

RF TEST REPORT



Report No.: 15050034-FCC-R5

Supersede Report No.: N/A

Applicant	b mobile HK Limited	
Product Name	Mobile Phone	
Model No.	AX1050	
Serial No.	L50	
Test Standard	FCC Part 24(E), FCC Part 27: 2014; ANSI/TIA C603 D: 2010	
Test Date	August 13 to September 10, 2015	
Issue Date	September 28, 2015	
Test Result	☒ Pass ☐ Fail	
Equipment complied with the specification	☒	
Equipment did not comply with the specification	☐	
<i>Winnie Zhang</i>	<i>David Huang</i>	
Winnie Zhang Test Engineer	David Huang Checked By	
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Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

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Accreditations for Conformity Assessment

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

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
15050034-FCC-R5	NONE	Original	September 28, 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: AX1050

Serial Model: L50

Date EUT received: August 12, 2015

Test Date(s): August 13 to September 10, 2015

Equipment Category : PCE

Antenna Gain:

GSM850: -1.28dBi
 PCS1900: -0.93dBi
 UMTS-FDD Band V: -1.28dBi
 UMTS-FDD Band IV: -0.88dBi
 UMTS-FDD Band II: -0.93dBi
 Bluetooth/BLE: 0.977dBi
 WIFI: 0.977dB
 LTE Band 2:-0.93Bi
 LTE Band 4:-0.88dBi
 LTE Band 12:-1.35dBi

Type of Modulation:

GSM / GPRS: GMSK
 EGPRS: GMSK, 8PSK
 UMTS-FDD: QPSK, 16QAM
 802.11b/g/n: DSSS, OFDM
 Bluetooth: GFSK, π /4DQPSK, 8DPSK
 BLE: GFSK
 LTE Band: QPSK, 16QAM
 GPS:BPSK

RF Operating Frequency (ies):

GSM850 TX: 824.2 ~ 848.8 MHz; RX: 869.2 ~ 893.8 MHz
 PCS1900 TX: 1850.2 ~ 1909.8 MHz; RX: 1930.2 ~ 1989.8 MHz
 UMTS-FDD Band V TX: 826.4 ~ 846.6 MHz; RX: 871.4 ~ 891.6 MHz
 UMTS-FDD Band 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

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 12 TX:699.7 ~ 715.3 MHz; RX : 729.7~ 745.3MHz

GPS RX:1575.42 MHz

Maximum Conducted
AV Power to Antenna:

LTE Band 2: 22.68dBm
LTE Band 4: 21.88dBm
LTE Band 12: 22.62dBm

ERP/EIRP:

LTE Band 2: 17.16dBm / EIRP
LTE Band 4: 17.09dBm / EIRP
LTE Band 12: 16.77dBm / EIRP

Port:

Power Port, Earphone Port, USB Port

Input Power:

Adapter:
Model: A98A-050100U-US1
Input: 100-240V; 50/60Hz;0.2A
Output: DC 5V,1000mA
Battery:
Model: AX1050
Spec:2000mAh, 7.6Wh
Voltage:3.8Vdc

Trade Name :

Bmobile

GPRS/EGPRS Multi-slot class

8/10/12

FCC ID:

ZSW-30-017

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

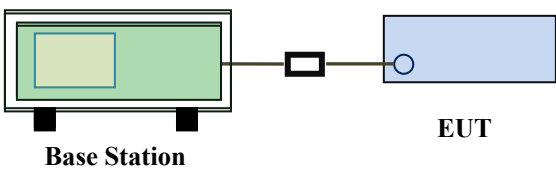
The EUT is a portable device, thus requires SAR evaluation;
Please refer to RF Exposure Evaluation Report: 15050034-FCC-H.

6.2 RF Output Power

Temperature	22°C
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	September 01, 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	 The diagram illustrates the test setup. On the left, a green rectangular box represents the 'Base Station'. A black line connects it to a small black square, which in turn connects to a blue rectangular box labeled 'EUT' (Equipment Under Test).
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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
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	generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. - Spurious emissions in dB = $10 \log (\text{TX power in Watts}/0.001)$ – the absolute level - Spurious attenuation limit in dB = $43 + 10 \text{ Log}_{10} (\text{power out in Watts})$.
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	22.28	22±1
				1	49	0	22.25	22±1
				1	99	0	22.29	22±1
				50	0	1	21.15	22±1
				50	24	1	21.18	22±1
				50	49	1	21.21	22±1
				100	0	1	21.15	22±1
			16QAM	1	0	1	21.11	21.3±1
				1	49	1	21.13	21.3±1
				1	99	1	21.18	21.3±1
				50	0	2	21.09	21.3±1
				50	24	2	21.01	21.3±1
				50	49	2	20.78	21.3±1
				100	0	2	20.47	21.3±1
	18900	1880.0	QPSK	1	0	0	22.16	21.3±1
				1	49	0	22.12	21.3±1
				1	99	0	22.25	21.3±1
				50	0	1	21.26	21.3±1
				50	24	1	21.28	21.3±1
				50	49	1	21.30	21.3±1
				100	0	1	21.24	21.3±1
			16QAM	1	0	1	21.47	21.3±1
				1	49	1	21.37	21.3±1
				1	99	1	21.48	21.3±1
				50	0	2	21.24	21.3±1
				50	24	2	21.13	21.3±1
				50	49	2	20.84	21.3±1
				100	0	2	20.32	21.3±1
	19100	1900.0	QPSK	1	0	0	22.40	23±1
				1	49	0	22.42	23±1
				1	99	0	22.45	23±1
				50	0	1	21.44	22±1
				50	24	1	21.46	22±1
				50	49	1	21.49	22±1
				100	0	1	21.43	22±1
			16QAM	1	0	1	21.79	21.3±1
				1	49	1	21.82	21.3±1
				1	99	1	21.83	21.3±1
				50	0	2	21.54	21.3±1
				50	24	2	21.42	21.3±1
				50	49	2	21.27	21.3±1
				100	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
15MHz	18675	1857.5	QPSK	1	0	0	22.20	22±1
				1	37	0	22.12	22±1
				1	74	0	22.13	22±1
				36	0	1	21.28	22±1
				36	16	1	21.25	22±1
				36	35	1	21.20	22±1
				75	0	1	21.23	22±1
			16QAM	1	0	1	21.55	21.3±1
				1	37	1	21.63	21.3±1
				1	74	1	21.70	21.3±1
				36	0	2	21.16	21.3±1
				36	16	2	21.09	21.3±1
				36	35	2	20.89	21.3±1
				75	0	2	20.31	21.3±1
	18900	1880.0	QPSK	1	0	0	22.38	22±1
				1	37	0	22.37	22±1
				1	74	0	22.42	22±1
				36	0	1	21.33	22±1
				36	16	1	21.36	22±1
				36	35	1	21.38	22±1
				75	0	1	21.34	22±1
			16QAM	1	0	1	21.18	21.3±1
				1	37	1	21.13	21.3±1
				1	74	1	21.17	21.3±1
				36	0	2	20.88	21.3±1
				36	16	2	20.48	21.3±1
				36	35	2	20.41	21.3±1
				75	0	2	20.35	21.3±1
	19125	1902.5	QPSK	1	0	0	22.47	22±1
				1	37	0	22.44	22±1
				1	74	0	22.33	22±1
				36	0	1	21.53	22±1
				36	16	1	21.57	22±1
				36	35	1	21.60	22±1
				75	0	1	21.59	22±1
			16QAM	1	0	1	21.57	21.3±1
				1	37	1	21.58	21.3±1
				1	74	1	21.53	21.3±1
				36	0	2	20.86	21.3±1
				36	16	2	20.81	21.3±1
				36	35	2	20.78	21.3±1
				75	0	2	20.55	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	18650	1855	QPSK	1	0	0	22.24	22±1
				1	24	0	22.31	22±1
				1	49	0	22.13	22±1
				25	0	1	21.13	22±1
				25	12	1	21.15	22±1
				25	24	1	21.17	22±1
				50	0	1	21.10	22±1
			16QAM	1	0	1	21.11	21.3±1
				1	24	1	21.58	21.3±1
				1	49	1	21.48	21.3±1
				25	0	2	20.84	21.3±1
				25	12	2	20.79	21.3±1
				25	24	2	20.67	21.3±1
				50	0	2	20.32	21.3±1
	18900	1880.0	QPSK	1	0	0	22.13	22±1
				1	24	0	22.15	22±1
				1	49	0	22.20	22±1
				25	0	1	21.27	22±1
				25	12	1	21.25	22±1
				25	24	1	21.26	22±1
				50	0	1	21.27	22±1
			16QAM	1	0	1	21.80	21.3±1
				1	24	1	21.78	21.3±1
				1	49	1	21.83	21.3±1
				25	0	2	20.88	21.3±1
				25	12	2	20.75	21.3±1
				25	24	2	20.68	21.3±1
				50	0	2	20.35	21.3±1
	19150	1905	QPSK	1	0	0	22.56	22±1
				1	24	0	22.61	22±1
				1	49	0	22.68	22±1
				25	0	1	21.50	22±1
				25	12	1	21.58	22±1
				25	24	1	21.64	22±1
				50	0	1	21.51	22±1
			16QAM	1	0	1	21.35	21.3±1
				1	24	1	21.37	21.3±1
				1	49	1	21.40	21.3±1
				25	0	2	20.57	21.3±1
				25	12	2	20.50	21.3±1
				25	24	2	20.43	21.3±1
				50	0	2	20.38	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	18625	1852.5	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	21.14	22±1
				12	6	1	21.13	22±1
				12	11	1	21.16	22±1
				25	0	1	21.11	22±1
			16QAM	1	0	1	21.42	21.3±1
				1	12	1	21.46	21.3±1
				1	24	1	21.48	21.3±1
				12	0	2	20.45	21.3±1
				12	6	2	20.42	21.3±1
				12	11	2	20.39	21.3±1
				25	0	2	20.31	21.3±1
	18900	1880.0	QPSK	1	0	0	22.18	22±1
				1	12	0	22.21	22±1
				1	24	0	22.22	22±1
				12	0	1	21.30	22±1
				12	6	1	21.28	22±1
				12	11	1	21.29	22±1
				25	0	1	21.22	22±1
			16QAM	1	0	1	21.27	21.3±1
				1	12	1	21.29	21.3±1
				1	24	1	21.28	21.3±1
				12	0	2	20.75	21.3±1
				12	6	2	20.68	21.3±1
				12	11	2	20.72	21.3±1
				25	0	2	20.33	21.3±1
	19175	1907.5	QPSK	1	0	0	22.54	23±1
				1	12	0	22.56	23±1
				1	24	0	22.53	23±1
				12	0	1	21.54	22±1
				12	6	1	21.49	22±1
				12	11	1	21.43	22±1
				25	0	1	21.48	22±1
			16QAM	1	0	1	21.42	21.3±1
				1	12	1	21.47	21.3±1
				1	24	1	21.45	21.3±1
				12	0	2	20.87	21.3±1
				12	6	2	20.79	21.3±1
				12	11	2	20.76	21.3±1
				25	0	2	20.59	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	22.19	21.3±1
				1	7	0	22.27	21.3±1
				1	14	0	22.19	21.3±1
				8	0	1	21.12	21.3±1
				8	4	1	21.11	21.3±1
				8	7	1	21.12	21.3±1
				15	0	1	21.12	21.3±1
			16QAM	1	0	1	20.92	21.3±1
				1	7	1	20.99	21.3±1
				1	14	1	20.94	21.3±1
				8	0	2	20.54	21.3±1
				8	4	2	20.56	21.3±1
				8	7	2	20.52	21.3±1
				15	0	2	20.32	21.3±1
	18900	1880.0	QPSK	1	0	0	22.21	22±1
				1	7	0	22.29	22±1
				1	14	0	22.24	22±1
				8	0	1	21.28	22±1
				8	4	1	21.24	22±1
				8	7	1	21.23	22±1
				15	0	1	21.22	22±1
			16QAM	1	0	1	21.18	21.3±1
				1	7	1	21.22	21.3±1
				1	14	1	21.17	21.3±1
				8	0	2	20.49	21.3±1
				8	4	2	20.47	21.3±1
				8	7	2	20.45	21.3±1
				15	0	2	20.31	21.3±1
	19175	1907.5	QPSK	1	0	0	22.39	22±1
				1	7	0	22.52	22±1
				1	14	0	22.45	22±1
				8	0	1	21.49	22±1
				8	4	1	21.48	22±1
				8	7	1	21.51	22±1
				15	0	1	21.50	22±1
			16QAM	1	0	1	21.87	21.3±1
				1	7	1	21.90	21.3±1
				1	14	1	21.82	21.3±1
				8	0	2	21.24	21.3±1
				8	4	2	21.21	21.3±1
				8	7	2	21.19	21.3±1
				15	0	2	20.63	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	18607	1850.7	QPSK	1	0	0	22.21	22±1
				1	2	0	22.31	22±1
				1	5	0	22.24	22±1
				3	0	0	22.21	22±1
				3	1	0	22.19	22±1
				3	2	0	22.20	22±1
				6	0	1	21.18	22±1
			16QAM	1	0	1	20.94	21.3±1
				1	2	1	21.01	21.3±1
				1	5	1	20.94	21.3±1
				3	0	1	20.62	21.3±1
				3	1	1	20.58	21.3±1
				3	2	1	20.49	21.3±1
				6	0	2	20.35	21.3±1
	18900	1880.0	QPSK	1	0	0	22.24	22±1
				1	2	0	22.32	22±1
				1	5	0	22.26	22±1
				3	0	0	22.35	22±1
				3	1	0	22.34	21±1
				3	2	0	22.39	22±1
				6	0	1	21.15	22±1
			16QAM	1	0	1	21.18	21.3±1
				1	2	1	21.27	21.3±1
				1	5	1	21.23	21.3±1
				3	0	1	20.74	21.3±1
				3	1	1	20.71	21.3±1
				3	2	1	20.68	21.3±1
				6	0	2	20.37	21.3±1
	19193	1909.3	QPSK	1	0	0	22.49	22±1
				1	2	0	22.61	22±1
				1	5	0	22.54	22±1
				3	0	0	22.55	22±1
				3	1	0	22.54	22±1
				3	2	0	22.56	22±1
				6	0	1	21.51	22±1
			16QAM	1	0	1	21.07	21.3±1
				1	2	1	21.18	21.3±1
				1	5	1	21.11	21.3±1
				3	0	1	20.95	21.3±1
				3	1	1	20.89	21.3±1
				3	2	1	20.81	21.3±1
				6	0	2	20.42	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	21.40	21.3±1
				1	49	0	21.28	21.3±1
				1	99	0	21.25	21.3±1
				50	0	1	20.85	21.3±1
				50	24	1	20.82	21.3±1
				50	49	1	20.83	21.3±1
				100	0	1	20.36	21.3±1
			16QAM	1	0	1	20.38	21.3±1
				1	49	1	20.39	21.3±1
				1	99	1	20.37	21.3±1
				50	0	2	20.34	21.3±1
				50	24	2	20.32	21.3±1
				50	49	2	20.31	21.3±1
				100	0	2	20.32	21.3±1
	20175	1732.5	QPSK	1	0	0	21.08	21.3±1
				1	49	0	20.97	21.3±1
				1	99	0	21.00	21.3±1
				50	0	1	20.49	21.3±1
				50	24	1	20.42	21.3±1
				50	49	1	20.38	21.3±1
				100	0	1	20.32	21.3±1
			16QAM	1	0	1	20.54	21.3±1
				1	49	1	20.49	21.3±1
				1	99	1	20.47	21.3±1
				50	0	2	20.41	21.3±1
				50	24	2	20.39	21.3±1
				50	49	2	20.38	21.3±1
				100	0	2	20.32	21.3±1
	20300	1745.0	QPSK	1	0	0	21.07	21.3±1
				1	49	0	21.02	21.3±1
				1	99	0	20.98	21.3±1
				50	0	1	20.93	21.3±1
				50	24	1	20.89	21.3±1
				50	49	1	20.87	21.3±1
				100	0	1	20.77	21.3±1
			16QAM	1	0	1	20.54	21.3±1
				1	49	1	20.49	21.3±1
				1	99	1	20.46	21.3±1
				50	0	2	20.42	21.3±1
				50	24	2	20.39	21.3±1
				50	49	2	20.37	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	21.72	21.3±1
				1	37	0	21.24	21.3±1
				1	74	0	21.08	21.3±1
				36	0	1	20.33	21.3±1
				36	16	1	20.35	21.3±1
				36	35	1	20.38	21.3±1
				75	0	1	20.31	21.3±1
			16QAM	1	0	1	20.87	21.3±1
				1	37	1	20.84	21.3±1
				1	74	1	20.84	21.3±1
				36	0	2	20.78	21.3±1
				36	16	2	20.74	21.3±1
				36	35	2	20.71	21.3±1
				75	0	2	20.41	21.3±1
	20175	1732.5	QPSK	1	0	0	21.02	21.3±1
				1	37	0	20.93	21.3±1
				1	74	0	20.98	21.3±1
				36	0	1	20.87	21.3±1
				36	16	1	20.85	21.3±1
				36	35	1	20.84	21.3±1
				75	0	1	20.67	21.3±1
			16QAM	1	0	1	20.73	21.3±1
				1	37	1	20.67	21.3±1
				1	74	1	20.63	21.3±1
				36	0	2	20.57	21.3±1
				36	16	2	20.58	21.3±1
				36	35	2	20.49	21.3±1
				75	0	2	20.33	21.3±1
	20325	1747.5	QPSK	1	0	0	21.11	21.3±1
				1	37	0	21.10	21.3±1
				1	74	0	21.06	21.3±1
				36	0	1	20.94	21.3±1
				36	16	1	20.92	21.3±1
				36	35	1	20.91	21.3±1
				75	0	1	20.55	21.3±1
			16QAM	1	0	1	20.87	21.3±1
				1	37	1	20.85	21.3±1
				1	74	1	20.81	21.3±1
				36	0	2	20.71	21.3±1
				36	16	2	20.69	21.3±1
				36	35	2	20.68	21.3±1
				75	0	2	20.46	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	21.38	21.3±1
				1	24	0	21.32	21.3±1
				1	49	0	21.21	21.3±1
				25	0	1	20.38	21.3±1
				25	12	1	20.39	21.3±1
				25	24	1	20.41	21.3±1
				50	0	1	20.31	21.3±1
			16QAM	1	0	1	20.89	21.3±1
				1	24	1	20.87	21.3±1
				1	49	1	20.84	21.3±1
				25	0	2	20.42	21.3±1
				25	12	2	20.38	21.3±1
				25	24	2	20.35	21.3±1
				50	0	2	20.31	21.3±1
	20175	1732.5	QPSK	1	0	0	21.64	21.3±1
				1	24	0	21.55	21.3±1
				1	49	0	21.57	21.3±1
				25	0	1	20.74	21.3±1
				25	12	1	20.71	21.3±1
				25	24	1	20.73	21.3±1
				50	0	1	20.72	21.3±1
			16QAM	1	0	1	21.39	21.3±1
				1	24	1	21.28	21.3±1
				1	49	1	21.22	21.3±1
				25	0	2	20.71	21.3±1
				25	12	2	20.69	21.3±1
				25	24	2	20.68	21.3±1
				50	0	2	20.64	21.3±1
	20350	1750.0	QPSK	1	0	0	21.58	21.3±1
				1	24	0	21.57	21.3±1
				1	49	0	21.49	21.3±1
				25	0	1	20.64	21.3±1
				25	12	1	20.62	21.3±1
				25	24	1	20.63	21.3±1
				50	0	1	20.65	21.3±1
			16QAM	1	0	1	21.14	21.3±1
				1	24	1	21.15	21.3±1
				1	49	1	21.09	21.3±1
				25	0	2	20.58	21.3±1
				25	12	2	20.55	21.3±1
				25	24	2	20.52	21.3±1
				50	0	2	20.43	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	21.79	21.3±1
				1	12	0	21.75	21.3±1
				1	24	0	21.69	21.3±1
				12	0	1	20.85	21.3±1
				12	6	1	20.83	21.3±1
				12	11	1	20.81	21.3±1
				25	0	1	20.80	21.3±1
			16QAM	1	0	1	21.22	21.3±1
				1	12	1	21.21	21.3±1
				1	24	1	21.15	21.3±1
				12	0	2	20.74	21.3±1
				12	6	2	20.71	21.3±1
				12	11	2	20.72	21.3±1
				25	0	2	20.69	21.3±1
	20175	1732.5	QPSK	1	0	0	21.62	21.3±1
				1	12	0	21.61	21.3±1
				1	24	0	21.58	21.3±1
				12	0	1	20.77	21.3±1
				12	6	1	20.76	21.3±1
				12	11	1	20.72	21.3±1
				25	0	1	20.69	21.3±1
			16QAM	1	0	1	20.76	21.3±1
				1	12	1	20.74	21.3±1
				1	24	1	20.69	21.3±1
				12	0	2	20.65	21.3±1
				12	6	2	20.64	21.3±1
				12	11	2	20.61	21.3±1
				25	0	2	20.38	21.3±1
	20350	1750.0	QPSK	1	0	0	21.70	21.3±1
				1	12	0	21.72	21.3±1
				1	24	0	21.55	21.3±1
				12	0	1	20.74	21.3±1
				12	6	1	20.72	21.3±1
				12	11	1	20.71	21.3±1
				25	0	1	20.64	21.3±1
			16QAM	1	0	1	20.66	21.3±1
				1	12	1	20.65	21.3±1
				1	24	1	20.59	21.3±1
				12	0	2	20.48	21.3±1
				12	6	2	20.46	21.3±1
				12	11	2	20.45	21.3±1
				25	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
3MHz	19965	1711.5	QPSK	1	0	0	21.77	21.3±1
				1	7	0	21.78	21.3±1
				1	14	0	21.71	21.3±1
				8	0	1	20.79	21.3±1
				8	4	1	20.75	21.3±1
				8	7	1	20.77	21.3±1
				15	0	1	20.78	21.3±1
			16QAM	1	0	1	20.64	21.3±1
				1	7	1	20.62	21.3±1
				1	14	1	20.59	21.3±1
				8	0	2	20.54	21.3±1
				8	4	2	20.52	21.3±1
				8	7	2	20.48	21.3±1
				15	0	2	20.37	21.3±1
	20175	1732.5	QPSK	1	0	0	21.47	21.3±1
				1	7	0	21.50	21.3±1
				1	14	0	21.46	21.3±1
				8	0	1	20.69	21.3±1
				8	4	1	20.68	21.3±1
				8	7	1	20.68	21.3±1
				15	0	1	20.69	21.3±1
			16QAM	1	0	1	21.18	21.3±1
				1	7	1	21.17	21.3±1
				1	14	1	21.11	21.3±1
				8	0	2	20.57	21.3±1
				8	4	2	20.56	21.3±1
				8	7	2	20.54	21.3±1
				15	0	2	20.49	21.3±1
	20385	1753.5	QPSK	1	0	0	21.65	21.3±1
				1	7	0	21.67	21.3±1
				1	14	0	21.61	21.3±1
				8	0	1	20.66	21.3±1
				8	4	1	20.65	21.3±1
				8	7	1	20.63	21.3±1
				15	0	1	20.63	21.3±1
			16QAM	1	0	1	20.47	21.3±1
				1	7	1	20.47	21.3±1
				1	14	1	20.43	21.3±1
				8	0	2	20.41	21.3±1
				8	4	2	20.39	21.3±1
				8	7	2	20.38	21.3±1
				15	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
1.4MHz	19957	1710.7	QPSK	1	0	0	21.77	21.3±1
				1	2	0	21.79	21.3±1
				1	5	0	21.77	21.3±1
				3	0	0	21.87	21.3±1
				3	1	0	21.88	21.3±1
				3	2	0	21.85	21.3±1
				6	0	1	20.77	21.3±1
			16QAM	1	0	1	20.64	21.3±1
				1	2	1	20.67	21.3±1
				1	5	1	20.63	21.3±1
				3	0	1	20.58	21.3±1
				3	1	1	20.56	21.3±1
				3	2	1	20.55	21.3±1
				6	0	2	20.39	21.3±1
	20175	1732.5	QPSK	1	0	0	21.55	21.3±1
				1	2	0	21.54	21.3±1
				1	5	0	21.55	21.3±1
				3	0	0	21.75	21.3±1
				3	1	0	21.74	21.3±1
				3	2	0	21.72	21.3±1
				6	0	1	20.62	21.3±1
			16QAM	1	0	1	20.84	21.3±1
				1	2	1	20.82	21.3±1
				1	5	1	20.83	21.3±1
				3	0	1	20.77	21.3±1
				3	1	1	20.76	21.3±1
				3	2	1	20.74	21.3±1
				6	0	2	20.57	21.3±1
	20393	1754.3	QPSK	1	0	0	21.54	21.3±1
				1	2	0	21.58	21.3±1
				1	5	0	21.58	21.3±1
				3	0	0	21.75	21.3±1
				3	1	0	21.74	21.3±1
				3	2	0	21.72	21.3±1
				6	0	1	20.59	21.3±1
			16QAM	1	0	1	20.59	21.3±1
				1	2	1	20.58	21.3±1
				1	5	1	20.56	21.3±1
				3	0	1	20.47	21.3±1
				3	1	1	20.45	21.3±1
				3	2	1	20.42	21.3±1
				6	0	2	20.38	21.3±1

LTE Band 12:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
10MHz	23060	704	QPSK	1	0	0	22.38	22±1
				1	24	0	22.57	22±1
				1	49	0	22.61	22±1
				25	0	1	21.54	22±1
				25	12	1	21.51	22±1
				25	24	1	21.56	22±1
				50	0	1	21.54	22±1
			16QAM	1	0	1	21.37	21.3±1
				1	24	1	21.42	21.3±1
				1	49	1	21.40	21.3±1
				25	0	2	21.44	21.3±1
				25	12	2	21.47	21.3±1
				25	24	2	21.49	21.3±1
				50	0	2	20.52	21.3±1
	23095	707.5	QPSK	1	0	0	22.62	22±1
				1	24	0	22.36	22±1
				1	49	0	22.27	22±1
				25	0	1	21.60	22±1
				25	12	1	21.55	22±1
				25	24	1	21.58	22±1
				50	0	1	21.58	22±1
			16QAM	1	0	1	21.55	21.3±1
				1	24	1	21.54	21.3±1
				1	49	1	21.52	21.3±1
				25	0	2	21.34	21.3±1
				25	12	2	21.32	21.3±1
				25	24	2	21.29	21.3±1
				50	0	2	20.56	21.3±1
	23130	711	QPSK	1	0	0	22.57	22±1
				1	24	0	22.39	22±1
				1	49	0	22.21	22±1
				25	0	1	21.56	22±1
				25	12	1	21.49	22±1
				25	24	1	21.40	22±1
				50	0	1	21.49	22±1
			16QAM	1	0	1	22.03	21.3±1
				1	24	1	21.91	21.3±1
				1	49	1	21.68	21.3±1
				25	0	2	21.45	21.3±1
				25	12	2	21.37	21.3±1
				25	24	2	21.21	21.3±1
				50	0	2	20.49	21.3±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	23035	701.5	QPSK	1	0	0	22.34	22±1
				1	12	0	22.32	22±1
				1	24	0	22.42	22±1
				12	0	1	21.52	22±1
				12	6	1	21.53	22±1
				12	11	1	21.55	22±1
				25	0	1	21.53	22±1
			16QAM	1	0	1	21.81	21.3±1
				1	12	1	21.83	21.3±1
				1	24	1	21.80	21.3±1
				12	0	2	21.67	21.3±1
				12	6	2	21.64	21.3±1
				12	11	2	21.61	21.3±1
				25	0	2	20.46	21.3±1
	23095	707.5	QPSK	1	0	0	22.58	22±1
				1	12	0	22.14	22±1
				1	24	0	22.39	22±1
				12	0	1	21.64	22±1
				12	6	1	21.60	22±1
				12	11	1	21.63	22±1
				25	0	1	21.56	22±1
			16QAM	1	0	1	21.57	21.3±1
				1	12	1	21.51	21.3±1
				1	24	1	21.53	21.3±1
				12	0	2	21.11	21.3±1
				12	6	2	21.14	21.3±1
				12	11	2	21.09	21.3±1
				25	0	2	20.52	21.3±1
	23155	713.5	QPSK	1	0	0	22.45	22±1
				1	12	0	22.36	22±1
				1	24	0	22.28	22±1
				12	0	1	21.47	22±1
				12	6	1	21.41	22±1
				12	11	1	21.37	22±1
				25	0	1	21.36	22±1
			16QAM	1	0	1	21.45	22±1
				1	12	1	21.41	22±1
				1	24	1	21.35	22±1
				12	0	2	21.37	22±1
				12	6	2	21.36	22±1
				12	11	2	21.39	22±1
				25	0	2	21.40	22±1

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	23025	700.5	QPSK	1	0	0	22.58	22±1
				1	7	0	22.55	22±1
				1	14	0	22.45	22±1
				8	0	1	21.52	22±1
				8	4	1	21.48	22±1
				8	7	1	21.49	22±1
				15	0	1	21.48	22±1
			16QAM	1	0	1	21.37	21.3±1
				1	7	1	21.35	21.3±1
				1	14	1	21.31	21.3±1
				8	0	2	21.12	21.3±1
				8	4	2	21.04	21.3±1
				8	7	2	20.92	21.3±1
				15	0	2	20.40	21.3±1
	23095	707.5	QPSK	1	0	0	22.55	22±1
				1	7	0	22.59	22±1
				1	14	0	22.57	22±1
				8	0	1	21.54	22±1
				8	4	1	21.52	22±1
				8	7	1	21.55	22±1
				15	0	1	21.51	22±1
			16QAM	1	0	1	21.49	21.3±1
				1	7	1	21.48	21.3±1
				1	14	1	21.45	21.3±1
				8	0	2	20.89	21.3±1
				8	4	2	20.67	21.3±1
				8	7	2	20.58	21.3±1
				15	0	2	20.46	21.3±1
	23165	714.5	QPSK	1	0	0	22.15	22±1
				1	7	0	22.19	22±1
				1	14	0	22.10	22±1
				8	0	1	21.34	22±1
				8	4	1	21.32	22±1
				8	7	1	21.33	22±1
				15	0	1	21.34	22±1
			16QAM	1	0	1	21.93	21.3±1
				1	7	1	21.87	21.3±1
				1	14	1	21.70	21.3±1
				8	0	2	21.65	21.3±1
				8	4	2	21.61	21.3±1
				8	7	2	21.55	21.3±1
				15	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
1.4MHz	23017	699.7	QPSK	1	0	0	22.14	22±1
				1	2	0	22.12	22±1
				1	5	0	22.05	22±1
				3	0	0	21.24	22±1
				3	1	0	21.13	22±1
				3	2	0	21.10	22±1
			16QAM	6	0	1	21.09	22±1
				1	0	1	21.23	21.3±1
				1	2	1	21.02	21.3±1
				1	5	1	20.89	21.3±1
				3	0	1	20.78	21.3±1
				3	1	1	20.71	21.3±1
				3	2	1	20.68	21.3±1
				6	0	2	20.52	21.3±1
	23095	707.5	QPSK	1	0	0	22.34	22±1
				1	2	0	22.23	22±1
				1	5	0	22.14	22±1
				3	0	0	21.39	22±1
				3	1	0	21.31	22±1
				3	2	0	21.25	22±1
			16QAM	6	0	1	21.17	22±1
				1	0	1	21.19	21.3±1
				1	2	1	21.14	21.3±1
				1	5	1	20.84	21.3±1
				3	0	1	20.77	21.3±1
				3	1	1	20.67	21.3±1
				3	2	1	20.68	21.3±1
				6	0	1	20.51	21.3±1
	23173	715.3	QPSK	1	0	1	22.21	22±1
				1	2	2	22.16	22±1
				1	5	0	22.09	22±1
				3	0	0	21.53	22±1
				3	1	0	21.38	22±1
				3	2	0	21.32	22±1
			16QAM	6	0	1	21.12	22±1
				1	0	1	21.74	21.3±1
				1	2	1	21.68	21.3±1
				1	5	1	21.65	21.3±1
				3	0	1	21.18	21.3±1
				3	1	1	21.12	21.3±1
				3	2	1	20.88	21.3±1
				6	0	2	20.57	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	9.75	V	7.88	0.85	16.78	33.01
1880	1.4	QPSK	1/0	9.63	V	7.88	0.85	16.66	33.01
1909.3	1.4	QPSK	1/0	9.81	V	7.88	0.85	16.84	33.01
1850.7	1.4	QPSK	1/0	9.67	H	7.88	0.85	16.70	33.01
1880	1.4	QPSK	1/0	9.52	H	7.88	0.85	16.55	33.01
1909.3	1.4	QPSK	1/0	9.76	H	7.88	0.85	16.79	33.01
1850.7	1.4	16-QAM	1/0	10.13	V	7.88	0.85	17.16	33.01
1880	1.4	16-QAM	1/0	10.05	V	7.88	0.85	17.08	33.01
1909.3	1.4	16-QAM	1/0	10.11	V	7.88	0.85	17.14	33.01
1850.7	1.4	16-QAM	1/0	9.64	H	7.88	0.85	16.67	33.01
1880	1.4	16-QAM	1/0	9.58	H	7.88	0.85	16.61	33.01
1909.3	1.4	16-QAM	1/0	9.62	H	7.88	0.85	16.65	33.01
1851.5	3	QPSK	1/0	9.65	V	7.88	0.85	16.68	33.01
1880	3	QPSK	1/0	9.51	V	7.88	0.85	16.54	33.01
1908.5	3	QPSK	1/0	9.59	V	7.88	0.85	16.62	33.01
1851.5	3	QPSK	1/0	9.84	H	7.88	0.85	16.87	33.01
1880	3	QPSK	1/0	9.97	H	7.88	0.85	17.00	33.01
1908.5	3	QPSK	1/0	9.82	H	7.88	0.85	16.85	33.01
1851.5	3	16-QAM	1/0	9.83	V	7.88	0.85	16.86	33.01
1880	3	16-QAM	1/0	9.77	V	7.88	0.85	16.80	33.01
1908.5	3	16-QAM	1/0	9.59	V	7.88	0.85	16.62	33.01
1851.5	3	16-QAM	1/0	9.49	H	7.88	0.85	16.52	33.01
1880	3	16-QAM	1/0	9.62	H	7.88	0.85	16.65	33.01
1908.5	3	16-QAM	1/0	9.58	H	7.88	0.85	16.61	33.01
1852.5	5	QPSK	1/24	9.87	V	7.88	0.85	16.90	33.01
1880	5	QPSK	1/0	9.91	V	7.88	0.85	16.94	33.01
1907.5	5	QPSK	1/24	9.83	V	7.88	0.85	16.86	33.01
1852.5	5	QPSK	1/24	9.55	H	7.88	0.85	16.58	33.01
1880	5	QPSK	1/0	9.62	H	7.88	0.85	16.65	33.01
1907.5	5	QPSK	1/24	9.58	H	7.88	0.85	16.61	33.01
1852.5	5	16-QAM	1/24	9.62	V	7.88	0.85	16.65	33.01

1880	5	16-QAM	1/0	9.71	V	7.88	0.85	16.74	33.01
1907.5	5	16-QAM	1/24	9.68	V	7.88	0.85	16.71	33.01
1852.5	5	16-QAM	1/24	9.83	H	7.88	0.85	16.86	33.01
1880	5	16-QAM	1/0	9.76	H	7.88	0.85	16.79	33.01
1907.5	5	16-QAM	1/24	9.71	H	7.88	0.85	16.74	33.01
1855	10	QPSK	1/0	9.86	V	7.88	0.85	16.89	33.01
1880	10	QPSK	1/0	9.92	V	7.88	0.85	16.95	33.01
1905	10	QPSK	1/49	9.97	V	7.88	0.85	17.00	33.01
1855	10	QPSK	1/0	9.53	H	7.88	0.85	16.56	33.01
1880	10	QPSK	1/0	9.64	H	7.88	0.85	16.67	33.01
1905	10	QPSK	1/49	9.68	H	7.88	0.85	16.71	33.01
1855	10	16-QAM	1/0	9.75	V	7.88	0.85	16.78	33.01
1880	10	16-QAM	1/0	9.84	V	7.88	0.85	16.87	33.01
1905	10	16-QAM	1/49	9.79	V	7.88	0.85	16.82	33.01
1855	10	16-QAM	1/0	10.13	H	7.88	0.85	17.16	33.01
1880	10	16-QAM	1/0	9.97	H	7.88	0.85	17.00	33.01
1905	10	16-QAM	1/49	10.05	H	7.88	0.85	17.08	33.01
1857.5	15	QPSK	1/0	9.84	V	7.88	0.85	16.87	33.01
1880	15	QPSK	1/0	9.77	V	7.88	0.85	16.80	33.01
1902.5	15	QPSK	1/0	9.81	V	7.88	0.85	16.84	33.01
1857.5	15	QPSK	1/0	9.68	H	7.88	0.85	16.71	33.01
1880	15	QPSK	1/0	9.75	H	7.88	0.85	16.78	33.01
1902.5	15	QPSK	1/0	9.65	H	7.88	0.85	16.68	33.01
1857.5	15	16-QAM	1/0	9.83	V	7.88	0.85	16.86	33.01
1880	15	16-QAM	1/0	9.77	V	7.88	0.85	16.80	33.01
1902.5	15	16-QAM	1/0	9.86	V	7.88	0.85	16.89	33.01
1857.5	15	16-QAM	1/0	9.61	H	7.88	0.85	16.64	33.01
1880	15	16-QAM	1/0	9.58	H	7.88	0.85	16.61	33.01
1902.5	15	16-QAM	1/0	9.67	H	7.88	0.85	16.70	33.01
1860	20	QPSK	1/0	9.95	V	7.88	0.85	16.98	33.01
1880	20	QPSK	1/0	9.98	V	7.88	0.85	17.01	33.01
1900	20	QPSK	1/0	10.03	V	7.88	0.85	17.06	33.01
1860	20	QPSK	1/0	9.86	H	7.88	0.85	16.89	33.01
1880	20	QPSK	1/0	9.79	H	7.88	0.85	16.82	33.01
1900	20	QPSK	1/0	9.82	H	7.88	0.85	16.85	33.01
1860	20	16-QAM	1/0	9.87	V	7.88	0.85	16.90	33.01
1880	20	16-QAM	1/0	9.93	V	7.88	0.85	16.96	33.01
1900	20	16-QAM	1/0	9.85	V	7.88	0.85	16.88	33.01

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1860	20	16-QAM	1/0	9.63	H	7.88	0.85	16.66	33.01
1880	20	16-QAM	1/0	9.71	H	7.88	0.85	16.74	33.01
1900	20	16-QAM	1/0	9.68	H	7.88	0.85	16.71	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	9.63	V	7.95	0.79	16.79	30
1732.5	1.4	QPSK	1/0	9.57	V	7.95	0.79	16.73	30
1754.3	1.4	QPSK	1/0	9.64	V	7.95	0.79	16.80	30
1710.7	1.4	QPSK	1/0	9.43	H	7.95	0.79	16.59	30
1732.5	1.4	QPSK	1/0	9.39	H	7.95	0.79	16.55	30
1754.3	1.4	QPSK	1/0	9.45	H	7.95	0.79	16.61	30
1710.7	1.4	16-QAM	1/5	9.74	V	7.95	0.79	16.90	30
1732.5	1.4	16-QAM	1/0	9.69	V	7.95	0.79	16.85	30
1754.3	1.4	16-QAM	1/0	9.71	V	7.95	0.79	16.87	30
1710.7	1.4	16-QAM	1/5	9.55	H	7.95	0.79	16.71	30
1732.5	1.4	16-QAM	1/0	9.46	H	7.95	0.79	16.62	30
1754.3	1.4	16-QAM	1/0	9.49	H	7.95	0.79	16.65	30
1711.5	3	QPSK	1/0	9.66	V	7.95	0.79	16.82	30
1732.5	3	QPSK	1/0	9.58	V	7.95	0.79	16.74	30
1753.5	3	QPSK	1/0	9.62	V	7.95	0.79	16.78	30
1711.5	3	QPSK	1/0	9.25	H	7.95	0.79	16.41	30
1732.5	3	QPSK	1/0	9.34	H	7.95	0.79	16.50	30
1753.5	3	QPSK	1/0	9.27	H	7.95	0.79	16.43	30
1711.5	3	16-QAM	1/0	9.62	V	7.95	0.79	16.78	30
1732.5	3	16-QAM	1/0	9.59	V	7.95	0.79	16.75	30
1753.5	3	16-QAM	1/0	9.64	V	7.95	0.79	16.80	30
1711.5	3	16-QAM	1/0	9.34	H	7.95	0.79	16.50	30
1732.5	3	16-QAM	1/0	9.26	H	7.95	0.79	16.42	30
1753.5	3	16-QAM	1/0	9.28	H	7.95	0.79	16.44	30
1712.5	5	QPSK	1/0	9.45	V	7.95	0.79	16.61	30
1732.5	5	QPSK	1/0	9.39	V	7.95	0.79	16.55	30
1752.5	5	QPSK	1/24	9.41	V	7.95	0.79	16.57	30
1712.5	5	QPSK	1/0	9.51	H	7.95	0.79	16.67	30
1732.5	5	QPSK	1/0	9.46	H	7.95	0.79	16.62	30
1752.5	5	QPSK	1/24	9.55	H	7.95	0.79	16.71	30
1712.5	5	16-QAM	1/0	9.73	V	7.95	0.79	16.89	30
1732.5	5	16-QAM	1/0	9.67	V	7.95	0.79	16.83	30
1752.5	5	16-QAM	1/24	9.52	V	7.95	0.79	16.68	30

1712.5	5	16-QAM	1/0	9.35	H	7.95	0.79	16.51	30
1732.5	5	16-QAM	1/0	9.27	H	7.95	0.79	16.43	30
1752.5	5	16-QAM	1/24	9.34	H	7.95	0.79	16.50	30
1715	10	QPSK	1/0	9.58	V	7.95	0.79	16.74	30
1732.5	10	QPSK	1/49	9.62	V	7.95	0.79	16.78	30
1750	10	QPSK	1/0	9.53	V	7.95	0.79	16.69	30
1715	10	QPSK	1/0	9.27	H	7.95	0.79	16.43	30
1732.5	10	QPSK	1/49	9.33	H	7.95	0.79	16.49	30
1750	10	QPSK	1/0	9.26	H	7.95	0.79	16.42	30
1715	10	16-QAM	1/0	9.68	V	7.95	0.79	16.84	30
1732.5	10	16-QAM	1/49	9.75	V	7.95	0.79	16.91	30
1750	10	16-QAM	1/0	9.67	V	7.95	0.79	16.83	30
1715	10	16-QAM	1/0	9.58	H	7.95	0.79	16.74	30
1732.5	10	16-QAM	1/49	9.63	H	7.95	0.79	16.79	30
1750	10	16-QAM	1/0	9.56	H	7.95	0.79	16.72	30
1717.5	15	QPSK	1/0	9.66	V	7.95	0.79	16.82	30
1732.5	15	QPSK	1/74	9.74	V	7.95	0.79	16.90	30
1747.5	15	QPSK	1/0	9.68	V	7.95	0.79	16.84	30
1717.5	15	QPSK	1/0	9.49	H	7.95	0.79	16.65	30
1732.5	15	QPSK	1/74	9.52	H	7.95	0.79	16.68	30
1747.5	15	QPSK	1/0	9.56	H	7.95	0.79	16.72	30
1717.5	15	16-QAM	1/0	9.77	V	7.95	0.79	16.93	30
1732.5	15	16-QAM	1/74	9.73	V	7.95	0.79	16.89	30
1747.5	15	16-QAM	1/0	9.68	V	7.95	0.79	16.84	30
1717.5	15	16-QAM	1/0	9.25	H	7.95	0.79	16.41	30
1732.5	15	16-QAM	1/74	9.34	H	7.95	0.79	16.50	30
1747.5	15	16-QAM	1/0	9.29	H	7.95	0.79	16.45	30
1720	20	QPSK	1/99	9.82	V	7.95	0.79	16.98	30
1732.5	20	QPSK	1/99	9.76	V	7.95	0.79	16.92	30
1745	20	QPSK	1/0	9.79	V	7.95	0.79	16.95	30
1720	20	QPSK	1/99	9.15	H	7.95	0.79	16.31	30
1732.5	20	QPSK	1/99	9.24	H	7.95	0.79	16.40	30
1745	20	QPSK	1/0	9.18	H	7.95	0.79	16.34	30
1720	20	16-QAM	1/99	9.93	V	7.95	0.79	17.09	30
1732.5	20	16-QAM	1/99	9.86	V	7.95	0.79	17.02	30
1745	20	16-QAM	1/0	9.91	V	7.95	0.79	17.07	30
1720	20	16-QAM	1/99	9.28	H	7.95	0.79	16.44	30
1732.5	20	16-QAM	1/99	9.34	H	7.95	0.79	16.50	30

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1745	20	16-QAM	1/0	9.27	H	7.95	0.79	16.43	30
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ERP for LTE Band 12 (Part 27)

Frequency (MHz)	BW (MHz)	Modulation	RB Size/Offset	Substituted level (dBm)	Antenna Polarization	Antenna Gain correction (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)
699.7	1.4	QPSK	1/5	10.23	V	6.9	0.42	16.71	34.77
707.5	1.4	QPSK	1/5	10.17	V	6.8	0.42	16.55	34.77
715.3	1.4	QPSK	1/5	10.25	V	6.8	0.42	16.63	34.77
699.7	1.4	QPSK	1/5	9.76	H	6.9	0.42	16.24	34.77
707.5	1.4	QPSK	1/5	9.82	H	6.8	0.42	16.20	34.77
715.3	1.4	QPSK	1/5	9.79	H	6.8	0.42	16.17	34.77
699.7	1.4	16-QAM	1/5	10.29	V	6.9	0.42	16.77	34.77
707.5	1.4	16-QAM	1/5	10.23	V	6.8	0.42	16.61	34.77
715.3	1.4	16-QAM	1/5	10.21	V	6.8	0.42	16.59	34.77
699.7	1.4	16-QAM	1/5	9.82	H	6.9	0.42	16.48	34.77
707.5	1.4	16-QAM	1/5	9.79	H	6.8	0.42	16.17	34.77
715.3	1.4	16-QAM	1/5	9.85	H	6.8	0.42	16.23	34.77
700.5	3	QPSK	1/14	10.13	V	6.9	0.42	16.61	34.77
707.5	3	QPSK	1/0	10.09	V	6.8	0.42	16.47	34.77
714.5	3	QPSK	1/14	10.14	V	6.8	0.42	16.52	34.77
700.5	3	QPSK	1/14	9.73	H	6.9	0.42	16.21	34.77
707.5	3	QPSK	1/0	9.79	H	6.8	0.42	16.17	34.77
714.5	3	QPSK	1/14	9.81	H	6.8	0.42	16.19	34.77
700.5	3	16-QAM	1/14	9.96	V	6.9	0.42	16.44	34.77
707.5	3	16-QAM	1/0	9.92	V	6.8	0.42	16.30	34.77
714.5	3	16-QAM	1/14	10.03	V	6.8	0.42	16.41	34.77
700.5	3	16-QAM	1/14	9.73	H	6.9	0.42	16.21	34.77
707.5	3	16-QAM	1/0	9.68	H	6.8	0.42	16.06	34.77
714.5	3	16-QAM	1/14	9.71	H	6.8	0.42	16.09	34.77
701.5	5	QPSK	1/24	9.86	V	6.9	0.42	16.34	34.77
707.5	5	QPSK	1/24	9.92	V	6.8	0.42	16.30	34.77
713.5	5	QPSK	1/24	9.95	V	6.8	0.42	16.33	34.77
701.5	5	QPSK	1/24	9.63	H	6.9	0.42	16.11	34.77
707.5	5	QPSK	1/24	9.56	H	6.8	0.42	15.94	34.77
713.5	5	QPSK	1/24	9.67	H	6.8	0.42	16.05	34.77
701.5	5	16-QAM	1/24	9.92	V	6.9	0.42	16.40	34.77
707.5	5	16-QAM	1/24	9.87	V	6.8	0.42	16.25	34.77

713.5	5	16-QAM	1/24	9.95	V	6.8	0.42	16.33	34.77
701.5	5	16-QAM	1/24	9.51	H	6.9	0.42	15.99	34.77
707.5	5	16-QAM	1/24	9.53	H	6.8	0.42	15.91	34.77
713.5	5	16-QAM	1/24	9.58	H	6.8	0.42	15.96	34.77
704	10	QPSK	1/49	9.85	V	6.8	0.42	16.23	34.77
707.5	10	QPSK	1/49	9.92	V	6.8	0.42	16.30	34.77
711	10	QPSK	1/49	9.88	V	6.8	0.42	16.26	34.77
704	10	QPSK	1/49	9.49	H	6.8	0.42	15.87	34.77
707.5	10	QPSK	1/49	9.51	H	6.8	0.42	15.89	34.77
711	10	QPSK	1/49	9.46	H	6.8	0.42	15.84	34.77
704	10	16-QAM	1/49	9.76	V	6.8	0.42	16.14	34.77
707.5	10	16-QAM	1/49	9.68	V	6.8	0.42	16.06	34.77
711	10	16-QAM	1/49	9.72	V	6.8	0.42	16.10	34.77
704	10	16-QAM	1/49	9.56	H	6.8	0.42	15.94	34.77
707.5	10	16-QAM	1/49	9.48	H	6.8	0.42	15.86	34.77
711	10	16-QAM	1/49	9.59	H	6.8	0.42	15.97	34.77

6.3 Peak-Average Ratio

Temperature	22°C
Relative Humidity	54%
Atmospheric Pressure	1021mbar
Test date :	August 21, 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	Base Station Spectrum Analyzer EUT		
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	25.38	22.16	3.22
			16QAM	24.20	21.47	2.73
15	1880	RB 1/0	QPSK	25.27	22.38	2.89
			16QAM	23.82	21.18	2.64
10	1880	RB 1/0	QPSK	25.18	22.13	3.05
			16QAM	24.87	21.80	3.07
5	1880	RB 1/0	QPSK	25.16	22.18	2.98
			16QAM	24.06	21.27	2.79
3	1880	RB 1/0	QPSK	24.73	22.21	2.52
			16QAM	23.63	21.18	2.45
1.4	1880	RB 1/0	QPSK	25.25	22.24	3.01
			16QAM	24.41	21.18	3.23

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	23.61	21.08	2.53
			16QAM	22.99	20.54	2.45
15	1732.5	RB 1/0	QPSK	23.65	21.02	2.63
			16QAM	23.39	20.73	2.66
10	1732.5	RB 1/0	QPSK	24.22	21.64	2.58
			16QAM	24.14	21.39	2.75
5	1732.5	RB 1/0	QPSK	24.30	21.62	2.68
			16QAM	23.45	20.76	2.69
3	1732.5	RB 1/0	QPSK	24.52	21.47	3.05
			16QAM	24.28	21.18	3.10
1.4	1732.5	RB 1/0	QPSK	24.67	21.55	3.12
			16QAM	23.91	20.84	3.07

LTE Band 12 (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
10	707.5	RB 1/0	QPSK	25.85	22.62	3.23
			16QAM	24.80	21.55	3.25
5	707.5	RB 1/0	QPSK	25.74	22.58	3.16
			16QAM	24.66	21.57	3.09
3	707.5	RB 1/0	QPSK	25.14	22.55	2.59
			16QAM	24.15	21.49	2.66
1.4	707.5	RB 1/0	QPSK	24.87	22.34	2.53
			16QAM	23.84	21.19	2.65

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	23°C
Relative Humidity	55%
Atmospheric Pressure	1022mbar
Test date :	August 22, 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	Base Station Spectrum Analyzer EUT		
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	16QAM	1.1208	1.496
			QPSK	1.1214	1.390
1.4	18900	1880	16QAM	1.1048	1.287
			QPSK	1.1122	1.340
1.4	19193	1909.3	16QAM	1.1121	1.314
			QPSK	1.1182	1.326
3	18615	1851.5	16QAM	2.7963	3.113
			QPSK	2.7915	3.079
3	18900	1880	16QAM	2.7571	3.045
			QPSK	2.7684	3.075
3	19185	1908.5	16QAM	2.7578	3.066
			QPSK	2.7738	3.073
5	18625	1852.5	16QAM	4.5507	5.164
			QPSK	4.5652	5.152
5	18900	1880	16QAM	4.5599	5.099
			QPSK	4.5434	5.076
5	19175	1907.5	16QAM	4.5569	5.104
			QPSK	4.5297	5.082
10	18650	1855	16QAM	9.1647	10.21
			QPSK	9.2103	20.27
10	18900	1880	16QAM	9.1366	10.27
			QPSK	9.1597	10.26
10	19150	1905	16QAM	9.1366	10.18
			QPSK	9.1366	10.27
15	18675	1857.5	16QAM	13.573	10.01
			QPSK	13.645	15.18
15	18900	1880	16QAM	13.569	15.00
			QPSK	13.553	14.99
15	19125	1902.5	16QAM	13.564	14.93
			QPSK	13.586	14.98

20	18700	1860	16QAM	17.997	19.53
			QPSK	18.003	19.44
20	18900	1880	16QAM	18.011	19.58
			QPSK	17.971	19.56
20	19100	1900	16QAM	17.934	19.57
			QPSK	17.986	19.67

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	16QAM	1.1214	1.352
			QPSK	1.1196	1.377
1.4	20175	1732.5	16QAM	1.1183	1.372
			QPSK	1.1336	1.406
1.4	20393	1754.3	16QAM	1.1227	1.379
			QPSK	1.1240	1.370
3	19965	1711.5	16QAM	2.8063	4.951
			QPSK	2.8247	5.746
3	20175	1732.5	16QAM	2.8705	5.427
			QPSK	2.9187	5.256
3	20385	1753.5	16QAM	2.8167	4.368
			QPSK	2.8214	5.177
5	19975	1712.5	16QAM	4.5923	6.220
			QPSK	4.5915	6.776
5	20175	1732.5	16QAM	4.5983	7.468
			QPSK	4.6588	7.367
5	20375	1752.5	16QAM	4.6036	6.317
			QPSK	4.5941	6.980
10	20000	1715	16QAM	9.2056	10.41
			QPSK	9.2227	10.62
10	20175	1732.5	16QAM	9.2408	10.40
			QPSK	9.2621	10.50
10	20350	1750	16QAM	9.2449	11.89
			QPSK	9.2910	12.93
15	20025	1717.5	16QAM	13.638	15.13
			QPSK	13.626	15.17
15	20175	1732.5	16QAM	13.647	15.17
			QPSK	13.693	15.26
15	20325	1747.5	16QAM	13.626	15.16
			QPSK	13.638	15.14
20	20050	1720	16QAM	18.051	19.81

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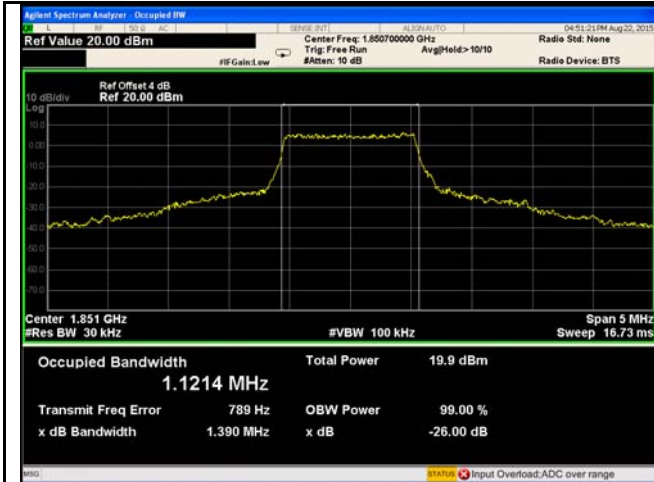
			QPSK	18.074	19.73
20	20175	1732.5	16QAM	18.028	19.84
			QPSK	18.055	19.86
20	20300	1745	16QAM	18.030	19.67
			QPSK	18.020	19.63

LTE Band 12 (Part 27) result

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	23017	699.7	16QAM	1.2762	2.394
			QPSK	1.3835	2.637
1.4	23095	707.5	16QAM	1.2760	2.497
			QPSK	1.2319	2.567
1.4	23173	715.3	16QAM	1.4817	2.737
			QPSK	1.5917	2.683
3	23025	700.5	16QAM	3.2362	6.259
			QPSK	3.4486	6.739
3	23095	707.5	16QAM	3.3163	6.324
			QPSK	3.3154	6.478
3	23165	714.5	16QAM	4.0646	6.034
			QPSK	4.1606	6.560
5	23035	701.5	16QAM	4.6726	7.557
			QPSK	4.8501	7.557
5	23095	707.5	16QAM	4.6665	7.282
			QPSK	4.7122	8.691
5	23155	713.5	16QAM	5.1082	7.583
			QPSK	5.3466	7.559
10	23060	704	16QAM	9.2845	15.87
			QPSK	9.3724	16.74
10	23095	707.5	16QAM	9.3577	13.72
			QPSK	9.4509	14.95
10	23130	711	16QAM	9.2579	10.47
			QPSK	9.2356	10.54

Test Plots

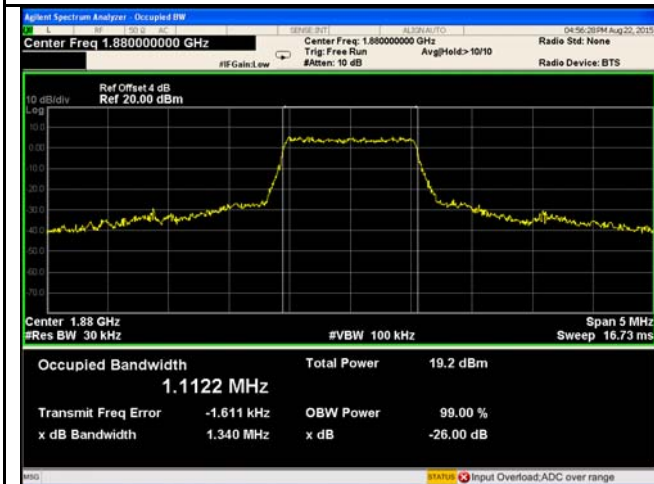
LTE Band 2 (Part 24E)



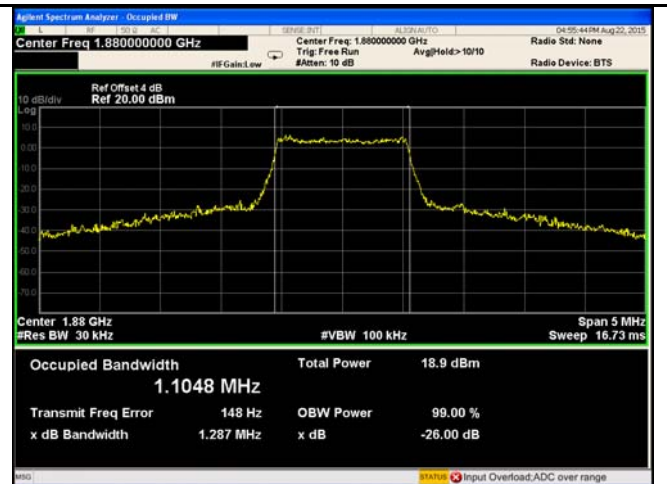
LTE band 2 - Low CH QPSK-1.4



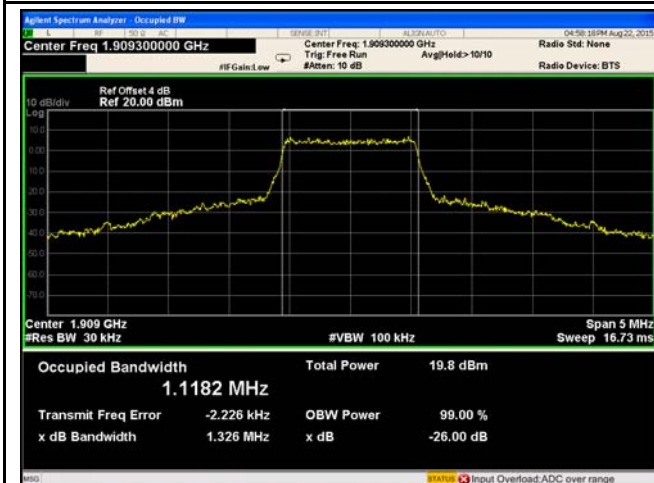
LTE band 2 - Low CH 16QAM-1.4



LTE band 2 - Middle CH QPSK-1.4



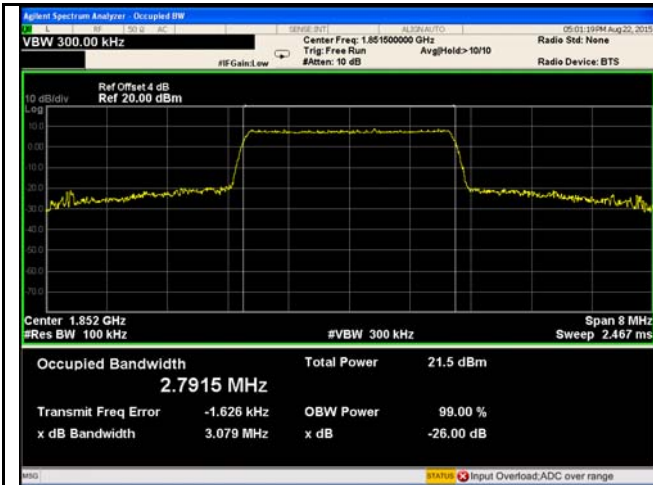
LTE band 2 - Middle CH 16QAM-1.4



LTE band 2 - High CH QPSK-1.4



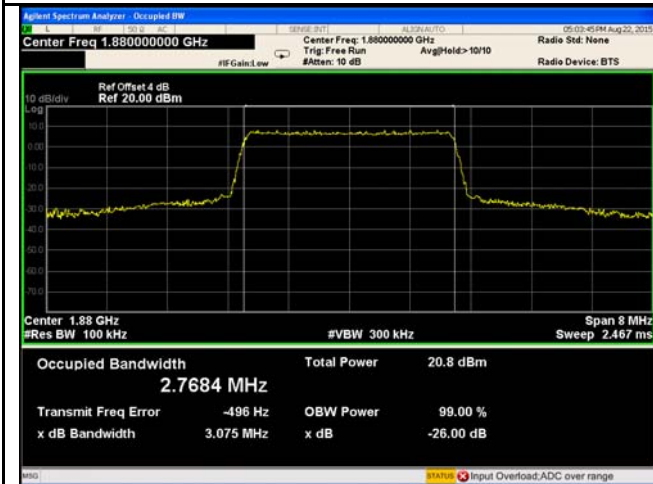
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LTE band 2 - Low CH QPSK-3



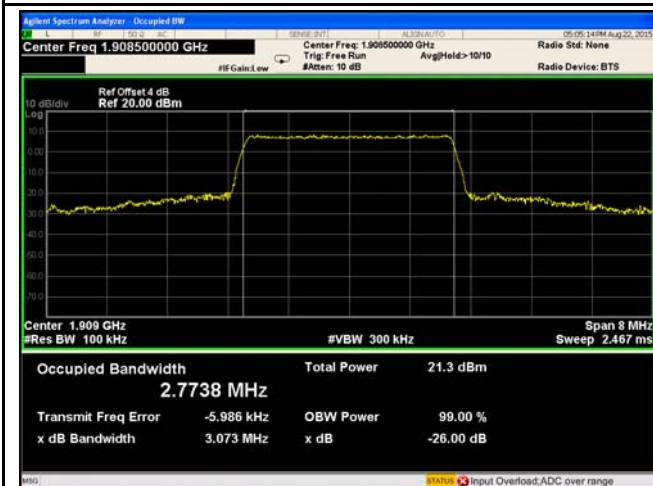
LTE band 2 - Low CH 16QAM-3



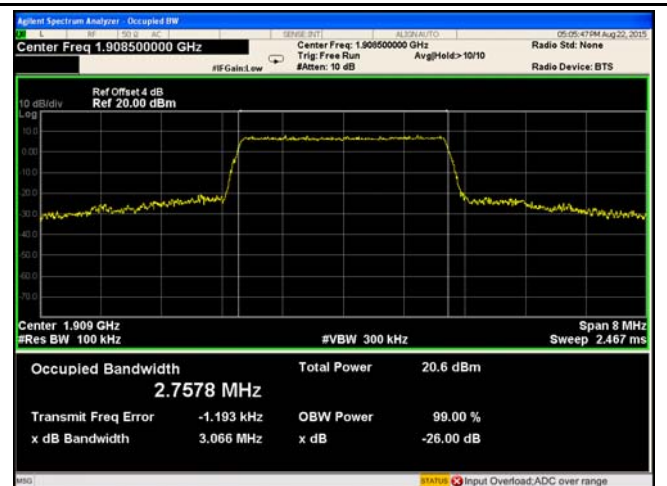
LTE band 2 - Middle CH QPSK-3



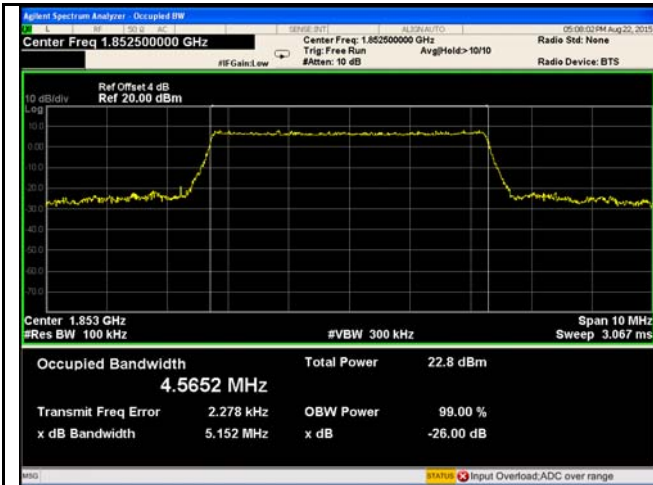
LTE band 2 - Middle CH 16QAM-3



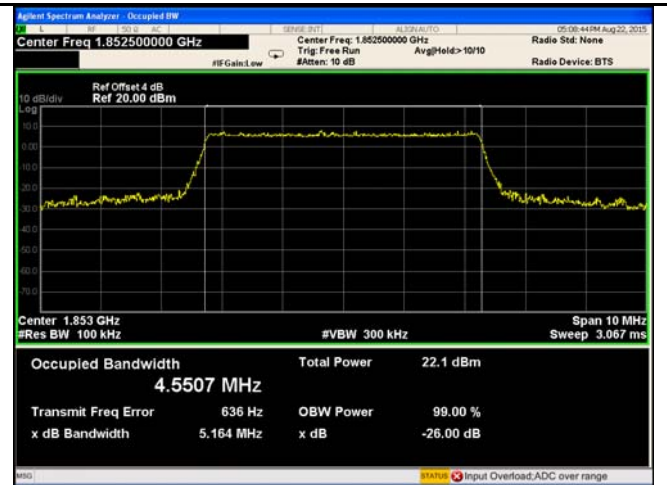
LTE band 2 - High CH QPSK-3



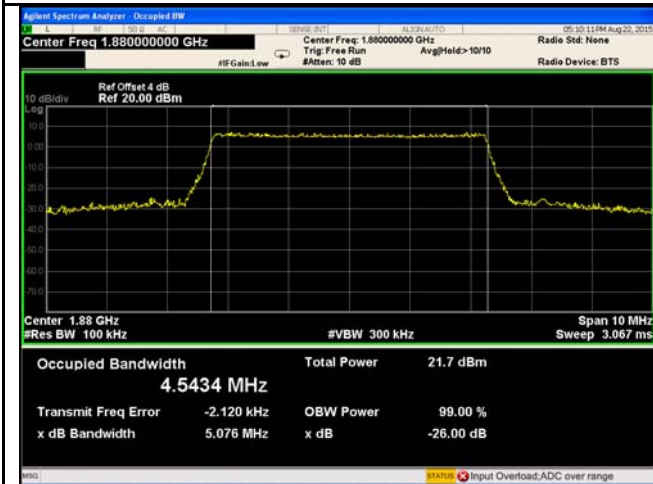
LTE band 2 - High CH 16QAM-3



LTE band 2 - Low CH QPSK-5



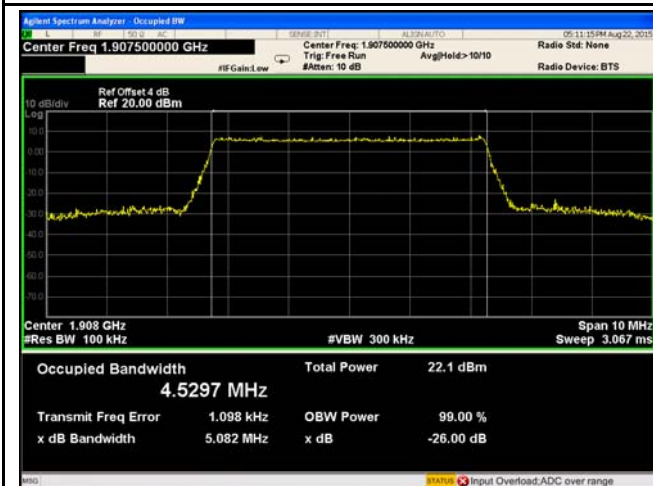
LTE band 2 - Low CH 16QAM-5



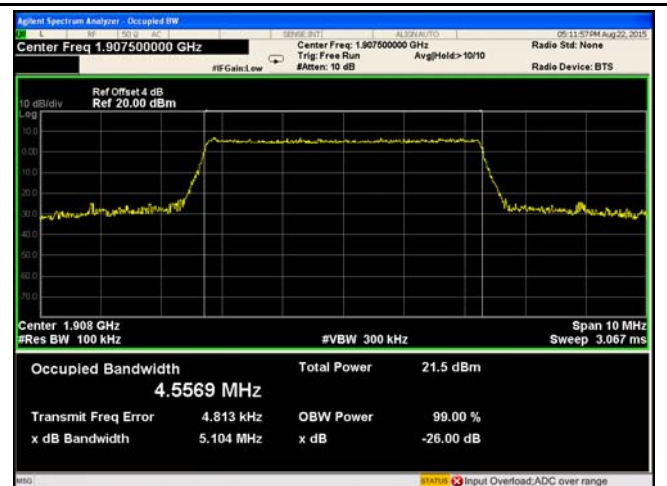
LTE band 2 - Middle CH QPSK-5



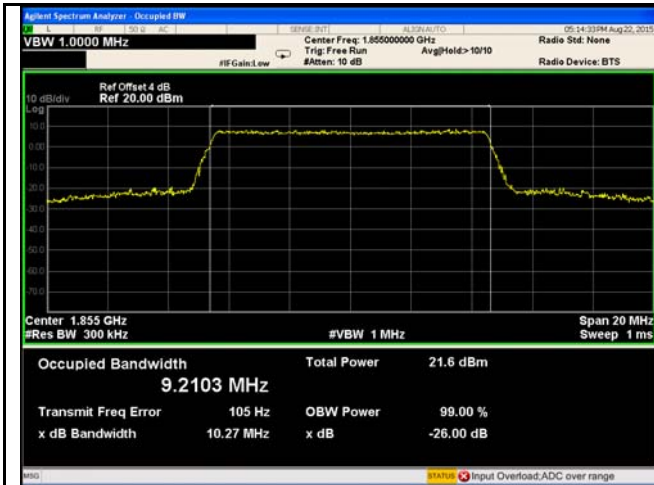
LTE band 2 - Middle CH 16QAM-5



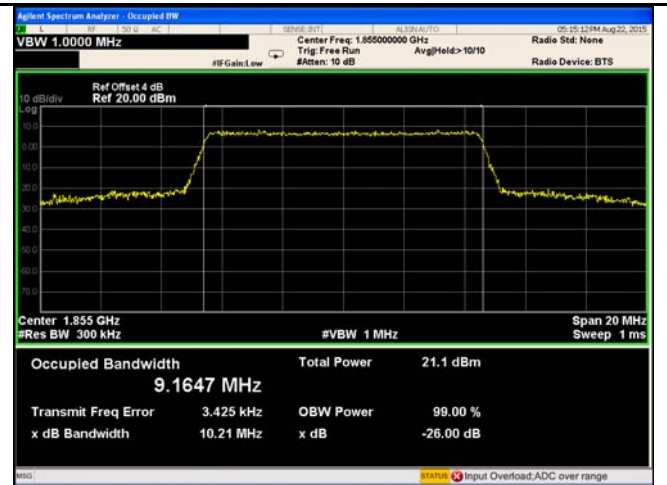
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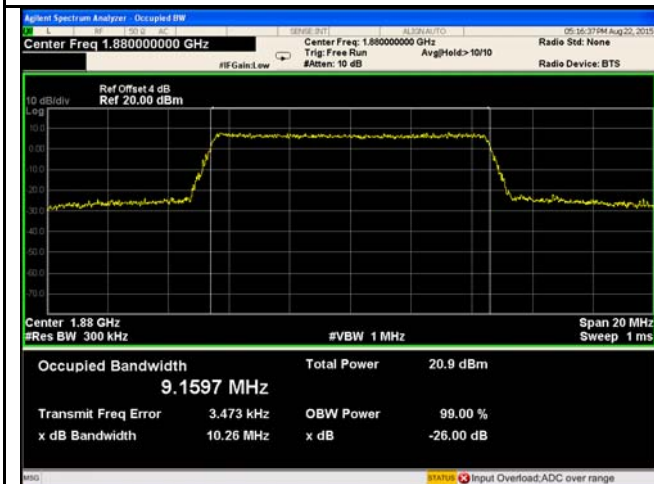
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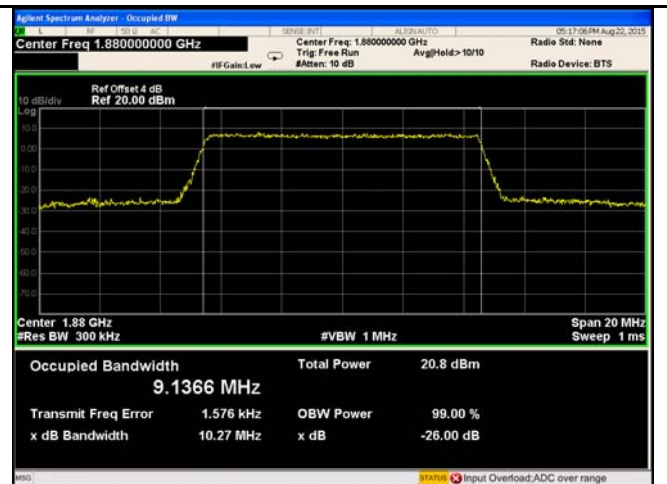
LTE band 2 - Low CH QPSK-10



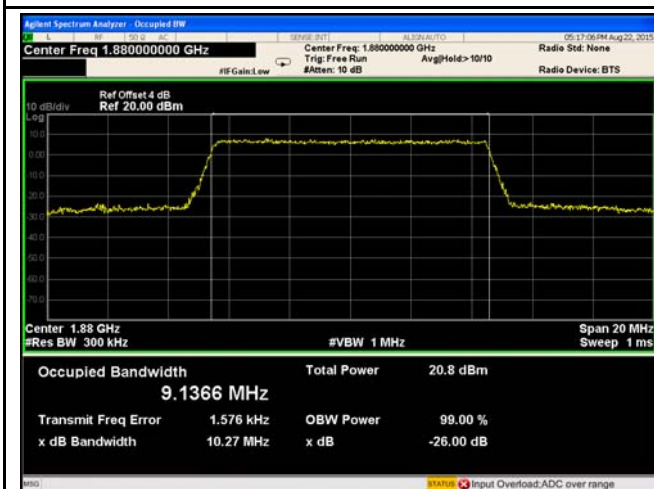
LTE band 2 - Low CH 16QAM-10



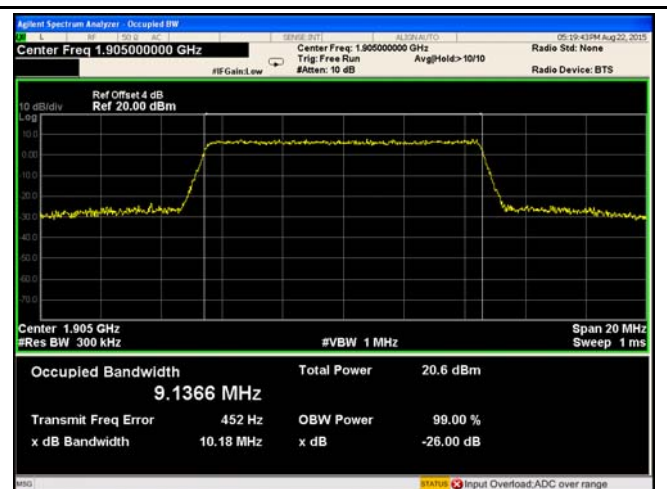
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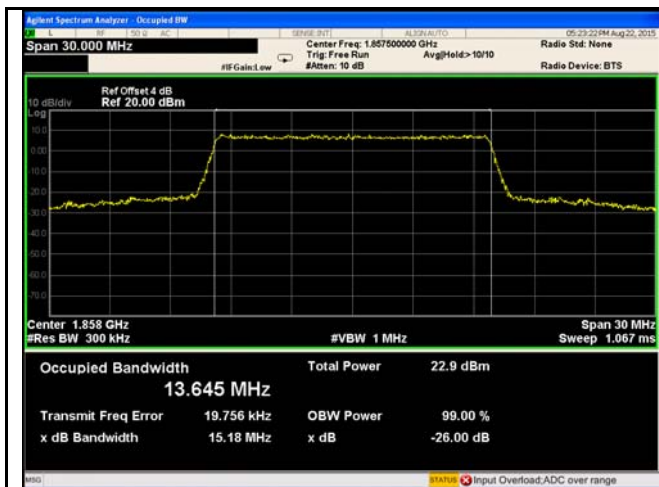
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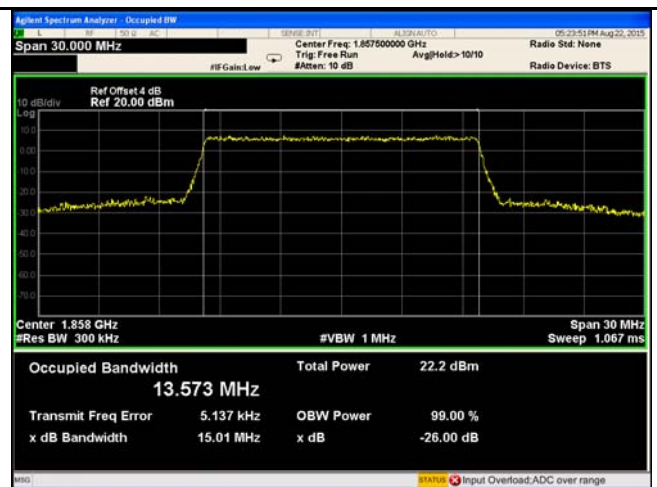
LTE band 2 - High CH QPSK-10



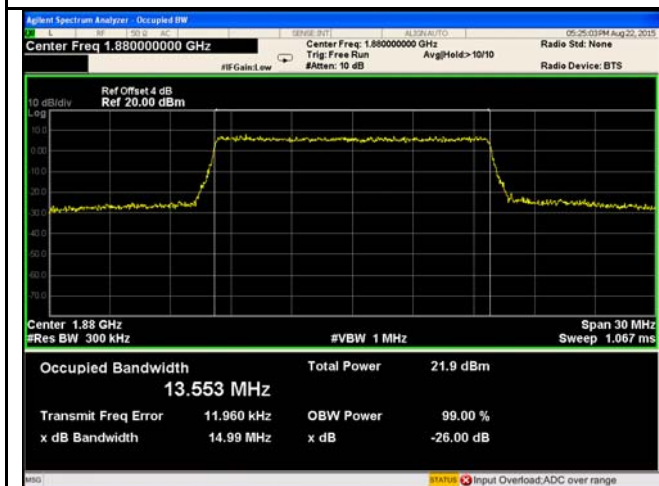
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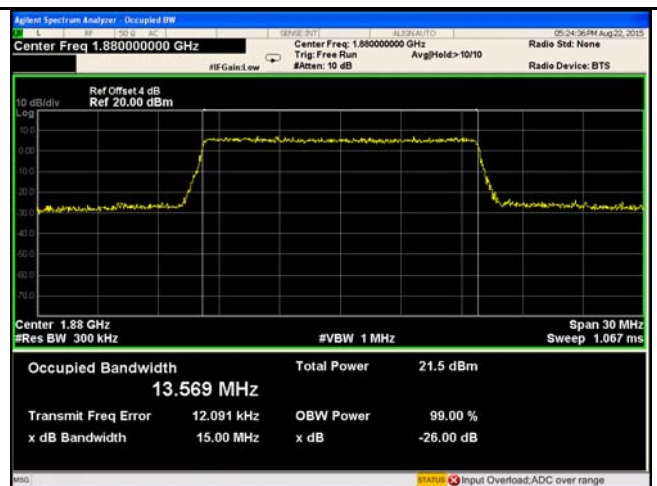
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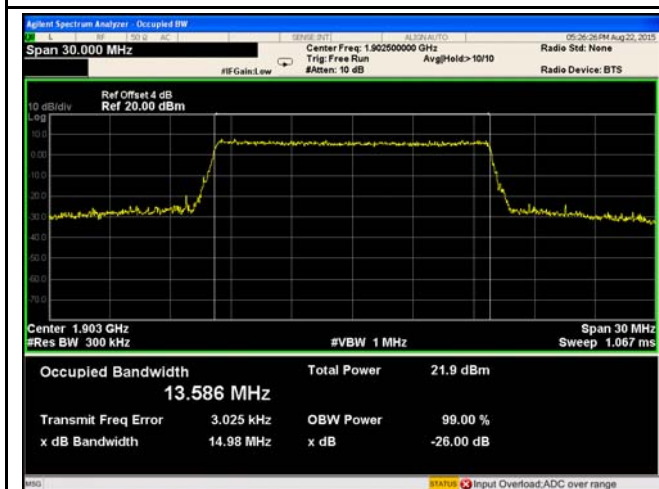
LTE band 2 - Low CH 16QAM-15



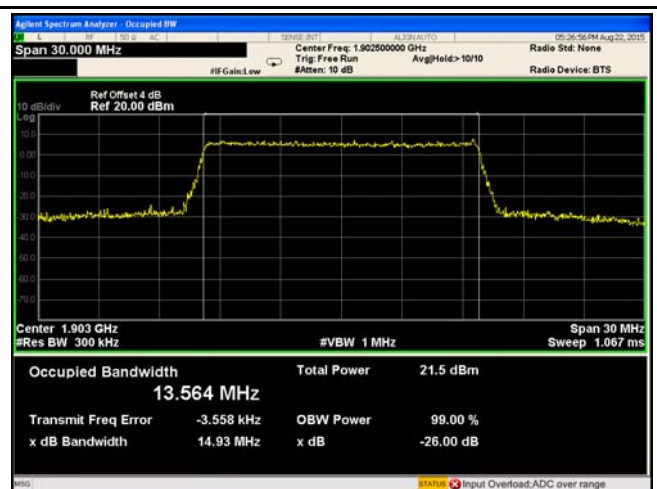
LTE band 2 - Middle CH QPSK-15



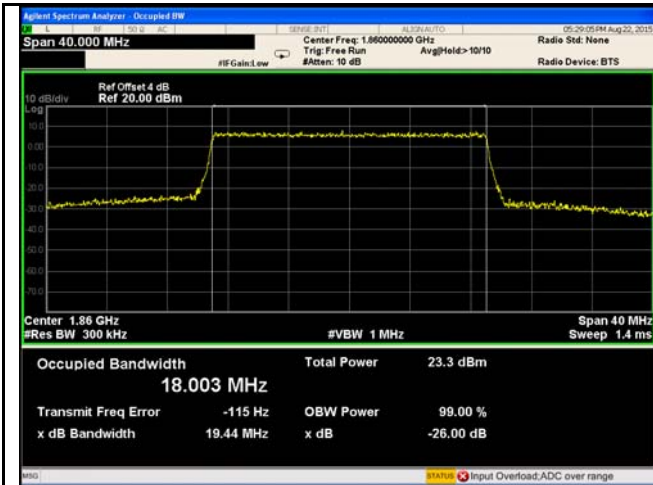
LTE band 2 - Middle CH 16QAM-15



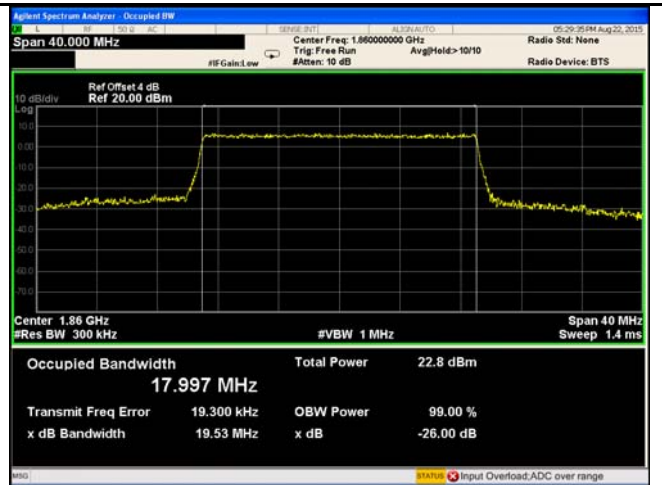
LTE band 2 - High CH QPSK-15



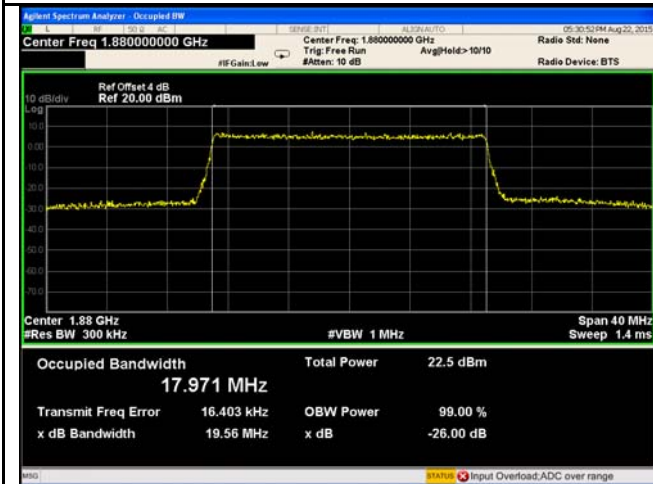
LTE band 2 - High CH 16QAM-15



LTE band 2 - Low CH QPSK-20



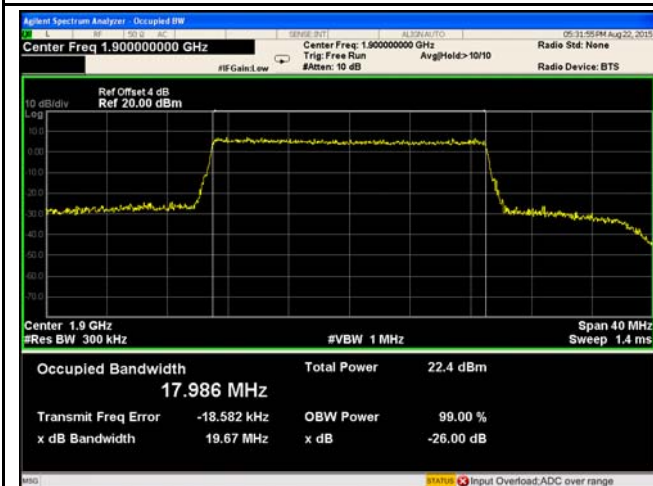
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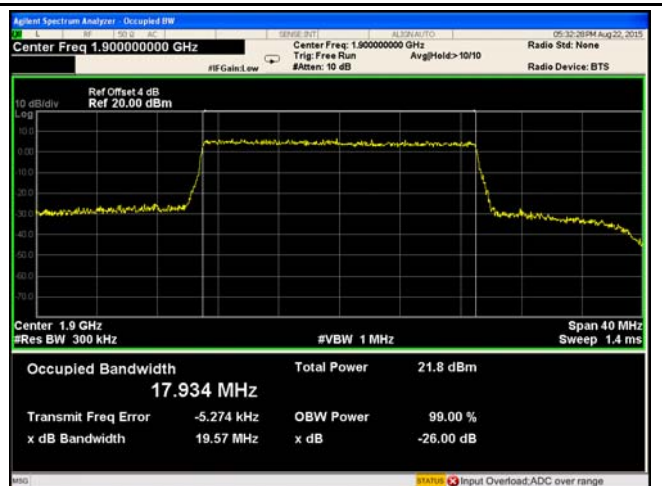
LTE band 2 - Middle CH QPSK-20



LTE band 2 - Middle CH 16QAM-20

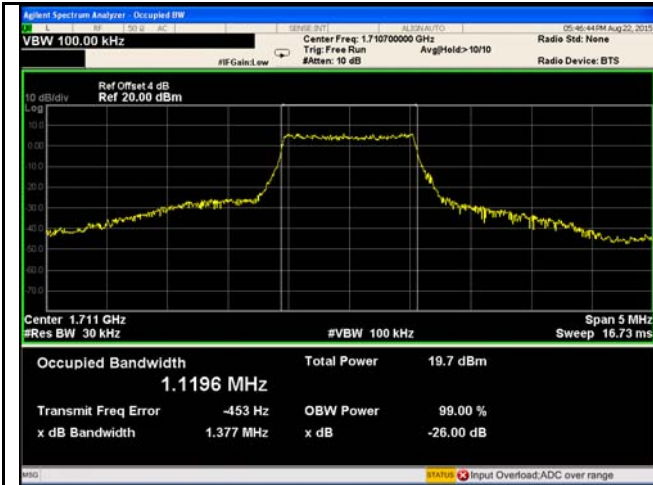


LTE band 2 - High CH QPSK-20

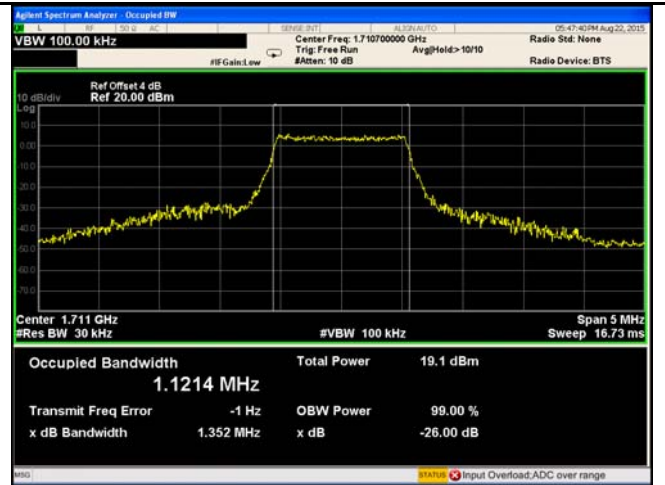


LTE band 2 - High CH 16QAM-20

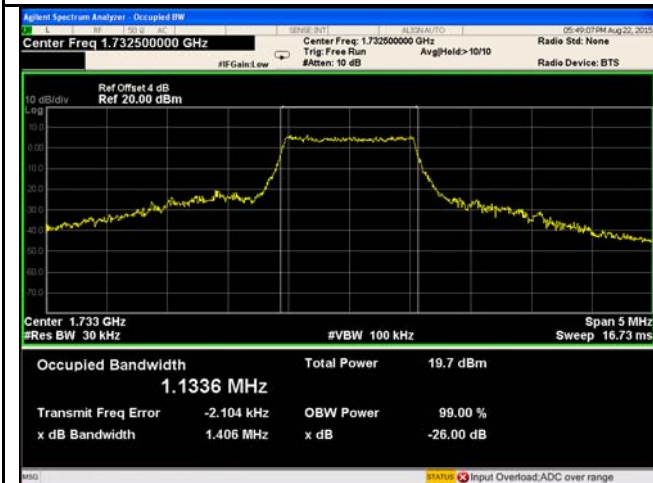
LTE Band 4 (Part 27)



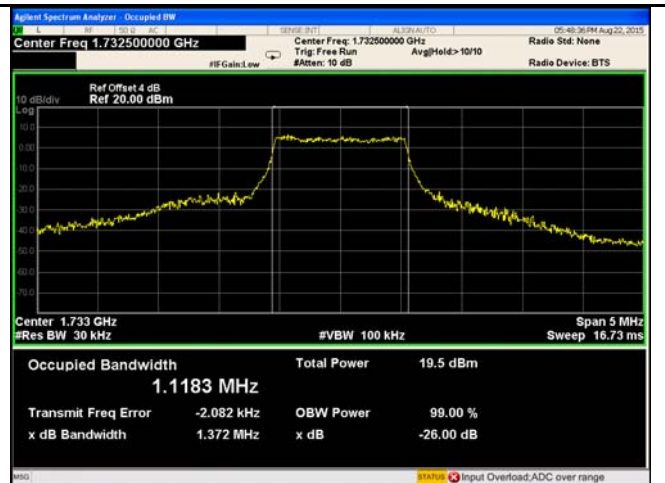
LTE band 4 - Low CH QPSK-1.4



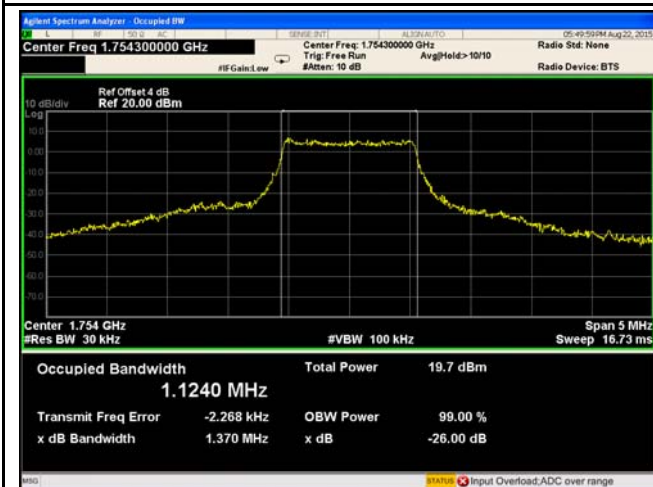
LTE band 4 - Low CH 16QAM-1.4



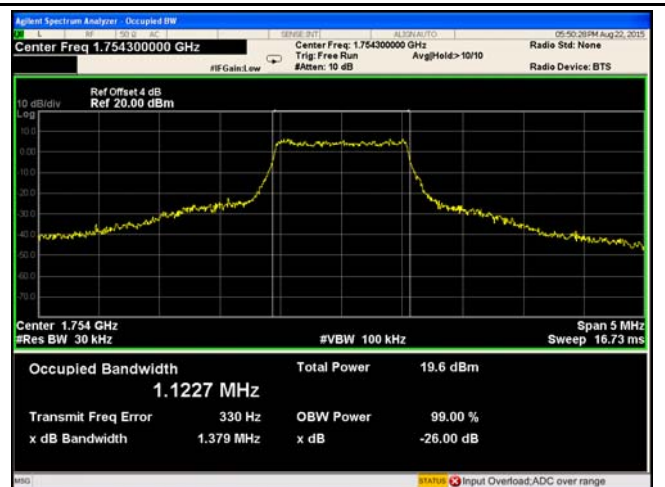
LTE band 4 - Middle CH QPSK-1.4



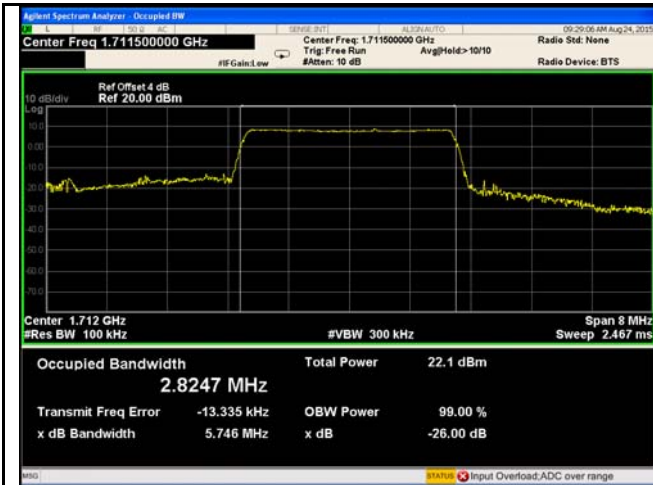
LTE band 4 - Middle CH 16QAM-1.4



LTE band 4 - High CH QPSK-1.4



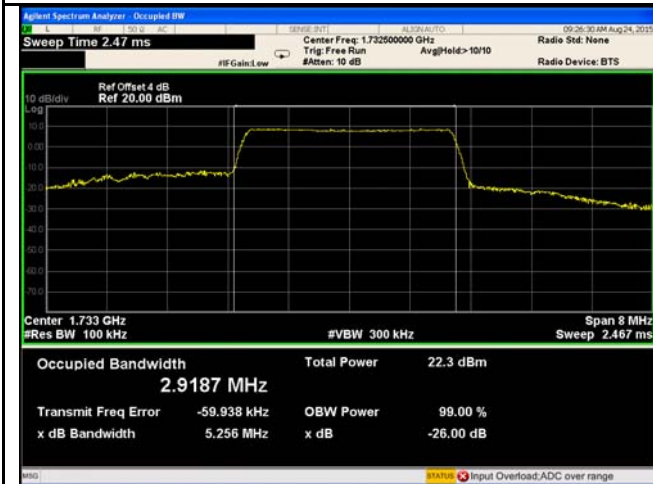
LTE band 4 - High CH 16QAM-1.4



LTE band 4 - Low CH QPSK-3



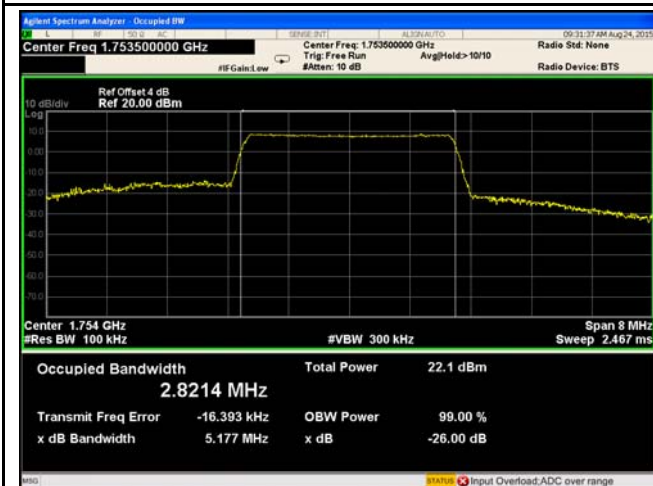
LTE band 4 - Low CH 16QAM-3



LTE band 4 - Middle CH QPSK-3



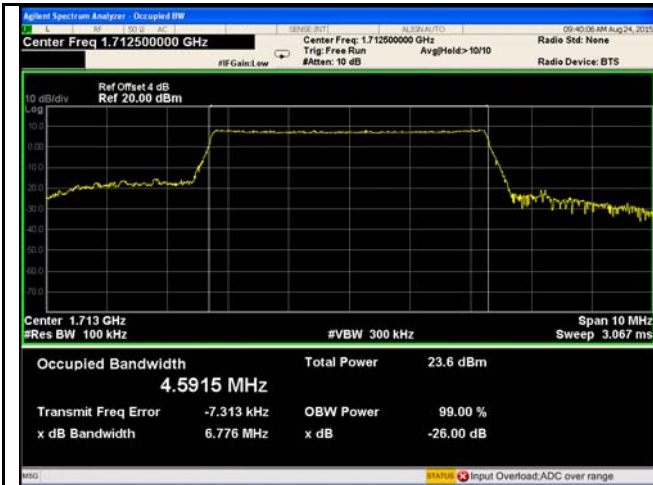
LTE band 4 - Middle CH 16QAM-3



LTE band 4 - High CH QPSK-3



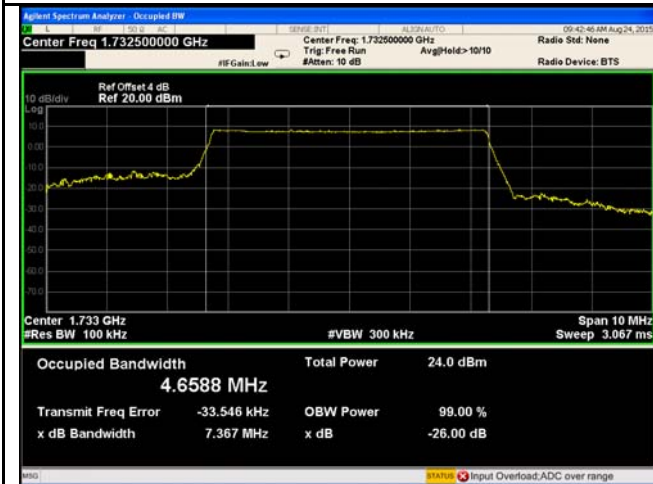
LTE band 4 - High CH 16QAM-3



LTE band 4 - Low CH QPSK-5



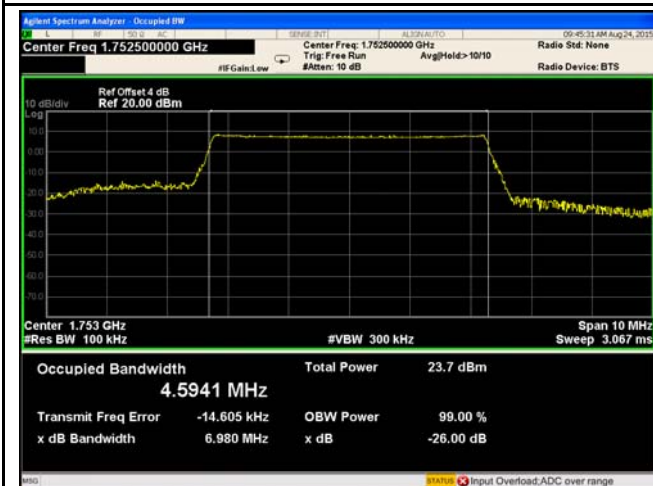
LTE band 4 - Low CH 16QAM-5



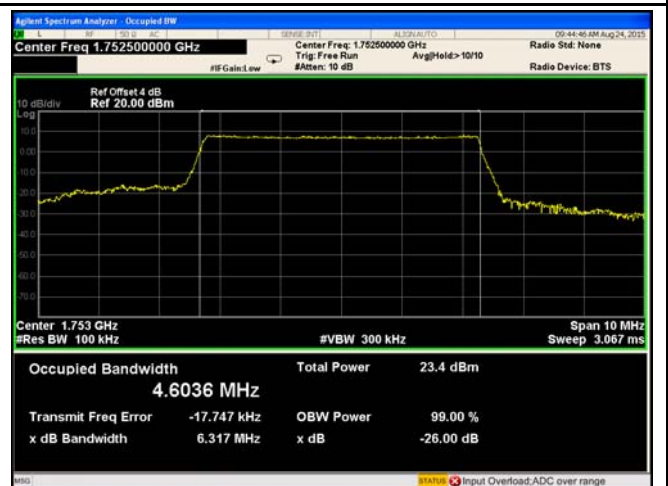
LTE band 4 - Middle CH QPSK-5



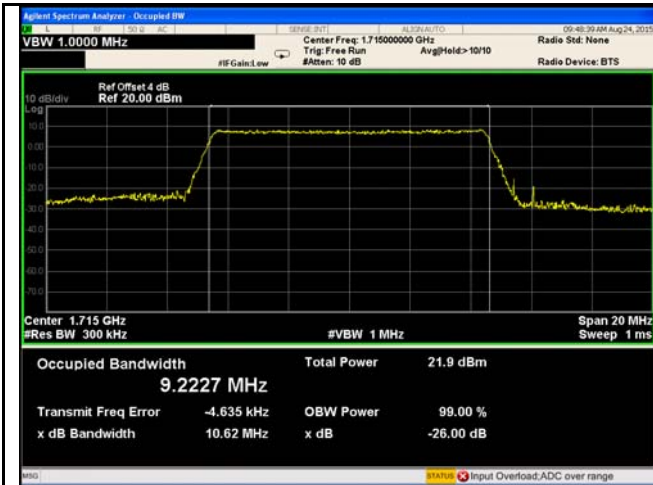
LTE band 4 - Middle CH 16QAM-5



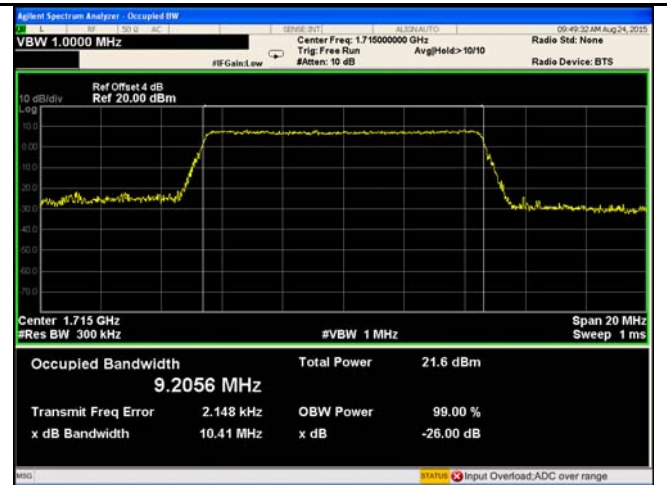
LTE band 4 - High CH QPSK-5



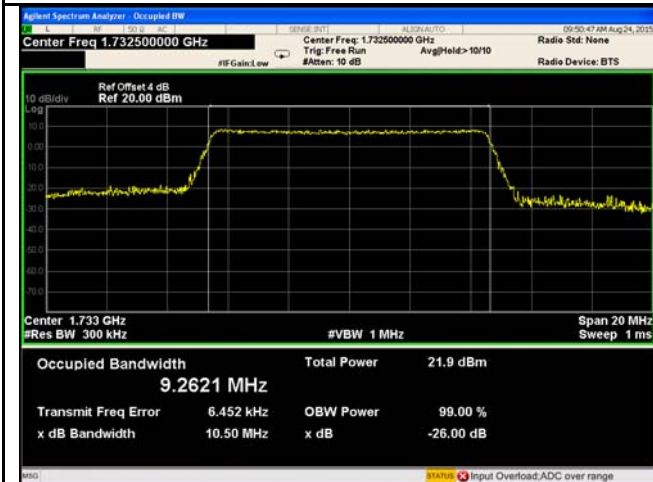
LTE band 4 - High CH 16QAM-5



LTE band 4 - Low CH QPSK-10



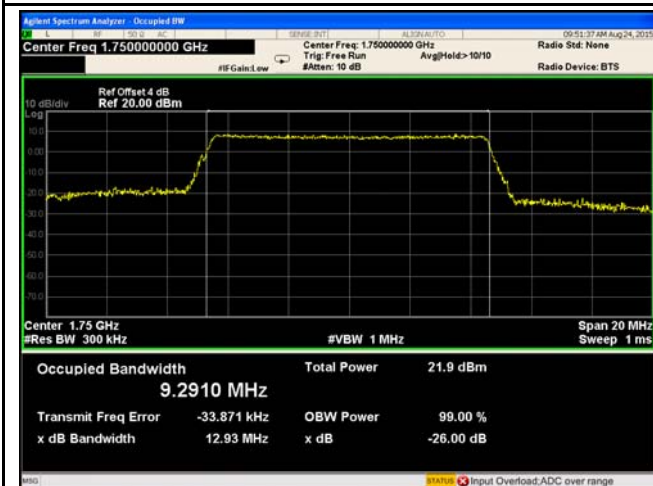
LTE band 4 - Low CH 16QAM-10



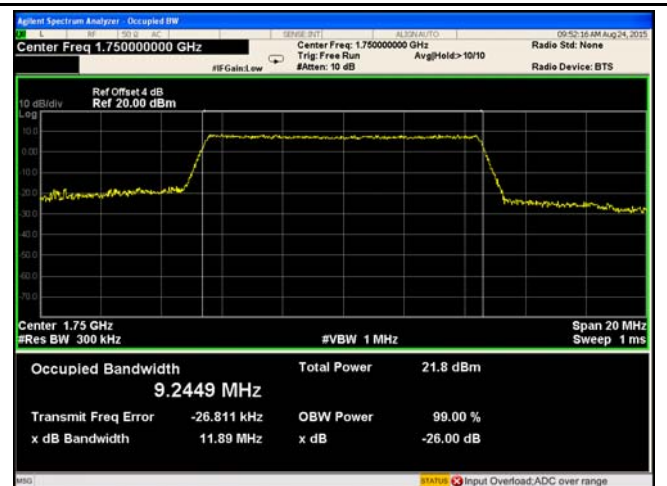
LTE band 4 - Middle CH QPSK-10



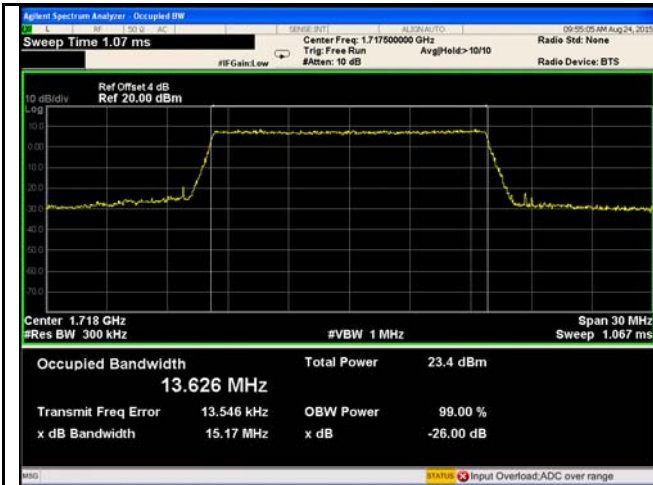
LTE band 4 - Middle CH 16QAM-10



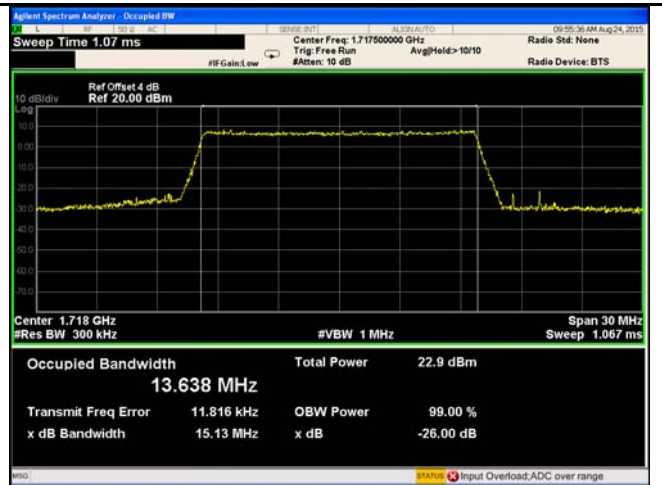
LTE band 4 - High CH QPSK-10



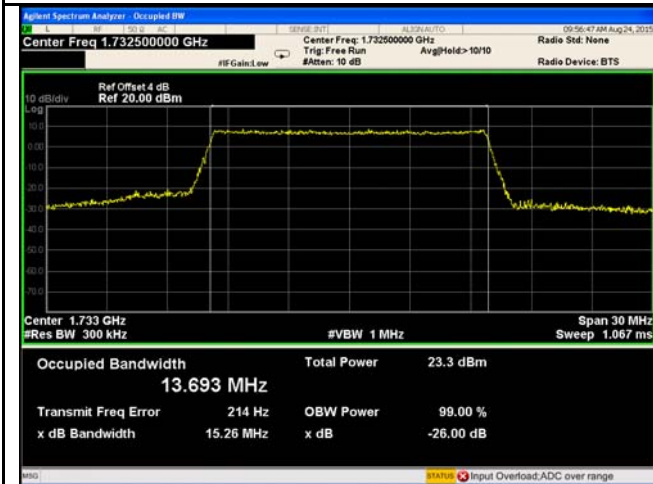
LTE band 4 - High CH 16QAM-10



LTE band 4 - Low CH QPSK-15



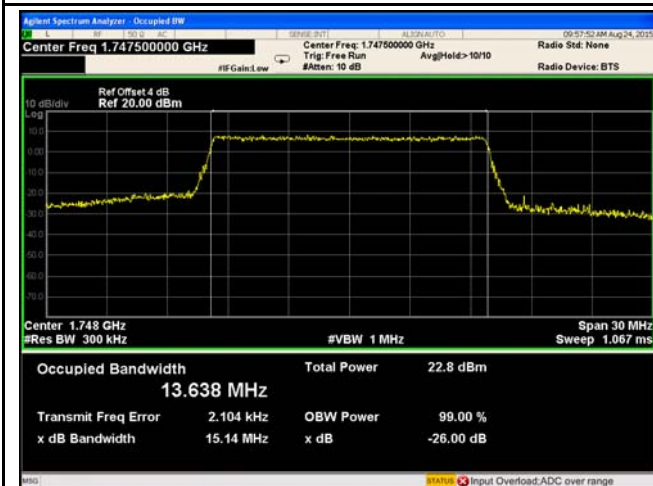
LTE band 4 - Low CH 16QAM-15



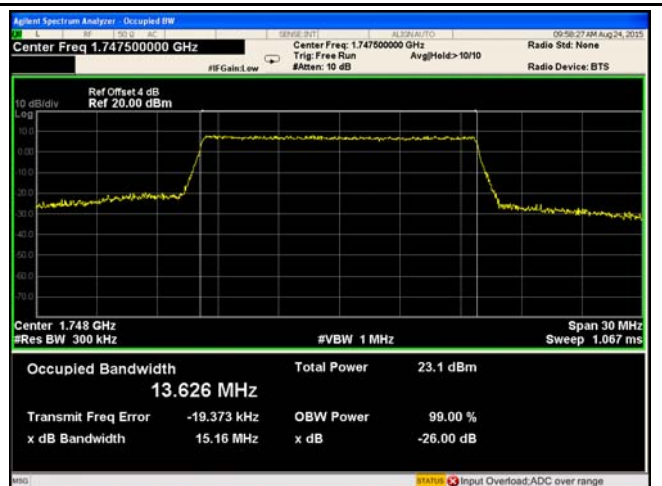
LTE band 4 - Middle CH QPSK-15



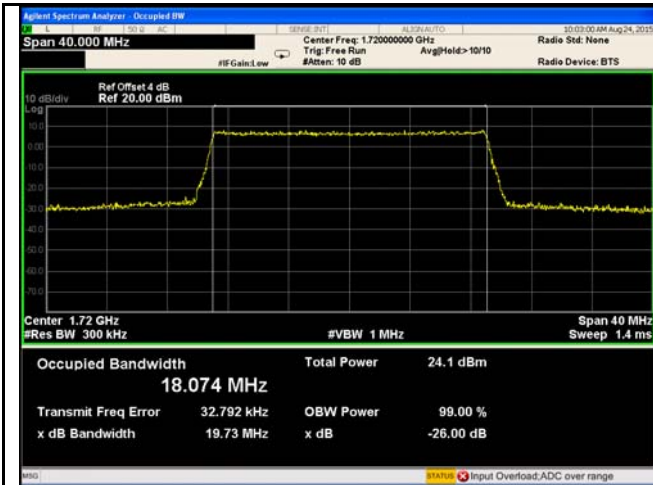
LTE band 4 - Middle CH 16QAM-15



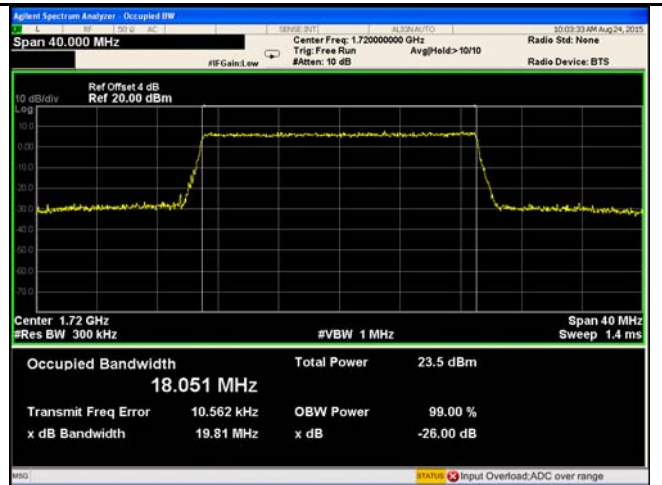
LTE band 4 - High CH QPSK-15



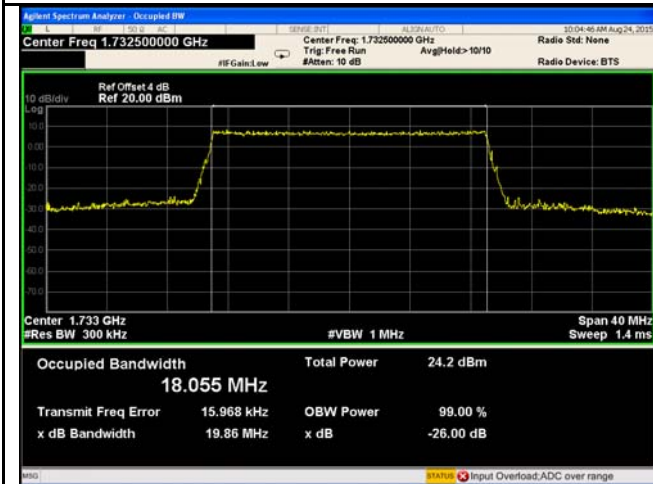
LTE band 4 - High CH 16QAM-15



LTE band 4 - Low CH QPSK-20



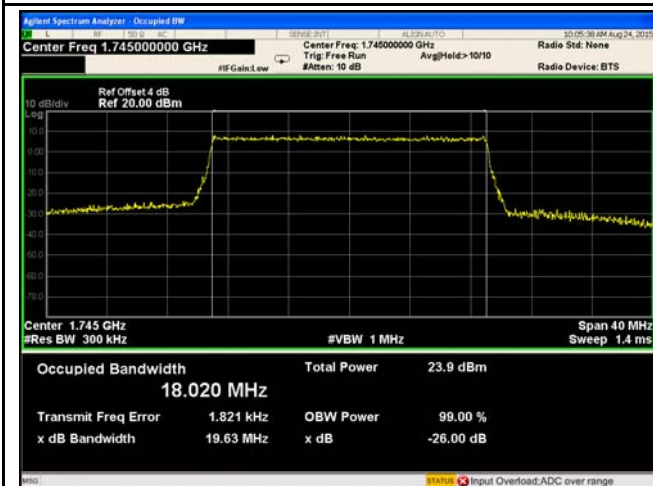
LTE band 4 - Low CH 16QAM-20



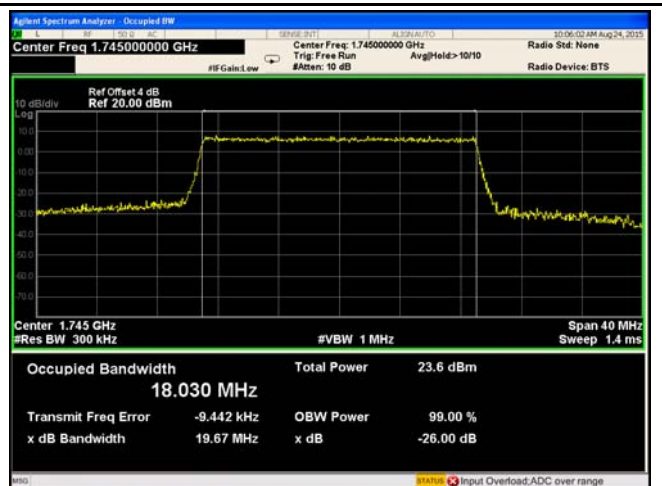
LTE band 4 - Middle CH QPSK-20



LTE band 4 - Middle CH 16QAM-20

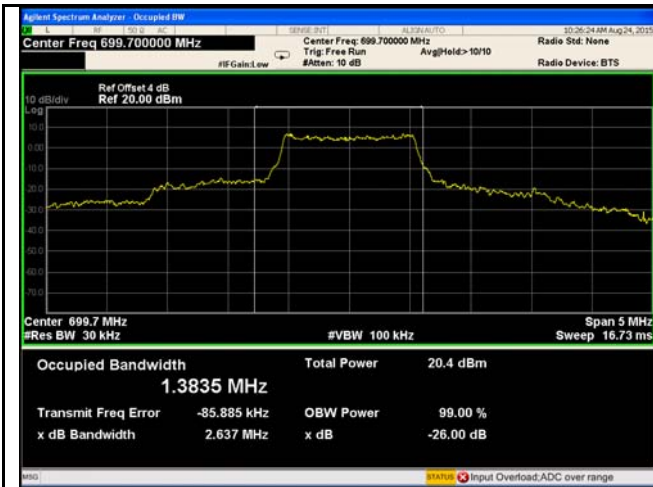


LTE band 4 - High CH QPSK-20



LTE band 4 - High CH 16QAM-20

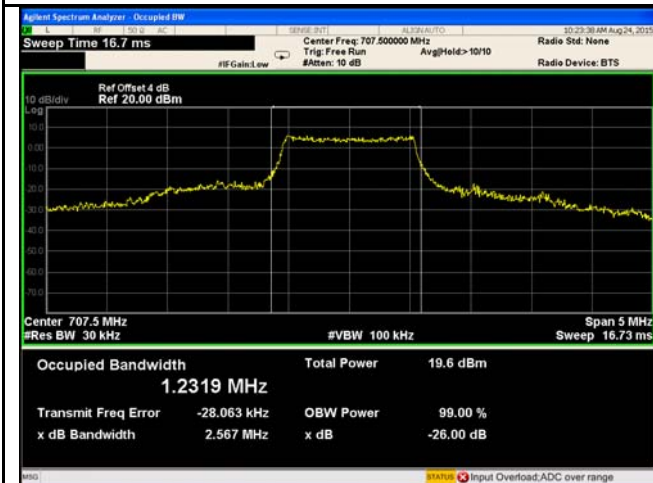
LTE Band 12 (Part 27)



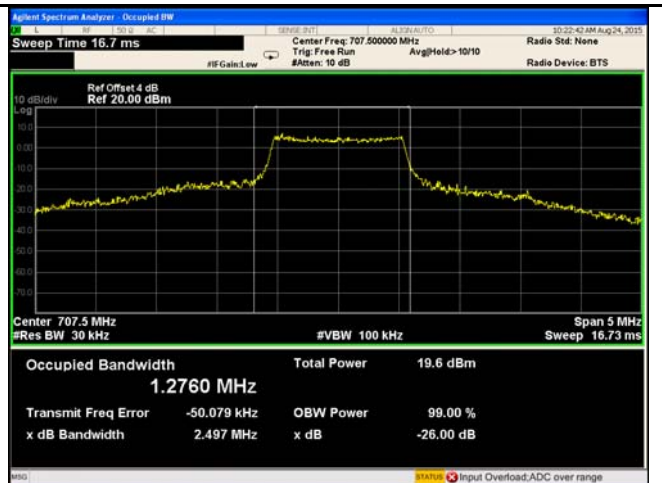
LTE band 7 - Low CH QPSK-1.4



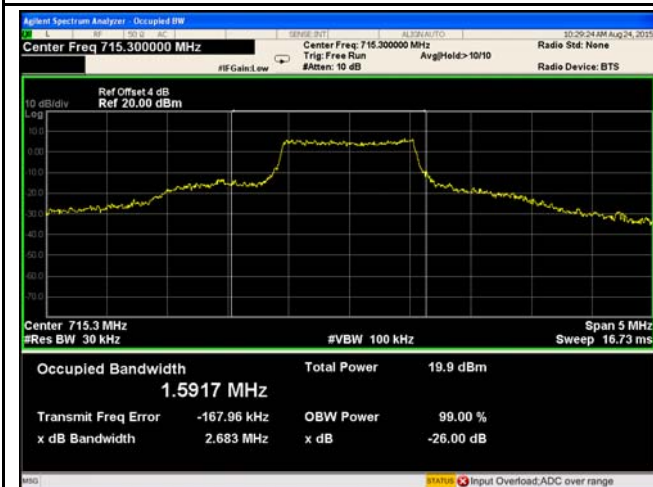
LTE band 7 - Low CH 16QAM-1.4



LTE band 7 - Middle CH QPSK-1.4



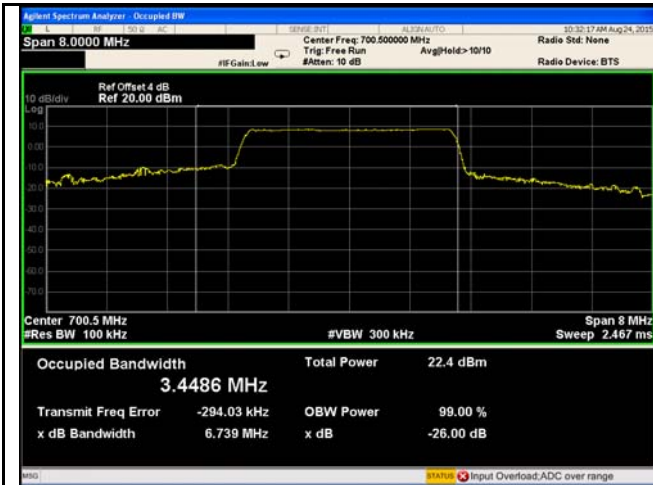
LTE band 7 - Middle CH 16QAM-1.4



LTE band 7 - High CH QPSK-1.4



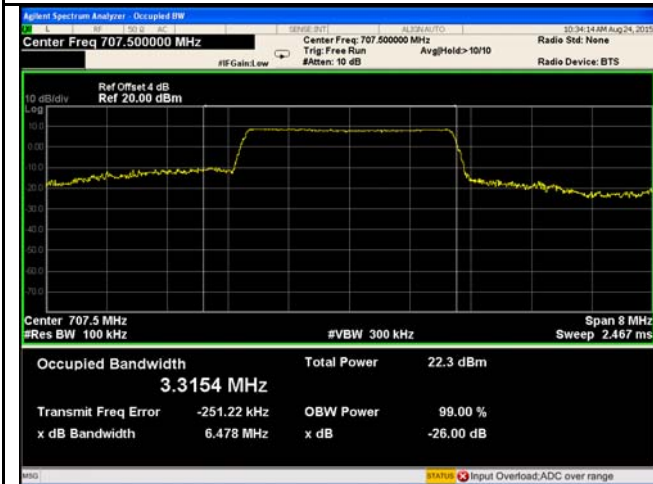
LTE band 7 - High CH 16QAM-1.4



LTE band 7 - Low CH QPSK-3



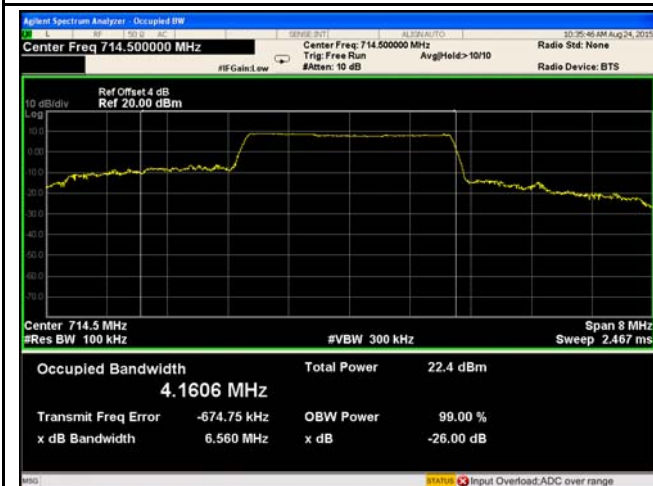
LTE band 7 - Low CH 16QAM-3



LTE band 7 - Middle CH QPSK-3



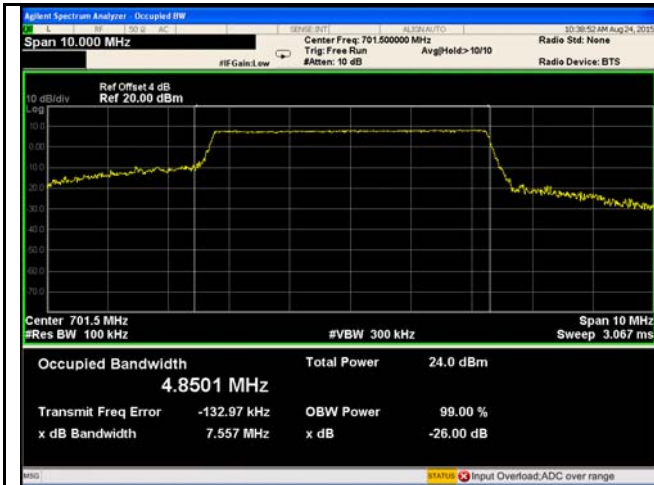
LTE band 7 - Middle CH 16QAM-3



LTE band 7 - High CH QPSK-3



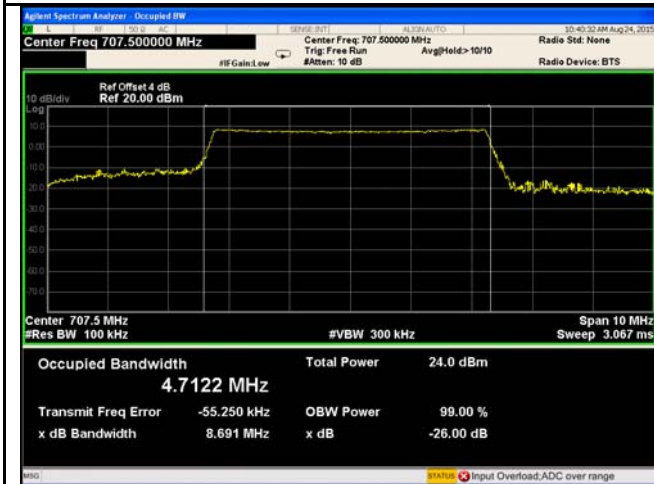
LTE band 7 - High CH 16QAM-3



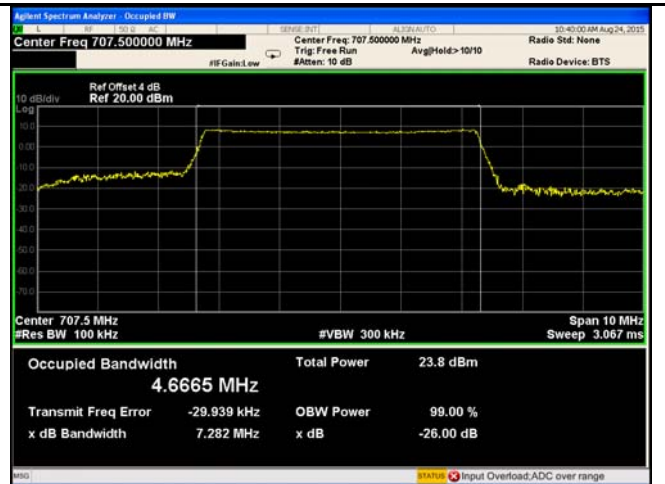
LTE band 7 - Low CH QPSK-5



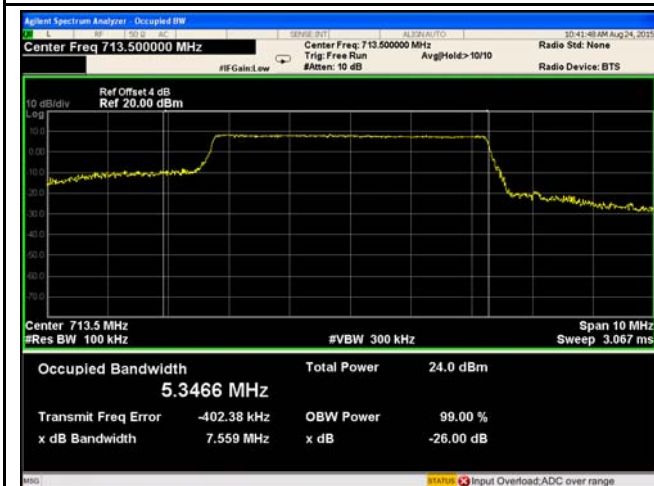
LTE band 7 - Low CH 16QAM-5



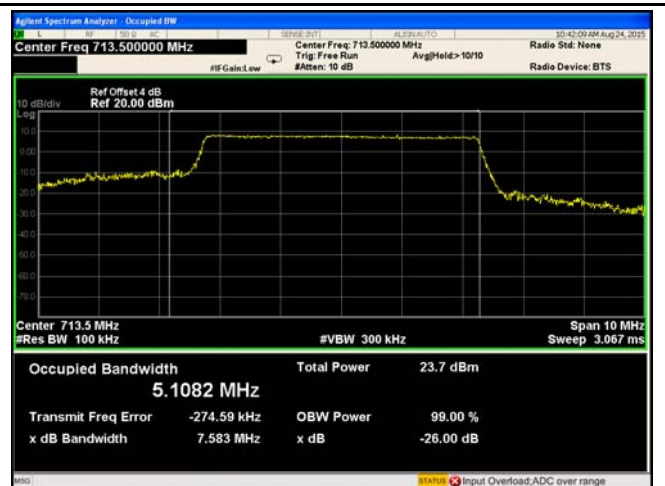
LTE band 7 - Middle CH QPSK-5



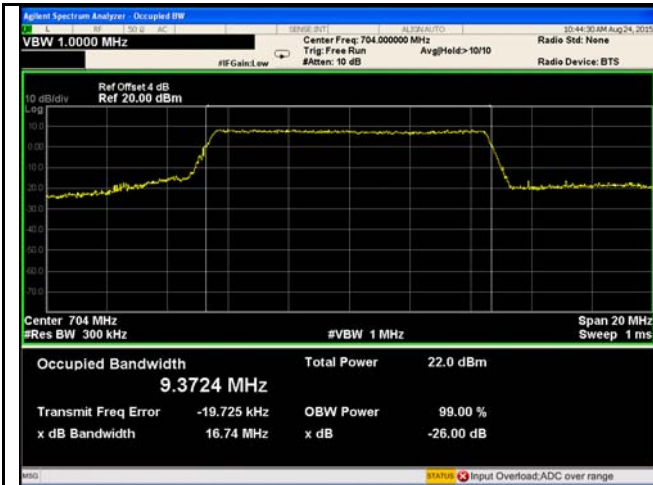
LTE band 7 - Middle CH 16QAM-5



LTE band 7 - High CH QPSK-5



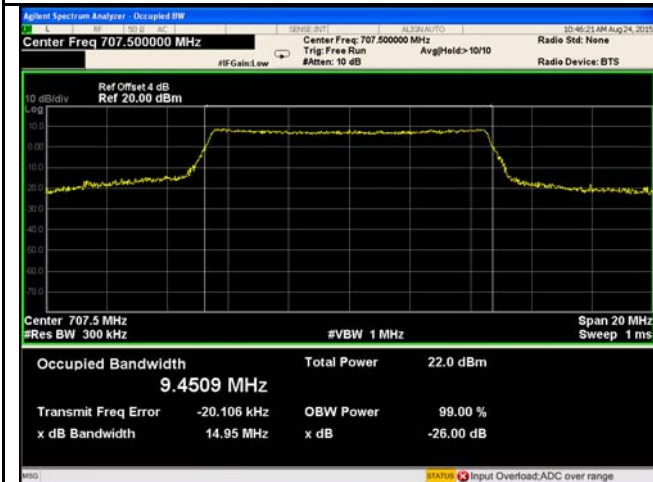
LTE band 7 - High CH 16QAM-5



LTE band 7 - Low CH QPSK-10



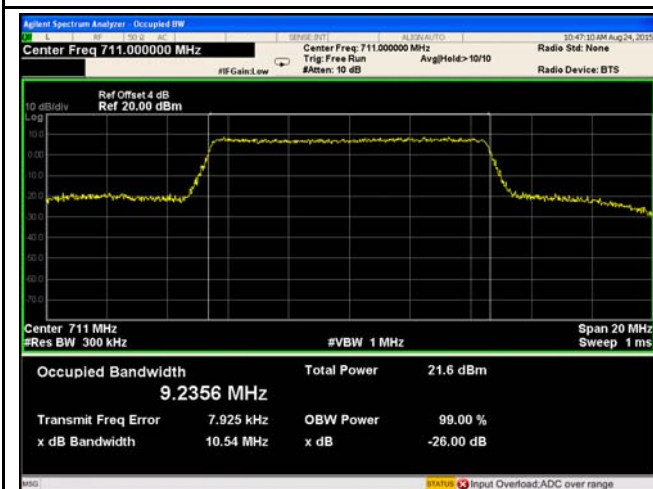
LTE band 7 - Low CH 16QAM-10



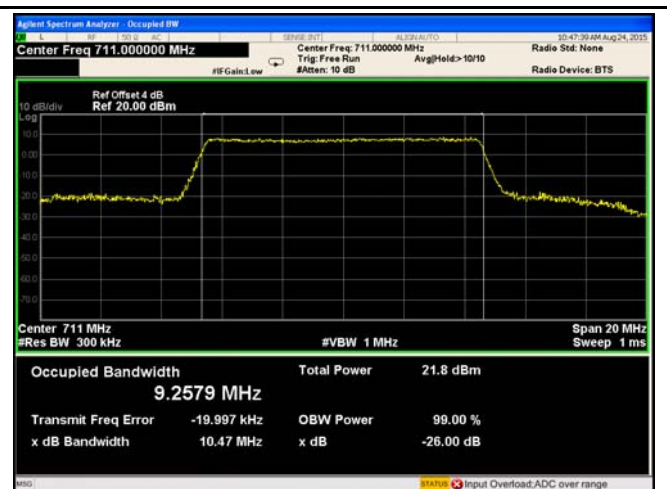
LTE band 7 - Middle CH QPSK-10



LTE band 7 - Middle CH 16QAM-10



LTE band 7 - High CH QPSK-10



LTE band 7 - High CH 16QAM-10

6.6 Spurious Emissions at Antenna Terminals

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

Requirement(s):

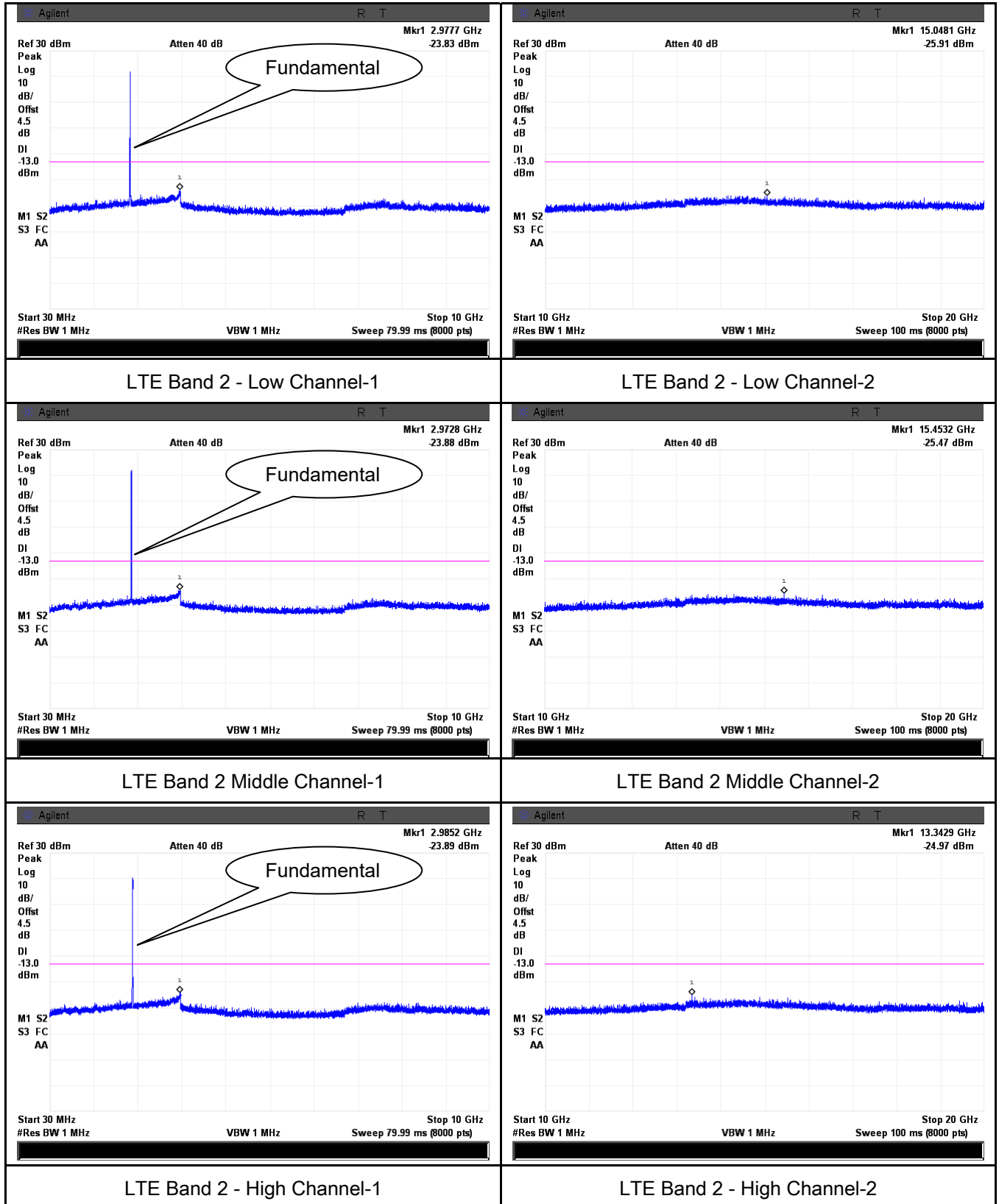
Spec	Item	Requirement	Applicable
§2.1051, §24.238(a) § 27.53(h)	a)	The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB	☒
Test Setup	Base Station Spectrum Analyzer EUT		
Test Procedure	- 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

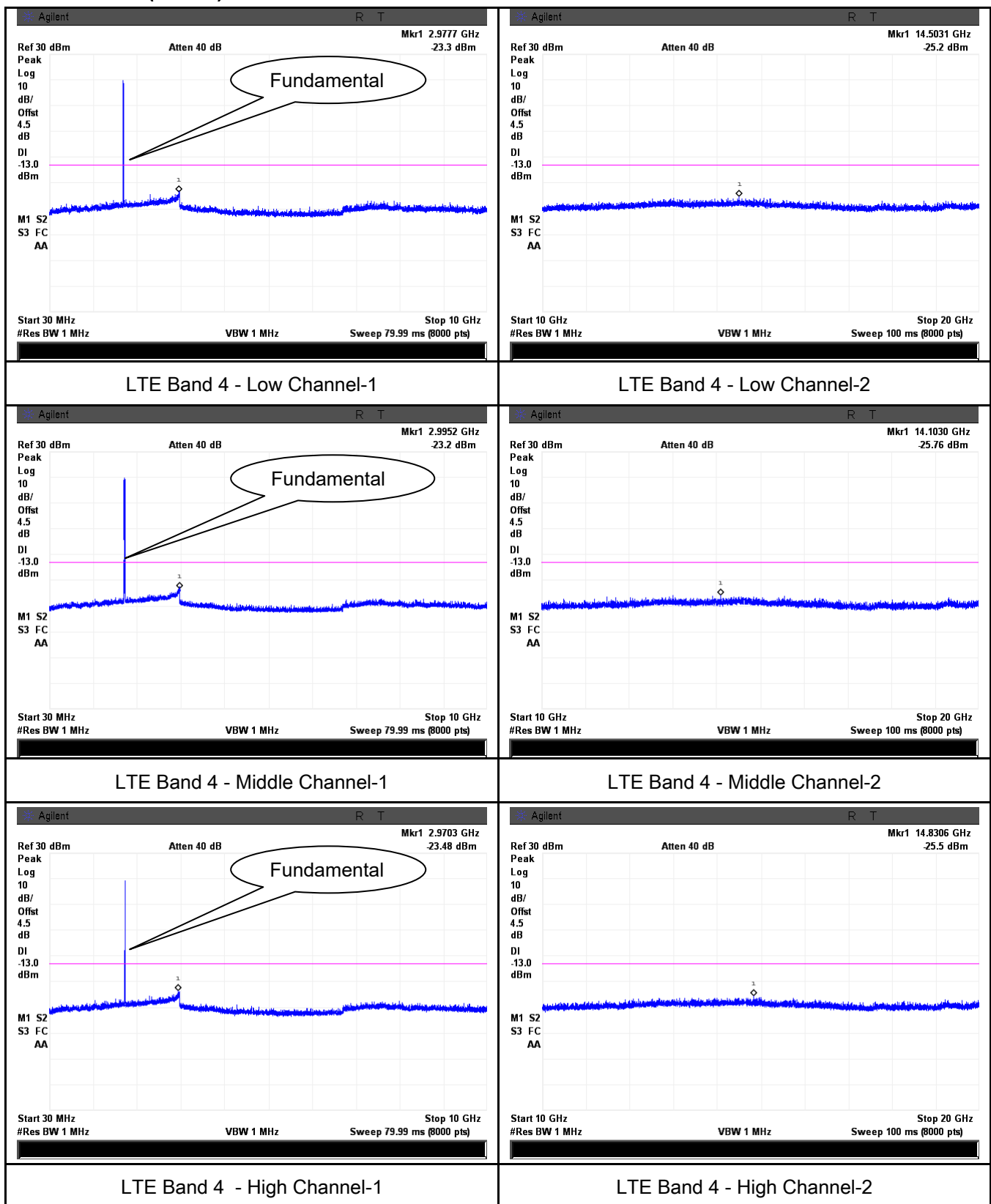
Test Plot ☒ Yes (See below) ☐ N/A

Test Plots 30MHz-5GHz

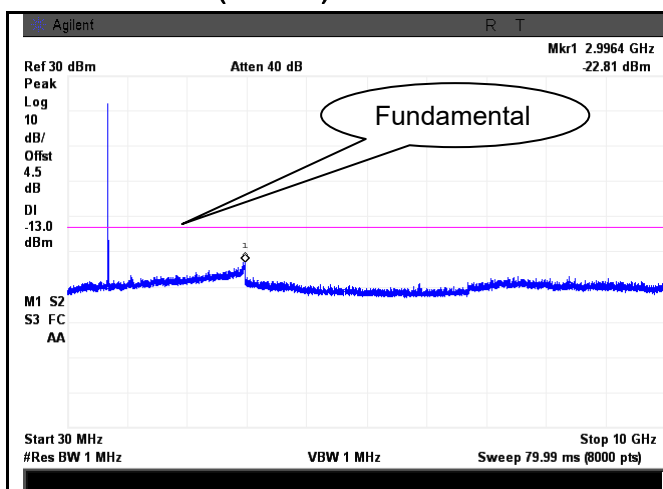
LTE Band 2 (Part 24E) result



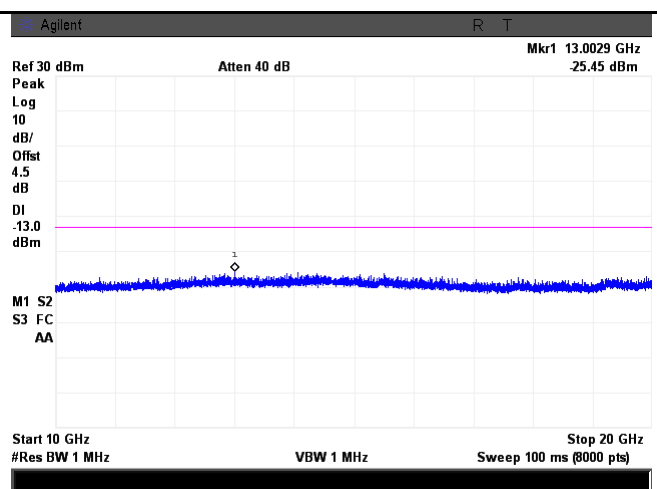
LTE Band 4 (Part27) result



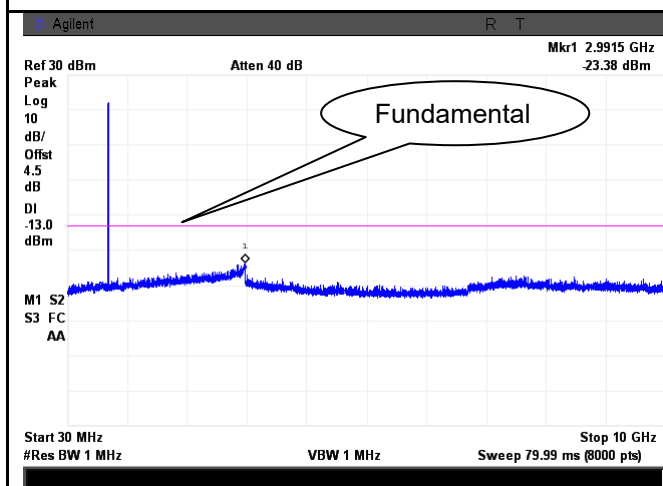
LTE Band 12 (Part 27)



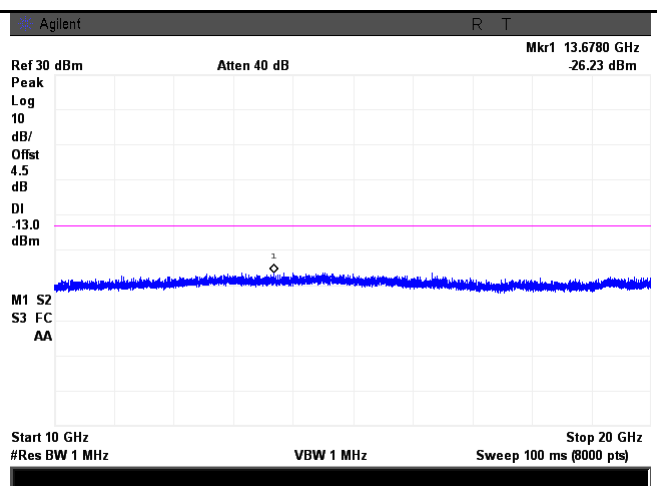
LTE Band 12 - Low Channel-1



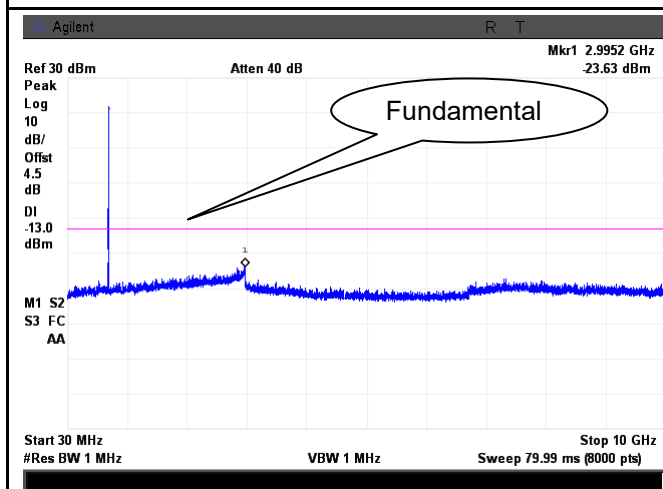
LTE Band 12 - Low Channel-2



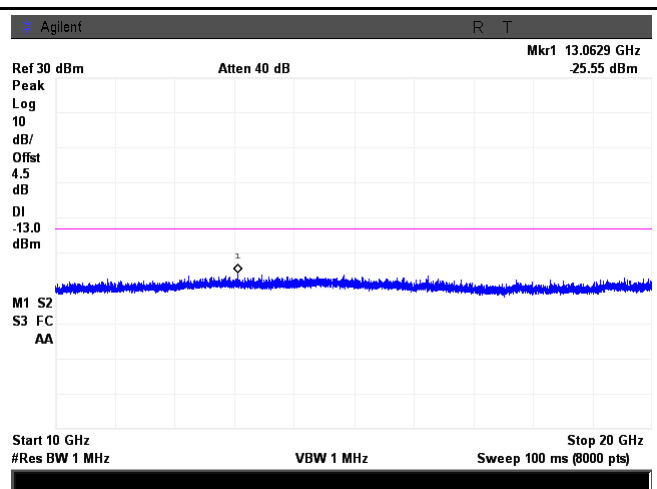
LTE Band 12- Middle Channel-1



LTE Band 12 - Middle Channel-2



LTE Band 12 - High Channel-1

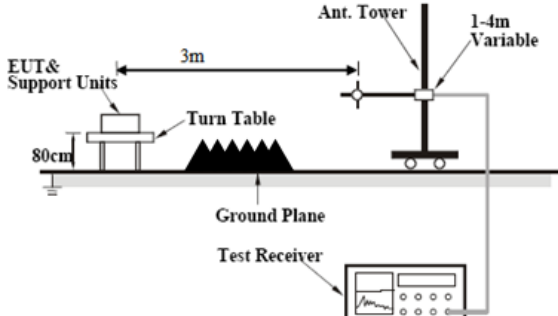


LTE Band 12 - High Channel-2

6.7 Spurious Radiated Emissions

Temperature	25°C
Relative Humidity	50%
Atmospheric Pressure	1008mbar
Test date :	September 08, 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	- The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable. - The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis. - Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. Sample Calculation: EUT Field Strength = Raw Amplitude (dBμV/m) – Amplifier Gain (dB) + Antenna Factor (dB) + Cable Loss (dB) + Filter Attenuation (dB, if used)		
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	-46.38	V	10.25	2.73	-38.86	-13	-25.86
3720	-45.22	H	10.25	2.73	-37.70	-13	-24.7
556.8	-50.65	V	6.5	0.36	-44.51	-13	-31.51
785.3	-51.43	H	6.8	0.44	-45.07	-13	-32.07

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	-45.59	V	10.25	2.73	-38.07	-13	-25.07
3760	-46.34	H	10.25	2.73	-38.82	-13	-25.82
556.3	-50.52	V	6.5	0.36	-44.38	-13	-31.38
785.1	-51.58	H	6.8	0.44	-45.22	-13	-32.22

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3800	-46.24	V	10.36	2.73	-38.61	-13	-25.61
3800	-46.89	H	10.36	2.73	-39.26	-13	-26.26
556.9	-49.86	V	6.5	0.36	-43.72	-13	-30.72
785.6	-52.42	H	6.8	0.44	-46.06	-13	-33.06

LTE Band 4(Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3440	-46.95	V	10.06	2.52	-39.41	-13	-26.41
3440	-48.71	H	10.06	2.52	-41.17	-13	-28.17
557.4	-50.36	V	6.5	0.36	-44.22	-13	-31.22
783.5	-51.42	H	6.8	0.44	-45.06	-13	-32.06

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3465	-46.81	V	10.09	2.52	-39.24	-13	-26.24
3465	-48.76	H	10.09	2.52	-41.19	-13	-28.19
557.9	-50.59	V	6.5	0.36	-44.45	-13	-31.45
783.2	-52.15	H	6.8	0.44	-45.79	-13	-32.79

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	-47.13	V	10.09	2.52	-39.56	-13	-26.56
3490	-48.58	H	10.09	2.52	-41.01	-13	-28.01
557.5	-51.24	V	6.5	0.36	-45.10	-13	-32.1
783.6	-52.96	H	6.8	0.44	-46.60	-13	-33.6

LTE Band 12(Part27) result

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1408	-46.85	V	7.65	0.75	-39.95	-13	-26.95
1408	-48.72	H	7.65	0.75	-41.82	-13	-28.82
552.8	-50.86	V	6.5	0.36	-44.72	-13	-31.72
786.5	-52.41	H	6.8	0.44	-46.05	-13	-33.05

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
1415	-46.84	V	7.65	0.75	-39.94	-13	-26.94
1415	-48.69	H	7.65	0.75	-41.79	-13	-28.79
552.3	-51.04	V	6.5	0.36	-44.90	-13	-31.9
786.1	-51.97	H	6.8	0.44	-45.61	-13	-32.61

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	-46.97	V	7.65	0.75	-40.07	-13	-27.07
1422	-48.52	H	7.65	0.75	-41.62	-13	-28.62
552.8	-51.33	V	6.5	0.36	-45.19	-13	-32.19
786.4	-53.18	H	6.8	0.44	-46.82	-13	-33.82