FCC REPORT
(LTE)

Applicant:	Smartech, C.A.
Address of Applicant:	Manongo Avenue with Palma Real Street, C.C. Via Veneto, Milan Level, M32 Local, Manongo Valencia Venezuela

Equipment Under Test (EUT)

Product Name:	Smart phone
Model No.:	M3
Trade mark:	Win
FCC ID:	2ATS6M3
Applicable standards:	FCC CFR Title 47 Part 2 FCC CFR Title 47 Part 27 Subpart L FCC CFR Title 47 Part 27 Subpart M
Date of sample receipt:	03 Apr., 2020
Date of Test:	04 Apr., to 26 Apr., 2020
Date of report issued:	13 May, 2020
Test Result:	PASS*

*In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2. Version

Version No.	Date	Description
00	*29 Apr., 2020*	*Original*
01	*13 May, 2020*	*Update page 64,65*

Tested by: Yoyo Wu ***Date:*** *13 May, 2020*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *13 May, 2020*

Project Engineer

3. Contents

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4. Test Summary

Test Items	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307 Part 2.1093	Passed (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 27.50 (d)(4) Part 27.50 (h)(2)	Pass
Peak-to-Average Ratio	Part 27.50(d)(5)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238(b) Part 27.53(g) Part 27.53(h) Part 27.53(m)	Pass
Out of band emission at antenna terminals	Part 27.53 (h) Part 27.53(m)	Pass
Field strength of spurious radiation	Part 2.1053 Part 27.53 (h) Part 27.53(m)	Pass
Frequency stability vs. temperature	Part 22.355 Part 24.235 Part 27.54 Part 2.1055(a)(1)(b)	Pass
Frequency stability vs. voltage	Part 22.355 Part 24.235 Part 27.54 Part 2.1055(d)(2)	Pass

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).*

Test Method:	*ANSI/TIA-603-E-2016* *ANSI C63.26-2015*

5. General Information

5.1 Client Information

Applicant:	Smartech, C.A.
Address:	Manongo Avenue with Palma Real Street, C.C. Via Veneto, Milan Level, M32 Local, Manongo Valencia Venezuela
Manufacturer/ Factory:	United Creation Technology Corp., Ltd
Address:	Room 201, Block A, Science and technology buliding phase-2, Nanhai Road 1057, Shekou, Nanshan district, Shenzhen China

5.2 General Description of E.U.T.

Product Name:	Smart phone
Model No.:	M3
Operation Frequency range:	LTE Band 4: TX: 1710MHz-1755MHz, RX: 2110MHz-2155MHz LTE Band 7: TX: 2500MHz-2570MHz, RX: 2620MHz-2690MHz
Modulation type:	QPSK, 16QAM
Antenna type:	Internal Antenna
Antenna gain:	LTE Band 4: -3.1dBi LTE Band 7: -3.5dBi
Power supply:	Rechargeable Li-ion Battery DC3.8V-2300mAh
AC adapter:	Model: M3 Input: AC100-240V, 50/60Hz, 0.2A Output: DC 5.0V, 1.0A
Test Sample Condition:	The applicant provided engineering samples for staying in continuously transmitting for testing.

Operation Frequency List:

LTE Band 4 (1.4MHz)		LTE Band 4 (3MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19957	1710.70	19965	1711.50
19958	1710.80	19966	1711.60
….	….	….	….
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
…	…	…	…
20392	1754.20	20384	1753.40
20393	1754.30	20385	1753.50
LTE Band 4 (5MHz)		LTE Band 4 (10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
19975	1712.50	20000	1715.00
19976	1712.60	20001	1715.10
….	….	….	….
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
…	…	…	…
20374	1752.40	20349	1749.90
20375	1752.50	20350	1750.00
LTE Band 4 (15MHz)		LTE Band 4 (20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20025	1717.50	20050	1720.00
20026	1717.60	20051	1720.10
….	….	….	….
20174	1732.40	20174	1732.40
20175	1732.50	20175	1732.50
20176	1732.60	20176	1732.60
…	…	…	…
20324	1747.40	20299	1744.90
20325	1747.50	20300	1745.00

LTE Band 7 (5MHz)		LTE Band 7 (10MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20775	2502.50	20800	2505.00
20776	2502.60	20801	2502.10
….	….	….	….
21099	2534.90	21099	2534.90
21100	2535.00	21100	2535.00
21101	2535.20	21101	2535.20
…	…	…	…
21424	2567.40	21399	2564.90
21425	2567.50	21400	2565.00
LTE Band 7 (15MHz)		LTE Band 7 (20MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
20825	2507.50	20850	2510.00
20826	2507.60	20851	2510.10
….	….	….	….
21099	2534.90	21099	2534.90
21100	2535.00	21100	2535.00
21101	2535.20	21101	2535.20
…	…	…	…
21374	2562.40	21349	2559.90
21375	2562.50	21350	2560.00

Regards to the operating frequency range, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channels as below:

LTE Band 4 (1.4MHz)			LTE Band 4 (3MHz)		
Channel:		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	19957	1710.70	Lowest channel	19965	1711.50
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20393	1754.30	Highest channel	20385	1753.50
LTE Band 4 (5MHz)			LTE Band 4 (10MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	19975	1712.50	Lowest channel	20000	1715.00
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20375	1752.50	Highest channel	20350	1750.00
LTE Band 4 (15MHz)			LTE Band 4 (20MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20025	1717.50	Lowest channel	20050	1720.00
Middle channel	20175	1732.50	Middle channel	20175	1732.50
Highest channel	20325	1747.50	Highest channel	20300	1745.00

LTE Band 7 (5MHz)			LTE Band 7 (10MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20775	2502.50	Lowest channel	20800	2505.00
Middle channel	21100	2535.00	Middle channel	21100	2535.00
Highest channel	21425	2567.50	Highest channel	21400	2565.00
LTE Band 7 (15MHz)			LTE Band 7 (20MHz)		
Channel		Frequency (MHz)	Channel		Frequency (MHz)
Lowest channel	20825	2507.50	Lowest channel	20850	2510.00
Middle channel	21100	2535.00	Middle channel	21100	2535.00
Highest channel	21375	2562.50	Highest channel	21350	2560.00

5.3 Test environment and mode

Operating Environment:	
Temperature:	Normal: 15℃ ~ 35℃, Extreme: -30℃ ~ +50℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.8Vdc, Extreme: Low 3.5Vdc, High 4.35Vdc
Test mode:	
LTE QPSK mode	Keep the EUT communication with simulated station in QPSK mode
LTE 16-QAM mode	Keep the EUT communication with simulated station in 16-QAM mode
Remark: The EUT has been tested under continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes with power adaptor, earphone and Data cable. Just the worst case position (H mode) shown in report.	

5.4 Description of Support Units

Test Equipment	Manufacturer	Model No.	Serial No.
Simulated Station	Anritsu	MT8820C	6201026545

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.38 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±3.36 dB (k=2)

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 Additions to, deviations, or exclusions from the method

No

5.8 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.9 Laboratory Location

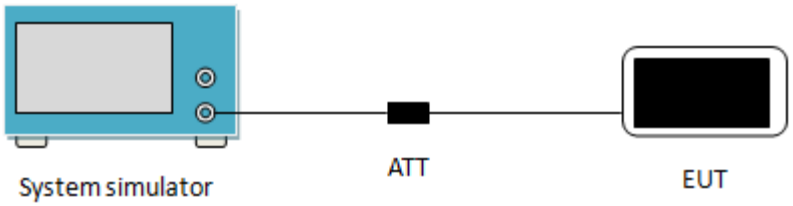
Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.10 Test Instruments list

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020
				03-18-2020	03-17-2021
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-07-2020	03-06-2021
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-18-2019	11-17-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-07-2020	03-06-2021
Pre-amplifier	CD	PAP-1G18	11804	03-07-2020	03-06-2021
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-05-2020	03-04-2021
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-18-2019	11-17-2020
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-05-2020	03-04-2021
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-18-2019	11-17-2020
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-05-2020	03-04-2021
Signal Generator	R&S	SMR20	1008100050	03-05-2020	03-04-2021
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0		
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2020	03-06-2021
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2020	03-06-2021
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2020	03-06-2021
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	09-25-2019	09-24-2020
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	11-01-2019	11-31-2020
Simulated Station	Rohde & Schwarz	CMW500	140493	07-22-2019	07-21-2020

6. Test results

6.1 Conducted Output Power, ERP and EIRP

Test Requirement:	Part 27.50(d)(4), Part 27.50 (h)(2)
Limit:	LTE Band 4: 1W, LTE Band 7: 2W
Test Setup:	
Test Procedure:	The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the CMW500. Transmitter output power was read off in dBm.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19957	20175	20393
					1710.7MHz	1732.5MHz	1754.3MHz
4	1.4	QPSK	1	0	23.25	23.27	23.29
			1	2	23.26	23.32	23.26
			1	5	23.30	23.29	23.36
			3	0	22.28	22.38	22.56
			3	1	22.35	22.46	22.41
			3	2	22.29	22.40	22.45
			6	0	22.36	22.28	22.38
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.26		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.67	22.86	22.90
			1	2	22.86	22.62	22.73
			1	5	22.79	22.56	22.40
			3	0	21.47	21.52	21.68
			3	1	21.56	21.60	21.73
			3	2	21.50	21.55	21.74
			6	0	21.56	21.64	21.38
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			19.80		
		EIRP Limit (dBm):			30.00		

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19965	20175	20385
					1711.5MHz	1732.5MHz	1753.5MHz
4	3	QPSK	1	0	23.29	23.36	23.22
			1	7	23.28	23.29	23.28
			1	14	23.31	23.44	23.23
			8	0	22.45	22.51	22.33
			8	4	22.38	22.47	22.35
			8	7	22.35	22.44	22.39
			15	0	22.36	22.29	22.44
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.34		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.50	22.59	23.09
			1	7	22.68	22.54	23.22
			1	14	22.46	22.63	23.11
			8	0	21.25	21.41	21.29
			8	4	21.34	21.61	21.45
			8	7	21.31	21.48	21.38
			15	0	21.53	21.46	21.66
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.12		
		EIRP Limit (dBm):			30.00		

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					19975	20175	20375
					1712.5MHz	1732.5MHz	1752.5MHz
4	5	QPSK	1	0	23.24	23.31	23.33
			1	12	23.37	23.27	23.17
			1	24	23.23	23.29	23.29
			12	0	22.53	22.21	22.20
			12	6	22.46	22.26	22.43
			12	11	22.43	22.43	22.22
			25	0	22.41	22.29	22.37
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.27		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.67	22.44	22.38
			1	12	22.85	22.76	22.56
			1	24	22.54	22.27	22.71
			12	0	21.61	21.43	21.05
			12	6	21.46	21.32.	21.39
			12	11	21.68	21.39	21.29
			25	0	21.60	21.41	21.46
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			19.75		
		EIRP Limit (dBm):			30.00		

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20000	20175	20350
					1715.0MHz	1732.5MHz	1750.0MHz
4	10	QPSK	1	0	23.31	23.23	23.39
			1	24	23.23	23.26	23.43
			1	49	23.21	23.25	23.30
			25	0	22.29	22.26	22.29
			25	12	22.21	22.21	22.50
			25	24	22.27	22.46	22.36
			50	0	22.48	22.21	22.32
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.33		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.56	22.34	22.53
			1	24	22.54	22.72	22.68
			1	49	22.95	22.41	22.32
			25	0	21.63	21.54	21.66
			25	12	21.58	21.56	21.29
			25	24	21.45	21.44	21.41
			50	0	21.43	21.40	21.70
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			19.85		
		EIRP Limit (dBm):			30.00		

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20025	20175	20325
					1717.5MHz	1732.5MHz	1747.5MHz
4	15	QPSK	1	0	23.26	23.32	23.45
			1	37	23.20	23.30	23.40
			1	74	23.19	23.24	23.34
			36	0	22.35	22.52	22.53
			36	16	22.27	22.30	22.28
			36	35	22.16	22.43	22.38
			75	0	22.22	22.27	22.50
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.35		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.77	22.72	22.93
			1	37	22.38	22.46	22.87
			1	74	22.33	22.84	22.82
			36	0	21.40	21.26	21.48
			36	16	21.39	21.40	21.53
			36	35	21.44	21.43	21.36
			75	0	21.56	21.58	21.70
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			19.83		
		EIRP Limit (dBm):			30.00		

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20050	20175	20300
					1720.0MHz	1732.5MHz	1745.0MHz
4	20	QPSK	1	0	23.32	23.40	23.42
			1	49	23.41	23.37	23.36
			1	99	23.30	23.20	23.15
			50	0	22.53	22.24	22.34
			50	24	22.49	22.23	22.51
			50	49	22.25	22.34	22.32
			100	0	22.44	22.47	22.46
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			20.32		
		EIRP Limit (dBm):			30.00		
		16QAM	1	0	22.07	22.88	22.45
			1	49	22.53	22.36	22.49
			1	99	22.16	22.93	22.62
			50	0	21.47	21.34	21.65
			50	24	21.57	21.78	21.43
			50	49	21.71	21.66	21.58
			100	0	21.53	21.54	21.56
		Antenna Gain (dBi):			-3.1		
		Max. EIRP (dBm):			19.83		
		EIRP Limit (dBm):			30.00		

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20775	21100	21425
					2502.5MHz	2535.0MHz	2567.5MHz
7	5	QPSK	1	0	22.91	22.94	22.94
			1	12	23.01	22.93	22.95
			1	24	22.93	22.97	23.02
			12	0	22.38	22.11	22.21
			12	6	22.19	22.02	22.16
			12	11	22.23	22.25	22.49
			25	0	22.01	22.11	22.19
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.52		
		EIRP Limit (dBm):			33.00		
		16QAM	1	0	22.08	22.19	22.70
			1	12	22.48	22.34	22.26
			1	24	22.15	22.19	22.40
			12	0	21.14	21.08	21.59
			12	6	21.09	21.06	21.49
			12	11	21.01	21.20	21.48
			25	0	21.19	21.12	21.62
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.20		
		EIRP Limit (dBm):			33.00		

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20800	21100	21400
					2505.0MHz	2535.0MHz	2565.0MHz
7	10	QPSK	1	0	22.90	22.90	22.99
			1	24	22.88	22.98	22.96
			1	49	22.92	22.97	23.03
			25	0	22.00	22.23	22.19
			25	12	22.03	22.03	22.25
			25	24	22.07	22.17	22.17
			50	0	22.03	22.03	22.20
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.53		
		EIRP Limit (dBm):			33.00		
		16QAM	1	0	22.12	22.08	22.41
			1	24	22.44	22.05	22.28
			1	49	22.34	22.29	22.16
			25	0	21.30	21.32	21.47
			25	12	21.40	21.21	21.52
			25	24	21.25	21.19	21.46
			50	0	21.45	21.56	21.53
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			18.94		
		EIRP Limit (dBm):			33.00		

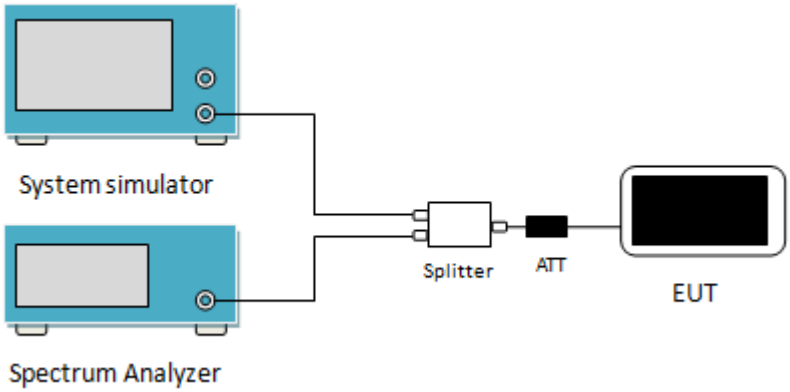
Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20825	21100	21375
					2507.5MHz	2535.0MHz	2562.5MHz
7	15	QPSK	1	0	22.98	23.10	23.14
			1	37	23.02	23.06	23.12
			1	74	23.00	23.09	23.11
			36	0	22.22	22.20	22.09
			36	16	22.14	22.11	22.23
			36	35	22.15	22.09	22.11
			75	0	22.02	22.08	22.20
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.64		
		EIRP Limit (dBm):			33.00		
		16QAM	1	0	22.21	22.41	22.69
			1	37	22.40	22.78	22.72
			1	74	22.04	22.74	22.82
			36	0	21.34	21.01	21.97
			36	16	21.37	21.32	21.00
			36	35	21.38	21.27	21.35
			75	0	21.34	21.29	21.28
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.32		
		EIRP Limit (dBm):			33.00		

LTE Band	Bandwidth (MHz)	Modulation	RB Size	RB Offset	Average Power (dBm)		
					20850	21100	21350
					2510.0MHz	2535.0MHz	2560.0MHz
7	20	QPSK	1	0	23.24	23.10	23.17
			1	49	23.17	23.15	23.07
			1	99	23.13	23.19	23.14
			50	0	22.22	22.17	22.14
			50	24	22.44	22.14	22.12
			50	49	22.28	22.05	22.40
			100	0	22.20	22.08	22.18
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.74		
		EIRP Limit (dBm):			33.00		
		16QAM	1	0	22.47	22.34	22.41
			1	49	22.62	22.49	22.24
			1	99	22.31	22.48	22.27
			50	0	21.62	21.33	22.05
			50	24	21.97	21.51	22.00
			50	49	22.25	21.70	21.79
			100	0	21.94	21.56	21.92
		Antenna Gain (dBi):			-3.5		
		Max. EIRP (dBm):			19.12		
		EIRP Limit (dBm):			33.00		

Note: EIRP (dBm) = Average power (dBm) + Antenna Gain (dBi).

6.2 Peak-to-Average Ratio

Test Requirement:	Part 27.50(d)(5)
Limit:	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.
Test Setup:	
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 Set the CCDF option in spectrum analyzer, RBW ≥ OBW, 3 Set the EUT working in highest power level, measured and recorded the 0.1% as PAPR level. 4 Repeat step 1~3 at other frequency and modulations.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

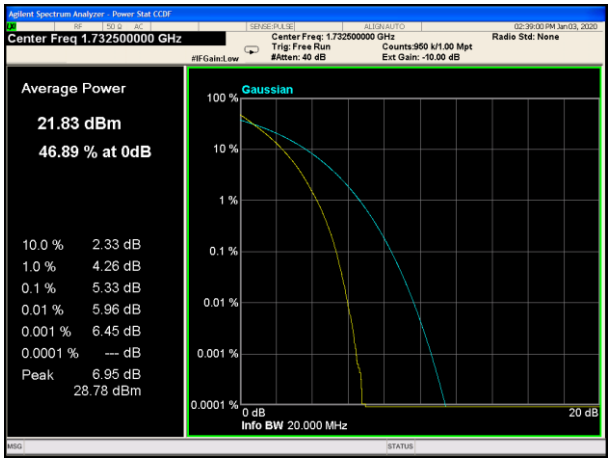
Measurement Data (Worst case):

Bandwidth	Modulation	RB Size	RB Offset	PAPR
LTE Band 4 (Middle Channel)				
20MHz	QPSK	100	0	5.33
	16QAM	100	0	6.07
LTE Band 7 (Middle Channel)				
20MHz	QPSK	100	0	5.41
	16QAM	100	0	6.10

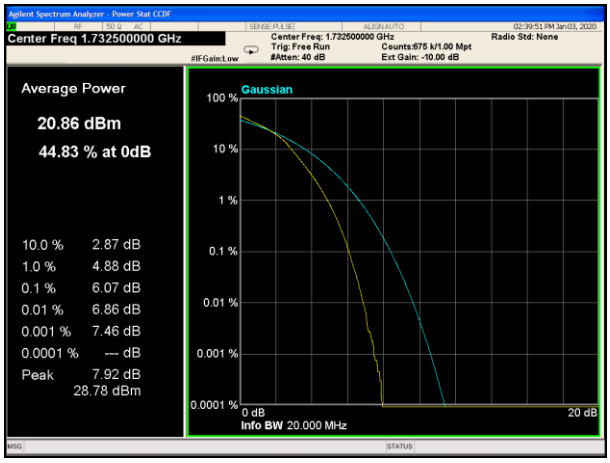
Test plots as below:

LTE Band 4 Middle channel

Modulation: QPSK

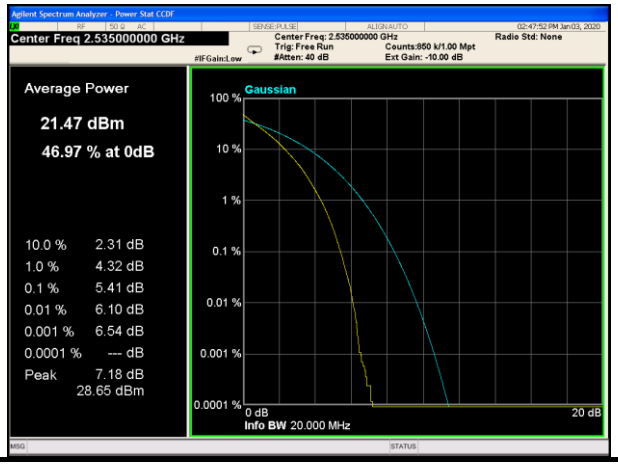


Modulation:16QAM

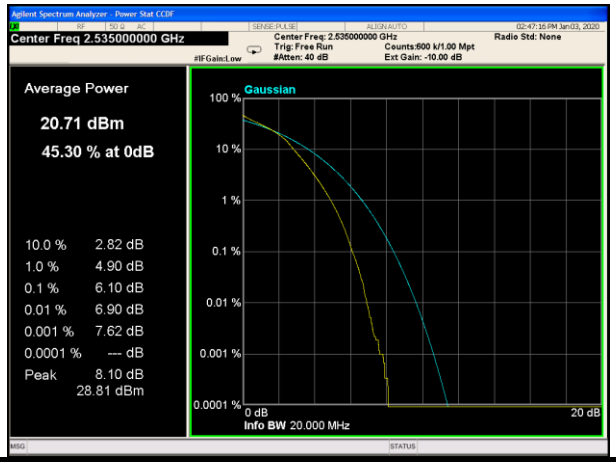


LTE Band 7 Middle channel

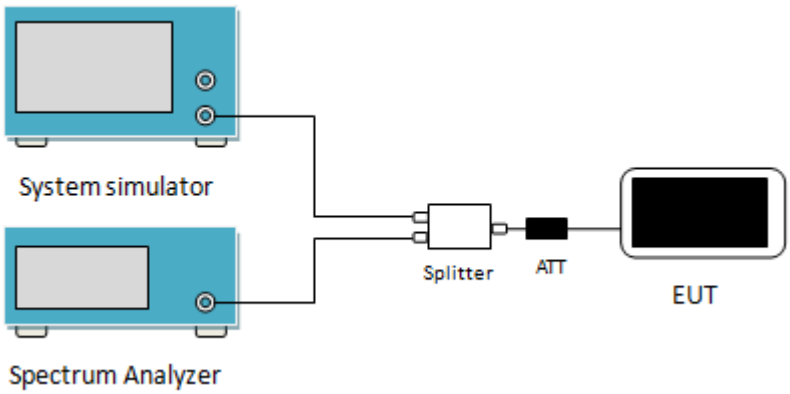
Modulation: QPSK



Modulation:16QAM



6.3 Occupy Bandwidth

Test Requirement:	Part 27.53(h), Part 27.53(m)
Test Setup:	
Test Procedure:	1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% ~ 5% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

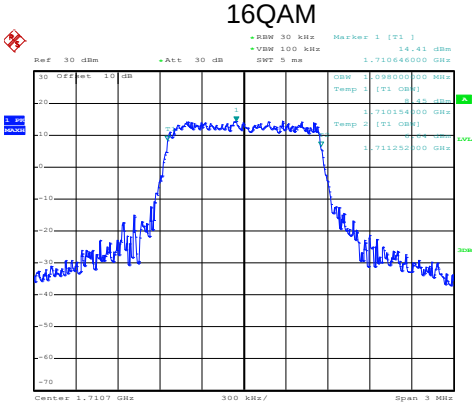
LTE Band 4					
Bandwidth	Channel	Frequency (MHz)	Modulation	99% OBW (kHz)	-26dBcEBW (kHz)
1.4MHz	19957	1710.7	16QAM	1098	1254
			QPSK	1104	1266
	20175	1732.5	16QAM	1092	1272
			QPSK	1098	1266
	20393	1754.3	16QAM	1098	1254
			QPSK	1104	1242
3MHz	19965	1711.5	16QAM	2748	3072
			QPSK	2760	3132
	20175	1732.5	16QAM	2736	3036
			QPSK	2760	3096
	20385	1750.5	16QAM	2736	3072
			QPSK	2760	3120
5MHz	19975	1712.5	16QAM	4500	4860
			QPSK	4520	4980
	20175	1732.5	16QAM	4500	4900
			QPSK	4520	4960
	20375	1752.5	16QAM	4500	5000
			QPSK	4540	5020
10MHz	20000	1715.0	16QAM	9080	10040
			QPSK	9160	10280
	20175	1732.5	16QAM	9120	10120
			QPSK	9080	10600
	20350	1750.0	16QAM	9080	10000
			QPSK	9120	10840
15MHz	20025	1717.5	16QAM	13500	14880
			QPSK	13560	15120
	20175	1732.5	16QAM	13560	14760
			QPSK	13500	15060
	20325	1747.5	16QAM	13500	14820
			QPSK	13560	14820
20MHz	20050	1720.0	16QAM	18000	19680
			QPSK	18080	19600
	20175	1732.5	16QAM	17920	19760
			QPSK	18000	19520
	20300	1745.0	16QAM	18000	19840
			QPSK	18000	19440

LTE Band 7					
Bandwidth	Channel	Frequency (MHz)	Modulation	99% OBW (kHz)	-26dBcEBW (kHz)
5MHz	20775	2502.5	16QAM	4500	4940
			QPSK	4520	4960
	21100	2535.0	16QAM	4520	4860
			QPSK	4500	4920
	21425	2567.5	16QAM	4480	4980
			QPSK	4520	4960
10MHz	20800	2505.0	16QAM	9120	9960
			QPSK	9080	10240
	21100	2535.0	16QAM	9120	10120
			QPSK	9120	10200
	21400	2565.0	16QAM	9080	10080
			QPSK	9160	10080
15MHz	20825	2507.5	16QAM	13560	14700
			QPSK	13500	15120
	21100	2535.0	16QAM	13500	14700
			QPSK	13500	14880
	21375	2562.5	16QAM	13440	14700
			QPSK	13560	15000
20MHz	20850	2510.0	16QAM	18000	19360
			QPSK	18080	20080
	21100	2535.0	16QAM	17920	19520
			QPSK	18000	19760
	21350	2560.0	16QAM	17920	19440
			QPSK	18160	19760

Test plot as follows:
LTE Band 4 part:

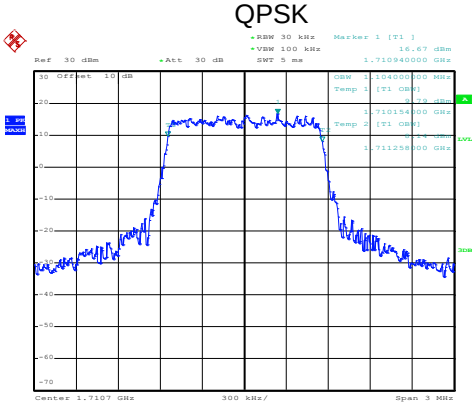
LTE Band 4: 99% Occupy bandwidth
BW: 1.4MHz

16QAM



Date: 20.APR.2020 11:51:10

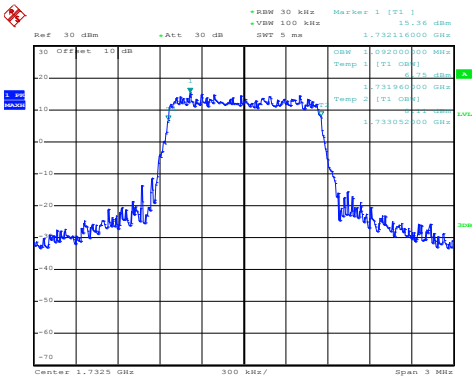
QPSK



Date: 20.APR.2020 11:51:05

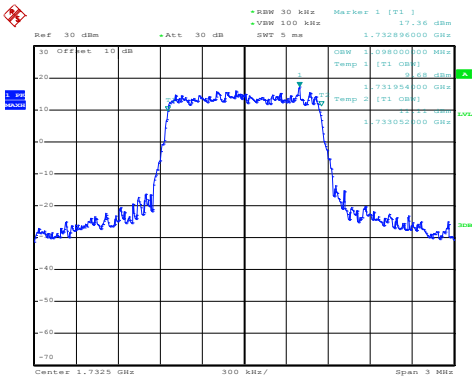
Lowest channel

16QAM



Date: 20.APR.2020 11:51:25

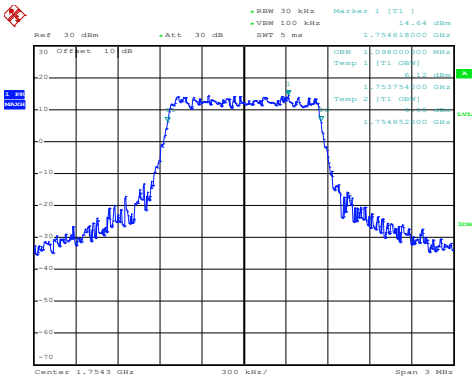
QPSK



Date: 20.APR.2020 11:51:20

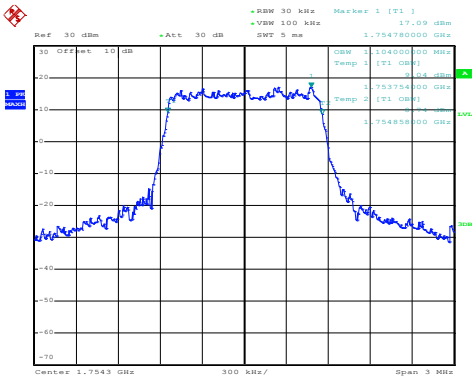
Middle channel

16QAM



Date: 20.APR.2020 11:52:20

QPSK

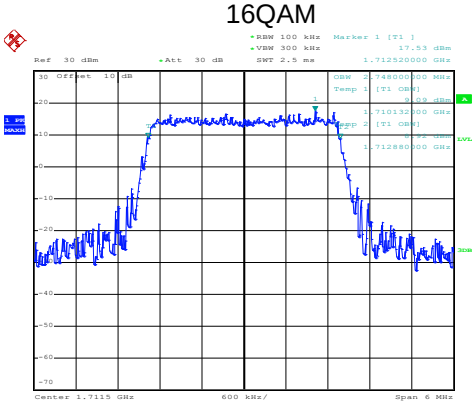


Date: 20.APR.2020 11:52:15

Highest channel

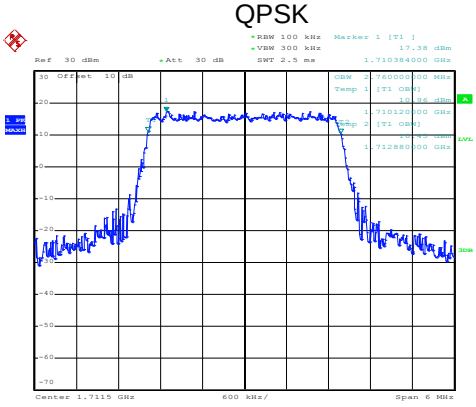
LTE Band 4: 99% Occupy bandwidth
BW: 3MHz

16QAM



Date: 20.APR.2020 11:48:39

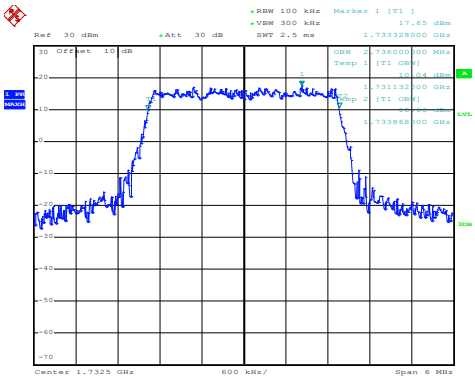
QPSK



Date: 20.APR.2020 11:48:34

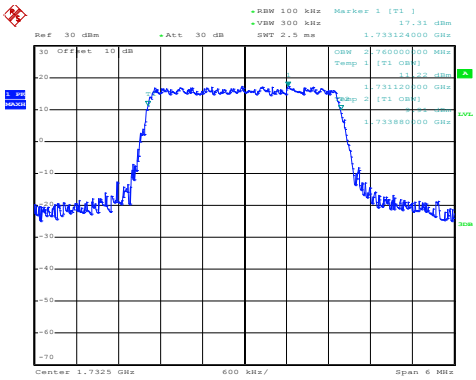
Lowest channel

16QAM



Date: 20.APR.2020 11:49:20

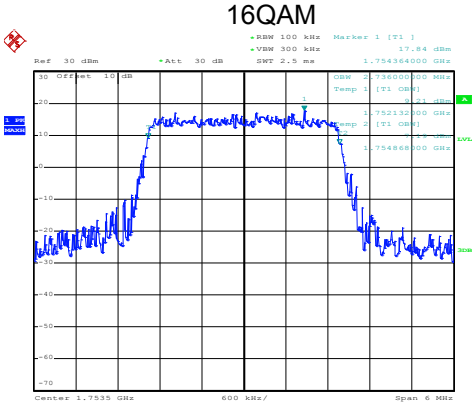
QPSK



Date: 20.APR.2020 11:49:13

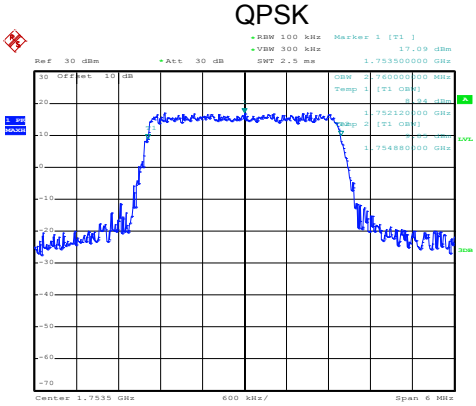
Middle channel

16QAM



Date: 20.APR.2020 11:49:40

QPSK

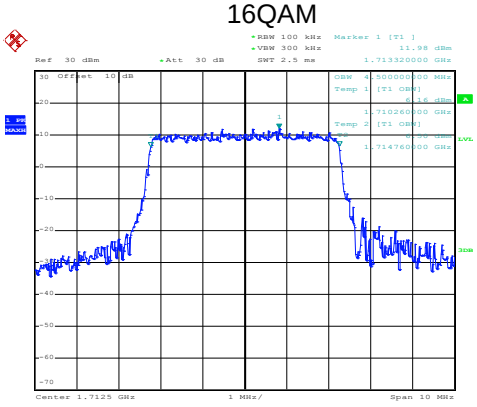


Date: 20.APR.2020 11:49:35

Highest channel

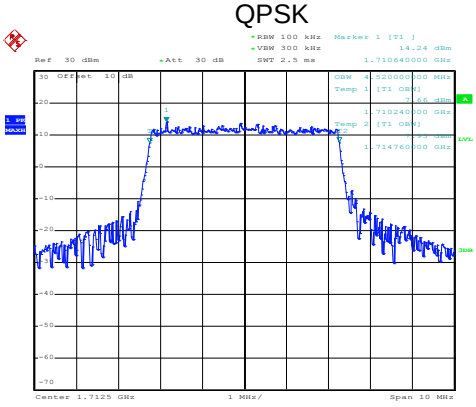
LTE Band 4: 99% Occupy bandwidth
BW: 5MHz

16QAM



Date: 20.APR.2020 11:45:17

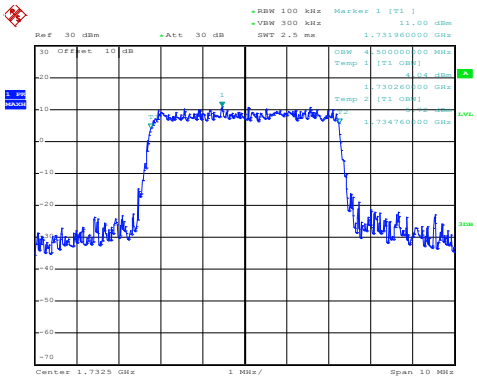
QPSK



Date: 20.APR.2020 11:45:36

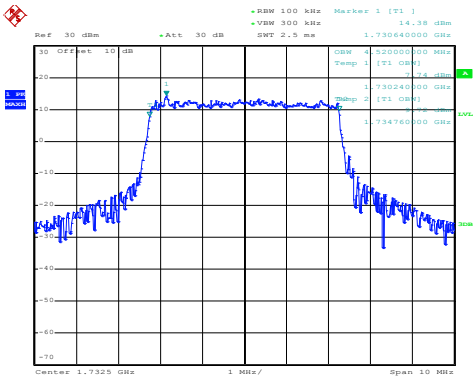
Lowest channel

16QAM



Date: 20.APR.2020 11:46:05

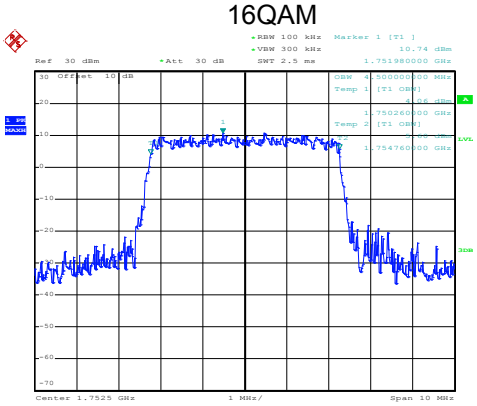
QPSK



Date: 20.APR.2020 11:46:00

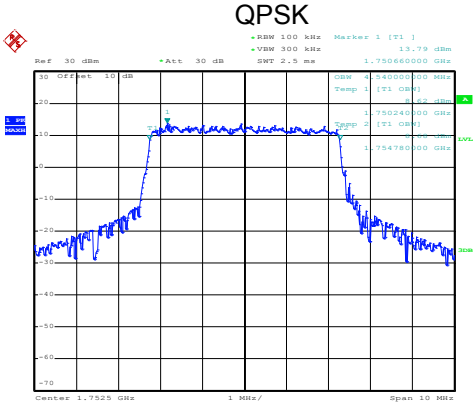
Middle channel

16QAM



Date: 20.APR.2020 11:47:48

QPSK

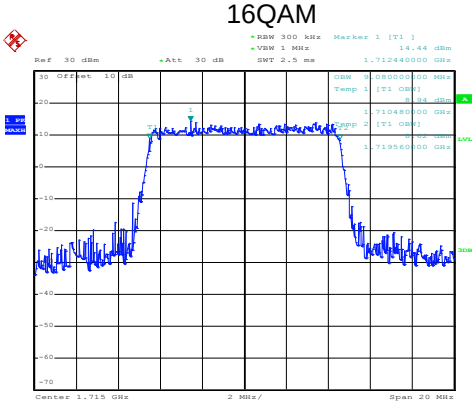


Date: 20.APR.2020 11:47:43

Highest channel

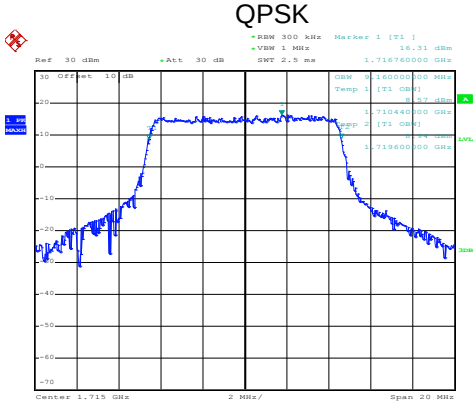
LTE Band 4: 99% Occupy bandwidth
BW: 10MHz

16QAM



Date: 20.APR.2020 11:41:30

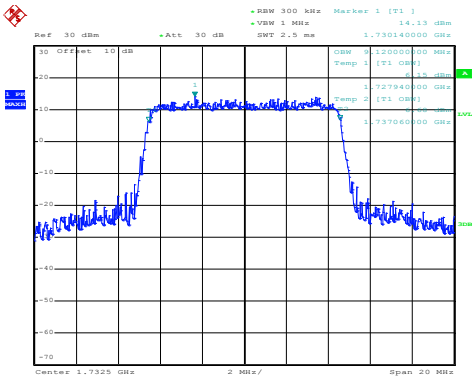
QPSK



Date: 20.APR.2020 11:41:24

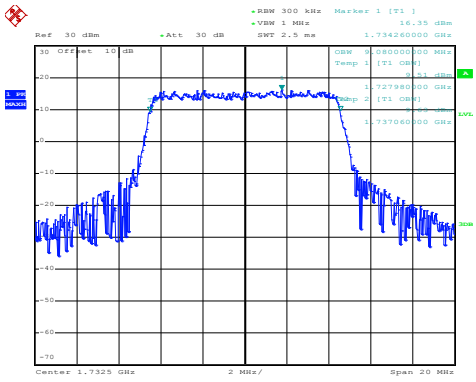
Lowest channel

16QAM



Date: 20.APR.2020 11:42:30

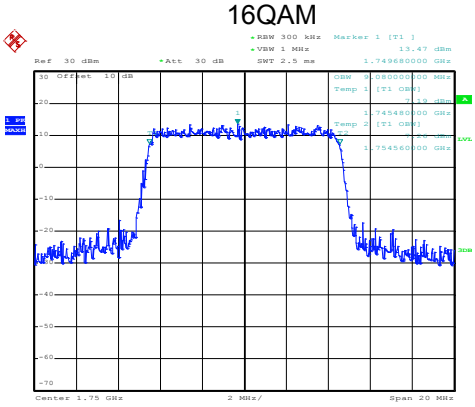
QPSK



Date: 20.APR.2020 11:42:25

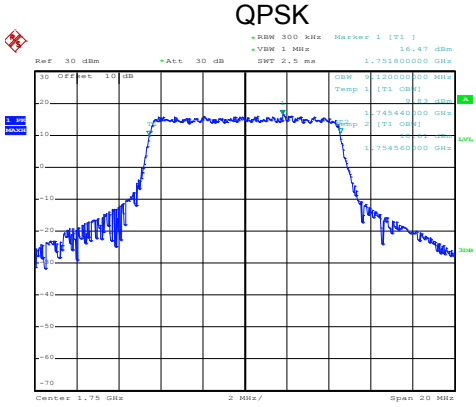
Middle channel

16QAM



Date: 20.APR.2020 11:43:07

QPSK

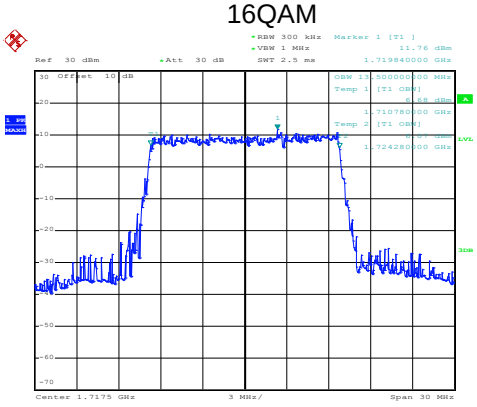


Date: 20.APR.2020 11:43:03

Highest channel

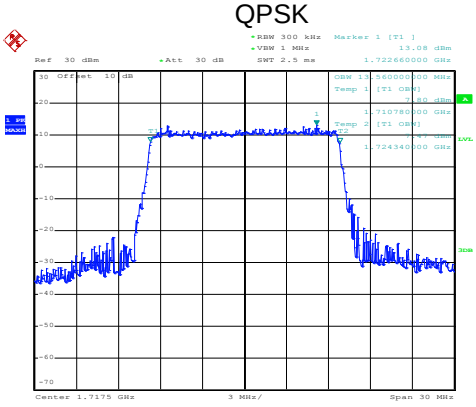
LTE Band 4: 99% Occupy bandwidth
BW: 15MHz

16QAM



Date: 20.APR.2020 11:39:46

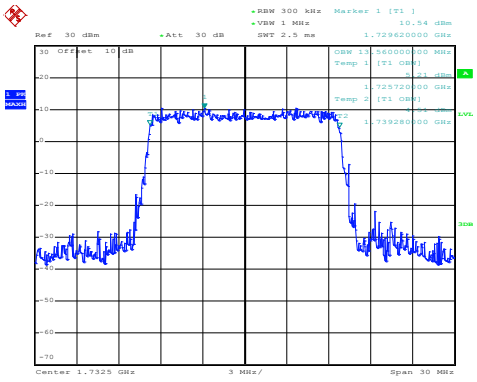
QPSK



Date: 20.APR.2020 11:39:42

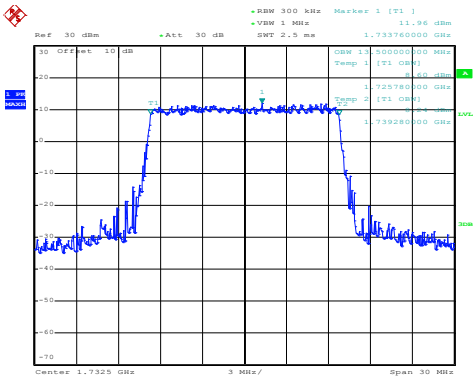
Lowest channel

16QAM



Date: 20.APR.2020 11:39:58

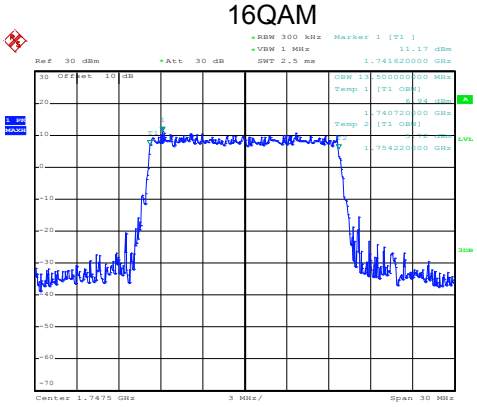
QPSK



Date: 20.APR.2020 11:39:54

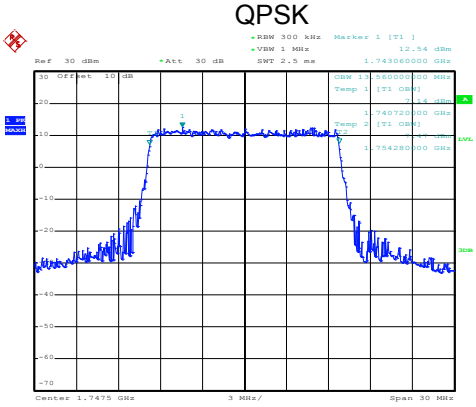
Middle channel

16QAM



Date: 20.APR.2020 11:40:39

QPSK

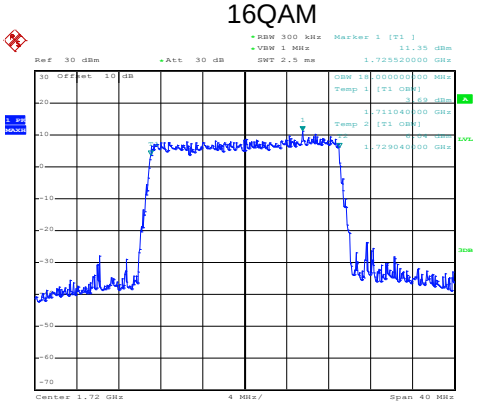


Date: 20.APR.2020 11:40:33

Highest channel

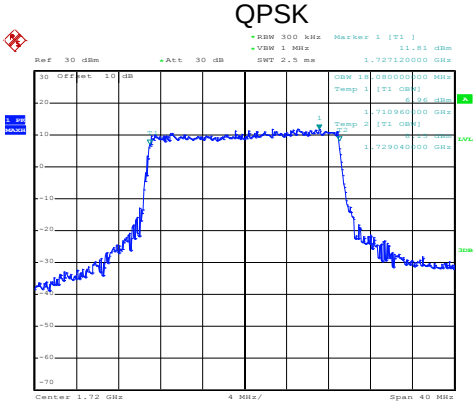
LTE Band 4: 99% Occupy bandwidth
BW: 20MHz

16QAM



Date: 20.APR.2020 11:35:52

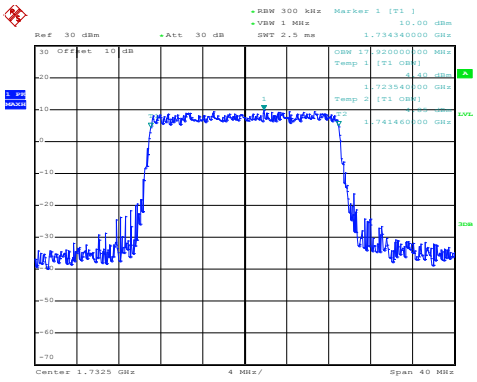
QPSK



Date: 20.APR.2020 11:35:47

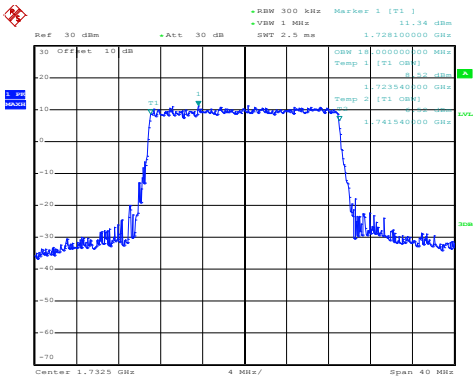
Lowest channel

16QAM



Date: 20.APR.2020 11:38:16

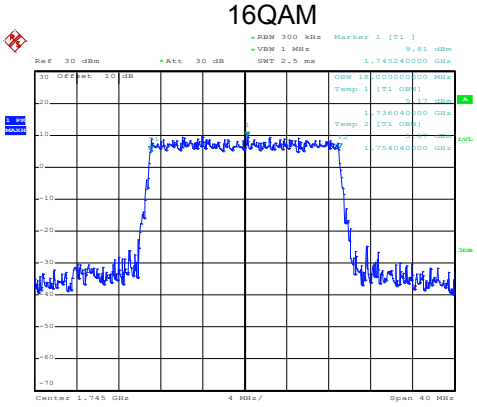
QPSK



Date: 20.APR.2020 11:38:11

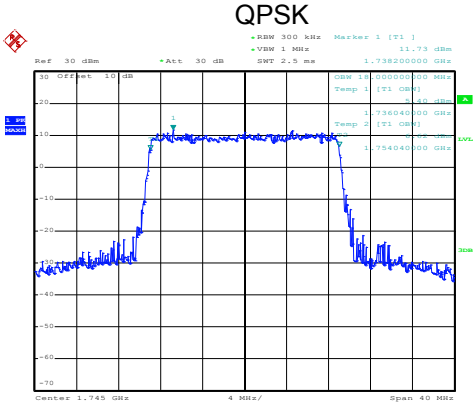
Middle channel

16QAM



Date: 20.APR.2020 11:38:34

QPSK

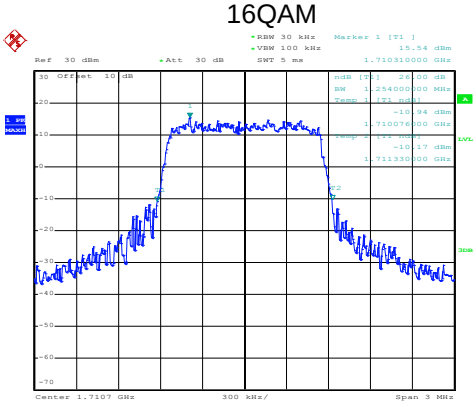


Date: 20.APR.2020 11:38:30

Highest channel

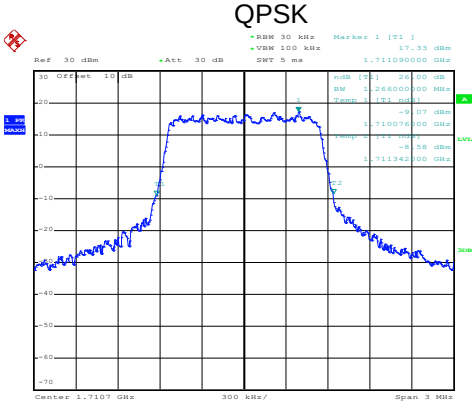
LTE Band 4: -26dBc bandwidth
BW: 1.4MHz

16QAM



Date: 20.APR.2020 11:50:57

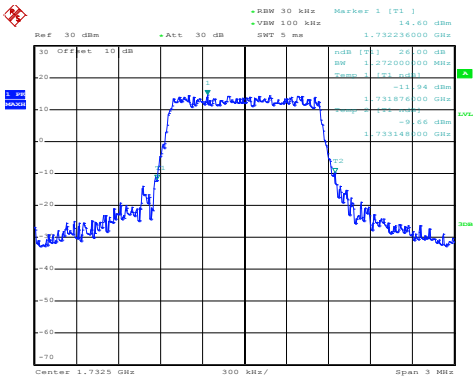
QPSK



Date: 20.APR.2020 11:50:52

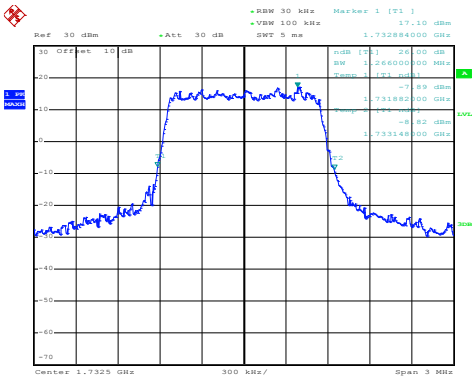
Lowest channel

16QAM



Date: 20.APR.2020 11:51:39

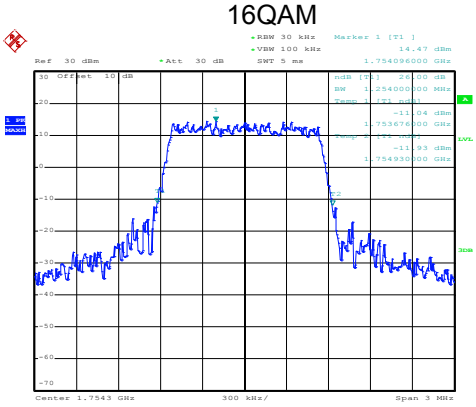
QPSK



Date: 20.APR.2020 11:51:34

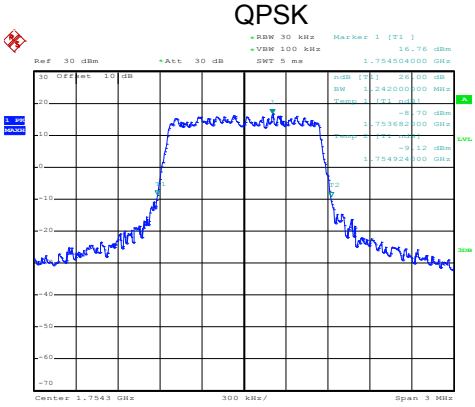
Middle channel

16QAM



Date: 20.APR.2020 11:52:06

QPSK

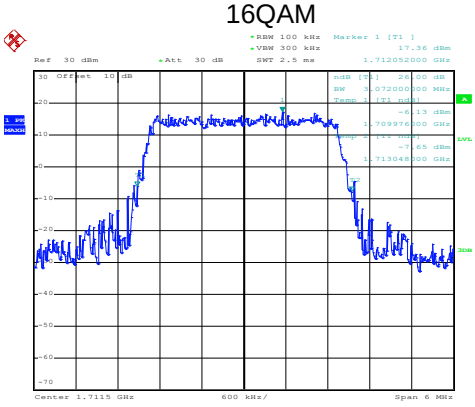


Date: 20.APR.2020 11:52:02

Highest channel

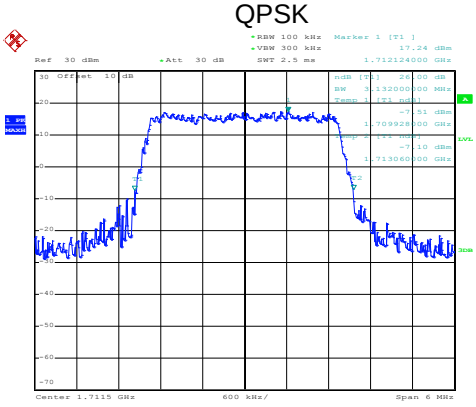
LTE Band 4: -26dBc bandwidth
BW: 3MHz

16QAM



Date: 20.APR.2020 11:48:51

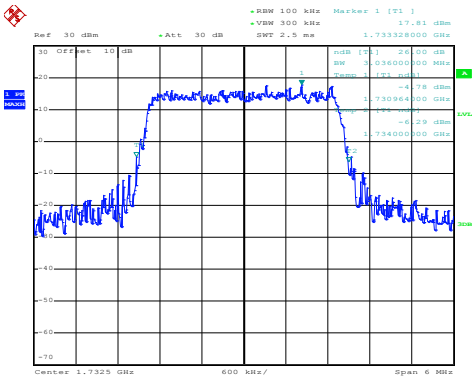
QPSK



Date: 20.APR.2020 11:48:46

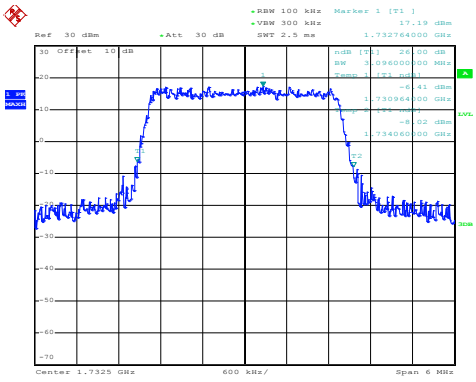
Lowest channel

16QAM



Date: 20.APR.2020 11:49:04

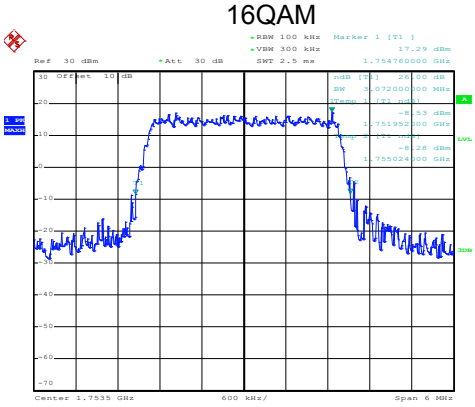
QPSK



Date: 20.APR.2020 11:48:59

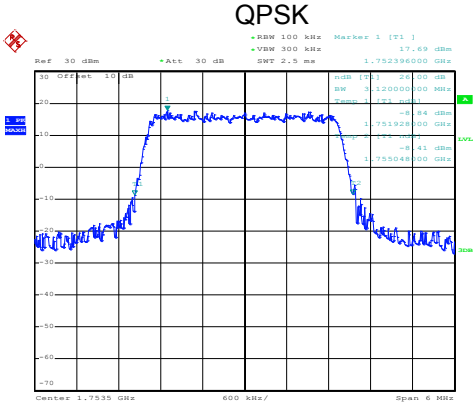
Middle channel

16QAM



Date: 20.APR.2020 11:49:52

QPSK

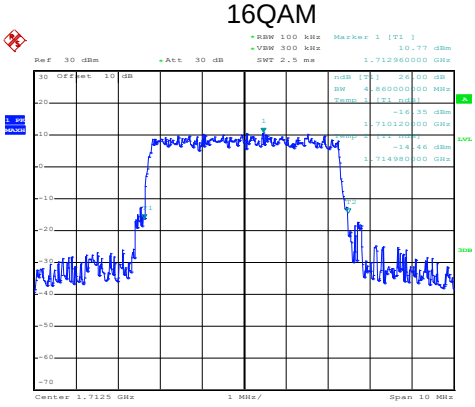


Date: 20.APR.2020 11:49:48

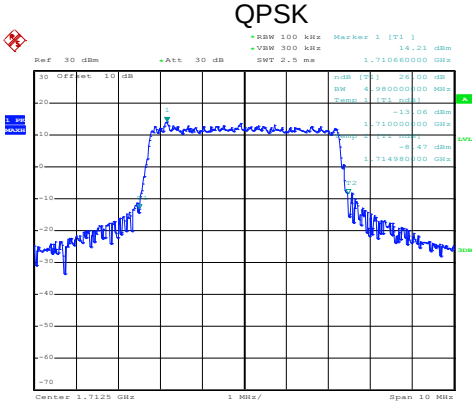
Highest channel

LTE Band 4: -26dBc bandwidth
BW: 5MHz

16QAM

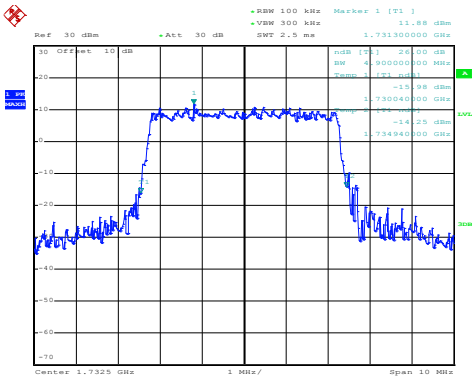


QPSK

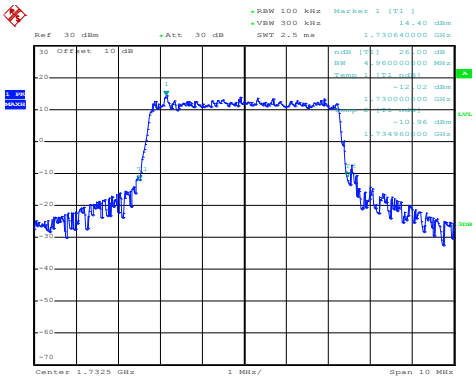


Lowest channel

16QAM

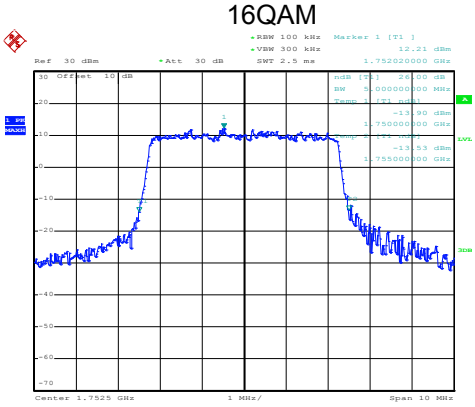


QPSK

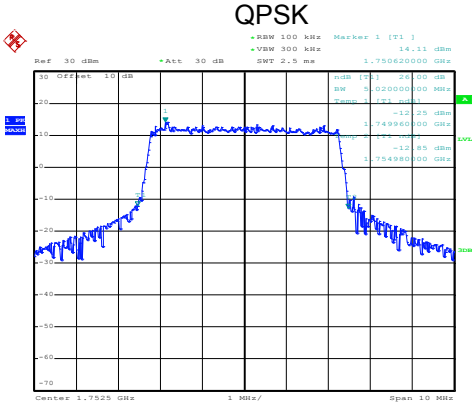


Middle channel

16QAM



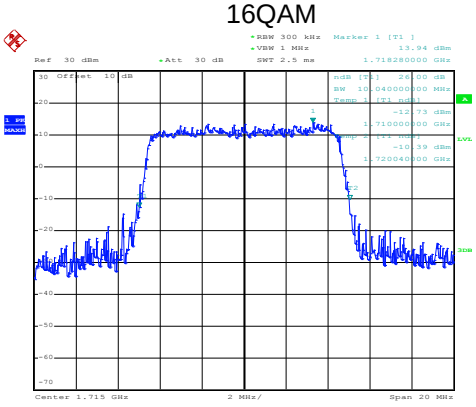
QPSK



Highest channel

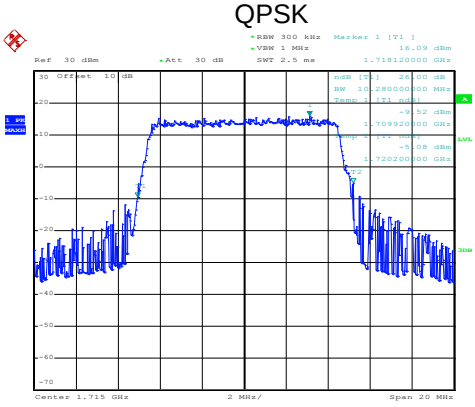
LTE Band 4: -26dBc bandwidth
BW: 10MHz

16QAM



Date: 20.APR.2020 11:41:43

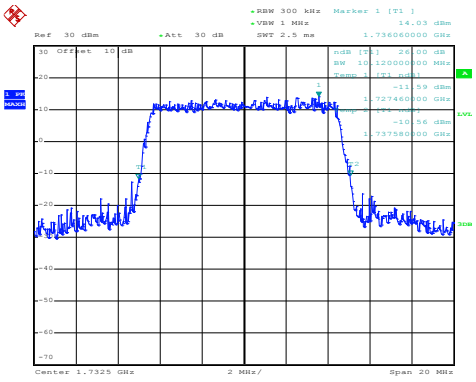
QPSK



Date: 20.APR.2020 11:41:39

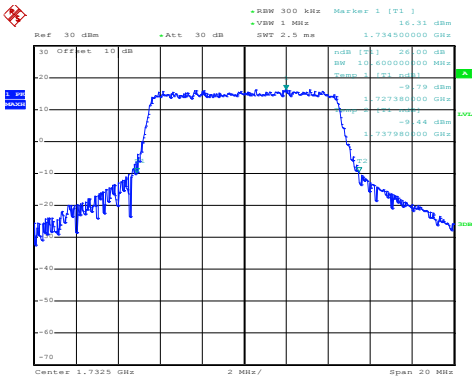
Lowest channel

16QAM



Date: 20.APR.2020 11:42:14

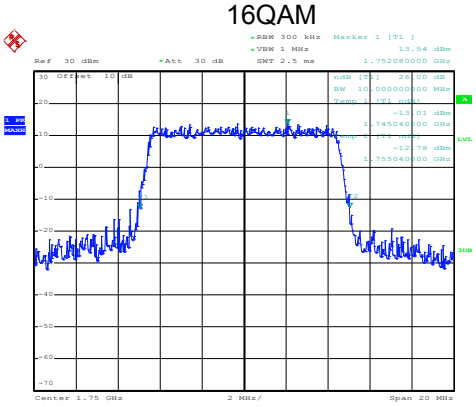
QPSK



Date: 20.APR.2020 11:42:10

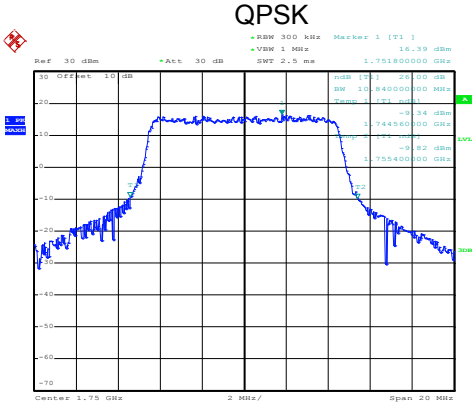
Middle channel

16QAM



Date: 20.APR.2020 11:43:40

QPSK

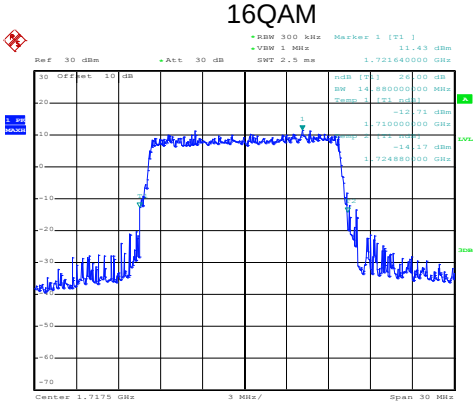


Date: 20.APR.2020 11:43:36

Highest channel

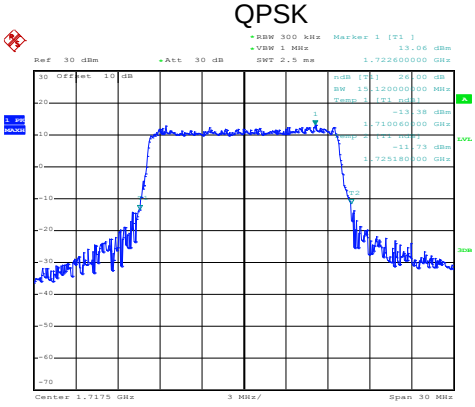
LTE Band 4: -26dBc bandwidth
BW: 15MHz

16QAM



Date: 20.APR.2020 11:39:34

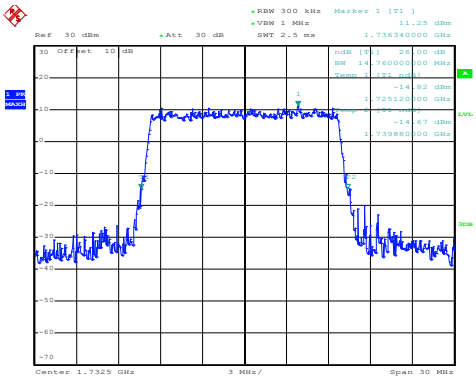
QPSK



Date: 20.APR.2020 11:39:29

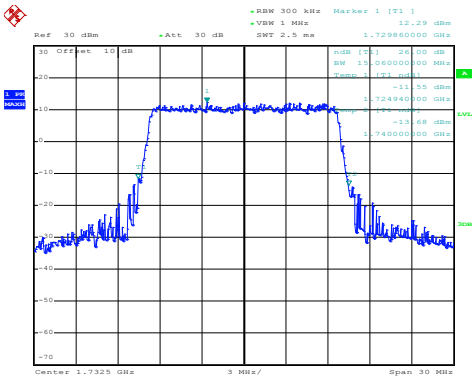
Lowest channel

16QAM



Date: 20.APR.2020 11:40:09

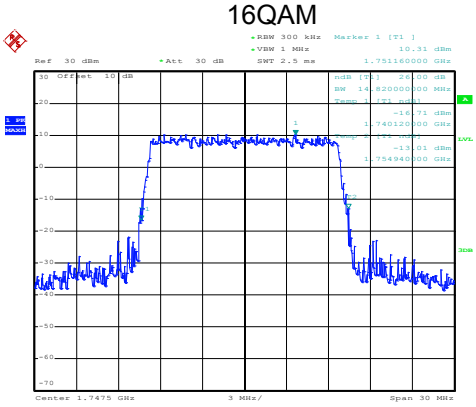
QPSK



Date: 20.APR.2020 11:40:05

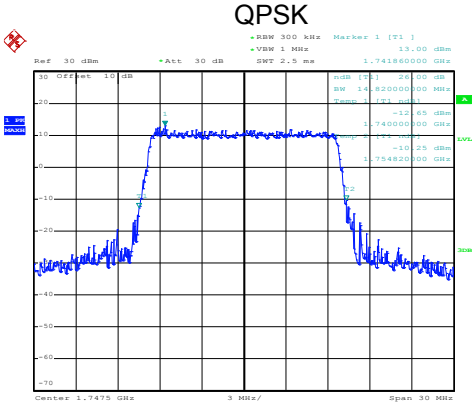
Middle channel

16QAM



Date: 20.APR.2020 11:40:23

QPSK

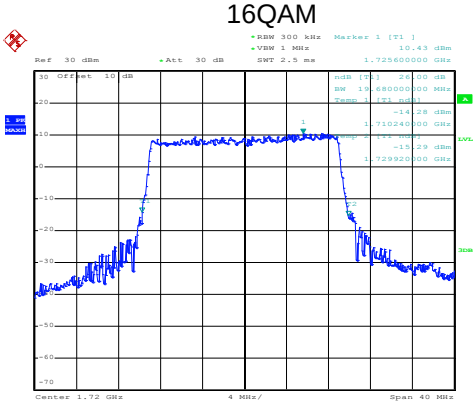


Date: 20.APR.2020 11:40:20

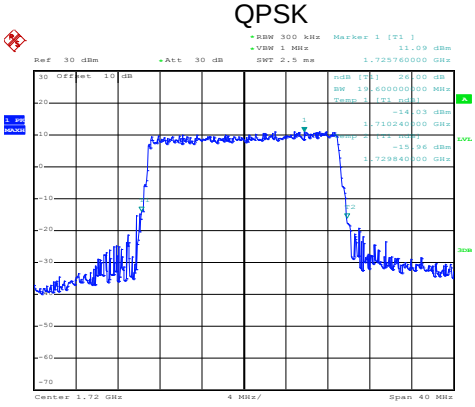
Highest channel

LTE Band 4: -26dBc bandwidth
BW: 20MHz

16QAM

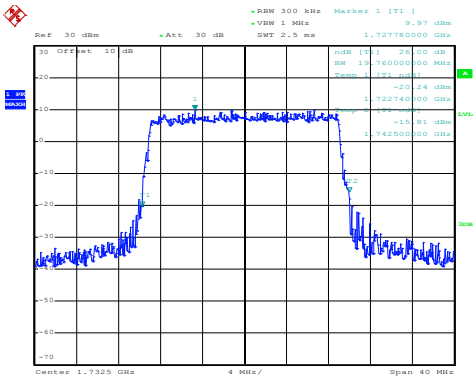


QPSK

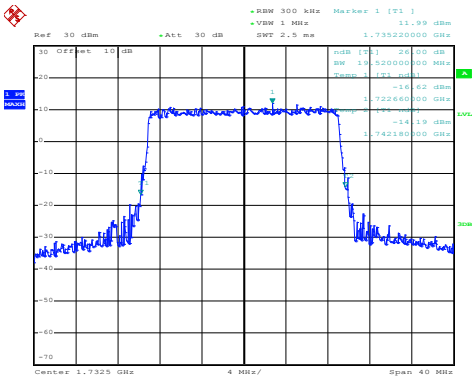


Lowest channel

16QAM

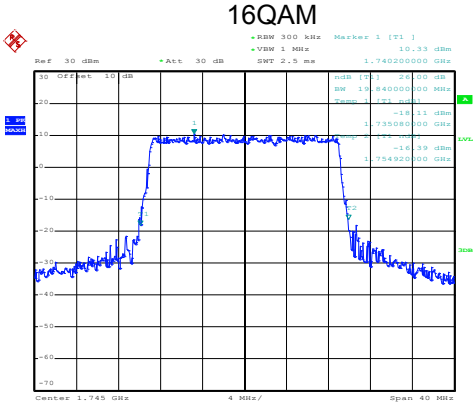


QPSK

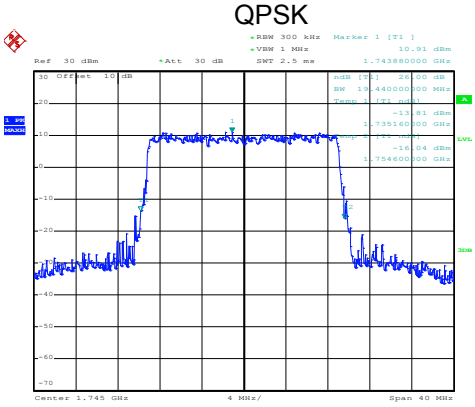


Middle channel

16QAM



QPSK

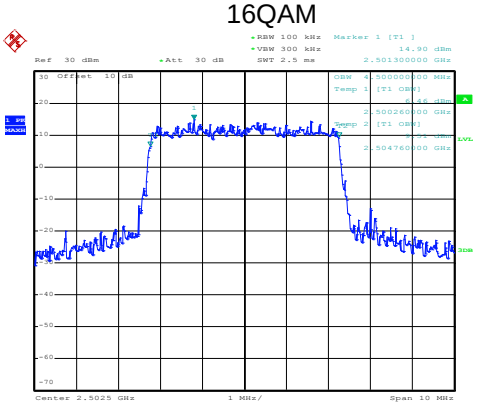


Highest channel

LTE-Band 7 part:

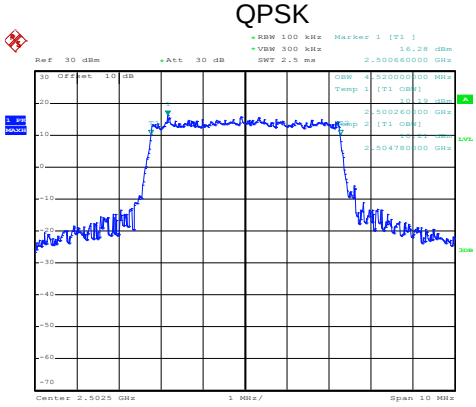
LTE Band 7: 99% Occupy bandwidth
BW: 5MHz

16QAM



Date: 20.APR.2020 11:53:19

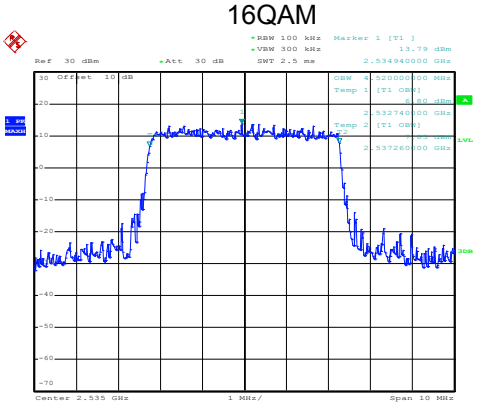
QPSK



Date: 20.APR.2020 11:53:15

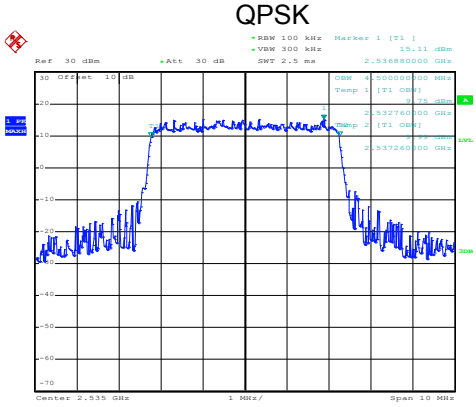
Lowest channel

16QAM



Date: 20.APR.2020 11:54:00

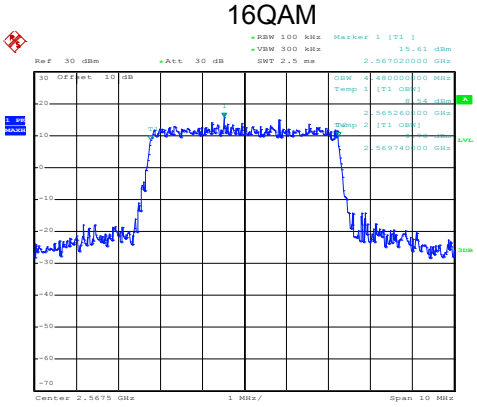
QPSK



Date: 20.APR.2020 11:53:56

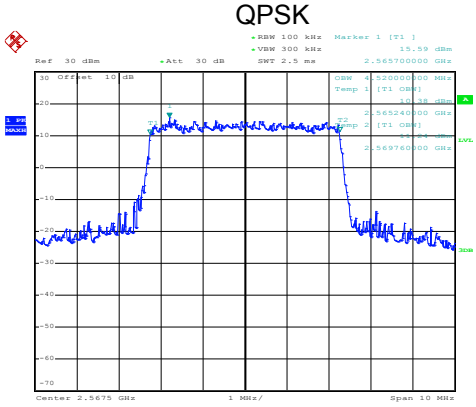
Middle channel

16QAM



Date: 20.APR.2020 11:54:18

QPSK

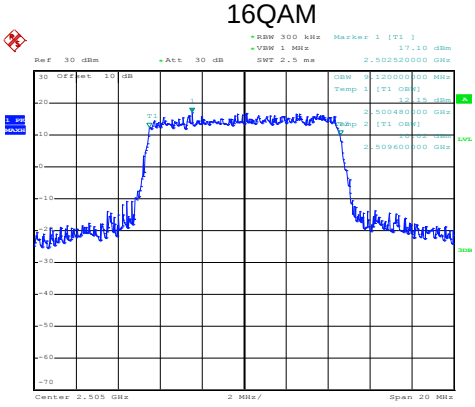


Date: 20.APR.2020 11:54:14

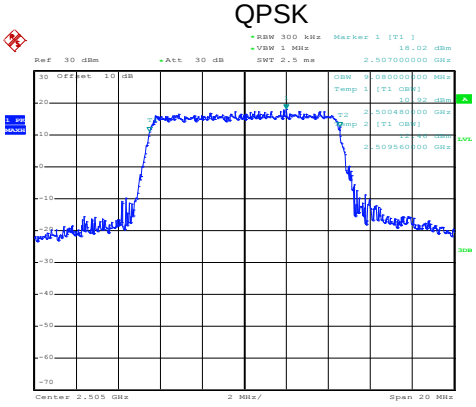
Highest channel

LTE Band 7: 99% Occupy bandwidth
BW: 10MHz

16QAM

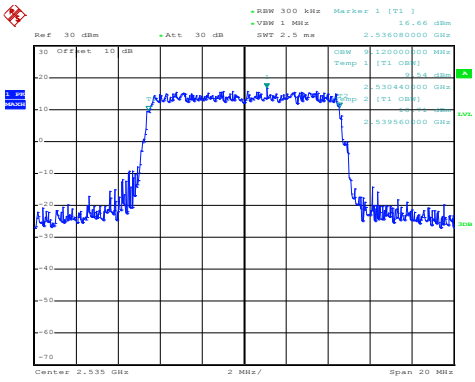


QPSK

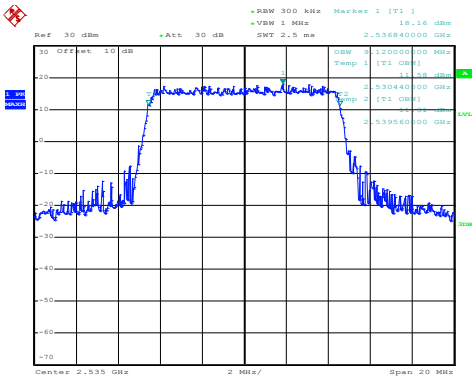


Lowest channel

16QAM

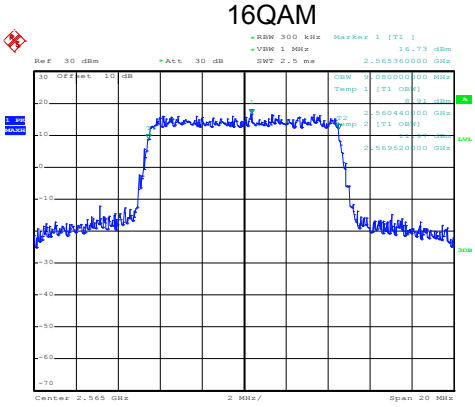


QPSK

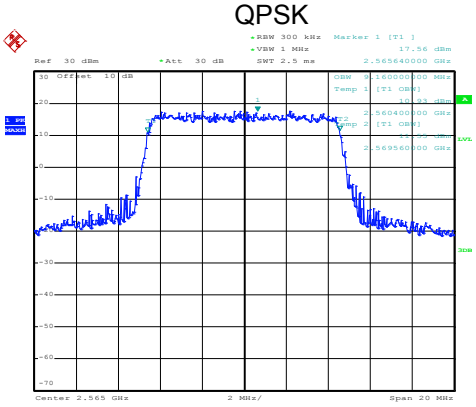


Middle channel

16QAM



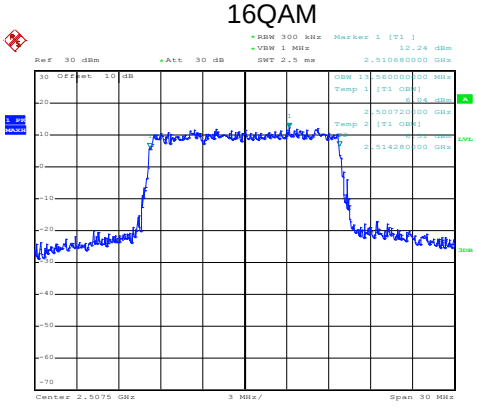
QPSK



Highest channel

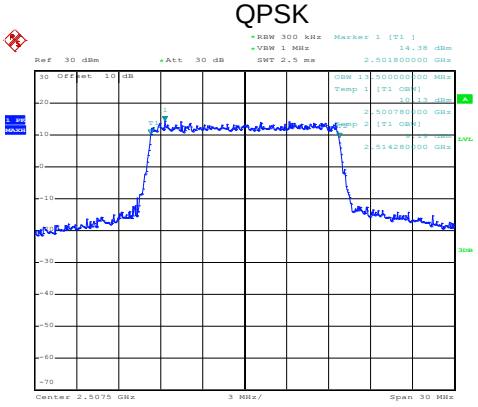
LTE Band 7: 99% Occupy bandwidth
BW: 15MHz

16QAM



Date: 20.APR.2020 11:56:54

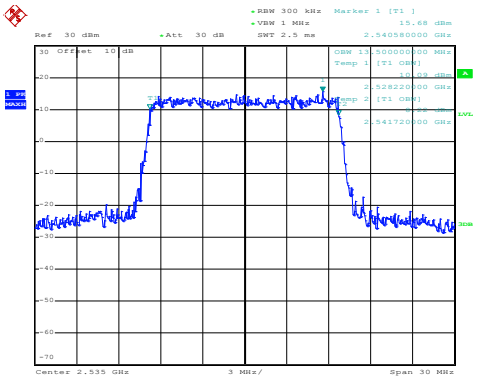
QPSK



Date: 20.APR.2020 11:56:50

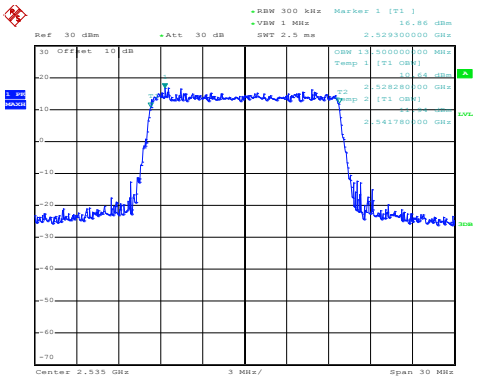
Lowest channel

16QAM



Date: 20.APR.2020 11:57:33

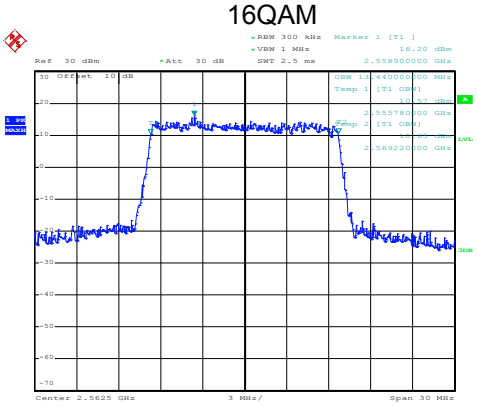
QPSK



Date: 20.APR.2020 11:57:28

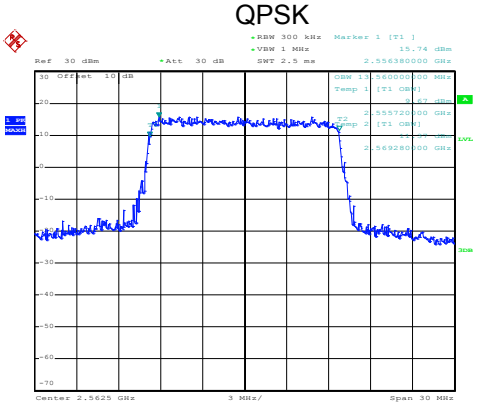
Middle channel

16QAM



Date: 20.APR.2020 11:57:49

QPSK

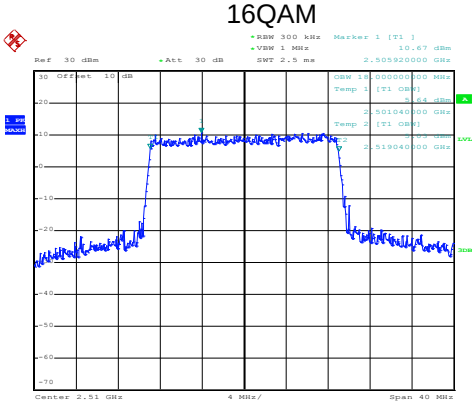


Date: 20.APR.2020 11:57:44

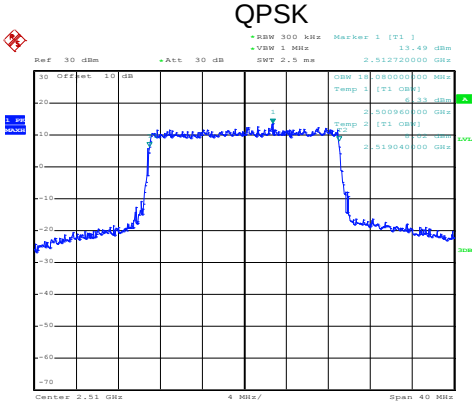
Highest channel

LTE Band 7: 99% Occupy bandwidth
BW: 20MHz

16QAM

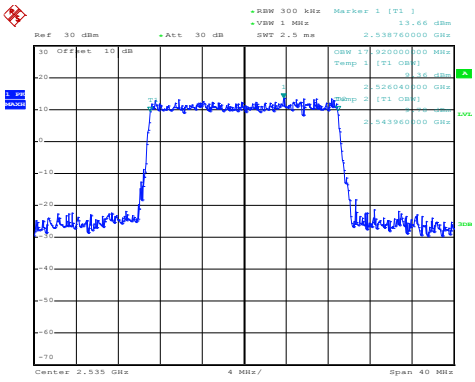


QPSK

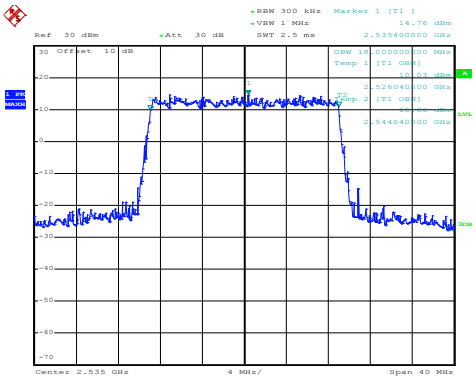


Lowest channel

16QAM

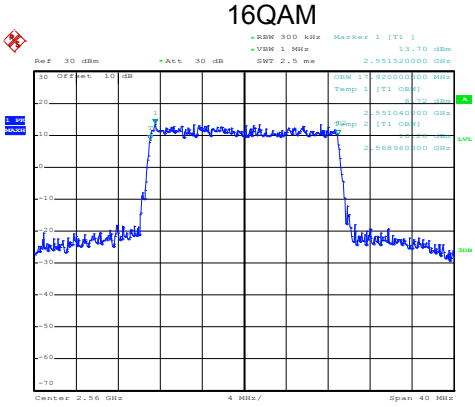


QPSK

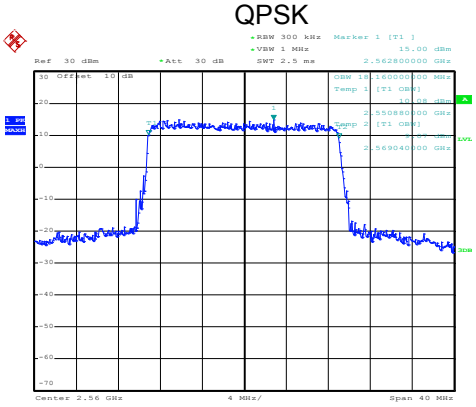


Middle channel

16QAM



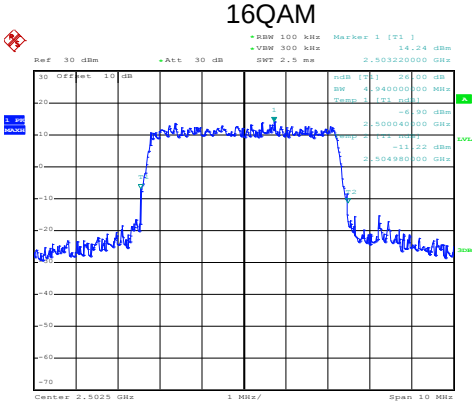
QPSK



Highest channel

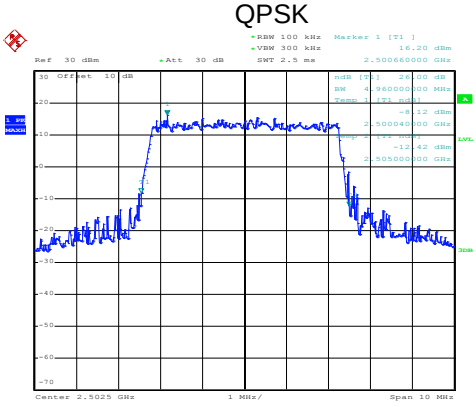
LTE Band 7: -26dBc bandwidth
BW: 5MHz

16QAM



Date: 20.APR.2020 11:53:33

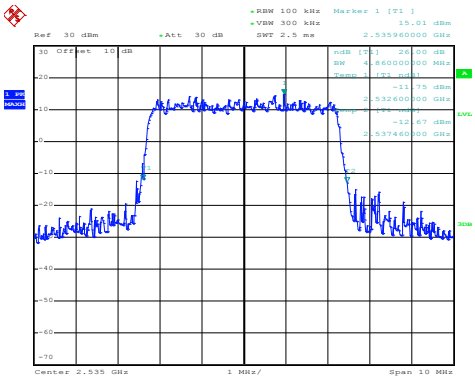
QPSK



Date: 20.APR.2020 11:53:27

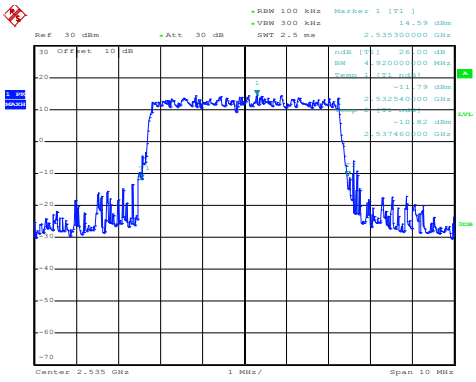
Lowest channel

16QAM



Date: 20.APR.2020 11:53:48

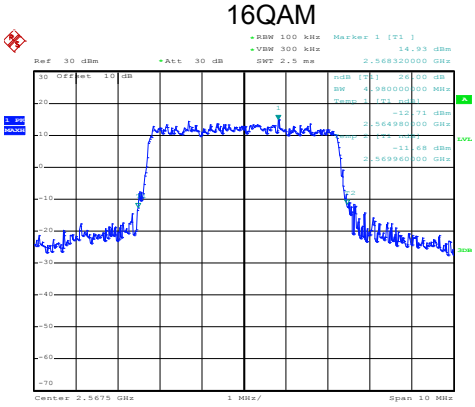
QPSK



Date: 20.APR.2020 11:53:44

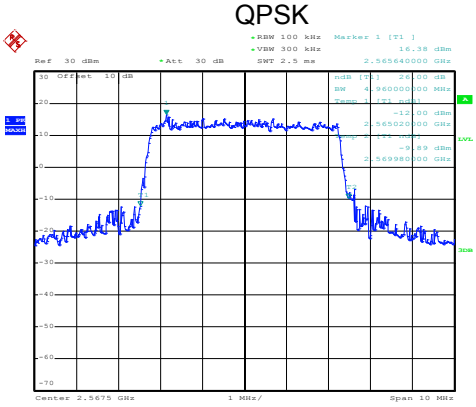
Middle channel

16QAM



Date: 20.APR.2020 11:54:32

QPSK

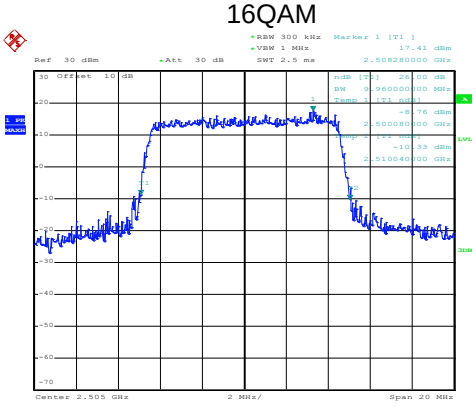


Date: 20.APR.2020 11:54:27

Highest channel

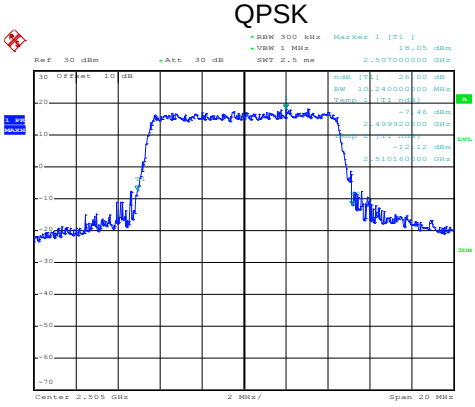
LTE Band 7: -26dBc bandwidth
BW: 10MHz

16QAM



Date: 20.APR.2020 11:55:05

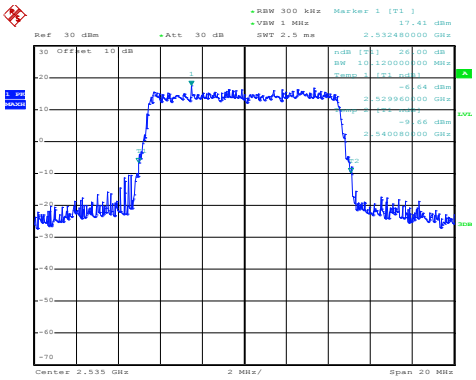
QPSK



Date: 20.APR.2020 11:55:01

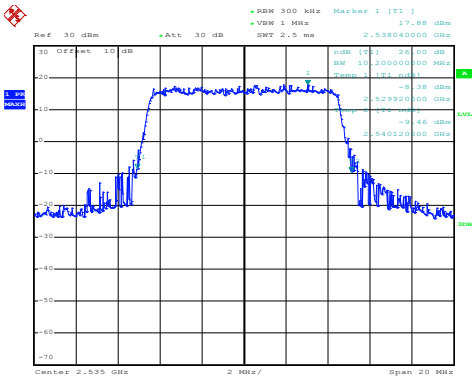
Lowest channel

16QAM



Date: 20.APR.2020 11:55:51

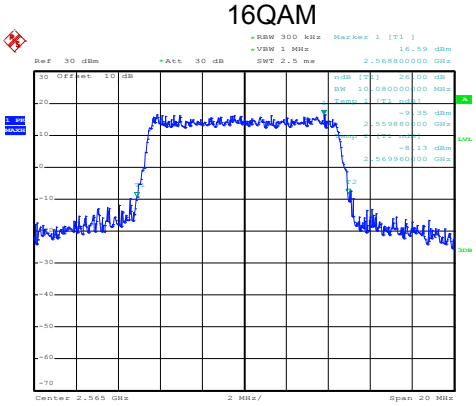
QPSK



Date: 20.APR.2020 11:55:46

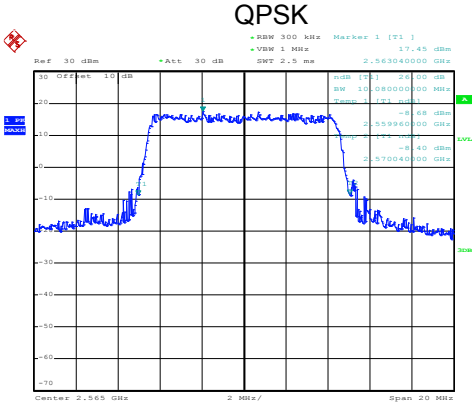
Middle channel

16QAM



Date: 20.APR.2020 11:56:13

QPSK

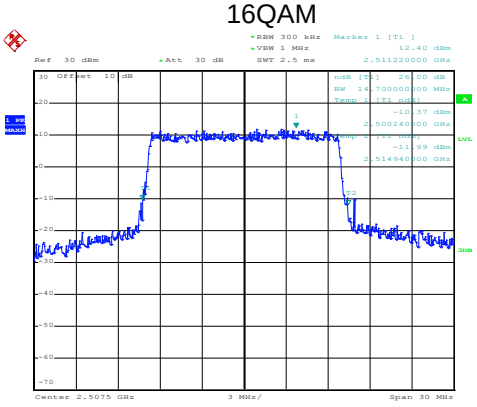


Date: 20.APR.2020 11:56:09

Highest channel

LTE Band 7: -26dBc bandwidth
BW: 15MHz

16QAM



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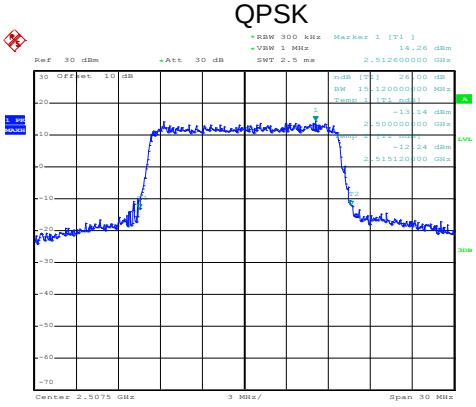
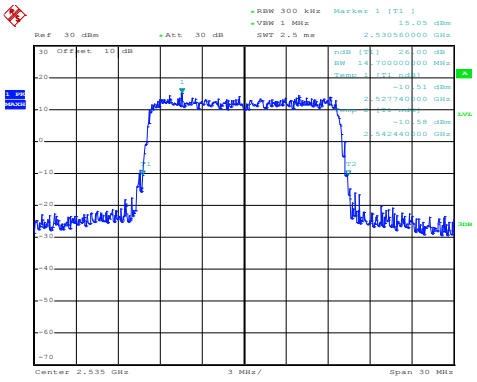
QPSK



Date: 20.APR.2020 11:57:00

Lowest channel

16QAM



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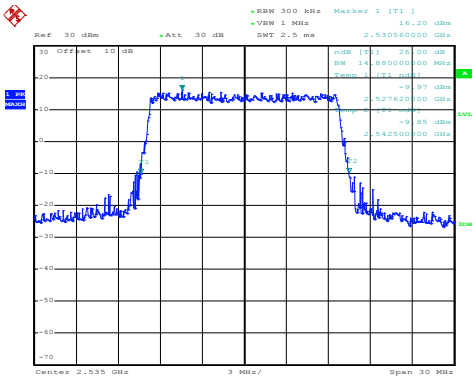
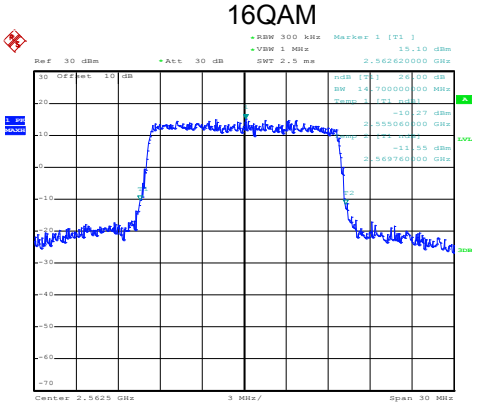
QPSK



Date: 20.APR.2020 11:57:16

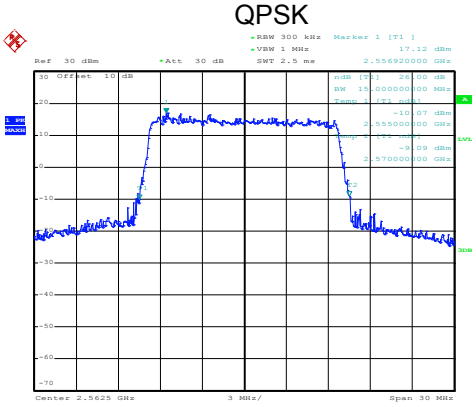
Middle channel

16QAM



Date: 20.APR.2020 11:58:04

QPSK

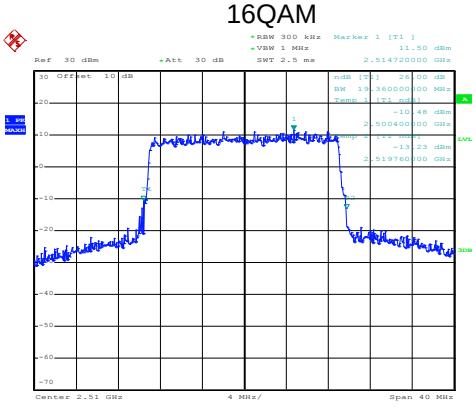


Date: 20.APR.2020 11:57:59

Highest channel

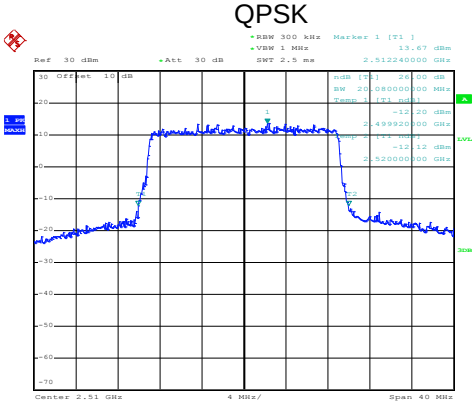
LTE Band 7: -26dBc bandwidth
BW: 20MHz

16QAM



Date: 20.APR.2020 11:58:54

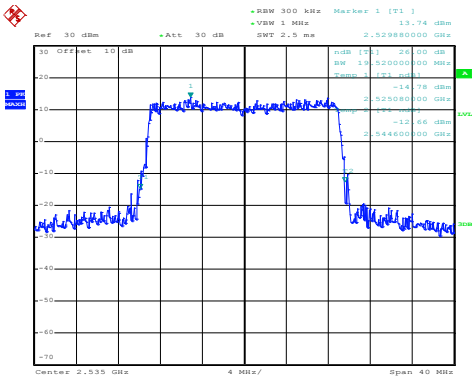
QPSK



Date: 20.APR.2020 11:58:49

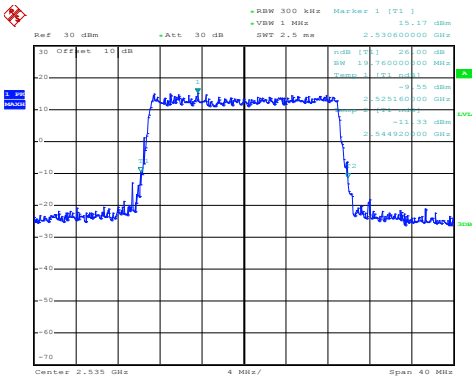
Lowest channel

16QAM



Date: 20.APR.2020 11:59:35

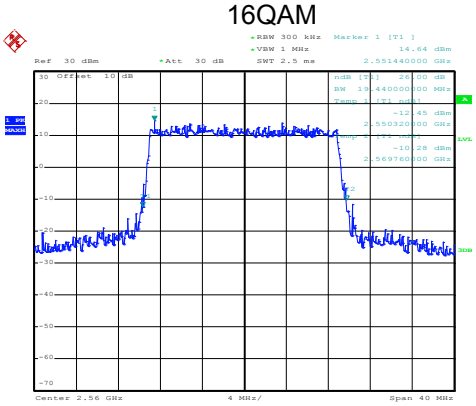
QPSK



Date: 20.APR.2020 11:59:29

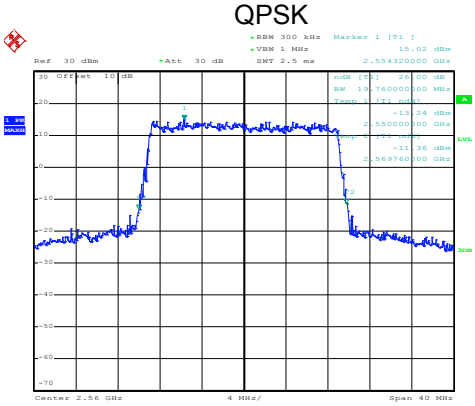
Middle channel

16QAM



Date: 20.APR.2020 11:59:51

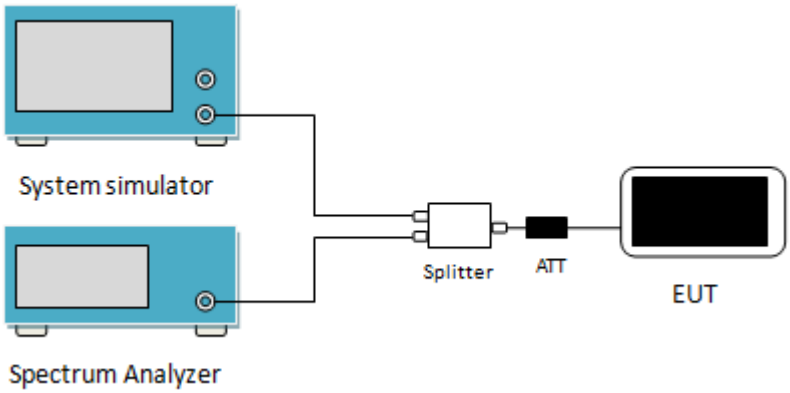
QPSK



Date: 20.APR.2020 11:59:47

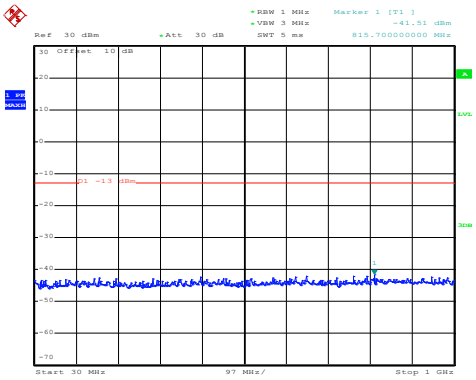
Highest channel

6.4 Out of band emission at antenna terminals

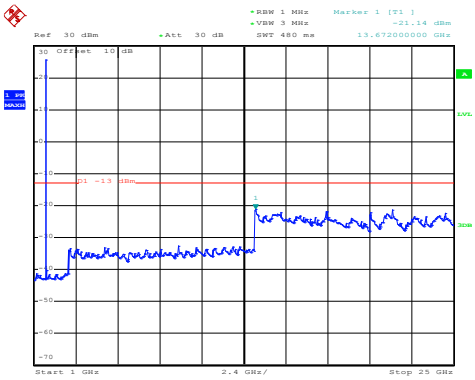
Test Requirement:	Part 27.53(h), Part 27.53(m)
Limit:	LTE Band 4: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$(P) dB (-13 dBm). LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.
Test Setup:	
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 100 kHz when below 1GHz, 1MHz when above 1 GHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	Pre-scan all RB Size and offset, and found the RB Size and offset of worst case, so the report shows only the worst case test data.

Test plots as follows (Conducted spurious emission) (worst case):
LTE Band 4 part:

LTE Band 4: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel

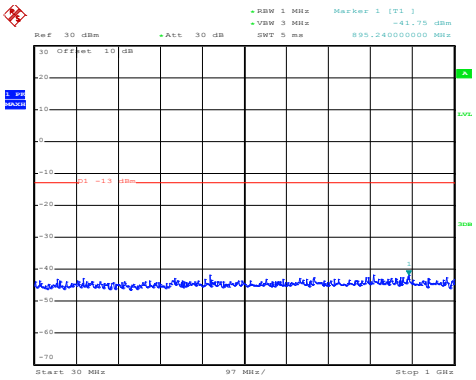


30MHz~1GHz

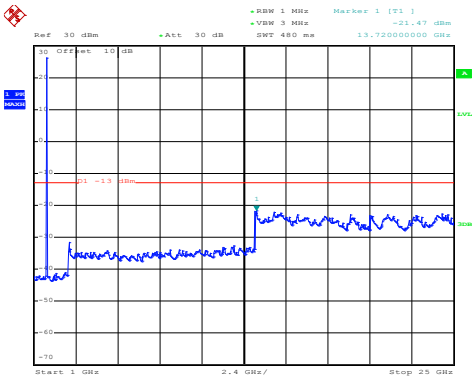


1GHz~25GHz

Middle channel

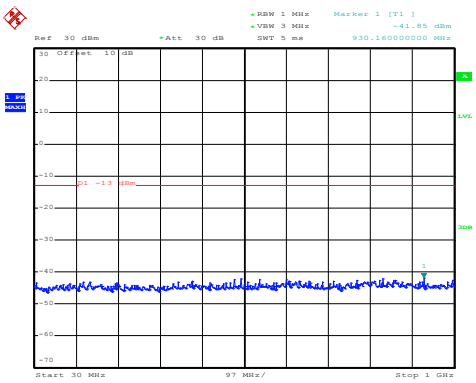


30MHz~1GHz

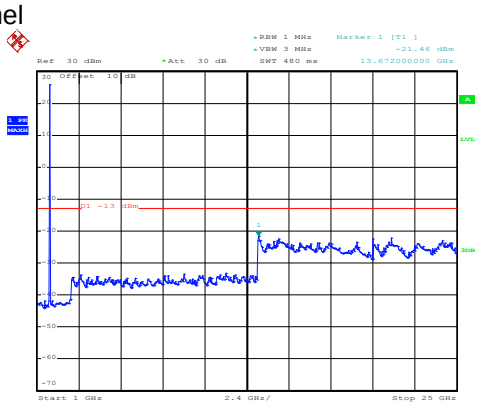


1GHz~25GHz

High channel

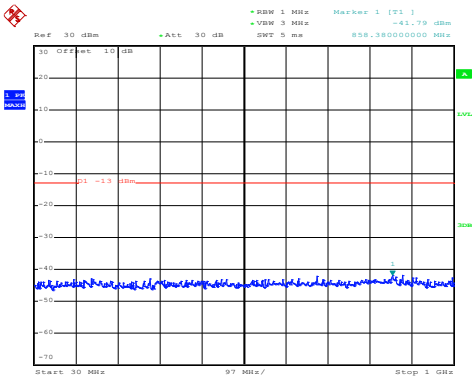


30MHz~1GHz



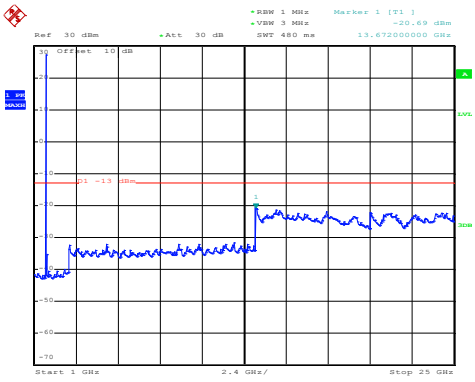
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 20.APR.2020 11:32:13

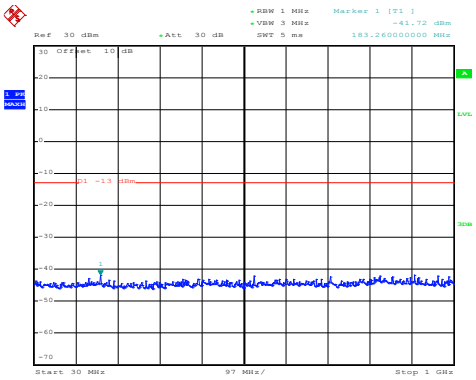
30MHz~1GHz



Date: 20.APR.2020 11:29:43

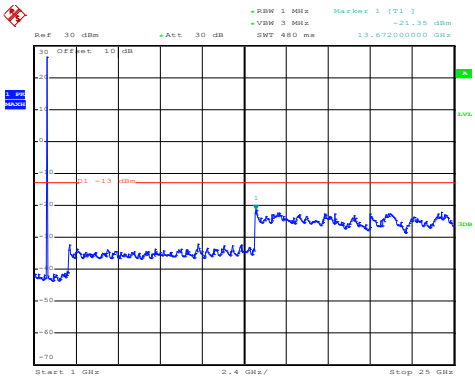
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:31:52

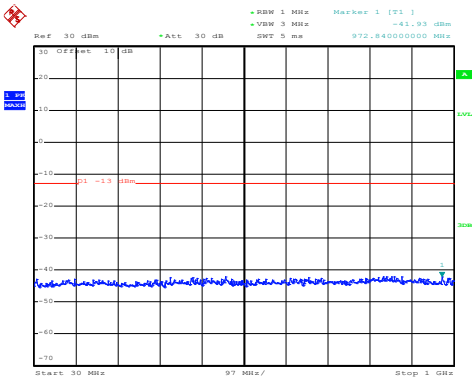
30MHz~1GHz



Date: 20.APR.2020 11:30:12

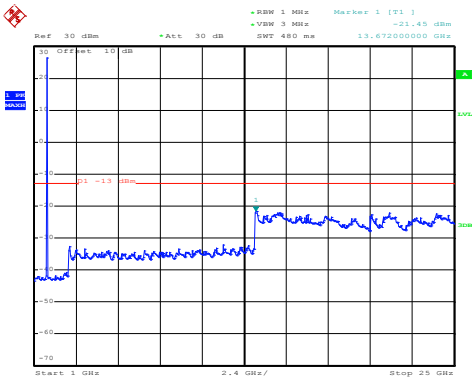
1GHz~25GHz

High channel



Date: 20.APR.2020 11:31:30

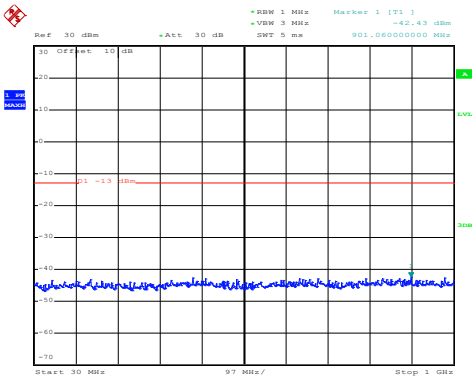
30MHz~1GHz



Date: 20.APR.2020 11:30:36

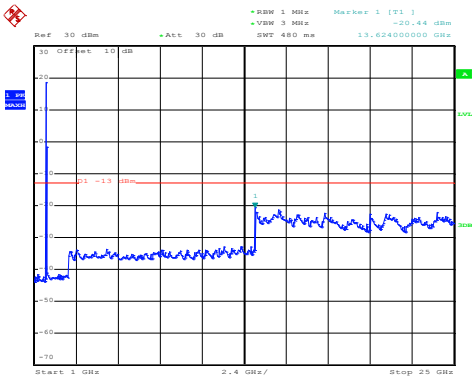
1GHz~25GHz

LTE Band 4: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 20.APR.2020 11:32:57

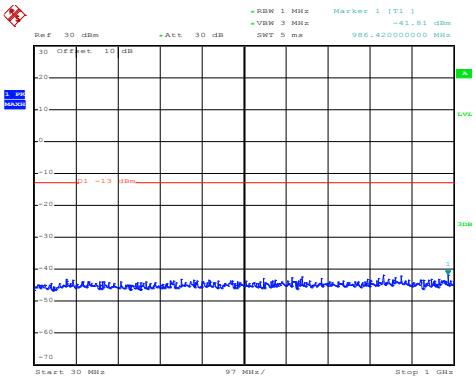
30MHz~1GHz



Date: 20.APR.2020 11:34:42

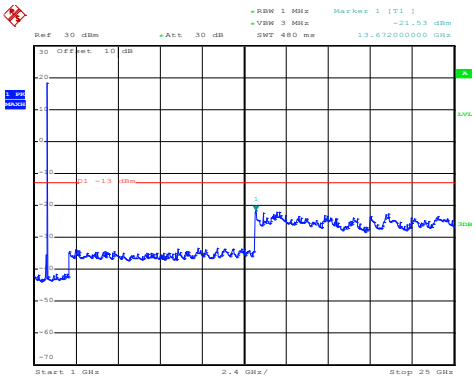
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:33:12

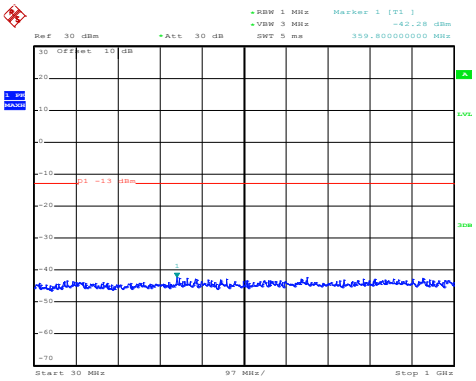
30MHz~1GHz



Date: 20.APR.2020 11:34:19

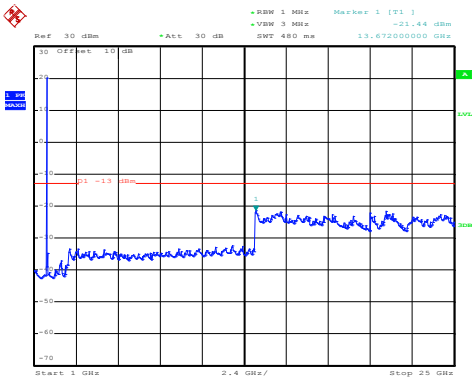
1GHz~25GHz

High channel



Date: 20.APR.2020 11:33:31

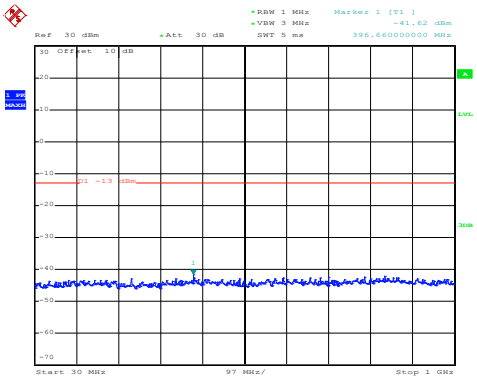
30MHz~1GHz



Date: 20.APR.2020 11:34:04

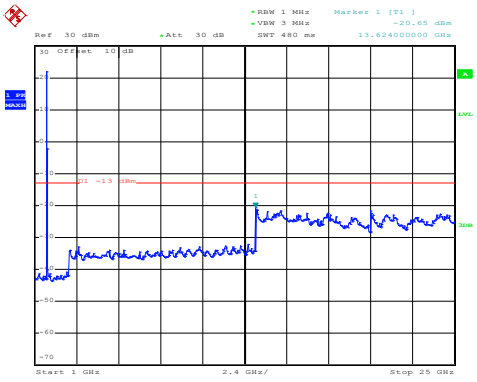
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 20.APR.2020 11:32:51

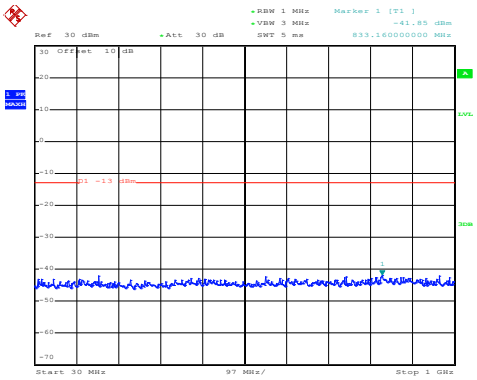
30MHz~1GHz



Date: 20.APR.2020 11:34:34

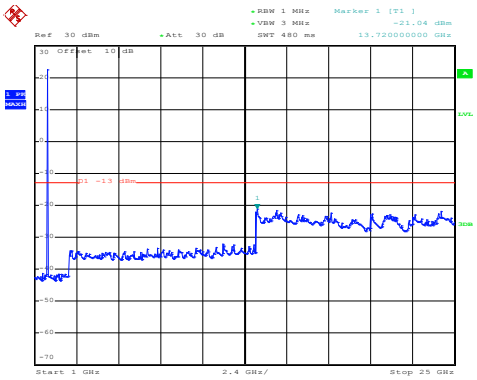
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:33:07

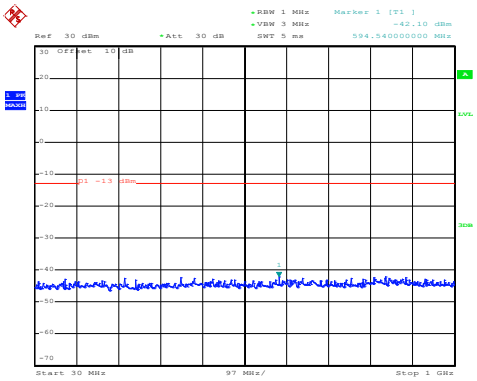
30MHz~1GHz



Date: 20.APR.2020 11:34:13

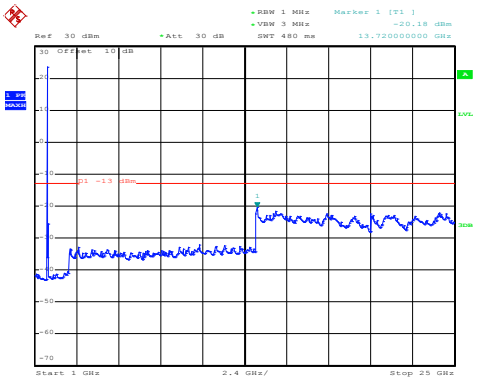
1GHz~25GHz

High channel



Date: 20.APR.2020 11:33:24

30MHz~1GHz

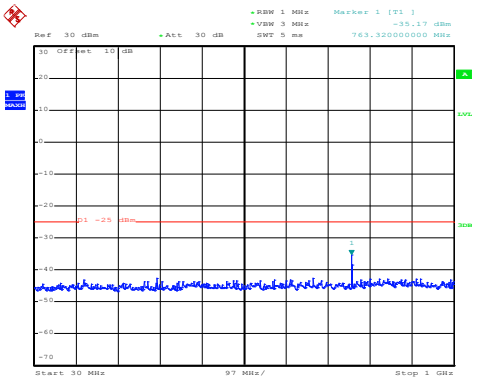


Date: 20.APR.2020 11:33:52

1GHz~25GHz

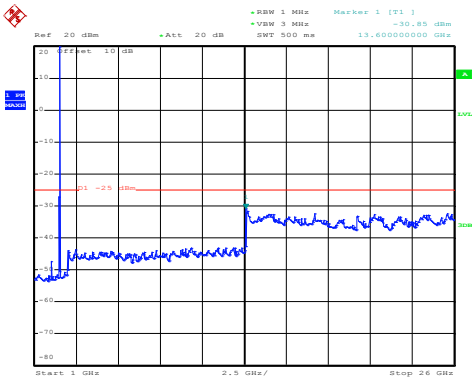
LTE Band 7 part:

LTE Band 7: 16 QAM & RB Size 1
BW: 5MHz
Lowest channel



Date: 20.APR.2020 11:26:03

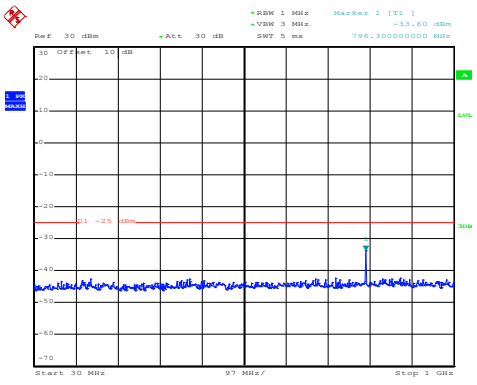
30MHz~1GHz



Date: 20.APR.2020 11:28:19

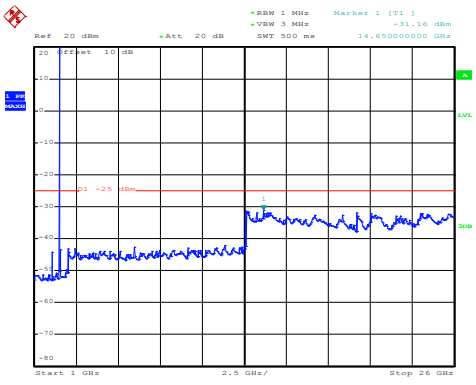
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:26:19

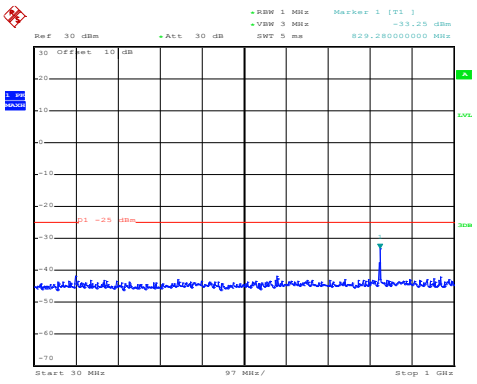
30MHz~1GHz



Date: 20.APR.2020 11:27:58

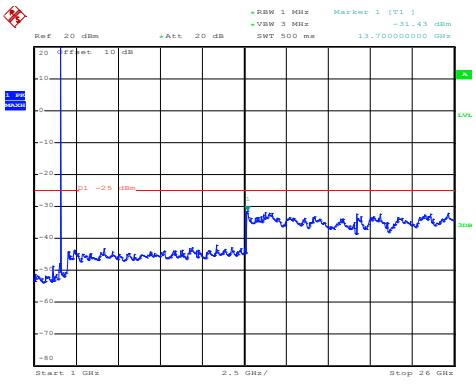
1GHz~25GHz

High channel



Date: 20.APR.2020 11:26:42

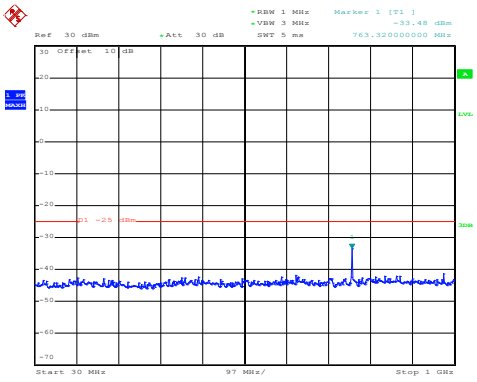
30MHz~1GHz



Date: 20.APR.2020 11:27:29

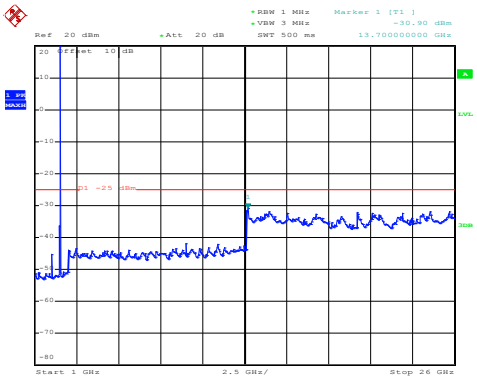
1GHz~25GHz

LTE Band 7: QPSK & RB Size 1
BW: 5MHz
Lowest channel



Date: 20.APR.2020 11:25:57

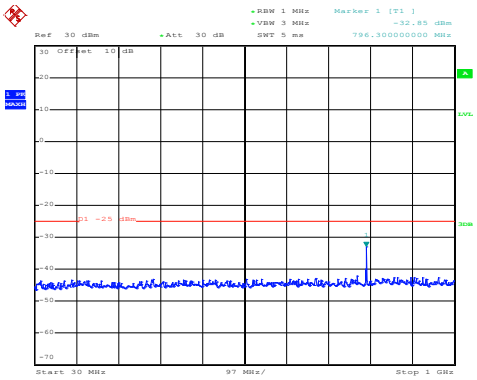
30MHz~1GHz



Date: 20.APR.2020 11:28:13

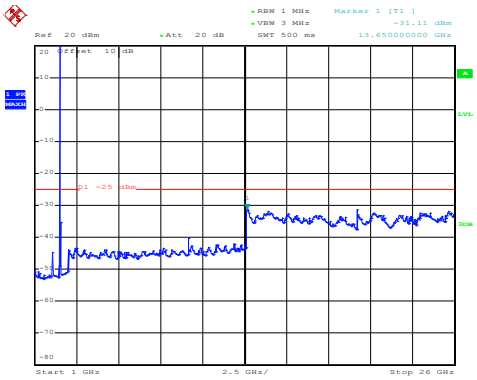
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:26:11

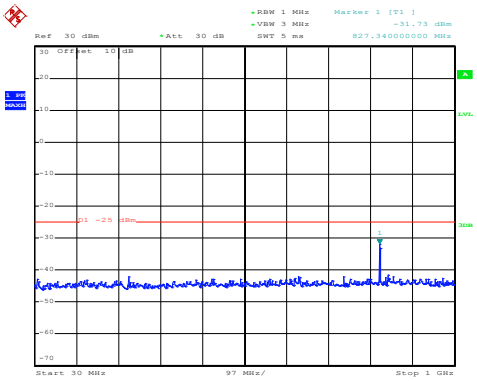
30MHz~1GHz



Date: 20.APR.2020 11:27:46

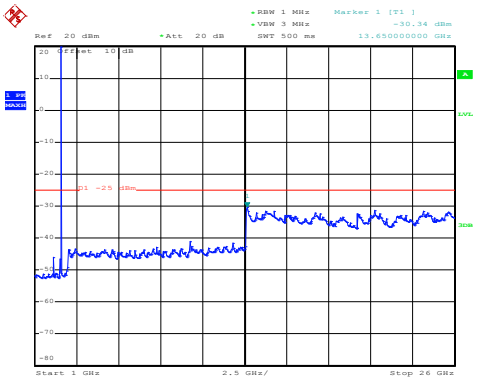
1GHz~25GHz

High channel



Date: 20.APR.2020 11:26:33

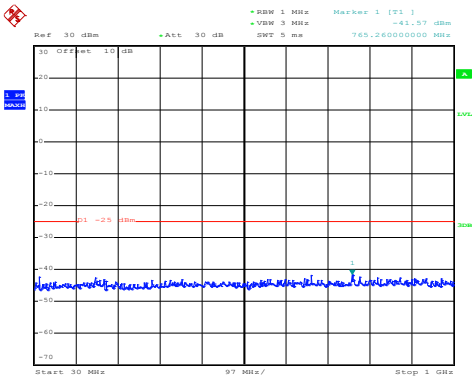
30MHz~1GHz



Date: 20.APR.2020 11:27:20

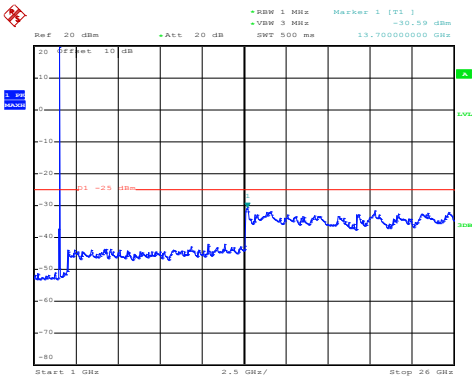
1GHz~25GHz

LTE Band 7: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 20.APR.2020 11:25:32

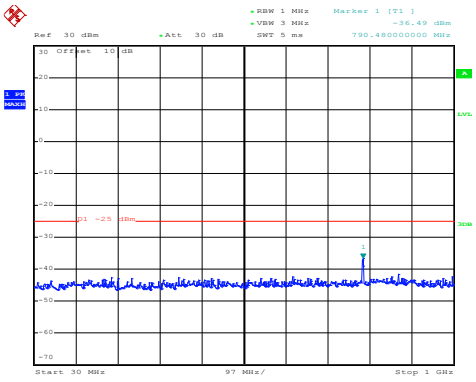
30MHz~1GHz



Date: 20.APR.2020 11:22:49

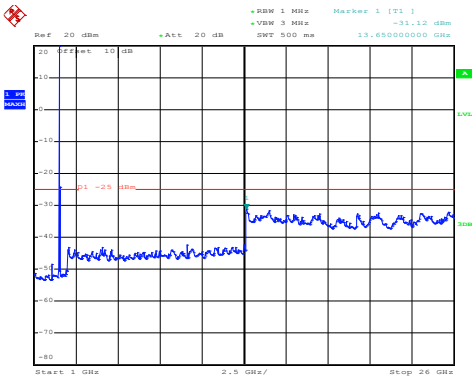
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:25:15

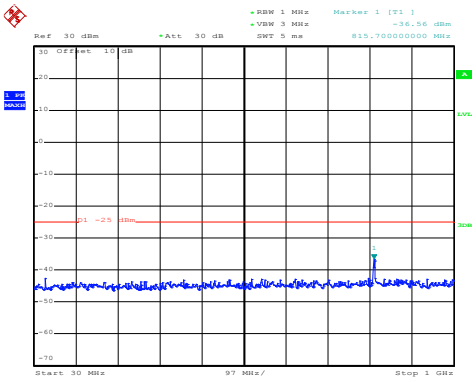
30MHz~1GHz



Date: 20.APR.2020 11:23:17

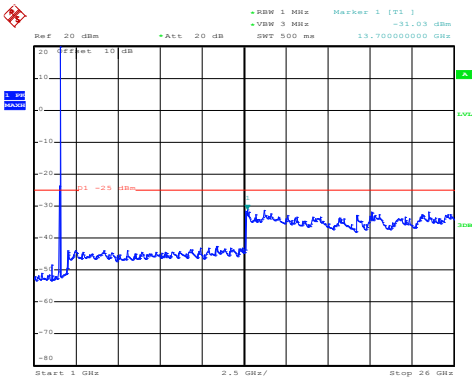
1GHz~25GHz

High channel



Date: 20.APR.2020 11:24:56

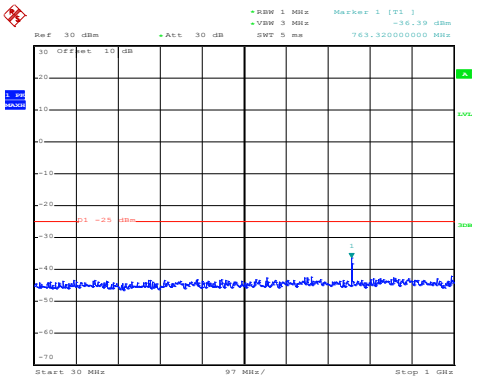
30MHz~1GHz



Date: 20.APR.2020 11:23:42

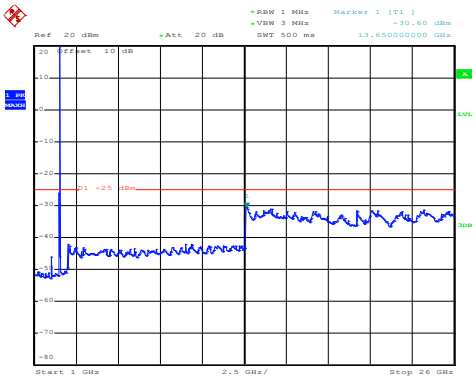
1GHz~25GHz

LTE Band 7: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 20.APR.2020 11:25:25

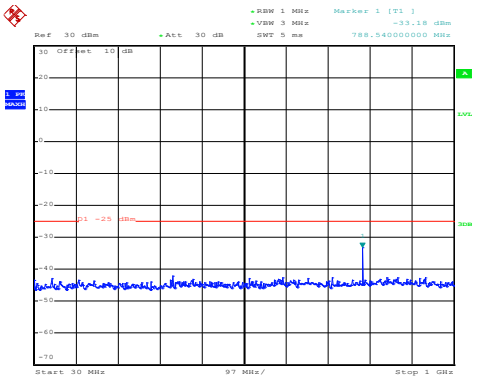
30MHz~1GHz



Date: 20.APR.2020 11:22:39

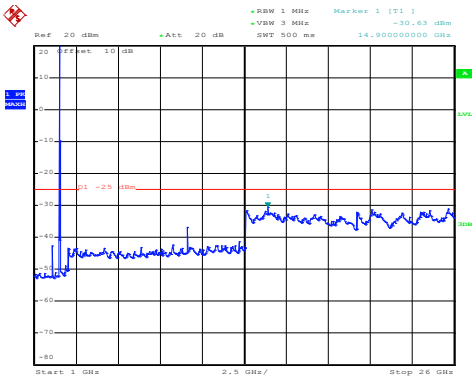
1GHz~25GHz

Middle channel



Date: 20.APR.2020 11:25:09

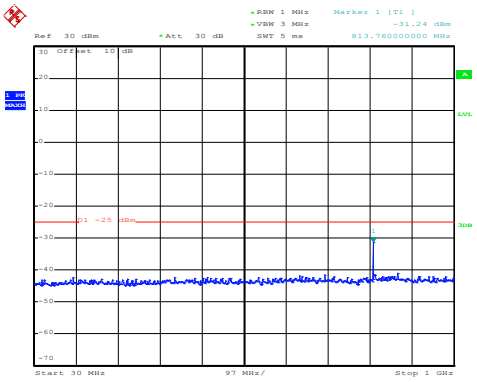
30MHz~1GHz



Date: 20.APR.2020 11:23:10

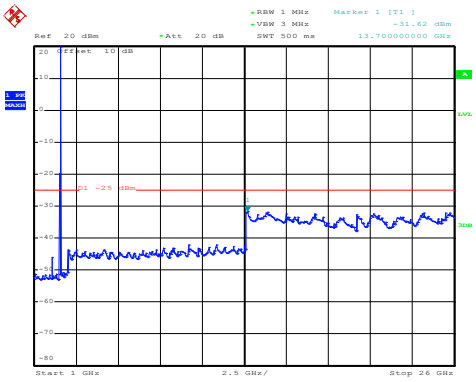
1GHz~25GHz

High channel



Date: 20.APR.2020 11:24:50

30MHz~1GHz



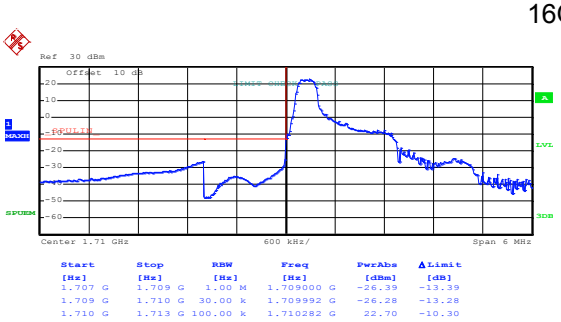
Date: 20.APR.2020 11:23:34

1GHz~25GHz

Band edge emission:

LTE Band 4 part:

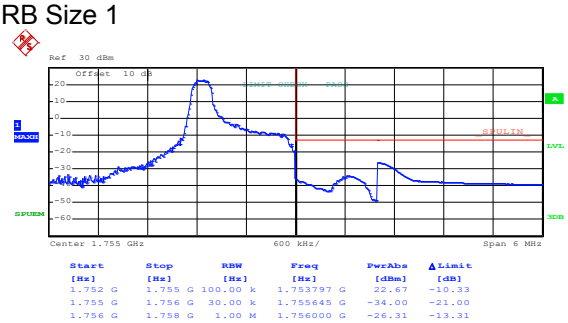
LTE Band 4, BW: 1.4MHz
16QAM & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.707 G	1.709 G	1.00 M	1.709000 G	-26.39	-13.39
1.709 G	1.710 G	30.00 k	1.709992 G	-26.28	-13.28
1.710 G	1.713 G	100.00 k	1.710282 G	22.70	-10.30

Date: 20.APR.2020 11:06:01

Lowest channel

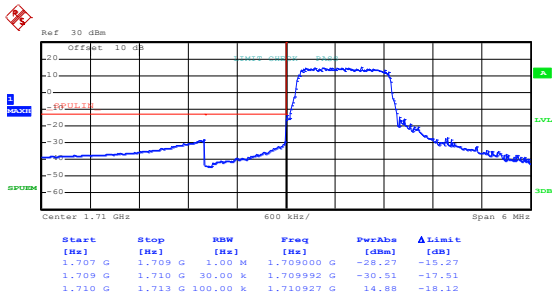


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.752 G	1.755 G	100.00 k	1.753797 G	22.67	-10.33
1.755 G	1.756 G	30.00 k	1.755645 G	-34.00	-21.00
1.756 G	1.758 G	1.00 M	1.756000 G	-26.31	-13.31

Date: 20.APR.2020 11:08:13

Highest channel

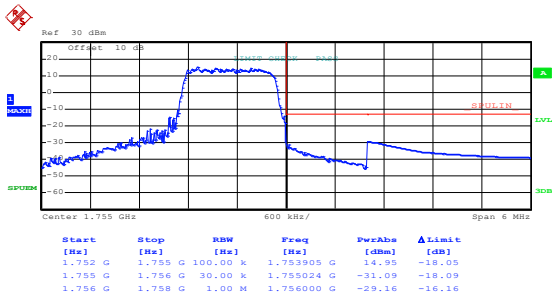
16QAM & RB Size 6



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.707 G	1.709 G	1.00 M	1.709000 G	-28.27	-15.27
1.709 G	1.710 G	30.00 k	1.709992 G	-30.51	-17.51
1.710 G	1.713 G	100.00 k	1.710927 G	14.88	-18.12

Date: 20.APR.2020 11:06:23

Lowest channel



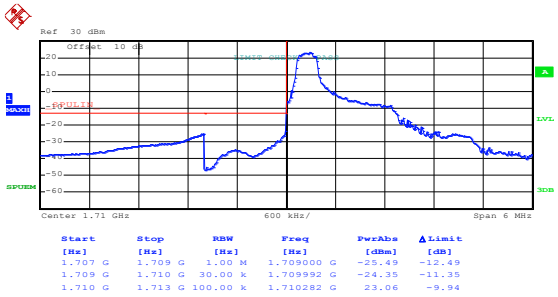
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.752 G	1.755 G	100.00 k	1.753905 G	14.95	-18.05
1.755 G	1.756 G	30.00 k	1.755024 G	-31.09	-18.09
1.756 G	1.758 G	1.00 M	1.756000 G	-29.16	-16.16

Date: 20.APR.2020 11:06:58

Highest channel

LTE Band 4, BW: 1.4MHz

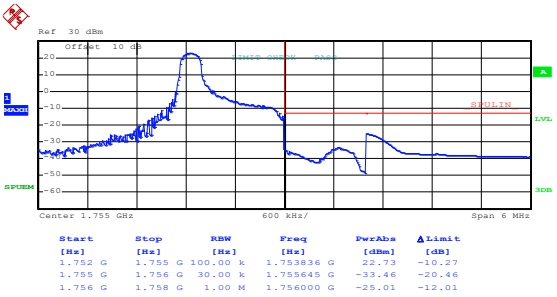
QPSK & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.707 G	1.709 G	1.00 M	1.709000 G	-25.49	-12.49
1.709 G	1.710 G	30.00 k	1.709992 G	-24.35	-11.35
1.710 G	1.713 G	100.00 k	1.710282 G	23.06	-9.94

Date: 20.APR.2020 11:05:38

Lowest channel

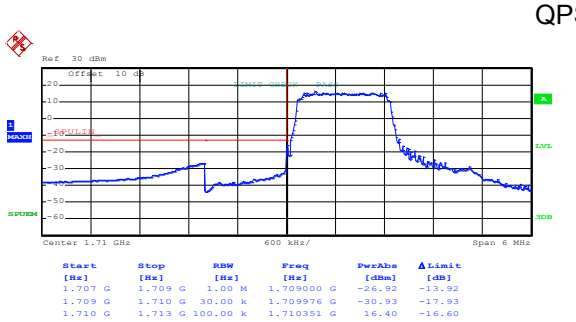


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.752 G	1.755 G	100.00 k	1.753836 G	22.73	-10.27
1.755 G	1.756 G	30.00 k	1.755645 G	-33.46	-20.46
1.756 G	1.758 G	1.00 M	1.756000 G	-25.01	-12.01

Date: 20.APR.2020 11:07:38

Highest channel

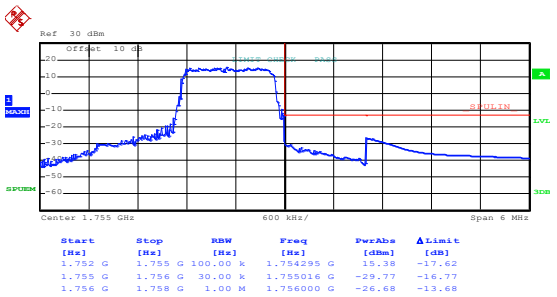
QPSK & RB Size 6



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.707 G	1.709 G	1.00 M	1.709000 G	-26.92	-13.92
1.709 G	1.710 G	30.00 k	1.709976 G	-30.93	-17.93
1.710 G	1.713 G	100.00 k	1.710351 G	16.40	-16.60

Date: 20.APR.2020 11:06:12

Lowest channel

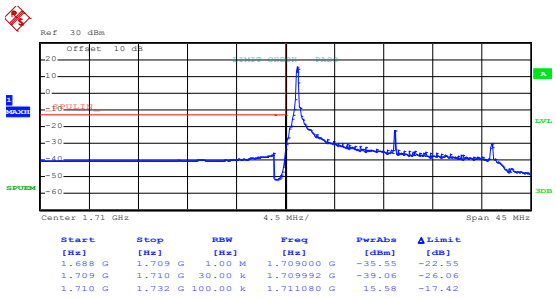


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.752 G	1.755 G	100.00 k	1.754295 G	15.38	-17.62
1.755 G	1.756 G	30.00 k	1.755016 G	-29.77	-16.77
1.756 G	1.758 G	1.00 M	1.756000 G	-26.68	-13.68

Date: 20.APR.2020 11:06:48

Highest channel

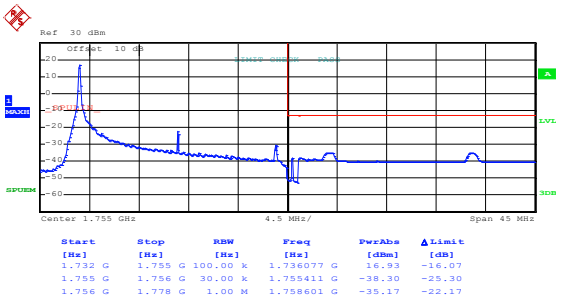
LTE Band 4, BW: 20MHz
16QAM & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.688 G	1.709 G	1.00 M	1.709000 G	-35.55	-22.55
1.709 G	1.710 G	30.00 k	1.709992 G	-39.06	-26.06
1.710 G	1.732 G	100.00 k	1.711080 G	15.58	-17.42

Date: 20.APR.2020 11:10:52

Lowest channel

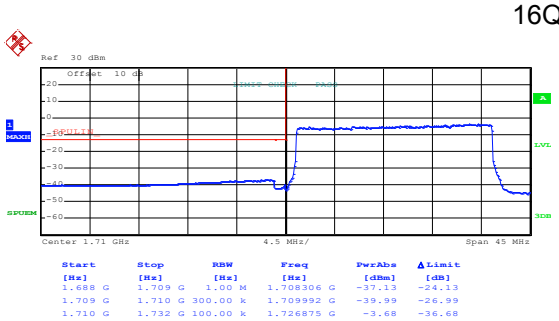


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.732 G	1.755 G	100.00 k	1.736077 G	16.93	-16.07
1.755 G	1.756 G	30.00 k	1.755411 G	-38.30	-25.30
1.756 G	1.778 G	1.00 M	1.758601 G	-35.17	-22.17

Date: 20.APR.2020 11:09:42

Highest channel

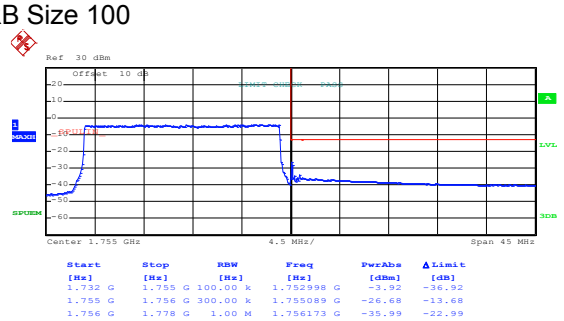
16QAM & RB Size 100



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.688 G	1.709 G	1.00 M	1.708306 G	-37.13	-24.13
1.709 G	1.710 G	300.00 k	1.709992 G	-39.99	-26.99
1.710 G	1.732 G	100.00 k	1.726875 G	-3.68	-36.68

Date: 20.APR.2020 11:10:32

Lowest channel



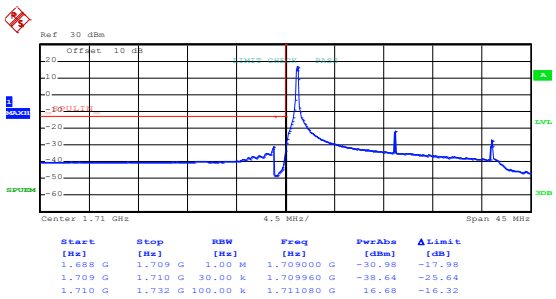
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.732 G	1.755 G	100.00 k	1.752998 G	-3.92	-36.92
1.755 G	1.756 G	300.00 k	1.755089 G	-26.68	-13.68
1.756 G	1.778 G	1.00 M	1.756173 G	-35.99	-22.99

Date: 20.APR.2020 11:10:02

Highest channel

LTE Band 4, BW: 20MHz

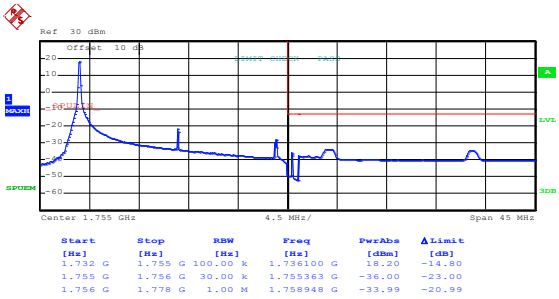
QPSK & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.688 G	1.709 G	1.00 M	1.709000 G	-30.98	-17.98
1.709 G	1.710 G	30.00 k	1.709960 G	-38.64	-25.64
1.710 G	1.732 G	100.00 k	1.711080 G	16.68	-16.32

Date: 20.APR.2020 11:10:45

Lowest channel

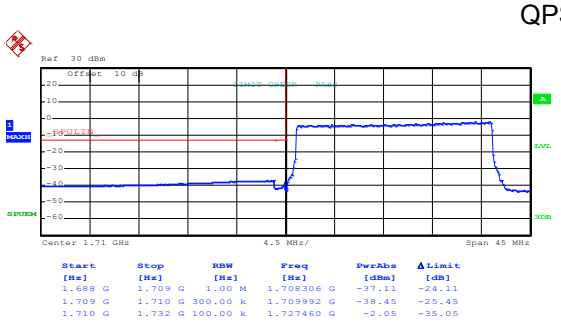


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.732 G	1.755 G	100.00 k	1.736100 G	18.20	-14.80
1.755 G	1.756 G	30.00 k	1.755363 G	-36.00	-23.00
1.756 G	1.778 G	1.00 M	1.758948 G	-33.99	-20.99

Date: 20.APR.2020 11:09:28

Highest channel

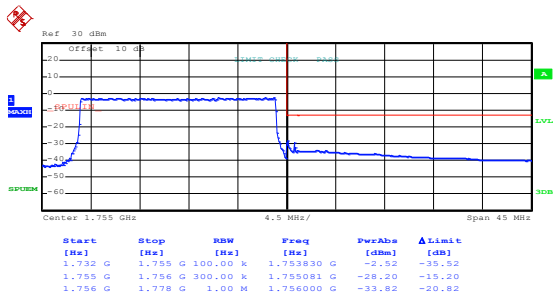
QPSK & RB Size 100



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.688 G	1.709 G	1.00 M	1.708306 G	-37.11	-24.11
1.709 G	1.710 G	300.00 k	1.709992 G	-38.45	-25.45
1.710 G	1.732 G	100.00 k	1.727460 G	-2.05	-35.05

Date: 20.APR.2020 11:10:26

Lowest channel



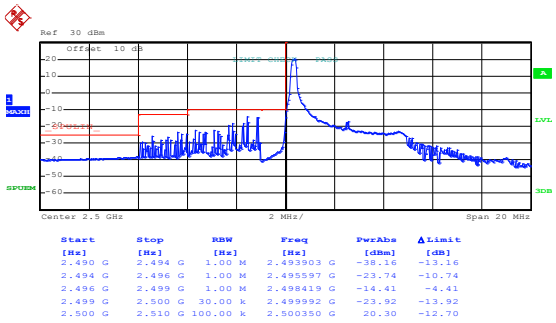
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.732 G	1.755 G	100.00 k	1.753830 G	-2.52	-35.52
1.755 G	1.756 G	300.00 k	1.755081 G	-28.20	-15.20
1.756 G	1.778 G	1.00 M	1.756000 G	-33.82	-20.82

Date: 20.APR.2020 11:09:56

Highest channel

LTE Band 7 part:

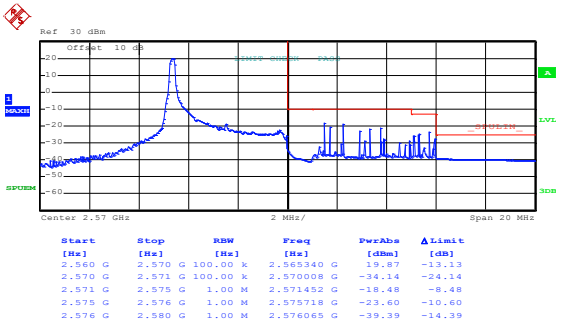
LTE Band 7, BW: 5MHz
16QAM & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.490 G	2.494 G	1.00 M	2.493903 G	-38.16	-13.16
2.494 G	2.496 G	1.00 M	2.495597 G	-23.74	-10.74
2.496 G	2.499 G	1.00 M	2.498419 G	-14.41	-4.41
2.499 G	2.500 G	30.00 k	2.499992 G	-23.92	-13.92
2.500 G	2.510 G	100.00 k	2.500350 G	20.30	-12.70

Date: 20.APR.2020 11:13:58

Lowest channel

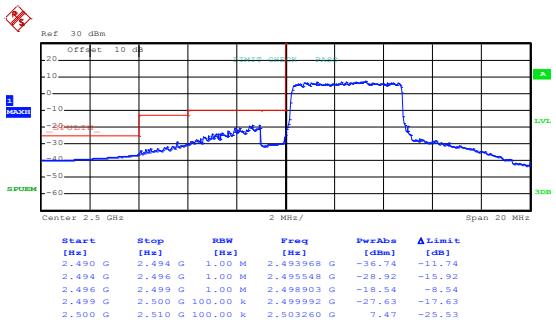


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.560 G	2.570 G	100.00 k	2.565340 G	19.87	-13.13
2.570 G	2.571 G	100.00 k	2.570008 G	-34.14	-24.14
2.571 G	2.575 G	1.00 M	2.571452 G	-18.48	-8.48
2.575 G	2.576 G	1.00 M	2.575718 G	-23.60	-10.60
2.576 G	2.580 G	1.00 M	2.576065 G	-39.39	-14.39

Date: 20.APR.2020 11:16:17

Highest channel

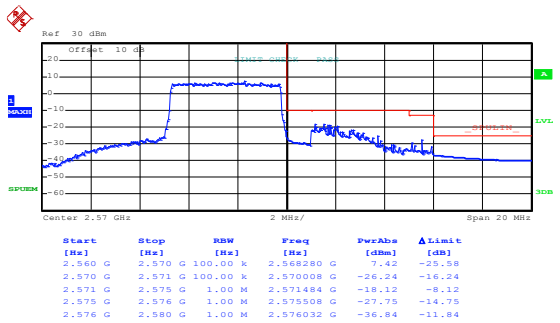
16QAM & RB Size 25



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.490 G	2.494 G	1.00 M	2.493968 G	-36.74	-11.74
2.494 G	2.496 G	1.00 M	2.495548 G	-28.92	-15.92
2.496 G	2.499 G	1.00 M	2.498903 G	-18.54	-8.54
2.499 G	2.500 G	100.00 k	2.499992 G	-27.63	-17.63
2.500 G	2.510 G	100.00 k	2.503260 G	7.47	-25.53

Date: 20.APR.2020 11:14:23

Lowest channel

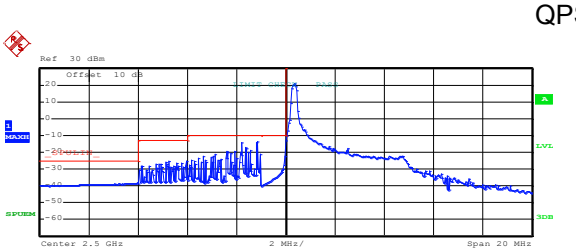


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.560 G	2.570 G	100.00 k	2.568280 G	7.42	-25.58
2.570 G	2.571 G	100.00 k	2.570008 G	-26.24	-16.24
2.571 G	2.575 G	1.00 M	2.571484 G	-18.12	-8.12
2.575 G	2.576 G	1.00 M	2.575508 G	-27.75	-14.75
2.576 G	2.580 G	1.00 M	2.576032 G	-36.84	-11.84

Date: 20.APR.2020 11:15:22

Highest channel

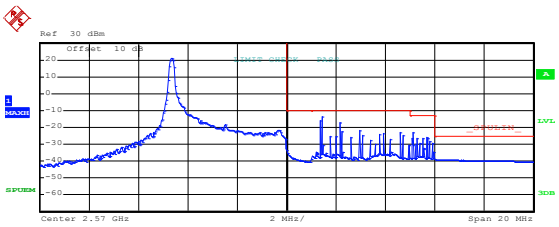
LTE Band 7, BW: 5MHz
QPSK & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.490 G	2.494 G	1.00 M	2.493968 G	-38.41	-13.41
2.494 G	2.496 G	1.00 M	2.495226 G	-25.22	-12.22
2.496 G	2.499 G	1.00 M	2.498831 G	-13.61	-3.61
2.499 G	2.500 G	30.00 k	2.499992 G	-23.32	-13.32
2.500 G	2.510 G	100.00 k	2.500340 G	21.03	-11.97

Date: 20.APR.2020 11:13:40

Lowest channel

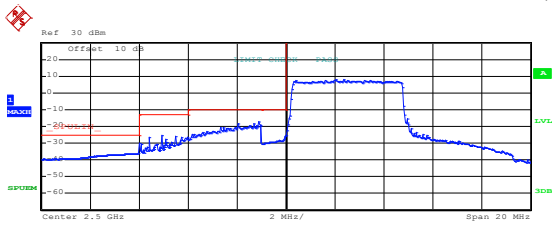


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.560 G	2.570 G	100.00 k	2.565310 G	21.08	-11.92
2.570 G	2.571 G	100.00 k	2.570008 G	-33.77	-23.77
2.571 G	2.575 G	1.00 M	2.571419 G	-13.82	-3.82
2.575 G	2.576 G	1.00 M	2.575113 G	-22.79	-9.79
2.576 G	2.580 G	1.00 M	2.576065 G	-39.07	-14.07

Date: 20.APR.2020 11:15:53

Highest channel

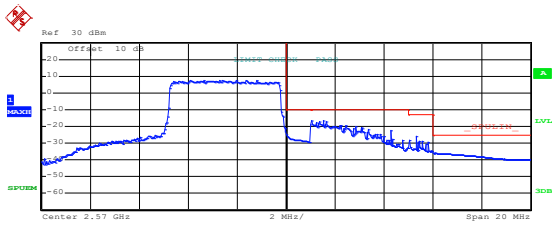
QPSK & RB Size 25



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.490 G	2.494 G	1.00 M	2.493968 G	-35.99	-10.99
2.494 G	2.496 G	1.00 M	2.494919 G	-25.48	-12.48
2.496 G	2.499 G	1.00 M	2.498855 G	-17.13	-7.13
2.499 G	2.500 G	100.00 k	2.499992 G	-26.23	-16.23
2.500 G	2.510 G	100.00 k	2.502030 G	8.21	-24.79

Date: 20.APR.2020 11:14:15

Lowest channel

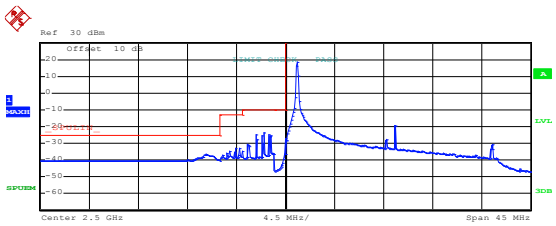


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.560 G	2.570 G	100.00 k	2.567950 G	7.60	-25.40
2.570 G	2.571 G	100.00 k	2.570016 G	-25.05	-15.05
2.571 G	2.575 G	1.00 M	2.571484 G	-16.52	-6.52
2.575 G	2.576 G	1.00 M	2.575315 G	-26.06	-13.06
2.576 G	2.580 G	1.00 M	2.576097 G	-36.07	-11.07

Date: 20.APR.2020 11:15:32

Highest channel

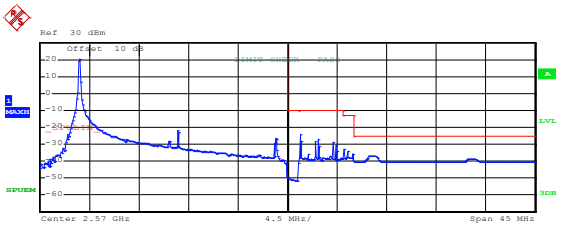
LTE Band 7, BW: 20MHz
16QAM & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.478 G	2.494 G	1.00 M	2.492669 G	-36.61	-11.61
2.494 G	2.496 G	1.00 M	2.495371 G	-32.77	-19.77
2.496 G	2.499 G	1.00 M	2.497984 G	-23.44	-13.44
2.499 G	2.500 G	30.00 k	2.499984 G	-36.47	-26.47
2.500 G	2.523 G	100.00 k	2.501080 G	18.53	-14.47

Date: 20.APR.2020 11:18:50

Lowest channel

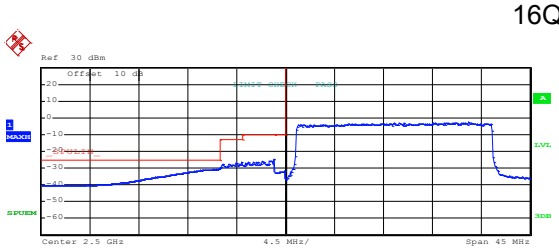


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.547 G	2.570 G	100.00 k	2.551055 G	20.27	-12.73
2.570 G	2.571 G	30.00 k	2.570008 G	-49.61	-39.61
2.571 G	2.575 G	1.00 M	2.571161 G	-24.29	-14.29
2.575 G	2.576 G	1.00 M	2.575089 G	-32.72	-19.72
2.576 G	2.592 G	1.00 M	2.577730 G	-36.76	-11.76

Date: 20.APR.2020 11:17:28

Highest channel

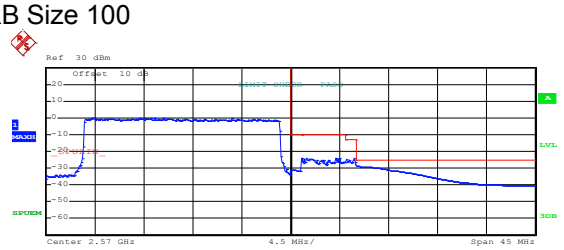
16QAM & RB Size 100



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.478 G	2.494 G	1.00 M	2.493867 G	-30.41	-5.41
2.494 G	2.496 G	1.00 M	2.495952 G	-26.35	-13.35
2.496 G	2.499 G	1.00 M	2.499000 G	-24.79	-14.79
2.499 G	2.500 G	300.00 k	2.499992 G	-31.87	-21.87
2.500 G	2.523 G	100.00 k	2.516830 G	-2.49	-35.49

Date: 20.APR.2020 11:18:30

Lowest channel



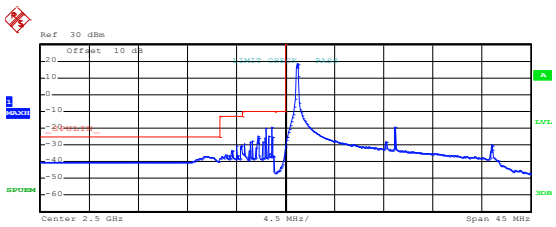
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.547 G	2.570 G	100.00 k	2.556140 G	-0.18	-33.18
2.570 G	2.571 G	300.00 k	2.570331 G	-30.85	-20.85
2.571 G	2.575 G	1.00 M	2.571032 G	-23.83	-13.83
2.575 G	2.576 G	1.00 M	2.575871 G	-24.02	-11.02
2.576 G	2.592 G	1.00 M	2.576266 G	-29.00	-4.00

Date: 20.APR.2020 11:17:52

Highest channel

LTE Band 7, BW: 20MHz

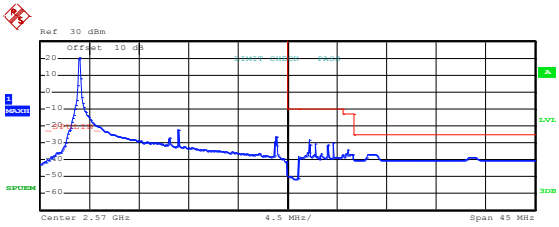
QPSK & RB Size 1



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.478 G	2.494 G	1.00 M	2.492669 G	-36.95	-11.95
2.494 G	2.496 G	1.00 M	2.495500 G	-30.24	-17.24
2.496 G	2.499 G	1.00 M	2.498710 G	-19.59	-9.59
2.499 G	2.500 G	30.00 k	2.499984 G	-36.48	-26.48
2.500 G	2.523 G	100.00 k	2.501080 G	18.35	-14.65

Date: 20.APR.2020 11:18:43

Lowest channel

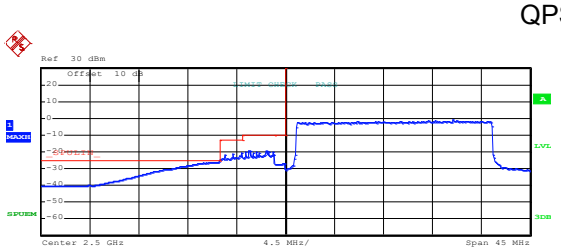


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.547 G	2.570 G	100.00 k	2.551077 G	20.56	-12.44
2.570 G	2.571 G	30.00 k	2.570056 G	-49.41	-39.41
2.571 G	2.575 G	1.00 M	2.571968 G	-27.95	-17.95
2.575 G	2.576 G	1.00 M	2.575452 G	-34.02	-23.02
2.576 G	2.592 G	1.00 M	2.577597 G	-36.74	-11.74

Date: 20.APR.2020 11:17:17

Highest channel

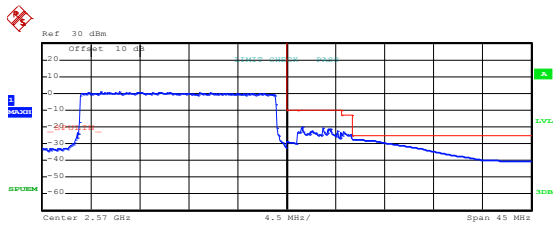
QPSK & RB Size 100



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.478 G	2.494 G	1.00 M	2.493867 G	-26.12	-1.12
2.494 G	2.496 G	1.00 M	2.495935 G	-20.76	-7.76
2.496 G	2.499 G	1.00 M	2.498177 G	-19.25	-9.25
2.499 G	2.500 G	300.00 k	2.499992 G	-26.94	-16.94
2.500 G	2.523 G	100.00 k	2.515345 G	-0.97	-33.97

Date: 20.APR.2020 11:18:23

Lowest channel

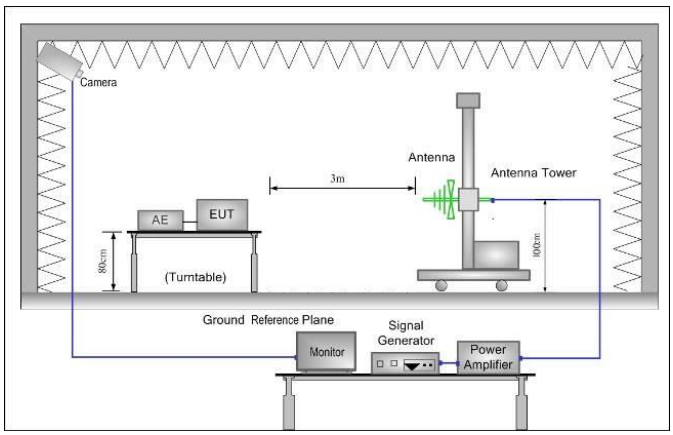
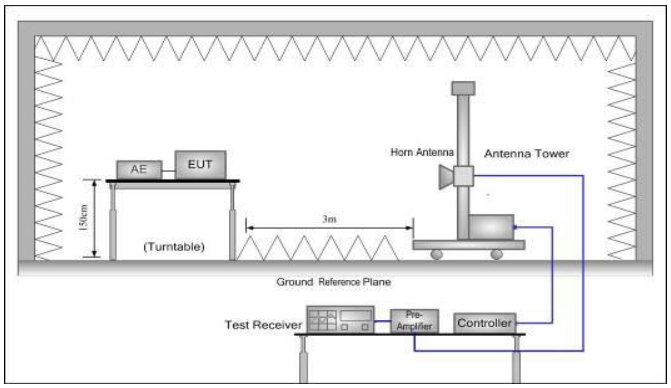


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
2.547 G	2.570 G	100.00 k	2.552855 G	0.97	-32.03
2.570 G	2.571 G	300.00 k	2.570008 G	-28.85	-18.85
2.571 G	2.575 G	1.00 M	2.571419 G	-20.29	-10.29
2.575 G	2.576 G	1.00 M	2.575210 G	-22.89	-9.89
2.576 G	2.592 G	1.00 M	2.576133 G	-27.41	-2.41

Date: 20.APR.2020 11:17:42

Highest channel

6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 27.53(m), Part 27.53(h)
Limit:	LTE Band 2 & 4 & 5 & 12 & 17: The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$(P) dB (-13 dBm). LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.
Test setup:	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

	4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. ERP / EIRP = S.G. output (dBm) + Antenna Gain(dB/dBi) – Cable Loss (dB)
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data:

LTE Band 4 part:

Band 4 (1.4MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3421.40	-60.83	12.30	0.70	-49.23	-13.00	-36.23	Vertical
5132.10	-41.45	12.69	1.01	-29.77	-13.00	-16.77	Vertical
6842.80	-37.19	11.56	1.53	-27.16	-13.00	13.00	Vertical
3421.40	-60.14	12.30	0.70	-48.54	-13.00	-35.54	Horizontal
5132.10	-44.10	12.69	1.01	-32.42	-13.00	-19.42	Horizontal
6842.80	-40.95	11.56	1.53	-30.92	-13.00	13.00	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3465.00	-60.85	12.41	0.72	-49.16	-13.00	-36.16	Vertical
5197.50	-41.15	12.64	1.04	-29.55	-13.00	-16.55	Vertical
6930.00	-37.38	11.53	1.56	-27.41	-13.00	13.00	Vertical
3465.00	-59.86	12.41	0.72	-48.17	-13.00	-35.17	Horizontal
5197.50	-44.12	12.64	1.04	-32.52	-13.00	-19.52	Horizontal
6930.00	-40.82	11.53	1.56	-30.85	-13.00	13.00	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3508.60	-61.62	12.49	0.74	-49.87	-13.00	-36.87	Vertical
5262.90	-40.87	12.59	1.07	-29.35	-13.00	-16.35	Vertical
7017.20	-37.55	11.49	1.58	-27.64	-13.00	13.00	Vertical
3508.60	-60.58	12.49	0.74	-48.83	-13.00	-35.83	Horizontal
5262.90	-43.71	12.59	1.07	-32.19	-13.00	-19.19	Horizontal
7017.20	-40.10	11.49	1.58	-30.19	-13.00	13.00	Horizontal
Remark:							
1. The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

Band 4 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3440.00	-61.34	12.34	0.71	-49.71	-13.00	-36.71	Vertical
5160.00	-41.12	12.67	1.03	-29.48	-13.00	-16.48	Vertical
6880.00	-37.49	11.55	1.54	-27.48	-13.00	-14.48	Vertical
3440.00	-59.80	12.34	0.71	-48.17	-13.00	-35.17	Horizontal
5160.00	-43.93	12.67	1.03	-32.29	-13.00	-19.29	Horizontal
6880.00	-40.55	11.55	1.54	-30.54	-13.00	-17.54	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3465.00	-61.52	12.41	0.72	-49.83	-13.00	-36.83	Vertical
5197.50	-41.34	12.64	1.04	-29.74	-13.00	-16.74	Vertical
6930.00	-37.81	11.53	1.56	-27.84	-13.00	-14.84	Vertical
3465.00	-60.21	12.41	0.72	-48.52	-13.00	-35.52	Horizontal
5197.50	-43.79	12.64	1.04	-32.19	-13.00	-19.19	Horizontal
6930.00	-40.08	11.53	1.56	-30.11	-13.00	-17.11	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3490.00	-61.03	12.49	0.73	-49.27	-13.00	-36.27	Vertical
5235.00	-40.96	12.61	1.06	-29.41	-13.00	-16.41	Vertical
6980.00	-37.41	11.51	1.57	-27.47	-13.00	-14.47	Vertical
3490.00	-59.91	12.49	0.73	-48.15	-13.00	-35.15	Horizontal
5235.00	-44.38	12.61	1.06	-32.83	-13.00	-19.83	Horizontal
6980.00	-40.18	11.51	1.57	-30.24	-13.00	-17.24	Horizontal

Remark:

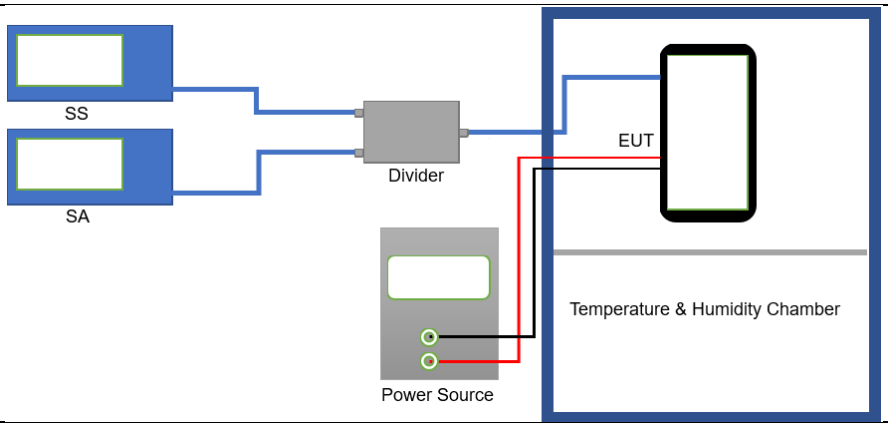
1. The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.

LTE Band 7 part:

Band 7 (5MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3700.40	-62.67	12.58	0.48	-50.57	-25.00	-37.57	Vertical
5550.60	-56.67	12.37	0.75	-45.05	-25.00	-32.05	Vertical
3700.40	-61.87	12.58	0.48	-49.77	-25.00	-36.77	Horizontal
5550.60	-55.03	12.37	0.75	-43.41	-25.00	-30.41	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3760.00	-62.80	12.60	0.51	-50.71	-25.00	-37.71	Vertical
5640.00	-56.99	12.50	0.78	-45.27	-25.00	-32.27	Vertical
3760.00	-62.28	12.60	0.51	-50.19	-25.00	-37.19	Horizontal
5640.00	-55.15	12.50	0.78	-43.43	-25.00	-30.43	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3819.60	-62.44	12.63	0.54	-50.35	-25.00	-37.35	Vertical
5729.40	-56.90	12.62	0.81	-45.09	-25.00	-32.09	Vertical
3819.60	-62.62	12.63	0.54	-50.53	-25.00	-37.53	Horizontal
5729.40	-55.38	12.62	0.81	-43.57	-25.00	-30.57	Horizontal
Remark: *1. The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.*							

Band 7 (20MHz)							
Lowest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3700.40	-62.67	12.58	0.48	-50.57	-25.00	-37.57	Vertical
5550.60	-56.67	12.37	0.75	-45.05	-25.00	-32.05	Vertical
3700.40	-61.87	12.58	0.48	-49.77	-25.00	-36.77	Horizontal
5550.60	-55.03	12.37	0.75	-43.41	-25.00	-30.41	Horizontal
Middle channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3760.00	-62.80	12.60	0.51	-50.71	-25.00	-37.71	Vertical
5640.00	-56.99	12.50	0.78	-45.27	-25.00	-32.27	Vertical
3760.00	-62.28	12.60	0.51	-50.19	-25.00	-37.19	Horizontal
5640.00	-55.15	12.50	0.78	-43.43	-25.00	-30.43	Horizontal
Highest channel							
Frequency (MHz)	Level at antenna terminals (dBm)	Substitute antenna gain (dBi)	Cable Loss (dBi)	Spurous Emission level (dBm)	Limit Line (dBm)	Over Limit (dBm)	Polarization
3819.60	-62.44	12.63	0.54	-50.35	-25.00	-37.35	Vertical
5729.40	-56.90	12.62	0.81	-45.09	-25.00	-32.09	Vertical
3819.60	-62.62	12.63	0.54	-50.53	-25.00	-37.53	Horizontal
5729.40	-55.38	12.62	0.81	-43.57	-25.00	-30.57	Horizontal
Remark:							
1. The emission levels of below 1 GHz are lower than the limit 20dB and not show in test report.							

6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Limit:	±2.5ppm
Test setup:	
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25℃ operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

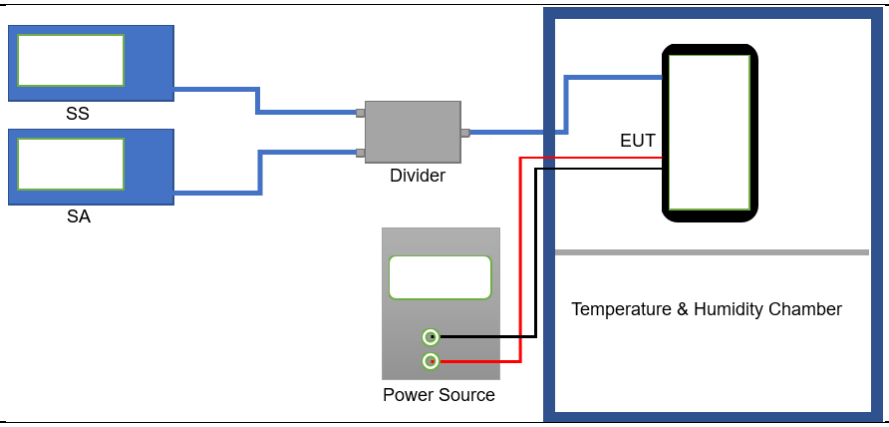
LTE Band 4 part:

Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	180	0.103896	±2.5	Pass
	-20	175	0.101010		
	-10	168	0.096970		
	0	160	0.092352		
	10	154	0.088889		
	20	146	0.084271		
	30	140	0.080808		
	40	132	0.076190		
	50	121	0.069841		
16QAM					
3.80	-30	177	0.102165	±2.5	Pass
	-20	169	0.097547		
	-10	162	0.093506		
	0	152	0.087734		
	10	143	0.082540		
	20	137	0.079076		
	30	131	0.075613		
	40	120	0.069264		
	50	115	0.066378		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7 (10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (℃)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	176	0.069428	±2.5	Pass
	-20	164	0.064694		
	-10	156	0.061538		
	0	150	0.059172		
	10	143	0.056410		
	20	133	0.052465		
	30	127	0.050099		
	40	122	0.048126		
	50	113	0.044576		
16QAM					
3.80	-30	170	0.067061	±2.5	Pass
	-20	163	0.064300		
	-10	156	0.061538		
	0	149	0.058777		
	10	142	0.056016		
	20	134	0.052860		
	30	127	0.050099		
	40	119	0.046943		
	50	110	0.043393		
Note: Only the worst case shown in the report.					

6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)
Limit:	±2.5ppm
Test setup:	
Test procedure:	1. Set chamber temperature to 25℃. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	88	0.050794	±2.5	Pass
	3.80	73	0.042136		
	3.50	54	0.031169		
16QAM					
25	4.35	79	0.045599	±2.5	Pass
	3.80	67	0.038672		
	3.50	56	0.032323		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (℃)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	80	0.031558	±2.5	Pass
	3.80	72	0.028402		
	3.50	50	0.019724		
16QAM					
25	4.35	77	0.030375	±2.5	Pass
	3.80	66	0.026036		
	3.50	55	0.021696		
Note: Only the worst case shown in the report.					