RF TEST REPORT

Report No.: 17070840-FCC-R5

Supersede Report No.: N/A

Applicant	Verykool USA Inc
Product Name	Mobile phone
Model No.	SL5029
Serial No.	N/A
Test Standard	FCC Part 22(H):2015, FCC Part 24(E):2015, FCC Part 27: 2015; ANSI/TIA-603-D: 2010
Test Date	September 27 to October 15, 2017
Issue Date	October 16, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Loren Luo	David Huang	
Loren Luo Test Engineer	David Huang Checked By	

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

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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

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Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

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

Accreditations for Conformity Assessment

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

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070840-FCC-R5	NONE	Original	October 16, 2017

2. Customer information

Applicant Name	Verykool USA Inc
Applicant Add	3636 Nobel Drive, Suite 325, San Diego, California 92122 United States
Manufacturer	Fortune Ship International Industrial Ltd
Manufacturer Add	6/F, Kanghesheng Building, No.1 Chuangsheng Road, Nanshan District, Shenzhen, Guangdong, China

3. Test site information

Test Lab A:

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

Test Lab B:

Lab performing tests	SIEMIC (Nanjing-China) Laboratories
Lab Address	2-1 Longcang Avenue Yuhua Economic and Technology Development Park, Nanjing, China
FCC Test Site No.	694825
IC Test Site No.	4842B-1
Test Software	EZ_EMC(ver.Icp-03A1)

Note: We just perform Radiated Spurious Emission above 18GHz in the test Lab. B.

4. Equipment under Test (EUT) Information

Description of EUT:	Mobile phone
Main Model:	SL5029
Serial Model:	N/A
Date EUT received:	September 26, 2017
Test Date(s):	September 27 to October 15, 2017
Equipment Category：	PCE
Antenna Gain:	GSM850: -1.5dBi PCS1900: 0.5dBi UMTS-FDD Band V: -1.5dBi UMTS-FDD Band II: 0.5dBi LTE Band 2: 0.8dBi LTE Band 4: 0.7dBi LTE Band 5: 0.2dBi LTE Band 7: 1.0dBi Bluetooth/BLE: 1.02dBi WIFI: 1.1dBi GPS: 1.02dBi
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, π /4DQPSK, 8DPSK BLE: GFSK GPS:BPSK
RF Operating Frequency (ies):	GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz UMTS-FDD Band II TX:1852.4 ~ 1907.6 MHz; RX: 1932.4 ~ 1987.6 MHz

	LTE Band 2 TX: 1852.5 ~ 1907.5 MHz; RX : 1932.5 ~ 1987.5 MHz LTE Band 4 TX: 1712.5 ~ 1752.5 MHz; RX : 2112.5 ~ 2152.5 MHz LTE Band 5 TX: 826.5 ~ 846.5 MHz; RX : 871.5 ~ 891.5 MHz LTE Band 7 TX: 2502.5 ~ 2567.5 MHz; RX : 2622.5 ~ 2687.5 MHz WIFI: 802.11b/g/n(20M): 2412-2462 MHz WIFI: 802.11n(40M): 2422-2452 MHz Bluetooth& BLE: 2402-2480 MHz GPS: 1575.42 MHz
Maximum Conducted AV Power to Antenna:	LTE Band 2: 23.37 dBm LTE Band 4: 23.16 dBm LTE Band 5: 23.88 dBm LTE Band 7: 23.00 dBm
ERP/EIRP:	LTE Band 2: 24.12 dBm / EIRP LTE Band 4: 23.69 dBm / EIRP LTE Band 5: 21.52 dBm / EIRP LTE Band 7: 23.42 dBm / EIRP
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: UAX-C05Y10-00A00 Input: AC100-240V~50/60Hz, 0.2A Output: DC 5.0V,1.0A Battery: Model: 366073ART Spec: 3.7V, 2000mAh, 7.4Wh Limited charger voltage: 4.2V
Trade Name :	verykool
GPRS/ EGPRS Multi-slot class	8/10/11/12
FCC ID:	WA6SL5029

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§ 1.1307; § 2.1093	RF Exposure (SAR)	Compliance
§2.1046; § 22.913(a); § 24.232(c); § 27.50(c.10); § 27.50(d.4)	RF Output Power	Compliance
§ 24.232 (d); § 27.50(d)	Peak-Average Ratio	Compliance
§ 2.1047	Modulation Characteristics	N/A
§ 2.1049; § 22.905; § 22.917; § 24.238; § 27.53(a.5)	99% & -26 dB Occupied Bandwidth	Compliance
§ 2.1051; § 22.917(a); § 24.238(a); § 27.53(h)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917(a); § 24.238(a); § 27.53(h)	Field Strength of Spurious Radiation	Compliance
§ 22.917(a); § 24.238(a);	Out of band emission, Band Edge	Compliance
§ 27.53(m)	Band Edge 27.53(m)	Compliance
§ 2.1055; § 22.355; § 24.235; § 27.5(h); § 27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

Note: Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

Measurement Uncertainty

Emissions		
Test Item	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
-	-	-

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

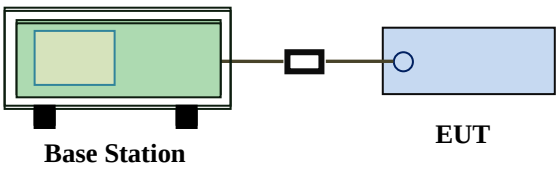
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 17070840-FCC-H.

6.2 RF Output Power

Temperature	23 °C
Relative Humidity	54%
Atmospheric Pressure	1020mbar
Test date :	September 28, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§22.913 (a)	a)	ERP:38.45dBm	☑
§24.232 (c)	b)	EIRP:33dBm	☑
§27.50 (c)	c)	EIRP: 30dBm	☑
Test Setup			
Test Procedure	For Conducted Power: - The transmitter output port was connected to base station. - Set EUT at maximum power through base station. - Select lowest, middle, and highest channels for each band and different test mode. For ERP/EIRP: - The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. - The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. - The frequency range up to tenth harmonic of the fundamental frequency was investigated.		

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

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

Conducted Power

LTE Band 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	23.27	23±1
				1	49	0	23.37	23±1
				1	99	0	23.26	23±1
				50	0	1	22.08	23±1
				50	24	1	22.13	23±1
				50	49	1	22.11	23±1
				100	0	1	22.05	23±1
			16QAM	1	0	1	22.1	22±1
				1	49	1	22.15	22±1
				1	99	1	22.05	22±1
				50	0	2	22.19	22±1
				50	24	2	22.01	22±1
				50	49	2	22.2	22±1
				100	0	2	21.07	22±1
	18900	1880.0	QPSK	1	0	0	22.14	22±1
				1	49	0	22.16	22±1
				1	99	0	22.17	22±1
				50	0	1	21.06	22±1
				50	24	1	21.01	22±1
				50	49	1	21.16	22±1
				100	0	1	21.28	22±1
			16QAM	1	0	1	21.55	21.3±1
				1	49	1	21.47	21.3±1
				1	99	1	21.47	21.3±1
				50	0	2	21.6	21.3±1
				50	24	2	21.58	21.3±1
				50	49	2	21.57	21.3±1
				100	0	2	20.43	21.3±1
	19100	1900.0	QPSK	1	0	0	22.93	22.1±1
				1	49	0	22.94	22.1±1
				1	99	0	23.02	22.1±1
				50	0	1	21.92	22.1±1
				50	24	1	21.86	22.1±1
				50	49	1	21.9	22.1±1
				100	0	1	21.85	22.1±1
			16QAM	1	0	1	22.31	21.7±1
				1	49	1	22.38	21.7±1
				1	99	1	22.37	21.7±1
				50	0	2	22.28	21.7±1
				50	24	2	22.32	21.7±1
				50	49	2	22.3	21.7±1
				100	0	2	20.92	21.7±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	18675	1857.5	QPSK	1	0	0	23.21	23±1
				1	37	0	23.15	23±1
				1	74	0	23.23	23±1
				36	0	1	22.17	23±1
				36	16	1	22.11	23±1
				36	35	1	22.19	23±1
				75	0	1	22.15	23±1
			16QAM	1	0	1	22.01	22±1
				1	37	1	22.03	22±1
				1	74	1	22.01	22±1
				36	0	2	21.99	22±1
				36	16	2	21.95	22±1
				36	35	2	21.98	22±1
				75	0	2	21.13	22±1
	18900	1880.0	QPSK	1	0	0	22.15	22±1
				1	37	0	22.65	22±1
				1	74	0	22.55	22±1
				36	0	1	21.1	22±1
				36	16	1	21.08	22±1
				36	35	1	21.02	22±1
				75	0	1	21.24	22±1
			16QAM	1	0	1	21.45	21.3±1
				1	37	1	21.35	21.3±1
				1	74	1	21.53	21.3±1
				36	0	2	21.41	21.3±1
				36	16	2	21.39	21.3±1
				36	35	2	21.42	21.3±1
				75	0	2	20.42	21.3±1
	19125	1902.5	QPSK	1	0	0	22.83	22.5±1
				1	37	0	22.81	22.5±1
				1	74	0	22.8	22.5±1
				36	0	1	21.95	22.5±1
				36	16	1	21.97	22.5±1
				36	35	1	21.99	22.5±1
				75	0	1	21.51	22.5±1
			16QAM	1	0	1	22.4	21.6±1
				1	37	1	22.49	21.6±1
				1	74	1	22.49	21.6±1
				36	0	2	22.48	21.6±1
				36	16	2	22.34	21.6±1
				36	35	2	22.35	21.6±1
				75	0	2	20.65	21.6±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	18650	1855	QPSK	1	0	0	23.17	22.5±1
				1	24	0	23.2	22.5±1
				1	49	0	23.13	22.5±1
				25	0	1	22.04	22.5±1
				25	12	1	22.12	22.5±1
				25	24	1	22.07	22.5±1
				50	0	1	21.99	22.5±1
			16QAM	1	0	1	21.92	21.3±1
				1	24	1	22	21.3±1
				1	49	1	21.94	21.3±1
				25	0	2	21.88	21.3±1
				25	12	2	21.99	21.3±1
				25	24	2	21.88	21.3±1
				50	0	2	20.99	21.3±1
	18900	1880.0	QPSK	1	0	0	22.03	22±1
				1	24	0	21.96	22±1
				1	49	0	22.01	22±1
				25	0	1	21.14	22±1
				25	12	1	21.13	22±1
				25	24	1	21.07	22±1
				50	0	1	21.26	22±1
			16QAM	1	0	1	21.01	21.3±1
				1	24	1	21.02	21.3±1
				1	49	1	20.98	21.3±1
				25	0	2	21.1	21.3±1
				25	12	2	21.02	21.3±1
				25	24	2	21.01	21.3±1
				50	0	2	20.41	21.3±1
	19150	1905	QPSK	1	0	0	22.37	22±1
				1	24	0	22.44	22±1
				1	49	0	22.43	22±1
				25	0	1	21.33	22±1
				25	12	1	21.38	22±1
				25	24	1	21.42	22±1
				50	0	1	21.2	22±1
			16QAM	1	0	1	22.08	21.3±1
				1	24	1	22.1	21.3±1
				1	49	1	22.17	21.3±1
				25	0	2	22.13	21.3±1
				25	12	2	22.18	21.3±1
				25	24	2	21.99	21.3±1
				50	0	2	20.35	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	23.09	23±1
				1	12	0	23.03	23±1
				1	24	0	23.17	23±1
				12	0	1	22.09	23±1
				12	6	1	22.08	23±1
				12	11	1	22.15	23±1
				25	0	1	22	23±1
			16QAM	1	0	1	22.42	21.7±1
				1	12	1	22.4	21.7±1
				1	24	1	22.42	21.7±1
				12	0	2	22.4	21.7±1
				12	6	2	22.33	21.7±1
				12	11	2	22.51	21.7±1
				25	0	2	20.98	21.7±1
	18900	1880.0	QPSK	1	0	0	22.43	22±1
				1	12	0	22.43	22±1
				1	24	0	22.51	22±1
				12	0	1	21.29	22±1
				12	6	1	21.34	22±1
				12	11	1	21.21	22±1
				25	0	1	21.39	22±1
			16QAM	1	0	1	21.56	21.3±1
				1	12	1	21.53	21.3±1
				1	24	1	21.6	21.3±1
				12	0	2	21.47	21.3±1
				12	6	2	21.55	21.3±1
				12	11	2	21.53	21.3±1
				25	0	2	20.46	21.3±1
	19175	1907.5	QPSK	1	0	0	22.52	22±1
				1	12	0	22.52	22±1
				1	24	0	22.5	22±1
				12	0	1	21.31	22±1
				12	6	1	21.41	22±1
				12	11	1	21.38	22±1
				25	0	1	21.23	22±1
			16QAM	1	0	1	21.63	21.3±1
				1	12	1	21.65	21.3±1
				1	24	1	21.56	21.3±1
				12	0	2	21.57	21.3±1
				12	6	2	21.58	21.3±1
				12	11	2	21.69	21.3±1
				25	0	2	20.41	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	23.11	22.5±1
				1	7	0	23.16	22.5±1
				1	14	0	23.09	22.5±1
				8	0	1	22.08	22.5±1
				8	4	1	21.99	22.5±1
				8	7	1	22.12	22.5±1
				15	0	1	22.07	22.5±1
			16QAM	1	0	1	21.87	21.3±1
				1	7	1	21.81	21.3±1
				1	14	1	21.9	21.3±1
				8	0	2	20.97	21.3±1
				8	4	2	20.91	21.3±1
				8	7	2	20.91	21.3±1
				15	0	2	21	21.3±1
	18900	1880.0	QPSK	1	0	0	22.65	21.8±1
				1	7	0	20.91	21.8±1
				1	14	0	22.73	21.8±1
				8	0	1	21.64	21.8±1
				8	4	1	21.69	21.8±1
				8	7	1	21.7	21.8±1
				15	0	1	21.75	21.8±1
			16QAM	1	0	1	21.68	21.3±1
				1	7	1	21.65	21.3±1
				1	14	1	21.63	21.3±1
				8	0	2	20.63	21.3±1
				8	4	2	20.7	21.3±1
				8	7	2	20.57	21.3±1
				15	0	2	20.84	21.3±1
	19175	1907.5	QPSK	1	0	0	22.39	22±1
				1	7	0	22.33	22±1
				1	14	0	22.39	22±1
				8	0	1	21.58	22±1
				8	4	1	21.6	22±1
				8	7	1	21.62	22±1
				15	0	1	21.68	22±1
			16QAM	1	0	1	22.03	21.3±1
				1	7	1	21.99	21.3±1
				1	14	1	22.06	21.3±1
				8	0	2	20.65	21.3±1
				8	4	2	20.65	21.3±1
				8	7	2	20.68	21.3±1
				15	0	2	20.77	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	18607	1850.7	QPSK	1	0	0	23.1	23±1
				1	2	0	23.08	23±1
				1	5	0	23.01	23±1
				3	0	0	23.11	23±1
				3	1	0	23.15	23±1
				3	2	0	23.13	23±1
				6	0	1	22.04	23±1
			16QAM	1	0	1	21.87	21.5±1
				1	2	1	21.97	21.5±1
				1	5	1	21.87	21.5±1
				3	0	1	21.84	21.5±1
				3	1	1	21.77	21.5±1
				3	2	1	21.88	21.5±1
				6	0	2	20.95	21.5±1
	18900	1880.0	QPSK	1	0	0	22.76	22.3±1
				1	2	0	22.83	22.3±1
				1	5	0	22.77	22.3±1
				3	0	0	22.55	22.3±1
				3	1	0	22.49	22.3±1
				3	2	0	22.61	22.3±1
				6	0	1	21.73	22.3±1
			16QAM	1	0	1	21.75	21.5±1
				1	2	1	21.75	21.5±1
				1	5	1	21.7	21.5±1
				3	0	1	21.65	21.5±1
				3	1	1	21.66	21.5±1
				3	2	1	21.7	21.5±1
				6	0	2	20.71	21.5±1
	19193	1909.3	QPSK	1	0	0	22.41	22±1
				1	2	0	22.42	22±1
				1	5	0	22.48	22±1
				3	0	0	22.47	22±1
				3	1	0	22.43	22±1
				3	2	0	22.45	22±1
				6	0	1	21.64	22±1
			16QAM	1	0	1	21.27	21.3±1
				1	2	1	21.24	21.3±1
				1	5	1	21.17	21.3±1
				3	0	1	21.17	21.3±1
				3	1	1	21.32	21.3±1
				3	2	1	21.17	21.3±1
				6	0	2	20.57	21.3±1

LTE Band 4:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20050	1720.0	QPSK	1	0	0	22.78	22.5±1
				1	49	0	22.77	22.5±1
				1	99	0	22.74	22.5±1
				50	0	1	21.96	22.5±1
				50	24	1	21.93	22.5±1
				50	49	1	22.03	22.5±1
				100	0	1	21.94	22.5±1
			16QAM	1	0	1	21.98	21.5±1
				1	49	1	22.01	21.5±1
				1	99	1	22	21.5±1
				50	0	2	21.99	21.5±1
				50	24	2	21.91	21.5±1
				50	49	2	21.91	21.5±1
				100	0	2	20.92	21.5±1
	20175	1732.5	QPSK	1	0	0	22.46	22±1
				1	49	0	22.54	22±1
				1	99	0	22.52	22±1
				50	0	1	22.04	22±1
				50	24	1	22.11	22±1
				50	49	1	22.12	22±1
				100	0	1	21.92	22±1
			16QAM	1	0	1	22.22	21.5±1
				1	49	1	22.17	21.5±1
				1	99	1	22.15	21.5±1
				50	0	2	22.31	21.5±1
				50	24	2	22.14	21.5±1
				50	49	2	22.32	21.5±1
				100	0	2	20.89	21.5±1
	20300	1745.0	QPSK	1	0	0	22.58	22±1
				1	49	0	22.66	22±1
				1	99	0	22.53	22±1
				50	0	1	22.18	22±1
				50	24	1	22.24	22±1
				50	49	1	22.27	22±1
				100	0	1	22.36	22±1
			16QAM	1	0	1	22.37	22±1
				1	49	1	22.46	22±1
				1	99	1	22.33	22±1
				50	0	2	22.46	22±1
				50	24	2	22.36	22±1
				50	49	2	22.47	22±1
				100	0	2	21.21	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20025	1717.5	QPSK	1	0	0	23.06	22.5±1
				1	37	0	23.05	22.5±1
				1	74	0	23.16	22.5±1
				36	0	1	22.07	22.5±1
				36	16	1	21.98	22.5±1
				36	35	1	22.13	22.5±1
				75	0	1	22.08	22.5±1
			16QAM	1	0	1	21.85	21.5±1
				1	37	1	21.84	21.5±1
				1	74	1	21.87	21.5±1
				36	0	2	21.82	21.5±1
				36	16	2	21.77	21.5±1
				36	35	2	21.88	21.5±1
				75	0	2	21.07	21.5±1
	20175	1732.5	QPSK	1	0	0	22.92	22.5±1
				1	37	0	22.82	22.5±1
				1	74	0	22.99	22.5±1
				36	0	1	22.24	22.5±1
				36	16	1	22.18	22.5±1
				36	35	1	22.34	22.5±1
				75	0	1	22.13	22.5±1
			16QAM	1	0	1	22.11	22±1
				1	37	1	22.07	22±1
				1	74	1	22.13	22±1
				36	0	2	22.2	22±1
				36	16	2	22.21	22±1
				36	35	2	22.07	22±1
				75	0	2	21.04	22±1
	20325	1747.5	QPSK	1	0	0	22.91	23±1
				1	37	0	23	23±1
				1	74	0	22.9	23±1
				36	0	1	22.12	23±1
				36	16	1	22.06	23±1
				36	35	1	22.13	23±1
				75	0	1	22.05	23±1
			16QAM	1	0	1	22.45	22±1
				1	37	1	22.45	22±1
				1	74	1	22.43	22±1
				36	0	2	22.55	22±1
				36	16	2	22.4	22±1
				36	35	2	22.44	22±1
				75	0	2	21.15	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20000	1715.0	QPSK	1	0	0	23.04	22.5±1
				1	24	0	22.97	22.5±1
				1	49	0	23.11	22.5±1
				25	0	1	21.93	22.5±1
				25	12	1	22.01	22.5±1
				25	24	1	21.95	22.5±1
				50	0	1	21.94	22.5±1
			16QAM	1	0	1	22.1	21.5±1
				1	24	1	22.09	21.5±1
				1	49	1	22.17	21.5±1
				25	0	2	22.11	21.5±1
				25	12	2	22.2	21.5±1
				25	24	2	22.07	21.5±1
				50	0	2	20.94	21.5±1
	20175	1732.5	QPSK	1	0	0	22.96	22.5±1
				1	24	0	23.03	22.5±1
				1	49	0	22.86	22.5±1
				25	0	1	21.89	22.5±1
				25	12	1	21.85	22.5±1
				25	24	1	21.86	22.5±1
				50	0	1	21.91	22.5±1
			16QAM	1	0	1	21.89	21.5±1
				1	24	1	21.85	21.5±1
				1	49	1	21.82	21.5±1
				25	0	2	21.83	21.5±1
				25	12	2	21.85	21.5±1
				25	24	2	21.85	21.5±1
				50	0	2	20.94	21.5±1
	20350	1750.0	QPSK	1	0	0	22.97	22.5±1
				1	24	0	23	22.5±1
				1	49	0	22.89	22.5±1
				25	0	1	22.05	22.5±1
				25	12	1	22.08	22.5±1
				25	24	1	22.15	22.5±1
				50	0	1	22.07	22.5±1
			16QAM	1	0	1	22.51	22±1
				1	24	1	22.49	22±1
				1	49	1	22.58	22±1
				25	0	2	22.59	22±1
				25	12	2	22.43	22±1
				25	24	2	22.59	22±1
				50	0	2	21.1	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	20000	1715.0	QPSK	1	0	0	22.88	22.5±1
				1	12	0	22.82	22.5±1
				1	24	0	22.86	22.5±1
				12	0	1	21.92	22.5±1
				12	6	1	21.87	22.5±1
				12	11	1	21.85	22.5±1
				25	0	1	21.89	22.5±1
			16QAM	1	0	1	22.24	21.5±1
				1	12	1	22.15	21.5±1
				1	24	1	22.19	21.5±1
				12	0	2	22.25	21.5±1
				12	6	2	22.29	21.5±1
				12	11	2	22.28	21.5±1
				25	0	2	20.87	21.5±1
	20175	1732.5	QPSK	1	0	0	22.84	22.5±1
				1	12	0	22.94	22.5±1
				1	24	0	22.94	22.5±1
				12	0	1	21.96	22.5±1
				12	6	1	22.04	22.5±1
				12	11	1	21.95	22.5±1
				25	0	1	21.89	22.5±1
			16QAM	1	0	1	21.91	21.5±1
				1	12	1	21.88	21.5±1
				1	24	1	21.94	21.5±1
				12	0	2	21.85	21.5±1
				12	6	2	21.98	21.5±1
				12	11	2	21.9	21.5±1
				25	0	2	20.93	21.5±1
	20350	1750.0	QPSK	1	0	0	22.78	22.5±1
				1	12	0	22.84	22.5±1
				1	24	0	22.7	22.5±1
				12	0	1	22.41	22.5±1
				12	6	1	22.48	22.5±1
				12	11	1	22.32	22.5±1
				25	0	1	22.29	22.5±1
			16QAM	1	0	1	22.05	22±1
				1	12	1	22.12	22±1
				1	24	1	21.97	22±1
				12	0	2	22.11	22±1
				12	6	2	21.99	22±1
				12	11	2	21.98	22±1
				25	0	2	21.2	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	19965	1711.5	QPSK	1	0	0	22.91	22.5±1
				1	7	0	22.95	22.5±1
				1	14	0	22.9	22.5±1
				8	0	1	21.87	22.5±1
				8	4	1	21.86	22.5±1
				8	7	1	21.96	22.5±1
				15	0	1	21.87	22.5±1
			16QAM	1	0	1	21.69	21.5±1
				1	7	1	21.78	21.5±1
				1	14	1	21.64	21.5±1
				8	0	2	20.8	21.5±1
				8	4	2	20.76	21.5±1
				8	7	2	20.88	21.5±1
				15	0	2	20.81	21.5±1
	20175	1732.5	QPSK	1	0	0	22.88	22±1
				1	7	0	21.1	22±1
				1	14	0	22.96	22±1
				8	0	1	21.83	22±1
				8	4	1	21.81	22±1
				8	7	1	21.79	22±1
				15	0	1	21.9	22±1
			16QAM	1	0	1	21.81	21.5±1
				1	7	1	21.71	21.5±1
				1	14	1	21.8	21.5±1
				8	0	2	20.68	21.5±1
				8	4	2	20.7	21.5±1
				8	7	2	20.7	21.5±1
				15	0	2	20.92	21.5±1
	20385	1753.5	QPSK	1	0	0	23.04	23±1
				1	7	0	23.07	23±1
				1	14	0	23.09	23±1
				8	0	1	22.14	23±1
				8	4	1	22.17	23±1
				8	7	1	22.2	23±1
				15	0	1	22.2	23±1
			16QAM	1	0	1	22.55	22±1
				1	7	1	22.56	22±1
				1	14	1	22.48	22±1
				8	0	2	21.08	22±1
				8	4	2	21.04	22±1
				8	7	2	21.03	22±1
				15	0	2	21.25	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	22.93	22.5±1
				1	2	0	22.84	22.5±1
				1	5	0	22.84	22.5±1
				3	0	0	22.97	22.5±1
				3	1	0	22.9	22.5±1
				3	2	0	22.98	22.5±1
				6	0	1	21.89	22.5±1
			16QAM	1	0	1	21.72	21.5±1
				1	2	1	21.76	21.5±1
				1	5	1	21.8	21.5±1
				3	0	1	21.65	21.5±1
				3	1	1	21.77	21.5±1
				3	2	1	21.73	21.5±1
				6	0	2	20.83	21.5±1
	20175	1732.5	QPSK	1	0	0	22.89	22.5±1
				1	2	0	22.8	22.5±1
				1	5	0	22.99	22.5±1
				3	0	0	22.91	22.5±1
				3	1	0	22.98	22.5±1
				3	2	0	22.82	22.5±1
				6	0	1	21.85	22.5±1
			16QAM	1	0	1	21.81	21.5±1
				1	2	1	21.79	21.5±1
				1	5	1	21.88	21.5±1
				3	0	1	21.87	21.5±1
				3	1	1	21.77	21.5±1
				3	2	1	21.81	21.5±1
				6	0	2	20.69	21.5±1
	20393	1754.3	QPSK	1	0	0	23.11	23±1
				1	2	0	23.08	23±1
				1	5	0	23.16	23±1
				3	0	0	22.66	23±1
				3	1	0	22.7	23±1
				3	2	0	22.62	23±1
				6	0	1	22.35	23±1
			16QAM	1	0	1	22.1	22±1
				1	2	1	22.02	22±1
				1	5	1	22.18	22±1
				3	0	1	22.08	22±1
				3	1	1	22.07	22±1
				3	2	1	22.18	22±1
				6	0	2	21.03	22±1

LTE Band 5:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20450	829	QPSK	1	0	0	23.51	23±1
				1	12	0	23.58	23±1
				1	24	0	23.42	23±1
				12	0	1	22.48	23±1
				12	6	1	22.43	23±1
				12	11	1	22.53	23±1
				25	0	1	22.57	23±1
			16QAM	1	0	1	23.04	22.3±1
				1	12	1	23.04	22.3±1
				1	24	1	22.95	22.3±1
				12	0	2	22.96	22.3±1
				12	6	2	23.09	22.3±1
				12	11	2	23.1	22.3±1
				25	0	2	21.42	22.3±1
	20525	836.5	QPSK	1	0	0	23.49	23±1
				1	12	0	23.39	23±1
				1	24	0	23.48	23±1
				12	0	1	22.51	23±1
				12	6	1	22.45	23±1
				12	11	1	22.53	23±1
				25	0	1	22.41	23±1
			16QAM	1	0	1	23.04	22.3±1
				1	12	1	22.94	22.3±1
				1	24	1	22.99	22.3±1
				12	0	2	23.13	22.3±1
				12	6	2	22.99	22.3±1
				12	11	2	23.11	22.3±1
				25	0	2	21.51	22.3±1
	20600	844	QPSK	1	0	0	23.39	23±1
				1	12	0	23.45	23±1
				1	24	0	23.42	23±1
				12	0	1	22.38	23±1
				12	6	1	22.48	23±1
				12	11	1	22.44	23±1
				25	0	1	22.31	23±1
			16QAM	1	0	1	22.17	22±1
				1	12	1	22.2	22±1
				1	24	1	22.25	22±1
				12	0	2	22.1	22±1
				12	6	2	22.23	22±1
				12	11	2	22.15	22±1
				25	0	2	21.34	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	20425	826.5	QPSK	1	0	0	23.78	23.5±1
				1	24	0	23.77	23.5±1
				1	49	0	23.76	23.5±1
				25	0	1	22.78	23.5±1
				25	12	1	22.69	23.5±1
				25	24	1	22.73	23.5±1
				50	0	1	22.71	23.5±1
			16QAM	1	0	1	23.15	22.5±1
				1	24	1	23.09	22.5±1
				1	49	1	23.22	22.5±1
				25	0	2	23.18	22.5±1
				25	12	2	23.11	22.5±1
				25	24	2	23.24	22.5±1
				50	0	2	21.69	22.5±1
	20525	836.5	QPSK	1	0	0	23.42	23±1
				1	24	0	23.32	23±1
				1	49	0	23.51	23±1
				25	0	1	22.52	23±1
				25	12	1	22.55	23±1
				25	24	1	22.59	23±1
				50	0	1	22.41	23±1
			16QAM	1	0	1	22.46	22±1
				1	24	1	22.45	22±1
				1	49	1	22.55	22±1
				25	0	2	22.39	22±1
				25	12	2	22.54	22±1
				25	24	2	22.47	22±1
				50	0	2	21.45	22±1
	20625	846.5	QPSK	1	0	0	23.42	23±1
				1	24	0	23.39	23±1
				1	49	0	23.4	23±1
				25	0	1	22.43	23±1
				25	12	1	22.5	23±1
				25	24	1	22.52	23±1
				50	0	1	22.38	23±1
			16QAM	1	0	1	22.33	22±1
				1	24	1	22.26	22±1
				1	49	1	22.41	22±1
				25	0	2	22.28	22±1
				25	12	2	22.28	22±1
				25	24	2	22.39	22±1
				50	0	2	21.41	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	20415	825.5	QPSK	1	0	0	23.78	23.5±1
				1	7	0	23.75	23.5±1
				1	14	0	23.88	23.5±1
				8	0	1	22.77	23.5±1
				8	4	1	22.8	23.5±1
				8	7	1	22.73	23.5±1
				15	0	1	22.73	23.5±1
			16QAM	1	0	1	22.57	22±1
				1	7	1	22.47	22±1
				1	14	1	22.61	22±1
				8	0	2	21.7	22±1
				8	4	2	21.75	22±1
				8	7	2	21.69	22±1
				15	0	2	21.67	22±1
	20525	836.5	QPSK	1	0	0	23.5	23±1
				1	7	0	21.75	23±1
				1	14	0	23.44	23±1
				8	0	1	22.44	23±1
				8	4	1	22.43	23±1
				8	7	1	22.53	23±1
				15	0	1	22.5	23±1
			16QAM	1	0	1	22.43	22±1
				1	7	1	22.52	22±1
				1	14	1	22.52	22±1
				8	0	2	21.39	22±1
				8	4	2	21.46	22±1
				8	7	2	21.47	22±1
				15	0	2	21.59	22±1
	20635	847.5	QPSK	1	0	0	23.4	23±1
				1	7	0	23.5	23±1
				1	14	0	23.47	23±1
				8	0	1	22.41	23±1
				8	4	1	22.4	23±1
				8	7	1	22.5	23±1
				15	0	1	22.4	23±1
			16QAM	1	0	1	22.17	22±1
				1	7	1	22.08	22±1
				1	14	1	22.07	22±1
				8	0	2	21.29	22±1
				8	4	2	21.36	22±1
				8	7	2	21.24	22±1
				15	0	2	21.29	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	20407	824.7	QPSK	1	0	0	23.79	23.5±1
				1	2	0	23.82	23.5±1
				1	5	0	23.79	23.5±1
				3	0	0	23.83	23.5±1
				3	1	0	23.76	23.5±1
				3	2	0	23.77	23.5±1
				6	0	1	22.77	23.5±1
			16QAM	1	0	1	22.59	22±1
				1	2	1	22.67	22±1
				1	5	1	22.67	22±1
				3	0	1	22.49	22±1
				3	1	1	22.68	22±1
				3	2	1	22.63	22±1
				6	0	2	21.7	22±1
	20525	836.5	QPSK	1	0	0	23.45	23.5±1
				1	2	0	23.5	23.5±1
				1	5	0	23.51	23.5±1
				3	0	0	23.42	23.5±1
				3	1	0	23.33	23.5±1
				3	2	0	23.49	23.5±1
				6	0	1	22.41	23.5±1
			16QAM	1	0	1	22.37	22±1
				1	2	1	22.27	22±1
				1	5	1	22.44	22±1
				3	0	1	22.42	22±1
				3	1	1	22.34	22±1
				3	2	1	22.33	22±1
				6	0	2	21.23	22±1
	20643	848.3	QPSK	1	0	0	23.39	23±1
				1	2	0	23.4	23±1
				1	5	0	23.34	23±1
				3	0	0	23.4	23±1
				3	1	0	23.46	23±1
				3	2	0	23.45	23±1
				6	0	1	22.46	23±1
			16QAM	1	0	1	22	22±1
				1	2	1	21.94	22±1
				1	5	1	21.92	22±1
				3	0	1	22.05	22±1
				3	1	1	22.07	22±1
				3	2	1	22.1	22±1
				6	0	2	21.29	22±1

LTE Band 7:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20850	2510	QPSK	1	0	0	22.95	22.5±1
				1	49	0	22.9	22.5±1
				1	99	0	22.99	22.5±1
				50	0	1	21.64	22.5±1
				50	24	1	21.61	22.5±1
				50	49	1	21.56	22.5±1
				100	0	1	21.56	22.5±1
			16QAM	1	0	1	21.86	21.5±1
				1	49	1	21.94	21.5±1
				1	99	1	21.9	21.5±1
				50	0	2	21.86	21.5±1
				50	24	2	21.89	21.5±1
				50	49	2	21.86	21.5±1
				100	0	2	20.56	21.5±1
	21100	2535	QPSK	1	0	0	22.41	22±1
				1	49	0	22.51	22±1
				1	99	0	22.41	22±1
				50	0	1	21.37	22±1
				50	24	1	21.34	22±1
				50	49	1	21.3	22±1
				100	0	1	21.31	22±1
			16QAM	1	0	1	21.75	21.3±1
				1	49	1	21.73	21.3±1
				1	99	1	21.83	21.3±1
				50	0	2	21.67	21.3±1
				50	24	2	21.76	21.3±1
				50	49	2	21.85	21.3±1
				100	0	2	20.38	21.3±1
	21350	2560	QPSK	1	0	0	22.31	22±1
				1	49	0	22.39	22±1
				1	99	0	22.37	22±1
				50	0	1	21.56	22±1
				50	24	1	21.65	22±1
				50	49	1	21.54	22±1
				100	0	1	21.27	22±1
			16QAM	1	0	1	21.74	21.3±1
				1	49	1	21.71	21.3±1
				1	99	1	21.78	21.3±1
				50	0	2	21.74	21.3±1
				50	24	2	21.76	21.3±1
				50	49	2	21.81	21.3±1
				100	0	2	20.32	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
15MHz	20825	1717.5	QPSK	1	0	0	22.92	22.5±1
				1	37	0	22.93	22.5±1
				1	74	0	23	22.5±1
				36	0	1	21.81	22.5±1
				36	16	1	21.88	22.5±1
				36	35	1	21.85	22.5±1
				75	0	1	21.68	22.5±1
			16QAM	1	0	1	21.74	21.3±1
				1	37	1	21.83	21.3±1
				1	74	1	21.78	21.3±1
				36	0	2	21.7	21.3±1
				36	16	2	21.65	21.3±1
				36	35	2	21.79	21.3±1
				75	0	2	20.85	21.3±1
	21100	1732.5	QPSK	1	0	0	22.36	22±1
				1	37	0	22.39	22±1
				1	74	0	22.26	22±1
				36	0	1	21.37	22±1
				36	16	1	21.46	22±1
				36	35	1	21.28	22±1
				75	0	1	21.32	22±1
			16QAM	1	0	1	21.66	21.3±1
				1	37	1	21.7	21.3±1
				1	74	1	21.68	21.3±1
				36	0	2	21.7	21.3±1
				36	16	2	21.72	21.3±1
				36	35	2	21.61	21.3±1
				75	0	2	20.38	21.3±1
	21375	1747.5	QPSK	1	0	0	22.2	22±1
				1	37	0	22.26	22±1
				1	74	0	22.17	22±1
				36	0	1	21.39	22±1
				36	16	1	21.33	22±1
				36	35	1	21.3	22±1
				75	0	1	21.3	22±1
			16QAM	1	0	1	21.81	21.3±1
				1	37	1	21.76	21.3±1
				1	74	1	21.83	21.3±1
				36	0	2	21.76	21.3±1
				36	16	2	21.9	21.3±1
				36	35	2	21.81	21.3±1
				75	0	2	20.33	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	20800	2502	QPSK	1	0	0	22.75	22.5±1
				1	24	0	22.78	22.5±1
				1	49	0	22.78	22.5±1
				25	0	1	21.63	22.5±1
				25	12	1	21.68	22.5±1
				25	24	1	21.69	22.5±1
				50	0	1	21.51	22.5±1
			16QAM	1	0	1	21.58	21.3±1
				1	24	1	21.66	21.3±1
				1	49	1	21.51	21.3±1
				25	0	2	21.48	21.3±1
				25	12	2	21.67	21.3±1
				25	24	2	21.52	21.3±1
				50	0	2	20.56	21.3±1
	21100	2535	QPSK	1	0	0	22.36	22±1
				1	24	0	22.39	22±1
				1	49	0	22.46	22±1
				25	0	1	21.25	22±1
				25	12	1	21.24	22±1
				25	24	1	21.35	22±1
				50	0	1	21.19	22±1
			16QAM	1	0	1	21.38	21.3±1
				1	24	1	21.45	21.3±1
				1	49	1	21.48	21.3±1
				25	0	2	21.45	21.3±1
				25	12	2	21.3	21.3±1
				25	24	2	21.32	21.3±1
				50	0	2	20.33	21.3±1
	21400	2565	QPSK	1	0	0	22.21	22±1
				1	24	0	22.14	22±1
				1	49	0	22.11	22±1
				25	0	1	21.23	22±1
				25	12	1	21.29	22±1
				25	24	1	21.24	22±1
				50	0	1	21.12	22±1
			16QAM	1	0	1	21.72	21.3±1
				1	24	1	21.74	21.3±1
				1	49	1	21.67	21.3±1
				25	0	2	21.79	21.3±1
				25	12	2	21.66	21.3±1
				25	24	2	21.76	21.3±1
				50	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
5MHz	19975	1712.5	QPSK	1	0	0	22.18	22±1
				1	12	0	22.19	22±1
				1	24	0	22.17	22±1
				12	0	1	21.18	22±1
				12	6	1	21.13	22±1
				12	11	1	21.23	22±1
				25	0	1	21.1	22±1
			16QAM	1	0	1	21.61	21.3±1
				1	12	1	21.69	21.3±1
				1	24	1	21.57	21.3±1
				12	0	2	21.63	21.3±1
				12	6	2	21.71	21.3±1
				12	11	2	21.68	21.3±1
				25	0	2	20.33	21.3±1
	20175	1732.5	QPSK	1	0	0	21.65	21.5±1
				1	12	0	21.68	21.5±1
				1	24	0	21.66	21.5±1
				12	0	1	20.71	21.5±1
				12	6	1	20.8	21.5±1
				12	11	1	20.78	21.5±1
				25	0	1	20.63	21.5±1
			16QAM	1	0	1	20.72	21.3±1
				1	12	1	20.68	21.3±1
				1	24	1	20.8	21.3±1
				12	0	2	20.82	21.3±1
				12	6	2	20.67	21.3±1
				12	11	2	20.82	21.3±1
				25	0	2	20.35	21.3±1
	20375	1752.5	QPSK	1	0	0	22.06	21.5±1
				1	12	0	21.98	21.5±1
				1	24	0	21.96	21.5±1
				12	0	1	21.04	21.5±1
				12	6	1	20.94	21.5±1
				12	11	1	20.94	21.5±1
				25	0	1	20.87	21.5±1
			16QAM	1	0	1	21.03	21.3±1
				1	12	1	21.04	21.3±1
				1	24	1	21.09	21.3±1
				12	0	2	20.95	21.3±1
				12	6	2	21.07	21.3±1
				12	11	2	20.96	21.3±1
				25	0	2	20.34	21.3±1

ERP & EIRP

EIRP for LTE Band 2 (Part 24E)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
1850.7	1.4	QPSK	1/0	17.09	V	7.88	0.85	24.12	33.01
1880	1.4	QPSK	1/0	16.08	V	7.88	0.85	23.11	33.01
1909.3	1.4	QPSK	1/0	15.84	V	7.88	0.85	22.87	33.01
1850.7	1.4	QPSK	1/0	16.18	H	7.88	0.85	23.21	33.01
1880	1.4	QPSK	1/0	15.12	H	7.88	0.85	22.15	33.01
1909.3	1.4	QPSK	1/0	14.89	H	7.88	0.85	21.92	33.01
1850.7	1.4	16-QAM	1/0	16.83	V	7.88	0.85	23.86	33.01
1880	1.4	16-QAM	1/0	15.94	V	7.88	0.85	22.97	33.01
1909.3	1.4	16-QAM	1/0	16.51	V	7.88	0.85	23.54	33.01
1850.7	1.4	16-QAM	1/0	15.84	H	7.88	0.85	22.87	33.01
1880	1.4	16-QAM	1/0	15	H	7.88	0.85	22.03	33.01
1909.3	1.4	16-QAM	1/0	15.58	H	7.88	0.85	22.61	33.01
1851.5	3	QPSK	1/0	16.72	V	7.88	0.85	23.75	33.01
1880	3	QPSK	1/0	16.08	V	7.88	0.85	23.11	33.01
1908.5	3	QPSK	1/0	15.95	V	7.88	0.85	22.98	33.01
1851.5	3	QPSK	1/0	15.8	H	7.88	0.85	22.83	33.01
1880	3	QPSK	1/0	15.18	H	7.88	0.85	22.21	33.01
1908.5	3	QPSK	1/0	15.01	H	7.88	0.85	22.04	33.01
1851.5	3	16-QAM	1/0	16.61	V	7.88	0.85	23.64	33.01
1880	3	16-QAM	1/0	15.12	V	7.88	0.85	22.15	33.01
1908.5	3	16-QAM	1/0	15.73	V	7.88	0.85	22.76	33.01
1851.5	3	16-QAM	1/0	15.65	H	7.88	0.85	22.68	33.01
1880	3	16-QAM	1/0	14.22	H	7.88	0.85	21.25	33.01
1908.5	3	16-QAM	1/0	14.81	H	7.88	0.85	21.84	33.01
1852.5	5	QPSK	1/24	16.51	V	7.88	0.85	23.54	33.01
1880	5	QPSK	1/0	15.42	V	7.88	0.85	22.45	33.01
1907.5	5	QPSK	1/24	16.15	V	7.88	0.85	23.18	33.01
1852.5	5	QPSK	1/24	15.6	H	7.88	0.85	22.63	33.01
1880	5	QPSK	1/0	14.65	H	7.88	0.85	21.68	33.01
1907.5	5	QPSK	1/24	15.24	H	7.88	0.85	22.27	33.01

1852.5	5	16-QAM	1/24	16.63	V	7.88	0.85	23.66	33.01
1880	5	16-QAM	1/0	15.81	V	7.88	0.85	22.84	33.01
1907.5	5	16-QAM	1/24	16.04	V	7.88	0.85	23.07	33.01
1852.5	5	16-QAM	1/24	15.72	H	7.88	0.85	22.75	33.01
1880	5	16-QAM	1/0	14.88	H	7.88	0.85	21.91	33.01
1907.5	5	16-QAM	1/24	15.11	H	7.88	0.85	22.14	33.01
1855	10	QPSK	1/0	16.46	V	7.88	0.85	23.49	33.01
1880	10	QPSK	1/0	15.71	V	7.88	0.85	22.74	33.01
1905	10	QPSK	1/49	16.13	V	7.88	0.85	23.16	33.01
1855	10	QPSK	1/0	15.5	H	7.88	0.85	22.53	33.01
1880	10	QPSK	1/0	14.83	H	7.88	0.85	21.86	33.01
1905	10	QPSK	1/49	15.2	H	7.88	0.85	22.23	33.01
1855	10	16-QAM	1/0	16.48	V	7.88	0.85	23.51	33.01
1880	10	16-QAM	1/0	16.39	V	7.88	0.85	23.42	33.01
1905	10	16-QAM	1/49	15.58	V	7.88	0.85	22.61	33.01
1855	10	16-QAM	1/0	15.55	H	7.88	0.85	22.58	33.01
1880	10	16-QAM	1/0	15.46	H	7.88	0.85	22.49	33.01
1905	10	16-QAM	1/49	14.72	H	7.88	0.85	21.75	33.01
1857.5	15	QPSK	1/0	16.25	V	7.88	0.85	23.28	33.01
1880	15	QPSK	1/0	15.73	V	7.88	0.85	22.76	33.01
1902.5	15	QPSK	1/0	16.06	V	7.88	0.85	23.09	33.01
1857.5	15	QPSK	1/0	15.28	H	7.88	0.85	22.31	33.01
1880	15	QPSK	1/0	14.82	H	7.88	0.85	21.85	33.01
1902.5	15	QPSK	1/0	15.1	H	7.88	0.85	22.13	33.01
1857.5	15	16-QAM	1/0	16.59	V	7.88	0.85	23.62	33.01
1880	15	16-QAM	1/0	15.65	V	7.88	0.85	22.68	33.01
1902.5	15	16-QAM	1/0	16.11	V	7.88	0.85	23.14	33.01
1857.5	15	16-QAM	1/0	15.65	H	7.88	0.85	22.68	33.01
1880	15	16-QAM	1/0	14.73	H	7.88	0.85	21.76	33.01
1902.5	15	16-QAM	1/0	15.22	H	7.88	0.85	22.25	33.01
1860	20	QPSK	1/0	16.28	V	7.88	0.85	23.31	33.01
1880	20	QPSK	1/0	16.12	V	7.88	0.85	23.15	33.01
1900	20	QPSK	1/0	16.02	V	7.88	0.85	23.05	33.01
1860	20	QPSK	1/0	15.32	H	7.88	0.85	22.35	33.01
1880	20	QPSK	1/0	15.13	H	7.88	0.85	22.16	33.01

1900	20	QPSK	1/0	15.1	H	7.88	0.85	22.13	33.01
1860	20	16-QAM	1/0	15.95	V	7.88	0.85	22.98	33.01
1880	20	16-QAM	1/0	16.12	V	7.88	0.85	23.15	33.01
1900	20	16-QAM	1/0	15.61	V	7.88	0.85	22.64	33.01
1860	20	16-QAM	1/0	15.02	H	7.88	0.85	22.05	33.01
1880	20	16-QAM	1/0	15.16	H	7.88	0.85	22.19	33.01
1900	20	16-QAM	1/0	14.72	H	7.88	0.85	21.75	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	15.99	V	7.95	0.79	23.15	30
1732.5	1.4	QPSK	1/0	15.82	V	7.95	0.79	22.98	30
1754.3	1.4	QPSK	1/0	16.05	V	7.95	0.79	23.21	30
1710.7	1.4	QPSK	1/0	15.03	H	7.95	0.79	22.19	30
1732.5	1.4	QPSK	1/0	14.87	H	7.95	0.79	22.03	30
1754.3	1.4	QPSK	1/0	15.15	H	7.95	0.79	22.31	30
1710.7	1.4	16-QAM	1/5	15.9	V	7.95	0.79	23.06	30
1732.5	1.4	16-QAM	1/0	15.59	V	7.95	0.79	22.75	30
1754.3	1.4	16-QAM	1/0	16.45	V	7.95	0.79	23.61	30
1710.7	1.4	16-QAM	1/5	14.98	H	7.95	0.79	22.14	30
1732.5	1.4	16-QAM	1/0	14.7	H	7.95	0.79	21.86	30
1754.3	1.4	16-QAM	1/0	15.58	H	7.95	0.79	22.74	30
1711.5	3	QPSK	1/0	16.09	V	7.95	0.79	23.25	30
1732.5	3	QPSK	1/0	15.98	V	7.95	0.79	23.14	30
1753.5	3	QPSK	1/0	15.68	V	7.95	0.79	22.84	30
1711.5	3	QPSK	1/0	15.18	H	7.95	0.79	22.34	30
1732.5	3	QPSK	1/0	15	H	7.95	0.79	22.16	30
1753.5	3	QPSK	1/0	14.73	H	7.95	0.79	21.89	30
1711.5	3	16-QAM	1/0	16	V	7.95	0.79	23.16	30
1732.5	3	16-QAM	1/0	16.31	V	7.95	0.79	23.47	30
1753.5	3	16-QAM	1/0	16.08	V	7.95	0.79	23.24	30
1711.5	3	16-QAM	1/0	15.07	H	7.95	0.79	22.23	30
1732.5	3	16-QAM	1/0	15.38	H	7.95	0.79	22.54	30
1753.5	3	16-QAM	1/0	15.15	H	7.95	0.79	22.31	30
1712.5	5	QPSK	1/0	16.53	V	7.95	0.79	23.69	30
1732.5	5	QPSK	1/0	15.99	V	7.95	0.79	23.15	30
1752.5	5	QPSK	1/24	15.7	V	7.95	0.79	22.86	30
1712.5	5	QPSK	1/0	15.59	H	7.95	0.79	22.75	30
1732.5	5	QPSK	1/0	15.07	H	7.95	0.79	22.23	30
1752.5	5	QPSK	1/24	14.79	H	7.95	0.79	21.95	30
1712.5	5	16-QAM	1/0	16.35	V	7.95	0.79	23.51	30
1732.5	5	16-QAM	1/0	15.94	V	7.95	0.79	23.1	30

1752.5	5	16-QAM	1/24	15.4	V	7.95	0.79	22.56	30
1712.5	5	16-QAM	1/0	15.4	H	7.95	0.79	22.56	30
1732.5	5	16-QAM	1/0	15.07	H	7.95	0.79	22.23	30
1752.5	5	16-QAM	1/24	14.48	H	7.95	0.79	21.64	30
1715	10	QPSK	1/0	16.1	V	7.95	0.79	23.26	30
1732.5	10	QPSK	1/49	15.62	V	7.95	0.79	22.78	30
1750	10	QPSK	1/0	15.99	V	7.95	0.79	23.15	30
1715	10	QPSK	1/0	15.19	H	7.95	0.79	22.35	30
1732.5	10	QPSK	1/49	14.69	H	7.95	0.79	21.85	30
1750	10	QPSK	1/0	15.05	H	7.95	0.79	22.21	30
1715	10	16-QAM	1/0	16.25	V	7.95	0.79	23.41	30
1732.5	10	16-QAM	1/49	15.9	V	7.95	0.79	23.06	30
1750	10	16-QAM	1/0	15.78	V	7.95	0.79	22.94	30
1715	10	16-QAM	1/0	15.3	H	7.95	0.79	22.46	30
1732.5	10	16-QAM	1/49	14.95	H	7.95	0.79	22.11	30
1750	10	16-QAM	1/0	14.86	H	7.95	0.79	22.02	30
1717.5	15	QPSK	1/0	16.2	V	7.95	0.79	23.36	30
1732.5	15	QPSK	1/74	15.95	V	7.95	0.79	23.11	30
1747.5	15	QPSK	1/0	15.9	V	7.95	0.79	23.06	30
1717.5	15	QPSK	1/0	15.25	H	7.95	0.79	22.41	30
1732.5	15	QPSK	1/74	14.99	H	7.95	0.79	22.15	30
1747.5	15	QPSK	1/0	14.97	H	7.95	0.79	22.13	30
1717.5	15	16-QAM	1/0	16.35	V	7.95	0.79	23.51	30
1732.5	15	16-QAM	1/74	16.17	V	7.95	0.79	23.33	30
1747.5	15	16-QAM	1/0	15.71	V	7.95	0.79	22.87	30
1717.5	15	16-QAM	1/0	15.48	H	7.95	0.79	22.64	30
1732.5	15	16-QAM	1/74	15.22	H	7.95	0.79	22.38	30
1747.5	15	16-QAM	1/0	14.73	H	7.95	0.79	21.89	30
1720	20	QPSK	1/99	16.45	V	7.95	0.79	23.61	30
1732.5	20	QPSK	1/99	15.62	V	7.95	0.79	22.78	30
1745	20	QPSK	1/0	16.39	V	7.95	0.79	23.55	30
1720	20	QPSK	1/99	15.58	H	7.95	0.79	22.74	30
1732.5	20	QPSK	1/99	14.66	H	7.95	0.79	21.82	30
1745	20	QPSK	1/0	15.4	H	7.95	0.79	22.56	30
1720	20	16-QAM	1/99	16.07	V	7.95	0.79	23.23	30

1732.5	20	16-QAM	1/99	16.04	V	7.95	0.79	23.2	30
1745	20	16-QAM	1/0	15.83	V	7.95	0.79	22.99	30
1720	20	16-QAM	1/99	15.1	H	7.95	0.79	22.26	30
1732.5	20	16-QAM	1/99	15.08	H	7.95	0.79	22.24	30
1745	20	16-QAM	1/0	14.89	H	7.95	0.79	22.05	30

EIRP for LTE Band 5 (Part 22)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
824.7	1.4	QPSK	1/5	14.96	V	6.8	0.44	21.32	34.77
836.5	1.4	QPSK	1/5	14.29	V	6.8	0.44	20.65	34.77
848.3	1.4	QPSK	1/5	14.65	V	6.9	0.44	21.11	34.77
824.7	1.4	QPSK	1/5	13.99	H	6.8	0.44	20.35	34.77
836.5	1.4	QPSK	1/5	13.36	H	6.8	0.44	19.72	34.77
848.3	1.4	QPSK	1/5	13.67	H	6.9	0.44	20.13	34.77
824.7	1.4	16-QAM	1/5	14.78	V	6.8	0.44	21.14	34.77
836.5	1.4	16-QAM	1/5	14.87	V	6.8	0.44	21.23	34.77
848.3	1.4	16-QAM	1/5	15.06	V	6.9	0.44	21.52	34.77
824.7	1.4	16-QAM	1/5	13.82	H	6.8	0.44	20.18	34.77
836.5	1.4	16-QAM	1/5	13.95	H	6.8	0.44	20.31	34.77
848.3	1.4	16-QAM	1/5	14.1	H	6.9	0.44	20.56	34.77
825.5	3	QPSK	1/14	14.7	V	6.8	0.44	21.06	34.77
836.5	3	QPSK	1/0	14.39	V	6.8	0.44	20.75	34.77
847.5	3	QPSK	1/14	14.87	V	6.9	0.44	21.33	34.77
825.5	3	QPSK	1/14	13.72	H	6.8	0.44	20.08	34.77
836.5	3	QPSK	1/0	13.48	H	6.8	0.44	19.84	34.77
847.5	3	QPSK	1/14	13.88	H	6.9	0.44	20.34	34.77
825.5	3	16-QAM	1/14	15.06	V	6.8	0.44	21.42	34.77
836.5	3	16-QAM	1/0	14.94	V	6.8	0.44	21.3	34.77
847.5	3	16-QAM	1/14	14.49	V	6.9	0.44	20.95	34.77
825.5	3	16-QAM	1/14	14.1	H	6.8	0.44	20.46	34.77
836.5	3	16-QAM	1/0	13.98	H	6.8	0.44	20.34	34.77
847.5	3	16-QAM	1/14	13.58	H	6.9	0.44	20.04	34.77
826.5	5	QPSK	1/24	15	V	6.8	0.44	21.36	34.77
836.5	5	QPSK	1/24	14.78	V	6.8	0.44	21.14	34.77
846.5	5	QPSK	1/24	14.49	V	6.8	0.44	20.85	34.77
826.5	5	QPSK	1/24	14.09	H	6.8	0.44	20.45	34.77
836.5	5	QPSK	1/24	13.83	H	6.8	0.44	20.19	34.77
846.5	5	QPSK	1/24	13.5	H	6.8	0.44	19.86	34.77

826.5	5	16-QAM	1/24	14.85	V	6.8	0.44	21.21	34.77
836.5	5	16-QAM	1/24	14.67	V	6.8	0.44	21.03	34.77
846.5	5	16-QAM	1/24	14.52	V	6.8	0.44	20.88	34.77
826.5	5	16-QAM	1/24	13.87	H	6.8	0.44	20.23	34.77
836.5	5	16-QAM	1/24	13.72	H	6.8	0.44	20.08	34.77
846.5	5	16-QAM	1/24	13.59	H	6.8	0.44	19.95	34.77
829	10	QPSK	1/49	14.84	V	6.8	0.44	21.2	34.77
836.5	10	QPSK	1/49	14.7	V	6.8	0.44	21.06	34.77
844	10	QPSK	1/49	14.77	V	6.8	0.44	21.13	34.77
829	10	QPSK	1/49	13.89	H	6.8	0.44	20.25	34.77
836.5	10	QPSK	1/49	13.78	H	6.8	0.44	20.14	34.77
844	10	QPSK	1/49	13.85	H	6.8	0.44	20.21	34.77
829	10	16-QAM	1/49	14.78	V	6.8	0.44	21.14	34.77
836.5	10	16-QAM	1/49	15	V	6.8	0.44	21.36	34.77
844	10	16-QAM	1/49	14.38	V	6.8	0.44	20.74	34.77
829	10	16-QAM	1/49	13.9	H	6.8	0.44	20.26	34.77
836.5	10	16-QAM	1/49	14.09	H	6.8	0.44	20.45	34.77
844	10	16-QAM	1/49	13.49	H	6.8	0.44	19.85	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	15.07	V	8.93	0.83	23.17	30
2535	5	QPSK	1/0	14.46	V	8.93	0.83	22.56	30
2567.5	5	QPSK	1/24	15.32	V	8.93	0.83	23.42	30
2502.5	5	QPSK	1/0	14.13	H	8.93	0.83	22.23	30
2535	5	QPSK	1/0	13.57	H	8.93	0.83	21.67	30
2567.5	5	QPSK	1/24	14.46	H	8.93	0.83	22.56	30
2502.5	5	16-QAM	1/0	15	V	8.93	0.83	23.1	30
2535	5	16-QAM	1/0	14.46	V	8.93	0.83	22.56	30
2567.5	5	16-QAM	1/24	15.11	V	8.93	0.83	23.21	30
2502.5	5	16-QAM	1/0	14.08	H	8.93	0.83	22.18	30
2535	5	16-QAM	1/0	13.65	H	8.93	0.83	21.75	30
2567.5	5	16-QAM	1/24	14.22	H	8.93	0.83	22.32	30
2505	10	QPSK	1/0	14.65	V	8.93	0.83	22.75	30
2535	10	QPSK	1/49	14.36	V	8.93	0.83	22.46	30
2565	10	QPSK	1/0	15.14	V	8.93	0.83	23.24	30
2505	10	QPSK	1/0	13.74	H	8.93	0.83	21.84	30
2535	10	QPSK	1/49	13.44	H	8.93	0.83	21.54	30
2565	10	QPSK	1/0	14.25	H	8.93	0.83	22.35	30
2505	10	16-QAM	1/0	15.15	V	8.93	0.83	23.25	30
2535	10	16-QAM	1/49	14.75	V	8.93	0.83	22.85	30
2565	10	16-QAM	1/0	14.53	V	8.93	0.83	22.63	30
2505	10	16-QAM	1/0	14.16	H	8.93	0.83	22.26	30
2535	10	16-QAM	1/49	13.87	H	8.93	0.83	21.97	30
2565	10	16-QAM	1/0	13.66	H	8.93	0.83	21.76	30
2507.5	15	QPSK	1/0	14.79	V	8.93	0.83	22.89	30
2535	15	QPSK	1/74	14.64	V	8.93	0.83	22.74	30
2562.5	15	QPSK	1/0	14.94	V	8.93	0.83	23.04	30
2507.5	15	QPSK	1/0	13.84	H	8.93	0.83	21.94	30
2535	15	QPSK	1/74	13.76	H	8.93	0.83	21.86	30
2562.5	15	QPSK	1/0	13.95	H	8.93	0.83	22.05	30

2507.5	15	16-QAM	1/0	14.61	V	8.93	0.83	22.71	30
2535	15	16-QAM	1/74	14.75	V	8.93	0.83	22.85	30
2562.5	15	16-QAM	1/0	15.06	V	8.93	0.83	23.16	30
2507.5	15	16-QAM	1/0	13.72	H	8.93	0.83	21.82	30
2535	15	16-QAM	1/74	13.79	H	8.93	0.83	21.89	30
2562.5	15	16-QAM	1/0	14.09	H	8.93	0.83	22.19	30
2510	20	QPSK	1/99	14.96	V	8.93	0.83	23.06	30
2535	20	QPSK	1/99	14.85	V	8.93	0.83	22.95	30
2560	20	QPSK	1/0	14.68	V	8.93	0.83	22.78	30
2510	20	QPSK	1/99	14.05	H	8.93	0.83	22.15	30
2535	20	QPSK	1/99	13.96	H	8.93	0.83	22.06	30
2560	20	QPSK	1/0	13.75	H	8.93	0.83	21.85	30
2510	20	16-QAM	1/99	14.76	V	8.93	0.83	22.86	30
2535	20	16-QAM	1/99	14.85	V	8.93	0.83	22.95	30
2560	20	16-QAM	1/0	15.02	V	8.93	0.83	23.12	30
2510	20	16-QAM	1/99	13.86	H	8.93	0.83	21.96	30
2535	20	16-QAM	1/99	13.93	H	8.93	0.83	22.03	30
2560	20	16-QAM	1/0	14.08	H	8.93	0.83	22.18	30

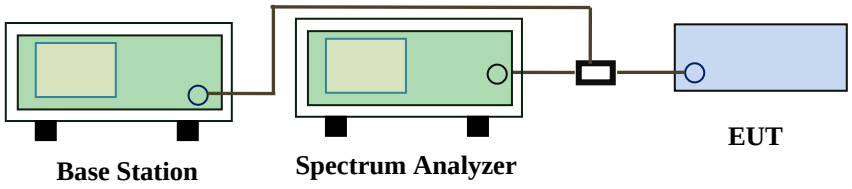
6.3 Peak-Average Ratio

Temperature	23 °C
Relative Humidity	54%
Atmospheric Pressure	1020mbar
Test date :	September 28, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§24.232(d) § 27.50(d)	a)	The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.	☑

Test Setup



Test Procedure

According with KDB 971168 v02r02

5.7.2 Alternate procedure for PAPR

5.1.2 Peak power measurements with a peak power meter

The total peak output power may be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

5.2.3 Average power measurement with average power meter

As an alternative to the use of a spectrum/signal analyzer or EMI receiver to perform a measurement of the total in-band average output power, a wideband RF average power meter with a thermocouple detector or equivalent can be used under certain conditions

If the EUT can be configured to transmit continuously (i.e., the burst duty cycle ≥ 98%) and at all times the EUT is transmitting at is maximum output

	power level, then a conventional wide-band RF power meter can be used. If the EUT cannot be configured to transmit continuously (i.e., the burst duty cycle < 98%), then there are two options for the use of an average power meter. First, a gated average power meter can be used to perform the measurement if the gating parameters can be adjusted such that the power is measured only over active transmission bursts at maximum output power levels. A conventional average power meter can also be used if the measured burst duty cycle is constant (i.e., duty cycle variations are less than ± 2 percent) by performing the measurement over the on/off burst cycles and then correcting (increasing) the measured level by a factor equal to 10log(1/duty cycle)
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☑ N/A

LTE Band 2 (part 24E)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1880	RB 1/0	QPSK	23.24	22.76	0.48
			16QAM	22.15	21.75	0.4
3	1880	RB 1/0	QPSK	23.01	22.65	0.36
			16QAM	22.05	21.68	0.37
5	1880	RB 1/0	QPSK	22.79	22.43	0.36
			16QAM	22.04	21.56	0.48
10	1880	RB 1/0	QPSK	22.44	22.03	0.41
			16QAM	21.5	21.01	0.49
15	1880	RB 1/0	QPSK	22.5	22.15	0.35
			16QAM	21.92	21.45	0.47
20	1880	RB 1/0	QPSK	22.64	22.14	0.5
			16QAM	22	21.55	0.45

LTE Band 4 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1732.5	RB 1/0	QPSK	23.31	22.89	0.42
			16QAM	22.25	21.81	0.44
3	1732.5	RB 1/0	QPSK	23.23	22.88	0.35
			16QAM	22.28	21.81	0.47
5	1732.5	RB 1/0	QPSK	23.33	22.84	0.49
			16QAM	22.25	21.91	0.34
10	1732.5	RB 1/0	QPSK	23.41	22.96	0.45
			16QAM	22.34	21.89	0.45
15	1732.5	RB 1/0	QPSK	23.33	22.92	0.41
			16QAM	22.5	22.11	0.39
20	1732.5	RB 1/0	QPSK	22.76	22.46	0.3
			16QAM	22.68	22.22	0.46

LTE Band 5 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	836.5	RB 1/0	QPSK	23.76	22.11	1.65
			16QAM	22.87	21.07	1.8
3	836.5	RB 1/0	QPSK	23.83	22.11	1.72
			16QAM	22.9	21.09	1.81
5	836.5	RB 1/0	QPSK	23.85	22.16	1.69
			16QAM	22.77	21.56	1.21
10	836.5	RB 1/0	QPSK	23.79	22.24	1.55
			16QAM	23.51	21.16	2.35

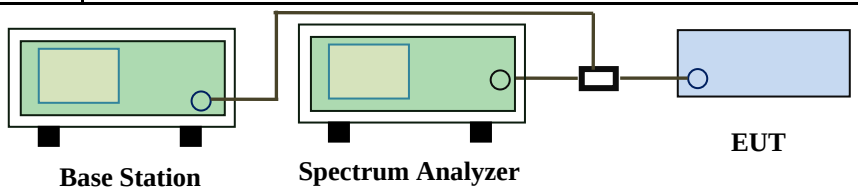
LTE Band 7 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
5	2535	RB 1/0	QPSK	25.33	23	2.33
			16QAM	25.36	22.23	3.13
10	2535	RB 1/0	QPSK	25.62	22.98	2.64
			16QAM	25.56	21.75	3.81
15	2535	RB 1/0	QPSK	25.51	22.99	2.52
			16QAM	25.23	22.19	3.04
20	2535	RB 1/0	QPSK	25.64	22.88	2.76
			16QAM	25.46	22.13	3.33

6.4 Occupied Bandwidth

Temperature	24 °C
Relative Humidity	54%
Atmospheric Pressure	1020mbar
Test date :	September 29, 2017
Tested By :	Loren Luo

Requirement(s):

Spec	Item	Requirement	Applicable
§2.1049, §22.917, §22.905 §24.238 §27.53(a)	a)	99% Occupied Bandwidth(kHz)	☑
	b)	26 dB Bandwidth(kHz)	☑
Test Setup			
Test Procedure	- The EUT was connected to Spectrum Analyzer and Base Station via power divider. - The 99% and 26 dB occupied bandwidth (BW) of the middle channel for the highest RF powers.		
Remark			
Result	☑ Pass ☐ Fail		

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

LTE Band 2 (Part 24E)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1850.7	16QAM	1.114	1.358
			QPSK	1.113	1.36
1.4	18900	1880	16QAM	1.1094	1.289
			QPSK	1.1156	1.289
1.4	19193	1909.3	16QAM	1.1187	1.309
			QPSK	1.1046	1.314
3	18615	1851.5	16QAM	2.7577	3.114
			QPSK	2.7707	3.129
3	18900	1880	16QAM	2.7552	3.1
			QPSK	2.7503	3.112
3	19185	1908.5	16QAM	2.7593	3.12
			QPSK	2.7612	3.126
5	18625	1852.5	16QAM	4.5293	5.094
			QPSK	4.5312	5.103
5	18900	1880	16QAM	4.5289	5.085
			QPSK	4.5324	5.079
5	19175	1907.5	16QAM	4.5475	5.097
			QPSK	4.55	5.09
10	18650	1855	16QAM	9.059	10.313
			QPSK	9.0552	10.249
10	18900	1880	16QAM	9.1165	10.262
			QPSK	9.0813	10.226
10	19150	1905	16QAM	9.1122	10.262
			QPSK	9.093	10.27
15	18675	1857.5	16QAM	13.4341	14.803
			QPSK	13.4432	14.819
15	18900	1880	16QAM	13.5021	15.004
			QPSK	13.5315	15.013
15	19125	1902.5	16QAM	13.5159	14.864
			QPSK	13.522	14.837

20	18700	1860	16QAM	17.9062	19.42
			QPSK	17.9054	19.429
20	18900	1880	16QAM	17.9059	19.424
			QPSK	17.9193	19.474
20	19100	1900	16QAM	17.9522	19.408
			QPSK	17.9416	19.464

LTE Band 4 (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1710.7	16QAM	1.1009	1.274
			QPSK	1.0984	1.272
1.4	20175	1732.5	16QAM	1.1103	1.265
			QPSK	1.1041	1.27
1.4	20393	1754.3	16QAM	1.1	1.279
			QPSK	1.1023	1.277
3	19965	1711.5	16QAM	2.745	3.084
			QPSK	2.7489	3.081
3	20175	1732.5	16QAM	2.7456	3.091
			QPSK	2.7433	3.096
3	20385	1753.5	16QAM	2.7435	3.097
			QPSK	2.7423	3.096
5	19975	1712.5	16QAM	4.5305	5.088
			QPSK	4.5248	5.08
5	20175	1732.5	16QAM	4.5316	5.075
			QPSK	4.5279	5.087
5	20375	1752.5	16QAM	4.5323	5.078
			QPSK	4.5287	5.079
10	20000	1715	16QAM	9.0387	10.242
			QPSK	9.0636	10.189
10	20175	1732.5	16QAM	9.059	10.345
			QPSK	9.0521	10.17
10	20350	1750	16QAM	9.0873	10.276
			QPSK	9.0584	10.244

15	20025	1717.5	16QAM	13.4576	14.834
			QPSK	13.4513	14.861
15	20175	1732.5	16QAM	13.4911	14.902
			QPSK	13.5021	14.93
15	20325	1747.5	16QAM	13.4588	14.907
			QPSK	13.5161	14.941
20	20050	1720	16QAM	17.9003	19.5
			QPSK	17.8707	19.451
20	20175	1732.5	16QAM	17.8518	19.529
			QPSK	17.8876	19.535
20	20300	1745	16QAM	17.9427	19.418
			QPSK	17.8738	19.451

LTE Band 5 (Part 22H)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	20407	824.7	16QAM	1.1053	1.278
			QPSK	1.105	1.283
1.4	20525	936.5	16QAM	1.114	1.277
			QPSK	1.1107	1.277
1.4	20643	949.3	16QAM	1.105	1.282
			QPSK	1.1039	1.279
3	20415	825.5	16QAM	2.7551	3.116
			QPSK	2.7468	3.115
3	20525	936.5	16QAM	2.7502	3.124
			QPSK	2.7538	3.117
3	20635	847.5	16QAM	2.7606	3.116
			QPSK	2.7521	3.113
5	20425	826.5	16QAM	4.5246	5.073
			QPSK	4.5224	5.071
5	20525	936.5	16QAM	4.5166	5.102
			QPSK	4.5215	5.065
5	20625	846.5	16QAM	4.5362	5.079
			QPSK	4.5478	5.085

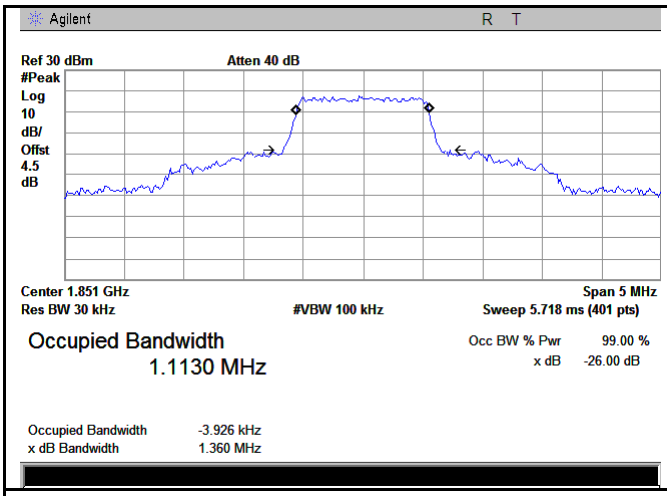
10	20450	829	16QAM	9.0948	10.297
			QPSK	9.0778	10.25
10	20525	936.5	16QAM	9.0719	10.245
			QPSK	9.0906	10.219
10	20800	844	16QAM	9.0804	10.307
			QPSK	9.1125	10.3

LTE Band 7 (Part 27) result

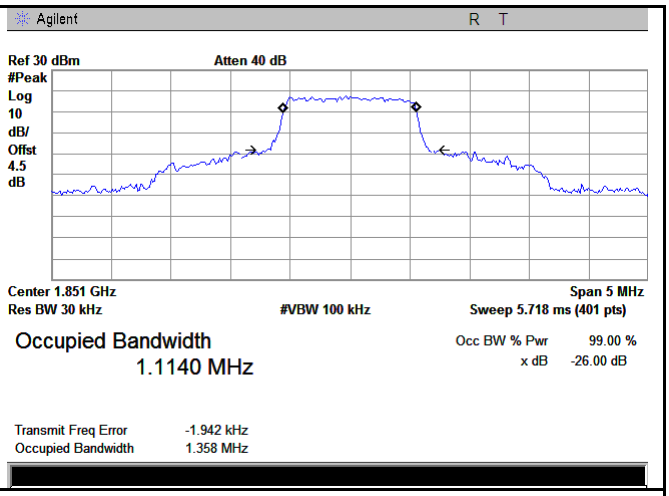
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2502.5	16QAM	4.5295	5.084
			QPSK	4.5244	5.091
5	21100	2535	16QAM	4.5214	5.075
			QPSK	4.5183	5.08
5	21425	2567.5	16QAM	4.5542	5.088
			QPSK	4.5417	5.076
10	20800	2505	16QAM	9.0585	10.281
			QPSK	9.035	10.204
10	21100	2535	16QAM	9.0451	10.23
			QPSK	9.0692	10.184
10	21400	2562.5	16QAM	9.0756	10.418
			QPSK	9.0507	10.289
15	20825	2507.5	16QAM	13.4567	14.981
			QPSK	13.4665	14.959
15	21100	2535	16QAM	13.4981	14.944
			QPSK	13.4526	14.935
15	21400	2562.5	16QAM	13.516	14.944
			QPSK	13.4743	14.974
20	20850	2510	16QAM	17.923	19.442
			QPSK	17.8795	19.506
20	21100	2535	16QAM	17.8516	19.69
			QPSK	17.8835	19.465
20	21350	2560	16QAM	17.9302	19.431
			QPSK	17.8797	19.438

Test Plots

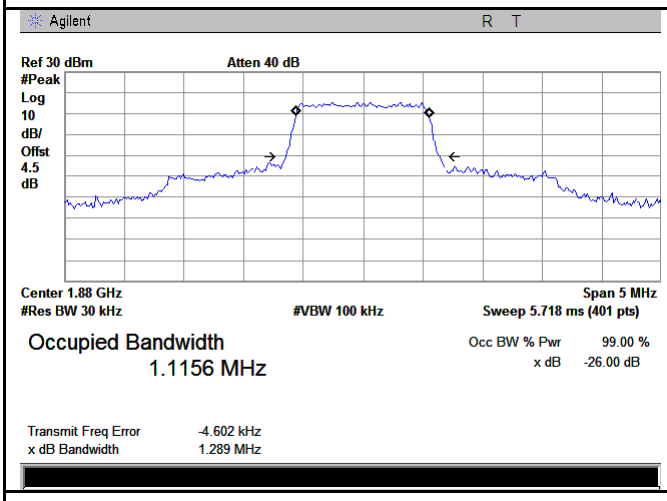
LTE Band 2 (Part 24E)



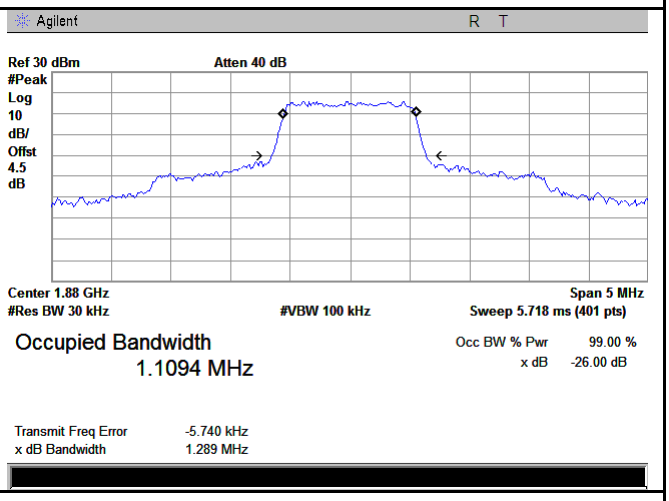
LTE band 2 - Low CH QPSK-1.4



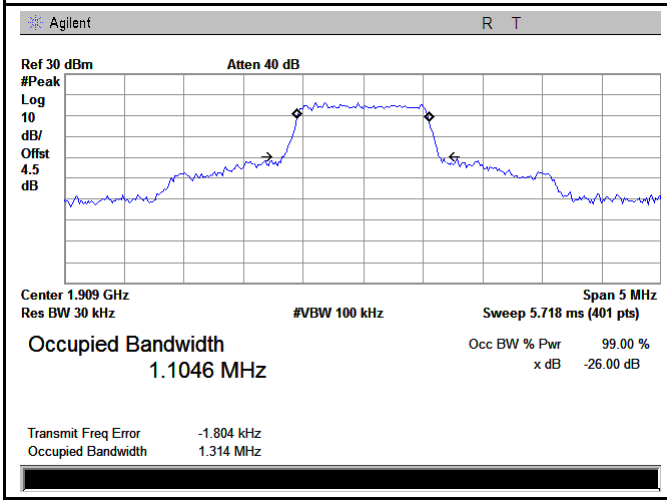
LTE band 2 - Low CH 16QAM-1.4



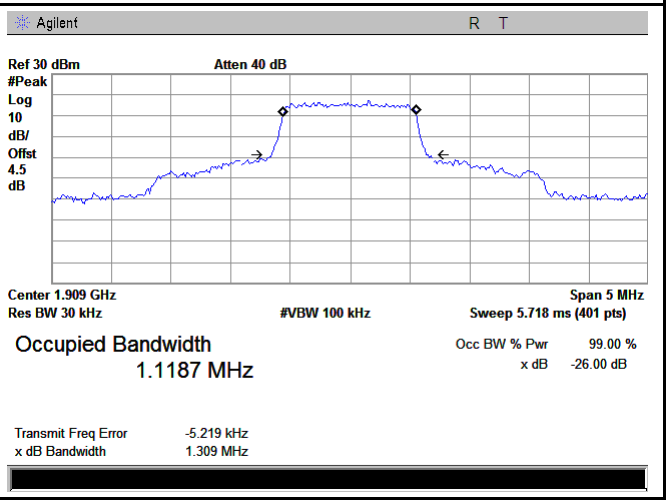
LTE band 2 - Middle CH QPSK-1.4



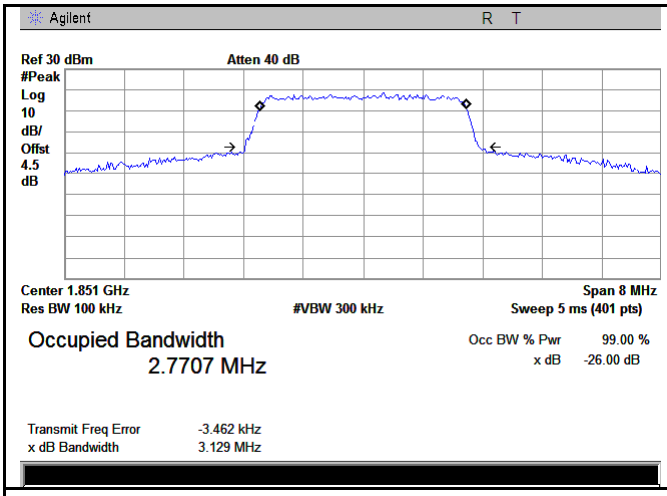
LTE band 2 - Middle CH 16QAM-1.4



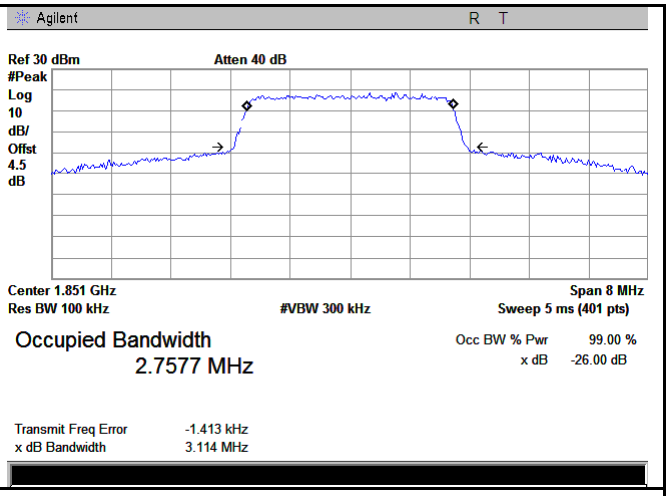
LTE band 2 - High CH QPSK-1.4



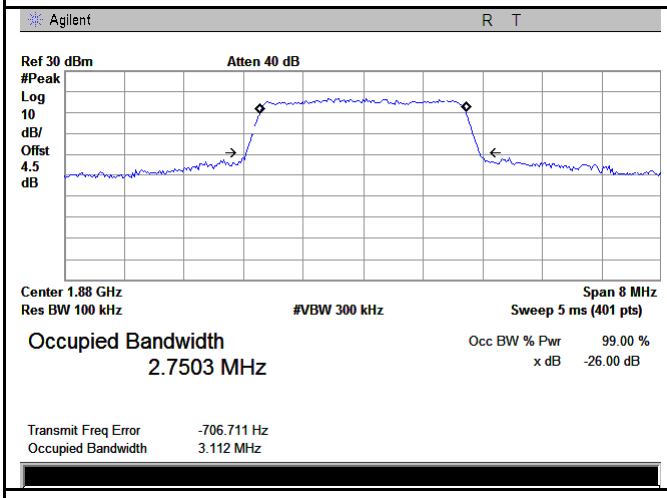
LTE band 2 - High CH 16QAM-1.4



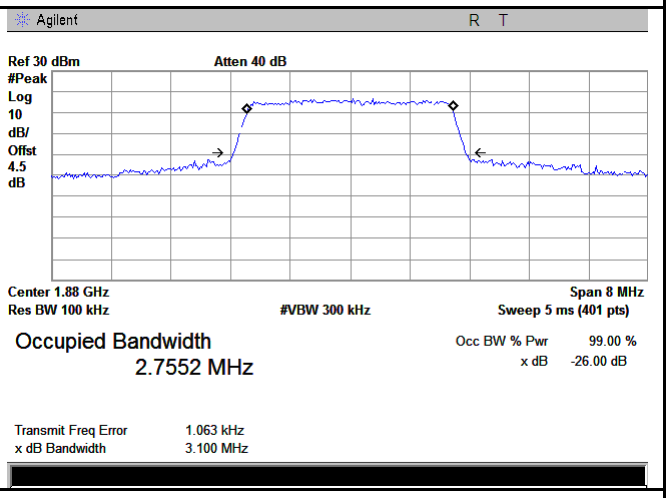
LTE band 2 - Low CH QPSK-3



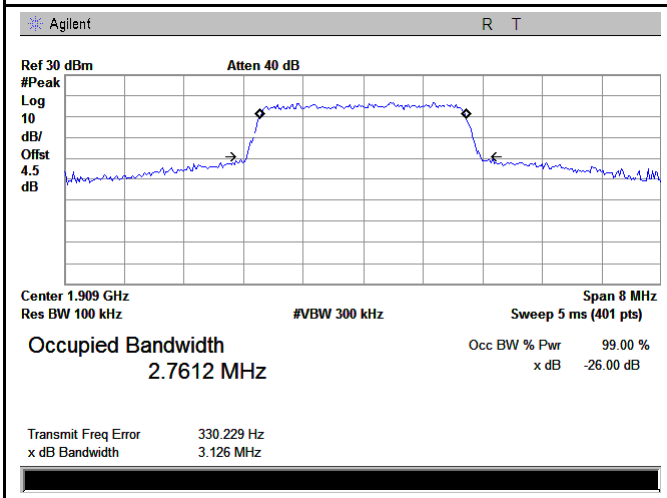
LTE band 2 - Low CH 16QAM-3



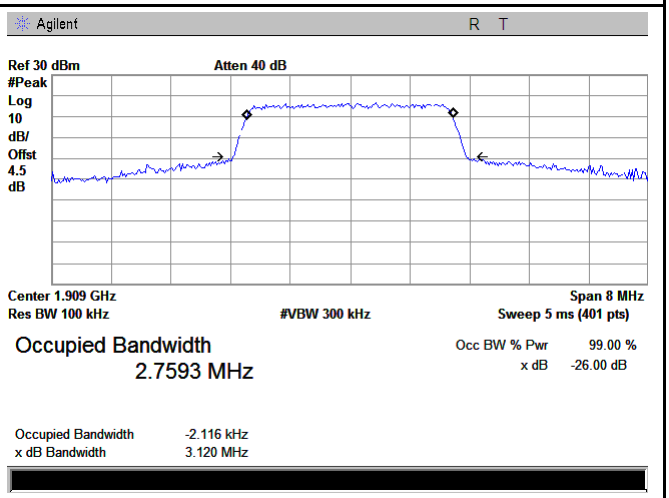
LTE band 2 - Middle CH QPSK-3



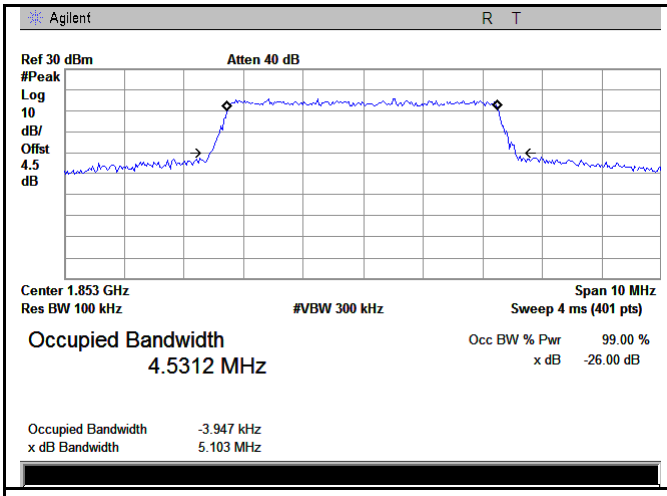
LTE band 2 - Middle CH 16QAM-3



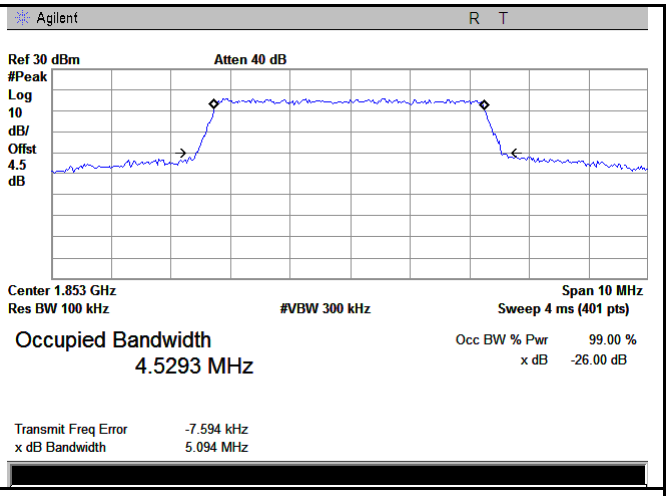
LTE band 2 - High CH QPSK-3



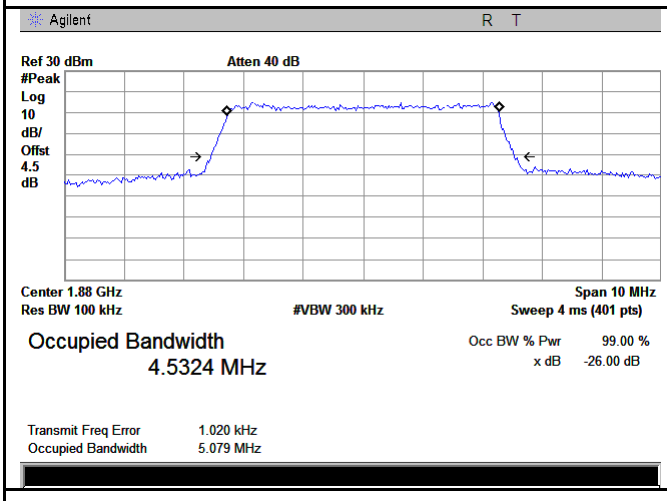
LTE band 2 - High CH 16QAM-3



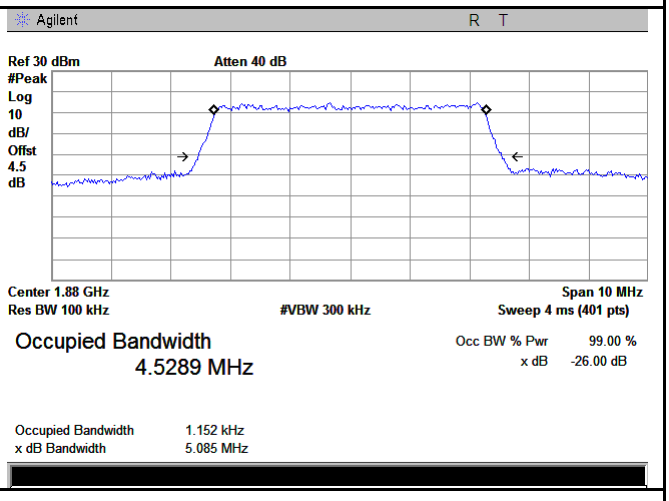
LTE band 2 - Low CH QPSK-5



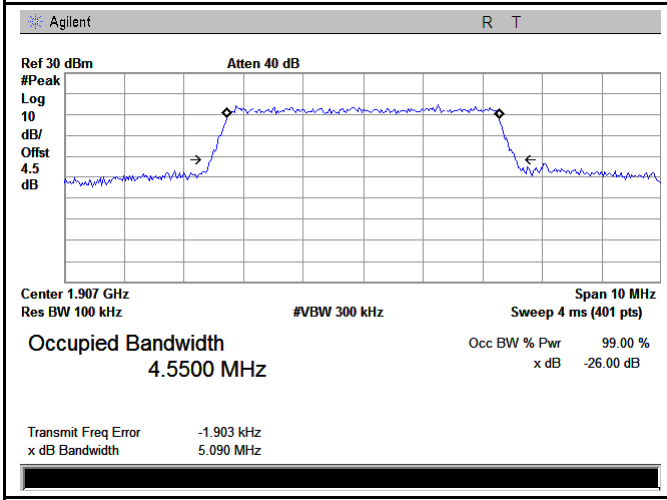
LTE band 2 - Low CH 16QAM-5



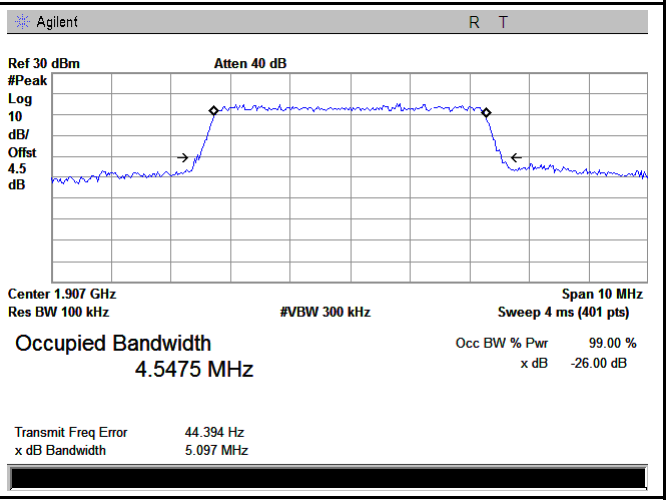
LTE band 2 - Middle CH QPSK-5



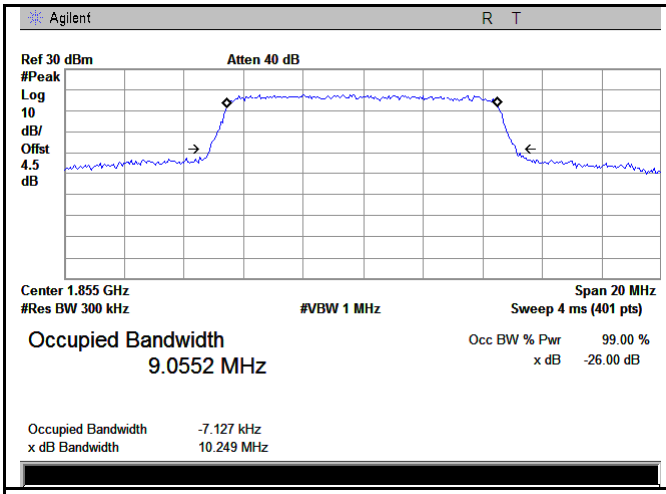
LTE band 2 - Middle CH 16QAM-5



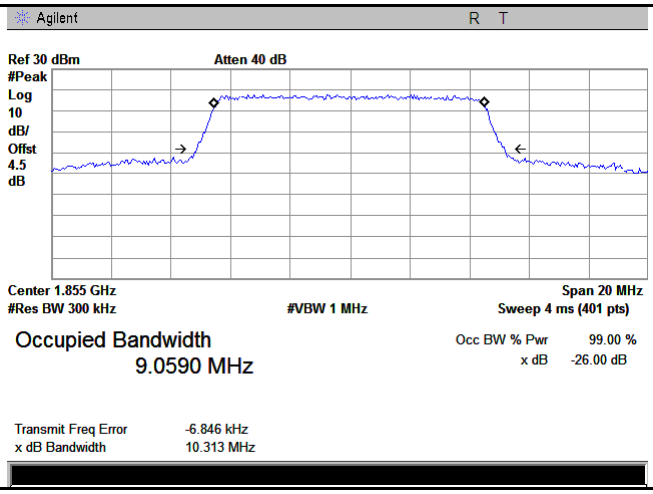
LTE band 2 - High CH QPSK-5



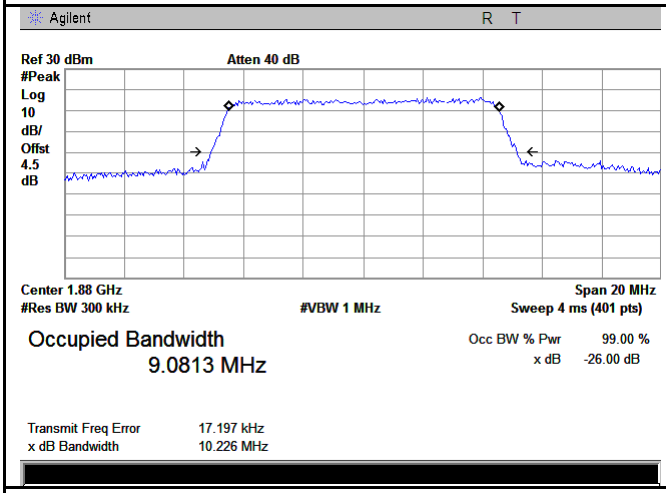
LTE band 2 - High CH 16QAM-5



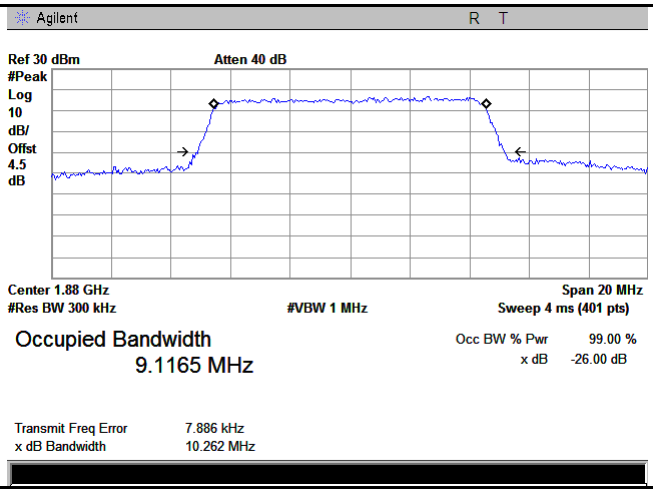
LTE band 2 - Low CH QPSK-10



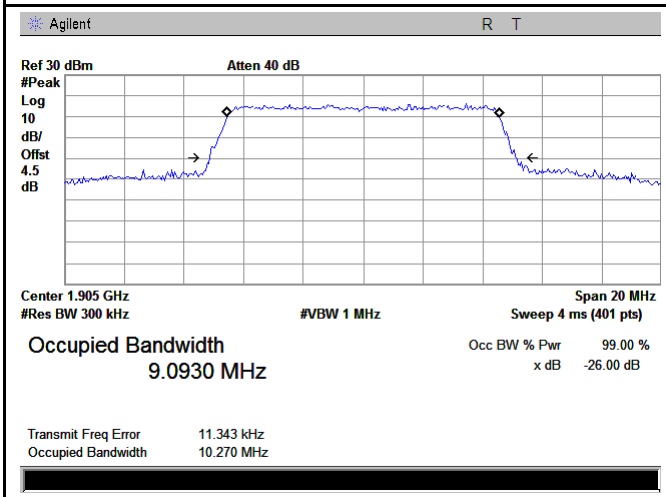
LTE band 2 - Low CH 16QAM-10



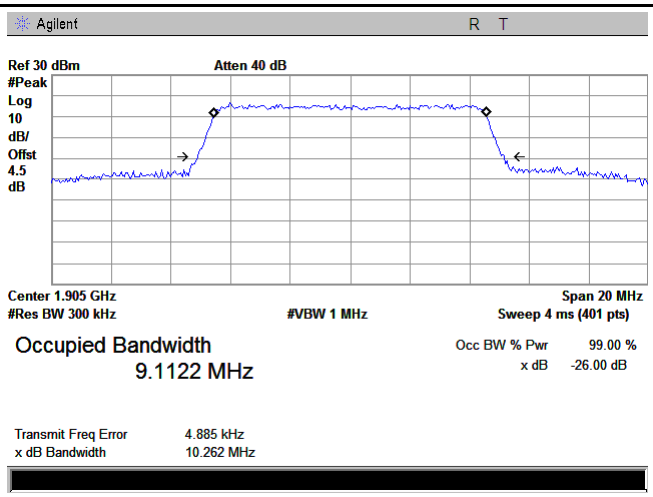
LTE band 2 - Middle CH QPSK-10



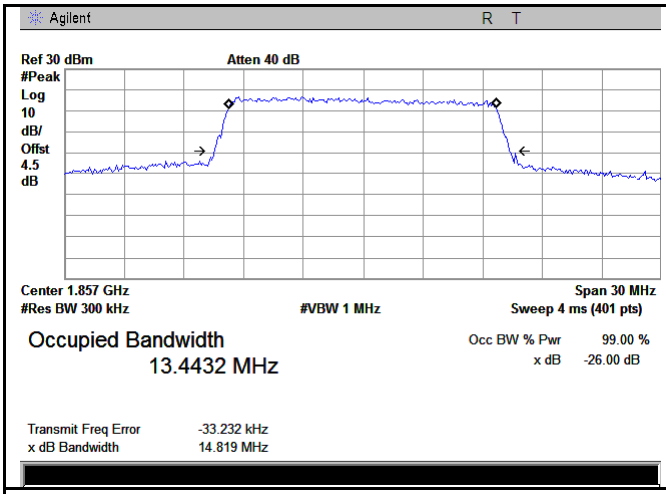
LTE band 2 - Middle CH 16QAM-10



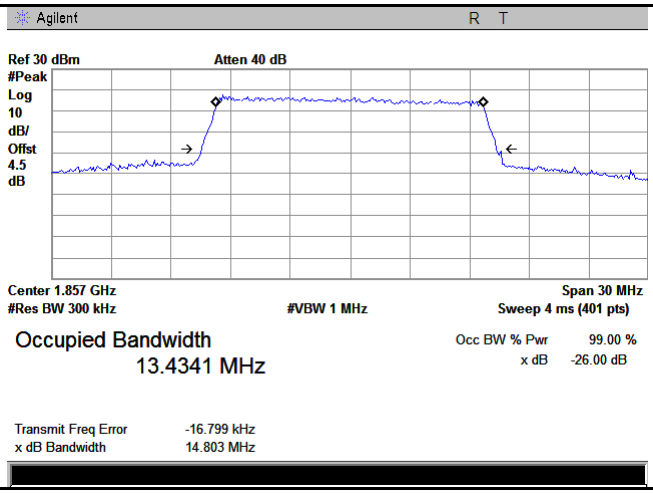
LTE band 2 - High CH QPSK-10



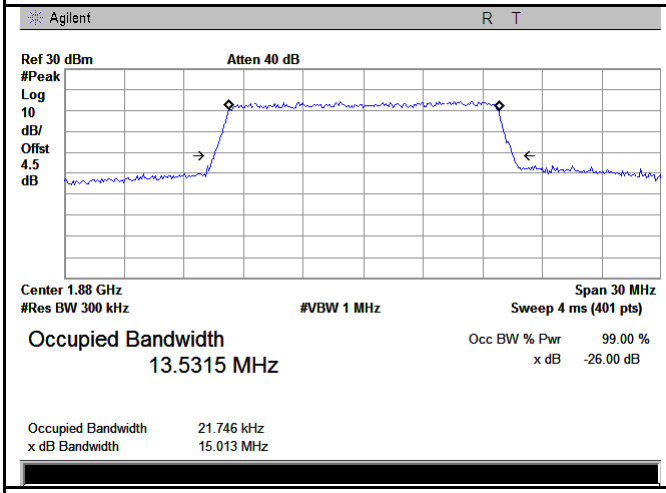
LTE band 2 - High CH 16QAM-10



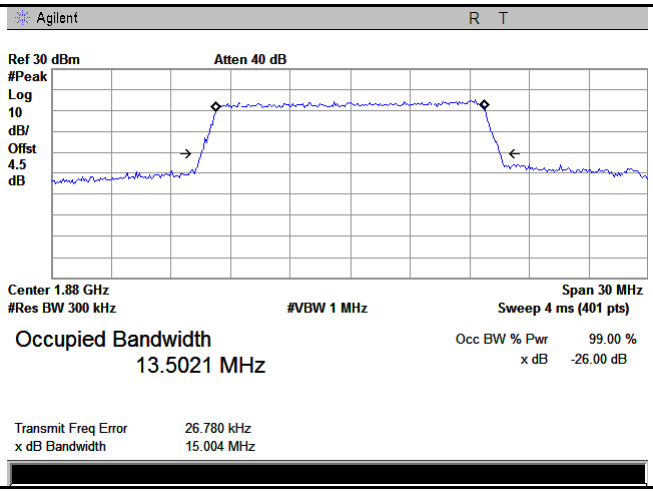
LTE band 2 - Low CH QPSK-15



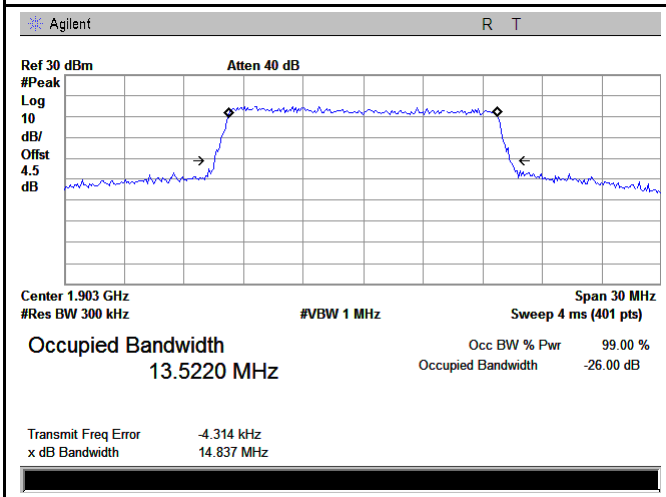
LTE band 2 - Low CH 16QAM-15



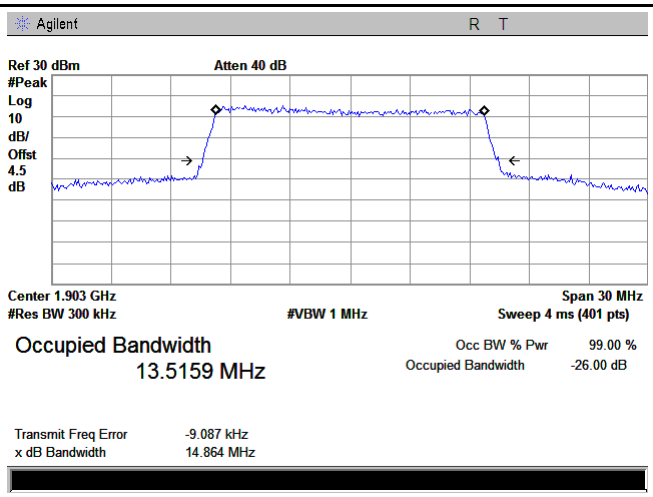
LTE band 2 - Middle CH QPSK-15



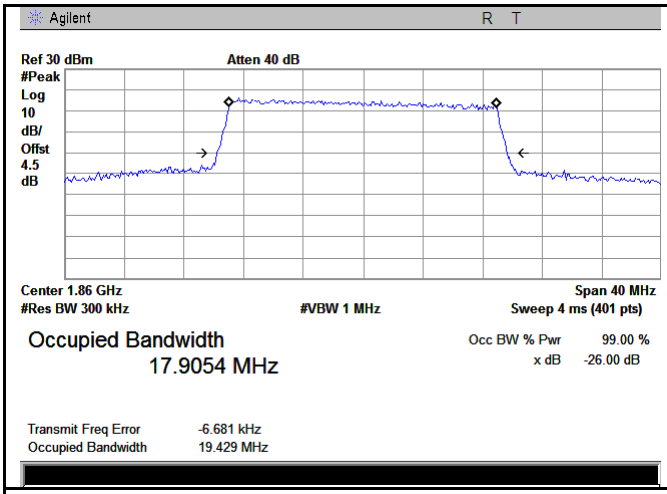
LTE band 2 - Middle CH 16QAM-15



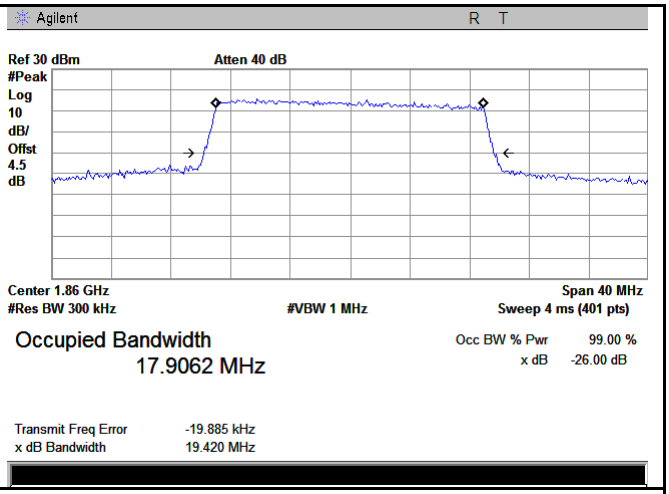
LTE band 2 - High CH QPSK-15



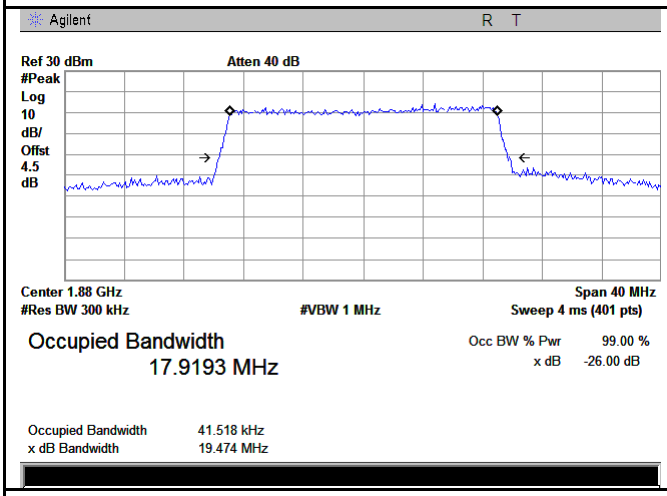
LTE band 2 - High CH 16QAM-15



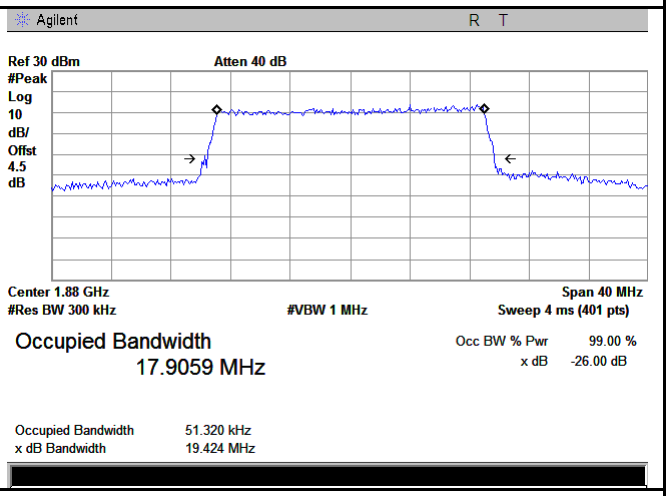
LTE band 2 - Low CH QPSK-20



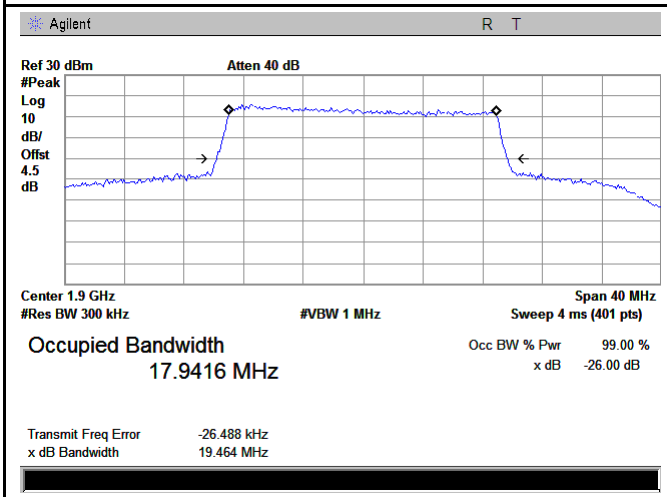
LTE band 2 - Low CH 16QAM-20



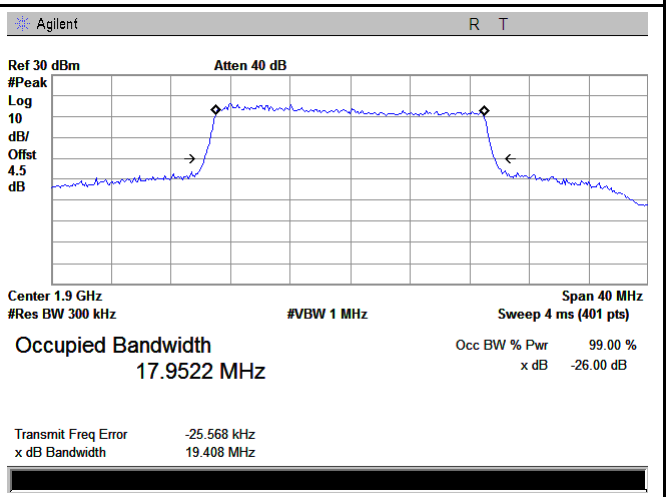
LTE band 2 - Middle CH QPSK-20



LTE band 2 - Middle CH 16QAM-20

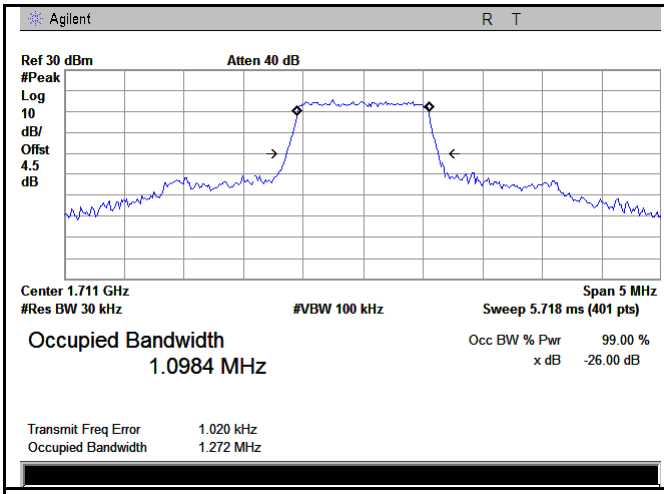


LTE band 2 - High CH QPSK-20

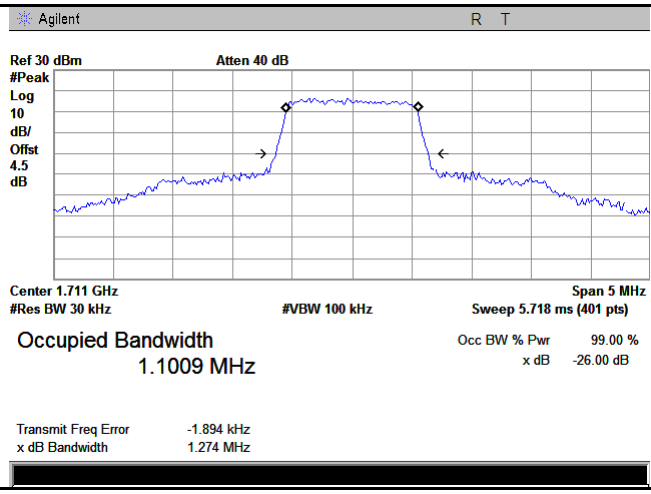


LTE band 2 - High CH 16QAM-20

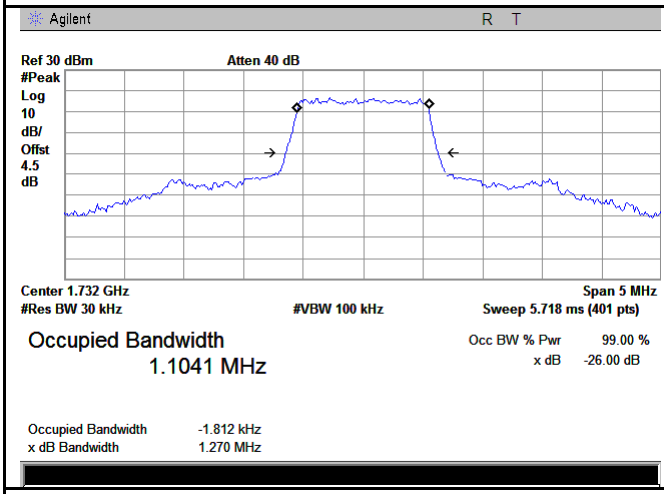
LTE Band 4 (Part 27)



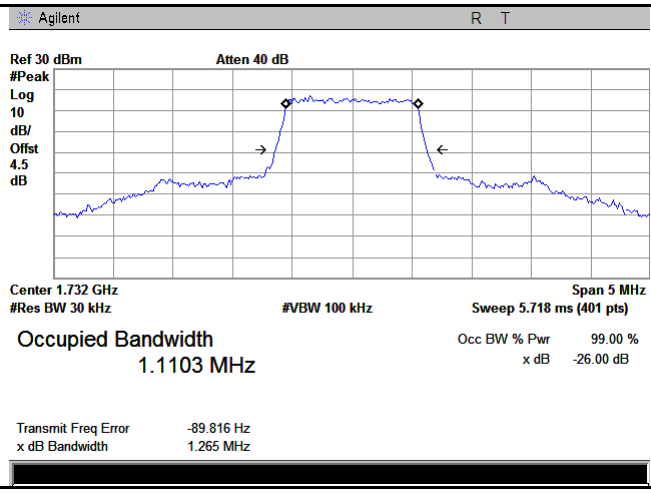
LTE band 4 - Low CH QPSK-1.4



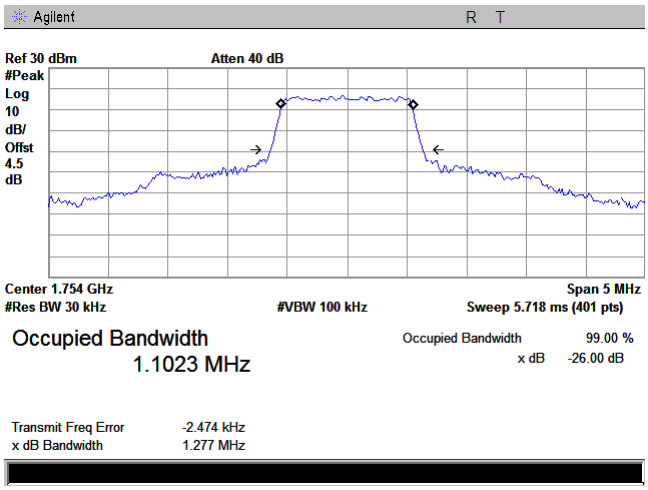
LTE band 4 - Low CH 16QAM-1.4



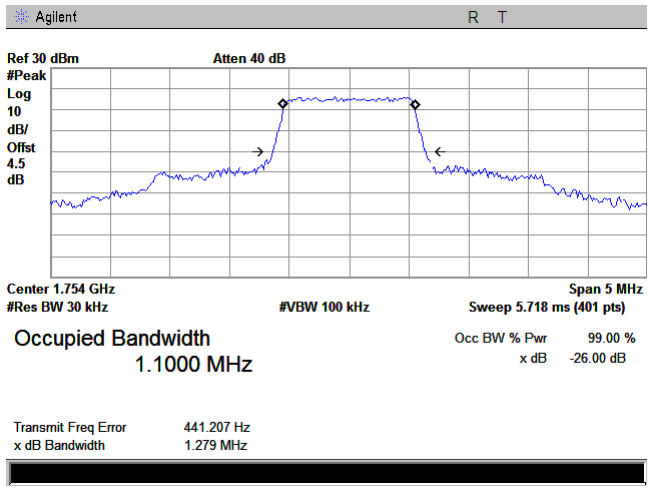
LTE band 4 - Middle CH QPSK-1.4



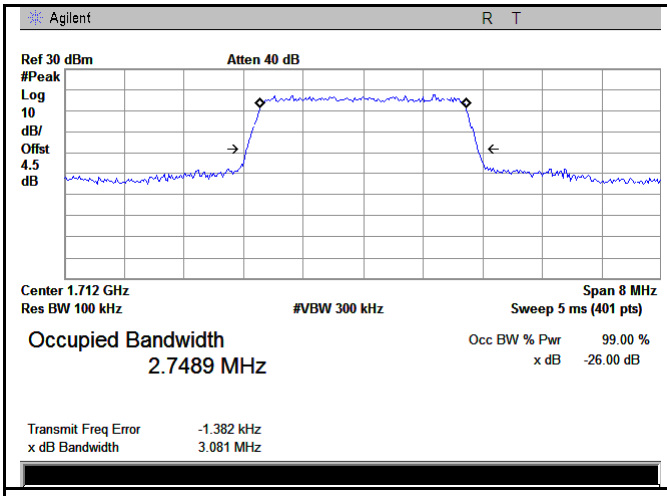
LTE band 4 - Middle CH 16QAM-1.4



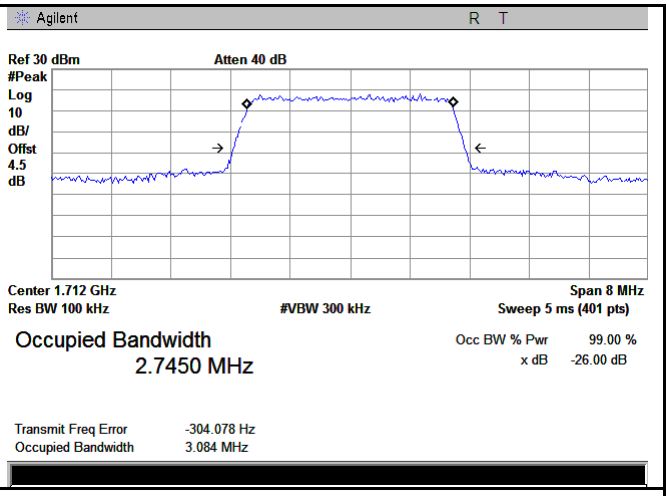
LTE band 4 - High CH QPSK-1.4



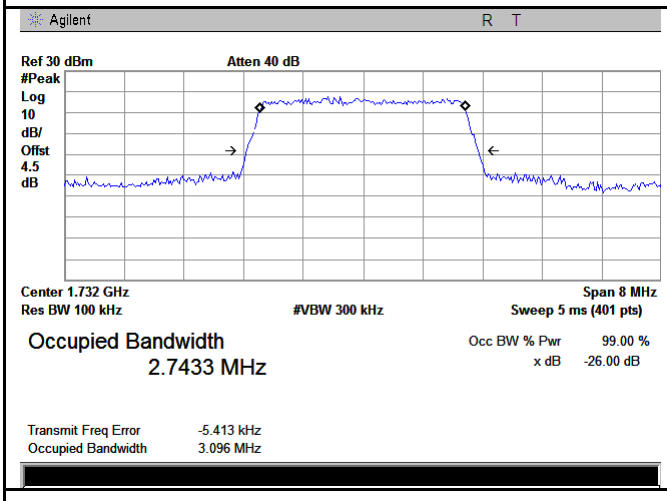
LTE band 4 - High CH 16QAM-1.4



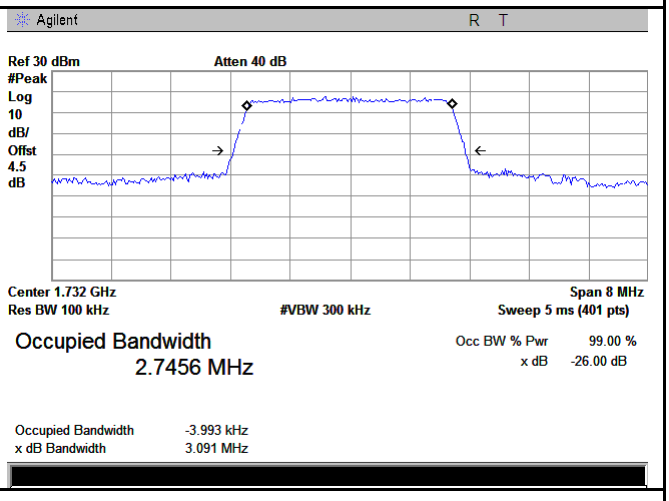
LTE band 4 - Low CH QPSK-3



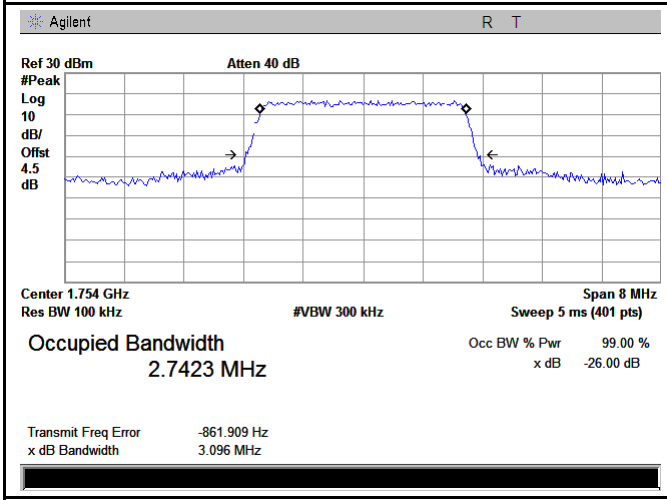
LTE band 4 - Low CH 16QAM-3



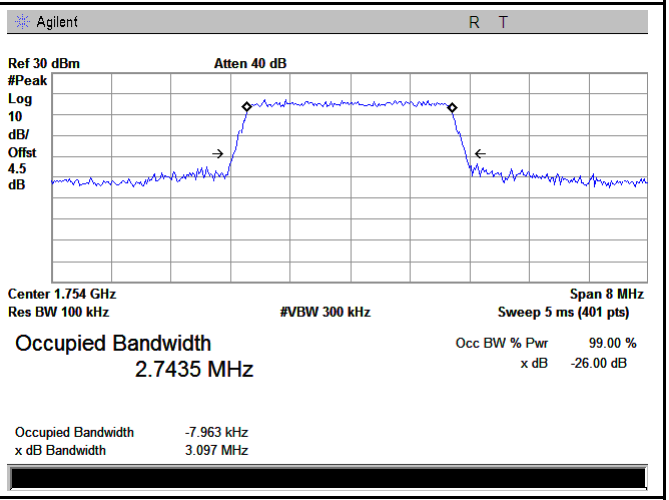
LTE band 4 - Middle CH QPSK-3



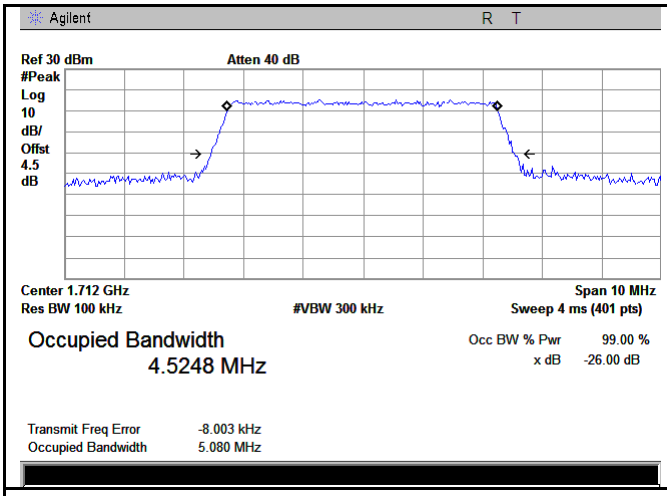
LTE band 4 - Middle CH 16QAM-3



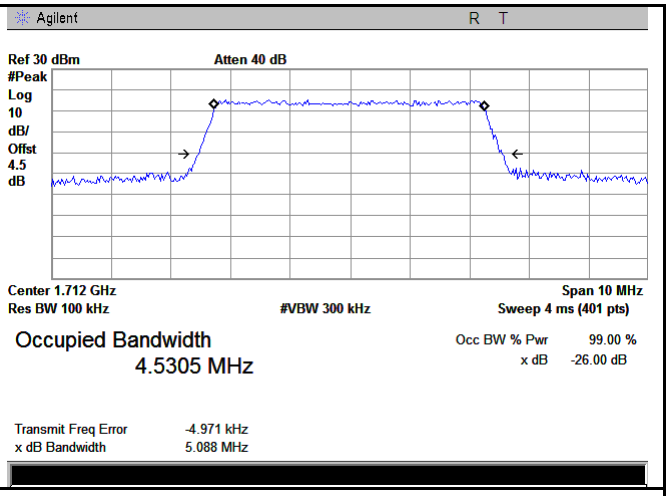
LTE band 4 - High CH QPSK-3



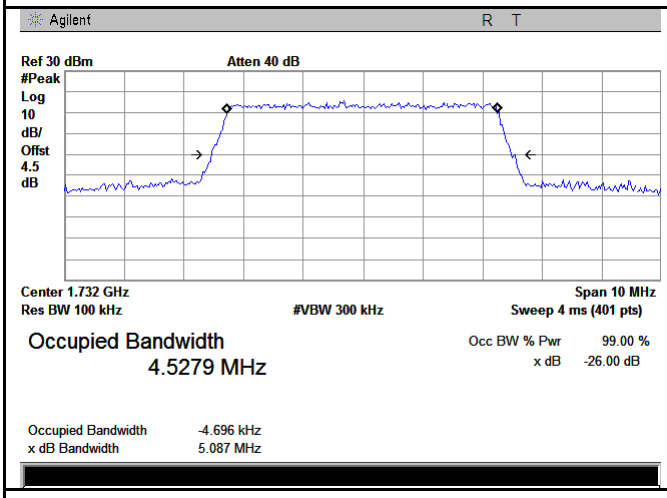
LTE band 4 - High CH 16QAM-3



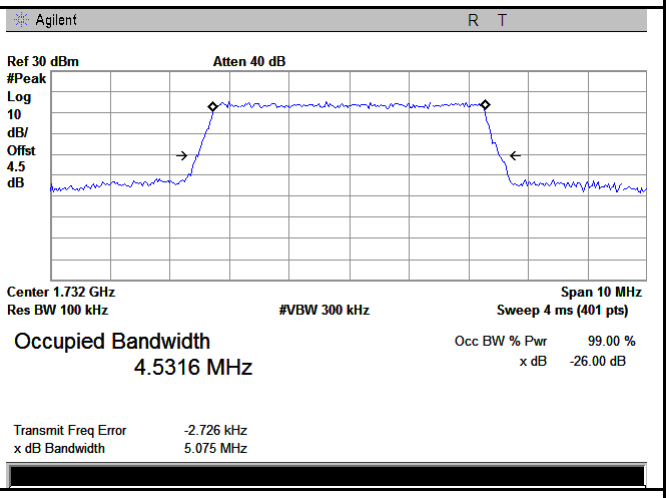
LTE band 4 - Low CH QPSK-5



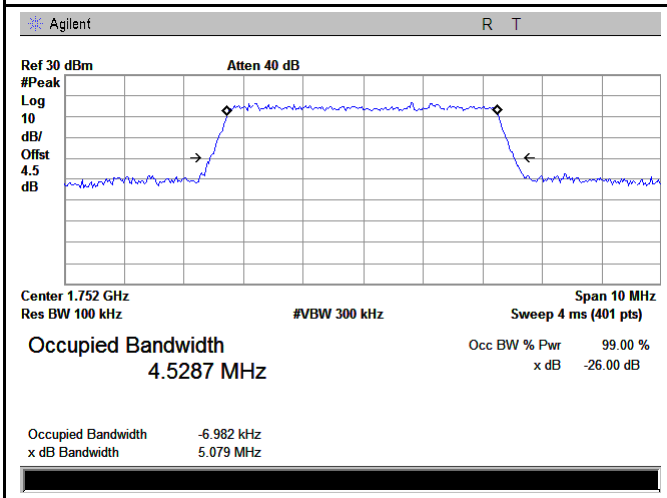
LTE band 4 - Low CH 16QAM-5



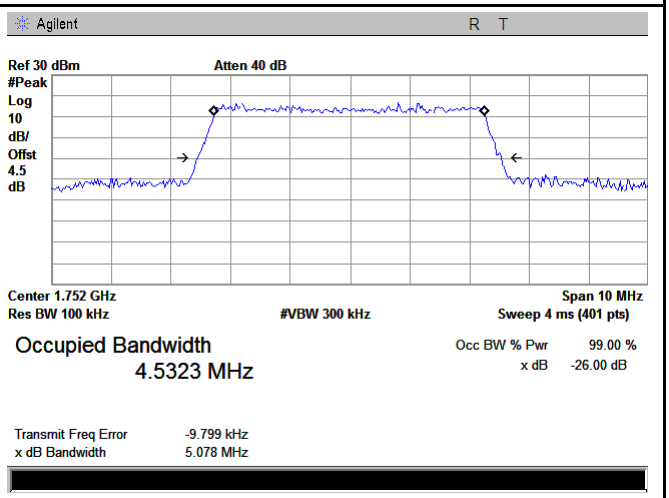
LTE band 4 - Middle CH QPSK-5



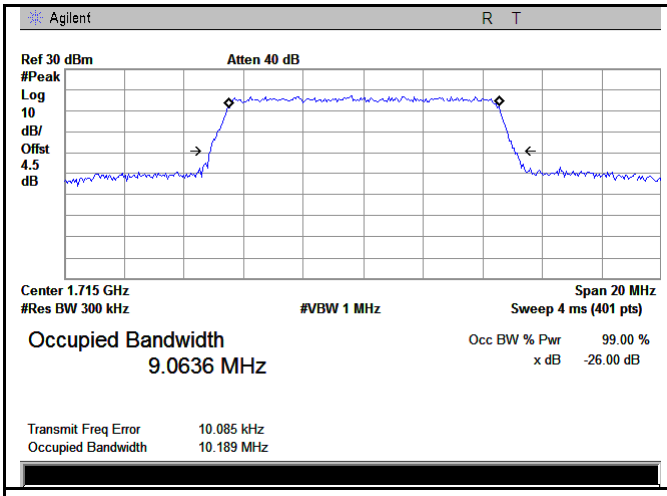
LTE band 4 - Middle CH 16QAM-5



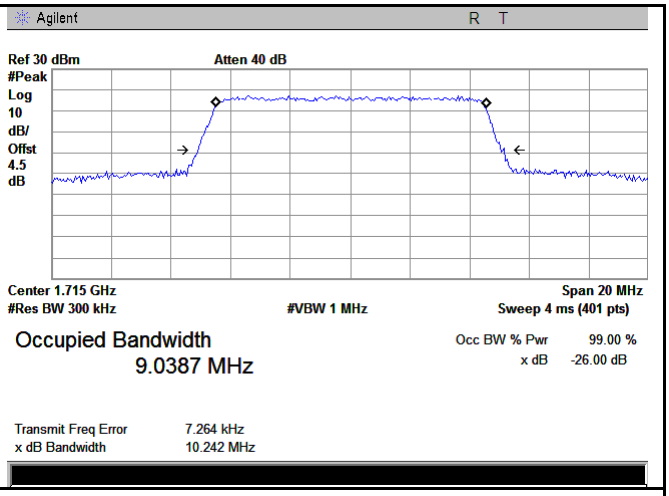
LTE band 4 - High CH QPSK-5



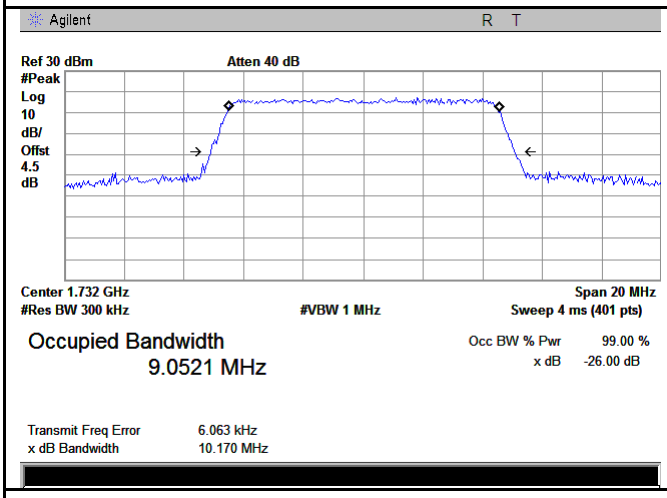
LTE band 4 - High CH 16QAM-5



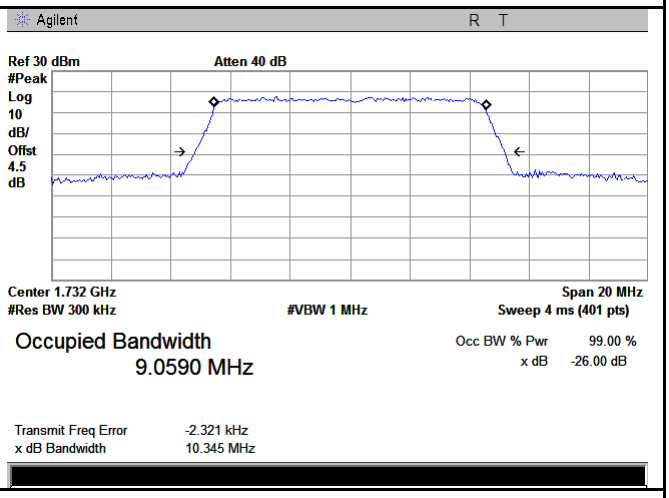
LTE band 4 - Low CH QPSK-10



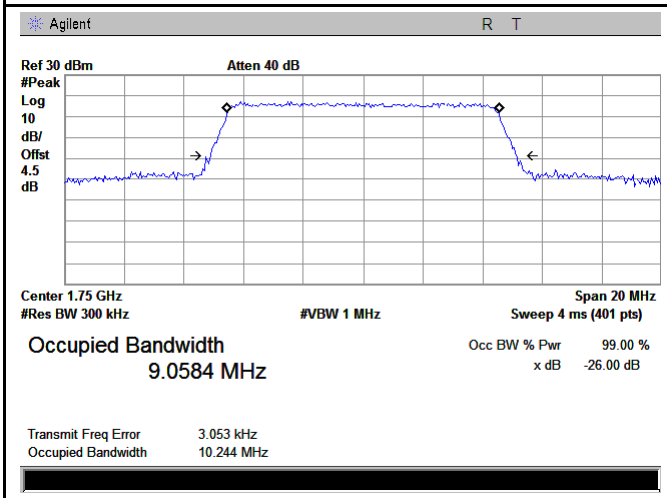
LTE band 4 - Low CH 16QAM-10



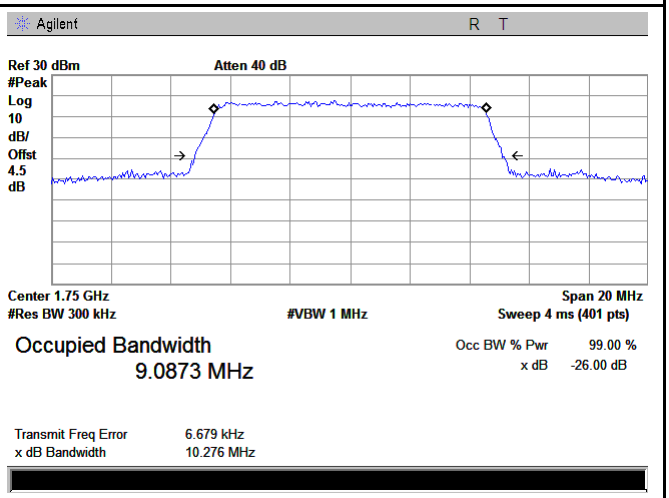
LTE band 4 - Middle CH QPSK-10



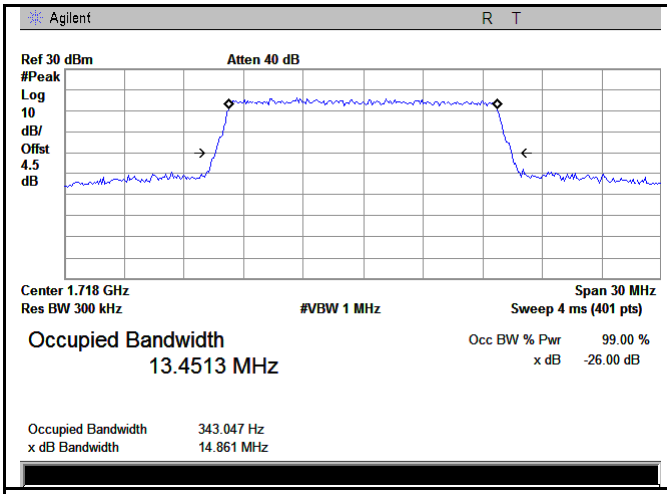
LTE band 4 - Middle CH 16QAM-10



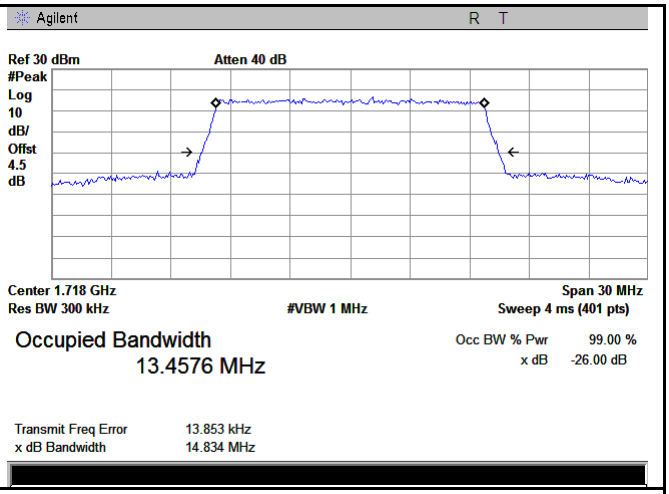
LTE band 4 - High CH QPSK-10



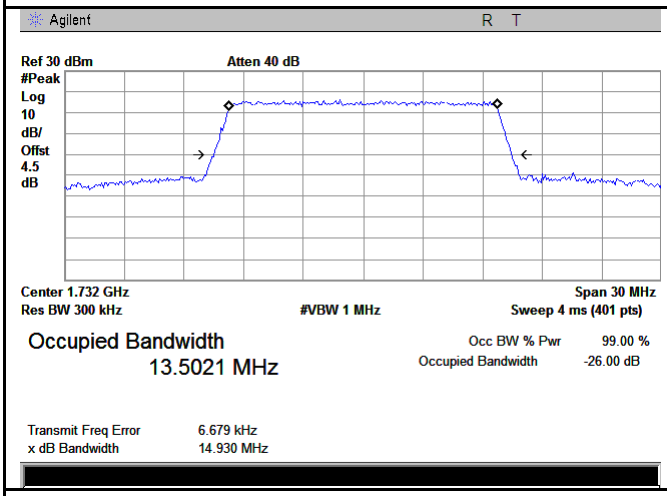
LTE band 4 - High CH 16QAM-10



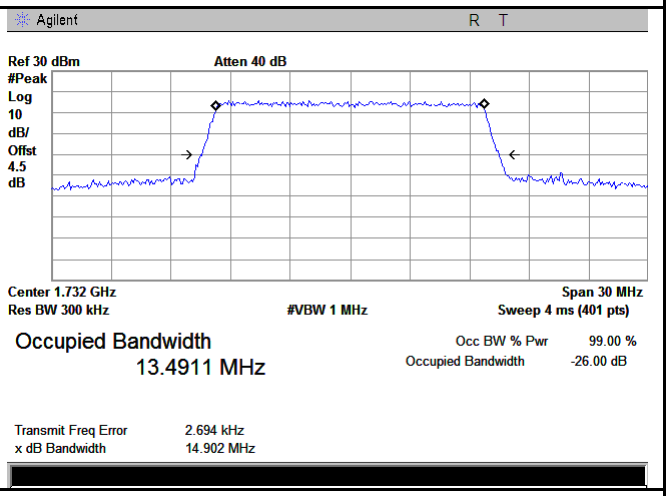
LTE band 4 - Low CH QPSK-15



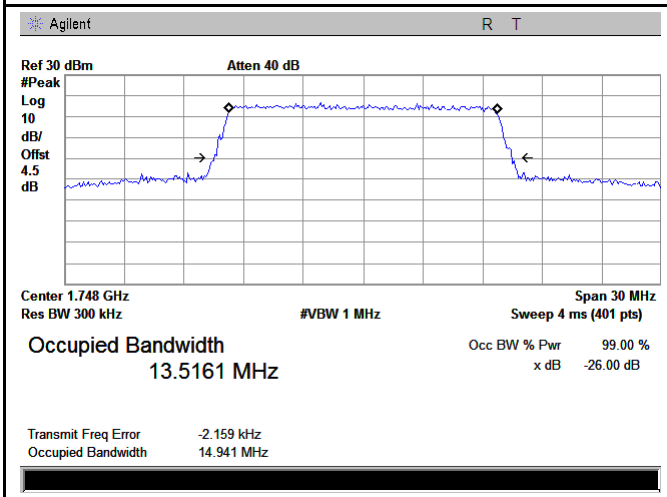
LTE band 4 - Low CH 16QAM-15



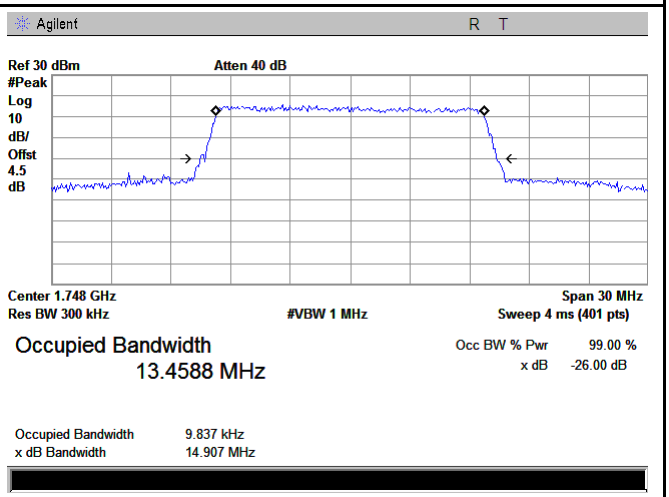
LTE band 4 - Middle CH QPSK-15



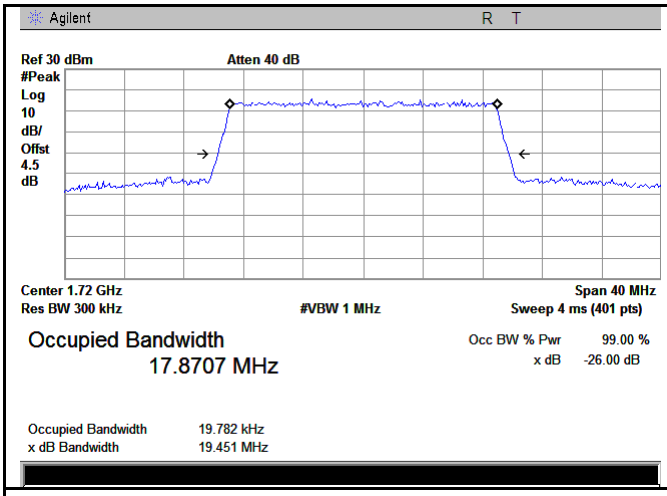
LTE band 4 - Middle CH 16QAM-15



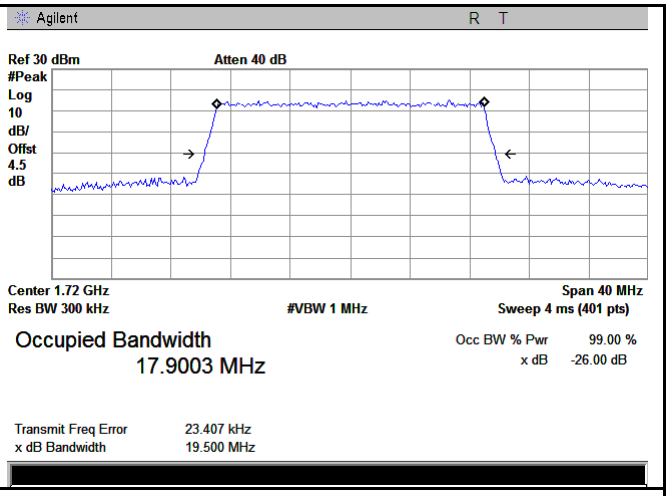
LTE band 4 - High CH QPSK-15



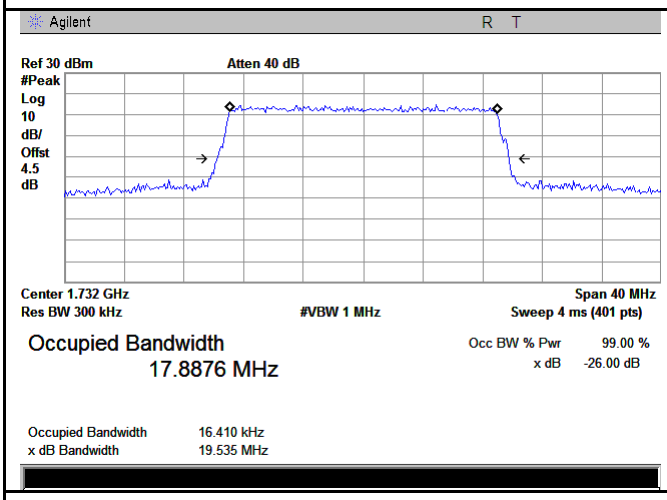
LTE band 4 - High CH 16QAM-15



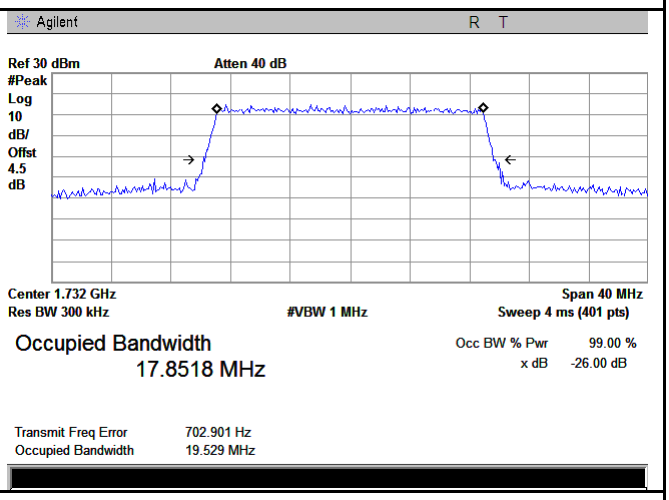
LTE band 4 - Low CH QPSK-20



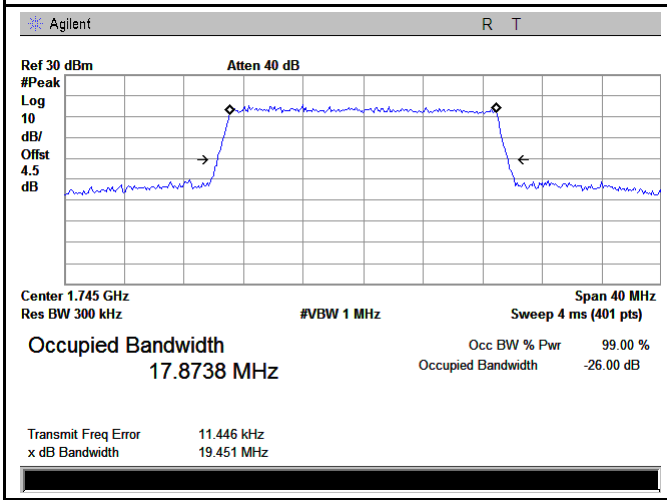
LTE band 4 - Low CH 16QAM-20



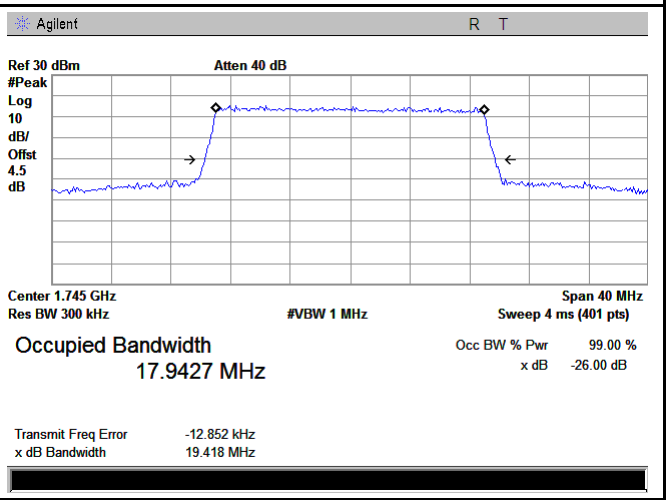
LTE band 4 - Middle CH QPSK-20



LTE band 4 - Middle CH 16QAM-20

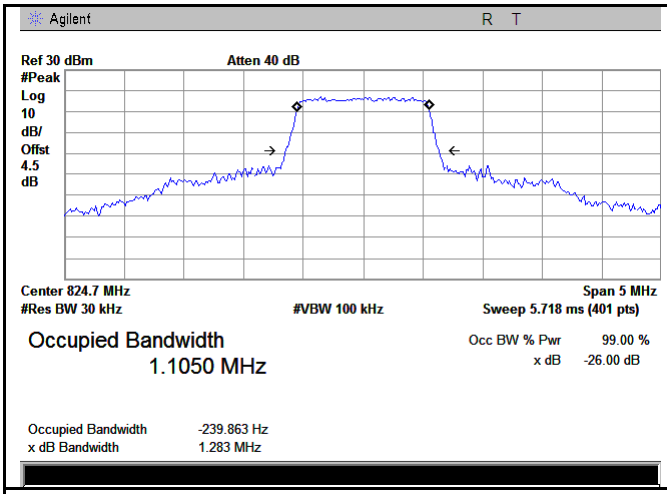


LTE band 4 - High CH QPSK-20

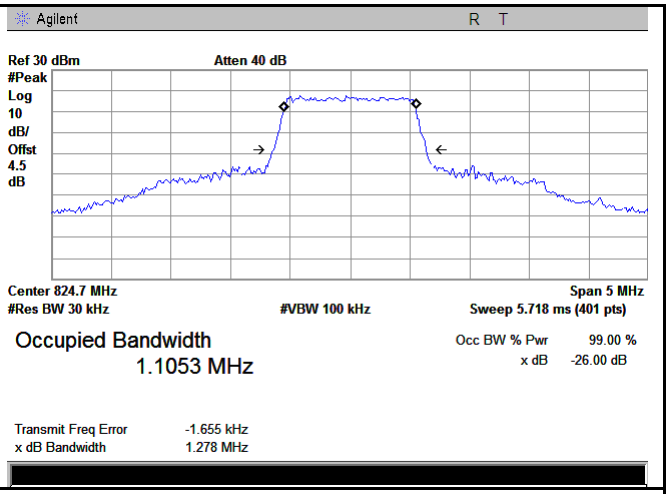


LTE band 4 - High CH 16QAM-20

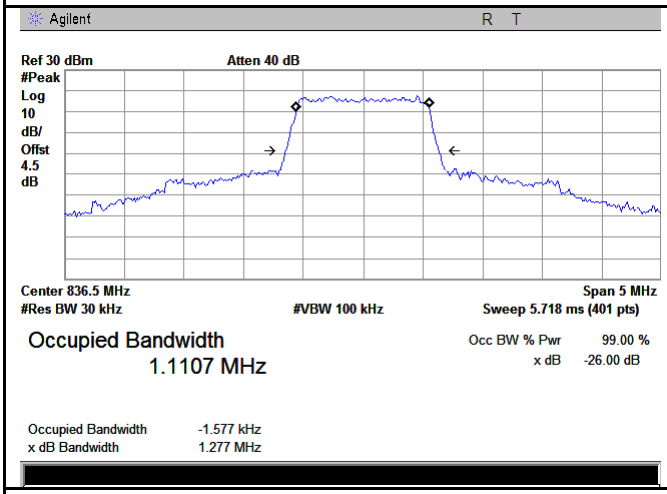
LTE Band 5 (Part 22H)



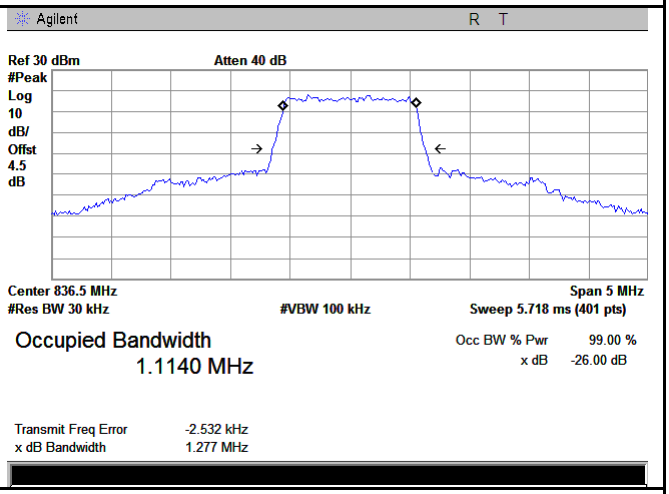
LTE band 5 - Low CH QPSK-1.4



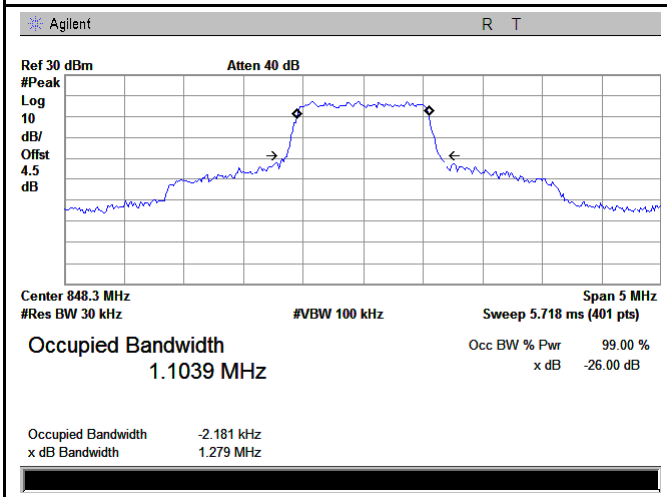
LTE band 5 - Low CH 16QAM-1.4



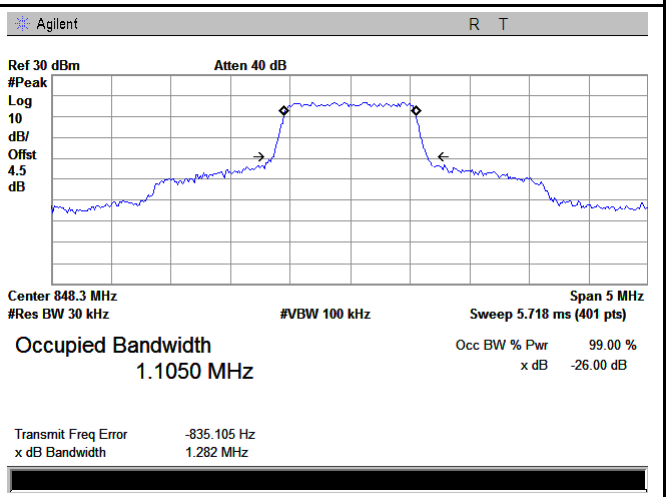
LTE band 5 - Middle CH QPSK-1.4



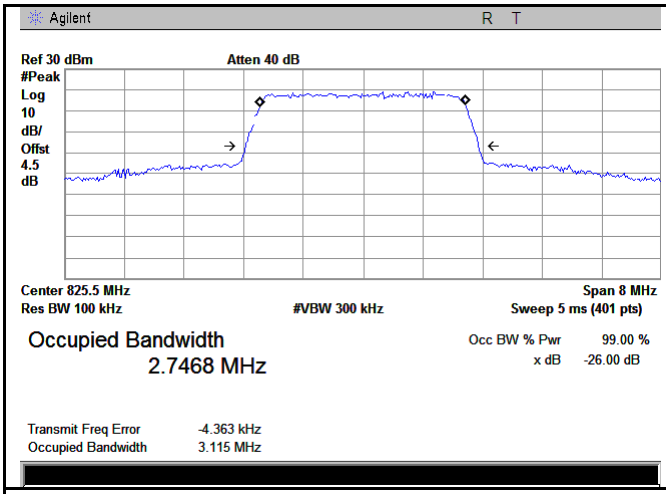
LTE band 5 - Middle CH 16QAM-1.4



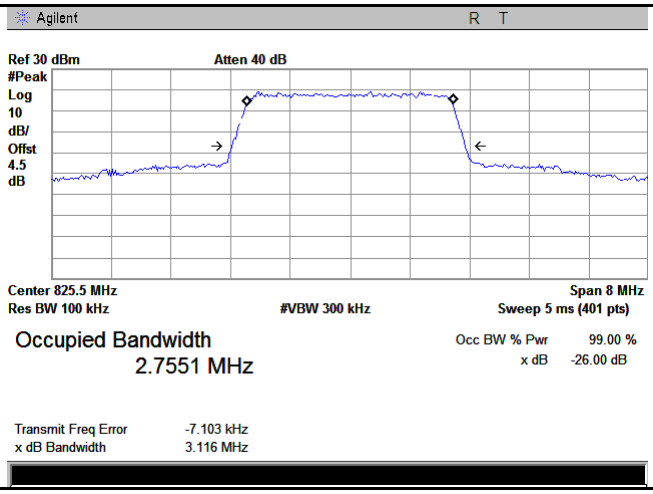
LTE band 5 - High CH QPSK-1.4



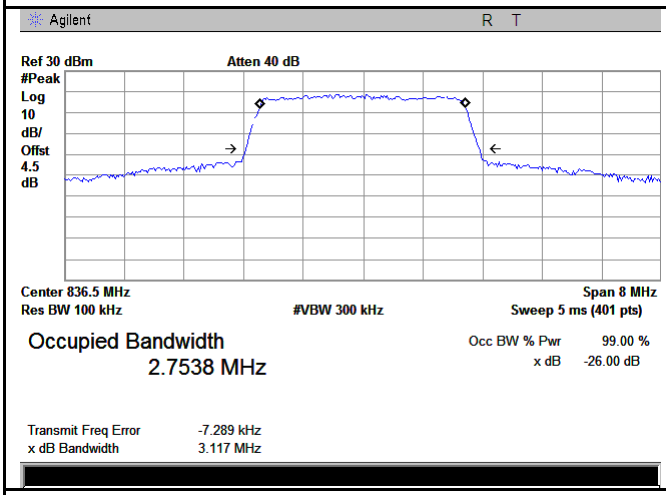
LTE band 5 - High CH 16QAM-1.4



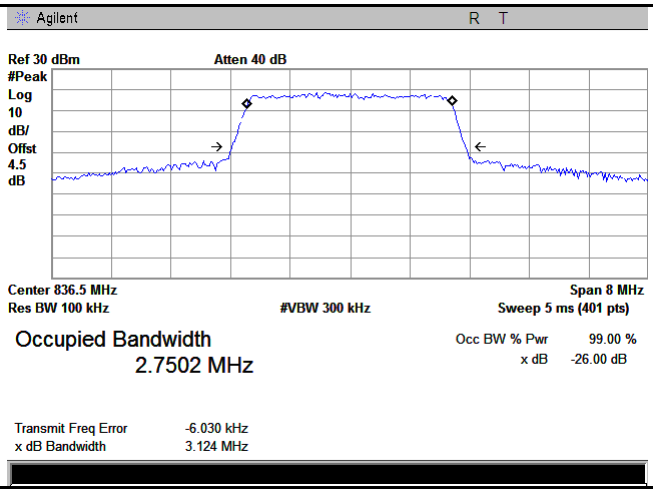
LTE band 5 - Low CH QPSK-3



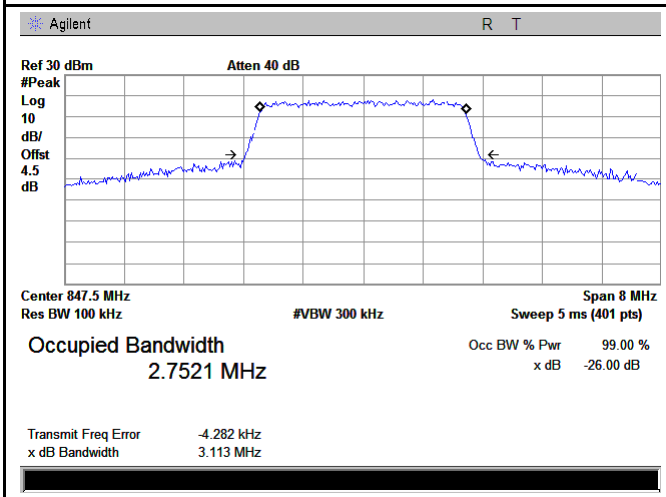
LTE band 5 - Low CH 16QAM-3



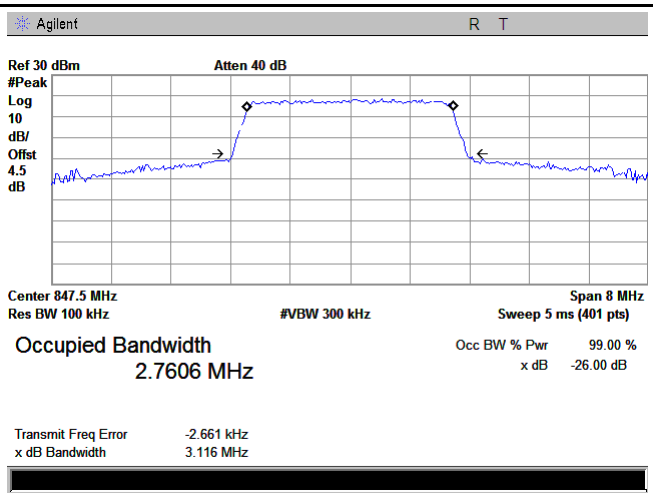
LTE band 5 - Middle CH QPSK-3



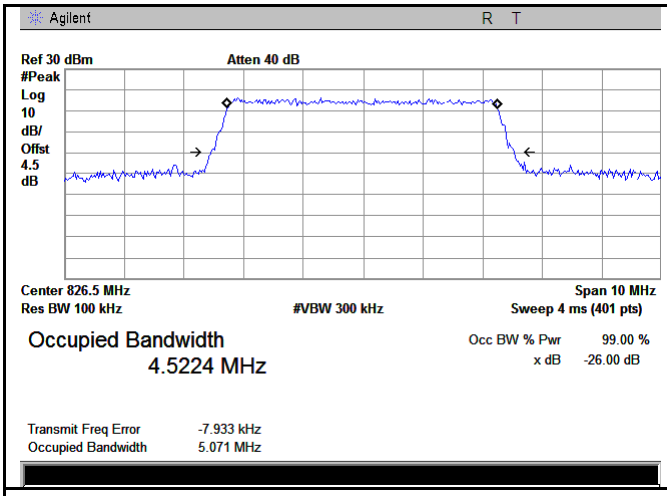
LTE band 5 - Middle CH 16QAM-3



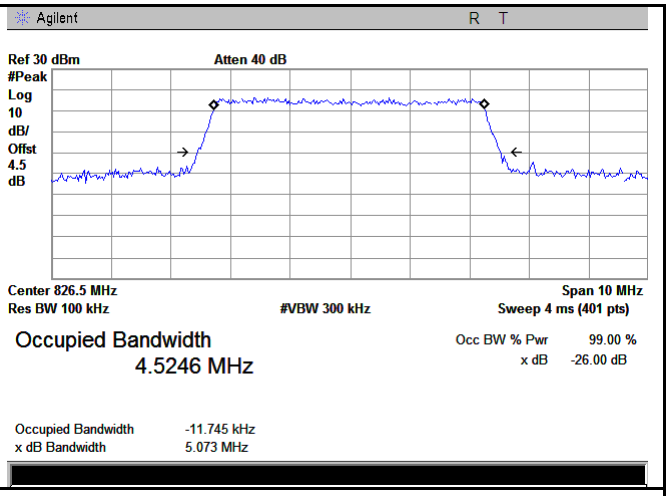
LTE band 5 - High CH QPSK-3



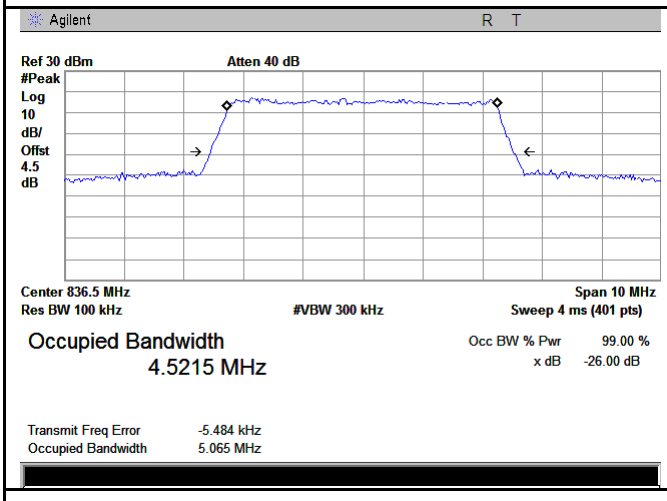
LTE band 5 - High CH 16QAM-3



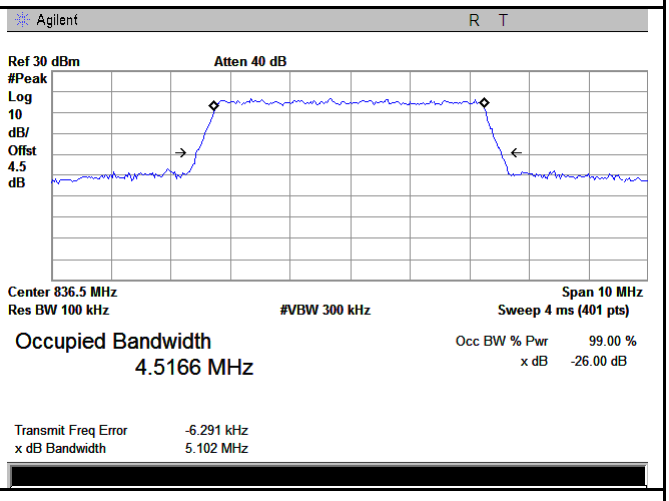
LTE band 5 - Low CH QPSK-5



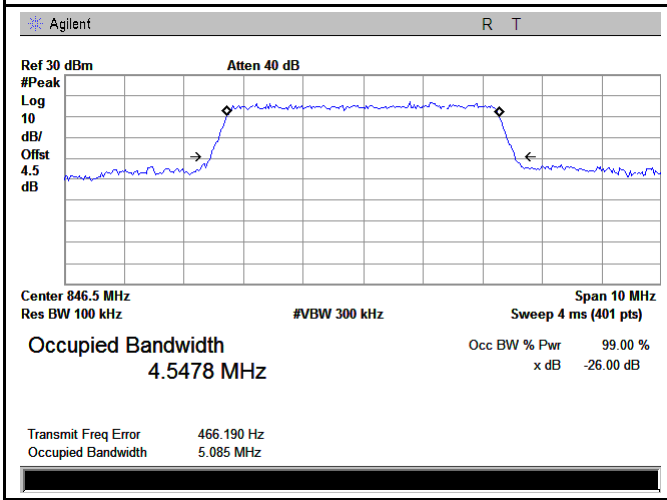
LTE band 5 - Low CH 16QAM-5



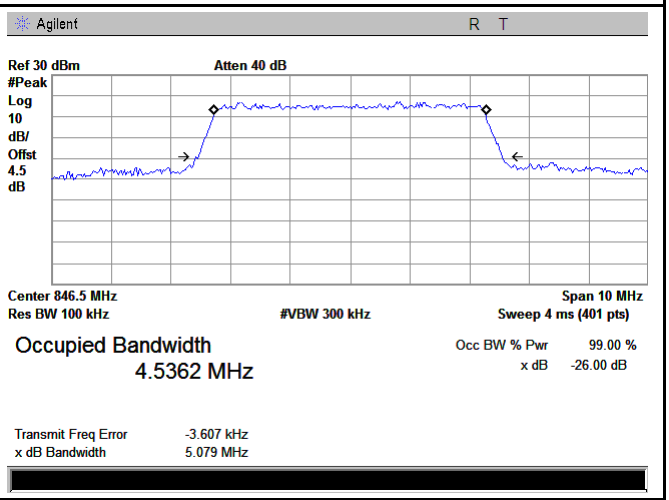
LTE band 5 - Middle CH QPSK-5



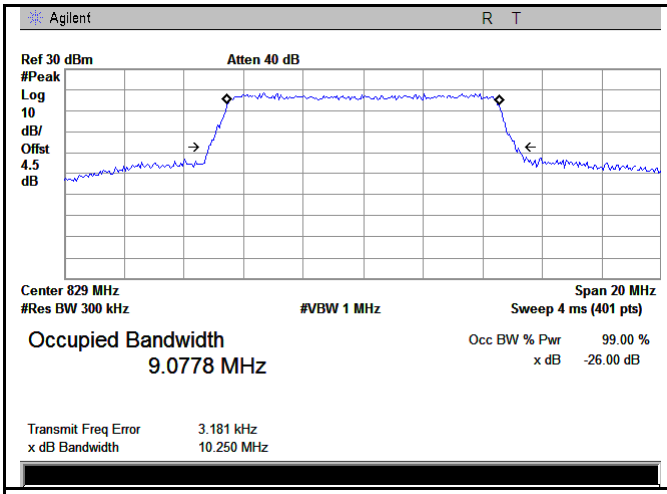
LTE band 5 - Middle CH 16QAM-5



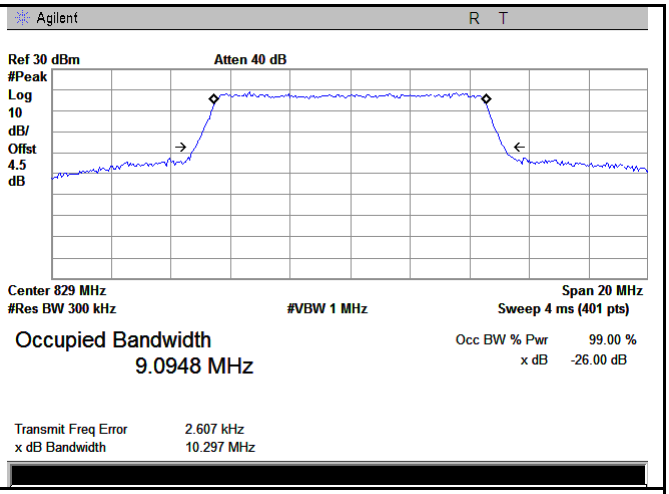
LTE band 5 - High CH QPSK-5



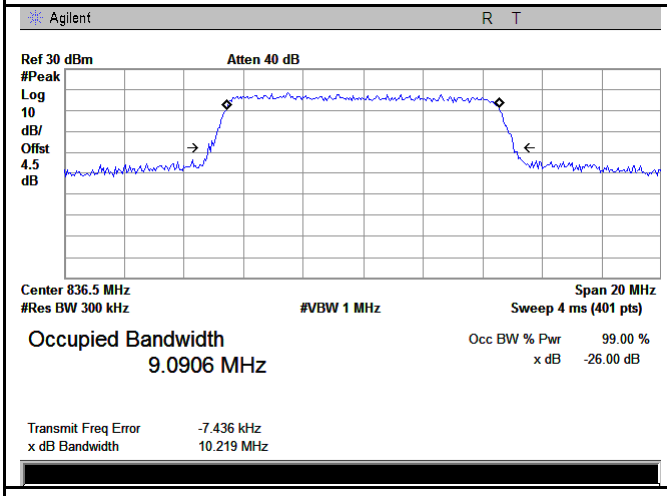
LTE band 5 - High CH 16QAM-5



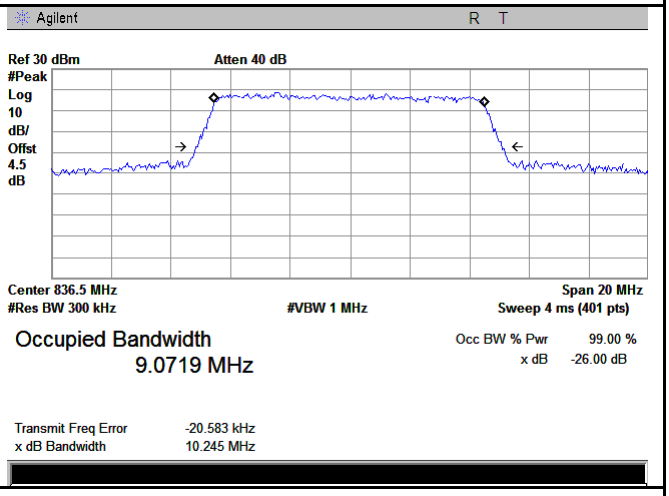
LTE band 5 - Low CH QPSK-10



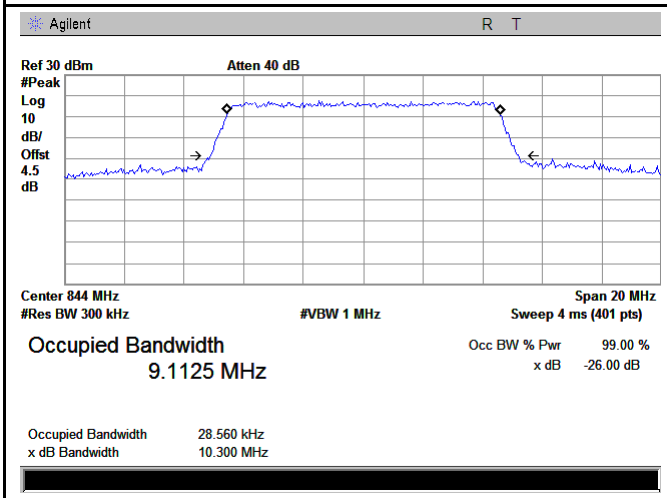
LTE band 5 - Low CH 16QAM-10



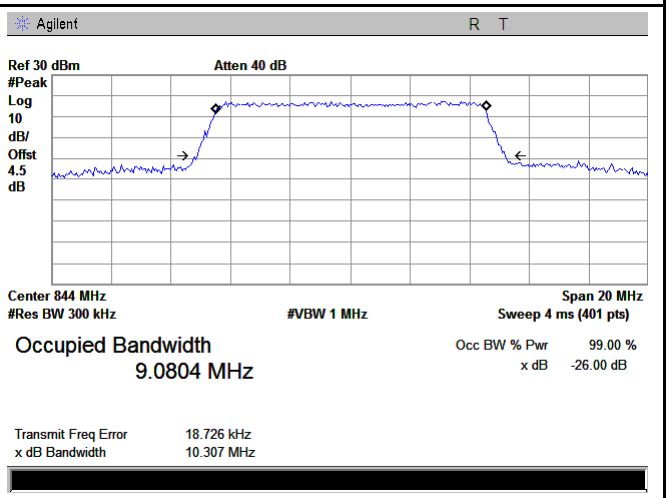
LTE band 5 - Middle CH QPSK-10



LTE band 5 - Middle CH 16QAM-10



LTE band 5 - High CH QPSK-10



LTE band 5 - High CH 16QAM-10