FCC TEST REPORT
For
Anhui Ronds Science & Technology Incorporated Company

Wireless Machinery Monitoring Station
Model No.:RH560-4G

Prepared for	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	R0117011039W1
Date of Test	:	Feb. 07~Apr. 18, 2017
Date of Report	:	Apr. 19, 2017

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Test Report

Anbotek

TEST REPORT

Applicant	:	Anhui Ronds Science & Technology Incorporated Company
Manufacturer	:	Anhui Ronds Science & Technology Incorporated Company
EUT	:	Wireless Machinery Monitoring Station
Model No.	:	RH560-4G
Serial No.	:	N.A.
Trade Mark	:	RONDS
Rating	:	AC 100-240V, 50/60Hz, 0.35A

Measurement Procedure Used:
FCC Part 2, FCC Part 22 Subpart H, FCC Part 24 Subpart E, FCC CFR47 Part 27 Subpart L: 2016 ,ANSI/TIA 603-D (2010)

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 22(H):2016; FCC Part 24(E):2016,FCC CFR47 Part 27 Subpart L: 2016 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Feb. 07~Apr. 18, 2017

Prepared by : Kyle Xu
(Test Engineer / Kyle Xu)

Reviewer : Brown Lu
(Project Manager / Brown Lu)

Approved & Authorized Signer : Tom Chen
(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Wireless Machinery Monitoring Station
Model Number	:	RH560-4G
Test Voltage	:	AC 120V, 60Hz
Frequency Bands:	:	LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 823~850MHz LTE Band 17: 704-716MHz
Modulation Type:	:	QPSK/16QAM
Antenna Type	:	vertically polarization antenna
Antenna Gain	:	1.0 dBi
Applicant	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China
Manufacturer	:	Anhui Ronds Science & Technology Incorporated Company
Address	:	8th Floor, B1 Building, High-techInnovation Park, No.800 Wangjiang West Road, Hefei, Anhui, 230088, China
Date of receipt	:	Feb. 06, 2017
Date of Test	:	Feb. 07~Apr. 18, 2017

1.2. Auxiliary Equipment Used during Test

N/A

1.3. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 752021
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, July 06, 2016.

IC-Registration No.: 8058A-1
Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, Jun. 13, 2016.

Test Location
All Emissions tests were performed at
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.1 dB (Horizontal) Ur = 4.3 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4dB

2. Technical test

2.1. Summary of Test Results

No Deviations from the technical specification(s) were ascertained in the course of the tests Performed	
Final Verdict: (only “Pass” if all single measurements are “Pass”)	Pass

2.2. Test Report

The EUT has been tested according to the following specifications:
The tests documented in this report were performed in accordance with TIA-603-D, FCC CFR 47 Part 2, Part 22, Part 24, Part 27.

Item Number	Item Description	FCC Rules
1	RF Output Power	2.1046/22.913 (a)/24.232 (c)/27.50(c)/27.50(d)
2	Peak-to-Average Ratio	24.232 (d)/ 27.50(d)
3	Bandwidth	2.1049 /22.905/22.917 /24.238/27.53(a)
4	Spurious Emissions at Antenna Terminal	2.1051/22.917 (a)/24.238 (a)/27.53(h)
5	Field Strength of Spurious Radiation	2.1053 / 22.917 (a) /24.238 (a)/27.53(h)
6	Out of band emission	22.917 (a) /24.238 (a) /27.53(h)
7	Frequency Stability	2.1055/22.355/24.235/ 27.5(h)/27.54

3. DESCRIPTION OF TEST MODES

The worst-case scenario for all measurements is based on the investigation results.
The device has LTE Bands of: Band 2, Band 4, Band 5,Band 17,
The RB Size was selected to measure for peak or average ERP and EIRP, which was based on the conducted power verification baseline data.
For the fundamental investigation of radiated emissions, the EUT is investigated for vertical and horizontal antenna orientations and X Y and Z orientations of the EUT alone. After the investigations the worst case was determined to be at X orientation for all LTE bands.

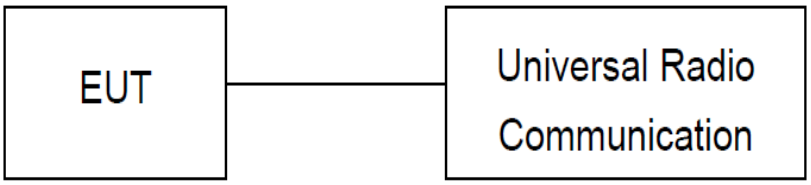
4.TEST EQUIPMENT

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analysis	Agilent	E4407B	US39390582	Jul. 12, 2016	1 Year
2	Preamplifier	Instruments corporation	EMC011830	980100	Jun. 17, 2016	1 Year
3	EMI Test Receiver	Rohde & Schwarz	ESPI	101604	Jun. 17, 2016	1 Year
4	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	May 06, 2016	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 06, 2016	1 Year
6	Pre-amplifier	SONOMA	310N	186860	Jun. 17, 2016	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Jun. 17, 2016	1 Year
9	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Jun. 17, 2016	1 Year
10	DC Power supply	IV	IV-8080	YQSB0096	Jun. 17, 2016	1 Year
11	TEMP&HUMI PROGRAMMABLE CHAMBER	Bell Group	BE-THK-150M8	SE-0137	Jun. 17, 2016	1 Year
12	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	117888	Jun. 17, 2016	1 Year
13	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMW 500	104209	Jun. 17, 2016	1 Year
14	Filter	COM-MW	ZHPF-BM1100-4000-0730	1307006523	Jun. 17, 2016	1 Year
15	Filter	COM-MW	ZHPT-M35-18G-3834	B2015094550	Jun. 17, 2016	1 Year
16	Bilog Antenna	TeseQ	CBL6144	35410	May 06, 2016	1 Year

5. RF OUTPUT POWER

5.1 Test Procedure

Conducted method:
The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation



5.2 Measurement Result

OUTPUT POWER FOR LTE BAND 2

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	1.4MHz	18607	1850.7	QPSK	1	Low	27.06	22.12
					1	Mid	27.03	22.22
					1	High	27.07	22.11
					3	Low	27.32	21.12
					3	High	27.42	21.13
					6	Low	27.27	21.22
				16QAM	1	Low	27.04	21.02
					1	Mid	27.09	22.03
					1	High	27.03	22.12
					3	Low	27.35	22.14
					3	High	27.42	21.16
					6	Low	27.37	21.18
	1.4MHz	18900	1880.0	QPSK	1	Low	27.11	22.62
					1	Mid	27.18	22.64
					1	High	27.14	22.67
					3	Low	27.47	21.63
					3	High	27.53	21.63
					6	Low	27.59	21.64
				16QAM	1	Low	27.13	21.64
					1	Mid	27.16	22.65
					1	High	27.29	22.60
					3	Low	27.43	22.62
					3	High	27.56	21.63
					6	Low	27.43	21.63
	1.4MHz	19193	1909.3	QPSK	1	Low	25.69	22.63
					1	Mid	25.64	22.65
					1	High	25.72	22.66
					3	Low	26.06	21.64
					3	High	26.03	21.62
					6	Low	26.69	21.50
				16QAM	1	Low	25.64	21.62
					1	Mid	25.69	22.62
					1	High	25.73	22.64
					3	Low	26.09	22.63
					3	High	26.13	21.62
					6	Low	26.68	21.63

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	3.0 MHz	18615	1851.5	QPSK	1	Low	26.62	22.02
					1	Mid	26.73	22.16
					1	High	26.72	22.00
					8	Low	26.72	21.14
					8	High	26.65	21.14
					15	Low	26.91	21.13
				16QAM	1	Low	26.64	21.08
					1	Mid	26.72	22.03
					1	High	26.75	22.17
					8	Low	26.71	22.16
					8	High	26.76	21.15
					15	Low	27.02	21.14
	3.0 MHz	18900	1880.0	QPSK	1	Low	26.83	22.56
					1	Mid	26.94	22.64
					1	High	26.96	22.63
					8	Low	26.91	21.66
					8	High	26.85	21.63
					15	Low	27.33	21.62
				16QAM	1	Low	26.82	21.65
					1	Mid	26.95	22.62
					1	High	26.81	22.68
					8	Low	26.96	22.60
					8	High	26.83	21.56
					15	Low	27.22	21.62
	3.0 MHz	19185	1908.5	QPSK	1	Low	25.56	22.73
					1	Mid	25.62	22.72
					1	High	25.65	22.60
					8	Low	25.66	21.62
					8	High	25.62	21.61
					15	Low	27.28	21.60
				16QAM	1	Low	25.53	21.62
					1	Mid	25.65	22.71
					1	High	25.62	22.73
					8	Low	25.67	22.60
					8	High	25.66	21.61
					15	Low	27.22	21.63

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	5.0 MHz	18625	1852.5	QPSK	1	Low	26.82	22.12
					1	Mid	26.91	22.21
					1	High	26.95	22.16
					12	Low	27.32	21.20
					12	High	27.54	21.21
					25	Low	27.51	21.23
				16QAM	1	Low	26.83	21.21
					1	Mid	26.91	22.20
					1	High	26.94	22.22
					12	Low	27.41	22.23
					12	High	27.43	21.24
					25	Low	27.85	21.24
	5.0 MHz	18900	1880.0	QPSK	1	Low	26.96	22.60
					1	Mid	27.01	22.67
					1	High	27.15	22.74
					12	Low	27.46	21.74
					12	High	27.63	21.73
					25	Low	27.66	21.72
				16QAM	1	Low	26.92	21.65
					1	Mid	27.05	22.61
					1	High	27.12	22.73
					12	Low	27.64	22.75
					12	High	27.61	21.72
					25	Low	27.14	21.72
	5.0 MHz	19175	1907.5	QPSK	1	Low	25.71	22.80
					1	Mid	25.62	22.72
					1	High	25.74	22.73
					12	Low	26.25	21.76
					12	High	26.01	21.68
					25	Low	26.86	21.62
				16QAM	1	Low	25.73	21.64
					1	Mid	25.64	22.82
					1	High	25.79	22.64
					12	Low	26.26	22.63
					12	High	26.18	21.71
					25	Low	26.92	21.71

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	10.0 MHz	18625	1852.5	QPSK	1	Low	26.75	22.11
					1	Mid	26.84	22.23
					1	High	26.78	22.00
					25	Low	27.24	21.22
					25	High	27.42	21.22
					50	Low	27.46	21.22
				16QAM	1	Low	26.73	21.21
					1	Mid	26.87	22.12
					1	High	26.71	22.26
					25	Low	27.27	22.03
					25	High	27.34	21.24
					50	Low	27.42	21.25
	10.0 MHz	18900	1880.0	QPSK	1	Low	26.77	22.52
					1	Mid	26.94	22.65
					1	High	26.93	22.44
					25	Low	27.38	21.65
					25	High	27.52	21.68
					50	Low	27.53	21.73
				16QAM	1	Low	26.81	21.74
					1	Mid	26.92	22.63
					1	High	26.95	22.72
					25	Low	27.42	22.52
					25	High	27.59	21.62
					50	Low	27.75	21.69
	10.0 MHz	19175	1907.5	QPSK	1	Low	25.97	22.63
					1	Mid	25.63	22.73
					1	High	25.65	22.33
					25	Low	26.44	21.67
					25	High	26.16	21.69
					50	Low	26.78	21.72
				16QAM	1	Low	25.92	21.73
					1	Mid	25.61	22.65
					1	High	25.66	22.74
					25	Low	26.48	22.30
					25	High	26.16	21.74
					50	Low	26.87	21.70

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	15.0 MHz	18675	1857.5	QPSK	1	Low	26.75	22.21
					1	Mid	26.82	22.23
					1	High	26.81	22.32
					36	Low	27.36	21.23
					36	High	27.47	21.30
					75	Low	28.06	21.35
				16QAM	1	Low	26.72	21.32
					1	Mid	26.81	22.20
					1	High	26.93	22.27
					36	Low	27.34	22.36
					36	High	27.47	21.22
					75	Low	28.04	21.29
	15.0 MHz	18900	1880.0	QPSK	1	Low	26.72	22.52
					1	Mid	26.96	22.74
					1	High	27.02	22.66
					36	Low	27.34	21.64
					36	High	27.69	21.70
					75	Low	28.22	21.83
				16QAM	1	Low	26.75	21.72
					1	Mid	26.94	22.54
					1	High	27.01	22.75
					36	Low	27.39	22.64
					36	High	27.56	21.62
					75	Low	28.28	21.81
	15.0 MHz	19125	1902.5	QPSK	1	Low	26.41	22.72
					1	Mid	25.76	22.77
					1	High	25.62	22.53
					36	Low	26.88	21.95
					36	High	26.24	21.90
					75	Low	27.46	21.84
				16QAM	1	Low	26.48	21.82
					1	Mid	25.74	22.63
					1	High	25.56	22.67
					36	Low	26.77	22.44
					36	High	26.27	21.82
					75	Low	27.36	21.83

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 2	20.0 MHz	18700	1860.0	QPSK	1	Low	26.90	22.55
					1	Mid	27.04	22.23
					1	High	27.02	22.52
					50	Low	27.48	21.21
					50	High	27.46	21.19
					100	Low	27.54	21.30
				16QAM	1	Low	26.93	21.32
					1	Mid	27.05	22.23
					1	High	27.04	22.26
					50	Low	27.49	22.54
					50	High	27.55	21.24
					100	Low	27.52	21.30
	20.0 MHz	18900	1880.0	QPSK	1	Low	26.94	22.83
					1	Mid	27.07	22.52
					1	High	27.15	22.64
					50	Low	27.42	21.64
					50	High	27.66	21.65
					100	Low	27.74	21.72
				16QAM	1	Low	26.93	21.67
					1	Mid	27.05	22.52
					1	High	27.12	22.67
					50	Low	27.48	22.72
					50	High	27.67	21.61
					100	Low	27.78	21.65
	20.0 MHz	19100	1900.0	QPSK	1	Low	27.05	22.63
					1	Mid	26.04	22.62
					1	High	25.66	22.41
					50	Low	27.04	21.97
					50	High	26.32	21.73
					100	Low	27.34	21.72
				16QAM	1	Low	26.95	21.73
					1	Mid	26.02	22.62
					1	High	25.66	22.55
					50	Low	27.12	22.41
					50	High	26.31	21.72
					100	Low	27.43	21.71

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	1.4MHz	19957	1710.7	QPSK	1	Low	27.15	22.52
					1	Mid	27.13	22.52
					1	High	27.17	22.53
					3	Low	27.48	21.65
					3	High	27.41	21.65
					6	Low	27.62	21.64
				16QAM	1	Low	27.03	21.52
					1	Mid	27.05	22.61
					1	High	27.16	22.53
					3	Low	27.34	22.54
					3	High	27.43	21.76
					6	Low	27.68	21.72
	1.4MHz	20175	1732.5	QPSK	1	Low	27.09	22.53
					1	Mid	27.04	22.54
					1	High	27.02	22.52
					3	Low	27.33	21.65
					3	High	27.37	21.66
					6	Low	27.62	21.62
				16QAM	1	Low	27.01	21.52
					1	Mid	27.02	22.51
					1	High	27.09	22.56
					3	Low	27.33	22.52
					3	High	27.42	21.64
					6	Low	27.67	21.62
	1.4MHz	20393	1754.3	QPSK	1	Low	26.91	22.81
					1	Mid	26.82	22.62
					1	High	26.83	22.60
					3	Low	27.39	21.76
					3	High	27.32	21.72
					6	Low	27.30	21.63
				16QAM	1	Low	26.82	21.78
					1	Mid	26.73	22.81
					1	High	26.88	22.61
					3	Low	27.37	22.62
					3	High	27.33	21.74
					6	Low	27.39	21.71

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	3.0 MHz	19965	1711.5	QPSK	1	Low	26.82	22.55
					1	Mid	26.94	22.52
					1	High	26.98	22.54
					8	Low	26.82	21.52
					8	High	26.89	21.54
					15	Low	27.42	21.55
				16QAM	1	Low	26.87	21.64
					1	Mid	26.93	22.51
					1	High	26.98	22.54
					8	Low	26.85	22.42
					8	High	26.82	21.43
					15	Low	27.81	21.43
	3.0 MHz	20175	1732.5	QPSK	1	Low	26.59	22.44
					1	Mid	26.95	22.52
					1	High	26.82	22.53
					8	Low	26.79	21.55
					8	High	26.83	21.55
					15	Low	27.77	21.52
				16QAM	1	Low	26.85	21.63
					1	Mid	26.73	22.43
					1	High	26.85	22.52
					8	Low	26.64	22.50
					8	High	26.83	21.52
					15	Low	27.41	21.53
	3.0 MHz	20385	1753.5	QPSK	1	Low	26.92	22.82
					1	Mid	26.85	22.70
					1	High	26.78	22.63
					8	Low	26.79	21.65
					8	High	26.78	21.64
					15	Low	28.55	21.64
				16QAM	1	Low	26.93	21.92
					1	Mid	26.82	22.83
					1	High	26.71	22.65
					8	Low	26.73	22.54
					8	High	26.75	21.52
					15	Low	28.58	21.61

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	5.0 MHz	19975	1712.5	QPSK	1	Low	26.92	22.62
					1	Mid	27.01	22.50
					1	High	27.05	22.41
					12	Low	27.63	21.63
					12	High	27.74	21.63
					25	Low	28.11	21.62
				16QAM	1	Low	26.98	21.56
					1	Mid	27.02	22.64
					1	High	27.09	22.52
					12	Low	27.62	22.43
					12	High	27.77	21.67
					25	Low	28.14	21.66
	5.0 MHz	20175	1732.5	QPSK	1	Low	26.91	22.54
					1	Mid	26.82	22.30
					1	High	26.98	22.63
					12	Low	27.56	21.62
					12	High	27.52	21.61
					25	Low	27.57	21.56
				16QAM	1	Low	26.93	21.50
					1	Mid	26.81	22.53
					1	High	26.95	22.31
					12	Low	27.52	22.66
					12	High	27.48	21.53
					25	Low	27.59	21.52
	5.0 MHz	20375	1752.5	QPSK	1	Low	27.12	22.88
					1	Mid	26.94	22.43
					1	High	26.97	22.54
					12	Low	27.46	21.76
					12	High	27.32	21.59
					25	Low	28.02	21.43
				16QAM	1	Low	27.01	21.55
					1	Mid	26.93	22.89
					1	High	26.98	22.34
					12	Low	27.23	22.45
					12	High	27.10	21.63
					25	Low	27.94	21.62

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	10.0 MHz	20000	1715.0	QPSK	1	Low	26.85	22.63
					1	Mid	26.92	22.44
					1	High	26.84	22.25
					25	Low	27.47	21.56
					25	High	27.62	21.55
					50	Low	27.68	21.57
				16QAM	1	Low	26.83	21.56
					1	Mid	26.99	22.67
					1	High	26.93	22.45
					25	Low	27.55	22.23
					25	High	27.68	21.53
					50	Low	27.62	21.52
	10.0 MHz	20175	1732.5	QPSK	1	Low	26.73	22.21
					1	Mid	26.65	22.22
					1	High	26.67	22.26
					25	Low	27.24	21.44
					25	High	27.28	21.44
					50	Low	27.54	21.44
				16QAM	1	Low	26.76	21.43
					1	Mid	26.62	22.22
					1	High	26.74	22.25
					25	Low	27.23	22.23
					25	High	27.37	21.42
					50	Low	27.53	21.45
	10.0 MHz	20350	1750.0	QPSK	1	Low	26.96	22.52
					1	Mid	26.72	22.44
					1	High	26.67	22.02
					25	Low	27.64	21.73
					25	High	27.53	21.68
					50	Low	27.68	21.42
				16QAM	1	Low	26.84	21.65
					1	Mid	26.77	22.52
					1	High	26.63	22.32
					25	Low	27.68	22.00
					25	High	27.56	21.74
					50	Low	27.33	21.59

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	15.0 MHz	20025	1717.5	QPSK	1	Low	26.94	22.65
					1	Mid	27.03	22.57
					1	High	26.95	22.48
					36	Low	27.42	21.63
					36	High	27.55	21.60
					75	Low	27.36	21.54
				16QAM	1	Low	26.95	21.67
					1	Mid	27.02	22.62
					1	High	26.95	22.54
					36	Low	27.43	22.47
					36	High	27.46	21.65
					75	Low	28.23	21.59
	15.0 MHz	20175	1732.5	QPSK	1	Low	26.99	22.46
					1	Mid	26.76	22.23
					1	High	26.85	22.54
					36	Low	27.32	21.46
					36	High	27.45	21.50
					75	Low	28.19	21.54
				16QAM	1	Low	26.94	21.55
					1	Mid	26.77	22.47
					1	High	26.84	22.32
					36	Low	27.47	22.64
					36	High	27.43	21.57
					75	Low	28.16	21.60
	15.0 MHz	20325	1747.5	QPSK	1	Low	26.93	22.85
					1	Mid	26.95	22.73
					1	High	26.73	22.47
					36	Low	27.68	21.92
					36	High	27.64	21.88
					75	Low	27.27	21.83
				16QAM	1	Low	26.95	21.78
					1	Mid	26.92	22.83
					1	High	26.75	22.76
					36	Low	27.61	22.44
					36	High	27.65	21.89
					75	Low	27.28	21.87

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 4	20.0 MHz	20050	1720.0	QPSK	1	Low	27.15	22.64
					1	Mid	27.22	22.56
					1	High	27.14	22.54
					50	Low	27.67	21.58
					50	High	27.65	21.58
					100	Low	27.82	21.57
				16QAM	1	Low	27.16	21.58
					1	Mid	27.29	22.63
					1	High	27.27	22.54
					50	Low	27.66	22.57
					50	High	27.69	21.59
					100	Low	27.74	21.55
	20.0 MHz	20175	1732.5	QPSK	1	Low	27.20	22.92
					1	Mid	27.14	22.63
					1	High	27.25	22.89
					50	Low	27.53	21.52
					50	High	27.65	21.60
					100	Low	27.78	21.74
				16QAM	1	Low	27.22	21.67
					1	Mid	27.18	22.53
					1	High	27.24	22.65
					50	Low	27.55	22.52
					50	High	27.67	21.51
					100	Low	27.84	21.60
	20.0 MHz	20300	1745.0	QPSK	1	Low	27.18	22.85
					1	Mid	27.22	22.82
					1	High	27.18	22.83
					50	Low	27.63	21.87
					50	High	27.74	21.90
					100	Low	28.27	21.97
				16QAM	1	Low	27.04	21.87
					1	Mid	27.28	22.62
					1	High	27.23	22.79
					50	Low	27.68	22.82
					50	High	27.74	21.85
					100	Low	28.18	21.89

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 5	1.4MHz	20407	824.7	QPSK	1	Low	26.9	22.4
					1	Mid	26.88	22.4
					1	High	26.92	22.41
					3	Low	27.23	21.53
					3	High	27.16	21.53
					6	Low	27.37	21.52
				16QAM	1	Low	26.78	21.4
					1	Mid	26.8	22.49
					1	High	26.91	22.41
					3	Low	27.09	22.42
					3	High	27.18	21.64
					6	Low	27.43	21.6
	1.4MHz	20525	836.5	QPSK	1	Low	26.84	22.41
					1	Mid	26.79	22.42
					1	High	26.77	22.4
					3	Low	27.08	21.53
					3	High	27.12	21.54
					6	Low	27.37	21.5
				16QAM	1	Low	26.76	21.4
					1	Mid	26.77	22.39
					1	High	26.84	22.44
					3	Low	27.08	22.4
					3	High	27.17	21.52
					6	Low	27.42	21.5
	1.4MHz	20634	848.3	QPSK	1	Low	26.66	22.69
					1	Mid	26.57	22.5
					1	High	26.58	22.48
					3	Low	27.14	21.64
					3	High	27.07	21.6
					6	Low	27.05	21.51
				16QAM	1	Low	26.57	21.66
					1	Mid	26.48	22.69
					1	High	26.63	22.49
					3	Low	27.12	22.5
					3	High	27.08	21.62
					6	Low	27.14	21.59

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 5	3.0 MHz	20415	825.5	QPSK	1	Low	26.57	22.43
					1	Mid	26.69	22.4
					1	High	26.73	22.42
					8	Low	26.57	21.4
					8	High	26.64	21.42
					15	Low	27.17	21.43
				16QAM	1	Low	26.62	21.52
					1	Mid	26.68	22.39
					1	High	26.73	22.42
					8	Low	26.6	22.3
					8	High	26.57	21.31
					15	Low	27.56	21.31
	3.0 MHz	20525	836.5	QPSK	1	Low	26.34	22.32
					1	Mid	26.7	22.4
					1	High	26.57	22.41
					8	Low	26.54	21.43
					8	High	26.58	21.43
					15	Low	27.52	21.4
				16QAM	1	Low	26.6	21.51
					1	Mid	26.48	22.31
					1	High	26.6	22.4
					8	Low	26.39	22.38
					8	High	26.58	21.4
					15	Low	27.16	21.41
	3.0 MHz	20635	847.5	QPSK	1	Low	26.67	22.7
					1	Mid	26.6	22.58
					1	High	26.53	22.51
					8	Low	26.54	21.53
					8	High	26.53	21.52
					15	Low	28.3	21.52
				16QAM	1	Low	26.68	21.8
					1	Mid	26.57	22.71
					1	High	26.46	22.53
					8	Low	26.48	22.42
					8	High	26.5	21.4
					15	Low	28.33	21.49

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 5	5.0 MHz	20425	826.5	QPSK	1	Low	26.67	22.5
					1	Mid	26.76	22.38
					1	High	26.8	22.29
					12	Low	27.38	21.51
					12	High	27.49	21.51
					25	Low	27.86	21.5
				16QAM	1	Low	26.73	21.44
					1	Mid	26.77	22.52
					1	High	26.84	22.4
					12	Low	27.37	22.31
					12	High	27.52	21.55
					25	Low	27.89	21.54
	5.0 MHz	20525	836.5	QPSK	1	Low	26.66	22.42
					1	Mid	26.57	22.18
					1	High	26.73	22.51
					12	Low	27.31	21.5
					12	High	27.27	21.49
					25	Low	27.32	21.44
				16QAM	1	Low	26.68	21.38
					1	Mid	26.56	22.41
					1	High	26.7	22.19
					12	Low	27.27	22.54
					12	High	27.23	21.41
					25	Low	27.34	21.4
	5.0 MHz	20625	846.5	QPSK	1	Low	26.87	22.76
					1	Mid	26.69	22.31
					1	High	26.72	22.42
					12	Low	27.21	21.64
					12	High	27.07	21.47
					25	Low	27.77	21.31
				16QAM	1	Low	26.76	21.43
					1	Mid	26.68	22.77
					1	High	26.73	22.22
					12	Low	26.98	22.33
					12	High	26.85	21.51
					25	Low	27.69	21.5

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 5	10.0 MHz	20450	829.0	QPSK	1	Low	26.6	22.51
					1	Mid	26.67	22.32
					1	High	26.59	22.13
					25	Low	27.22	21.44
					25	High	27.37	21.43
					50	Low	27.43	21.45
				16QAM	1	Low	26.58	21.44
					1	Mid	26.74	22.55
					1	High	26.68	22.33
					25	Low	27.3	22.11
					25	High	27.43	21.41
					50	Low	27.37	21.4
	10.0 MHz	20525	836.5	QPSK	1	Low	26.48	22.09
					1	Mid	26.4	22.1
					1	High	26.42	22.14
					25	Low	26.99	21.32
					25	High	27.03	21.32
					50	Low	27.29	21.32
				16QAM	1	Low	26.51	21.31
					1	Mid	26.37	22.1
					1	High	26.49	22.13
					25	Low	26.98	22.11
					25	High	27.12	21.3
					50	Low	27.28	21.33
	10.0 MHz	20600	844	QPSK	1	Low	26.71	22.4
					1	Mid	26.47	22.32
					1	High	26.42	21.9
					25	Low	27.39	21.61
					25	High	27.28	21.56
					50	Low	27.43	21.3
				16QAM	1	Low	26.59	21.53
					1	Mid	26.52	22.4
					1	High	26.38	22.2
					25	Low	27.43	21.88
					25	High	27.31	21.62
					50	Low	27.08	21.47

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 17	5.0MHz	23755	706.5	QPSK	1	Low	26.75	22.62
					1	Mid	27.24	22.56
					1	High	27.12	22.45
					12	Low	27.78	21.62
					12	High	27.86	21.62
					25	Low	28.22	21.55
				16QAM	1	Low	27.23	21.52
					1	Mid	27.59	22.64
					1	High	27.50	22.57
					12	Low	27.95	22.46
					12	High	28.26	21.62
					25	Low	28.37	21.58
	5.0MHz	23790	710.0	QPSK	1	Low	27.53	22.43
					1	Mid	27.56	22.44
					1	High	27.18	22.46
					12	Low	27.25	21.44
					12	High	27.86	21.43
					25	Low	27.84	21.42
				16QAM	1	Low	27.63	21.43
					1	Mid	27.58	22.44
					1	High	27.12	22.41
					12	Low	28.19	22.42
					12	High	27.75	21.44
					25	Low	27.84	21.49
	5.0MHz	23825	713.5	QPSK	1	Low	27.62	22.52
					1	Mid	27.47	22.55
					1	High	27.64	22.70
					12	Low	27.43	21.54
					12	High	27.66	21.59
					25	Low	27.94	21.63
				16QAM	1	Low	27.68	21.54
					1	Mid	27.42	22.53
					1	High	27.69	22.66
					12	Low	27.72	22.66
					12	High	27.50	21.53
					25	Low	28.12	21.53

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		Peak Power(dBm)	Average Power(dBm)
					RB Size	RB Offset		
Band 17	10.0MHz	23780	709.0	QPSK	1	Low	27.13	22.54
					1	Mid	27.49	22.46
					1	High	27.06	22.52
					25	Low	27.74	21.52
					25	High	27.75	21.49
					50	Low	27.72	21.44
				16QAM	1	Low	27.19	21.55
					1	Mid	27.44	22.52
					1	High	27.06	22.42
					25	Low	27.93	22.47
					25	High	27.66	21.53
					50	Low	28.04	21.54
	10.0MHz	23790	710.0	QPSK	1	Low	27.23	22.72
					1	Mid	27.26	22.34
					1	High	27.04	22.54
					25	Low	27.87	21.40
					25	High	27.52	21.50
					50	Low	27.73	21.75
				16QAM	1	Low	27.26	21.56
					1	Mid	27.29	22.51
					1	High	27.04	22.43
					25	Low	27.76	22.57
					25	High	27.54	21.42
					50	Low	27.85	21.43
	10.0MHz	23800	711.0	QPSK	1	Low	27.59	22.62
					1	Mid	27.37	22.40
					1	High	27.36	22.58
					25	Low	28.17	21.41
					25	High	27.86	21.49
					50	Low	27.38	21.51
				16QAM	1	Low	27.53	21.51
					1	Mid	27.30	22.55
					1	High	27.35	22.44
					25	Low	27.94	22.56
					25	High	27.87	21.42
					50	Low	27.66	21.42

5.3 Radiated Output Power

5.3.1 measurement method

1. The setup of EUT is according with per TIA/EIA Standard 603D:2010.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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.

5.3.2 PROVISIONS APPLICABLE

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.
27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

Mode	Nominal Peak Power
LTE Band 2	<=33 dBm (2W)
LTE Band 4	<=30 dBm (1W)
LTE Band 5	<=38.45 dBm (7W)
LTE Band 17	<=30 dBm (1W)

5.3.3 Measurement Result

Radiated Power (E.I.R.P) for LTE BAND 2 (1.4MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1850.7	14.68	Horizontal	8.13	0.96	21.85	Pass
	1850.7	15.63	Vertical	8.13	0.96	22.8	Pass
	1880.0	14.63	Horizontal	8.14	0.96	21.81	Pass
	1880.0	15.11	Vertical	8.14	0.96	22.29	Pass
	1909.3	14.13	Horizontal	8.14	0.96	21.31	Pass
	1909.3	15.32	Vertical	8.14	0.96	22.5	Pass
16QAM	1850.7	14.73	Horizontal	8.13	0.96	21.9	Pass
	1850.7	15.56	Vertical	8.13	0.96	22.73	Pass
	1880.0	14.51	Horizontal	8.14	0.96	21.69	Pass
	1880.0	15.32	Vertical	8.14	0.96	22.5	Pass
	1909.3	14.63	Horizontal	8.14	0.96	21.81	Pass
	1909.3	15.74	Vertical	8.14	0.96	22.92	Pass

Radiated Power (E.I.R.P) for LTE BAND 2 (3MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1851.5	14.32	Horizontal	8.13	0.96	21.49	Pass
	1851.5	15.66	Vertical	8.13	0.96	22.83	Pass
	1880.0	14.96	Horizontal	8.14	0.96	22.14	Pass
	1880.0	15.32	Vertical	8.14	0.96	22.5	Pass
	1908.5	14.88	Horizontal	8.14	0.96	22.06	Pass
	1908.5	15.63	Vertical	8.14	0.96	22.81	Pass
16QAM	1851.5	14.74	Horizontal	8.13	0.96	21.91	Pass
	1851.5	15.67	Vertical	8.13	0.96	22.84	Pass
	1880.0	14.35	Horizontal	8.14	0.96	21.53	Pass
	1880.0	15.98	Vertical	8.14	0.96	23.16	Pass
	1908.5	14.35	Horizontal	8.14	0.96	21.53	Pass
	1908.5	15.91	Vertical	8.14	0.96	23.09	Pass

Radiated Power (E.I.R.P) for LTE BAND 2 (5MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1852.5	14.52	Horizontal	8.13	0.96	21.49	Pass
	1852.5	15.69	Vertical	8.13	0.96	22.83	Pass
	1880.0	14.37	Horizontal	8.14	0.96	22.14	Pass
	1880.0	15.23	Vertical	8.14	0.96	22.5	Pass
	1907.5	14.84	Horizontal	8.14	0.96	22.06	Pass
	1907.5	15.87	Vertical	8.14	0.96	22.81	Pass
16QAM	1852.5	14.65	Horizontal	8.13	0.96	21.91	Pass
	1852.5	15.93	Vertical	8.13	0.96	22.84	Pass
	1880.0	14.65	Horizontal	8.14	0.96	21.53	Pass
	1880.0	15.87	Vertical	8.14	0.96	23.16	Pass
	1907.5	14.63	Horizontal	8.14	0.96	21.53	Pass
	1907.5	15.87	Vertical	8.14	0.96	23.09	Pass

Radiated Power (E.I.R.P) for LTE BAND 2 (10MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1855.0	14.66	Horizontal	8.13	0.96	21.83	Pass
	1855.0	15.91	Vertical	8.13	0.96	23.08	Pass
	1880.0	14.36	Horizontal	8.14	0.96	21.54	Pass
	1880.0	15.87	Vertical	8.14	0.96	23.05	Pass
	1905.0	14.74	Horizontal	8.14	0.96	21.92	Pass
	1905.0	15.32	Vertical	8.14	0.96	22.5	Pass
16QAM	1855.0	14.98	Horizontal	8.13	0.96	22.15	Pass
	1855.0	15.79	Vertical	8.13	0.96	22.96	Pass
	1880.0	14.66	Horizontal	8.14	0.96	21.84	Pass
	1880.0	15.87	Vertical	8.14	0.96	23.05	Pass
	1905.0	14.32	Horizontal	8.14	0.96	21.5	Pass
	1905.0	15.97	Vertical	8.14	0.96	23.15	Pass

Radiated Power (E.I.R.P) for LTE BAND 2 (15MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1857.5	14.35	Horizontal	8.13	0.96	21.52	Pass
	1857.5	15.65	Vertical	8.13	0.96	22.82	Pass
	1880.0	14.36	Horizontal	8.14	0.96	21.54	Pass
	1880.0	15.88	Vertical	8.14	0.96	23.06	Pass
	1902.5	14.74	Horizontal	8.14	0.96	21.92	Pass
	1902.5	15.32	Vertical	8.14	0.96	22.5	Pass
16QAM	1857.5	14.85	Horizontal	8.13	0.96	22.02	Pass
	1857.5	15.36	Vertical	8.13	0.96	22.53	Pass
	1880.0	14.58	Horizontal	8.14	0.96	21.76	Pass
	1880.0	15.98	Vertical	8.14	0.96	23.16	Pass
	1902.5	14.22	Horizontal	8.14	0.96	21.4	Pass
	1902.5	15.63	Vertical	8.14	0.96	22.81	Pass

Radiated Power (E.I.R.P) for LTE BAND 2 (20MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1860.0	14.02	Horizontal	8.13	0.96	21.19	Pass
	1860.0	15.38	Vertical	8.13	0.96	22.55	Pass
	1880.0	14.22	Horizontal	8.14	0.96	21.40	Pass
	1880.0	15.36	Vertical	8.14	0.96	22.54	Pass
	1900.0	14.85	Horizontal	8.14	0.96	22.03	Pass
	1900.0	15.63	Vertical	8.14	0.96	22.83	Pass
16QAM	1860.0	14.87	Horizontal	8.13	0.96	22.04	Pass
	1860.0	15.66	Vertical	8.13	0.96	22.83	Pass
	1880.0	14.32	Horizontal	8.14	0.96	21.5	Pass
	1880.0	15.87	Vertical	8.14	0.96	23.05	Pass
	1900.0	14.25	Horizontal	8.14	0.96	21.43	Pass
	1900.0	15.77	Vertical	8.14	0.96	22.95	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (1.4MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1710.7	13.68	Horizontal	8.03	0.91	20.8	Pass
	1710.7	14.94	Vertical	8.03	0.91	22.06	Pass
	1732.5	13.35	Horizontal	8.04	0.91	20.48	Pass
	1732.5	14.89	Vertical	8.04	0.91	22.02	Pass
	1754.3	13.58	Horizontal	8.04	0.91	20.71	Pass
	1754.3	14.36	Vertical	8.04	0.91	21.49	Pass
16QAM	1710.7	13.87	Horizontal	8.03	0.91	20.99	Pass
	1710.7	14.36	Vertical	8.03	0.91	21.48	Pass
	1732.5	13.28	Horizontal	8.04	0.91	20.41	Pass
	1732.5	14.39	Vertical	8.04	0.91	21.52	Pass
	1754.3	13.64	Horizontal	8.04	0.91	20.77	Pass
	1754.3	14.87	Vertical	8.04	0.91	22.00	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (3MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1711.5	13.58	Horizontal	8.03	0.91	20.7	Pass
	1711.5	14.83	Vertical	8.03	0.91	21.95	Pass
	1732.5	13.87	Horizontal	8.04	0.91	21	Pass
	1732.5	14.69	Vertical	8.04	0.91	21.82	Pass
	1753.5	13.72	Horizontal	8.04	0.91	20.85	Pass
	1753.5	14.69	Vertical	8.04	0.91	21.82	Pass
16QAM	1711.5	13.58	Horizontal	8.03	0.91	20.7	Pass
	1711.5	14.36	Vertical	8.03	0.91	21.48	Pass
	1732.5	13.58	Horizontal	8.04	0.91	20.71	Pass
	1732.5	14.93	Vertical	8.04	0.91	22.06	Pass
	1753.5	13.57	Horizontal	8.04	0.91	20.7	Pass
	1753.5	14.94	Vertical	8.04	0.91	22.07	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (5MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1712.5	13.58	Horizontal	8.03	0.91	20.7	Pass
	1712.5	14.44	Vertical	8.03	0.91	21.56	Pass
	1732.5	13.25	Horizontal	8.04	0.91	20.38	Pass
	1732.5	14.57	Vertical	8.04	0.91	21.7	Pass
	1752.5	13.44	Horizontal	8.04	0.91	20.57	Pass
	1752.5	14.63	Vertical	8.04	0.91	21.76	Pass
16QAM	1712.5	13.54	Horizontal	8.03	0.91	20.66	Pass
	1712.5	14.32	Vertical	8.03	0.91	21.44	Pass
	1732.5	13.58	Horizontal	8.04	0.91	20.71	Pass
	1732.5	14.74	Vertical	8.04	0.91	21.87	Pass
	1752.5	13.52	Horizontal	8.04	0.91	20.65	Pass
	1752.5	14.36	Vertical	8.04	0.91	21.49	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (10MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1715.0	13.25	Horizontal	8.03	0.91	20.37	Pass
	1715.0	14.94	Vertical	8.03	0.91	22.06	Pass
	1732.5	13.74	Horizontal	8.04	0.91	20.87	Pass
	1732.5	14.35	Vertical	8.04	0.91	21.48	Pass
	1750.0	13.57	Horizontal	8.04	0.91	20.7	Pass
	1750.0	14.36	Vertical	8.04	0.91	21.49	Pass
16QAM	1715.0	13.57	Horizontal	8.03	0.91	20.69	Pass
	1715.0	14.67	Vertical	8.03	0.91	21.79	Pass
	1732.5	13.85	Horizontal	8.04	0.91	20.98	Pass
	1732.5	14.36	Vertical	8.04	0.91	21.49	Pass
	1750.0	13.58	Horizontal	8.04	0.91	20.71	Pass
	1750.0	14.93	Vertical	8.04	0.91	22.06	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (15MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1717.5	13.58	Horizontal	8.03	0.91	20.7	Pass
	1717.5	14.36	Vertical	8.03	0.91	21.48	Pass
	1732.5	13.54	Horizontal	8.04	0.91	20.67	Pass
	1732.5	14.87	Vertical	8.04	0.91	22	Pass
	1747.5	13.25	Horizontal	8.04	0.91	20.38	Pass
	1747.5	14.35	Vertical	8.04	0.91	21.48	Pass
16QAM	1717.5	13.42	Horizontal	8.03	0.91	20.54	Pass
	1717.5	14.35	Vertical	8.03	0.91	21.47	Pass
	1732.5	13.25	Horizontal	8.04	0.91	20.38	Pass
	1732.5	14.57	Vertical	8.04	0.91	21.7	Pass
	1747.5	13.25	Horizontal	8.04	0.91	20.38	Pass
	1747.5	14.68	Vertical	8.04	0.91	21.81	Pass

Radiated Power (E.I.R.P) for LTE BAND 4 (20MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	1720.0	13.25	Horizontal	8.03	0.91	20.37	Pass
	1720.0	14.34	Vertical	8.03	0.91	21.46	Pass
	1732.5	13.21	Horizontal	8.04	0.91	20.34	Pass
	1732.5	14.98	Vertical	8.04	0.91	22.11	Pass
	1745.0	13.29	Horizontal	8.04	0.91	20.42	Pass
	1745.0	14.36	Vertical	8.04	0.91	21.49	Pass
16QAM	1720.0	13.54	Horizontal	8.03	0.91	20.66	Pass
	1720.0	14.77	Vertical	8.03	0.91	21.89	Pass
	1732.5	13.25	Horizontal	8.04	0.91	20.38	Pass
	1732.5	14.64	Vertical	8.04	0.91	21.77	Pass
	1745.0	13.28	Horizontal	8.04	0.91	20.41	Pass
	1745.0	14.91	Vertical	8.04	0.91	22.04	Pass

Radiated Power (E.R.P) for LTE BAND 5 (1.4MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	824.7	16.65	Horizontal	6.4	0.52	22.53	Pass
	824.7	17.36	Vertical	6.4	0.52	23.24	Pass
	836.5	16.35	Horizontal	6.4	0.52	22.23	Pass
	836.5	17.35	Vertical	6.4	0.52	23.23	Pass
	848.3	16.22	Horizontal	6.5	0.52	22.2	Pass
	848.3	17.41	Vertical	6.5	0.52	23.39	Pass
16QAM	824.7	16.36	Horizontal	6.4	0.52	22.24	Pass
	824.7	17.65	Vertical	6.4	0.52	23.53	Pass
	836.5	16.54	Horizontal	6.4	0.52	22.42	Pass
	836.5	17.36	Vertical	6.4	0.52	23.24	Pass
	848.3	16.57	Horizontal	6.5	0.52	22.55	Pass
	848.3	17.27	Vertical	6.5	0.52	23.25	Pass

Radiated Power (E.R.P) for LTE BAND 5 (3MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	825.5	16.58	Horizontal	6.4	0.52	22.46	Pass
	825.5	17.54	Vertical	6.4	0.52	23.42	Pass
	836.5	16.77	Horizontal	6.4	0.52	22.65	Pass
	836.5	17.67	Vertical	6.4	0.52	23.55	Pass
	847.5	16.57	Horizontal	6.5	0.52	22.55	Pass
	847.5	17.36	Vertical	6.5	0.52	23.34	Pass
16QAM	825.5	16.87	Horizontal	6.4	0.52	22.75	Pass
	825.5	17.55	Vertical	6.4	0.52	23.43	Pass
	836.5	16.87	Horizontal	6.4	0.52	22.75	Pass
	836.5	17.35	Vertical	6.4	0.52	23.23	Pass
	847.5	16.87	Horizontal	6.5	0.52	22.85	Pass
	847.5	17.52	Vertical	6.5	0.52	23.5	Pass

Radiated Power (E.R.P) for LTE BAND 5 (5MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	826.5	16.87	Horizontal	6.4	0.52	22.75	Pass
	826.5	17.52	Vertical	6.4	0.52	23.4	Pass
	836.5	16.87	Horizontal	6.4	0.52	22.75	Pass
	836.5	17.25	Vertical	6.4	0.52	23.13	Pass
	846.5	16.54	Horizontal	6.5	0.52	22.52	Pass
	846.5	17.57	Vertical	6.5	0.52	23.55	Pass
16QAM	826.5	16.65	Horizontal	6.4	0.52	22.53	Pass
	826.5	17.36	Vertical	6.4	0.52	23.24	Pass
	836.5	16.55	Horizontal	6.4	0.52	22.43	Pass
	836.5	17.53	Vertical	6.4	0.52	23.41	Pass
	846.5	16.74	Horizontal	6.5	0.52	22.72	Pass
	846.5	17.48	Vertical	6.5	0.52	23.46	Pass

Radiated Power (E.R.P) for LTE BAND 5 (10MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	829.0	16.87	Horizontal	6.4	0.52	22.75	Pass
	829.0	17.65	Vertical	6.4	0.52	23.53	Pass
	836.5	16.02	Horizontal	6.4	0.52	21.9	Pass
	836.5	17.22	Vertical	6.4	0.52	23.1	Pass
	844.0	16.24	Horizontal	6.5	0.52	22.22	Pass
	844.0	17.02	Vertical	6.5	0.52	23	Pass
16QAM	829.0	16.37	Horizontal	6.4	0.52	22.25	Pass
	829.0	17.64	Vertical	6.4	0.52	23.52	Pass
	836.5	16.34	Horizontal	6.4	0.52	22.22	Pass
	836.5	17.55	Vertical	6.4	0.52	23.43	Pass
	844.0	16.32	Horizontal	6.5	0.52	22.3	Pass
	844.0	17.65	Vertical	6.5	0.52	23.63	Pass

Radiated Power (E.R.P) for LTE BAND 17 (5MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	706.5	12.57	Horizontal	6.1	0.49	18.18	Pass
	706.5	13.45	Vertical	6.1	0.49	19.06	Pass
	710.0	12.41	Horizontal	6.1	0.49	18.02	Pass
	710.0	13.58	Vertical	6.1	0.49	19.19	Pass
	713.5	12.36	Horizontal	6.1	0.49	17.97	Pass
	713.5	13.85	Vertical	6.1	0.49	19.46	Pass
16QAM	706.5	12.41	Horizontal	6.1	0.49	18.02	Pass
	706.5	13.66	Vertical	6.1	0.49	19.27	Pass
	710.0	12.87	Horizontal	6.1	0.49	18.48	Pass
	710.0	13.52	Vertical	6.1	0.49	19.13	Pass
	713.5	12.77	Horizontal	6.1	0.49	18.38	Pass
	713.5	13.65	Vertical	6.1	0.49	19.26	Pass

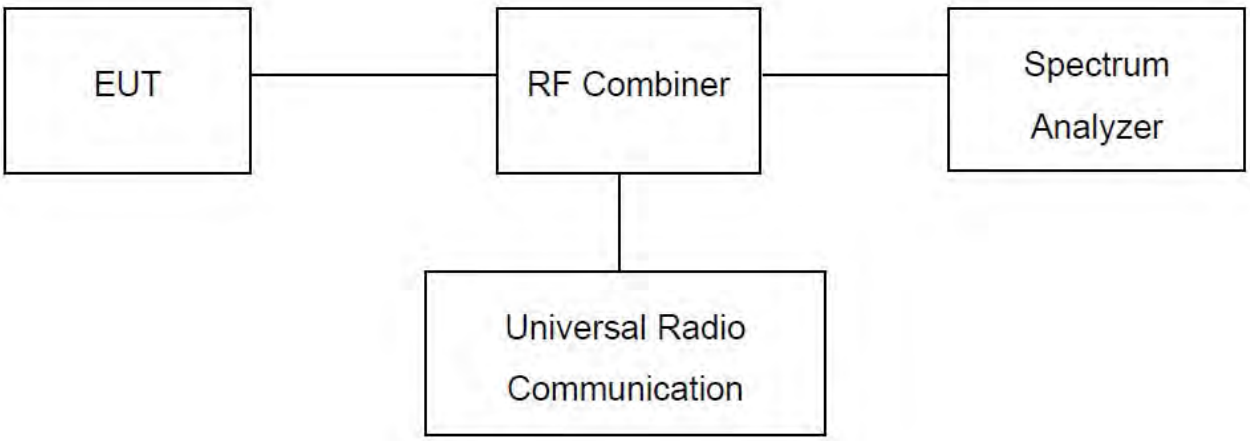
Radiated Power (E.R.P) for LTE BAND 17 (10MHZ BANDWIDTH)							
Mode	**Frequency**	**Substituted Level (dBm)**	**Antenna Polarization**	**Antenna Gain (dBi)**	**Cable loss (dB)**	**Absolute Level (dBm)**	**Conclusion**
QPSK	709.0	12.89	Horizontal	6.1	0.49	18.50	Pass
	709.0	13.69	Vertical	6.1	0.49	19.30	Pass
	710.0	12.44	Horizontal	6.1	0.49	18.05	Pass
	710.0	13.96	Vertical	6.1	0.49	19.57	Pass
	711.0	12.87	Horizontal	6.1	0.49	18.48	Pass
	711.0	13.58	Vertical	6.1	0.49	19.19	Pass
16QAM	709.0	12.65	Horizontal	6.1	0.49	18.26	Pass
	709.0	13.41	Vertical	6.1	0.49	19.02	Pass
	710.0	12.57	Horizontal	6.1	0.49	18.18	Pass
	710.0	13.67	Vertical	6.1	0.49	19.28	Pass
	711.0	12.52	Horizontal	6.1	0.49	18.13	Pass
	711.0	13.35	Vertical	6.1	0.49	18.96	Pass

6. PEAK-TO-AVERAGE RATIO

6.1 Test Procedure

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. Set EUT to transmit at maximum output power.
3. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.

6.2 Test Setup



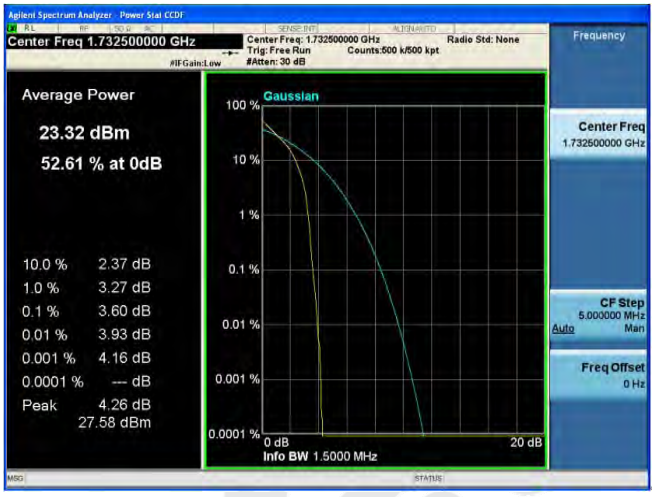
6.3 Measurement Result

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB

BAND	CHANNEL	Frequency [MHz]	BANDWIDTH	NO. RB	RB POS.	MODULATION	PAR [dB]
2	18900	1880.0	1.4	1	Low	QPSK	3.83
2	18900	1880.0	1.4	1	Low	16QAM	5.81
2	18900	1880.0	3.0	1	Low	QPSK	3.87
2	18900	1880.0	3.0	1	Low	16QAM	4.73
2	18900	1880.0	5.0	1	Low	QPSK	3.65
2	18900	1880.0	5.0	1	Low	16QAM	4.64
2	18900	1880.0	10.0	1	Low	QPSK	4.61
2	18900	1880.0	10.0	1	Low	16QAM	5.68
2	18900	1880.0	15.0	1	Low	QPSK	5.54
2	18900	1880.0	15.0	1	Low	16QAM	6.49
2	18900	1880.0	20.0	1	Low	QPSK	6.46
2	18900	1880.0	20.0	1	Low	16QAM	6.98
4	20175	1732.5	1.4	1	Low	QPSK	3.60
4	20175	1732.5	1.4	1	Low	16QAM	4.63
4	20175	1732.5	3.0	1	Low	QPSK	3.76
4	20175	1732.5	3.0	1	Low	16QAM	4.67
4	20175	1732.5	5.0	1	Low	QPSK	3.51
4	20175	1732.5	5.0	1	Low	16QAM	4.73
4	20175	1732.5	10.0	1	Low	QPSK	4.76
4	20175	1732.5	10.0	1	Low	16QAM	5.80
4	20175	1732.5	15.0	1	Low	QPSK	5.62
4	20175	1732.5	15.0	1	Low	16QAM	6.49
4	20175	1732.5	20.0	1	Low	QPSK	11.27
4	20175	1732.5	20.0	1	Low	16QAM	9.70
5	20525	836.5	1.4	1	Low	QPSK	5.09
5	20525	836.5	1.4	1	Low	16QAM	6.10
5	20525	836.5	3.0	1	Low	QPSK	5.11
5	20525	836.5	3.0	1	Low	16QAM	6.08
5	20525	836.5	5.0	1	Low	QPSK	4.99
5	20525	836.5	5.0	1	Low	16QAM	5.83
5	20525	836.5	10.0	1	Low	QPSK	5.35
5	20525	836.5	10.0	1	Low	16QAM	6.37
17	23790	710.0	5.0	1	Low	QPSK	4.81
17	23790	710.0	5.0	1	Low	16QAM	6.41
17	23790	710.0	10.0	1	Low	QPSK	5.03
17	23790	710.0	10.0	1	Low	16QAM	5.19

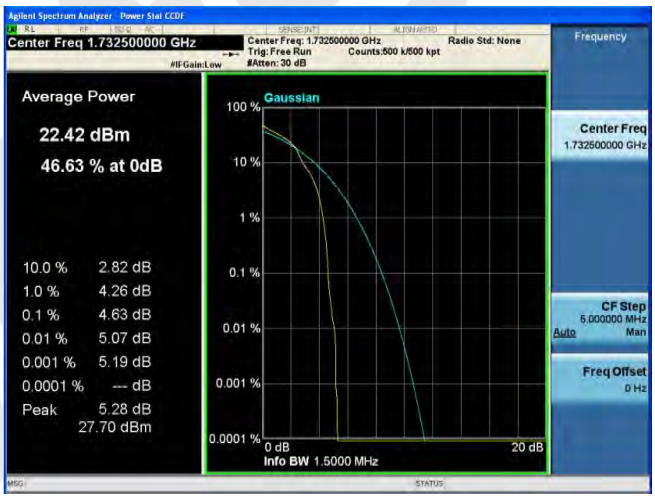
Band 2(Channel Bandwidth: 1.4 MHz)-QPSK

Band 4(Channel Bandwidth: 1.4 MHz)-QPSK

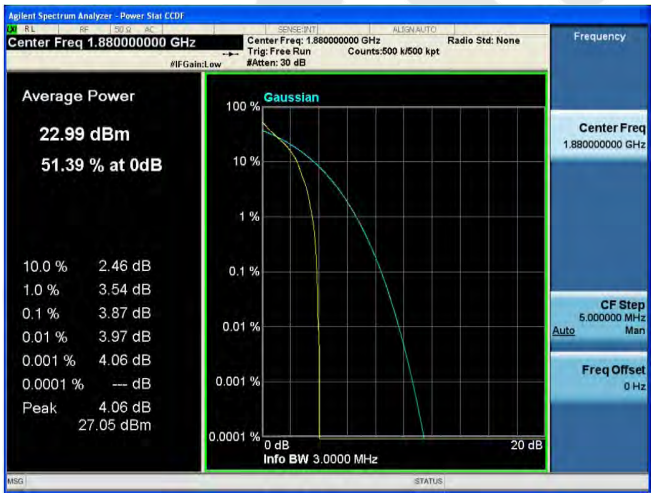


Band 2(Channel Bandwidth: 1.4 MHz)-16QAM

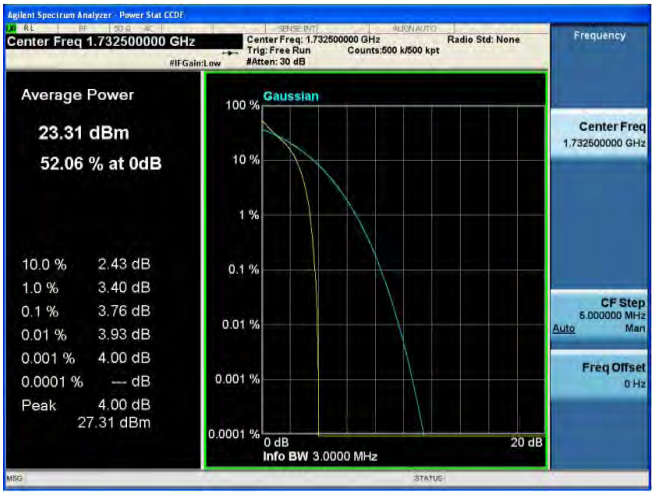
Band 4(Channel Bandwidth: 1.4 MHz)-16QAM



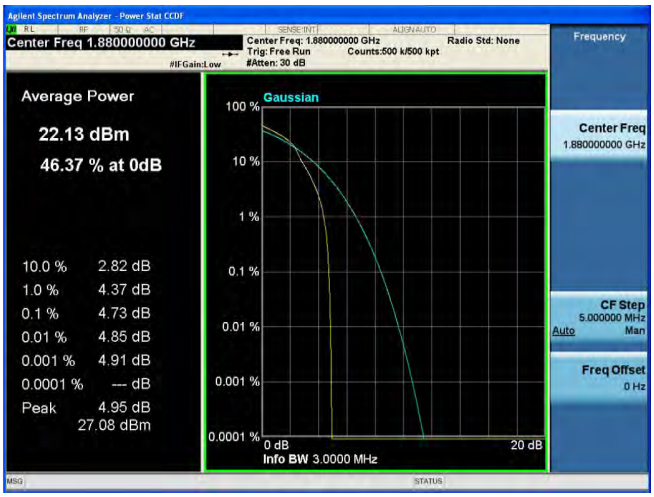
Band 2(Channel Bandwidth: 3 MHz)-QPSK



Band 4(Channel Bandwidth: 3 MHz)-QPSK

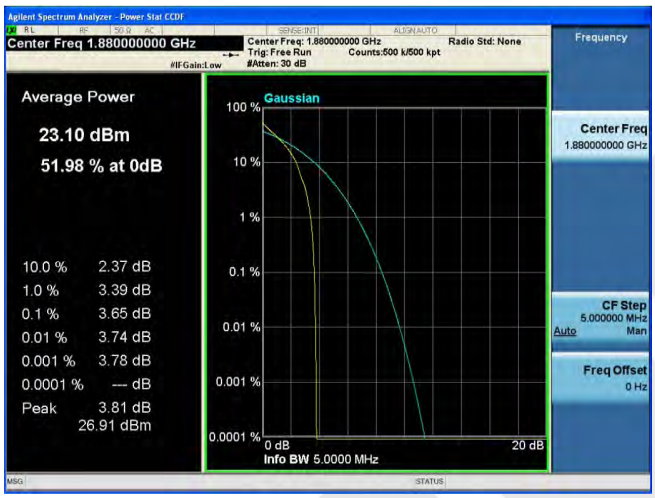


Band 2(Channel Bandwidth: 3 MHz)-16QAM



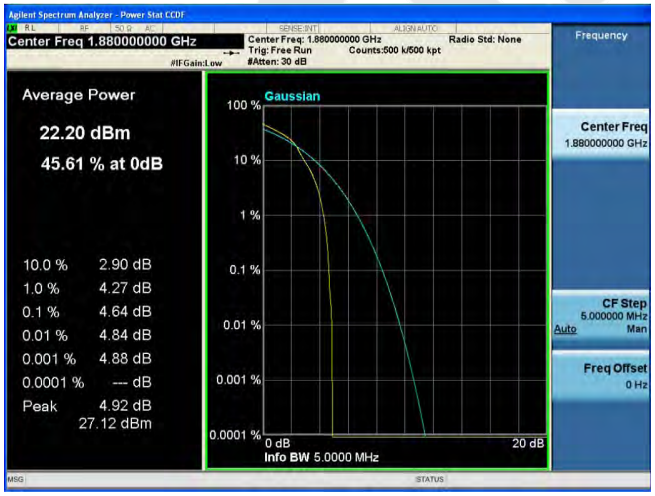
Band 4(Channel Bandwidth: 3 MHz)-16QAM

Band 2(Channel Bandwidth: 5 MHz)-QPSK

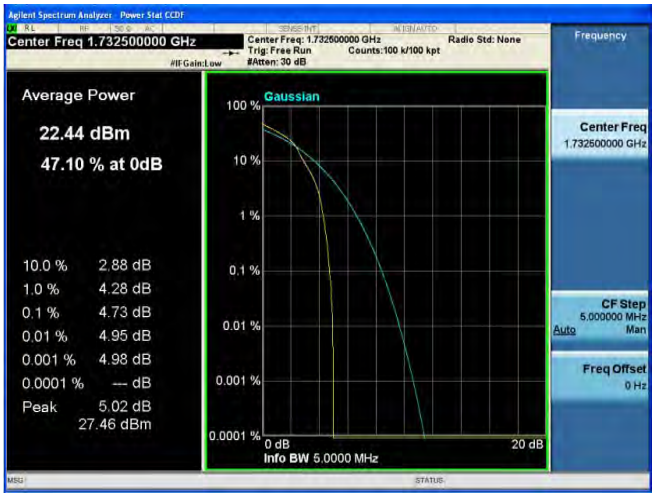


Band 4(Channel Bandwidth: 5 MHz)-QPSK

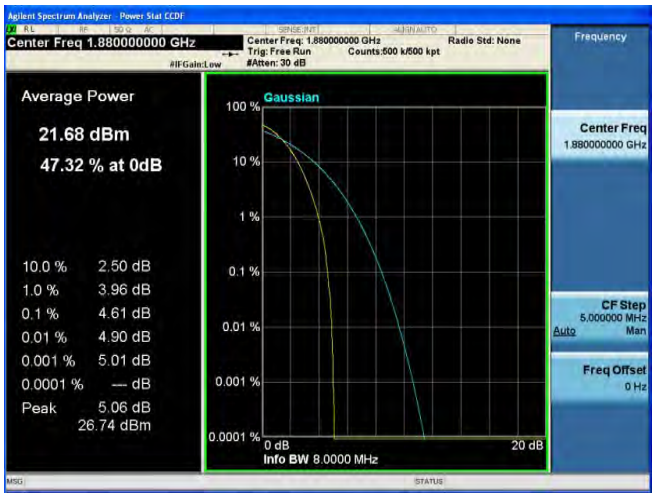
Band 2(Channel Bandwidth: 5 MHz)-16QAM



Band 4(Channel Bandwidth: 5 MHz)-16QAM



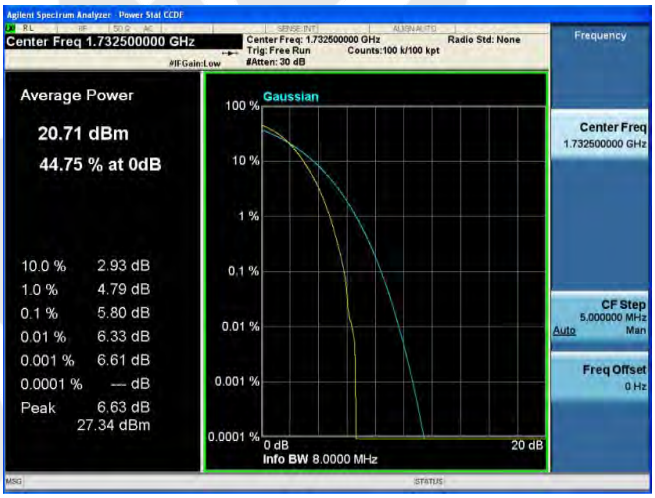
Band 2(Channel Bandwidth: 10 MHz)-QPSK



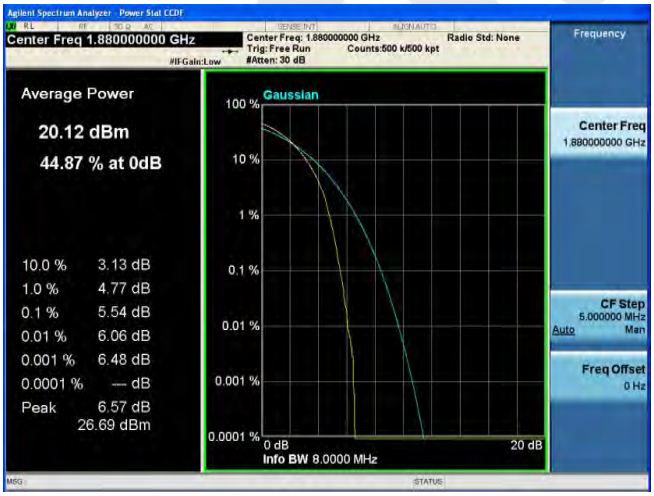
Band 4(Channel Bandwidth: 10 MHz)-QPSK

Band 2(Channel Bandwidth: 10 MHz)-16QAM

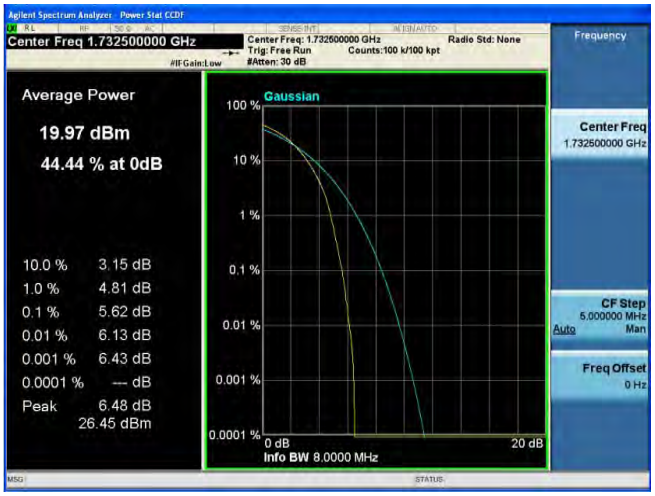
Band 4(Channel Bandwidth: 10 MHz)-16QAM



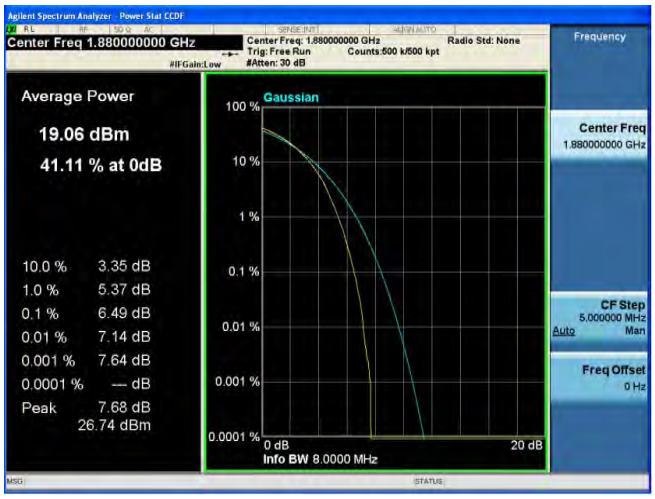
Band 2(Channel Bandwidth: 15 MHz)-QPSK



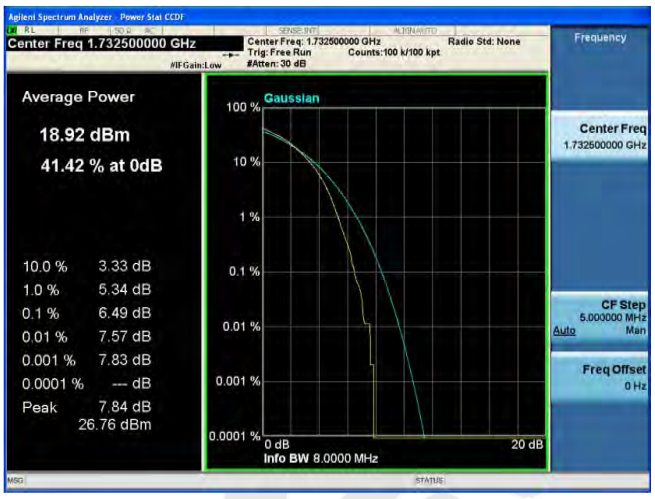
Band 4(Channel Bandwidth: 15 MHz)-QPSK



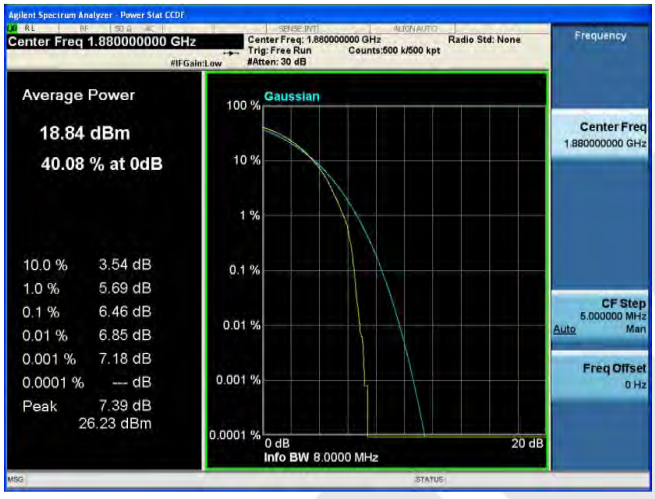
Band 2(Channel Bandwidth: 15 MHz)-16QAM



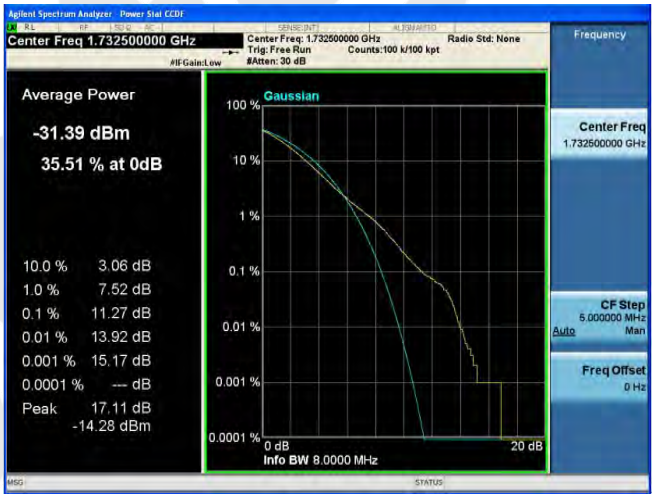
Band 4(Channel Bandwidth: 15 MHz)-16QAM



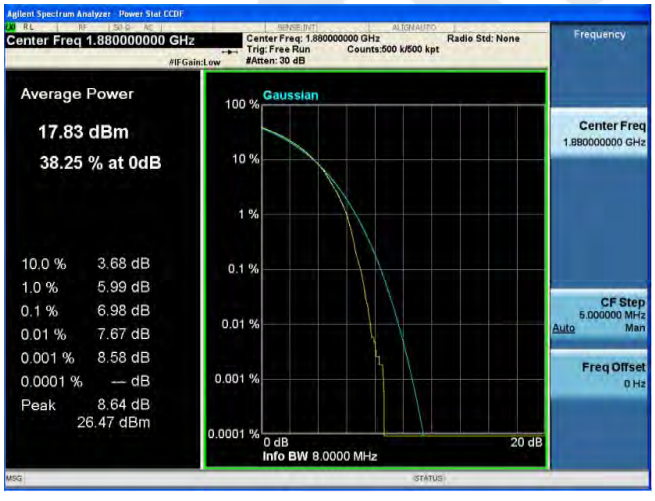
Band 2(Channel Bandwidth: 20 MHz)-QPSK



Band 4(Channel Bandwidth: 20 MHz)-QPSK

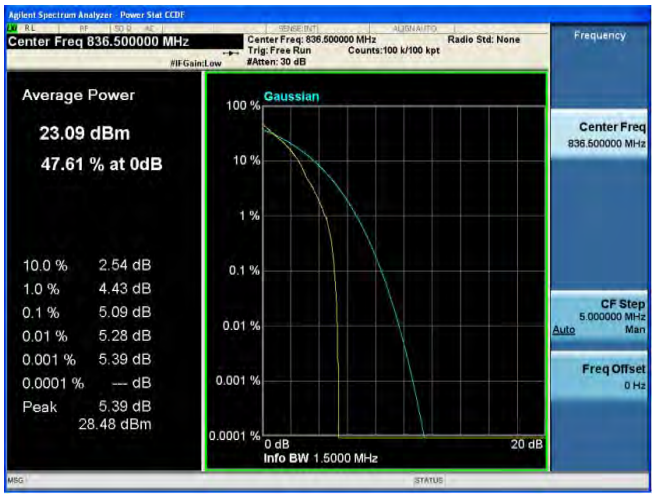


Band 2(Channel Bandwidth: 20 MHz)-16QAM

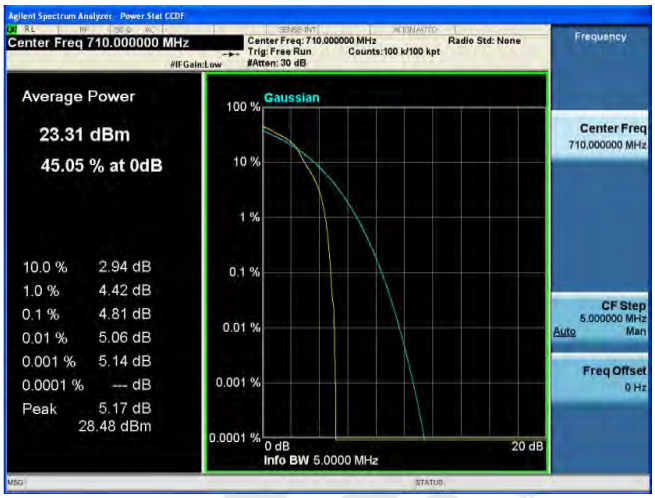


Band 4(Channel Bandwidth: 20 MHz)-16QAM

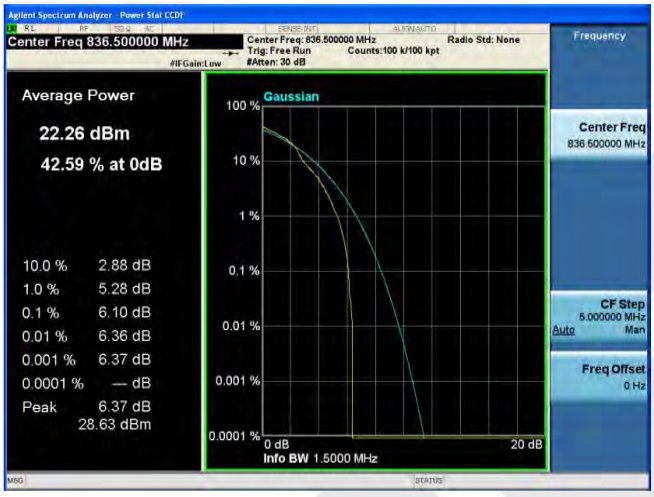
Band 5(Channel Bandwidth: 1.4 MHz)-QPSK



Band 17(Channel Bandwidth: 5 MHz)-QPSK

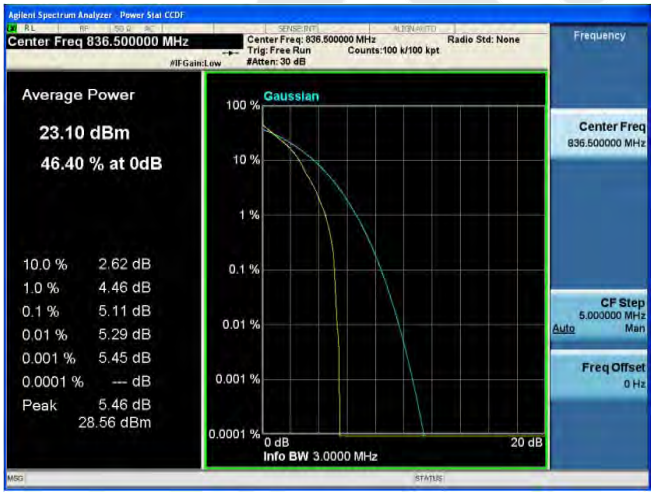


Band 5(Channel Bandwidth: 1.4 MHz)-16QAM

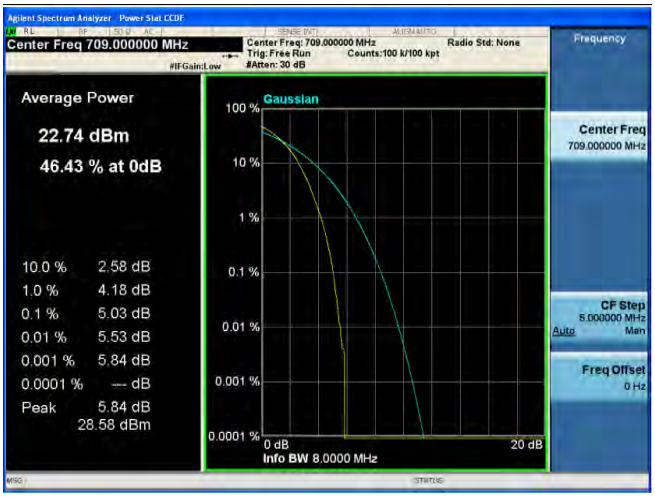


Band 17(Channel Bandwidth: 5MHz)-16QAM

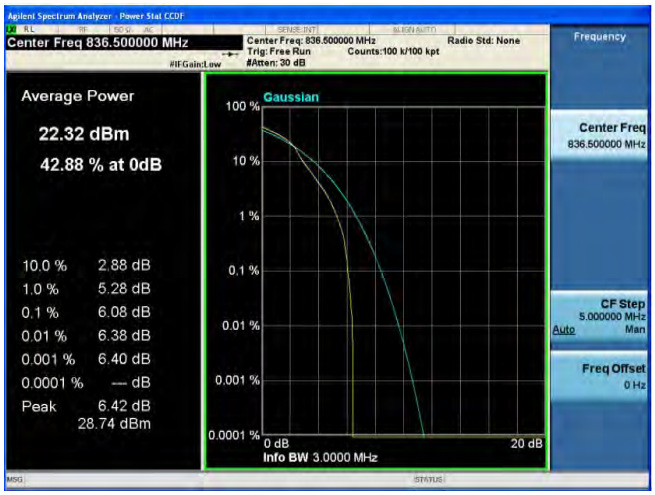
Band 5(Channel Bandwidth: 3 MHz)-QPSK



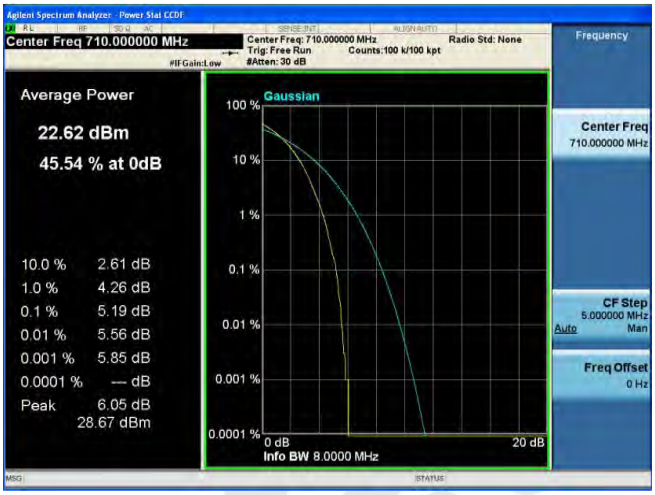
Band 17(Channel Bandwidth: 10 MHz)-QPSK



Band 5(Channel Bandwidth: 3 MHz)-16QAM



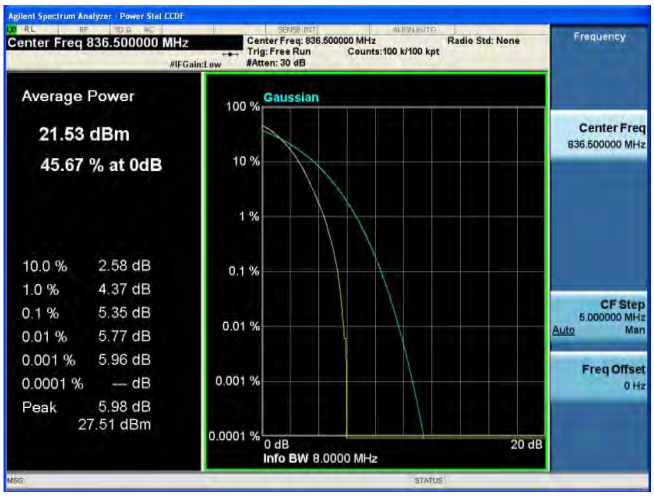
Band 17(Channel Bandwidth: 10 MHz)-16QAM



Band 5(Channel Bandwidth: 5 MHz)-QPSK

Band 5(Channel Bandwidth: 5 MHz)-16QAM

Band 5(Channel Bandwidth: 10 MHz)-QPSK



Band 5(Channel Bandwidth: 10 MHz)-16QAM

7 RADIATED SPURIOUS EMISSION

7.1 measurement method

Test Requirement: FCC Part 2.1053, 22.917, 24.238, 27.53(h)

Test Method: TIA/EIA-603-D:2010

KDB971168 D01 v02r02

The procedure of radiated spurious emissions is as follows:

1. The testing follows FCC KDB 971168 D01 Section 5.8 and ANSI/TIA-603-D-2010 – Section 2.2.12

2. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz

3. VBW ≥ 3 x RBW

4. Span = 1.5 times the OBW

5.No. of sweep points > 2 x span/RBW

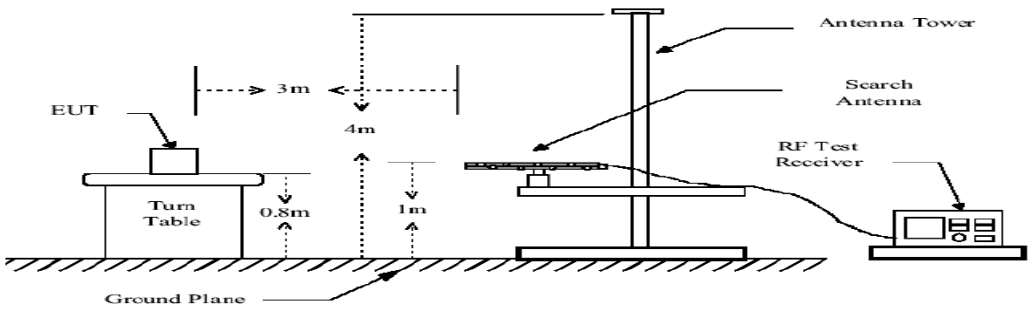
6. Detector = Peak

7. Trace mode = max hold

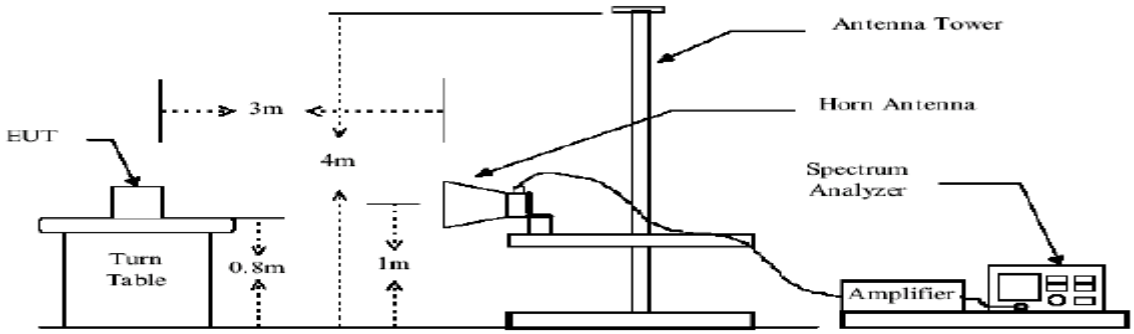
8. The trace was allowed to stabilize

TEST SETUP

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz



1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from 30MHz up to the tenth harmonic of the highest fundamental frequency.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.
7. 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 lg (TXpwr in Watts/0.001) – the absolute level
   Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts)
8. Repeat above procedures until the measurements for all frequencies are completed

Note: Test performed from 30MHz to 10th harmonics with low/middle/high channels, only the worst data were recorded.

7.2 Measurement Result

LTE BAND 2						
Test Results for Channel 18607						
Frequency(MHz)	Power(dBm)	Antenna Gain (dBi)	Cable loss(dB)	PMea (dBm)	Limit （dBm）	Polarity
3701.4	-34.12	15.45	2.03	-20.7	-13.00	Horizontal
3701.4	-33.23	15.45	2.03	-19.81	-13.00	Vertical
5552.1	-35.34	19.63	2.51	-18.22	-13.00	Vertical
5552.1	-33.65	19.63	2.51	-16.53	-13.00	Horizontal
7402.8	-36.16	22.88	3.62	-16.9	-13.00	Horizontal
7402.8	-35.98	22.88	3.62	-16.72	-13.00	Vertical
Test Results for Channel 18900						
3760	-37.23	15.83	2.07	-23.47	-13.00	Horizontal
3760	-32.76	15.83	2.07	-19	-13.00	Vertical
5640	-41.87	20.32	2.76	-24.31	-13.00	Vertical
5640	-43.56	20.32	2.76	-26	-13.00	Horizontal
7520	-39.29	23.48	3.88	-19.69	-13.00	Horizontal
7520	-39.56	23.48	3.88	-19.96	-13.00	Vertical
Test Results for Channel 19193						
3818.6	-37.87	16.14	2.27	-24	-13.00	Horizontal
3818.6	-35.45	16.14	2.27	-21.58	-13.00	Vertical
5727.9	-36.34	20.43	2.77	-18.68	-13.00	Vertical
5727.9	-34.83	20.43	2.77	-17.17	-13.00	Horizontal
7637.2	-42.45	23.78	4.03	-22.7	-13.00	Horizontal
7637.2	-41.25	23.78	4.03	-21.5	-13.00	Vertical

NOTE:1.All other emissions more than 30dB below the limit.

2.ALL mode were investingated.The results above show only the worst case.

LTE BAND 4						
Test Results for Channel 19957						
Frequency(MHz)	Power(dBm)	Antenna Gain (dBi)	Cable loss(dB)	PMea (dBm)	Limit （dBm）	Polarity
3421.4	-35.45	14.12	1.91	-23.24	-13.00	Horizontal
3421.4	-36.45	14.12	1.91	-24.24	-13.00	Vertical
5132.1	-37.56	16.37	2.23	-23.42	-13.00	Vertical
5132.1	-36.85	16.37	2.23	-22.71	-13.00	Horizontal
6842.4	-38.67	21.35	3.24	-20.56	-13.00	Horizontal
6842.4	-37.86	21.35	3.24	-19.75	-13.00	Vertical
Test Results for Channel 20175						
3465	-38.76	14.31	1.92	-26.37	-13.00	Horizontal
3465	-39.23	14.31	1.92	-26.84	-13.00	Vertical
5197.5	-38.67	16.43	2.26	-24.5	-13.00	Vertical
5197.5	-40.04	16.43	2.26	-25.87	-13.00	Horizontal
6930	-39.87	21.48	3.26	-21.65	-13.00	Horizontal
6930	-39.12	21.48	3.26	-20.9	-13.00	Vertical
Test Results for Channel 20393						
3508.6	-37.65	14.36	2.27	-25.56	-13.00	Horizontal
3508.6	-36.78	14.36	2.27	-24.69	-13.00	Vertical
5262.9	-38.89	16.59	2.77	-25.07	-13.00	Vertical
5262.9	-35.87	16.59	2.77	-22.05	-13.00	Horizontal
7017.2	-43.45	21.62	3.32	-25.15	-13.00	Horizontal
7017.2	-44.27	21.62	3.32	-25.97	-13.00	Vertical

NOTE:1.All other emissions more than 30dB below the limit.

2.ALL mode were investingated.The results above show only the worst case.

LTE BAND 5						
Test Results for Channel 20407						
Frequency(MHz)	Power(dBm)	Antenna Gain (dBi)	Cable loss(dB)	PMea (dBm)	Limit （dBm）	Polarity
1649.4	-32.41	8.42	0.62	-24.61	-13.00	Vertical
1649.4	-33.23	8.42	0.62	-25.43	-13.00	Horizontal
2474.1	-32.54	12	1	-21.54	-13.00	Vertical
2474.1	-31.65	12	1	-20.65	-13.00	Horizontal
3298.8	-31.76	13.8	1.5	-19.46	-13.00	Horizontal
3298.8	-31.44	13.8	1.5	-19.14	-13.00	Vertical
Test Results for Channel 20525						
1673.0	-32.12	8.7	0.7	-24.12	-13.00	Vertical
1673.0	-32.17	8.7	0.7	-24.17	-13.00	Horizontal
2509.5	-34.24	12.2	1.0	-23.04	-13.00	Vertical
2509.5	-33.23	12.2	1.0	-22.03	-13.00	Horizontal
3346.0	-33.52	14.2	1.6	-20.92	-13.00	Horizontal
3346.0	-34.34	14.2	1.6	-21.74	-13.00	Vertical
Test Results for Channel 20643						
1696.6	-32.34	8.78	0.68	-24.24	-13.00	Vertical
1696.6	-33.23	8.78	0.68	-25.13	-13.00	Horizontal
2544.9	-34.12	12.69	1.0	-22.43	-13.00	Vertical
2544.9	-33.29	12.69	1.0	-21.6	-13.00	Horizontal
3393.2	-33.58	14.52	1.6	-20.66	-13.00	Horizontal
3393.2	-34.56	14.52	1.6	-21.64	-13.00	Vertical

NOTE:1.All other emissions more than 30dB below the limit.

2.ALL mode were investingated.The results above show only the worst case.

LTE BAND 17						
Test Results for Channel 23755						
Frequency(MHz)	Power(dBm)	Antenna Gain (dBi)	Cable loss(dB)	PMea (dBm)	Limit （dBm）	Polarity
1413.0	-33.23	7.42	0.51	-26.32	-13.00	Vertical
1413.0	-32.75	7.42	0.51	-25.84	-13.00	Horizontal
2119.5	-33.45	10.96	0.87	-23.36	-13.00	Vertical
2119.5	-34.03	10.96	0.87	-23.94	-13.00	Horizontal
2826.0	-32.54	12.38	1.35	-21.51	-13.00	Horizontal
2826.0	-33.76	12.38	1.35	-22.73	-13.00	Vertical
Test Results for Channel 23790						
1420.0	-33.52	7.42	0.57	-26.67	-13.00	Vertical
1420.0	-34.65	7.42	0.57	-27.8	-13.00	Horizontal
2130.0	-34.56	10.96	0.88	-24.48	-13.00	Vertical
2130.0	-35.87	10.96	0.88	-25.79	-13.00	Horizontal
2840.0	-34.53	12.4	1.36	-23.49	-13.00	Horizontal
2840.0	-34.52	12.4	1.36	-23.48	-13.00	Vertical
Test Results for Channel 23825						
1427.0	-33.35	7.42	0.68	-26.61	-13.00	Vertical
1427.0	-34.56	7.42	0.68	-27.82	-13.00	Horizontal
2140.5	-33.95	10.98	0.9	-23.87	-13.00	Vertical
2140.5	-34.24	10.98	0.9	-24.16	-13.00	Horizontal
2854.0	-35.34	12.43	1.38	-24.29	-13.00	Horizontal
2854.0	-36.51	12.43	1.38	-25.46	-13.00	Vertical

NOTE:
1.All other emissions more than 30dB below the limit.
2.ALL mode were investingated.The results above show only the worst case.

8. FREQUENCY STABILITY

8.1 measurement method

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The AC leads and RF output cable exited the chamber through an opening made for the purpose.
After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

8.2 PROVISIONS APPLICABLE

8.2.1 For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment, the normal environment temperature is 20°C.

8.3 Measurement Result(WORST)

LTE BAND 2

Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VL	TN	-3.35	-0.001781	± 2.5	PASS
		VN	TN	3.59	0.001910	± 2.5	PASS
		VH	TN	5.06	0.002694	± 2.5	PASS
16QAM	MCH	VL	TN	5.95	0.003165	± 2.5	PASS
		VN	TN	-10.00	-0.005319	± 2.5	PASS
		VH	TN	24.92	0.013255	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	3.56	0.001895	± 2.5	PASS
		VN	-20	3.89	0.002070	± 2.5	PASS
		VN	-10	4.72	0.002511	± 2.5	PASS
		VN	0	**23.00**	**0.012235**	± 2.5	PASS
		VN	10	3.98	0.002115	± 2.5	PASS
		VN	20	4.82	0.002564	± 2.5	PASS
		VN	30	-16.71	-0.008887	± 2.5	PASS
		VN	40	4.82	0.002564	± 2.5	PASS
		VN	50	5.47	0.002907	± 2.5	PASS
16QAM	MCH	VN	-30	3.63	0.001933	± 2.5	PASS
		VN	-20	0.79	0.000419	± 2.5	PASS
		VN	-10	4.95	0.002633	± 2.5	PASS
		VN	0	2.66	0.001415	± 2.5	PASS
		VN	10	-13.62	-0.007244	± 2.5	PASS
		VN	20	**25.75**	**0.013696**	± 2.5	PASS
		VN	30	-9.23	-0.004908	± 2.5	PASS
		VN	40	4.84	0.002572	± 2.5	PASS
		VN	50	-1.69	-0.000898	± 2.5	PASS

LTE BAND 4

Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VL	TN	4.98	0.002873	± 2.5	PASS
		VN	TN	-4.18	-0.002411	± 2.5	PASS
		VH	TN	7.51	0.004335	± 2.5	PASS
16QAM	MCH	VL	TN	3.82	0.002205	± 2.5	PASS
		VN	TN	5.22	0.003014	± 2.5	PASS
		VH	TN	**-17.95**	**-0.010362**	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	2.02	0.001164	± 2.5	PASS
		VN	-20	-13.00	-0.007506	± 2.5	PASS
		VN	-10	22.70	0.013104	± 2.5	PASS
		VN	0	-1.82	-0.001049	± 2.5	PASS
		VN	10	1.90	0.001098	± 2.5	PASS
		VN	20	**-25.49**	**-0.014714**	± 2.5	PASS
		VN	30	4.75	0.002744	± 2.5	PASS
		VN	40	4.55	0.002626	± 2.5	PASS
		VN	50	-7.72	-0.00445	± 2.5	PASS
16QAM	MCH	VN	-30	8.89	0.005131	± 2.5	PASS
		VN	-20	8.71	0.005028	± 2.5	PASS
		VN	-10	-9.91	-0.00572	± 2.5	PASS
		VN	0	2.24	0.001291	± 2.5	PASS
		VN	10	-1.78	-0.00103	± 2.5	PASS
		VN	20	-3.18	-0.00184	± 2.5	PASS
		VN	30	-5.21	-0.00301	± 2.5	PASS
		VN	40	3.32	0.001917	± 2.5	PASS
		VN	50	6.94	0.004009	± 2.5	PASS

LTE BAND 5

Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VL	TN	6.72	0.008035	± 2.5	PASS
		VN	TN	**9.61**	**0.011493**	± 2.5	PASS
		VH	TN	7.98	0.009539	± 2.5	PASS
16QAM	MCH	VL	TN	1.30	0.001552	± 2.5	PASS
		VN	TN	-1.01	-0.001205	± 2.5	PASS
		VH	TN	-5.23	-0.006255	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	-7.05	-0.008427	± 2.5	PASS
		VN	-20	6.73	0.008048	± 2.5	PASS
		VN	-10	-3.01	-0.003596	± 2.5	PASS
		VN	0	-7.45	-0.008908	± 2.5	PASS
		VN	10	-4.19	-0.005005	± 2.5	PASS
		VN	20	5.19	0.006207	± 2.5	PASS
		VN	30	-7.55	-0.009022	± 2.5	PASS
		VN	40	-1.11	-0.001325	± 2.5	PASS
		VN	50	6.70	0.008013	± 2.5	PASS
16QAM	MCH	VN	-30	-8.40	-0.010040	± 2.5	PASS
		VN	-20	-6.48	-0.007743	± 2.5	PASS
		VN	-10	**9.37**	**0.011196**	± 2.5	PASS
		VN	0	8.16	0.009752	± 2.5	PASS
		VN	10	-5.95	-0.007111	± 2.5	PASS
		VN	20	2.31	0.002761	± 2.5	PASS
		VN	30	-2.60	-0.003110	± 2.5	PASS
		VN	40	1.17	0.001394	± 2.5	PASS
		VN	50	-4.12	-0.002376	± 2.5	PASS

LTE BAND 17

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VL	TN	-0.71	-0.000994	± 2.5	PASS
		VN	TN	-5.26	-0.007413	± 2.5	PASS
		VH	TN	3.58	0.005045	± 2.5	PASS
16QAM	MCH	VL	TN	0.72	0.001011	± 2.5	PASS
		VN	TN	-5.60	-0.007882	± 2.5	PASS
		VH	TN	0.15	0.000218	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	**9.85**	**0.013878**	± 2.5	PASS
		VN	-20	-0.88	-0.001236	± 2.5	PASS
		VN	-10	-6.37	-0.008974	± 2.5	PASS
		VN	0	-7.22	-0.010162	± 2.5	PASS
		VN	10	3.02	0.004252	± 2.5	PASS
		VN	20	5.77	0.008125	± 2.5	PASS
		VN	30	-1.64	-0.002316	± 2.5	PASS
		VN	40	-3.29	-0.004640	± 2.5	PASS
		VN	50	1.39	0.001962	± 2.5	PASS
16QAM	MCH	VN	-30	-2.15	-0.003024	± 2.5	PASS
		VN	-20	-4.37	-0.006153	± 2.5	PASS
		VN	-10	2.76	0.003888	± 2.5	PASS
		VN	0	-7.07	-0.009955	± 2.5	PASS
		VN	10	-1.09	-0.001531	± 2.5	PASS
		VN	20	-1.12	-0.001575	± 2.5	PASS
		VN	30	4.18	0.005881	± 2.5	PASS
		VN	40	**-8.57**	**-0.012068**	± 2.5	PASS
		VN	50	0.85	0.001201	± 2.5	PASS

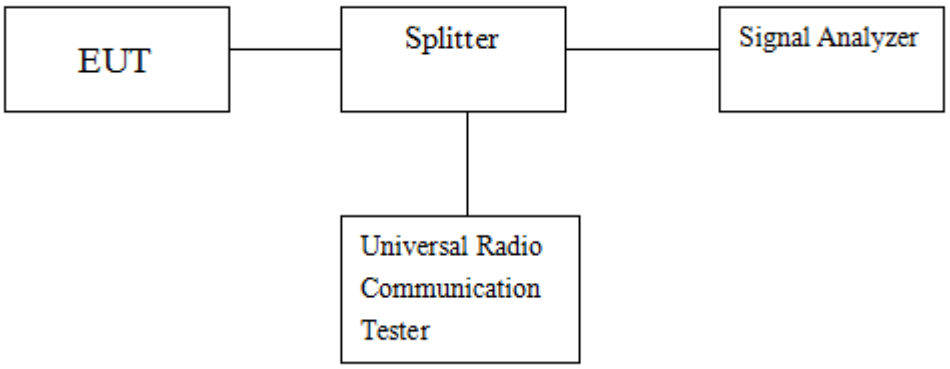
9. OCCUPIED BANDWIDTH

9.1Applicable Standard

FCC Part 2.1049, 22.917, 22.905, 24.238, 27.53(a)

9.2 Test Procedure

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.Details according with KDB 971168 D01 v02r02



Test Equipment List and Details

Refer a test equipment and calibration data table in this test report.

9.3 Measurement Result

LTE Band 2:

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	18607	1850.7	QPSK	1.0769	1.225
			16QAM	1.0816	1.237
1.4	18900	1880	QPSK	1.0783	1.223
			16QAM	1.0809	1.230
1.4	19193	1909.3	QPSK	1.0787	1.233
			16QAM	1.0798	1.226
3	18615	1851.5	QPSK	2.6833	2.871
			16QAM	2.6830	2.885
3	18900	1880	QPSK	2.6832	2.869
			16QAM	2.6837	2.875
3	19185	1908.5	QPSK	2.6812	2.860
			16QAM	2.6807	2.880
5	18625	1852.5	QPSK	4.4850	4.811
			16QAM	4.4836	4.841
5	18900	1800	QPSK	4.4830	4.825
			16QAM	4.4815	4.863

5	19175	1907.5	QPSK	4.4852	4.836
			16QAM	4.4792	4.823
10	18650	1855	QPSK	8.9472	9.513
			16QAM	8.9372	9.459
10	18900	1880	QPSK	8.9321	9.443
			16QAM	8.9262	9.497
10	19150	1905	QPSK	8.9312	9.423
			16QAM	8.9286	9.463
15	18675	1857.5	QPSK	13.414	14.08
			16QAM	13.420	14.05
15	18900	1880	QPSK	13.394	14.06
			16QAM	13.395	13.97
15	19125	1902.5	QPSK	13.401	14.05
			16QAM	13.406	14.09
20	18700	1860	QPSK	17.866	18.62
			16QAM	17.868	18.58
20	18900	1880	QPSK	17.836	18.58
			16QAM	17.835	18.57
20	19100	1900	QPSK	17.880	18.64
			16QAM	17.877	18.64

LTE Band 4:

BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	19957	1710.7	QPSK	1.0777	1.244
			16QAM	1.0812	1.216
1.4	20175	1732.5	QPSK	1.0780	1.242
			16QAM	1.0809	1.223
1.4	20393	1754.3	QPSK	1.0781	1.238
			16QAM	1.0805	1.234
3	19965	1711.5	QPSK	2.6846	2.891
			16QAM	2.6850	2.877
3	20175	1732.5	QPSK	2.6830	2.864
			16QAM	2.6837	2.861
3	20385	1753.3	QPSK	2.6830	2.863
			16QAM	2.6834	2.851
5	19975	1712.5	QPSK	4.4807	4.788
			16QAM	4.4756	4.825
5	20175	1732.5	QPSK	4.4814	4.864
			16QAM	4.4794	4.809
5	20375	1752.5	QPSK	4.4900	4.846
			16QAM	4.4773	4.828
10	20000	1715	QPSK	8.9359	9.435
			16QAM	8.9262	9.439

10	20175	1732.5	QPSK	8.9375	9.514
			16QAM	8.9329	9.531
10	20350	1750	QPSK	8.9389	9.490
			16QAM	8.9325	9.450
15	20025	1717.5	QPSK	13.403	14.12
			16QAM	13.400	13.99
15	20175	1732.5	QPSK	13.417	14.08
			16QAM	13.401	14.08
15	20325	1747.5	QPSK	13.409	13.99
			16QAM	13.402	14.09
20	20050	1720	QPSK	17.852	18.55
			16QAM	17.867	18.56
20	20175	1732.5	QPSK	17.873	18.67
			16QAM	17.879	18.61
20	20300	1745	QPSK	17.850	18.60
			16QAM	17.842	18.57

LTE Band 5:

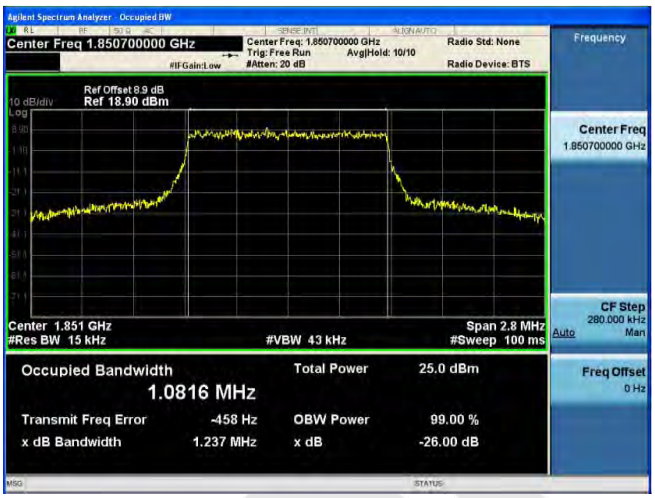
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
1.4	20407	824.7	QPSK	1.0759	1.225
			16QAM	1.0800	1.230
1.4	20525	836.5	QPSK	1.0783	1.210
			16QAM	1.0791	1.231
1.4	20643	848.3	QPSK	1.0752	1.223
			16QAM	1.0778	1.216
3	20415	825.5	QPSK	2.6861	2.867
			16QAM	2.6881	2.891
3	20525	836.5	QPSK	2.6835	2.846
			16QAM	2.6807	2.886
3	20635	847.5	QPSK	2.6851	2.874
			16QAM	2.6781	2.845
5	20425	826.5	QPSK	4.4841	4.839
			16QAM	4.4802	4.781
5	20525	836.5	QPSK	4.4813	4.816
			16QAM	4.4794	4.823
5	20625	846.5	QPSK	4.4832	4.791
			16QAM	4.4745	4.768
10	20450	829.0	QPSK	8.9471	9.456
			16QAM	8.9307	9.432
10	20525	836.5	QPSK	8.9445	9.463
			16QAM	8.9422	9.447
10	20600	844.0	QPSK	8.9553	9.409
			16QAM	8.9452	9.456

LTE Band 17:

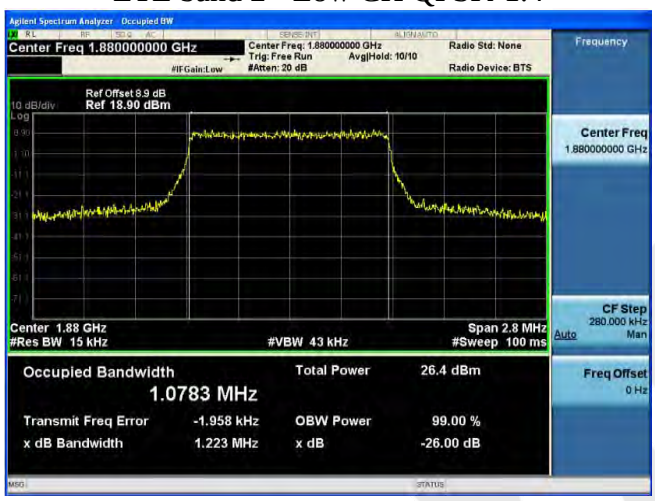
BW(MHz)	Channel	Frequency (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Bandwidth (MHz)
5	23755	706.5	QPSK	4.4674	4.803
			16QAM	4.4696	4.764
5	23790	710	QPSK	4.4860	4.788
			16QAM	4.4792	4.789
5	23825	713.5	QPSK	4.4876	4.804
			16QAM	4.4856	4.831
10	23780	709	QPSK	8.9089	9.397
			16QAM	8.9117	9.393
10	23790	710	QPSK	8.9414	9.367
			16QAM	8.9336	9.364
10	23800	711	QPSK	8.9603	9.440
			16QAM	8.9476	9.451

Note: This test was only measured at maximum RB allocation for each LTE BW

LTE band 2 - Low CH QPSK-1.4

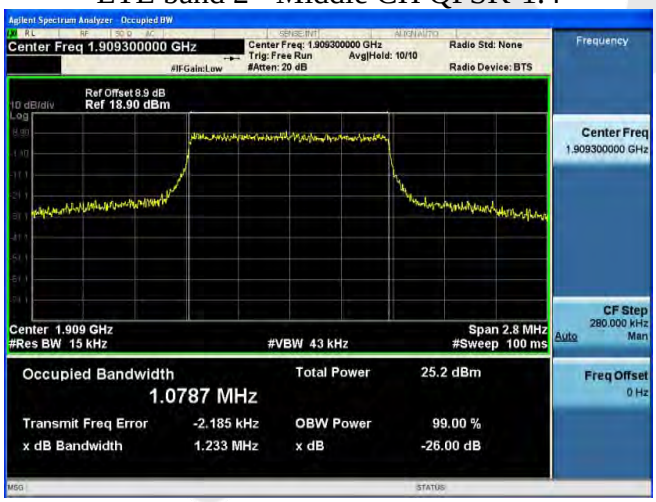


LTE band 2 - Low CH 16QAM-1.4

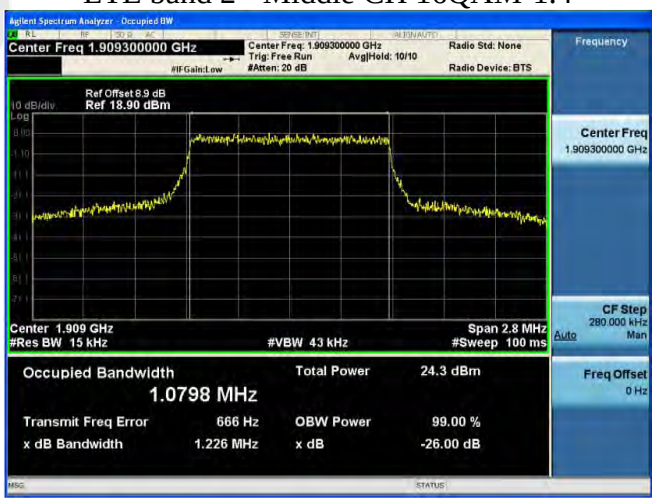


LTE band 2 - Middle CH QPSK-1.4

LTE band 2 - Middle CH 16QAM-1.4



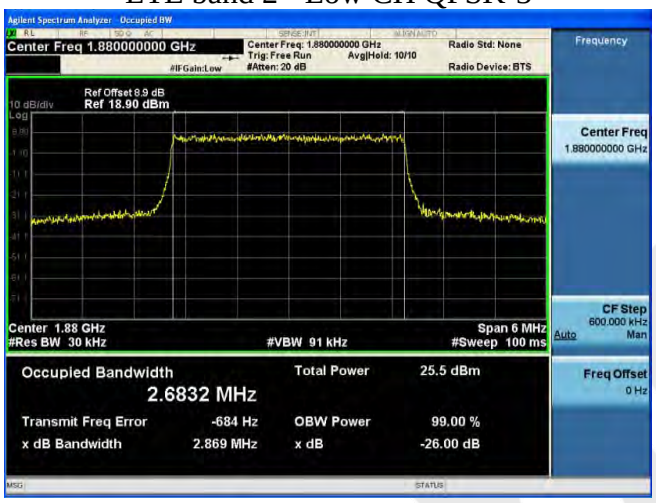
LTE band 2 - High CH QPSK-1.4



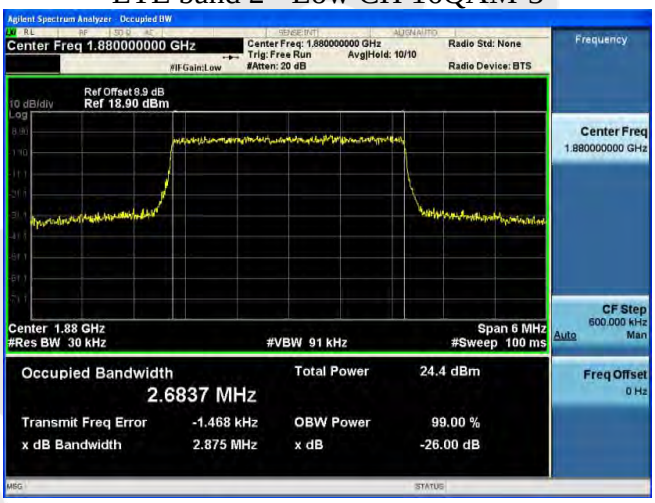
LTE band 2 -High CH 16QAM-1.4

LTE band 2 - Low CH QPSK-3

LTE band 2 - Low CH 16QAM-3



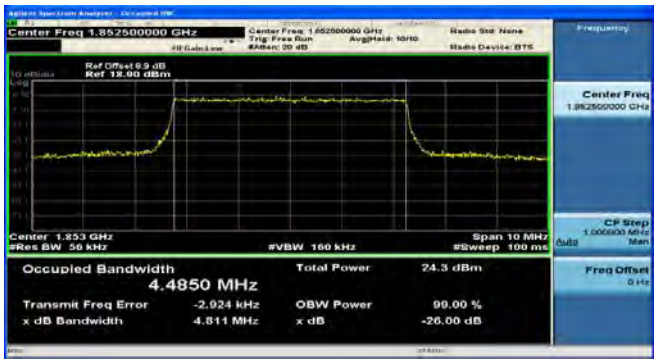
LTE band 2 - Middle CH QPSK-3



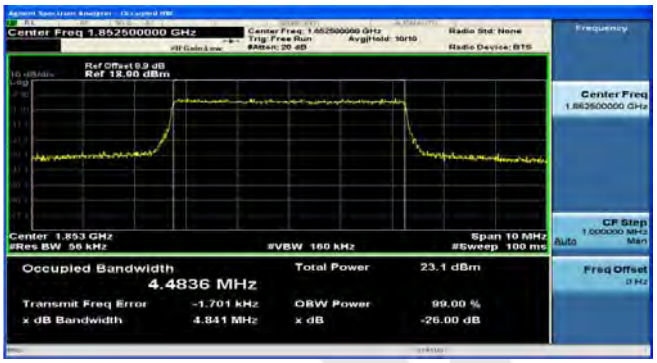
LTE band 2 - Middle CH 16QAM-3

LTE band 2 - High CH QPSK-3

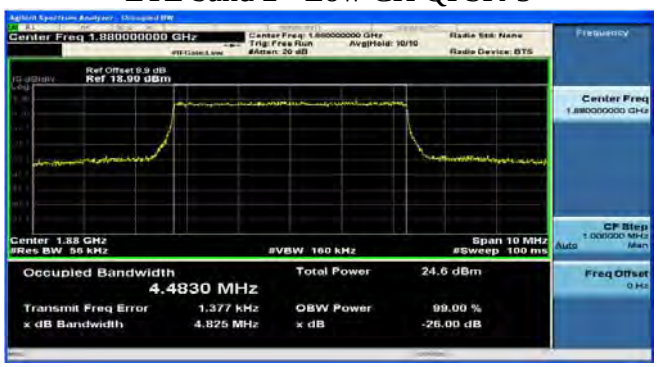
LTE band 2 -High CH 16QAM-3



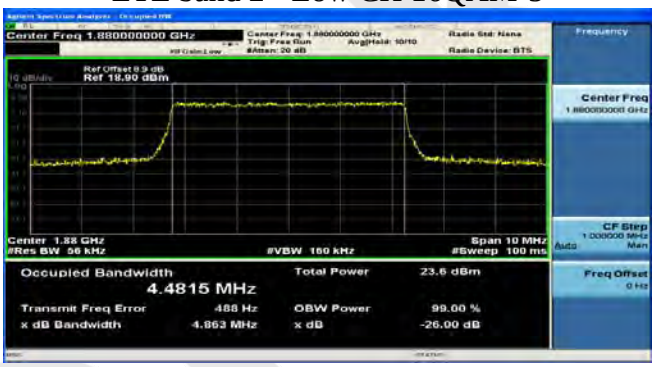
LTE band 2 - Low CH QPSK-5



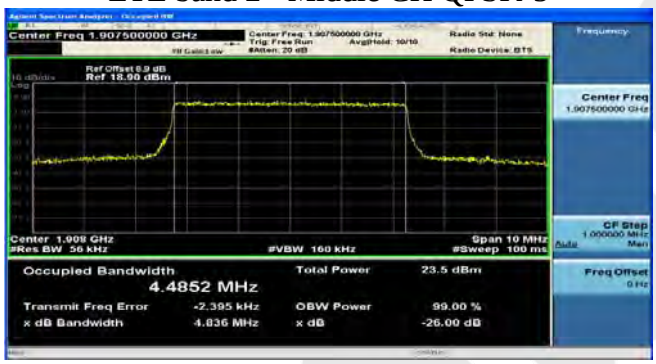
LTE band 2 - Low CH 16QAM-5



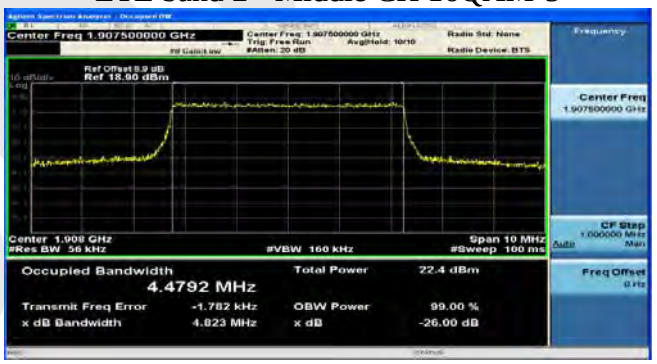
LTE band 2 - Middle CH QPSK-5



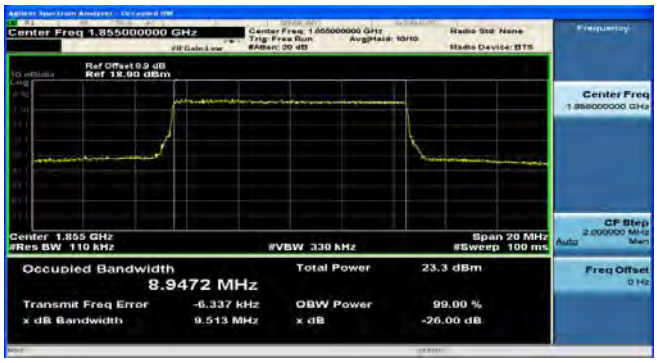
LTE band 2 - Middle CH 16QAM-5



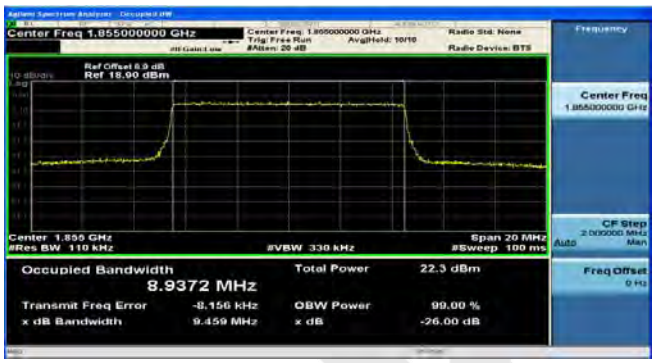
LTE band 2 - High CH QPSK-5



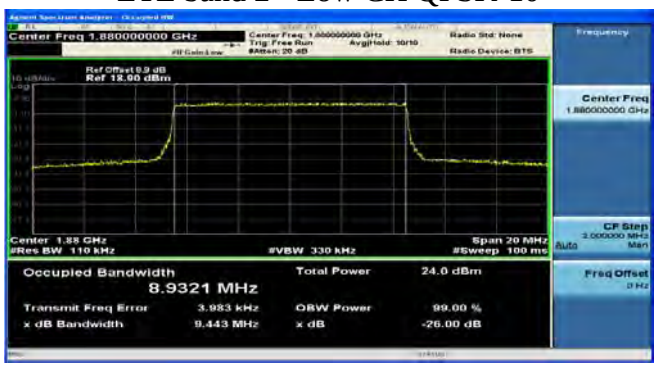
LTE band 2 -High CH 16QAM-5



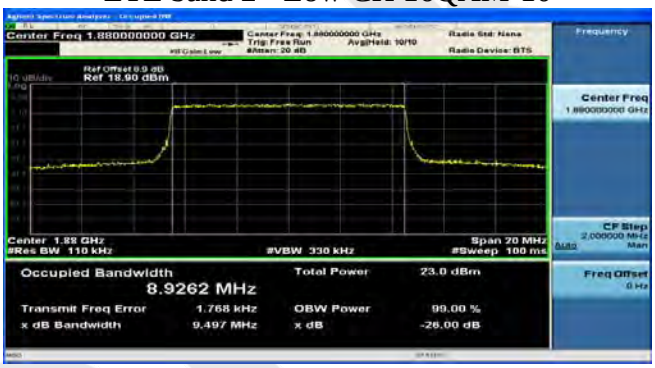
LTE band 2 - Low CH QPSK-10



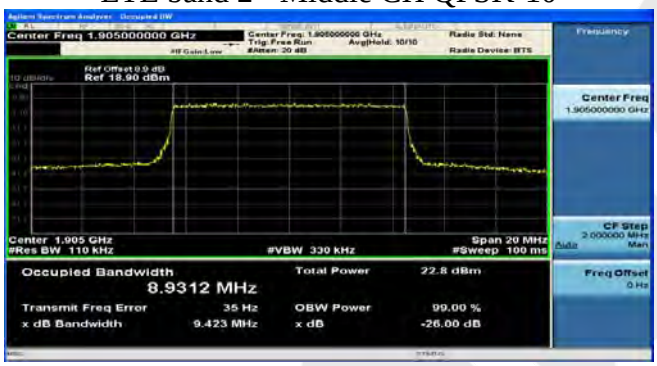
LTE band 2 - Low CH 16QAM-10



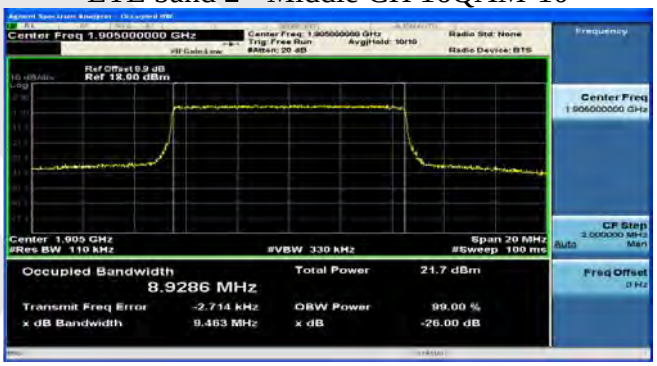
LTE band 2 - Middle CH QPSK-10



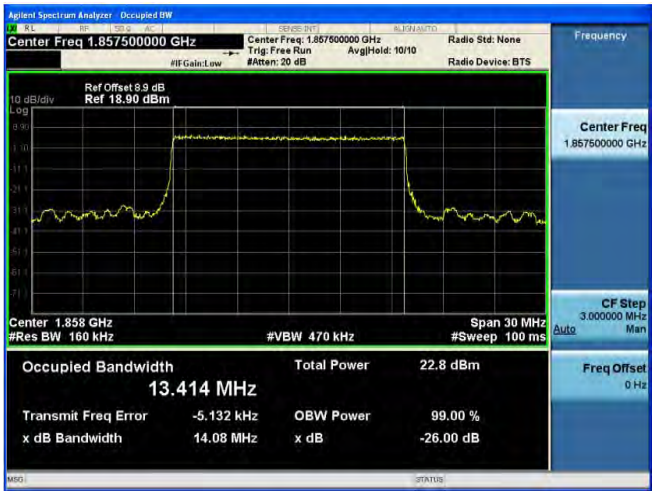
LTE band 2 - Middle CH 16QAM-10



LTE band 2 - High CH QPSK-10



LTE band 2 -High CH 16QAM-10



LTE band 2 - Low CH QPSK-15

LTE band 2 - Low CH 16QAM-15

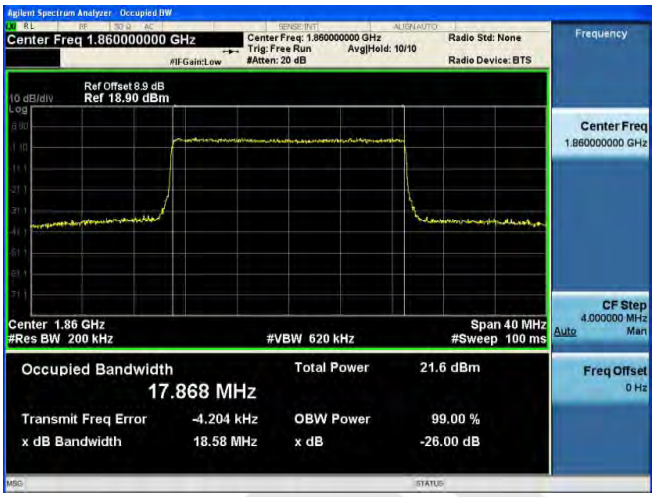
LTE band 2 - Middle CH QPSK-15

LTE band 2 - Middle CH 16QAM-15

LTE band 2 - High CH QPSK-15

LTE band 2 -High CH 16QAM-15

LTE band 2 - Low CH QPSK-20



LTE band 2 - Low CH 16QAM-20

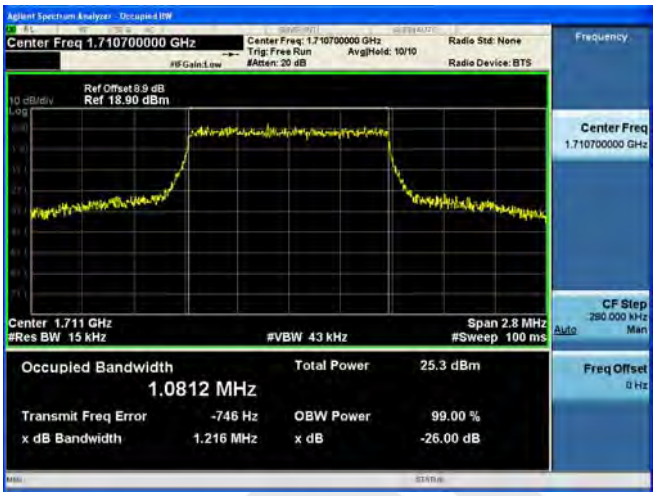
LTE band 2 - Middle CH QPSK-20

LTE band 2 - Middle CH 16QAM-20

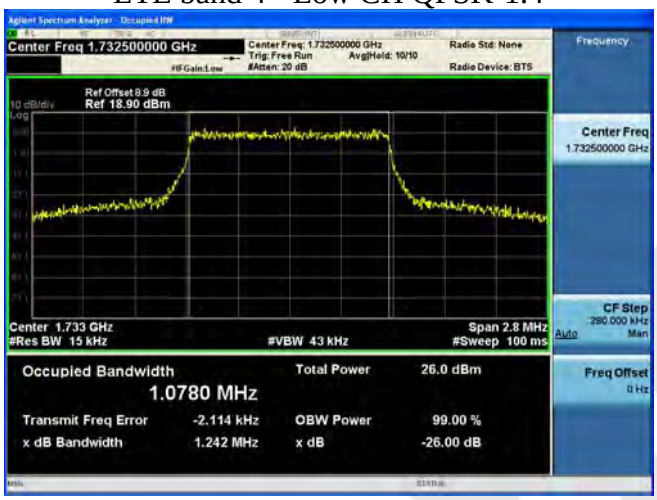
LTE band 2 - High CH QPSK-20

LTE band 2 -High CH 16QAM-20

LTE band 4 - Low CH QPSK-1.4

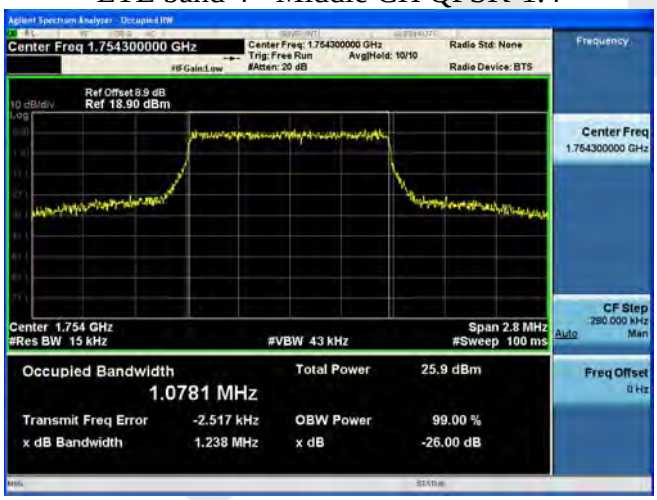


LTE band 4- Low CH 16QAM-1.4



LTE band 4 - Middle CH QPSK-1.4

LTE band 4 - Middle CH 16QAM-1.4

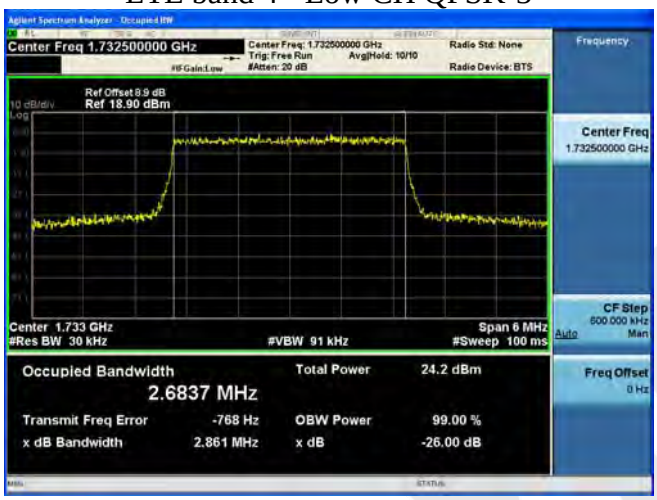


LTE band 4 - High CH QPSK-1.4

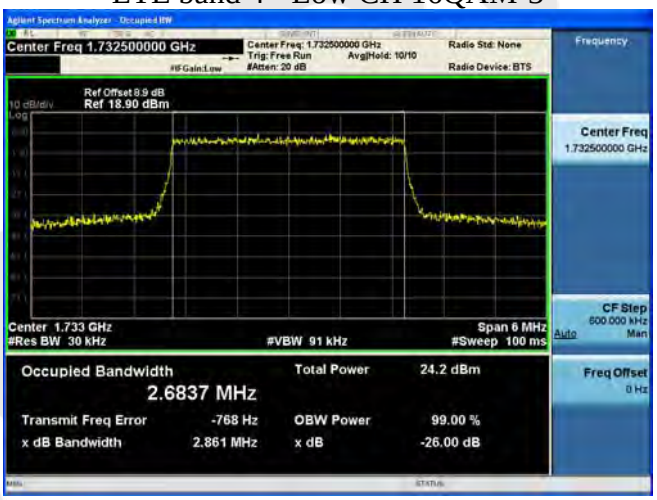
LTE band 4 -High CH 16QAM-1.4

LTE band 4 - Low CH QPSK-3

LTE band 4 - Low CH 16QAM-3



LTE band 4 - Middle CH QPSK-3



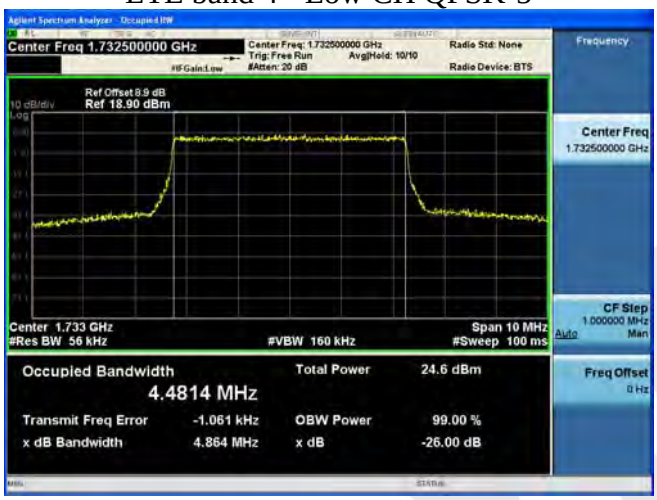
LTE band 4 - Middle CH 16QAM-3

LTE band 4 - High CH QPSK-3

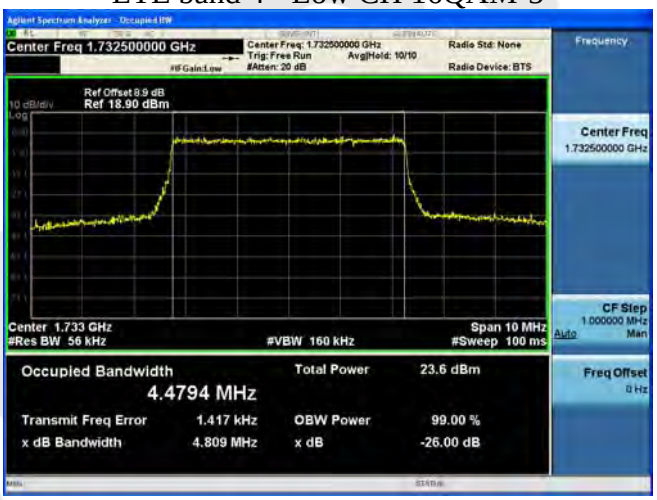
LTE band 4 -High CH 16QAM-3

LTE band 4 - Low CH QPSK-5

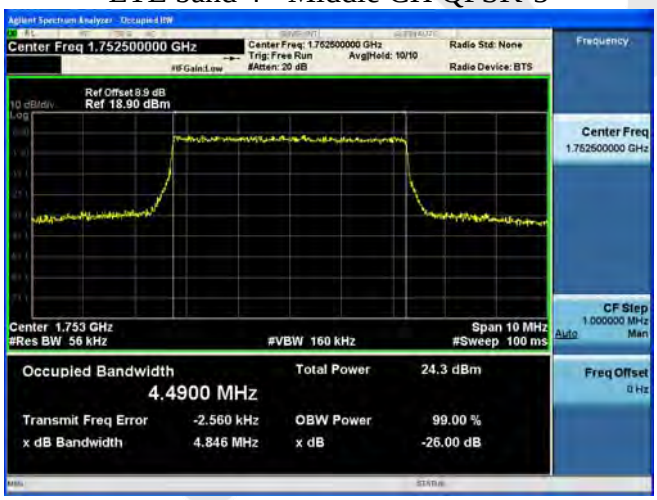
LTE band 4 - Low CH 16QAM-5



LTE band 4 - Middle CH QPSK-5



LTE band 4 - Middle CH 16QAM-5

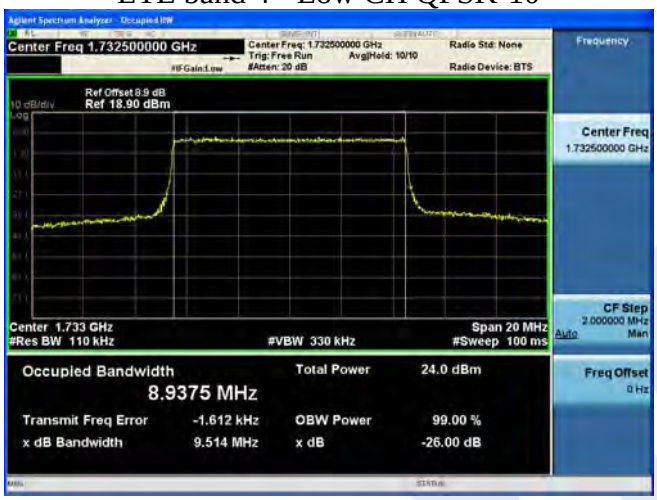


LTE band 4 - High CH QPSK-5

LTE band 4 -High CH 16QAM-5

LTE band 4 - Low CH QPSK-10

LTE band 4 - Low CH 16QAM-10



LTE band 4 - Middle CH QPSK-10

LTE band 4 - Middle CH 16QAM-10

LTE band 4 - High CH QPSK-10

LTE band 4 -High CH 16QAM-10

LTE band 4 - Low CH QPSK-15

LTE band 4 - Low CH 16QAM-15

LTE band 4- Middle CH QPSK-15

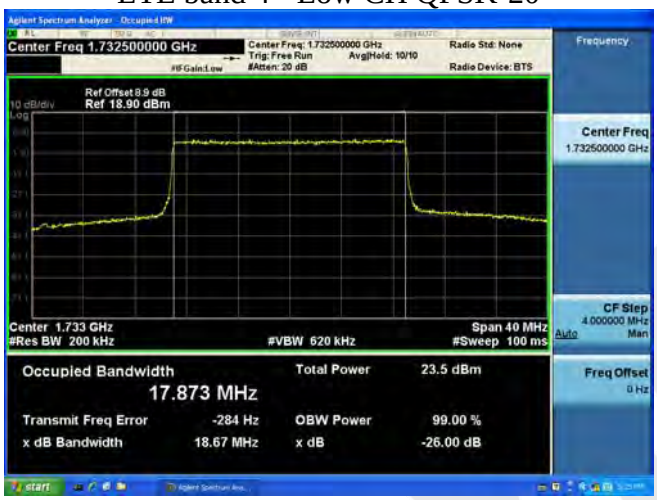
LTE band 4 - Middle CH 16QAM-15

LTE band 4 - High CH QPSK-15

LTE band 4 -High CH 16QAM-15

LTE band 4 - Low CH QPSK-20

LTE band 4 - Low CH 16QAM-20



LTE band 4 - Middle CH QPSK-20

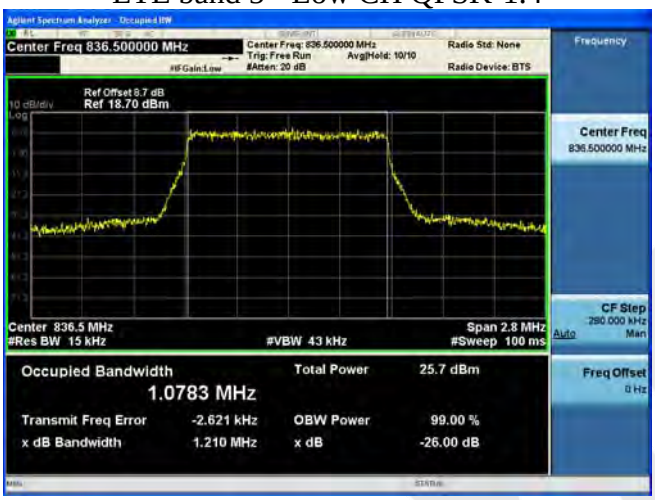
LTE band 4- Middle CH 16QAM-20

LTE band 4 - High CH QPSK-20

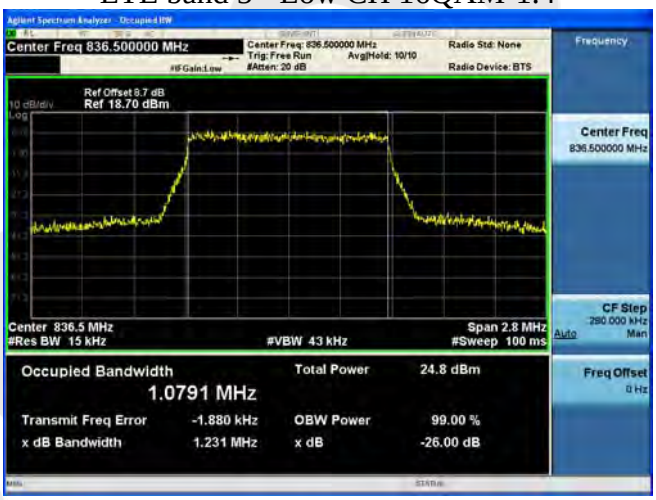
LTE band 4 -High CH 16QAM-20

LTE band 5 - Low CH QPSK-1.4

LTE band 5 - Low CH 16QAM-1.4



LTE band 5 - Middle CH QPSK-1.4



LTE band 5 - Middle CH 16QAM-1.4

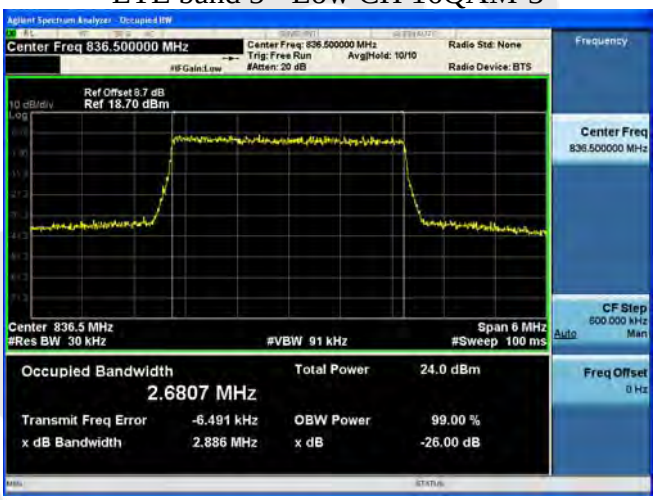
LTE band 5 - High CH QPSK-1.4

LTE band 5 -High CH 16QAM-1.4

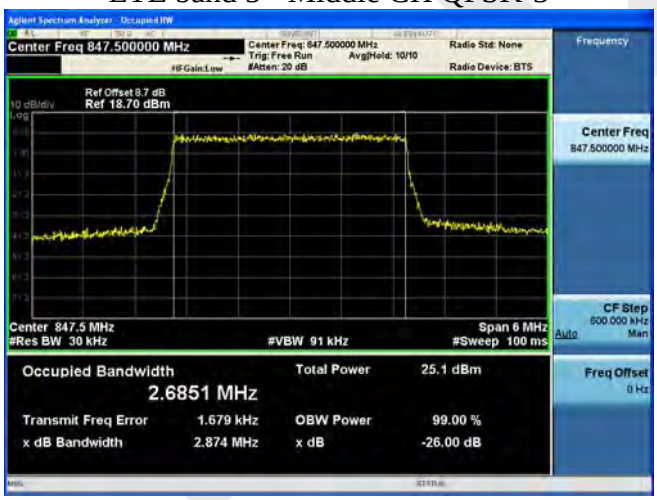
LTE band 5 - Low CH QPSK-3

LTE band 5 - Low CH 16QAM-3

LTE band 5 - Middle CH QPSK-3



LTE band 5 - Middle CH 16QAM-3

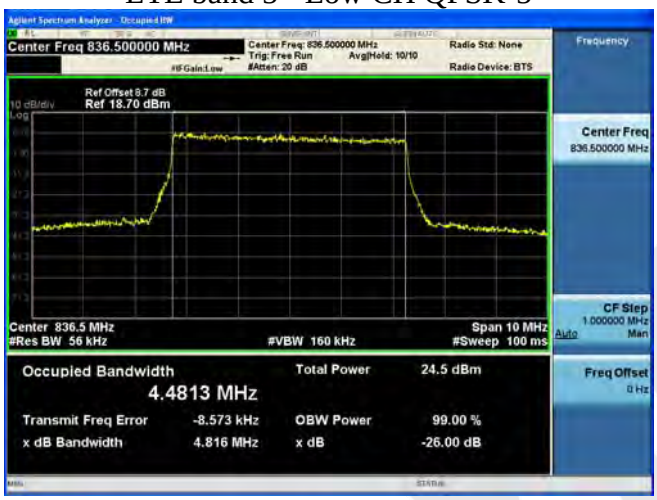


LTE band 5 - High CH QPSK-3

LTE band 5 -High CH 16QAM-3

LTE band 5 - Low CH QPSK-5

LTE band 5 - Low CH 16QAM-5



LTE band 5 - Middle CH QPSK-5

LTE band 5 - Middle CH 16QAM-5

LTE band 5 - High CH QPSK-5

LTE band 5 -High CH 16QAM-5

LTE band 5 - Low CH QPSK-10

LTE band 5- Low CH 16QAM-10

LTE band 5 - Middle CH QPSK-10

LTE band 5 - Middle CH 16QAM-10

LTE band 5 - High CH QPSK-10

LTE band 5 -High CH 16QAM-10

LTE band 17 - Low CH QPSK-5

LTE band 17 - Low CH 16QAM-5

LTE band 17 - Middle CH QPSK-5

LTE band 17 - Middle CH 16QAM-5

LTE band 17 - High CH QPSK-5

LTE band 17 -High CH 16QAM-5

LTE band 17 - Low CH QPSK-10

LTE band 17 - Low CH 16QAM-10

LTE band 17 - Middle CH QPSK-10

LTE band 17 - Middle CH 16QAM-10

LTE band 17 - High CH QPSK-10

LTE band 17 -High CH 16QAM-10