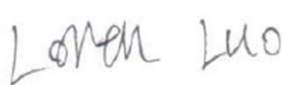




RF TEST REPORT



Report No.: 16071342-FCC-R5

Supersede Report No.: N/A

Applicant	BLU Products, Inc.	
Product Name	Smartphone	
Model No.	LIFE ONE X2 MINI	
Serial No.	N/A	
Test Standard	FCC Part 22(H):2015, FCC Part 24(E):2015, FCC Part 27: 2015; ANSI/TIA-603-D: 2010	
Test Date	November 26 to December 12, 2016	
Issue Date	December 13, 2016	
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Equipment complied with the specification	<input checked="" type="checkbox"/>	
Equipment did not comply with the specification	<input type="checkbox"/>	
		
Loren Luo Test Engineer	David Huang Checked By	
This test report may be reproduced in full only 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

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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.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

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
16071342-FCC-R5	NONE	Original	December 13, 2016

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

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.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT:	Smartphone
Main Model:	LIFE ONE X2 MINI
Serial Model:	N/A
Date EUT received:	November 25, 2016
Test Date(s):	November 26 to December 12, 2016
Equipment Category :	PCE
Antenna Gain:	GSM850: -0.5dBi PCS1900: 0.5dBi UMTS-FDD Band V: -0.5dBi UMTS-FDD Band IV: 0.5dBi UMTS-FDD Band II: 0.5dBi LTE Band II: 0.5dBi LTE Band IV: 0.5dBi LTE Band VII: 0.8dBi LTE Band XII: -0.5dBi LTE Band XVII: -0.5dBi WIFI: 1.6dBi Bluetooth/BLE: 1.6dBi GPS: 0.5dBi
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, $\pi/4$ DQPSK, 8DPSK BLE: GFSK GPS: BPSK

	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
RF Operating Frequency (ies):	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: 22.92 dBm
	LTE Band IV: 22.89dBm
	LTE Band VII: 22.41 dBm
	LTE Band XII: 22.93 dBm
	LTE Band XVII: 22.75 dBm
ERP/EIRP:	LTE Band II: 23.41 dBm / EIRP
	LTE Band IV: 23.35 dBm / EIRP
	LTE Band VII: 23.22dBm / EIRP
	LTE Band XII: 20.63dBm / EIRP
	LTE Band XVII: 20.03 dBm / ERP
Port:	USB Port, Earphone Port

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Adapter:

Model: US-BM-1500

Input: AC 100-240V,50/60Hz, 0.25A

Output: DC5V,1550mA

Battery:

Model: C705904300P

Spec: 3.84V,3000mAh,11.52Wh

Charging Limited Voltage: 4.4V

Input Power:

Trade Name :

BLU

FCC ID:

YHLBLULOX2MN

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

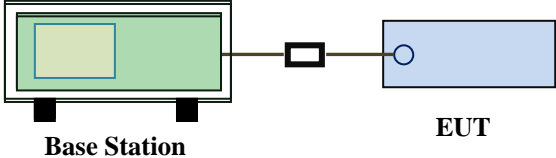
The EUT is a portable device, thus requires SAR evaluation;
Please refer to RF Exposure Evaluation Report: 16071342-FCC-H.

6.2 RF Output Power

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	<input checked="" type="checkbox"/>
§24.232 (c)	b)	EIRP:33dBm	<input checked="" type="checkbox"/>
§27.50 (c)	c)	EIRP: 30dBm	<input checked="" type="checkbox"/>

Test Setup	 <p>The diagram illustrates the test setup. On the left, a green rectangular box represents the 'Base Station'. A cable connects the Base Station to a blue rectangular box on the right, which is labeled 'EUT' (Equipment Under Test). The connection is shown as a simple line with a small square at the Base Station end and a small circle at the EUT end.</p>
------------	---

Test Procedure	<p>For Conducted Power:</p> <ul style="list-style-type: none"> - 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. <p>For ERP/EIRP:</p> <ul style="list-style-type: none"> - 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.
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	<ul style="list-style-type: none"> - 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 = $10 \log (\text{TX power in Watts}/0.001)$ – the absolute level - Spurious attenuation limit in dB = $43 + 10 \log_{10} (\text{power out in Watts})$.
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> 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	22.50	22±1
				1	49	0	22.51	22±1
				1	99	0	22.53	22±1
				50	0	1	21.51	22±1
				50	24	1	21.55	22±1
				50	49	1	21.53	22±1
				100	0	1	21.48	22±1
			16QAM	1	0	1	21.38	21.3±1
				1	49	1	21.33	21.3±1
				1	99	1	21.39	21.3±1
				50	0	2	21.51	21.3±1
				50	24	2	21.55	21.3±1
				50	49	2	21.53	21.3±1
				100	0	2	20.46	21.3±1
	18900	1880.0	QPSK	1	0	0	22.52	22±1
				1	49	0	22.55	22±1
				1	99	0	22.53	22±1
				50	0	1	21.52	22±1
				50	24	1	21.55	22±1
				50	49	1	21.54	22±1
				100	0	1	21.59	22±1
			16QAM	1	0	1	21.88	21.3±1
				1	49	1	21.85	21.3±1
				1	99	1	21.83	21.3±1
				50	0	2	21.52	21.3±1
				50	24	2	21.53	21.3±1
				50	49	2	21.54	21.3±1
				100	0	2	20.58	21.3±1
	19100	1900.0	QPSK	1	0	0	22.44	22±1
				1	49	0	22.46	22±1
				1	99	0	22.45	22±1
				50	0	1	21.71	22±1
				50	24	1	21.76	22±1
				50	49	1	21.74	22±1
				100	0	1	21.78	22±1
			16QAM	1	0	1	22.06	21.3±1
				1	49	1	22.10	21.3±1
				1	99	1	22.08	21.3±1
				50	0	2	21.71	21.3±1
				50	24	2	21.70	21.3±1
				50	49	2	21.73	21.3±1
				100	0	2	20.66	21.3±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	22.45	22±1
				1	37	0	22.46	22±1
				1	74	0	22.42	22±1
				36	0	1	21.44	22±1
				36	16	1	21.43	22±1
				36	35	1	21.45	22±1
				75	0	1	21.44	22±1
			16QAM	1	0	1	21.89	21.3±1
				1	37	1	21.88	21.3±1
				1	74	1	21.84	21.3±1
				36	0	2	21.44	21.3±1
				36	16	2	21.45	21.3±1
				36	35	2	21.46	21.3±1
				75	0	2	20.37	21.3±1
	18900	1880.0	QPSK	1	0	0	22.47	22±1
				1	37	0	22.44	22±1
				1	74	0	22.49	22±1
				36	0	1	21.55	22±1
				36	16	1	21.53	22±1
				36	35	1	21.59	22±1
				75	0	1	21.55	22±1
			16QAM	1	0	1	21.32	21.3±1
				1	37	1	21.33	21.3±1
				1	74	1	21.36	21.3±1
				36	0	2	21.55	21.3±1
				36	16	2	21.55	21.3±1
				36	35	2	21.52	21.3±1
				75	0	2	20.60	21.3±1
	19125	1902.5	QPSK	1	0	0	22.76	22±1
				1	37	0	22.74	22±1
				1	74	0	22.77	22±1
				36	0	1	21.78	22±1
				36	16	1	21.77	22±1
				36	35	1	21.74	22±1
				75	0	1	21.70	22±1
			16QAM	1	0	1	22.00	21.3±1
				1	37	1	22.10	21.3±1
				1	74	1	22.13	21.3±1
				36	0	2	21.78	21.3±1
				36	16	2	21.77	21.3±1
				36	35	2	21.74	21.3±1
				75	0	2	20.70	21.3±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	22.48	22±1
				1	24	0	22.46	22±1
				1	49	0	22.44	22±1
				25	0	1	21.50	22±1
				25	12	1	21.52	22±1
				25	24	1	21.55	22±1
				50	0	1	21.42	22±1
			16QAM	1	0	1	21.96	21.3±1
				1	24	1	21.92	21.3±1
				1	49	1	21.93	21.3±1
				25	0	2	21.50	21.3±1
				25	12	2	21.53	21.3±1
				25	24	2	21.55	21.3±1
				50	0	2	20.33	21.3±1
	18900	1880.0	QPSK	1	0	0	22.72	22±1
				1	24	0	22.74	22±1
				1	49	0	22.76	22±1
				25	0	1	21.46	22±1
				25	12	1	21.45	22±1
				25	24	1	21.47	22±1
				50	0	1	21.60	22±1
			16QAM	1	0	1	21.33	21.3±1
				1	24	1	21.33	21.3±1
				1	49	1	21.36	21.3±1
				25	0	2	21.46	21.3±1
				25	12	2	21.44	21.3±1
				25	24	2	21.43	21.3±1
				50	0	2	20.47	21.3±1
	19150	1905	QPSK	1	0	0	22.73	22±1
				1	24	0	22.77	22±1
				1	49	0	22.71	22±1
				25	0	1	21.72	22±1
				25	12	1	21.74	22±1
				25	24	1	21.73	22±1
				50	0	1	21.75	22±1
			16QAM	1	0	1	21.90	21.3±1
				1	24	1	21.92	21.3±1
				1	49	1	21.87	21.3±1
				25	0	2	21.72	21.3±1
				25	12	2	21.74	21.3±1
				25	24	2	21.73	21.3±1
				50	0	2	20.75	21.3±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	22.67	22±1
				1	12	0	22.65	22±1
				1	24	0	22.63	22±1
				12	0	1	21.50	22±1
				12	6	1	21.55	22±1
				12	11	1	21.53	22±1
				25	0	1	21.48	22±1
			16QAM	1	0	1	22.15	21.3±1
				1	12	1	22.16	21.3±1
				1	24	1	22.17	21.3±1
				12	0	2	21.50	21.3±1
				12	6	2	21.53	21.3±1
				12	11	2	21.51	21.3±1
				25	0	2	20.46	21.3±1
	18900	1880.0	QPSK	1	0	0	22.91	22±1
				1	12	0	22.92	22±1
				1	24	0	22.89	22±1
				12	0	1	21.58	22±1
				12	6	1	21.56	22±1
				12	11	1	21.57	22±1
				25	0	1	21.46	22±1
			16QAM	1	0	1	21.85	21.3±1
				1	12	1	21.86	21.3±1
				1	24	1	21.87	21.3±1
				12	0	2	21.58	21.3±1
				12	6	2	21.56	21.3±1
				12	11	2	21.53	21.3±1
				25	0	2	20.30	21.3±1
	19175	1907.5	QPSK	1	0	0	22.74	22±1
				1	12	0	22.76	22±1
				1	24	0	22.71	22±1
				12	0	1	21.58	22±1
				12	6	1	21.61	22±1
				12	11	1	21.55	22±1
				25	0	1	21.67	22±1
			16QAM	1	0	1	21.30	21.3±1
				1	12	1	21.33	21.3±1
				1	24	1	21.39	21.3±1
				12	0	2	21.58	21.3±1
				12	6	2	21.59	21.3±1
				12	11	2	21.55	21.3±1
				25	0	2	20.74	21.3±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	22.54	22±1
				1	7	0	22.51	22±1
				1	14	0	22.53	22±1
				8	0	1	21.39	22±1
				8	4	1	21.35	22±1
				8	7	1	21.33	22±1
				15	0	1	21.45	22±1
			16QAM	1	0	1	21.87	21.2±1
				1	7	1	21.88	21.2±1
				1	14	1	21.85	21.2±1
				8	0	2	20.36	21.2±1
				8	4	2	20.39	21.2±1
				8	7	2	20.41	21.2±1
				15	0	2	20.31	21.2±1
	18900	1880.0	QPSK	1	0	0	22.63	22±1
				1	7	0	22.65	22±1
				1	14	0	22.64	22±1
				8	0	1	21.48	22±1
				8	4	1	21.42	22±1
				8	7	1	21.46	22±1
				15	0	1	21.48	22±1
			16QAM	1	0	1	21.34	21.2±1
				1	7	1	21.33	21.2±1
				1	14	1	21.31	21.2±1
				8	0	2	20.33	21.2±1
				8	4	2	20.35	21.2±1
				8	7	2	20.39	21.2±1
				15	0	2	20.34	21.2±1
	19175	1907.5	QPSK	1	0	0	22.56	22±1
				1	7	0	22.59	22±1
				1	14	0	22.54	22±1
				8	0	1	21.60	22±1
				8	4	1	21.63	22±1
				8	7	1	21.65	22±1
				15	0	1	21.65	22±1
			16QAM	1	0	1	21.53	21.3±1
				1	7	1	21.56	21.3±1
				1	14	1	21.52	21.3±1
				8	0	2	20.51	21.3±1
				8	4	2	20.53	21.3±1
				8	7	2	20.55	21.3±1
				15	0	2	20.73	21.3±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	22.32	22±1
				1	2	0	22.36	22±1
				1	5	0	22.35	22±1
				3	0	0	22.47	22±1
				3	1	0	22.45	22±1
				3	2	0	22.49	22±1
				6	0	1	21.40	22±1
			16QAM	1	0	1	21.78	21.3±1
				1	2	1	21.74	21.3±1
				1	5	1	21.73	21.3±1
				3	0	1	22.47	21.3±1
				3	1	1	22.46	21.3±1
				3	2	1	22.41	21.3±1
				6	0	2	20.37	21.3±1
	18900	1880.0	QPSK	1	0	0	22.64	22±1
				1	2	0	22.65	22±1
				1	5	0	22.61	22±1
				3	0	0	22.43	22±1
				3	1	0	22.41	22±1
				3	2	0	22.46	22±1
				6	0	1	21.56	22±1
			16QAM	1	0	1	21.23	21.3±1
				1	2	1	21.26	21.3±1
				1	5	1	21.24	21.3±1
				3	0	1	22.43	21.3±1
				3	1	1	22.41	21.3±1
				3	2	1	22.46	21.3±1
				6	0	2	20.56	21.3±1
	19193	1909.3	QPSK	1	0	0	22.30	22±1
				1	2	0	22.35	22±1
				1	5	0	22.32	22±1
				3	0	0	22.73	22±1
				3	1	0	22.74	22±1
				3	2	0	22.71	22±1
				6	0	1	21.63	22±1
			16QAM	1	0	1	21.66	21.3±1
				1	2	1	21.62	21.3±1
				1	5	1	21.61	21.3±1
				3	0	1	22.73	21.3±1
				3	1	1	22.71	21.3±1
				3	2	1	22.73	21.3±1
				6	0	2	20.60	21.3±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	22.84	22±1
				1	49	0	22.86	22±1
				1	99	0	22.85	22±1
				50	0	1	21.66	22±1
				50	24	1	21.70	22±1
				50	49	1	21.65	22±1
				100	0	1	21.69	22±1
			16QAM	1	0	1	21.40	21.3±1
				1	49	1	21.45	21.3±1
				1	99	1	21.46	21.3±1
				50	0	2	21.66	21.3±1
				50	24	2	21.65	21.3±1
				50	49	2	21.63	21.3±1
				100	0	2	20.67	21.3±1
	20175	1732.5	QPSK	1	0	0	22.42	22±1
				1	49	0	22.45	22±1
				1	99	0	22.43	22±1
				50	0	1	21.74	22±1
				50	24	1	21.76	22±1
				50	49	1	21.79	22±1
				100	0	1	21.71	22±1
			16QAM	1	0	1	22.12	21.3±1
				1	49	1	22.13	21.3±1
				1	99	1	22.20	21.3±1
				50	0	2	21.74	21.3±1
				50	24	2	21.76	21.3±1
				50	49	2	21.70	21.3±1
				100	0	2	20.58	21.3±1
	20300	1745.0	QPSK	1	0	0	22.48	22±1
				1	49	0	22.50	22±1
				1	99	0	22.51	22±1
				50	0	1	21.83	22±1
				50	24	1	21.80	22±1
				50	49	1	21.85	22±1
				100	0	1	21.71	22±1
			16QAM	1	0	1	22.12	21.3±1
				1	49	1	22.15	21.3±1
				1	99	1	22.20	21.3±1
				50	0	2	21.83	21.3±1
				50	24	2	21.85	21.3±1
				50	49	2	21.86	21.3±1
				100	0	2	20.54	21.3±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	22.59	22 ± 1
				1	37	0	22.56	22 ± 1
				1	74	0	22.57	22 ± 1
				36	0	1	21.79	22 ± 1
				36	16	1	21.82	22 ± 1
				36	35	1	21.76	22 ± 1
				75	0	1	21.66	22 ± 1
			16QAM	1	0	1	21.95	21.3 ± 1
				1	37	1	21.93	21.3 ± 1
				1	74	1	21.89	21.3 ± 1
				36	0	2	21.79	21.3 ± 1
				36	16	2	21.81	21.3 ± 1
				36	35	2	21.83	21.3 ± 1
				75	0	2	20.74	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.42	22 ± 1
				1	37	0	22.45	22 ± 1
				1	74	0	22.43	22 ± 1
				36	0	1	21.65	22 ± 1
				36	16	1	21.69	22 ± 1
				36	35	1	21.63	22 ± 1
				75	0	1	21.64	22 ± 1
			16QAM	1	0	1	21.22	21.3 ± 1
				1	37	1	21.25	21.3 ± 1
				1	74	1	21.30	21.3 ± 1
				36	0	2	21.65	21.3 ± 1
				36	16	2	21.69	21.3 ± 1
				36	35	2	21.63	21.3 ± 1
				75	0	2	20.48	21.3 ± 1
	20325	1747.5	QPSK	1	0	0	22.60	22 ± 1
				1	37	0	22.63	22 ± 1
				1	74	0	22.61	22 ± 1
				36	0	1	21.63	22 ± 1
				36	16	1	21.65	22 ± 1
				36	35	1	21.66	22 ± 1
				75	0	1	21.52	22 ± 1
			16QAM	1	0	1	22.27	21.4 ± 1
				1	37	1	22.30	21.4 ± 1
				1	74	1	22.29	21.4 ± 1
				36	0	2	21.63	21.4 ± 1
				36	16	2	21.65	21.4 ± 1
				36	35	2	21.66	21.4 ± 1
				75	0	2	20.56	21.4 ± 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	22.70	22±1
				1	24	0	22.75	22±1
				1	49	0	22.73	22±1
				25	0	1	21.79	22±1
				25	12	1	21.82	22±1
				25	24	1	21.74	22±1
				50	0	1	21.73	22±1
			16QAM	1	0	1	22.07	21.3±1
				1	24	1	22.06	21.3±1
				1	49	1	22.12	21.3±1
				25	0	2	21.79	21.3±1
				25	12	2	21.80	21.3±1
				25	24	2	21.75	21.3±1
				50	0	2	21.73	21.3±1
	20175	1732.5	QPSK	1	0	0	22.42	22±1
				1	24	0	22.43	22±1
				1	49	0	22.41	22±1
				25	0	1	21.69	22±1
				25	12	1	21.70	22±1
				25	24	1	21.71	22±1
				50	0	1	21.67	22±1
			16QAM	1	0	1	21.91	21.3±1
				1	24	1	21.93	21.3±1
				1	49	1	21.89	21.3±1
				25	0	2	21.69	21.3±1
				25	12	2	21.70	21.3±1
				25	24	2	21.73	21.3±1
				50	0	2	20.53	21.3±1
	20350	1750.0	QPSK	1	0	0	22.56	22±1
				1	24	0	22.60	22±1
				1	49	0	22.52	22±1
				25	0	1	21.59	22±1
				25	12	1	21.62	22±1
				25	24	1	21.59	22±1
				50	0	1	21.47	22±1
			16QAM	1	0	1	21.66	21.3±1
				1	24	1	21.69	21.3±1
				1	49	1	21.65	21.3±1
				25	0	2	21.59	21.3±1
				25	12	2	21.62	21.3±1
				25	24	2	21.63	21.3±1
				50	0	2	20.38	21.3±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	22.85	22±1
				1	12	0	22.88	22±1
				1	24	0	22.81	22±1
				12	0	1	21.89	22±1
				12	6	1	21.88	22±1
				12	11	1	21.82	22±1
				25	0	1	21.80	22±1
			16QAM	1	0	1	21.79	21.3±1
				1	12	1	21.80	21.3±1
				1	24	1	21.74	21.3±1
				12	0	2	21.89	21.3±1
				12	6	2	21.85	21.3±1
				12	11	2	21.80	21.3±1
				25	0	2	20.88	21.3±1
	20175	1732.5	QPSK	1	0	0	22.63	22±1
				1	12	0	22.65	22±1
				1	24	0	22.61	22±1
				12	0	1	21.67	22±1
				12	6	1	21.66	22±1
				12	11	1	21.62	22±1
				25	0	1	21.67	22±1
			16QAM	1	0	1	21.55	21.3±1
				1	12	1	21.56	21.3±1
				1	24	1	21.52	21.3±1
				12	0	2	21.67	21.3±1
				12	6	2	21.65	21.3±1
				12	11	2	21.66	21.3±1
				25	0	2	20.51	21.3±1
	20350	1750.0	QPSK	1	0	0	22.30	22±1
				1	12	0	22.35	22±1
				1	24	0	22.31	22±1
				12	0	1	21.48	22±1
				12	6	1	21.49	22±1
				12	11	1	21.50	22±1
				25	0	1	21.45	22±1
			16QAM	1	0	1	21.44	21.3±1
				1	12	1	21.46	21.3±1
				1	24	1	21.49	21.3±1
				12	0	2	21.48	21.3±1
				12	6	2	21.46	21.3±1
				12	11	2	21.43	21.3±1
				25	0	2	20.62	21.3±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	22.79	22±1
				1	7	0	22.74	22±1
				1	14	0	22.71	22±1
				8	0	1	21.87	22±1
				8	4	1	21.88	22±1
				8	7	1	21.85	22±1
				15	0	1	21.79	22±1
			16QAM	1	0	1	22.16	21±1
				1	7	1	22.10	21±1
				1	14	1	21.90	21±1
				8	0	2	20.66	21±1
				8	4	2	20.70	21±1
				8	7	2	20.69	21±1
				15	0	2	20.73	21±1
	20175	1732.5	QPSK	1	0	0	22.57	22±1
				1	7	0	22.54	22±1
				1	14	0	22.51	22±1
				8	0	1	21.65	22±1
				8	4	1	21.66	22±1
				8	7	1	21.60	22±1
				15	0	1	21.73	22±1
			16QAM	1	0	1	21.28	21±1
				1	7	1	21.25	21±1
				1	14	1	21.30	21±1
				8	0	2	20.58	21±1
				8	4	2	20.60	21±1
				8	7	2	20.54	21±1
				15	0	2	20.65	21±1
	20385	1753.5	QPSK	1	0	0	22.22	22±1
				1	7	0	22.26	22±1
				1	14	0	22.30	22±1
				8	0	1	21.18	22±1
				8	4	1	21.20	22±1
				8	7	1	21.22	22±1
				15	0	1	21.41	22±1
			16QAM	1	0	1	21.65	21.3±1
				1	7	1	21.66	21.3±1
				1	14	1	21.59	21.3±1
				8	0	2	20.30	21.3±1
				8	4	2	20.31	21.3±1
				8	7	2	20.33	21.3±1
				15	0	2	20.57	21.3±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	22.65	22±1
				1	2	0	22.62	22±1
				1	5	0	22.61	22±1
				3	0	0	22.89	22±1
				3	1	0	22.84	22±1
				3	2	0	22.81	22±1
				6	0	1	21.84	22±1
			16QAM	1	0	1	22.06	21.3±1
				1	2	1	22.10	21.3±1
				1	5	1	22.13	21.3±1
				3	0	1	22.89	21.3±1
				3	1	1	22.80	21.3±1
				3	2	1	22.84	21.3±1
				6	0	2	20.53	21.3±1
	20175	1732.5	QPSK	1	0	0	22.59	22±1
				1	2	0	22.54	22±1
				1	5	0	22.55	22±1
				3	0	0	22.56	22±1
				3	1	0	22.51	22±1
				3	2	0	22.53	22±1
				6	0	1	21.68	22±1
			16QAM	1	0	1	21.06	22±1
				1	2	1	21.10	22±1
				1	5	1	21.21	22±1
				3	0	1	22.56	22±1
				3	1	1	22.52	22±1
				3	2	1	22.53	22±1
				6	0	2	21.68	22±1
	20393	1754.3	QPSK	1	0	0	22.49	22±1
				1	2	0	22.45	22±1
				1	5	0	22.43	22±1
				3	0	0	22.28	22±1
				3	1	0	22.31	22±1
				3	2	0	22.24	22±1
				6	0	1	21.46	22±1
			16QAM	1	0	1	21.13	21.3±1
				1	2	1	21.16	21.3±1
				1	5	1	21.20	21.3±1
				3	0	1	22.28	21.3±1
				3	1	1	22.30	21.3±1
				3	2	1	22.24	21.3±1
				6	0	2	20.47	21.3±1

LTE Band VII:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20850	2510	QPSK	1	0	0	21.99	21.3±1
				1	49	0	22.10	21.3±1
				1	99	0	21.98	21.3±1
				50	0	1	21.01	21.3±1
				50	24	1	21.13	21.3±1
				50	49	1	21.15	21.3±1
				100	0	1	20.98	21.3±1
			16QAM	1	0	1	21.04	21±1
				1	49	1	21.05	21±1
				1	99	1	21.10	21±1
				50	0	2	21.01	21±1
				50	24	2	21.06	21±1
				50	49	2	21.12	21±1
				100	0	2	20.42	21±1
	21100	2535	QPSK	1	0	0	21.76	22±1
				1	49	0	21.72	22±1
				1	99	0	21.71	22±1
				50	0	1	21.32	22±1
				50	24	1	21.36	22±1
				50	49	1	21.33	22±1
				100	0	1	21.28	22±1
			16QAM	1	0	1	21.50	21.3±1
				1	49	1	21.53	21.3±1
				1	99	1	21.52	21.3±1
				50	0	2	21.32	21.3±1
				50	24	2	21.36	21.3±1
				50	49	2	21.33	21.3±1
				100	0	2	20.35	21.3±1
	21350	2560	QPSK	1	0	0	22.13	22±1
				1	49	0	22.15	22±1
				1	99	0	22.23	22±1
				50	0	1	21.31	22±1
				50	24	1	21.35	22±1
				50	49	1	21.32	22±1
				100	0	1	21.38	22±1
			16QAM	1	0	1	21.65	21±1
				1	49	1	21.66	21±1
				1	99	1	21.69	21±1
				50	0	2	21.31	21±1
				50	24	2	21.36	21±1
				50	49	2	21.33	21±1
				100	0	2	20.33	21±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20825	2507.5	QPSK	1	0	0	21.96	21.3±1
				1	37	0	21.95	21.3±1
				1	74	0	21.93	21.3±1
				36	0	1	20.90	21.3±1
				36	16	1	20.93	21.3±1
				36	35	1	20.91	21.3±1
				75	0	1	20.93	21.3±1
			16QAM	1	0	1	21.86	21.3±1
				1	37	1	21.83	21.3±1
				1	74	1	21.81	21.3±1
				36	0	2	20.90	21.3±1
				36	16	2	20.92	21.3±1
				36	35	2	20.93	21.3±1
				75	0	2	20.32	21.3±1
	21100	2535	QPSK	1	0	0	21.92	22±1
				1	37	0	21.95	22±1
				1	74	0	21.93	22±1
				36	0	1	21.30	22±1
				36	16	1	21.35	22±1
				36	35	1	21.39	22±1
				75	0	1	21.12	22±1
			16QAM	1	0	1	20.61	21.3±1
				1	37	1	20.66	21.3±1
				1	74	1	20.63	21.3±1
				36	0	2	21.30	21.3±1
				36	16	2	21.35	21.3±1
				36	35	2	21.33	21.3±1
				75	0	2	20.33	21.3±1
	21375	2562.5	QPSK	1	0	0	22.12	21.3±1
				1	37	0	22.16	21.3±1
				1	74	0	22.15	21.3±1
				36	0	1	21.40	21.3±1
				36	16	1	21.42	21.3±1
				36	35	1	21.43	21.3±1
				75	0	1	21.34	21.3±1
			16QAM	1	0	1	21.39	21±1
				1	37	1	21.36	21±1
				1	74	1	21.39	21±1
				36	0	2	21.40	21±1
				36	16	2	21.42	21±1
				36	35	2	21.43	21±1
				75	0	2	20.33	21±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	22.38	22±1
				1	24	0	22.41	22±1
				1	49	0	22.39	22±1
				25	0	1	21.99	22±1
				25	12	1	21.89	22±1
				25	24	1	21.95	22±1
				50	0	1	21.95	22±1
			16QAM	1	0	1	21.33	21.3±1
				1	24	1	21.36	21.3±1
				1	49	1	21.39	21.3±1
				25	0	2	21.99	21.3±1
				25	12	2	21.95	21.3±1
				25	24	2	21.96	21.3±1
				50	0	2	20.90	21.3±1
	21100	2535	QPSK	1	0	0	22.08	22±1
				1	24	0	22.11	22±1
				1	49	0	22.12	22±1
				25	0	1	21.27	22±1
				25	12	1	21.30	22±1
				25	24	1	21.32	22±1
				50	0	1	21.17	22±1
			16QAM	1	0	1	21.33	21±1
				1	24	1	21.36	21±1
				1	49	1	21.39	21±1
				25	0	2	21.27	21±1
				25	12	2	21.31	21±1
				25	24	2	21.32	21±1
				50	0	2	20.35	21±1
	21400	2565	QPSK	1	0	0	22.31	22±1
				1	24	0	22.35	22±1
				1	49	0	22.32	22±1
				25	0	1	21.38	22±1
				25	12	1	21.40	22±1
				25	24	1	21.36	22±1
				50	0	1	21.41	22±1
			16QAM	1	0	1	21.64	21.3±1
				1	24	1	21.63	21.3±1
				1	49	1	21.66	21.3±1
				25	0	2	21.38	21.3±1
				25	12	2	21.39	21.3±1
				25	24	2	21.42	21.3±1
				50	0	2	20.33	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	19975	2502.5	QPSK	1	0	0	22.34	22±1
				1	12	0	22.36	22±1
				1	24	0	22.39	22±1
				12	0	1	21.19	22±1
				12	6	1	21.21	22±1
				12	11	1	21.22	22±1
				25	0	1	20.94	22±1
			16QAM	1	0	1	21.50	21±1
				1	12	1	21.53	21±1
				1	24	1	21.54	21±1
				12	0	2	21.19	21±1
				12	6	2	21.20	21±1
				12	11	2	21.23	21±1
				25	0	2	20.37	21±1
	20175	2535	QPSK	1	0	0	22.11	22±1
				1	12	0	22.15	22±1
				1	24	0	22.16	22±1
				12	0	1	21.29	22±1
				12	6	1	21.30	22±1
				12	11	1	21.26.	22±1
				25	0	1	21.25	22±1
			16QAM	1	0	1	21.26.	21.3±1
				1	12	1	21.23	21.3±1
				1	24	1	21.25	21.3±1
				12	0	2	21.29	21.3±1
				12	6	2	21.30	21.3±1
				12	11	2	21.32	21.3±1
				25	0	2	20.38	21.3±1
	20375	2567.5	QPSK	1	0	0	22.14	22±1
				1	12	0	22.16	22±1
				1	24	0	22.20	22±1
				12	0	1	21.28	22±1
				12	6	1	21.30	22±1
				12	11	1	21.31	22±1
				25	0	1	21.28	22±1
			16QAM	1	0	1	20.92	21.3±1
				1	12	1	20.95	21.3±1
				1	24	1	20.89	21.3±1
				12	0	2	21.28	21.3±1
				12	6	2	21.30	21.3±1
				12	11	2	21.31	21.3±1
				25	0	2	20.55	21.3±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	22.60	22±1
				1	24	0	22.63	22±1
				1	49	0	22.62	22±1
				25	0	1	21.83	22±1
				25	12	1	21.85	22±1
				25	24	1	21.84	22±1
				50	0	1	21.83	22±1
			16QAM	1	0	1	21.84	21.3±1
				1	24	1	21.86	21.3±1
				1	49	1	21.85	21.3±1
				25	0	2	21.83	21.3±1
				25	12	2	21.85	21.3±1
				25	24	2	21.83	21.3±1
				50	0	2	20.87	21.3±1
	23095	707.5	QPSK	1	0	0	22.63	22±1
				1	24	0	22.65	22±1
				1	49	0	22.61	22±1
				25	0	1	21.85	22±1
				25	12	1	21.86	22±1
				25	24	1	21.88	22±1
				50	0	1	21.79	22±1
			16QAM	1	0	1	21.81	21.3±1
				1	24	1	21.86	21.3±1
				1	49	1	21.82	21.3±1
				25	0	2	21.85	21.3±1
				25	12	2	21.86	21.3±1
				25	24	2	21.89	21.3±1
				50	0	2	20.85	21.3±1
	23130	711	QPSK	1	0	0	22.87	22±1
				1	24	0	22.86	22±1
				1	49	0	22.81	22±1
				25	0	1	21.90	22±1
				25	12	1	21.93	22±1
				25	24	1	21.95	22±1
				50	0	1	21.75	22±1
			16QAM	1	0	1	21.96	21.3±1
				1	24	1	21.92	21.3±1
				1	49	1	21.93	21.3±1
				25	0	2	21.90	21.3±1
				25	12	2	21.93	21.3±1
				25	24	2	21.94	21.3±1
				50	0	2	20.82	21.3±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	22.90	22.5±1
				1	12	0	22.92	22.5±1
				1	24	0	22.93	22.5±1
				12	0	1	21.84	22.5±1
				12	6	1	21.86	22.5±1
				12	11	1	21.87	22.5±1
				25	0	1	21.89	22.5±1
			16QAM	1	0	1	22.32	21.5±1
				1	12	1	22.36	21.5±1
				1	24	1	22.30	21.5±1
				12	0	2	21.84	21.5±1
				12	6	2	21.86	21.5±1
				12	11	2	21.82	21.5±1
				25	0	2	20.91	21.5±1
	23095	707.5	QPSK	1	0	0	22.58	22±1
				1	12	0	22.61	22±1
				1	24	0	22.63	22±1
				12	0	1	21.86	22±1
				12	6	1	21.84	22±1
				12	11	1	21.83	22±1
				25	0	1	21.89	22±1
			16QAM	1	0	1	21.80	21.3±1
				1	12	1	21.86	21.3±1
				1	24	1	21.83	21.3±1
				12	0	2	21.89	21.3±1
				12	6	2	21.85	21.3±1
				12	11	2	21.87	21.3±1
				25	0	2	20.92	21.3±1
	23155	713.5	QPSK	1	0	0	22.75	22±1
				1	12	0	22.71	22±1
				1	24	0	22.73	22±1
				12	0	1	21.68	22±1
				12	6	1	21.69	22±1
				12	11	1	21.63	22±1
				25	0	1	21.66	22±1
			16QAM	1	0	1	21.56	21.3±1
				1	12	1	21.59	21.3±1
				1	24	1	21.52	21.3±1
				12	0	2	21.68	21.3±1
				12	6	2	21.69	21.3±1
				12	11	2	21.65	21.3±1
				25	0	2	20.60	21.3±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	22.86	22±1
				1	7	0	22.84	22±1
				1	14	0	22.89	22±1
				8	0	1	21.89	22±1
				8	4	1	21.91	22±1
				8	7	1	21.90	22±1
				15	0	1	21.91	22±1
			16QAM	1	0	1	21.78	21.3±1
				1	7	1	21.81	21.3±1
				1	14	1	21.80	21.3±1
				8	0	2	20.58	21.3±1
				8	4	2	20.60	21.3±1
				8	7	2	20.61	21.3±1
				15	0	2	20.79	21.3±1
	23095	707.5	QPSK	1	0	0	22.73	22±1
				1	7	0	22.75	22±1
				1	14	0	22.76	22±1
				8	0	1	21.83	22±1
				8	4	1	21.85	22±1
				8	7	1	21.86	22±1
				15	0	1	21.93	22±1
			16QAM	1	0	1	21.76	21.3±1
				1	7	1	21.75	21.3±1
				1	14	1	21.71	21.3±1
				8	0	2	20.76	21.3±1
				8	4	2	20.78	21.3±1
				8	7	2	20.74	21.3±1
				15	0	2	20.89	21.3±1
	23025	714.5	QPSK	1	0	0	22.76	22±1
				1	7	0	22.81	22±1
				1	14	0	22.74	22±1
				8	0	1	21.67	22±1
				8	4	1	21.66	22±1
				8	7	1	21.64	22±1
				15	0	1	21.69	22±1
			16QAM	1	0	1	22.04	21.3±1
				1	7	1	22.10	21.3±1
				1	14	1	22.09	21.3±1
				8	0	2	20.71	21.3±1
				8	4	2	20.73	21.3±1
				8	7	2	20.75	21.3±1
				15	0	2	20.84	21.3±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	22.79	22±1
				1	2	0	22.80	22±1
				1	5	0	22.81	22±1
				3	0	0	22.89	22±1
				3	1	0	22.90	22±1
				3	2	0	22.91	22±1
				6	0	1	21.76	22±1
			16QAM	1	0	1	21.98	21.3±1
				1	2	1	21.99	21.3±1
				1	5	1	21.96	21.3±1
				3	0	1	22.89	21.3±1
				3	1	1	22.86	21.3±1
				3	2	1	22.84	21.3±1
				6	0	2	20.55	21.3±1
	23095	707.5	QPSK	1	0	0	22.78	22±1
				1	2	0	22.80	22±1
				1	5	0	22.76	22±1
				3	0	0	22.78	22±1
				3	1	0	22.76	22±1
				3	2	0	22.71	22±1
				6	0	1	21.95	22±1
			16QAM	1	0	1	21.59	21.9±1
				1	2	1	21.61	21.9±1
				1	5	1	21.63	21.9±1
				3	0	1	22.78	21.9±1
				3	1	1	22.81	21.9±1
				3	2	1	22.79	21.9±1
				6	0	2	20.96	21.9±1
	23173	715.3	QPSK	1	0	0	22.68	22±1
				1	2	0	22.71	22±1
				1	5	0	22.73	22±1
				3	0	0	22.62	22±1
				3	1	0	22.65	22±1
				3	2	0	22.61	22±1
				6	0	1	21.75	22±1
			16QAM	1	0	1	21.61	21.3±1
				1	2	1	21.63	21.3±1
				1	5	1	21.65	21.3±1
				3	0	1	22.62	21.3±1
				3	1	1	22.63	21.3±1
				3	2	1	22.61	21.3±1
				6	0	2	20.78	21.3±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	22.43	22±1
				1	24	0	22.45	22±1
				1	49	0	22.46	22±1
				25	0	1	21.63	22±1
				25	12	1	21.61	22±1
				25	24	1	21.66	22±1
				50	0	1	21.52	22±1
			16QAM	1	0	1	21.50	21.3±1
				1	24	1	21.52	21.3±1
				1	49	1	21.53	21.3±1
				25	0	2	21.63	21.3±1
				25	12	2	21.66	21.3±1
				25	24	2	21.64	21.3±1
				50	0	2	20.67	21.3±1
	23790	701.0	QPSK	1	0	0	22.71	22±1
				1	24	0	22.73	22±1
				1	49	0	22.75	22±1
				25	0	1	21.61	22±1
				25	12	1	21.63	22±1
				25	24	1	21.65	22±1
				50	0	1	21.55	22±1
			16QAM	1	0	1	21.51	21.3±1
				1	24	1	21.55	21.3±1
				1	49	1	21.53	21.3±1
				25	0	2	21.61	21.3±1
				25	12	2	21.63	21.3±1
				25	24	2	21.64	21.3±1
				50	0	2	20.66	21.3±1
	23800	711.0	QPSK	1	0	0	22.63	22±1
				1	24	0	22.65	22±1
				1	49	0	22.61	22±1
				25	0	1	21.59	22±1
				25	12	1	21.56	22±1
				25	24	1	21.62	22±1
				50	0	1	21.55	22±1
			16QAM	1	0	1	22.06	21.3±1
				1	24	1	22.10	21.3±1
				1	49	1	22.12	21.3±1
				25	0	2	21.59	21.3±1
				25	12	2	21.61	21.3±1
				25	24	2	21.62	21.3±1
				50	0	2	20.49	21.3±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	22.35	22±1
				1	12	0	22.36	22±1
				1	24	0	22.38	22±1
				12	0	1	21.42	22±1
				12	6	1	22.41	22±1
				12	11	1	22.45	22±1
				25	0	1	21.64	22±1
			16QAM	1	0	1	22.31	22±1
				1	12	1	22.38	22±1
				1	24	1	22.35	22±1
				12	0	2	21.64	22±1
				12	6	2	21.65	22±1
				12	11	2	21.61	22±1
				25	0	2	21.22	22±1
	23790	710.0	QPSK	1	0	0	22.21	22±1
				1	12	0	22.23	22±1
				1	24	0	22.28	22±1
				12	0	1	21.55	22±1
				12	6	1	21.54	22±1
				12	11	1	21.52	22±1
				25	0	1	21.09	22±1
			16QAM	1	0	1	22.14	22±1
				1	12	1	22.13	22±1
				1	24	1	22.15	22±1
				12	0	2	21.78	22±1
				12	6	2	21.74	22±1
				12	11	2	21.75	22±1
				25	0	2	21.39	22±1
	23825	713.5	QPSK	1	0	0	22.27	22±1
				1	12	0	22.26	22±1
				1	24	0	22.22	22±1
				12	0	1	21.32	22±1
				12	6	1	21.35	22±1
				12	11	1	21.36	22±1
				25	0	1	21.11	22±1
			16QAM	1	0	1	22.36	22±1
				1	12	1	22.35	22±1
				1	24	1	22.38	22±1
				12	0	2	21.58	22±1
				12	6	2	21.57	22±1
				12	11	2	21.52	22±1
				25	0	2	21.25	22±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	15.76	V	7.88	0.85	22.79	33.01
1880	1.4	QPSK	1/0	16.02	V	7.88	0.85	23.05	33.01
1909.3	1.4	QPSK	1/0	15.74	V	7.88	0.85	22.77	33.01
1850.7	1.4	QPSK	1/0	14.54	H	7.88	0.85	21.57	33.01
1880	1.4	QPSK	1/0	14.82	H	7.88	0.85	21.85	33.01
1909.3	1.4	QPSK	1/0	14.52	H	7.88	0.85	21.55	33.01
1850.7	1.4	16-QAM	1/0	15.21	V	7.88	0.85	22.24	33.01
1880	1.4	16-QAM	1/0	14.73	V	7.88	0.85	21.76	33.01
1909.3	1.4	16-QAM	1/0	15.08	V	7.88	0.85	22.11	33.01
1850.7	1.4	16-QAM	1/0	14.02	H	7.88	0.85	21.05	33.01
1880	1.4	16-QAM	1/0	13.56	H	7.88	0.85	20.59	33.01
1909.3	1.4	16-QAM	1/0	13.89	H	7.88	0.85	20.92	33.01
1851.5	3	QPSK	1/0	15.98	V	7.88	0.85	23.01	33.01
1880	3	QPSK	1/0	16.12	V	7.88	0.85	23.15	33.01
1908.5	3	QPSK	1/0	15.94	V	7.88	0.85	22.97	33.01
1851.5	3	QPSK	1/0	14.73	H	7.88	0.85	21.76	33.01
1880	3	QPSK	1/0	14.92	H	7.88	0.85	21.95	33.01
1908.5	3	QPSK	1/0	14.69	H	7.88	0.85	21.72	33.01
1851.5	3	16-QAM	1/0	15.36	V	7.88	0.85	22.39	33.01
1880	3	16-QAM	1/0	14.71	V	7.88	0.85	21.74	33.01
1908.5	3	16-QAM	1/0	14.93	V	7.88	0.85	21.96	33.01
1851.5	3	16-QAM	1/0	14.13	H	7.88	0.85	21.16	33.01
1880	3	16-QAM	1/0	13.54	H	7.88	0.85	20.57	33.01
1908.5	3	16-QAM	1/0	13.71	H	7.88	0.85	20.74	33.01
1852.5	5	QPSK	1/24	16.08	V	7.88	0.85	23.11	33.01
1880	5	QPSK	1/0	16.38	V	7.88	0.85	23.41	33.01
1907.5	5	QPSK	1/24	16.27	V	7.88	0.85	23.30	33.01
1852.5	5	QPSK	1/24	14.95	H	7.88	0.85	21.98	33.01
1880	5	QPSK	1/0	15.12	H	7.88	0.85	22.15	33.01
1907.5	5	QPSK	1/24	15.04	H	7.88	0.85	22.07	33.01
1852.5	5	16-QAM	1/24	15.59	V	7.88	0.85	22.62	33.01
1880	5	16-QAM	1/0	15.26	V	7.88	0.85	22.29	33.01

1907.5	5	16-QAM	1/24	14.92	V	7.88	0.85	21.95	33.01
1852.5	5	16-QAM	1/24	14.22	H	7.88	0.85	21.25	33.01
1880	5	16-QAM	1/0	14.03	H	7.88	0.85	21.06	33.01
1907.5	5	16-QAM	1/24	13.74	H	7.88	0.85	20.77	33.01
1855	10	QPSK	1/0	15.97	V	7.88	0.85	23.00	33.01
1880	10	QPSK	1/0	16.22	V	7.88	0.85	23.25	33.01
1905	10	QPSK	1/49	16.19	V	7.88	0.85	23.22	33.01
1855	10	QPSK	1/0	14.78	H	7.88	0.85	21.81	33.01
1880	10	QPSK	1/0	15.03	H	7.88	0.85	22.06	33.01
1905	10	QPSK	1/49	14.91	H	7.88	0.85	21.94	33.01
1855	10	16-QAM	1/0	15.46	V	7.88	0.85	22.49	33.01
1880	10	16-QAM	1/0	14.85	V	7.88	0.85	21.88	33.01
1905	10	16-QAM	1/49	15.39	V	7.88	0.85	22.42	33.01
1855	10	16-QAM	1/0	14.21	H	7.88	0.85	21.24	33.01
1880	10	16-QAM	1/0	13.64	H	7.88	0.85	20.67	33.01
1905	10	16-QAM	1/49	14.09	H	7.88	0.85	21.12	33.01
1857.5	15	QPSK	1/0	15.93	V	7.88	0.85	22.96	33.01
1880	15	QPSK	1/0	15.95	V	7.88	0.85	22.98	33.01
1902.5	15	QPSK	1/0	16.18	V	7.88	0.85	23.21	33.01
1857.5	15	QPSK	1/0	14.73	H	7.88	0.85	21.76	33.01
1880	15	QPSK	1/0	14.75	H	7.88	0.85	21.78	33.01
1902.5	15	QPSK	1/0	14.97	H	7.88	0.85	22.00	33.01
1857.5	15	16-QAM	1/0	15.37	V	7.88	0.85	22.40	33.01
1880	15	16-QAM	1/0	14.82	V	7.88	0.85	21.85	33.01
1902.5	15	16-QAM	1/0	15.49	V	7.88	0.85	22.52	33.01
1857.5	15	16-QAM	1/0	14.12	H	7.88	0.85	21.15	33.01
1880	15	16-QAM	1/0	13.61	H	7.88	0.85	20.64	33.01
1902.5	15	16-QAM	1/0	14.28	H	7.88	0.85	21.31	33.01
1860	20	QPSK	1/0	16.01	V	7.88	0.85	23.04	33.01
1880	20	QPSK	1/0	16.04	V	7.88	0.85	23.07	33.01
1900	20	QPSK	1/0	15.93	V	7.88	0.85	22.96	33.01
1860	20	QPSK	1/0	14.82	H	7.88	0.85	21.85	33.01
1880	20	QPSK	1/0	14.85	H	7.88	0.85	21.88	33.01
1900	20	QPSK	1/0	14.76	H	7.88	0.85	21.79	33.01
1860	20	16-QAM	1/0	14.95	V	7.88	0.85	21.98	33.01
1880	20	16-QAM	1/0	15.38	V	7.88	0.85	22.41	33.01
1900	20	16-QAM	1/0	15.54	V	7.88	0.85	22.57	33.01
1860	20	16-QAM	1/0	13.68	H	7.88	0.85	20.71	33.01

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1880	20	16-QAM	1/0	14.11	H	7.88	0.85	21.14	33.01
1900	20	16-QAM	1/0	14.2	H	7.88	0.85	21.23	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	16.03	V	7.95	0.79	23.19	30
1732.5	1.4	QPSK	1/0	15.96	V	7.95	0.79	23.12	30
1754.3	1.4	QPSK	1/0	15.85	V	7.95	0.79	23.01	30
1710.7	1.4	QPSK	1/0	14.84	H	7.95	0.79	22.00	30
1732.5	1.4	QPSK	1/0	14.73	H	7.95	0.79	21.89	30
1754.3	1.4	QPSK	1/0	14.62	H	7.95	0.79	21.78	30
1710.7	1.4	16-QAM	1/5	15.48	V	7.95	0.79	22.64	30
1732.5	1.4	16-QAM	1/0	14.35	V	7.95	0.79	21.51	30
1754.3	1.4	16-QAM	1/0	14.41	V	7.95	0.79	21.57	30
1710.7	1.4	16-QAM	1/5	14.21	H	7.95	0.79	21.37	30
1732.5	1.4	16-QAM	1/0	13.16	H	7.95	0.79	20.32	30
1754.3	1.4	16-QAM	1/0	13.27	H	7.95	0.79	20.43	30
1711.5	3	QPSK	1/0	16.12	V	7.95	0.79	23.28	30
1732.5	3	QPSK	1/0	15.94	V	7.95	0.79	23.10	30
1753.5	3	QPSK	1/0	15.53	V	7.95	0.79	22.69	30
1711.5	3	QPSK	1/0	14.97	H	7.95	0.79	22.13	30
1732.5	3	QPSK	1/0	14.75	H	7.95	0.79	21.91	30
1753.5	3	QPSK	1/0	14.29	H	7.95	0.79	21.45	30
1711.5	3	16-QAM	1/0	15.42	V	7.95	0.79	22.58	30
1732.5	3	16-QAM	1/0	14.64	V	7.95	0.79	21.80	30
1753.5	3	16-QAM	1/0	15.02	V	7.95	0.79	22.18	30
1711.5	3	16-QAM	1/0	14.26	H	7.95	0.79	21.42	30
1732.5	3	16-QAM	1/0	13.49	H	7.95	0.79	20.65	30
1753.5	3	16-QAM	1/0	13.98	H	7.95	0.79	21.14	30
1712.5	5	QPSK	1/0	16.19	V	7.95	0.79	23.35	30
1732.5	5	QPSK	1/0	15.92	V	7.95	0.79	23.08	30
1752.5	5	QPSK	1/24	15.68	V	7.95	0.79	22.84	30
1712.5	5	QPSK	1/0	14.93	H	7.95	0.79	22.09	30
1732.5	5	QPSK	1/0	14.71	H	7.95	0.79	21.87	30
1752.5	5	QPSK	1/24	14.43	H	7.95	0.79	21.59	30
1712.5	5	16-QAM	1/0	15.11	V	7.95	0.79	22.27	30
1732.5	5	16-QAM	1/0	14.83	V	7.95	0.79	21.99	30
1752.5	5	16-QAM	1/24	14.81	V	7.95	0.79	21.97	30
1712.5	5	16-QAM	1/0	14.86	H	7.95	0.79	22.02	30
1732.5	5	16-QAM	1/0	14.63	H	7.95	0.79	21.79	30

1752.5	5	16-QAM	1/24	14.61	H	7.95	0.79	21.77	30
1715	10	QPSK	1/0	16.13	V	7.95	0.79	23.29	30
1732.5	10	QPSK	1/49	15.73	V	7.95	0.79	22.89	30
1750	10	QPSK	1/0	15.94	V	7.95	0.79	23.10	30
1715	10	QPSK	1/0	14.87	H	7.95	0.79	22.03	30
1732.5	10	QPSK	1/49	14.52	H	7.95	0.79	21.68	30
1750	10	QPSK	1/0	14.73	H	7.95	0.79	21.89	30
1715	10	16-QAM	1/0	15.3	V	7.95	0.79	22.46	30
1732.5	10	16-QAM	1/49	15.23	V	7.95	0.79	22.39	30
1750	10	16-QAM	1/0	15.1	V	7.95	0.79	22.26	30
1715	10	16-QAM	1/0	14.12	H	7.95	0.79	21.28	30
1732.5	10	16-QAM	1/49	14.03	H	7.95	0.79	21.19	30
1750	10	16-QAM	1/0	13.97	H	7.95	0.79	21.13	30
1717.5	15	QPSK	1/0	15.92	V	7.95	0.79	23.08	30
1732.5	15	QPSK	1/74	15.78	V	7.95	0.79	22.94	30
1747.5	15	QPSK	1/0	15.98	V	7.95	0.79	23.14	30
1717.5	15	QPSK	1/0	14.76	H	7.95	0.79	21.92	30
1732.5	15	QPSK	1/74	14.54	H	7.95	0.79	21.70	30
1747.5	15	QPSK	1/0	14.81	H	7.95	0.79	21.97	30
1717.5	15	16-QAM	1/0	15.29	V	7.95	0.79	22.45	30
1732.5	15	16-QAM	1/74	14.68	V	7.95	0.79	21.84	30
1747.5	15	16-QAM	1/0	15.65	V	7.95	0.79	22.81	30
1717.5	15	16-QAM	1/0	14.03	H	7.95	0.79	21.19	30
1732.5	15	16-QAM	1/74	13.38	H	7.95	0.79	20.54	30
1747.5	15	16-QAM	1/0	14.32	H	7.95	0.79	21.48	30
1720	20	QPSK	1/99	16.14	V	7.95	0.79	23.30	30
1732.5	20	QPSK	1/99	15.76	V	7.95	0.79	22.92	30
1745	20	QPSK	1/0	15.85	V	7.95	0.79	23.01	30
1720	20	QPSK	1/99	14.97	H	7.95	0.79	22.13	30
1732.5	20	QPSK	1/99	14.53	H	7.95	0.79	21.69	30
1745	20	QPSK	1/0	14.61	H	7.95	0.79	21.77	30
1720	20	16-QAM	1/99	14.83	V	7.95	0.79	21.99	30
1732.5	20	16-QAM	1/99	15.5	V	7.95	0.79	22.66	30
1745	20	16-QAM	1/0	15.42	V	7.95	0.79	22.58	30
1720	20	16-QAM	1/99	13.61	H	7.95	0.79	20.77	30
1732.5	20	16-QAM	1/99	14.29	H	7.95	0.79	21.45	30
1745	20	16-QAM	1/0	14.18	H	7.95	0.79	21.34	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	15.03	V	8.93	0.83	23.13	30
2535	5	QPSK	1/0	14.86	V	8.93	0.83	22.96	30
2567.5	5	QPSK	1/24	14.93	V	8.93	0.83	23.03	30
2502.5	5	QPSK	1/0	14.31	H	8.93	0.83	22.41	30
2535	5	QPSK	1/0	13.96	H	8.93	0.83	22.06	30
2567.5	5	QPSK	1/24	14.03	H	8.93	0.83	22.13	30
2502.5	5	16-QAM	1/0	14.21	V	8.93	0.83	22.31	30
2535	5	16-QAM	1/0	14.92	V	8.93	0.83	23.02	30
2567.5	5	16-QAM	1/24	13.65	V	8.93	0.83	21.75	30
2502.5	5	16-QAM	1/0	13.45	H	8.93	0.83	21.55	30
2535	5	16-QAM	1/0	14.26	H	8.93	0.83	22.36	30
2567.5	5	16-QAM	1/24	12.89	H	8.93	0.83	20.99	30
2505	10	QPSK	1/0	15.12	V	8.93	0.83	23.22	30
2535	10	QPSK	1/49	14.82	V	8.93	0.83	22.92	30
2565	10	QPSK	1/0	15.04	V	8.93	0.83	23.14	30
2505	10	QPSK	1/0	14.36	H	8.93	0.83	22.46	30
2535	10	QPSK	1/49	14.02	H	8.93	0.83	22.12	30
2565	10	QPSK	1/0	14.25	H	8.93	0.83	22.35	30
2505	10	16-QAM	1/0	13.97	V	8.93	0.83	22.07	30
2535	10	16-QAM	1/49	13.85	V	8.93	0.83	21.95	30
2565	10	16-QAM	1/0	14.12	V	8.93	0.83	22.22	30
2505	10	16-QAM	1/0	13.24	H	8.93	0.83	21.34	30
2535	10	16-QAM	1/49	13.12	H	8.93	0.83	21.22	30
2565	10	16-QAM	1/0	13.38	H	8.93	0.83	21.48	30
2507.5	15	QPSK	1/0	14.76	V	8.93	0.83	22.86	30
2535	15	QPSK	1/74	14.68	V	8.93	0.83	22.78	30
2562.5	15	QPSK	1/0	14.82	V	8.93	0.83	22.92	30
2507.5	15	QPSK	1/0	13.91	H	8.93	0.83	22.01	30
2535	15	QPSK	1/74	13.89	H	8.93	0.83	21.99	30
2562.5	15	QPSK	1/0	14.03	H	8.93	0.83	22.13	30
2507.5	15	16-QAM	1/0	14.69	V	8.93	0.83	22.79	30
2535	15	16-QAM	1/74	13.38	V	8.93	0.83	21.48	30
2562.5	15	16-QAM	1/0	14.06	V	8.93	0.83	22.16	30

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2507.5	15	16-QAM	1/0	13.85	H	8.93	0.83	21.95	30
2535	15	16-QAM	1/74	12.67	H	8.93	0.83	20.77	30
2562.5	15	16-QAM	1/0	13.29	H	8.93	0.83	21.39	30
2510	20	QPSK	1/99	14.75	V	8.93	0.83	22.85	30
2535	20	QPSK	1/99	14.46	V	8.93	0.83	22.56	30
2560	20	QPSK	1/0	14.92	V	8.93	0.83	23.02	30
2510	20	QPSK	1/99	13.92	H	8.93	0.83	22.02	30
2535	20	QPSK	1/99	13.64	H	8.93	0.83	21.74	30
2560	20	QPSK	1/0	14.13	H	8.93	0.83	22.23	30
2510	20	16-QAM	1/99	13.87	V	8.93	0.83	21.97	30
2535	20	16-QAM	1/99	14.16	V	8.93	0.83	22.26	30
2560	20	16-QAM	1/0	14.39	V	8.93	0.83	22.49	30
2510	20	16-QAM	1/99	13.06	H	8.93	0.83	21.16	30
2535	20	16-QAM	1/99	13.34	H	8.93	0.83	21.44	30
2560	20	16-QAM	1/0	13.57	H	8.93	0.83	21.67	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	13.84	V	6.9	0.42	20.32	34.77
707.5	1.4	QPSK	1/5	13.68	V	6.8	0.42	20.06	34.77
715.3	1.4	QPSK	1/5	13.64	V	6.8	0.42	20.02	34.77
699.7	1.4	QPSK	1/5	13.15	H	6.9	0.42	19.63	34.77
707.5	1.4	QPSK	1/5	12.97	H	6.8	0.42	19.35	34.77
715.3	1.4	QPSK	1/5	12.93	H	6.8	0.42	19.31	34.77
699.7	1.4	16-QAM	1/5	12.87	V	6.9	0.42	19.35	34.77
707.5	1.4	16-QAM	1/5	12.65	V	6.8	0.42	19.03	34.77
715.3	1.4	16-QAM	1/5	12.59	V	6.8	0.42	18.97	34.77
699.7	1.4	16-QAM	1/5	12.19	H	6.9	0.42	18.67	34.77
707.5	1.4	16-QAM	1/5	11.86	H	6.8	0.42	18.24	34.77
715.3	1.4	16-QAM	1/5	11.78	H	6.8	0.42	18.16	34.77
700.5	3	QPSK	1/14	13.65	V	6.9	0.42	20.13	34.77
707.5	3	QPSK	1/0	13.58	V	6.8	0.42	19.96	34.77
714.5	3	QPSK	1/14	13.62	V	6.8	0.42	20.00	34.77
700.5	3	QPSK	1/14	12.96	H	6.9	0.42	19.44	34.77
707.5	3	QPSK	1/0	12.85	H	6.8	0.42	19.23	34.77
714.5	3	QPSK	1/14	12.93	H	6.8	0.42	19.31	34.77
700.5	3	16-QAM	1/14	12.74	V	6.9	0.42	19.22	34.77
707.5	3	16-QAM	1/0	12.63	V	6.8	0.42	19.01	34.77
714.5	3	16-QAM	1/14	12.89	V	6.8	0.42	19.27	34.77
700.5	3	16-QAM	1/14	11.97	H	6.9	0.42	18.45	34.77
707.5	3	16-QAM	1/0	11.86	H	6.8	0.42	18.24	34.77
714.5	3	16-QAM	1/14	12.06	H	6.8	0.42	18.44	34.77
701.5	5	QPSK	1/24	13.84	V	6.9	0.42	20.32	34.77
707.5	5	QPSK	1/24	13.54	V	6.8	0.42	19.92	34.77
713.5	5	QPSK	1/24	13.65	V	6.8	0.42	20.03	34.77
701.5	5	QPSK	1/24	13.05	H	6.9	0.42	19.53	34.77
707.5	5	QPSK	1/24	12.79	H	6.8	0.42	19.17	34.77
713.5	5	QPSK	1/24	12.87	H	6.8	0.42	19.25	34.77
701.5	5	16-QAM	1/24	14.15	V	6.9	0.42	20.63	34.77
707.5	5	16-QAM	1/24	12.94	V	6.8	0.42	19.32	34.77
713.5	5	16-QAM	1/24	12.76	V	6.8	0.42	19.14	34.77
701.5	5	16-QAM	1/24	13.36	H	6.9	0.42	19.84	34.77

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707.5	5	16-QAM	1/24	12.25	H	6.8	0.42	18.63	34.77
713.5	5	16-QAM	1/24	12.03	H	6.8	0.42	18.41	34.77
704	10	QPSK	1/49	13.65	V	6.8	0.42	20.03	34.77
707.5	10	QPSK	1/49	13.68	V	6.8	0.42	20.06	34.77
711	10	QPSK	1/49	13.85	V	6.8	0.42	20.23	34.77
704	10	QPSK	1/49	12.84	H	6.8	0.42	19.22	34.77
707.5	10	QPSK	1/49	12.87	H	6.8	0.42	19.25	34.77
711	10	QPSK	1/49	13.08	H	6.8	0.42	19.46	34.77
704	10	16-QAM	1/49	12.86	V	6.8	0.42	19.24	34.77
707.5	10	16-QAM	1/49	12.83	V	6.8	0.42	19.21	34.77
711	10	16-QAM	1/49	12.97	V	6.8	0.42	19.35	34.77
704	10	16-QAM	1/49	12.13	H	6.8	0.42	18.51	34.77
707.5	10	16-QAM	1/49	12.1	H	6.8	0.42	18.48	34.77
711	10	16-QAM	1/49	12.24	H	6.8	0.42	18.62	34.77

ERP for LTE Band XVII (Part 27)

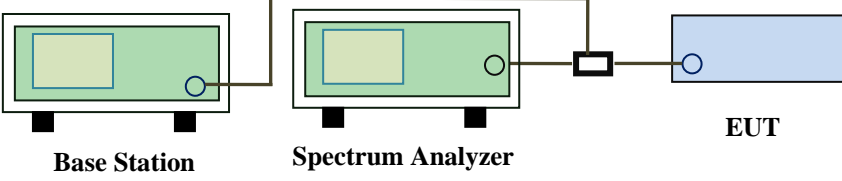
Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
706.5	5	QPSK	1/0	13.34	V	6.8	0.42	19.72	34.77
710	5	QPSK	1/0	13.26	V	6.8	0.42	19.64	34.77
713.5	5	QPSK	1/0	13.28	V	6.8	0.42	19.66	34.77
706.5	5	QPSK	1/0	12.49	H	6.8	0.42	18.87	34.77
710	5	QPSK	1/0	12.39	H	6.8	0.42	18.77	34.77
713.5	5	QPSK	1/0	12.41	H	6.8	0.42	18.79	34.77
706.5	5	16-QAM	1/0	13.31	V	6.8	0.42	19.69	34.77
710	5	16-QAM	1/0	13.05	V	6.8	0.42	19.43	34.77
713.5	5	16-QAM	1/0	13.25	V	6.8	0.42	19.63	34.77
706.5	5	16-QAM	1/0	12.53	H	6.8	0.42	18.91	34.77
710	5	16-QAM	1/0	12.24	H	6.8	0.42	18.62	34.77
713.5	5	16-QAM	1/0	13.45	H	6.8	0.42	19.83	34.77
709	10	QPSK	1/0	13.54	V	6.8	0.42	19.92	34.77
710	10	QPSK	1/0	13.65	V	6.8	0.42	20.03	34.77
711	10	QPSK	1/0	13.59	V	6.8	0.42	19.97	34.77
709	10	QPSK	1/0	12.73	H	6.8	0.42	19.11	34.77
710	10	QPSK	1/0	12.84	H	6.8	0.42	19.22	34.77
711	10	QPSK	1/0	12.78	H	6.8	0.42	19.16	34.77
709	10	16-QAM	1/0	12.56	V	6.8	0.42	18.94	34.77
710	10	16-QAM	1/0	12.57	V	6.8	0.42	18.95	34.77
711	10	16-QAM	1/0	13.06	V	6.8	0.42	19.44	34.77
709	10	16-QAM	1/0	11.79	H	6.8	0.42	18.17	34.77
710	10	16-QAM	1/0	11.8	H	6.8	0.42	18.18	34.77
711	10	16-QAM	1/0	12.26	H	6.8	0.42	18.64	34.77

6.3 Peak-Average Ratio

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06, 2016
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.	<input checked="" type="checkbox"/>

Test Setup	 <p>The diagram illustrates the test setup. On the left is a green box labeled 'Base Station'. A cable connects it to a green box labeled 'Spectrum Analyzer'. Another cable connects the Spectrum Analyzer to a blue box labeled 'EUT' (Equipment Under Test).</p>
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Test Procedure	<p>According with KDB 971168 v02r02</p> <p>5.7.2 Alternate procedure for PAPR</p> <p>5.1.2 Peak power measurements with a peak power meter</p> <p>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.</p> <p>5.2.3 Average power measurement with average power meter</p> <p>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</p> <p>If the EUT can be configured to transmit continuously (i.e., the burst duty cycle $\geq 98\%$) and at all times the EUT is transmitting at its maximum output</p>
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	<p>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 $10\log(1/\text{duty cycle})$</p>
Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> 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	25.63	22.64	2.99
			16QAM	24.3	21.23	3.07
3	1880	RB 1/0	QPSK	25.23	22.63	2.6
			16QAM	25.21	21.34	3.87
5	1880	RB 1/0	QPSK	25.31	22.91	2.4
			16QAM	24.89	21.85	3.04
10	1880	RB 1/0	QPSK	25.69	22.72	2.97
			16QAM	24.36	21.23	3.13
15	1880	RB 1/0	QPSK	25.36	22.47	2.89
			16QAM	24.33	21.32	3.01
20	1880	RB 1/0	QPSK	25.42	22.52	2.9
			16QAM	25.12	21.88	3.24

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	25.36	22.59	2.77
			16QAM	24.31	21.06	3.25
3	1732.5	RB 1/0	QPSK	25.49	22.57	2.92
			16QAM	24.33	21.28	3.05
5	1732.5	RB 1/0	QPSK	25.41	22.63	2.78
			16QAM	24.56	21.55	3.01
10	1732.5	RB 1/0	QPSK	25.75	22.42	3.33
			16QAM	24.95	21.91	3.04
15	1732.5	RB 1/0	QPSK	25.41	22.42	2.99
			16QAM	24.32	21.22	3.1
20	1732.5	RB 1/0	QPSK	25.41	22.42	2.99
			16QAM	25.16	22.12	3.04

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	25.36	22.11	3.25
			16QAM	25.1	21.2	3.9
10	2535	RB 1/0	QPSK	25.12	22.08	3.04
			16QAM	24.33	21.33	3
15	2535	RB 1/0	QPSK	24.21	21.92	2.29
			16QAM	24.13	20.61	3.52
20	2535	RB 1/0	QPSK	24.29	21.76	2.53
			16QAM	24.51	21.5	3.01

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	25.33	22.78	2.55
			16QAM	25.16	21.59	3.57
3	1732.5	RB 1/0	QPSK	25.78	22.73	3.05
			16QAM	24.71	21.76	2.95
5	1732.5	RB 1/0	QPSK	25.61	22.58	3.03
			16QAM	24.91	21.8	3.11
10	1732.5	RB 1/0	QPSK	25.74	22.63	3.11
			16QAM	24.9	21.81	3.09

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	25.76	22.71	3.05
			16QAM	24.52	21.51	3.01
10	710	RB 1/0	QPSK	25.11	22.45	2.66
			16QAM	24.23	21.05	3.18

6.4 Occupied Bandwidth

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06&07, 2016
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)	<input checked="" type="checkbox"/>
	b)	26 dB Bandwidth(kHz)	<input checked="" type="checkbox"/>
Test Setup	<p>Base Station Spectrum Analyzer EUT</p>		
Test Procedure	<ul style="list-style-type: none"> - 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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> 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	1.1003	1.303
			QPSK	1.0999	1.285
1.4	18900	1880	16QAM	1.0981	1.309
			QPSK	1.1024	1.313
1.4	19193	1909	16QAM	1.1124	1.318
			QPSK	1.1094	1.306
3	18615	1851	16QAM	2.7608	3.134
			QPSK	2.7567	3.121
3	18900	1880	16QAM	2.7548	3.119
			QPSK	2.7435	3.111
3	19185	1909	16QAM	2.7582	3.140
			QPSK	2.7538	3.143
5	18625	1853	16QAM	4.5249	5.067
			QPSK	4.5238	5.085
5	18900	1880	16QAM	4.5161	5.030
			QPSK	4.5185	5.061
5	19175	1908	16QAM	4.5098	5.031
			QPSK	4.5156	5.044
10	18650	1855	16QAM	9.0321	10.251
			QPSK	9.0294	10.259
10	18900	1880	16QAM	9.0514	10.251
			QPSK	9.0664	10.270
10	19150	1905	16QAM	9.0600	10.300
			QPSK	9.0617	10.266
15	18675	1858	16QAM	13.4158	14.874
			QPSK	13.4173	14.909
15	18900	1880	16QAM	13.4748	14.955
			QPSK	13.4838	14.886
15	19125	1903	16QAM	13.4418	15.013
			QPSK	13.4281	14.983

20	18700	1860	16QAM	17.8429	19.386
			QPSK	17.8405	19.356
20	18900	1880	16QAM	17.9038	19.641
			QPSK	17.9011	19.733
20	19100	1900	16QAM	17.8259	19.405
			QPSK	17.8188	19.381

LTE Band IV (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1711	16QAM	1.1057	1.308
			QPSK	1.1037	1.300
1.4	20175	1732	16QAM	1.1049	1.318
			QPSK	1.1046	1.318
1.4	20393	1754	16QAM	1.1094	1.311
			QPSK	1.1111	1.322
3	19965	1712	16QAM	2.6998	2.947
			QPSK	2.6900	2.963
3	20175	1732	16QAM	2.6964	2.959
			QPSK	2.6846	2.940
3	20385	1754	16QAM	2.6933	2.941
			QPSK	2.6892	2.950
5	19975	1712	16QAM	4.4795	4.898
			QPSK	4.4787	4.890
5	20175	1732	16QAM	4.4677	4.876
			QPSK	4.4691	4.894
5	20375	1752	16QAM	4.4748	4.874
			QPSK	4.4763	4.893
10	20000	1715	16QAM	9.0129	10.255
			QPSK	9.0296	10.197
10	20175	1732	16QAM	9.0575	10.272
			QPSK	9.0518	10.232
10	20350	1750	16QAM	9.0636	10.255
			QPSK	9.0639	10.274
15	20025	1718	16QAM	13.4151	14.929
			QPSK	13.4178	14.907
15	20175	1732	16QAM	13.4662	14.941
			QPSK	13.4775	14.933
15	20325	1748	16QAM	13.4687	15.015
			QPSK	13.4441	15.010

20	20050	1720	16QAM	17.8387	19.414
			QPSK	17.8299	19.437
20	20175	1732	16QAM	17.8976	19.541
			QPSK	17.8988	19.527
20	20300	1745	16QAM	17.8037	19.381
			QPSK	17.8072	19.374

LTE Band VII (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2502	16QAM	4.5096	5.034
			QPSK	4.5146	5.032
5	21100	2535	16QAM	4.5066	5.031
			QPSK	4.5054	5.035
5	21425	2567	16QAM	4.5071	5.046
			QPSK	4.5212	5.040
10	20800	2505	16QAM	9.0413	10.166
			QPSK	9.0244	10.153
10	21100	2535	16QAM	9.0314	10.227
			QPSK	9.0310	10.238
10	21400	2565	16QAM	9.0488	10.263
			QPSK	9.0287	10.265
15	20825	2507	16QAM	13.4707	14.912
			QPSK	13.4633	14.965
15	21100	2535	16QAM	13.3868	14.899
			QPSK	13.3775	14.932
15	21400	2562	16QAM	13.4496	14.859
			QPSK	13.4349	14.906
20	20850	2510	16QAM	17.9408	19.523
			QPSK	17.9607	19.553
20	21100	2535	16QAM	17.7460	19.272
			QPSK	17.7823	19.430
20	21350	2560	16QAM	17.8821	19.430
			QPSK	17.8637	19.392

LTE Band XII (Part 27)

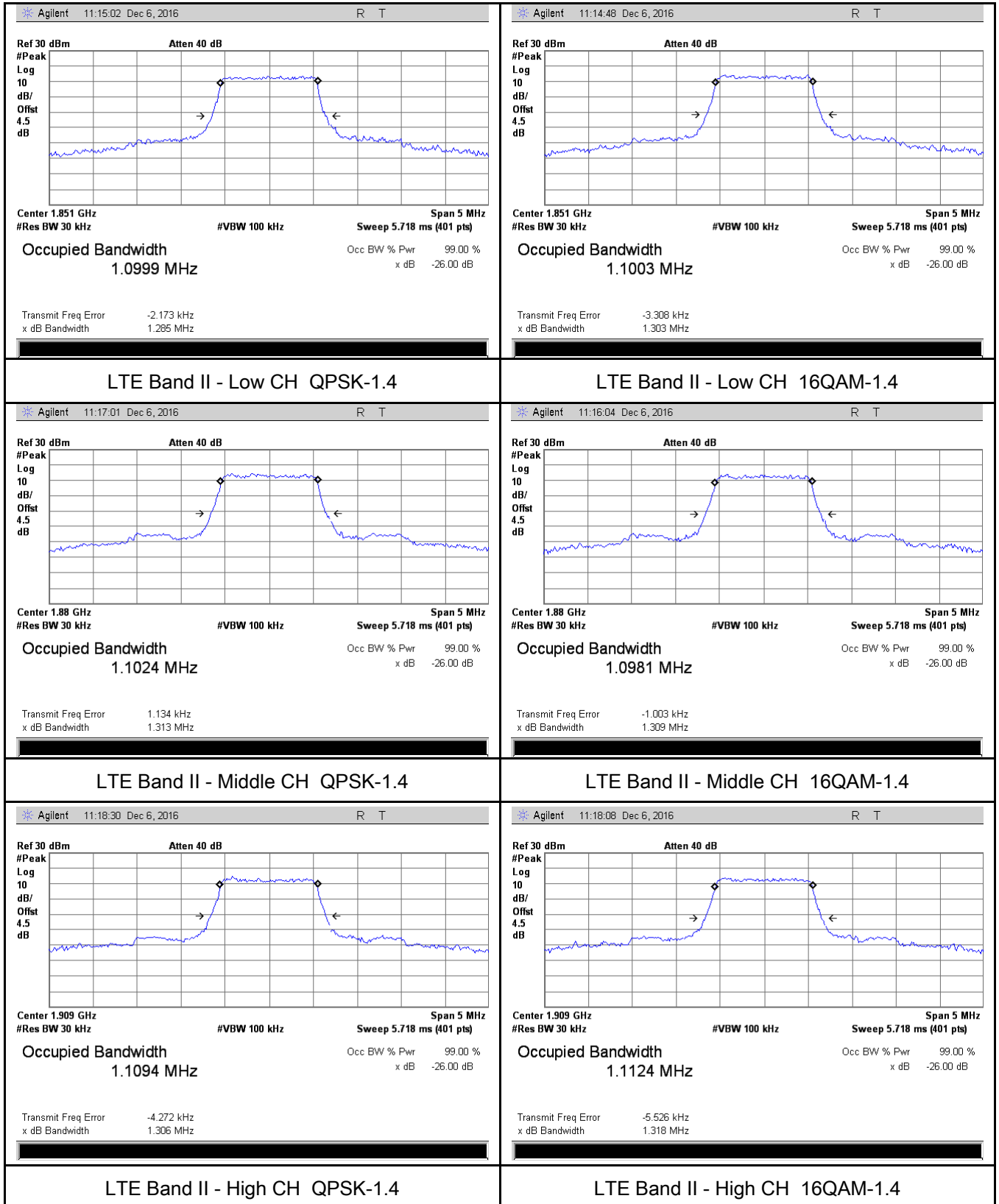
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	23017	699.7	16QAM	1.1069	1.285
			QPSK	1.1094	1.304
1.4	23095	707.5	16QAM	1.1146	1.328
			QPSK	1.1027	1.317
1.4	23173	715.3	16QAM	1.1123	1.321
			QPSK	1.1115	1.294
3	23025	700.5	16QAM	2.7591	3.131
			QPSK	2.7489	3.119
3	23095	707.5	16QAM	2.7620	3.150
			QPSK	2.7615	3.118
3	23165	714.5	16QAM	2.7572	3.134
			QPSK	2.7492	3.138
5	23035	701.5	16QAM	4.5071	5.060
			QPSK	4.5127	5.061
5	23095	707.5	16QAM	4.5246	5.057
			QPSK	4.5242	5.043
5	23055	713.5	16QAM	4.5017	4.996
			QPSK	4.5006	4.996
10	23060	704	16QAM	8.9912	10.143
			QPSK	8.9638	10.195
10	23095	707.5	16QAM	9.1162	10.271
			QPSK	9.1221	10.302
10	23130	711	16QAM	9.0340	10.295
			QPSK	9.0461	10.319

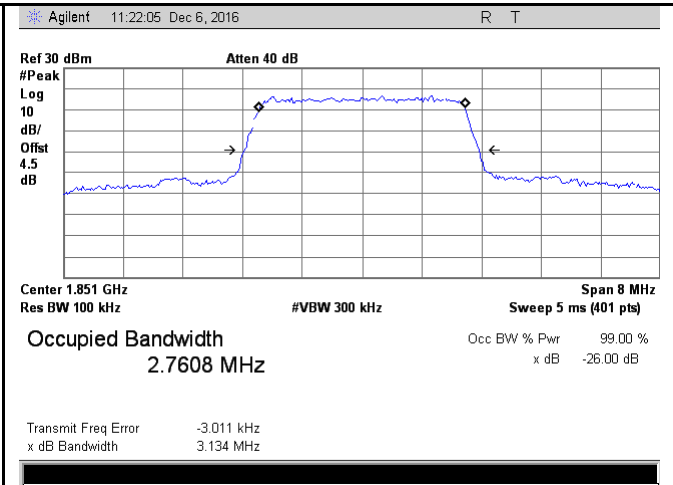
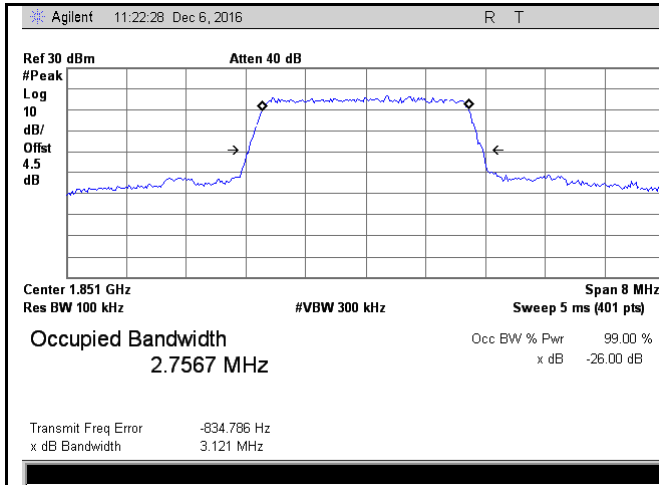
LTE Band XVII (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	23755	706.5	16QAM	4.5338	5.082
			QPSK	4.5291	5.073
5	23790	710	16QAM	4.5232	5.055
			QPSK	4.5203	5.060
5	23825	713.5	16QAM	4.4976	5.008
			QPSK	4.4893	5.005
10	23780	709	16QAM	9.0743	10.288
			QPSK	9.0892	10.206
10	23790	710	16QAM	9.0928	10.282
			QPSK	9.0971	10.267
10	23800	711	16QAM	9.0662	10.282
			QPSK	9.0326	10.311

Test Plots

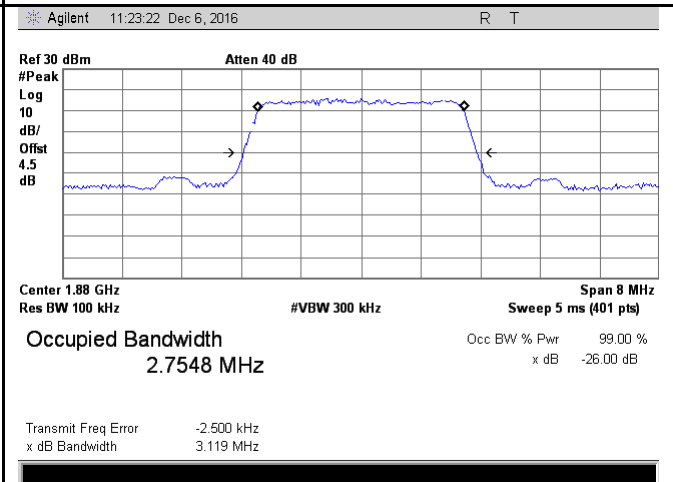
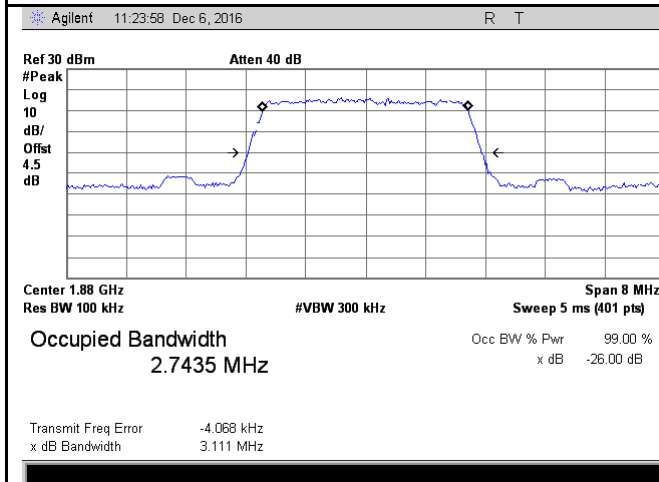
LTE Band II (Part 24E)





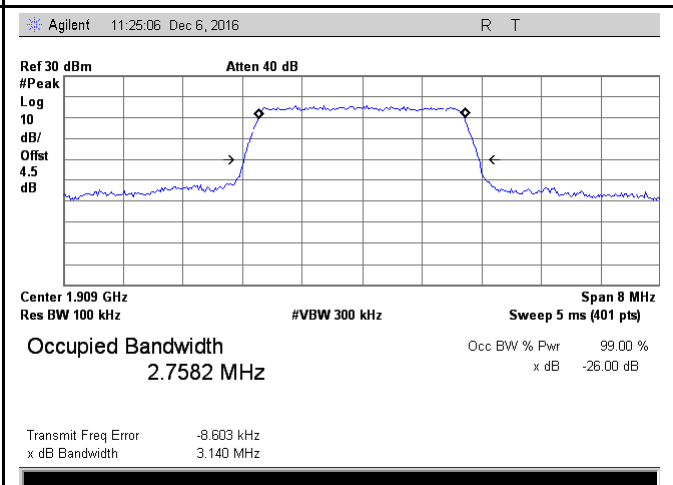
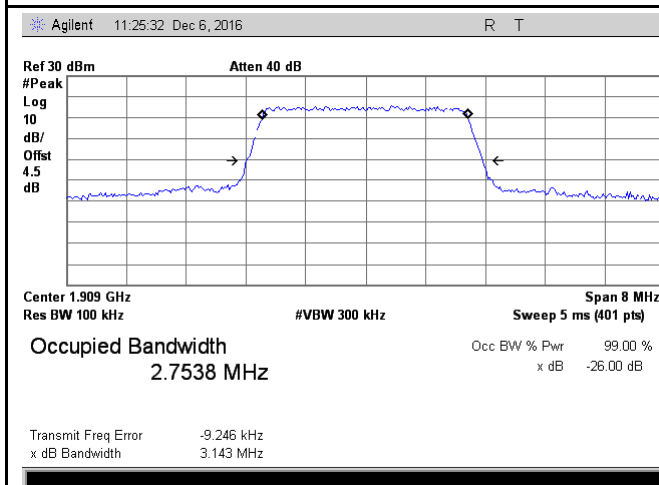
LTE Band II - Low CH QPSK-3

LTE Band II - Low CH 16QAM-3



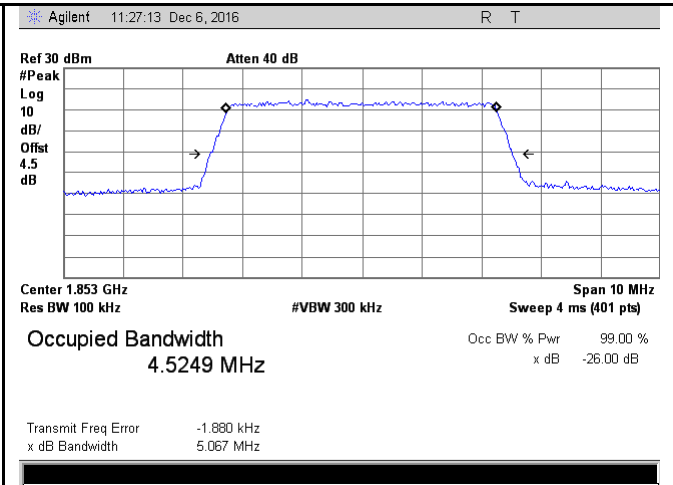
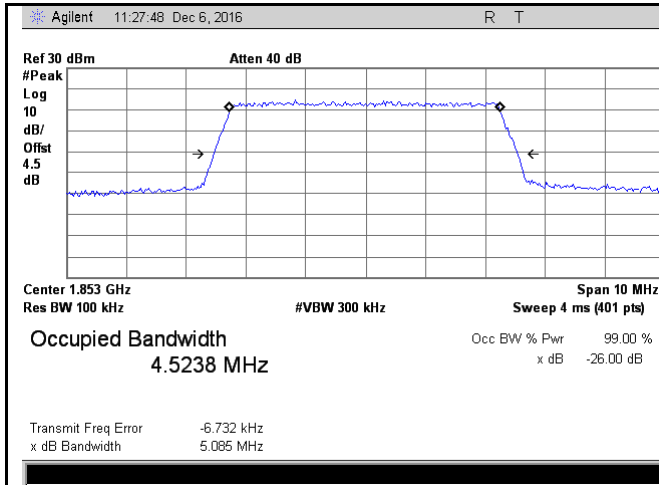
LTE Band II - Middle CH QPSK-3

LTE Band II - Middle CH 16QAM-3



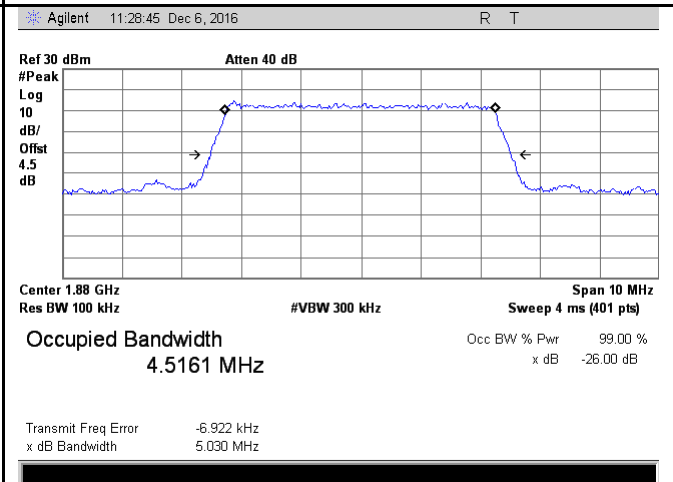
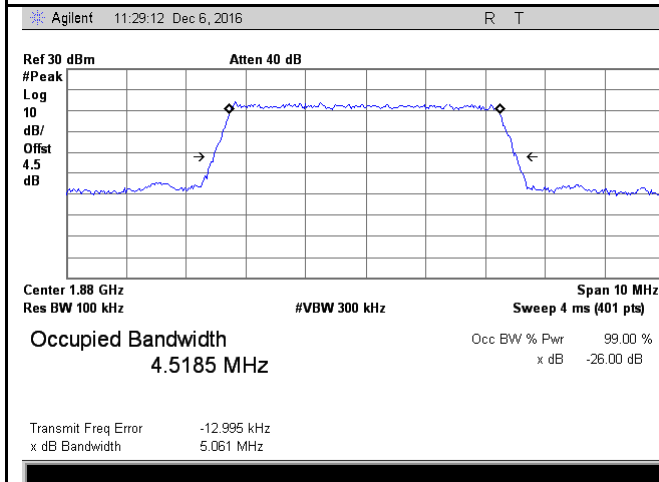
LTE Band II - High CH QPSK-3

LTE Band II - High CH 16QAM-3



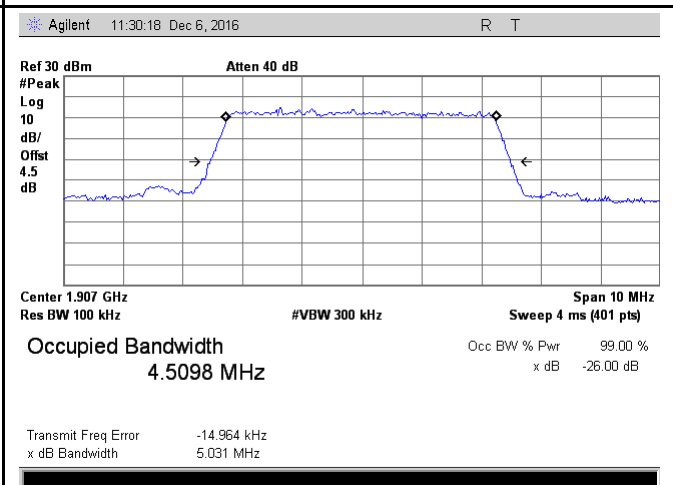
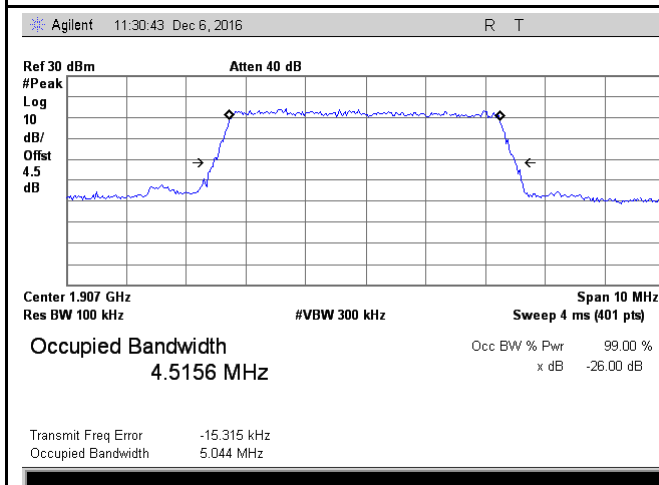
LTE Band II - Low CH QPSK-5

LTE Band II - Low CH 16QAM-5



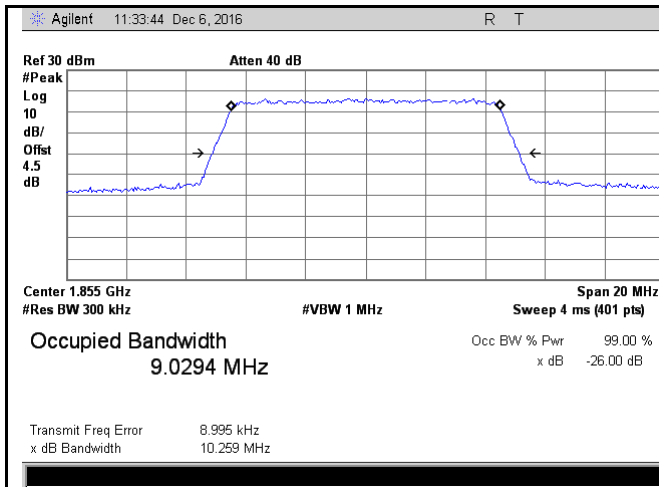
LTE Band II - Middle CH QPSK-5

LTE Band II - Middle CH 16QAM-5

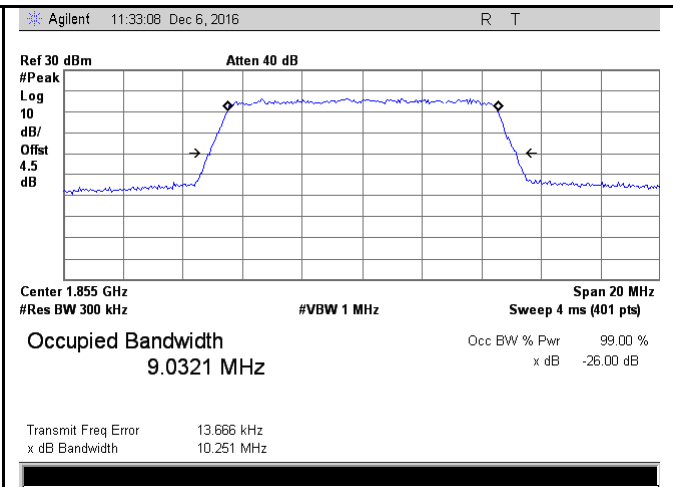


LTE Band II - High CH QPSK-5

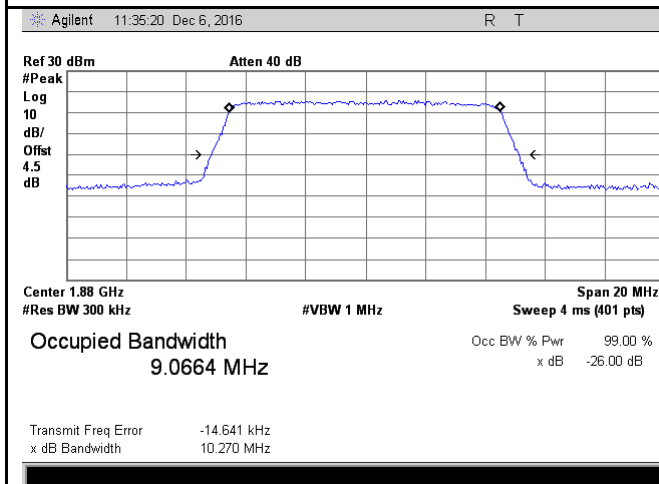
LTE Band II - High CH 16QAM-5



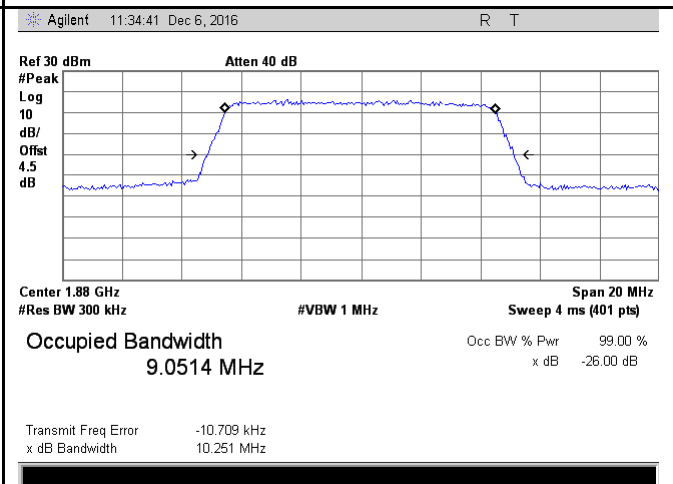
LTE Band II - Low CH QPSK-10



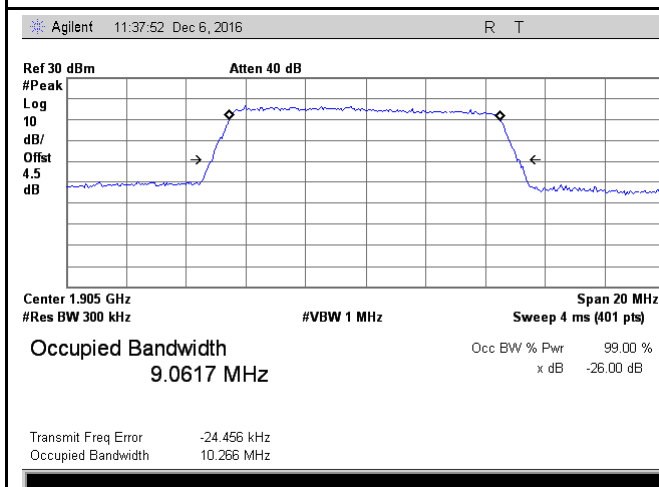
LTE Band II - Low CH 16QAM-10



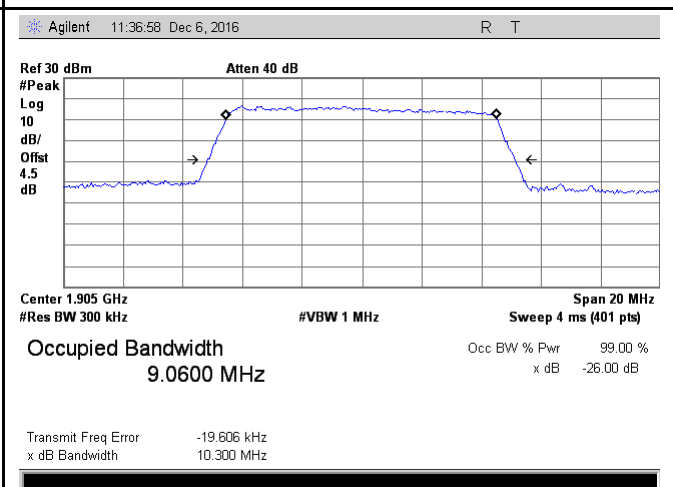
LTE Band II - Middle CH QPSK-10



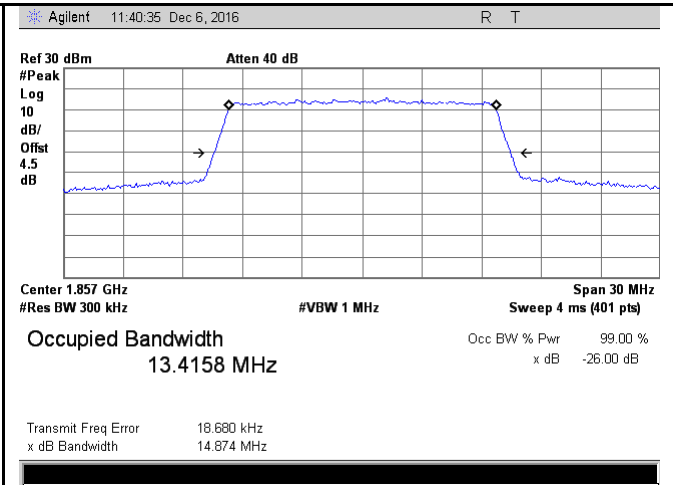
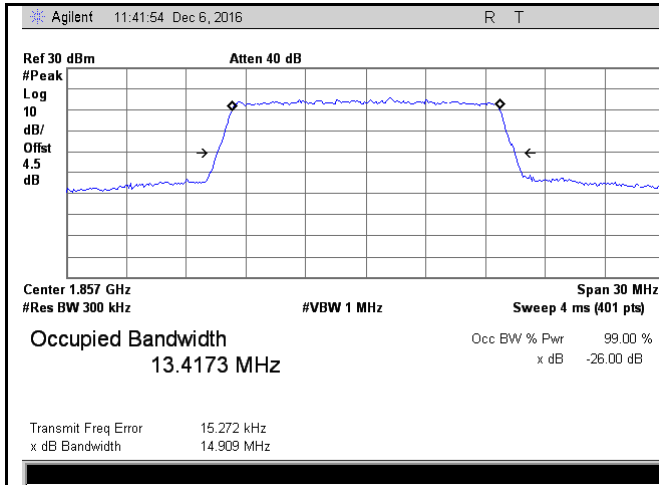
LTE Band II - Middle CH 16QAM-10



LTE Band II - High CH QPSK-10

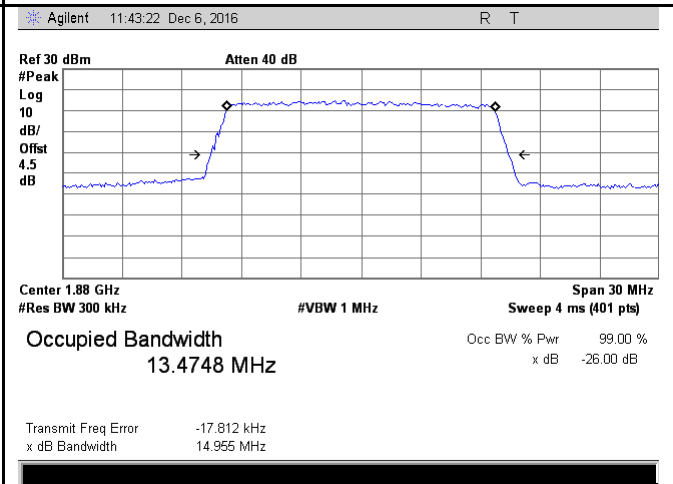
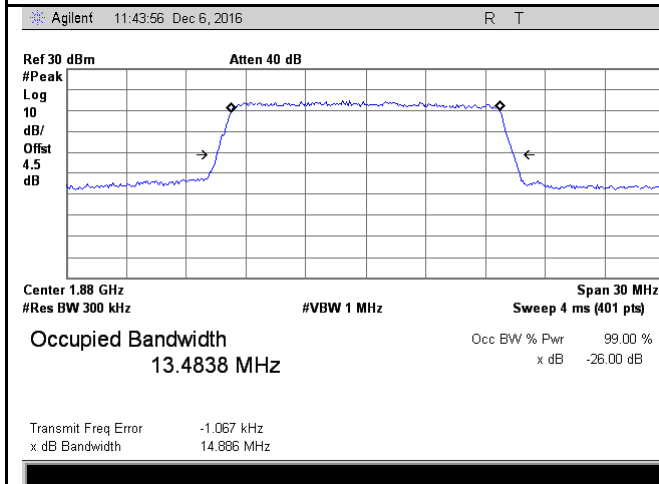


LTE Band II - High CH 16QAM-10



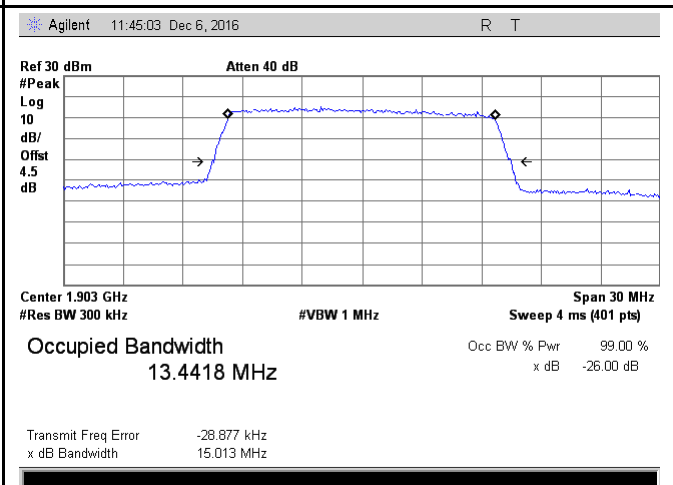
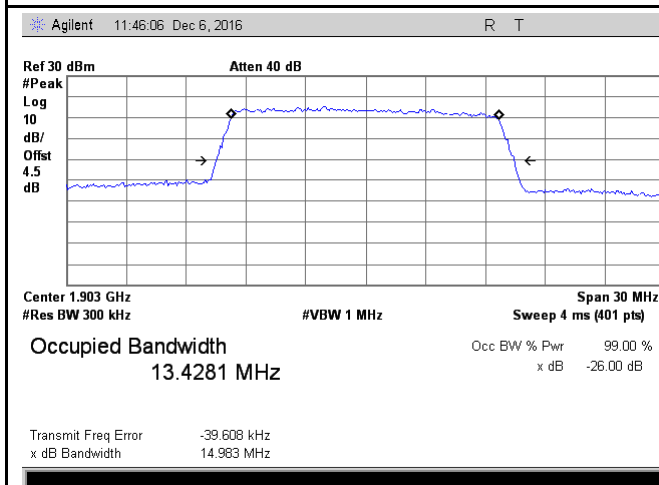
LTE Band II - Low CH QPSK-15

LTE Band II - Low CH 16QAM-15



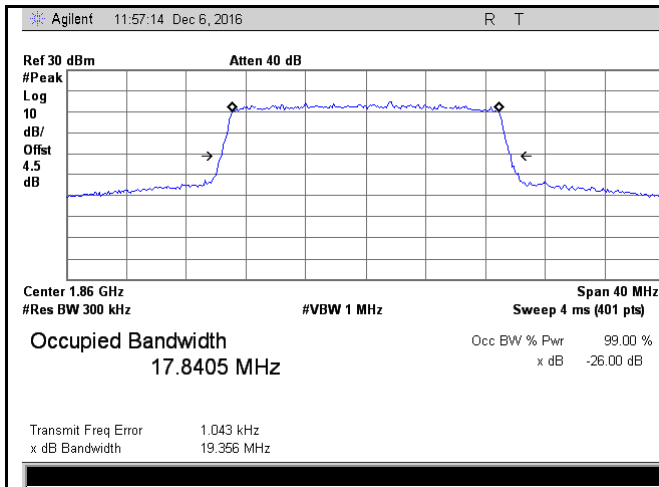
LTE Band II - Middle CH QPSK-15

LTE Band II - Middle CH 16QAM-15

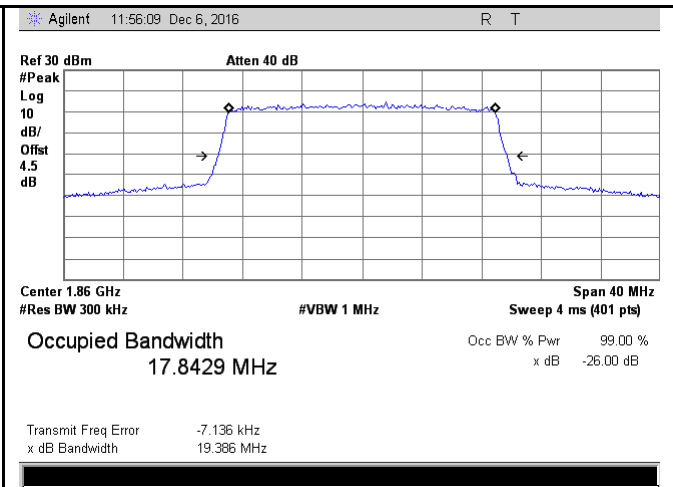


LTE Band II - High CH QPSK-15

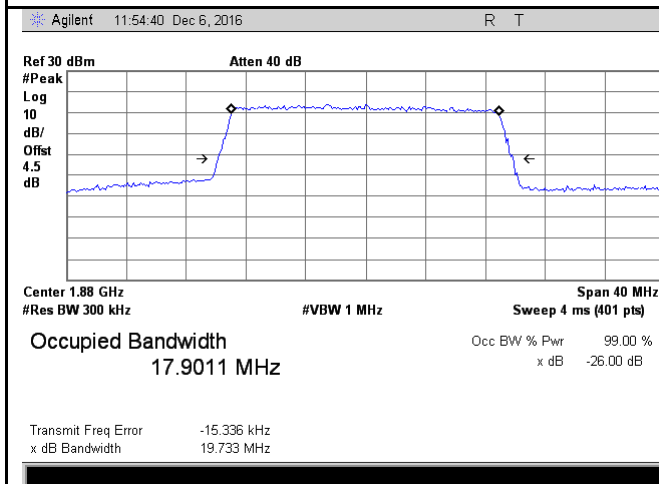
LTE Band II - High CH 16QAM-15



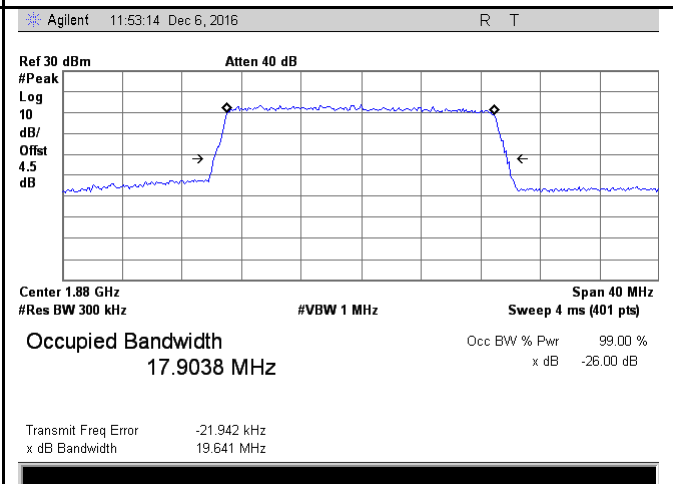
LTE Band II - Low CH QPSK-20



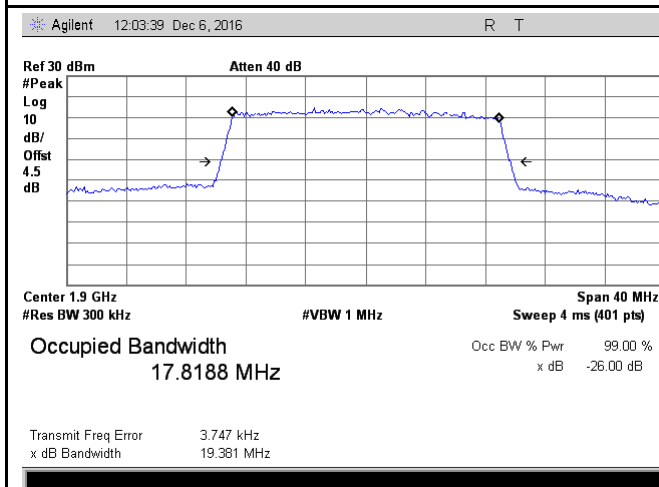
LTE Band II - Low CH 16QAM-20



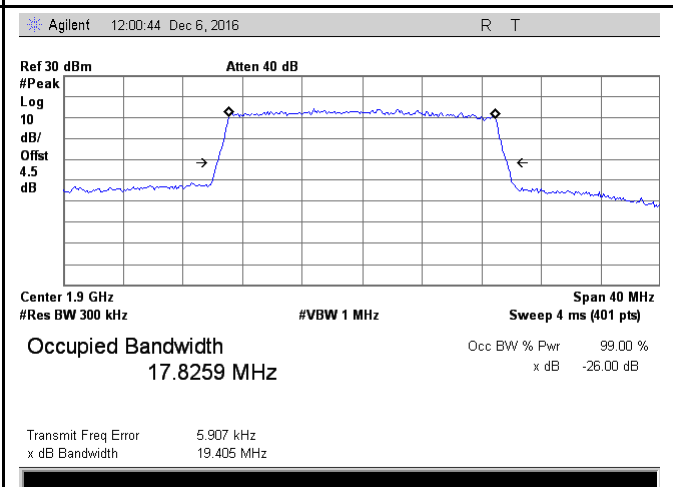
LTE Band II - Middle CH QPSK-20



LTE Band II - Middle CH 16QAM-20

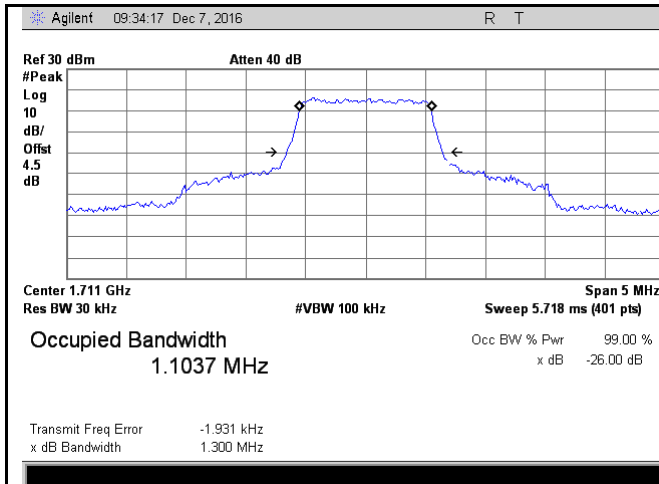


LTE Band II - High CH QPSK-20

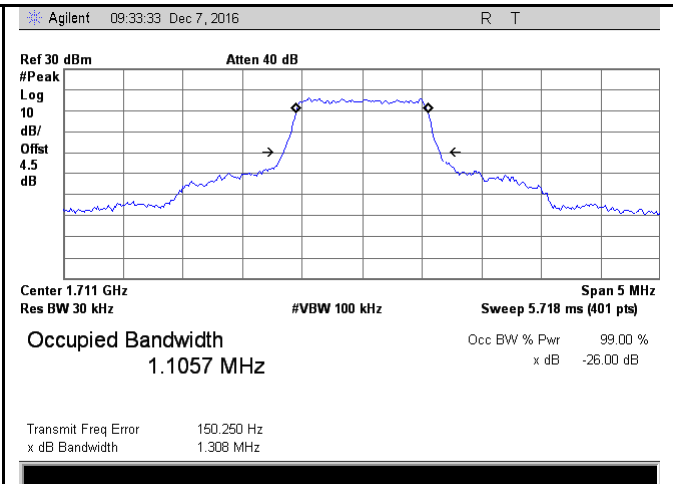


LTE Band II - High CH 16QAM-20

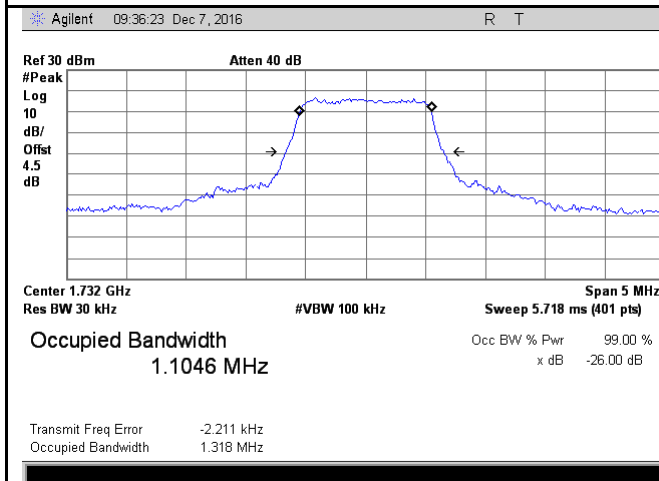
LTE Band IV (Part 27)



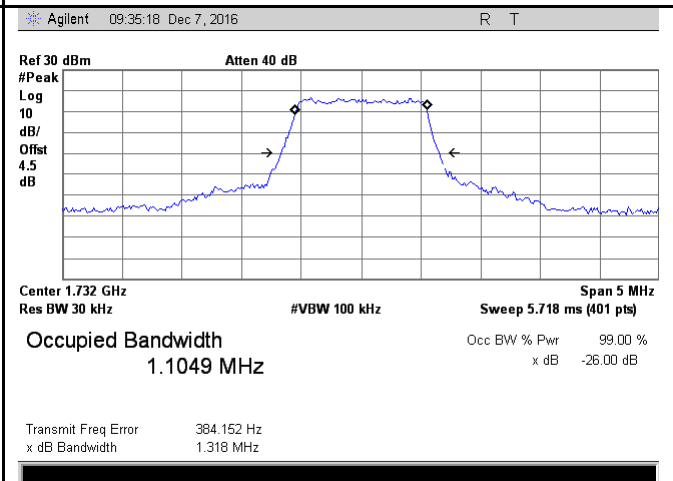
LTE Band IV - Low CH QPSK-1.4



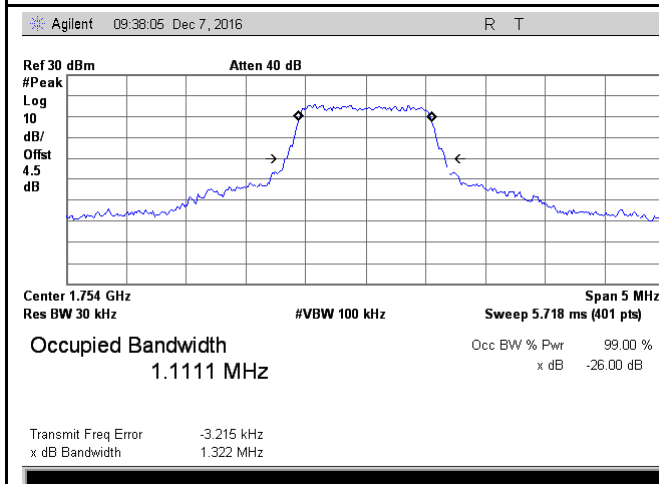
LTE Band IV - Low CH 16QAM-1.4



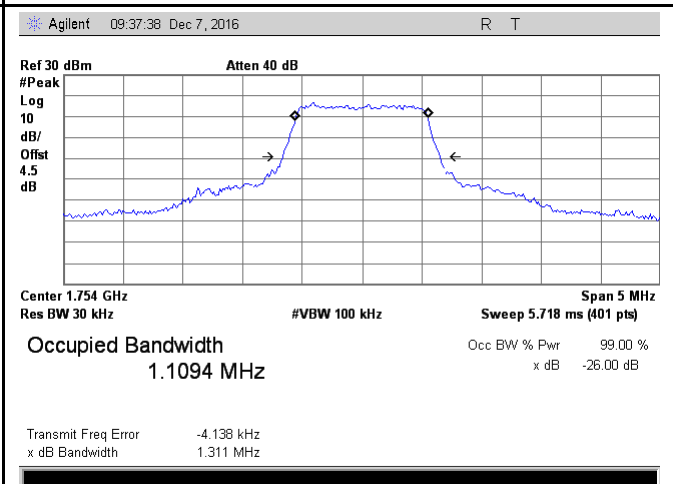
LTE Band IV - Middle CH QPSK-1.4



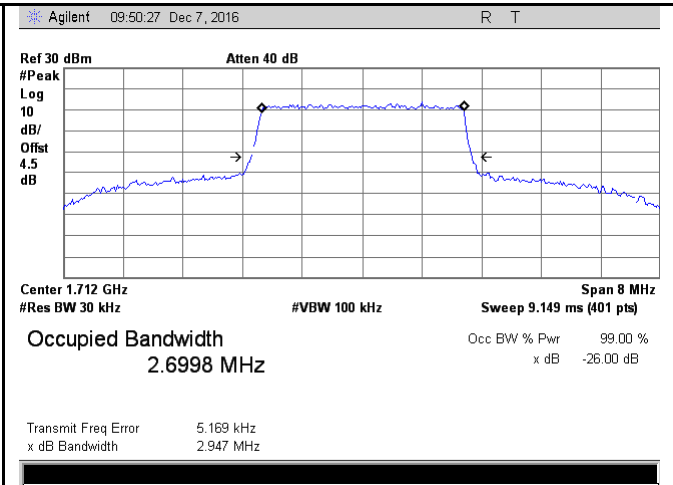
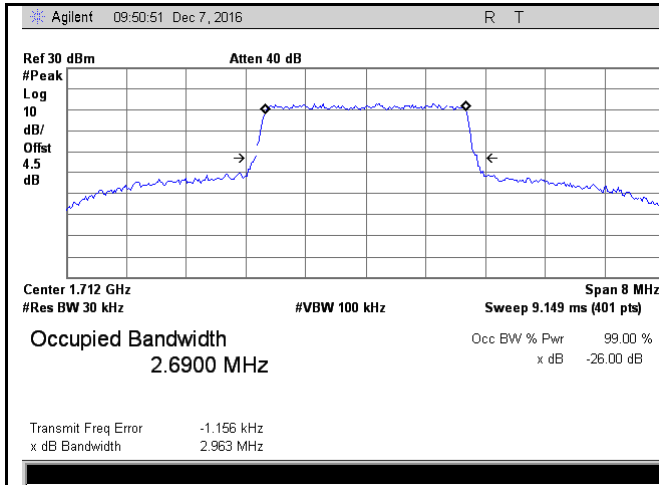
LTE Band IV - Middle CH 16QAM-1.4



LTE Band IV - High CH QPSK-1.4

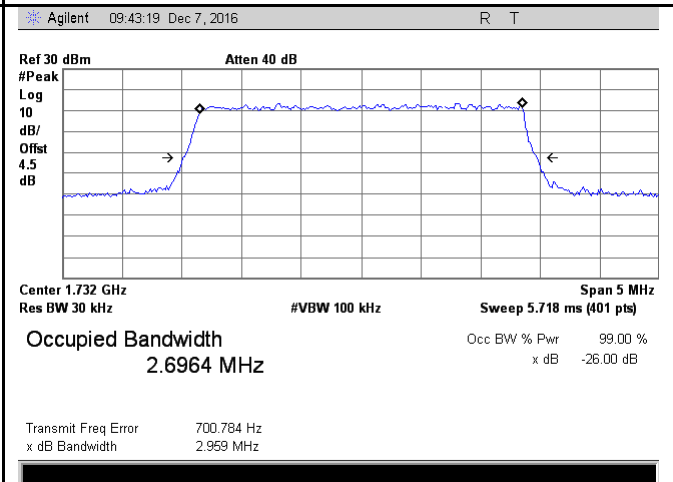
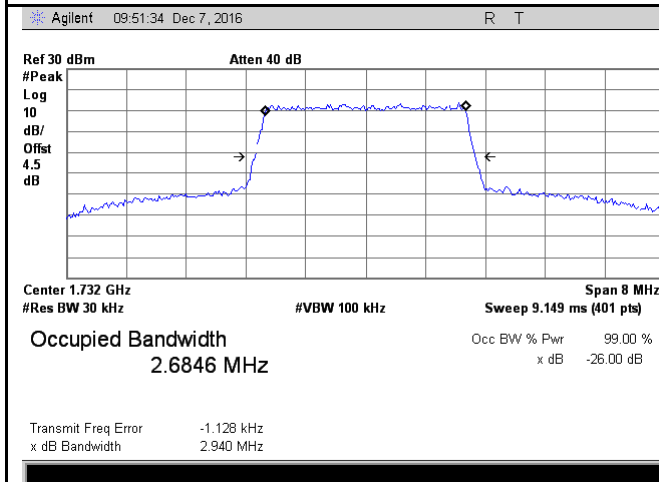


LTE Band IV - High CH 16QAM-1.4



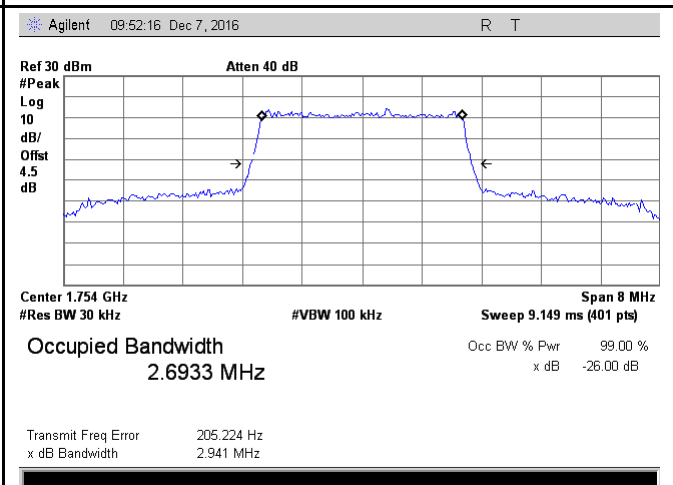
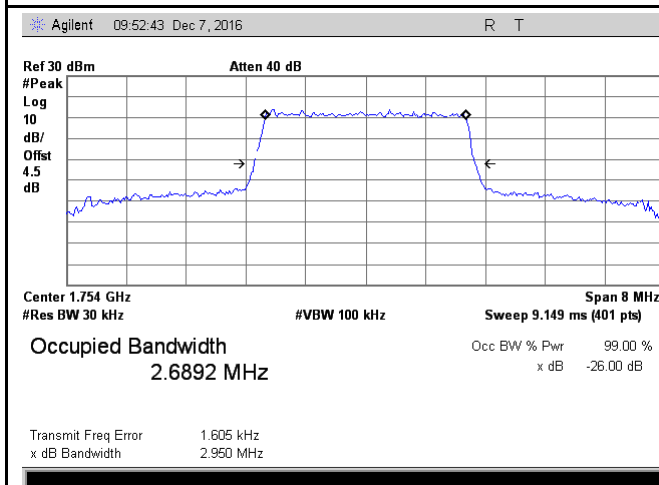
LTE Band IV - Low CH QPSK-3

LTE Band IV - Low CH 16QAM-3



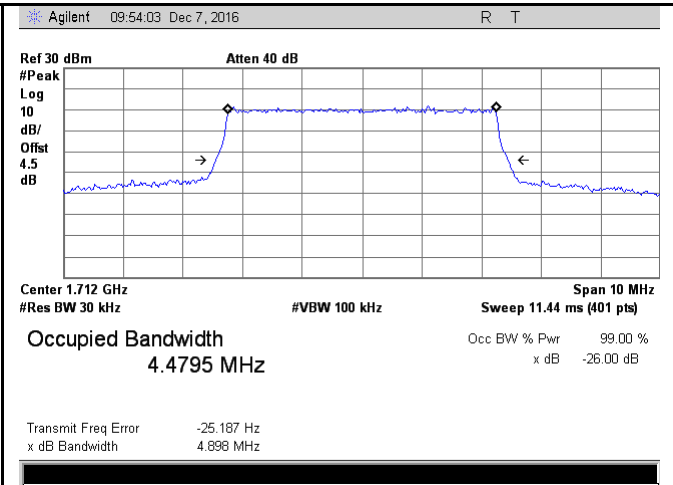
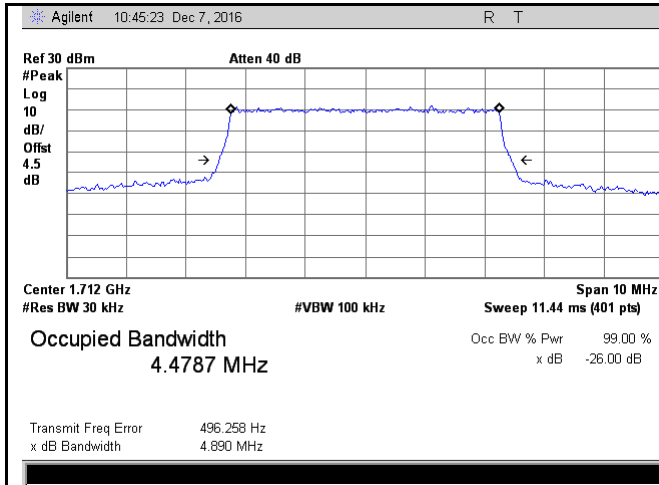
LTE Band IV - Middle CH QPSK-3

LTE Band IV - Middle CH 16QAM-3

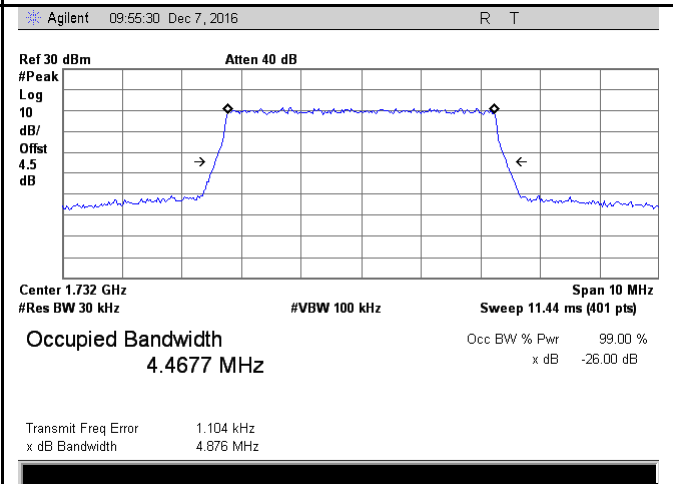
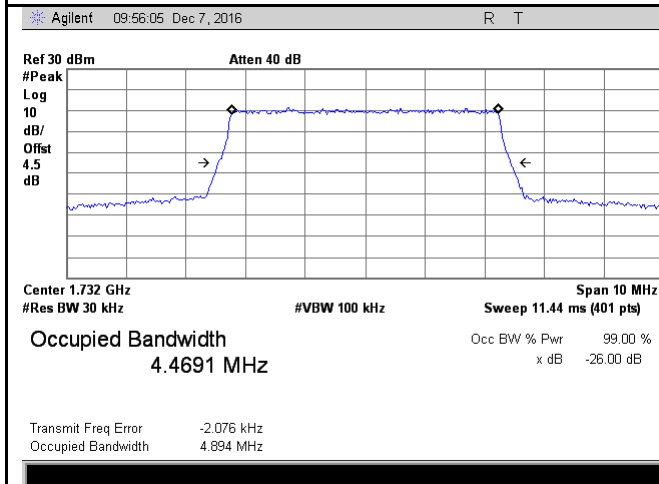


LTE Band IV - High CH QPSK-3

LTE Band IV - High CH 16QAM-3

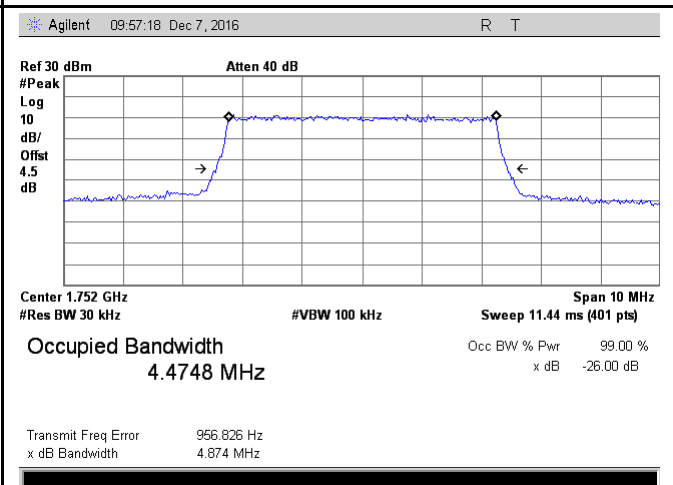
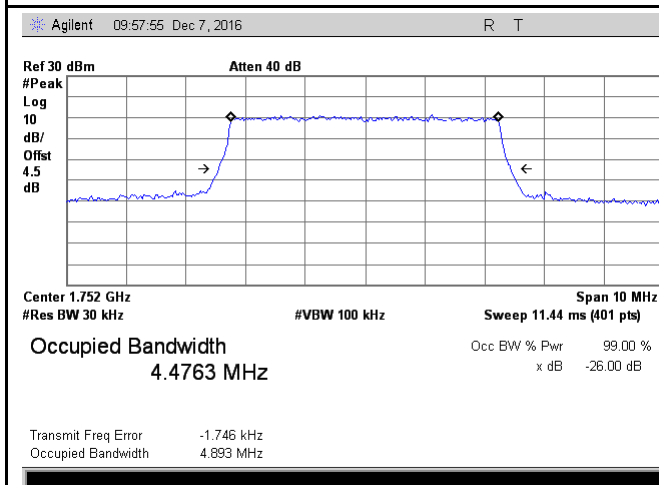


LTE Band IV - Low CH QPSK-5



LTE Band IV - Low CH 16QAM-5

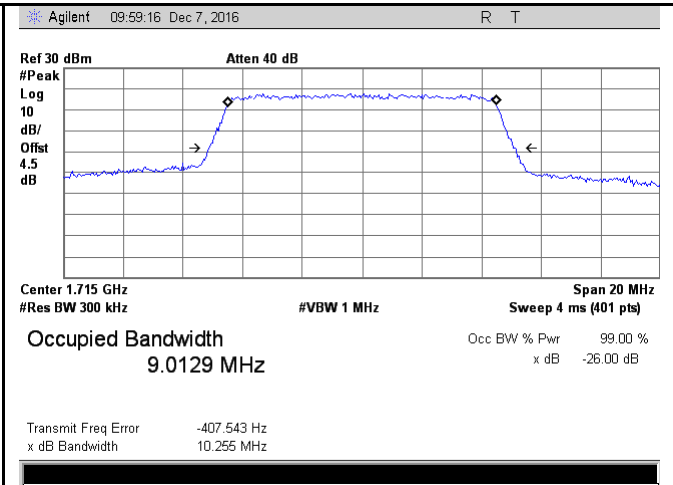
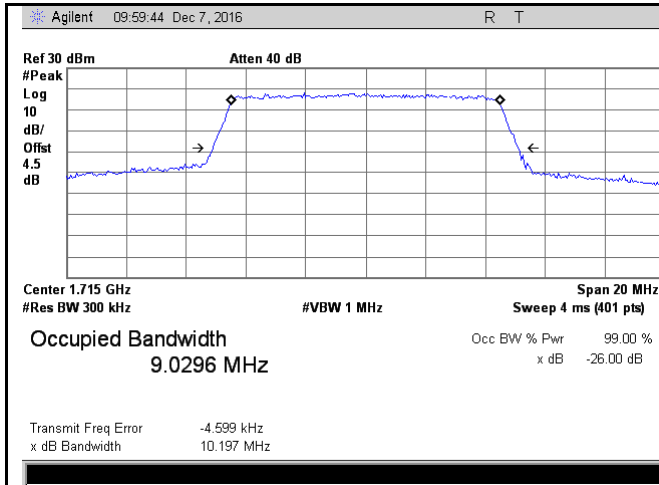
LTE Band IV - Middle CH QPSK-5



LTE Band IV - Middle CH 16QAM-5

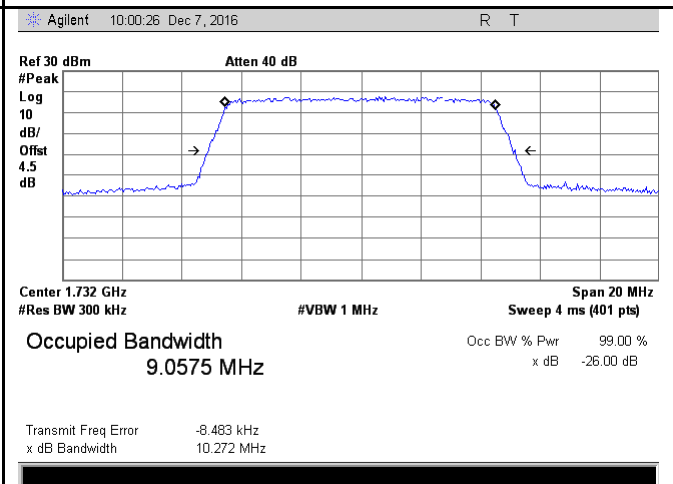
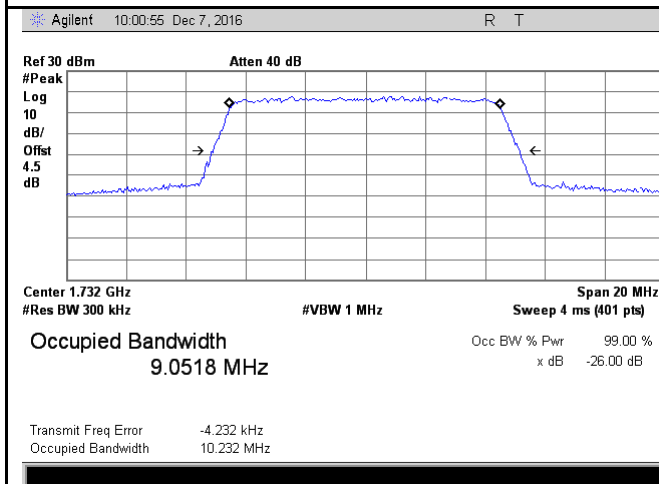
LTE Band IV - High CH QPSK-5

LTE Band IV - High CH 16QAM-5



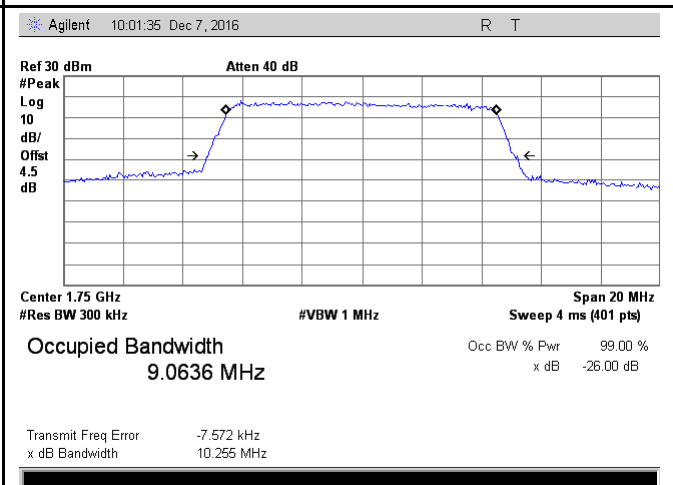
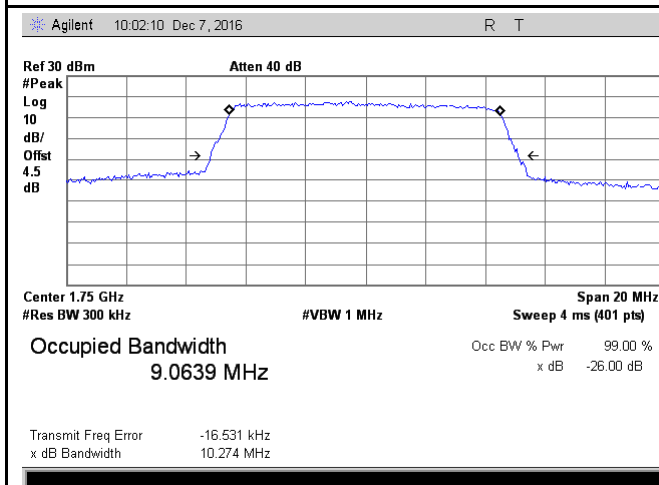
LTE Band IV - Low CH QPSK-10

LTE Band IV - Low CH 16QAM-10



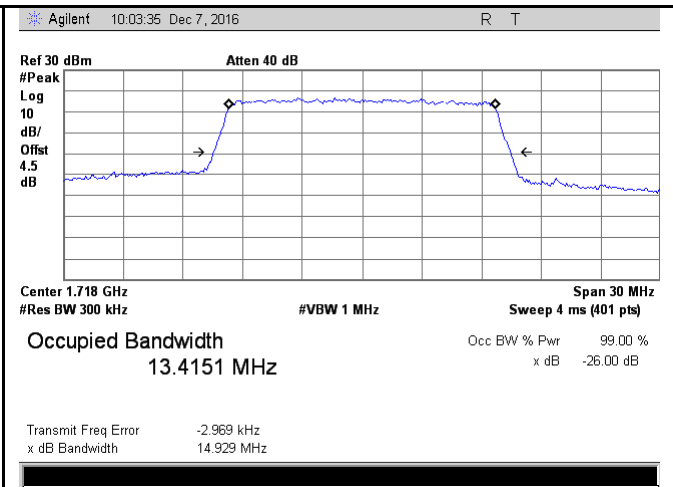
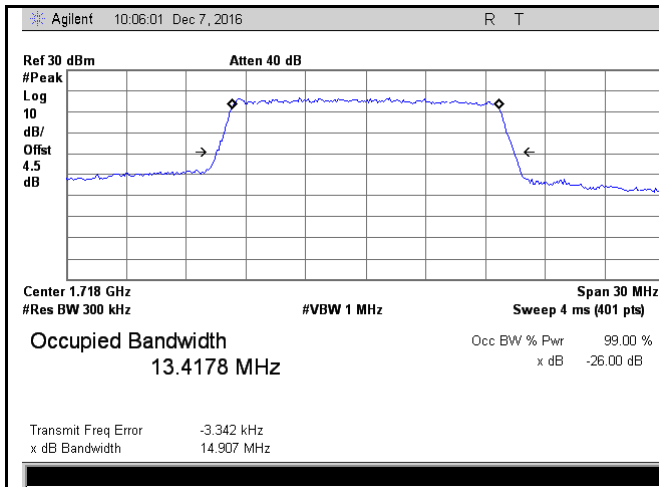
LTE Band IV - Middle CH QPSK-10

LTE Band IV - Middle CH 16QAM-10



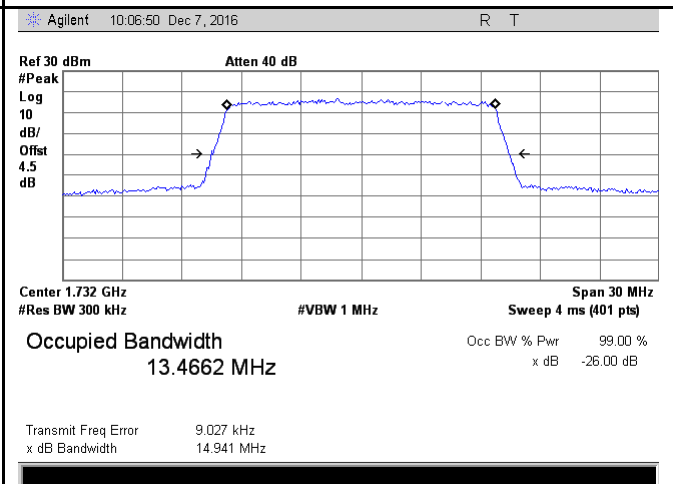
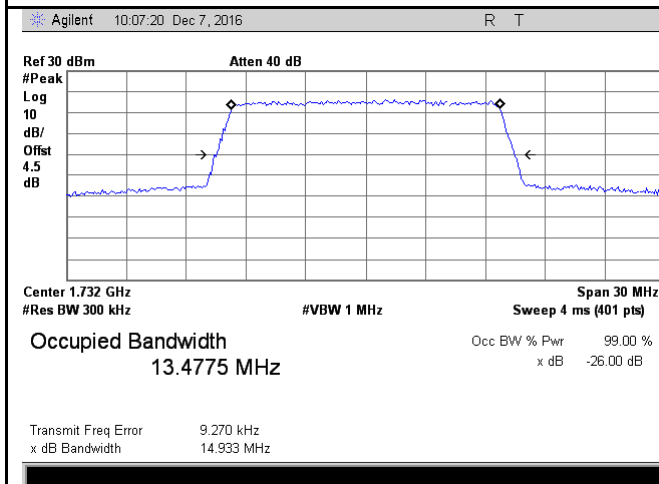
LTE Band IV - High CH QPSK-10

LTE Band IV - High CH 16QAM-10



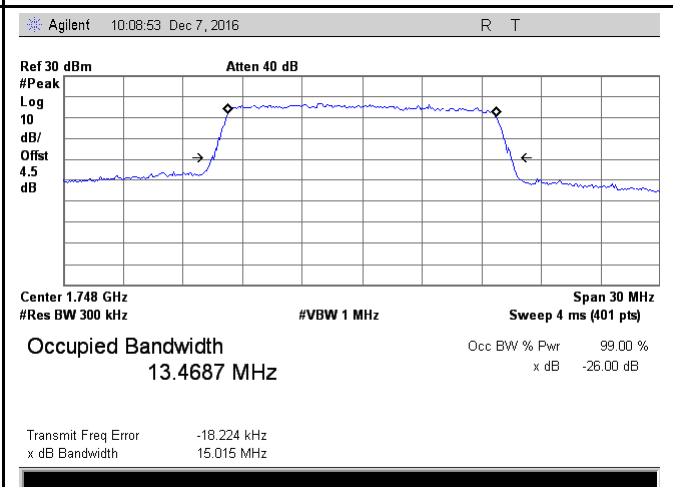
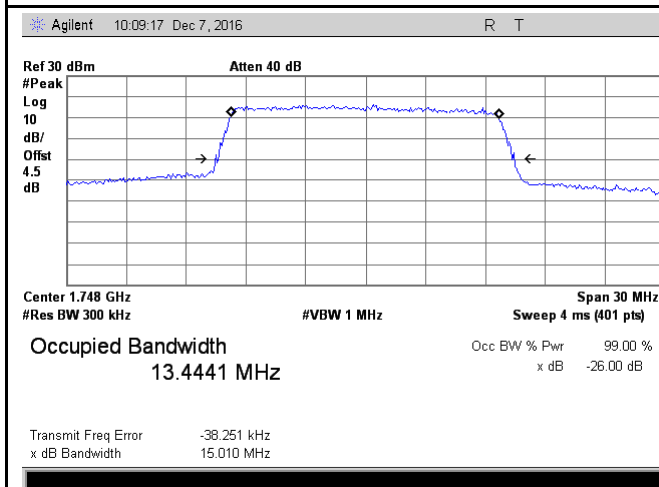
LTE Band IV - Low CH QPSK-15

LTE Band IV - Low CH 16QAM-15



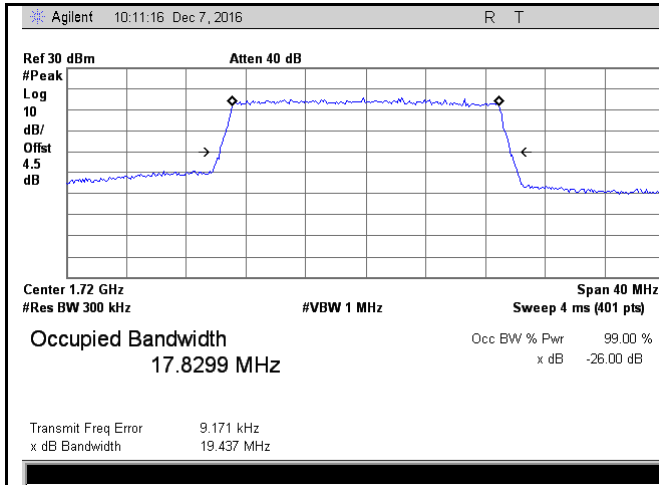
LTE Band IV - Middle CH QPSK-15

LTE Band IV - Middle CH 16QAM-15

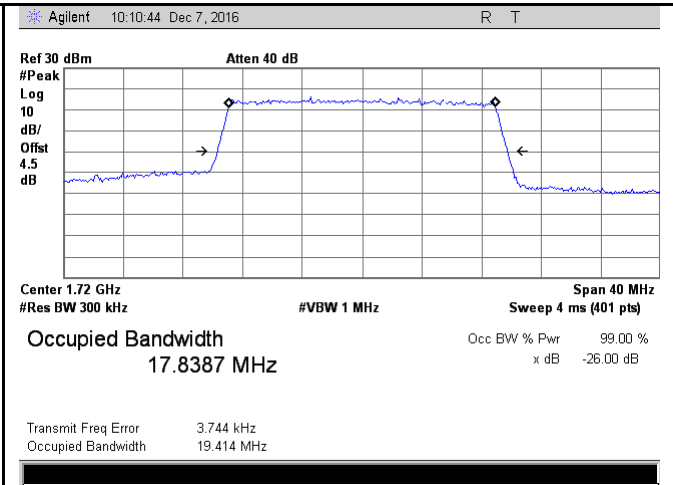


LTE Band IV - High CH QPSK-15

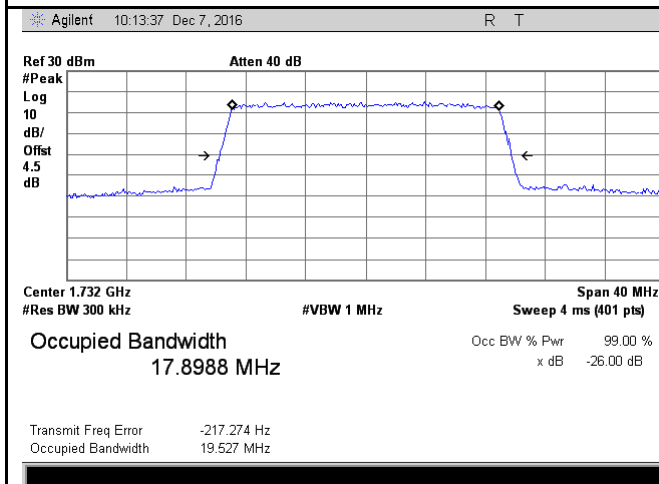
LTE Band IV - High CH 16QAM-15



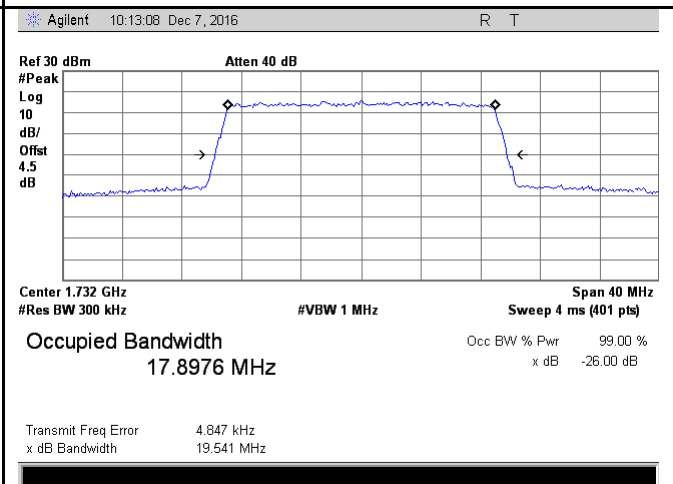
LTE Band IV - Low CH QPSK-20



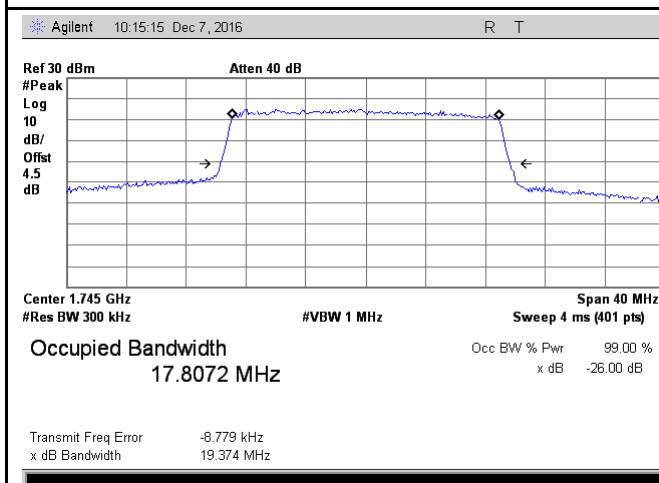
LTE Band IV - Low CH 16QAM-20



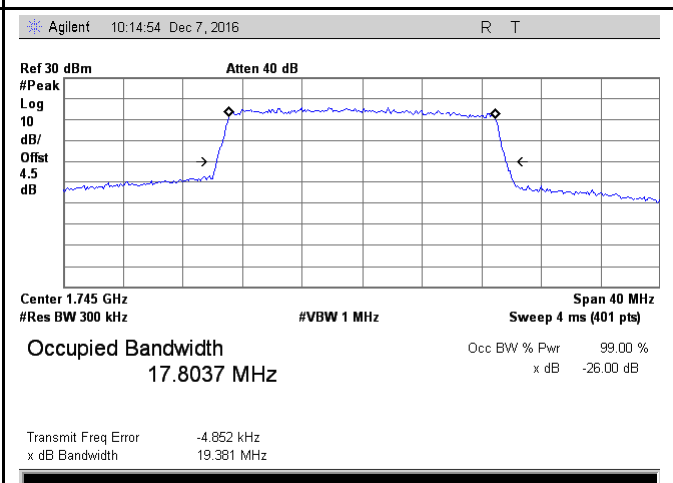
LTE Band IV - Middle CH QPSK-20



LTE Band IV - Middle CH 16QAM-20

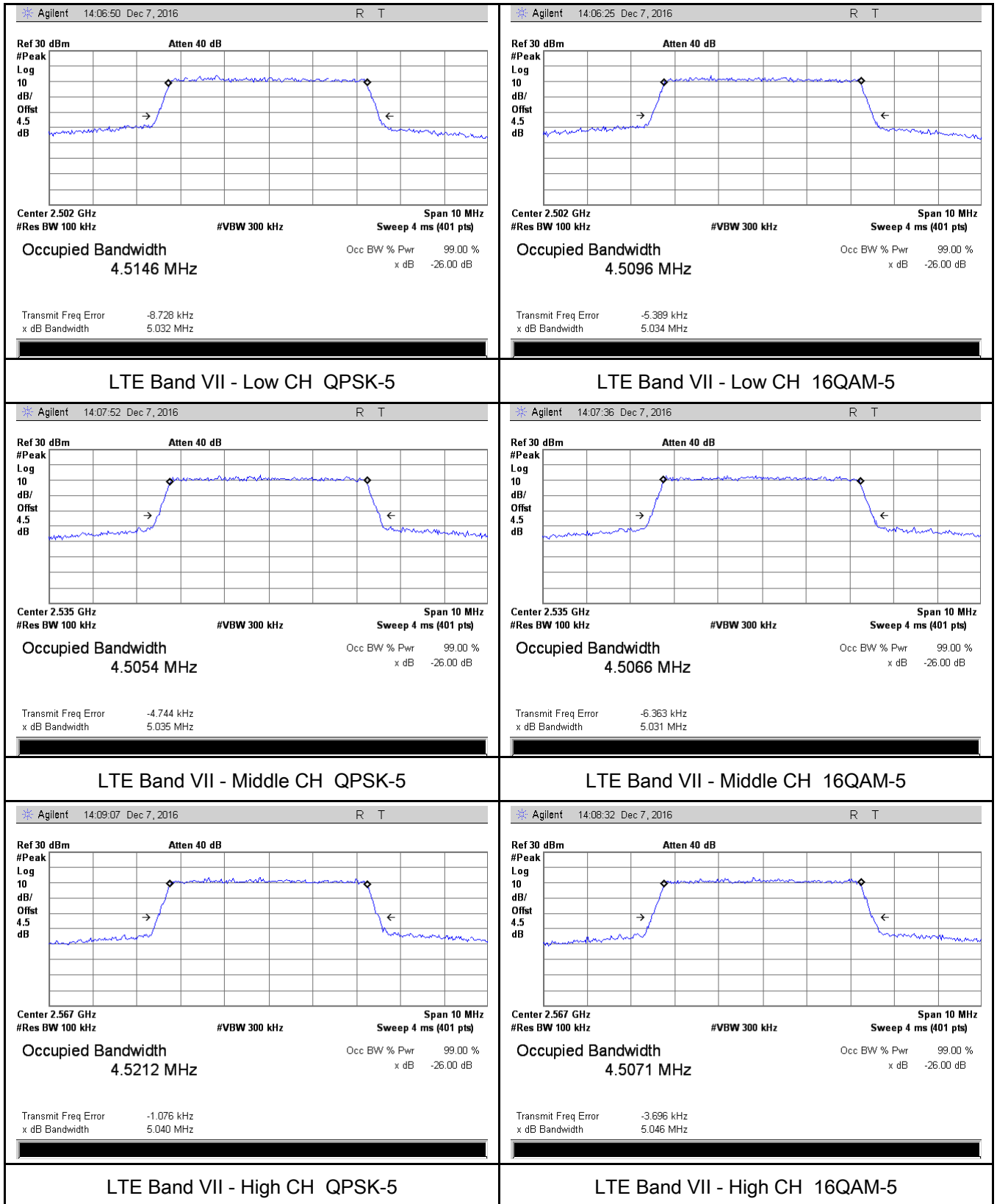


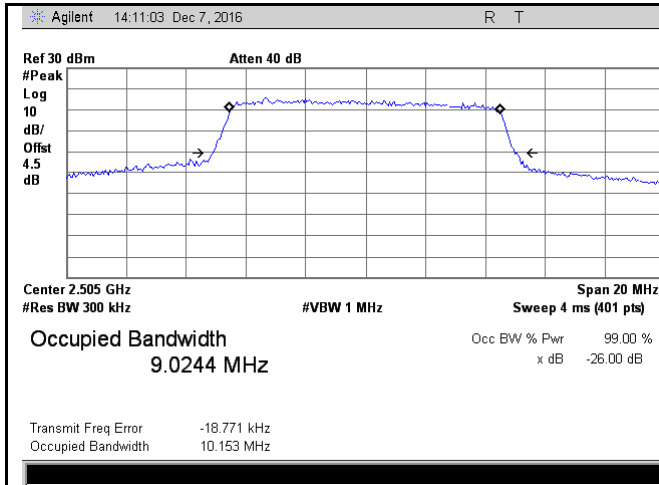
LTE Band IV - High CH QPSK-20



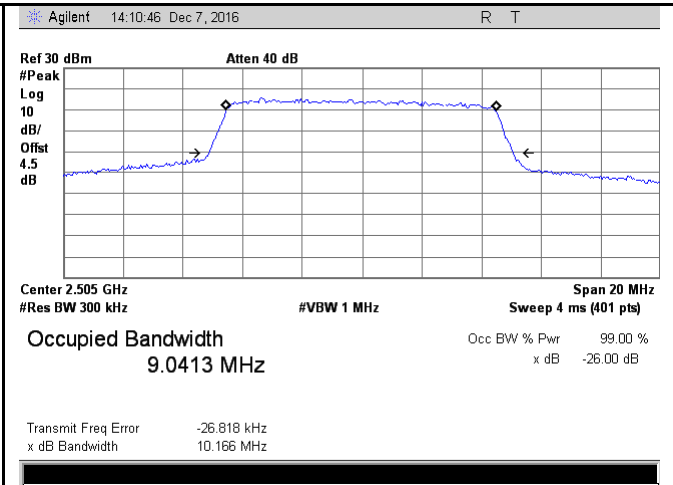
LTE Band IV - High CH 16QAM-20

LTE Band VII (Part 27)

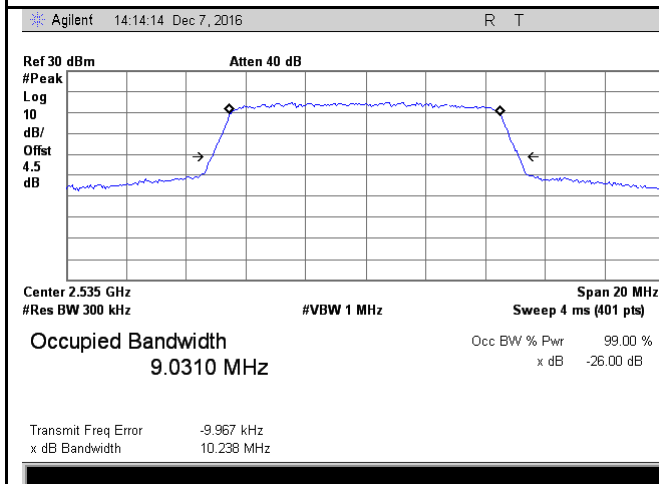




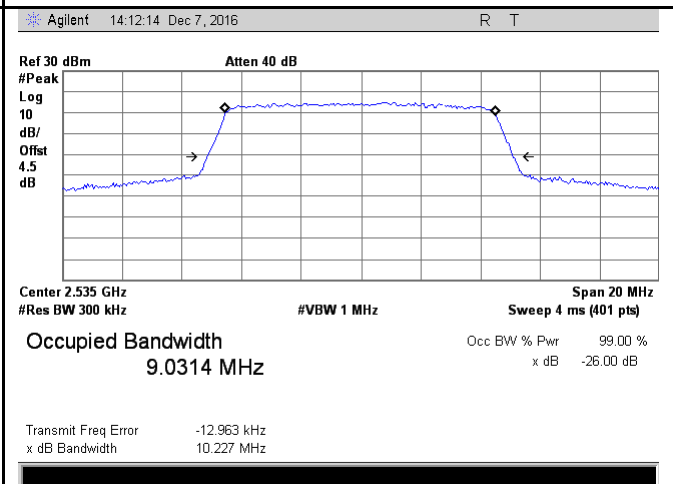
LTE Band VII - Low CH QPSK-10



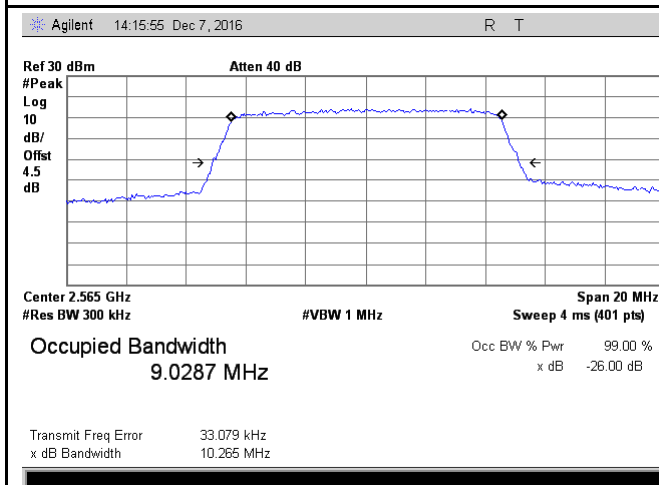
LTE Band VII - Low CH 16QAM-10



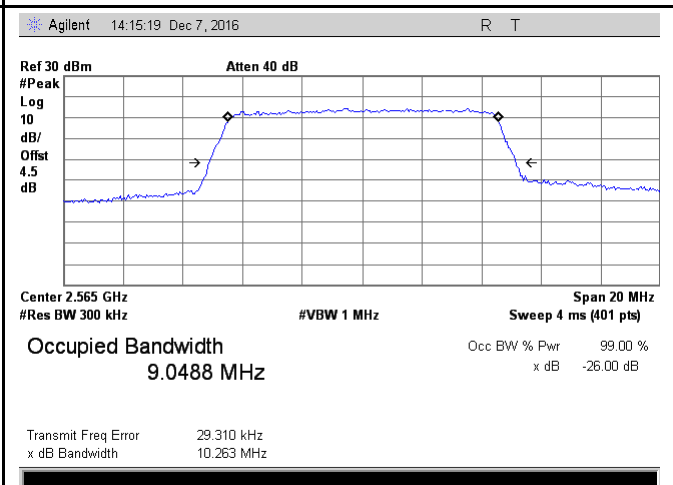
LTE Band VII - Middle CH QPSK-10



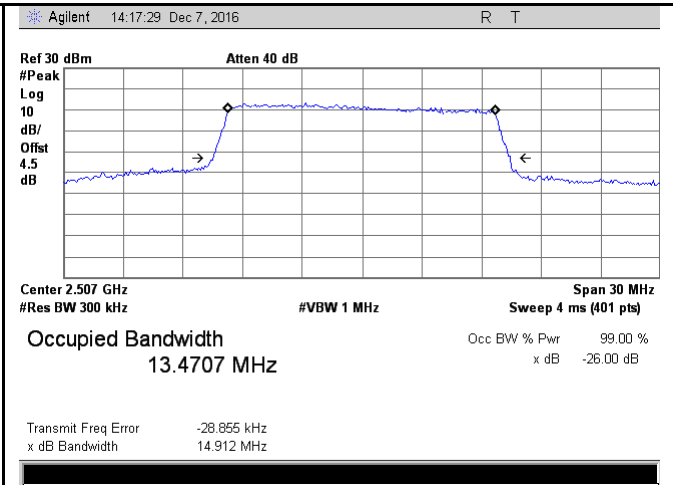
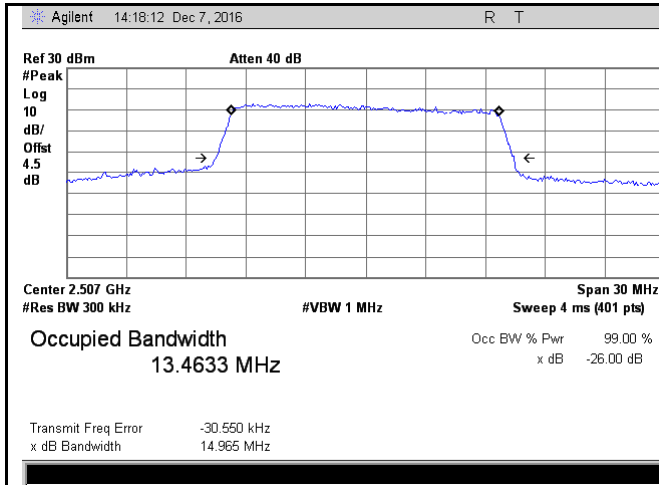
LTE Band VII - Middle CH 16QAM-10



LTE Band VII - High CH QPSK-10

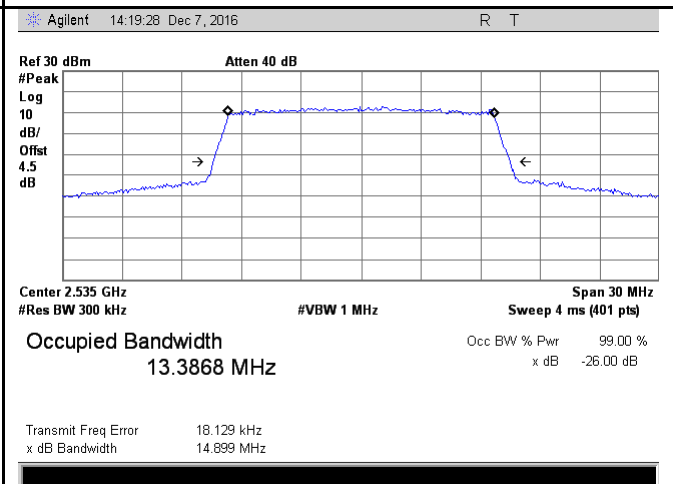
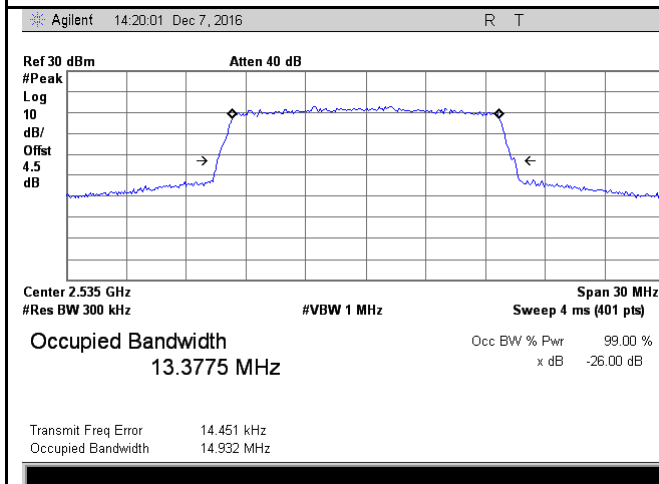


LTE Band VII - High CH 16QAM-10



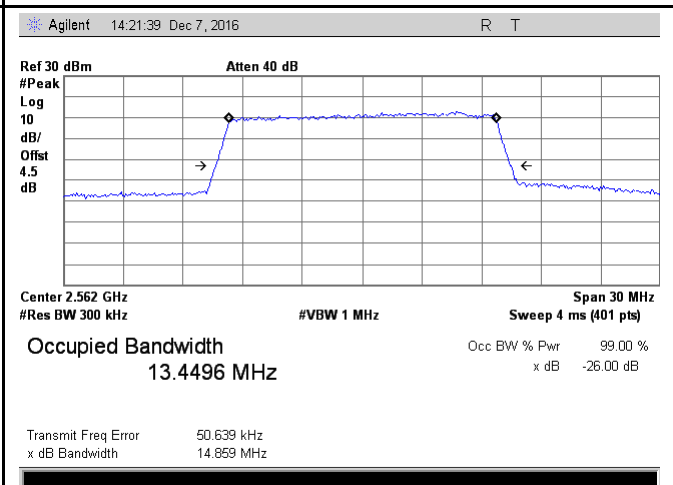
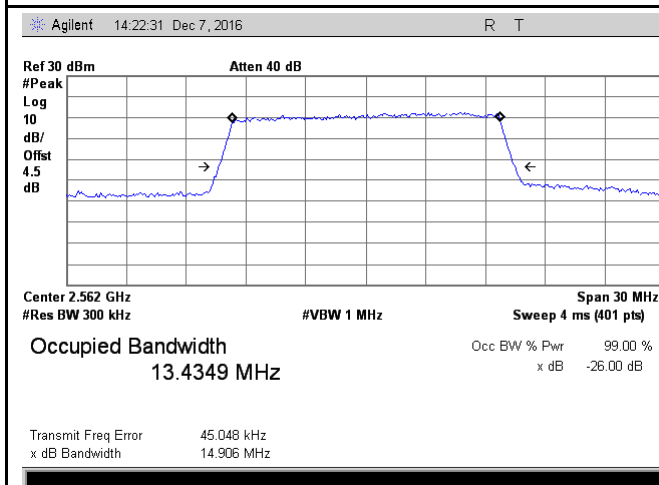
LTE Band VII - Low CH QPSK-15

LTE Band VII - Low CH 16QAM-15



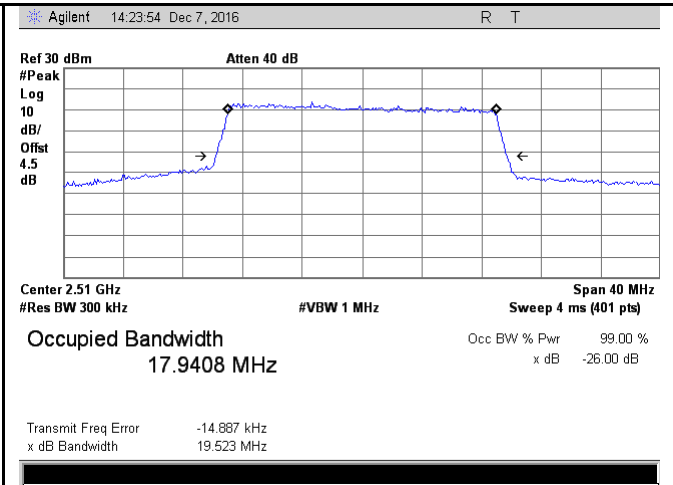
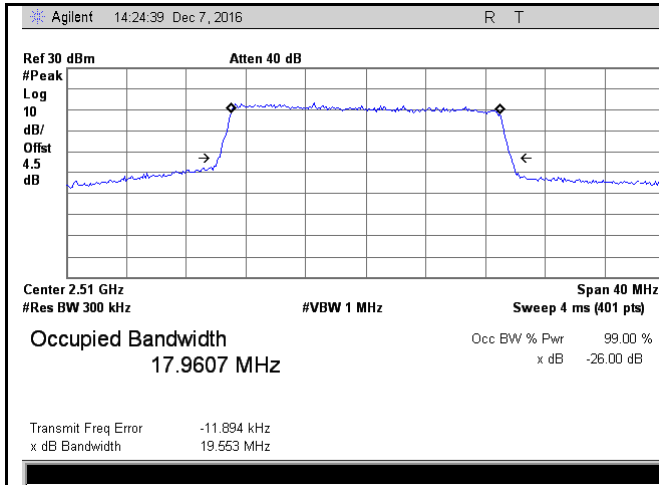
LTE Band VII - Middle CH QPSK-15

LTE Band VII - Middle CH 16QAM-15



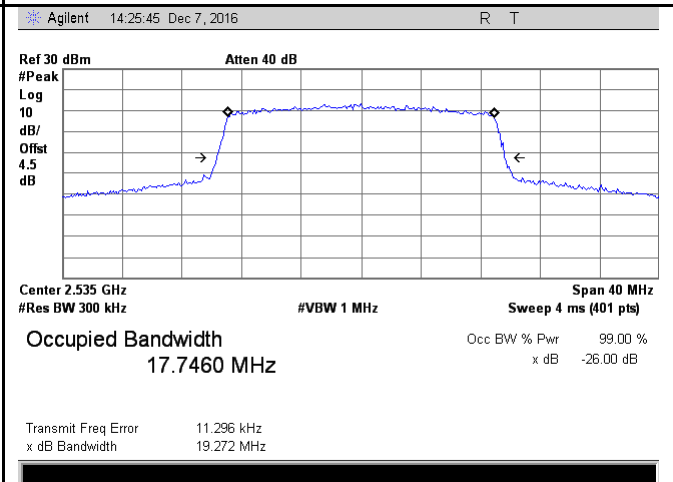
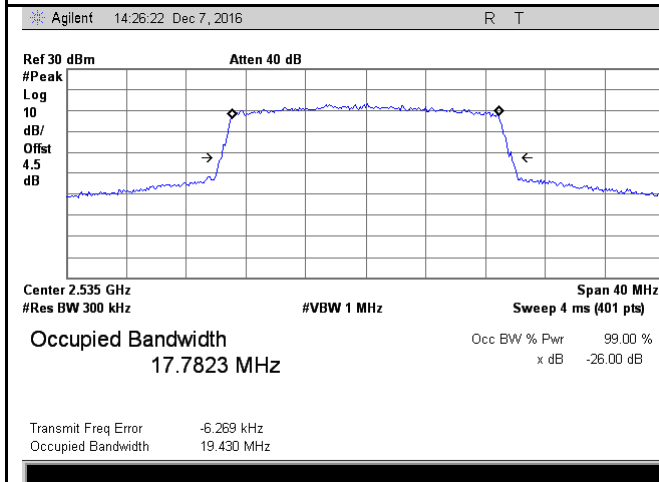
LTE Band VII - High CH QPSK-15

LTE Band VII - High CH 16QAM-15



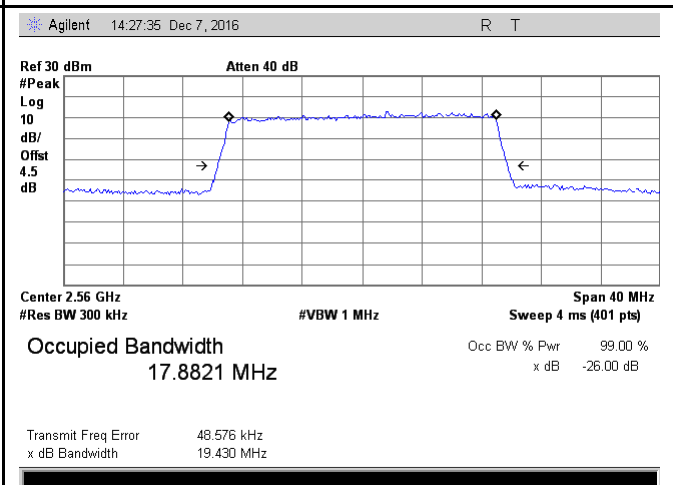
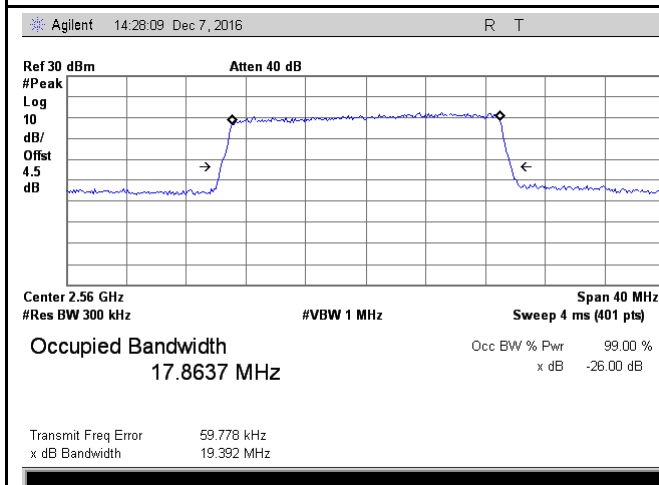
LTE Band VII - Low CH QPSK-20

LTE Band VII - Low CH 16QAM-20



LTE Band VII - Middle CH QPSK-20

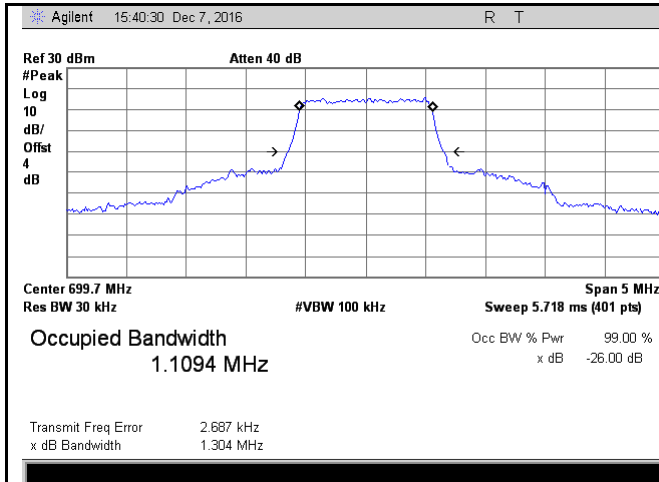
LTE Band VII - Middle CH 16QAM-20



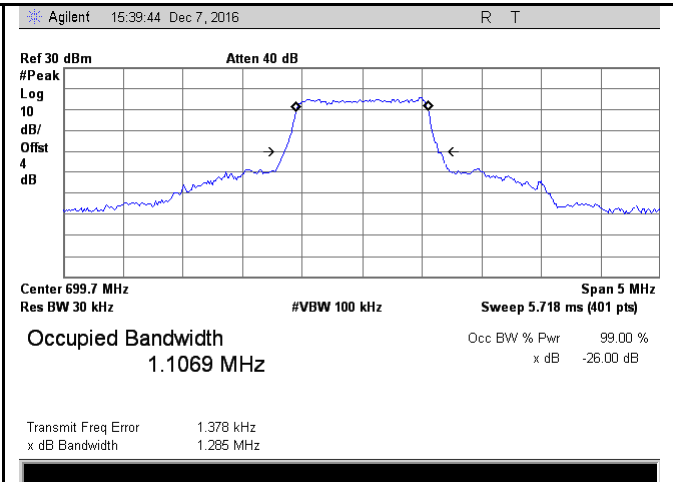
LTE Band VII - High CH QPSK-20

LTE Band VII - High CH 16QAM-20

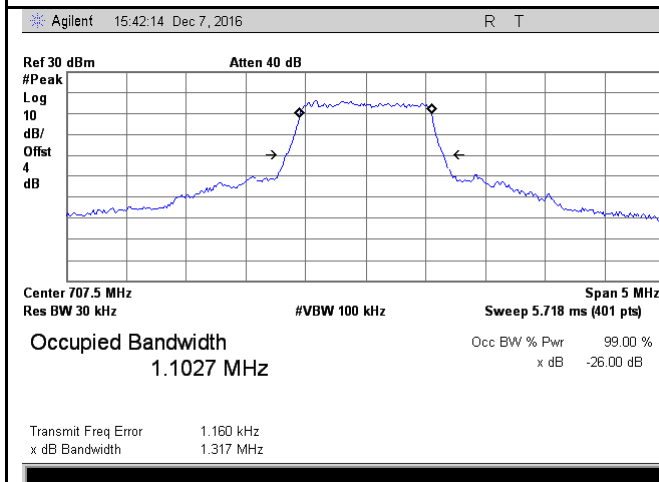
LTE Band XII (Part 27)



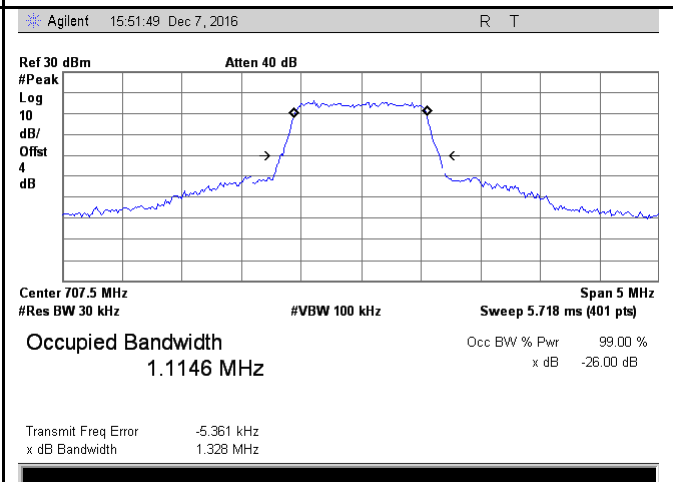
LTE Band XII - Low CH QPSK-1.4



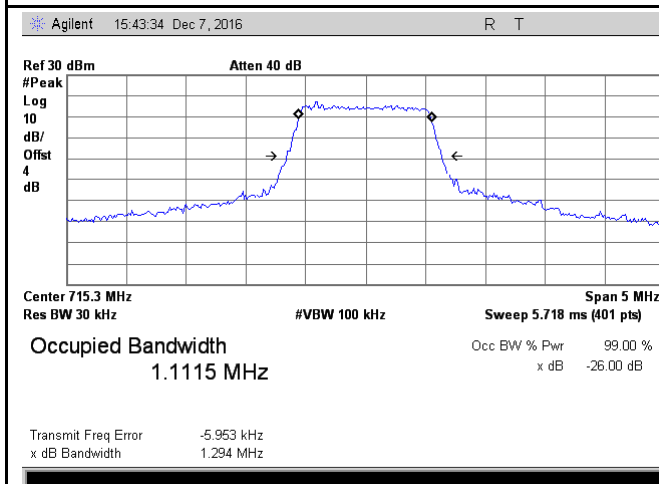
LTE Band XII - Low CH 16QAM-1.4



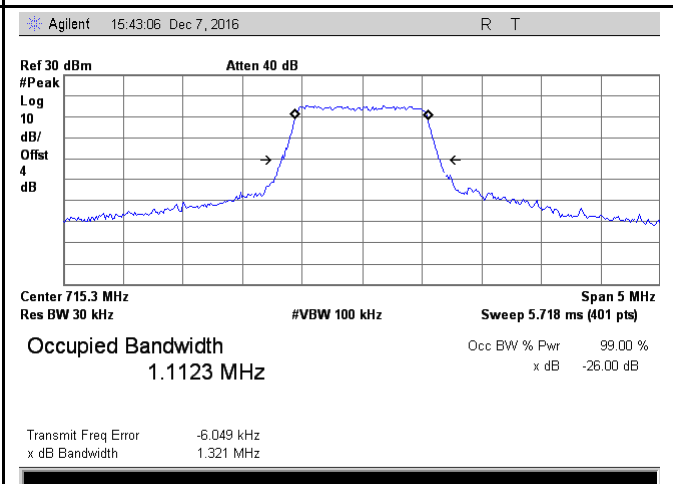
LTE Band XII - Middle CH QPSK-1.4



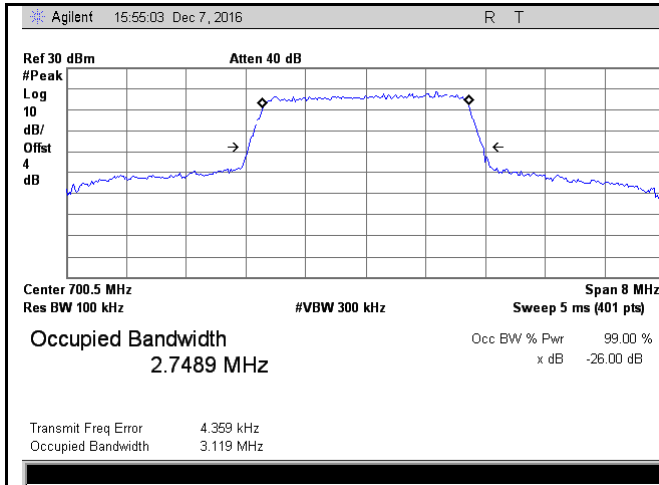
LTE Band XII - Middle CH 16QAM-1.4



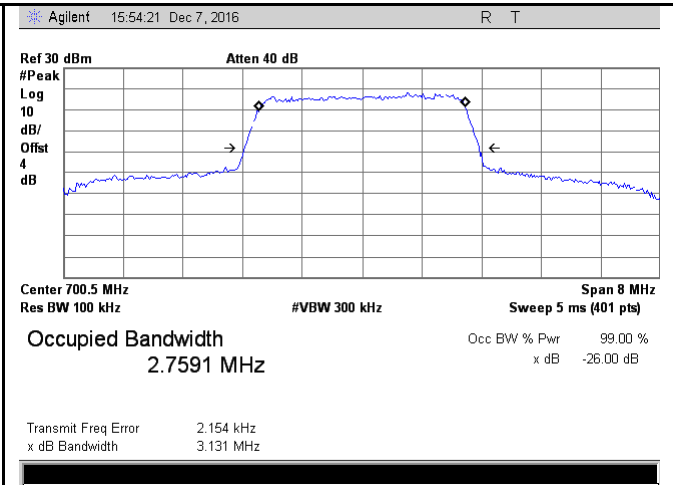
LTE Band XII - High CH QPSK-1.4



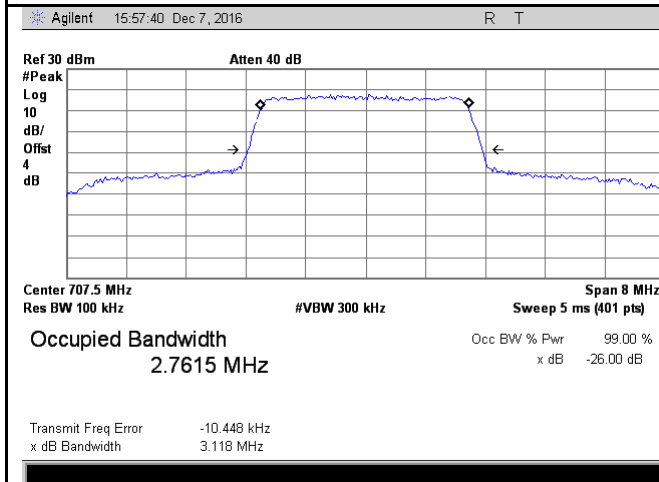
LTE Band XII - High CH 16QAM-1.4



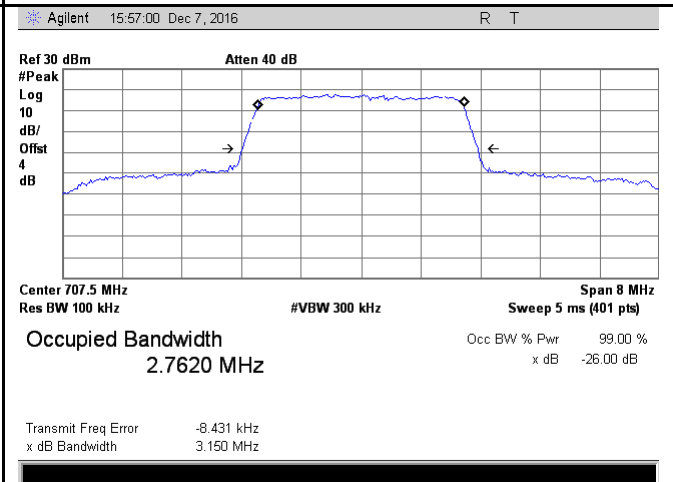
LTE Band XII - Low CH QPSK-3



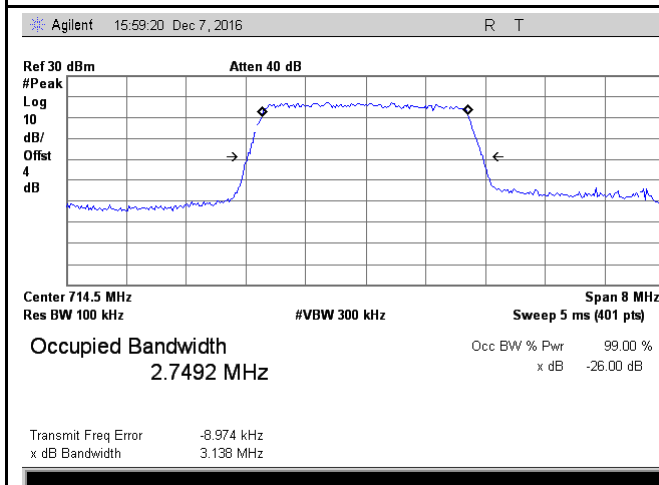
LTE Band XII - Low CH 16QAM-3



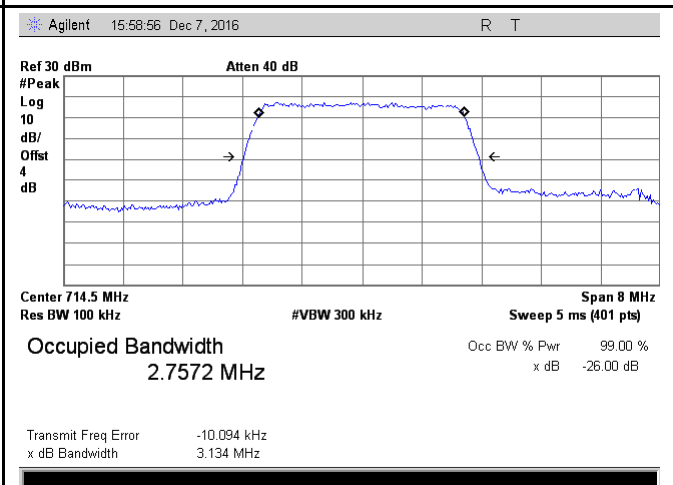
LTE Band XII - Middle CH QPSK-3



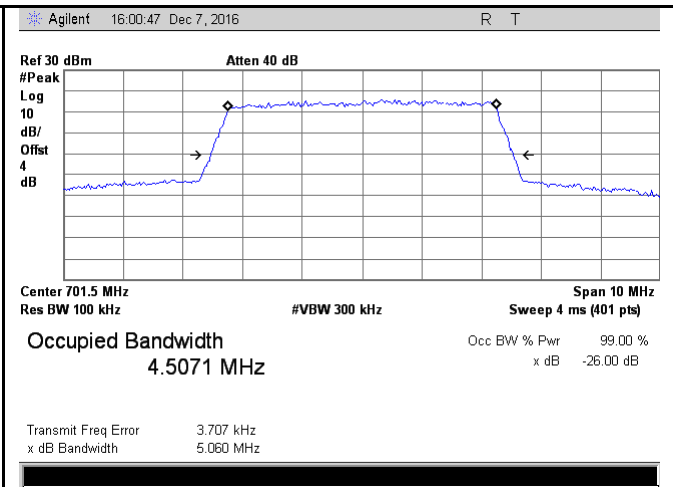
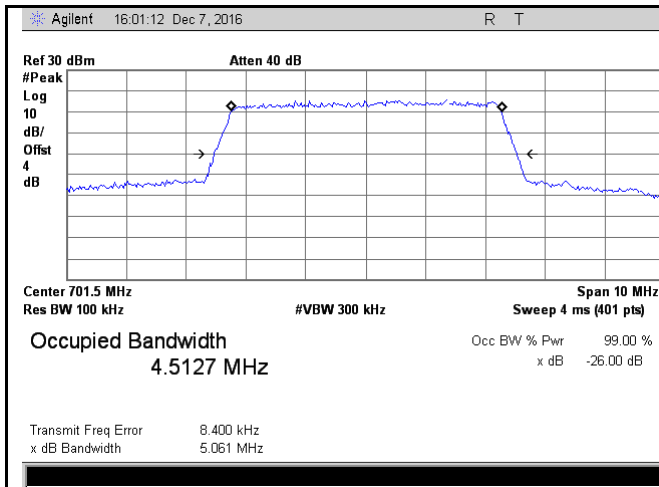
LTE Band XII - Middle CH 16QAM-3



LTE Band XII - High CH QPSK-3

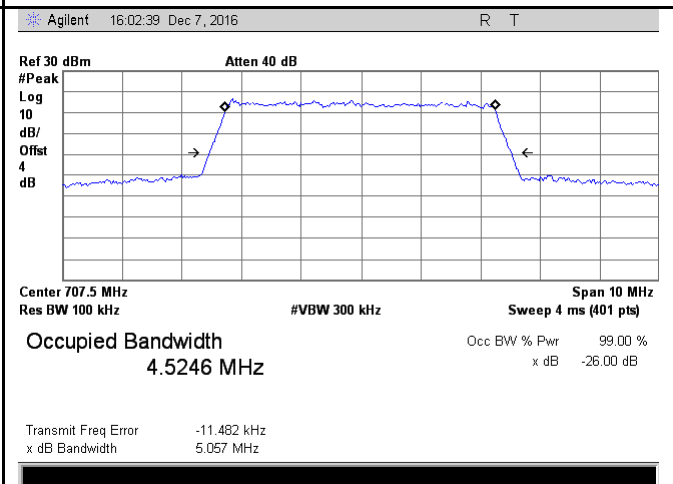
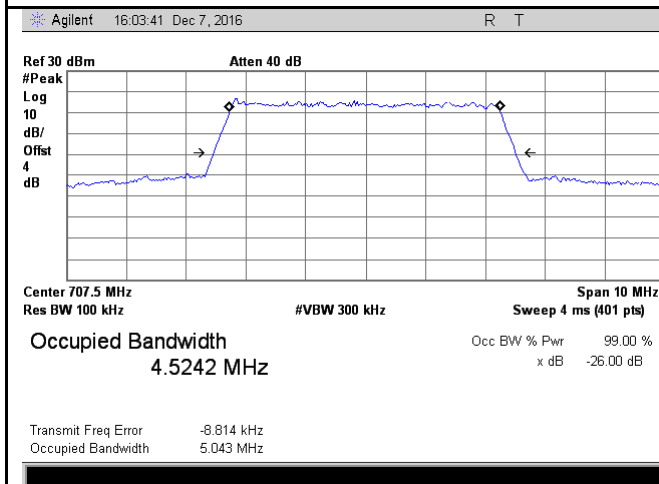


LTE Band XII - High CH 16QAM-3



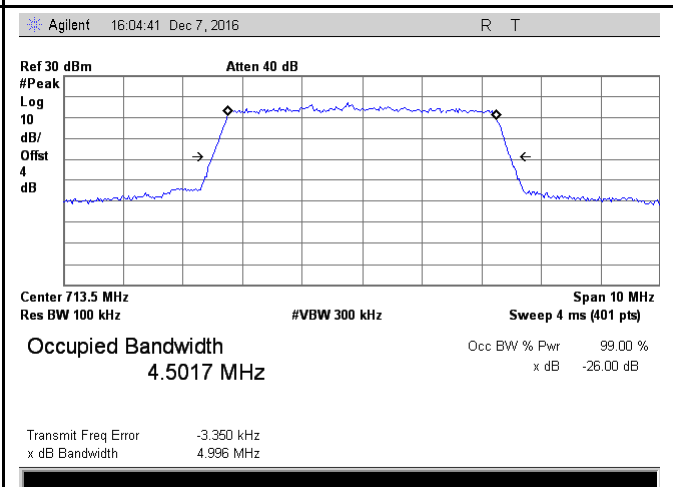
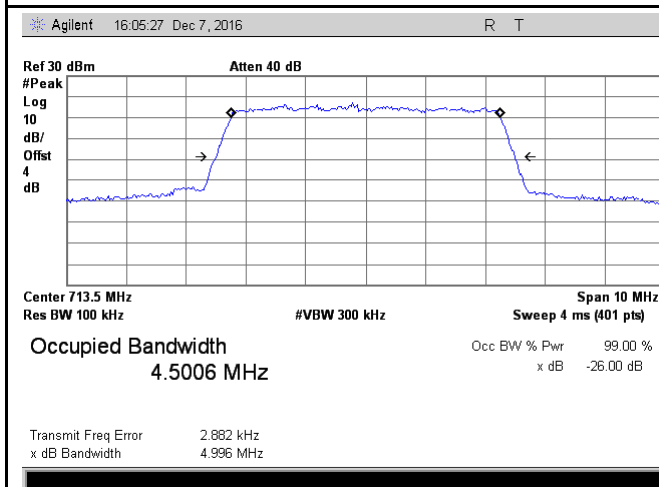
LTE Band XII - Low CH QPSK-5

LTE Band XII - Low CH 16QAM-5



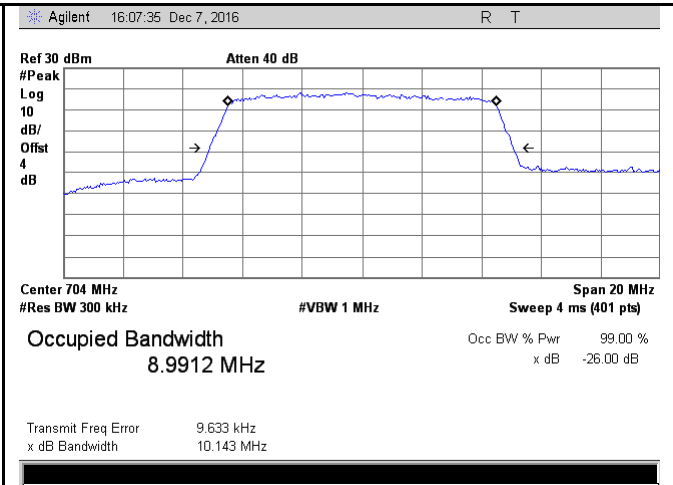
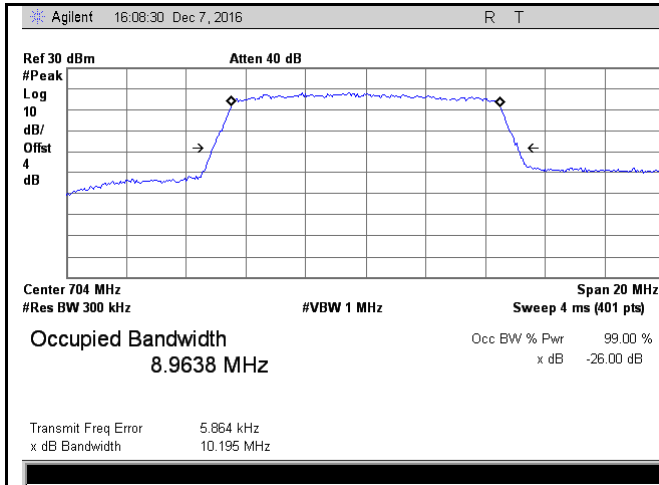
LTE Band XII - Middle CH QPSK-5

LTE Band XII - Middle CH 16QAM-5



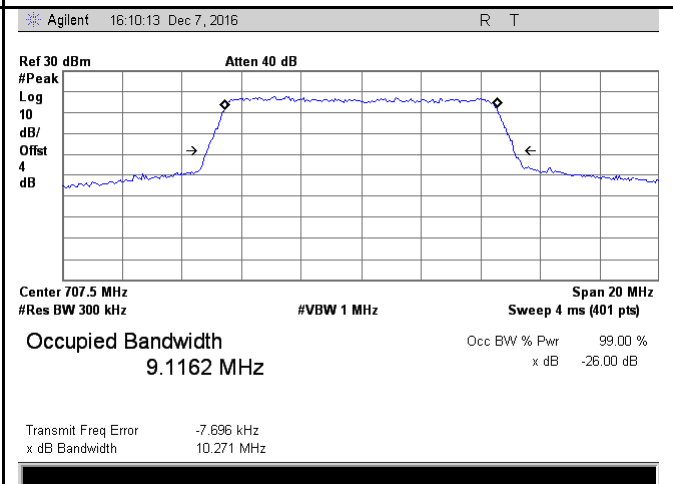
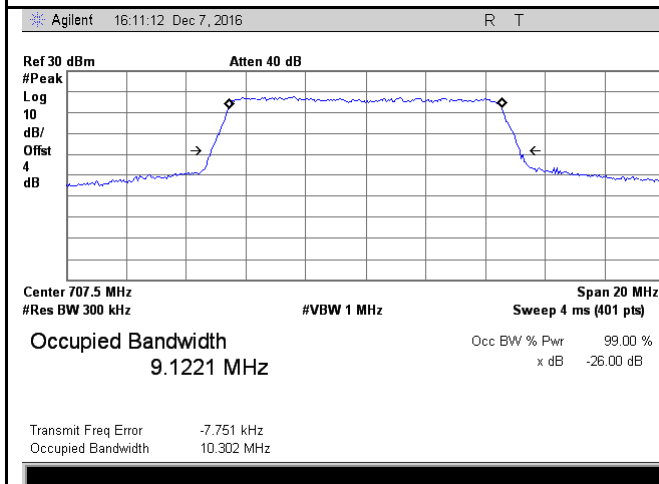
LTE Band XII - High CH QPSK-5

LTE Band XII - High CH 16QAM-5



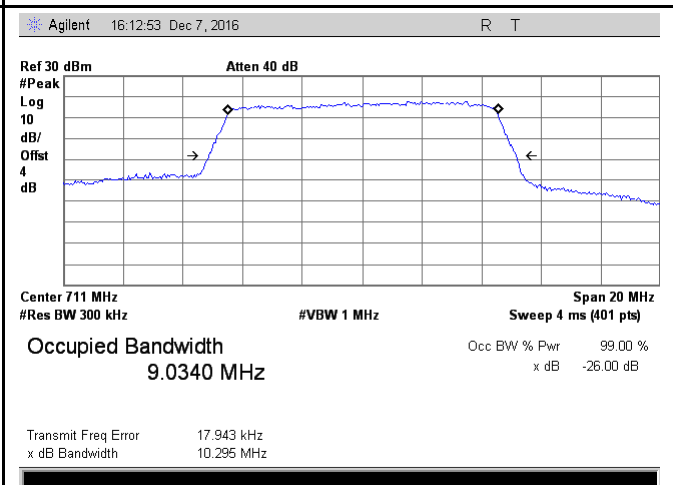
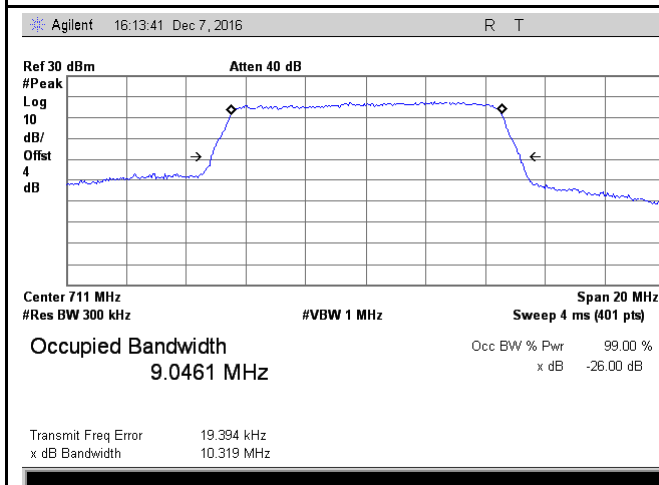
LTE Band XII - Low CH QPSK-10

LTE Band XII - Low CH 16QAM-10



LTE Band XII - Middle CH QPSK-10

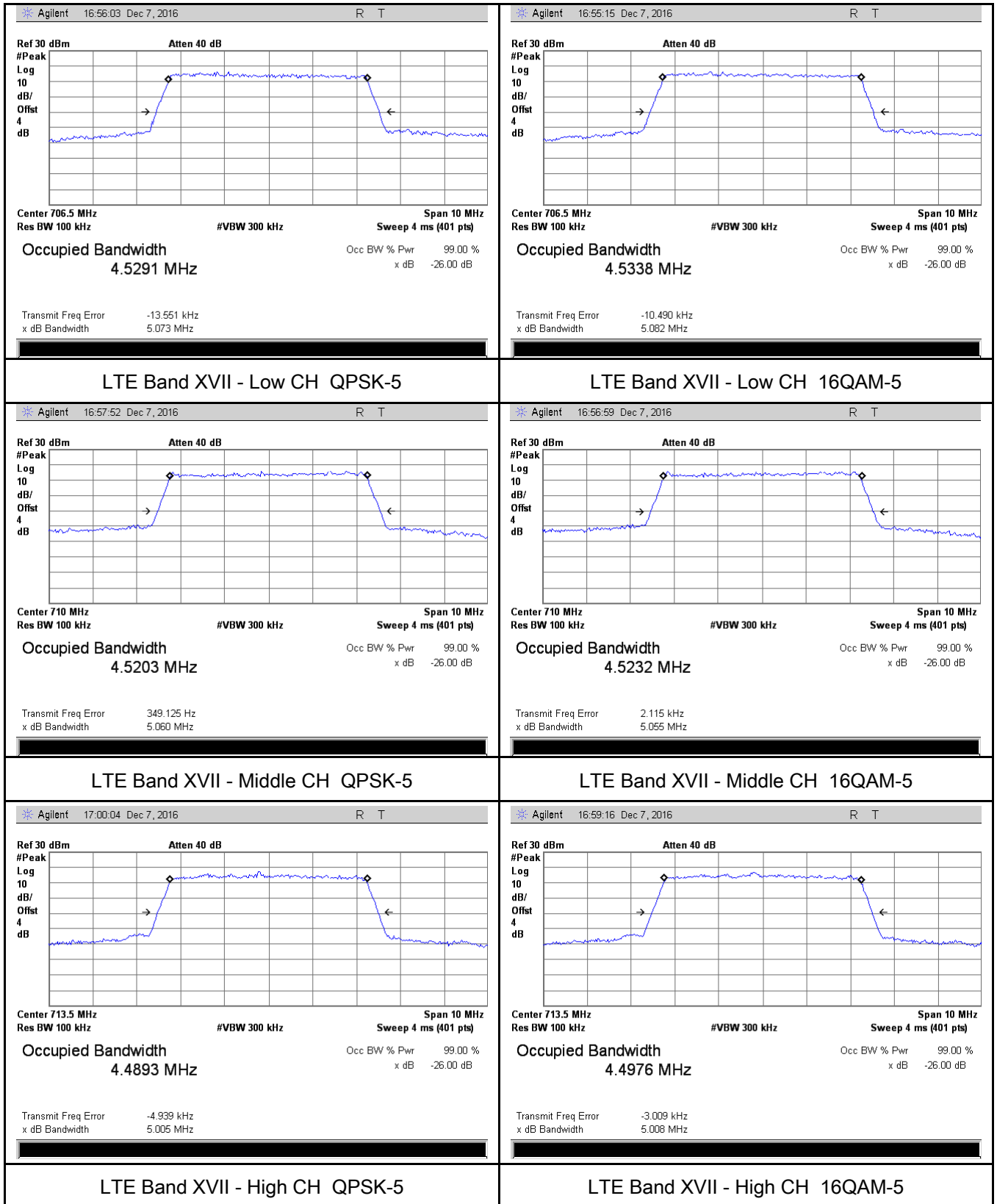
LTE Band XII - Middle CH 16QAM-10

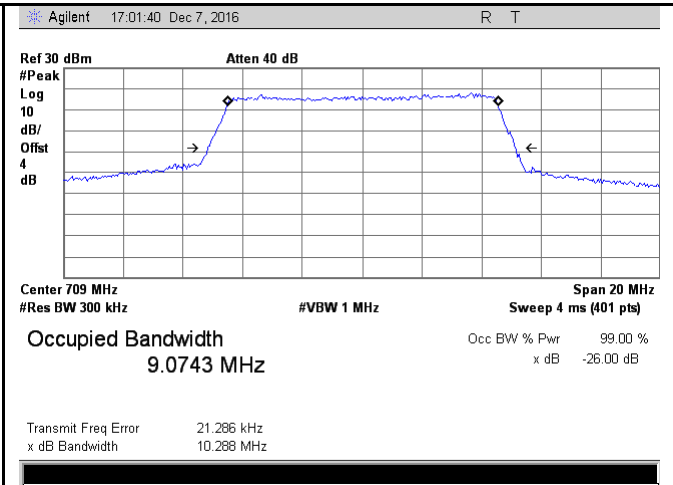
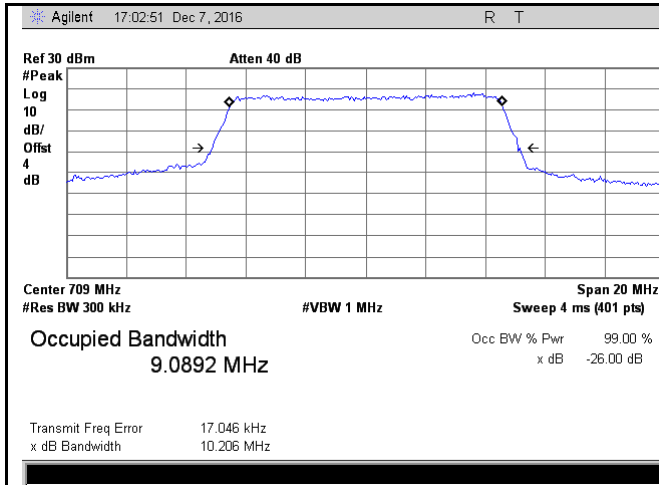


LTE Band XII - High CH QPSK-10

LTE Band XII - High CH 16QAM-10

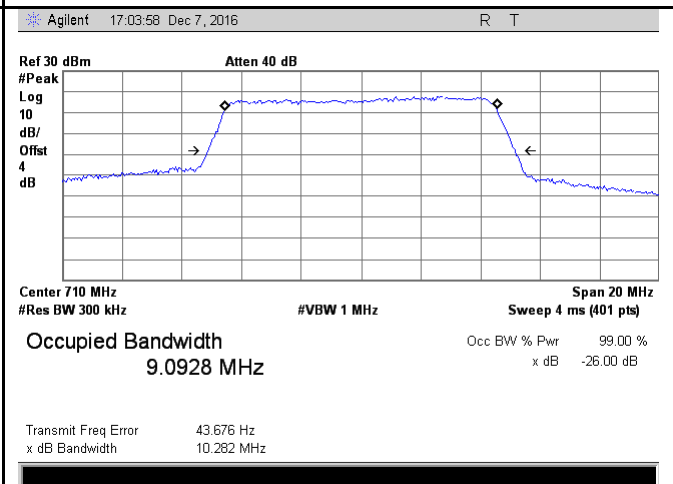
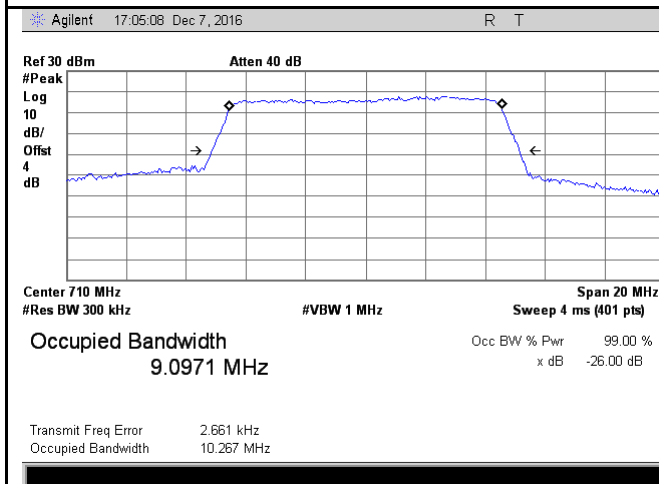
LTE Band XVII (Part 27)





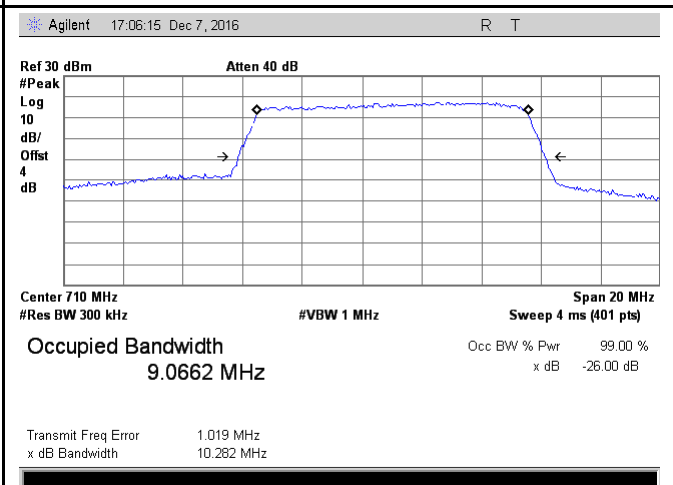
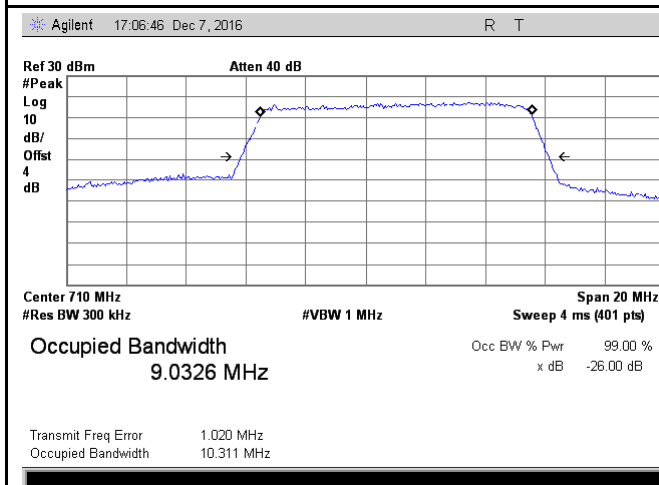
LTE Band XVII - Low CH QPSK-10

LTE Band XVII - Low CH 16QAM-10



LTE Band XVII - Middle CH QPSK-10

LTE Band XVII - Middle CH 16QAM-10



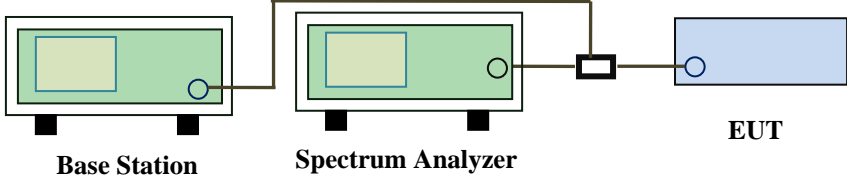
LTE Band XVII - High CH QPSK-10

LTE Band XVII - High CH 16QAM-10

6.5 Spurious Emissions at Antenna Terminals

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06&07, 2016
Tested By :	Loren Luo

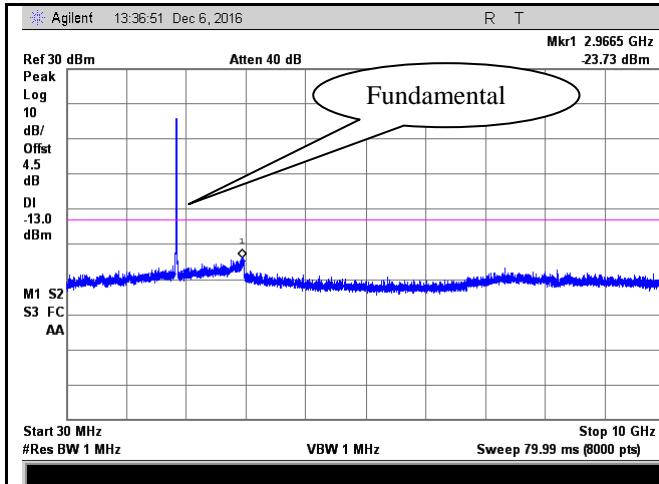
Requirement(s):

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	<input checked="" type="checkbox"/>
Test Setup	 <p>Base Station Spectrum Analyzer EUT</p>		
Test Procedure	<ul style="list-style-type: none"> - 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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

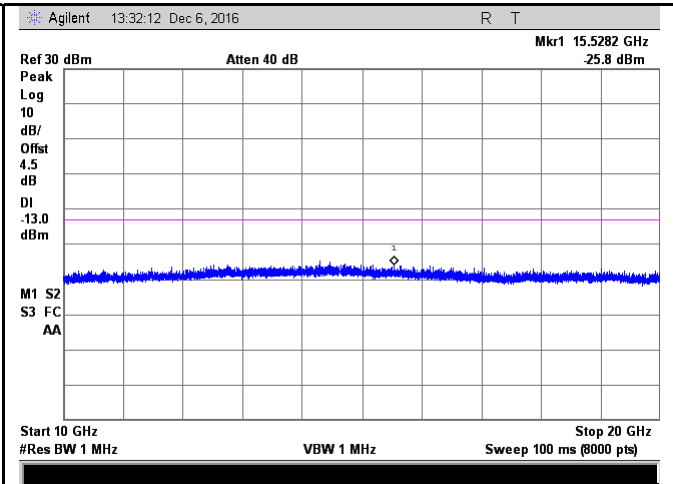
Test Data ☒ Yes ☐ N/A
 Test Plot ☒ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

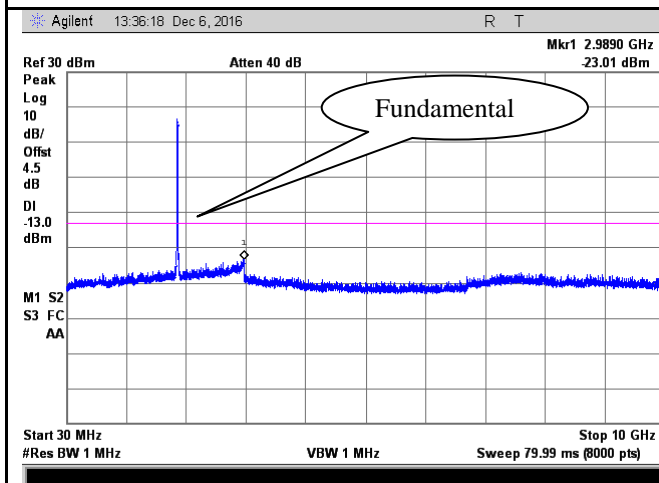
LTE Band II (Part 24E)



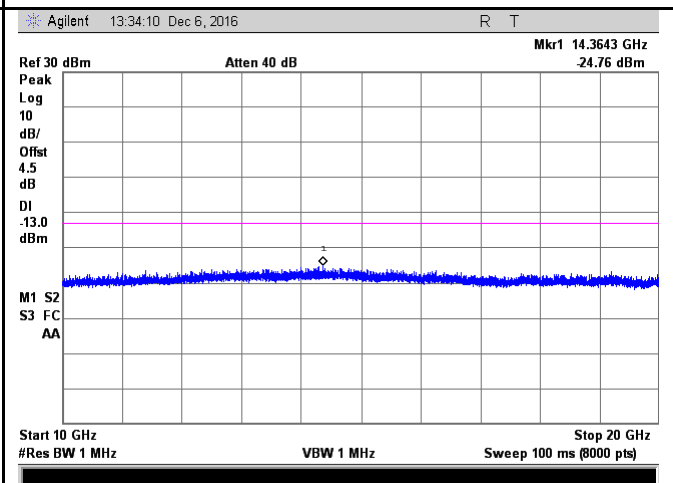
LTE Band II - Low Channel-1



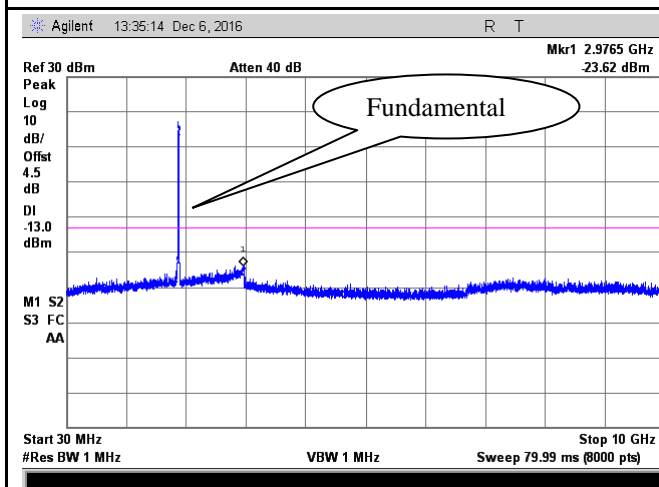
LTE Band II - Low Channel-2



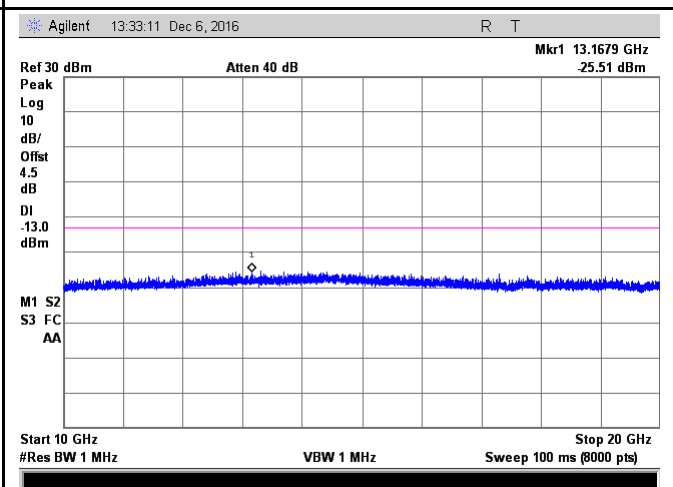
LTE Band II Middle Channel-1



LTE Band II Middle Channel-2

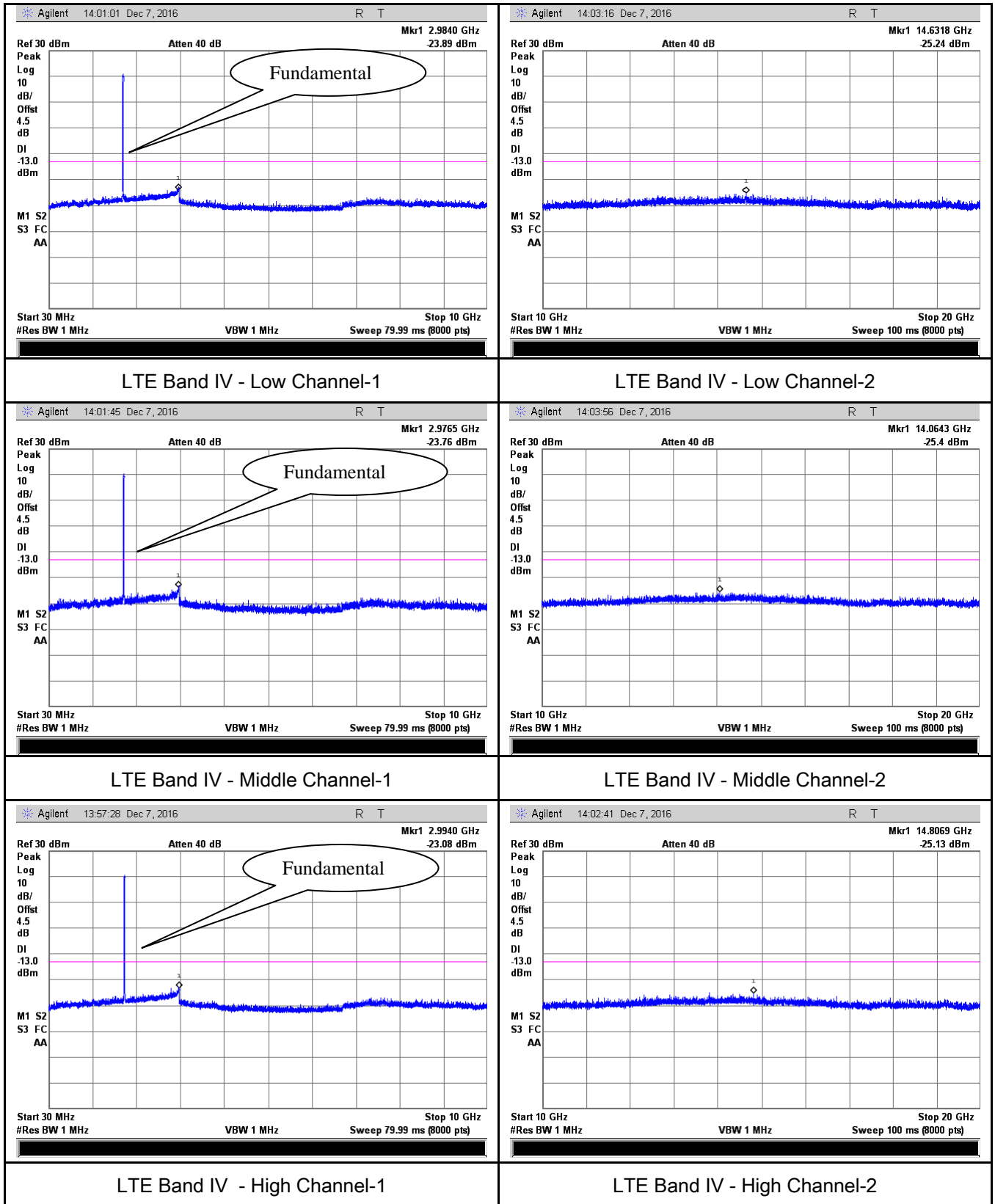


LTE Band II - High Channel-1

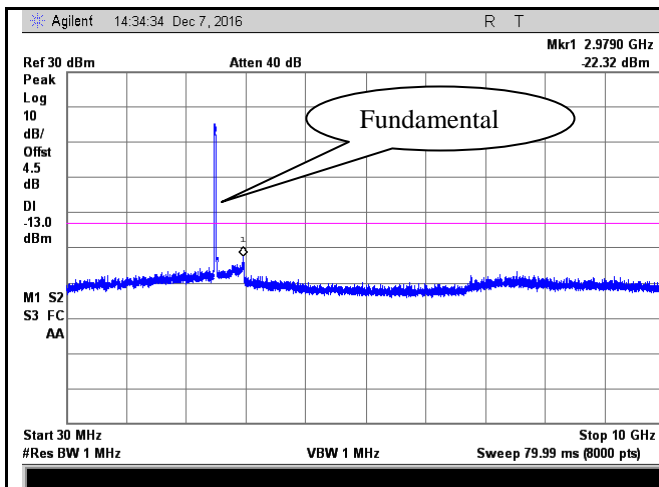


LTE Band II - High Channel-2

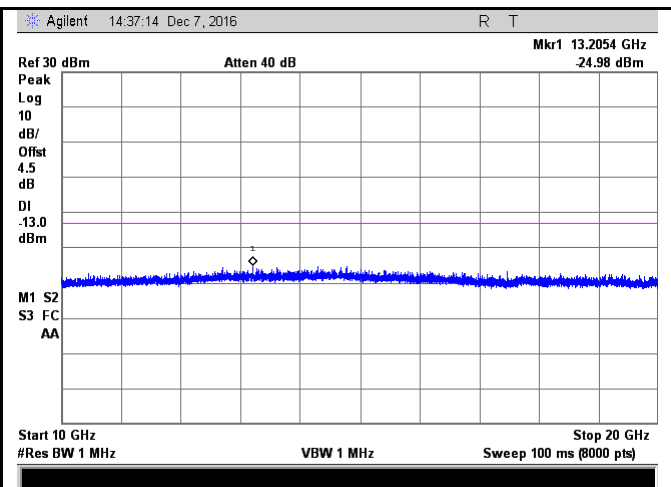
LTE Band IV (Part27) result



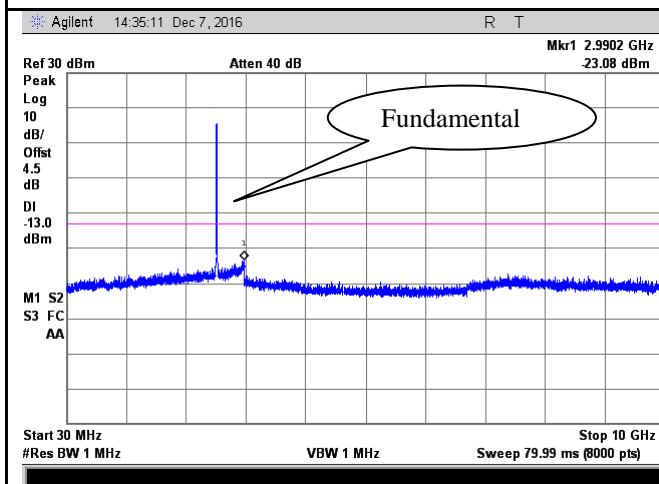
LTE Band VII (Part 27)



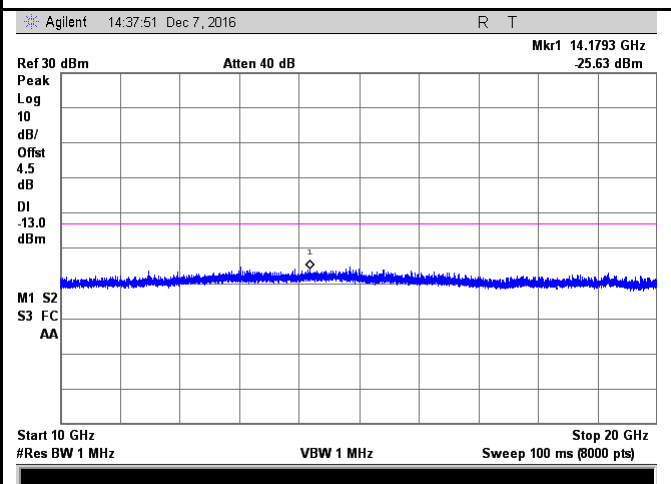
LTE Band VII - Low Channel-1



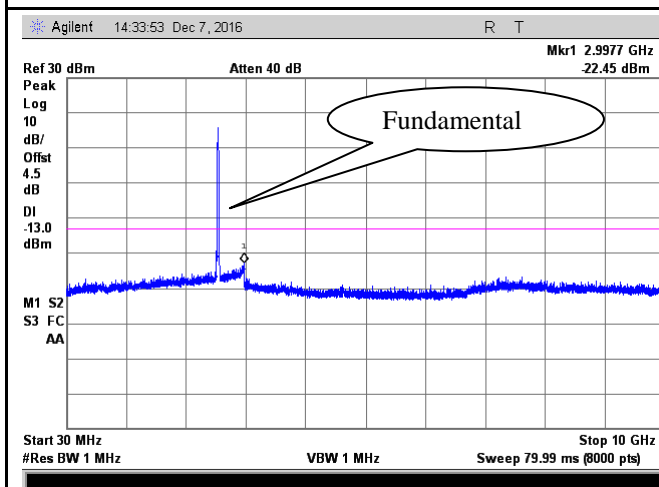
LTE Band VII - Low Channel-2



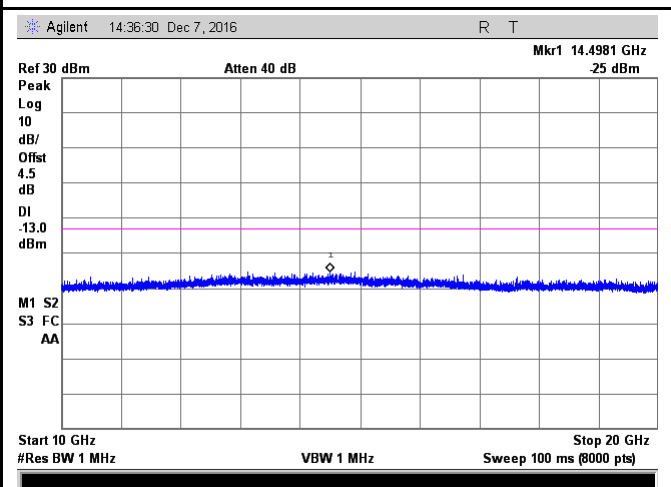
LTE Band VII- Middle Channel-1



LTE Band VII - Middle Channel-2

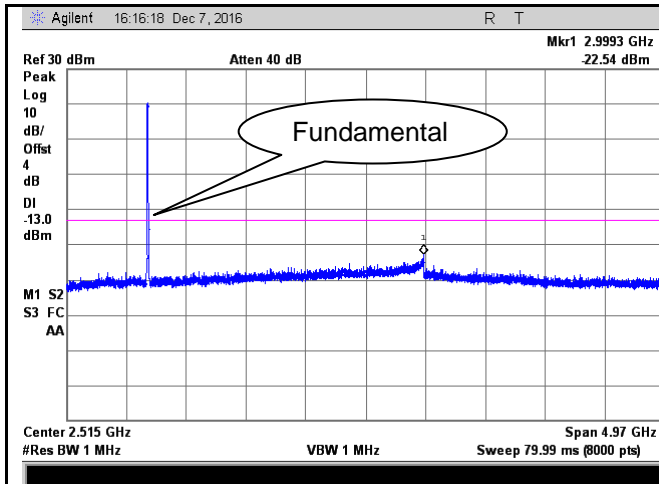


LTE Band VII - High Channel-1

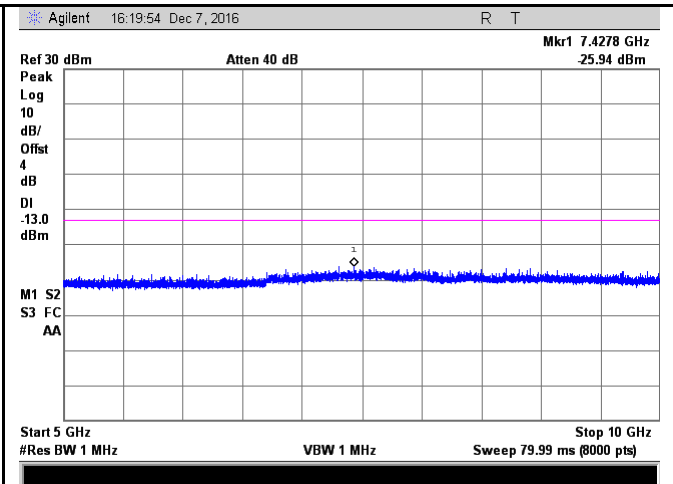


LTE Band VII - High Channel-2

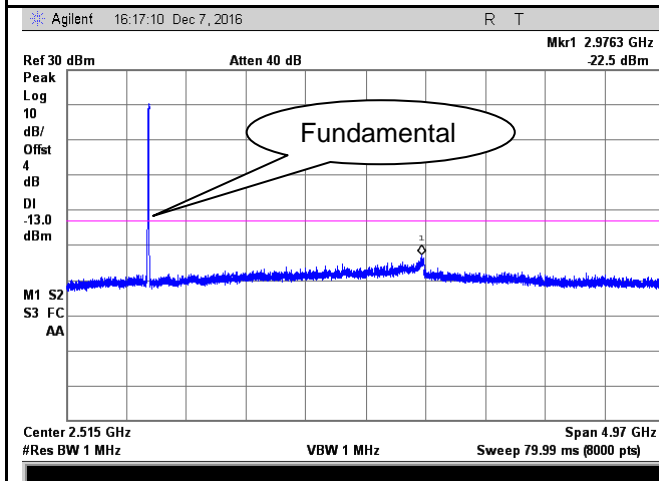
LTE Band XII (Part 27)



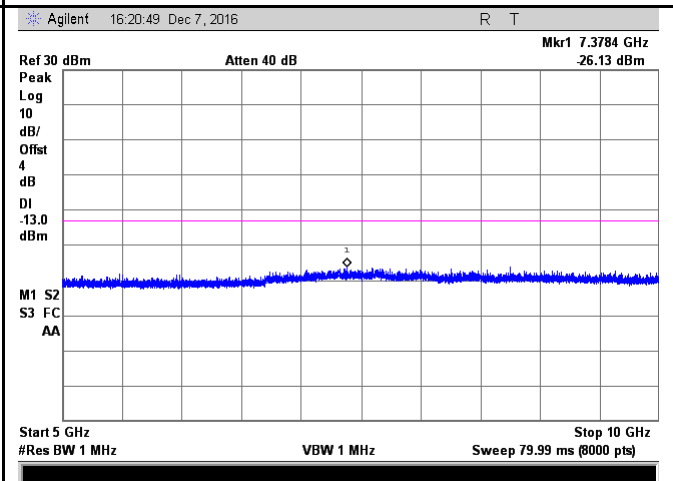
LTE Band XII - Low Channel-1



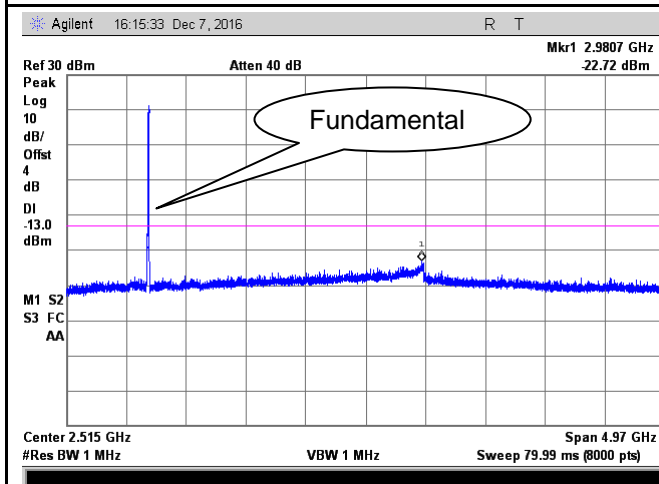
LTE Band XII - Low Channel-2



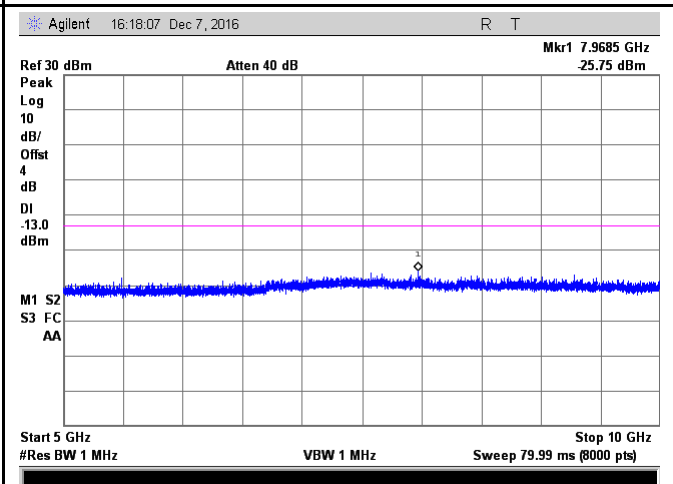
LTE Band XII- Middle Channel-1



LTE Band XII - Middle Channel-2

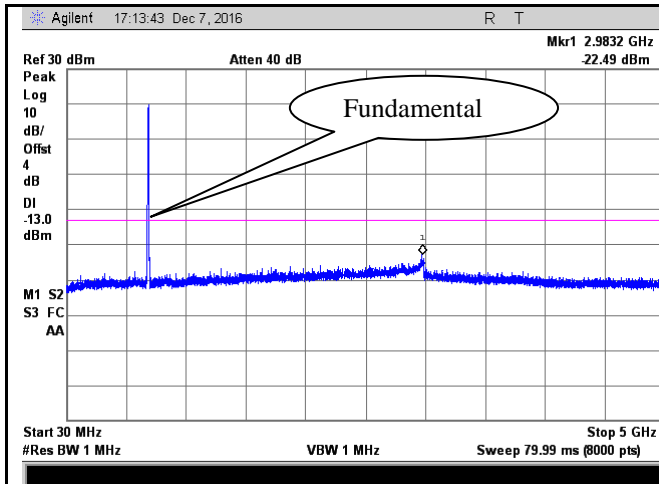


LTE Band XII - High Channel-1

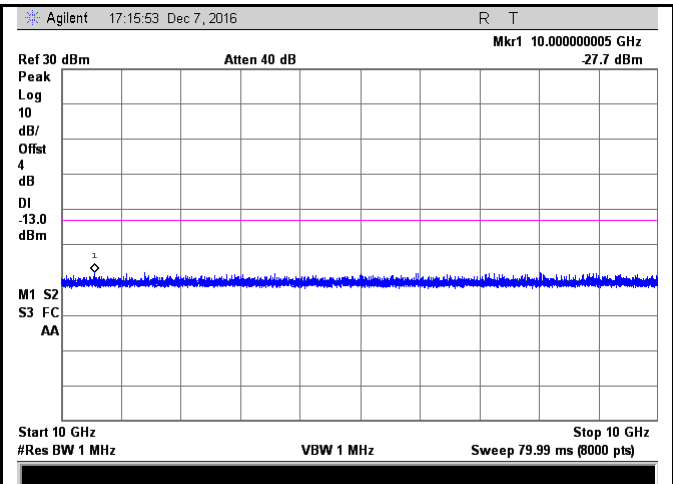


LTE Band XII - High Channel-2

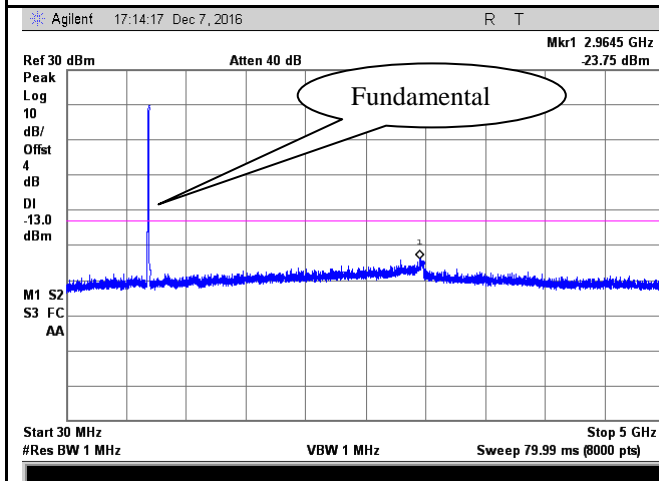
LTE Band XVII (Part 27)



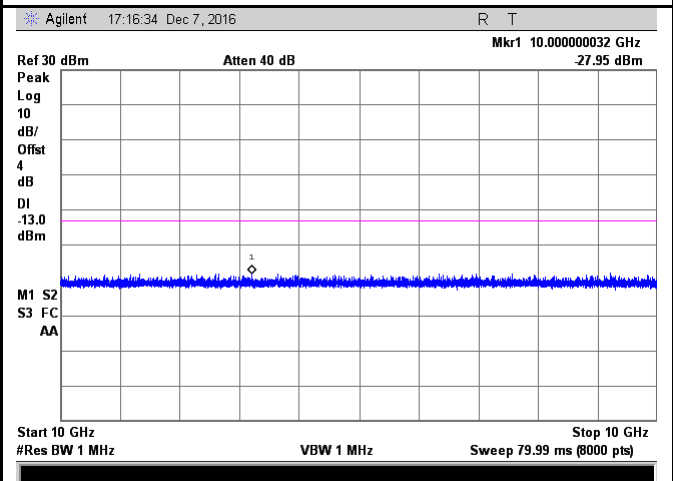
LTE Band XVII - Low Channel-1



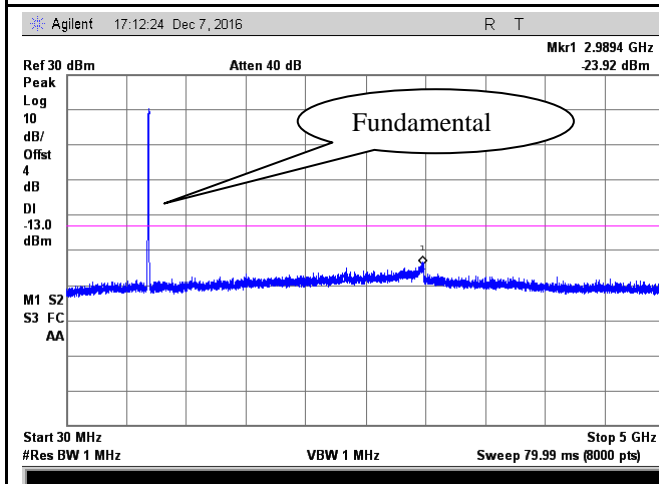
LTE Band XVII - Low Channel-2



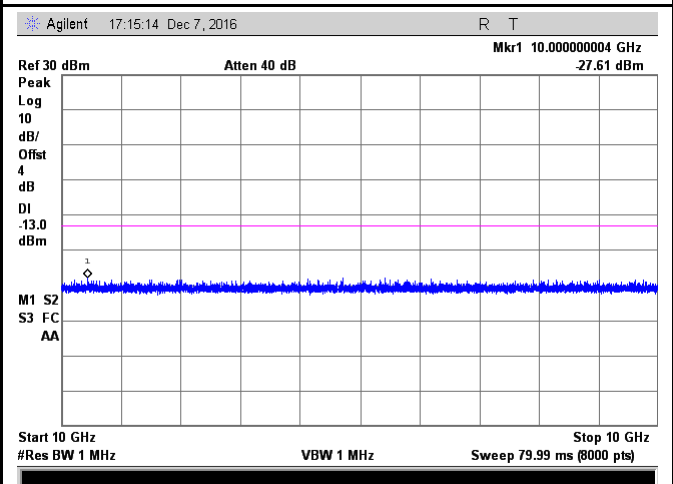
LTE Band XVII - Middle Channel-1



LTE Band XVII - Middle Channel-2



LTE Band XVII - High Channel-1



LTE Band XVII - High Channel-2

6.6 Spurious Radiated Emissions

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1053, §22.917 & §24.238 § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.	<input checked="" type="checkbox"/>

Test setup	
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Test Procedure	<ol style="list-style-type: none"> 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. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. Sample Calculation: EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)
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Remark	
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

LTE Band II (Part 24E) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3720	-46.35	V	10.25	2.73	-38.83	-13	-25.83
3720	-46.97	H	10.25	2.73	-39.45	-13	-26.45
50.3	-45.23	V	-4.2	0.11	-49.54	-13	-36.54
201.8	-48.62	H	4.6	0.18	-44.2	-13	-31.20

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3760	-46.29	V	10.25	2.73	-38.77	-13	-25.77
3760	-47.61	H	10.25	2.73	-40.09	-13	-27.09
50.9	-45.23	V	-4.2	0.11	-49.54	-13	-36.54
205.7	-48.27	H	4.6	0.18	-43.85	-13	-30.85

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3800	-46.35	V	10.36	2.73	-38.72	-13	-25.72
3800	-46.85	H	10.36	2.73	-39.22	-13	-26.22
50.8	-44.93	V	-4.2	0.11	-49.24	-13	-36.24
203.6	-46.95	H	4.6	0.18	-42.53	-13	-29.53

Note:

1, The testing has been conformed to $10 \times 1907.5 \text{ MHz} = 19,075 \text{ GHz}$

2, All other emissions more than 30 dB below the limit

3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

LTE Band IV (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3440	-45.99	V	10.06	2.52	-38.45	-13	-25.45
3440	-47.25	H	10.06	2.52	-39.71	-13	-26.71
49.6	-45.36	V	-4.2	0.11	-49.67	-13	-36.67
205.7	-48.56	H	4.6	0.18	-44.14	-13	-31.14

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3465	-46.25	V	10.09	2.52	-38.68	-13	-25.68
3465	-46.87	H	10.09	2.52	-39.3	-13	-26.30
51.4	-46.59	V	-4.2	0.11	-50.9	-13	-37.90
206.8	-49.35	H	4.6	0.18	-44.93	-13	-31.93

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3490	-45.87	V	10.09	2.52	-38.3	-13	-25.30
3490	-47.61	H	10.09	2.52	-40.04	-13	-27.04
50.9	-46.83	V	-4.2	0.11	-51.14	-13	-38.14
204.8	-49.27	H	4.6	0.18	-44.85	-13	-31.85

Note:

1, The testing has been conformed to $10 \times 1752.5 \text{ MHz} = 17,525 \text{ GHz}$

2, All other emissions more than 30 dB below the limit

3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

LTE Band VII (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5020	-48.16	V	10.29	0.98	-38.85	-13	-25.85
5020	-48.03	H	10.29	0.98	-38.72	-13	-25.72
51.3	-46.39	V	-4.2	0.11	-50.7	-13	-37.70
204.6	-48.16	H	4.6	0.18	-43.74	-13	-30.74

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5070	-47.95	V	10.3	0.99	-38.64	-13	-25.64
5070	-48.15	H	10.3	0.99	-38.84	-13	-25.84
52.3	-46.25	V	-4.2	0.11	-50.56	-13	-37.56
205.5	-48.23	H	4.6	0.18	-43.81	-13	-30.81

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5120	-48.47	V	10.32	1	-39.15	-13	-26.15
5120	-48.35	H	10.32	1	-39.03	-13	-26.03
50.5	-46.29	V	-4.2	0.11	-50.6	-13	-37.60
204.1	-47.23	H	4.6	0.18	-42.81	-13	-29.81

Note:

1, The testing has been conformed to $10 \times 2567.5 \text{ MHz} = 25,675 \text{ GHz}$

2, All other emissions more than 30 dB below the limit

3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

LTE Band XII (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1408	-48.29	V	7.65	0.75	-41.39	-13	-28.39
1408	-46.97	H	7.65	0.75	-40.07	-13	-27.07
571.3	-56.72	V	6.5	0.36	-50.58	-13	-37.58
846.9	-50.38	H	6.8	0.44	-44.02	-13	-31.02

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1415	-47.82	V	7.65	0.75	-40.92	-13	-27.92
1415	-47.53	H	7.65	0.75	-40.63	-13	-27.63
572.8	-56.29	V	6.5	0.36	-50.15	-13	-37.15
851.9	-50.43	H	6.8	0.44	-44.07	-13	-31.07

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1422	-47.25	V	7.65	0.75	-40.35	-13	-27.35
1422	-48.13	H	7.65	0.75	-41.23	-13	-28.23
568.4	-57.49	V	6.5	0.36	-51.35	-13	-38.35
843.5	-50.29	H	6.8	0.44	-43.93	-13	-30.93

Note:

1, The testing has been conformed to $10 \times 715.3 \text{ MHz} = 7,153 \text{ GHz}$

All other emissions more than 30 dB below the limit

3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

2,

LTE Band XVII (Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1418	-43.28	V	7.65	0.75	-36.38	-13	-23.38
1418	-44.67	H	7.65	0.75	-37.77	-13	-24.77
50.2	-45.29	V	-4.2	0.11	-49.6	-13	-36.60
204.5	-49.23	H	4.6	0.18	-44.81	-13	-31.81

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1420	-43.67	V	7.65	0.75	-36.77	-13	-23.77
1420	-45.12	H	7.65	0.75	-38.22	-13	-25.22
51.7	-45.36	V	-4.2	0.11	-49.67	-13	-36.67
205.9	-49.27	H	4.6	0.18	-44.85	-13	-31.85

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1422	-44.16	V	7.65	0.75	-37.26	-13	-24.26
1422	-45.08	H	7.65	0.75	-38.18	-13	-25.18
52.3	-45.29	V	-4.2	0.11	-49.6	-13	-36.60
203.6	-49.83	H	4.6	0.18	-45.41	-13	-32.41

Note:

1, The testing has been conformed to $10 \times 713.5 \text{ MHz} = 7,135 \text{ GHz}$

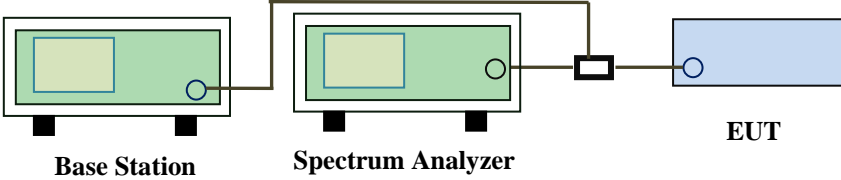
All other emissions more than 30 dB below the limit

3, X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

6.7 Band Edge

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06&07, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§22.917(a) §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.	<input checked="" type="checkbox"/>
Test setup	 <p>Base Station Spectrum Analyzer EUT</p>		
Procedure	<ul style="list-style-type: none"> - 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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

LTE Band II (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	18607	1850	QPSK	-23.46	-13
			16QAM	-23.18	-13
1.4	18900	1910	QPSK	-22.06	-13
			16QAM	-23.55	-13
3	18615	1850	QPSK	-17.42	-13
			16QAM	-17.35	-13
3	19185	1910	QPSK	-19.97	-13
			16QAM	-18.82	-13
5	18625	1850	QPSK	-20.22	-13
			16QAM	-18.41	-13
5	19175	1910	QPSK	-21.77	-13
			16QAM	-20.56	-13
10	18650	1850	QPSK	-21.09	-13
			16QAM	-21.26	-13
10	19150	1910	QPSK	-20.56	-13
			16QAM	-20.05	-13
15	18675	1850	QPSK	-19.73	-13
			16QAM	-23.17	-13
15	19125	1910	QPSK	-21.82	-13
			16QAM	-24.72	-13
20	18700	1850	QPSK	-24.00	-13
			16QAM	-22.17	-13
20	19100	1910	QPSK	-24.21	-13
			16QAM	-24.49	-13

LTE Band IV (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	19957	1709.9	QPSK	-20.92	-13
			16QAM	-19.99	-13
1.4	20393	1755	QPSK	-19.57	-13
			16QAM	-19.21	-13
3	19965	1709.9	QPSK	-17.82	-13
			16QAM	-15.81	-13
3	20385	1755	QPSK	-17.37	-13
			16QAM	-18.03	-13
5	19975	1709.9	QPSK	-18.07	-13
			16QAM	-16.43	-13
5	20375	1755	QPSK	-18.64	-13
			16QAM	-17.81	-13
10	20000	1709.9	QPSK	-24.29	-13
			16QAM	-24.29	-13
10	20350	1755	QPSK	-25.56	-13
			16QAM	-26.50	-13
15	20025	1710	QPSK	-17.82	-13
			16QAM	-19.28	-13
15	20325	1755	QPSK	-25.40	-13
			16QAM	-24.07	-13
20	20050	1710	QPSK	-20.64	-13
			16QAM	-20.62	-13
20	20300	1755	QPSK	-22.32	-13
			16QAM	-22.37	-13

LTE Band XII (Part 27) result

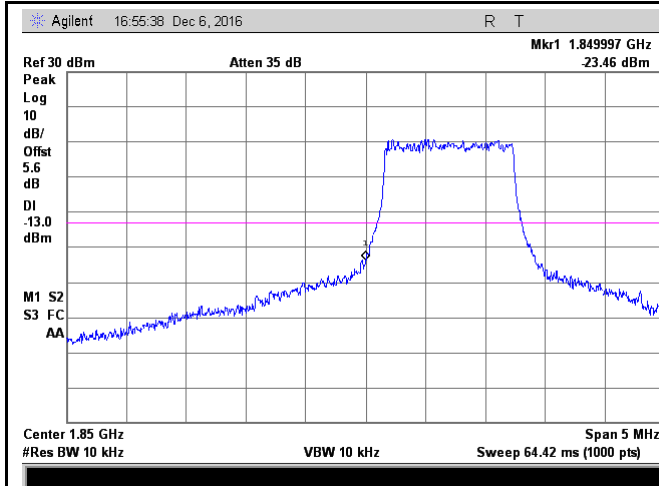
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	23017	699	QPSK	-22.29	-13
			16QAM	-21.67	-13
1.4	23173	716	QPSK	-22.67	-13
			16QAM	-23.54	-13
3	23025	699	QPSK	-16.58	-13
			16QAM	-16.95	-13
3	23165	716	QPSK	-17.70	-13
			16QAM	-17.67	-13
5	23035	699	QPSK	-17.60	-13
			16QAM	-20.05	-13
5	23155	716	QPSK	-18.52	-13
			16QAM	-19.50	-13
10	23060	698	QPSK	-19.06	-13
			16QAM	-19.52	-13
10	23130	716	QPSK	-18.92	-13
			16QAM	-18.87	-13

LTE Band XVII (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
5	23755	704	QPSK	-14.44	-13
			16QAM	-17.27	-13
5	23825	716	QPSK	-19.27	-13
			16QAM	-18.61	-13
10	23780	704	QPSK	-16.48	-13
			16QAM	-18.94	-13
10	23800	716	QPSK	-19.58	-13
			16QAM	-16.49	-13

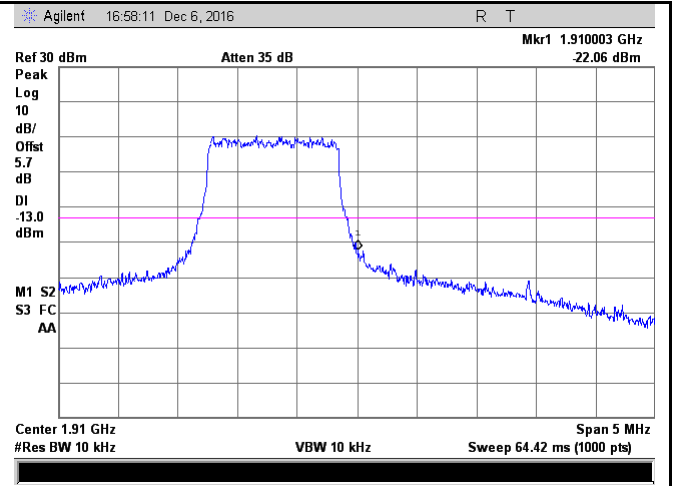
Test Plots

LTE Band II (Part 24E)



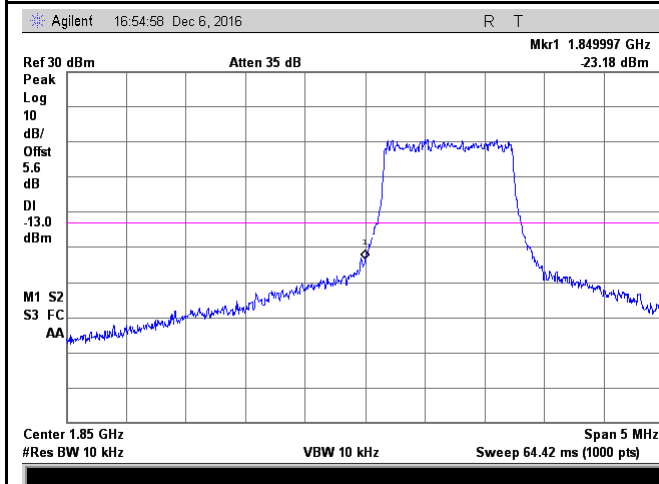
LTE Band II - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(12.85/10)=4.5+1.1=5.6dB



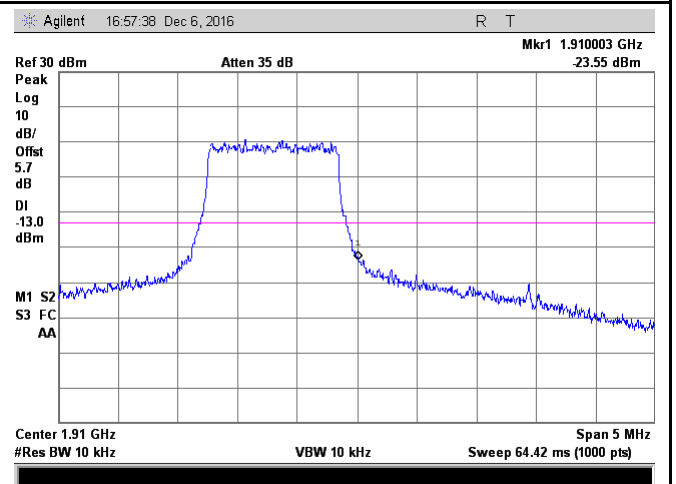
LTE Band II - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.06/10)=4.5+1.2=5.7dB



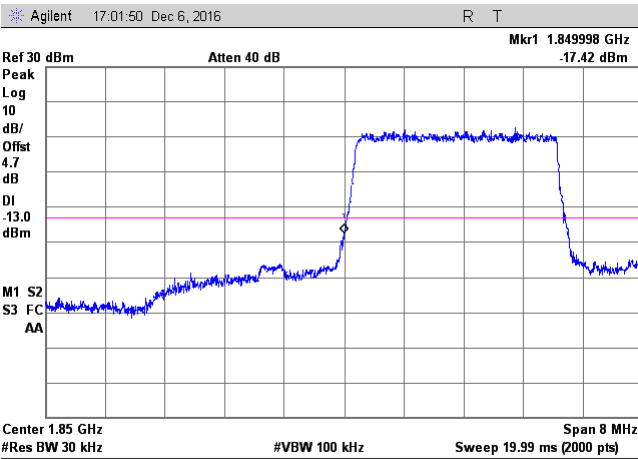
LTE Band II - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.03/10)=4.5+1.1=5.6 dB



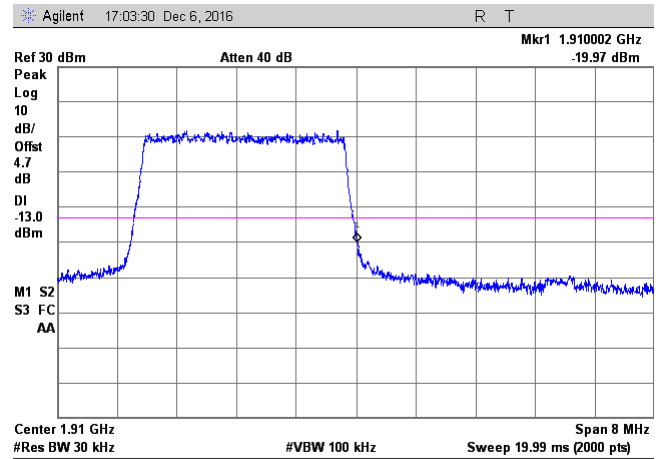
LTE Band II - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.18/10)=4.5+1.2=5.7 dB



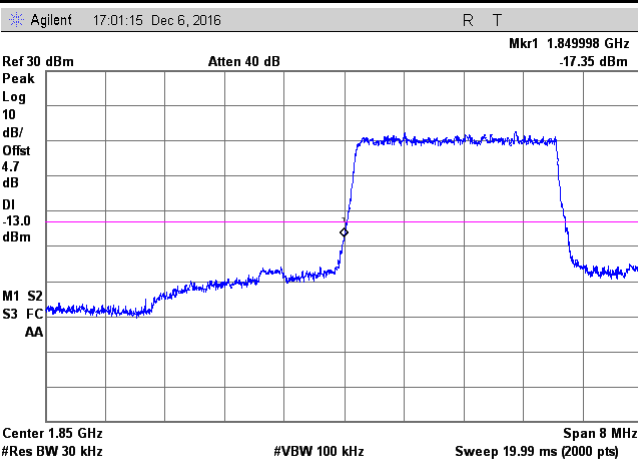
LTE Band II - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(31.21/30)=4.5+0.2=4.7 dB



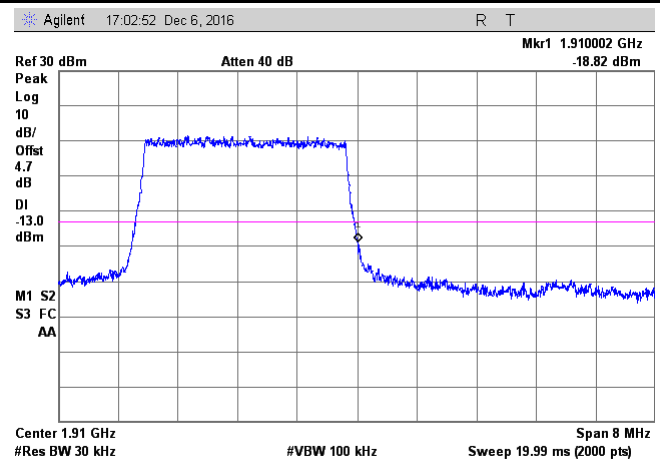
LTE Band II - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(31.43/30)=4.5+0.2=4.7 dB



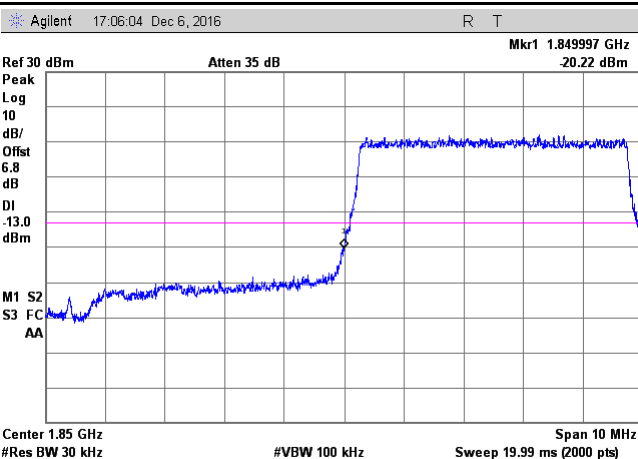
LTE Band II - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(31.34/30)=4.5+0.2=4.7 dB

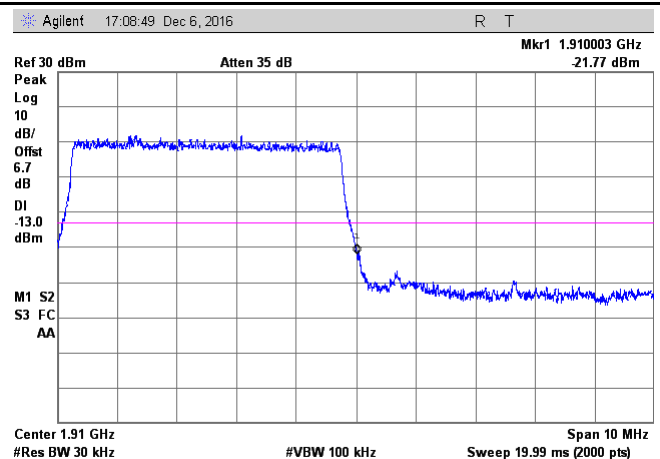


LTE Band II - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(31.40/30)=4.5+0.2=4.7 dB

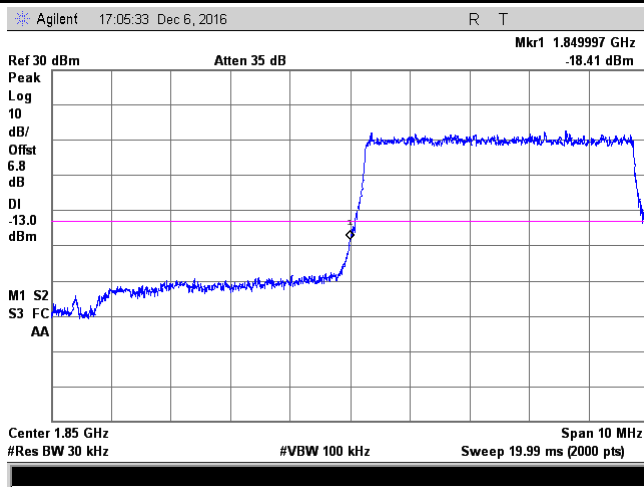


LTE Band II - Low Channel QPSK-5



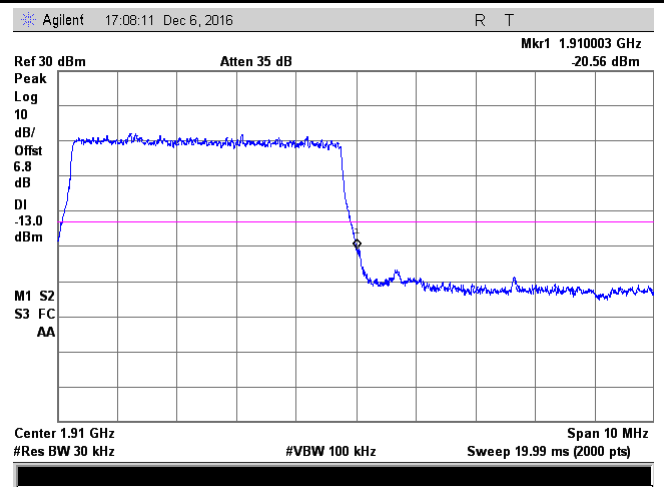
LTE Band II - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.85/30)=4.5+2.3=6.8 dB



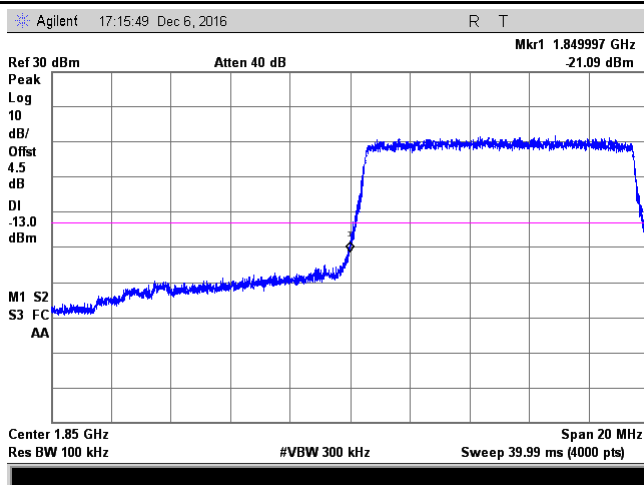
LTE Band II - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.44/30)=4.5+2.2=6.7 dB



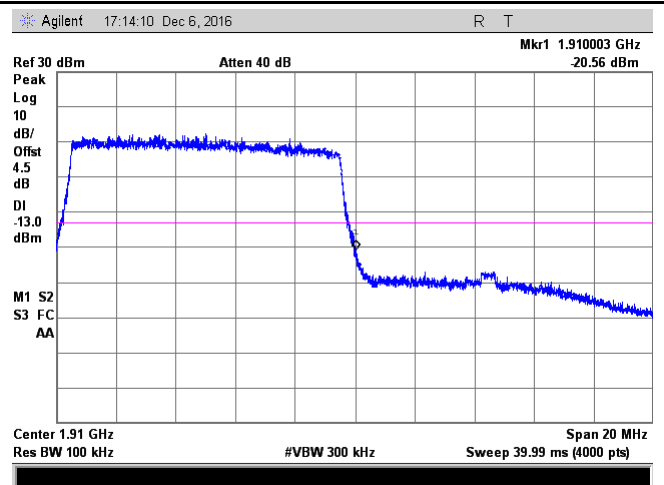
LTE Band II - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.67/30)=4.5+2.3=6.8 dB

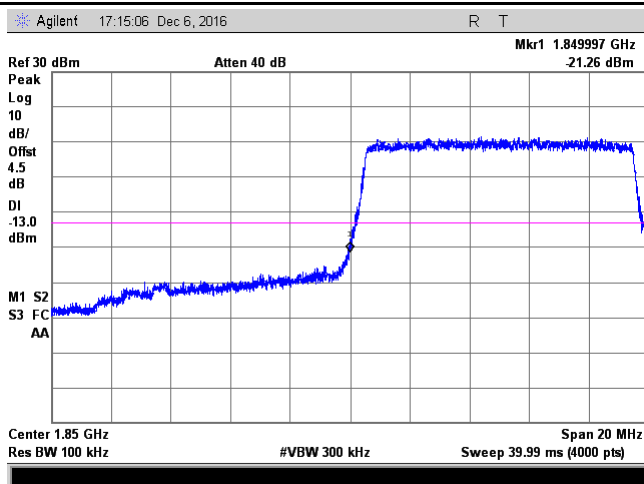


LTE Band II - Low Channel QPSK-10

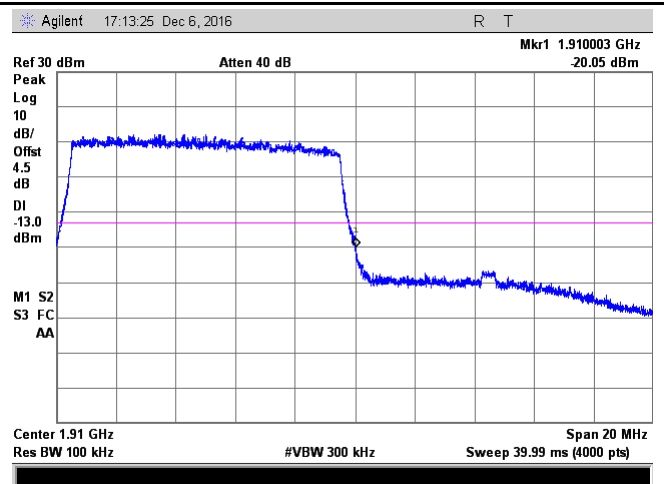
Note: Offset=Cable loss (4.5) + 10log
(50.31/30)=4.5+2.3=6.8 dB



LTE Band II - High Channel QPSK-10

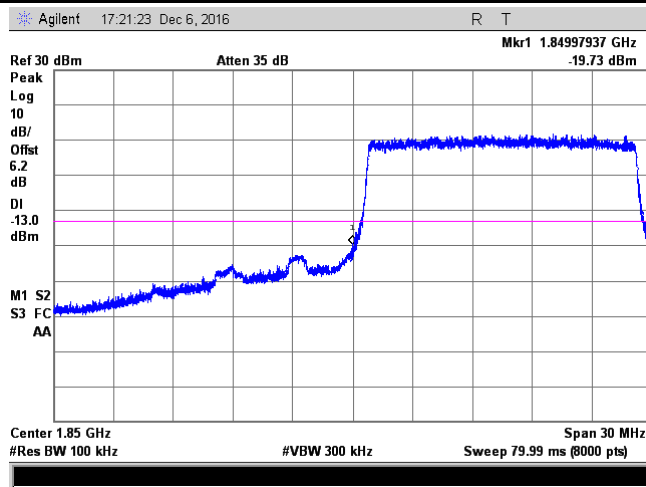


LTE Band II - Low Channel 16QAM-10



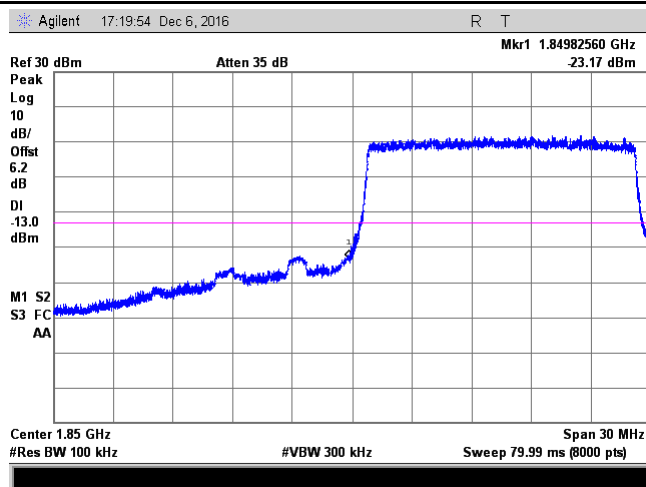
LTE Band II - High Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log
(102.5/100)=4.5+0.0=4.5 dB



LTE Band II - Low Channel QPSK-15

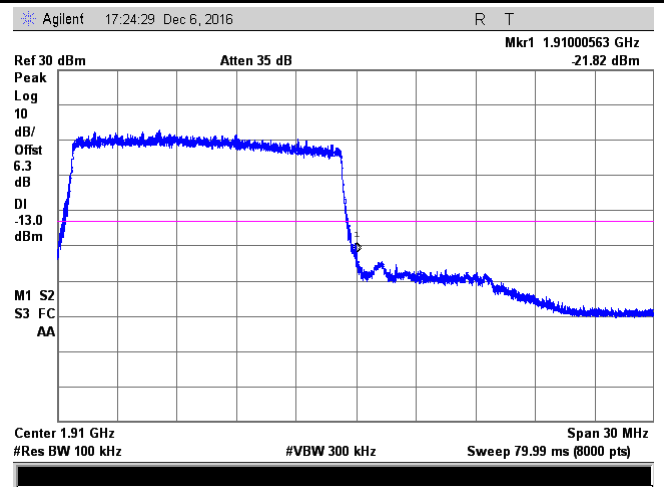
Note: Offset=Cable loss (4.5) + 10log
(149.1/100)=4.5+1.7=6.2 dB



LTE Band II - Low Channel 16QAM-15

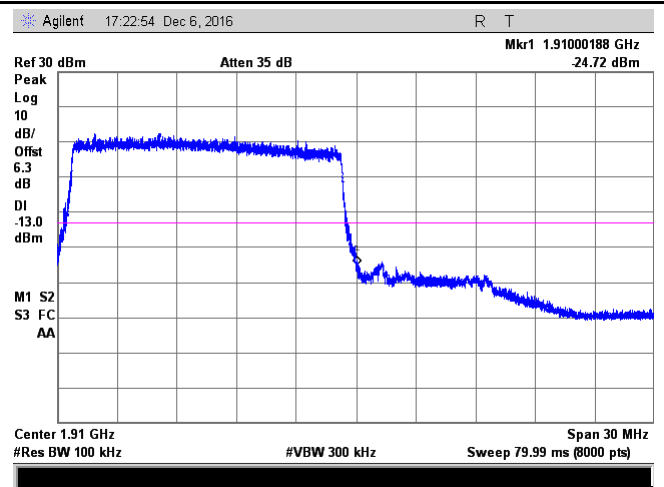
Note: Offset=Cable loss (4.5) + 10log
(148.7/100)=4.5+1.7=6.2 dB

Note: Offset=Cable loss (4.5) + 10log
(103/100)=4.5+0.0=4.5 dB



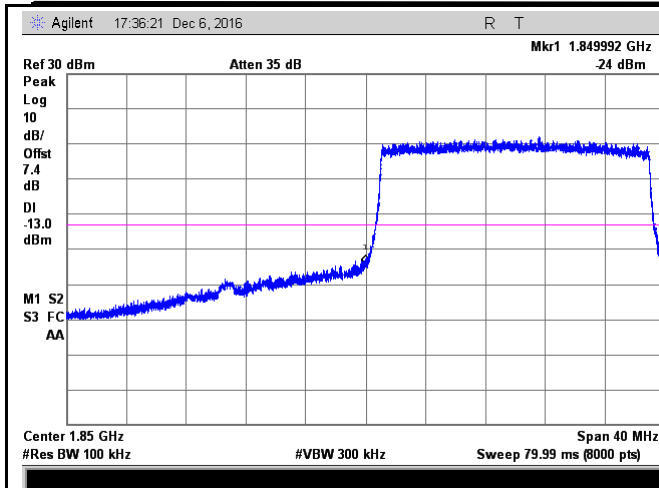
LTE Band II - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
(149.8/100)=4.5+1.8=6.3 dB



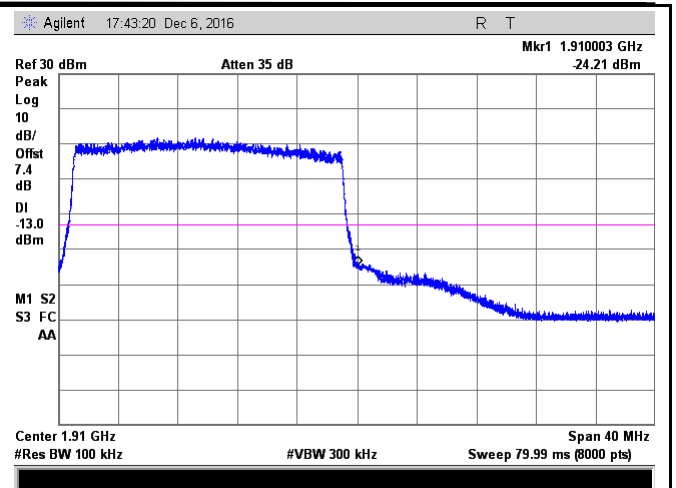
LTE Band II - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(150.1/100)=4.5+1.8=6.3 dB



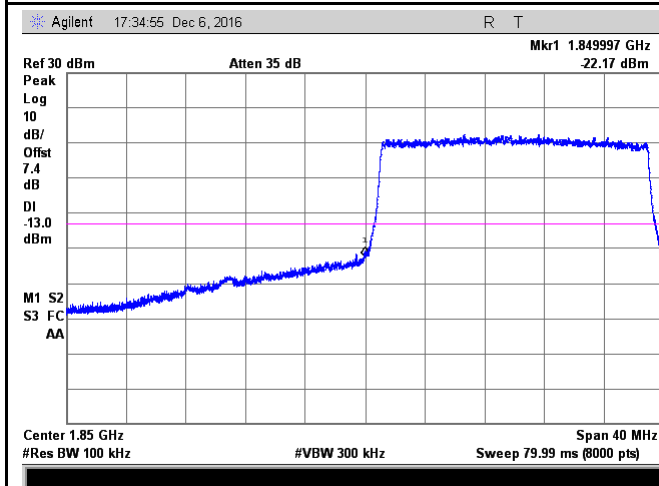
LTE Band II - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(193.6/100)=4.5+2.9=7.4 dB



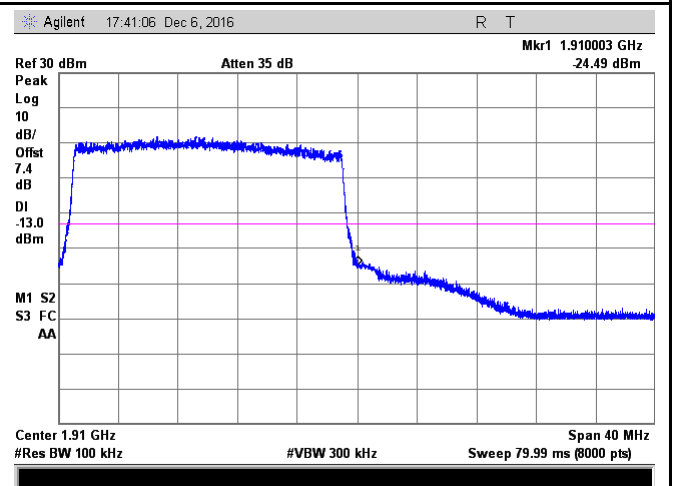
LTE Band II - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(193.8/100)=4.5+2.9=7.4 dB



LTE Band II - Low Channel 16QAM-20

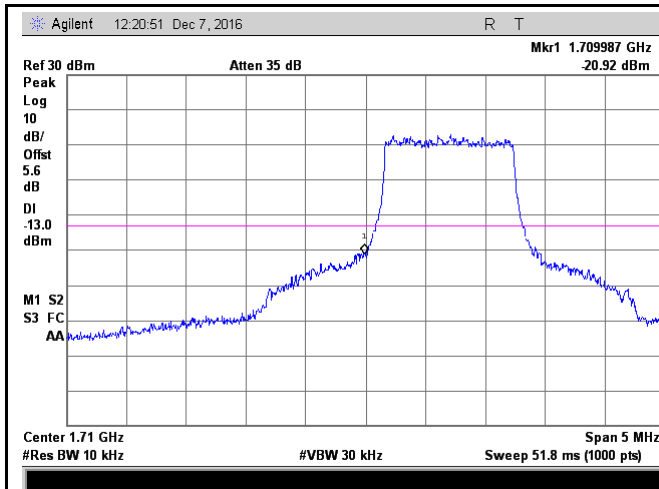
Note: Offset=Cable loss (4.5) + 10log
(193.7/100)=4.5+2.9=7.4 dB



LTE Band II - High Channel 16QAM-20

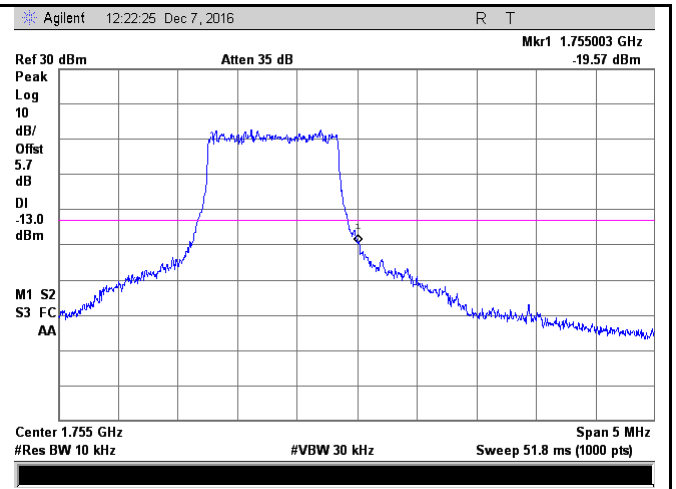
Note: Offset=Cable loss (4.5) + 10log
(194.1/100)=4.5+2.9=7.4 dB

LTE Band IV (Part 27)



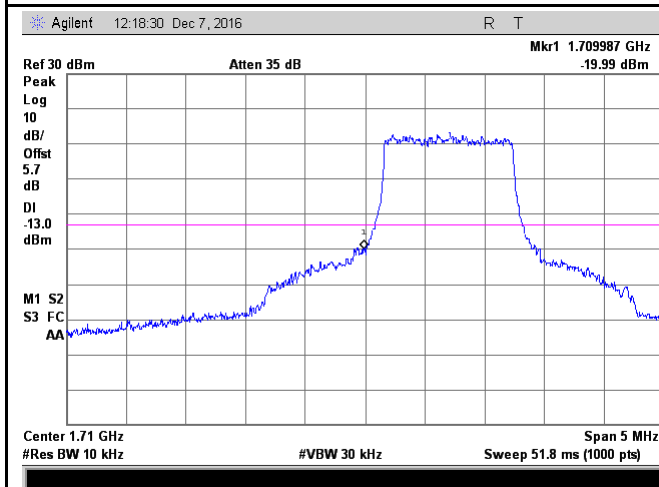
LTE Band IV - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.00/10)=4.5+1.1=5.6 dB



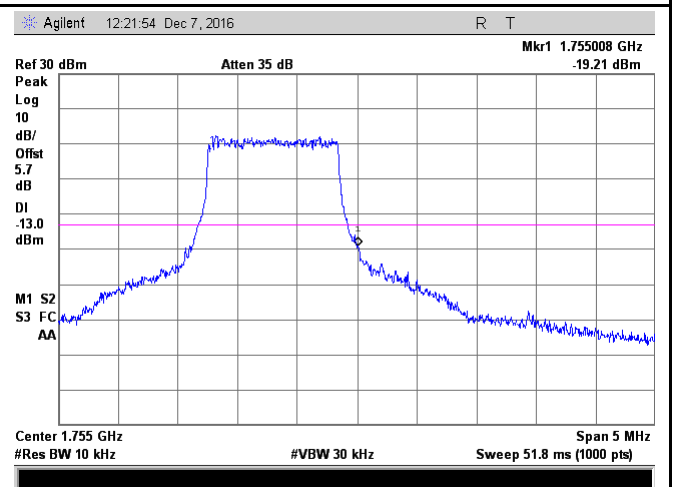
LTE Band IV - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.22/10)=4.5+1.2=5.7 dB



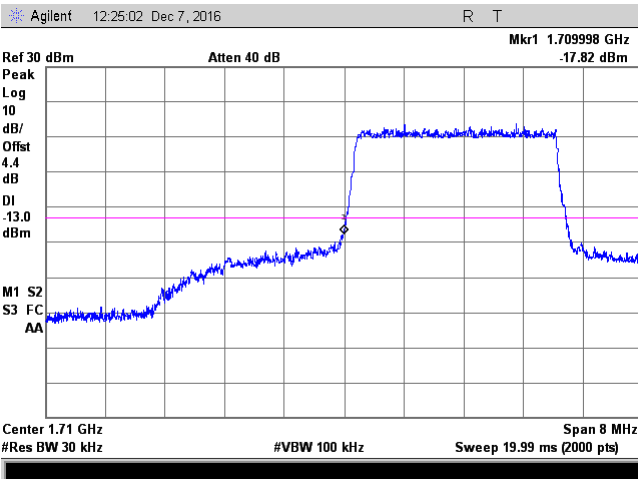
LTE Band IV - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.08/10)=4.5+1.2=5.7 dB



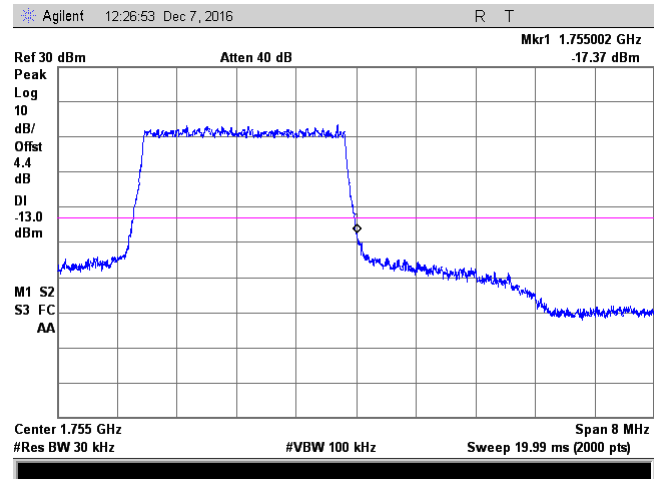
LTE Band IV - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.11/10)=4.5+1.2=5.7 dB



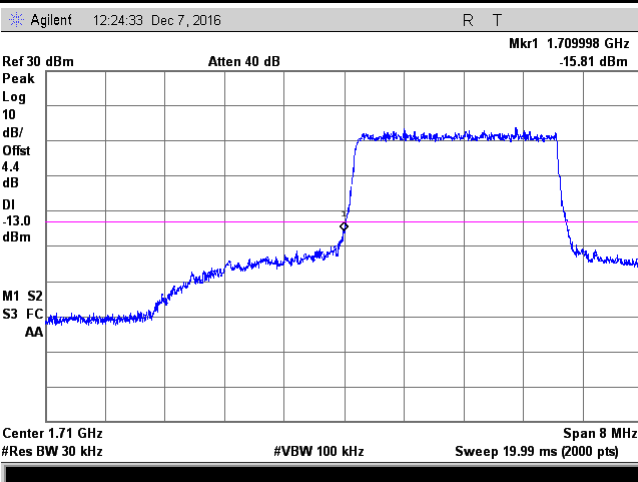
LTE Band IV - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(29.63/30)=4.5+(-0.1)=4.4 dB



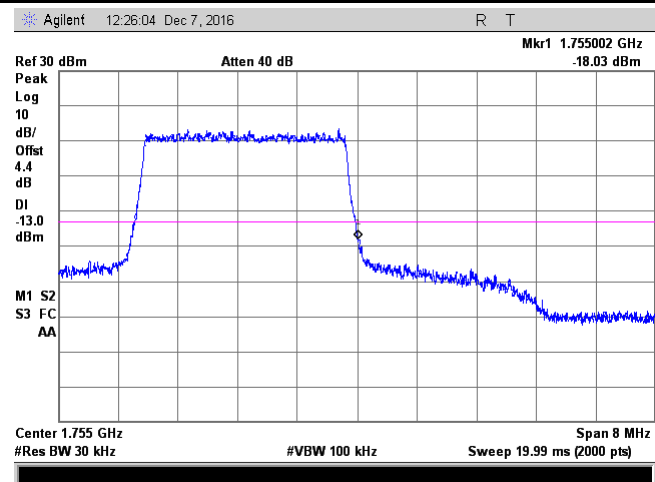
LTE Band IV - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(29.50/30)=4.5+(-0.1)=4.4 dB



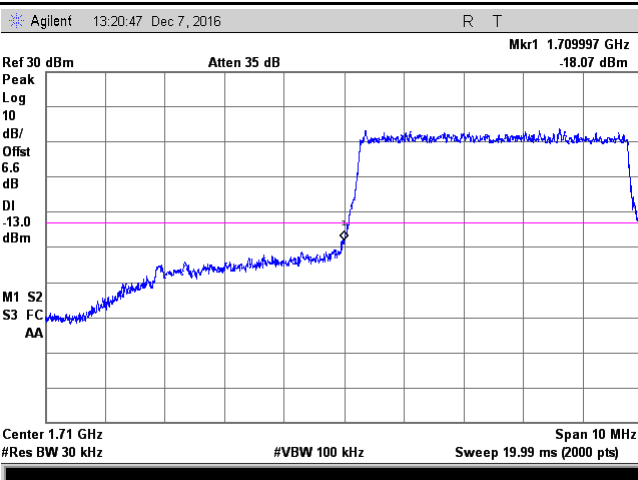
LTE Band IV - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(29.47/30)=4.5+(-0.10)=4.4 dB

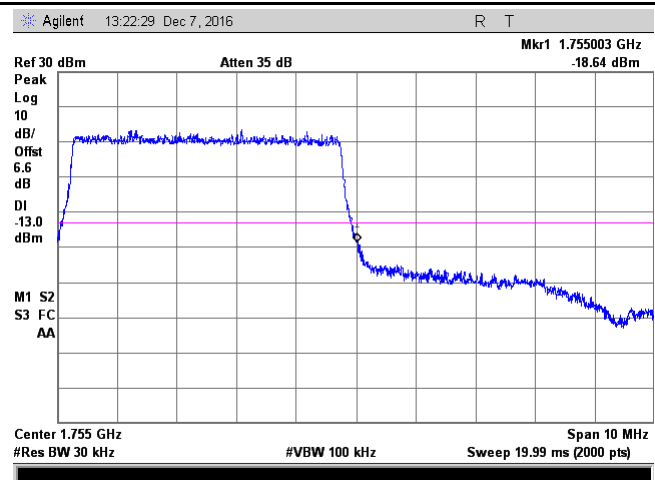


LTE Band IV - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(29.41/30)=4.5+(-0.1)=4.4 dB

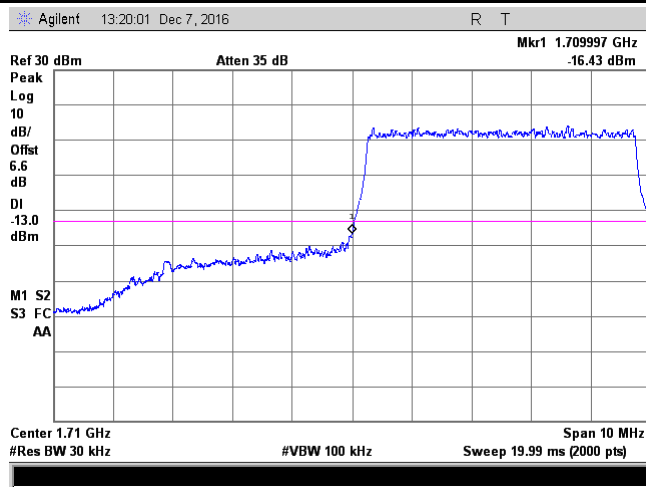


LTE Band IV - Low Channel QPSK-5



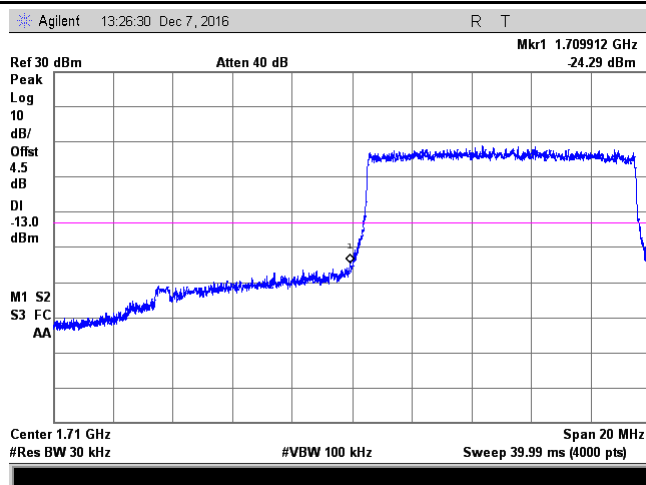
LTE Band IV - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(48.90/30)=4.5+2.1=6.6 dB

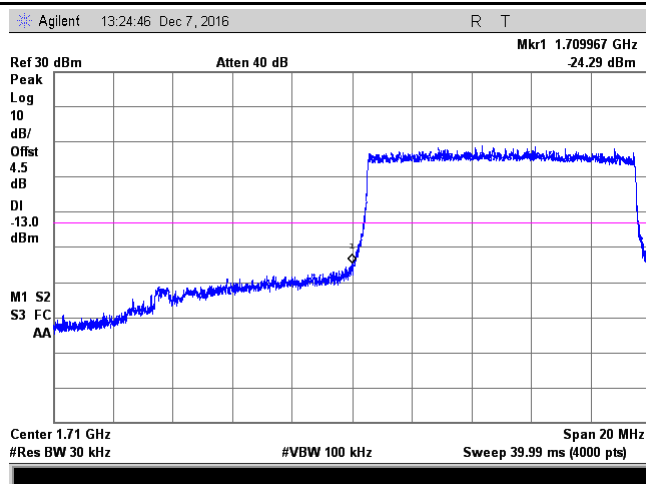


LTE Band IV - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(48.98/30)=4.5+2.1=6.6 dB

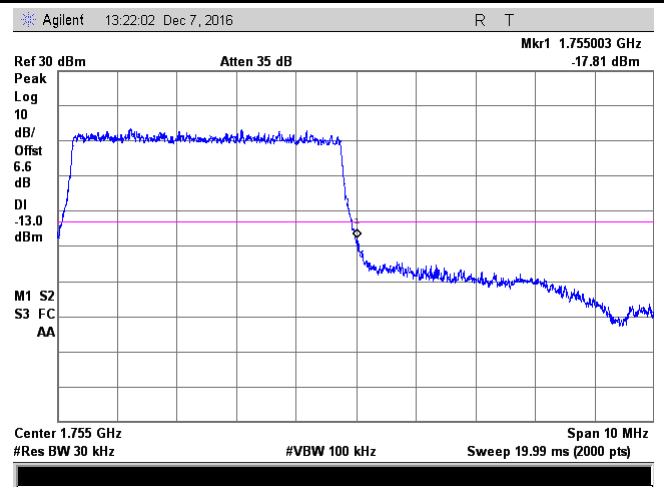


LTE Band IV - Low Channel QPSK-10



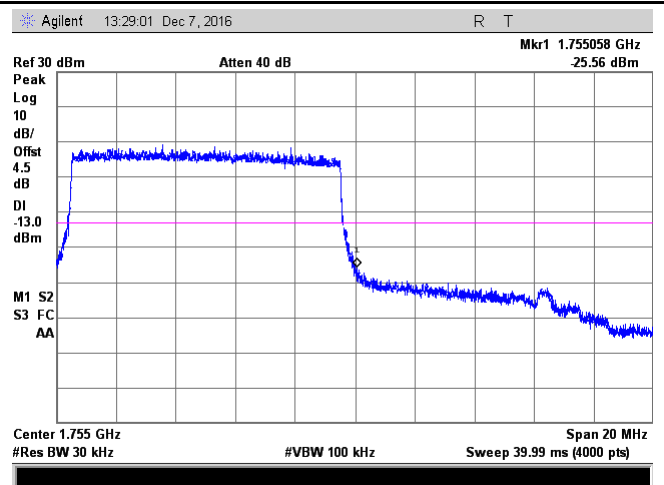
LTE Band IV - Low Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log
(48.93/30)=4.5+2.1=6.6 dB

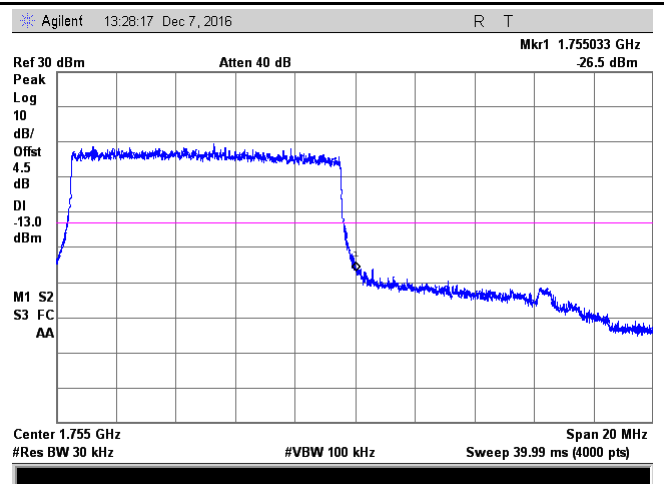


LTE Band IV - High Channel 16QAM-5

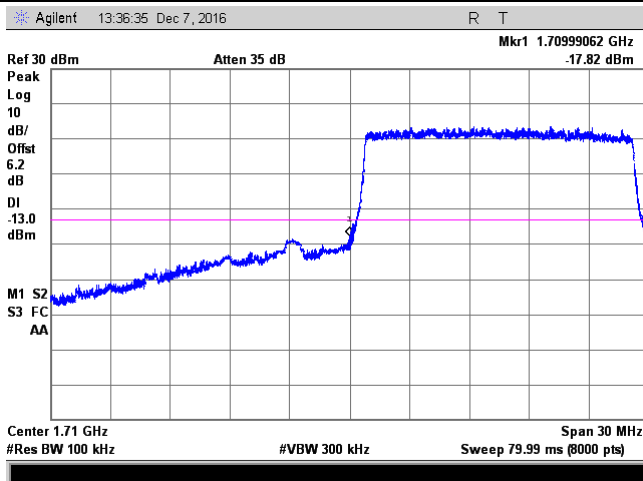
Note: Offset=Cable loss (4.5) + 10log
(48.74/30)=4.5+2.1=6.6 dB



LTE Band IV - High Channel QPSK-10

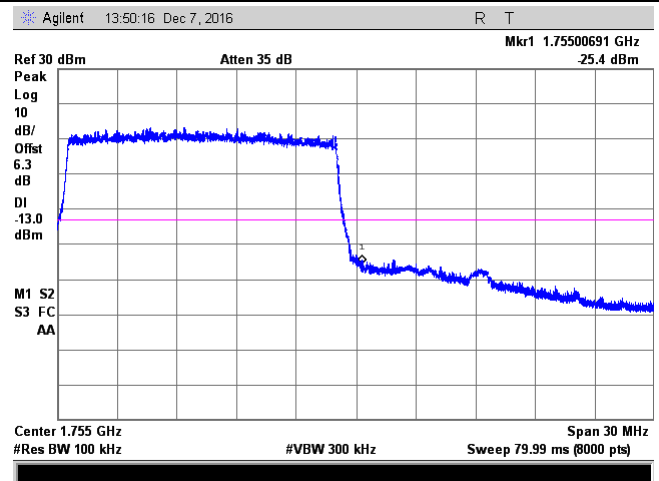


LTE Band IV - High Channel 16QAM-10



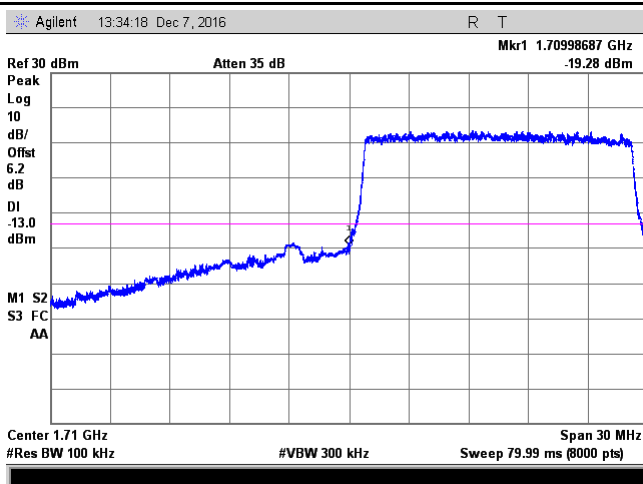
LTE Band IV - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
(149.1/100)=4.5+1.7=6.2 dB



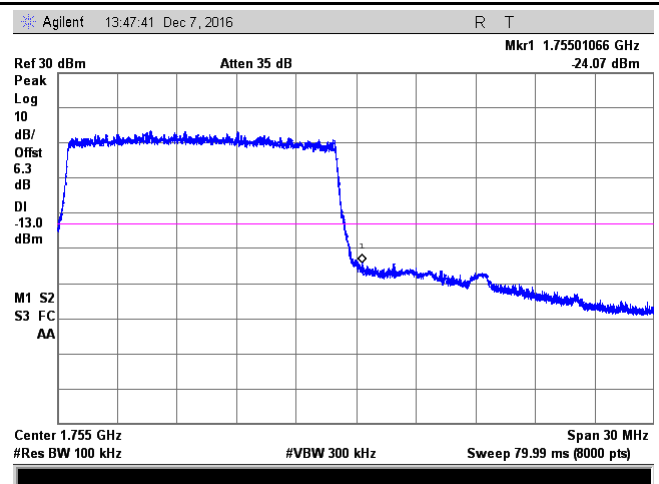
LTE Band IV - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
(150.1/100)=4.5+1.8=6.3 dB



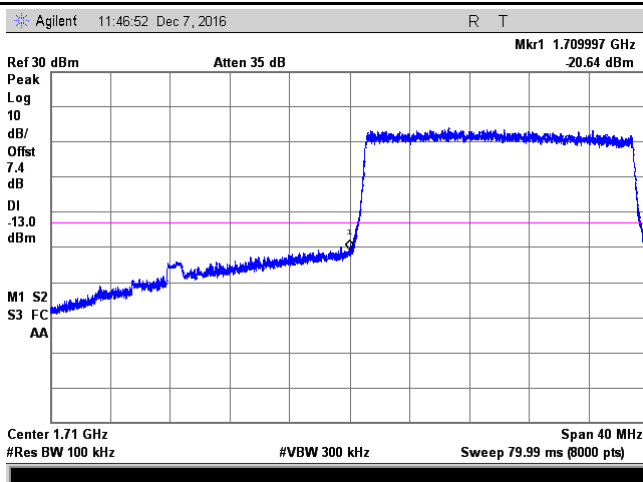
LTE Band IV - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(149.3/100)=4.5+1.7=6.2 dB

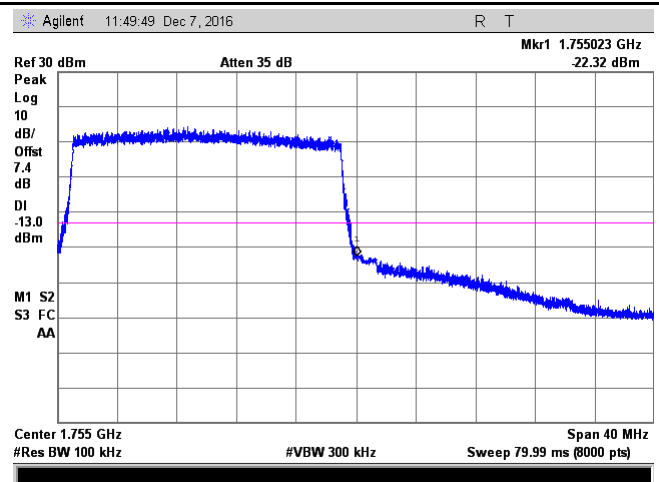


LTE Band IV - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(150.2/100)=4.5+1.8=6.3 dB



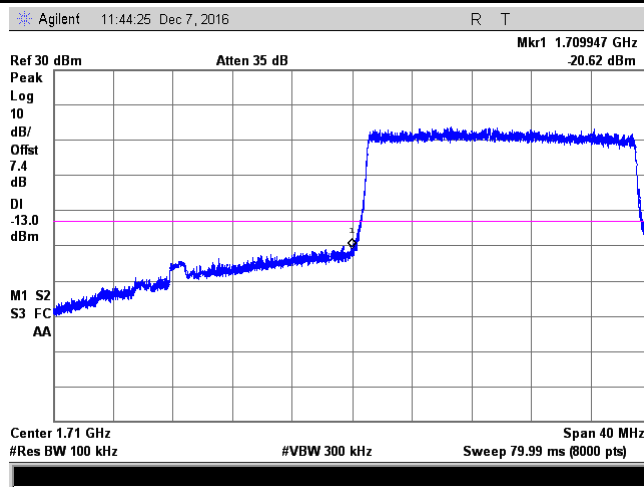
LTE Band IV - Low Channel QPSK-20



LTE Band IV - High Channel QPSK-20

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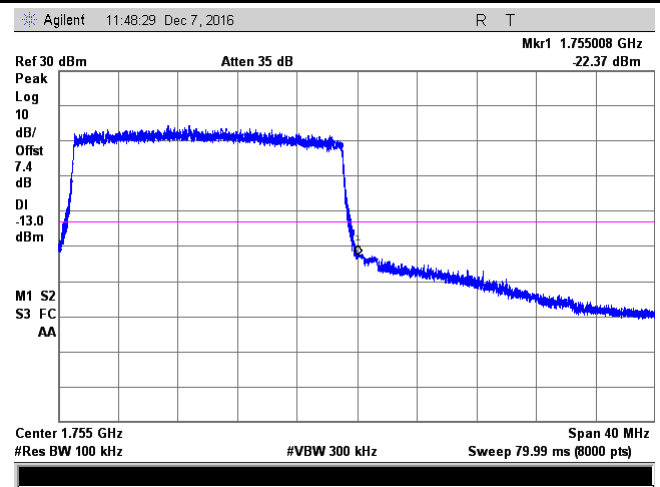
Note: Offset=Cable loss (4.5) + 10log
(194.4/100)=4.5+2.9=7.4 dB



LTE Band IV - Low Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(194.1/100)=4.5+2.9=7.4dB

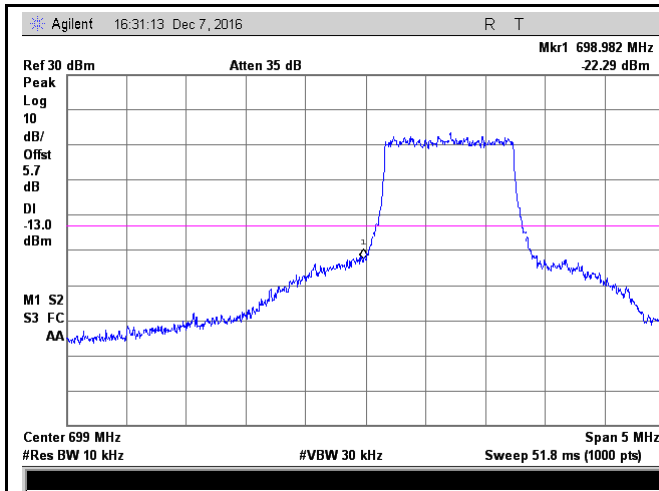
Note: Offset=Cable loss (4.5) + 10log
(193.7/100)=4.5+2.9=7.4 dB



LTE Band IV - High Channel 16QAM-20

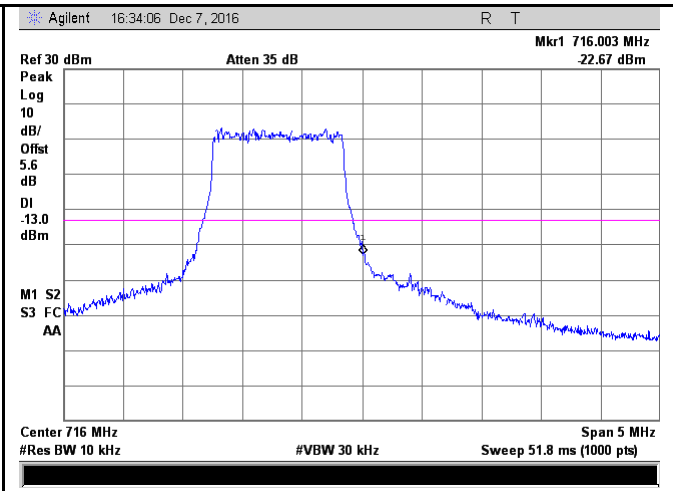
Note: Offset=Cable loss (4.5) + 10log
(193.8/100)=4.5+2.9=7.4 dB

LTE Band XII (Part 27)



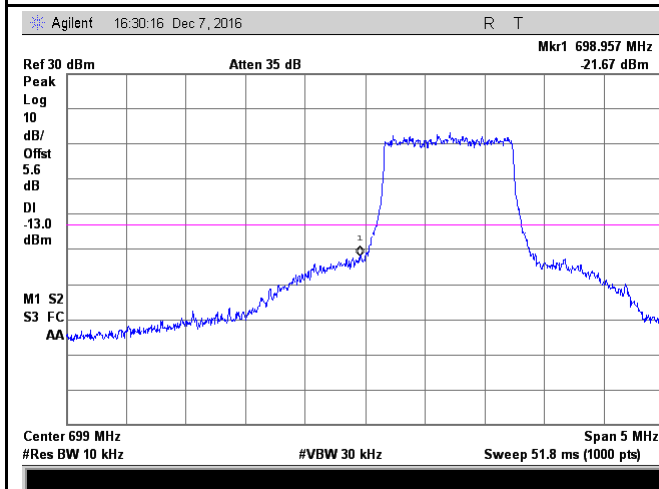
LTE Band XII - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.04/10)=4.5+1.2=5.7dB



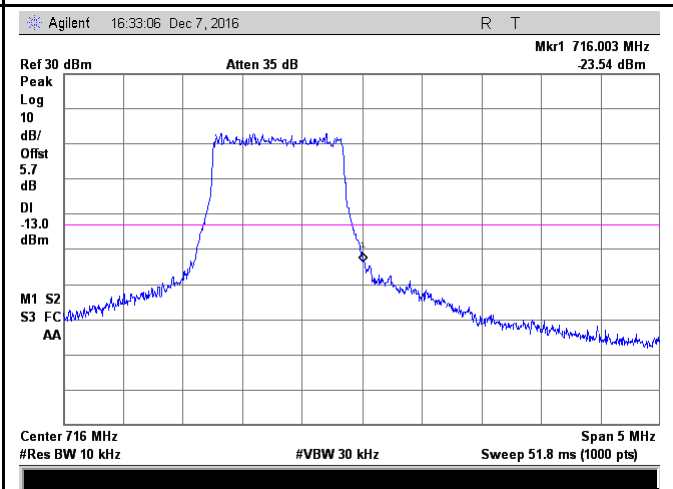
LTE Band XII - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log
(12.94/10)=4.5+1.1=5.6 dB



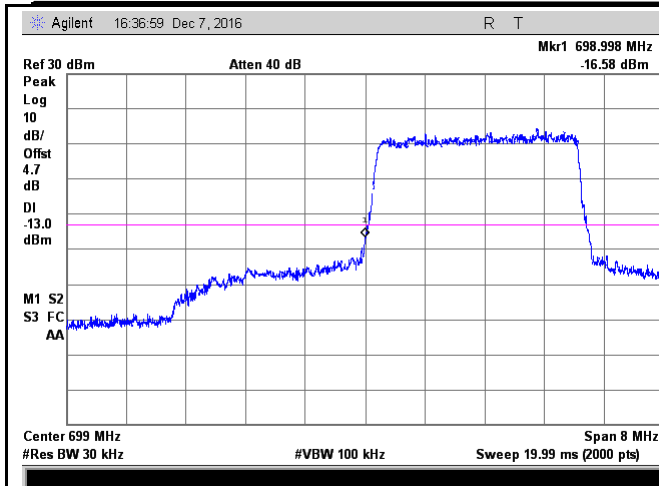
LTE Band XII - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(12.85/10)=4.5+1.1=5.6 dB



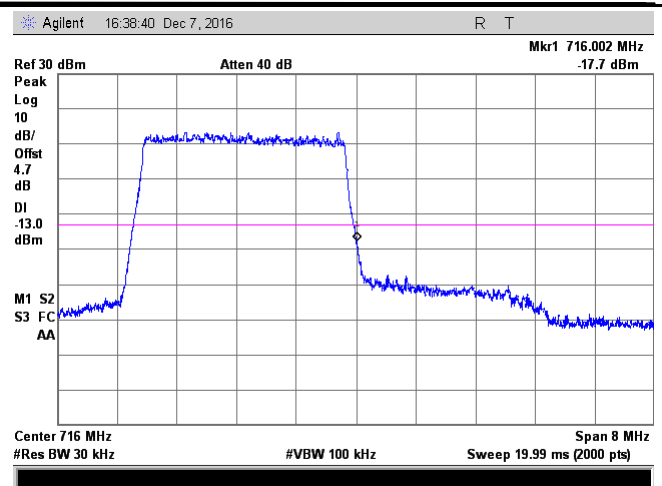
LTE Band XII - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log
(13.21/10)=4.5+1.2=5.7 dB



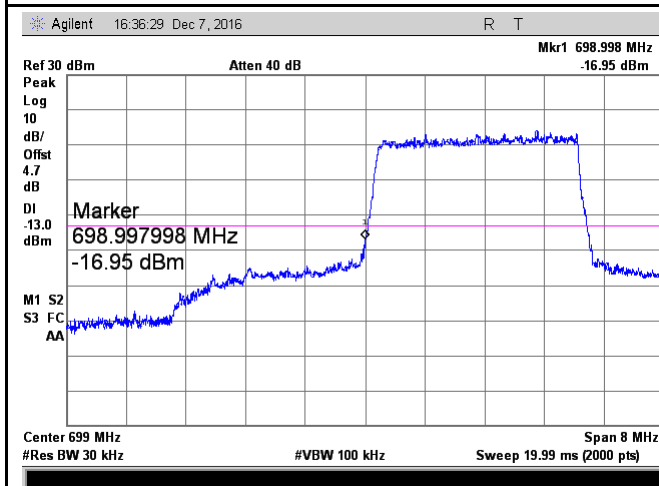
LTE Band XII - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(31.19/30)=4.5+0.2=4.7 dB



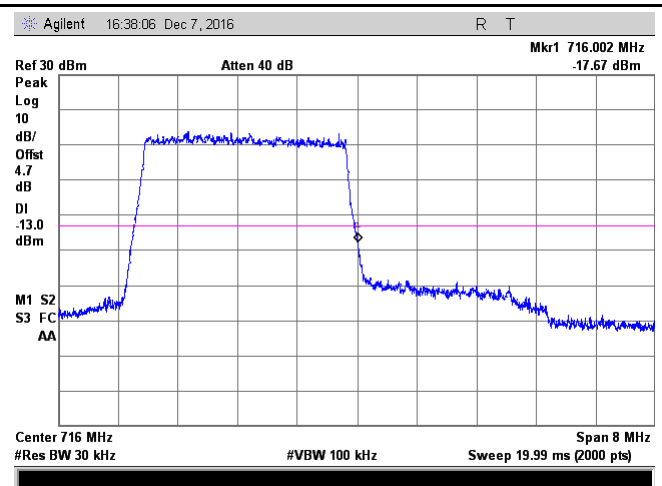
LTE Band XII - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(31.38/30)=4.5+0.2=4.7 dB



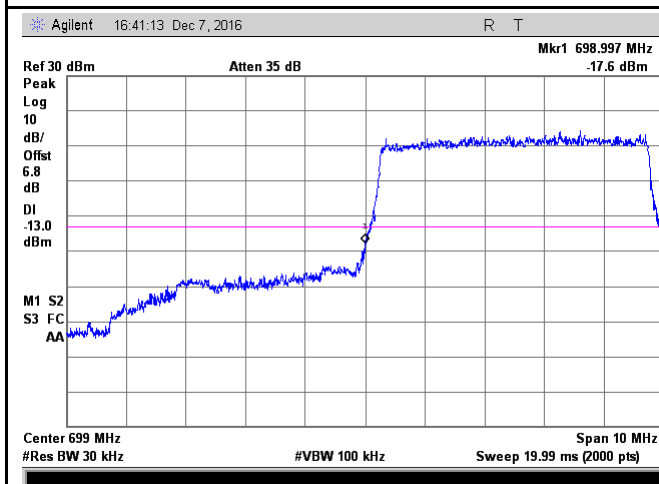
LTE Band XII - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(31.31/30)=4.5+0.2=4.7 dB

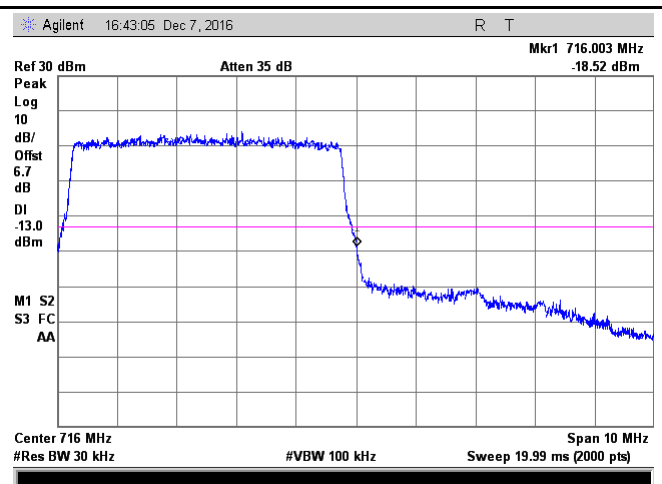


LTE Band XII - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(31.34/30)=4.5+0.2=4.7 dB

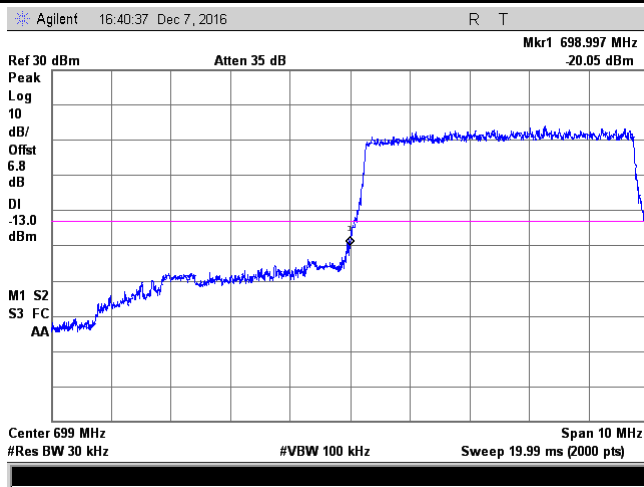


LTE Band XII - Low Channel QPSK-5



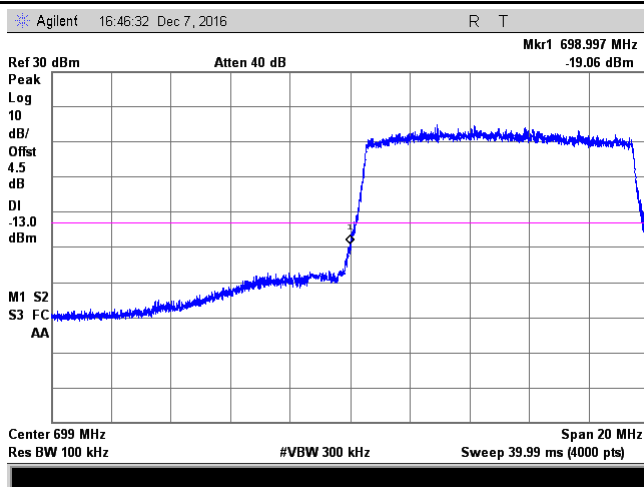
LTE Band XII - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.61/30)=4.5+2.3=6.8 dB

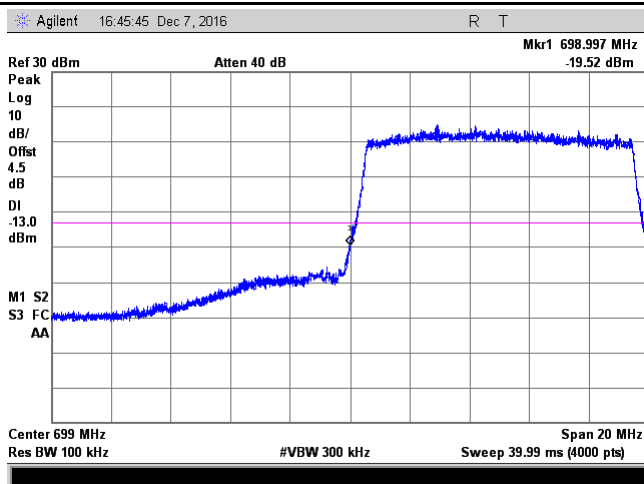


LTE Band XII - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.6/30)=4.5+2.3=6.8 dB

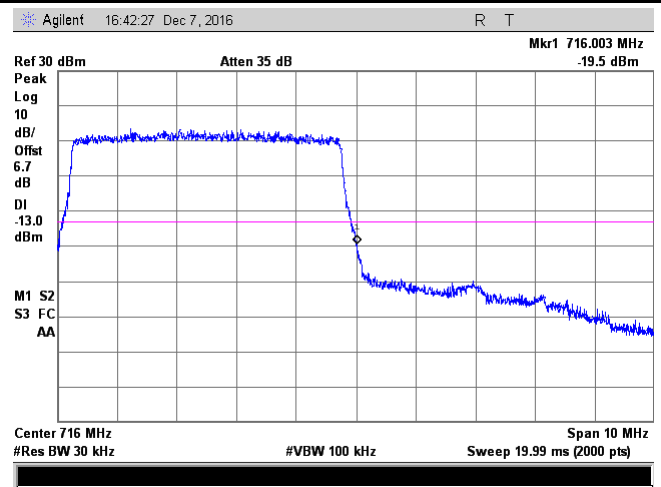


LTE Band XII - Low Channel QPSK-10



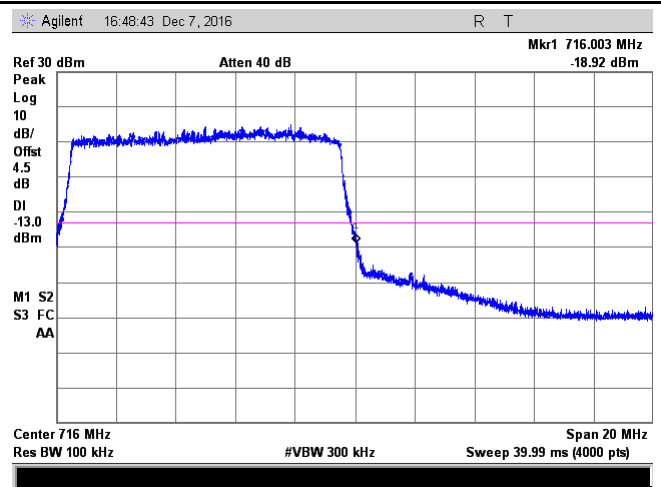
LTE Band XII - Low Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log
(49.96/30)=4.5+2.2=6.7 dB

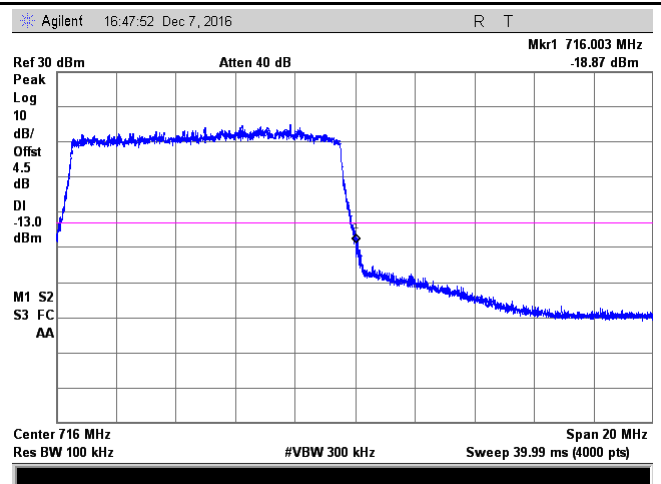


LTE Band XII - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(49.96/30)=4.5+2.2=6.7 dB

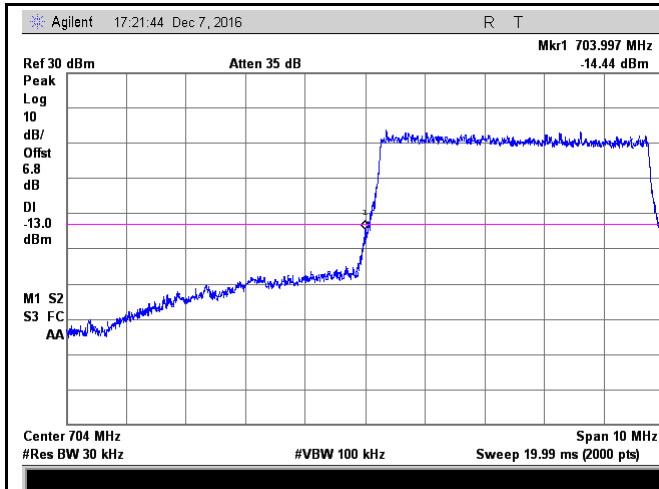


LTE Band XII - High Channel QPSK-10



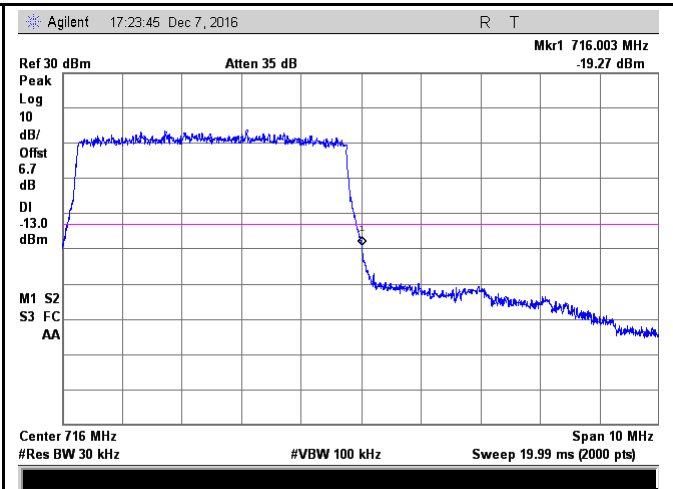
LTE Band XII - High Channel 16QAM-10

LTE Band XVII (Part 27)



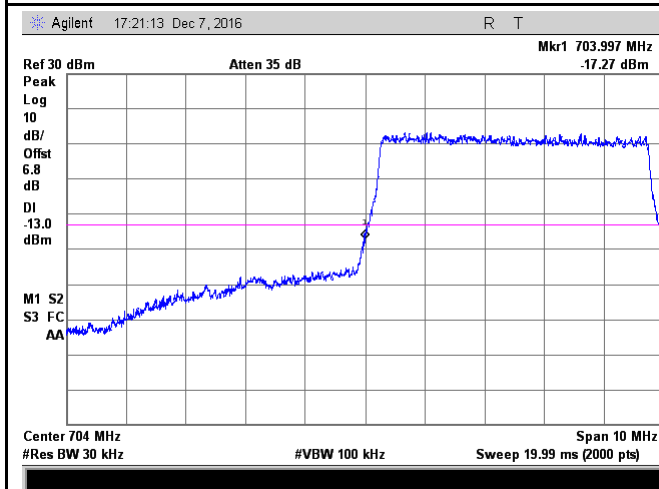
LTE Band XVII - Low Channel QPSK-5

Note: Offset=Cable loss (4.0) + 10log
(50.73/30)=4.5+2.3=6.8 dB



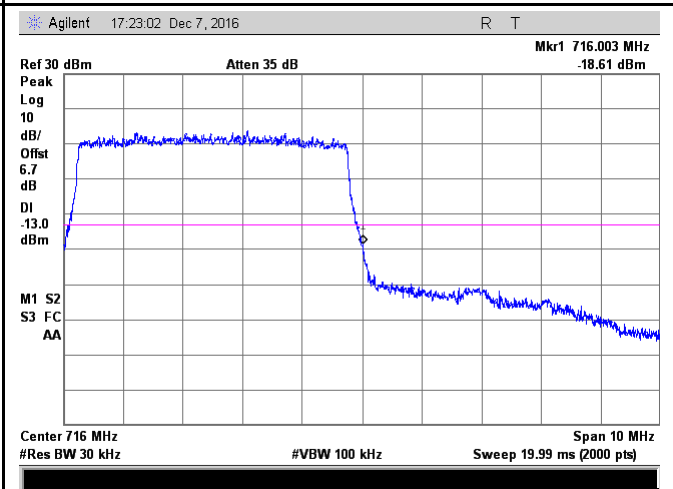
LTE Band XVII - High Channel QPSK-5

Note: Offset=Cable loss (4.0) + 10log
(50.05/30)=4.5+2.2=6.8 dB



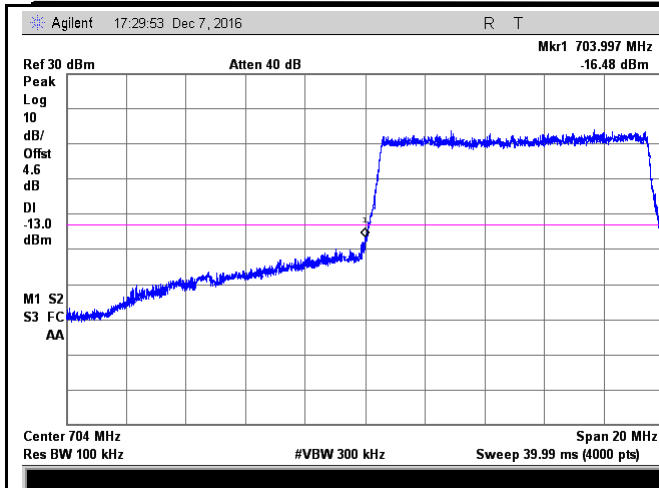
LTE Band XVII - Low Channel 16QAM-5

Note: Offset=Cable loss (4.0) + 10log
(50.82/30)=4.5+2.3=6.8 dB

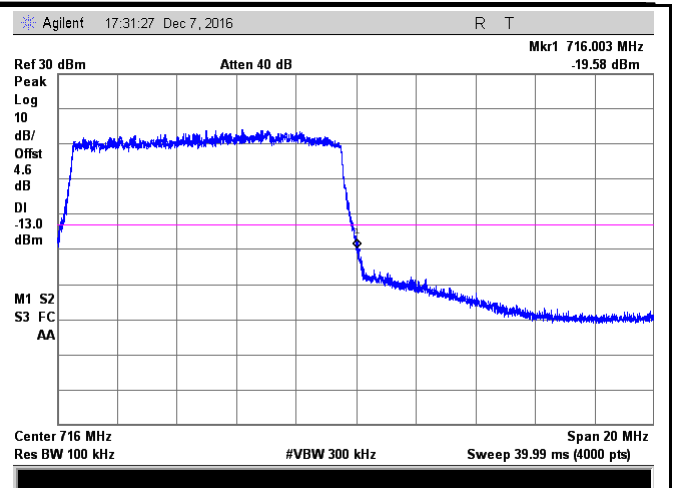


LTE Band XVII - High Channel 16QAM-5

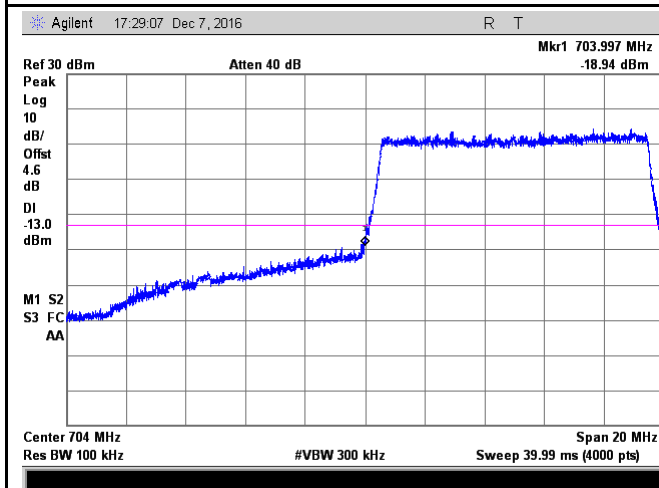
Note: Offset=Cable loss (4.0) + 10log
(50.08/30)=4.5+2.2=6.7 dB



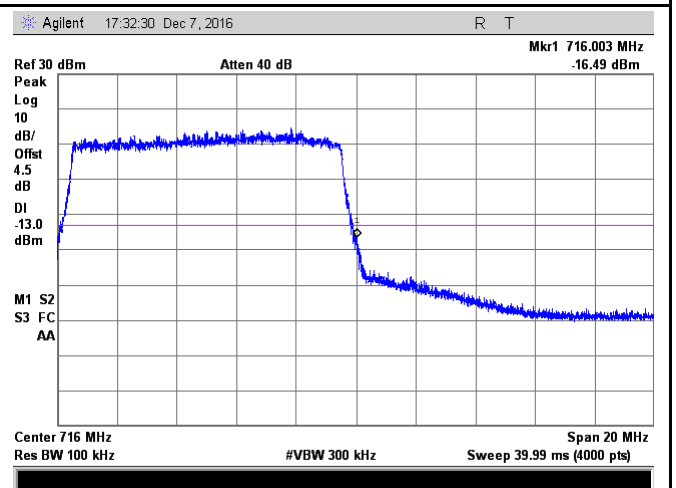
LTE Band XVII - Low Channel QPSK-10



LTE Band XVII - High Channel QPSK-10



LTE Band XVII - Low Channel 16QAM-10

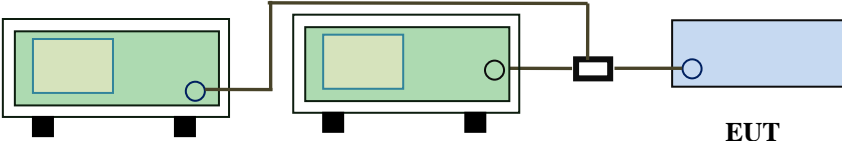


LTE Band XVII - High Channel 16QAM-10

6.8 Band Edge 27.53(m)

Temperature	24°C
Relative Humidity	59%
Atmospheric Pressure	1007mbar
Test date :	December 07, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Requirement	Applicable
§27.53(m)	According to FCC 27.53(m)(4) specified that power of any emission outside of the channel edge must be attenuated below the transmitting power(P) by a factor shall be not less than $43+10\log(P)$ dB at the channel edge, the limit of emission equal to -13dBm. And $55+10\log(P)$ dB at 5.5MHz from the channel edges, the limit of emission equal to -25dBm. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.	<input checked="" type="checkbox"/>
Test Setup	 <p style="text-align: center;">Base Station Spectrum Analyzer EUT</p>	
Test Procedure	<ul style="list-style-type: none"> - 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	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

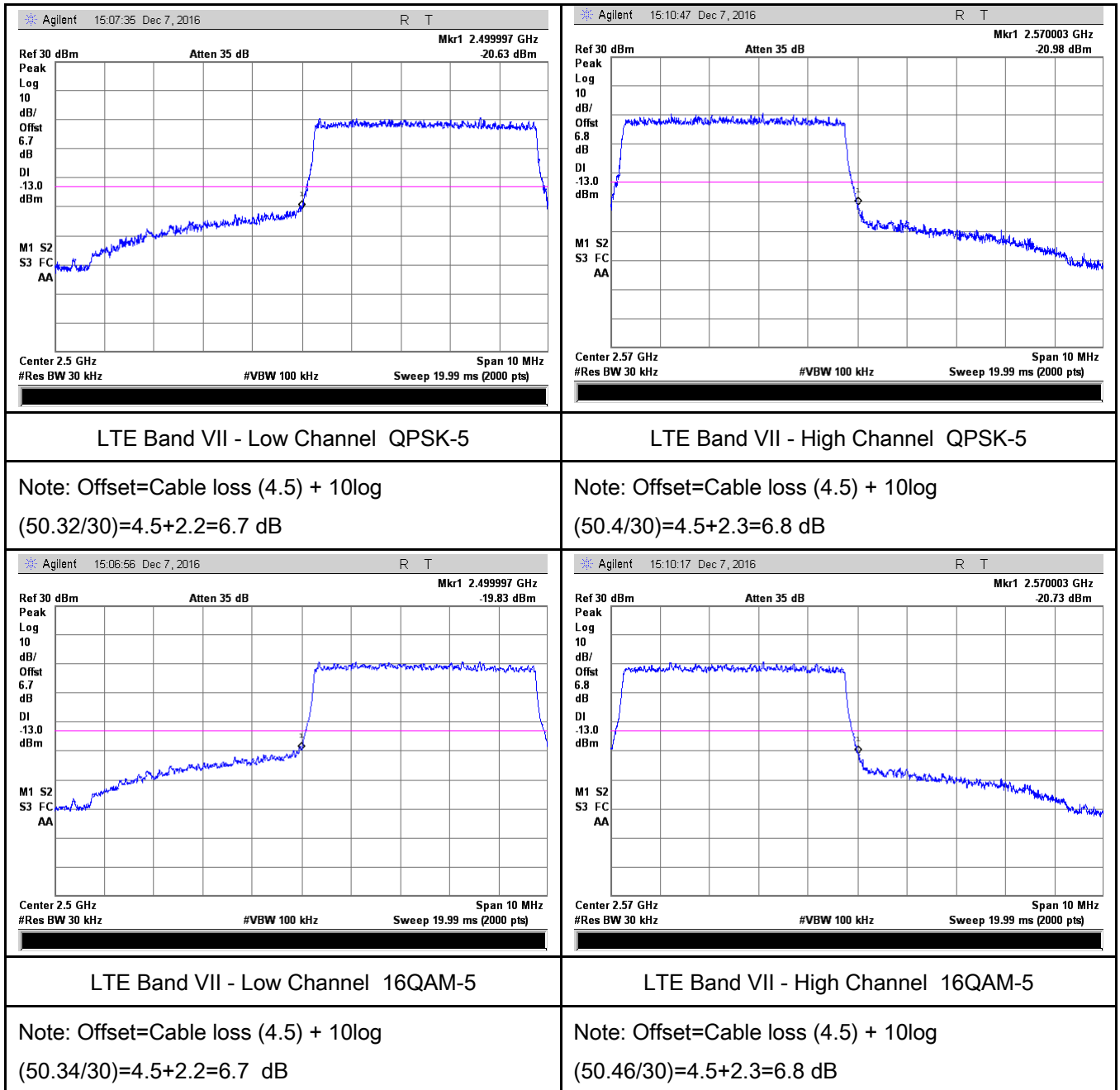
Test Data ☒ Yes ☐ N/A

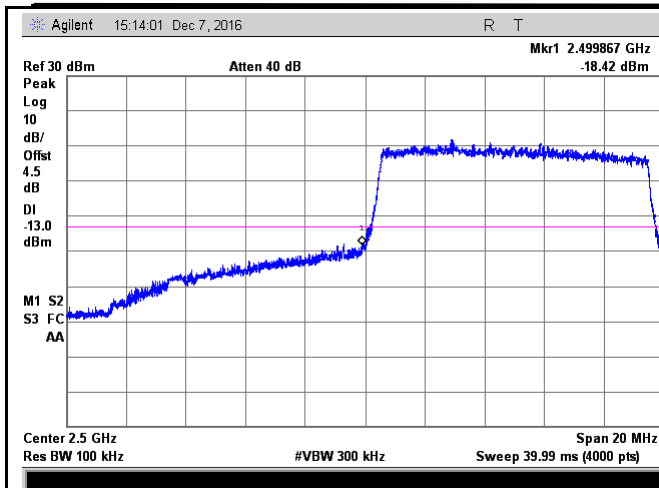
Test Plot ☒ Yes (See below) ☐ N/A

LTE Band VII (Part 27) result

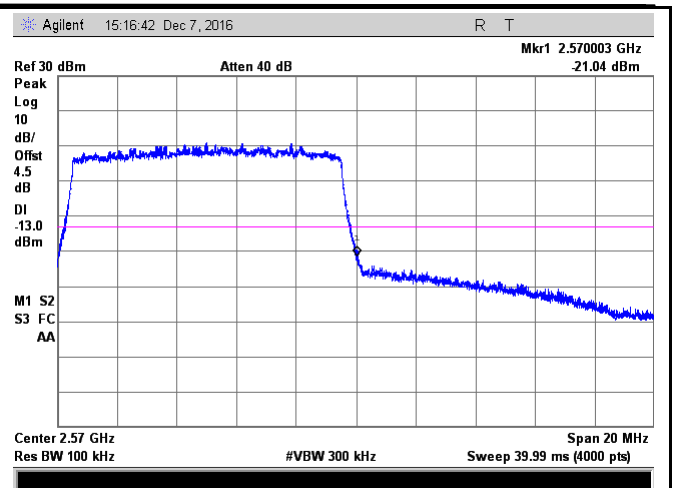
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
5	20775	2500	QPSK	-20.63	-13
			16QAM	-19.83	-13
5	21425	2570	QPSK	-20.98	-13
			16QAM	-20.73	-13
10	20800	2500	QPSK	-18.42	-13
			16QAM	-18.38	-13
10	21400	2570	QPSK	-21.04	-13
			16QAM	-22.39	-13
15	20825	2500	QPSK	-19.81	-13
			16QAM	-20.92	-13
15	21400	2570	QPSK	-25.01	-13
			16QAM	-24.98	-13
20	20850	2500	QPSK	-19.69	-13
			16QAM	-19.56	-13
20	21350	2571	QPSK	-24.10	-13
			16QAM	-23.03	-13

LTE Band VII (Part 27)

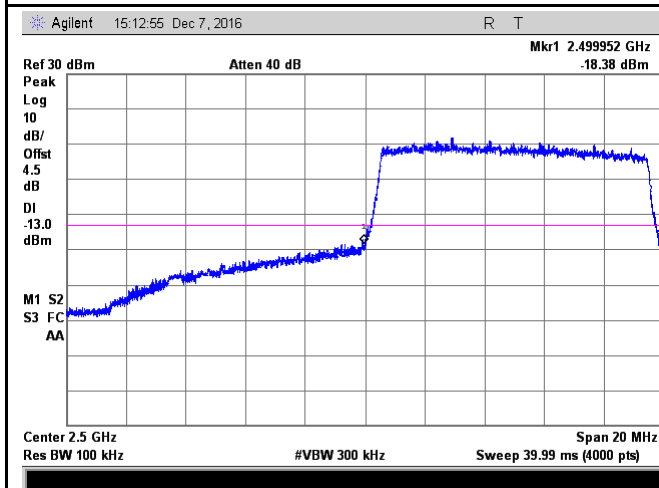




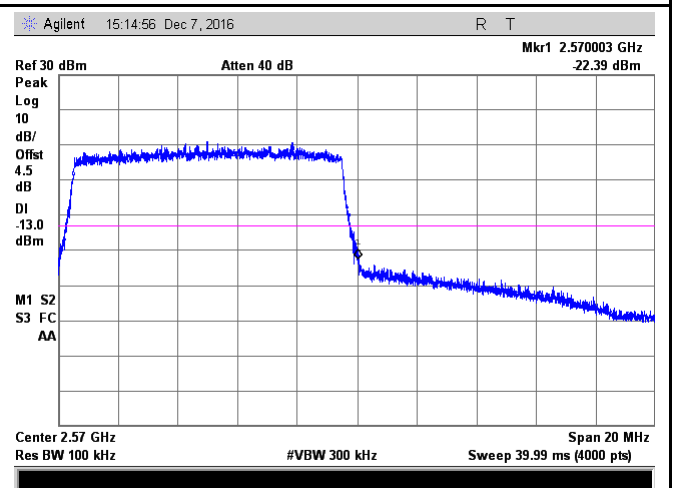
LTE Band VII - Low Channel QPSK-10



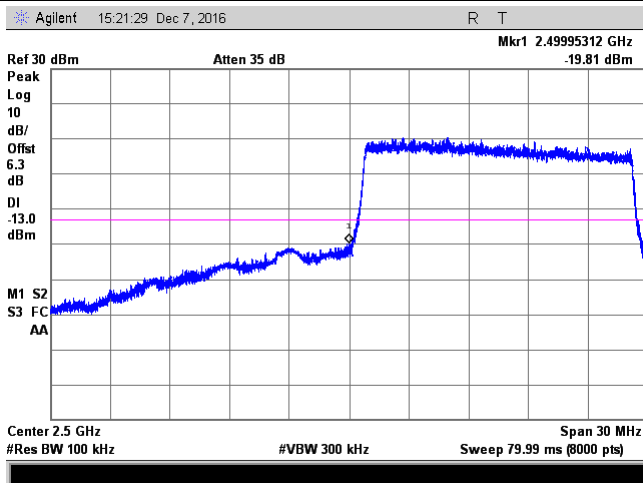
LTE Band VII - High Channel QPSK-10



LTE Band VII - Low Channel 16QAM-10

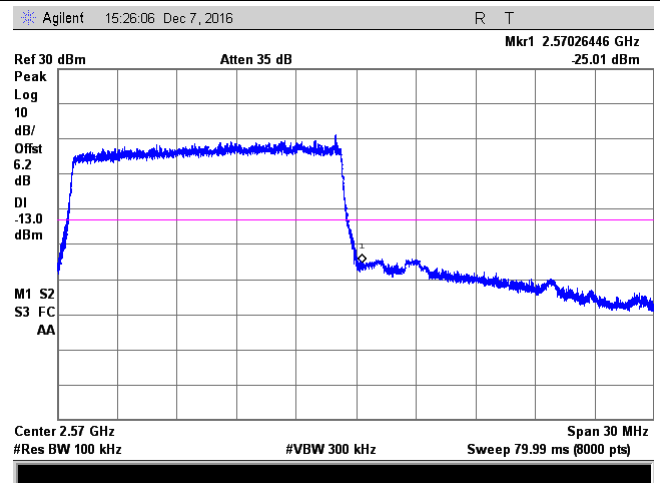


LTE Band VII - High Channel 16QAM-10



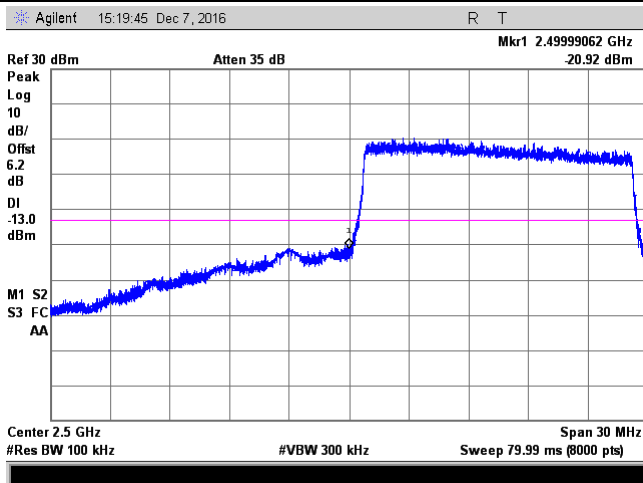
LTE Band VII - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
(149.7/100)=4.5+1.8=6.3 dB



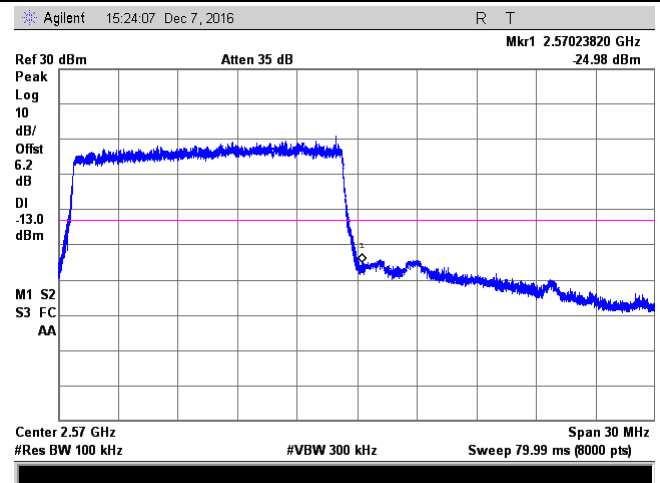
LTE Band VII - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log
(149.1/100)=4.5+1.7=6.2 dB



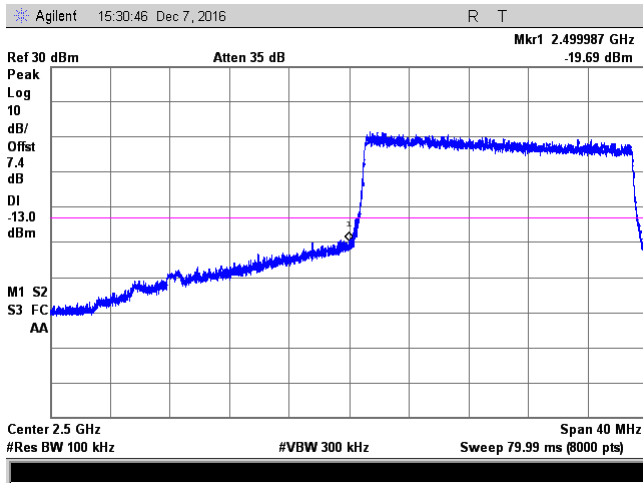
LTE Band VII - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(149.1/100)=4.5+1.7=6.2dB



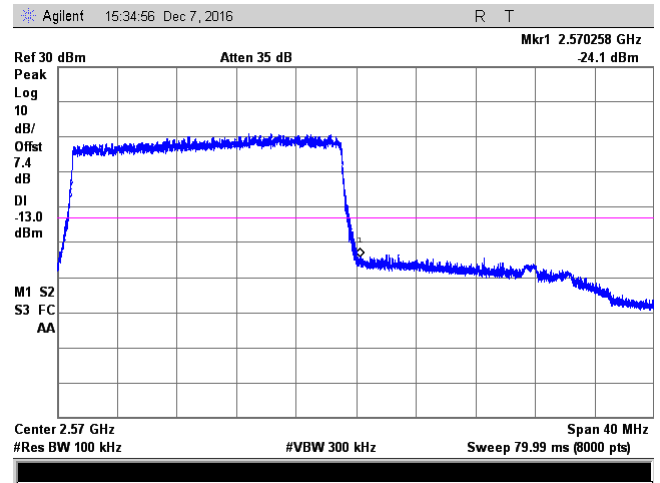
LTE Band VII - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(148.6/100)=4.5+1.7=6.2 dB



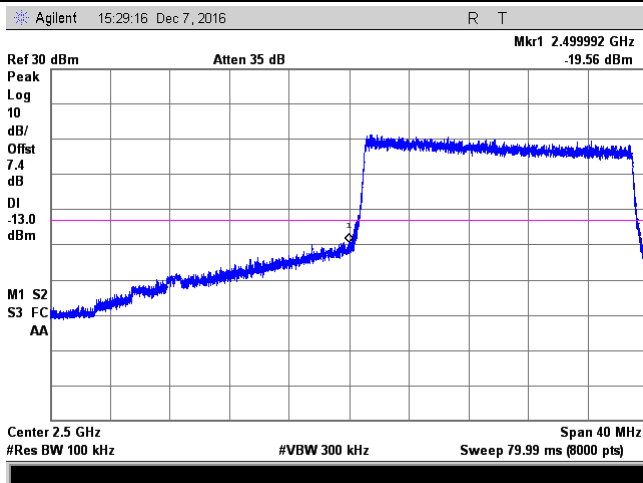
LTE Band VII - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(195.5/100)=4.5+2.9=7.4 dB



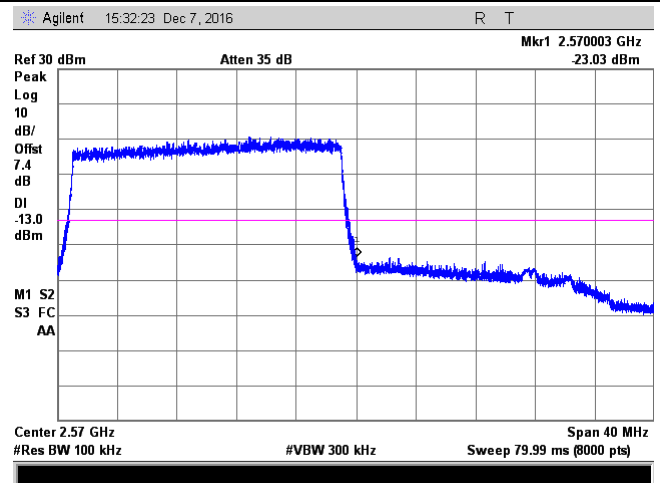
LTE Band VII - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(193.9 /100)=4.5+2.9=7.4dB



LTE Band VII - Low Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(195.5/100)=4.5+2.9=7.4 dB



LTE Band VII - High Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(194.3/100)=4.5+2.9=7.4 dB

6.9 Frequency Stability

Temperature	23°C
Relative Humidity	58%
Atmospheric Pressure	1006mbar
Test date :	December 06, 2016
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable																																
§2.1055, §22.355 & §24.235 § 27.5(h); § 27.54	a)	<p>According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:</p> <p>Frequency Tolerance for Transmitters in the Public Mobile Services</p> <table border="1"> <thead> <tr> <th>Frequency Range (MHz)</th><th>Base, fixed (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th><th>Mobile ≤ 3 watts (ppm)</th></tr> </thead> <tbody> <tr> <td>25 to 50</td><td>20.0</td><td>20.0</td><td>50.0</td></tr> <tr> <td>to 450</td><td>5.0</td><td>5.0</td><td>50.0</td></tr> <tr> <td>450 to 512</td><td>2.5</td><td>5.0</td><td>5 0</td></tr> <tr> <td>821 to 896</td><td>1.5</td><td>2.5</td><td>2.5</td></tr> <tr> <td>928 to 929.</td><td>5.0</td><td>N/A</td><td>N/A</td></tr> <tr> <td>929 to 960.</td><td>1.5</td><td>N/A</td><td>N/A</td></tr> <tr> <td>2110 to 2220</td><td>10.0</td><td>N/A</td><td>N/A</td></tr> </tbody> </table> <p>According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.</p> <p>According to §27.54, The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.</p>	Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)	25 to 50	20.0	20.0	50.0	to 450	5.0	5.0	50.0	450 to 512	2.5	5.0	5 0	821 to 896	1.5	2.5	2.5	928 to 929.	5.0	N/A	N/A	929 to 960.	1.5	N/A	N/A	2110 to 2220	10.0	N/A	N/A	<input checked="" type="checkbox"/>
Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)																																
25 to 50	20.0	20.0	50.0																																
to 450	5.0	5.0	50.0																																
450 to 512	2.5	5.0	5 0																																
821 to 896	1.5	2.5	2.5																																
928 to 929.	5.0	N/A	N/A																																
929 to 960.	1.5	N/A	N/A																																
2110 to 2220	10.0	N/A	N/A																																

Test setup	<p>Base Station</p> <p>EUT</p> <p>Thermal Chamber</p>
Procedure	<p>A communication link was established between EUT and base station. The frequency error was monitored and measured by base station under variation of ambient temperature and variation of primary supply voltage.</p> <p>Limit: The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.</p>
Remark	<p>Frequency Stability versus Temperature: The Frequency tolerance of the carrier signal shall be maintained within 2.5ppm of the operating frequency over a temperature variation of -10°C to $+55^{\circ}\text{C}$ at normal supply voltage.</p>
Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

LTE Band II (Part 24E) result

Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-3	0.0016	2.5
0		-2	0.0011	2.5
10		-6	0.0032	2.5
20		-9	0.0048	2.5
30		-5	0.0027	2.5
40		-10	0.0053	2.5
50		-11	0.0059	2.5
55		-12	0.0064	2.5
25	4.2	-9	0.0048	2.5
	3.5	-5	0.0027	2.5

LTE Band IV (Part 27) result

Middle Channel, $f_0 = 1732.5$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-5	0.0029	2.5
0		-9	0.0052	2.5
10		-6	0.0035	2.5
20		-11	0.0063	2.5
30		-15	0.0087	2.5
40		-16	0.0092	2.5
50		-15	0.0087	2.5
55		-14	0.0081	2.5
25	4.2	-10	0.0058	2.5
	3.5	-9	0.0052	2.5

LTE Band VII (Part 27) result

Middle Channel, $f_0 = 2535$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-12	0.0047	2.5
0		-9	0.0036	2.5
10		-10	0.0039	2.5
20		-14	0.0055	2.5
30		-12	0.0047	2.5
40		-14	0.0055	2.5
50		-12	0.0047	2.5
55		-13	0.0051	2.5
25	4.2	-11	0.0043	2.5
	3.5	-10	0.0039	2.5

LTE Band XII (Part 27) result

Middle Channel, $f_0 = 707.5\text{MHz}$				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-6	0.0027	2.5
0		-9	0.0059	2.5
10		-8	0.0037	2.5
20		-5	0.0053	2.5
30		-9	0.0064	2.5
40		-10	0.0048	2.5
50		-12	0.0064	2.5
55		-16	0.0032	2.5
25	4.2	-12	0.0059	2.5
	3.5	-8	0.0053	2.5

LTE Band XVII (Part 27) result

Middle Channel, $f_0 = 710\text{ MHz}$				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	9	0.0127	2.5
0		12	0.0169	2.5
10		11	0.0155	2.5
20		12	0.0169	2.5
30		9	0.0127	2.5
40		7	0.0099	2.5
50		6	0.0085	2.5
55		8	0.0113	2.5
25	4.2	9	0.0127	2.5
	3.5	12	0.0169	2.5

Annex A. TEST INSTRUMENT

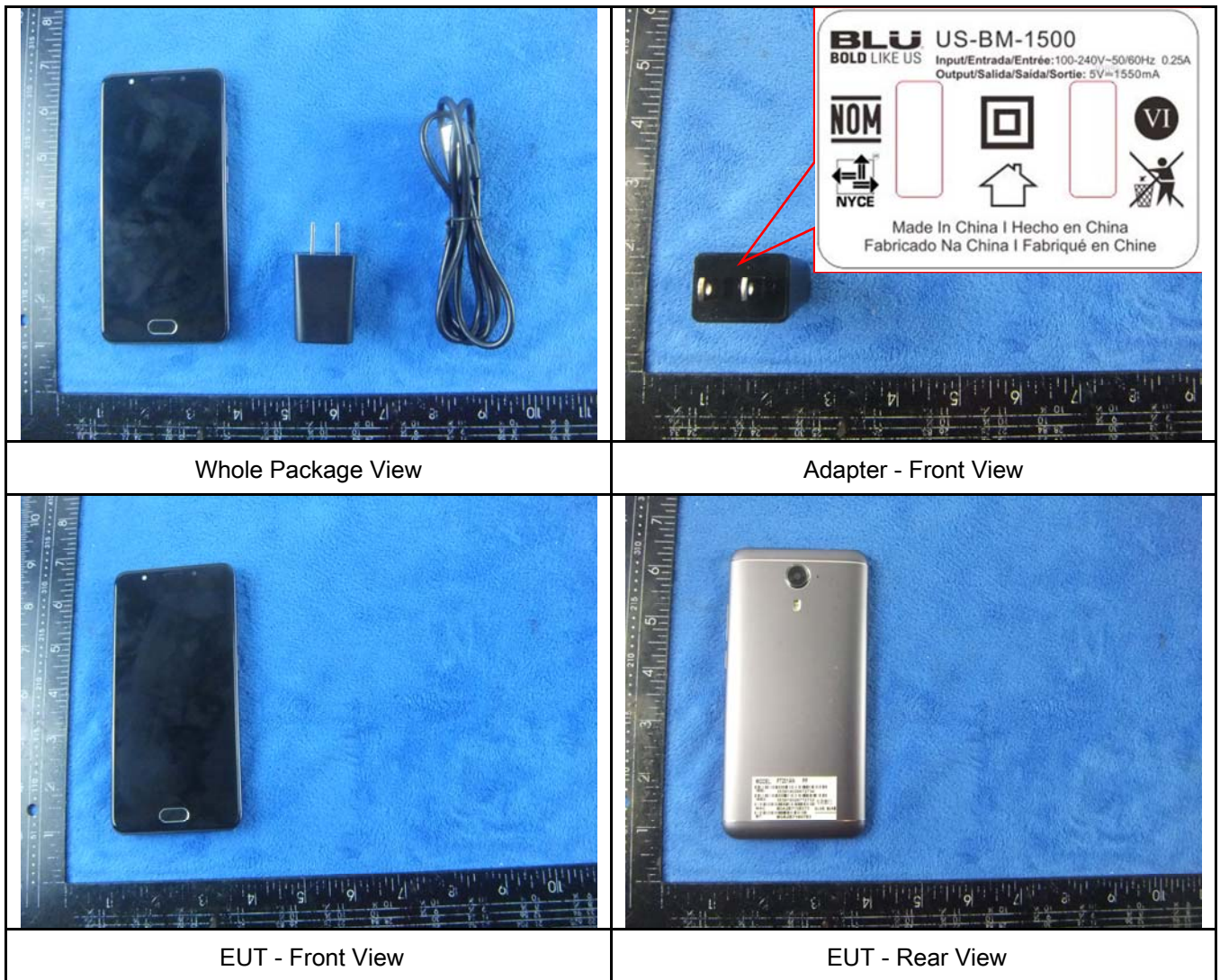
Instrument	Model	Serial #	Cal Date	Cal Due	In use
RF Conducted Test					
Agilent ESA-E SERIES SPECTRUM ANALYZER	E4407B	MY45108319	09/15/2016	09/14/2017	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/24/2016	09/23/2017	<input checked="" type="checkbox"/>
Wideband Radio Communication Tester	CMW500	120906	03/27/2016	03/26/2017	<input checked="" type="checkbox"/>
Temperature/Humidity Chamber	UHL-270	001	10/08/2016	10/07/2017	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
RF Power Sensor	Dare RPR3006C/P/W	AY554013	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Microwave Preamplifier (0.5 ~ 18GHz)	PAM-118	443008	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~2GHz)	JB1	A112017	09/20/2016	09/19/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71259	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/23/2016	09/22/2017	<input checked="" type="checkbox"/>
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	09/16/2016	09/15/2017	<input checked="" type="checkbox"/>
Tunable Notch Filter	3NF-800/1000-S	AA4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>

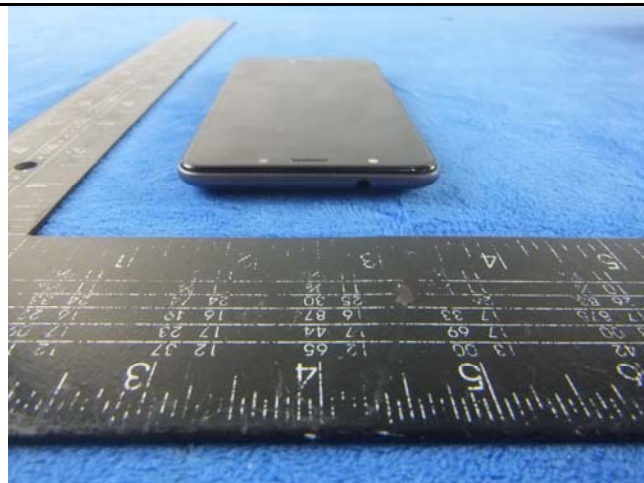
Test Report	16071342-FCC-R5
Page	124 of 134

Tunable Notch Filter	3NF- 1000/2000-S	AM 4	08/31/2016	08/30/2017	<input checked="" type="checkbox"/>
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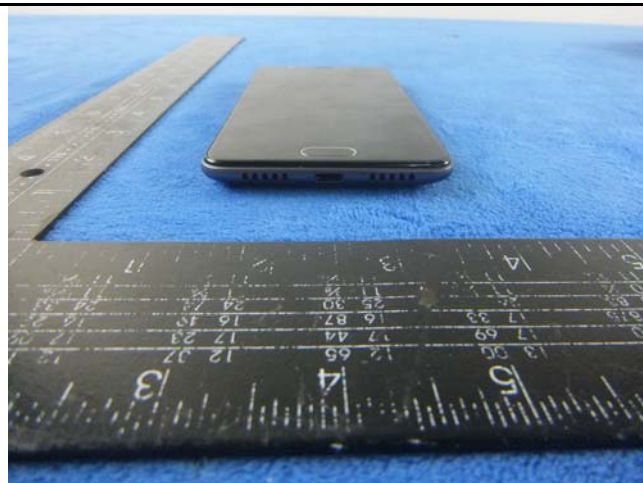
Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

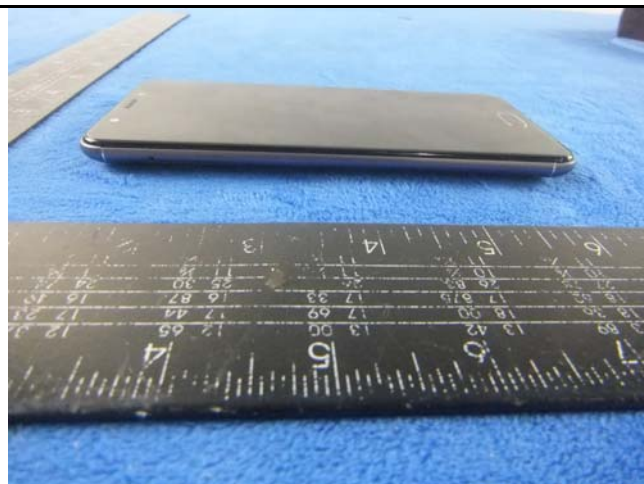




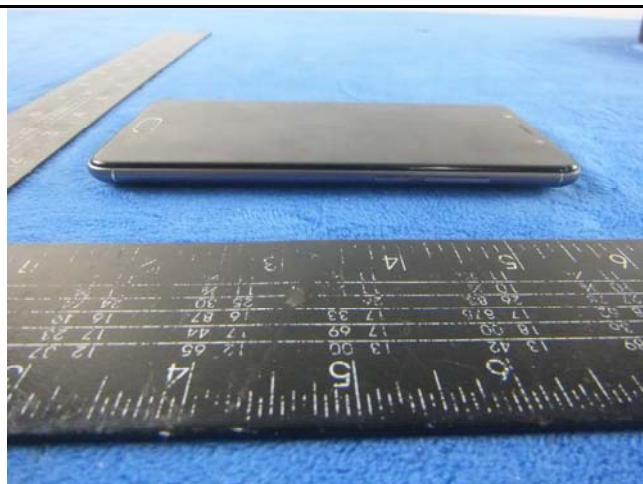
EUT - Top View



EUT - Bottom View



EUT - Left View



EUT - Right View

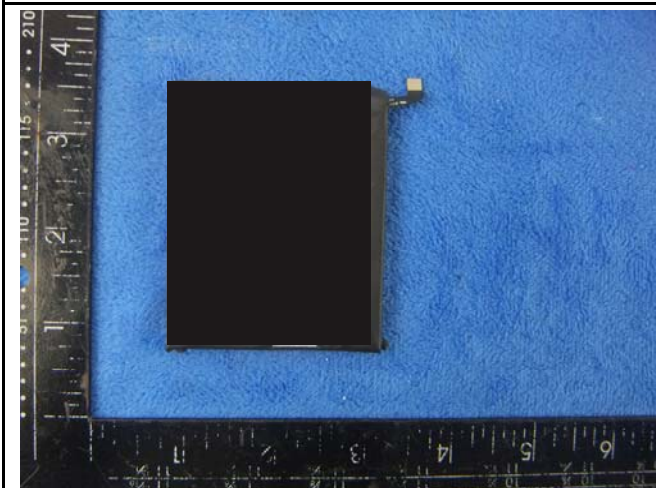
Annex B.ii. Photograph: EUT Internal Photo



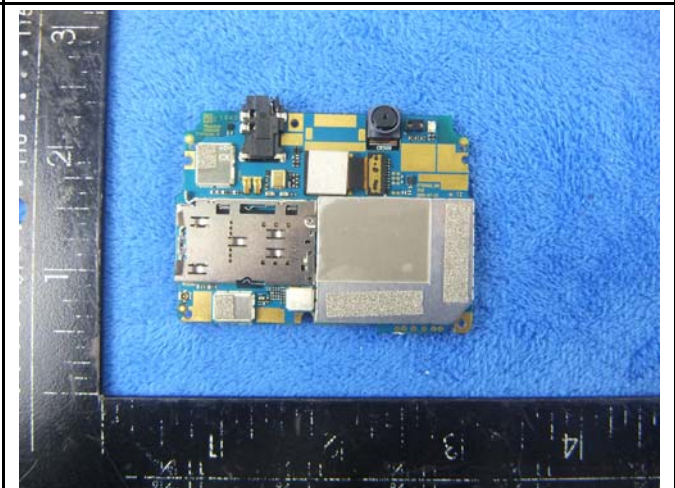
Cover Off - Top View



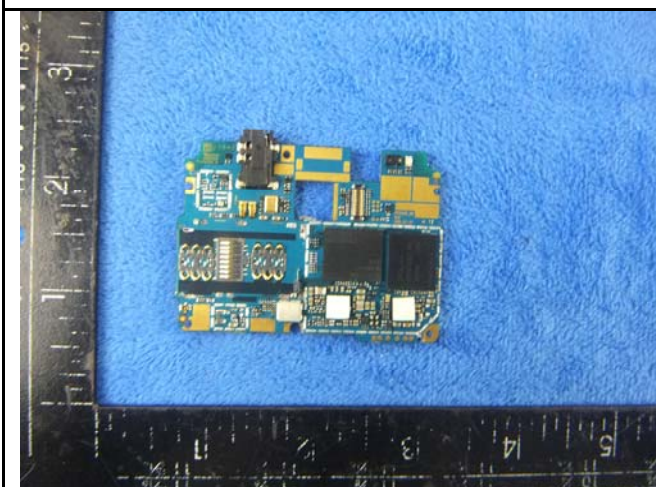
Battery - Front View



Battery - Rear View



Mainboard with Shielding - Front View



Mainboard without Shielding - Front View



Mainboard with Shielding - Rear View



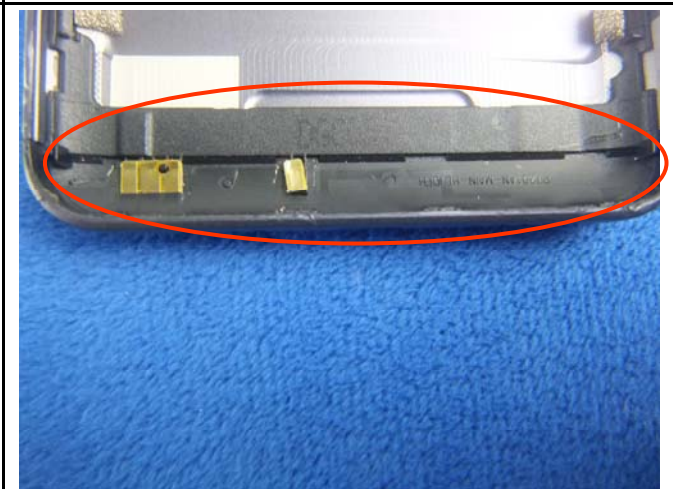
Mainboard without Shielding - Rear View



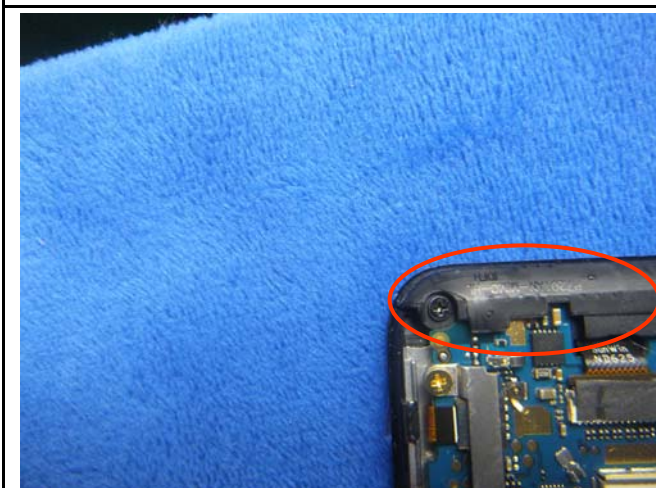
LCD - Front View



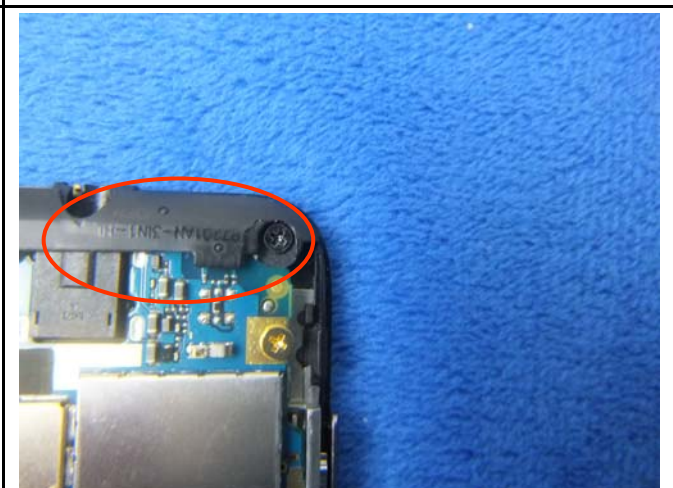
LCD - Rear View



GSM/PCS/UMTS-FDD Antenna View

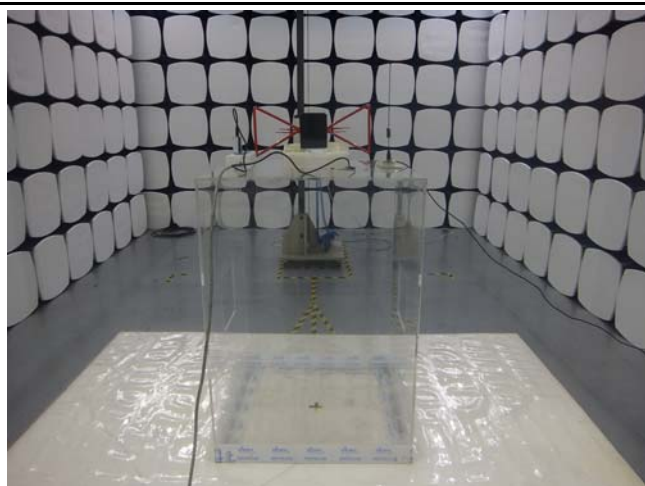


LTE - Antenna View

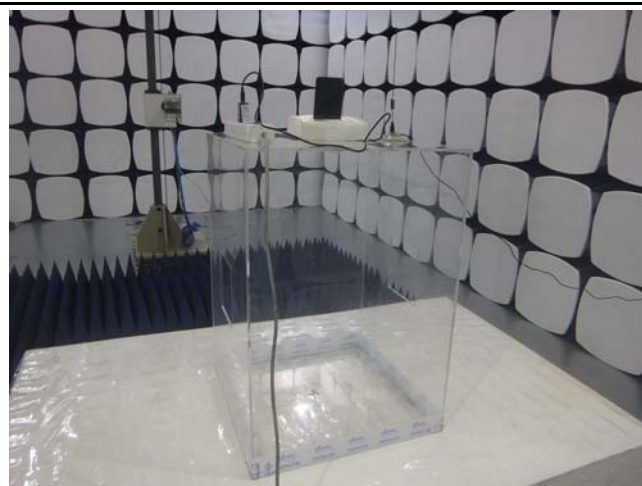


WIFI/BT/BLE/GPS - Antenna View

Annex B.iii. Photograph: Test Setup Photo



Radiated Spurious Emissions Test Setup Below 1GHz

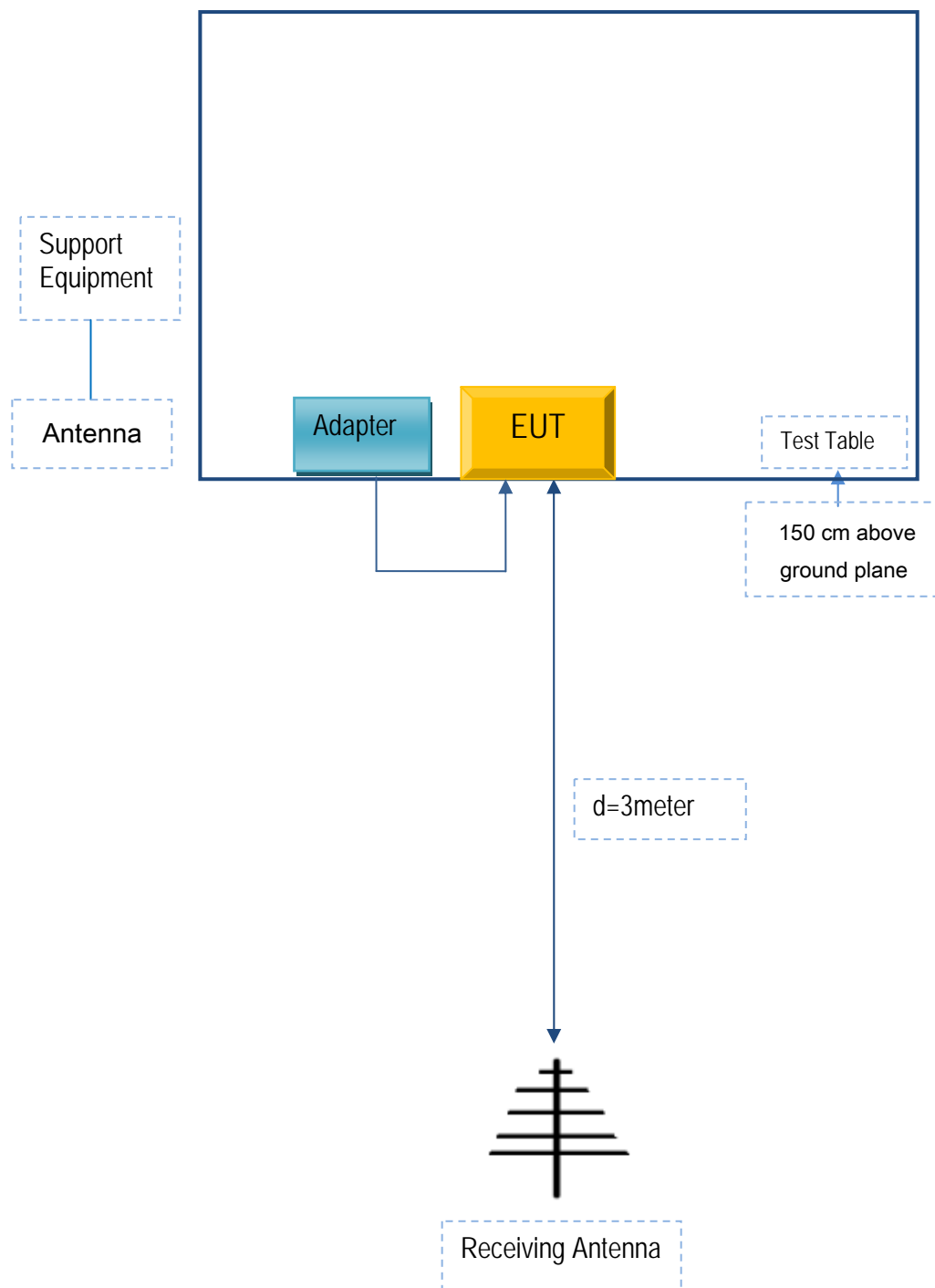


Radiated Spurious Emissions Test Setup Above
1GHz

Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Radiated Emissions



Annex C. ii. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
BLU Products, Inc.	Adapter	US-BM-1500	D05362

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB Cable	Un-shielding	No	0.8m	D05362

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Annex C.ii. EUT OPERATING CONKITIONS

N/A

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Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

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Annex E. DECLARATION OF SIMILARITY

N/A