FCC Test Report

Report No.: AGC00653150905FE06

FCC ID	:	2AFD9UNIVERSAL
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Tablet Pc
BRAND NAME	:	KRONO
MODEL NAME	:	UNIVERSAL
CLIENT	:	MOVEON TECHNOLOGY LIMITED
DATE OF ISSUE	:	Oct.28, 2015
STANDARD(S)	:	FCC Part 27 Rules
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd.

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct.28, 2015	Valid	Original Report

TABLE OF CONTENTS

1.VERIFICATION OF COMPLIANCE

Applicant	MOVEON TECHNOLOGY LIMITED
Address	World Trade Plaza-A block#3201-3202 Fuhong Road, Futian
Manufacturer	MOVEON TECHNOLOGY LIMITED
Address	World Trade Plaza-A block#3201-3202 Fuhong Road, Futian
Product Designation	Tablet Pc
Brand Name	KRONO
Test Model	UNIVERSAL
Date of test	Oct.12, 2015 to Oct.15, 2015
Deviation	None
Condition of Test Sample	Normal

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C 63.4:2009 and TIA/EIA 603. The sample tested as described in this report is in compliance with the FCC Rules Part 27.
The test results of this report relate only to the tested sample identified in this report.

Tested By	Matt Zhang	
	Matt Zhang(Zhang Liang)	Oct.28, 2015
Reviewed By	Bart Xie	
	Bart Xie(Xie Xiaobin)	Oct.28, 2015
Approved By	Solger Zhang	
	Solger Zhang(Zhang Hongyi) Authorized Officer	Oct.28, 2015

2. GENERAL INFORMATION

2.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Radio System Type:	LTE	
Hardware version:	W706BF_V2	
Software version:	Android 5.1	
Frequency Bands:	☐FDD Band 2 ☒FDD Band 4 ☐FDD Band 5 ☐FDD Band 17 ☐FDD Band 25 ☐FDD Band 26 ☐TDD Band 41 (U.S. Bands) ☐FDD Band 1 ☐FDD Band 3 ☒FDD Band 7 ☐FDD Band 8 ☐FDD Band 20 ☐TDD Band 33 ☐TDD Band 34 ☐TDD Band 38 ☐FDD Band 40 ☐FDD Band 42 ☐FDD Band 43 (Non-U.S. Bands)	
Frequency Range	LTE Band 4	Transmission (TX): 1710 to 1755 MHz
		Receiving (RX): 2110 to 2155 MHz
	LTE Band 7	Transmission (TX): 2500 to 2570 MHz
		Receiving (RX): 2620 ~ 2690 MHz
Supported Channel Bandwidth	LTE Band 4	☒ 1.4 MHz ☒ 3 MHz ☒ 5 MHz ☒ 10 MHz ☒ 15 MHz ☒ 20 MHz
	LTE Band 7	☒ 5 MHz ☒ 10 MHz ☒ 15 MHz ☒ 20 MHz
Antenna:	PIFA Antenna	
Type of Modulation	QPSK/16QAM	
Antenna gain:	-0.7dBi(LTE band 4), -1.0dBi(LTE band 7)	
Power Supply:	DC 3.7V by battery	
Battery parameter:	DC3.7V/3000mAh	
Adapter Input:	AC100-240V, 50-60Hz, 500mA	
Adapter Output:	DC5V, 2000mA	
Single SIM Card:	GSM/WCDMA/LTE Card Slot	
Power Class	3	
Extreme Vol. Limits:	DC3.4 V to 4.2 V (Normal: DC3.7 V)	
Extreme Temp. Tolerance	-10℃ to +50℃	
*** Note: The High Voltage DC4.2V and Low Voltage DC3.4V were declared by manufacturer, The EUT couldn't be operating normally with higher or lower voltage.		

2.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AFD9UNIVERSAL**, filing to comply with the FCC Part27 requirements.

2.3 TEST METHODOLOGY

The radiated emission testing was performed according to the procedures of ANSI C 63.4: 2009; TIA/EIA 603 and FCC CFR 47 Rules of 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057.
KDB 971168 D01 Power Meas License Digital Systems v02r01

2.4 TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D,Baoding Technology Park,Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009.

2.5 MEASUREMENT INSTRUMENTS

RF TEST EQUIPMENT LIST

Name of Equipment	Manufacturer	Model	S/N	Calibration Date	Calibration Due.
SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	Feb.17,2015	Feb.16,2016
TEST RECEIVER	R&S	ESCI	100694	July 25, 2015	July 24, 2016
COMMUNICATION TESTER	AGILENT	8960	122500087	July 25, 2015	July 24, 2016
COMMUNICATION TESTER	R&S	CMW500	120909	Oct. 21, 2015	Oct. 20, 2016
SIGNAL GENERATOR	AGILENT	E4438C	MY44260051	Feb.23,2015	Feb. 22,2016
LISN	R&S	ESH3-Z5	838979/009	July 25, 2015	July 24, 2016
CLIMATE CHAMBER	ALBATROSS	--	--	July 25, 2015	July 24, 2016
Loop Antenna	A.H.	SAS-562B	SEL0097	May 10, 2015	May 09, 2016
WIDEBAND REQUENCY ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Aug.16, 2015	Aug.15, 2016
Substitution Antenna	EMCO	3142C	00060447	Aug.17,2015	Aug.16,2016
Substitution Antenna	EM	EM-AH-10180	69	Apr.19, 2015	Apr.18, 2016
Horn Antenna	EM	EM-AH-10180	67	Feb.17,2015	Feb.16,2016
Horn Antenna	A.H. Systems Inc.	SAS-574	N/A	June 6, 2015	June 5, 2016
Radiation Cable 1	Sat	RE1	R003	June 4, 2015	June 3, 2016
Radiation Cable 2	Sat	RE2	R002	June 4, 2015	June 3, 2016

Conduction Cable	Sat	CE1	C001	June 4, 2015	June 3, 2016

FOR RADIATED EMISSION TEST (BELOW 1GHZ)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2015	July 3, 2016
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2015	July 3, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 6, 2015	June 5, 2016
Spectrum analyzer	Agilent	E4407B	MY46185649	June 6, 2015	June 5, 2016
Power Probe	R&S	NRP-Z23	100323	July 25,2015	July 24,2016
RF attenuator	N/A	RFA20db	68	N/A	N/A

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 11, 2015	July 10, 2016
Spectrum Analyzer	Agilent	E4411B	MY4511453	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 7, 2015	July 6, 2016
RF Cable	SCHWARZBECK	AK9515H	96220	July 8, 2015	July 7, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 6, 2015	June 5, 2016
Power Probe	R&S	NRP-Z23	100323	July 25,2015	July 24,2016
RF attenuator	N/A	RFA20db	68	N/A	N/A

Conducted Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Artificial Mains Network	Narda	L2-16B	000WX31025	July 8, 2015	July 7, 2016
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 8, 2015	July 7, 2016
RF Cable	SCHWARZBECK	AK9515E	96222	July 4, 2015	July 3, 2016
Shielded Room	CHENGYU	843	PTS-002	June 6,2015	June 5,2016

2.6 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

2.7 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. SYSTEM TEST CONFIGURATION

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

3.3 GENERAL TECHNICAL REQUIREMENTS

Item Number	Item Description		FCC Rules
1	Output Power	Conducted output power	2.1046/27.50(d)/ 27.50(c)
		Radiated output power	
2	Peak-to-Average Ratio	Peak-to-Average Ratio	27.50(d)
3	Spurious Emission	Conducted spurious emission	2.1051 / 27.53(h)/ 27.53(g)
		Radiated spurious emission	
4	Mains Conducted Emission		15.107 / 15.207
5	Frequency Stability		2.1055/27.54
6	Occupied Bandwidth		2.1049 (h)(i)
7	Emission Bandwidth		2.1049/27.53(h)/ 27.53(g)
8	Band Edge		27.53(h)/ 27.53(g)

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

3.4 CONFIGURATION OF EUT SYSTEM

Fig. 2-1 Configuration of EUT System

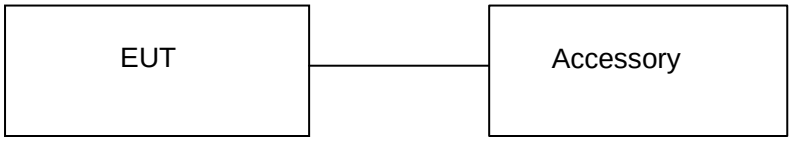


Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	Tablet Pc	UNIVERSAL	FCC ID: 2AFD9UNIVERSAL	EUT
2	Adapter	DM050200-5V	DC5V, 2000mA	Accessory
3	Battery	356593	DC3.7V/3000mAh	Accessory
4	Earphone	UNIVERSAL	N/A	Accessory
5	USB Cable	UNIVERSAL	N/A	Accessory

****Note: All the accessories have been used during the test. The following "EUT" in setup diagram means EUT system.*

4. SUMMARY OF TEST RESULTS

Item Number	Item Description		FCC Rules	Result
1	Output Power	Conducted Output Power	2.1046/27.50(d)/ 27.50(i)	Pass
		Radiated Output Power		
2	Peak-to-Average Ratio	Peak-to-Average Ratio	27.50(d)	Pass
3	Spurious Emission	Conducted Spurious Emission	2.1051 / 27.53(h)/ 27.53(g)	Pass
		Radiated Spurious Emission		
4	Mains Conducted Emission		15.107 / 15.207	Pass
5	Frequency Stability		2.1055/27.54	Pass
6	Occupied Bandwidth		2.1049 (h)(i),27.53(c)	Pass
7	Emission Bandwidth		2.1049/27.53(h)/ 27.53(g)	Pass
8	Band Edge		27.53(h)/ 27.53(g)	Pass

5. DESCRIPTION OF TEST MODES

During the testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication Tester (CMW 500) to ensure max power transmission and proper modulation. Three channels (The top channel, the middle channel and the bottom channel) were chosen for testing on both LTE frequency band.

*****Note:** LTE band 4 mode and LTE band 7 mode have been tested during the test.

The worst condition was recorded in the test report if no other modes test data.

Test Mode	Test Modes Description
LTE	LTE system, QPSK modulation
LTE	LTE system, 16QAM modulation

Test Mode	TX / RX	RF Channel		
		Low (B)	Middle (M)	High (T)
LTE Band 4	TX (1.4M)	Channel 19957	Channel 20175	Channel 20393
		1710.7 MHz	1732.5 MHz	1754.3 MHz
	TX (3M)	Channel 19965	Channel 20175	Channel 20385
		1711.5 MHz	1732.5 MHz	1753.5 MHz
	TX (5M)	Channel 19975	Channel 20175	Channel 20375
		1712.5 MHz	1732.5 MHz	1752.5 MHz
	TX (10M)	Channel 20000	Channel 20175	Channel 20350
		1715 MHz	1732.5 MHz	1750 MHz
	TX (15M)	Channel 20025	Channel 20175	Channel 20325
		1717.5 MHz	1732.5 MHz	1747.5 MHz
	TX (20M)	Channel 20050	Channel 20175	Channel 20300
		1720 MHz	1732.5 MHz	1745 MHz
	RX (1.4M)	Channel 1957	Channel 2175	Channel 2393
		2110.7 MHz	2132.5 MHz	2154.3 MHz
	RX (3M)	Channel 1965	Channel 2175	Channel 2385
		2111.5 MHz	2132.5 MHz	2153.5 MHz
	RX (5M)	Channel 1975	Channel 2175	Channel 2375
		2112.5 MHz	2132.5 MHz	2152.5 MHz
	RX (10M)	Channel 2000	Channel 2175	Channel 2350
		2115 MHz	2132.5 MHz	2150 MHz
	RX (15M)	Channel 2025	Channel 2175	Channel 2325
		2117.5 MHz	2132.5 MHz	2147.5 MHz
	RX (20M)	Channel 2050	Channel 2175	Channel 2300
		2120 MHz	2132.5 MHz	2145 MHz

Test Mode	TX / RX	RF Channel		
		Low (B)	Middle (M)	High (T)
LTE Band 7	TX (5M)	Channel 20775	Channel 21100	Channel 21425
		2502.5 MHz	2535 MHz	2567.5 MHz
	TX (10M)	Channel 20800	Channel 21100	Channel 21400
		2505 MHz	2535 MHz	2565 MHz
	TX (15M)	Channel 20825	Channel 21100	Channel 21375
		2507.5 MHz	2535 MHz	2562.5 MHz
	TX (20M)	Channel 20850	Channel 21100	Channel 21350
		2510 MHz	2535 MHz	2560 MHz
	RX (5M)	Channel 2775	Channel 3100	Channel 3425
		2622.5 MHz	2655 MHz	2687.5 MHz
	RX (10M)	Channel 2800	Channel 3100	Channel 3400
		2625 MHz	2655 MHz	2685 MHz
	RX (15M)	Channel 2825	Channel 3100	Channel 3375
		2627.5 MHz	2655 MHz	2682.5 MHz
	RX (20M)	Channel 2850	Channel 3100	Channel 3350
		2630 MHz	2655 MHz	2680 MHz

6. OUTPUT POWER

6.1 Conducted Output Power

6.1.1 Procedures: (According with KDB 971168)

The transmitter output port was connected to base station.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Measure the maximum burst average power and average power for other modulation signal.

The EUT was setup for the max output power with pseudo random data modulation. Power was measured with Spectrum Analyzer. The measurements were performed on all modes (LTE Band 4 and LTE Band 4) at 3 typical channels (the Top Channel, the Middle Channel and the Bottom Channel) for each band.

The instrument must have an available measurement/resolution bandwidth that is equal to or exceeds the OBW. If this capability is available, then the following procedure can be used to determine the total peak output power.

a) Set the RBW ≥ OBW.

b) Set VBW ≥ 3 × RBW. c)

Set span ≥ 2 x RBW

d) Sweep time = auto couple.

e) Detector = peak.

f) Ensure that the number of measurement points ≥ span/RBW.

g) Trace mode = max hold.

h) Allow trace to fully stabilize.

1) Use the peak marker function to determine the peak amplitude level.

6.1.2 MEASUREMENT RESULT

Conducted Output Power Limits for LTE Band 4		
Mode	**Average Power**	**Tolerance(dB)**
LTE	23 dBm (0.2W)	- 2.7

Conducted Output Power Limits for LTE Band 7		
Mode	**Average Power**	**Tolerance(dB)**
LTE	23 dBm (0.2W)	- 2.7

LTE Band 4

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
20MHz	20050	1720.0	QPSK	1	0	0	22.99
				1	49	0	22.49
				1	99	0	22.95
				50	0	1	21.62
				50	24	1	21.45
				50	49	1	21.55
				100	0	1	21.58
			16QAM	1	0	1	22.18
				1	49	1	21.67
				1	99	1	22.13
				50	0	2	20.72
				50	24	2	20.52
				50	49	2	20.62
				100	0	2	20.64
	20175	1732.5	QPSK	1	0	0	22.58
				1	49	0	23.14
				1	99	0	23.53
				50	0	1	21.76
				50	24	1	22.05
				50	49	1	22.29
				100	0	1	22.03
			16QAM	1	0	1	21.77
				1	49	1	22.36
				1	99	1	22.71
				50	0	2	20.84
				50	24	2	21.03
				50	49	2	21.26
				100	0	2	21.03
	20300	1745.0	QPSK	1	0	0	23.38
				1	49	0	23.41
				1	99	0	23.53
				50	0	1	22.37
				50	24	1	22.36
				50	49	1	22.40
				100	0	1	22.37
			16QAM	1	0	1	22.71
				1	49	1	22.81
				1	99	1	22.88
				50	0	2	21.40
				50	24	2	21.41
				50	49	2	21.44
				100	0	2	21.39

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
15MHz	20025	1717.5	QPSK	1	0	0	22.90
				1	37	0	22.58
				1	74	0	22.48
				36	0	1	21.77
				36	16	1	21.54
				36	35	1	21.43
				75	0	1	21.60
			16QAM	1	0	1	22.17
				1	37	1	21.90
				1	74	1	21.76
				36	0	2	20.81
				36	16	2	20.60
				36	35	2	20.48
				75	0	2	20.65
	20175	1732.5	QPSK	1	0	0	22.61
				1	37	0	23.20
				1	74	0	23.35
				36	0	1	21.87
				36	16	1	22.09
				36	35	1	22.28
				75	0	1	22.09
			16QAM	1	0	1	21.92
				1	37	1	22.44
				1	74	1	22.63
				36	0	2	20.91
				36	16	2	21.06
				36	35	2	21.27
				75	0	2	21.09
	20325	1747.5	QPSK	1	0	0	23.37
				1	37	0	23.39
				1	74	0	23.42
				36	0	1	22.43
				36	16	1	22.39
				36	35	1	22.43
				75	0	1	22.42
			16QAM	1	0	1	22.67
				1	37	1	22.67
				1	74	1	22.72
				36	0	2	21.42
				36	16	2	21.41
				36	35	2	21.42
				75	0	2	21.41

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
10MHz	20000	1715.0	QPSK	1	0	0	22.92
				1	24	0	22.70
				1	49	0	22.39
				25	0	1	21.79
				25	12	1	21.66
				25	24	1	21.49
				50	0	1	21.65
			16QAM	1	0	1	22.17
				1	24	1	21.94
				1	49	1	21.68
				25	0	2	20.88
				25	12	2	20.76
				25	24	2	20.62
				50	0	2	20.75
	20175	1732.5	QPSK	1	0	0	22.73
				1	24	0	23.08
				1	49	0	23.27
				25	0	1	21.88
				25	12	1	22.05
				25	24	1	22.18
				50	0	1	22.04
			16QAM	1	0	1	22.02
				1	24	1	22.34
				1	49	1	22.54
				25	0	2	20.92
				25	12	2	21.06
				25	24	2	21.18
				50	0	2	21.05
	20350	1750.0	QPSK	1	0	0	23.36
				1	24	0	23.30
				1	49	0	23.43
				25	0	1	22.33
				25	12	1	22.32
				25	24	1	22.40
				50	0	1	22.33
			16QAM	1	0	1	22.77
				1	24	1	22.74
				1	49	1	22.82
				25	0	2	21.36
				25	12	2	21.35
				25	24	2	21.40
				50	0	2	21.37

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
5MHz	19975	1712.5	QPSK	1	0	0	22.94
				1	12	0	22.88
				1	24	0	22.69
				12	0	1	21.92
				12	6	1	21.85
				12	11	1	21.80
				25	0	1	21.80
			16QAM	1	0	1	22.34
				1	12	1	22.26
				1	24	1	22.09
				12	0	2	21.15
				12	6	2	21.10
				12	11	2	21.04
				25	0	2	20.94
	20175	1732.5	QPSK	1	0	0	22.90
				1	12	0	23.15
				1	24	0	23.17
				12	0	1	22.03
				12	6	1	22.08
				12	11	1	22.16
				25	0	1	22.05
			16QAM	1	0	1	22.33
				1	12	1	22.56
				1	24	1	22.53
				12	0	2	21.16
				12	6	2	21.25
				12	11	2	21.32
				25	0	2	21.10
	20375	1752.5	QPSK	1	0	0	23.38
				1	12	0	23.47
				1	24	0	23.47
				12	0	1	22.39
				12	6	1	22.42
				12	11	1	22.44
				25	0	1	22.38
			16QAM	1	0	1	22.40
				1	12	1	22.51
				1	24	1	22.46
				12	0	2	21.43
				12	6	2	21.41
				12	11	2	21.47
				25	0	2	21.40

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
3MHz	19965	1711.5	QPSK	1	0	0	22.82
				1	7	0	22.90
				1	14	0	22.75
				8	0	1	21.87
				8	4	1	21.86
				8	7	1	21.82
				15	0	1	21.85
			16QAM	1	0	1	22.11
				1	7	1	22.22
				1	14	1	22.02
				8	0	2	21.00
				8	4	2	21.01
				8	7	2	20.99
				15	0	2	20.95
	20175	1732.5	QPSK	1	0	0	22.89
				1	7	0	23.09
				1	14	0	23.07
				8	0	1	22.05
				8	4	1	22.10
				8	7	1	22.11
				15	0	1	22.04
			16QAM	1	0	1	22.15
				1	7	1	22.40
				1	14	1	22.34
				8	0	2	21.08
				8	4	2	21.13
				8	7	2	21.14
				15	0	2	21.03
	20385	1753.5	QPSK	1	0	0	23.32
				1	7	0	23.45
				1	14	0	23.39
				8	0	1	22.39
				8	4	1	22.41
				8	7	1	22.45
				15	0	1	22.41
			16QAM	1	0	1	22.71
				1	7	1	22.82
				1	14	1	22.75
				8	0	2	21.37
				8	4	2	21.38
				8	7	2	21.41
				15	0	2	21.37

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
1.4MHz	19957	1710.7	QPSK	1	0	0	22.86
				1	2	0	22.93
				1	5	0	22.84
				3	0	0	22.92
				3	1	0	22.88
				3	2	0	22.91
				6	0	1	21.87
			16QAM	1	0	1	22.12
				1	2	1	22.27
				1	5	1	22.11
				3	0	1	22.08
				3	1	1	22.03
				3	2	1	22.02
				6	0	2	20.90
	20175	1732.5	QPSK	1	0	0	23.04
				1	2	0	23.12
				1	5	0	23.09
				3	0	0	23.12
				3	1	0	23.08
				3	2	0	23.12
				6	0	1	22.08
			16QAM	1	0	1	22.42
				1	2	1	22.52
				1	5	1	22.48
				3	0	1	22.08
				3	1	1	22.09
				3	2	1	22.14
				6	0	2	21.02
	20393	1754.3	QPSK	1	0	0	23.40
				1	2	0	23.44
				1	5	0	23.43
				3	0	0	23.47
				3	1	0	23.47
				3	2	0	23.44
				6	0	1	22.40
			16QAM	1	0	1	22.63
				1	2	1	22.78
				1	5	1	22.66
				3	0	1	22.49
				3	1	1	22.46
				3	2	1	22.46
				6	0	2	21.53

LTE Band 7

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
20MHz	20850	2510	QPSK	1	0	0	21.75
				1	49	0	21.50
				1	99	0	21.01
				50	0	1	20.54
				50	25	1	20.46
				50	50	1	21.68
				100	0	1	21.53
			16QAM	1	0	1	21.64
				1	49	1	21.58
				1	99	1	21.12
				50	0	2	20.57
				50	25	2	20.41
				50	50	2	21.64
				100	0	2	21.47
	21100	2535	QPSK	1	0	0	21.72
				1	49	0	21.59
				1	99	0	21.14
				50	0	1	20.47
				50	25	1	20.42
				50	50	1	21.64
				100	0	1	21.59
			16QAM	1	0	1	21.62
				1	49	1	21.55
				1	99	1	21.12
				50	0	2	20.63
				50	25	2	20.49
				50	50	2	21.62
				100	0	2	21.48
	21350	2560	QPSK	1	0	0	21.64
				1	49	0	21.54
				1	99	0	21.12
				50	0	1	20.62
				50	25	1	20.71
				50	50	1	21.49
				100	0	1	21.42
			16QAM	1	0	1	21.79
				1	49	1	21.63
				1	99	1	21.21
				50	0	2	20.71
				50	25	2	20.56
				50	50	2	21.48
				100	0	2	21.37

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
15MHz	20825	2507.5	QPSK	1	0	0	21.62
				1	37	0	21.50
				1	74	0	21.46
				37	0	1	20.69
				37	18	1	20.58
				37	38	1	20.55
				75	0	1	20.64
			16QAM	1	0	1	21.69
				1	37	1	21.62
				1	74	1	21.51
				37	0	2	20.64
				37	18	2	20.47
				37	38	2	20.52
				75	0	2	20.68
	21100	2535	QPSK	1	0	0	21.73
				1	37	0	21.63
				1	74	0	21.49
				37	0	1	20.46
				37	18	1	20.53
				37	38	1	20.66
				75	0	1	20.67
			16QAM	1	0	1	21.58
				1	37	1	21.54
				1	74	1	21.53
				37	0	2	20.62
				37	18	2	20.52
				37	38	2	20.59
				75	0	2	20.68
	21375	2562.5	QPSK	1	0	0	21.71
				1	37	0	21.56
				1	74	0	21.72
				37	0	1	20.71
				37	18	1	20.53
				37	38	1	20.59
				75	0	1	20.66
			16QAM	1	0	1	21.68
				1	37	1	21.54
				1	74	1	21.42
				37	0	2	20.51
				37	18	2	20.54
				37	38	2	20.59
				75	0	2	20.66

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
10MHz	20800	2505	QPSK	1	0	0	21.60
				1	24	0	21.49
				1	49	0	21.41
				25	0	1	20.54
				25	12	1	20.49
				25	25	1	20.47
				50	0	1	20.50
			16QAM	1	0	1	21.63
				1	24	1	21.42
				1	49	1	21.45
				25	0	2	20.58
				25	12	2	20.46
				25	25	2	20.48
				50	0	2	20.52
	21100	2535	QPSK	1	0	0	21.64
				1	24	0	21.47
				1	49	0	21.44
				25	0	1	20.58
				25	12	1	20.51
				25	25	1	20.43
				50	0	1	20.56
			16QAM	1	0	1	21.63
				1	24	1	21.47
				1	49	1	21.43
				25	0	2	20.58
				25	12	2	20.46
				25	25	2	20.42
				50	0	2	20.51
	21400	2565	QPSK	1	0	0	21.63
				1	24	0	21.41
				1	49	0	21.43
				25	0	1	20.57
				25	12	1	20.45
				25	25	1	20.45
				50	0	1	20.53
			16QAM	1	0	1	21.62
				1	24	1	21.42
				1	49	1	21.44
				25	0	2	20.58
				25	12	2	20.46
				25	25	2	20.43
				50	0	2	20.53

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
5MHz	20775	2502.5	QPSK	1	0	0	21.71
				1	12	0	21.62
				1	24	0	21.59
				12	0	1	20.71
				12	6	1	20.66
				12	13	1	20.65
				25	0	1	20.62
			16QAM	1	0	1	21.85
				1	12	1	21.66
				1	24	1	21.53
				12	0	2	20.49
				12	6	2	20.46
				12	13	2	20.62
				25	0	2	20.67
	21100	2535	QPSK	1	0	0	21.78
				1	12	0	21.68
				1	24	0	21.61
				12	0	1	20.77
				12	6	1	20.42
				12	13	1	20.67
				25	0	1	20.64
			16QAM	1	0	1	21.63
				1	12	1	21.68
				1	24	1	21.54
				12	0	2	20.72
				12	6	2	20.63
				12	13	2	20.69
				25	0	2	20.57
	21425	2567.5	QPSK	1	0	0	21.74
				1	12	0	21.65
				1	24	0	21.56
				12	0	1	20.74
				12	6	1	20.69
				12	13	1	20.61
				25	0	1	20.65
			16QAM	1	0	1	21.73
				1	12	1	21.67
				1	24	1	21.53
				12	0	2	20.75
				12	6	2	20.64
				12	13	2	20.62
				25	0	2	20.69

According to 3GPP 36.521 sub-clause 6.2.3.3, the maximum output power is allowed to be reduced by following the table.

Table 6.2.3.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (For PRACH, PUCCH and SRS transmission, the allowed MPR is according to that specified for PUSCH QPSK modulation for the corresponding transmission bandwidth.).

When PRACH, PUCCH are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

For each subframe, the MPR is evaluated per slot and given by the maximum value taken over the transmission(s) within the slot, the maximum MPR over the two slots is then applied for the entire subframe.

For the UE maximum output power modified by MPR, the power limits specified in subclause 6.2.5.3 apply. The normative reference for this requirement is TS 36.101 clause 6.2.3.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

6.2 RADIATED OUTPUT POWER

6.2.1 MEASUREMENT METHOD

The measurements procedures specified in TIA-603C-2004 were applied.

1 In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for the frequency band of interest is connected to the dipole with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A known (measured) power (Pin) is applied to the input of the dipole, and the power received (Pr) at the chamber's probe antenna is recorded.

2 The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established as ARpl=Pin + 2.15 - Pr. The ARpl is the attenuation of “reference path loss”, and including the gain of receive antenna, the cable loss and the air loss. The measurement results are obtained as described below: Power=PMea+ARpl

3 The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.

4 From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.

5 The EUT is then put into continuously transmitting mode at its maximum power level.

6 Power mode measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 27.50(d)(4). The "reference path loss" from Step1 is added to this result.

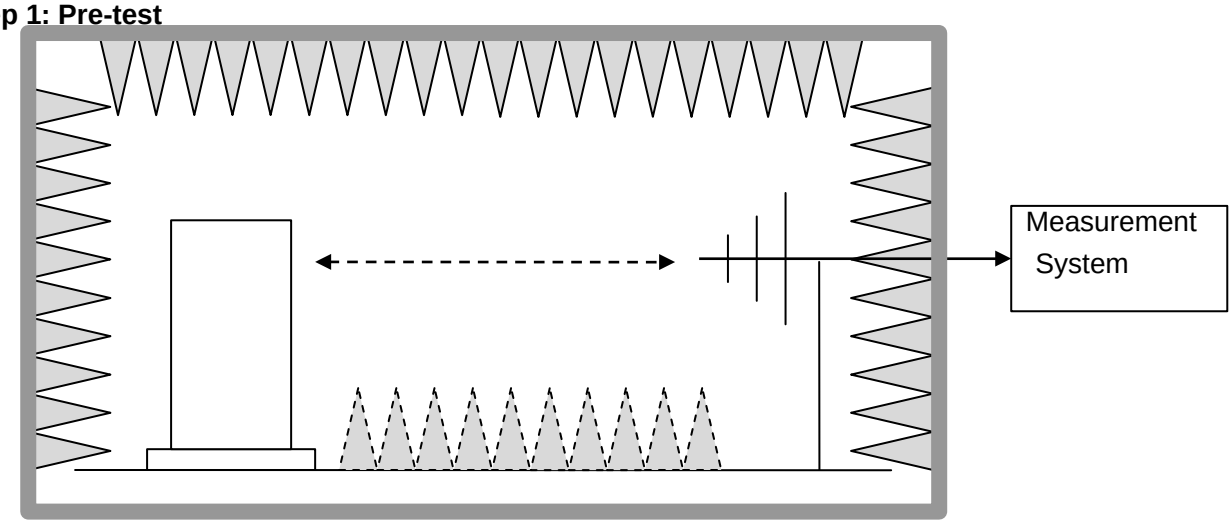
7 This value is EIRP since the measurement is calibrated using a half-wave dipole antenna of known gain (2.15 dBi) and known input power (Pin).

8 ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi..

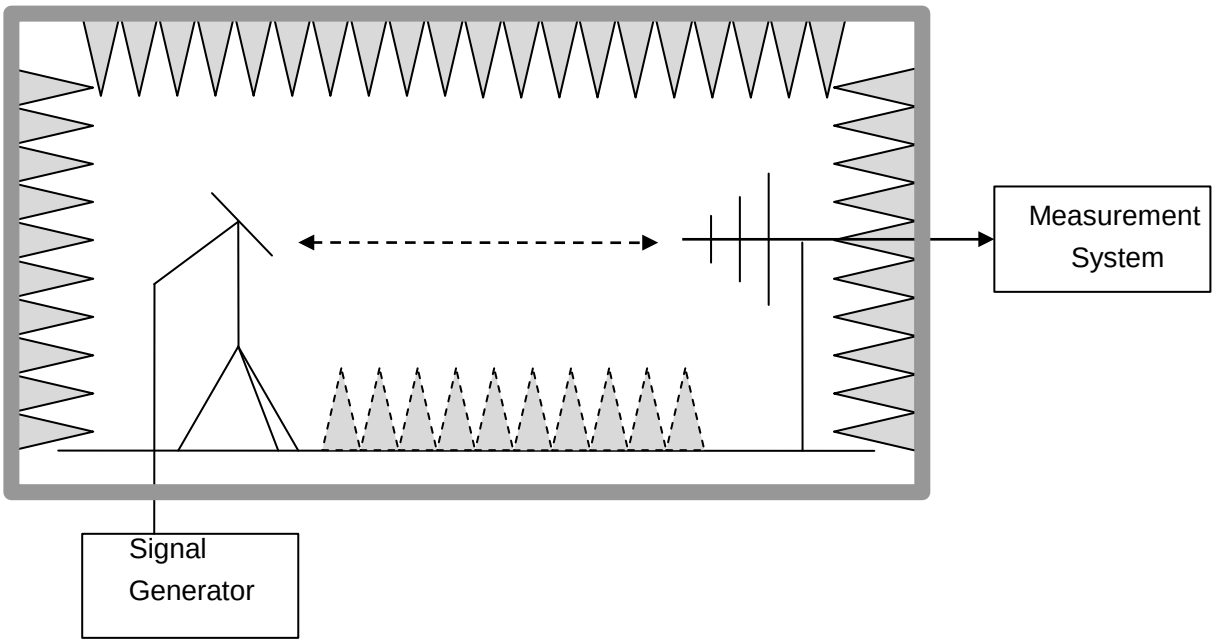
Test Setup

NOTE: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

Step 1: Pre-test



Step 2: Substitution method to verify the maximum ERP



6.2.2 PROVISIONS APPLICABLE

This is the test for the maximum radiated power from the EUT. Rule Part 27.50(d) specifies, “Mobile/portable stations are limited to 1 watts e.i.r.p.

Mode	Nominal Peak Power
LTE Band 4	<=30 dBm (1W)
LTE Band 7	<=30 dBm (1W)

6.2.3 MEASUREMENT RESULT

EIRP for LTE Band4 (Part 27)

Frequency	Channel Bandwidth	Mode.	RB	Substituted level	Antenna Polarization	Antenna Gain correction	Cable Loss	Absolute Level	Limit (dBm)
1710.7	1.4	QPSK	1/0	12.49	V	7.95	0.79	19.65	30
1732.5	1.4	QPSK	1/0	12.52	V	7.95	0.79	19.68	30
1754.3	1.4	QPSK	1/0	12.72	V	7.95	0.79	19.88	30
1710.7	1.4	QPSK	1/0	11.38	H	7.95	0.79	18.54	30
1732.5	1.4	QPSK	1/0	11.64	H	7.95	0.79	18.8	30
1754.3	1.4	QPSK	1/0	11.49	H	7.95	0.79	18.65	30
1710.7	1.4	16-QAM	1/5	12.52	V	7.95	0.79	19.68	30
1732.5	1.4	16-QAM	1/0	12.68	V	7.95	0.79	19.84	30
1754.3	1.4	16-QAM	1/0	12.49	V	7.95	0.79	19.65	30
1710.7	1.4	16-QAM	1/5	11.28	H	7.95	0.79	18.44	30
1732.5	1.4	16-QAM	1/0	11.37	H	7.95	0.79	18.53	30
1754.3	1.4	16-QAM	1/0	11.48	H	7.95	0.79	18.64	30
1711.5	3	QPSK	1/0	12.33	V	7.95	0.79	19.49	30
1732.5	3	QPSK	1/0	12.46	V	7.95	0.79	19.62	30
1753.5	3	QPSK	1/0	13.18	V	7.95	0.79	20.34	30
1711.5	3	QPSK	1/0	11.82	H	7.95	0.79	18.98	30
1732.5	3	QPSK	1/0	11.76	H	7.95	0.79	18.92	30
1753.5	3	QPSK	1/0	12.19	H	7.95	0.79	19.35	30
1711.5	3	16-QAM	1/0	12.96	V	7.95	0.79	20.12	30
1732.5	3	16-QAM	1/0	12.77	V	7.95	0.79	19.93	30
1753.5	3	16-QAM	1/0	12.71	V	7.95	0.79	19.87	30
1711.5	3	16-QAM	1/0	11.27	H	7.95	0.79	18.43	30
1732.5	3	16-QAM	1/0	12.24	H	7.95	0.79	19.4	30
1753.5	3	16-QAM	1/0	11.86	H	7.95	0.79	19.02	30
1712.5	5	QPSK	1/0	12.43	V	7.95	0.79	19.59	30
1732.5	5	QPSK	1/0	12.89	V	7.95	0.79	20.05	30
1752.5	5	QPSK	1/24	13.02	V	7.95	0.79	20.18	30
1712.5	5	QPSK	1/0	12.48	H	7.95	0.79	19.64	30
1732.5	5	QPSK	1/0	12.18	H	7.95	0.79	19.34	30
1752.5	5	QPSK	1/24	11.63	H	7.95	0.79	18.79	30
1712.5	5	16-QAM	1/0	12.96	V	7.95	0.79	20.12	30
1732.5	5	16-QAM	1/0	13.12	V	7.95	0.79	20.28	30
1752.5	5	16-QAM	1/24	12.75	V	7.95	0.79	19.91	30
1712.5	5	16-QAM	1/0	11.95	H	7.95	0.79	19.11	30
1732.5	5	16-QAM	1/0	11.99	H	7.95	0.79	19.15	30

1752.5	5	16-QAM	1/24	11.78	H	7.95	0.79	18.94	30
1715	10	QPSK	1/0	13.08	V	7.95	0.79	20.24	30
1732.5	10	QPSK	1/49	12.96	V	7.95	0.79	20.12	30
1750	10	QPSK	1/0	12.69	V	7.95	0.79	19.85	30
1715	10	QPSK	1/0	11.84	H	7.95	0.79	19	30
1732.5	10	QPSK	1/49	11.89	H	7.95	0.79	19.05	30
1750	10	QPSK	1/0	11.92	H	7.95	0.79	19.08	30
1715	10	16-QAM	1/0	13.14	V	7.95	0.79	20.3	30
1732.5	10	16-QAM	1/49	13.05	V	7.95	0.79	20.21	30
1750	10	16-QAM	1/0	12.89	V	7.95	0.79	20.05	30
1715	10	16-QAM	1/0	12.52	H	7.95	0.79	19.68	30
1732.5	10	16-QAM	1/49	12.36	H	7.95	0.79	19.52	30
1750	10	16-QAM	1/0	11.87	H	7.95	0.79	19.03	30
1717.5	15	QPSK	1/0	12.76	V	7.95	0.79	19.92	30
1732.5	15	QPSK	1/74	12.69	V	7.95	0.79	19.85	30
1747.5	15	QPSK	1/0	12.84	V	7.95	0.79	20	30
1717.5	15	QPSK	1/0	12.12	H	7.95	0.79	19.28	30
1732.5	15	QPSK	1/74	12.25	H	7.95	0.79	19.41	30
1747.5	15	QPSK	1/0	11.89	H	7.95	0.79	19.05	30
1717.5	15	16-QAM	1/0	12.79	V	7.95	0.79	19.95	30
1732.5	15	16-QAM	1/74	12.73	V	7.95	0.79	19.89	30
1747.5	15	16-QAM	1/0	12.68	V	7.95	0.79	19.84	30
1717.5	15	16-QAM	1/0	12.24	H	7.95	0.79	19.4	30
1732.5	15	16-QAM	1/74	11.83	H	7.95	0.79	18.99	30
1747.5	15	16-QAM	1/0	11.88	H	7.95	0.79	19.04	30
1720	20	QPSK	1/99	12.87	V	7.95	0.79	20.03	30
1732.5	20	QPSK	1/99	13.14	V	7.95	0.79	20.3	30
1745	20	QPSK	1/0	12.86	V	7.95	0.79	20.02	30
1720	20	QPSK	1/99	11.95	H	7.95	0.79	19.11	30
1732.5	20	QPSK	1/99	11.67	H	7.95	0.79	18.83	30
1745	20	QPSK	1/0	12.26	H	7.95	0.79	19.42	30
1720	20	16-QAM	1/99	13.25	V	7.95	0.79	20.41	30
1732.5	20	16-QAM	1/99	12.91	V	7.95	0.79	20.07	30
1745	20	16-QAM	1/0	12.88	V	7.95	0.79	20.04	30
1720	20	16-QAM	1/99	12.15	H	7.95	0.79	19.31	30
1732.5	20	16-QAM	1/99	11.83	H	7.95	0.79	18.99	30
1745	20	16-QAM	1/99	11.95	H	7.95	0.79	19.11	30

ERP for LTE Band 7 (Part 27)

Frequency	Channel BW	Mode.	RB	Substituted level	Antenna Polarization	Antenna Gain correction	Cable Loss	Absolute Level	Limit (dBm)
2502.5	5	QPSK	1/0	12.42	H	7.95	0.79	19.58	30
2535	5	QPSK	1/0	12.61	H	7.95	0.79	19.77	30
2567.5	5	QPSK	1/0	12.32	H	7.95	0.79	19.48	30
2502.5	5	QPSK	1/0	11.77	V	7.95	0.79	18.93	30
2535	5	QPSK	1/0	11.62	V	7.95	0.79	18.78	30
2567.5	5	QPSK	1/0	11.63	V	7.95	0.79	18.79	30
2502.5	5	16-QAM	1/0	12.43	H	7.95	0.79	19.59	30
2535	5	16-QAM	1/0	12.29	H	7.95	0.79	19.45	30
2567.5	5	16-QAM	1/0	12.38	H	7.95	0.79	19.54	30
2502.5	5	16-QAM	1/0	11.41	V	7.95	0.79	18.57	30
2535	5	16-QAM	1/0	11.65	V	7.95	0.79	18.81	30
2567.5	5	16-QAM	1/0	11.72	V	7.95	0.79	18.88	30
2505	10	QPSK	1/0	12.39	H	7.95	0.79	19.55	30
2535	10	QPSK	1/0	12.29	H	7.95	0.79	19.45	30
2565	10	QPSK	1/0	13.42	H	7.95	0.79	20.58	30
2505	10	QPSK	1/0	11.78	V	7.95	0.79	18.94	30
2535	10	QPSK	1/0	11.62	V	7.95	0.79	18.78	30
2565	10	QPSK	1/0	12.24	V	7.95	0.79	19.4	30
2505	10	16-QAM	1/0	12.91	H	7.95	0.79	20.07	30
2535	10	16-QAM	1/0	12.72	H	7.95	0.79	19.88	30
2565	10	16-QAM	1/0	12.58	H	7.95	0.79	19.74	30
2505	10	16-QAM	1/0	11.34	V	7.95	0.79	18.5	30
2535	10	16-QAM	1/0	12.29	V	7.95	0.79	19.45	30
2565	10	16-QAM	1/0	11.77	V	7.95	0.79	18.93	30
2507.5	15	QPSK	1/0	12.49	H	7.95	0.79	19.65	30
2535	15	QPSK	1/0	12.84	H	7.95	0.79	20	30
2562.5	15	QPSK	1/0	13.12	H	7.95	0.79	20.28	30
2507.5	15	QPSK	1/0	12.42	V	7.95	0.79	19.58	30
2535	15	QPSK	1/0	12.26	V	7.95	0.79	19.42	30
2562.5	15	QPSK	1/0	11.71	V	7.95	0.79	18.87	30
2507.5	15	16-QAM	1/0	12.48	H	7.95	0.79	19.64	30
2535	15	16-QAM	1/0	13.38	H	7.95	0.79	20.54	30
2562.5	15	16-QAM	1/0	12.46	H	7.95	0.79	19.62	30
2507.5	15	16-QAM	1/0	11.82	V	7.95	0.79	18.98	30
2535	15	16-QAM	1/0	11.67	V	7.95	0.79	18.83	30
2562.5	15	16-QAM	1/0	11.72	V	7.95	0.79	18.88	30

2510	20	QPSK	1/0	13.14	H	7.95	0.79	20.3	30
2535	20	QPSK	1/0	12.83	H	7.95	0.79	19.99	30
2560	20	QPSK	1/0	12.73	H	7.95	0.79	19.89	30
2510	20	QPSK	1/0	11.69	V	7.95	0.79	18.85	30
2535	20	QPSK	1/0	11.49	V	7.95	0.79	18.65	30
2560	20	QPSK	1/0	11.68	V	7.95	0.79	18.84	30
2510	20	16-QAM	1/0	13.29	H	7.95	0.79	20.45	30
2535	20	16-QAM	1/0	13.17	H	7.95	0.79	20.33	30
2560	20	16-QAM	1/0	12.75	H	7.95	0.79	19.91	30
2510	20	16-QAM	1/0	12.46	V	7.95	0.79	19.62	30
2535	20	16-QAM	1/0	12.82	V	7.95	0.79	19.98	30
2560	20	16-QAM	1/0	11.98	V	7.95	0.79	19.14	30

Note: Above is worst mode data.

6.3. Peak-to-Average Ratio

6.3.1 MEASUREMENT METHOD

FCC: 27.50(a)

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

According to KDB 971168 v02r01 5.7.1:

a)Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Set the measurement interval to 1 ms

e)Record the maximum PAPR level associated with a probability of 0.1%

6.3.2 PROVISIONS APPLICABLE

This is the test for the Peak-to-Average Ratio from the EUT.

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

6.3.3 MEASUREMENT RESULT

LTE Band 4 (Part 27)

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio (dB)	Limit (dB)	Verdict
		Size	Offset			
QPSK	LCH	1	0	5.07	<13	PASS
		1	3	5.12	<13	PASS
		1	5	5.13	<13	PASS
		3	0	5.14	<13	PASS
		3	2	5.04	<13	PASS
		3	3	5.16	<13	PASS
		6	0	5.75	<13	PASS

	MCH	1	0	4.65	<13	PASS
		1	3	4.58	<13	PASS
		1	5	4.57	<13	PASS
		3	0	4.79	<13	PASS
		3	2	4.77	<13	PASS
		3	3	4.81	<13	PASS
		6	0	5.54	<13	PASS
	HCH	1	0	4.61	<13	PASS
		1	3	4.55	<13	PASS
		1	5	4.59	<13	PASS
		3	0	4.68	<13	PASS
		3	2	4.65	<13	PASS
		3	3	4.7	<13	PASS
		6	0	5.45	<13	PASS
16QAM	LCH	1	0	5.97	<13	PASS
		1	3	5.89	<13	PASS
		1	5	5.94	<13	PASS
		3	0	5.98	<13	PASS
		3	2	6.09	<13	PASS
		3	3	6.12	<13	PASS
		6	0	6.6	<13	PASS
	MCH	1	0	5.67	<13	PASS
		1	3	5.54	<13	PASS
		1	5	5.67	<13	PASS
		3	0	5.77	<13	PASS
		3	2	5.76	<13	PASS
		3	3	5.74	<13	PASS
		6	0	6.37	<13	PASS
	HCH	1	0	5.54	<13	PASS
		1	3	5.51	<13	PASS
		1	5	5.54	<13	PASS
		3	0	5.44	<13	PASS
		3	2	5.37	<13	PASS
		3	3	5.51	<13	PASS
		6	0	6.28	<13	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	5.04	<13	PASS
		1	7	5.1	<13	PASS
		1	14	5.13	<13	PASS
		8	0	5.71	<13	PASS
		8	4	5.72	<13	PASS
		8	7	5.74	<13	PASS
		15	0	5.75	<13	PASS
	MCH	1	0	4.85	<13	PASS
		1	7	4.76	<13	PASS
		1	14	4.75	<13	PASS
		8	0	5.54	<13	PASS
		8	4	5.5	<13	PASS
		8	7	5.52	<13	PASS
		15	0	5.65	<13	PASS
	HCH	1	0	4.46	<13	PASS
		1	7	4.45	<13	PASS
		1	14	4.49	<13	PASS
		8	0	5.46	<13	PASS
		8	4	5.43	<13	PASS
		8	7	5.43	<13	PASS
		15	0	5.65	<13	PASS
16QAM	LCH	1	0	5.9	<13	PASS
		1	7	5.98	<13	PASS
		1	14	6.04	<13	PASS
		8	0	6.3	<13	PASS
		8	4	6.35	<13	PASS
		8	7	6.35	<13	PASS
		15	0	6.57	<13	PASS
	MCH	1	0	5.72	<13	PASS
		1	7	5.68	<13	PASS
		1	14	5.68	<13	PASS
		8	0	6.23	<13	PASS
		8	4	6.22	<13	PASS
		8	7	6.15	<13	PASS
		15	0	6.45	<13	PASS

	HCH	1	0	5.47	<13	PASS
		1	7	5.33	<13	PASS
		1	14	5.52	<13	PASS
		8	0	6.14	<13	PASS
		8	4	6.12	<13	PASS
		8	7	6.11	<13	PASS
		15	0	6.39	<13	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	4.95	<13	PASS
		1	12	4.98	<13	PASS
		1	24	5.15	<13	PASS
		12	0	5.67	<13	PASS
		12	6	5.72	<13	PASS
		12	13	5.7	<13	PASS
		25	0	5.88	<13	PASS
	MCH	1	0	4.71	<13	PASS
		1	12	4.6	<13	PASS
		1	24	4.53	<13	PASS
		12	0	5.5	<13	PASS
		12	6	5.45	<13	PASS
		12	13	5.47	<13	PASS
		25	0	5.67	<13	PASS
	HCH	1	0	4.63	<13	PASS
		1	12	4.55	<13	PASS
		1	24	4.58	<13	PASS
		12	0	5.48	<13	PASS
		12	6	5.44	<13	PASS
		12	13	5.42	<13	PASS
		25	0	5.58	<13	PASS
16QAM	LCH	1	0	5.78	<13	PASS
		1	12	5.83	<13	PASS
		1	24	5.95	<13	PASS
		12	0	6.46	<13	PASS
		12	6	6.54	<13	PASS
		12	13	6.48	<13	PASS
		25	0	6.61	<13	PASS
	MCH	1	0	5.56	<13	PASS

		1	12	5.53	<13	PASS
		1	24	5.49	<13	PASS
		12	0	6.26	<13	PASS
		12	6	6.24	<13	PASS
		12	13	6.24	<13	PASS
		25	0	6.41	<13	PASS
	HCH	1	0	5.35	<13	PASS
		1	12	5.3	<13	PASS
		1	24	5.32	<13	PASS
		12	0	6.4	<13	PASS
		12	6	6.34	<13	PASS
		12	13	6.38	<13	PASS
		25	0	6.4	<13	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	5.07	<13	PASS
		1	24	5.27	<13	PASS
		1	49	5.25	<13	PASS
		25	0	5.77	<13	PASS
		25	12	5.8	<13	PASS
		25	25	5.76	<13	PASS
		50	0	5.8	<13	PASS
	MCH	1	0	4.96	<13	PASS
		1	24	4.77	<13	PASS
		1	49	4.65	<13	PASS
		25	0	5.53	<13	PASS
		25	12	5.55	<13	PASS
		25	25	5.51	<13	PASS
		50	0	5.62	<13	PASS
	HCH	1	0	4.49	<13	PASS
		1	24	4.43	<13	PASS
		1	49	4.5	<13	PASS
		25	0	5.5	<13	PASS
		25	12	5.51	<13	PASS
		25	25	5.49	<13	PASS
		50	0	5.59	<13	PASS
16QAM	LCH	1	0	5.98	<13	PASS

		1	24	6.12	<13	PASS
		1	49	6.14	<13	PASS
		25	0	6.52	<13	PASS
		25	12	6.57	<13	PASS
		25	25	6.59	<13	PASS
		50	0	6.46	<13	PASS
	MCH	1	0	5.82	<13	PASS
		1	24	5.63	<13	PASS
		1	49	5.54	<13	PASS
		25	0	6.4	<13	PASS
		25	12	6.39	<13	PASS
		25	25	6.32	<13	PASS
		50	0	6.33	<13	PASS
	HCH	1	0	5.41	<13	PASS
		1	24	5.29	<13	PASS
		1	49	5.43	<13	PASS
		25	0	6.3	<13	PASS
		25	12	6.35	<13	PASS
		25	25	6.32	<13	PASS
		50	0	6.3	<13	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	9.82	<13	PASS
		1	37	5.28	<13	PASS
		1	74	9.94	<13	PASS
		37	0	4.94	<13	PASS
		37	18	5.79	<13	PASS
		37	38	4.93	<13	PASS
		75	0	5.12	<13	PASS
	MCH	1	0	9.99	<13	PASS
		1	37	4.77	<13	PASS
		1	74	10.35	<13	PASS
		37	0	4.77	<13	PASS
		37	18	5.56	<13	PASS
		37	38	4.92	<13	PASS
		75	0	4.99	<13	PASS
	HCH	1	0	9.36	<13	PASS

		1	37	4.61	<13	PASS
		1	74	10.2	<13	PASS
		37	0	4.77	<13	PASS
		37	18	5.55	<13	PASS
		37	38	4.81	<13	PASS
		75	0	5.05	<13	PASS
16QAM	LCH	1	0	9.71	<13	PASS
		1	37	6.06	<13	PASS
		1	74	10.61	<13	PASS
		37	0	6.14	<13	PASS
		37	18	6.5	<13	PASS
		37	38	6.16	<13	PASS
		75	0	6.39	<13	PASS
	MCH	1	0	9.95	<13	PASS
		1	37	5.5	<13	PASS
		1	74	11.11	<13	PASS
		37	0	6.01	<13	PASS
		37	18	6.32	<13	PASS
		37	38	6.12	<13	PASS
		75	0	6.25	<13	PASS
	HCH	1	0	9.51	<13	PASS
		1	37	5.5	<13	PASS
		1	74	10.85	<13	PASS
		37	0	6	<13	PASS
		37	18	6.4	<13	PASS
		37	38	6.1	<13	PASS
		75	0	6.27	<13	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	10.19	<13	PASS
		1	49	5.11	<13	PASS
		1	99	11.73	<13	PASS
		50	0	5.7	<13	PASS
		50	25	5.67	<13	PASS
		50	50	5.84	<13	PASS
		100	0	5.72	<13	PASS
	MCH	1	0	9.96	<13	PASS

		1	49	4.68	<13	PASS
		1	99	10.08	<13	PASS
		50	0	5.53	<13	PASS
		50	25	5.63	<13	PASS
		50	50	5.85	<13	PASS
		100	0	5.71	<13	PASS
	HCH	1	0	10.27	<13	PASS
		1	49	4.65	<13	PASS
		1	99	11.68	<13	PASS
		50	0	5.5	<13	PASS
		50	25	5.66	<13	PASS
		50	50	5.9	<13	PASS
		100	0	5.76	<13	PASS
16QAM	LCH	1	0	10.36	<13	PASS
		1	49	5.97	<13	PASS
		1	99	10.91	<13	PASS
		50	0	6.64	<13	PASS
		50	25	6.48	<13	PASS
		50	50	6.65	<13	PASS
		100	0	6.85	<13	PASS
	MCH	1	0	10.99	<13	PASS
		1	49	5.51	<13	PASS
		1	99	10.48	<13	PASS
		50	0	6.61	<13	PASS
		50	25	6.38	<13	PASS
		50	50	6.65	<13	PASS
		100	0	6.77	<13	PASS
	HCH	1	0	11.37	<13	PASS
		1	49	5.4	<13	PASS
		1	99	11	<13	PASS
		50	0	6.61	<13	PASS
		50	25	6.4	<13	PASS
		50	50	6.68	<13	PASS
		100	0	6.71	<13	PASS

LTE Band 7 (Part 27)

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	3.26	<13	PASS
		1	12	3.31	<13	PASS
		1	24	3.39	<13	PASS
		12	0	4.63	<13	PASS
		12	6	4.57	<13	PASS
		12	13	4.69	<13	PASS
		25	0	5.09	<13	PASS
	MCH	1	0	4.15	<13	PASS
		1	12	4.2	<13	PASS
		1	24	3.47	<13	PASS
		12	0	5.32	<13	PASS
		12	6	5.16	<13	PASS
		12	13	5.04	<13	PASS
		25	0	5.41	<13	PASS
	HCH	1	0	4.63	<13	PASS
		1	12	5.11	<13	PASS
		1	24	4.83	<13	PASS
		12	0	5.49	<13	PASS
		12	6	5.48	<13	PASS
		12	13	5.54	<13	PASS
		25	0	5.69	<13	PASS
16QAM	LCH	1	0	4.25	<13	PASS
		1	12	4.3	<13	PASS
		1	24	4.37	<13	PASS
		12	0	5.46	<13	PASS
		12	6	5.37	<13	PASS
		12	13	5.49	<13	PASS
		25	0	5.8	<13	PASS
	MCH	1	0	4.81	<13	PASS
		1	12	4.84	<13	PASS
		1	24	4.24	<13	PASS
		12	0	6.1	<13	PASS
		12	6	6	<13	PASS
		12	13	5.83	<13	PASS

		25	0	6.07	<13	PASS
	HCH	1	0	5.5	<13	PASS
		1	12	6	<13	PASS
		1	24	5.77	<13	PASS
		12	0	6.15	<13	PASS
		12	6	6.23	<13	PASS
		12	13	6.19	<13	PASS
		25	0	6.32	<13	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	3.48	<13	PASS
		1	24	3.43	<13	PASS
		1	49	3.65	<13	PASS
		25	0	4.85	<13	PASS
		25	12	4.81	<13	PASS
		25	25	5.02	<13	PASS
		50	0	5.21	<13	PASS
	MCH	1	0	4.87	<13	PASS
		1	24	4.26	<13	PASS
		1	49	3.53	<13	PASS
		25	0	5.52	<13	PASS
		25	12	5.32	<13	PASS
		25	25	5.13	<13	PASS
		50	0	5.47	<13	PASS
	HCH	1	0	3.91	<13	PASS
		1	24	4.63	<13	PASS
		1	49	4.79	<13	PASS
		25	0	5.25	<13	PASS
		25	12	5.4	<13	PASS
		25	25	5.51	<13	PASS
		50	0	5.53	<13	PASS
16QAM	LCH	1	0	4.41	<13	PASS
		1	24	4.38	<13	PASS
		1	49	4.6	<13	PASS
		25	0	5.65	<13	PASS
		25	12	5.61	<13	PASS
		25	25	5.78	<13	PASS

		50	0	5.92	<13	PASS
	MCH	1	0	5.73	<13	PASS
		1	24	5.04	<13	PASS
		1	49	4.41	<13	PASS
		25	0	6.27	<13	PASS
		25	12	6	<13	PASS
		25	25	5.81	<13	PASS
		50	0	6.14	<13	PASS
	HCH	1	0	4.73	<13	PASS
		1	24	5.46	<13	PASS
		1	49	5.64	<13	PASS
		25	0	5.99	<13	PASS
		25	12	6.09	<13	PASS
		25	25	6.22	<13	PASS
		50	0	6.16	<13	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	10.23	<13	PASS
		1	37	3.55	<13	PASS
		1	74	10.09	<13	PASS
		37	0	4.64	<13	PASS
		37	18	4.99	<13	PASS
		37	38	4.73	<13	PASS
		75	0	5.05	<13	PASS
	MCH	1	0	9.8	<13	PASS
		1	37	4.24	<13	PASS
		1	74	10.23	<13	PASS
		37	0	4.84	<13	PASS
		37	18	5.42	<13	PASS
		37	38	4.71	<13	PASS
		75	0	5.08	<13	PASS
	HCH	1	0	9.96	<13	PASS
		1	37	4.54	<13	PASS
		1	74	10.22	<13	PASS
		37	0	4.59	<13	PASS
		37	18	5.32	<13	PASS
		37	38	4.88	<13	PASS

		75	0	4.99	<13	PASS
16QAM	LCH	1	0	9.94	<13	PASS
		1	37	4.44	<13	PASS
		1	74	10.54	<13	PASS
		37	0	5.82	<13	PASS
		37	18	5.79	<13	PASS
		37	38	5.92	<13	PASS
		75	0	6.18	<13	PASS
	MCH	1	0	9.72	<13	PASS
		1	37	5.04	<13	PASS
		1	74	10.65	<13	PASS
		37	0	6.05	<13	PASS
		37	18	6.08	<13	PASS
		37	38	5.91	<13	PASS
		75	0	6.23	<13	PASS
	HCH	1	0	10.4	<13	PASS
		1	37	5.28	<13	PASS
		1	74	10.35	<13	PASS
		37	0	5.74	<13	PASS
		37	18	5.94	<13	PASS
		37	38	6.04	<13	PASS
		75	0	6.18	<13	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz						
Modulation	Channel	RB Configuration		Peak-to-Average Ratio [dB]	Limit [dB]	Verdict
		Size	Offset			
QPSK	LCH	1	0	12.13	<13	PASS
		1	49	3.68	<13	PASS
		1	99	11.52	<13	PASS
		50	0	5.57	<13	PASS
		50	25	5.3	<13	PASS
		50	50	5.82	<13	PASS
		100	0	5.74	<13	PASS
	MCH	1	0	10.31	<13	PASS
		1	49	4.26	<13	PASS
		1	99	11.56	<13	PASS
		50	0	5.57	<13	PASS
		50	25	5.56	<13	PASS
		50	50	5.81	<13	PASS

		100	0	5.73	<13	PASS
	HCH	1	0	12.48	<13	PASS
		1	49	3.93	<13	PASS
		1	99	11.3	<13	PASS
		50	0	5.43	<13	PASS
		50	25	5.19	<13	PASS
		50	50	5.85	<13	PASS
		100	0	5.8	<13	PASS
16QAM	LCH	1	0	11.99	<13	PASS
		1	49	4.47	<13	PASS
		1	99	11.29	<13	PASS
		50	0	6.5	<13	PASS
		50	25	5.98	<13	PASS
		50	50	6.62	<13	PASS
		100	0	6.74	<13	PASS
	MCH	1	0	9.94	<13	PASS
		1	49	5.09	<13	PASS
		1	99	11.09	<13	PASS
		50	0	6.57	<13	PASS
		50	25	6.21	<13	PASS
		50	50	6.61	<13	PASS
		100	0	6.79	<13	PASS
	HCH	1	0	11.79	<13	PASS
		1	49	4.6	<13	PASS
		1	99	11.24	<13	PASS
		50	0	6.44	<13	PASS
		50	25	5.85	<13	PASS
		50	50	6.6	<13	PASS
		100	0	6.62	<13	PASS

7. SPURIOUS EMISSION

7.1 CONDUCTED SPURIOUS EMISSION

7.1.1 MEASUREMENT METHOD

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

Test Procedure Used

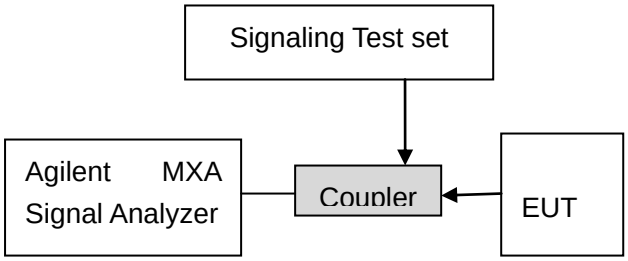
KDB 971168 v02r01 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = max hold
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Test Instrument & Measurement Setup

shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

Test Note

Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for frequencies less than 1 GHz and 1 MHz or greater for frequencies greater than 1 GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

7.1.2 MEASUREMENT RESULT

PLEASE REFER TO: APPENDIX I TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

Note: 1. As no emission found in standby or receive mode, no recording in this report.

7.2 Radiated Spurious Emission

7.2.1 TEST OVERVIEW

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-C-2004 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as peak measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 v02r01 – Section 5.8

ANSI/TIA-603-C-2004 – Section 2.2.12

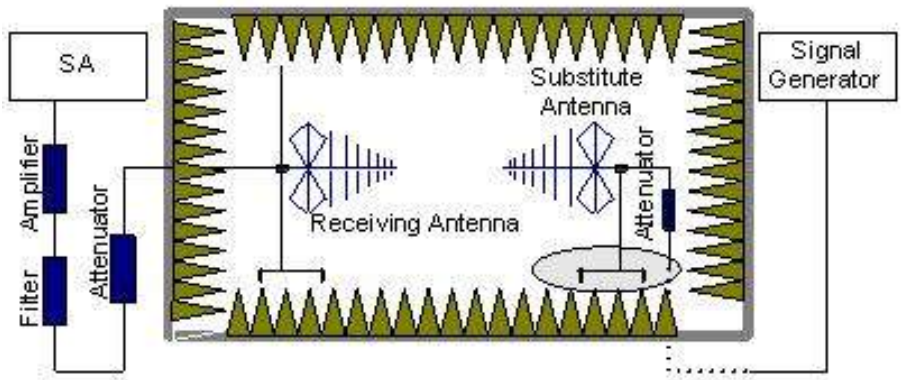
Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points > 2 x span / RBW
5. Detector = Peak
6. Trace mode = max hold
7. The trace was allowed to stabilize

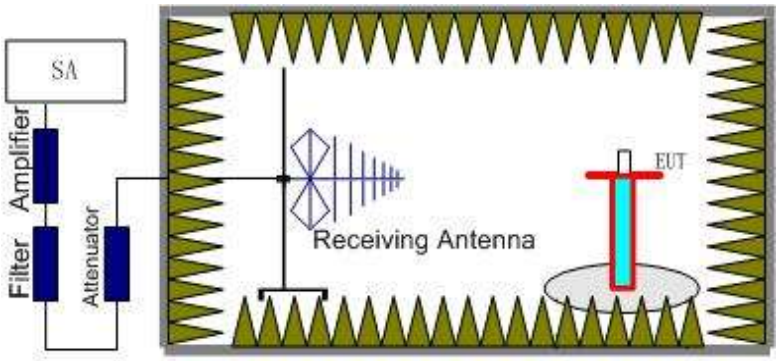
Test Setup

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as, RSE=Rx（dBuV）+CL（dB）+SA（dB）+Gain（dBi）-107（dBuV to dBm）The SA is calibrated using following setup.



b) EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector and 1MHz bandwidth.



Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the LTE band 4 and LTE band 17. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.

The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below: $Power=P_{Mea}+A_{Rpl}$

7.2.2 PROVISIONS APPLICABLE

(a) On any frequency outside a licensee’s frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Note: only result the worst condition of each test mode:

7.2.3 MEASUREMENT RESULT

LTE Band 4 (Part 27)

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3425	-47.28	V	10.06	2.52	-39.74	-13	-26.74
3425	-48.06	H	10.06	2.52	-40.52	-13	-27.52
262.8	-54.28	V	6.7	0.24	-47.82	-13	-34.82
644.6	-50.17	H	6.5	0.39	-44.06	-13	-31.06

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3465	-47.48	V	10.09	2.52	-39.91	-13	-26.91
3465	-48.37	H	10.09	2.52	-40.80	-13	-27.80
256.9	-54.65	V	6.7	0.24	-48.19	-13	-35.19
639.8	-50.29	H	6.5	0.39	-44.18	-13	-31.18

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
3505	-47.45	V	10.09	2.52	-39.88	-13	-26.88
3505	-48.62	H	10.09	2.52	-41.05	-13	-28.05
257.6	-54.77	V	6.7	0.24	-48.31	-13	-35.31
641.9	-50.18	H	6.5	0.39	-44.07	-13	-31.07

Note: EUT Field Strength (dBm) = Reading (Signal generator) + Antenna Gain (substitution antenna) - Cable loss (From Signal Generator to substitution antenna)

Below 30MHZ no Spurious found and The GSM modes is the worst condition.

LTE Band 7 (Part 27)

Low channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5005	-46.77	V	10.72	2.18	-38.23	-13	-25.23
5005	-47.52	H	10.72	2.18	-38.98	-13	-25.98
262.3	-51.47	V	6.2	0.27	-45.54	-13	-32.54
645.7	-52.59	H	7.4	0.79	-45.98	-13	-32.98

Middle channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5070	-48.69	V	10.07	2.52	-41.14	-13	-28.14
5070	-47.55	H	10.07	2.52	-40.00	-13	-27.00
529.2	-55.47	V	6.7	0.24	-49.01	-13	-36.01
537.4	-51.68	H	6.5	0.79	-45.97	-13	-32.97

High channel

Frequency (MHz)	Substituted level (dBm)	Polarity (H/V)	Antenna Gain Correction (dB)	Cable Loss (dB)	Corrected Reading (dBm)	Limit (dBm)	Margin (dB)
5135	-49.24	V	10.06	2.52	-41.70	-13	-28.70
5135	-48.71	H	10.06	2.52	-41.17	-13	-28.17
427.9	-51.39	V	6.7	0.24	-44.93	-13	-31.93
636.8	-50.68	H	6.5	0.79	-44.97	-13	-31.97

Note: EUT Field Strength (dBm) = Reading (Signal generator) + Antenna Gain (substitution antenna) - Cable loss (From Signal Generator to substitution antenna)

Below 30MHZ no Spurious found and The GSM modes is the worst condition.

8. MAINS CONDUCTED EMISSION

8.1 MEASUREMENT METHOD

The measurement procedure specified in ANSI C63.4-2009 was used for testing. Conducted Emission was measured with travel charger.

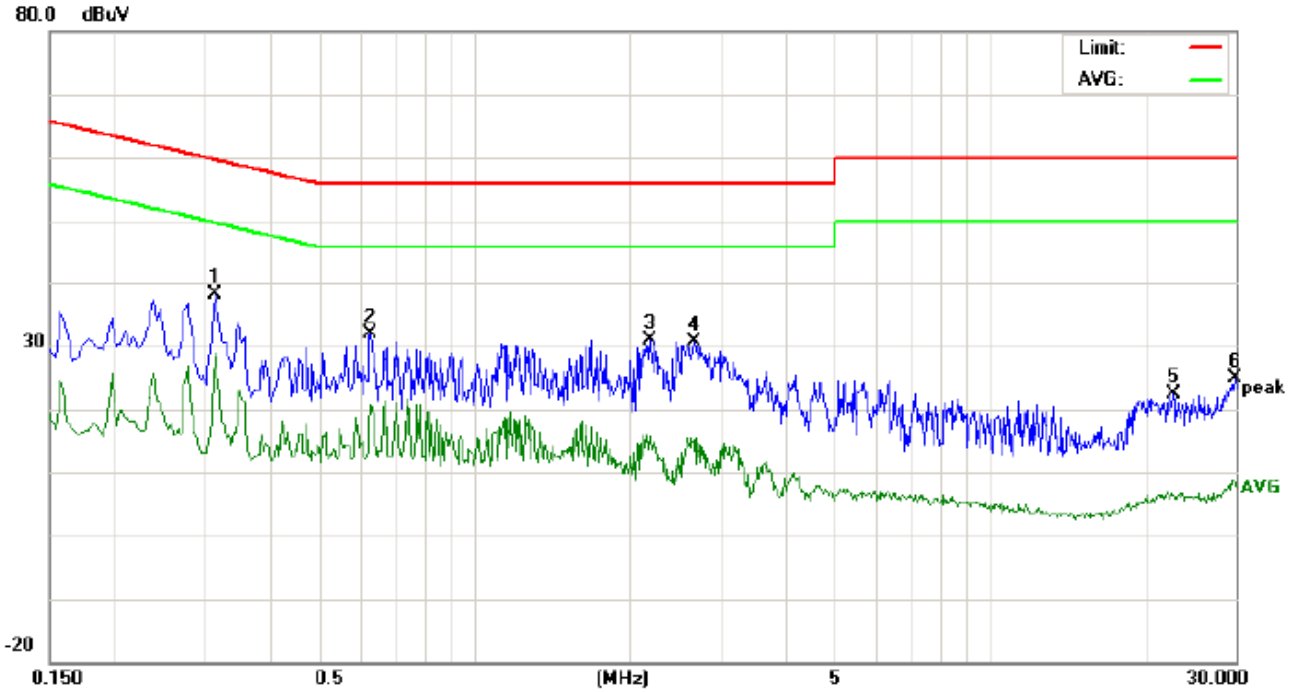
8.2 PROVISIONS APPLICABLE

Frequency of Emission (MHz)	Conducted Limit(dBuV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50
*Decreases with the logarithm of the frequency. *The lower limit shall apply at the transition frequency.		

Note: The LTE Band mode is the worst condition and the test result as following:

8.3 MEASUREMENT RESULT

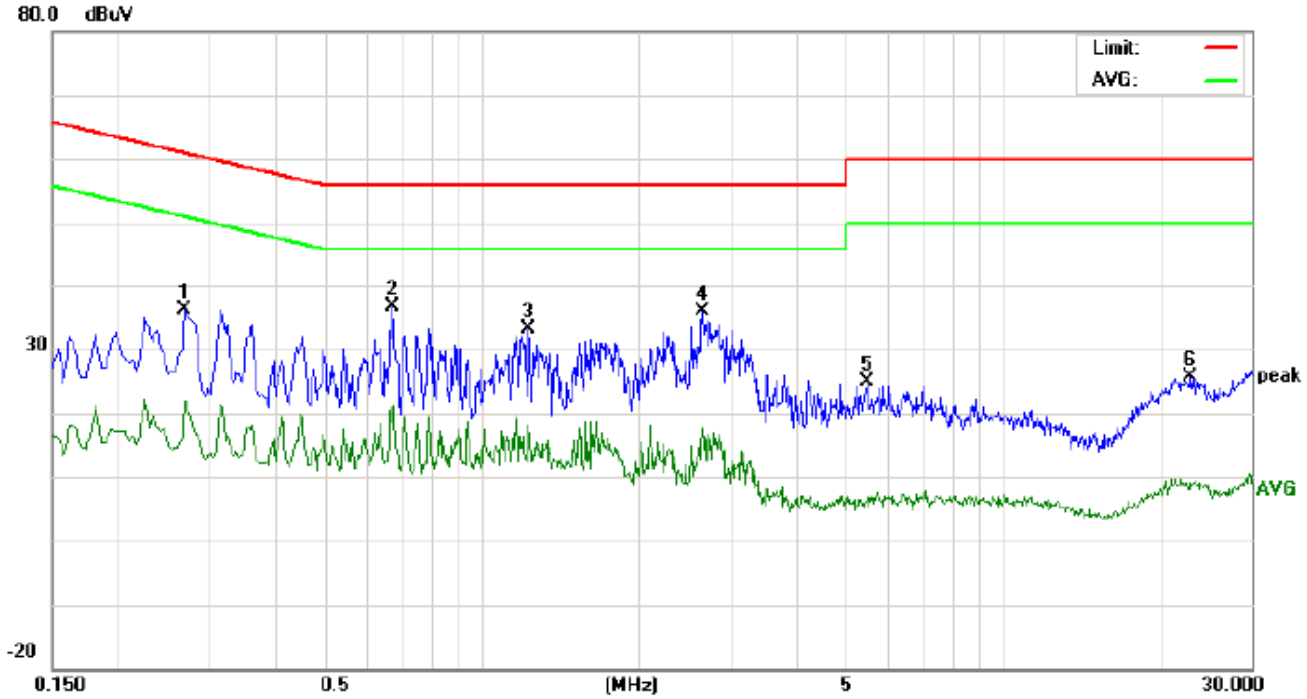
LINE CONDUCTED EMISSION - L



Site: Conduction
Phase: *L1*
Temperature: 22.5
Limit: FCC Class B Conduction(QP)
Power: AC 120V/60Hz
Humidity: 53.1 %
EUT: Tablet Pc
M/N: UNIVERSAL
Mode: LTE BAND 4
Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.3140	27.88		18.52	10.30	38.18		28.82	59.86	49.86	-21.68	-21.04	P	
2	0.6300	21.63		10.28	10.32	31.95		20.60	56.00	46.00	-24.05	-25.40	P	
3	2.1940	20.54		5.37	10.30	30.84		15.67	56.00	46.00	-25.16	-30.33	P	
4	2.6740	20.27		4.57	10.47	30.74		15.04	56.00	46.00	-25.26	-30.96	P	
5	22.7220	12.26		-3.75	10.11	22.37		6.36	60.00	50.00	-37.63	-43.64	P	
6	29.9780	14.76		-1.62	10.12	24.88		8.50	60.00	50.00	-35.12	-41.50	P	

LINE CONDUCTED EMISSION - N



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Tablet Pc
M/N: UNIVERSAL
Mode: LTE BAND 4
Note:

Phase: *N*
Power: AC 120V/60Hz

Temperature: 22.5
Humidity: 53.1 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2700	25.93		11.60	10.28	36.21		21.88	61.12	51.12	-24.91	-29.24	P	
2	0.6740	26.35		10.49	10.34	36.69		20.83	56.00	46.00	-19.31	-25.17	P	
3	1.2300	22.86		7.65	10.37	33.23		18.02	56.00	46.00	-22.77	-27.98	P	
4	2.6500	25.30		7.27	10.47	35.77		17.74	56.00	46.00	-20.23	-28.26	P	
5	5.4779	14.55		-3.98	10.25	24.80		6.27	60.00	50.00	-35.20	-43.73	P	
6	22.9860	15.44		-1.05	10.11	25.55		9.06	60.00	50.00	-34.45	-40.94	P	

9. FREQUENCY STABILITY

9.1 MEASUREMENT METHOD

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1 , Measure the carrier frequency at room temperature.

2 , Subject the EUT to overnight soak at -10℃.

, With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on channel 20175 for LTE band 4 measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

3 , Repeat the above measurements at 10℃ increments from -10℃ to +50℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

4 , Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.

5 , Subject the EUT to overnight soak at +50℃.

6 , With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

7 , Repeat the above measurements at 10℃ increments from +50℃ to -10℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

8 , At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

9.2 PROVISIONS APPLICABLE

9.2.1 For Hand carried battery powered equipment

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-C-2004. The frequency stability of the transmitter is measured by:

a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24 and Part 27, the frequency stability shall be sufficient to nsure that the fundamental emission stays within the authorized frequency block.

9.2.2 For equipment powered by primary supply voltage

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

9.3 MEASUREMENT RESULT (WORST)

LTE Band 4 (Part 27)

Middle Channel, f_O = 1732.5 MHz				
Temperature (℃)	**Power Supplied**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-10	3.7	0.20	0.000116	2.5
0		0.62	0.000355	2.5
10		0.82	0.000471	2.5
20		0.63	0.000363	2.5
30		0.73	0.000421	2.5
40		-1.13	-0.000652	2.5
50		-0.90	-0.000520	2.5
55		0.44	0.000256	2.5
25	4.2	-1.49	-0.000859	2.5
	3.5	-1.47	-0.000850	2.5

Note: The EUT doesn’t work below -10℃

LTE Band 7 (Part 27)

Middle Channel, fo = 2535 MHz				
Temperature (℃)	**Power Supplied**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-10	3.7	2.62	0.001033	2.5
0		2.17	0.000858	2.5
10		4.26	0.001682	2.5
20		2.68	0.001055	2.5
30		2.89	0.001140	2.5
40		2.52	0.000993	2.5
50		2.96	0.001168	2.5
55		2.70	0.001067	2.5
25	4.2	1.06	0.000418	2.5
	3.5	4.25	0.001676	2.5

Note: The EUT doesn’t work below -10℃

10. OCCUPIED BANDWIDTH

10.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

10.2 PROVISIONS APPLICABLE

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

10.3 MEASUREMENT RESULT

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

LTE Band 4 (Part 27)

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth(MHz)	Verdict
		Size	Offset		
QPSK	LCH	6	0	1.2098	PASS
	MCH	6	0	1.2187	PASS
	HCH	6	0	1.2127	PASS
16QAM	LCH	6	0	1.2169	PASS
	MCH	6	0	1.2190	PASS
	HCH	6	0	1.2193	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth(MHz)	Verdict
		Size	Offset		
QPSK	LCH	15	0	2.8739	PASS
	MCH	15	0	2.8580	PASS
	HCH	15	0	2.8910	PASS
16QAM	LCH	15	0	2.8743	PASS
	MCH	15	0	2.8902	PASS
	HCH	15	0	2.8819	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth(MHz)	Verdict
		Size	Offset		
QPSK	LCH	25	0	4.8441	PASS
	MCH	25	0	4.8135	PASS
	HCH	25	0	4.8437	PASS
16QAM	LCH	25	0	4.8401	PASS
	MCH	25	0	4.8618	PASS
	HCH	25	0	4.8082	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	50	0	9.4266	PASS
	MCH	50	0	9.4826	PASS
	HCH	50	0	9.4776	PASS
16QAM	LCH	50	0	9.4756	PASS
	MCH	50	0	9.4554	PASS
	HCH	50	0	9.4955	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	75	0	13.9867	PASS
	MCH	75	0	14.1124	PASS
	HCH	75	0	14.0188	PASS
16QAM	LCH	75	0	14.0072	PASS
	MCH	75	0	14.0403	PASS
	HCH	75	0	14.0698	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	100	0	18.5675	PASS
	MCH	100	0	18.5822	PASS
	HCH	100	0	18.7497	PASS
16QAM	LCH	100	0	18.5675	PASS
	MCH	100	0	18.5621	PASS
	HCH	100	0	18.6455	PASS

LTE Band 7 (Part 27)

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	25	0	4.8268	PASS
	MCH	25	0	4.8549	PASS
	HCH	25	0	4.8790	PASS
16QAM	LCH	25	0	4.8195	PASS
	MCH	25	0	4.8740	PASS
	HCH	25	0	4.8159	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	50	0	9.4907	PASS
	MCH	50	0	9.4918	PASS
	HCH	50	0	9.4093	PASS
16QAM	LCH	50	0	9.4400	PASS
	MCH	50	0	9.4816	PASS
	HCH	50	0	9.4461	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	75	0	14.1068	PASS
	MCH	75	0	14.0911	PASS
	HCH	75	0	14.0142	PASS
16QAM	LCH	75	0	14.0695	PASS
	MCH	75	0	14.1281	PASS
	HCH	75	0	14.1068	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		Occupied Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	100	0	18.6064	PASS
	MCH	100	0	18.6757	PASS
	HCH	100	0	18.6125	PASS
16QAM	LCH	100	0	18.5666	PASS
	MCH	100	0	18.6299	PASS
	HCH	100	0	18.6618	PASS

11. EMISSION BANDWIDTH

11.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

11.2 PROVISIONS APPLICABLE

The emission bandwidth is defined as two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power

11.3 MEASUREMENT RESULT

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

LTE Band 4 (Part 27)

Channel Bandwidth: 1.4 MHz

Channel Bandwidth: 1.4 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	6	0	1.07808	PASS
	MCH	6	0	1.07498	PASS
	HCH	6	0	1.07787	PASS
16QAM	LCH	6	0	1.08124	PASS
	MCH	6	0	1.07935	PASS
	HCH	6	0	1.07829	PASS

Channel Bandwidth: 3 MHz

Channel Bandwidth: 3 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	15	0	2.68508	PASS
	MCH	15	0	2.68442	PASS
	HCH	15	0	2.68118	PASS
16QAM	LCH	15	0	2.68349	PASS
	MCH	15	0	2.68479	PASS
	HCH	15	0	2.69132	PASS

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	25	0	4.48300	PASS
	MCH	25	0	4.48294	PASS
	HCH	25	0	4.48231	PASS
16QAM	LCH	25	0	4.48703	PASS
	MCH	25	0	4.47916	PASS
	HCH	25	0	4.48091	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	50	0	8.95668	PASS
	MCH	50	0	8.93430	PASS
	HCH	50	0	8.92511	PASS
16QAM	LCH	50	0	8.94527	PASS
	MCH	50	0	8.93094	PASS
	HCH	50	0	8.94684	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	75	0	13.41310	PASS
	MCH	75	0	13.39033	PASS
	HCH	75	0	13.41549	PASS
16QAM	LCH	75	0	13.41003	PASS
	MCH	75	0	13.39832	PASS
	HCH	75	0	13.42106	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	100	0	17.82847	PASS
	MCH	100	0	17.83816	PASS
	HCH	100	0	17.89799	PASS
16QAM	LCH	100	0	17.82847	PASS
	MCH	100	0	17.83465	PASS
	HCH	100	0	17.89421	PASS

LTE Band 7 (Part 27)

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth(MHz)	Verdict
		Size	Offset		
QPSK	LCH	25	0	4.48616	PASS
	MCH	25	0	4.48033	PASS
	HCH	25	0	4.48880	PASS
16QAM	LCH	25	0	4.48337	PASS
	MCH	25	0	4.49168	PASS
	HCH	25	0	4.48645	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	50	0	8.93759	PASS
	MCH	50	0	8.95922	PASS
	HCH	50	0	8.93102	PASS
16QAM	LCH	50	0	8.93732	PASS
	MCH	50	0	8.93888	PASS
	HCH	50	0	8.94148	PASS

Channel Bandwidth: 15 MHz

Channel Bandwidth: 15 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	75	0	13.41551	PASS
	MCH	75	0	13.41654	PASS
	HCH	75	0	13.39514	PASS
16QAM	LCH	75	0	13.41397	PASS
	MCH	75	0	13.42954	PASS
	HCH	75	0	13.40292	PASS

Channel Bandwidth: 20 MHz

Channel Bandwidth: 20 MHz					
Modulation	Channel	RB Configuration		26dB Bandwidth (MHz)	Verdict
		Size	Offset		
QPSK	LCH	100	0	17.86085	PASS
	MCH	100	0	17.90201	PASS
	HCH	100	0	17.85507	PASS
16QAM	LCH	100	0	17.86879	PASS
	MCH	100	0	17.91545	PASS
	HCH	100	0	17.83535	PASS

12. BAND EDGE

12.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

12.2 PROVISIONS APPLICABLE

As Specified in FCC rules of §2.1051 §24.238(a) §27.53(e) §27.53(g)
KDB 971168 v02r01 – Section 6.0

12.3 MEASUREMENT RESULT

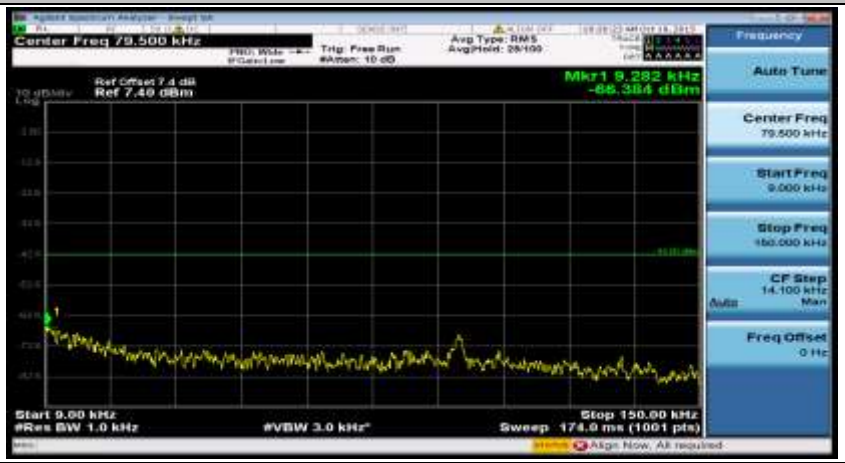
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

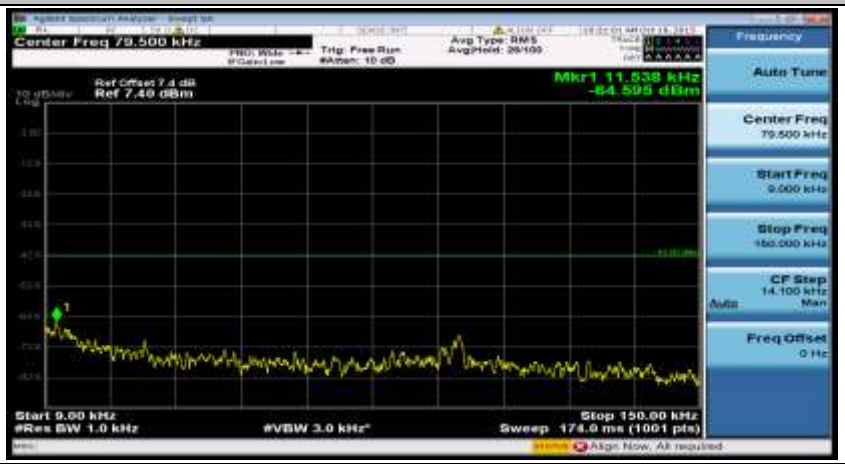
The minimum permissible attenuation level of any spurious emission is 43 + log10(P[Watts]), where P is the transmitter power in Watts.

Please refers to Appendix III for compliance test plots for band edges

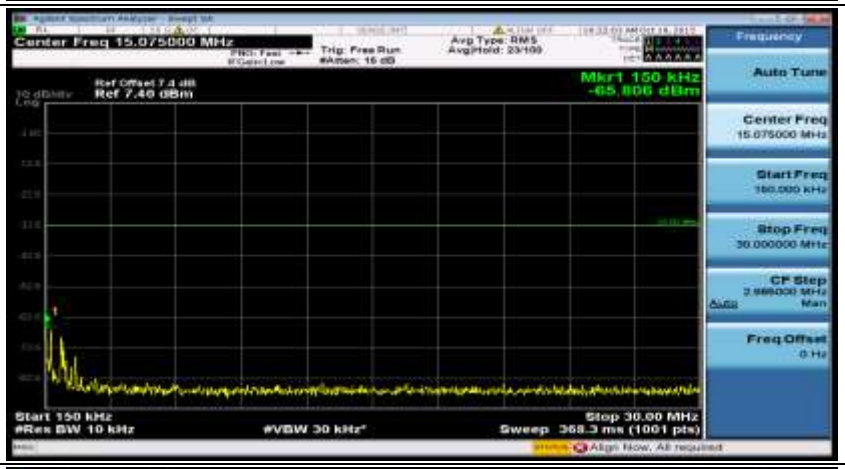
APPENDIX A
TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

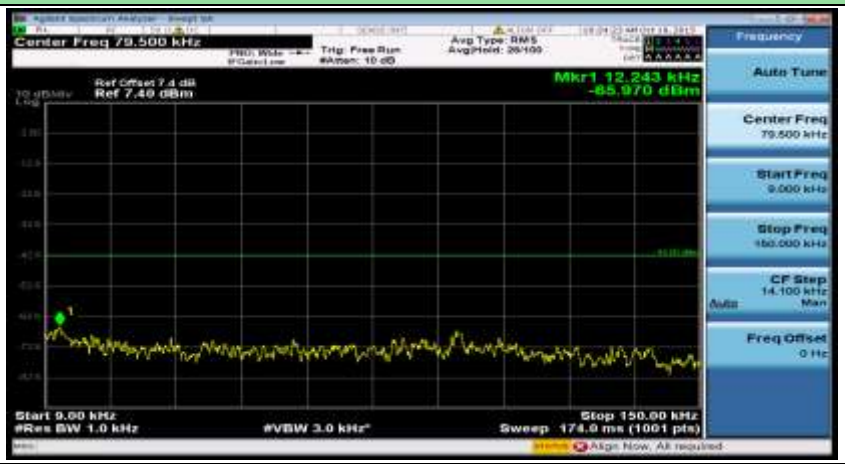
CONDUCTED EMISSION IN LTE BAND 4

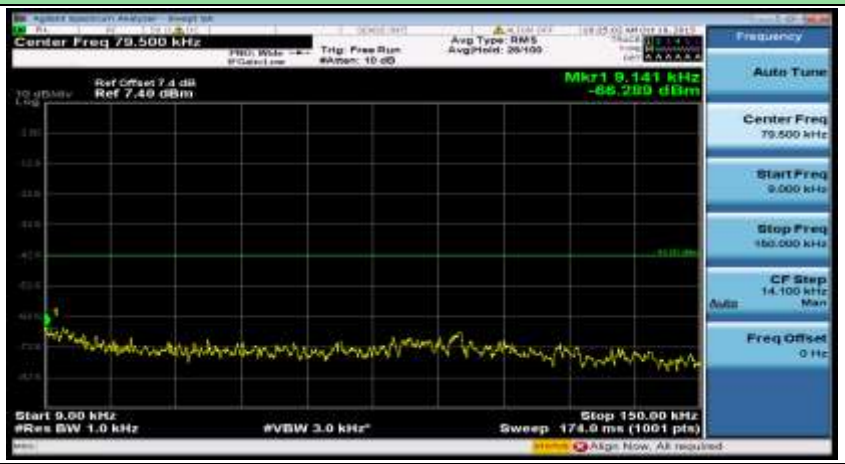
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12


(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24

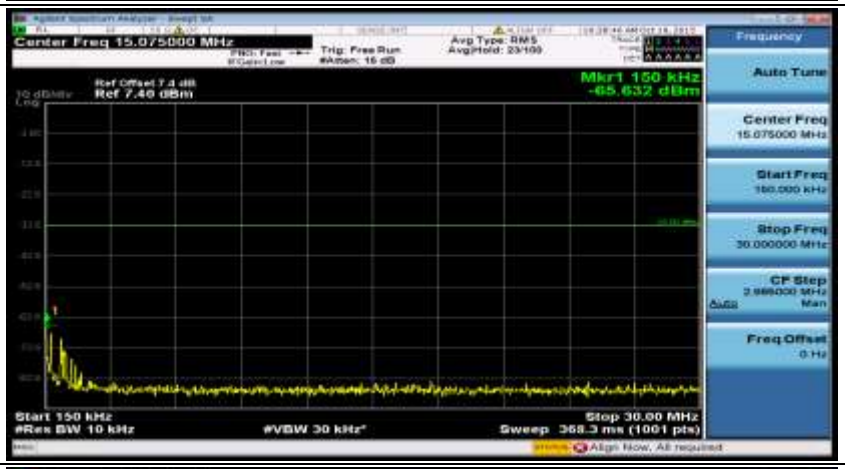


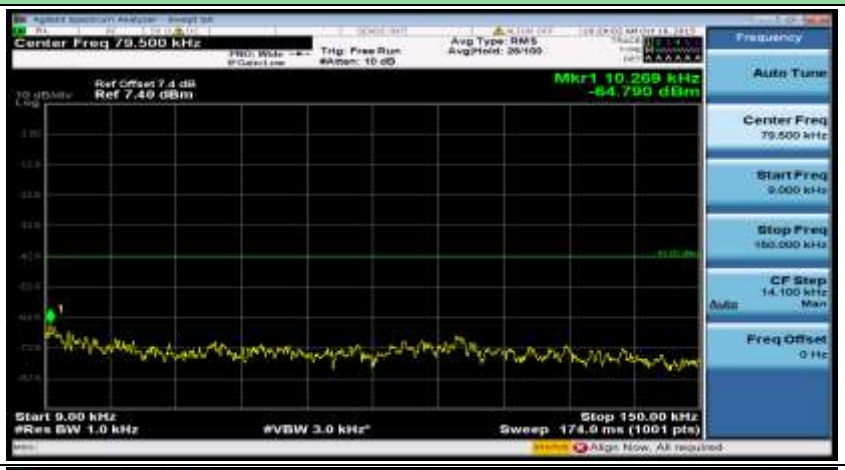
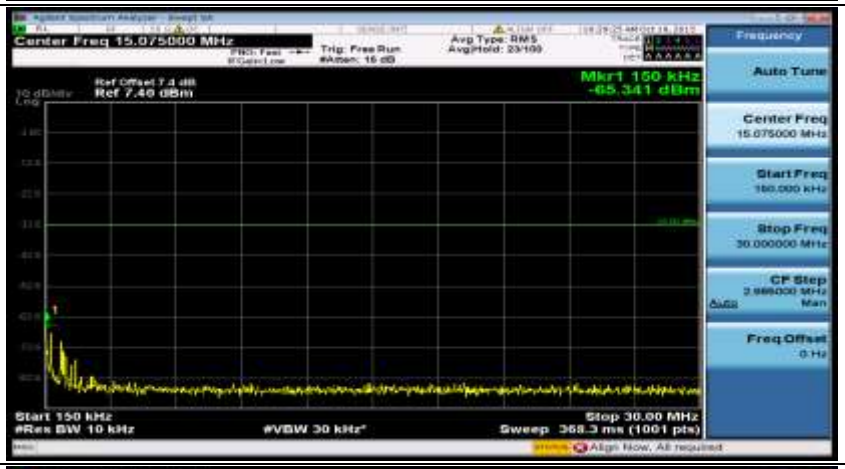

(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0


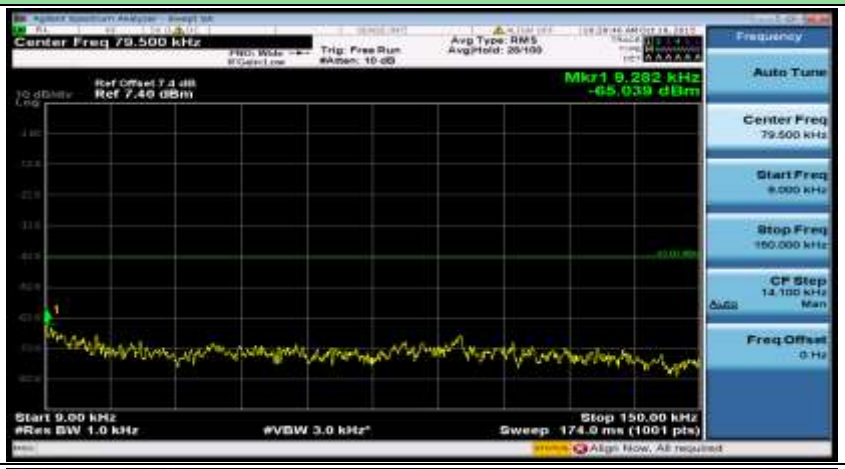
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12


(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24

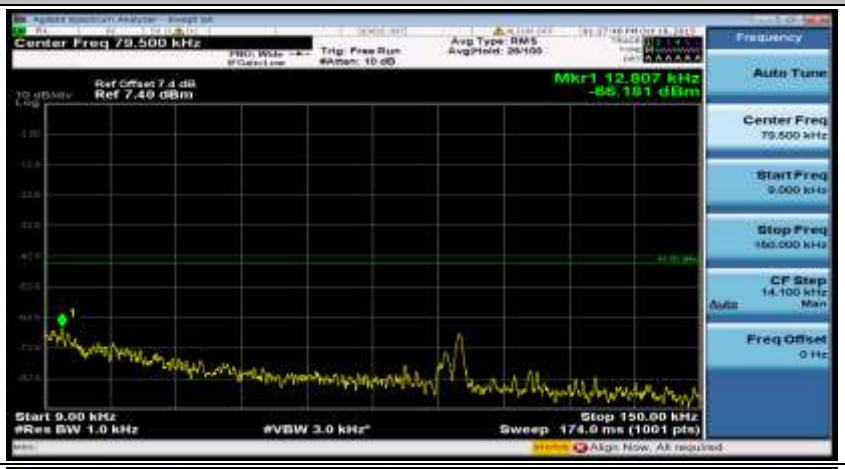

(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0

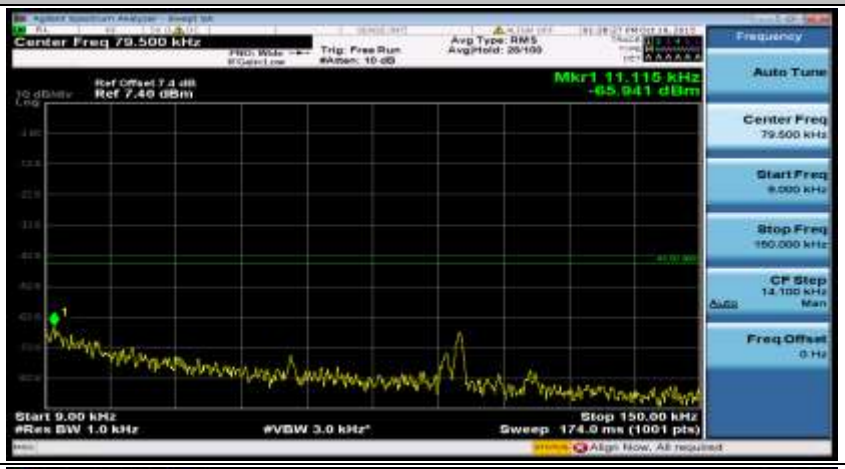
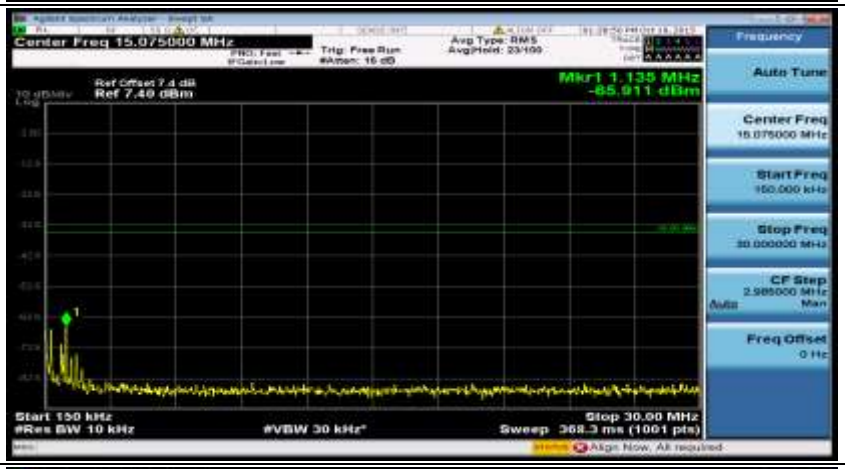


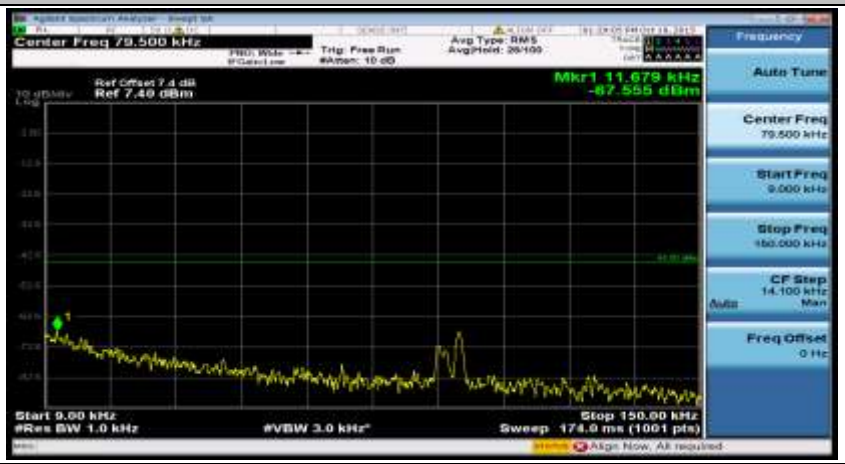
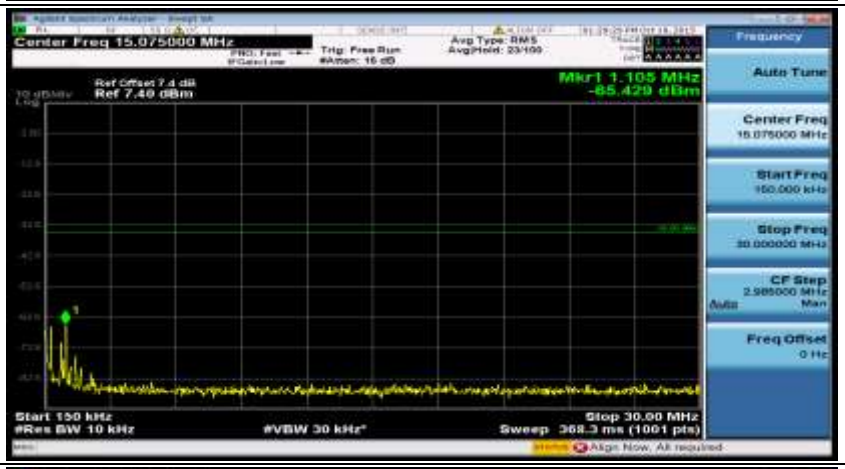

(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



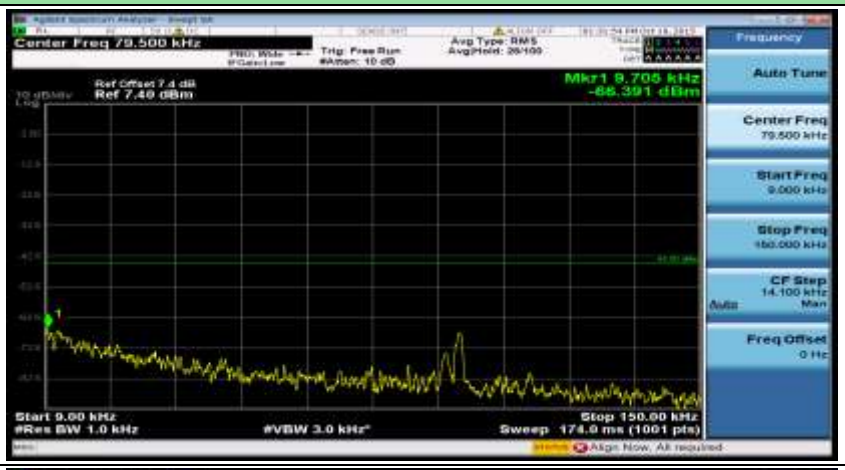

(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24


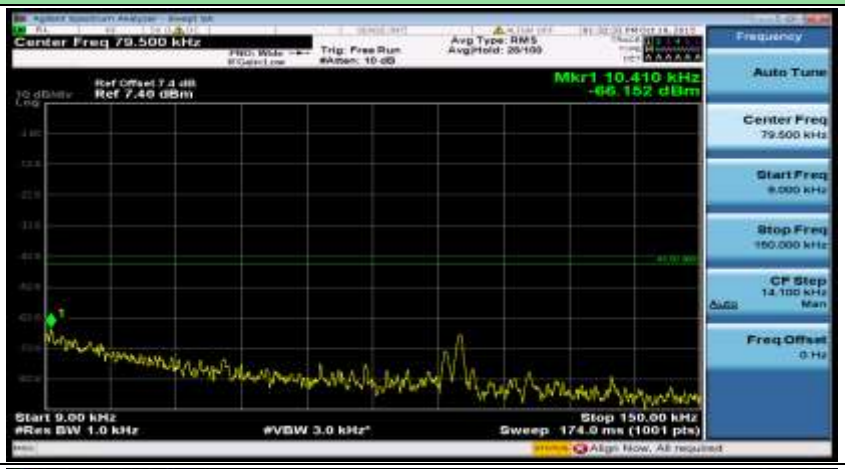
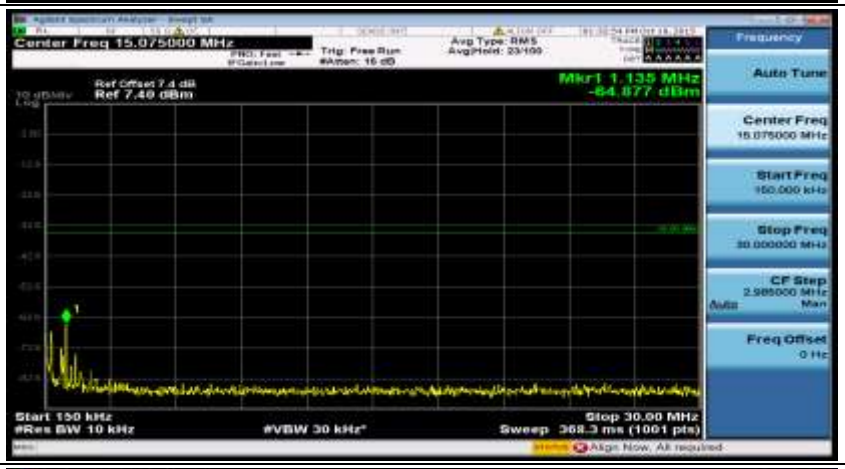
CONDUCTED EMISSION IN LTE BAND 7

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#0


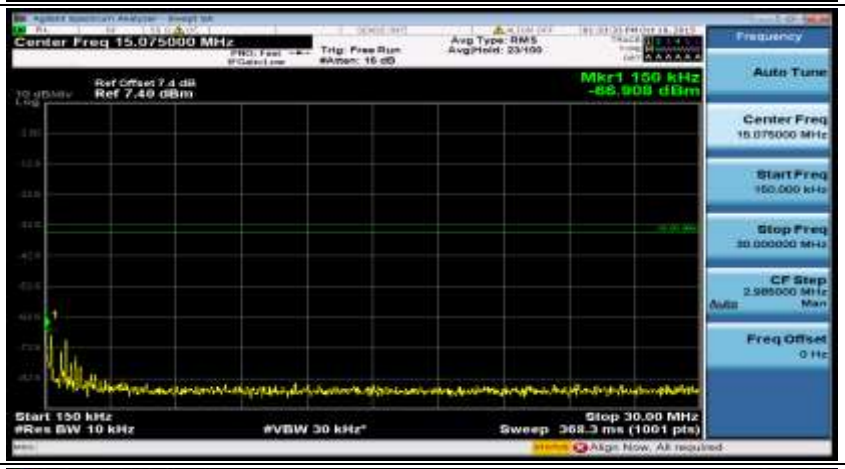
(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#12



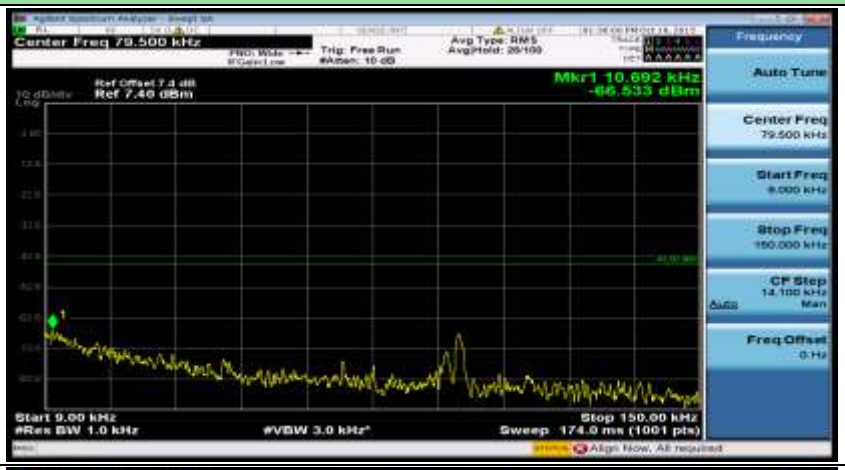
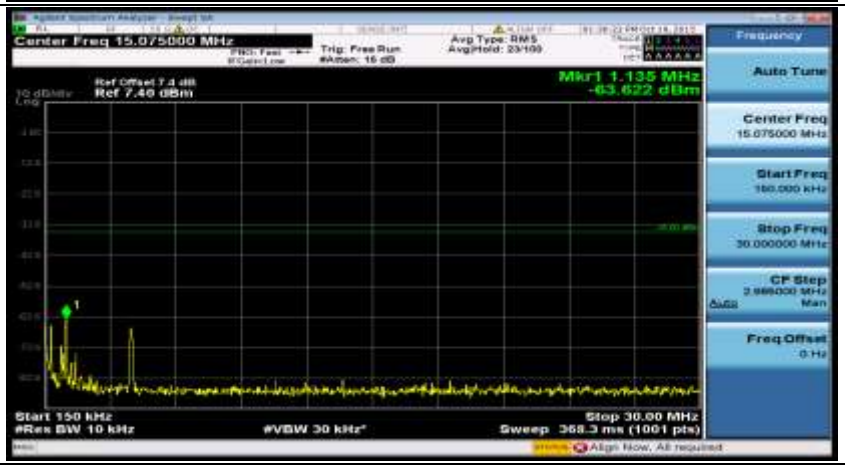

(Channel Bandwidth: 5 MHz)_LCH_QPSK_1RB#24



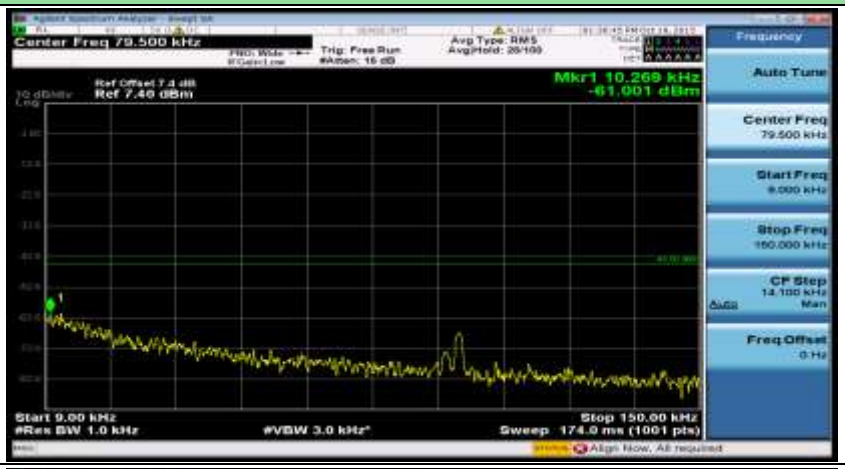
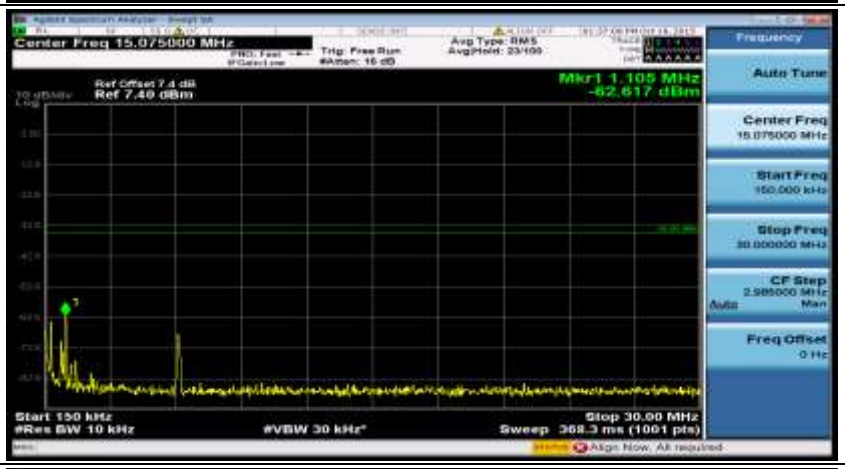

(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#0


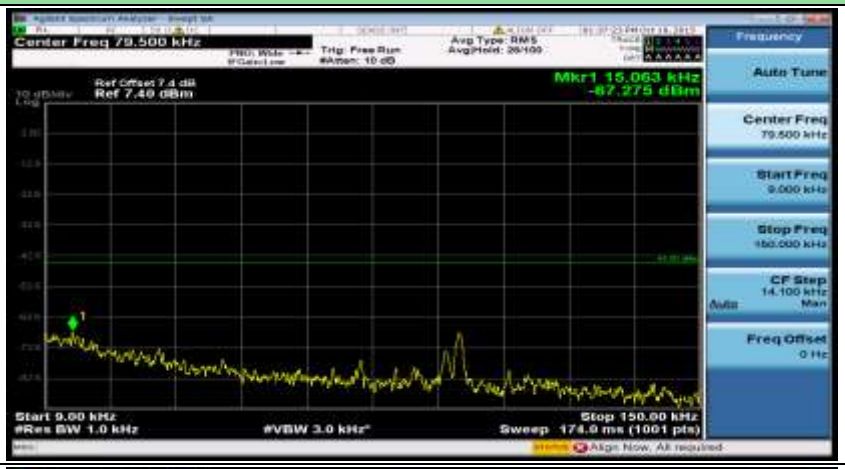
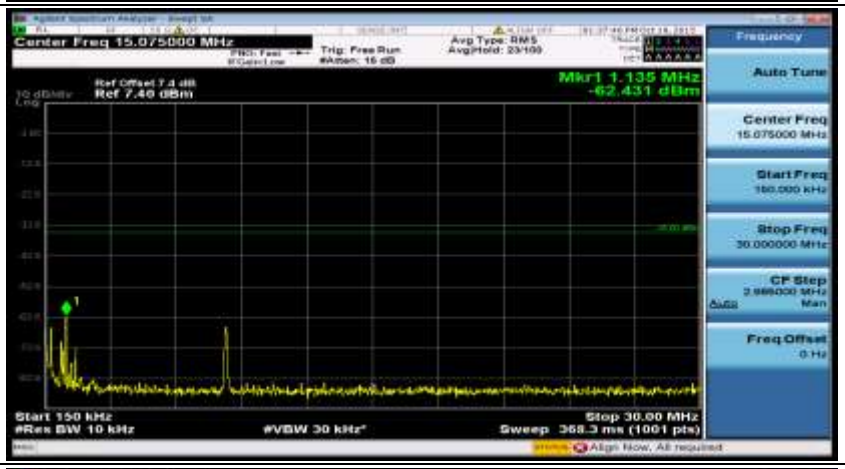
(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#12




(Channel Bandwidth: 5 MHz)_MCH_QPSK_1RB#24




(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0




(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#12



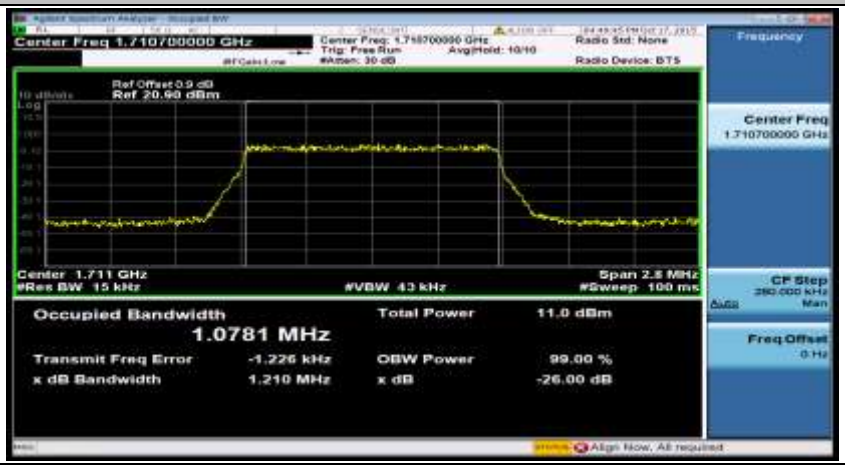

(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#24




APPENDIX B
TEST PLOTS FOR OCCUPIED BANDWIDTH (99%) EMISSION BANDWIDTH (-26dBC)

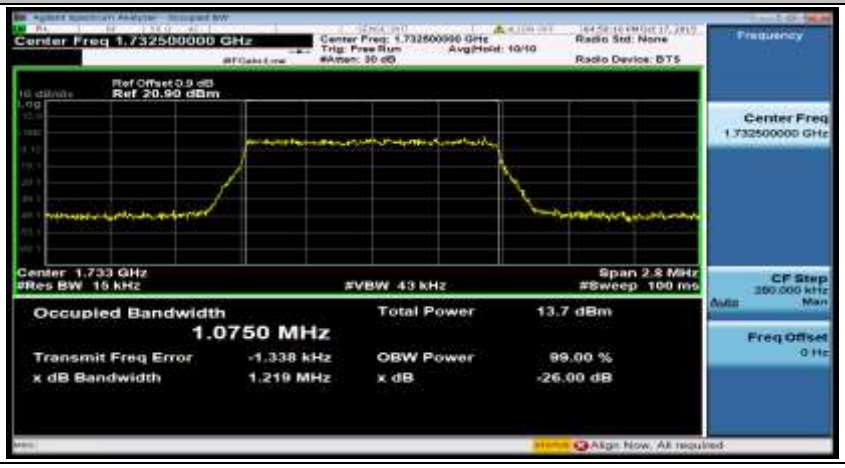
LTE Band 4

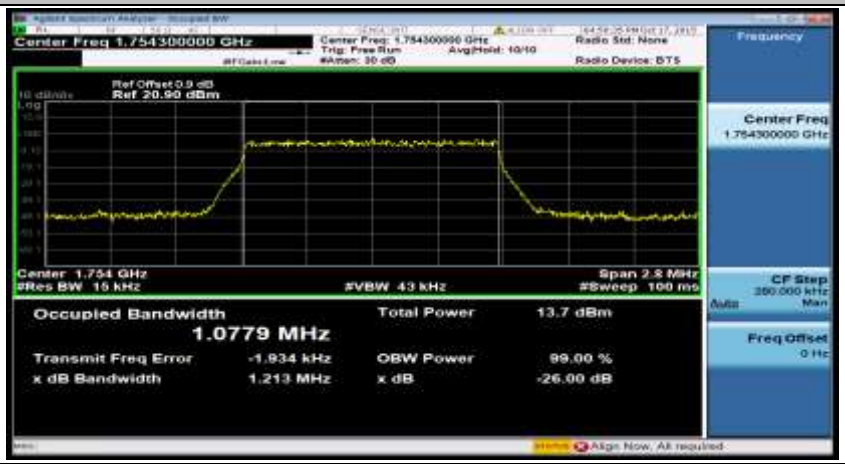
Channel Bandwidth: 1.4 MHz

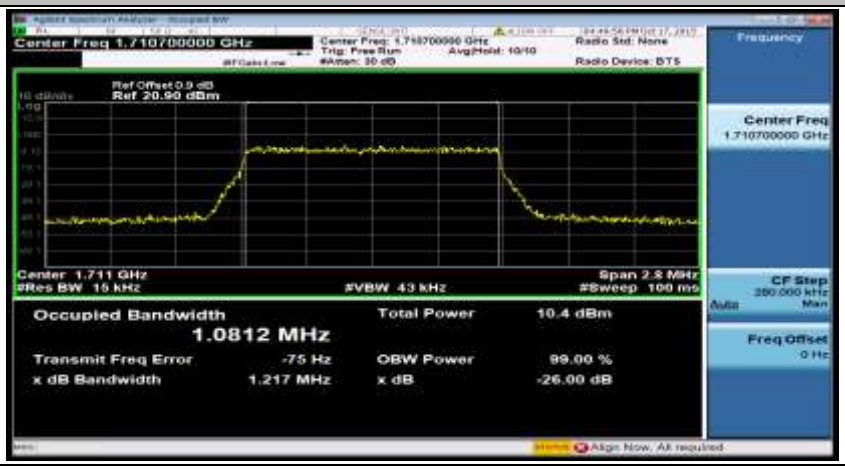
(Channel Bandwidth: 1.4 MHz)_LCH_QPSK_6RB#0

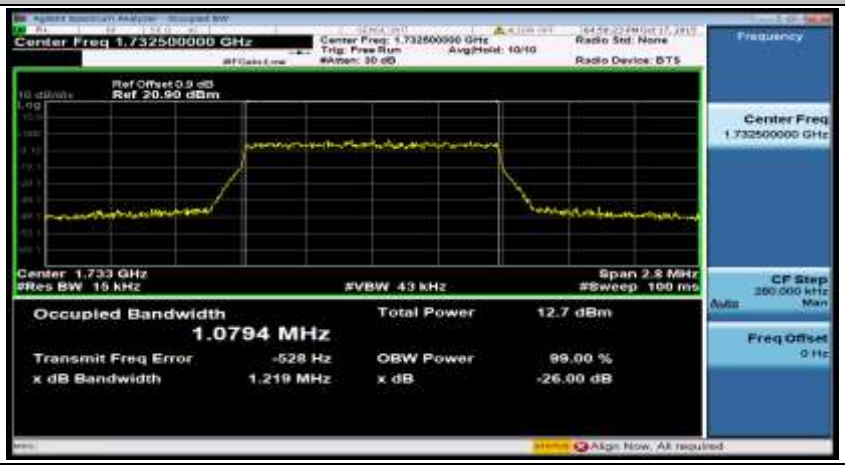


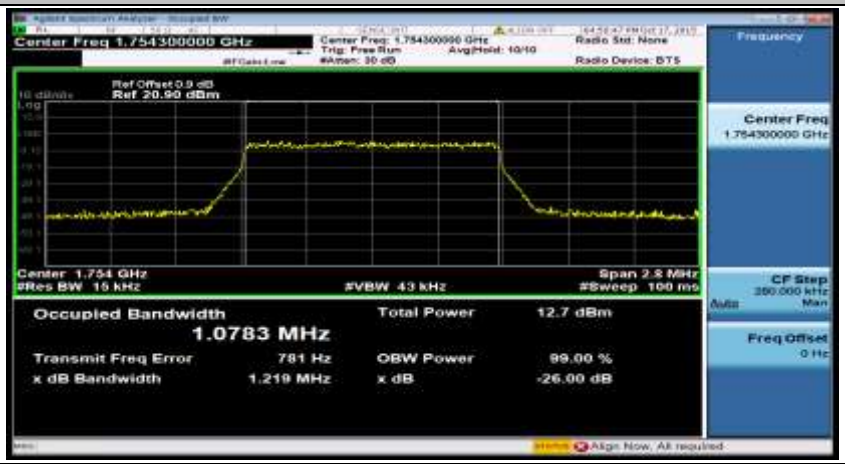
(Channel Bandwidth: 1.4 MHz)_MCH_QPSK_6RB#0



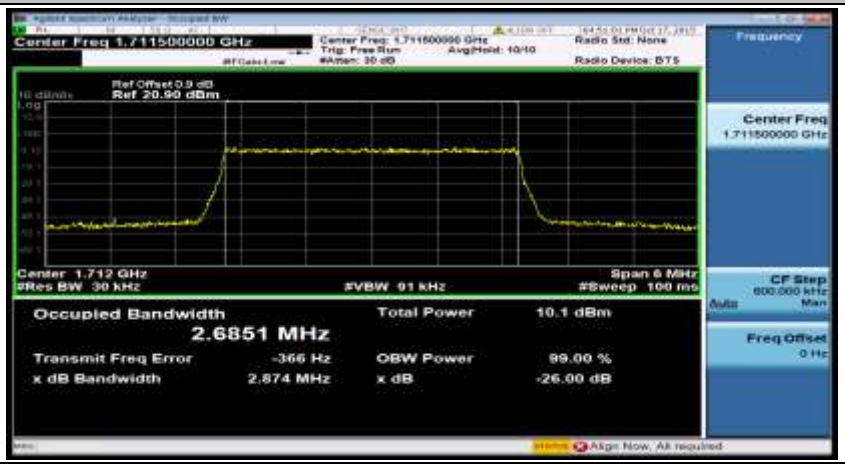
(Channel Bandwidth: 1.4 MHz)_HCH_QPSK_6RB#0


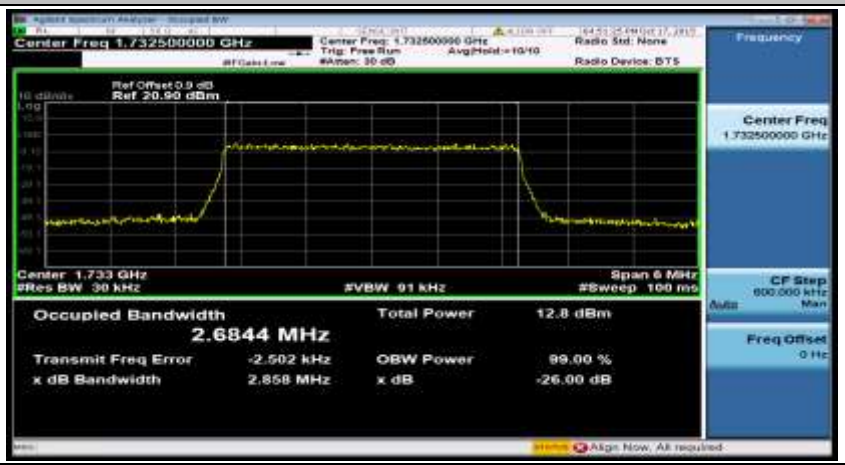
(Channel Bandwidth: 1.4 MHz)_LCH_16QAM_6RB#0


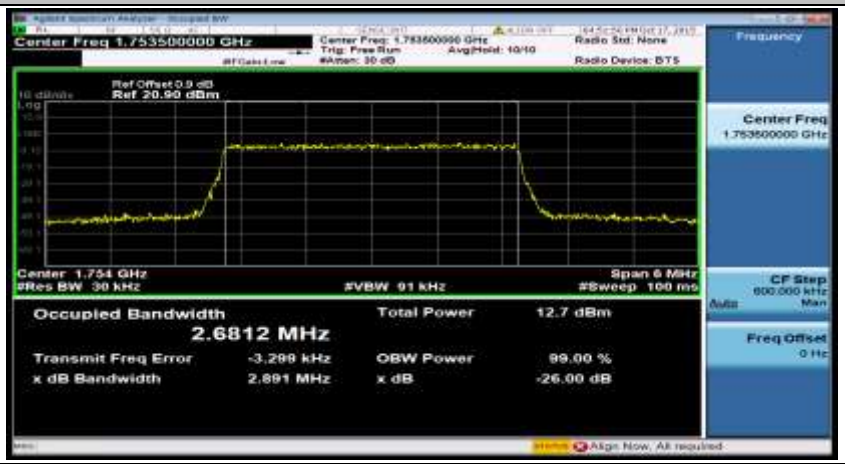
(Channel Bandwidth: 1.4 MHz)_MCH_16QAM_6RB#0


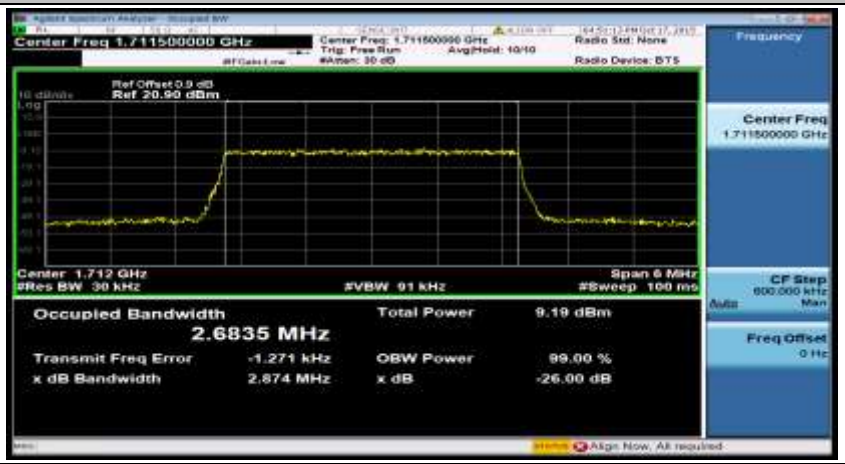
(Channel Bandwidth: 1.4 MHz)_HCH_16QAM_6RB#0


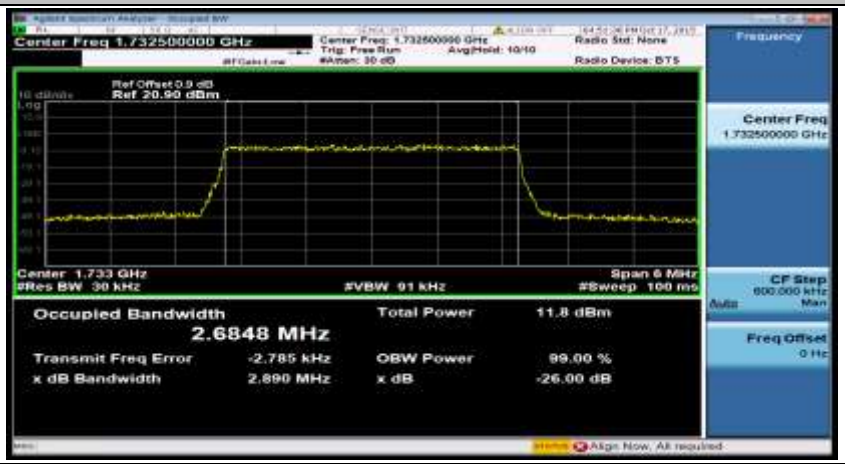
Channel Bandwidth: 3 MHz

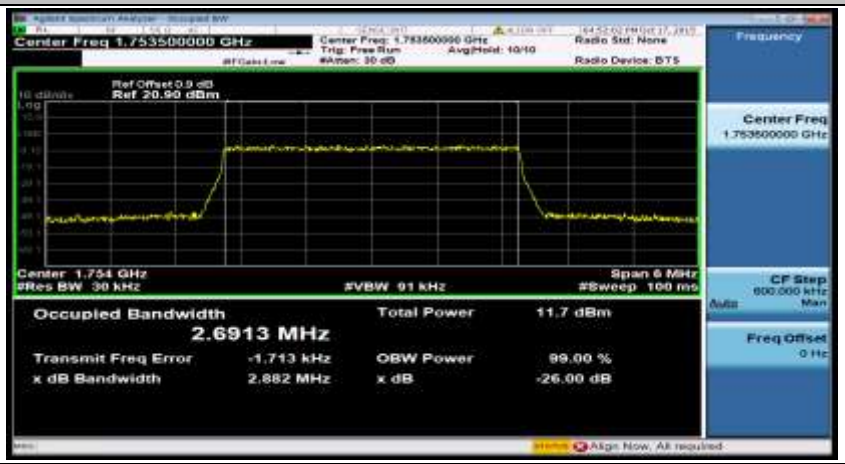
(Channel Bandwidth: 3 MHz)_LCH_QPSK_15RB#0


(Channel Bandwidth: 3 MHz)_MCH_QPSK_15RB#0


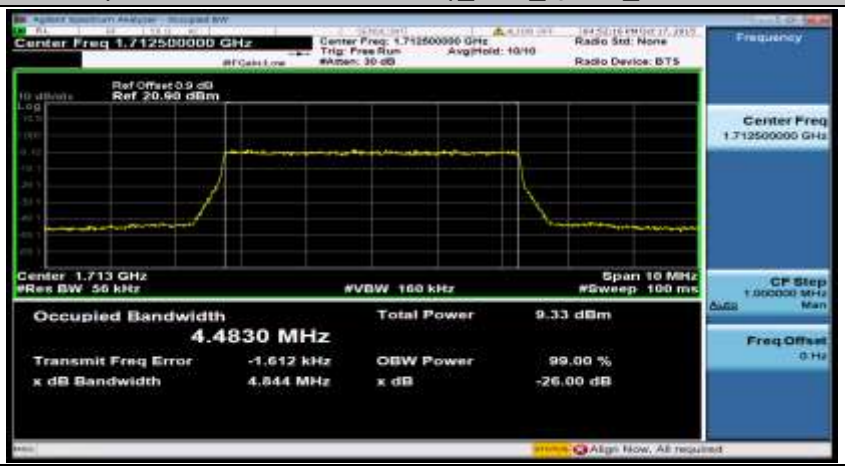
(Channel Bandwidth: 3 MHz)_HCH_QPSK_15RB#0


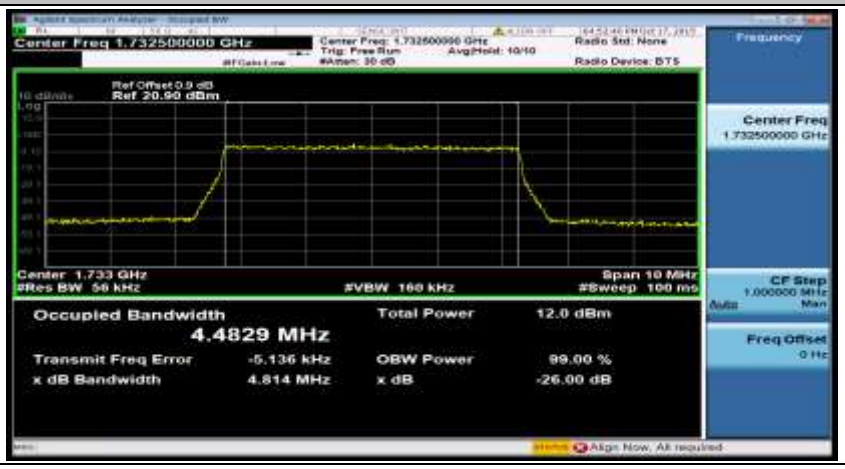
(Channel Bandwidth: 3 MHz)_LCH_16QAM_15RB#0


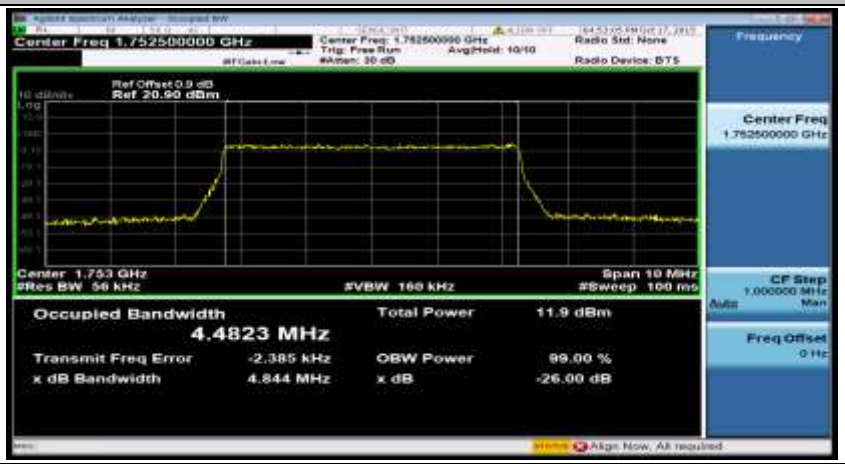
(Channel Bandwidth: 3 MHz)_MCH_16QAM_15RB#0


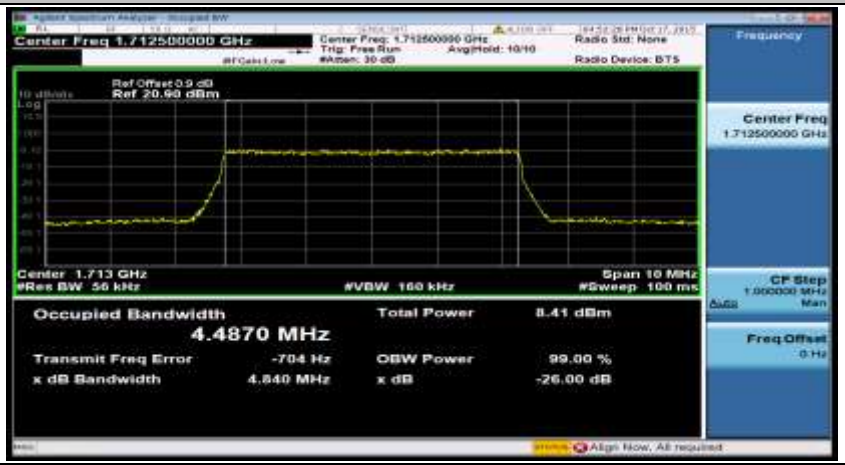
(Channel Bandwidth: 3 MHz)_HCH_16QAM_15RB#0


Channel Bandwidth: 5 MHz

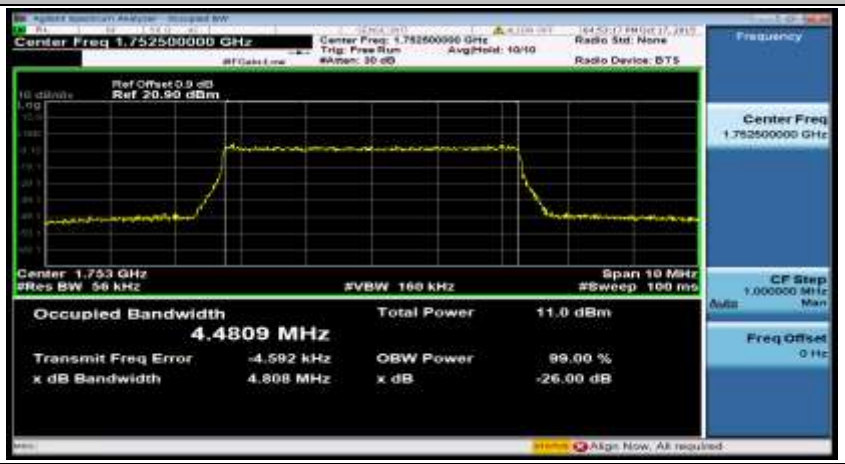
(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0


(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0


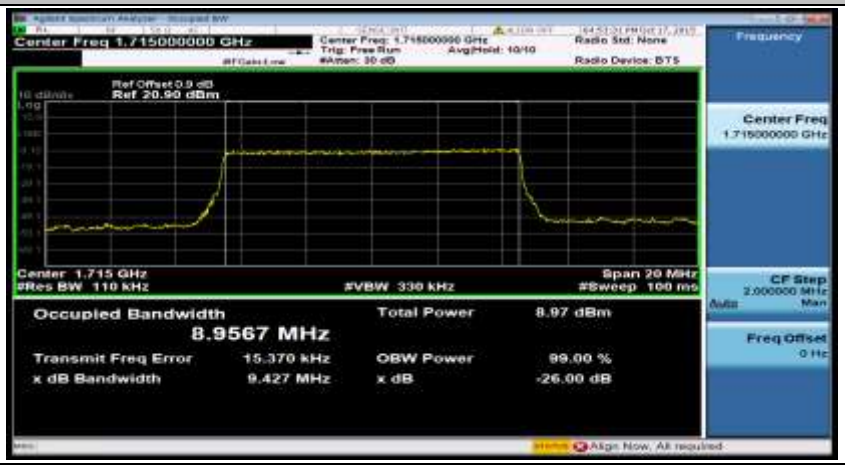
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0


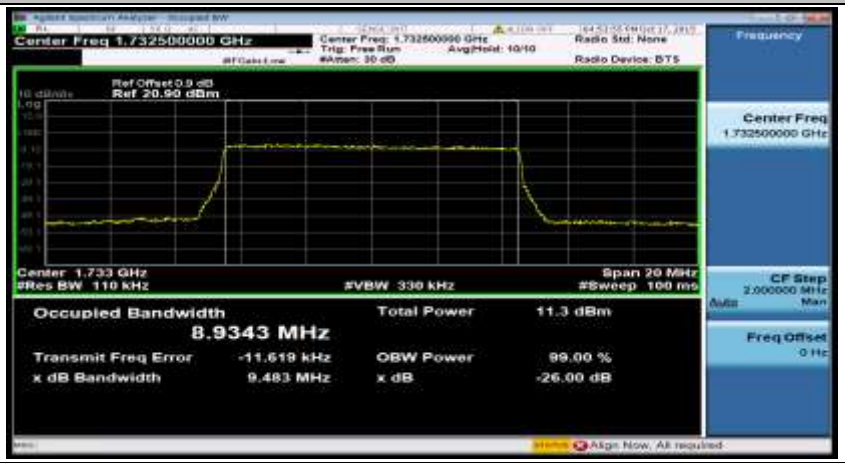
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0


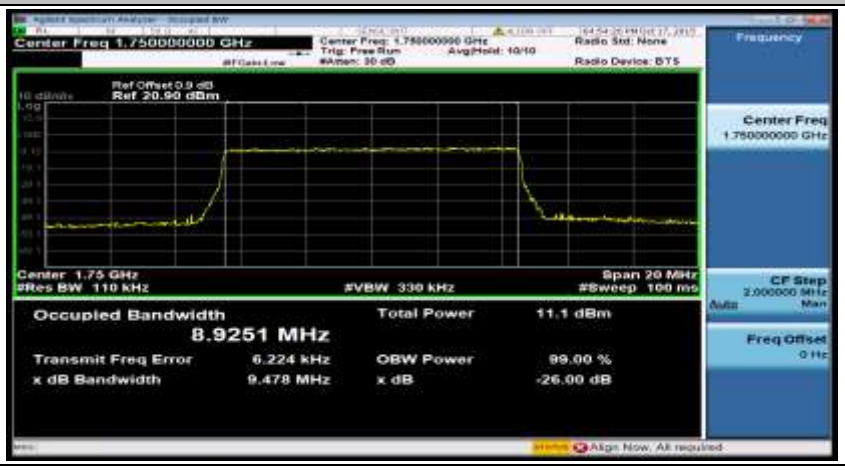
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0

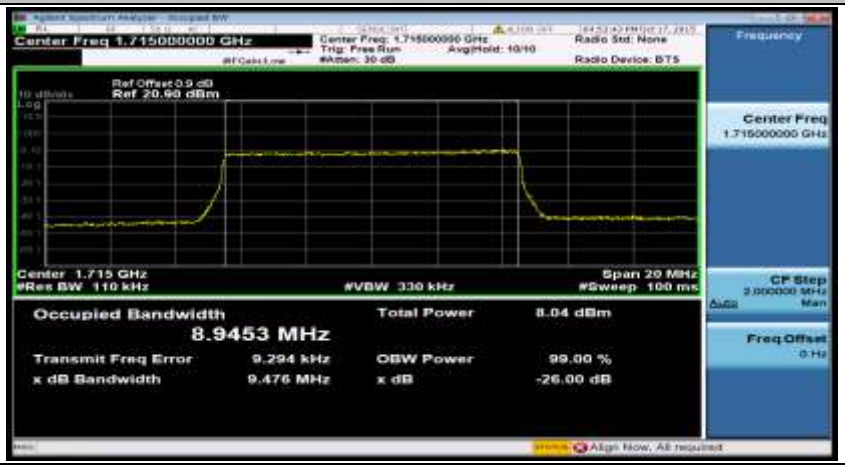

(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0


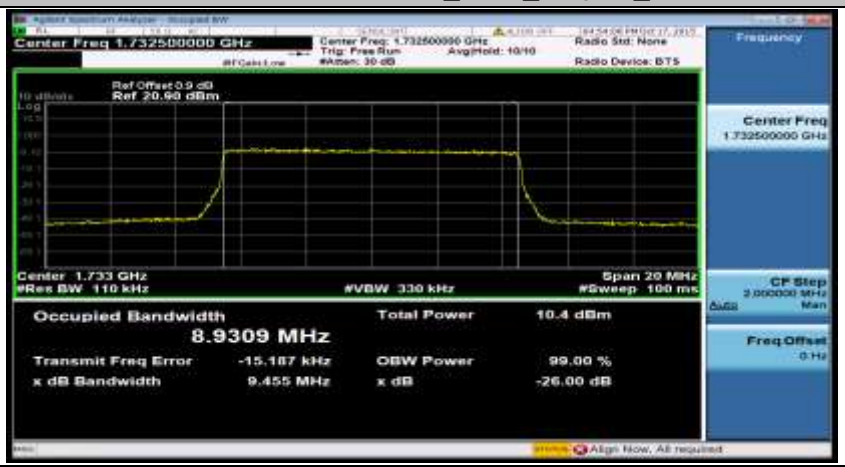
Channel Bandwidth: 10 MHz

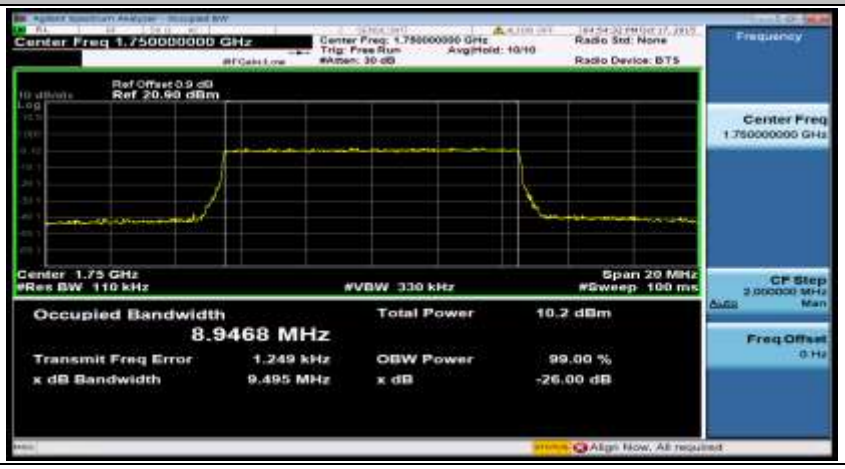
Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0


Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0


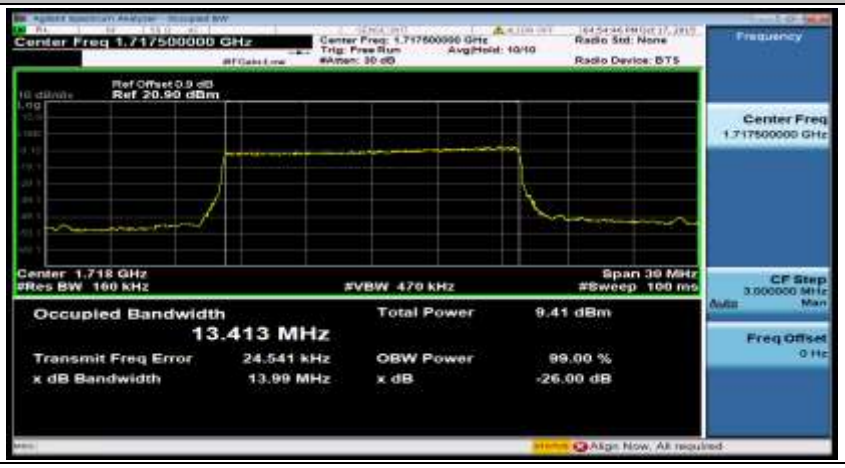
Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0


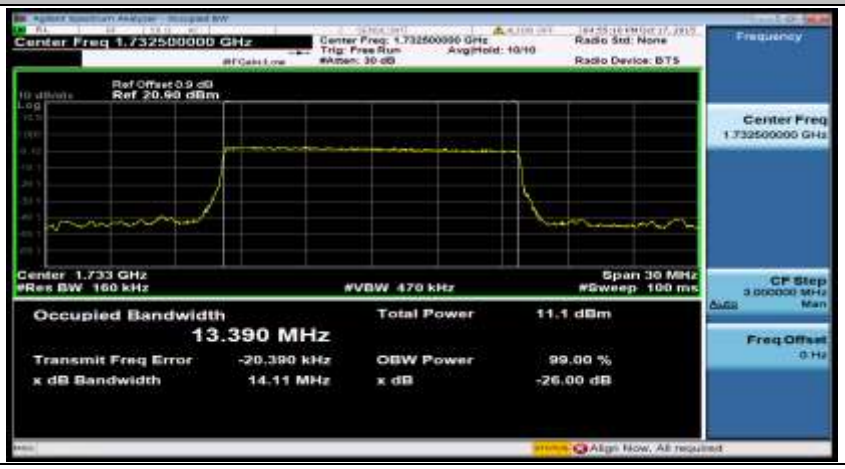
Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0


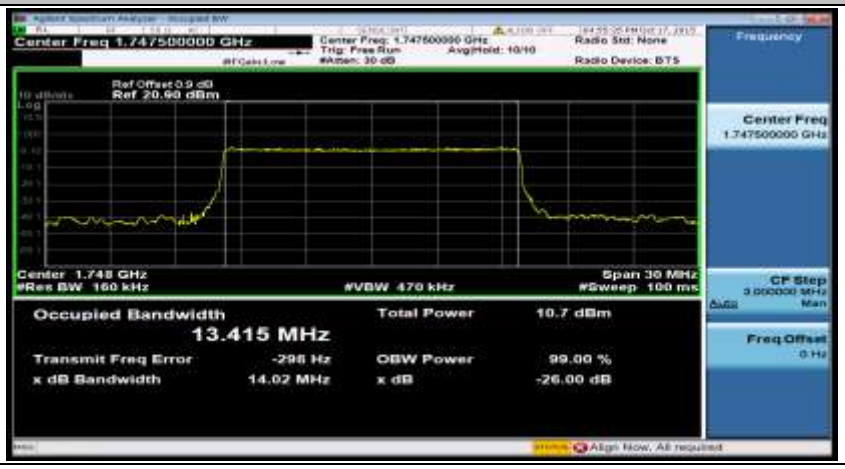
Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0


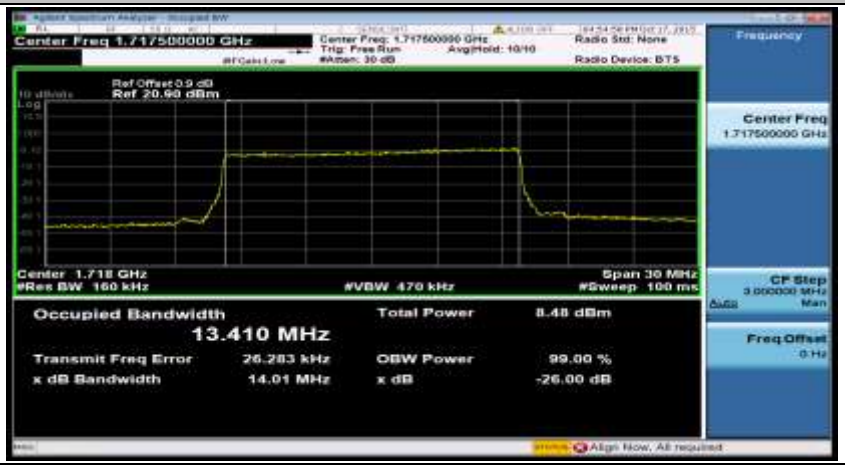
Channel Bandwidth: 10 MHz_HCH_16QAM_50RB#0


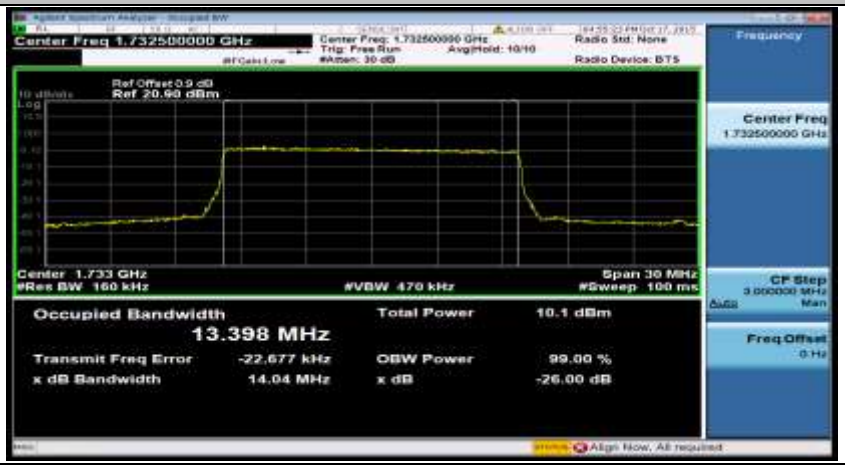
Channel Bandwidth: 15 MHz

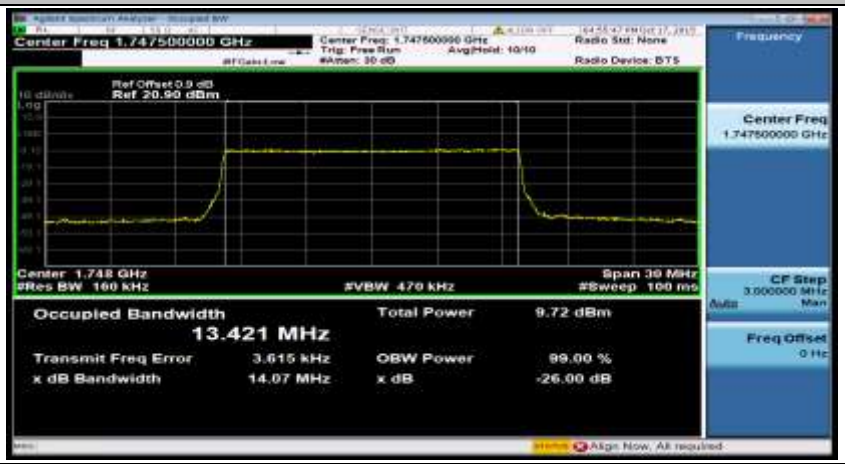
(Channel Bandwidth:15 MHz)_LCH_QPSK_75RB#0


(Channel Bandwidth:15 MHz)_MCH_QPSK_75RB#0


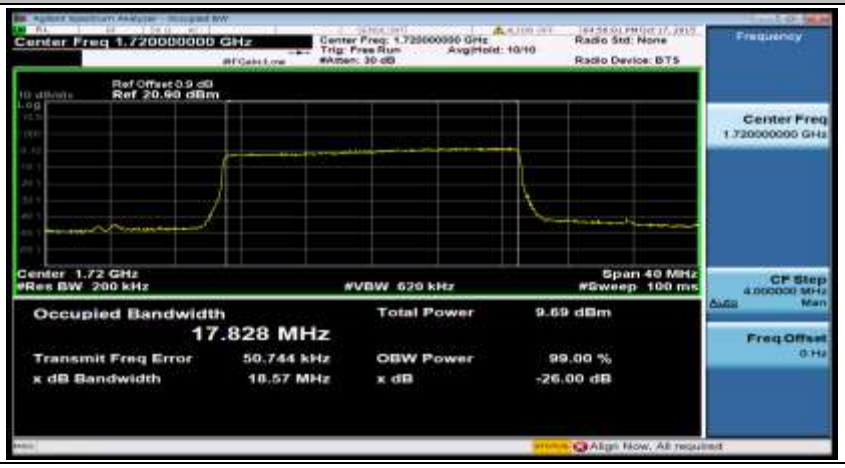
(Channel Bandwidth:15 MHz)_HCH_QPSK_75RB#0


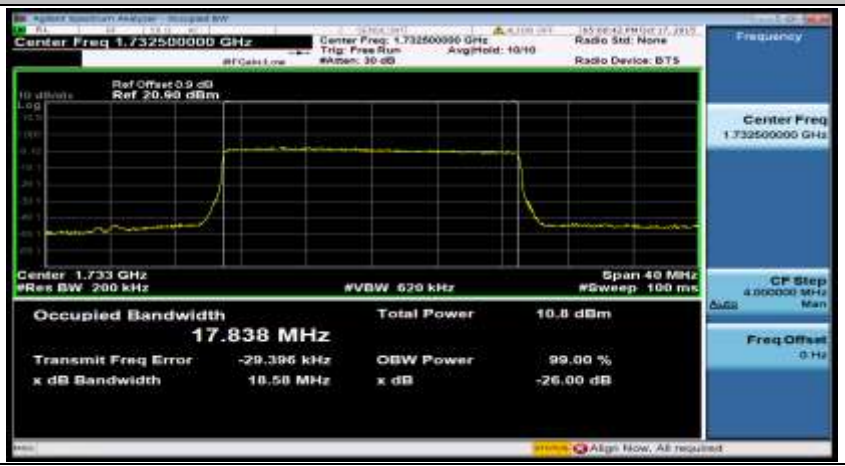
(Channel Bandwidth:15 MHz)_LCH_16QAM_75RB#0


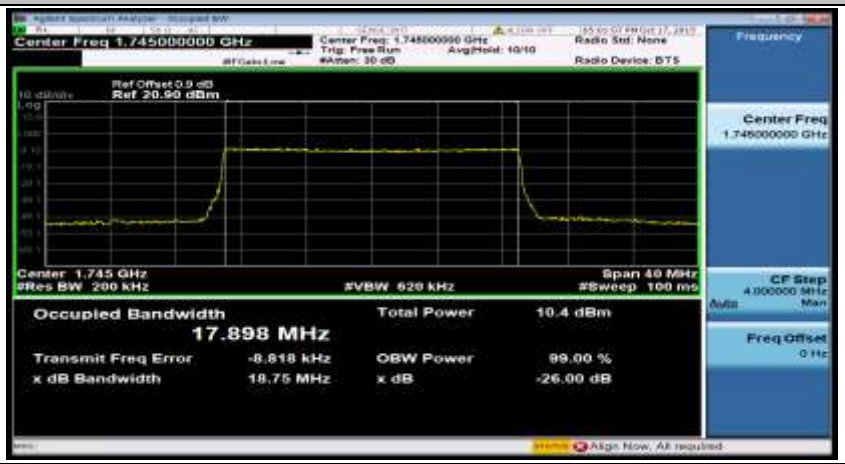
(Channel Bandwidth:15 MHz)_MCH_16QAM_75RB#0


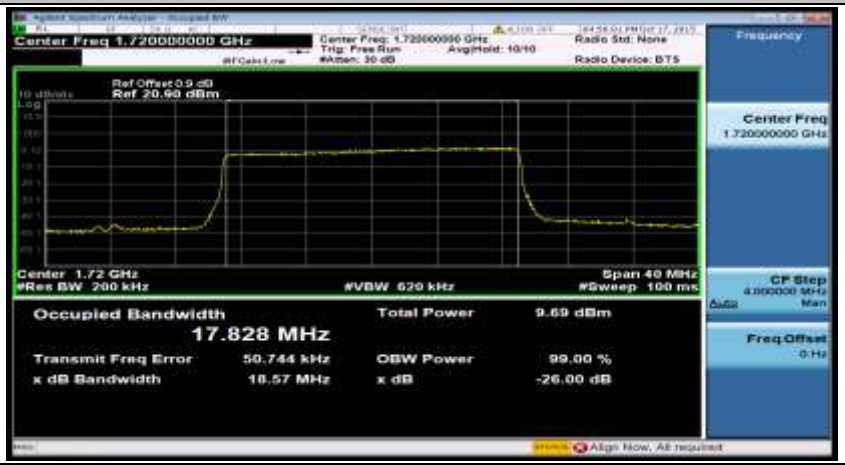
(Channel Bandwidth:15 MHz)_HCH_16QAM_75RB#0


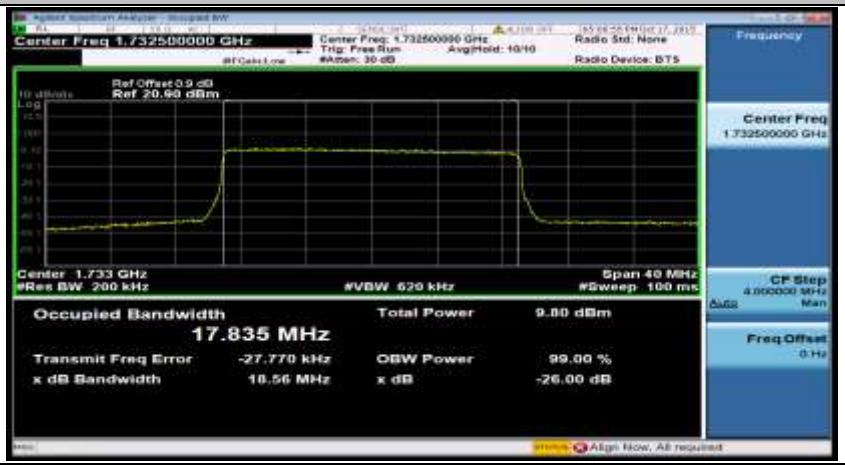
Channel Bandwidth: 20 MHz

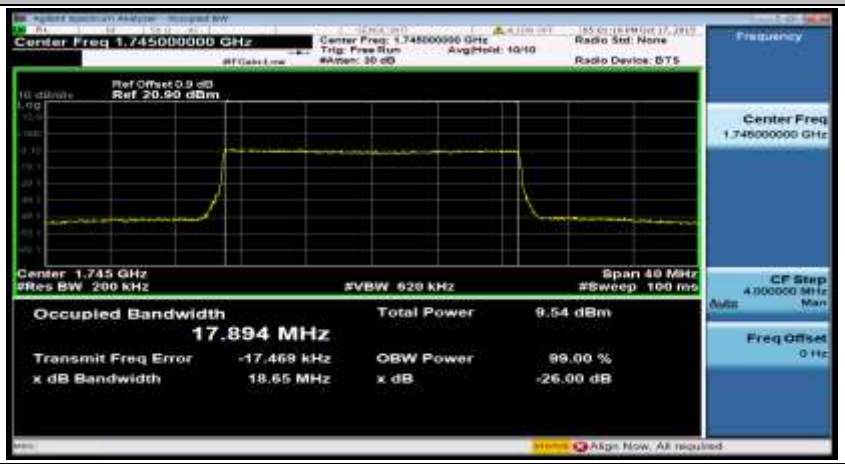
(Channel Bandwidth:20 MHz)_LCH_QPSK_100RB#0


(Channel Bandwidth:20 MHz)_MCH_QPSK_100RB#0


(Channel Bandwidth:20 MHz)_HCH_QPSK_100RB#0


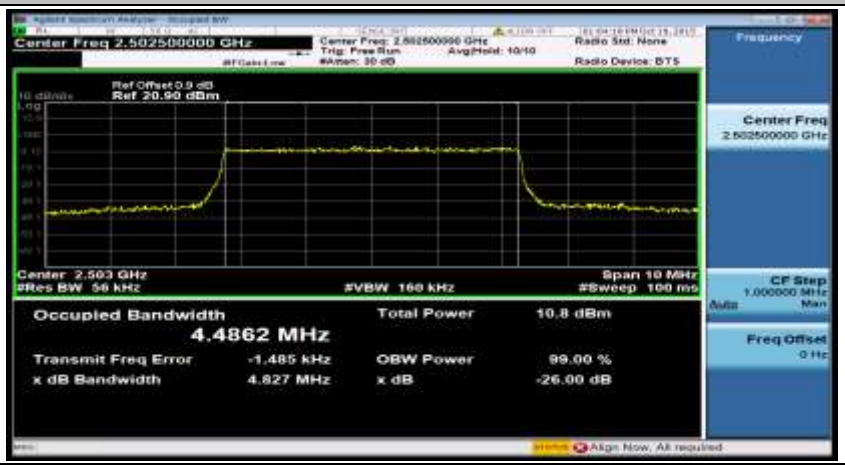
(Channel Bandwidth:20 MHz)_LCH_16QAM_100RB#0


(Channel Bandwidth:20 MHz)_MCH_16QAM_100RB#0


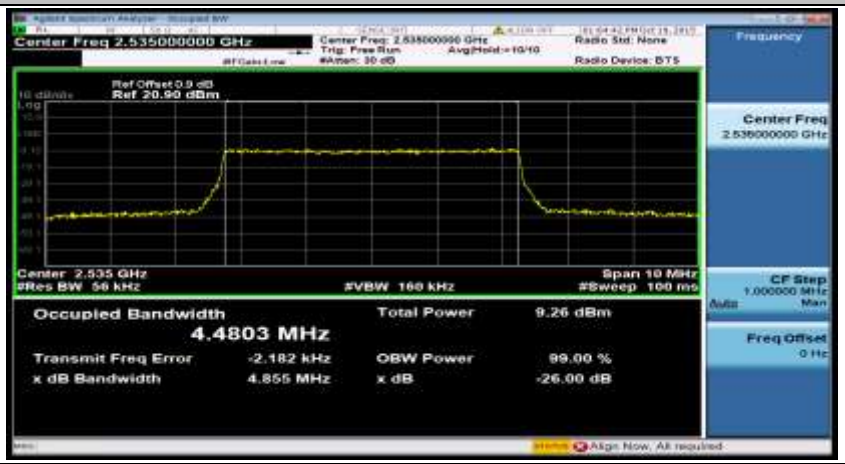
(Channel Bandwidth:20 MHz)_HCH_16QAM_100RB#0


LTE BAND 7

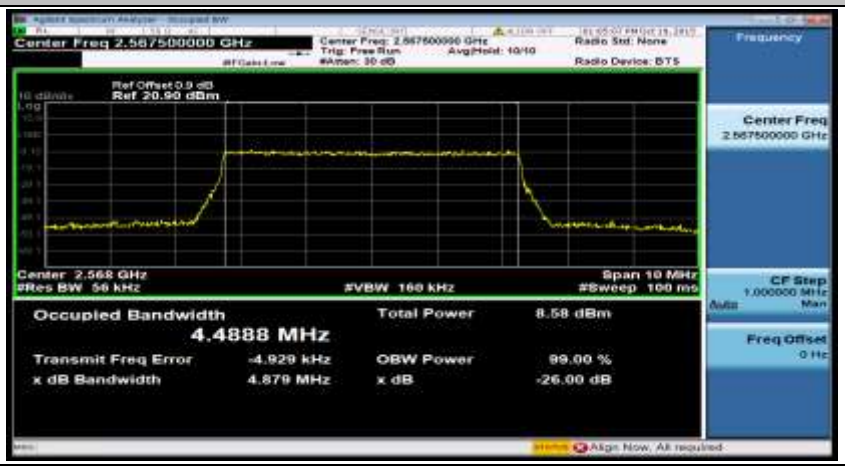
Channel Bandwidth: 5 MHz

(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0


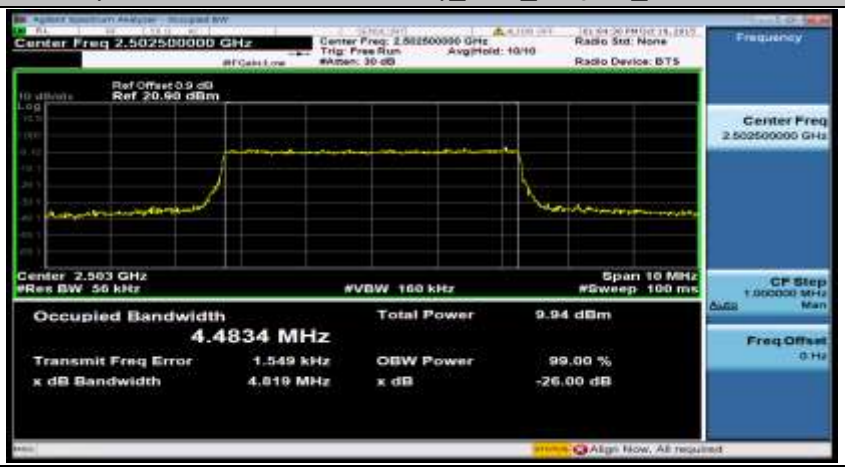
(Channel Bandwidth: 5 MHz)_MCH_QPSK_25RB#0

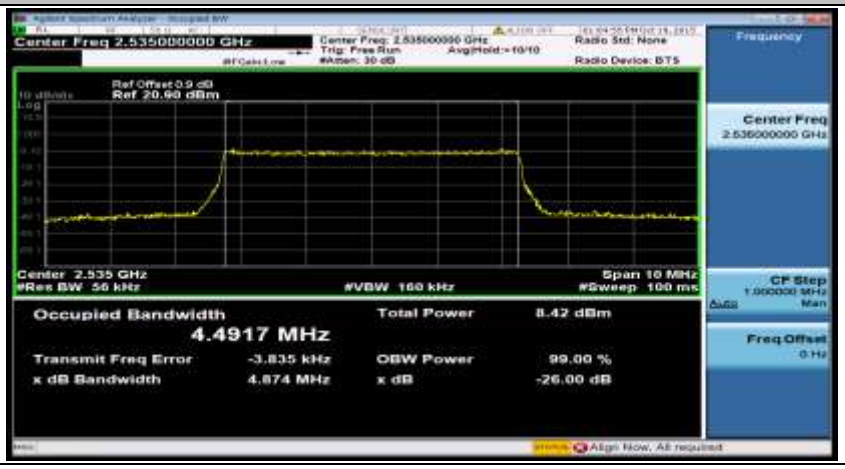


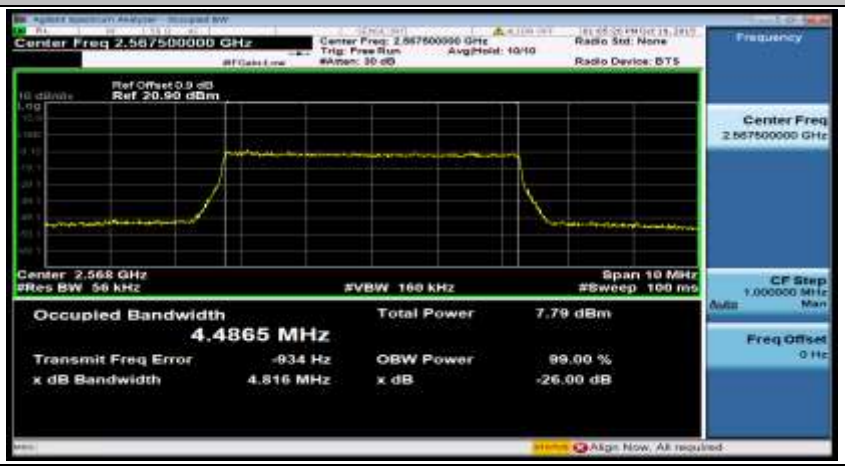
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



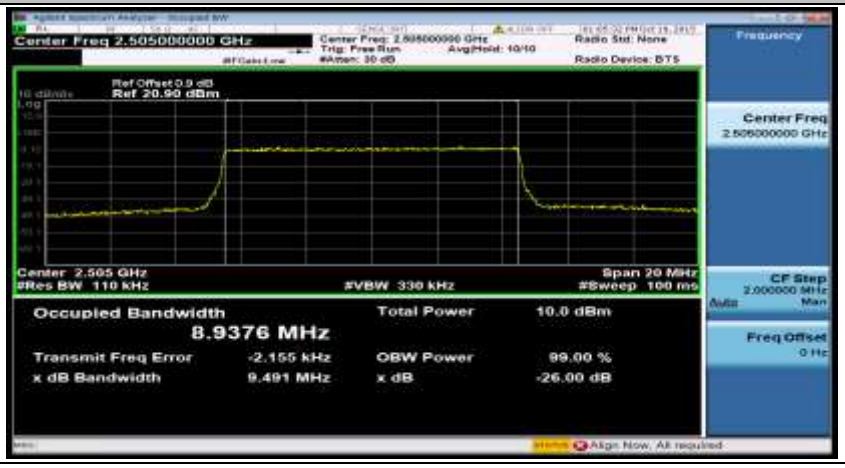
(Channel Bandwidth: 5 MHz)_LCH_16QAM_25RB#0

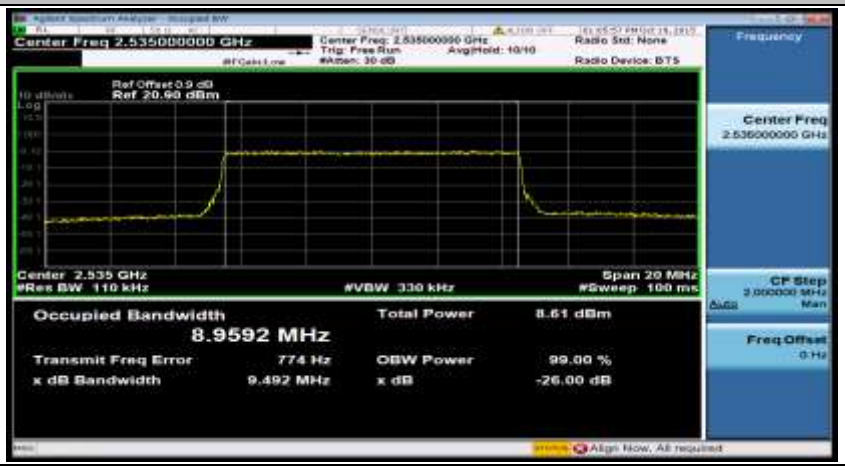


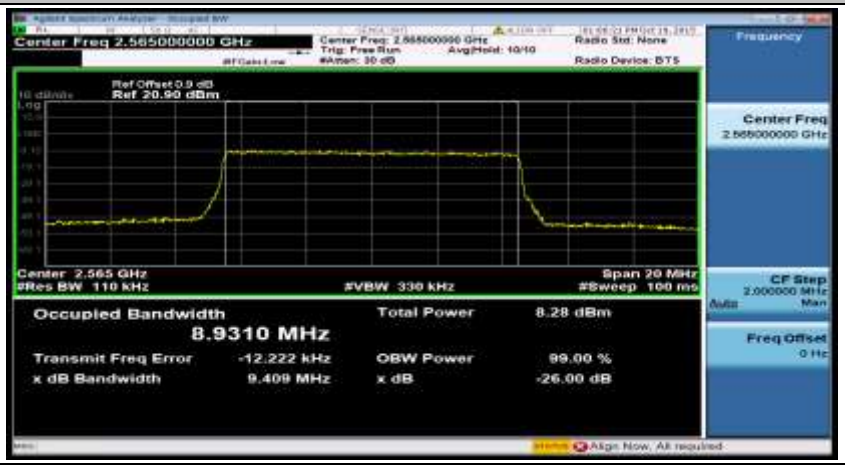
(Channel Bandwidth: 5 MHz)_MCH_16QAM_25RB#0


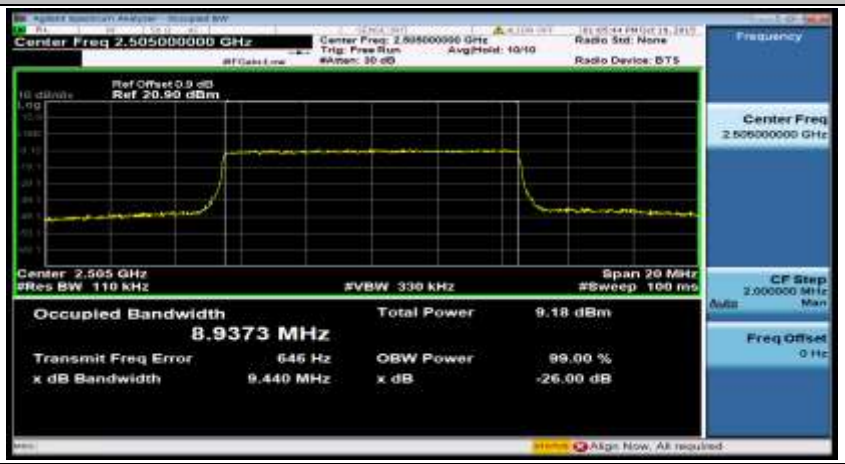
(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0


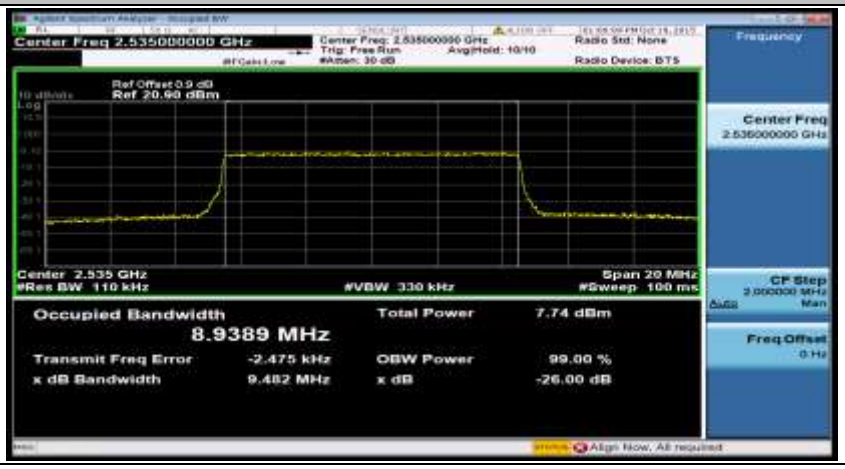
Channel Bandwidth: 10 MHz

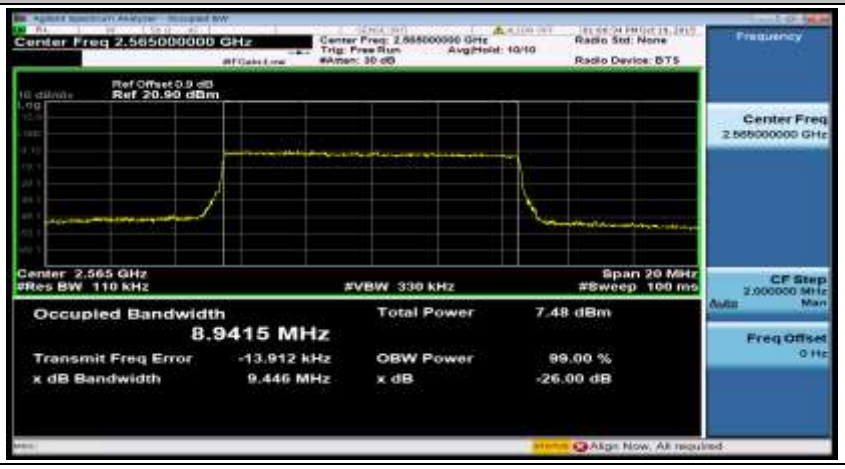
Channel Bandwidth: 10 MHz_LCH_QPSK_50RB#0


Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0


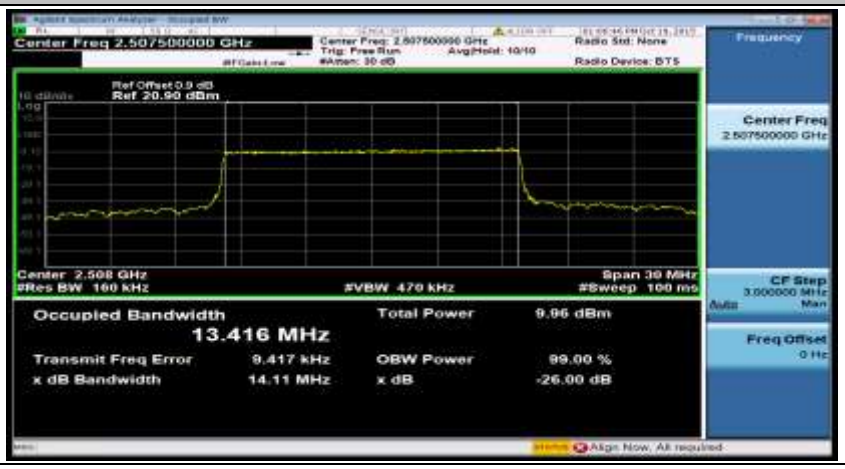
Channel Bandwidth: 10 MHz_HCH_QPSK_50RB#0


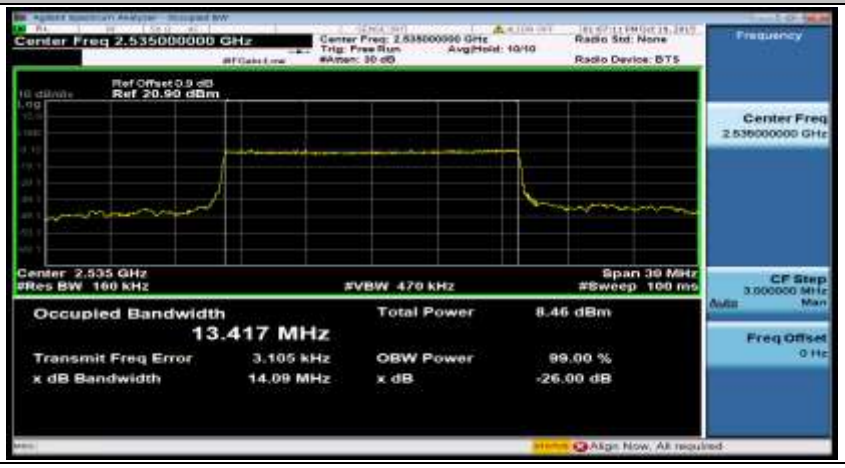
Channel Bandwidth: 10 MHz_LCH_16QAM_50RB#0


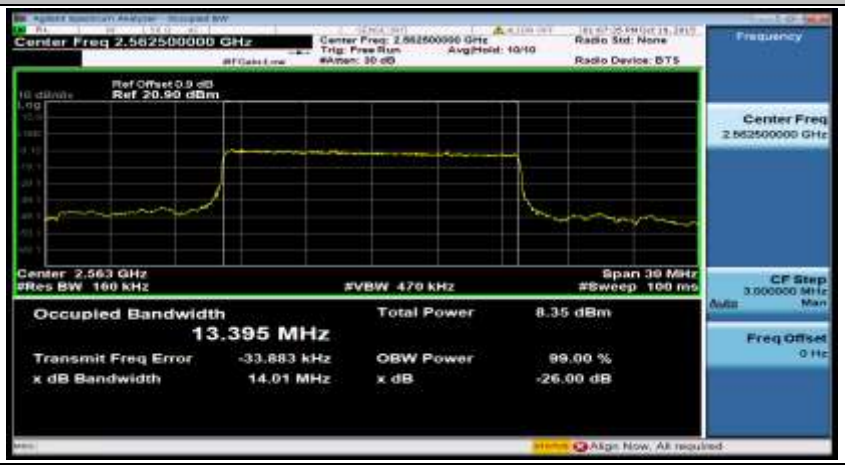
Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0


Channel Bandwidth: 10 MHz_HCH_16QAM_50RB#0


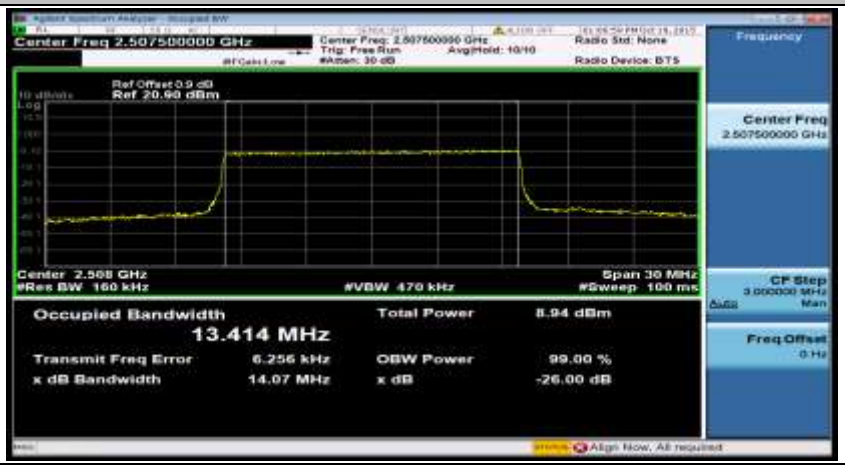
Channel Bandwidth: 15 MHz

(Channel Bandwidth:15 MHz)_LCH_QPSK_75RB#0


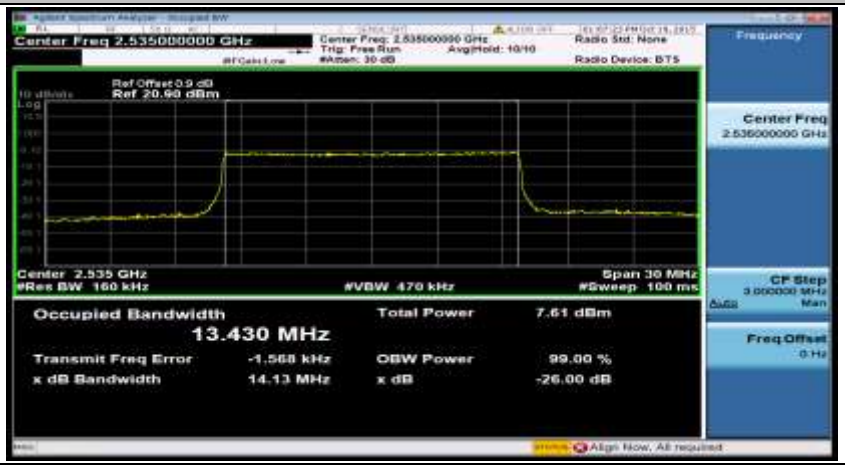
(Channel Bandwidth:15 MHz)_MCH_QPSK_75RB#0


(Channel Bandwidth:15 MHz)_HCH_QPSK_75RB#0


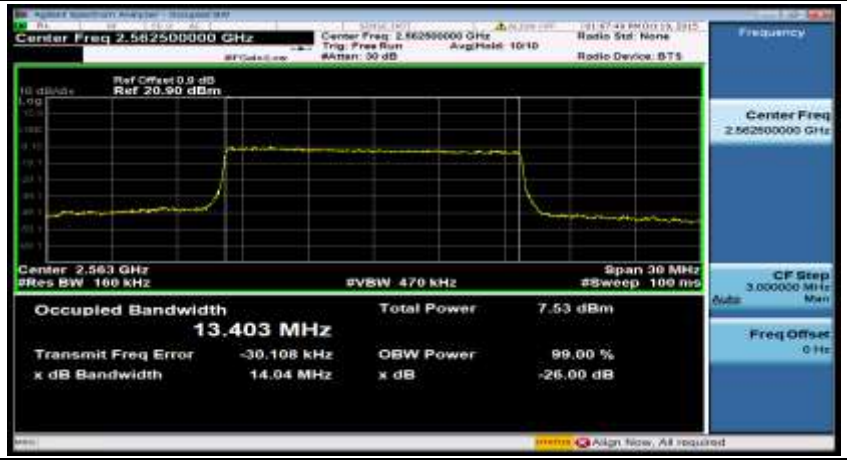
(Channel Bandwidth:15 MHz)_LCH_16QAM_75RB#0



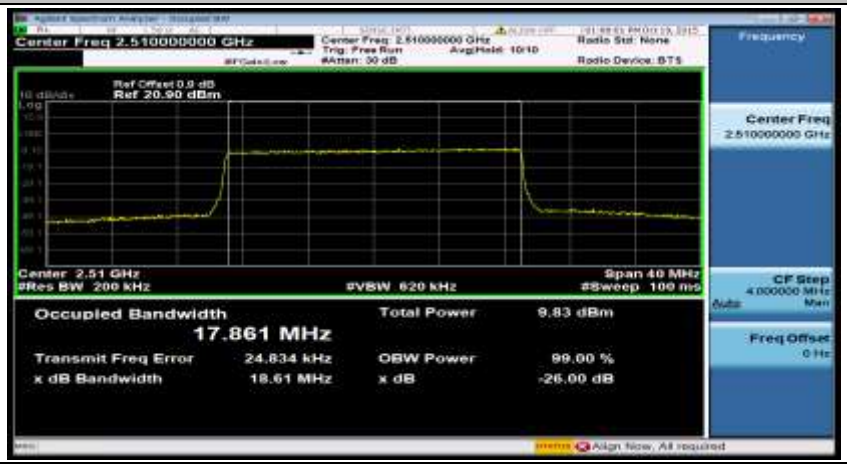
(Channel Bandwidth:15 MHz)_MCH_16QAM_75RB#0

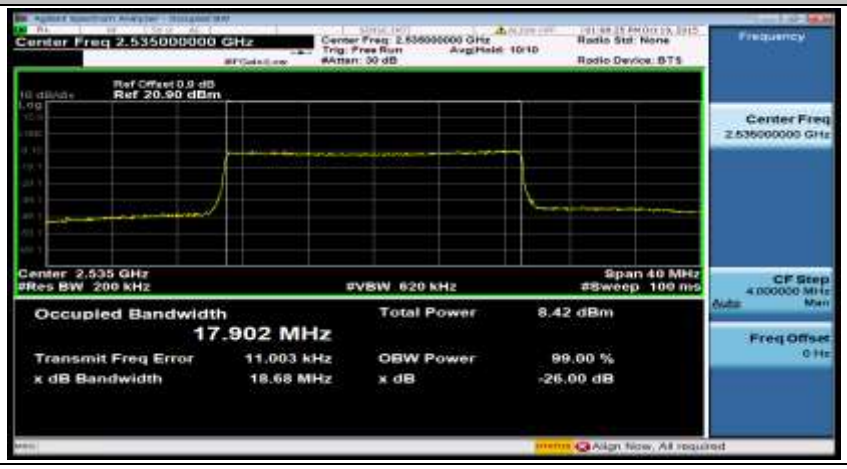


(Channel Bandwidth:15 MHz)_HCH_16QAM_75RB#0

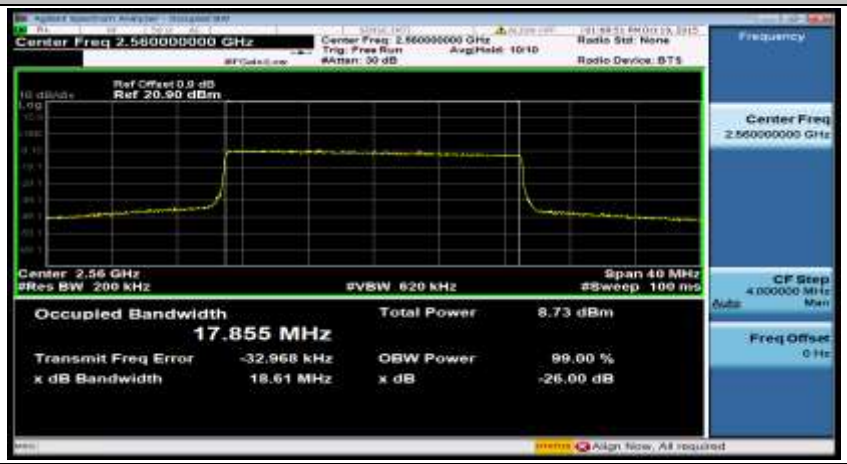


Channel Bandwidth: 20 MHz

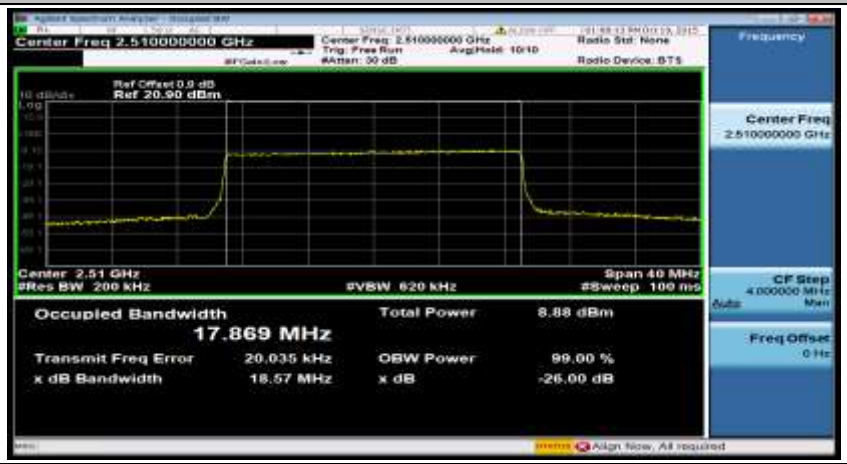
(Channel Bandwidth:20 MHz)_LCH_QPSK_100RB#0


(Channel Bandwidth:20 MHz)_MCH_QPSK_100RB#0


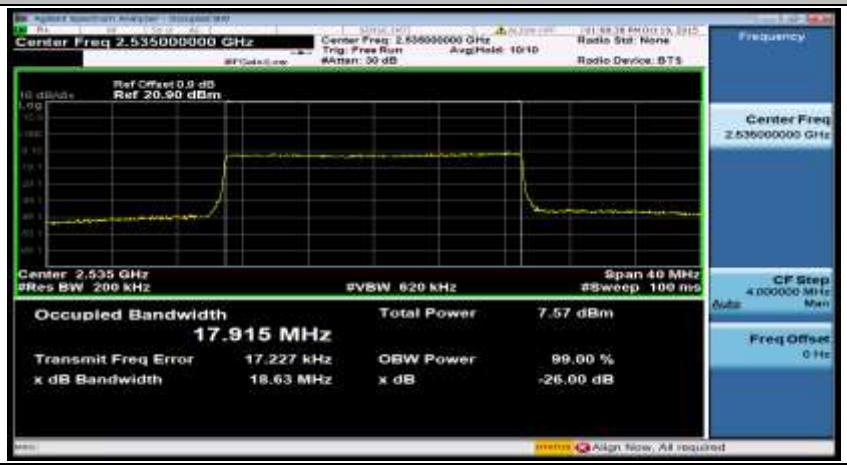
(Channel Bandwidth:20 MHz)_HCH_QPSK_100RB#0

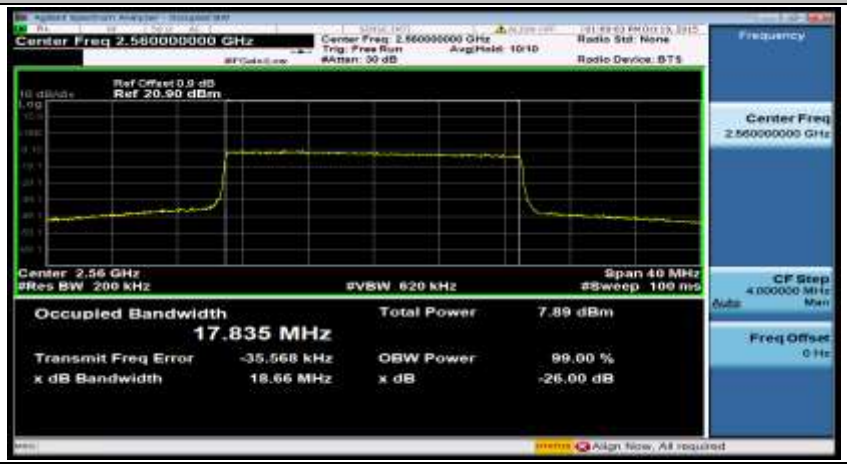


(Channel Bandwidth:20 MHz)_LCH_16QAM_100RB#0



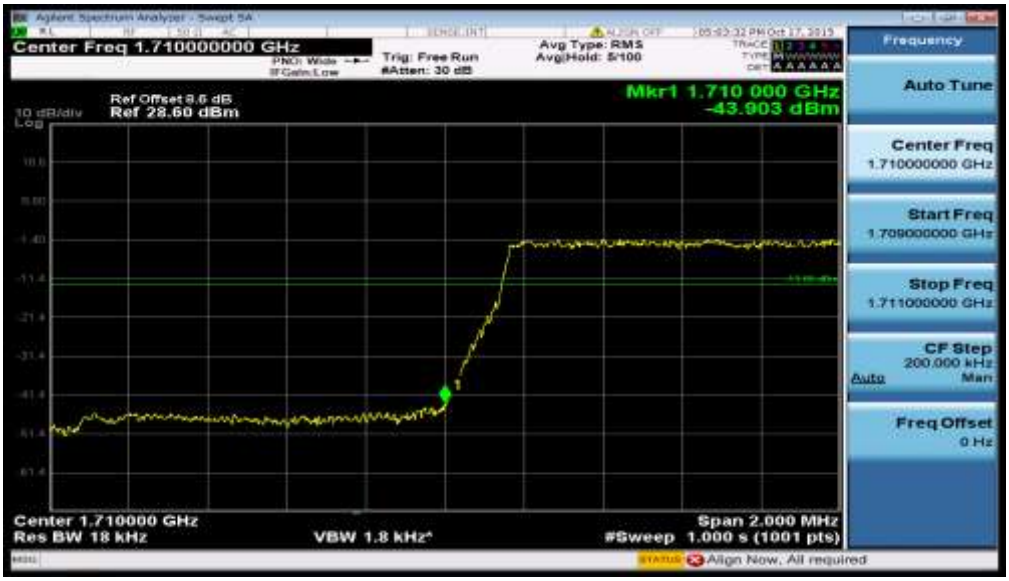
(Channel Bandwidth:20 MHz)_MCH_16QAM_100RB#0



(Channel Bandwidth:20 MHz)_HCH_16QAM_100RB#0


APPENDIX C
TEST PLOTS FOR BAND EDGES

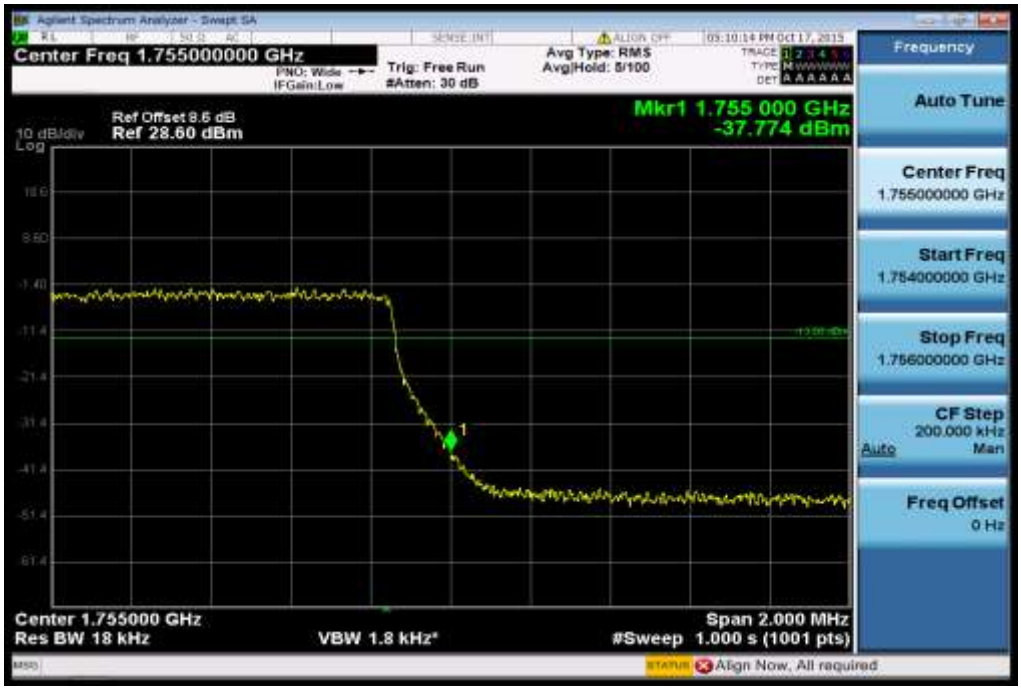
Lower Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 25)



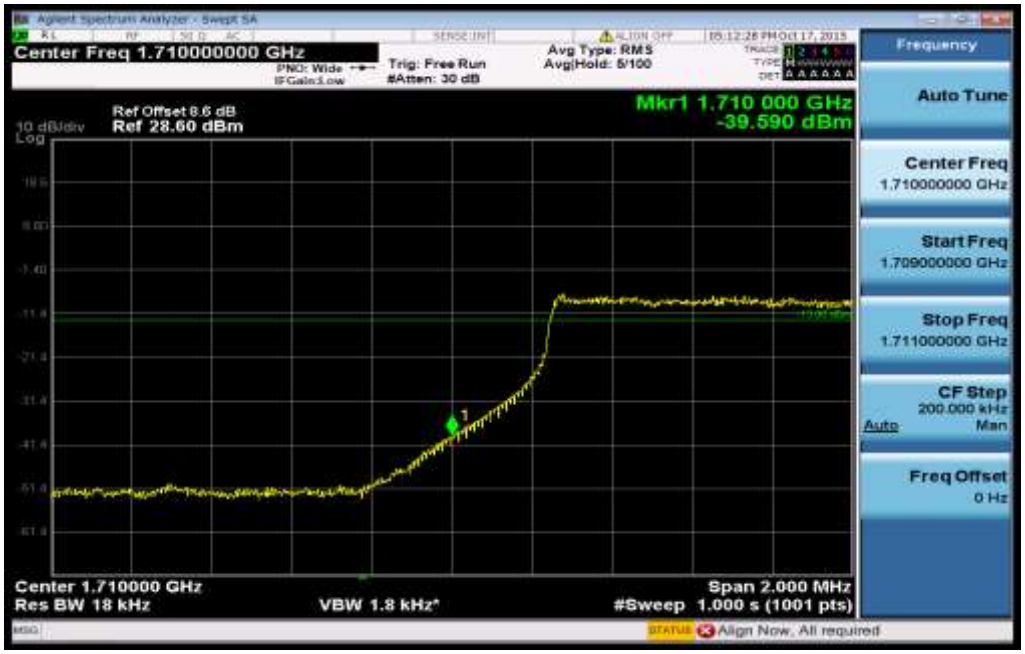
High Band Edge Plot (Band 4 – 1.4MHz QPSK – RB Size 25)

Lower Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)

Lower Band Edge Plot (Band 4 – 3.0MHz QPSK – RB Size 15)



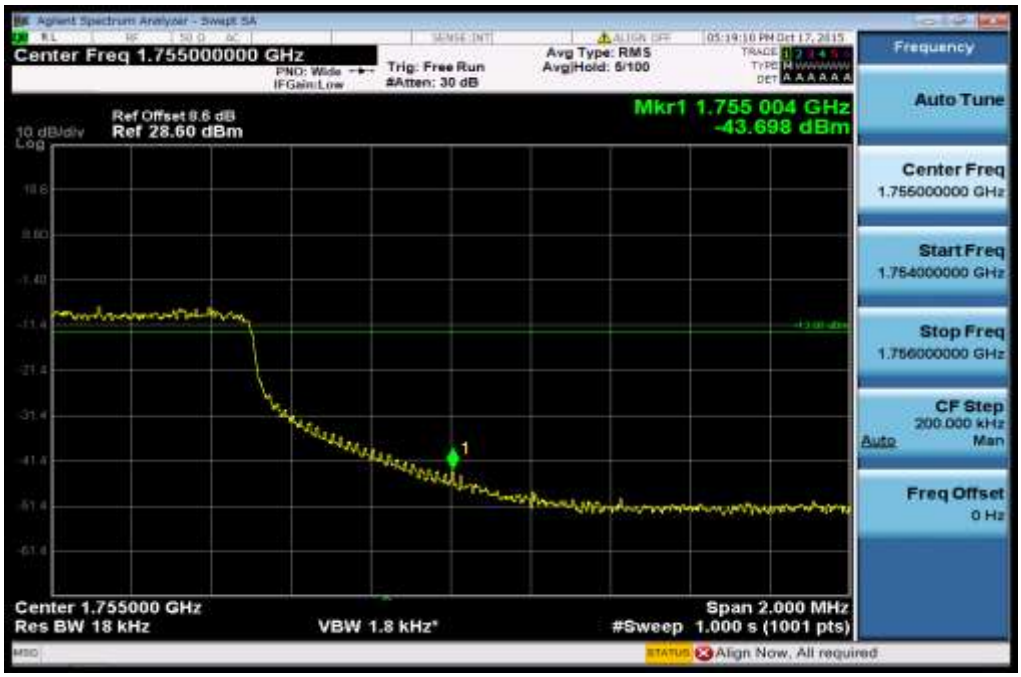
Lower Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)



High Band Edge Plot (Band 4 – 5.0MHz QPSK – RB Size 25)

Lower Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)

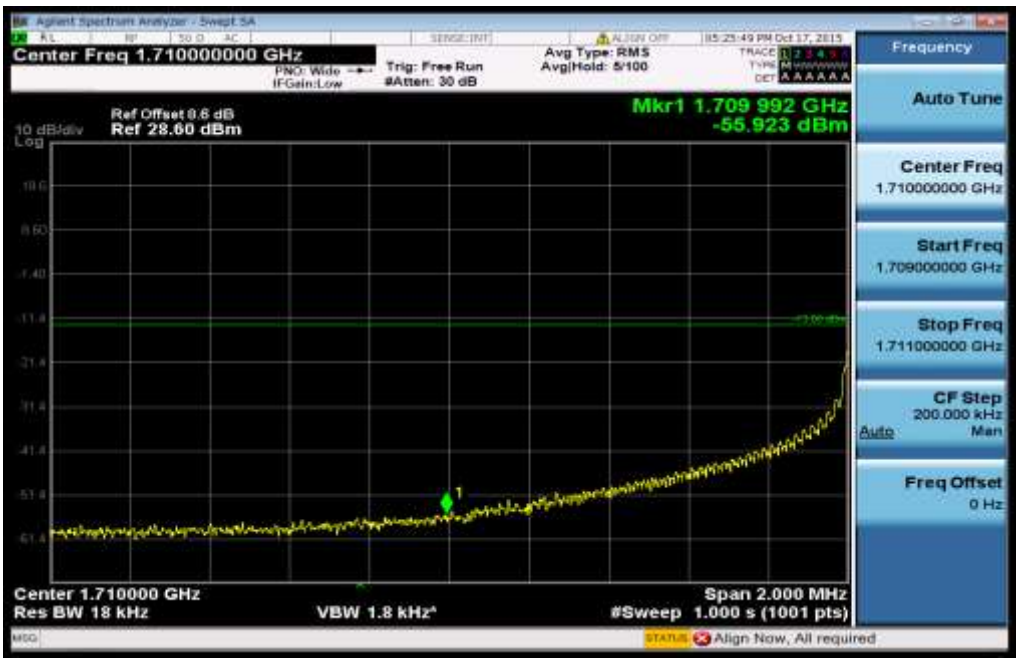
High Band Edge Plot (Band 4 – 10.0MHz QPSK – RB Size 50)



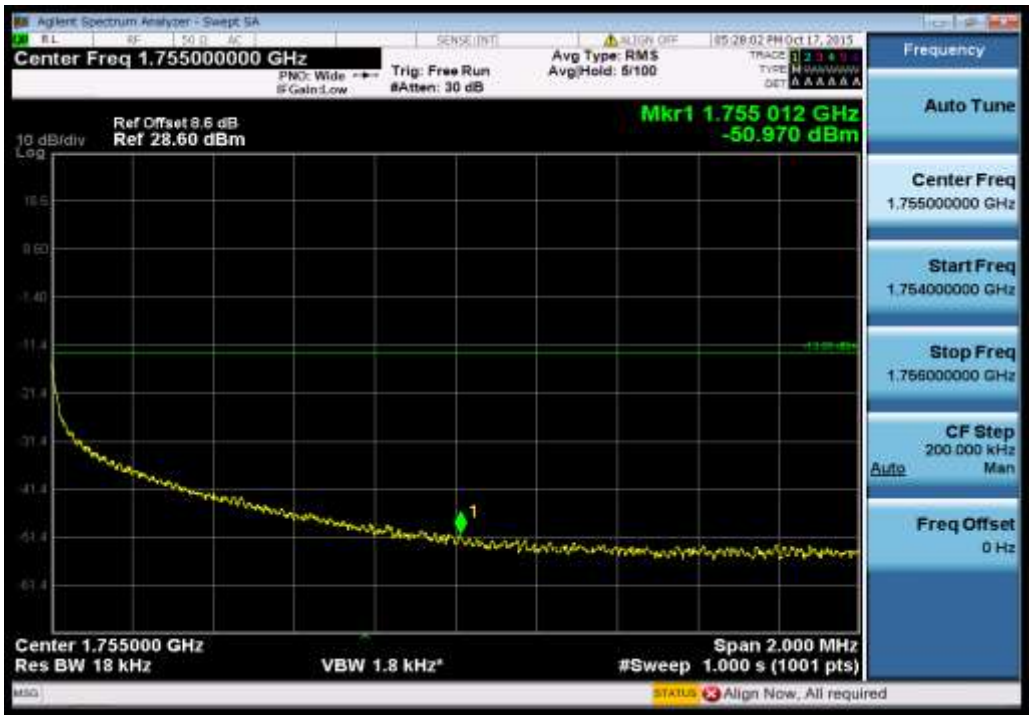
Lower Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

High Band Edge Plot (Band 4 – 15.0MHz QPSK – RB Size 75)

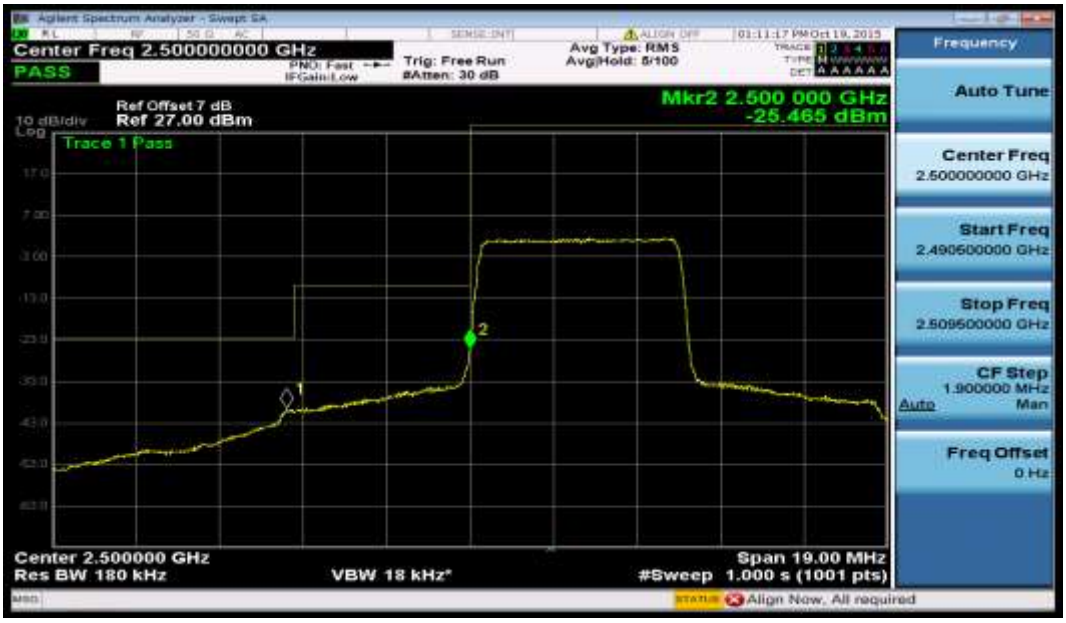
Lower Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



High Band Edge Plot (Band 4 – 20.0MHz QPSK – RB Size 100)



Lower Band Edge Plot (Band 7 – 5.0MHz QPSK – RB Size 25)



High Band Edge Plot (Band 7 – 5.0MHz QPSK – RB Size 25)

Lower Band Edge Plot (Band 7 – 10.0MHz QPSK – RB Size 50)

High Band Edge Plot (Band 7 – 10.0MHz QPSK – RB Size 50)

Lower Band Edge Plot (Band 7 – 15.0MHz QPSK – RB Size 75)

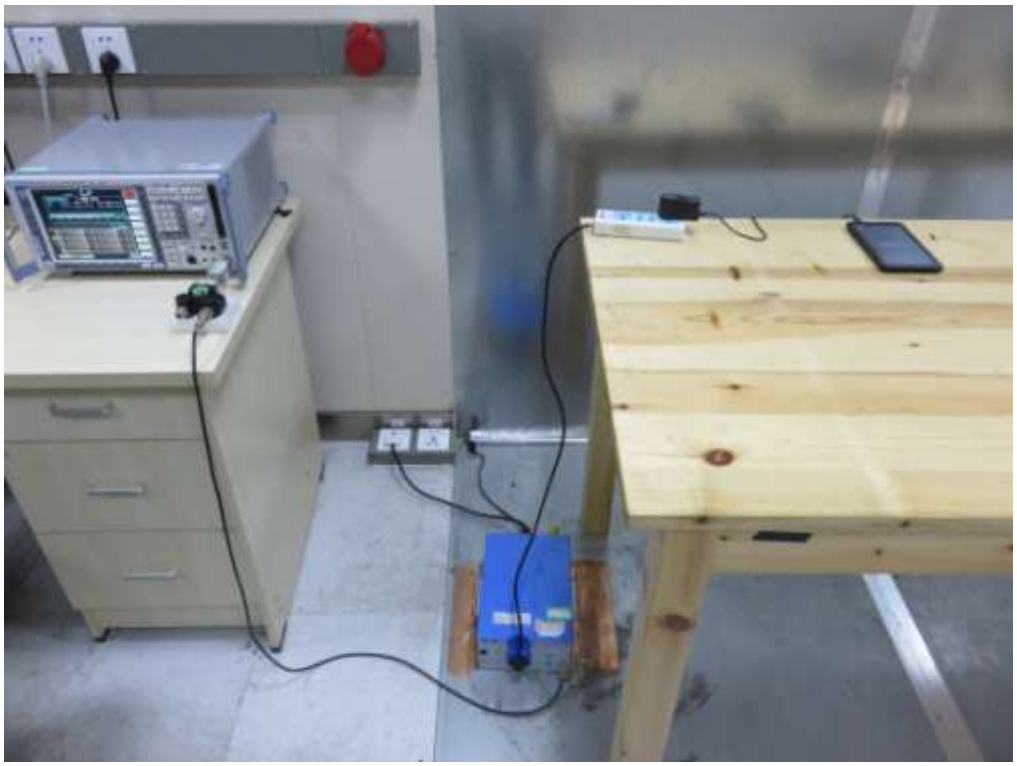
High Band Edge Plot (Band 7 – 15.0MHz QPSK – RB Size 75)

Lower Band Edge Plot (Band 7 – 20.0MHz QPSK – RB Size 100)

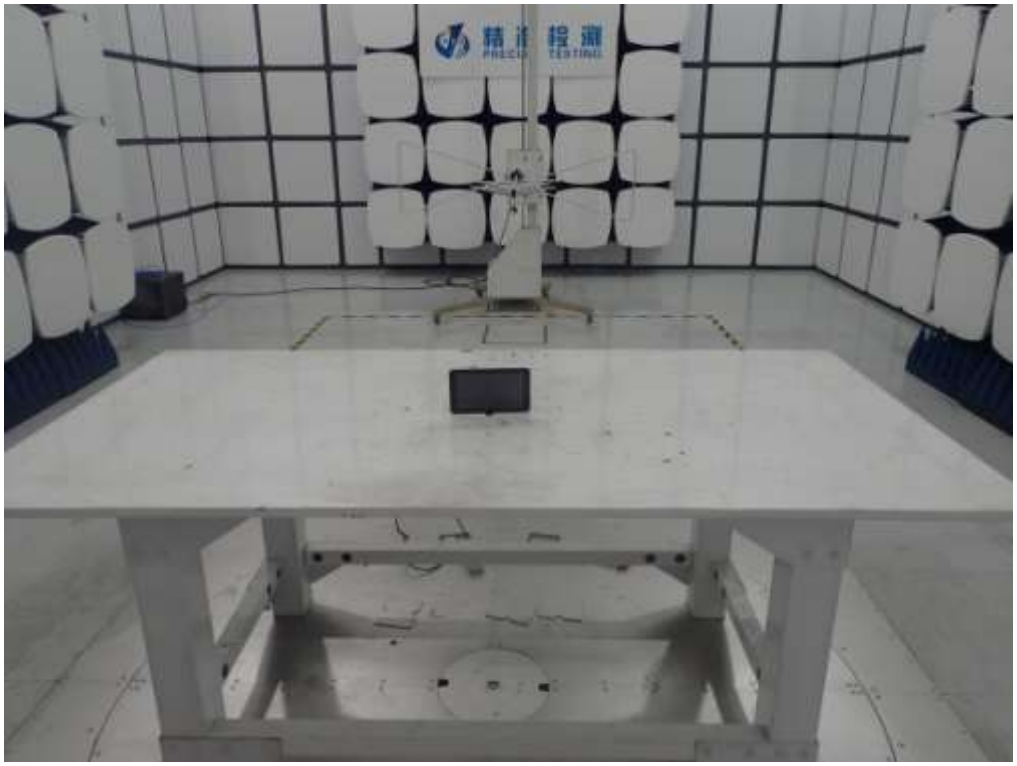
High Band Edge Plot (Band 7 – 20.0MHz QPSK – RB Size 100)

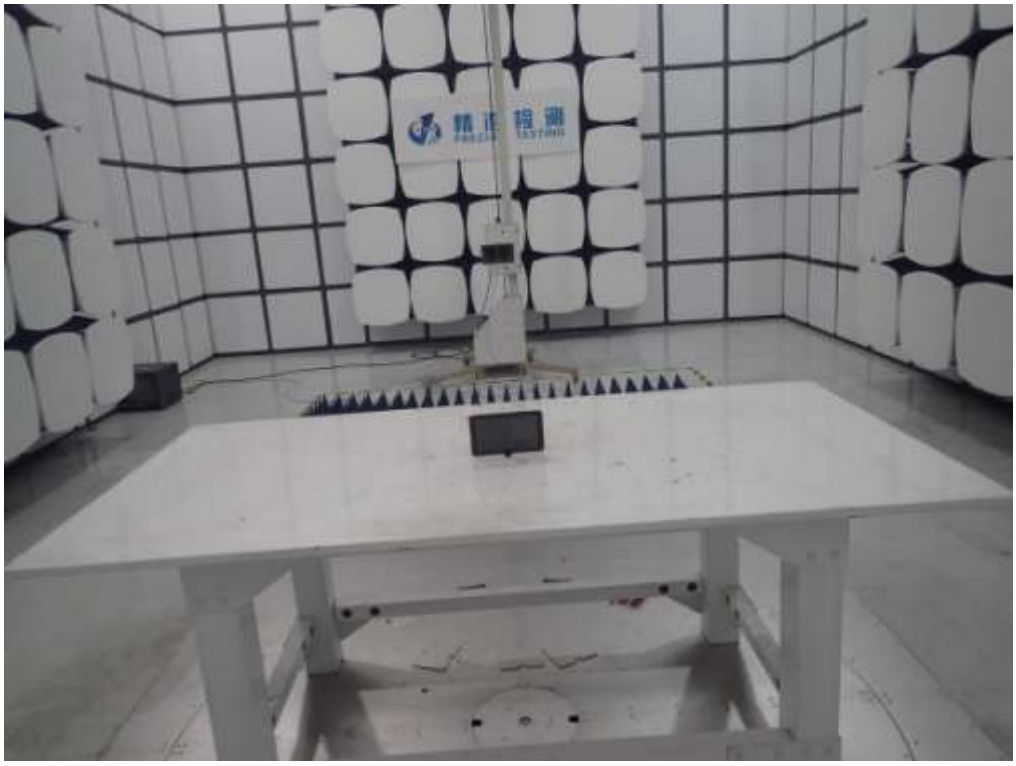
APPENDIX D
PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION



RADIATED SPURIOUS EMISSION



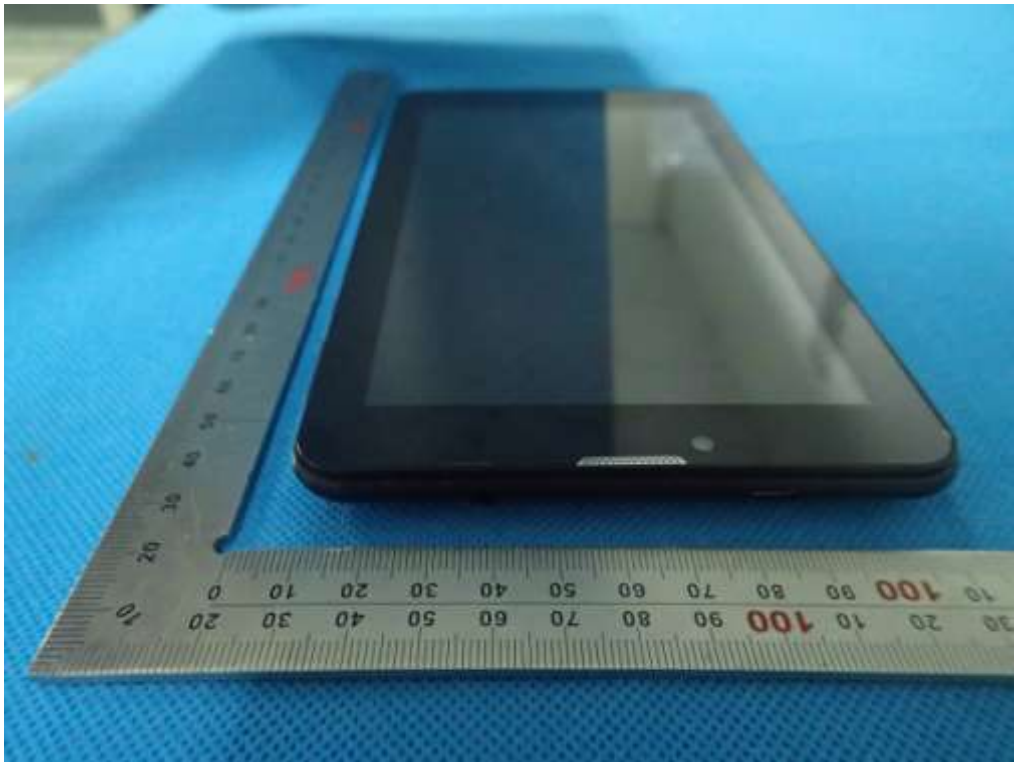


CONDUCTED MEASUREMENTS

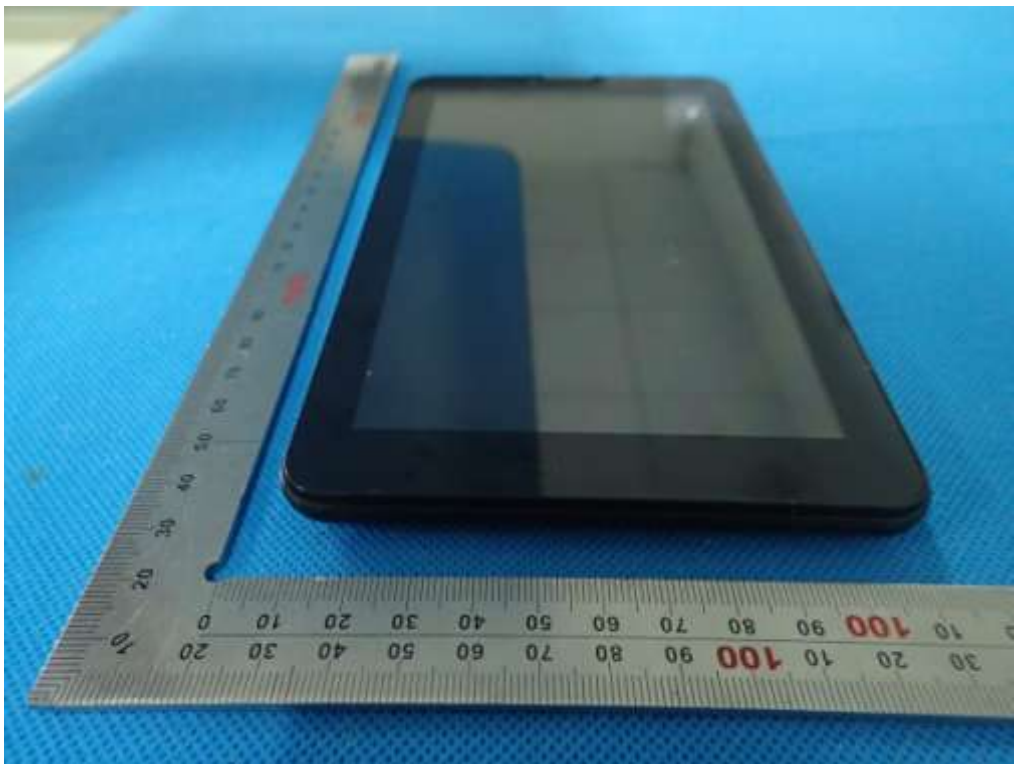
APPENDIX E
PHOTOGRAPHS OF EUT

TOTAL VIEW OF EUT

TOP VIEW OF EUT



BOTTOM VIEW OF EUT

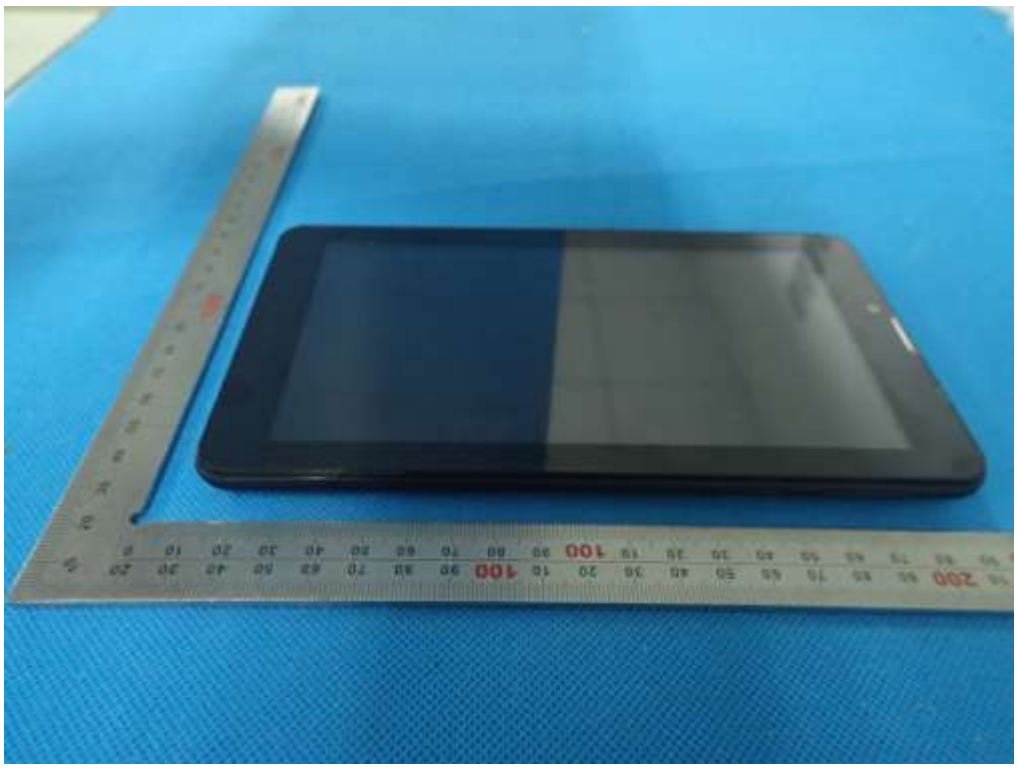


FRONT VIEW OF EUT

BACK VIEW OF EUT

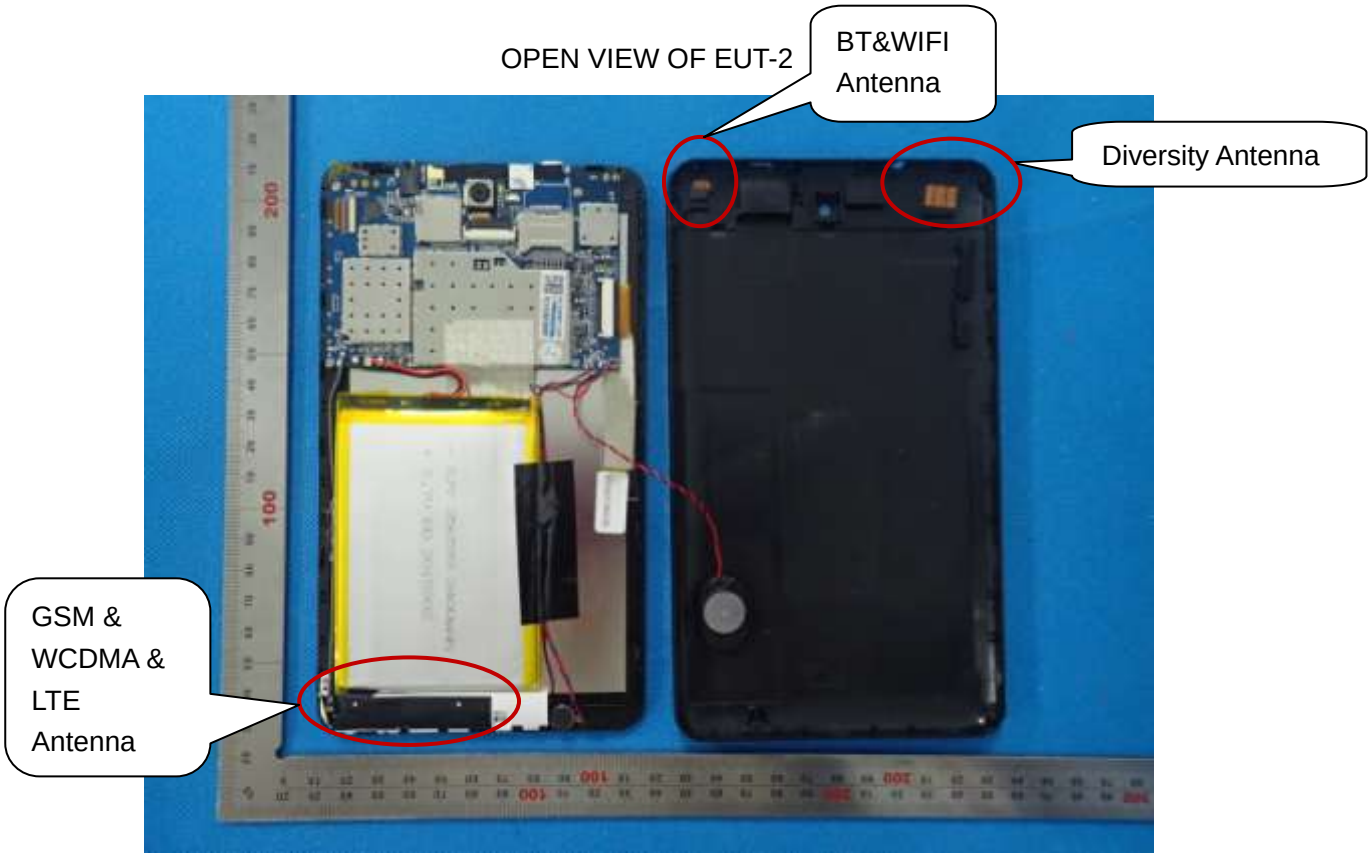
LEFT VIEW OF EUT

RIGHT VIEW OF EUT



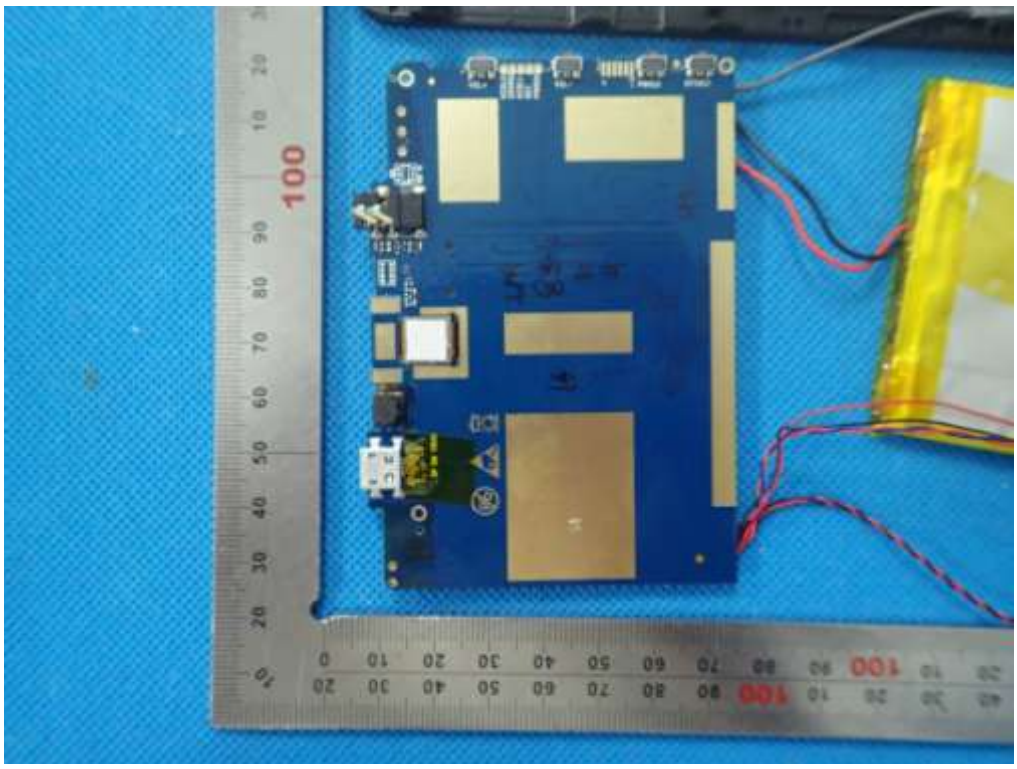
OPEN VIEW OF EUT-1

OPEN VIEW OF EUT-2

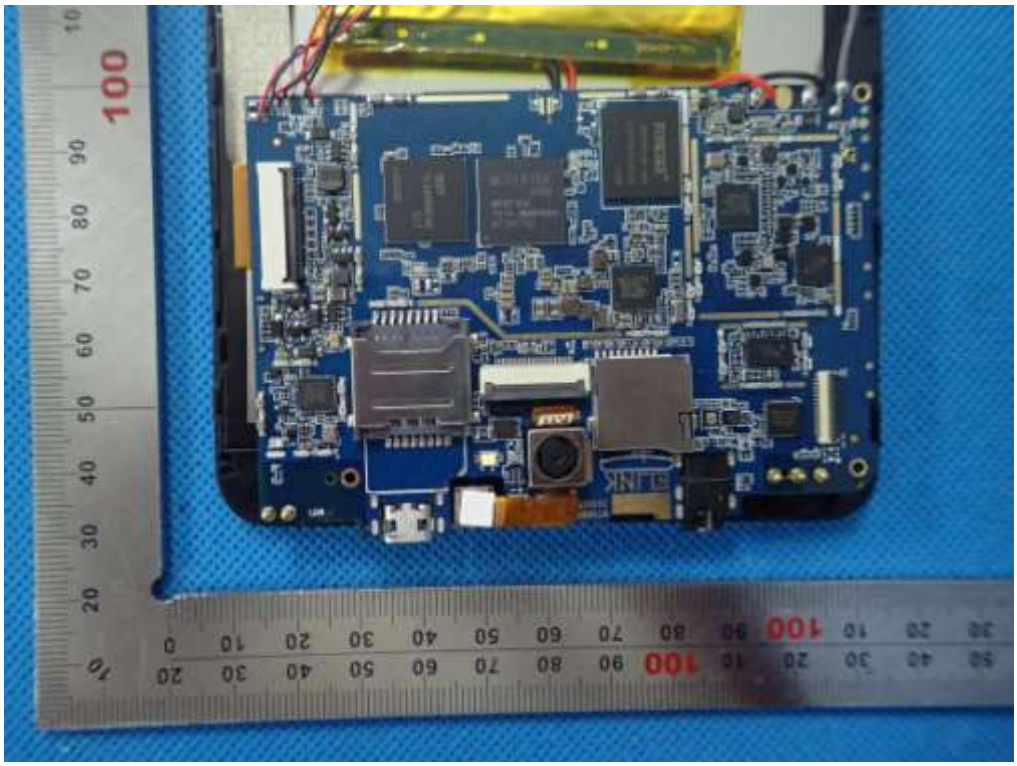


OPEN VIEW OF EUT-3

INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



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