

					RB Con	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				ODCK	1	0	23.02
		L	4000	QPSK	100	0	23.27
		18700	1860	40.0414	1	0	21.70
				16-QAM	100	0	20.68
				ODCK	1	0	21.52
LTE		М	1880	QPSK	100	0	20.82
	20MHz	18900	1000	16-QAM	1	0	21.09
Band 2				16-QAIVI	100	0	20.15
				QPSK	1	0	21.75
		Н	1900	QFSK	100	0	20.75
		19100	1900	16-QAM	1	0	22.06
			16-QAIVI	100	0	20.69	
					RB Con	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				0.0014	1	0	21.17
	L	4057.5	QPSK -	75	0	20.35	
		18675	1857.5	16-QAM	1	0	21.96
					75	0	20.28
				QPSK	1	0	22.35
LTE		М	l 1880 l	QPSK	75	0	20.58
	15MHz	18900		16-QAM	1	0	21.52
Band 2				10 30 101	75	0	20.27
			QPSK	1	0	21.75	
		Н	1902.5	QPSK	75	0	20.58
		19125	1902.5	16-QAM	1	0	21.66
					75	0	20.58
Dand	D \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Ob a same al	(_/\\	NA - dod - di - o	RB Con	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	20.92
		L	1855	QF3K	50	0	20.30
		18650	1833	16-QAM	1	0	21.34
				10-QAIVI	50	0	20.28
,				QPSK	1	0	22.35
LTE	_	10MHz 18900	1880	QF UN	50	0	20.42
	10MHz		1000	16-OAM	1	0	20.75
Band 2				16-QAM	50	0	20.70
				QPSK	1	0	20.54
		Н	1905	UP3N	50	0	20.73
		19150	1905	16-QAM	1	0	20.23
				10-QAW	50	0	20.04





					RB Cor	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				ODSK	1	0	20.85
		L	40E0 E	QPSK	25	0	20.17
	18625	18625	1852.5	16-QAM	1	0	20.65
					25	0	20.53
				ODCK	1	0	21.32
LTE		М	4000	QPSK	25	0	20.35
	5MHz	18900	1880	16-QAM	1	0	20.90
Band 2				16-QAIVI	25	0	20.03
				QPSK	1	0	21.32
		Н	1907.5	QFSK	25	0	20.34
		19175	1907.5	16-QAM	1	0	21.35
				16-QAIVI	25	0	20.15
			_		RB Cor	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
		L 18615	1851.5	QPSK	1	0	21.24
					15	0	19.92
				16-QAM	1	0	21.81
					15	0	20.71
LTE		M	1880	QPSK	1	0	21.84
LIE					15	0	20.79
	3MHz	18900		16-QAM	1	0	21.54
Band 2				. 5 30 1101	15	0	20.40
			1908.5	QPSK -	1	0	21.80
		Н			15	0	20.24
		19185		16-QAM -	1	0	21.92
					15	0	20.72
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Cor	ifiguration	EIRP
Dand	Danu Widin	Chamer	Fieq.(IVII IZ)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	20.77
		L	1850.7	QFOR	6	0	20.18
		18607	1050.7	16-QAM	1	0	21.38
				IO-QAIVI	6	0	20.22
1.75				QPSK	1	0	21.89
LTE		18900	1880	QI UIV	6	0	20.61
	1.4MHz		1000	16-QAM	1	0	21.13
Band 2			10 Q/NIVI	6	0	20.09	
				QPSK	1	0	21.17
	Н	1909.3	UPSK	6	0	20.53	
		19193	1909.3	16-QAM	1	0	21.20
				10 G/NVI	6	0	20.61





					RB Cor	figuration	EIRP	
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)	
					1	0	21.96	
		L		QPSK	100	0	20.53	
		20050	1720.0		1	0	21.87	
			16-QAM	100	0	20.94		
				1	0	22.29		
LTE		М		QPSK	100	0	21.36	
	20MHz	20175	1732.5	40.0414	1	0	22.26	
Band 4				16-QAM	100	0	21.02	
				ODCK	1	0	21.86	
	Н	Н	4745.0	QPSK	100	0	20.47	
		20300	1745.0	40 0 4 14	1	0	22.38	
				16-QAM	100	0	21.30	
					RB Cor	figuration	EIRP	
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)	
				QPSK -	1	0	21.95	
		L 20025	1717.5		75	0	20.82	
				16 0 4 14	1	0	22.07	
				16-QAM	75	0	20.49	
			QPSK	1	0	22.39		
LTE		М	1732.5	QPSK	75	0	21.15	
	15MHz	20175		16-QAM	1	0	22.30	
Band 4				10-QAIVI	75	0	20.73	
			1747.5	QPSK	1	0	21.86	
		Н			75	0	20.79	
		20325		16-QAM	1	0	21.70	
				TO QAIVI	75	0	21.15	
Band	Band Width	Channel	From (MHz)	Modulation	RB Cor	figuration	EIRP	
Danu	Danu Widin	Charmer	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)	
				QPSK	1	0	21.33	
		L	1715.0	QFOR	50	0	20.73	
		20000	17 13.0	16-QAM	1	0	21.91	
				10-QAIVI	50	0	20.80	
LTE				QPSK	1	0	21.82	
LTE		M 20175	1732.5	Q. O.	50	0	21.09	
	10MHz			16-QAM	1	0	21.39	
Band 4			. C G/ IIVI	50	0	20.80		
			QPSK	1	0	21.75		
		H	H 20350 1750.0	QF OIL	50	0	20.67	
		20350		16-QAM	1	0	22.34	
						50	0	21.33



					RB Cor	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				ODCK	1	0	21.49
		L	4740.5	QPSK	25	0	20.40
		19975	1712.5	40 0 4 14	1	0	21.43
				16-QAM	25	0	20.71
				ODSK	1	0	22.26
LTE		M	4700 5	QPSK	25	0	21.46
	5MHz	20175	1732.5	16-QAM	1	0	21.80
Band 4				16-QAIVI	25	0	20.89
	H 20375		QPSK	1	0	21.42	
		1752.5	QF3K	25	0	20.24	
		20375	1732.3	16-QAM	1	0	22.34
				10-QAIVI	25	0	21.40
D '	D 1347 141	Oh .	F (8411.)	NA - 1 1 2	RB Cor	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
			1711.5	QPSK	1	0	21.61
		L 19965			15	0	20.80
				16-QAM	1	0	21.89
					15	0	20.53
		М	1732.5	QPSK	1	0	22.89
LTE				QF3K	15	0	21.24
	3MHz	20175		16-QAM	1	0	21.96
Band 4					15	0	20.71
			1753.5	QPSK	1	0	21.68
		Н			15	0	20.83
		20385	1733.3	16-QAM	1	0	22.20
				10 Q/NV	15	0	21.24
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Cor	figuration	EIRP
Dand	Dana Widin	Chamilei	1 16q.(IVII 12)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	21.41
		L	1710.7	QI OIN	6	0	20.69
		19957	17 10.7	16-QAM	1	0	21.51
				10 QAIVI	6	0	20.67
1.75				QPSK	1	0	21.92
LTE		1.4MHz M 20175	1732.5	QI OIX	6	0	21.10
	1.4MHz		1702.0	16-QAM	1	0	21.46
Band 4				10 Q/NIVI	6	0	20.76
			1754.3	QPSK	1	0	21.35
		Н		QF SIN	6	0	20.54
		20393		16-QAM	1	0	22.44
				10-QAW	6	0	21.37



Б	5 1345.61		- (411)		RB Cor	nfiguration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
		L		ODGK	1	0	20.73
		_	2510	QPSK	100	0	20.44
			2510	16-QAM	1	0	22.33
		20850			100	0	21.19
		М		QPSK	1	0	23.19
LTE			2535	QFSK	100	0	21.42
	20MHz	04400	2000	16-QAM	1	0	21.19
Band 7		21100		10-QAIVI	100	0	20.37
		Н		QPSK	1	0	22.81
			2560	QI OI	100	0	21.16
		24250	2300	16-QAM	1	0	22.73
		21350		10-QAIVI	100	0	21.47
Donal	D =l \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Ob a same at	C (A 41 1-)	NA - dod - 4:	RB Cor	figuration	EIRP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
			2507.5	QPSK -	1	0	21.35
		L 20825			75	0	20.25
				16-QAM	1	0	22.85
				10-QAIVI	75	0	21.24
1.75		M	2535	QPSK	1	0	22.20
LTE					75	0	21.22
	15MHz	21100		16-QAM	1	0	21.40
Band 7					75	0	20.32
		H 2562.5	QPSK	1	0	22.69	
				75	0	21.11	
		21375	2002.0	16-QAM	1	0	22.72
					75	0	21.49
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Cor	nfiguration	EIRP
Dana	Dana Watii	Orianner	1 16q.(WII 12)	Woddiation	RB Size	RB Offset	(dBm)
				QPSK	1	0	20.52
		L	2505	QI OIL	50	0	20.22
		20800	2303	16-QAM	1	0	22.33
				10-QAIVI	50	0	20.86
ITE				QPSK	1	0	22.56
LTE		M 21100	2535	<u> </u>	50	0	21.33
	10MHz		2000	16-QAM	1	0	20.87
Band 7				10 SANIVI	50	0	20.13
				QPSK	1	0	22.11
		Н	2565	UPSN	50	0	21.17
		21400	2000	16-QAM	1	0	21.86
				10-QAIVI	50	0	21.33



Dand	Davad Width	Channal	Freq.(MHz)	Madulatian	RB Configuration		EIRP
Band	Band Band Width	Channel	Freq.(IVIHZ)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	20.70
	20775	2502.5	QF SK	25	0	20.00	
		2302.3	16-QAM	1	0	22.32	
				10-QAW	25	0	21.21
			QPSK	1	0	22.03	
LTE		М	2535	QF 5K	25	0	21.12
	5MHz	21100		16-QAM	1	0	20.75
Band 7					25	0	20.07
				QPSK	1	0	22.16
	Н	2567.5	QF SK	25	0	21.09	
		21425	2007.0	16-QAM	1	0	22.55
				10-QAM	25	0	21.40

Donal	D 1 1/1/1-141-	Ob a sala	F (A411-)	Madridation	RB Con	figuration	ERP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	21.03
		L	704	QF3K	50	0	19.98
		23060	704	16-QAM	1	0	20.85
				10-QAIVI	50	0	19.51
				QPSK	1	0	20.68
LTE		M 23095	707.5	QI OK	50	0	19.41
	10MHz		707.5	16-QAM	1	0	21.49
Band 12	H 23130			10-QAIVI	50	0	19.91
				QPSK	1	0	21.33
		711	QI OIL	50	0	19.48	
		23130	,	16-QAM	1	0	20.21
					50	0	19.46
Band	d D1 M/:-141-	Channel I	Freq.(MHz)	Modulation	RB Con	figuration	ERP
Danu	Band Width		rieq.(IVIHZ)	Modulation	RB Size	RB Offset	(dBm)
				QPSK -	1	0	20.86
		L	701.5		25	0	19.98
		23035	701.5	16-QAM	1	0	20.89
				10-QAIVI	25	0	19.71
				QPSK	1	0	20.10
LTE		М	707.5	QI OIX	25	0	18.99
	5MHz 23095 Band 12	23095	707.5	16-QAM	1	0	20.91
Band 12				10 QAIVI	25	0	20.05
		H 23155		QPSK	1	0	20.73
			713.5	QF SIN	25	0	19.59
				16-QAM	1	0	20.62
					25	0	19.26





					RB Con	figuration	ERP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
		L		QPSK	1	0	21.38
		_	700.5	QPSK	15	0	19.97
		00005	700.5	16-QAM	1	0	21.14
	23025		10-QAIVI	15	0	19.50	
	LTE 3MHz	М		QPSK	1	0	20.83
LIE			707.5	QF 5K	15	0	19.12
		00005	707.5	16-QAM	1	0	21.73
Band 12	23095		10-QAIVI	15	0	19.89	
	Н		QPSK	1	0	20.93	
	714.5	7115	QF3N	15	0	19.80	
	00405	7 14.5	16-QAM	1	0	20.14	
	23165		10-QAIVI	15	0	19.11	
Donal	5	01	Гла ст /N/II I—)	Modulation	RB Con	figuration	ERP
Band	Band Width	Channel Freq.(MHz)		เพอนนเสแอก	RB Size	RB Offset	(dBm)
				QPSK	1	0	20.59
		L	699.7		6	0	20.00
		23017	699.7	16-QAM	1	0	20.87
				10-QAIVI	6	0	19.78
				QPSK	1	0	19.71
LTE		М	707.5	QF 5K	6	0	18.88
	1.4MHz	23095	707.5	16-QAM	1	0	20.64
Band 12	Band 12			10-QAIVI	6	0	20.07
				QPSK	1	0	20.71
		H 23173	715.3	UP3N	6	0	19.65
			7 10.0	16-QAM	1	0	20.23
				10 Q/NIVI	6	0	19.15

Dond	Band Band Width C	Channal		Madulatian	RB Con	figuration	ERP
Бапи		Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	21.61
	23780	L	709	QFSK	50	0	22.02
		23780	709	16-QAM	1	0	20.40
				10-QAW	50	0	19.62
			710	QPSK	1	0	21.09*
LTE		М			50	0	19.55
	10MHz	23790		16-QAM	1	0	20.76
Band 17				10-QAIVI	50	0	19.41
				QPSK	1	0	21.37
	H 23800		711	QF3N	50	0	19.60
		23800	711	16 OAM	1	0	19.53
				16-QAM	50	0	19.71





Dond	nd Band Width	Channal	Frog (MHz)	Madulatian	RB Con	figuration	ERP
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Size	RB Offset	(dBm)
				QPSK	1	0	21.94
		L	706.5	QFSK	25	0	19.62
		23755	700.5	16-QAM	1	0	19.78
				10-QAW	25	0	19.45
				QPSK	1	0	19.65
LTE		М	710	QFSK	25	0	19.38
	5MHz	23790		16-QAM	1	0	19.30
Band 17				10-QAIVI	25	0	19.58
				QPSK	1	0	19.92
	H 23825	Н	713.5	QF 5K	25	0	19.89
		23825	713.5	16-QAM	1	0	19.94
					25	0	19.48





2.8. Radiated Spurious Emissions

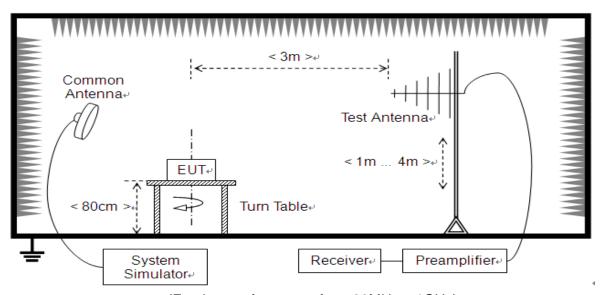
2.8.1. Requirement

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:

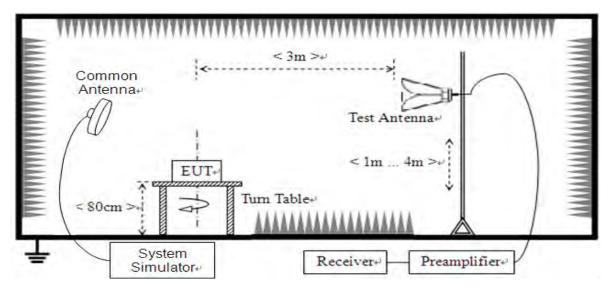
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB. This calculated to be -25dBm.

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.

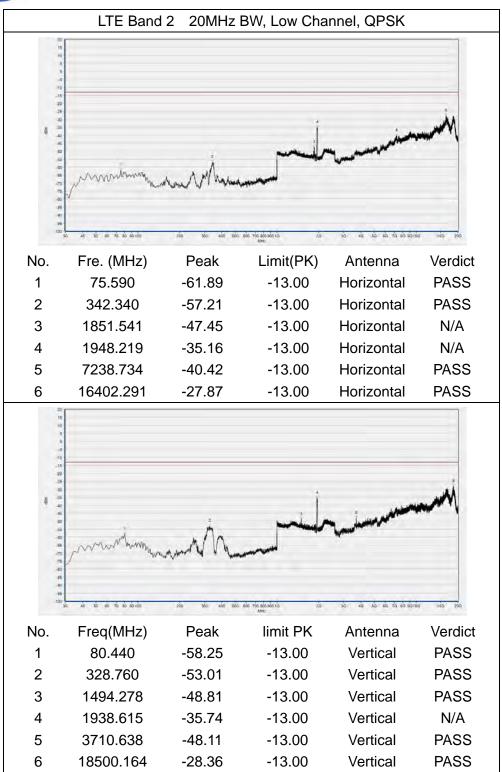
Note1: The power of the EUT transmitting frequency should be ignored.

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.

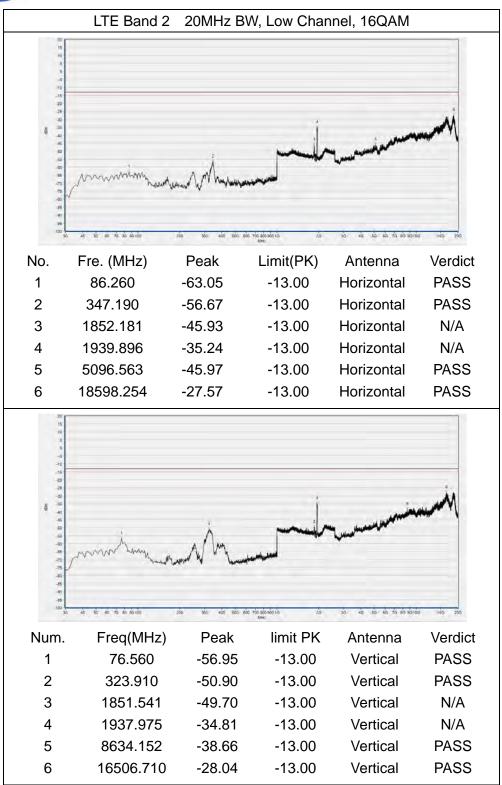
Note3: All bandwidth and test channel were considered and evaluated respectively by performing full test for each band, only the worst cases were recorded in this test report.





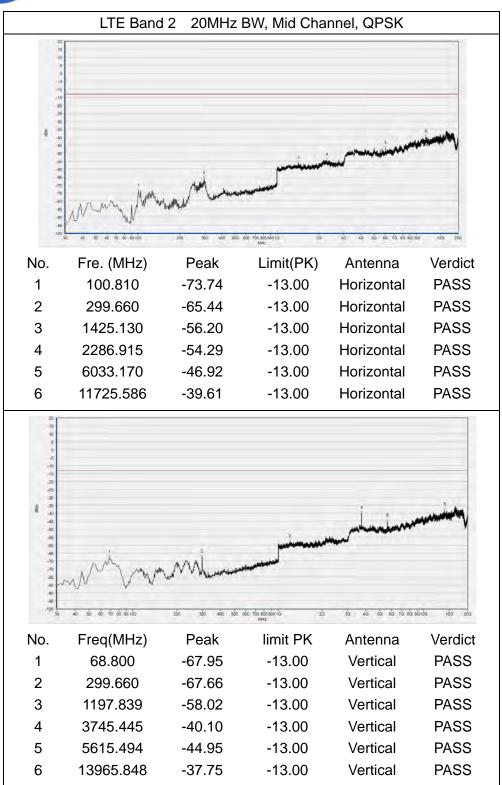






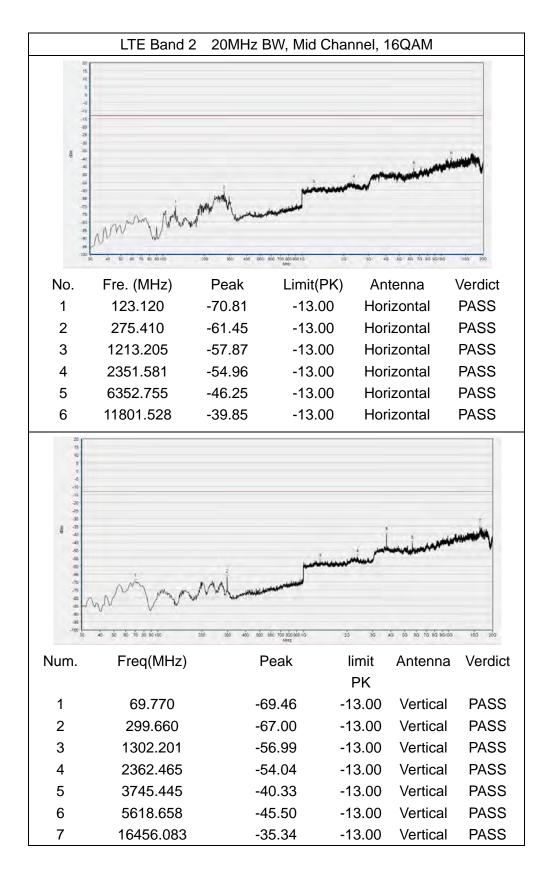






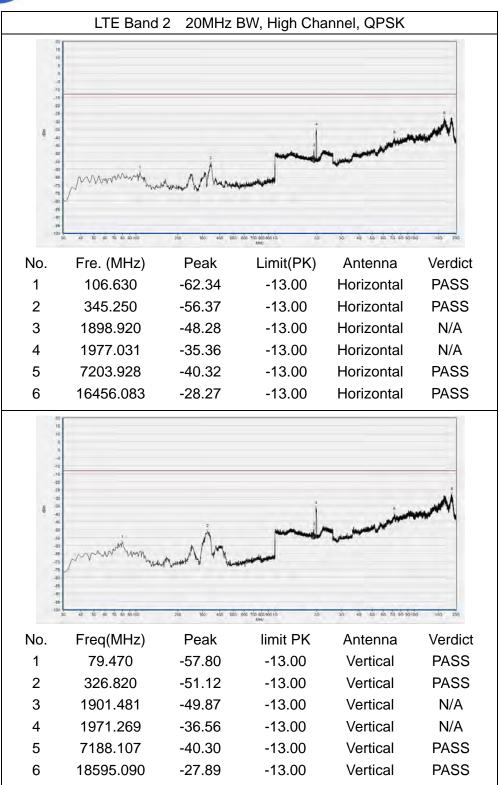


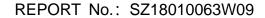




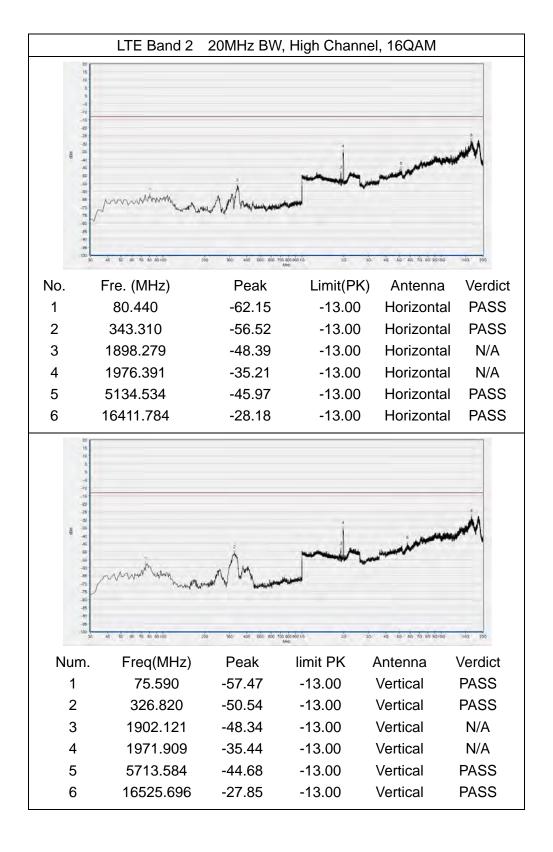




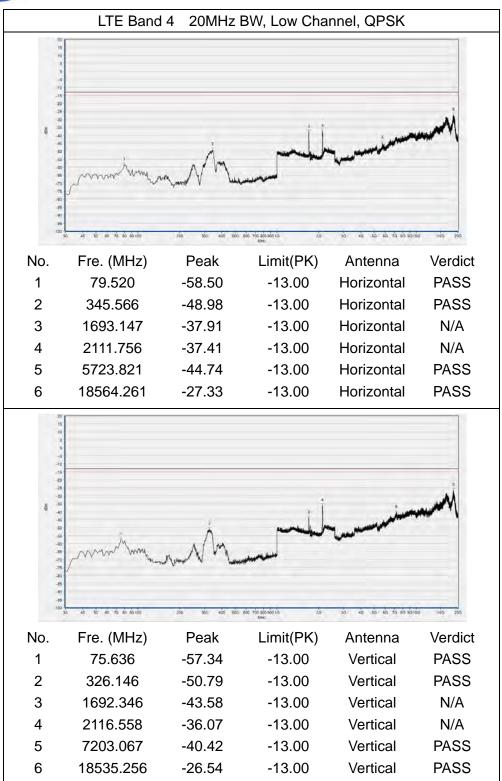






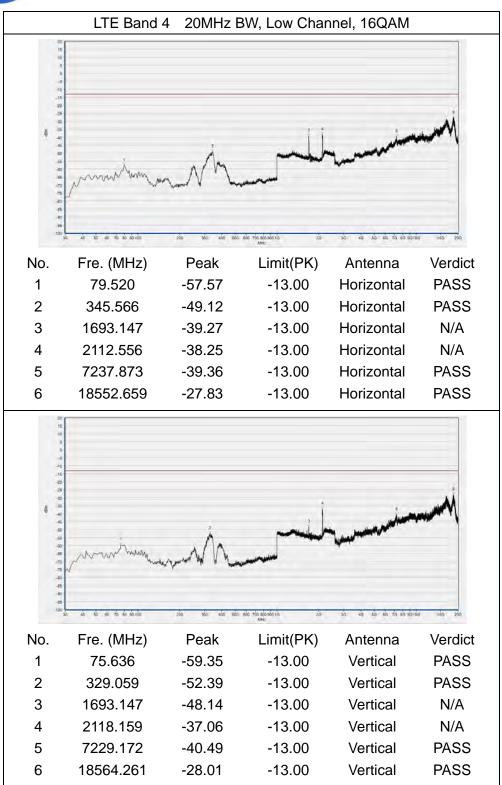




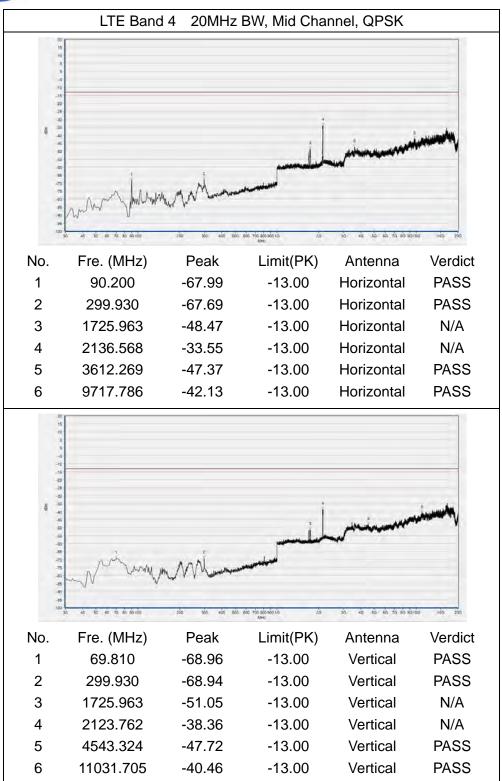




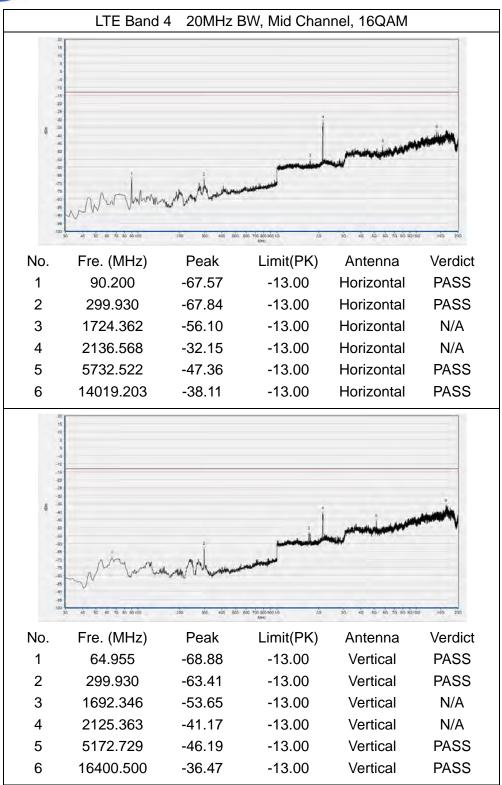




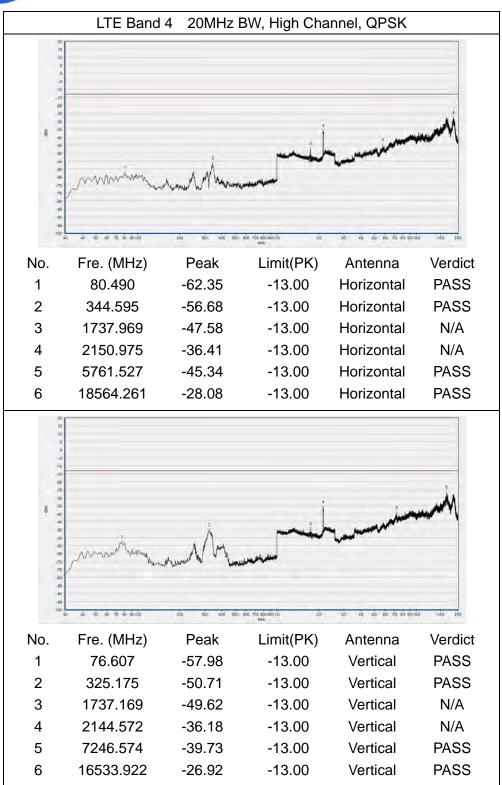




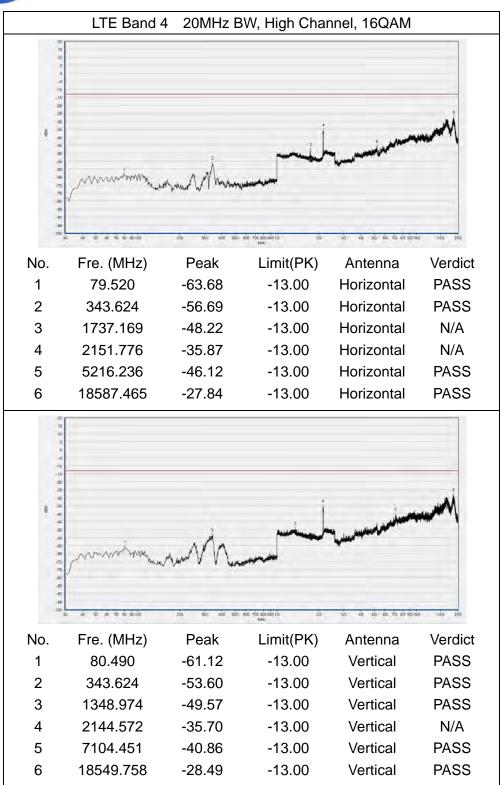




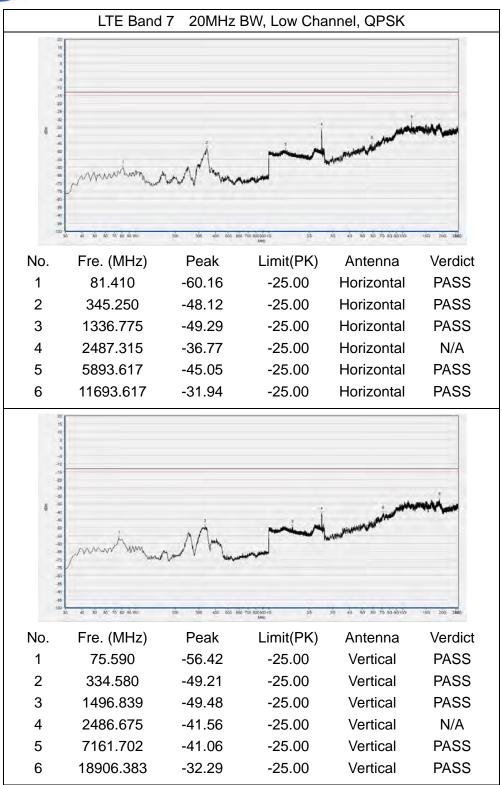




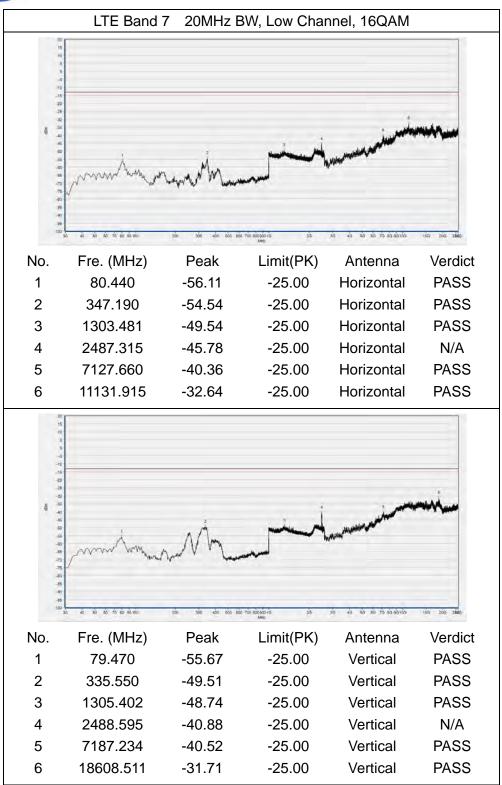






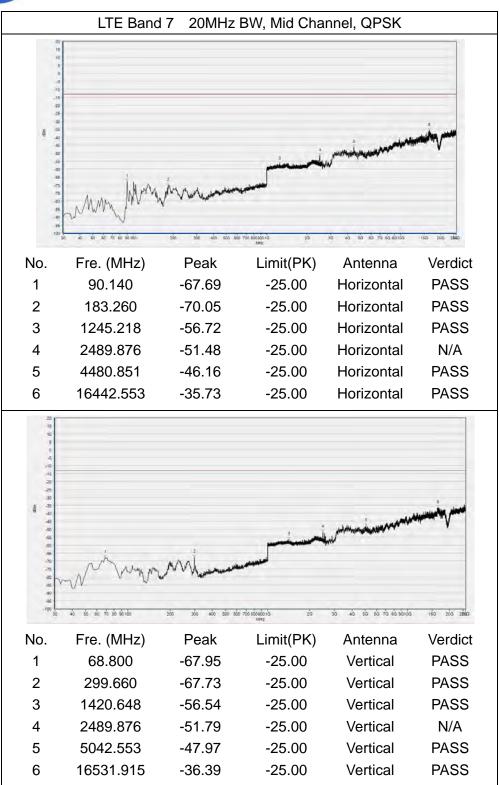




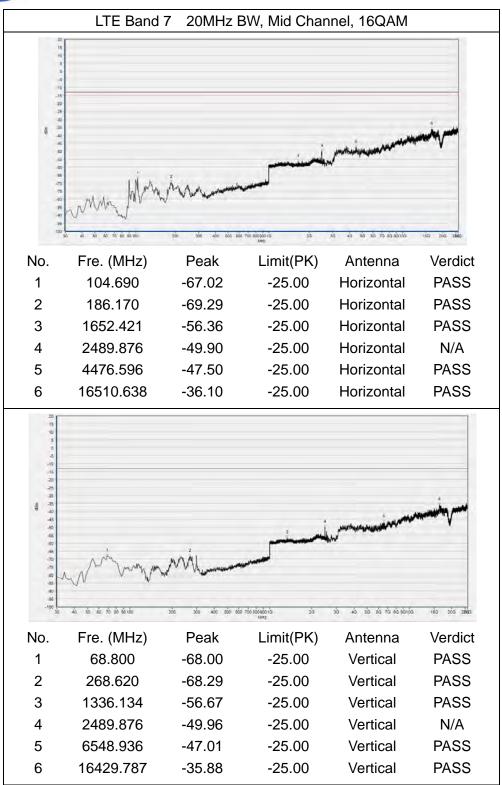




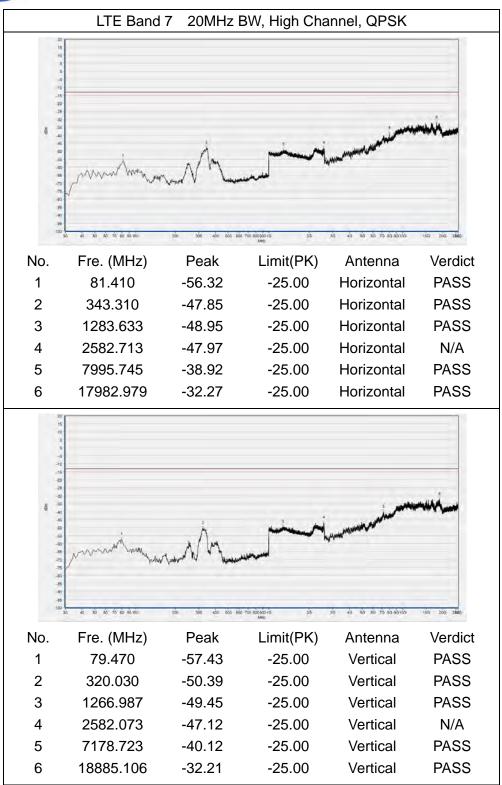




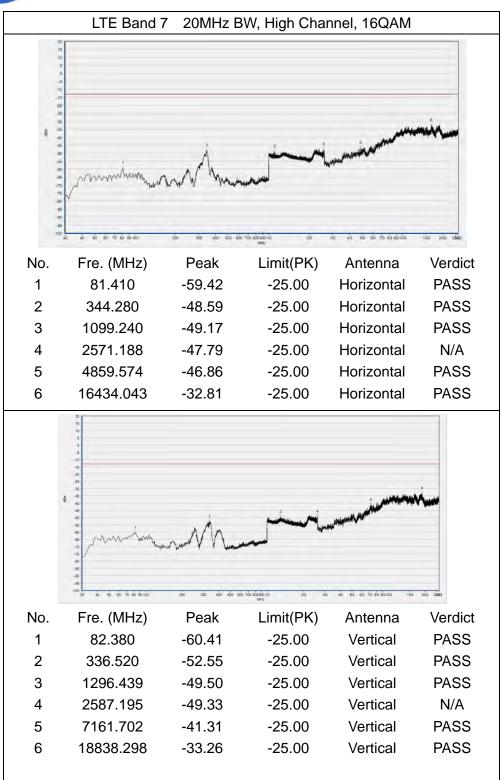






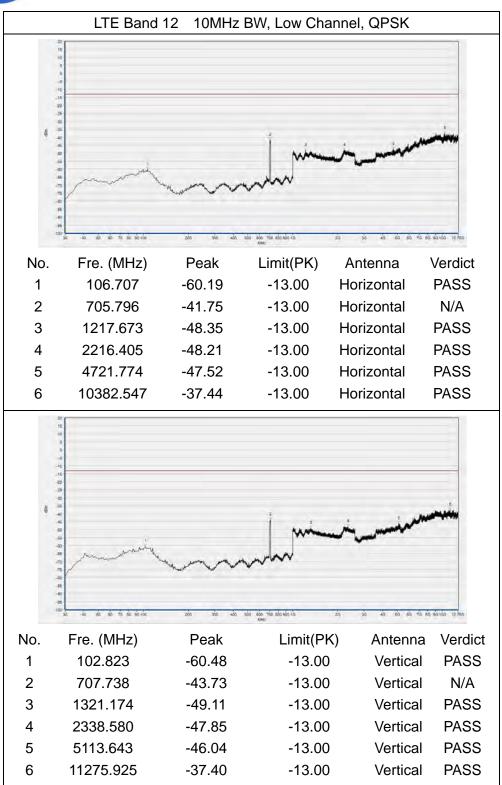




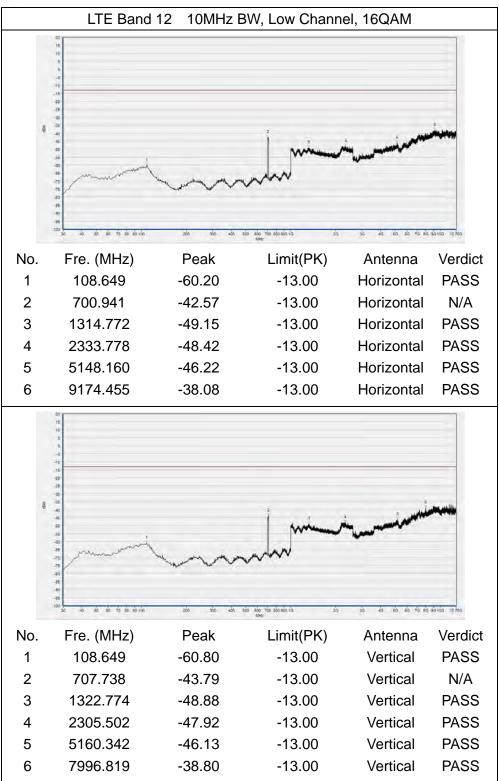






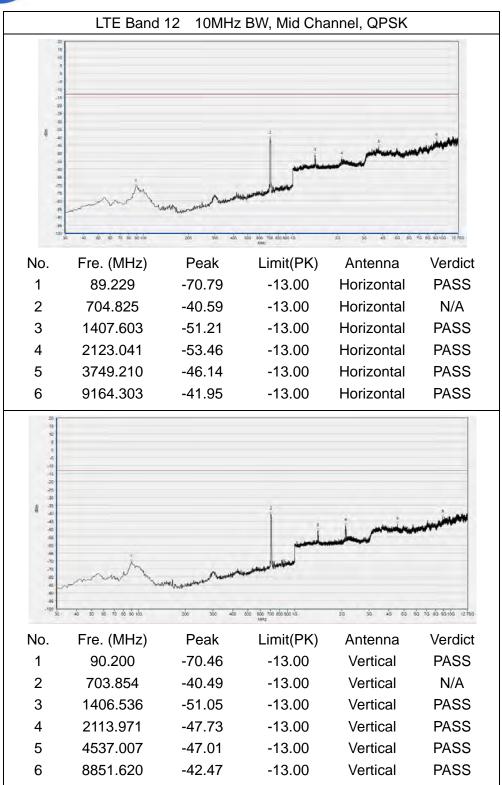




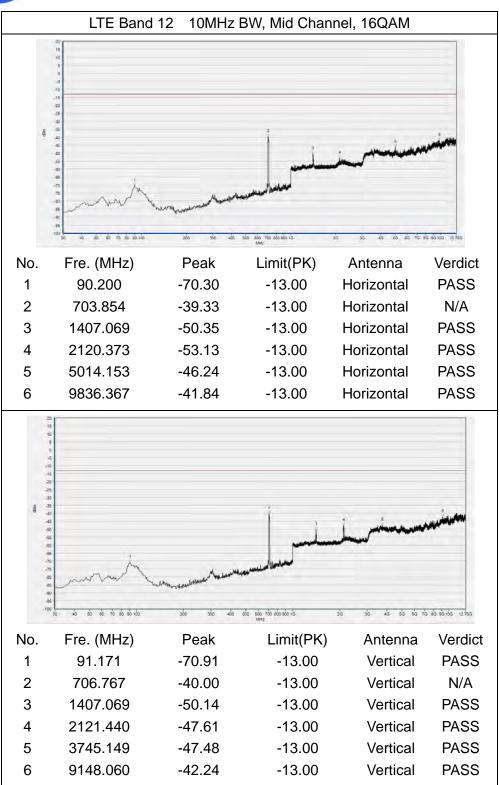




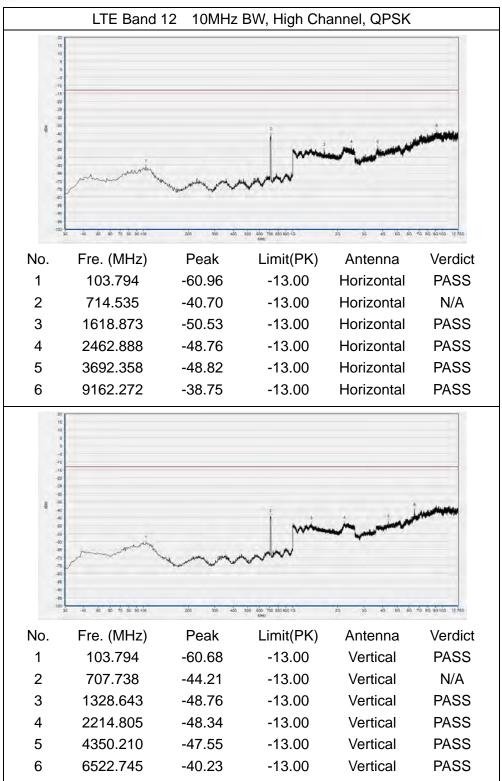






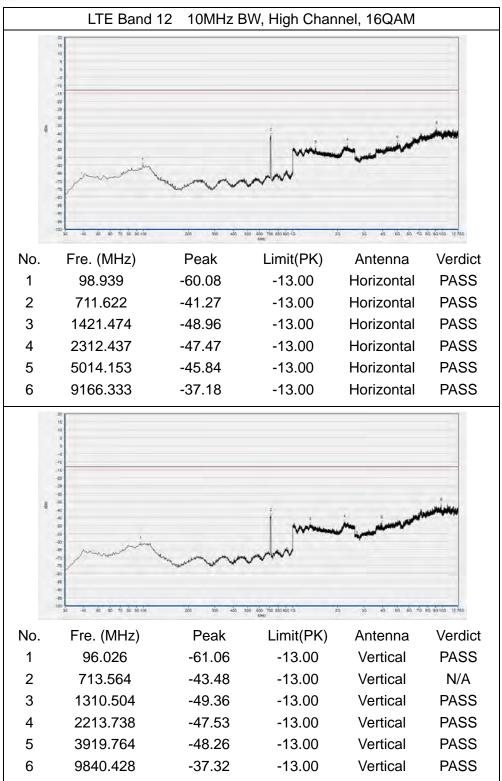






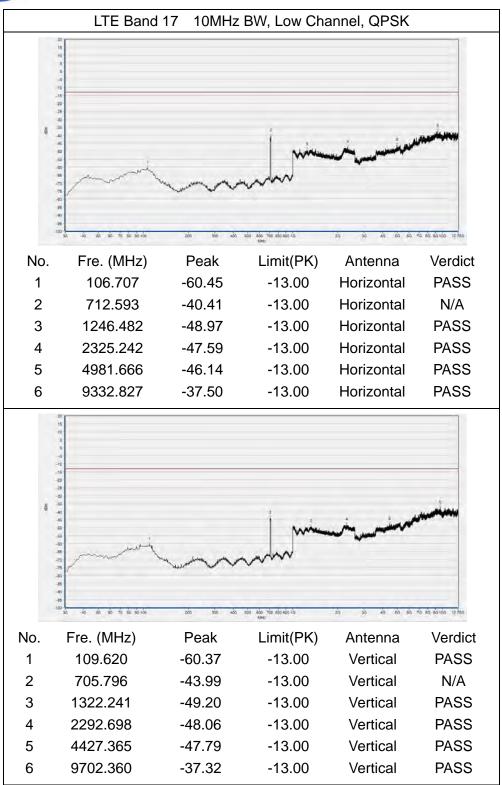




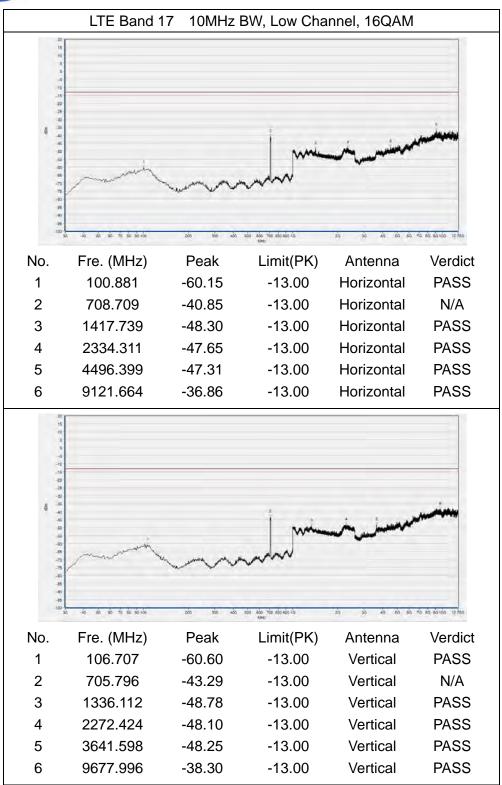




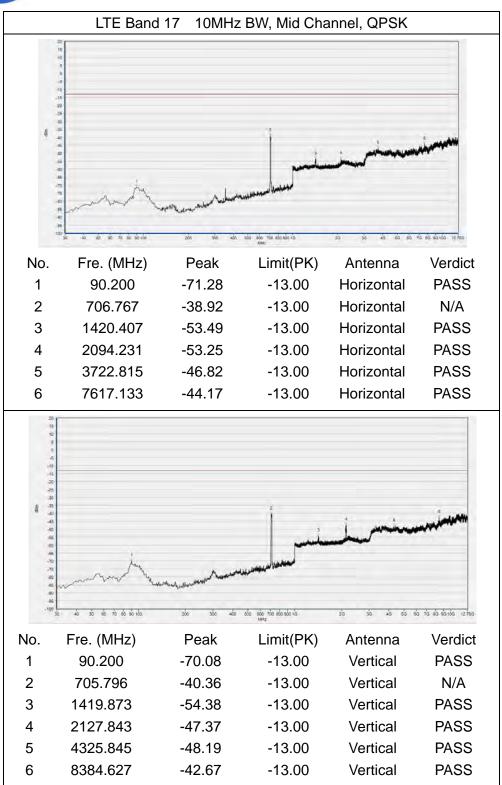




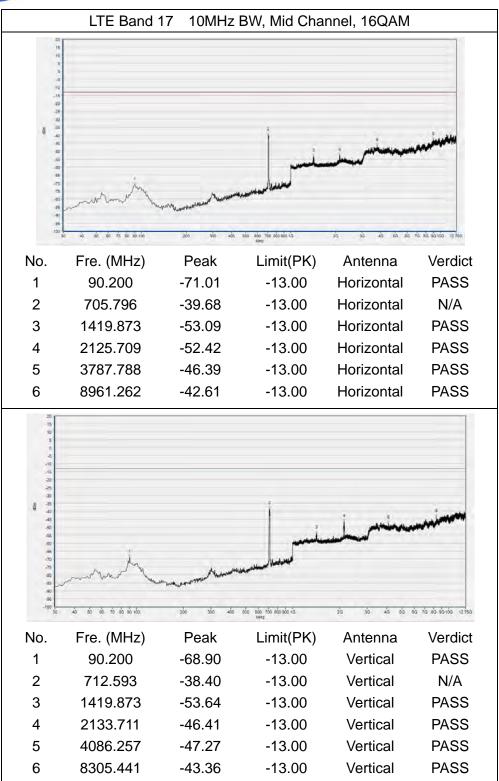




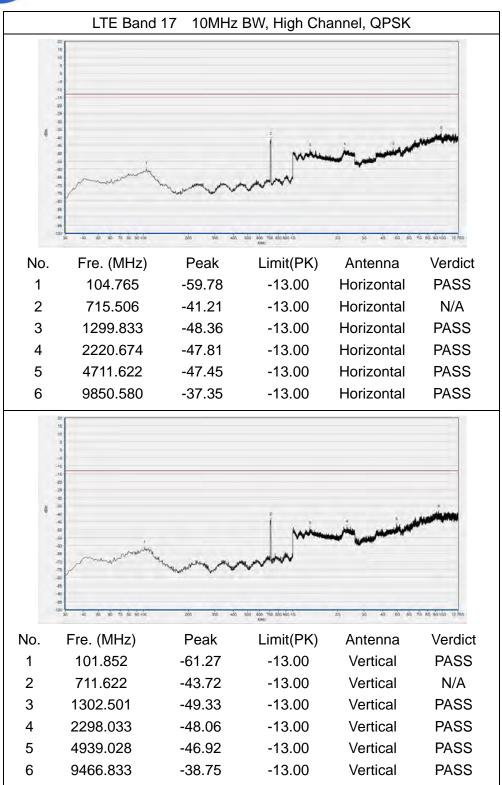




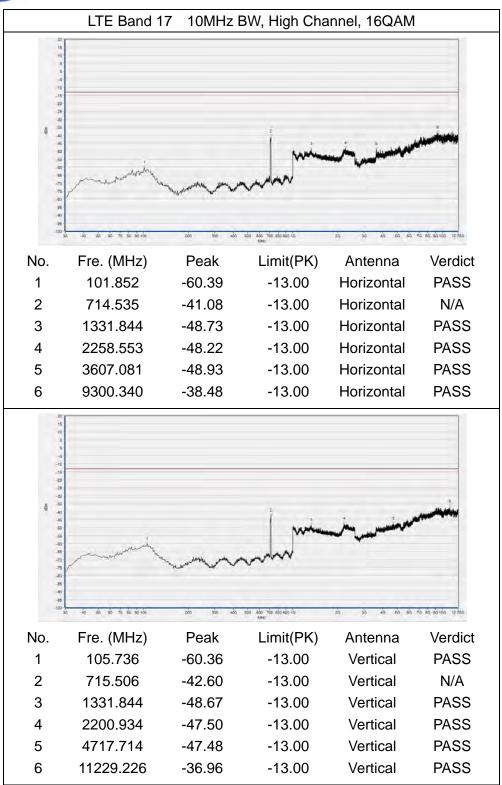
















Annex A Test Uncertainty

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	±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	Mr. Su Feng			
Manager:	IVII. Su Felig			
Telephone:	+86 755 36698555			
Facsimile:	+86 755 36698525			

2. Identification of the Responsible Testing Location

Namai	Shenzhen Morlab Communications Technology Co., Ltd.		
Name:	Morlab Laboratory		
	FL.3, Building A, FeiYang Science Park, No.8 LongChang		
Address:	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/TIA-603-E-2016 and CISPR Publication 22; the FCC designation number is CN1192.





4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Туре	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2017.05.24	2018.05.23
Attenuator 1	(N/A.)	10dB	Resnet	2017.05.24	2018.05.23
Attenuator 2	(N/A.)	3dB	Resnet	2017.05.24	2018.05.23
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
USB Power Sensor	MY54210011	U2021XA	Agilent	2017.05.24	2018.05.23
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	2017.05.24	2018.05.23

4.2Auxiliary 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	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Name		7 1			
System Simulator	152038	CMW500	R&S	2018.05.08	2019.05.07
Receiver	MY54130016	N9038A	Agilent	2018.05.08	2019.05.07
Test Antenna -	9163-519	VULB 9163	Schwarzbeck	2018.05.08	2019.05.07
Bi-Log	0.0000.0	V025 0100	Conwarzsook	2010.00.00	2310.00.01
Test Antenna -	9170C-531	BBHA9170	Schwarzbeck	2017.09.13	2018.09.12
Horn	91700-331				
Test Antenna -	01774	BBHA 9120D	Schwarzbeck	2017 00 12	2019 00 12
Horn	01774	BBHA 9120D	Scriwarzbeck	2017.09.13	2018.09.12
Coaxial cable					
(N male)	CB04	EMC04	Morlab	N/A	N/A
(9KHz-30MHz)					
Coaxial cable					
(N male)	CB02	EMC02	Morlab	N/A	N/A
(30MHz-26GHz)					
Coaxial cable					
(N male)	CB03	EMC03	Morlab	N/A	N/A
(30MHz-26GHz)					
1-18GHz	MA02	TS-PR18	Rohde&	2018.05.08	2019.05.07
pre-Amplifier	IVIAUZ	13-PK10	Schwarz	2016.05.06	2019.05.07
18-26.5GHz	MAGG	TS-PR18	Rohde&	2019 05 09	2010 05 07
pre-Amplifier	MA03	13-4410	Schwarz	2018.05.08	2019.05.07
Anechoic	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18
Chamber	IN/A	3111 0111 0111	UNI	2017.11.19	2020.11.10

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