

RF TEST REPORT



Report No.: 15071133-FCC-R5

Supersede Report No.: N/A

Applicant	Verykool USA Inc	
Product Name	Mobile Phone	
Model No.	SL4050	
Serial No.	N/A	
Test Standard	FCC Part 22(H), FCC Part 24(E), FCC Part 27: 2014; ANSI/TIA C603 D: 2010	
Test Date	November 25 to December 15, 2015	
Issue Date	December 17, 2015	
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"/>	
<i>Winnie Zhang</i>	<i>David Huang</i>	
Winnie Zhang Test Engineer	David Huang Checked By	
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Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

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Accreditations for Conformity Assessment

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

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
15071133-FCC-R5	NONE	Original	December 17, 2015

2. Customer information

Applicant Name	Verykool USA Inc
Applicant Add	3636 Nobel Drive, Suite 325, San Diego, CA 92122 USA
Manufacturer	HUAWO TECHNOLOGY LIMITED
Manufacturer Add	9A,Gongkan building,Technology south 8th road,High-Tech Park,Nanshan district,Shenzhen

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:	Mobile Phone
Main Model:	SL4050
Serial Model:	N/A
Date EUT received:	November 24,2015
Test Date(s):	November 25 to December 15, 2015
Equipment Category :	PCE
Antenna Gain:	GSM850: 3.9dBi PCS1900: 4.47dBi UMTS-FDD Band V: 3.9dBi UMTS-FDD Band II: 4.47dBi UMTS-FDD Band IV: 3.15dBi Bluetooth/BLE:5.49dBi WIFI: 5.35dBi LTE Band 2: 3.9dBi LTE Band 4: 5.2dBi LTE Band 5: 3.9dBi LTE Band 7: 4.0dBi GPS: 3.97dBi
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK, 8PSK UMTS-FDD: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK LTE Band: QPSK, 16QAM GPS:BPSK

RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
	PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
	UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
	UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz;
	RX: 1932.4 ~ 1987.6 MHz
	UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz;
	WIFI:802.11b/g/n(20M): 2412-2462 MHz
	WIFI:802.11n(40M): 2422-2452 MHz
	Bluetooth& BLE: 2402-2480 MHz
	LTE Band 2 TX: 1852.5 ~ 1907.5 MHz; RX : 1932.5 ~ 1987.5 MHz
	LTE Band 4 TX: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 MHz
	LTE Band 5 TX: 826.5 ~ 846.5 MHz; RX : 871.5 ~ 891.5 MHz
	LTE Band 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz
	GPS RX:1575.42 MHz
Maximum Conducted AV Power to Antenna:	LTE Band 2: 22.23dBm
	LTE Band 4: 22.77dBm
	LTE Band 5: 23.16dBm
	LTE Band 7: 22.65dBm
ERP/EIRP:	LTE Band 2: 25.85dBm / EIRP
	LTE Band 4: 27.08dBm / EIRP
	LTE Band 5: 26.57dBm / EIRP
	LTE Band 7: 26.36dBm / EIRP
Port:	Power Port, Earphone Port, USB Port
Input Power:	Battery:
	Model:395254
	Standard Voltage:DC3.7V
	Rated Capacity:1400mAh,5.18Wh
	Limited charger coltage:4.2V
	Adapter:
	Model:DU050050USB01
	Input: AC100-240V; 50/60Hz; 0.2A
Trade Name :	Output: DC 5.0V,500mA
	veryKool

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

FCC ID: WA6SL4050

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

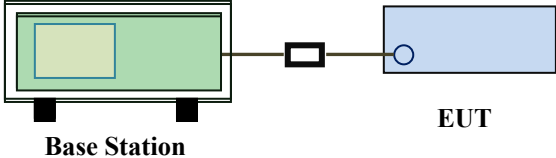
The EUT is a portable device, thus requires SAR evaluation;
Please refer to RF Exposure Evaluation Report: 15071133-FCC-H.

6.2 RF Output Power

Temperature	24°C
Relative Humidity	53%
Atmospheric Pressure	1011mbar
Test date :	December 11, 2015
Tested By :	Winnie Zhang

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>
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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 2:

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	21.92	21.3 ± 1
				1	49	0	21.85	21.3 ± 1
				1	99	0	21.96	21.3 ± 1
				50	0	1	20.93	21.3 ± 1
				50	24	1	20.95	21.3 ± 1
				50	49	1	20.96	21.3 ± 1
				100	0	1	20.91	21.3 ± 1
			16QAM	1	0	1	21.29	21.3 ± 1
				1	49	1	21.27	21.3 ± 1
				1	99	1	21.35	21.3 ± 1
				50	0	2	20.94	21.3 ± 1
				50	24	2	20.91	21.3 ± 1
				50	49	2	20.87	21.3 ± 1
				100	0	2	20.31	21.3 ± 1
	18900	1880.0	QPSK	1	0	0	22.12	21.3 ± 1
				1	49	0	22.21	21.3 ± 1
				1	99	0	22.07	21.3 ± 1
				50	0	1	21.06	21.3 ± 1
				50	24	1	21.12	21.3 ± 1
				50	49	1	21.19	21.3 ± 1
				100	0	1	21.09	21.3 ± 1
			16QAM	1	0	1	21.01	21.3 ± 1
				1	49	1	21.09	21.3 ± 1
				1	99	1	21.07	21.3 ± 1
				50	0	2	20.84	21.3 ± 1
				50	24	2	20.81	21.3 ± 1
				50	49	2	20.74	21.3 ± 1
				100	0	2	20.33	21.3 ± 1
	19100	1900.0	QPSK	1	0	0	21.57	21.3 ± 1
				1	49	0	21.21	21.3 ± 1
				1	99	0	20.61	21.3 ± 1
				50	0	1	20.31	21.3 ± 1
				50	24	1	20.45	21.3 ± 1
				50	49	1	20.66	21.3 ± 1
				100	0	1	20.43	21.3 ± 1
			16QAM	1	0	1	20.91	21.3 ± 1
				1	49	1	20.52	21.3 ± 1
				1	99	1	20.43	21.3 ± 1
				50	0	2	20.39	21.3 ± 1
				50	24	2	20.34	21.3 ± 1
				50	49	2	20.31	21.3 ± 1
				100	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
15MHz	18675	1857.5	QPSK	1	0	0	21.79	21.3 ± 1
				1	37	0	21.75	21.3 ± 1
				1	74	0	21.76	21.3 ± 1
				36	0	1	20.95	21.3 ± 1
				36	16	1	20.93	21.3 ± 1
				36	35	1	20.92	21.3 ± 1
				75	0	1	20.93	21.3 ± 1
			16QAM	1	0	1	21.31	21.3 ± 1
				1	37	1	21.35	21.3 ± 1
				1	74	1	21.38	21.3 ± 1
				36	0	2	20.64	21.3 ± 1
				36	16	2	20.59	21.3 ± 1
				36	35	2	20.47	21.3 ± 1
				75	0	2	20.31	21.3 ± 1
	18900	1880.0	QPSK	1	0	0	22.07	21.3 ± 1
				1	37	0	22.13	21.3 ± 1
				1	74	0	22.16	21.3 ± 1
				36	0	1	21.12	21.3 ± 1
				36	16	1	21.19	21.3 ± 1
				36	35	1	21.24	21.3 ± 1
				75	0	1	21.20	21.3 ± 1
			16QAM	1	0	1	20.88	21.3 ± 1
				1	37	1	20.97	21.3 ± 1
				1	74	1	21.08	21.3 ± 1
				36	0	2	20.57	21.3 ± 1
				36	16	2	20.54	21.3 ± 1
				36	35	2	20.49	21.3 ± 1
				75	0	2	20.39	21.3 ± 1
	19125	1902.5	QPSK	1	0	0	20.94	21.3 ± 1
				1	37	0	21.39	21.3 ± 1
				1	74	0	20.38	21.3 ± 1
				36	0	1	20.32	21.3 ± 1
				36	16	1	20.39	21.3 ± 1
				36	35	1	20.45	21.3 ± 1
				75	0	1	20.31	21.3 ± 1
			16QAM	1	0	1	20.38	21.3 ± 1
				1	37	1	20.68	21.3 ± 1
				1	74	1	20.42	21.3 ± 1
				36	0	2	20.36	21.3 ± 1
				36	16	2	20.32	21.3 ± 1
				36	35	2	20.37	21.3 ± 1
				75	0	2	20.34	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	21.78	21.3 ± 1
				1	24	0	21.76	21.3 ± 1
				1	49	0	21.75	21.3 ± 1
				25	0	1	20.84	21.3 ± 1
				25	12	1	20.82	21.3 ± 1
				25	24	1	20.86	21.3 ± 1
				50	0	1	20.87	21.3 ± 1
			16QAM	1	0	1	21.28	21.3 ± 1
				1	24	1	21.31	21.3 ± 1
				1	49	1	21.32	21.3 ± 1
				25	0	2	21.05	21.3 ± 1
				25	12	2	21.01	21.3 ± 1
				25	24	2	20.94	21.3 ± 1
				50	0	2	20.35	21.3 ± 1
	18900	1880.0	QPSK	1	0	0	22.15	21.3 ± 1
				1	24	0	22.18	21.3 ± 1
				1	49	0	22.20	21.3 ± 1
				25	0	1	21.07	21.3 ± 1
				25	12	1	21.11	21.3 ± 1
				25	24	1	21.15	21.3 ± 1
				50	0	1	21.11	21.3 ± 1
			16QAM	1	0	1	20.94	21.3 ± 1
				1	24	1	20.98	21.3 ± 1
				1	49	1	21.02	21.3 ± 1
				25	0	2	20.62	21.3 ± 1
				25	12	2	20.58	21.3 ± 1
				25	24	2	20.46	21.3 ± 1
				50	0	2	20.35	21.3 ± 1
	19150	1905	QPSK	1	0	0	21.13	21.3 ± 1
				1	24	0	21.55	21.3 ± 1
				1	49	0	20.49	21.3 ± 1
				25	0	1	20.56	21.3 ± 1
				25	12	1	20.34	21.3 ± 1
				25	24	1	20.41	21.3 ± 1
				50	0	1	20.45	21.3 ± 1
			16QAM	1	0	1	20.61	21.3 ± 1
				1	24	1	21.08	21.3 ± 1
				1	49	1	20.37	21.3 ± 1
				25	0	2	20.47	21.3 ± 1
				25	12	2	20.51	21.3 ± 1
				25	24	2	20.49	21.3 ± 1
				50	0	2	20.32	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	21.83	21.3±1
				1	12	0	21.77	21.3±1
				1	24	0	21.76	21.3±1
				12	0	1	20.86	21.3±1
				12	6	1	20.82	21.3±1
				12	11	1	20.85	21.3±1
				25	0	1	20.82	21.3±1
			16QAM	1	0	1	21.19	21.3±1
				1	12	1	21.18	21.3±1
				1	24	1	21.14	21.3±1
				12	0	2	20.71	21.3±1
				12	6	2	20.75	21.3±1
				12	11	2	20.68	21.3±1
				25	0	2	20.41	21.3±1
	18900	1880.0	QPSK	1	0	0	22.13	21.3±1
				1	12	0	22.18	21.3±1
				1	24	0	22.12	21.3±1
				12	0	1	21.18	21.3±1
				12	6	1	21.21	21.3±1
				12	11	1	21.23	21.3±1
				25	0	1	21.14	21.3±1
			16QAM	1	0	1	21.07	21.3±1
				1	12	1	21.14	21.3±1
				1	24	1	21.10	21.3±1
				12	0	2	20.84	21.3±1
				12	6	2	20.76	21.3±1
				12	11	2	20.75	21.3±1
				25	0	2	20.36	21.3±1
	19175	1907.5	QPSK	1	0	0	22.01	21.3±1
				1	12	0	21.45	21.3±1
				1	24	0	20.95	21.3±1
				12	0	1	21.01	21.3±1
				12	6	1	20.73	21.3±1
				12	11	1	20.40	21.3±1
				25	0	1	20.70	21.3±1
			16QAM	1	0	1	21.33	21.3±1
				1	12	1	20.90	21.3±1
				1	24	1	20.44	21.3±1
				12	0	2	20.42	21.3±1
				12	6	2	20.39	21.3±1
				12	11	2	20.41	21.3±1
				25	0	2	20.37	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	21.85	21.3 ± 1
				1	7	0	21.86	21.3 ± 1
				1	14	0	21.80	21.3 ± 1
				8	0	1	20.85	21.3 ± 1
				8	4	1	20.81	21.3 ± 1
				8	7	1	20.83	21.3 ± 1
				15	0	1	20.84	21.3 ± 1
			16QAM	1	0	1	20.80	21.3 ± 1
				1	7	1	20.79	21.3 ± 1
				1	14	1	20.78	21.3 ± 1
				8	0	2	20.64	21.3 ± 1
				8	4	2	20.62	21.3 ± 1
				8	7	2	20.63	21.3 ± 1
				15	0	2	20.51	21.3 ± 1
	18900	1880.0	QPSK	1	0	0	21.95	21.3 ± 1
				1	7	0	22.05	21.3 ± 1
				1	14	0	22.02	21.3 ± 1
				8	0	1	21.13	21.3 ± 1
				8	4	1	21.15	21.3 ± 1
				8	7	1	21.18	21.3 ± 1
				15	0	1	21.15	21.3 ± 1
			16QAM	1	0	1	21.53	21.3 ± 1
				1	7	1	21.57	21.3 ± 1
				1	14	1	21.52	21.3 ± 1
				8	0	2	20.89	21.3 ± 1
				8	4	2	20.87	21.3 ± 1
				8	7	2	20.85	21.3 ± 1
				15	0	2	20.65	21.3 ± 1
	19175	1907.5	QPSK	1	0	0	21.95	21.3 ± 1
				1	7	0	21.30	21.3 ± 1
				1	14	0	20.80	21.3 ± 1
				8	0	1	20.81	21.3 ± 1
				8	4	1	20.51	21.3 ± 1
				8	7	1	20.42	21.3 ± 1
				15	0	1	20.64	21.3 ± 1
			16QAM	1	0	1	20.73	21.3 ± 1
				1	7	1	20.34	21.3 ± 1
				1	14	1	20.31	21.3 ± 1
				8	0	2	20.45	21.3 ± 1
				8	4	2	20.43	21.3 ± 1
				8	7	2	20.42	21.3 ± 1
				15	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
1.4MHz	18607	1850.7	QPSK	1	0	0	21.88	21.3±1
				1	2	0	21.93	21.3±1
				1	5	0	21.90	21.3±1
				3	0	0	21.95	21.3±1
				3	1	0	21.94	21.3±1
				3	2	0	21.93	21.3±1
				6	0	1	20.89	21.3±1
			16QAM	1	0	1	20.69	21.3±1
				1	2	1	20.71	21.3±1
				1	5	1	20.70	21.3±1
				3	0	1	20.54	21.3±1
				3	1	1	20.53	21.3±1
				3	2	1	20.51	21.3±1
				6	0	2	20.34	21.3±1
	18900	1880.0	QPSK	1	0	0	22.12	21.3±1
				1	2	0	22.23	21.3±1
				1	5	0	22.17	21.3±1
				3	0	0	22.15	21.3±1
				3	1	0	22.19	21.3±1
				3	2	0	22.20	21.3±1
				6	0	1	21.12	21.3±1
			16QAM	1	0	1	21.07	21.3±1
				1	2	1	21.21	21.3±1
				1	5	1	21.14	21.3±1
				3	0	1	20.89	21.3±1
				3	1	1	20.64	21.3±1
				3	2	1	20.58	21.3±1
				6	0	2	20.35	21.3±1
	19193	1909.3	QPSK	1	0	0	21.16	21.3±1
				1	2	0	20.76	21.3±1
				1	5	0	20.67	21.3±1
				3	0	0	21.05	21.3±1
				3	1	0	20.69	21.3±1
				3	2	0	20.75	21.3±1
				6	0	1	20.36	21.3±1
			16QAM	1	0	1	21.11	21.3±1
				1	2	1	20.72	21.3±1
				1	5	1	20.63	21.3±1
				3	0	1	20.52	21.3±1
				3	1	1	20.49	21.3±1
				3	2	1	20.51	21.3±1
				6	0	2	20.38	21.3±1

LTE Band 4:

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	22.77	22 ± 1
				1	49	0	22.65	22 ± 1
				1	99	0	22.54	22 ± 1
				50	0	1	21.62	22 ± 1
				50	24	1	21.55	22 ± 1
				50	49	1	21.50	22 ± 1
				100	0	1	21.54	22 ± 1
			16QAM	1	0	1	21.65	21.3 ± 1
				1	49	1	21.53	21.3 ± 1
				1	99	1	21.42	21.3 ± 1
				50	0	2	20.78	21.3 ± 1
				50	24	2	20.61	21.3 ± 1
				50	49	2	20.68	21.3 ± 1
				100	0	2	20.55	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.47	22 ± 1
				1	49	0	22.37	22 ± 1
				1	99	0	22.28	22 ± 1
				50	0	1	21.48	22 ± 1
				50	24	1	21.42	22 ± 1
				50	49	1	21.39	22 ± 1
				100	0	1	21.43	22 ± 1
			16QAM	1	0	1	21.74	21.3 ± 1
				1	49	1	21.61	21.3 ± 1
				1	99	1	21.50	21.3 ± 1
				50	0	2	20.89	21.3 ± 1
				50	24	2	20.78	21.3 ± 1
				50	49	2	20.82	21.3 ± 1
				100	0	2	20.43	21.3 ± 1
	20300	1745.0	QPSK	1	0	0	22.45	22 ± 1
				1	49	0	22.40	22 ± 1
				1	99	0	22.45	22 ± 1
				50	0	1	21.39	22 ± 1
				50	24	1	21.41	22 ± 1
				50	49	1	21.42	22 ± 1
				100	0	1	21.39	22 ± 1
			16QAM	1	0	1	21.81	21.3 ± 1
				1	49	1	21.76	21.3 ± 1
				1	99	1	21.82	21.3 ± 1
				50	0	2	20.78	21.3 ± 1
				50	24	2	20.74	21.3 ± 1
				50	49	2	20.69	21.3 ± 1
				100	0	2	20.40	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	22.72	22 ± 1
				1	37	0	22.61	22 ± 1
				1	74	0	22.55	22 ± 1
				36	0	1	21.68	22 ± 1
				36	16	1	21.62	22 ± 1
				36	35	1	21.58	22 ± 1
				75	0	1	21.64	22 ± 1
			16QAM	1	0	1	21.52	21.3 ± 1
				1	37	1	21.44	21.3 ± 1
				1	74	1	21.36	21.3 ± 1
				36	0	2	21.15	21.3 ± 1
				36	16	2	21.13	21.3 ± 1
				36	35	2	21.11	21.3 ± 1
				75	0	2	20.64	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.44	22 ± 1
				1	37	0	22.38	22 ± 1
				1	74	0	22.34	22 ± 1
				36	0	1	21.51	22 ± 1
				36	16	1	21.49	22 ± 1
				36	35	1	21.47	22 ± 1
				75	0	1	21.52	22 ± 1
			16QAM	1	0	1	21.70	21.3 ± 1
				1	37	1	21.58	21.3 ± 1
				1	74	1	21.51	21.3 ± 1
				36	0	2	21.35	21.3 ± 1
				36	16	2	21.25	21.3 ± 1
				36	35	2	21.12	21.3 ± 1
				75	0	2	20.45	21.3 ± 1
	20325	1747.5	QPSK	1	0	0	22.32	22 ± 1
				1	37	0	22.37	22 ± 1
				1	74	0	22.41	22 ± 1
				36	0	1	21.48	22 ± 1
				36	16	1	21.51	22 ± 1
				36	35	1	21.53	22 ± 1
				75	0	1	21.51	22 ± 1
			16QAM	1	0	1	21.79	21.3 ± 1
				1	37	1	21.87	21.3 ± 1
				1	74	1	21.90	21.3 ± 1
				36	0	2	21.26	21.3 ± 1
				36	16	2	21.10	21.3 ± 1
				36	35	2	20.88	21.3 ± 1
				75	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
10MHz	20000	1715.0	QPSK	1	0	0	22.69	22 ± 1
				1	24	0	22.65	22 ± 1
				1	49	0	22.57	22 ± 1
				25	0	1	21.62	22 ± 1
				25	12	1	21.59	22 ± 1
				25	24	1	21.57	22 ± 1
				50	0	1	21.59	22 ± 1
			16QAM	1	0	1	21.54	21.3 ± 1
				1	24	1	21.47	21.3 ± 1
				1	49	1	21.41	21.3 ± 1
				25	0	2	21.32	21.3 ± 1
				25	12	2	21.29	21.3 ± 1
				25	24	2	21.27	21.3 ± 1
				50	0	2	20.61	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.50	22 ± 1
				1	24	0	22.48	22 ± 1
				1	49	0	22.42	22 ± 1
				25	0	1	21.44	22 ± 1
				25	12	1	21.41	22 ± 1
				25	24	1	21.39	22 ± 1
				50	0	1	21.41	22 ± 1
			16QAM	1	0	1	21.45	21.3 ± 1
				1	24	1	21.39	21.3 ± 1
				1	49	1	21.33	21.3 ± 1
				25	0	2	20.79	21.3 ± 1
				25	12	2	20.75	21.3 ± 1
				25	24	2	20.71	21.3 ± 1
				50	0	2	20.43	21.3 ± 1
	20350	1750.0	QPSK	1	0	0	22.38	22 ± 1
				1	24	0	22.37	22 ± 1
				1	49	0	22.38	22 ± 1
				25	0	1	21.43	22 ± 1
				25	12	1	21.41	22 ± 1
				25	24	1	21.42	22 ± 1
				50	0	1	21.41	22 ± 1
			16QAM	1	0	1	21.88	21.3 ± 1
				1	24	1	21.87	21.3 ± 1
				1	49	1	21.87	21.3 ± 1
				25	0	2	21.39	21.3 ± 1
				25	12	2	21.34	21.3 ± 1
				25	24	2	21.28	21.3 ± 1
				50	0	2	20.44	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	22.64	22 ± 1
				1	12	0	22.60	22 ± 1
				1	24	0	22.53	22 ± 1
				12	0	1	21.65	22 ± 1
				12	6	1	21.62	22 ± 1
				12	11	1	21.57	22 ± 1
				25	0	1	21.60	22 ± 1
			16QAM	1	0	1	21.97	21.3 ± 1
				1	12	1	21.98	21.3 ± 1
				1	24	1	21.91	21.3 ± 1
				12	0	2	21.26	21.3 ± 1
				12	6	2	21.21	21.3 ± 1
				12	11	2	21.19	21.3 ± 1
				25	0	2	20.59	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.48	22 ± 1
				1	12	0	22.46	22 ± 1
				1	24	0	22.38	22 ± 1
				12	0	1	21.50	22 ± 1
				12	6	1	21.46	22 ± 1
				12	11	1	21.48	22 ± 1
				25	0	1	21.41	22 ± 1
			16QAM	1	0	1	21.42	21.3 ± 1
				1	12	1	21.40	21.3 ± 1
				1	24	1	21.34	21.3 ± 1
				12	0	2	20.87	21.3 ± 1
				12	6	2	20.85	21.3 ± 1
				12	11	2	20.81	21.3 ± 1
				25	0	2	20.48	21.3 ± 1
	20350	1750.0	QPSK	1	0	0	22.43	22 ± 1
				1	12	0	22.44	22 ± 1
				1	24	0	22.41	22 ± 1
				12	0	1	21.47	22 ± 1
				12	6	1	21.45	22 ± 1
				12	11	1	21.44	22 ± 1
				25	0	1	21.42	22 ± 1
			16QAM	1	0	1	21.78	21.3 ± 1
				1	12	1	21.81	21.3 ± 1
				1	24	1	21.76	21.3 ± 1
				12	0	2	20.68	21.3 ± 1
				12	6	2	20.65	21.3 ± 1
				12	11	2	20.63	21.3 ± 1
				25	0	2	20.41	21.3 ± 1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	19965	1711.5	QPSK	1	0	0	22.63	22 ± 1
				1	7	0	22.67	22 ± 1
				1	14	0	22.59	22 ± 1
				8	0	1	21.63	22 ± 1
				8	4	1	21.61	22 ± 1
				8	7	1	21.60	22 ± 1
				15	0	1	21.63	22 ± 1
			16QAM	1	0	1	21.46	21.3 ± 1
				1	7	1	21.45	21.3 ± 1
				1	14	1	21.41	21.3 ± 1
				8	0	2	20.74	21.3 ± 1
				8	4	2	20.72	21.3 ± 1
				8	7	2	20.71	21.3 ± 1
				15	0	2	20.57	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.42	22 ± 1
				1	7	0	22.44	22 ± 1
				1	14	0	22.40	22 ± 1
				8	0	1	21.45	22 ± 1
				8	4	1	21.44	22 ± 1
				8	7	1	21.43	22 ± 1
				15	0	1	21.42	22 ± 1
			16QAM	1	0	1	21.37	21.3 ± 1
				1	7	1	21.36	21.3 ± 1
				1	14	1	21.31	21.3 ± 1
				8	0	2	20.69	21.3 ± 1
				8	4	2	20.68	21.3 ± 1
				8	7	2	20.66	21.3 ± 1
				15	0	2	20.43	21.3 ± 1
	20385	1753.5	QPSK	1	0	0	22.30	22 ± 1
				1	7	0	22.35	22 ± 1
				1	14	0	22.29	22 ± 1
				8	0	1	21.45	22 ± 1
				8	4	1	21.43	22 ± 1
				8	7	1	21.44	22 ± 1
				15	0	1	21.46	22 ± 1
			16QAM	1	0	1	21.85	21.3 ± 1
				1	7	1	21.88	21.3 ± 1
				1	14	1	21.79	21.3 ± 1
				8	0	2	20.95	21.3 ± 1
				8	4	2	20.92	21.3 ± 1
				8	7	2	20.89	21.3 ± 1
				15	0	2	20.55	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	22.63	22±1
				1	2	0	22.67	22±1
				1	5	0	22.64	22±1
				3	0	0	22.61	22±1
				3	1	0	22.63	22±1
				3	2	0	22.61	22±1
				6	0	1	21.59	22±1
			16QAM	1	0	1	21.56	21.3±1
				1	2	1	21.68	21.3±1
				1	5	1	21.59	21.3±1
				3	0	1	20.59	21.3±1
				3	1	1	20.57	21.3±1
				3	2	1	20.56	21.3±1
				6	0	2	20.43	21.3±1
	20175	1732.5	QPSK	1	0	0	22.35	22±1
				1	2	0	22.38	22±1
				1	5	0	22.36	22±1
				3	0	0	22.46	22±1
				3	1	0	22.44	22±1
				3	2	0	22.45	22±1
				6	0	1	21.42	22±1
			16QAM	1	0	1	21.04	21.3±1
				1	2	1	21.06	21.3±1
				1	5	1	21.04	21.3±1
				3	0	1	20.89	21.3±1
				3	1	1	20.85	21.3±1
				3	2	1	20.86	21.3±1
				6	0	2	20.33	21.3±1
	20393	1754.3	QPSK	1	0	0	22.48	22±1
				1	2	0	22.52	22±1
				1	5	0	22.49	22±1
				3	0	0	22.52	22±1
				3	1	0	22.51	22±1
				3	2	0	22.52	22±1
				6	0	1	21.48	22±1
			16QAM	1	0	1	21.29	21.3±1
				1	2	1	21.32	21.3±1
				1	5	1	21.28	21.3±1
				3	0	1	20.84	21.3±1
				3	1	1	20.85	21.3±1
				3	2	1	20.83	21.3±1
				6	0	2	20.42	21.3±1

LTE Band 5:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20450	829	QPSK	1	0	0	22.72	22 ± 1
				1	24	0	22.78	22 ± 1
				1	49	0	22.48	22 ± 1
				25	0	1	21.63	22 ± 1
				25	12	1	21.61	22 ± 1
				25	24	1	21.59	22 ± 1
				50	0	1	21.72	22 ± 1
			16QAM	1	0	1	21.62	21.3 ± 1
				1	24	1	21.61	21.3 ± 1
				1	49	1	21.38	21.3 ± 1
				25	0	2	20.85	21.3 ± 1
				25	12	2	20.81	21.3 ± 1
				25	24	2	20.82	21.3 ± 1
				50	0	2	20.78	21.3 ± 1
	20525	836.5	QPSK	1	0	0	22.60	22 ± 1
				1	24	0	22.17	21.3 ± 1
				1	49	0	20.59	21.3 ± 1
				25	0	1	21.43	21.3 ± 1
				25	12	1	20.59	21.3 ± 1
				25	24	1	20.64	21.3 ± 1
				50	0	1	21.39	21.3 ± 1
			16QAM	1	0	1	22.17	21.3 ± 1
				1	24	1	21.85	21.3 ± 1
				1	49	1	20.32	21.3 ± 1
				25	0	2	20.45	21.3 ± 1
				25	12	2	20.41	21.3 ± 1
				25	24	2	20.38	21.3 ± 1
				50	0	2	20.44	21.3 ± 1
	20600	844	QPSK	1	0	0	21.35	22 ± 1
				1	24	0	21.98	22 ± 1
				1	49	0	22.38	21.3 ± 1
				25	0	1	20.45	21.3 ± 1
				25	12	1	20.68	21.3 ± 1
				25	24	1	21.34	21.3 ± 1
				50	0	1	21.33	21.3 ± 1
			16QAM	1	0	1	20.34	21.3 ± 1
				1	24	1	20.86	21.3 ± 1
				1	49	1	21.23	21.3 ± 1
				25	0	2	20.36	21.3 ± 1
				25	12	2	20.77	21.3 ± 1
				25	24	2	20.91	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	20425	826.5	QPSK	1	0	0	22.88	22 ± 1
				1	12	0	22.05	22 ± 1
				1	24	0	22.73	22 ± 1
				12	0	1	21.23	22 ± 1
				12	6	1	21.71	22 ± 1
				12	11	1	21.66	22 ± 1
				25	0	1	21.36	22 ± 1
			16QAM	1	0	1	21.82	21.3 ± 1
				1	12	1	21.04	21.3 ± 1
				1	24	1	21.76	21.3 ± 1
				12	0	2	20.84	21.3 ± 1
				12	6	2	20.75	21.3 ± 1
				12	11	2	20.69	21.3 ± 1
				25	0	2	20.49	21.3 ± 1
	20525	836.5	QPSK	1	0	0	22.41	22 ± 1
				1	12	0	22.09	22 ± 1
				1	24	0	21.27	22 ± 1
				12	0	1	21.40	22 ± 1
				12	6	1	21.15	22 ± 1
				12	11	1	20.64	22 ± 1
				25	0	1	21.34	22 ± 1
			16QAM	1	0	1	21.87	21.3 ± 1
				1	12	1	21.58	21.3 ± 1
				1	24	1	20.78	21.3 ± 1
				12	0	2	20.65	21.3 ± 1
				12	6	2	20.61	21.3 ± 1
				12	11	2	20.58	21.3 ± 1
				25	0	2	20.31	21.3 ± 1
	20625	846.5	QPSK	1	0	0	22.29	22 ± 1
				1	12	0	22.33	22 ± 1
				1	24	0	22.25	22 ± 1
				12	0	1	21.43	22 ± 1
				12	6	1	21.42	22 ± 1
				12	11	1	21.41	22 ± 1
				25	0	1	21.38	22 ± 1
			16QAM	1	0	1	21.38	21.3 ± 1
				1	12	1	21.42	21.3 ± 1
				1	24	1	21.34	21.3 ± 1
				12	0	2	20.78	21.3 ± 1
				12	6	2	20.76	21.3 ± 1
				12	11	2	20.75	21.3 ± 1
				25	0	2	20.39	21.3 ± 1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	20415	825.5	QPSK	1	0	0	22.88	22 ± 1
				1	7	0	22.89	22 ± 1
				1	14	0	22.74	22 ± 1
				8	0	1	22.04	22 ± 1
				8	4	1	22.03	22 ± 1
				8	7	1	22.01	22 ± 1
				15	0	1	22.02	22 ± 1
			16QAM	1	0	1	22.52	21.3 ± 1
				1	7	1	22.53	21.3 ± 1
				1	14	1	22.41	21.3 ± 1
				8	0	2	21.84	21.3 ± 1
				8	4	2	21.85	21.3 ± 1
				8	7	2	21.76	21.3 ± 1
				15	0	2	21.15	21.3 ± 1
	20525	836.5	QPSK	1	0	0	22.37	22 ± 1
				1	7	0	22.36	22 ± 1
				1	14	0	22.29	22 ± 1
				8	0	1	21.36	22 ± 1
				8	4	1	21.34	22 ± 1
				8	7	1	21.32	22 ± 1
				15	0	1	21.36	22 ± 1
			16QAM	1	0	1	21.26	21.3 ± 1
				1	7	1	21.23	21.3 ± 1
				1	14	1	21.16	21.3 ± 1
				8	0	2	20.75	21.3 ± 1
				8	4	2	20.72	21.3 ± 1
				8	7	2	20.68	21.3 ± 1
				15	0	2	20.31	21.3 ± 1
	20635	847.5	QPSK	1	0	0	22.44	22 ± 1
				1	7	0	22.48	22 ± 1
				1	14	0	22.42	22 ± 1
				8	0	1	21.44	22 ± 1
				8	4	1	21.43	22 ± 1
				8	7	1	21.45	22 ± 1
				15	0	1	21.47	22 ± 1
			16QAM	1	0	1	21.42	21.3 ± 1
				1	7	1	21.45	21.3 ± 1
				1	14	1	21.41	21.3 ± 1
				8	0	2	20.65	21.3 ± 1
				8	4	2	20.63	21.3 ± 1
				8	7	2	20.61	21.3 ± 1
				15	0	2	20.48	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	20407	824.7	QPSK	1	0	0	23.04	23 ± 1
				1	2	0	23.08	23 ± 1
				1	5	0	23.02	23 ± 1
				3	0	0	23.16	23 ± 1
				3	1	0	23.15	23 ± 1
				3	2	0	23.13	23 ± 1
				6	0	1	22.06	23 ± 1
			16QAM	1	0	1	21.93	21.3 ± 1
				1	2	1	21.98	21.3 ± 1
				1	5	1	21.90	21.3 ± 1
				3	0	1	21.72	21.3 ± 1
				3	1	1	21.69	21.3 ± 1
				3	2	1	21.67	21.3 ± 1
				6	0	2	21.05	21.3 ± 1
	20525	836.5	QPSK	1	0	0	22.36	22 ± 1
				1	2	0	22.39	22 ± 1
				1	5	0	22.36	22 ± 1
				3	0	0	22.42	22 ± 1
				3	1	0	22.44	22 ± 1
				3	2	0	22.43	22 ± 1
				6	0	1	21.32	22 ± 1
			16QAM	1	0	1	21.35	21.3 ± 1
				1	2	1	21.40	21.3 ± 1
				1	5	1	21.38	21.3 ± 1
				3	0	1	20.57	21.3 ± 1
				3	1	1	20.54	21.3 ± 1
				3	2	1	20.52	21.3 ± 1
				6	0	2	20.34	21.3 ± 1
	20643	848.3	QPSK	1	0	0	22.33	22 ± 1
				1	2	0	22.41	22 ± 1
				1	5	0	22.35	22 ± 1
				3	0	0	22.51	22 ± 1
				3	1	0	22.48	22 ± 1
				3	2	0	22.49	22 ± 1
				6	0	1	21.42	22 ± 1
			16QAM	1	0	1	21.05	21.3 ± 1
				1	2	1	21.16	21.3 ± 1
				1	5	1	21.07	21.3 ± 1
				3	0	1	20.61	21.3 ± 1
				3	1	1	20.59	21.3 ± 1
				3	2	1	20.58	21.3 ± 1
				6	0	2	20.39	21.3 ± 1

LTE Band 7:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20850	2510	QPSK	1	0	0	22.36	22 ± 1
				1	49	0	22.43	22 ± 1
				1	99	0	22.45	22 ± 1
				50	0	1	21.43	22 ± 1
				50	24	1	21.46	22 ± 1
				50	49	1	21.49	22 ± 1
				100	0	1	21.45	22 ± 1
			16QAM	1	0	1	21.70	21.3 ± 1
				1	49	1	21.79	21.3 ± 1
				1	99	1	21.84	21.3 ± 1
				50	0	2	20.45	21.3 ± 1
				50	24	2	20.43	21.3 ± 1
				50	49	2	20.42	21.3 ± 1
				100	0	2	20.41	21.3 ± 1
	21100	2535	QPSK	1	0	0	22.65	22 ± 1
				1	49	0	22.21	22 ± 1
				1	99	0	22.15	22 ± 1
				50	0	1	21.51	22 ± 1
				50	24	1	21.34	22 ± 1
				50	49	1	21.04	22 ± 1
				100	0	1	21.29	22 ± 1
			16QAM	1	0	1	21.55	21.3 ± 1
				1	49	1	21.27	21.3 ± 1
				1	99	1	20.99	21.3 ± 1
				50	0	2	20.64	21.3 ± 1
				50	24	2	20.61	21.3 ± 1
				50	49	2	20.57	21.3 ± 1
				100	0	2	20.45	21.3 ± 1
	21350	2560	QPSK	1	0	0	21.94	21.3 ± 1
				1	49	0	21.73	21.3 ± 1
				1	99	0	20.72	21.3 ± 1
				50	0	1	21.02	21.3 ± 1
				50	24	1	20.68	21.3 ± 1
				50	49	1	20.32	21.3 ± 1
				100	0	1	20.74	21.3 ± 1
			16QAM	1	0	1	21.40	21.3 ± 1
				1	49	1	21.34	21.3 ± 1
				1	99	1	20.68	21.3 ± 1
				50	0	2	20.54	21.3 ± 1
				50	24	2	20.42	21.3 ± 1
				50	49	2	20.38	21.3 ± 1
				100	0	2	20.31	21.3 ± 1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20825	1717.5	QPSK	1	0	0	22.29	22 ± 1
				1	37	0	22.34	22 ± 1
				1	74	0	22.39	22 ± 1
				36	0	1	21.42	22 ± 1
				36	16	1	21.46	22 ± 1
				36	35	1	21.54	22 ± 1
				75	0	1	21.54	22 ± 1
			16QAM	1	0	1	21.63	21.3 ± 1
				1	37	1	21.74	21.3 ± 1
				1	74	1	21.85	21.3 ± 1
				36	0	2	20.88	21.3 ± 1
				36	16	2	20.75	21.3 ± 1
				36	35	2	20.67	21.3 ± 1
				75	0	2	20.47	21.3 ± 1
	21100	1732.5	QPSK	1	0	0	22.56	22 ± 1
				1	37	0	22.07	22 ± 1
				1	74	0	22.05	22 ± 1
				36	0	1	21.41	22 ± 1
				36	16	1	21.28	22 ± 1
				36	35	1	21.01	22 ± 1
				75	0	1	21.22	22 ± 1
			16QAM	1	0	1	21.39	21.3 ± 1
				1	37	1	21.11	21.3 ± 1
				1	74	1	20.94	21.3 ± 1
				36	0	2	20.75	21.3 ± 1
				36	16	2	20.46	21.3 ± 1
				36	35	2	20.43	21.3 ± 1
				75	0	2	20.41	21.3 ± 1
	21375	1747.5	QPSK	1	0	0	21.89	21.3 ± 1
				1	37	0	21.34	21.3 ± 1
				1	74	0	20.53	21.3 ± 1
				36	0	1	20.97	21.3 ± 1
				36	16	1	20.85	21.3 ± 1
				36	35	1	20.71	21.3 ± 1
				75	0	1	20.58	21.3 ± 1
			16QAM	1	0	1	21.29	21.3 ± 1
				1	37	1	20.81	21.3 ± 1
				1	74	1	20.75	21.3 ± 1
				36	0	2	20.62	21.3 ± 1
				36	16	2	20.56	21.3 ± 1
				36	35	2	20.43	21.3 ± 1
				75	0	2	20.31	21.3 ± 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	22.11	22 ± 1
				1	24	0	22.36	22 ± 1
				1	49	0	22.31	22 ± 1
				25	0	1	21.35	22 ± 1
				25	12	1	21.38	22 ± 1
				25	24	1	21.43	22 ± 1
				50	0	1	21.42	22 ± 1
			16QAM	1	0	1	21.52	21.3 ± 1
				1	24	1	21.81	21.3 ± 1
				1	49	1	21.83	21.3 ± 1
				25	0	2	20.87	21.3 ± 1
				25	12	2	20.82	21.3 ± 1
				25	24	2	20.76	21.3 ± 1
				50	0	2	20.43	21.3 ± 1
	21100	2535	QPSK	1	0	0	22.43	22 ± 1
				1	24	0	22.15	22 ± 1
				1	49	0	21.84	22 ± 1
				25	0	1	21.38	22 ± 1
				25	12	1	21.23	22 ± 1
				25	24	1	21.11	22 ± 1
				50	0	1	21.27	22 ± 1
			16QAM	1	0	1	21.31	21.3 ± 1
				1	24	1	21.18	21.3 ± 1
				1	49	1	20.74	21.3 ± 1
				25	0	2	20.69	21.3 ± 1
				25	12	2	20.64	21.3 ± 1
				25	24	2	20.58	21.3 ± 1
				50	0	2	20.43	21.3 ± 1
	21400	2565	QPSK	1	0	0	21.79	21.3 ± 1
				1	24	0	21.21	21.3 ± 1
				1	49	0	20.41	21.3 ± 1
				25	0	1	20.67	21.3 ± 1
				25	12	1	20.57	21.3 ± 1
				25	24	1	20.64	21.3 ± 1
				50	0	1	20.36	21.3 ± 1
			16QAM	1	0	1	20.88	21.3 ± 1
				1	24	1	20.38	21.3 ± 1
				1	49	1	20.41	21.3 ± 1
				25	0	2	20.39	21.3 ± 1
				25	12	2	20.37	21.3 ± 1
				25	24	2	20.35	21.3 ± 1
				50	0	2	20.31	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	1712.5	QPSK	1	0	0	22.32	22 ± 1
				1	12	0	22.13	22 ± 1
				1	24	0	22.29	22 ± 1
				12	0	1	21.27	22 ± 1
				12	6	1	21.34	22 ± 1
				12	11	1	21.41	22 ± 1
				25	0	1	21.36	22 ± 1
			16QAM	1	0	1	21.64	21.3 ± 1
				1	12	1	21.63	21.3 ± 1
				1	24	1	21.65	21.3 ± 1
				12	0	2	20.83	21.3 ± 1
				12	6	2	20.81	21.3 ± 1
				12	11	2	20.78	21.3 ± 1
				25	0	2	20.35	21.3 ± 1
	20175	1732.5	QPSK	1	0	0	22.42	22 ± 1
				1	12	0	22.03	22 ± 1
				1	24	0	22.37	22 ± 1
				12	0	1	21.39	22 ± 1
				12	6	1	21.35	22 ± 1
				12	11	1	21.28	22 ± 1
				25	0	1	21.29	22 ± 1
			16QAM	1	0	1	21.45	21.3 ± 1
				1	12	1	21.27	21.3 ± 1
				1	24	1	21.41	21.3 ± 1
				12	0	2	20.71	21.3 ± 1
				12	6	2	20.68	21.3 ± 1
				12	11	2	20.65	21.3 ± 1
				25	0	2	20.50	21.3 ± 1
	20375	1752.5	QPSK	1	0	0	21.52	21.3 ± 1
				1	12	0	20.78	21.3 ± 1
				1	24	0	20.98	21.3 ± 1
				12	0	1	20.42	21.3 ± 1
				12	6	1	20.39	21.3 ± 1
				12	11	1	20.31	21.3 ± 1
				25	0	1	20.33	21.3 ± 1
			16QAM	1	0	1	20.65	21.3 ± 1
				1	12	1	20.57	21.3 ± 1
				1	24	1	20.46	21.3 ± 1
				12	0	2	20.39	21.3 ± 1
				12	6	2	20.34	21.3 ± 1
				12	11	2	20.33	21.3 ± 1
				25	0	2	20.32	21.3 ± 1

ERP & EIRP

EIRP for LTE Band 2 (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	18.73	V	7.88	0.85	25.76	33.01
1880	1.4	QPSK	1/0	18.82	V	7.88	0.85	25.85	33.01
1909.3	1.4	QPSK	1/0	18.76	V	7.88	0.85	25.79	33.01
1850.7	1.4	QPSK	1/0	17.35	H	7.88	0.85	24.38	33.01
1880	1.4	QPSK	1/0	17.41	H	7.88	0.85	24.44	33.01
1909.3	1.4	QPSK	1/0	17.39	H	7.88	0.85	24.42	33.01
1850.7	1.4	16-QAM	1/0	17.52	V	7.88	0.85	24.55	33.01
1880	1.4	16-QAM	1/0	17.59	V	7.88	0.85	24.62	33.01
1909.3	1.4	16-QAM	1/0	17.56	V	7.88	0.85	24.59	33.01
1850.7	1.4	16-QAM	1/0	16.15	H	7.88	0.85	23.18	33.01
1880	1.4	16-QAM	1/0	16.22	H	7.88	0.85	23.25	33.01
1909.3	1.4	16-QAM	1/0	16.17	H	7.88	0.85	23.20	33.01
1851.5	3	QPSK	1/0	18.63	V	7.88	0.85	25.66	33.01
1880	3	QPSK	1/0	18.72	V	7.88	0.85	25.75	33.01
1908.5	3	QPSK	1/0	18.69	V	7.88	0.85	25.72	33.01
1851.5	3	QPSK	1/0	17.25	H	7.88	0.85	24.28	33.01
1880	3	QPSK	1/0	17.32	H	7.88	0.85	24.35	33.01
1908.5	3	QPSK	1/0	17.24	H	7.88	0.85	24.27	33.01
1851.5	3	16-QAM	1/0	17.38	V	7.88	0.85	24.41	33.01
1880	3	16-QAM	1/0	17.42	V	7.88	0.85	24.45	33.01
1908.5	3	16-QAM	1/0	17.35	V	7.88	0.85	24.38	33.01
1851.5	3	16-QAM	1/0	16.14	H	7.88	0.85	23.17	33.01
1880	3	16-QAM	1/0	16.19	H	7.88	0.85	23.22	33.01
1908.5	3	16-QAM	1/0	16.16	H	7.88	0.85	23.19	33.01
1852.5	5	QPSK	1/24	18.67	V	7.88	0.85	25.70	33.01
1880	5	QPSK	1/0	18.62	V	7.88	0.85	25.65	33.01
1907.5	5	QPSK	1/24	18.72	V	7.88	0.85	25.75	33.01
1852.5	5	QPSK	1/24	16.73	H	7.88	0.85	23.76	33.01
1880	5	QPSK	1/0	16.82	H	7.88	0.85	23.85	33.01
1907.5	5	QPSK	1/24	16.75	H	7.88	0.85	23.78	33.01
1852.5	5	16-QAM	1/24	17.82	V	7.88	0.85	24.85	33.01
1880	5	16-QAM	1/0	17.76	V	7.88	0.85	24.79	33.01

1907.5	5	16-QAM	1/24	17.73	V	7.88	0.85	24.76	33.01
1852.5	5	16-QAM	1/24	16.49	H	7.88	0.85	23.52	33.01
1880	5	16-QAM	1/0	16.53	H	7.88	0.85	23.56	33.01
1907.5	5	16-QAM	1/24	16.48	H	7.88	0.85	23.51	33.01
1855	10	QPSK	1/0	18.59	V	7.88	0.85	25.62	33.01
1880	10	QPSK	1/0	18.62	V	7.88	0.85	25.65	33.01
1905	10	QPSK	1/49	18.65	V	7.88	0.85	25.68	33.01
1855	10	QPSK	1/0	17.29	H	7.88	0.85	24.32	33.01
1880	10	QPSK	1/0	17.33	H	7.88	0.85	24.36	33.01
1905	10	QPSK	1/49	17.26	H	7.88	0.85	24.29	33.01
1855	10	16-QAM	1/0	17.83	V	7.88	0.85	24.86	33.01
1880	10	16-QAM	1/0	17.76	V	7.88	0.85	24.79	33.01
1905	10	16-QAM	1/49	17.81	V	7.88	0.85	24.84	33.01
1855	10	16-QAM	1/0	16.45	H	7.88	0.85	23.48	33.01
1880	10	16-QAM	1/0	16.38	H	7.88	0.85	23.41	33.01
1905	10	16-QAM	1/49	16.42	H	7.88	0.85	23.45	33.01
1857.5	15	QPSK	1/0	18.49	V	7.88	0.85	25.52	33.01
1880	15	QPSK	1/0	18.52	V	7.88	0.85	25.55	33.01
1902.5	15	QPSK	1/0	18.44	V	7.88	0.85	25.47	33.01
1857.5	15	QPSK	1/0	17.29	H	7.88	0.85	24.32	33.01
1880	15	QPSK	1/0	17.33	H	7.88	0.85	24.36	33.01
1902.5	15	QPSK	1/0	17.24	H	7.88	0.85	24.27	33.01
1857.5	15	16-QAM	1/0	17.64	V	7.88	0.85	24.67	33.01
1880	15	16-QAM	1/0	17.59	V	7.88	0.85	24.62	33.01
1902.5	15	16-QAM	1/0	17.63	V	7.88	0.85	24.66	33.01
1857.5	15	16-QAM	1/0	16.48	H	7.88	0.85	23.51	33.01
1880	15	16-QAM	1/0	16.52	H	7.88	0.85	23.55	33.01
1902.5	15	16-QAM	1/0	16.46	H	7.88	0.85	23.49	33.01
1860	20	QPSK	1/0	18.83	V	7.88	0.85	25.86	33.01
1880	20	QPSK	1/0	18.76	V	7.88	0.85	25.79	33.01
1900	20	QPSK	1/0	18.82	V	7.88	0.85	25.85	33.01
1860	20	QPSK	1/0	17.56	H	7.88	0.85	24.59	33.01
1880	20	QPSK	1/0	17.62	H	7.88	0.85	24.65	33.01
1900	20	QPSK	1/0	17.54	H	7.88	0.85	24.57	33.01
1860	20	16-QAM	1/0	18.16	V	7.88	0.85	25.19	33.01
1880	20	16-QAM	1/0	18.12	V	7.88	0.85	25.15	33.01
1900	20	16-QAM	1/0	18.11	V	7.88	0.85	25.14	33.01
1860	20	16-QAM	1/0	16.92	H	7.88	0.85	23.95	33.01

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1880	20	16-QAM	1/0	16.86	H	7.88	0.85	23.89	33.01
1900	20	16-QAM	1/0	17.51	H	7.88	0.85	24.54	33.01

EIRP for LTE Band 4 (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	19.56	V	7.95	0.79	26.72	30
1732.5	1.4	QPSK	1/0	19.48	V	7.95	0.79	26.64	30
1754.3	1.4	QPSK	1/0	19.51	V	7.95	0.79	26.67	30
1710.7	1.4	QPSK	1/0	17.83	H	7.95	0.79	24.99	30
1732.5	1.4	QPSK	1/0	17.86	H	7.95	0.79	25.02	30
1754.3	1.4	QPSK	1/0	17.82	H	7.95	0.79	24.98	30
1710.7	1.4	16-QAM	1/5	18.46	V	7.95	0.79	25.62	30
1732.5	1.4	16-QAM	1/0	18.52	V	7.95	0.79	25.68	30
1754.3	1.4	16-QAM	1/0	18.47	V	7.95	0.79	25.63	30
1710.7	1.4	16-QAM	1/5	16.94	H	7.95	0.79	24.10	30
1732.5	1.4	16-QAM	1/0	16.98	H	7.95	0.79	24.14	30
1754.3	1.4	16-QAM	1/0	16.92	H	7.95	0.79	24.08	30
1711.5	3	QPSK	1/0	19.52	V	7.95	0.79	26.68	30
1732.5	3	QPSK	1/0	19.57	V	7.95	0.79	26.73	30
1753.5	3	QPSK	1/0	19.53	V	7.95	0.79	26.69	30
1711.5	3	QPSK	1/0	17.94	H	7.95	0.79	25.10	30
1732.5	3	QPSK	1/0	17.86	H	7.95	0.79	25.02	30
1753.5	3	QPSK	1/0	17.91	H	7.95	0.79	25.07	30
1711.5	3	16-QAM	1/0	18.43	V	7.95	0.79	25.59	30
1732.5	3	16-QAM	1/0	18.52	V	7.95	0.79	25.68	30
1753.5	3	16-QAM	1/0	18.48	V	7.95	0.79	25.64	30
1711.5	3	16-QAM	1/0	16.73	H	7.95	0.79	23.89	30
1732.5	3	16-QAM	1/0	16.68	H	7.95	0.79	23.84	30
1753.5	3	16-QAM	1/0	16.62	H	7.95	0.79	23.78	30
1712.5	5	QPSK	1/0	19.66	V	7.95	0.79	26.82	30
1732.5	5	QPSK	1/0	19.59	V	7.95	0.79	26.75	30
1752.5	5	QPSK	1/24	19.61	V	7.95	0.79	26.77	30
1712.5	5	QPSK	1/0	17.83	H	7.95	0.79	24.99	30
1732.5	5	QPSK	1/0	17.92	H	7.95	0.79	25.08	30
1752.5	5	QPSK	1/24	17.96	H	7.95	0.79	25.12	30
1712.5	5	16-QAM	1/0	18.52	V	7.95	0.79	25.68	30
1732.5	5	16-QAM	1/0	18.49	V	7.95	0.79	25.65	30
1752.5	5	16-QAM	1/24	18.56	V	7.95	0.79	25.72	30
1712.5	5	16-QAM	1/0	16.81	H	7.95	0.79	23.97	30
1732.5	5	16-QAM	1/0	16.92	H	7.95	0.79	24.08	30

1752.5	5	16-QAM	1/24	16.85	H	7.95	0.79	24.01	30
1715	10	QPSK	1/0	19.82	V	7.95	0.79	26.98	30
1732.5	10	QPSK	1/49	19.76	V	7.95	0.79	26.92	30
1750	10	QPSK	1/0	19.75	V	7.95	0.79	26.91	30
1715	10	QPSK	1/0	18.35	H	7.95	0.79	25.51	30
1732.5	10	QPSK	1/49	18.41	H	7.95	0.79	25.57	30
1750	10	QPSK	1/0	18.37	H	7.95	0.79	25.53	30
1715	10	16-QAM	1/0	18.65	V	7.95	0.79	25.81	30
1732.5	10	16-QAM	1/49	18.59	V	7.95	0.79	25.75	30
1750	10	16-QAM	1/0	18.61	V	7.95	0.79	25.77	30
1715	10	16-QAM	1/0	17.13	H	7.95	0.79	24.29	30
1732.5	10	16-QAM	1/49	17.19	H	7.95	0.79	24.35	30
1750	10	16-QAM	1/0	17.21	H	7.95	0.79	24.37	30
1717.5	15	QPSK	1/0	19.76	V	7.95	0.79	26.92	30
1732.5	15	QPSK	1/74	19.82	V	7.95	0.79	26.98	30
1747.5	15	QPSK	1/0	19.75	V	7.95	0.79	26.91	30
1717.5	15	QPSK	1/0	18.29	H	7.95	0.79	25.45	30
1732.5	15	QPSK	1/74	18.32	H	7.95	0.79	25.48	30
1747.5	15	QPSK	1/0	18.26	H	7.95	0.79	25.42	30
1717.5	15	16-QAM	1/0	18.56	V	7.95	0.79	25.72	30
1732.5	15	16-QAM	1/74	18.61	V	7.95	0.79	25.77	30
1747.5	15	16-QAM	1/0	18.57	V	7.95	0.79	25.73	30
1717.5	15	16-QAM	1/0	17.12	H	7.95	0.79	24.28	30
1732.5	15	16-QAM	1/74	17.23	H	7.95	0.79	24.39	30
1747.5	15	16-QAM	1/0	17.16	H	7.95	0.79	24.32	30
1720	20	QPSK	1/99	19.85	V	7.95	0.79	27.01	30
1732.5	20	QPSK	1/99	19.81	V	7.95	0.79	26.97	30
1745	20	QPSK	1/0	19.92	V	7.95	0.79	27.08	30
1720	20	QPSK	1/99	18.26	H	7.95	0.79	25.42	30
1732.5	20	QPSK	1/99	18.32	H	7.95	0.79	25.48	30
1745	20	QPSK	1/0	18.25	H	7.95	0.79	25.41	30
1720	20	16-QAM	1/99	18.67	V	7.95	0.79	25.83	30
1732.5	20	16-QAM	1/99	18.72	V	7.95	0.79	25.88	30
1745	20	16-QAM	1/0	18.69	V	7.95	0.79	25.85	30
1720	20	16-QAM	1/99	16.93	H	7.95	0.79	24.09	30
1732.5	20	16-QAM	1/99	16.98	H	7.95	0.79	24.14	30
1745	20	16-QAM	1/0	16.94	H	7.95	0.79	24.10	30

EIRP for LTE Band 5 (Part 22)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.7	1.4	QPSK	1/5	20.16	V	6.8	0.44	26.52	34.77
836.5	1.4	QPSK	1/5	20.08	V	6.8	0.44	26.44	34.77
848.3	1.4	QPSK	1/5	20.11	V	6.9	0.44	26.57	34.77
824.7	1.4	QPSK	1/5	18.56	H	6.8	0.44	24.92	34.77
836.5	1.4	QPSK	1/5	18.63	H	6.8	0.44	24.99	34.77
848.3	1.4	QPSK	1/5	18.59	H	6.9	0.44	25.05	34.77
824.7	1.4	16-QAM	1/5	19.24	V	6.8	0.44	25.60	34.77
836.5	1.4	16-QAM	1/5	19.17	V	6.8	0.44	25.53	34.77
848.3	1.4	16-QAM	1/5	19.16	V	6.9	0.44	25.62	34.77
824.7	1.4	16-QAM	1/5	17.92	H	6.8	0.44	24.28	34.77
836.5	1.4	16-QAM	1/5	17.86	H	6.8	0.44	24.22	34.77
848.3	1.4	16-QAM	1/5	19.89	H	6.9	0.44	26.35	34.77
825.5	3	QPSK	1/14	19.86	V	6.8	0.44	26.22	34.77
836.5	3	QPSK	1/0	19.92	V	6.8	0.44	26.28	34.77
847.5	3	QPSK	1/14	19.95	V	6.9	0.44	26.41	34.77
825.5	3	QPSK	1/14	18.21	H	6.8	0.44	24.57	34.77
836.5	3	QPSK	1/0	18.16	H	6.8	0.44	24.52	34.77
847.5	3	QPSK	1/14	18.19	H	6.9	0.44	24.65	34.77
825.5	3	16-QAM	1/14	18.73	V	6.8	0.44	25.09	34.77
836.5	3	16-QAM	1/0	18.69	V	6.8	0.44	25.05	34.77
847.5	3	16-QAM	1/14	18.75	V	6.9	0.44	25.21	34.77
825.5	3	16-QAM	1/14	17.13	H	6.8	0.44	23.49	34.77
836.5	3	16-QAM	1/0	17.08	H	6.8	0.44	23.44	34.77
847.5	3	16-QAM	1/14	17.12	H	6.9	0.44	23.58	34.77
826.5	5	QPSK	1/24	19.92	V	6.8	0.44	26.28	34.77
836.5	5	QPSK	1/24	19.88	V	6.8	0.44	26.24	34.77
846.5	5	QPSK	1/24	19.96	V	6.8	0.44	26.32	34.77
826.5	5	QPSK	1/24	18.24	H	6.8	0.44	24.60	34.77
836.5	5	QPSK	1/24	18.31	H	6.8	0.44	24.67	34.77
846.5	5	QPSK	1/24	18.29	H	6.8	0.44	24.65	34.77
826.5	5	16-QAM	1/24	18.73	V	6.8	0.44	25.09	34.77
836.5	5	16-QAM	1/24	18.69	V	6.8	0.44	25.05	34.77
846.5	5	16-QAM	1/24	18.75	V	6.8	0.44	25.11	34.77

826.5	5	16-QAM	1/24	16.94	H	6.8	0.44	23.30	34.77
836.5	5	16-QAM	1/24	16.83	H	6.8	0.44	23.19	34.77
846.5	5	16-QAM	1/24	16.88	H	6.8	0.44	23.24	34.77
829	10	QPSK	1/49	19.82	V	6.8	0.44	26.18	34.77
836.5	10	QPSK	1/49	19.76	V	6.8	0.44	26.12	34.77
844	10	QPSK	1/49	19.85	V	6.8	0.44	26.21	34.77
829	10	QPSK	1/49	18.13	H	6.8	0.44	24.49	34.77
836.5	10	QPSK	1/49	18.09	H	6.8	0.44	24.45	34.77
844	10	QPSK	1/49	18.12	H	6.8	0.44	24.48	34.77
829	10	16-QAM	1/49	18.63	V	6.8	0.44	24.99	34.77
836.5	10	16-QAM	1/49	18.56	V	6.8	0.44	24.92	34.77
844	10	16-QAM	1/49	18.59	V	6.8	0.44	24.95	34.77
829	10	16-QAM	1/49	16.73	H	6.8	0.44	23.09	34.77
836.5	10	16-QAM	1/49	16.82	H	6.8	0.44	23.18	34.77
844	10	16-QAM	1/49	16.79	H	6.8	0.44	23.15	34.77

ERP for LTE Band 7 (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	18.26	V	8.93	0.83	26.36	30
2535	5	QPSK	1/0	18.17	V	8.93	0.83	26.27	30
2567.5	5	QPSK	1/24	18.22	V	8.93	0.83	26.32	30
2502.5	5	QPSK	1/0	16.72	H	8.93	0.83	24.82	30
2535	5	QPSK	1/0	16.68	H	8.93	0.83	24.78	30
2567.5	5	QPSK	1/24	16.76	H	8.93	0.83	24.86	30
2502.5	5	16-QAM	1/0	17.15	V	8.93	0.83	25.25	30
2535	5	16-QAM	1/0	17.08	V	8.93	0.83	25.18	30
2567.5	5	16-QAM	1/24	17.12	V	8.93	0.83	25.22	30
2502.5	5	16-QAM	1/0	15.83	H	8.93	0.83	23.93	30
2535	5	16-QAM	1/0	15.92	H	8.93	0.83	24.02	30
2567.5	5	16-QAM	1/24	15.88	H	8.93	0.83	23.98	30
2505	10	QPSK	1/0	17.96	V	8.93	0.83	26.06	30
2535	10	QPSK	1/49	17.91	V	8.93	0.83	26.01	30
2565	10	QPSK	1/0	17.95	V	8.93	0.83	26.05	30
2505	10	QPSK	1/0	16.35	H	8.93	0.83	24.45	30
2535	10	QPSK	1/49	16.29	H	8.93	0.83	24.39	30
2565	10	QPSK	1/0	16.31	H	8.93	0.83	24.41	30
2505	10	16-QAM	1/0	16.75	V	8.93	0.83	24.85	30
2535	10	16-QAM	1/49	16.82	V	8.93	0.83	24.92	30
2565	10	16-QAM	1/0	16.79	V	8.93	0.83	24.89	30
2505	10	16-QAM	1/0	15.35	H	8.93	0.83	23.45	30
2535	10	16-QAM	1/49	15.26	H	8.93	0.83	23.36	30
2565	10	16-QAM	1/0	15.31	H	8.93	0.83	23.41	30
2507.5	15	QPSK	1/0	18.13	V	8.93	0.83	26.23	30
2535	15	QPSK	1/74	18.09	V	8.93	0.83	26.19	30
2562.5	15	QPSK	1/0	18.11	V	8.93	0.83	26.21	30
2507.5	15	QPSK	1/0	16.75	H	8.93	0.83	24.85	30
2535	15	QPSK	1/74	16.69	H	8.93	0.83	24.79	30
2562.5	15	QPSK	1/0	16.72	H	8.93	0.83	24.82	30
2507.5	15	16-QAM	1/0	17.23	V	8.93	0.83	25.33	30
2535	15	16-QAM	1/74	17.15	V	8.93	0.83	25.25	30
2562.5	15	16-QAM	1/0	17.19	V	8.93	0.83	25.29	30

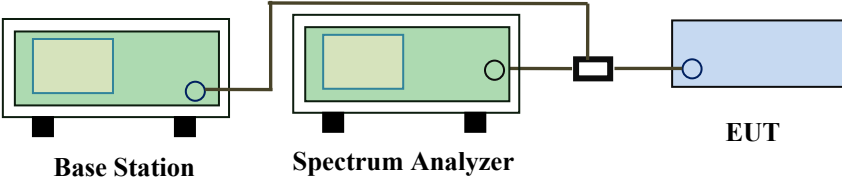
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2507.5	15	16-QAM	1/0	15.66	H	8.93	0.83	23.76	30
2535	15	16-QAM	1/74	15.73	H	8.93	0.83	23.83	30
2562.5	15	16-QAM	1/0	15.68	H	8.93	0.83	23.78	30
2510	20	QPSK	1/99	18.25	V	8.93	0.83	26.35	30
2535	20	QPSK	1/99	18.17	V	8.93	0.83	26.27	30
2560	20	QPSK	1/0	18.21	V	8.93	0.83	26.31	30
2510	20	QPSK	1/99	16.94	H	8.93	0.83	25.04	30
2535	20	QPSK	1/99	16.88	H	8.93	0.83	24.98	30
2560	20	QPSK	1/0	16.91	H	8.93	0.83	25.01	30
2510	20	16-QAM	1/99	17.05	V	8.93	0.83	25.15	30
2535	20	16-QAM	1/99	17.12	V	8.93	0.83	25.22	30
2560	20	16-QAM	1/0	17.06	V	8.93	0.83	25.16	30
2510	20	16-QAM	1/99	15.73	H	8.93	0.83	23.83	30
2535	20	16-QAM	1/99	15.68	H	8.93	0.83	23.78	30
2560	20	16-QAM	1/0	16.72	H	8.93	0.83	24.82	30

6.3 Peak-Average Ratio

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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 style="text-align: center;">Base Station Spectrum Analyzer EUT</p>		
Test Procedure	<p>According with KDB 971168</p> <ol style="list-style-type: none"> 1. The signal analyzer' s CCDF measurement profile is enabled 2. Frequency = carrier center frequency 3. Measurement BW > Emission bandwidth of signal 4. The signal analyzer was set to collect one million samples to generate the CCDF curve 5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal “ RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “ on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power 		
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 2 (part 24E)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1880	RB 1/0	QPSK	24.84	22.12	2.72
			16QAM	23.51	21.07	2.44
3	1880	RB 1/0	QPSK	24.26	21.95	2.31
			16QAM	24.11	21.53	2.58
5	1880	RB 1/0	QPSK	24.59	22.13	2.46
			16QAM	23.61	21.07	2.54
10	1880	RB 1/0	QPSK	24.67	22.15	2.52
			16QAM	23.27	20.94	2.33
15	1880	RB 1/0	QPSK	24.69	22.07	2.62
			16QAM	23.94	20.88	3.06
20	1880	RB 1/0	QPSK	24.75	22.12	2.63
			16QAM	24.36	21.01	3.35

LTE Band 4 (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	25.15	22.35	2.8
			16QAM	24.21	21.04	3.17
3	1732.5	RB 1/0	QPSK	25.04	22.42	2.62
			16QAM	23.94	21.37	2.57
5	1732.5	RB 1/0	QPSK	25.16	22.48	2.68
			16QAM	23.86	21.42	2.44
10	1732.5	RB 1/0	QPSK	25.36	22.50	2.86
			16QAM	23.38	21.45	1.93
15	1732.5	RB 1/0	QPSK	24.97	22.44	2.53
			16QAM	23.21	21.70	1.51
20	1732.5	RB 1/0	QPSK	25.48	22.47	3.01
			16QAM	23.47	21.74	1.73

LTE Band 5 (part 22H)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	836.5	RB 1/0	QPSK	24.95	22.36	2.59
			16QAM	23.84	21.35	2.49
3	836.5	RB 1/0	QPSK	25.11	22.37	2.74
			16QAM	24.23	21.26	2.97
5	836.5	RB 1/0	QPSK	25.24	22.41	2.83
			16QAM	24.62	21.87	2.75
10	836.5	RB 1/0	QPSK	25.28	22.60	2.68
			16QAM	24.18	22.17	2.01

LTE Band 7 (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	22.42	2.94
			16QAM	24.21	21.45	2.76
10	2535	RB 1/0	QPSK	25.14	22.43	2.71
			16QAM	24.26	21.31	2.95
15	2535	RB 1/0	QPSK	25.61	22.56	3.05
			16QAM	24.17	21.39	2.78
20	2535	RB 1/0	QPSK	25.31	22.65	2.66
			16QAM	24.39	21.55	2.84

6.4 Occupied Bandwidth

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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 2 (Part 24E)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1850.7	16QAM	1.0986	1.281
			QPSK	1.0984	1.290
1.4	18900	1880	16QAM	1.0968	1.275
			QPSK	1.0918	1.258
1.4	19193	1909.3	16QAM	1.1086	1.311
			QPSK	1.0972	1.289
3	18615	1851.5	16QAM	2.7593	3.072
			QPSK	2.7459	3.084
3	18900	1880	16QAM	2.7361	3.072
			QPSK	2.7456	3.059
3	19185	1908.5	16QAM	2.7336	3.081
			QPSK	2.7499	3.109
5	18625	1852.5	16QAM	4.5159	5.093
			QPSK	4.5234	5.081
5	18900	1880	16QAM	4.5378	5.062
			QPSK	4.5191	5.005
5	19175	1907.5	16QAM	4.5365	5.064
			QPSK	4.5113	5.057
10	18650	1855	16QAM	9.0619	10.193
			QPSK	9.0549	10.167
10	18900	1880	16QAM	9.0464	10.121
			QPSK	9.0970	10.112
10	19150	1905	16QAM	9.0150	9.991
			QPSK	9.0626	10.078
15	18675	1857.5	16QAM	13.4923	14.824
			QPSK	13.4744	15.004
15	18900	1880	16QAM	13.4233	14.887
			QPSK	13.4383	14.797
15	19125	1902.5	16QAM	13.4793	14.651
			QPSK	13.4643	14.754

20	18700	1860	16QAM	17.9213	19.377
			QPSK	17.8997	19.409
20	18900	1880	16QAM	17.8527	19.347
			QPSK	17.8459	19.081
20	19100	1900	16QAM	17.9579	19.265
			QPSK	17.9480	19.207

LTE Band 4 (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1710.7	16QAM	1.0719	1.258
			QPSK	1.1006	1.284
1.4	20175	1732.5	16QAM	1.0956	1.271
			QPSK	1.1038	1.264
1.4	20393	1754.3	16QAM	1.1033	1.278
			QPSK	1.0992	1.293
3	19965	1711.5	16QAM	2.7394	3.096
			QPSK	2.7466	3.087
3	20175	1732.5	16QAM	2.7462	3.099
			QPSK	2.7463	3.099
3	20385	1753.5	16QAM	2.7462	3.083
			QPSK	2.7402	3.074
5	19975	1712.5	16QAM	4.5226	5.083
			QPSK	4.5154	5.035
5	20175	1732.5	16QAM	4.5123	5.050
			QPSK	4.5429	5.037
5	20375	1752.5	16QAM	4.5334	5.084
			QPSK	4.5157	5.011
10	20000	1715	16QAM	9.0522	10.024
			QPSK	9.0751	10.132
10	20175	1732.5	16QAM	9.0732	10.028
			QPSK	9.0737	10.106
10	20350	1750	16QAM	9.0689	10.043
			QPSK	9.0684	10.080

15	20025	1717.5	16QAM	13.4568	14.644
			QPSK	13.4530	14.733
15	20175	1732.5	16QAM	13.4707	14.817
			QPSK	13.4781	14.775
15	20325	1747.5	16QAM	13.4818	14.663
			QPSK	13.4380	14.581
20	20050	1720	16QAM	17.8960	19.303
			QPSK	17.8958	19.265
20	20175	1732.5	16QAM	17.8525	19.310
			QPSK	17.9198	19.331
20	20300	1745	16QAM	17.9212	19.410
			QPSK	17.8868	19.395

LTE Band 5 (Part 22H)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	20407	824.7	16QAM	1.1010	1.278
			QPSK	1.0964	1.273
1.4	20525	936.5	16QAM	1.0904	1.255
			QPSK	1.0994	1.277
1.4	20643	949.3	16QAM	1.0990	1.291
			QPSK	1.0940	1.271
3	20415	825.5	16QAM	2.7512	3.070
			QPSK	2.7400	3.082
3	20525	936.5	16QAM	2.7331	3.079
			QPSK	2.7454	3.074
3	20635	847.5	16QAM	2.7247	3.075
			QPSK	2.7370	3.050
5	20425	826.5	16QAM	4.5402	5.051
			QPSK	4.5270	5.044
5	20525	936.5	16QAM	4.5231	5.024
			QPSK	4.5280	5.024
5	20625	846.5	16QAM	4.5133	5.032
			QPSK	4.5046	4.993

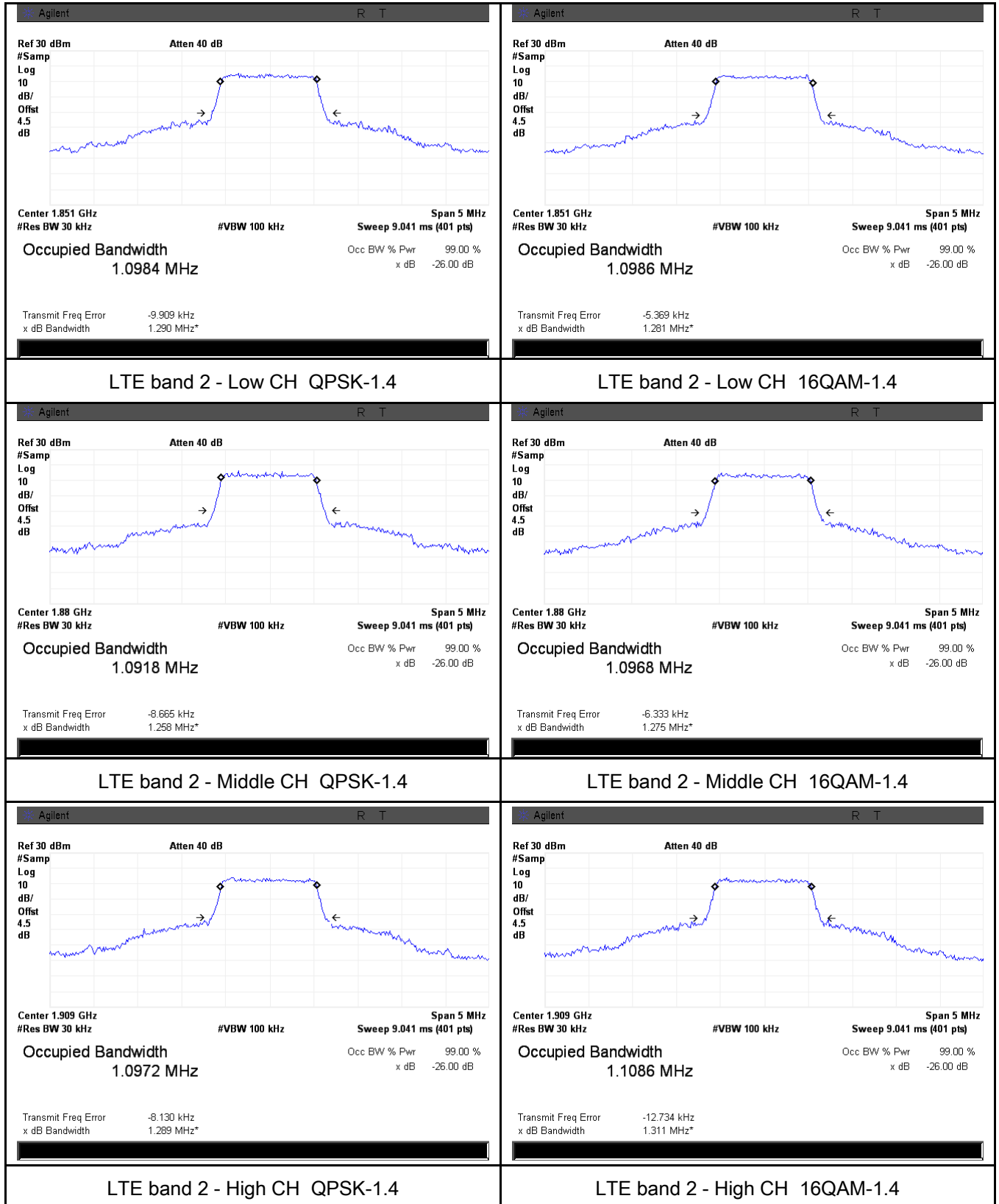
10	20450	829	16QAM	9.0431	10.023
			QPSK	9.0325	10.045
10	20525	936.5	16QAM	9.0834	10.046
			QPSK	9.0971	10.052
10	20800	844	16QAM	9.0831	10.054
			QPSK	9.1043	9.986

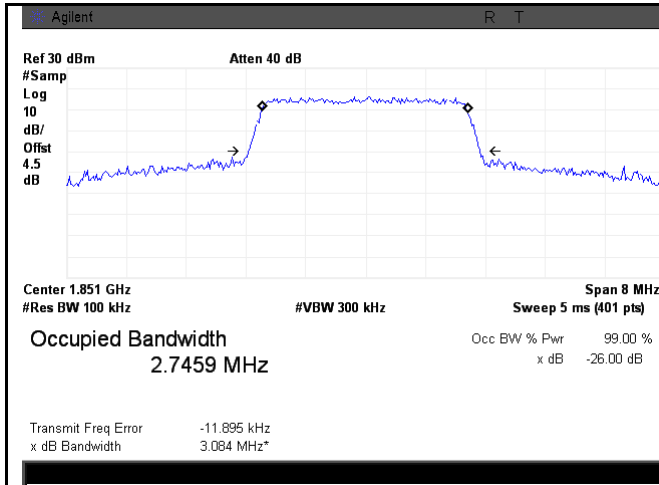
LTE Band 7 (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2502.5	16QAM	4.5142	5.069
			QPSK	4.5343	5.070
5	21100	2535	16QAM	4.5223	5.083
			QPSK	4.5175	5.021
5	21425	2567.5	16QAM	4.5378	5.128
			QPSK	4.5099	5.032
10	20800	2505	16QAM	9.1002	10.099
			QPSK	9.0801	10.240
10	21100	2535	16QAM	9.0628	9.998
			QPSK	9.0962	10.080
10	21400	2562.5	16QAM	9.0705	10.167
			QPSK	9.0801	10.164
15	20825	2507.5	16QAM	13.4631	14.842
			QPSK	13.4417	14.836
15	21100	2535	16QAM	13.5142	14.916
			QPSK	13.5430	14.885
15	21400	2562.5	16QAM	13.4740	14.946
			QPSK	13.5193	14.798
20	20850	2510	16QAM	17.8713	19.315
			QPSK	17.8370	19.133
20	21100	2535	16QAM	17.9498	19.313
			QPSK	17.9292	19.265
20	21350	2560	16QAM	17.9153	19.326
			QPSK	17.8835	19.132

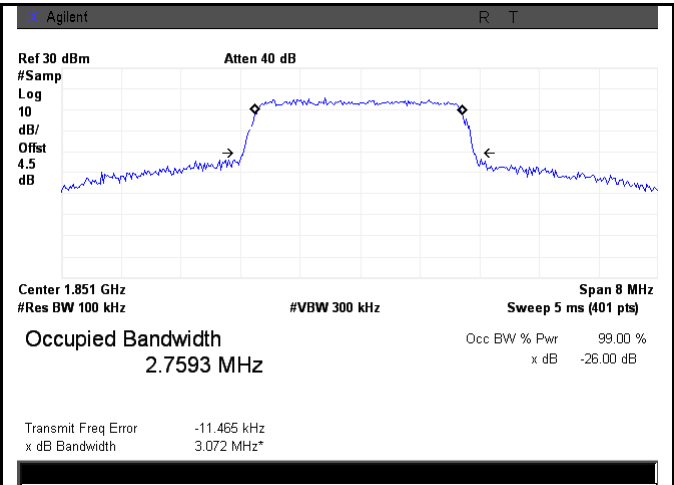
Test Plots

LTE Band 2 (Part 24E)

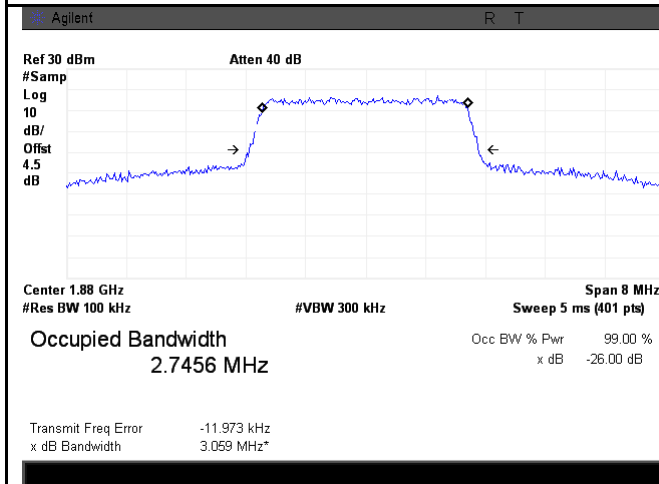




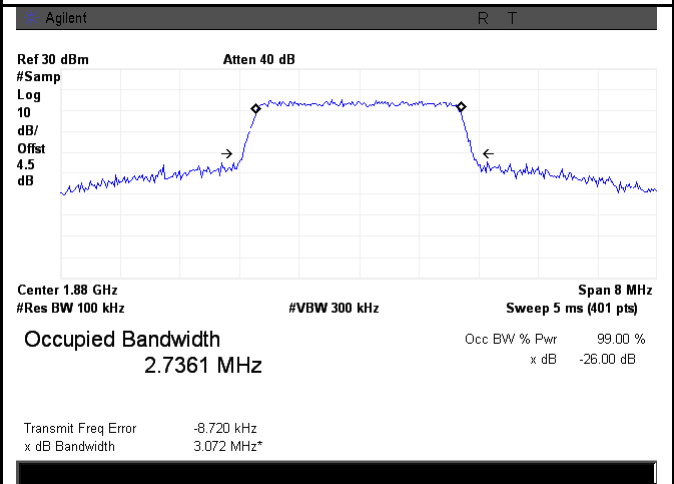
LTE band 2 - Low CH QPSK-3



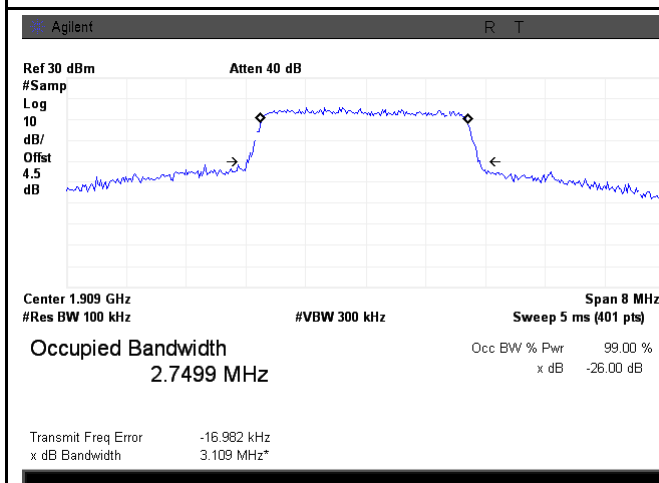
LTE band 2 - Low CH 16QAM-3



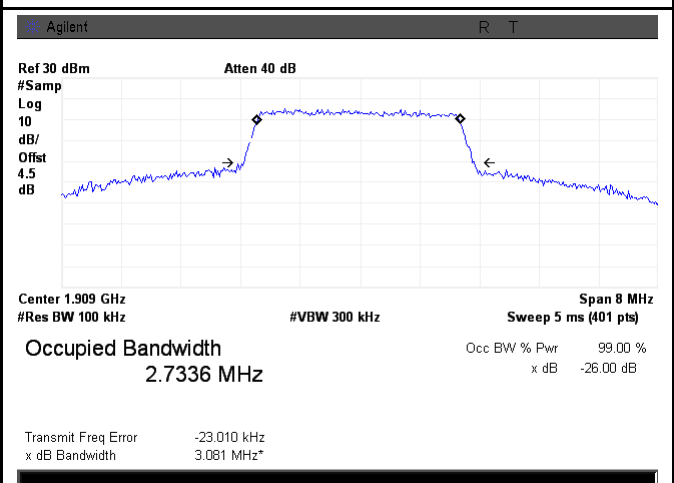
LTE band 2 - Middle CH QPSK-3



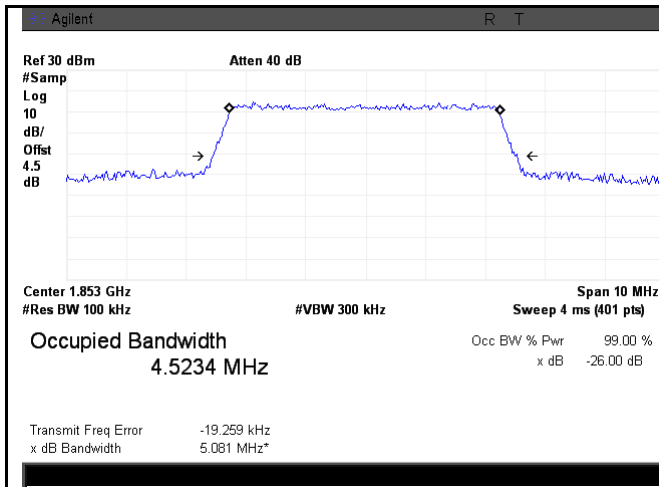
LTE band 2 - Middle CH 16QAM-3



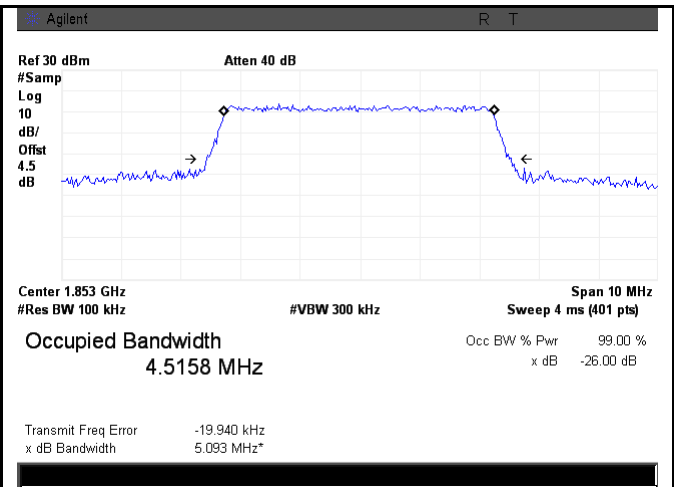
LTE band 2 - High CH QPSK-3



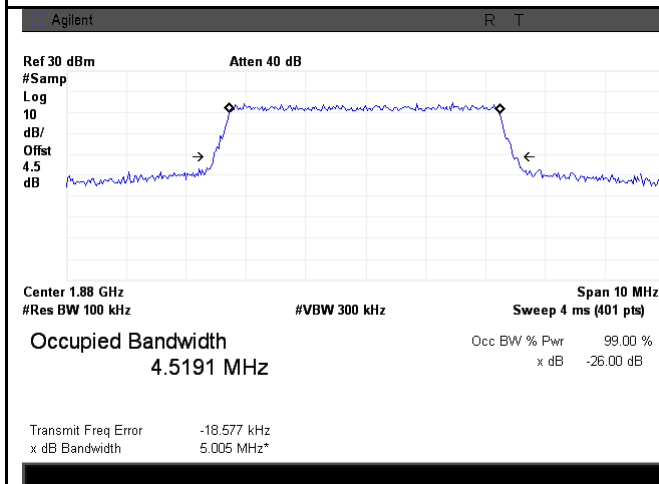
LTE band 2 - High CH 16QAM-3



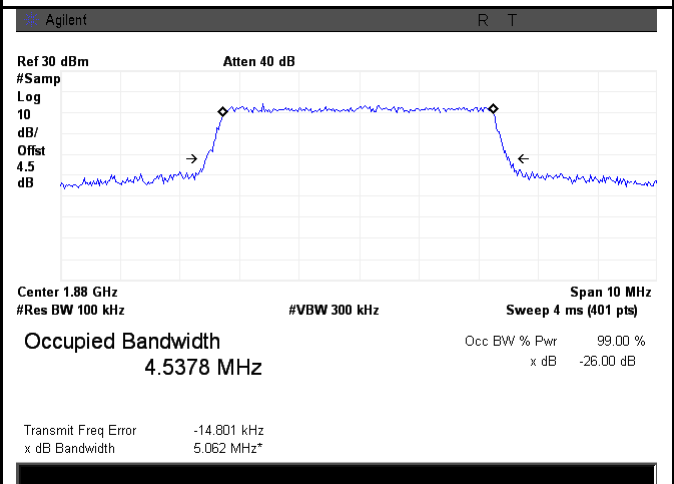
LTE band 2 - Low CH QPSK-5



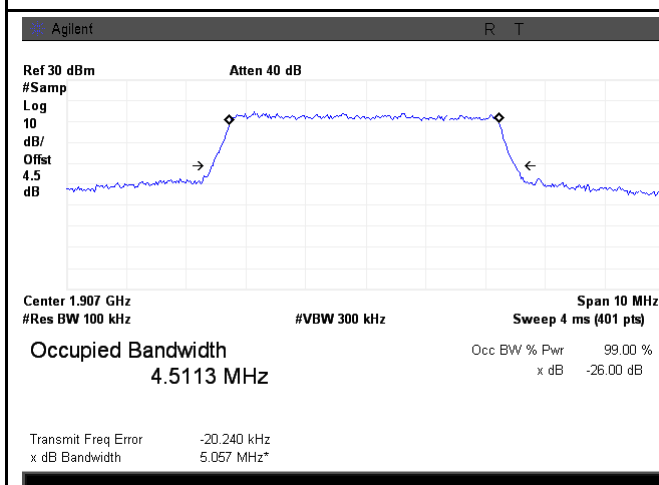
LTE band 2 - Low CH 16QAM-5



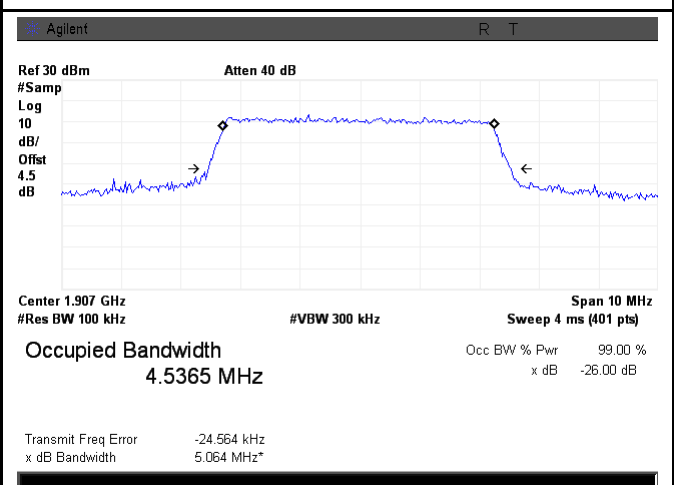
LTE band 2 - Middle CH QPSK-5



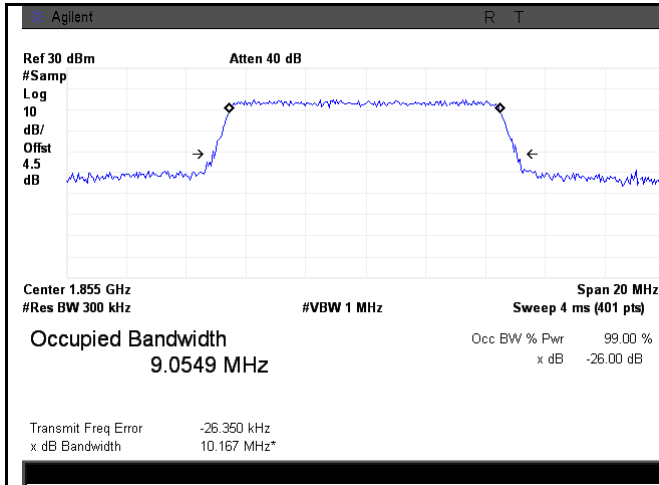
LTE band 2 - Middle CH 16QAM-5



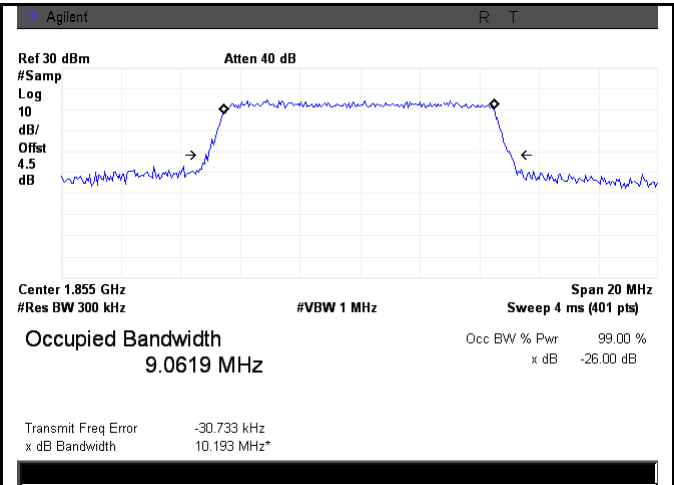
LTE band 2 - High CH QPSK-5



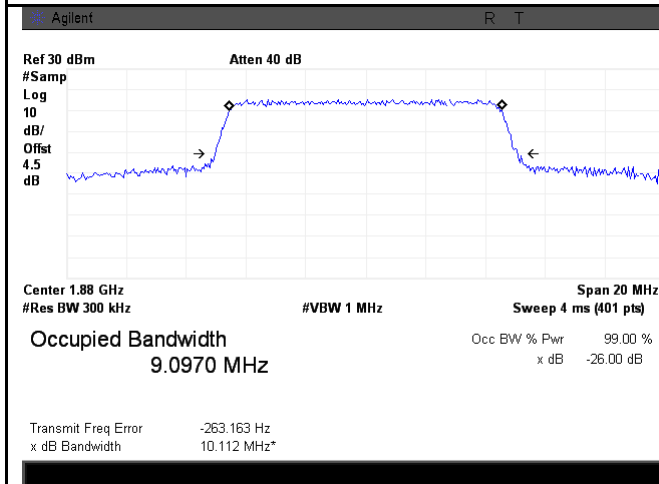
LTE band 2 - High CH 16QAM-5



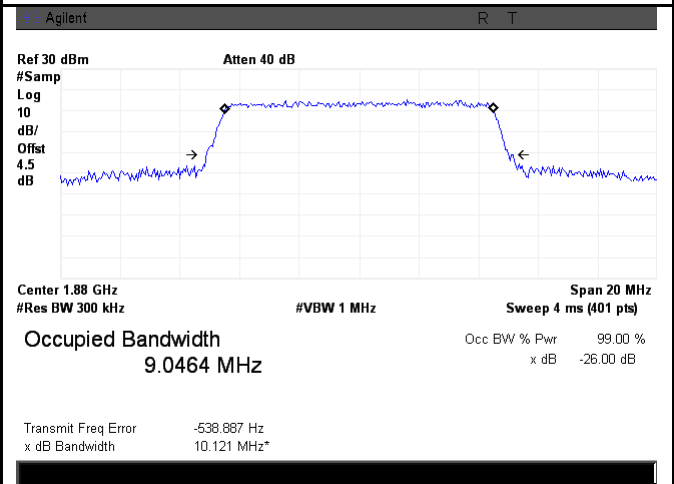
LTE band 2 - Low CH QPSK-10



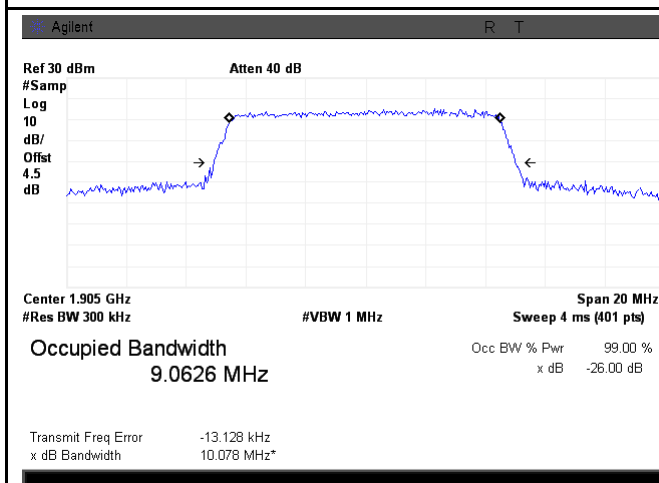
LTE band 2 - Low CH 16QAM-10



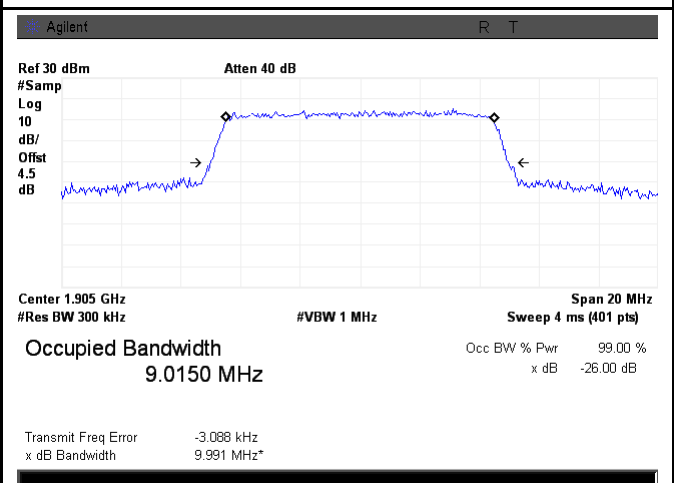
LTE band 2 - Middle CH QPSK-10



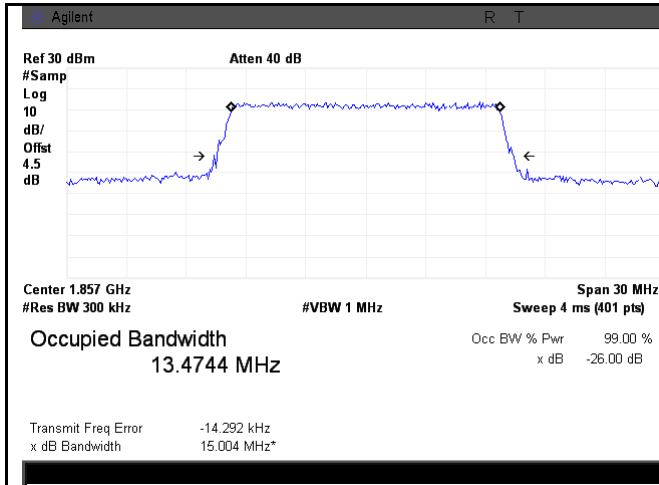
LTE band 2 - Middle CH 16QAM-10



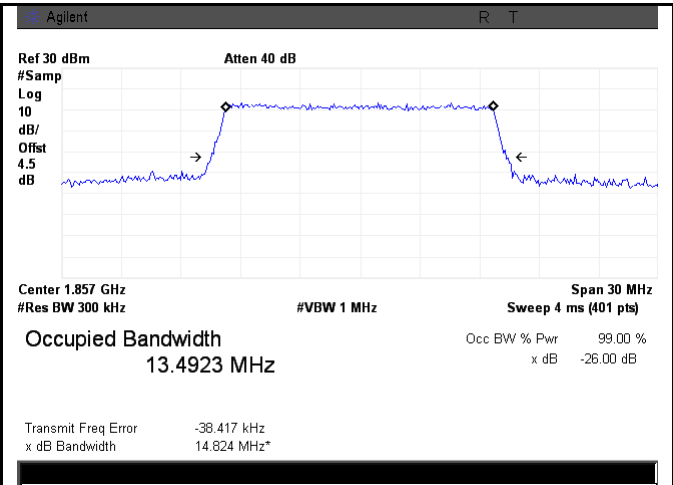
LTE band 2 - High CH QPSK-10



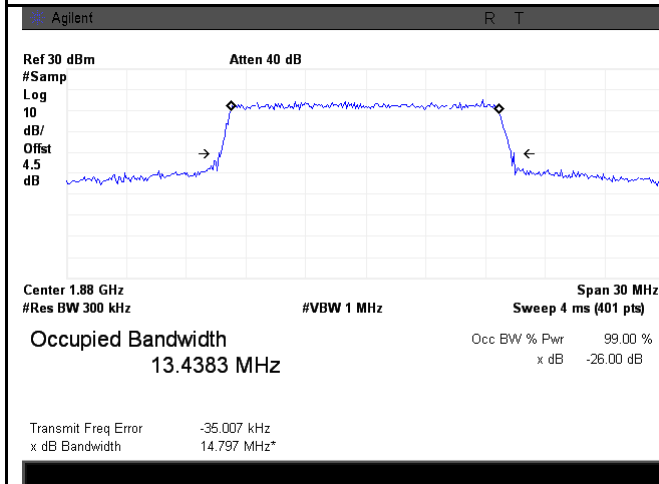
LTE band 2 - High CH 16QAM-10



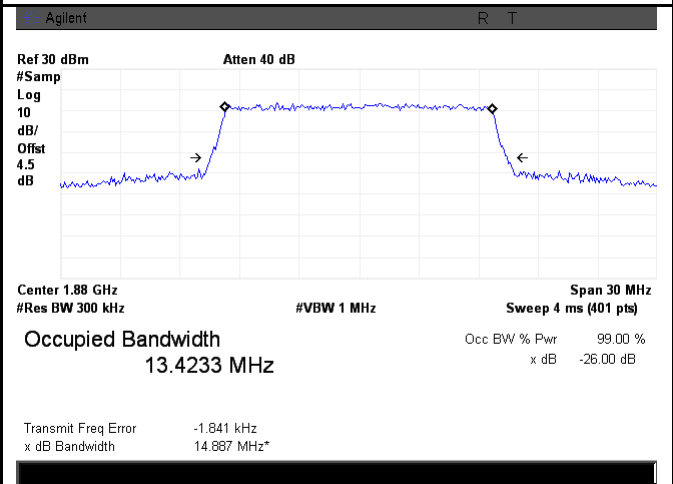
LTE band 2 - Low CH QPSK-15



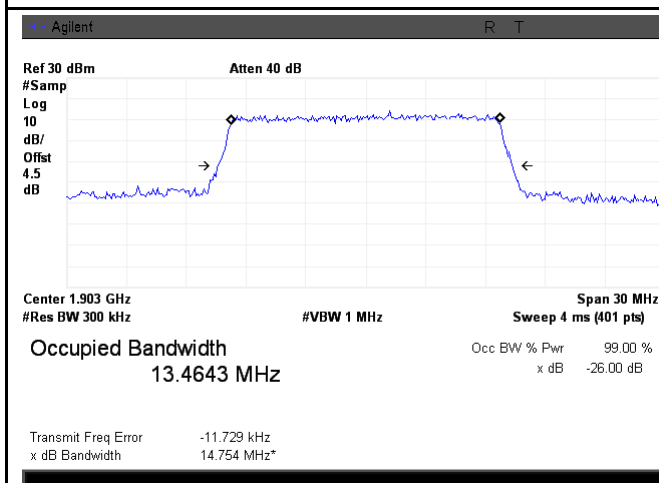
LTE band 2 - Low CH 16QAM-15



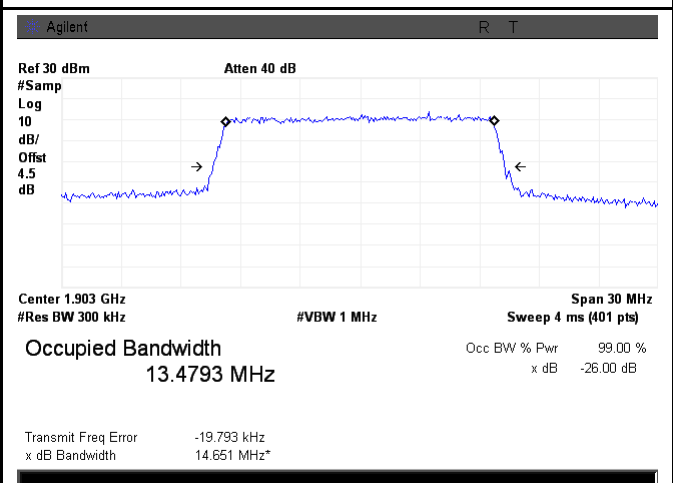
LTE band 2 - Middle CH QPSK-15



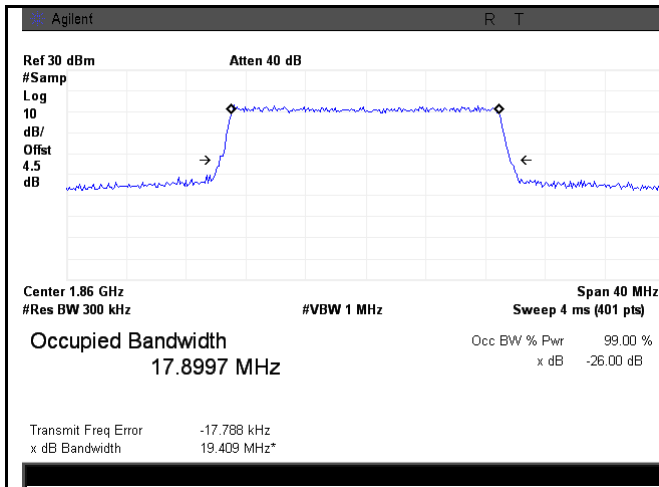
LTE band 2 - Middle CH 16QAM-15



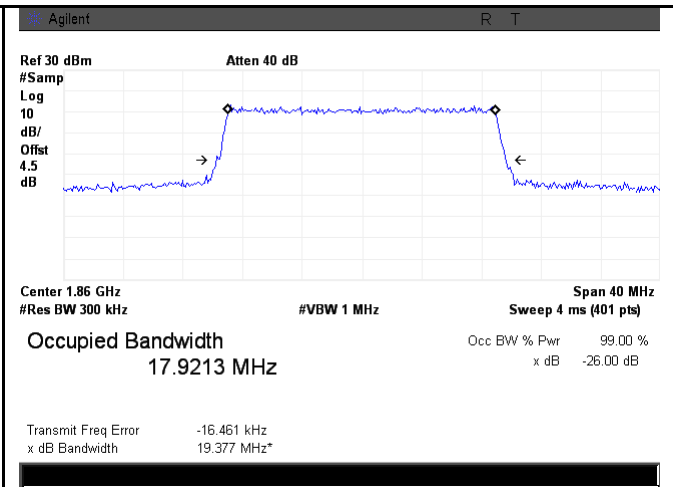
LTE band 2 - High CH QPSK-15



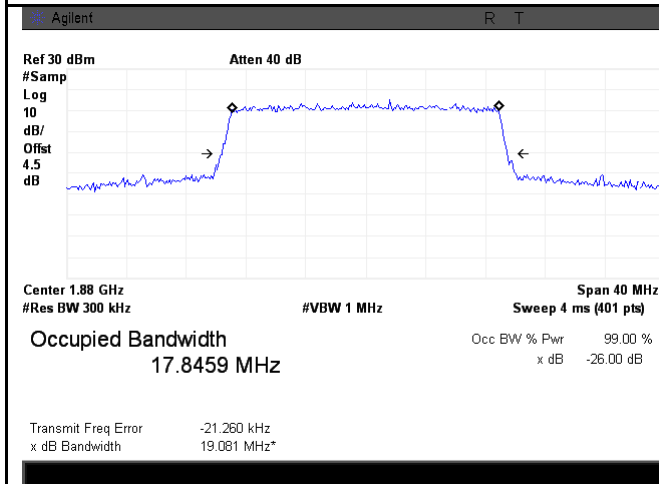
LTE band 2 - High CH 16QAM-15



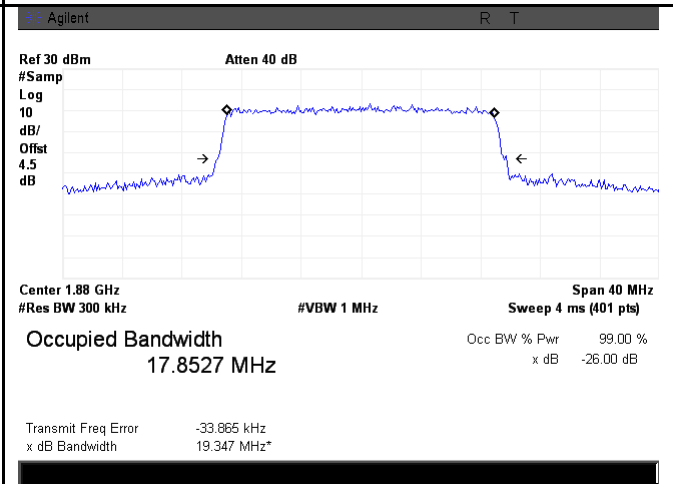
LTE band 2 - Low CH QPSK-20



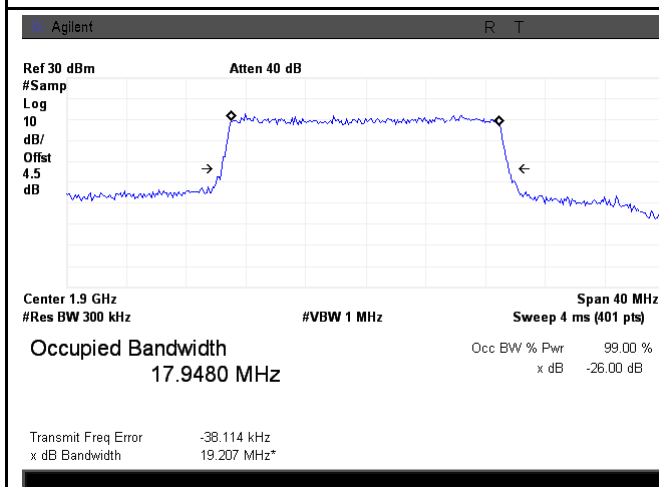
LTE band 2 - Low CH 16QAM-20



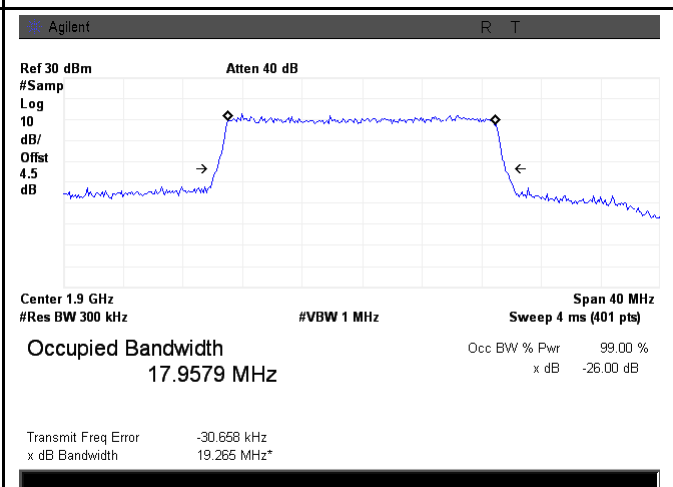
LTE band 2 - Middle CH QPSK-20



LTE band 2 - Middle CH 16QAM-20

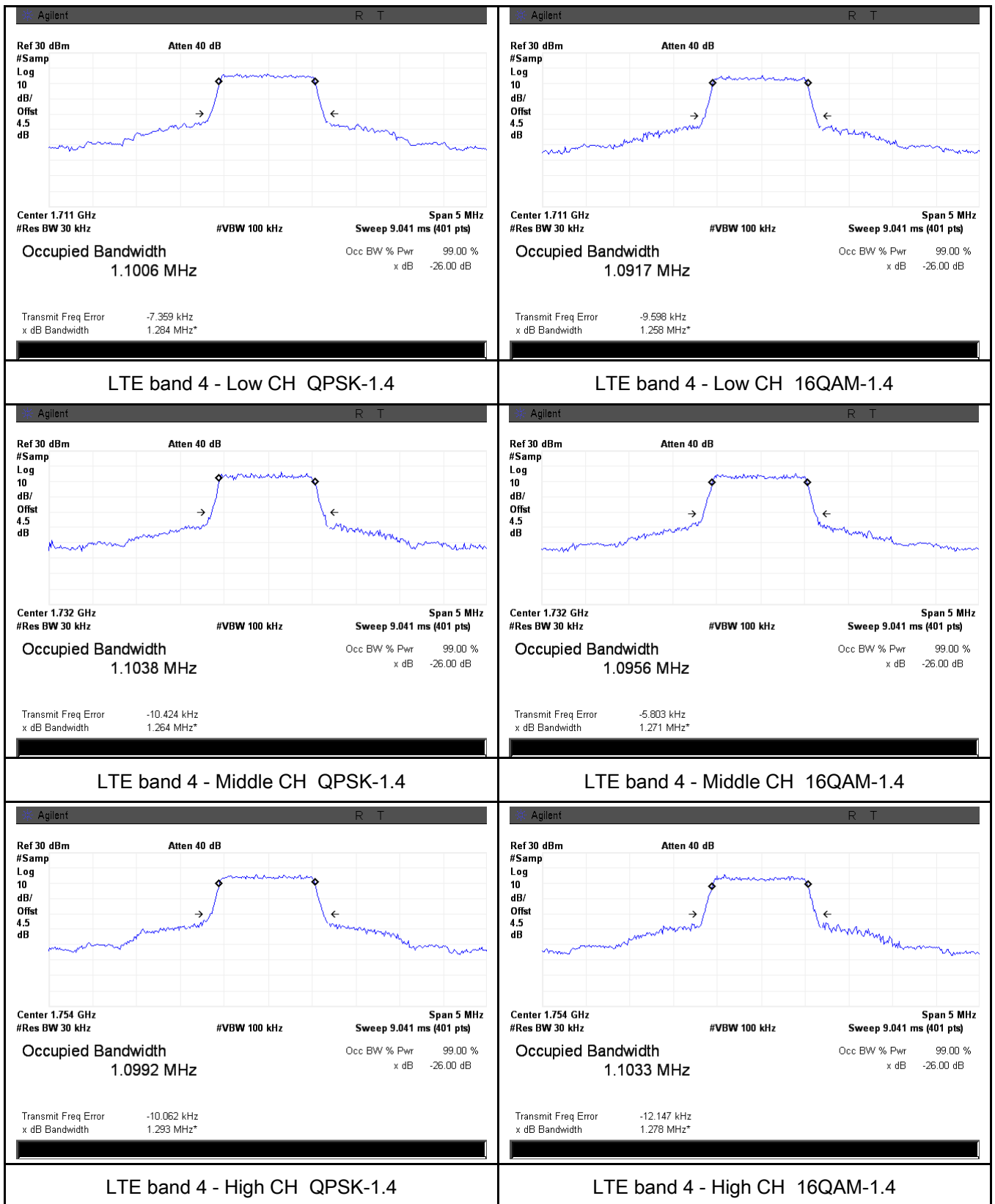


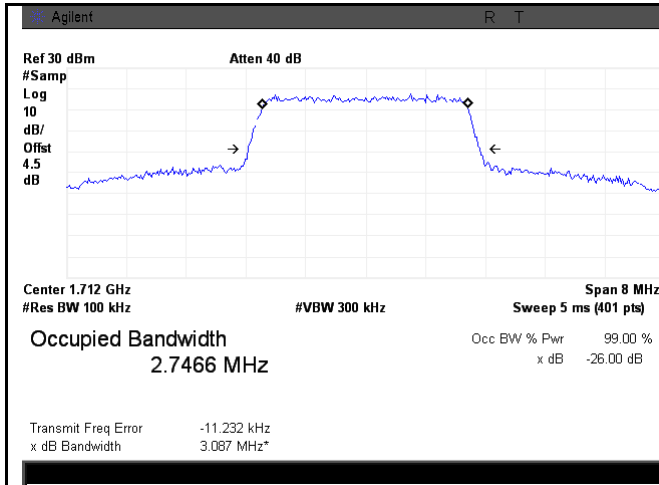
LTE band 2 - High CH QPSK-20



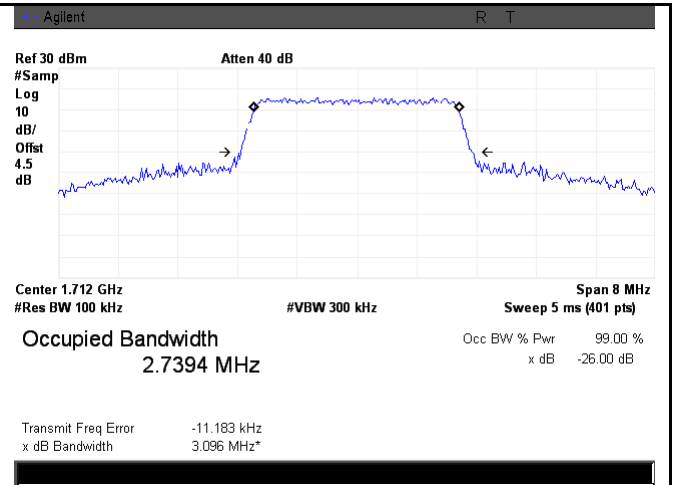
LTE band 2 - High CH 16QAM-20

LTE Band 4 (Part 27)

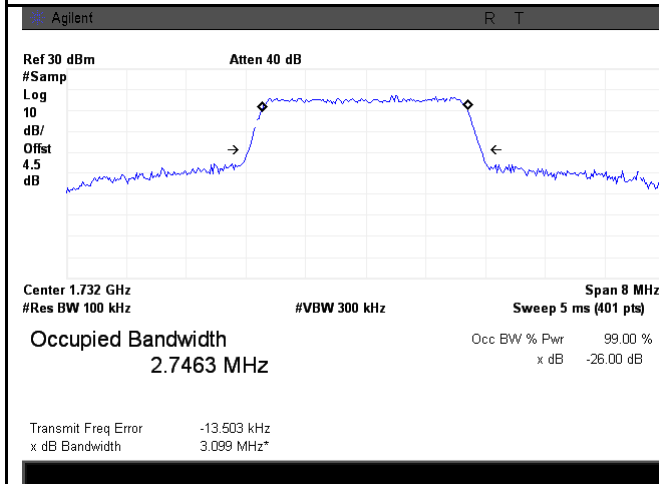




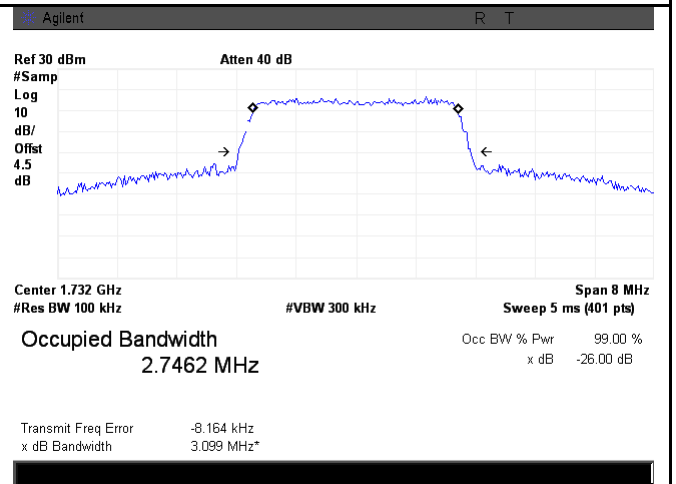
LTE band 4 - Low CH QPSK-3



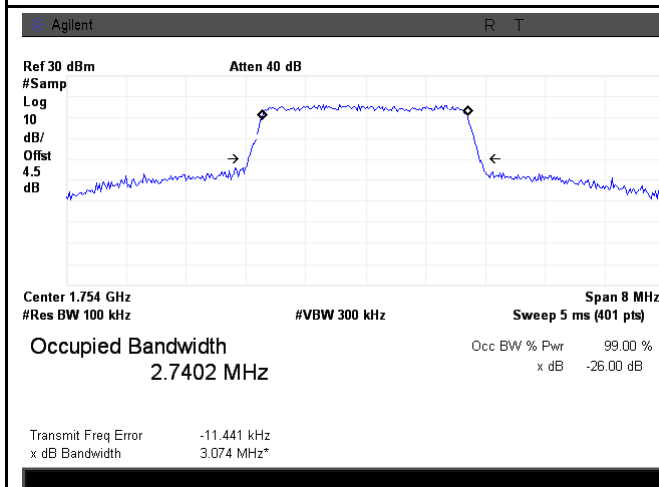
LTE band 4 - Low CH 16QAM-3



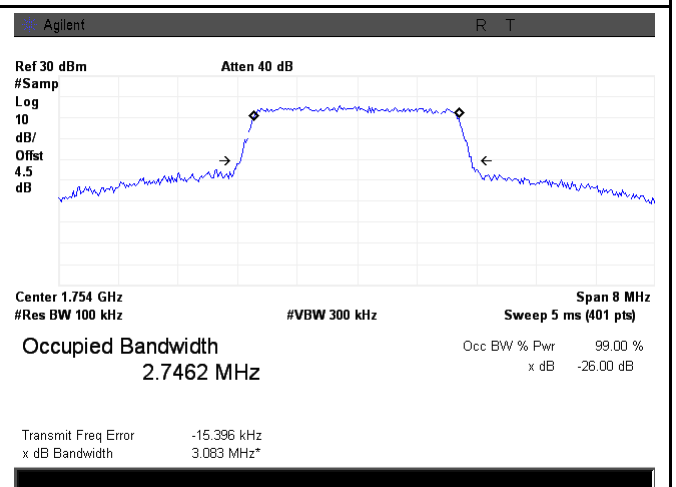
LTE band 4 - Middle CH QPSK-3



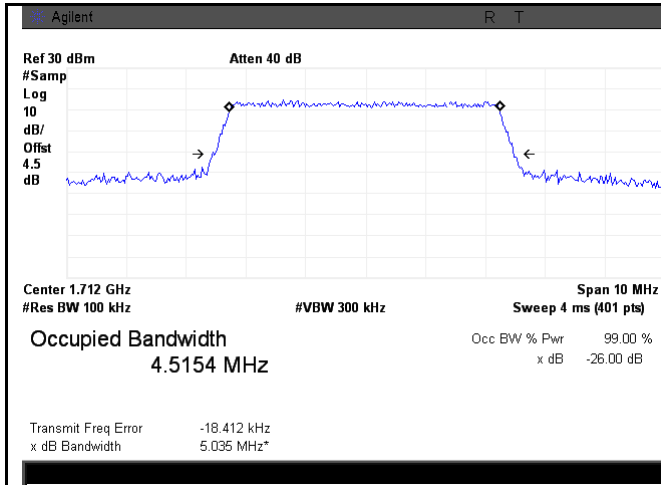
LTE band 4 - Middle CH 16QAM-3



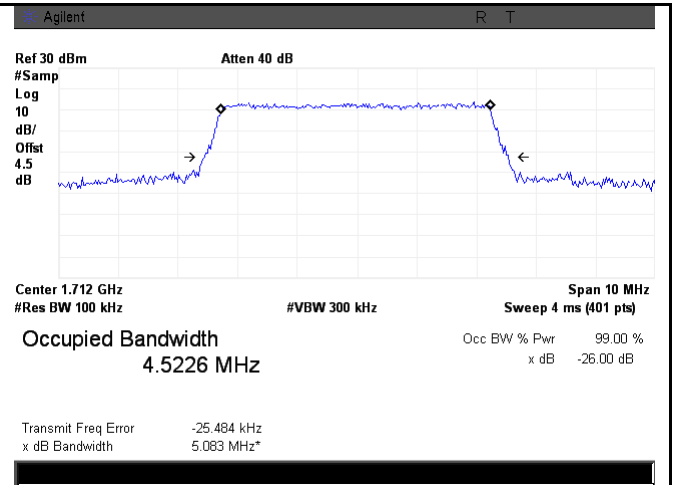
LTE band 4 - High CH QPSK-3



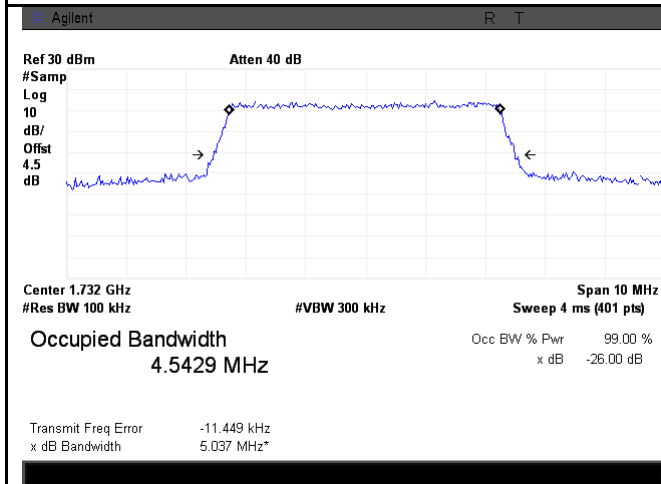
LTE band 4 - High CH 16QAM-3



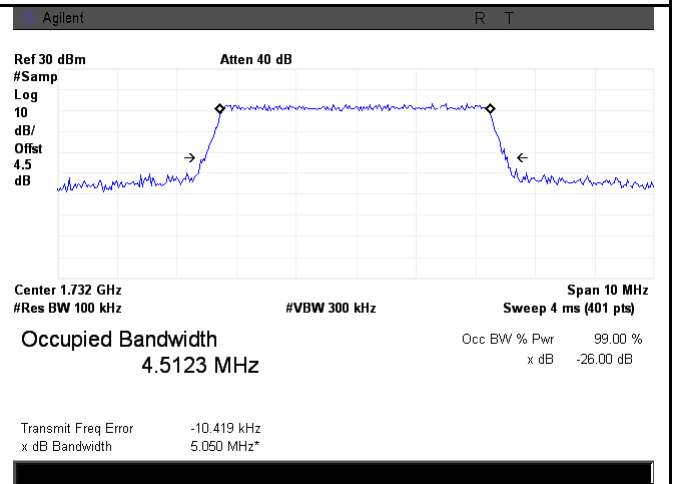
LTE band 4 - Low CH QPSK-5



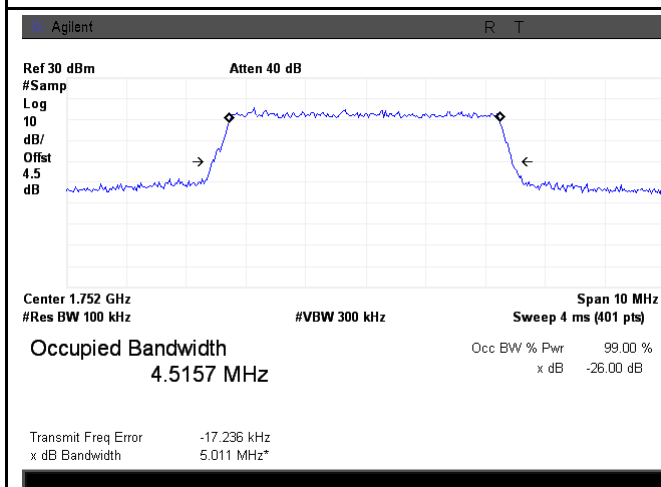
LTE band 4 - Low CH 16QAM-5



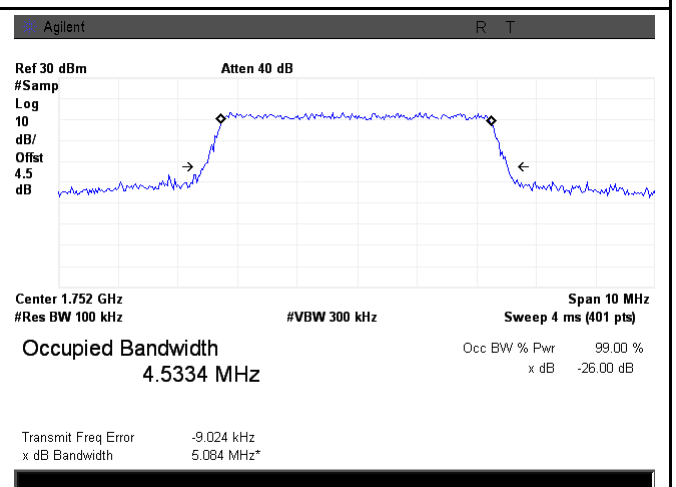
LTE band 4 - Middle CH QPSK-5



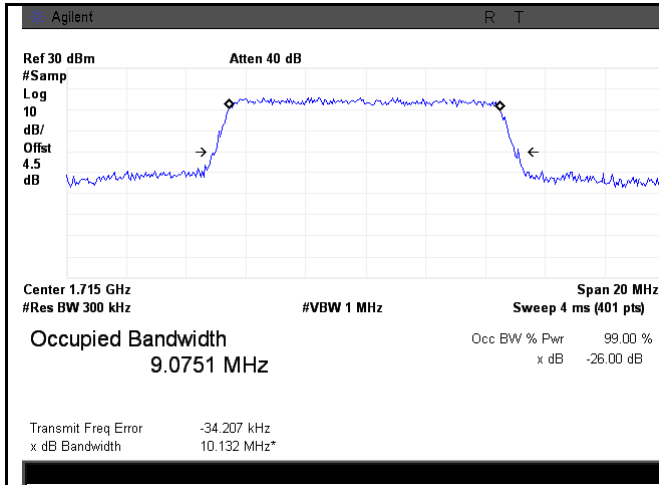
LTE band 4 - Middle CH 16QAM-5



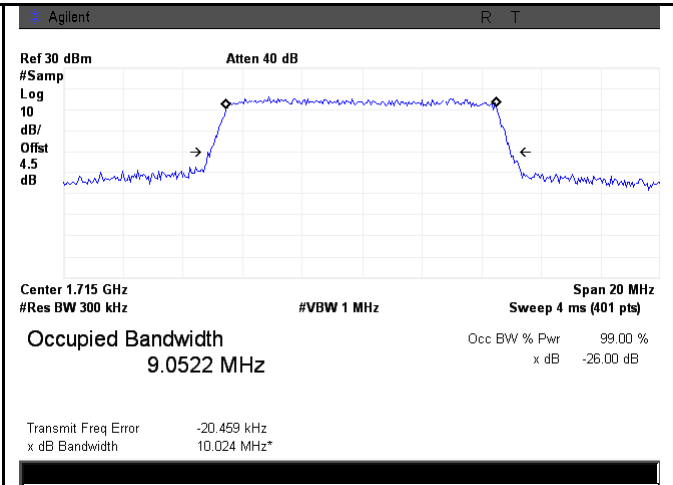
LTE band 4 - High CH QPSK-5



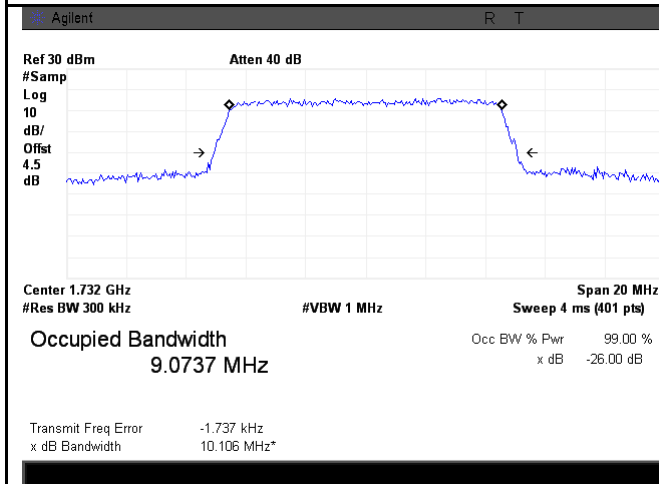
LTE band 4 - High CH 16QAM-5



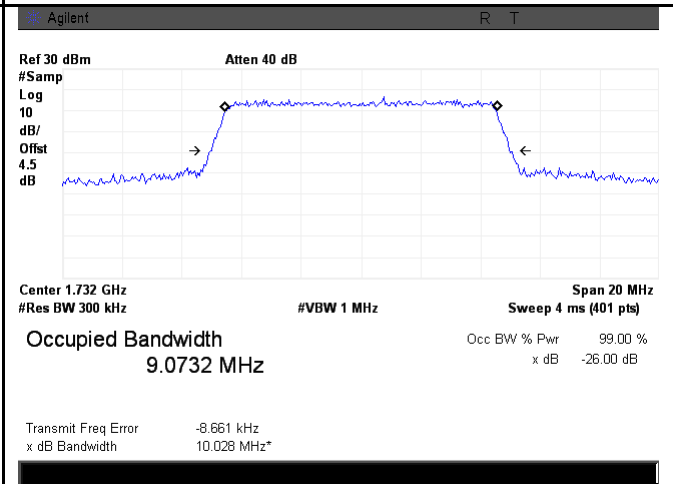
LTE band 4 - Low CH QPSK-10



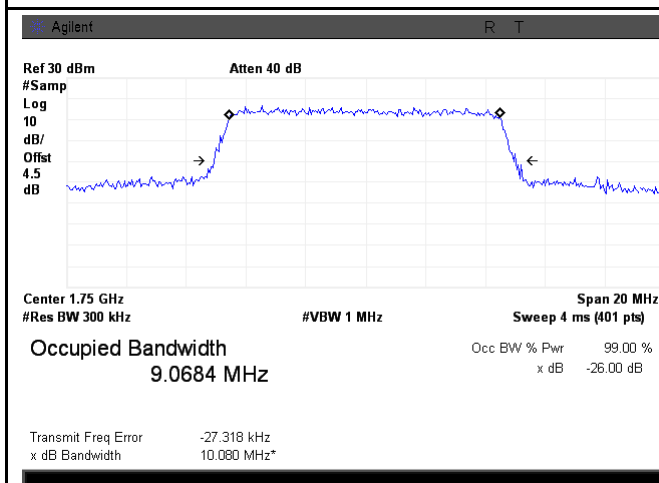
LTE band 4 - Low CH 16QAM-10



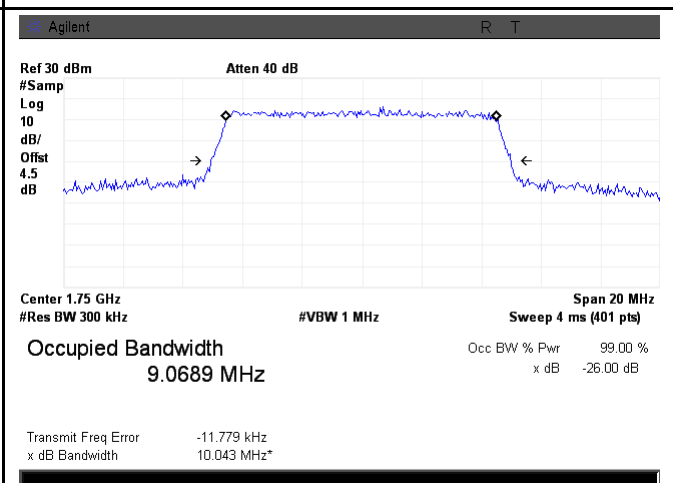
LTE band 4 - Middle CH QPSK-10



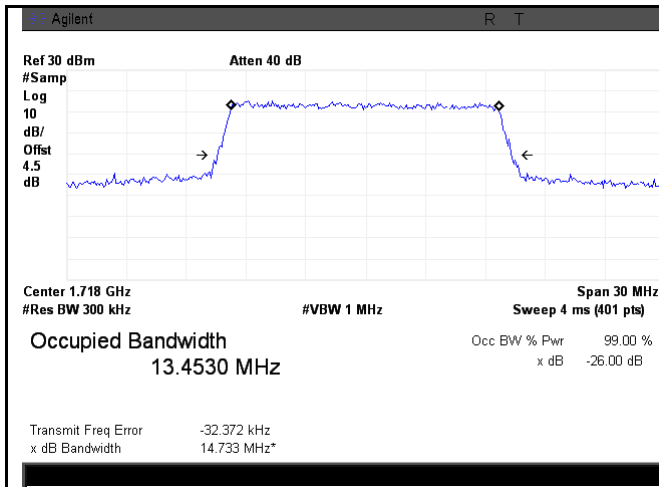
LTE band 4 - Middle CH 16QAM-10



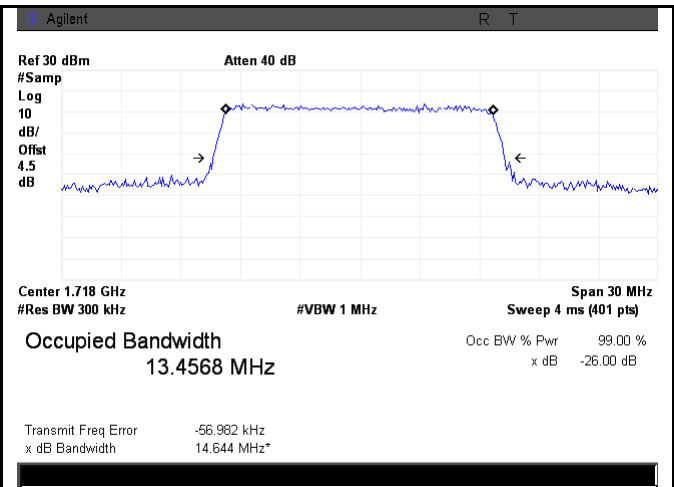
LTE band 4 - High CH QPSK-10



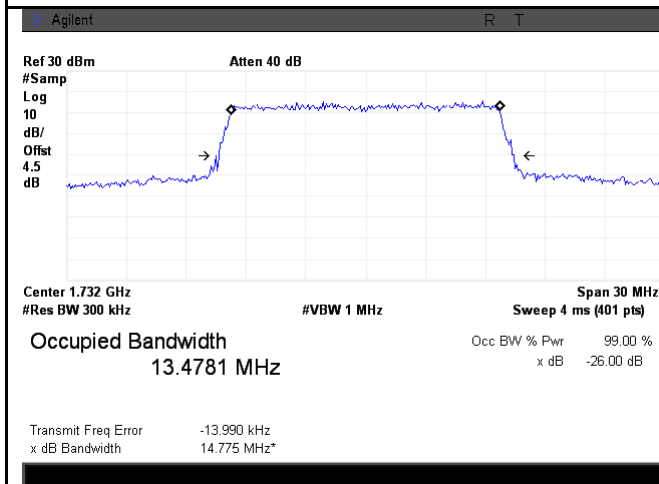
LTE band 4 - High CH 16QAM-10



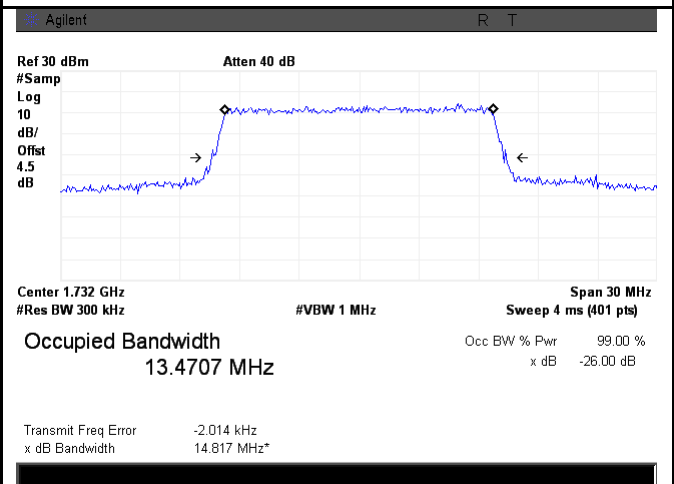
LTE band 4 - Low CH QPSK-15



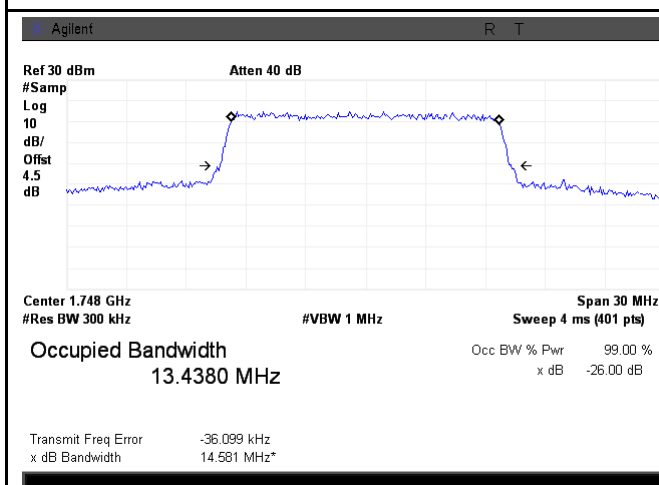
LTE band 4 - Low CH 16QAM-15



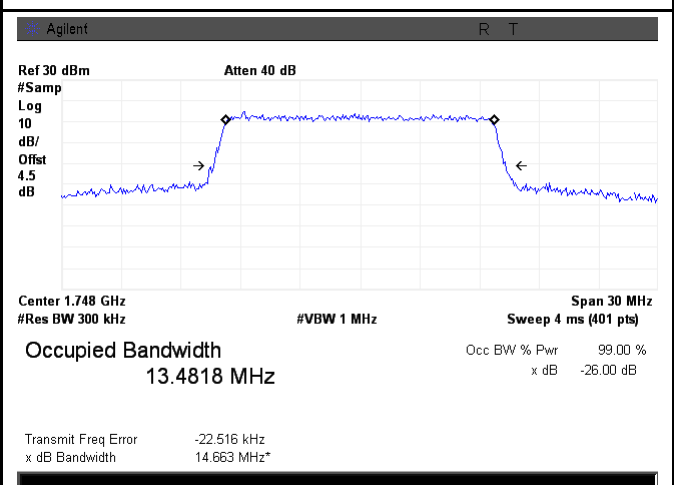
LTE band 4 - Middle CH QPSK-15



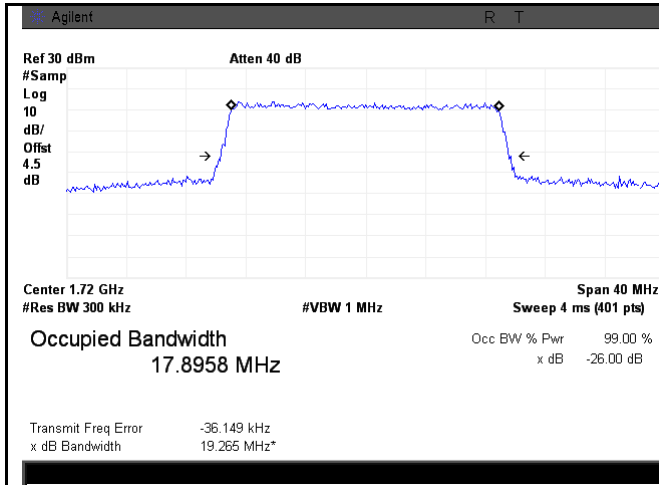
LTE band 4 - Middle CH 16QAM-15



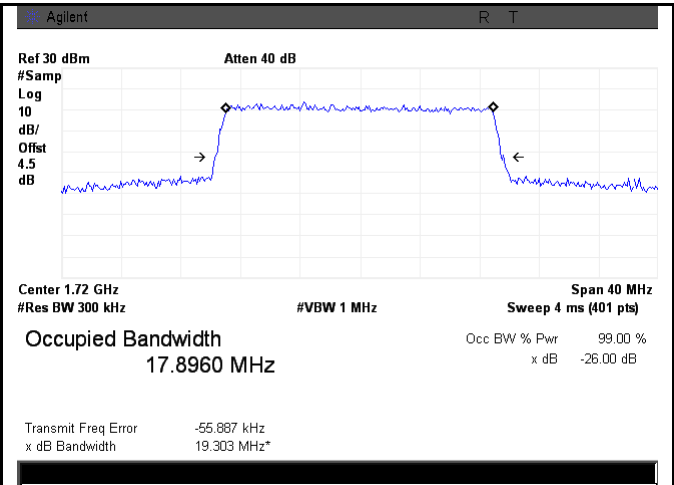
LTE band 4 - High CH QPSK-15



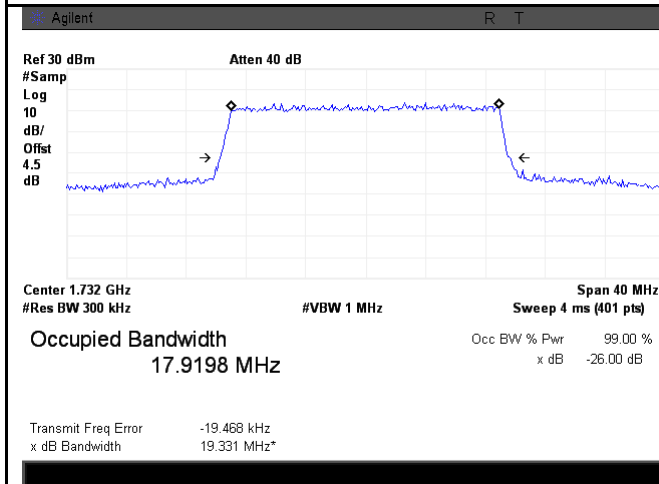
LTE band 4 - High CH 16QAM-15



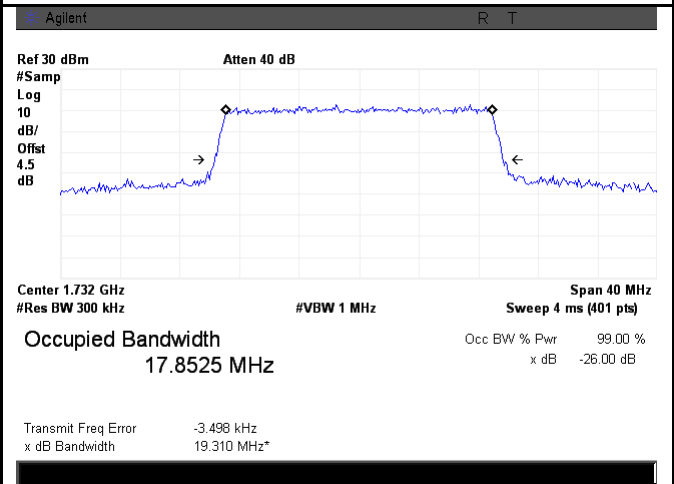
LTE band 4 - Low CH QPSK-20



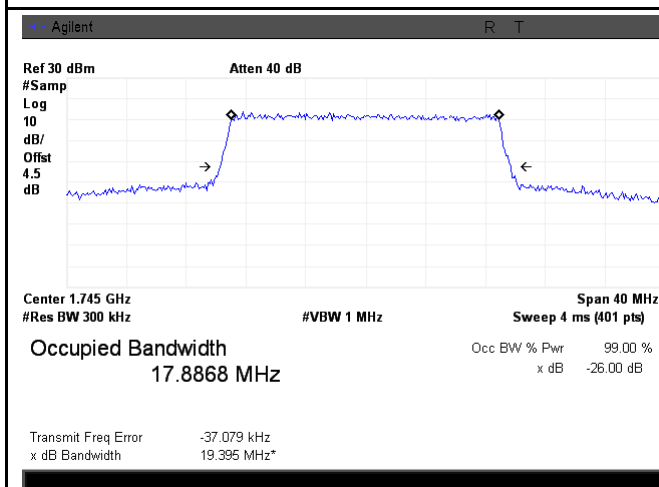
LTE band 4 - Low CH 16QAM-20



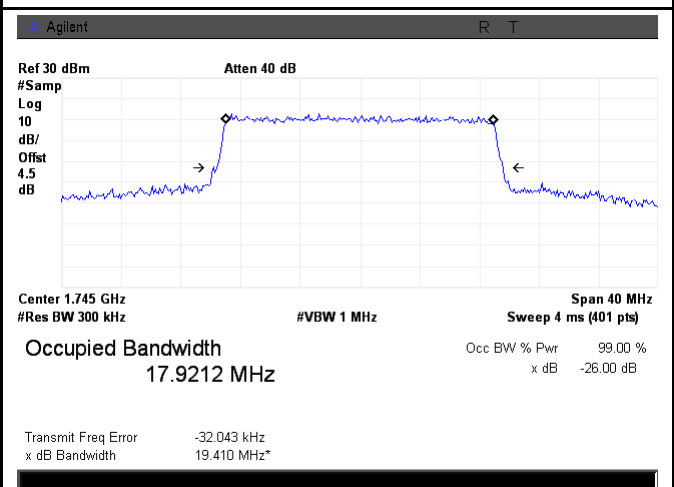
LTE band 4 - Middle CH QPSK-20



LTE band 4 - Middle CH 16QAM-20

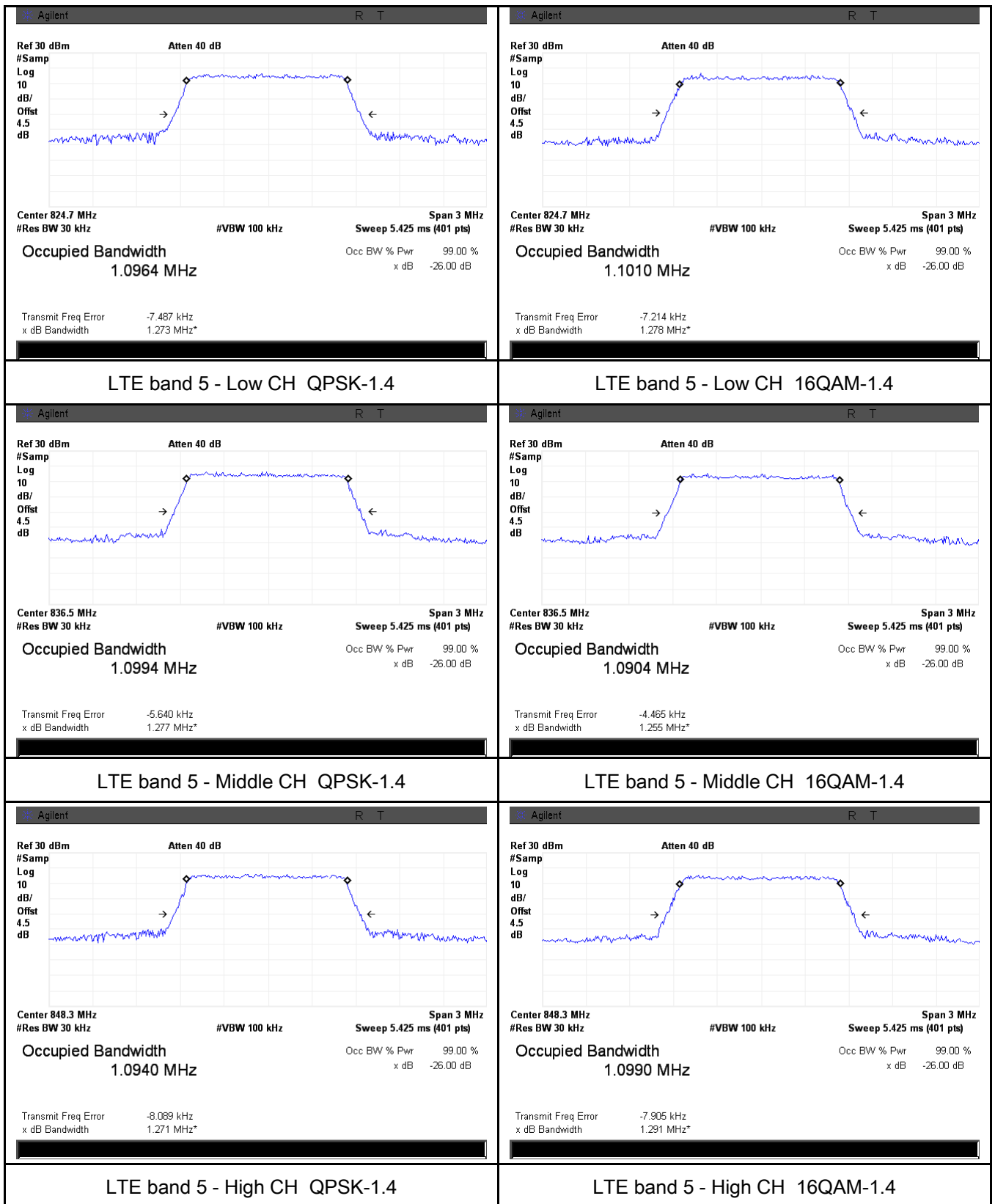


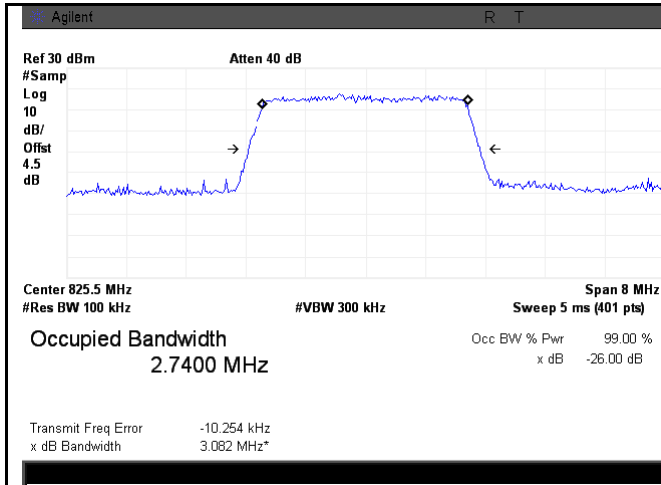
LTE band 4 - High CH QPSK-20



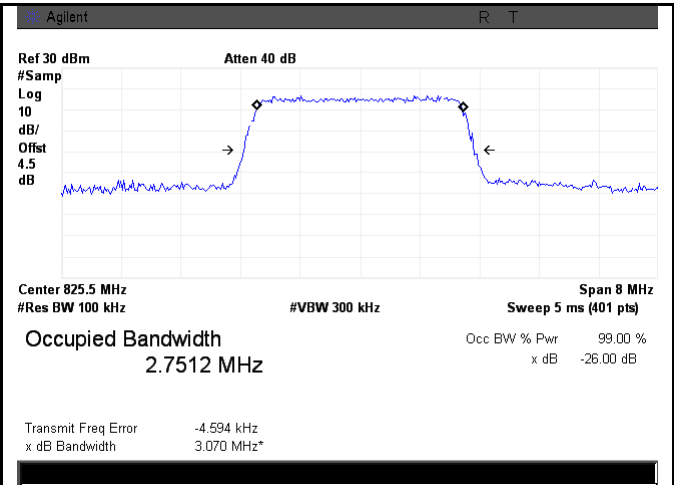
LTE band 4 - High CH 16QAM-20

LTE Band 5 (Part 22H)

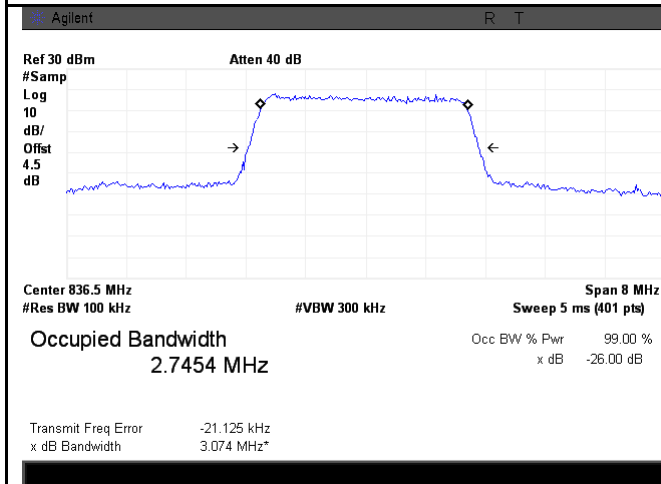




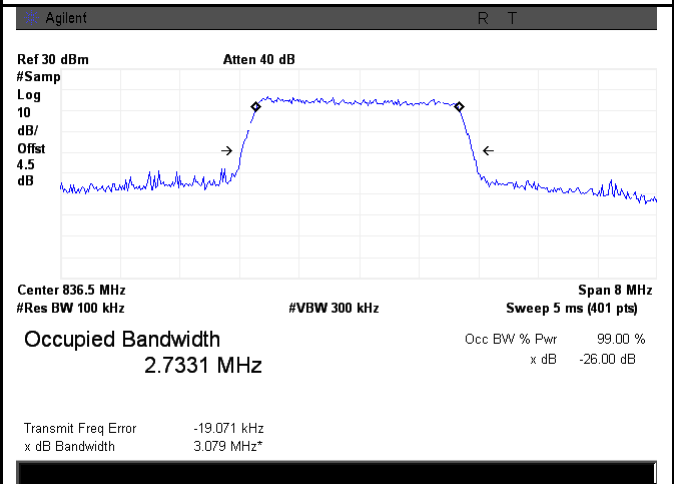
LTE band 5 - Low CH QPSK-3



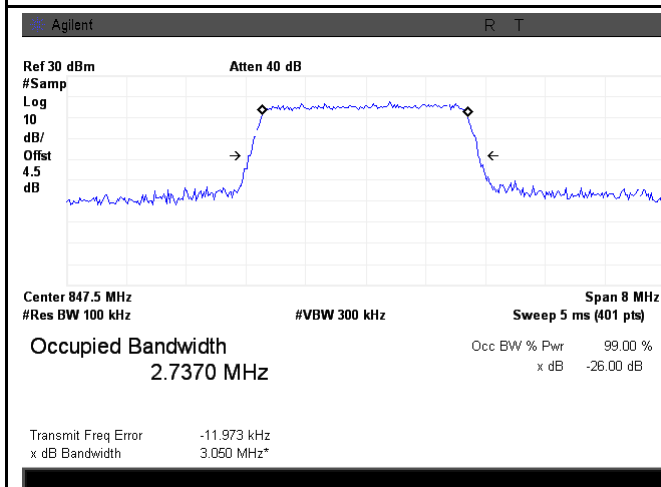
LTE band 5 - Low CH 16QAM-3



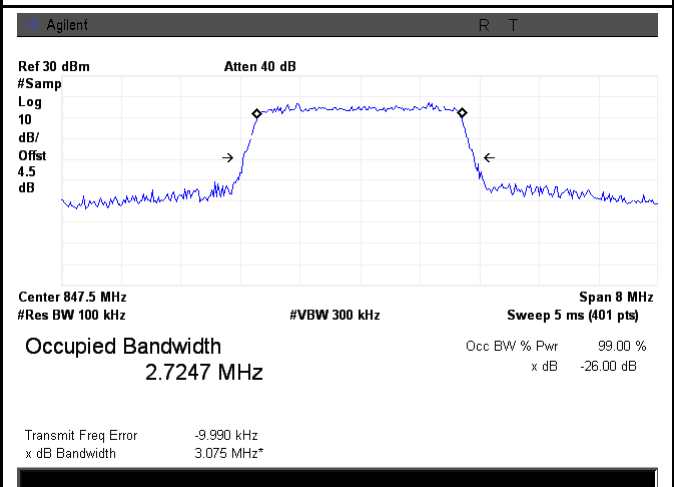
LTE band 5 - Middle CH QPSK-3



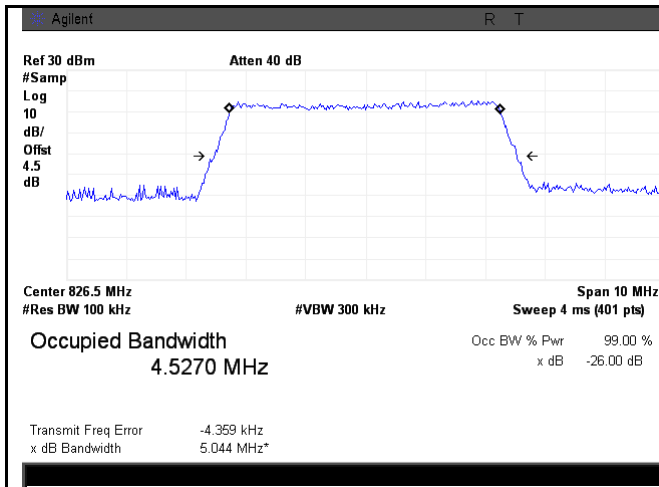
LTE band 5 - Middle CH 16QAM-3



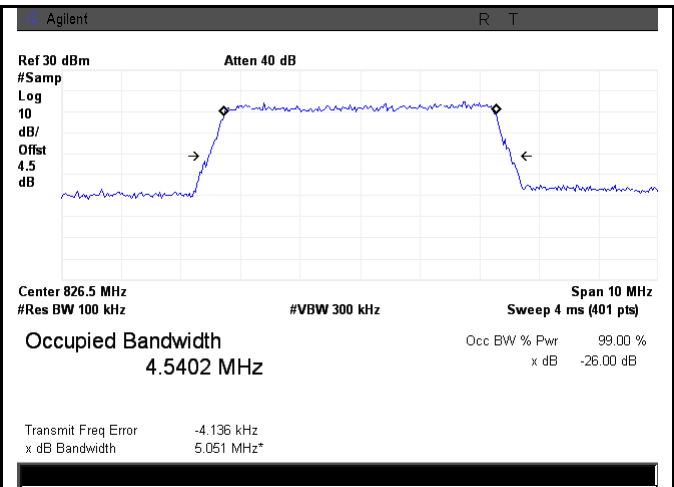
LTE band 5 - High CH QPSK-3



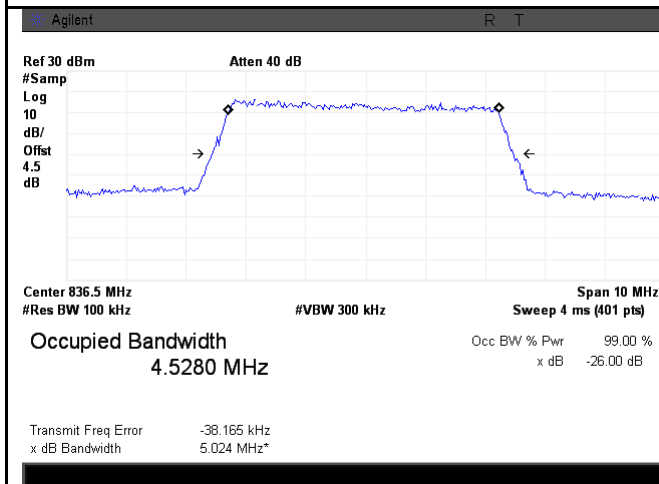
LTE band 5 - High CH 16QAM-3



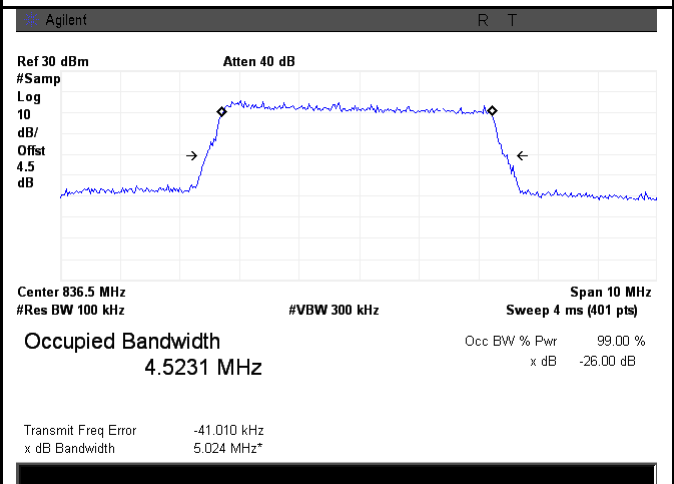
LTE band 5 - Low CH QPSK-5



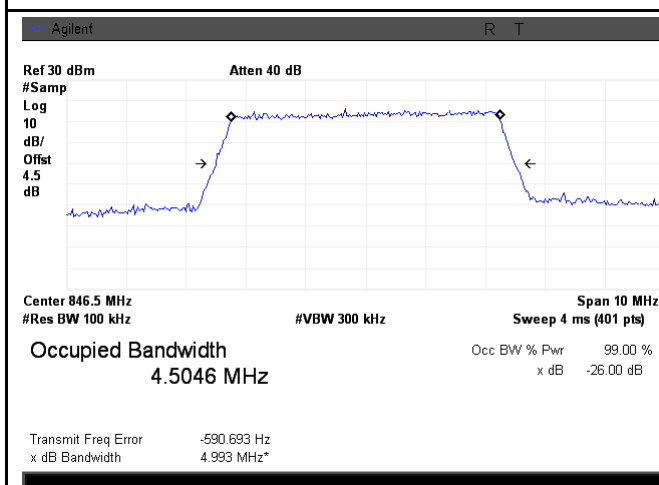
LTE band 5 - Low CH 16QAM-5



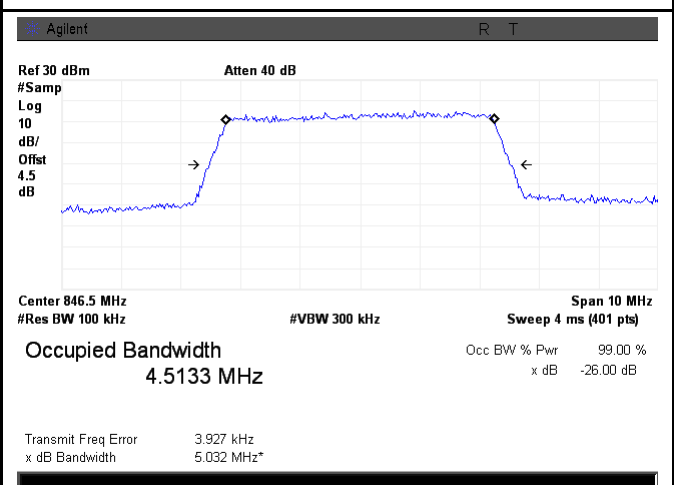
LTE band 5 - Middle CH QPSK-5



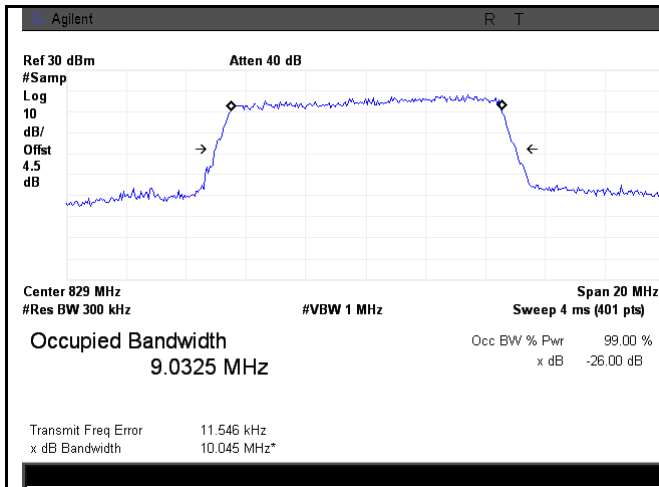
LTE band 5 - Middle CH 16QAM-5



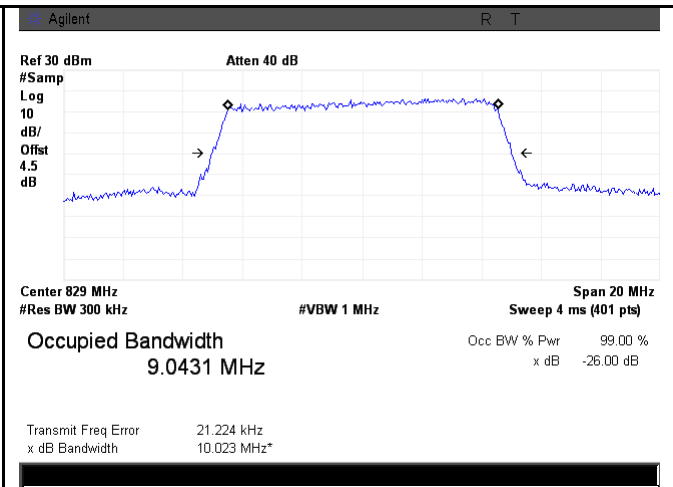
LTE band 5 - High CH QPSK-5



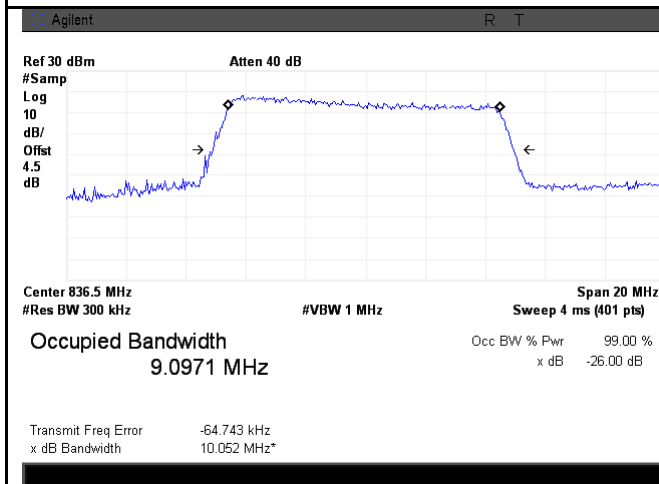
LTE band 5 - High CH 16QAM-5



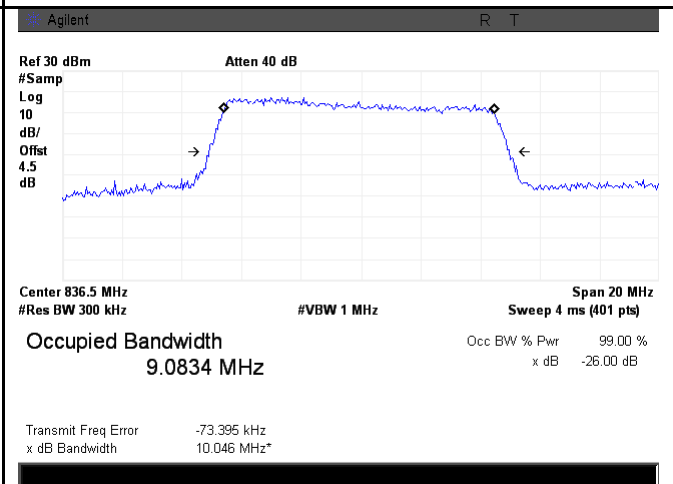
LTE band 5 - Low CH QPSK-10



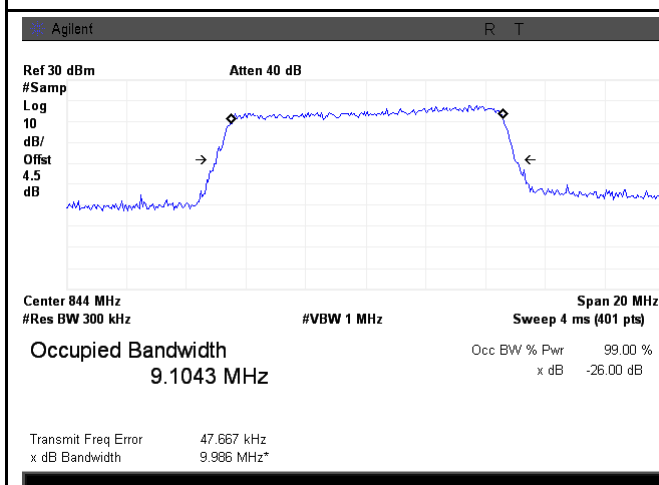
LTE band 5 - Low CH 16QAM-10



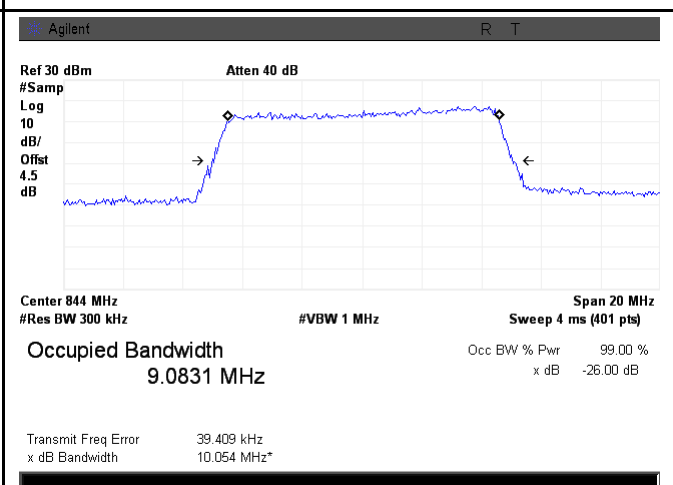
LTE band 5 - Middle CH QPSK-10



LTE band 5 - Middle CH 16QAM-10

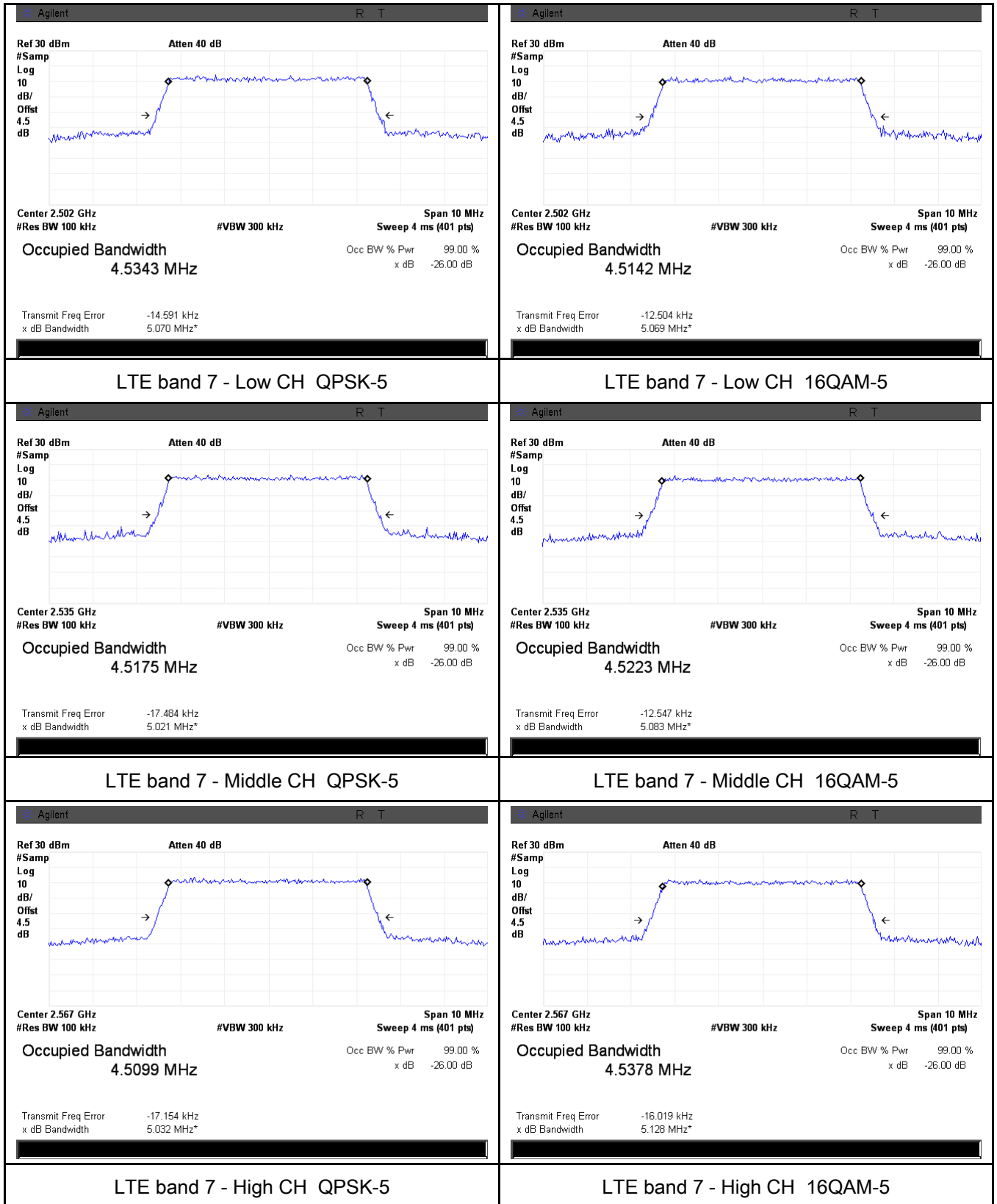


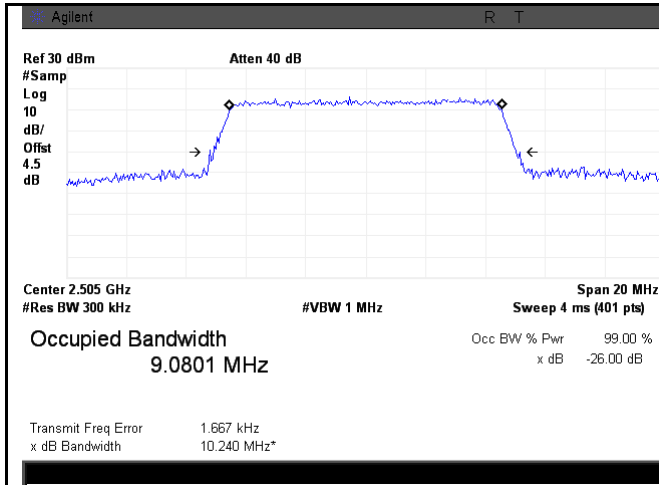
LTE band 5 - High CH QPSK-10



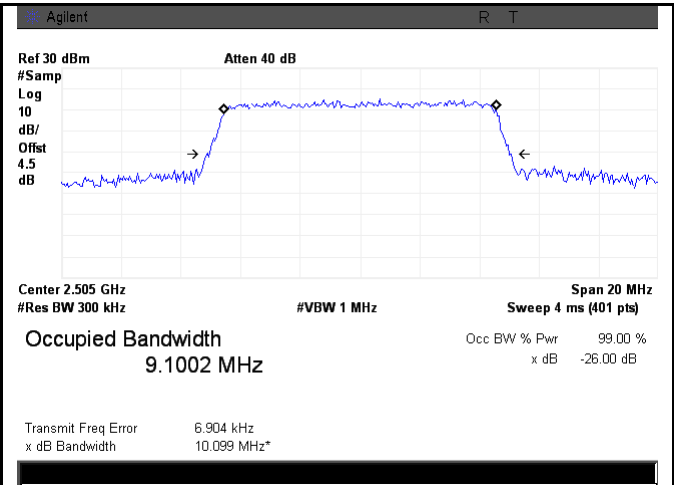
LTE band 5 - High CH 16QAM-10

LTE Band 7 (Part 27)

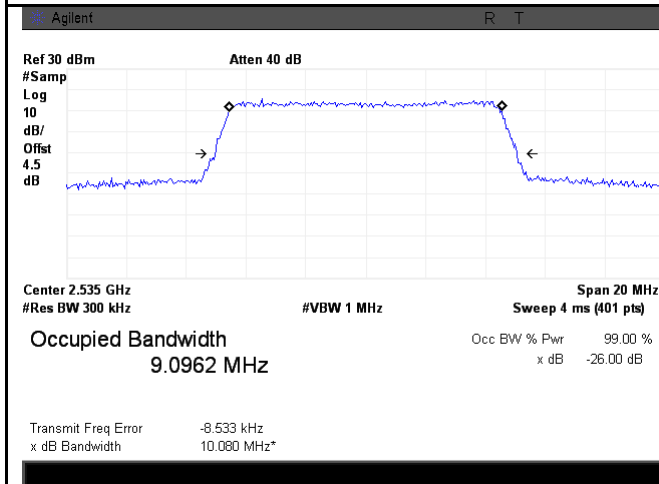




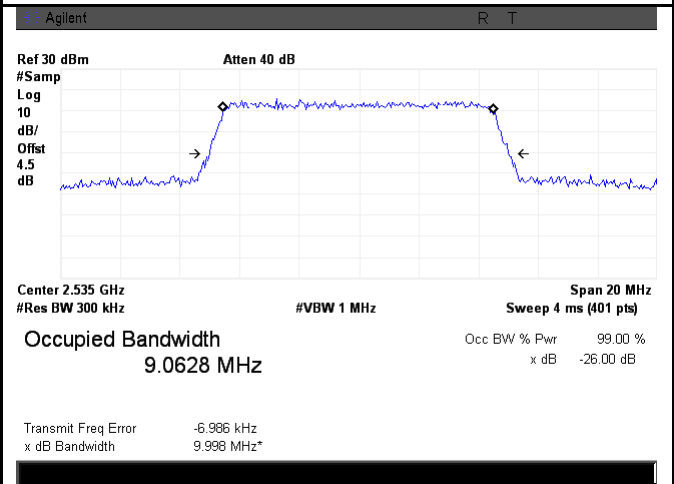
LTE band 7 - Low CH QPSK-10



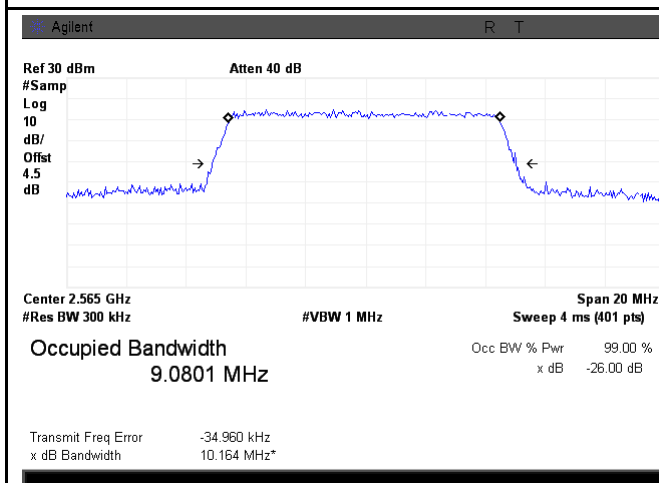
LTE band 7 - Low CH 16QAM-10



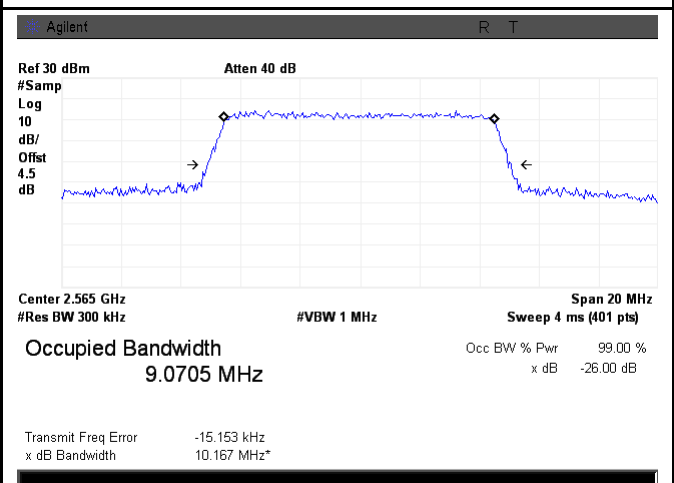
LTE band 7 - Middle CH QPSK-10



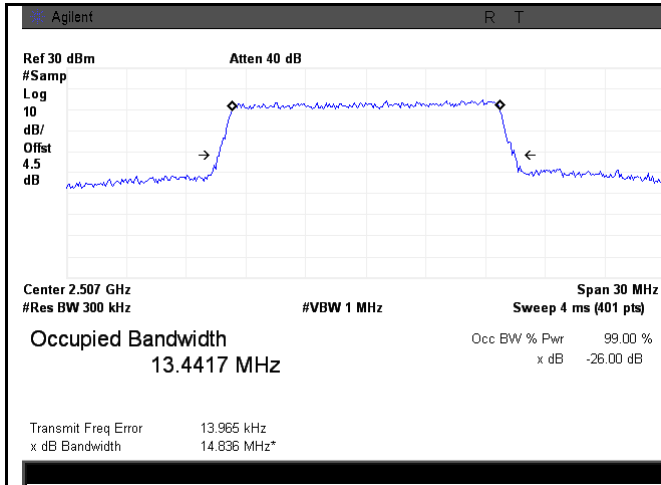
LTE band 7 - Middle CH 16QAM-10



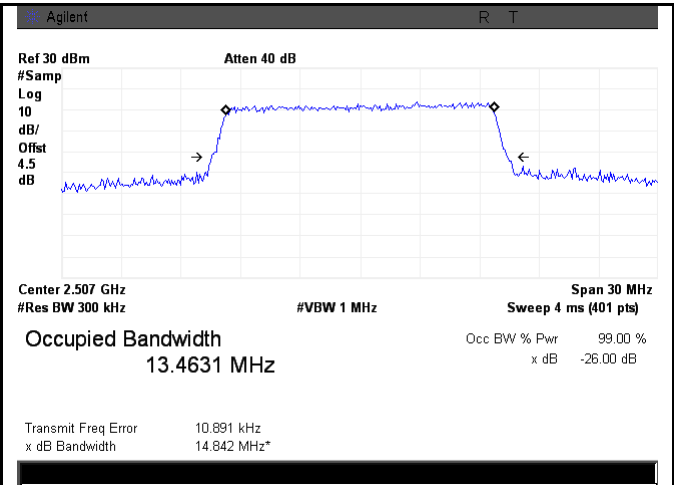
LTE band 7 - High CH QPSK-10



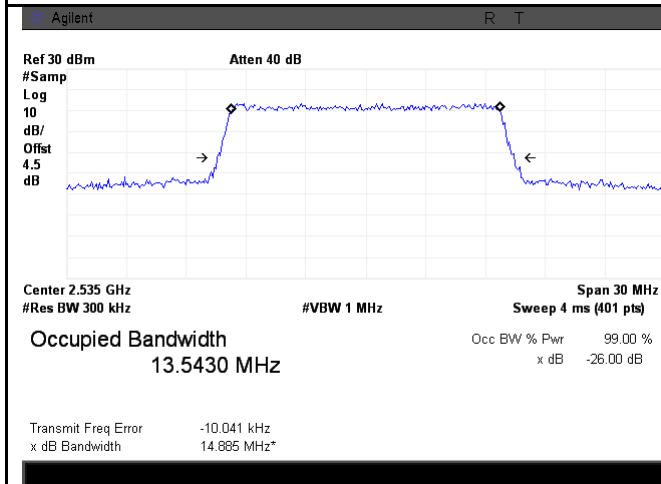
LTE band 7 - High CH 16QAM-10



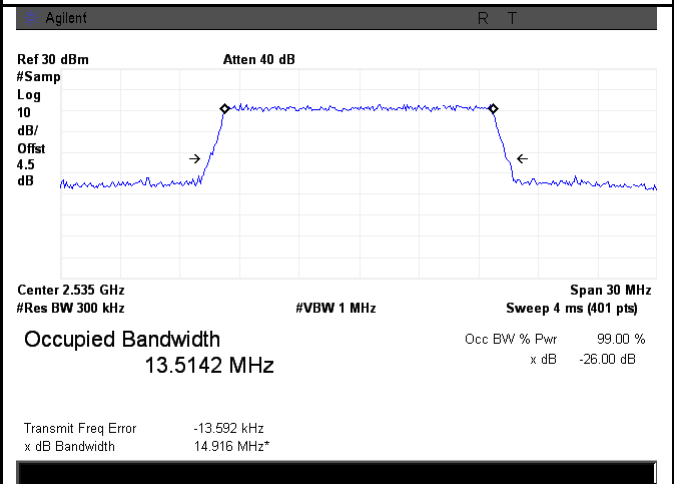
LTE band 7 - Low CH QPSK-15



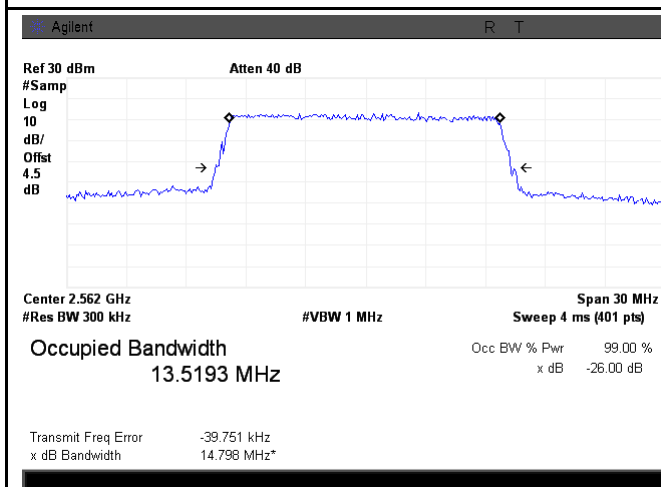
LTE band 7 - Low CH 16QAM-15



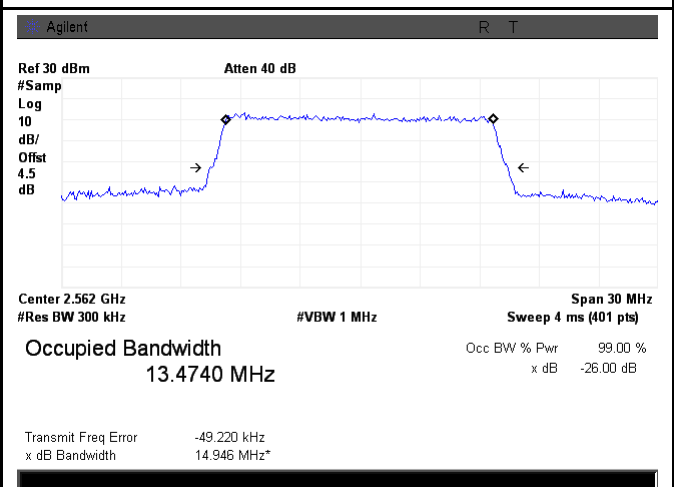
LTE band 7 - Middle CH QPSK-15



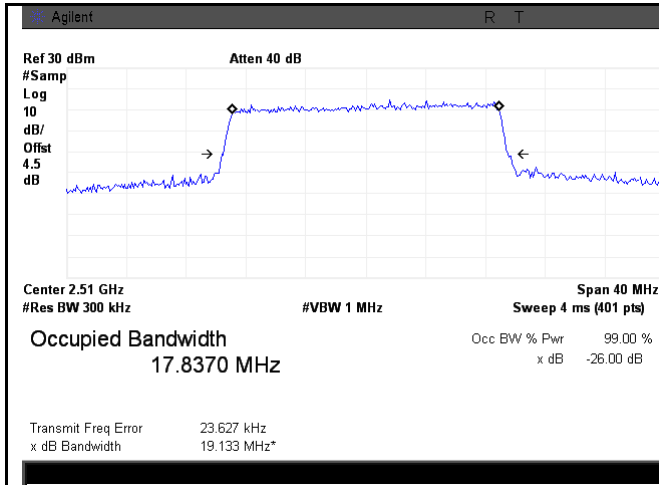
LTE band 7 - Middle CH 16QAM-15



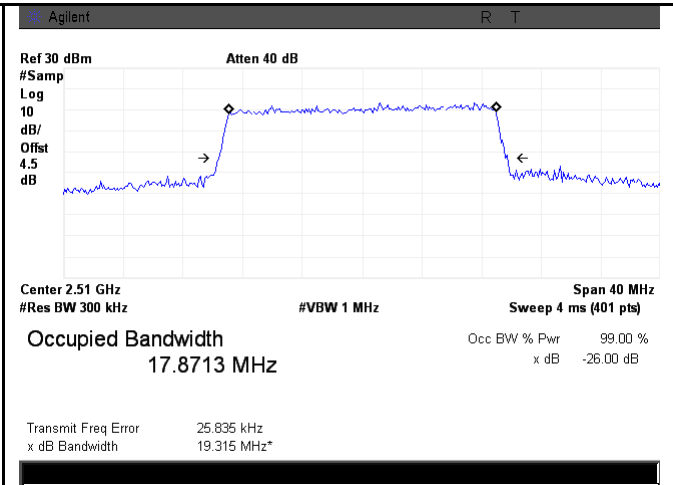
LTE band 7 - High CH QPSK-15



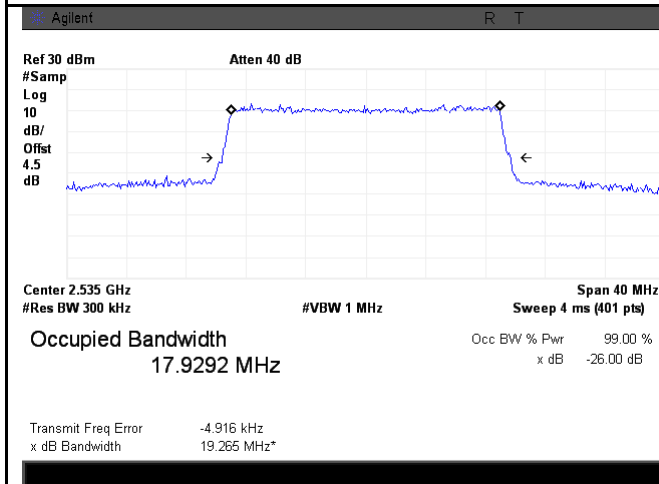
LTE band 7 - High CH 16QAM-15



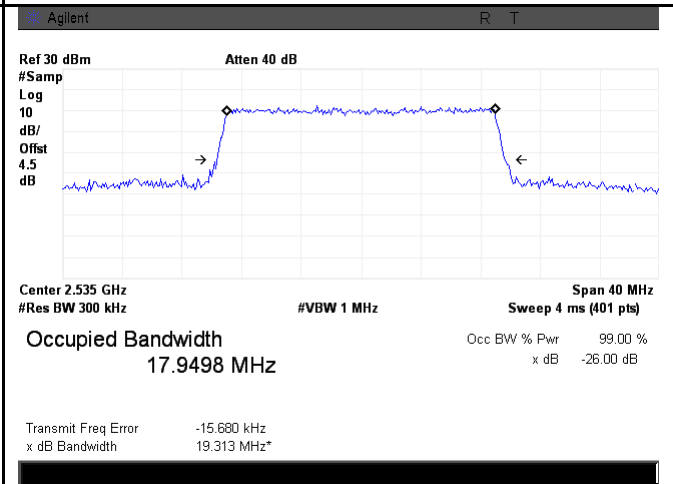
LTE band 7 - Low CH QPSK-20



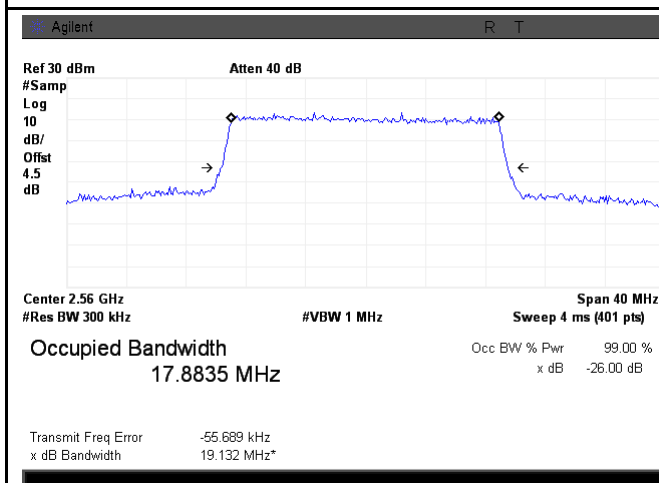
LTE band 7 - Low CH 16QAM-20



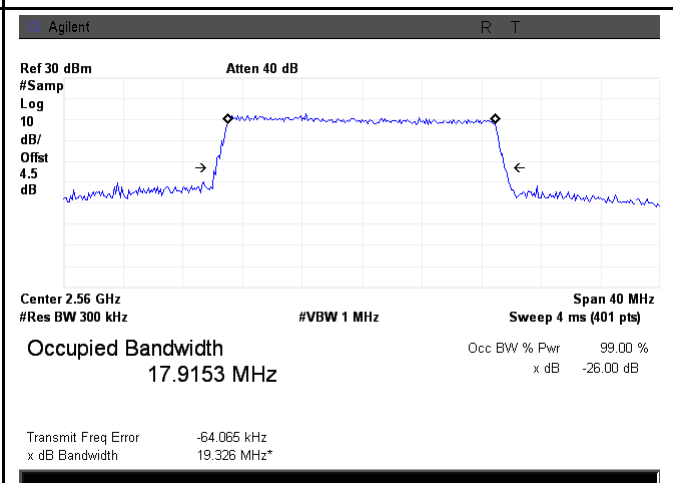
LTE band 7 - Middle CH QPSK-20



LTE band 7 - Middle CH 16QAM-20



LTE band 7 - High CH QPSK-20



LTE band 7 - High CH 16QAM-20

6.5 Spurious Emissions at Antenna Terminals

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

Requirement(s):

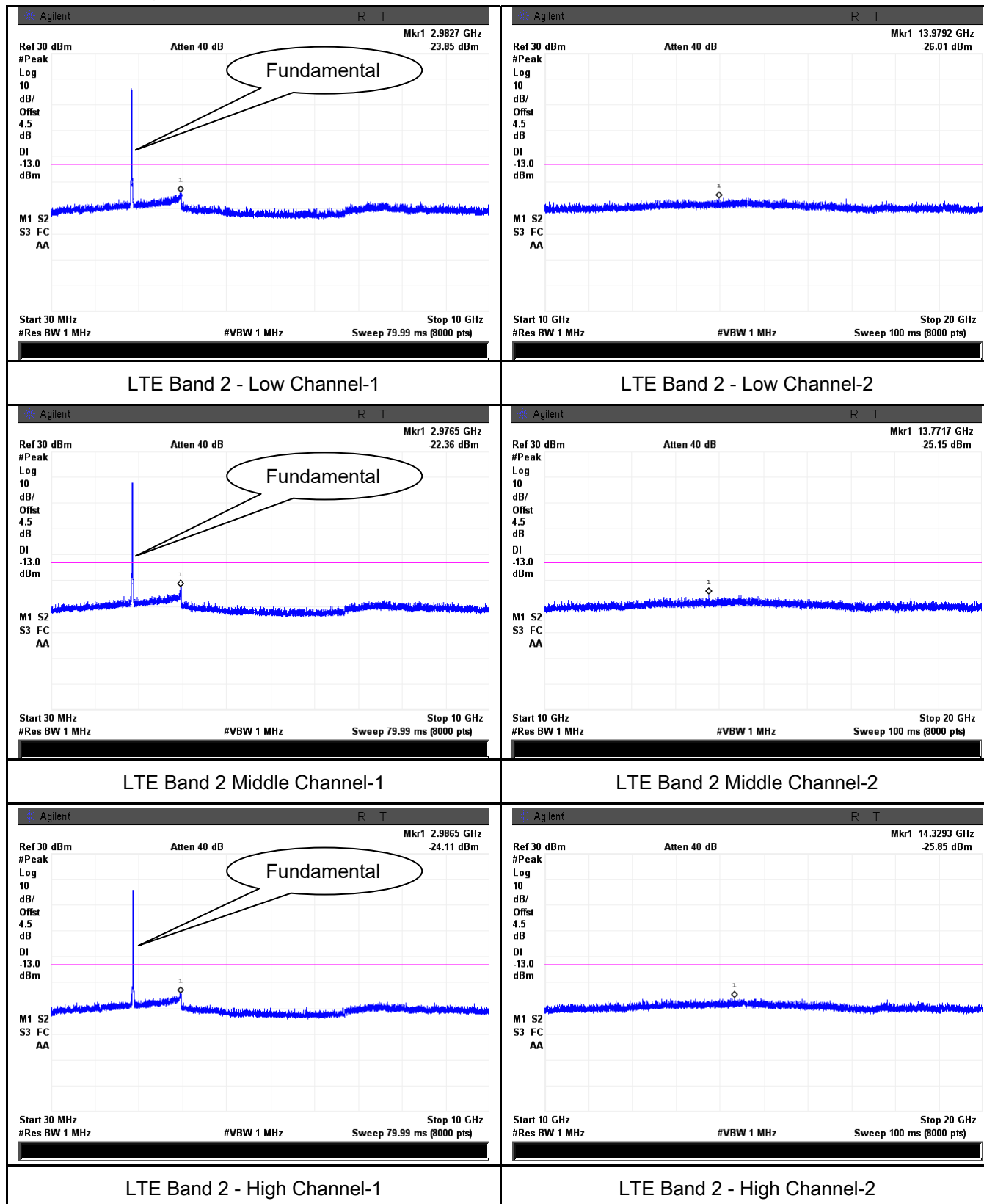
Spec	Item	Requirement	Applicable
§2.1051, §22.917(a)& §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB	<input checked="" type="checkbox"/>
Test Setup	<p>Base 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

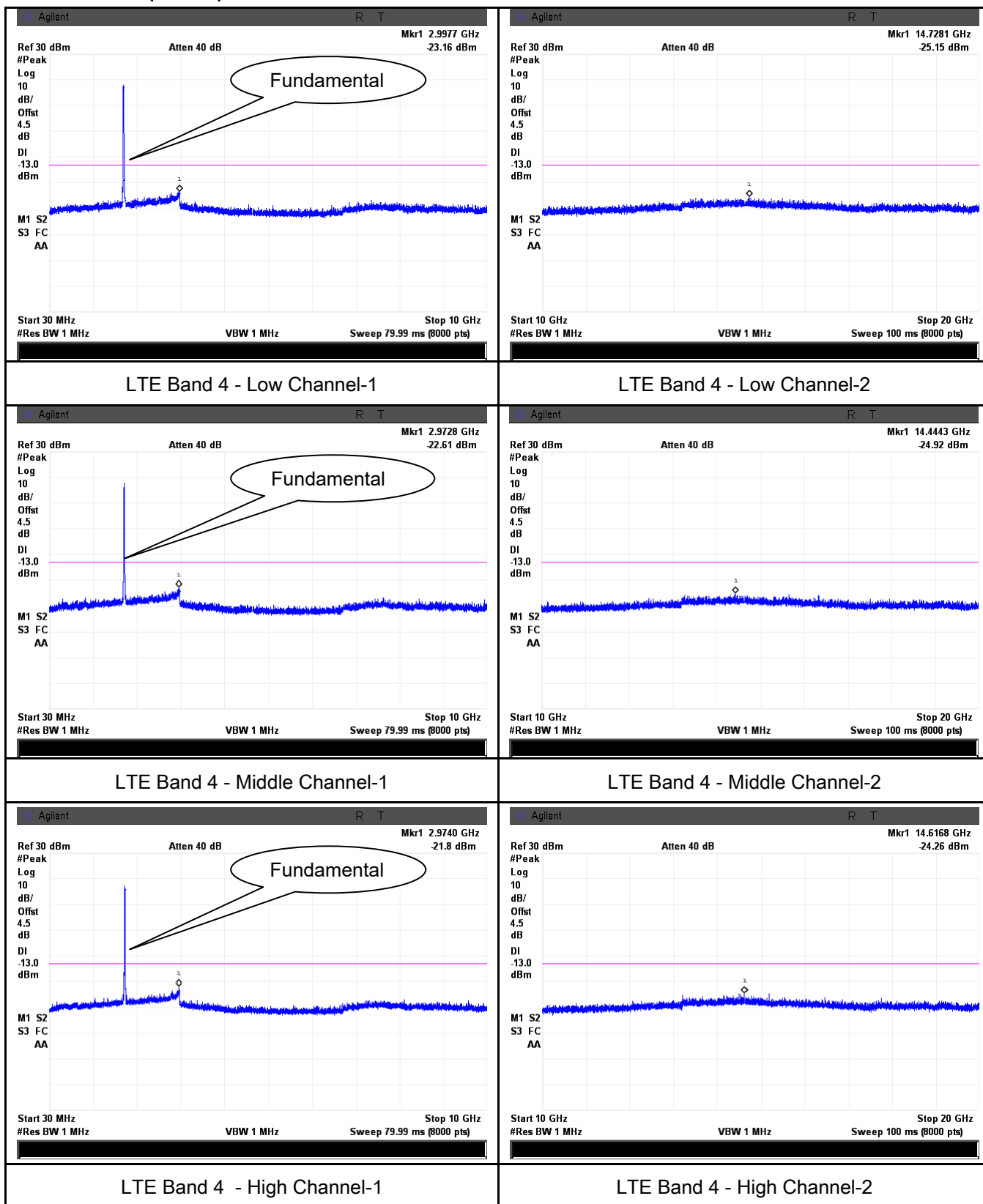
Test Plot ☒ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

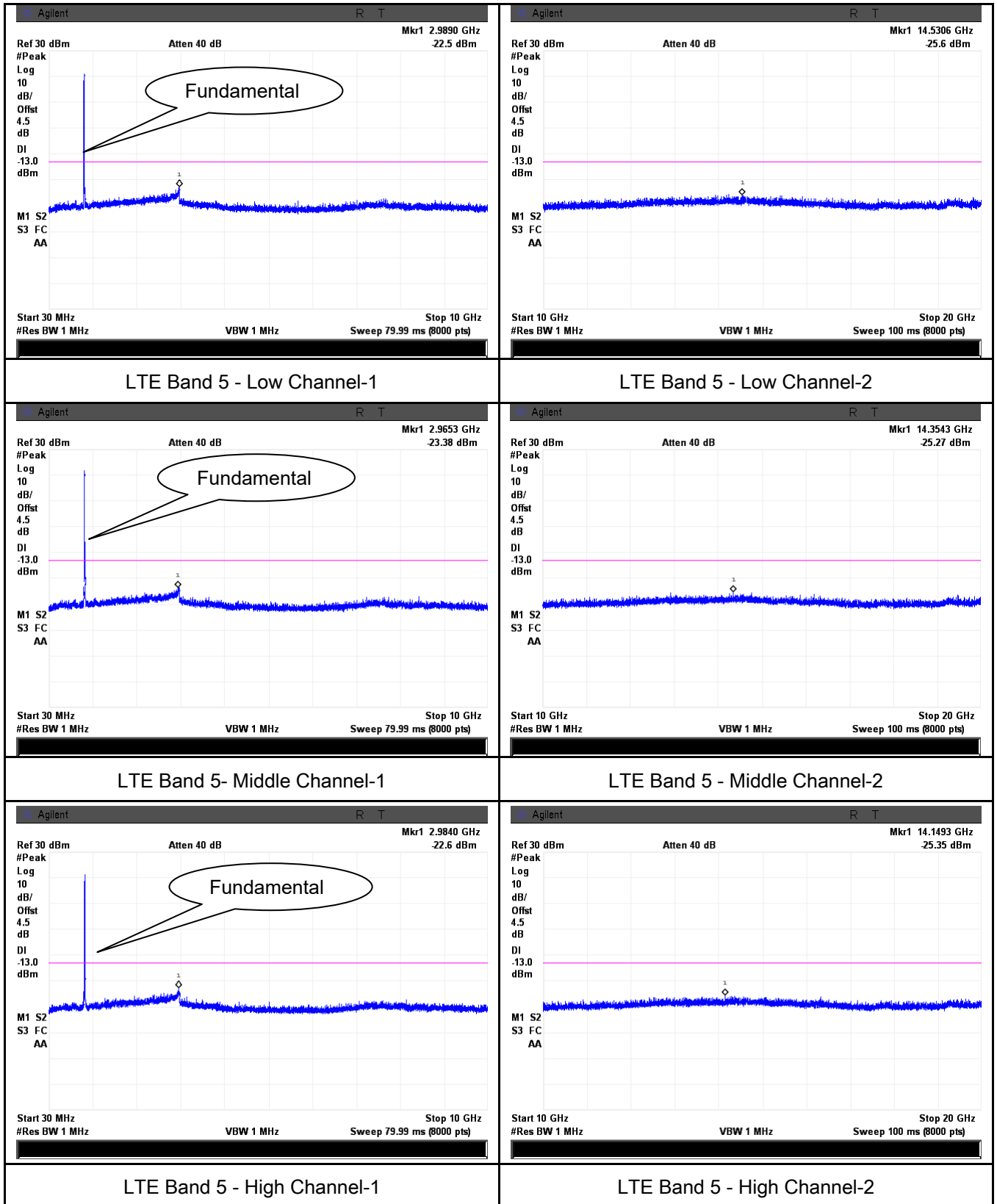
LTE Band 2 (Part 24E)



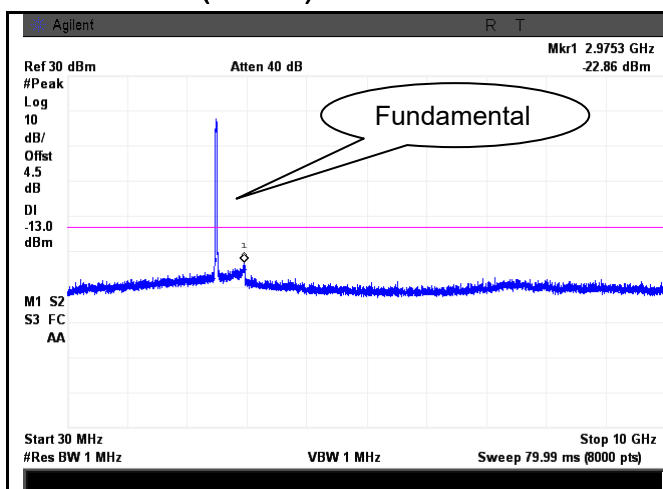
LTE Band 4 (Part27) result



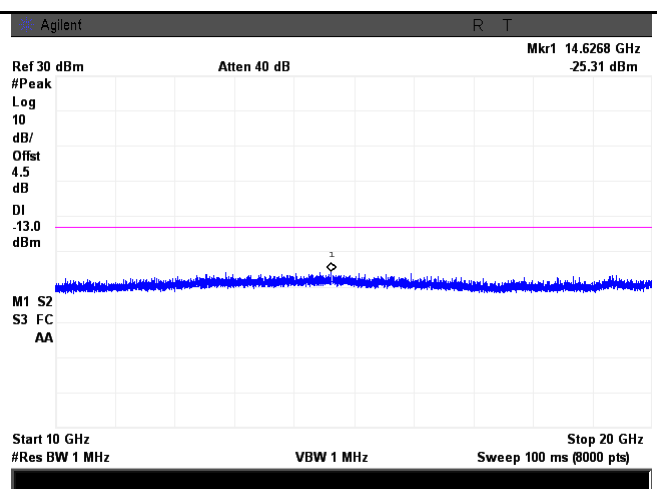
LTE Band 5 (Part 22H)



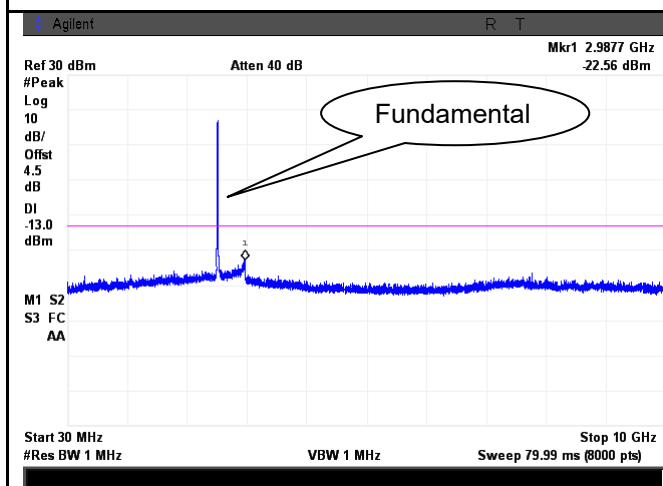
LTE Band 7 (Part 27)



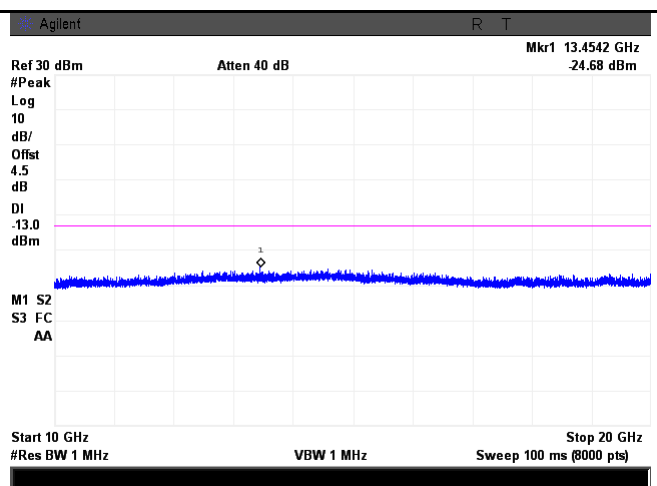
LTE Band 7 - Low Channel-1



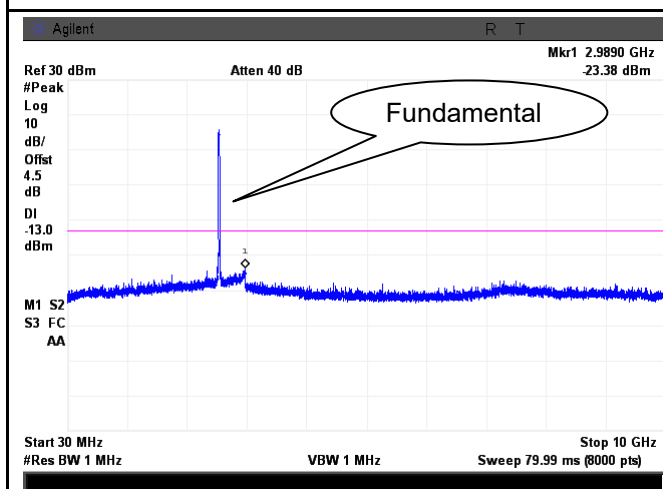
LTE Band 7 - Low Channel-2



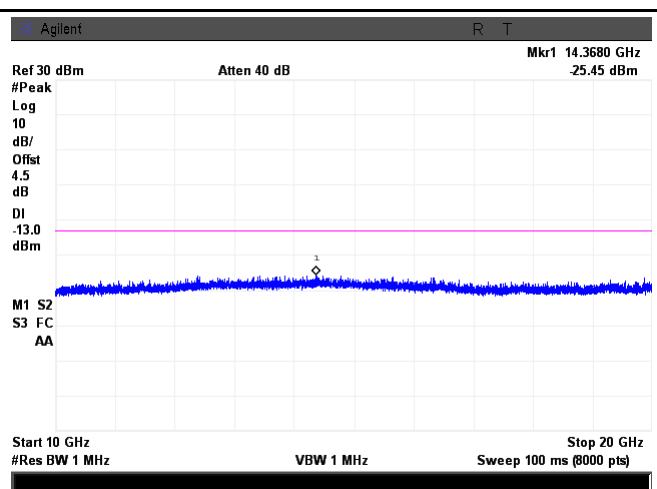
LTE Band 7 - Middle Channel-1



LTE Band 7 - Middle Channel-2



LTE Band 7 - High Channel-1

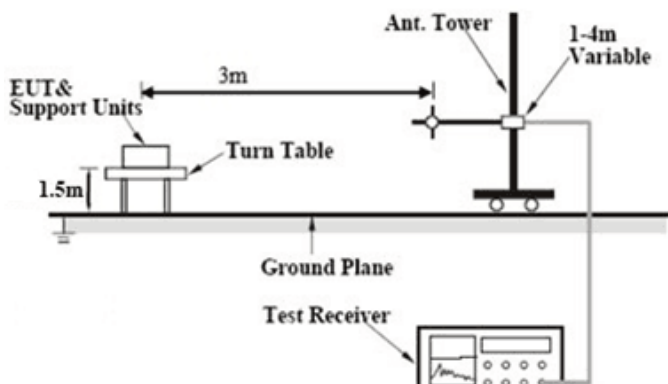


LTE Band 7 - High Channel-2

6.6 Spurious Radiated Emissions

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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		 <p>The diagram illustrates the test setup. A turntable is placed on a ground plane. On the turntable, there are EUT & Support Units. A measurement antenna is positioned 3m away from the turntable. The antenna is connected to a test receiver. The antenna height is adjustable (1-4m variable). The turntable is 1.5m high.</p>	
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. <p>Sample Calculation:</p> <p>EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)</p>	
Remark			

Result	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
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Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

LTE Band 2 (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	-45.92	V	10.25	2.73	-38.4	-13	-25.40
3720	-46.23	H	10.25	2.73	-38.71	-13	-25.71
53.6	-41.26	V	-4.2	0.11	-45.57	-13	-32.57
168.2	-49.91	H	4.6	0.18	-45.49	-13	-32.49

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	-45.86	V	10.25	2.73	-38.34	-13	-25.34
3760	-46.25	H	10.25	2.73	-38.73	-13	-25.73
53.3	-41.13	V	-4.2	0.11	-45.44	-13	-32.44
168.5	-49.88	H	4.6	0.18	-45.46	-13	-32.46

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	-45.92	V	10.36	2.73	-38.29	-13	-25.29
3800	-46.18	H	10.36	2.73	-38.55	-13	-25.55
53.8	-41.19	V	-4.2	0.11	-45.5	-13	-32.50
168.9	-50.13	H	4.6	0.18	-45.71	-13	-32.71

Note:

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

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

LTE Band 4(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	-46.35	V	10.06	2.52	-38.81	-13	-25.81
3440	-47.22	H	10.06	2.52	-39.68	-13	-26.68
54.1	-40.51	V	-4.2	0.11	-44.82	-13	-31.82
167.8	-49.76	H	4.6	0.18	-45.34	-13	-32.34

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	-46.41	V	10.09	2.52	-38.84	-13	-25.84
3465	-47.19	H	10.09	2.52	-39.62	-13	-26.62
54.5	-40.55	V	-4.2	0.11	-44.86	-13	-31.86
167.2	-49.83	H	4.6	0.18	-45.41	-13	-32.41

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	-46.55	V	10.09	2.52	-38.98	-13	-25.98
3490	-47.23	H	10.09	2.52	-39.66	-13	-26.66
54.3	-40.61	V	-4.2	0.11	-44.92	-13	-31.92
167.6	-49.91	H	4.6	0.18	-45.49	-13	-32.49

Note:

- 1, The testing has been conformed to $10 \times 1752.5 \text{ MHz} = 17,525 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

LTE Band 5(Part22H) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1658	-45.52	V	7.95	0.78	-38.35	-13	-25.35
1658	-45.93	H	7.95	0.78	-38.76	-13	-25.76
52.9	-41.26	V	-4.2	0.11	-45.57	-13	-32.57
169.3	-50.38	H	4.6	0.18	-45.96	-13	-32.96

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1673	-45.48	V	7.95	0.78	-38.31	-13	-25.31
1673	-45.83	H	7.95	0.78	-38.66	-13	-25.66
52.6	-41.32	V	-4.2	0.11	-45.63	-13	-32.63
169.8	-50.36	H	4.6	0.18	-45.94	-13	-32.94

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1688	-45.61	V	7.95	0.78	-38.44	-13	-25.44
1688	-45.95	H	7.95	0.78	-38.78	-13	-25.78
52.3	-41.28	V	-4.2	0.11	-45.59	-13	-32.59
169.7	-50.24	H	4.6	0.18	-45.82	-13	-32.82

Note:

- 1, The testing has been conformed to $10 \times 846.5 \text{ MHz} = 8,465 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

LTE Band 7(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	-47.16	V	10.29	0.98	-37.85	-13	-24.85
5020	-48.12	H	10.29	0.98	-38.81	-13	-25.81
53.1	-42.17	V	-4.2	0.11	-46.48	-13	-33.48
168.5	-50.63	H	4.6	0.18	-46.21	-13	-33.21

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	-47.22	V	10.3	0.99	-37.91	-13	-24.91
5070	-48.06	H	10.3	0.99	-38.75	-13	-25.75
53.8	-42.11	V	-4.2	0.11	-46.42	-13	-33.42
168.4	-50.53	H	4.6	0.18	-46.11	-13	-33.11

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	-47.31	V	10.32	1	-37.99	-13	-24.99
5120	-48.12	H	10.32	1	-38.8	-13	-25.8
53.9	-42.19	V	-4.2	0.11	-46.5	-13	-33.5
168.5	-50.46	H	4.6	0.18	-46.04	-13	-33.04

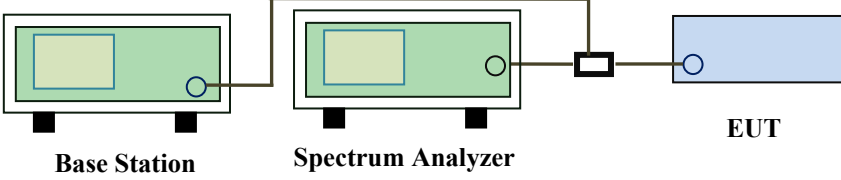
Note:

- 1, The testing has been conformed to $10 \times 2567.5 \text{ MHz} = 25,675 \text{ MHz}$
- 2, All other emissions more than 30 dB below the limit

6.7 Band Edge

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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>The diagram illustrates the test setup. On the left is a green box labeled 'Base Station'. In the center is another green box labeled 'Spectrum Analyzer'. On the right is a blue box labeled 'EUT'. A line connects the Base Station to the Spectrum Analyzer. Another line connects the Spectrum Analyzer to a small black box (power divider), which then connects to the 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 2 (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	18607	1850.7	QPSK	-19.80	-13
			16QAM	-20.34	-13
1.4	18900	1909.3	QPSK	-20.62	-13
			16QAM	-20.48	-13
3	18615	1851.5	QPSK	-16.97	-13
			16QAM	-17.57	-13
3	19185	1908.5	QPSK	-20.00	-13
			16QAM	-20.21	-13
5	18625	1852.5	QPSK	-16.61	-13
			16QAM	-17.43	-13
5	19175	1907.5	QPSK	-18.36	-13
			16QAM	-21.65	-13
10	18650	1855	QPSK	-18.91	-13
			16QAM	-21.23	-13
10	19150	1905	QPSK	-19.09	-13
			16QAM	-21.67	-13
15	18675	1857.5	QPSK	-20.30	-13
			16QAM	-20.94	-13
15	19125	1902.5	QPSK	-21.41	-13
			16QAM	-23.55	-13
20	18700	1860	QPSK	-24.31	-13
			16QAM	-23.50	-13
20	19100	1900	QPSK	-27.81	-13
			16QAM	-22.91	-13

LTE Band 4 (Part 27) result

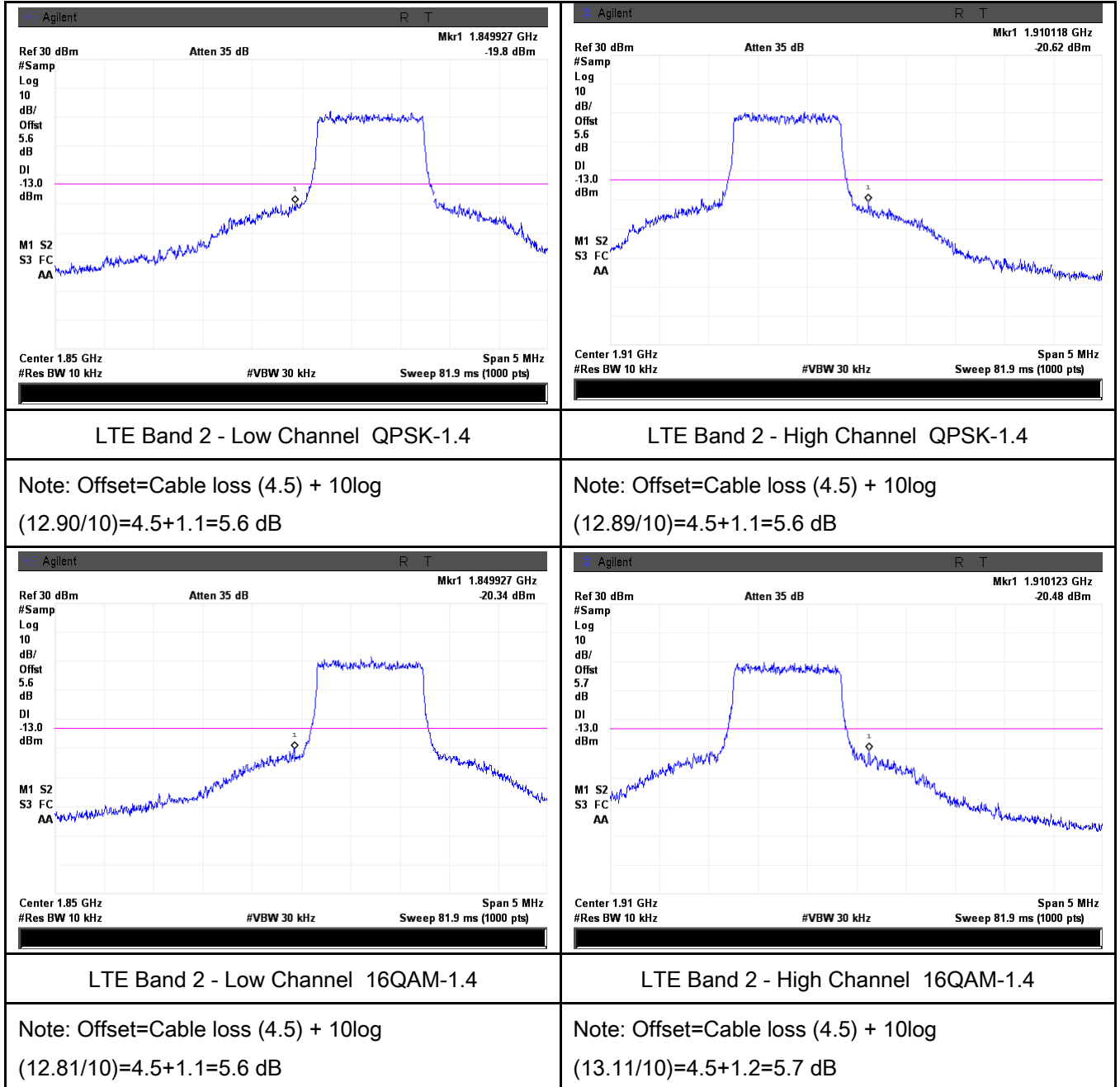
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	19957	1710.7	QPSK	-19.13	-13
			16QAM	-21.61	-13
1.4	20393	1754.3	QPSK	-21.24	-13
			16QAM	-21.96	-13
3	19965	1711.5	QPSK	-21.37	-13
			16QAM	-21.53	-13
3	20385	1753.5	QPSK	-21.18	-13
			16QAM	-22.93	-13
5	19975	1712.5	QPSK	-22.81	-13
			16QAM	-23.65	-13
5	20375	1752.5	QPSK	-17.99	-13
			16QAM	-21.92	-13
10	20000	1715	QPSK	-15.20	-13
			16QAM	-18.80	-13
10	20350	1750	QPSK	-18.97	-13
			16QAM	-22.29	-13
15	20025	1717.5	QPSK	-19.63	-13
			16QAM	-24.12	-13
15	20325	1747.5	QPSK	-20.71	-13
			16QAM	-21.27	-13
20	20050	1720	QPSK	-20.38	-13
			16QAM	-24.36	-13
20	20300	1745	QPSK	-21.56	-13
			16QAM	-23.00	-13

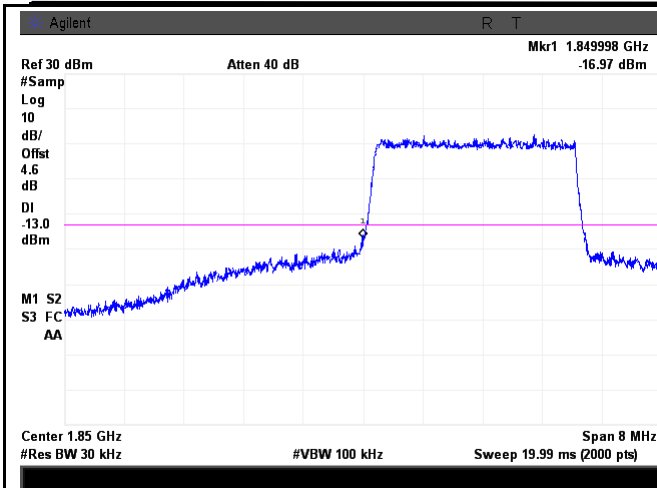
LTE Band 5 (Part 22H) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	20407	824.7	QPSK	-28.81	-13
			16QAM	-28.93	-13
1.4	20643	848.3	QPSK	-28.26	-13
			16QAM	-26.99	-13
3	20415	825.5	QPSK	-18.09	-13
			16QAM	-18.54	-13
3	20635	847.5	QPSK	-21.23	-13
			16QAM	-20.57	-13
5	20425	826.5	QPSK	-17.50	-13
			16QAM	-16.59	-13
5	20625	846.5	QPSK	-16.63	-13
			16QAM	-17.37	-13
10	20450	829	QPSK	-19.51	-13
			16QAM	-20.98	-13
10	20800	844	QPSK	-17.45	-13
			16QAM	-18.40	-13

Test Plots

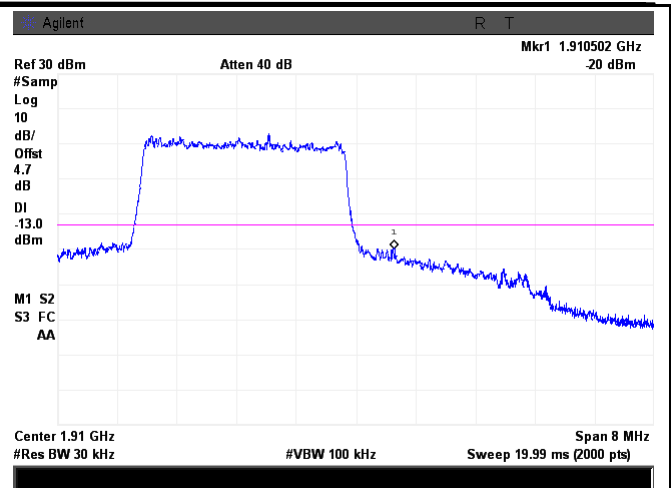
LTE Band 2 (Part 24E)





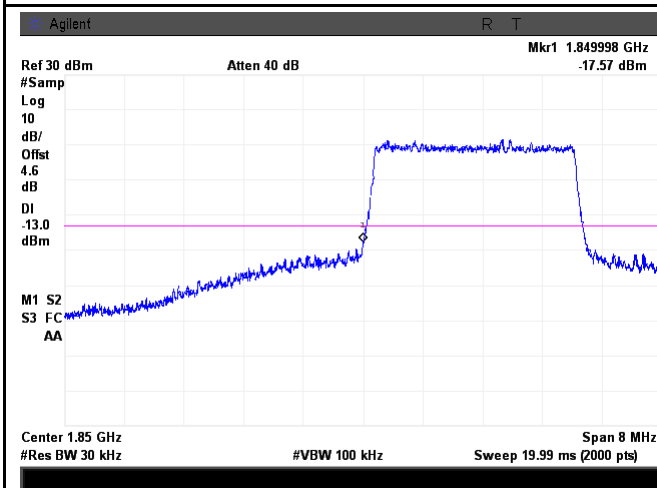
LTE Band 2 - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(30.84/30)=4.5+0.1=4.6 dB



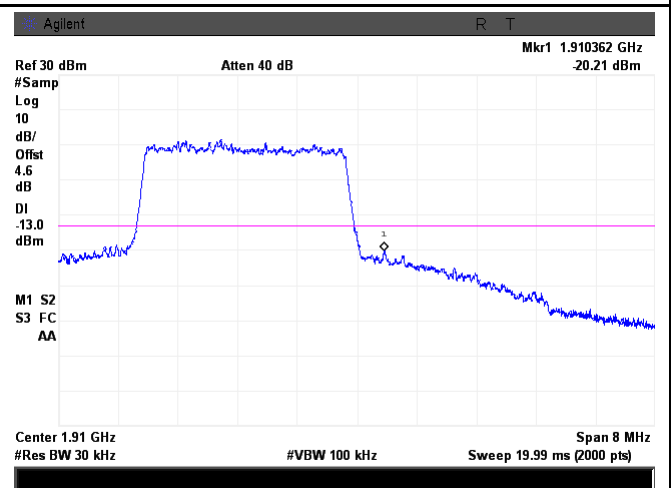
LTE Band 2 - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(31.09/30)=4.5+0.2=4.7 dB



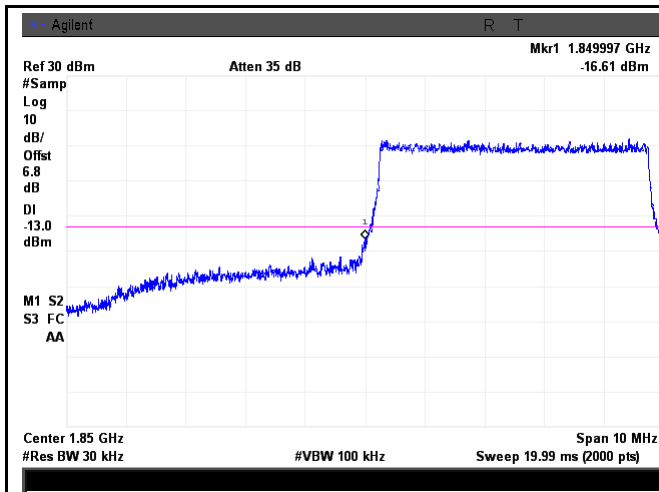
LTE Band 2 - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.72/30)=4.5+0.1=4.6 dB



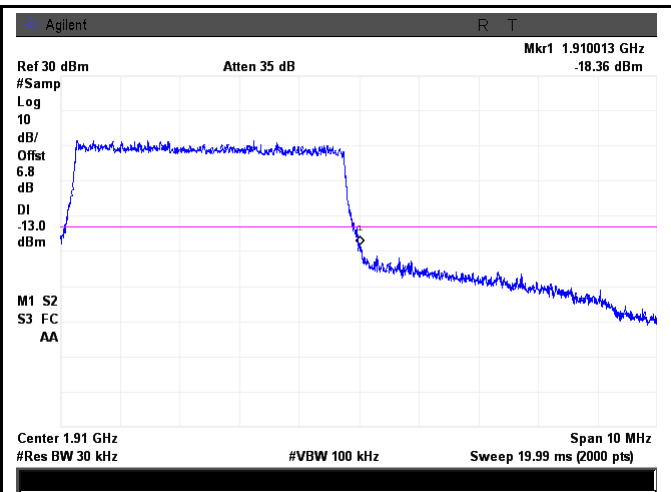
LTE Band 2 - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.81/30)=4.5+0.1=4.6 dB



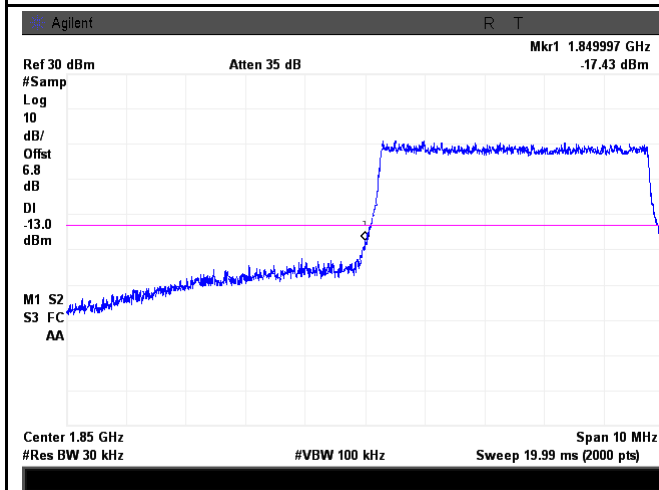
LTE Band 2 - Low Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.81/30)=4.5+2.3=6.8 dB



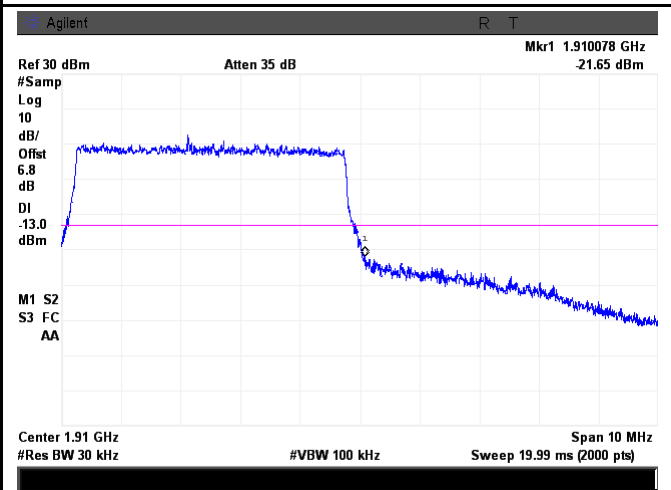
LTE Band 2 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.57/30)=4.5+2.3=6.8 dB



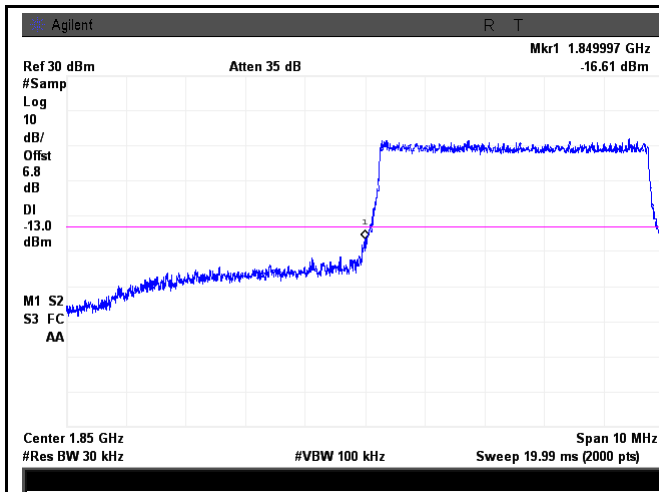
LTE Band 2 - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.93/30)=4.5+2.3=6.8 dB

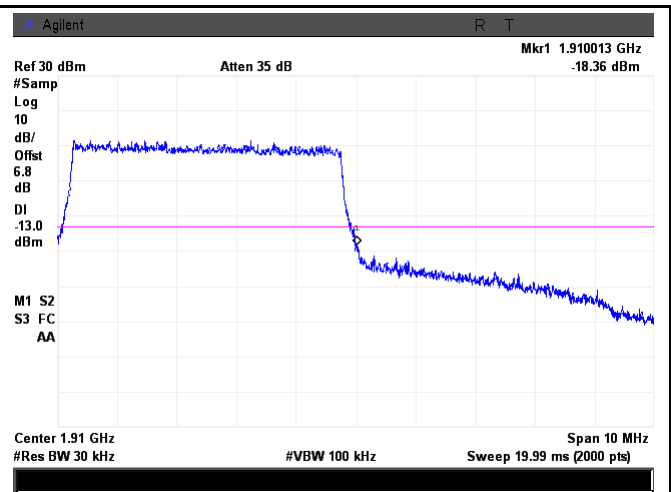


LTE Band 2 - High Channel 16QAM-5

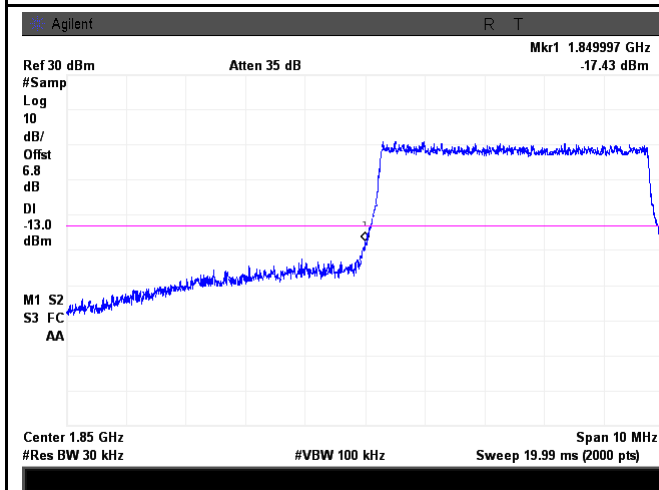
Note: Offset=Cable loss (4.5) + 10log
(50.64/30)=4.5+2.3=6.8 dB



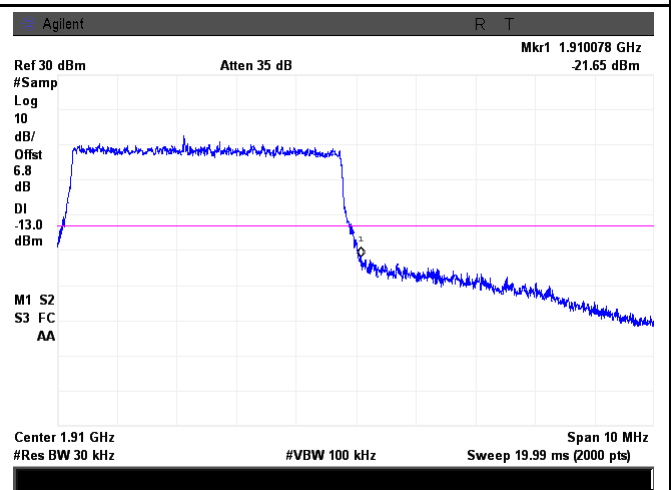
LTE Band 2 - Low Channel QPSK-10



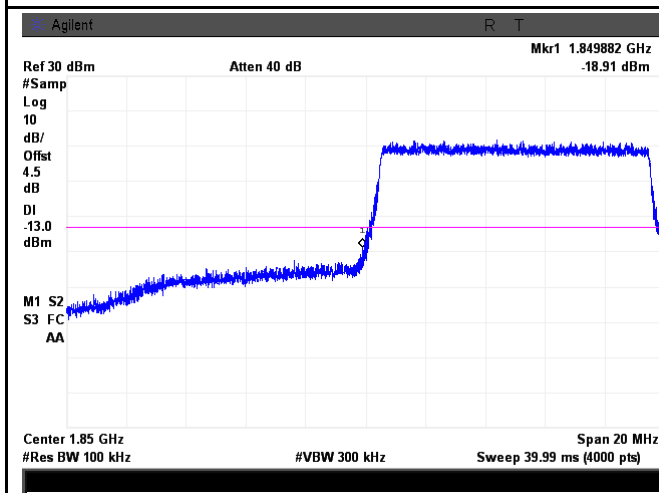
LTE Band 2 - High Channel QPSK-10



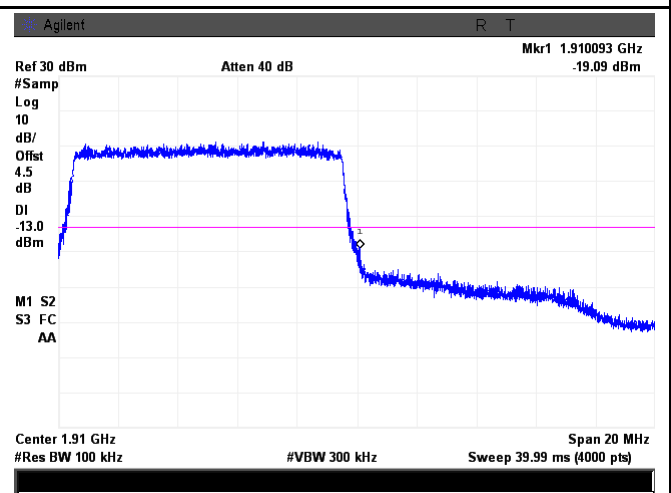
LTE Band 2 - Low Channel 16QAM-10



LTE Band 2 - High Channel 16QAM-10



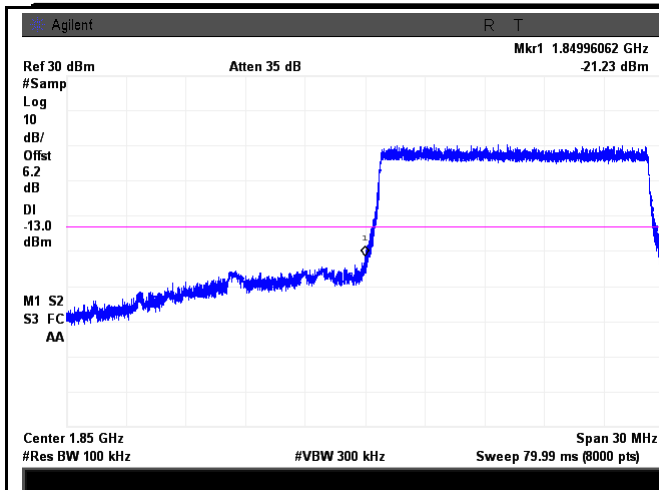
LTE Band 2 - Low Channel QPSK-15



LTE Band 2 - High Channel QPSK-15

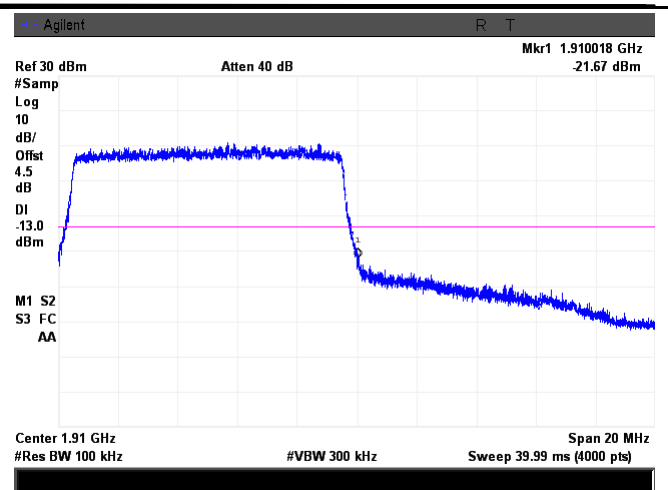
Note: Offset=Cable loss (4.5) + 10log
(150.04/100)=4.0+0.5=4.5dB

Note: Offset=Cable loss (4.5) + 10log
(147.54/100)=4.0+0.5=4.5 dB



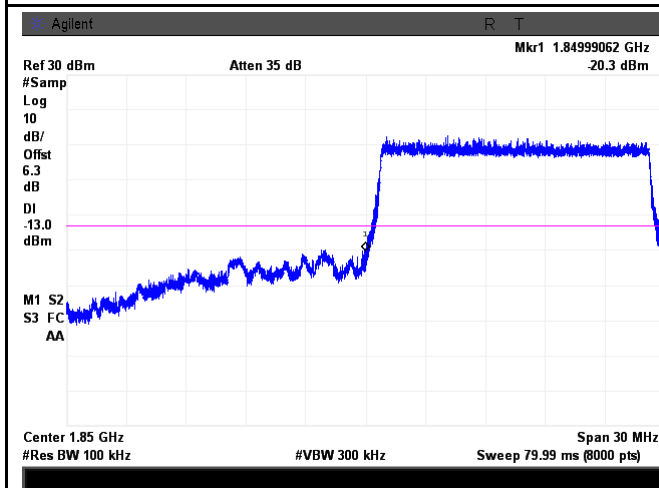
LTE Band 2 - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(148.24/100)=4.5+1.7=6.2 dB



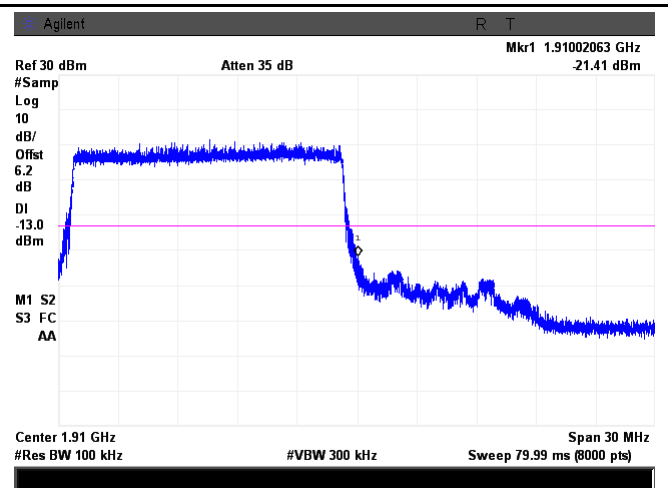
LTE Band 2 - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(146.51/100)=4.0+0.4=4.5 dB



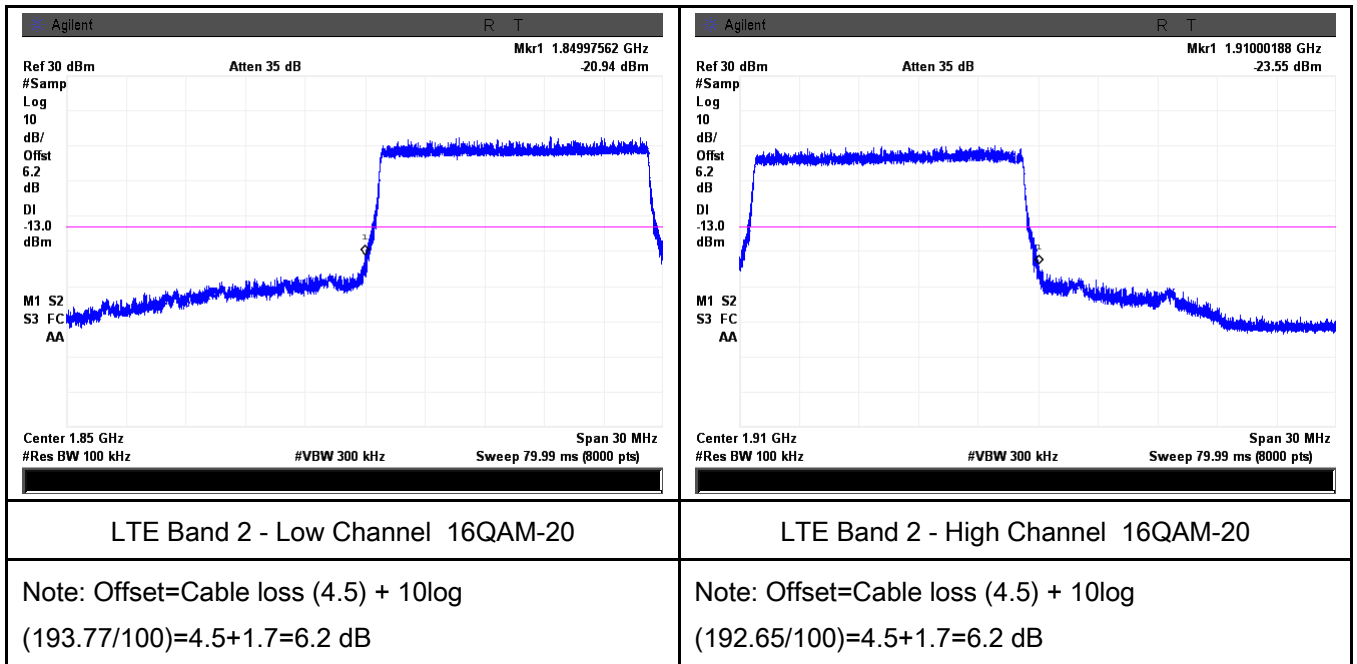
LTE Band 2 - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(194.09/100)=4.5+1.8=6.3 dB



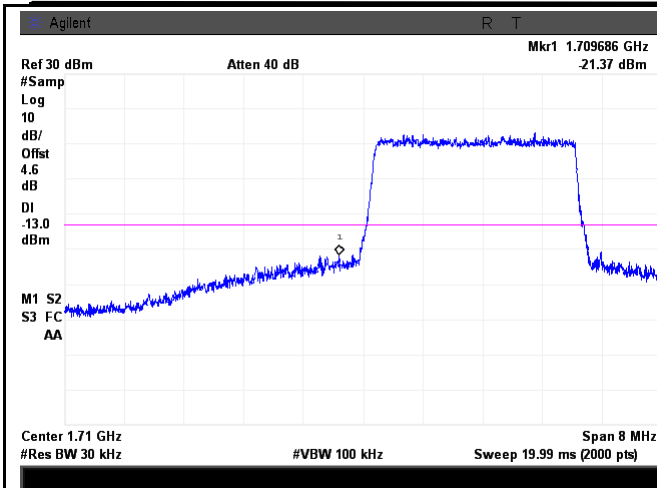
LTE Band 2 - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(192.07/100)=4.5+1.7=6.2 dB



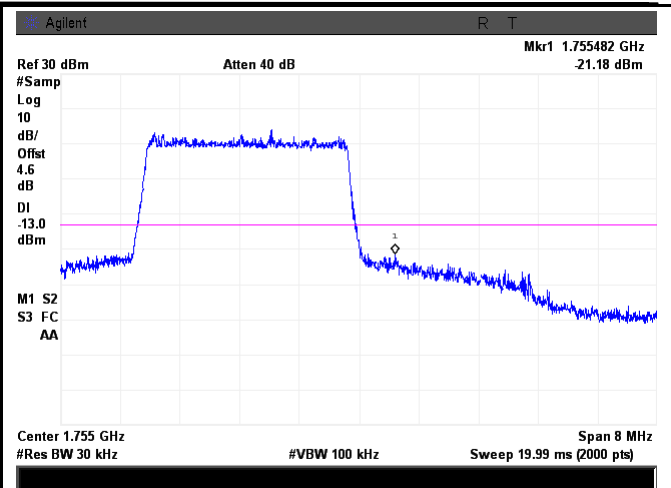
LTE Band 4 (Part 27)

<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 1.709997 GHz -19.13 dBm</p> <p>#Samp Log 10 dB/ Offset 5.6 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 1.71 GHz Span 5 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 81.9 ms (1000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 1.755073 GHz -21.24 dBm</p> <p>#Samp Log 10 dB/ Offset 5.6 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 1.755 GHz Span 5 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 81.9 ms (1000 pts)</p>
LTE Band 4 - Low Channel QPSK-1.4	LTE Band 4 - High Channel QPSK-1.4
<p>Note: Offset=Cable loss (4.5) + 10log (12.84/10)=4.5+1.1=5.6 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (12.93/10)=4.5+1.1=5.6 dB</p>
<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 1.709917 GHz -21.61 dBm</p> <p>#Samp Log 10 dB/ Offset 5.5 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 1.71 GHz Span 5 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 81.9 ms (1000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 1.755003 GHz -21.96 dBm</p> <p>#Samp Log 10 dB/ Offset 5.6 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 1.755 GHz Span 5 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 81.9 ms (1000 pts)</p>
LTE Band 4 - Low Channel 16QAM-1.4	LTE Band 4 - High Channel 16QAM-1.4
<p>Note: Offset=Cable loss (4.5) + 10log (12.58/10)=4.5+1.0=5.5 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (12.78/10)=4.5+1.1=5.6 dB</p>



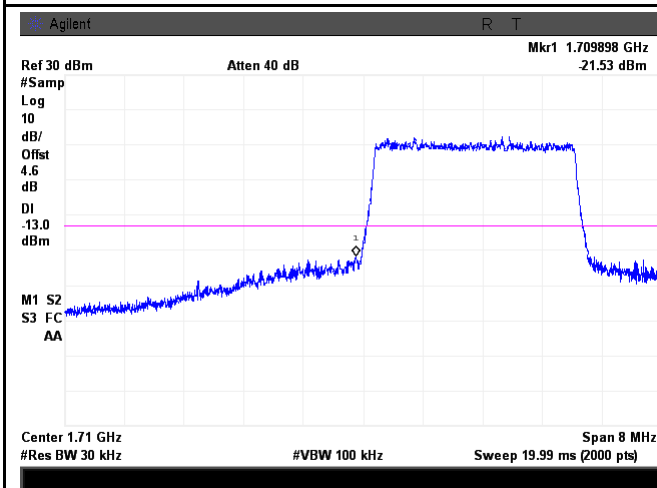
LTE Band 4 - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(30.87/30)=4.5+0.1=4.6 dB



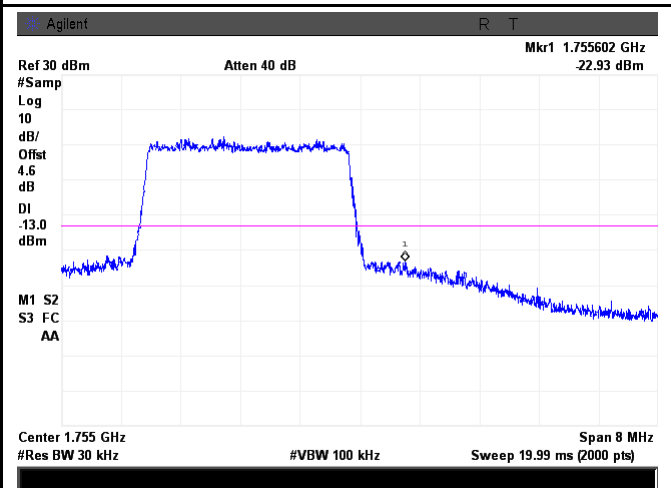
LTE Band 4 - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(30.74/30)=4.5+0.1=4.6 dB



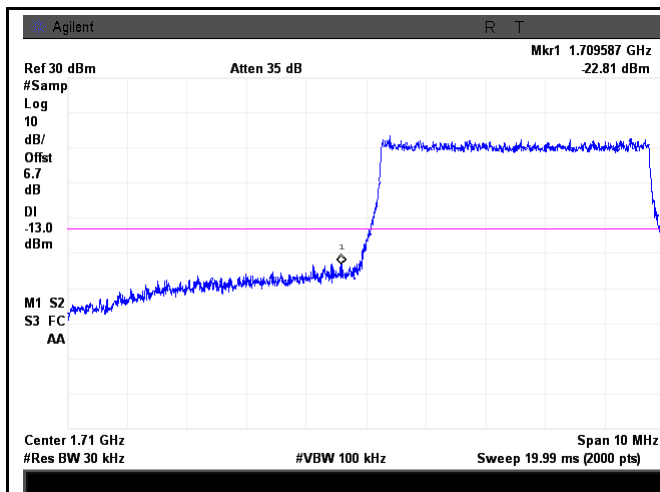
LTE Band 4 - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.96/30)=4.5+0.1=4.6 dB



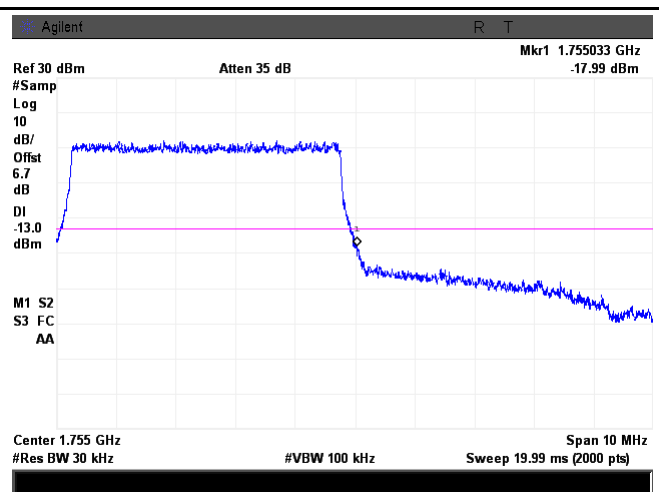
LTE Band 4 - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.83/30)=4.5+0.1=4.6 dB



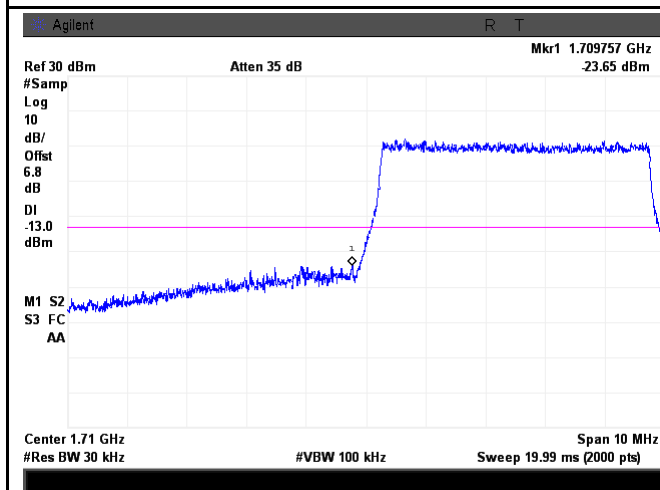
LTE Band 4 - Low Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.35/30)=4.5+2.2=6.7 dB



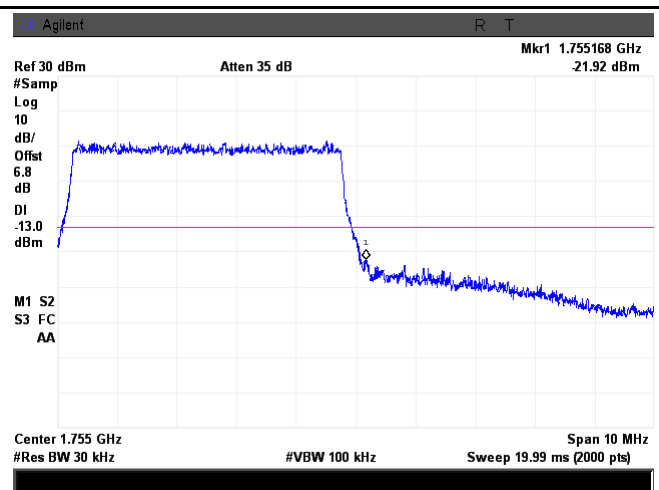
LTE Band 4 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.11/30)=4.5+2.2=6.7 dB



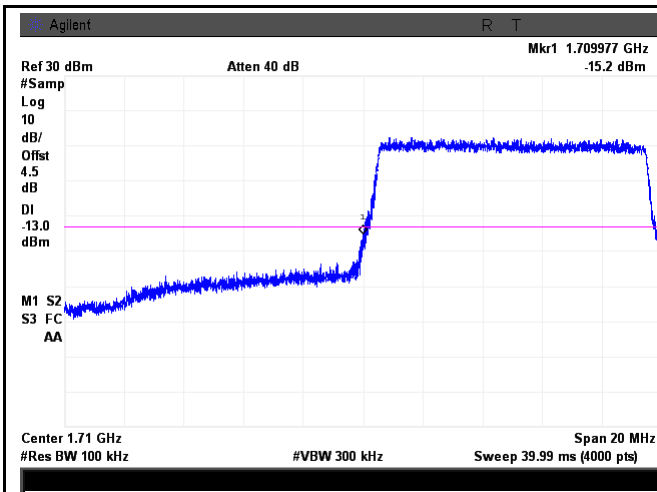
LTE Band 4 - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.83/30)=4.5+2.3=6.8 dB

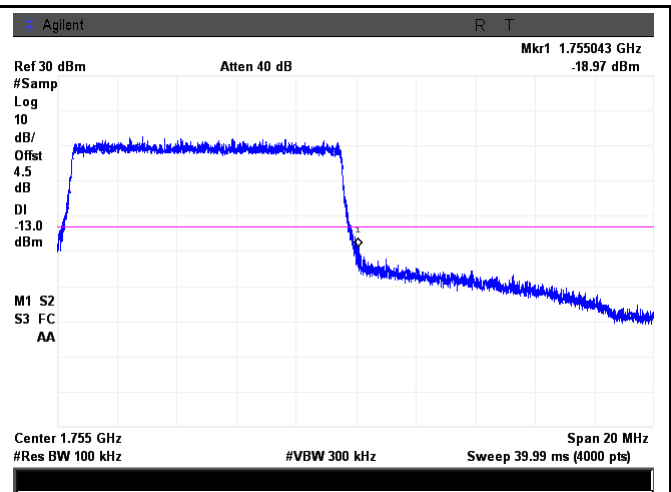


LTE Band 4 - High Channel 16QAM-5

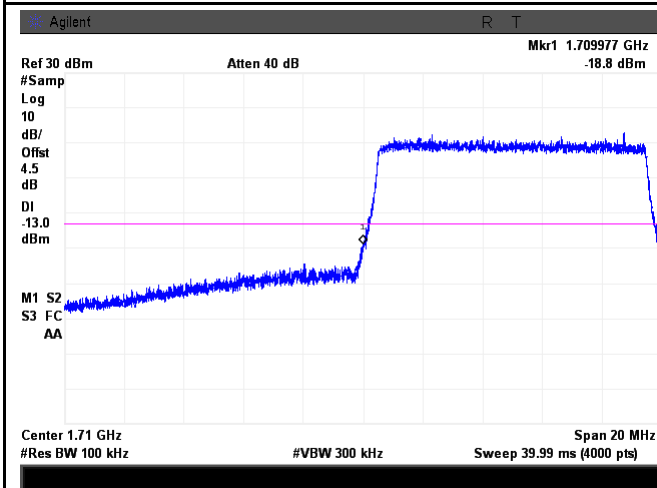
Note: Offset=Cable loss (4.5) + 10log
(50.84/30)=4.5+2.3=6.8 dB



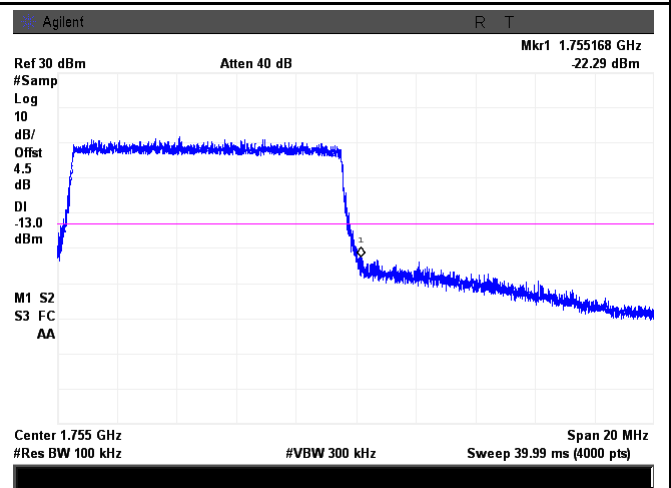
LTE Band 4 - Low Channel QPSK-10



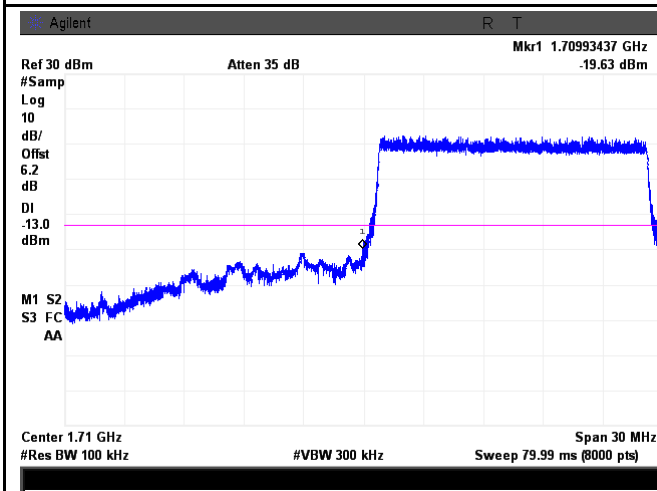
LTE Band 4 - High Channel QPSK-10



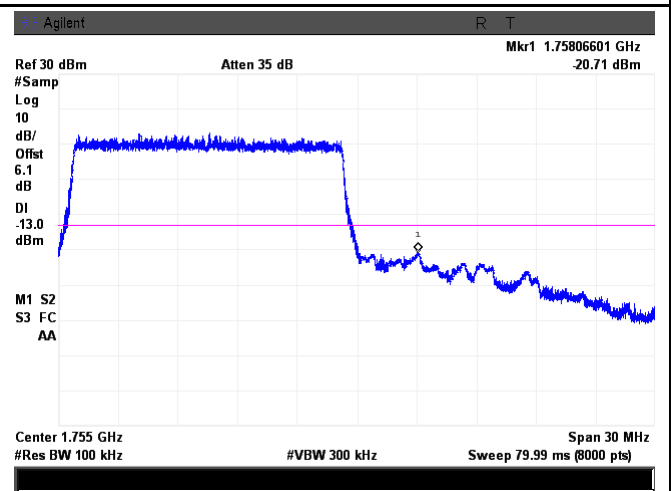
LTE Band 4 - Low Channel 16QAM-10



LTE Band 4 - High Channel 16QAM-10



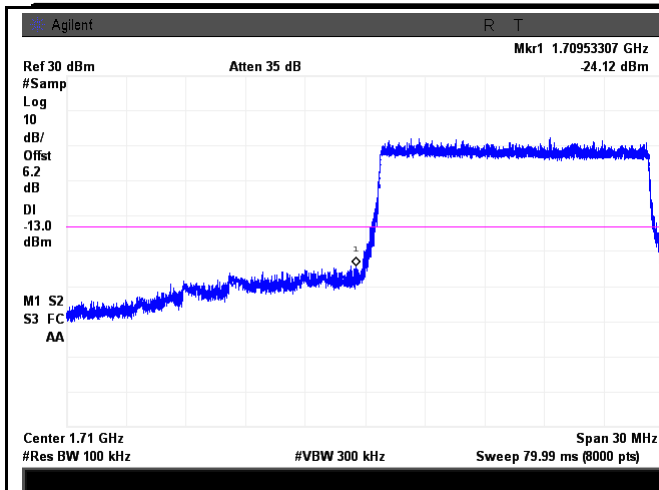
LTE Band 4 - Low Channel QPSK-15



LTE Band 4 - High Channel QPSK-15

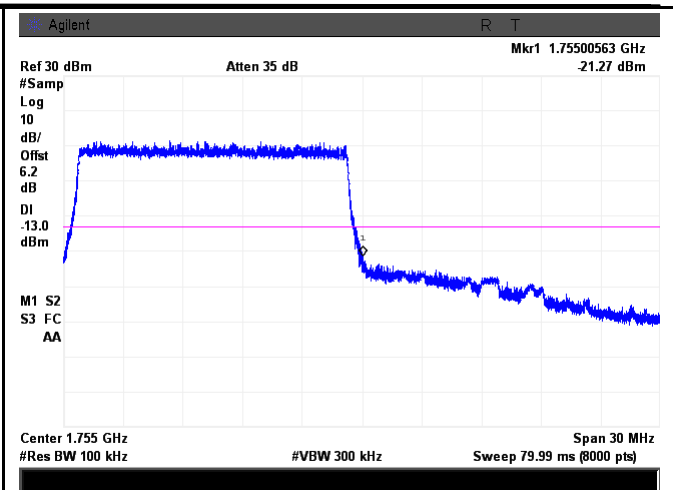
Note: Offset=Cable loss (4.5) + 10log
(147.33/100)=4.5+1.7=6.2 dB

Note: Offset=Cable loss (4.5) + 10log
(145.81/100)=4.5+1.6=6.1 dB



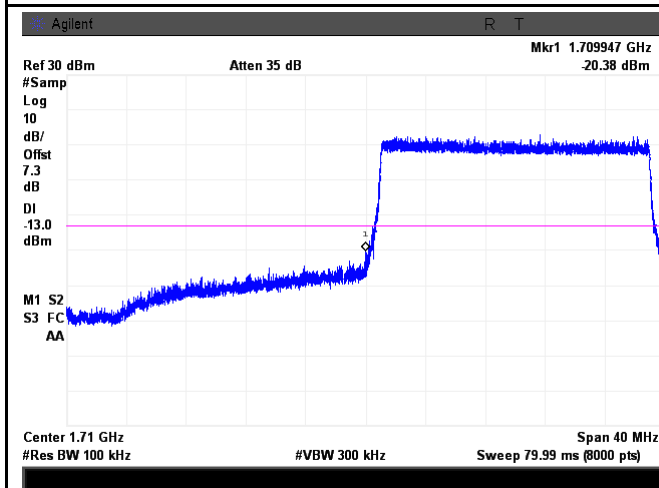
LTE Band 4 - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(146.44/100)=4.5+1.7=6.2 dB



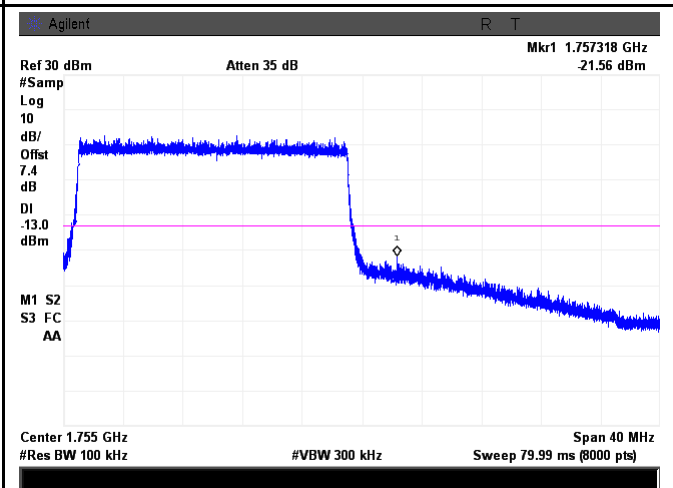
LTE Band 4 - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(146.63/100)=4.5+1.7=6.2 dB



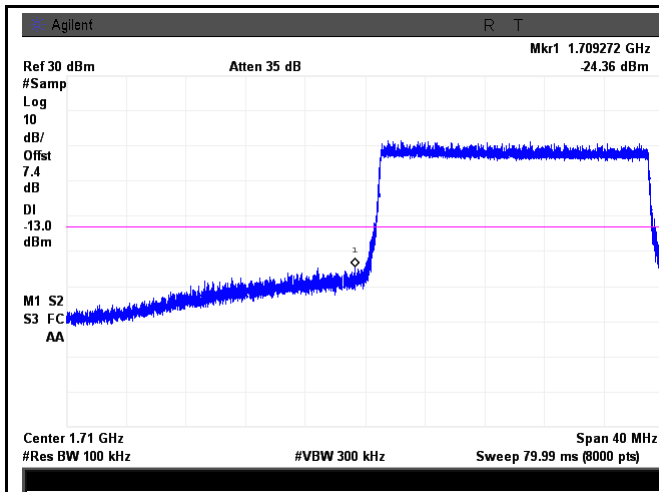
LTE Band 4 - Low Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(192.65/100)=4.5+2.8=7.3 dB



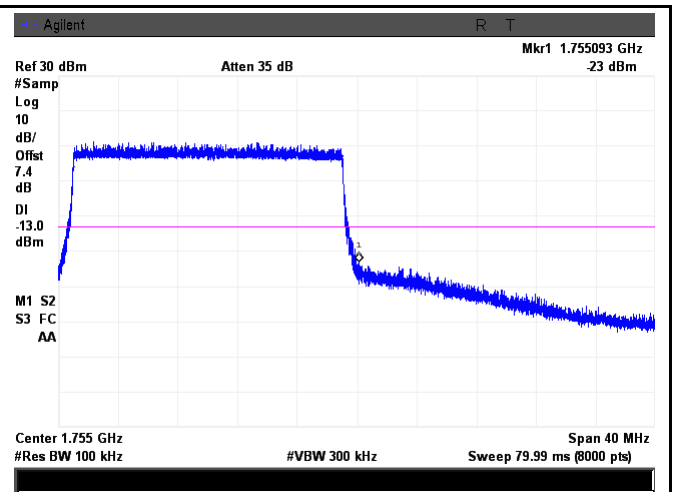
LTE Band 4 - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(193.95/100)=4.5+2.9=7.4 dB



LTE Band 4 - Low Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(193.03/100)=4.5+2.9=7.4 dB

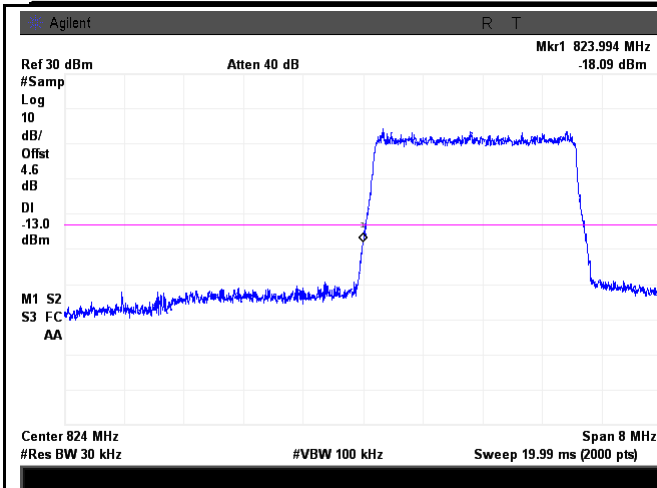


LTE Band 4 - High Channel 16QAM-20

Note: Offset=Cable loss (4.5) + 10log
(194.10/100)=4.5+2.9=7.4 dB

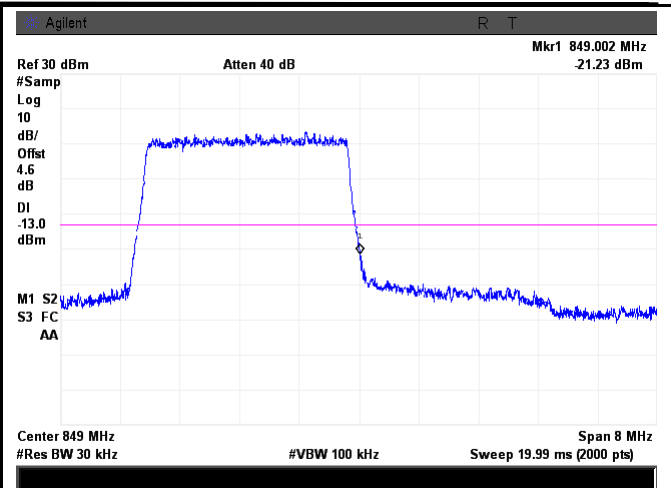
LTE Band 5 (Part 22H)

<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 823.957 MHz -28.81 dBm</p> <p>#Samp Log 10 dB/Offset 5.5 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 824 MHz #Res BW 10 kHz #VBW 30 kHz Span 5 MHz Sweep 81.9 ms (1000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 849.238 MHz -28.26 dBm</p> <p>#Samp Log 10 dB/Offset 5.5 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 849 MHz #Res BW 10 kHz #VBW 30 kHz Span 5 MHz Sweep 81.9 ms (1000 pts)</p>
LTE Band 5 - Low Channel QPSK-1.4	LTE Band 5 - High Channel QPSK-1.4
<p>Note: Offset=Cable loss (4.5) + 10log (12.73/10)=4.5+1.0=5.5 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (12.71/10)=4.5+1.0=5.5 dB</p>
<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 823.832 MHz -28.93 dBm</p> <p>#Samp Log 10 dB/Offset 5.6 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 824 MHz #Res BW 10 kHz #VBW 30 kHz Span 5 MHz Sweep 81.9 ms (1000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 849.113 MHz -26.99 dBm</p> <p>#Samp Log 10 dB/Offset 5.6 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 849 MHz #Res BW 10 kHz #VBW 30 kHz Span 5 MHz Sweep 81.9 ms (1000 pts)</p>
LTE Band 5 - Low Channel 16QAM-1.4	LTE Band 5 - High Channel 16QAM-1.4
<p>Note: Offset=Cable loss (4.5) + 10log (12.78/10)=4.5+1.1=5.6 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (12.91/10)=4.5+1.1=5.6 dB</p>



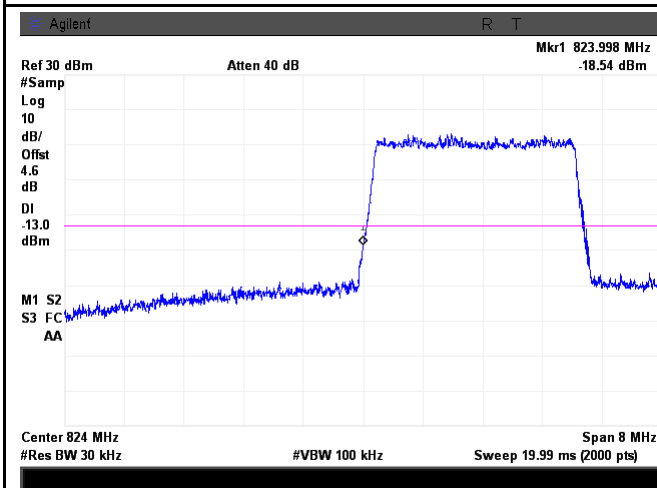
LTE Band 5 - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(30.82/30)=4.5+0.1=4.6 dB



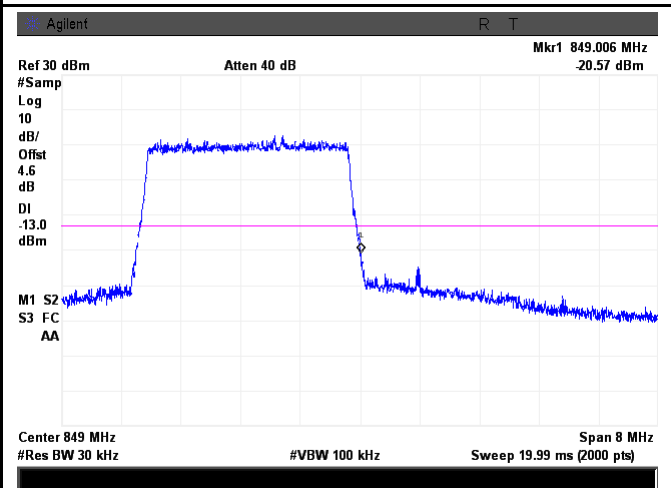
LTE Band 5 - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log
(30.50/30)=4.5+0.1=4.6 dB



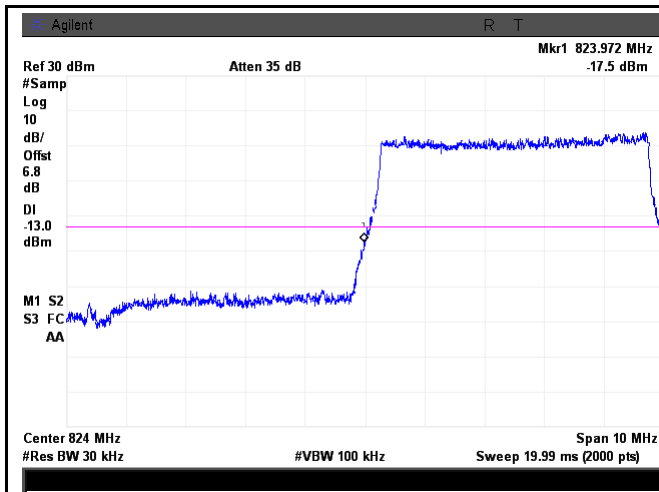
LTE Band 5 - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.70/30)=4.5+0.1=4.6 dB



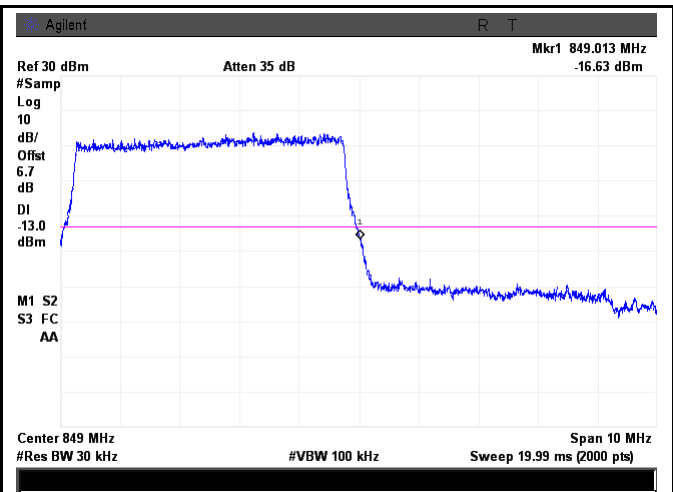
LTE Band 5 - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log
(30.75/30)=4.5+0.1=4.6 dB



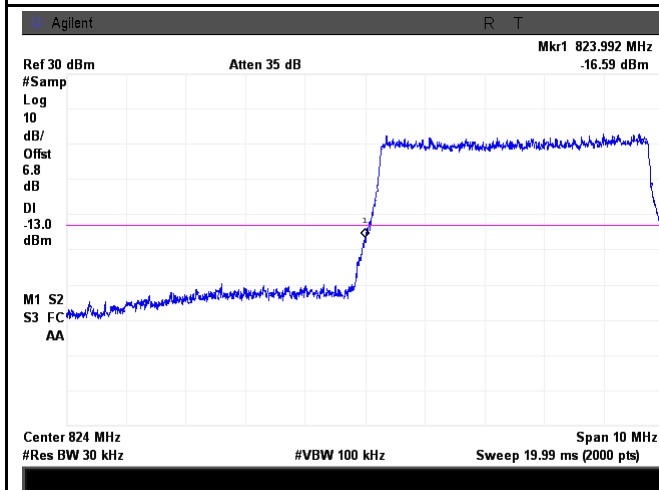
LTE Band 5 - Low Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(50.44/30)=4.5+2.3=6.8 dB



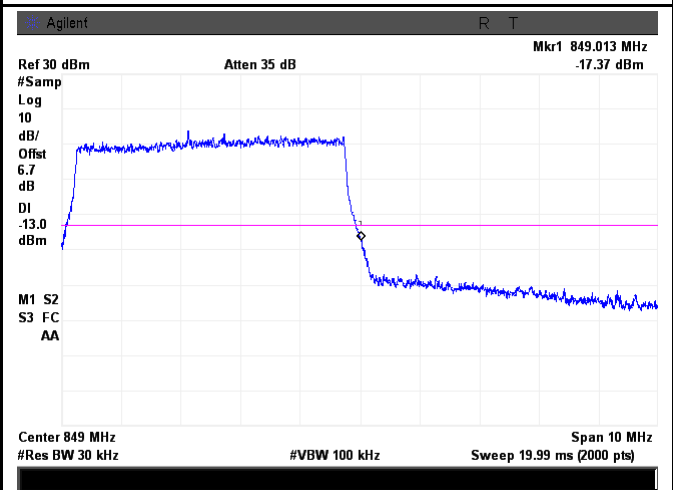
LTE Band 5 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log
(49.93/30)=4.5+2.2=6.7 dB



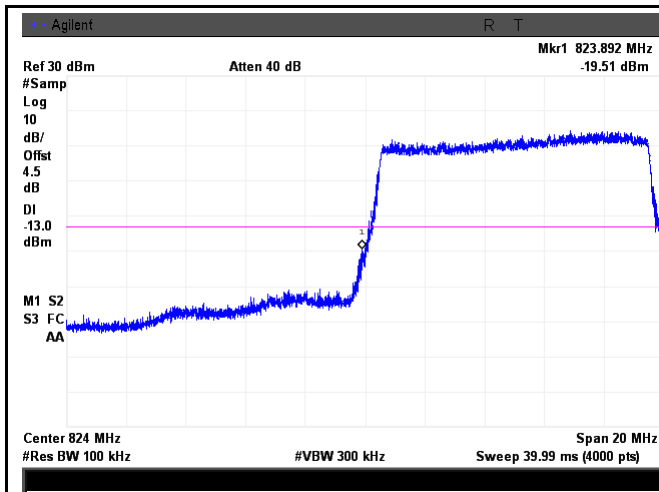
LTE Band 5 - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log
(50.51/30)=4.5+2.3=6.8 dB

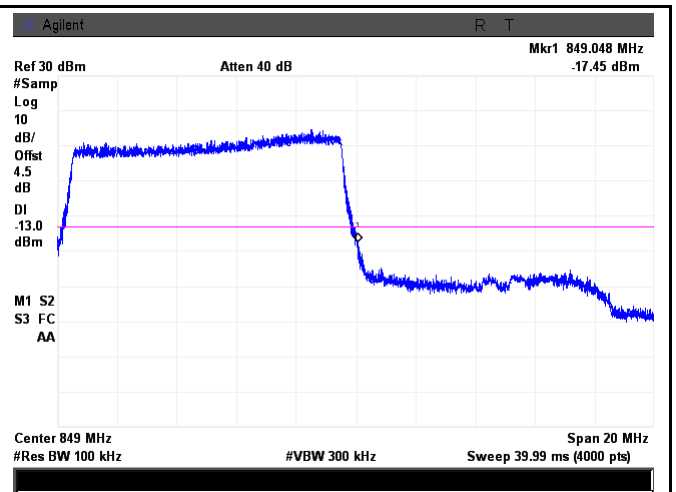


LTE Band 5 - High Channel 16QAM-5

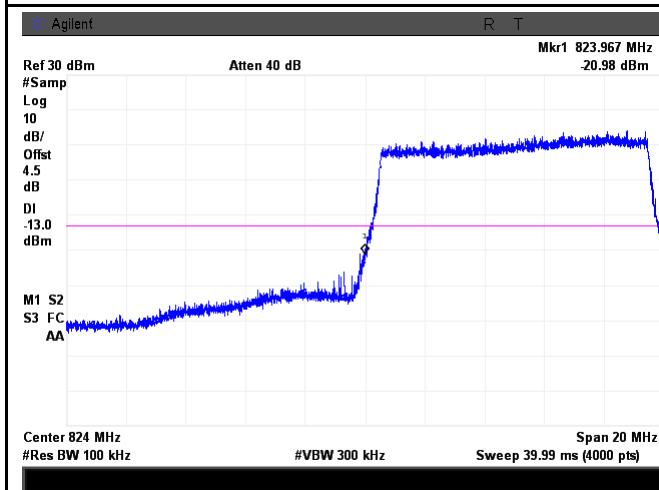
Note: Offset=Cable loss (4.5) + 10log
(50.32/30)=4.5+2.2=6.7 dB



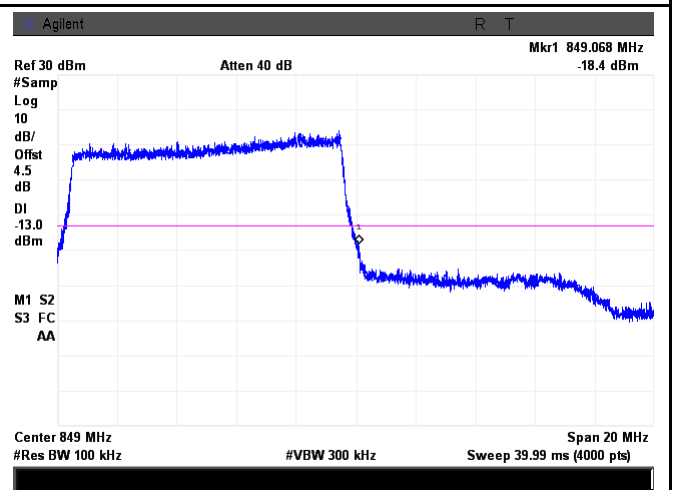
LTE Band 5 - Low Channel QPSK-10



LTE Band 5 - High Channel QPSK-10



LTE Band 5 - Low Channel 16QAM-10

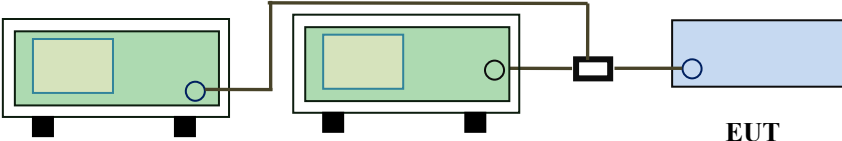


LTE Band 5 - High Channel 16QAM-10

6.8 Band Edge 27.53(m)

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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

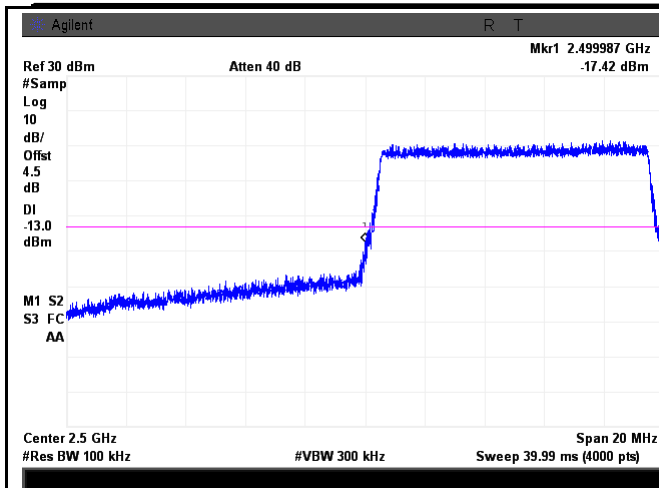
Test Plot ☒ Yes (See below) ☐ N/A

LTE Band 7 (Part 27) result

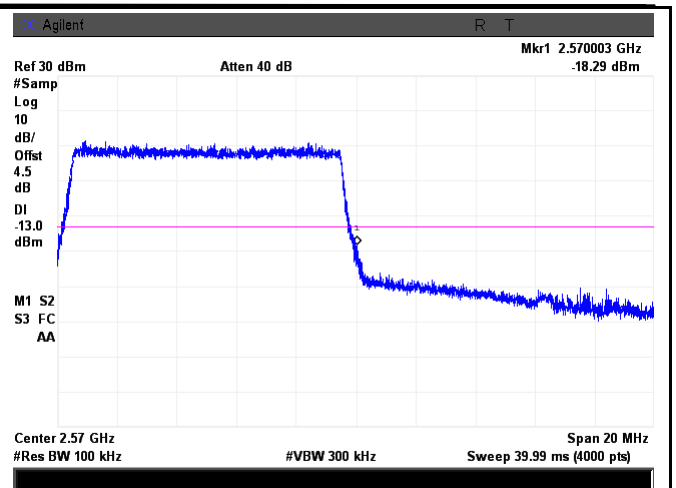
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
5	20775	2502.5	QPSK	-18.87	-13
			16QAM	-19.07	-13
5	21425	2567.5	QPSK	-19.70	-13
			16QAM	-18.62	-13
10	20800	2505	QPSK	-17.42	-13
			16QAM	-20.61	-13
10	21400	2562.5	QPSK	-18.29	-13
			16QAM	-21.26	-13
15	20825	2507.5	QPSK	-21.70	-13
			16QAM	-23.38	-13
15	21400	2562.5	QPSK	-20.85	-13
			16QAM	-24.82	-13
20	20850	2510	QPSK	-22.52	-13
			16QAM	-22.93	-13
20	21350	2560	QPSK	-26.39	-13
			16QAM	-25.31	-13

LTE Band 7 (Part 27)

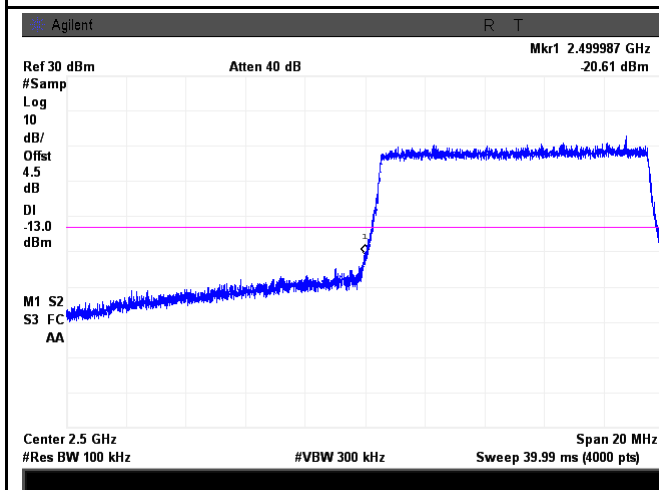
<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 2.499977 GHz -18.87 dBm</p> <p>#Samp Log 10 dB/ Offst 6.8 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.5 GHz Span 10 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 19.99 ms (2000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 2.570008 GHz -19.7 dBm</p> <p>#Samp Log 10 dB/ Offst 6.7 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.57 GHz Span 10 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 19.99 ms (2000 pts)</p>
LTE Band 7 - Low Channel QPSK-5	LTE Band 7 - High Channel QPSK-5
<p>Note: Offset=Cable loss (4.5) + 10log (50.70/30)=4.5+2.3=6.8 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (50.32/30)=4.5+2.2=6.7 dB</p>
<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 2.499977 GHz -19.07 dBm</p> <p>#Samp Log 10 dB/ Offst 6.8 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.5 GHz Span 10 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 19.99 ms (2000 pts)</p>	<p>Agilent R T</p> <p>Ref 30 dBm Atten 35 dB Mkr1 2.570013 GHz -18.62 dBm</p> <p>#Samp Log 10 dB/ Offst 6.8 dB DI -13.0 dBm</p> <p>M1 S2 S3 FC AA</p> <p>Center 2.57 GHz Span 10 MHz #Res BW 30 kHz #VBW 100 kHz Sweep 19.99 ms (2000 pts)</p>
LTE Band 7 - Low Channel 16QAM-5	LTE Band 7 - High Channel 16QAM-5
<p>Note: Offset=Cable loss (4.5) + 10log (50.69/30)=4.5+2.3=6.8 dB</p>	<p>Note: Offset=Cable loss (4.5) + 10log (51.28/30)=4.5+2.3=6.8 dB</p>



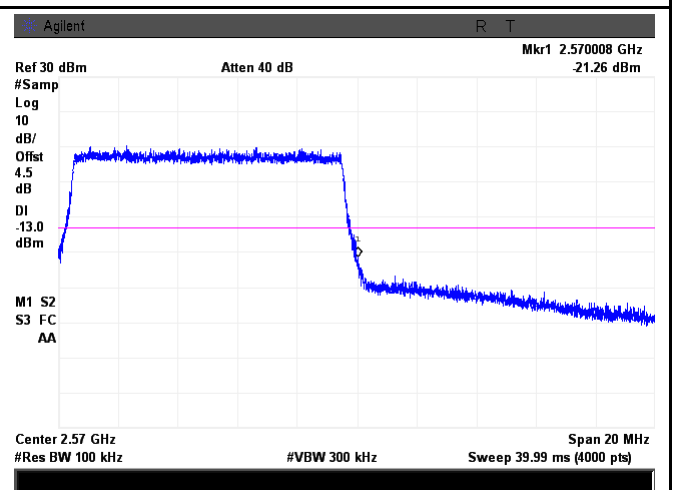
LTE Band 7 - Low Channel QPSK-10



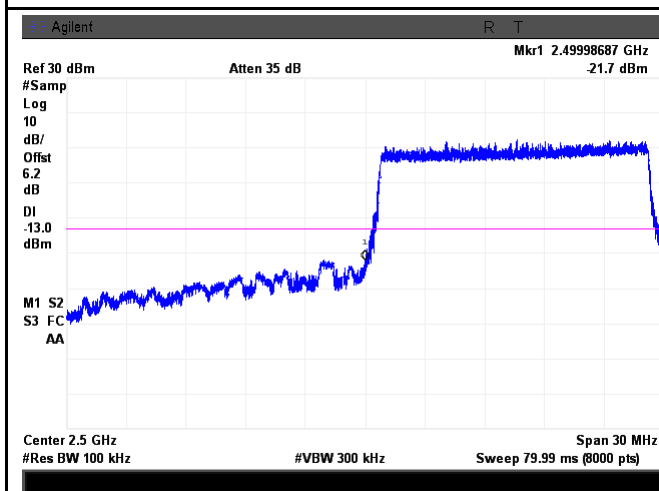
LTE Band 7 - High Channel QPSK-10



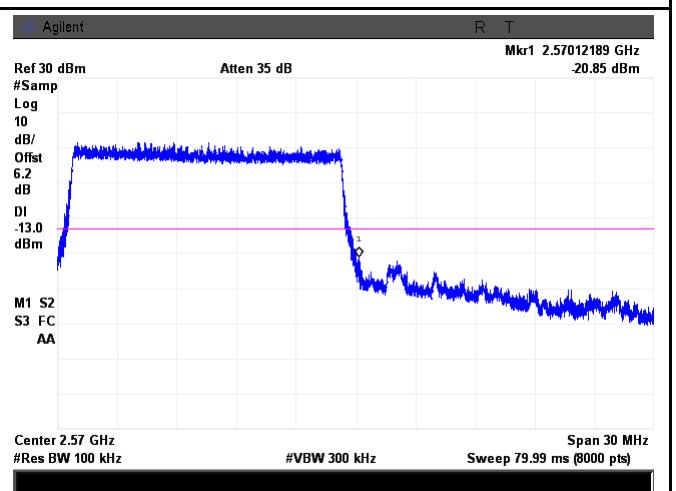
LTE Band 7 - Low Channel 16QAM-10



LTE Band 7 - High Channel 16QAM-10



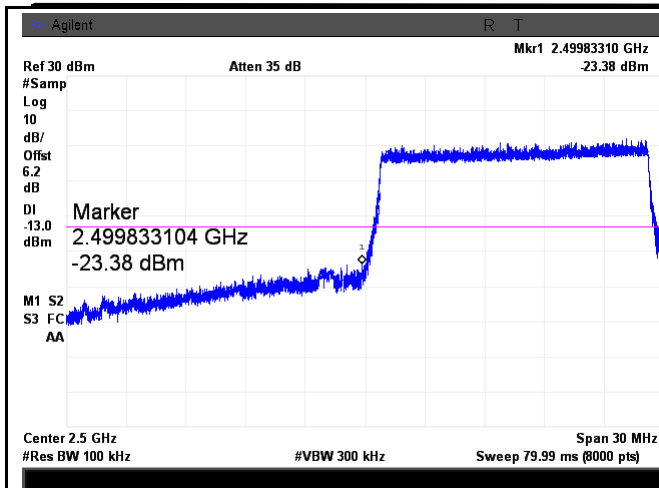
LTE Band 7 - Low Channel QPSK-15



LTE Band 7 - High Channel QPSK-15

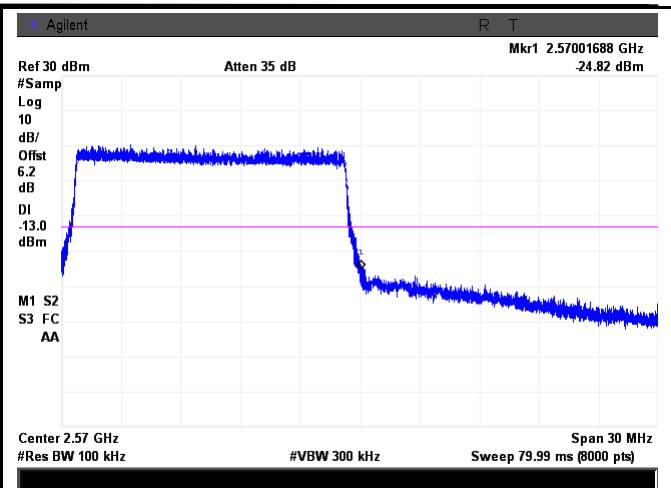
Note: Offset=Cable loss (4.5) + 10log
(148.36/100)=4.5+1.7=6.2 dB

Note: Offset=Cable loss (4.5) + 10log
(147.98/100)=4.5+1.7=6.2 dB



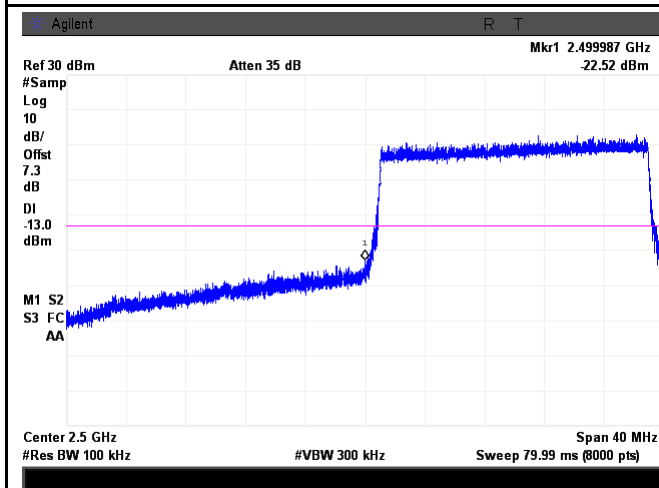
LTE Band 7 - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(148.42/100)=4.5+1.7=6.2 dB



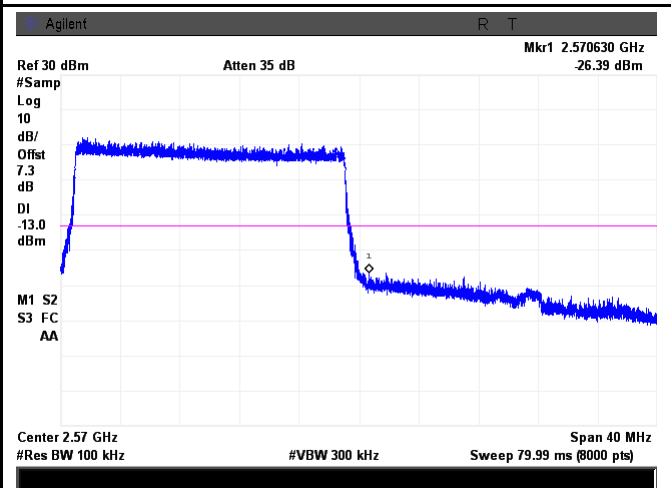
LTE Band 7 - High Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log
(149.46/100)=4.5+1.7=6.2 dB



LTE Band 7 - Low Channel QPSK-20

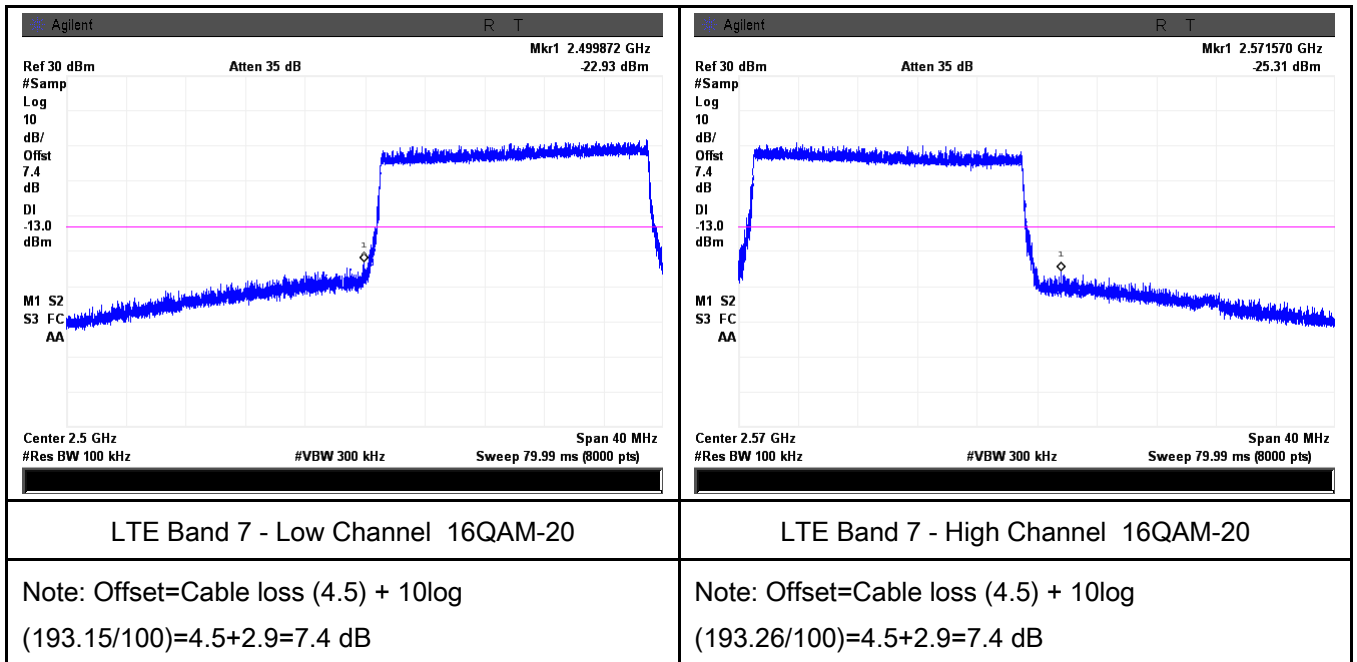
Note: Offset=Cable loss (4.5) + 10log
(191.33/100)=4.5+2.8=7.3 dB



LTE Band 7 - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log
(191.32/100)=4.5+2.8=7.3 dB

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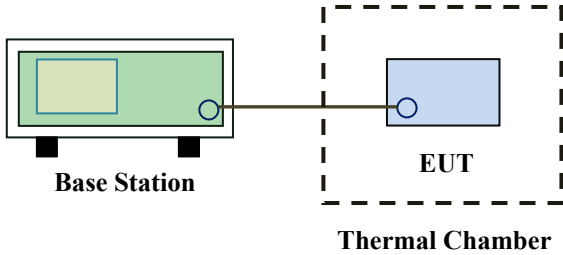


6.9 Frequency Stability

Temperature	23°C
Relative Humidity	56%
Atmospheric Pressure	1014mbar
Test date :	December 14, 2015
Tested By :	Winnie Zhang

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 style="text-align: center;">Base Station EUT 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 2 (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	-6	0.0032	2.5
0		-7	0.0037	2.5
10		-4	0.0021	2.5
20		-8	0.0043	2.5
30		-5	0.0027	2.5
40		-9	0.0048	2.5
50		-11	0.0059	2.5
55		-10	0.0053	2.5
25	4.2	-10	0.0053	2.5
	3.5	-12	0.0064	2.5

LTE Band 4 (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	-10	0.0058	2.5
0		-11	0.0063	2.5
10		-14	0.0081	2.5
20		-16	0.0092	2.5
30		-13	0.0075	2.5
40		-12	0.0069	2.5
50		-15	0.0087	2.5
55		-12	0.0069	2.5
25	4.2	-13	0.0075	2.5
	3.5	-15	0.0087	2.5

LTE Band 5 (Part 22H) result

Middle Channel, $f_0 = 836.5$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	9	0.0108	2.5
0		6	0.0072	2.5
10		7	0.0084	2.5
20		5	0.0060	2.5
30		10	0.0120	2.5
40		8	0.0096	2.5
50		6	0.0072	2.5
55		11	0.0132	2.5
25	4.2	12	0.0143	2.5
	3.5	14	0.0167	2.5

LTE Band 7 (Part 27) result

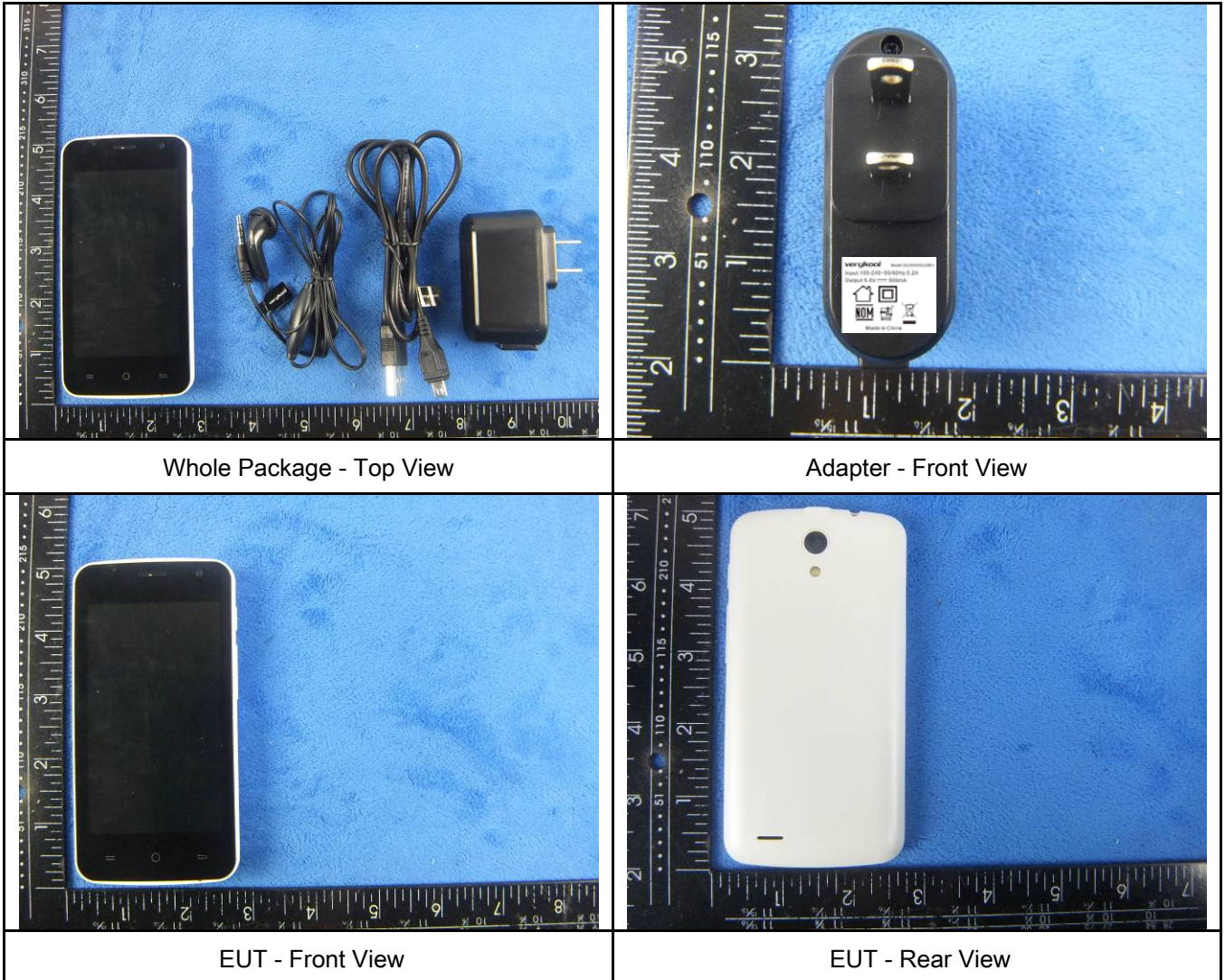
Middle Channel, $f_0 = 2535$ MHz				
Temperature (°C)	Power Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-10	0.0039	2.5
0		-8	0.0032	2.5
10		-11	0.0043	2.5
20		-9	0.0036	2.5
30		-13	0.0051	2.5
40		-12	0.0047	2.5
50		-8	0.0032	2.5
55		-10	0.0039	2.5
25	4.2	-9	0.0036	2.5
	3.5	-12	0.0047	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	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Power Splitter	1#	1#	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Universal Radio Communication Tester	CMU200	121393	09/25/2015	09/24/2016	<input checked="" type="checkbox"/>
Wideband Radio Communication Tester	CMW500	120906	03/29/2015	03/28/2016	<input checked="" type="checkbox"/>
Temperature/Humidity Chamber	UHL-270	001	10/09/2015	10/08/2016	<input checked="" type="checkbox"/>
DC Power Supply	E3640A	MY40004013	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Radiated Emissions					
EMI test receiver	ESL6	100262	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Microwave Preamplifier (0.5 ~ 18GHz)	PAM-118	443008	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/21/2015	09/20/2016	<input checked="" type="checkbox"/>
Bilog Antenna (30MHz~2GHz)	JB1	A112017	09/21/2015	09/20/2016	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71259	09/24/2015	09/23/2016	<input checked="" type="checkbox"/>
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/24/2015	09/23/2016	<input checked="" type="checkbox"/>
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	09/17/2015	09/16/2016	<input checked="" type="checkbox"/>
Tunable Notch Filter	3NF-800/1000-S	AA4	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>
Tunable Notch Filter	3NF-1000/2000-S	AM 4	09/01/2015	08/31/2016	<input checked="" type="checkbox"/>

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo





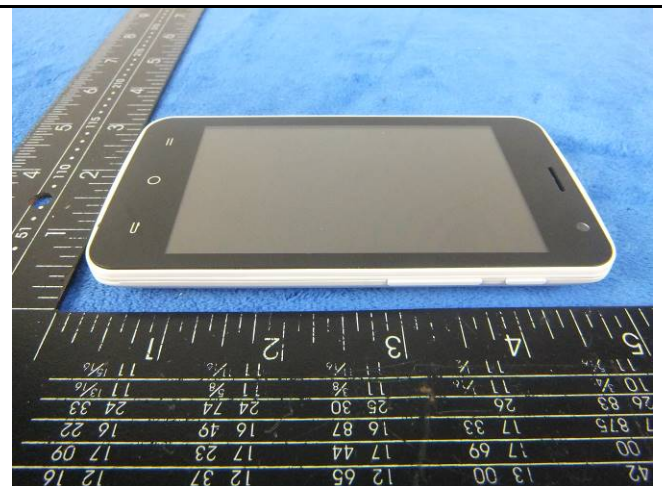
EUT - Top View



EUT - Bottom View



EUT - Left View

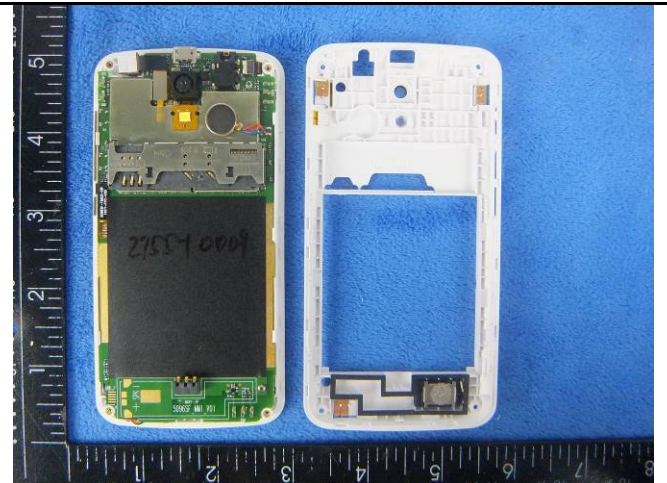


EUT - Right View

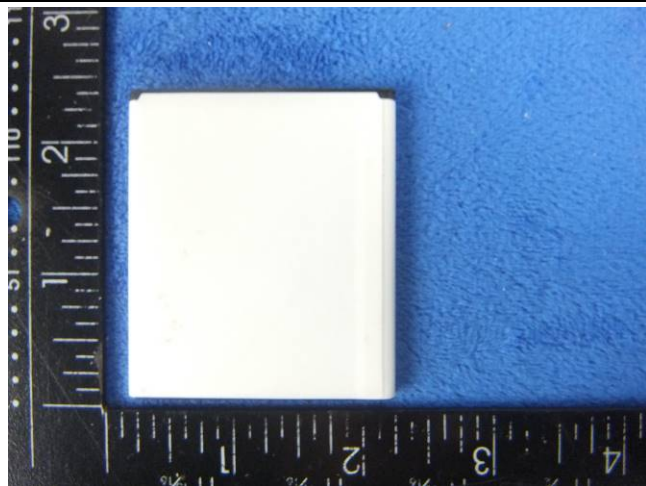
Annex B.ii. Photograph: EUT Internal Photo



Cover Off - Top View 1



Cover Off - Top View 2



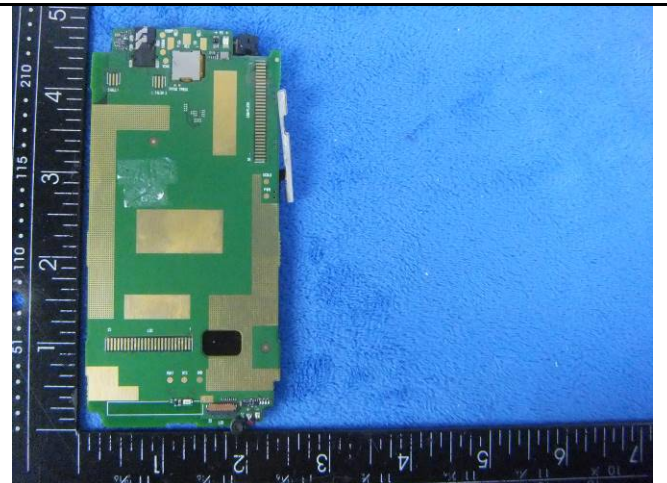
Battery - Front View



Battery - Rear View



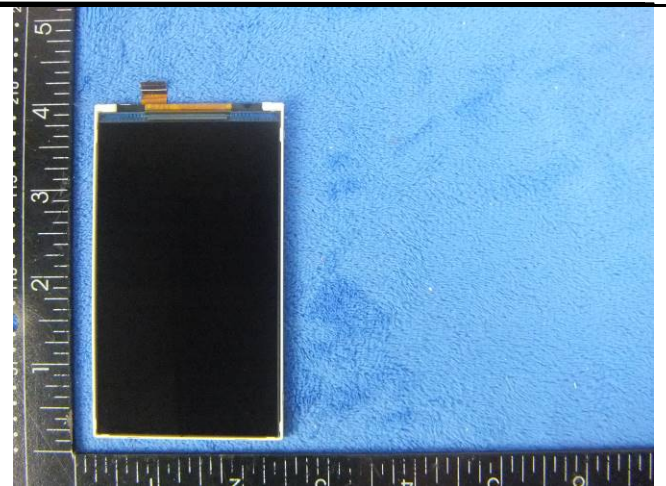
Mainboard with Shielding - Front View



Mainboard with Shielding - Rear View



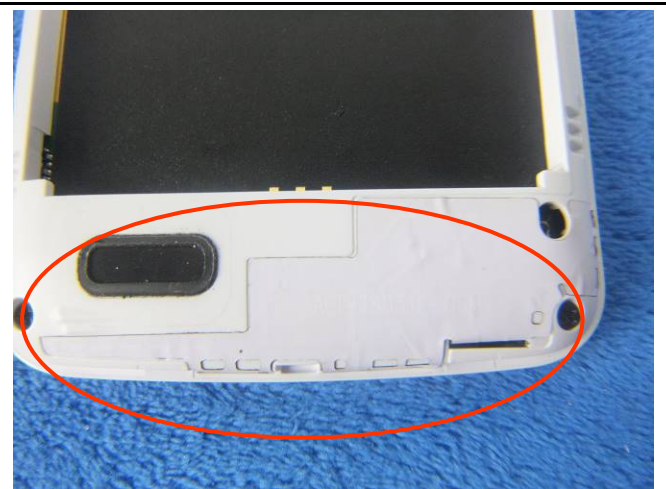
Mainboard without shielding - Front View



LCD - Front View



LCD - Rear View



GSM/PCS/UMTS-FDD/LTE - Antenna View

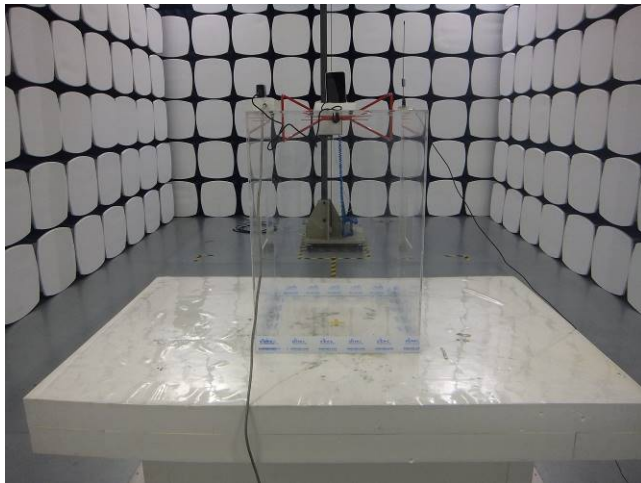


WIFI/BT/BLE/GPS - Antenna View

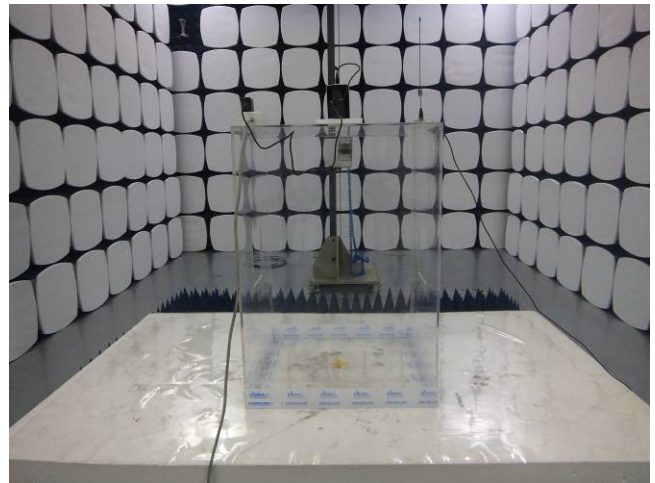


LTE - Antenna View

Annex B.iii. Photograph: Test Setup Photo



Radiated Spurious Emissions Test Setup Below 1GHz

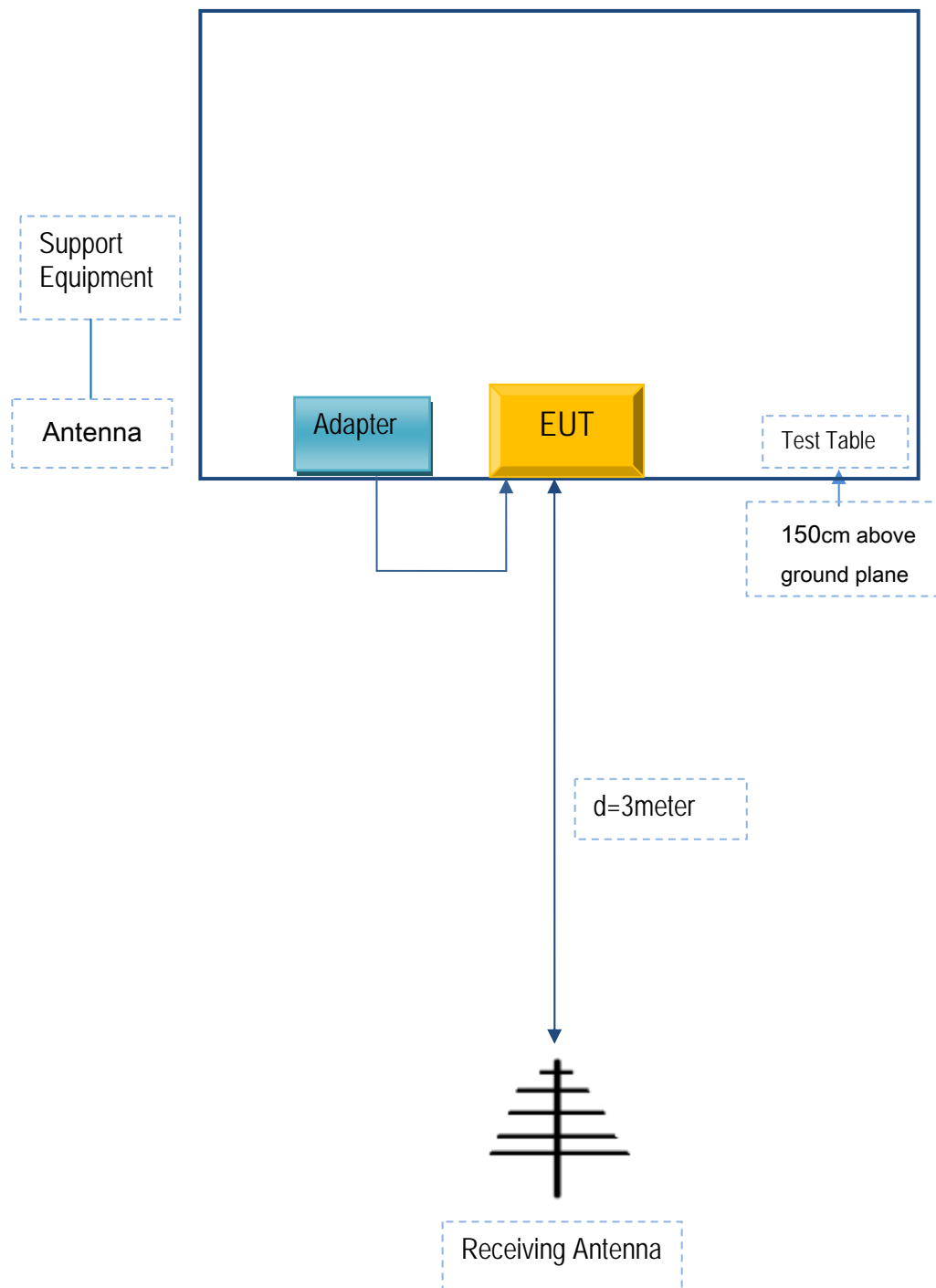


Radiated Spurious Emissions Test Setup Above
1GHz

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.

Manufacturer	Equipment Description	Model	Calibration Date	Serial No	Calibration Due Date
Verykool USA Inc	Adapter	DU050050USB01	N/A	CN15010435	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No	Calibration Date	Calibration Due Date
USB Cable	Un-shielding	No	0.8m	JX1502736	N/A	N/A

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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 attachment

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Annex E. DECLARATION OF SIMILARITY

N/A