RF TEST REPORT

Report No.: 17071294-FCC-R5

Supersede Report No.: N/A

Applicant	MFOURTEL MEXICO S.A. DE C.V.
Product Name	Smart Phone
Model No.	M4 B3
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	November 20 to December 05, 2017
Issue Date	December 06, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Aaron Liang	David Huang	
Aaron 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
17071294-FCC-R5	NONE	Original	December 06, 2017

2. Customer information

Applicant Name	MFOURTEL MEXICO S.A. DE C.V.
Applicant Add	Av. Ejército Nacional 436 Piso 3 Chapultepec Morales Miguel Hidalgo Distrito Federal 11570.
Manufacturer	CK Telecom Limited
Manufacturer Add	Technology Road.High-Tech Development Zone. Heyuan, Guangdong,P.R.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:	Smart Phone
Main Model:	M4 B3
Serial Model:	N/A
Date EUT received:	November 20, 2017
Test Date(s):	November 20 to December 05, 2017
Equipment Category :	PCE
Antenna Gain:	GSM850: -3dBi PCS1900: -1dBi UMTS-FDD Band V: -3dBi UMTS-FDD Band II: -1dBi LTE Band II: -1dBi LTE Band IV: -3dBi LTE Band VII: 0 dBi LTE Band XII: -4dBi Bluetooth/BLE: 1dBi WIFI: 1dBi GPS: -1dBi
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 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 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: 23.60 dBm LTE Band IV: 23.67 dBm LTE Band VII: 23.61 dBm LTE Band XII: 23.37 dBm
ERP/EIRP:	LTE Band II: 22.52 dBm / EIRP LTE Band IV: 20.67 dBm / EIRP LTE Band VII: 23.55 dBm / EIRP LTE Band XII: 21.08 dBm / EIRP
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: M4 Input: AC100-240V~50/60Hz,150mA Output: DC 5V, 1000mA Battery: Model: M3000A Spec: 3.85V, 3000mAh, 11.55Wh
Trade Name :	M4
GPRS/EGPRS Multi-slot class	8/10/11/12
FCC ID:	CLNM4B3

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

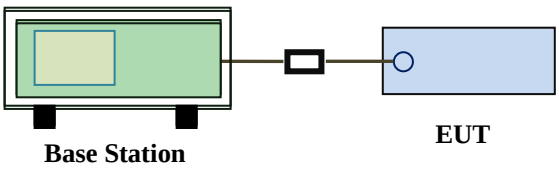
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17071294-FCC-H.

6.2 RF Output Power

Temperature	23 °C
Relative Humidity	51%
Atmospheric Pressure	1020mbar
Test date :	November 30, 2017
Tested By :	Aaron 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	23.36	23.4±1
				1	49	0	23.38	23.4±1
				1	99	0	23.39	23.4±1
				50	0	1	23.29	23.4±1
				50	24	1	23.4	23.4±1
				50	49	1	23.32	23.4±1
				100	0	1	23.42	23.4±1
			16QAM	1	0	1	23.29	23.3±1
				1	49	1	23.27	23.3±1
				1	99	1	23.2	23.3±1
				50	0	2	23.28	23.3±1
				50	24	2	23.34	23.3±1
				50	49	2	23.2	23.3±1
				100	0	2	23.24	23.3±1
	18900	1880.0	QPSK	1	0	0	23.29	22.8±1
				1	49	0	23.32	22.8±1
				1	99	0	23.24	22.8±1
				50	0	1	22.42	22.8±1
				50	24	1	22.32	22.8±1
				50	49	1	22.39	22.8±1
				100	0	1	22.39	22.8±1
			16QAM	1	0	1	22.36	22.1±1
				1	49	1	22.27	22.1±1
				1	99	1	22.34	22.1±1
				50	0	2	22.03	22.1±1
				50	24	2	22.1	22.1±1
				50	49	2	21.94	22.1±1
				100	0	2	21.76	22.1±1
	19100	1900.0	QPSK	1	0	0	22.46	22.5±1
				1	49	0	22.38	22.5±1
				1	99	0	22.55	22.5±1
				50	0	1	22.57	22.5±1
				50	24	1	22.54	22.5±1
				50	49	1	22.59	22.5±1
				100	0	1	22.58	22.5±1
			16QAM	1	0	1	22.64	22.2±1
				1	49	1	22.62	22.2±1
				1	99	1	22.62	22.2±1
				50	0	2	21.61	22.2±1
				50	24	2	21.7	22.2±1
				50	49	2	21.55	22.2±1
				100	0	2	21.68	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	23.36	23.2±1
				1	74	0	23.17	23.2±1
				36	0	1	23.31	23.2±1
				36	16	1	23.21	23.2±1
				36	35	1	23.29	23.2±1
				75	0	1	23.21	23.2±1
			16QAM	1	0	1	23.27	23.3±1
				1	37	1	23.33	23.3±1
				1	74	1	23.36	23.3±1
				36	0	2	23.33	23.3±1
				36	16	2	23.23	23.3±1
				36	35	2	23.21	23.3±1
				75	0	2	23.25	23.3±1
	18900	1880.0	QPSK	1	0	0	23.27	22.9±1
				1	37	0	23.24	22.9±1
				1	74	0	23.32	22.9±1
				36	0	1	22.42	22.9±1
				36	16	1	22.33	22.9±1
				36	35	1	22.46	22.9±1
				75	0	1	22.48	22.9±1
			16QAM	1	0	1	22.51	21.9±1
				1	37	1	22.49	21.9±1
				1	74	1	22.42	21.9±1
				36	0	2	21.51	21.9±1
				36	16	2	21.59	21.9±1
				36	35	2	21.55	21.9±1
				75	0	2	21.43	21.9±1
	19125	1902.5	QPSK	1	0	0	23.51	23.1±1
				1	37	0	23.53	23.1±1
				1	74	0	23.6	23.1±1
				36	0	1	22.72	23.1±1
				36	16	1	22.63	23.1±1
				36	35	1	22.69	23.1±1
				75	0	1	22.7	23.1±1
			16QAM	1	0	1	23.02	22.2±1
				1	37	1	23.03	22.2±1
				1	74	1	22.97	22.2±1
				36	0	2	21.73	22.2±1
				36	16	2	21.72	22.2±1
				36	35	2	21.83	22.2±1
				75	0	2	21.74	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	23.23	23.2±1
				1	24	0	23.22	23.2±1
				1	49	0	23.27	23.2±1
				25	0	1	23.27	23.2±1
				25	12	1	23.15	23.2±1
				25	24	1	23.28	23.2±1
				50	0	1	23.19	23.2±1
			16QAM	1	0	1	23.14	23.1±1
				1	24	1	23.17	23.1±1
				1	49	1	23.07	23.1±1
				25	0	2	23.21	23.1±1
				25	12	2	23.17	23.1±1
				25	24	2	23.23	23.1±1
				50	0	2	23.12	23.1±1
	18900	1880.0	QPSK	1	0	0	23.14	22.8±1
				1	24	0	23.08	22.8±1
				1	49	0	23.16	22.8±1
				25	0	1	22.39	22.8±1
				25	12	1	22.33	22.8±1
				25	24	1	22.38	22.8±1
				50	0	1	22.39	22.8±1
			16QAM	1	0	1	22.82	22.2±1
				1	24	1	22.8	22.2±1
				1	49	1	22.81	22.2±1
				25	0	2	21.49	22.2±1
				25	12	2	21.39	22.2±1
				25	24	2	21.57	22.2±1
				50	0	2	21.43	22.2±1
	19150	1905	QPSK	1	0	0	23.27	22.8±1
				1	24	0	23.29	22.8±1
				1	49	0	23.35	22.8±1
				25	0	1	22.32	22.8±1
				25	12	1	22.29	22.8±1
				25	24	1	22.42	22.8±1
				50	0	1	22.34	22.8±1
			16QAM	1	0	1	22.25	21.9±1
				1	24	1	22.3	21.9±1
				1	49	1	22.17	21.9±1
				25	0	2	21.71	21.9±1
				25	12	2	21.67	21.9±1
				25	24	2	21.73	21.9±1
				50	0	2	21.45	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	23.11	23.1±1
				1	12	0	23.17	23.1±1
				1	24	0	23.09	23.1±1
				12	0	1	23.17	23.1±1
				12	6	1	23.03	23.1±1
				12	11	1	23.07	23.1±1
				25	0	1	23.14	23.1±1
			16QAM	1	0	1	23.29	23.3±1
				1	12	1	23.22	23.3±1
				1	24	1	23.28	23.3±1
				12	0	2	23.23	23.3±1
				12	6	2	23.21	23.3±1
				12	11	2	23.19	23.3±1
				25	0	2	23.21	23.3±1
	18900	1880.0	QPSK	1	0	0	23.29	22.9±1
				1	12	0	23.24	22.9±1
				1	24	0	23.25	22.9±1
				12	0	1	22.41	22.9±1
				12	6	1	22.39	22.9±1
				12	11	1	22.43	22.9±1
				25	0	1	22.36	22.9±1
			16QAM	1	0	1	22.31	21.8±1
				1	12	1	22.33	21.8±1
				1	24	1	22.26	21.8±1
				12	0	2	21.39	21.8±1
				12	6	2	21.49	21.8±1
				12	11	2	21.46	21.8±1
				25	0	2	21.36	21.8±1
	19175	1907.5	QPSK	1	0	0	23.05	22.6±1
				1	12	0	23.03	22.6±1
				1	24	0	22.95	22.6±1
				12	0	1	22.17	22.6±1
				12	6	1	22.14	22.6±1
				12	11	1	22.18	22.6±1
				25	0	1	22.31	22.6±1
			16QAM	1	0	1	22.19	21.7±1
				1	12	1	22.12	21.7±1
				1	24	1	22.24	21.7±1
				12	0	2	21.35	21.7±1
				12	6	2	21.27	21.7±1
				12	11	2	21.35	21.7±1
				25	0	2	21.42	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	23.18	23.2±1
				1	7	0	23.24	23.2±1
				1	14	0	23.1	23.2±1
				8	0	1	23.11	23.2±1
				8	4	1	23.28	23.2±1
				8	7	1	23.19	23.2±1
				15	0	1	23.1	23.2±1
			16QAM	1	0	1	23.36	23.4±1
				1	7	1	23.37	23.4±1
				1	14	1	23.43	23.4±1
				8	0	2	23.36	23.4±1
				8	4	2	23.4	23.4±1
				8	7	2	23.46	23.4±1
				15	0	2	23.39	23.4±1
	18900	1880.0	QPSK	1	0	0	23.36	22.8±1
				1	7	0	23.42	22.8±1
				1	14	0	23.39	22.8±1
				8	0	1	22.34	22.8±1
				8	4	1	22.34	22.8±1
				8	7	1	22.33	22.8±1
				15	0	1	22.38	22.8±1
			16QAM	1	0	1	22.31	21.7±1
				1	7	1	22.22	21.7±1
				1	14	1	22.28	21.7±1
				8	0	2	21.27	21.7±1
				8	4	2	21.22	21.7±1
				8	7	2	21.19	21.7±1
				15	0	2	21.39	21.7±1
	19175	1907.5	QPSK	1	0	0	23.08	22.9±1
				1	7	0	23.18	22.9±1
				1	14	0	23.14	22.9±1
				8	0	1	22.53	22.9±1
				8	4	1	22.51	22.9±1
				8	7	1	22.51	22.9±1
				15	0	1	22.74	22.9±1
			16QAM	1	0	1	22.9	22.3±1
				1	7	1	22.81	22.3±1
				1	14	1	22.84	22.3±1
				8	0	2	22.02	22.3±1
				8	4	2	22.09	22.3±1
				8	7	2	22.09	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	23.18	23.2±1
				1	2	0	23.28	23.2±1
				1	5	0	23.23	23.2±1
				3	0	0	23.12	23.2±1
				3	1	0	23.28	23.2±1
				3	2	0	23.28	23.2±1
				6	0	1	23.1	23.2±1
			16QAM	1	0	1	23.34	23.3±1
				1	2	1	23.42	23.3±1
				1	5	1	23.25	23.3±1
				3	0	1	23.35	23.3±1
				3	1	1	23.27	23.3±1
				3	2	1	23.43	23.3±1
				6	0	2	23.39	23.3±1
	18900	1880.0	QPSK	1	0	0	23.34	22.9±1
				1	2	0	23.28	22.9±1
				1	5	0	23.31	22.9±1
				3	0	0	23.35	22.9±1
				3	1	0	23.3	22.9±1
				3	2	0	23.41	22.9±1
				6	0	1	22.34	22.9±1
			16QAM	1	0	1	22.31	21.8±1
				1	2	1	22.3	21.8±1
				1	5	1	22.41	21.8±1
				3	0	1	21.96	21.8±1
				3	1	1	21.87	21.8±1
				3	2	1	22.05	21.8±1
				6	0	2	21.71	21.8±1
	19193	1909.3	QPSK	1	0	0	23.52	23±1
				1	2	0	23.53	23±1
				1	5	0	23.51	23±1
				3	0	0	22.51	23±1
				3	1	0	22.42	23±1
				3	2	0	22.52	23±1
				6	0	1	22.69	23±1
			16QAM	1	0	1	22.5	22.2±1
				1	2	1	22.57	22.2±1
				1	5	1	22.51	22.2±1
				3	0	1	21.75	22.2±1
				3	1	1	21.74	22.2±1
				3	2	1	21.73	22.2±1
				6	0	2	21.71	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	23.6	23.6±1
				1	49	0	23.51	23.6±1
				1	99	0	23.67	23.6±1
				50	0	1	23.67	23.6±1
				50	24	1	23.58	23.6±1
				50	49	1	23.53	23.6±1
				100	0	1	23.62	23.6±1
			16QAM	1	0	1	23.29	23.3±1
				1	49	1	23.3	23.3±1
				1	99	1	23.36	23.3±1
				50	0	2	23.29	23.3±1
				50	24	2	23.38	23.3±1
				50	49	2	23.35	23.3±1
				100	0	2	23.28	23.3±1
	20175	1732.5	QPSK	1	0	0	23.29	22.8±1
				1	49	0	23.35	22.8±1
				1	99	0	23.21	22.8±1
				50	0	1	22.33	22.8±1
				50	24	1	22.38	22.8±1
				50	49	1	22.4	22.8±1
				100	0	1	22.23	22.8±1
			16QAM	1	0	1	22.52	21.8±1
				1	49	1	22.42	21.8±1
				1	99	1	22.45	21.8±1
				50	0	2	21.26	21.8±1
				50	24	2	21.19	21.8±1
				50	49	2	21.3	21.8±1
				100	0	2	21.24	21.8±1
	20300	1745.0	QPSK	1	0	0	23.27	22.7±1
				1	49	0	23.34	22.7±1
				1	99	0	23.2	22.7±1
				50	0	1	22.1	22.7±1
				50	24	1	22.19	22.7±1
				50	49	1	22.15	22.7±1
				100	0	1	22.05	22.7±1
			16QAM	1	0	1	22.15	21.6±1
				1	49	1	22.21	21.6±1
				1	99	1	22.22	21.6±1
				50	0	2	21.38	21.6±1
				50	24	2	21.41	21.6±1
				50	49	2	21.42	21.6±1
				100	0	2	21.09	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	23.52	23.5±1
				1	37	0	23.61	23.5±1
				1	74	0	23.45	23.5±1
				36	0	1	23.51	23.5±1
				36	16	1	23.58	23.5±1
				36	35	1	23.57	23.5±1
				75	0	1	23.5	23.5±1
			16QAM	1	0	1	23.26	23.2±1
				1	37	1	23.3	23.2±1
				1	74	1	23.25	23.2±1
				36	0	2	23.31	23.2±1
				36	16	2	23.25	23.2±1
				36	35	2	23.21	23.2±1
				75	0	2	23.25	23.2±1
	20175	1732.5	QPSK	1	0	0	23.26	22.8±1
				1	37	0	23.27	22.8±1
				1	74	0	23.29	22.8±1
				36	0	1	22.33	22.8±1
				36	16	1	22.23	22.8±1
				36	35	1	22.29	22.8±1
				75	0	1	22.39	22.8±1
			16QAM	1	0	1	22.44	21.8±1
				1	37	1	22.51	21.8±1
				1	74	1	22.41	21.8±1
				36	0	2	21.21	21.8±1
				36	16	2	21.13	21.8±1
				36	35	2	21.11	21.8±1
				75	0	2	21.23	21.8±1
	20325	1747.5	QPSK	1	0	0	23.14	22.7±1
				1	37	0	23.14	22.7±1
				1	74	0	23.08	22.7±1
				36	0	1	22.16	22.7±1
				36	16	1	22.18	22.7±1
				36	35	1	22.26	22.7±1
				75	0	1	22.14	22.7±1
			16QAM	1	0	1	22.58	21.9±1
				1	37	1	22.66	21.9±1
				1	74	1	22.52	21.9±1
				36	0	2	20.86	21.9±1
				36	16	2	20.88	21.9±1
				36	35	2	20.89	21.9±1
				75	0	2	21.12	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	23.49	23.5±1
				1	24	0	23.46	23.5±1
				1	49	0	23.58	23.5±1
				25	0	1	23.45	23.5±1
				25	12	1	23.46	23.5±1
				25	24	1	23.44	23.5±1
				50	0	1	23.57	23.5±1
			16QAM	1	0	1	23.18	23.2±1
				1	24	1	23.09	23.2±1
				1	49	1	23.22	23.2±1
				25	0	2	23.22	23.2±1
				25	12	2	23.15	23.2±1
				25	24	2	23.19	23.2±1
				50	0	2	23.09	23.2±1
	20175	1732.5	QPSK	1	0	0	23.18	22.7±1
				1	24	0	23.18	22.7±1
				1	49	0	23.24	22.7±1
				25	0	1	22.18	22.7±1
				25	12	1	22.21	22.7±1
				25	24	1	22.11	22.7±1
				50	0	1	22.16	22.7±1
			16QAM	1	0	1	22.72	21.9±1
				1	24	1	22.73	21.9±1
				1	49	1	22.67	21.9±1
				25	0	2	21.23	21.9±1
				25	12	2	21.26	21.9±1
				25	24	2	21.13	21.9±1
				50	0	2	21.19	21.9±1
	20350	1750.0	QPSK	1	0	0	23.08	22.6±1
				1	24	0	23.08	22.6±1
				1	49	0	23.05	22.6±1
				25	0	1	22.02	22.6±1
				25	12	1	22.08	22.6±1
				25	24	1	22.12	22.6±1
				50	0	1	21.98	22.6±1
			16QAM	1	0	1	21.86	21.5±1
				1	24	1	21.79	21.5±1
				1	49	1	21.78	21.5±1
				25	0	2	21.06	21.5±1
				25	12	2	21.04	21.5±1
				25	24	2	21.1	21.5±1
				50	0	2	20.99	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	23.41	23.4±1
				1	12	0	23.37	23.4±1
				1	24	0	23.46	23.4±1
				12	0	1	23.45	23.4±1
				12	6	1	23.43	23.4±1
				12	11	1	23.51	23.4±1
				25	0	1	23.48	23.4±1
			16QAM	1	0	1	23.17	23.2±1
				1	12	1	23.08	23.2±1
				1	24	1	23.15	23.2±1
				12	0	2	23.26	23.2±1
				12	6	2	23.1	23.2±1
				12	11	2	23.23	23.2±1
				25	0	2	23.19	23.2±1
	20175	1732.5	QPSK	1	0	0	23.17	22.7±1
				1	12	0	23.22	22.7±1
				1	24	0	23.1	22.7±1
				12	0	1	22.24	22.7±1
				12	6	1	22.31	22.7±1
				12	11	1	22.26	22.7±1
				25	0	1	22.19	22.7±1
			16QAM	1	0	1	22.21	21.6±1
				1	12	1	22.29	21.6±1
				1	24	1	22.15	21.6±1
				12	0	2	21.16	21.6±1
				12	6	2	21.22	21.6±1
				12	11	2	21.09	21.6±1
				25	0	2	21.22	21.6±1
	20350	1750.0	QPSK	1	0	0	22.92	22.5±1
				1	12	0	22.91	22.5±1
				1	24	0	22.88	22.5±1
				12	0	1	22.01	22.5±1
				12	6	1	22.01	22.5±1
				12	11	1	22.02	22.5±1
				25	0	1	21.93	22.5±1
			16QAM	1	0	1	21.9	21.4±1
				1	12	1	21.91	21.4±1
				1	24	1	21.83	21.4±1
				12	0	2	21.14	21.4±1
				12	6	2	21.06	21.4±1
				12	11	2	21.05	21.4±1
				25	0	2	20.97	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	23.44	23.5±1
				1	7	0	23.38	23.5±1
				1	14	0	23.39	23.5±1
				8	0	1	23.49	23.5±1
				8	4	1	23.54	23.5±1
				8	7	1	23.36	23.5±1
				15	0	1	23.47	23.5±1
			16QAM	1	0	1	23.21	23.2±1
				1	7	1	23.15	23.2±1
				1	14	1	23.14	23.2±1
				8	0	2	23.16	23.2±1
				8	4	2	23.13	23.2±1
				8	7	2	23.24	23.2±1
				15	0	2	23.26	23.2±1
	20175	1732.5	QPSK	1	0	0	23.21	22.7±1
				1	7	0	23.3	22.7±1
				1	14	0	23.28	22.7±1
				8	0	1	22.15	22.7±1
				8	4	1	22.16	22.7±1
				8	7	1	22.06	22.7±1
				15	0	1	22.16	22.7±1
			16QAM	1	0	1	22.1	22.1±1
				1	7	1	22.15	22.1±1
				1	14	1	22.03	22.1±1
				8	0	2	22.33	22.1±1
				8	4	2	22.35	22.1±1
				8	7	2	22.29	22.1±1
				15	0	2	22.16	22.1±1
	20385	1753.5	QPSK	1	0	0	22.78	22.4±1
				1	7	0	22.8	22.4±1
				1	14	0	22.77	22.4±1
				8	0	1	21.92	22.4±1
				8	4	1	21.98	22.4±1
				8	7	1	22	22.4±1
				15	0	1	21.93	22.4±1
			16QAM	1	0	1	22.33	21.7±1
				1	7	1	22.33	21.7±1
				1	14	1	22.36	21.7±1
				8	0	2	21.22	21.7±1
				8	4	2	21.22	21.7±1
				8	7	2	21.15	21.7±1
				15	0	2	21.03	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	23.47	23.5±1
				1	2	0	23.41	23.5±1
				1	5	0	23.46	23.5±1
				3	0	0	23.5	23.5±1
				3	1	0	23.38	23.5±1
				3	2	0	23.48	23.5±1
				6	0	1	23.43	23.5±1
			16QAM	1	0	1	23.19	23.2±1
				1	2	1	23.24	23.2±1
				1	5	1	23.13	23.2±1
				3	0	1	23.27	23.2±1
				3	1	1	23.13	23.2±1
				3	2	1	23.27	23.2±1
				6	0	2	23.29	23.2±1
	20175	1732.5	QPSK	1	0	0	23.19	22.7±1
				1	2	0	23.13	22.7±1
				1	5	0	23.19	22.7±1
				3	0	0	23.17	22.7±1
				3	1	0	23.07	22.7±1
				3	2	0	23.09	22.7±1
				6	0	1	22.11	22.7±1
			16QAM	1	0	1	22.11	21.5±1
				1	2	1	22.16	21.5±1
				1	5	1	22.03	21.5±1
				3	0	1	20.98	21.5±1
				3	1	1	20.91	21.5±1
				3	2	1	20.88	21.5±1
				6	0	2	20.96	21.5±1
	20393	1754.3	QPSK	1	0	0	22.89	22.4±1
				1	2	0	22.89	22.4±1
				1	5	0	22.99	22.4±1
				3	0	0	22.92	22.4±1
				3	1	0	22.82	22.4±1
				3	2	0	22.93	22.4±1
				6	0	1	21.86	22.4±1
			16QAM	1	0	1	21.71	21.2±1
				1	2	1	21.66	21.2±1
				1	5	1	21.67	21.2±1
				3	0	1	21.08	21.2±1
				3	1	1	21.18	21.2±1
				3	2	1	21.13	21.2±1
				6	0	2	20.84	21.2±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	23.14	23.2±1
				1	49	0	23.04	23.2±1
				1	99	0	23.16	23.2±1
				50	0	1	23.14	23.2±1
				50	24	1	23.1	23.2±1
				50	49	1	23.05	23.2±1
				100	0	1	23.2	23.2±1
			16QAM	1	0	1	23.44	23.4±1
				1	49	1	23.44	23.4±1
				1	99	1	23.37	23.4±1
				50	0	2	23.36	23.4±1
				50	24	2	23.35	23.4±1
				50	49	2	23.34	23.4±1
				100	0	2	23.46	23.4±1
	21100	2535	QPSK	1	0	0	23.44	23.1±1
				1	49	0	23.34	23.1±1
				1	99	0	23.36	23.1±1
				50	0	1	22.74	23.1±1
				50	24	1	22.84	23.1±1
				50	49	1	22.8	23.1±1
				100	0	1	22.61	23.1±1
			16QAM	1	0	1	22.69	22.2±1
				1	49	1	22.6	22.2±1
				1	99	1	22.76	22.2±1
				50	0	2	21.53	22.2±1
				50	24	2	21.61	22.2±1
				50	49	2	21.6	22.2±1
				100	0	2	21.72	22.2±1
	21350	2560	QPSK	1	0	0	22.53	22.2±1
				1	49	0	22.61	22.2±1
				1	99	0	22.56	22.2±1
				50	0	1	21.76	22.2±1
				50	24	1	21.75	22.2±1
				50	49	1	21.68	22.2±1
				100	0	1	22.19	22.2±1
			16QAM	1	0	1	22.03	21.5±1
				1	49	1	21.93	21.5±1
				1	99	1	22.09	21.5±1
				50	0	2	21.43	21.5±1
				50	24	2	21.51	21.5±1
				50	49	2	21.44	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	23.23	23.3±1
				1	37	0	23.16	23.3±1
				1	74	0	23.13	23.3±1
				36	0	1	23.29	23.3±1
				36	16	1	23.28	23.3±1
				36	35	1	23.26	23.3±1
				75	0	1	23.16	23.3±1
			16QAM	1	0	1	23.05	23±1
				1	37	1	23.1	23±1
				1	74	1	23.14	23±1
				36	0	2	23.12	23±1
				36	16	2	23.04	23±1
				36	35	2	22.97	23±1
				75	0	2	23.03	23±1
	21100	1732.5	QPSK	1	0	0	23.05	22.7±1
				1	37	0	23.03	22.7±1
				1	74	0	22.96	22.7±1
				36	0	1	22.26	22.7±1
				36	16	1	22.27	22.7±1
				36	35	1	22.28	22.7±1
				75	0	1	22.19	22.7±1
			16QAM	1	0	1	22.24	21.8±1
				1	37	1	22.14	21.8±1
				1	74	1	22.23	21.8±1
				36	0	2	20.99	21.8±1
				36	16	2	20.97	21.8±1
				36	35	2	20.95	21.8±1
				75	0	2	21.26	21.8±1
	21375	1747.5	QPSK	1	0	0	23.14	22.7±1
				1	37	0	23.09	22.7±1
				1	74	0	23.19	22.7±1
				36	0	1	22.21	22.7±1
				36	16	1	22.26	22.7±1
				36	35	1	22.14	22.7±1
				75	0	1	22.16	22.7±1
			16QAM	1	0	1	22.12	21.7±1
				1	37	1	22.13	21.7±1
				1	74	1	22.03	21.7±1
				36	0	2	21.37	21.7±1
				36	16	2	21.41	21.7±1
				36	35	2	21.31	21.7±1
				75	0	2	21.15	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	23.2	23.2±1
				1	24	0	23.3	23.2±1
				1	49	0	23.28	23.2±1
				25	0	1	23.26	23.2±1
				25	12	1	23.16	23.2±1
				25	24	1	23.12	23.2±1
				50	0	1	23.17	23.2±1
			16QAM	1	0	1	23.23	23.2±1
				1	24	1	23.28	23.2±1
				1	49	1	23.27	23.2±1
				25	0	2	23.23	23.2±1
				25	12	2	23.31	23.2±1
				25	24	2	23.14	23.2±1
				50	0	2	23.15	23.2±1
	21100	2535	QPSK	1	0	0	23.23	22.7±1
				1	24	0	23.18	22.7±1
				1	49	0	23.2	22.7±1
				25	0	1	22.16	22.7±1
				25	12	1	22.17	22.7±1
				25	24	1	22.23	22.7±1
				50	0	1	22.23	22.7±1
			16QAM	1	0	1	22.23	21.8±1
				1	24	1	22.29	22.7±1
				1	49	1	22.21	22.7±1
				25	0	2	21.18	22.7±1
				25	12	2	21.21	22.7±1
				25	24	2	21.27	22.7±1
				50	0	2	21.28	22.7±1
	21400	2565	QPSK	1	0	0	23.06	22.6±1
				1	24	0	22.99	22.6±1
				1	49	0	23.03	22.6±1
				25	0	1	22.2	22.6±1
				25	12	1	22.3	22.6±1
				25	24	1	22.23	22.6±1
				50	0	1	22.29	22.6±1
			16QAM	1	0	1	22.67	22±1
				1	24	1	22.72	22±1
				1	49	1	22.69	22±1
				25	0	2	21.18	22±1
				25	12	2	21.13	22±1
				25	24	2	21.08	22±1
				50	0	2	21.42	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	23.25	23.2±1
				1	12	0	23.19	23.2±1
				1	24	0	23.31	23.2±1
				12	0	1	23.32	23.2±1
				12	6	1	23.33	23.2±1
				12	11	1	23.24	23.2±1
				25	0	1	23.35	23.2±1
			16QAM	1	0	1	23.46	23.4±1
				1	12	1	23.44	23.4±1
				1	24	1	23.45	23.4±1
				12	0	2	23.38	23.4±1
				12	6	2	23.38	23.4±1
				12	11	2	23.53	23.4±1
				25	0	2	23.4	23.4±1
	20175	1732.5	QPSK	1	0	0	23.46	23.1±1
				1	12	0	23.36	23.1±1
				1	24	0	23.56	23.1±1
				12	0	1	22.68	23.1±1
				12	6	1	22.7	23.1±1
				12	11	1	22.73	23.1±1
				25	0	1	22.66	23.1±1
			16QAM	1	0	1	22.61	22.2±1
				1	12	1	22.69	22.2±1
				1	24	1	22.63	22.2±1
				12	0	2	21.67	22.2±1
				12	6	2	21.6	22.2±1
				12	11	2	21.66	22.2±1
				25	0	2	21.71	22.2±1
	20375	1752.5	QPSK	1	0	0	23.55	23.1±1
				1	12	0	23.58	23.1±1
				1	24	0	23.61	23.1±1
				12	0	1	22.72	23.1±1
				12	6	1	22.77	23.1±1
				12	11	1	22.72	23.1±1
				25	0	1	22.68	23.1±1
			16QAM	1	0	1	22.96	22.3±1
				1	12	1	22.9	22.3±1
				1	24	1	23.06	22.3±1
				12	0	2	21.66	22.3±1
				12	6	2	21.7	22.3±1
				12	11	2	21.63	22.3±1
				25	0	2	21.65	22.3±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	23±1
				1	24	0	22.9	23±1
				1	49	0	23.05	23±1
				25	0	1	23.08	23±1
				25	12	1	22.96	23±1
				25	24	1	23.06	23±1
				50	0	1	22.92	23±1
			16QAM	1	0	1	23.01	23±1
				1	24	1	22.96	23±1
				1	49	1	23.1	23±1
				25	0	2	22.96	23±1
				25	12	2	22.99	23±1
				25	24	2	22.91	23±1
				50	0	2	23.09	23±1
	23095	707.5	QPSK	1	0	0	23.01	22.6±1
				1	24	0	22.93	22.6±1
				1	49	0	23.04	22.6±1
				25	0	1	22.15	22.6±1
				25	12	1	22.18	22.6±1
				25	24	1	22.06	22.6±1
				50	0	1	22.17	22.6±1
			16QAM	1	0	1	22.65	21.9±1
				1	24	1	22.63	21.9±1
				1	49	1	22.66	21.9±1
				25	0	2	21.22	21.9±1
				25	12	2	21.31	21.9±1
				25	24	2	21.22	21.9±1
				50	0	2	21.18	21.9±1
	23130	711	QPSK	1	0	0	23.12	22.6±1
				1	24	0	23.04	22.6±1
				1	49	0	23.05	22.6±1
				25	0	1	22.1	22.6±1
				25	12	1	22.04	22.6±1
				25	24	1	22.14	22.6±1
				50	0	1	22.13	22.6±1
			16QAM	1	0	1	21.97	21.6±1
				1	24	1	21.89	21.6±1
				1	49	1	21.88	21.6±1
				25	0	2	20.88	21.6±1
				25	12	2	20.85	21.6±1
				25	24	2	20.78	21.6±1
				50	0	2	21.18	21.6±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	23.23	23.2±1
				1	12	0	23.26	23.2±1
				1	24	0	23.17	23.2±1
				12	0	1	23.17	23.2±1
				12	6	1	23.13	23.2±1
				12	11	1	23.17	23.2±1
				25	0	1	23.2	23.2±1
			16QAM	1	0	1	23.05	23.1±1
				1	12	1	23.15	23.1±1
				1	24	1	22.95	23.1±1
				12	0	2	23.03	23.1±1
				12	6	2	23.11	23.1±1
				12	11	2	23.09	23.1±1
				25	0	2	23.14	23.1±1
	23095	707.5	QPSK	1	0	0	23.05	22.6±1
				1	12	0	23.11	22.6±1
				1	24	0	22.98	22.6±1
				12	0	1	22.26	22.6±1
				12	6	1	22.21	22.6±1
				12	11	1	22.34	22.6±1
				25	0	1	22.19	22.6±1
			16QAM	1	0	1	22.24	21.8±1
				1	12	1	22.32	21.8±1
				1	24	1	22.17	21.8±1
				12	0	2	21.27	21.8±1
				12	6	2	21.28	21.8±1
				12	11	2	21.24	21.8±1
				25	0	2	21.26	21.8±1
	23155	713.5	QPSK	1	0	0	23.14	22.7±1
				1	12	0	23.14	22.7±1
				1	24	0	23.23	22.7±1
				12	0	1	22.21	22.7±1
				12	6	1	22.31	22.7±1
				12	11	1	22.29	22.7±1
				25	0	1	22.16	22.7±1
			16QAM	1	0	1	22.12	21.6±1
				1	12	1	22.16	21.6±1
				1	24	1	22.18	21.6±1
				12	0	2	21.37	21.6±1
				12	6	2	21.27	21.6±1
				12	11	2	21.4	21.6±1
				25	0	2	21.15	21.6±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	23.2	23.2±1
				1	7	0	23.27	23.2±1
				1	14	0	23.25	23.2±1
				8	0	1	23.16	23.2±1
				8	4	1	23.22	23.2±1
				8	7	1	23.13	23.2±1
				15	0	1	23.17	23.2±1
			16QAM	1	0	1	23.23	23.2±1
				1	7	1	23.19	23.2±1
				1	14	1	23.21	23.2±1
				8	0	2	23.14	23.2±1
				8	4	2	23.29	23.2±1
				8	7	2	23.2	23.2±1
				15	0	2	23.18	23.2±1
	23095	707.5	QPSK	1	0	0	23.23	22.7±1
				1	7	0	23.32	22.7±1
				1	14	0	23.33	22.7±1
				8	0	1	22.16	22.7±1
				8	4	1	22.14	22.7±1
				8	7	1	22.11	22.7±1
				15	0	1	22.23	22.7±1
			16QAM	1	0	1	22.23	21.8±1
				1	7	1	22.18	21.8±1
				1	14	1	22.23	21.8±1
				8	0	2	21.31	21.8±1
				8	4	2	21.29	21.8±1
				8	7	2	21.25	21.8±1
				15	0	2	21.28	21.8±1
	23025	714.5	QPSK	1	0	0	23.06	22.6±1
				1	7	0	23.12	22.6±1
				1	14	0	23.14	22.6±1
				8	0	1	22.2	22.6±1
				8	4	1	22.23	22.6±1
				8	7	1	22.2	22.6±1
				15	0	1	22.29	22.6±1
			16QAM	1	0	1	22.67	22±1
				1	7	1	22.57	22±1
				1	14	1	22.65	22±1
				8	0	2	21.19	22±1
				8	4	2	21.21	22±1
				8	7	2	21.25	22±1
				15	0	2	21.42	22±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	23.16	23.2±1
				1	2	0	23.24	23.2±1
				1	5	0	23.24	23.2±1
				3	0	0	23.26	23.2±1
				3	1	0	23.2	23.2±1
				3	2	0	23.17	23.2±1
				6	0	1	23.26	23.2±1
			16QAM	1	0	1	23.19	23.2±1
				1	2	1	23.2	23.2±1
				1	5	1	23.16	23.2±1
				3	0	1	23.28	23.2±1
				3	1	1	23.29	23.2±1
				3	2	1	23.17	23.2±1
				6	0	2	23.28	23.2±1
	23095	707.5	QPSK	1	0	0	23.19	22.7±1
				1	2	0	23.22	22.7±1
				1	5	0	23.12	22.7±1
				3	0	0	23.27	22.7±1
				3	1	0	23.37	22.7±1
				3	2	0	23.36	22.7±1
				6	0	1	22.14	22.7±1
			16QAM	1	0	1	22.17	21.6±1
				1	2	1	22.08	21.6±1
				1	5	1	22.24	21.6±1
				3	0	1	20.83	21.6±1
				3	1	1	20.76	21.6±1
				3	2	1	20.84	21.6±1
				6	0	2	21.07	21.6±1
	23173	715.3	QPSK	1	0	0	23.07	22.7±1
				1	2	0	23.15	22.7±1
				1	5	0	23.16	22.7±1
				3	0	0	23.27	22.7±1
				3	1	0	23.29	22.7±1
				3	2	0	23.33	22.7±1
				6	0	1	22.16	22.7±1
			16QAM	1	0	1	21.76	21.4±1
				1	2	1	21.78	21.4±1
				1	5	1	21.72	21.4±1
				3	0	1	21.28	21.4±1
				3	1	1	21.27	21.4±1
				3	2	1	21.22	21.4±1
				6	0	2	21.1	21.4±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	15.15	V	7.88	0.85	22.18	33.01
1880	1.4	QPSK	1/0	15.31	V	7.88	0.85	22.34	33.01
1909.3	1.4	QPSK	1/0	15.49	V	7.88	0.85	22.52	33.01
1850.7	1.4	QPSK	1/0	12.96	H	7.88	0.85	19.99	33.01
1880	1.4	QPSK	1/0	13.66	H	7.88	0.85	20.69	33.01
1909.3	1.4	QPSK	1/0	14.14	H	7.88	0.85	21.17	33.01
1850.7	1.4	16-QAM	1/0	15.31	V	7.88	0.85	22.34	33.01
1880	1.4	16-QAM	1/0	14.28	V	7.88	0.85	21.31	33.01
1909.3	1.4	16-QAM	1/0	14.47	V	7.88	0.85	21.5	33.01
1850.7	1.4	16-QAM	1/0	12.82	H	7.88	0.85	19.85	33.01
1880	1.4	16-QAM	1/0	12.76	H	7.88	0.85	19.79	33.01
1909.3	1.4	16-QAM	1/0	11.98	H	7.88	0.85	19.01	33.01
1851.5	3	QPSK	1/0	15.15	V	7.88	0.85	22.18	33.01
1880	3	QPSK	1/0	15.33	V	7.88	0.85	22.36	33.01
1908.5	3	QPSK	1/0	15.05	V	7.88	0.85	22.08	33.01
1851.5	3	QPSK	1/0	13.35	H	7.88	0.85	20.38	33.01
1880	3	QPSK	1/0	13.72	H	7.88	0.85	20.75	33.01
1908.5	3	QPSK	1/0	13.99	H	7.88	0.85	21.02	33.01
1851.5	3	16-QAM	1/0	15.33	V	7.88	0.85	22.36	33.01
1880	3	16-QAM	1/0	14.28	V	7.88	0.85	21.31	33.01
1908.5	3	16-QAM	1/0	14.87	V	7.88	0.85	21.9	33.01
1851.5	3	16-QAM	1/0	13.9	H	7.88	0.85	20.93	33.01
1880	3	16-QAM	1/0	12.18	H	7.88	0.85	19.21	33.01
1908.5	3	16-QAM	1/0	13.22	H	7.88	0.85	20.25	33.01
1852.5	5	QPSK	1/24	15.06	V	7.88	0.85	22.09	33.01
1880	5	QPSK	1/0	15.26	V	7.88	0.85	22.29	33.01
1907.5	5	QPSK	1/24	14.92	V	7.88	0.85	21.95	33.01
1852.5	5	QPSK	1/24	13.2	H	7.88	0.85	20.23	33.01
1880	5	QPSK	1/0	14.15	H	7.88	0.85	21.18	33.01
1907.5	5	QPSK	1/24	12.64	H	7.88	0.85	19.67	33.01
1852.5	5	16-QAM	1/24	15.25	V	7.88	0.85	22.28	33.01

1880	5	16-QAM	1/0	14.28	V	7.88	0.85	21.31	33.01
1907.5	5	16-QAM	1/24	14.21	V	7.88	0.85	21.24	33.01
1852.5	5	16-QAM	1/24	13.14	H	7.88	0.85	20.17	33.01
1880	5	16-QAM	1/0	13.25	H	7.88	0.85	20.28	33.01
1907.5	5	16-QAM	1/24	12.77	H	7.88	0.85	19.8	33.01
1855	10	QPSK	1/0	15.2	V	7.88	0.85	22.23	33.01
1880	10	QPSK	1/0	15.11	V	7.88	0.85	22.14	33.01
1905	10	QPSK	1/49	15.32	V	7.88	0.85	22.35	33.01
1855	10	QPSK	1/0	13.74	H	7.88	0.85	20.77	33.01
1880	10	QPSK	1/0	13.89	H	7.88	0.85	20.92	33.01
1905	10	QPSK	1/49	14.29	H	7.88	0.85	21.32	33.01
1855	10	16-QAM	1/0	15.11	V	7.88	0.85	22.14	33.01
1880	10	16-QAM	1/0	14.79	V	7.88	0.85	21.82	33.01
1905	10	16-QAM	1/49	14.14	V	7.88	0.85	21.17	33.01
1855	10	16-QAM	1/0	12.96	H	7.88	0.85	19.99	33.01
1880	10	16-QAM	1/0	12.67	H	7.88	0.85	19.7	33.01
1905	10	16-QAM	1/49	12.35	H	7.88	0.85	19.38	33.01
1857.5	15	QPSK	1/0	15.23	V	7.88	0.85	22.26	33.01
1880	15	QPSK	1/0	15.24	V	7.88	0.85	22.27	33.01
1902.5	15	QPSK	1/0	15.48	V	7.88	0.85	22.51	33.01
1857.5	15	QPSK	1/0	13.86	H	7.88	0.85	20.89	33.01
1880	15	QPSK	1/0	14.12	H	7.88	0.85	21.15	33.01
1902.5	15	QPSK	1/0	14.3	H	7.88	0.85	21.33	33.01
1857.5	15	16-QAM	1/0	15.24	V	7.88	0.85	22.27	33.01
1880	15	16-QAM	1/0	14.48	V	7.88	0.85	21.51	33.01
1902.5	15	16-QAM	1/0	14.99	V	7.88	0.85	22.02	33.01
1857.5	15	16-QAM	1/0	12.94	H	7.88	0.85	19.97	33.01
1880	15	16-QAM	1/0	13.14	H	7.88	0.85	20.17	33.01
1902.5	15	16-QAM	1/0	13.88	H	7.88	0.85	20.91	33.01
1860	20	QPSK	1/0	15.33	V	7.88	0.85	22.36	33.01
1880	20	QPSK	1/0	15.26	V	7.88	0.85	22.29	33.01
1900	20	QPSK	1/0	14.43	V	7.88	0.85	21.46	33.01
1860	20	QPSK	1/0	14.11	H	7.88	0.85	21.14	33.01
1880	20	QPSK	1/0	14.02	H	7.88	0.85	21.05	33.01
1900	20	QPSK	1/0	12.47	H	7.88	0.85	19.5	33.01

1860	20	16-QAM	1/0	15.26	V	7.88	0.85	22.29	33.01
1880	20	16-QAM	1/0	14.33	V	7.88	0.85	21.36	33.01
1900	20	16-QAM	1/0	14.61	V	7.88	0.85	21.64	33.01
1860	20	16-QAM	1/0	13.54	H	7.88	0.85	20.57	33.01
1880	20	16-QAM	1/0	12.6	H	7.88	0.85	19.63	33.01
1900	20	16-QAM	1/0	12.95	H	7.88	0.85	19.98	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	13.3	V	7.95	0.79	20.46	30
1732.5	1.4	QPSK	1/0	13.03	V	7.95	0.79	20.19	30
1754.3	1.4	QPSK	1/0	12.73	V	7.95	0.79	19.89	30
1710.7	1.4	QPSK	1/0	11.26	H	7.95	0.79	18.42	30
1732.5	1.4	QPSK	1/0	10.99	H	7.95	0.79	18.15	30
1754.3	1.4	QPSK	1/0	11.43	H	7.95	0.79	18.59	30
1710.7	1.4	16-QAM	1/5	12.97	V	7.95	0.79	20.13	30
1732.5	1.4	16-QAM	1/0	11.95	V	7.95	0.79	19.11	30
1754.3	1.4	16-QAM	1/0	11.55	V	7.95	0.79	18.71	30
1710.7	1.4	16-QAM	1/5	11.82	H	7.95	0.79	18.98	30
1732.5	1.4	16-QAM	1/0	9.48	H	7.95	0.79	16.64	30
1754.3	1.4	16-QAM	1/0	10.48	H	7.95	0.79	17.64	30
1711.5	3	QPSK	1/0	13.28	V	7.95	0.79	20.44	30
1732.5	3	QPSK	1/0	13.05	V	7.95	0.79	20.21	30
1753.5	3	QPSK	1/0	12.62	V	7.95	0.79	19.78	30
1711.5	3	QPSK	1/0	11.48	H	7.95	0.79	18.64	30
1732.5	3	QPSK	1/0	11.95	H	7.95	0.79	19.11	30
1753.5	3	QPSK	1/0	11.02	H	7.95	0.79	18.18	30
1711.5	3	16-QAM	1/0	13.05	V	7.95	0.79	20.21	30
1732.5	3	16-QAM	1/0	11.94	V	7.95	0.79	19.1	30
1753.5	3	16-QAM	1/0	12.17	V	7.95	0.79	19.33	30
1711.5	3	16-QAM	1/0	11.52	H	7.95	0.79	18.68	30
1732.5	3	16-QAM	1/0	10.59	H	7.95	0.79	17.75	30
1753.5	3	16-QAM	1/0	11.12	H	7.95	0.79	18.28	30
1712.5	5	QPSK	1/0	13.25	V	7.95	0.79	20.41	30
1732.5	5	QPSK	1/0	13.01	V	7.95	0.79	20.17	30
1752.5	5	QPSK	1/24	12.76	V	7.95	0.79	19.92	30
1712.5	5	QPSK	1/0	11.01	H	7.95	0.79	18.17	30
1732.5	5	QPSK	1/0	10.66	H	7.95	0.79	17.82	30
1752.5	5	QPSK	1/24	10.6	H	7.95	0.79	17.76	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	12.05	V	7.95	0.79	19.21	30

1752.5	5	16-QAM	1/24	11.74	V	7.95	0.79	18.9	30
1712.5	5	16-QAM	1/0	11.76	H	7.95	0.79	18.92	30
1732.5	5	16-QAM	1/0	10.83	H	7.95	0.79	17.99	30
1752.5	5	16-QAM	1/24	10.66	H	7.95	0.79	17.82	30
1715	10	QPSK	1/0	13.33	V	7.95	0.79	20.49	30
1732.5	10	QPSK	1/49	13.08	V	7.95	0.79	20.24	30
1750	10	QPSK	1/0	12.92	V	7.95	0.79	20.08	30
1715	10	QPSK	1/0	11.45	H	7.95	0.79	18.61	30
1732.5	10	QPSK	1/49	12.07	H	7.95	0.79	19.23	30
1750	10	QPSK	1/0	11.11	H	7.95	0.79	18.27	30
1715	10	16-QAM	1/0	13.02	V	7.95	0.79	20.18	30
1732.5	10	16-QAM	1/49	12.51	V	7.95	0.79	19.67	30
1750	10	16-QAM	1/0	11.7	V	7.95	0.79	18.86	30
1715	10	16-QAM	1/0	11.62	H	7.95	0.79	18.78	30
1732.5	10	16-QAM	1/49	10.47	H	7.95	0.79	17.63	30
1750	10	16-QAM	1/0	9.61	H	7.95	0.79	16.77	30
1717.5	15	QPSK	1/0	13.36	V	7.95	0.79	20.52	30
1732.5	15	QPSK	1/74	13.13	V	7.95	0.79	20.29	30
1747.5	15	QPSK	1/0	12.98	V	7.95	0.79	20.14	30
1717.5	15	QPSK	1/0	12.32	H	7.95	0.79	19.48	30
1732.5	15	QPSK	1/74	10.82	H	7.95	0.79	17.98	30
1747.5	15	QPSK	1/0	11.65	H	7.95	0.79	18.81	30
1717.5	15	16-QAM	1/0	13.1	V	7.95	0.79	20.26	30
1732.5	15	16-QAM	1/74	12.25	V	7.95	0.79	19.41	30
1747.5	15	16-QAM	1/0	12.42	V	7.95	0.79	19.58	30
1717.5	15	16-QAM	1/0	11.76	H	7.95	0.79	18.92	30
1732.5	15	16-QAM	1/74	11.17	H	7.95	0.79	18.33	30
1747.5	15	16-QAM	1/0	11.11	H	7.95	0.79	18.27	30
1720	20	QPSK	1/99	13.51	V	7.95	0.79	20.67	30
1732.5	20	QPSK	1/99	13.05	V	7.95	0.79	20.21	30
1745	20	QPSK	1/0	13.11	V	7.95	0.79	20.27	30
1720	20	QPSK	1/99	12.43	H	7.95	0.79	19.59	30
1732.5	20	QPSK	1/99	11.66	H	7.95	0.79	18.82	30
1745	20	QPSK	1/0	11.71	H	7.95	0.79	18.87	30
1720	20	16-QAM	1/99	13.2	V	7.95	0.79	20.36	30

1732.5	20	16-QAM	1/99	12.29	V	7.95	0.79	19.45	30
1745	20	16-QAM	1/0	11.99	V	7.95	0.79	19.15	30
1720	20	16-QAM	1/99	11.6	H	7.95	0.79	18.76	30
1732.5	20	16-QAM	1/99	9.79	H	7.95	0.79	16.95	30
1745	20	16-QAM	1/0	9.81	H	7.95	0.79	16.97	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	15.15	V	8.93	0.83	23.25	30
2535	5	QPSK	1/0	15.36	V	8.93	0.83	23.46	30
2567.5	5	QPSK	1/24	15.45	V	8.93	0.83	23.55	30
2502.5	5	QPSK	1/0	13.33	H	8.93	0.83	21.43	30
2535	5	QPSK	1/0	14.33	H	8.93	0.83	22.43	30
2567.5	5	QPSK	1/24	13.54	H	8.93	0.83	21.64	30
2502.5	5	16-QAM	1/0	15.36	V	8.93	0.83	23.46	30
2535	5	16-QAM	1/0	14.51	V	8.93	0.83	22.61	30
2567.5	5	16-QAM	1/24	14.86	V	8.93	0.83	22.96	30
2502.5	5	16-QAM	1/0	13.53	H	8.93	0.83	21.63	30
2535	5	16-QAM	1/0	12.48	H	8.93	0.83	20.58	30
2567.5	5	16-QAM	1/24	12.44	H	8.93	0.83	20.54	30
2505	10	QPSK	1/0	15.1	V	8.93	0.83	23.2	30
2535	10	QPSK	1/49	15.1	V	8.93	0.83	23.2	30
2565	10	QPSK	1/0	14.96	V	8.93	0.83	23.06	30
2505	10	QPSK	1/0	13.42	H	8.93	0.83	21.52	30
2535	10	QPSK	1/49	13.7	H	8.93	0.83	21.8	30
2565	10	QPSK	1/0	12.97	H	8.93	0.83	21.07	30
2505	10	16-QAM	1/0	15.13	V	8.93	0.83	23.23	30
2535	10	16-QAM	1/49	14.11	V	8.93	0.83	22.21	30
2565	10	16-QAM	1/0	14.57	V	8.93	0.83	22.67	30
2505	10	16-QAM	1/0	13.59	H	8.93	0.83	21.69	30
2535	10	16-QAM	1/49	12.24	H	8.93	0.83	20.34	30
2565	10	16-QAM	1/0	13.21	H	8.93	0.83	21.31	30
2507.5	15	QPSK	1/0	15.13	V	8.93	0.83	23.23	30
2535	15	QPSK	1/74	14.86	V	8.93	0.83	22.96	30
2562.5	15	QPSK	1/0	15.04	V	8.93	0.83	23.14	30
2507.5	15	QPSK	1/0	13.85	H	8.93	0.83	21.95	30
2535	15	QPSK	1/74	13.3	H	8.93	0.83	21.4	30
2562.5	15	QPSK	1/0	13.9	H	8.93	0.83	22	30
2507.5	15	16-QAM	1/0	14.95	V	8.93	0.83	23.05	30
2535	15	16-QAM	1/74	14.13	V	8.93	0.83	22.23	30

2562.5	15	16-QAM	1/0	14.02	V	8.93	0.83	22.12	30
2507.5	15	16-QAM	1/0	13.73	H	8.93	0.83	21.83	30
2535	15	16-QAM	1/74	12.88	H	8.93	0.83	20.98	30
2562.5	15	16-QAM	1/0	11.66	H	8.93	0.83	19.76	30
2510	20	QPSK	1/99	15.06	V	8.93	0.83	23.16	30
2535	20	QPSK	1/99	15.26	V	8.93	0.83	23.36	30
2560	20	QPSK	1/0	14.43	V	8.93	0.83	22.53	30
2510	20	QPSK	1/99	13.43	H	8.93	0.83	21.53	30
2535	20	QPSK	1/99	13.03	H	8.93	0.83	21.13	30
2560	20	QPSK	1/0	12.64	H	8.93	0.83	20.74	30
2510	20	16-QAM	1/99	15.27	V	8.93	0.83	23.37	30
2535	20	16-QAM	1/99	14.66	V	8.93	0.83	22.76	30
2560	20	16-QAM	1/0	13.93	V	8.93	0.83	22.03	30
2510	20	16-QAM	1/99	13.28	H	8.93	0.83	21.38	30
2535	20	16-QAM	1/99	12.61	H	8.93	0.83	20.71	30
2560	20	16-QAM	1/0	12.67	H	8.93	0.83	20.77	30

ERP for LTE Band XII (Part 27)

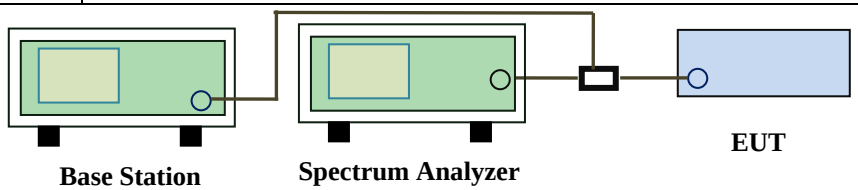
Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
699.7	1.4	QPSK	1/5	10.61	V	6.9	0.42	17.09	34.77
707.5	1.4	QPSK	1/5	14.59	V	6.8	0.42	20.97	34.77
715.3	1.4	QPSK	1/5	14.63	V	6.8	0.42	21.01	34.77
699.7	1.4	QPSK	1/5	8.3	H	6.9	0.42	14.78	34.77
707.5	1.4	QPSK	1/5	13.37	H	6.8	0.42	19.75	34.77
715.3	1.4	QPSK	1/5	13.44	H	6.8	0.42	19.82	34.77
699.7	1.4	16-QAM	1/5	10.53	V	6.9	0.42	17.01	34.77
707.5	1.4	16-QAM	1/5	13.71	V	6.8	0.42	20.09	34.77
715.3	1.4	16-QAM	1/5	13.19	V	6.8	0.42	19.57	34.77
699.7	1.4	16-QAM	1/5	8.3	H	6.9	0.42	14.78	34.77
707.5	1.4	16-QAM	1/5	12.51	H	6.8	0.42	18.89	34.77
715.3	1.4	16-QAM	1/5	11.62	H	6.8	0.42	18	34.77
700.5	3	QPSK	1/14	10.62	V	6.9	0.42	17.1	34.77
707.5	3	QPSK	1/0	14.7	V	6.8	0.42	21.08	34.77
714.5	3	QPSK	1/14	14.61	V	6.8	0.42	20.99	34.77
700.5	3	QPSK	1/14	9.49	H	6.9	0.42	15.97	34.77
707.5	3	QPSK	1/0	12.64	H	6.8	0.42	19.02	34.77
714.5	3	QPSK	1/14	12.81	H	6.8	0.42	19.19	34.77
700.5	3	16-QAM	1/14	10.58	V	6.9	0.42	17.06	34.77
707.5	3	16-QAM	1/0	13.7	V	6.8	0.42	20.08	34.77
714.5	3	16-QAM	1/14	14.12	V	6.8	0.42	20.5	34.77
700.5	3	16-QAM	1/14	9.37	H	6.9	0.42	15.85	34.77
707.5	3	16-QAM	1/0	11.4	H	6.8	0.42	17.78	34.77
714.5	3	16-QAM	1/14	12.59	H	6.8	0.42	18.97	34.77
701.5	5	QPSK	1/24	10.54	V	6.9	0.42	17.02	34.77
707.5	5	QPSK	1/24	14.45	V	6.8	0.42	20.83	34.77
713.5	5	QPSK	1/24	14.7	V	6.8	0.42	21.08	34.77
701.5	5	QPSK	1/24	8.27	H	6.9	0.42	14.75	34.77
707.5	5	QPSK	1/24	12.21	H	6.8	0.42	18.59	34.77
713.5	5	QPSK	1/24	12.44	H	6.8	0.42	18.82	34.77
701.5	5	16-QAM	1/24	10.32	V	6.9	0.42	16.8	34.77

707.5	5	16-QAM	1/24	13.64	V	6.8	0.42	20.02	34.77
713.5	5	16-QAM	1/24	13.65	V	6.8	0.42	20.03	34.77
701.5	5	16-QAM	1/24	8.97	H	6.9	0.42	15.45	34.77
707.5	5	16-QAM	1/24	12.54	H	6.8	0.42	18.92	34.77
713.5	5	16-QAM	1/24	11.91	H	6.8	0.42	18.29	34.77
704	10	QPSK	1/49	10.52	V	6.8	0.42	16.9	34.77
707.5	10	QPSK	1/49	14.51	V	6.8	0.42	20.89	34.77
711	10	QPSK	1/49	14.52	V	6.8	0.42	20.9	34.77
704	10	QPSK	1/49	9.22	H	6.8	0.42	15.6	34.77
707.5	10	QPSK	1/49	13.32	H	6.8	0.42	19.7	34.77
711	10	QPSK	1/49	13.4	H	6.8	0.42	19.78	34.77
704	10	16-QAM	1/49	10.57	V	6.8	0.42	16.95	34.77
707.5	10	16-QAM	1/49	14.13	V	6.8	0.42	20.51	34.77
711	10	16-QAM	1/49	13.35	V	6.8	0.42	19.73	34.77
704	10	16-QAM	1/49	8.6	H	6.8	0.42	14.98	34.77
707.5	10	16-QAM	1/49	12.71	H	6.8	0.42	19.09	34.77
711	10	16-QAM	1/49	11.12	H	6.8	0.42	17.5	34.77

6.3 Peak-Average Ratio

Temperature	23 °C
Relative Humidity	51%
Atmospheric Pressure	1020mbar
Test date :	November 30, 2017
Tested By :	Aaron 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	1732.5	RB 1/0	QPSK	23.04	22.6	0.44
			16QAM	22.15	21.85	0.3
3	1732.5	RB 1/0	QPSK	22.95	22.65	0.3
			16QAM	22	21.6	0.4
5	1732.5	RB 1/0	QPSK	23.03	22.57	0.46
			16QAM	21.98	21.61	0.37
10	1732.5	RB 1/0	QPSK	22.73	22.43	0.3
			16QAM	21.93	21.55	0.38
15	1732.5	RB 1/0	QPSK	22.9	22.59	0.31
			16QAM	22.03	21.55	0.48
20	1732.5	RB 1/0	QPSK	23.05	22.58	0.47
			16QAM	21.93	21.63	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	23.08	22.6	0.48
			16QAM	22.31	21.85	0.46
3	1732.5	RB 1/0	QPSK	23	22.65	0.35
			16QAM	22.03	21.6	0.43
5	1732.5	RB 1/0	QPSK	22.98	22.57	0.41
			16QAM	22.04	21.61	0.43
10	1732.5	RB 1/0	QPSK	22.73	22.43	0.3
			16QAM	21.95	21.55	0.4
15	1732.5	RB 1/0	QPSK	22.98	22.59	0.39
			16QAM	21.95	21.55	0.4
20	1732.5	RB 1/0	QPSK	22.96	22.58	0.38
			16QAM	22.09	21.63	0.46

LTE Band VII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
5	1732.5	RB 1/0	QPSK	23.01	22.57	0.44
			16QAM	21.99	21.61	0.38
10	1732.5	RB 1/0	QPSK	22.84	22.43	0.41
			16QAM	21.89	21.55	0.34
15	1732.5	RB 1/0	QPSK	23.06	22.59	0.47
			16QAM	21.91	21.55	0.36
20	1732.5	RB 1/0	QPSK	23.05	22.58	0.47
			16QAM	22.02	21.63	0.39

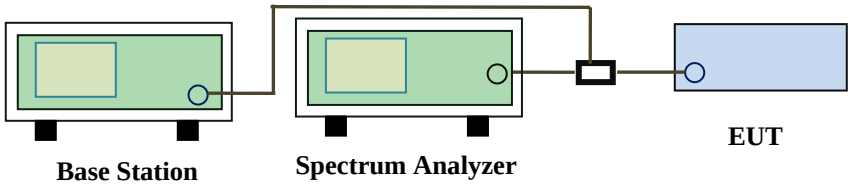
LTE Band XII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1732.5	RB 1/0	QPSK	22.94	22.6	0.34
			16QAM	22.26	21.85	0.41
3	1732.5	RB 1/0	QPSK	23.1	22.65	0.45
			16QAM	22.1	21.6	0.5
5	1732.5	RB 1/0	QPSK	22.94	22.57	0.37
			16QAM	22.07	21.61	0.46
10	1732.5	RB 1/0	QPSK	22.83	22.43	0.4
			16QAM	21.86	21.55	0.31

6.4 Occupied Bandwidth

Temperature	25 °C
Relative Humidity	55%
Atmospheric Pressure	1022mbar
Test date :	November 31, 2017
Tested By :	Aaron 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	1.1140	1.358
			QPSK	1.1130	1.360
1.4	18900	1880	16QAM	1.1094	1.289
			QPSK	1.1156	1.289
1.4	19193	1909	16QAM	1.1187	1.309
			QPSK	1.1046	1.314
3	18615	1852	16QAM	2.7577	3.114
			QPSK	2.7707	3.129
3	18900	1880	16QAM	2.7552	3.100
			QPSK	2.7503	3.112
3	19185	1909	16QAM	2.7593	3.120
			QPSK	2.7612	3.126
5	18625	1853	16QAM	4.5293	5.094
			QPSK	4.5312	5.103
5	18900	1880	16QAM	4.5289	5.085
			QPSK	4.5324	5.079
5	19175	1908	16QAM	4.5475	5.097
			QPSK	4.5500	5.090
10	18650	1855	16QAM	9.0590	10.313
			QPSK	9.0552	10.249
10	18900	1880	16QAM	9.1165	10.262
			QPSK	9.0813	10.226
10	19150	1905	16QAM	9.1122	10.262
			QPSK	9.0930	10.270
15	18675	1858	16QAM	13.4341	14.803
			QPSK	13.4432	14.819
15	18900	1880	16QAM	13.5021	15.004
			QPSK	13.5315	15.013
15	19125	1903	16QAM	13.5159	14.864
			QPSK	13.5220	14.837

20	18700	1860	16QAM	17.9062	19.420
			QPSK	17.9054	19.429
20	18900	1880	16QAM	17.9059	19.424
			QPSK	17.9193	19.474
20	19100	1900	16QAM	17.9522	19.408
			QPSK	17.9416	19.464

LTE Band IV (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1711	16QAM	1.1009	1.274
			QPSK	1.0984	1.272
1.4	20175	1733	16QAM	1.1103	1.265
			QPSK	1.1041	1.270
1.4	20393	1754	16QAM	1.1000	1.279
			QPSK	1.1023	1.277
3	19965	1712	16QAM	2.7450	3.084
			QPSK	2.7489	3.081
3	20175	1733	16QAM	2.7456	3.091
			QPSK	2.7433	3.096
3	20385	1754	16QAM	2.7435	3.097
			QPSK	2.7423	3.096
5	19975	1713	16QAM	4.5305	5.088
			QPSK	4.5248	5.080
5	20175	1733	16QAM	4.5316	5.075
			QPSK	4.5279	5.087
5	20375	1753	16QAM	4.5323	5.078
			QPSK	4.5287	5.079
10	20000	1715	16QAM	9.0387	10.242
			QPSK	9.0636	10.189
10	20175	1733	16QAM	9.0590	10.345
			QPSK	9.0521	10.170
10	20350	1750	16QAM	9.0873	10.276
			QPSK	9.0584	10.244
15	20025	1718	16QAM	13.4576	14.834
			QPSK	13.4513	14.861
15	20175	1733	16QAM	13.4911	14.902
			QPSK	13.5021	14.930
15	20325	1748	16QAM	13.4588	14.907
			QPSK	13.5161	14.941

20	20050	1720	16QAM	17.9003	19.500
			QPSK	17.8707	19.451
20	20175	1733	16QAM	17.8518	19.529
			QPSK	17.8876	19.535
20	20300	1745	16QAM	17.9427	19.418
			QPSK	17.8738	19.451

LTE Band VII (Part 27) result

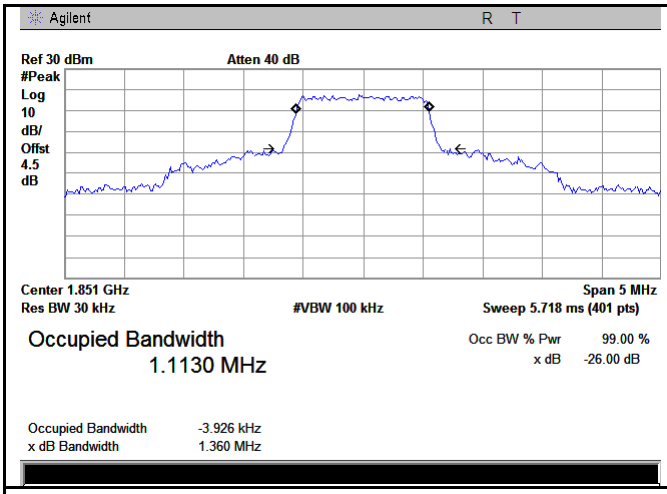
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2503	16QAM	4.5295	5.084
			QPSK	4.5244	5.091
5	21100	2535	16QAM	4.5214	5.075
			QPSK	4.5183	5.080
5	21425	2568	16QAM	4.5542	5.088
			QPSK	4.5417	5.076
10	20800	2505	16QAM	9.0585	10.281
			QPSK	9.0350	10.204
10	21100	2535	16QAM	9.0451	10.230
			QPSK	9.0692	10.184
10	21400	2565	16QAM	9.0756	10.418
			QPSK	9.0507	10.289
15	20825	2508	16QAM	13.4567	14.981
			QPSK	13.4665	14.959
15	21100	2535	16QAM	13.4981	14.944
			QPSK	13.4526	14.935
15	21400	2563	16QAM	13.5160	14.944
			QPSK	13.4743	14.974
20	20850	2510	16QAM	17.9230	19.442
			QPSK	17.8795	19.506
20	21100	2535	16QAM	17.8516	19.690
			QPSK	17.8835	19.465
20	21350	2560	16QAM	17.9302	19.431
			QPSK	17.8797	19.438

LTE Band XII (Part 27)

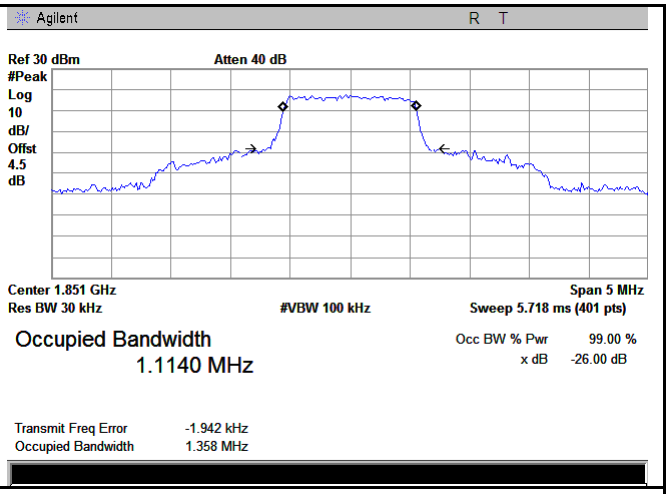
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	23017	699.7	16QAM	1.1074	1.299
			QPSK	1.1077	1.296
1.4	23095	707.5	16QAM	1.1106	1.278
			QPSK	1.1053	1.283
1.4	23173	715.3	16QAM	1.1074	1.284
			QPSK	1.1058	1.290
3	23025	700.5	16QAM	2.7592	3.053
			QPSK	2.7592	3.054
3	23095	707.5	16QAM	2.7516	3.070
			QPSK	2.7517	3.052
3	23165	714.5	16QAM	2.7464	3.062
			QPSK	2.7502	3.053
5	23035	701.5	16QAM	4.5378	5.105
			QPSK	4.5382	5.107
5	23095	707.5	16QAM	4.5272	5.071
			QPSK	4.5308	5.059
5	23055	713.5	16QAM	4.5323	5.068
			QPSK	4.5387	5.065
10	23060	704	16QAM	9.0796	10.15
			QPSK	9.0688	10.16
10	23095	707.5	16QAM	9.1060	10.20
			QPSK	9.1101	10.24
10	23130	711	16QAM	9.1283	10.21
			QPSK	9.1276	10.30

Test Plots

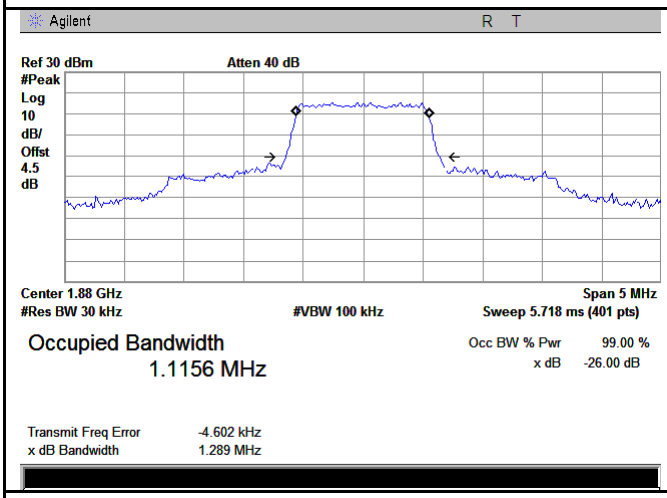
LTE Band II (Part 24E)



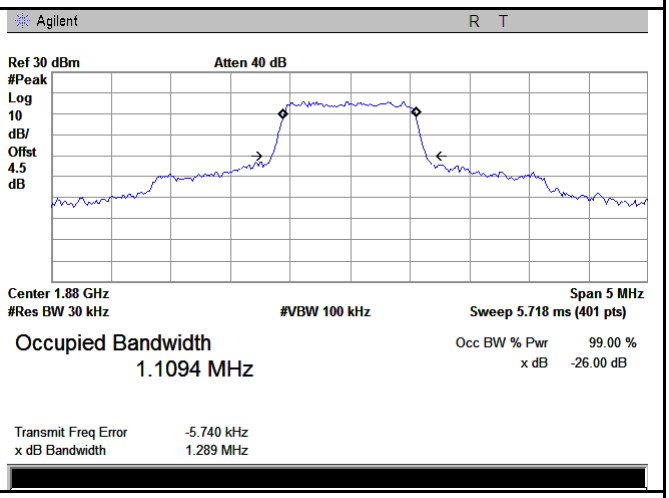
LTE Band II - Low CH QPSK-1.4



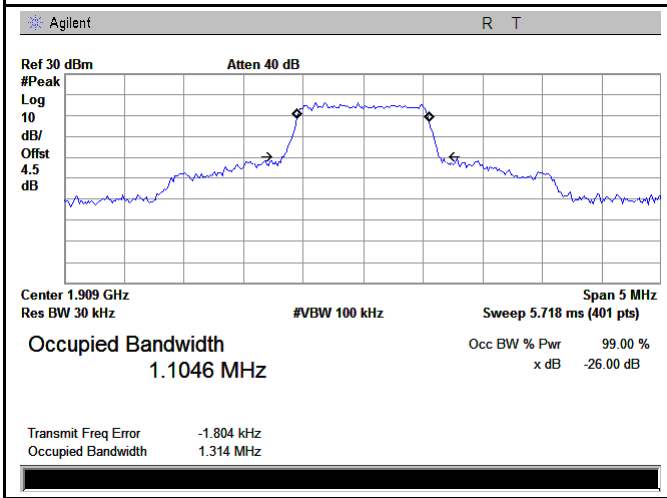
LTE Band II - Low CH 16QAM-1.4



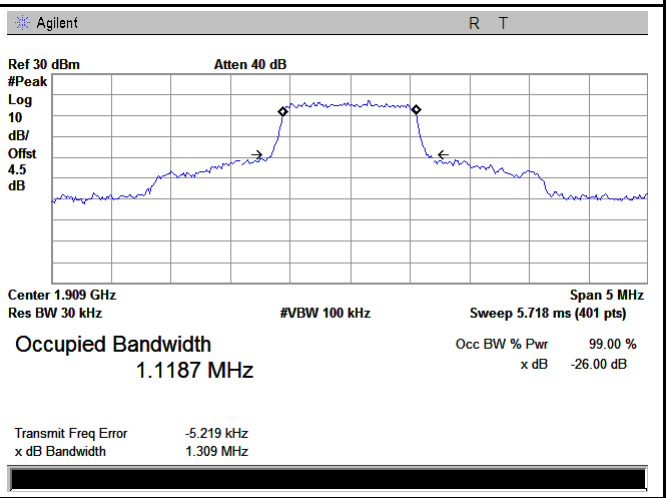
LTE Band II - Middle CH QPSK-1.4



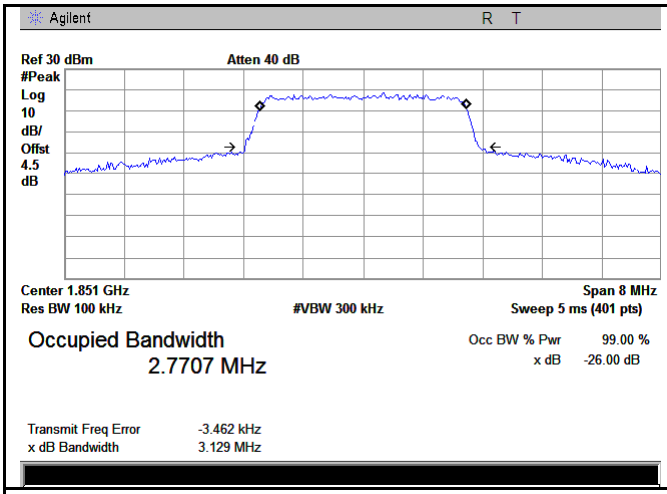
LTE Band II - Middle CH 16QAM-1.4



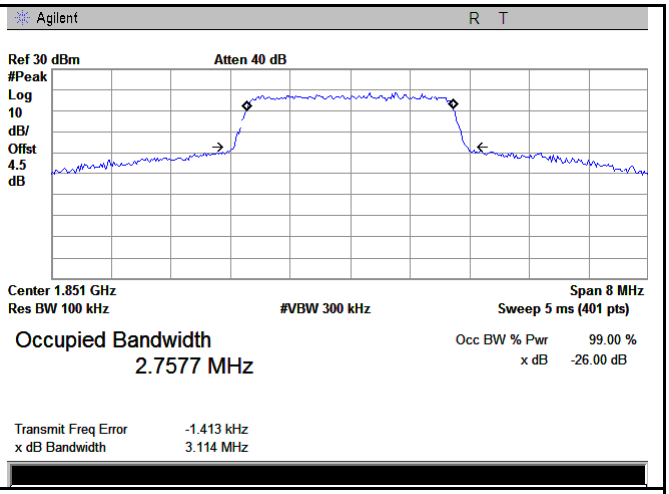
LTE Band II - High CH QPSK-1.4



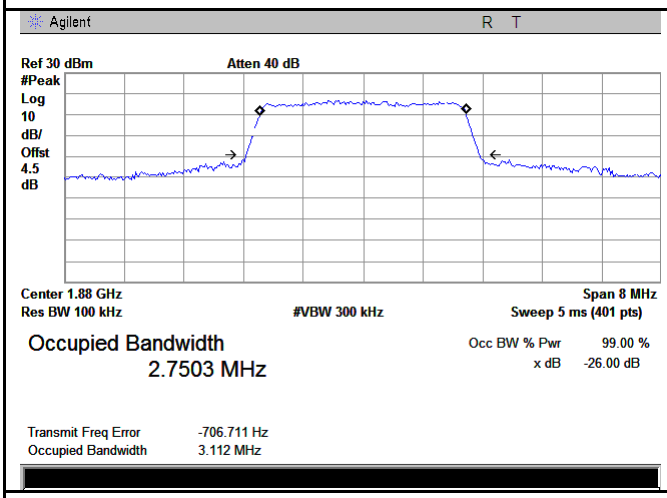
LTE Band II - High CH 16QAM-1.4



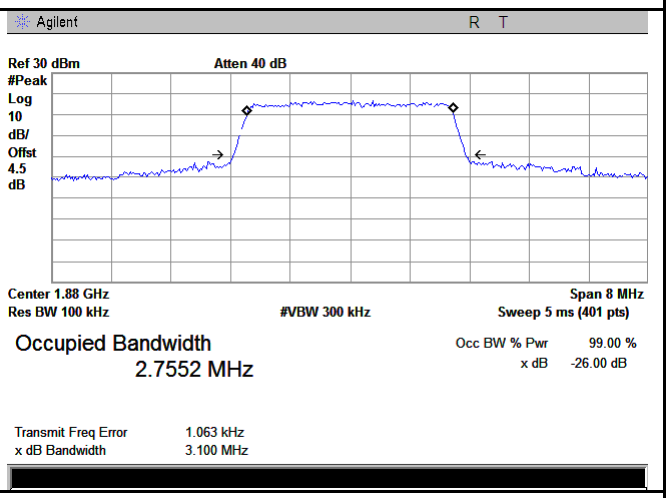
LTE Band II - Low CH QPSK-3



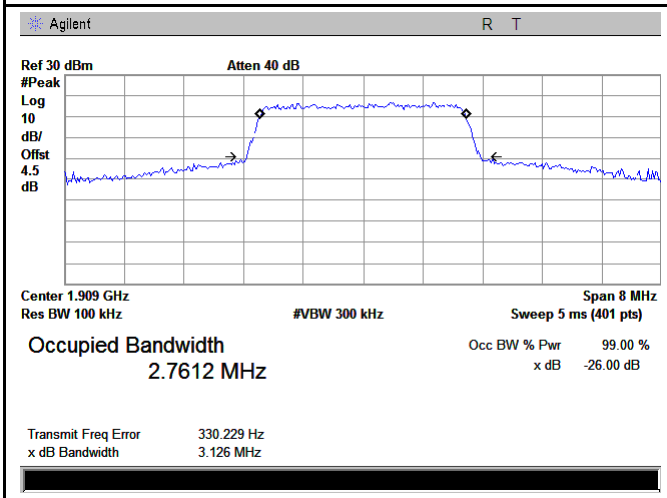
LTE Band II - Low CH 16QAM-3



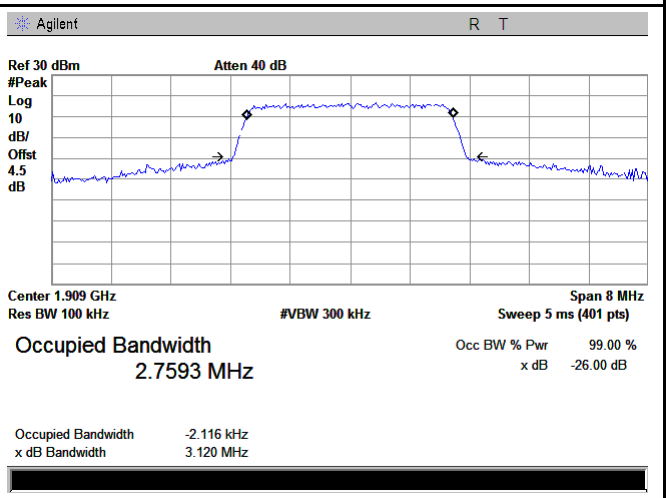
LTE Band II - Middle CH QPSK-3



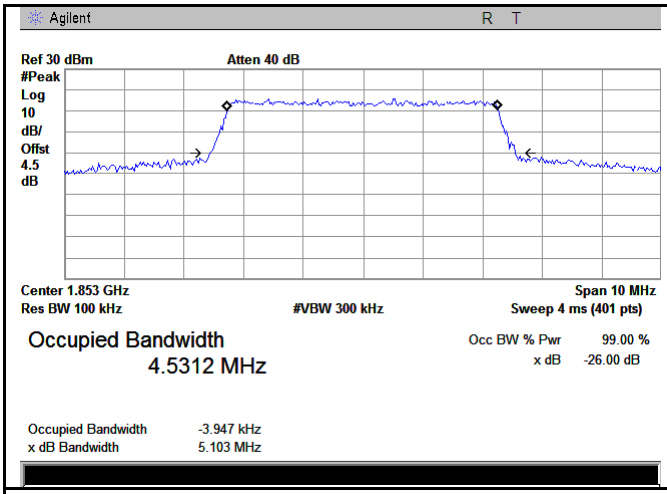
LTE Band II - Middle CH 16QAM-3



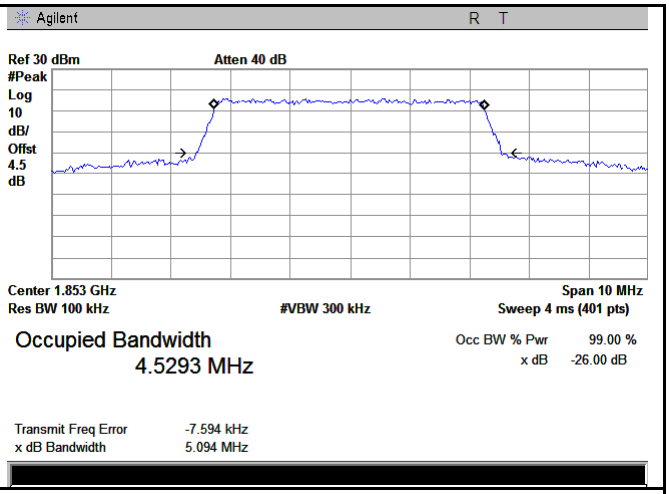
LTE Band II - High CH QPSK-3



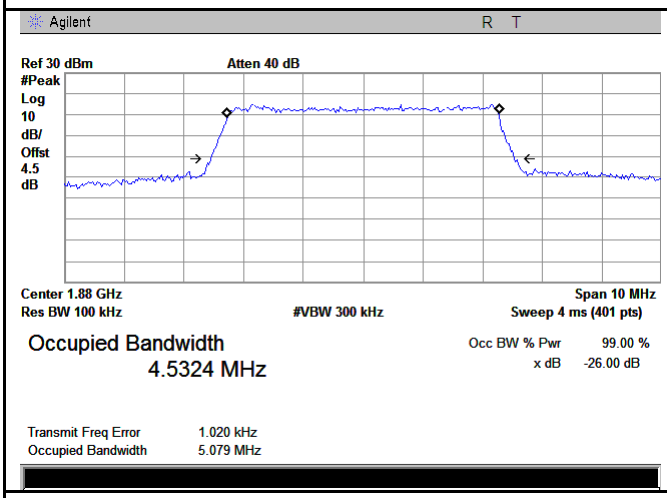
LTE Band II - High CH 16QAM-3



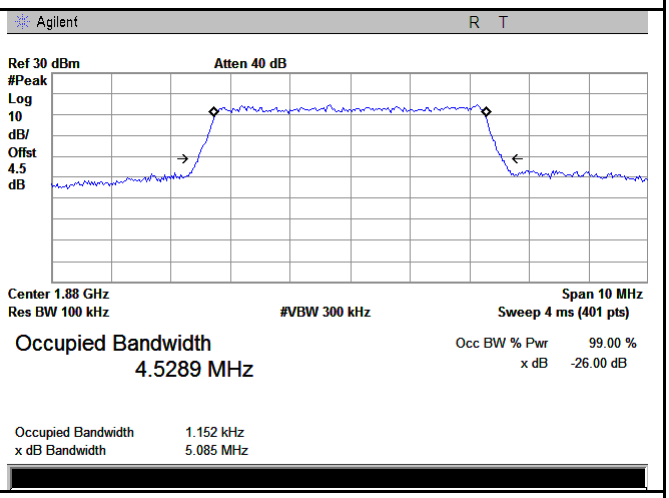
LTE Band II - Low CH QPSK-5



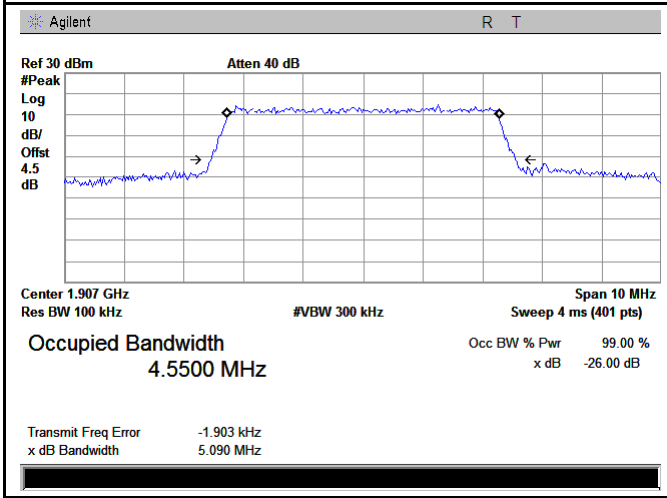
LTE Band II - Low CH 16QAM-5



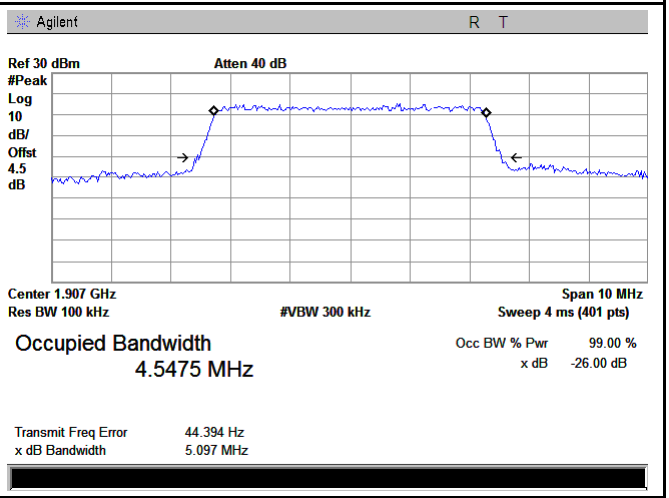
LTE Band II - Middle CH QPSK-5



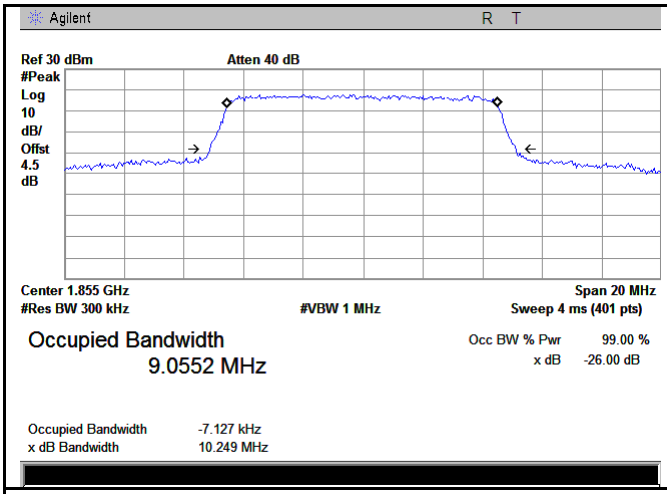
LTE Band II - Middle CH 16QAM-5



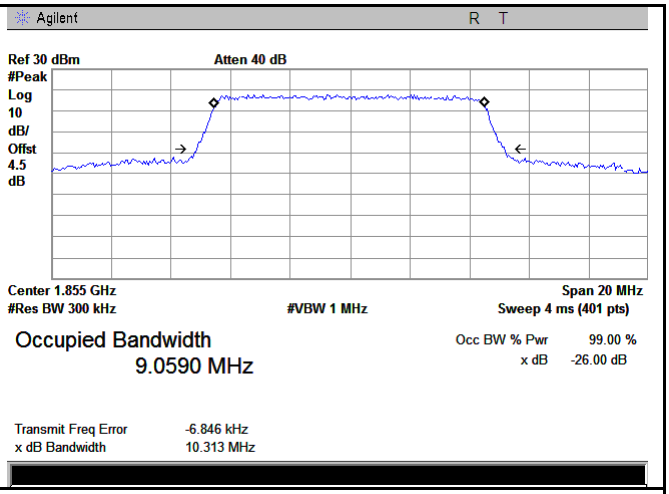
LTE Band II - High CH QPSK-5



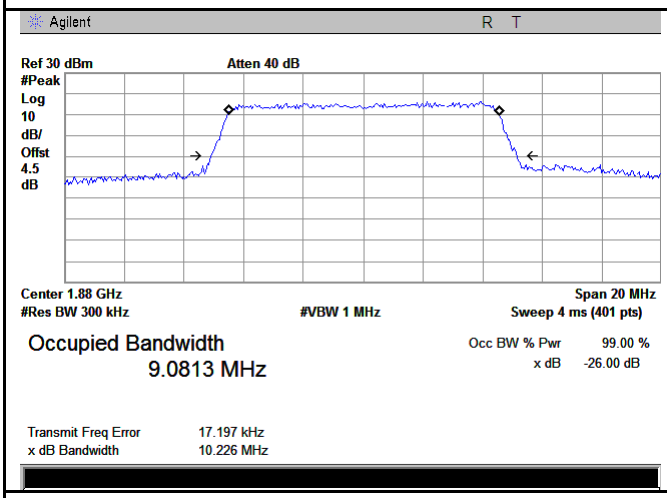
LTE Band II - High CH 16QAM-5



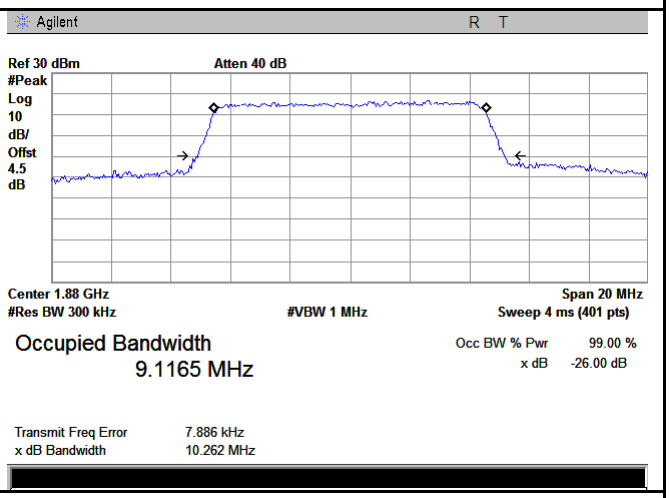
LTE Band II - Low CH QPSK-10



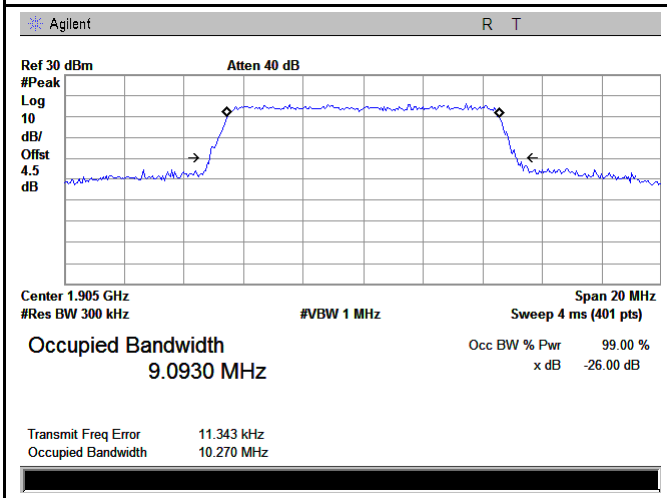
LTE Band II - Low CH 16QAM-10



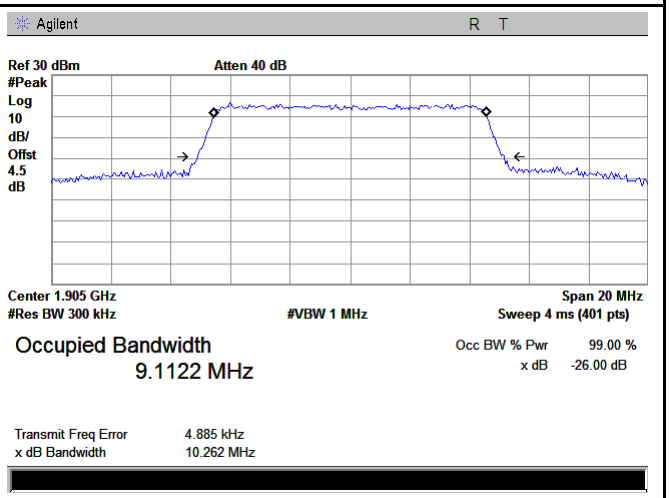
LTE Band II - Middle CH QPSK-10



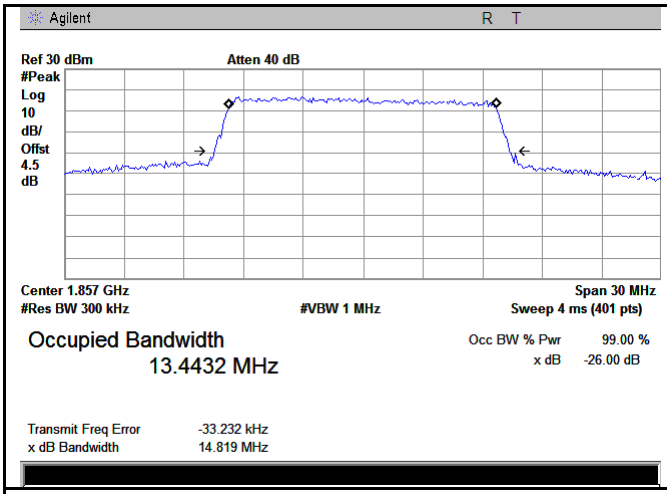
LTE Band II - Middle CH 16QAM-10



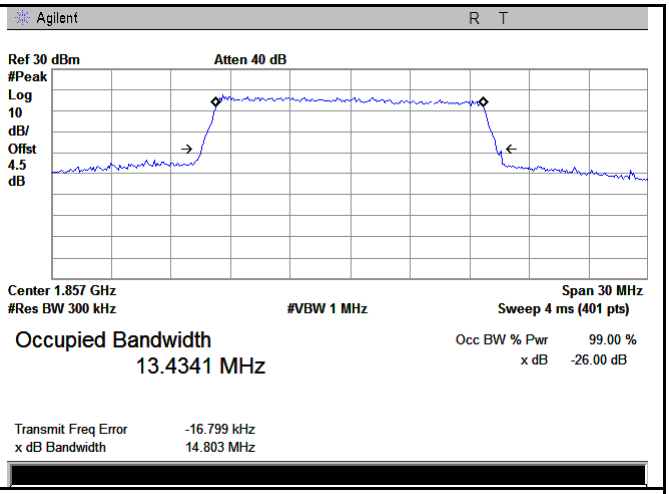
LTE Band II - High CH QPSK-10



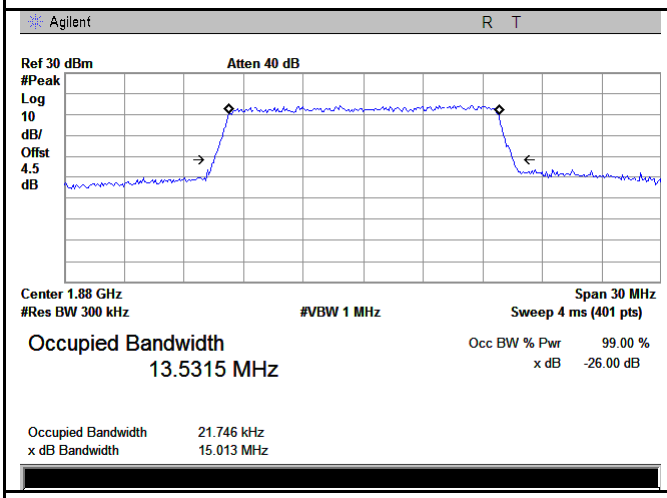
LTE Band II - High CH 16QAM-10



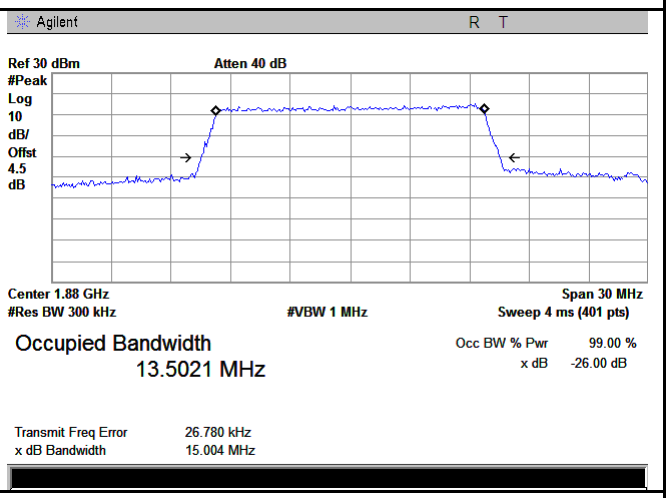
LTE Band II - Low CH QPSK-15



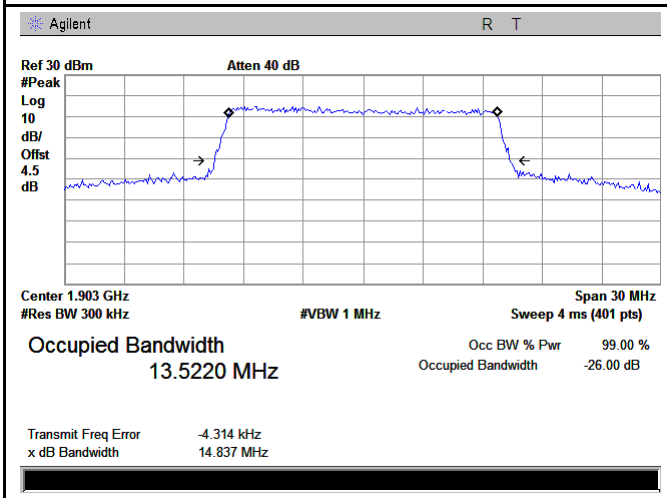
LTE Band II - Low CH 16QAM-15



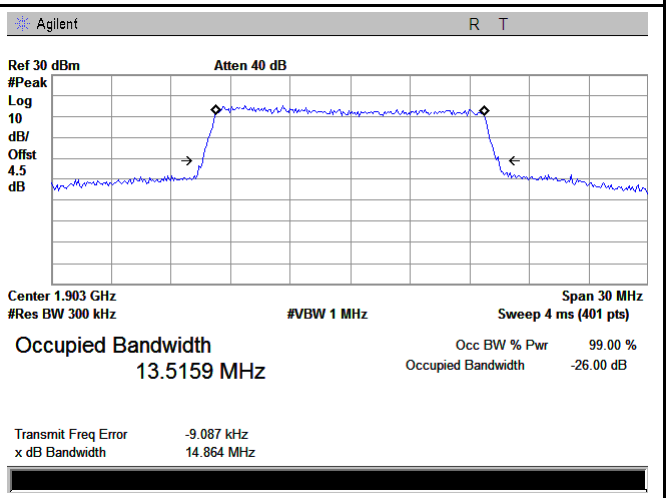
LTE Band II - Middle CH QPSK-15



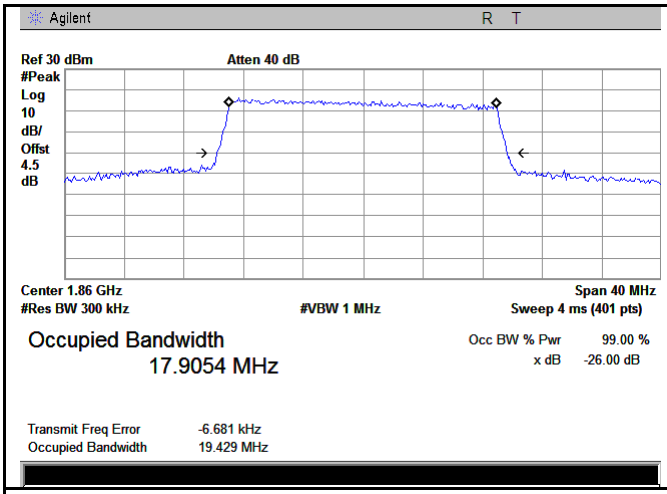
LTE Band II - Middle CH 16QAM-15



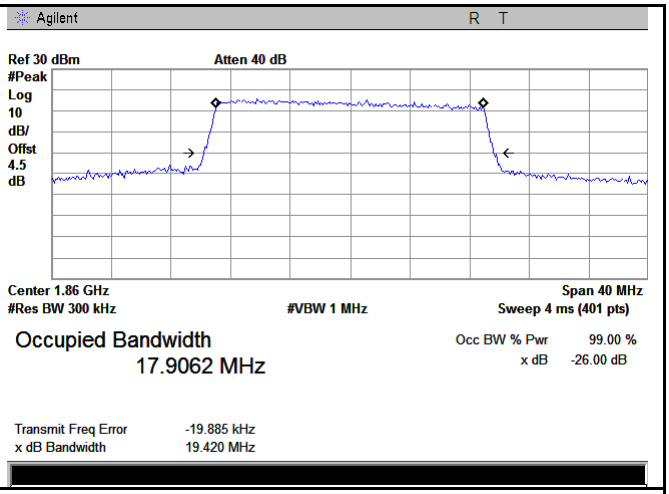
LTE Band II - High CH QPSK-15



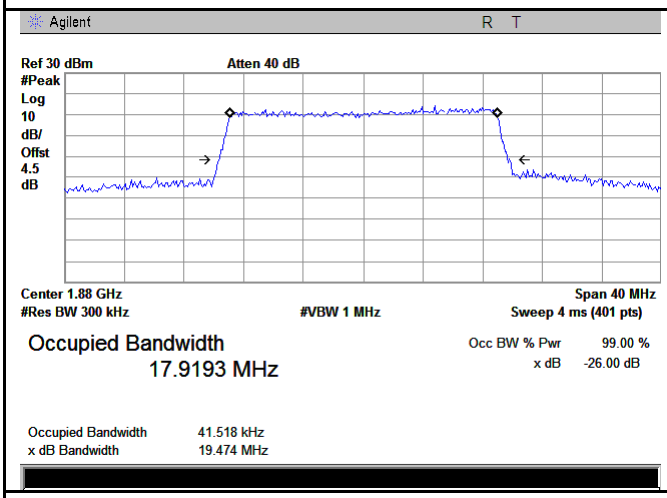
LTE Band II - High CH 16QAM-15



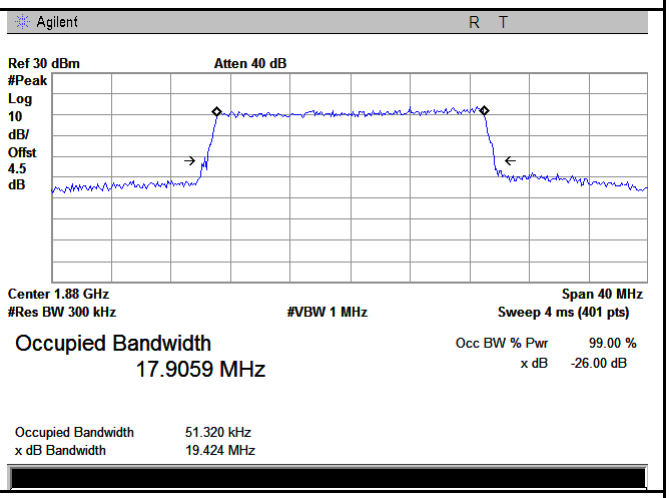
LTE Band II - Low CH QPSK-20



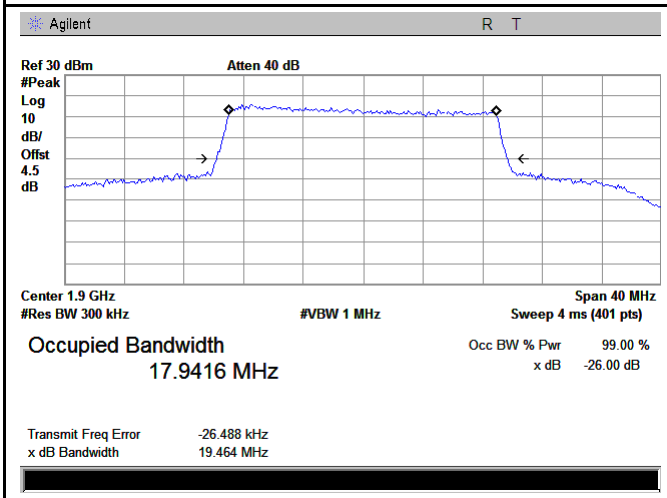
LTE Band II - Low CH 16QAM-20



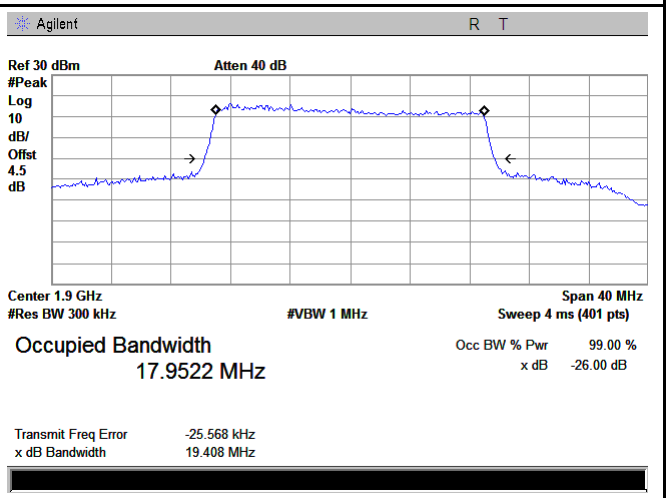
LTE Band II - Middle CH QPSK-20



LTE Band II - Middle CH 16QAM-20

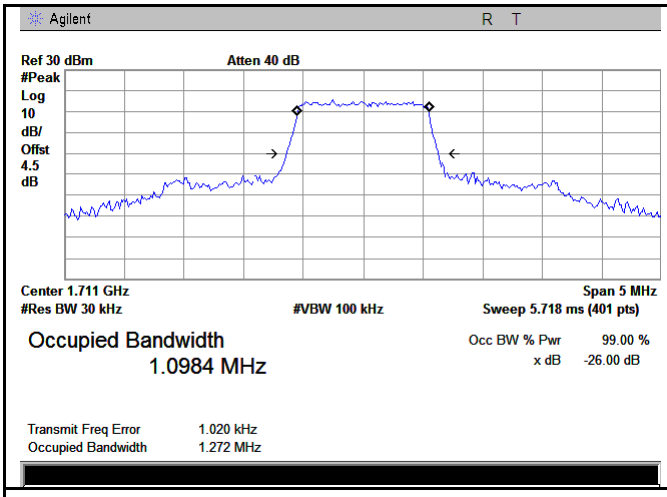


LTE Band II - High CH QPSK-20

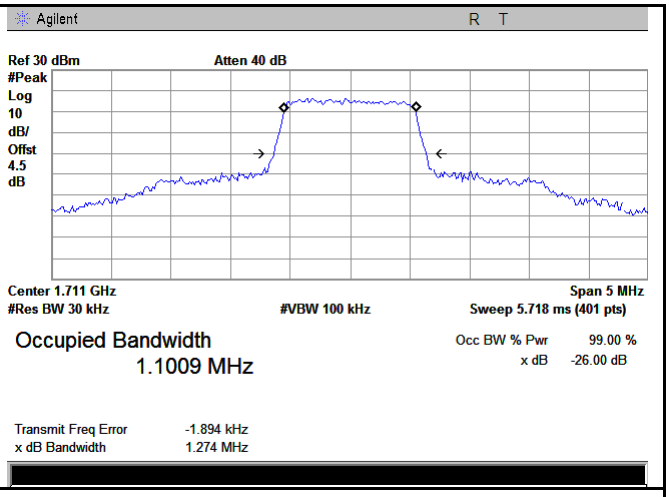


LTE Band II - High CH 16QAM-20

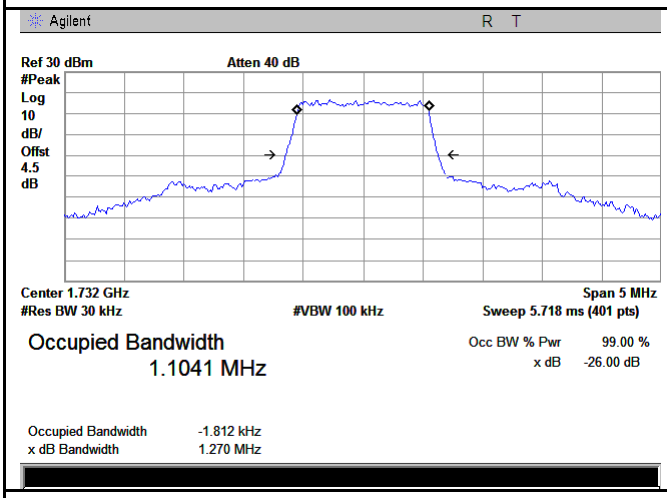
LTE Band IV (Part 27)



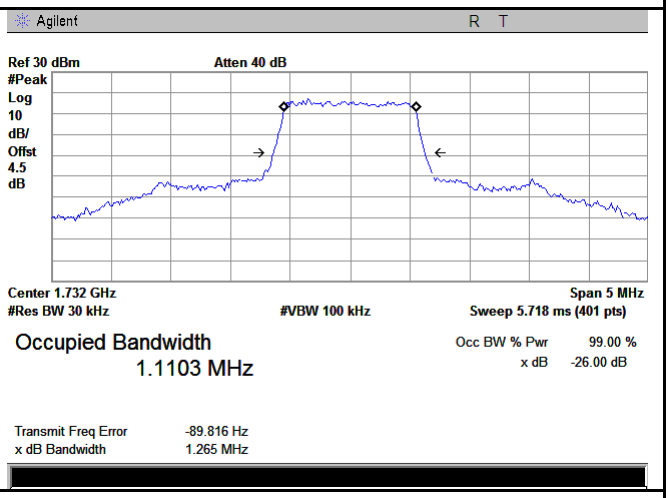
LTE Band IV - Low CH QPSK-1.4



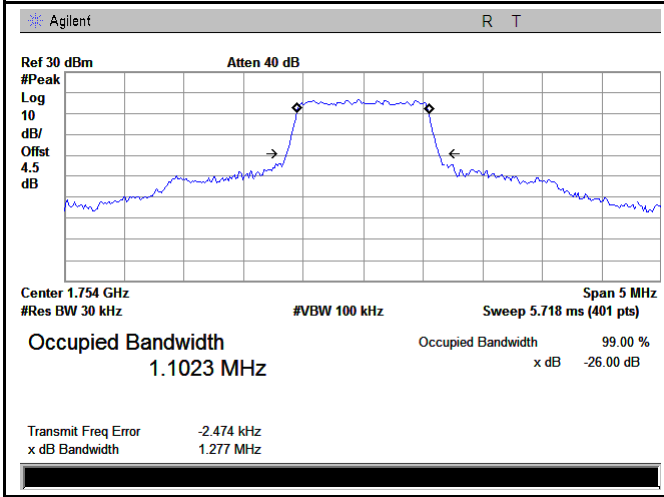
LTE Band IV - Low CH 16QAM-1.4



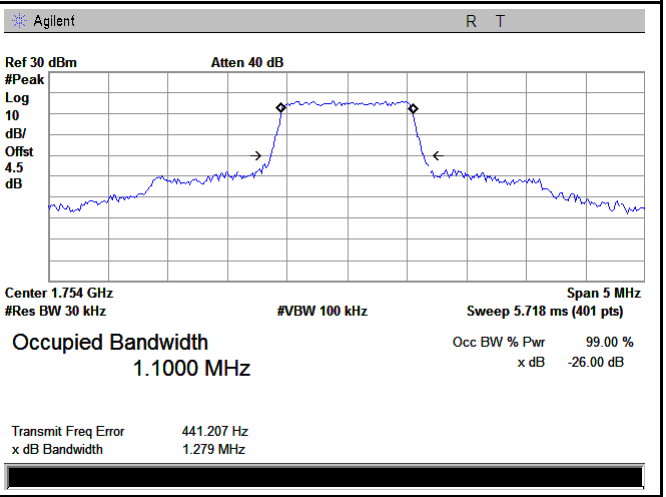
LTE Band IV - Middle CH QPSK-1.4



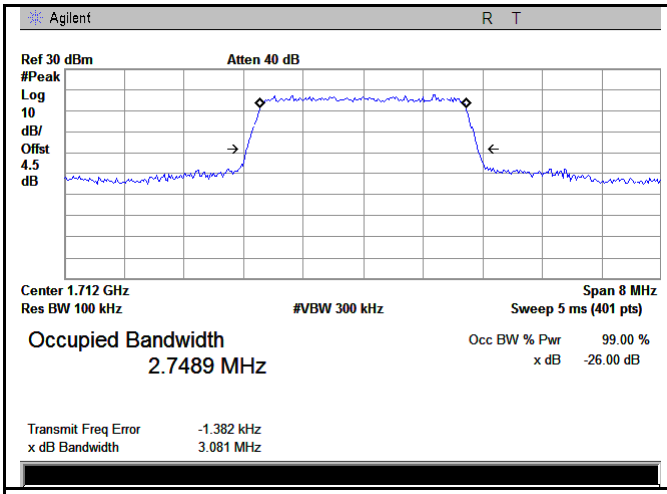
LTE Band IV - Middle CH 16QAM-1.4



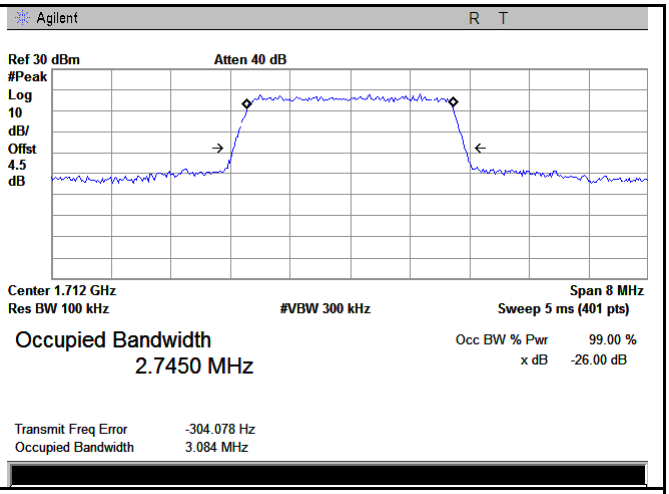
LTE Band IV - High CH QPSK-1.4



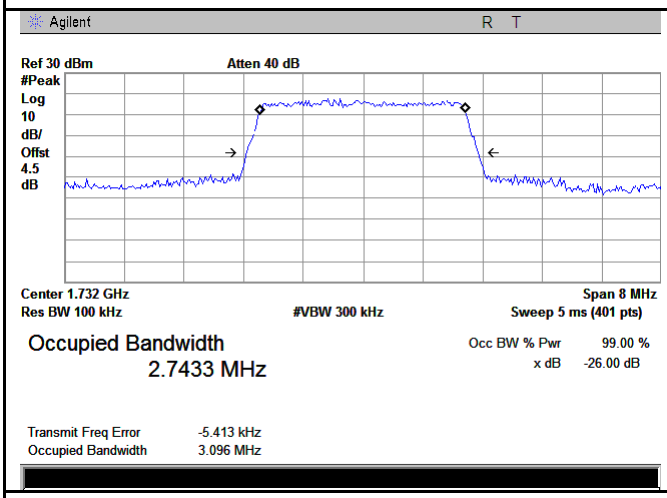
LTE Band IV - High CH 16QAM-1.4



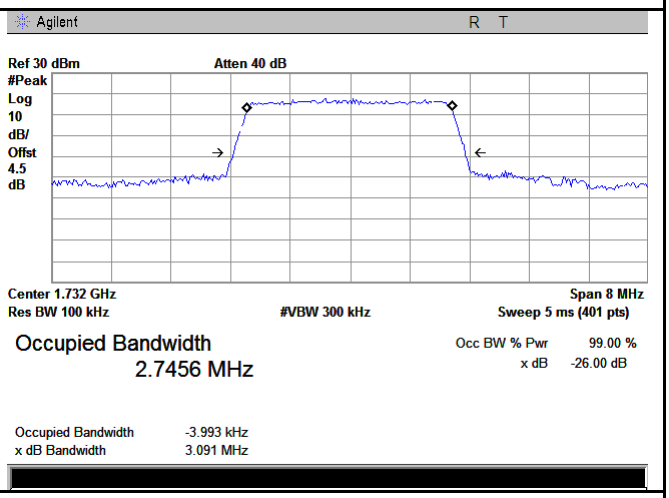
LTE Band IV - Low CH QPSK-3



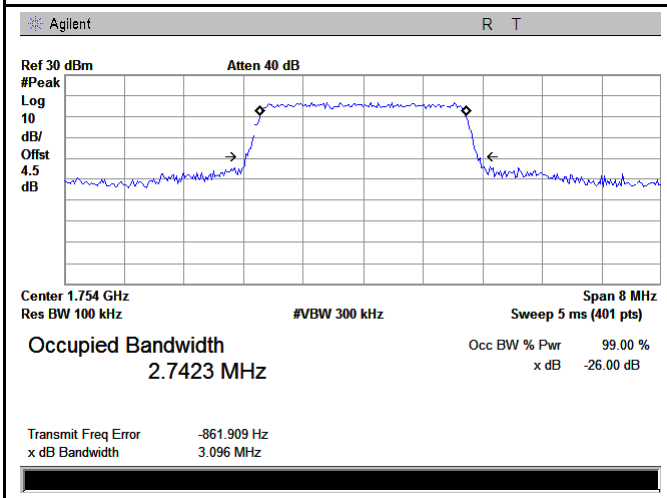
LTE Band IV - Low CH 16QAM-3



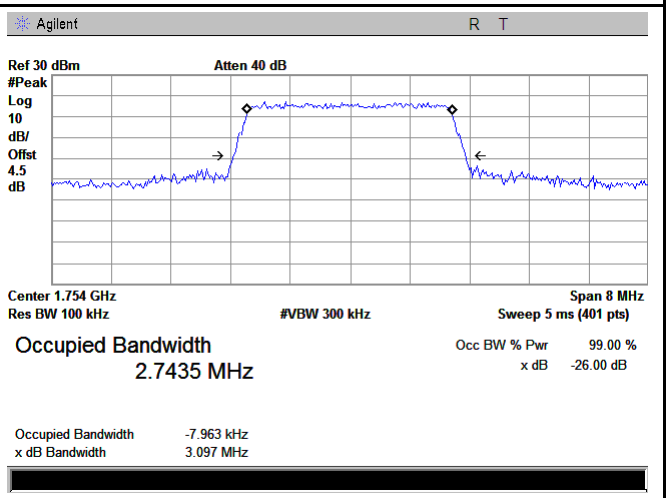
LTE Band IV - Middle CH QPSK-3



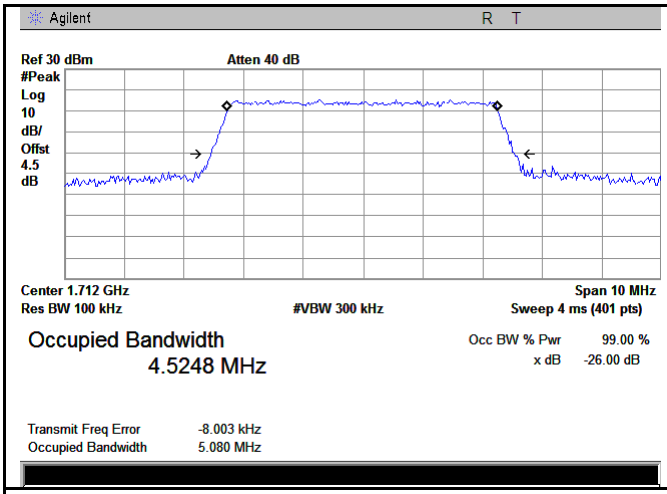
LTE Band IV - Middle CH 16QAM-3



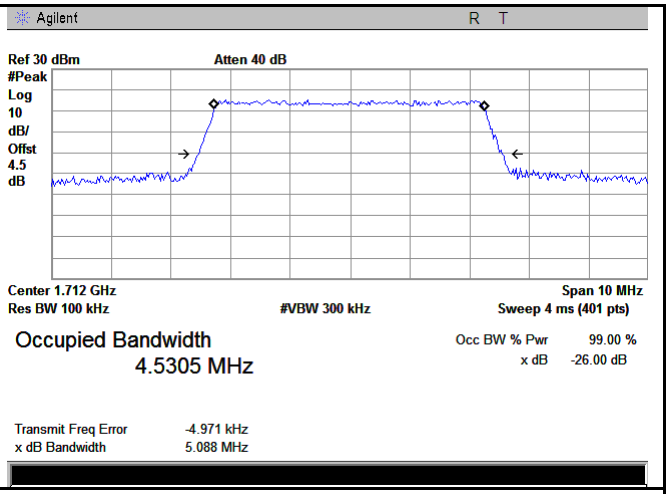
LTE Band IV - High CH QPSK-3



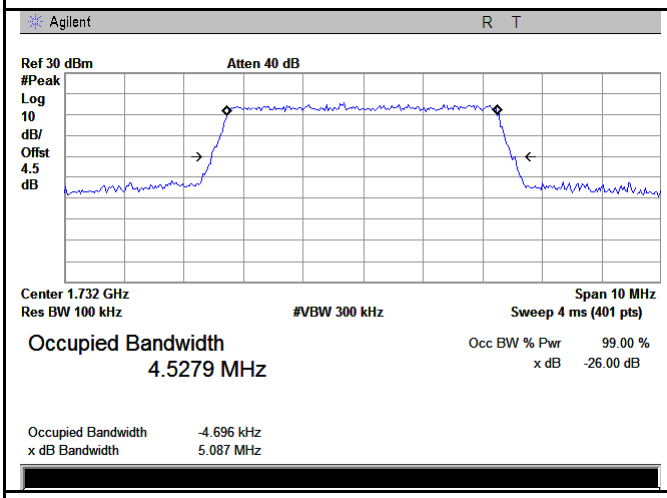
LTE Band IV - High CH 16QAM-3



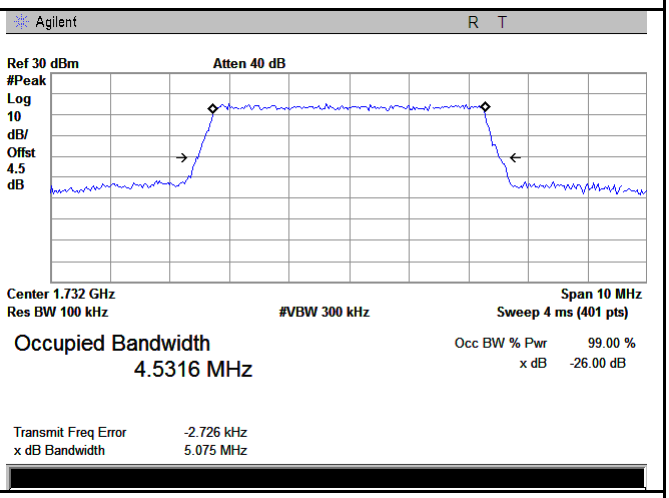
LTE Band IV - Low CH QPSK-5



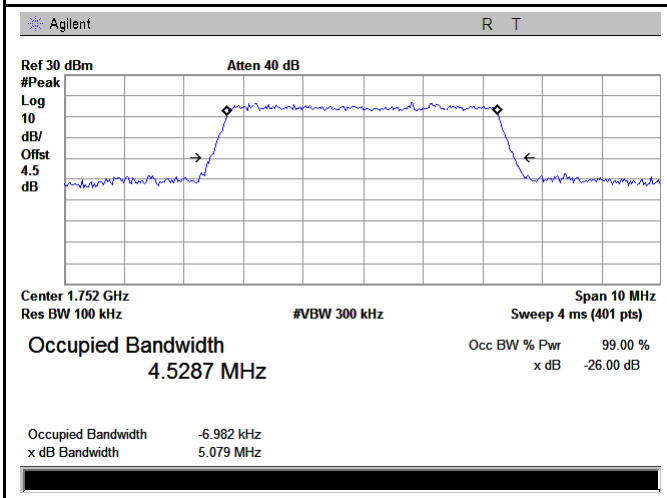
LTE Band IV - Low CH 16QAM-5



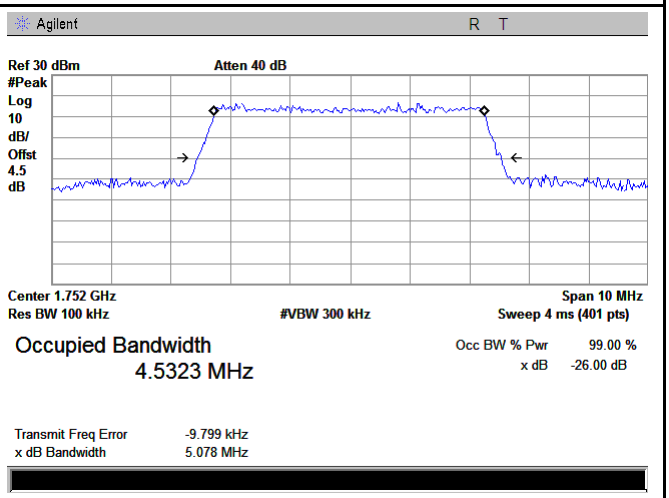
LTE Band IV - Middle CH QPSK-5



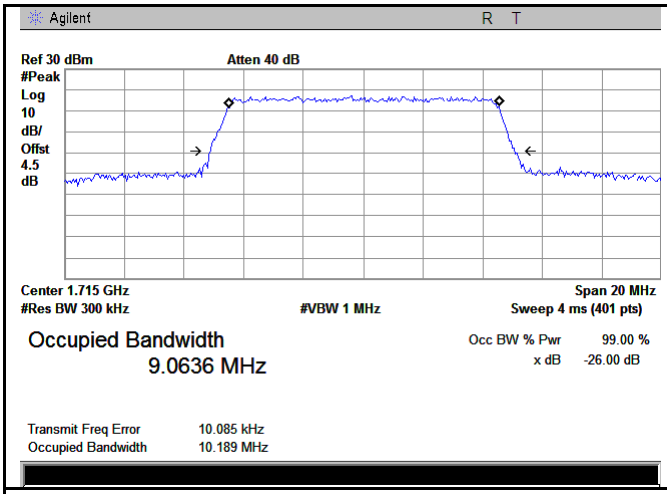
LTE Band IV - Middle CH 16QAM-5



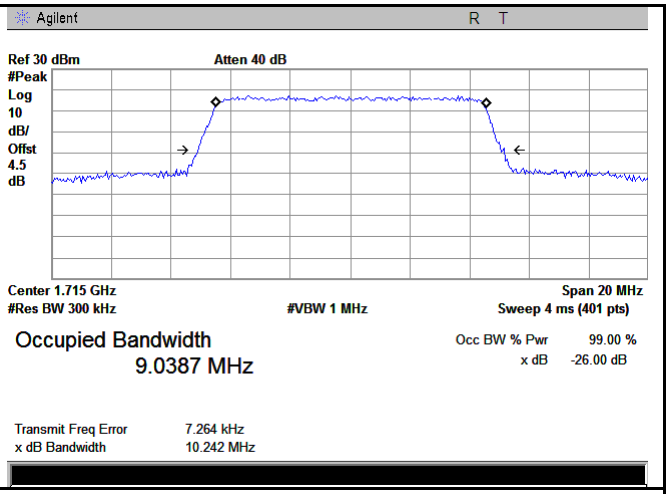
LTE Band IV - High CH QPSK-5



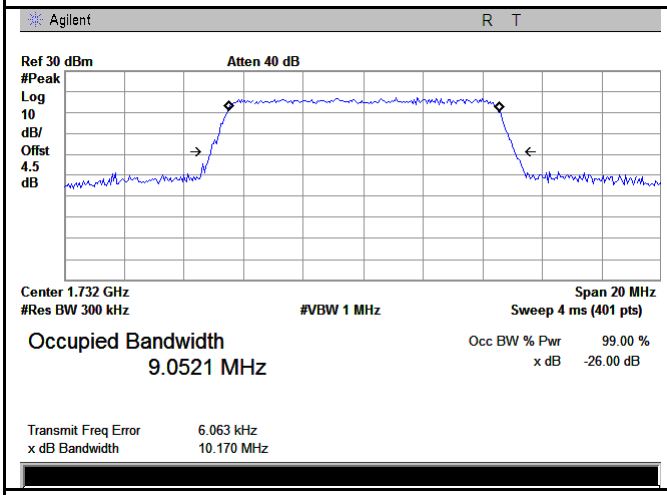
LTE Band IV - High CH 16QAM-5



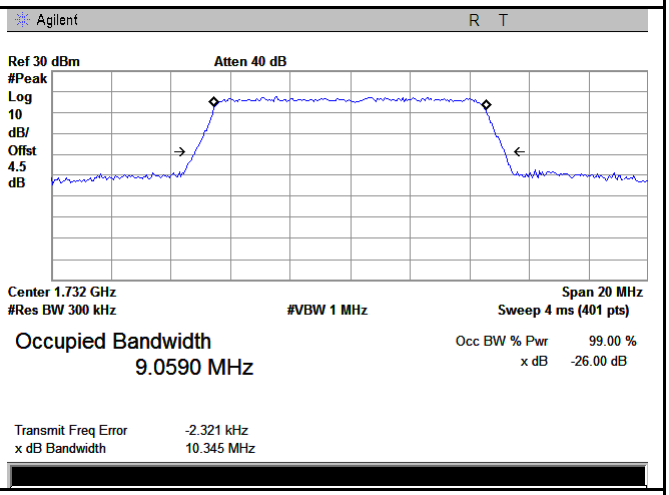
LTE Band IV - Low CH QPSK-10



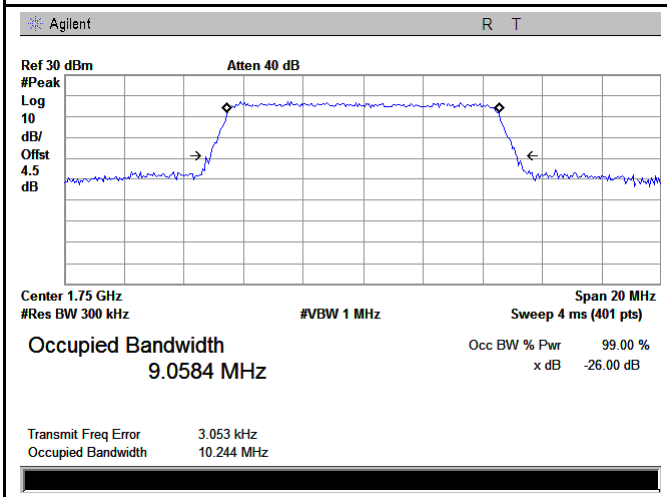
LTE Band IV - Low CH 16QAM-10



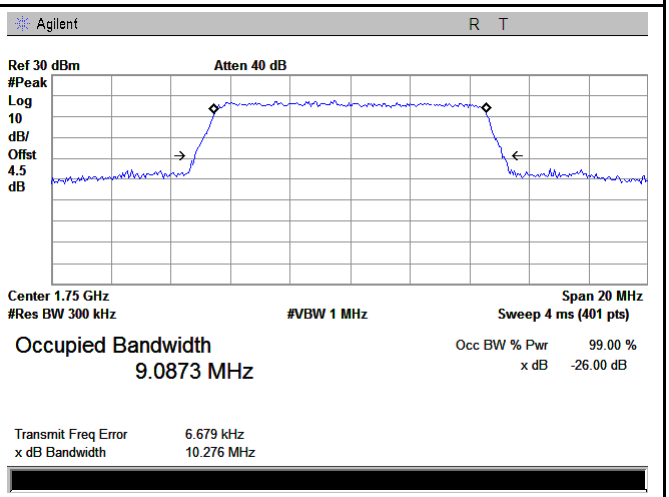
LTE Band IV - Middle CH QPSK-10



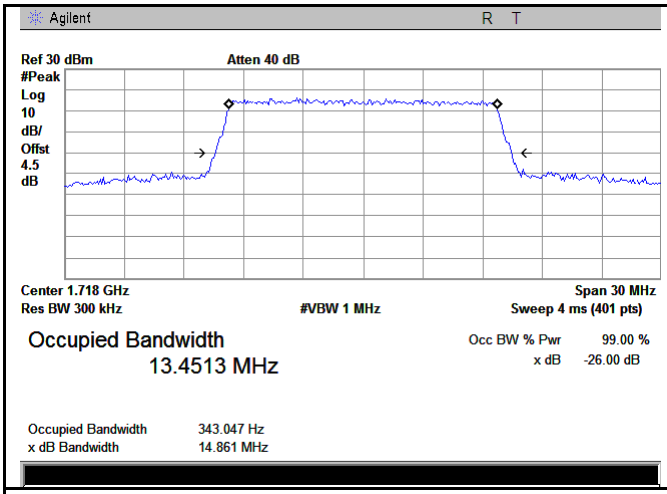
LTE Band IV - Middle CH 16QAM-10



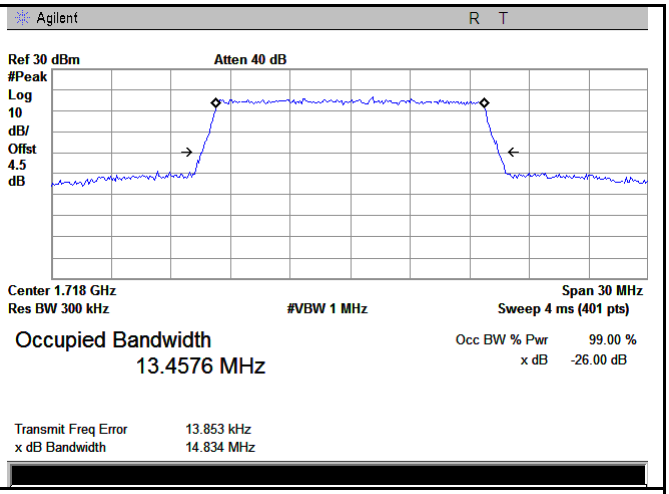
LTE Band IV - High CH QPSK-10



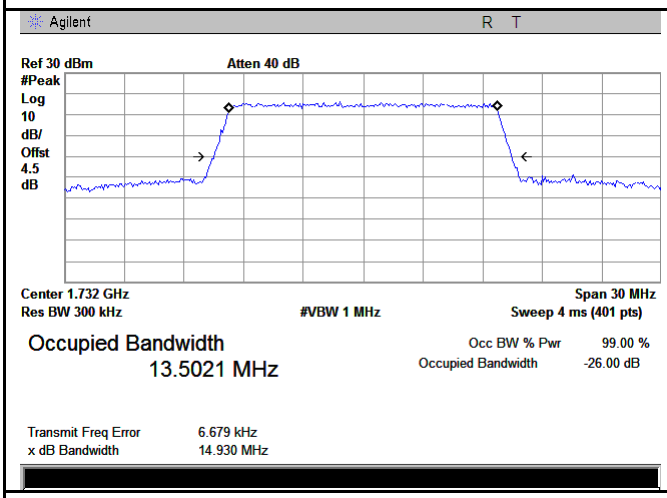
LTE Band IV - High CH 16QAM-10



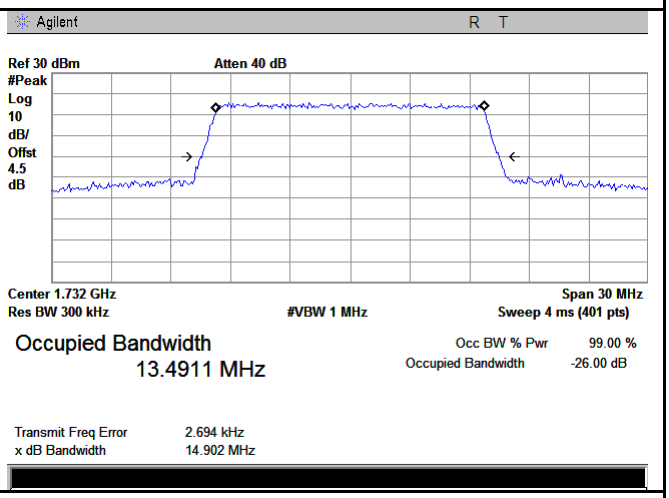
LTE Band IV - Low CH QPSK-15



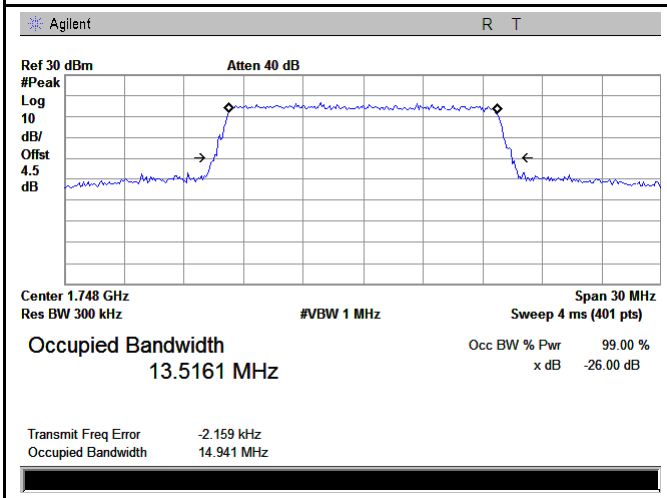
LTE Band IV - Low CH 16QAM-15



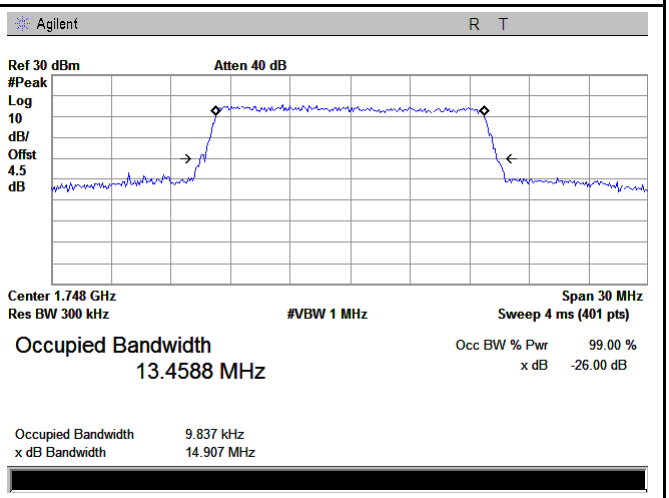
LTE Band IV - Middle CH QPSK-15



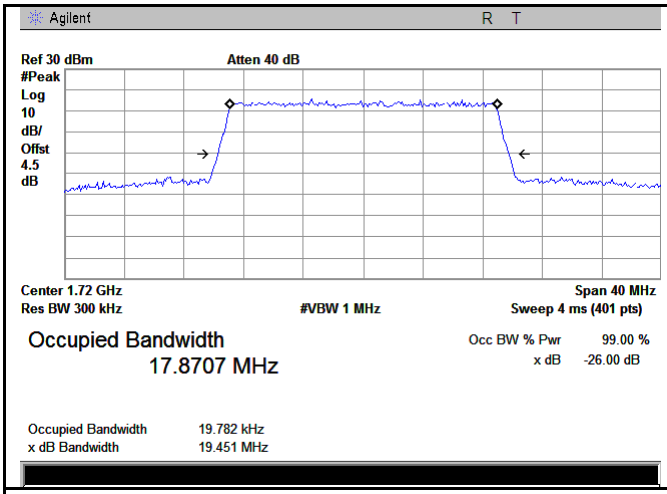
LTE Band IV - Middle CH 16QAM-15



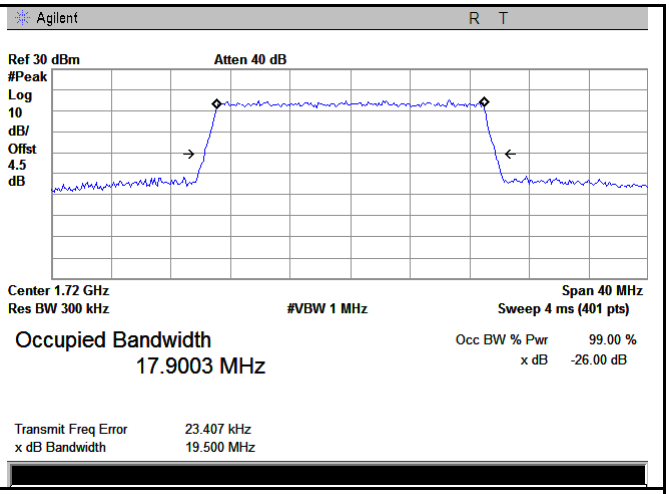
LTE Band IV - High CH QPSK-15



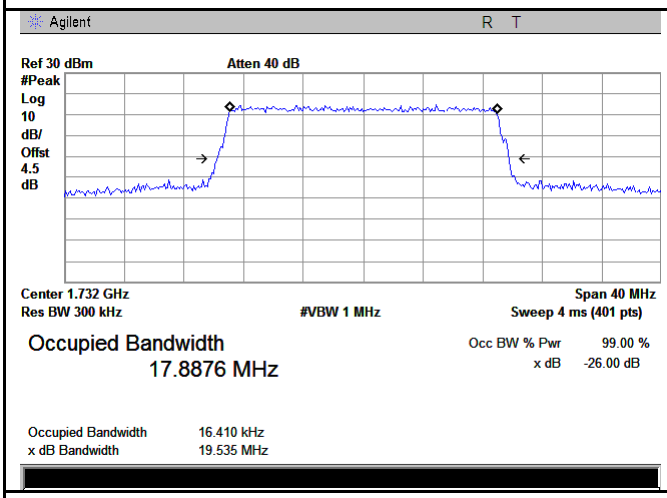
LTE Band IV - High CH 16QAM-15



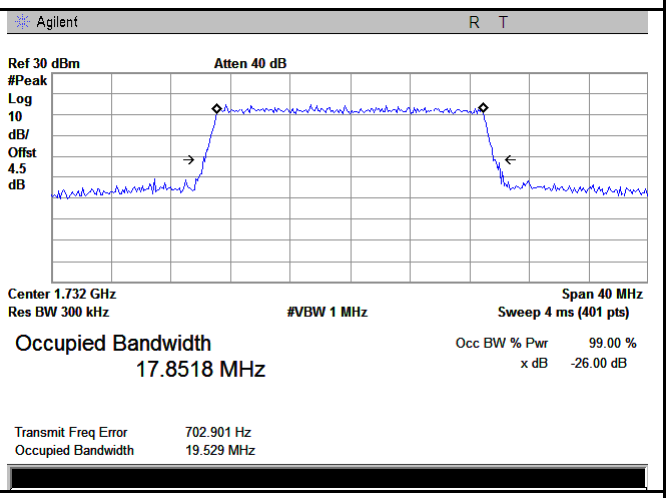
LTE Band IV - Low CH QPSK-20



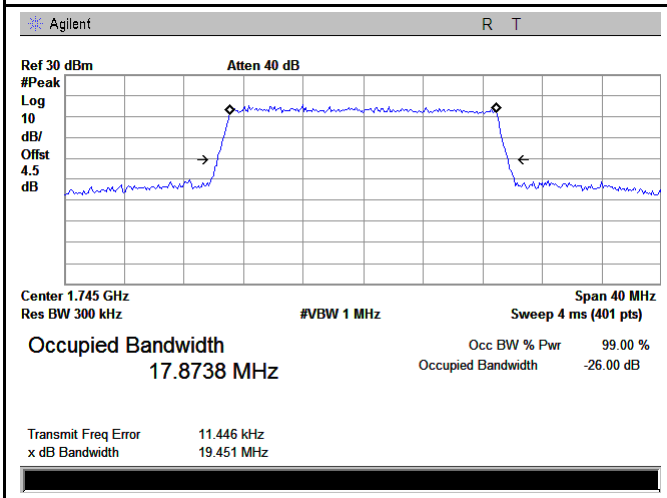
LTE Band IV - Low CH 16QAM-20



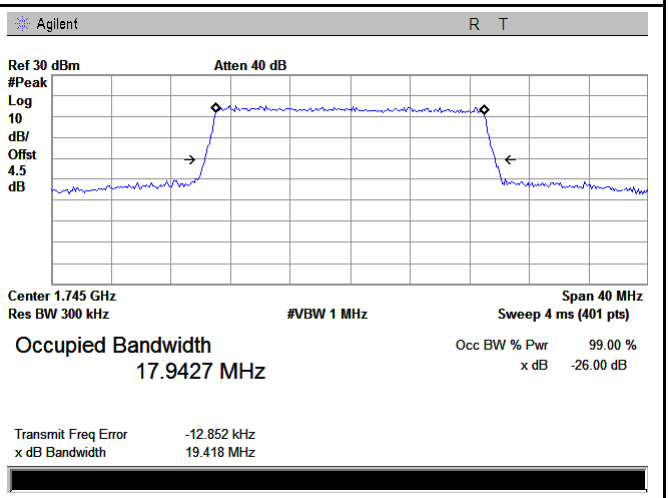
LTE Band IV - Middle CH QPSK-20



LTE Band IV - Middle CH 16QAM-20

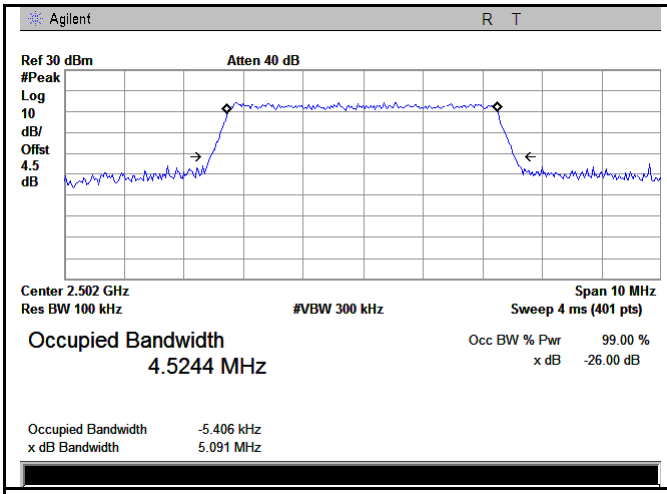


LTE Band IV - High CH QPSK-20

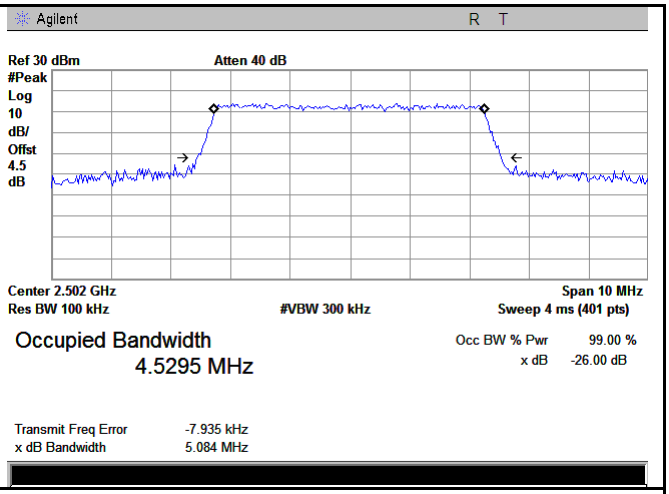


LTE Band IV - High CH 16QAM-20

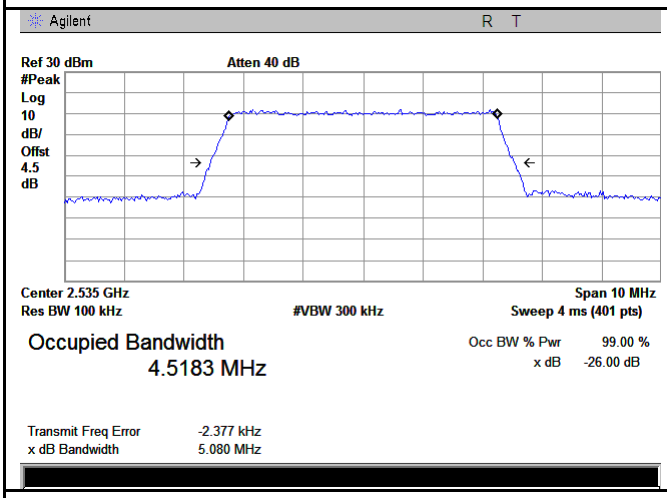
LTE Band VII (Part 27)



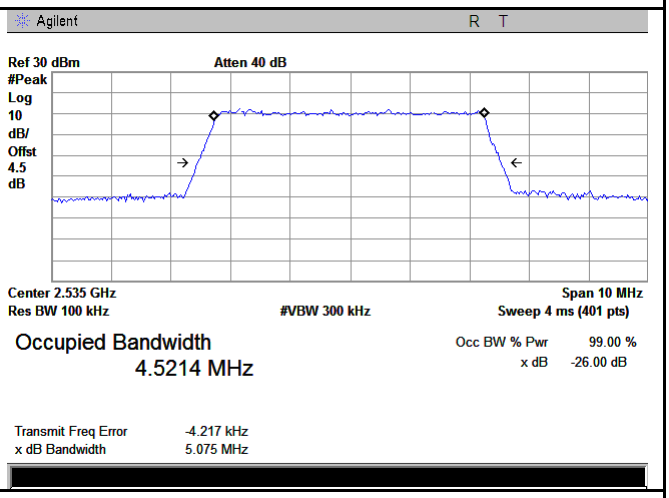
LTE Band VII - Low CH QPSK-5



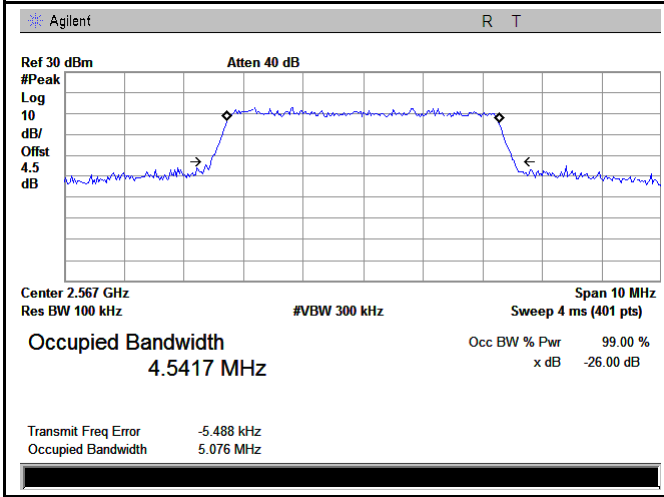
LTE Band VII - Low CH 16QAM-5



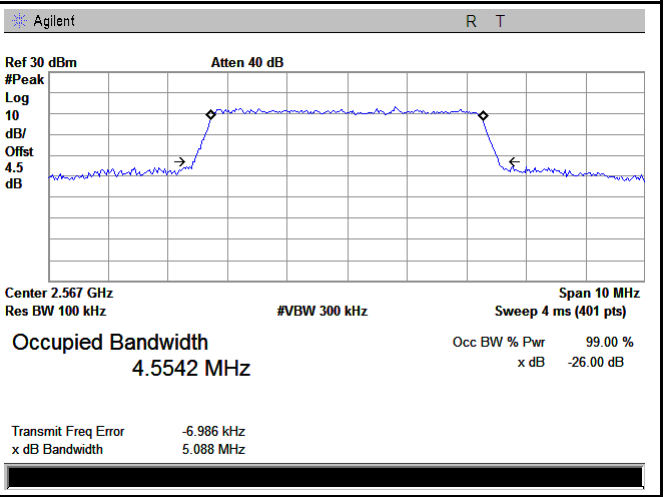
LTE Band VII - Middle CH QPSK-5



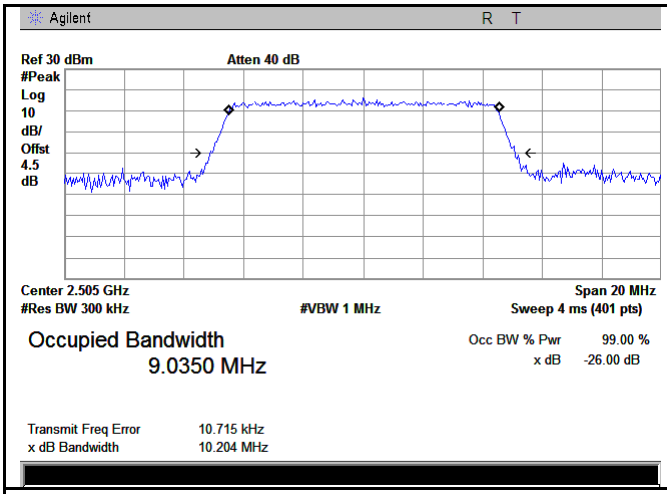
LTE Band VII - Middle CH 16QAM-5



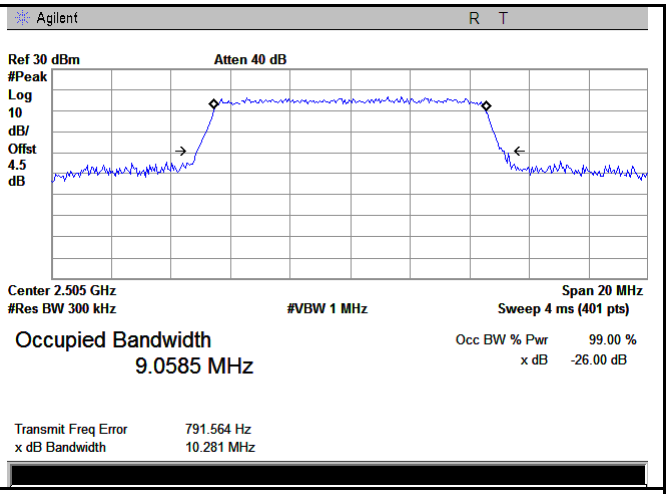
LTE Band VII - High CH QPSK-5



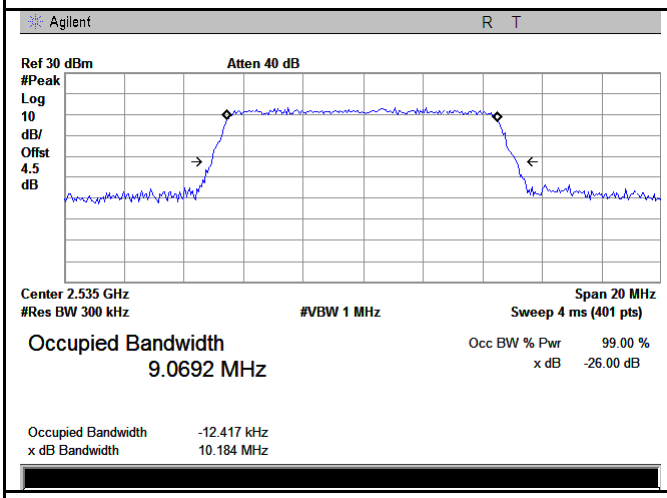
LTE Band VII - High CH 16QAM-5



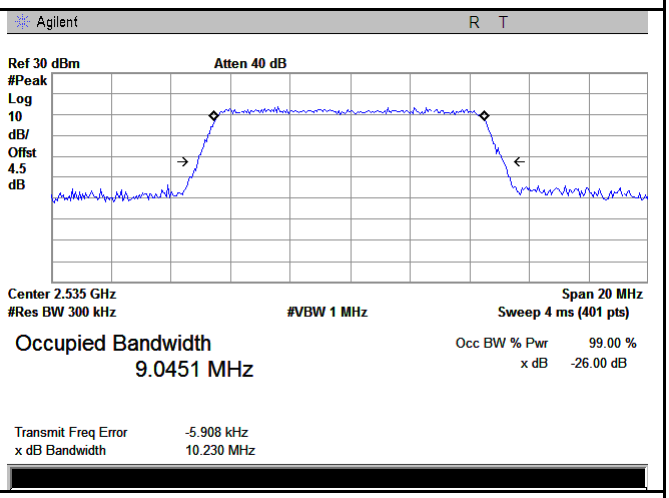
LTE Band VII - Low CH QPSK-10



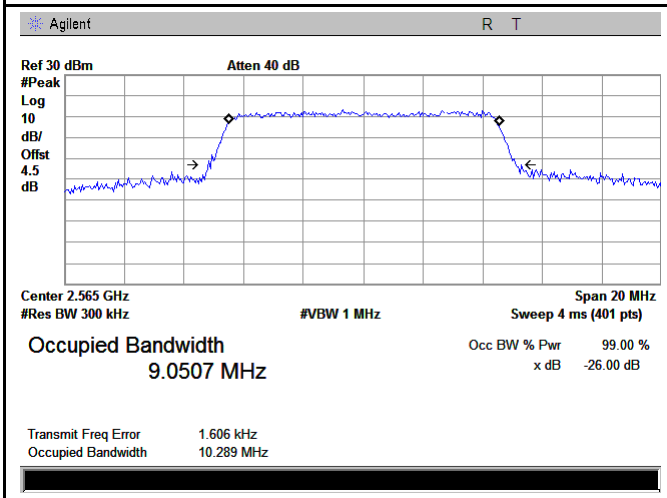
LTE Band VII - Low CH 16QAM-10



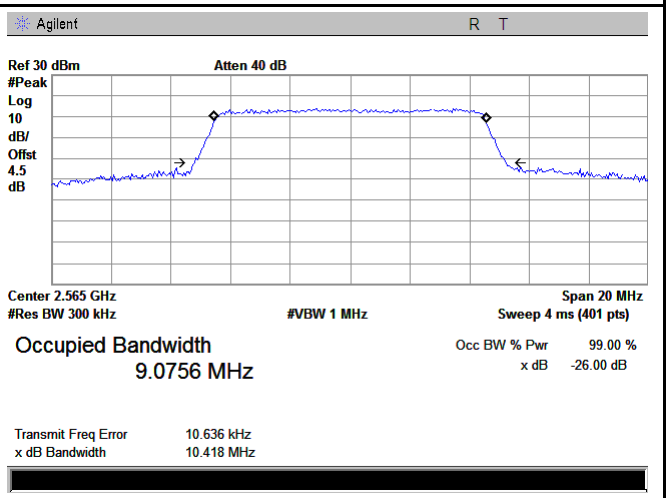
LTE Band VII - Middle CH QPSK-10



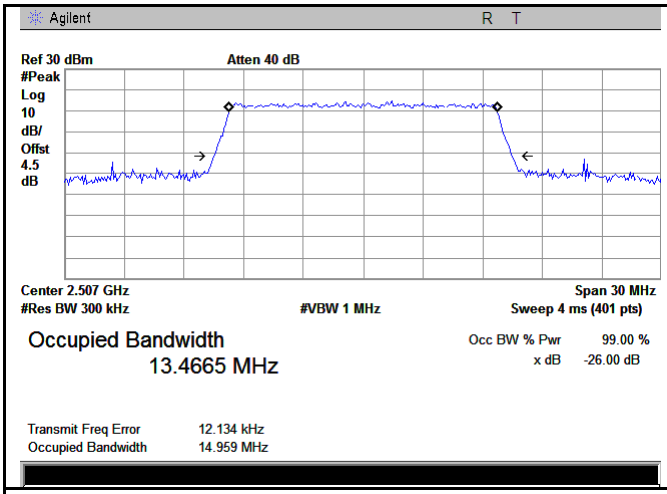
LTE Band VII - Middle CH 16QAM-10



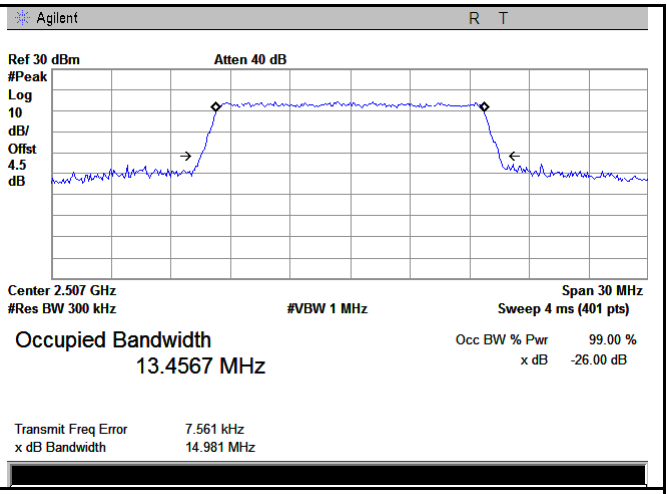
LTE Band VII - High CH QPSK-10



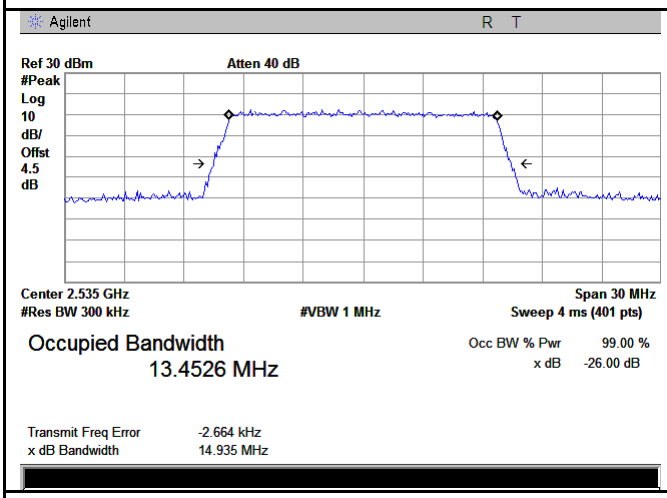
LTE Band VII - High CH 16QAM-10



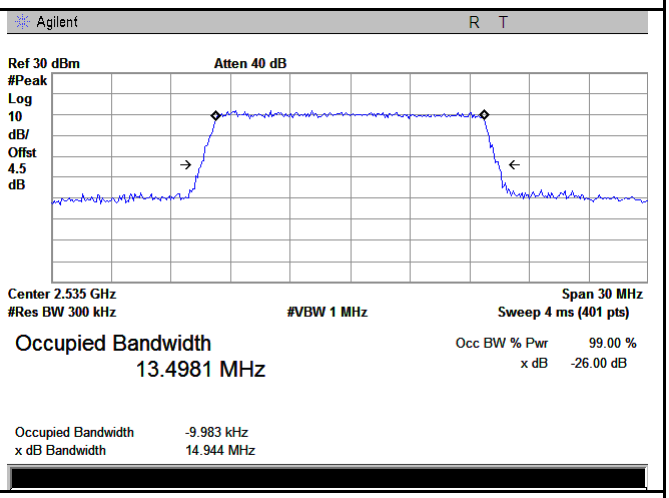
LTE Band VII - Low CH QPSK-15



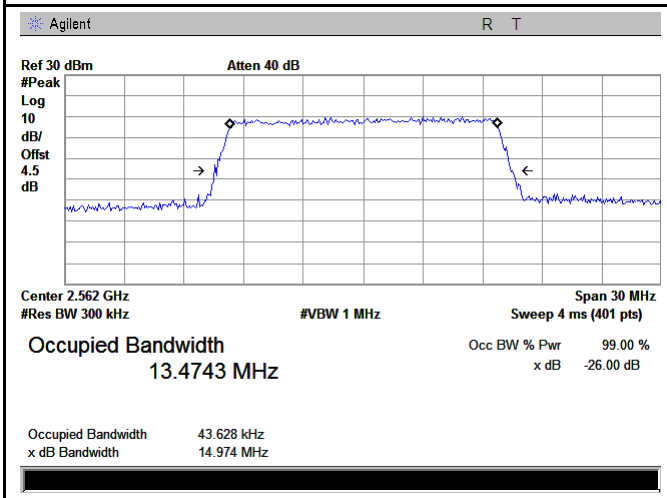
LTE Band VII - Low CH 16QAM-15



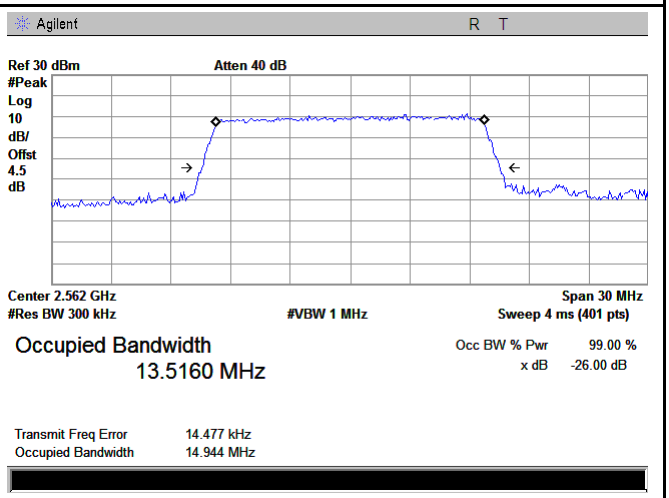
LTE Band VII - Middle CH QPSK-15



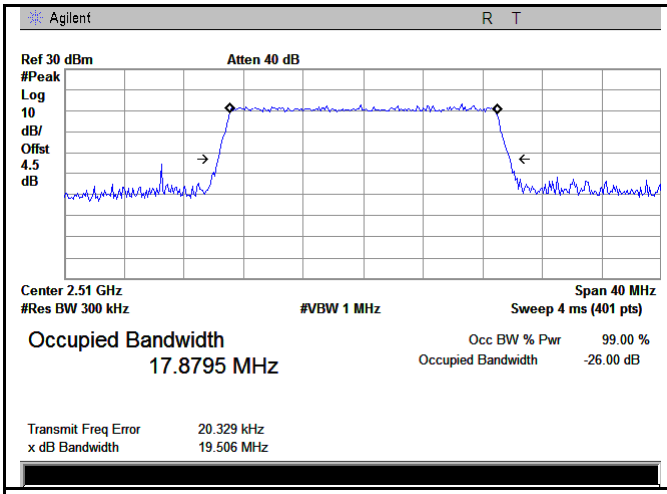
LTE Band VII - Middle CH 16QAM-15



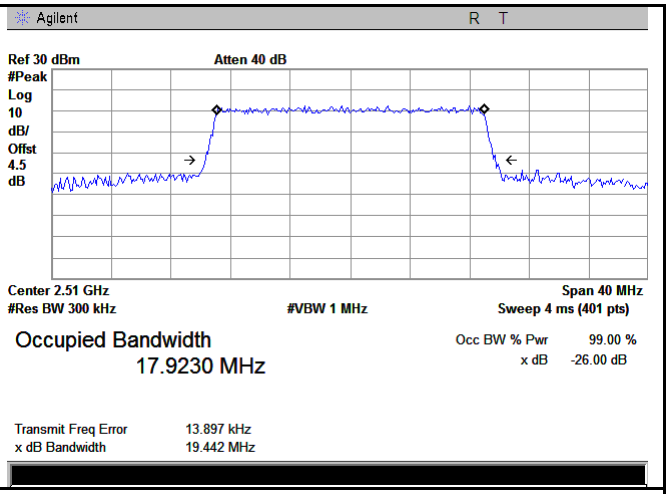
LTE Band VII - High CH QPSK-15



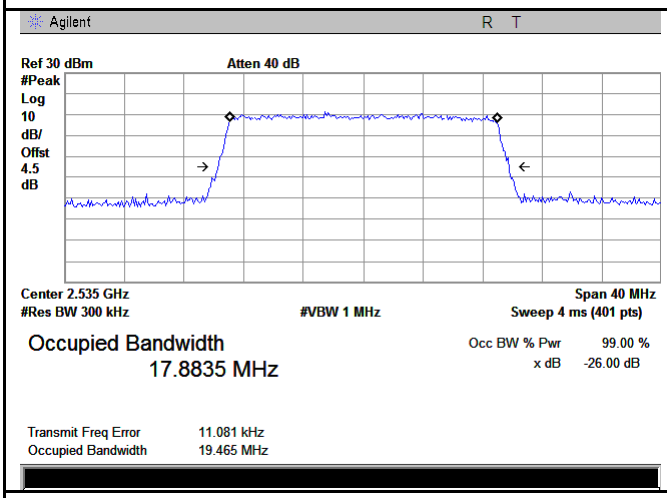
LTE Band VII - High CH 16QAM-15



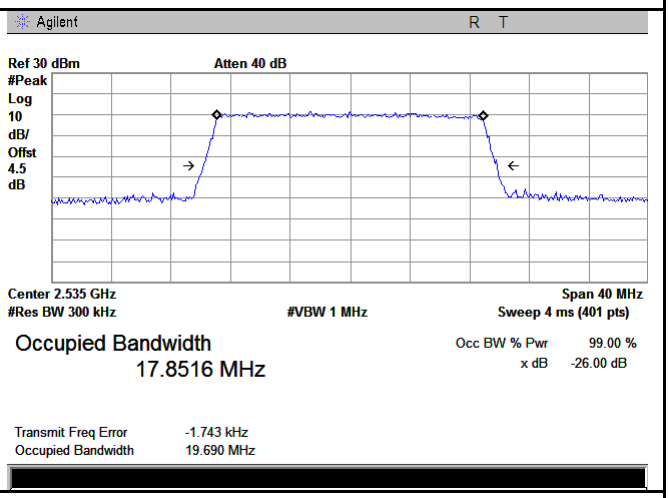
LTE Band VII - Low CH QPSK-20



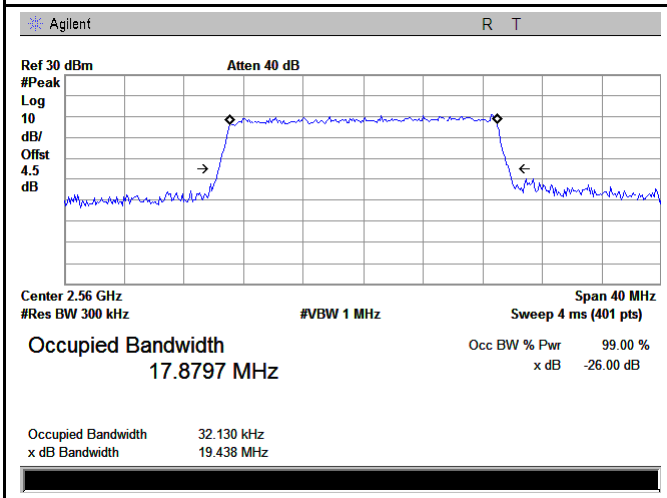
LTE Band VII - Low CH 16QAM-20



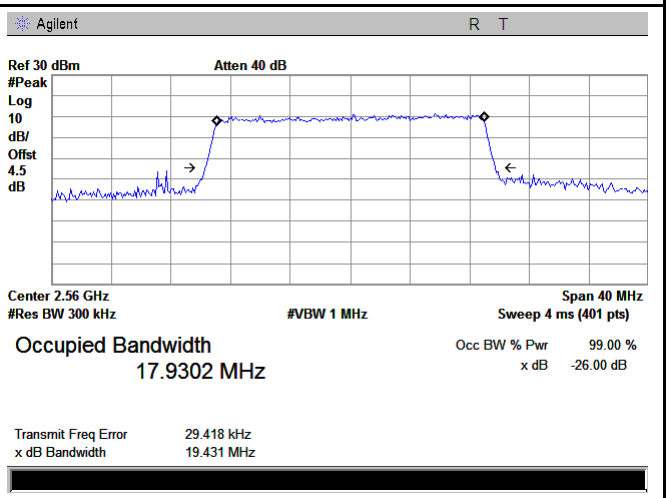
LTE Band VII - Middle CH QPSK-20



LTE Band VII - Middle CH 16QAM-20

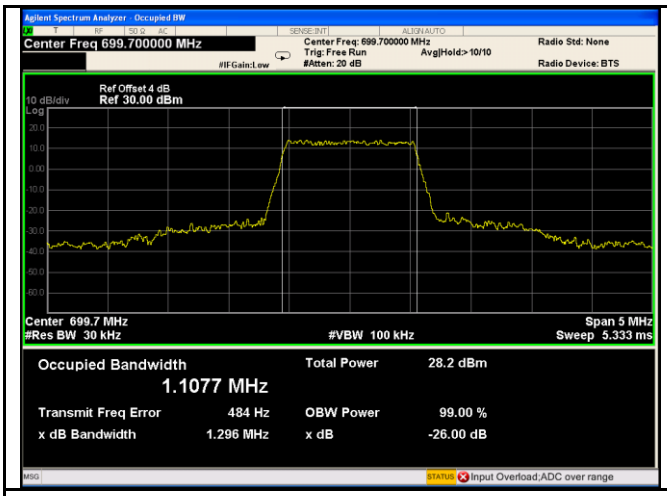


LTE Band VII - High CH QPSK-20

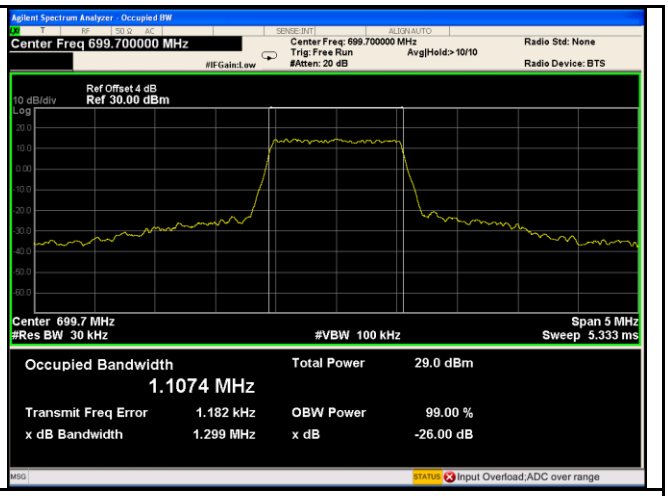


LTE Band VII - High CH 16QAM-20

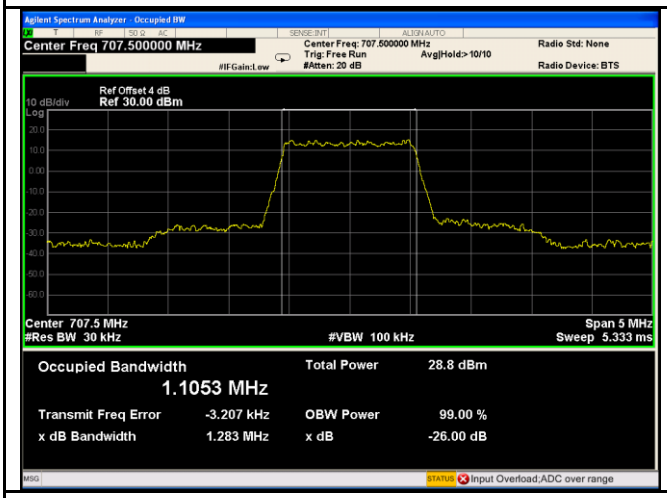
LTE Band XII (Part 27)



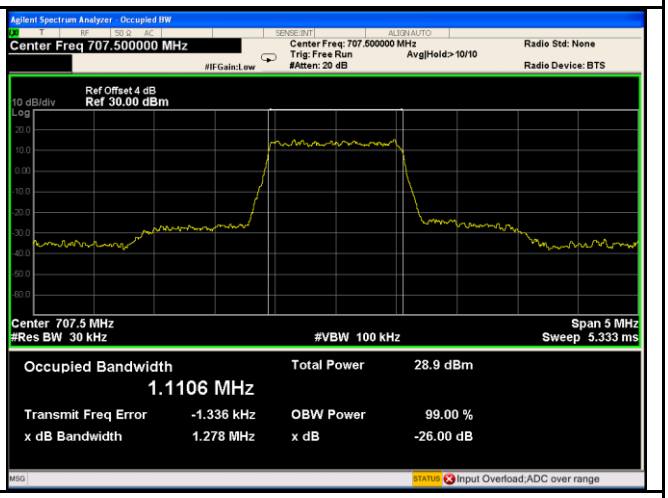
LTE Band XII - Low CH QPSK-1.4



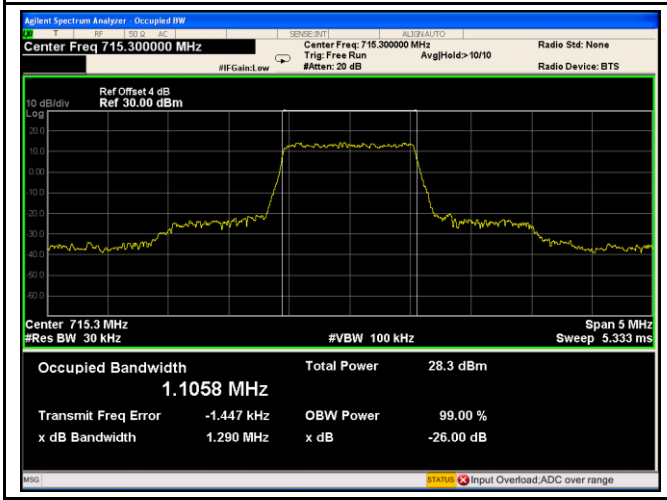
LTE Band XII - Low CH 16QAM-1.4



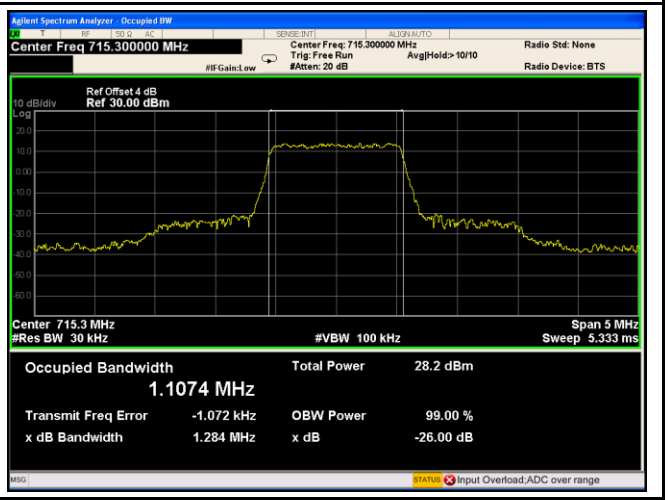
LTE Band XII - Middle CH QPSK-1.4



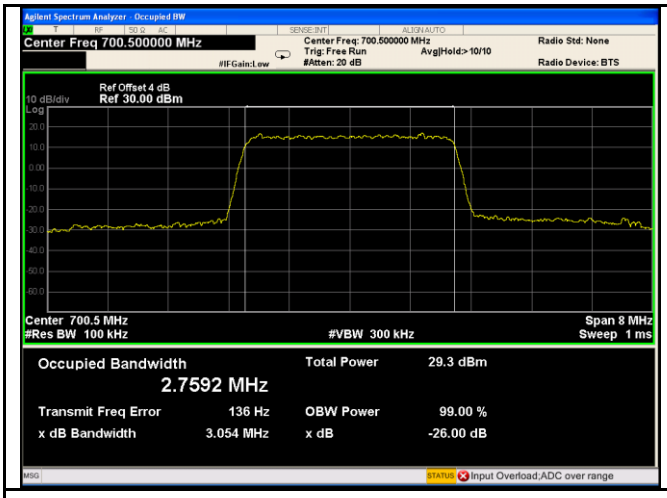
LTE Band XII - Middle CH 16QAM-1.4



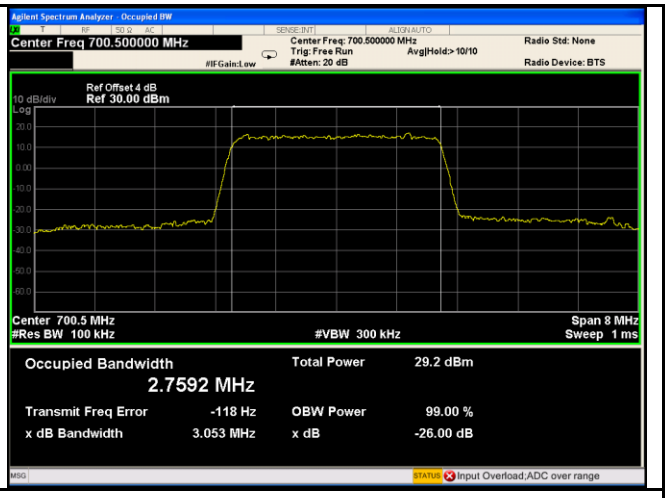
LTE Band XII - High CH QPSK-1.4



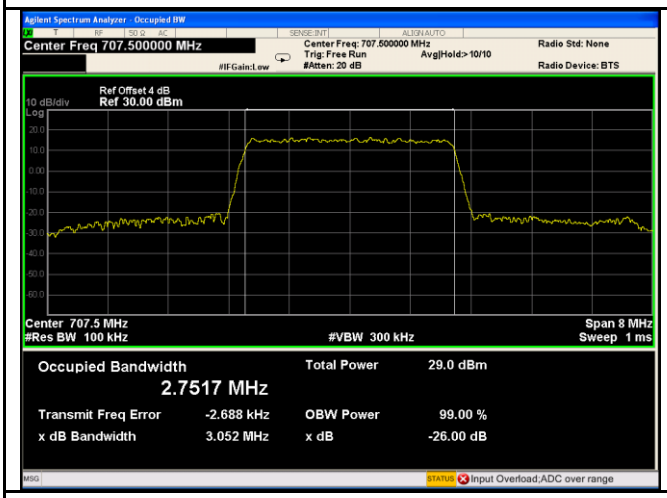
LTE Band XII - High CH 16QAM-1.4



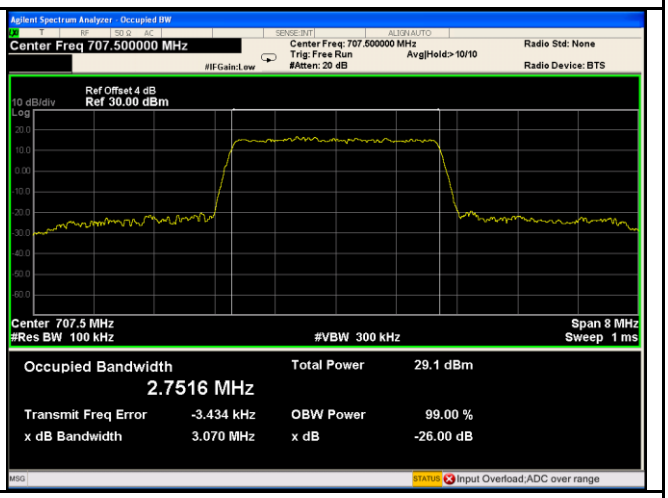
LTE Band XII - Low CH QPSK-3



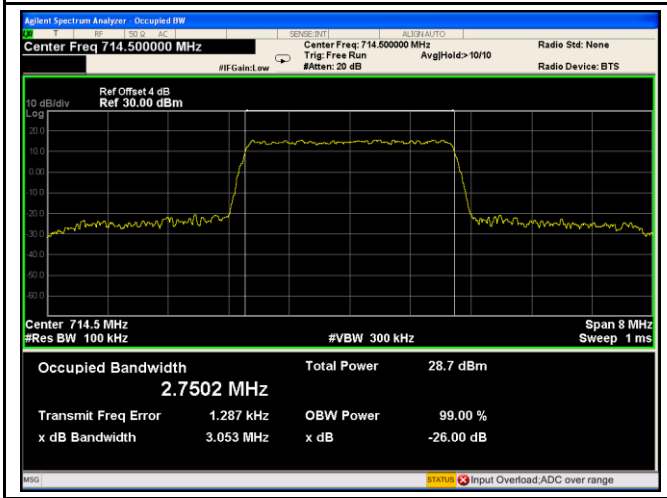
LTE Band XII - Low CH 16QAM-3



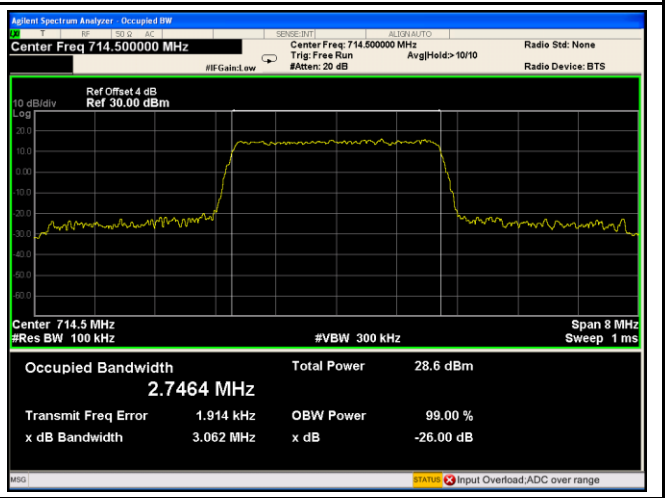
LTE Band XII - Middle CH QPSK-3



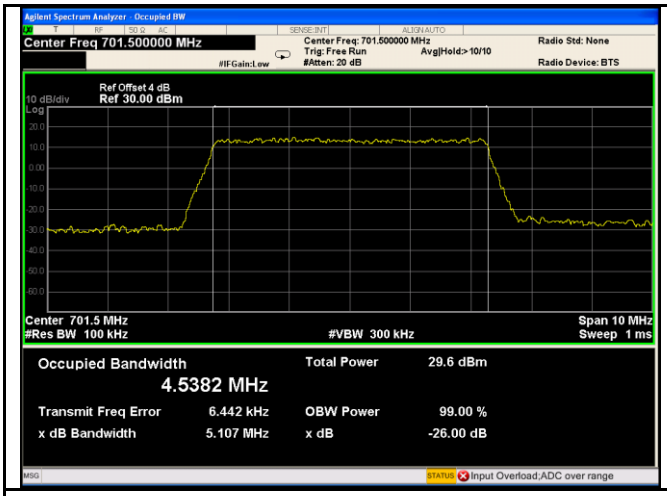
LTE Band XII - Middle CH 16QAM-3



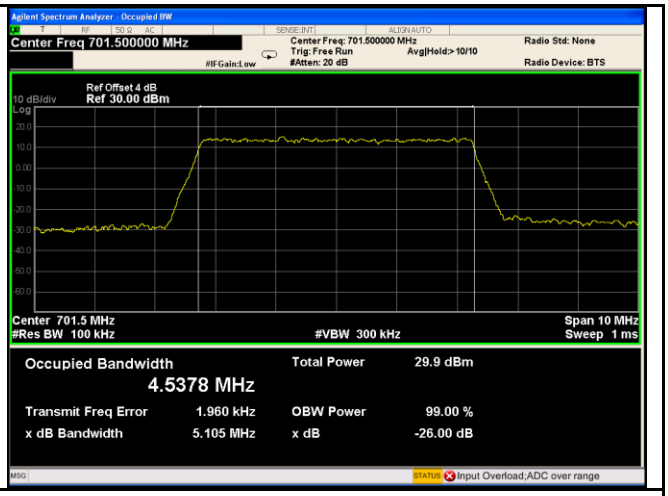
LTE Band XII - High CH QPSK-3



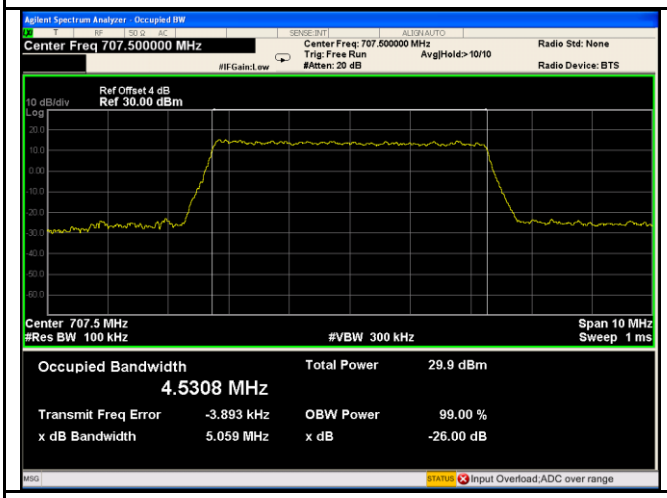
LTE Band XII - High CH 16QAM-3



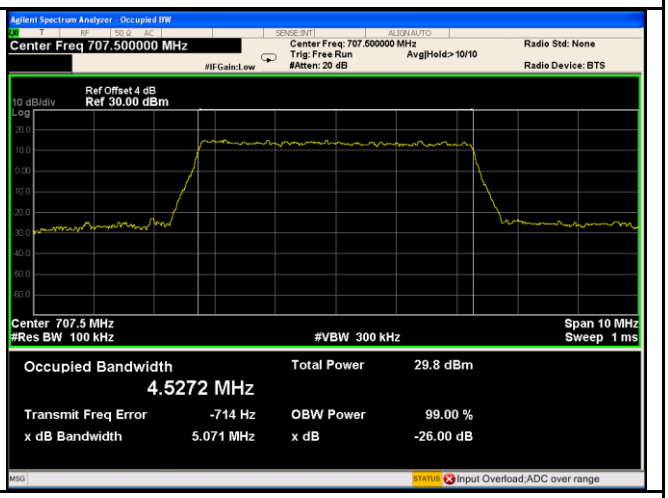
LTE Band XII - Low CH QPSK-5



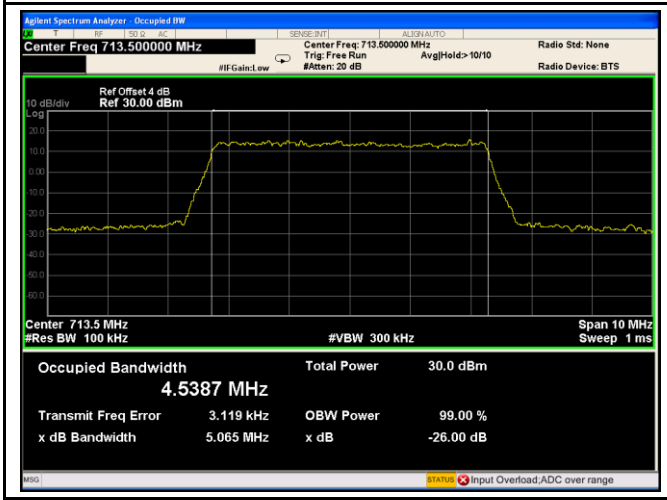
LTE Band XII - Low CH 16QAM-5



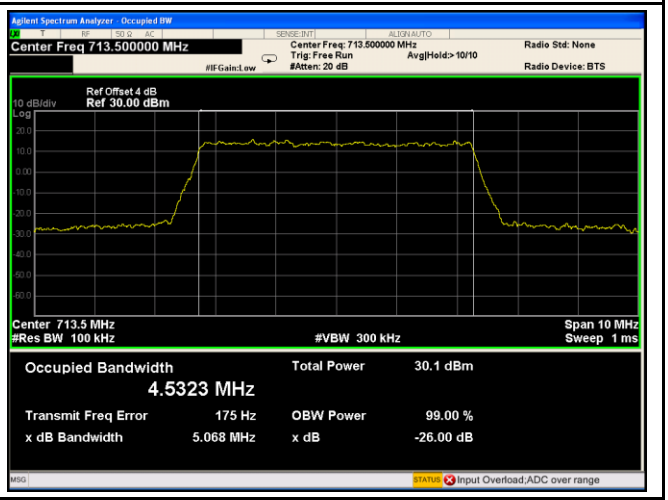
LTE Band XII - Middle CH QPSK-5



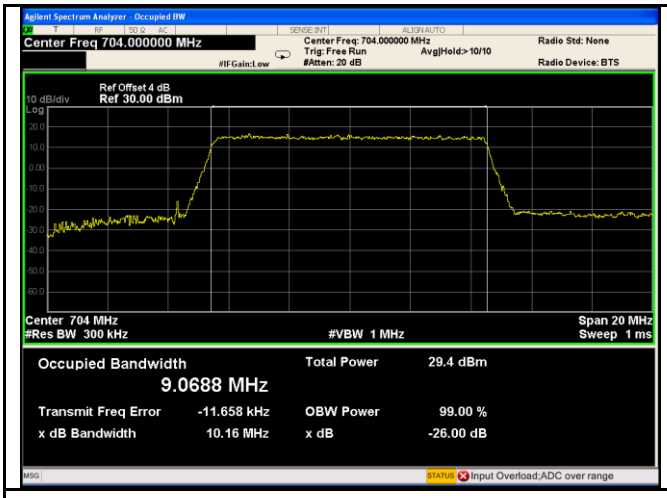
LTE Band XII - Middle CH 16QAM-5



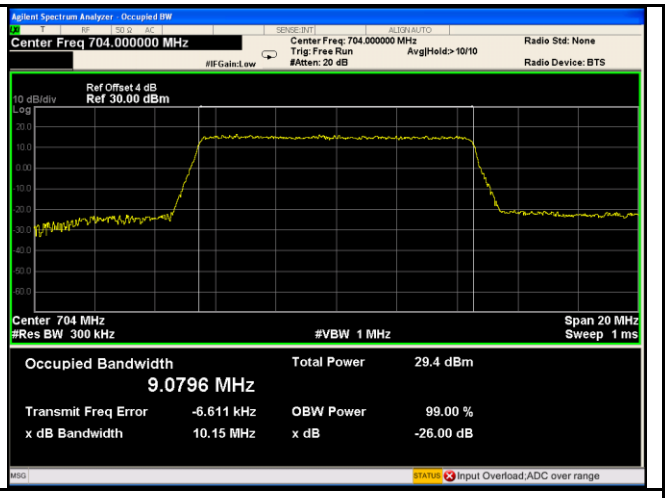
LTE Band XII - High CH QPSK-5



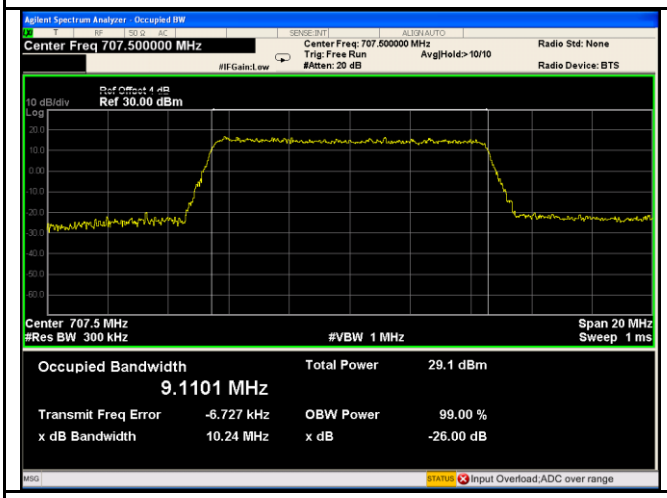
LTE Band XII - High CH 16QAM-5



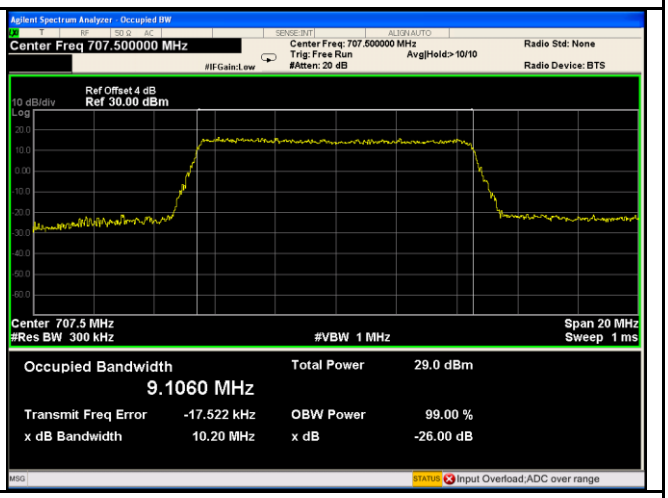
LTE Band XII - Low CH QPSK-10



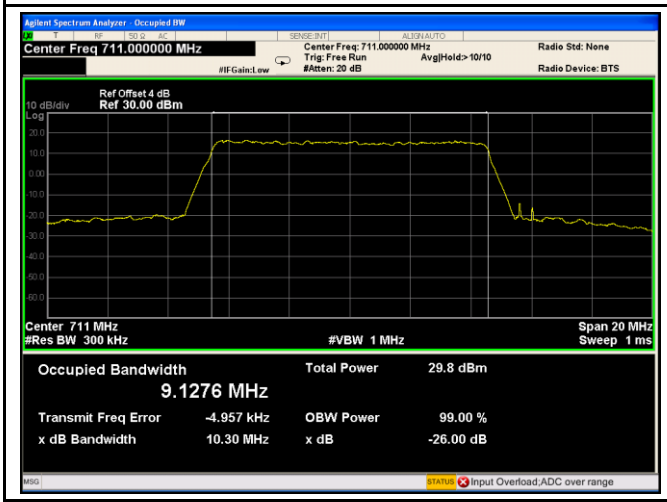
LTE Band XII - Low CH 16QAM-10



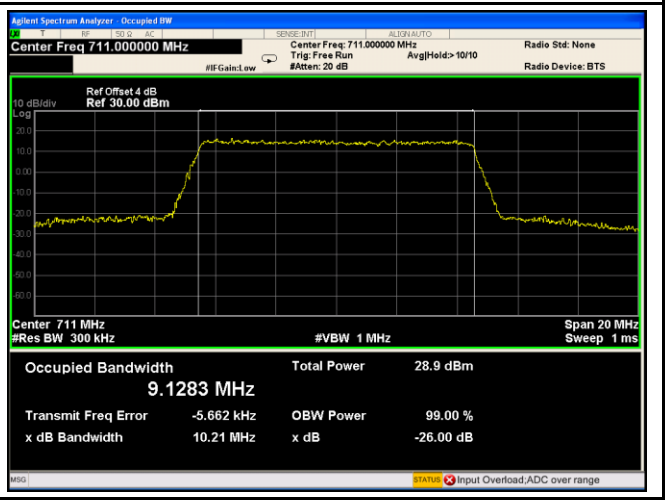
LTE Band XII - Middle CH QPSK-10



LTE Band XII - Middle CH 16QAM-10



LTE Band XII - High CH QPSK-10

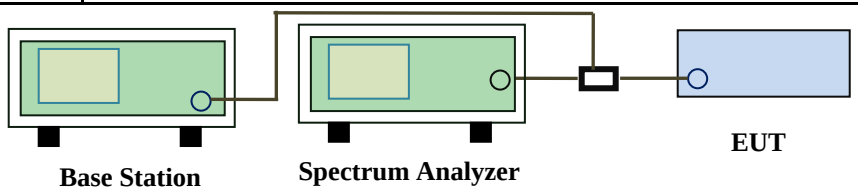


LTE Band XII - High CH 16QAM-10

6.5 Spurious Emissions at Antenna Terminals

Temperature	25 °C
Relative Humidity	55%
Atmospheric Pressure	1022mbar
Test date :	November 31, 2017
Tested By :	Aaron Liang

Requirement(s):

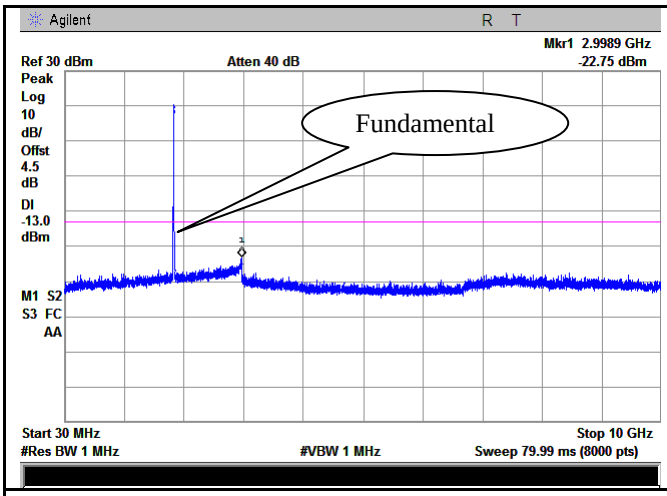
Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB	☑
Test Setup			
Test Procedure	- The EUT was connected 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

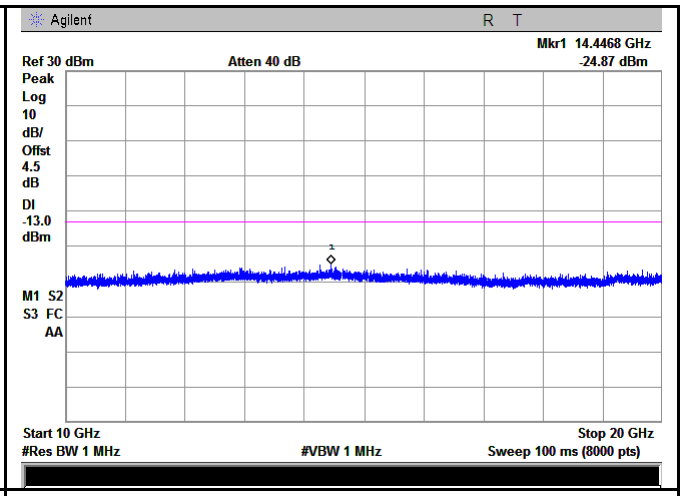
Test Plot ☑ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

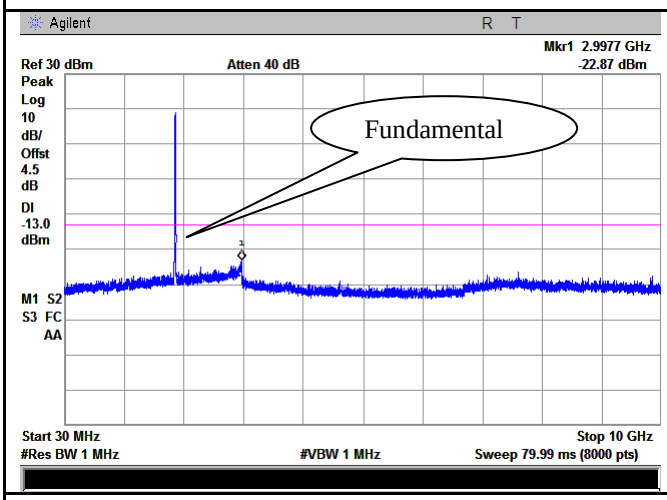
LTE Band II (Part 24E)



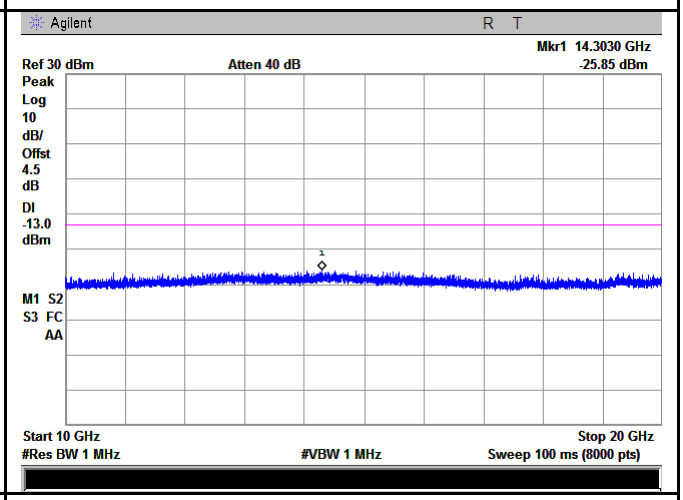
LTE Band II - Low Channel-1



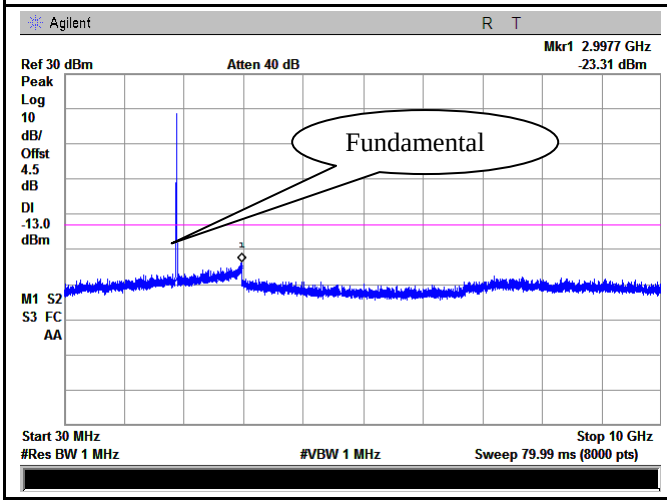
LTE Band II - Low Channel-2



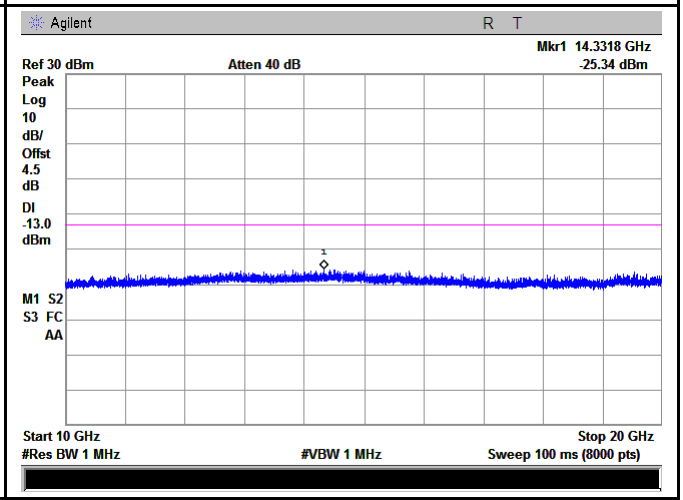
LTE Band II Middle Channel-1



LTE Band II Middle Channel-2



LTE Band II - High Channel-1



LTE Band II - High Channel-2