RF TEST REPORT

Report No.: 17071325-FCC-R5

Supersede Report No.: N/A

Applicant	TECNO MOBILE LIMITED
Product Name	Mobile phone
Model No.	CA6
Serial No.	N/A
Test Standard	FCC Part 22(H):2016, FCC Part 24(E):2016, FCC Part 27: 2016; ANSI/TIA-603-D: 2010
Test Date	December 28, 2017 to January 02, 2018
Issue Date	January 03, 2018
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Aarron Liang	David Huang	
Aarron Liang Test Engineer	David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

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Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17071325-FCC-R5	NONE	Original	January 03, 2018

2. Customer information

Applicant Name	TECNO MOBILE LIMITED
Applicant Add	ROOMS 05-15, 13A/F., SOUTH TOWER, WORLD FINANCE CENTRE, HARBOUR CITY, 17 CANTON ROAD, TSIM SHA TSUI, KOWLOON, HONG KONG
Manufacturer	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Manufacturer Add	1-4th Floor,3rd Building,Pacific Industrial Park,No.2088,Shenyan Road,YantianDistrict,Shenzhen,Guangdong,China

3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMC(ver.Icp-03A1)

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

4. Equipment under Test (EUT) Information

Description of EUT:	Mobile phone
Main Model:	CA6
Serial Model:	N/A
Date EUT received:	December 27, 2017
Test Date(s):	December 28, 2017 to January 02, 2018
Equipment Category：	PCE
Antenna Gain:	GSM850: -1.92dBi PCS1900: -0.61dBi UMTS-FDD Band V: -1.92dBi UMTS-FDD Band IV: -0.7dBi UMTS-FDD Band II: -0.62dBi LTE Band II: -0.61dBi LTE Band IV: -0.7dBi LTE Band V: -1.92dBi LTE Band VII: -1dBi WIFI: -1.22dBi Bluetooth/BLE: -1.22dBi GPS: -1.22dBi
Antenna Type:	PIFA antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS:BPSK

RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz; RX : 2112.4 ~ 2152.6 MHz UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz LTE Band II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz LTE Band V TX: 824.7~ 848.3 MHz; RX : 869.7 ~ 893.3MHz LTE Band VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz Bluetooth& BLE: 2402-2480 MHz GPS: 1575.42 MHz
Maximum Conducted AV Power to Antenna:	LTE Band II: 23.61 dBm LTE Band IV: 23.68 dBm LTE Band V: 23.63 dBm LTE Band VII: 23.64 dBm
ERP/EIRP:	LTE Band II: 22.98 dBm / EIRP LTE Band IV: 23.05 dBm / EIRP LTE Band V: 19.56 dBm / EIRP LTE Band VII: 22.53 dBm / EIRP
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: CU-52JT Input: AC100-240V~50/60Hz,200mA Output: DC 5.0V,1.2A Battery Model: BL-30UT Rating: 3.85V, 3000mAh/3050mAh, 11.55Wh/11.74Wh Limited charge voltage: 4.4V
Trade Name :	TECNO

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 1.1307; § 2.1093	RF Exposure (SAR)	Compliance
§2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10); § 27.50(d.4)	RF Output Power	Compliance
§ 24.232 (d); § 27.50(d)	Peak-Average Ratio	Compliance
§ 2.1049; § 22.905; § 22.917; § 24.238; § 27.53(a.5)	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917(a); § 24.238(a); § 27.53(h)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917(a); § 24.238(a); § 27.53(h)	Field Strength of Spurious Radiation	Compliance
§ 22.917(a); § 24.238(a);	Out of band emission, Band Edge	Compliance
§ 27.53(m)	Band Edge 27.53(m)	Compliance
§ 2.1055; § 22.355; § 24.235; § 27.5(h); § 27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

Measurement Uncertainty

Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

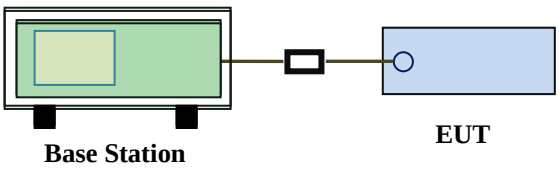
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17071325-FCC-H.

6.2 RF Output Power

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	☑
§24.232 (c)	b)	EIRP:33dBm	☑
§27.50 (c)	c)	EIRP: 30dBm	☑
Test Setup			
Test Procedure	For Conducted Power: - The transmitter output port was connected to base station. - Set EUT at maximum power through base station. - Select lowest, middle, and highest channels for each band and different test mode. For ERP/EIRP: - The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. - The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. - The frequency range up to tenth harmonic of the fundamental frequency was investigated.		

	- Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. - Spurious emissions in dB = 10 log (TX power in Watts/0.001) – the absolute level - Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts.
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

Conducted Power

LTE Band II:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	18700	1860.0	QPSK	1	0	0	23.29	23.4±1
				1	49	0	23.44	23.4±1
				1	99	0	23.34	23.4±1
				50	0	1	23.27	23.4±1
				50	24	1	23.37	23.4±1
				50	49	1	23.25	23.4±1
				100	0	1	23.46	23.4±1
			16QAM	1	0	1	23.35	23.3±1
				1	49	1	23.37	23.3±1
				1	99	1	23.10	23.3±1
				50	0	2	23.21	23.3±1
				50	24	2	23.27	23.3±1
				50	49	2	23.28	23.3±1
				100	0	2	23.25	23.3±1
	18900	1880.0	QPSK	1	0	0	23.22	22.8±1
				1	49	0	23.39	22.8±1
				1	99	0	23.26	22.8±1
				50	0	1	22.37	22.8±1
				50	24	1	22.34	22.8±1
				50	49	1	22.35	22.8±1
				100	0	1	22.41	22.8±1
			16QAM	1	0	1	22.45	22.1±1
				1	49	1	22.24	22.1±1
				1	99	1	22.25	22.1±1
				50	0	2	22.05	22.1±1
				50	24	2	22.16	22.1±1
				50	49	2	22.02	22.1±1
				100	0	2	21.70	22.1±1
	19100	1900.0	QPSK	1	0	0	22.46	22.5±1
				1	49	0	22.37	22.5±1
				1	99	0	22.45	22.5±1
				50	0	1	22.67	22.5±1
				50	24	1	22.46	22.5±1
				50	49	1	22.67	22.5±1
				100	0	1	22.60	22.5±1
			16QAM	1	0	1	22.57	22.2±1
				1	49	1	22.54	22.2±1
				1	99	1	22.62	22.2±1
				50	0	2	21.65	22.2±1
				50	24	2	21.68	22.2±1
				50	49	2	21.46	22.2±1
				100	0	2	21.58	22.2±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	18675	1857.5	QPSK	1	0	0	23.26	23.2±1
				1	37	0	23.32	23.2±1
				1	74	0	23.08	23.2±1
				36	0	1	23.30	23.2±1
				36	16	1	23.25	23.2±1
				36	35	1	23.36	23.2±1
				75	0	1	23.27	23.2±1
			16QAM	1	0	1	23.18	23.3±1
				1	37	1	23.37	23.3±1
				1	74	1	23.37	23.3±1
				36	0	2	23.24	23.3±1
				36	16	2	23.28	23.3±1
				36	35	2	23.15	23.3±1
				75	0	2	23.28	23.3±1
	18900	1880.0	QPSK	1	0	0	23.32	22.9±1
				1	37	0	23.25	22.9±1
				1	74	0	23.32	22.9±1
				36	0	1	22.51	22.9±1
				36	16	1	22.31	22.9±1
				36	35	1	22.52	22.9±1
				75	0	1	22.41	22.9±1
			16QAM	1	0	1	22.51	21.9±1
				1	37	1	22.53	21.9±1
				1	74	1	22.43	21.9±1
				36	0	2	21.57	21.9±1
				36	16	2	21.50	21.9±1
				36	35	2	21.61	21.9±1
				75	0	2	21.40	21.9±1
	19125	1902.5	QPSK	1	0	0	23.59	23.1±1
				1	37	0	23.46	23.1±1
				1	74	0	23.61	23.1±1
				36	0	1	22.72	23.1±1
				36	16	1	22.68	23.1±1
				36	35	1	22.77	23.1±1
				75	0	1	22.61	23.1±1
			16QAM	1	0	1	23.05	22.2±1
				1	37	1	22.99	22.2±1
				1	74	1	23.04	22.2±1
				36	0	2	21.69	22.2±1
				36	16	2	21.79	22.2±1
				36	35	2	21.81	22.2±1
				75	0	2	21.83	22.2±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	18650	1855	QPSK	1	0	0	23.24	23.2±1
				1	24	0	23.22	23.2±1
				1	49	0	23.23	23.2±1
				25	0	1	23.30	23.2±1
				25	12	1	23.04	23.2±1
				25	24	1	23.25	23.2±1
				50	0	1	23.08	23.2±1
			16QAM	1	0	1	23.18	23.1±1
				1	24	1	23.14	23.1±1
				1	49	1	23.10	23.1±1
				25	0	2	23.28	23.1±1
				25	12	2	23.17	23.1±1
				25	24	2	23.32	23.1±1
				50	0	2	23.13	23.1±1
	18900	1880.0	QPSK	1	0	0	23.17	22.8±1
				1	24	0	23.02	22.8±1
				1	49	0	23.20	22.8±1
				25	0	1	22.42	22.8±1
				25	12	1	22.41	22.8±1
				25	24	1	22.40	22.8±1
				50	0	1	22.37	22.8±1
			16QAM	1	0	1	22.82	22.2±1
				1	24	1	22.89	22.2±1
				1	49	1	22.97	22.2±1
				25	0	2	21.64	22.2±1
				25	12	2	21.46	22.2±1
				25	24	2	21.72	22.2±1
				50	0	2	21.35	22.2±1
	19150	1905	QPSK	1	0	0	23.15	22.8±1
				1	24	0	23.32	22.8±1
				1	49	0	23.22	22.8±1
				25	0	1	22.46	22.8±1
				25	12	1	22.29	22.8±1
				25	24	1	22.36	22.8±1
				50	0	1	22.23	22.8±1
			16QAM	1	0	1	22.24	21.9±1
				1	24	1	22.28	21.9±1
				1	49	1	22.31	21.9±1
				25	0	2	21.83	21.9±1
				25	12	2	21.76	21.9±1
				25	24	2	21.59	21.9±1
				50	0	2	21.44	21.9±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	18625	1852.5	QPSK	1	0	0	23.1	23.1±1
				1	12	0	23.08	23.1±1
				1	24	0	23.09	23.1±1
				12	0	1	23.09	23.1±1
				12	6	1	22.94	23.1±1
				12	11	1	23.07	23.1±1
				25	0	1	23.08	23.1±1
			16QAM	1	0	1	23.21	23.3±1
				1	12	1	23.17	23.3±1
				1	24	1	23.18	23.3±1
				12	0	2	23.24	23.3±1
				12	6	2	23.29	23.3±1
				12	11	2	23.09	23.3±1
				25	0	2	23.21	23.3±1
	18900	1880.0	QPSK	1	0	0	23.27	22.9±1
				1	12	0	23.28	22.9±1
				1	24	0	23.18	22.9±1
				12	0	1	22.5	22.9±1
				12	6	1	22.35	22.9±1
				12	11	1	22.47	22.9±1
				25	0	1	22.46	22.9±1
			16QAM	1	0	1	22.39	21.8±1
				1	12	1	22.34	21.8±1
				1	24	1	22.3	21.8±1
				12	0	2	21.44	21.8±1
				12	6	2	21.52	21.8±1
				12	11	2	21.46	21.8±1
				25	0	2	21.27	21.8±1
	19175	1907.5	QPSK	1	0	0	23.09	22.6±1
				1	12	0	23.02	22.6±1
				1	24	0	22.9	22.6±1
				12	0	1	22.17	22.6±1
				12	6	1	22.24	22.6±1
				12	11	1	22.08	22.6±1
				25	0	1	22.36	22.6±1
			16QAM	1	0	1	22.22	21.7±1
				1	12	1	22.14	21.7±1
				1	24	1	22.14	21.7±1
				12	0	2	21.4	21.7±1
				12	6	2	21.2	21.7±1
				12	11	2	21.25	21.7±1
				25	0	2	21.48	21.7±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	23.24	23.2±1
				1	7	0	23.33	23.2±1
				1	14	0	23.19	23.2±1
				8	0	1	23.21	23.2±1
				8	4	1	23.21	23.2±1
				8	7	1	23.17	23.2±1
				15	0	1	23.12	23.2±1
			16QAM	1	0	1	23.34	23.4±1
				1	7	1	23.39	23.4±1
				1	14	1	23.35	23.4±1
				8	0	2	23.30	23.4±1
				8	4	2	23.30	23.4±1
				8	7	2	23.45	23.4±1
				15	0	2	23.46	23.4±1
	18900	1880.0	QPSK	1	0	0	23.43	22.8±1
				1	7	0	23.47	22.8±1
				1	14	0	23.44	22.8±1
				8	0	1	22.39	22.8±1
				8	4	1	22.33	22.8±1
				8	7	1	22.32	22.8±1
				15	0	1	22.28	22.8±1
			16QAM	1	0	1	22.41	21.7±1
				1	7	1	22.32	21.7±1
				1	14	1	22.38	21.7±1
				8	0	2	21.32	21.7±1
				8	4	2	21.32	21.7±1
				8	7	2	21.24	21.7±1
				15	0	2	21.36	21.7±1
	19175	1907.5	QPSK	1	0	0	23.14	22.9±1
				1	7	0	23.24	22.9±1
				1	14	0	23.24	22.9±1
				8	0	1	22.48	22.9±1
				8	4	1	22.61	22.9±1
				8	7	1	22.51	22.9±1
				15	0	1	22.66	22.9±1
			16QAM	1	0	1	22.83	22.3±1
				1	7	1	22.84	22.3±1
				1	14	1	22.76	22.3±1
				8	0	2	21.96	22.3±1
				8	4	2	22.10	22.3±1
				8	7	2	22.01	22.3±1
				15	0	2	21.77	22.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	18607	1850.7	QPSK	1	0	0	23.21	23.2±1
				1	2	0	23.18	23.2±1
				1	5	0	23.16	23.2±1
				3	0	0	23.12	23.2±1
				3	1	0	23.24	23.2±1
				3	2	0	23.33	23.2±1
				6	0	1	23.13	23.2±1
			16QAM	1	0	1	23.4	23.3±1
				1	2	1	23.34	23.3±1
				1	5	1	23.24	23.3±1
				3	0	1	23.31	23.3±1
				3	1	1	23.33	23.3±1
				3	2	1	23.53	23.3±1
				6	0	2	23.34	23.3±1
	18900	1880.0	QPSK	1	0	0	23.33	22.9±1
				1	2	0	23.25	22.9±1
				1	5	0	23.28	22.9±1
				3	0	0	23.36	22.9±1
				3	1	0	23.21	22.9±1
				3	2	0	23.34	22.9±1
				6	0	1	22.27	22.9±1
			16QAM	1	0	1	22.39	21.8±1
				1	2	1	22.22	21.8±1
				1	5	1	22.48	21.8±1
				3	0	1	21.87	21.8±1
				3	1	1	21.92	21.8±1
				3	2	1	22.05	21.8±1
				6	0	2	21.76	21.8±1
	19193	1909.3	QPSK	1	0	0	23.55	23±1
				1	2	0	23.46	23±1
				1	5	0	23.5	23±1
				3	0	0	22.5	23±1
				3	1	0	22.34	23±1
				3	2	0	22.58	23±1
				6	0	1	22.78	23±1
			16QAM	1	0	1	22.51	22.2±1
				1	2	1	22.63	22.2±1
				1	5	1	22.6	22.2±1
				3	0	1	21.73	22.2±1
				3	1	1	21.64	22.2±1
				3	2	1	21.78	22.2±1
				6	0	2	21.7	22.2±1

LTE Band IV:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20050	1720.0	QPSK	1	0	0	23.68	23.6±1
				1	49	0	23.45	23.6±1
				1	99	0	23.75	23.6±1
				50	0	1	23.72	23.6±1
				50	24	1	23.6	23.6±1
				50	49	1	23.48	23.6±1
				100	0	1	23.63	23.6±1
			16QAM	1	0	1	23.32	23.3±1
				1	49	1	23.39	23.3±1
				1	99	1	23.38	23.3±1
				50	0	2	23.28	23.3±1
				50	24	2	23.4	23.3±1
				50	49	2	23.26	23.3±1
				100	0	2	23.35	23.3±1
	20175	1732.5	QPSK	1	0	0	23.25	22.8±1
				1	49	0	23.35	22.8±1
				1	99	0	23.12	22.8±1
				50	0	1	22.42	22.8±1
				50	24	1	22.34	22.8±1
				50	49	1	22.46	22.8±1
				100	0	1	22.16	22.8±1
			16QAM	1	0	1	22.49	21.8±1
				1	49	1	22.32	21.8±1
				1	99	1	22.35	21.8±1
				50	0	2	21.24	21.8±1
				50	24	2	21.26	21.8±1
				50	49	2	21.22	21.8±1
				100	0	2	21.15	21.8±1
	20300	1745.0	QPSK	1	0	0	23.36	22.7±1
				1	49	0	23.35	22.7±1
				1	99	0	23.21	22.7±1
				50	0	1	22.03	22.7±1
				50	24	1	22.23	22.7±1
				50	49	1	22.16	22.7±1
				100	0	1	22.1	22.7±1
			16QAM	1	0	1	22.05	21.6±1
				1	49	1	22.23	21.6±1
				1	99	1	22.13	21.6±1
				50	0	2	21.36	21.6±1
				50	24	2	21.41	21.6±1
				50	49	2	21.39	21.6±1
				100	0	2	21.05	21.6±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20025	1717.5	QPSK	1	0	0	23.45	23.5±1
				1	37	0	23.51	23.5±1
				1	74	0	23.47	23.5±1
				36	0	1	23.48	23.5±1
				36	16	1	23.55	23.5±1
				36	35	1	23.53	23.5±1
				75	0	1	23.58	23.5±1
			16QAM	1	0	1	23.32	23.2±1
				1	37	1	23.31	23.2±1
				1	74	1	23.23	23.2±1
				36	0	2	23.34	23.2±1
				36	16	2	23.3	23.2±1
				36	35	2	23.3	23.2±1
				75	0	2	23.26	23.2±1
	20175	1732.5	QPSK	1	0	0	23.18	22.8±1
				1	37	0	23.34	22.8±1
				1	74	0	23.23	22.8±1
				36	0	1	22.37	22.8±1
				36	16	1	22.19	22.8±1
				36	35	1	22.23	22.8±1
				75	0	1	22.3	22.8±1
			16QAM	1	0	1	22.4	21.8±1
				1	37	1	22.51	21.8±1
				1	74	1	22.46	21.8±1
				36	0	2	21.28	21.8±1
				36	16	2	21.1	21.8±1
				36	35	2	21.08	21.8±1
				75	0	2	21.15	21.8±1
	20325	1747.5	QPSK	1	0	0	23.06	22.7±1
				1	37	0	23.21	22.7±1
				1	74	0	23.01	22.7±1
				36	0	1	22.13	22.7±1
				36	16	1	22.11	22.7±1
				36	35	1	22.32	22.7±1
				75	0	1	22.19	22.7±1
			16QAM	1	0	1	22.68	21.9±1
				1	37	1	22.66	21.9±1
				1	74	1	22.46	21.9±1
				36	0	2	20.82	21.9±1
				36	16	2	20.83	21.9±1
				36	35	2	20.83	21.9±1
				75	0	2	21.03	21.9±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20000	1715.0	QPSK	1	0	0	23.42	23.5±1
				1	24	0	23.5	23.5±1
				1	49	0	23.67	23.5±1
				25	0	1	23.54	23.5±1
				25	12	1	23.37	23.5±1
				25	24	1	23.54	23.5±1
				50	0	1	23.47	23.5±1
			16QAM	1	0	1	23.26	23.2±1
				1	24	1	23.19	23.2±1
				1	49	1	23.28	23.2±1
				25	0	2	23.14	23.2±1
				25	12	2	23.12	23.2±1
				25	24	2	23.24	23.2±1
				50	0	2	23	23.2±1
	20175	1732.5	QPSK	1	0	0	23.23	22.7±1
				1	24	0	23.26	22.7±1
				1	49	0	23.14	22.7±1
				25	0	1	22.27	22.7±1
				25	12	1	22.24	22.7±1
				25	24	1	22.13	22.7±1
				50	0	1	22.18	22.7±1
			16QAM	1	0	1	22.8	21.9±1
				1	24	1	22.66	21.9±1
				1	49	1	22.64	21.9±1
				25	0	2	21.28	21.9±1
				25	12	2	21.27	21.9±1
				25	24	2	21.14	21.9±1
				50	0	2	21.12	21.9±1
	20350	1750.0	QPSK	1	0	0	23.18	22.6±1
				1	24	0	22.98	22.6±1
				1	49	0	23.14	22.6±1
				25	0	1	22.11	22.6±1
				25	12	1	22.13	22.6±1
				25	24	1	22.04	22.6±1
				50	0	1	22.02	22.6±1
			16QAM	1	0	1	21.77	21.5±1
				1	24	1	21.73	21.5±1
				1	49	1	21.83	21.5±1
				25	0	2	20.98	21.5±1
				25	12	2	20.95	21.5±1
				25	24	2	21	21.5±1
				50	0	2	20.97	21.5±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	20000	1715.0	QPSK	1	0	0	23.31	23.4±1
				1	12	0	23.33	23.4±1
				1	24	0	23.46	23.4±1
				12	0	1	23.35	23.4±1
				12	6	1	23.39	23.4±1
				12	11	1	23.59	23.4±1
				25	0	1	23.45	23.4±1
			16QAM	1	0	1	23.15	23.2±1
				1	12	1	23.01	23.2±1
				1	24	1	23.06	23.2±1
				12	0	2	23.23	23.2±1
				12	6	2	23.01	23.2±1
				12	11	2	23.14	23.2±1
				25	0	2	23.26	23.2±1
	20175	1732.5	QPSK	1	0	0	23.14	22.7±1
				1	12	0	23.26	22.7±1
				1	24	0	23.01	22.7±1
				12	0	1	22.15	22.7±1
				12	6	1	22.4	22.7±1
				12	11	1	22.17	22.7±1
				25	0	1	22.19	22.7±1
			16QAM	1	0	1	22.2	21.6±1
				1	12	1	22.33	21.6±1
				1	24	1	22.22	21.6±1
				12	0	2	21.12	21.6±1
				12	6	2	21.22	21.6±1
				12	11	2	21.18	21.6±1
				25	0	2	21.13	21.6±1
	20350	1750.0	QPSK	1	0	0	22.9	22.5±1
				1	12	0	22.95	22.5±1
				1	24	0	22.9	22.5±1
				12	0	1	22.11	22.5±1
				12	6	1	22.03	22.5±1
				12	11	1	22.08	22.5±1
				25	0	1	21.9	22.5±1
			16QAM	1	0	1	21.83	21.4±1
				1	12	1	21.95	21.4±1
				1	24	1	21.91	21.4±1
				12	0	2	21.12	21.4±1
				12	6	2	21.09	21.4±1
				12	11	2	21.1	21.4±1
				25	0	2	21.03	21.4±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	19965	1711.5	QPSK	1	0	0	23.36	23.5±1
				1	7	0	23.38	23.5±1
				1	14	0	23.29	23.5±1
				8	0	1	23.56	23.5±1
				8	4	1	23.55	23.5±1
				8	7	1	23.4	23.5±1
				15	0	1	23.43	23.5±1
			16QAM	1	0	1	23.21	23.2±1
				1	7	1	23.09	23.2±1
				1	14	1	23.2	23.2±1
				8	0	2	23.21	23.2±1
				8	4	2	23.08	23.2±1
				8	7	2	23.31	23.2±1
				15	0	2	23.21	23.2±1
	20175	1732.5	QPSK	1	0	0	23.27	22.7±1
				1	7	0	23.23	22.7±1
				1	14	0	23.2	22.7±1
				8	0	1	22.21	22.7±1
				8	4	1	22.15	22.7±1
				8	7	1	21.97	22.7±1
				15	0	1	22.06	22.7±1
			16QAM	1	0	1	22.05	22.1±1
				1	7	1	22.1	22.1±1
				1	14	1	21.94	22.1±1
				8	0	2	22.36	22.1±1
				8	4	2	22.33	22.1±1
				8	7	2	22.27	22.1±1
				15	0	2	22.23	22.1±1
	20385	1753.5	QPSK	1	0	0	22.77	22.4±1
				1	7	0	22.71	22.4±1
				1	14	0	22.69	22.4±1
				8	0	1	21.83	22.4±1
				8	4	1	21.95	22.4±1
				8	7	1	21.92	22.4±1
				15	0	1	21.94	22.4±1
			16QAM	1	0	1	22.41	21.7±1
				1	7	1	22.36	21.7±1
				1	14	1	22.28	21.7±1
				8	0	2	21.25	21.7±1
				8	4	2	21.26	21.7±1
				8	7	2	21.16	21.7±1
				15	0	2	21	21.7±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	19957	1710.7	QPSK	1	0	0	23.43	23.5±1
				1	2	0	23.39	23.5±1
				1	5	0	23.40	23.5±1
				3	0	0	23.52	23.5±1
				3	1	0	23.38	23.5±1
				3	2	0	23.40	23.5±1
				6	0	1	23.53	23.5±1
			16QAM	1	0	1	23.24	23.2±1
				1	2	1	23.26	23.2±1
				1	5	1	23.03	23.2±1
				3	0	1	23.36	23.2±1
				3	1	1	23.15	23.2±1
				3	2	1	23.23	23.2±1
				6	0	2	23.24	23.2±1
	20175	1732.5	QPSK	1	0	0	23.27	22.7±1
				1	2	0	23.1	22.7±1
				1	5	0	23.23	22.7±1
				3	0	0	23.19	22.7±1
				3	1	0	23.08	22.7±1
				3	2	0	23.14	22.7±1
				6	0	1	22.16	22.7±1
			16QAM	1	0	1	22.21	21.5±1
				1	2	1	22.19	21.5±1
				1	5	1	21.95	21.5±1
				3	0	1	20.93	21.5±1
				3	1	1	20.82	21.5±1
				3	2	1	20.83	21.5±1
				6	0	2	21.04	21.5±1
	20393	1754.3	QPSK	1	0	0	22.9	22.4±1
				1	2	0	22.84	22.4±1
				1	5	0	23.08	22.4±1
				3	0	0	22.83	22.4±1
				3	1	0	22.83	22.4±1
				3	2	0	22.98	22.4±1
				6	0	1	21.79	22.4±1
			16QAM	1	0	1	21.79	21.2±1
				1	2	1	21.64	21.2±1
				1	5	1	21.72	21.2±1
				3	0	1	21.12	21.2±1
				3	1	1	21.12	21.2±1
				3	2	1	21.21	21.2±1
				6	0	2	20.78	21.2±1

LTE Band V:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20450	829	QPSK	1	0	0	23.26	23.2±1
				1	24	0	23.09	23.2±1
				1	49	0	23.11	23.2±1
				25	0	1	23.18	23.2±1
				25	12	1	23.13	23.2±1
				25	24	1	22.98	23.2±1
				50	0	1	23.27	23.2±1
			16QAM	1	0	1	23.41	23.4±1
				1	24	1	23.31	23.4±1
				1	49	1	23.4	23.4±1
				25	0	2	23.46	23.4±1
				25	12	2	23.38	23.4±1
				25	24	2	23.25	23.4±1
				50	0	2	23.46	23.4±1
	20525	836.5	QPSK	1	0	0	23.31	23.1±1
				1	24	0	23.33	23.1±1
				1	49	0	23.32	23.1±1
				25	0	1	22.83	23.1±1
				25	12	1	22.89	23.1±1
				25	24	1	22.8	23.1±1
				50	0	1	22.59	23.1±1
			16QAM	1	0	1	22.67	22.2±1
				1	24	1	22.52	22.2±1
				1	49	1	22.88	22.2±1
				25	0	2	21.68	22.2±1
				25	12	2	21.59	22.2±1
				25	24	2	21.67	22.2±1
				50	0	2	21.72	22.2±1
	20600	844	QPSK	1	0	0	22.59	22.2±1
				1	24	0	22.69	22.2±1
				1	49	0	22.66	22.2±1
				25	0	1	21.75	22.2±1
				25	12	1	21.83	22.2±1
				25	24	1	21.82	22.2±1
				50	0	1	22.39	22.2±1
			16QAM	1	0	1	21.9	21.5±1
				1	24	1	21.91	21.5±1
				1	49	1	22.19	21.5±1
				25	0	2	21.34	21.5±1
				25	12	2	21.57	21.5±1
				25	24	2	21.54	21.5±1
				50	0	2	21.27	21.5±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	20425	826.5	QPSK	1	0	0	23.29	23.3±1
				1	12	0	23.21	23.3±1
				1	24	0	23.17	23.3±1
				12	0	1	23.31	23.3±1
				12	6	1	23.4	23.3±1
				12	11	1	23.34	23.3±1
				25	0	1	23.26	23.3±1
			16QAM	1	0	1	23.01	23±1
				1	12	1	23.14	23±1
				1	24	1	23.04	23±1
				12	0	2	23.21	23±1
				12	6	2	23.17	23±1
				12	11	2	22.86	23±1
				25	0	2	23.01	23±1
	20525	836.5	QPSK	1	0	0	22.93	22.7±1
				1	12	0	23.16	22.7±1
				1	24	0	22.91	22.7±1
				12	0	1	22.33	22.7±1
				12	6	1	22.24	22.7±1
				12	11	1	22.47	22.7±1
				25	0	1	22.3	22.7±1
			16QAM	1	0	1	22.25	21.8±1
				1	12	1	22.15	21.8±1
				1	24	1	22.28	21.8±1
				12	0	2	20.93	21.8±1
				12	6	2	20.99	21.8±1
				12	11	2	20.96	21.8±1
				25	0	2	21.32	21.8±1
	20625	846.5	QPSK	1	0	0	23.17	22.7±1
				1	12	0	22.95	22.7±1
				1	24	0	23.12	22.7±1
				12	0	1	22.27	22.7±1
				12	6	1	22.2	22.7±1
				12	11	1	22.32	22.7±1
				25	0	1	22.04	22.7±1
			16QAM	1	0	1	22.13	21.7±1
				1	12	1	22.13	21.7±1
				1	24	1	21.99	21.7±1
				12	0	2	21.43	21.7±1
				12	6	2	21.58	21.7±1
				12	11	2	21.19	21.7±1
				25	0	2	21.13	21.7±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	20415	825.5	QPSK	1	0	0	23.23	23.2±1
				1	7	0	23.28	23.2±1
				1	14	0	23.24	23.2±1
				8	0	1	23.39	23.2±1
				8	4	1	23.2	23.2±1
				8	7	1	23.13	23.2±1
				15	0	1	23.01	23.2±1
			16QAM	1	0	1	23.07	23.2±1
				1	7	1	23.34	23.2±1
				1	14	1	23.4	23.2±1
				8	0	2	23.34	23.2±1
				8	4	2	23.26	23.2±1
				8	7	2	23.16	23.2±1
				15	0	2	23.18	23.2±1
	20525	836.5	QPSK	1	0	0	23.15	22.7±1
				1	7	0	23.24	22.7±1
				1	14	0	23.1	22.7±1
				8	0	1	22.26	22.7±1
				8	4	1	22.13	22.7±1
				8	7	1	22.23	22.7±1
				15	0	1	22.16	22.7±1
			16QAM	1	0	1	22.26	21.8±1
				1	7	1	22.26	21.8±1
				1	14	1	22.26	21.8±1
				8	0	2	21.22	21.8±1
				8	4	2	21.15	21.8±1
				8	7	2	21.2	21.8±1
				15	0	2	21.24	21.8±1
	20635	847.5	QPSK	1	0	0	22.99	22.6±1
				1	7	0	23.11	22.6±1
				1	14	0	22.97	22.6±1
				8	0	1	22.31	22.6±1
				8	4	1	22.31	22.6±1
				8	7	1	22.21	22.6±1
				15	0	1	22.13	22.6±1
			16QAM	1	0	1	22.68	22±1
				1	7	1	22.58	22±1
				1	14	1	22.82	22±1
				8	0	2	21.11	22±1
				8	4	2	21.19	22±1
				8	7	2	21.09	22±1
				15	0	2	21.31	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	20407	824.7	QPSK	1	0	0	23.29	23.2±1
				1	2	0	23.19	23.2±1
				1	5	0	23.44	23.2±1
				3	0	0	23.32	23.2±1
				3	1	0	23.22	23.2±1
				3	2	0	23.07	23.2±1
				6	0	1	23.29	23.2±1
			16QAM	1	0	1	23.38	23.4±1
				1	2	1	23.35	23.4±1
				1	5	1	23.43	23.4±1
				3	0	1	23.36	23.4±1
				3	1	1	23.29	23.4±1
				3	2	1	23.49	23.4±1
				6	0	2	23.36	23.4±1
	20525	836.5	QPSK	1	0	0	23.58	23.1±1
				1	2	0	23.41	23.1±1
				1	5	0	23.49	23.1±1
				3	0	0	22.7	23.1±1
				3	1	0	22.72	23.1±1
				3	2	0	22.72	23.1±1
				6	0	1	22.67	23.1±1
			16QAM	1	0	1	22.52	22.2±1
				1	2	1	22.67	22.2±1
				1	5	1	22.78	22.2±1
				3	0	1	21.71	22.2±1
				3	1	1	21.69	22.2±1
				3	2	1	21.65	22.2±1
				6	0	2	21.52	22.2±1
	20643	848.3	QPSK	1	0	0	23.53	23.1±1
				1	2	0	23.55	23.1±1
				1	5	0	23.63	23.1±1
				3	0	0	22.72	23.1±1
				3	1	0	22.74	23.1±1
				3	2	0	22.64	23.1±1
				6	0	1	22.65	23.1±1
			16QAM	1	0	1	22.87	22.3±1
				1	2	1	22.88	22.3±1
				1	5	1	23.17	22.3±1
				3	0	1	21.55	22.3±1
				3	1	1	21.77	22.3±1
				3	2	1	21.62	22.3±1
				6	0	2	21.63	22.3±1

LTE Band VII:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20850	2510	QPSK	1	0	0	23.22	23.2±1
				1	49	0	23.12	23.2±1
				1	99	0	23.08	23.2±1
				50	0	1	23.13	23.2±1
				50	24	1	23.15	23.2±1
				50	49	1	23.06	23.2±1
				100	0	1	23.17	23.2±1
			16QAM	1	0	1	23.43	23.4±1
				1	49	1	23.37	23.4±1
				1	99	1	23.36	23.4±1
				50	0	2	23.41	23.4±1
				50	24	2	23.35	23.4±1
				50	49	2	23.31	23.4±1
				100	0	2	23.44	23.4±1
	21100	2535	QPSK	1	0	0	23.4	23.1±1
				1	49	0	23.38	23.1±1
				1	99	0	23.41	23.1±1
				50	0	1	22.75	23.1±1
				50	24	1	22.91	23.1±1
				50	49	1	22.84	23.1±1
				100	0	1	22.52	23.1±1
			16QAM	1	0	1	22.71	22.2±1
				1	49	1	22.52	22.2±1
				1	99	1	22.81	22.2±1
				50	0	2	21.58	22.2±1
				50	24	2	21.62	22.2±1
				50	49	2	21.61	22.2±1
				100	0	2	21.77	22.2±1
	21350	2560	QPSK	1	0	0	22.56	22.2±1
				1	49	0	22.68	22.2±1
				1	99	0	22.6	22.2±1
				50	0	1	21.72	22.2±1
				50	24	1	21.84	22.2±1
				50	49	1	21.78	22.2±1
				100	0	1	22.29	22.2±1
			16QAM	1	0	1	21.96	21.5±1
				1	49	1	21.98	21.5±1
				1	99	1	22.16	21.5±1
				50	0	2	21.43	21.5±1
				50	24	2	21.53	21.5±1
				50	49	2	21.51	21.5±1
				100	0	2	21.35	21.5±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20825	1717.5	QPSK	1	0	0	23.28	23.3±1
				1	37	0	23.23	23.3±1
				1	74	0	23.11	23.3±1
				36	0	1	23.23	23.3±1
				36	16	1	23.33	23.3±1
				36	35	1	23.33	23.3±1
				75	0	1	23.17	23.3±1
			16QAM	1	0	1	23.1	23±1
				1	37	1	23.19	23±1
				1	74	1	23.05	23±1
				36	0	2	23.15	23±1
				36	16	2	23.12	23±1
				36	35	2	22.93	23±1
				75	0	2	23.04	23±1
	21100	1732.5	QPSK	1	0	0	23.01	22.7±1
				1	37	0	23.06	22.7±1
				1	74	0	22.89	22.7±1
				36	0	1	22.26	22.7±1
				36	16	1	22.3	22.7±1
				36	35	1	22.38	22.7±1
				75	0	1	22.2	22.7±1
			16QAM	1	0	1	22.3	21.8±1
				1	37	1	22.23	21.8±1
				1	74	1	22.22	21.8±1
				36	0	2	20.95	21.8±1
				36	16	2	20.97	21.8±1
				36	35	2	20.93	21.8±1
				75	0	2	21.23	21.8±1
	21375	1747.5	QPSK	1	0	0	23.16	22.7±1
				1	37	0	23.01	22.7±1
				1	74	0	23.22	22.7±1
				36	0	1	22.2	22.7±1
				36	16	1	22.3	22.7±1
				36	35	1	22.22	22.7±1
				75	0	1	22.12	22.7±1
			16QAM	1	0	1	22.11	21.7±1
				1	37	1	22.22	21.7±1
				1	74	1	21.95	21.7±1
				36	0	2	21.46	21.7±1
				36	16	2	21.48	21.7±1
				36	35	2	21.28	21.7±1
				75	0	2	21.22	21.7±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20800	2502	QPSK	1	0	0	23.3	23.2±1
				1	24	0	23.25	23.2±1
				1	49	0	23.25	23.2±1
				25	0	1	23.35	23.2±1
				25	12	1	23.12	23.2±1
				25	24	1	23.21	23.2±1
				50	0	1	23.08	23.2±1
			16QAM	1	0	1	23.16	23.2±1
				1	24	1	23.26	23.2±1
				1	49	1	23.35	23.2±1
				25	0	2	23.31	23.2±1
				25	12	2	23.34	23.2±1
				25	24	2	23.08	23.2±1
				50	0	2	23.09	23.2±1
	21100	2535	QPSK	1	0	0	23.21	22.7±1
				1	24	0	23.16	22.7±1
				1	49	0	23.17	22.7±1
				25	0	1	22.23	22.7±1
				25	12	1	22.17	22.7±1
				25	24	1	22.19	22.7±1
				50	0	1	22.21	22.7±1
			16QAM	1	0	1	22.23	21.8±1
				1	24	1	22.34	21.8±1
				1	49	1	22.27	21.8±1
				25	0	2	21.17	21.8±1
				25	12	2	21.21	21.8±1
				25	24	2	21.28	21.8±1
				50	0	2	21.33	21.8±1
	21400	2565	QPSK	1	0	0	23.07	22.6±1
				1	24	0	23.08	22.6±1
				1	49	0	23.05	22.6±1
				25	0	1	22.23	22.6±1
				25	12	1	22.39	22.6±1
				25	24	1	22.22	22.6±1
				50	0	1	22.22	22.6±1
			16QAM	1	0	1	22.6	22±1
				1	24	1	22.66	22±1
				1	49	1	22.77	22±1
				25	0	2	21.08	22±1
				25	12	2	21.09	22±1
				25	24	2	21.13	22±1
				50	0	2	21.39	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	19975	1712.5	QPSK	1	0	0	23.22	23.2±1
				1	12	0	23.13	23.2±1
				1	24	0	23.39	23.2±1
				12	0	1	23.22	23.2±1
				12	6	1	23.31	23.2±1
				12	11	1	23.17	23.2±1
				25	0	1	23.32	23.2±1
			16QAM	1	0	1	23.45	23.4±1
				1	12	1	23.38	23.4±1
				1	24	1	23.53	23.4±1
				12	0	2	23.31	23.4±1
				12	6	2	23.32	23.4±1
				12	11	2	23.5	23.4±1
				25	0	2	23.4	23.4±1
	20175	1732.5	QPSK	1	0	0	23.53	23.1±1
				1	12	0	23.43	23.1±1
				1	24	0	23.54	23.1±1
				12	0	1	22.73	23.1±1
				12	6	1	22.71	23.1±1
				12	11	1	22.68	23.1±1
				25	0	1	22.59	23.1±1
			16QAM	1	0	1	22.53	22.2±1
				1	12	1	22.75	22.2±1
				1	24	1	22.72	22.2±1
				12	0	2	21.77	22.2±1
				12	6	2	21.6	22.2±1
				12	11	2	21.71	22.2±1
				25	0	2	21.62	22.2±1
	20375	1752.5	QPSK	1	0	0	23.51	23.1±1
				1	12	0	23.53	23.1±1
				1	24	0	23.64	23.1±1
				12	0	1	22.63	23.1±1
				12	6	1	22.69	23.1±1
				12	11	1	22.73	23.1±1
				25	0	1	22.67	23.1±1
			16QAM	1	0	1	22.95	22.3±1
				1	12	1	22.84	22.3±1
				1	24	1	23.08	22.3±1
				12	0	2	21.61	22.3±1
				12	6	2	21.69	22.3±1
				12	11	2	21.68	22.3±1
				25	0	2	21.72	22.3±1

ERP & EIRP

EIRP for LTE Band II (Part 24E)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.7	1.4	QPSK	1/0	15.57	V	7.88	0.85	22.6	33.01
1880	1.4	QPSK	1/0	15.69	V	7.88	0.85	22.72	33.01
1909.3	1.4	QPSK	1/0	15.91	V	7.88	0.85	22.94	33.01
1850.7	1.4	QPSK	1/0	13.21	H	7.88	0.85	20.24	33.01
1880	1.4	QPSK	1/0	13.9	H	7.88	0.85	20.93	33.01
1909.3	1.4	QPSK	1/0	14.62	H	7.88	0.85	21.65	33.01
1850.7	1.4	16-QAM	1/0	15.76	V	7.88	0.85	22.79	33.01
1880	1.4	16-QAM	1/0	14.75	V	7.88	0.85	21.78	33.01
1909.3	1.4	16-QAM	1/0	14.87	V	7.88	0.85	21.9	33.01
1850.7	1.4	16-QAM	1/0	14.36	H	7.88	0.85	21.39	33.01
1880	1.4	16-QAM	1/0	13.44	H	7.88	0.85	20.47	33.01
1909.3	1.4	16-QAM	1/0	12.89	H	7.88	0.85	19.92	33.01
1851.5	3	QPSK	1/0	15.6	V	7.88	0.85	22.63	33.01
1880	3	QPSK	1/0	15.79	V	7.88	0.85	22.82	33.01
1908.5	3	QPSK	1/0	15.5	V	7.88	0.85	22.53	33.01
1851.5	3	QPSK	1/0	13.5	H	7.88	0.85	20.53	33.01
1880	3	QPSK	1/0	14.48	H	7.88	0.85	21.51	33.01
1908.5	3	QPSK	1/0	13.48	H	7.88	0.85	20.51	33.01
1851.5	3	16-QAM	1/0	15.7	V	7.88	0.85	22.73	33.01
1880	3	16-QAM	1/0	14.77	V	7.88	0.85	21.8	33.01
1908.5	3	16-QAM	1/0	15.19	V	7.88	0.85	22.22	33.01
1851.5	3	16-QAM	1/0	14.16	H	7.88	0.85	21.19	33.01
1880	3	16-QAM	1/0	12.99	H	7.88	0.85	20.02	33.01
1908.5	3	16-QAM	1/0	13.66	H	7.88	0.85	20.69	33.01
1852.5	5	QPSK	1/24	15.45	V	7.88	0.85	22.48	33.01
1880	5	QPSK	1/0	15.63	V	7.88	0.85	22.66	33.01
1907.5	5	QPSK	1/24	15.26	V	7.88	0.85	22.29	33.01
1852.5	5	QPSK	1/24	13.61	H	7.88	0.85	20.64	33.01
1880	5	QPSK	1/0	14.53	H	7.88	0.85	21.56	33.01
1907.5	5	QPSK	1/24	12.97	H	7.88	0.85	20	33.01
1852.5	5	16-QAM	1/24	15.54	V	7.88	0.85	22.57	33.01
1880	5	16-QAM	1/0	14.75	V	7.88	0.85	21.78	33.01

1907.5	5	16-QAM	1/24	14.5	V	7.88	0.85	21.53	33.01
1852.5	5	16-QAM	1/24	14.42	H	7.88	0.85	21.45	33.01
1880	5	16-QAM	1/0	12.97	H	7.88	0.85	20	33.01
1907.5	5	16-QAM	1/24	12.65	H	7.88	0.85	19.68	33.01
1855	10	QPSK	1/0	15.6	V	7.88	0.85	22.63	33.01
1880	10	QPSK	1/0	15.53	V	7.88	0.85	22.56	33.01
1905	10	QPSK	1/49	15.58	V	7.88	0.85	22.61	33.01
1855	10	QPSK	1/0	14.2	H	7.88	0.85	21.23	33.01
1880	10	QPSK	1/0	13.83	H	7.88	0.85	20.86	33.01
1905	10	QPSK	1/49	14.41	H	7.88	0.85	21.44	33.01
1855	10	16-QAM	1/0	15.54	V	7.88	0.85	22.57	33.01
1880	10	16-QAM	1/0	15.18	V	7.88	0.85	22.21	33.01
1905	10	16-QAM	1/49	14.67	V	7.88	0.85	21.7	33.01
1855	10	16-QAM	1/0	14.01	H	7.88	0.85	21.04	33.01
1880	10	16-QAM	1/0	13.2	H	7.88	0.85	20.23	33.01
1905	10	16-QAM	1/49	12.99	H	7.88	0.85	20.02	33.01
1857.5	15	QPSK	1/0	15.62	V	7.88	0.85	22.65	33.01
1880	15	QPSK	1/0	15.68	V	7.88	0.85	22.71	33.01
1902.5	15	QPSK	1/0	15.95	V	7.88	0.85	22.98	33.01
1857.5	15	QPSK	1/0	13.42	H	7.88	0.85	20.45	33.01
1880	15	QPSK	1/0	13.91	H	7.88	0.85	20.94	33.01
1902.5	15	QPSK	1/0	14.88	H	7.88	0.85	21.91	33.01
1857.5	15	16-QAM	1/0	15.54	V	7.88	0.85	22.57	33.01
1880	15	16-QAM	1/0	14.87	V	7.88	0.85	21.9	33.01
1902.5	15	16-QAM	1/0	15.41	V	7.88	0.85	22.44	33.01
1857.5	15	16-QAM	1/0	13.38	H	7.88	0.85	20.41	33.01
1880	15	16-QAM	1/0	13.44	H	7.88	0.85	20.47	33.01
1902.5	15	16-QAM	1/0	13.8	H	7.88	0.85	20.83	33.01
1860	20	QPSK	1/0	15.65	V	7.88	0.85	22.68	33.01
1880	20	QPSK	1/0	15.58	V	7.88	0.85	22.61	33.01
1900	20	QPSK	1/0	14.82	V	7.88	0.85	21.85	33.01
1860	20	QPSK	1/0	14.23	H	7.88	0.85	21.26	33.01
1880	20	QPSK	1/0	14.14	H	7.88	0.85	21.17	33.01
1900	20	QPSK	1/0	12.42	H	7.88	0.85	19.45	33.01
1860	20	16-QAM	1/0	15.71	V	7.88	0.85	22.74	33.01
1880	20	16-QAM	1/0	14.81	V	7.88	0.85	21.84	33.01
1900	20	16-QAM	1/0	14.93	V	7.88	0.85	21.96	33.01
1860	20	16-QAM	1/0	14.62	H	7.88	0.85	21.65	33.01

1880	20	16-QAM	1/0	13.1	H	7.88	0.85	20.13	33.01
1900	20	16-QAM	1/0	13.73	H	7.88	0.85	20.76	33.01

EIRP for LTE Band IV (Part 27)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1710.7	1.4	QPSK	1/0	15.54	V	7.95	0.79	22.7	30
1732.5	1.4	QPSK	1/0	15.41	V	7.95	0.79	22.57	30
1754.3	1.4	QPSK	1/0	15.04	V	7.95	0.79	22.2	30
1710.7	1.4	QPSK	1/0	14.17	H	7.95	0.79	21.33	30
1732.5	1.4	QPSK	1/0	13.54	H	7.95	0.79	20.7	30
1754.3	1.4	QPSK	1/0	13.95	H	7.95	0.79	21.11	30
1710.7	1.4	16-QAM	1/5	15.17	V	7.95	0.79	22.33	30
1732.5	1.4	16-QAM	1/0	14.35	V	7.95	0.79	21.51	30
1754.3	1.4	16-QAM	1/0	13.93	V	7.95	0.79	21.09	30
1710.7	1.4	16-QAM	1/5	13.79	H	7.95	0.79	20.95	30
1732.5	1.4	16-QAM	1/0	12.01	H	7.95	0.79	19.17	30
1754.3	1.4	16-QAM	1/0	12.61	H	7.95	0.79	19.77	30
1711.5	3	QPSK	1/0	15.5	V	7.95	0.79	22.66	30
1732.5	3	QPSK	1/0	15.41	V	7.95	0.79	22.57	30
1753.5	3	QPSK	1/0	14.91	V	7.95	0.79	22.07	30
1711.5	3	QPSK	1/0	13.16	H	7.95	0.79	20.32	30
1732.5	3	QPSK	1/0	13.45	H	7.95	0.79	20.61	30
1753.5	3	QPSK	1/0	13.28	H	7.95	0.79	20.44	30
1711.5	3	16-QAM	1/0	15.35	V	7.95	0.79	22.51	30
1732.5	3	16-QAM	1/0	14.19	V	7.95	0.79	21.35	30
1753.5	3	16-QAM	1/0	14.55	V	7.95	0.79	21.71	30
1711.5	3	16-QAM	1/0	13.64	H	7.95	0.79	20.8	30
1732.5	3	16-QAM	1/0	11.93	H	7.95	0.79	19.09	30
1753.5	3	16-QAM	1/0	12.59	H	7.95	0.79	19.75	30
1712.5	5	QPSK	1/0	15.45	V	7.95	0.79	22.61	30
1732.5	5	QPSK	1/0	15.28	V	7.95	0.79	22.44	30
1752.5	5	QPSK	1/24	15.04	V	7.95	0.79	22.2	30
1712.5	5	QPSK	1/0	13.82	H	7.95	0.79	20.98	30
1732.5	5	QPSK	1/0	14.1	H	7.95	0.79	21.26	30
1752.5	5	QPSK	1/24	12.87	H	7.95	0.79	20.03	30
1712.5	5	16-QAM	1/0	15.29	V	7.95	0.79	22.45	30
1732.5	5	16-QAM	1/0	14.34	V	7.95	0.79	21.5	30
1752.5	5	16-QAM	1/24	13.97	V	7.95	0.79	21.13	30
1712.5	5	16-QAM	1/0	14.24	H	7.95	0.79	21.4	30
1732.5	5	16-QAM	1/0	13.34	H	7.95	0.79	20.5	30

1752.5	5	16-QAM	1/24	11.64	H	7.95	0.79	18.8	30
1715	10	QPSK	1/0	15.56	V	7.95	0.79	22.72	30
1732.5	10	QPSK	1/49	15.28	V	7.95	0.79	22.44	30
1750	10	QPSK	1/0	15.32	V	7.95	0.79	22.48	30
1715	10	QPSK	1/0	13.11	H	7.95	0.79	20.27	30
1732.5	10	QPSK	1/49	13.33	H	7.95	0.79	20.49	30
1750	10	QPSK	1/0	13.95	H	7.95	0.79	21.11	30
1715	10	16-QAM	1/0	15.4	V	7.95	0.79	22.56	30
1732.5	10	16-QAM	1/49	14.78	V	7.95	0.79	21.94	30
1750	10	16-QAM	1/0	13.91	V	7.95	0.79	21.07	30
1715	10	16-QAM	1/0	13.86	H	7.95	0.79	21.02	30
1732.5	10	16-QAM	1/49	12.33	H	7.95	0.79	19.49	30
1750	10	16-QAM	1/0	11.86	H	7.95	0.79	19.02	30
1717.5	15	QPSK	1/0	15.59	V	7.95	0.79	22.75	30
1732.5	15	QPSK	1/74	15.37	V	7.95	0.79	22.53	30
1747.5	15	QPSK	1/0	15.2	V	7.95	0.79	22.36	30
1717.5	15	QPSK	1/0	13.5	H	7.95	0.79	20.66	30
1732.5	15	QPSK	1/74	13.85	H	7.95	0.79	21.01	30
1747.5	15	QPSK	1/0	13.05	H	7.95	0.79	20.21	30
1717.5	15	16-QAM	1/0	15.46	V	7.95	0.79	22.62	30
1732.5	15	16-QAM	1/74	14.6	V	7.95	0.79	21.76	30
1747.5	15	16-QAM	1/0	14.82	V	7.95	0.79	21.98	30
1717.5	15	16-QAM	1/0	13.18	H	7.95	0.79	20.34	30
1732.5	15	16-QAM	1/74	13.04	H	7.95	0.79	20.2	30
1747.5	15	16-QAM	1/0	13.48	H	7.95	0.79	20.64	30
1720	20	QPSK	1/99	15.89	V	7.95	0.79	23.05	30
1732.5	20	QPSK	1/99	15.26	V	7.95	0.79	22.42	30
1745	20	QPSK	1/0	15.5	V	7.95	0.79	22.66	30
1720	20	QPSK	1/99	14.1	H	7.95	0.79	21.26	30
1732.5	20	QPSK	1/99	13.74	H	7.95	0.79	20.9	30
1745	20	QPSK	1/0	13.17	H	7.95	0.79	20.33	30
1720	20	16-QAM	1/99	15.52	V	7.95	0.79	22.68	30
1732.5	20	16-QAM	1/99	14.49	V	7.95	0.79	21.65	30
1745	20	16-QAM	1/0	14.19	V	7.95	0.79	21.35	30
1720	20	16-QAM	1/99	13.85	H	7.95	0.79	21.01	30
1732.5	20	16-QAM	1/99	12.9	H	7.95	0.79	20.06	30
1745	20	16-QAM	1/0	12.22	H	7.95	0.79	19.38	30

EIRP for LTE Band V (Part 22)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.7	1.4	QPSK	1/5	13.01	V	6.8	0.44	19.37	34.77
836.5	1.4	QPSK	1/5	13.06	V	6.8	0.44	19.42	34.77
848.3	1.4	QPSK	1/5	13.1	V	6.9	0.44	19.56	34.77
824.7	1.4	QPSK	1/5	10.52	H	6.8	0.44	16.88	34.77
836.5	1.4	QPSK	1/5	11.03	H	6.8	0.44	17.39	34.77
848.3	1.4	QPSK	1/5	11.01	H	6.9	0.44	17.47	34.77
824.7	1.4	16-QAM	1/5	13	V	6.8	0.44	19.36	34.77
836.5	1.4	16-QAM	1/5	12.35	V	6.8	0.44	18.71	34.77
848.3	1.4	16-QAM	1/5	12.64	V	6.9	0.44	19.1	34.77
824.7	1.4	16-QAM	1/5	10.93	H	6.8	0.44	17.29	34.77
836.5	1.4	16-QAM	1/5	9.85	H	6.8	0.44	16.21	34.77
848.3	1.4	16-QAM	1/5	11.34	H	6.9	0.44	17.8	34.77
825.5	3	QPSK	1/14	12.85	V	6.8	0.44	19.21	34.77
836.5	3	QPSK	1/0	11.73	V	6.8	0.44	18.09	34.77
847.5	3	QPSK	1/14	12.58	V	6.9	0.44	19.04	34.77
825.5	3	QPSK	1/14	11.18	H	6.8	0.44	17.54	34.77
836.5	3	QPSK	1/0	10.32	H	6.8	0.44	16.68	34.77
847.5	3	QPSK	1/14	10.87	H	6.9	0.44	17.33	34.77
825.5	3	16-QAM	1/14	12.91	V	6.8	0.44	19.27	34.77
836.5	3	16-QAM	1/0	10.81	V	6.8	0.44	17.17	34.77
847.5	3	16-QAM	1/14	12.05	V	6.9	0.44	18.51	34.77
825.5	3	16-QAM	1/14	11.57	H	6.8	0.44	17.93	34.77
836.5	3	16-QAM	1/0	9.19	H	6.8	0.44	15.55	34.77
847.5	3	16-QAM	1/14	10.12	H	6.9	0.44	16.58	34.77
826.5	5	QPSK	1/24	12.74	V	6.8	0.44	19.1	34.77
836.5	5	QPSK	1/24	12.48	V	6.8	0.44	18.84	34.77
846.5	5	QPSK	1/24	12.69	V	6.8	0.44	19.05	34.77
826.5	5	QPSK	1/24	10.33	H	6.8	0.44	16.69	34.77
836.5	5	QPSK	1/24	11.1	H	6.8	0.44	17.46	34.77
846.5	5	QPSK	1/24	11.64	H	6.8	0.44	18	34.77
826.5	5	16-QAM	1/24	12.61	V	6.8	0.44	18.97	34.77
836.5	5	16-QAM	1/24	11.85	V	6.8	0.44	18.21	34.77
846.5	5	16-QAM	1/24	11.56	V	6.8	0.44	17.92	34.77

826.5	5	16-QAM	1/24	11	H	6.8	0.44	17.36	34.77
836.5	5	16-QAM	1/24	10.5	H	6.8	0.44	16.86	34.77
846.5	5	16-QAM	1/24	10.22	H	6.8	0.44	16.58	34.77
829	10	QPSK	1/49	12.68	V	6.8	0.44	19.04	34.77
836.5	10	QPSK	1/49	12.89	V	6.8	0.44	19.25	34.77
844	10	QPSK	1/49	12.23	V	6.8	0.44	18.59	34.77
829	10	QPSK	1/49	11.56	H	6.8	0.44	17.92	34.77
836.5	10	QPSK	1/49	10.69	H	6.8	0.44	17.05	34.77
844	10	QPSK	1/49	11.15	H	6.8	0.44	17.51	34.77
829	10	16-QAM	1/49	12.97	V	6.8	0.44	19.33	34.77
836.5	10	16-QAM	1/49	12.45	V	6.8	0.44	18.81	34.77
844	10	16-QAM	1/49	11.76	V	6.8	0.44	18.12	34.77
829	10	16-QAM	1/49	11.7	H	6.8	0.44	18.06	34.77
836.5	10	16-QAM	1/49	10.43	H	6.8	0.44	16.79	34.77
844	10	16-QAM	1/49	10.63	H	6.8	0.44	16.99	34.77

ERP for LTE Band VII (Part 27)

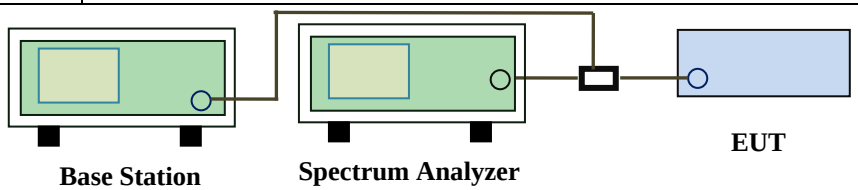
Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
2502.5	5	QPSK	1/0	14.12	V	8.93	0.83	22.22	30
2535	5	QPSK	1/0	14.43	V	8.93	0.83	22.53	30
2567.5	5	QPSK	1/24	14.41	V	8.93	0.83	22.51	30
2502.5	5	QPSK	1/0	12.88	H	8.93	0.83	20.98	30
2535	5	QPSK	1/0	12.21	H	8.93	0.83	20.31	30
2567.5	5	QPSK	1/24	12.44	H	8.93	0.83	20.54	30
2502.5	5	16-QAM	1/0	14.35	V	8.93	0.83	22.45	30
2535	5	16-QAM	1/0	13.43	V	8.93	0.83	21.53	30
2567.5	5	16-QAM	1/24	13.85	V	8.93	0.83	21.95	30
2502.5	5	16-QAM	1/0	13.21	H	8.93	0.83	21.31	30
2535	5	16-QAM	1/0	12.1	H	8.93	0.83	20.2	30
2567.5	5	16-QAM	1/24	12.05	H	8.93	0.83	20.15	30
2505	10	QPSK	1/0	14.2	V	8.93	0.83	22.3	30
2535	10	QPSK	1/49	14.07	V	8.93	0.83	22.17	30
2565	10	QPSK	1/0	13.97	V	8.93	0.83	22.07	30
2505	10	QPSK	1/0	12.42	H	8.93	0.83	20.52	30
2535	10	QPSK	1/49	12.14	H	8.93	0.83	20.24	30
2565	10	QPSK	1/0	11.78	H	8.93	0.83	19.88	30
2505	10	16-QAM	1/0	14.06	V	8.93	0.83	22.16	30
2535	10	16-QAM	1/49	13.17	V	8.93	0.83	21.27	30
2565	10	16-QAM	1/0	13.5	V	8.93	0.83	21.6	30
2505	10	16-QAM	1/0	12.84	H	8.93	0.83	20.94	30
2535	10	16-QAM	1/49	11.84	H	8.93	0.83	19.94	30
2565	10	16-QAM	1/0	12.45	H	8.93	0.83	20.55	30
2507.5	15	QPSK	1/0	14.18	V	8.93	0.83	22.28	30
2535	15	QPSK	1/74	13.79	V	8.93	0.83	21.89	30
2562.5	15	QPSK	1/0	14.06	V	8.93	0.83	22.16	30
2507.5	15	QPSK	1/0	13.15	H	8.93	0.83	21.25	30
2535	15	QPSK	1/74	12.74	H	8.93	0.83	20.84	30
2562.5	15	QPSK	1/0	12.43	H	8.93	0.83	20.53	30
2507.5	15	16-QAM	1/0	14	V	8.93	0.83	22.1	30
2535	15	16-QAM	1/74	13.12	V	8.93	0.83	21.22	30
2562.5	15	16-QAM	1/0	13.01	V	8.93	0.83	21.11	30

2507.5	15	16-QAM	1/0	12.44	H	8.93	0.83	20.54	30
2535	15	16-QAM	1/74	11.19	H	8.93	0.83	19.29	30
2562.5	15	16-QAM	1/0	11.76	H	8.93	0.83	19.86	30
2510	20	QPSK	1/99	13.98	V	8.93	0.83	22.08	30
2535	20	QPSK	1/99	14.31	V	8.93	0.83	22.41	30
2560	20	QPSK	1/0	13.46	V	8.93	0.83	21.56	30
2510	20	QPSK	1/99	12.09	H	8.93	0.83	20.19	30
2535	20	QPSK	1/99	12.14	H	8.93	0.83	20.24	30
2560	20	QPSK	1/0	11.72	H	8.93	0.83	19.82	30
2510	20	16-QAM	1/99	14.26	V	8.93	0.83	22.36	30
2535	20	16-QAM	1/99	13.71	V	8.93	0.83	21.81	30
2560	20	16-QAM	1/0	12.86	V	8.93	0.83	20.96	30
2510	20	16-QAM	1/99	12.1	H	8.93	0.83	20.2	30
2535	20	16-QAM	1/99	11.59	H	8.93	0.83	19.69	30
2560	20	16-QAM	1/0	11.71	H	8.93	0.83	19.81	30

6.3 Peak-Average Ratio

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§24.232(d) § 27.50(d)	a)	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.	☑
Test Setup			
Test Procedure	According with KDB 971168 v02r02 5.7.2 Alternate procedure for PAPR 5.1.2 Peak power measurements with a peak power meter The total peak output power may be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector. 5.2.3 Average power measurement with average power meter As an alternative to the use of a spectrum/signal analyzer or EMI receiver to perform a measurement of the total in-band average output power, a wideband RF average power meter with a thermocouple detector or equivalent can be used under certain conditions If the EUT can be configured to transmit continuously (i.e., the burst duty		

	cycle ≥ 98%) and at all times the EUT is transmitting at is maximum output power level, then a conventional wide-band RF power meter can be used. If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle < 98%), then there are two options for the use of an average power meter. First, a gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only over active transmission bursts at maximum output power levels. A conventional average power meter can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to 10log(1/duty cycle)
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

LTE Band II (part 24E)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1880	RB 1/0	QPSK	22.73	22.32	0.41
			16QAM	21.77	21.31	0.46
3	1880	RB 1/0	QPSK	22.77	22.36	0.41
			16QAM	21.69	21.35	0.34
5	1880	RB 1/0	QPSK	22.92	22.55	0.37
			16QAM	21.77	21.42	0.35
10	1880	RB 1/0	QPSK	23.01	22.58	0.43
			16QAM	21.83	21.53	0.3
15	1880	RB 1/0	QPSK	23.4	23.08	0.32
			16QAM	22.47	22.06	0.41
20	1880	RB 1/0	QPSK	23.7	23.35	0.35
			16QAM	22.56	22.2	0.36

LTE Band IV (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1732.5	RB 1/0	QPSK	22.81	22.32	0.49
			16QAM	21.7	21.31	0.39
3	1732.5	RB 1/0	QPSK	22.75	22.36	0.39
			16QAM	21.78	21.35	0.43
5	1732.5	RB 1/0	QPSK	22.92	22.55	0.37
			16QAM	21.72	21.42	0.3
10	1732.5	RB 1/0	QPSK	22.97	22.58	0.39
			16QAM	21.89	21.53	0.36
15	1732.5	RB 1/0	QPSK	23.44	23.08	0.36
			16QAM	22.47	22.06	0.41
20	1732.5	RB 1/0	QPSK	23.65	23.35	0.3
			16QAM	22.55	22.2	0.35

LTE Band V (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	836.5	RB 1/0	QPSK	22.66	22.32	0.34
			16QAM	21.63	21.31	0.32
3	836.5	RB 1/0	QPSK	22.72	22.36	0.36
			16QAM	21.83	21.35	0.48
5	836.5	RB 1/0	QPSK	22.88	22.55	0.33
			16QAM	21.87	21.42	0.45
10	836.5	RB 1/0	QPSK	22.95	22.58	0.37
			16QAM	21.83	21.53	0.3

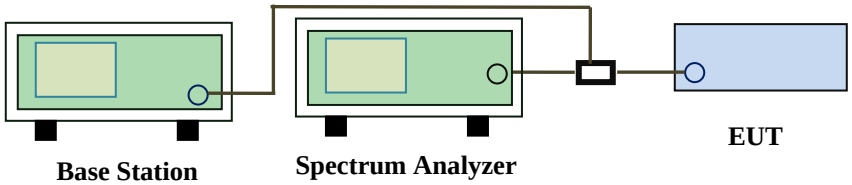
LTE Band VII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
5	2535	RB 1/0	QPSK	22.66	22.32	0.34
			16QAM	21.63	21.31	0.32
10	2535	RB 1/0	QPSK	22.72	22.36	0.36
			16QAM	21.83	21.35	0.48
15	2535	RB 1/0	QPSK	22.88	22.55	0.33
			16QAM	21.87	21.42	0.45
20	2535	RB 1/0	QPSK	22.95	22.58	0.37
			16QAM	21.83	21.53	0.3

6.4 Occupied Bandwidth

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §22.917, §22.905 §24.238 §27.53(a)	a)	99% Occupied Bandwidth(kHz)	☑
	b)	26 dB Bandwidth(kHz)	☑
Test Setup			
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band II (Part 24E)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1851	16QAM	1.0910	1.266
			QPSK	1.0830	1.279
1.4	18900	1880	16QAM	1.1019	1.291
			QPSK	1.1013	1.286
1.4	19193	1909	16QAM	1.0970	1.262
			QPSK	1.1057	1.291
3	18615	1852	16QAM	2.7237	3.037
			QPSK	2.7302	3.028
3	18900	1880	16QAM	2.7487	3.077
			QPSK	2.7395	3.045
3	19185	1909	16QAM	2.7311	3.043
			QPSK	2.7395	3.051
5	18625	1853	16QAM	4.5222	5.047
			QPSK	4.5025	5.046
5	18900	1880	16QAM	4.5107	5.063
			QPSK	4.5269	5.071
5	19175	1908	16QAM	4.5371	5.055
			QPSK	4.5341	5.018
10	18650	1855	16QAM	9.0233	10.079
			QPSK	9.0312	9.968
10	18900	1880	16QAM	9.0519	9.996
			QPSK	9.0570	10.061
10	19150	1905	16QAM	9.0682	10.167
			QPSK	9.0255	10.156
15	18675	1858	16QAM	13.4348	14.714
			QPSK	13.4340	14.824
15	18900	1880	16QAM	13.4590	14.893
			QPSK	13.4663	14.877
15	19125	1903	16QAM	13.4811	14.792
			QPSK	13.4811	14.792

20	18700	1860	16QAM	17.8457	19.224
			QPSK	17.9056	19.419
20	18900	1880	16QAM	17.8283	19.200
			QPSK	17.8817	19.395
20	19100	1900	16QAM	17.8813	19.209
			QPSK	17.9098	19.436

LTE Band IV (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1711	16QAM	1.0997	1.274
			QPSK	1.0962	1.263
1.4	20175	1733	16QAM	1.1059	1.269
			QPSK	1.1042	1.267
1.4	20393	1754	16QAM	1.0842	1.261
			QPSK	1.1009	1.271
3	19965	1712	16QAM	2.7097	2.975
			QPSK	2.7444	3.023
3	20175	1733	16QAM	2.7221	3.025
			QPSK	2.7316	3.024
3	20385	1754	16QAM	2.7399	3.033
			QPSK	2.7308	3.044
5	19975	1713	16QAM	4.5165	5.092
			QPSK	4.5338	5.072
5	20175	1733	16QAM	4.5010	5.014
			QPSK	4.5173	5.076
5	20375	1753	16QAM	4.5064	5.065
			QPSK	4.5133	5.063
10	20000	1715	16QAM	9.0290	10.002
			QPSK	9.0375	10.139
10	20175	1733	16QAM	9.0285	10.003
			QPSK	9.0336	10.190
10	20350	1750	16QAM	9.0150	10.064
			QPSK	8.9940	9.998
15	20025	1718	16QAM	13.4349	14.730
			QPSK	13.4384	14.874
15	20175	1733	16QAM	13.4495	14.677
			QPSK	13.4591	14.738
15	20325	1748	16QAM	13.4140	14.823
			QPSK	13.4453	14.829

20	20050	1720	16QAM	17.8861	19.453
			QPSK	17.8454	19.305
20	20175	1733	16QAM	17.9055	19.629
			QPSK	17.9246	19.283
20	20300	1745	16QAM	17.8462	19.418
			QPSK	17.8165	19.232

LTE Band V (Part 22H)

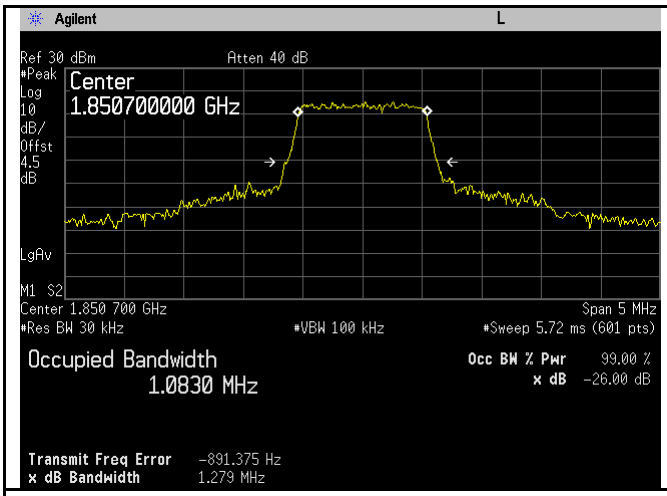
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	20407	824.7	16QAM	1.0842	1.254
			QPSK	1.0938	1.275
1.4	20525	836.5	16QAM	1.0912	1.256
			QPSK	1.0891	1.269
1.4	20643	848.3	16QAM	1.1030	1.265
			QPSK	1.0999	1.253
3	20415	825.5	16QAM	2.7474	2.994
			QPSK	2.7399	3.029
3	20525	836.5	16QAM	2.436	3.050
			QPSK	2.7452	3.036
3	20635	847.5	16QAM	2.7249	3.046
			QPSK	2.7352	3.032
5	20425	826.5	16QAM	4.5233	5.034
			QPSK	4.5300	5.074
5	20525	836.5	16QAM	4.5130	5.005
			QPSK	4.5258	5.037
5	20625	846.5	16QAM	4.4909	4.913
			QPSK	4.5043	4.922
10	20450	829	16QAM	9.0069	9.973
			QPSK	9.0598	10.099
10	20525	836.5	16QAM	9.0340	9.833
			QPSK	9.0499	10.010
10	20800	844	16QAM	9.0512	9.848
			QPSK	9.0471	9.851

LTE Band VII (Part 27) result

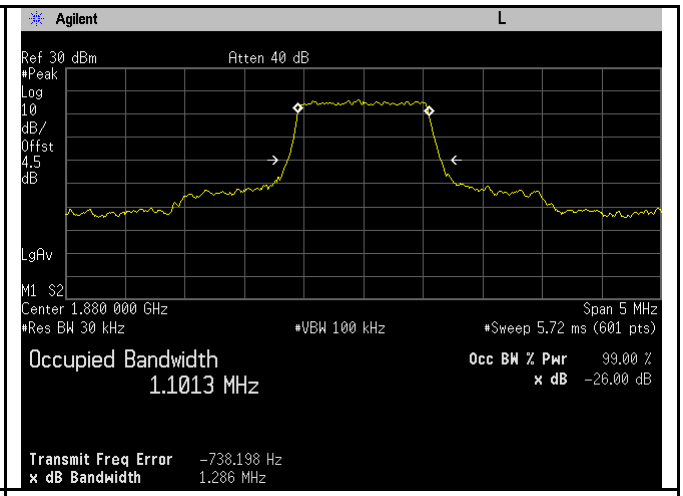
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2503	16QAM	4.5172	5.060
			QPSK	4.5151	4.995
5	21100	2535	16QAM	4.5165	4.996
			QPSK	4.5314	5.036
5	21425	2568	16QAM	4.5006	4.981
			QPSK	4.5227	5.016
10	20800	2505	16QAM	9.0369	10.027
			QPSK	9.0789	10.153
10	21100	2535	16QAM	9.0368	10.108
			QPSK	9.0163	10.144
10	21400	2565	16QAM	9.0507	10.068
			QPSK	9.0532	10.025
15	20825	2508	16QAM	13.4602	14.698
			QPSK	13.4858	14.936
15	21100	2535	16QAM	13.4401	14.749
			QPSK	13.4361	14.633
15	21400	2563	16QAM	13.4330	14.703
			QPSK	13.4721	14.726
20	20850	2510	16QAM	17.8859	19.259
			QPSK	17.9457	19.518
20	21100	2535	16QAM	17.8171	18.494
			QPSK	17.8245	18.557
20	21350	2560	16QAM	17.8870	19.130
			QPSK	17.8864	19.313

Test Plots

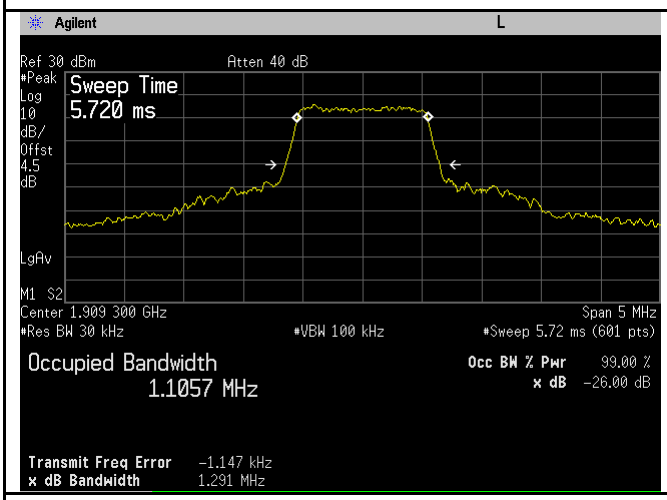
LTE Band II (Part 24E)



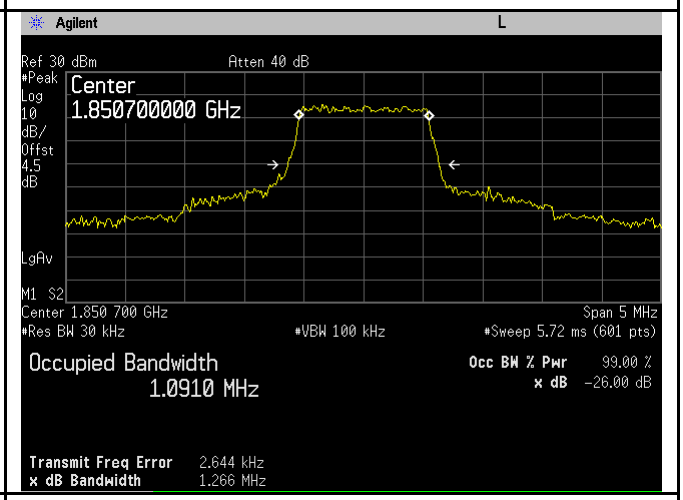
LTE Band II - Low CH QPSK-1.4



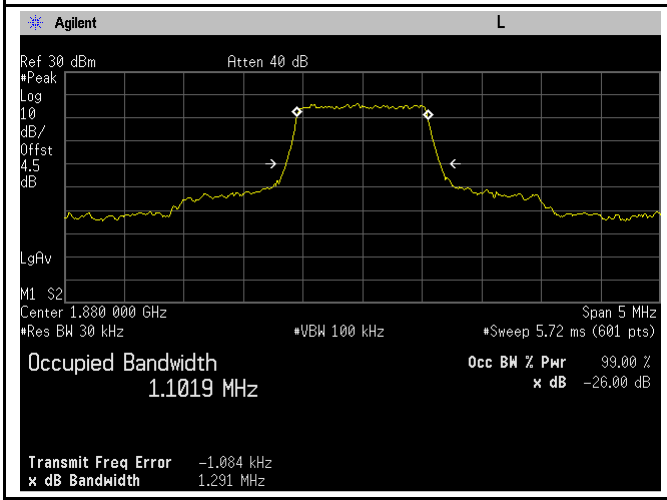
LTE Band II - Low CH 16QAM-1.4



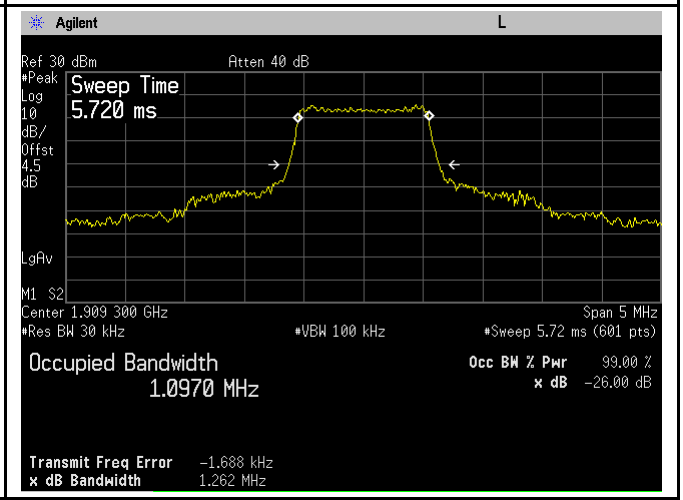
LTE Band II - Middle CH QPSK-1.4



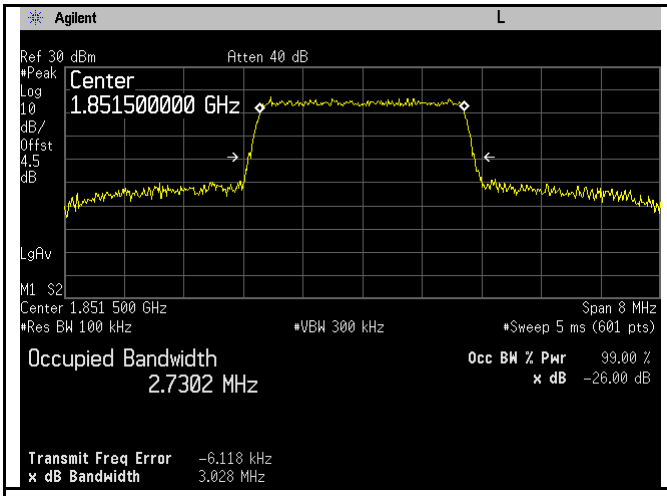
LTE Band II - Middle CH 16QAM-1.4



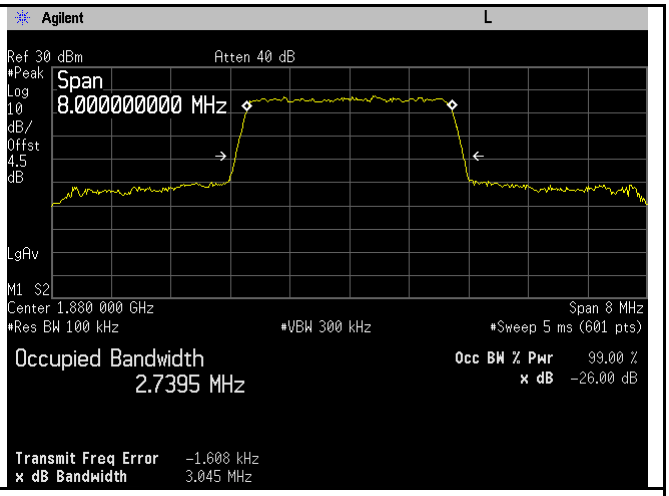
LTE Band II - High CH QPSK-1.4



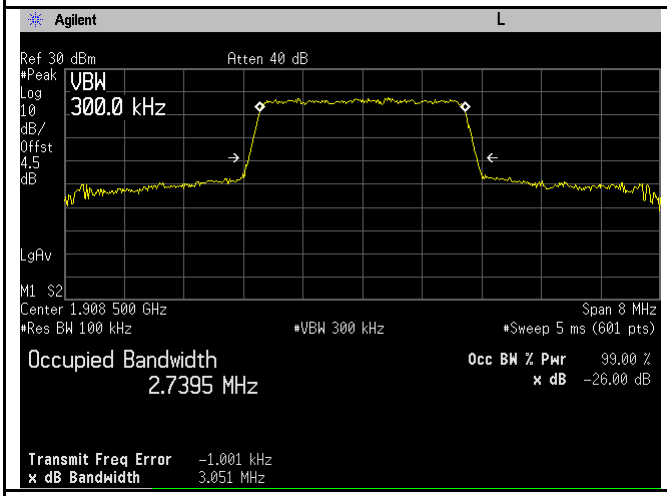
LTE Band II - High CH 16QAM-1.4



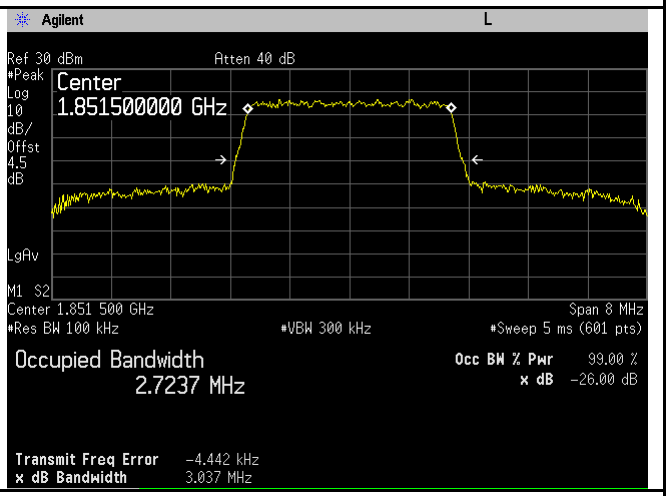
LTE Band II - Low CH QPSK-3



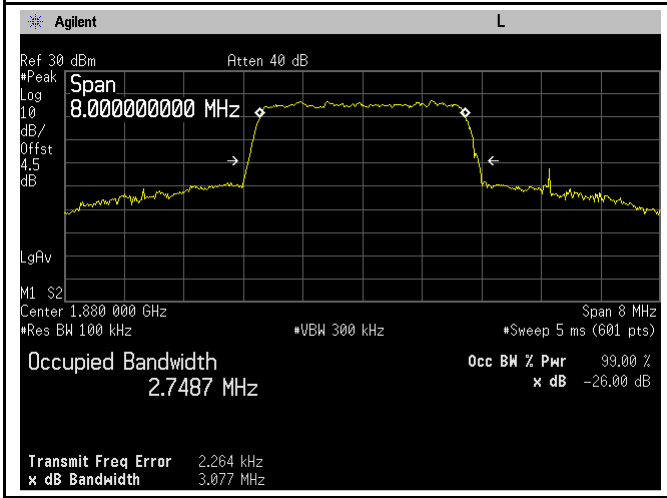
LTE Band II - Low CH 16QAM-3



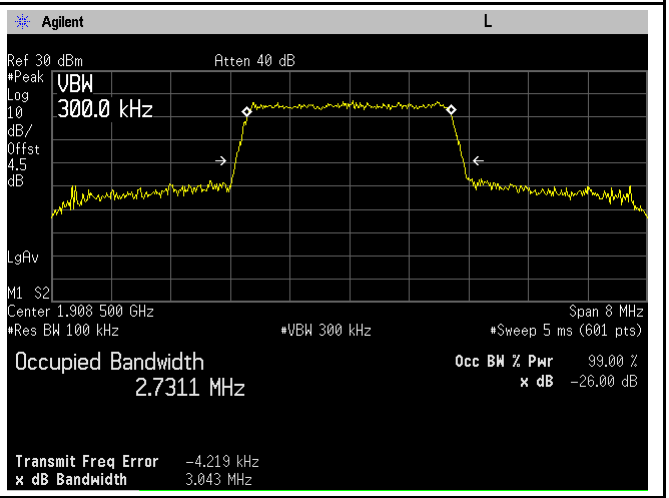
LTE Band II - Middle CH QPSK-3



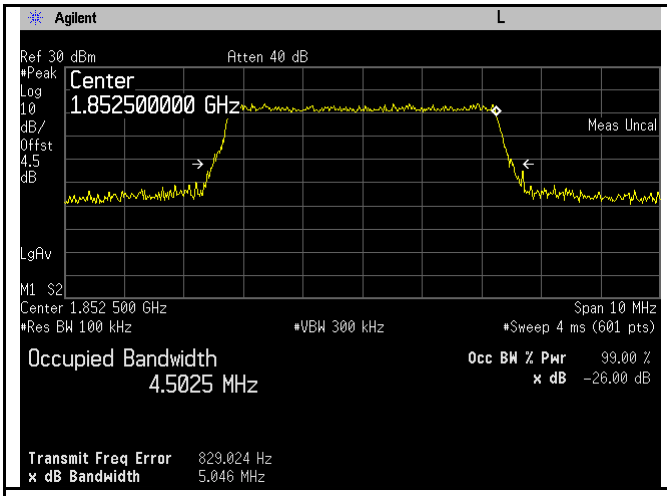
LTE Band II - Middle CH 16QAM-3



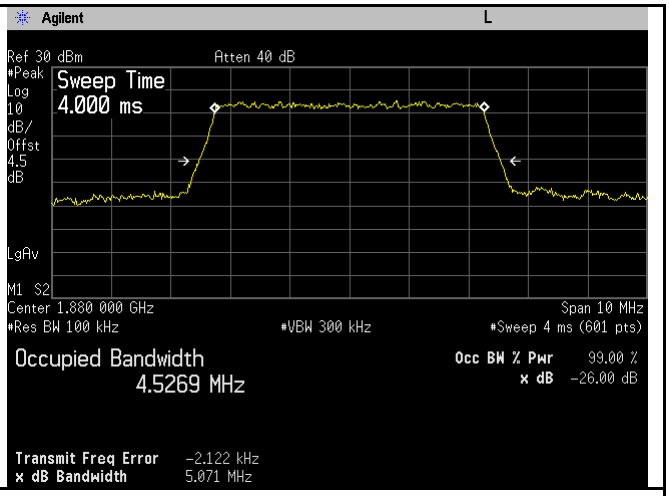
LTE Band II - High CH QPSK-3



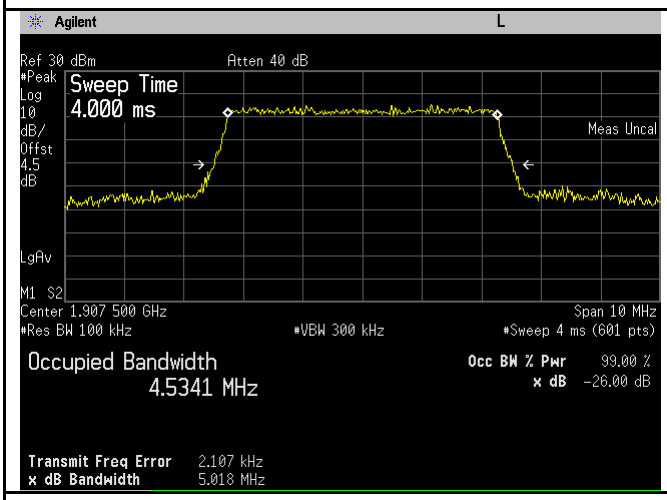
LTE Band II - High CH 16QAM-3



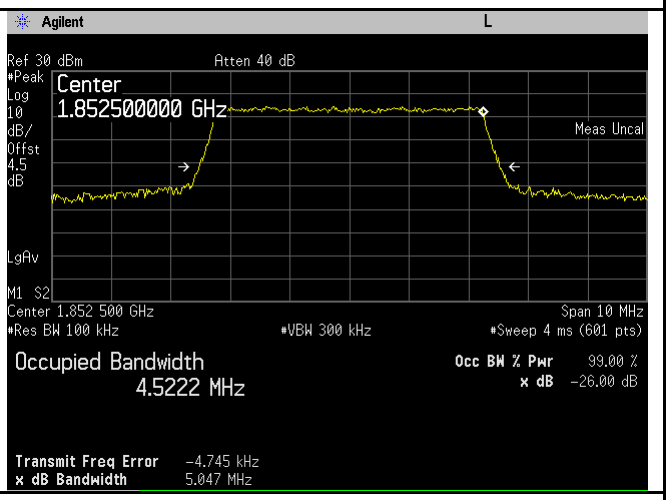
LTE Band II - Low CH QPSK-5



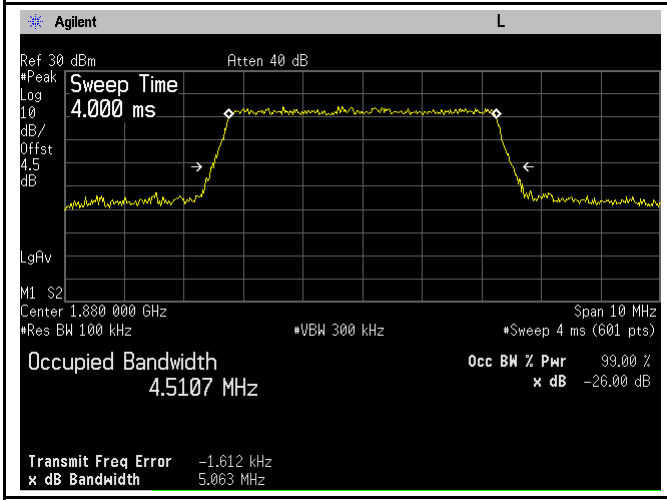
LTE Band II - Low CH 16QAM-5



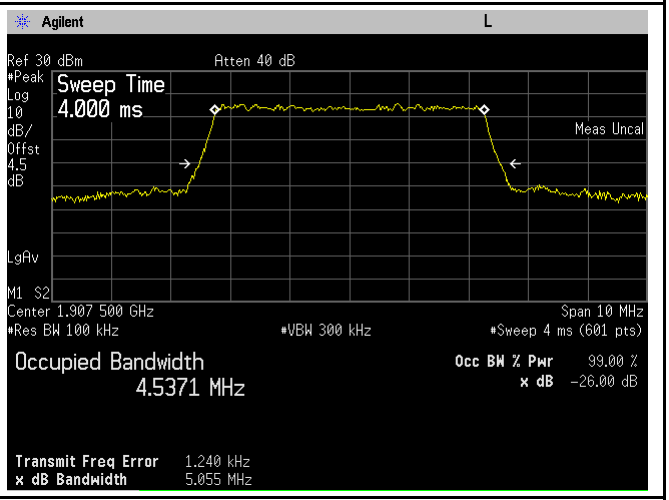
LTE Band II - Middle CH QPSK-5



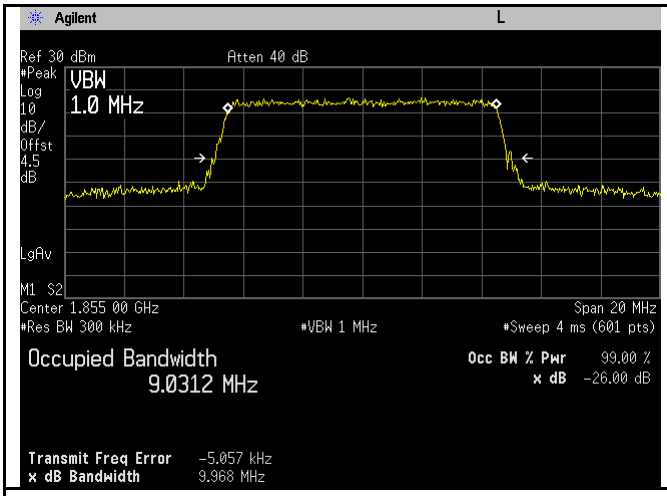
LTE Band II - Middle CH 16QAM-5



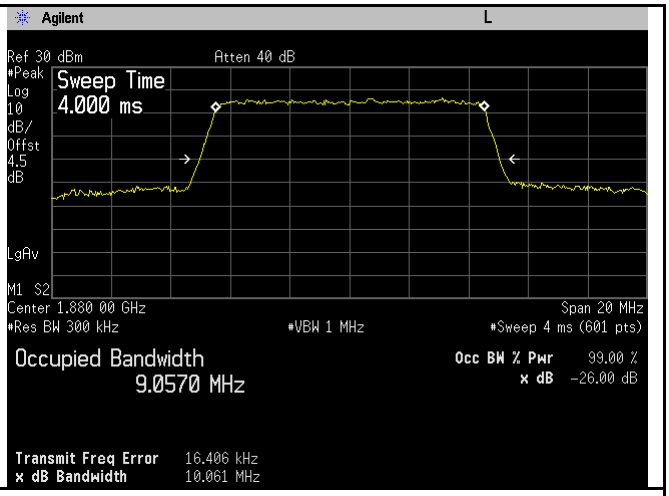
LTE Band II - High CH QPSK-5



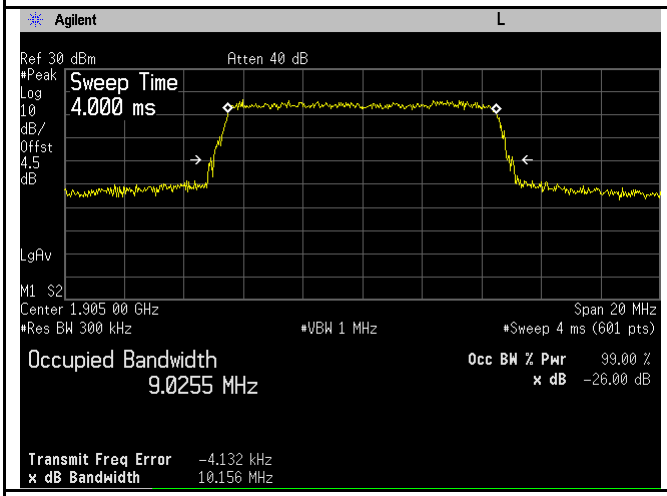
LTE Band II - High CH 16QAM-5



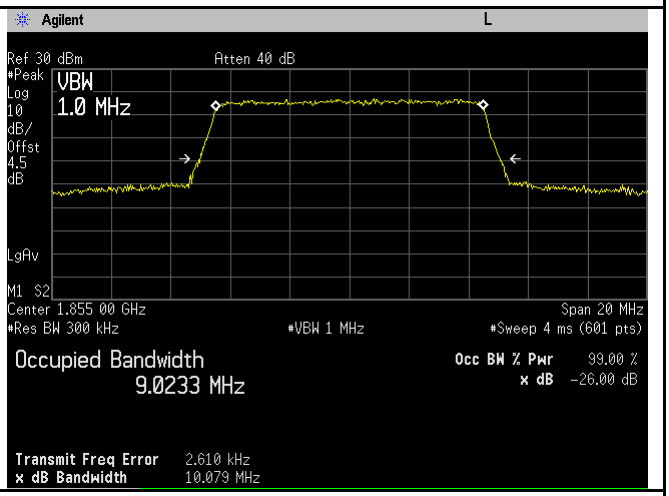
LTE Band II - Low CH QPSK-10



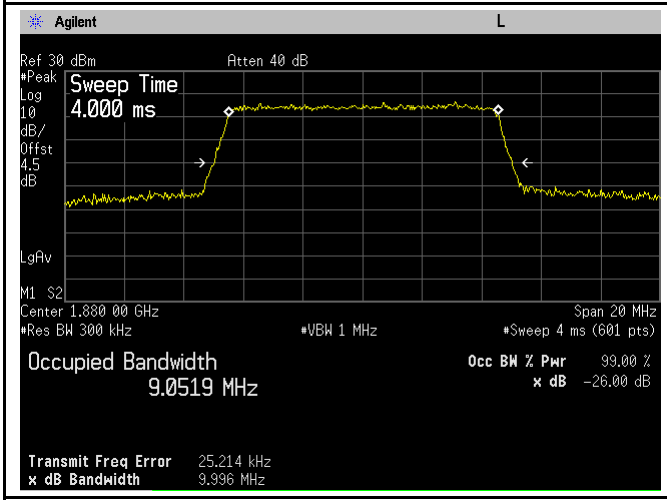
LTE Band II - Low CH 16QAM-10



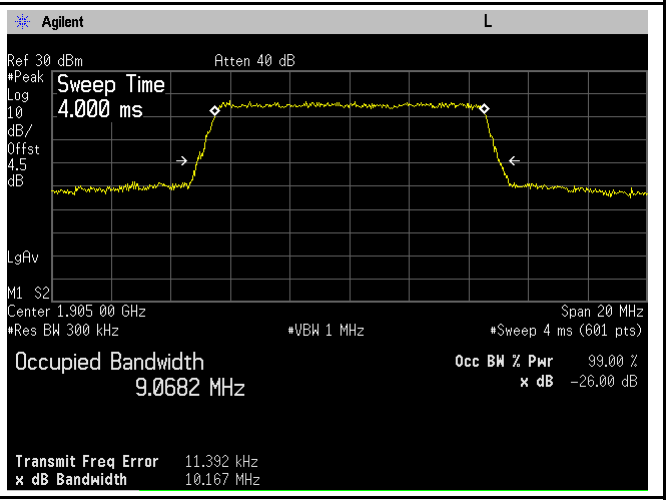
LTE Band II - Middle CH QPSK-10



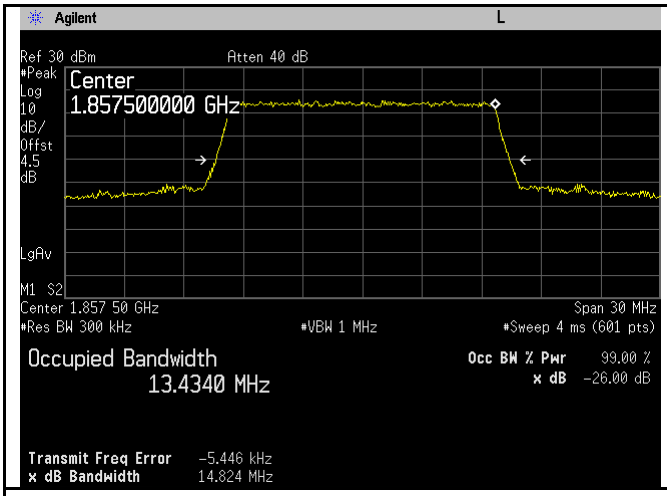
LTE Band II - Middle CH 16QAM-10



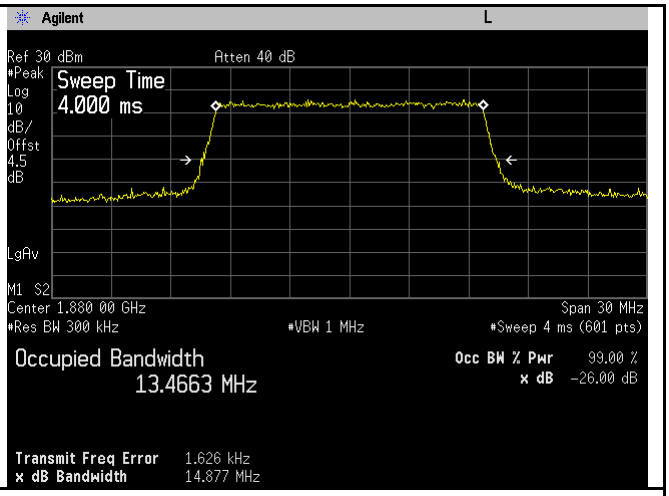
LTE Band II - High CH QPSK-10



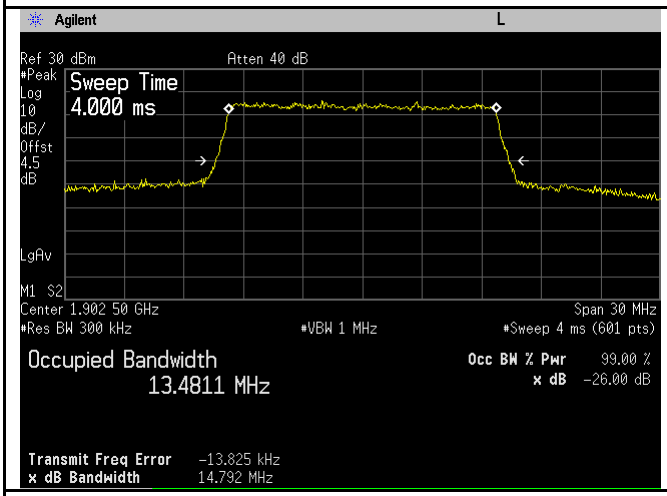
LTE Band II - High CH 16QAM-10



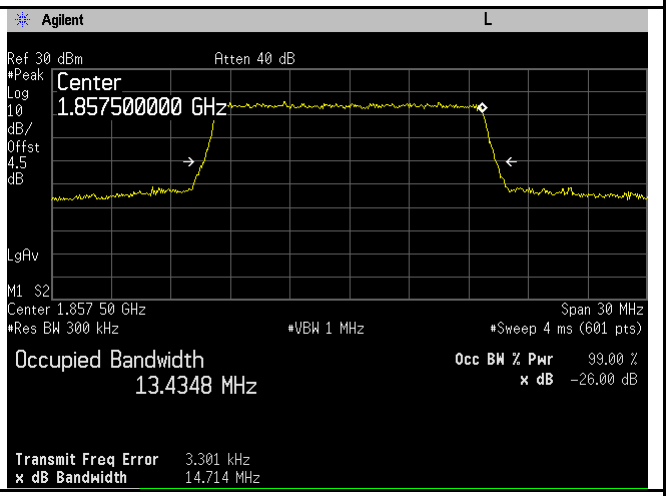
LTE Band II - Low CH QPSK-15



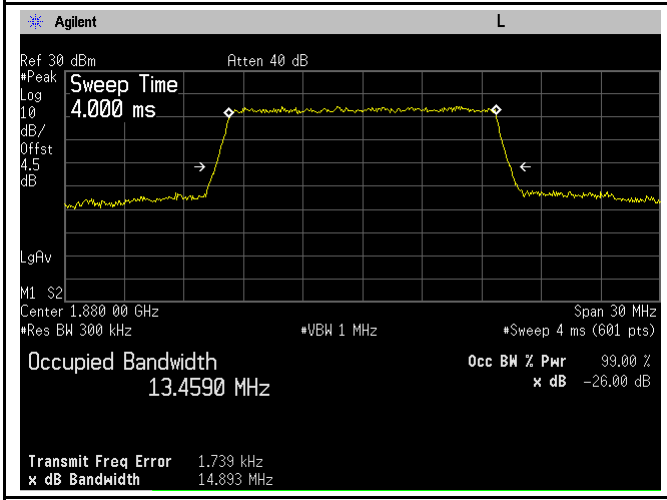
LTE Band II - Low CH 16QAM-15



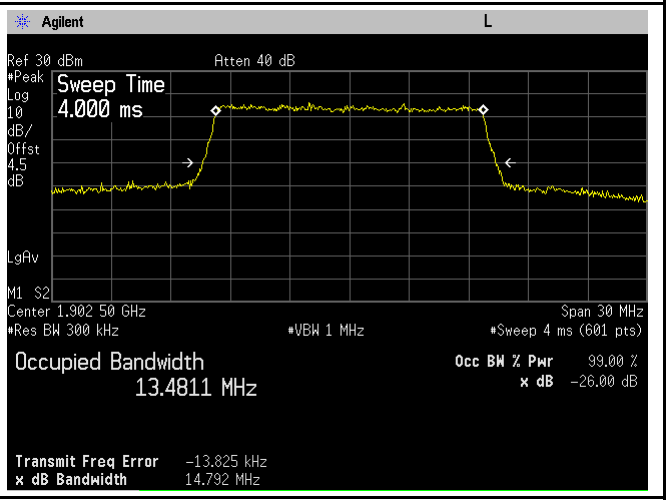
LTE Band II - Middle CH QPSK-15



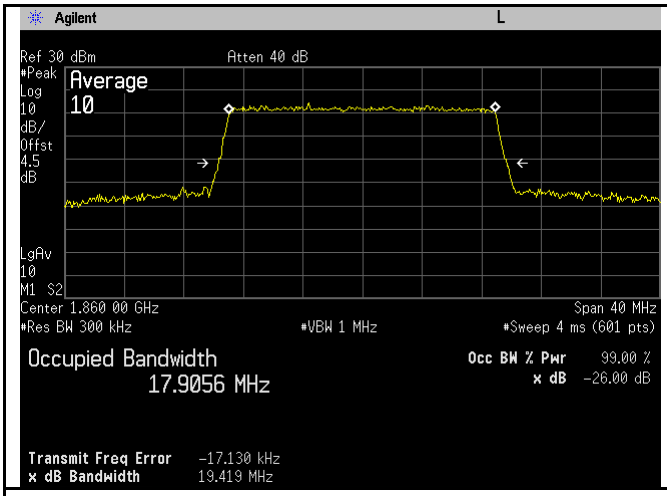
LTE Band II - Middle CH 16QAM-15



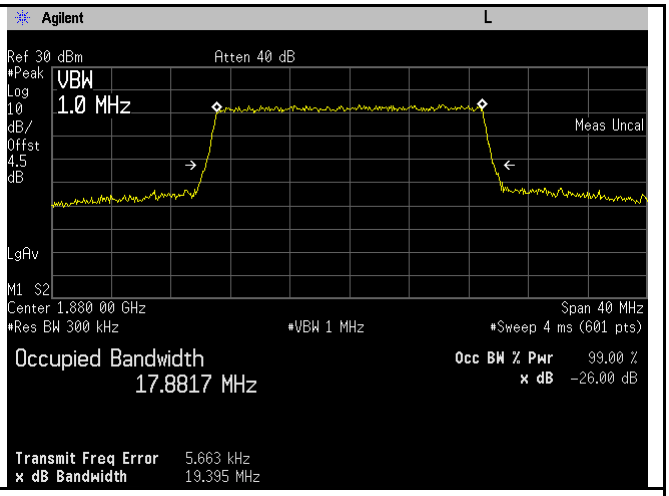
LTE Band II - High CH QPSK-15



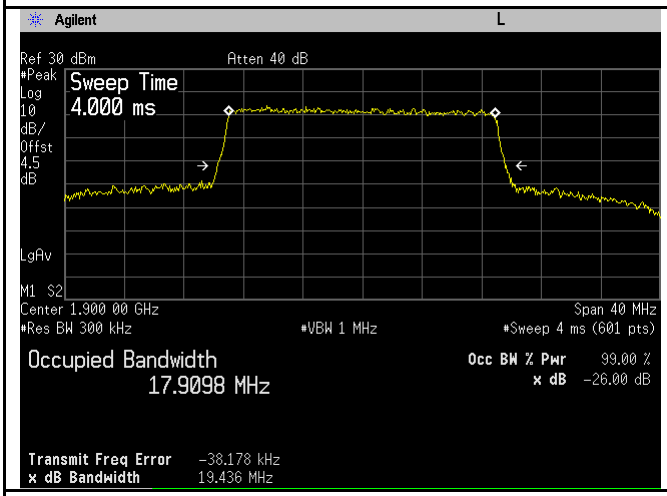
LTE Band II - High CH 16QAM-15



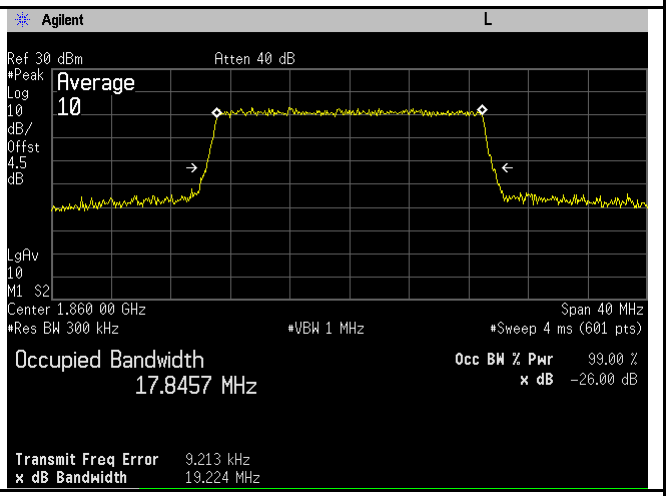
LTE Band II - Low CH QPSK-20



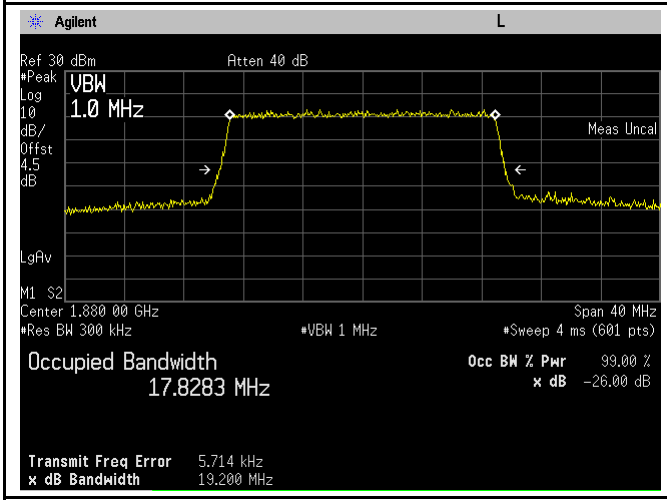
LTE Band II - Low CH 16QAM-20



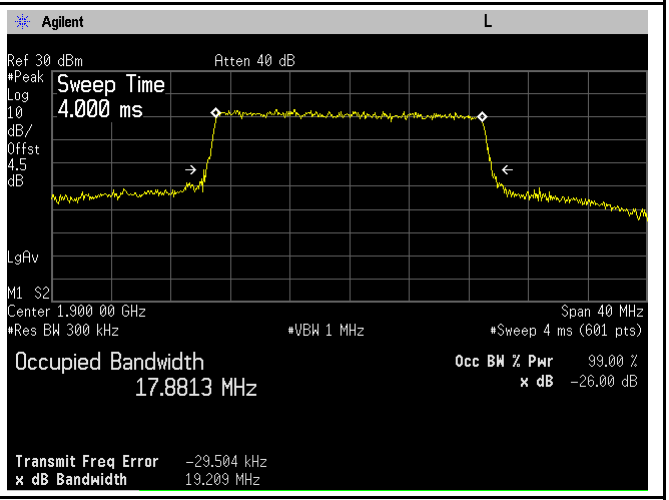
LTE Band II - Middle CH QPSK-20



LTE Band II - Middle CH 16QAM-20

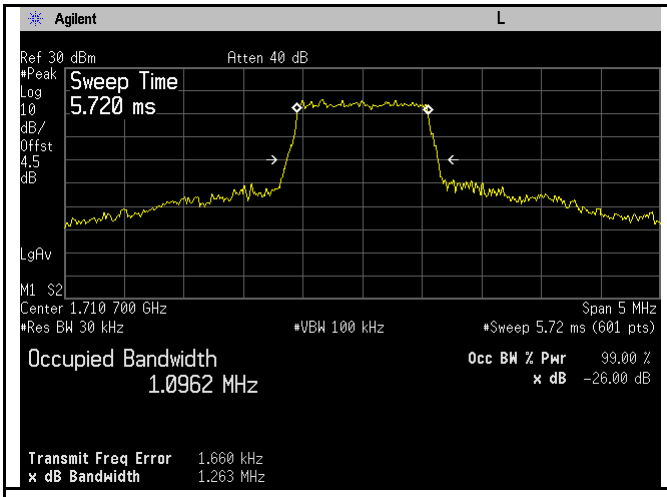


LTE Band II - High CH QPSK-20

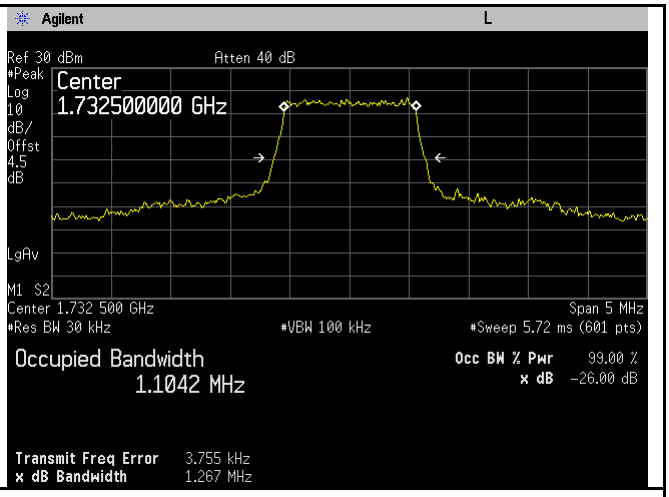


LTE Band II - High CH 16QAM-20

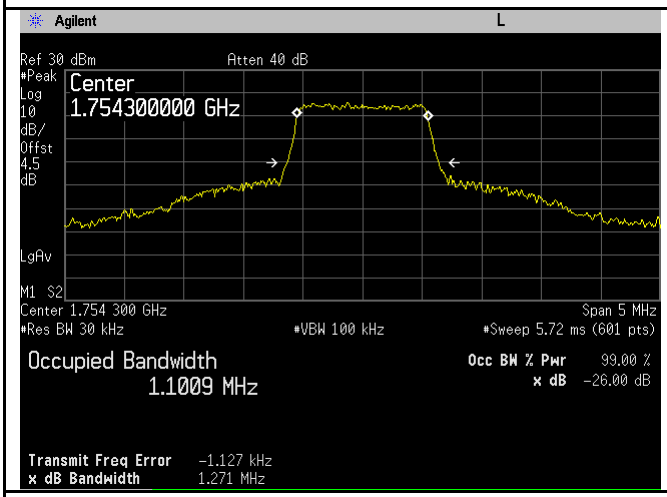
LTE Band IV (Part 27)



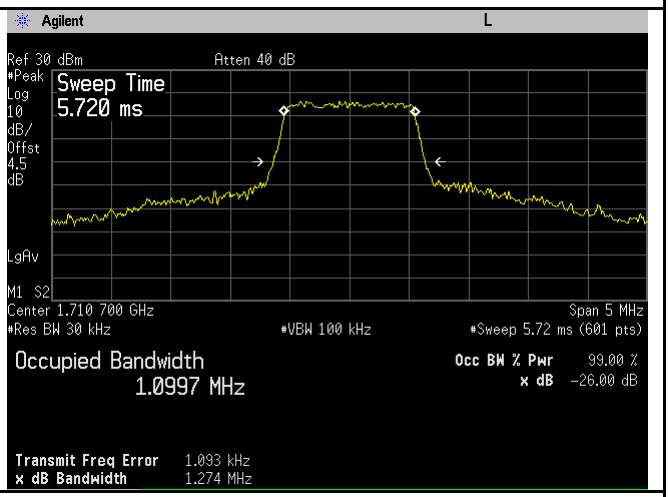
LTE Band IV - Low CH QPSK-1.4



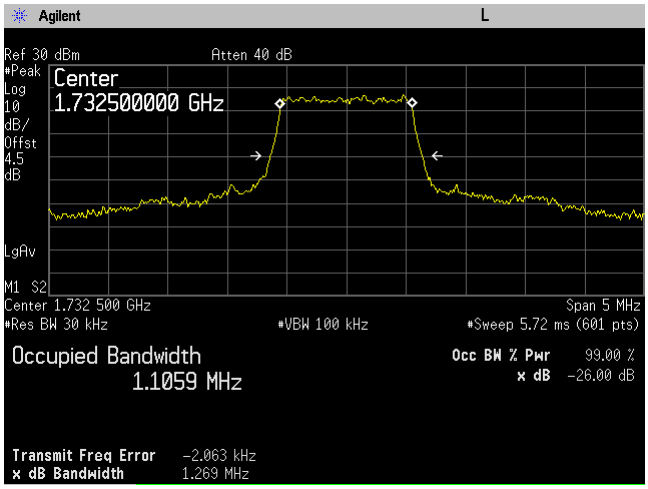
LTE Band IV - Low CH 16QAM-1.4



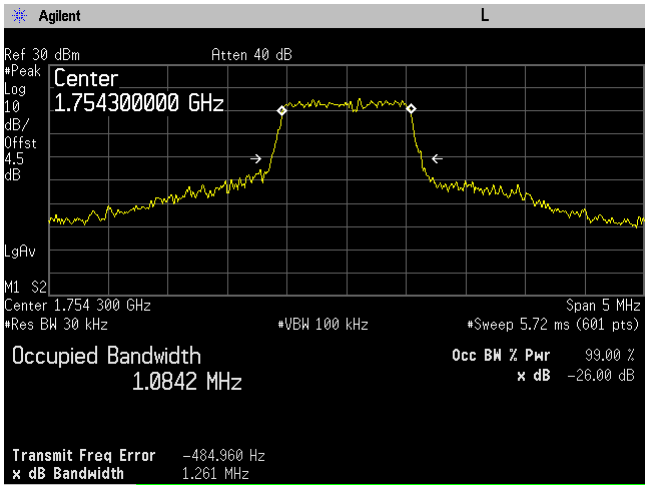
LTE Band IV - Middle CH QPSK-1.4



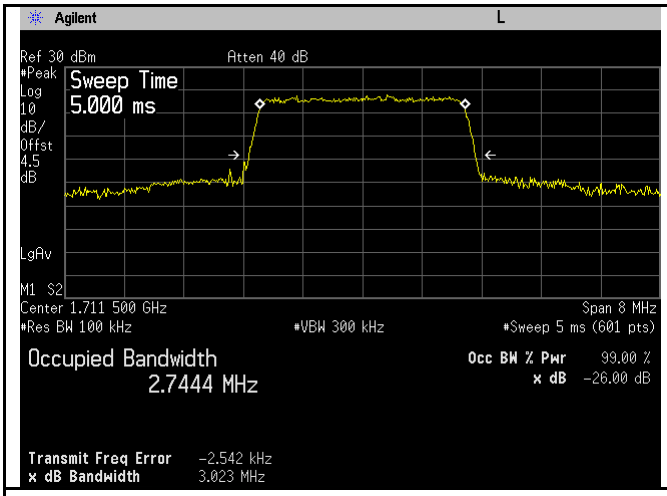
LTE Band IV - Middle CH 16QAM-1.4



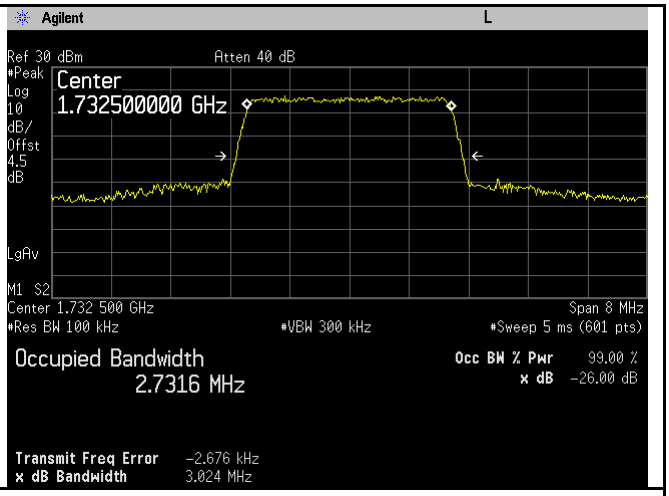
LTE Band IV - High CH QPSK-1.4



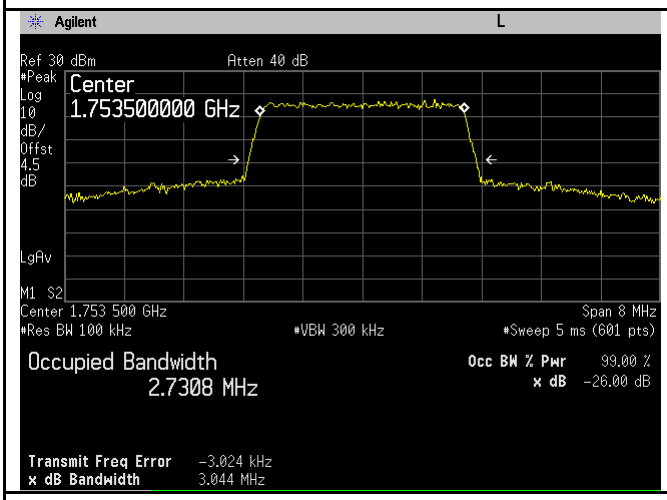
LTE Band IV - High CH 16QAM-1.4



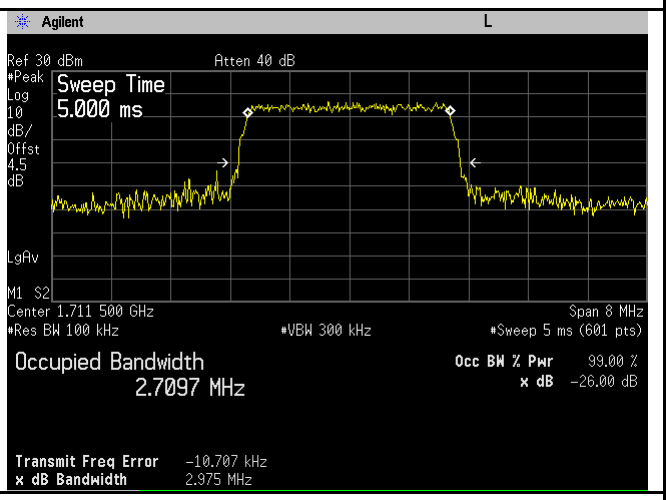
LTE Band IV - Low CH QPSK-3



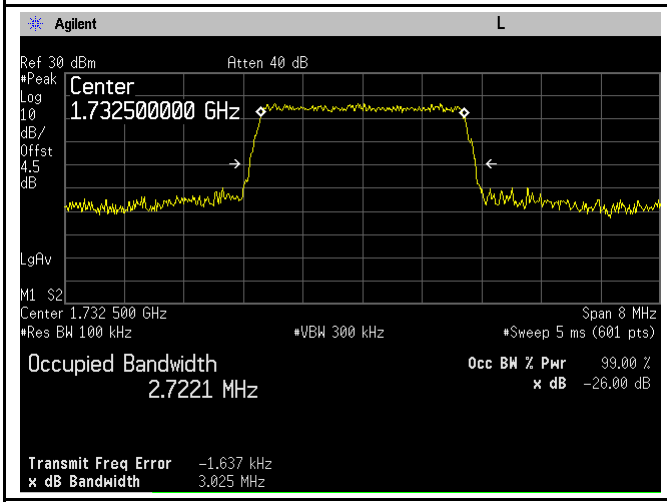
LTE Band IV - Low CH 16QAM-3



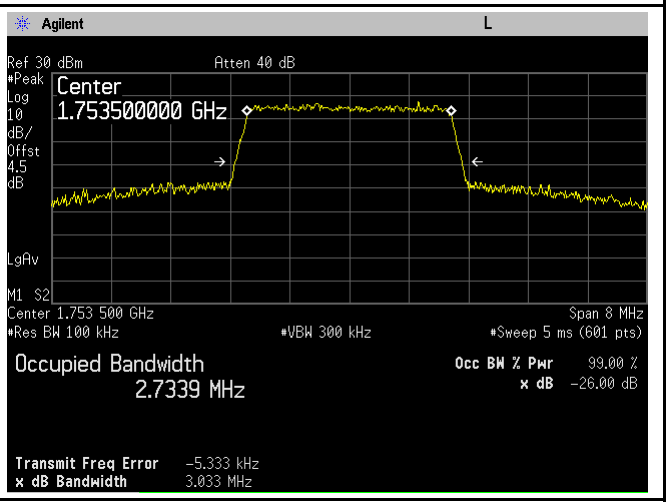
LTE Band IV - Middle CH QPSK-3



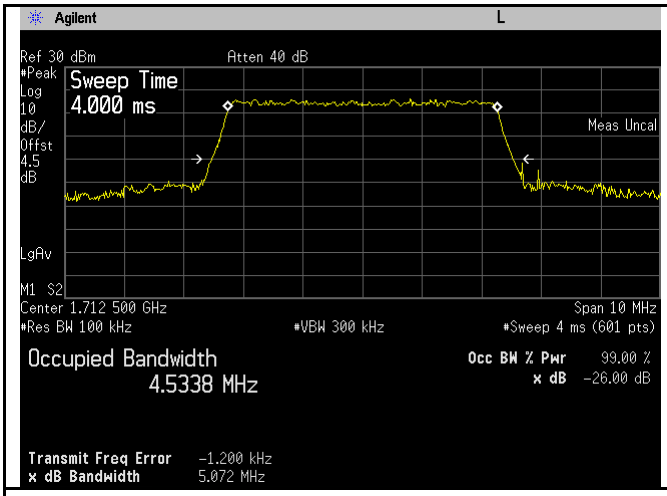
LTE Band IV - Middle CH 16QAM-3



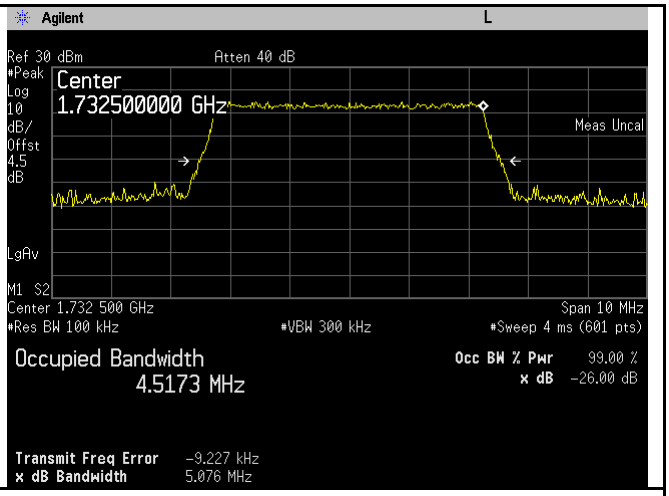
LTE Band IV - High CH QPSK-3



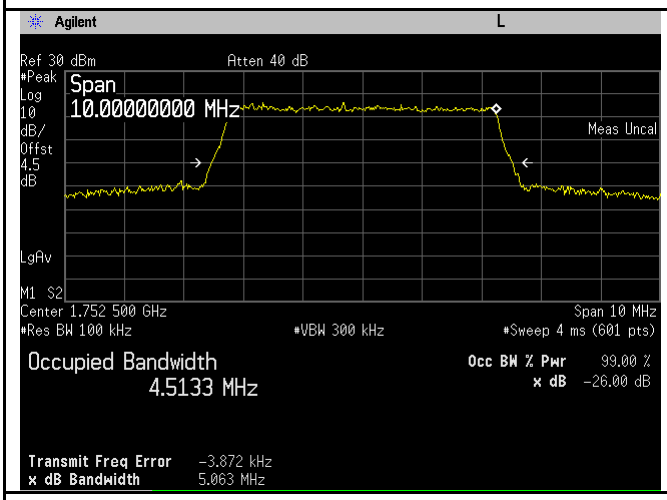
LTE Band IV - High CH 16QAM-3



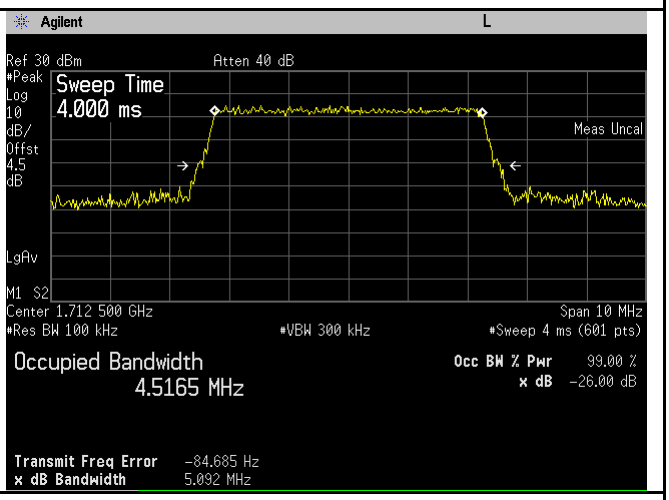
LTE Band IV - Low CH QPSK-5



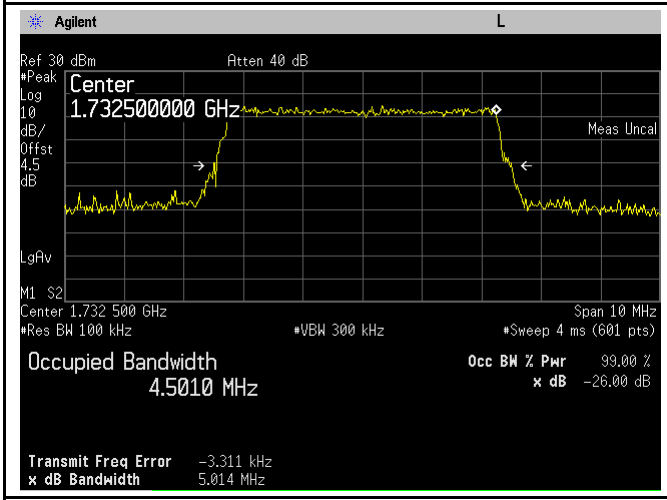
LTE Band IV - Low CH 16QAM-5



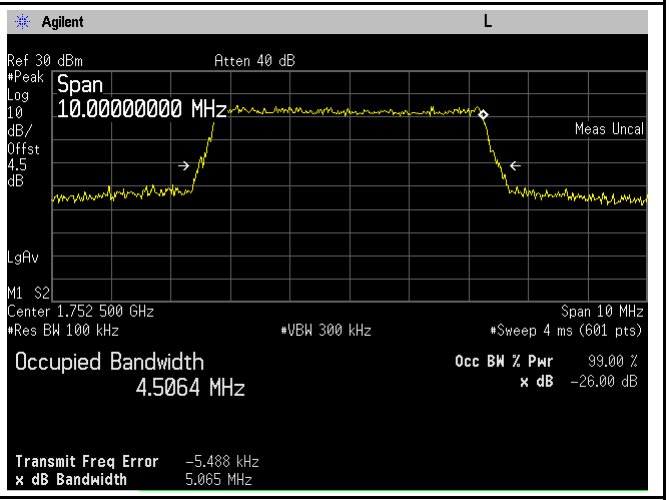
LTE Band IV - Middle CH QPSK-5



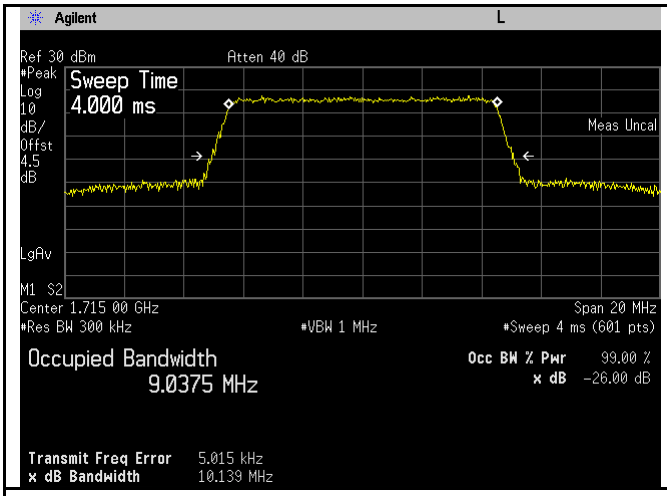
LTE Band IV - Middle CH 16QAM-5



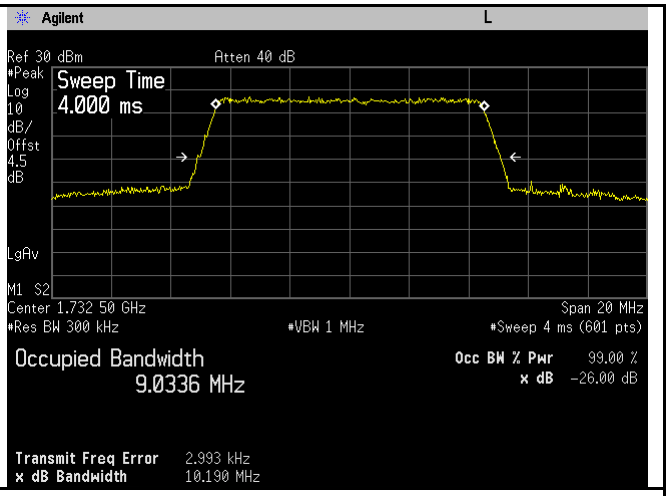
LTE Band IV - High CH QPSK-5



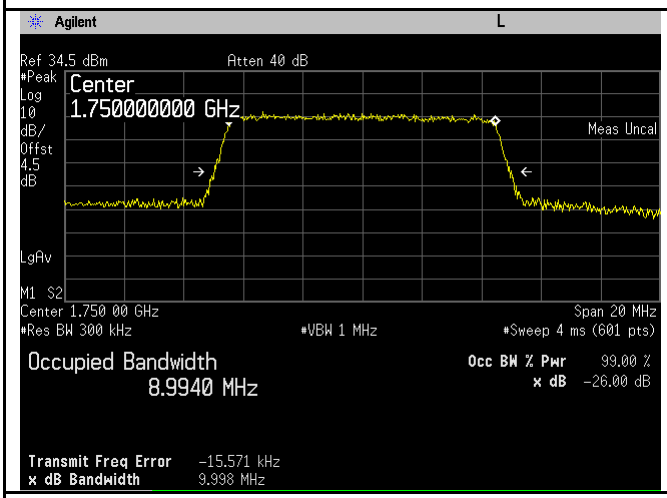
LTE Band IV - High CH 16QAM-5



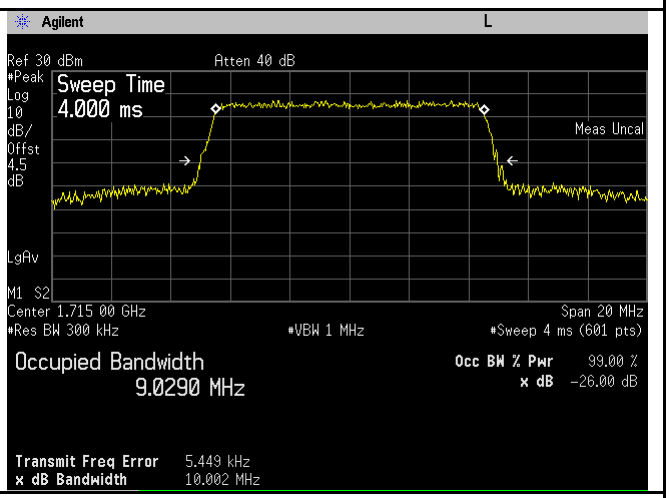
LTE Band IV - Low CH QPSK-10



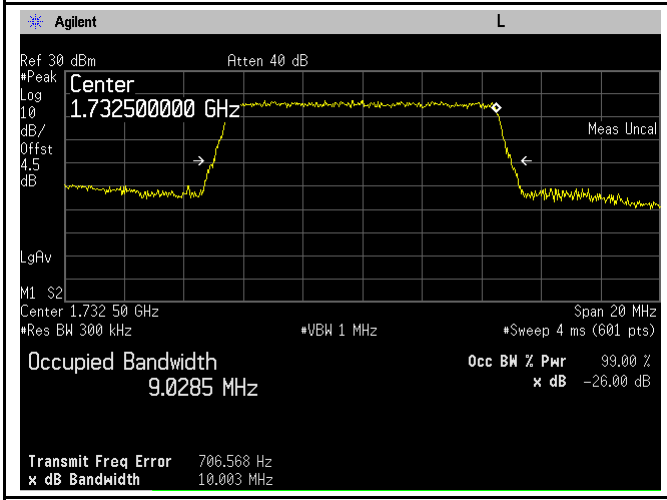
LTE Band IV - Low CH 16QAM-10



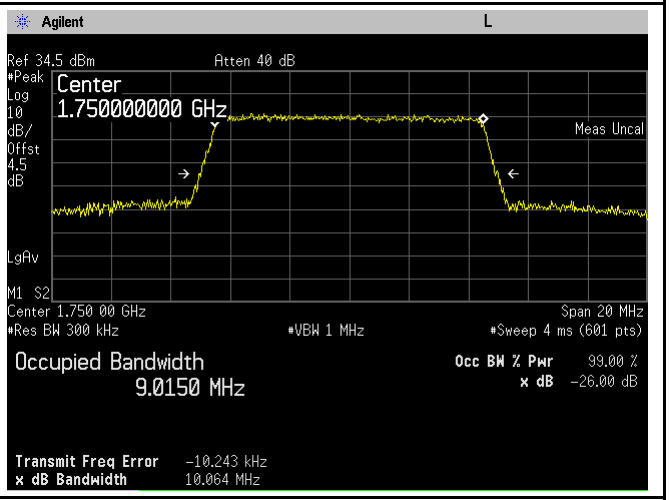
LTE Band IV - Middle CH QPSK-10



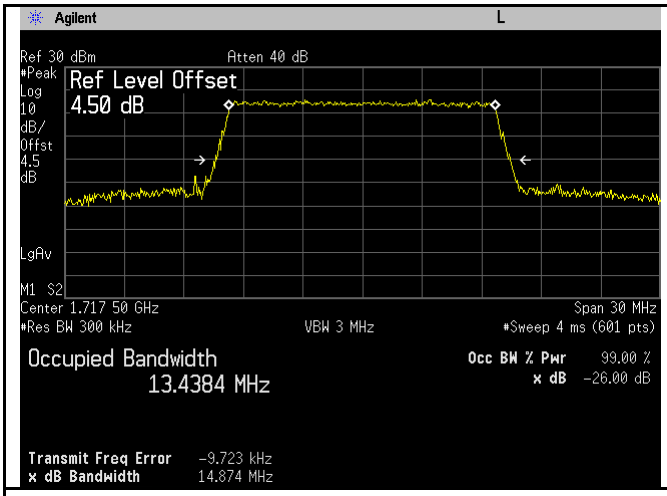
LTE Band IV - Middle CH 16QAM-10



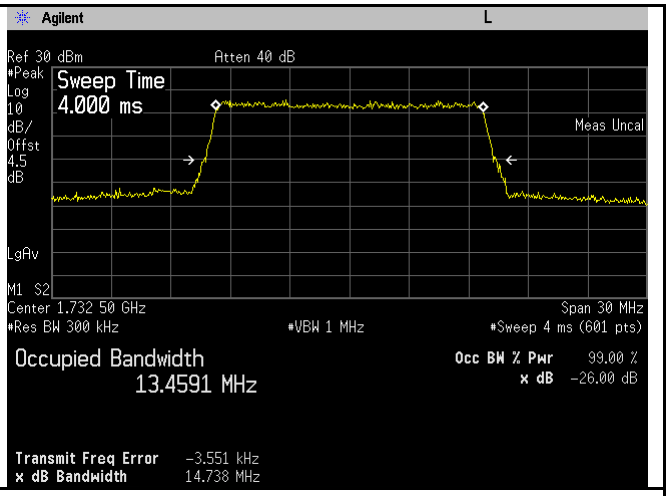
LTE Band IV - High CH QPSK-10



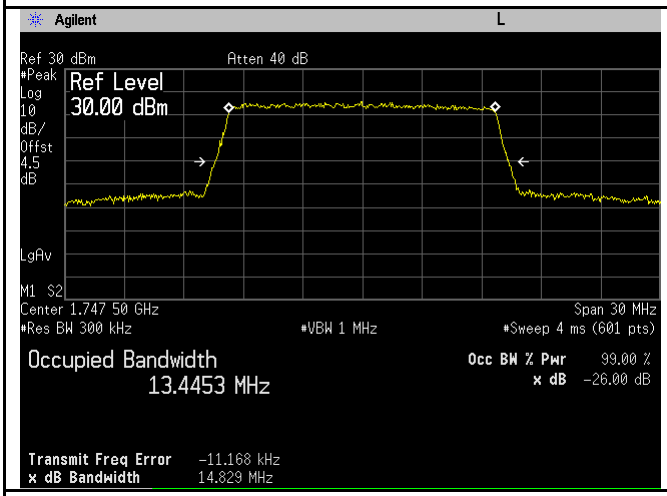
LTE Band IV - High CH 16QAM-10



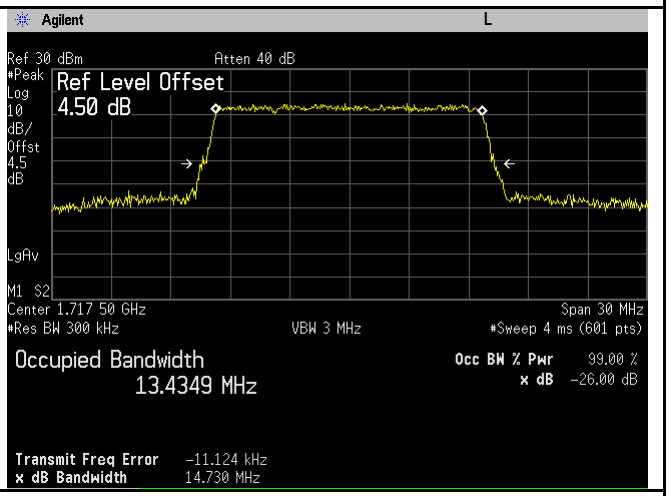
LTE Band IV - Low CH QPSK-15



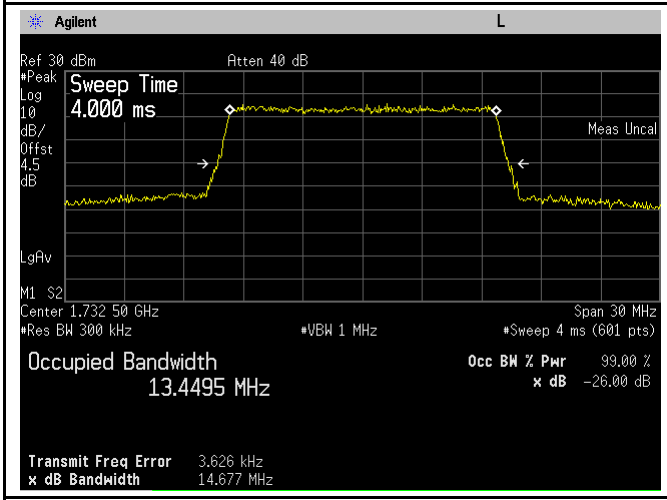
LTE Band IV - Low CH 16QAM-15



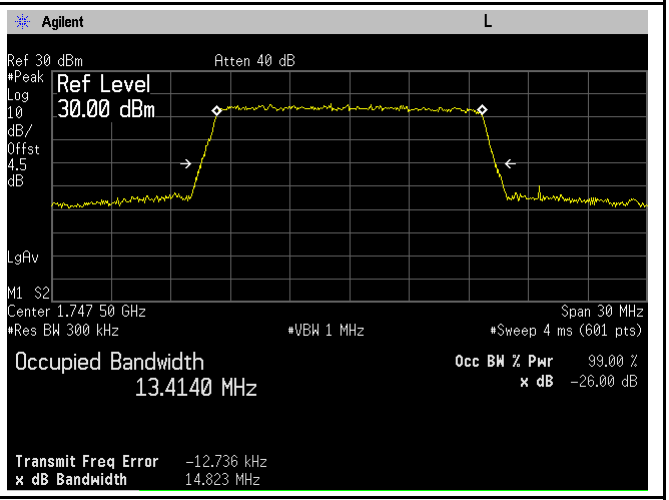
LTE Band IV - Middle CH QPSK-15



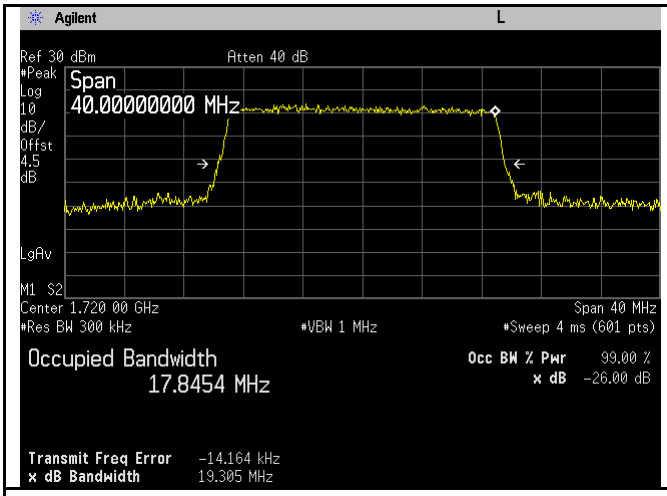
LTE Band IV - Middle CH 16QAM-15



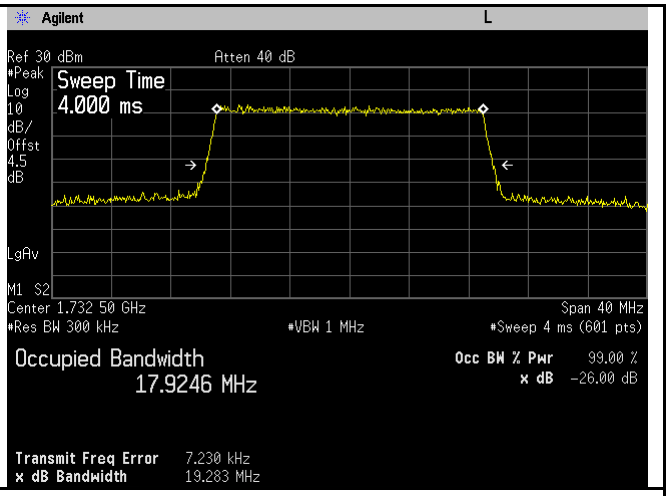
LTE Band IV - High CH QPSK-15



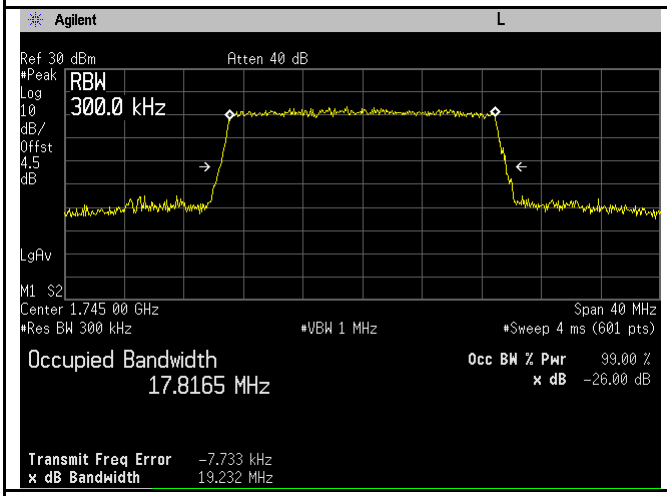
LTE Band IV - High CH 16QAM-15



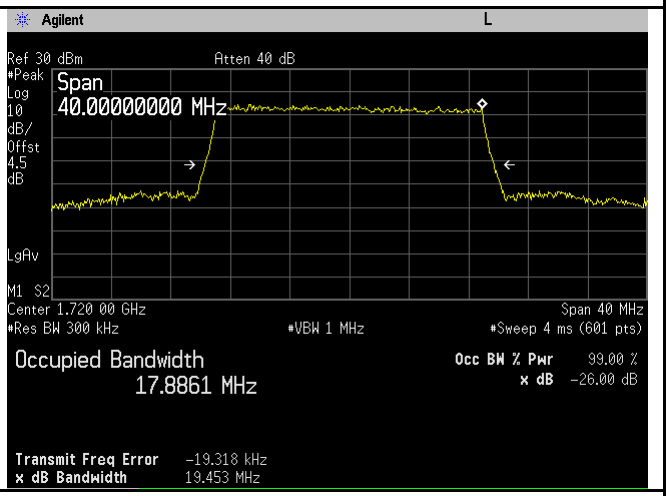
LTE Band IV - Low CH QPSK-20



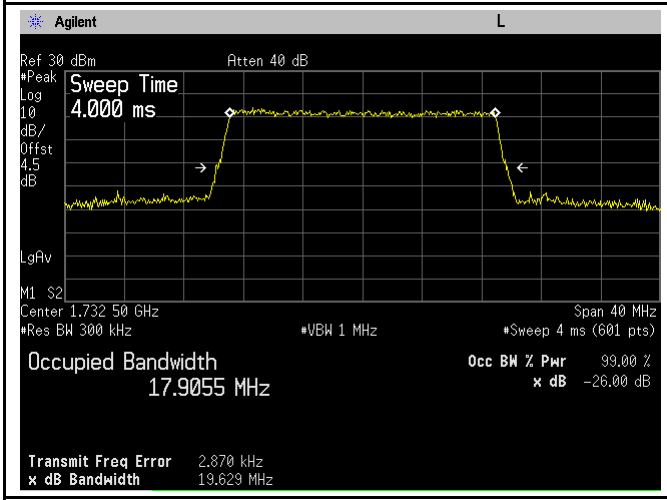
LTE Band IV - Low CH 16QAM-20



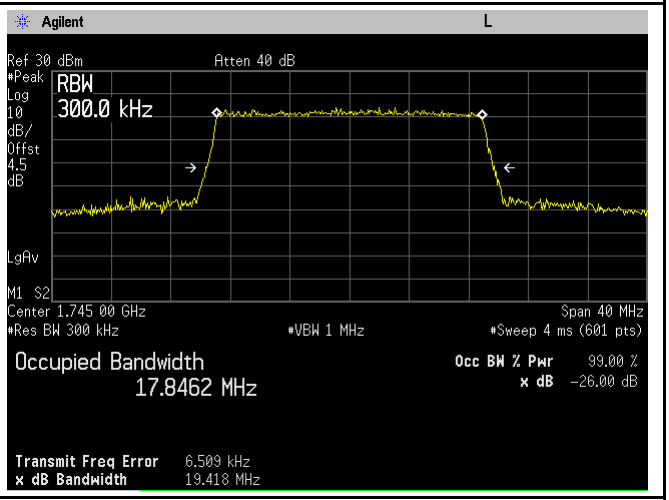
LTE Band IV - Middle CH QPSK-20



LTE Band IV - Middle CH 16QAM-20

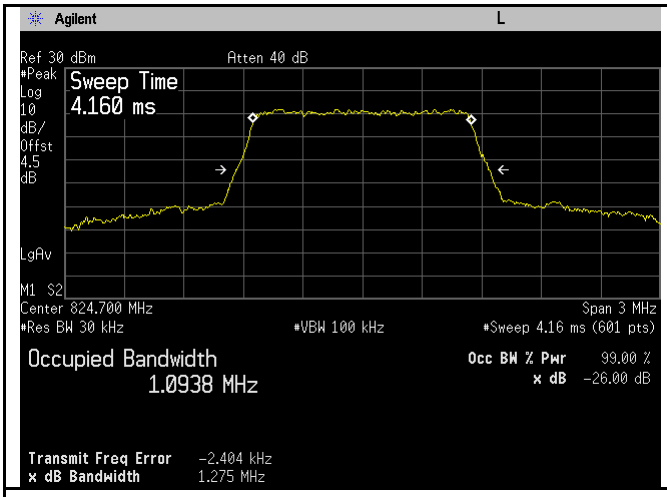


LTE Band IV - High CH QPSK-20

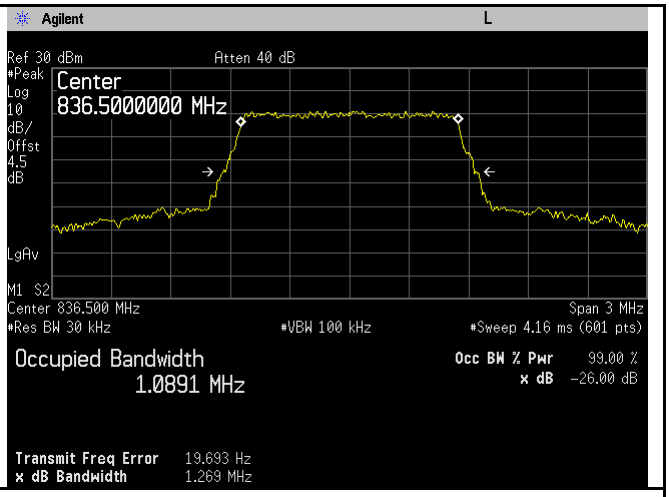


LTE Band IV - High CH 16QAM-20

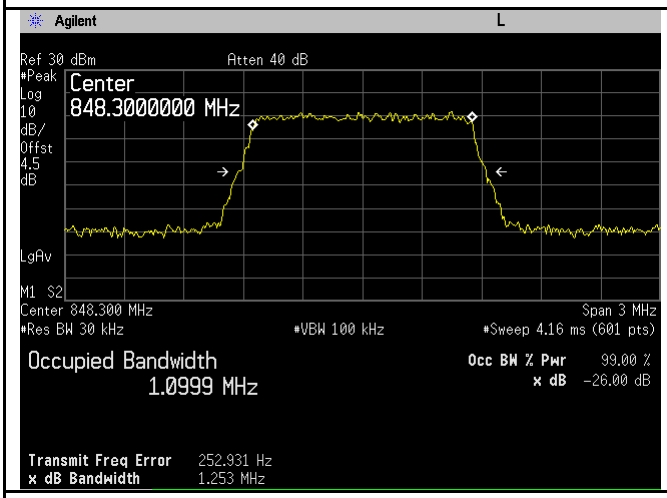
LTE Band V (Part 22H)



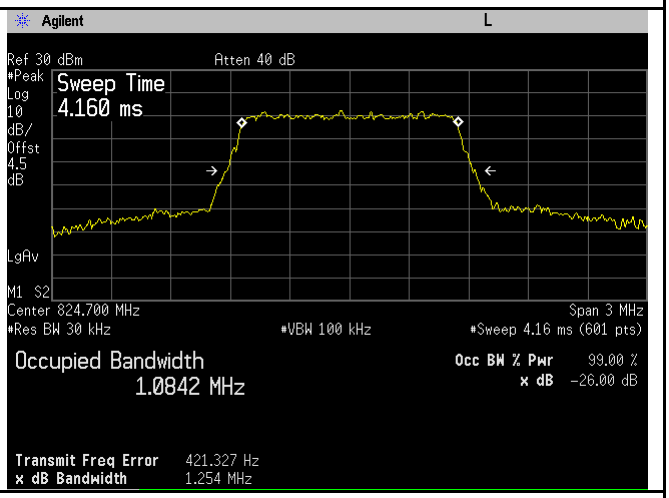
LTE Band V - Low CH QPSK-1.4



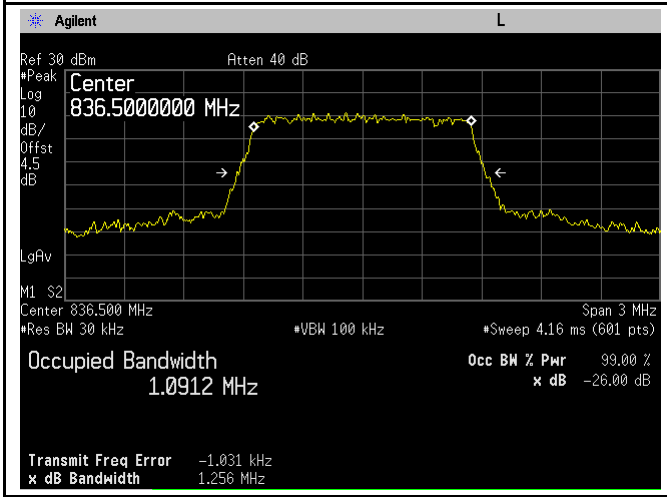
LTE Band V - Low CH 16QAM-1.4



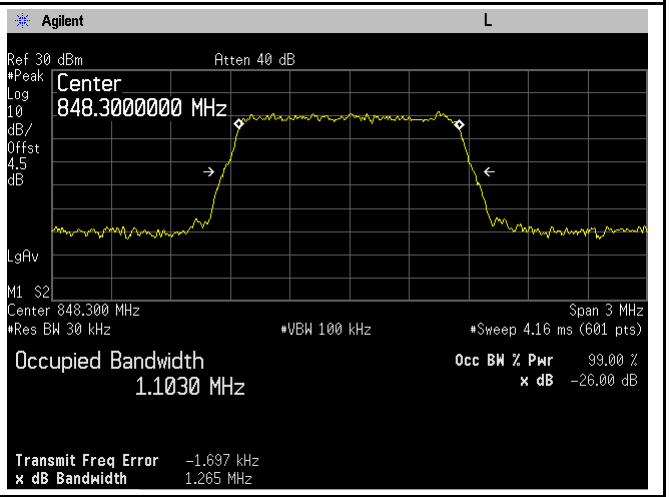
LTE Band V - Middle CH QPSK-1.4



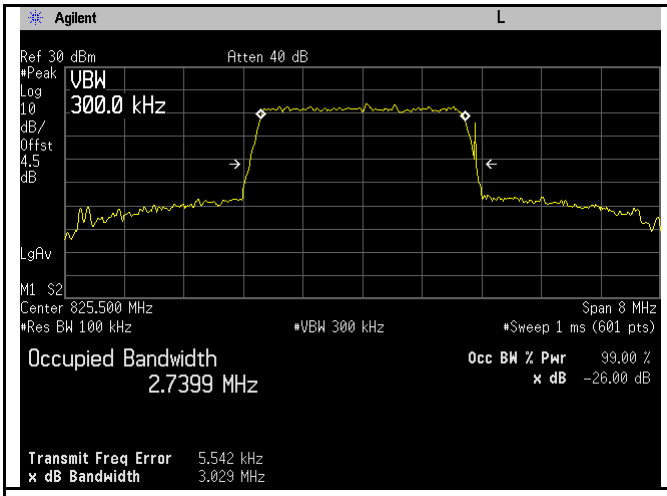
LTE Band V - Middle CH 16QAM-1.4



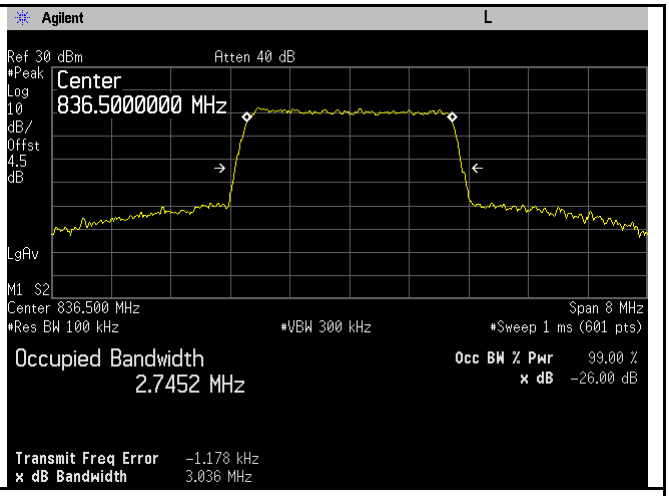
LTE Band V - High CH QPSK-1.4



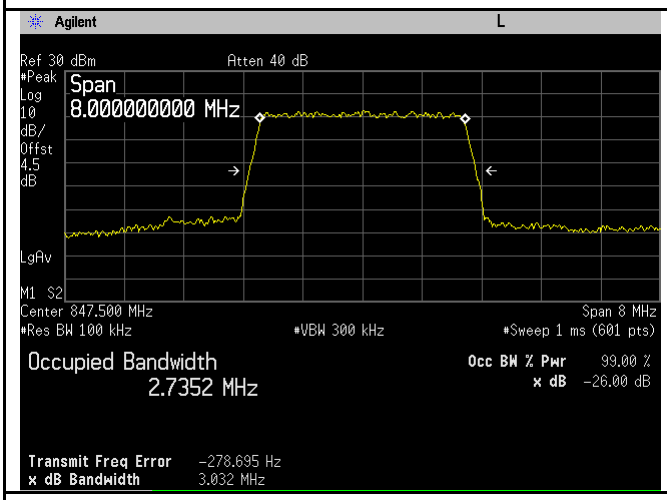
LTE Band V - High CH 16QAM-1.4



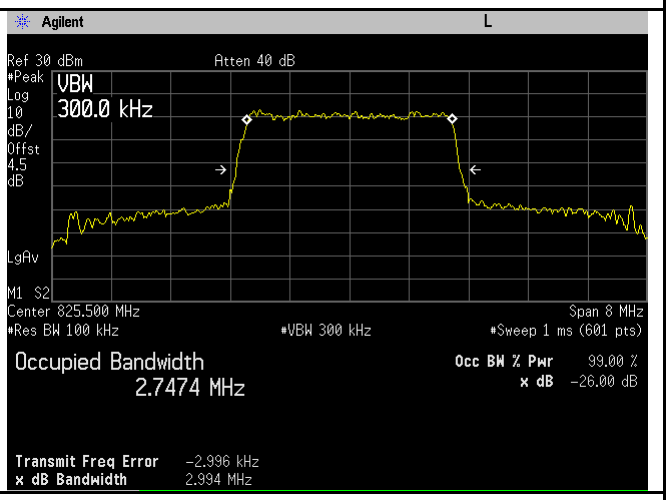
LTE Band V - Low CH QPSK-3



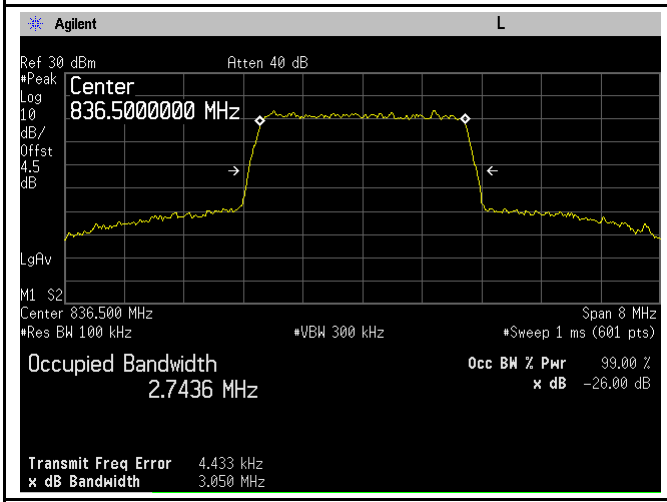
LTE Band V - Low CH 16QAM-3



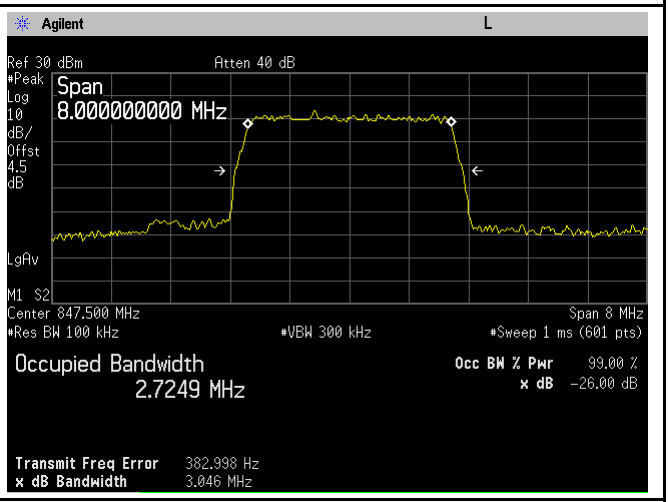
LTE Band V - Middle CH QPSK-3



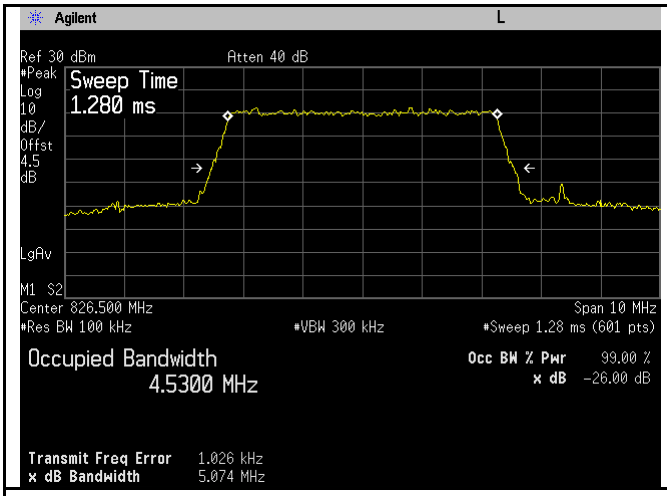
LTE Band V - Middle CH 16QAM-3



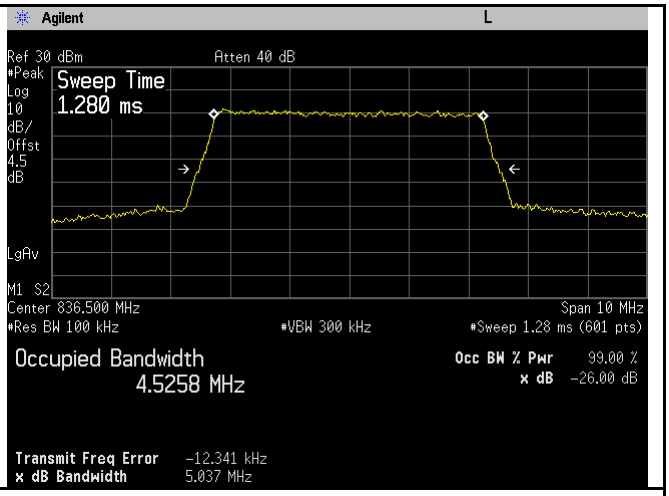
LTE Band V - High CH QPSK-3



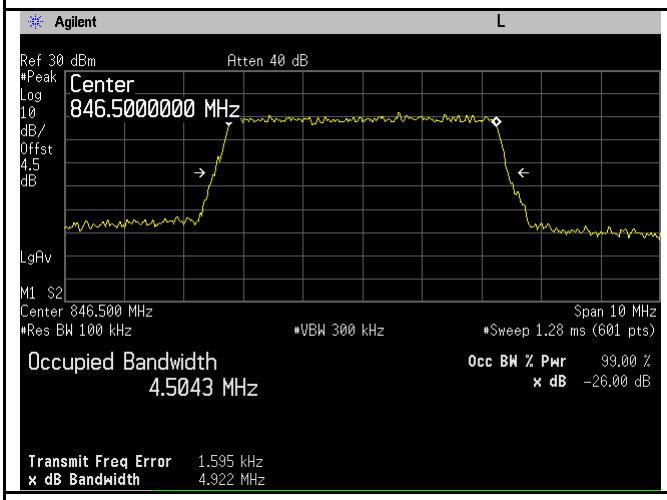
LTE Band V - High CH 16QAM-3



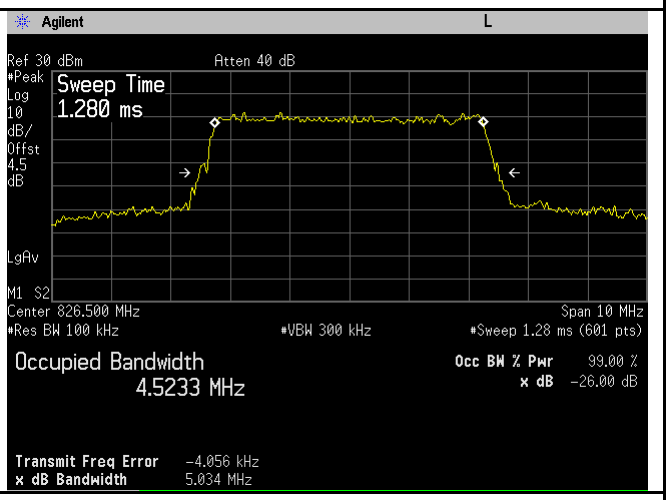
LTE Band V - Low CH QPSK-5



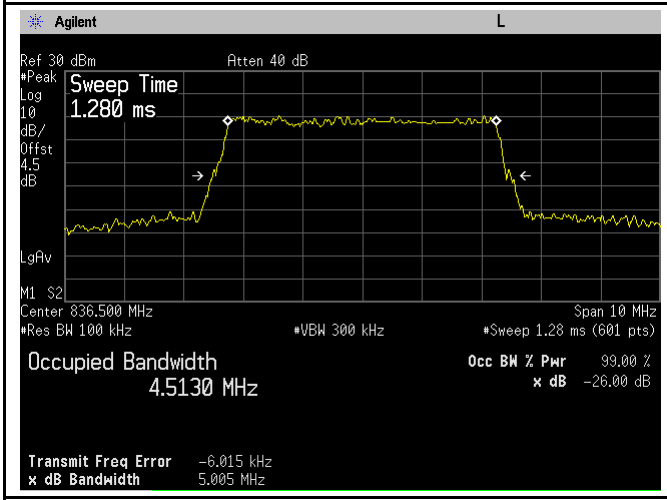
LTE Band V - Low CH 16QAM-5



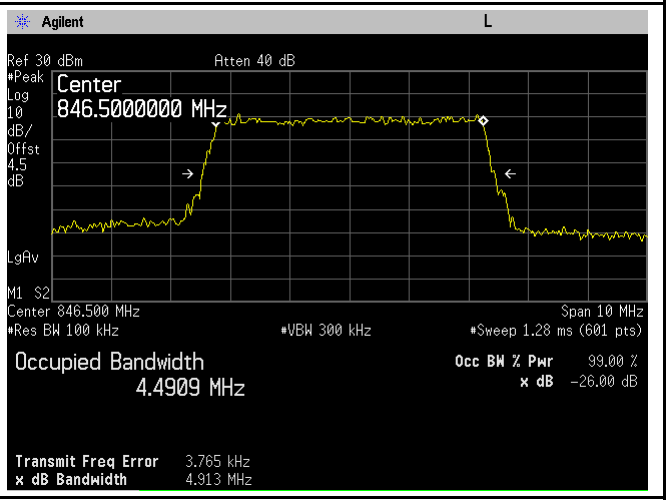
LTE Band V - Middle CH QPSK-5



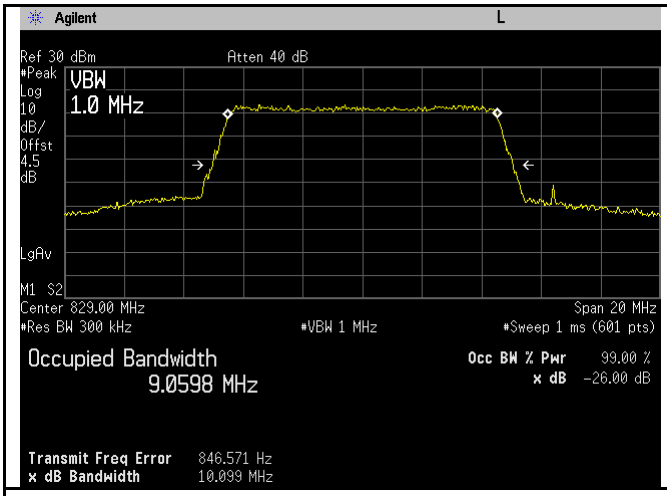
LTE Band V - Middle CH 16QAM-5



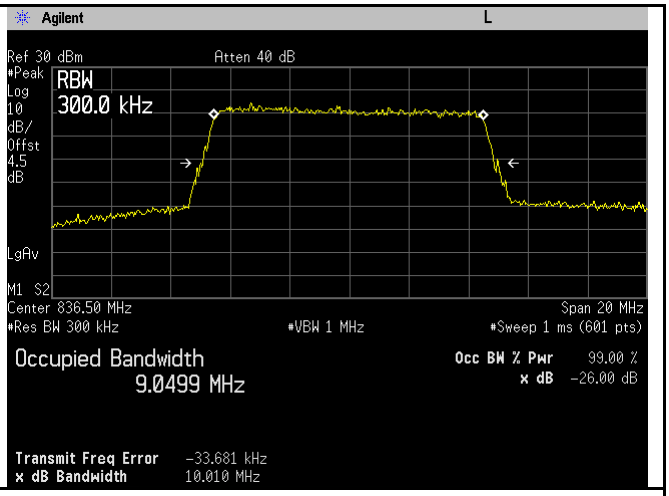
LTE Band V - High CH QPSK-5



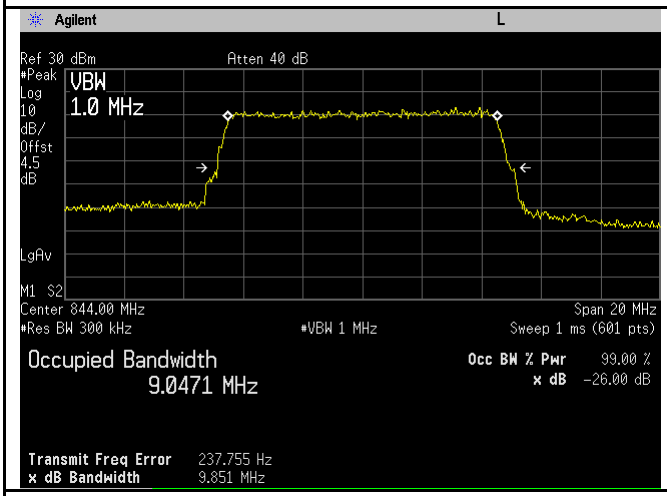
LTE Band V - High CH 16QAM-5



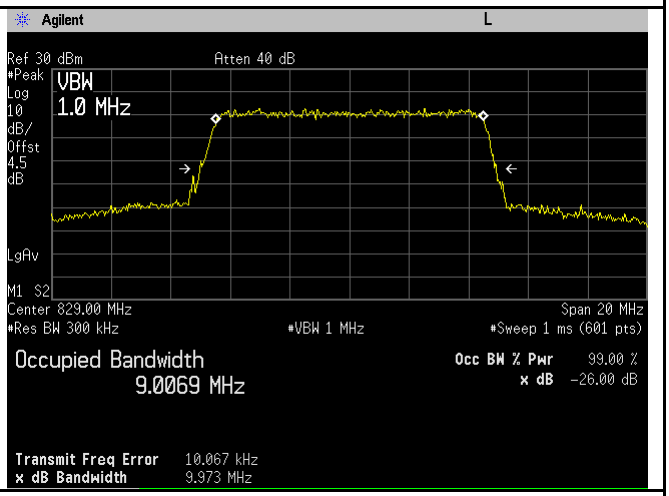
LTE Band V - Low CH QPSK-10



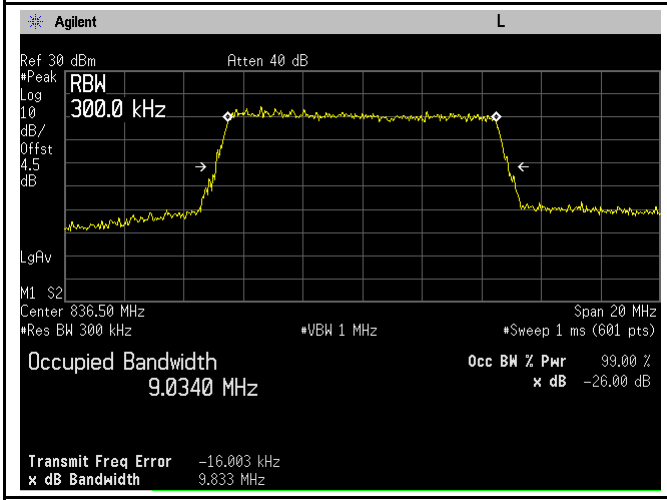
LTE Band V - Low CH 16QAM-10



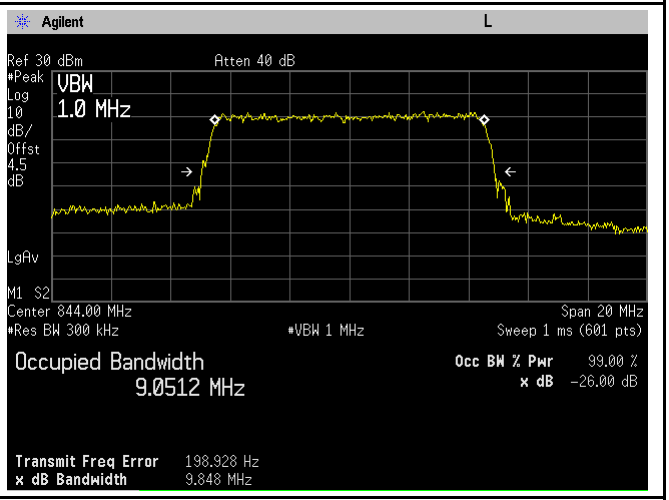
LTE Band V - Middle CH QPSK-10



LTE Band V - Middle CH 16QAM-10

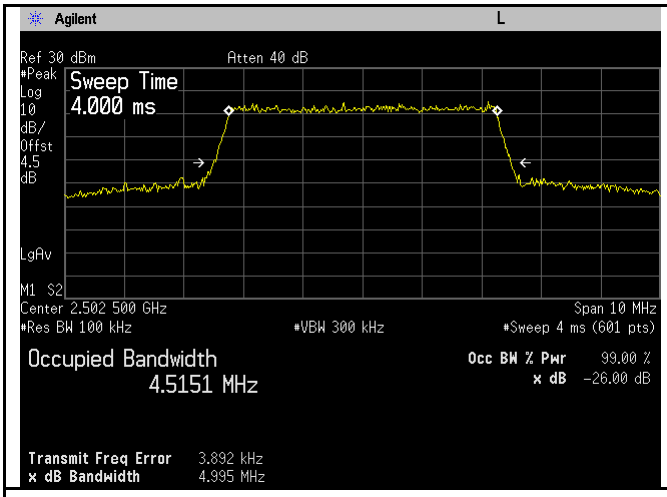


LTE Band V - High CH QPSK-10

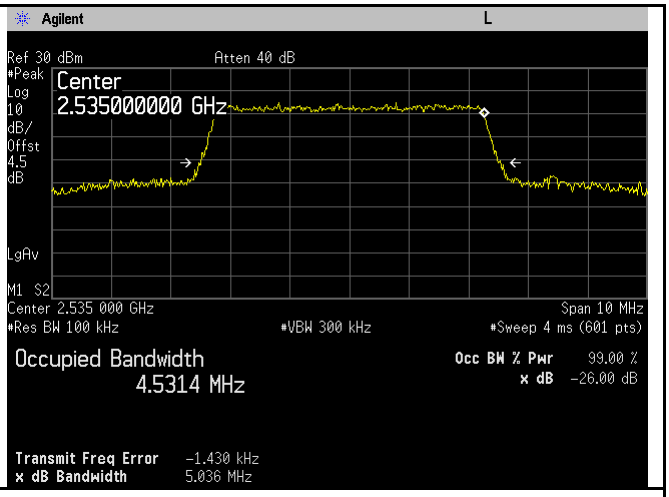


LTE Band V - High CH 16QAM-10

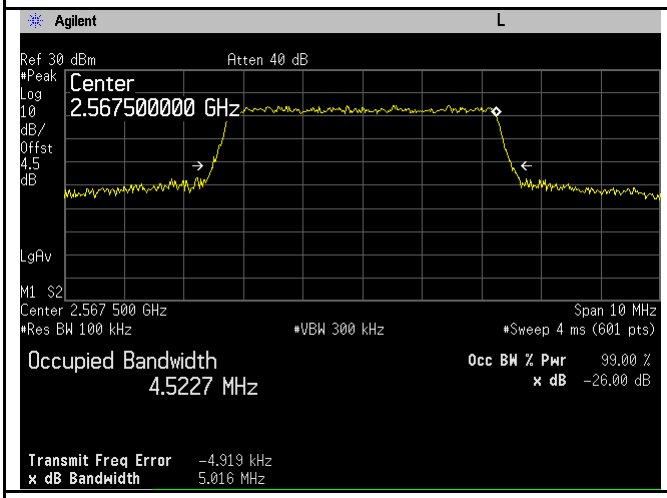
LTE Band VII (Part 27)



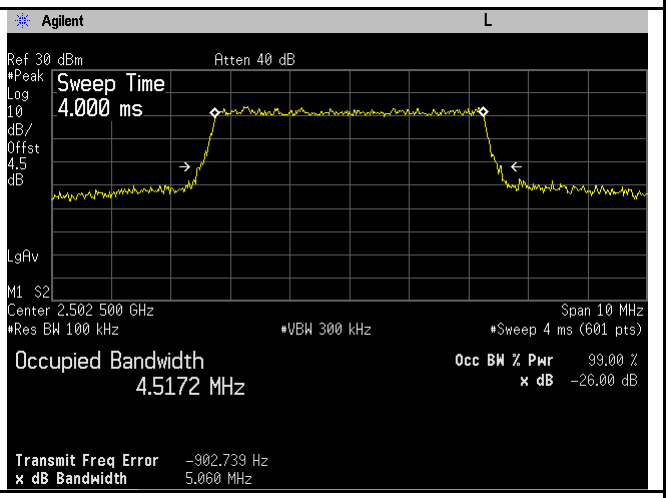
LTE Band VII - Low CH QPSK-5



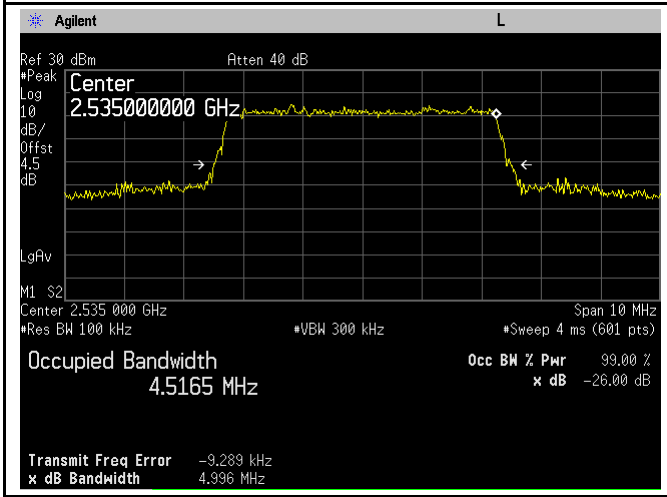
LTE Band VII - Low CH 16QAM-5



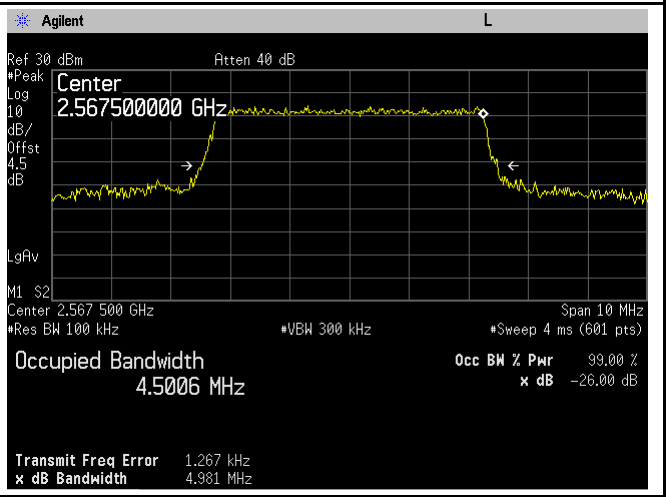
LTE Band VII - Middle CH QPSK-5



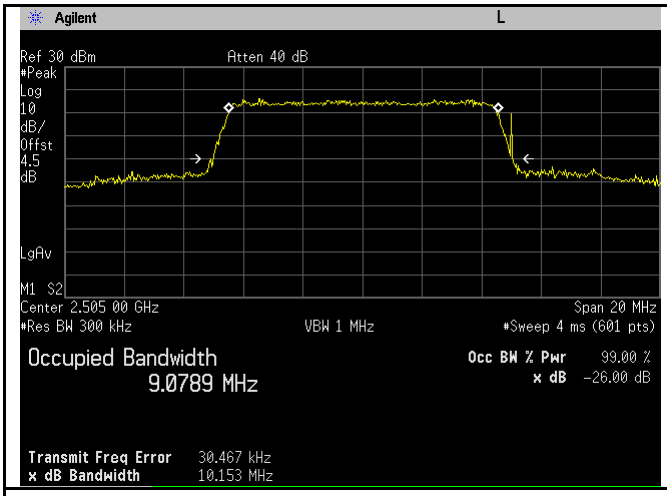
LTE Band VII - Middle CH 16QAM-5



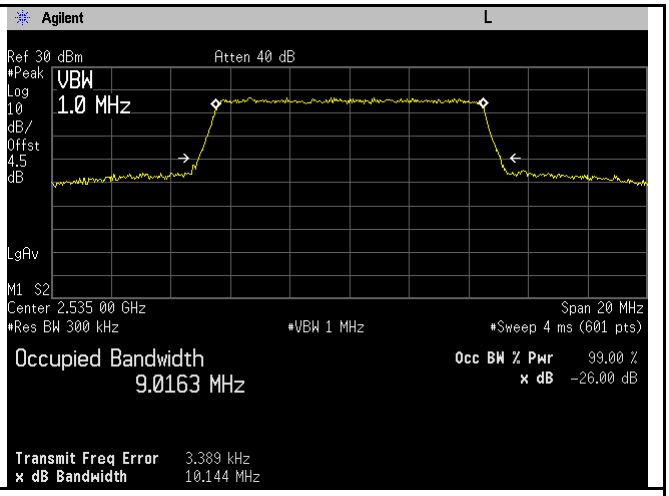
LTE Band VII - High CH QPSK-5



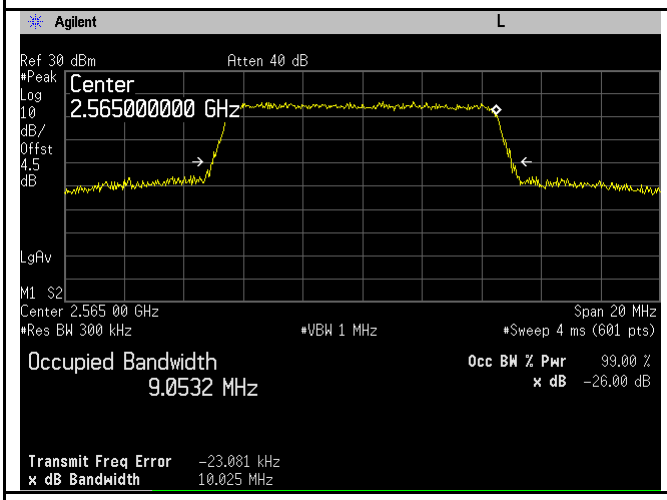
LTE Band VII - High CH 16QAM-5



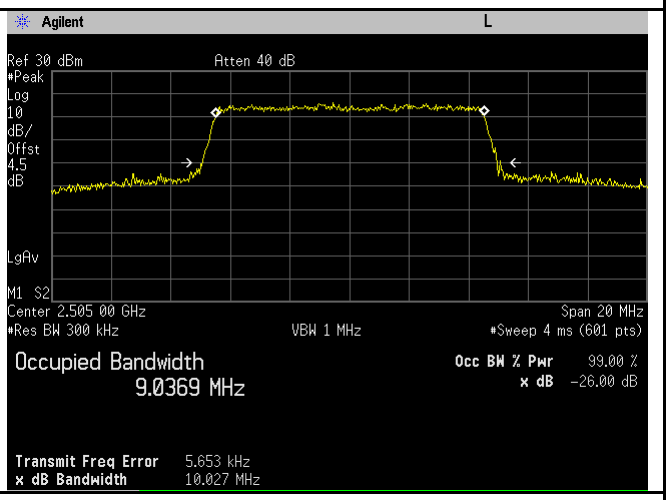
LTE Band VII - Low CH QPSK-10



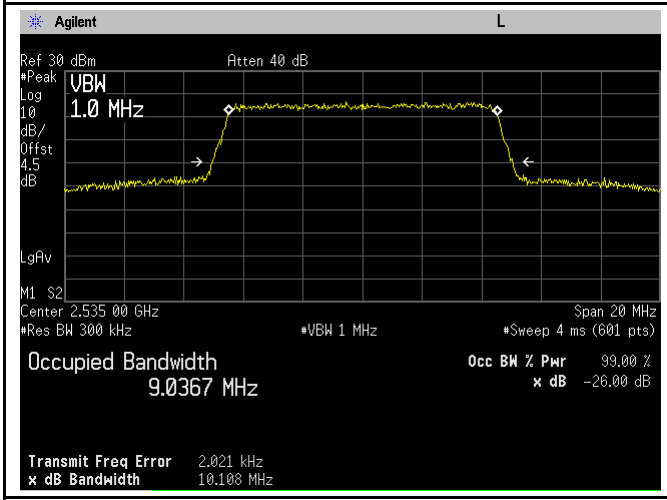
LTE Band VII - Low CH 16QAM-10



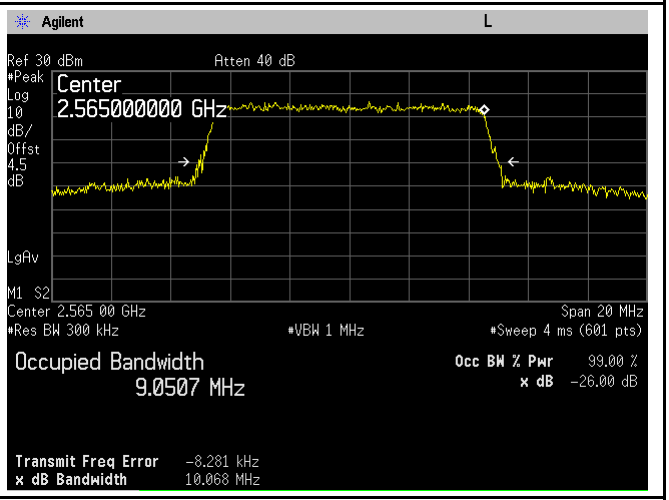
LTE Band VII - Middle CH QPSK-10



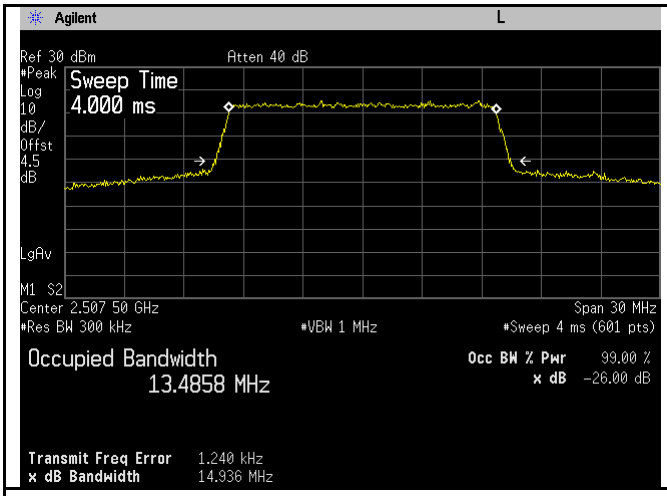
LTE Band VII - Middle CH 16QAM-10



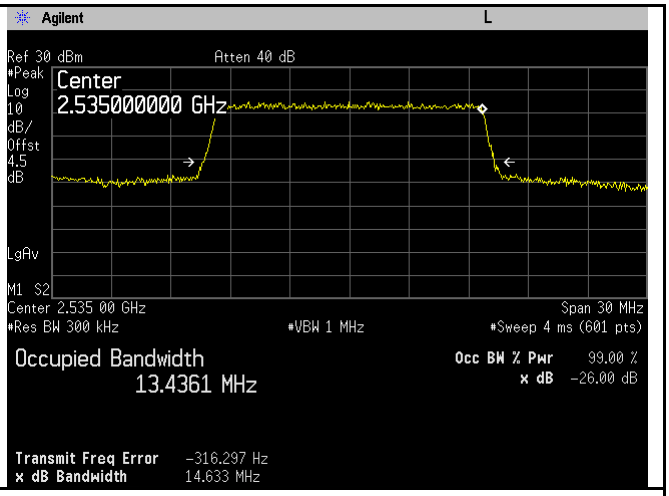
LTE Band VII - High CH QPSK-10



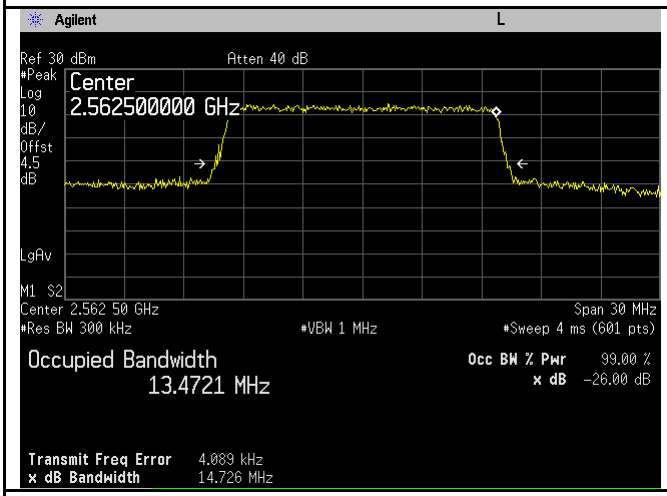
LTE Band VII - High CH 16QAM-10



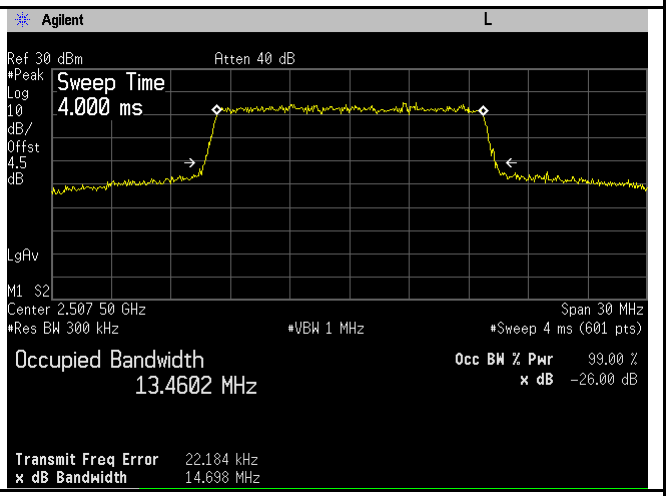
LTE Band VII - Low CH QPSK-15



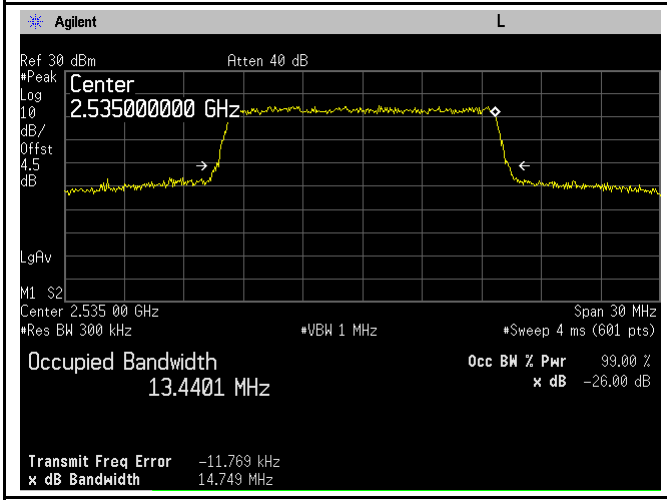
LTE Band VII - Low CH 16QAM-15



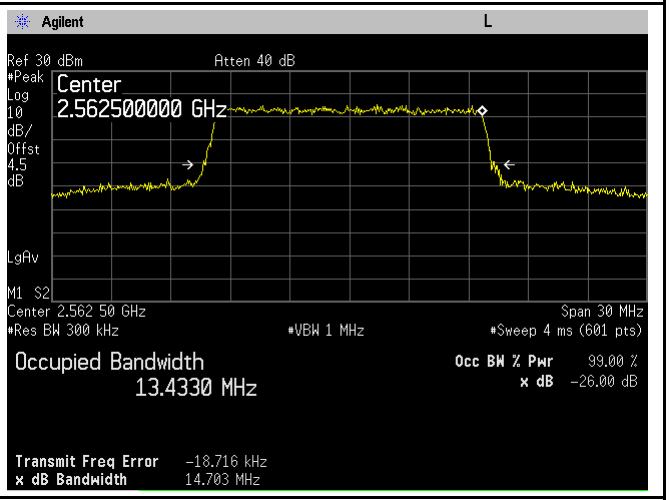
LTE Band VII - Middle CH QPSK-15



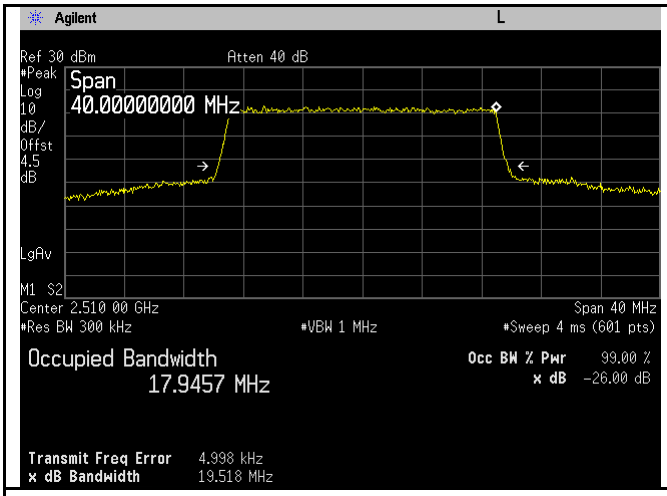
LTE Band VII - Middle CH 16QAM-15



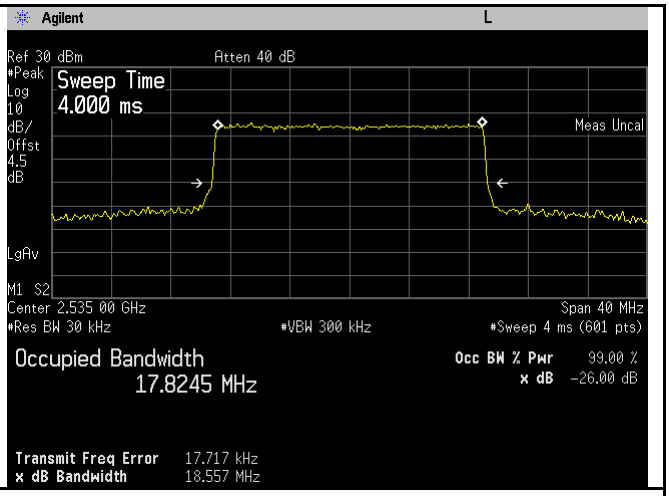
LTE Band VII - High CH QPSK-15



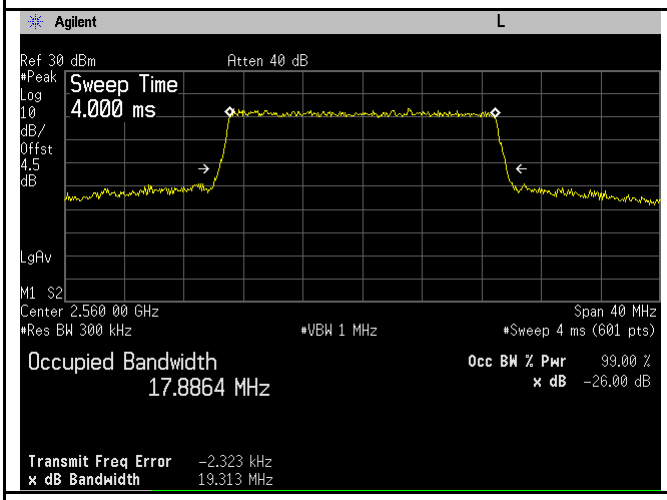
LTE Band VII - High CH 16QAM-15



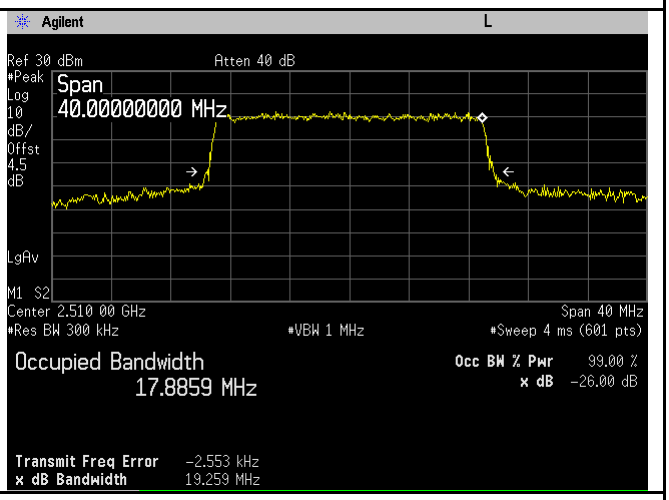
LTE Band VII - Low CH QPSK-20



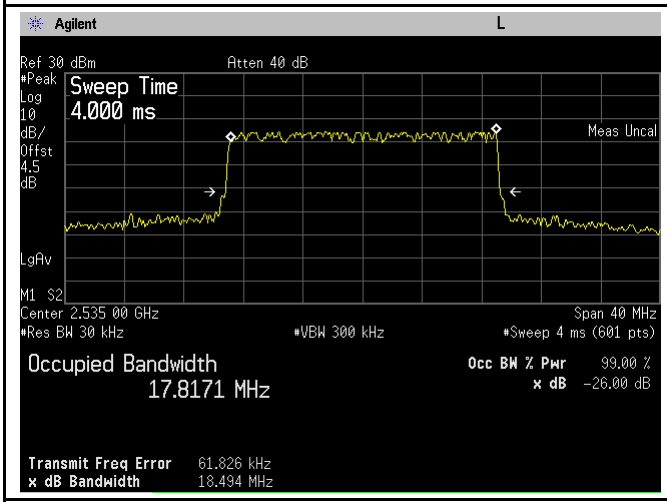
LTE Band VII - Low CH 16QAM-20



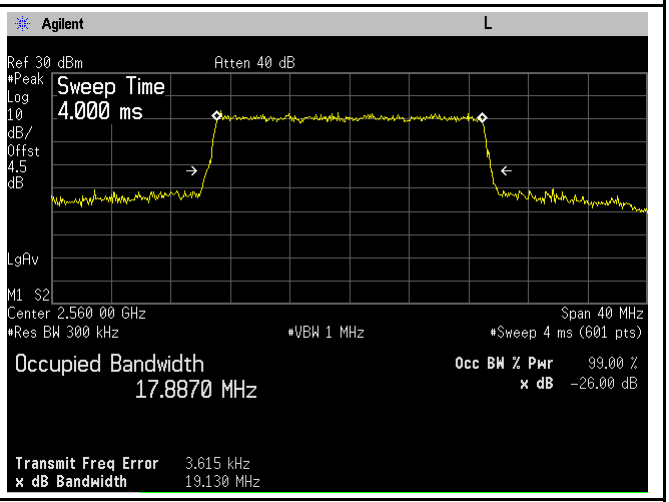
LTE Band VII - Middle CH QPSK-20



LTE Band VII - Middle CH 16QAM-20



LTE Band VII - High CH QPSK-20

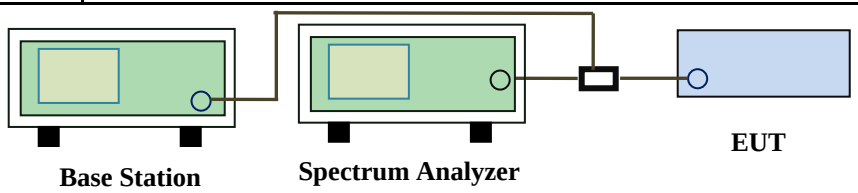


LTE Band VII - High CH 16QAM-20

6.5 Spurious Emissions at Antenna Terminals

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

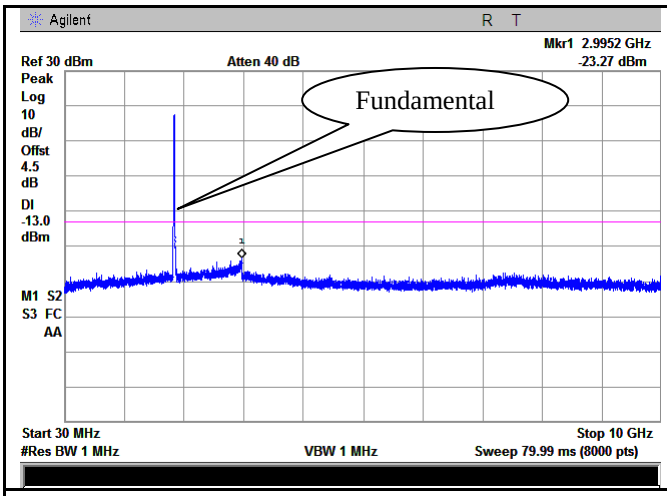
Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB	☑
Test Setup			
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. - Setting RBW as roughly BW/100.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

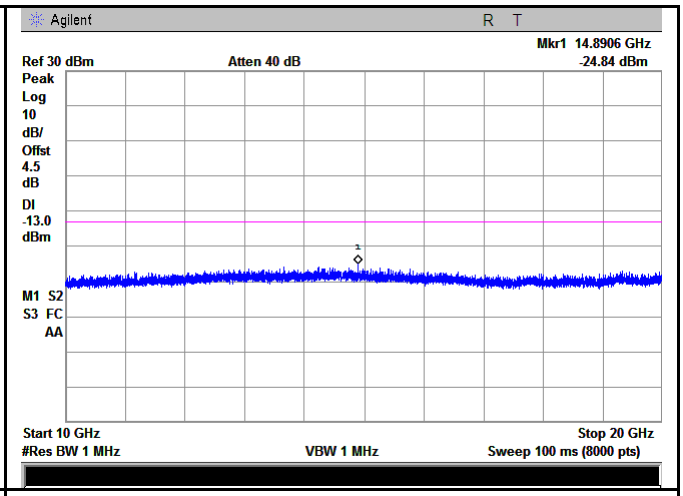
Test Plot ☑ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

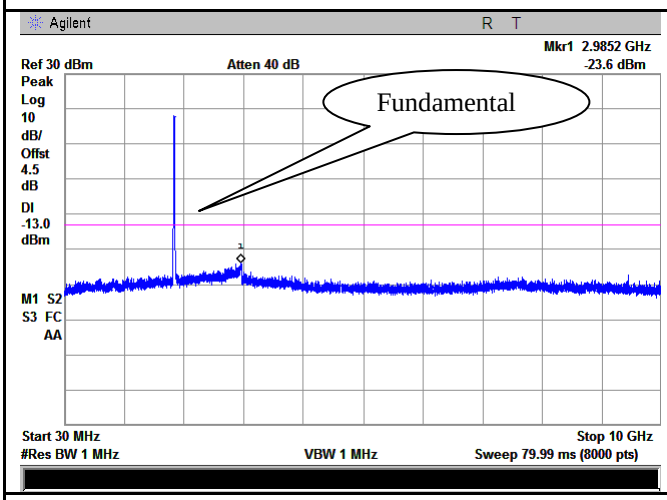
LTE Band II (Part 24E)



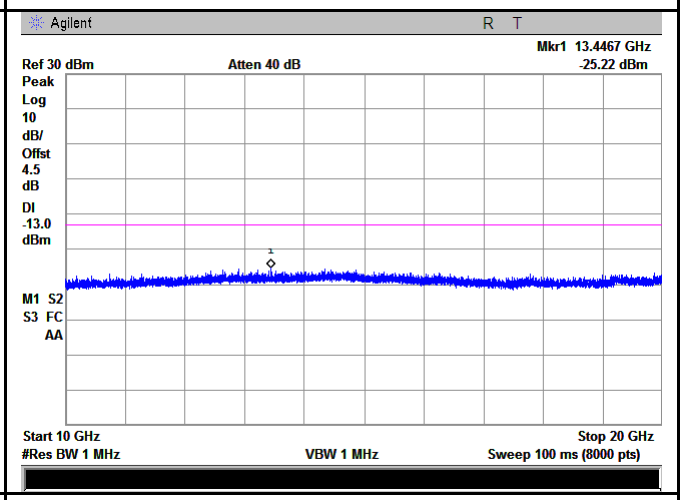
LTE Band II - Low Channel-1



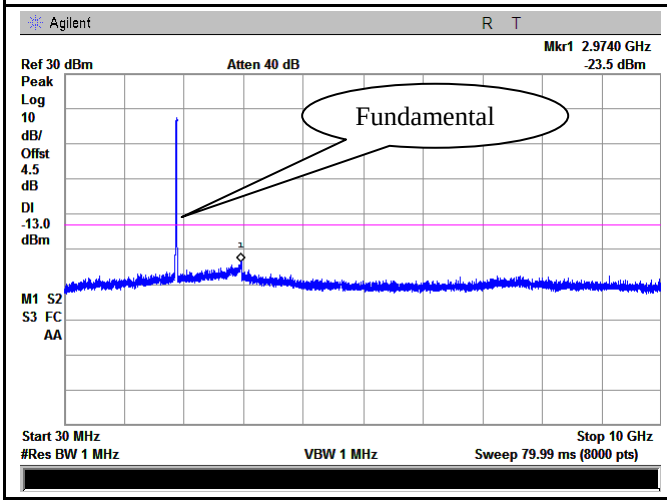
LTE Band II - Low Channel-2



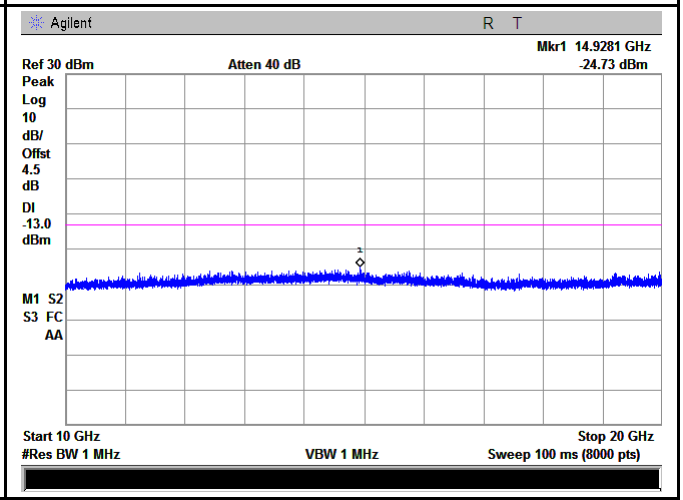
LTE Band II Middle Channel-1



LTE Band II Middle Channel-2

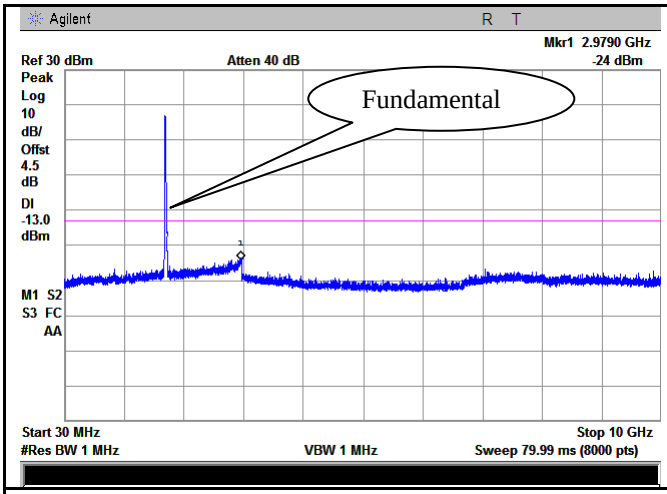


LTE Band II - High Channel-1

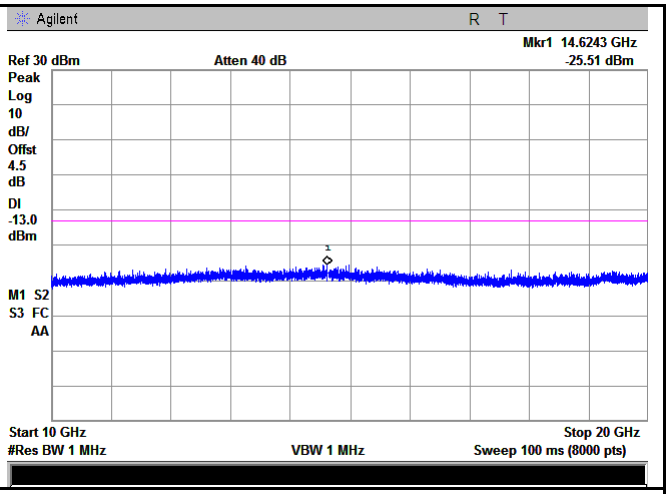


LTE Band II - High Channel-2

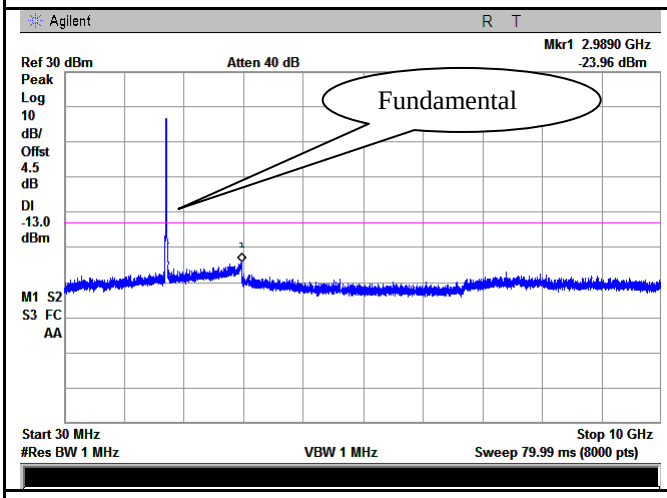
LTE Band IV (Part27) result



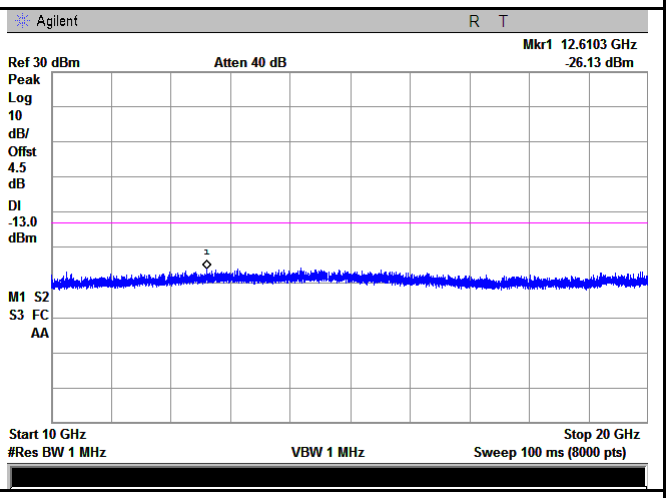
LTE Band IV - Low Channel-1



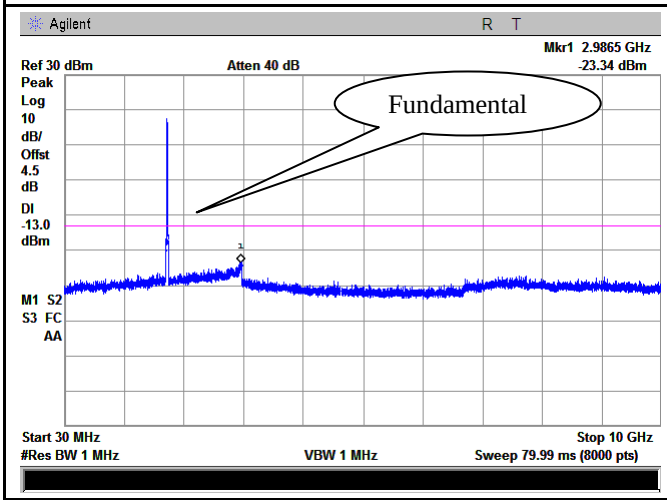
LTE Band IV - Low Channel-2



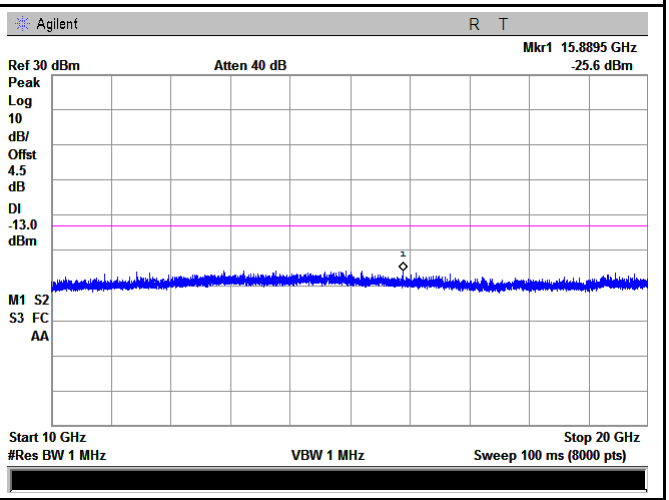
LTE Band IV - Middle Channel-1



LTE Band IV - Middle Channel-2

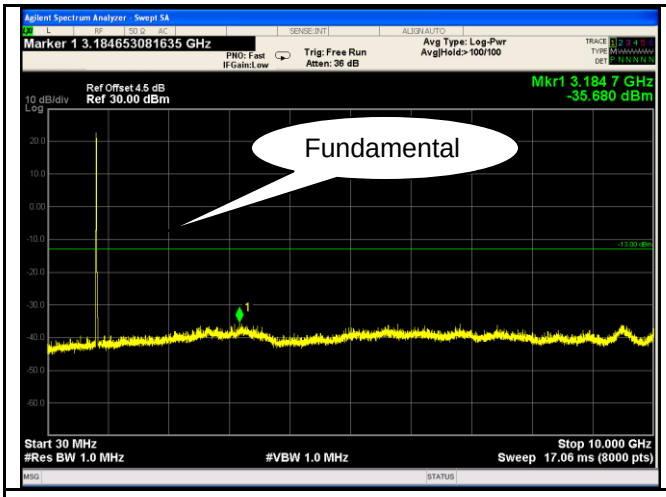


LTE Band IV - High Channel-1

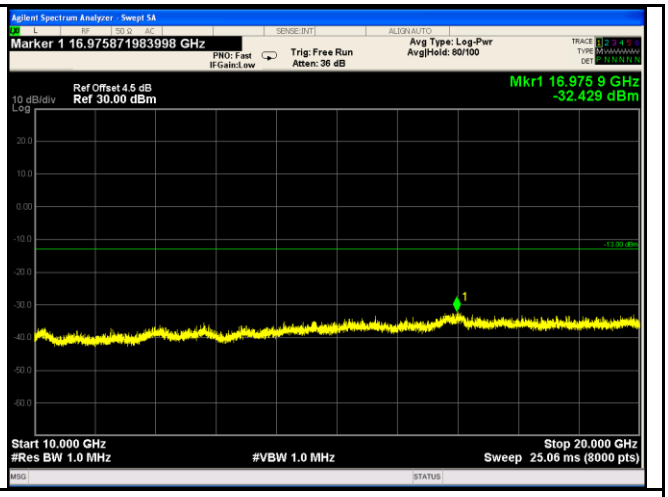


LTE Band IV - High Channel-2

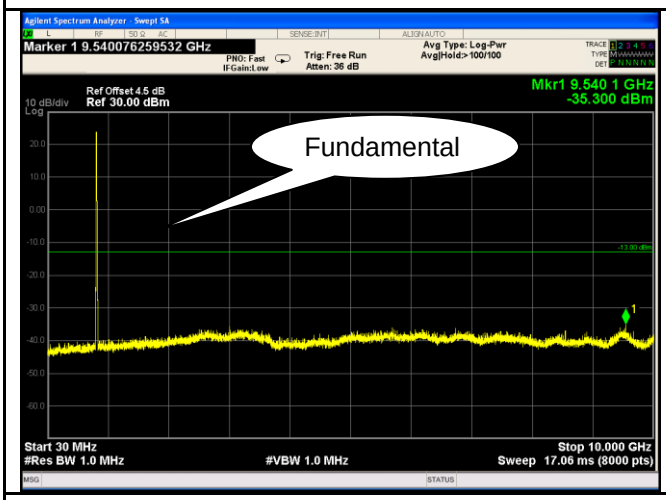
LTE Band V (Part 22H)



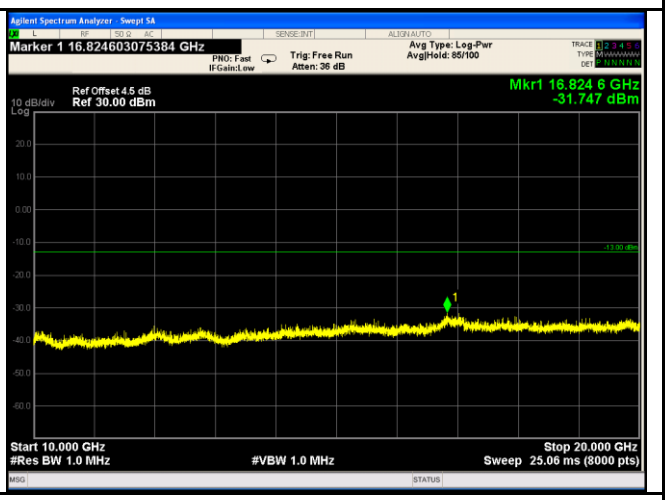
LTE Band V - Low Channel-1



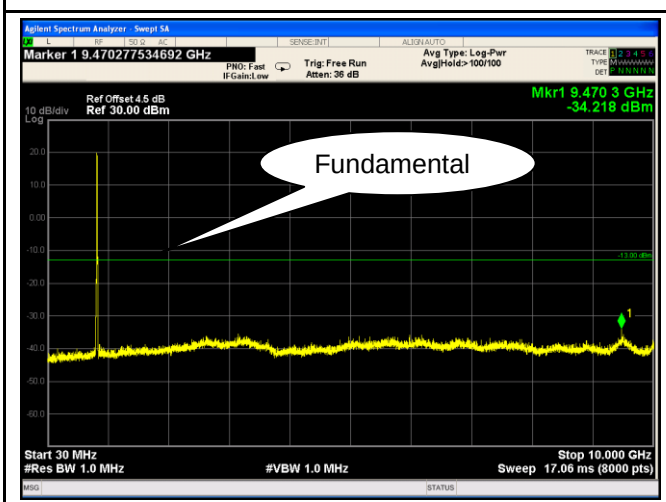
LTE Band V - Low Channel-2



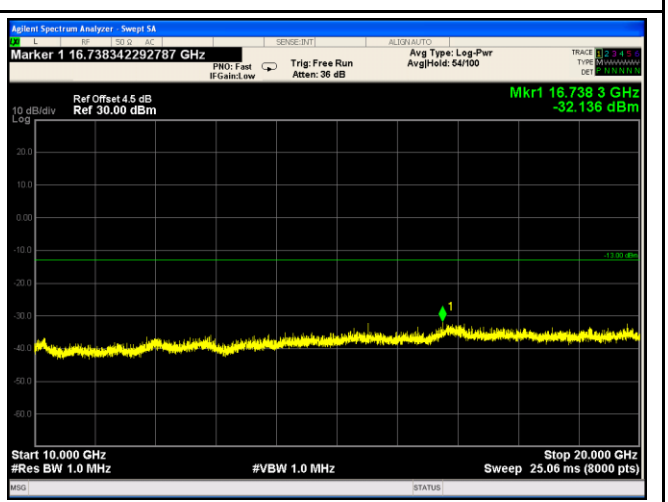
LTE Band V- Middle Channel-1



LTE Band V - Middle Channel-2

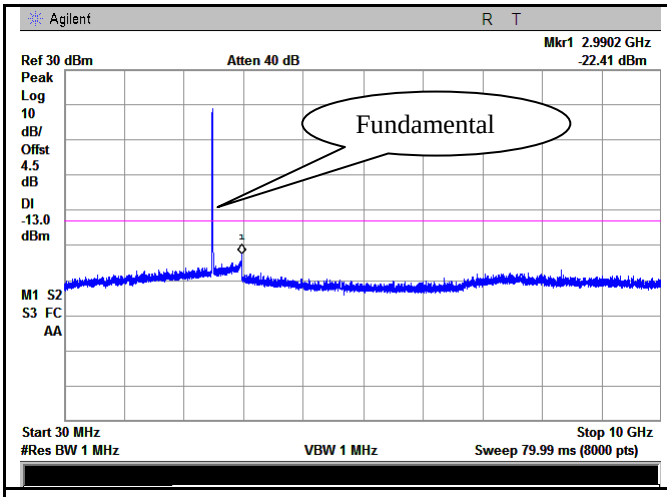


LTE Band V - High Channel-1

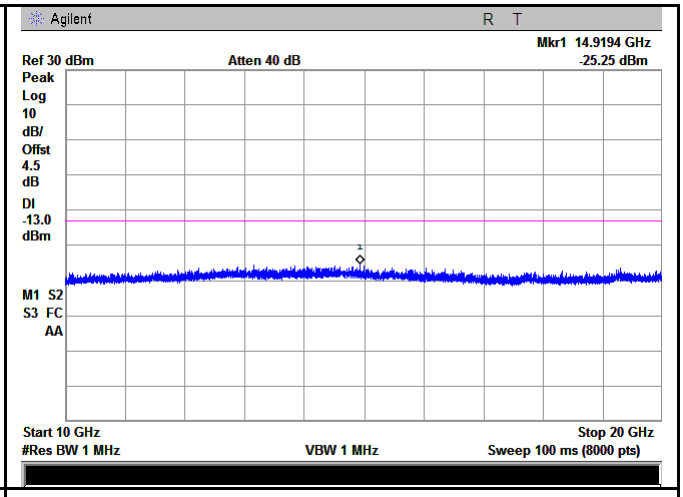


LTE Band V - High Channel-2

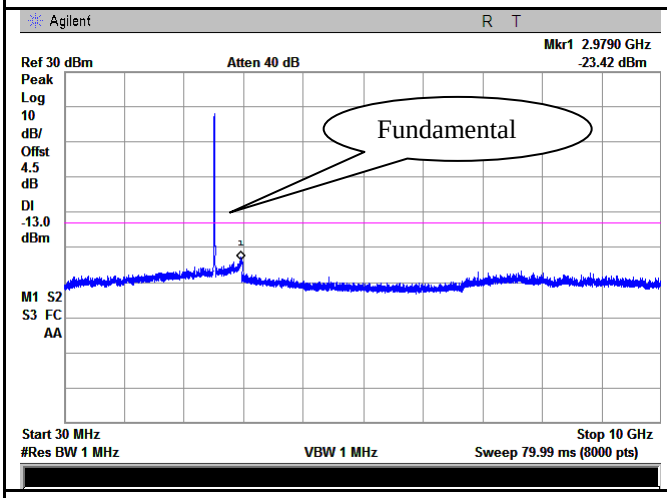
LTE Band VII (Part 27)



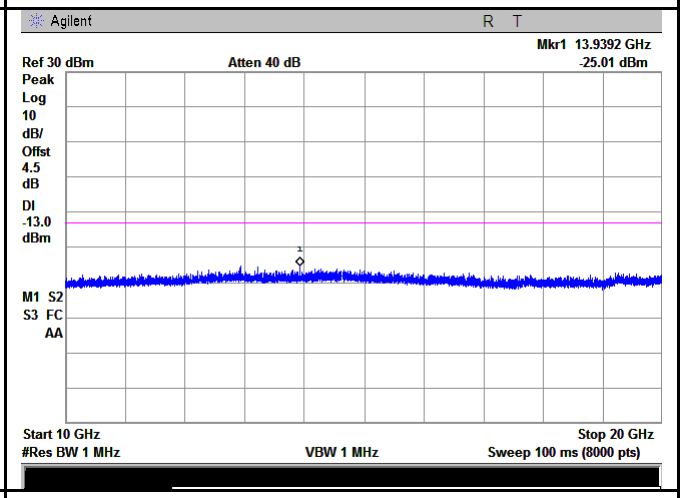
LTE Band VII - Low Channel-1



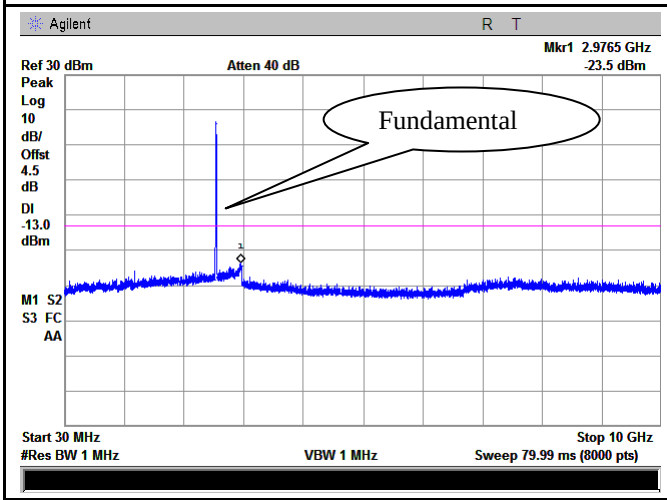
LTE Band VII - Low Channel-2



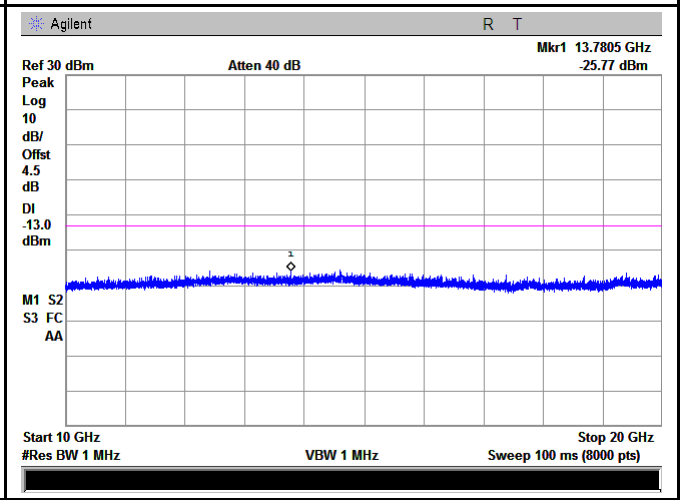
LTE Band VII- Middle Channel-1



LTE Band VII - Middle Channel-2



LTE Band VII - High Channel-1

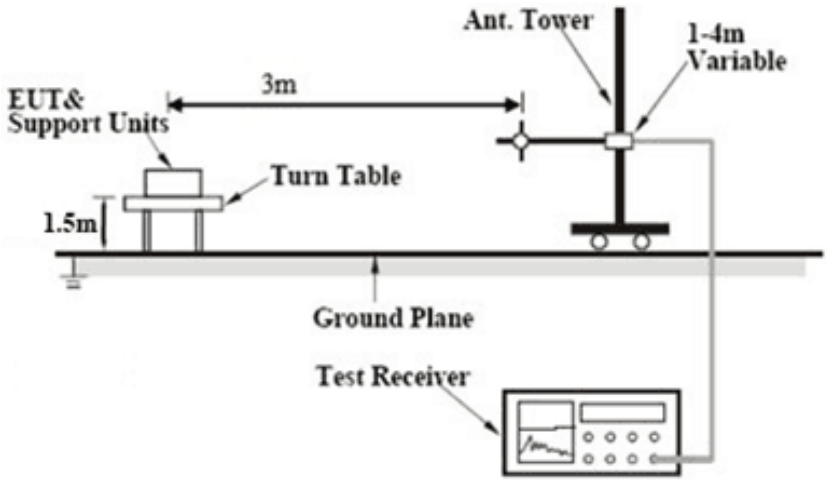


LTE Band VII - High Channel-2

6.6 Spurious Radiated Emissions

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1053, §22.917 & §24.238 § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.	☑
Test setup			
Test Procedure	1. The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. 2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. 3. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. Sample Calculation: EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)		

Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

LTE Band II (Part 24E) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3720	-42.59	V	10.25	2.73	-35.07	-13	-22.07
3720	-43.6	H	10.25	2.73	-36.08	-13	-23.08
363.83	-53.22	V	5.94	0.26	-47.54	-13	-34.54
663.25	-52.41	H	6.09	0.35	-46.67	-13	-33.67

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-44.21	V	10.25	2.73	-36.69	-13	-23.69
3760	-44.92	H	10.25	2.73	-37.4	-13	-24.4
301.54	-52.64	V	5.91	0.28	-47.01	-13	-34.01
633.59	-52.16	H	6.13	0.35	-46.38	-13	-33.38

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3800	-42.81	V	10.36	2.73	-35.18	-13	-22.18
3800	-44.41	H	10.36	2.73	-36.78	-13	-23.78
809.58	-51.7	V	6.44	0.46	-45.72	-13	-32.72
704.38	-53.14	H	6.42	0.45	-47.17	-13	-34.17

Note:

*1, The testing has been conformed to 10*1907.5MHz=19,075MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and Z–Axis were investigated. The results above show only the worst case.

LTE Band IV (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3440	-42.67	V	10.06	2.52	-35.13	-13	-22.13
3440	-44.62	H	10.06	2.52	-37.08	-13	-24.08
585.99	-51.82	V	6.05	0.35	-46.12	-13	-33.12
517.06	-52.28	H	6.07	0.39	-46.6	-13	-33.6

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3465	-43.1	V	10.09	2.52	-35.53	-13	-22.53
3465	-43	H	10.09	2.52	-35.43	-13	-22.43
842.18	-53.52	V	6.42	0.43	-47.53	-13	-34.53
707.55	-52.9	H	6.38	0.43	-46.95	-13	-33.95

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3490	-43.01	V	10.09	2.52	-35.44	-13	-22.44
3490	-44.53	H	10.09	2.52	-36.96	-13	-23.96
331.52	-52.29	V	5.88	0.28	-46.69	-13	-33.69
792.24	-52.96	H	6.39	0.42	-46.99	-13	-33.99

Note:

*1, The testing has been conformed to 10*1752.5MHz=17,525MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and Z–Axis were investigated. The results above show only the worst case.

LTE Band V (Part22H) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1658	-43.95	V	7.95	0.78	-36.78	-13	-23.78
1658	-44.74	H	7.95	0.78	-37.57	-13	-24.57
300.83	-53.54	V	5.88	0.3	-47.96	-13	-34.96
323.1	-52.87	H	5.9	0.3	-47.27	-13	-34.27

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1673	-43.63	V	7.95	0.78	-36.46	-13	-23.46
1673	-43.49	H	7.95	0.78	-36.32	-13	-23.32
560.89	-51.73	V	6.12	0.38	-45.99	-13	-32.99
306.55	-53.39	H	5.9	0.28	-47.77	-13	-34.77

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1688	-43.29	V	7.95	0.78	-36.12	-13	-23.12
1688	-44.86	H	7.95	0.78	-37.69	-13	-24.69
624.74	-51.86	V	6.4	0.41	-45.87	-13	-32.87
600.51	-51.65	H	6.1	0.35	-45.9	-13	-32.90

Note:

*1, The testing has been conformed to 10*846.5MHz=8,465MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and Z–Axis were investigated. The results above show only the worst case.

LTE Band VII (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5020	-43.34	V	10.29	0.98	-34.03	-13	-21.03
5020	-43.37	H	10.29	0.98	-34.06	-13	-21.06
615.21	-52.32	V	6.45	0.4	-46.27	-13	-33.27
704.42	-52.37	H	6.38	0.46	-46.45	-13	-33.45

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5070	-43.88	V	10.3	0.99	-34.57	-13	-21.57
5070	-44.76	H	10.3	0.99	-35.45	-13	-22.45
287.88	-53.01	V	5.89	0.3	-47.42	-13	-34.42
609.14	-52.32	H	6.39	0.41	-46.34	-13	-33.34

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5120	-43.54	V	10.32	1	-34.22	-13	-21.22
5120	-44.73	H	10.32	1	-35.41	-13	-22.41
759.18	-52.75	V	6.42	0.4	-46.73	-13	-33.73
814.97	-51.63	H	6.45	0.44	-45.62	-13	-32.62

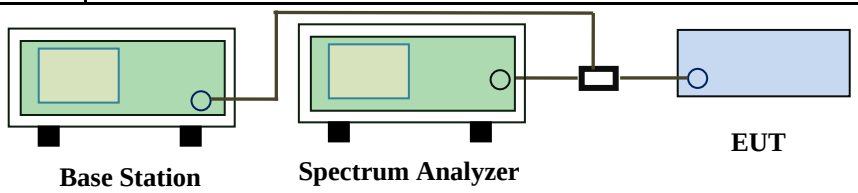
Note:

*1, The testing has been conformed to 10*2567.5MHz=25,675MHz*
2, All other emissions more than 30 dB below the limit
3, X-Axis, Y-Axis and Z –Axis were investigated. The results above show only the worst case.

6.7 Band Edge

Temperature	26℃
Relative Humidity	56%
Atmospheric Pressure	1022mbar
Test date :	December 26, 2017
Tested By :	Aarron Liang

Requirement(s):

Spec	Item	Requirement	Applicable
§22.917(a) §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.	☑
Test setup			
Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The Band Edges of low and high channels for the highest RF powers were measured. Setting RBW as roughly BW/100.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band II (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	18607	1850	QPSK	-30.336	-13
			16QAM	-30.202	-13
1.4	18900	1910	QPSK	-34.360	-13
			16QAM	-33.480	-13
3	18615	1850	QPSK	-34.566	-13
			16QAM	-32.389	-13
3	19185	1910	QPSK	-37.148	-13
			16QAM	-36.783	-13
5	18625	1850	QPSK	-38.312	-13
			16QAM	-36.845	-13
5	19175	1910	QPSK	-40.812	-13
			16QAM	-39.975	-13
10	18650	1850	QPSK	-39.306	-13
			16QAM	-40.098	-13
10	19150	1910	QPSK	-42.730	-13
			16QAM	-40.044	-13
15	18675	1850	QPSK	-38.564	-13
			16QAM	-37.880	-13
15	19125	1910	QPSK	-43.794	-13
			16QAM	-43.665	-13
20	18700	1850	QPSK	-40.248	-13
			16QAM	-41.894	-13
20	19100	1910	QPSK	-45.308	-13
			16QAM	-45.313	-13

LTE Band IV (Part 27) result

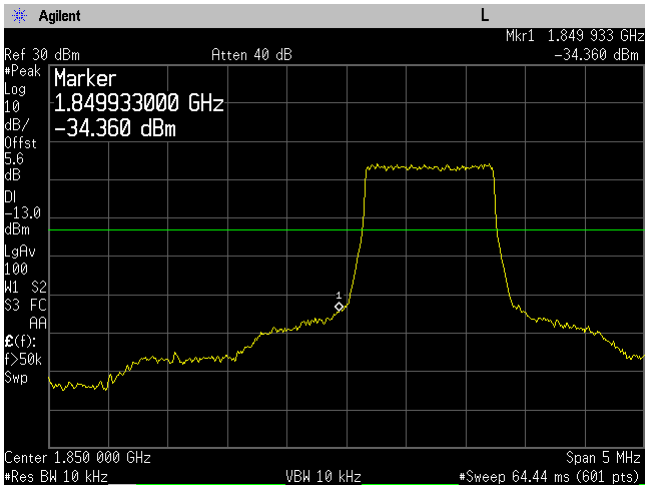
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	19957	1709.9	QPSK	-43.583	-13
			16QAM	-42.293	-13
1.4	20393	1755	QPSK	-43.422	-13
			16QAM	-41.895	-13
3	19965	1709.9	QPSK	-37.372	-13
			16QAM	-36.331	-13
3	20385	1755	QPSK	-37.061	-13
			16QAM	-35.329	-13
5	19975	1709.9	QPSK	-37.135	-13
			16QAM	-36.956	-13
5	20375	1755	QPSK	-37.422	-13
			16QAM	-34.989	-13
10	20000	1709.9	QPSK	-42.202	-13
			16QAM	-42.663	-13
10	20350	1755	QPSK	-40.426	-13
			16QAM	-40.358	-13
15	20025	1709.9	QPSK	-42.685	-13
			16QAM	-42.462	-13
15	20325	1755	QPSK	-40.175	-13
			16QAM	-40.979	-13
20	20050	1709.9	QPSK	-43.368	-13
			16QAM	-42.502	-13
20	20300	1755	QPSK	-42.041	-13
			16QAM	-41.736	-13

LTE Band V (Part 22H) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	20407	823.9	QPSK	-50.151	-13
			16QAM	-48.845	-13
1.4	20643	849	QPSK	-43.935	-13
			16QAM	-43.839	-13
3	20415	824	QPSK	-45.701	-13
			16QAM	-44.886	-13
3	20635	849	QPSK	-40.869	-13
			16QAM	-39.380	-13
5	20425	824	QPSK	-26.405	-13
			16QAM	-25.018	-13
5	20625	849	QPSK	-24.311	-13
			16QAM	-24.723	-13
10	20450	824	QPSK	-46.462	-13
			16QAM	-46.382	-13
10	20800	849	QPSK	-42.533	-13
			16QAM	-42.241	-13

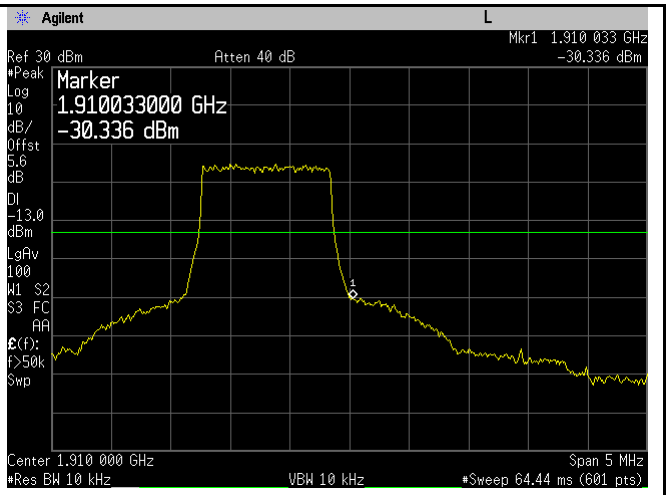
Test Plots

LTE Band II (Part 24E)



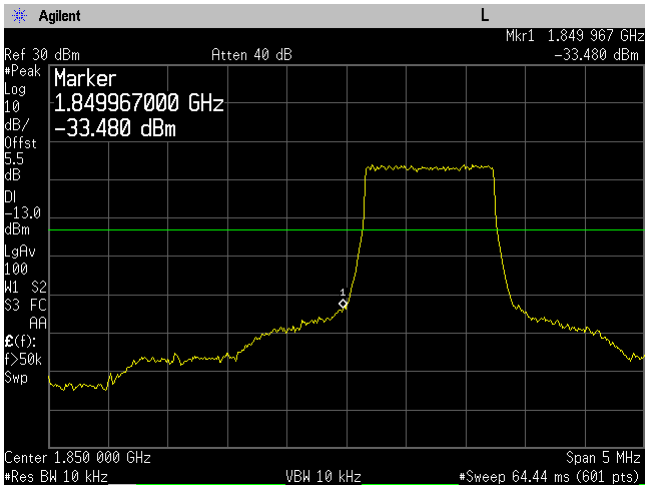
LTE Band II - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.79/10)=4.5+1.1=5.6dB



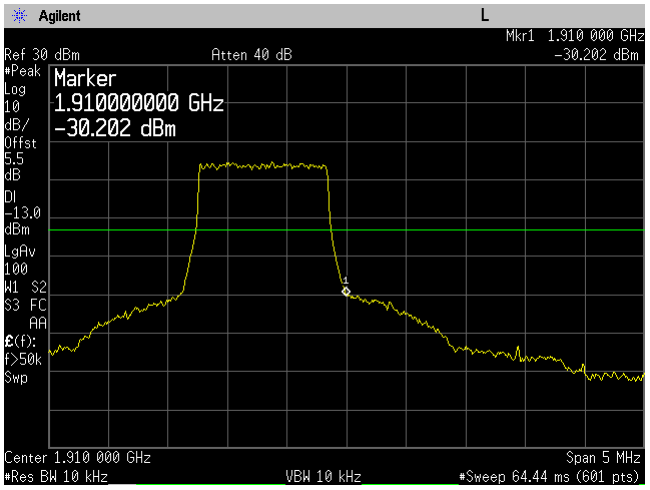
LTE Band II - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.91/10)=4.5+1.1=5.6dB



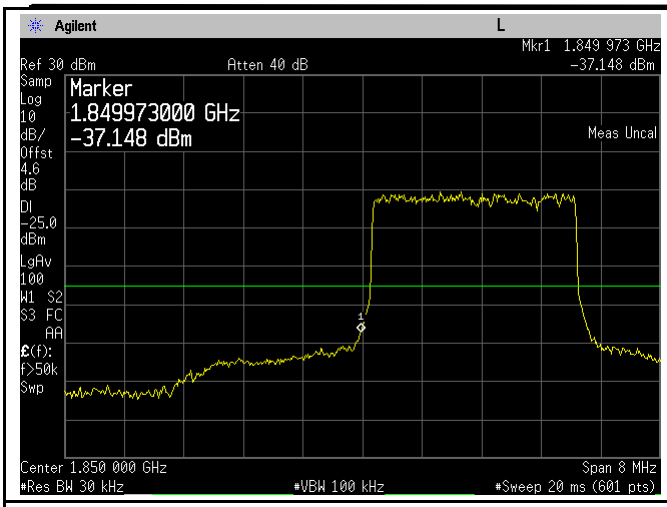
LTE Band II - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.66/10)=4.5+1.0=5.5 dB



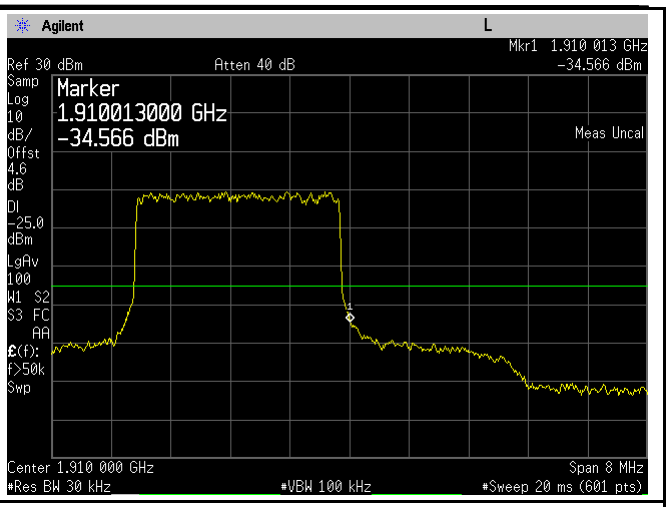
LTE Band II - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.62/10)=4.5+1.0=5.5 dB



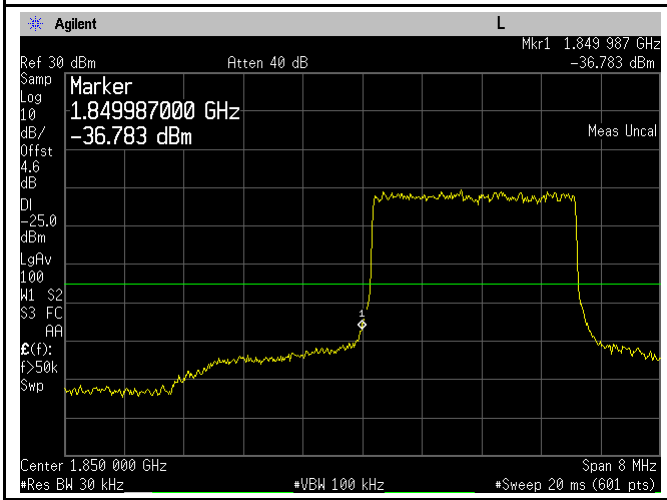
LTE Band II - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.28/30)=4.5+0.1=4.6 dB



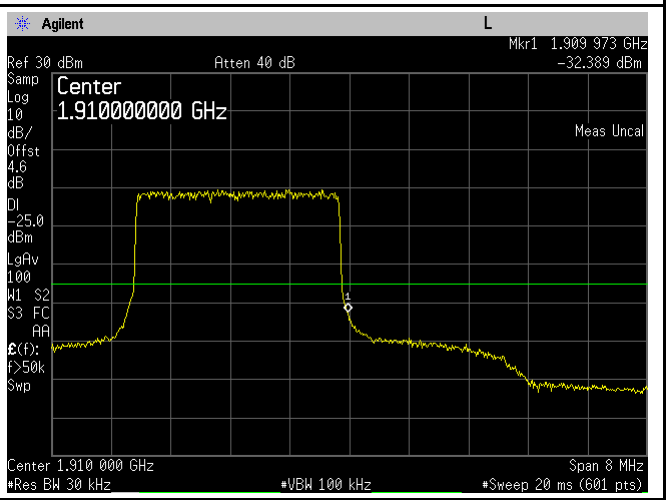
LTE Band II - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.51/30)=4.5+0.1=4.6 dB



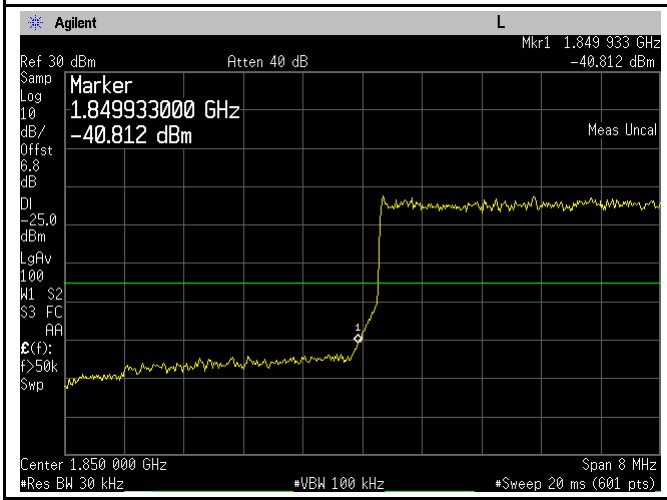
LTE Band II - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.37/30)=4.5+0.1=4.6 dB

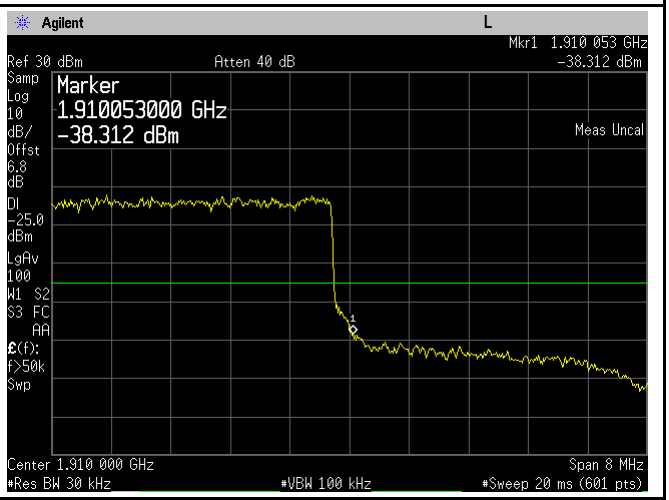


LTE Band II - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.43/30)=4.5+0.1=4.6 dB

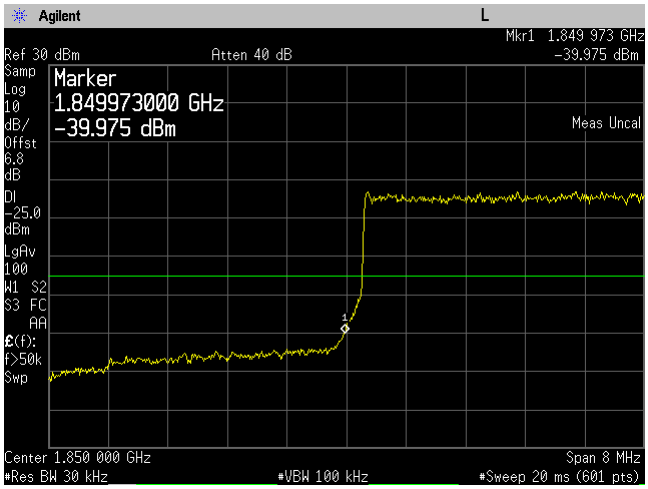


LTE Band II - Low Channel QPSK-5



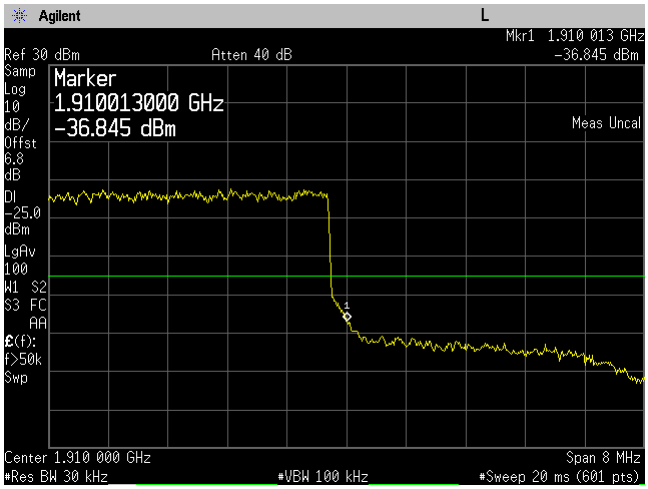
LTE Band II - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.46/30)=4.5+2.3=6.8dB



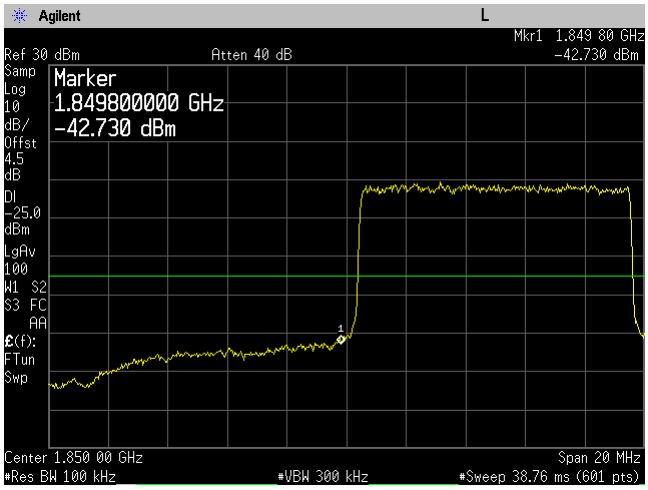
LTE Band II - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.18/30)=4.5+2.3=6.8 dB



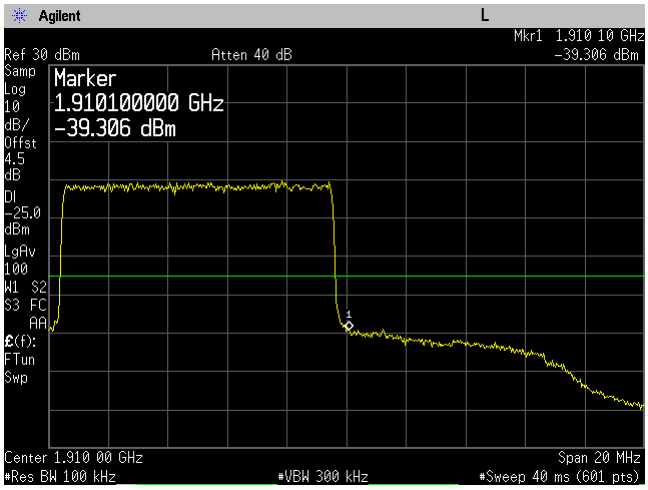
LTE Band II - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.47/30)=4.5+2.3=6.8 dB

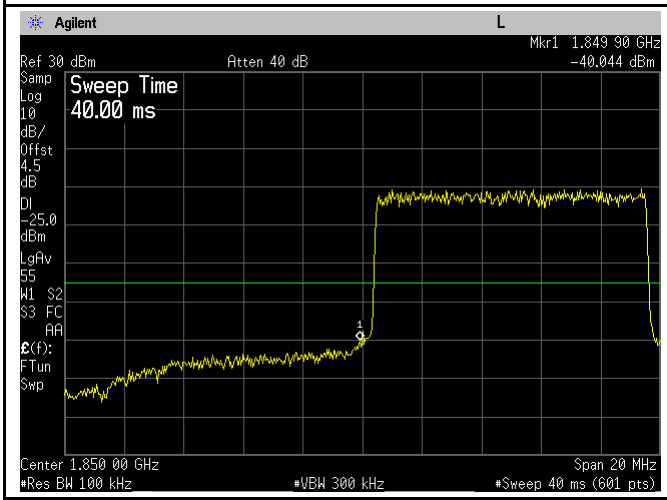


LTE Band II - Low Channel QPSK-10

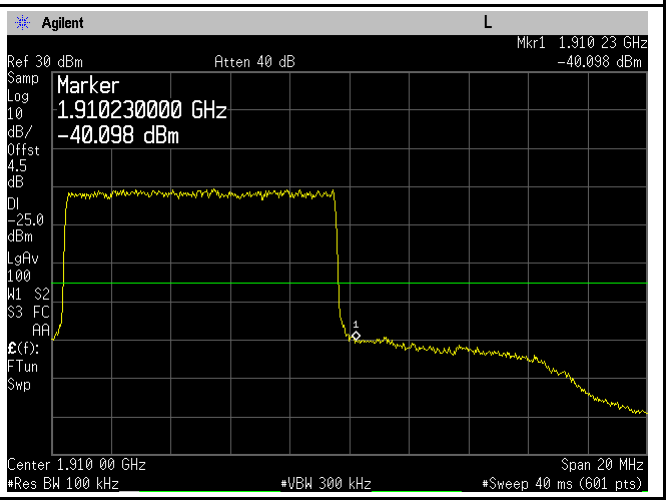
Note: Offset=Cable loss (4.5) + 10log (50.71/30)=4.5+2.3=6.8 dB



LTE Band II - High Channel QPSK-10

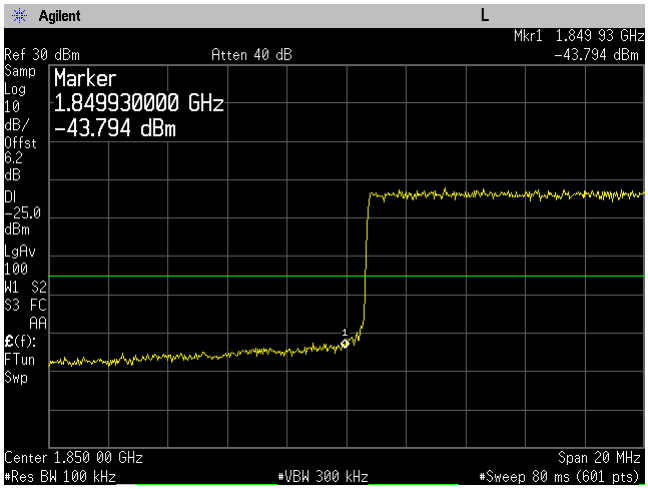


LTE Band II - Low Channel 16QAM-10



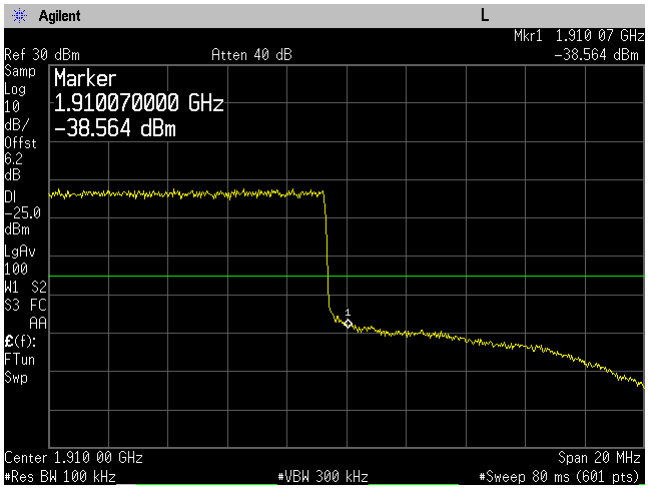
LTE Band II - High Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log (100.8/100)=4.5+0.0=4.5 dB



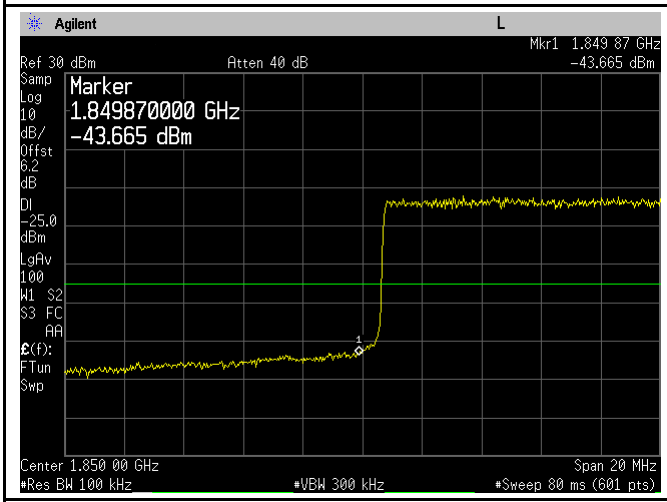
LTE Band II - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (101.7/100)=4.5+0.0=4.5 dB



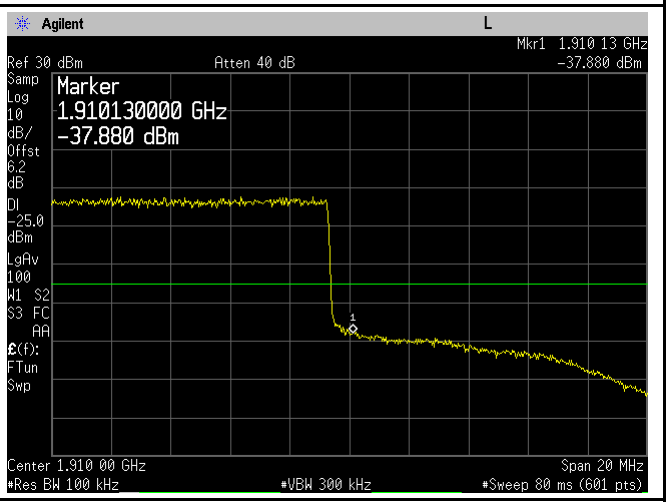
LTE Band II - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (148.2/100)=4.5+2.3=6.2 dB



LTE Band II - Low Channel 16QAM-15

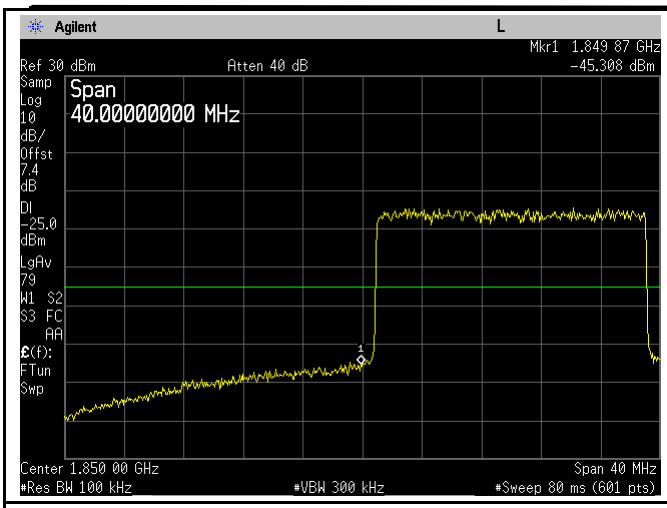
Note: Offset=Cable loss (4.5) + 10log (147.9/100)=4.5+2.3=6.2 dB



LTE Band II - High Channel 16QAM-15

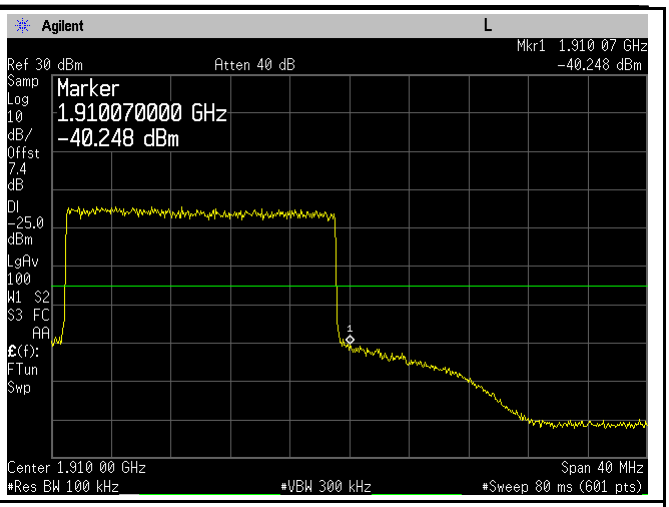
Note: Offset=Cable loss (4.5) + 10log (147.1/100)=4.5+2.3=6.2 dB

Note: Offset=Cable loss (4.5) + 10log (147.9/100)=4.5+2.3=6.2dB



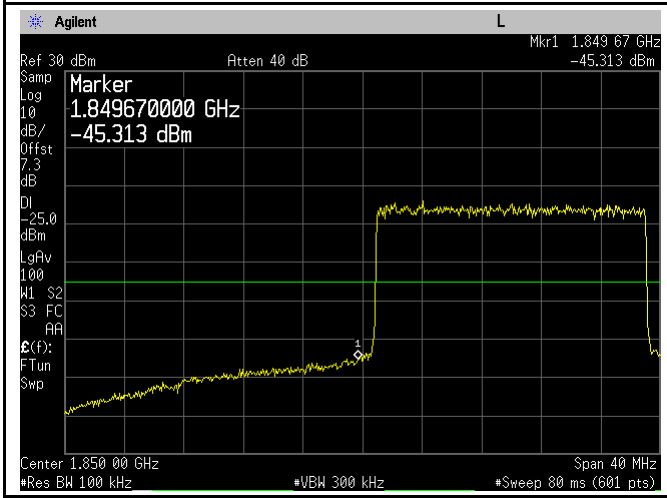
LTE Band II - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log (194.2/100)=4.5+2.9=7.4 dB



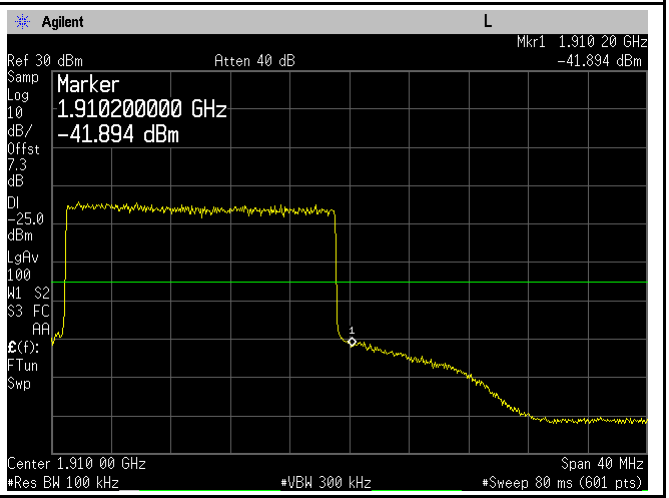
LTE Band II - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log (194.4/100)=4.5+2.9=7.4 dB



LTE Band II - Low Channel 16QAM-20

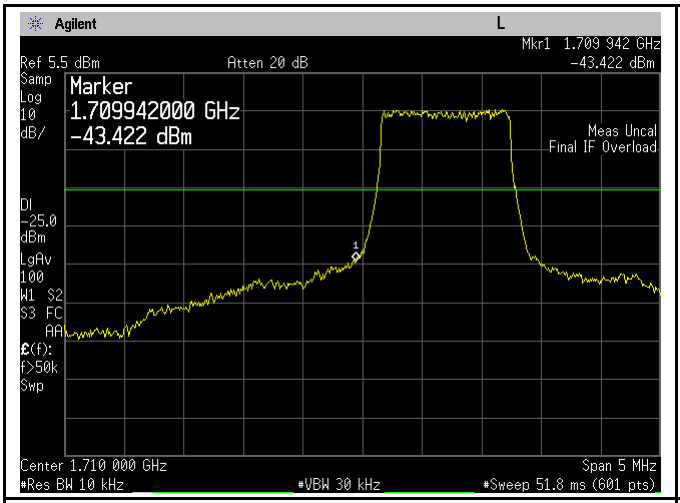
Note: Offset=Cable loss (4.5) + 10log (192/100)=4.5+2.8=7.3dB



LTE Band II - High Channel 16QAM-20

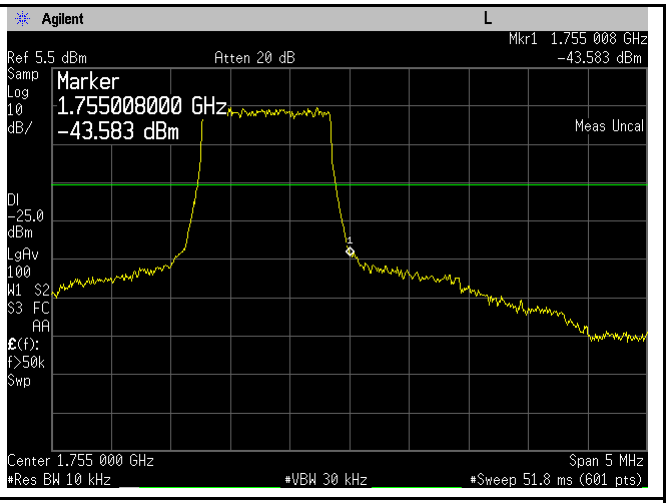
Note: Offset=Cable loss (4.5) + 10log (192.1/100)=4.5+2.8=7.3 dB

LTE Band IV (Part 27)



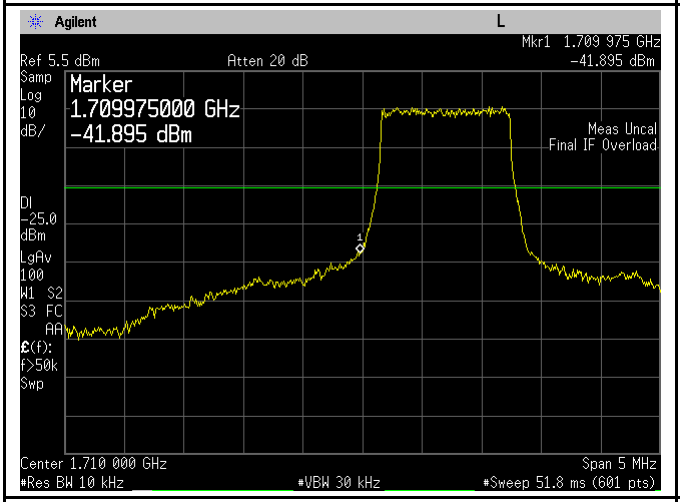
LTE Band IV - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.63/10)=4.5+1.0=5.5 dB



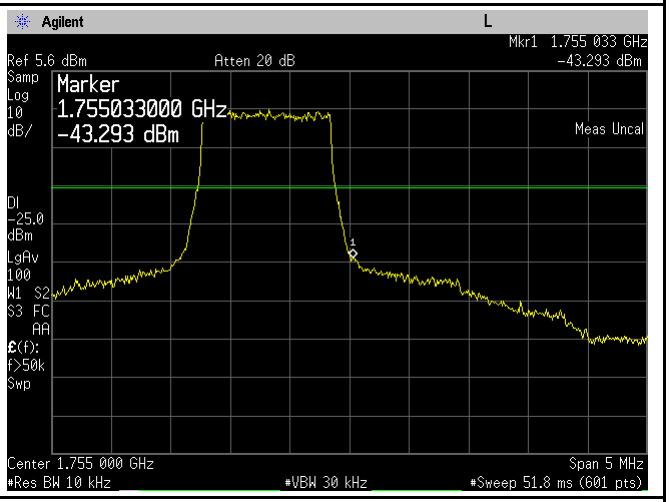
LTE Band IV - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.71/10)=4.5+1.0=5.5 dB



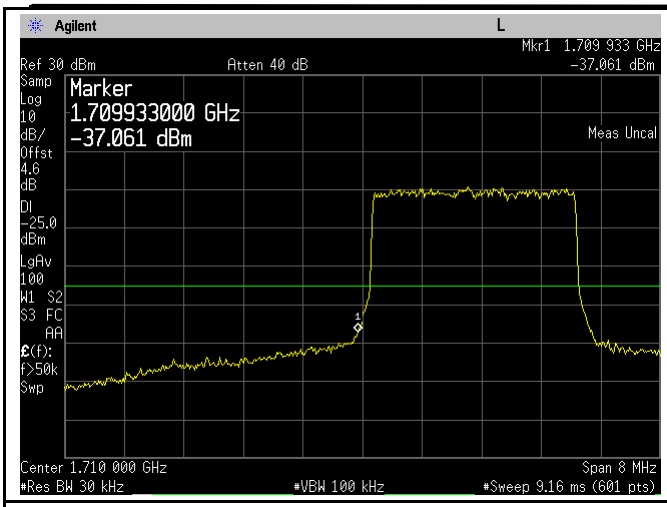
LTE Band IV - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.74/10)=4.5+1.0=5.5 dB



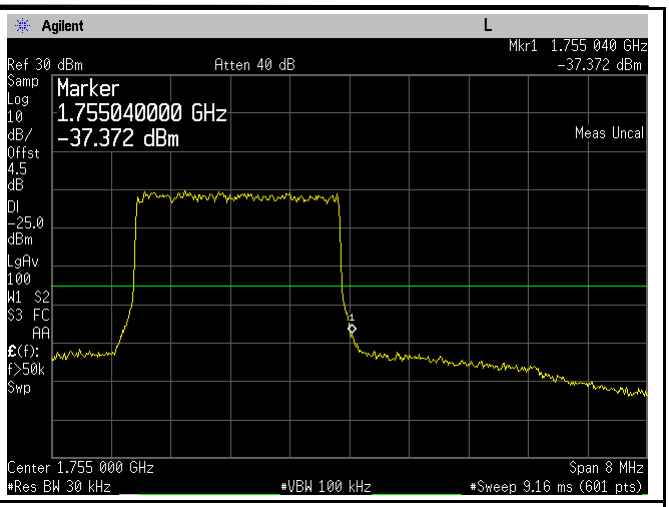
LTE Band IV - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.61/10)=4.5+1.1=5.6 dB



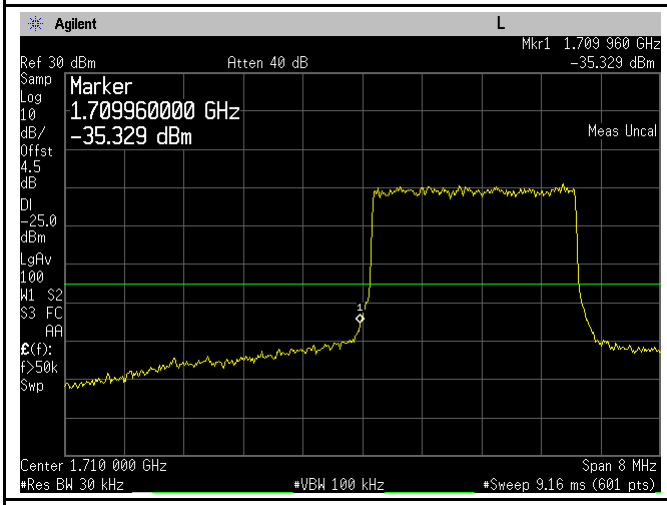
LTE Band IV - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.23/30)=4.5+0.1=4.6 dB



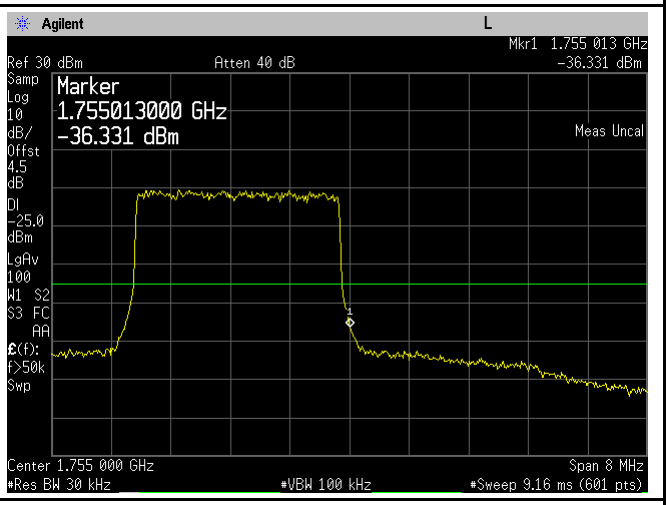
LTE Band IV - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.44/30)=4.5+0.1=4.6 dB



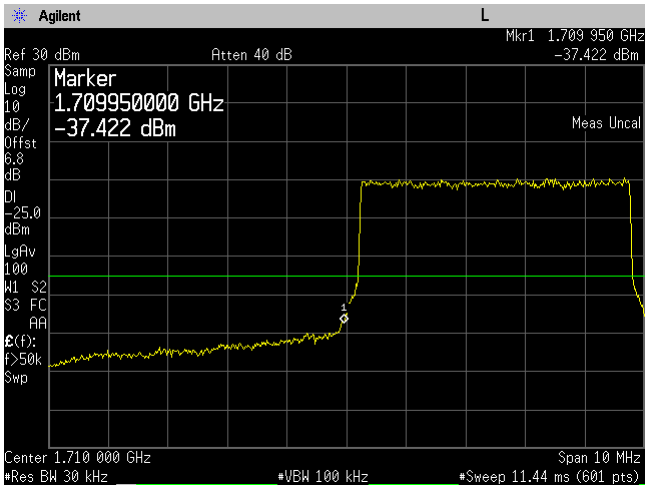
LTE Band IV - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (29.75/30)=4.5+0.0=4.5 dB

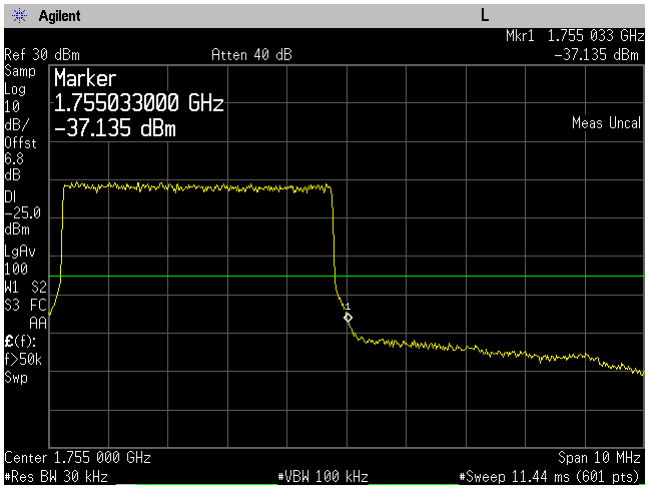


LTE Band IV - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.33/30)=4.5+0.0=4.5 dB

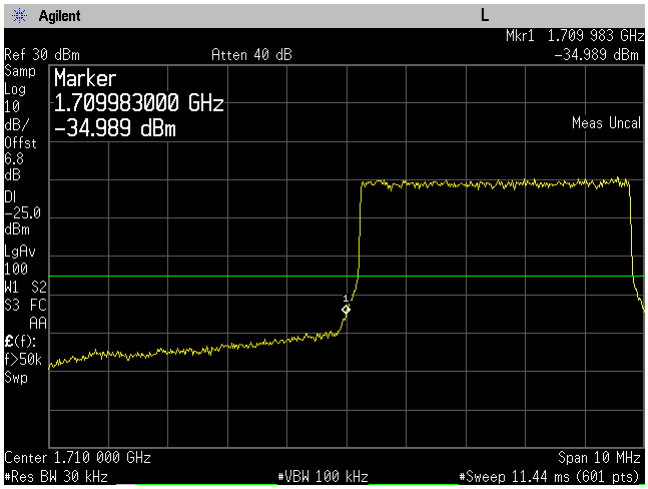


LTE Band IV - Low Channel QPSK-5



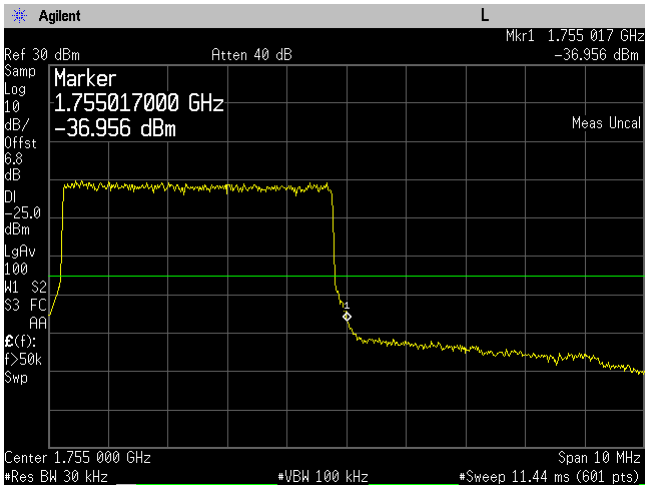
LTE Band IV - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.72/30)=4.5+2.3=6.8 dB



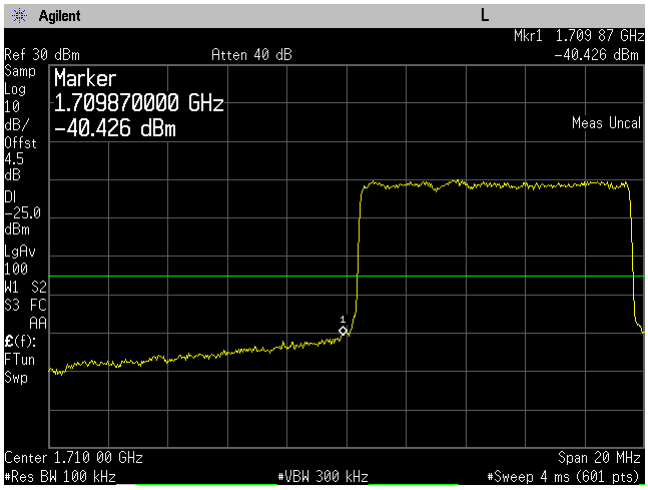
LTE Band IV - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.63/30)=4.5+2.3=6.8 dB



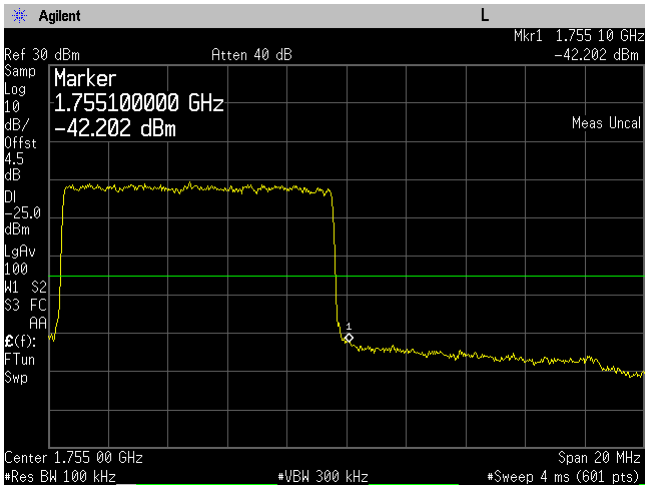
LTE Band IV - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.92/30)=4.5+2.3=6.8 dB

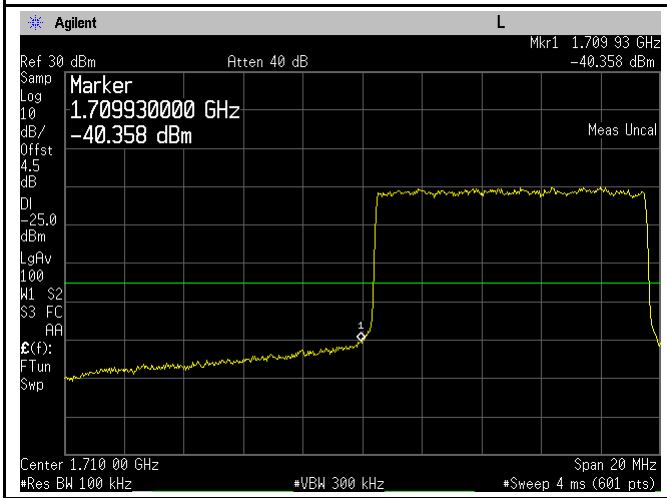


LTE Band IV - Low Channel QPSK-10

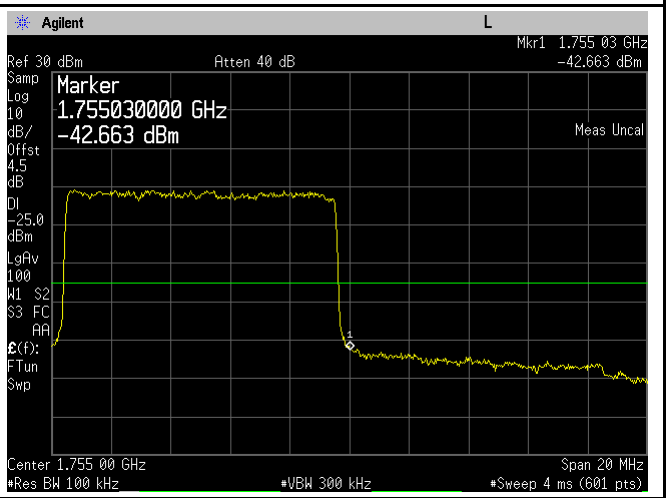
Note: Offset=Cable loss (4.5) + 10log (50.65/30)=4.5+2.3=6.8 dB



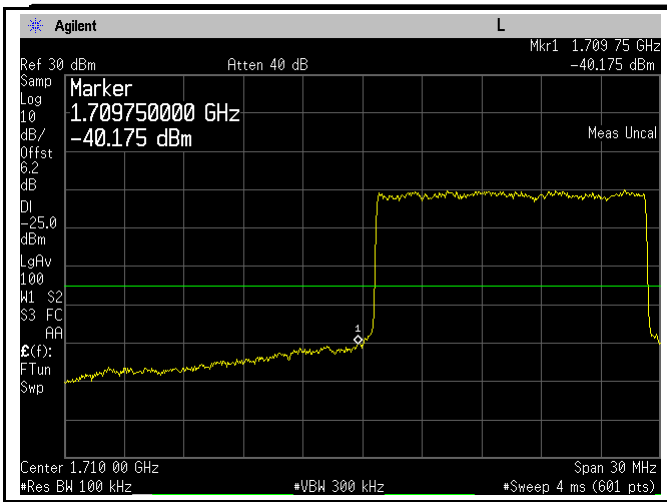
LTE Band IV - High Channel QPSK-10



LTE Band IV - Low Channel 16QAM-10

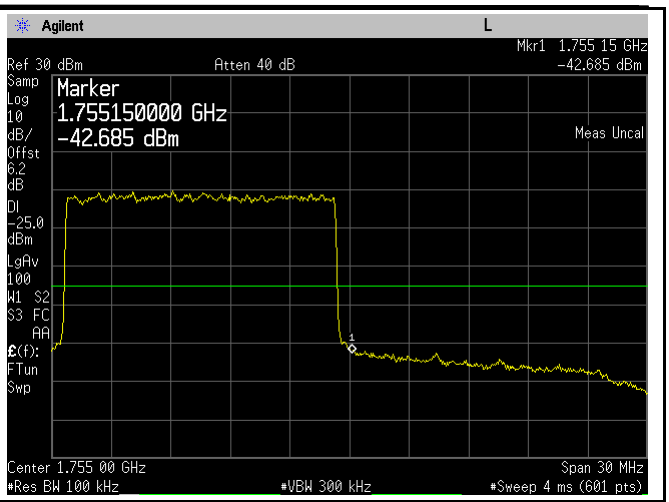


LTE Band IV - High Channel 16QAM-10



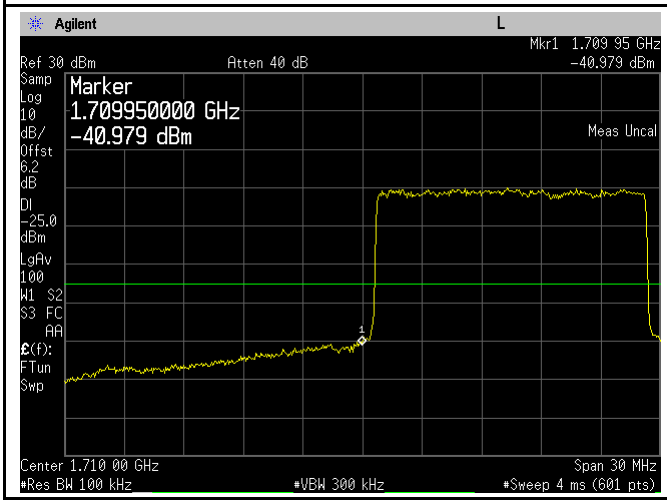
LTE Band IV - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (148.74/100)=4.5+1.7=6.2 dB



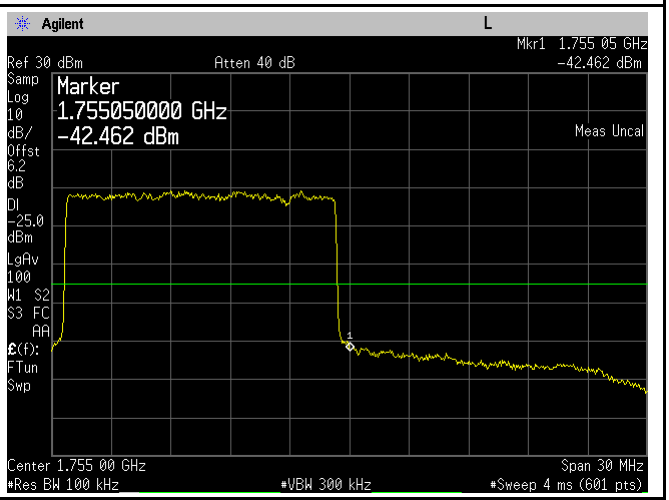
LTE Band IV - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (148.3/100)=4.5+1.7=6.2 dB



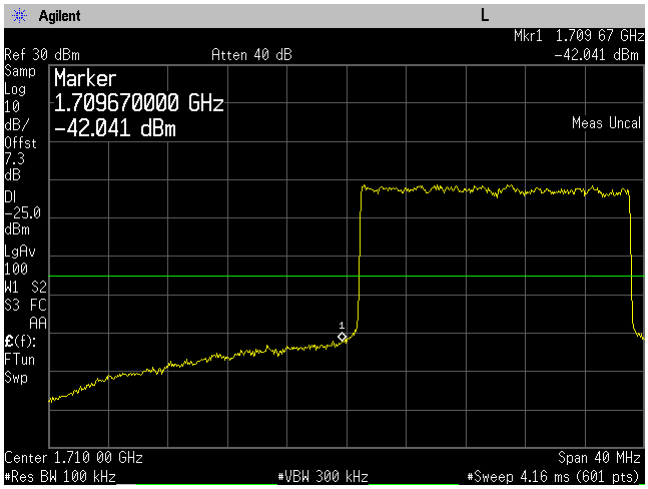
LTE Band IV - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log (147/100)=4.5+1.7=6.2 dB

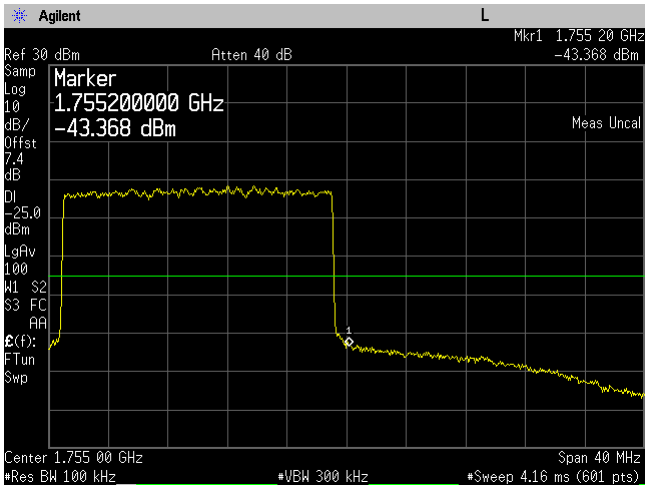


LTE Band IV - High Channel 16QAM-15

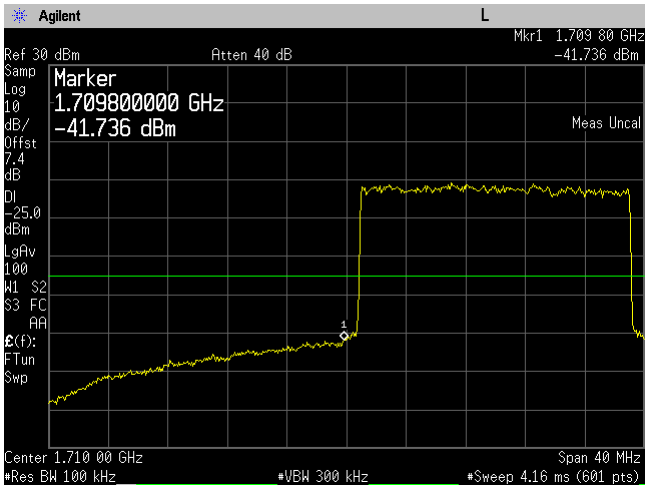
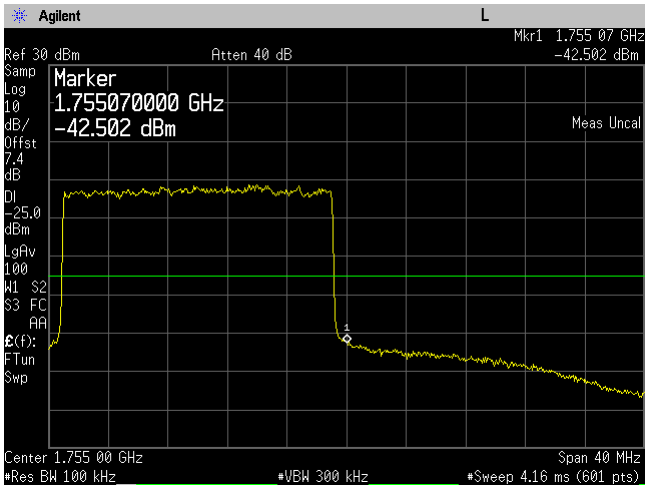
Note: Offset=Cable loss (4.5) + 10log (148/100)=4.5+1.7=6.2 dB



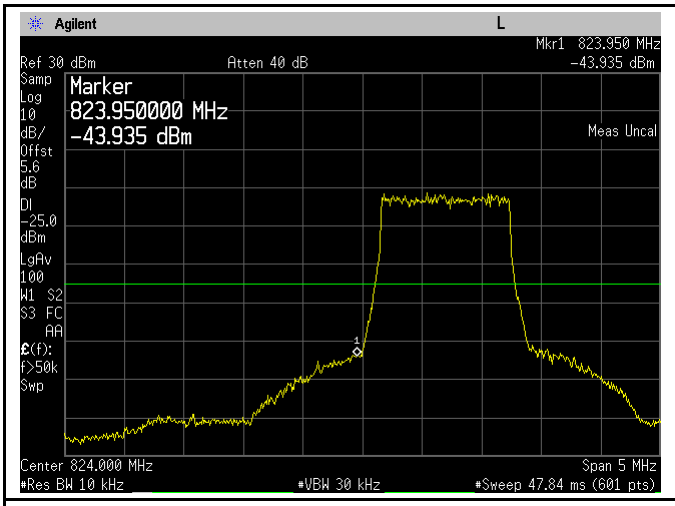
LTE Band IV - Low Channel QPSK-20



LTE Band IV - High Channel QPSK-20

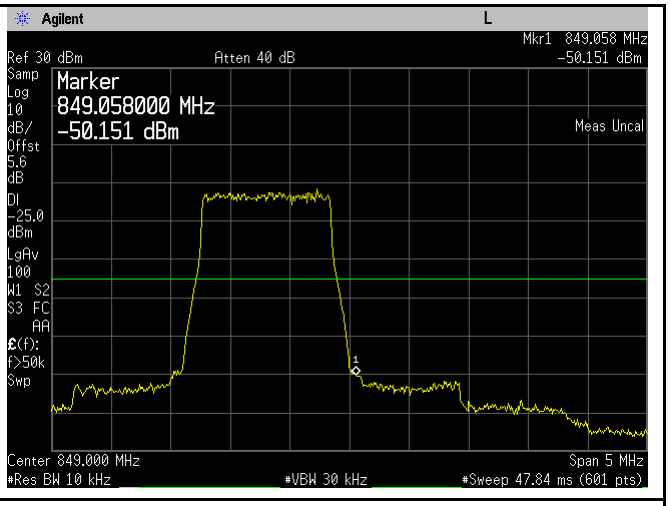
Note: Offset=Cable loss (4.5) + 10log (193.1/100)=4.5+2.8=7.3 dB	Note: Offset=Cable loss (4.5) + 10log (192.3/100)=4.5+2.9=7.4 dB
	
LTE Band IV - Low Channel 16QAM-20	LTE Band IV - High Channel 16QAM-20
Note: Offset=Cable loss (4.5) + 10log (175/100)=4.5+2.9=7.4dB	Note: Offset=Cable loss (4.5) + 10log (194.2/100)=4.5+2.9=7.4 dB

LTE Band V (Part 22H)



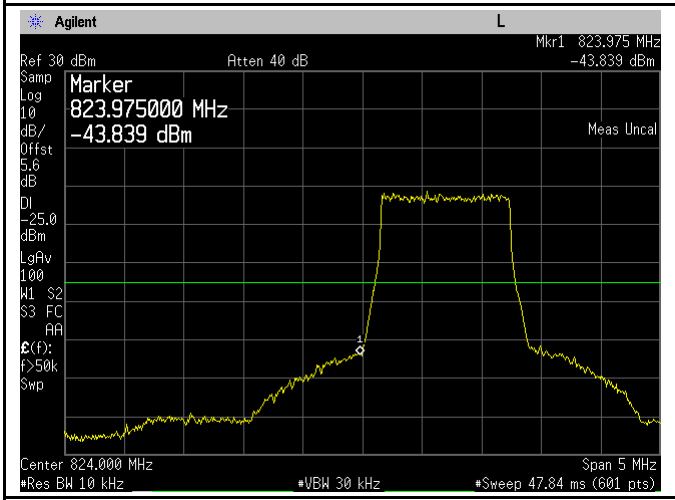
LTE Band V - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.75/10)=4.5+1.1=5.6 dB



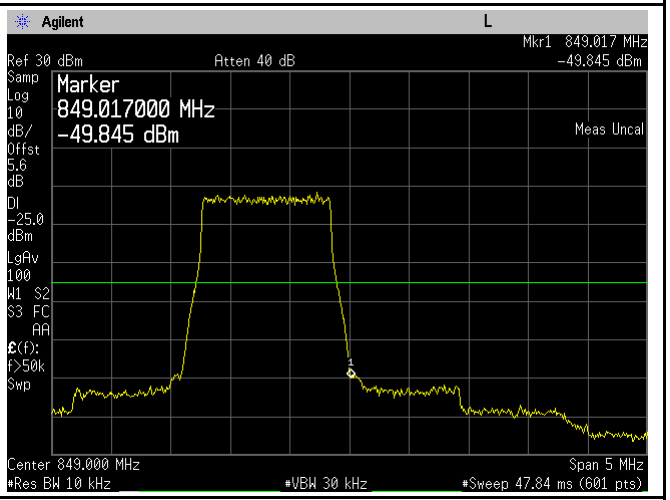
LTE Band V - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.53/10)=4.5+1.1=5.6 dB



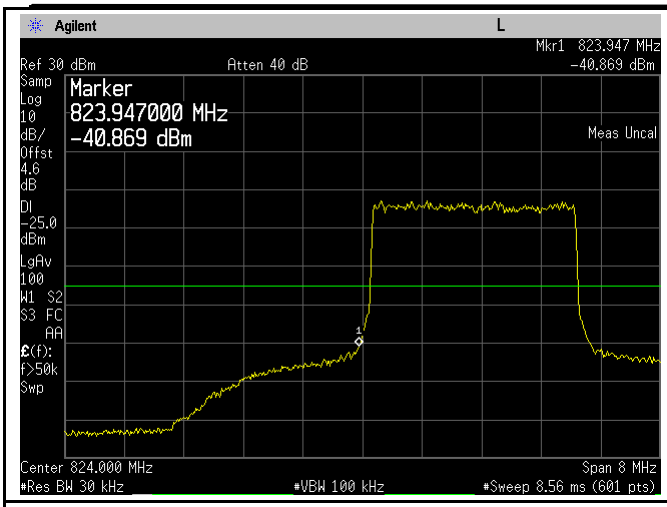
LTE Band V - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.54/10)=4.5+1.1=5.6dB



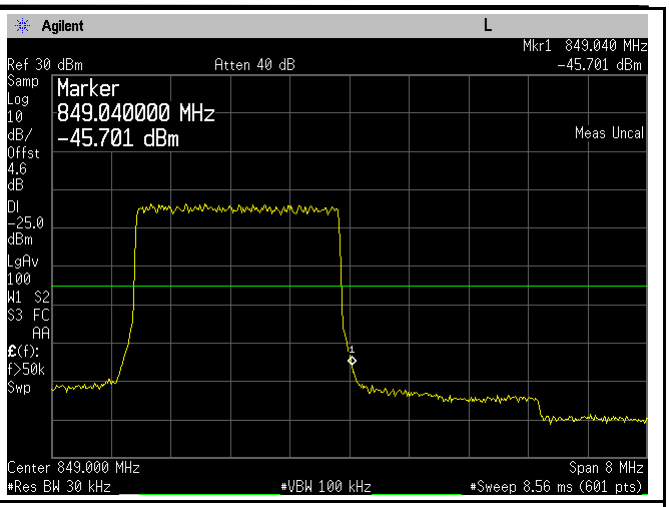
LTE Band V - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.65/10)=4.5+1.1=5.6 dB



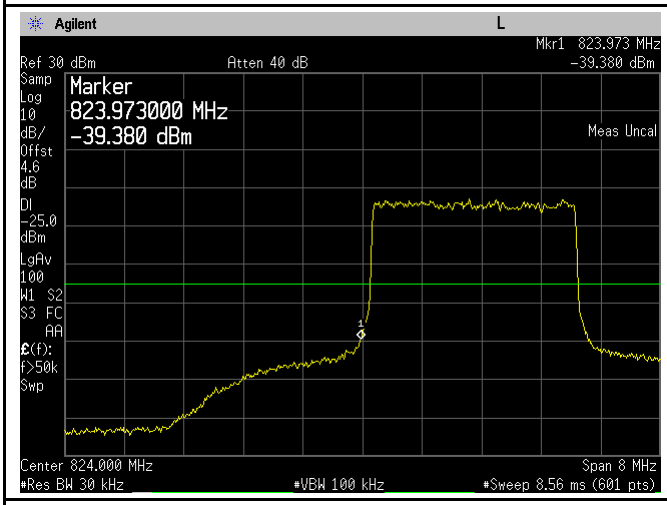
LTE Band V - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.29/30)=4.5+0.1=4.6 dB



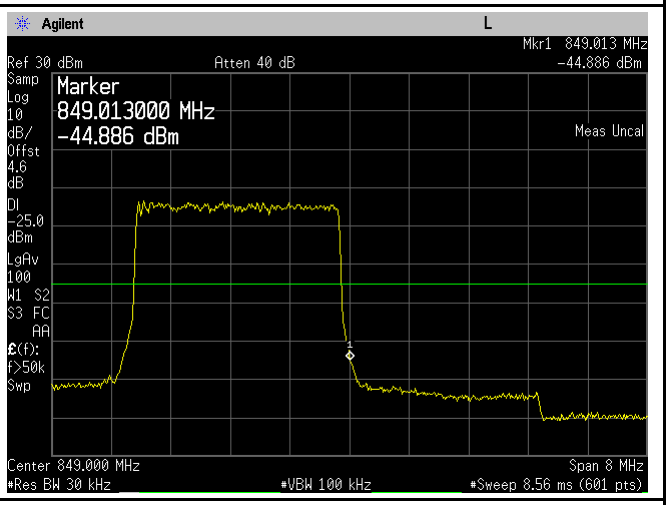
LTE Band V - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.32/30)=4.5+0.1=4.6 dB



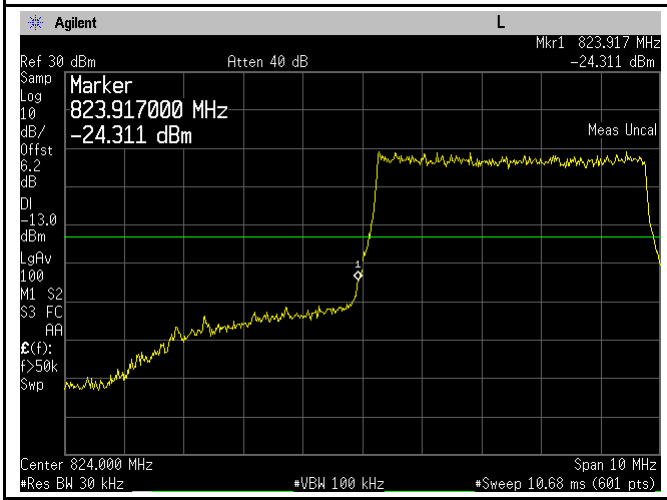
LTE Band V - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (29.94/30)=4.5+0.1=4.6 dB

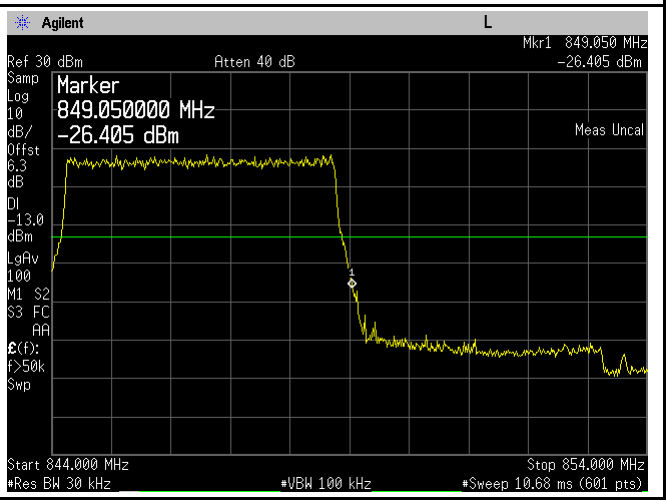


LTE Band V - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.46/30)=4.5+0.1=4.6 dB



LTE Band V - Low Channel QPSK-5



LTE Band V - High Channel QPSK-5