FCC Radio Test Report

FCC ID: VSFMS3A

This report concerns: Original Grant

Project No.	:	1907H013
Equipment	:	Tablet
Brand Name	:	Juniper Systems
Test Model	:	MS3A
Series Model	:	N/A
Applicant	:	Juniper Systems
Address	:	1132 W 1700 N Logan, UT 84321 USA
Manufacturer	:	Juniper Systems
Address	:	1132 W 1700 N Logan, UT 84321 USA
Date of Receipt	:	Jul. 16, 2019
Date of Test	:	Jul. 16, 2019 ~ Nov.03, 2019
Issued Date	:	Nov. 07, 2019
Report Version	:	R00
Test Sample	:	Engineering Sample No.: SH2019091645/SH2019091646/ SH2019091641-5 /SH2019091641-6
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 27 Subpart F 47 CFR FCC Part 27 Subpart E 47 CFR FCC Part 2 & ANSI/TIA/EIA-603-E-2016 FCC 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.

Krain. Wu

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young chai

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Certificate # 5123.03

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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.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

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.
Please note that the measurement uncertainty is provided for informational purpose only and is not use in determining the Pass/Fail results.

Table of Contents Page

Table of Contents Page

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Nov. 07, 2019

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 Subpart L,M,H,F,E & Part 2			
Standard(s) Section	Test Item	Verdict	Tested By
2.1046 27.50(d)(4) 27.50(h)(2) 27.50(b)(10) 27.50(c)(10)	Effective Radiated Power & Equivalent Isotropic Radiated Power	PASS	Summer Xu
2.1049	Occupied Bandwidth	PASS	Summer Xu
2.1051 27.53(c)(2)(4) 27.53(g) 27.53(h) 27.53(m)(4)	Conducted Spurious Emissions	PASS	Summer Xu
2.1053 27.53(c)(2) 27.53(f) 27.53(g) 27.53(h) 27.53(m)(4)	Radiated Spurious Emissions	PASS	Summer Xu
2.1051 27.53(c)(2)(4) 27.53(g) 27.53(h) 27.53(m)(4)	Band Edge Measurements	PASS	Summer Xu
-	Peak To Average Ratio	PASS	Summer Xu
2.1055 27.54	Frequency Stability	PASS	Summer Xu

Note:
For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China.
BTL's Test Firm Registration Number for FCC: 476765
BTL's Designation Number for FCC: CN1241

1.2 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)
SH-CB01 (3m)	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.12
		30MHz ~ 200MHz	H	3.20
		200MHz ~ 1,000MHz	V	3.12
		200MHz ~ 1,000MHz	H	3.18

Test Site	Method	Measurement Frequency Range	U,(dB)
SH-CB01 (3m)	CISPR	1GHz ~ 6GHz	4.40
		6GHz ~ 18GHz	4.86

Test Site	Method	Measurement Frequency Range	U,(dB)
SH-CB01 (3m)	CISPR	18 ~ 26.5 GHz	3.64
		26.5 ~ 40 GHz	3.78

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

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet	
Brand Name	Juniper Systems	
Test Model	MS3A	
Series Model	N/A	
Model Difference(s)	N/A	
Software Version	MS3A-userdebug 9.1.0.1-20190619 eng.mirror.20190619.093211 test-keys	
Hardware Version	DVT1	
Antenna Type	Internal Antenna	
Antenna Gain	WCDMA IV / LTE Band 4	0.5 dBi
	LTE Band 7	1.8 dBi
	LTE Band 12,13,14&17	0.2 dBi
Modulation Type	WCDMA	UL: QPSK DL: QPSK, 16QAM
	WCDMA(HSDPA/HSUPA/DC-HSDPA)	16QAM
	LTE	UL: QPSK,16QAM DL: QPSK,16QAM, 64QAM
Operation Frequency	WCDMA Band IV	1712.4MHz ~1752.6MHz
	LTE Band 4 (Channel Bandwidth: 1.4MHz)	1710.7MHz ~ 1754.3MHz
	LTE Band 4 (Channel Bandwidth: 3MHz)	1711.5MHz ~ 1753.5MHz
	LTE Band 4 (Channel Bandwidth: 5MHz)	1712.5MHz ~ 1752.5MHz
	LTE Band 4 (Channel Bandwidth: 10MHz)	1715.0MHz ~ 1750.0MHz
	LTE Band 4 (Channel Bandwidth: 15MHz)	1717.5MHz ~ 1747.5MHz
	LTE Band 4 (Channel Bandwidth: 20MHz)	1720.0MHz ~ 1745.0MHz
	LTE Band 7 (Channel Bandwidth: 5MHz)	2502.5MHz ~ 2567.5MHz
	LTE Band 7 (Channel Bandwidth: 10MHz)	2505.0MHz ~ 2565.0MHz
	LTE Band 7 (Channel Bandwidth: 15MHz)	2507.5MHz ~ 2562.5MHz
	LTE Band 7 (Channel Bandwidth: 20MHz)	2510.0MHz ~ 2560.0MHz
	LTE Band 12 (Channel Bandwidth: 1.4MHz)	699.7MHz ~ 715.3MHz
	LTE Band 12 (Channel Bandwidth: 3MHz)	700.5MHz ~ 714.5MHz
	LTE Band 12 (Channel Bandwidth: 5MHz)	701.5MHz ~ 713.5MHz
	LTE Band 12 (Channel Bandwidth: 10MHz)	704.0MHz ~ 711.0MHz
	LTE Band 13 (Channel Bandwidth: 5MHz)	779.5MHz ~ 784.5MHz
	LTE Band 13 (Channel Bandwidth: 10MHz)	782.0MHz
	LTE Band 14 (Channel Bandwidth: 5MHz)	788.0MHz ~ 793.0MHz
	LTE Band 14 (Channel Bandwidth: 10MHz)	793.0MHz
	LTE Band 17 (Channel Bandwidth: 5MHz)	706.5 MHz ~ 713.5 MHz
	LTE Band 17 (Channel Bandwidth: 10MHz)	709.0 MHz ~ 711.0 MHz

Max. EIRP Power	WCDMA Band IV (WCDMA)	QPSK	20.19	dBm
	WCDMA Band IV (HSDPA)	16QAM	19.17	dBm
	WCDMA Band IV (HSUPA)	16QAM	19.19	dBm
	WCDMA Band IV (DC-HSDPA)	16QAM	19.17	dBm
	LTE Band 4 (Channel Bandwidth: 1.4MHz)	QPSK	20.75	dBm
		16QAM	19.89	dBm
	LTE Band 4 (Channel Bandwidth: 3MHz)	QPSK	20.86	dBm
		16QAM	20.19	dBm
	LTE Band 4 (Channel Bandwidth: 5MHz)	QPSK	20.90	dBm
		16QAM	20.35	dBm
	LTE Band 4 (Channel Bandwidth: 10MHz)	QPSK	20.87	dBm
		16QAM	20.23	dBm
	LTE Band 4 (Channel Bandwidth: 15MHz)	QPSK	20.99	dBm
		16QAM	20.34	dBm
	LTE Band 4 (Channel Bandwidth: 20MHz)	QPSK	20.92	dBm
		16QAM	20.45	dBm
	LTE Band 7 (Channel Bandwidth: 5MHz)	QPSK	22.81	dBm
		16QAM	22.35	dBm
	LTE Band 7 (Channel Bandwidth: 10MHz)	QPSK	22.68	dBm
		16QAM	22.09	dBm
	LTE Band 7 (Channel Bandwidth: 15MHz)	QPSK	22.90	dBm
		16QAM	22.30	dBm
	LTE Band 7 (Channel Bandwidth: 20MHz)	QPSK	22.96	dBm
		16QAM	23.39	dBm

Max. ERP Power	LTE Band 12 (Channel Bandwidth: 1.4MHz)	QPSK	21.54	dBm
		16QAM	20.66	dBm
	LTE Band 12 (Channel Bandwidth: 3MHz)	QPSK	21.80	dBm
		16QAM	20.93	dBm
	LTE Band 12 (Channel Bandwidth: 5MHz)	QPSK	21.82	dBm
		16QAM	20.94	dBm
	LTE Band 12 (Channel Bandwidth: 10MHz)	QPSK	21.85	dBm
		16QAM	20.91	dBm
	LTE Band 13 (Channel Bandwidth: 5MHz)	QPSK	21.72	dBm
		16QAM	21.04	dBm
	LTE Band 13 (Channel Bandwidth: 10MHz)	QPSK	21.79	dBm
		16QAM	20.44	dBm
	LTE Band 14 (Channel Bandwidth: 5MHz)	QPSK	21.65	dBm
		16QAM	21.03	dBm
	LTE Band 14 (Channel Bandwidth: 10MHz)	QPSK	21.74	dBm
		16QAM	20.44	dBm
	LTE Band 17 (Channel Bandwidth: 5MHz)	QPSK	21.74	dBm
		16QAM	20.73	dBm
	LTE Band 17 (Channel Bandwidth: 10MHz)	QPSK	21.82	dBm
		16QAM	20.88	dBm
Power Source	#1 DC voltage supplied from AC/DC adapter. Model：PSAA30R-120 #2 Supplied from Li-ion battery pack.			
Power Rating	#1 I/P: 100~240V 0.8A 50~60Hz O/P: 12V ⎓ 2.5A #2 7.2V, 6.0A, 43.2W			

Note:
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. WCDMA (UL:QPSK; DL: QPSK) mode was found to be the worst case and recorded.

2.2 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
Output Power	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
Radiated Emission	1312 to 1513	1413	WCDMA
Band Edge	1312 to 1513	1312, 1513	WCDMA
Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA
Frequency Stability	1312 to 1513	1413	WCDMA

LTE BAND 4 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & 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
Output Power & 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
Output Power & 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 13 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1RB/12RB/25RB
		23230	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Occupied Bandwidth	23205 to 23255	23230	5MHz	QPSK, 16QAM	25RB
	23205 to 23255	23230	10MHz	QPSK, 16QAM	50RB
Conducted Spurious Emission	23205 to 23255	23230	5MHz	QPSK	1 RB
		23230	10MHz	QPSK	1 RB
Radiated Spurious Emission	23205 to 23255	23230	5MHz	QPSK	1 RB
	23205 to 23255	23230	10MHz	QPSK	1 RB
Band Edge	23205 to 23255	23205, 23255	5MHz	QPSK	1RB/25RB
	23205 to 23255	23230	10MHz	QPSK	1RB/50RB
Peak To Average Ratio	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1RB
	23205 to 23255	23230	10MHz	QPSK, 16QAM	1RB
Frequency Stability	23205 to 23255	23230	5MHz	QPSK	1RB
	23205 to 23255	23230	10MHz	QPSK	1RB

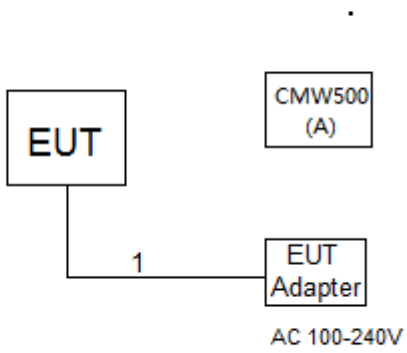
LTE BAND 14 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	23305 to 23330	23305, 23330	5MHz	QPSK, 16QAM	1RB/12RB/25RB
		23330	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Occupied Bandwidth	23305 to 23330	23230	5MHz	QPSK, 16QAM	25RB
	23305 to 23330	23330	10MHz	QPSK, 16QAM	50RB
Conducted Spurious Emission	23305 to 23330	23230	5MHz	QPSK	1 RB
		23330	10MHz	QPSK	1 RB
Radiated Spurious Emission	23305 to 23330	23230	5MHz	QPSK	1 RB
	23305 to 23330	23330	10MHz	QPSK	1 RB
Band Edge	23305 to 23330	23305, 23330	5MHz	QPSK	1RB/25RB
	23305 to 23330	23230	10MHz	QPSK	1RB/50RB
Peak To Average Ratio	23305 to 23330	23305, 23330	5MHz	QPSK, 16QAM	1RB
	23305 to 23330	23330	10MHz	QPSK, 16QAM	1RB
Frequency Stability	23305 to 23330	23330	5MHz	QPSK	1RB
	23305 to 23330	23330	10MHz	QPSK	1RB

LTE BAND 17 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ER	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	709.0 to 711.0	23780, 23790, 23775	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, 23775	10MHz	QPSK, 16QAM	50RB
Conducted Spurious Emission	706.5 to 713.5	23790	5MHz	QPSK	1 RB
	709.0 to 711.0	23790	10MHz	QPSK	1 RB
Radiated Spurious Emission	706.5 to 713.5	23755	5MHz	QPSK	1 RB
	709.0 to 711.0	23755	10MHz	QPSK	1 RB
Band Edge	706.5 to 713.5	23755	5MHz	QPSK	1RB/25RB
		23825	5MHz	QPSK	
	709.0 to 711.0	23780	10MHz	QPSK	1RB/50RB
		23775	10MHz	QPSK	
Peak To Average Ratio	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB
	709.0 to 711.0	23780, 23790, 23775	10MHz	QPSK, 16QAM	1 RB
Frequency Stability	706.5 to 713.5	23790	5MHz	QPSK	1 RB
	709.0 to 711.0	23790	10MHz	QPSK	1 RB

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP/ERP	23°C, 59%RH	DC 7.2V
Output Power	23°C, 59%RH	DC 7.2V
Occupied Bandwidth	23°C, 59%RH	DC 7.2V
Conducted Emission	23°C, 59%RH	DC 7.2V
Radiated Emission	22°C, 58%RH	AC 120V/60Hz
Band Edge	23°C, 59%RH	DC 7.2V
Peak to Average Ratio	23°C, 59%RH	DC 7.2V
Frequency Stability	Normal and Extreme	Normal and Extreme

2.3 BLOCK DIGRAM SHOWING THECONFIGURATIONOFSYSTEMTESTED



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.	Series No.
A	CMW500	N/A	N/A	131463

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m

3. TEST RESULT

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMIT

Mobile / Portable station are limited to 1 watts e.i.r.p. (WCDMA Band IV, LTE Band 4)
Mobile / Portable station are limited to 2 watts e.i.r.p. (LTE Band 7)
Mobile / Portable station are limited to 3 watts e.r.p. (LTE Band 12, LTE Band 13, LTE Band 14, LTE Band 17)

3.1.2 TEST PROCEDURE

EIRP/ERP:

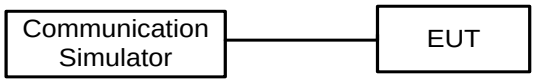
EIRP= Conducted Power +Antenan gain
ERP power=EIPR power-2.15dBi.

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.

3.1.3 TEST SETUP LAYOUT

Conducted Power Measurement



3.1.4 TEST DEVIATION

No deviation

3.1.5 TEST RESULTS

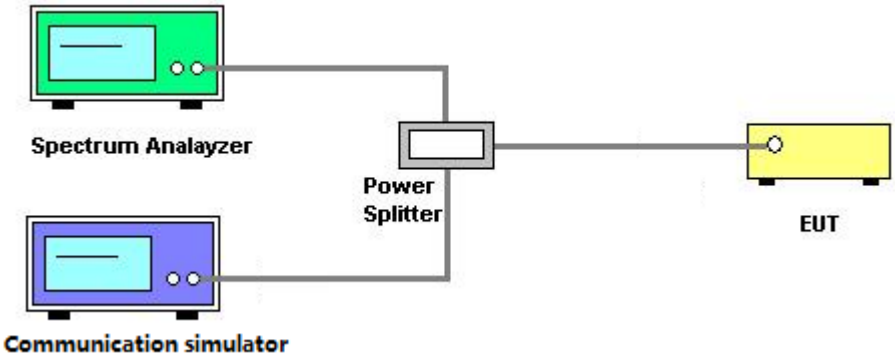
Please refer to the Appendix A.

3.2 OCCUPIED BANDWIDTH MEASUREMENT

3.2.1 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.

3.2.2 TEST SETUP LAYOUT



3.2.3 TEST DEVIATION

No deviation

3.2.4 TEST RESULTS

Please refer to the Appendix B.

3.3 CONDUCTED EMISSIONS MEASUREMENT

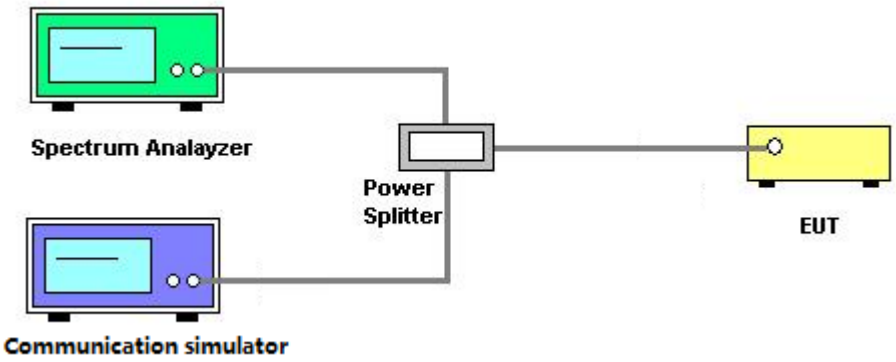
3.3.1 LIMIT

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. (WCDMA Band IV, LTE Band 4, Band 12, Band 13, Band 14, Band 17)
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 Band 7)

3.3.2 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>=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.

3.3.3 TEST SETUP LAYOUT



3.3.4 TEST DEVIATION

No deviation

3.3.5 TEST RESULTS

Please refer to the Appendix C.

3.4 RADIATED EMISSIONS MEASUREMENT

3.4.1 LIMIT

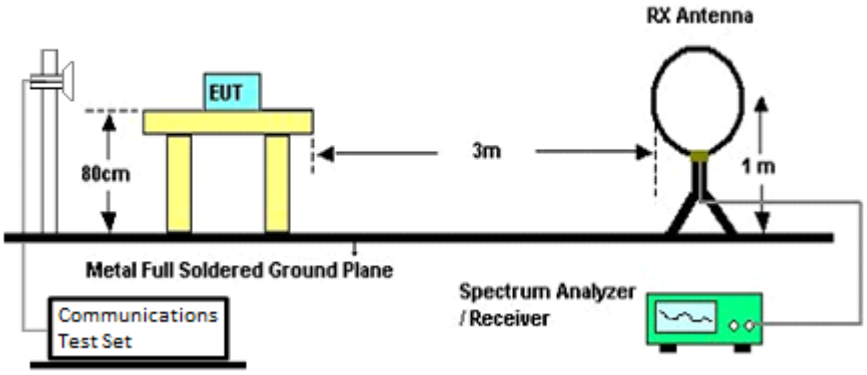
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to -13dBm. (WCDMA Band IV, LTE Band 4, Band 12, Band 17)
The power of any emission outside of the authorized 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 Band 7)
The power of any emission outside of the authorized operating frequency ranges must be attenua ted below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. (LTE Band 13)

3.4.2 TEST PROCEDURES

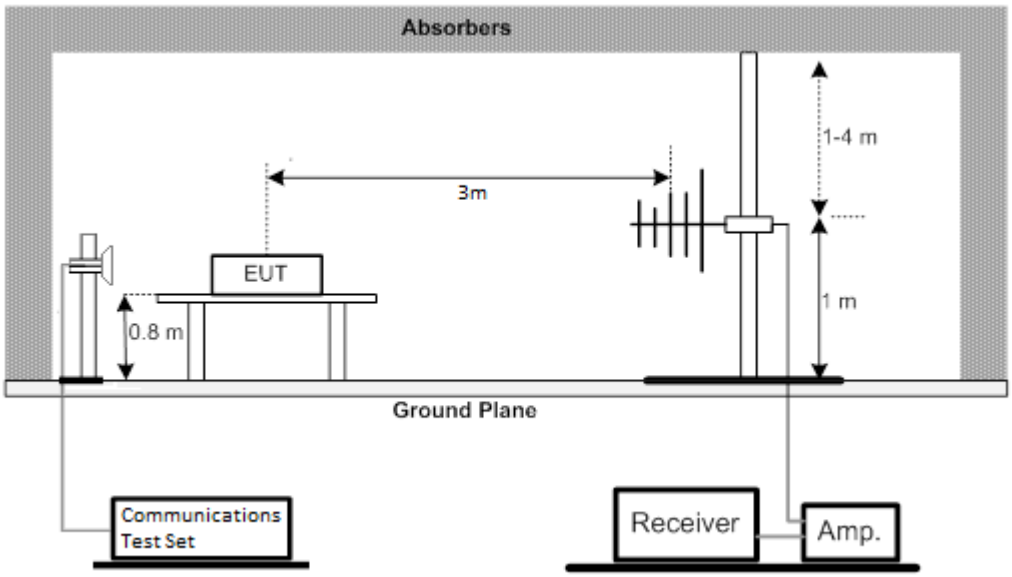
1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power.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

3.4.3 TEST SETUP LAYOUT

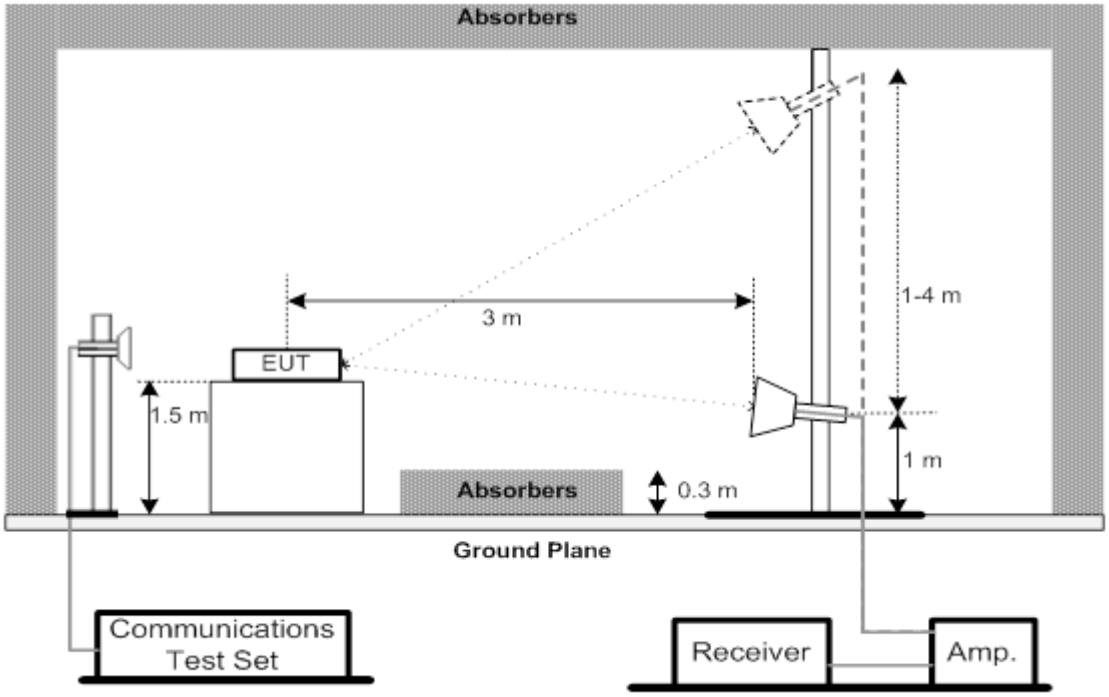
Below 30MHz



30MHz to 1GHz



Above 1GHz



3.4.4 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix D.

3.4.5 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix E.

3.4.6 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix F.

3.5 BAND EDGE MEASUREMENT

3.5.1 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. (WCDMA Band IV, LTE Band 4, Band 12, Band 17)

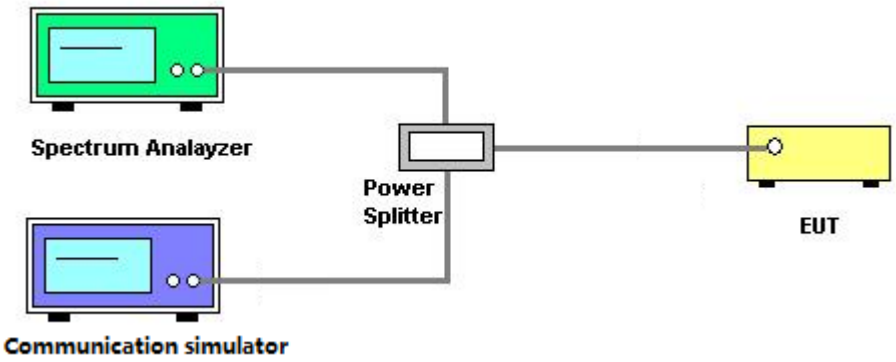
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge,
43 + 10 log (P) dBon all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all 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 that 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 SatelliteService 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 Band 7)

For operations in the 776-788 MHz band, the FCC limit is 43 + 10log10(P[Watts]) dB below the transmitter power P(Watts) in a 100 kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. In addition, the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least 65 + 10 log10 p (watts), dB, for mobile and portable equipment. (LTE Band 13)

3.5.2 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.

3.5.3 TEST SETUP LAYOUT



3.5.4 TEST DEVIATION

No deviation

3.5.5 TEST RESULTS

Please refer to the Appendix G.

3.6 PEAK TO AVERAGE RATIO MEASUREMENT

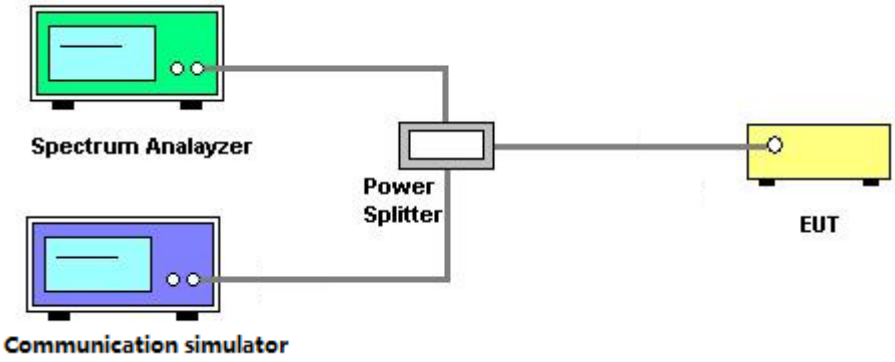
3.6.1 LIMIT

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.

3.6.2 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ 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%.

3.6.3 TEST SETUP LAYOUT



3.6.4 TEST DEVIATION

No deviation

3.6.5 TEST RESULTS

Please refer to the Appendix H.

3.7 FREQUENCY STABILITY MEASUREMENT

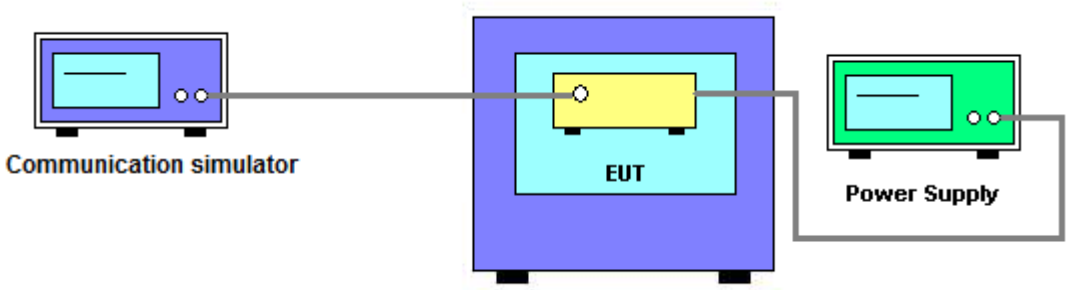
3.7.1 LIMIT

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

3.7.2 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 ±0.5°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.

3.7.3 TEST SETUP LAYOUT



3.7.4 TEST DEVIATION

No deviation

3.7.5 TEST RESULTS

Please refer to the Appendix I.

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emission Measurement(9K-30M)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Loop Antenna	EMCI	EMCI LPA600	275	Mar. 29, 2020
2	EMI Test Receiver	R&S	ESCI	100082	Mar. 29, 2020
3	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

For WCDMA

Radiated Emission Measurement(30M-1G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019

Radiated Emission Measurement(1G-18G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
4	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 29, 2020
5	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
6	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
7	Cable	N/A	EMC102-SM-SM-6000	170336	Apr. 17, 2020
8	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019

For LTE

Radiated Emission Measurement(30M-1G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
3	MXE EMI Receiver	Keysight	N9038A	MY57150106	Mar. 29, 2020
4	Test Cable	emci	EMC104-SM-SM-7000	170330	Apr. 17, 2020
5	Test Cable	emci	EMC104-SM-SM-1000	170331	Apr. 17, 2020
6	Test Cable	emci	EMC104-SM-NM-3500	170621	Apr. 17, 2020
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
8	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019

Radiated Emission Measurement(1G-18G)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pre-Amplifier	emci	EMC184045SE	980409	Mar. 29, 2020
2	Pre-Amplifier	emci	EMC012645SE	980421	Mar. 29, 2020
3	Pre-Amplifier	emci	EMC9135	980400	Mar. 29, 2020
4	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1787	Mar. 29, 2020
5	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	Mar. 29, 2020
6	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	719	Mar. 29, 2020
7	Cable	N/A	EMC102-SM-SM-6000	170336	Apr. 17, 2020
8	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019

For WCDMA

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019
2	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
4	Power Divider	JUK	PD-2SF-2060	N/A	N/A

Frequency Stability Measurement					
	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	8960 SERIES 10 WIRELESS COMMUNICATIONS TEST SET	Agilent	E5515C	GB45070942	Nov. 20, 2019
2*	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
4	Power Divider	JUK	PD-2SF-2060	N/A	N/A
5	Temperature And Humidity Box	Blue pand	BPHS-120B	170616454	Nov. 20, 2019

For LTE

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
2	Power Divider	JUK	PD-4SF-2060	N/A	N/A
3	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019
4	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020

Frequency Stability Measurement					
	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 29, 2020
2*	Power Divider	JUK	PD-4SF-2060	N/A	N/A
3	Wideband Radio Communication Test	R&S	CMW500	131463	Nov. 20, 2019
4	Spectrum Analyzer	R&S	FSP40	100626	Mar. 29, 2020
5	Temperature And Humidity Box	Blue pand	BPHS-120B	170616454	Nov. 20, 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 - OUTPUT POWER

Output Power (dBm):

Modulation	Band	WCDMA IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
BPSK	RMC 12.2K	21.78	21.76	21.72
	RMC 64K	21.83	21.8	21.71
	RMC 144K	21.77	21.75	21.72
	RMC 384K	21.84	21.71	21.73
16QAM	HSDPA Subtest-1	20.82	20.73	20.69
	HSDPA Subtest-2	20.81	20.76	20.73
	HSDPA Subtest-3	20.24	20.23	20.19
	HSDPA Subtest-4	20.29	20.24	20.32
	HSUPA Subtest-1	20.66	20.72	20.63
	HSUPA Subtest-2	18.77	18.81	18.8
	HSUPA Subtest-3	19.81	19.78	19.64
	HSUPA Subtest-4	18.78	18.82	18.81
	HSUPA Subtest-5	20.84	20.77	20.73
	DC-HSDPA Subtest-1	20.82	20.73	20.69
	DC-HSDPA Subtest-2	20.81	20.76	20.73
	DC-HSDPA Subtest-3	20.24	20.23	20.19
	DC-HSDPA Subtest-4	20.29	20.24	20.32

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	20.14	20.25	19.95
		1	2	20.24	20.24	20.01
		1	5	20.11	20.22	19.93
		3	0	20.09	20.07	19.95
		3	1	20.16	20.16	20.00
		3	2	20.11	20.11	19.95
		6	0	19.22	19.17	18.96
	16QAM	1	0	19.19	19.24	19.31
		1	2	19.22	19.34	19.38
		1	5	19.21	19.26	19.32
		3	0	19.32	19.21	19.15
		3	1	19.39	19.24	19.23
		3	2	19.32	19.22	19.15
		6	0	18.36	18.36	17.91

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	20.27	20.30	20.07
		1	7	20.34	20.36	20.14
		1	14	20.22	20.25	20.04
		8	0	19.27	19.25	19.11
		8	4	19.28	19.29	19.10
		8	7	19.23	19.26	19.07
		15	0	19.22	19.26	19.10
	16QAM	1	0	19.17	19.63	19.14
		1	7	19.25	19.69	19.19
		1	14	19.13	19.62	19.09
		8	0	18.43	18.34	18.18
		8	4	18.43	18.40	18.23
		8	7	18.38	18.34	18.17
		15	0	18.37	18.36	18.10

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	20.40	20.32	20.16
		1	13	20.38	20.31	20.21
		1	24	20.33	20.29	20.12
		12	0	19.30	19.29	19.15
		12	6	19.30	19.32	19.16
		12	11	19.25	19.28	19.13
		25	0	19.26	19.31	19.11
	16QAM	1	0	19.52	19.82	19.26
		1	13	19.48	19.85	19.25
		1	24	19.40	19.82	19.20
		12	0	18.44	18.50	18.26
		12	6	18.44	18.50	18.25
		12	11	18.40	18.48	18.22
		25	0	18.34	18.39	18.10

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	20.34	20.37	20.23
		1	25	20.17	20.29	20.11
		1	49	20.19	20.30	20.10
		25	0	19.27	19.35	19.26
		25	13	19.29	19.32	19.23
		25	25	19.25	19.27	19.20
		50	0	19.22	19.31	19.25
	16QAM	1	0	19.27	19.73	19.30
		1	25	19.14	19.59	19.19
		1	49	19.13	19.64	19.17
		25	0	18.42	18.42	18.39
		25	13	18.33	18.38	18.37
		25	25	18.29	18.36	18.33
		50	0	18.34	18.35	18.32

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	20.40	20.43	20.49
		1	38	20.14	20.24	20.19
		1	74	20.22	20.33	20.19
		36	0	19.31	19.38	19.40
		36	18	19.23	19.33	19.26
		36	39	19.32	19.27	19.23
		75	0	19.36	19.33	19.32
	16QAM	1	0	19.34	19.80	19.84
		1	38	19.10	19.61	19.60
		1	74	19.17	19.63	19.54
		36	0	18.43	18.61	18.42
		36	18	18.37	18.43	18.28
		36	39	18.38	18.44	18.25
		75	0	18.42	18.41	18.41

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	20.41	20.42	20.42
		1	50	20.16	19.26	20.09
		1	99	20.25	20.26	20.05
		50	0	19.33	19.41	19.27
		50	25	19.31	19.33	19.25
		50	50	19.26	19.32	19.11
		100	0	19.36	19.35	19.23
	16QAM	1	0	19.95	19.87	19.79
		1	50	19.71	18.38	19.54
		1	99	19.80	19.76	19.55
		50	0	18.47	18.47	18.45
		50	25	18.46	18.44	18.43
		50	50	18.38	18.35	18.27
		100	0	18.45	18.40	18.42

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	22.11	22.23	22.20
		1	13	22.16	22.31	22.28
		1	24	22.08	22.22	22.20
		12	0	21.09	21.17	21.24
		12	6	21.10	21.21	21.24
		12	11	21.10	21.19	21.24
		25	0	21.09	21.19	21.25
	16QAM	1	0	21.19	21.35	21.75
		1	13	21.23	21.41	21.85
		1	24	21.16	21.36	21.74
		12	0	20.21	20.36	20.44
		12	6	20.23	20.39	20.47
		12	11	20.21	20.38	20.47
		25	0	20.11	20.28	20.36

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	21.98	22.17	22.18
		1	25	21.98	22.17	22.17
		1	49	21.90	22.14	22.14
		25	0	21.05	21.15	21.20
		25	13	21.00	21.20	21.25
		25	25	21.09	21.18	21.22
		50	0	21.09	21.21	21.20
	16QAM	1	0	20.98	21.54	21.31
		1	25	20.96	21.59	21.30
		1	49	20.88	21.59	21.23
		25	0	20.18	20.29	20.43
		25	13	20.17	20.32	20.43
		25	25	20.26	20.33	20.40
		50	0	20.26	20.29	20.39

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	21.98	22.15	22.35
		1	38	21.99	22.18	22.40
		1	74	21.37	22.09	22.31
		36	0	20.96	21.13	21.35
		36	18	21.13	21.18	21.38
		36	39	21.08	21.17	21.37
		75	0	21.11	21.18	21.38
	16QAM	1	0	20.96	21.60	21.71
		1	38	20.99	21.64	21.80
		1	74	20.47	21.59	21.71
		36	0	20.11	20.31	20.41
		36	18	20.24	20.36	20.44
		36	39	20.24	20.34	20.39
		75	0	20.22	20.29	20.46

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	22.10	22.20	22.36
		1	50	22.11	22.42	22.46
		1	99	21.27	22.25	22.29
		50	0	21.29	21.41	21.49
		50	25	21.27	21.39	21.46
		50	50	21.21	21.39	21.47
		100	0	21.21	21.33	21.41
	16QAM	1	0	21.75	21.74	21.88
		1	50	21.82	21.85	21.89
		1	99	21.03	21.84	21.82
		50	0	20.46	20.53	20.52
		50	25	20.45	20.53	20.57
		50	50	20.42	20.50	20.54
		100	0	20.42	20.50	20.53

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	23.09	23.45	23.13
		1	2	23.20	23.49	23.15
		1	5	23.24	23.38	22.87
		3	0	23.18	23.33	23.00
		3	1	23.19	23.41	23.10
		3	2	23.30	23.37	23.12
		6	0	22.56	22.47	22.17
	16QAM	1	0	22.49	22.50	22.39
		1	2	22.61	22.51	22.47
		1	5	22.60	22.38	22.32
		3	0	22.35	22.41	22.22
		3	1	22.47	22.49	22.35
		3	2	22.52	22.44	22.29
		6	0	21.46	21.59	21.04

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	23.60	23.18
		1	7	23.50	23.53	23.32
		1	14	23.75	23.42	22.96
		8	0	22.70	22.59	22.13
		8	4	22.81	22.52	22.21
		8	7	22.79	22.38	22.16
		15	0	22.74	22.44	22.09
	16QAM	1	0	22.56	22.52	21.96
		1	7	22.88	22.49	22.03
		1	14	22.80	22.32	21.87
		8	0	21.75	21.61	21.19
		8	4	21.87	21.56	21.28
		8	7	21.81	21.42	21.25
		15	0	21.81	21.44	21.11

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	23.77	23.39
		1	13	23.70	23.54	23.31
		1	24	23.72	23.32	23.14
		12	0	22.76	22.62	22.15
		12	6	22.83	22.50	22.15
		12	11	22.82	22.36	22.08
		25	0	22.78	22.46	22.14
	16QAM	1	0	22.79	22.71	22.37
		1	13	22.89	22.55	22.29
		1	24	22.79	22.32	22.34
		12	0	21.93	21.70	21.24
		12	6	21.93	21.56	21.26
		12	11	21.91	21.41	21.18
		25	0	21.80	21.46	21.23

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	23.19	23.80	23.68
		1	25	23.76	23.48	23.18
		1	49	23.32	23.13	22.83
		25	0	22.76	22.74	22.28
		25	13	22.80	22.48	22.18
		25	25	22.63	22.24	22.04
		50	0	22.65	22.40	22.23
	16QAM	1	0	22.19	22.61	22.86
		1	25	22.73	22.34	22.43
		1	49	22.33	21.98	22.28
		25	0	21.85	21.80	21.35
		25	13	21.90	21.54	21.26
		25	25	21.73	21.30	21.13
		50	0	21.72	21.45	21.30

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23205CH	23230CH	23255CH
				779.5MHz	782MHz	784.5MHz
13 / 5M	QPSK	1	0	23.43	23.54	23.67
		1	13	23.52	23.61	23.61
		1	24	23.55	23.55	23.43
		12	0	22.36	22.49	22.51
		12	6	22.43	22.54	22.49
		12	11	22.44	22.53	22.43
		25	0	22.42	22.47	22.44
	16QAM	1	0	22.78	22.55	22.68
		1	13	22.99	22.66	22.70
		1	24	22.96	22.61	22.54
		12	0	21.51	21.57	21.62
		12	6	21.61	21.63	21.60
		12	11	21.65	21.59	21.55
		25	0	21.55	21.48	21.55

LTE Band / BW	Modulation	RB Size	RB Offset	Mid CH
				23230CH
				782MHz
13 / 10M	QPSK	1	0	23.43
		1	25	23.74
		1	49	23.36
		25	0	22.46
		25	13	22.56
		25	25	22.45
		50	0	22.48
	16QAM	1	0	22.22
		1	25	22.39
		1	49	22.28
		25	0	21.50
		25	13	21.60
		25	25	21.56
		50	0	21.52

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH
				23305CH	23330CH
				790.5MHz	793MHz
14 / 5M	QPSK	1	0	23.52	23.57
		1	13	23.58	23.60
		1	24	23.54	23.53
		12	0	22.50	22.54
		12	6	22.54	22.54
		12	11	22.53	22.53
		25	0	22.51	22.52
	16QAM	1	0	22.98	22.57
		1	13	22.63	22.66
		1	24	22.74	22.63
		12	0	21.67	21.61
		12	6	21.71	21.65
		12	11	21.71	21.64
		25	0	21.61	21.55

LTE Band / BW	Modulation	RB Size	RB Offset	Mid CH
				23330CH
				793MHz
14 / 10M	QPSK	1	0	23.34
		1	25	23.69
		1	49	23.45
		25	0	22.52
		25	13	22.53
		25	25	22.51
		50	0	22.52
	16QAM	1	0	22.30
		1	25	22.39
		1	49	22.34
		25	0	21.62
		25	13	21.64
		25	25	21.59
		50	0	21.56

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23755CH	23790CH	23825CH
				706.5MHz	710MHz	713.5MHz
17 / 5M	QPSK	1	0	23.69	23.64	23.29
		1	13	23.66	23.48	23.21
		1	24	23.50	23.25	23.31
		12	0	22.68	22.37	22.16
		12	6	22.56	22.26	22.20
		12	11	22.51	22.21	22.08
		25	0	22.60	22.22	22.17
	16QAM	1	0	22.62	22.58	22.68
		1	13	22.57	22.45	22.61
		1	24	22.49	22.24	22.63
		12	0	21.75	21.51	21.33
		12	6	21.66	21.36	21.32
		12	11	21.61	21.32	21.24
		25	0	21.62	21.26	21.26

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23780CH	23790CH	23800CH
				709MHz	710MHz	711MHz
17 / 10M	QPSK	1	0	23.77	23.58	23.59
		1	25	23.39	23.30	23.30
		1	49	23.15	23.16	23.28
		25	0	22.56	22.53	22.41
		25	13	22.37	22.22	22.19
		25	25	22.20	22.16	22.19
		50	0	22.34	22.23	22.27
	16QAM	1	0	22.83	22.47	22.39
		1	25	22.62	22.23	22.08
		1	49	22.38	22.05	22.00
		25	0	21.63	21.67	21.48
		25	13	21.46	21.35	21.27
		25	25	21.27	21.28	21.22
		50	0	21.43	21.33	21.31

EIRP Power (dBm):

Modulation	Band	WCDMA IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
BPSK	RMC 12.2K	20.13	20.11	20.07
	RMC 64K	20.18	20.15	20.06
	RMC 144K	20.12	20.10	20.07
	RMC 384K	20.19	20.06	20.08
16QAM	HSDPA Subtest-1	19.17	19.08	19.04
	HSDPA Subtest-2	19.16	19.11	19.08
	HSDPA Subtest-3	18.59	18.58	18.54
	HSDPA Subtest-4	18.64	18.59	18.67
	HSUPA Subtest-1	19.01	19.07	18.98
	HSUPA Subtest-2	17.12	17.16	17.15
	HSUPA Subtest-3	18.16	18.13	17.99
	HSUPA Subtest-4	17.13	17.17	17.16
	HSUPA Subtest-5	19.19	19.12	19.08
	DC-HSDPA Subtest-1	19.17	19.08	19.04
	DC-HSDPA Subtest-2	19.16	19.11	19.08
	DC-HSDPA Subtest-3	18.59	18.58	18.54
	DC-HSDPA Subtest-4	18.64	18.59	18.67

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	20.64	20.75	20.45
		1	2	20.74	20.74	20.51
		1	5	20.61	20.72	20.43
		3	0	20.59	20.57	20.45
		3	1	20.66	20.66	20.50
		3	2	20.61	20.61	20.45
		6	0	19.72	19.67	19.46
	16QAM	1	0	19.69	19.74	19.81
		1	2	19.72	19.84	19.88
		1	5	19.71	19.76	19.82
		3	0	19.82	19.71	19.65
		3	1	19.89	19.74	19.73
		3	2	19.82	19.72	19.65
		6	0	18.86	18.86	18.41

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	20.77	20.80	20.57
		1	7	20.84	20.86	20.64
		1	14	20.72	20.75	20.54
		8	0	19.77	19.75	19.61
		8	4	19.78	19.79	19.60
		8	7	19.73	19.76	19.57
		15	0	19.72	19.76	19.60
	16QAM	1	0	19.67	20.13	19.64
		1	7	19.75	20.19	19.69
		1	14	19.63	20.12	19.59
		8	0	18.93	18.84	18.68
		8	4	18.93	18.90	18.73
		8	7	18.88	18.84	18.67
		15	0	18.87	18.86	18.60

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	20.90	20.82	20.66
		1	13	20.88	20.81	20.71
		1	24	20.83	20.79	20.62
		12	0	19.80	19.79	19.65
		12	6	19.80	19.82	19.66
		12	11	19.75	19.78	19.63
		25	0	19.76	19.81	19.61
	16QAM	1	0	20.02	20.32	19.76
		1	13	19.98	20.35	19.75
		1	24	19.90	20.32	19.70
		12	0	18.94	19.00	18.76
		12	6	18.94	19.00	18.75
		12	11	18.90	18.98	18.72
		25	0	18.84	18.89	18.60

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	20.84	20.87	20.73
		1	25	20.67	20.79	20.61
		1	49	20.69	20.80	20.60
		25	0	19.77	19.85	19.76
		25	13	19.79	19.82	19.73
		25	25	19.75	19.77	19.70
		50	0	19.72	19.81	19.75
	16QAM	1	0	19.77	20.23	19.80
		1	25	19.64	20.09	19.69
		1	49	19.63	20.14	19.67
		25	0	18.92	18.92	18.89
		25	13	18.83	18.88	18.87
		25	25	18.79	18.86	18.83
		50	0	18.84	18.85	18.82

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	20.90	20.93	20.99
		1	38	20.64	20.74	20.69
		1	74	20.72	20.83	20.69
		36	0	19.81	19.88	19.90
		36	18	19.73	19.83	19.76
		36	39	19.82	19.77	19.73
		75	0	19.86	19.83	19.82
	16QAM	1	0	19.84	20.30	20.34
		1	38	19.60	20.11	20.10
		1	74	19.67	20.13	20.04
		36	0	18.93	19.11	18.92
		36	18	18.87	18.93	18.78
		36	39	18.88	18.94	18.75
		75	0	18.92	18.91	18.91

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	20.91	20.92	20.92
		1	50	20.66	19.76	20.59
		1	99	20.75	20.76	20.55
		50	0	19.83	19.91	19.77
		50	25	19.81	19.83	19.75
		50	50	19.76	19.82	19.61
		100	0	19.86	19.85	19.73
	16QAM	1	0	20.45	20.37	20.29
		1	50	20.21	18.88	20.04
		1	99	20.30	20.26	20.05
		50	0	18.97	18.97	18.95
		50	25	18.96	18.94	18.93
		50	50	18.88	18.85	18.77
		100	0	18.95	18.90	18.92

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	22.61	22.73	22.70
		1	13	22.66	22.81	22.78
		1	24	22.58	22.72	22.70
		12	0	21.59	21.67	21.74
		12	6	21.60	21.71	21.74
		12	11	21.60	21.69	21.74
		25	0	21.59	21.69	21.75
	16QAM	1	0	21.69	21.85	22.25
		1	13	21.73	21.91	22.35
		1	24	21.66	21.86	22.24
		12	0	20.71	20.86	20.94
		12	6	20.73	20.89	20.97
		12	11	20.71	20.88	20.97
		25	0	20.61	20.78	20.86

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	22.48	22.67	22.68
		1	25	22.48	22.67	22.67
		1	49	22.40	22.64	22.64
		25	0	21.55	21.65	21.70
		25	13	21.50	21.70	21.75
		25	25	21.59	21.68	21.72
		50	0	21.59	21.71	21.70
	16QAM	1	0	21.48	22.04	21.81
		1	25	21.46	22.09	21.80
		1	49	21.38	22.09	21.73
		25	0	20.68	20.79	20.93
		25	13	20.67	20.82	20.93
		25	25	20.76	20.83	20.90
		50	0	20.76	20.79	20.89

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	22.48	22.65	22.85
		1	38	22.49	22.68	22.90
		1	74	21.87	22.59	22.81
		36	0	21.46	21.63	21.85
		36	18	21.63	21.68	21.88
		36	39	21.58	21.67	21.87
		75	0	21.61	21.68	21.88
	16QAM	1	0	21.46	22.10	22.21
		1	38	21.49	22.14	22.30
		1	74	20.97	22.09	22.21
		36	0	20.61	20.81	20.91
		36	18	20.74	20.86	20.94
		36	39	20.74	20.84	20.89
		75	0	20.72	20.79	20.96

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	22.60	22.70	22.86
		1	50	22.61	22.92	22.96
		1	99	21.77	22.75	22.79
		50	0	21.79	21.91	21.99
		50	25	21.77	21.89	21.96
		50	50	21.71	21.89	21.97
		100	0	21.71	21.83	21.91
	16QAM	1	0	22.25	22.24	22.38
		1	50	22.32	22.35	22.39
		1	99	21.53	22.34	22.32
		50	0	20.96	21.03	21.02
		50	25	20.95	21.03	21.07
		50	50	20.92	21.00	21.04
		100	0	20.92	21.00	21.03

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	21.14	21.50	21.18
		1	2	21.25	21.54	21.20
		1	5	21.29	21.43	20.92
		3	0	21.23	21.38	21.05
		3	1	21.24	21.46	21.15
		3	2	21.35	21.42	21.17
		6	0	20.61	20.52	20.22
	16QAM	1	0	20.54	20.55	20.44
		1	2	20.66	20.56	20.52
		1	5	20.65	20.43	20.37
		3	0	20.40	20.46	20.27
		3	1	20.52	20.54	20.40
		3	2	20.57	20.49	20.34
		6	0	19.51	19.64	19.09

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	21.26	21.65	21.23
		1	7	21.55	21.58	21.37
		1	14	21.80	21.47	21.01
		8	0	20.75	20.64	20.18
		8	4	20.86	20.57	20.26
		8	7	20.84	20.43	20.21
		15	0	20.79	20.49	20.14
	16QAM	1	0	20.61	20.57	20.01
		1	7	20.93	20.54	20.08
		1	14	20.85	20.37	19.92
		8	0	19.80	19.66	19.24
		8	4	19.92	19.61	19.33
		8	7	19.86	19.47	19.30
		15	0	19.86	19.49	19.16

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	21.37	21.82	21.44
		1	13	21.75	21.59	21.36
		1	24	21.77	21.37	21.19
		12	0	20.81	20.67	20.20
		12	6	20.88	20.55	20.20
		12	11	20.87	20.41	20.13
		25	0	20.83	20.51	20.19
	16QAM	1	0	20.84	20.76	20.42
		1	13	20.94	20.60	20.34
		1	24	20.84	20.37	20.39
		12	0	19.98	19.75	19.29
		12	6	19.98	19.61	19.31
		12	11	19.96	19.46	19.23
		25	0	19.85	19.51	19.28

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	21.24	21.85	21.73
		1	25	21.81	21.53	21.23
		1	49	21.37	21.18	20.88
		25	0	20.81	20.79	20.33
		25	13	20.85	20.53	20.23
		25	25	20.68	20.29	20.09
		50	0	20.70	20.45	20.28
	16QAM	1	0	20.24	20.66	20.91
		1	25	20.78	20.39	20.48
		1	49	20.38	20.03	20.33
		25	0	19.90	19.85	19.40
		25	13	19.95	19.59	19.31
		25	25	19.78	19.35	19.18
		50	0	19.77	19.50	19.35

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23205CH	23230CH	23255CH
				779.5MHz	782MHz	784.5MHz
13 / 5M	QPSK	1	0	21.48	21.59	21.72
		1	13	21.57	21.66	21.66
		1	24	21.60	21.60	21.48
		12	0	20.41	20.54	20.56
		12	6	20.48	20.59	20.54
		12	11	20.49	20.58	20.48
		25	0	20.47	20.52	20.49
	16QAM	1	0	20.83	20.60	20.73
		1	13	21.04	20.71	20.75
		1	24	21.01	20.66	20.59
		12	0	19.56	19.62	19.67
		12	6	19.66	19.68	19.65
		12	11	19.70	19.64	19.60
		25	0	19.60	19.53	19.60

LTE Band / BW	Modulation	RB Size	RB Offset	Mid CH
				23230CH
				782MHz
13 / 10M	QPSK	1	0	21.48
		1	25	21.79
		1	49	21.41
		25	0	20.51
		25	13	20.61
		25	25	20.50
		50	0	20.53
	16QAM	1	0	20.27
		1	25	20.44
		1	49	20.33
		25	0	19.55
		25	13	19.65
		25	25	19.61
		50	0	19.57

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH
				23305CH	23330CH
				790.5MHz	793MHz
13 / 5M	QPSK	1	0	21.57	21.62
		1	13	21.63	21.65
		1	24	21.59	21.58
		12	0	20.55	20.59
		12	6	20.59	20.59
		12	11	20.58	20.58
		25	0	20.56	20.57
	16QAM	1	0	21.03	20.62
		1	13	20.68	20.71
		1	24	20.79	20.68
		12	0	19.72	19.66
		12	6	19.76	19.70
		12	11	19.76	19.69
		25	0	19.66	19.60

LTE Band / BW	Modulation	RB Size	RB Offset	Mid CH
				23330CH
				793MHz
13 / 10M	QPSK	1	0	21.39
		1	25	21.74
		1	49	21.50
		25	0	20.57
		25	13	20.58
		25	25	20.56
		50	0	20.57
	16QAM	1	0	20.35
		1	25	20.44
		1	49	20.39
		25	0	19.67
		25	13	19.69
		25	25	19.64
		50	0	19.61

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23755CH	23790CH	23825CH
				706.5MHz	710MHz	713.5MHz
17 / 5M	QPSK	1	0	21.74	21.69	21.34
		1	13	21.71	21.53	21.26
		1	24	21.55	21.30	21.36
		12	0	20.73	20.42	20.21
		12	6	20.61	20.31	20.25
		12	11	20.56	20.26	20.13
		25	0	20.65	20.27	20.22
	16QAM	1	0	20.67	20.63	20.73
		1	13	20.62	20.50	20.66
		1	24	20.54	20.29	20.68
		12	0	19.80	19.56	19.38
		12	6	19.71	19.41	19.37
		12	11	19.66	19.37	19.29
		25	0	19.67	19.31	19.31

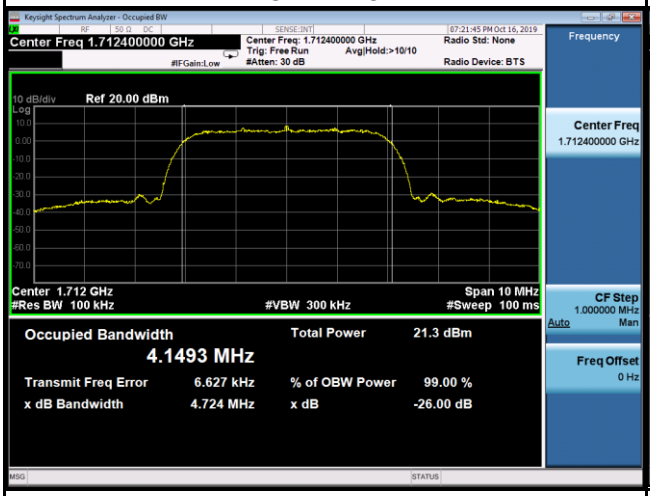
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				23780CH	23790CH	23800CH
				709MHz	710MHz	711MHz
17 / 10M	QPSK	1	0	21.82	21.63	21.64
		1	25	21.44	21.35	21.35
		1	49	21.20	21.21	21.33
		25	0	20.61	20.58	20.46
		25	13	20.42	20.27	20.24
		25	25	20.25	20.21	20.24
		50	0	20.39	20.28	20.32
	16QAM	1	0	20.88	20.52	20.44
		1	25	20.67	20.28	20.13
		1	49	20.43	20.10	20.05
		25	0	19.68	19.72	19.53
		25	13	19.51	19.40	19.32
		25	25	19.32	19.33	19.27
		50	0	19.48	19.38	19.36

APPENDIX B - OCCUPIED BANDWIDTH

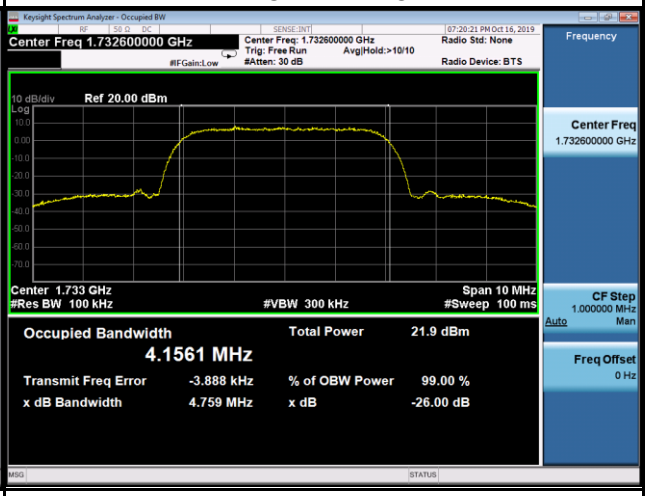
WCDMA Band IV_WCDMA					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1493	1312	1712.4	4.7240
1413	1732.6	4.1561	1413	1732.6	4.7590
1513	1752.6	4.1517	1513	1752.6	4.7640

Spectrum Plot

WCDMA 1312



WCDMA 1413



WCDMA 1513

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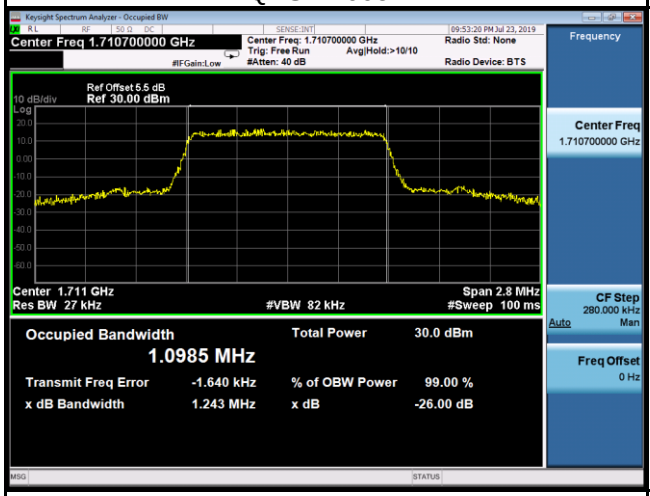
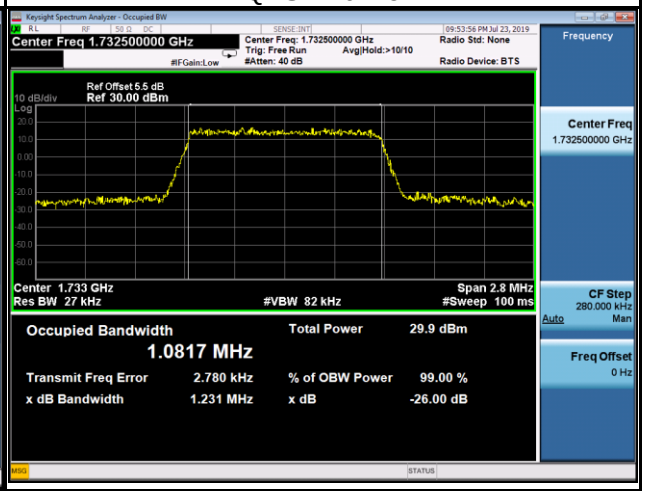
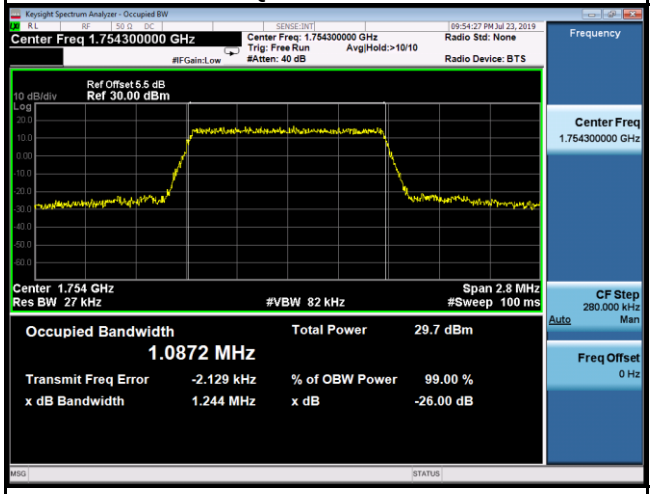
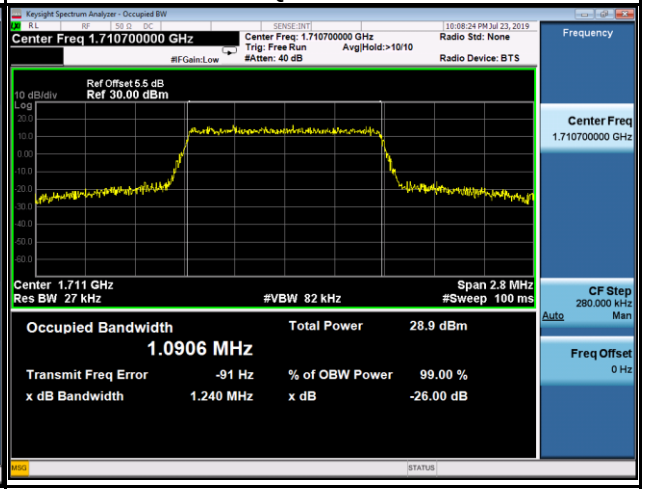
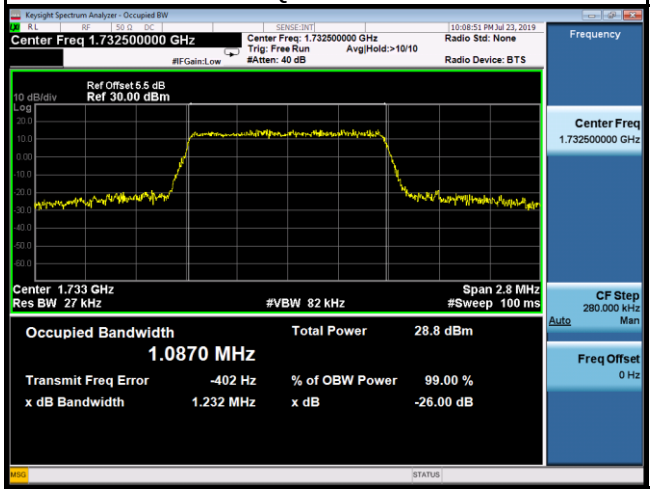
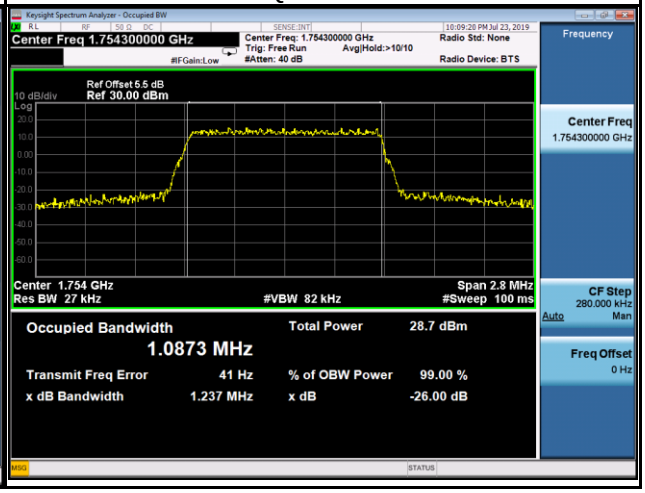
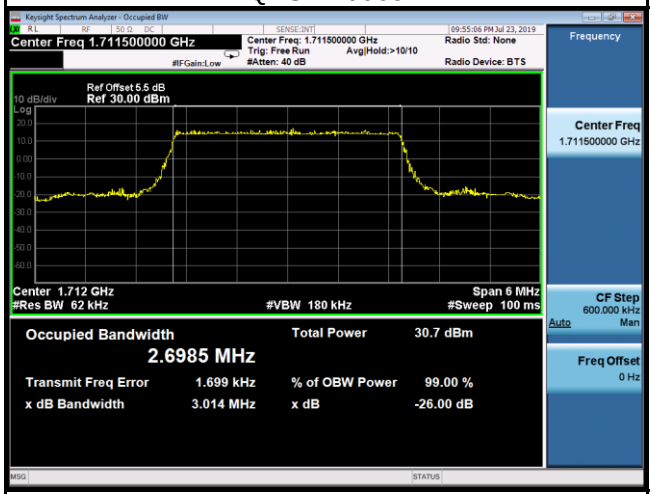
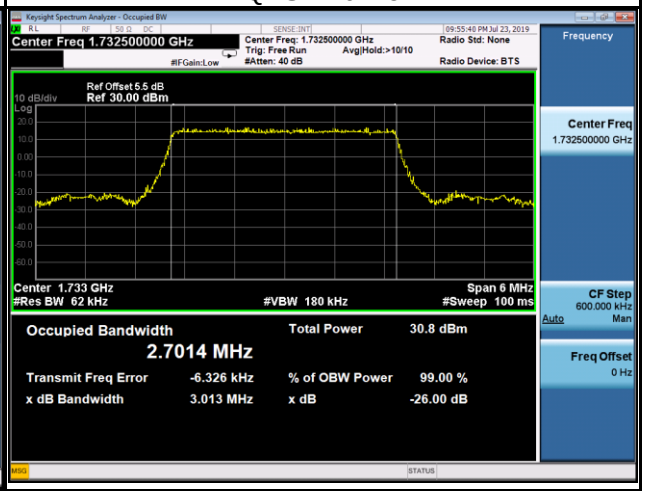
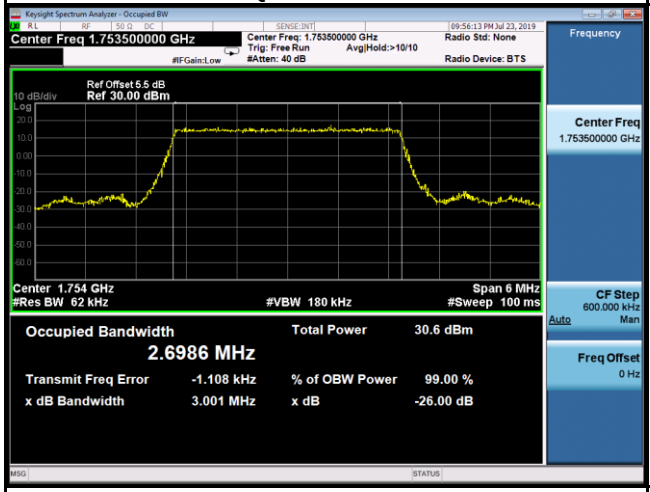
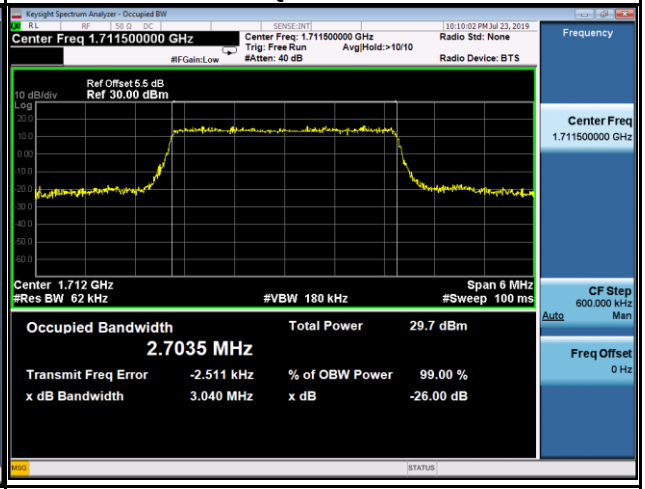
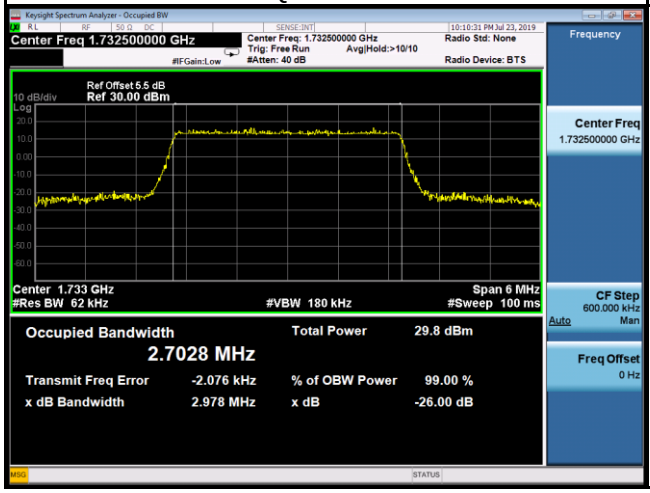
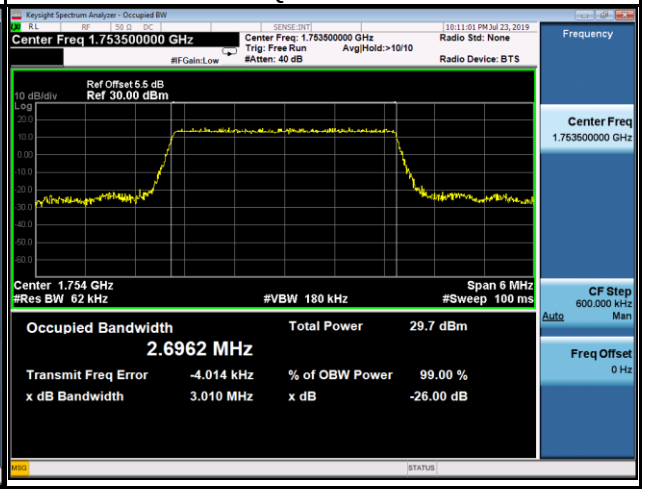
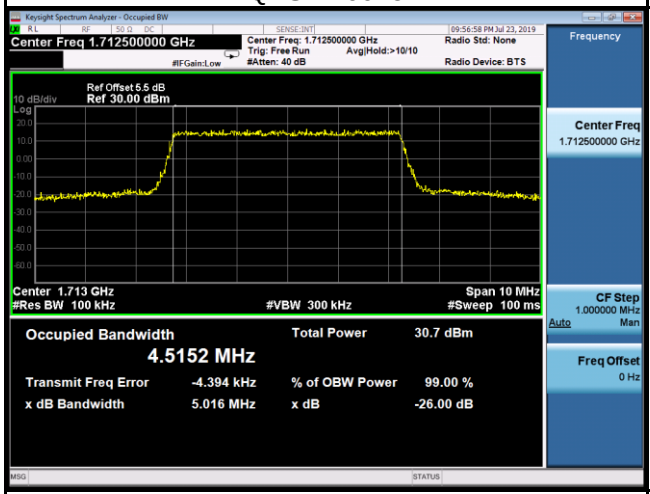
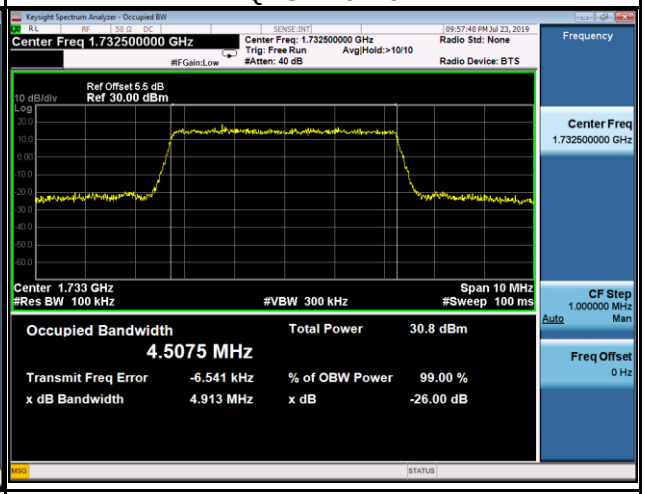
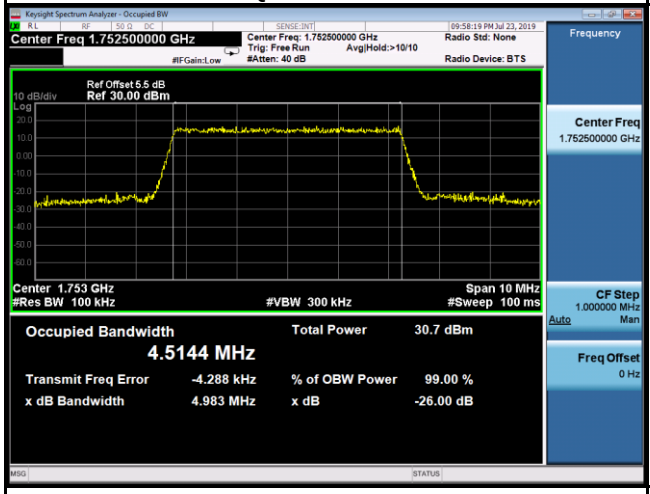
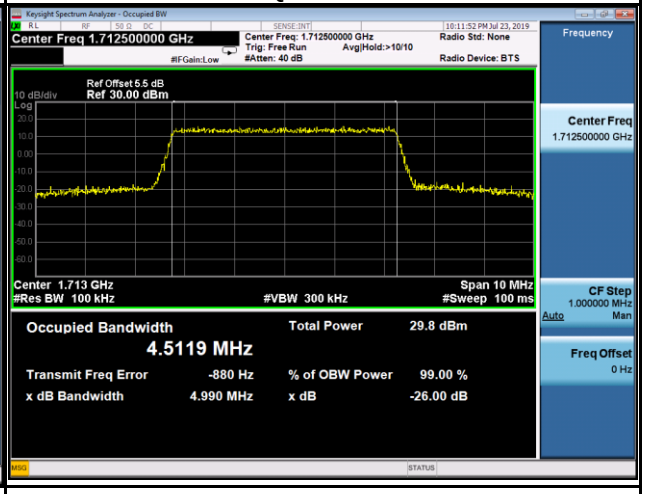
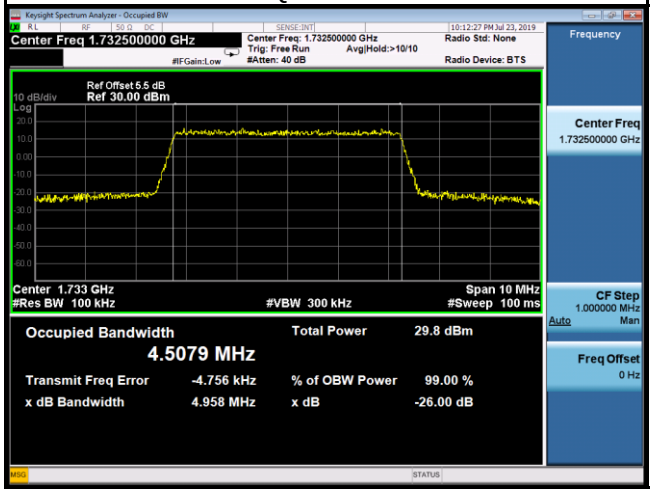
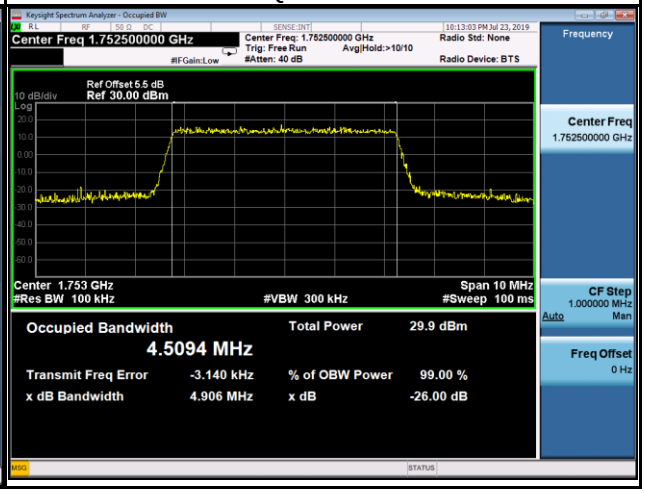
LTE Band 4_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19957	1710.7	1.0985	19957	1710.7	1.0906
20175	1732.5	1.0817	20175	1732.5	1.0870
20393	1754.3	1.0872	20393	1754.3	1.0873
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.2430	19957	1710.7	1.2400
20175	1732.5	1.2310	20175	1732.5	1.2320
20393	1754.3	1.2440	20393	1754.3	1.2370

Spectrum Plot	
QPSK-19957	QPSK-20175
	
QPSK-20393	16QAM-19957
	
16QAM-20175	16QAM-20393
	

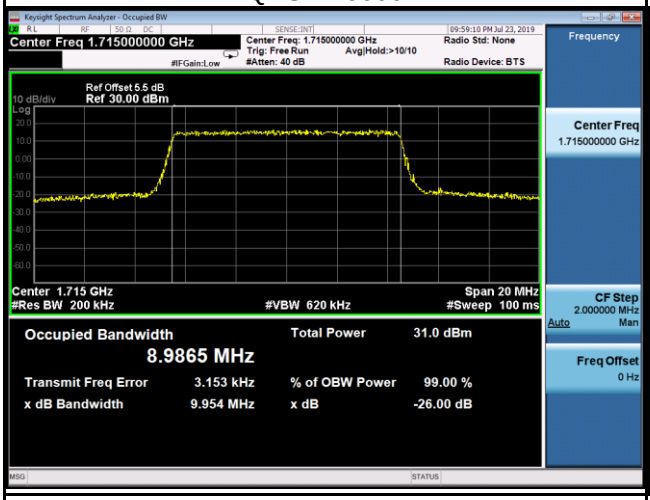
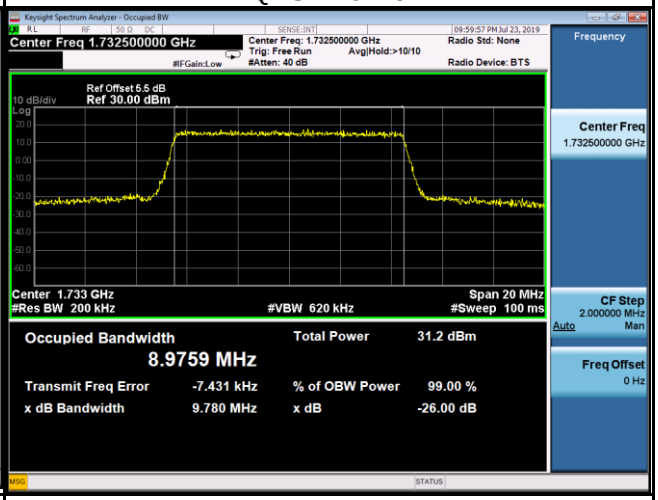
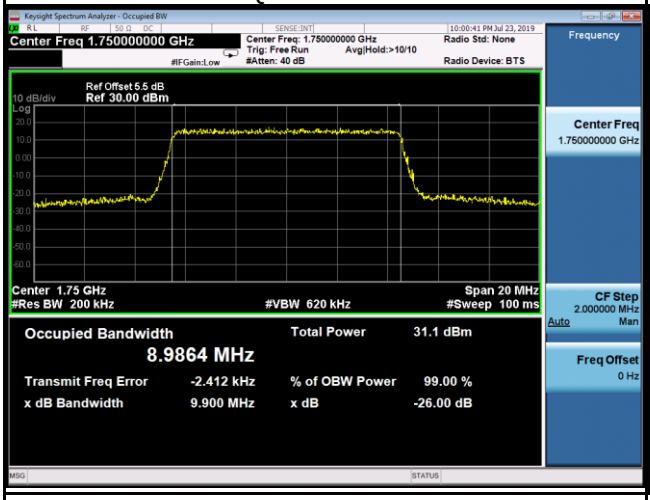
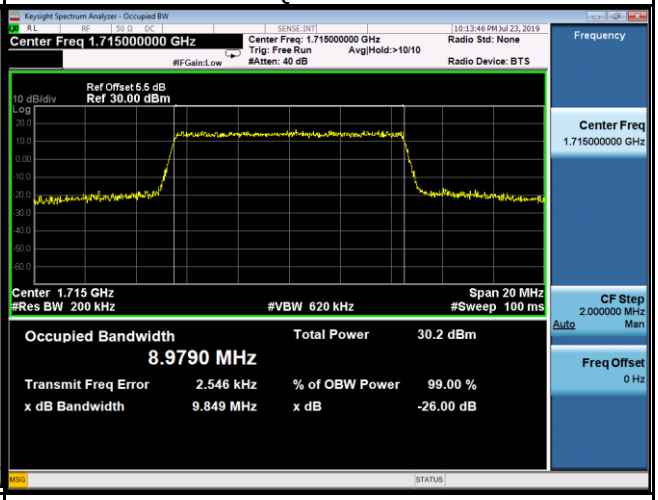
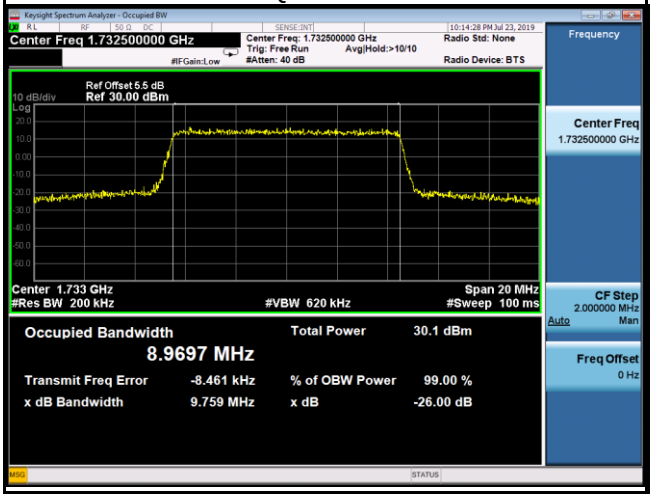
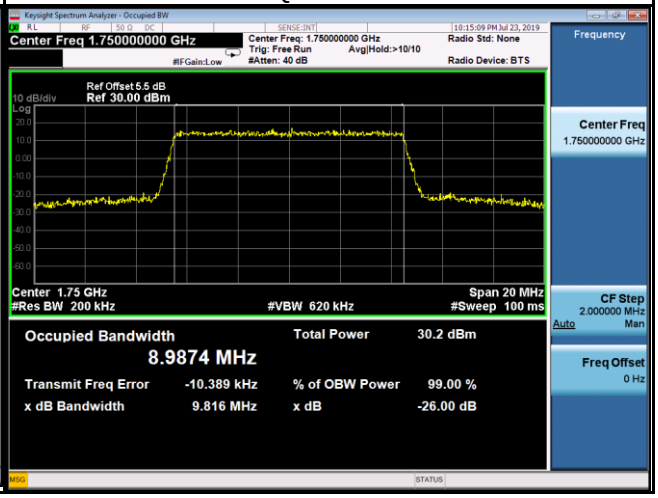
LTE Band 4_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19965	1711.5	2.6985	19965	1711.5	2.7035
20175	1732.5	2.7014	20175	1732.5	2.7028
20385	1753.5	2.6986	20385	1753.5	2.6962
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	3.0140	19965	1711.5	3.0400
20175	1732.5	3.0130	20175	1732.5	2.9780
20385	1753.5	3.0010	20385	1753.5	3.0100

Spectrum Plot	
QPSK-19965	QPSK-20175
	
QPSK-20385	16QAM-19965
	
16QAM-20175	16QAM-20385
	

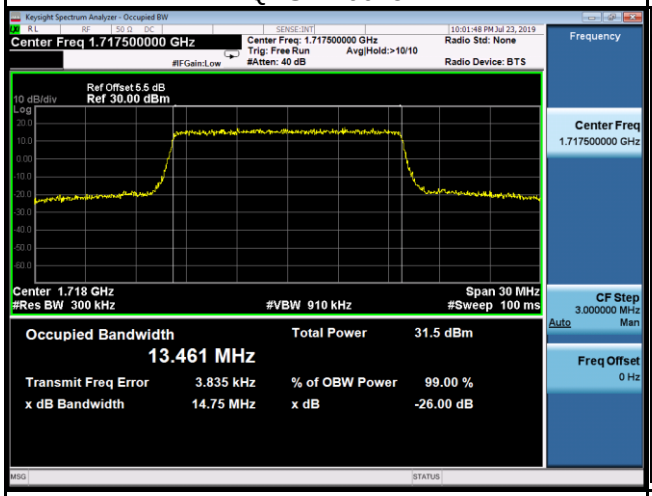
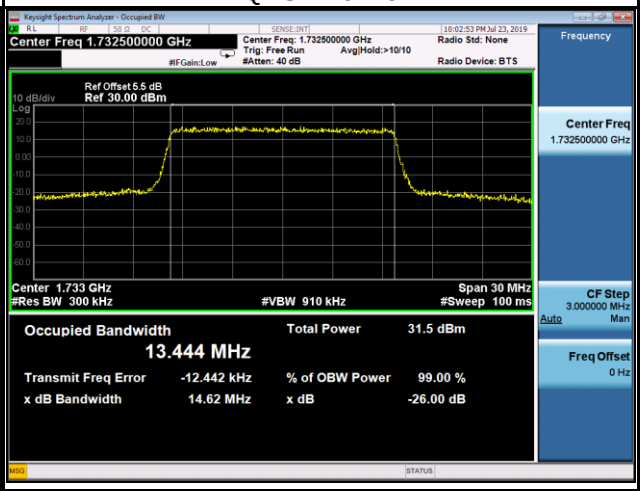
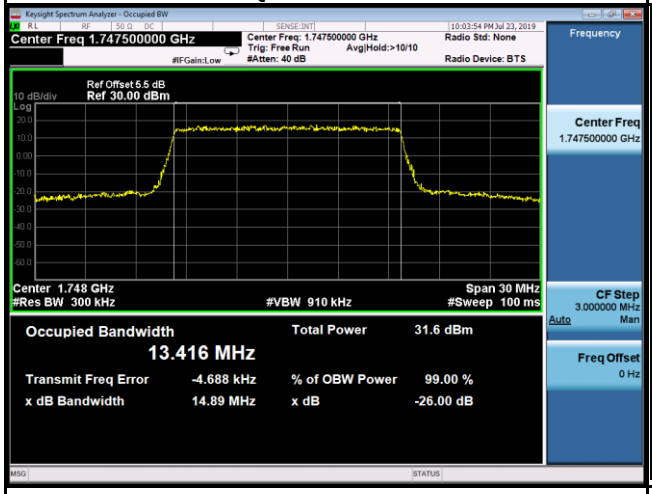
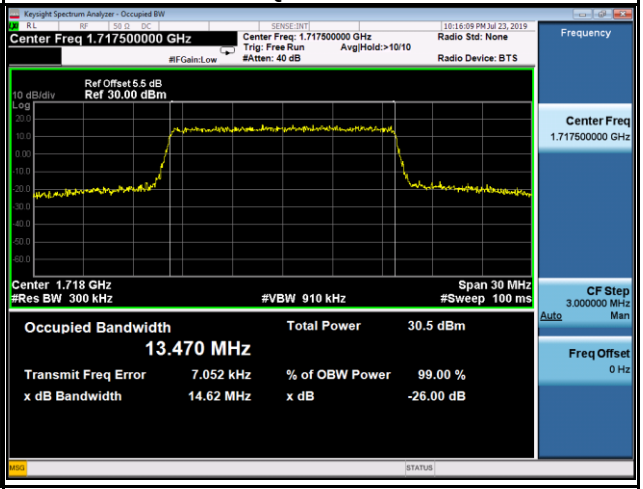
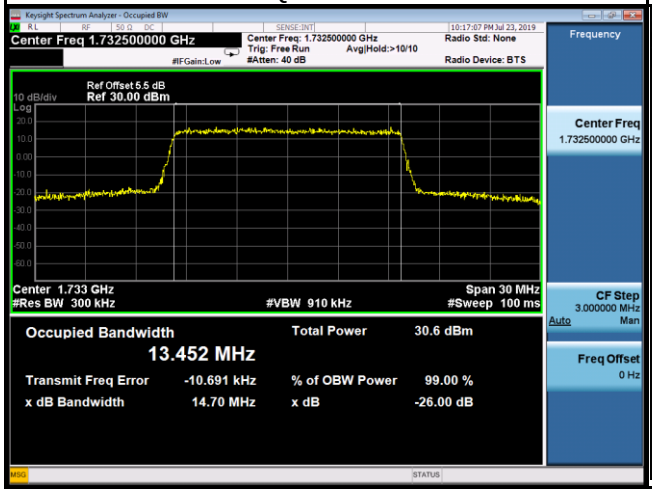
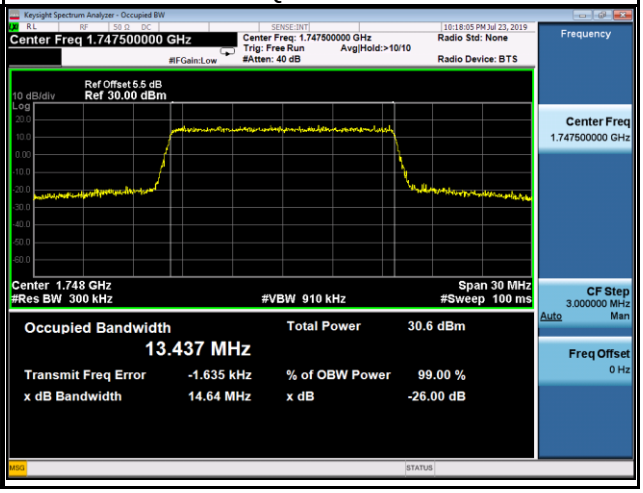
LTE Band 4_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19975	1712.5	4.5152	19975	1712.5	4.5119
20175	1732.5	4.5075	20175	1732.5	4.5079
20375	1752.5	4.5144	20375	1752.5	4.5094
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	5.0160	19975	1712.5	4.9900
20175	1732.5	4.9130	20175	1732.5	4.9580
20375	1752.5	4.9830	20375	1752.5	4.9060

Spectrum Plot	
QPSK-19975	QPSK-20175
	
QPSK-20375	16QAM-19975
	
16QAM-20175	16QAM-20375
	

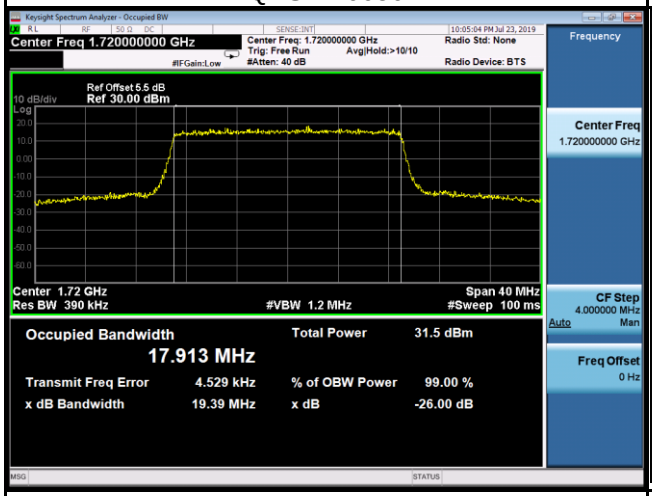
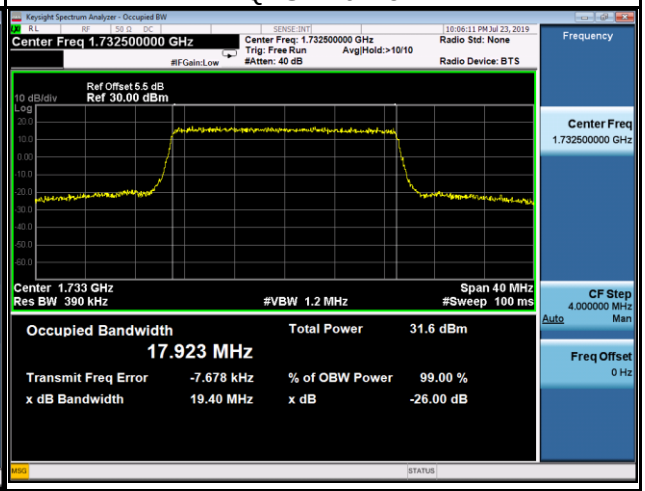
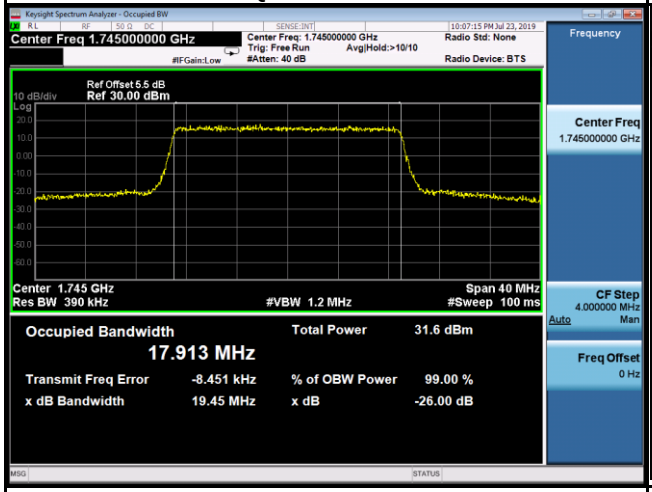
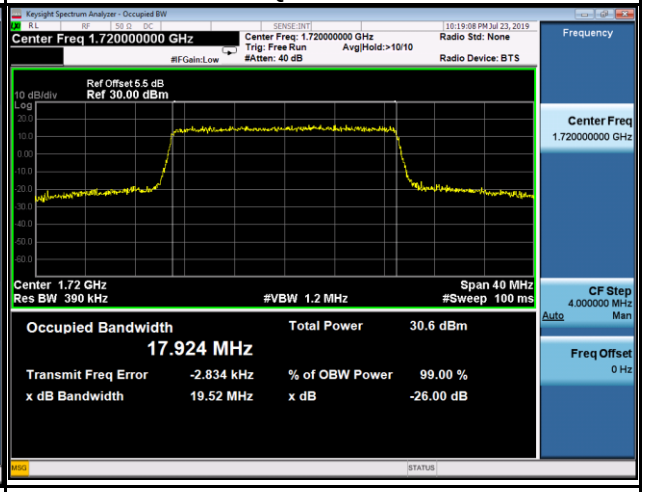
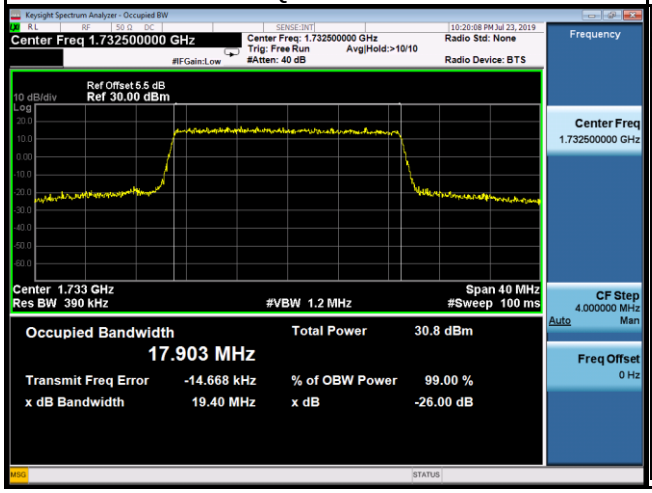
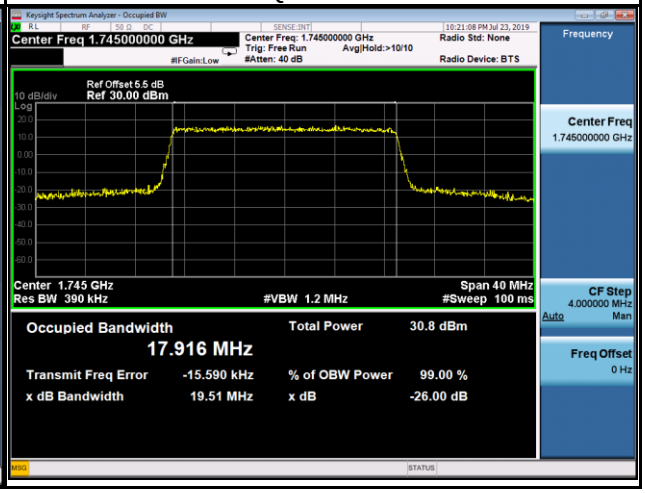
LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	8.9865	20000	1715	8.9790
20175	1732.5	8.9759	20175	1732.5	8.9697
20350	1750	8.9864	20350	1750	8.9874
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.9540	20000	1715	9.8490
20175	1732.5	9.7800	20175	1732.5	9.7590
20350	1750	9.9000	20350	1750	9.8160

Spectrum Plot	
QPSK-20000	QPSK-20175
	
QPSK-20350	16QAM-20000
	
16QAM-20175	16QAM-20350
	

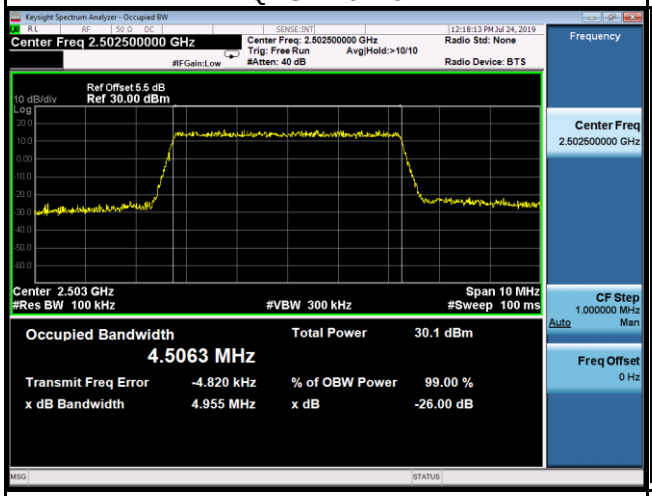
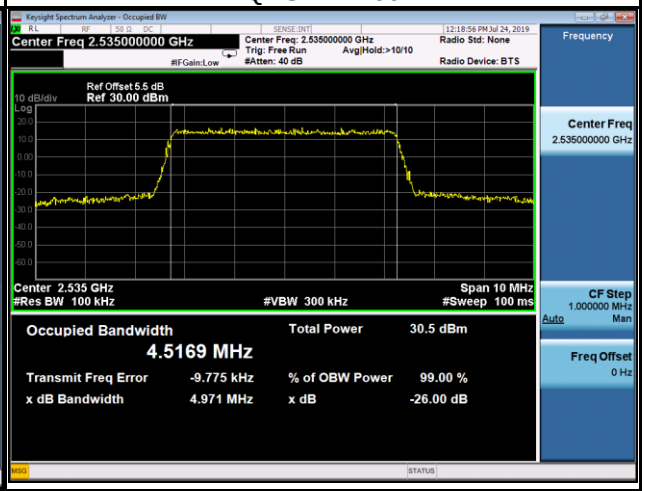
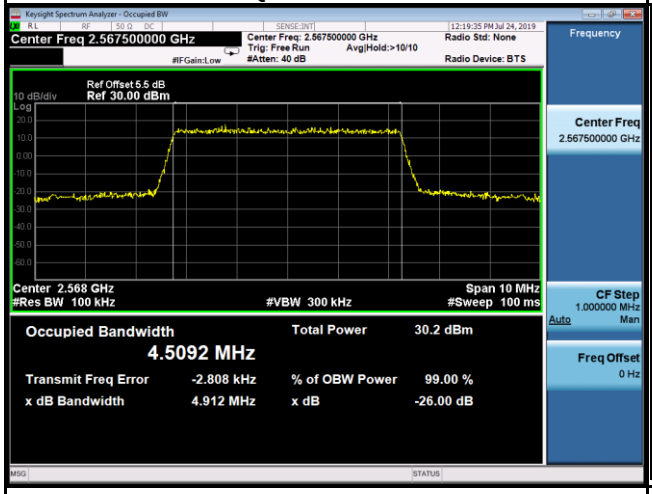
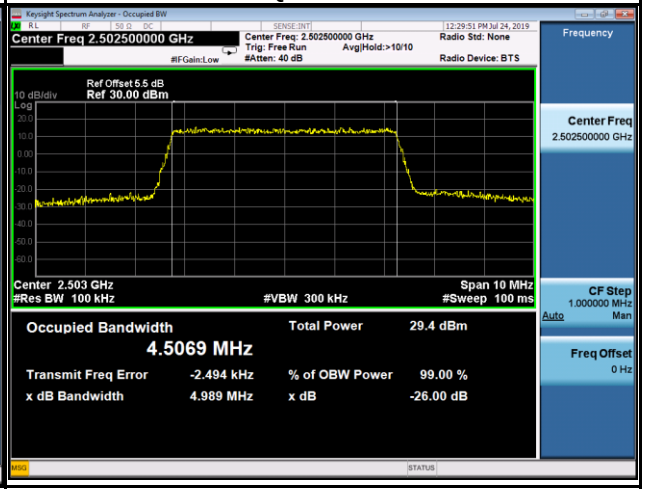
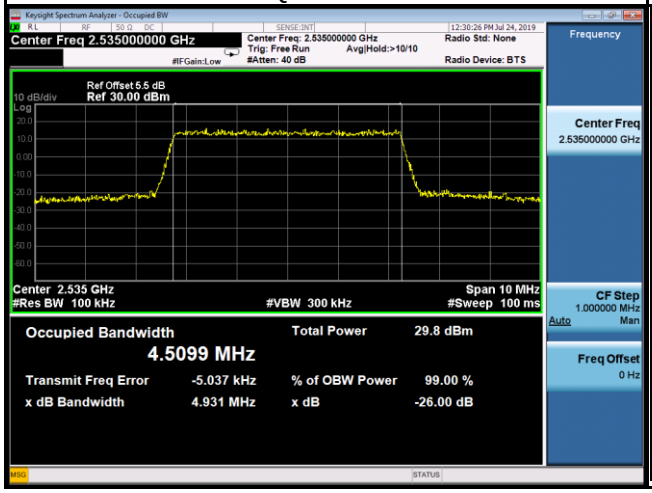
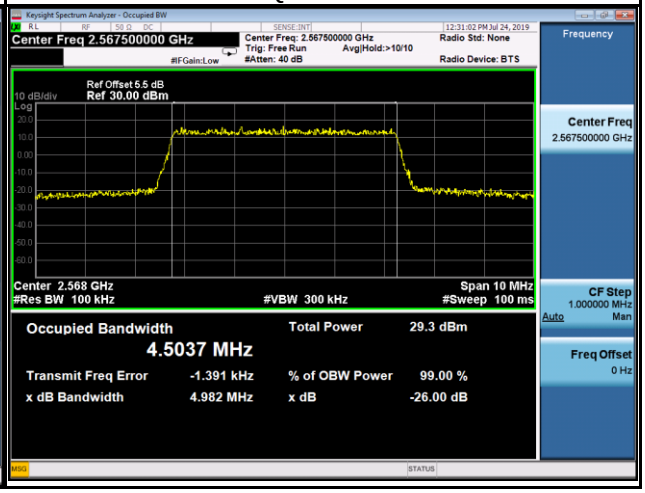
LTE Band 4_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20025	1717.5	13.4610	20025	1717.5	13.4700
20175	1732.5	13.4440	20175	1732.5	13.4520
20325	1747.5	13.4160	20325	1747.5	13.4370
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.7500	20025	1717.5	14.6200
20175	1732.5	14.6200	20175	1732.5	14.7000
20325	1747.5	14.8900	20325	1747.5	14.6400

Spectrum Plot	
QPSK-20025	QPSK-20175
	
QPSK-20325	16QAM-20025
	
16QAM-20175	16QAM-20325
	

LTE Band 4_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20050	1720	17.9130	20050	1720	17.9240
20175	1732.5	17.9230	20175	1732.5	17.9030
20300	1745	17.9130	20300	1745	17.9160
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.3900	20050	1720	19.5200
20175	1732.5	19.4000	20175	1732.5	19.4000
20300	1745	19.4500	20300	1745	19.5100

Spectrum Plot	
QPSK-20050	QPSK-20175
	
QPSK-20300	16QAM-20050
	
16QAM-20175	16QAM-20300
	

LTE Band 7_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20775	2502.5	4.5063	20775	2502.5	4.5069
21100	2535	4.5169	21100	2535	4.5099
21425	2567.5	4.5092	21425	2567.5	4.5037
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.9550	20775	2502.5	4.9890
21100	2535	4.9710	21100	2535	4.9310
21425	2567.5	4.9120	21425	2567.5	4.9820

Spectrum Plot	
QPSK-20775	QPSK-21100
	
QPSK-21425	16QAM-20775
	
16QAM-21100	16QAM-21425
	

LTE Band 7_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20800	2505	8.9722	20800	2505	8.9739
21100	2535	8.9705	21100	2535	8.9757
21400	2565	8.9838	21400	2565	8.9811
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.8210	20800	2505	9.8140
21100	2535	9.8690	21100	2535	9.7810
21400	2565	9.8570	21400	2565	9.8120