RF TEST REPORT

Report No.: 17070963-FCC-R5

Supersede Report No.: N/A

Applicant	BLU Products, Inc.
Product Name	Mobile Phone
Model No.	R2 PLUS
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	October 17 to November 05, 2017
Issue Date	November 06, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Loren Luo	David Huang	
Loren Luo 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

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn

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
17070963-FCC-R5	NONE	Original	November 06, 2017

2. Customer information

Applicant Name	BLU Products, Inc.
Applicant Add	10814 NW 33rd St # 100 Doral, FL 33172
Manufacturer	BLU Products, Inc.
Manufacturer Add	10814 NW 33rd St # 100 Doral, FL 33172

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:	R2 PLUS
Serial Model:	N/A
Date EUT received:	October 16, 2017
Test Date(s):	October 17 to November 05, 2017
Equipment Category :	PCE
Antenna Gain:	GSM850: -2.8dBi PCS1900: -2.3dBi UMTS-FDD Band V: -2.5dBi UMTS-FDD Band IV: -2.5dBi UMTS-FDD Band II: -2.5dBi LTE Band II: -2.8dBi LTE Band IV: -2.4dBi LTE Band VII: -2.5dBi LTE Band XII: -2.8dBi LTE Band XVII: -3.0dBi Bluetooth/BLE: -2.7dBi WIFI: -3.0dBi GPS: -2.9dBi
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 VII TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz LTE Band XII TX:699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz LTE Band XVII TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 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: 23.55 dBm LTE Band IV: 23.53 dBm LTE Band VII: 22.89 dBm LTE Band XII: 23.22 dBm LTE Band XVII: 23.95 dBm
ERP/EIRP:	LTE Band II: 20.67 dBm / EIRP LTE Band IV: 21.06 dBm / EIRP LTE Band VII: 20.29 dBm / EIRP LTE Band XII: 21.03 dBm / EIRP LTE Band XVII: 21.78 dBm / ERP
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: US-WT-1500 Input: AC100-240V~50/60Hz,0.3A Output: DC 5V~1.5A Battery: Model: C716041300P Spec: 3.8V, 3000mAh, 11.4Wh
Trade Name :	BLU

GPRS/EGPRS Multi-slot class 8/10/11/12

FCC ID: YHLBLUR2PLUS

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

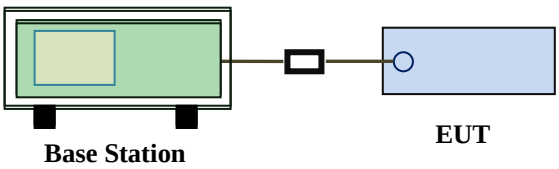
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17070963-FCC-H.

6.2 RF Output Power

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1018mbar
Test date :	October 19, 2017
Tested By :	Loren Luo

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	23.45	23±1
				1	49	0	23.53	23±1
				1	99	0	23.48	23±1
				50	0	1	22.39	23±1
				50	24	1	22.36	23±1
				50	49	1	22.42	23±1
				100	0	1	22.37	23±1
			16QAM	1	0	1	22.34	22±1
				1	49	1	22.25	22±1
				1	99	1	22.28	22±1
				50	0	2	22.43	22±1
				50	24	2	22.27	22±1
				50	49	2	22.33	22±1
				100	0	2	21.52	22±1
	18900	1880.0	QPSK	1	0	0	23.39	23±1
				1	49	0	23.39	23±1
				1	99	0	23.47	23±1
				50	0	1	22.45	23±1
				50	24	1	22.43	23±1
				50	49	1	22.51	23±1
				100	0	1	22.4	23±1
			16QAM	1	0	1	22.58	22.2±1
				1	49	1	22.63	22.2±1
				1	99	1	22.62	22.2±1
				50	0	2	22.52	22.2±1
				50	24	2	22.64	22.2±1
				50	49	2	22.49	22.2±1
				100	0	2	21.43	22.2±1
	19100	1900.0	QPSK	1	0	0	23.46	23±1
				1	49	0	23.53	23±1
				1	99	0	23.4	23±1
				50	0	1	22.47	23±1
				50	24	1	22.54	23±1
				50	49	1	22.56	23±1
				100	0	1	22.34	23±1
			16QAM	1	0	1	22.83	22.3±1
				1	49	1	22.81	22.3±1
				1	99	1	22.76	22.3±1
				50	0	2	22.8	22.3±1
				50	24	2	22.78	22.3±1
				50	49	2	22.8	22.3±1
				100	0	2	21.38	22.3±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	23.43	23±1
				1	37	0	23.4	23±1
				1	74	0	23.5	23±1
				36	0	1	22.49	23±1
				36	16	1	22.58	23±1
				36	35	1	22.42	23±1
				75	0	1	22.42	23±1
			16QAM	1	0	1	22.16	22±1
				1	37	1	22.08	22±1
				1	74	1	22.06	22±1
				36	0	2	22.14	22±1
				36	16	2	22.25	22±1
				36	35	2	22.16	22±1
				75	0	2	21.42	22±1
	18900	1880.0	QPSK	1	0	0	23.47	23±1
				1	37	0	23.46	23±1
				1	74	0	23.55	23±1
				36	0	1	22.55	23±1
				36	16	1	22.52	23±1
				36	35	1	22.53	23±1
				75	0	1	22.52	23±1
			16QAM	1	0	1	22.5	22±1
				1	37	1	22.46	22±1
				1	74	1	22.47	22±1
				36	0	2	22.51	22±1
				36	16	2	22.59	22±1
				36	35	2	22.6	22±1
				75	0	2	21.45	22±1
	19125	1902.5	QPSK	1	0	0	23.33	23±1
				1	37	0	23.25	23±1
				1	74	0	23.31	23±1
				36	0	1	22.4	23±1
				36	16	1	22.45	23±1
				36	35	1	22.37	23±1
				75	0	1	22.4	23±1
			16QAM	1	0	1	22.88	22.5±1
				1	37	1	22.96	22.5±1
				1	74	1	22.93	22.5±1
				36	0	2	22.93	22.5±1
				36	16	2	22.96	22.5±1
				36	35	2	22.85	22.5±1
				75	0	2	21.57	22.5±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	23.39	23±1
				1	24	0	23.33	23±1
				1	49	0	23.29	23±1
				25	0	1	22.27	23±1
				25	12	1	22.32	23±1
				25	24	1	22.3	23±1
				50	0	1	22.29	23±1
			16QAM	1	0	1	22.11	22±1
				1	24	1	22.08	22±1
				1	49	1	22.09	22±1
				25	0	2	22.02	22±1
				25	12	2	22.16	22±1
				25	24	2	22.06	22±1
				50	0	2	21.38	22±1
	18900	1880.0	QPSK	1	0	0	23.42	23±1
				1	24	0	23.5	23±1
				1	49	0	23.33	23±1
				25	0	1	22.36	23±1
				25	12	1	22.4	23±1
				25	24	1	22.34	23±1
				50	0	1	22.36	23±1
			16QAM	1	0	1	22.31	22±1
				1	24	1	22.35	22±1
				1	49	1	22.24	22±1
				25	0	2	22.32	22±1
				25	12	2	22.24	22±1
				25	24	2	22.38	22±1
				50	0	2	21.4	22±1
	19150	1905	QPSK	1	0	0	23.26	23±1
				1	24	0	23.26	23±1
				1	49	0	23.3	23±1
				25	0	1	22.31	23±1
				25	12	1	22.32	23±1
				25	24	1	22.37	23±1
				50	0	1	22.25	23±1
			16QAM	1	0	1	22.72	22.2±1
				1	24	1	22.75	22.2±1
				1	49	1	22.74	22.2±1
				25	0	2	22.74	22.2±1
				25	12	2	22.69	22.2±1
				25	24	2	22.75	22.2±1
				50	0	2	21.29	22.2±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	23.36	23±1
				1	12	0	23.42	23±1
				1	24	0	23.28	23±1
				12	0	1	22.3	23±1
				12	6	1	22.22	23±1
				12	11	1	22.31	23±1
				25	0	1	22.25	23±1
			16QAM	1	0	1	22.55	22.2±1
				1	12	1	22.64	22.2±1
				1	24	1	22.64	22.2±1
				12	0	2	22.65	22.2±1
				12	6	2	22.51	22.2±1
				12	11	2	22.61	22.2±1
				25	0	2	21.24	22.2±1
	18900	1880.0	QPSK	1	0	0	23.34	23±1
				1	12	0	23.43	23±1
				1	24	0	23.32	23±1
				12	0	1	22.4	23±1
				12	6	1	22.47	23±1
				12	11	1	22.36	23±1
				25	0	1	22.33	23±1
			16QAM	1	0	1	22.34	22±1
				1	12	1	22.44	22±1
				1	24	1	22.31	22±1
				12	0	2	22.37	22±1
				12	6	2	22.31	22±1
				12	11	2	22.38	22±1
				25	0	2	21.36	22±1
	19175	1907.5	QPSK	1	0	0	23.23	23±1
				1	12	0	23.31	23±1
				1	24	0	23.28	23±1
				12	0	1	22.26	23±1
				12	6	1	22.27	23±1
				12	11	1	22.26	23±1
				25	0	1	22.2	23±1
			16QAM	1	0	1	22.13	22±1
				1	12	1	22.16	22±1
				1	24	1	22.21	22±1
				12	0	2	22.1	22±1
				12	6	2	22.09	22±1
				12	11	2	22.23	22±1
				25	0	2	21.26	22±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	23.36	23±1
				1	7	0	23.34	23±1
				1	14	0	23.31	23±1
				8	0	1	22.33	23±1
				8	4	1	22.41	23±1
				8	7	1	22.35	23±1
				15	0	1	22.29	23±1
			16QAM	1	0	1	22.08	22±1
				1	7	1	22.12	22±1
				1	14	1	22.18	22±1
				8	0	2	21.24	22±1
				8	4	2	21.16	22±1
				8	7	2	21.15	22±1
				15	0	2	21.25	22±1
	18900	1880.0	QPSK	1	0	0	23.36	23±1
				1	7	0	21.16	23±1
				1	14	0	23.4	23±1
				8	0	1	22.35	23±1
				8	4	1	22.37	23±1
				8	7	1	22.31	23±1
				15	0	1	22.33	23±1
			16QAM	1	0	1	22.27	22±1
				1	7	1	22.27	22±1
				1	14	1	22.27	22±1
				8	0	2	21.19	22±1
				8	4	2	21.27	22±1
				8	7	2	21.28	22±1
				15	0	2	21.35	22±1
	19175	1907.5	QPSK	1	0	0	23.1	23±1
				1	7	0	23.18	23±1
				1	14	0	23.11	23±1
				8	0	1	22.21	23±1
				8	4	1	22.19	23±1
				8	7	1	22.29	23±1
				15	0	1	22.21	23±1
			16QAM	1	0	1	22.49	22±1
				1	7	1	22.5	22±1
				1	14	1	22.5	22±1
				8	0	2	21.16	22±1
				8	4	2	21.15	22±1
				8	7	2	21.22	22±1
				15	0	2	21.28	22±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	23.36	23±1
				1	2	0	23.34	23±1
				1	5	0	23.44	23±1
				3	0	0	23.32	23±1
				3	1	0	23.29	23±1
				3	2	0	23.35	23±1
				6	0	1	22.35	23±1
			16QAM	1	0	1	22.1	22±1
				1	2	1	22.14	22±1
				1	5	1	22.01	22±1
				3	0	1	22.02	22±1
				3	1	1	22.15	22±1
				3	2	1	22.09	22±1
				6	0	2	21.26	22±1
	18900	1880.0	QPSK	1	0	0	23.35	23±1
				1	2	0	23.28	23±1
				1	5	0	23.29	23±1
				3	0	0	23.32	23±1
				3	1	0	23.4	23±1
				3	2	0	23.22	23±1
				6	0	1	22.32	23±1
			16QAM	1	0	1	22.26	22±1
				1	2	1	22.24	22±1
				1	5	1	22.17	22±1
				3	0	1	22.24	22±1
				3	1	1	22.33	22±1
				3	2	1	22.34	22±1
				6	0	2	21.16	22±1
	19193	1909.3	QPSK	1	0	0	23.12	23±1
				1	2	0	23.05	23±1
				1	5	0	23.06	23±1
				3	0	0	23.16	23±1
				3	1	0	23.06	23±1
				3	2	0	23.14	23±1
				6	0	1	22.2	23±1
			16QAM	1	0	1	22.05	22±1
				1	2	1	21.99	22±1
				1	5	1	22.02	22±1
				3	0	1	22.05	22±1
				3	1	1	21.97	22±1
				3	2	1	22.01	22±1
				6	0	2	21.1	22±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	23.36	23±1
				1	49	0	23.44	23±1
				1	99	0	23.31	23±1
				50	0	1	22.32	23±1
				50	24	1	22.34	23±1
				50	49	1	22.42	23±1
				100	0	1	22.27	23±1
			16QAM	1	0	1	22.26	22±1
				1	49	1	22.33	22±1
				1	99	1	22.17	22±1
				50	0	2	22.18	22±1
				50	24	2	22.27	22±1
				50	49	2	22.35	22±1
				100	0	2	21.32	22±1
	20175	1732.5	QPSK	1	0	0	23.3	23±1
				1	49	0	23.34	23±1
				1	99	0	23.29	23±1
				50	0	1	22.34	23±1
				50	24	1	22.37	23±1
				50	49	1	22.4	23±1
				100	0	1	22.33	23±1
			16QAM	1	0	1	22.68	22.2±1
				1	49	1	22.77	22.2±1
				1	99	1	22.72	22.2±1
				50	0	2	22.7	22.2±1
				50	24	2	22.77	22.2±1
				50	49	2	22.65	22.2±1
				100	0	2	21.35	22.2±1
	20300	1745.0	QPSK	1	0	0	23.46	23±1
				1	49	0	23.42	23±1
				1	99	0	23.53	23±1
				50	0	1	22.41	23±1
				50	24	1	22.43	23±1
				50	49	1	22.37	23±1
				100	0	1	22.42	23±1
			16QAM	1	0	1	22.37	22±1
				1	49	1	22.38	22±1
				1	99	1	22.4	22±1
				50	0	2	22.31	22±1
				50	24	2	22.45	22±1
				50	49	2	22.28	22±1
				100	0	2	21.44	22±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	23.31	23±1
				1	37	0	23.34	23±1
				1	74	0	23.27	23±1
				36	0	1	22.35	23±1
				36	16	1	22.4	23±1
				36	35	1	22.44	23±1
				75	0	1	22.35	23±1
			16QAM	1	0	1	22.12	22±1
				1	37	1	22.12	22±1
				1	74	1	22.07	22±1
				36	0	2	22.1	22±1
				36	16	2	22.15	22±1
				36	35	2	22.1	22±1
				75	0	2	21.35	22±1
	20175	1732.5	QPSK	1	0	0	23.29	23±1
				1	37	0	23.27	23±1
				1	74	0	23.23	23±1
				36	0	1	22.41	23±1
				36	16	1	22.38	23±1
				36	35	1	22.32	23±1
				75	0	1	22.4	23±1
			16QAM	1	0	1	22.46	22±1
				1	37	1	22.41	22±1
				1	74	1	22.37	22±1
				36	0	2	22.4	22±1
				36	16	2	22.42	22±1
				36	35	2	22.45	22±1
				75	0	2	21.36	22±1
	20325	1747.5	QPSK	1	0	0	23.37	23±1
				1	37	0	23.28	23±1
				1	74	0	23.42	23±1
				36	0	1	22.57	23±1
				36	16	1	22.62	23±1
				36	35	1	22.56	23±1
				75	0	1	22.46	23±1
			16QAM	1	0	1	22.87	22.5±1
				1	37	1	22.78	22.5±1
				1	74	1	22.97	22.5±1
				36	0	2	22.78	22.5±1
				36	16	2	22.82	22.5±1
				36	35	2	22.81	22.5±1
				75	0	2	21.52	22.5±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	23.28	23±1
				1	24	0	23.33	23±1
				1	49	0	23.22	23±1
				25	0	1	22.22	23±1
				25	12	1	22.31	23±1
				25	24	1	22.22	23±1
				50	0	1	22.21	23±1
			16QAM	1	0	1	22.09	22±1
				1	24	1	22	22±1
				1	49	1	22.06	22±1
				25	0	2	22	22±1
				25	12	2	22.05	22±1
				25	24	2	22.09	22±1
				50	0	2	21.24	22±1
	20175	1732.5	QPSK	1	0	0	23.22	23±1
				1	24	0	23.24	23±1
				1	49	0	23.21	23±1
				25	0	1	22.27	23±1
				25	12	1	22.2	23±1
				25	24	1	22.21	23±1
				50	0	1	22.3	23±1
			16QAM	1	0	1	22.24	22±1
				1	24	1	22.29	22±1
				1	49	1	22.24	22±1
				25	0	2	22.26	22±1
				25	12	2	22.33	22±1
				25	24	2	22.17	22±1
				50	0	2	21.35	22±1
	20350	1750.0	QPSK	1	0	0	23.2	23±1
				1	24	0	23.23	23±1
				1	49	0	23.16	23±1
				25	0	1	22.47	23±1
				25	12	1	22.51	23±1
				25	24	1	22.47	23±1
				50	0	1	22.42	23±1
			16QAM	1	0	1	22.85	22.5±1
				1	24	1	22.91	22.5±1
				1	49	1	22.9	22.5±1
				25	0	2	22.79	22.5±1
				25	12	2	22.8	22.5±1
				25	24	2	22.84	22.5±1
				50	0	2	21.58	22.5±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	23.22	23±1
				1	12	0	23.26	23±1
				1	24	0	23.29	23±1
				12	0	1	22.25	23±1
				12	6	1	22.32	23±1
				12	11	1	22.17	23±1
				25	0	1	22.2	23±1
			16QAM	1	0	1	22.57	22.1±1
				1	12	1	22.59	22.1±1
				1	24	1	22.56	22.1±1
				12	0	2	22.54	22.1±1
				12	6	2	22.61	22.1±1
				12	11	2	22.53	22.1±1
				25	0	2	21.26	22.1±1
	20175	1732.5	QPSK	1	0	0	23.23	23±1
				1	12	0	23.33	23±1
				1	24	0	23.33	23±1
				12	0	1	22.31	23±1
				12	6	1	22.21	23±1
				12	11	1	22.34	23±1
				25	0	1	22.26	23±1
			16QAM	1	0	1	22.25	22.2±1
				1	12	1	22.24	22.2±1
				1	24	1	22.15	22.2±1
				12	0	2	22.17	22.2±1
				12	6	2	22.3	22.2±1
				12	11	2	22.33	22.2±1
				25	0	2	21.3	22.2±1
	20350	1750.0	QPSK	1	0	0	23.46	23±1
				1	12	0	23.46	23±1
				1	24	0	23.4	23±1
				12	0	1	22.49	23±1
				12	6	1	22.41	23±1
				12	11	1	22.43	23±1
				25	0	1	22.33	23±1
			16QAM	1	0	1	22.35	22±1
				1	12	1	22.41	22±1
				1	24	1	22.29	22±1
				12	0	2	22.33	22±1
				12	6	2	22.39	22±1
				12	11	2	22.28	22±1
				25	0	2	21.52	22±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	23.21	23±1
				1	7	0	23.28	23±1
				1	14	0	23.27	23±1
				8	0	1	22.2	23±1
				8	4	1	22.19	23±1
				8	7	1	22.17	23±1
				15	0	1	22.2	23±1
			16QAM	1	0	1	22.03	22±1
				1	7	1	22.11	22±1
				1	14	1	21.96	22±1
				8	0	2	21.15	22±1
				8	4	2	21.18	22±1
				8	7	2	21.08	22±1
				15	0	2	21.16	22±1
	20175	1732.5	QPSK	1	0	0	23.27	23±1
				1	7	0	21.18	23±1
				1	14	0	23.32	23±1
				8	0	1	22.26	23±1
				8	4	1	22.16	23±1
				8	7	1	22.21	23±1
				15	0	1	22.27	23±1
			16QAM	1	0	1	22.22	22±1
				1	7	1	22.26	22±1
				1	14	1	22.2	22±1
				8	0	2	21.1	22±1
				8	4	2	21.05	22±1
				8	7	2	21.1	22±1
				15	0	2	21.3	22±1
	20385	1753.5	QPSK	1	0	0	23.37	23±1
				1	7	0	23.29	23±1
				1	14	0	23.33	23±1
				8	0	1	22.48	23±1
				8	4	1	22.43	23±1
				8	7	1	22.58	23±1
				15	0	1	22.51	23±1
			16QAM	1	0	1	22.81	22.5±1
				1	7	1	22.79	22.5±1
				1	14	1	22.74	22.5±1
				8	0	2	21.43	22.5±1
				8	4	2	21.33	22.5±1
				8	7	2	21.41	22.5±1
				15	0	2	21.56	22.5±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	23.2	23±1
				1	2	0	23.18	23±1
				1	5	0	23.2	23±1
				3	0	0	23.25	23±1
				3	1	0	23.33	23±1
				3	2	0	23.21	23±1
				6	0	1	22.19	23±1
			16QAM	1	0	1	22.01	22±1
				1	2	1	22.08	22±1
				1	5	1	22.11	22±1
				3	0	1	22.07	22±1
				3	1	1	22	22±1
				3	2	1	22.01	22±1
				6	0	2	21.15	22±1
	20175	1732.5	QPSK	1	0	0	23.25	23±1
				1	2	0	23.28	23±1
				1	5	0	23.27	23±1
				3	0	0	23.21	23±1
				3	1	0	23.21	23±1
				3	2	0	23.11	23±1
				6	0	1	22.22	23±1
			16QAM	1	0	1	22.16	22.1±1
				1	2	1	22.26	22.1±1
				1	5	1	22.22	22.1±1
				3	0	1	22.14	22.1±1
				3	1	1	22.14	22.1±1
				3	2	1	22.17	22.1±1
				6	0	2	21.08	22.1±1
	20393	1754.3	QPSK	1	0	0	23.33	23±1
				1	2	0	23.3	23±1
				1	5	0	23.41	23±1
				3	0	0	23.34	23±1
				3	1	0	23.38	23±1
				3	2	0	23.28	23±1
				6	0	1	22.51	23±1
			16QAM	1	0	1	22.09	22±1
				1	2	1	22.02	22±1
				1	5	1	22.12	22±1
				3	0	1	22.13	22±1
				3	1	1	22.12	22±1
				3	2	1	22.13	22±1
				6	0	2	21.39	22±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	22.65	22.5±1
				1	49	0	22.72	22.5±1
				1	99	0	22.67	22.5±1
				50	0	1	21.67	22.5±1
				50	24	1	21.61	22.5±1
				50	49	1	21.74	22.5±1
				100	0	1	21.64	22.5±1
			16QAM	1	0	1	21.65	21.5±1
				1	49	1	21.67	21.5±1
				1	99	1	21.59	21.5±1
				50	0	2	21.75	21.5±1
				50	24	2	21.68	21.5±1
				50	49	2	21.57	21.5±1
				100	0	2	20.67	21.5±1
	21100	2535	QPSK	1	0	0	22.19	22±1
				1	49	0	22.1	22±1
				1	99	0	22.14	22±1
				50	0	1	21.65	22±1
				50	24	1	21.66	22±1
				50	49	1	21.7	22±1
				100	0	1	21.61	22±1
			16QAM	1	0	1	21.6	21.3±1
				1	49	1	21.7	21.3±1
				1	99	1	21.59	21.3±1
				50	0	2	21.55	21.3±1
				50	24	2	21.67	21.3±1
				50	49	2	21.64	21.3±1
				100	0	2	20.62	21.3±1
	21350	2560	QPSK	1	0	0	22.06	22±1
				1	49	0	22.04	22±1
				1	99	0	22.03	22±1
				50	0	1	21.26	22±1
				50	24	1	21.19	22±1
				50	49	1	21.25	22±1
				100	0	1	21.27	22±1
			16QAM	1	0	1	21.65	21.3±1
				1	49	1	21.68	21.3±1
				1	99	1	21.6	21.3±1
				50	0	2	21.62	21.3±1
				50	24	2	21.6	21.3±1
				50	49	2	21.62	21.3±1
				100	0	2	20.41	21.3±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	22.79	22.5±1
				1	37	0	22.88	22.5±1
				1	74	0	22.89	22.5±1
				36	0	1	21.84	22.5±1
				36	16	1	21.74	22.5±1
				36	35	1	21.83	22.5±1
				75	0	1	21.81	22.5±1
			16QAM	1	0	1	21.51	21.4±1
				1	37	1	21.49	21.4±1
				1	74	1	21.55	21.4±1
				36	0	2	21.56	21.4±1
				36	16	2	21.54	21.4±1
				36	35	2	21.5	21.4±1
				75	0	2	20.76	21.4±1
	21100	1732.5	QPSK	1	0	0	22.61	22.6±1
				1	37	0	22.55	22.6±1
				1	74	0	22.61	22.6±1
				36	0	1	21.76	22.6±1
				36	16	1	21.77	22.6±1
				36	35	1	21.74	22.6±1
				75	0	1	21.74	22.6±1
			16QAM	1	0	1	21.72	21.6±1
				1	37	1	21.8	21.6±1
				1	74	1	21.76	21.6±1
				36	0	2	21.67	21.6±1
				36	16	2	21.8	21.6±1
				36	35	2	21.78	21.6±1
				75	0	2	20.68	21.6±1
	21375	1747.5	QPSK	1	0	0	22.22	22±1
				1	37	0	22.12	22±1
				1	74	0	22.31	22±1
				36	0	1	21.49	22±1
				36	16	1	21.55	22±1
				36	35	1	21.58	22±1
				75	0	1	21.45	22±1
			16QAM	1	0	1	21.88	21.6±1
				1	37	1	21.88	21.6±1
				1	74	1	21.89	21.6±1
				36	0	2	21.89	21.6±1
				36	16	2	21.91	21.6±1
				36	35	2	21.9	21.6±1
				75	0	2	20.62	21.6±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	22.5	22±1
				1	24	0	22.55	22±1
				1	49	0	22.43	22±1
				25	0	1	21.61	22±1
				25	12	1	21.7	22±1
				25	24	1	21.66	22±1
				50	0	1	21.61	22±1
			16QAM	1	0	1	21.46	21.6±1
				1	24	1	21.36	21.6±1
				1	49	1	21.46	21.6±1
				25	0	2	21.39	21.6±1
				25	12	2	21.51	21.6±1
				25	24	2	21.41	21.6±1
				50	0	2	20.61	21.6±1
	21100	2535	QPSK	1	0	0	22.34	22±1
				1	24	0	22.29	22±1
				1	49	0	22.36	22±1
				25	0	1	21.57	22±1
				25	12	1	21.56	22±1
				25	24	1	21.5	22±1
				50	0	1	21.58	22±1
			16QAM	1	0	1	21.39	21.3±1
				1	24	1	21.43	21.3±1
				1	49	1	21.29	21.3±1
				25	0	2	21.47	21.3±1
				25	12	2	21.37	21.3±1
				25	24	2	21.41	21.3±1
				50	0	2	20.6	21.3±1
	21400	2565	QPSK	1	0	0	22.53	22±1
				1	24	0	22.47	22±1
				1	49	0	22.49	22±1
				25	0	1	21.52	22±1
				25	12	1	21.48	22±1
				25	24	1	21.44	22±1
				50	0	1	21.51	22±1
			16QAM	1	0	1	21.93	21.5±1
				1	24	1	21.88	21.5±1
				1	49	1	22	21.5±1
				25	0	2	21.88	21.5±1
				25	12	2	21.85	21.5±1
				25	24	2	21.95	21.5±1
				50	0	2	20.54	21.5±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	22.66	22.2±1
				1	12	0	22.61	22.2±1
				1	24	0	22.6	22.2±1
				12	0	1	21.63	22.2±1
				12	6	1	21.55	22.2±1
				12	11	1	21.66	22.2±1
				25	0	1	21.6	22.2±1
			16QAM	1	0	1	21.89	21.5±1
				1	12	1	21.94	21.5±1
				1	24	1	21.79	21.5±1
				12	0	2	21.93	21.5±1
				12	6	2	21.95	21.5±1
				12	11	2	21.84	21.5±1
				25	0	2	20.56	21.5±1
	20175	1732.5	QPSK	1	0	0	22.61	22.3±1
				1	12	0	22.62	22.3±1
				1	24	0	22.66	22.3±1
				12	0	1	21.62	22.3±1
				12	6	1	21.55	22.3±1
				12	11	1	21.59	22.3±1
				25	0	1	21.56	22.3±1
			16QAM	1	0	1	21.53	21.3±1
				1	12	1	21.54	21.3±1
				1	24	1	21.46	21.3±1
				12	0	2	21.49	21.3±1
				12	6	2	21.56	21.3±1
				12	11	2	21.56	21.3±1
				25	0	2	20.58	21.3±1
	20375	1752.5	QPSK	1	0	0	22.37	22±1
				1	12	0	22.29	22±1
				1	24	0	22.32	22±1
				12	0	1	21.47	22±1
				12	6	1	21.53	22±1
				12	11	1	21.45	22±1
				25	0	1	21.39	22±1
			16QAM	1	0	1	21.43	21.5±1
				1	12	1	21.53	21.5±1
				1	24	1	21.45	21.5±1
				12	0	2	21.43	21.5±1
				12	6	2	21.53	21.5±1
				12	11	2	21.5	21.5±1
				25	0	2	20.53	21.5±1

LTE Band XII:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	23060	704	QPSK	1	0	0	23.06	23±1
				1	24	0	22.98	23±1
				1	49	0	23.03	23±1
				25	0	1	23.05	23±1
				25	12	1	23	23±1
				25	24	1	22.97	23±1
				50	0	1	23.07	23±1
			16QAM	1	0	1	22.9	23±1
				1	24	1	22.99	23±1
				1	49	1	22.81	23±1
				25	0	2	22.92	23±1
				25	12	2	22.94	23±1
				25	24	2	22.9	23±1
				50	0	2	23.03	23±1
	23095	707.5	QPSK	1	0	0	23.07	23±1
				1	24	0	22.97	23±1
				1	49	0	22.97	23±1
				25	0	1	23.06	23±1
				25	12	1	22.99	23±1
				25	24	1	23	23±1
				50	0	1	23.09	23±1
			16QAM	1	0	1	22.99	23±1
				1	24	1	22.99	23±1
				1	49	1	22.98	23±1
				25	0	2	22.99	23±1
				25	12	2	23.02	23±1
				25	24	2	23.03	23±1
				50	0	2	23.09	23±1
	23130	711	QPSK	1	0	0	23	23±1
				1	24	0	22.95	23±1
				1	49	0	23.08	23±1
				25	0	1	23.13	23±1
				25	12	1	23.16	23±1
				25	24	1	23.05	23±1
				50	0	1	23.11	23±1
			16QAM	1	0	1	22.57	23±1
				1	24	1	22.48	23±1
				1	49	1	22.67	23±1
				25	0	2	22.49	23±1
				25	12	2	22.6	23±1
				25	24	2	22.65	23±1
				50	0	2	23.01	23±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	23035	701.5	QPSK	1	0	0	23.03	23±1
				1	12	0	23.11	23±1
				1	24	0	23.03	23±1
				12	0	1	23.06	23±1
				12	6	1	22.99	23±1
				12	11	1	23.08	23±1
				25	0	1	22.98	23±1
			16QAM	1	0	1	22.37	22.5±1
				1	12	1	22.35	22.5±1
				1	24	1	22.45	22.5±1
				12	0	2	22.34	22.5±1
				12	6	2	22.45	22.5±1
				12	11	2	22.4	22.5±1
				25	0	2	22.97	22.5±1
	23095	707.5	QPSK	1	0	0	23	23±1
				1	12	0	23.09	23±1
				1	24	0	23.03	23±1
				12	0	1	23.11	23±1
				12	6	1	23.06	23±1
				12	11	1	23.08	23±1
				25	0	1	23.08	23±1
			16QAM	1	0	1	22.55	23±1
				1	12	1	22.6	23±1
				1	24	1	22.53	23±1
				12	0	2	22.45	23±1
				12	6	2	22.53	23±1
				12	11	2	22.51	23±1
				25	0	2	23.07	23±1
	23155	713.5	QPSK	1	0	0	23.14	23±1
				1	12	0	23.09	23±1
				1	24	0	23.18	23±1
				12	0	1	23.16	23±1
				12	6	1	23.1	23±1
				12	11	1	23.22	23±1
				25	0	1	23.09	23±1
			16QAM	1	0	1	23.09	23±1
				1	12	1	23.13	23±1
				1	24	1	23.16	23±1
				12	0	2	23.17	23±1
				12	6	2	23.11	23±1
				12	11	2	23.16	23±1
				25	0	2	23.02	23±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	23025	700.5	QPSK	1	0	0	23.03	23±1
				1	7	0	23.01	23±1
				1	14	0	22.93	23±1
				8	0	1	23.01	23±1
				8	4	1	22.96	23±1
				8	7	1	23.1	23±1
				15	0	1	23.05	23±1
			16QAM	1	0	1	22.83	23±1
				1	7	1	22.9	23±1
				1	14	1	22.84	23±1
				8	0	2	22.96	23±1
				8	4	2	22.91	23±1
				8	7	2	22.99	23±1
				15	0	2	22.95	23±1
	23095	707.5	QPSK	1	0	0	23.03	23±1
				1	7	0	22.91	23±1
				1	14	0	23.13	23±1
				8	0	1	22.98	23±1
				8	4	1	23.04	23±1
				8	7	1	23.04	23±1
				15	0	1	23.1	23±1
			16QAM	1	0	1	22.95	23±1
				1	7	1	23.05	23±1
				1	14	1	23.05	23±1
				8	0	2	22.82	23±1
				8	4	2	22.72	23±1
				8	7	2	22.89	23±1
				15	0	2	23.08	23±1
	23025	714.5	QPSK	1	0	0	22.9	23±1
				1	7	0	22.85	23±1
				1	14	0	22.89	23±1
				8	0	1	23.04	23±1
				8	4	1	23.08	23±1
				8	7	1	23.11	23±1
				15	0	1	23.06	23±1
			16QAM	1	0	1	22.46	23±1
				1	7	1	22.44	23±1
				1	14	1	22.51	23±1
				8	0	2	22.99	23±1
				8	4	2	23.01	23±1
				8	7	2	22.97	23±1
				15	0	2	23.01	23±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	23017	699.7	QPSK	1	0	0	23.01	23±1
				1	2	0	22.91	23±1
				1	5	0	22.99	23±1
				3	0	0	23.1	23±1
				3	1	0	23.17	23±1
				3	2	0	23.05	23±1
				6	0	1	23	23±1
			16QAM	1	0	1	22.83	22.5±1
				1	2	1	22.88	22.5±1
				1	5	1	22.84	22.5±1
				3	0	1	22.88	22.5±1
				3	1	1	22.91	22.5±1
				3	2	1	22.88	22.5±1
				6	0	2	22.95	22.5±1
	23095	707.5	QPSK	1	0	0	23.07	23±1
				1	2	0	23.09	23±1
				1	5	0	23.1	23±1
				3	0	0	23.13	23±1
				3	1	0	23.11	23±1
				3	2	0	23.16	23±1
				6	0	1	23.03	23±1
			16QAM	1	0	1	22.99	23±1
				1	2	1	22.89	23±1
				1	5	1	23.08	23±1
				3	0	1	22.9	23±1
				3	1	1	22.99	23±1
				3	2	1	22.99	23±1
				6	0	2	22.89	23±1
	23173	715.3	QPSK	1	0	0	22.94	23±1
				1	2	0	22.99	23±1
				1	5	0	23.04	23±1
				3	0	0	23.1	23±1
				3	1	0	23.18	23±1
				3	2	0	23.05	23±1
				6	0	1	22.99	23±1
			16QAM	1	0	1	22.62	22.5±1
				1	2	1	22.54	22.5±1
				1	5	1	22.53	22.5±1
				3	0	1	22.7	22.5±1
				3	1	1	22.53	22.5±1
				3	2	1	22.7	22.5±1
				6	0	2	22.86	22.5±1

LTE Band XVII:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	23780	709.0	QPSK	1	0	0	23.95	23.5±1
				1	24	0	23.88	23.5±1
				1	49	0	23.87	23.5±1
				25	0	1	22.92	23.5±1
				25	12	1	22.93	23.5±1
				25	24	1	22.94	23.5±1
				50	0	1	22.95	23.5±1
			16QAM	1	0	1	22.75	22.5±1
				1	24	1	22.82	22.5±1
				1	49	1	22.65	22.5±1
				25	0	2	22.77	22.5±1
				25	12	2	22.69	22.5±1
				25	24	2	22.67	22.5±1
				50	0	2	21.92	22.5±1
	23790	701.0	QPSK	1	0	0	23.93	23.5±1
				1	24	0	23.89	23.5±1
				1	49	0	23.85	23.5±1
				25	0	1	22.91	23.5±1
				25	12	1	22.93	23.5±1
				25	24	1	22.88	23.5±1
				50	0	1	22.92	23.5±1
			16QAM	1	0	1	22.87	22.5±1
				1	24	1	22.9	22.5±1
				1	49	1	22.83	22.5±1
				25	0	2	22.92	22.5±1
				25	12	2	22.9	22.5±1
				25	24	2	22.82	22.5±1
				50	0	2	21.88	22.5±1
	23800	711.0	QPSK	1	0	0	23.81	23.5±1
				1	24	0	23.8	23.5±1
				1	49	0	23.8	23.5±1
				25	0	1	22.93	23.5±1
				25	12	1	23	23.5±1
				25	24	1	22.96	23.5±1
				50	0	1	22.94	23.5±1
			16QAM	1	0	1	23.28	23±1
				1	24	1	23.37	23±1
				1	49	1	23.36	23±1
				25	0	2	23.33	23±1
				25	12	2	23.24	23±1
				25	24	2	23.24	23±1
				50	0	2	22.91	23±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	23755	706.5	QPSK	1	0	0	23.86	23.5±1
				1	12	0	23.85	23.5±1
				1	24	0	23.76	23.5±1
				12	0	1	22.93	23.5±1
				12	6	1	22.88	23.5±1
				12	11	1	22.85	23.5±1
				25	0	1	22.92	23.5±1
			16QAM	1	0	1	23.28	23±1
				1	12	1	23.32	23±1
				1	24	1	23.24	23±1
				12	0	2	23.21	23±1
				12	6	2	23.22	23±1
				12	11	2	23.35	23±1
				25	0	2	22.85	23±1
	23790	710.0	QPSK	1	0	0	23.81	23.5±1
				1	12	0	23.74	23.5±1
				1	24	0	23.85	23.5±1
				12	0	1	22.95	23.5±1
				12	6	1	22.91	23.5±1
				12	11	1	22.98	23.5±1
				25	0	1	22.92	23.5±1
			16QAM	1	0	1	22.89	22.5±1
				1	12	1	22.95	22.5±1
				1	24	1	22.93	22.5±1
				12	0	2	22.96	22.5±1
				12	6	2	22.82	22.5±1
				12	11	2	22.87	22.5±1
				25	0	2	21.89	22.5±1
	23825	713.5	QPSK	1	0	0	23.9	23.5±1
				1	12	0	23.87	23.5±1
				1	24	0	23.91	23.5±1
				12	0	1	22.98	23.5±1
				12	6	1	22.91	23.5±1
				12	11	1	23.01	23.5±1
				25	0	1	22.91	23.5±1
			16QAM	1	0	1	22.89	22.5±1
				1	12	1	22.85	22.5±1
				1	24	1	22.91	22.5±1
				12	0	2	22.87	22.5±1
				12	6	2	22.94	22.5±1
				12	11	2	22.87	22.5±1
				25	0	2	21.91	22.5±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	13.53	V	7.88	0.85	20.56	33.01
1880	1.4	QPSK	1/0	13.52	V	7.88	0.85	20.55	33.01
1909.3	1.4	QPSK	1/0	13.29	V	7.88	0.85	20.32	33.01
1850.7	1.4	QPSK	1/0	11.07	H	7.88	0.85	18.1	33.01
1880	1.4	QPSK	1/0	11.75	H	7.88	0.85	18.78	33.01
1909.3	1.4	QPSK	1/0	12.01	H	7.88	0.85	19.04	33.01
1850.7	1.4	16-QAM	1/0	12.27	V	7.88	0.85	19.3	33.01
1880	1.4	16-QAM	1/0	12.43	V	7.88	0.85	19.46	33.01
1909.3	1.4	16-QAM	1/0	12.22	V	7.88	0.85	19.25	33.01
1850.7	1.4	16-QAM	1/0	10.11	H	7.88	0.85	17.14	33.01
1880	1.4	16-QAM	1/0	10.34	H	7.88	0.85	17.37	33.01
1909.3	1.4	16-QAM	1/0	10.71	H	7.88	0.85	17.74	33.01
1851.5	3	QPSK	1/0	13.53	V	7.88	0.85	20.56	33.01
1880	3	QPSK	1/0	13.53	V	7.88	0.85	20.56	33.01
1908.5	3	QPSK	1/0	13.27	V	7.88	0.85	20.3	33.01
1851.5	3	QPSK	1/0	11.32	H	7.88	0.85	18.35	33.01
1880	3	QPSK	1/0	11.43	H	7.88	0.85	18.46	33.01
1908.5	3	QPSK	1/0	10.8	H	7.88	0.85	17.83	33.01
1851.5	3	16-QAM	1/0	12.25	V	7.88	0.85	19.28	33.01
1880	3	16-QAM	1/0	12.44	V	7.88	0.85	19.47	33.01
1908.5	3	16-QAM	1/0	12.66	V	7.88	0.85	19.69	33.01
1851.5	3	16-QAM	1/0	9.97	H	7.88	0.85	17	33.01
1880	3	16-QAM	1/0	10.56	H	7.88	0.85	17.59	33.01
1908.5	3	16-QAM	1/0	10.8	H	7.88	0.85	17.83	33.01
1852.5	5	QPSK	1/24	13.45	V	7.88	0.85	20.48	33.01
1880	5	QPSK	1/0	13.51	V	7.88	0.85	20.54	33.01
1907.5	5	QPSK	1/24	13.45	V	7.88	0.85	20.48	33.01
1852.5	5	QPSK	1/24	11.56	H	7.88	0.85	18.59	33.01
1880	5	QPSK	1/0	12.21	H	7.88	0.85	19.24	33.01
1907.5	5	QPSK	1/24	11.17	H	7.88	0.85	18.2	33.01
1852.5	5	16-QAM	1/24	12.81	V	7.88	0.85	19.84	33.01

1880	5	16-QAM	1/0	12.51	V	7.88	0.85	19.54	33.01
1907.5	5	16-QAM	1/24	12.38	V	7.88	0.85	19.41	33.01
1852.5	5	16-QAM	1/24	11.3	H	7.88	0.85	18.33	33.01
1880	5	16-QAM	1/0	11.43	H	7.88	0.85	18.46	33.01
1907.5	5	16-QAM	1/24	11.15	H	7.88	0.85	18.18	33.01
1855	10	QPSK	1/0	13.56	V	7.88	0.85	20.59	33.01
1880	10	QPSK	1/0	13.59	V	7.88	0.85	20.62	33.01
1905	10	QPSK	1/49	13.47	V	7.88	0.85	20.5	33.01
1855	10	QPSK	1/0	11.61	H	7.88	0.85	18.64	33.01
1880	10	QPSK	1/0	11.56	H	7.88	0.85	18.59	33.01
1905	10	QPSK	1/49	11.23	H	7.88	0.85	18.26	33.01
1855	10	16-QAM	1/0	12.28	V	7.88	0.85	19.31	33.01
1880	10	16-QAM	1/0	12.48	V	7.88	0.85	19.51	33.01
1905	10	16-QAM	1/49	12.91	V	7.88	0.85	19.94	33.01
1855	10	16-QAM	1/0	10.82	H	7.88	0.85	17.85	33.01
1880	10	16-QAM	1/0	11.2	H	7.88	0.85	18.23	33.01
1905	10	16-QAM	1/49	10.49	H	7.88	0.85	17.52	33.01
1857.5	15	QPSK	1/0	13.6	V	7.88	0.85	20.63	33.01
1880	15	QPSK	1/0	13.64	V	7.88	0.85	20.67	33.01
1902.5	15	QPSK	1/0	13.5	V	7.88	0.85	20.53	33.01
1857.5	15	QPSK	1/0	11.19	H	7.88	0.85	18.22	33.01
1880	15	QPSK	1/0	12.56	H	7.88	0.85	19.59	33.01
1902.5	15	QPSK	1/0	12.39	H	7.88	0.85	19.42	33.01
1857.5	15	16-QAM	1/0	12.33	V	7.88	0.85	19.36	33.01
1880	15	16-QAM	1/0	12.67	V	7.88	0.85	19.7	33.01
1902.5	15	16-QAM	1/0	13.05	V	7.88	0.85	20.08	33.01
1857.5	15	16-QAM	1/0	10.37	H	7.88	0.85	17.4	33.01
1880	15	16-QAM	1/0	10.63	H	7.88	0.85	17.66	33.01
1902.5	15	16-QAM	1/0	11.98	H	7.88	0.85	19.01	33.01
1860	20	QPSK	1/0	13.62	V	7.88	0.85	20.65	33.01
1880	20	QPSK	1/0	13.56	V	7.88	0.85	20.59	33.01
1900	20	QPSK	1/0	13.63	V	7.88	0.85	20.66	33.01
1860	20	QPSK	1/0	12.17	H	7.88	0.85	19.2	33.01
1880	20	QPSK	1/0	12.16	H	7.88	0.85	19.19	33.01
1900	20	QPSK	1/0	11.3	H	7.88	0.85	18.33	33.01

1860	20	16-QAM	1/0	12.51	V	7.88	0.85	19.54	33.01
1880	20	16-QAM	1/0	12.75	V	7.88	0.85	19.78	33.01
1900	20	16-QAM	1/0	13	V	7.88	0.85	20.03	33.01
1860	20	16-QAM	1/0	10.08	H	7.88	0.85	17.11	33.01
1880	20	16-QAM	1/0	10.6	H	7.88	0.85	17.63	33.01
1900	20	16-QAM	1/0	11.22	H	7.88	0.85	18.25	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	13.64	V	7.95	0.79	20.8	30
1732.5	1.4	QPSK	1/0	13.69	V	7.95	0.79	20.85	30
1754.3	1.4	QPSK	1/0	13.77	V	7.95	0.79	20.93	30
1710.7	1.4	QPSK	1/0	11.7	H	7.95	0.79	18.86	30
1732.5	1.4	QPSK	1/0	11.58	H	7.95	0.79	18.74	30
1754.3	1.4	QPSK	1/0	11.89	H	7.95	0.79	19.05	30
1710.7	1.4	16-QAM	1/5	12.55	V	7.95	0.79	19.71	30
1732.5	1.4	16-QAM	1/0	12.6	V	7.95	0.79	19.76	30
1754.3	1.4	16-QAM	1/0	12.53	V	7.95	0.79	19.69	30
1710.7	1.4	16-QAM	1/5	10.51	H	7.95	0.79	17.67	30
1732.5	1.4	16-QAM	1/0	11.38	H	7.95	0.79	18.54	30
1754.3	1.4	16-QAM	1/0	10.35	H	7.95	0.79	17.51	30
1711.5	3	QPSK	1/0	13.65	V	7.95	0.79	20.81	30
1732.5	3	QPSK	1/0	13.71	V	7.95	0.79	20.87	30
1753.5	3	QPSK	1/0	13.81	V	7.95	0.79	20.97	30
1711.5	3	QPSK	1/0	12.16	H	7.95	0.79	19.32	30
1732.5	3	QPSK	1/0	11.92	H	7.95	0.79	19.08	30
1753.5	3	QPSK	1/0	12.54	H	7.95	0.79	19.7	30
1711.5	3	16-QAM	1/0	12.47	V	7.95	0.79	19.63	30
1732.5	3	16-QAM	1/0	12.66	V	7.95	0.79	19.82	30
1753.5	3	16-QAM	1/0	13.25	V	7.95	0.79	20.41	30
1711.5	3	16-QAM	1/0	10.75	H	7.95	0.79	17.91	30
1732.5	3	16-QAM	1/0	10.89	H	7.95	0.79	18.05	30
1753.5	3	16-QAM	1/0	11.42	H	7.95	0.79	18.58	30
1712.5	5	QPSK	1/0	13.66	V	7.95	0.79	20.82	30
1732.5	5	QPSK	1/0	13.67	V	7.95	0.79	20.83	30
1752.5	5	QPSK	1/24	13.9	V	7.95	0.79	21.06	30
1712.5	5	QPSK	1/0	11.82	H	7.95	0.79	18.98	30
1732.5	5	QPSK	1/0	11.99	H	7.95	0.79	19.15	30
1752.5	5	QPSK	1/24	12.72	H	7.95	0.79	19.88	30
1712.5	5	16-QAM	1/0	13.01	V	7.95	0.79	20.17	30
1732.5	5	16-QAM	1/0	12.69	V	7.95	0.79	19.85	30

1752.5	5	16-QAM	1/24	12.79	V	7.95	0.79	19.95	30
1712.5	5	16-QAM	1/0	10.65	H	7.95	0.79	17.81	30
1732.5	5	16-QAM	1/0	11.16	H	7.95	0.79	18.32	30
1752.5	5	16-QAM	1/24	11.27	H	7.95	0.79	18.43	30
1715	10	QPSK	1/0	13.72	V	7.95	0.79	20.88	30
1732.5	10	QPSK	1/49	13.65	V	7.95	0.79	20.81	30
1750	10	QPSK	1/0	13.64	V	7.95	0.79	20.8	30
1715	10	QPSK	1/0	11.47	H	7.95	0.79	18.63	30
1732.5	10	QPSK	1/49	11.72	H	7.95	0.79	18.88	30
1750	10	QPSK	1/0	12.06	H	7.95	0.79	19.22	30
1715	10	16-QAM	1/0	12.53	V	7.95	0.79	19.69	30
1732.5	10	16-QAM	1/49	12.68	V	7.95	0.79	19.84	30
1750	10	16-QAM	1/0	13.29	V	7.95	0.79	20.45	30
1715	10	16-QAM	1/0	11.31	H	7.95	0.79	18.47	30
1732.5	10	16-QAM	1/49	10.59	H	7.95	0.79	17.75	30
1750	10	16-QAM	1/0	11.41	H	7.95	0.79	18.57	30
1717.5	15	QPSK	1/0	13.75	V	7.95	0.79	20.91	30
1732.5	15	QPSK	1/74	13.67	V	7.95	0.79	20.83	30
1747.5	15	QPSK	1/0	13.81	V	7.95	0.79	20.97	30
1717.5	15	QPSK	1/0	12.23	H	7.95	0.79	19.39	30
1732.5	15	QPSK	1/74	11.78	H	7.95	0.79	18.94	30
1747.5	15	QPSK	1/0	12.55	H	7.95	0.79	19.71	30
1717.5	15	16-QAM	1/0	12.56	V	7.95	0.79	19.72	30
1732.5	15	16-QAM	1/74	12.81	V	7.95	0.79	19.97	30
1747.5	15	16-QAM	1/0	13.31	V	7.95	0.79	20.47	30
1717.5	15	16-QAM	1/0	10.6	H	7.95	0.79	17.76	30
1732.5	15	16-QAM	1/74	11.43	H	7.95	0.79	18.59	30
1747.5	15	16-QAM	1/0	11.74	H	7.95	0.79	18.9	30
1720	20	QPSK	1/99	13.75	V	7.95	0.79	20.91	30
1732.5	20	QPSK	1/99	13.73	V	7.95	0.79	20.89	30
1745	20	QPSK	1/0	13.9	V	7.95	0.79	21.06	30
1720	20	QPSK	1/99	11.52	H	7.95	0.79	18.68	30
1732.5	20	QPSK	1/99	12.26	H	7.95	0.79	19.42	30
1745	20	QPSK	1/0	11.94	H	7.95	0.79	19.1	30
1720	20	16-QAM	1/99	12.61	V	7.95	0.79	19.77	30

1732.5	20	16-QAM	1/99	13.16	V	7.95	0.79	20.32	30
1745	20	16-QAM	1/0	12.81	V	7.95	0.79	19.97	30
1720	20	16-QAM	1/99	10.54	H	7.95	0.79	17.7	30
1732.5	20	16-QAM	1/99	12.11	H	7.95	0.79	19.27	30
1745	20	16-QAM	1/0	11.73	H	7.95	0.79	18.89	30

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	12.06	V	8.93	0.83	20.16	30
2535	5	QPSK	1/0	12.01	V	8.93	0.83	20.11	30
2567.5	5	QPSK	1/24	11.77	V	8.93	0.83	19.87	30
2502.5	5	QPSK	1/0	9.76	H	8.93	0.83	17.86	30
2535	5	QPSK	1/0	10	H	8.93	0.83	18.1	30
2567.5	5	QPSK	1/24	9.47	H	8.93	0.83	17.57	30
2502.5	5	16-QAM	1/0	11.29	V	8.93	0.83	19.39	30
2535	5	16-QAM	1/0	10.93	V	8.93	0.83	19.03	30
2567.5	5	16-QAM	1/24	10.83	V	8.93	0.83	18.93	30
2502.5	5	16-QAM	1/0	9.65	H	8.93	0.83	17.75	30
2535	5	16-QAM	1/0	8.72	H	8.93	0.83	16.82	30
2567.5	5	16-QAM	1/24	8.47	H	8.93	0.83	16.57	30
2505	10	QPSK	1/0	11.9	V	8.93	0.83	20	30
2535	10	QPSK	1/49	11.76	V	8.93	0.83	19.86	30
2565	10	QPSK	1/0	11.93	V	8.93	0.83	20.03	30
2505	10	QPSK	1/0	10.12	H	8.93	0.83	18.22	30
2535	10	QPSK	1/49	10.4	H	8.93	0.83	18.5	30
2565	10	QPSK	1/0	10.17	H	8.93	0.83	18.27	30
2505	10	16-QAM	1/0	10.86	V	8.93	0.83	18.96	30
2535	10	16-QAM	1/49	10.69	V	8.93	0.83	18.79	30
2565	10	16-QAM	1/0	11.33	V	8.93	0.83	19.43	30
2505	10	16-QAM	1/0	8.63	H	8.93	0.83	16.73	30
2535	10	16-QAM	1/49	8.24	H	8.93	0.83	16.34	30
2565	10	16-QAM	1/0	10.24	H	8.93	0.83	18.34	30
2507.5	15	QPSK	1/0	12.19	V	8.93	0.83	20.29	30
2535	15	QPSK	1/74	12.01	V	8.93	0.83	20.11	30
2562.5	15	QPSK	1/0	11.62	V	8.93	0.83	19.72	30
2507.5	15	QPSK	1/0	11.12	H	8.93	0.83	19.22	30
2535	15	QPSK	1/74	10.06	H	8.93	0.83	18.16	30
2562.5	15	QPSK	1/0	9.46	H	8.93	0.83	17.56	30
2507.5	15	16-QAM	1/0	10.91	V	8.93	0.83	19.01	30
2535	15	16-QAM	1/74	11.16	V	8.93	0.83	19.26	30

2562.5	15	16-QAM	1/0	11.28	V	8.93	0.83	19.38	30
2507.5	15	16-QAM	1/0	8.84	H	8.93	0.83	16.94	30
2535	15	16-QAM	1/74	9.11	H	8.93	0.83	17.21	30
2562.5	15	16-QAM	1/0	10.19	H	8.93	0.83	18.29	30
2510	20	QPSK	1/99	12.07	V	8.93	0.83	20.17	30
2535	20	QPSK	1/99	11.54	V	8.93	0.83	19.64	30
2560	20	QPSK	1/0	11.46	V	8.93	0.83	19.56	30
2510	20	QPSK	1/99	10.79	H	8.93	0.83	18.89	30
2535	20	QPSK	1/99	10.25	H	8.93	0.83	18.35	30
2560	20	QPSK	1/0	9.57	H	8.93	0.83	17.67	30
2510	20	16-QAM	1/99	10.99	V	8.93	0.83	19.09	30
2535	20	16-QAM	1/99	10.99	V	8.93	0.83	19.09	30
2560	20	16-QAM	1/0	11.05	V	8.93	0.83	19.15	30
2510	20	16-QAM	1/99	9	H	8.93	0.83	17.1	30
2535	20	16-QAM	1/99	8.57	H	8.93	0.83	16.67	30
2560	20	16-QAM	1/0	9.43	H	8.93	0.83	17.53	30

ERP for LTE Band XII (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)
699.7	1.4	QPSK	1/5	11.56	V	6.9	0.42	18.04	34.77
707.5	1.4	QPSK	1/5	14.57	V	6.8	0.42	20.95	34.77
715.3	1.4	QPSK	1/5	14.51	V	6.8	0.42	20.89	34.77
699.7	1.4	QPSK	1/5	9.91	H	6.9	0.42	16.39	34.77
707.5	1.4	QPSK	1/5	13.56	H	6.8	0.42	19.94	34.77
715.3	1.4	QPSK	1/5	12.5	H	6.8	0.42	18.88	34.77
699.7	1.4	16-QAM	1/5	11.41	V	6.9	0.42	17.89	34.77
707.5	1.4	16-QAM	1/5	14.55	V	6.8	0.42	20.93	34.77
715.3	1.4	16-QAM	1/5	14	V	6.8	0.42	20.38	34.77
699.7	1.4	16-QAM	1/5	9.91	H	6.9	0.42	16.39	34.77
707.5	1.4	16-QAM	1/5	13.16	H	6.8	0.42	19.54	34.77
715.3	1.4	16-QAM	1/5	12.09	H	6.8	0.42	18.47	34.77
700.5	3	QPSK	1/14	11.5	V	6.9	0.42	17.98	34.77
707.5	3	QPSK	1/0	14.5	V	6.8	0.42	20.88	34.77
714.5	3	QPSK	1/14	14.36	V	6.8	0.42	20.74	34.77
700.5	3	QPSK	1/14	10.46	H	6.9	0.42	16.94	34.77
707.5	3	QPSK	1/0	12.71	H	6.8	0.42	19.09	34.77
714.5	3	QPSK	1/14	12.98	H	6.8	0.42	19.36	34.77
700.5	3	16-QAM	1/14	11.41	V	6.9	0.42	17.89	34.77
707.5	3	16-QAM	1/0	14.42	V	6.8	0.42	20.8	34.77
714.5	3	16-QAM	1/14	13.98	V	6.8	0.42	20.36	34.77
700.5	3	16-QAM	1/14	8.97	H	6.9	0.42	15.45	34.77
707.5	3	16-QAM	1/0	13.14	H	6.8	0.42	19.52	34.77
714.5	3	16-QAM	1/14	12.96	H	6.8	0.42	19.34	34.77
701.5	5	QPSK	1/24	11.6	V	6.9	0.42	18.08	34.77
707.5	5	QPSK	1/24	14.5	V	6.8	0.42	20.88	34.77
713.5	5	QPSK	1/24	14.65	V	6.8	0.42	21.03	34.77
701.5	5	QPSK	1/24	9.93	H	6.9	0.42	16.41	34.77
707.5	5	QPSK	1/24	12.91	H	6.8	0.42	19.29	34.77
713.5	5	QPSK	1/24	13.6	H	6.8	0.42	19.98	34.77
701.5	5	16-QAM	1/24	11.02	V	6.9	0.42	17.5	34.77

707.5	5	16-QAM	1/24	14	V	6.8	0.42	20.38	34.77
713.5	5	16-QAM	1/24	14.63	V	6.8	0.42	21.01	34.77
701.5	5	16-QAM	1/24	8.78	H	6.9	0.42	15.26	34.77
707.5	5	16-QAM	1/24	12.06	H	6.8	0.42	18.44	34.77
713.5	5	16-QAM	1/24	12.97	H	6.8	0.42	19.35	34.77
704	10	QPSK	1/49	11.7	V	6.8	0.42	18.08	34.77
707.5	10	QPSK	1/49	14.44	V	6.8	0.42	20.82	34.77
711	10	QPSK	1/49	14.55	V	6.8	0.42	20.93	34.77
704	10	QPSK	1/49	10.46	H	6.8	0.42	16.84	34.77
707.5	10	QPSK	1/49	12.58	H	6.8	0.42	18.96	34.77
711	10	QPSK	1/49	12.43	H	6.8	0.42	18.81	34.77
704	10	16-QAM	1/49	11.48	V	6.8	0.42	17.86	34.77
707.5	10	16-QAM	1/49	14.45	V	6.8	0.42	20.83	34.77
711	10	16-QAM	1/49	14.14	V	6.8	0.42	20.52	34.77
704	10	16-QAM	1/49	9.71	H	6.8	0.42	16.09	34.77
707.5	10	16-QAM	1/49	12.86	H	6.8	0.42	19.24	34.77
711	10	16-QAM	1/49	11.74	H	6.8	0.42	18.12	34.77

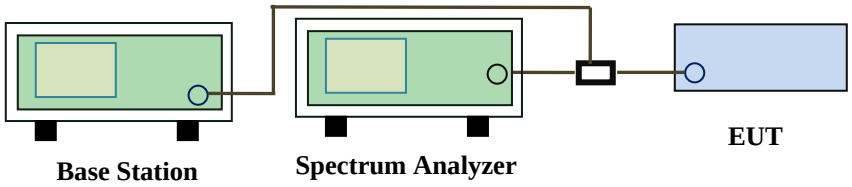
ERP for LTE Band XVII (Part 27)

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)
706.5	5	QPSK	1/0	12.33	V	6.8	0.42	18.71	34.77
710	5	QPSK	1/0	15.28	V	6.8	0.42	21.66	34.77
713.5	5	QPSK	1/0	15.37	V	6.8	0.42	21.75	34.77
706.5	5	QPSK	1/0	10.58	H	6.8	0.42	16.96	34.77
710	5	QPSK	1/0	13.02	H	6.8	0.42	19.4	34.77
713.5	5	QPSK	1/0	13.12	H	6.8	0.42	19.5	34.77
706.5	5	16-QAM	1/0	11.75	V	6.8	0.42	18.13	34.77
710	5	16-QAM	1/0	14.36	V	6.8	0.42	20.74	34.77
713.5	5	16-QAM	1/0	14.36	V	6.8	0.42	20.74	34.77
706.5	5	16-QAM	1/0	10.33	H	6.8	0.42	16.71	34.77
710	5	16-QAM	1/0	13.34	H	6.8	0.42	19.72	34.77
713.5	5	16-QAM	1/0	13.12	H	6.8	0.42	19.5	34.77
709	10	QPSK	1/0	12.42	V	6.8	0.42	18.8	34.77
710	10	QPSK	1/0	15.4	V	6.8	0.42	21.78	34.77
711	10	QPSK	1/0	15.28	V	6.8	0.42	21.66	34.77
709	10	QPSK	1/0	10.06	H	6.8	0.42	16.44	34.77
710	10	QPSK	1/0	13.13	H	6.8	0.42	19.51	34.77
711	10	QPSK	1/0	13.83	H	6.8	0.42	20.21	34.77
709	10	16-QAM	1/0	11.22	V	6.8	0.42	17.6	34.77
710	10	16-QAM	1/0	14.34	V	6.8	0.42	20.72	34.77
711	10	16-QAM	1/0	14.75	V	6.8	0.42	21.13	34.77
709	10	16-QAM	1/0	9.15	H	6.8	0.42	15.53	34.77
710	10	16-QAM	1/0	13.33	H	6.8	0.42	19.71	34.77
711	10	16-QAM	1/0	12.52	H	6.8	0.42	18.9	34.77

6.3 Peak-Average Ratio

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1018mbar
Test date :	October 19, 2017
Tested By :	Loren Luo

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	23.72	23.35	0.37
			16QAM	22.68	22.26	0.42
3	1880	RB 1/0	QPSK	23.71	23.36	0.35
			16QAM	22.58	22.27	0.31
5	1880	RB 1/0	QPSK	23.84	23.34	0.5
			16QAM	22.8	22.34	0.46
10	1880	RB 1/0	QPSK	23.84	23.42	0.42
			16QAM	22.67	22.31	0.36
15	1880	RB 1/0	QPSK	23.94	23.47	0.47
			16QAM	22.85	22.5	0.35
20	1880	RB 1/0	QPSK	23.79	23.39	0.4
			16QAM	22.88	22.58	0.3

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	23.62	23.25	0.37
			16QAM	22.61	22.16	0.45
3	1732.5	RB 1/0	QPSK	23.58	23.27	0.31
			16QAM	22.64	22.22	0.42
5	1732.5	RB 1/0	QPSK	23.65	23.23	0.42
			16QAM	22.69	22.25	0.44
10	1732.5	RB 1/0	QPSK	23.69	23.32	0.37
			16QAM	22.65	22.24	0.41
15	1732.5	RB 1/0	QPSK	23.66	23.29	0.37
			16QAM	22.87	22.46	0.41
20	1732.5	RB 1/0	QPSK	23.6	23.3	0.3
			16QAM	23.08	22.68	0.4

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	23.06	22.61	0.45
			16QAM	21.99	21.53	0.46
10	2535	RB 1/0	QPSK	22.64	22.34	0.3
			16QAM	21.85	21.39	0.46
15	2535	RB 1/0	QPSK	23.01	22.61	0.4
			16QAM	22.07	21.72	0.35
20	2535	RB 1/0	QPSK	22.65	22.19	0.46
			16QAM	21.99	21.6	0.39

LTE Band XII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	707.5	RB 1/0	QPSK	23.54	23.07	1.89
			16QAM	23.33	22.99	2.78
3	707.5	RB 1/0	QPSK	23.51	23.03	1.91
			16QAM	23.46	22.98	2.97
5	707.5	RB 1/0	QPSK	23.32	23	1.74
			16QAM	22.9	22.55	2.32
10	707.5	RB 1/0	QPSK	23.41	23.07	1.74
			16QAM	23.43	22.99	2.39

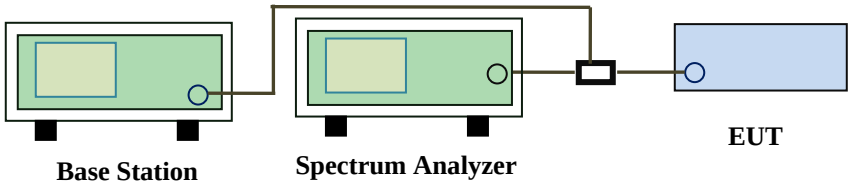
LTE Band XVII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
5	710	RB 1/0	QPSK	24.27	23.81	0.46
			16QAM	23.22	22.89	0.33
10	710	RB 1/0	QPSK	24.27	23.93	0.34
			16QAM	23.19	22.87	0.32

6.4 Occupied Bandwidth

Temperature	25 °C
Relative Humidity	57%
Atmospheric Pressure	1014mbar
Test date :	October 20, 2017
Tested By :	Loren Luo

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	1.1111	1.316
			QPSK	1.1043	1.339
1.4	18900	1880	16QAM	1.1191	1.341
			QPSK	1.1127	1.315
1.4	19193	1909	16QAM	1.1045	1.309
			QPSK	1.1116	1.298
3	18615	1852	16QAM	2.7594	3.127
			QPSK	2.7749	3.169
3	18900	1880	16QAM	2.756	3.131
			QPSK	2.7593	3.162
3	19185	1909	16QAM	2.756	3.13
			QPSK	2.7503	3.124
5	18625	1853	16QAM	4.5328	5.137
			QPSK	4.5449	5.12
5	18900	1880	16QAM	4.5397	5.105
			QPSK	4.5477	5.121
5	19175	1908	16QAM	4.5542	5.106
			QPSK	4.5465	5.12
10	18650	1855	16QAM	9.0891	10.28
			QPSK	9.0943	10.317
10	18900	1880	16QAM	9.1194	10.458
			QPSK	9.1491	10.42
10	19150	1905	16QAM	9.082	10.263
			QPSK	9.1176	10.462
15	18675	1858	16QAM	13.5143	15.064
			QPSK	13.5045	15.032
15	18900	1880	16QAM	13.506	15.138
			QPSK	13.4971	15.002
15	19125	1903	16QAM	13.4966	15.027
			QPSK	13.4755	14.969

20	18700	1860	16QAM	17.9451	19.68
			QPSK	17.9362	19.567
20	18900	1880	16QAM	17.9514	19.334
			QPSK	17.9855	20.522
20	19100	1900	16QAM	17.8386	19.438
			QPSK	17.8556	19.49

LTE Band IV (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1711	16QAM	1.1036	1.302
			QPSK	1.1048	1.29
1.4	20175	1733	16QAM	1.1072	1.287
			QPSK	1.114	1.278
1.4	20393	1754	16QAM	1.1085	1.282
			QPSK	1.1052	1.292
3	19965	1712	16QAM	2.7593	3.112
			QPSK	2.738	3.122
3	20175	1733	16QAM	2.7441	3.124
			QPSK	2.7535	3.104
3	20385	1754	16QAM	2.7471	3.126
			QPSK	2.7508	3.114
5	19975	1713	16QAM	4.5309	5.083
			QPSK	4.5306	5.098
5	20175	1733	16QAM	4.5439	5.101
			QPSK	4.527	5.121
5	20375	1753	16QAM	4.5421	5.117
			QPSK	4.5318	5.09
10	20000	1715	16QAM	9.038	10.234
			QPSK	9.0523	10.184
10	20175	1733	16QAM	9.0581	10.382
			QPSK	9.0503	10.271
10	20350	1750	16QAM	9.0536	10.347
			QPSK	9.0612	10.25
15	20025	1718	16QAM	13.4806	14.906
			QPSK	13.461	14.907
15	20175	1733	16QAM	13.5209	15.121
			QPSK	13.4878	15.073
15	20325	1748	16QAM	13.4906	14.998
			QPSK	13.4884	14.935

20	20050	1720	16QAM	17.9029	19.501
			QPSK	17.9378	19.395
20	20175	1733	16QAM	17.9395	19.675
			QPSK	17.8806	19.439
20	20300	1745	16QAM	17.8663	19.475
			QPSK	17.8926	19.593

LTE Band VII (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2503	16QAM	4.5359	5.11
			QPSK	4.5301	5.1
5	21100	2535	16QAM	4.5207	5.099
			QPSK	4.52	5.111
5	21425	2568	16QAM	4.5447	5.102
			QPSK	4.5457	5.102
10	20800	2505	16QAM	9.0607	10.27
			QPSK	9.0486	10.28
10	21100	2535	16QAM	9.0774	10.257
			QPSK	9.0867	10.291
10	21400	2565	16QAM	9.0927	10.296
			QPSK	9.0654	10.373
15	20825	2508	16QAM	13.4707	14.911
			QPSK	13.4822	14.923
15	21100	2535	16QAM	13.4788	15.009
			QPSK	13.4338	15.108
15	21400	2563	16QAM	13.5049	14.982
			QPSK	13.5061	14.937
20	20850	2510	16QAM	17.8928	19.664
			QPSK	17.9362	19.426
20	21100	2535	16QAM	17.8785	19.66
			QPSK	17.8825	19.525
20	21350	2560	16QAM	17.8839	19.553
			QPSK	17.9334	19.438

LTE Band XII (Part 27)

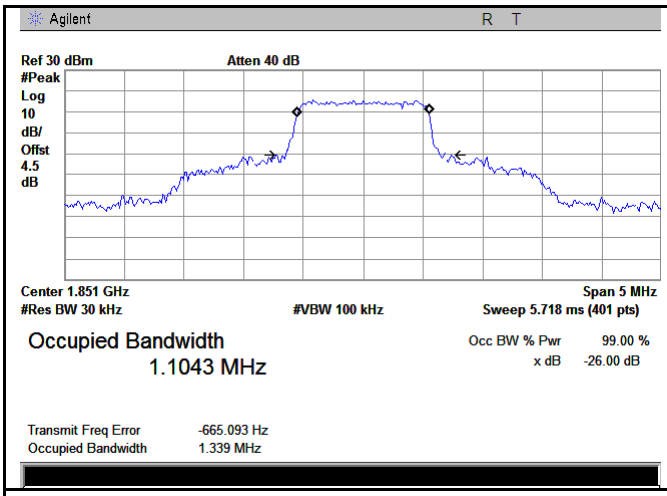
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	23017	699.7	16QAM	1.1059	1.288
			QPSK	1.0961	1.281
1.4	23095	707.5	16QAM	1.1068	1.274
			QPSK	1.108	1.281
1.4	23173	715.3	16QAM	1.1051	1.278
			QPSK	1.1096	1.288
3	23025	700.5	16QAM	2.747	3.106
			QPSK	2.7476	3.107
3	23095	707.5	16QAM	2.7496	3.096
			QPSK	2.7582	3.089
3	23165	714.5	16QAM	2.7574	3.113
			QPSK	2.7538	3.117
5	23035	701.5	16QAM	4.5211	5.084
			QPSK	4.5089	5.079
5	23095	707.5	16QAM	4.525	5.092
			QPSK	4.5293	5.072
5	23055	713.5	16QAM	4.5254	5.085
			QPSK	4.5349	5.078
10	23060	704	16QAM	9.0954	10.293
			QPSK	9.0839	10.222
10	23095	707.5	16QAM	9.1381	10.257
			QPSK	9.1199	10.389
10	23130	711	16QAM	9.0405	10.222
			QPSK	9.0356	10.279

LTE Band XVII (Part 27)

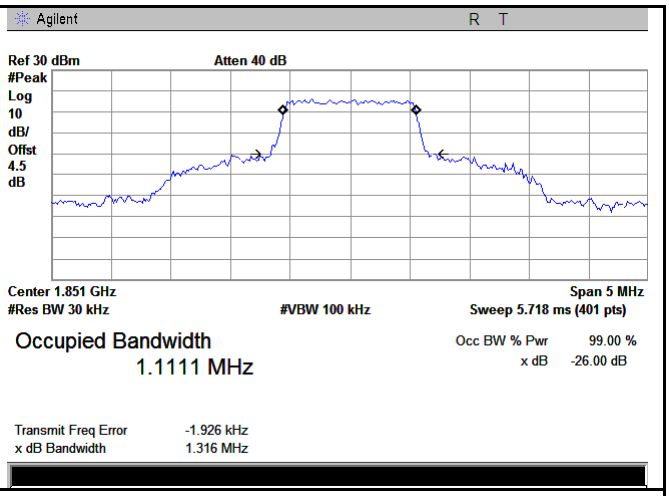
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	23755	706.5	16QAM	4.5438	5.126
			QPSK	4.5444	5.121
5	23790	710	16QAM	4.5112	5.07
			QPSK	4.5215	5.097
5	23825	713.5	16QAM	4.5359	5.088
			QPSK	4.5332	5.075
10	23780	709	16QAM	9.0627	10.226
			QPSK	9.084	10.256
10	23790	710	16QAM	9.1114	10.329
			QPSK	9.0784	10.215
10	23800	711	16QAM	9.0464	10.325
			QPSK	9.0643	10.366

Test Plots

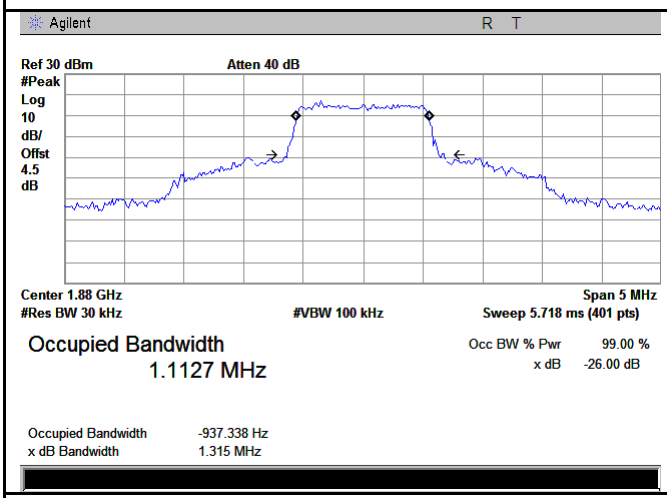
LTE Band II (Part 24E)



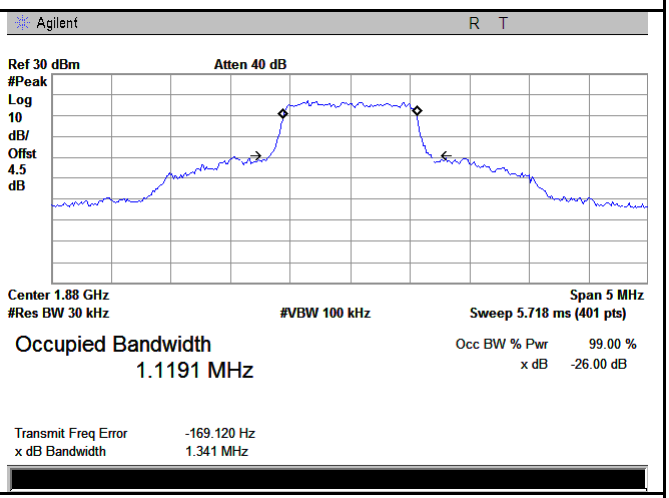
LTE Band II - Low CH QPSK-1.4



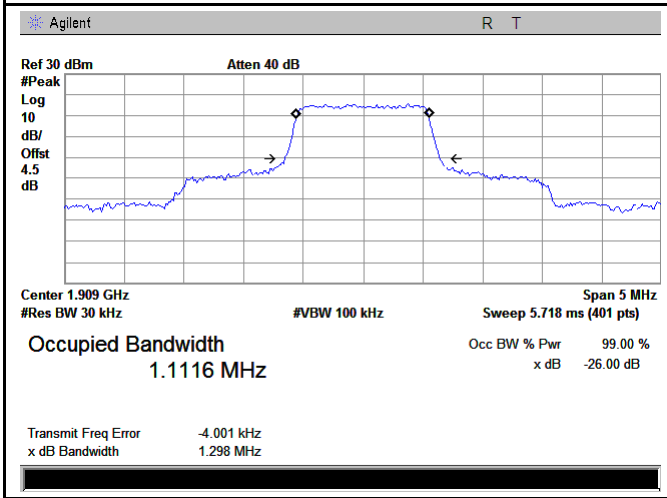
LTE Band II - Low CH 16QAM-1.4



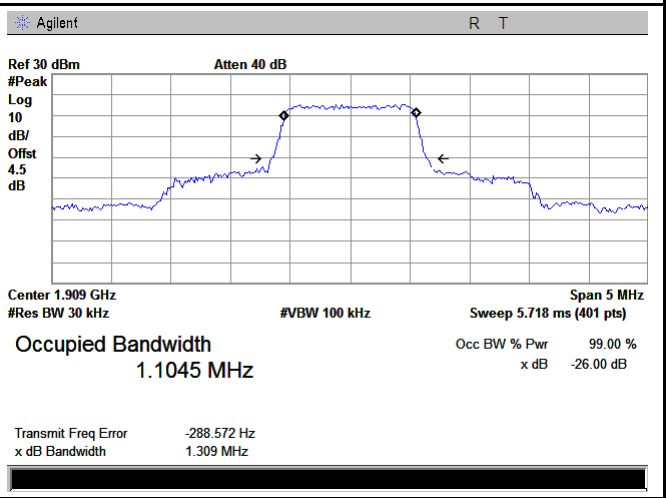
LTE Band II - Middle CH QPSK-1.4



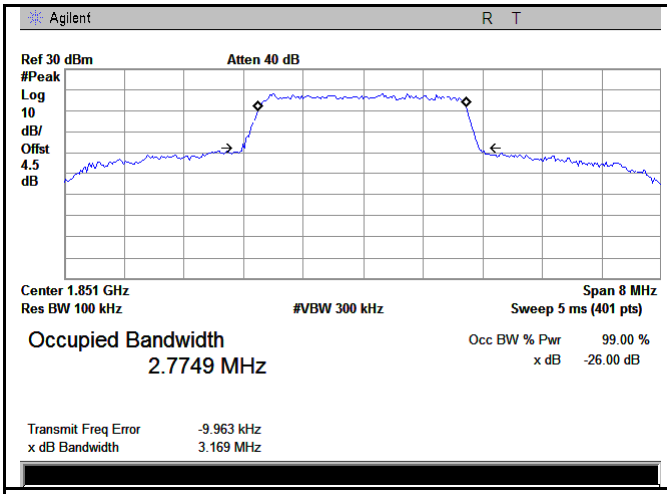
LTE Band II - Middle CH 16QAM-1.4



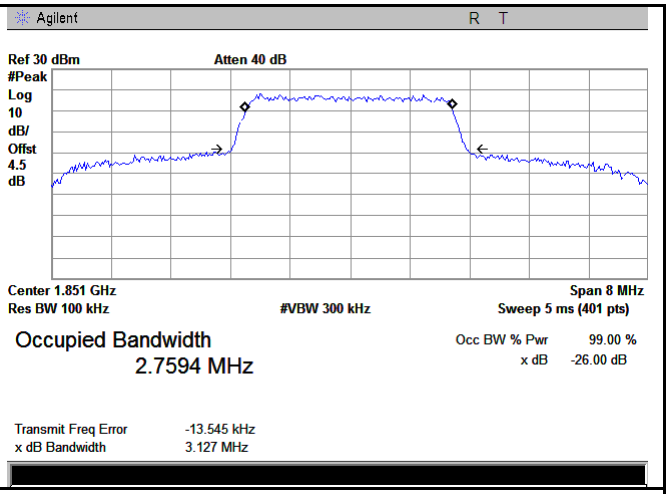
LTE Band II - High CH QPSK-1.4



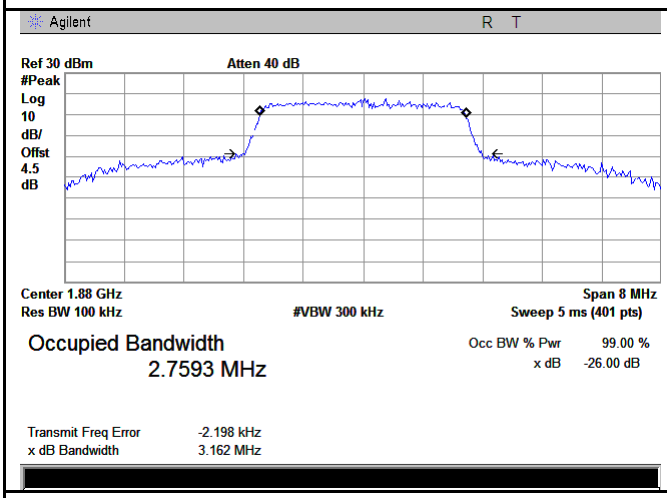
LTE Band II - High CH 16QAM-1.4



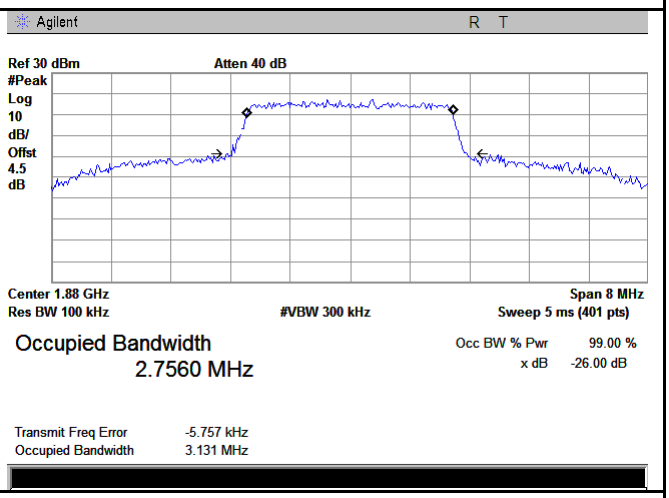
LTE Band II - Low CH QPSK-3



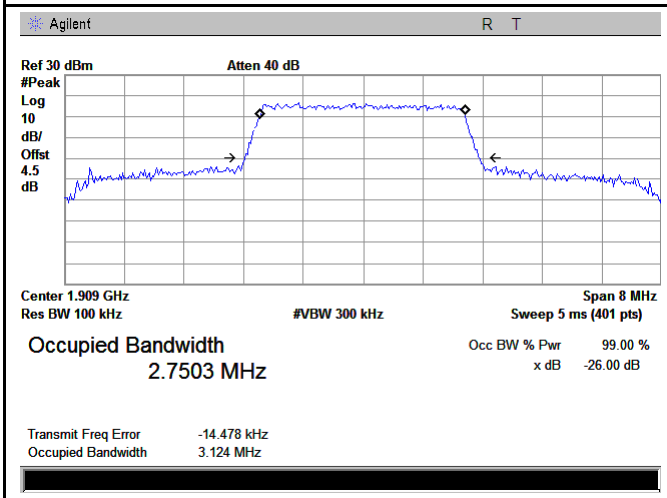
LTE Band II - Low CH 16QAM-3



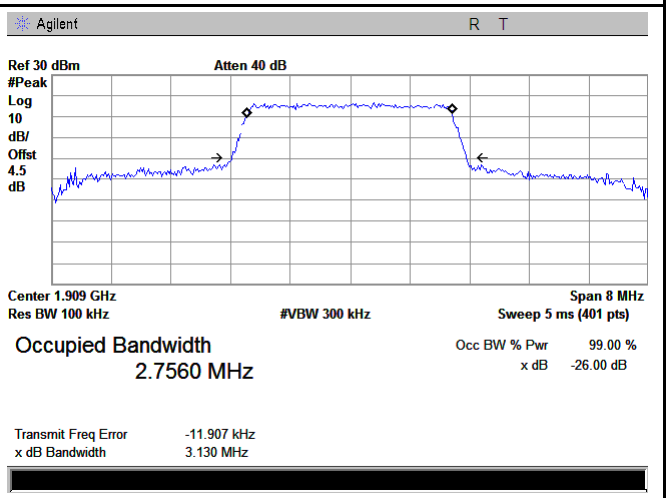
LTE Band II - Middle CH QPSK-3



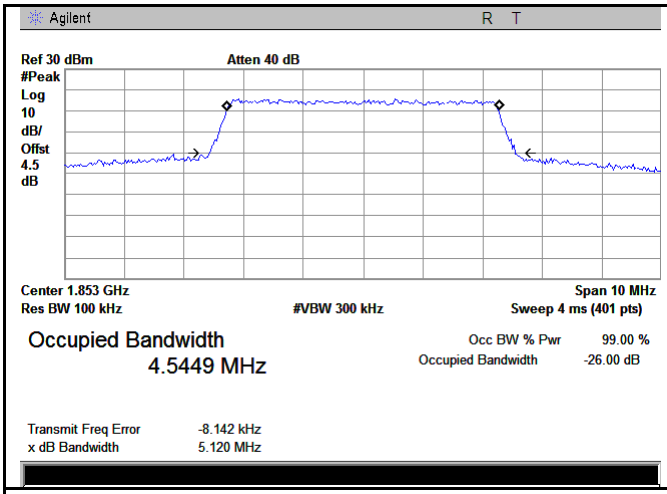
LTE Band II - Middle CH 16QAM-3



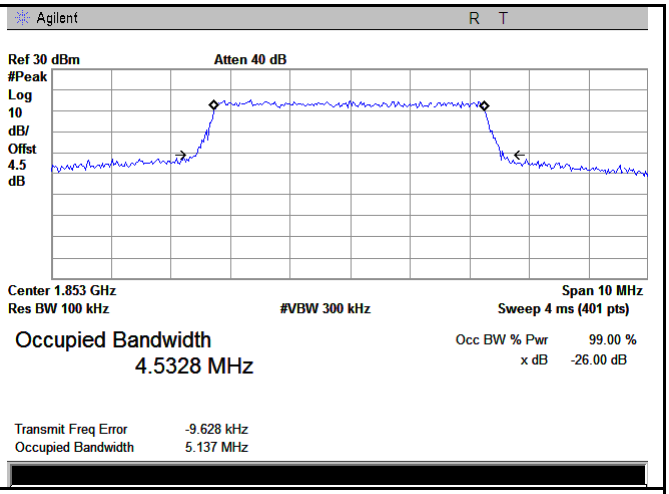
LTE Band II - High CH QPSK-3



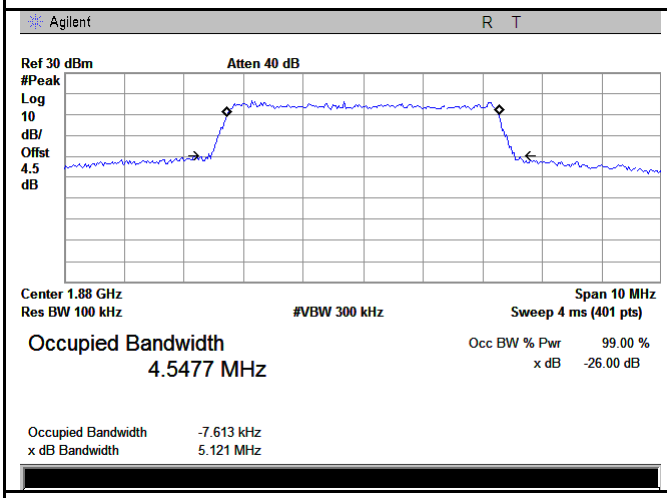
LTE Band II - High CH 16QAM-3



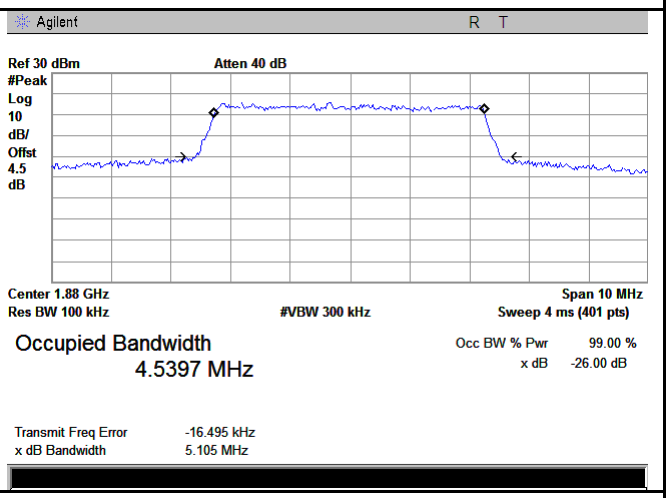
LTE Band II - Low CH QPSK-5



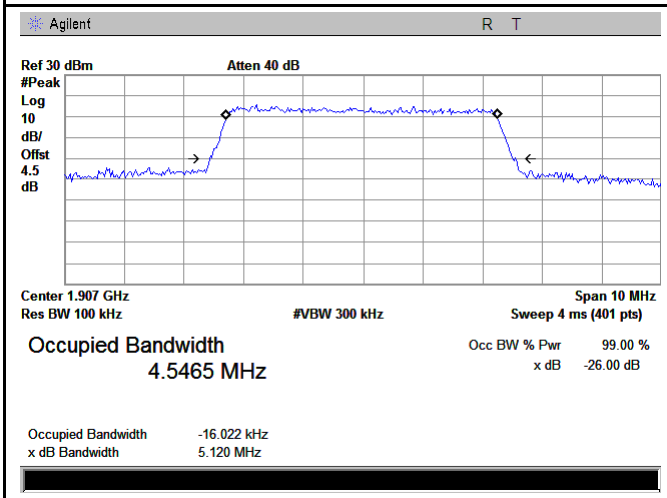
LTE Band II - Low CH 16QAM-5



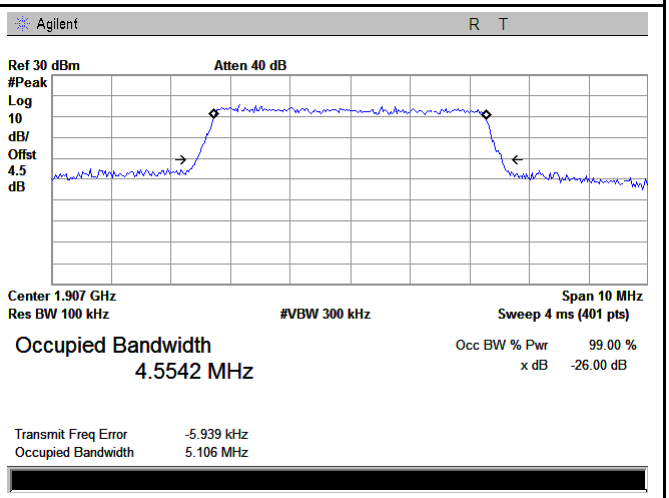
LTE Band II - Middle CH QPSK-5



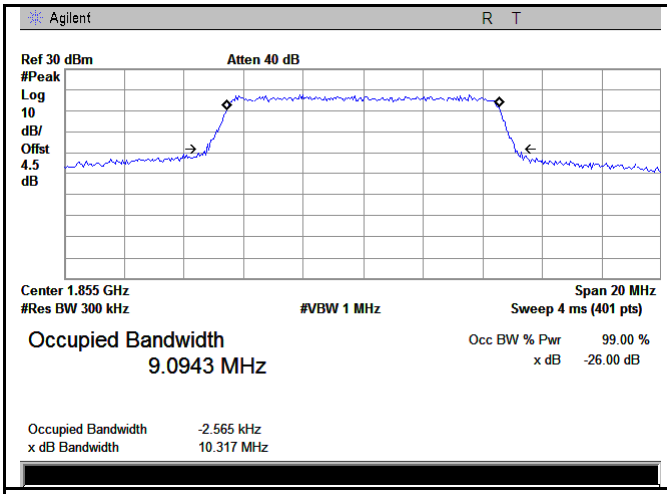
LTE Band II - Middle CH 16QAM-5



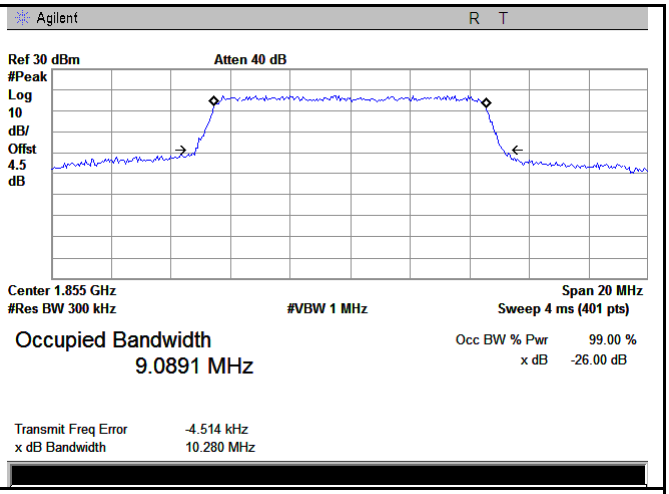
LTE Band II - High CH QPSK-5



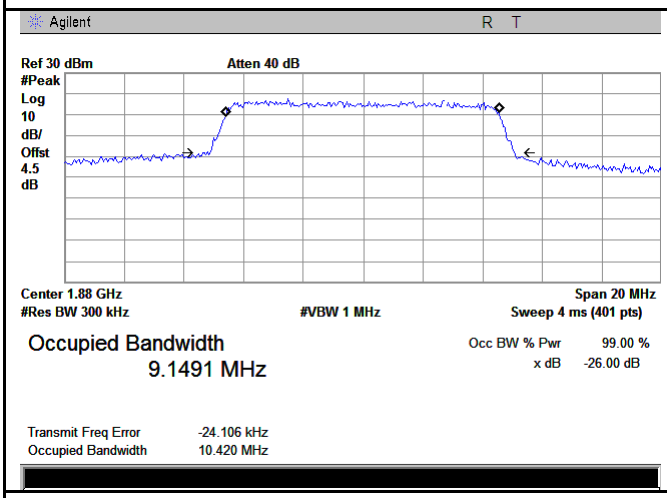
LTE Band II - High CH 16QAM-5



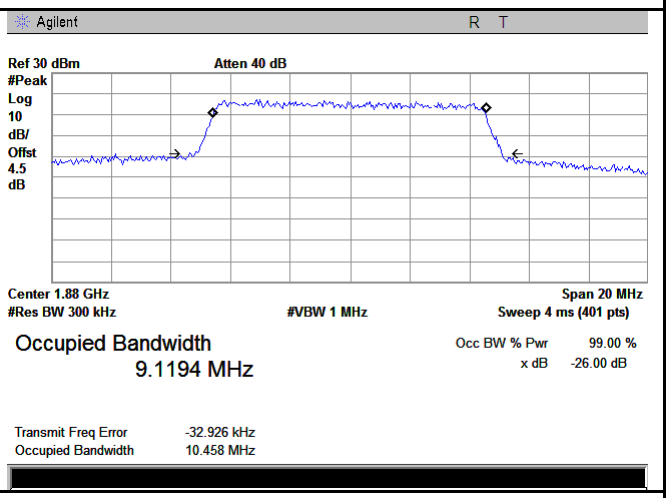
LTE Band II - Low CH QPSK-10



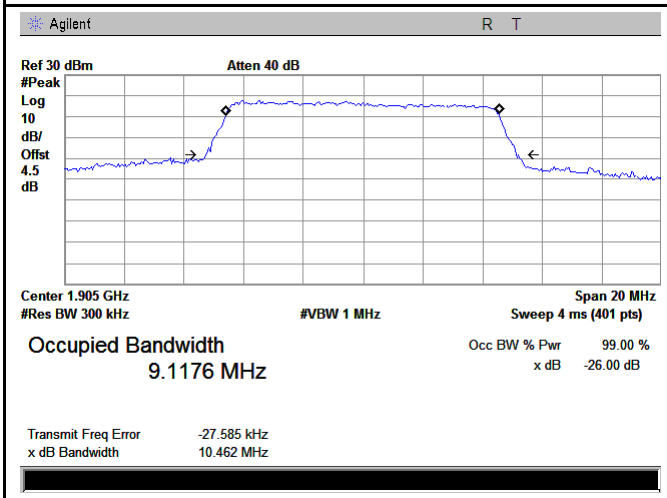
LTE Band II - Low CH 16QAM-10



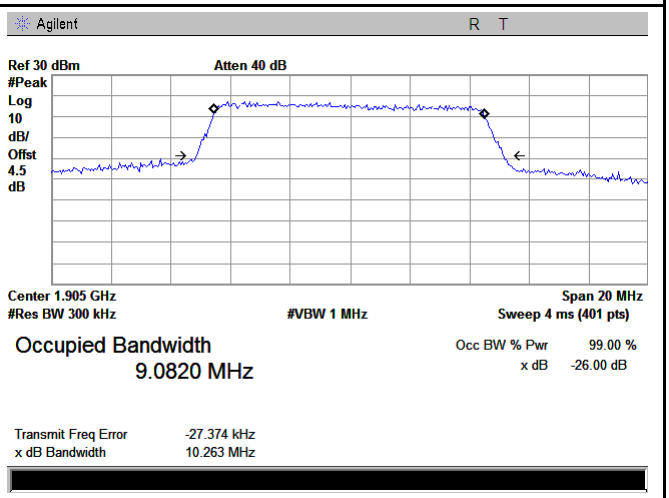
LTE Band II - Middle CH QPSK-10



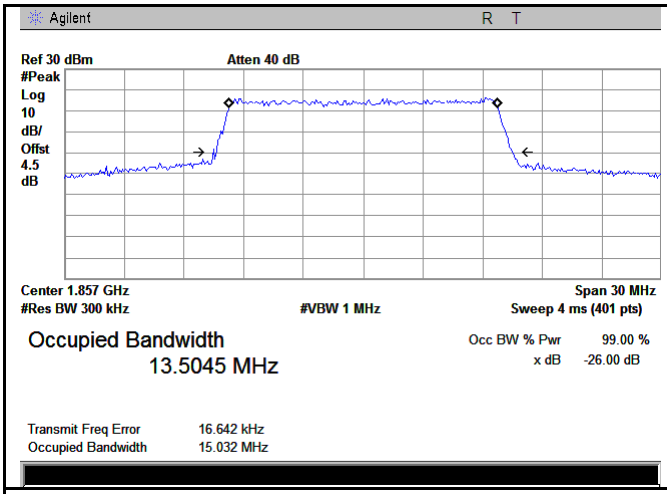
LTE Band II - Middle CH 16QAM-10



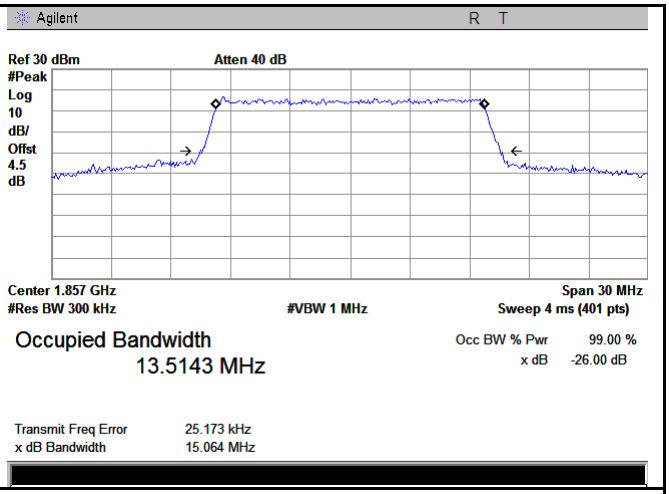
LTE Band II - High CH QPSK-10



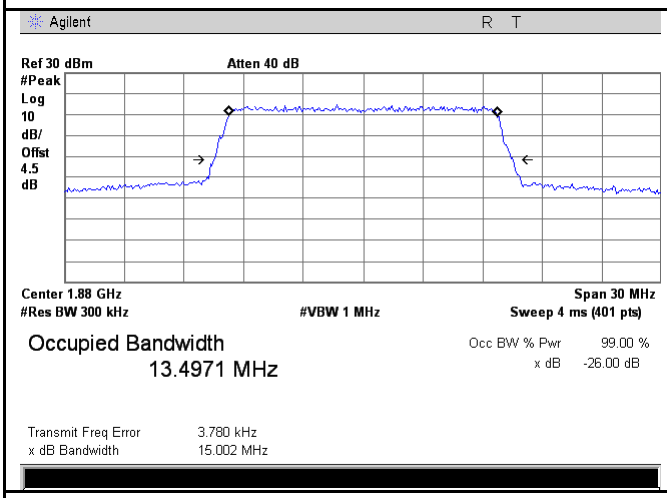
LTE Band II - High CH 16QAM-10



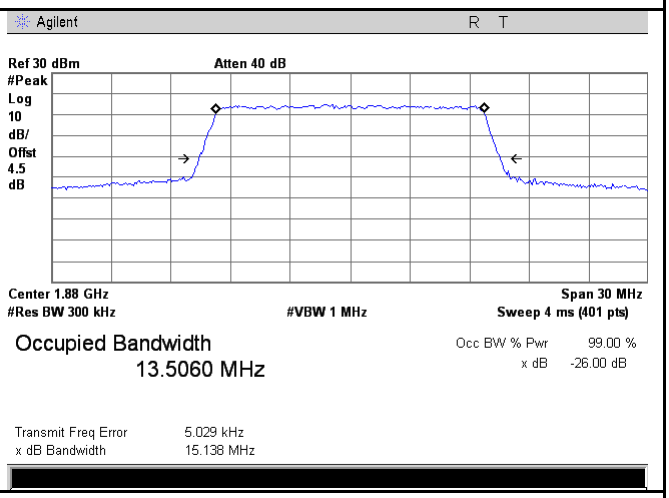
LTE Band II - Low CH QPSK-15



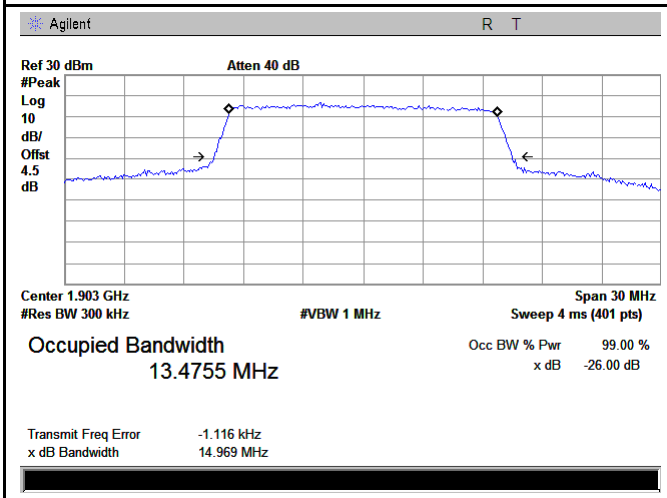
LTE Band II - Low CH 16QAM-15



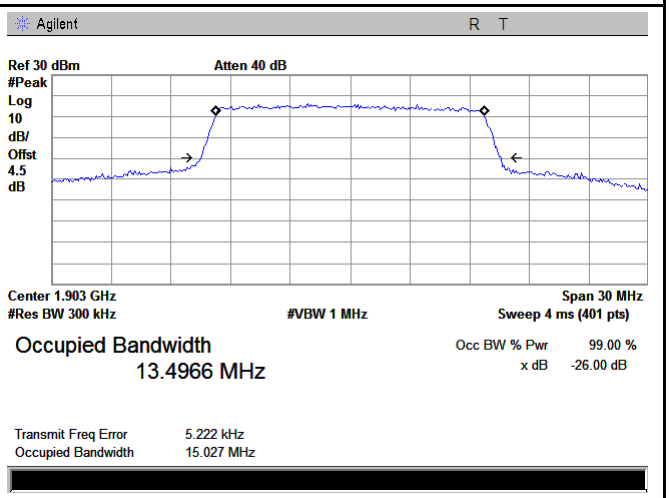
LTE Band II - Middle CH QPSK-15



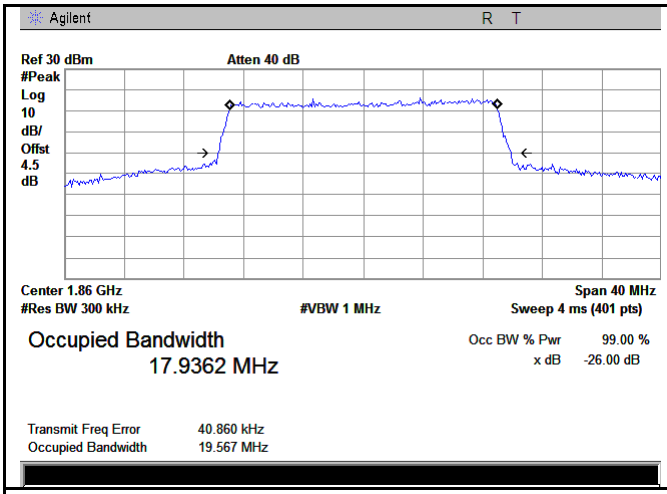
LTE Band II - Middle CH 16QAM-15



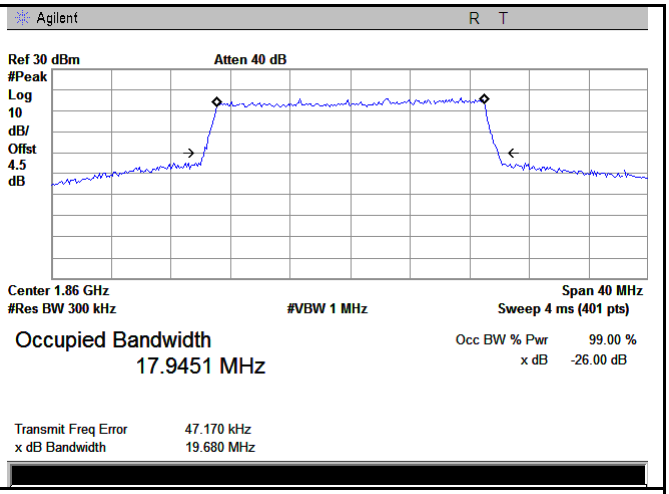
LTE Band II - High CH QPSK-15



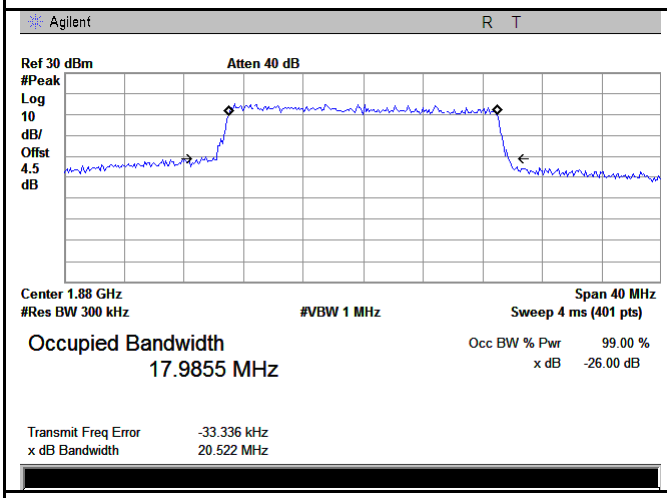
LTE Band II - High CH 16QAM-15



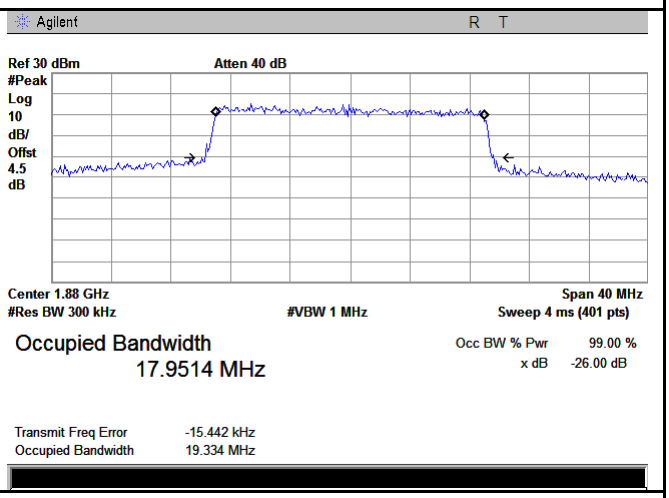
LTE Band II - Low CH QPSK-20



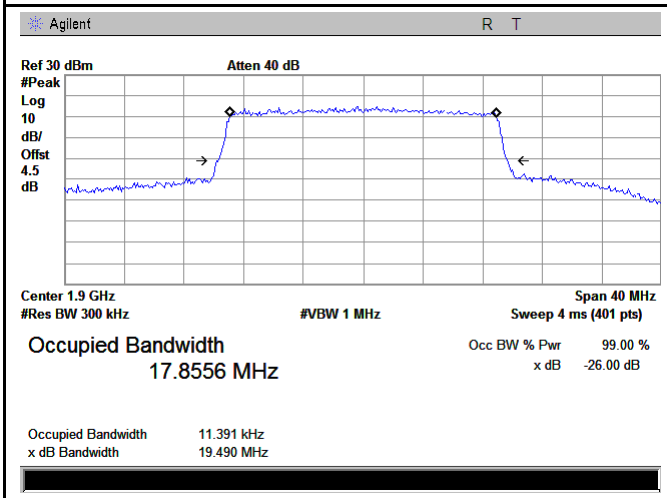
LTE Band II - Low CH 16QAM-20



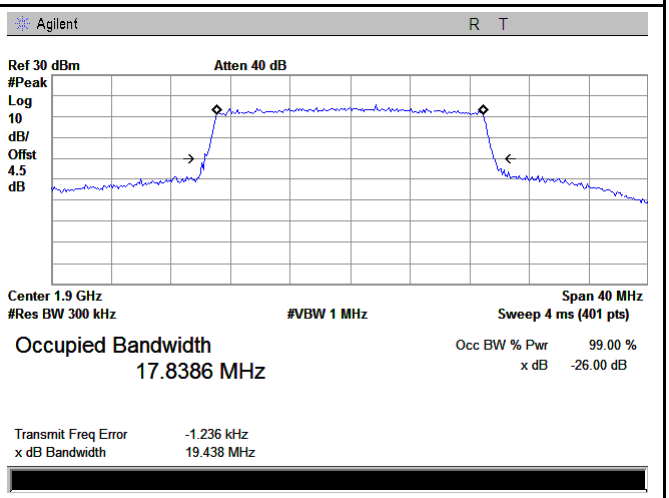
LTE Band II - Middle CH QPSK-20



LTE Band II - Middle CH 16QAM-20

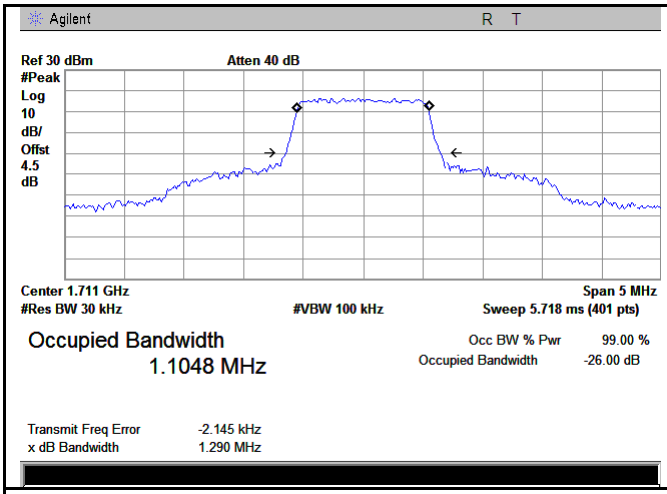


LTE Band II - High CH QPSK-20

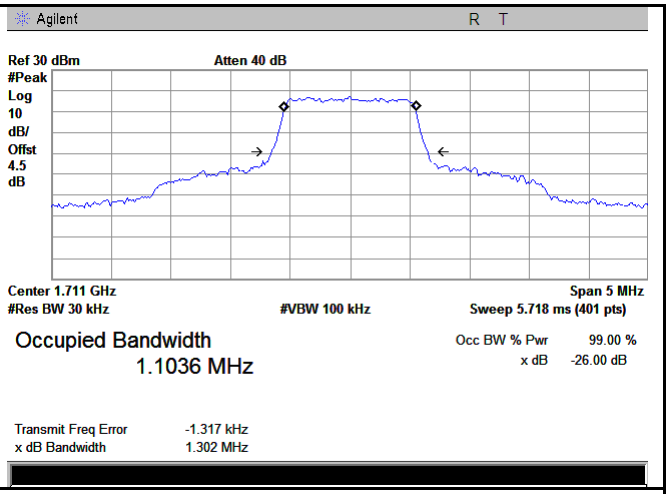


LTE Band II - High CH 16QAM-20

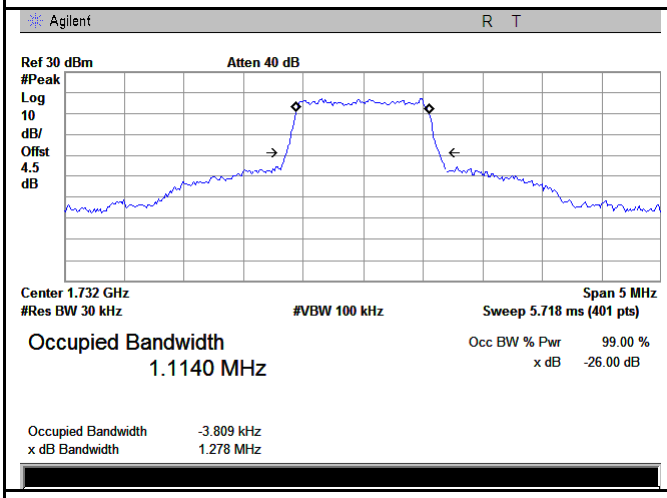
LTE Band IV (Part 27)



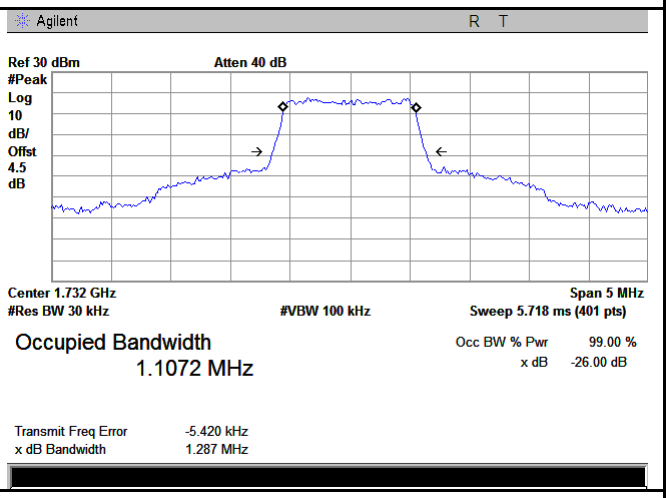
LTE Band IV - Low CH QPSK-1.4



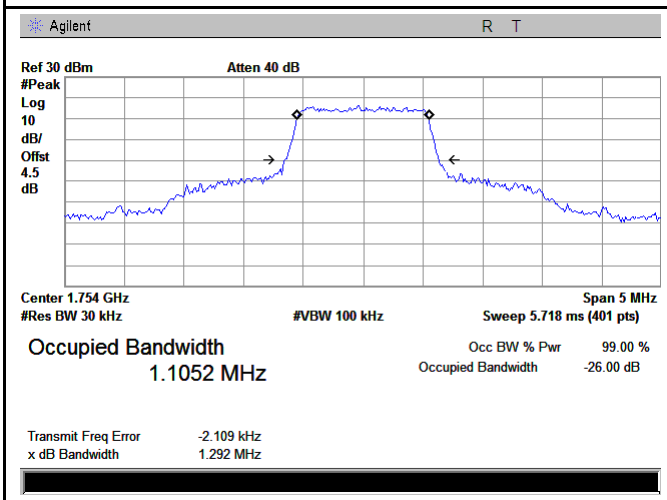
LTE Band IV - Low CH 16QAM-1.4



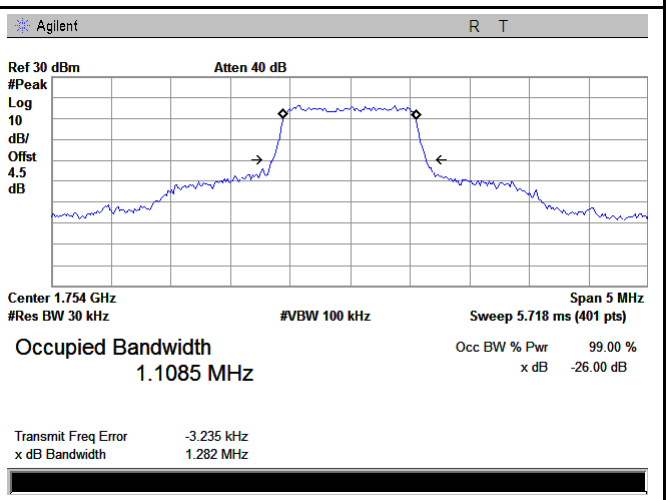
LTE Band IV - Middle CH QPSK-1.4



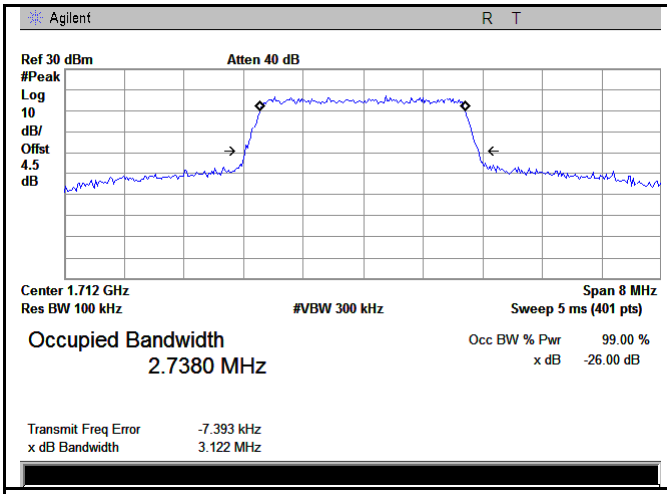
LTE Band IV - Middle CH 16QAM-1.4



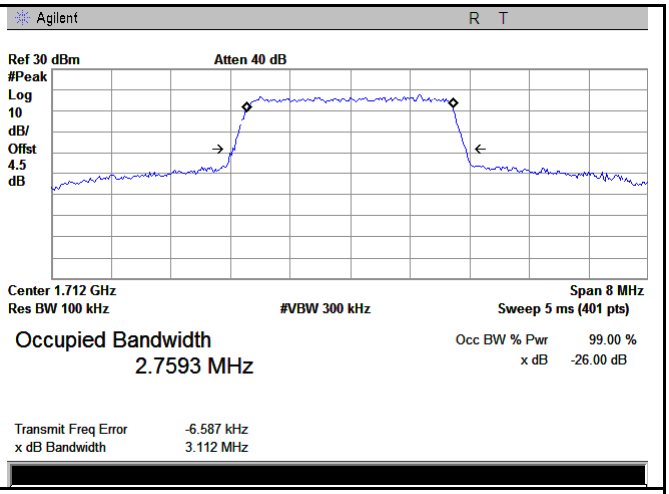
LTE Band IV - High CH QPSK-1.4



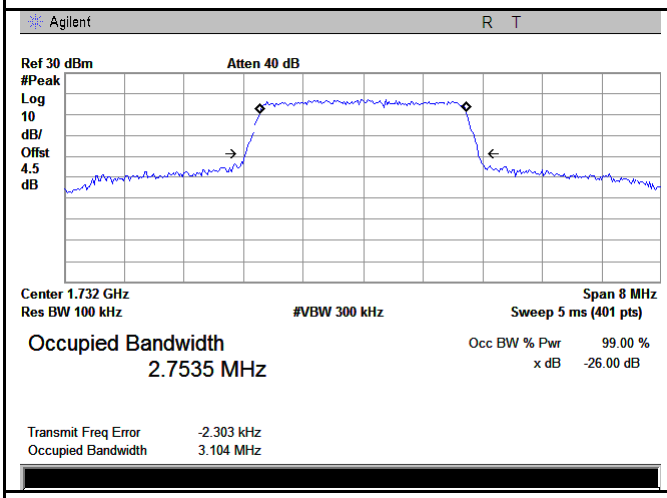
LTE Band IV - High CH 16QAM-1.4



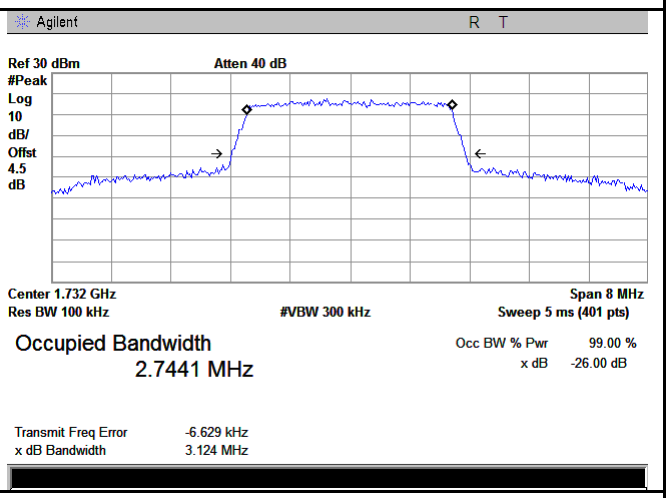
LTE Band IV - Low CH QPSK-3



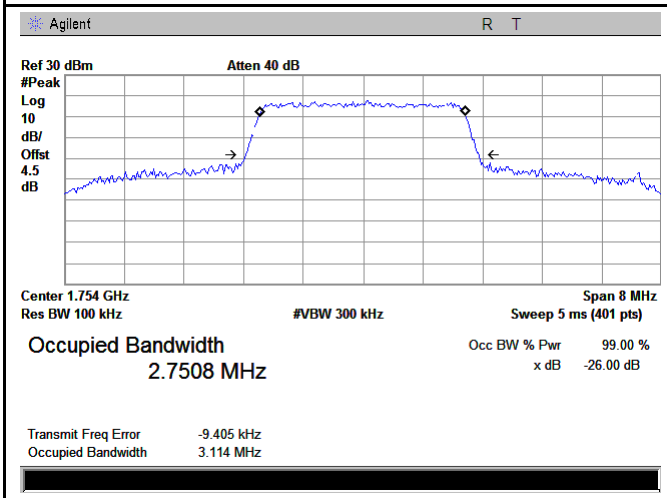
LTE Band IV - Low CH 16QAM-3



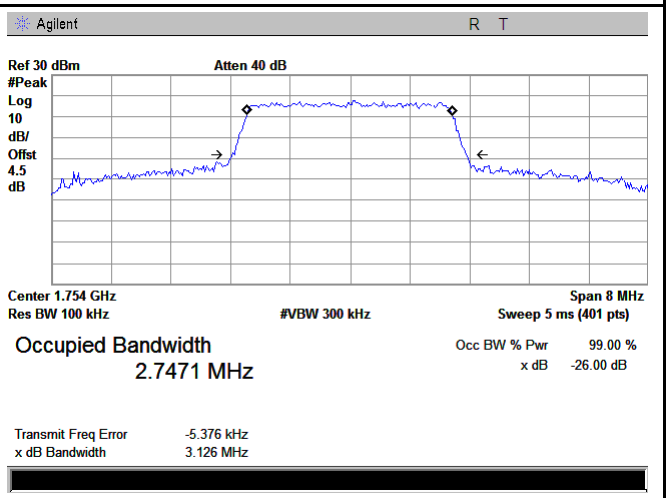
LTE Band IV - Middle CH QPSK-3



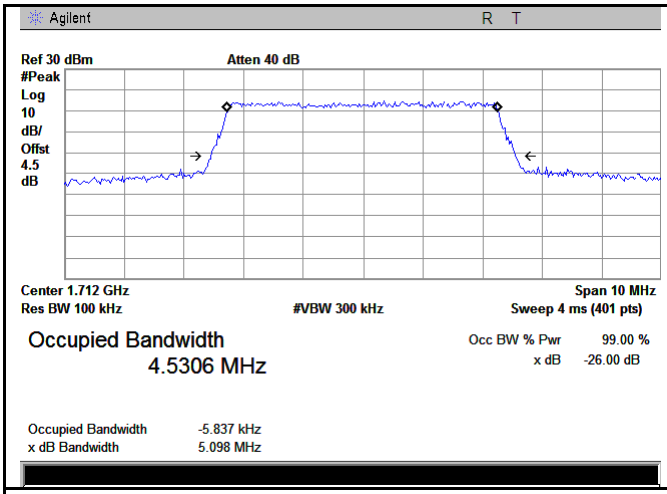
LTE Band IV - Middle CH 16QAM-3



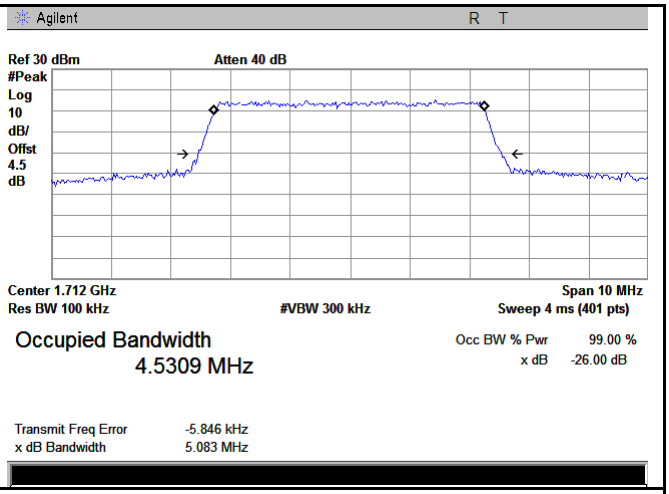
LTE Band IV - High CH QPSK-3



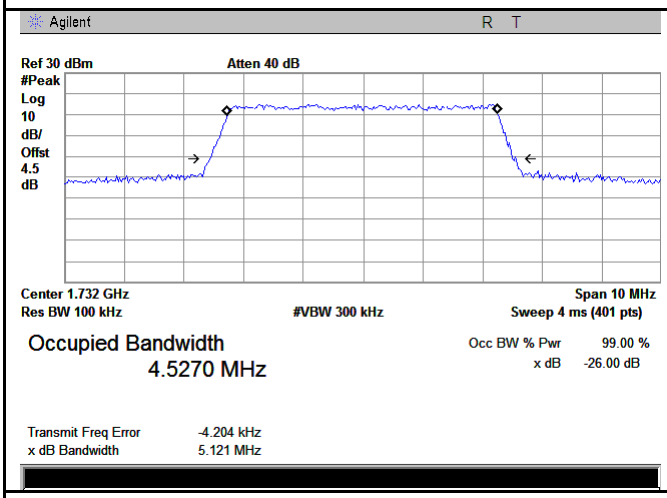
LTE Band IV - High CH 16QAM-3



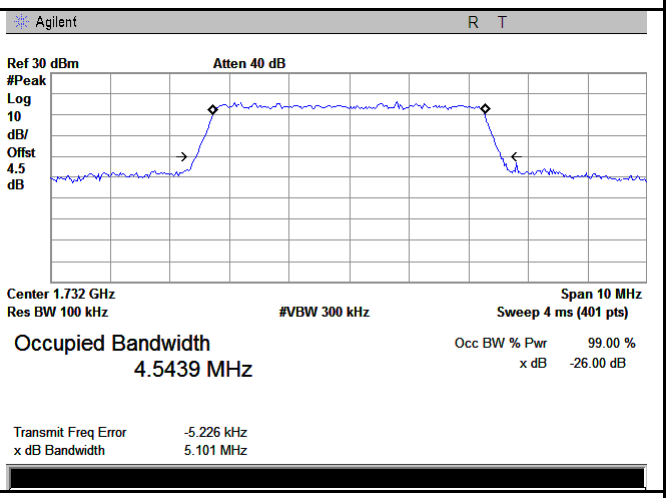
LTE Band IV - Low CH QPSK-5



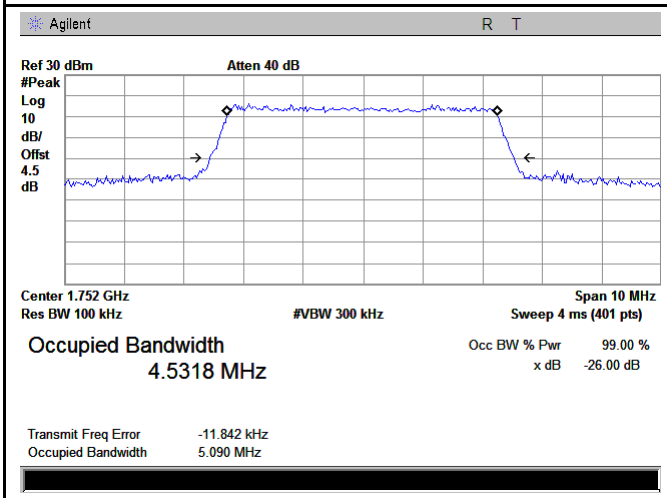
LTE Band IV - Low CH 16QAM-5



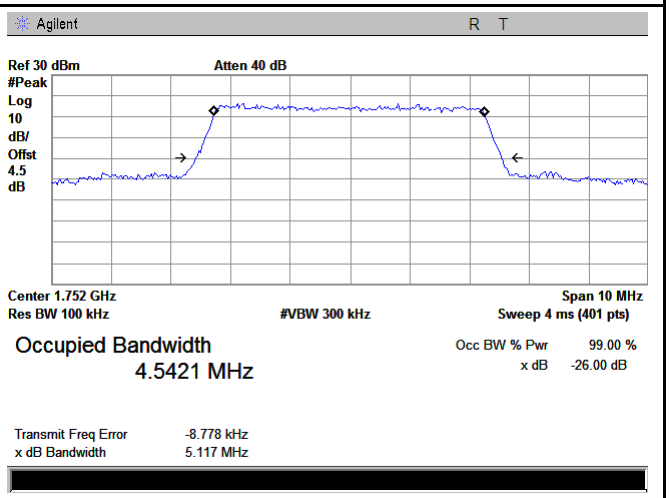
LTE Band IV - Middle CH QPSK-5



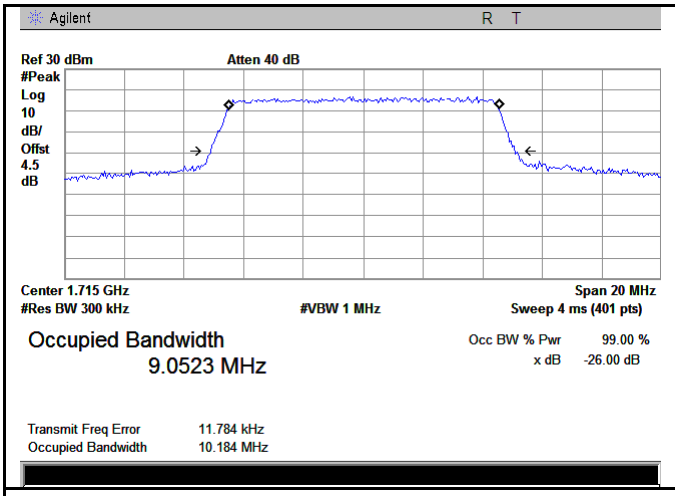
LTE Band IV - Middle CH 16QAM-5



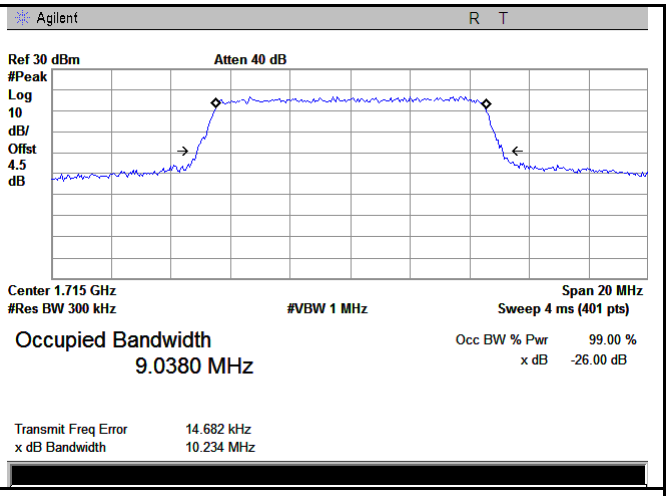
LTE Band IV - High CH QPSK-5



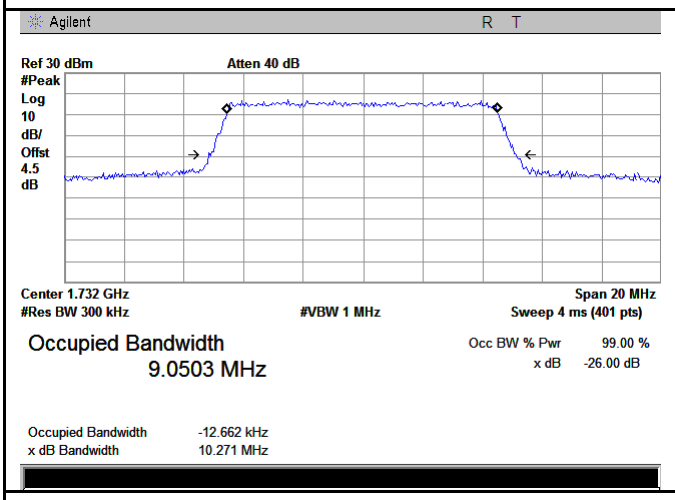
LTE Band IV - High CH 16QAM-5



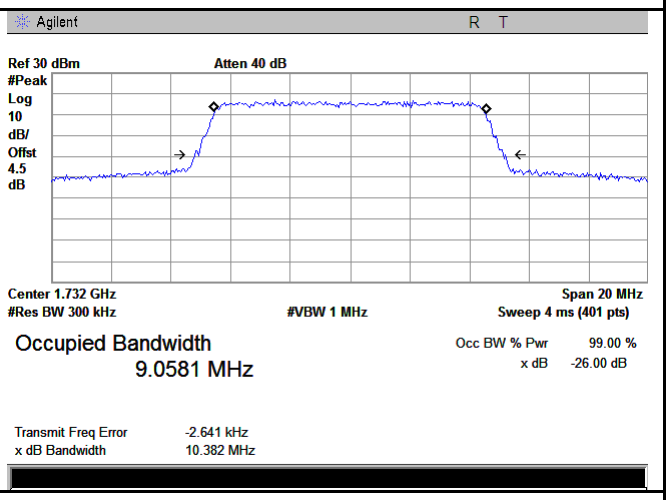
LTE Band IV - Low CH QPSK-10



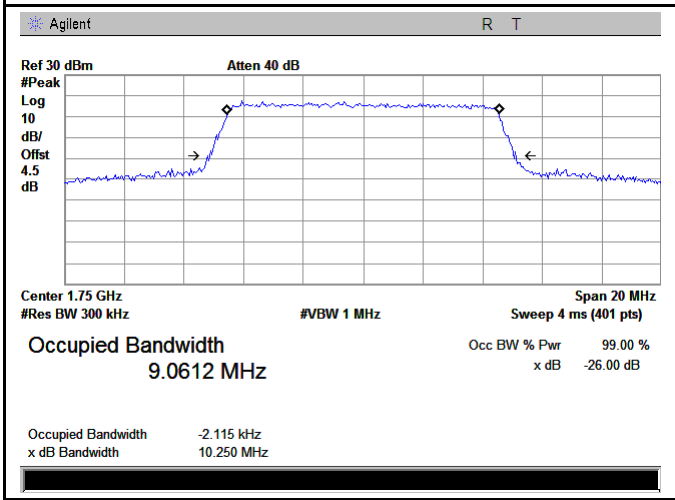
LTE Band IV - Low CH 16QAM-10



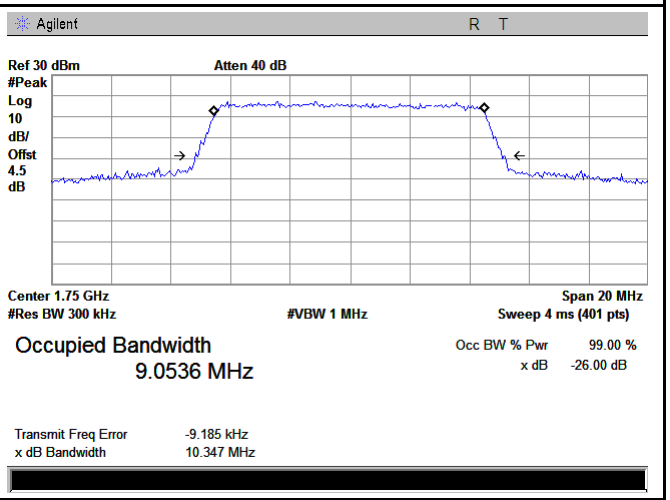
LTE Band IV - Middle CH QPSK-10



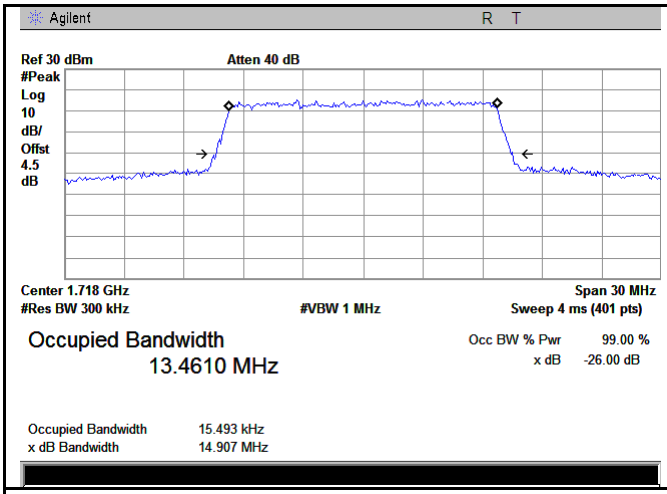
LTE Band IV - Middle CH 16QAM-10



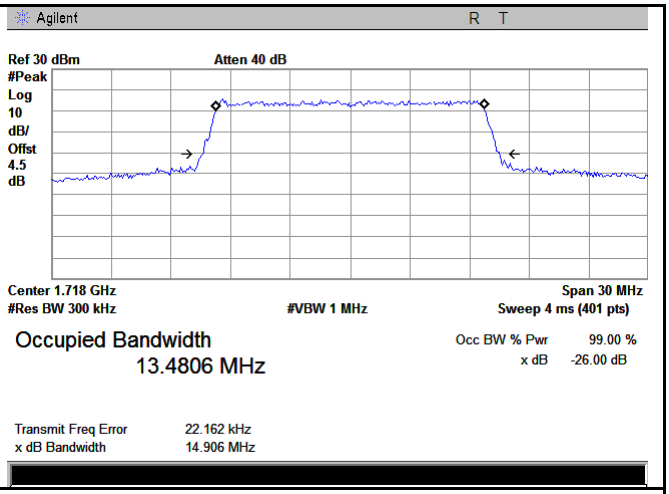
LTE Band IV - High CH QPSK-10



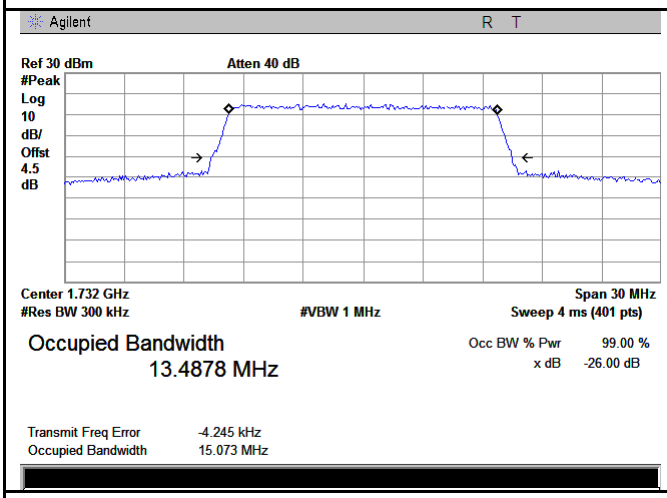
LTE Band IV - High CH 16QAM-10



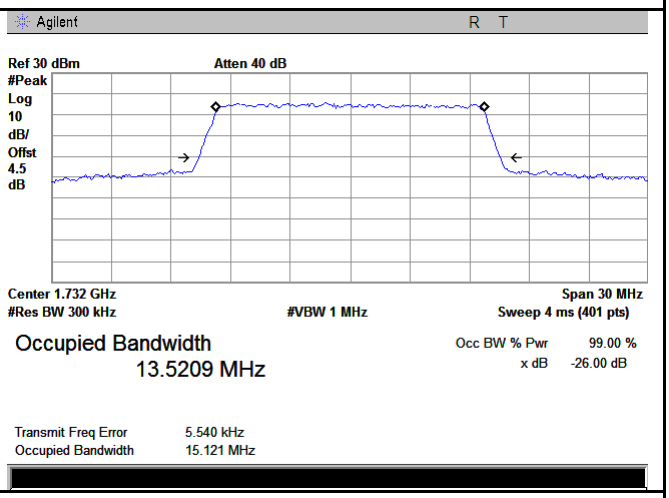
LTE Band IV - Low CH QPSK-15



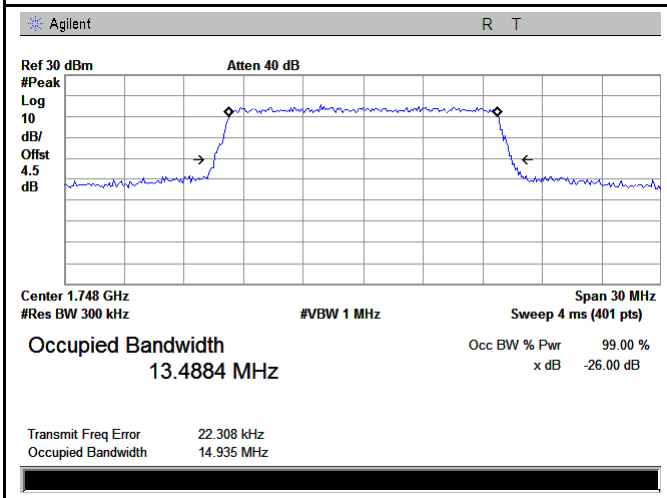
LTE Band IV - Low CH 16QAM-15



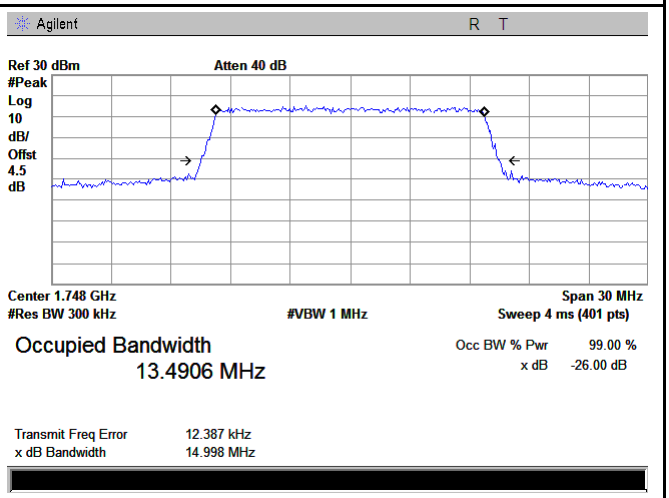
LTE Band IV - Middle CH QPSK-15



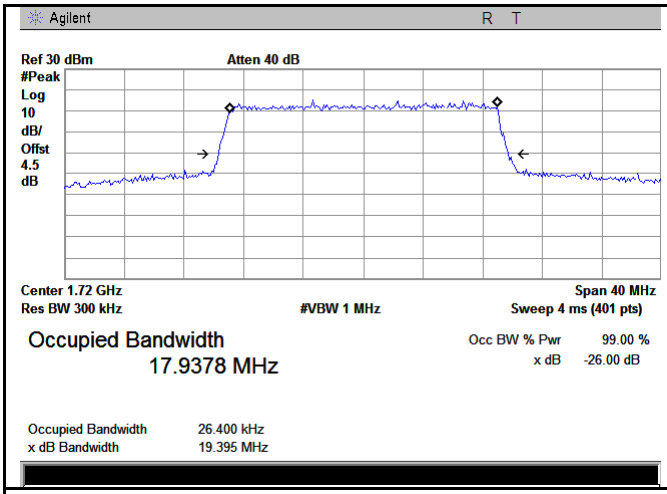
LTE Band IV - Middle CH 16QAM-15



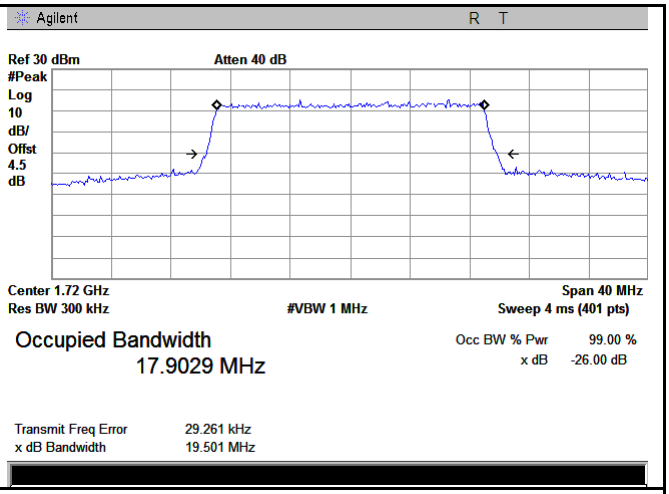
LTE Band IV - High CH QPSK-15



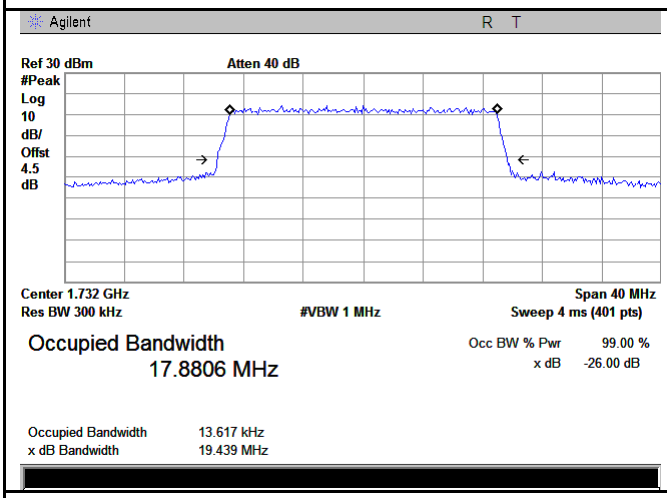
LTE Band IV - High CH 16QAM-15



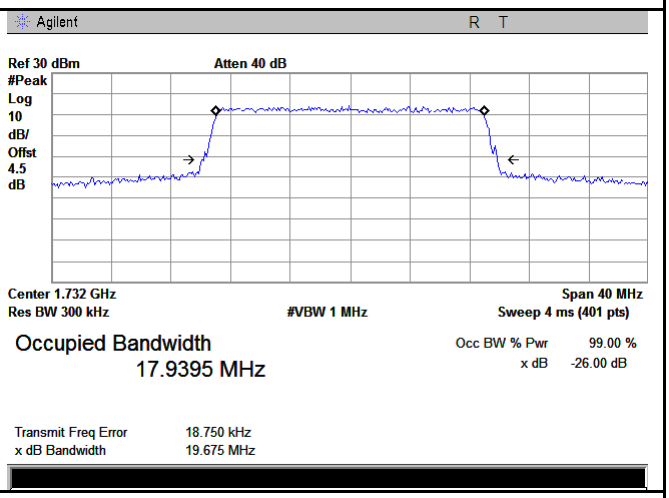
LTE Band IV - Low CH QPSK-20



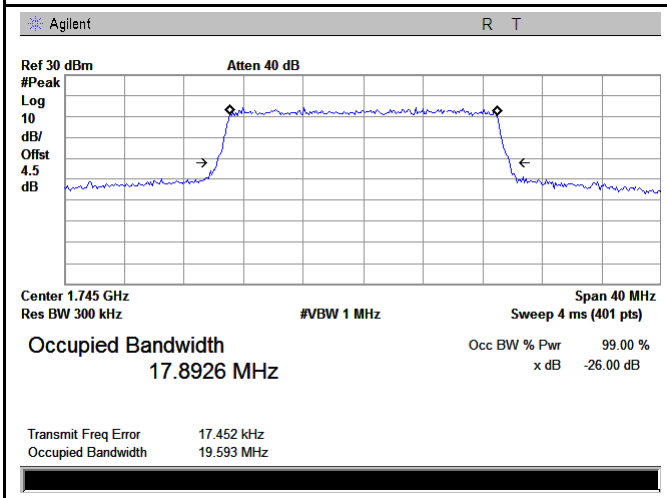
LTE Band IV - Low CH 16QAM-20



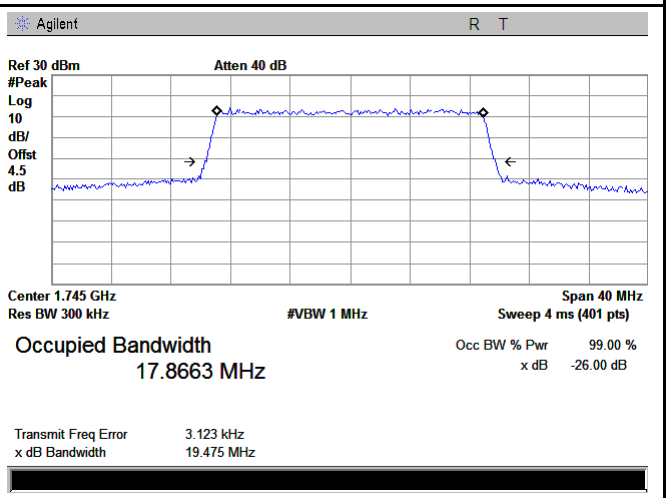
LTE Band IV - Middle CH QPSK-20



LTE Band IV - Middle CH 16QAM-20

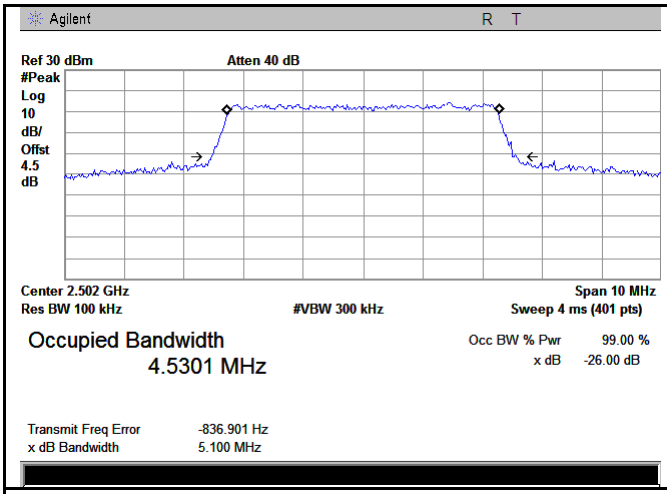


LTE Band IV - High CH QPSK-20

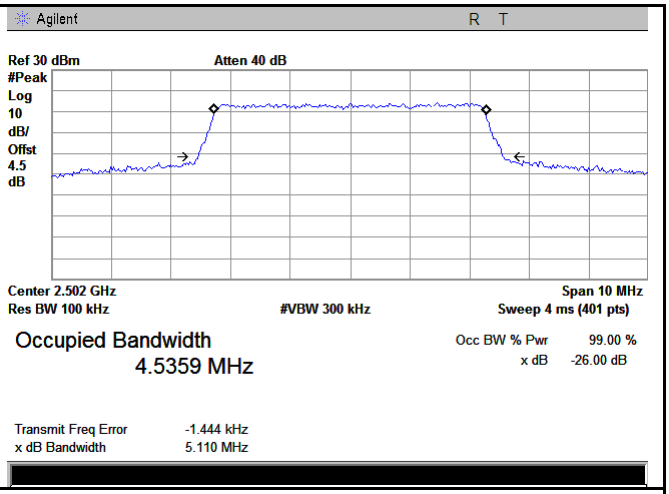


LTE Band IV - High CH 16QAM-20

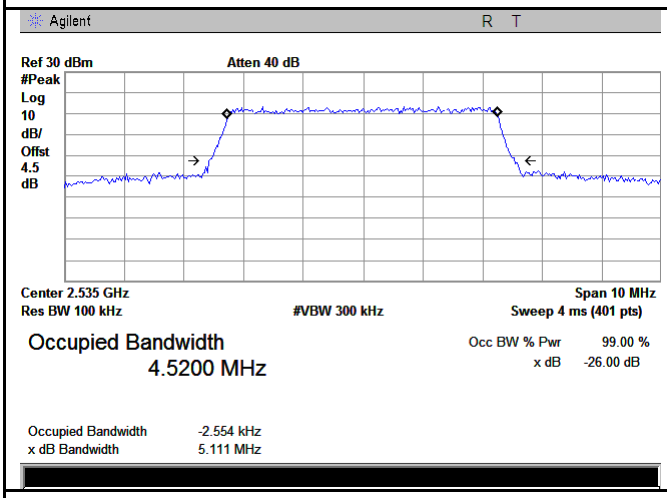
LTE Band VII (Part 27)



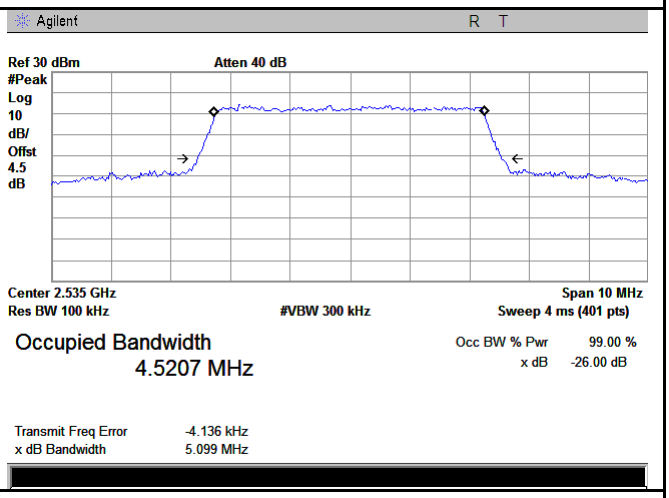
LTE Band VII - Low CH QPSK-5



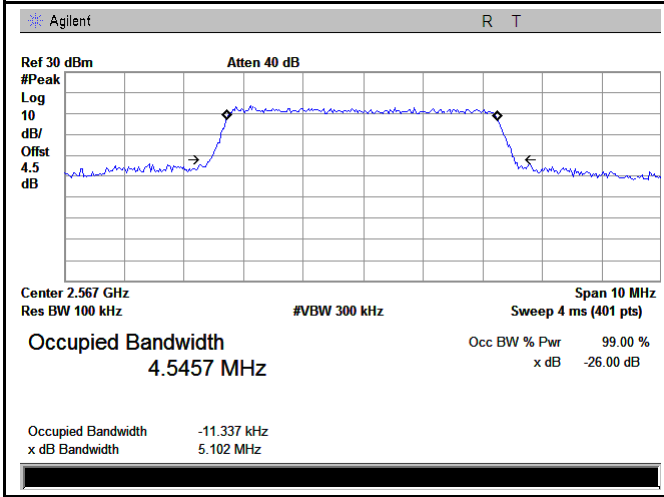
LTE Band VII - Low CH 16QAM-5



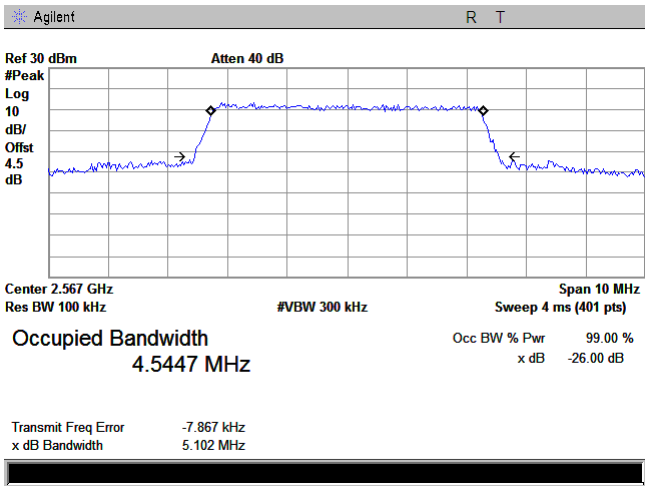
LTE Band VII - Middle CH QPSK-5



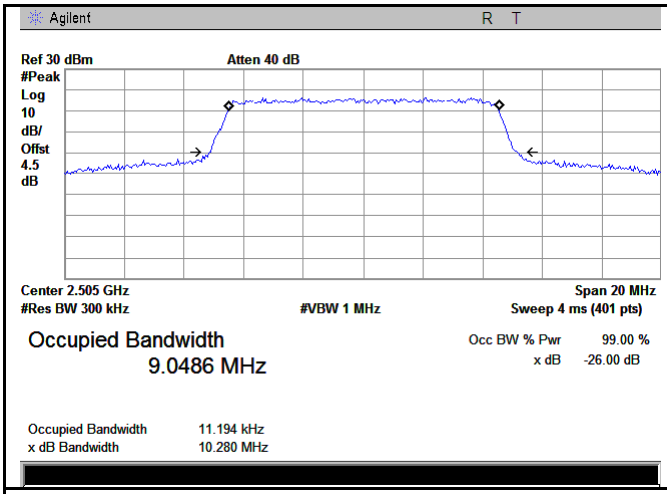
LTE Band VII - Middle CH 16QAM-5



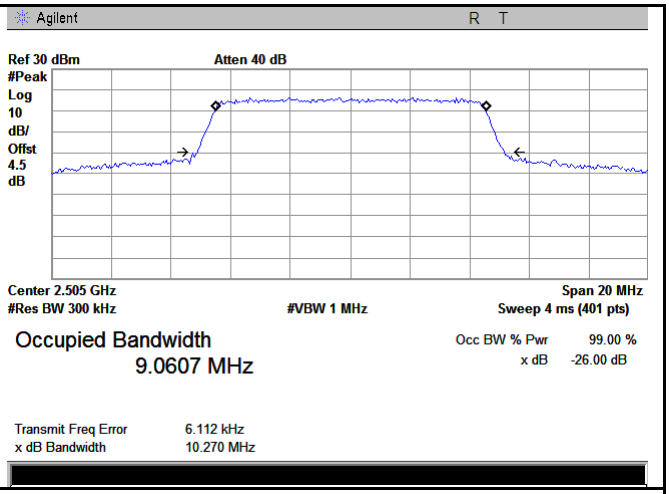
LTE Band VII - High CH QPSK-5



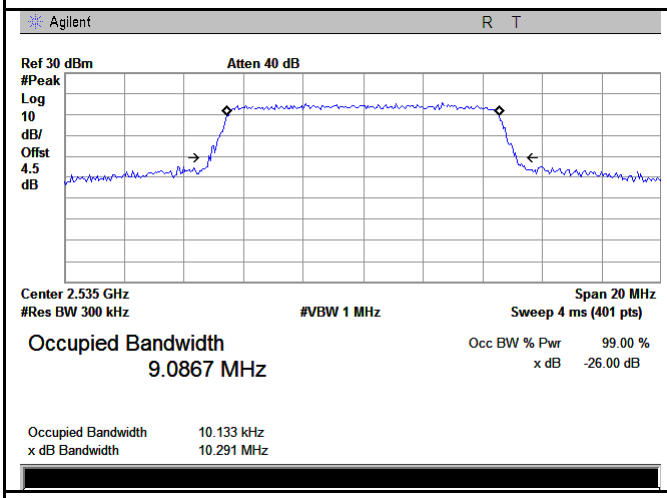
LTE Band VII - High CH 16QAM-5



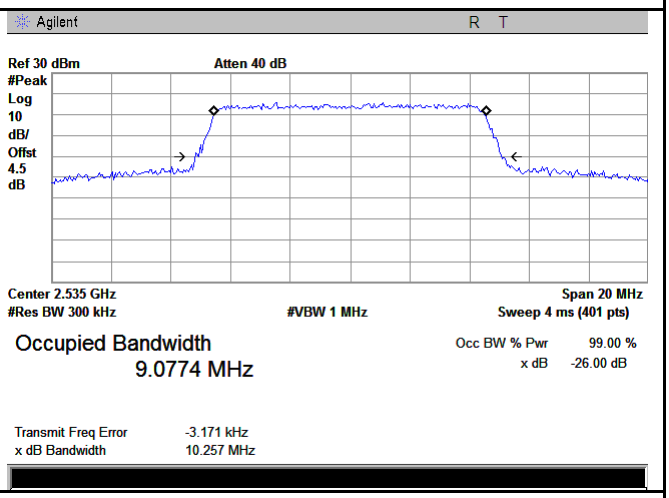
LTE Band VII - Low CH QPSK-10



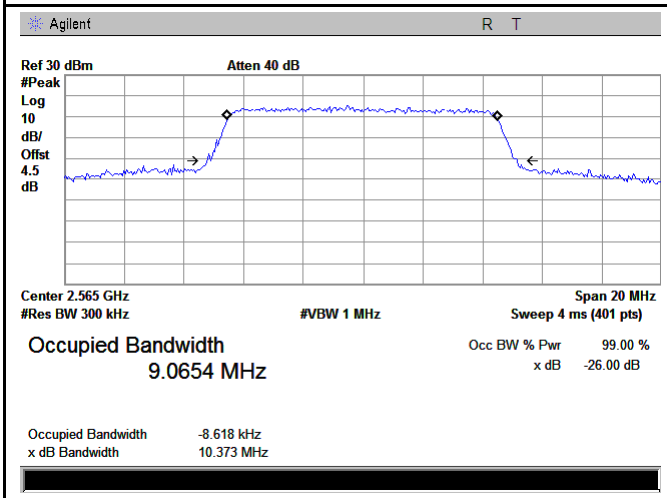
LTE Band VII - Low CH 16QAM-10



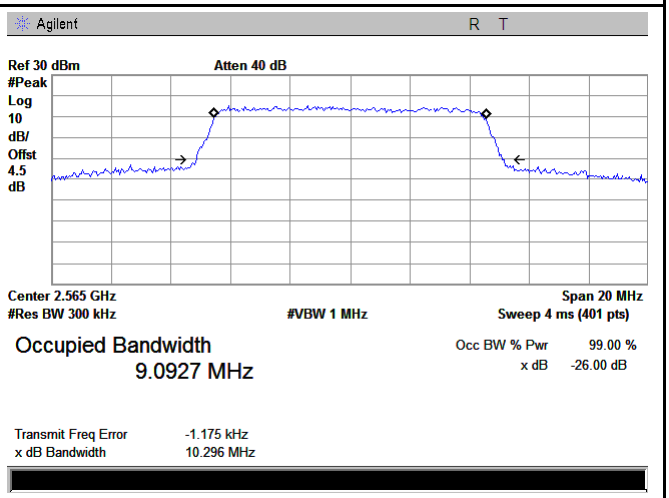
LTE Band VII - Middle CH QPSK-10



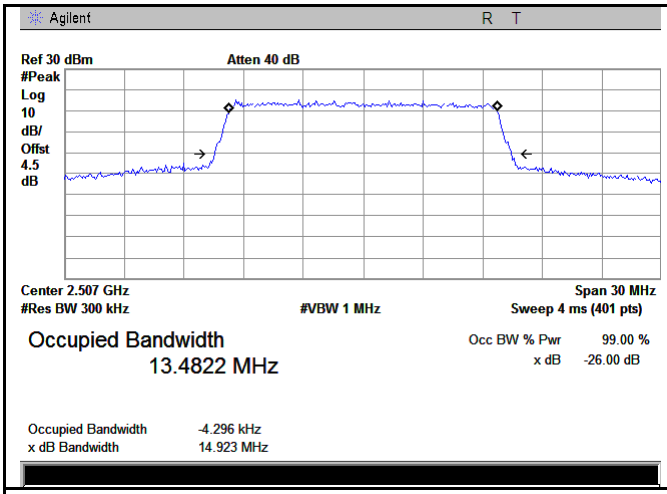
LTE Band VII - Middle CH 16QAM-10



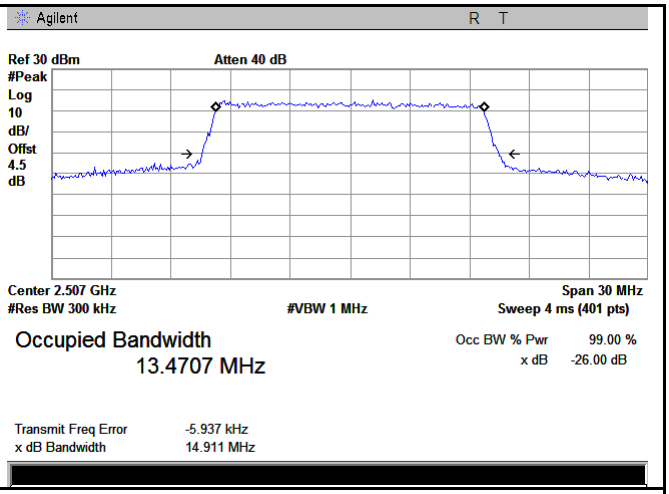
LTE Band VII - High CH QPSK-10



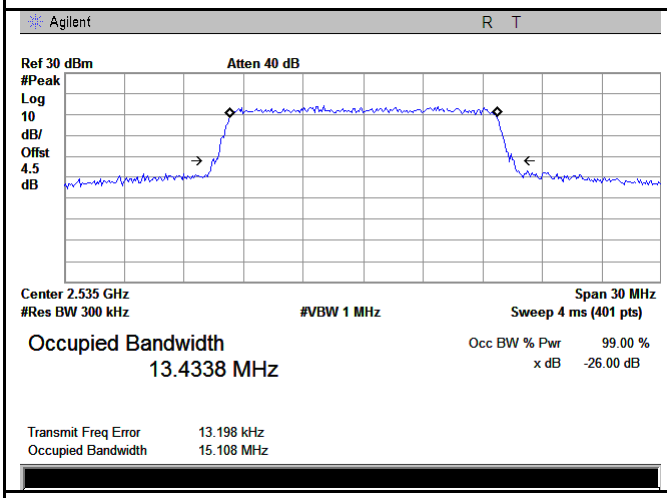
LTE Band VII - High CH 16QAM-10



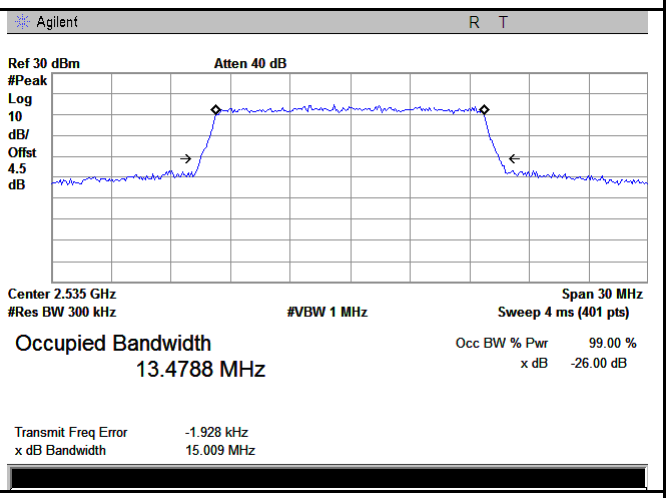
LTE Band VII - Low CH QPSK-15



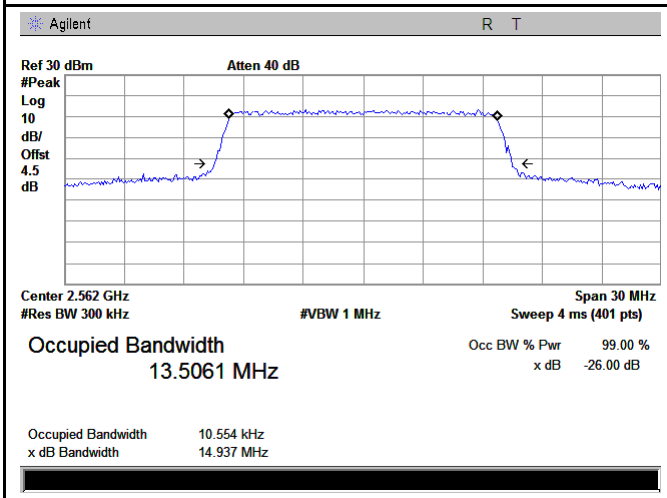
LTE Band VII - Low CH 16QAM-15



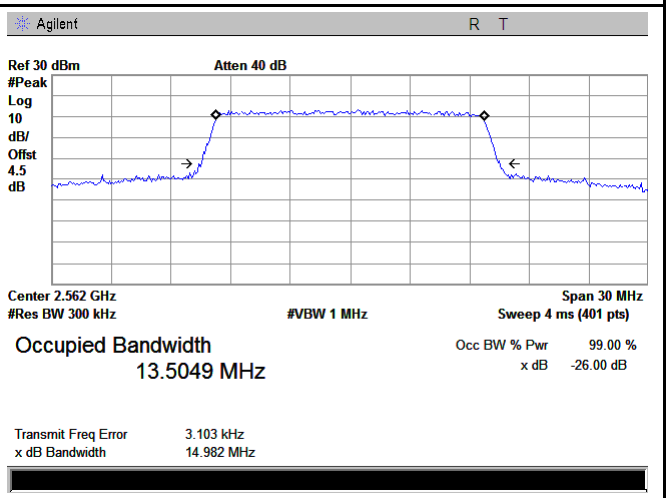
LTE Band VII - Middle CH QPSK-15



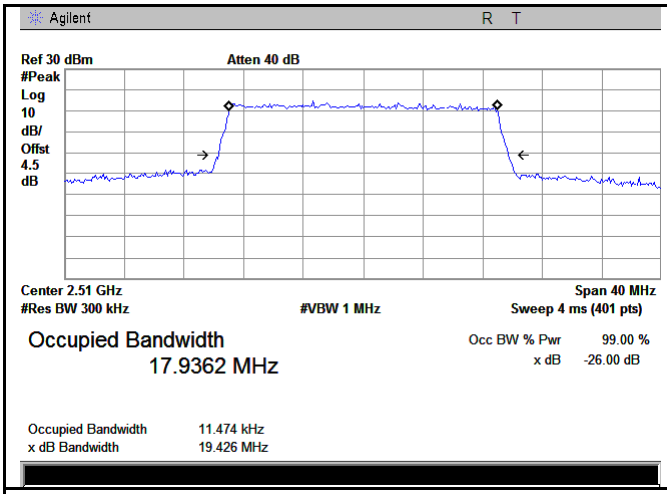
LTE Band VII - Middle CH 16QAM-15



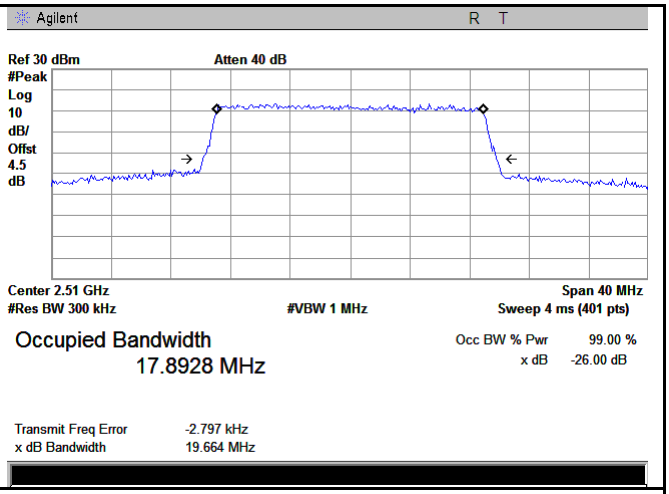
LTE Band VII - High CH QPSK-15



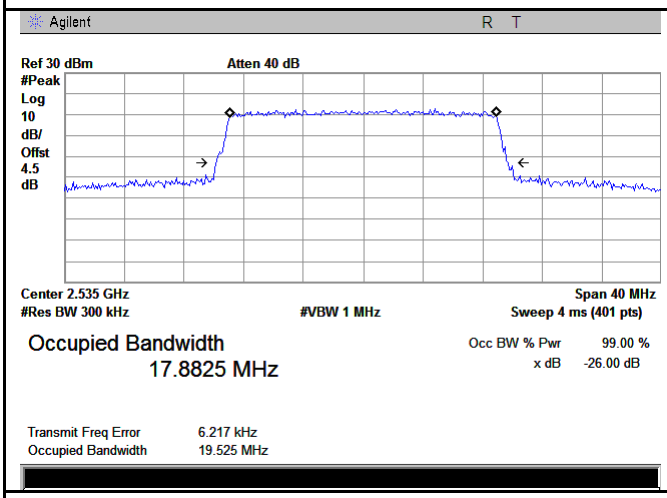
LTE Band VII - High CH 16QAM-15



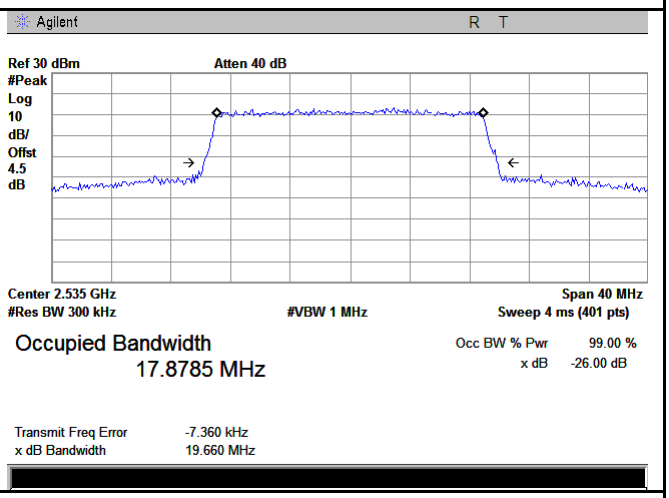
LTE Band VII - Low CH QPSK-20



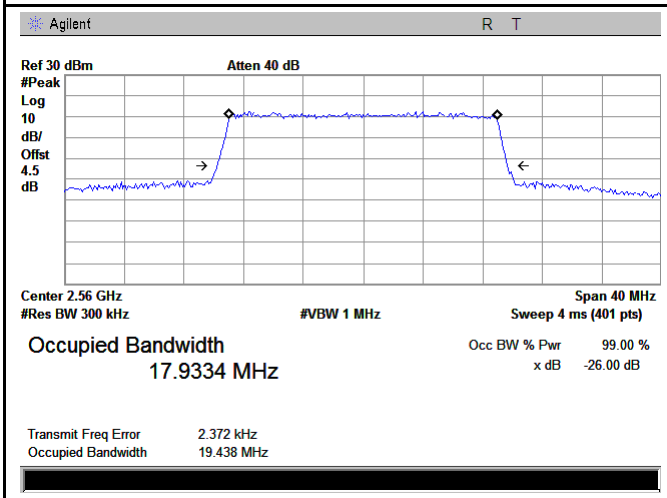
LTE Band VII - Low CH 16QAM-20



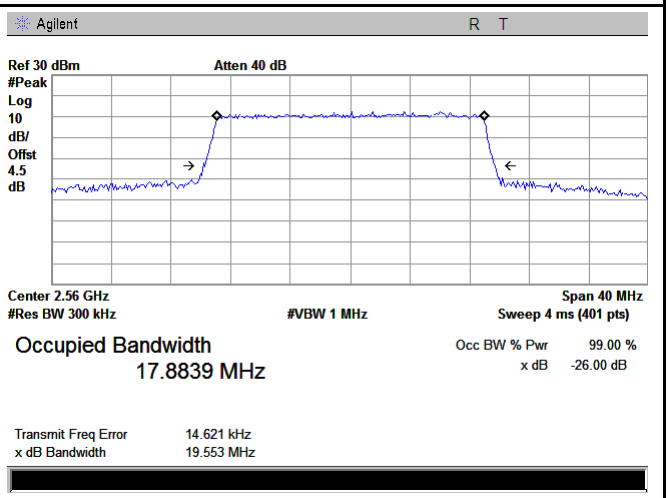
LTE Band VII - Middle CH QPSK-20



LTE Band VII - Middle CH 16QAM-20



LTE Band VII - High CH QPSK-20



LTE Band VII - High CH 16QAM-20