

FCC Radio Test Report

FCC ID: ZLE-RG650U

This report concerns: **Original Grant**

Project No. : 1810C073
Equipment : LTE SMARTPHONE
Test Model : RG650U
Series Model : N/A
Applicant : Power Idea Technology (Shenzhen) Co., Ltd.
Address : 4th Floor, A Section ,Languang Science&technology
Xinxi RD, Hi-Tech Industrial Park North, Nanshan,
ShenZhen, China

Date of Receipt : Oct. 18, 2018
Date of Test : Dec. 10, 2018 ~ Dec. 27, 2018
Issued Date : Jan. 28, 2019
Tested by : BTL Inc.

Technical Manager : David Mao
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Certificate #5123.02

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.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

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.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Jan. 07, 2019
R01	Changed the FCC ID and applicant information.	Jan. 28, 2019

1. GENERAL SUMMARY

Equipment : LTE SMARTPHONE
Brand Name : RugGear
Test Model : RG650U
Series Model : N/A
Applicant : Power Idea Technology (Shenzhen) Co., Ltd.
Manufacturer : RUGGEAR LIMITED
Address : RM1301,13/F WING TUCK COMM CTR 177-183 WING LOK ST SHEUNG
WAN HONG KONG
Date of Test : Dec. 10, 2018 ~ Dec. 27, 2018
Test Sample : Engineering Sample No.: D181211334 for conducted, D181211444 for radiated.
Standard(s) : 47 CFR FCC Part 27 Subpart L
47 CFR FCC Part 27 Subpart M
47 CFR FCC Part 27 Subpart H
47 CFR FCC Part 2 & ANSI/TIA/EIA-603-E-2016
KDB 971168 D01 Power Meas License Digital Systems v03r01

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-8-1810C073) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

Test results included in this report are only for the WCDMA Band IV, LTE Band 4, 7, 12, 17, 66 parts.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 Subpart L,M,H & Part 2			
Standard(s) Section	Test Item	Judgment	Tested By
2.1046 & 27.50(d)(4) & 27.50(h)	Radiated power	PASS	Paul Li
2.1046 & 27.50(d)(4) & 27.50(h)	Maximum Output Power	PASS	Paul Li
2.1049 & 27.53(h)	Occupied Bandwidth	PASS	Paul Li
2.1051 & 27.53(h) & 27.53(l)	Conducted Spurious Emissions	PASS	Paul Li
2.1053 / 27.53(h) 2.1051 & 27.53(l)	Radiated Spurious Emissions	PASS	Paul Li
27.53(h) & 27.53(l)	Band Edge Measurements	PASS	Paul Li
27.50(d)(5)	Peak To Average Ratio	PASS	Paul Li
2.1055 & 27.54	Frequency Stability	PASS	Paul Li

Note:

(1) "N/A" denotes test is not applicable to this device.

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 Registration Number for FCC: 357015
 BTL's Designation Number for FCC: CN1240

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 %, $U=2xUc(y)$.

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	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	CISPR	1GHz ~ 18GHz	V	3.12
		1GHz ~ 18GHz	H	3.68
		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	LTE SMARTPHONE	
Brand Name	RugGear	
Test Model	RG650U	
Series Model	N/A	
Model Difference(s)	N/A	
Hardware Version	V1.0	
Software Version	RG650_US_1.0.0.0.0_1	
Antenna Type	Internal Antenna	
Antenna Gain	WCDMA IV	-2.1 dBi
	LTE 4	-2.1 dBi
	LTE 7	-1.5 dBi
	LTE 12	-1.8 dBi
	LTE 17	-1.8 dBi
	LTE 66	-2.5 dBi
IMEI No.	Conducted	860624040000503
	Radiated	860624040000529
Modulation Type	WCDMA	UL: BPSK DL: QPSK
	WCDMA(HSDPA/HSUPA)	16QAM
	LTE	UL: QPSK,16QAM DL: QPSK,16QAM, 64QAM
Operation Frequency	WCDMA Band IV	1712.4MHz ~1752.6MHz
	LTE 4 (Channel Bandwidth: 1.4MHz)	1710.7MHz ~ 1754.3MHz
	LTE 4 (Channel Bandwidth: 3MHz)	1711.5MHz ~ 1753.5MHz
	LTE 4 (Channel Bandwidth: 5MHz)	1712.5MHz ~ 1752.5MHz
	LTE 4 (Channel Bandwidth: 10MHz)	1715.0MHz ~ 1750.0MHz
	LTE 4 (Channel Bandwidth: 15MHz)	1717.5MHz ~ 1747.5MHz
	LTE 4 (Channel Bandwidth: 20MHz)	1720.0MHz ~ 1745.0MHz
	LTE 7 (Channel Bandwidth: 5MHz)	2502.5MHz ~ 2567.5MHz
	LTE 7 (Channel Bandwidth: 10MHz)	2505.0MHz ~ 2565.0MHz
	LTE 7 (Channel Bandwidth: 15MHz)	2507.5MHz ~ 2562.5MHz
	LTE 7 (Channel Bandwidth: 20MHz)	2510.0MHz ~ 2560.0MHz

Operation Frequency	LTE 12 (Channel Bandwidth: 1.4MHz)	699.7MHz ~ 715.3MHz		
	LTE 12 (Channel Bandwidth: 3MHz)	700.5MHz ~ 714.5MHz		
	LTE 12 (Channel Bandwidth: 5MHz)	701.5MHz ~ 713.5MHz		
	LTE 12 (Channel Bandwidth: 10MHz)	704.0MHz ~ 711.0MHz		
	LTE 17 (Channel Bandwidth: 5MHz)	706.5MHz ~ 713.5MHz		
	LTE 17 (Channel Bandwidth: 10MHz)	709.0MHz ~ 711.0MHz		
	LTE 66 (Channel Bandwidth: 1.4MHz)	1710.7MHz ~ 1779.5MHz		
	LTE 66 (Channel Bandwidth: 3MHz)	1711.5MHz ~ 1778.5MHz		
	LTE 66 (Channel Bandwidth: 5MHz)	1712.5MHz ~ 1777.5MHz		
	LTE 66 (Channel Bandwidth: 10MHz)	1715.0MHz ~ 1775.0MHz		
	LTE 66 (Channel Bandwidth: 15MHz)	1717.5MHz ~ 1772.5MHz		
	LTE 66 (Channel Bandwidth: 20MHz)	1720.0MHz ~ 1770.0MHz		
Max. EIRP Power	WCDMA Band IV (WCDMA)	BPSK	20.35	dBm
	WCDMA Band IV (HSDPA)	16QAM	19.32	dBm
	WCDMA Band IV (HSUPA)	16QAM	18.52	dBm
	LTE 4 (Channel Bandwidth: 1.4MHz)	QPSK	20.98	dBm
		16QAM	19.82	dBm
	LTE 4 (Channel Bandwidth: 3MHz)	QPSK	20.66	dBm
		16QAM	20.02	dBm
	LTE 4 (Channel Bandwidth: 5MHz)	QPSK	20.64	dBm
		16QAM	20.02	dBm
	LTE 4 (Channel Bandwidth: 10MHz)	QPSK	20.68	dBm
		16QAM	19.99	dBm
	LTE 4 (Channel Bandwidth: 15MHz)	QPSK	20.55	dBm
		16QAM	19.89	dBm
	LTE 4 (Channel Bandwidth: 20MHz)	QPSK	20.99	dBm
		16QAM	20.40	dBm
	LTE 7 (Channel Bandwidth: 5MHz)	QPSK	22.14	dBm
		16QAM	21.39	dBm
	LTE 7 (Channel Bandwidth: 10MHz)	QPSK	22.15	dBm
		16QAM	20.94	dBm
	LTE 7 (Channel Bandwidth: 15MHz)	QPSK	22.14	dBm
		16QAM	21.04	dBm
	LTE 7 (Channel Bandwidth: 20MHz)	QPSK	22.18	dBm
		16QAM	21.20	dBm

Max. EIRP Power	LTE 66 (Channel Bandwidth: 1.4MHz)	QPSK	20.62	dBm	
		16QAM	19.96	dBm	
	LTE 66 (Channel Bandwidth: 3MHz)	QPSK	20.65	dBm	
		16QAM	20.06	dBm	
	LTE 66 (Channel Bandwidth: 5MHz)	QPSK	20.66	dBm	
		16QAM	20.05	dBm	
	LTE 66 (Channel Bandwidth: 10MHz)	QPSK	20.74	dBm	
		16QAM	19.97	dBm	
	LTE 66 (Channel Bandwidth: 15MHz)	QPSK	20.82	dBm	
		16QAM	20.12	dBm	
	LTE 66 (Channel Bandwidth: 20MHz)	QPSK	20.75	dBm	
		16QAM	20.20	dBm	
	Max. ERP Power	LTE 12 (Channel Bandwidth: 1.4MHz)	QPSK	19.33	dBm
			16QAM	18.25	dBm
LTE 12 (Channel Bandwidth: 3MHz)		QPSK	19.36	dBm	
		16QAM	18.12	dBm	
LTE 12 (Channel Bandwidth: 5MHz)		QPSK	19.42	dBm	
		16QAM	18.27	dBm	
LTE 12 (Channel Bandwidth: 10MHz)		QPSK	19.46	dBm	
		16QAM	18.39	dBm	
LTE 17 (Channel Bandwidth: 5MHz)		QPSK	19.13	dBm	
		16QAM	18.44	dBm	
LTE 17 (Channel Bandwidth: 10MHz)		QPSK	19.23	dBm	
		16QAM	18.46	dBm	
Power Source	1# DC voltage supplied from AC/DC adapter. Manufacturer / Model: Shenzhen Huntkey Electric co.,Ltd / HKC0055010-2D 2# Supplied from Li-Polymer battery. Manufacturer / Model: SHENZHEN JIAYUANTONGDA TECHNOLOGY CO.,LTD. / BL420KP 3# Supplied from USB port.				
Power Rating	1# I/P: 100-240V~ 50-60Hz 0.2A O/P: 5V --- 1.0A 2# DC 3.80V/4200mAh (15.96Wh) 3# DC 5V				

Note:

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

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Following channel(s) was (were) selected for the final test as listed below:

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

LTE BAND 4 MODE					
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	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Radiated Spurious Emission	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 4 MODE					
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 MODE					
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
	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 MODE					
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
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
Conducted Spurious Emission	23017 to 23173	23095	1.4MHz	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
	23035 to 23155	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	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		
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
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

LTE BAND 17 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Occupied Bandwidth	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	25RB
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	50RB
Conducted Emission	706.5 to 713.5	23790	5MHz	QPSK	1RB
	709.0 to 711.0	23790	10MHz	QPSK	1RB
Radiated Emission	706.5 to 713.5	23790	5MHz	QPSK	1RB
	709.0 to 711.0	23790	10MHz	QPSK	1RB
Band Edge	706.5 to 713.5	23800	5MHz	QPSK	1RB/25RB
		23825	5MHz	QPSK	
	709.0 to 711.0	23780	10MHz	QPSK	1RB/50RB
		23800	10MHz	QPSK	
Peak To Average Ratio	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1RB
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	1RB
Frequency Stability	706.5 to 713.5	23790	5MHz	QPSK	1RB
	709.0 to 711.0	23790	10MHz	QPSK	1RB

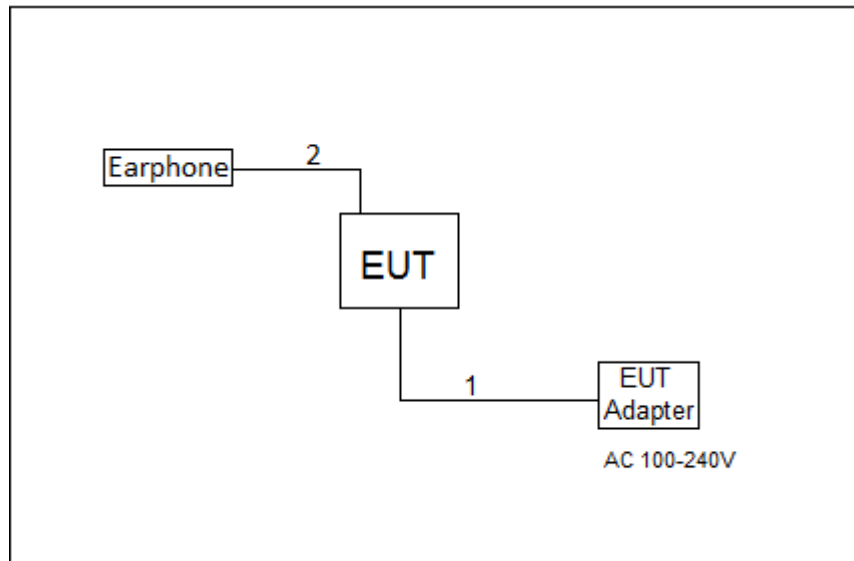
LTE BAND 66 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	15RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	25RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	50RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	75 RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	100RB
Conducted Spurious Emission	131979 to 132665	132322	1.4MHz	QPSK	1RB
	131997 to 132647	132322	5MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB
Radiated Spurious Emission	131979 to 132665	132322	1.4MHz	QPSK	1RB
	131997 to 132647	132322	5MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB

LTE BAND 66 MODE						
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode	
Band Edge	131979 to 132665	131979	1.4MHz	QPSK	1RB/6RB	
		132665	1.4MHz	QPSK		
	131987 to 132657	131987	3MHz	QPSK	1RB/15RB	
		132657	3MHz	QPSK		
	131997 to 132647	131997	5MHz	QPSK	1RB/25RB	
		132647	5MHz	QPSK		
	132022 to 132622	132022	10MHz	QPSK	1RB/50RB	
		132622	10MHz	QPSK		
	132047 to 132597	132047	15MHz	QPSK	1RB/75RB	
		132597	15MHz	QPSK		
	132072 to 132572	132072	20MHz	QPSK	1RB/100RB	
		132572	20MHz	QPSK		
	Peak To Average Ratio	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1RB
		131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1RB
131997 to 132647		131997, 132322, 132647	5MHz	QPSK, 16QAM	1RB	
132022 to 132622		132022, 132322, 132622	10MHz	QPSK, 16QAM	1RB	
132047 to 132597		132047, 132322, 132597	15MHz	QPSK, 16QAM	1RB	
132072 to 132572		132072, 132322, 132572	20MHz	QPSK, 16QAM	1RB	
Frequency Stability	131979 to 132665	132322	1.4MHz	QPSK	1RB	
	131987 to 132657	132322	3MHz	QPSK	1RB	
	131997 to 132647	132322	5MHz	QPSK	1RB	
	132022 to 132622	132322	10MHz	QPSK	1RB	
	132047 to 132597	132322	15MHz	QPSK	1RB	
	132072 to 132572	132322	20MHz	QPSK	1RB	

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP/ERP	21°C, 50%RH	DC 3.80V
Conducted Output Power	21°C, 50%RH	DC 3.80V
Occupied Bandwidth	21°C, 50%RH	DC 3.80V
Conducted Emission	21°C, 50%RH	DC 3.80V
Radiated Emission	23°C, 49%RH	AC 120V/60Hz
Band Edge	21°C, 50%RH	DC 3.80V
Peak to Average Ratio	21°C, 50%RH	DC 3.80V
Frequency Stability	Normal and Extreme	Normal and Extreme

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED FOR RADIATED



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	1.2m	DC Cable
2	NO	NO	1.0m	Audio 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. (WCDMA Band IV & LTE 4 & LTE 66)

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

Mobile / Portable station are limited to 3 watts e.i.r.p. (LTE 12 and LTE 17)

4.1.2 TEST PROCEDURE

EIRP/ERP:

EIRP= Conducted Power +Antenan gain

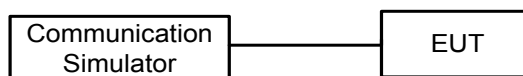
ERP power=EIPR power-2.15dBi.

Maximun Output Power:

The EUT was set up for the maximum power with WCDMA 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

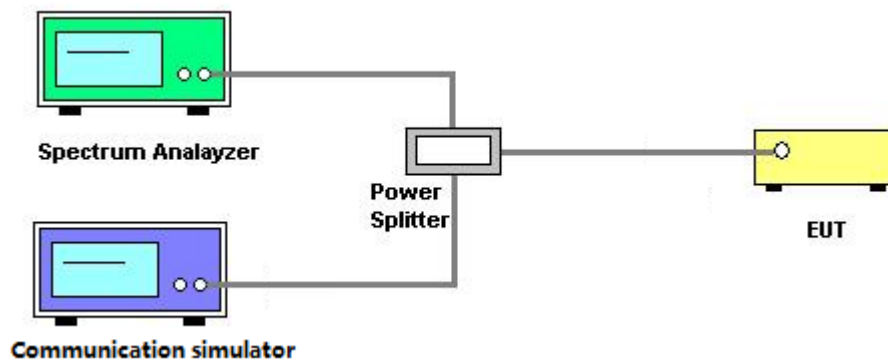
Please refer to the Appendix A.

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

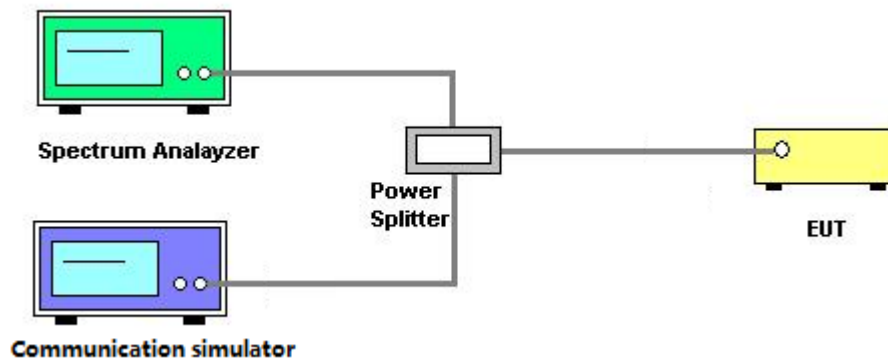
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (LTE 4,12,17,66)

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)

4.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v03r01 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.
6. The limit line is derived from $43+10\log(P)$ dB below the transmitter power P(Watts)
 $=P(W)-[43+10\log(P)](dB)$
 $=[30+10\log(P)](dBm)-[43+10\log(P)](dB)$
 $=-13dBm$

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 4,12,17,66)

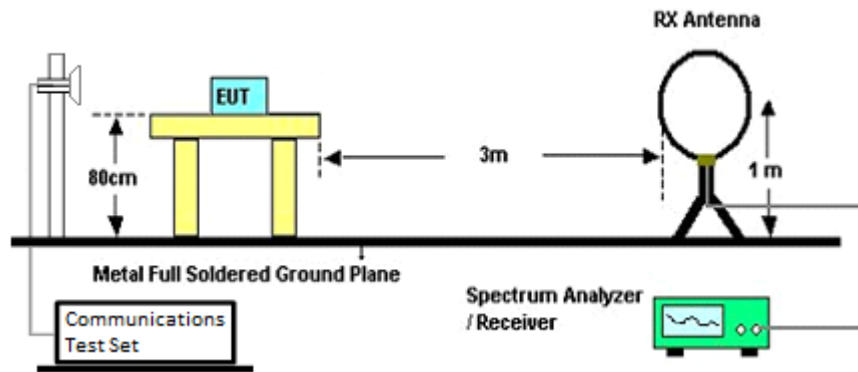
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (LTE 7)

4.4.2 TEST PROCEDURES

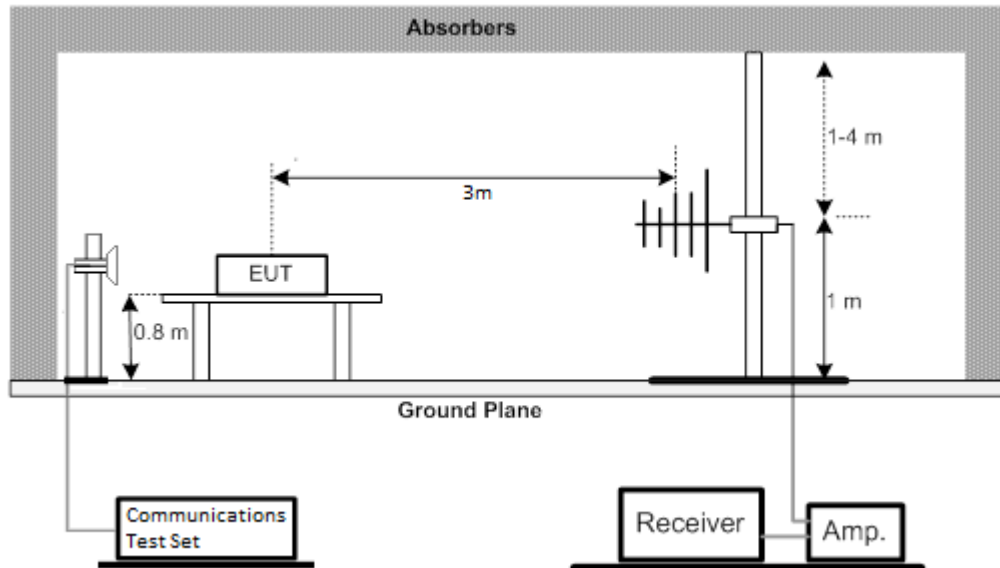
1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. 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

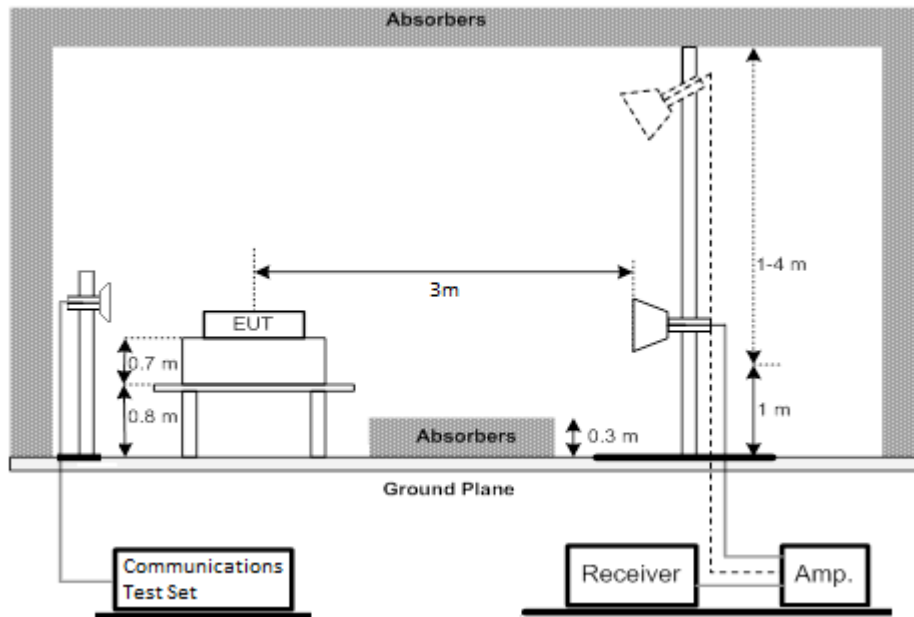
Below 30MHz



30MHz to 1GHz



Above 1GHz



4.4.4 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix D.

4.4.5 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix E.

4.4.6 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix F.

4.5 BAND EDGE MEASUREMENT

4.5.1 LIMIT

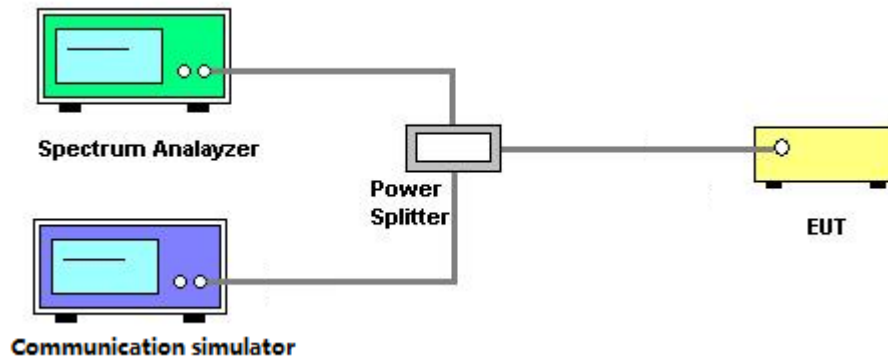
The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation 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 4,12,17,66)

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)

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 2MHz. RB of the spectrum is 15kHz and VB of the spectrum is 43kHz (LTE Bandwidth 1.4MHz).
3. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 91kHz (LTE Bandwidth 3MHz).
4. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 150kHz (LTE Bandwidth 5MHz).
5. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 10MHz).
6. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Bandwidth 15MHz).
7. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Bandwidth 20MHz).
8. 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

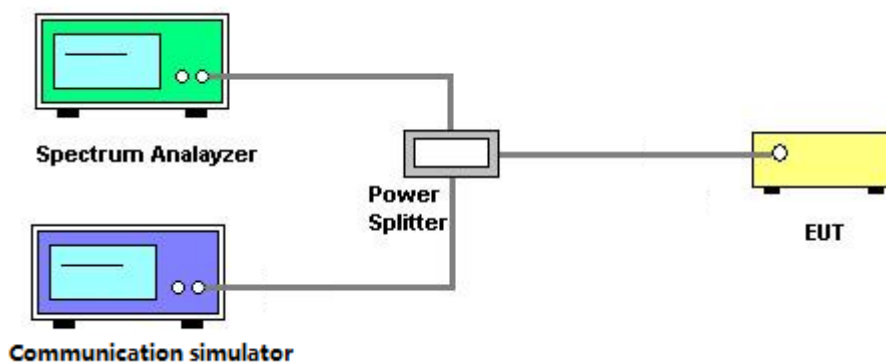
4.6.1 LIMIT

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

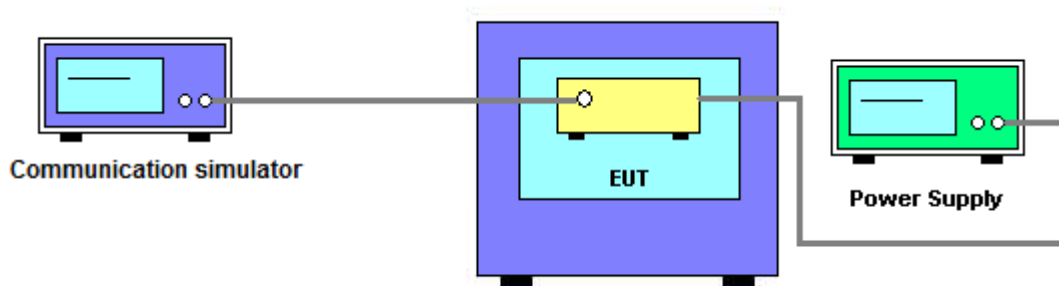
4.7.1 LIMIT

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 Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 11, 2019
2	Amplifier	Agilent	8449B	3008A02274	Mar. 11, 2019
3	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019
4	HighPass Filter	Wairwright Instruments Gmbh	WHK 1.5/15G-10ST	11	Mar. 11, 2019
5	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1710/1785-1690/180 5-60/12SS	38	Mar. 11, 2019
6	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 824/849-810/863-60/ 9SS	7	Mar. 11, 2019
7	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 880/915-860/935-60/ 9SS	14	Mar. 11, 2019
8	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1850/1910-1830/193 0-60/10SS	17	Mar. 11, 2019
9	HighPass Filter	Wairwright Instruments Gmbh	WHK3.1/18G-10SS	24	Mar. 11, 2019
10	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 11, 2019
11	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 11, 2019
12	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
13	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019
14	Cable	emci	LMR-400(30MHz-1G Hz)(8m+5m)	N/A	May 25, 2019
15	Cable	mitron	B10-01-01-12M	18072744	Jul. 30, 2019
16	Controller	ETS-Lindgren	2090	N/A	N/A
17	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
18	Loop Antenna	EM	EM-6876-1	230	Feb. 07, 2019
19	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 11, 2019
20	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2019

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. 11, 2019
2	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 11, 2019
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 11, 2019
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019
5	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 11, 2019
2*	Multi-output DC Power Supply	GW Instek	GPC-3030DN	EK880675	Sep. 26, 2020
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 11, 2019
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

*All calibration period of equipment list is three year.

APPENDIX A - MAXIMUM OUTPUT POWER

Maximum Output Power (dBm):

Modulation	Band	WCDMA IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
BPSK	RMC 12.2K	22.45	22.22	22.24
	RMC 64K	22.39	22.28	22.29
	RMC 144K	22.43	22.21	22.31
	RMC 384K	22.32	22.27	22.22
16QAM	HSDPA Subtest-1	21.42	21.32	21.18
	HSDPA Subtest-2	21.38	21.23	21.31
	HSDPA Subtest-3	21.05	20.83	20.77
	HSDPA Subtest-4	20.99	20.92	20.88
16QAM	HSUPA Subtest-1	19.88	19.8	19.83
	HSUPA Subtest-2	19.67	19.54	19.72
	HSUPA Subtest-3	20.6	20.59	20.59
	HSUPA Subtest-4	20.11	20.01	20.04
	HSUPA Subtest-5	20.62	20.53	20.62

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957CH	20175CH	20393CH
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4M	QPSK	1	0	22.92	22.77	22.32
		1	2	23.08	22.94	22.44
		1	5	22.90	22.78	22.31
		3	0	22.99	22.85	22.32
		3	1	23.06	22.89	22.38
		3	2	23.02	22.59	22.37
	16QAM	6	0	22.17	21.66	21.53
		1	0	21.62	21.59	21.82
		1	2	21.71	21.69	21.92
		1	5	21.62	21.56	21.82
		3	0	21.83	21.57	21.70
		3	1	21.88	21.61	21.76
		3	2	21.87	21.58	21.72
		6	0	20.82	20.67	20.42

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965CH	20175CH	20385CH
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3M	QPSK	1	0	22.58	22.58	22.53
		1	7	22.76	22.74	22.65
		1	14	22.61	22.59	22.45
		8	0	21.73	21.63	21.61
		8	4	21.77	21.66	21.63
		8	7	21.67	21.60	21.59
		15	0	21.70	21.61	21.59
	16QAM	1	0	21.63	21.95	21.64
		1	7	21.76	22.12	21.77
		1	14	21.61	21.97	21.54
		8	0	20.80	20.68	20.61
		8	4	20.83	20.70	20.65
		8	7	20.77	20.66	20.58
		15	0	20.72	20.61	20.51

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975CH	20175CH	20375CH
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5M	QPSK	1	0	22.61	22.48	22.52
		1	13	22.74	22.54	22.63
		1	24	22.60	22.43	22.49
		12	0	21.70	21.60	21.63
		12	6	21.71	21.64	21.66
		12	11	21.67	21.66	21.61
		25	0	21.68	21.62	21.60
	16QAM	1	0	21.79	22.03	21.61
		1	13	21.90	22.12	21.76
		1	24	21.73	22.02	21.59
		12	0	20.77	20.72	20.63
		12	6	20.80	20.77	20.68
		12	11	20.78	20.78	20.63
		25	0	20.67	20.66	20.50

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000CH	20175CH	20350CH
				1715MHz	1732.5MHz	1750MHz
4 / 10M	QPSK	1	0	22.56	22.59	22.45
		1	25	22.78	22.75	22.67
		1	49	22.58	22.51	22.46
		25	0	21.80	21.61	21.64
		25	13	21.74	21.66	21.65
		25	25	21.73	21.73	21.56
		50	0	21.74	21.66	21.66
	16QAM	1	0	21.62	21.97	21.53
		1	25	21.77	22.09	21.75
		1	49	21.57	21.91	21.55
		25	0	20.81	20.62	20.72
		25	13	20.73	20.70	20.70
		25	25	20.73	20.71	20.61
		50	0	20.74	20.68	20.62

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025CH	20175CH	20325CH
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15M	QPSK	1	0	22.56	22.57	22.45
		1	38	22.65	22.63	22.60
		1	74	22.48	22.43	22.44
		36	0	21.79	22.43	21.65
		36	18	21.77	21.70	21.66
		36	39	21.78	21.70	21.62
		75	0	21.83	21.70	21.66
	16QAM	1	0	21.55	21.94	21.83
		1	38	21.66	21.99	21.97
		1	74	21.51	21.76	21.85
		36	0	20.78	21.76	20.57
		36	18	20.75	20.73	20.60
		36	39	20.77	20.75	20.55
		75	0	20.77	20.65	20.59

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050CH	20175CH	20300CH
				1720MHz	1732.5MHz	1745MHz
4 / 20M	QPSK	1	0	22.62	22.55	22.45
		1	50	23.09	22.40	22.88
		1	99	22.53	22.41	22.46
		50	0	21.89	21.65	21.64
		50	25	21.92	21.75	21.70
		50	50	21.90	21.81	21.61
		100	0	21.87	21.75	21.62
	16QAM	1	0	22.09	21.98	21.78
		1	50	22.50	21.28	22.16
		1	99	22.00	21.81	21.75
		50	0	20.87	20.67	20.58
		50	25	20.88	20.75	20.62
		50	50	20.92	20.75	20.55
		100	0	20.89	20.69	20.58

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775CH	21100CH	21425CH
				2502.5MHz	2535MHz	2567.5MHz
7 / 5M	QPSK	1	0	22.67	22.82	23.43
		1	13	22.79	22.96	23.64
		1	24	22.65	22.87	22.92
		12	0	21.76	21.85	22.48
		12	6	21.79	21.94	22.52
		12	11	21.76	21.91	22.47
		25	0	21.78	21.90	22.46
	16QAM	1	0	21.68	21.89	22.71
		1	13	21.77	22.00	22.89
		1	24	21.66	21.93	22.77
		12	0	20.78	20.95	21.57
		12	6	20.81	21.02	21.57
		12	11	20.81	21.01	21.55
		25	0	20.68	20.90	21.43

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800CH	21100CH	21400CH
				2505MHz	2535MHz	2565MHz
7 / 10M	QPSK	1	0	22.79	22.87	23.39
		1	25	22.83	22.73	23.65
		1	49	22.79	22.64	22.72
		25	0	21.83	21.96	22.43
		25	13	21.82	21.95	22.49
		25	25	21.87	21.96	22.46
		50	0	21.88	22.00	22.41
	16QAM	1	0	21.58	22.15	22.20
		1	25	21.70	22.29	22.44
		1	49	21.56	22.20	22.29
		25	0	20.77	20.99	21.41
		25	13	20.78	20.95	21.48
		25	25	20.82	20.99	21.41
		50	0	20.82	21.00	21.35

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825CH	21100CH	21375CH
				2507.5MHz	2535MHz	2562.5MHz
7 / 15M	QPSK	1	0	22.61	22.80	23.38
		1	38	22.88	22.49	23.64
		1	74	22.72	22.49	22.73
		36	0	21.97	22.13	22.56
		36	18	21.99	22.11	22.66
		36	39	22.03	22.15	22.69
		75	0	22.03	22.18	22.65
	16QAM	1	0	21.52	22.05	22.36
		1	38	21.59	22.18	22.54
		1	74	21.50	22.10	22.47
		36	0	20.81	21.07	21.35
		36	18	20.85	21.03	21.42
		36	39	20.87	21.05	21.45
		75	0	20.84	21.04	21.41

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850CH	21100CH	21350CH
				2510MHz	2535MHz	2560MHz
7 / 20M	QPSK	1	0	22.20	22.55	23.06
		1	50	22.96	22.36	23.68
		1	99	22.54	22.38	22.73
		50	0	21.75	21.99	22.26
		50	25	21.82	22.00	22.42
		50	50	21.91	21.95	22.34
		100	0	21.80	21.95	22.31
	16QAM	1	0	21.76	22.00	22.17
		1	50	22.15	22.48	22.70
		1	99	21.81	22.14	22.38
		50	0	20.64	20.96	21.13
		50	25	20.76	20.98	21.30
		50	50	20.83	20.92	21.28
		100	0	20.75	20.93	21.19

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23017CH	23095CH	23173CH
				699.7MHz	707.5MHz	715.3MHz
12 / 1.4M	QPSK	1	0	23.17	22.97	23.14
		1	2	23.28	23.11	23.25
		1	5	23.15	23.02	23.16
		3	0	22.96	23.04	23.16
		3	1	23.09	23.14	23.18
		3	2	23.07	23.11	23.16
		6	0	22.27	22.22	22.15
	16QAM	1	0	21.87	22.09	22.04
		1	2	21.95	22.13	22.09
		1	5	21.96	22.04	21.95
		3	0	22.07	22.06	21.92
		3	1	22.17	21.96	21.93
		3	2	22.20	21.82	21.89
		6	0	21.20	21.07	20.57

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23025CH	23095CH	23165CH
				700.5MHz	707.5MHz	714.5MHz
12 / 3M	QPSK	1	0	23.21	23.17	23.16
		1	7	23.27	23.31	23.30
		1	14	23.15	23.18	23.17
		8	0	22.29	22.19	22.25
		8	4	22.27	22.27	22.21
		8	7	22.14	22.26	22.21
		15	0	22.18	22.16	22.21
	16QAM	1	0	21.72	21.97	21.73
		1	7	21.57	22.07	21.86
		1	14	21.53	21.87	21.61
		8	0	20.71	20.67	20.79
		8	4	20.76	20.73	20.79
		8	7	20.67	20.69	20.75
		15	0	20.63	20.60	20.71

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23035CH	23095CH	23155CH
				701.5MHz	707.5MHz	713.5MHz
12 / 5M	QPSK	1	0	23.32	23.18	23.14
		1	13	23.37	23.25	23.32
		1	24	23.30	23.19	23.24
		12	0	22.44	22.08	22.46
		12	6	22.36	22.27	22.28
		12	11	22.27	22.40	22.13
		25	0	22.39	22.29	22.15
	16QAM	1	0	21.67	22.22	21.64
		1	13	21.90	22.18	21.88
		1	24	21.90	22.03	21.77
		12	0	20.99	20.68	21.08
		12	6	20.90	20.88	20.93
		12	11	20.85	20.99	20.88
		25	0	20.81	20.78	20.88

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23060CH	23095CH	23130CH
				704MHz	707.5MHz	711MHz
12 / 10M	QPSK	1	0	23.41	22.98	22.85
		1	25	23.35	23.11	23.01
		1	49	23.09	22.89	22.93
		25	0	22.54	21.88	21.69
		25	13	22.10	22.02	21.93
		25	25	22.49	22.00	21.66
		50	0	22.45	22.00	21.75
	16QAM	1	0	21.65	22.34	21.91
		1	25	22.03	22.34	21.95
		1	49	21.71	22.19	21.95
		25	0	21.32	20.86	20.70
		25	13	21.07	21.00	20.94
		25	25	21.45	20.95	20.69
		50	0	21.31	20.97	20.70

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23755 CH	23790 CH	23825 CH
				706.5 MHz	710.0 MHz	713.5 MHz
17 / 5M	QPSK	1	0	22.98	22.96	22.86
		1	13	23.08	23.05	23.04
		1	24	22.87	22.94	22.97
		12	0	21.97	21.78	22.28
		12	6	22.12	21.94	22.13
		12	11	22.25	21.91	22.12
	16QAM	25	0	22.16	21.78	22.23
		1	0	22.13	22.32	21.89
		1	13	22.16	22.38	22.14
		1	24	21.94	22.39	21.99
		12	0	21.06	20.85	21.35
		12	6	21.16	21.03	21.20
		12	11	21.29	21.01	21.20
		25	0	21.19	20.79	21.16

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23780CH	23790CH	23800CH
				709.0MHz	710.0MHz	711.0MHz
17 / 10M	QPSK	1	0	23.00	23.00	22.97
		1	25	23.11	23.18	23.07
		1	49	22.96	23.08	23.02
		25	0	21.74	21.65	21.77
		25	13	22.01	21.94	22.00
		25	25	21.71	21.65	21.77
	16QAM	50	0	21.77	21.69	21.83
		1	0	21.96	22.35	21.99
		1	25	21.88	22.32	22.00
		1	49	21.94	22.41	22.00
		25	0	20.71	20.63	20.78
		25	13	20.95	20.92	21.02
		25	25	20.68	20.65	20.81
		50	0	20.70	20.64	20.78

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131979CH	132322CH	132665CH
				1710.7MHz	1745MHz	1779.3MHz
66 / 1.4M	QPSK	1	0	22.86	22.96	22.78
		1	2	23.00	23.12	22.96
		1	5	22.87	22.96	22.78
		3	0	22.93	23.03	22.87
		3	1	22.99	23.10	22.93
		3	2	22.93	23.04	22.87
		6	0	22.03	22.17	21.99
	16QAM	1	0	22.31	22.18	21.58
		1	2	22.46	22.37	21.73
		1	5	22.25	22.21	21.55
		3	0	21.92	21.87	21.24
		3	1	22.12	21.95	21.41
		3	2	21.94	21.88	21.25
		6	0	21.07	20.99	20.35

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131987CH	132322CH	132657CH
				1711.5MHz	1745MHz	1778.5MHz
66 / 3M	QPSK	1	0	22.92	23.01	22.85
		1	7	23.09	23.15	22.94
		1	14	22.87	23.00	22.81
		8	0	22.01	22.10	21.93
		8	4	22.04	22.14	21.97
		8	7	21.97	22.10	21.92
		15	0	21.98	22.11	21.94
	16QAM	1	0	22.35	22.25	21.68
		1	7	22.56	22.46	21.87
		1	14	22.30	22.19	21.55
		8	0	20.97	20.90	20.30
		8	4	21.01	20.91	20.31
		8	7	20.91	20.85	20.28
		15	0	20.93	20.88	20.30

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131997CH	132322CH	132647CH
				1712.5MHz	1745MHz	1777.5MHz
66 / 5M	QPSK	1	0	22.82	22.93	22.79
		1	13	23.06	23.16	23.13
		1	24	22.77	22.87	22.69
		12	0	21.98	22.10	21.97
		12	6	22.11	22.15	22.00
		12	11	21.95	22.08	21.92
		25	0	22.01	22.12	21.15
	16QAM	1	0	22.21	22.16	21.66
		1	13	22.55	22.51	21.92
		1	24	22.19	22.08	21.48
		12	0	20.84	20.79	20.26
		12	6	20.93	20.85	20.33
		12	11	20.80	20.78	20.21
		25	0	20.83	20.83	20.27

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132022CH	132322CH	132622CH
				1715MHz	1745MHz	1775MHz
66 / 10M	QPSK	1	0	23.24	22.83	22.44
		1	25	23.24	22.95	22.43
		1	49	23.22	22.62	22.05
		25	0	22.47	21.91	21.49
		25	13	22.42	21.93	21.42
		25	25	22.37	21.88	21.39
		50	0	22.47	21.94	21.53
	16QAM	1	0	22.34	22.28	21.92
		1	25	22.47	22.39	21.97
		1	49	22.32	22.10	21.53
		25	0	21.02	20.89	20.48
		25	13	20.96	20.88	20.41
		25	25	20.91	20.82	20.38
		50	0	20.95	20.91	20.43

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132047CH	132322CH	132597CH
				1717.5MHz	1745MHz	1772.5MHz
66 / 15M	QPSK	1	0	22.78	22.83	22.47
		1	38	23.32	23.07	22.68
		1	74	22.72	22.58	21.97
		36	0	22.04	21.94	21.61
		36	18	21.98	21.91	21.54
		36	39	21.94	21.85	21.36
		75	0	21.97	21.89	21.54
	16QAM	1	0	22.28	22.26	22.05
		1	38	22.62	22.51	22.03
		1	74	22.25	22.05	21.44
		36	0	20.94	20.88	20.58
		36	18	20.91	20.90	20.48
		36	39	20.84	20.77	20.37
		75	0	20.92	20.83	20.47

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132072CH	132322CH	132572CH
				1720MHz	1745MHz	1770MHz
66 / 20M	QPSK	1	0	22.83	22.62	22.53
		1	50	23.25	22.90	22.70
		1	99	22.72	22.42	22.24
		50	0	22.26	21.92	22.08
		50	25	22.28	21.97	21.81
		50	50	22.15	21.78	21.71
		100	0	22.17	21.80	21.85
	16QAM	1	0	22.38	22.13	22.10
		1	50	22.70	22.32	22.25
		1	99	22.35	21.81	21.48
		50	0	21.17	20.82	21.00
		50	25	21.14	20.85	20.80
		50	50	21.08	20.75	20.63
		100	0	21.07	20.70	20.77

EIRP Power (dBm):

Modulation	Band	WCDMA IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
BPSK	RMC 12.2K	20.35	20.12	20.14
	RMC 64K	20.29	20.18	20.19
	RMC 144K	20.33	20.11	20.21
	RMC 384K	20.22	20.17	20.12
16QAM	HSDPA Subtest-1	19.32	19.22	19.08
	HSDPA Subtest-2	19.28	19.13	19.21
	HSDPA Subtest-3	18.95	18.73	18.67
	HSDPA Subtest-4	18.89	18.82	18.78
16QAM	HSUPA Subtest-1	17.78	17.70	17.73
	HSUPA Subtest-2	17.57	17.44	17.62
	HSUPA Subtest-3	18.50	18.49	18.49
	HSUPA Subtest-4	18.01	17.91	17.94
	HSUPA Subtest-5	18.52	18.43	18.52

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957CH	20175CH	20393CH
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4M	QPSK	1	0	20.82	20.67	20.22
		1	2	20.98	20.84	20.34
		1	5	20.80	20.68	20.21
		3	0	20.89	20.75	20.22
		3	1	20.96	20.79	20.28
		3	2	20.92	20.49	20.27
		6	0	20.07	19.56	19.43
	16QAM	1	0	19.52	19.49	19.72
		1	2	19.61	19.59	19.82
		1	5	19.52	19.46	19.72
		3	0	19.73	19.47	19.60
		3	1	19.78	19.51	19.66
		3	2	19.77	19.48	19.62
		6	0	18.72	18.57	18.32

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965CH	20175CH	20385CH
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3M	QPSK	1	0	20.48	20.48	20.43
		1	7	20.66	20.64	20.55
		1	14	20.51	20.49	20.35
		8	0	19.63	19.53	19.51
		8	4	19.67	19.56	19.53
		8	7	19.57	19.50	19.49
		15	0	19.60	19.51	19.49
	16QAM	1	0	19.53	19.85	19.54
		1	7	19.66	20.02	19.67
		1	14	19.51	19.87	19.44
		8	0	18.70	18.58	18.51
		8	4	18.73	18.60	18.55
		8	7	18.67	18.56	18.48
		15	0	18.62	18.51	18.41

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975CH	20175CH	20375CH
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5M	QPSK	1	0	20.51	20.38	20.42
		1	13	20.64	20.44	20.53
		1	24	20.50	20.33	20.39
		12	0	19.60	19.50	19.53
		12	6	19.61	19.54	19.56
		12	11	19.57	19.56	19.51
		25	0	19.58	19.52	19.50
	16QAM	1	0	19.69	19.93	19.51
		1	13	19.80	20.02	19.66
		1	24	19.63	19.92	19.49
		12	0	18.67	18.62	18.53
		12	6	18.70	18.67	18.58
		12	11	18.68	18.68	18.53
		25	0	18.57	18.56	18.40

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000CH	20175CH	20350CH
				1715MHz	1732.5MHz	1750MHz
4 / 10M	QPSK	1	0	20.46	20.49	20.35
		1	25	20.68	20.65	20.57
		1	49	20.48	20.41	20.36
		25	0	19.70	19.51	19.54
		25	13	19.64	19.56	19.55
		25	25	19.63	19.63	19.46
		50	0	19.64	19.56	19.56
	16QAM	1	0	19.52	19.87	19.43
		1	25	19.67	19.99	19.65
		1	49	19.47	19.81	19.45
		25	0	18.71	18.52	18.62
		25	13	18.63	18.60	18.60
		25	25	18.63	18.61	18.51
		50	0	18.64	18.58	18.52

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025CH	20175CH	20325CH
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15M	QPSK	1	0	20.46	20.47	20.35
		1	38	20.55	20.53	20.50
		1	74	20.38	20.33	20.34
		36	0	19.69	20.33	19.55
		36	18	19.67	19.60	19.56
		36	39	19.68	19.60	19.52
		75	0	19.73	19.60	19.56
	16QAM	1	0	19.45	19.84	19.73
		1	38	19.56	19.89	19.87
		1	74	19.41	19.66	19.75
		36	0	18.68	19.66	18.47
		36	18	18.65	18.63	18.50
		36	39	18.67	18.65	18.45
		75	0	18.67	18.55	18.49

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050CH	20175CH	20300CH
				1720MHz	1732.5MHz	1745MHz
4 / 20M	QPSK	1	0	20.52	20.45	20.35
		1	50	20.99	20.30	20.78
		1	99	20.43	20.31	20.36
		50	0	19.79	19.55	19.54
		50	25	19.82	19.65	19.60
		50	50	19.80	19.71	19.51
		100	0	19.77	19.65	19.52
	16QAM	1	0	19.99	19.88	19.68
		1	50	20.40	19.18	20.06
		1	99	19.90	19.71	19.65
		50	0	18.77	18.57	18.48
		50	25	18.78	18.65	18.52
		50	50	18.82	18.65	18.45
		100	0	18.79	18.59	18.48

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775CH	21100CH	21425CH
				2502.5MHz	2535MHz	2567.5MHz
7 / 5M	QPSK	1	0	21.17	21.32	21.93
		1	13	21.29	21.46	22.14
		1	24	21.15	21.37	21.42
		12	0	20.26	20.35	20.98
		12	6	20.29	20.44	21.02
		12	11	20.26	20.41	20.97
		25	0	20.28	20.40	20.96
	16QAM	1	0	20.18	20.39	21.21
		1	13	20.27	20.50	21.39
		1	24	20.16	20.43	21.27
		12	0	19.28	19.45	20.07
		12	6	19.31	19.52	20.07
		12	11	19.31	19.51	20.05
		25	0	19.18	19.40	19.93

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800CH	21100CH	21400CH
				2505MHz	2535MHz	2565MHz
7 / 10M	QPSK	1	0	21.29	21.37	21.89
		1	25	21.33	21.23	22.15
		1	49	21.29	21.14	21.22
		25	0	20.33	20.46	20.93
		25	13	20.32	20.45	20.99
		25	25	20.37	20.46	20.96
		50	0	20.38	20.50	20.91
	16QAM	1	0	20.08	20.65	20.70
		1	25	20.20	20.79	20.94
		1	49	20.06	20.70	20.79
		25	0	19.27	19.49	19.91
		25	13	19.28	19.45	19.98
		25	25	19.32	19.49	19.91
		50	0	19.32	19.50	19.85

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825CH	21100CH	21375CH
				2507.5MHz	2535MHz	2562.5MHz
7 / 15M	QPSK	1	0	21.11	21.30	21.88
		1	38	21.38	20.99	22.14
		1	74	21.22	20.99	21.23
		36	0	20.47	20.63	21.06
		36	18	20.49	20.61	21.16
		36	39	20.53	20.65	21.19
		75	0	20.53	20.68	21.15
	16QAM	1	0	20.02	20.55	20.86
		1	38	20.09	20.68	21.04
		1	74	20.00	20.60	20.97
		36	0	19.31	19.57	19.85
		36	18	19.35	19.53	19.92
		36	39	19.37	19.55	19.95
		75	0	19.34	19.54	19.91

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850CH	21100CH	21350CH
				2510MHz	2535MHz	2560MHz
7 / 20M	QPSK	1	0	20.70	21.05	21.56
		1	50	21.46	20.86	22.18
		1	99	21.04	20.88	21.23
		50	0	20.25	20.49	20.76
		50	25	20.32	20.50	20.92
		50	50	20.41	20.45	20.84
		100	0	20.30	20.45	20.81
	16QAM	1	0	20.26	20.50	20.67
		1	50	20.65	20.98	21.20
		1	99	20.31	20.64	20.88
		50	0	19.14	19.46	19.63
		50	25	19.26	19.48	19.80
		50	50	19.33	19.42	19.78
		100	0	19.25	19.43	19.69

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131979CH	132322CH	132665CH
				1710.7MHz	1745MHz	1779.3MHz
66 / 1.4M	QPSK	1	0	20.36	20.46	20.28
		1	2	20.50	20.62	20.46
		1	5	20.37	20.46	20.28
		3	0	20.43	20.53	20.37
		3	1	20.49	20.60	20.43
		3	2	20.43	20.54	20.37
		6	0	19.53	19.67	19.49
	16QAM	1	0	19.81	19.68	19.08
		1	2	19.96	19.87	19.23
		1	5	19.75	19.71	19.05
		3	0	19.42	19.37	18.74
		3	1	19.62	19.45	18.91
		3	2	19.44	19.38	18.75
		6	0	18.57	18.49	17.85

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131987CH	132322CH	132657CH
				1711.5MHz	1745MHz	1778.5MHz
66 / 3M	QPSK	1	0	20.42	20.51	20.35
		1	7	20.59	20.65	20.44
		1	14	20.37	20.50	20.31
		8	0	19.51	19.60	19.43
		8	4	19.54	19.64	19.47
		8	7	19.47	19.60	19.42
		15	0	19.48	19.61	19.44
	16QAM	1	0	19.85	19.75	19.18
		1	7	20.06	19.96	19.37
		1	14	19.80	19.69	19.05
		8	0	18.47	18.40	17.80
		8	4	18.51	18.41	17.81
		8	7	18.41	18.35	17.78
		15	0	18.43	18.38	17.80

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				131997CH	132322CH	132647CH
				1712.5MHz	1745MHz	1777.5MHz
66 / 5M	QPSK	1	0	20.32	20.43	20.29
		1	13	20.56	20.66	20.63
		1	24	20.27	20.37	20.19
		12	0	19.48	19.60	19.47
		12	6	19.61	19.65	19.50
		12	11	19.45	19.58	19.42
		25	0	19.51	19.62	18.65
	16QAM	1	0	19.71	19.66	19.16
		1	13	20.05	20.01	19.42
		1	24	19.69	19.58	18.98
		12	0	18.34	18.29	17.76
		12	6	18.43	18.35	17.83
		12	11	18.30	18.28	17.71
		25	0	18.33	18.33	17.77

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132022CH	132322CH	132622CH
				1715MHz	1745MHz	1775MHz
66 / 10M	QPSK	1	0	20.74	20.33	19.94
		1	25	20.74	20.45	19.93
		1	49	20.72	20.12	19.55
		25	0	19.97	19.41	18.99
		25	13	19.92	19.43	18.92
		25	25	19.87	19.38	18.89
		50	0	19.97	19.44	19.03
	16QAM	1	0	19.84	19.78	19.42
		1	25	19.97	19.89	19.47
		1	49	19.82	19.60	19.03
		25	0	18.52	18.39	17.98
		25	13	18.46	18.38	17.91
		25	25	18.41	18.32	17.88
		50	0	18.45	18.41	17.93

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132047CH	132322CH	132597CH
				1717.5MHz	1745MHz	1772.5MHz
66 / 15M	QPSK	1	0	20.28	20.33	19.97
		1	38	20.82	20.57	20.18
		1	74	20.22	20.08	19.47
		36	0	19.54	19.44	19.11
		36	18	19.48	19.41	19.04
		36	39	19.44	19.35	18.86
		75	0	19.47	19.39	19.04
	16QAM	1	0	19.78	19.76	19.55
		1	38	20.12	20.01	19.53
		1	74	19.75	19.55	18.94
		36	0	18.44	18.38	18.08
		36	18	18.41	18.40	17.98
		36	39	18.34	18.27	17.87
		75	0	18.42	18.33	17.97

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				132072CH	132322CH	132572CH
				1720MHz	1745MHz	1770MHz
66 / 20M	QPSK	1	0	20.33	20.12	20.03
		1	50	20.75	20.40	20.20
		1	99	20.22	19.92	19.74
		50	0	19.76	19.42	19.58
		50	25	19.78	19.47	19.31
		50	50	19.65	19.28	19.21
		100	0	19.67	19.30	19.35
	16QAM	1	0	19.88	19.63	19.60
		1	50	20.20	19.82	19.75
		1	99	19.85	19.31	18.98
		50	0	18.67	18.32	18.50
		50	25	18.64	18.35	18.30
		50	50	18.58	18.25	18.13
		100	0	18.57	18.20	18.27

ERP Power (dBm):

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23017CH	23095CH	23173CH
				699.7MHz	707.5MHz	715.3MHz
12 / 1.4M	QPSK	1	0	19.22	19.02	19.19
		1	2	19.33	19.16	19.30
		1	5	19.20	19.07	19.21
		3	0	19.01	19.09	19.21
		3	1	19.14	19.19	19.23
		3	2	19.12	19.16	19.21
		6	0	18.32	18.27	18.20
	16QAM	1	0	17.92	18.14	18.09
		1	2	18.00	18.18	18.14
		1	5	18.01	18.09	18.00
		3	0	18.12	18.11	17.97
		3	1	18.22	18.01	17.98
		3	2	18.25	17.87	17.94
		6	0	17.25	17.12	16.62

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23025CH	23095CH	23165CH
				700.5MHz	707.5MHz	714.5MHz
12 / 3M	QPSK	1	0	19.26	19.22	19.21
		1	7	19.32	19.36	19.35
		1	14	19.20	19.23	19.22
		8	0	18.34	18.24	18.30
		8	4	18.32	18.32	18.26
		8	7	18.19	18.31	18.26
		15	0	18.23	18.21	18.26
	16QAM	1	0	17.77	18.02	17.78
		1	7	17.62	18.12	17.91
		1	14	17.58	17.92	17.66
		8	0	16.76	16.72	16.84
		8	4	16.81	16.78	16.84
		8	7	16.72	16.74	16.80
		15	0	16.68	16.65	16.76

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23035CH	23095CH	23155CH
				701.5MHz	707.5MHz	713.5MHz
12 / 5M	QPSK	1	0	19.37	19.23	19.19
		1	13	19.42	19.30	19.37
		1	24	19.35	19.24	19.29
		12	0	18.49	18.13	18.51
		12	6	18.41	18.32	18.33
		12	11	18.32	18.45	18.18
		25	0	18.44	18.34	18.20
	16QAM	1	0	17.72	18.27	17.69
		1	13	17.95	18.23	17.93
		1	24	17.95	18.08	17.82
		12	0	17.04	16.73	17.13
		12	6	16.95	16.93	16.98
		12	11	16.90	17.04	16.93
		25	0	16.86	16.83	16.93

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23060CH	23095CH	23130CH
				704MHz	707.5MHz	711MHz
12 / 10M	QPSK	1	0	19.46	19.03	18.90
		1	25	19.40	19.16	19.06
		1	49	19.14	18.94	18.98
		25	0	18.59	17.93	17.74
		25	13	18.15	18.07	17.98
		25	25	18.54	18.05	17.71
		50	0	18.50	18.05	17.80
	16QAM	1	0	17.70	18.39	17.96
		1	25	18.08	18.39	18.00
		1	49	17.76	18.24	18.00
		25	0	17.37	16.91	16.75
		25	13	17.12	17.05	16.99
		25	25	17.50	17.00	16.74
		50	0	17.36	17.02	16.75

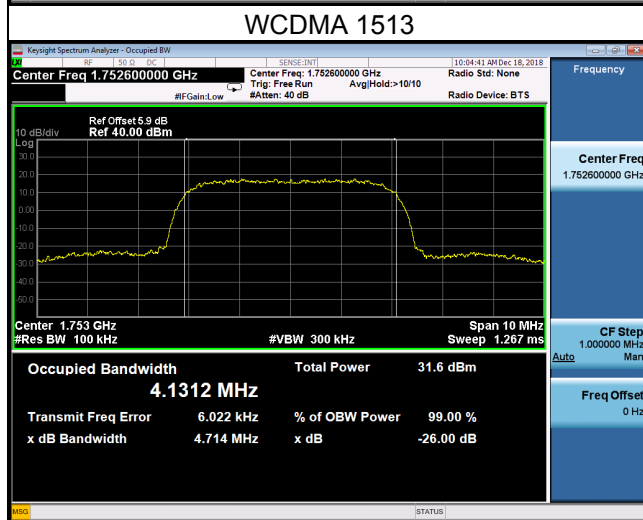
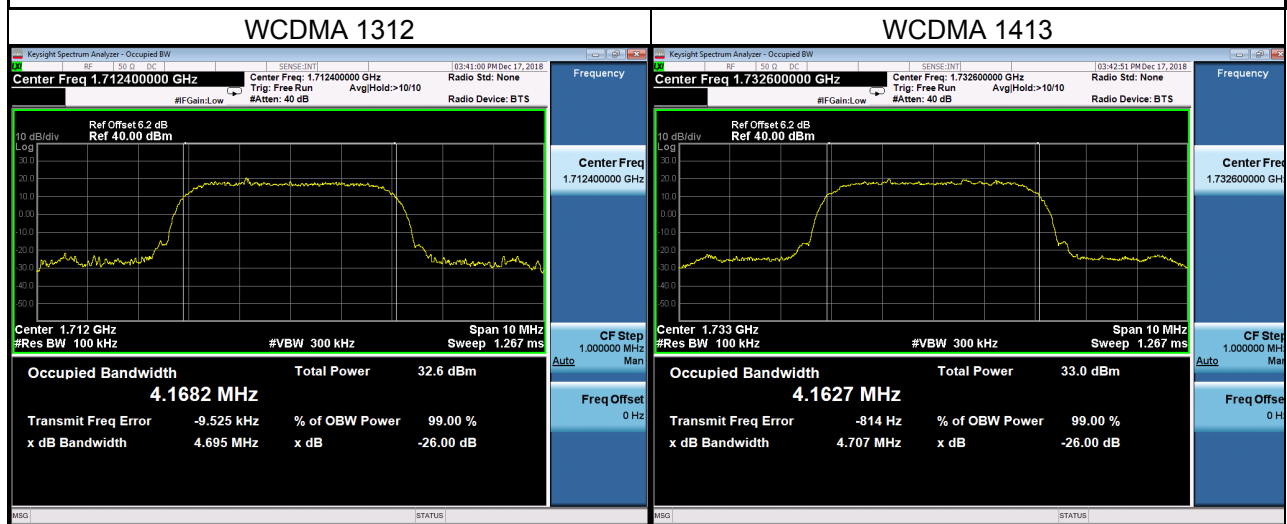
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23755CH	23790CH	23825CH
				706.5MHz	710.0MHz	713.5MHz
17 / 5M	QPSK	1	0	19.03	19.01	18.91
		1	13	19.13	19.10	19.09
		1	24	18.92	18.99	19.02
		12	0	18.02	17.83	18.33
		12	6	18.17	17.99	18.18
		12	11	18.30	17.96	18.17
		25	0	18.21	17.83	18.28
	16QAM	1	0	18.18	18.37	17.94
		1	13	18.21	18.43	18.19
		1	24	17.99	18.44	18.04
		12	0	17.11	16.90	17.40
		12	6	17.21	17.08	17.25
		12	11	17.34	17.06	17.25
		25	0	17.24	16.84	17.21

LTE Band / BW	Modulation	RB Siset	RB Offset	Low CH	Mid CH	High CH
				23780CH	23790CH	23800CH
				709.0MHz	710.0MHz	711.0MHz
17 / 10M	QPSK	1	0	19.05	19.05	19.02
		1	25	19.16	19.23	19.12
		1	49	19.01	19.13	19.07
		25	0	17.79	17.70	17.82
		25	13	18.06	17.99	18.05
		25	25	17.76	17.70	17.82
		50	0	17.82	17.74	17.88
	16QAM	1	0	18.01	18.40	18.04
		1	25	17.93	18.37	18.05
		1	49	17.99	18.46	18.05
		25	0	16.76	16.68	16.83
		25	13	17.00	16.97	17.07
		25	25	16.73	16.70	16.86
		50	0	16.75	16.69	16.83

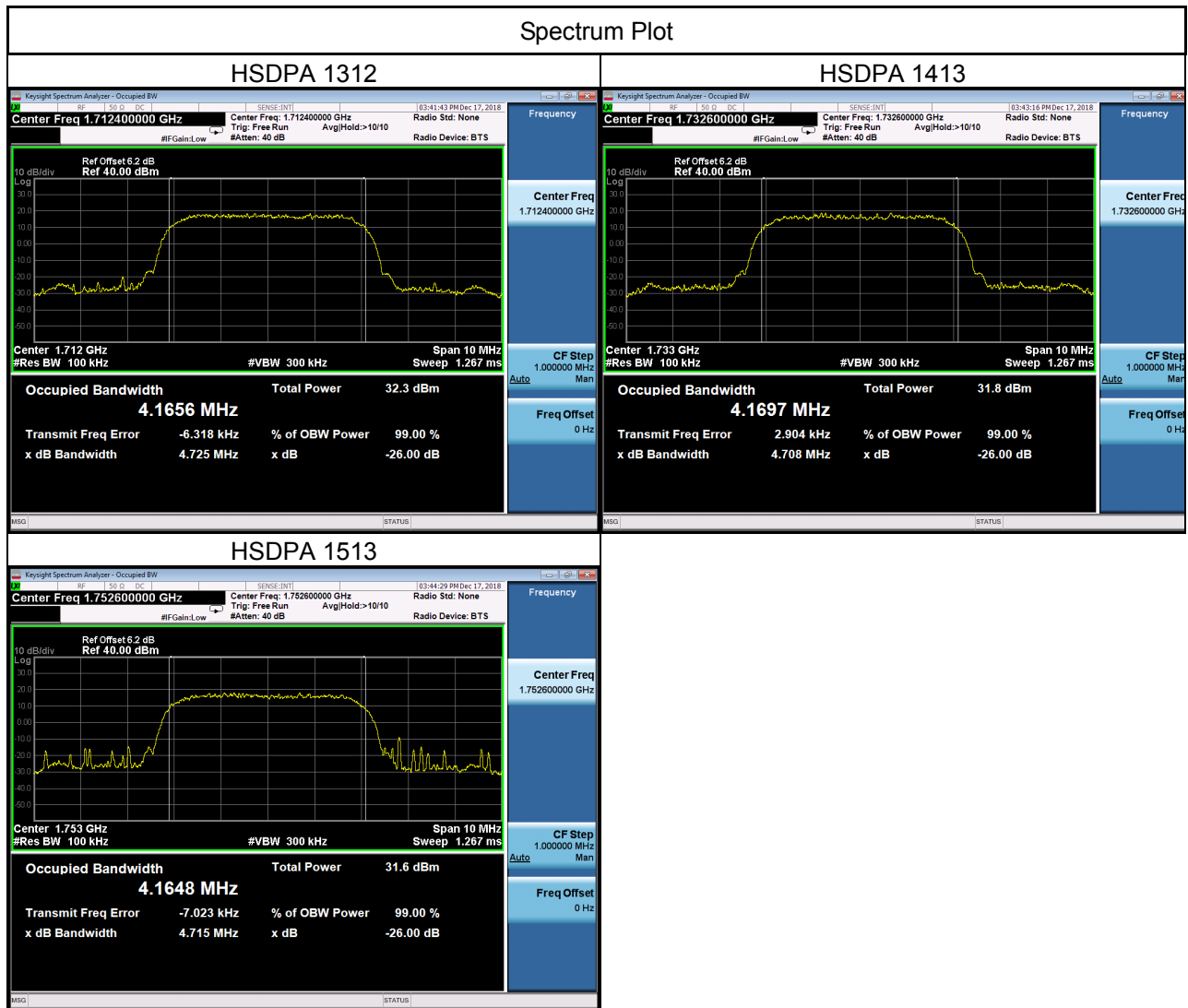
APPENDIX B - OCCUPIED BANDWIDTH

WCDMA Band IV_WCDMA					
BPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.168	1312	1712.4	4.695
1413	1732.6	4.163	1413	1732.6	4.707
1513	1752.6	4.131	1513	1752.6	4.714

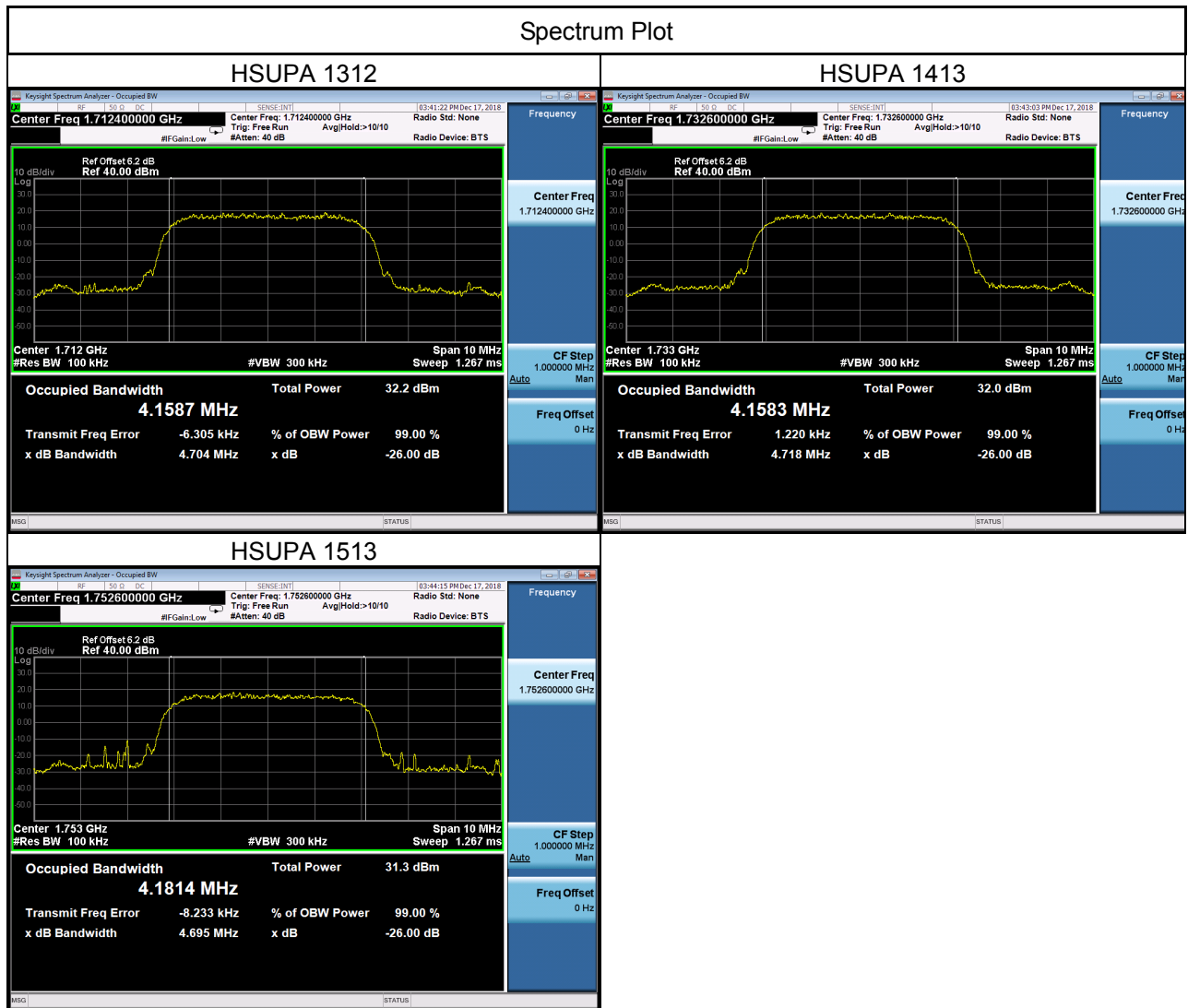
Spectrum Plot



WCDMA Band IV_HSDPA					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.166	1312	1712.4	4.725
1413	1732.6	4.170	1413	1732.6	4.708
1513	1752.6	4.165	1513	1752.6	4.715

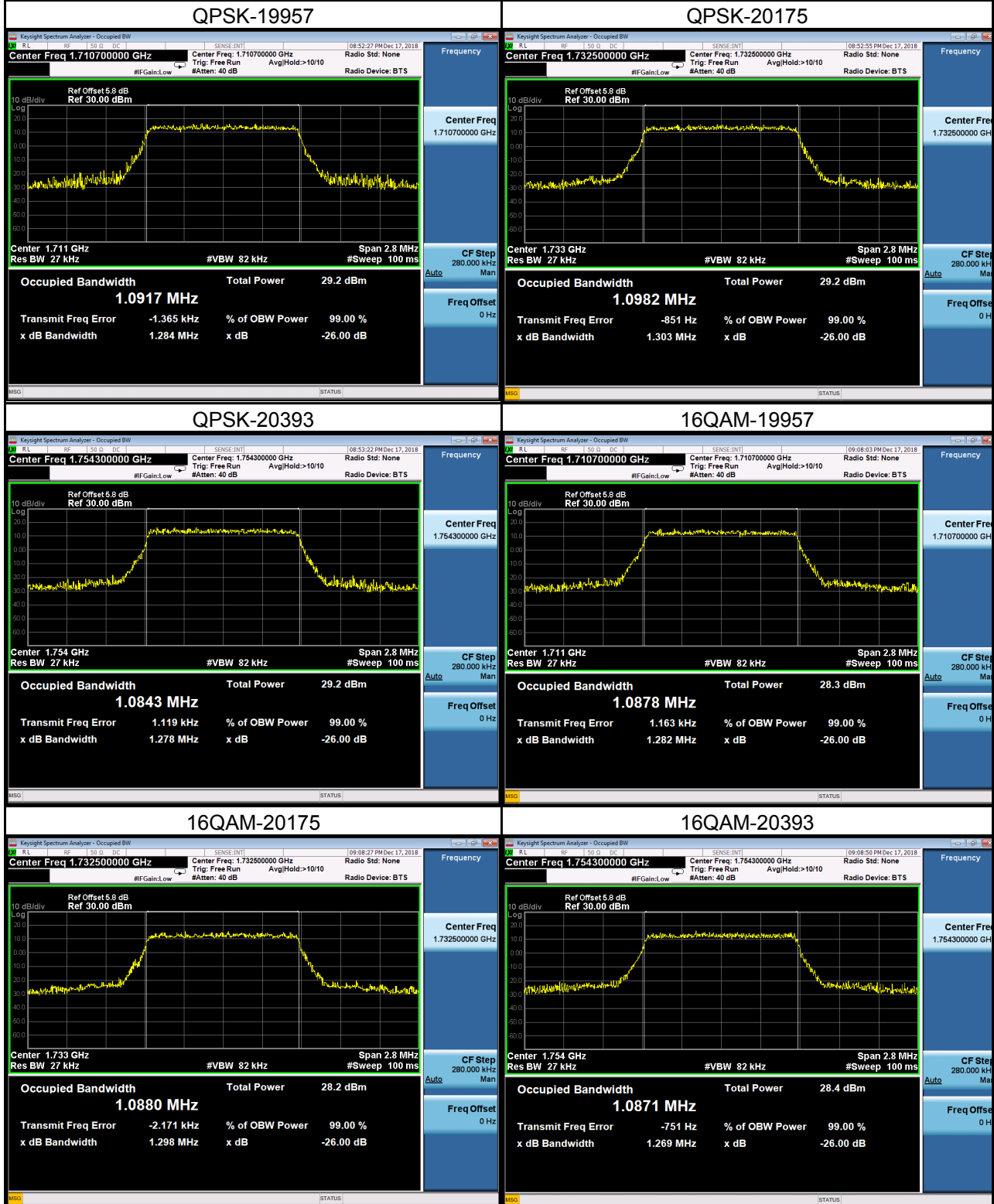


WCDMA Band IV_HSUPA					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.159	1312	1712.4	4.704
1413	1732.6	4.158	1413	1732.6	4.718
1513	1752.6	4.181	1513	1752.6	4.695



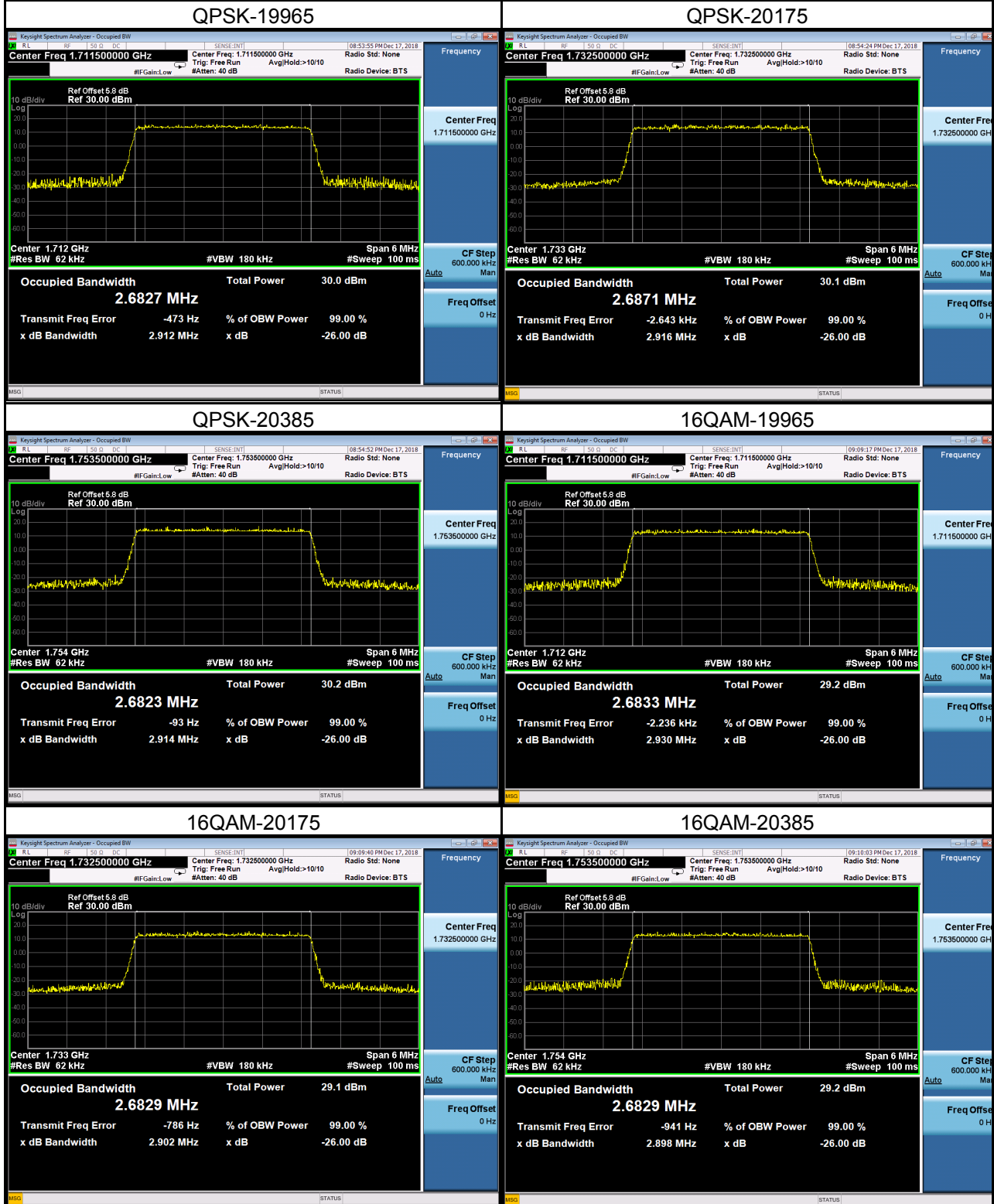
LTE Band 4_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19957	1710.7	1.092	19957	1710.7	1.088
20175	1732.5	1.098	20175	1732.5	1.088
20393	1754.3	1.084	20393	1754.3	1.087
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.284	19957	1710.7	1.282
20175	1732.5	1.303	20175	1732.5	1.298
20393	1754.3	1.278	20393	1754.3	1.269

Spectrum Plot



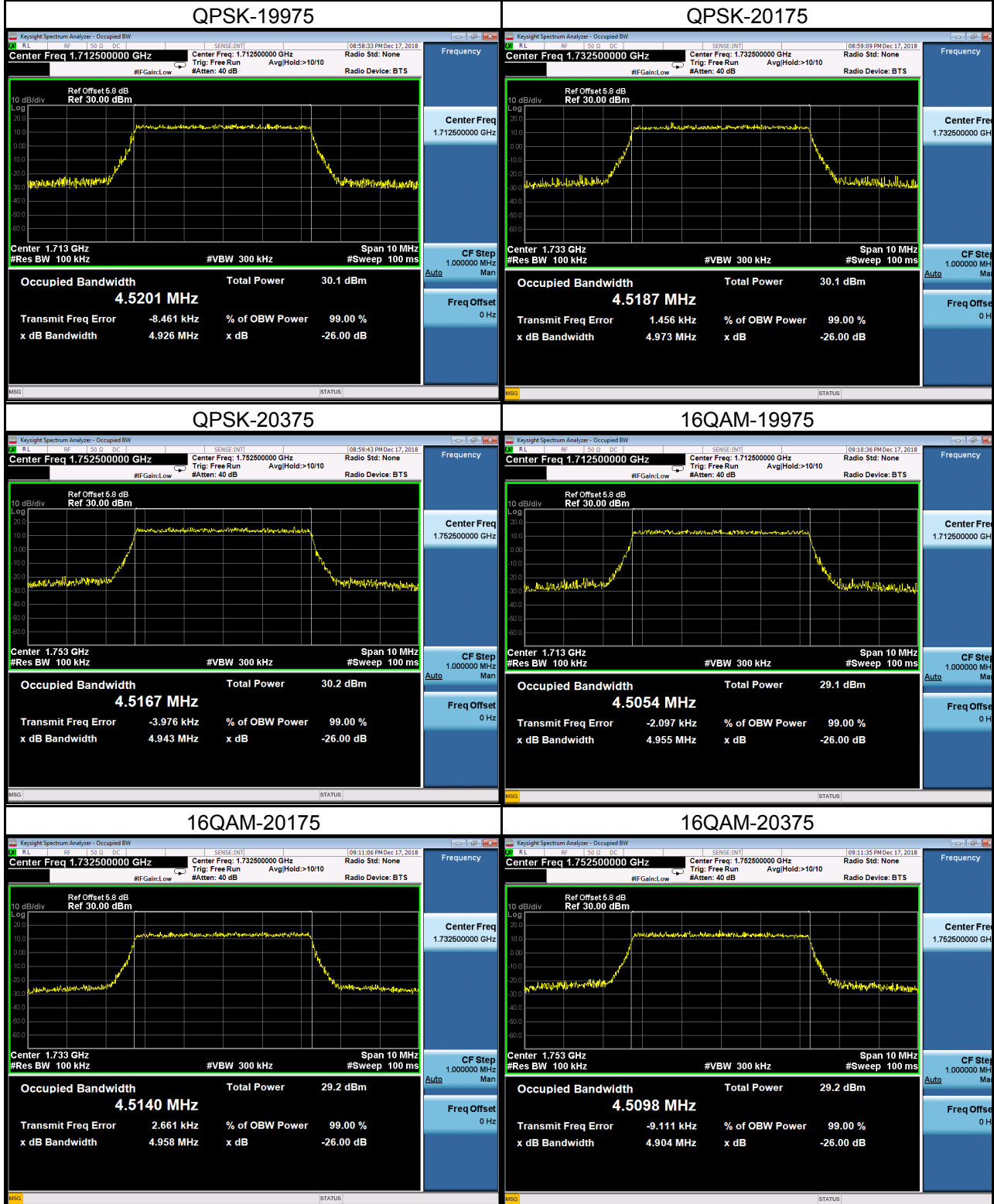
LTE Band 4_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19965	1711.5	2.683	19965	1711.5	2.683
20175	1732.5	2.687	20175	1732.5	2.683
20385	1753.5	2.682	20385	1753.5	2.683
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.912	19965	1711.5	2.930
20175	1732.5	2.916	20175	1732.5	2.902
20385	1753.5	2.914	20385	1753.5	2.898

Spectrum Plot



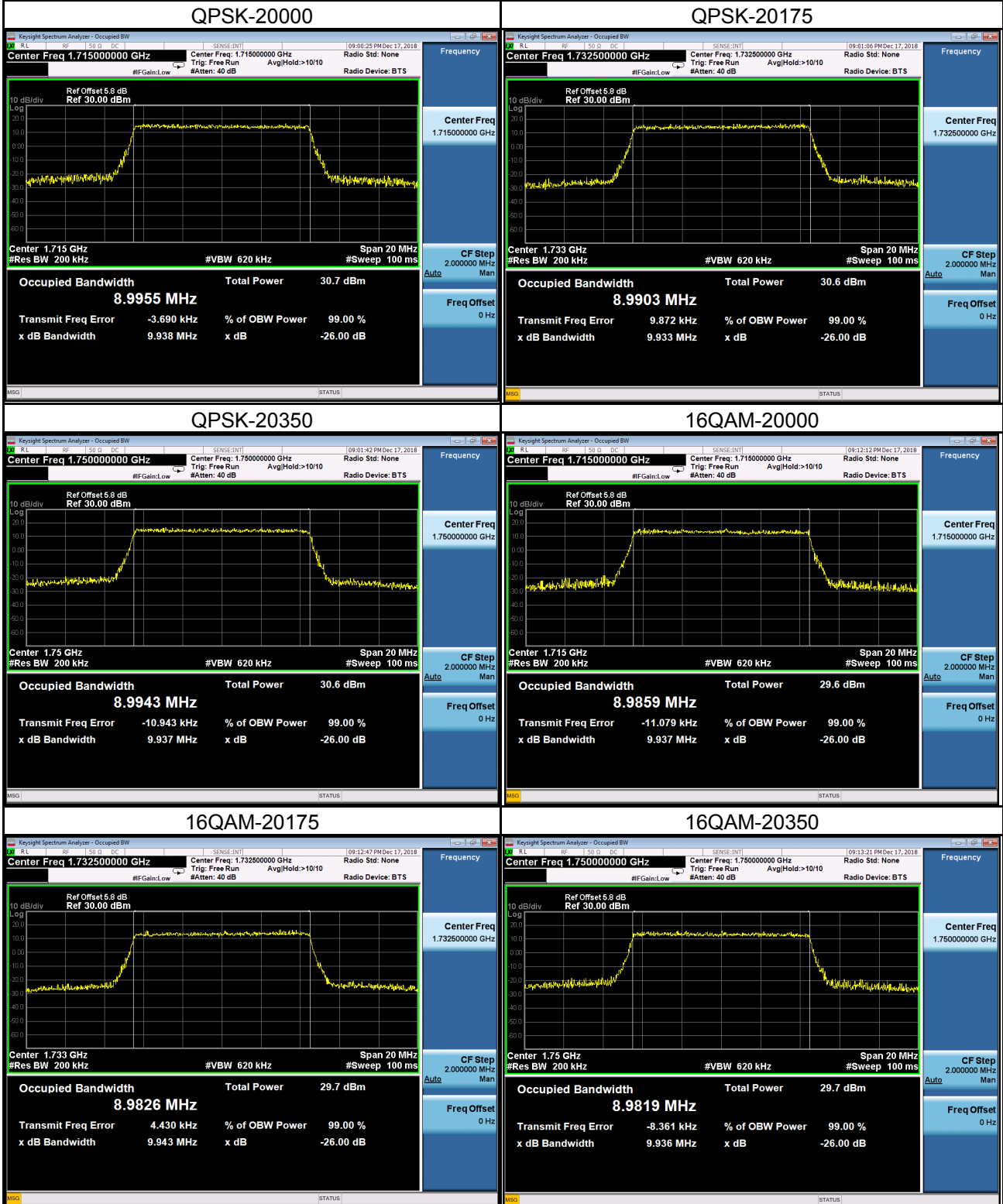
LTE Band 4_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19975	1712.5	4.520	19975	1712.5	4.505
20175	1732.5	4.519	20175	1732.5	4.514
20375	1752.5	4.517	20375	1752.5	4.510
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.926	19975	1712.5	4.955
20175	1732.5	4.973	20175	1732.5	4.958
20375	1752.5	4.943	20375	1752.5	4.904

Spectrum Plot



LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	8.996	20000	1715	8.986
20175	1732.5	8.990	20175	1732.5	8.983
20350	1750	8.994	20350	1750	8.982
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.938	20000	1715	9.937
20175	1732.5	9.933	20175	1732.5	9.943
20350	1750	9.937	20350	1750	9.936

Spectrum Plot



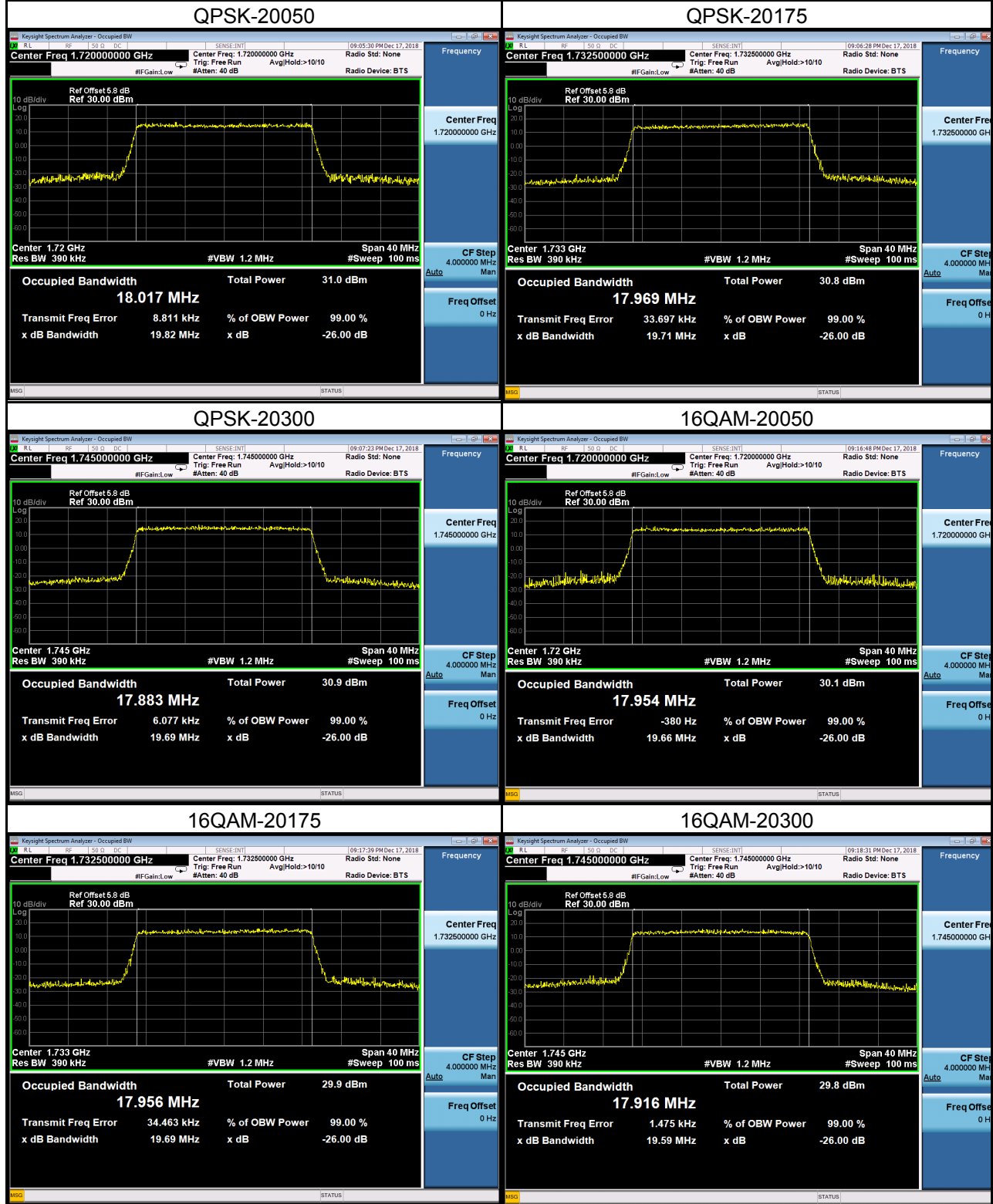
LTE Band 4_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20025	1717.5	13.522	20025	1717.5	13.492
20175	1732.5	13.465	20175	1732.5	13.504
20325	1747.5	13.443	20325	1747.5	13.468
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.790	20025	1717.5	14.730
20175	1732.5	14.920	20175	1732.5	14.710
20325	1747.5	14.940	20325	1747.5	14.970

Spectrum Plot



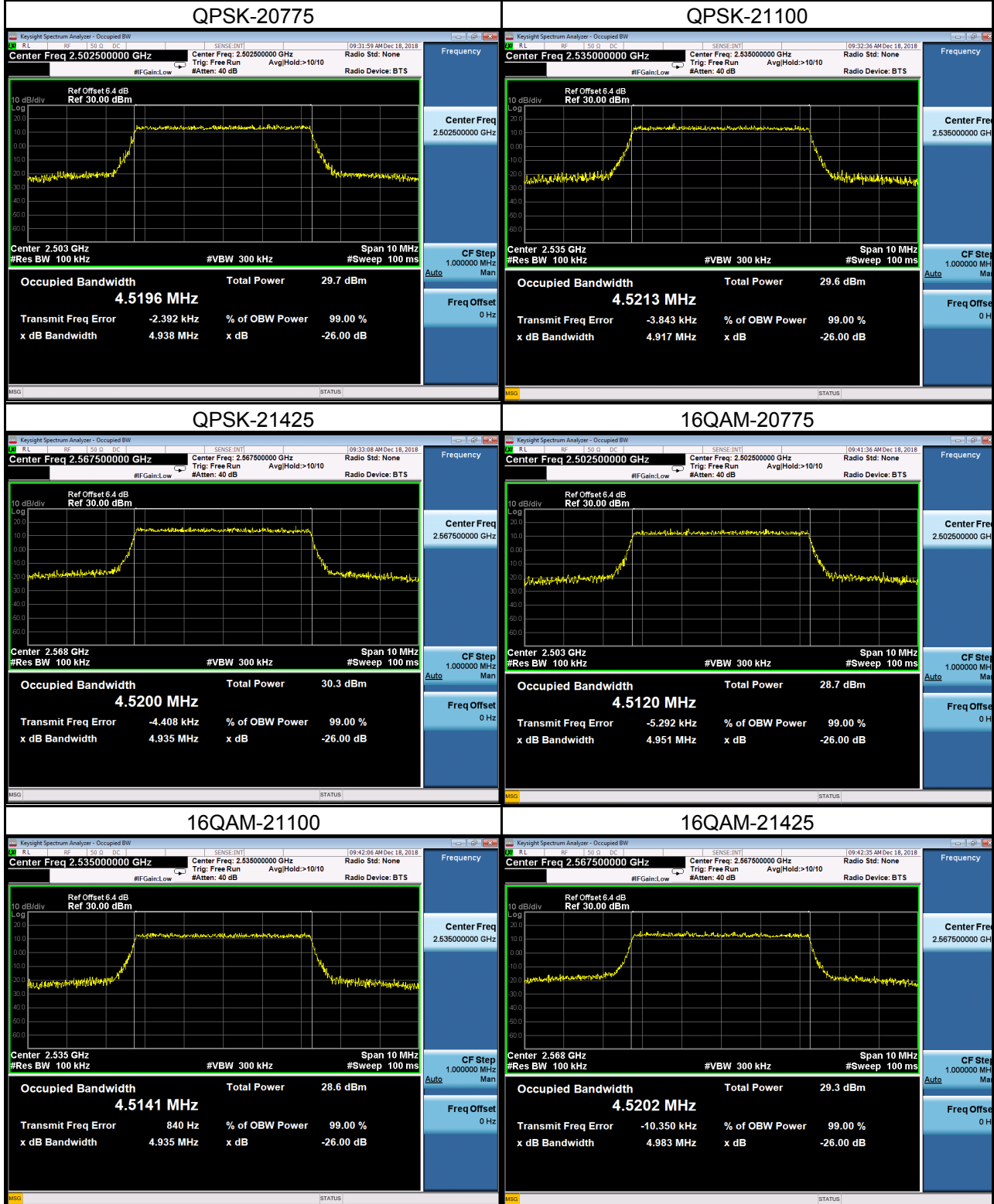
LTE Band 4_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20050	1720	18.017	20050	1720	17.954
20175	1732.5	17.969	20175	1732.5	17.956
20300	1745	17.883	20300	1745	17.916
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.820	20050	1720	19.660
20175	1732.5	19.710	20175	1732.5	19.690
20300	1745	19.690	20300	1745	19.590

Spectrum Plot



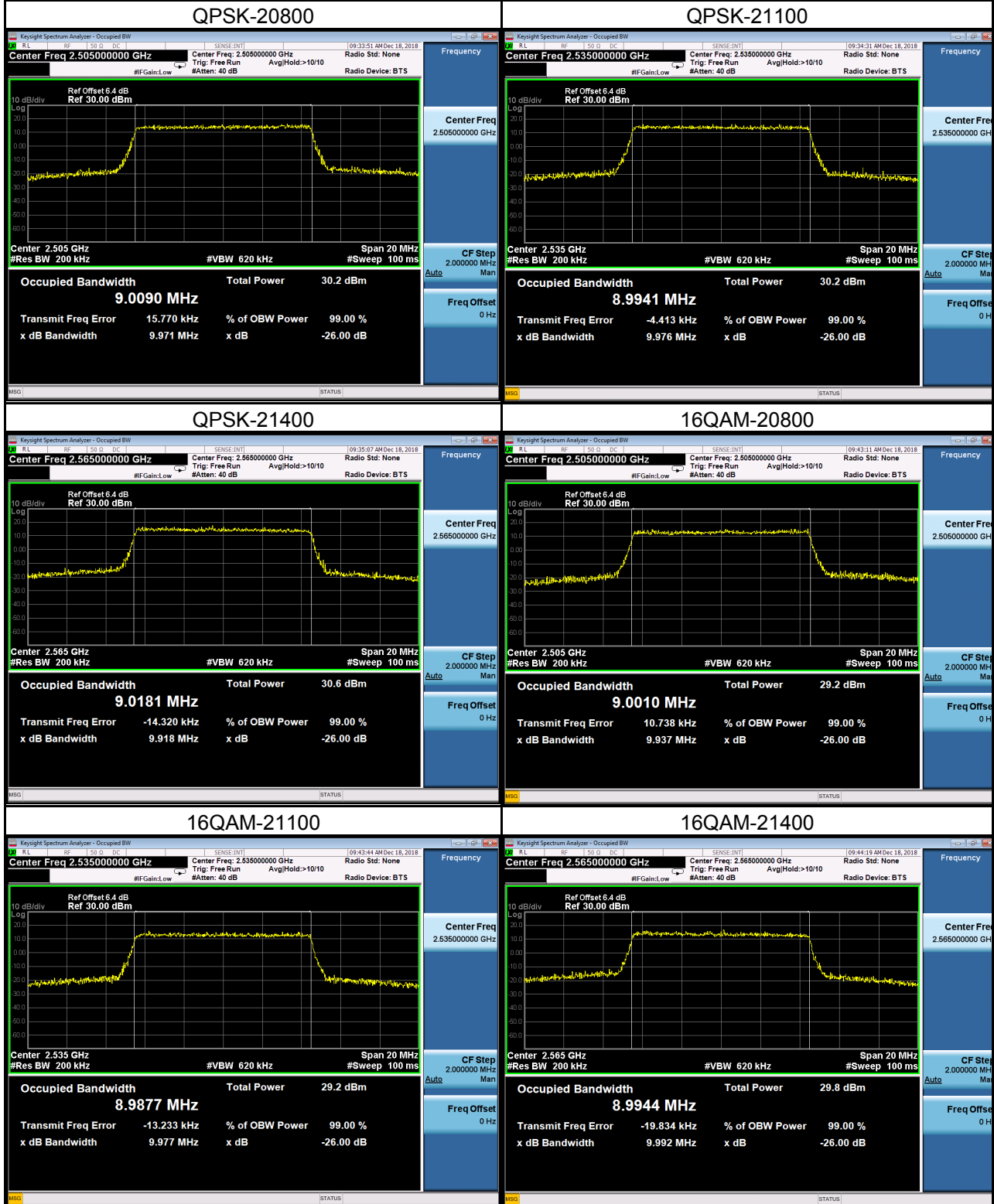
LTE Band 7_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20775	2502.5	4.520	20775	2502.5	4.512
21100	2535	4.521	21100	2535	4.514
21425	2567.5	4.520	21425	2567.5	4.520
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.938	20775	2502.5	4.951
21100	2535	4.917	21100	2535	4.935
21425	2567.5	4.925	21425	2567.5	4.983

Spectrum Plot



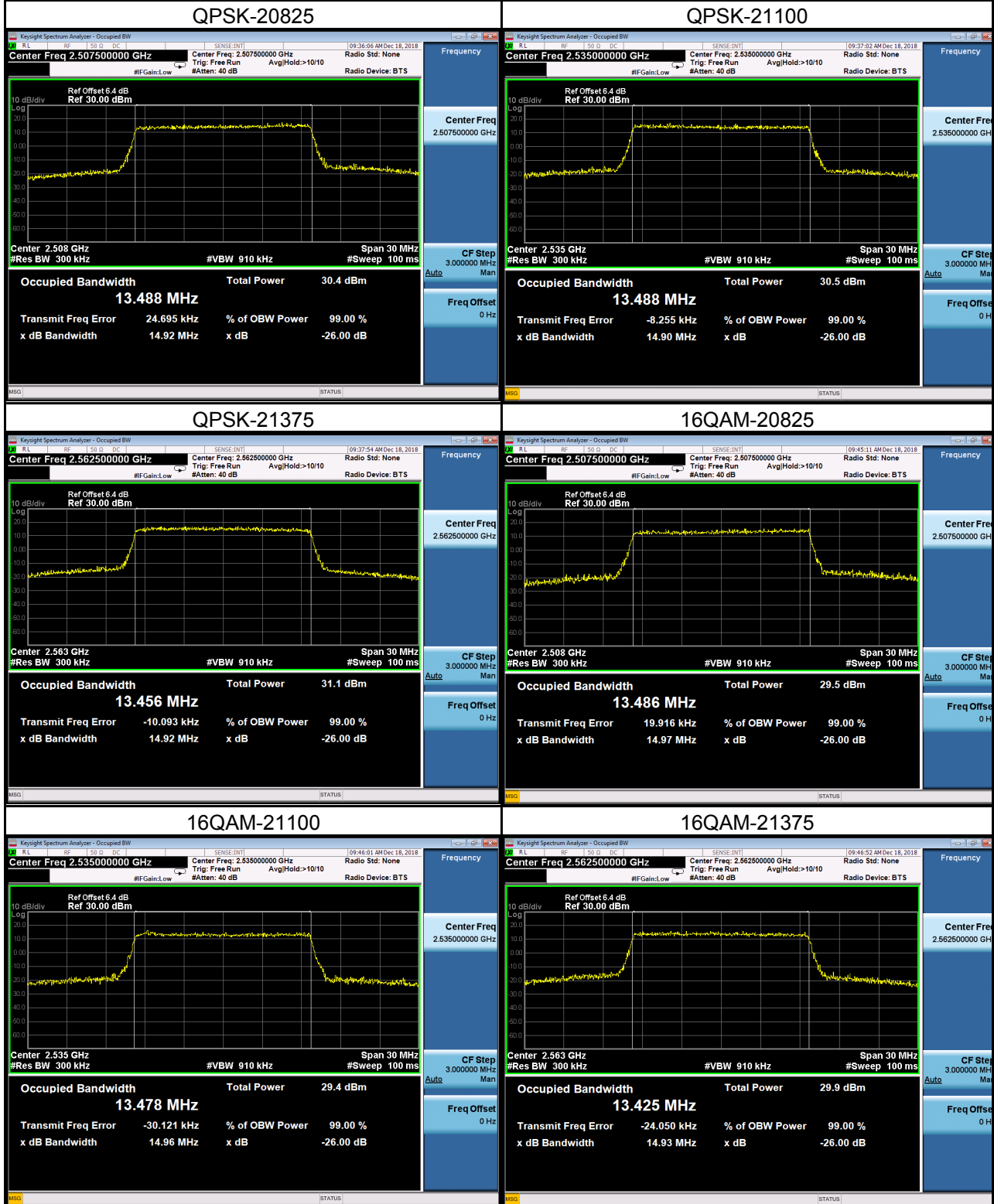
LTE Band 7_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20800	2505	9.009	20800	2505	9.001
21100	2535	8.994	21100	2535	8.988
21400	2565	9.018	21400	2565	8.994
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.971	20800	2505	9.937
21100	2535	9.976	21100	2535	9.977
21400	2565	9.918	21400	2565	9.992

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	13.488	20825	2507.5	13.486
21100	2535	13.488	21100	2535	13.478
21375	2562.5	13.456	21375	2562.5	13.425
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20825	2507.5	14.920	20825	2507.5	14.970
21100	2535	14.900	21100	2535	14.960
21375	2562.5	14.920	21375	2562.5	14.930

Spectrum Plot



LTE Band 7_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20850	2510	17.993	20850	2510	17.997
21100	2535	17.974	21100	2535	17.969
21350	2560	17.878	21350	2560	17.890
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20850	2510	19.61	20850	2510	19.60
21100	2535	19.77	21100	2535	19.69
21350	2560	19.66	21350	2560	19.68