

FCC Radio Test Report

FCC ID: 2A0UD-TP00098A

This report concerns (check one): ☒ Original Grant ☐ Class II Change

Project No. : 1711C206A
Equipment : Tablet PC
Test Model : TP00098A
Series Model : N/A
Applicant : Shenzhen Bitland Information Technology Co.,Ltd
Address : 6F, #7 Building, XiLi Tongfuyu Industrial Town,
Nanshan District, Shenzhen Guangdong 518055
China

Date of Receipt : Nov. 24, 2017
Date of Test : Nov. 24, 2017 ~ Feb. 13, 2018
Issued Date : Feb. 14, 2018
Tested by : BTL Inc.

Technical Engineer :


(Shawn Xiao)

Authorized Signatory :


(Steven Lu)

B T L I N C .

No.3,Jinshagang 1st Road, Shixia,Dalang Town, Dongguan,
Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000



Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

BTL's report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and **BTL-self**, extracts from the test report shall not be reproduced except in full with **BTL's** authorized written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents	Page
REPORT ISSUED HISTORY	5
1 . CERTIFICATION	6
2 . SUMMARY OF TEST RESULTS	7
2.1 TEST FACILITY	8
2.2 MEASUREMENT UNCERTAINTY	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION	12
3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	18
3.4 DESCRIPTION OF SUPPORT UNITS	18
4 . TEST RESULT	19
4.1 OUTPUT POWER MEASUREMENT	19
4.1.1 LIMIT	19
4.1.2 TEST PROCEDURE	19
4.1.3 TESTSETUP LAYOUT	19
4.1.4 TEST DEVIATION	19
4.1.5 TEST RESULTS	19
4.2 OCCUPIED BANDWIDTH MEASUREMENT	20
4.2.1 TEST PROCEDURE	20
4.2.2 TEST SETUP LAYOUT	20
4.2.3 TEST DEVIATION	20
4.2.4 TEST RESULTS	20
4.3 CONDUCTED EMISSIONS MEASUREMENT	21
4.3.1 LIMIT	21
4.3.2 TEST PROCEDURES	21
4.3.3 TESTSETUP LAYOUT	21
4.3.4 TESTDEVIATION	21
4.3.5 TEST RESULTS	21
4.4 RADIATED EMISSIONS MEASUREMENT	22
4.4.1 LIMIT	22
4.4.2 TEST PROCEDURES	22
4.4.3 TESTSETUP LAYOUT	22
4.4.4 TESTDEVIATION	23
4.4.5 TEST RESULTS (9KHZ TO 30MHZ)	23
4.4.6 TEST RESULTS (30MHZ TO 1000MHZ)	23
4.4.7 TEST RESULTS (ABOVE 1000MHZ)	23
4.5 BAND EDGE MEASUREMENT	24

Table of Contents	Page
4.5.1 LIMIT	24
4.5.2 TEST PROCEDURES	24
4.5.3 TESTSETUP LAYOUT	24
4.5.4 TESTDEVIATION	24
4.5.5 TEST RESULTS	24
4.6 PEAK TO AVERAGE RATIO MEASUREMENT	25
4.6.1 LIMIT	25
4.6.2 TEST PROCEDURES	25
4.6.3 TESTSETUP LAYOUT	25
4.6.4 TESTDEVIATION	25
4.6.5 TEST RESULTS	25
4.7 FREQUENCY STABILITY MEASUREMENT	26
4.7.1 LIMIT	26
4.7.2 TEST PROCEDURES	26
4.7.3 TESTSETUP LAYOUT	26
4.7.4 TESTDEVIATION	26
4.7.5 TEST RESULTS	26
5 . LIST OF MEASUREMENT EQUIPMENTS	27
6 . EUT TEST PHOTO	29
APPENDIX A - OUTPUT POWER	32
APPENDIX B - OCCUPIED BANDWIDTH	53
APPENDIX C - CONDUCTED EMISSIONS	97
APPENDIX C - RADIATED EMISSION (9KHZ TO 30MHZ)	121
APPENDIX D - RADIATED EMISSION (30MHZ TO 1GHZ)	146
APPENDIX E - RADIATED EMISSION (ABOVE 1GHZ)	219
APPENDIX F - BAND EDGE	242
APPENDIX G - PEAK TO AVERAGE RATIO	264
APPENDIX H - FREQUENCY STABILITY	288

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-3-1711C206A	Original Issue.	Feb. 14, 2018

1. CERTIFICATION

Equipment : Tablet PC
Brand Name : Lenovo
Test Model : TP00098A
Series Model : N/A
Applicant : Shenzhen Bitland Information Technology Co.,Ltd
Manufacturer : Lenovo PC HK Limited
Address : 23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong
Factory : Hefei Bitland Information Technology Co.Ltd.
Address : No.4088 JINXIU AVENUE, ECONOMIC&TECHNOLOGY DEVELOPMENT
AREA, HEFEI, CHINA
Date of Test : Nov. 24, 2017 ~ Feb. 13, 2018
Test Sample : Engineering Sample
Standard(s) : 47 CFR FCC Part 27
47 CFR FCC Part 2 & ANSI/TIA-603-D-2010
KDB 971168 D01 Power Meas License Digital Systems v03

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-3-1711C206A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the WCDMA Band 4, LTE Band 4, 7, 12, 13 and 41 part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 & Part 2			
Standard(s) Section	Test Item	Judgment	Tested By
2.1046 27.50(d)(4)	Radiated power	PASS	Paul Li
2.1046 27.50(d)(4)	Conducted Output Power	PASS	Paul Li
2.1049 27.53(h)	Occupied Bandwidth	PASS	Paul Li
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Paul Li
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Paul Li
27.53(h)	Band Edge Measurements	PASS	Paul Li
27.50	Peak To Average Ratio	PASS	Paul Li
2.1055 27.54	Frequency Stability	PASS	Paul Li

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's test firm number for FCC: 854385

BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) $k=1.96$ or $k=2$ (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)). Measurement Uncertainty for a Level of Confidence of 95 %, $U=2 \times U_c(y)$.

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (3m)	CISPR	1GHz ~ 18GHz	V	3.12
		1GHz ~ 18GHz	H	3.68

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03 (1m)	CISPR	18GHz ~ 40GHz	V	4.15
		18GHz ~ 40GHz	H	4.14

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet PC	
Brand Name	Lenovo	
Test Model	TP00098A	
Series Model	N/A	
Model Difference	N/A	
Modulation Type	WCDMA	UL: BPSK DL: QPSK
	WCDMA (HSDPA/HSUPA)	16QAM
	LTE	UL: QPSK,16QAM DL: QPSK,16QAM
Operation Frequency	WCDMA Band 4	1712.4 ~1752.6MHz
	LTE 4 (Channel Bandwidth: 1.4MHz)	1710.7 ~ 1754.3 MHz
	LTE 4 (Channel Bandwidth: 3MHz)	1711.5 ~ 1753.5 MHz
	LTE 4 (Channel Bandwidth: 5MHz)	1712.5 ~ 1752.5 MHz
	LTE 4 (Channel Bandwidth: 10MHz)	1715.0 ~ 1750.0 MHz
	LTE 4 (Channel Bandwidth: 15MHz)	1717.5 ~ 1747.5 MHz
	LTE 4 (Channel Bandwidth: 20MHz)	1720.0 ~ 1745.0 MHz
	LTE 7 (Channel Bandwidth: 5MHz)	2502.5 ~ 2567.5 MHz
	LTE 7 (Channel Bandwidth: 10MHz)	2505.0 ~ 2565.0 MHz
	LTE 7 (Channel Bandwidth: 15MHz)	2507.5 ~ 2562.5 MHz
	LTE 7 (Channel Bandwidth: 20MHz)	2510.0 ~ 2560.0 MHz
	LTE 12 (Channel Bandwidth: 1.4MHz)	699.7 ~ 715.3MHz
	LTE 12 (Channel Bandwidth: 3MHz)	700.5 ~ 714.5MHz
	LTE 12 (Channel Bandwidth: 5MHz)	701.5 ~ 713.5MHz
	LTE 12 (Channel Bandwidth: 10MHz)	704.0 ~ 711.0MHz
	LTE 13 (Channel Bandwidth: 5MHz)	779.5 ~ 784.5 MHz
	LTE 13 (Channel Bandwidth: 10MHz)	782.0 MHz
	LTE 41 (Channel Bandwidth: 5MHz)	2498.5 ~ 2687.5 MHz
	LTE 41 (Channel Bandwidth: 10MHz)	2501.0 ~ 2685.0 MHz
	LTE 41 (Channel Bandwidth: 15MHz)	2503.5 ~ 2682.5 MHz
	LTE 41 (Channel Bandwidth: 20MHz)	2506.0 ~ 2680.0 MHz

Max. EIRP Power	WCDMA Band 4(WCDMA)	BPSK	26.60	dBm
	WCDMA Band 4(HSDPA)	BPSK	25.52	dBm
	WCDMA Band 4(HSUPA)	BPSK	25.62	dBm
	LTE 4 (Channel Bandwidth: 1.4MHz)	QPSK	26.13	dBm
		16QAM	25.44	dBm
	LTE 4 (Channel Bandwidth: 3MHz)	QPSK	26.22	dBm
		16QAM	25.46	dBm
	LTE 4 (Channel Bandwidth: 5MHz)	QPSK	26.27	dBm
		16QAM	25.49	dBm
	LTE 4 (Channel Bandwidth: 10MHz)	QPSK	26.11	dBm
		16QAM	25.35	dBm
	LTE 4 (Channel Bandwidth: 15MHz)	QPSK	26.01	dBm
		16QAM	25.36	dBm
Max. EIRP Power	LTE 4 (Channel Bandwidth: 20MHz)	QPSK	26.08	dBm
		16QAM	25.76	dBm
	LTE 7 (Channel Bandwidth: 5MHz)	QPSK	24.83	dBm
		16QAM	24.45	dBm
	LTE 7 (Channel Bandwidth: 10MHz)	QPSK	24.73	dBm
		16QAM	24.14	dBm
Max. ERP Power	LTE 7 (Channel Bandwidth: 15MHz)	QPSK	24.66	dBm
		16QAM	24.03	dBm
	LTE 7 (Channel Bandwidth: 20MHz)	QPSK	24.86	dBm
		16QAM	24.73	dBm
	LTE 12 (Channel Bandwidth: 1.4MHz)	QPSK	22.88	dBm
		16QAM	22.04	dBm
	LTE 12 (Channel Bandwidth: 3MHz)	QPSK	22.99	dBm
		16QAM	22.08	dBm
	LTE 12 (Channel Bandwidth: 5MHz)	QPSK	22.94	dBm
		16QAM	22.15	dBm
Max. ERP Power	LTE 12 (Channel Bandwidth: 10MHz)	QPSK	22.85	dBm
		16QAM	22.05	dBm
	LTE 13 (Channel Bandwidth: 5MHz)	QPSK	22.57	dBm
		16QAM	22.04	dBm
	LTE 13 (Channel Bandwidth: 10MHz)	QPSK	22.48	dBm
		16QAM	21.63	dBm

Max. EIRP Power	LTE 41 (Channel Bandwidth: 5MHz)	QPSK	25.11	dBm
		16QAM	24.63	dBm
	LTE 41 (Channel Bandwidth: 10MHz)	QPSK	25.07	dBm
		16QAM	24.67	dBm
	LTE 41 (Channel Bandwidth: 15MHz)	QPSK	25.21	dBm
		16QAM	24.43	dBm
	LTE 41 (Channel Bandwidth: 20MHz)	QPSK	24.98	dBm
		16QAM	24.89	dBm
Hardware Version	TBD			
Software Version	TBD			
IMEI No.	014583000483973			
Power Source	#1 DC voltage supplied from AC/DC adapter. 1) Manufacturer / Model: Liteon / ADLX45YLC2A (2pin) 2) Manufacturer / Model: Liteon / ADLX45YLC3A (3pin) 3) Manufacturer / Model: Liteon / ADLX65YLC3A (3pin) 4) Manufacturer / Model: Chicony / ADLX45YCC2A (2pin) 5) Manufacturer / Model: Chicony / ADLX45YCC3A (3pin) 6) Manufacturer / Model: Chicony / ADLX65YCC3A (3pin) #2 Rechargeable Li-ion Battery supplied. 1) Manufacturer / Model: Simplo / L17M2P51 2) Manufacturer / Model: Simplo / L17M2P52 3) Manufacturer / Model: Celxpert / L17C2P51			
Power Rating	#1 For adapter: 1) / 2) / 4) / 5): I/P: 100-240V~1.3A 50-60Hz O/P: 20V --- 2.25A/15V --- 3A/9V --- 2A/5V --- 2A Max 45W 3) / 6): I/P: 100-240V~1.8A 50-60Hz O/P: 20V --- 3.25A/15V --- 3A/9V --- 2A/5V --- 2A Max 65W #2 For battery: DC 7.68V, 5080mAh			

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- Table for Filed Antenna:

Ant. Part Number (main & aux parts)	Type	Antenna Mfr.	Antenna Gain(dBi)		
			WCDMA Band 4	LTE Band 4	LTE Band 7
N19-0351-R0A N19-0352-R0A	Monopole	South Star	2.90	2.90	3.10
			1.33	1.33	1.66
			LTE Band 12	LTE Band 13	LTE Band 41
			1.72 -0.26	1.72 -0.26	3.10 1.66

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports
The worst case was found when positioned on X-plane for EIRP and X-axis for radiated emission.
Following channel(s) was (were) selected for the final test as listed below:

WCDMA BAND 4			
Test Item	Available Channel	Tested Channel	Mode
EIRP	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Frequency Stability	1312 to 1513	1413	WCDMA
Occupied Bandwidth	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Band Edge	1312 to 1513	1312, 1513	WCDMA,HSDPA, HSUPA
Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Conducuted Spurious Emission	1312 to 1513	1413	WCDMA,HSDPA, HSUPA
Radiated Spurious Emission	1312 to 1513	1312	WCDMA,HSDPA, HSUPA

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75 RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100RB
Conducted Spurious Emission Radiated Spurious Emission	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19965 to 20385	20175	3MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20000 to 20350	20175	10MHz	QPSK	1RB
	20025 to 20325	20175	15MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Conducted Spurious Emission	19957 to 20393	20175	1.4MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Band Edge	19957 to 20393	19957	1.4MHz	QPSK	1RB/6RB
		20393	1.4MHz	QPSK	
	19965 to 20385	19965	3MHz	QPSK	1RB/15RB
		20385	3MHz	QPSK	
	19975 to 20375	19975	5MHz	QPSK	1RB/25RB
		20375	5MHz	QPSK	
	20000 to 20350	20000	10MHz	QPSK	1RB/50RB
		20350	10MHz	QPSK	
	20025 to 20325	20025	15MHz	QPSK	1RB/75RB
		20325	15MHz	QPSK	
	20050 to 20300	20050	20MHz	QPSK	1RB/100RB
		20300	20MHz	QPSK	
Peak To Average Ratio	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1RB
Frequency Stability	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19965 to 20385	20175	3MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20000 to 20350	20175	10MHz	QPSK	1RB
	20025 to 20325	20175	15MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 7					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	25RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	50RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	75RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100RB
Conducted Spurious Emission	20775 to 21425	21100	5MHz	QPSK	1 RB
	20800 to 21400	21100	10MHz	QPSK	1 RB
	20825 to 21375	21100	15MHz	QPSK	1 RB
	20850 to 21350	21100	20MHz	QPSK	1 RB
Radiated Spurious Emission	20775 to 21425	21100	5MHz	QPSK	1 RB
	20850 to 21350	21100	20MHz	QPSK	1 RB
Band Edge	20775 to 21425	20775	5MHz	QPSK	1RB/25RB
		21425	5MHz	QPSK	
	20800 to 21400	20800	10MHz	QPSK	1RB/50RB
		21400	10MHz	QPSK	
	20825 to 21375	20825	15MHz	QPSK	1RB/75RB
		21375	15MHz	QPSK	
	20850 to 21350	20850	20MHz	QPSK	1RB/100RB
		21350	20MHz	QPSK	
Peak To Average Ratio	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1RB
Frequency Stability	20775 to 21425	21100	5MHz	QPSK	1RB
	20800 to 21400	21100	10MHz	QPSK	1RB
	20825 to 21375	21100	15MHz	QPSK	1RB
	20850 to 21350	21100	20MHz	QPSK	1RB

LTE BAND 12					
Test Item	Available Channel	Tested Channel	Channel	Modulation	Mode
ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Frequency Stability	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23025 to 23165	23095	3MHz	QPSK	1 RB
	23035 to 23155	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB
Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	6RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	15RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	25RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	50RB
Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1 RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1 RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1 RB
Band Edge	23017 to 23173	23017	1.4MHz	QPSK	1RB/6RB
		23173	1.4MHz	QPSK	
	23025 to 23165	23025	3MHz	QPSK	1RB/15RB
		23165	3MHz	QPSK	
	23035 to 23155	23035	5MHz	QPSK	1RB/25RB
		23155	5MHz	QPSK	
	23060 to 23130	23060	10MHz	QPSK	1RB/50RB
		23130	10MHz	QPSK	
Conducted Spurious Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23025 to 23165	23095	3MHz	QPSK	1 RB
	23035 to 23155	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB
Radiated Spurious Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB

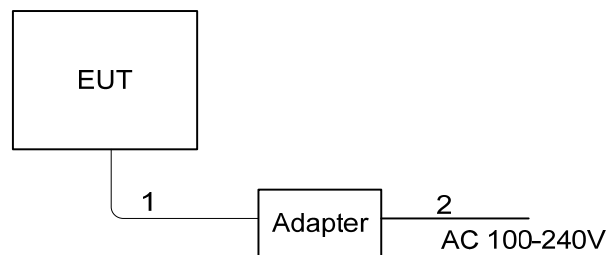
LTE BAND 13					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	779.5 to 784.5	23205, 23230, 23255	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	782	23230	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Occupied Bandwidth	779.5 to 784.5	23205, 23230, 23255	5MHz	QPSK, 16QAM	25RB
	782	23230	10MHz	QPSK, 16QAM	50RB
Conducted Spurious Emission	779.5 to 784.5	23230	5MHz	QPSK	1 RB
	782	23230	10MHz	QPSK	1 RB
Radiated Spurious Emission	779.5 to 784.5	23230	5MHz	QPSK	1 RB
	782	23230	10MHz	QPSK	1 RB
Band Edge	779.5 to 784.5	23230	5MHz	QPSK	1RB/25RB
		23230	5MHz	QPSK	
	782	23230	10MHz	QPSK	1RB/50RB
		23230	10MHz	QPSK	
Peak To Average Ratio	779.5 to 784.5	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB
	782	23230	10MHz	QPSK, 16QAM	1 RB
Frequency Stability	779.5 to 784.5	23230	5MHz	QPSK	1 RB
	782	23230	10MHz	QPSK	1 RB

LTE BAND 41					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Frequency Stability	39675 to 41565	40620	5MHz	QPSK	1 RB
	39700 to 41540	40620	10MHz	QPSK	1 RB
	39725 to 41515	40620	15MHz	QPSK	1 RB
	39750 to 41490	40620	20MHz	QPSK	1 RB
Occupied Bandwidth	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	25RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	50RB
	39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	75 RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	100RB
Peak to Average Ratio	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM	1 RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM	1 RB
	39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM	1 RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM	1 RB
Band Edge	39675 to 41565	39675, 41565	5MHz	QPSK, 16QAM	1RB/25RB
	39700 to 41540	39700, 41540	10MHz	QPSK, 16QAM	1RB/50RB
	39725 to 41515	39725, 41515	15MHz	QPSK, 16QAM	1RB/75RB
	39750 to 41490	39750, 41490	20MHz	QPSK, 16QAM	1RB/100RB
Conducted Spurious Emission	39675 to 41565	40620	5MHz	QPSK	1 RB
	39750 to 41490	40620	20MHz	QPSK	1 RB
Radiated Spurious Emission	39675 to 41565	40620	5MHz	QPSK	1 RB
	39750 to 41490	40620	20MHz	QPSK	1 RB

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP	24°C, 63%RH	DC 7.68V
Conducted Output Power	25°C, 65%RH	DC 7.68V
Occupied Bandwidth	25°C, 65%RH	DC 7.68V
Conducted Spurious Emission	25°C, 65%RH	DC 7.68V
Radiated Spurious Emission	25°C, 60%RH	AC 120V/60Hz
Band Edge	25°C, 65%RH	DC 7.68V
Peak to Average Ratio	25°C, 65%RH	DC 7.68V
Frequency Stability	Normal Extreme	Normal Extreme

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.6m	DC Cable
2	NO	NO	1.0m	AC Cable

4. TEST RESULT

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMIT

Mobile / Portable station are limited to 1 watts e.i.r.p. (LTE 4)

Mobile / Portable station are limited to 2 watts e.i.r.p. (LTE 7 and LTE 41)

Mobile / Portable station are limited to 3 watts e.i.r.p. (LTE 12 and LTE 13)

4.1.2 TEST PROCEDURE

EIRP/ERP:

EIRP= Conducted Power +Antenan gain

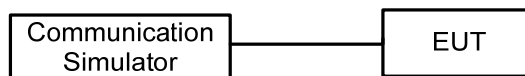
ERP power=EIPR power-2.15dBi.

Conducted Power:

The EUT was set up for the maximum power with WCDMA, CDMA, and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TESTSETUP LAYOUT

Conducted Power Measurement



4.1.4 TEST DEVIATION

No deviation

4.1.5 TEST RESULTS

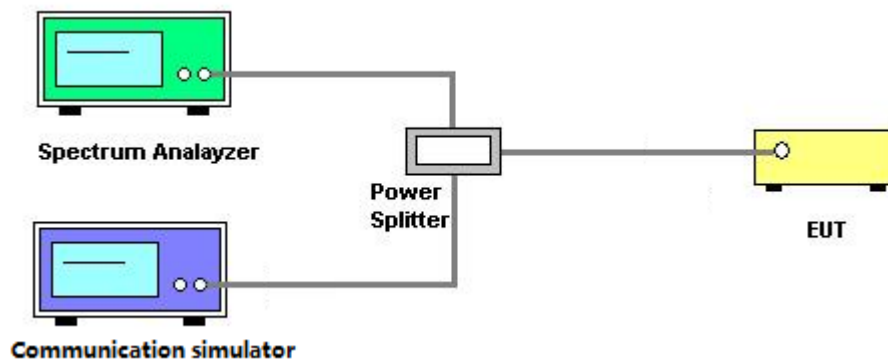
Please refer to the Appendix A.

4.2 OCCUPIED BANDWIDTH MEASUREMENT

4.2.1 TEST PROCEDURE

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.

4.2.2 TEST SETUP LAYOUT



4.2.3 TEST DEVIATION

No deviation

4.2.4 TEST RESULTS

Please refer to the Appendix B.

4.3 CONDUCTED EMISSIONS MEASUREMENT

4.3.1 LIMIT

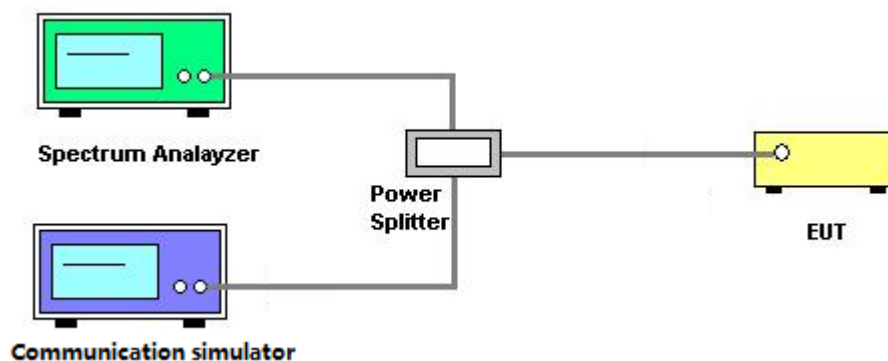
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (LTE 4,12,13)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (LTE 7, 41)

4.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v03 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set $RBW \geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

4.3.3 TESTSETUP LAYOUT



4.3.4 TESTDEVIATION

No deviation

4.3.5 TEST RESULTS

Please refer to the Appendix C.

4.4 RADIATED EMISSIONS MEASUREMENT

4.4.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (LTE 4,12,13)

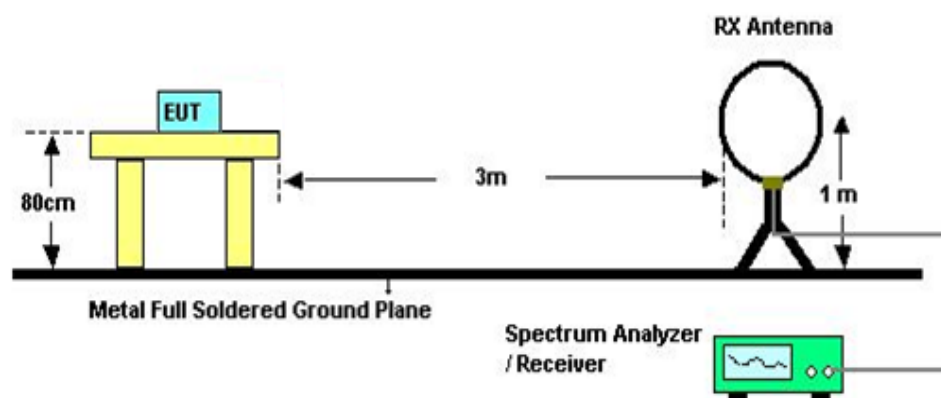
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (LTE 7, 41)

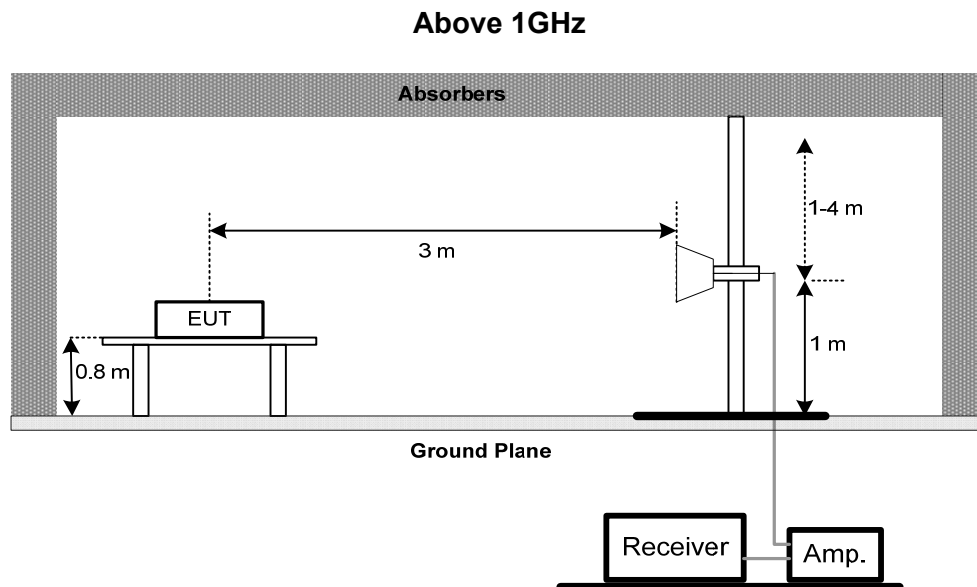
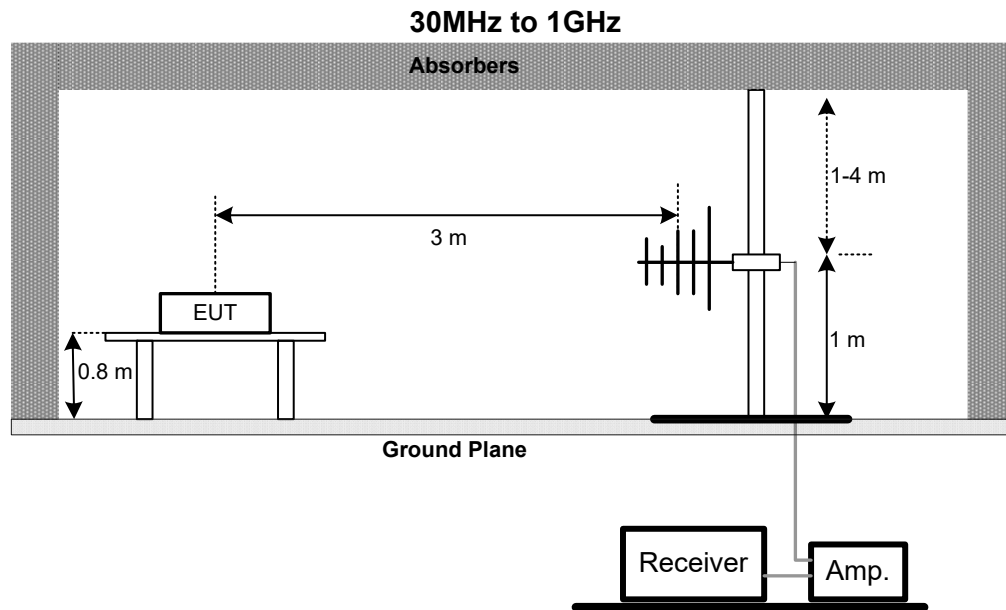
4.4.2 TEST PROCEDURES

1. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
3. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.4.3 TESTSETUP LAYOUT

Below 30MHz





4.4.4 TEST DEVIATION

No deviation

4.4.5 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix D.

4.4.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix E.

4.4.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix F.

Note: for band 13 1559-1610MHz, the test results of radiated emission meet the limit -40 dBm.

4.5 BAND EDGE MEASUREMENT

4.5.1 LIMIT

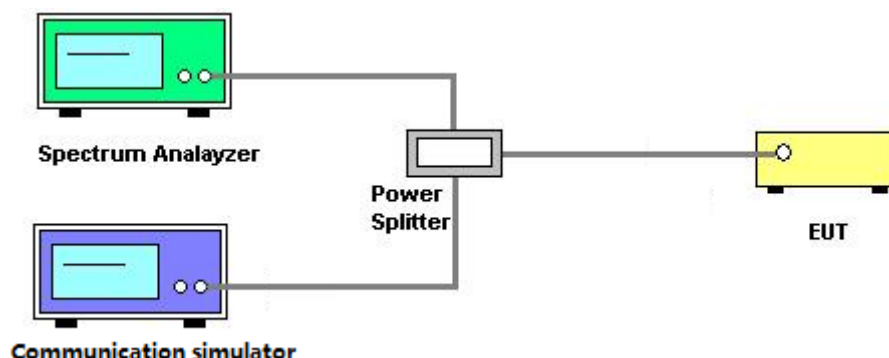
The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. (LTE 4,12,13)

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. (LTE 7, 41)

4.5.2 TEST PROCEDURES

1. All measurements were done at low and high operational frequency range.
2. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 13kHz and VB of the spectrum is 51kHz (LTE Bandwidth 1.4MHz).
3. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Bandwidth 3MHz).
4. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 5MHz/10MHz).
5. Record the max trace plot into the test report.

4.5.3 TESTSETUP LAYOUT



4.5.4 TESTDEVIATION

No deviation

4.5.5 TEST RESULTS

Please refer to the Appendix G.

4.6 PEAK TO AVERAGE RATIO MEASUREMENT

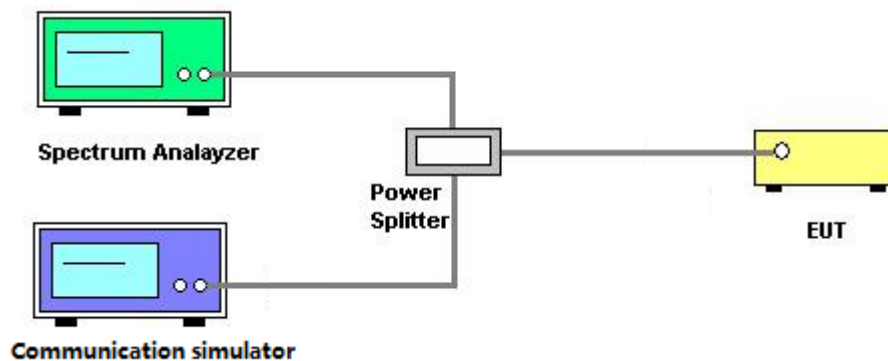
4.6.1 LIMIT

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.

4.6.2 TEST PROCEDURES

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.3 TESTSETUP LAYOUT



4.6.4 TESTDEVIATION

No deviation

4.6.5 TEST RESULTS

Please refer to the Appendix H

4.7 FREQUENCY STABILITY MEASUREMENT

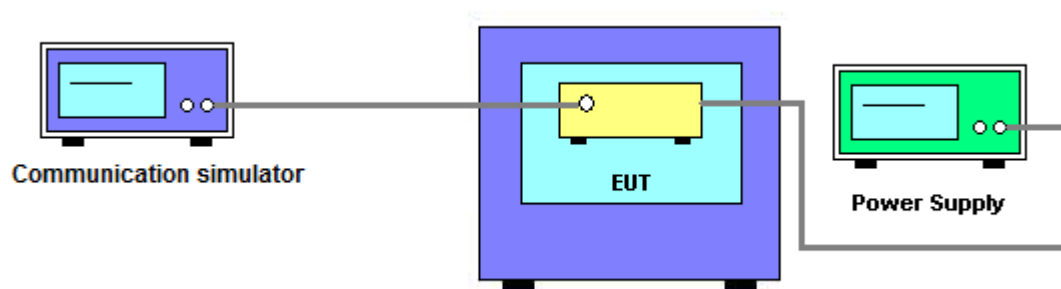
4.7.1 LIMIT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.7.2 TEST PROCEDURES

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

4.7.3 TESTSETUP LAYOUT



4.7.4 TESTDEVIATION

No deviation

4.7.5 TEST RESULTS

Please refer to the Appendix I

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emission & ERP or EIRP Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018
2	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 26, 2018
3	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Apr. 22, 2018
4	Amplifier	Agilent	8449B	3008A02274	Mar. 09, 2018
5	Amplifier	HP	8447D	2944A09673	Oct. 19, 2018
6	HighPass Filter	Wairwright Instruments Gmbh	WHK 1.5/15G-10ST	11	Mar. 09, 2018
7	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1710/1785-1690/180 5-60/12SS	38	Feb. 22, 2018
8	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 824/849-810/863-60/ 9SS	7	Feb. 22, 2018
9	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 880/915-860/935-60/ 9SS	14	Feb. 22, 2018
10	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1850/1910-1830/193 0-60/10SS	17	Feb. 22, 2018
11	HighPass Filter	Wairwright Instruments Gmbh	WHK3.1/18G-10SS	24	Mar. 09, 2018
12	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 26, 2018
13	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 26, 2018
14	Receiver	Agilent	N9038A	MY52130039	Sep. 03, 2018
15	wideband radio communication tester	R&S	CMW500	152372	Mar. 26, 2018
16	High pass filter	ZHPF-M1000-4000-1	ZHPF-M3-12.75G-3869	B2015073763	Aug. 03, 2018
17	High pass filter	ZHPF-M3-12.75G-3869	ZHPF-M1000-4000-1	B2015073762	Aug. 03, 2018
18	High pass filter	ZHPF-M6-18G-1727	ZHPF-M6-186-1727	B2015073764	Aug. 03, 2018
19	Cable	emci	LMR-400(30MHz-1G Hz)(8m+5m)	N/A	Jun. 26, 2018
20	Cable	emci	EMC104-SM-SM-12000(12m)	N/A	Jul. 05, 2018
21	Controller	ETS-Lindgren	2090	N/A	N/A
22	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 26, 2018
2	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 26, 2018
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S +	331000910-1	Feb. 25, 2018
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 26, 2018
5	Cable	N/A	RG316(0.3m)	N/A	Jul. 05, 2018

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 26, 2018
2	DC power supply	GW Instek	GPC-3030DN	EK880675	Oct. 12, 2018
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S +	331000910-1	Feb. 25, 2018
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 26, 2018
5	Const Temp,& Humidity Chamber	Bell	BTH-50C	20170306001	Mar. 26, 2018
6	Cable	N/A	RG316(0.3m)	N/A	Jul. 05, 2018

Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

6. EUT TEST PHOTO

Radiated Measurement Photos

9KHz to 30MHz



Radiated Measurement Photos

30MHz to 1000MHz



Radiated Measurement Photos

Above 1000MHz



APPENDIX A - OUTPUT POWER

Conducted Power:

Modulation	Band	WCDMA IV		
	Tx Channel	1312 CH	1413 CH	1513 CH
	Rx Channel	1537 CH	1638 CH	1738 CH
	Frequency	1712.4 MHz	1732.6 MHz	1752.6 MHz
BPSK	RMC 12.2K	23.67	23.56	23.53
	RMC 64K	23.66	23.58	23.55
	RMC 144K	23.70	23.56	23.50
	RMC 384K	23.69	23.55	23.52
BPSK	HSDPA Subtest-1	22.55	22.28	22.40
	HSDPA Subtest-2	22.62	22.31	22.43
	HSDPA Subtest-3	22.12	21.85	21.94
	HSDPA Subtest-4	22.11	21.87	21.97
BPSK	HSUPA Subtest-1	22.59	22.30	22.42
	HSUPA Subtest-2	22.17	21.94	21.91
	HSUPA Subtest-3	22.72	22.55	22.52
	HSUPA Subtest-4	22.68	22.50	22.45
	HSUPA Subtest-5	22.69	22.53	22.50

Conducted Power:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957 CH	20175 CH	20393 CH
				1710.7 MHz	1732.5 MHz	1754.3 MHz
4 / 1.4M	QPSK	1	0	23.12	23.02	23.20
		1	2	23.07	23.08	22.90
		1	5	23.20	22.97	23.23
		3	0	22.90	22.85	22.84
		3	1	22.99	22.92	22.87
		3	3	23.05	22.96	22.92
		6	0	22.02	21.87	21.80
	16QAM	1	0	22.36	22.42	21.92
		1	2	22.37	22.42	22.11
		1	5	22.54	22.23	21.99
		3	0	22.10	22.01	21.92
		3	1	22.23	22.06	21.97
		3	3	22.34	22.13	21.99
		6	0	21.14	20.78	20.97

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965 CH	20175 CH	20385 CH
				1711.5 MHz	1732.5 MHz	1753.5 MHz
4 / 3M	QPSK	1	0	23.13	23.19	22.94
		1	7	23.18	23.11	22.88
		1	14	23.32	23.14	22.94
		8	0	22.09	21.93	21.83
		8	3	22.11	21.87	21.86
		8	7	22.06	21.93	21.85
		15	0	22.11	21.92	21.86
	16QAM	1	0	22.11	22.56	22.09
		1	7	22.21	22.42	22.09
		1	14	22.29	22.43	21.99
		8	0	21.18	20.99	20.77
		8	3	21.15	20.86	20.84
		8	7	21.15	20.94	20.82
		15	0	21.13	20.92	20.73

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975 CH	20175 CH	20375 CH
				1712.5 MHz	1732.5 MHz	1752.5 MHz
4 / 5M	QPSK	1	0	23.28	23.02	23.11
		1	12	23.35	23.10	23.19
		1	24	23.37	23.08	23.16
		12	0	22.10	21.93	21.93
		12	6	22.16	21.96	21.99
		12	13	22.08	21.94	21.94
		25	0	22.15	21.81	21.92
	16QAM	1	0	22.31	22.56	22.06
		1	12	22.48	22.53	22.24
		1	24	22.42	22.59	22.13
		12	0	21.13	21.07	20.96
		12	6	21.20	21.06	20.98
		12	13	21.14	21.06	20.94
		25	0	21.13	20.84	20.83

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000 CH	20175 CH	20350 CH
				1715 MHz	1732.5 MHz	1750 MHz
4 / 10M	QPSK	1	0	23.10	23.21	22.96
		1	24	23.18	23.09	22.86
		1	49	23.16	23.06	22.83
		25	0	22.10	21.97	21.89
		25	12	22.11	21.89	21.80
		25	25	22.10	21.91	21.83
		50	0	22.12	21.90	21.77
	16QAM	1	0	22.29	22.25	22.44
		1	24	22.23	22.34	21.97
		1	49	22.45	22.26	22.13
		25	0	21.07	20.87	20.96
		25	12	21.12	20.89	20.86
		25	25	21.09	20.86	20.83
		50	0	21.07	20.90	20.77

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025 CH	20175 CH	20325 CH
				1717.5 MHz	1732.5 MHz	1747.5 MHz
4 / 15M	QPSK	1	0	23.10	23.11	22.95
		1	37	23.11	22.99	22.91
		1	74	22.89	22.88	22.84
		36	0	22.10	22.88	21.91
		36	19	22.12	22.03	21.94
		36	39	22.06	21.90	21.88
		75	0	22.06	21.95	21.86
	16QAM	1	0	22.11	22.32	22.46
		1	37	22.18	22.26	22.45
		1	74	21.96	22.19	22.33
		36	0	21.06	21.97	20.89
		36	19	21.08	21.01	20.85
		36	39	20.98	20.88	20.79
		75	0	21.05	20.92	20.81

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050 CH	20175 CH	20300 CH
				1720 MHz	1732.5 MHz	1745 MHz
4 / 20M	QPSK	1	0	23.10	22.88	22.93
		1	50	23.18	22.12	23.00
		1	99	23.06	22.75	22.74
		50	0	21.99	22.06	21.88
		50	25	22.13	22.02	21.94
		50	50	22.12	21.90	21.83
		100	0	22.02	21.90	21.89
	16QAM	1	0	22.75	22.82	22.22
		1	50	22.86	21.12	22.30
		1	99	22.59	22.20	22.07
		50	0	21.05	21.00	20.83
		50	25	21.15	20.98	20.87
		50	50	21.12	20.85	20.75
		100	0	21.06	20.87	20.87

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775 CH	21100 CH	21425 CH
				2502.5 MHz	2535 MHz	2567.5 MHz
7 / 5M	QPSK	1	0	21.45	21.70	21.31
		1	12	21.60	21.73	21.40
		1	24	21.61	21.64	21.31
		12	0	20.53	20.65	20.41
		12	6	20.49	20.70	20.45
		12	13	20.55	20.69	20.42
		25	0	20.57	20.66	20.39
	16QAM	1	0	20.66	21.33	20.42
		1	12	20.89	21.35	20.62
		1	24	20.79	21.33	20.49
		12	0	19.57	19.68	19.44
		12	6	19.51	19.76	19.41
		12	13	19.54	19.72	19.43
		25	0	19.52	19.61	19.31

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800 CH	21100 CH	21400 CH
				2505 MHz	2535 MHz	2565 MHz
7 / 10M	QPSK	1	0	21.38	21.56	21.13
		1	24	21.30	21.63	21.11
		1	49	21.26	21.49	21.09
		25	0	20.52	20.62	20.33
		25	12	20.47	20.60	20.33
		25	25	20.38	20.62	20.29
		50	0	20.45	20.55	20.26
	16QAM	1	0	20.46	21.00	20.86
		1	24	20.49	21.04	20.60
		1	49	20.76	20.94	20.89
		25	0	19.52	19.69	19.44
		25	12	19.52	19.77	19.49
		25	25	19.37	19.74	19.47
		50	0	19.43	19.68	19.41

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825 CH	21100 CH	21375 CH
				2507.5 MHz	2535 MHz	2562.5 MHz
7 / 15M	QPSK	1	0	21.19	21.48	21.11
		1	37	21.44	21.56	21.27
		1	74	21.29	21.33	21.02
		36	0	20.55	20.58	20.34
		36	19	20.59	20.63	20.46
		36	39	20.44	20.54	20.37
		75	0	20.50	20.52	20.37
	16QAM	1	0	20.32	20.86	20.70
		1	37	20.47	20.93	20.82
		1	74	20.26	20.72	20.64
		36	0	19.52	19.62	19.33
		36	19	19.58	19.65	19.40
		36	39	19.47	19.57	19.37
		75	0	19.51	19.56	19.38

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850 CH	21100 CH	21350 CH
				2510 MHz	2535 MHz	2560 MHz
7 / 20M	QPSK	1	0	21.53	21.67	21.44
		1	50	21.69	21.76	21.64
		1	99	21.53	21.44	21.38
		50	0	20.69	20.77	20.54
		50	25	20.68	20.86	20.55
		50	50	20.68	20.74	20.52
		100	0	20.68	20.81	20.49
	16QAM	1	0	21.25	21.50	20.85
		1	50	21.39	21.63	20.88
		1	99	20.99	21.29	20.68
		50	0	19.74	19.73	19.53
		50	25	19.72	19.83	19.54
		50	50	19.73	19.77	19.49
		100	0	19.72	19.84	19.52

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23017 CH	23095 CH	23173 CH
				699.7 MHz	707.5 MHz	715.3 MHz
12 / 1.4M	QPSK	1	0	23.26	23.22	23.12
		1	2	23.30	23.04	23.00
		1	5	23.27	23.31	23.14
		3	0	23.13	22.92	22.89
		3	1	23.14	22.98	22.93
		3	3	23.16	23.08	22.94
		6	0	22.10	21.88	21.85
	16QAM	1	0	22.11	22.19	22.26
		1	2	22.47	22.04	22.36
		1	5	22.14	22.20	22.33
		3	0	22.24	21.91	21.99
		3	1	22.20	21.95	22.03
		3	3	22.26	22.05	22.05
		6	0	21.24	20.93	20.74

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23025 CH	23095 CH	23165 CH
				700.5 MHz	707.5 MHz	714.5 MHz
12 / 3M	QPSK	1	0	23.30	23.04	23.10
		1	7	23.42	23.33	22.95
		1	14	23.33	22.97	22.96
		8	0	22.20	21.97	22.01
		8	3	22.21	22.05	21.91
		8	7	22.16	21.96	21.94
		15	0	22.12	21.97	22.03
	16QAM	1	0	22.21	22.51	22.26
		1	7	22.23	22.46	22.30
		1	14	22.15	22.46	22.16
		8	0	21.22	21.00	21.03
		8	3	21.23	21.03	20.89
		8	7	21.19	20.94	20.91
		15	0	21.15	20.98	20.85

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23035 CH	23095 CH	23155 CH
				701.5 MHz	707.5 MHz	713.5 MHz
12 / 5M	QPSK	1	0	23.33	23.03	23.11
		1	12	23.37	23.11	23.23
		1	24	23.21	22.92	23.01
		12	0	22.05	21.93	21.87
		12	6	22.16	21.94	21.99
		12	13	22.11	21.96	21.94
		25	0	22.12	21.93	21.85
	16QAM	1	0	22.22	22.58	22.13
		1	12	22.31	22.58	22.29
		1	24	22.15	22.47	22.01
		12	0	21.14	21.04	20.90
		12	6	21.13	21.05	21.07
		12	13	21.15	21.03	20.93
		25	0	21.10	20.94	20.77

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23060 CH	23095 CH	23130 CH
				704 MHz	707.5 MHz	711 MHz
12 / 10M	QPSK	1	0	23.19	23.24	23.06
		1	24	23.14	23.28	23.08
		1	49	22.97	23.14	22.87
		25	0	22.14	22.00	21.99
		25	12	22.08	21.96	21.96
		25	25	22.00	21.96	21.93
		50	0	22.05	21.94	21.95
	16QAM	1	0	22.36	22.40	22.35
		1	24	22.08	22.40	22.48
		1	49	22.14	22.31	22.35
		25	0	21.14	21.02	21.05
		25	12	21.06	20.99	21.08
		25	25	21.00	20.93	21.06
		50	0	20.95	20.90	20.96

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23205 CH	23230 CH	23255 CH
				779.5 MHz	782 MHz	784.5 MHz
13 / 5M	QPSK	1	0	22.92	22.93	22.90
		1	12	23.00	22.93	22.94
		1	24	22.81	22.87	22.88
		12	0	21.77	21.68	21.74
		12	6	21.81	21.74	21.76
		12	13	21.70	21.72	21.74
		25	0	21.78	21.67	21.78
	16QAM	1	0	21.85	21.88	22.36
		1	12	22.03	21.94	22.39
		1	24	21.82	21.87	22.47
		12	0	20.79	20.80	20.87
		12	6	20.88	20.83	20.85
		12	13	20.75	20.79	20.88
		25	0	20.77	20.74	20.84

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH
				23230 CH
				782 MHz
13 / 10M	QPSK	1	0	22.77
		1	24	22.91
		1	49	22.75
		25	0	21.76
		25	12	21.79
		25	25	21.70
		50	0	21.85
	16QAM	1	0	21.93
		1	24	21.92
		1	49	22.06
		25	0	20.78
		25	12	20.84
		25	25	20.74
		50	0	20.79

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39675 CH	40620 CH	41565 CH
				2498.5MHz	2593.0MHz	2687.5MHz
41 / 5M	QPSK	1	0	21.69	21.80	21.77
		1	12	21.91	22.01	21.91
		1	24	21.79	21.89	21.84
		12	0	20.72	20.70	20.69
		12	6	20.81	20.80	20.81
		12	13	20.83	20.72	20.82
		25	0	20.75	20.72	20.77
	16QAM	1	0	21.25	21.02	21.17
		1	12	21.43	21.13	21.53
		1	24	21.35	21.08	21.35
		12	0	19.88	19.79	19.68
		12	6	19.97	19.79	19.85
		12	13	19.95	19.78	19.79
		25	0	19.84	19.71	19.79

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39700 CH	40620 CH	41540 CH
				2501.0MHz	2593.0MHz	2685.0MHz
41 / 10M	QPSK	1	0	21.64	21.94	21.79
		1	24	21.97	21.96	21.81
		1	49	21.85	21.89	21.90
		25	0	20.81	20.71	20.74
		25	12	20.92	20.75	20.73
		25	25	20.82	20.84	20.82
		50	0	20.88	20.74	20.64
	16QAM	1	0	21.29	21.24	21.33
		1	24	21.47	21.35	21.17
		1	49	21.57	21.18	21.32
		25	0	19.88	19.71	19.75
		25	12	19.97	19.76	19.75
		25	25	19.91	19.77	19.83
		50	0	19.86	19.78	19.65

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39725 CH	40620 CH	41515 CH
				2503.5MHz	2593.0MHz	2682.5MHz
41 / 15M	QPSK	1	0	21.64	22.11	21.94
		1	37	21.88	21.95	21.93
		1	74	21.80	21.83	22.03
		36	0	20.90	20.83	20.90
		36	19	20.99	20.91	20.94
		36	39	20.88	20.84	20.82
		75	0	20.90	20.83	20.86
	16QAM	1	0	21.09	21.24	21.01
		1	37	21.16	21.33	21.19
		1	74	21.02	21.24	21.05
		36	0	19.90	19.85	19.92
		36	19	19.94	19.87	19.94
		36	39	19.86	19.81	19.86
		75	0	19.95	19.82	19.87

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39750 CH	40620 CH	41490 CH
				2506.0MHz	2593.0MHz	2680.0MHz
41 / 20M	QPSK	1	0	21.66	21.76	21.83
		1	50	21.76	21.88	21.76
		1	99	21.73	21.65	21.58
		50	0	20.78	20.89	20.91
		50	25	20.96	20.91	20.88
		50	50	20.81	20.83	20.80
		100	0	20.85	20.86	20.83
	16QAM	1	0	21.79	21.08	21.13
		1	50	21.60	21.43	21.30
		1	99	21.00	20.88	21.13
		50	0	19.77	19.86	19.89
		50	25	19.90	19.87	19.87
		50	50	19.79	19.76	19.77
		100	0	19.84	19.82	19.91

EIRP Power:

Modulation	Band	WCDMA IV		
	Tx Channel	1312 CH	1413 CH	1513 CH
	Rx Channel	1537 CH	1638 CH	1738 CH
	Frequency	1712.4	1732.6	1752.6
BPSK	RMC 12.2K	26.57	26.46	26.43
	RMC 64K	26.56	26.48	26.45
	RMC 144K	26.60	26.46	26.40
	RMC 384K	26.59	26.45	26.42
BPSK	HSDPA Subtest-1	25.45	25.18	25.30
	HSDPA Subtest-2	25.52	25.21	25.33
	HSDPA Subtest-3	25.02	24.75	24.84
	HSDPA Subtest-4	25.01	24.77	24.87
BPSK	HSUPA Subtest-1	25.49	25.20	25.32
	HSUPA Subtest-2	25.07	24.84	24.81
	HSUPA Subtest-3	25.62	25.45	25.42
	HSUPA Subtest-4	25.58	25.40	25.35
	HSUPA Subtest-5	25.59	25.43	25.40

EIRP Power:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957 CH	20175 CH	20393 CH
				1710.7 MHz	1732.5 MHz	1754.3 MHz
4 / 1.4M	QPSK	1	0	26.02	25.92	26.10
		1	2	25.97	25.98	25.80
		1	5	26.10	25.87	26.13
		3	0	25.80	25.75	25.74
		3	1	25.89	25.82	25.77
		3	3	25.95	25.86	25.82
		6	0	24.92	24.77	24.70
	16QAM	1	0	25.26	25.32	24.82
		1	2	25.27	25.32	25.01
		1	5	25.44	25.13	24.89
		3	0	25.00	24.91	24.82
		3	1	25.13	24.96	24.87
		3	3	25.24	25.03	24.89
		6	0	24.04	23.68	23.87

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965 CH	20175 CH	20385 CH
				1711.5 MHz	1732.5 MHz	1753.5 MHz
4 / 3M	QPSK	1	0	26.03	26.09	25.84
		1	7	26.08	26.01	25.78
		1	14	26.22	26.04	25.84
		8	0	24.99	24.83	24.73
		8	3	25.01	24.77	24.76
		8	7	24.96	24.83	24.75
		15	0	25.01	24.82	24.76
	16QAM	1	0	25.01	25.46	24.99
		1	7	25.11	25.32	24.99
		1	14	25.19	25.33	24.89
		8	0	24.08	23.89	23.67
		8	3	24.05	23.76	23.74
		8	7	24.05	23.84	23.72
		15	0	24.03	23.82	23.63

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975 CH	20175 CH	20375 CH
				1712.5 MHz	1732.5 MHz	1752.5 MHz
4 / 5M	QPSK	1	0	26.18	25.92	26.01
		1	12	26.25	26.00	26.09
		1	24	26.27	25.98	26.06
		12	0	25.00	24.83	24.83
		12	6	25.06	24.86	24.89
		12	13	24.98	24.84	24.84
		25	0	25.05	24.71	24.82
	16QAM	1	0	25.21	25.46	24.96
		1	12	25.38	25.43	25.14
		1	24	25.32	25.49	25.03
		12	0	24.03	23.97	23.86
		12	6	24.10	23.96	23.88
		12	13	24.04	23.96	23.84
		25	0	24.03	23.74	23.73

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000 CH	20175 CH	20350 CH
				1715 MHz	1732.5 MHz	1750 MHz
4 / 10M	QPSK	1	0	26.00	26.11	25.86
		1	24	26.08	25.99	25.76
		1	49	26.06	25.96	25.73
		25	0	25.00	24.87	24.79
		25	12	25.01	24.79	24.70
		25	25	25.00	24.81	24.73
		50	0	25.02	24.80	24.67
	16QAM	1	0	25.19	25.15	25.34
		1	24	25.13	25.24	24.87
		1	49	25.35	25.16	25.03
		25	0	23.97	23.77	23.86
		25	12	24.02	23.79	23.76
		25	25	23.99	23.76	23.73
		50	0	23.97	23.80	23.67

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025 CH	20175 CH	20325 CH
				1717.5 MHz	1732.5 MHz	1747.5 MHz
4 / 15M	QPSK	1	0	26.00	26.01	25.85
		1	37	26.01	25.89	25.81
		1	74	25.79	25.78	25.74
		36	0	25.00	25.78	24.81
		36	19	25.02	24.93	24.84
		36	39	24.96	24.80	24.78
		75	0	24.96	24.85	24.76
	16QAM	1	0	25.01	25.22	25.36
		1	37	25.08	25.16	25.35
		1	74	24.86	25.09	25.23
		36	0	23.96	24.87	23.79
		36	19	23.98	23.91	23.75
		36	39	23.88	23.78	23.69
		75	0	23.95	23.82	23.71

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050 CH	20175 CH	20300 CH
				1720 MHz	1732.5 MHz	1745 MHz
4 / 20M	QPSK	1	0	26.00	25.78	25.83
		1	50	26.08	25.02	25.90
		1	99	25.96	25.65	25.64
		50	0	24.89	24.96	24.78
		50	25	25.03	24.92	24.84
		50	50	25.02	24.80	24.73
		100	0	24.92	24.80	24.79
	16QAM	1	0	25.65	25.72	25.12
		1	50	25.76	24.02	25.20
		1	99	25.49	25.10	24.97
		50	0	23.95	23.90	23.73
		50	25	24.05	23.88	23.77
		50	50	24.02	23.75	23.65
		100	0	23.96	23.77	23.77

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775 CH	21100 CH	21425 CH
				2502.5 MHz	2535 MHz	2567.5 MHz
7 / 5M	QPSK	1	0	24.55	24.80	24.41
		1	12	24.70	24.83	24.50
		1	24	24.71	24.74	24.41
		12	0	23.63	23.75	23.51
		12	6	23.59	23.80	23.55
		12	13	23.65	23.79	23.52
		25	0	23.67	23.76	23.49
	16QAM	1	0	23.76	24.43	23.52
		1	12	23.99	24.45	23.72
		1	24	23.89	24.43	23.59
		12	0	22.67	22.78	22.54
		12	6	22.61	22.86	22.51
		12	13	22.64	22.82	22.53
		25	0	22.62	22.71	22.41

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800 CH	21100 CH	21400 CH
				2505 MHz	2535 MHz	2565 MHz
7 / 10M	QPSK	1	0	24.48	24.66	24.23
		1	24	24.40	24.73	24.21
		1	49	24.36	24.59	24.19
		25	0	23.62	23.72	23.43
		25	12	23.57	23.70	23.43
		25	25	23.48	23.72	23.39
		50	0	23.55	23.65	23.36
	16QAM	1	0	23.56	24.10	23.96
		1	24	23.59	24.14	23.70
		1	49	23.86	24.04	23.99
		25	0	22.62	22.79	22.54
		25	12	22.62	22.87	22.59
		25	25	22.47	22.84	22.57
		50	0	22.53	22.78	22.51

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825 CH	21100 CH	21375 CH
				2507.5 MHz	2535 MHz	2562.5 MHz
7 / 15M	QPSK	1	0	24.29	24.58	24.21
		1	37	24.54	24.66	24.37
		1	74	24.39	24.43	24.12
		36	0	23.65	23.68	23.44
		36	19	23.69	23.73	23.56
		36	39	23.54	23.64	23.47
		75	0	23.60	23.62	23.47
	16QAM	1	0	23.42	23.96	23.80
		1	37	23.57	24.03	23.92
		1	74	23.36	23.82	23.74
		36	0	22.62	22.72	22.43
		36	19	22.68	22.75	22.50
		36	39	22.57	22.67	22.47
		75	0	22.61	22.66	22.48

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850 CH	21100 CH	21350 CH
				2510 MHz	2535 MHz	2560 MHz
7 / 20M	QPSK	1	0	24.63	24.77	24.54
		1	50	24.79	24.86	24.74
		1	99	24.63	24.54	24.48
		50	0	23.79	23.87	23.64
		50	25	23.78	23.96	23.65
		50	50	23.78	23.84	23.62
		100	0	23.78	23.91	23.59
	16QAM	1	0	24.35	24.60	23.95
		1	50	24.49	24.73	23.98
		1	99	24.09	24.39	23.78
		50	0	22.84	22.83	22.63
		50	25	22.82	22.93	22.64
		50	50	22.83	22.87	22.59
		100	0	22.82	22.94	22.62

ERP Power:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23017 CH	23095 CH	23173 CH
				699.7 MHz	707.5 MHz	715.3 MHz
12 / 1.4M	QPSK	1	0	22.83	22.79	22.69
		1	2	22.87	22.61	22.57
		1	5	22.84	22.88	22.71
		3	0	22.70	22.49	22.46
		3	1	22.71	22.55	22.50
		3	3	22.73	22.65	22.51
		6	0	21.67	21.45	21.42
	16QAM	1	0	21.68	21.76	21.83
		1	2	22.04	21.61	21.93
		1	5	21.71	21.77	21.90
		3	0	21.81	21.48	21.56
		3	1	21.77	21.52	21.60
		3	3	21.83	21.62	21.62
		6	0	20.81	20.50	20.31

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23025 CH	23095 CH	23165 CH
				700.5 MHz	707.5 MHz	714.5 MHz
12 / 3M	QPSK	1	0	22.87	22.61	22.67
		1	7	22.99	22.90	22.52
		1	14	22.90	22.54	22.53
		8	0	21.77	21.54	21.58
		8	3	21.78	21.62	21.48
		8	7	21.73	21.53	21.51
		15	0	21.69	21.54	21.60
	16QAM	1	0	21.78	22.08	21.83
		1	7	21.80	22.03	21.87
		1	14	21.72	22.03	21.73
		8	0	20.79	20.57	20.60
		8	3	20.80	20.60	20.46
		8	7	20.76	20.51	20.48
		15	0	20.72	20.55	20.42

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23035 CH	23095 CH	23155 CH
				701.5 MHz	707.5 MHz	713.5 MHz
12 / 5M	QPSK	1	0	22.90	22.60	22.68
		1	12	22.94	22.68	22.80
		1	24	22.78	22.49	22.58
		12	0	21.62	21.50	21.44
		12	6	21.73	21.51	21.56
		12	13	21.68	21.53	21.51
		25	0	21.69	21.50	21.42
	16QAM	1	0	21.79	22.15	21.70
		1	12	21.88	22.15	21.86
		1	24	21.72	22.04	21.58
		12	0	20.71	20.61	20.47
		12	6	20.70	20.62	20.64
		12	13	20.72	20.60	20.50
		25	0	20.67	20.51	20.34

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23060 CH	23095 CH	23130 CH
				704 MHz	707.5 MHz	711 MHz
12 / 10M	QPSK	1	0	22.76	22.81	22.63
		1	24	22.71	22.85	22.65
		1	49	22.54	22.71	22.44
		25	0	21.71	21.57	21.56
		25	12	21.65	21.53	21.53
		25	25	21.57	21.53	21.50
		50	0	21.62	21.51	21.52
	16QAM	1	0	21.93	21.97	21.92
		1	24	21.65	21.97	22.05
		1	49	21.71	21.88	21.92
		25	0	20.71	20.59	20.62
		25	12	20.63	20.56	20.65
		25	25	20.57	20.50	20.63
		50	0	20.52	20.47	20.53

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23205 CH	23230 CH	23255 CH
				779.5 MHz	782 MHz	784.5 MHz
13 / 5M	QPSK	1	0	22.49	22.50	22.47
		1	12	22.57	22.50	22.51
		1	24	22.38	22.44	22.45
		12	0	21.34	21.25	21.31
		12	6	21.38	21.31	21.33
		12	13	21.27	21.29	21.31
		25	0	21.35	21.24	21.35
	16QAM	1	0	21.42	21.45	21.93
		1	12	21.60	21.51	21.96
		1	24	21.39	21.44	22.04
		12	0	20.36	20.37	20.44
		12	6	20.45	20.40	20.42
		12	13	20.32	20.36	20.45
		25	0	20.34	20.31	20.41

LTE Band / BW	Modulation	RB Size	RB Offset	Mid CH
				23230 CH
				782 MHz
13 / 10M	QPSK	1	0	22.34
		1	24	22.48
		1	49	22.32
		25	0	21.33
		25	12	21.36
		25	25	21.27
		50	0	21.42
	16QAM	1	0	21.50
		1	24	21.49
		1	49	21.63
		25	0	20.35
		25	12	20.41
		25	25	20.31
		50	0	20.36

EIRP Power:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39675 CH	40620 CH	41565 CH
				2498.5MHz	2593.0MHz	2687.5MHz
41 / 5M	QPSK	1	0	24.79	24.90	24.87
		1	12	25.01	25.11	25.01
		1	24	24.89	24.99	24.94
		12	0	23.82	23.80	23.79
		12	6	23.91	23.90	23.91
		12	13	23.93	23.82	23.92
		25	0	23.85	23.82	23.87
	16QAM	1	0	24.35	24.12	24.27
		1	12	24.53	24.23	24.63
		1	24	24.45	24.18	24.45
		12	0	22.98	22.89	22.78
		12	6	23.07	22.89	22.95
		12	13	23.05	22.88	22.89
		25	0	22.94	22.81	22.89

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39700 CH	40620 CH	41540 CH
				2501.0MHz	2593.0MHz	2685.0MHz
41 / 10M	QPSK	1	0	24.74	25.04	24.89
		1	24	25.07	25.06	24.91
		1	49	24.95	24.99	25.00
		25	0	23.91	23.81	23.84
		25	12	24.02	23.85	23.83
		25	25	23.92	23.94	23.92
		50	0	23.98	23.84	23.74
	16QAM	1	0	24.39	24.34	24.43
		1	24	24.57	24.45	24.27
		1	49	24.67	24.28	24.42
		25	0	22.98	22.81	22.85
		25	12	23.07	22.86	22.85
		25	25	23.01	22.87	22.93
		50	0	22.96	22.88	22.75

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39725 CH	40620 CH	41515 CH
				2503.5MHz	2593.0MHz	2682.5MHz
41 / 15M	QPSK	1	0	24.74	25.21	25.04
		1	37	24.98	25.05	25.03
		1	74	24.90	24.93	25.13
		36	0	24.00	23.93	24.00
		36	19	24.09	24.01	24.04
		36	39	23.98	23.94	23.92
		75	0	24.00	23.93	23.96
	16QAM	1	0	24.19	24.34	24.11
		1	37	24.26	24.43	24.29
		1	74	24.12	24.34	24.15
		36	0	23.00	22.95	23.02
		36	19	23.04	22.97	23.04
		36	39	22.96	22.91	22.96
		75	0	23.05	22.92	22.97

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39750 CH	40620 CH	41490 CH
				2506.0MHz	2593.0MHz	2680.0MHz
41 / 20M	QPSK	1	0	24.76	24.86	24.93
		1	50	24.86	24.98	24.86
		1	99	24.83	24.75	24.68
		50	0	23.88	23.99	24.01
		50	25	24.06	24.01	23.98
		50	50	23.91	23.93	23.90
		100	0	23.95	23.96	23.93
	16QAM	1	0	24.89	24.18	24.23
		1	50	24.70	24.53	24.40
		1	99	24.10	23.98	24.23
		50	0	22.87	22.96	22.99
		50	25	23.00	22.97	22.97
		50	50	22.89	22.86	22.87
		100	0	22.94	22.92	23.01

APPENDIX B - OCCUPIED BANDWIDTH

WCDMA Band 4 WCDMA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1438	19957	1710.7	4.716
1413	1732.6	4.1358	20175	1732.5	4.711
1513	1752.6	4.1373	20393	1754.3	4.680



WCDMA Band 4 HSDPA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1400	19957	1710.7	4.730
1413	1732.6	4.1550	20175	1732.5	4.736
1513	1752.6	4.1352	20393	1754.3	4.701

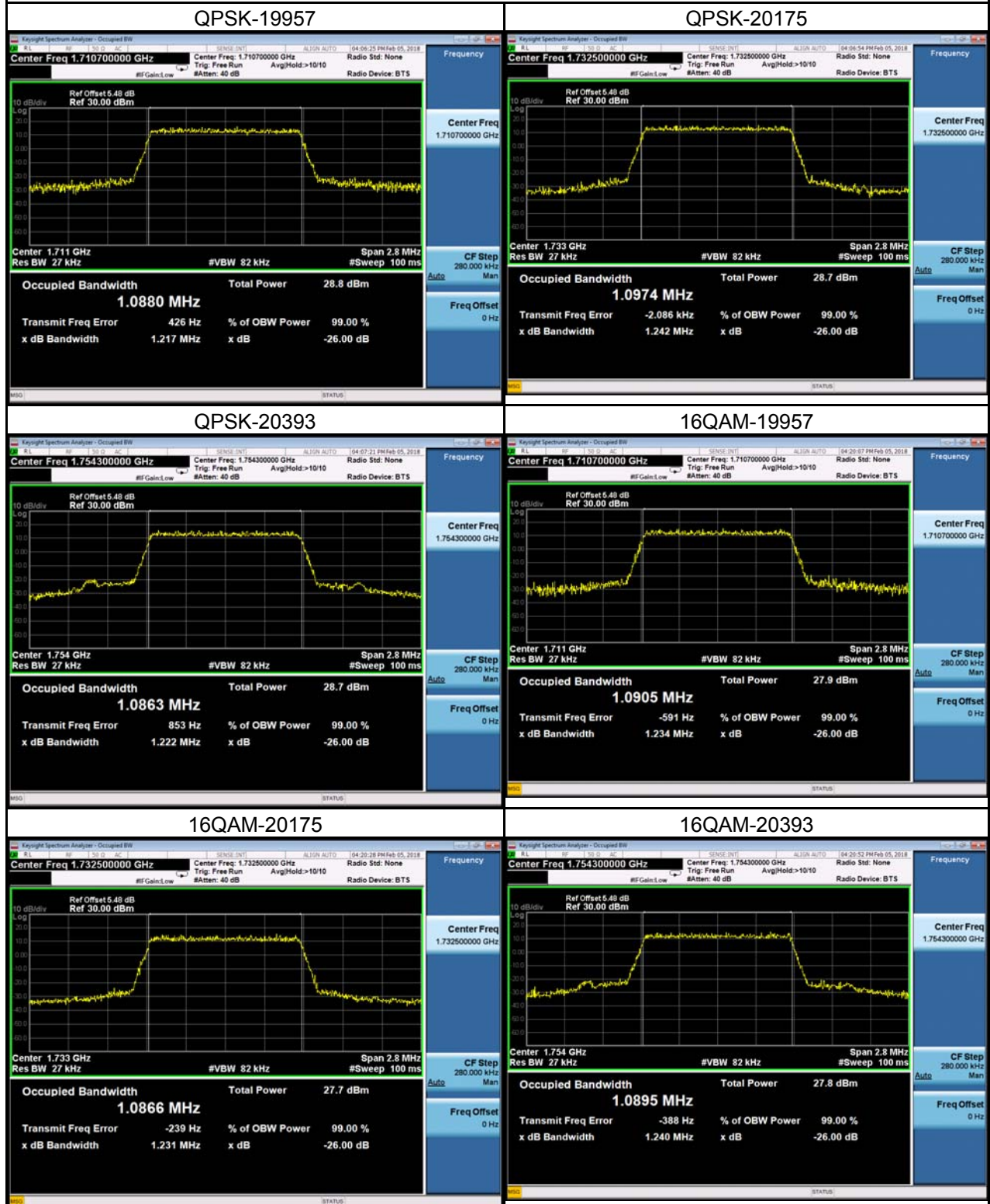


WCDMA Band 4 HSUPA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1412	19957	1710.7	4.732
1413	1732.6	4.1493	20175	1732.5	4.714
1513	1752.6	4.1328	20393	1754.3	4.721



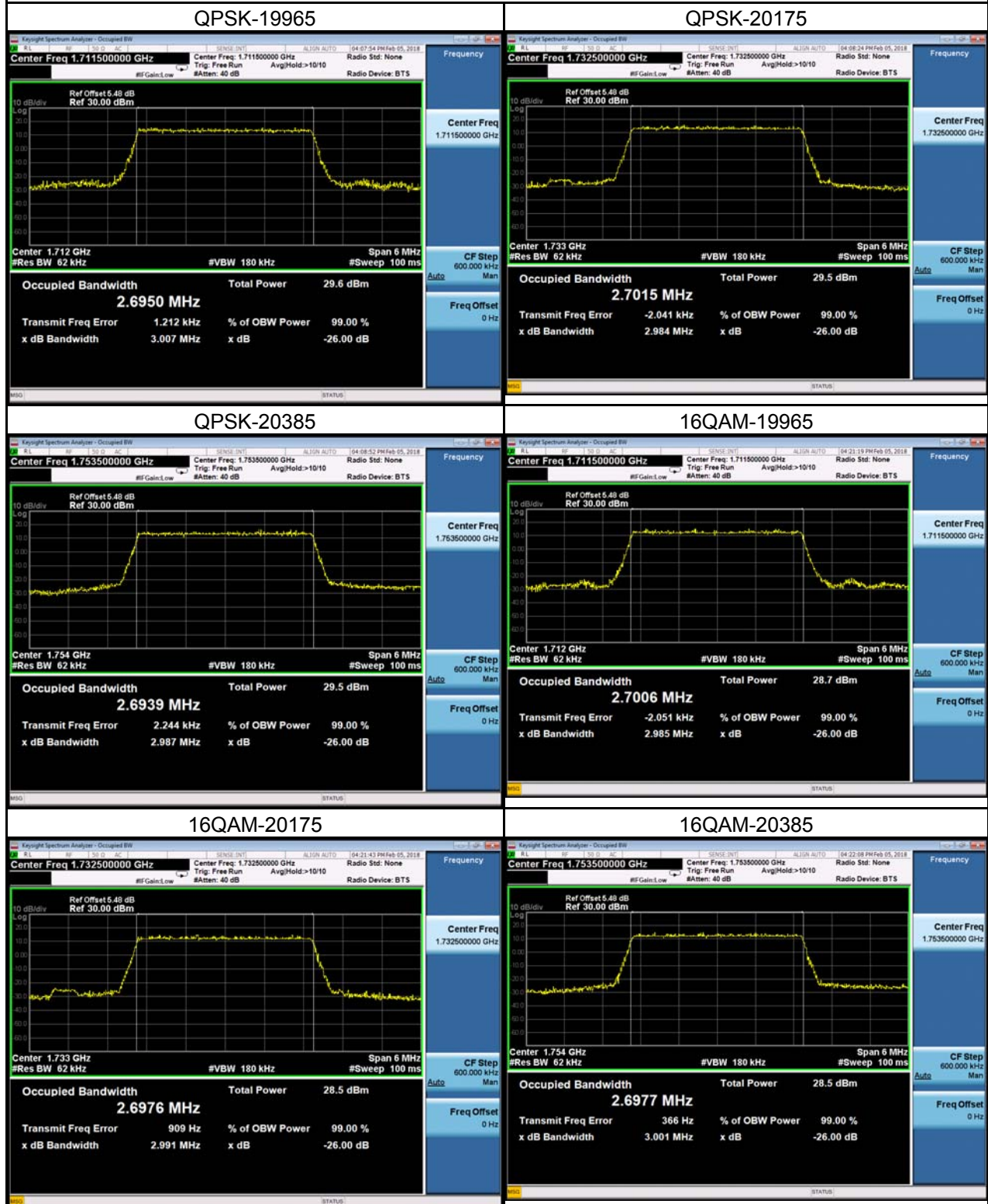
LTE Band 4_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19957	1710.7	1.0880	19957	1710.7	1.0905
20175	1732.5	1.0974	20175	1732.5	1.0866
20393	1754.3	1.0863	20393	1754.3	1.0895
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.217	19957	1710.7	1.234
20175	1732.5	1.242	20175	1732.5	1.231
20393	1754.3	1.222	20393	1754.3	1.240

Spectrum Plot



LTE Band 4_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19965	1711.5	2.6950	19965	1711.5	2.7006
20175	1732.5	2.7015	20175	1732.5	2.6976
20385	1753.5	2.6939	20385	1753.5	2.6977
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	3.007	19965	1711.5	2.985
20175	1732.5	2.984	20175	1732.5	2.991
20385	1753.5	2.987	20385	1753.5	3.001

Spectrum Plot



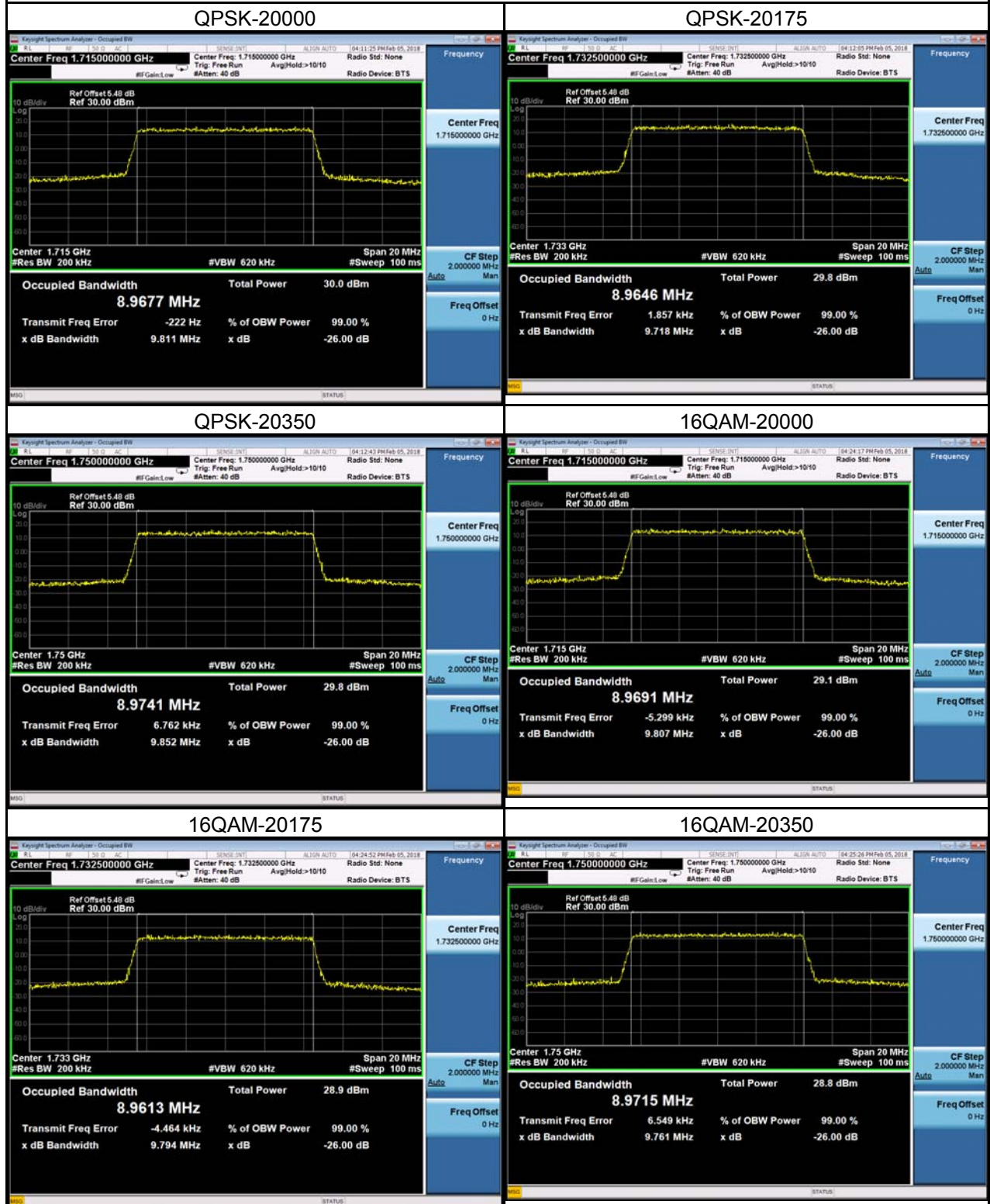
LTE Band 4_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19975	1712.5	4.5025	19975	1712.5	4.4973
20175	1732.5	4.4994	20175	1732.5	4.4973
20375	1752.5	4.5013	20375	1752.5	4.5057
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.968	19975	1712.5	4.970
20175	1732.5	4.916	20175	1732.5	4.955
20375	1752.5	4.957	20375	1752.5	4.930

Spectrum Plot



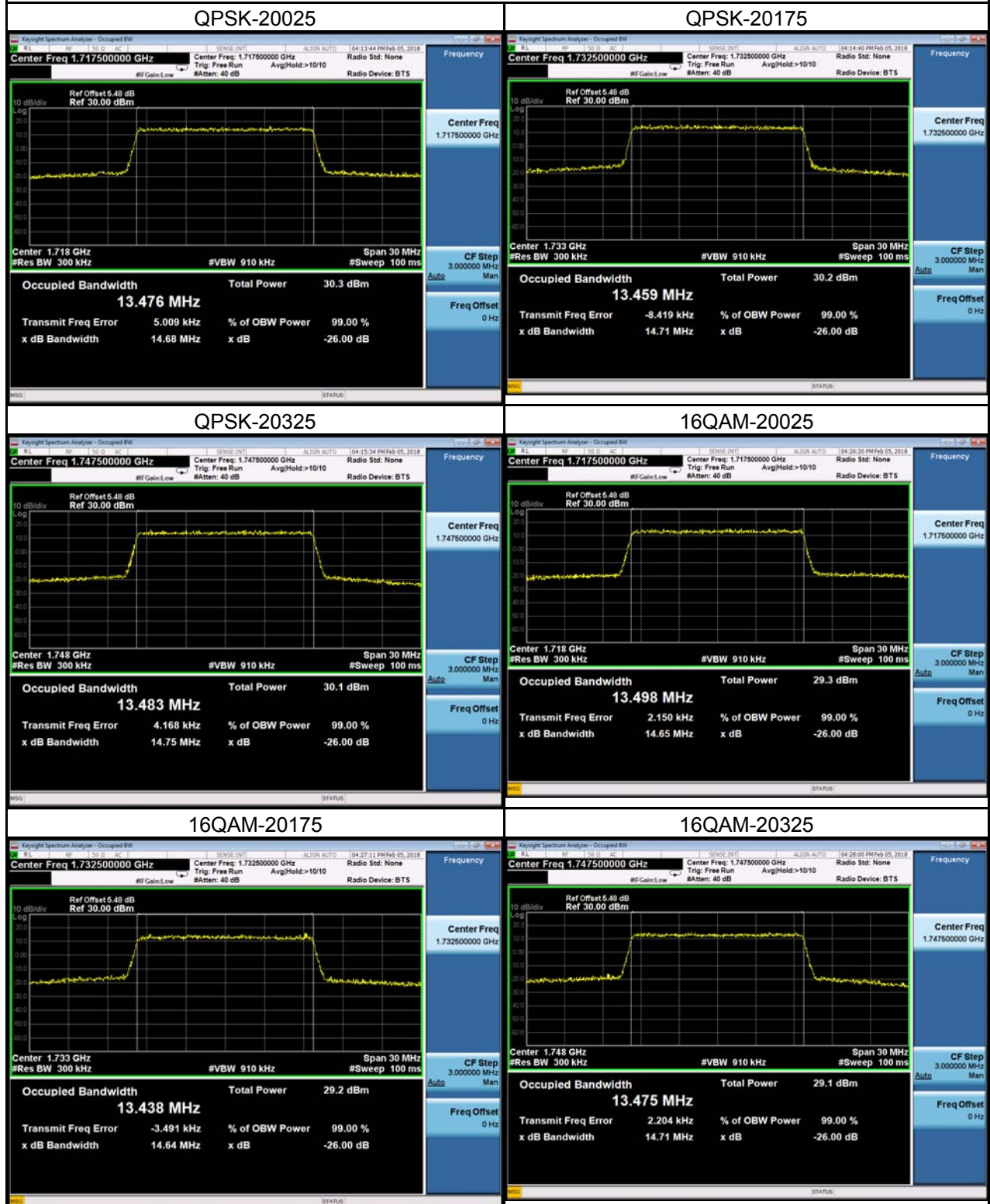
LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	8.9677	20000	1715	8.9691
20175	1732.5	8.9646	20175	1732.5	8.9613
20350	1750	8.9741	20350	1750	8.9715
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.811	20000	1715	9.807
20175	1732.5	9.718	20175	1732.5	9.794
20350	1750	9.852	20350	1750	9.761

Spectrum Plot



LTE Band 4_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20025	1717.5	13.476	20025	1717.5	13.498
20175	1732.5	13.459	20175	1732.5	13.438
20325	1747.5	13.483	20325	1747.5	13.475
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.68	20025	1717.5	14.65
20175	1732.5	14.71	20175	1732.5	14.64
20325	1747.5	14.75	20325	1747.5	14.71

Spectrum Plot



LTE Band 4_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20050	1720	17.957	20050	1720	17.951
20175	1732.5	17.919	20175	1732.5	17.927
20300	1745	17.947	20300	1745	17.970
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.42	20050	1720	19.50
20175	1732.5	19.48	20175	1732.5	19.29
20300	1745	19.51	20300	1745	19.46

Spectrum Plot



LTE Band 7_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20775	2502.5	4.5078	20775	2502.5	4.4934
21100	2535	4.5026	21100	2535	4.4970
21425	2567.5	4.4951	21425	2567.5	4.4980
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.914	20775	2502.5	4.921
21100	2535	4.966	21100	2535	4.934
21425	2567.5	4.945	21425	2567.5	4.930

Spectrum Plot



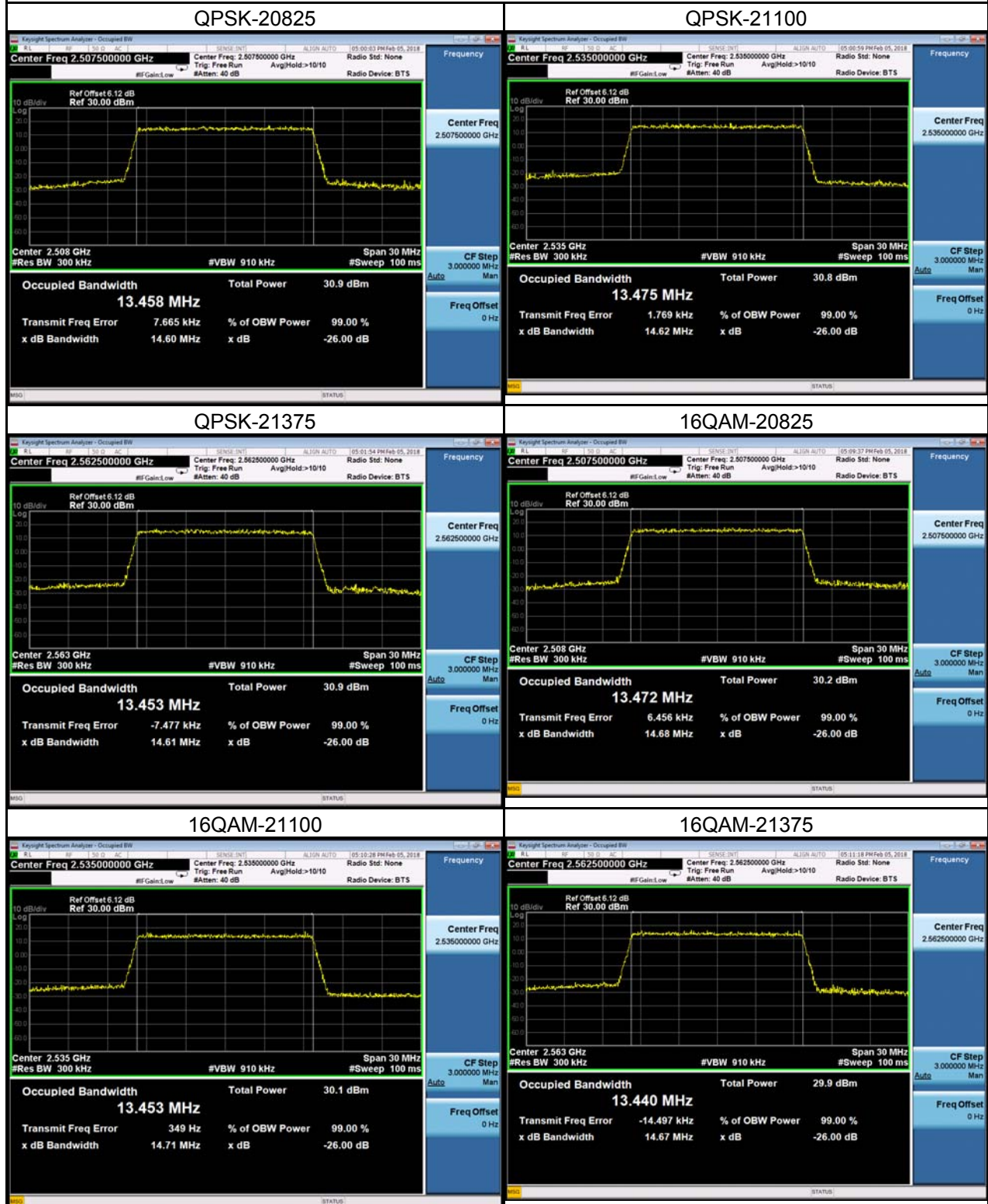
LTE Band 7_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20800	2505	8.9761	20800	2505	8.9650
21100	2535	8.9704	21100	2535	8.9556
21400	2565	8.9771	21400	2565	8.9738
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.801	20800	2505	9.780
21100	2535	9.819	21100	2535	9.829
21400	2565	9.779	21400	2565	9.812

Spectrum Plot



LTE Band 7_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20825	2507.5	13.458	20825	2507.5	13.472
21100	2535	13.475	21100	2535	13.453
21375	2562.5	13.453	21375	2562.5	13.440
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20825	2507.5	14.60	20825	2507.5	14.68
21100	2535	14.62	21100	2535	14.71
21375	2562.5	14.61	21375	2562.5	14.67

Spectrum Plot



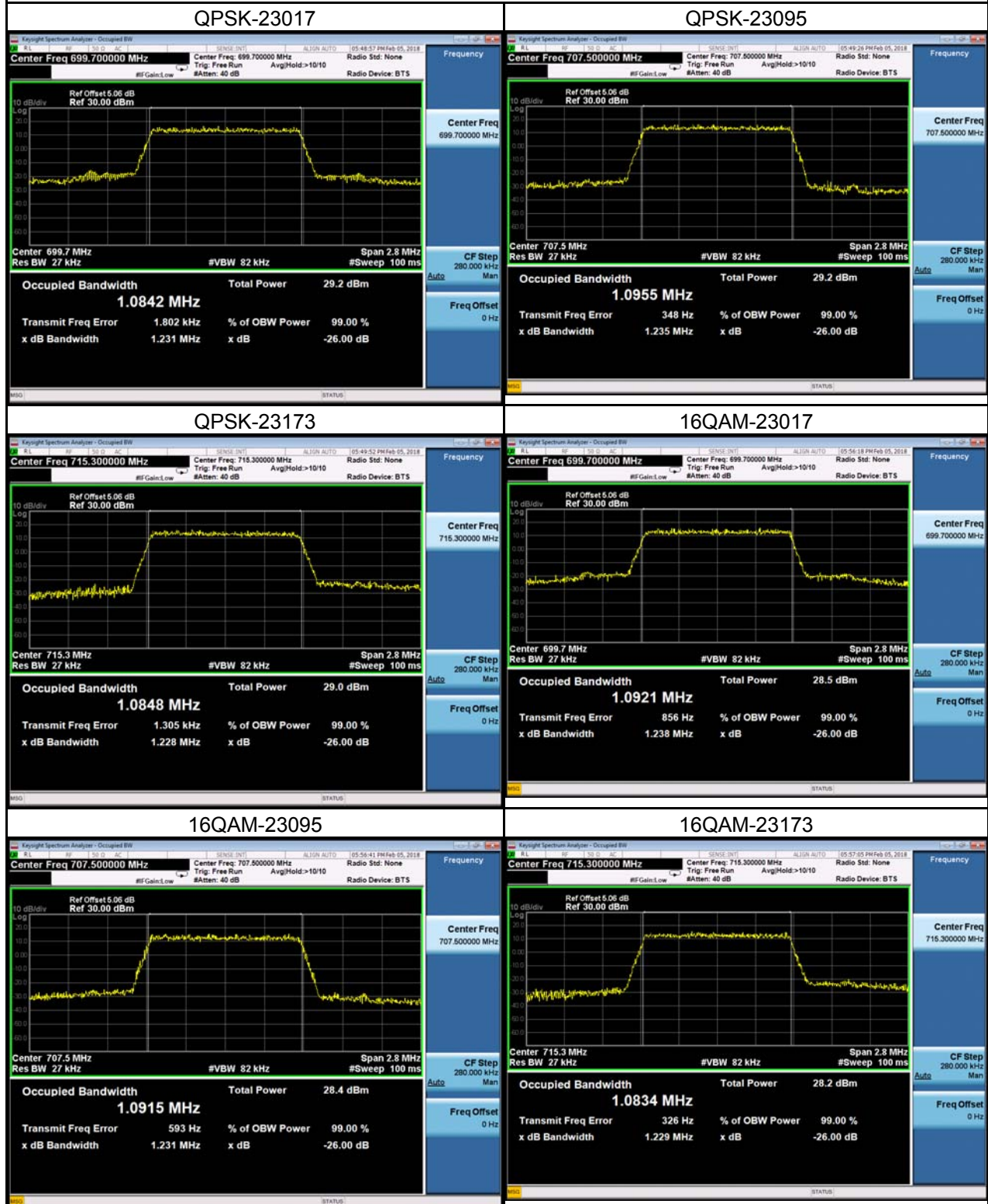
LTE Band 7_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20850	2510	17.934	20850	2510	17.938
21100	2535	17.942	21100	2535	17.928
21350	2560	17.903	21350	2560	17.953
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20850	2510	19.38	20850	2510	19.43
21100	2535	19.42	21100	2535	19.71
21350	2560	19.36	21350	2560	19.74

Spectrum Plot



LTE Band 12_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23017	699.7	1.0904	23017	699.7	1.0911
23095	707.5	1.0901	23095	707.5	1.0916
23173	715.3	1.0874	23173	715.3	1.0894
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.229	23017	699.7	1.231
23095	707.5	1.230	23095	707.5	1.230
23173	715.3	1.228	23173	715.3	1.240

Spectrum Plot



LTE Band 12_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23025	700.5	2.6979	23025	700.5	2.6967
23095	707.5	2.7020	23095	707.5	2.7025
23165	714.5	2.6988	23165	714.5	2.6970
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23025	700.5	2.997	23025	700.5	2.997
23095	707.5	3.011	23095	707.5	2.981
23165	714.5	2.992	23165	714.5	2.985

Spectrum Plot

QPSK-23025



QPSK-23095



QPSK-23165



16QAM-23025



16QAM-23095



16QAM-23165



LTE Band 12_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	4.5095	23035	701.5	4.4993
23095	707.5	4.5123	23095	707.5	4.5031
23155	713.5	4.5021	23155	713.5	4.4944
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23035	701.5	4.947	23035	701.5	4.924
23095	707.5	4.913	23095	707.5	4.968
23155	713.5	4.919	23155	713.5	4.880

Spectrum Plot



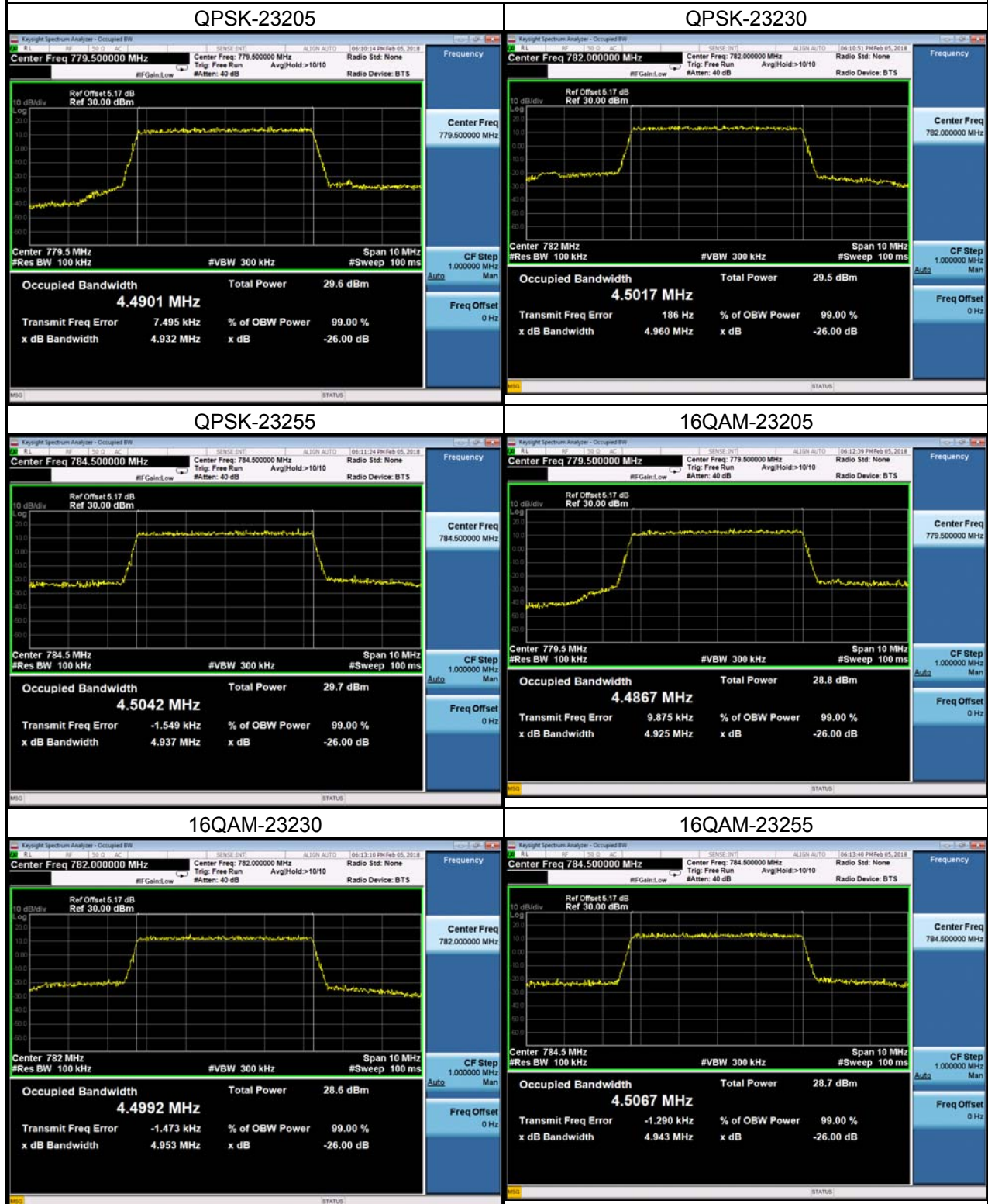
LTE Band 12_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23060	704.0	8.9684	23060	704.0	8.9666
23095	707.5	8.9978	23095	707.5	8.9629
23130	711.0	8.9935	23130	711.0	8.9779
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23060	704.0	9.783	23060	704.0	9.868
23095	707.5	9.824	23095	707.5	9.794
23130	711.0	9.819	23130	711.0	9.776

Spectrum Plot



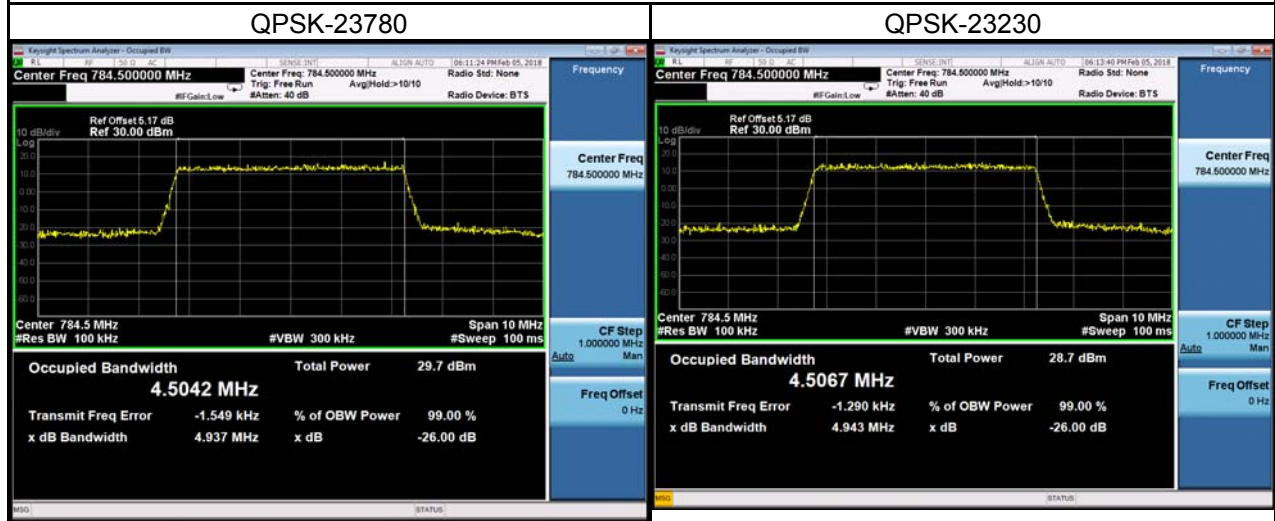
LTE Band 13_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23205	799.5	4.4901	23205	799.5	4.4867
23230	782.0	4.5017	23230	782.0	4.4992
23255	784.5	4.5042	23255	784.5	4.5067
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23205	706.5	4.932	23205	799.5	4.925
23230	710.0	4.960	23230	782.0	4.953
23255	713.5	4.937	23255	784.5	4.943

Spectrum Plot



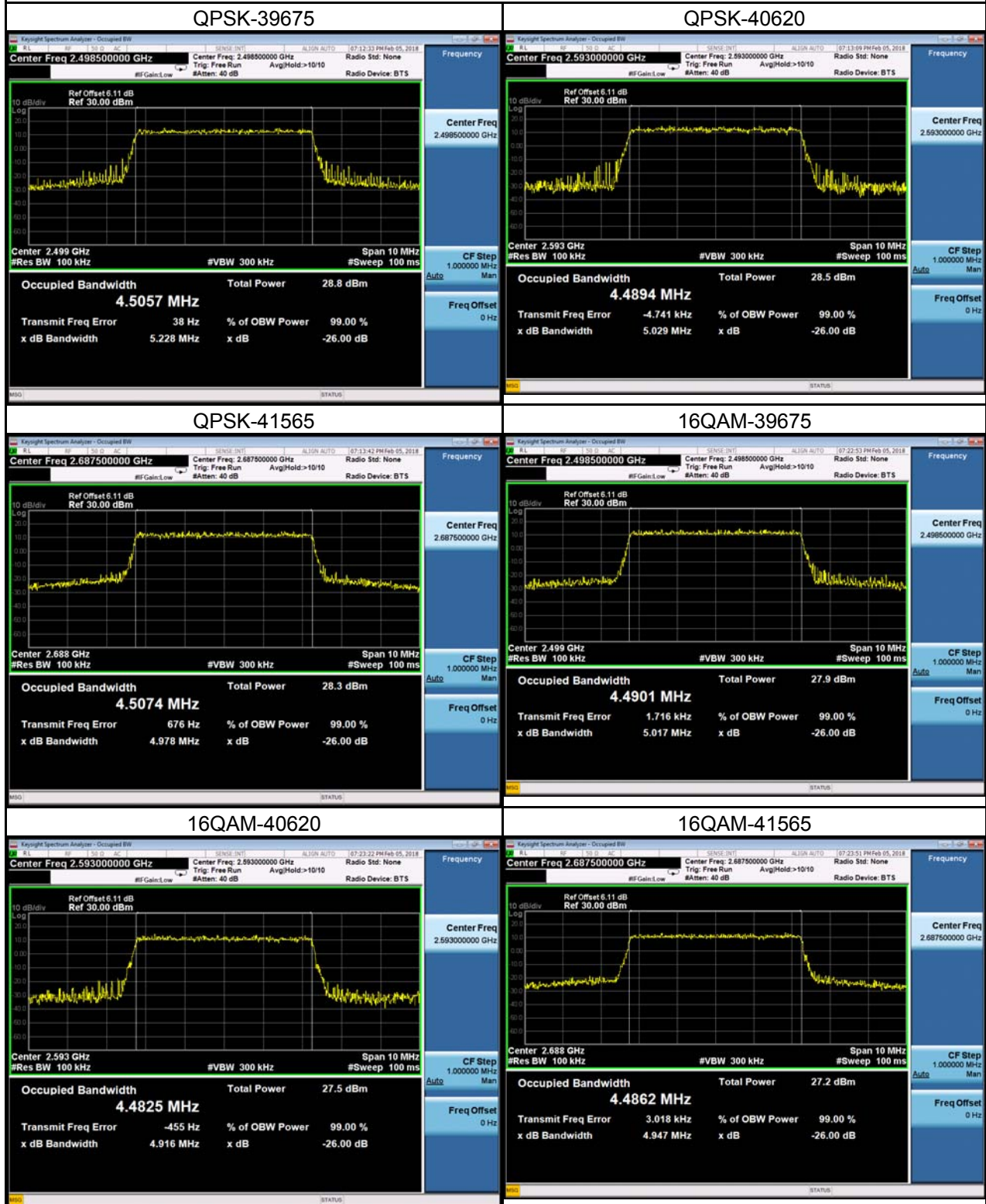
LTE Band 13_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23780	782	4.5042	23780	782	4.5067
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23780	782	9.937	23780	782	4.943

Spectrum Plot



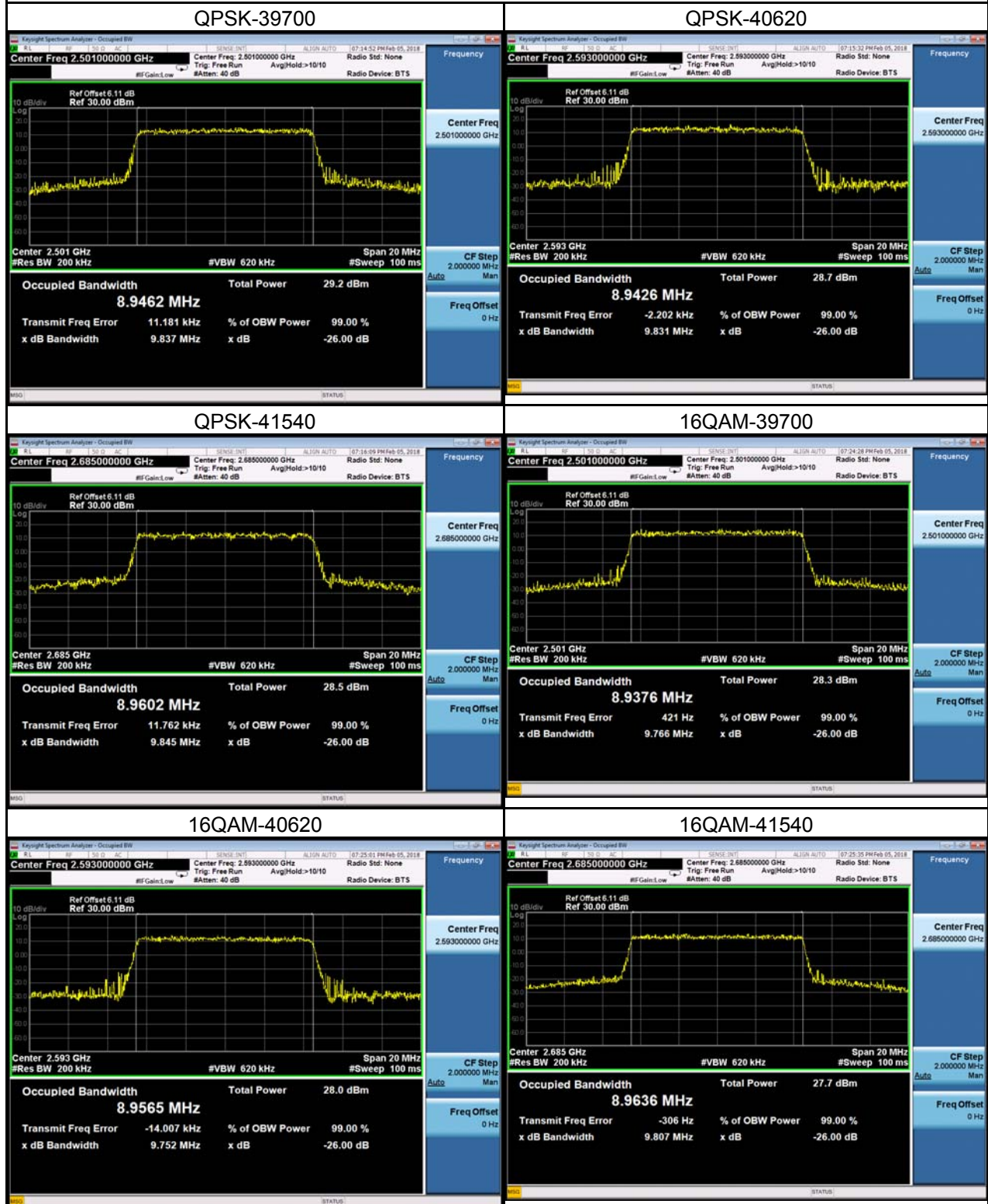
LTE Band 41_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
39675	2498.5	4.5057	39675	2498.5	4.4901
40620	2593.0	4.4894	40620	2593.0	4.4825
41565	2687.5	4.5074	41565	2687.5	4.4862
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
39675	2498.5	5.228	39675	2498.5	5.017
40620	2593.0	5.029	40620	2593.0	4.916
41565	2687.5	4.978	41565	2687.5	4.947

Spectrum Plot



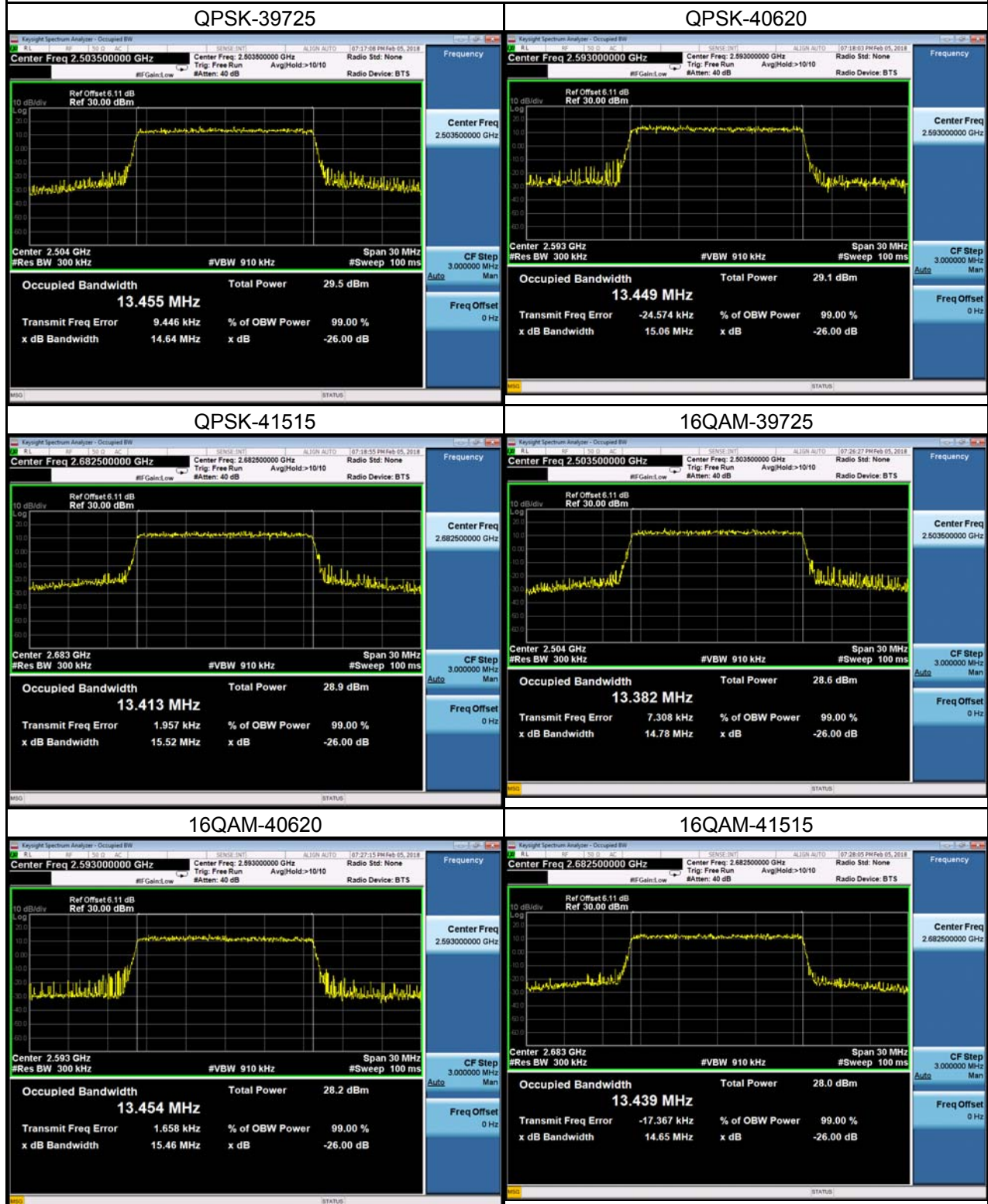
LTE Band 41_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
39700	2501.0	8.9462	39700	2501.0	8.9736
40620	2593.0	8.9426	40620	2593.0	8.9565
41540	2685.0	8.9602	41540	2685.0	8.9636
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
39700	2501.0	9.837	39700	2501.0	9.766
40620	2593.0	9.831	40620	2593.0	9.752
41540	2685.0	9.845	41540	2685.0	9.807

Spectrum Plot



LTE Band 41_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
39725	2503.5	13.455	39725	2503.5	13.382
40620	2593.0	13.449	40620	2593.0	13.454
41515	2682.5	13.413	41515	2682.5	13.439
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
39725	2503.5	14.64	39725	2503.5	14.78
40620	2593.0	15.06	40620	2593.0	15.46
41515	2682.5	15.52	41515	2682.5	14.65

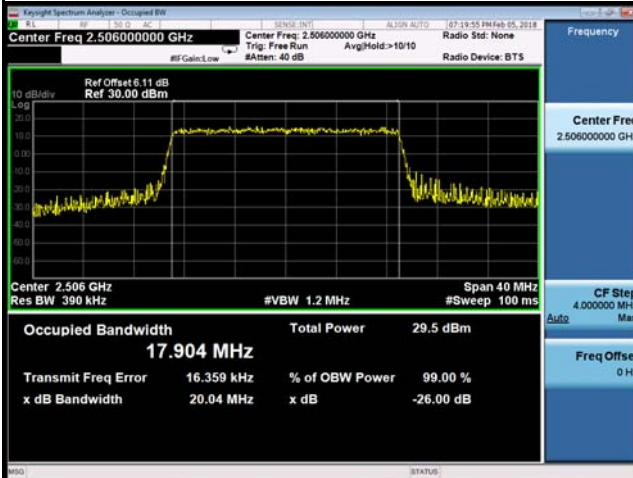
Spectrum Plot



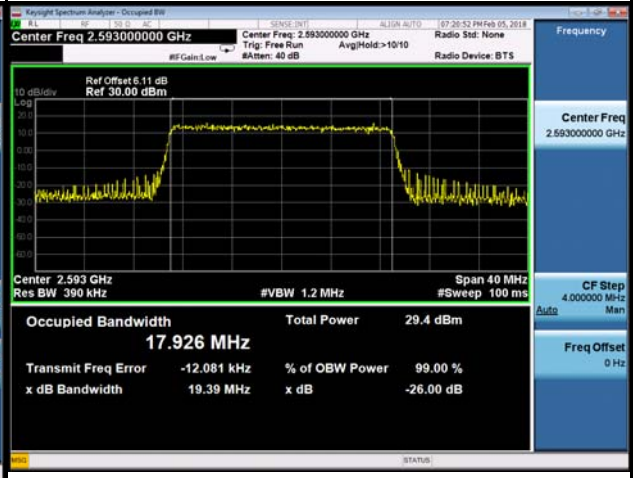
LTE Band 41_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
39750	2506.0	17.904	39750	2506.0	17.887
40620	2593.0	17.926	40620	2593.0	17.903
41490	2680.0	17.913	41490	2680.0	17.935
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
39750	2506.0	21.04	39750	2506.0	21.42
40620	2593.0	19.39	40620	2593.0	19.79
41490	2680.0	19.47	41490	2680.0	19.63

Spectrum Plot

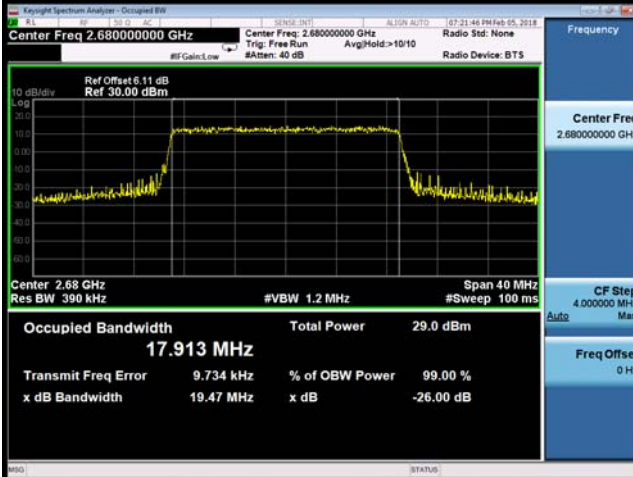
QPSK-39750



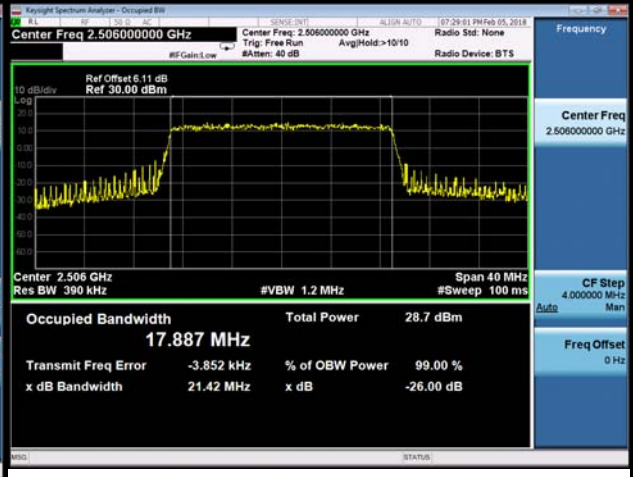
QPSK-40620



QPSK-41490



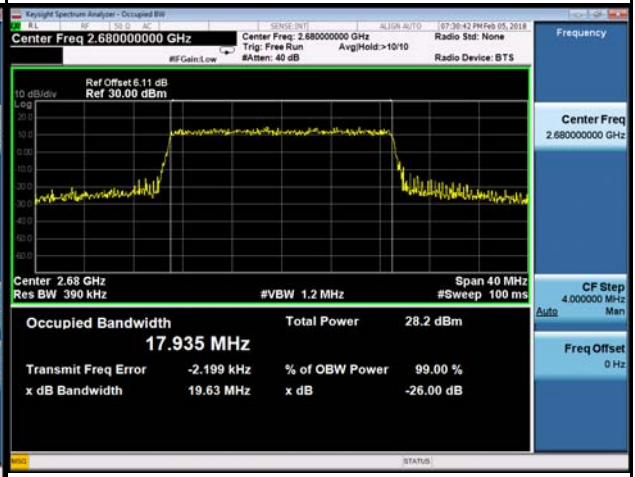
16QAM-39750



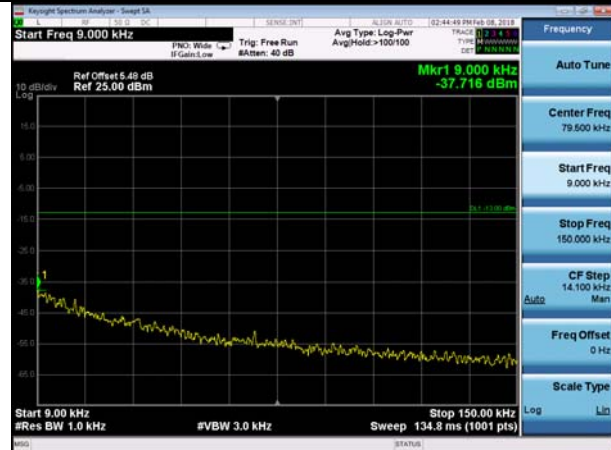
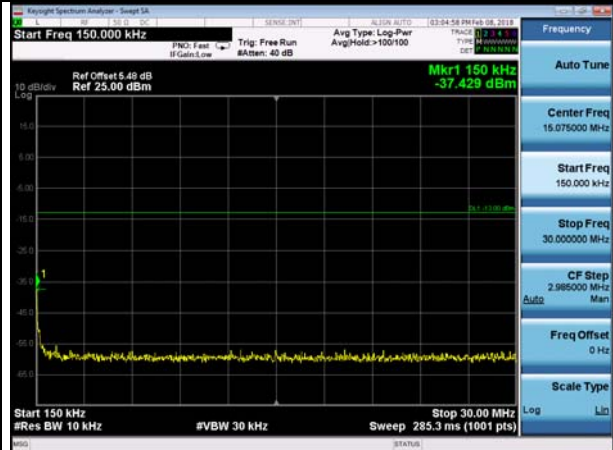
16QAM-40620



16QAM-41490



APPENDIX C - CONDUCTED EMISSIONS

WCDMA Band 4_WCDMA			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1413	1732.6	1413	1732.6
			
Channel	Frequency(MHz)	-	-
1413	1732.6	-	-
