RF TEST REPORT

Report No.: 18070029-FCC-R5

Supersede Report No.: N/A

Applicant	TECNO MOBILE LIMITED
Product Name	Mobile phone
Model No.	CA7
Serial No.	N/A
Test Standard	FCC Part 22(H):2016, FCC Part 24(E):2016, FCC Part 27: 2016; ANSI/TIA-603-D: 2010
Test Date	January 10 to February 06, 2018
Issue Date	February 07, 2018
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Aarron Liang	David Huang	
Aarron Liang 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
18070029-FCC-R5	NONE	Original	February 07, 2018

2. Customer information

Applicant Name	TECNO MOBILE LIMITED
Applicant Add	ROOMS 05-15, 13A/F., SOUTH TOWER, WORLD FINANCE CENTRE, HARBOUR CITY, 17 CANTON ROAD, TSIM SHA TSUI, KOWLOON, HONG KONG
Manufacturer	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Manufacturer Add	1-4th Floor,3rd Building,Pacific Industrial Park,No.2088,Shenyan Road,Yantian 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:	CA7
Serial Model:	N/A
Date EUT received:	January 09, 2018
Test Date(s):	January 10 to February 06, 2018
Equipment Category：	PCE
Antenna Gain:	GSM850: -0.2dBi PCS1900: 1.7dBi UMTS-FDD Band V: -0.2dBi UMTS-FDD Band II: 1.7dBi LTE Band II: 1.7dBi LTE Band IV: 1.7dBi LTE Band V: -0.2dBi LTE Band VII: 2.5dBi WIFI: 2.0dBi Bluetooth/BLE: 2.0dBi GPS: 2.0dBi
Antenna Type:	PIFA antenna
Type of Modulation:	GSM / GPRS: GMSK EGPRS: GMSK,8PSK UMTS-FDD: QPSK LTE Band: QPSK, 16QAM 802.11b/g/n: DSSS, OFDM Bluetooth: GFSK, 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 II TX: 1850.7 ~ 1909.3MHz; RX : 1930.7 ~ 1989.3 MHz LTE Band IV TX: 1710.7 ~ 1754.3 MHz; RX : 2110.7~ 2154.3 MHz LTE Band V TX: 824.7~ 848.3 MHz; RX : 869.7 ~ 893.3MHz LTE Band VII 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 II: 23.48 dBm LTE Band IV: 23.25 dBm LTE Band V: 23.72 dBm LTE Band VII: 23.12 dBm
ERP/EIRP:	LTE Band II: 25.02 dBm / EIRP LTE Band IV: 24.93 dBm / EIRP LTE Band V: 21.29dBm / EIRP LTE Band VII: 25.29 dBm / EIRP
Port:	USB Port, Earphone Port
Input Power:	Adapter: Model: A88-502000 Input: AC100-240V~50/60Hz, 0.35A Output: DC 5.0V, 2.0A Battery Model: BL-36BT Rating: 3.85V, 3650mAh/3750mAh, 14.05Wh/14.43Wh Limited charge voltage: 4.4V
Trade Name :	TECNO
FCC ID:	2ADYY-CA7

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

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

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

Measurement Uncertainty

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

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS

6.1 RF Exposure (SAR)

Test Result: Pass

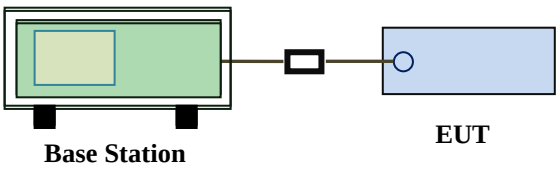
The EUT is a portable device, thus requires SAR evaluation;

Please refer to RF Exposure Evaluation Report: 18070029-FCC-H.

6.2 RF Output Power

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	February 05, 2018
Tested By :	Aarron Liang

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 II:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	18700	1860.0	QPSK	1	0	0	22.89	22.4±1
				1	49	0	22.9	
				1	99	0	22.81	
				50	0	1	21.98	
				50	24	1	22.01	
				50	49	1	22	
				100	0	1	21.87	
			16QAM	1	0	1	21.78	21.3±1
				1	49	1	21.72	
				1	99	1	21.69	
				50	0	2	20.88	
				50	24	2	20.89	
				50	49	2	20.9	
				100	0	2	20.86	
	18900	1880.0	QPSK	1	0	0	22.87	21.9±1
				1	49	0	21.89	
				1	99	0	22.8	
				50	0	1	22.09	
				50	24	1	22	
				50	49	1	22.09	
				100	0	1	22.11	
			16QAM	1	0	1	22.33	21.6±1
				1	49	1	22.29	
				1	99	1	22.3	
				50	0	2	21.05	
				50	24	2	21.15	
				50	49	2	21.11	
				100	0	2	21.08	
	19100	1900.0	QPSK	1	0	0	22.91	22.5±1
				1	49	0	22.91	
				1	99	0	22.81	
				50	0	1	22.18	
				50	24	1	22.17	
				50	49	1	22.2	
				100	0	1	22.11	
			16QAM	1	0	1	22.21	21.6±1
				1	49	1	22.18	
				1	99	1	22.21	
				50	0	2	21.14	
				50	24	2	21.09	
				50	49	2	21.21	
				100	0	2	21.11	

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	22.9	22.4±1
				1	37	0	22.8	
				1	74	0	22.95	
				36	0	1	21.91	
				36	16	1	21.83	
				36	35	1	21.82	
				75	0	1	21.97	
			16QAM	1	0	1	21.72	21.3±1
				1	37	1	21.74	
				1	74	1	21.65	
				36	0	2	20.9	
				36	16	2	20.91	
				36	35	2	20.94	
				75	0	2	20.93	
	18900	1880.0	QPSK	1	0	0	22.83	21.9±1
				1	37	0	20.91	
				1	74	0	22.78	
				36	0	1	22.1	
				36	16	1	22.04	
				36	35	1	22.13	
				75	0	1	22.11	
			16QAM	1	0	1	22.48	21.8±1
				1	37	1	22.47	
				1	74	1	22.41	
				36	0	2	21.15	
				36	16	2	21.1	
				36	35	2	21.11	
				75	0	2	21.12	
	19125	1902.5	QPSK	1	0	0	22.98	22.5±1
				1	37	0	22.89	
				1	74	0	23.06	
				36	0	1	22.17	
				36	16	1	22.08	
				36	35	1	22.21	
				75	0	1	22.23	
			16QAM	1	0	1	22.31	21.7±1
				1	37	1	22.41	
				1	74	1	22.22	
				36	0	2	21.18	
				36	16	2	21.23	
				36	35	2	21.25	
				75	0	2	21.1	

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	22.94	22.5±1
				1	24	0	22.92	
				1	49	0	22.93	
				25	0	1	21.98	
				25	12	1	22.04	
				25	24	1	22.06	
				50	0	1	21.99	
			16QAM	1	0	1	21.74	21.4±1
				1	24	1	21.76	
				1	49	1	21.7	
				25	0	2	20.95	
				25	12	2	20.9	
				25	24	2	20.91	
				50	0	2	21	
	18900	1880.0	QPSK	1	0	0	22.92	22±1
				1	24	0	20.9	
				1	49	0	22.84	
				25	0	1	22.11	
				25	12	1	22.06	
				25	24	1	22.04	
				50	0	1	22.12	
			16QAM	1	0	1	22.58	21.9±1
				1	24	1	22.61	
				1	49	1	22.65	
				25	0	2	21.17	
				25	12	2	21.25	
				25	24	2	21.14	
				50	0	2	21.13	
	19150	1905	QPSK	1	0	0	23.24	22.7±1
				1	24	0	23.29	
				1	49	0	23.32	
				25	0	1	22.31	
				25	12	1	22.31	
				25	24	1	22.34	
				50	0	1	22.28	
			16QAM	1	0	1	22.03	21.7±1
				1	24	1	21.98	
				1	49	1	22	
				25	0	2	21.31	
				25	12	2	21.23	
				25	24	2	21.3	
				50	0	2	21.24	

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	23.01	22.5±1
				1	12	0	23.11	
				1	24	0	22.98	
				12	0	1	22.07	
				12	6	1	22.01	
				12	11	1	21.98	
				25	0	1	22.05	
			16QAM	1	0	1	21.97	21.6±1
				1	12	1	21.89	
				1	24	1	21.89	
				12	0	2	21.12	
				12	6	2	21.02	
				12	11	2	21.05	
				25	0	2	21.95	
	18900	1880.0	QPSK	1	0	0	22.83	22±1
				1	12	0	21.02	
				1	24	0	22.91	
				12	0	1	21.9	
				12	6	1	21.97	
				12	11	1	21.85	
				25	0	1	21.92	
			16QAM	1	0	1	22.24	21.6±1
				1	12	1	22.3	
				1	24	1	22.31	
				12	0	2	21.02	
				12	6	2	20.93	
				12	11	2	21.09	
				25	0	2	20.91	
	19175	1907.5	QPSK	1	0	0	23.08	22.7±1
				1	12	0	23.07	
				1	24	0	23.13	
				12	0	1	22.25	
				12	6	1	22.27	
				12	11	1	22.3	
				25	0	1	22.27	
			16QAM	1	0	1	22.12	21.7±1
				1	12	1	22.11	
				1	24	1	22.05	
				12	0	2	22.21	
				12	6	2	22.2	
				12	11	2	22.21	
				25	0	2	21.27	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	18625	1852.5	QPSK	1	0	0	21.82	21.3±1
				1	7	0	21.89	
				1	14	0	21.74	
				8	0	1	20.82	
				8	4	1	20.77	
				8	7	1	20.79	
				15	0	1	20.86	
			16QAM	1	0	1	21.76	21.3±1
				1	7	1	21.8	
				1	14	1	21.7	
				8	0	2	20.78	
				8	4	2	20.68	
				8	7	2	20.87	
				15	0	2	20.86	
	18900	1880.0	QPSK	1	0	0	22.96	21.8±1
				1	7	0	20.68	
				1	14	0	22.86	
				8	0	1	22	
				8	4	1	21.92	
				8	7	1	21.99	
				15	0	1	22.07	
			16QAM	1	0	1	22.64	21.8±1
				1	7	1	22.69	
				1	14	1	22.64	
				8	0	2	21.04	
				8	4	2	21.13	
				8	7	2	21.08	
				15	0	2	21.17	
	19175	1907.5	QPSK	1	0	0	23.27	22.7±1
				1	7	0	23.22	
				1	14	0	23.29	
				8	0	1	22.21	
				8	4	1	22.23	
				8	7	1	22.23	
				15	0	1	22.25	
			16QAM	1	0	1	22.23	21.7±1
				1	7	1	22.15	
				1	14	1	22.21	
				8	0	2	21.07	
				8	4	2	20.98	
				8	7	2	21	
				15	0	2	21.28	

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	22.78	22.4±1
				1	2	0	22.74	
				1	5	0	22.82	
				3	0	0	22.93	
				3	1	0	22.95	
				3	2	0	22.98	
				6	0	1	21.89	
			16QAM	1	0	1	21.46	21.5±1
				1	2	1	21.53	
				1	5	1	21.4	
				3	0	1	22.2	
				3	1	1	22.14	
				3	2	1	22.26	
				6	0	2	20.83	
	18900	1880.0	QPSK	1	0	0	23.02	22.6±1
				1	2	0	22.14	
				1	5	0	22.94	
				3	0	0	23.09	
				3	1	0	23.18	
				3	2	0	23.04	
				6	0	1	22.07	
			16QAM	1	0	1	21.98	21.9±1
				1	2	1	22.02	
				1	5	1	21.9	
				3	0	1	22.42	
				3	1	1	22.49	
				3	2	1	22.46	
				6	0	2	21.28	
	19193	1909.3	QPSK	1	0	0	23.29	22.8±1
				1	2	0	23.2	
				1	5	0	23.28	
				3	0	0	23.38	
				3	1	0	23.39	
				3	2	0	23.48	
				6	0	1	22.23	
			16QAM	1	0	1	22.11	21.9±1
				1	2	1	22.03	
				1	5	1	22.18	
				3	0	1	22.42	
				3	1	1	22.38	
				3	2	1	22.35	
				6	0	2	21.28	

LTE Band IV:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20050	1720.0	QPSK	1	0	0	23.07	22.6±1
				1	49	0	23.05	
				1	99	0	23.12	
				50	0	1	22.12	
				50	24	1	22.12	
				50	49	1	22.17	
				100	0	1	22.11	
			16QAM	1	0	1	21.95	21.5±1
				1	49	1	21.95	
				1	99	1	21.97	
				50	0	2	21.05	
				50	24	2	21.05	
				50	49	2	20.97	
				100	0	2	21.12	
	20175	1732.5	QPSK	1	0	0	22.94	22±1
				1	49	0	22.55	
				1	99	0	22.86	
				50	0	1	22.07	
				50	24	1	21.99	
				50	49	1	22.11	
				100	0	1	22.06	
			16QAM	1	0	1	22.42	21.7±1
				1	49	1	22.5	
				1	99	1	22.33	
				50	0	2	21.04	
				50	24	2	20.94	
				50	49	2	21	
				100	0	2	21.11	
	20300	1745.0	QPSK	1	0	0	22.83	22.4±1
				1	49	0	22.75	
				1	99	0	22.76	
				50	0	1	22.01	
				50	24	1	22.03	
				50	49	1	22.03	
				100	0	1	22	
			16QAM	1	0	1	22.15	21.6±1
				1	49	1	22.11	
				1	99	1	22.2	
				50	0	2	20.98	
				50	24	2	21.05	
				50	49	2	20.93	
				100	0	2	20.98	

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	23.09	22.6±1
				1	37	0	23.01	
				1	74	0	23.06	
				36	0	1	22.12	
				36	16	1	22.1	
				36	35	1	22.02	
				75	0	1	22.16	
			16QAM	1	0	1	21.93	21.5±1
				1	37	1	22	
				1	74	1	21.99	
				36	0	2	21.11	
				36	16	2	21.03	
				36	35	2	21.17	
				75	0	2	21.12	
	20175	1732.5	QPSK	1	0	0	22.85	22±1
				1	37	0	21.03	
				1	74	0	22.75	
				36	0	1	22.03	
				36	16	1	22.03	
				36	35	1	22.07	
				75	0	1	22.05	
			16QAM	1	0	1	22.53	21.8±1
				1	37	1	22.48	
				1	74	1	22.56	
				36	0	2	21.08	
				36	16	2	21.11	
				36	35	2	21.06	
				75	0	2	21.16	
	20325	1747.5	QPSK	1	0	0	22.89	22.5±1
				1	37	0	22.98	
				1	74	0	22.89	
				36	0	1	22.06	
				36	16	1	22.05	
				36	35	1	22.14	
				75	0	1	22.08	
			16QAM	1	0	1	22.18	21.6±1
				1	37	1	22.16	
				1	74	1	22.13	
				36	0	2	21.05	
				36	16	2	21.01	
				36	35	2	21.04	
				75	0	2	20.99	

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	23.16	22.7±1
				1	24	0	23.09	
				1	49	0	23.21	
				25	0	1	22.13	
				25	12	1	22.09	
				25	24	1	22.14	
				50	0	1	22.16	
			16QAM	1	0	1	21.94	21.5±1
				1	24	1	22.01	
				1	49	1	21.94	
				25	0	2	21.15	
				25	12	2	21.24	
				25	24	2	21.06	
				50	0	2	21.12	
	20175	1732.5	QPSK	1	0	0	22.9	22±1
				1	24	0	21.24	
				1	49	0	23	
				25	0	1	22.11	
				25	12	1	22.1	
				25	24	1	22.07	
				50	0	1	22.14	
			16QAM	1	0	1	22.66	21.9±1
				1	24	1	22.59	
				1	49	1	22.6	
				25	0	2	21.16	
				25	12	2	21.08	
				25	24	2	21.07	
				50	0	2	21.15	
	20350	1750.0	QPSK	1	0	0	23.01	22.6±1
				1	24	0	23.11	
				1	49	0	22.91	
				25	0	1	22.09	
				25	12	1	22.1	
				25	24	1	22.13	
				50	0	1	22.05	
			16QAM	1	0	1	21.96	21.6±1
				1	24	1	21.99	
				1	49	1	21.95	
				25	0	2	21.22	
				25	12	2	21.29	
				25	24	2	21.17	
				50	0	2	21.08	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
5MHz	20000	1715.0	QPSK	1	0	0	23.01	22.6±1
				1	12	0	22.99	
				1	24	0	23.11	
				12	0	1	22.04	
				12	6	1	21.94	
				12	11	1	21.96	
				25	0	1	22.09	
			16QAM	1	0	1	21.43	21.2±1
				1	12	1	21.51	
				1	24	1	21.43	
				12	0	2	21.21	
				12	6	2	21.26	
				12	11	2	21.17	
				25	0	2	21.04	
	20175	1732.5	QPSK	1	0	0	22.97	22.1±1
				1	12	0	21.26	
				1	24	0	23.02	
				12	0	1	22.01	
				12	6	1	22.09	
				12	11	1	22.11	
				25	0	1	22.04	
			16QAM	1	0	1	21.95	21.5±1
				1	12	1	21.96	
				1	24	1	21.92	
				12	0	2	21.05	
				12	6	2	21.15	
				12	11	2	21.13	
				25	0	2	21.08	
	20350	1750.0	QPSK	1	0	0	22.86	22.4±1
				1	12	0	22.8	
				1	24	0	22.87	
				12	0	1	22.01	
				12	6	1	21.97	
				12	11	1	22.08	
				25	0	1	22	
			16QAM	1	0	1	21.92	21.4±1
				1	12	1	21.96	
				1	24	1	21.82	
				12	0	2	20.96	
				12	6	2	21.01	
				12	11	2	21.03	
				25	0	2	21.03	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
3MHz	19965	1711.5	QPSK	1	0	0	23.15	22.6±1
				1	7	0	23.17	
				1	14	0	23.1	
				8	0	1	22.03	
				8	4	1	22.02	
				8	7	1	21.97	
				15	0	1	22.07	
			16QAM	1	0	1	21.98	21.5±1
				1	7	1	22.06	
				1	14	1	21.93	
				8	0	2	21.02	
				8	4	2	20.99	
				8	7	2	21.1	
				15	0	2	21.01	
	20175	1732.5	QPSK	1	0	0	22.91	21.9±1
				1	7	0	20.99	
				1	14	0	22.93	
				8	0	1	21.97	
				8	4	1	22.04	
				8	7	1	22.07	
				15	0	1	22.04	
			16QAM	1	0	1	22.62	21.8±1
				1	7	1	22.71	
				1	14	1	22.58	
				8	0	2	21.01	
				8	4	2	20.94	
				8	7	2	21.08	
				15	0	2	21.13	
	20385	1753.5	QPSK	1	0	0	23	22.5±1
				1	7	0	23.05	
				1	14	0	22.92	
				8	0	1	21.95	
				8	4	1	21.87	
				8	7	1	21.98	
				15	0	1	21.98	
			16QAM	1	0	1	22.01	21.4±1
				1	7	1	21.97	
				1	14	1	21.92	
				8	0	2	20.82	
				8	4	2	20.74	
				8	7	2	20.84	
				15	0	2	21.01	

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
1.4MHz	19957	1710.7	QPSK	1	0	0	23.14	22.8±1
				1	2	0	23.19	
				1	5	0	23.23	
				3	0	0	23.25	
				3	1	0	23.25	
				3	2	0	23.19	
				6	0	1	22.16	
			16QAM	1	0	1	21.95	21.6±1
				1	2	1	21.95	
				1	5	1	22.03	
				3	0	1	21.27	
				3	1	1	21.2	
				3	2	1	21.25	
				6	0	2	21.13	
	20175	1732.5	QPSK	1	0	0	22.97	22.2±1
				1	2	0	21.2	
				1	5	0	22.94	
				3	0	0	23.15	
				3	1	0	23.14	
				3	2	0	23.06	
				6	0	1	22.05	
			16QAM	1	0	1	21.66	21.7±1
				1	2	1	21.56	
				1	5	1	21.59	
				3	0	1	22.41	
				3	1	1	22.47	
				3	2	1	22.34	
				6	0	2	21	
	20393	1754.3	QPSK	1	0	0	22.98	22.5±1
				1	2	0	23.08	
				1	5	0	22.91	
				3	0	0	23.05	
				3	1	0	22.99	
				3	2	0	23.14	
				6	0	1	22.01	
			16QAM	1	0	1	21.95	21.6±1
				1	2	1	21.85	
				1	5	1	21.87	
				3	0	1	22.28	
				3	1	1	22.35	
				3	2	1	22.28	
				6	0	2	20.9	

LTE Band V:

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	23.57	23.1±1
				1	24	0	23.54	
				1	49	0	23.64	
				25	0	1	22.62	
				25	12	1	22.59	
				25	24	1	22.52	
				50	0	1	22.56	
			16QAM	1	0	1	22.39	22±1
				1	24	1	22.39	
				1	49	1	22.35	
				25	0	2	21.7	
				25	12	2	21.78	
				25	24	2	21.8	
				50	0	2	21.64	
	20525	836.5	QPSK	1	0	0	23.43	22.5±1
				1	24	0	21.78	
				1	49	0	23.49	
				25	0	1	22.75	
				25	12	1	22.7	
				25	24	1	22.76	
				50	0	1	22.72	
			16QAM	1	0	1	23.11	22.5±1
				1	24	1	23.06	
				1	49	1	23.11	
				25	0	2	21.83	
				25	12	2	21.73	
				25	24	2	21.84	
				50	0	2	21.73	
	20600	844	QPSK	1	0	0	23.56	23±1
				1	24	0	23.54	
				1	49	0	23.52	
				25	0	1	22.56	
				25	12	1	22.47	
				25	24	1	22.6	
				50	0	1	22.57	
			16QAM	1	0	1	22.54	22.1±1
				1	24	1	22.57	
				1	49	1	22.5	
				25	0	2	21.7	
				25	12	2	21.6	
				25	24	2	21.7	
				50	0	2	21.6	

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	23.46	23±1
				1	12	0	23.52	
				1	24	0	23.5	
				12	0	1	22.54	
				12	6	1	22.49	
				12	11	1	22.47	
				25	0	1	22.6	
			16QAM	1	0	1	22.91	22±1
				1	12	1	22.88	
				1	24	1	22.95	
				12	0	2	21.76	
				12	6	2	21.76	
				12	11	2	21.84	
				25	0	2	21.12	
	20525	836.5	QPSK	1	0	0	23.57	22.7±1
				1	12	0	21.76	
				1	24	0	23.54	
				12	0	1	22.62	
				12	6	1	22.64	
				12	11	1	22.57	
				25	0	1	22.62	
			16QAM	1	0	1	22.47	22±1
				1	12	1	22.5	
				1	24	1	22.57	
				12	0	2	21.65	
				12	6	2	21.6	
				12	11	2	21.63	
				25	0	2	21.65	
	20625	846.5	QPSK	1	0	0	23.39	23±1
				1	12	0	23.4	
				1	24	0	23.45	
				12	0	1	22.55	
				12	6	1	22.52	
				12	11	1	22.5	
				25	0	1	22.54	
			16QAM	1	0	1	22.47	22±1
				1	12	1	22.49	
				1	24	1	22.4	
				12	0	2	21.54	
				12	6	2	21.44	
				12	11	2	21.52	
				25	0	2	21.59	

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	23.61	23±1
				1	7	0	23.67	
				1	14	0	23.65	
				8	0	1	22.48	
				8	4	1	22.39	
				8	7	1	22.41	
				15	0	1	22.55	
			16QAM	1	0	1	22.42	22±1
				1	7	1	22.42	
				1	14	1	22.46	
				8	0	2	21.5	
				8	4	2	21.53	
				8	7	2	21.6	
				15	0	2	21.54	
	20525	836.5	QPSK	1	0	0	23.46	22.5±1
				1	7	0	21.53	
				1	14	0	23.43	
				8	0	1	22.53	
				8	4	1	22.43	
				8	7	1	22.46	
				15	0	1	22.58	
			16QAM	1	0	1	23.16	22.4±1
				1	7	1	23.06	
				1	14	1	23.09	
				8	0	2	21.52	
				8	4	2	21.51	
				8	7	2	21.54	
				15	0	2	21.71	
	20635	847.5	QPSK	1	0	0	23.59	23.1±1
				1	7	0	23.55	
				1	14	0	23.68	
				8	0	1	22.48	
				8	4	1	22.48	
				8	7	1	22.57	
				15	0	1	22.59	
			16QAM	1	0	1	22.57	22±1
				1	7	1	22.61	
				1	14	1	22.64	
				8	0	2	21.37	
				8	4	2	21.28	
				8	7	2	21.41	
				15	0	2	21.38	

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	23.58	23.2±1
				1	2	0	23.51	
				1	5	0	23.68	
				3	0	0	23.67	
				3	1	0	23.6	
				3	2	0	23.62	
				6	0	1	22.57	
			16QAM	1	0	1	22.43	22.2±1
				1	2	1	22.46	
				1	5	1	22.5	
				3	0	1	22.73	
				3	1	1	22.73	
				3	2	1	22.74	
				6	0	2	21.6	
	20525	836.5	QPSK	1	0	0	23.46	23.1±1
				1	2	0	22.73	
				1	5	0	23.54	
				3	0	0	23.67	
				3	1	0	23.72	
				3	2	0	23.68	
				6	0	1	22.57	
			16QAM	1	0	1	22.13	22.2±1
				1	2	1	22.23	
				1	5	1	22.18	
				3	0	1	22.9	
				3	1	1	22.81	
				3	2	1	22.87	
				6	0	2	21.53	
	20643	848.3	QPSK	1	0	0	23.45	23.2±1
				1	2	0	23.42	
				1	5	0	23.43	
				3	0	0	23.68	
				3	1	0	23.72	
				3	2	0	23.71	
				6	0	1	22.59	
			16QAM	1	0	1	22.13	22.3±1
				1	2	1	22.08	
				1	5	1	22.05	
				3	0	1	22.87	
				3	1	1	22.77	
				3	2	1	22.77	
				6	0	2	21.55	

LTE Band VII:

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	Tune up Power tolerant
20MHz	20850	2510	QPSK	1	0	0	23.03	22.5±1
				1	49	0	23.04	
				1	99	0	22.97	
				50	0	1	22.01	
				50	24	1	22.09	
				50	49	1	22.06	
				100	0	1	21.94	
			16QAM	1	0	1	21.87	21.4±1
				1	49	1	21.97	
				1	99	1	21.78	
				50	0	2	21.01	
				50	24	2	21	
				50	49	2	20.97	
				100	0	2	20.96	
	21100	2535	QPSK	1	0	0	22.7	21.9±1
				1	49	0	21	
				1	99	0	22.77	
				50	0	1	21.73	
				50	24	1	21.68	
				50	49	1	21.64	
				100	0	1	21.78	
			16QAM	1	0	1	22.18	21.5±1
				1	49	1	22.09	
				1	99	1	22.22	
				50	0	2	20.78	
				50	24	2	20.86	
				50	49	2	20.72	
				100	0	2	20.86	
	21350	2560	QPSK	1	0	0	22.58	22.2±1
				1	49	0	22.52	
				1	99	0	22.68	
				50	0	1	21.84	
				50	24	1	21.9	
				50	49	1	21.79	
				100	0	1	21.82	
			16QAM	1	0	1	21.81	21.4±1
				1	49	1	21.71	
				1	99	1	21.9	
				50	0	2	20.84	
				50	24	2	20.9	
				50	49	2	20.92	
				100	0	2	20.86	

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	23.05	22.6±1
				1	37	0	23.11	
				1	74	0	22.97	
				36	0	1	22.08	
				36	16	1	22.04	
				36	35	1	22.17	
				75	0	1	22	
			16QAM	1	0	1	21.8	21.5±1
				1	37	1	21.89	
				1	74	1	21.78	
				36	0	2	21.12	
				36	16	2	21.04	
				36	35	2	21.1	
				75	0	2	21.05	
	21100	1732.5	QPSK	1	0	0	22.64	21.9±1
				1	37	0	21.04	
				1	74	0	22.74	
				36	0	1	21.8	
				36	16	1	21.77	
				36	35	1	21.73	
				75	0	1	21.85	
			16QAM	1	0	1	22.29	21.6±1
				1	37	1	22.21	
				1	74	1	22.23	
				36	0	2	20.85	
				36	16	2	20.85	
				36	35	2	20.94	
				75	0	2	20.91	
	21375	1747.5	QPSK	1	0	0	22.71	22.3±1
				1	37	0	22.77	
				1	74	0	22.72	
				36	0	1	21.88	
				36	16	1	21.86	
				36	35	1	21.86	
				75	0	1	21.88	
			16QAM	1	0	1	21.87	21.4±1
				1	37	1	21.95	
				1	74	1	21.79	
				36	0	2	20.91	
				36	16	2	21	
				36	35	2	20.81	
				75	0	2	20.88	

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	23.09	22.6±1
				1	24	0	23.06	
				1	49	0	23.12	
				25	0	1	22.03	
				25	12	1	22.07	
				25	24	1	22.04	
				50	0	1	22	
			16QAM	1	0	1	21.86	21.4±1
				1	24	1	21.76	
				1	49	1	21.89	
				25	0	2	21.09	
				25	12	2	21.01	
				25	24	2	20.99	
				50	0	2	21.08	
	21100	2535	QPSK	1	0	0	22.68	21.8±1
				1	24	0	21.01	
				1	49	0	22.58	
				25	0	1	21.83	
				25	12	1	21.9	
				25	24	1	21.8	
				50	0	1	21.88	
			16QAM	1	0	1	22.31	21.6±1
				1	24	1	22.35	
				1	49	1	22.24	
				25	0	2	20.97	
				25	12	2	20.94	
				25	24	2	21.01	
				50	0	2	20.93	
	21400	2565	QPSK	1	0	0	22.79	22.3±1
				1	24	0	22.76	
				1	49	0	22.78	
				25	0	1	21.84	
				25	12	1	21.77	
				25	24	1	21.91	
				50	0	1	21.83	
			16QAM	1	0	1	21.71	21.3±1
				1	24	1	21.74	
				1	49	1	21.67	
				25	0	2	21.02	
				25	12	2	21	
				25	24	2	21.05	
				50	0	2	20.93	

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	22.9	22.5±1
				1	12	0	22.95	
				1	24	0	22.94	
				12	0	1	21.98	
				12	6	1	22.02	
				12	11	1	21.93	
				25	0	1	21.98	
			16QAM	1	0	1	22.21	21.7±1
				1	12	1	22.27	
				1	24	1	22.27	
				12	0	2	21.19	
				12	6	2	21.25	
				12	11	2	21.17	
				25	0	2	21.05	
	20175	1732.5	QPSK	1	0	0	22.67	21.9±1
				1	12	0	21.25	
				1	24	0	22.67	
				12	0	1	21.71	
				12	6	1	21.8	
				12	11	1	21.81	
				25	0	1	21.72	
			16QAM	1	0	1	21.61	21.2±1
				1	12	1	21.64	
				1	24	1	21.61	
				12	0	2	20.78	
				12	6	2	20.79	
				12	11	2	20.75	
				25	0	2	20.82	
	20375	1752.5	QPSK	1	0	0	22.63	22.2±1
				1	12	0	22.71	
				1	24	0	22.54	
				12	0	1	21.76	
				12	6	1	21.7	
				12	11	1	21.69	
				25	0	1	21.75	
			16QAM	1	0	1	21.68	21.2±1
				1	12	1	21.73	
				1	24	1	21.73	
				12	0	2	20.75	
				12	6	2	20.67	
				12	11	2	20.85	
				25	0	2	20.85	

ERP & EIRP

EIRP for LTE Band II (Part 24E)

Frequency (MHz)	Channel Bandwidth (MHz)	Mod.	RB Size/Offset	Antenna Polarization (H/V)	Absolute Level (dBm)	Limit (dBm)
1850.7	1.4	QPSK	1/0	V	24.48	33.01
1880	1.4	QPSK	1/0	V	24.72	33.01
1909.3	1.4	QPSK	1/0	V	24.99	33.01
1850.7	1.4	QPSK	1/0	H	23.47	33.01
1880	1.4	QPSK	1/0	H	22.33	33.01
1909.3	1.4	QPSK	1/0	H	23.15	33.01
1850.7	1.4	16-QAM	1/0	V	23.16	33.01
1880	1.4	16-QAM	1/0	V	23.68	33.01
1909.3	1.4	16-QAM	1/0	V	23.81	33.01
1850.7	1.4	16-QAM	1/0	H	21.73	33.01
1880	1.4	16-QAM	1/0	H	21.9	33.01
1909.3	1.4	16-QAM	1/0	H	22.09	33.01
1851.5	3	QPSK	1/0	V	23.52	33.01
1880	3	QPSK	1/0	V	24.66	33.01
1908.5	3	QPSK	1/0	V	24.97	33.01
1851.5	3	QPSK	1/0	H	21.14	33.01
1880	3	QPSK	1/0	H	23.51	33.01
1908.5	3	QPSK	1/0	H	23.89	33.01
1851.5	3	16-QAM	1/0	V	23.46	33.01
1880	3	16-QAM	1/0	V	24.34	33.01
1908.5	3	16-QAM	1/0	V	23.93	33.01
1851.5	3	16-QAM	1/0	H	21.94	33.01
1880	3	16-QAM	1/0	H	22.95	33.01
1908.5	3	16-QAM	1/0	H	21.59	33.01
1852.5	5	QPSK	1/24	V	24.68	33.01
1880	5	QPSK	1/0	V	24.53	33.01
1907.5	5	QPSK	1/24	V	24.83	33.01
1852.5	5	QPSK	1/24	H	23.4	33.01
1880	5	QPSK	1/0	H	22.14	33.01

1907.5	5	QPSK	1/24	H	23.04	33.01
1852.5	5	16-QAM	1/24	V	23.59	33.01
1880	5	16-QAM	1/0	V	23.94	33.01
1907.5	5	16-QAM	1/24	V	23.75	33.01
1852.5	5	16-QAM	1/24	H	22.3	33.01
1880	5	16-QAM	1/0	H	22.14	33.01
1907.5	5	16-QAM	1/24	H	21.28	33.01
1855	10	QPSK	1/0	V	24.64	33.01
1880	10	QPSK	1/0	V	24.62	33.01
1905	10	QPSK	1/49	V	25.02	33.01
1855	10	QPSK	1/0	H	22.16	33.01
1880	10	QPSK	1/0	H	22.41	33.01
1905	10	QPSK	1/49	H	23.92	33.01
1855	10	16-QAM	1/0	V	23.44	33.01
1880	10	16-QAM	1/0	V	24.28	33.01
1905	10	16-QAM	1/49	V	23.7	33.01
1855	10	16-QAM	1/0	H	21.19	33.01
1880	10	16-QAM	1/0	H	22.82	33.01
1905	10	16-QAM	1/49	H	21.46	33.01
1857.5	15	QPSK	1/0	V	24.6	33.01
1880	15	QPSK	1/0	V	24.53	33.01
1902.5	15	QPSK	1/0	V	24.68	33.01
1857.5	15	QPSK	1/0	H	23.27	33.01
1880	15	QPSK	1/0	H	22.79	33.01
1902.5	15	QPSK	1/0	H	23.01	33.01
1857.5	15	16-QAM	1/0	V	23.42	33.01
1880	15	16-QAM	1/0	V	24.18	33.01
1902.5	15	16-QAM	1/0	V	24.01	33.01
1857.5	15	16-QAM	1/0	H	21.73	33.01
1880	15	16-QAM	1/0	H	22.77	33.01
1902.5	15	16-QAM	1/0	H	21.51	33.01
1860	20	QPSK	1/0	V	24.59	33.01
1880	20	QPSK	1/0	V	24.57	33.01
1900	20	QPSK	1/0	V	24.61	33.01
1860	20	QPSK	1/0	H	22.43	33.01

1880	20	QPSK	1/0	H	22.68	33.01
1900	20	QPSK	1/0	H	22.67	33.01
1860	20	16-QAM	1/0	V	23.48	33.01
1880	20	16-QAM	1/0	V	24.03	33.01
1900	20	16-QAM	1/0	V	23.91	33.01
1860	20	16-QAM	1/0	H	21.68	33.01
1880	20	16-QAM	1/0	H	21.79	33.01
1900	20	16-QAM	1/0	H	22.55	33.01

EIRP for LTE Band IV (Part 27)

Frequency (MHz)	Channel Bandwidth (MHz)	Mod.	RB Size/Offset	Antenna Polarization (H/V)	Absolute Level (dBm)	Limit (dBm)
1710.7	1.4	QPSK	1/0	V	24.93	30
1732.5	1.4	QPSK	1/0	V	24.67	30
1754.3	1.4	QPSK	1/0	V	24.68	30
1710.7	1.4	QPSK	1/0	H	23.2	30
1732.5	1.4	QPSK	1/0	H	23.56	30
1754.3	1.4	QPSK	1/0	H	23.5	30
1710.7	1.4	16-QAM	1/5	V	23.73	30
1732.5	1.4	16-QAM	1/0	V	23.36	30
1754.3	1.4	16-QAM	1/0	V	23.65	30
1710.7	1.4	16-QAM	1/5	H	21.96	30
1732.5	1.4	16-QAM	1/0	H	21.64	30
1754.3	1.4	16-QAM	1/0	H	21.3	30
1711.5	3	QPSK	1/0	V	24.85	30
1732.5	3	QPSK	1/0	V	24.61	30
1753.5	3	QPSK	1/0	V	24.7	30
1711.5	3	QPSK	1/0	H	23.12	30
1732.5	3	QPSK	1/0	H	23.56	30
1753.5	3	QPSK	1/0	H	22.72	30
1711.5	3	16-QAM	1/0	V	23.68	30
1732.5	3	16-QAM	1/0	V	24.32	30
1753.5	3	16-QAM	1/0	V	23.71	30
1711.5	3	16-QAM	1/0	H	22.65	30
1732.5	3	16-QAM	1/0	H	22.56	30
1753.5	3	16-QAM	1/0	H	22.44	30
1712.5	5	QPSK	1/0	V	24.71	30
1732.5	5	QPSK	1/0	V	24.67	30
1752.5	5	QPSK	1/24	V	24.56	30
1712.5	5	QPSK	1/0	H	22.25	30
1732.5	5	QPSK	1/0	H	23.43	30
1752.5	5	QPSK	1/24	H	22.86	30
1712.5	5	16-QAM	1/0	V	23.13	30
1732.5	5	16-QAM	1/0	V	23.65	30
1752.5	5	16-QAM	1/24	V	23.62	30
1712.5	5	16-QAM	1/0	H	22.04	30

1732.5	5	16-QAM	1/0	H	21.69	30
1752.5	5	16-QAM	1/24	H	21.8	30
1715	10	QPSK	1/0	V	24.86	30
1732.5	10	QPSK	1/49	V	24.7	30
1750	10	QPSK	1/0	V	24.71	30
1715	10	QPSK	1/0	H	22.75	30
1732.5	10	QPSK	1/49	H	22.28	30
1750	10	QPSK	1/0	H	22.63	30
1715	10	16-QAM	1/0	V	23.64	30
1732.5	10	16-QAM	1/49	V	24.3	30
1750	10	16-QAM	1/0	V	23.66	30
1715	10	16-QAM	1/0	H	22.23	30
1732.5	10	16-QAM	1/49	H	23.14	30
1750	10	16-QAM	1/0	H	22.25	30
1717.5	15	QPSK	1/0	V	24.79	30
1732.5	15	QPSK	1/74	V	24.45	30
1747.5	15	QPSK	1/0	V	24.59	30
1717.5	15	QPSK	1/0	H	23.33	30
1732.5	15	QPSK	1/74	H	22.88	30
1747.5	15	QPSK	1/0	H	23.16	30
1717.5	15	16-QAM	1/0	V	23.63	30
1732.5	15	16-QAM	1/74	V	24.26	30
1747.5	15	16-QAM	1/0	V	23.88	30
1717.5	15	16-QAM	1/0	H	21.81	30
1732.5	15	16-QAM	1/74	H	22.47	30
1747.5	15	16-QAM	1/0	H	22.74	30
1720	20	QPSK	1/99	V	24.82	30
1732.5	20	QPSK	1/99	V	24.56	30
1745	20	QPSK	1/0	V	24.53	30
1720	20	QPSK	1/99	H	22.8	30
1732.5	20	QPSK	1/99	H	22.62	30
1745	20	QPSK	1/0	H	22.03	30
1720	20	16-QAM	1/99	V	23.67	30
1732.5	20	16-QAM	1/99	V	24.03	30
1745	20	16-QAM	1/0	V	23.85	30
1720	20	16-QAM	1/99	H	22.21	30
1732.5	20	16-QAM	1/99	H	21.69	30
1745	20	16-QAM	1/0	H	22.59	30

EIRP for LTE Band V (Part 22)

Frequency (MHz)	Channel Bandwidth (MHz)	Mod.	RB Size/Offset	Antenna Polarization (H/V)	Absolute Level (dBm)	Limit (dBm)
824.7	1.4	QPSK	1/5	V	21.16	34.77
836.5	1.4	QPSK	1/5	V	20.38	34.77
848.3	1.4	QPSK	1/5	V	21.07	34.77
824.7	1.4	QPSK	1/5	H	18.93	34.77
836.5	1.4	QPSK	1/5	H	18.33	34.77
848.3	1.4	QPSK	1/5	H	19.64	34.77
824.7	1.4	16-QAM	1/5	V	20.11	34.77
836.5	1.4	16-QAM	1/5	V	19.88	34.77
848.3	1.4	16-QAM	1/5	V	19.73	34.77
824.7	1.4	16-QAM	1/5	H	18.4	34.77
836.5	1.4	16-QAM	1/5	H	17.94	34.77
848.3	1.4	16-QAM	1/5	H	18.05	34.77
825.5	3	QPSK	1/14	V	21.26	34.77
836.5	3	QPSK	1/0	V	20.11	34.77
847.5	3	QPSK	1/14	V	21.24	34.77
825.5	3	QPSK	1/14	H	18.96	34.77
836.5	3	QPSK	1/0	H	17.74	34.77
847.5	3	QPSK	1/14	H	18.77	34.77
825.5	3	16-QAM	1/14	V	20.07	34.77
836.5	3	16-QAM	1/0	V	19.19	34.77
847.5	3	16-QAM	1/14	V	20.22	34.77
825.5	3	16-QAM	1/14	H	18.78	34.77
836.5	3	16-QAM	1/0	H	17.48	34.77
847.5	3	16-QAM	1/14	H	19.15	34.77
826.5	5	QPSK	1/24	V	21.29	34.77
836.5	5	QPSK	1/24	V	21.14	34.77
846.5	5	QPSK	1/24	V	21.17	34.77
826.5	5	QPSK	1/24	H	19.63	34.77
836.5	5	QPSK	1/24	H	18.95	34.77
846.5	5	QPSK	1/24	H	19.38	34.77
826.5	5	16-QAM	1/24	V	20	34.77
836.5	5	16-QAM	1/24	V	20.76	34.77
846.5	5	16-QAM	1/24	V	20.15	34.77
826.5	5	16-QAM	1/24	H	17.87	34.77
836.5	5	16-QAM	1/24	H	19.47	34.77
846.5	5	16-QAM	1/24	H	18.25	34.77
829	10	QPSK	1/49	V	21.15	34.77
836.5	10	QPSK	1/49	V	21.19	34.77
844	10	QPSK	1/49	V	21.1	34.77
829	10	QPSK	1/49	H	20	34.77
836.5	10	QPSK	1/49	H	18.95	34.77
844	10	QPSK	1/49	H	19.52	34.77
829	10	16-QAM	1/49	V	20.6	34.77
836.5	10	16-QAM	1/49	V	20.22	34.77
844	10	16-QAM	1/49	V	20.05	34.77
829	10	16-QAM	1/49	H	18.93	34.77
836.5	10	16-QAM	1/49	H	17.91	34.77

844	10	16-QAM	1/49	H	17.75	34.77

ERP for LTE Band VII (Part 27)

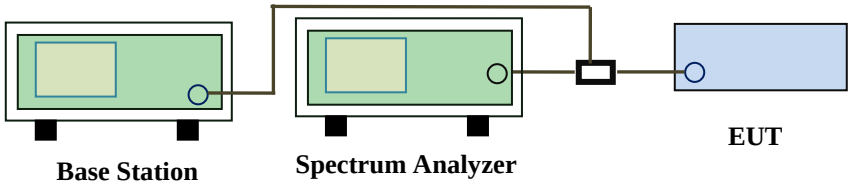
Frequency (MHz)	Channel Bandwidth (MHz)	Mod.	RB Size/Offset	Antenna Polarization (H/V)	Absolute Level (dBm)	Limit (dBm)
2502.5	5	QPSK	1/0	V	25.4	30
2535	5	QPSK	1/0	V	25.17	30
2567.5	5	QPSK	1/24	V	25.13	30
2502.5	5	QPSK	1/0	H	18.04	30
2535	5	QPSK	1/0	H	23.15	30
2567.5	5	QPSK	1/24	H	17.06	30
2502.5	5	16-QAM	1/0	V	24.71	30
2535	5	16-QAM	1/0	V	24.11	30
2567.5	5	16-QAM	1/24	V	24.18	30
2502.5	5	16-QAM	1/0	H	23.31	30
2535	5	16-QAM	1/0	H	21.94	30
2567.5	5	16-QAM	1/24	H	22.46	30
2505	10	QPSK	1/0	V	25.59	30
2535	10	QPSK	1/49	V	25.08	30
2565	10	QPSK	1/0	V	25.29	30
2505	10	QPSK	1/0	H	24.26	30
2535	10	QPSK	1/49	H	23.15	30
2565	10	QPSK	1/0	H	23.02	30
2505	10	16-QAM	1/0	V	24.36	30
2535	10	16-QAM	1/49	V	24.74	30
2565	10	16-QAM	1/0	V	24.21	30
2505	10	16-QAM	1/0	H	22.84	30
2535	10	16-QAM	1/49	H	23.38	30
2565	10	16-QAM	1/0	H	23.04	30
2507.5	15	QPSK	1/0	V	25.55	30
2535	15	QPSK	1/74	V	25.24	30
2562.5	15	QPSK	1/0	V	25.21	30
2507.5	15	QPSK	1/0	H	23.99	30
2535	15	QPSK	1/74	H	22.86	30
2562.5	15	QPSK	1/0	H	23.9	30
2507.5	15	16-QAM	1/0	V	24.3	30
2535	15	16-QAM	1/74	V	24.73	30

2562.5	15	16-QAM	1/0	V	24.37	30
2507.5	15	16-QAM	1/0	H	23.24	30
2535	15	16-QAM	1/74	H	22.84	30
2562.5	15	16-QAM	1/0	H	22.32	30
2510	20	QPSK	1/99	V	25.47	30
2535	20	QPSK	1/99	V	25.27	30
2560	20	QPSK	1/0	V	25.08	30
2510	20	QPSK	1/99	H	24.28	30
2535	20	QPSK	1/99	H	23.33	30
2560	20	QPSK	1/0	H	23.72	30
2510	20	16-QAM	1/99	V	24.28	30
2535	20	16-QAM	1/99	V	24.72	30
2560	20	16-QAM	1/0	V	24.31	30
2510	20	16-QAM	1/99	H	22.31	30
2535	20	16-QAM	1/99	H	22.95	30
2560	20	16-QAM	1/0	H	22.42	30

6.3 Peak-Average Ratio

Temperature	24 °C
Relative Humidity	55%
Atmospheric Pressure	1013mbar
Test date :	February 05, 2018
Tested By :	Aarron Liang

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 II (part 24E)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1880	RB 1/0	QPSK	25.78	22.63	3.15
			16QAM	25.35	21.52	3.83
3	1880	RB 1/0	QPSK	25.46	22.62	2.84
			16QAM	25.26	21.41	3.85
5	1880	RB 1/0	QPSK	25.38	22.74	2.64
			16QAM	25.46	21.63	3.83
10	1880	RB 1/0	QPSK	25.86	22.62	3.24
			16QAM	24.97	22.16	2.81
15	1880	RB 1/0	QPSK	25.68	22.75	2.93
			16QAM	25.27	21.59	3.68
20	1880	RB 1/0	QPSK	25.28	22.81	2.47
			16QAM	25.75	21.73	4.02

LTE Band IV (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
1.4	1732.5	RB 1/0	QPSK	25.35	22.91	2.44
			16QAM	25.26	21.94	3.32
3	1732.5	RB 1/0	QPSK	25.4	23.23	2.17
			16QAM	25.15	22.04	3.11
5	1732.5	RB 1/0	QPSK	25.28	23.3	1.98
			16QAM	25.64	22.35	3.29
10	1732.5	RB 1/0	QPSK	25.38	22.56	2.82
			16QAM	25.84	21.56	4.28
15	1732.5	RB 1/0	QPSK	25.66	22.81	2.85
			16QAM	25.35	21.73	3.62
20	1732.5	RB 1/0	QPSK	25.75	23.29	2.46
			16QAM	25.49	22.25	3.24

LTE Band V (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	25.55	22.6	2.95
			16QAM	25.74	21.55	4.19
3	836.5	RB 1/0	QPSK	24.64	22.63	2.01
			16QAM	24.62	21.61	3.01
5	836.5	RB 1/0	QPSK	25.03	22.73	2.3
			16QAM	24.83	22.06	2.77
10	836.5	RB 1/0	QPSK	25.08	22.91	2.17
			16QAM	24.92	22.09	2.83

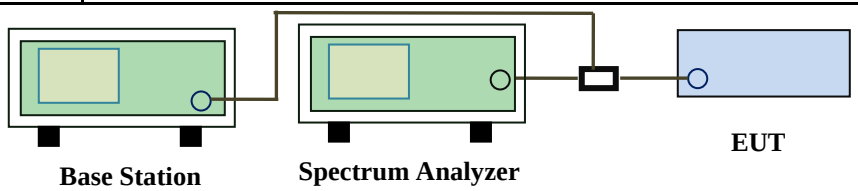
LTE Band VII (part 27)

BW(MHz)	Frequency (MHz)	Mode	Modulation	Conducted Power (dBm)		Peak-Average Ratio (PAR)
				Peak	Average	
5	2535	RB 1/0	QPSK	25.55	22.6	2.95
			16QAM	25.74	21.55	4.19
10	2535	RB 1/0	QPSK	24.64	22.63	2.01
			16QAM	24.62	21.61	3.01
15	2535	RB 1/0	QPSK	25.03	22.73	2.3
			16QAM	24.83	22.06	2.77
20	2535	RB 1/0	QPSK	25.08	22.91	2.17
			16QAM	24.92	22.09	2.83

6.4 Occupied Bandwidth

Temperature	25 °C
Relative Humidity	54%
Atmospheric Pressure	1010mbar
Test date :	February 06, 2018
Tested By :	Aarron Liang

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 II (Part 24E)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1851	16QAM	1.101	1.301
			QPSK	1.1081	1.301
1.4	18900	1880	16QAM	1.1071	1.329
			QPSK	1.1036	1.305
1.4	19193	1909	16QAM	1.1003	1.307
			QPSK	1.1067	1.313
3	18615	1852	16QAM	2.7393	2.995
			QPSK	2.7413	3.012
3	18900	1880	16QAM	2.7369	3.007
			QPSK	2.7372	3.024
3	19185	1909	16QAM	2.7342	3.002
			QPSK	2.7413	3.001
5	18625	1853	16QAM	4.5256	5.196
			QPSK	4.524	5.171
5	18900	1880	16QAM	4.5241	5.153
			QPSK	4.5385	5.198
5	19175	1908	16QAM	4.5498	5.19
			QPSK	4.5258	5.147
10	18650	1855	16QAM	9.0773	10.25
			QPSK	9.083	10.3
10	18900	1880	16QAM	9.1293	10.38
			QPSK	9.1189	10.4
10	19150	1905	16QAM	9.0595	10.19
			QPSK	9.0993	10.33
15	18675	1858	16QAM	13.491	15.01
			QPSK	13.51	15.02
15	18900	1880	16QAM	13.54	14.99
			QPSK	13.542	15.1
15	19125	1903	16QAM	13.488	15.07
			QPSK	13.518	15.13

20	18700	1860	16QAM	17.868	19.19
			QPSK	17.886	19.42
20	18900	1880	16QAM	17.921	19.27
			QPSK	17.928	19.46
20	19100	1900	16QAM	17.953	19.6
			QPSK	17.959	19.82

LTE Band IV (Part 27)

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1711	16QAM	1.104	1.337
			QPSK	1.021	1.31
1.4	20175	1733	16QAM	1.102	1.311
			QPSK	1.1053	1.323
1.4	20393	1754	16QAM	1.0959	13.07
			QPSK	1.1036	1.311
3	19965	1712	16QAM	2.7439	3.022
			QPSK	2.742	3.022
3	20175	1733	16QAM	2.7326	3
			QPSK	2.7356	3.029
3	20385	1754	16QAM	2.7363	3.011
			QPSK	2.7407	3.014
5	19975	1713	16QAM	4.5456	5.24
			QPSK	4.5301	5.24
5	20175	1733	16QAM	4.5239	5.117
			QPSK	4.5333	5.197
5	20375	1753	16QAM	4.5422	5.168
			QPSK	4.5299	5.134
10	20000	1715	16QAM	9.1023	10.22
			QPSK	9.0828	10.31
10	20175	1733	16QAM	9.105	10.41
			QPSK	9.1002	10.28
10	20350	1750	16QAM	9.0997	10.22
			QPSK	9.1219	10.39
15	20025	1718	16QAM	13.475	14.99
			QPSK	13.486	15
15	20175	1733	16QAM	13.489	15.05
			QPSK	13.497	15.06
15	20325	1748	16QAM	13.526	14.99
			QPSK	13.518	15.08

20	20050	1720	16QAM	17.929	19.47
			QPSK	17.933	19.44
20	20175	1733	16QAM	17.891	19.23
			QPSK	17.977	19.45
20	20300	1745	16QAM	17.864	19.48
			QPSK	17.901	19.7

LTE Band V (Part 22H)

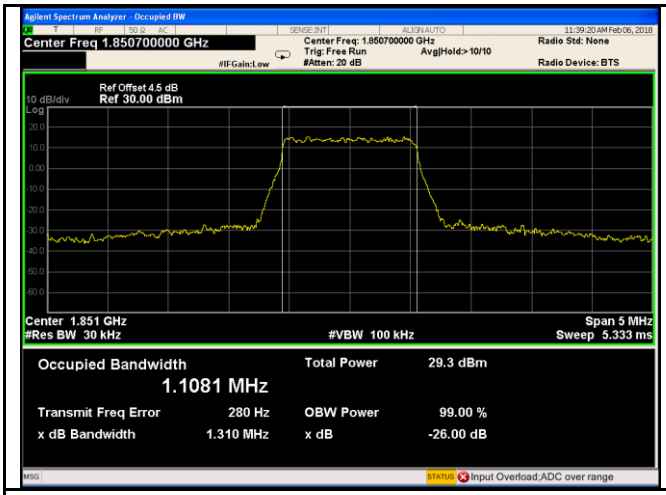
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	20407	824.7	16QAM	1.1044	1.293
			QPSK	1.038	1.311
1.4	20525	836.5	16QAM	1.1095	1.302
			QPSK	1.112	1.308
1.4	20643	848.3	16QAM	1.001	1.319
			QPSK	1.1005	1.325
3	20415	825.5	16QAM	2.7409	3.003
			QPSK	2.7427	3.001
3	20525	836.5	16QAM	2.738	3.007
			QPSK	2.7295	3.033
3	20635	847.5	16QAM	2.7353	3.015
			QPSK	2.7384	2.998
5	20425	826.5	16QAM	4.5563	5.203
			QPSK	4.5619	5.2
5	20525	836.5	16QAM	4.5142	5.012
			QPSK	4.5143	5.082
5	20625	846.5	16QAM	4.5367	5.09
			QPSK	4.5316	5.192
10	20450	829	16QAM	9.0744	10.22
			QPSK	9.0733	10.25
10	20525	836.5	16QAM	9.1176	10.21
			QPSK	9.1464	10.24
10	20800	844	16QAM	9.1193	10.21
			QPSK	9.1241	10.29

LTE Band VII (Part 27) result

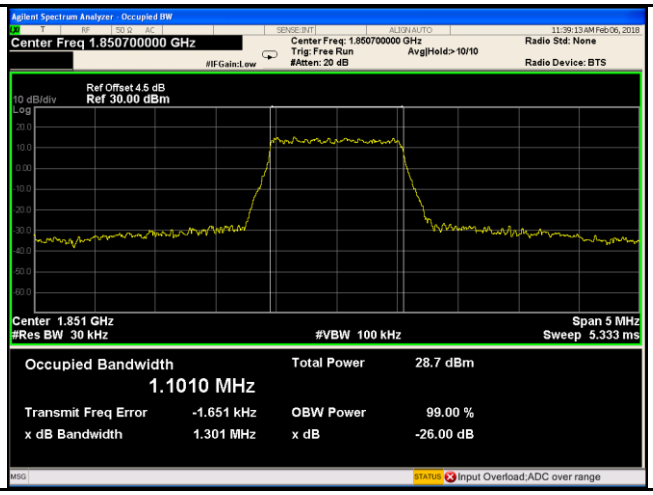
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	20775	2503	16QAM	4.5384	5.137
			QPSK	4.5373	5.139
5	21100	2535	16QAM	4.5187	5.136
			QPSK	4.5224	5.079
5	21425	2568	16QAM	4.5539	5.473
			QPSK	4.5318	5.232
10	20800	2505	16QAM	9.0759	10.22
			QPSK	9.0862	10.36
10	21100	2535	16QAM	9.0997	10.21
			QPSK	9.1055	10.19
10	21400	2565	16QAM	9.0867	10.17
			QPSK	9.0962	10.37
15	20825	2508	16QAM	13.498	15.03
			QPSK	13.478	14.76
15	21100	2535	16QAM	13.497	14.95
			QPSK	13.512	15.01
15	21400	2563	16QAM	13.499	15.08
			QPSK	13.486	14.85
20	20850	2510	16QAM	17.881	19.38
			QPSK	17.882	19.4
20	21100	2535	16QAM	17.947	19.49
			QPSK	17.936	19.97
20	21350	2560	16QAM	17.93	19.48
			QPSK	17.968	19.72

Test Plots

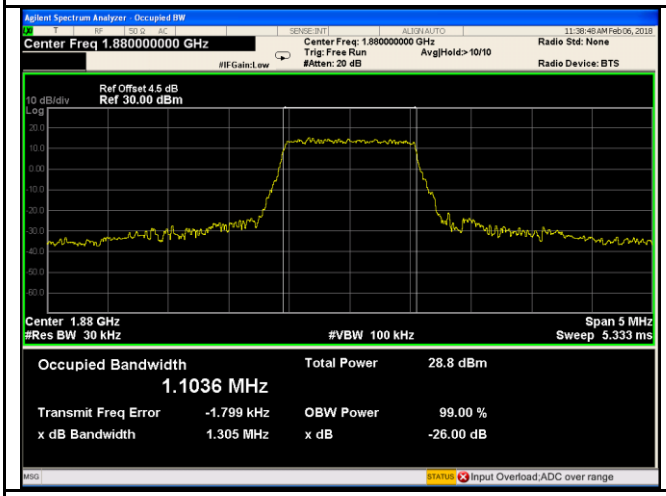
LTE Band II (Part 24E)



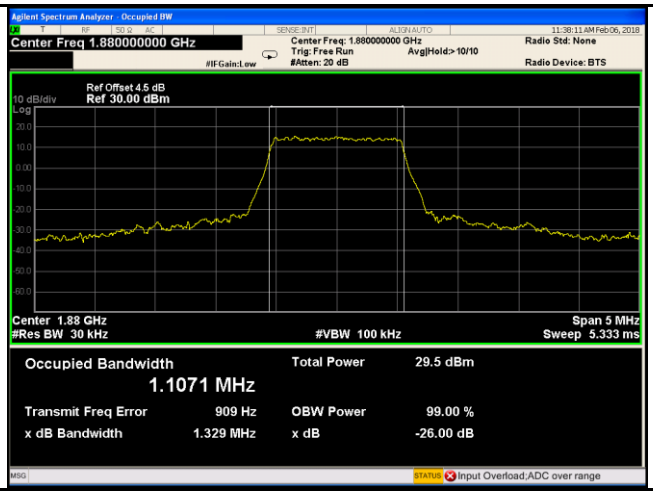
LTE Band II - Low CH QPSK-1.4



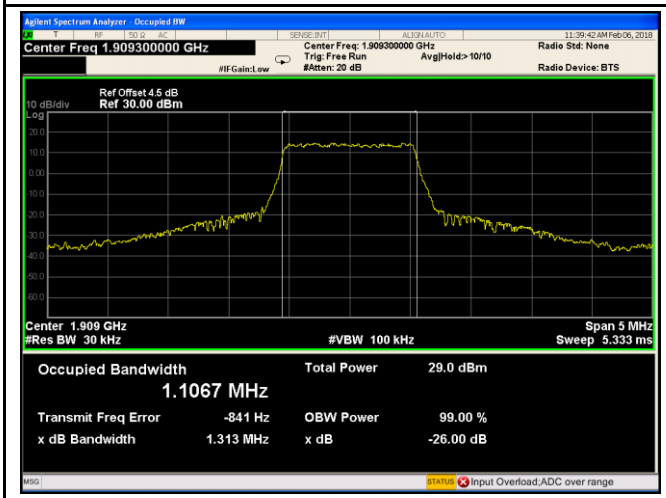
LTE Band II - Low CH 16QAM-1.4



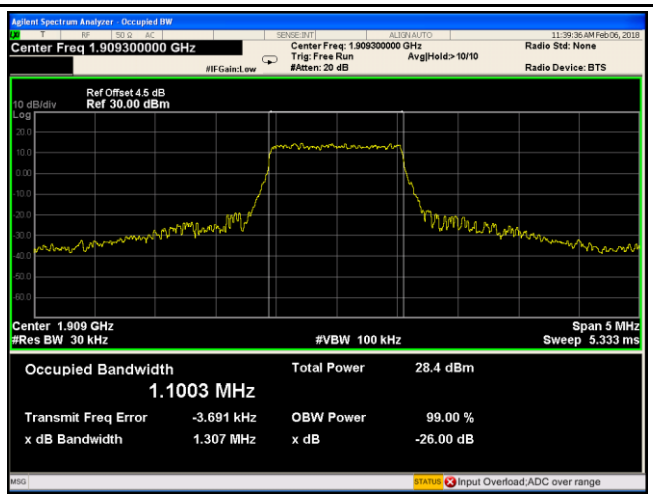
LTE Band II - Middle CH QPSK-1.4



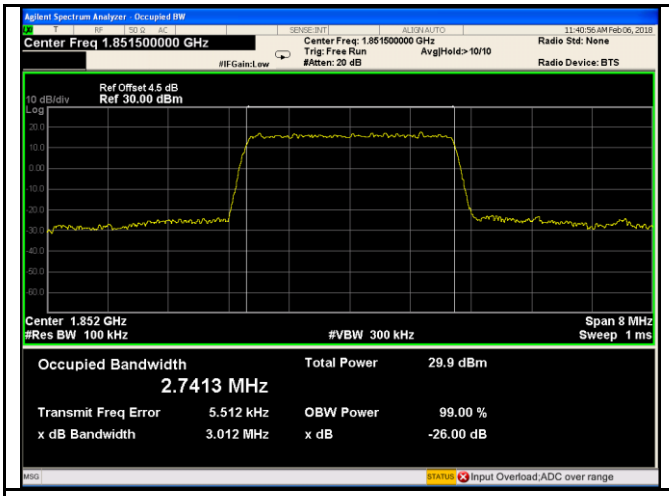
LTE Band II - Middle CH 16QAM-1.4



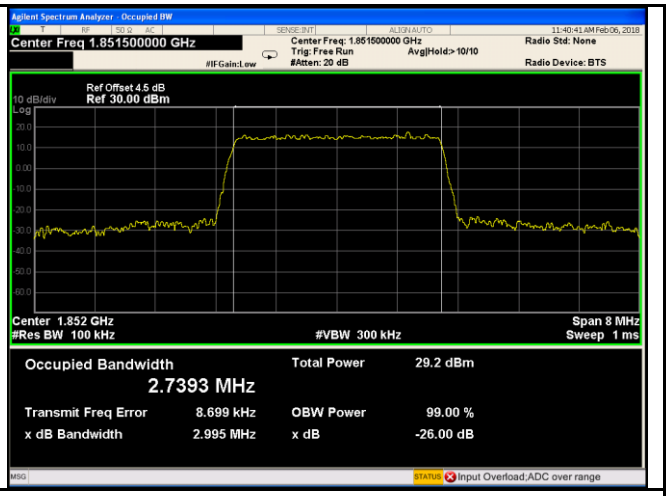
LTE Band II - High CH QPSK-1.4



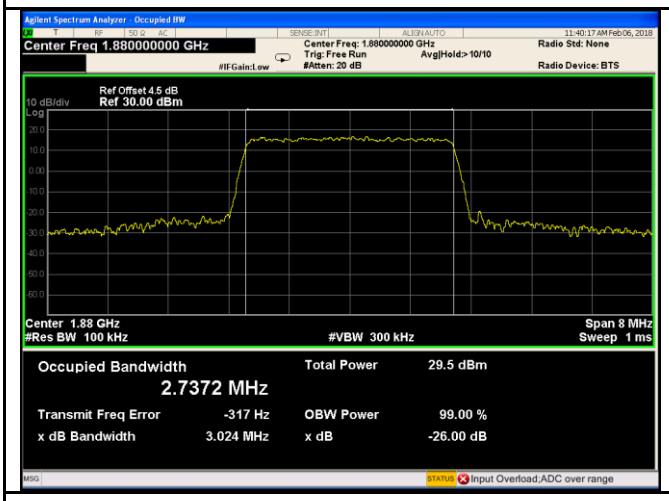
LTE Band II - High CH 16QAM-1.4



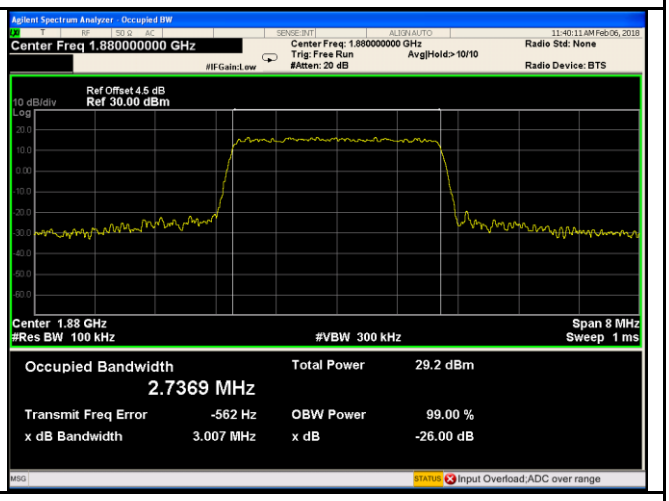
LTE Band II - Low CH QPSK-3



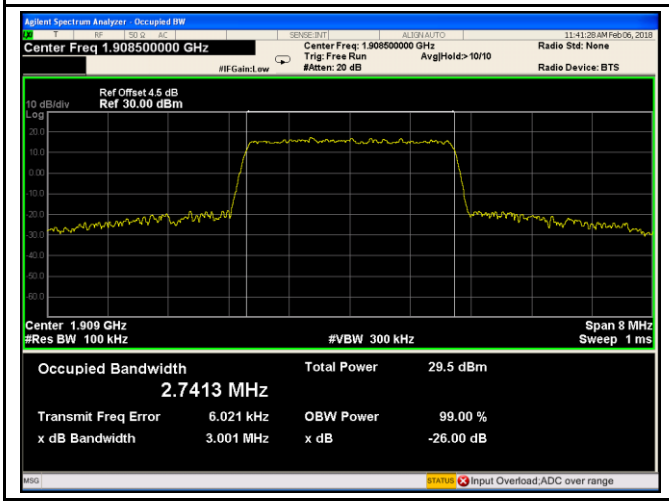
LTE Band II - Low CH 16QAM-3



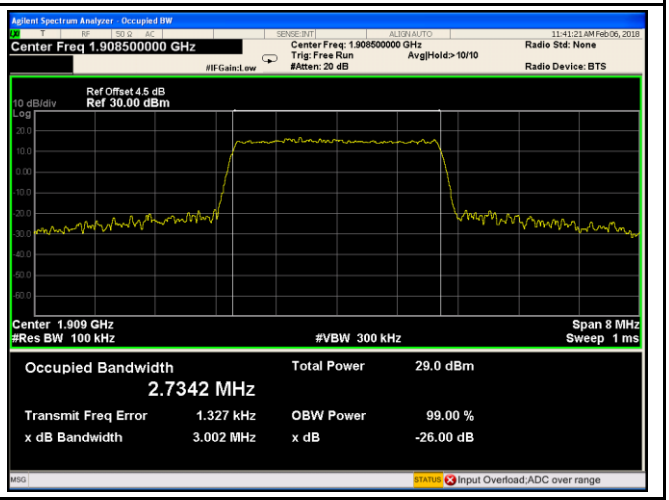
LTE Band II - Middle CH QPSK-3



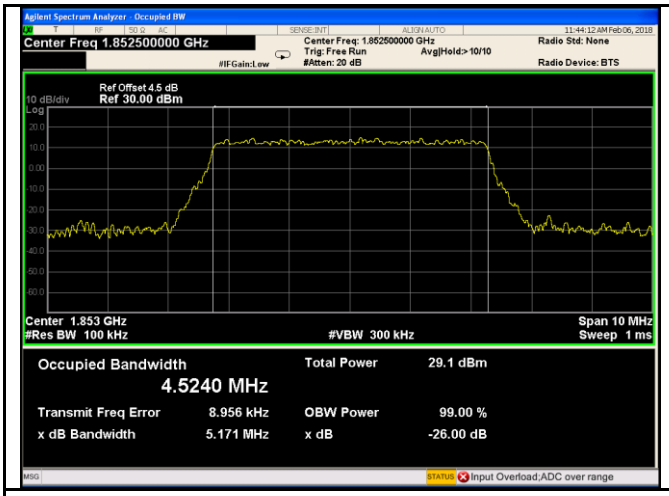
LTE Band II - Middle CH 16QAM-3



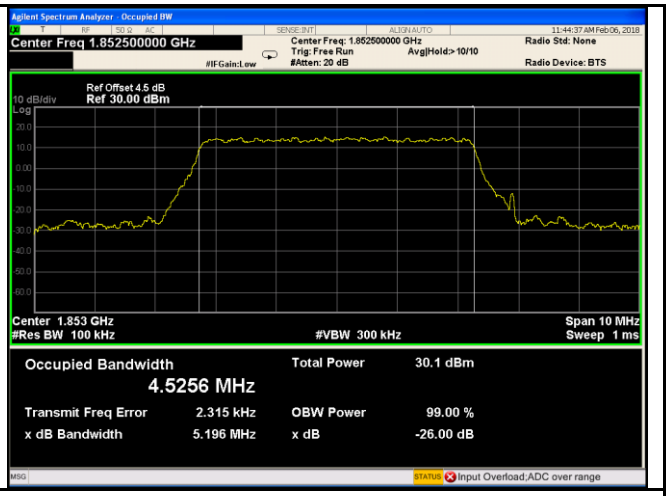
LTE Band II - High CH QPSK-3



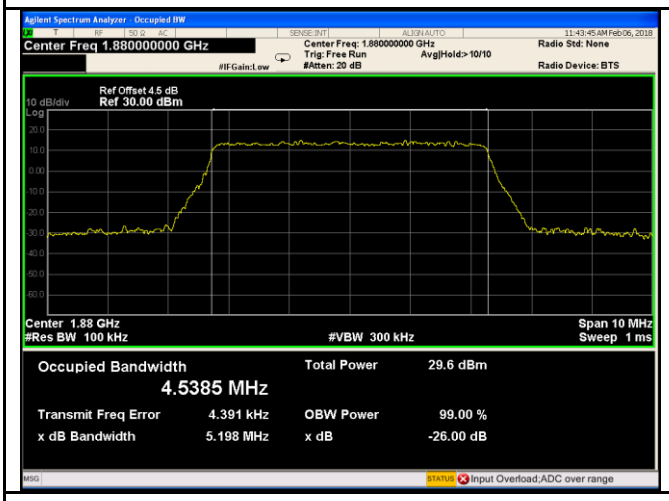
LTE Band II - High CH 16QAM-3



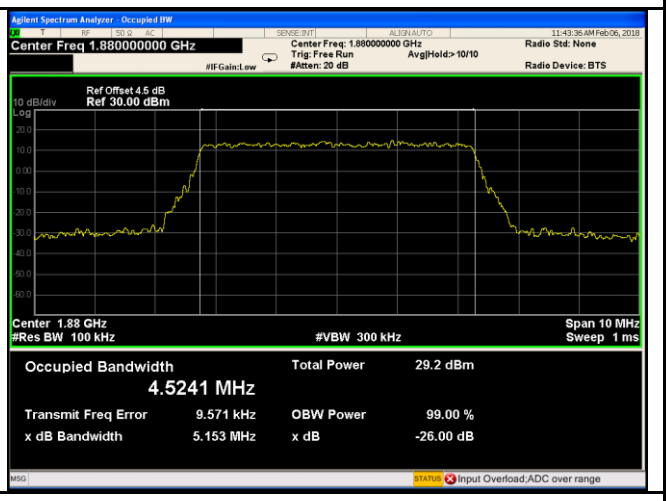
LTE Band II - Low CH QPSK-5



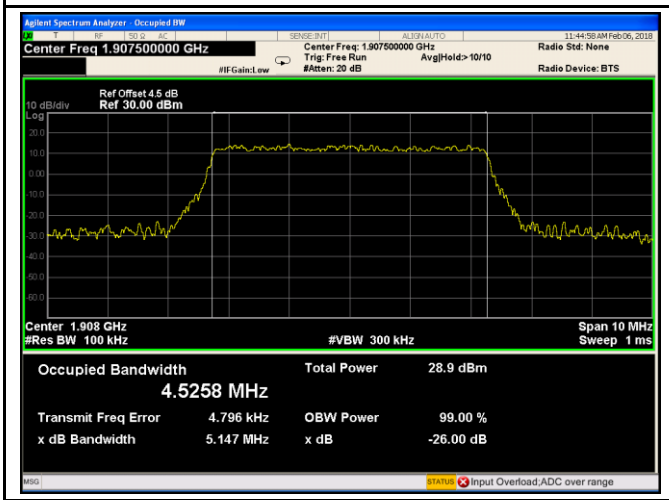
LTE Band II - Low CH 16QAM-5



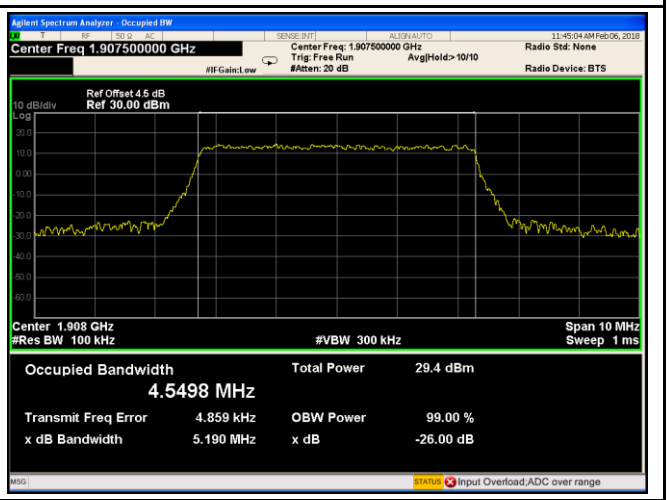
LTE Band II - Middle CH QPSK-5



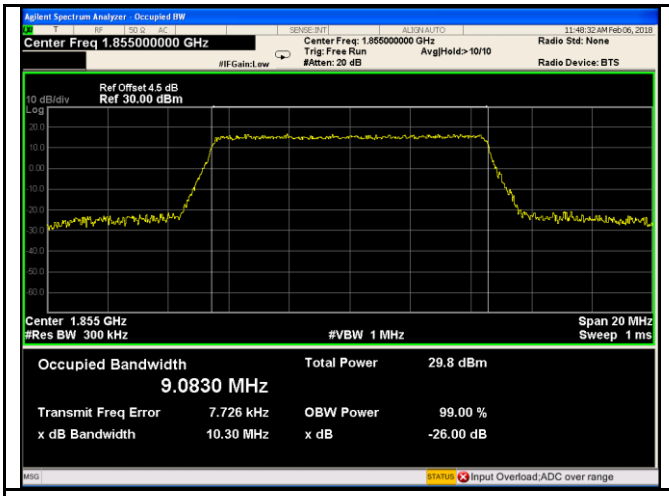
LTE Band II - Middle CH 16QAM-5



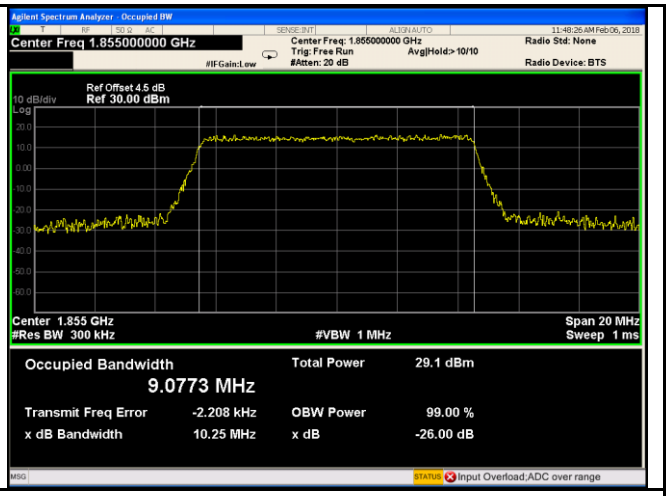
LTE Band II - High CH QPSK-5



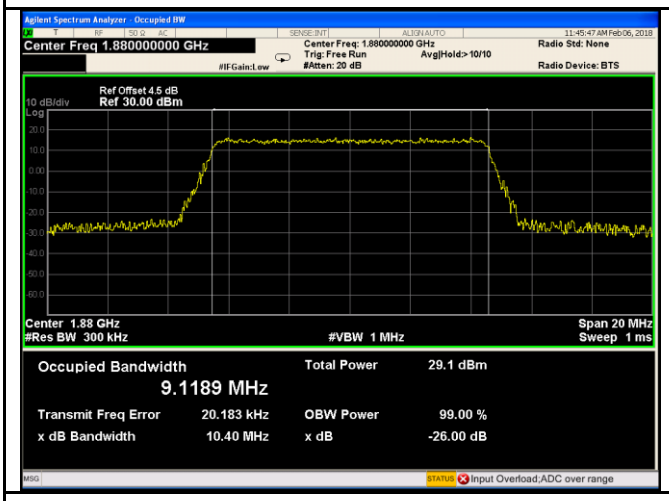
LTE Band II - High CH 16QAM-5



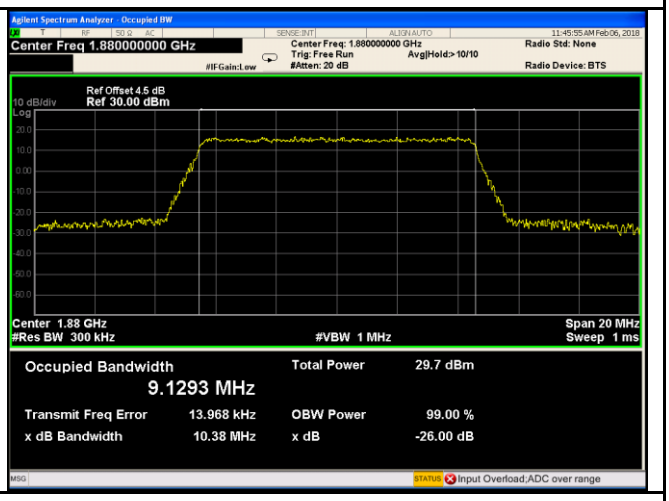
LTE Band II - Low CH QPSK-10



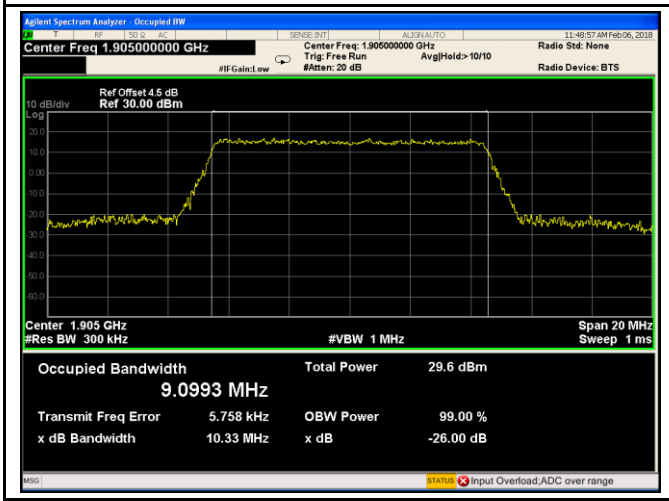
LTE Band II - Low CH 16QAM-10



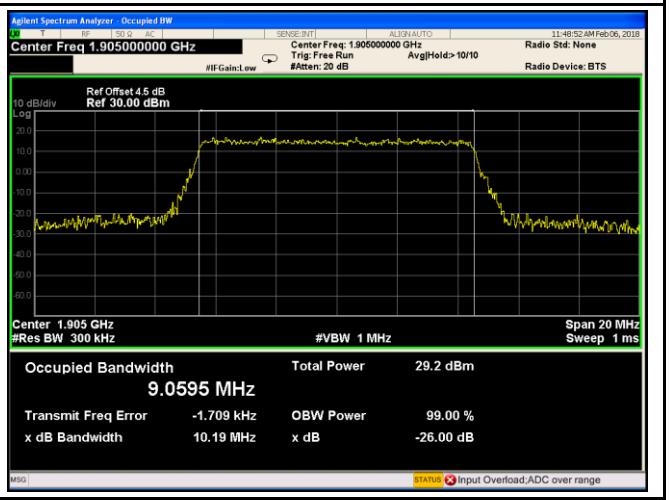
LTE Band II - Middle CH QPSK-10



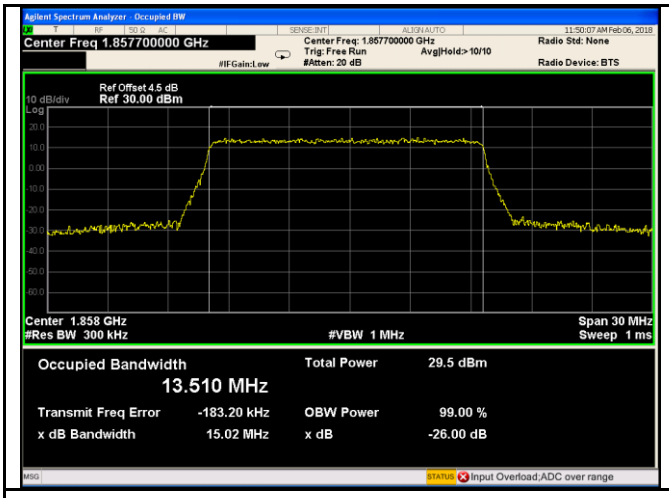
LTE Band II - Middle CH 16QAM-10



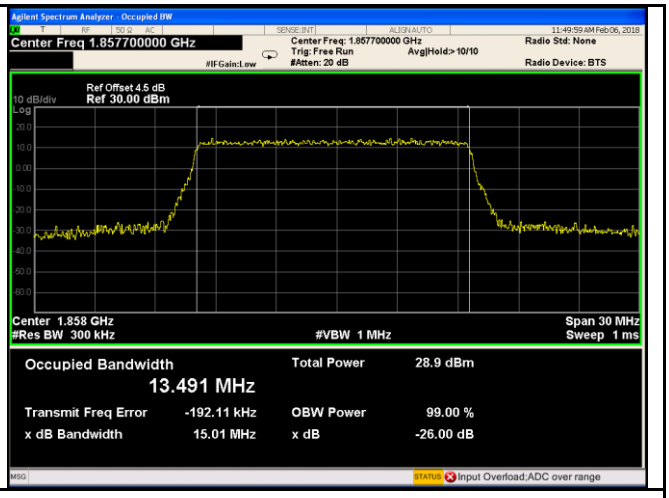
LTE Band II - High CH QPSK-10



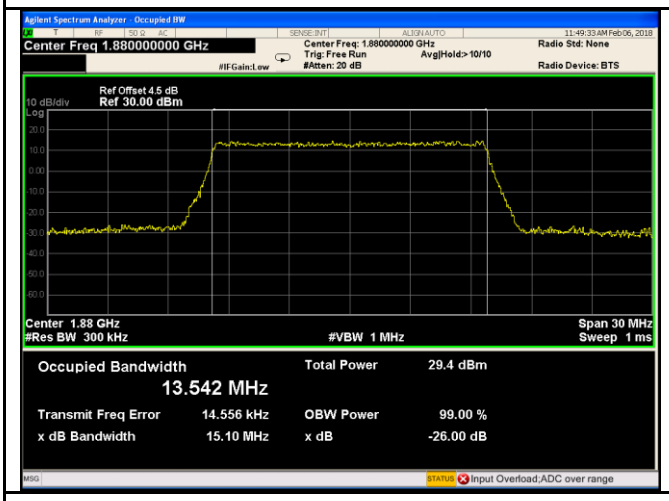
LTE Band II - High CH 16QAM-10



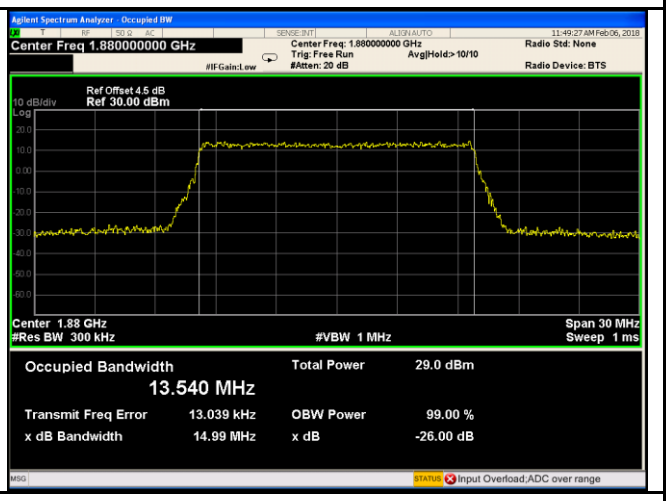
LTE Band II - Low CH QPSK-15



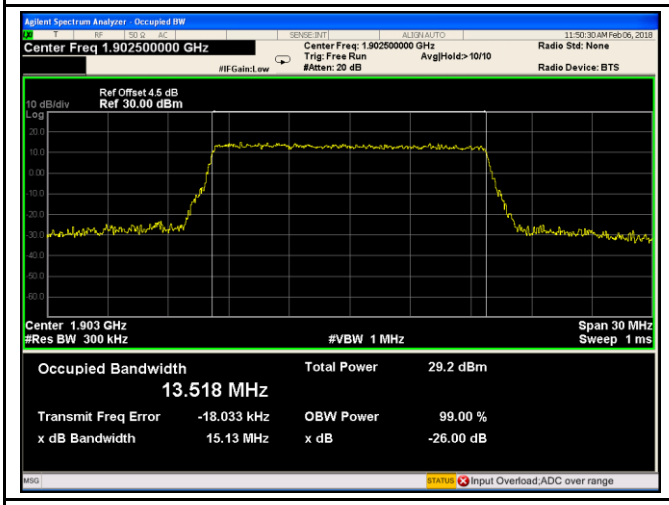
LTE Band II - Low CH 16QAM-15



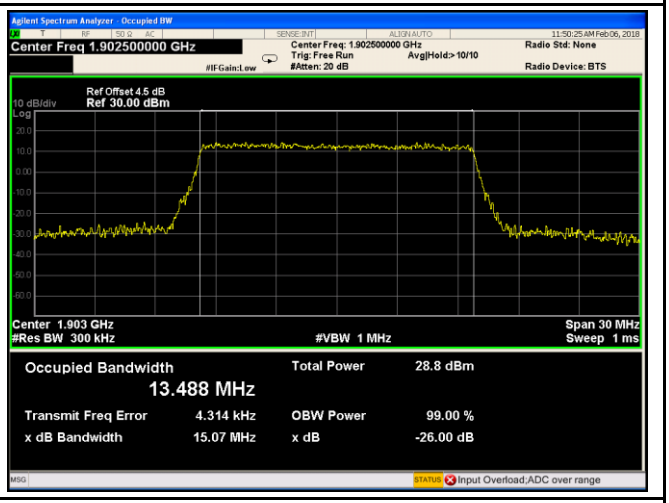
LTE Band II - Middle CH QPSK-15



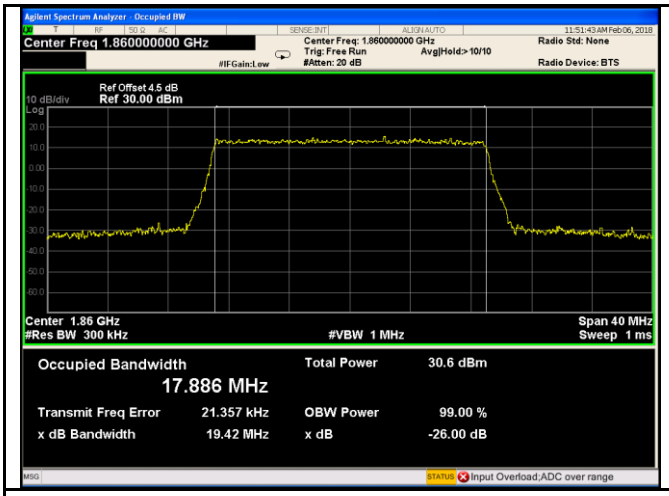
LTE Band II - Middle CH 16QAM-15



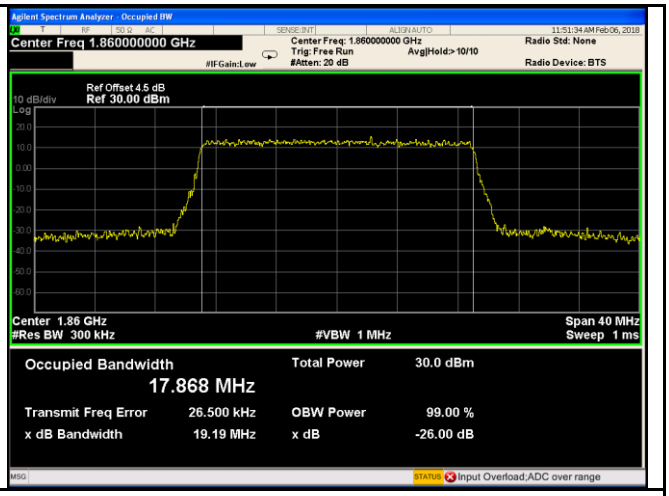
LTE Band II - High CH QPSK-15



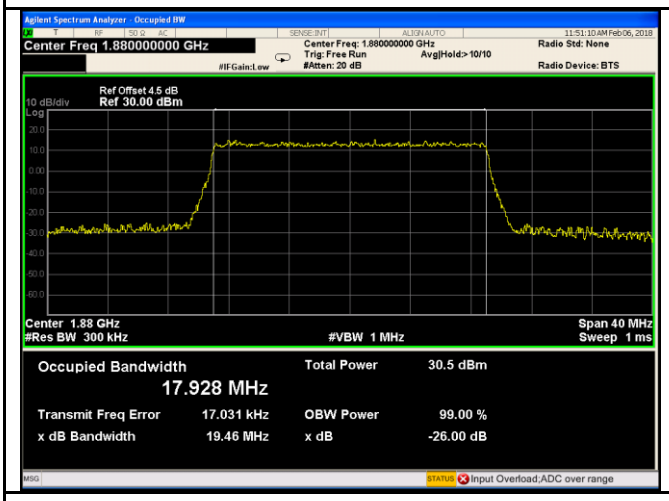
LTE Band II - High CH 16QAM-15



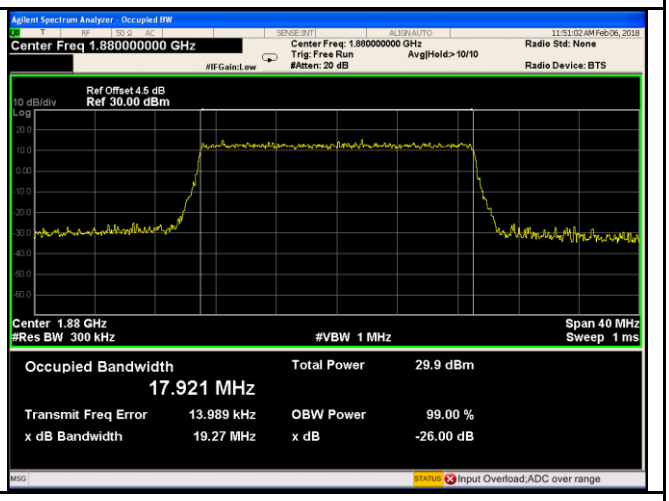
LTE Band II - Low CH QPSK-20



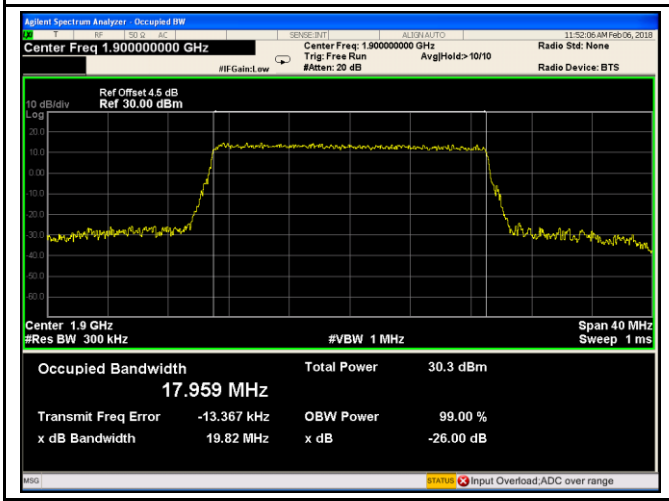
LTE Band II - Low CH 16QAM-20



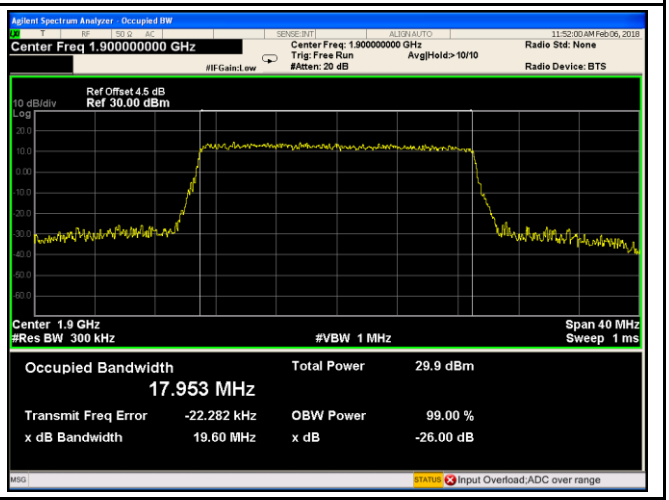
LTE Band II - Middle CH QPSK-20



LTE Band II - Middle CH 16QAM-20

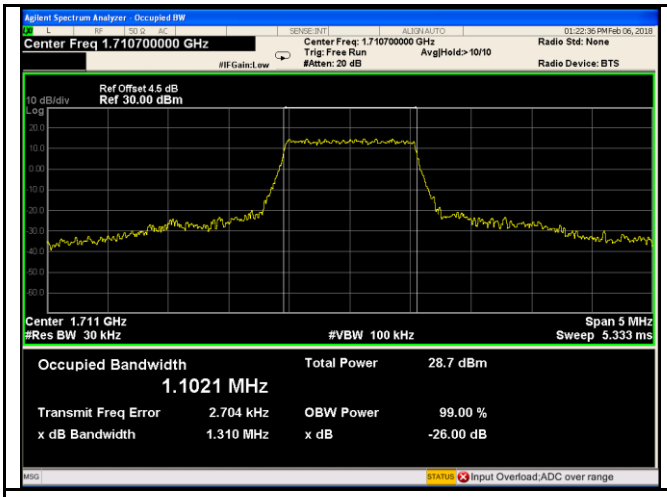


LTE Band II - High CH QPSK-20

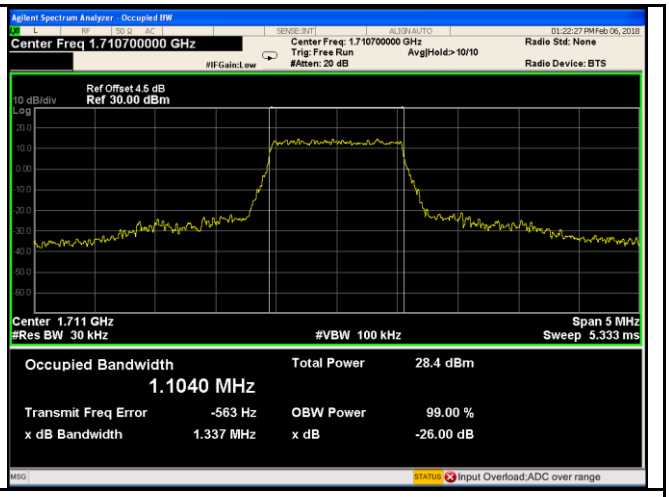


LTE Band II - High CH 16QAM-20

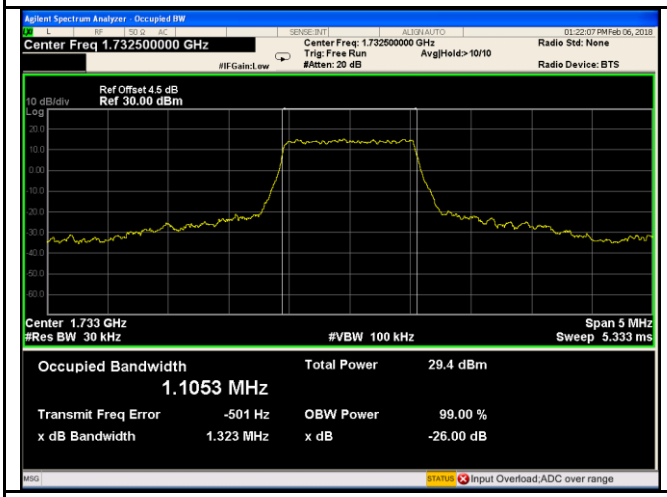
LTE Band IV (Part 27)



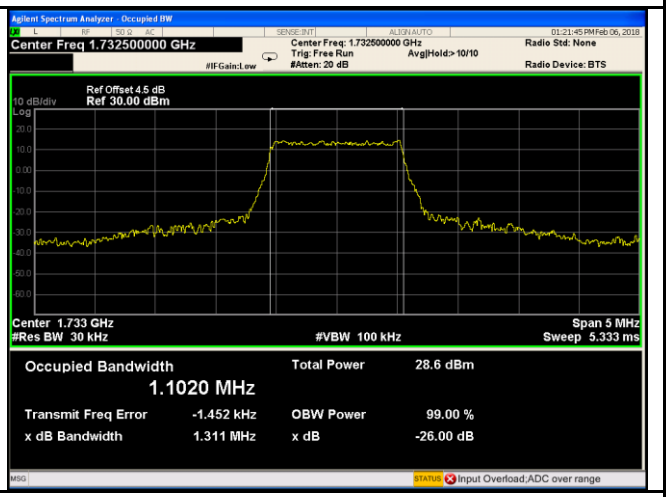
LTE Band IV - Low CH QPSK-1.4



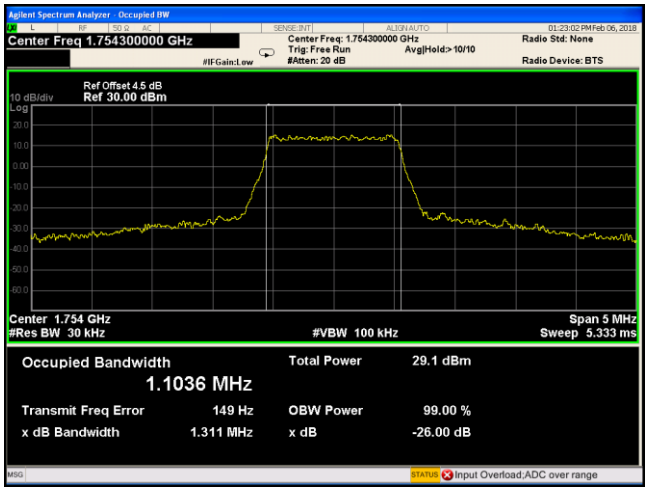
LTE Band IV - Low CH 16QAM-1.4



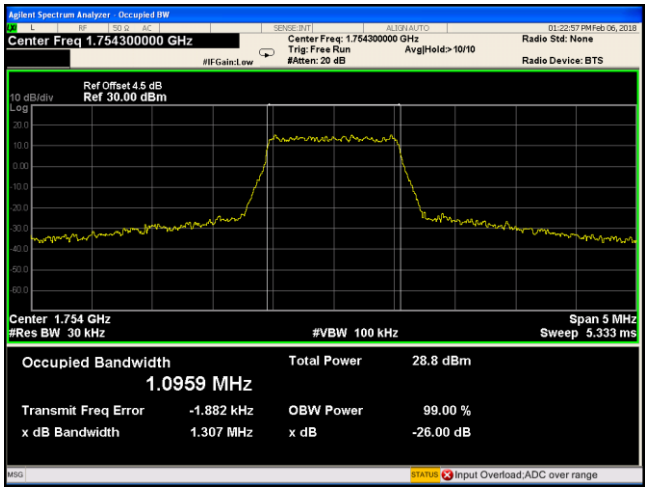
LTE Band IV - Middle CH QPSK-1.4



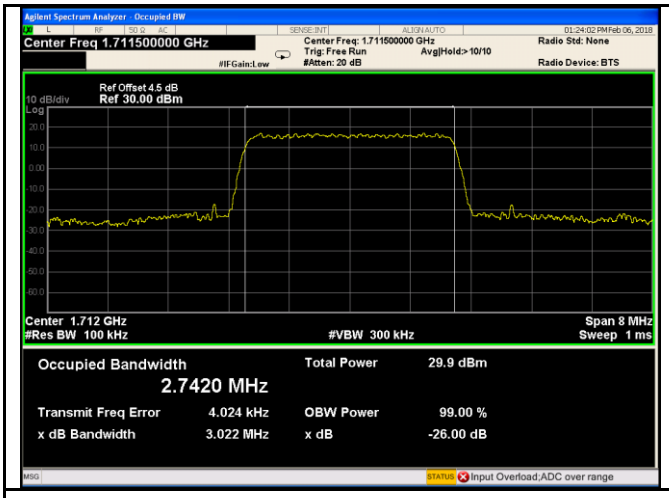
LTE Band IV - Middle CH 16QAM-1.4



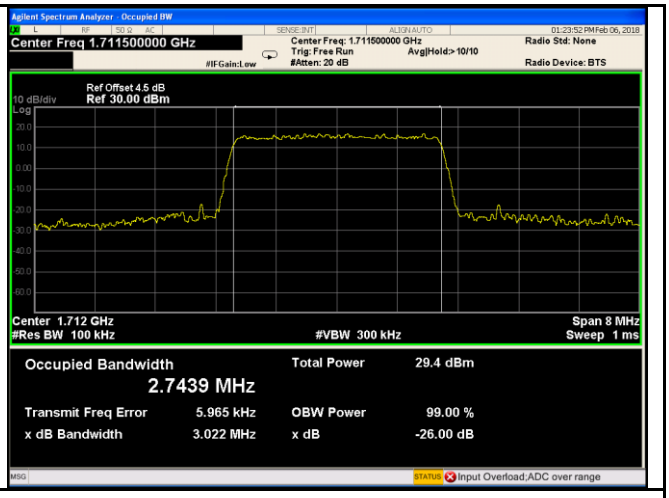
LTE Band IV - High CH QPSK-1.4



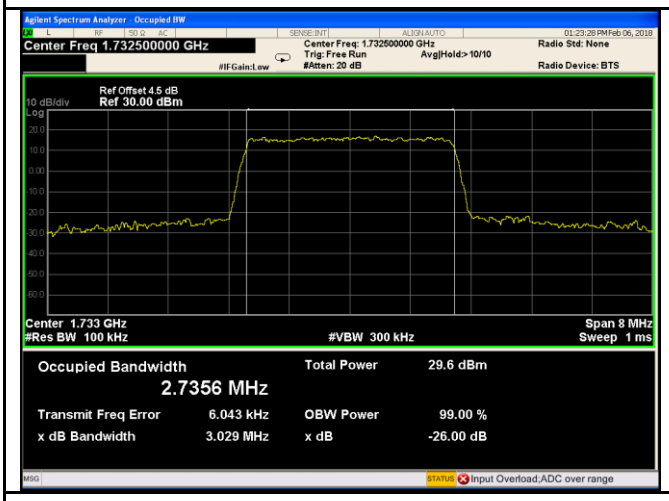
LTE Band IV - High CH 16QAM-1.4



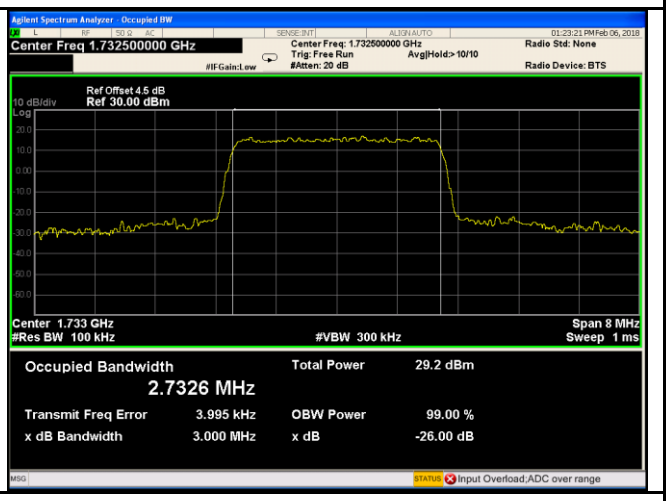
LTE Band IV - Low CH QPSK-3



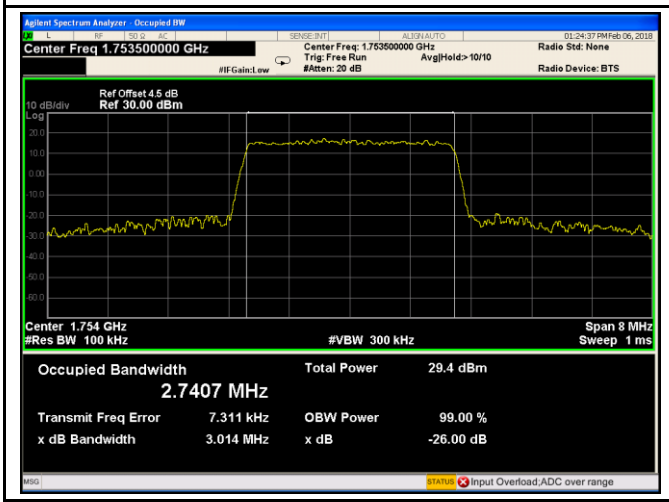
LTE Band IV - Low CH 16QAM-3



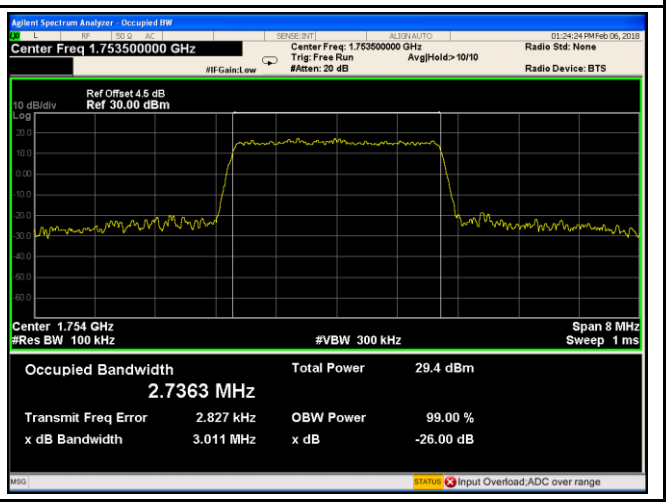
LTE Band IV - Middle CH QPSK-3



LTE Band IV - Middle CH 16QAM-3



LTE Band IV - High CH QPSK-3



LTE Band IV - High CH 16QAM-3