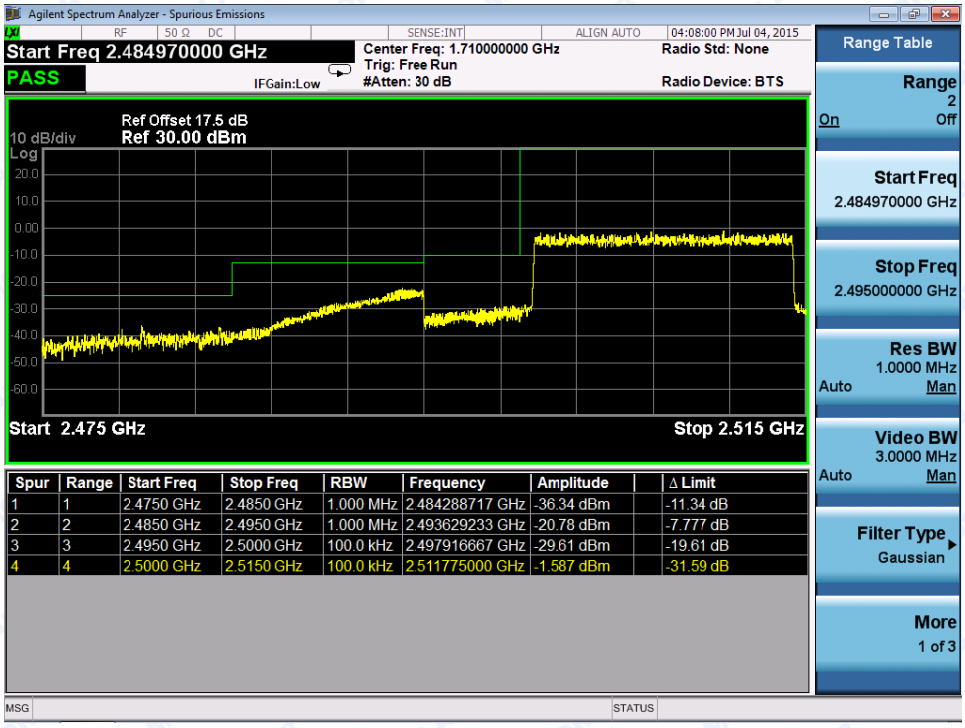


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4850 GHz	1.000 MHz	2.482643667 GHz	-42.00 dBm	-17.00 dB
2	2	2.4850 GHz	2.4950 GHz	1.000 MHz	2.487527650 GHz	-41.07 dBm	-28.07 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.499658333 GHz	-45.21 dBm	-35.21 dB
4	4	2.5000 GHz	2.5150 GHz	100.0 kHz	2.500800000 GHz	17.51 dBm	-12.49 dB

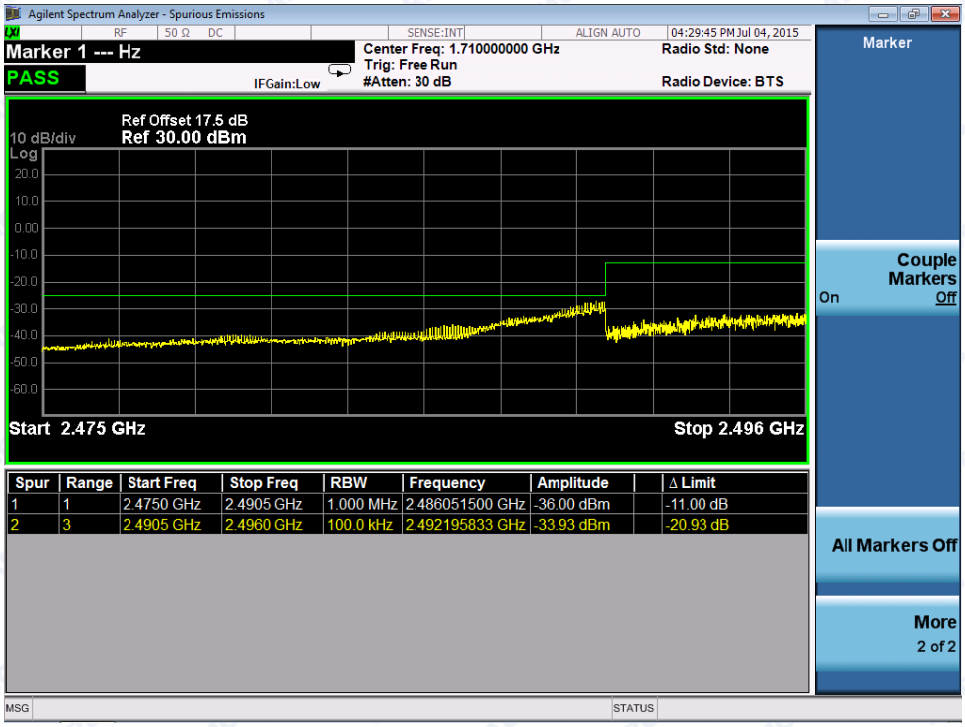


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.487679000 GHz	-40.54 dBm	-15.54 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.493341667 GHz	-49.27 dBm	-36.27 dB

LTE Band 7			
Channel Bandwidth: 15MHz X=15.03 MHz			
Channel	20825	RB Size 75	RB Offset 0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4850 GHz	1.000 MHz	2.484288717 GHz	-36.34 dBm	-11.34 dB
2	2	2.4850 GHz	2.4950 GHz	1.000 MHz	2.493629233 GHz	-20.78 dBm	-7.777 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.497916667 GHz	-29.61 dBm	-19.61 dB
4	4	2.5000 GHz	2.5150 GHz	100.0 kHz	2.511775000 GHz	-1.587 dBm	-31.59 dB

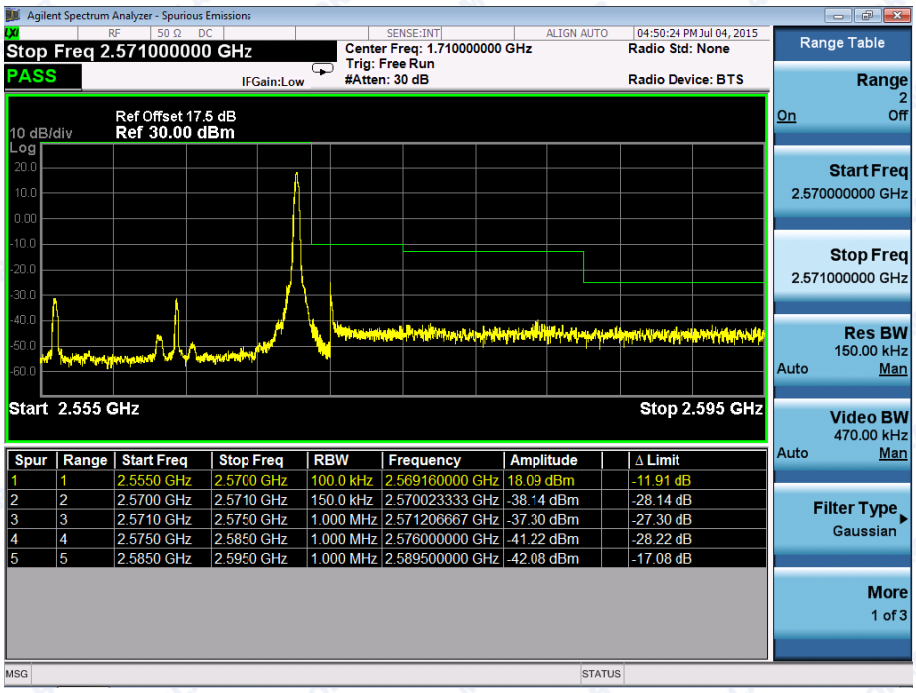


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.486051500 GHz	-36.00 dBm	-11.00 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.492195833 GHz	-33.93 dBm	-20.93 dB

LTE Band 7

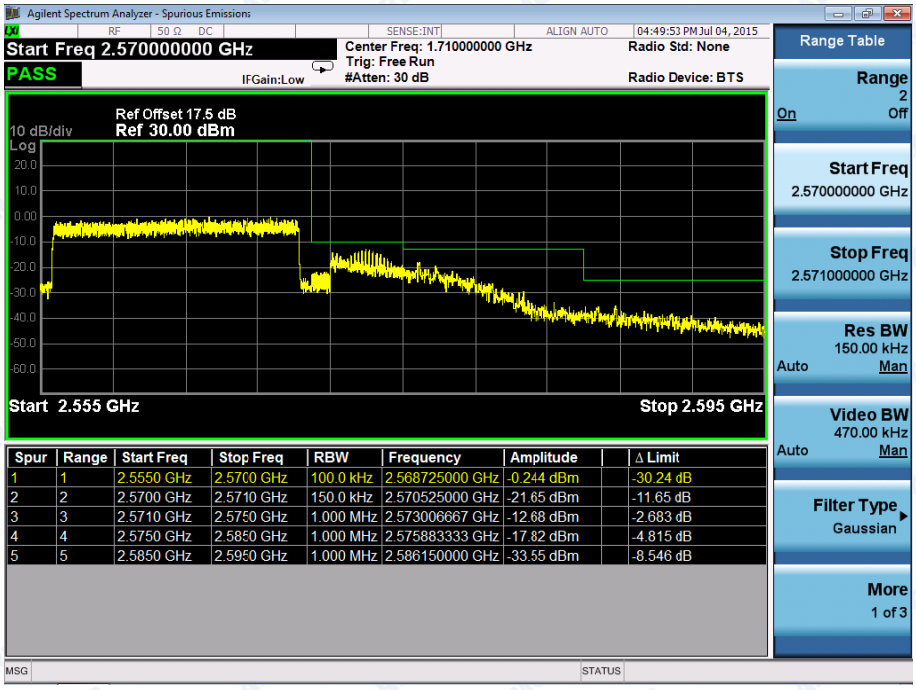
Channel Bandwidth: 15MHz X=15.38 MHz

Channel	21375	RB Size 1	RB Offset 74



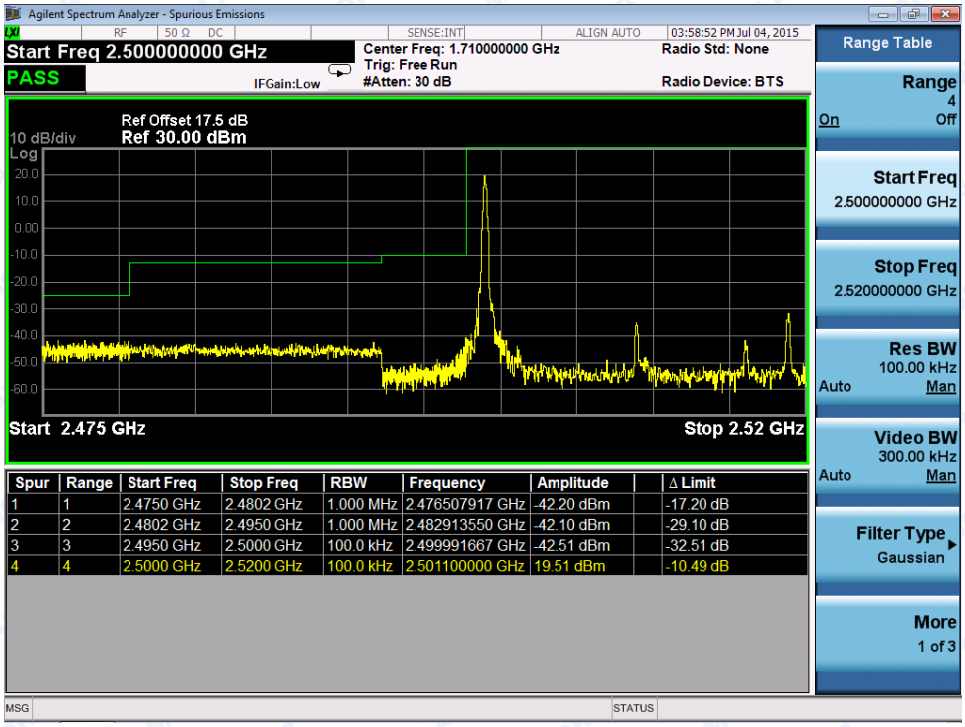
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5550 GHz	2.5700 GHz	100.0 kHz	2.569160000 GHz	18.09 dBm	-11.91 dB
2	2	2.5700 GHz	2.5710 GHz	150.0 kHz	2.570023333 GHz	-38.14 dBm	-28.14 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571206667 GHz	-37.30 dBm	-27.30 dB
4	4	2.5750 GHz	2.5850 GHz	1.000 MHz	2.576000000 GHz	-41.22 dBm	-28.22 dB
5	5	2.5850 GHz	2.5950 GHz	1.000 MHz	2.589500000 GHz	-42.08 dBm	-17.08 dB

Channel	21375	RB Size 75	RB Offset 0

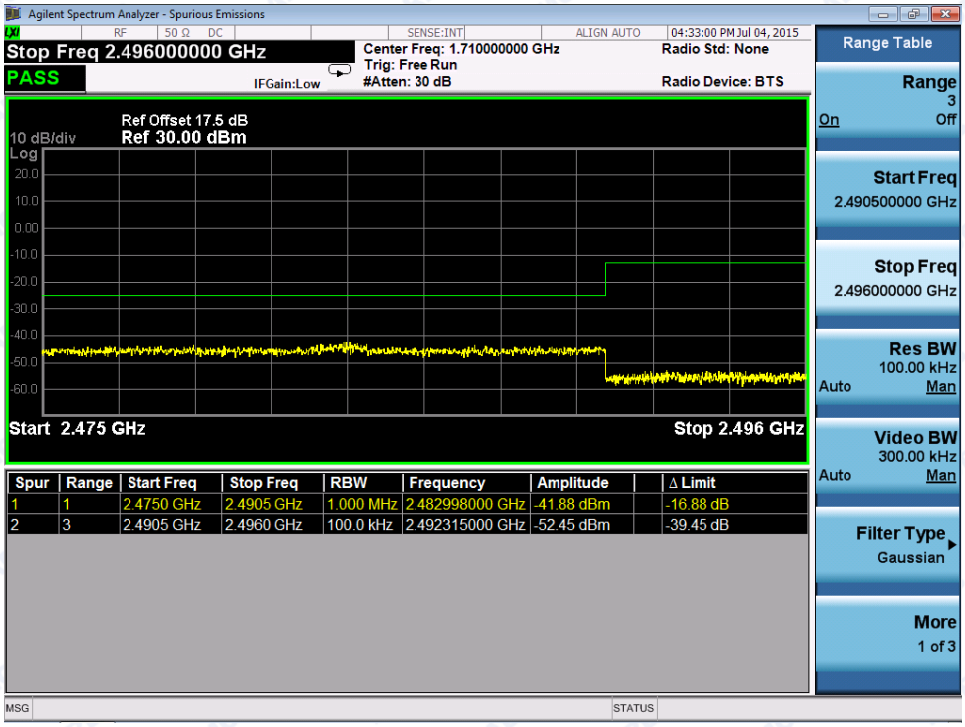


Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5550 GHz	2.5700 GHz	100.0 kHz	2.568725000 GHz	-0.244 dBm	-30.24 dB
2	2	2.5700 GHz	2.5710 GHz	150.0 kHz	2.570525000 GHz	-21.65 dBm	-11.65 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.573006667 GHz	-12.68 dBm	-2.683 dB
4	4	2.5750 GHz	2.5850 GHz	1.000 MHz	2.575883333 GHz	-17.82 dBm	-4.815 dB
5	5	2.5850 GHz	2.5950 GHz	1.000 MHz	2.586150000 GHz	-33.55 dBm	-8.546 dB

LTE Band 7			
Channel Bandwidth: 20MHz X=19.83 MHz			
Channel	20850	RB Size 1	RB Offset 0

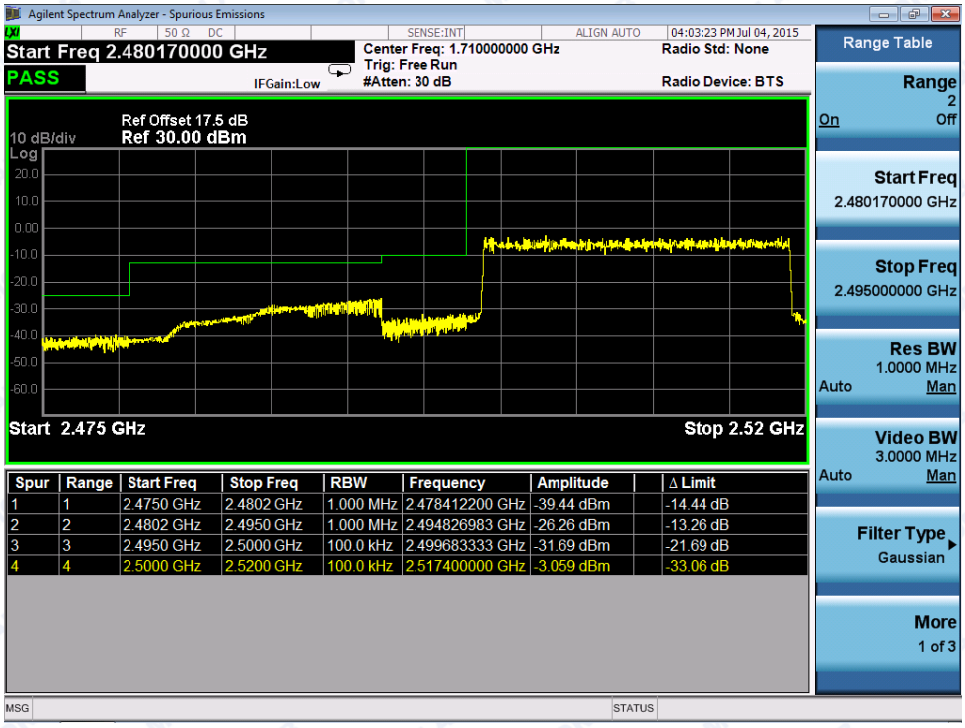


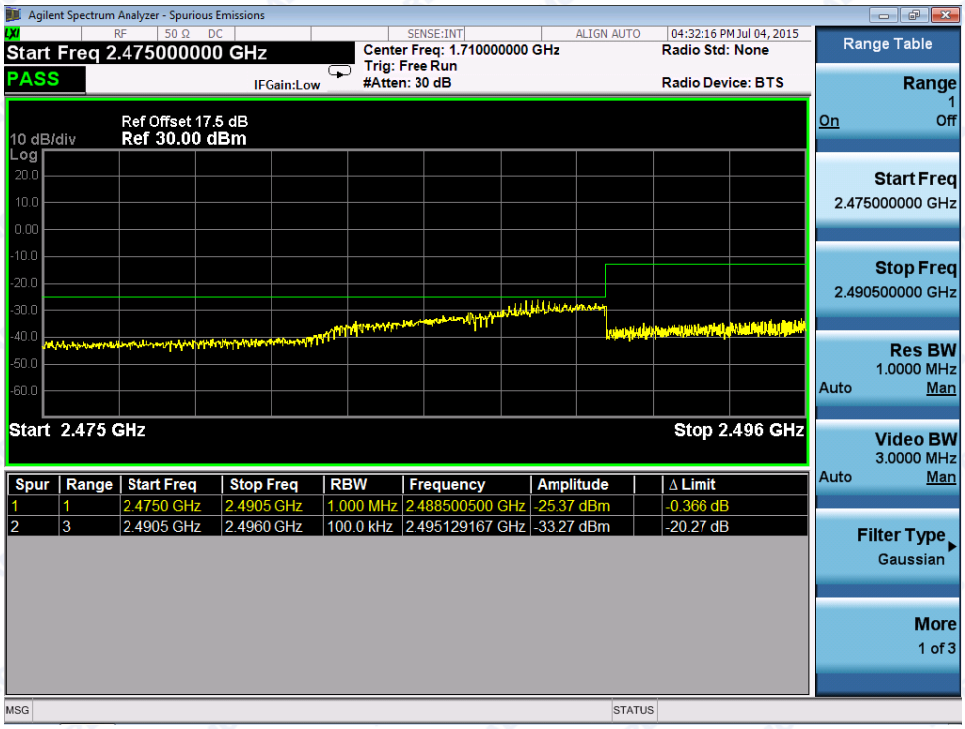
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4802 GHz	1.000 MHz	2.476507917 GHz	-42.20 dBm	-17.20 dB
2	2	2.4802 GHz	2.4950 GHz	1.000 MHz	2.482913550 GHz	-42.10 dBm	-29.10 dB
3	3	2.4950 GHz	2.5000 GHz	100.0 kHz	2.499991667 GHz	-42.51 dBm	-32.51 dB
4	4	2.5000 GHz	2.5200 GHz	100.0 kHz	2.501100000 GHz	19.51 dBm	-10.49 dB



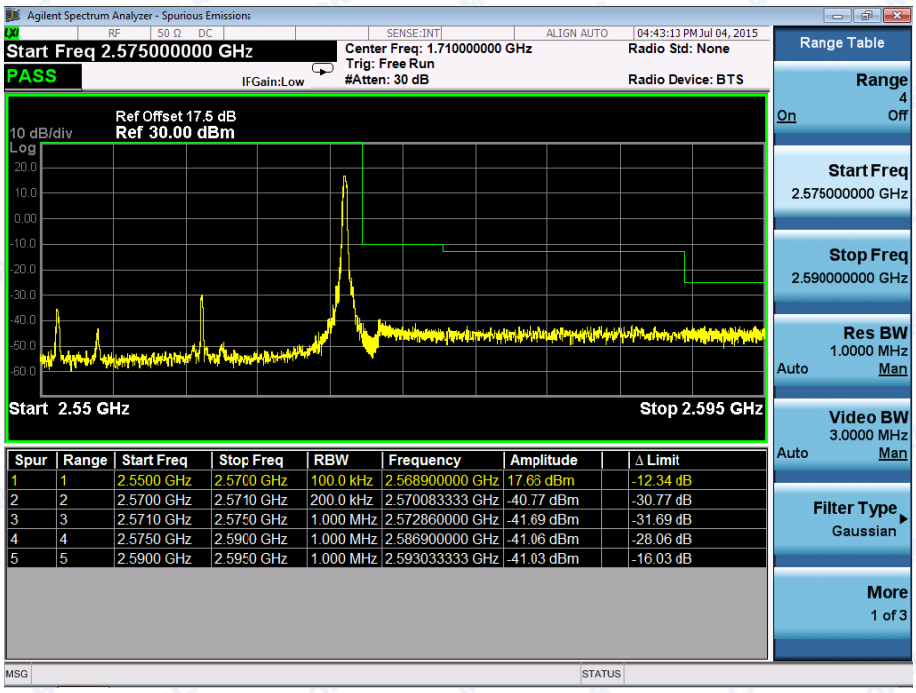
Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4750 GHz	2.4905 GHz	1.000 MHz	2.482998000 GHz	-41.88 dBm	-16.88 dB
2	3	2.4905 GHz	2.4960 GHz	100.0 kHz	2.492315000 GHz	-52.45 dBm	-39.45 dB

LTE Band 7			
Channel Bandwidth: 20MHz X=19.83 MHz			
Channel	20850	RB Size 100	RB Offset 0



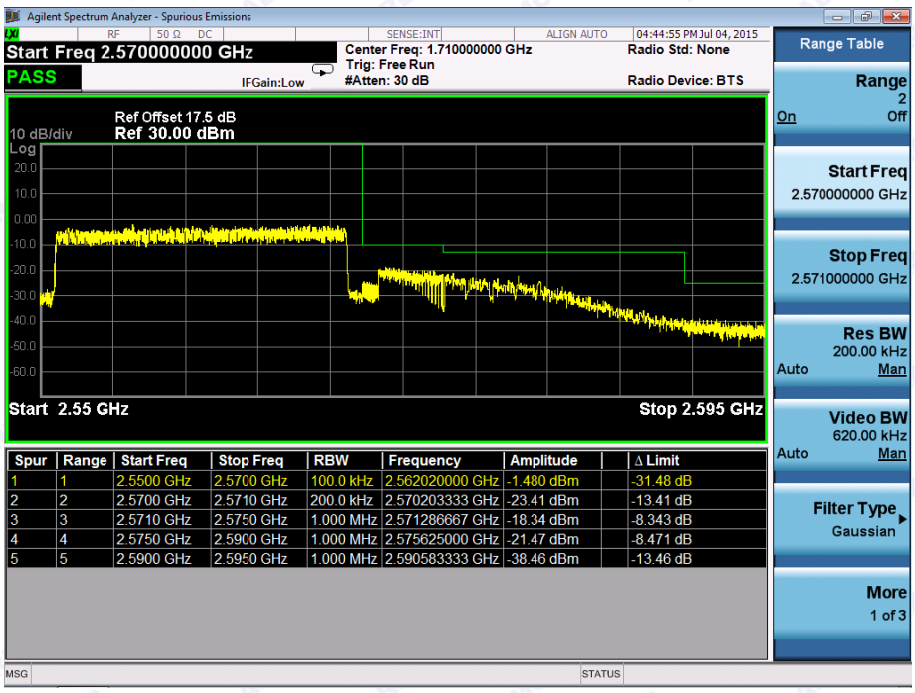


LTE Band 7			
Channel Bandwidth: 20MHz X=19.89 MHz			
Channel	21350	RB Size 1	RB Offset 99



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.568900000 GHz	17.66 dBm	-12.34 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570083333 GHz	-40.77 dBm	-30.77 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.572860000 GHz	-41.69 dBm	-31.69 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.586900000 GHz	-41.06 dBm	-28.06 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.593033333 GHz	-41.03 dBm	-16.03 dB

Channel	21350	RB Size 100	RB Offset 0



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5500 GHz	2.5700 GHz	100.0 kHz	2.562020000 GHz	-1.480 dBm	-31.48 dB
2	2	2.5700 GHz	2.5710 GHz	200.0 kHz	2.570203333 GHz	-23.41 dBm	-13.41 dB
3	3	2.5710 GHz	2.5750 GHz	1.000 MHz	2.571286667 GHz	-18.34 dBm	-8.343 dB
4	4	2.5750 GHz	2.5900 GHz	1.000 MHz	2.575625000 GHz	-21.47 dBm	-8.471 dB
5	5	2.5900 GHz	2.5950 GHz	1.000 MHz	2.590583333 GHz	-38.46 dBm	-13.46 dB

2.7 Transmitter Radiated Power (EIRP/ERP)

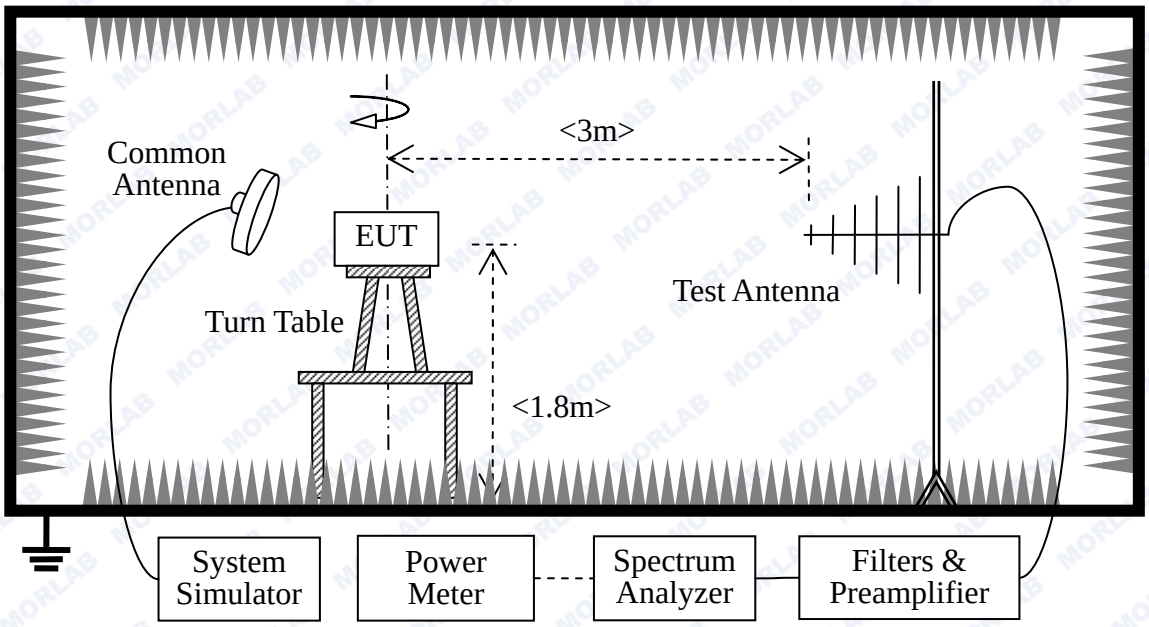
2.7.1 Requirement

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

Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2 Test Description

Test Setup:



The EUT, which is powered by the PC, 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.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50/ 124534/wk	2015.02.26	2016.02.25
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2015.02.26	2016.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2015.02.26	2016.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2015.02.26	2016.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2015.02.26	2016.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2015.02.26	2016.02.25

2.7.3 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:

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

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST_TX_ANT}$ 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}.

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	20MHz	L 18700	1860	QPSK	1	0	23.82
					100	0	23.06
				16-QAM	1	0	23.09
					100	0	22.13
		M 18900	1880	QPSK	1	0	24.26
					100	0	23.04
				16-QAM	1	0	23.48
					100	0	22.03
		H 19100	1900	QPSK	1	0	24.23
					100	0	23.04
				16-QAM	1	0	23.62
					100	0	22.17
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	15MHz	L 18675	1857.5	QPSK	1	0	24.13
					75	0	23.35
				16-QAM	1	0	23.52
					75	0	22.11
		M 18900	1880	QPSK	1	0	22.52
					75	0	23.28
				16-QAM	1	0	23.18
					75	0	22.42
		H 19125	1902.5	QPSK	1	0	24.06
					75	0	23.27
				16-QAM	1	0	23.31
					75	0	22.07
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	10MHz	L 18650	1855	QPSK	1	0	24.03
					50	0	23.41
				16-QAM	1	0	23.76
					50	0	22.05
		M 18900	1880	QPSK	1	0	24.46
					50	0	23.33
				16-QAM	1	0	23.52
					50	0	22.12
		H 19150	1905	QPSK	1	0	24.20
					50	0	23.27
				16-QAM	1	0	23.53
					50	0	22.37

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	5MHz	L 18625	1852.5	QPSK	1	0	24.11
					25	0	23.44
				16-QAM	1	0	22.93
					25	0	22.01
		M 18900	1880	QPSK	1	0	24.13
					25	0	23.49
				16-QAM	1	0	22.63
					25	0	22.43
		H 19175	1907.5	QPSK	1	0	24.32
					25	0	23.66
				16-QAM	1	0	23.96
					25	0	22.22
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	3MHz	L 18615	1851.5	QPSK	1	0	24.08
					15	0	22.86
				16-QAM	1	0	23.12
					15	0	21.30
		M 18900	1880	QPSK	1	0	23.81
					15	0	22.75
				16-QAM	1	0	23.85
					15	0	22.24
		H 19185	1908.5	QPSK	1	0	23.96
					15	0	22.77
				16-QAM	1	0	23.52
					15	0	22.23
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	1.4MHz	L 18607	1850.7	QPSK	1	0	22.91
					6	0	21.98
				16-QAM	1	0	22.06
					6	0	21.12
		18900	1880	QPSK	1	0	23.08
					6	0	22.23
				16-QAM	1	0	22.86
					6	0	21.07
		H 19193	1909.3	QPSK	1	0	22.55
					6	0	21.86
				16-QAM	1	0	21.72
					6	0	21.10

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	20MHz	L 20050	1720.0	QPSK	1	0	23.62
					100	0	22.77
				16-QAM	1	0	22.81
					100	0	21.83
		M 20175	1732.5	QPSK	1	0	23.96
					100	0	22.37
				16-QAM	1	0	22.58
					100	0	21.83
		H 20300	1745.0	QPSK	1	0	23.86
					100	0	21.73
				16-QAM	1	0	22.42
					100	0	20.92
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	15MHz	L 20025	1717.5	QPSK	1	0	22.89
					75	0	22.06
				16-QAM	1	0	22.47
					75	0	22.14
		M 20175	1732.5	QPSK	1	0	22.88
					75	0	22.39
				16-QAM	1	0	22.51
					75	0	22.11
		H 20325	1747.5	QPSK	1	0	22.35
					75	0	22.93
				16-QAM	1	0	22.17
					75	0	21.85
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	10MHz	L 20000	1715.0	QPSK	1	0	23.52
					50	0	21.82
				16-QAM	1	0	21.77
					50	0	20.62
		M 20175	1732.5	QPSK	1	0	22.91
					50	0	21.84
				16-QAM	1	0	21.55
					50	0	20.33
		H 20350	1750.0	QPSK	1	0	22.57
					50	0	21.51
				16-QAM	1	0	21.79
					50	0	20.36

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	5MHz	L 19975	1712.5	QPSK	1	0	23.23
					25	0	21.99
				16-QAM	1	0	21.68
					25	0	20.86
		M 20175	1732.5	QPSK	1	0	22.44
					25	0	21.34
				16-QAM	1	0	21.59
					25	0	20.11
		H 20375	1752.5	QPSK	1	0	22.36
					25	0	21.87
				16-QAM	1	0	21.99
					25	0	20.56
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	3MHz	L 19965	1711.5	QPSK	1	0	22.68
					15	0	22.02
				16-QAM	1	0	21.89
					15	0	20.72
		M 20175	1732.5	QPSK	1	0	21.96
					15	0	22.14
				16-QAM	1	0	20.88
					15	0	20.93
		H 20385	1753.5	QPSK	1	0	22.77
					15	0	20.85
				16-QAM	1	0	21.56
					15	0	20.14
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	1.4MHz	L 19957	1710.7	QPSK	1	0	22.91
					6	0	22.38
				16-QAM	1	0	22.45
					6	0	21.83
		M 20175	1732.5	QPSK	1	0	23.42
					6	0	22.56
				16-QAM	1	0	21.75
					6	0	21.33
		H 20393	1754.3	QPSK	1	0	21.39
					6	0	22.30
				16-QAM	1	0	22.06
					6	0	21.75

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 7	20MHz	L 20850	2510	QPSK	1	0	23.28
					100	0	22.13
				16-QAM	1	0	22.06
					100	0	20.91
		M 21100	2535	QPSK	1	0	23.54
					100	0	22.49
				16-QAM	1	0	22.37
					100	0	21.46
		H 21350	2560	QPSK	1	0	23.23
					100	0	22.39
				16-QAM	1	0	22.61
					100	0	21.26
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 7	15MHz	L 20825	2507.5	QPSK	1	0	22.92
					75	0	22.15
				16-QAM	1	0	21.85
					75	0	21.03
		M 21100	2535	QPSK	1	0	23.24
					75	0	22.32
				16-QAM	1	0	22.53
					75	0	21.26
		H 21375	2562.5	QPSK	1	0	23.63
					75	0	21.88
				16-QAM	1	0	22.39
					75	0	21.41
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 7	10MHz	L 20800	2505	QPSK	1	0	22.49
					50	0	21.84
				16-QAM	1	0	22.36
					50	0	20.68
		M 21100	2535	QPSK	1	0	23.25
					50	0	22.09
				16-QAM	1	0	22.62
					50	0	20.33
		H 21400	2565	QPSK	1	0	22.87
					50	0	21.56
				16-QAM	1	0	21.08
					50	0	20.63

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 7	5MHz	L 20775	2502.5	QPSK	1	0	22.59
					25	0	21.42
				16-QAM	1	0	20.96
					25	0	20.63
		M 21100	2535	QPSK	1	0	22.77
					25	0	21.53
				16-QAM	1	0	21.16
					25	0	20.35
		H 21425	2567.5	QPSK	1	0	22.25
					25	0	21.40
				16-QAM	1	0	21.66
					25	0	21.10

2.8 Radiated Spurious Emissions

2.8.1 Requirement

According to FCC section 2.1053 and section 27.53(g), 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.

2.8.2 Test Description

See section 2.7.2 of this report.

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 Result

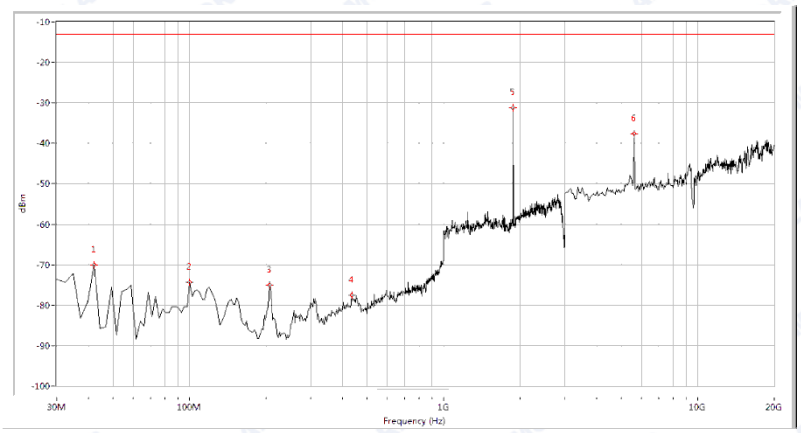
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified.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

Test Plots for the Whole Measurement Frequency Range:

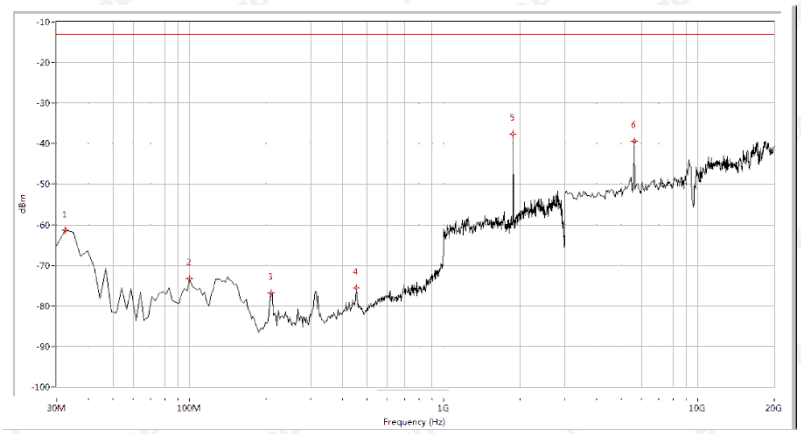
Note1: the power of the EUT transmitting frequency should be ignored.

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.

LTE Band 2 1.4MHz BW, Mid Channel, QPSK

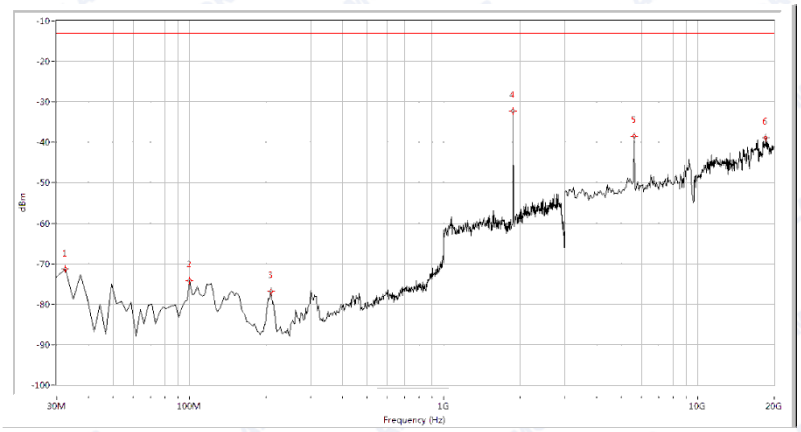


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.13	-13.0	57.1	Horizontal	PASS
100.150	-74.34	-13.0	61.3	Horizontal	PASS
206.584	-75.12	-13.0	62.1	Horizontal	PASS
436.384	-77.58	-13.0	64.6	Horizontal	PASS
1877.805	-31.26	-13.0	18.3	Horizontal	N.A
5628.429	-37.54	-13.0	24.5	Horizontal	PASS

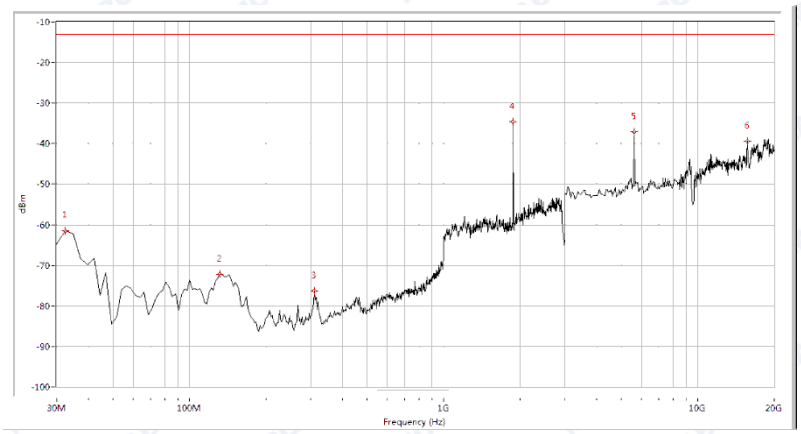


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.37	-13.0	48.4	Vertical	PASS
100.150	-73.26	-13.0	60.3	Vertical	PASS
209.002	-76.83	-13.0	63.8	Vertical	PASS
453.317	-75.66	-13.0	62.7	Vertical	PASS
1877.805	-37.60	-13.0	24.6	Vertical	N.A
5628.429	-39.32	-13.0	26.3	Vertical	PASS

LTE Band 2 1.4MHz BW, Mid Channel, 16QAM

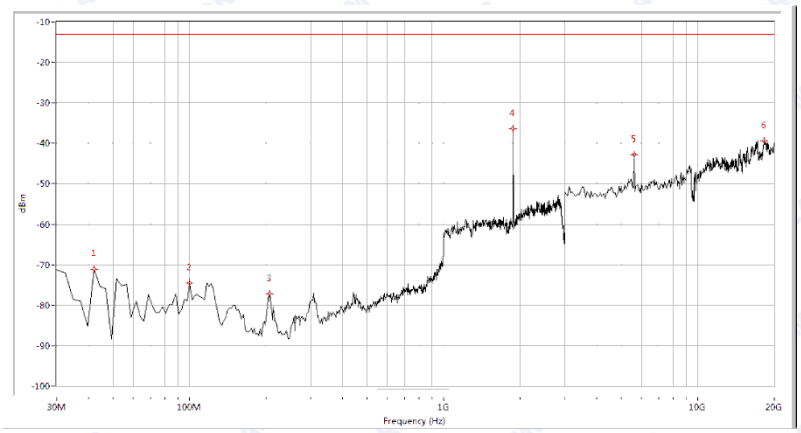


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-71.29	-13.0	58.3	Horizontal	PASS
100.150	-74.23	-13.0	61.2	Horizontal	PASS
209.002	-76.88	-13.0	63.9	Horizontal	PASS
1877.805	-32.30	-13.0	19.3	Horizontal	N.A
5628.429	-38.57	-13.0	25.6	Horizontal	PASS
18516.209	-38.84	-13.0	25.8	Horizontal	PASS

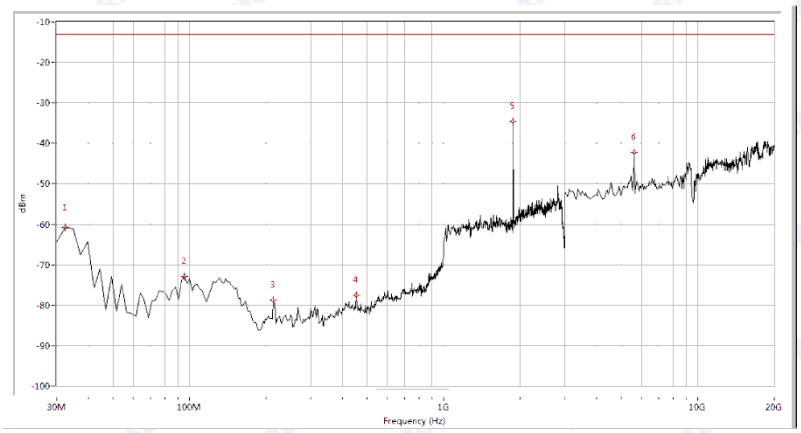


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.47	-13.0	48.5	Vertical	PASS
131.596	-72.20	-13.0	59.2	Vertical	PASS
310.599	-76.21	-13.0	63.2	Vertical	PASS
1877.805	-34.53	-13.0	21.5	Vertical	N.A
5628.429	-37.13	-13.0	24.1	Vertical	PASS
15675.810	-39.38	-13.0	26.4	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, QPSK

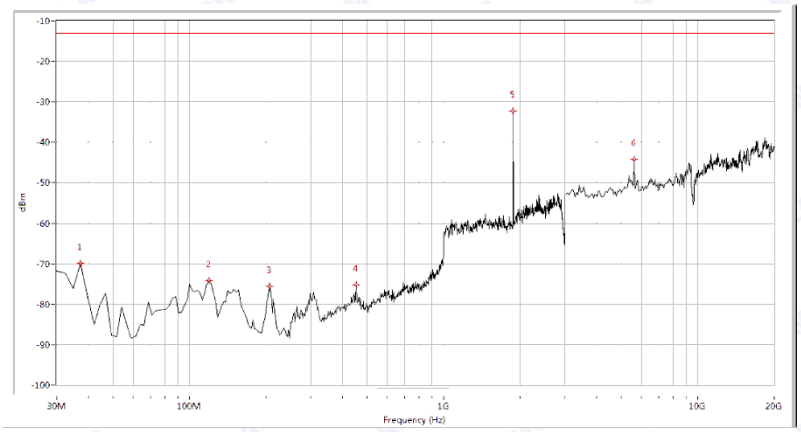


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-71.20	-13.0	58.2	Horizontal	PASS
100.150	-74.47	-13.0	61.5	Horizontal	PASS
206.584	-77.15	-13.0	64.1	Horizontal	PASS
1877.805	-36.34	-13.0	23.3	Horizontal	N.A
5628.429	-42.77	-13.0	29.8	Horizontal	PASS
18261.845	-39.43	-13.0	26.4	Horizontal	PASS

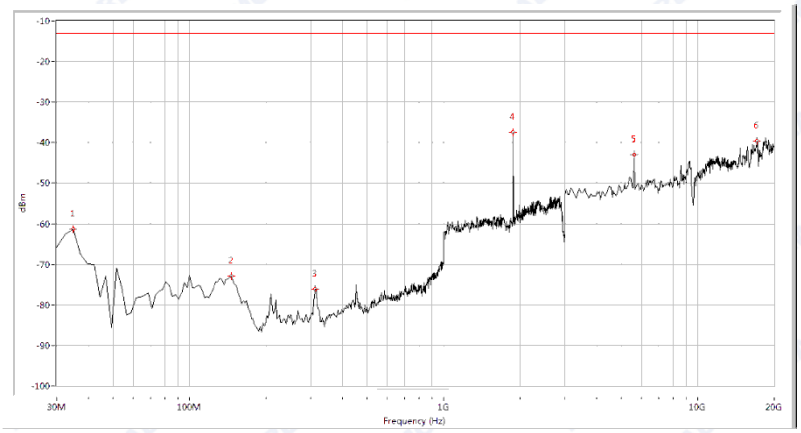


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.85	-13.0	47.9	Vertical	PASS
95.312	-72.92	-13.0	59.9	Vertical	PASS
213.840	-78.80	-13.0	65.8	Vertical	PASS
453.317	-77.63	-13.0	64.6	Vertical	PASS
1877.805	-34.56	-13.0	21.6	Vertical	N.A
5628.429	-42.30	-13.0	29.3	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, 16QAM

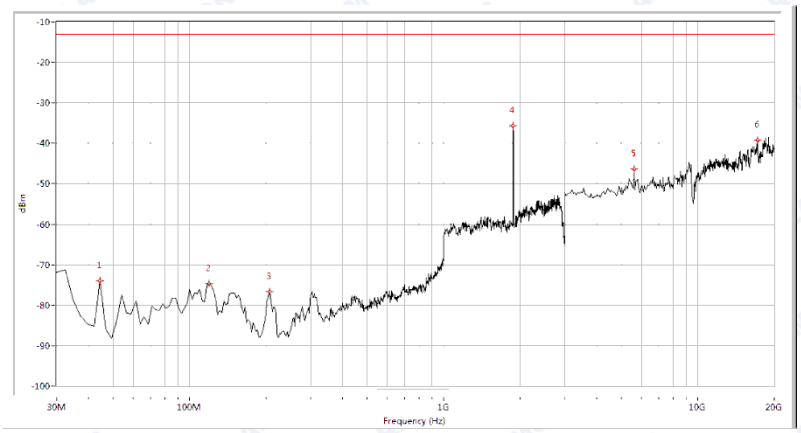


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-69.85	-13.0	56.9	Horizontal	PASS
119.501	-74.08	-13.0	61.1	Horizontal	PASS
206.584	-75.55	-13.0	62.5	Horizontal	PASS
453.317	-75.23	-13.0	62.2	Horizontal	PASS
1877.805	-32.30	-13.0	19.3	Horizontal	N.A
5628.429	-44.27	-13.0	31.3	Horizontal	PASS

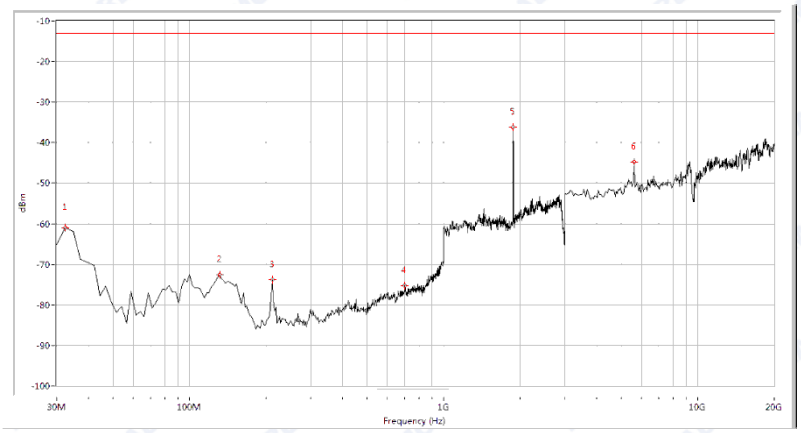


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-61.33	-13.0	48.3	Vertical	PASS
146.110	-72.86	-13.0	59.9	Vertical	PASS
313.017	-76.15	-13.0	63.1	Vertical	PASS
1877.805	-37.43	-13.0	24.4	Vertical	N.A
5628.429	-42.93	-13.0	29.9	Vertical	PASS
17117.207	-39.66	-13.0	26.7	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, QPSK

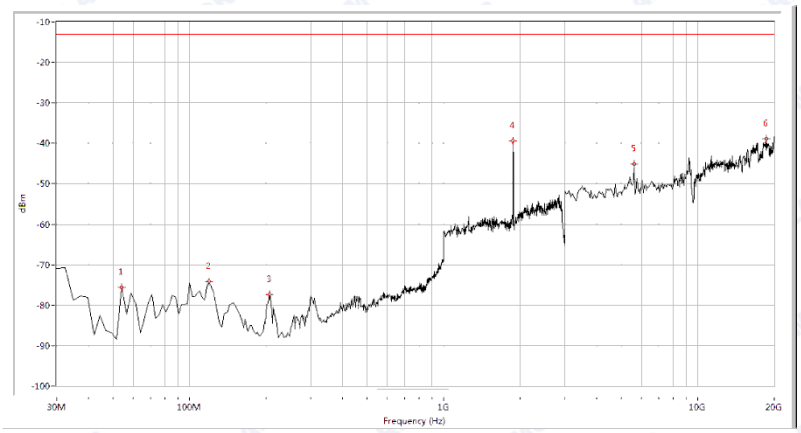


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
44.514	-73.99	-13.0	61.0	Horizontal	PASS
119.501	-74.73	-13.0	61.7	Horizontal	PASS
206.584	-76.72	-13.0	63.7	Horizontal	PASS
1877.805	-35.70	-13.0	22.7	Horizontal	N.A
5628.429	-46.32	-13.0	33.3	Horizontal	PASS
17159.601	-39.27	-13.0	26.3	Horizontal	PASS

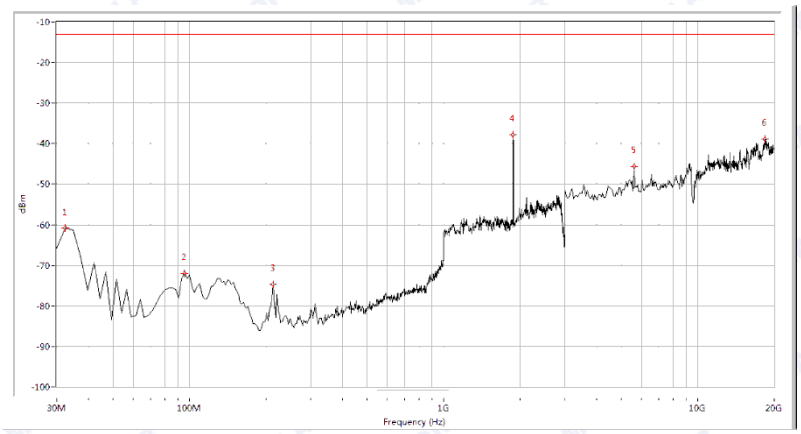


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-61.04	-13.0	48.0	Vertical	PASS
131.596	-72.58	-13.0	59.6	Vertical	PASS
211.421	-73.86	-13.0	60.9	Vertical	PASS
702.469	-75.24	-13.0	62.2	Vertical	PASS
1877.805	-36.27	-13.0	23.3	Vertical	N.A
5628.429	-44.84	-13.0	31.8	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, 16QAM

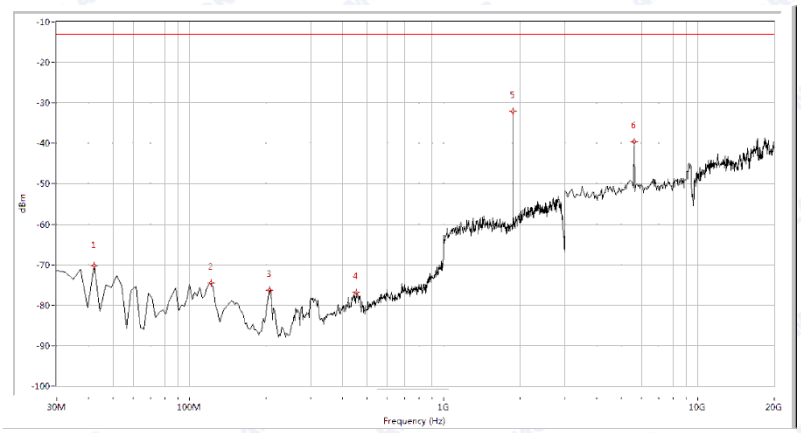


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
54.190	-75.54	-13.0	62.5	Horizontal	PASS
119.501	-74.16	-13.0	61.2	Horizontal	PASS
206.584	-77.37	-13.0	64.4	Horizontal	PASS
1877.805	-39.45	-13.0	26.4	Horizontal	N.A
5628.429	-45.10	-13.0	32.1	Horizontal	PASS
18643.392	-38.80	-13.0	25.8	Horizontal	PASS

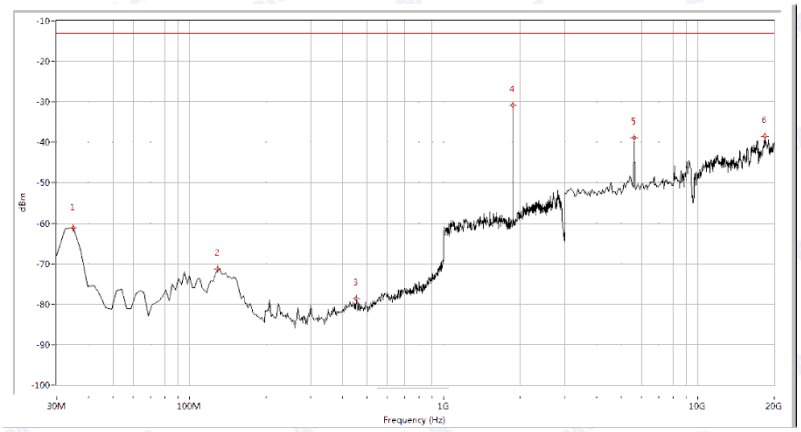


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.81	-13.0	47.8	Vertical	PASS
95.312	-71.94	-13.0	58.9	Vertical	PASS
213.840	-74.67	-13.0	61.7	Vertical	PASS
1877.805	-37.87	-13.0	24.9	Vertical	N.A
5628.429	-45.71	-13.0	32.7	Vertical	PASS
18346.633	-38.95	-13.0	25.9	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, QPSK

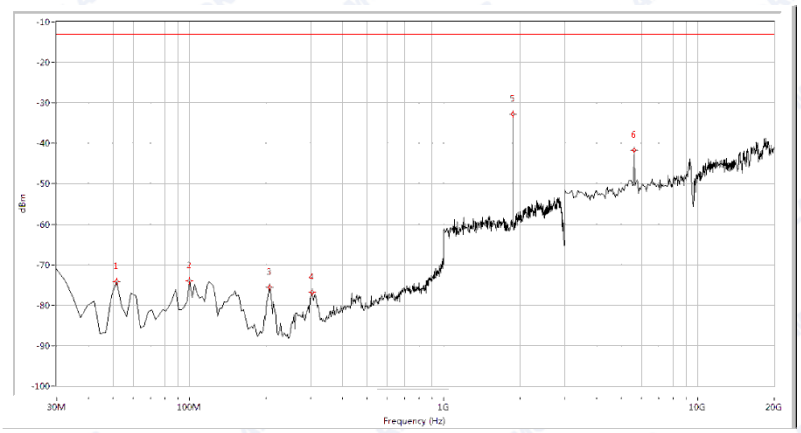


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.30	-13.0	57.3	Horizontal	PASS
121.920	-74.48	-13.0	61.5	Horizontal	PASS
206.584	-76.38	-13.0	63.4	Horizontal	PASS
453.317	-76.75	-13.0	63.7	Horizontal	PASS
1872.818	-32.13	-13.0	19.1	Horizontal	N.A
5628.429	-39.54	-13.0	26.5	Horizontal	PASS

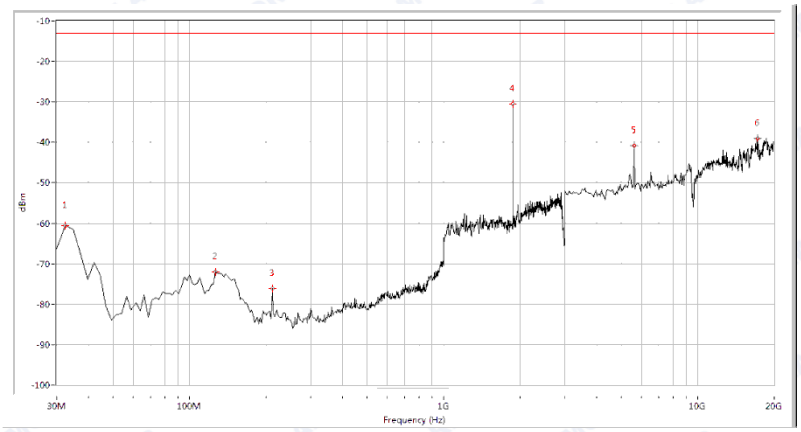


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-61.09	-13.0	48.1	Vertical	PASS
129.177	-71.23	-13.0	58.2	Vertical	PASS
453.317	-78.59	-13.0	65.6	Vertical	PASS
1872.818	-30.82	-13.0	17.8	Vertical	N.A
5628.429	-38.96	-13.0	26.0	Vertical	PASS
18346.633	-38.59	-13.0	25.6	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, 16QAM

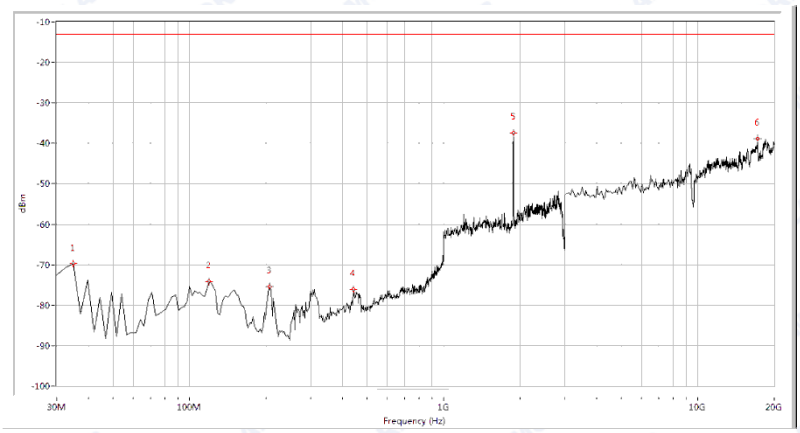


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
51.771	-74.08	-13.0	61.1	Horizontal	PASS
100.150	-74.06	-13.0	61.1	Horizontal	PASS
206.584	-75.55	-13.0	62.5	Horizontal	PASS
303.342	-76.82	-13.0	63.8	Horizontal	PASS
1872.818	-32.85	-13.0	19.8	Horizontal	N.A
5628.429	-41.67	-13.0	28.7	Horizontal	PASS

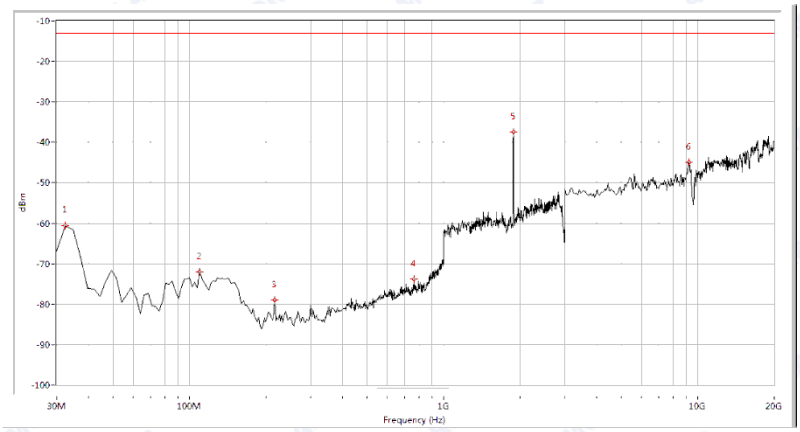


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.61	-13.0	47.6	Vertical	PASS
126.758	-71.98	-13.0	59.0	Vertical	PASS
211.421	-76.15	-13.0	63.2	Vertical	PASS
1872.818	-30.52	-13.0	17.5	Vertical	N.A
5628.429	-40.91	-13.0	27.9	Vertical	PASS
17159.601	-39.09	-13.0	26.1	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, QPSK

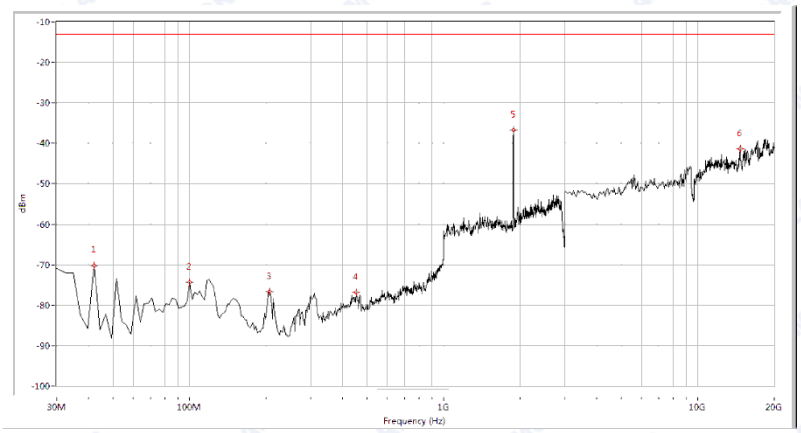


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-69.76	-13.0	56.8	Horizontal	PASS
119.501	-74.24	-13.0	61.2	Horizontal	PASS
206.584	-75.42	-13.0	62.4	Horizontal	PASS
441.222	-76.14	-13.0	63.1	Horizontal	PASS
1882.793	-37.37	-13.0	24.4	Horizontal	N.A
17201.995	-38.89	-13.0	25.9	Horizontal	PASS

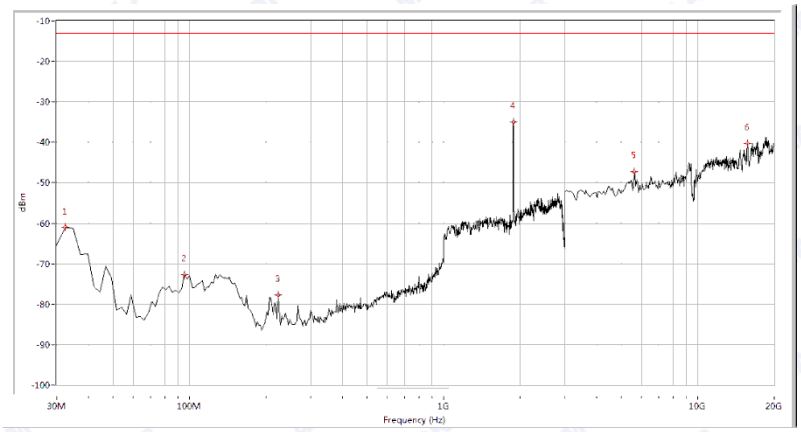


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.56	-13.0	47.6	Vertical	PASS
109.825	-72.07	-13.0	59.1	Vertical	PASS
216.259	-78.95	-13.0	66.0	Vertical	PASS
765.362	-73.87	-13.0	60.9	Vertical	PASS
1882.793	-37.52	-13.0	24.5	Vertical	N.A
9231.920	-44.87	-13.0	31.9	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, 16QAM

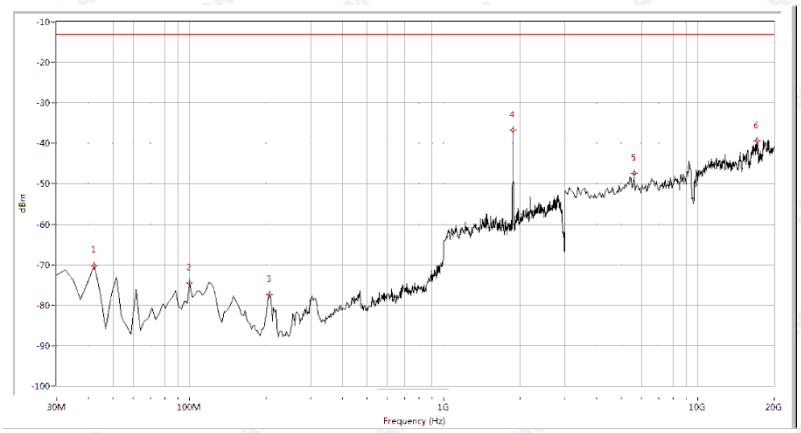


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.22	-13.0	57.2	Horizontal	PASS
100.150	-74.26	-13.0	61.3	Horizontal	PASS
206.584	-76.63	-13.0	63.6	Horizontal	PASS
453.317	-76.84	-13.0	63.8	Horizontal	PASS
1882.793	-36.67	-13.0	23.7	Horizontal	N.A
14658.354	-41.33	-13.0	28.3	Horizontal	PASS

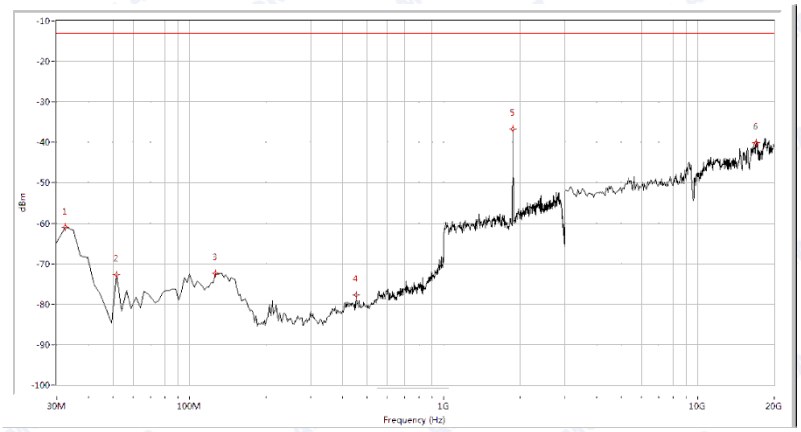


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.88	-13.0	47.9	Vertical	PASS
95.312	-72.69	-13.0	59.7	Vertical	PASS
223.516	-77.81	-13.0	64.8	Vertical	PASS
1882.793	-34.91	-13.0	21.9	Vertical	N.A
5628.429	-47.28	-13.0	34.3	Vertical	PASS
15675.810	-40.29	-13.0	27.3	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, QPSK

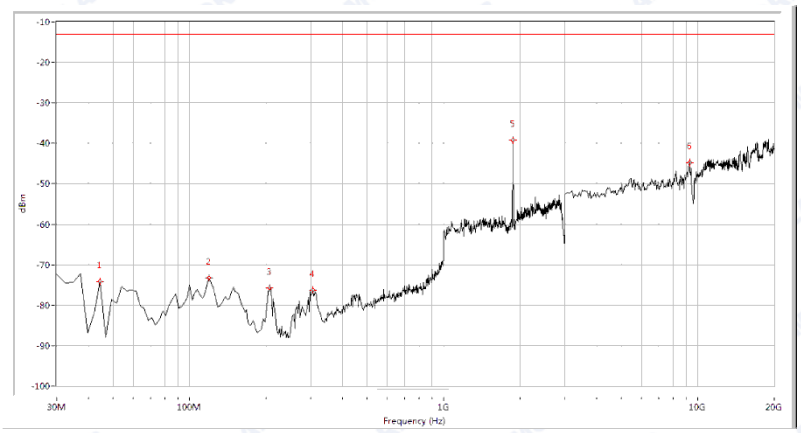


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.19	-13.0	57.2	Horizontal	PASS
100.150	-74.55	-13.0	61.5	Horizontal	PASS
206.584	-77.35	-13.0	64.3	Horizontal	PASS
1872.818	-36.72	-13.0	23.7	Horizontal	N.A
5628.429	-47.47	-13.0	34.5	Horizontal	PASS
17117.207	-39.39	-13.0	26.4	Horizontal	PASS

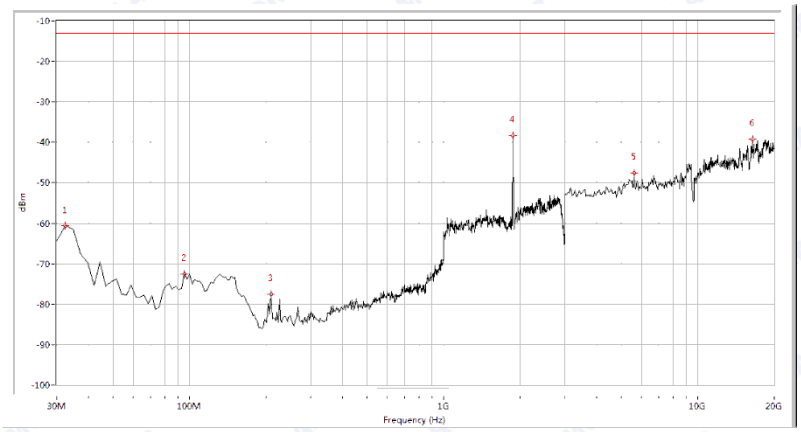


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.97	-13.0	48.0	Vertical	PASS
51.771	-72.81	-13.0	59.8	Vertical	PASS
126.758	-72.42	-13.0	59.4	Vertical	PASS
453.317	-77.77	-13.0	64.8	Vertical	PASS
1872.818	-36.66	-13.0	23.7	Vertical	N.A
16990.025	-40.05	-13.0	27.1	Vertical	PASS

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

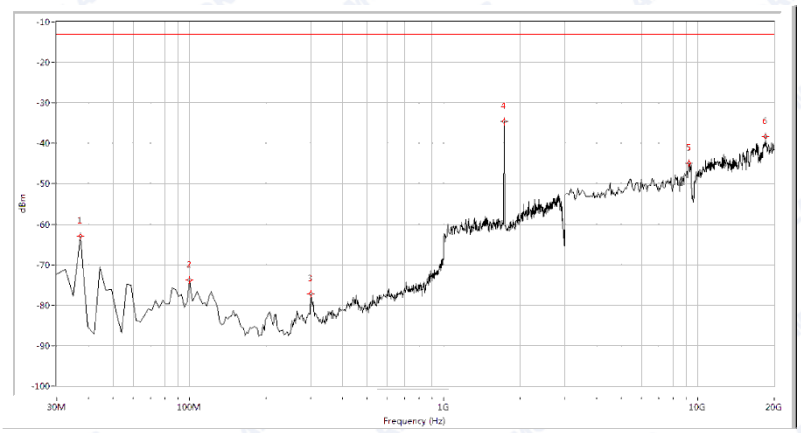


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
44.514	-74.12	-13.0	61.1	Horizontal	PASS
119.501	-73.29	-13.0	60.3	Horizontal	PASS
206.584	-75.74	-13.0	62.7	Horizontal	PASS
305.761	-76.22	-13.0	63.2	Horizontal	PASS
1872.818	-39.21	-13.0	26.2	Horizontal	N.A
9274.314	-44.70	-13.0	31.7	Horizontal	PASS

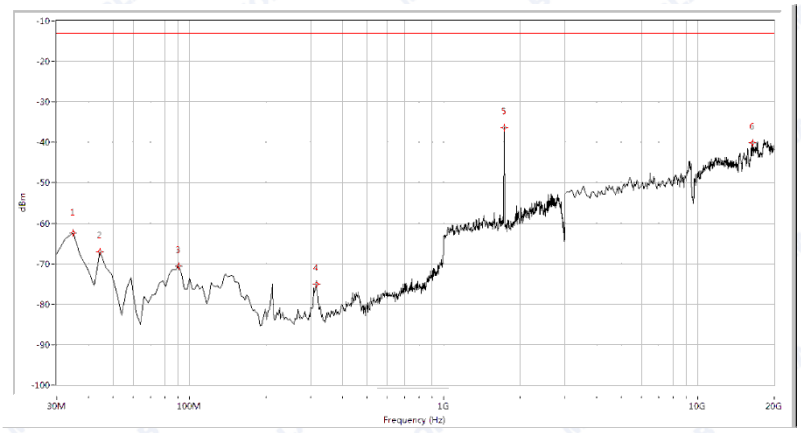


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-60.65	-13.0	47.6	Vertical	PASS
95.312	-72.54	-13.0	59.5	Vertical	PASS
209.002	-77.63	-13.0	64.6	Vertical	PASS
1877.805	-38.32	-13.0	25.3	Vertical	N.A
5628.429	-47.59	-13.0	34.6	Vertical	PASS
16396.509	-39.29	-13.0	26.3	Vertical	PASS

LTE Band 4 1.4MHz BW, Mid Channel, QPSK

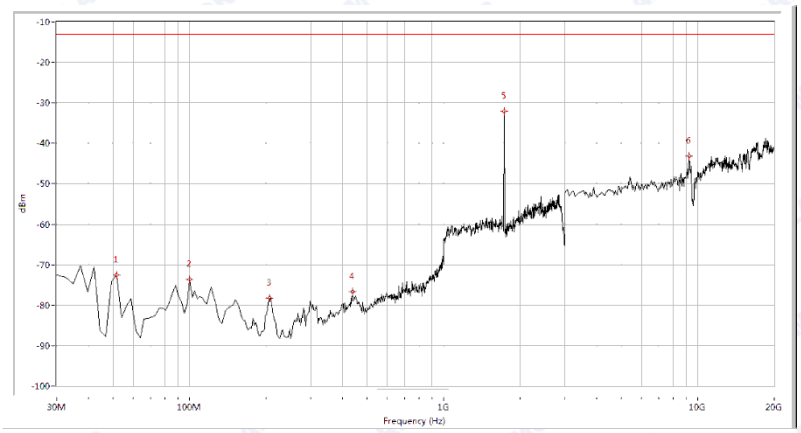


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-62.94	-13.0	49.9	Horizontal	PASS
100.150	-73.76	-13.0	60.8	Horizontal	PASS
300.923	-77.23	-13.0	64.2	Horizontal	PASS
1728.180	-34.66	-13.0	21.7	Horizontal	N.A
9231.920	-44.93	-13.0	31.9	Horizontal	PASS
18473.815	-38.31	-13.0	25.3	Horizontal	PASS

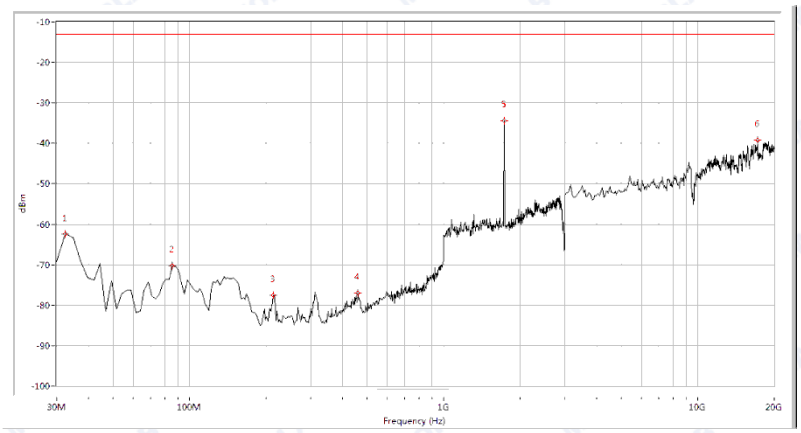


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.36	-13.0	49.4	Vertical	PASS
44.514	-66.95	-13.0	54.0	Vertical	PASS
90.474	-70.53	-13.0	57.5	Vertical	PASS
315.436	-75.06	-13.0	62.1	Vertical	PASS
1733.167	-36.34	-13.0	23.3	Vertical	N.A
16396.509	-40.04	-13.0	27.0	Vertical	PASS

LTE Band 4 1.4MHz BW, Mid Channel, 16QAM

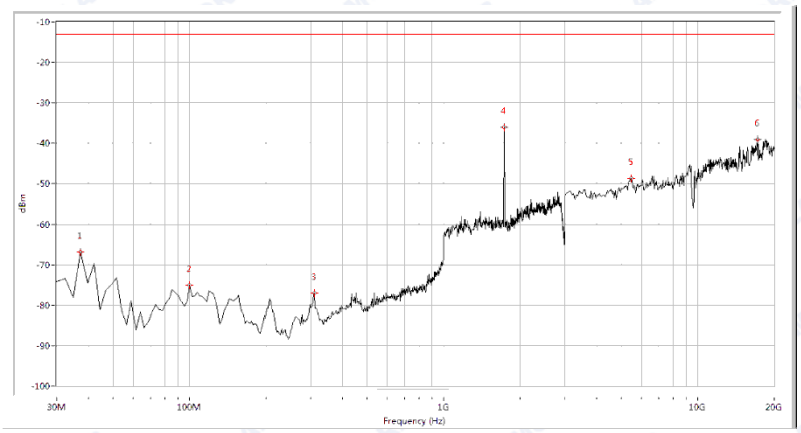


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
51.771	-72.55	-13.0	59.5	Horizontal	PASS
100.150	-73.70	-13.0	60.7	Horizontal	PASS
206.584	-78.18	-13.0	65.2	Horizontal	PASS
438.803	-76.74	-13.0	63.7	Horizontal	PASS
1733.167	-32.11	-13.0	19.1	Horizontal	N.A
9231.920	-43.08	-13.0	30.1	Horizontal	PASS

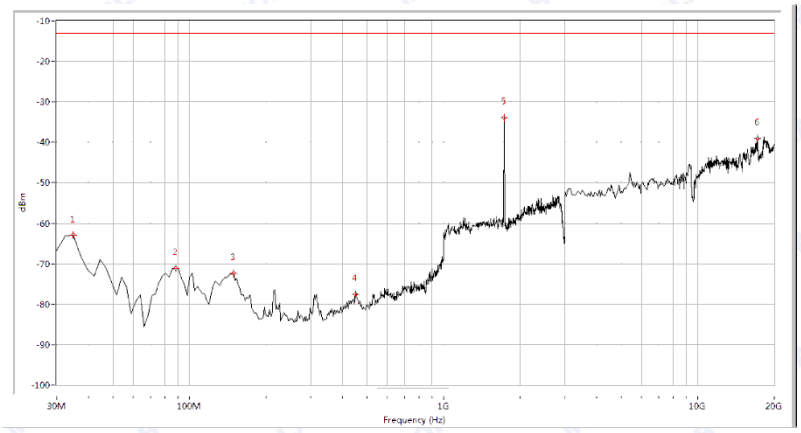


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
32.419	-62.35	-13.0	49.3	Vertical	PASS
85.636	-70.16	-13.0	57.2	Vertical	PASS
213.840	-77.54	-13.0	64.5	Vertical	PASS
458.155	-77.05	-13.0	64.0	Vertical	PASS
1733.167	-34.40	-13.0	21.4	Vertical	N.A
17201.995	-39.25	-13.0	26.2	Vertical	PASS

LTE Band 4 3MHz BW, Mid Channel, QPSK

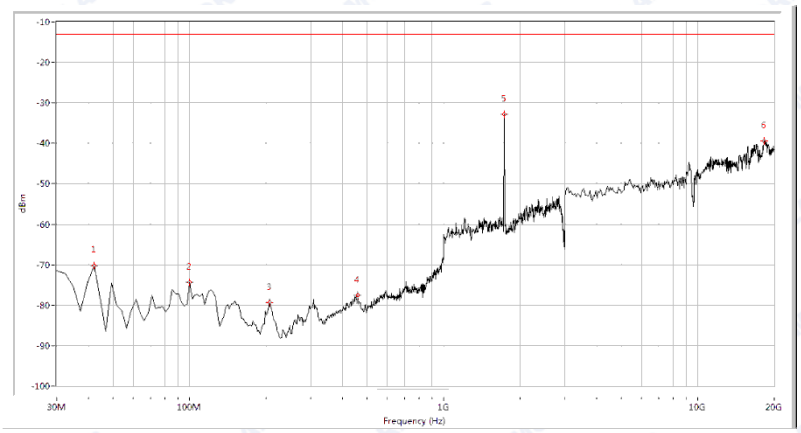


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-66.84	-13.0	53.8	Horizontal	PASS
100.150	-75.00	-13.0	62.0	Horizontal	PASS
310.599	-77.09	-13.0	64.1	Horizontal	PASS
1733.167	-35.97	-13.0	23.0	Horizontal	N.A
5458.853	-48.59	-13.0	35.6	Horizontal	PASS
17159.601	-38.98	-13.0	26.0	Horizontal	PASS

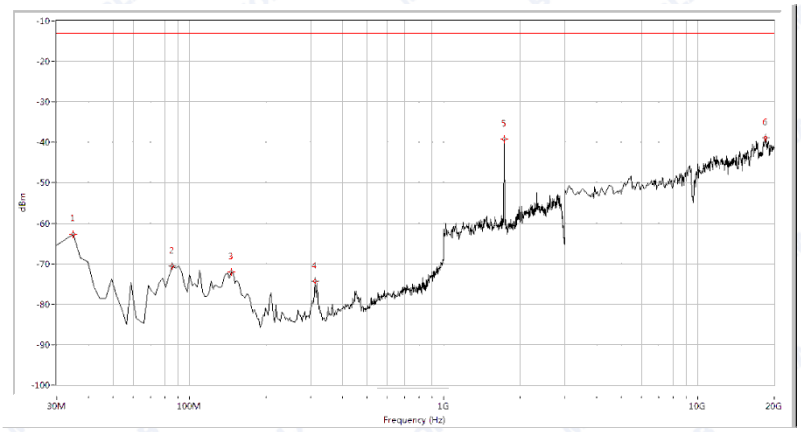


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.02	-13.0	50.0	Vertical	PASS
88.055	-71.13	-13.0	58.1	Vertical	PASS
148.529	-72.46	-13.0	59.5	Vertical	PASS
450.898	-77.57	-13.0	64.6	Vertical	PASS
1728.180	-33.86	-13.0	20.9	Vertical	N.A
17159.601	-39.08	-13.0	26.1	Vertical	PASS

LTE Band 4 3MHz BW, Mid Channel, 16QAM

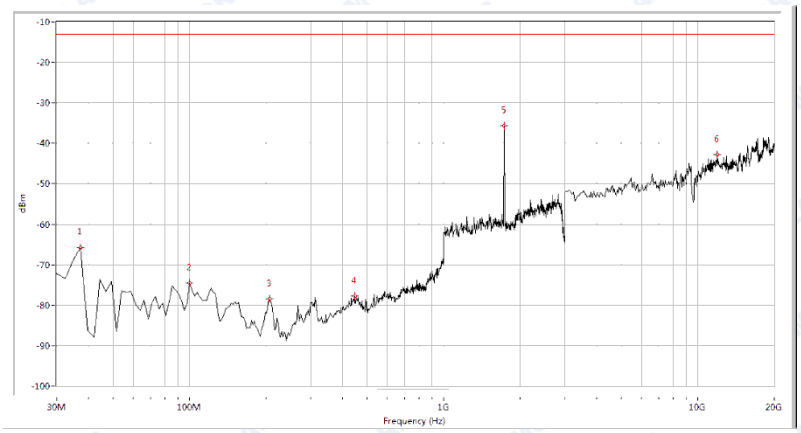


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.29	-13.0	57.3	Horizontal	PASS
100.150	-74.29	-13.0	61.3	Horizontal	PASS
206.584	-79.36	-13.0	66.4	Horizontal	PASS
458.155	-77.59	-13.0	64.6	Horizontal	PASS
1733.167	-32.73	-13.0	19.7	Horizontal	N.A
18261.845	-39.44	-13.0	26.4	Horizontal	PASS

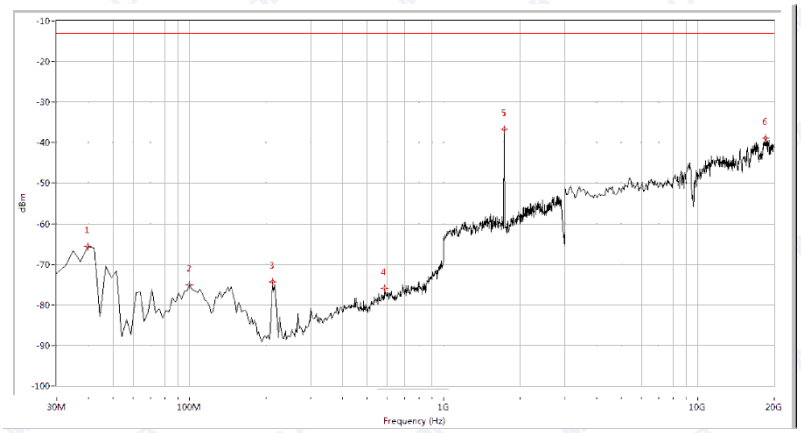


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.74	-13.0	49.7	Vertical	PASS
85.636	-70.65	-13.0	57.7	Vertical	PASS
146.110	-71.98	-13.0	59.0	Vertical	PASS
313.017	-74.32	-13.0	61.3	Vertical	PASS
1733.167	-39.16	-13.0	26.2	Vertical	N.A
18473.815	-38.94	-13.0	25.9	Vertical	PASS

LTE Band 4 5MHz BW, Mid Channel, QPSK

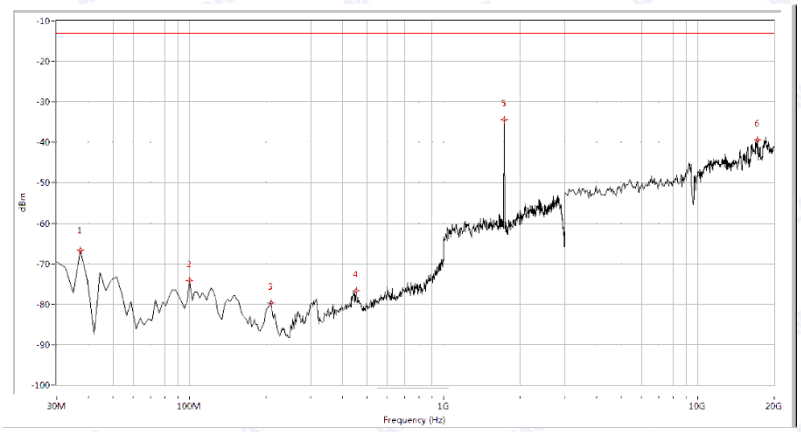


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-65.79	-13.0	52.8	Horizontal	PASS
100.150	-74.47	-13.0	61.5	Horizontal	PASS
206.584	-78.45	-13.0	65.4	Horizontal	PASS
446.060	-77.74	-13.0	64.7	Horizontal	PASS
1733.167	-35.74	-13.0	22.7	Horizontal	N.A
11945.137	-42.79	-13.0	29.8	Horizontal	PASS

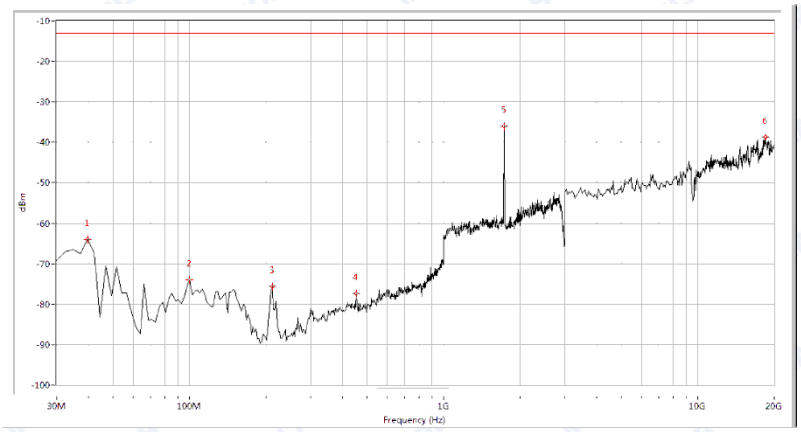


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-65.63	-13.0	52.6	Vertical	PASS
100.150	-74.98	-13.0	62.0	Vertical	PASS
211.421	-74.34	-13.0	61.3	Vertical	PASS
586.359	-75.94	-13.0	62.9	Vertical	PASS
1728.180	-36.68	-13.0	23.7	Vertical	N.A
18473.815	-38.88	-13.0	25.9	Vertical	PASS

LTE Band 4 5MHz BW, Mid Channel, 16QAM

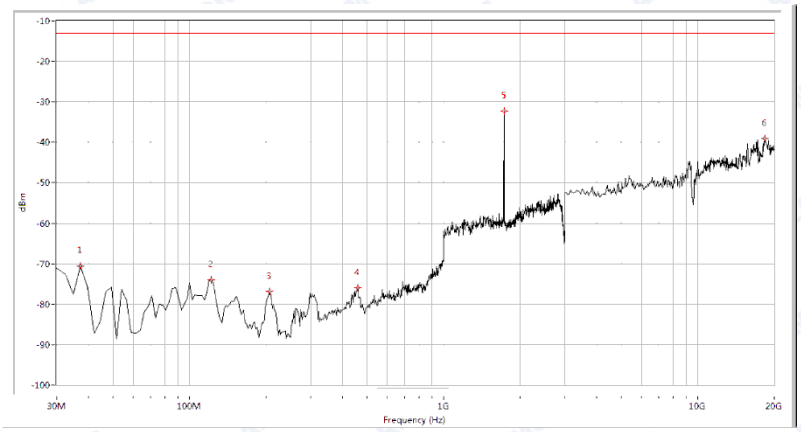


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-66.61	-13.0	53.6	Horizontal	PASS
100.150	-74.10	-13.0	61.1	Horizontal	PASS
209.002	-79.70	-13.0	66.7	Horizontal	PASS
453.317	-76.70	-13.0	63.7	Horizontal	PASS
1728.180	-34.33	-13.0	21.3	Horizontal	N.A
17159.601	-39.41	-13.0	26.4	Horizontal	PASS

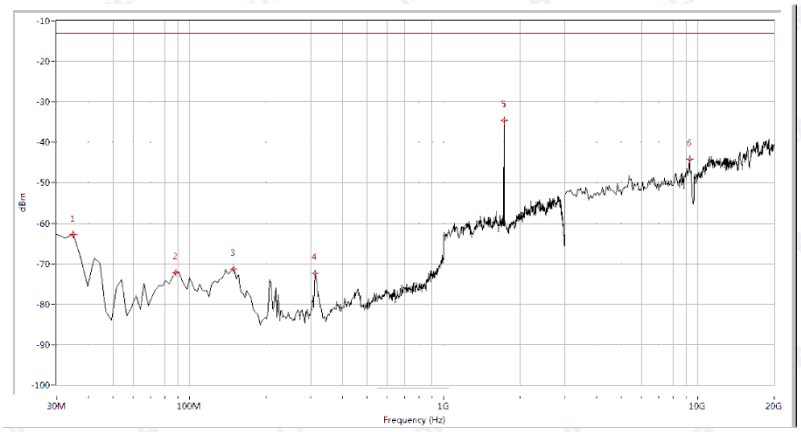


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-63.96	-13.0	51.0	Vertical	PASS
100.150	-74.02	-13.0	61.0	Vertical	PASS
211.421	-75.61	-13.0	62.6	Vertical	PASS
453.317	-77.45	-13.0	64.4	Vertical	PASS
1728.180	-36.02	-13.0	23.0	Vertical	N.A
18473.815	-38.70	-13.0	25.7	Vertical	PASS

LTE Band 4 10MHz BW, Mid Channel, QPSK

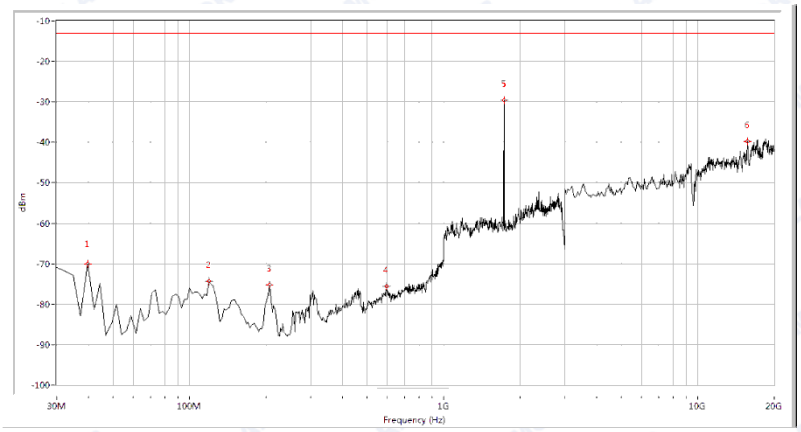


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-70.63	-13.0	57.6	Horizontal	PASS
121.920	-73.93	-13.0	60.9	Horizontal	PASS
206.584	-76.77	-13.0	63.8	Horizontal	PASS
458.155	-75.92	-13.0	62.9	Horizontal	PASS
1728.180	-32.23	-13.0	19.2	Horizontal	N.A
18346.633	-39.10	-13.0	26.1	Horizontal	PASS

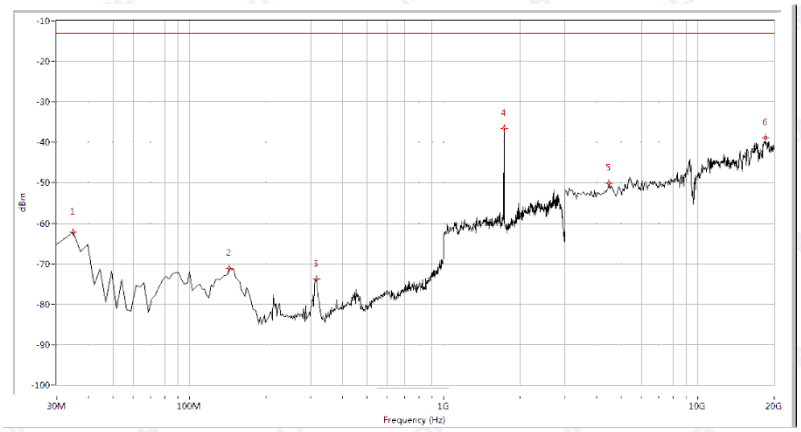


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.67	-13.0	49.7	Vertical	PASS
88.055	-72.27	-13.0	59.3	Vertical	PASS
148.529	-71.23	-13.0	58.2	Vertical	PASS
313.017	-72.35	-13.0	59.3	Vertical	PASS
1728.180	-34.66	-13.0	21.7	Vertical	N.A
9274.314	-44.16	-13.0	31.2	Vertical	PASS

LTE Band 4 10MHz BW, Mid Channel, 16QAM

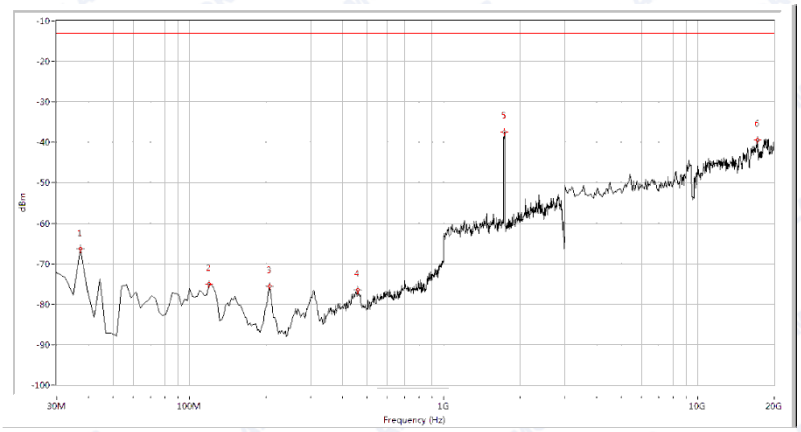


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
39.676	-70.13	-13.0	57.1	Horizontal	PASS
119.501	-74.39	-13.0	61.4	Horizontal	PASS
206.584	-75.15	-13.0	62.1	Horizontal	PASS
596.035	-75.64	-13.0	62.6	Horizontal	PASS
1728.180	-29.54	-13.0	16.5	Horizontal	N.A
15718.204	-39.76	-13.0	26.8	Horizontal	PASS

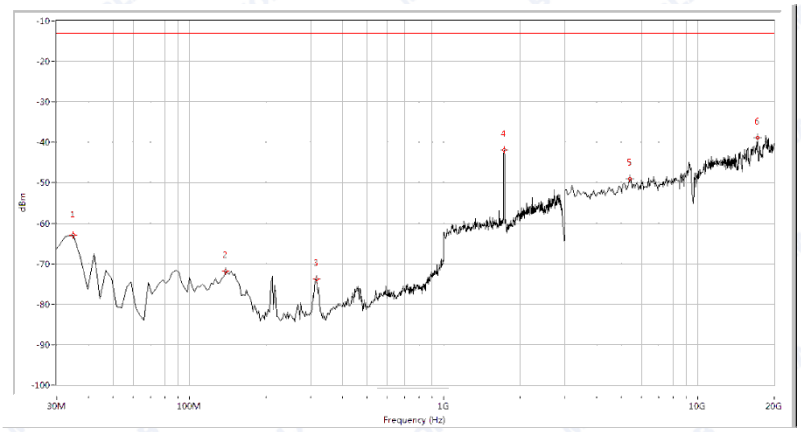


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.20	-13.0	49.2	Vertical	PASS
143.691	-71.05	-13.0	58.1	Vertical	PASS
315.436	-73.78	-13.0	60.8	Vertical	PASS
1728.180	-36.57	-13.0	23.6	Vertical	N.A
4483.791	-50.03	-13.0	37.0	Vertical	PASS
18473.815	-38.84	-13.0	25.8	Vertical	PASS

LTE Band 4 15MHz BW, Mid Channel, QPSK

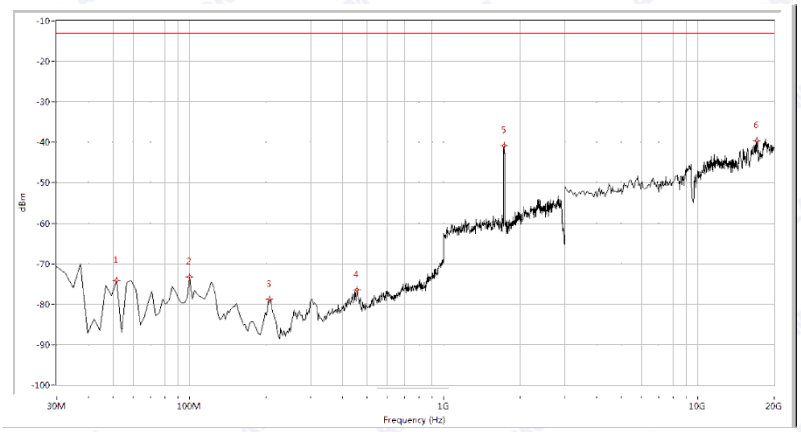


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-66.26	-13.0	53.3	Horizontal	PASS
119.501	-75.06	-13.0	62.1	Horizontal	PASS
206.584	-75.57	-13.0	62.6	Horizontal	PASS
458.155	-76.40	-13.0	63.4	Horizontal	PASS
1728.180	-37.42	-13.0	24.4	Horizontal	N.A
17201.995	-39.34	-13.0	26.3	Horizontal	PASS

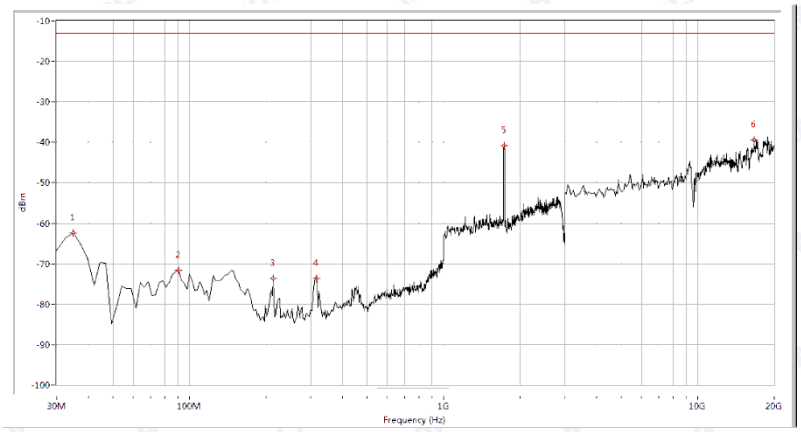


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.91	-13.0	49.9	Vertical	PASS
138.853	-71.77	-13.0	58.8	Vertical	PASS
315.436	-73.74	-13.0	60.7	Vertical	PASS
1728.180	-41.88	-13.0	28.9	Vertical	N.A
5416.459	-49.01	-13.0	36.0	Vertical	PASS
17159.601	-38.92	-13.0	25.9	Vertical	PASS

LTE Band 4 15MHz BW, Mid Channel, 16QAM

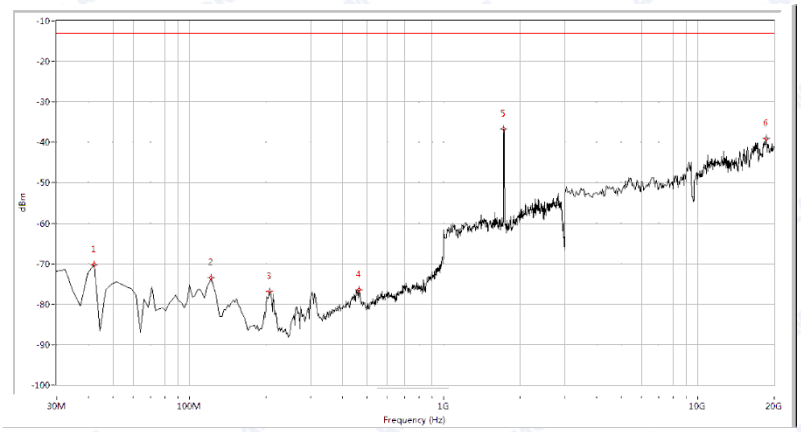


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
51.771	-74.20	-13.0	61.2	Horizontal	PASS
100.150	-73.33	-13.0	60.3	Horizontal	PASS
206.584	-78.75	-13.0	65.8	Horizontal	PASS
455.736	-76.46	-13.0	63.5	Horizontal	PASS
1728.180	-40.85	-13.0	27.9	Horizontal	N.A
17117.207	-39.53	-13.0	26.5	Horizontal	PASS

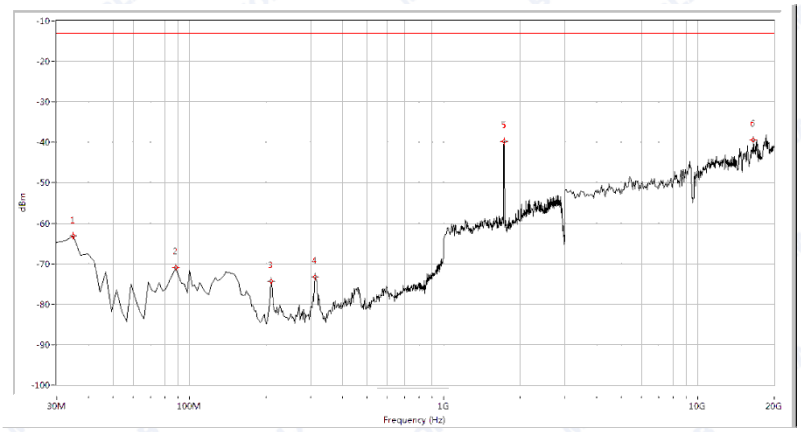


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.46	-13.0	49.5	Vertical	PASS
90.474	-71.71	-13.0	58.7	Vertical	PASS
213.840	-73.66	-13.0	60.7	Vertical	PASS
315.436	-73.60	-13.0	60.6	Vertical	PASS
1728.180	-40.77	-13.0	27.8	Vertical	N.A
16650.873	-39.46	-13.0	26.5	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, QPSK

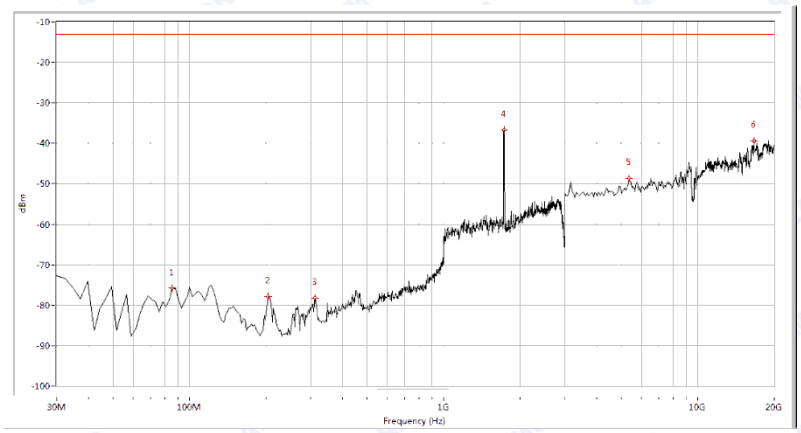


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-70.28	-13.0	57.3	Horizontal	PASS
121.920	-73.52	-13.0	60.5	Horizontal	PASS
206.584	-76.91	-13.0	63.9	Horizontal	PASS
465.411	-76.47	-13.0	63.5	Horizontal	PASS
1723.192	-36.74	-13.0	23.7	Horizontal	N.A
18558.603	-39.04	-13.0	26.0	Horizontal	PASS

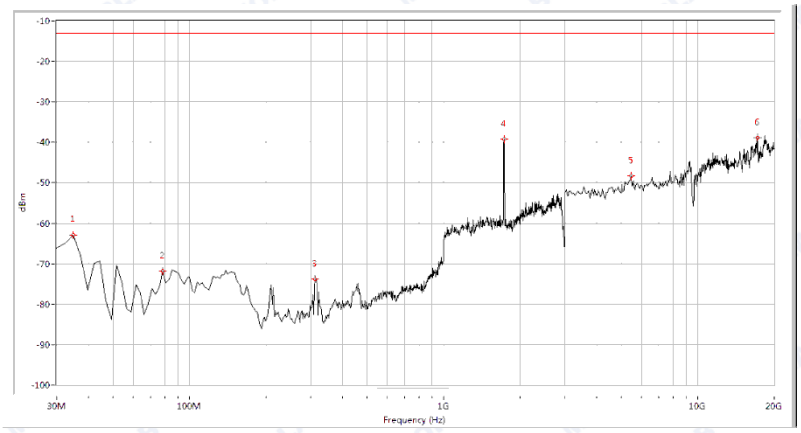


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.06	-13.0	50.1	Vertical	PASS
88.055	-70.93	-13.0	57.9	Vertical	PASS
209.002	-74.27	-13.0	61.3	Vertical	PASS
313.017	-73.35	-13.0	60.3	Vertical	PASS
1728.180	-39.72	-13.0	26.7	Vertical	N.A
16566.085	-39.37	-13.0	26.4	Vertical	PASS

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

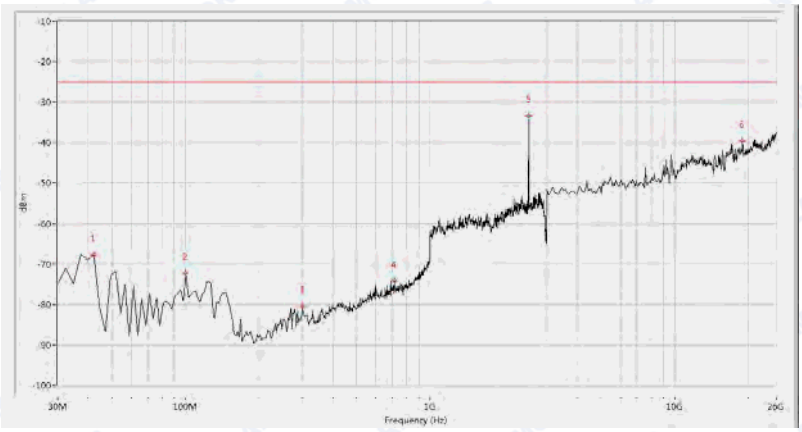


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
85.636	-75.78	-13.0	62.8	Horizontal	PASS
204.165	-77.91	-13.0	64.9	Horizontal	PASS
313.017	-78.34	-13.0	65.3	Horizontal	PASS
1728.180	-36.70	-13.0	23.7	Horizontal	N.A
5374.065	-48.61	-13.0	35.6	Horizontal	PASS
16608.479	-39.40	-13.0	26.4	Horizontal	PASS

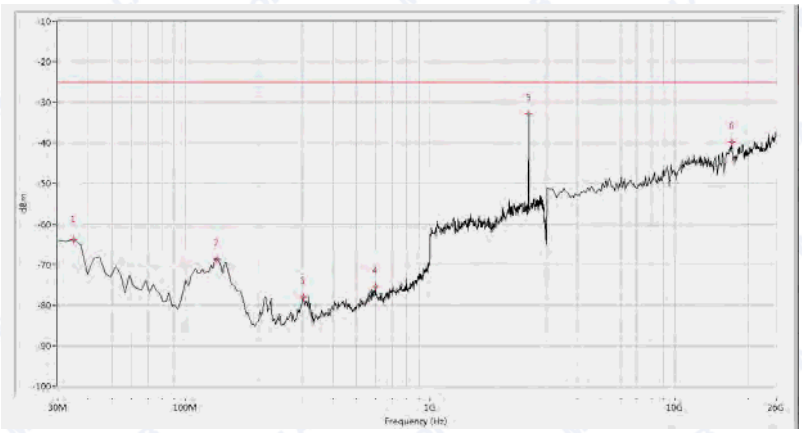


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.00	-13.0	50.0	Vertical	PASS
78.379	-71.91	-13.0	58.9	Vertical	PASS
313.017	-73.80	-13.0	60.8	Vertical	PASS
1728.180	-39.21	-13.0	26.2	Vertical	N.A
5458.853	-48.34	-13.0	35.3	Vertical	PASS
17159.601	-38.81	-13.0	25.8	Vertical	PASS

LTE Band 7 5MHz BW, Mid Channel, QPSK

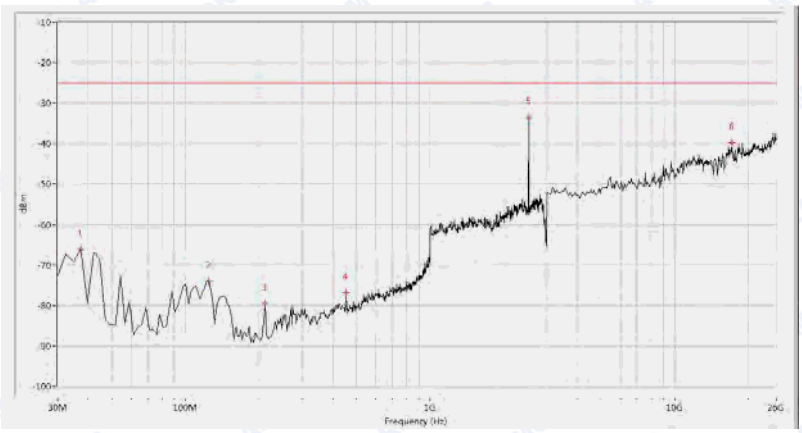


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.80	-25.0	42.8	Horizontal	PASS
100.150	-72.24	-25.0	47.2	Horizontal	PASS
300.923	-80.36	-25.0	55.4	Horizontal	PASS
714.564	-74.21	-25.0	49.2	Horizontal	PASS
2531.172	-33.33	-25.0	8.3	Horizontal	N.A
18945.137	-39.65	-25.0	14.6	Horizontal	PASS

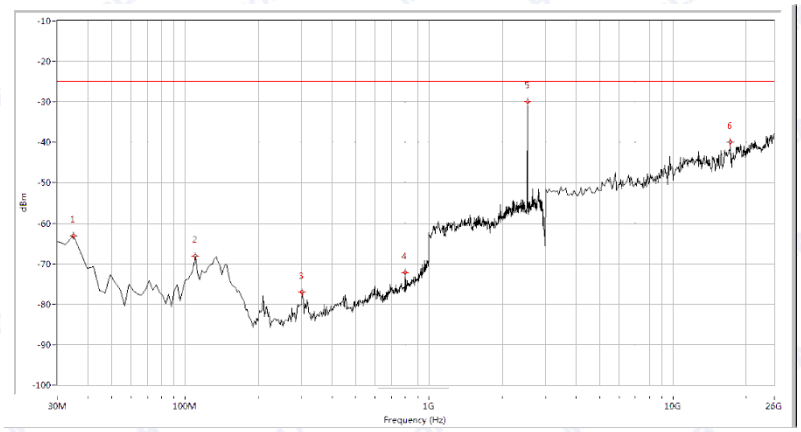


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.85	-25.0	38.9	Vertical	PASS
134.015	-68.69	-25.0	43.7	Vertical	PASS
303.342	-77.82	-25.0	52.8	Vertical	PASS
598.454	-75.36	-25.0	50.4	Vertical	PASS
2531.172	-32.81	-25.0	7.8	Vertical	N.A
17167.082	-39.68	-25.0	14.7	Vertical	PASS

LTE Band 7 5MHz BW, Mid Channel, 16QAM

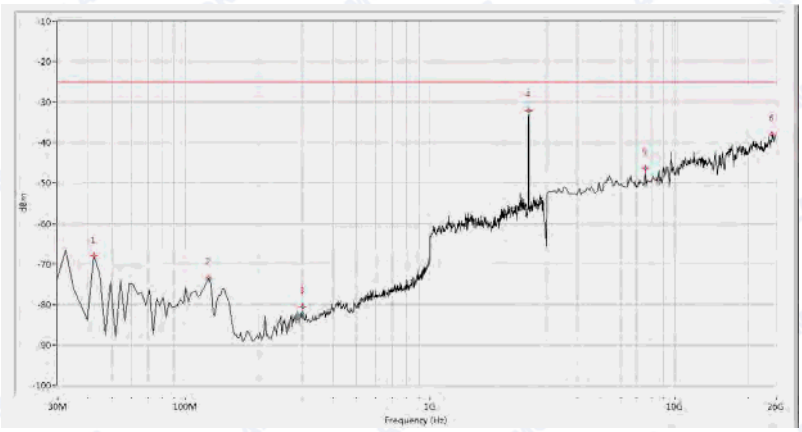


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-66.07	-25.0	41.1	Horizontal	PASS
124.339	-74.04	-25.0	49.0	Horizontal	PASS
211.421	-79.44	-25.0	54.4	Horizontal	PASS
453.317	-76.75	-25.0	51.8	Horizontal	PASS
2531.172	-33.61	-25.0	8.6	Horizontal	N.A
17109.726	-39.84	-25.0	14.8	Horizontal	PASS

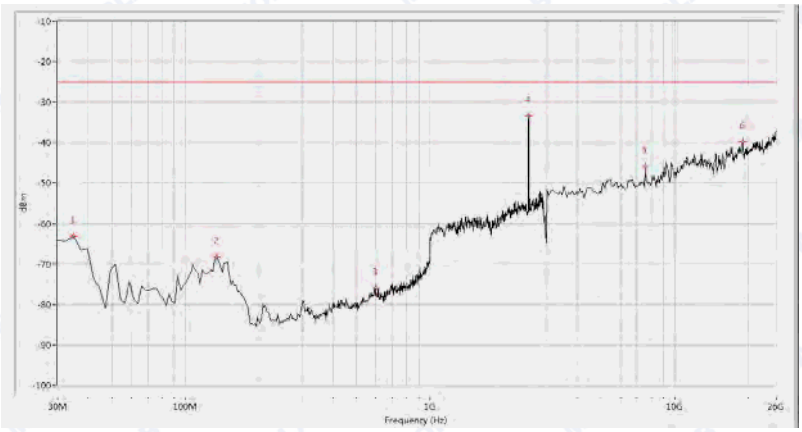


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.02	-25.0	38.0	Vertical	PASS
109.825	-68.13	-25.0	43.1	Vertical	PASS
300.923	-76.94	-25.0	51.9	Vertical	PASS
799.227	-72.20	-25.0	47.2	Vertical	PASS
2531.172	-29.95	-25.0	4.9	Vertical	N.A
17167.082	-39.98	-25.0	15.0	Vertical	PASS

LTE Band 7 10MHz BW, Mid Channel, QPSK

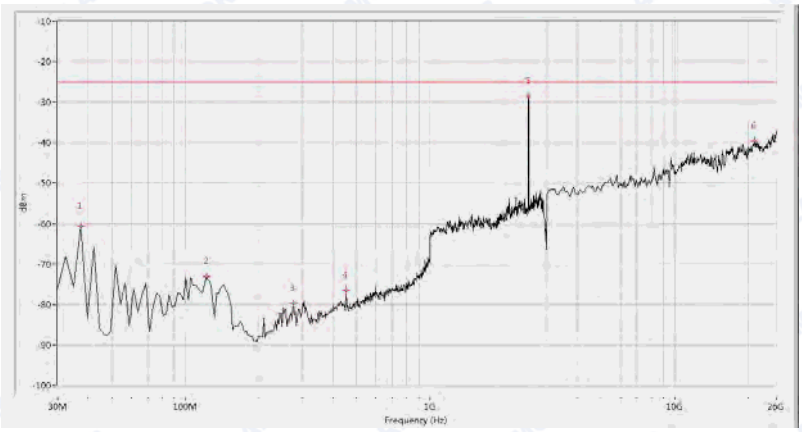


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.95	-25.0	43.0	Horizontal	PASS
124.339	-73.42	-25.0	48.4	Horizontal	PASS
300.923	-80.61	-25.0	55.6	Horizontal	PASS
2531.172	-32.15	-25.0	7.1	Horizontal	N.A
7588.529	-46.43	-25.0	21.4	Horizontal	PASS
25024.938	-37.96	-25.0	13.0	Horizontal	PASS

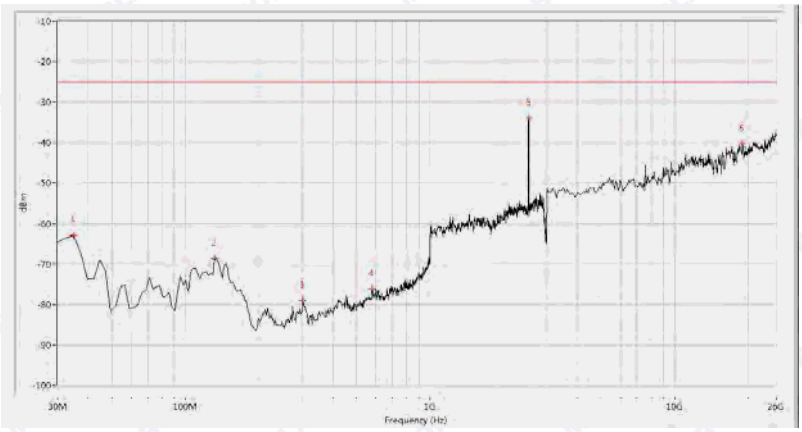


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.10	-25.0	38.1	Vertical	PASS
134.015	-68.28	-25.0	43.3	Vertical	PASS
598.454	-76.00	-25.0	51.0	Vertical	PASS
2531.172	-33.44	-25.0	8.4	Vertical	N.A
7588.529	-45.93	-25.0	20.9	Vertical	PASS
19002.494	-39.82	-25.0	14.8	Vertical	PASS

LTE Band 7 10MHz BW, Mid Channel, 16QAM

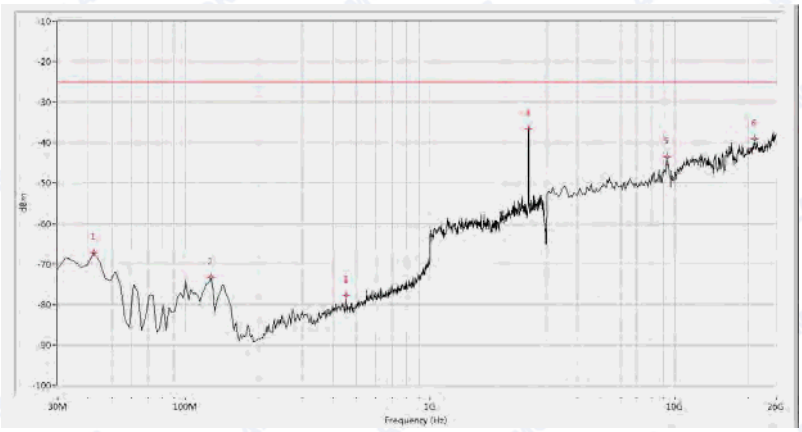


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
37.257	-60.68	-25.0	35.7	Horizontal	PASS
121.920	-73.17	-25.0	48.2	Horizontal	PASS
276.733	-79.59	-25.0	54.6	Horizontal	PASS
453.317	-76.54	-25.0	51.5	Horizontal	PASS
2526.185	-28.52	-25.0	3.5	Horizontal	N.A
21182.045	-39.56	-25.0	14.6	Horizontal	PASS

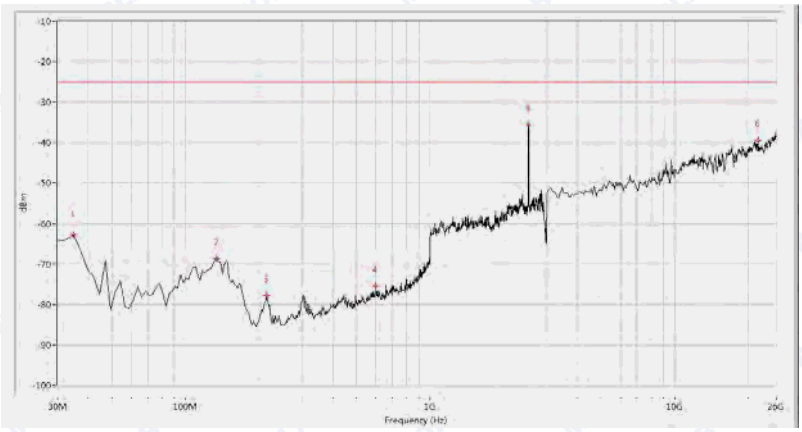


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.87	-25.0	37.9	Vertical	PASS
131.596	-68.67	-25.0	43.7	Vertical	PASS
300.923	-78.96	-25.0	54.0	Vertical	PASS
579.102	-76.05	-25.0	51.1	Vertical	PASS
2531.172	-33.82	-25.0	8.8	Vertical	N.A
18945.137	-40.29	-25.0	15.3	Vertical	PASS

LTE Band 7 15MHz BW, Mid Channel, QPSK

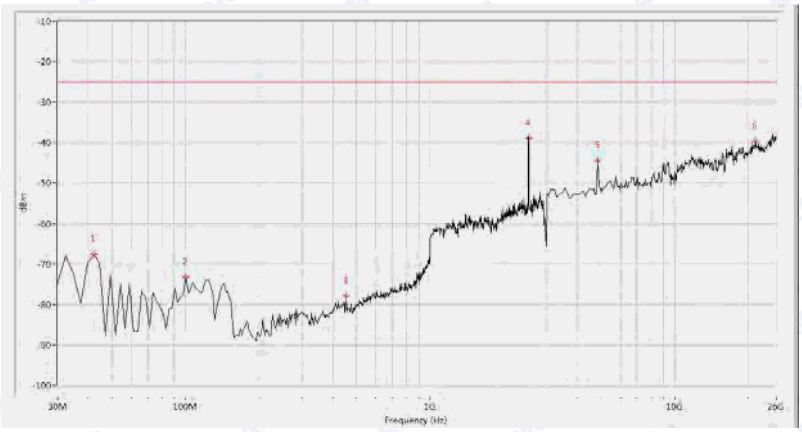


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.16	-25.0	42.2	Horizontal	PASS
126.758	-73.19	-25.0	48.2	Horizontal	PASS
453.317	-77.75	-25.0	52.8	Horizontal	PASS
2536.160	-36.64	-25.0	11.6	Horizontal	N.A
9309.227	-43.52	-25.0	18.5	Horizontal	PASS
21182.045	-39.06	-25.0	14.1	Horizontal	PASS

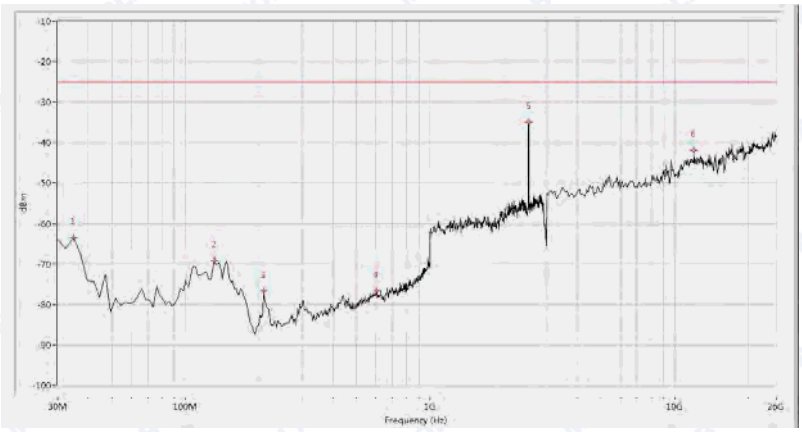


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.77	-25.0	37.8	Vertical	PASS
134.015	-68.57	-25.0	43.6	Vertical	PASS
213.840	-77.66	-25.0	52.7	Vertical	PASS
598.454	-75.49	-25.0	50.5	Vertical	PASS
2526.185	-35.56	-25.0	10.6	Vertical	N.A
21870.324	-39.42	-25.0	14.4	Vertical	PASS

LTE Band 7 15MHz BW, Mid Channel, 16QAM

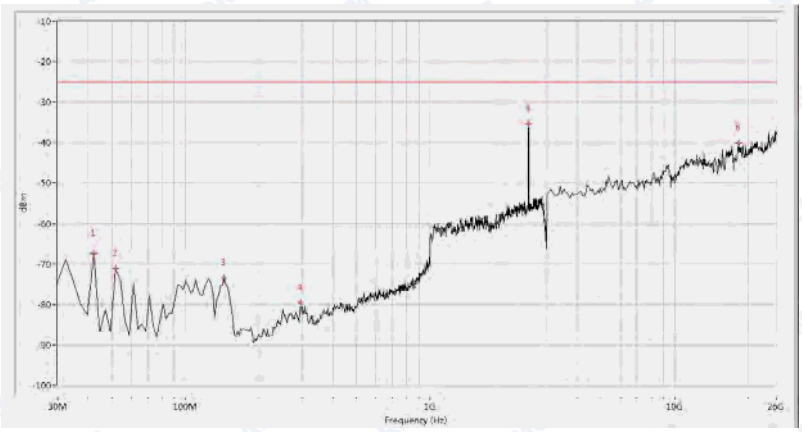


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.64	-25.0	42.6	Horizontal	PASS
100.150	-73.22	-25.0	48.2	Horizontal	PASS
453.317	-77.88	-25.0	52.9	Horizontal	PASS
2531.172	-38.86	-25.0	13.9	Horizontal	N.A
4835.411	-44.46	-25.0	19.5	Horizontal	PASS
21354.115	-39.55	-25.0	14.5	Horizontal	PASS

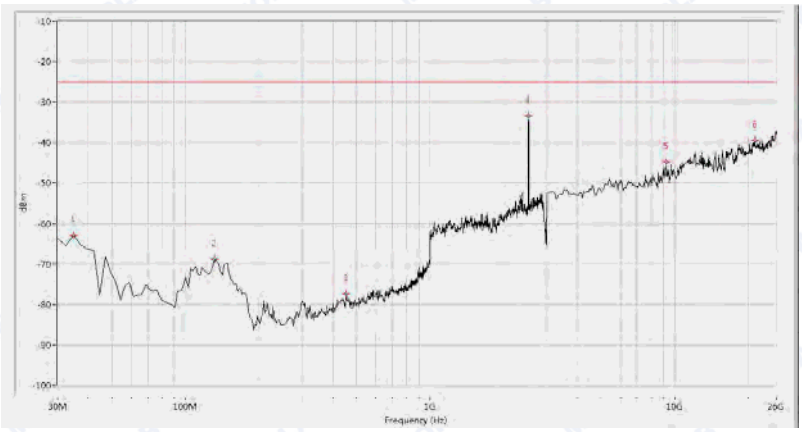


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-63.54	-25.0	38.5	Vertical	PASS
131.596	-69.15	-25.0	44.2	Vertical	PASS
209.002	-76.73	-25.0	51.7	Vertical	PASS
603.292	-76.58	-25.0	51.6	Vertical	PASS
2531.172	-34.92	-25.0	9.9	Vertical	N.A
12004.988	-41.91	-25.0	16.9	Vertical	PASS

LTE Band 7 20MHz BW, Mid Channel, QPSK

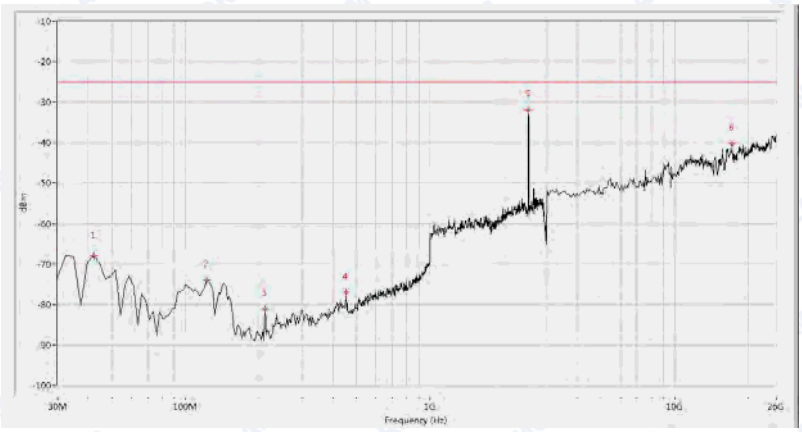


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.32	-25.0	42.3	Horizontal	PASS
51.771	-71.18	-25.0	46.2	Horizontal	PASS
143.691	-73.40	-25.0	48.4	Horizontal	PASS
296.085	-79.58	-25.0	54.6	Horizontal	PASS
2526.185	-35.31	-25.0	10.3	Horizontal	N.A
18199.501	-40.07	-25.0	15.1	Horizontal	PASS

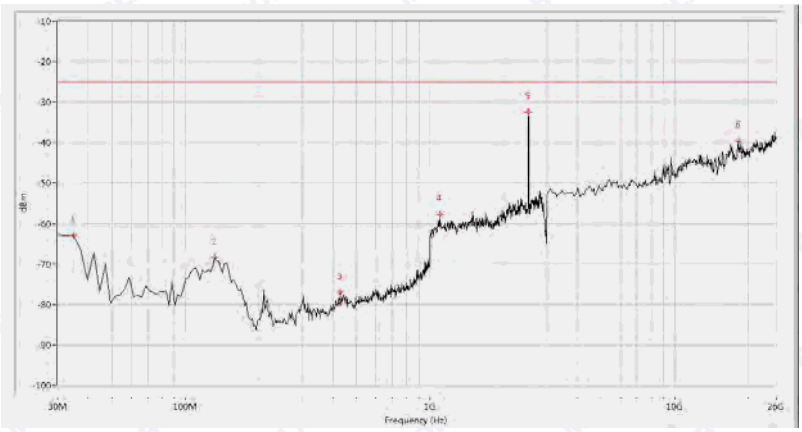


Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.97	-25.0	38.0	Vertical	PASS
131.596	-68.81	-25.0	43.8	Vertical	PASS
453.317	-77.35	-25.0	52.3	Vertical	PASS
2526.185	-33.27	-25.0	8.3	Vertical	N.A
9251.870	-44.74	-25.0	19.7	Vertical	PASS
21296.758	-39.34	-25.0	14.3	Vertical	PASS

LTE Band 7 20MHz BW, Mid Channel, 16QAM



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
42.095	-67.95	-25.0	42.9	Horizontal	PASS
121.920	-73.92	-25.0	48.9	Horizontal	PASS
211.421	-81.19	-25.0	56.2	Horizontal	PASS
453.317	-76.98	-25.0	52.0	Horizontal	PASS
2526.185	-31.84	-25.0	6.8	Horizontal	N.A
17167.082	-40.33	-25.0	15.3	Horizontal	PASS



Fre. (MHz)	Peak	Limit(PK)	Margin	Antenna	Verdict
34.838	-62.87	-25.0	37.9	Vertical	PASS
131.596	-68.43	-25.0	43.4	Vertical	PASS
429.127	-77.06	-25.0	52.1	Vertical	PASS
1094.763	-57.70	-25.0	32.7	Vertical	PASS
2526.185	-32.40	-25.0	7.4	Vertical	N.A
18199.501	-39.59	-25.0	14.6	Vertical	PASS

***** END OF REPORT *****