RF TEST REPORT

Report No.: 15050027-FCC-R5

Supersede Report No.: N/A

Applicant	b mobile HK Limited
Product Name	Mobile phone
Model No.	AX1030
Serial No.	AX1020
Test Standard	FCC Part 24(E), FCC Part 27: 2014; ANSI/TIA C603 D: 2010
Test Date	July 10 to July 27, 2015
Issue Date	August 10, 2015
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Winnie Zhang	David Huang	
Winnie Zhang Test Engineer	David Huang Checked By	

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

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

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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
15050027-FCC-R5	NONE	Original	August 10, 2015

2. Customer information

Applicant Name	b mobile HK Limited
Applicant Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung;New Territories; Hong Kong
Manufacturer	b mobile HK Limited
Manufacturer Add	Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street; Kwai Chung;New Territories; Hong Kong

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:	AX1030
Serial Model:	AX1020
Date EUT received:	July 09, 2015
Test Date(s):	July 10 to July 27, 2015
Equipment Category：	PCE
Antenna Gain:	GSM850: 1.4 dBi PCS1900: 1.7 dBi UMTS-FDD Band IV: 1.7 dBi UMTS-FDD Band V: 1.7 dBi UMTS-FDD Band II: 1.7 dBi Bluetooth/BLE: 1.9 dBi WIFI: 1.8 dBi LTE Band 2: 1.7 dBi LTE Band 4: 1.6 dBi LTE Band 7: 1.9 dBi LTE Band 17: 1.5 dBi GPS:2 dBi
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

	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band IV TX:1712.4 ~ 1752.6 MHz; RX : 2112.4 ~ 2152.6 MHz UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz
RF Operating Frequency (ies):	WIFI:802.11b/g/n(20M): 2412-2472 MHz WIFI:802.11n(40M): 2422-2462 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 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz LTE Band 17 TX: 706.5 ~ 713.5 MHz; RX : 736.5 ~ 743.5 MHz GPS RX:1575.42 MHz
Maximum Conducted AV Power to Antenna:	LTE Band 2: 23.41 dBm LTE Band 4: 23.33 dBm LTE Band 7: 22.03 dBm LTE Band 17: 22.56 dBm
ERP/EIRP:	LTE Band 2: 17.18 dBm / EIRP LTE Band 4: 18.01 dBm / EIRP LTE Band 17: 17.90 dBm / EIRP LTE Band 7: 17.03 dBm / ERP
Port:	Power Port, Earphone Port, USB Port
Input Power:	Battery: Model: A4505 Spec:1950mAh,7.215Wh Voltage:3.7Vdc Charging Voltage: 4.35Vdc Adapter: Model:N/A Input: 100-240V; 50/60Hz;0.15A Output: 5.0V; 1A
Trade Name :	Bmobile

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

FCC ID: ZSW-30-012

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;§ 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
§ 2.1047	Modulation Characteristics	Compliance
§ 2.1049; § 24.238; § 27.53(a.5)	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 24.238(a); § 27.53(h)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 24.238(a); § 27.53(h)	Field Strength of Spurious Radiation	Compliance
§ 24.238(a);	Out of band emission, Band Edge	Compliance
§ 27.53(m)	Band Edge 27.53(m)	Compliance
§ 2.1055;§ 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

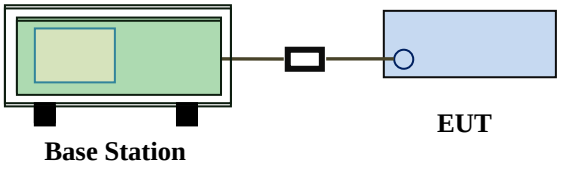
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 15050027-FCC-H.

6.2 RF Output Power

Temperature	25℃
Relative Humidity	57%
Atmospheric Pressure	1024mbar
Test date :	July 24, 2015
Tested By :	Winnie Zhang

Requirement(s):

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

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

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

Conducted Power

LTE Band 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	22.20	22±1
				1	49	0	22.92	22±1
				1	99	0	22.65	22±1
				50	0	1	21.73	22±1
				50	24	1	21.87	22±1
				50	49	1	22.06	22±1
				100	0	1	22.00	22±1
			16QAM	1	0	1	21.43	22±1
				1	49	1	22.40	22±1
				1	99	1	22.20	22±1
				50	0	2	21.46	22±1
				50	24	2	21.52	22±1
				50	49	2	21.79	22±1
				100	0	2	21.02	22±1
	18900	1880.0	QPSK	1	0	0	22.47	21.3±1
				1	49	0	21.63	21.3±1
				1	99	0	21.54	21.3±1
				50	0	1	21.15	21.3±1
				50	24	1	20.79	21.3±1
				50	49	1	20.55	21.3±1
				100	0	1	21.02	21.3±1
			16QAM	1	0	1	21.57	21.3±1
				1	49	1	20.66	21.3±1
				1	99	1	20.65	21.3±1
				50	0	2	20.54	21.3±1
				50	24	2	20.21	21.3±1
				50	49	2	20.43	21.3±1
				100	0	2	20.33	21.3±1
	19100	1900.0	QPSK	1	0	0	22.84	23±1
				1	49	0	**23.41**	23±1
				1	99	0	22.19	23±1
				50	0	1	21.75	22±1
				50	24	1	21.76	22±1
				50	49	1	21.78	22±1
				100	0	1	21.87	22±1
			16QAM	1	0	1	21.46	21.3±1
				1	49	1	22.30	21.3±1
				1	99	1	21.14	21.3±1
				50	0	2	21.12	21.3±1
				50	24	2	21.09	21.3±1
				50	49	2	21.16	21.3±1
				100	0	2	20.99	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	21.85	22±1
				1	37	0	22.72	22±1
				1	74	0	22.84	22±1
				36	0	1	21.55	22±1
				36	16	1	21.59	22±1
				36	35	1	22.03	22±1
				75	0	1	21.76	22±1
			16QAM	1	0	1	21.52	22±1
				1	37	1	22.17	22±1
				1	74	1	22.46	22±1
				36	0	2	21.48	22±1
				36	16	2	21.43	22±1
				36	35	2	21.98	22±1
				75	0	2	21.70	22±1
	18900	1880.0	QPSK	1	0	0	22.06	21.3±1
				1	37	0	21.75	21.3±1
				1	74	0	21.26	21.3±1
				36	0	1	21.19	21.3±1
				36	16	1	21.27	21.3±1
				36	35	1	20.70	21.3±1
				75	0	1	20.99	21.3±1
			16QAM	1	0	1	21.16	21.3±1
				1	37	1	20.68	21.3±1
				1	74	1	20.31	21.3±1
				36	0	2	21.21	21.3±1
				36	16	2	21.15	21.3±1
				36	35	2	20.54	21.3±1
				75	0	2	20.98	21.3±1
	19125	1902.5	QPSK	1	0	0	22.99	22±1
				1	37	0	22.59	22±1
				1	74	0	21.48	22±1
				36	0	1	22.21	22±1
				36	16	1	22.09	22±1
				36	35	1	21.27	22±1
				75	0	1	21.75	22±1
			16QAM	1	0	1	22.14	21.3±1
				1	37	1	21.83	21.3±1
				1	74	1	20.71	21.3±1
				36	0	2	22.20	21.3±1
				36	16	2	22.06	21.3±1
				36	35	2	21.38	21.3±1
				75	0	2	21.58	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	18650	1855	QPSK	1	0	0	22.16	22±1
				1	24	0	22.01	22±1
				1	49	0	22.65	22±1
				25	0	1	21.19	22±1
				25	12	1	21.28	22±1
				25	24	1	21.43	22±1
				50	0	1	21.30	22±1
			16QAM	1	0	1	21.83	21.3±1
				1	24	1	21.66	21.3±1
				1	49	1	21.25	21.3±1
				25	0	2	21.18	21.3±1
				25	12	2	21.27	21.3±1
				25	24	2	21.42	21.3±1
				50	0	2	20.41	21.3±1
	18900	1880.0	QPSK	1	0	0	22.43	22±1
				1	24	0	21.70	22±1
				1	49	0	21.87	22±1
				25	0	1	21.19	21.3±1
				25	12	1	21.06	21.3±1
				25	24	1	20.89	21.3±1
				50	0	1	21.03	21.3±1
			16QAM	1	0	1	21.67	21.3±1
				1	24	1	20.91	21.3±1
				1	49	1	21.14	21.3±1
				25	0	2	21.17	21.3±1
				25	12	2	21.03	21.3±1
				25	24	2	20.79	21.3±1
				50	0	2	20.43	21.3±1
	19150	1905	QPSK	1	0	0	23.03	22±1
				1	24	0	22.10	22±1
				1	49	0	22.04	22±1
				25	0	1	21.78	22±1
				25	12	1	21.38	22±1
				25	24	1	21.16	22±1
				50	0	1	21.47	22±1
			16QAM	1	0	1	22.29	21.3±1
				1	24	1	21.35	21.3±1
				1	49	1	21.34	21.3±1
				25	0	2	21.68	21.3±1
				25	12	2	21.14	21.3±1
				25	24	2	21.27	21.3±1
				50	0	2	20.70	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	18625	1852.5	QPSK	1	0	0	22.16	22±1
				1	12	0	22.01	22±1
				1	24	0	22.65	22±1
				12	0	1	21.19	22±1
				12	6	1	21.28	22±1
				12	11	1	21.43	22±1
				25	0	1	21.30	22±1
			16QAM	1	0	1	21.83	21.3±1
				1	12	1	21.66	21.3±1
				1	24	1	21.25	21.3±1
				12	0	2	21.18	21.3±1
				12	6	2	21.27	21.3±1
				12	11	2	21.42	21.3±1
				25	0	2	20.41	21.3±1
	18900	1880.0	QPSK	1	0	0	22.43	22±1
				1	12	0	21.70	22±1
				1	24	0	21.87	22±1
				12	0	1	21.19	21.3±1
				12	6	1	21.06	21.3±1
				12	11	1	20.89	21.3±1
				25	0	1	21.03	21.3±1
			16QAM	1	0	1	21.67	21.3±1
				1	12	1	20.91	21.3±1
				1	24	1	21.14	21.3±1
				12	0	2	21.17	21.3±1
				12	6	2	21.03	21.3±1
				12	11	2	20.79	21.3±1
				25	0	2	20.53	21.3±1
	19175	1907.5	QPSK	1	0	0	23.03	23±1
				1	12	0	22.10	23±1
				1	24	0	22.04	23±1
				12	0	1	21.78	22±1
				12	6	1	21.38	22±1
				12	11	1	21.16	22±1
				25	0	1	21.47	22±1
			16QAM	1	0	1	22.29	21.3±1
				1	12	1	21.35	21.3±1
				1	24	1	21.34	21.3±1
				12	0	2	21.68	21.3±1
				12	6	2	21.14	21.3±1
				12	11	2	21.27	21.3±1
				25	0	2	20.70	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	23.07	23±1
				1	7	0	23.06	23±1
				1	14	0	23.19	23±1
				8	0	1	21.94	22±1
				8	4	1	22.02	22±1
				8	7	1	22.07	22±1
				15	0	1	22.11	22±1
			16QAM	1	0	1	21.87	22±1
				1	7	1	21.90	22±1
				1	14	1	22.07	22±1
				8	0	2	21.87	22±1
				8	4	2	21.96	22±1
				8	7	2	22.01	22±1
				15	0	2	21.20	22±1
	18900	1880.0	QPSK	1	0	0	22.58	22±1
				1	7	0	22.35	22±1
				1	14	0	22.28	22±1
				8	0	1	21.68	22±1
				8	4	1	21.64	22±1
				8	7	1	21.59	22±1
				15	0	1	21.65	22±1
			16QAM	1	0	1	21.81	21.3±1
				1	7	1	21.56	21.3±1
				1	14	1	21.50	21.3±1
				8	0	2	21.65	21.3±1
				8	4	2	21.59	21.3±1
				8	7	2	21.54	21.3±1
				15	0	2	20.82	21.3±1
	19175	1907.5	QPSK	1	0	0	22.99	22±1
				1	7	0	22.58	22±1
				1	14	0	22.39	22±1
				8	0	1	22.13	22±1
				8	4	1	22.04	22±1
				8	7	1	21.92	22±1
				15	0	1	22.08	22±1
			16QAM	1	0	1	22.67	22±1
				1	7	1	22.24	22±1
				1	14	1	22.02	22±1
				8	0	2	22.05	22±1
				8	4	2	21.91	22±1
				8	7	2	21.84	22±1
				15	0	2	21.32	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	18607	1850.7	QPSK	1	0	0	22.51	22±1
				1	2	0	22.41	22±1
				1	5	0	22.51	22±1
				3	0	0	22.47	22±1
				3	1	0	22.48	22±1
				3	2	0	22.49	22±1
				6	0	1	21.68	22±1
			16QAM	1	0	1	21.54	21.3±1
				1	2	1	21.47	21.3±1
				1	5	1	21.55	21.3±1
				3	0	1	21.84	21.3±1
				3	1	1	21.69	21.3±1
				3	2	1	21.79	21.3±1
				6	0	2	20.82	21.3±1
	18900	1880.0	QPSK	1	0	0	22.46	22±1
				1	2	0	22.35	22±1
				1	5	0	22.37	22±1
				3	0	0	22.45	22±1
				3	1	0	22.46	21±1
				3	2	0	22.47	22±1
				6	0	1	21.65	22±1
			16QAM	1	0	1	21.64	21.3±1
				1	2	1	21.59	21.3±1
				1	5	1	21.58	21.3±1
				3	0	1	21.67	21.3±1
				3	1	1	21.59	21.3±1
				3	2	1	21.48	21.3±1
				6	0	2	20.74	21.3±1
	19193	1909.3	QPSK	1	0	0	22.11	21.3±1
				1	2	0	21.95	21.3±1
				1	5	0	21.89	21.3±1
				3	0	0	22.09	21.3±1
				3	1	0	21.97	21.3±1
				3	2	0	21.85	21.3±1
				6	0	1	20.67	21.3±1
			16QAM	1	0	1	20.81	21.3±1
				1	2	1	20.52	21.3±1
				1	5	1	20.41	21.3±1
				3	0	1	21.57	21.3±1
				3	1	1	21.48	21.3±1
				3	2	1	21.44	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	23.27	23±1
				1	49	0	23.11	23±1
				1	99	0	22.64	23±1
				50	0	1	22.12	22±1
				50	24	1	22.03	22±1
				50	49	1	21.86	22±1
				100	0	1	21.82	22±1
			16QAM	1	0	1	22.26	21.3±1
				1	49	1	21.63	21.3±1
				1	99	1	22.98	21.3±1
				50	0	2	22.04	21.3±1
				50	24	2	21.94	21.3±1
				50	49	2	21.75	21.3±1
				100	0	2	20.92	21.3±1
	20175	1732.5	QPSK	1	0	0	22.45	22±1
				1	49	0	22.03	22±1
				1	99	0	21.62	22±1
				50	0	1	21.26	21.3±1
				50	24	1	21.09	21.3±1
				50	49	1	20.92	21.3±1
				100	0	1	21.31	21.3±1
			16QAM	1	0	1	21.86	21.3±1
				1	49	1	21.54	21.3±1
				1	99	1	20.99	21.3±1
				50	0	2	20.54	21.3±1
				50	24	2	20.42	21.3±1
				50	49	2	20.37	21.3±1
				100	0	2	21.29	21.3±1
	20300	1745.0	QPSK	1	0	0	21.82	21.3±1
				1	49	0	21.70	21.3±1
				1	99	0	22.05	21.3±1
				50	0	1	20.86	21.3±1
				50	24	1	20.97	21.3±1
				50	49	1	21.09	21.3±1
				100	0	1	21.05	21.3±1
			16QAM	1	0	1	21.42	21.3±1
				1	49	1	21.22	21.3±1
				1	99	1	21.49	21.3±1
				50	0	2	20.31	21.3±1
				50	24	2	20.34	21.3±1
				50	49	2	20.42	21.3±1
				100	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
15MHz	20025	1717.5	QPSK	1	0	0	22.63	22±1
				1	37	0	22.62	22±1
				1	74	0	22.02	22±1
				36	0	1	21.88	22±1
				36	16	1	21.74	22±1
				36	35	1	21.65	22±1
				75	0	1	21.85	22±1
			16QAM	1	0	1	22.22	21.3±1
				1	37	1	22.24	21.3±1
				1	74	1	21.78	21.3±1
				36	0	2	20.46	21.3±1
				36	16	2	20.41	21.3±1
				36	35	2	20.38	21.3±1
				75	0	2	20.94	21.3±1
	20175	1732.5	QPSK	1	0	0	22.32	22±1
				1	37	0	21.92	22±1
				1	74	0	21.64	22±1
				36	0	1	21.08	21.3±1
				36	16	1	20.97	21.3±1
				36	35	1	20.85	21.3±1
				75	0	1	21.17	21.3±1
			16QAM	1	0	1	21.26	21.3±1
				1	37	1	20.98	21.3±1
				1	74	1	20.59	21.3±1
				36	0	2	20.68	21.3±1
				36	16	2	20.51	21.3±1
				36	35	2	20.36	21.3±1
				75	0	2	20.34	21.3±1
	20325	1747.5	QPSK	1	0	0	21.56	21.3±1
				1	37	0	21.78	21.3±1
				1	74	0	21.87	21.3±1
				36	0	1	20.95	21.3±1
				36	16	1	21.01	21.3±1
				36	35	1	21.08	21.3±1
				75	0	1	21.13	21.3±1
			16QAM	1	0	1	21.21	21.3±1
				1	37	1	21.47	21.3±1
				1	74	1	21.53	21.3±1
				36	0	2	20.43	21.3±1
				36	16	2	20.32	21.3±1
				36	35	2	20.45	21.3±1
				75	0	2	20.36	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	22.44	22±1
				1	24	0	22.67	22±1
				1	49	0	22.22	22±1
				25	0	1	21.77	22±1
				25	12	1	21.74	22±1
				25	24	1	21.72	22±1
				50	0	1	21.66	22±1
			16QAM	1	0	1	21.45	21.3±1
				1	24	1	21.61	21.3±1
				1	49	1	21.07	21.3±1
				25	0	2	20.48	21.3±1
				25	12	2	20.65	21.3±1
				25	24	2	20.52	21.3±1
				50	0	2	20.78	21.3±1
	20175	1732.5	QPSK	1	0	0	21.83	21.3±1
				1	24	0	21.91	21.3±1
				1	49	0	21.48	21.3±1
				25	0	1	21.10	21.3±1
				25	12	1	21.08	21.3±1
				25	24	1	21.06	21.3±1
				50	0	1	21.22	21.3±1
			16QAM	1	0	1	20.91	21.3±1
				1	24	1	21.07	21.3±1
				1	49	1	20.58	21.3±1
				25	0	2	20.63	21.3±1
				25	12	2	20.49	21.3±1
				25	24	2	20.55	21.3±1
				50	0	2	20.31	21.3±1
	20350	1750.0	QPSK	1	0	0	21.70	21.3±1
				1	24	0	21.86	21.3±1
				1	49	0	21.54	21.3±1
				25	0	1	20.46	21.3±1
				25	12	1	20.59	21.3±1
				25	24	1	20.99	21.3±1
				50	0	1	21.33	21.3±1
			16QAM	1	0	1	21.32	21.3±1
				1	24	1	21.56	21.3±1
				1	49	1	21.13	21.3±1
				25	0	2	20.49	21.3±1
				25	12	2	20.56	21.3±1
				25	24	2	20.35	21.3±1
				50	0	2	20.42	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	23.33	23±1
				1	12	0	23.28	23±1
				1	24	0	**23.33**	23±1
				12	0	1	22.33	23±1
				12	6	1	22.32	23±1
				12	11	1	22.31	23±1
				25	0	1	22.11	23±1
			16QAM	1	0	1	22.33	22±1
				1	12	1	22.34	22±1
				1	24	1	22.34	22±1
				12	0	2	21.35	22±1
				12	6	2	21.31	22±1
				12	11	2	21.32	22±1
				25	0	2	21.26	22±1
	20175	1732.5	QPSK	1	0	0	22.75	22±1
				1	12	0	22.25	22±1
				1	24	0	22.42	22±1
				12	0	1	21.83	22±1
				12	6	1	21.69	22±1
				12	11	1	21.58	22±1
				25	0	1	21.51	22±1
			16QAM	1	0	1	22.21	21.3±1
				1	12	1	21.71	21.3±1
				1	24	1	21.90	21.3±1
				12	0	2	20.76	21.3±1
				12	6	2	20.65	21.3±1
				12	11	2	20.59	21.3±1
				25	0	2	20.82	21.3±1
	20350	1750.0	QPSK	1	0	0	22.52	22±1
				1	12	0	22.07	22±1
				1	24	0	22.51	22±1
				12	0	1	21.36	22±1
				12	6	1	21.33	22±1
				12	11	1	21.28	22±1
				25	0	1	21.41	22±1
			16QAM	1	0	1	21.79	21.3±1
				1	12	1	21.25	21.3±1
				1	24	1	21.63	21.3±1
				12	0	2	20.49	21.3±1
				12	6	2	20.44	21.3±1
				12	11	2	20.39	21.3±1
				25	0	2	20.51	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	23.25	23±1
				1	7	0	23.04	23±1
				1	14	0	23.12	23±1
				8	0	1	22.16	23±1
				8	4	1	22.15	23±1
				8	7	1	22.12	23±1
				15	0	1	22.15	23±1
			16QAM	1	0	1	22.22	22±1
				1	7	1	22.01	22±1
				1	14	1	22.06	22±1
				8	0	2	21.26	22±1
				8	4	2	21.24	22±1
				8	7	2	21.23	22±1
				15	0	2	21.22	22±1
	20175	1732.5	QPSK	1	0	0	22.60	22±1
				1	7	0	22.33	22±1
				1	14	0	22.32	22±1
				8	0	1	21.76	22±1
				8	4	1	21.69	22±1
				8	7	1	21.62	22±1
				15	0	1	21.66	22±1
			16QAM	1	0	1	21.79	21.3±1
				1	7	1	21.48	21.3±1
				1	14	1	21.45	21.3±1
				8	0	2	20.84	21.3±1
				8	4	2	20.79	21.3±1
				8	7	2	20.74	21.3±1
				15	0	2	20.79	21.3±1
	20385	1753.5	QPSK	1	0	0	22.72	22±1
				1	7	0	22.58	22±1
				1	14	0	22.74	22±1
				8	0	1	21.92	22±1
				8	4	1	21.92	22±1
				8	7	1	21.93	22±1
				15	0	1	21.98	22±1
			16QAM	1	0	1	22.43	22±1
				1	7	1	22.26	22±1
				1	14	1	22.35	22±1
				8	0	2	21.04	22±1
				8	4	2	21.05	22±1
				8	7	2	21.09	22±1
				15	0	2	21.12	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	19957	1710.7	QPSK	1	0	0	23.12	23±1
				1	2	0	23.03	23±1
				1	5	0	23.08	23±1
				3	0	0	23.07	23±1
				3	1	0	23.04	23±1
				3	2	0	23.00	23±1
				6	0	1	22.18	23±1
			16QAM	1	0	1	22.14	22±1
				1	2	1	21.96	22±1
				1	5	1	22.08	22±1
				3	0	1	22.06	22±1
				3	1	1	22.07	22±1
				3	2	1	22.13	22±1
				6	0	2	21.27	22±1
	20175	1732.5	QPSK	1	0	0	22.34	22±1
				1	2	0	22.17	22±1
				1	5	0	22.19	22±1
				3	0	0	22.41	22±1
				3	1	0	22.37	22±1
				3	2	0	22.33	22±1
				6	0	1	21.62	22±1
			16QAM	1	0	1	21.60	21.3±1
				1	2	1	21.35	21.3±1
				1	5	1	21.49	21.3±1
				3	0	1	21.33	21.3±1
				3	1	1	21.31	21.3±1
				3	2	1	21.28	21.3±1
				6	0	2	20.58	21.3±1
	20393	1754.3	QPSK	1	0	0	22.75	22±1
				1	2	0	22.60	22±1
				1	5	0	22.75	22±1
				3	0	0	22.86	22±1
				3	1	0	22.83	22±1
				3	2	0	22.82	22±1
				6	0	1	21.94	22±1
			16QAM	1	0	1	21.55	21.3±1
				1	2	1	21.42	21.3±1
				1	5	1	21.52	21.3±1
				3	0	1	21.79	21.3±1
				3	1	1	21.75	21.3±1
				3	2	1	21.77	21.3±1
				6	0	2	20.88	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
5MHz	20775	2502.5	QPSK	1	0	0	20.37	21.3±1
				1	12	0	20.48	21.3±1
				1	24	0	20.51	21.3±1
				12	0	1	20.45	21.3±1
				12	6	1	20.36	21.3±1
				12	11	1	20.32	21.3±1
				25	0	1	20.39	21.3±1
			16QAM	1	0	1	20.34	21.3±1
				1	12	1	20.41	21.3±1
				1	24	1	20.46	21.3±1
				12	0	2	20.34	21.3±1
				12	6	2	20.31	21.3±1
				12	11	2	20.30	21.3±1
				25	0	2	20.32	21.3±1
	21100	2535	QPSK	1	0	0	20.49	21.3±1
				1	12	0	20.42	21.3±1
				1	24	0	20.41	21.3±1
				12	0	1	20.37	21.3±1
				12	6	1	20.34	21.3±1
				12	11	1	20.36	21.3±1
				25	0	1	20.38	21.3±1
			16QAM	1	0	1	20.41	21.3±1
				1	12	1	20.37	21.3±1
				1	24	1	20.32	21.3±1
				12	0	2	20.33	21.3±1
				12	6	2	20.31	21.3±1
				12	11	2	20.30	21.3±1
				25	0	2	20.34	21.3±1
	21425	2567.5	QPSK	1	0	0	21.21	21.3±1
				1	12	0	20.91	21.3±1
				1	24	0	20.67	21.3±1
				12	0	1	20.37	21.3±1
				12	6	1	20.49	21.3±1
				12	11	1	20.57	21.3±1
				25	0	1	20.49	21.3±1
			16QAM	1	0	1	20.92	21.3±1
				1	12	1	20.82	21.3±1
				1	24	1	20.53	21.3±1
				12	0	2	20.33	21.3±1
				12	6	2	20.45	21.3±1
				12	11	2	20.39	21.3±1
				25	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
10MHz	20800	2505	QPSK	1	0	0	20.37	21.3±1
				1	24	0	20.47	21.3±1
				1	49	0	20.62	21.3±1
				25	0	1	20.54	21.3±1
				25	12	1	20.36	21.3±1
				25	24	1	20.48	21.3±1
				50	0	1	20.49	21.3±1
			16QAM	1	0	1	20.39	21.3±1
				1	24	1	20.36	21.3±1
				1	49	1	20.35	21.3±1
				25	0	2	20.36	21.3±1
				25	12	2	20.37	21.3±1
				25	24	2	20.39	21.3±1
				50	0	2	20.41	21.3±1
	21100	2535	QPSK	1	0	0	20.36	21.3±1
				1	24	0	20.30	21.3±1
				1	49	0	20.34	21.3±1
				25	0	1	20.37	21.3±1
				25	12	1	20.34	21.3±1
				25	24	1	20.54	21.3±1
				50	0	1	20.49	21.3±1
			16QAM	1	0	1	20.31	21.3±1
				1	24	1	20.35	21.3±1
				1	49	1	20.41	21.3±1
				25	0	2	20.31	21.3±1
				25	12	2	20.39	21.3±1
				25	24	2	20.35	21.3±1
				50	0	2	20.31	21.3±1
	21400	2562.5	QPSK	1	0	0	**22.03**	21.3±1
				1	24	0	21.17	21.3±1
				1	49	0	20.37	21.3±1
				25	0	1	20.87	21.3±1
				25	12	1	20.59	21.3±1
				25	24	1	20.37	21.3±1
				50	0	1	20.44	21.3±1
			16QAM	1	0	1	20.94	21.3±1
				1	24	1	20.35	21.3±1
				1	49	1	20.54	21.3±1
				25	0	2	20.78	21.3±1
				25	12	2	20.31	21.3±1
				25	24	2	20.32	21.3±1
				50	0	2	20.49	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20825	2507.5	QPSK	1	0	0	20.34	21.3±1
				1	37	0	20.41	21.3±1
				1	74	0	20.54	21.3±1
				36	0	1	20.47	21.3±1
				36	16	1	20.52	21.3±1
				36	35	1	20.48	21.3±1
				75	0	1	20.31	21.3±1
			16QAM	1	0	1	20.37	21.3±1
				1	37	1	20.34	21.3±1
				1	74	1	20.38	21.3±1
				36	0	2	20.36	21.3±1
				36	16	2	20.31	21.3±1
				36	35	2	20.30	21.3±1
				75	0	2	20.37	21.3±1
	21100	2535	QPSK	1	0	0	21.06	21.3±1
				1	37	0	20.95	21.3±1
				1	74	0	20.87	21.3±1
				36	0	1	20.51	21.3±1
				36	16	1	20.46	21.3±1
				36	35	1	20.42	21.3±1
				75	0	1	20.34	21.3±1
			16QAM	1	0	1	21.01	21.3±1
				1	37	1	20.84	21.3±1
				1	74	1	20.67	21.3±1
				36	0	2	20.46	21.3±1
				36	16	2	20.32	21.3±1
				36	35	2	20.37	21.3±1
				75	0	2	20.33	21.3±1
	21400	2562.5	QPSK	1	0	0	21.59	21.3±1
				1	37	0	21.89	21.3±1
				1	74	0	20.39	21.3±1
				36	0	1	20.98	21.3±1
				36	16	1	20.75	21.3±1
				36	35	1	20.30	21.3±1
				75	0	1	20.49	21.3±1
			16QAM	1	0	1	21.28	21.3±1
				1	37	1	21.49	21.3±1
				1	74	1	21.27	21.3±1
				36	0	2	20.37	21.3±1
				36	16	2	20.54	21.3±1
				36	35	2	20.39	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
20MHz	20850	2510	QPSK	1	0	0	21.01	21.3±1
				1	49	0	21.14	21.3±1
				1	99	0	21.54	21.3±1
				50	0	1	21.36	21.3±1
				50	24	1	21.26	21.3±1
				50	49	1	21.07	21.3±1
				100	0	1	21.35	21.3±1
			16QAM	1	0	1	20.46	21.3±1
				1	49	1	20.57	21.3±1
				1	99	1	20.32	21.3±1
				50	0	2	20.34	21.3±1
				50	24	2	20.36	21.3±1
				50	49	2	20.31	21.3±1
				100	0	2	20.48	21.3±1
	21100	2535	QPSK	1	0	0	21.51	21.3±1
				1	49	0	21.10	21.3±1
				1	99	0	21.06	21.3±1
				50	0	1	20.68	21.3±1
				50	24	1	20.74	21.3±1
				50	49	1	20.79	21.3±1
				100	0	1	20.31	21.3±1
			16QAM	1	0	1	20.92	21.3±1
				1	49	1	20.45	21.3±1
				1	99	1	20.53	21.3±1
				50	0	2	20.32	21.3±1
				50	24	2	20.35	21.3±1
				50	49	2	20.31	21.3±1
				100	0	2	20.36	21.3±1
	21350	2560	QPSK	1	0	0	20.31	21.3±1
				1	49	0	21.83	21.3±1
				1	99	0	20.39	21.3±1
				50	0	1	20.34	21.3±1
				50	24	1	20.31	21.3±1
				50	49	1	20.39	21.3±1
				100	0	1	20.35	21.3±1
			16QAM	1	0	1	20.36	21.3±1
				1	49	1	21.74	21.3±1
				1	99	1	20.34	21.3±1
				50	0	2	20.37	21.3±1
				50	24	2	20.34	21.3±1
				50	49	2	20.35	21.3±1
				100	0	2	20.39	21.3±1

LTE Band 17:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	23780	709.0	QPSK	1	0	0	22.11	21.3±1
				1	24	0	21.90	21.3±1
				1	49	0	21.16	21.3±1
				25	0	1	21.25	21.3±1
				25	12	1	21.12	21.3±1
				25	24	1	20.50	21.3±1
				50	0	1	21.28	21.3±1
			16QAM	1	0	1	21.85	21.3±1
				1	24	1	21.54	21.3±1
				1	49	1	20.81	21.3±1
				25	0	2	21.25	21.3±1
				25	12	2	21.09	21.3±1
				25	24	2	21.11	21.3±1
				50	0	2	21.31	21.3±1
	23790	701.0	QPSK	1	0	0	22.17	21.3±1
				1	24	0	21.52	21.3±1
				1	49	0	21.05	21.3±1
				25	0	1	21.28	21.3±1
				25	12	1	21.05	21.3±1
				25	24	1	21.24	21.3±1
				50	0	1	21.26	21.3±1
			16QAM	1	0	1	21.82	21.3±1
				1	24	1	21.08	21.3±1
				1	49	1	20.68	21.3±1
				25	0	2	21.36	21.3±1
				25	12	2	21.26	21.3±1
				25	24	2	21.18	21.3±1
				50	0	2	21.29	21.3±1
	23800	711.0	QPSK	1	0	0	22.20	21.3±1
				1	24	0	21.19	21.3±1
				1	49	0	21.29	21.3±1
				25	0	1	21.26	21.3±1
				25	12	1	20.89	21.3±1
				25	24	1	21.45	21.3±1
				50	0	1	21.03	21.3±1
			16QAM	1	0	1	21.81	21.3±1
				1	24	1	20.73	21.3±1
				1	49	1	21.96	21.3±1
				25	0	2	21.16	21.3±1
				25	12	2	21.35	21.3±1
				25	24	2	21.20	21.3±1
				50	0	2	21.26	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	23755	706.5	QPSK	1	0	0	22.21	22±1
				1	12	0	22.26	22±1
				1	24	0	22.20	22±1
				12	0	1	22.18	22±1
				12	6	1	22.23	22±1
				12	11	1	22.21	22±1
				25	0	1	22.10	22±1
			16QAM	1	0	1	22.15	22±1
				1	12	1	22.14	22±1
				1	24	1	22.08	22±1
				12	0	2	22.22	22±1
				12	6	2	22.26	22±1
				12	11	2	22.23	22±1
				25	0	2	21.21	22±1
	23790	710.0	QPSK	1	0	0	22.28	22±1
				1	12	0	22.27	22±1
				1	24	0	22.15	22±1
				12	0	1	22.18	22±1
				12	6	1	22.24	22±1
				12	11	1	22.09	22±1
				25	0	1	21.92	22±1
			16QAM	1	0	1	22.41	22±1
				1	12	1	22.43	22±1
				1	24	1	22.32	22±1
				12	0	2	**22.56**	22±1
				12	6	2	21.47	22±1
				12	11	2	22.48	22±1
				25	0	2	22.17	22±1
	23825	713.5	QPSK	1	0	0	22.15	22±1
				1	12	0	22.27	22±1
				1	24	0	22.32	22±1
				12	0	1	22.08	22±1
				12	6	1	22.11	22±1
				12	11	1	22.25	22±1
				25	0	1	22.05	22±1
			16QAM	1	0	1	22.01	22±1
				1	12	1	22.11	22±1
				1	24	1	22.16	22±1
				12	0	2	21.98	22±1
				12	6	2	21.03	22±1
				12	11	2	21.95	22±1
				25	0	2	21.31	22±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	9.83	V	7.88	0.85	16.86	33.01
1880	1.4	QPSK	1/0	9.91	V	7.88	0.85	16.94	33.01
1909.3	1.4	QPSK	1/0	9.86	V	7.88	0.85	16.89	33.01
1850.7	1.4	QPSK	1/0	8.24	H	7.88	0.85	15.27	33.01
1880	1.4	QPSK	1/0	8.17	H	7.88	0.85	15.20	33.01
1909.3	1.4	QPSK	1/0	8.29	H	7.88	0.85	15.32	33.01
1850.7	1.4	16-QAM	1/0	9.13	V	7.88	0.85	16.16	33.01
1880	1.4	16-QAM	1/0	9.08	V	7.88	0.85	16.11	33.01
1909.3	1.4	16-QAM	1/0	9.15	V	7.88	0.85	16.18	33.01
1850.7	1.4	16-QAM	1/0	7.58	H	7.88	0.85	14.61	33.01
1880	1.4	16-QAM	1/0	7.61	H	7.88	0.85	14.64	33.01
1909.3	1.4	16-QAM	1/0	7.44	H	7.88	0.85	14.47	33.01
1851.5	3	QPSK	1/0	9.95	V	7.88	0.85	16.98	33.01
1880	3	QPSK	1/0	9.88	V	7.88	0.85	16.91	33.01
1908.5	3	QPSK	1/0	9.91	V	7.88	0.85	16.94	33.01
1851.5	3	QPSK	1/0	8.44	H	7.88	0.85	15.47	33.01
1880	3	QPSK	1/0	8.37	H	7.88	0.85	15.4	33.01
1908.5	3	QPSK	1/0	8.25	H	7.88	0.85	15.28	33.01
1851.5	3	16-QAM	1/0	9.11	V	7.88	0.85	16.14	33.01
1880	3	16-QAM	1/0	9.08	V	7.88	0.85	16.11	33.01
1908.5	3	16-QAM	1/0	9.14	V	7.88	0.85	16.17	33.01
1851.5	3	16-QAM	1/0	7.63	H	7.88	0.85	14.66	33.01
1880	3	16-QAM	1/0	7.85	H	7.88	0.85	14.88	33.01
1908.5	3	16-QAM	1/0	7.59	H	7.88	0.85	14.62	33.01
1852.5	5	QPSK	1/24	10.02	V	7.88	0.85	17.05	33.01
1880	5	QPSK	1/0	9.98	V	7.88	0.85	17.01	33.01
1907.5	5	QPSK	1/24	9.95	V	7.88	0.85	16.98	33.01
1852.5	5	QPSK	1/24	8.34	H	7.88	0.85	15.37	33.01
1880	5	QPSK	1/0	8.59	H	7.88	0.85	15.62	33.01
1907.5	5	QPSK	1/24	8.61	H	7.88	0.85	15.64	33.01
1852.5	5	16-QAM	1/24	9.24	V	7.88	0.85	16.27	33.01
1880	5	16-QAM	1/0	9.18	V	7.88	0.85	16.21	33.01

1907.5	5	16-QAM	1/24	9.26	V	7.88	0.85	16.29	33.01
1852.5	5	16-QAM	1/24	7.81	H	7.88	0.85	14.84	33.01
1880	5	16-QAM	1/0	7.75	H	7.88	0.85	14.78	33.01
1907.5	5	16-QAM	1/24	7.68	H	7.88	0.85	14.71	33.01
1855	10	QPSK	1/0	9.94	V	7.88	0.85	16.97	33.01
1880	10	QPSK	1/0	9.89	V	7.88	0.85	16.92	33.01
1905	10	QPSK	1/49	9.93	V	7.88	0.85	16.96	33.01
1855	10	QPSK	1/0	8.66	H	7.88	0.85	15.69	33.01
1880	10	QPSK	1/0	8.57	H	7.88	0.85	15.60	33.01
1905	10	QPSK	1/49	8.51	H	7.88	0.85	15.54	33.01
1855	10	16-QAM	1/0	9.26	V	7.88	0.85	16.29	33.01
1880	10	16-QAM	1/0	9.13	V	7.88	0.85	16.16	33.01
1905	10	16-QAM	1/49	9.27	V	7.88	0.85	16.30	33.01
1855	10	16-QAM	1/0	8.01	H	7.88	0.85	15.04	33.01
1880	10	16-QAM	1/0	7.96	H	7.88	0.85	14.99	33.01
1905	10	16-QAM	1/49	7.99	H	7.88	0.85	15.02	33.01
1857.5	15	QPSK	1/0	9.97	V	7.88	0.85	17.00	33.01
1880	15	QPSK	1/0	9.88	V	7.88	0.85	16.91	33.01
1902.5	15	QPSK	1/0	9.95	V	7.88	0.85	16.98	33.01
1857.5	15	QPSK	1/0	8.61	H	7.88	0.85	15.64	33.01
1880	15	QPSK	1/0	8.75	H	7.88	0.85	15.78	33.01
1902.5	15	QPSK	1/0	8.69	H	7.88	0.85	15.72	33.01
1857.5	15	16-QAM	1/0	9.03	V	7.88	0.85	16.06	33.01
1880	15	16-QAM	1/0	9.12	V	7.88	0.85	16.15	33.01
1902.5	15	16-QAM	1/0	9.16	V	7.88	0.85	16.19	33.01
1857.5	15	16-QAM	1/0	7.95	H	7.88	0.85	14.98	33.01
1880	15	16-QAM	1/0	8.11	H	7.88	0.85	15.14	33.01
1902.5	15	16-QAM	1/0	8.06	H	7.88	0.85	15.09	33.01
1860	20	QPSK	1/0	10.13	V	7.88	0.85	17.16	33.01
1880	20	QPSK	1/0	10.15	V	7.88	0.85	**17.18**	33.01
1900	20	QPSK	1/0	10.09	V	7.88	0.85	17.12	33.01
1860	20	QPSK	1/0	8.94	H	7.88	0.85	15.97	33.01
1880	20	QPSK	1/0	8.79	H	7.88	0.85	15.82	33.01
1900	20	QPSK	1/0	8.96	H	7.88	0.85	15.99	33.01
1860	20	16-QAM	1/0	9.35	V	7.88	0.85	16.38	33.01
1880	20	16-QAM	1/0	9.47	V	7.88	0.85	16.50	33.01
1900	20	16-QAM	1/0	9.38	V	7.88	0.85	16.41	33.01
1860	20	16-QAM	1/0	8.26	H	7.88	0.85	15.29	33.01

1880	20	16-QAM	1/0	8.17	H	7.88	0.85	15.20	33.01
1900	20	16-QAM	1/0	8.14	H	7.88	0.85	15.17	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	10.67	V	7.95	0.79	17.83	30
1732.5	1.4	QPSK	1/0	10.75	V	7.95	0.79	17.91	30
1754.3	1.4	QPSK	1/0	10.82	V	7.95	0.79	17.98	30
1710.7	1.4	QPSK	1/0	9.86	H	7.95	0.79	17.02	30
1732.5	1.4	QPSK	1/0	9.91	H	7.95	0.79	17.07	30
1754.3	1.4	QPSK	1/0	9.95	H	7.95	0.79	17.11	30
1710.7	1.4	16-QAM	1/5	9.68	V	7.95	0.79	16.84	30
1732.5	1.4	16-QAM	1/0	9.75	V	7.95	0.79	16.91	30
1754.3	1.4	16-QAM	1/0	9.79	V	7.95	0.79	16.95	30
1710.7	1.4	16-QAM	1/5	9.12	H	7.95	0.79	16.28	30
1732.5	1.4	16-QAM	1/0	9.08	H	7.95	0.79	16.24	30
1754.3	1.4	16-QAM	1/0	9.15	H	7.95	0.79	16.31	30
1711.5	3	QPSK	1/0	10.35	V	7.95	0.79	17.51	30
1732.5	3	QPSK	1/0	10.29	V	7.95	0.79	17.45	30
1753.5	3	QPSK	1/0	10.37	V	7.95	0.79	17.53	30
1711.5	3	QPSK	1/0	9.68	H	7.95	0.79	16.84	30
1732.5	3	QPSK	1/0	9.74	H	7.95	0.79	16.9	30
1753.5	3	QPSK	1/0	9.56	H	7.95	0.79	16.72	30
1711.5	3	16-QAM	1/0	9.44	V	7.95	0.79	16.60	30
1732.5	3	16-QAM	1/0	9.38	V	7.95	0.79	16.54	30
1753.5	3	16-QAM	1/0	9.41	V	7.95	0.79	16.57	30
1711.5	3	16-QAM	1/0	8.85	H	7.95	0.79	16.01	30
1732.5	3	16-QAM	1/0	8.82	H	7.95	0.79	15.98	30
1753.5	3	16-QAM	1/0	8.79	H	7.95	0.79	15.95	30
1712.5	5	QPSK	1/0	10.52	V	7.95	0.79	17.68	30
1732.5	5	QPSK	1/0	10.61	V	7.95	0.79	17.77	30
1752.5	5	QPSK	1/24	10.56	V	7.95	0.79	17.72	30
1712.5	5	QPSK	1/0	9.75	H	7.95	0.79	16.91	30
1732.5	5	QPSK	1/0	9.68	H	7.95	0.79	16.84	30
1752.5	5	QPSK	1/24	9.66	H	7.95	0.79	16.82	30
1712.5	5	16-QAM	1/0	9.74	V	7.95	0.79	16.90	30
1732.5	5	16-QAM	1/0	9.68	V	7.95	0.79	16.84	30
1752.5	5	16-QAM	1/24	9.71	V	7.95	0.79	16.87	30

1712.5	5	16-QAM	1/0	8.89	H	7.95	0.79	16.05	30
1732.5	5	16-QAM	1/0	8.91	H	7.95	0.79	16.07	30
1752.5	5	16-QAM	1/24	8.86	H	7.95	0.79	16.02	30
1715	10	QPSK	1/0	10.35	V	7.95	0.79	17.51	30
1732.5	10	QPSK	1/49	10.28	V	7.95	0.79	17.44	30
1750	10	QPSK	1/0	10.22	V	7.95	0.79	17.38	30
1715	10	QPSK	1/0	9.51	H	7.95	0.79	16.67	30
1732.5	10	QPSK	1/49	9.56	H	7.95	0.79	16.72	30
1750	10	QPSK	1/0	9.48	H	7.95	0.79	16.64	30
1715	10	16-QAM	1/0	9.61	V	7.95	0.79	16.77	30
1732.5	10	16-QAM	1/49	9.66	V	7.95	0.79	16.82	30
1750	10	16-QAM	1/0	9.72	V	7.95	0.79	16.88	30
1715	10	16-QAM	1/0	8.33	H	7.95	0.79	15.49	30
1732.5	10	16-QAM	1/49	8.39	H	7.95	0.79	15.55	30
1750	10	16-QAM	1/0	8.41	H	7.95	0.79	15.57	30
1717.5	15	QPSK	1/0	10.59	V	7.95	0.79	17.75	30
1732.5	15	QPSK	1/74	10.53	V	7.95	0.79	17.69	30
1747.5	15	QPSK	1/0	10.55	V	7.95	0.79	17.71	30
1717.5	15	QPSK	1/0	9.77	H	7.95	0.79	16.93	30
1732.5	15	QPSK	1/74	9.79	H	7.95	0.79	16.95	30
1747.5	15	QPSK	1/0	9.81	H	7.95	0.79	16.97	30
1717.5	15	16-QAM	1/0	9.83	V	7.95	0.79	16.99	30
1732.5	15	16-QAM	1/74	9.76	V	7.95	0.79	16.92	30
1747.5	15	16-QAM	1/0	9.81	V	7.95	0.79	16.97	30
1717.5	15	16-QAM	1/0	8.92	H	7.95	0.79	16.08	30
1732.5	15	16-QAM	1/74	8.86	H	7.95	0.79	16.02	30
1747.5	15	16-QAM	1/0	8.95	H	7.95	0.79	16.11	30
1720	20	QPSK	1/99	10.85	V	7.95	0.79	**18.01**	30
1732.5	20	QPSK	1/99	10.76	V	7.95	0.79	17.92	30
1745	20	QPSK	1/0	10.79	V	7.95	0.79	17.95	30
1720	20	QPSK	1/99	9.95	H	7.95	0.79	17.11	30
1732.5	20	QPSK	1/99	9.99	H	7.95	0.79	17.15	30
1745	20	QPSK	1/0	9.86	H	7.95	0.79	17.02	30
1720	20	16-QAM	1/99	9.74	V	7.95	0.79	16.90	30
1732.5	20	16-QAM	1/99	9.83	V	7.95	0.79	16.99	30
1745	20	16-QAM	1/0	9.81	V	7.95	0.79	16.97	30
1720	20	16-QAM	1/99	8.35	H	7.95	0.79	15.51	30
1732.5	20	16-QAM	1/99	8.29	H	7.95	0.79	15.45	30

1745	20	16-QAM	1/0	8.33	H	7.95	0.79	15.49	30

ERP for LTE Band 17 (Part 27)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
706.5	5	QPSK	1/0	11.52	V	6.8	0.42	**17.90**	34.77
710	5	QPSK	1/0	11.46	V	6.8	0.42	17.84	34.77
713.5	5	QPSK	1/0	11.49	V	6.8	0.42	17.87	34.77
706.5	5	QPSK	1/0	10.35	H	6.8	0.42	16.73	34.77
710	5	QPSK	1/0	10.29	H	6.8	0.42	16.67	34.77
713.5	5	QPSK	1/0	10.37	H	6.8	0.42	16.75	34.77
706.5	5	16-QAM	1/0	11.16	V	6.8	0.42	17.54	34.77
710	5	16-QAM	1/0	11.05	V	6.8	0.42	17.43	34.77
713.5	5	16-QAM	1/0	10.98	V	6.8	0.42	17.36	34.77
706.5	5	16-QAM	1/0	9.85	H	6.8	0.42	16.23	34.77
710	5	16-QAM	1/0	9.67	H	6.8	0.42	16.05	34.77
713.5	5	16-QAM	1/0	9.72	H	6.8	0.42	16.10	34.77
709	10	QPSK	1/0	11.35	V	6.8	0.42	17.73	34.77
710	10	QPSK	1/0	11.29	V	6.8	0.42	17.67	34.77
711	10	QPSK	1/0	11.31	V	6.8	0.42	17.69	34.77
709	10	QPSK	1/0	10.64	H	6.8	0.42	17.02	34.77
710	10	QPSK	1/0	10.35	H	6.8	0.42	16.73	34.77
711	10	QPSK	1/0	10.58	H	6.8	0.42	16.96	34.77
709	10	16-QAM	1/0	10.67	V	6.8	0.42	17.05	34.77
710	10	16-QAM	1/0	10.62	V	6.8	0.42	17.00	34.77
711	10	16-QAM	1/0	10.59	V	6.8	0.42	16.97	34.77
709	10	16-QAM	1/0	9.83	H	6.8	0.42	16.21	34.77
710	10	16-QAM	1/0	9.75	H	6.8	0.42	16.13	34.77
711	10	16-QAM	1/0	9.81	H	6.8	0.42	16.19	34.77

ERP for LTE Band 7 (Part 27)

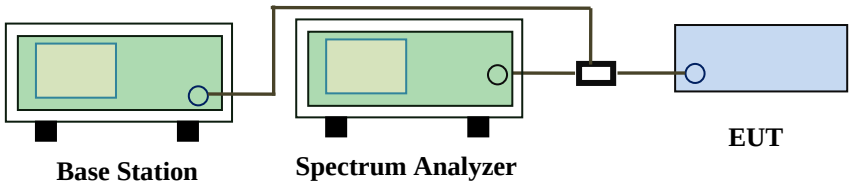
Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
2502.5	5	QPSK	1/0	8.16	V	8.93	0.83	16.26	30
2535	5	QPSK	1/0	8.13	V	8.93	0.83	16.23	30
2567.5	5	QPSK	1/24	8.12	V	8.93	0.83	16.22	30
2502.5	5	QPSK	1/0	7.38	H	8.93	0.83	15.48	30
2535	5	QPSK	1/0	7.41	H	8.93	0.83	15.51	30
2567.5	5	QPSK	1/24	7.36	H	8.93	0.83	15.46	30
2502.5	5	16-QAM	1/0	7.66	V	8.93	0.83	15.76	30
2535	5	16-QAM	1/0	7.63	V	8.93	0.83	15.73	30
2567.5	5	16-QAM	1/24	7.59	V	8.93	0.83	15.69	30
2502.5	5	16-QAM	1/0	7.11	H	8.93	0.83	15.21	30
2535	5	16-QAM	1/0	7.09	H	8.93	0.83	15.19	30
2567.5	5	16-QAM	1/24	7.08	H	8.93	0.83	15.18	30
2505	10	QPSK	1/0	8.22	V	8.93	0.83	16.32	30
2535	10	QPSK	1/49	8.16	V	8.93	0.83	16.26	30
2565	10	QPSK	1/0	8.19	V	8.93	0.83	16.29	30
2505	10	QPSK	1/0	7.73	H	8.93	0.83	15.83	30
2535	10	QPSK	1/49	7.69	H	8.93	0.83	15.79	30
2565	10	QPSK	1/0	7.65	H	8.93	0.83	15.75	30
2505	10	16-QAM	1/0	7.59	V	8.93	0.83	15.69	30
2535	10	16-QAM	1/49	7.55	V	8.93	0.83	15.65	30
2565	10	16-QAM	1/0	7.58	V	8.93	0.83	15.68	30
2505	10	16-QAM	1/0	7.06	H	8.93	0.83	15.16	30
2535	10	16-QAM	1/49	7.11	H	8.93	0.83	15.21	30
2565	10	16-QAM	1/0	7.14	H	8.93	0.83	15.24	30
2507.5	15	QPSK	1/0	8.25	V	8.93	0.83	16.35	30
2535	15	QPSK	1/74	8.23	V	8.93	0.83	16.33	30
2562.5	15	QPSK	1/0	8.26	V	8.93	0.83	16.36	30
2507.5	15	QPSK	1/0	7.51	H	8.93	0.83	15.61	30
2535	15	QPSK	1/74	7.49	H	8.93	0.83	15.59	30
2562.5	15	QPSK	1/0	7.45	H	8.93	0.83	15.55	30
2507.5	15	16-QAM	1/0	7.66	V	8.93	0.83	15.76	30
2535	15	16-QAM	1/74	7.62	V	8.93	0.83	15.72	30
2562.5	15	16-QAM	1/0	7.59	V	8.93	0.83	15.69	30
2507.5	15	16-QAM	1/0	7.14	H	8.93	0.83	15.24	30

2535	15	16-QAM	1/74	7.09	H	8.93	0.83	15.19	30
2562.5	15	16-QAM	1/0	7.11	H	8.93	0.83	15.21	30
2510	20	QPSK	1/99	8.93	V	8.93	0.83	**17.03**	30
2535	20	QPSK	1/99	8.86	V	8.93	0.83	16.96	30
2560	20	QPSK	1/0	8.88	V	8.93	0.83	16.98	30
2510	20	QPSK	1/99	8.23	H	8.93	0.83	16.33	30
2535	20	QPSK	1/99	8.21	H	8.93	0.83	16.31	30
2560	20	QPSK	1/0	8.15	H	8.93	0.83	16.25	30
2510	20	16-QAM	1/99	8.35	V	8.93	0.83	16.45	30
2535	20	16-QAM	1/99	8.26	V	8.93	0.83	16.36	30
2560	20	16-QAM	1/0	8.15	V	8.93	0.83	16.25	30
2510	20	16-QAM	1/99	7.45	H	8.93	0.83	15.55	30
2535	20	16-QAM	1/99	7.38	H	8.93	0.83	15.48	30
2560	20	16-QAM	1/0	7.42	H	8.93	0.83	15.52	30

6.3 Peak-Average Ratio

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21 to July 22, 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.	☑
Test Setup			
Test Procedure	**According with KDB 971168** 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	☑ Pass ☐ 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	
20	1880	RB 1/0	QPSK	25.52	22.47	3.05
			16QAM	24.49	21.57	2.92
15	1880	RB 1/0	QPSK	25.15	22.06	3.09
			16QAM	24.05	21.16	2.89
10	1880	RB 1/0	QPSK	25.27	22.43	2.84
			16QAM	24.13	21.67	2.46
5	1880	RB 1/0	QPSK	25.47	22.43	3.04
			16QAM	24.35	21.67	2.68
3	1880	RB 1/0	QPSK	24.41	22.58	1.83
			16QAM	24.28	21.81	2.47
1.4	1880	RB 1/0	QPSK	24.36	22.46	1.90
			16QAM	23.30	21.64	1.66

LTE Band 4 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
20	1732.5	RB 1/0	QPSK	25.15	22.45	2.70
			16QAM	25.07	21.86	3.21
15	1732.5	RB 1/0	QPSK	26.12	22.32	3.80
			16QAM	25.02	21.26	3.76
10	1732.5	RB 1/0	QPSK	26.2	21.83	4.37
			16QAM	25.1	20.91	4.19
5	1732.5	RB 1/0	QPSK	25.19	22.75	2.44
			16QAM	25.12	22.21	2.91
3	1732.5	RB 1/0	QPSK	26.09	22.61	3.48
			16QAM	26.01	21.79	4.22
1.4	1732.5	RB 1/0	QPSK	25.25	22.34	2.91
			16QAM	24.14	21.60	2.54

LTE Band 17 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
10	710	RB 1/0	QPSK	26.29	22.17	4.12
			16QAM	25.61	21.82	3.79
5	710	RB 1/0	QPSK	26.91	22.28	4.63
			16QAM	25.12	22.41	2.71

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	24.18	20.49	3.69
			16QAM	24.16	20.41	3.75
10	2535	RB 1/0	QPSK	24.56	20.36	4.20
			16QAM	24.01	20.31	3.70
15	2535	RB 1/0	QPSK	23.62	21.06	2.56
			16QAM	24.58	21.01	3.57
20	2535	RB 1/0	QPSK	25.12	21.51	3.61
			16QAM	24.15	20.92	3.23

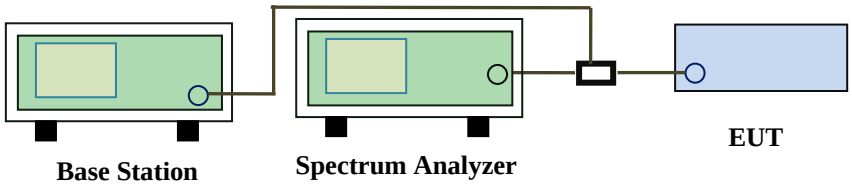
6.4 Modulation Characteristic

According to FCC § 2.1047(d), Part24E& Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6.5 Occupied Bandwidth

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21 to July 24, 2015
Tested By :	Winnie Zhang

Requirement(s):

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

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band 2 (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1850.7	QPSK	1.0911	1.281
			16QAM	1.0978	1.293
1.4	18900	1880	QPSK	1.0991	1.272
			16QAM	1.0962	1.277
1.4	19193	1909.3	QPSK	1.0918	1.285
			16QAM	1.0958	1.262
3	18615	1851.5	QPSK	2.7395	3.048
			16QAM	2.7379	3.052
3	18900	1880	QPSK	2.7469	3.066
			16QAM	2.7360	3.049
3	19185	1908.5	QPSK	2.7451	3.070
			16QAM	2.7336	3.084
5	18625	1852.5	QPSK	4.5124	5.029
			16QAM	4.5028	5.061
5	18900	1880	QPSK	4.5241	5.016
			16QAM	4.5128	5.059
5	19175	1907.5	QPSK	4.5241	5.086
			16QAM	4.5037	5.088
10	18650	1855	QPSK	9.0506	10.174
			16QAM	9.0804	9.954
10	18900	1880	QPSK	9.0795	10.060
			16QAM	9.0522	9.971
10	19150	1905	QPSK	9.0411	10.068
			16QAM	9.0353	10.005
15	18675	1857.5	QPSK	13.4641	14.620
			16QAM	13.4387	14.467
15	18900	1880	QPSK	13.4902	14.825
			16QAM	13.4572	14.765
15	19125	1902.5	QPSK	13.4716	14.707
			16QAM	13.4936	14.776

20	18700	1860	QPSK	17.8540	19.414
			16QAM	17.8254	19.233
20	18900	1880	QPSK	17.9365	19.229
			16QAM	17.8681	19.469
20	19100	1900	QPSK	17.9175	19.242
			16QAM	17.9131	19.471

LTE Band 4 (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1710.7	QPSK	1.0925	1.278
			16QAM	1.0962	1.259
1.4	20175	1732.5	QPSK	1.0971	1.285
			16QAM	1.0955	1.263
1.4	20393	1754.3	QPSK	1.0943	1.287
			16QAM	1.0966	1.262
3	19965	1711.5	QPSK	2.7398	3.086
			16QAM	2.7438	3.046
3	20175	1732.5	QPSK	2.7470	3.067
			16QAM	2.7396	3.077
3	20385	1753.5	QPSK	2.7440	3.086
			16QAM	2.7380	3.118
5	19975	1712.5	QPSK	4.5166	5.053
			16QAM	4.5205	5.084
5	20175	1732.5	QPSK	4.5228	5.041
			16QAM	4.5198	5.012
5	20375	1752.5	QPSK	4.5213	5.023
			16QAM	4.5228	5.107
10	20000	1715	QPSK	9.0404	10.099
			16QAM	9.0652	10.051
10	20175	1732.5	QPSK	9.0615	10.052
			16QAM	9.0853	10.045
10	20350	1750	QPSK	9.0524	9.999
			16QAM	9.0280	10.054

15	20025	1717.5	QPSK	13.4380	14.732
			16QAM	16.4474	14.657
15	20175	1732.5	QPSK	13.4858	14.529
			16QAM	13.5284	14.880
15	20325	1747.5	QPSK	13.4859	14.919
			16QAM	13.4887	14.589
20	20050	1720	QPSK	17.7933	19.188
			16QAM	17.8234	19.236
20	20175	1732.5	QPSK	17.9163	19.410
			16QAM	17.8896	19.290
20	20300	1745	QPSK	17.9050	19.337
			16QAM	17.8846	19.618

LTE Band 17 (Part 27) result

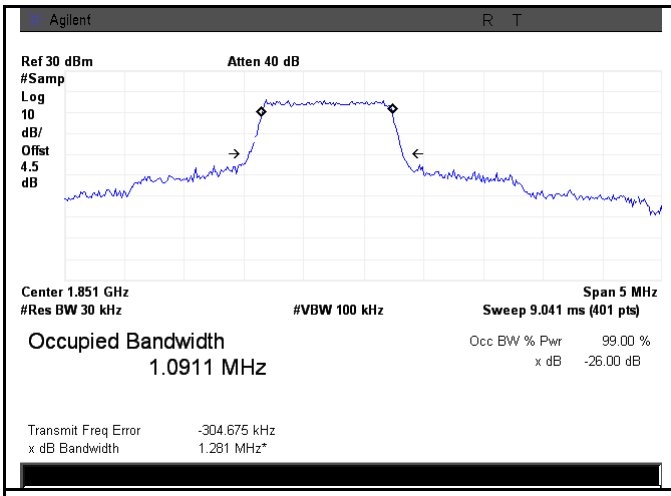
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	23755	706.5	QPSK	4.5167	5.046
			16QAM	4.5033	5.036
5	23790	710	QPSK	4.5153	4.959
			16QAM	4.4998	4.980
5	23825	713.5	QPSK	4.5230	5.028
			16QAM	4.5407	5.047
10	23780	709	QPSK	9.0018	10.051
			16QAM	9.0200	10.017
10	23790	710	QPSK	9.0295	10.085
			16QAM	9.0129	10.043
10	23800	711	QPSK	9.0619	10.027
			16QAM	9.0512	9.966

LTE Band 7 (Part 27) result

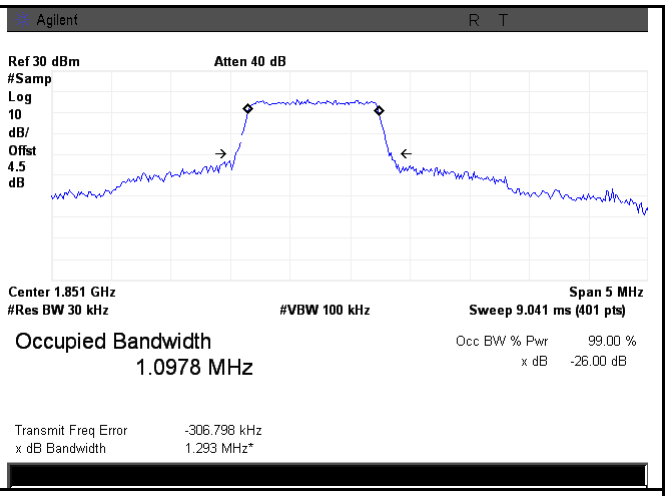
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2502.5	QPSK	4.5145	5.034
			16QAM	4.5283	5.084
5	21100	2535	QPSK	4.5209	5.039
			16QAM	4.5161	5.055
5	21425	2567.5	QPSK	4.5205	5.049
			16QAM	4.5255	5.085
10	20800	2505	QPSK	9.0698	10.143
			16QAM	9.0916	10.169
10	21100	2535	QPSK	9.0716	10.132
			16QAM	9.0556	10.059
10	21400	2562.5	QPSK	9.0613	10.036
			16QAM	9.0527	10.203
15	20825	2507.5	QPSK	13.4739	14.516
			16QAM	13.4788	14.841
15	21100	2535	QPSK	13.4505	14.612
			16QAM	13.5141	14.571
15	21400	2562.5	QPSK	13.5301	14.640
			16QAM	13.4751	14.645
20	20850	2510	QPSK	17.8447	19.212
			16QAM	17.9020	19.329
20	21100	2535	QPSK	17.8774	19.230
			16QAM	17.8856	19.269
20	21350	2560	QPSK	17.8349	18.978
			16QAM	17.8738	19.247

Test Plots

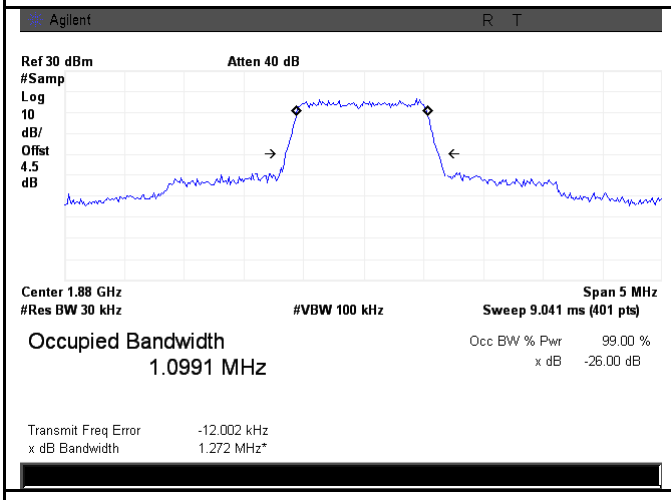
LTE Band 2 (Part 24E)



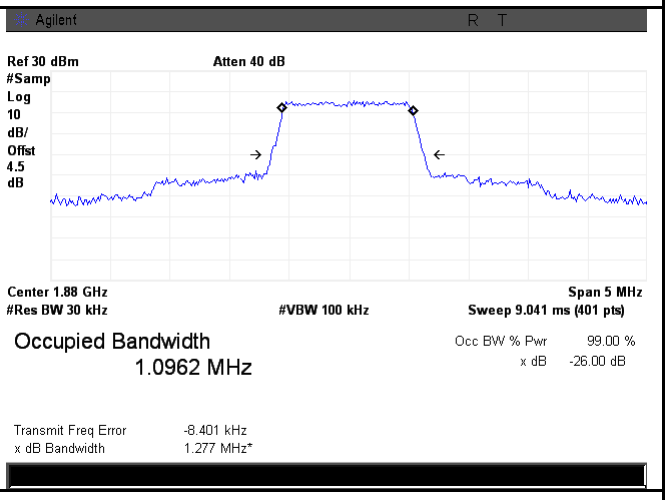
LTE band 2 - Low CH QPSK-1.4



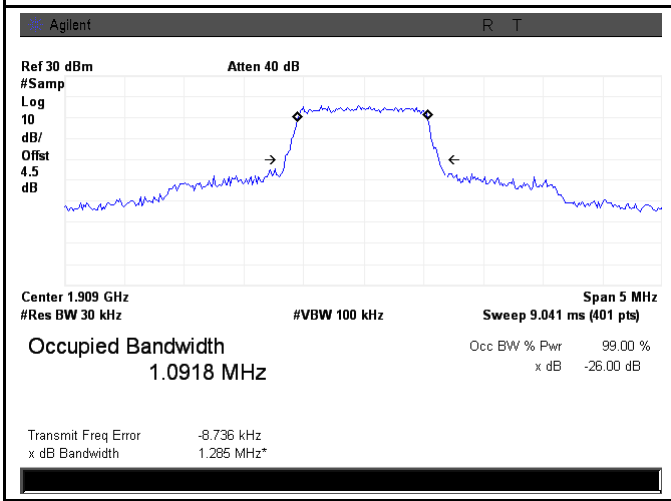
LTE band 2 - Low CH 16QAM-1.4



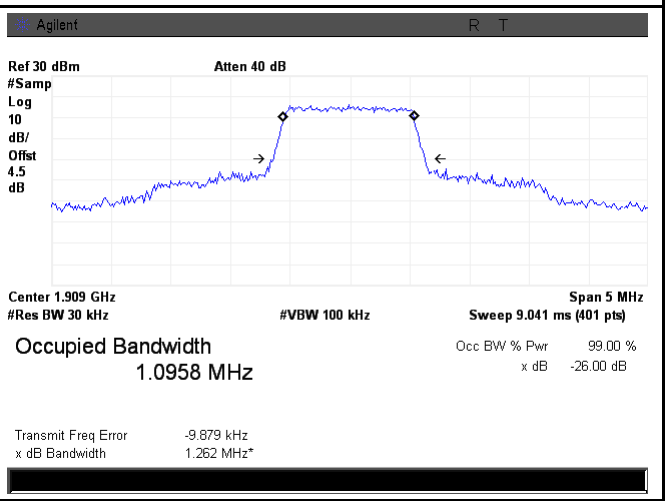
LTE band 2 - Middle CH QPSK-1.4



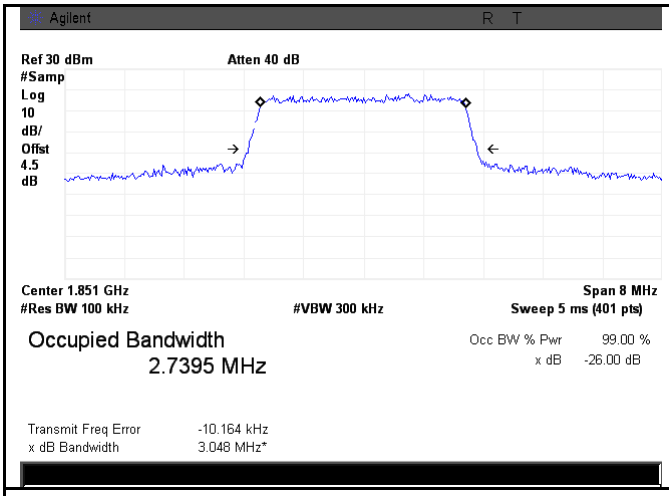
LTE band 2 - Middle CH 16QAM-1.4



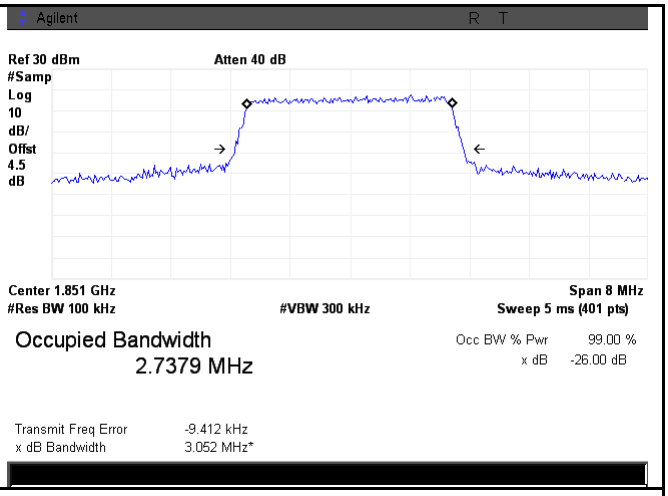
LTE band 2 - High CH QPSK-1.4



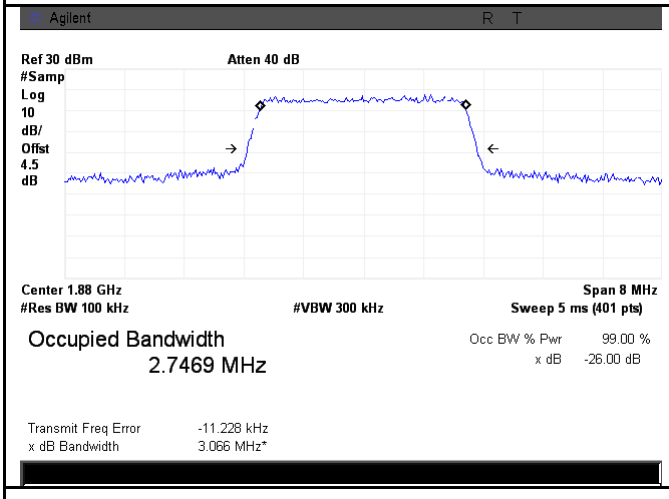
LTE band 2 - High CH 16QAM-1.4



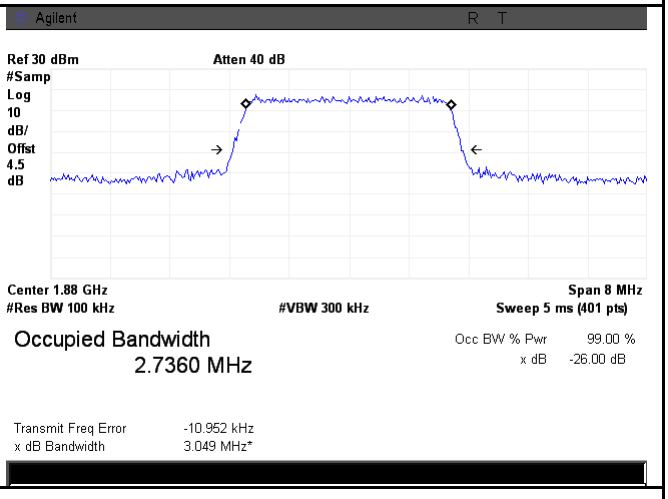
LTE band 2 - Low CH QPSK-3



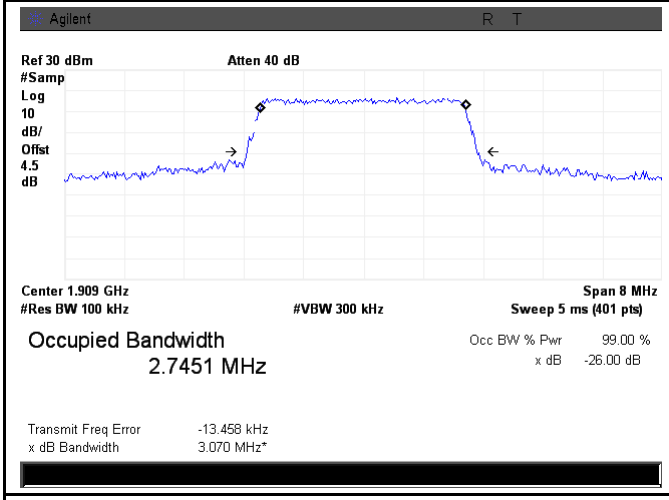
LTE band 2 - Low CH 16QAM-3



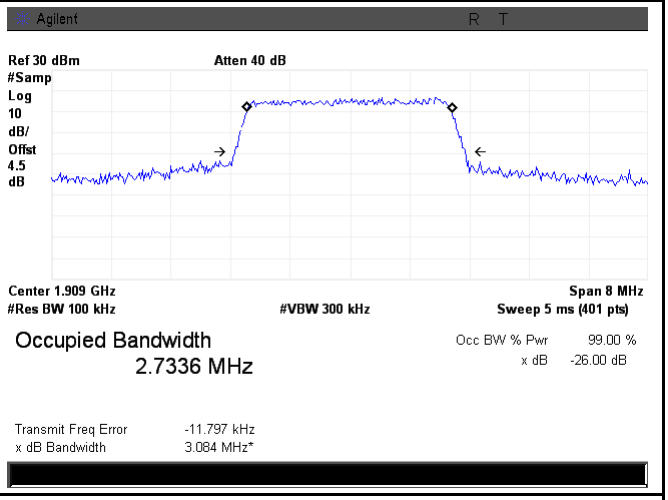
LTE band 2 - Middle CH QPSK-3



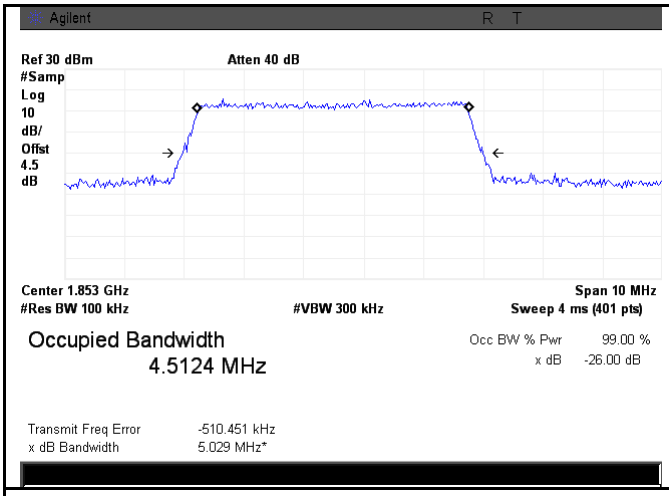
LTE band 2 - Middle CH 16QAM-3



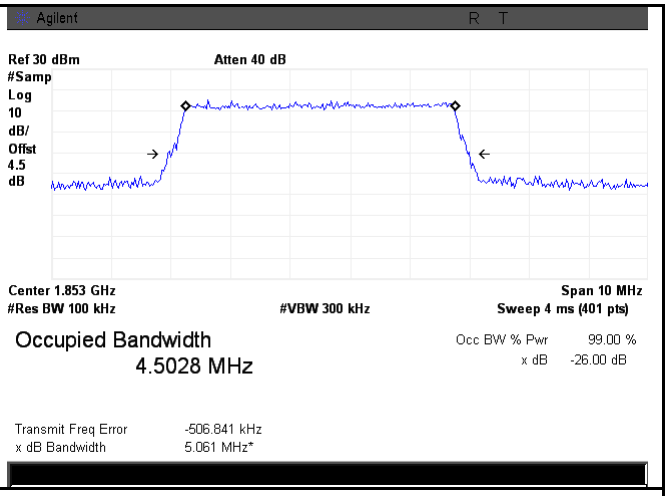
LTE band 2 - High CH QPSK-3



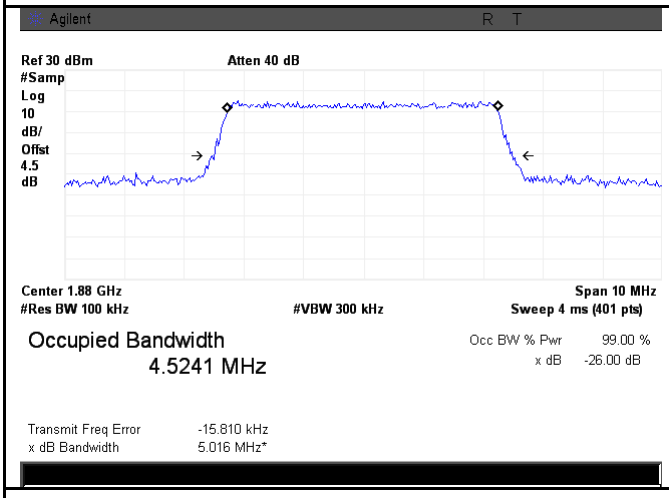
LTE band 2 - High CH 16QAM-3



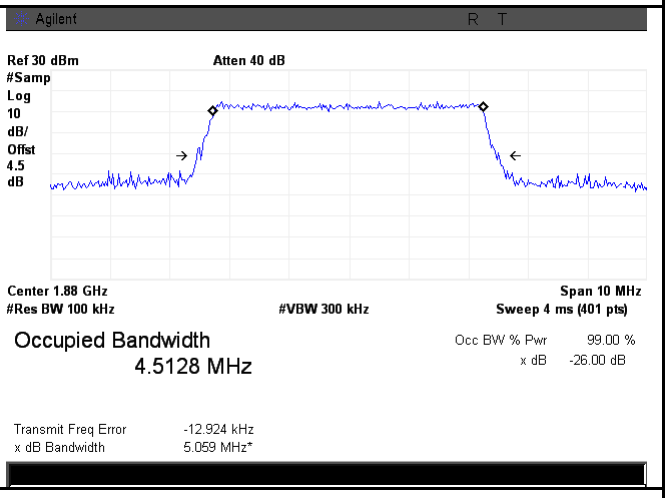
LTE band 2 - Low CH QPSK-5



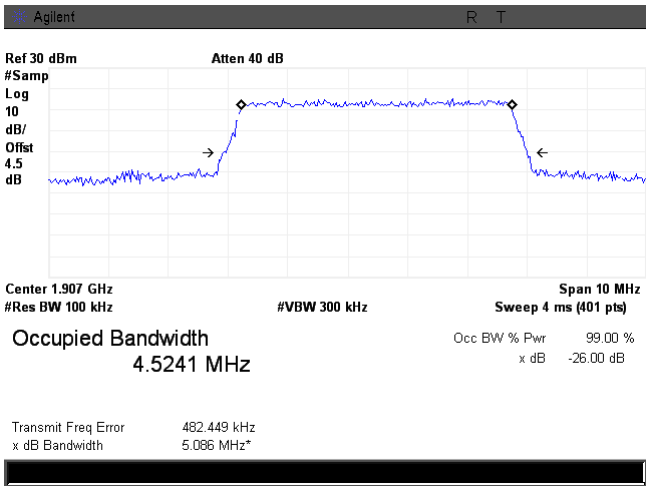
LTE band 2 - Low CH 16QAM-5



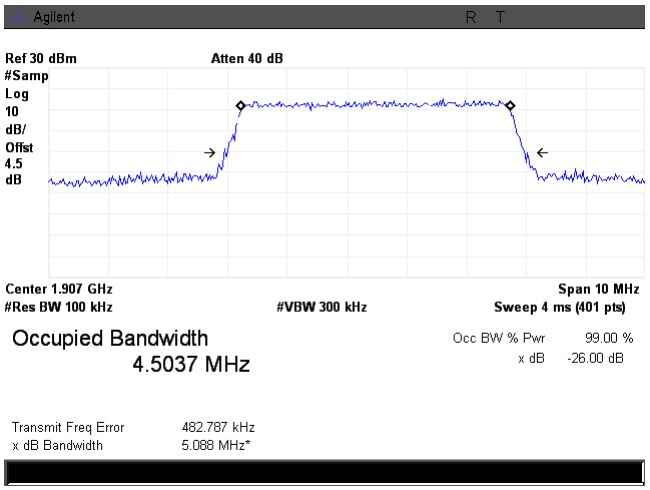
LTE band 2 - Middle CH QPSK-5



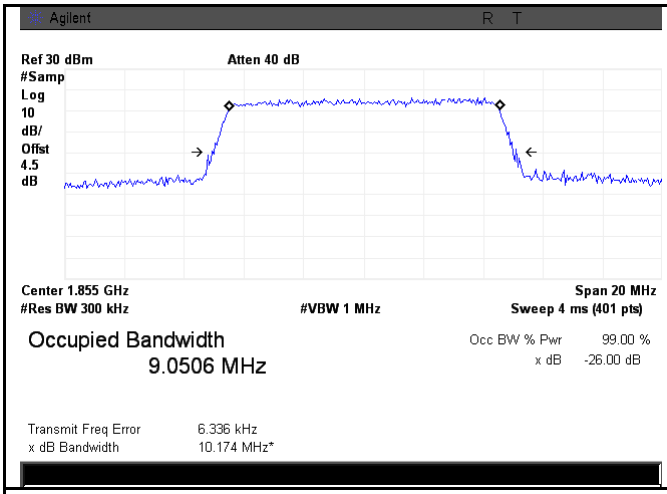
LTE band 2 - Middle CH 16QAM-5



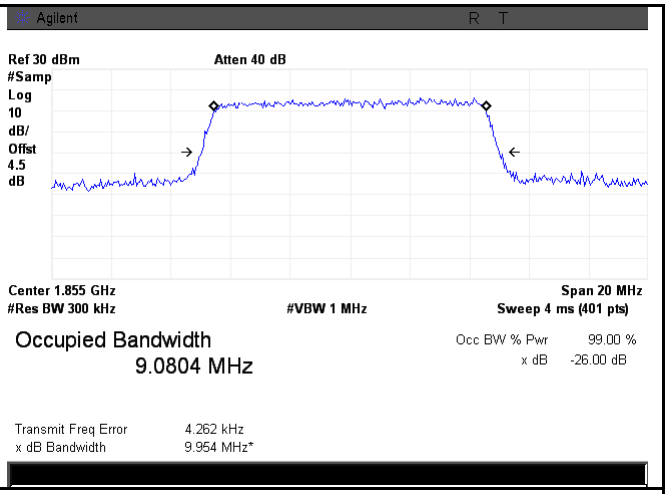
LTE band 2 - High CH QPSK-5



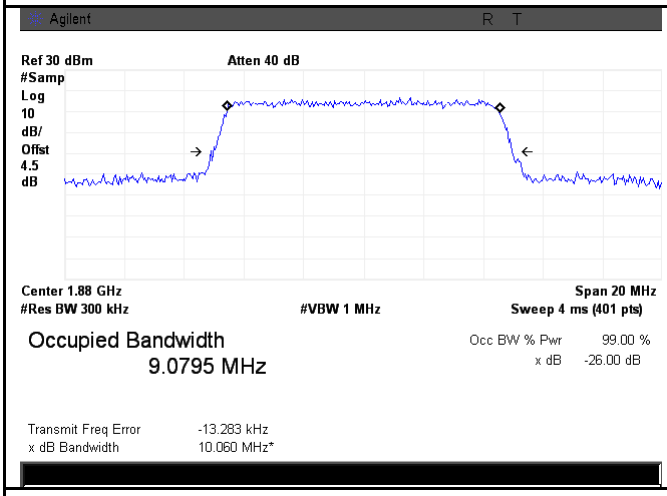
LTE band 2 - High CH 16QAM-5



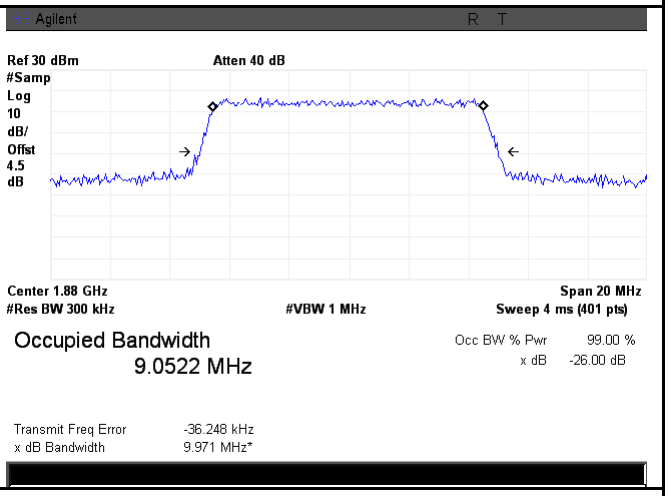
LTE band 2 - Low CH QPSK-10



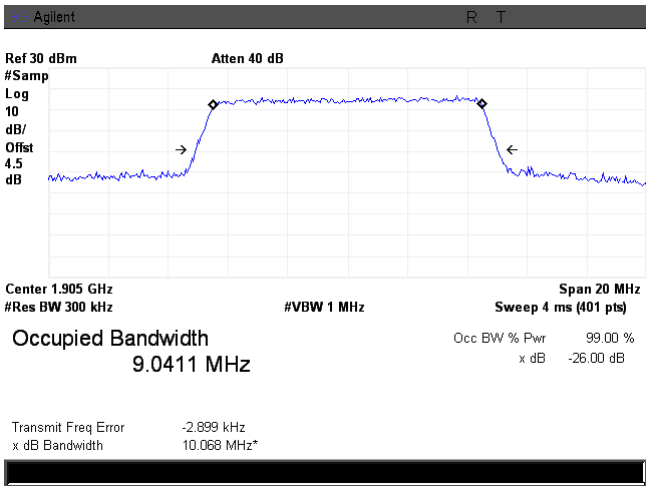
LTE band 2 - Low CH 16QAM-10



LTE band 2 - Middle CH QPSK-10



LTE band 2 - Middle CH 16QAM-10



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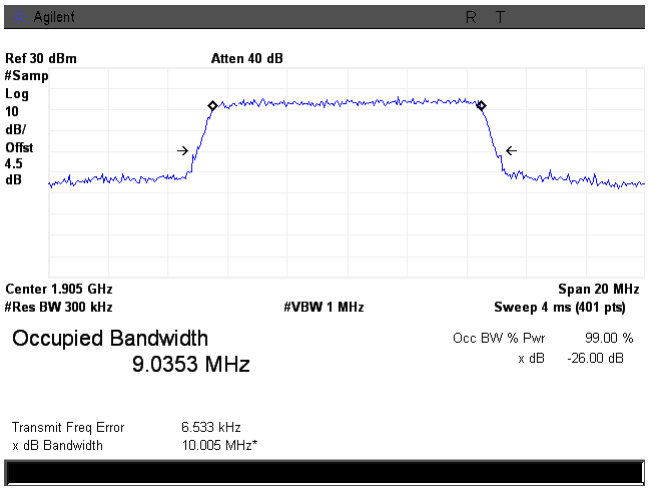
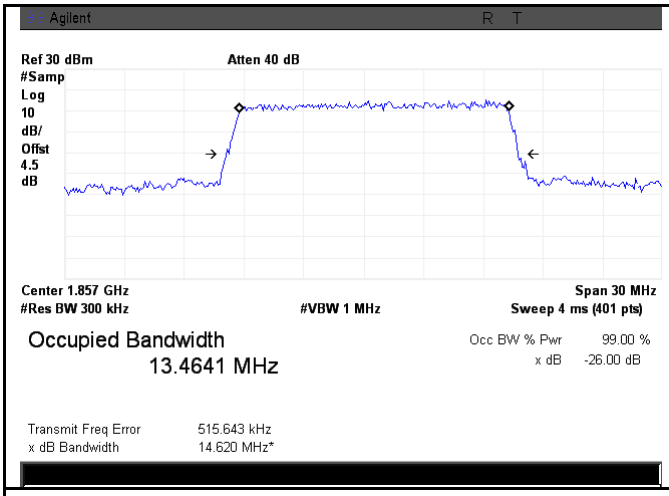
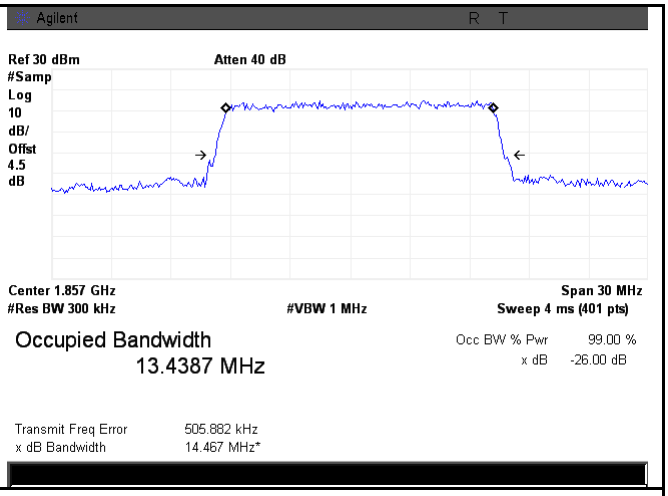


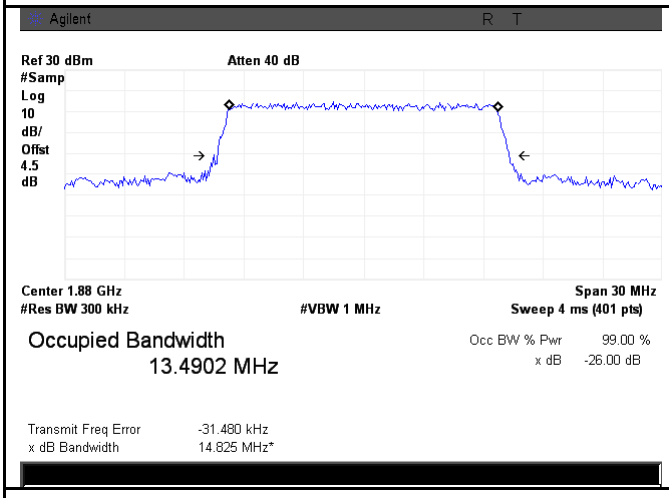
LTE band 2 - High CH 16QAM-10



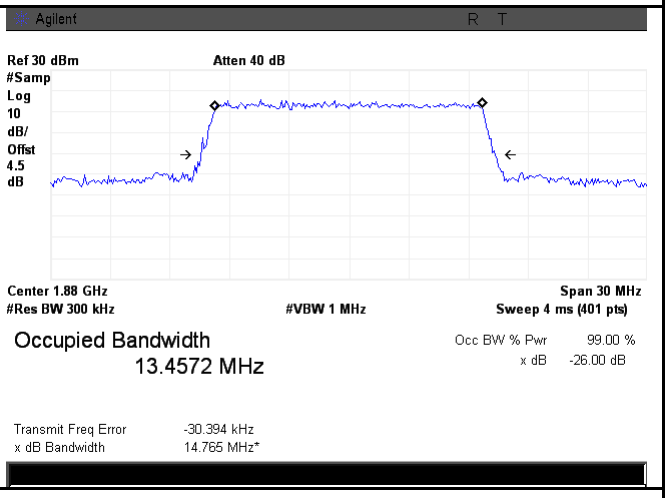
LTE band 2 - Low CH QPSK-15



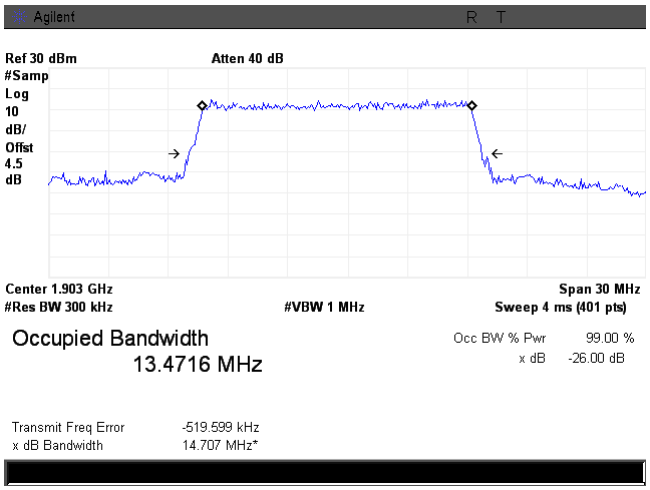
LTE band 2 - Low CH 16QAM-15



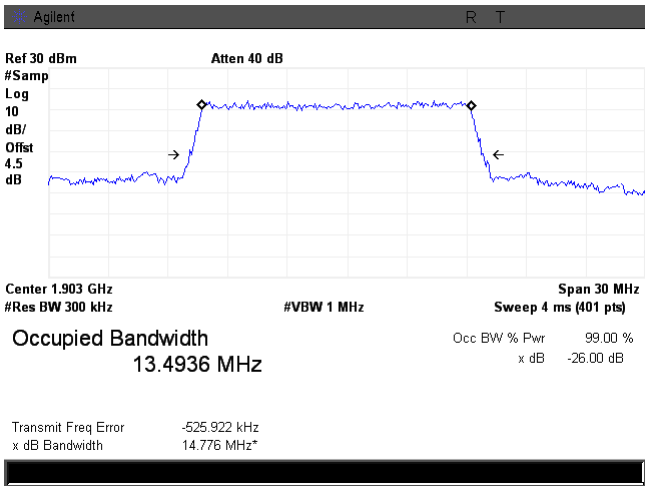
LTE band 2 - Middle CH QPSK-15



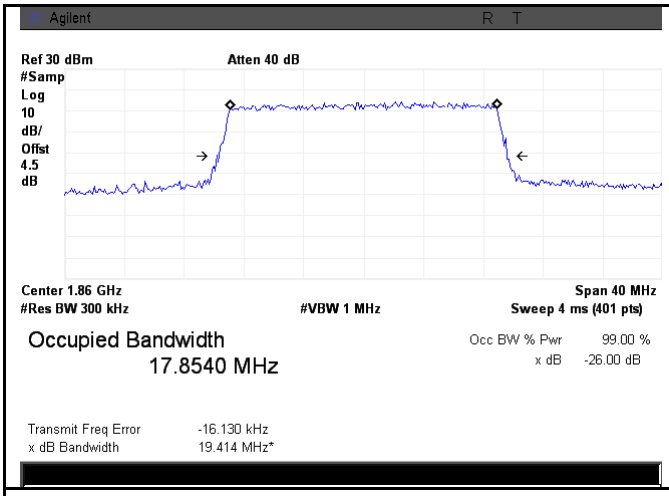
LTE band 2 - Middle CH 16QAM-15



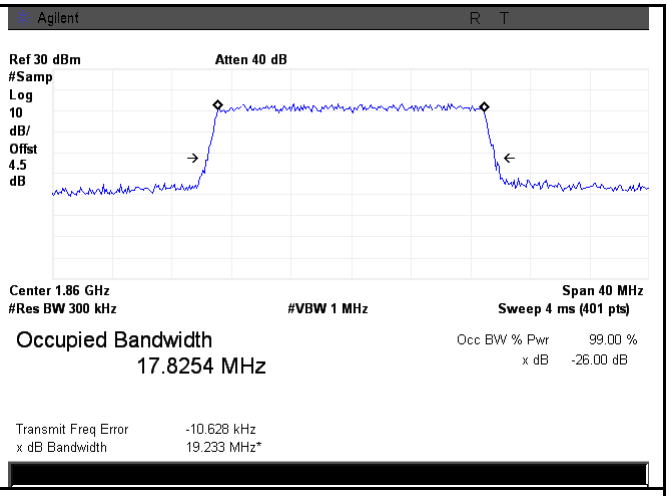
LTE band 2 - High CH QPSK-15



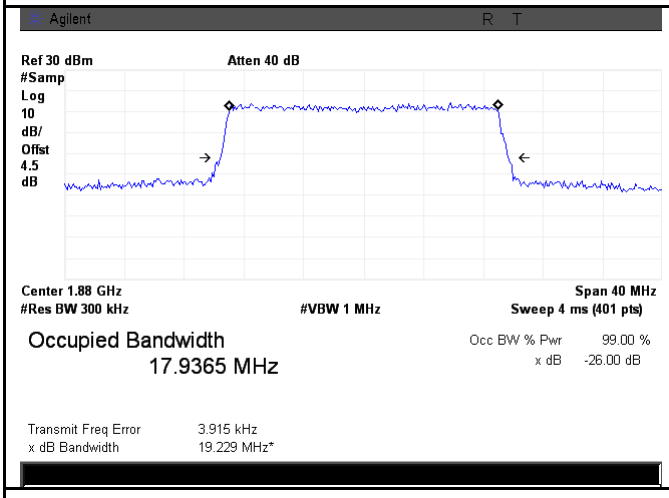
LTE band 2 - High CH 16QAM-15



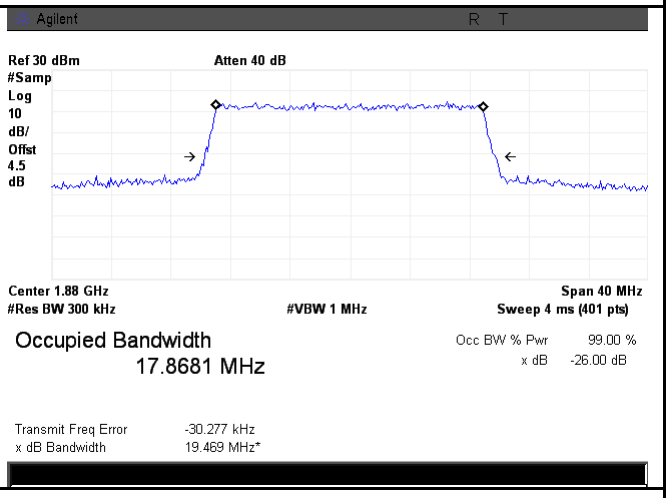
LTE band 2 - Low CH QPSK-20



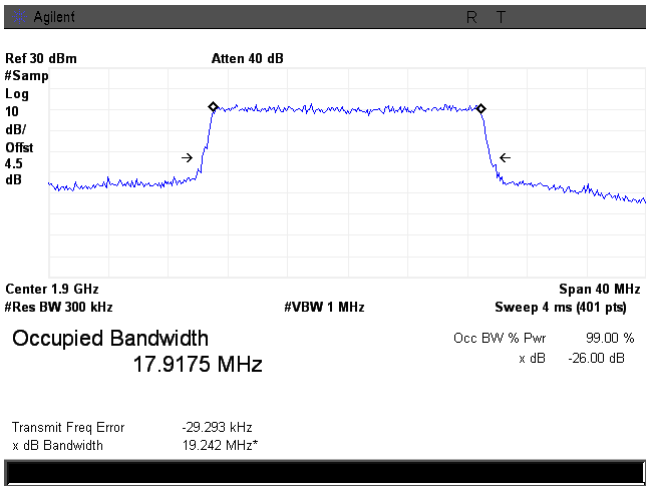
LTE band 2 - Low CH 16QAM-20



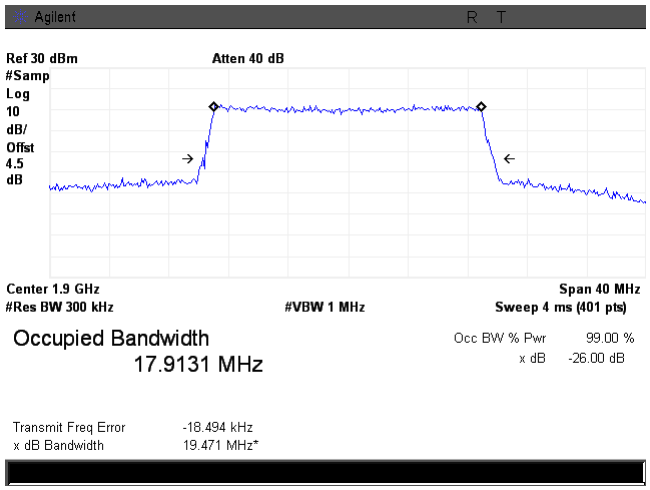
LTE band 2 - Middle CH QPSK-20



LTE band 2 - Middle CH 16QAM-20

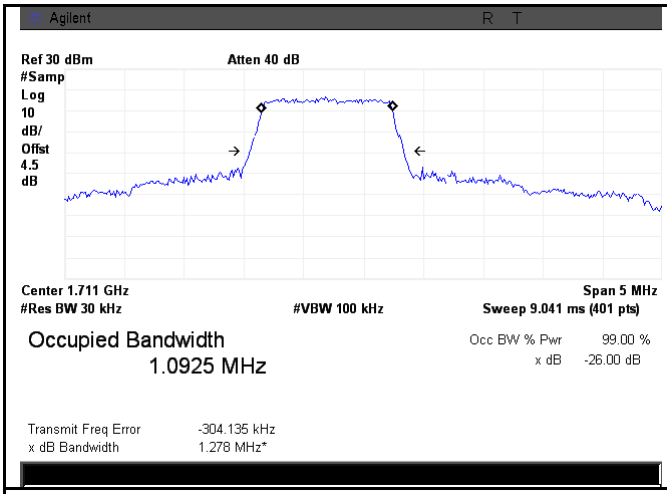


LTE band 2 - High CH QPSK-20

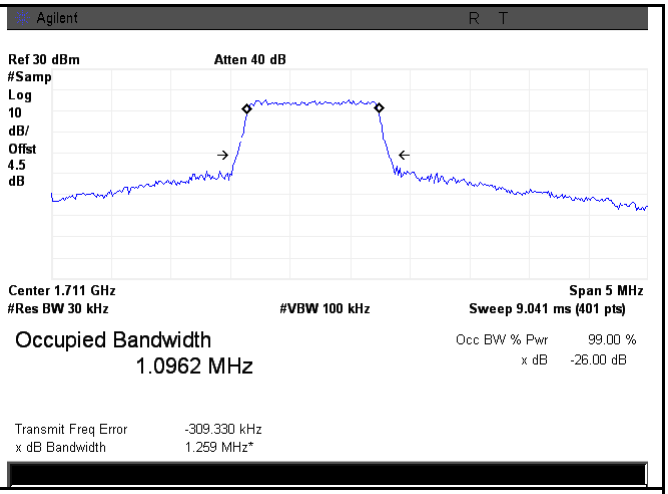


LTE band 2 - High CH 16QAM-20

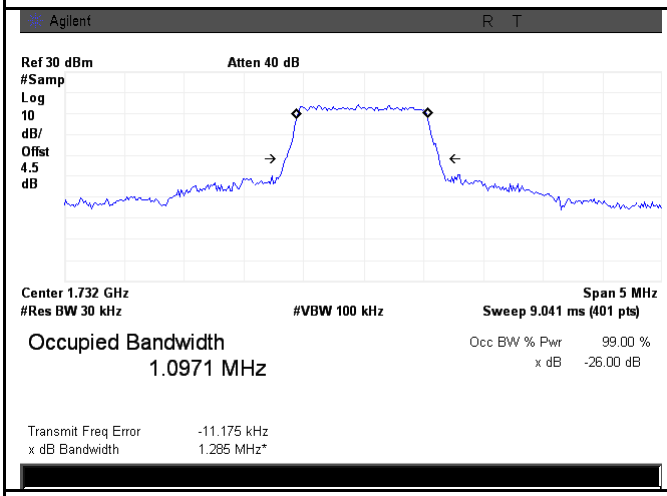
LTE Band 4 (Part 27)



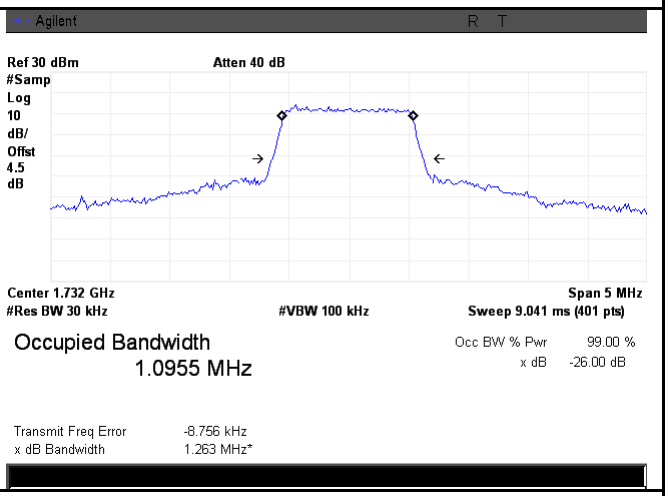
LTE band 4 - Low CH QPSK-1.4



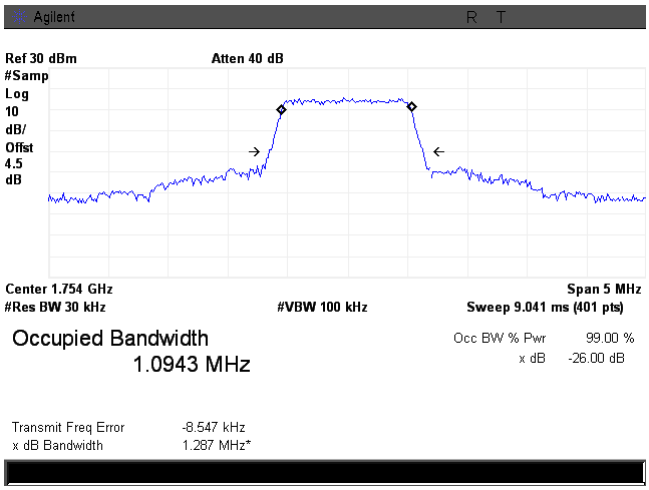
LTE band 4 - Low CH 16QAM-1.4



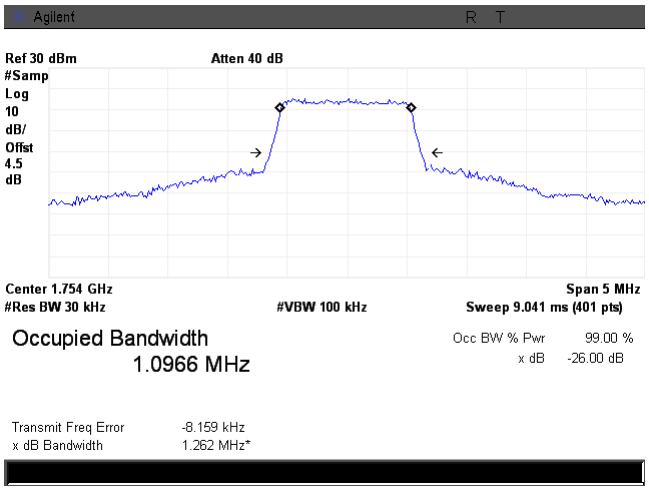
LTE band 4 - Middle CH QPSK-1.4



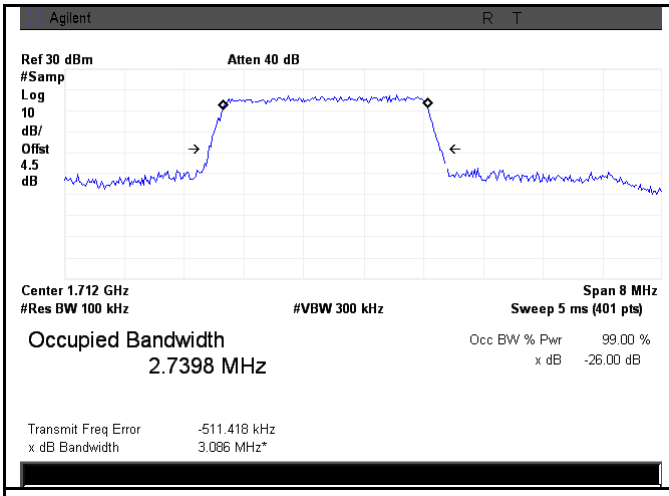
LTE band 4 - Middle CH 16QAM-1.4



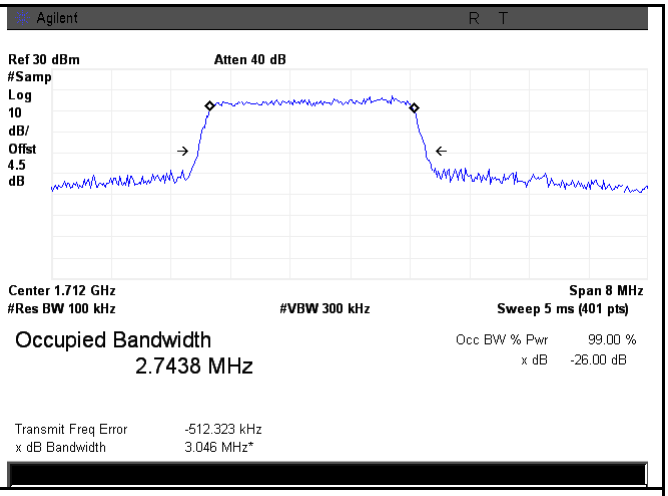
LTE band 4 - High CH QPSK-1.4



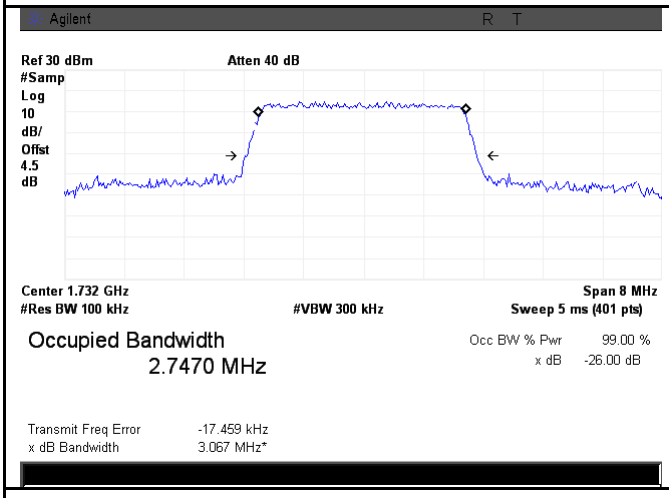
LTE band 4 - High CH 16QAM-1.4



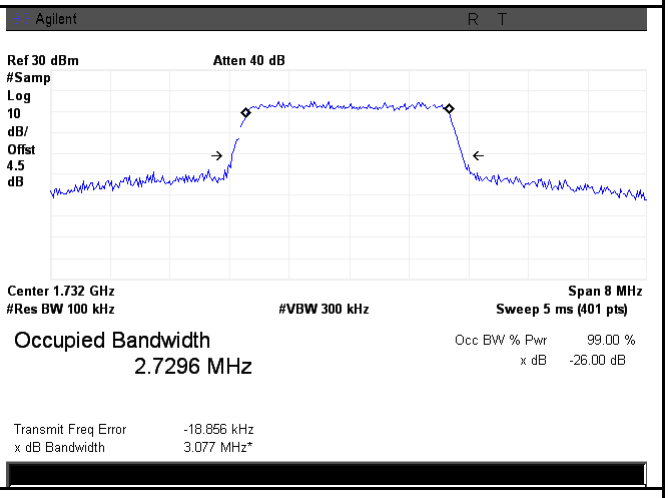
LTE band 4 - Low CH QPSK-3



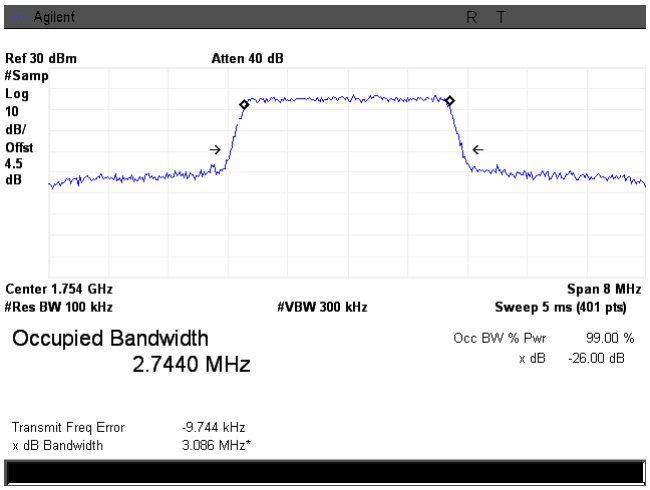
LTE band 4 - Low CH 16QAM-3



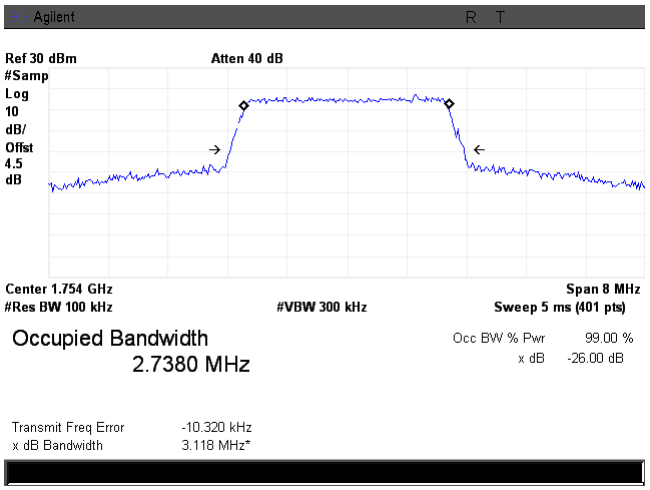
LTE band 4 - Middle CH QPSK-3



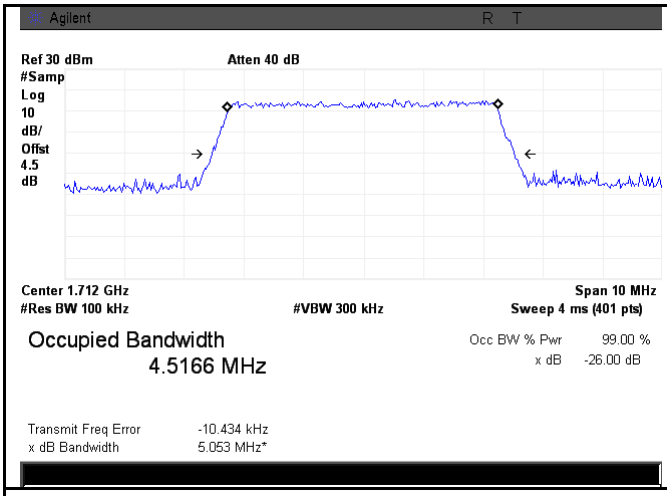
LTE band 4 - Middle CH 16QAM-3



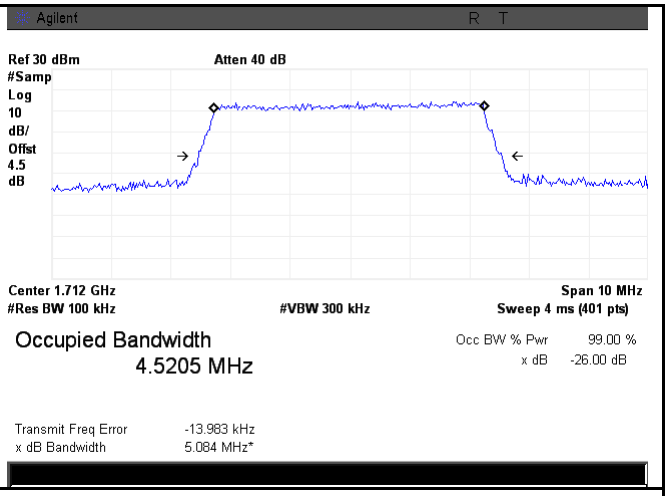
LTE band 4 - High CH QPSK-3



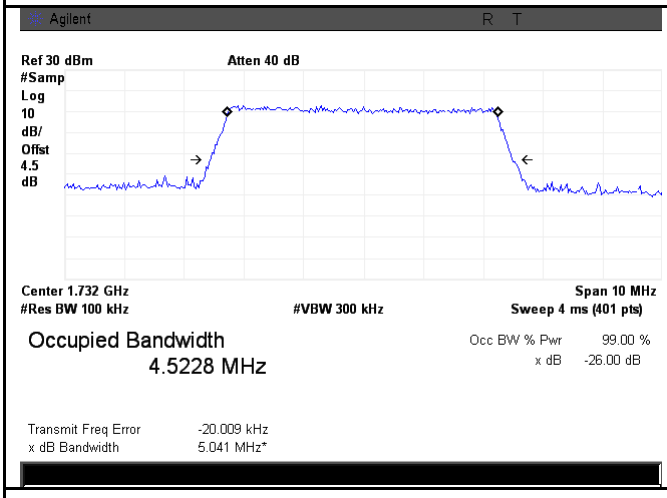
LTE band 4 - High CH 16QAM-3



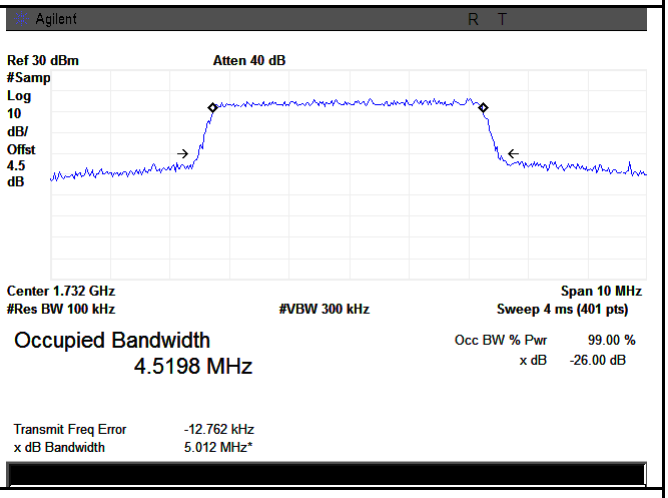
LTE band 4 - Low CH QPSK-5



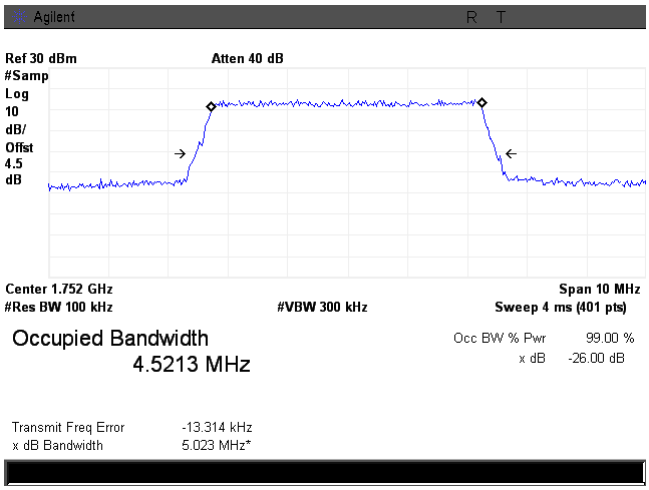
LTE band 4 - Low CH 16QAM-5



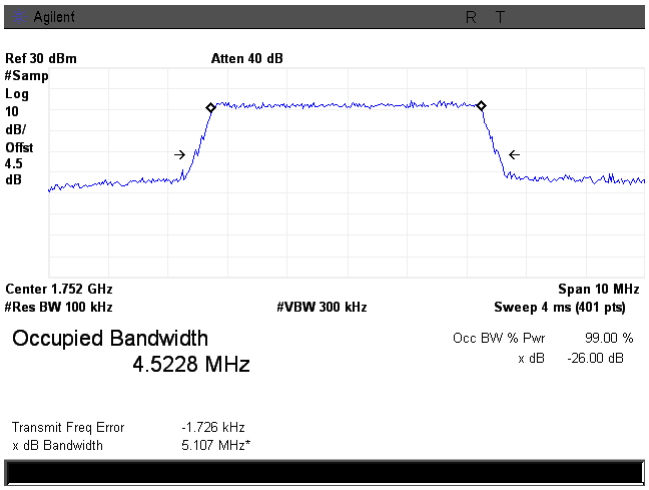
LTE band 4 - Middle CH QPSK-5



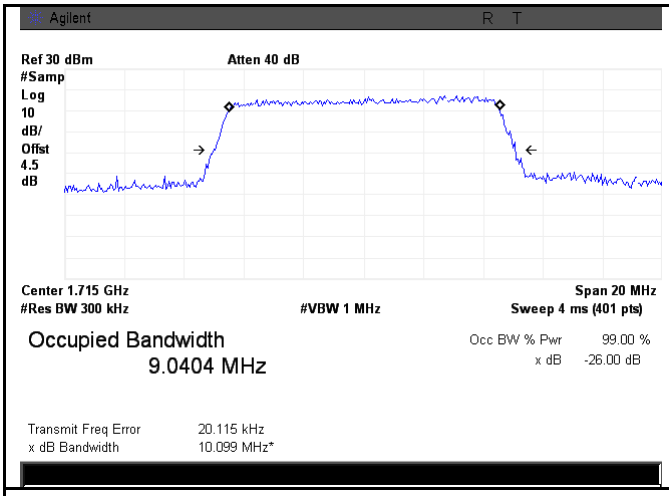
LTE band 4 - Middle CH 16QAM-5



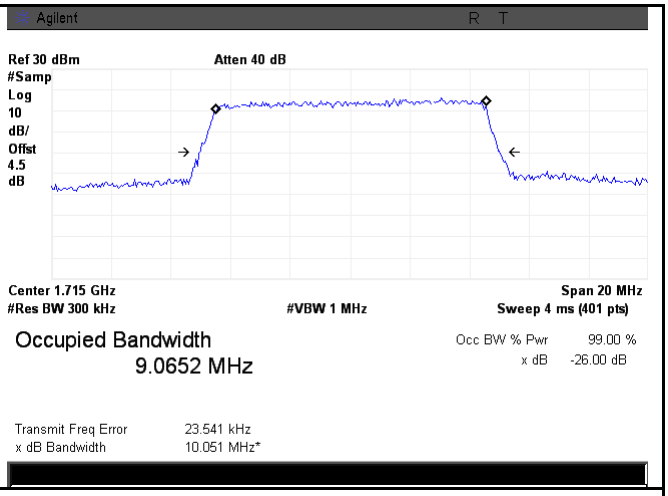
LTE band 4 - High CH QPSK-5



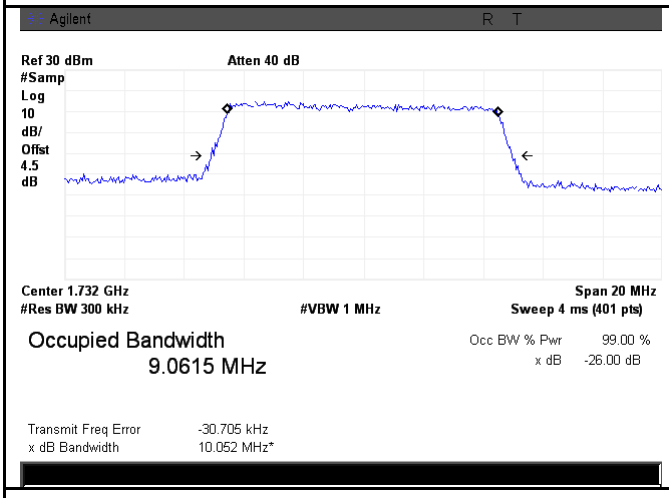
LTE band 4 - High CH 16QAM-5



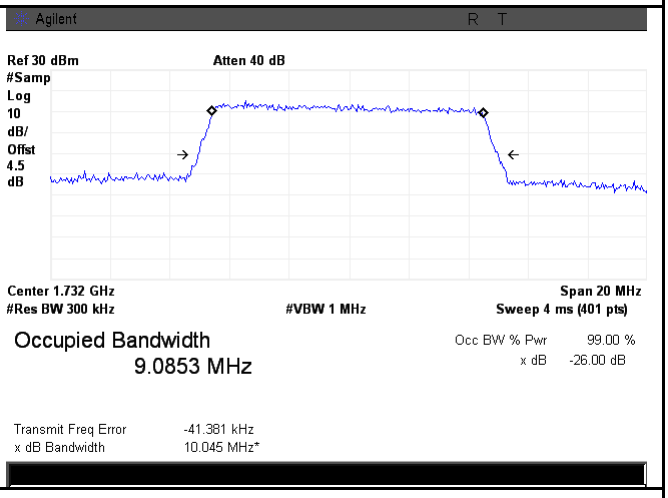
LTE band 4 - Low CH QPSK-10



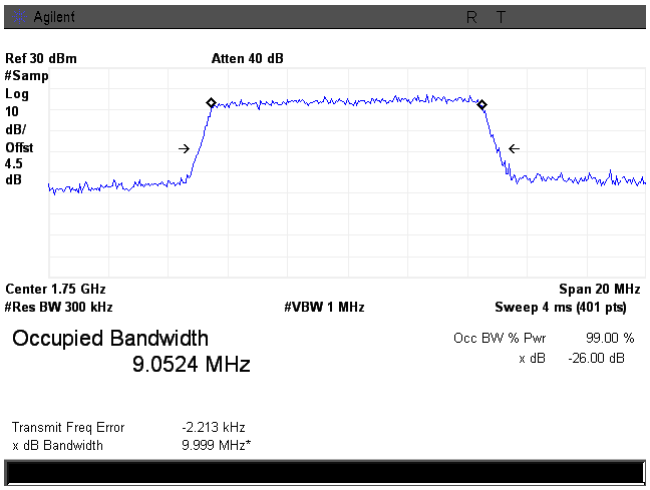
LTE band 4 - Low CH 16QAM-10



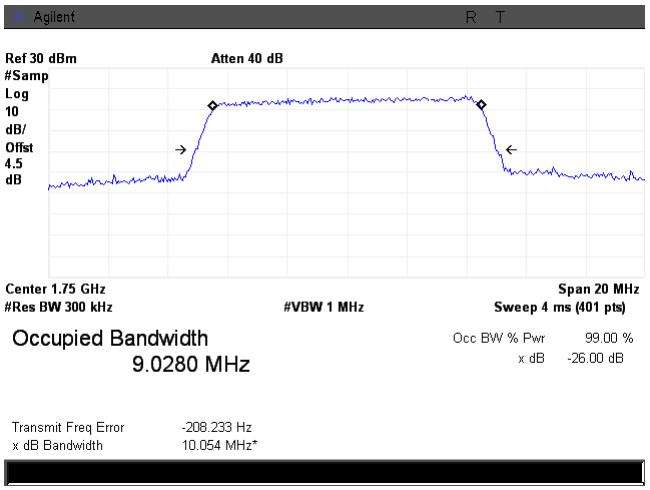
LTE band 4 - Middle CH QPSK-10



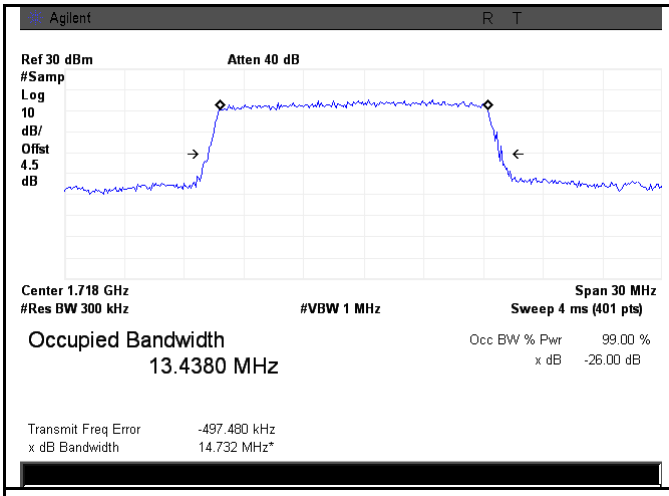
LTE band 4 - Middle CH 16QAM-10



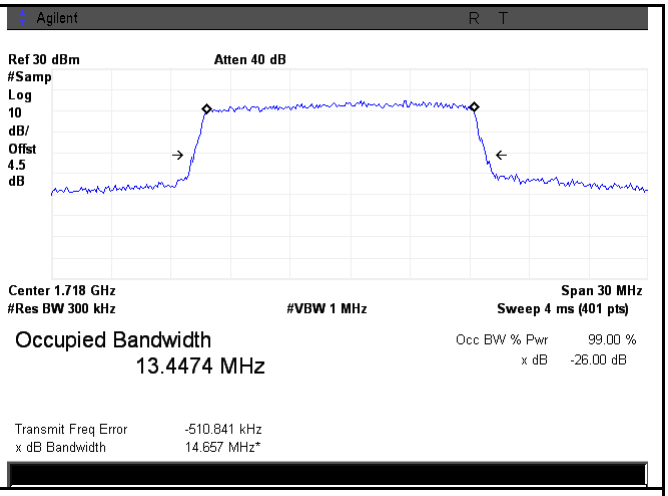
LTE band 4 - High CH QPSK-10



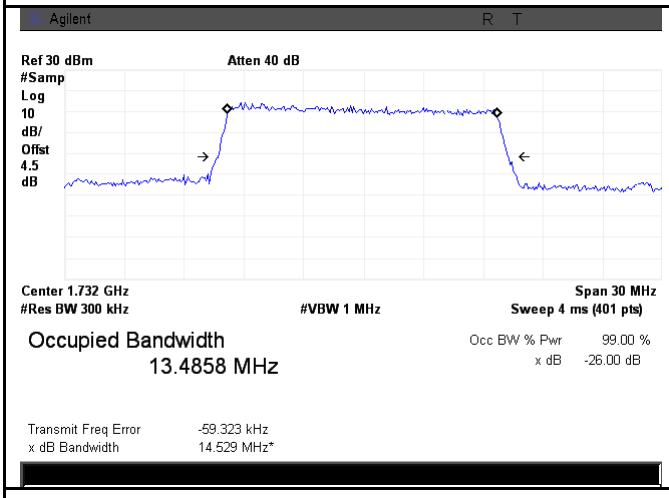
LTE band 4 - High CH 16QAM-10



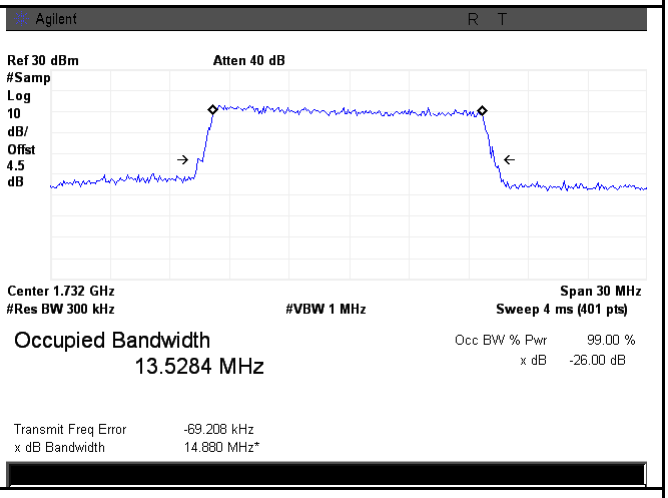
LTE band 4 - Low CH QPSK-15



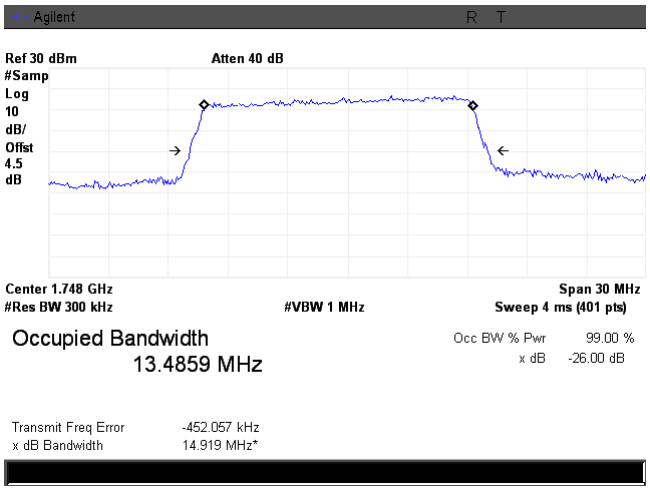
LTE band 4 - Low CH 16QAM-15



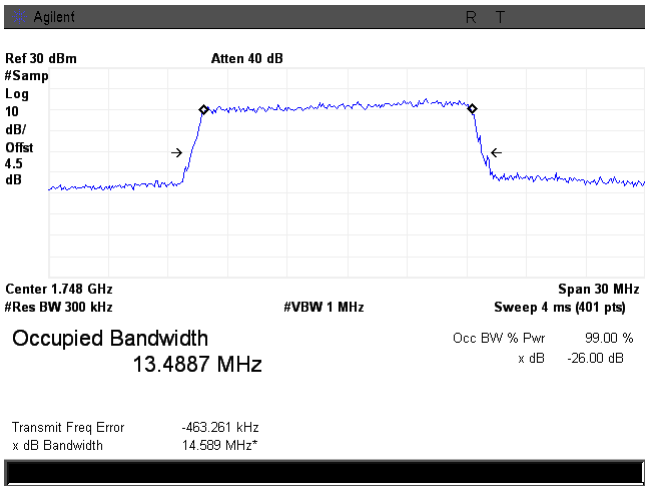
LTE band 4 - Middle CH QPSK-15



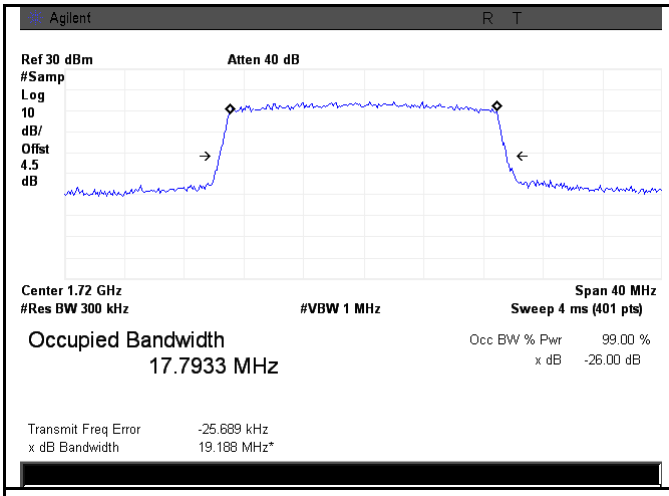
LTE band 4 - Middle CH 16QAM-15



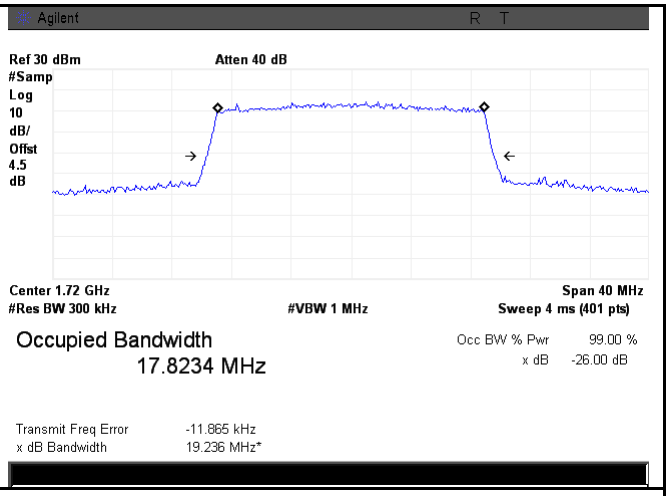
LTE band 4 - High CH QPSK-15



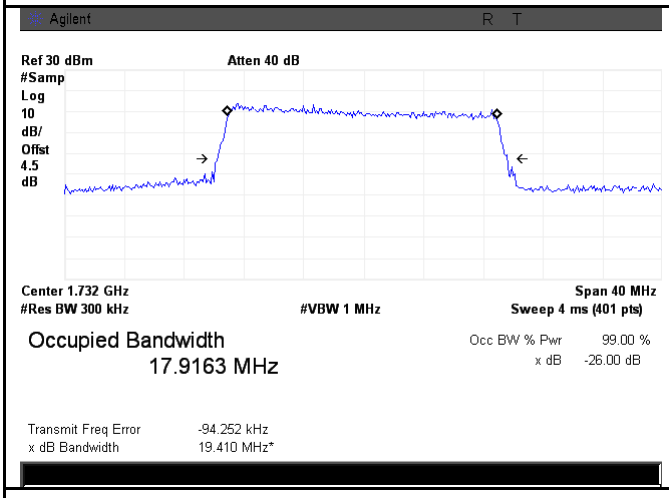
LTE band 4 - High CH 16QAM-15



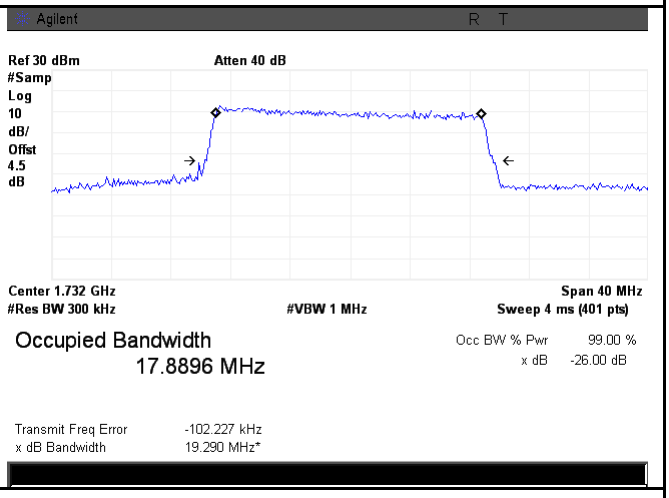
LTE band 4 - Low CH QPSK-20



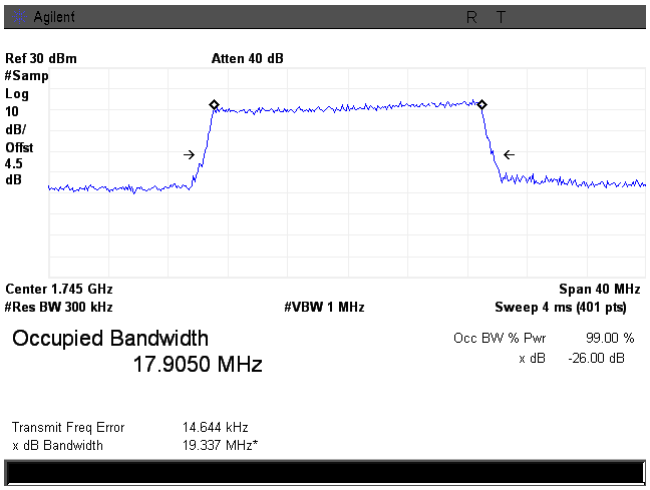
LTE band 4 - Low CH 16QAM-20



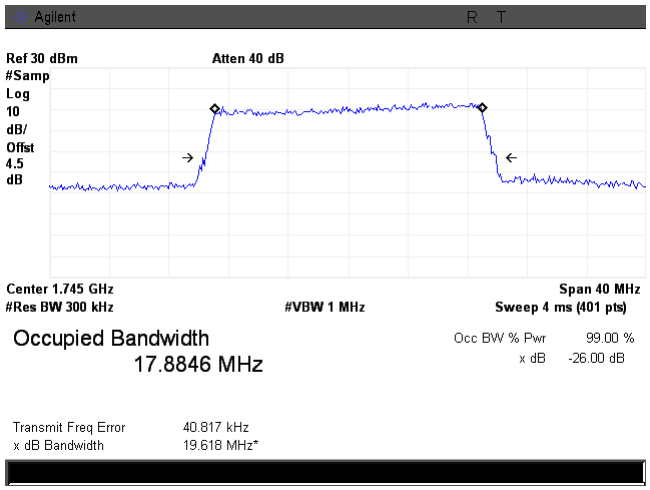
LTE band 4 - Middle CH QPSK-20



LTE band 4 - Middle CH 16QAM-20

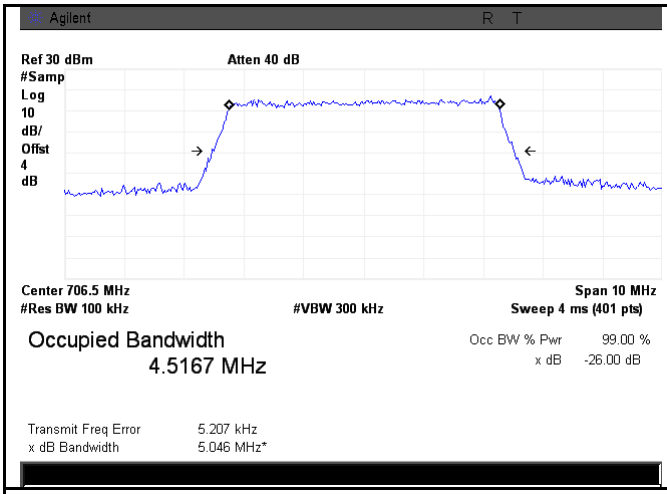


LTE band 4 - High CH QPSK-20

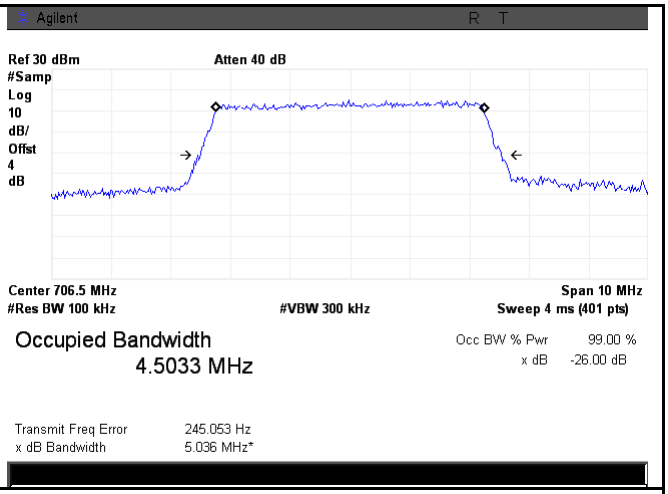


LTE band 4 - High CH 16QAM-20

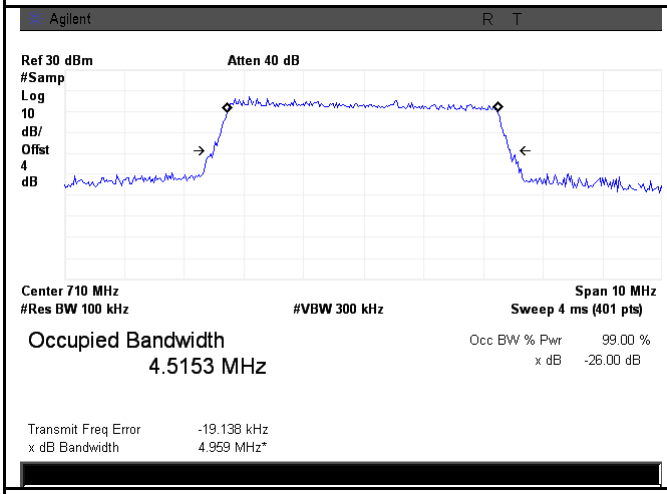
LTE Band 17 (Part 27)



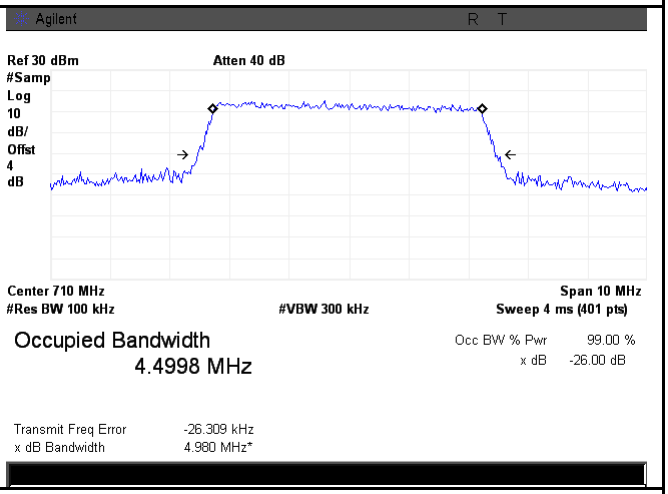
LTE band 17 - Low CH QPSK-5



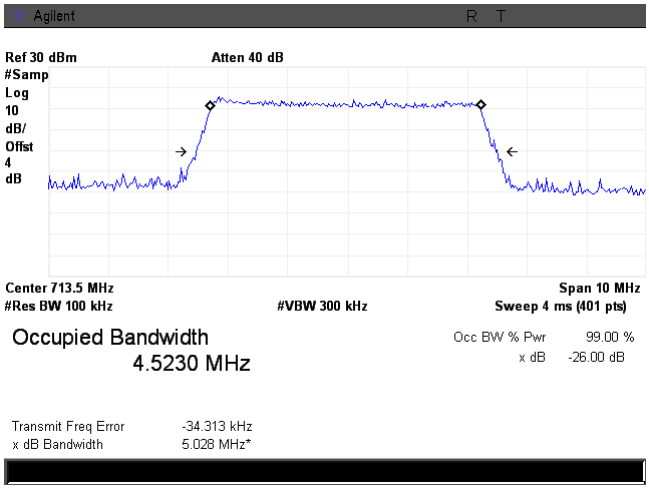
LTE band 17 - Low CH 16QAM-5



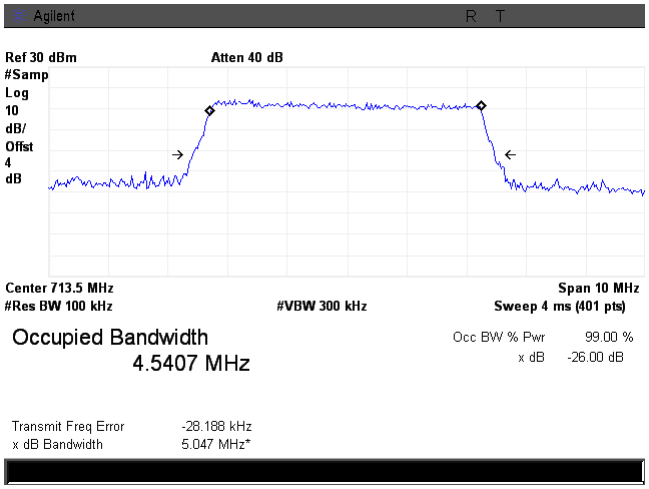
LTE band 17 - Middle CH QPSK-5



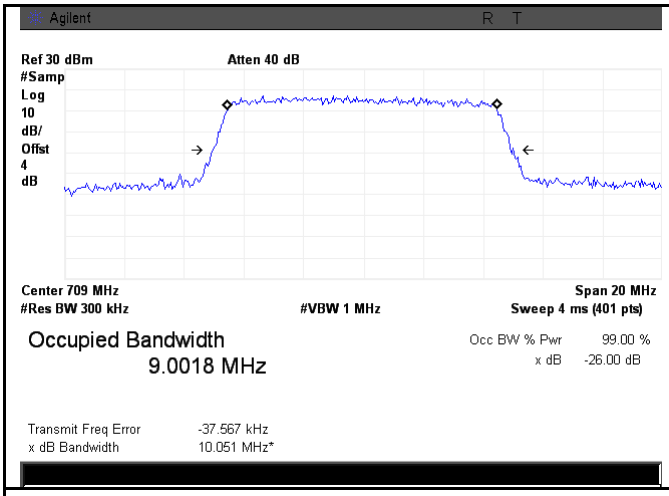
LTE band 17 - Middle CH 16QAM-5



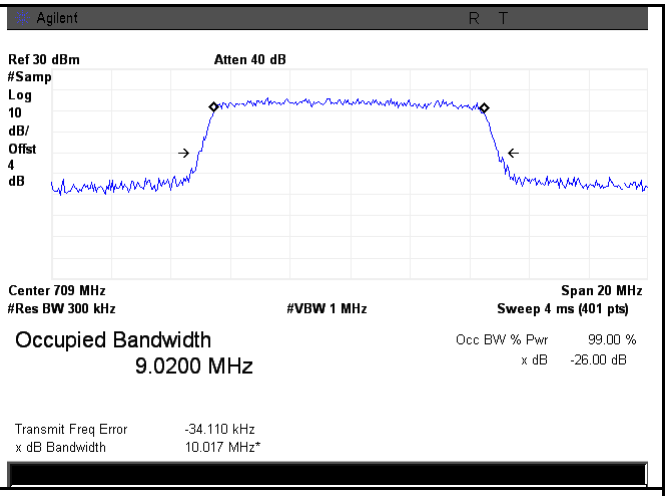
LTE band 17 - High CH QPSK-5



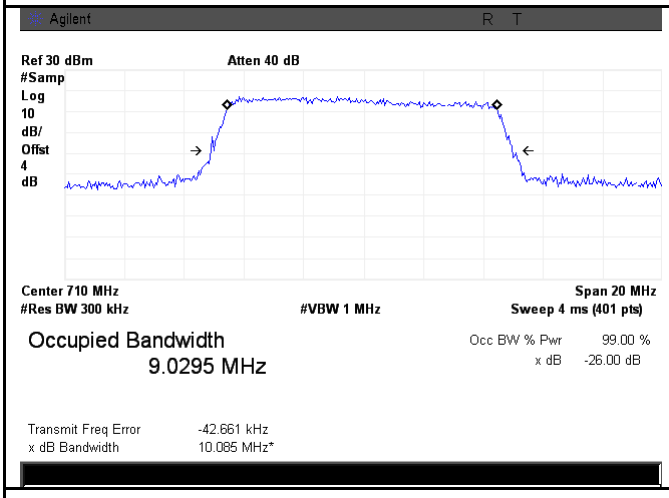
LTE band 17 - High CH 16QAM-5



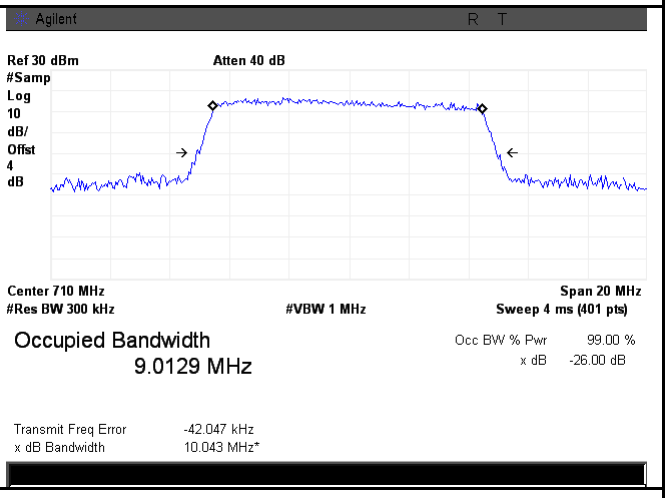
LTE band 17 - Low CH QPSK-10



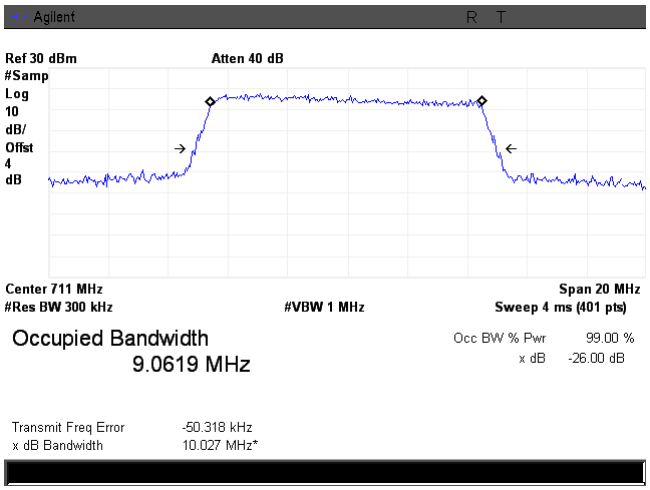
LTE band 17 - Low CH 16QAM-10



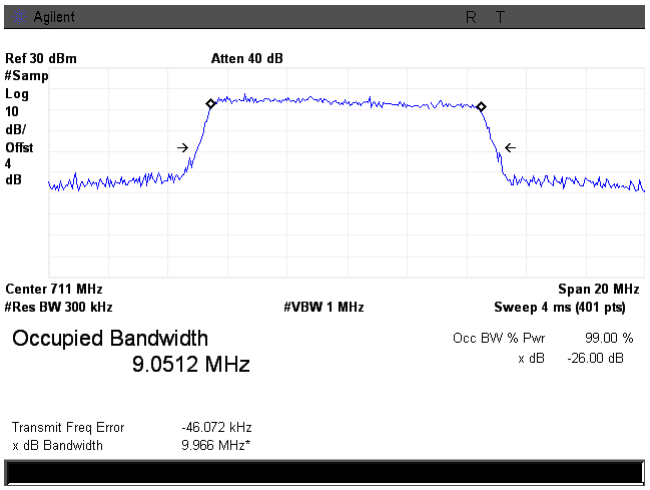
LTE band 17 - Middle CH QPSK-10



LTE band 17 - Middle CH 16QAM-10

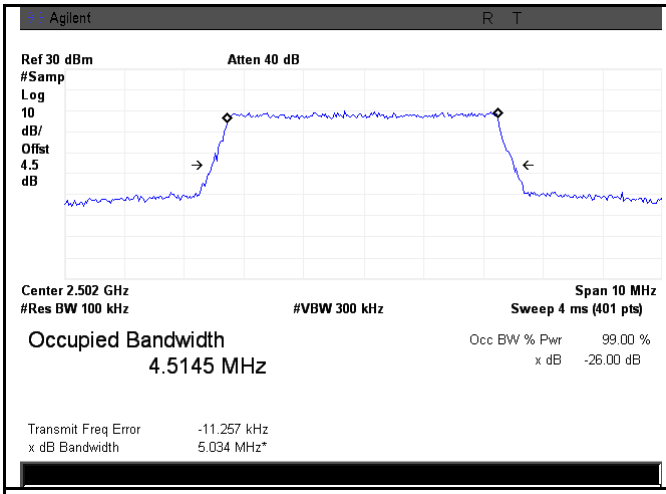


LTE band 17 - High CH QPSK-10

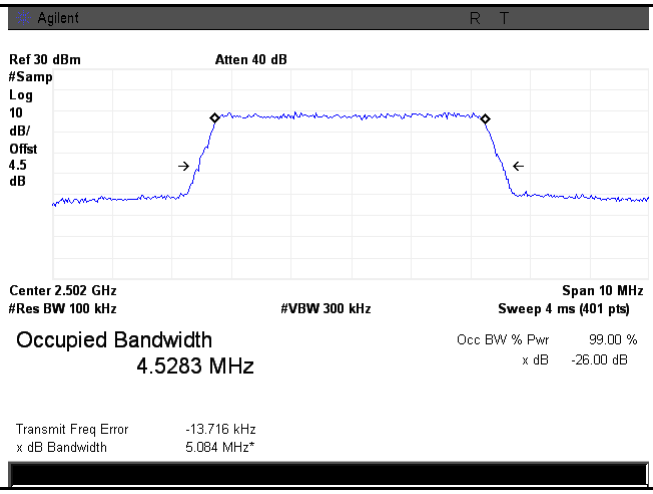


LTE band 17 - High CH 16QAM-10

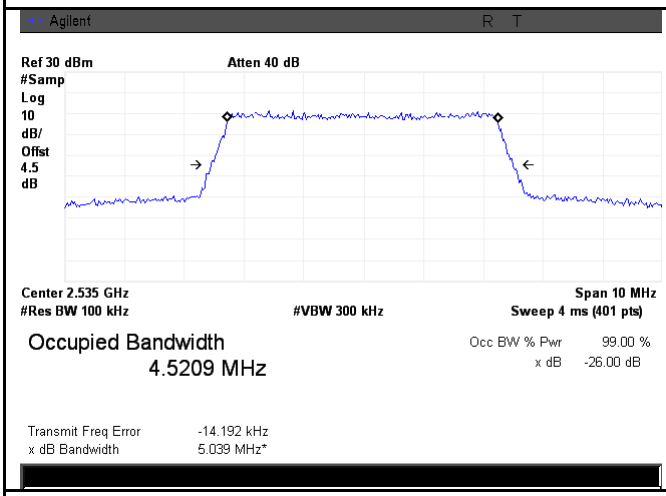
LTE Band 7 (Part 27)



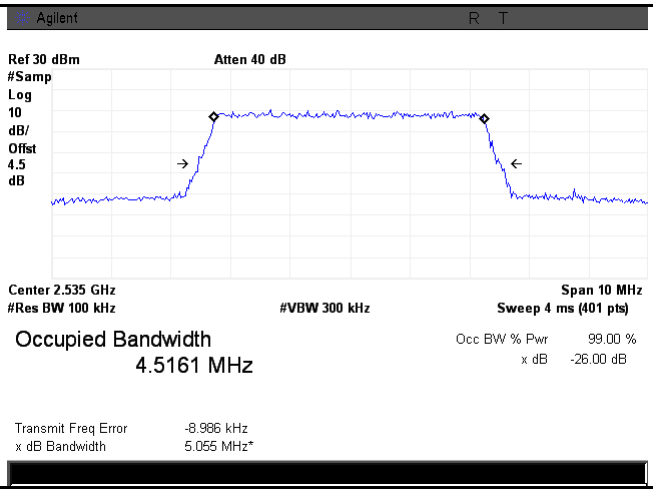
LTE band 7 - Low CH QPSK-5



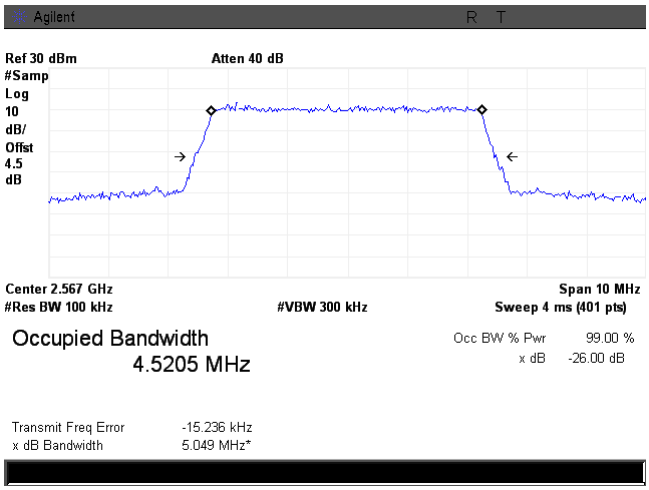
LTE band 7 - Low CH 16QAM-5



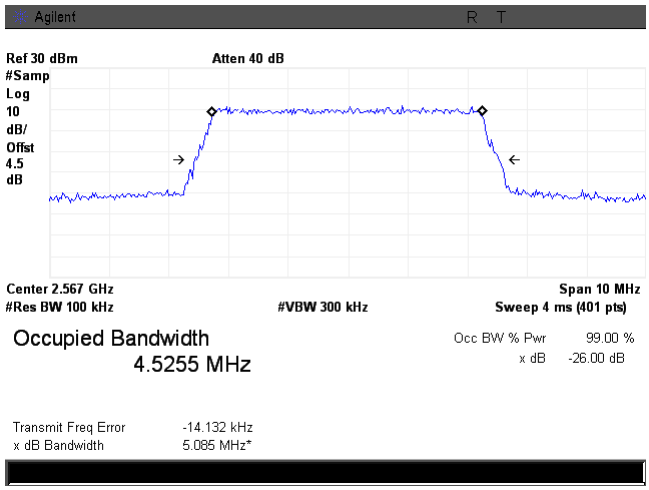
LTE band 7 - Middle CH QPSK-5



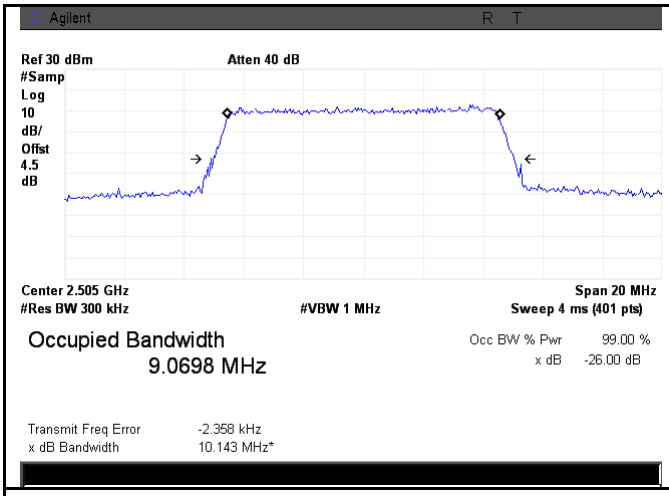
LTE band 7 - Middle CH 16QAM-5



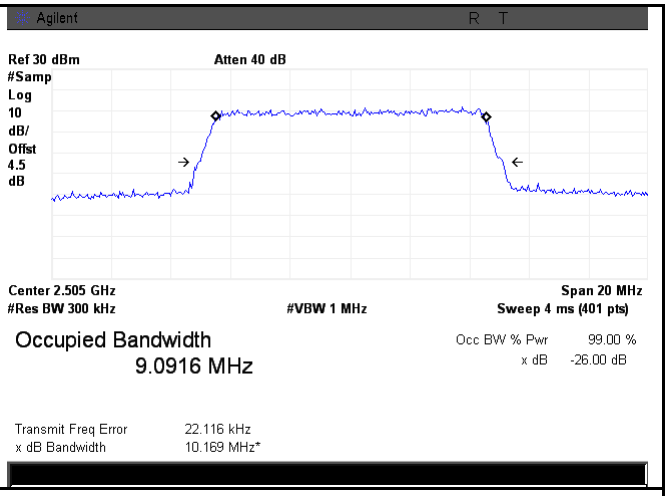
LTE band 7 - High CH QPSK-5



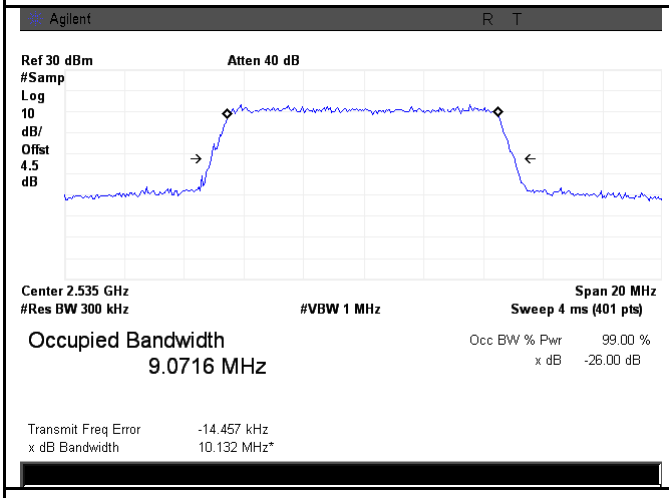
LTE band 7 - High CH 16QAM-5



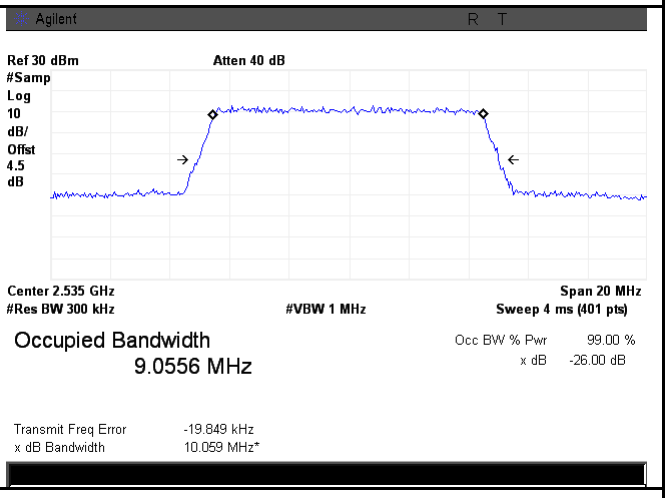
LTE band 7 - Low CH QPSK-10



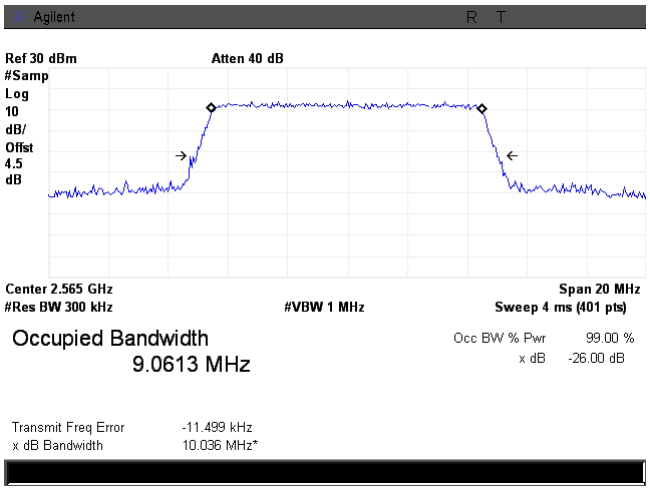
LTE band 7 - Low CH 16QAM-10



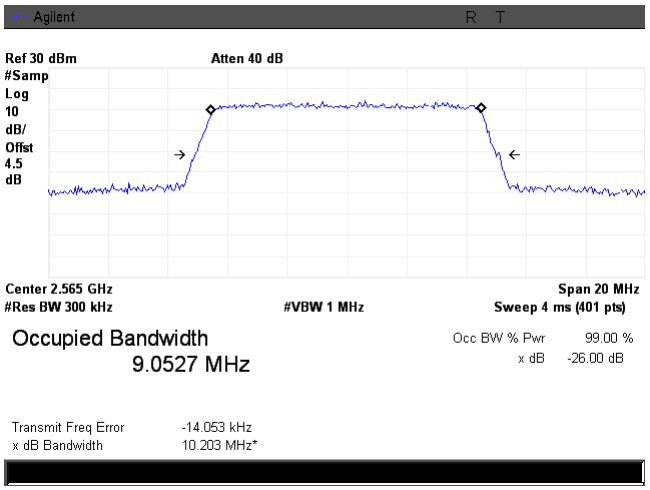
LTE band 7 - Middle CH QPSK-10



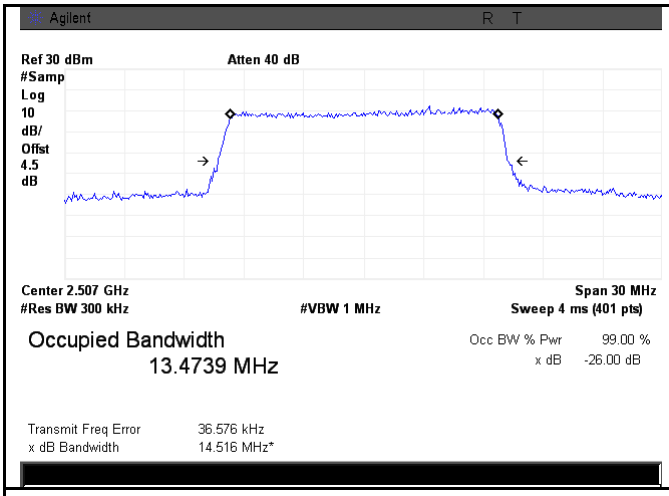
LTE band 7 - Middle CH 16QAM-10



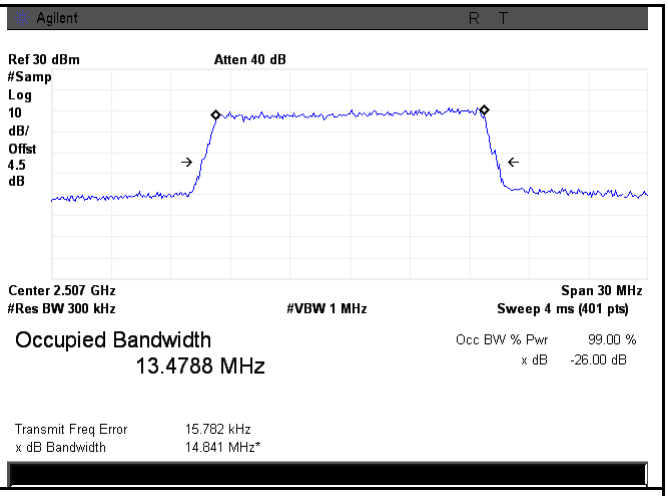
LTE band 7 - High CH QPSK-10



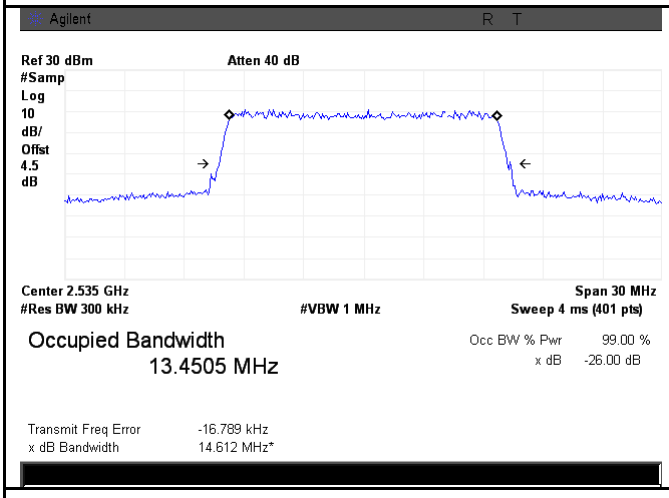
LTE band 7 - High CH 16QAM-10



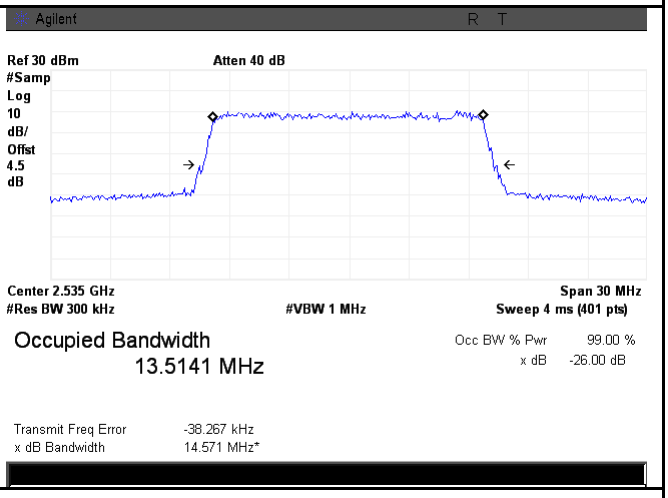
LTE band 7 - Low CH QPSK-15



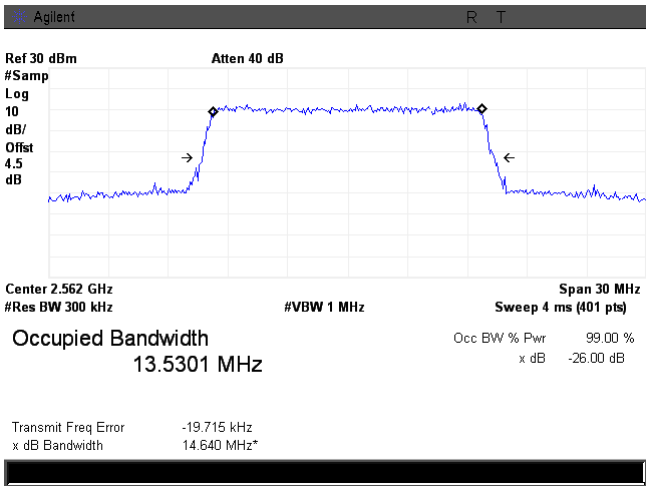
LTE band 7 - Low CH 16QAM-15



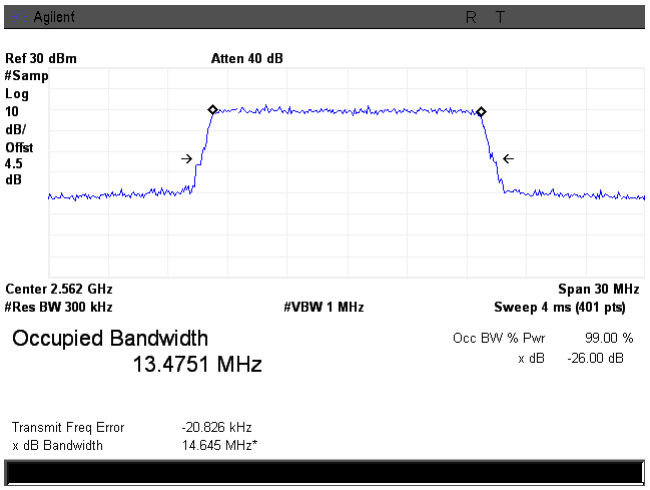
LTE band 7 - Middle CH QPSK-15



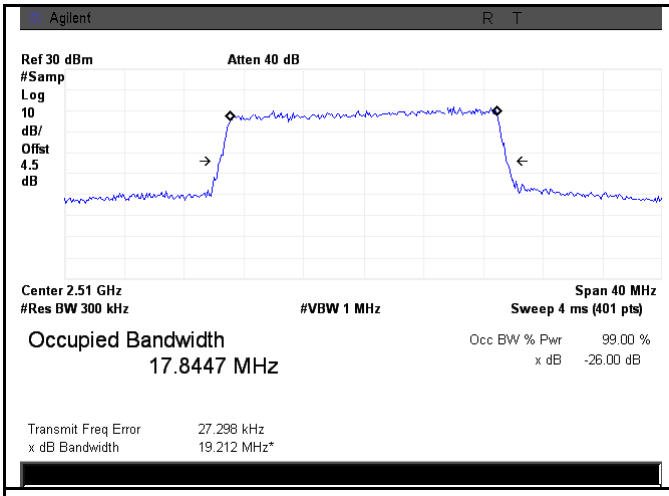
LTE band 7 - Middle CH 16QAM-15



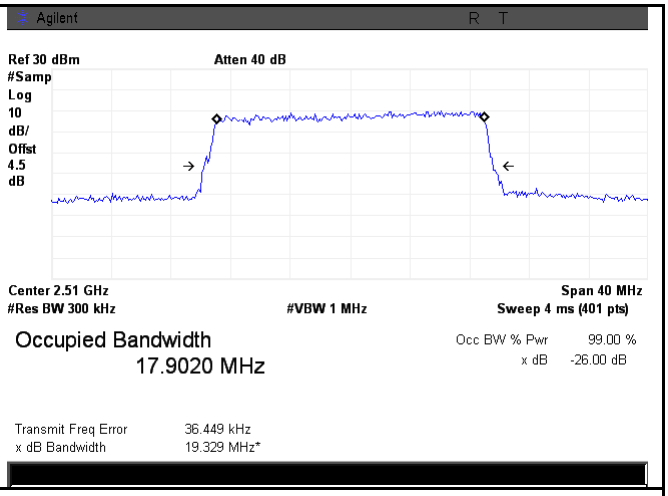
LTE band 7 - High CH QPSK-15



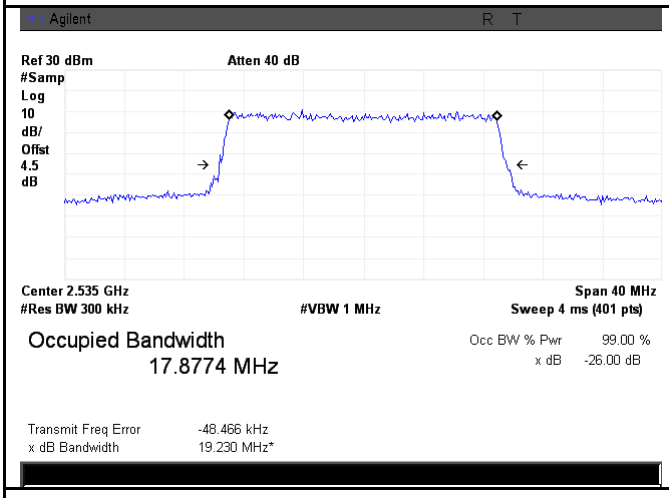
LTE band 7 - High CH 16QAM-15



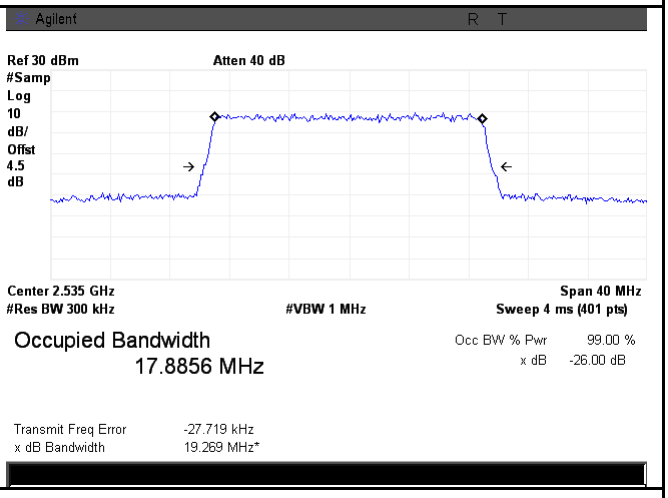
LTE band 7 - Low CH QPSK-20



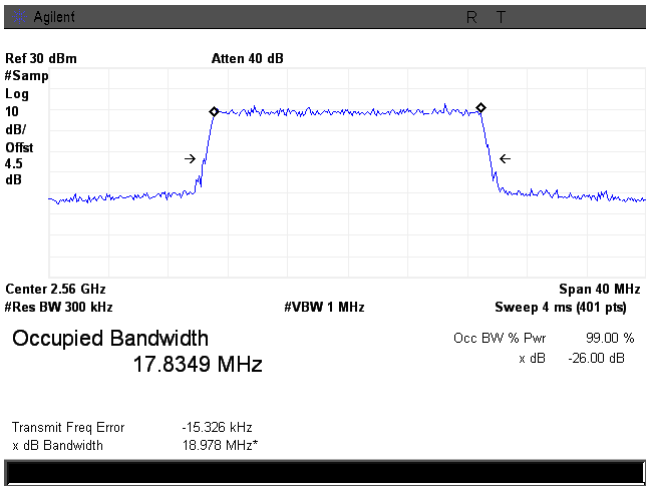
LTE band 7 - Low CH 16QAM-20



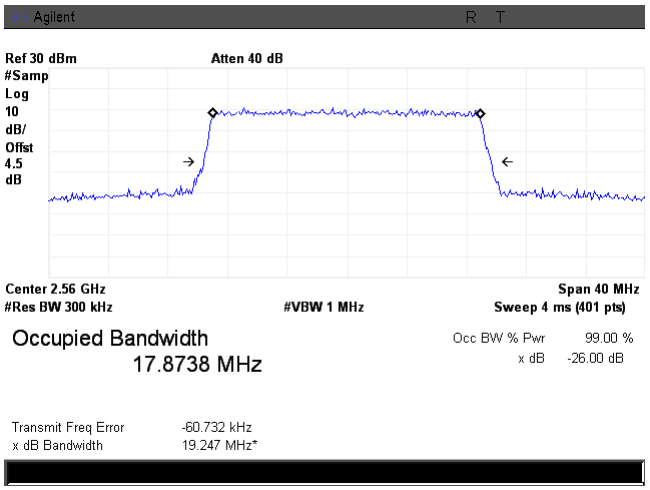
LTE band 7 - Middle CH QPSK-20



LTE band 7 - Middle CH 16QAM-20



LTE band 7 - High CH QPSK-20

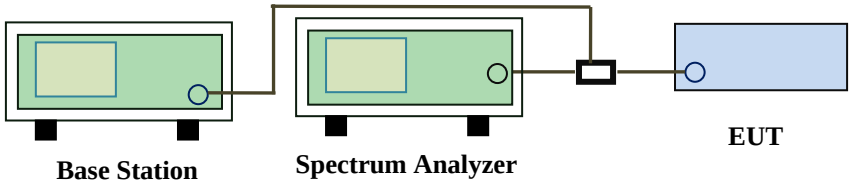


LTE band 7 - High CH 16QAM-20

6.6 Spurious Emissions at Antenna Terminals

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21 to July 23, 2015
Tested By :	Winnie Zhang

Requirement(s):

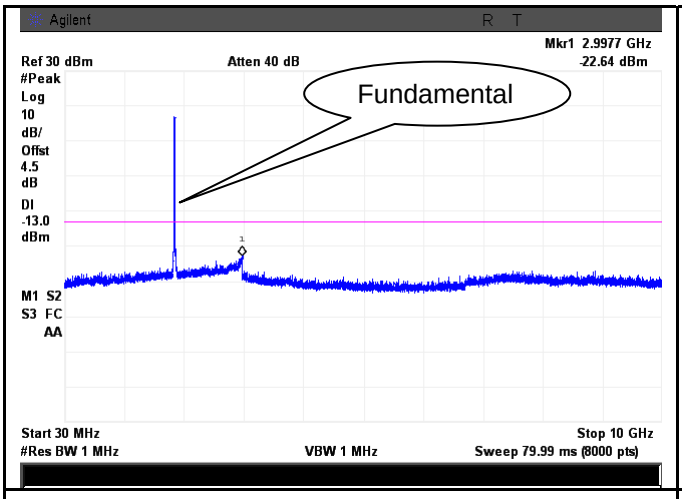
Spec	Item	Requirement	Applicable
§2.1051, §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB	☑
Test Setup			
Test Procedure	- The EUT was connected to Spectrum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

Test Data ☑ Yes ☐ N/A

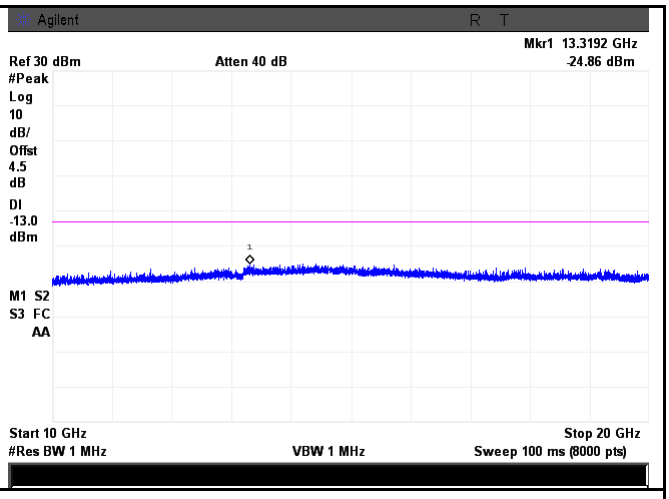
Test Plot ☑ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

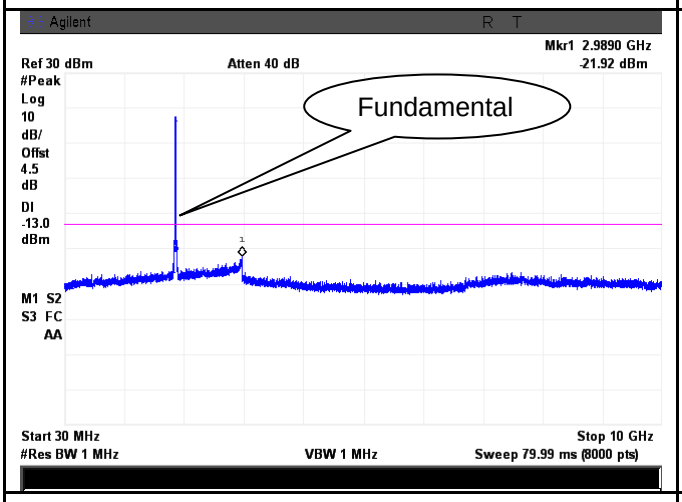
LTE Band 2 (Part 24E) result



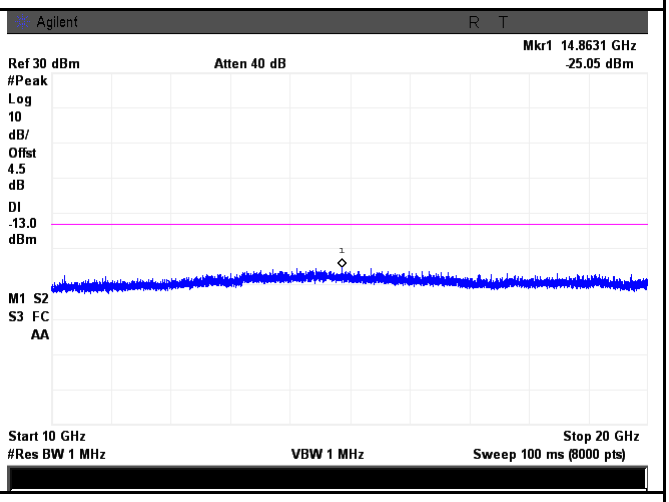
LTE Band 2 - Low Channel-1



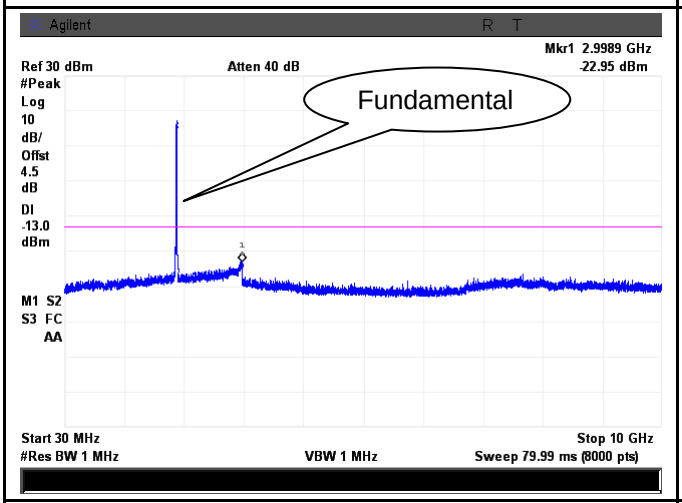
LTE Band 2 - Low Channel-2



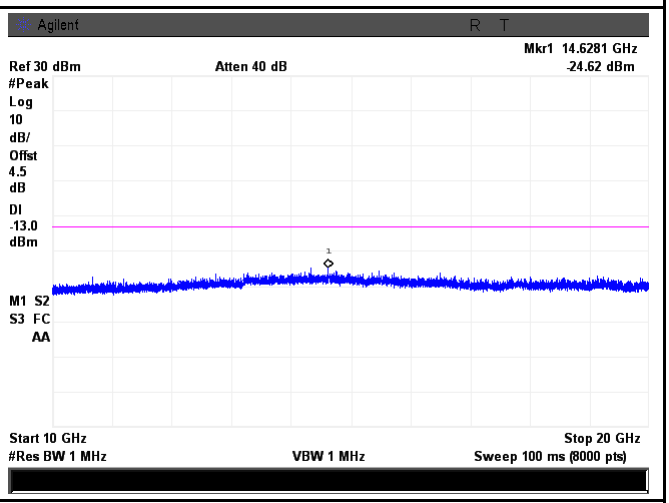
LTE Band 2 Middle Channel-1



LTE Band 2 Middle Channel-2

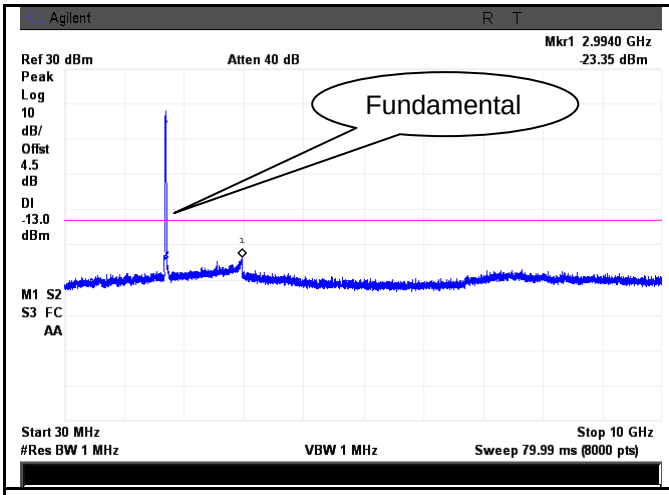


LTE Band 2 - High Channel-1

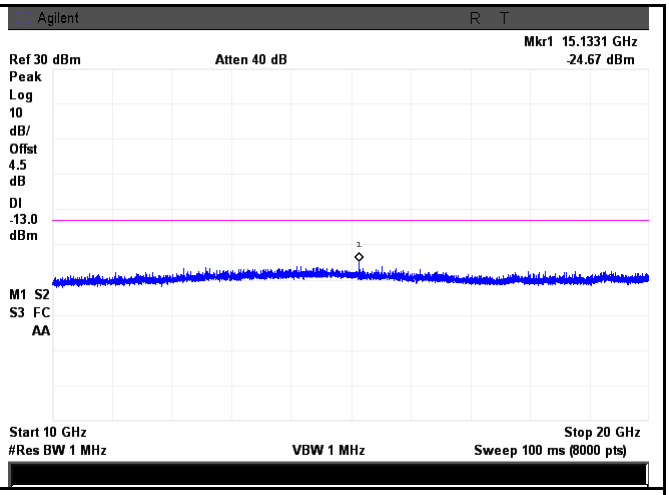


LTE Band 2 - High Channel-2

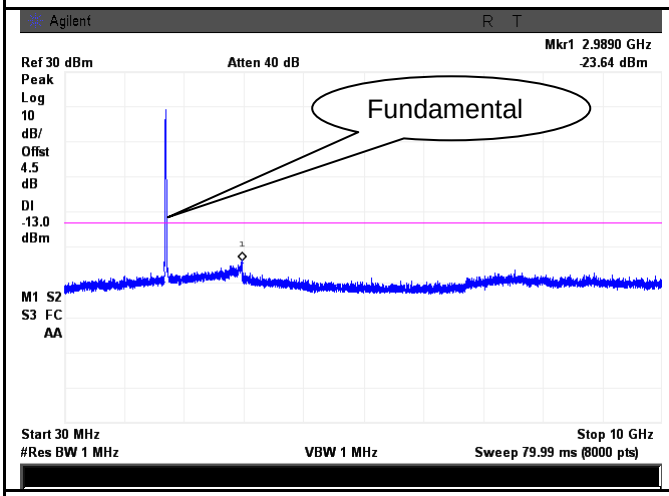
LTE Band 4 (Part27) result



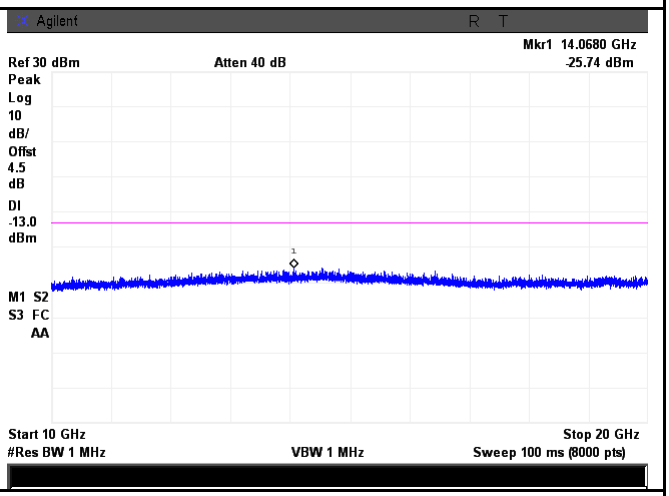
LTE Band 4 - Low Channel-1



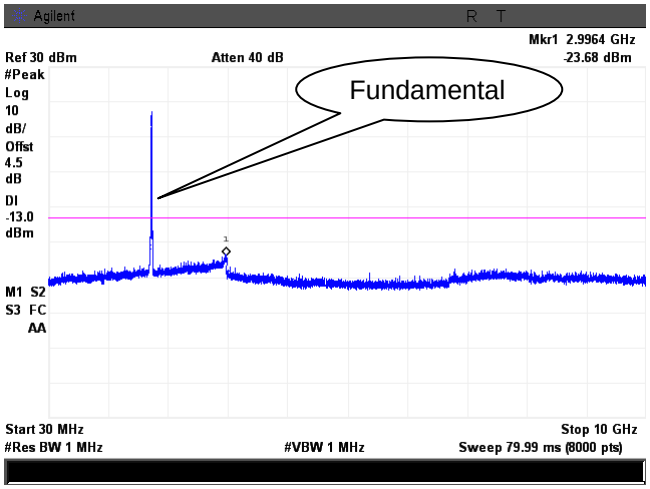
LTE Band 4 - Low Channel-2



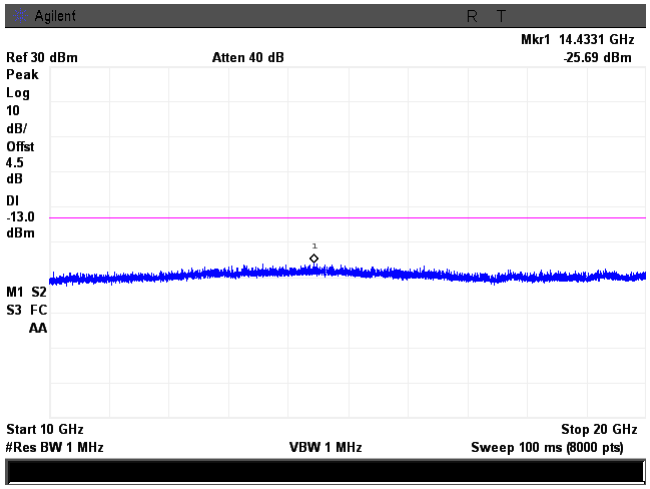
LTE Band 4 - Middle Channel-1



LTE Band 4 - Middle Channel-2

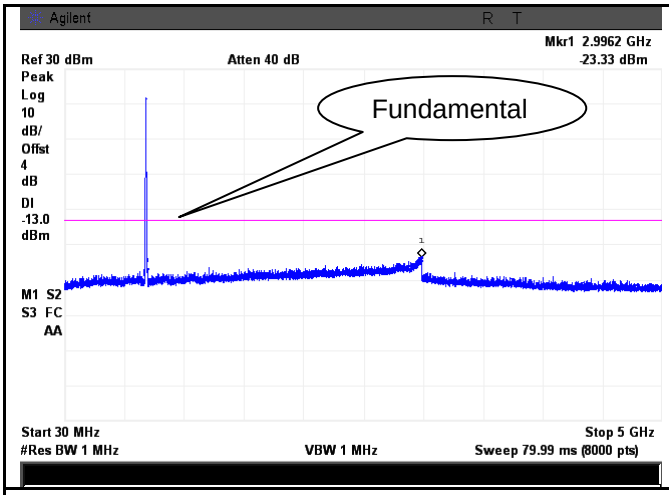


LTE Band 4 - High Channel-1

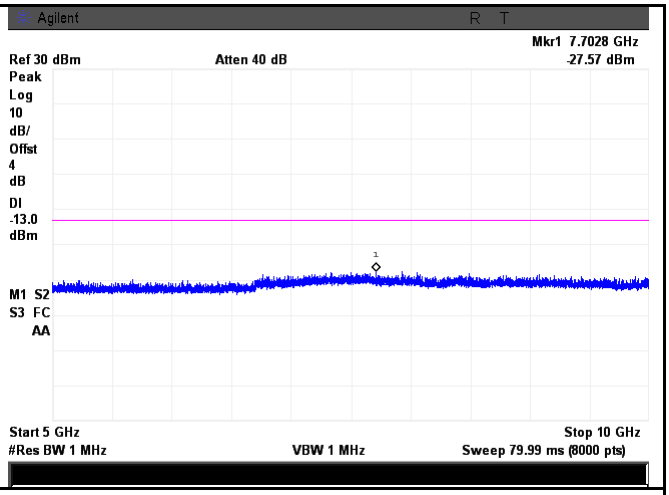


LTE Band 4 - High Channel-2

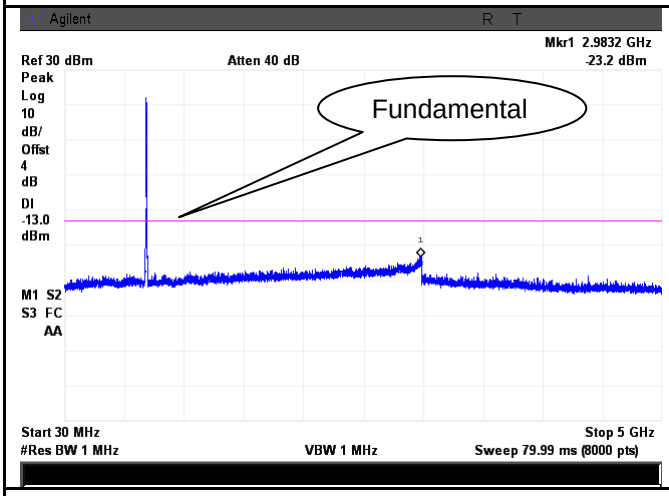
LTE Band 17 (Part 27)



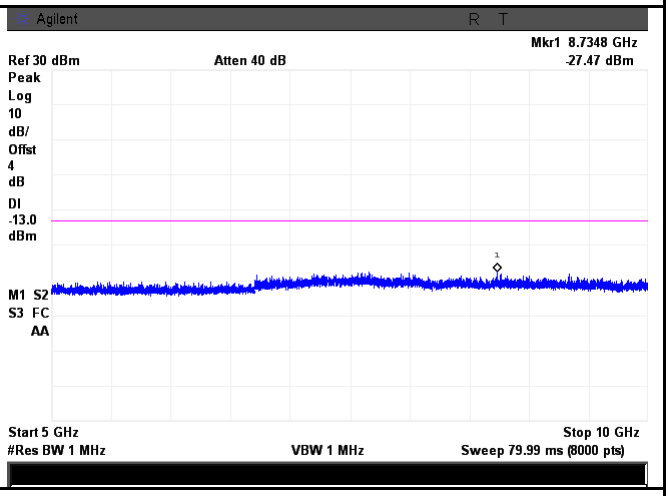
LTE Band 17 - Low Channel-1



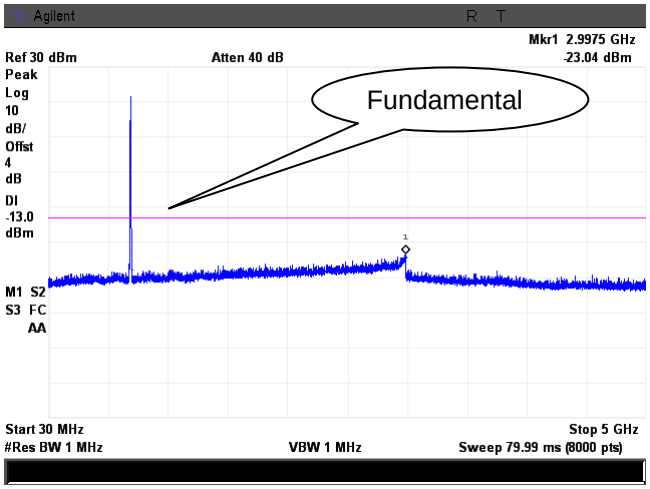
LTE Band 17 - Low Channel-2



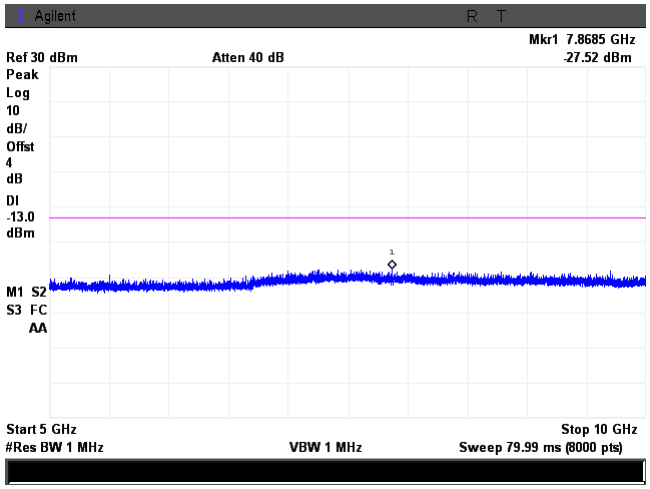
LTE Band 17- Middle Channel-1



LTE Band 17 - Middle Channel-2

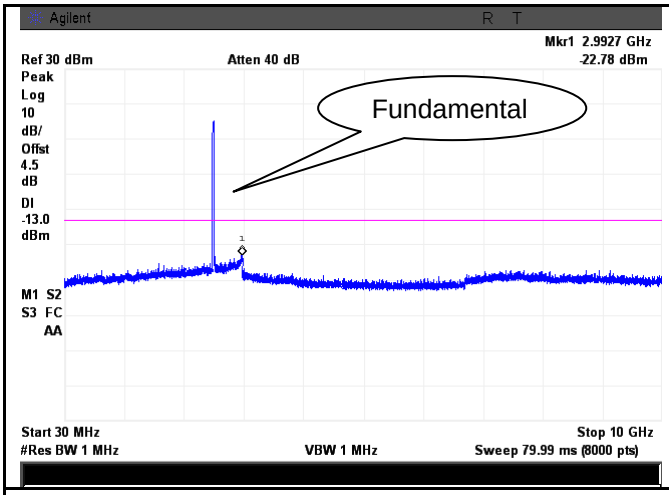


LTE Band 17 - High Channel-1

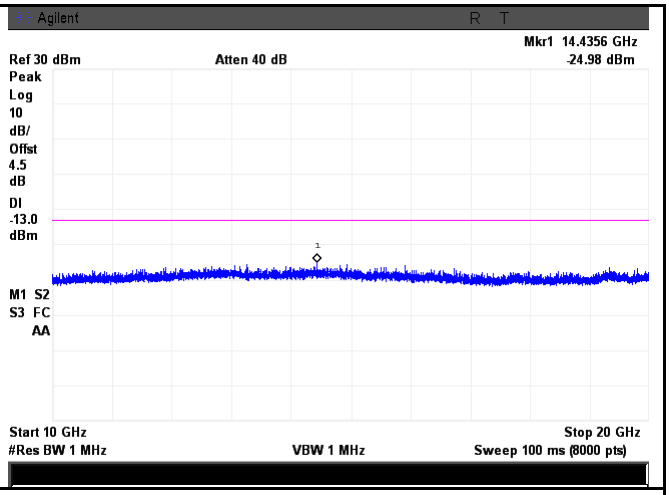


LTE Band 17 - High Channel-2

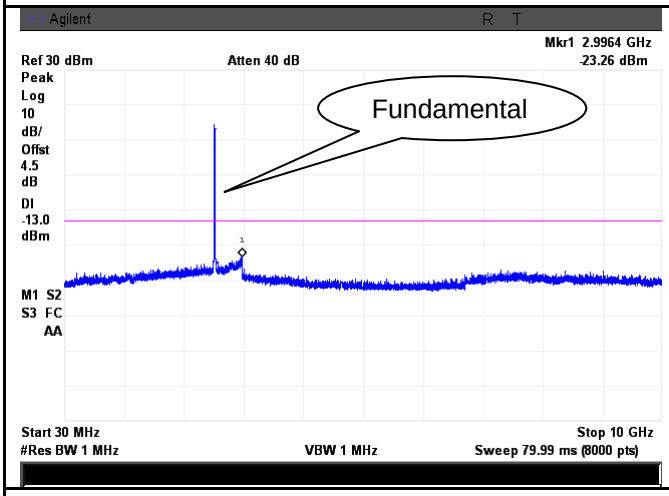
LTE Band 7 (Part 27)



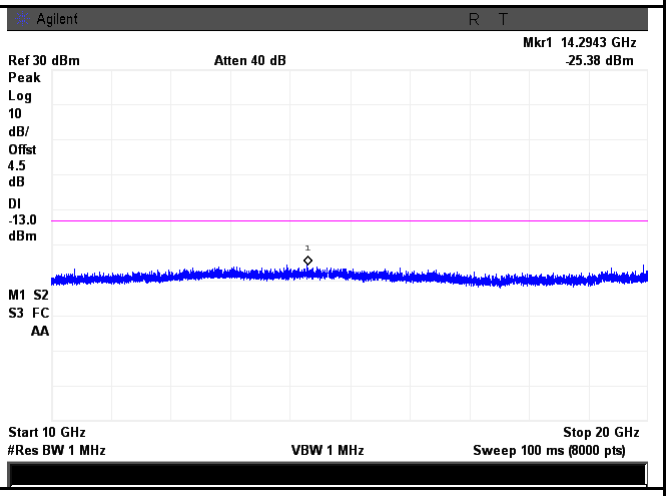
LTE Band 7 - Low Channel-1



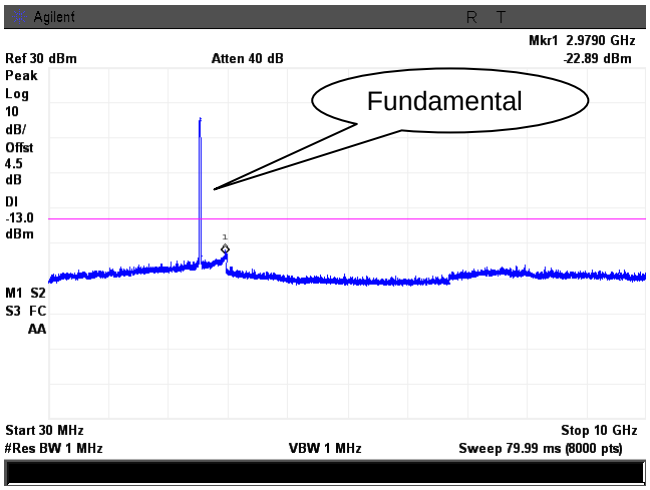
LTE Band 7 - Low Channel-2



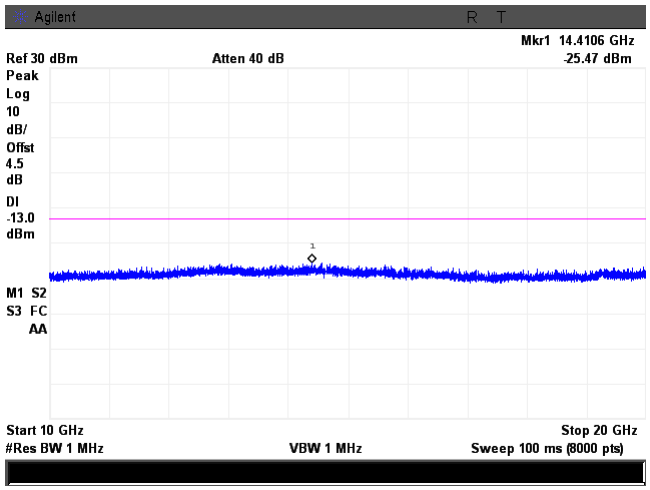
LTE Band 7- Middle Channel-1



LTE Band 7 - Middle Channel-2



LTE Band 7 - High Channel-1

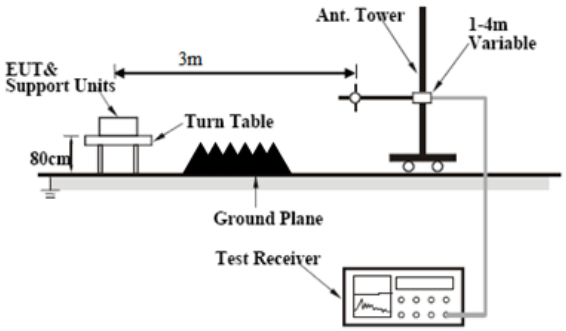


LTE Band 7 - High Channel-2

6.7 Spurious Radiated Emissions

Temperature	24℃
Relative Humidity	56%
Atmospheric Pressure	1023mbar
Test date :	July 23, 2015
Tested By :	Winnie Zhang

Requirement(s):

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

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

LTE Band 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	-45.32	V	10.25	2.73	-37.8	-13	-24.8
3720	-46.05	H	10.25	2.73	-38.53	-13	-25.53
244.1	-47.68	V	6.5	0.23	-41.41	-13	-28.41
451.6	-48.92	H	6.5	0.29	-42.71	-13	-29.71

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	-45.65	V	10.25	2.73	-38.13	-13	-25.13
3760	-47.12	H	10.25	2.73	-39.6	-13	-26.6
244.3	-47.55	V	6.5	0.23	-41.28	-13	-28.28
451.5	-48.97	H	6.5	0.29	-42.76	-13	-29.76

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	-45.59	V	10.36	2.73	-37.96	-13	-24.96
3800	-46.92	H	10.36	2.73	-39.29	-13	-26.29
244.5	-46.85	V	6.5	0.23	-40.58	-13	-27.58
451.2	-47.66	H	6.5	0.29	-41.45	-13	-28.45

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	-45.86	V	10.06	2.52	-38.32	-13	-25.32
3440	-47.03	H	10.06	2.52	-39.49	-13	-26.49
244.9	-45.28	V	6.5	0.23	-39.01	-13	-26.01
451.1	-47.95	H	6.5	0.29	-41.74	-13	-28.74

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3465	-45.95	V	10.09	2.52	-38.38	-13	-25.38
3465	-46.71	H	10.09	2.52	-39.14	-13	-26.14
245.3	-45.66	V	6.5	0.23	-39.39	-13	-26.39
452.6	-47.73	H	6.5	0.29	-41.52	-13	-28.52

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	-46.02	V	10.09	2.52	-38.45	-13	-25.45
3490	-46.85	H	10.09	2.52	-39.28	-13	-26.28
245.1	-46.99	V	6.5	0.23	-40.72	-13	-27.72
452.5	-47.67	H	6.5	0.29	-41.46	-13	-28.46

LTE Band 17(Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1418	-44.66	V	7.65	0.75	-37.76	-13	-24.76
1418	-45.12	H	7.65	0.75	-38.22	-13	-25.22
245.6	-46.91	V	6.5	0.23	-40.64	-13	-27.64
450.2	-48.52	H	6.5	0.29	-42.31	-13	-29.31

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1420	-43.95	V	7.65	0.75	-37.05	-13	-24.05
1420	-45.16	H	7.65	0.75	-38.26	-13	-25.26
245.9	-47.01	V	6.5	0.23	-40.74	-13	-27.74
450.5	-48.96	H	6.5	0.29	-42.75	-13	-29.75

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1422	-43.74	V	7.65	0.75	-36.84	-13	-23.84
1422	-44.98	H	7.65	0.75	-38.08	-13	-25.08
245.4	-46.85	V	6.5	0.23	-40.58	-13	-27.58
450.8	-48.11	H	6.5	0.29	-41.9	-13	-28.9

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	-48.95	V	10.29	0.98	-39.64	-13	-26.64
5020	-49.71	H	10.29	0.98	-40.4	-13	-27.4
245.7	-45.55	V	6.5	0.23	-39.28	-13	-26.28
451.2	-48.39	H	6.5	0.29	-42.18	-13	-29.18

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	-48.65	H	10.3	0.99	-39.34	-13	-26.34
245.6	-46.05	V	6.5	0.23	-39.78	-13	-26.78
451.3	-48.14	H	6.5	0.29	-41.93	-13	-28.93

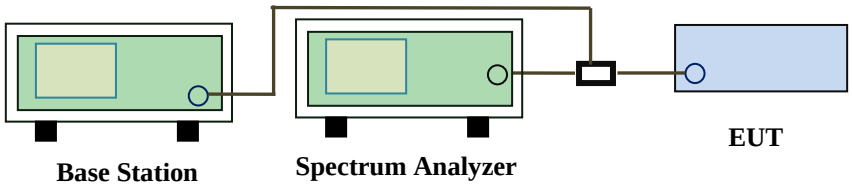
High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5120	-47.85	V	10.32	1	-38.53	-13	-25.53
5120	-49.13	H	10.32	1	-39.81	-13	-26.81
244.8	-46.81	V	6.5	0.23	-40.54	-13	-27.54
452.1	-48.64	H	6.5	0.29	-42.43	-13	-29.43

6.8 Band Edge

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21 to July 24, 2015
Tested By :	Winnie Zhang

Requirement(s):

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

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band 2 (Part 24E) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	18607	1850.7	QPSK	-20.16	-13
			16QAM	-20.71	-13
1.4	18900	1909.3	QPSK	-19.23	-13
			16QAM	-19.07	-13
3	18615	1851.5	QPSK	-16.64	-13
			16QAM	-17.03	-13
3	19185	1908.5	QPSK	-18.17	-13
			16QAM	-18.34	-13
5	18625	1852.5	QPSK	-16.63	-13
			16QAM	-16.66	-13
5	19175	1907.5	QPSK	-17.33	-13
			16QAM	-16.50	-13
10	18650	1855	QPSK	-17.91	-13
			16QAM	-18.09	-13
10	19150	1905	QPSK	-16.64	-13
			16QAM	-20.75	-13
15	18675	1857.5	QPSK	-21.23	-13
			16QAM	-20.95	-13
15	19125	1902.5	QPSK	-21.00	-13
			16QAM	-22.72	-13
20	18700	1860	QPSK	-26.12	-13
			16QAM	-23.51	-13
20	19100	1900	QPSK	-20.93	-13
			16QAM	-21.88	-13

LTE Band 4 (Part 27) result

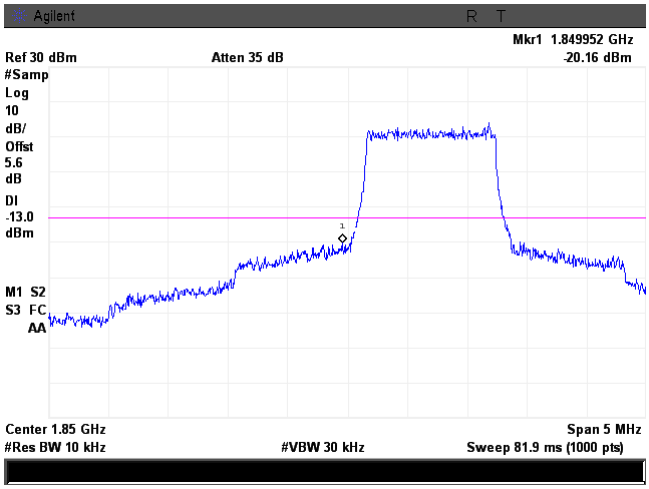
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
1.4	19957	1710.7	QPSK	-23.77	-13
			16QAM	-24.21	-13
1.4	20393	1754.3	QPSK	-20.83	-13
			16QAM	-22.65	-13
3	19965	1711.5	QPSK	-18.51	-13
			16QAM	-20.00	-13
3	20385	1753.5	QPSK	-17.93	-13
			16QAM	-17.08	-13
5	19975	1712.5	QPSK	-17.28	-13
			16QAM	-17.75	-13
5	20375	1752.5	QPSK	-18.51	-13
			16QAM	-17.33	-13
10	20000	1715	QPSK	-18.65	-13
			16QAM	-22.49	-13
10	20350	1750	QPSK	-15.43	-13
			16QAM	-18.21	-13
15	20025	1717.5	QPSK	-19.15	-13
			16QAM	-21.04	-13
15	20325	1747.5	QPSK	-19.63	-13
			16QAM	-20.46	-13
20	20050	1720	QPSK	-26.20	-13
			16QAM	-24.93	-13
20	20300	1745	QPSK	-22.04	-13
			16QAM	-19.99	-13

LTE Band 17 (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
5	23755	706.5	QPSK	-17.57	-13
			16QAM	-16.46	-13
5	23825	713.5	QPSK	-17.50	-13
			16QAM	-18.67	-13
10	23780	709	QPSK	-16.78	-13
			16QAM	-20.54	-13
10	23800	711	QPSK	-20.14	-13
			16QAM	-21.08	-13

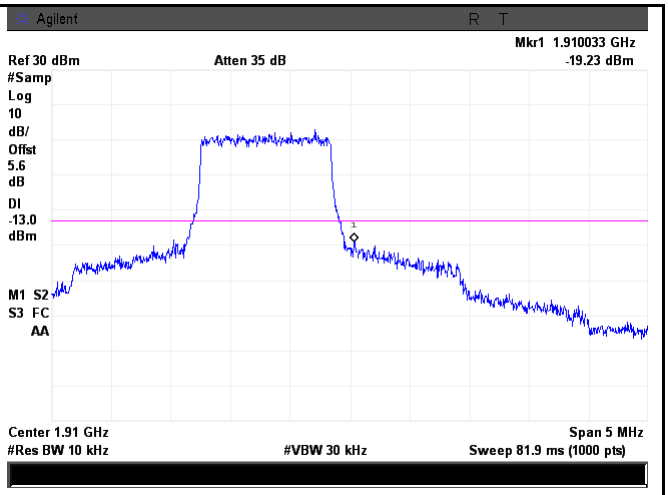
Test Plots

LTE Band 2 (Part 24E)



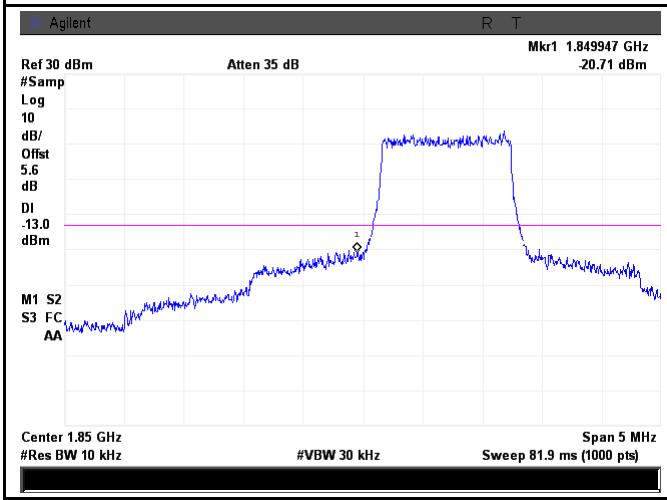
LTE Band 2 - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.81/10)=4.5+1.1=5.6 dB



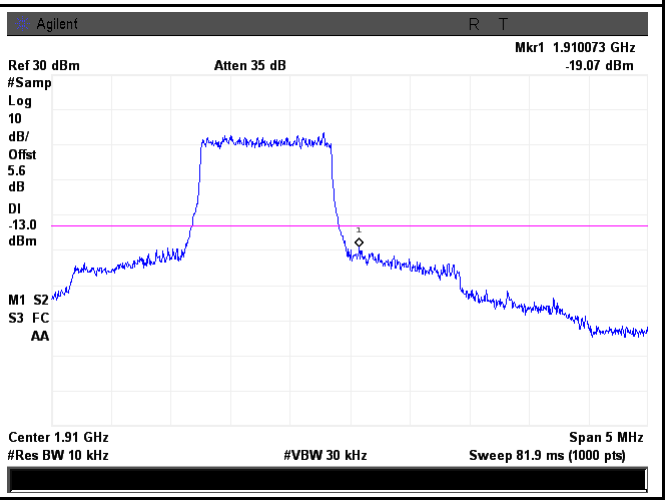
LTE Band 2 - High Channel QPSK-1.4

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



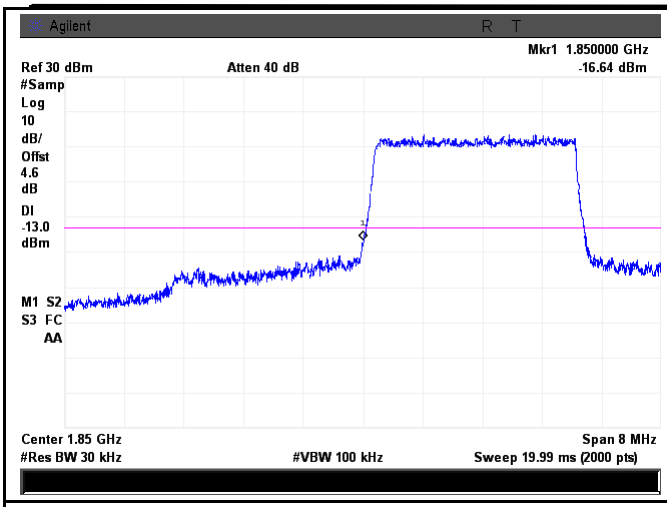
LTE Band 2 - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.93/10)=4.5+1.1=5.6 dB



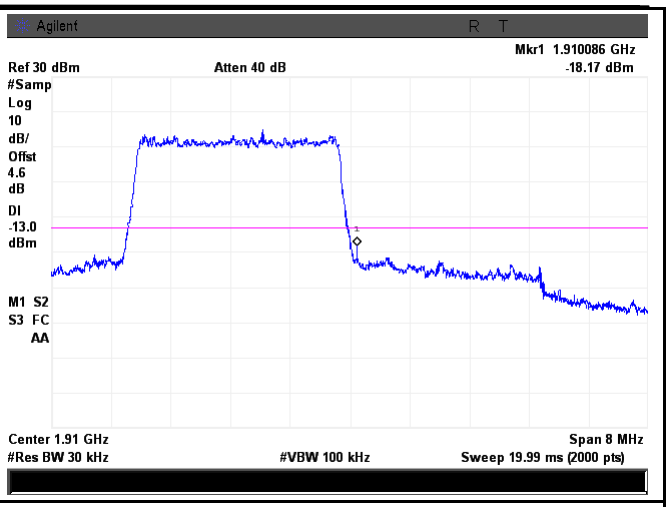
LTE Band 2 - High Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.62/10)=4.5+1.1=5.6 dB



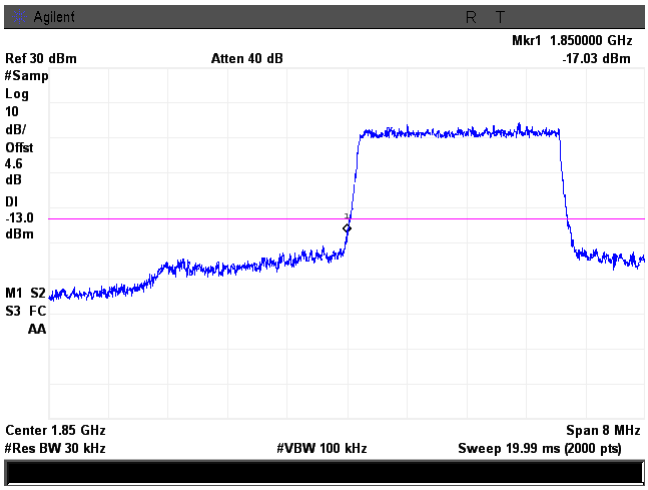
LTE Band 2 - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.48/30)=4.5+0.1=4.6 dB



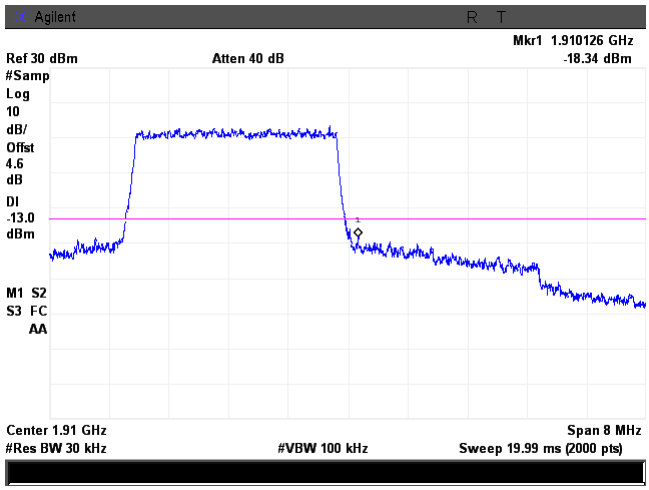
LTE Band 2 - High Channel QPSK-3

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



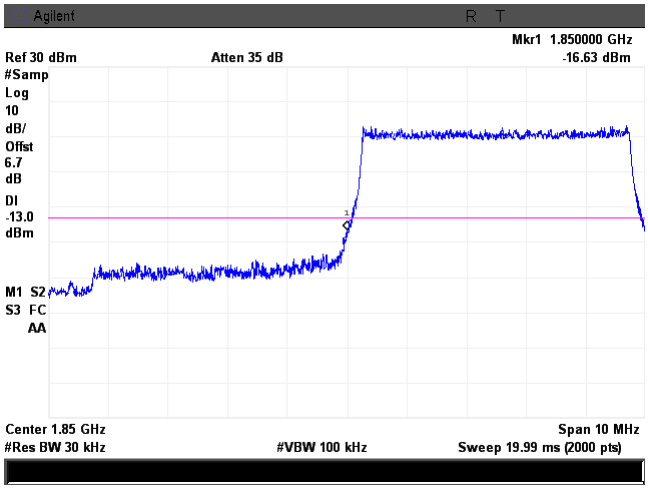
LTE Band 2 - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.52/30)=4.5+0.1=4.6 dB

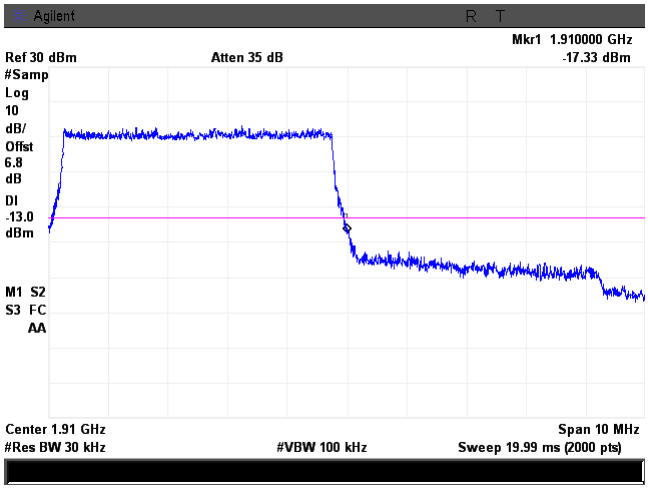


LTE Band 2 - High Channel 16QAM-3

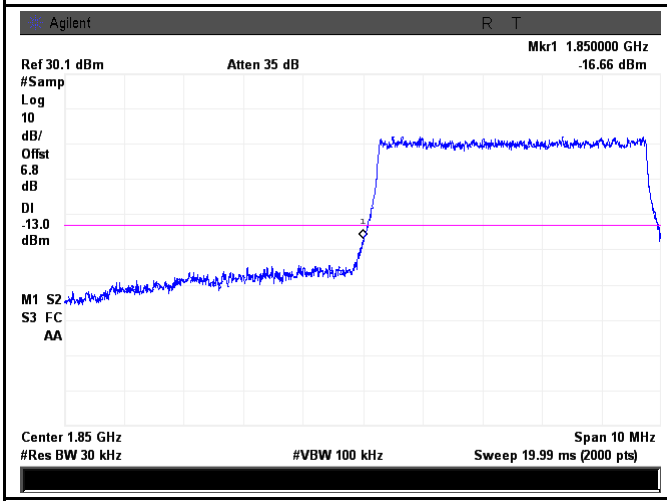
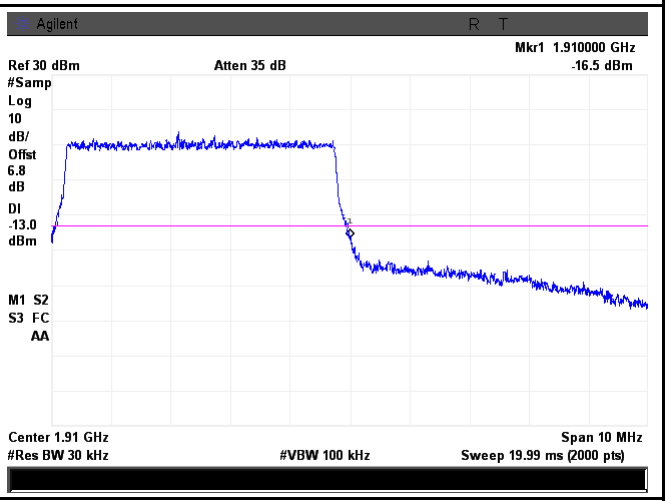
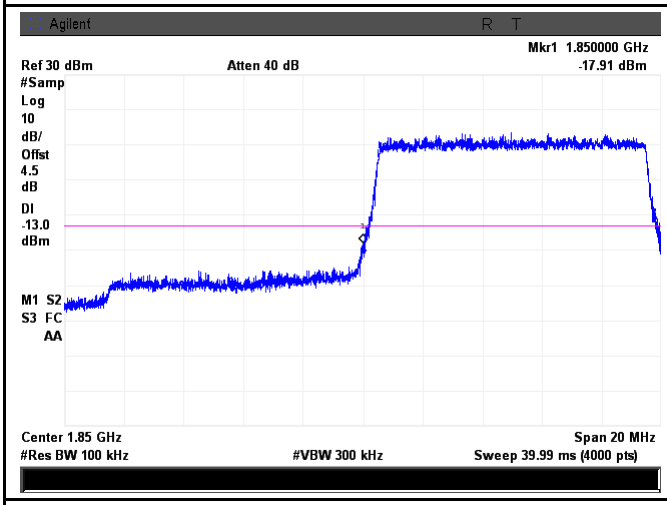
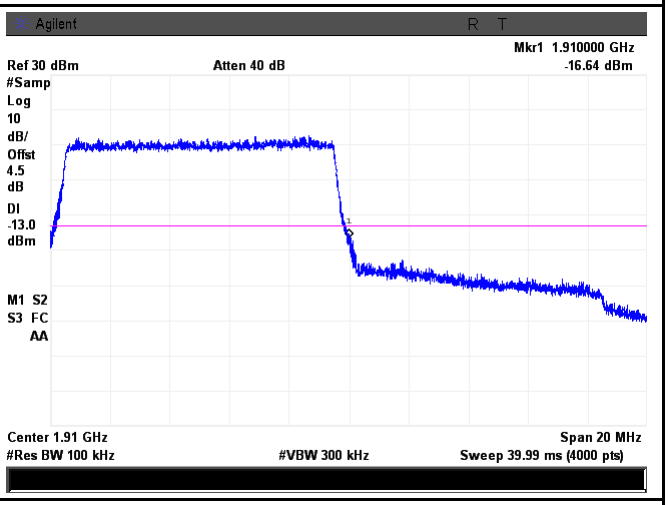
Note: Offset=Cable loss (4.5) + 10log (30.84/30)=4.5+0.1=4.6 dB

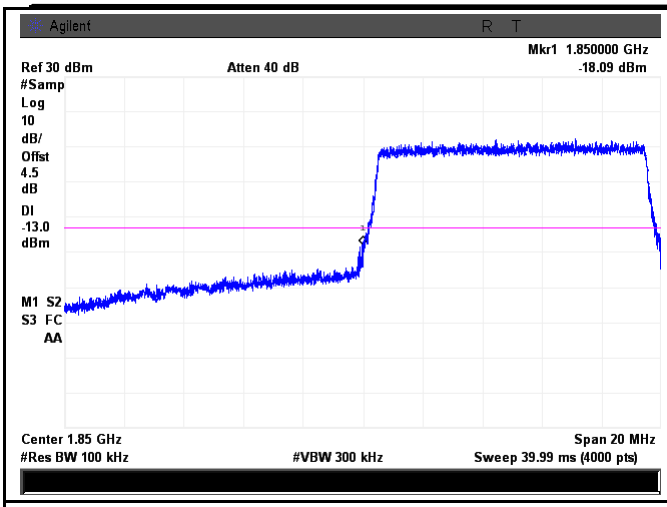


LTE Band 2 - Low Channel QPSK-5



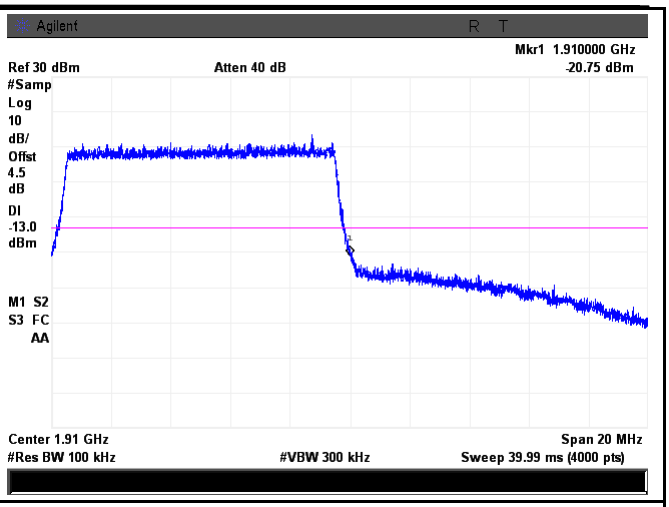
LTE Band 2 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.29/30)=4.5+2.2=6.7 dB	Note: Offset=Cable loss (4.5) + 10log (50.86/30)=4.5+2.3=6.8 dB
	
LTE Band 2 - Low Channel 16QAM-5	LTE Band 2 - High Channel 16QAM-5
Note: Offset=Cable loss (4.5) + 10log (50.61/30)=4.5+2.3=6.8 dB	Note: Offset=Cable loss (4.5) + 10log (50.88/30)=4.5+2.3=6.8 dB
	
LTE Band 2 - Low Channel QPSK-10	LTE Band 2 - High Channel QPSK-10
Note: Offset=Cable loss (4.5) + 10log (101.7/100)=4.5+0.0=4.5 dB	Note: Offset=Cable loss (4.5) + 10log (100.7/100)=4.5+0.0=4.5 dB



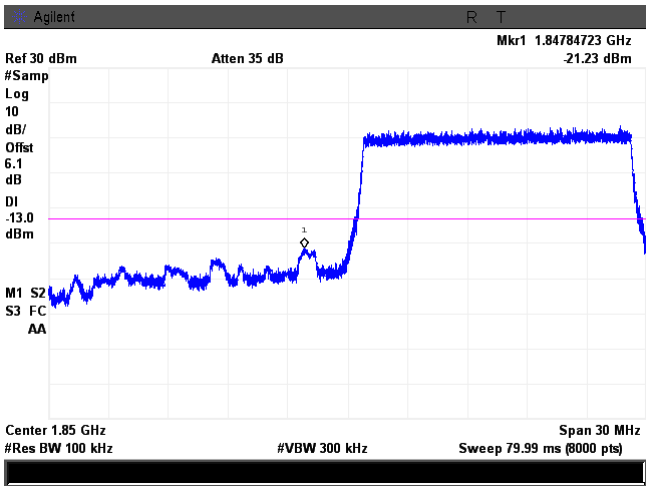
LTE Band 2 - Low Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log (99.54/100)=4.5+0.0=4.5 dB



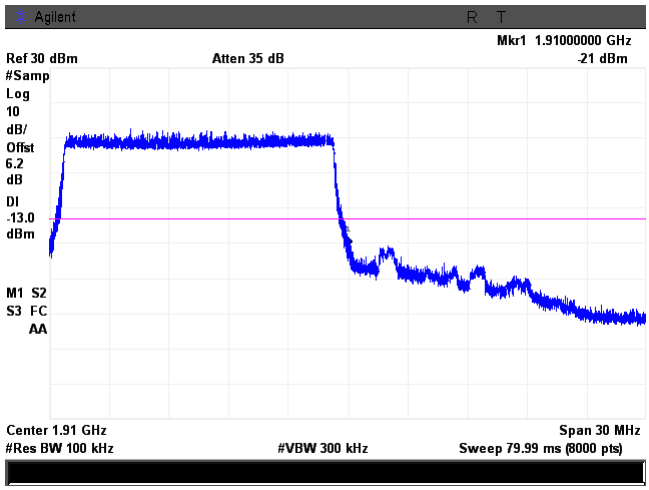
LTE Band 2 - High Channel 16QAM-10

Note: Offset=Cable loss (4.5) + 10log (100.7/100)=4.5+0.0=4.5 dB



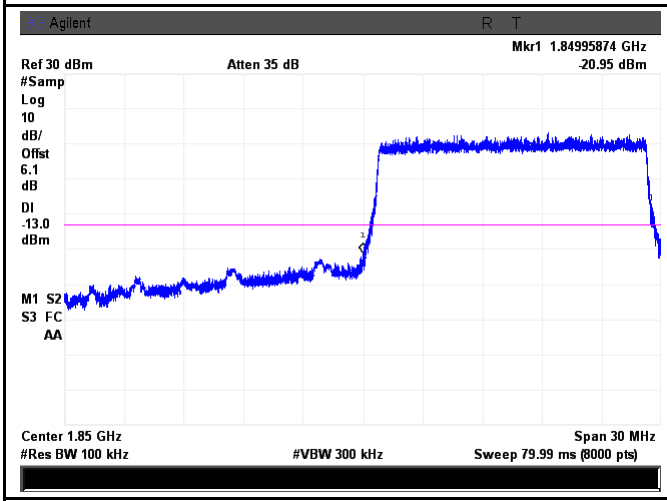
LTE Band 2 - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (146.2/100)=4.5+1.6=6.1 dB

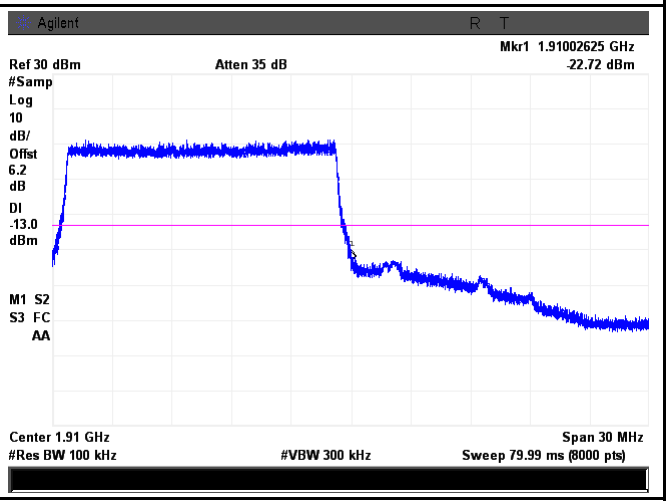


LTE Band 2 - High Channel QPSK-15

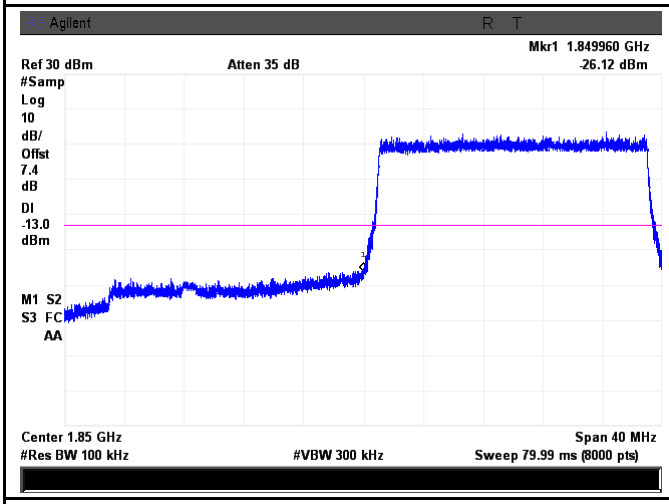
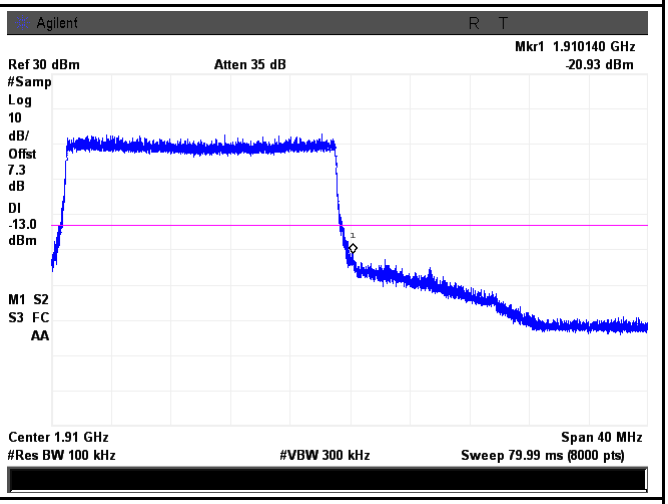
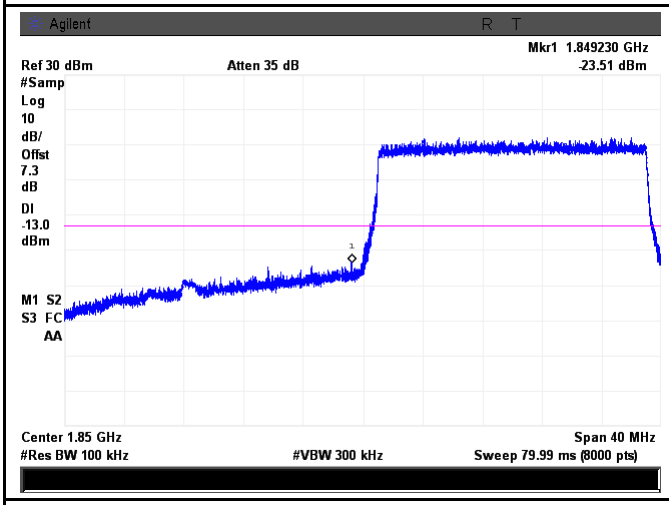
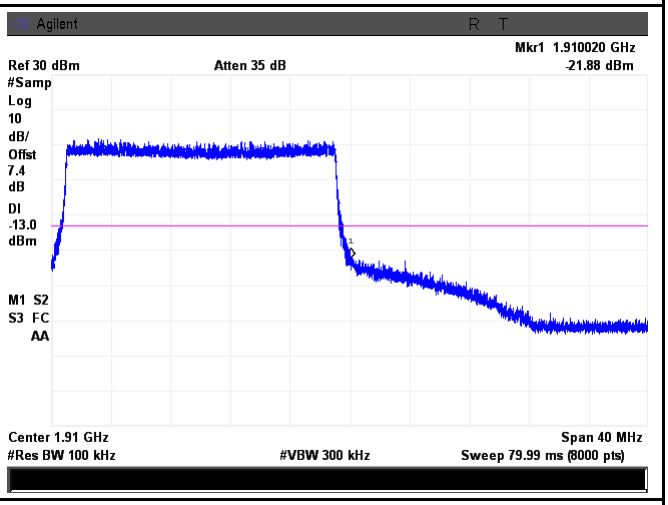
Note: Offset=Cable loss (4.5) + 10log (147.1/100)=4.5+1.7=6.2 dB



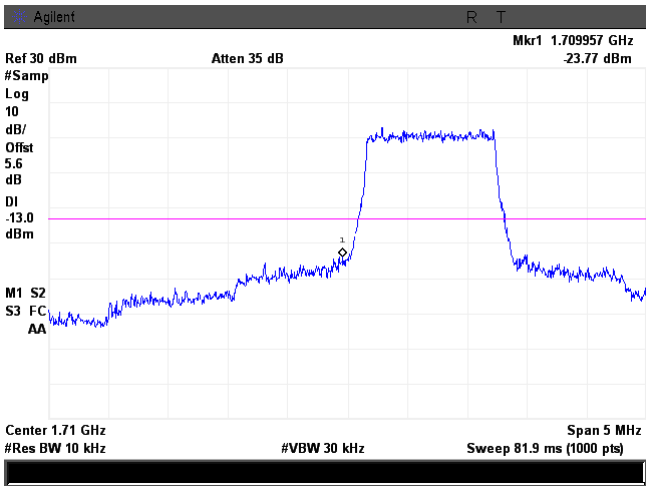
LTE Band 2 - Low Channel 16QAM-15



LTE Band 2 - High Channel 16QAM-15

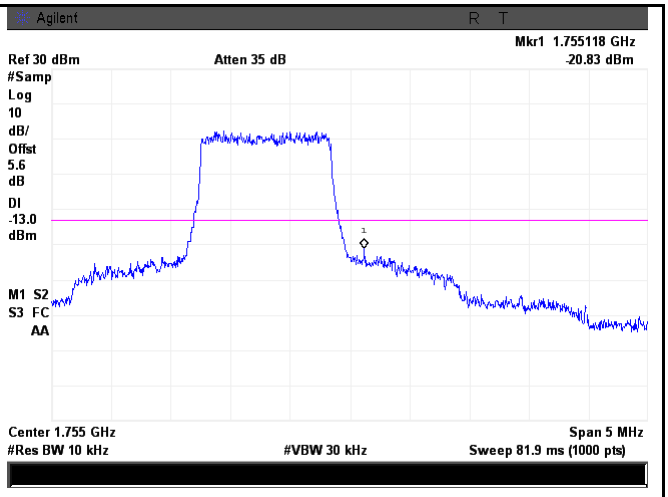
Note: Offset=Cable loss (4.5) + 10log (144.7/100)=4.5+1.6=6.1 dB	Note: Offset=Cable loss (4.5) + 10log (147.8/100)=4.5+1.7=6.2 dB
	
LTE Band 2 - Low Channel QPSK-20	LTE Band 2 - High Channel QPSK-20
Note: Offset=Cable loss (4.5) + 10log (194.1/100)=4.5+2.9=7.4dB	Note: Offset=Cable loss (4.5) + 10log (192.4/100)=4.5+2.8=7.3 dB
	
LTE Band 2 - Low Channel 16QAM-20	LTE Band 2 - High Channel 16QAM-20
Note: Offset=Cable loss (4.5) + 10log (192.3/100)=4.5+2.8=7.3 dB	Note: Offset=Cable loss (4.5) + 10log (194.7/100)=4.5+2.9=7.4 dB

LTE Band 4 (Part 27)



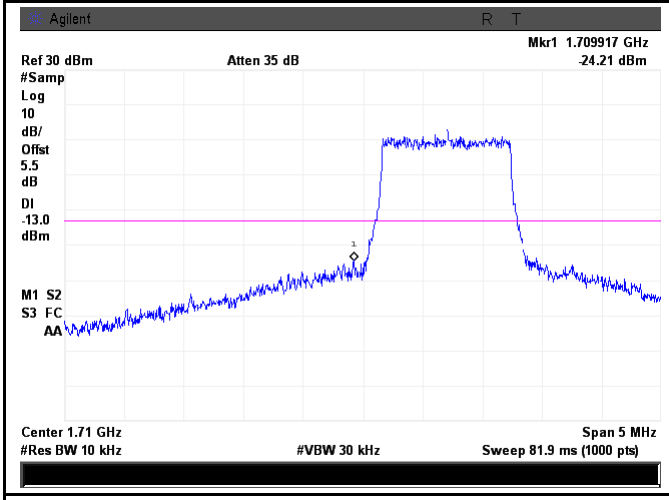
LTE Band 4 - Low Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.78/10)=4.5+1.1=5.6 dB



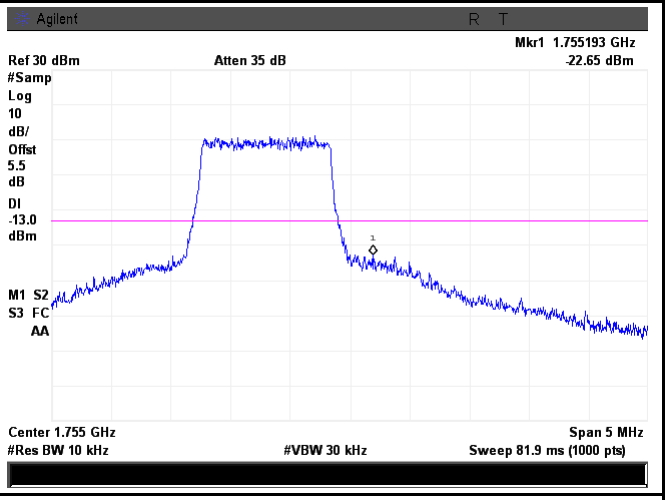
LTE Band 4 - High Channel QPSK-1.4

Note: Offset=Cable loss (4.5) + 10log (12.87/10)=4.5+1.1=5.6 dB



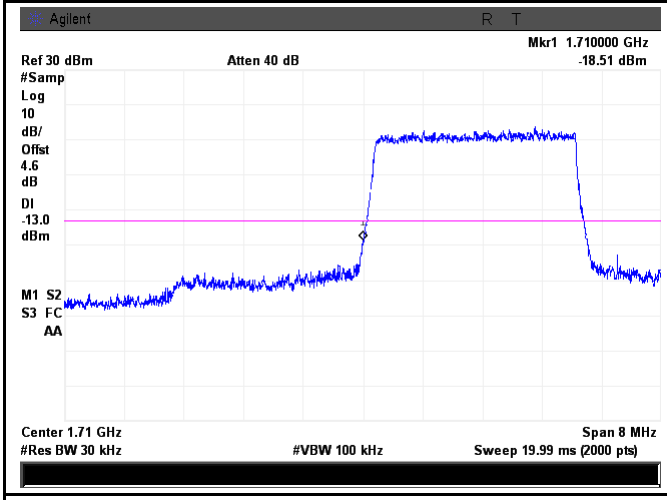
LTE Band 4 - Low Channel 16QAM-1.4

Note: Offset=Cable loss (4.5) + 10log (12.59/10)=4.5+1.0=5.5 dB



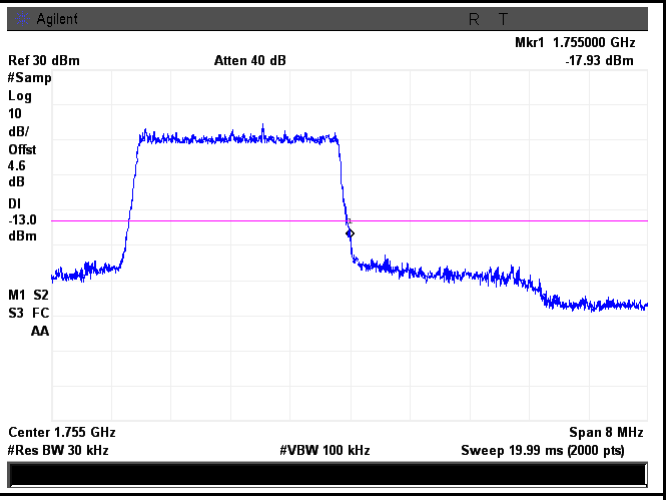
LTE Band 4 - High Channel 16QAM-1.4

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



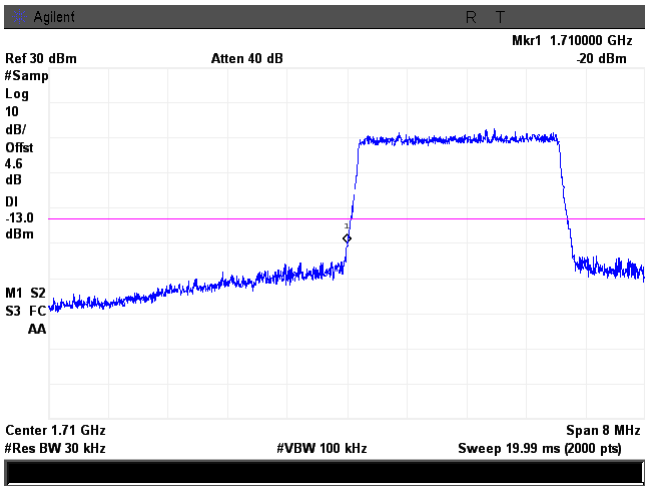
LTE Band 4 - Low Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.9/30)=4.5+0.1=4.6 dB



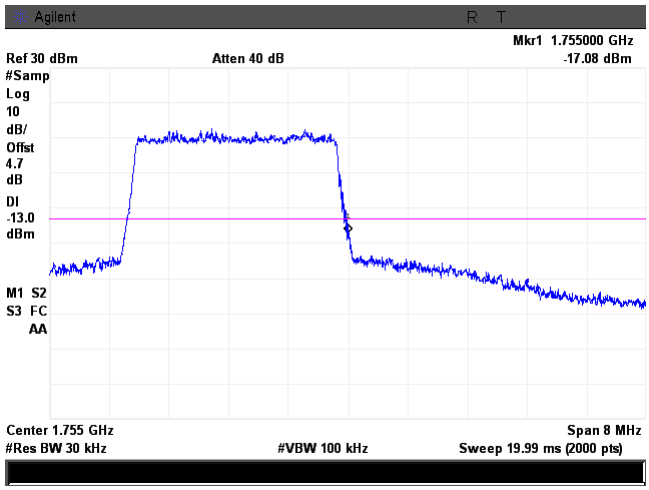
LTE Band 4 - High Channel QPSK-3

Note: Offset=Cable loss (4.5) + 10log (30.9/30)=4.5+0.1=4.6 dB



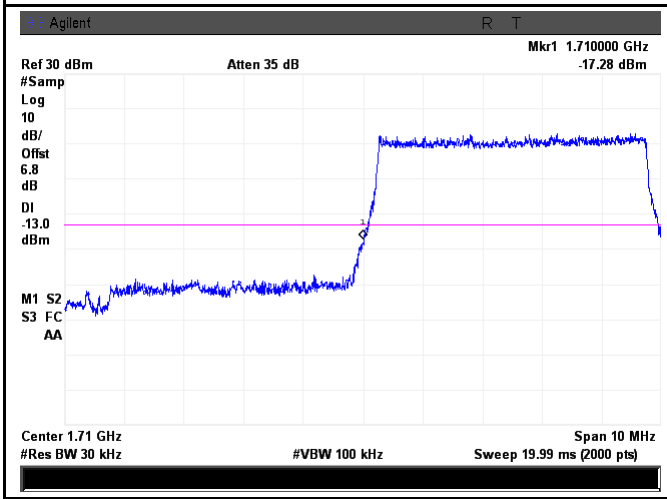
LTE Band 4 - Low Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (30.5/30)=4.5+0.1=4.6 dB

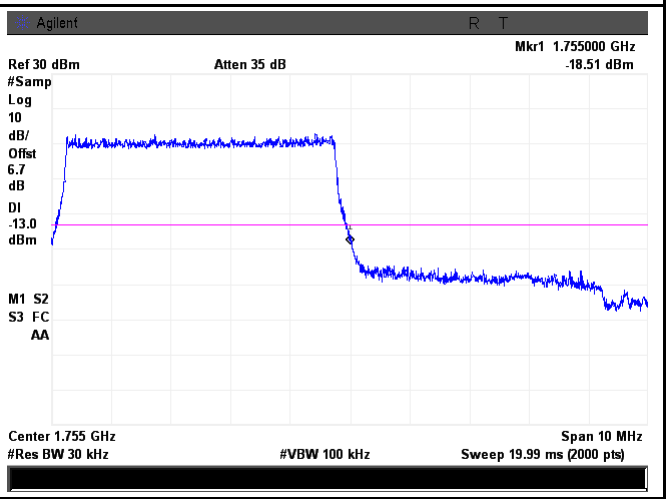


LTE Band 4 - High Channel 16QAM-3

Note: Offset=Cable loss (4.5) + 10log (31.2/30)=4.5+0.2=4.7 dB

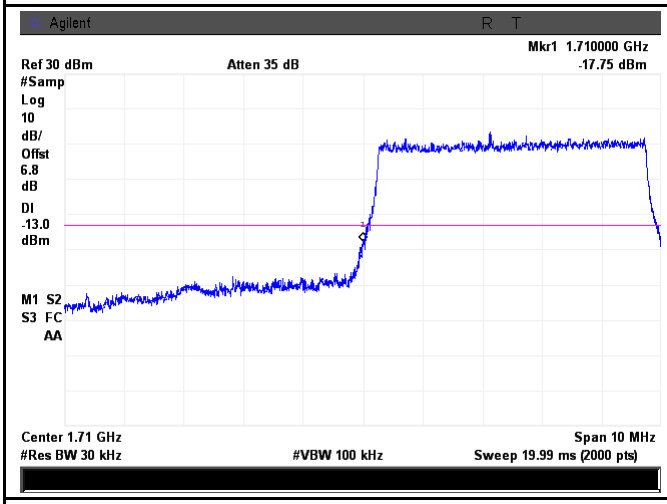


LTE Band 4 - Low Channel QPSK-5



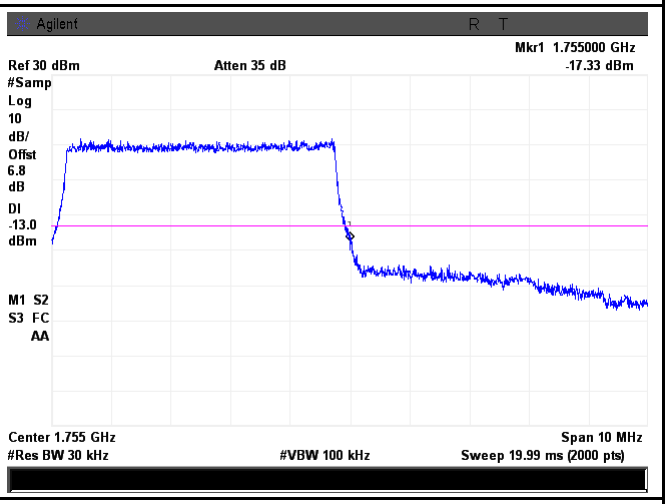
LTE Band 4 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.5/30)=4.5+2.3=6.8 dB



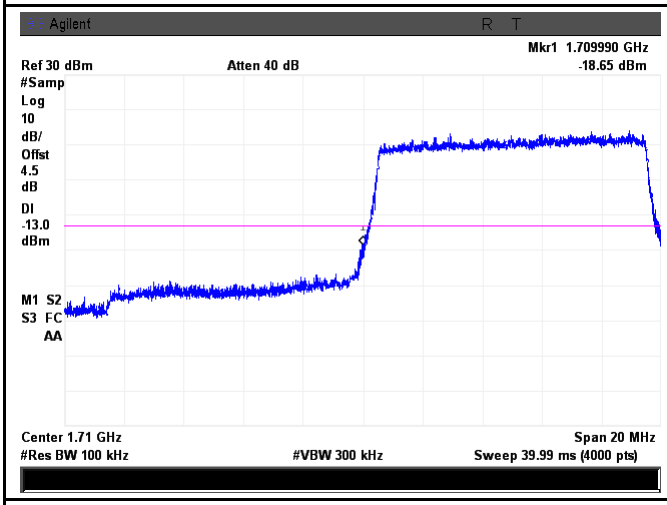
LTE Band 4 - Low Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.2/30)=4.5+2.2=6.7 dB



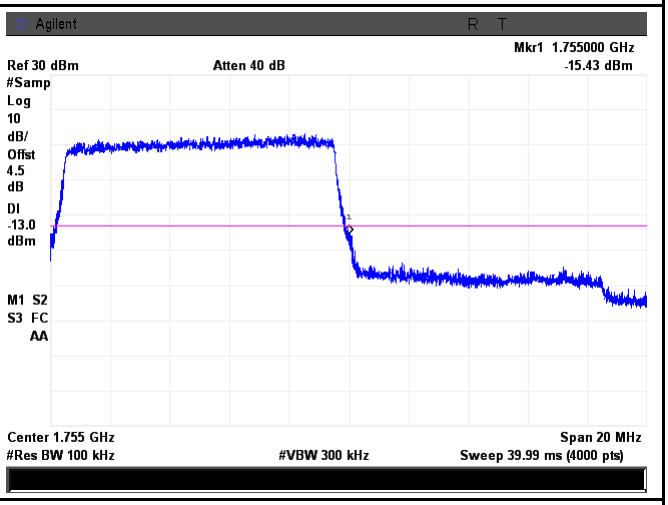
LTE Band 4 - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.8/30)=4.5+2.3=6.8 dB

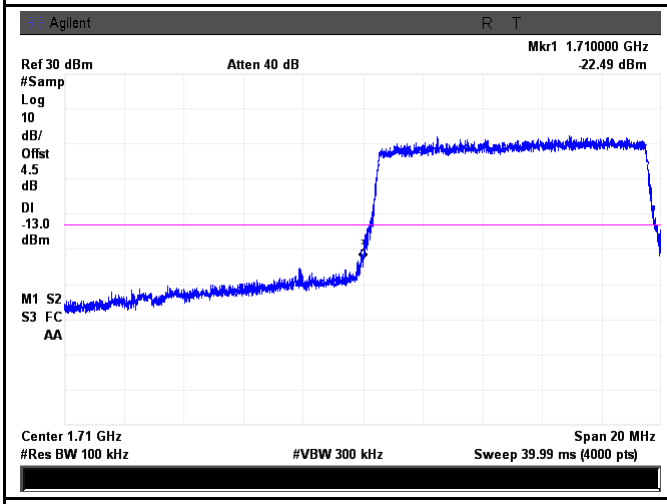


LTE Band 4 - Low Channel QPSK-10

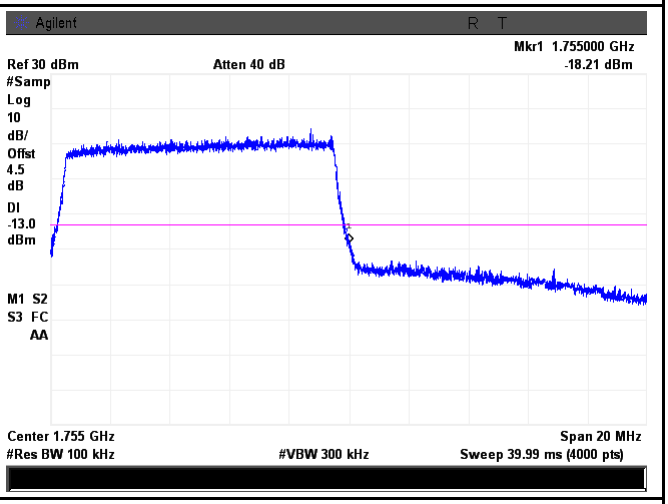
Note: Offset=Cable loss (4.5) + 10log (51.0/30)=4.5+2.3=6.8 dB



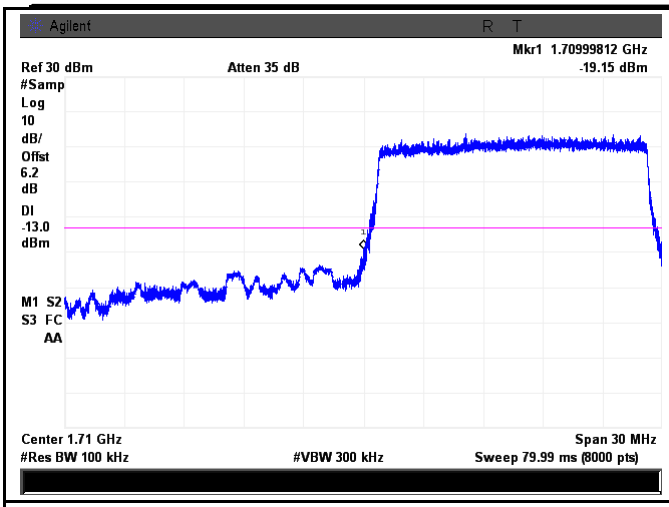
LTE Band 4 - High Channel QPSK-10



LTE Band 4 - Low Channel 16QAM-10

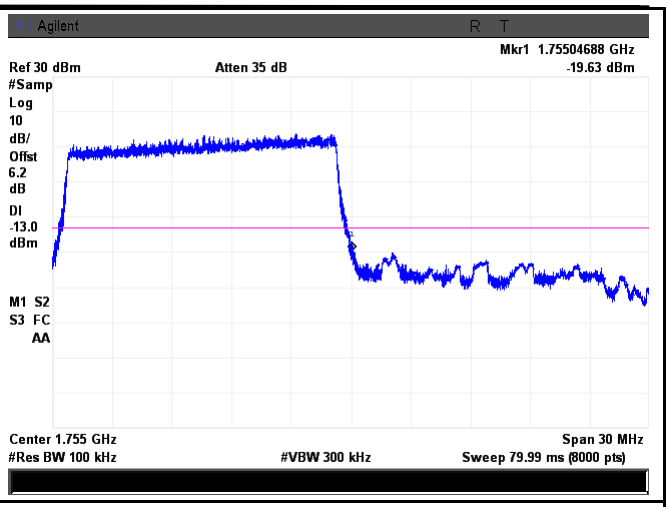


LTE Band 4 - High Channel 16QAM-10



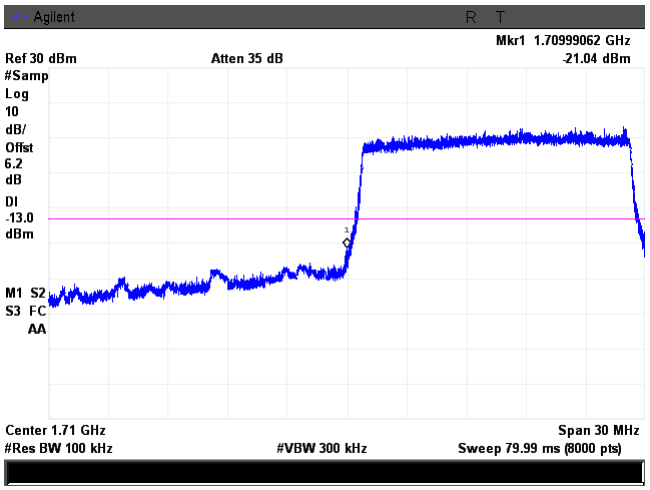
LTE Band 4 - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (147.3/100)=4.5+1.7=6.2 dB



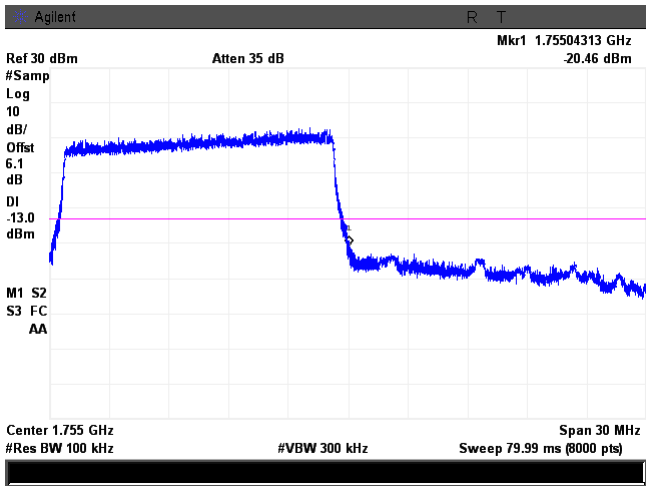
LTE Band 4 - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (149.2/100)=4.5+1.7=6.2 dB



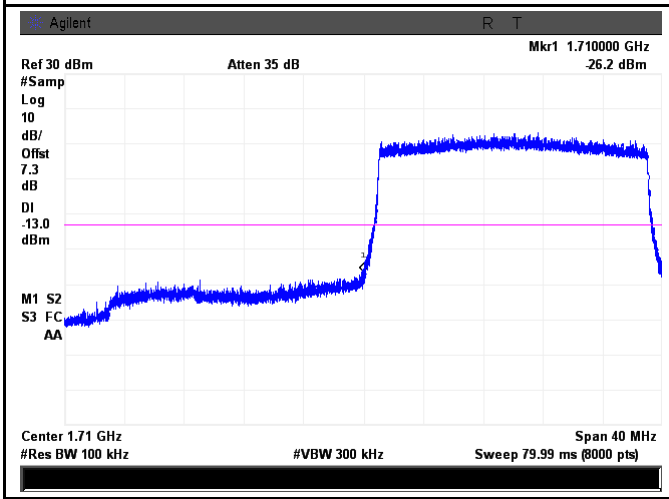
LTE Band 4 - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log (146.6/100)=4.5+1.7=6.2 dB

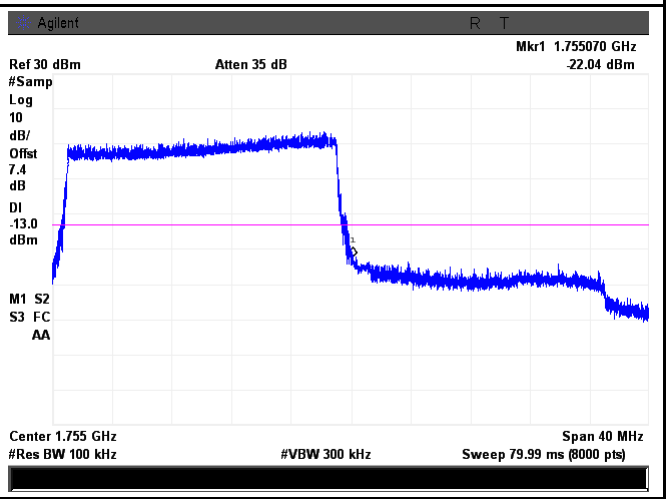


LTE Band 4 - High Channel 16QAM-15

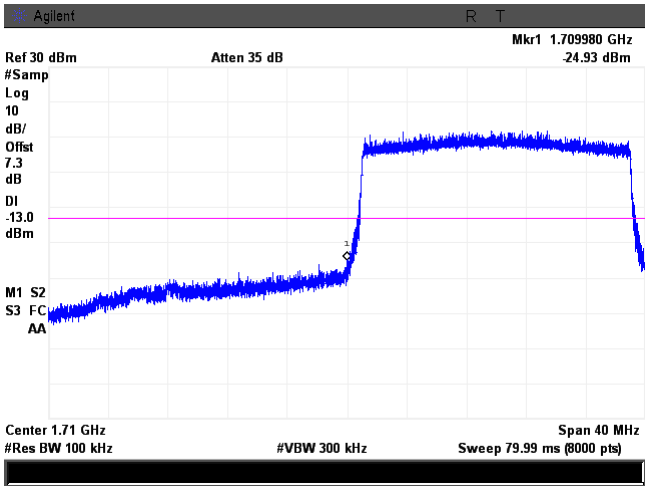
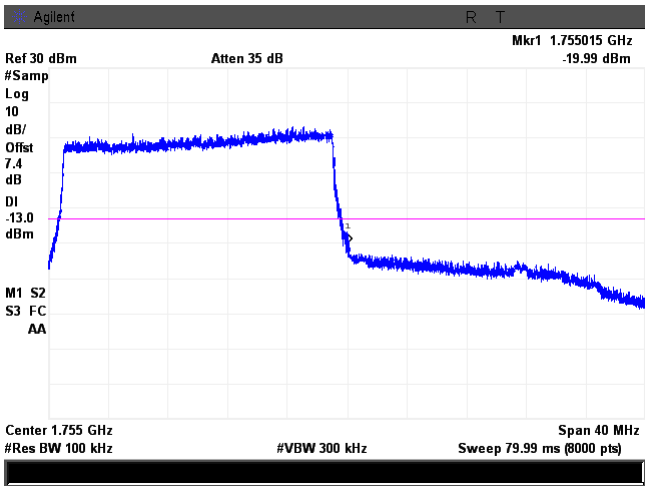
Note: Offset=Cable loss (4.5) + 10log (145.9/100)=4.5+1.6=6.1 dB



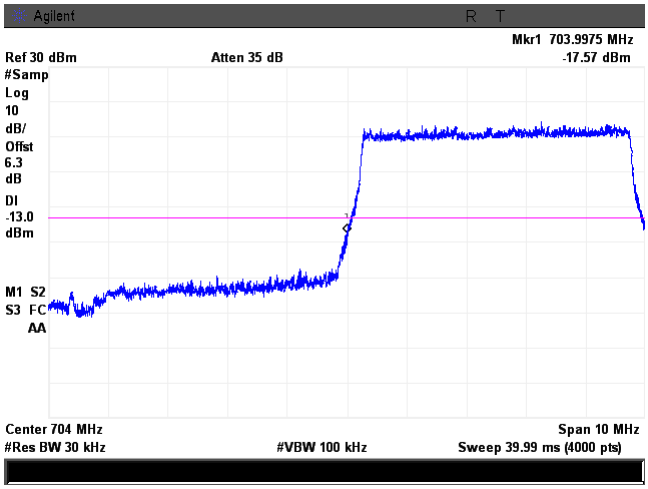
LTE Band 4 - Low Channel QPSK-20



LTE Band 4 - High Channel QPSK-20

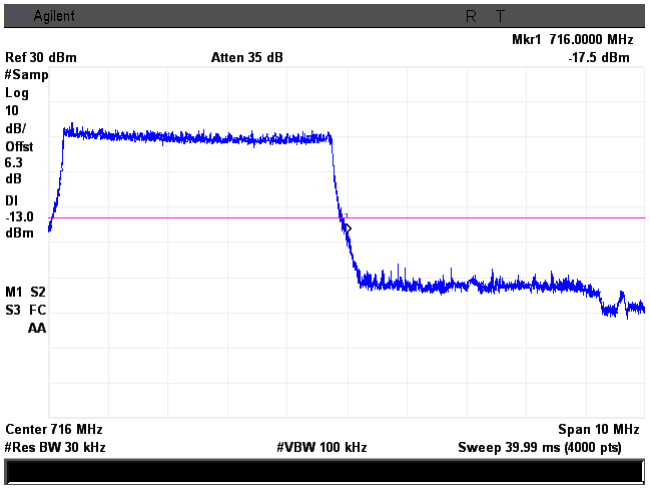
Note: Offset=Cable loss (4.5) + 10log (191.9/100)=4.5+2.8=7.3 dB	Note: Offset=Cable loss (4.5) + 10log (193.4/100)=4.5+2.9=7.4 dB
	
LTE Band 4 - Low Channel 16QAM-20	LTE Band 4 - High Channel 16QAM-20
Note: Offset=Cable loss (4.5) + 10log (192.4/100)=4.5+2.8=7.3 dB	Note: Offset=Cable loss (4.5) + 10log (196.2/100)=4.5+2.9=7.4 dB

LTE Band 17 (Part 27)



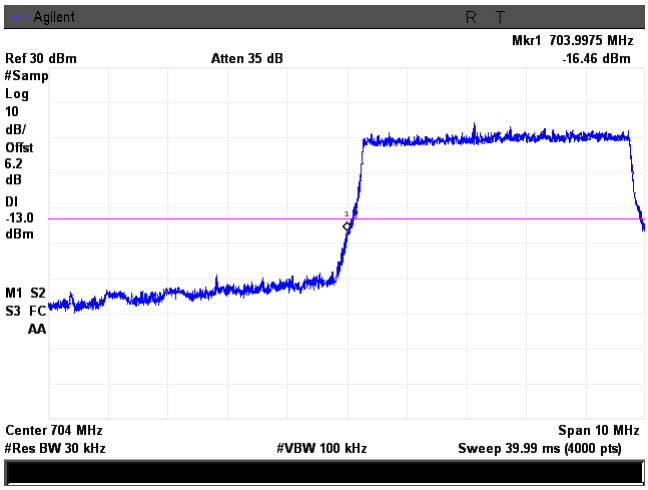
LTE Band 17 - Low Channel QPSK-5

Note: Offset=Cable loss (4.0) + 10log (50.5/30)=4.0+2.3=6.3 dB



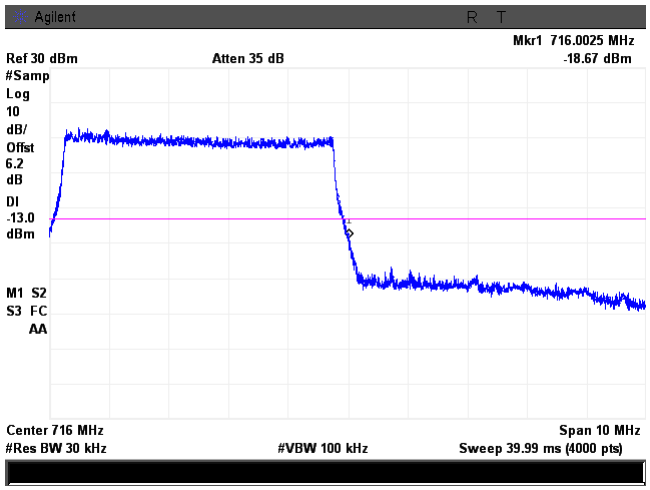
LTE Band 17 - High Channel QPSK-5

Note: Offset=Cable loss (4.0) + 10log (50.3/30)=4.0+2.3=6.3 dB



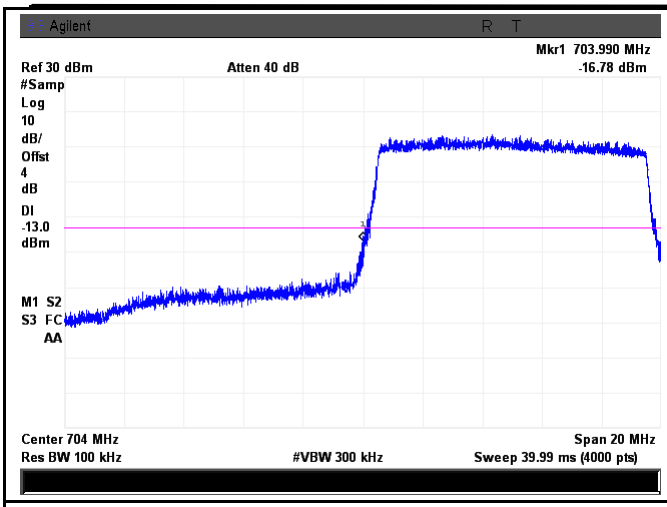
LTE Band 17 - Low Channel 16QAM-5

Note: Offset=Cable loss (4.0) + 10log (50.4/30)=4.0+2.2=6.2 dB

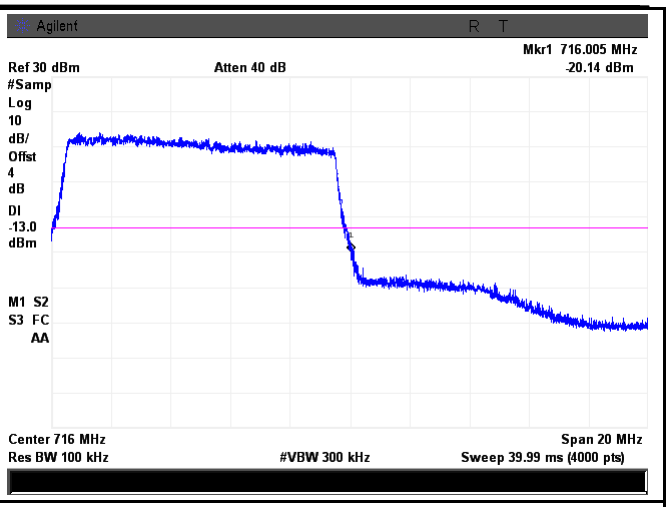


LTE Band 17 - High Channel 16QAM-5

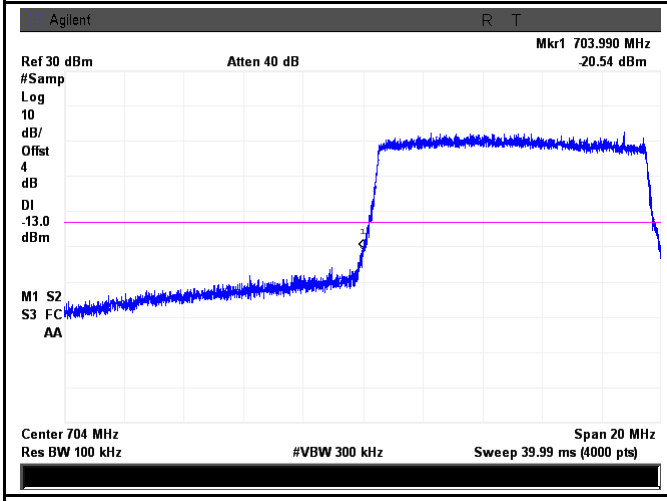
Note: Offset=Cable loss (4.0) + 10log (50.5/30)=4.0+2.2=6.2 dB



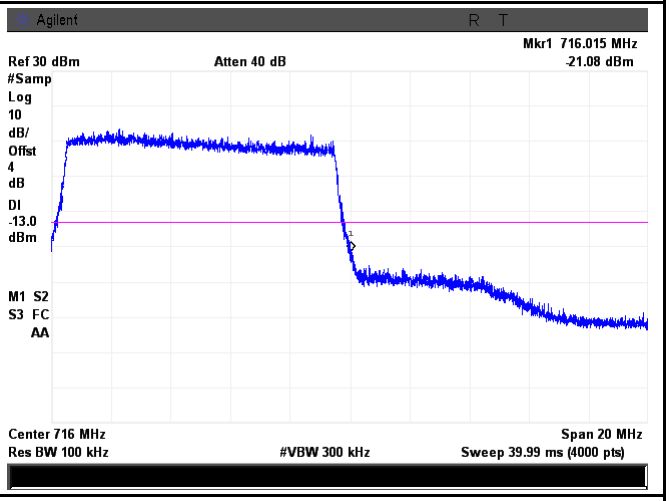
LTE Band 17 - Low Channel QPSK-10



LTE Band 17 - High Channel QPSK-10



LTE Band 17 - Low Channel 16QAM-10

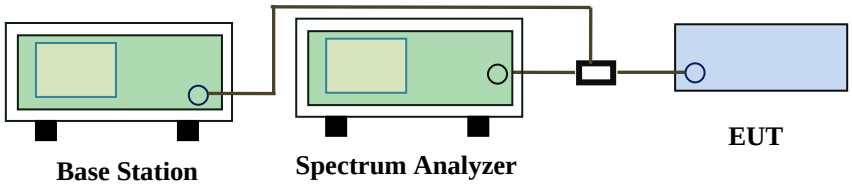


LTE Band 17 - High Channel 16QAM-10

6.9 Band Edge 27.53(m)

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21, 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 emmission ouutside of the channel edge must be attenuated below the transmitting power(P) by a factor shall be not less than 43+10log (P)dB at the channel edge, the limit of emission equal to -13dBm. And 55+10log (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 frenqency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.	☑
Test Setup		
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.	
Remark		
Result	☑ Pass ☐ Fail	

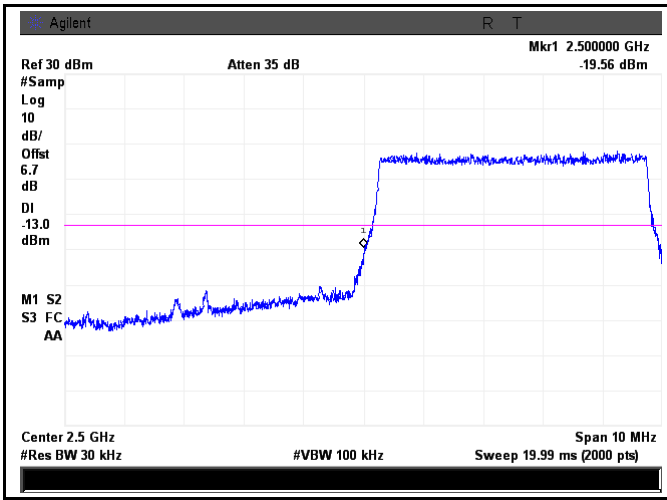
Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band 7 (Part 27) result

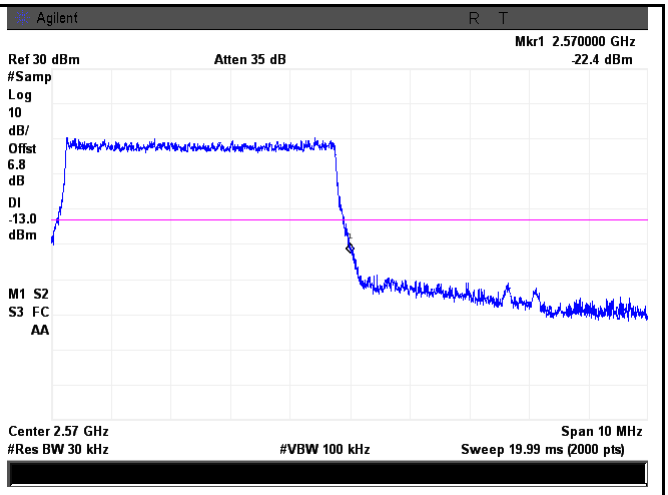
BW(MHz)	Channel	Frequency (MHz)	Mode	Emission (dBm)	Limit (dBm)
5	20775	2502.5	QPSK	-19.56	-13
			16QAM	-21.94	-13
5	21425	2567.5	QPSK	-22.40	-13
			16QAM	-19.73	-13
10	20800	2505	QPSK	-21.05	-13
			16QAM	-23.34	-13
10	21400	2562.5	QPSK	-22.24	-13
			16QAM	-22.72	-13
15	20825	2507.5	QPSK	-27.93	-13
			16QAM	-27.78	-13
15	21400	2562.5	QPSK	-22.45	-13
			16QAM	-24.41	-13
20	20850	2510	QPSK	-29.73	-13
			16QAM	-29.58	-13
20	21350	2560	QPSK	-26.58	-13
			16QAM	-31.16	-13

LTE Band 7 (Part 27)



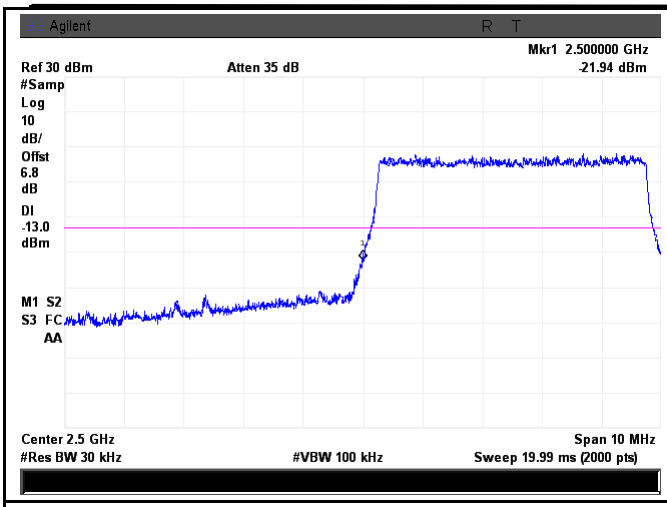
LTE Band 7 - Low Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.4/30)=4.5+2.2=6.7 dB

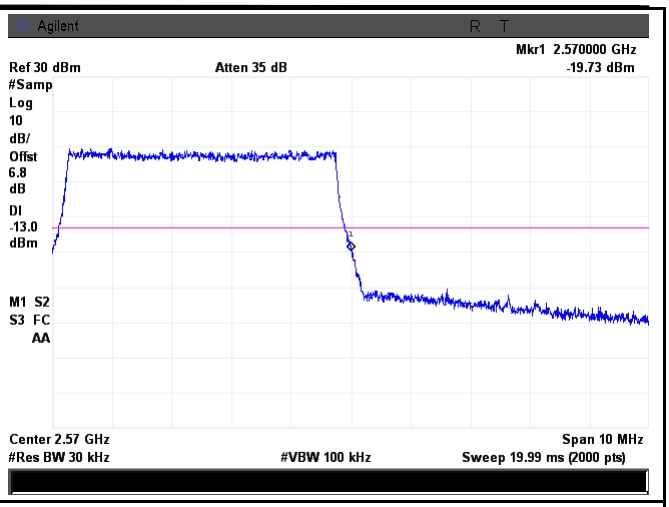


LTE Band 7 - High Channel QPSK-5

Note: Offset=Cable loss (4.5) + 10log (50.5/30)=4.5+2.3=6.8 dB



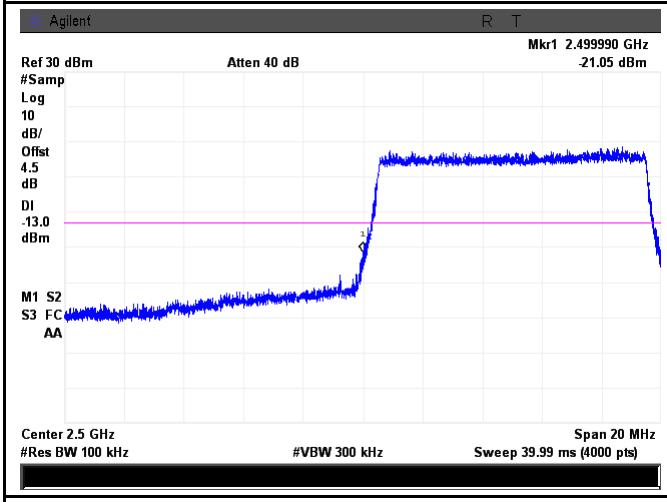
LTE Band 7 - Low Channel 16QAM-5



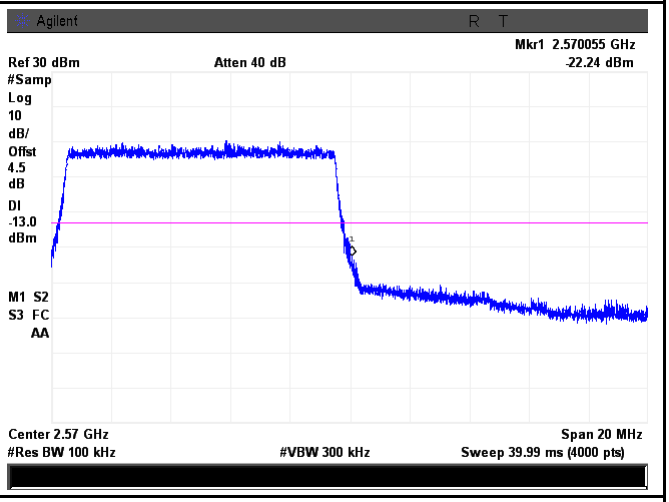
LTE Band 7 - High Channel 16QAM-5

Note: Offset=Cable loss (4.5) + 10log (50.8/30)=4.5+2.3=6.8 dB

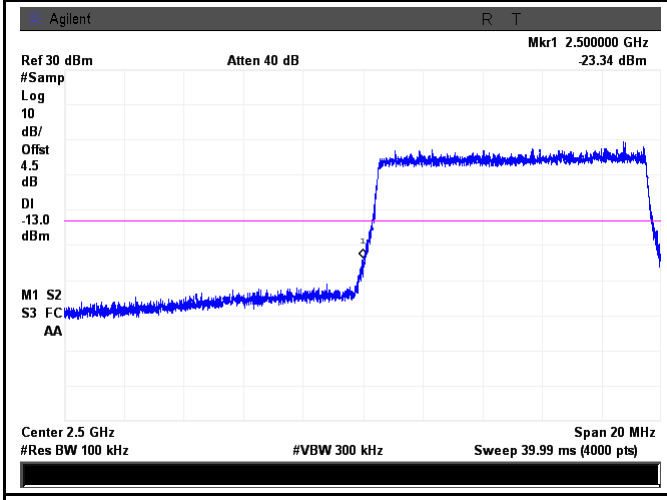
Note: Offset=Cable loss (4.5) + 10log (50.9/30)=4.5+2.3=6.8 dB



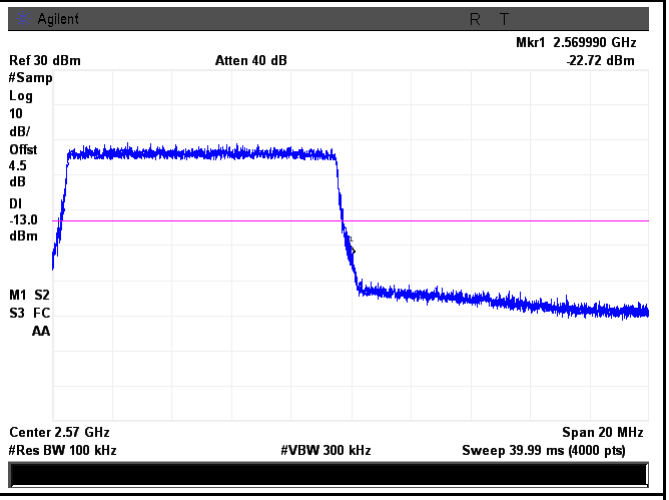
LTE Band 7 - Low Channel QPSK-10



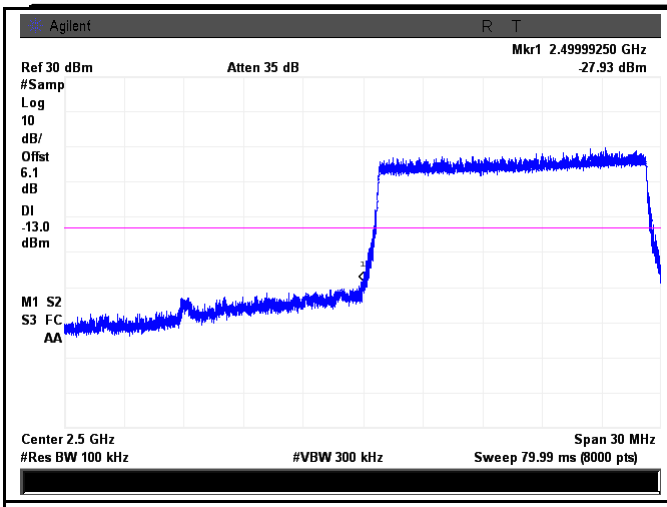
LTE Band 7 - High Channel QPSK-10



LTE Band 7 - Low Channel 16QAM-10

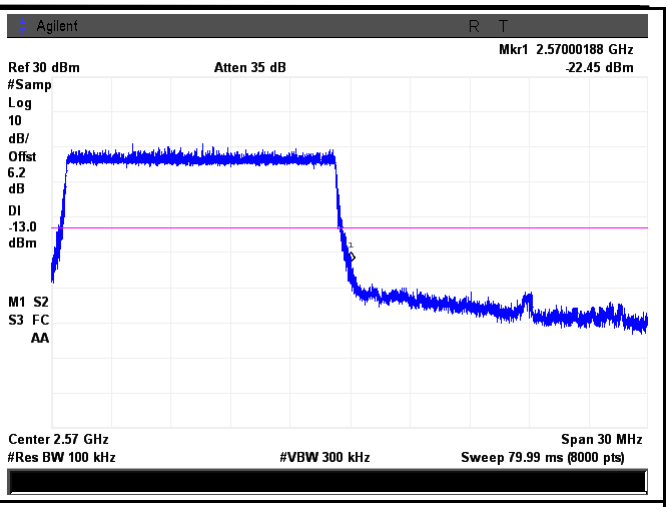


LTE Band 7 - High Channel 16QAM-10



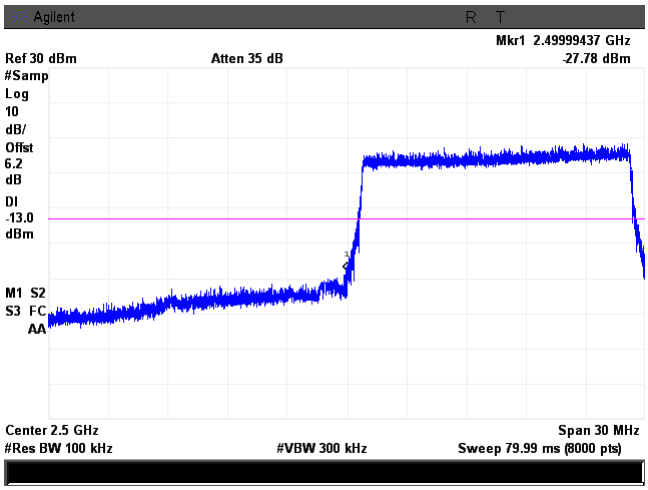
LTE Band 7 - Low Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (145.2/100)=4.5+1.6=6.1 dB



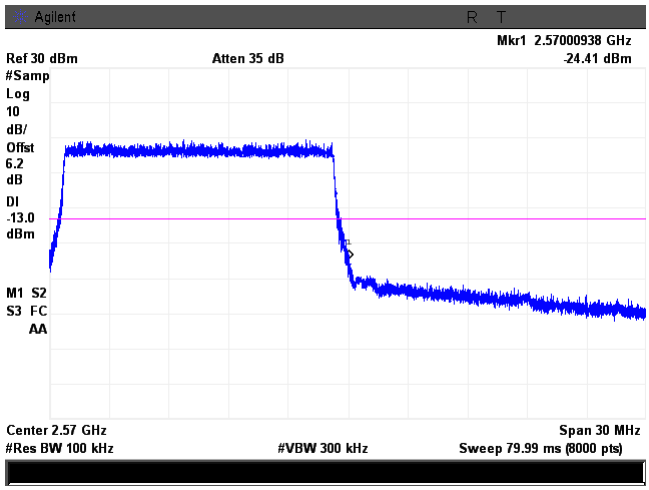
LTE Band 7 - High Channel QPSK-15

Note: Offset=Cable loss (4.5) + 10log (145.7/100)=4.5+1.7=6.2 dB



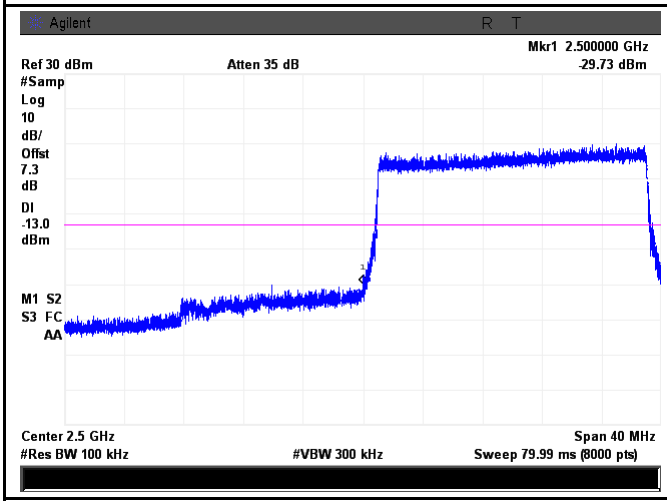
LTE Band 7 - Low Channel 16QAM-15

Note: Offset=Cable loss (4.5) + 10log (148.4/100)=4.5+1.7=6.2 dB

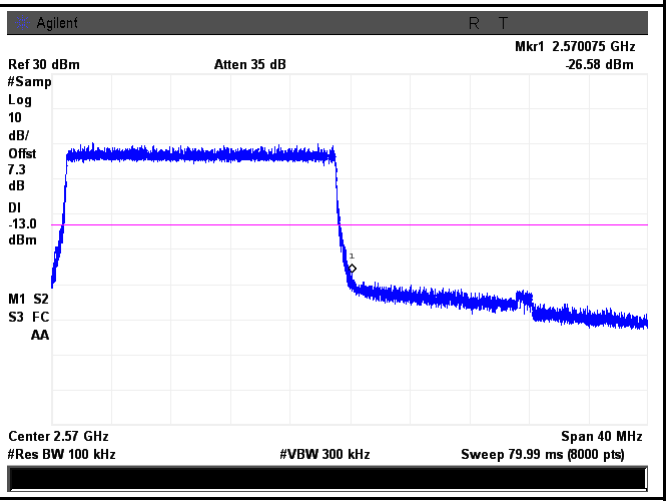


LTE Band 7 - High Channel 16QAM-15

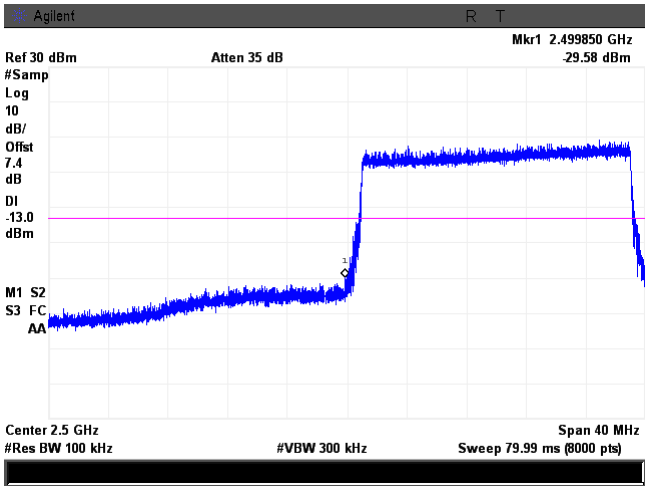
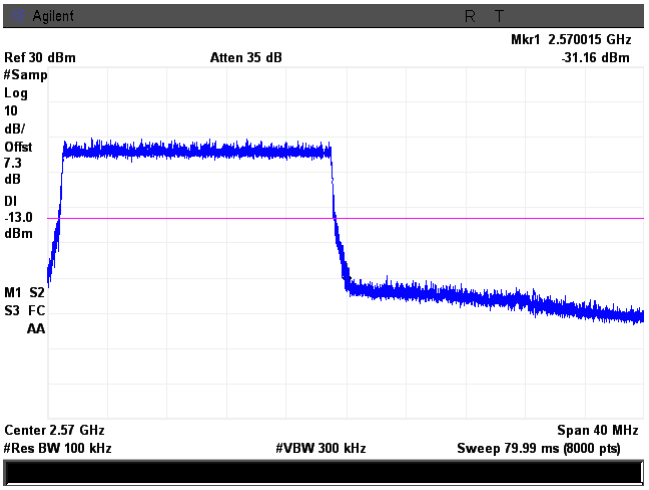
Note: Offset=Cable loss (4.5) + 10log (146.5/100)=4.5+1.7=6.2 dB



LTE Band 7 - Low Channel QPSK-20



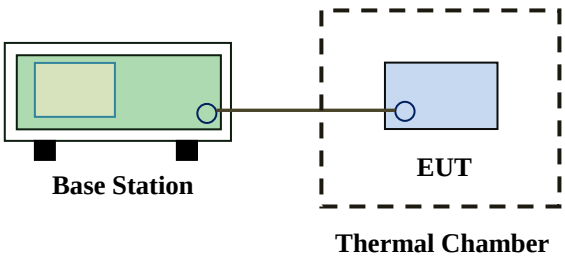
LTE Band 7 - High Channel QPSK-20

Note: Offset=Cable loss (4.5) + 10log (192.1/100)=4.5+2.8=7.3dB	Note: Offset=Cable loss (4.5) + 10log (189.8/100)=4.5+2.8=7.3dB
	
LTE Band 7 - Low Channel 16QAM-20	LTE Band 7 - High Channel 16QAM-20
Note: Offset=Cable loss (4.5) + 10log (193.3/100)=4.5+2.9=7.4 dB	Note: Offset=Cable loss (4.5) + 10log (192.5/100)=4.5+2.8=7.3 dB

6.10 Frequency Stability

Temperature	22℃
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	July 21, 2015
Tested By :	Winnie Zhang

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1055, §24.235 § 27.5(h); § 27.54	a)	According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block. According to §27.54, The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.	☑
Test setup			
Procedure	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. Limit: The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.		
Remark	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 -10ºC to +55ºC at normal supply voltage.		
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

LTE Band 2 (Part 24E) result

Middle Channel, f_o = 1880 MHz				
Temperature (℃)	Power Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-7	0.0037	2.5
0		-9	0.0048	2.5
10		-8	0.0043	2.5
20		-8	0.0043	2.5
30		-10	0.0053	2.5
40		-9	0.0048	2.5
50		-7	0.0037	2.5
55		-11	0.0059	2.5
25	4.2	-12	0.0064	2.5
	3.5	-10	0.0053	2.5

LTE Band 4 (Part 27) result

Middle Channel, f_o = 1732.5 MHz				
Temperature (℃)	Power Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-15	0.0087	2.5
0		-13	0.0075	2.5
10		-11	0.0063	2.5
20		-10	0.0058	2.5
30		-12	0.0069	2.5
40		-15	0.0087	2.5
50		-14	0.0081	2.5
55		-15	0.0087	2.5
25	4.2	-15	0.0087	2.5
	3.5	-17	0.0098	2.5

LTE Band 17 (Part 27) result

Middle Channel, f_o = 710 MHz				
Temperature (℃)	Power Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	5	0.0070	2.5
0		7	0.0113	2.5
10		6	0.0141	2.5
20		8	0.0056	2.5
30		6	0.0028	2.5
40		4	0.0155	2.5
50		9	0.0197	2.5
55		6	0.0028	2.5
25	4.2	10	0.0127	2.5
	3.5	9	0.0183	2.5

LTE Band 7 (Part 27) result

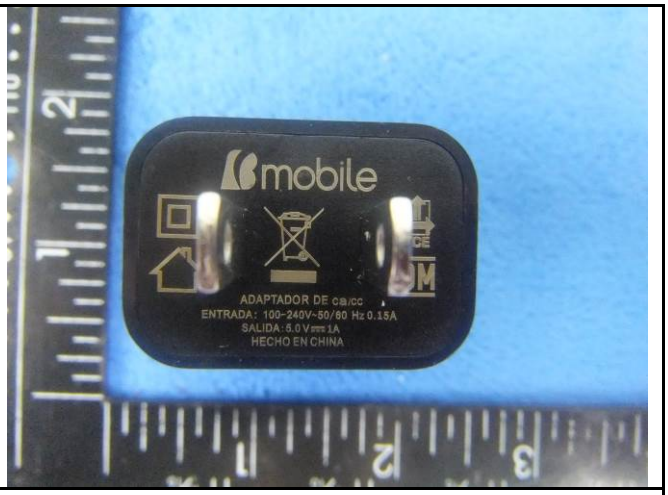
Middle Channel, f_o = 2535 MHz				
Temperature (℃)	Power Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-10	3.7	-9	0.0048	2.5
0		-10	0.0053	2.5
10		-10	0.0053	2.5
20		-11	0.0059	2.5
30		-8	0.0043	2.5
40		-9	0.0048	2.5
50		-10	0.0053	2.5
55		-8	0.0043	2.5
25	4.2	-11	0.0059	2.5
	3.5	-12	0.0064	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	09/17/2014	09/16/2015	☑
Power Splitter	1#	1#	09/02/2014	09/01/2015	☑
Universal Radio Communication Tester	CMU200	121393	09/26/2014	09/25/2015	☑
Wideband Radio Communication Tester	CMW500	120906	03/28/2015	03/27/2016	☑
Temperature/Humidity Chamber	UHL-270	001	10/10/2014	10/09/2015	☑
DC Power Supply	E3640A	MY40004013	09/18/2014	09/17/2015	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/18/2014	09/17/2015	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	09/02/2014	09/01/2015	☑
Microwave Preamplifier (0.5 ~ 18GHz)	PAM-118	443008	09/02/2014	09/01/2015	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/22/2014	09/21/2015	☑
Bilog Antenna (30MHz~2GHz)	JB1	A112017	09/22/2014	09/21/2015	☑
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71259	09/25/2014	09/24/2015	☑
Double Ridge Horn Antenna (1 ~18GHz)	AH-118	71283	09/25/2014	09/24/2015	☑
SYNTHESIZED SIGNAL GENERATOR	8665B	3744A01293	09/18/2014	09/17/2015	☑
Tunable Notch Filter	3NF-800/1000-S	AA4	09/02/2014	09/01/2015	☑
Tunable Notch Filter	3NF-1000/2000-S	AM 4	09/02/2014	09/01/2015	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

	
Whole Package - Top View	Adapter - Front View
	
EUT - Front View	EUT - Rear View

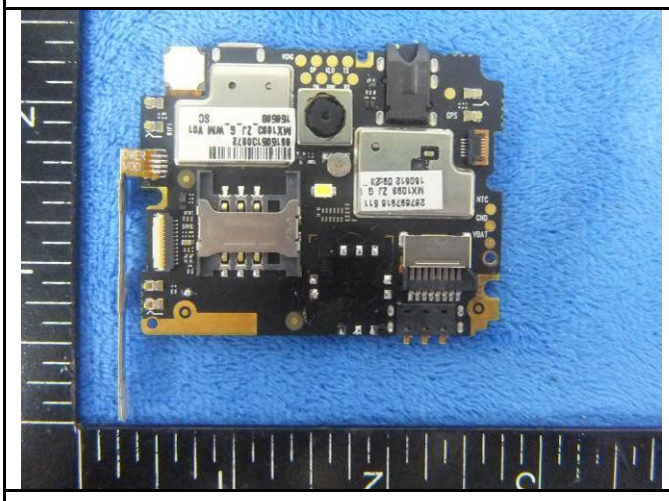
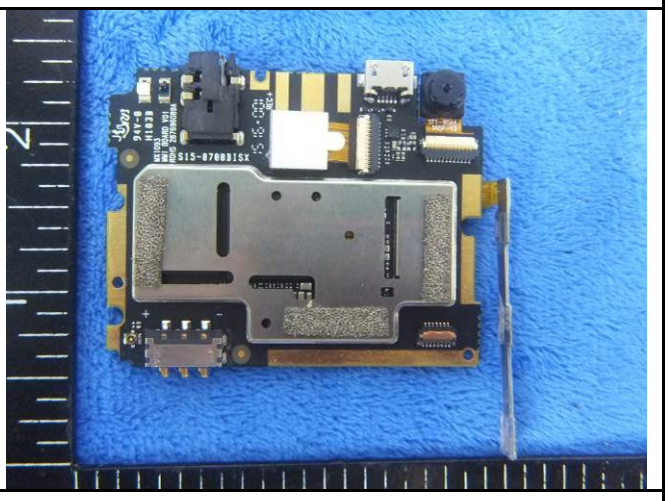
EUT - Top View

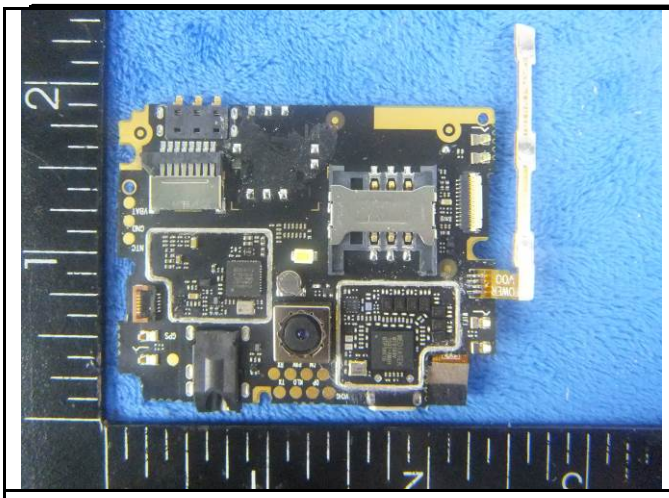
EUT - Bottom View

EUT - Left View

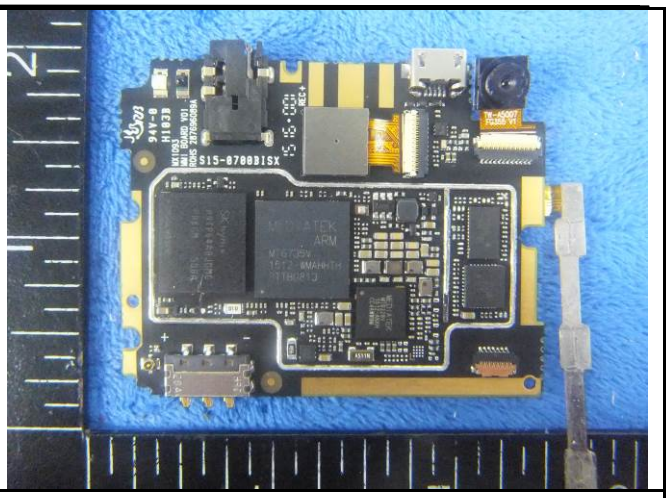
EUT - Right View

Annex B.ii. Photograph: EUT Internal Photo

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Cover Off - Top View 1</td><td>Cover Off - Top View 2</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Battery - Top View</td><td>Battery - Bottom View</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Mainborad With Shielding - Front View</td><td>Mainborad With Shielding - Rear View</td></tr>
</table>

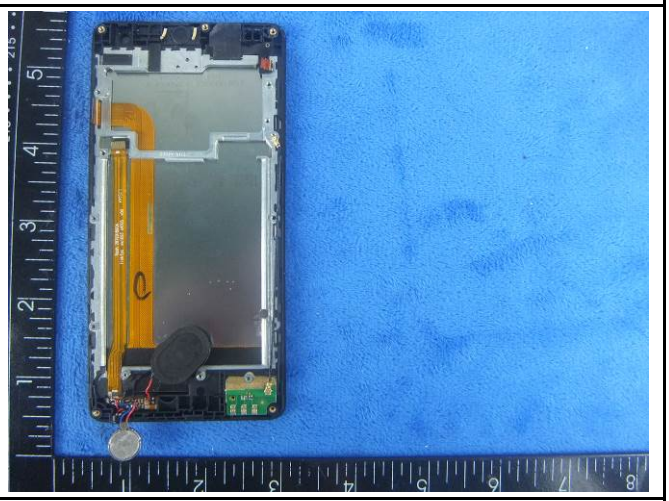


Mainborad Without Shielding - Front View



Mainborad Without Shielding - Rear View

LCD – Front View



LCD – Rear View

GSM/PCS/UMTS-FDD Antenna View

WIFI/BT/BLE - Antenna View

	
LTE- Antenna View	

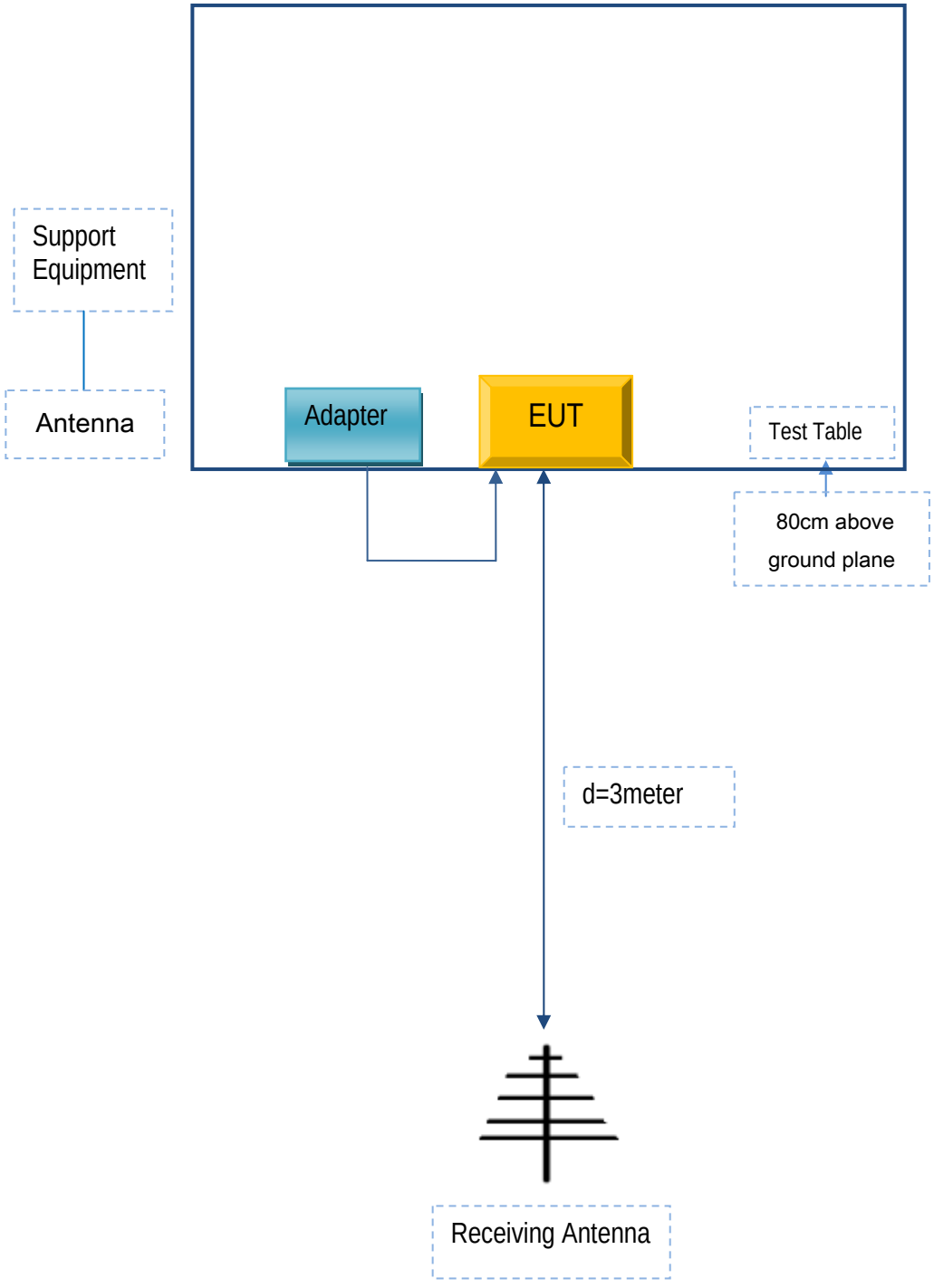
Annex B.iii. Photograph: Test Setup Photo

	
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. il. 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	Calibration Due Date
N/A	N/A	N/A	N/A	N/A

Annex C.ii. EUT OPERATING CONKITIONS

N/A

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

Please see attachment

Annex E. DECLARATION OF SIMILARITY

b Mobile HK Limited

To SIEMIC Inc
775 Montague Expressway
Milpitas, CA 95035.

Statement

We, b Mobile HK Limited apply a multiple-listing certification for the below models.

Product Name: Mobile phone

Model number: AX1020/ AX1030

FCC ID: ZSW-30-012

We hereby state that these models are identical in interior structure, electrical circuits and components, and just model name is different for the marketing requirement.

Your assistance on this matter is highly appreciated.

Sincerely,
Name: KA SHING LAM
Title: Director
Signature: