

FCC Radio Test Report

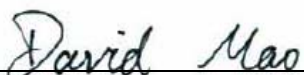
FCC ID: QISAGS2-L03

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

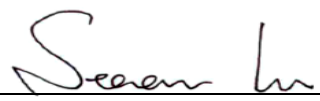
Project No. : 1808C216
Equipment : HUAWEI MediaPad T5
Model Name : AGS2-L03
Series Model : N/A
Applicant : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

Date of Receipt : Aug. 24, 2018
Date of Test : Aug. 27, 2018 ~ Sep. 07, 2018
Issued Date : Sep. 13, 2018
Tested by : BTL Inc.

Technical Manager :


(David Mao)

Authorized Signatory :


(Steven Lu)

B T L I N C .

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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 NVLAP, NIST, 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 Guide 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, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements 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

Issued No.	Description	Issued Date
BTL-FCCP-7-1808C216	Original Issue.	Sep. 13, 2018

1. CERTIFICATION

Equipment : HUAWEI MediaPad T5
Brand Name : HUAWEI
Model Name : AGS2-L03
Series Model : N/A
Applicant : Huawei Technologies Co., Ltd.
Manufacturer : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Factory : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Test : Aug. 27, 2018 ~ Sep. 07, 2018
Test Sample : Engineering Sample No.: D180807232 for conducted, D180807229 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-603-D-2010

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-7-1808C216) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the WCDMA Band IV, LTE Band 4, 7, 12, 17 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 number for FCC: 854385

BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

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

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	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	HUAWEI MediaPad T5	
Brand Name	HUAWEI	
Model Name	AGS2-L03	
Series Model	N/A	
Model Difference(s)	N/A	
Modulation Type	WCDMA	UL: BPSK DL: QPSK
	WCDMA(HSDPA/HSUPA)	16QAM
	LTE	UL: QPSK,16QAM DL: QPSK,16QAM
Operation Frequency	WCDMA Band IV	1712.4 ~1752.6MHz
	LTE 4 (Channel Bandwidth: 1.4MHz)	1710.7 ~ 1754.3MHz
	LTE 4 (Channel Bandwidth: 3MHz)	1711.5 ~ 1753.5MHz
	LTE 4 (Channel Bandwidth: 5MHz)	1712.5 ~ 1752.5MHz
	LTE 4 (Channel Bandwidth: 10MHz)	1715.0 ~ 1750.0MHz
	LTE 4 (Channel Bandwidth: 15MHz)	1717.5 ~ 1747.5MHz
	LTE 4 (Channel Bandwidth: 20MHz)	1720.0 ~ 1745.0MHz
	LTE 7 (Channel Bandwidth: 5MHz)	2502.5 ~ 2567.5MHz
	LTE 7 (Channel Bandwidth: 10MHz)	2505.0 ~ 2565.0MHz
	LTE 7 (Channel Bandwidth: 15MHz)	2507.5 ~ 2562.5MHz
	LTE 7 (Channel Bandwidth: 20MHz)	2510.0 ~ 2560.0MHz
	LTE 12 (Channel Bandwidth: 1.4MHz)	699.7 ~ 715.3MHz
	LTE 12 (Channel Bandwidth: 3MHz)	700.5 ~ 714.5MHz
	LTE 12 (Channel Bandwidth: 5MHz)	701.5 ~ 713.5MHz
	LTE 12 (Channel Bandwidth: 10MHz)	704.0 ~ 711.0MHz
	LTE 17 (Channel Bandwidth: 5MHz)	706.5 ~ 713.5MHz
	LTE 17 (Channel Bandwidth: 10MHz)	709.0 ~ 711.0MHz

Max. EIRP Power	WCDMA Band IV (WCDMA)	BPSK	23.95	dBm
	WCDMA Band IV (HSDPA)	16QAM	23.85	dBm
	WCDMA Band IV (HSUPA)	16QAM	23.33	dBm
	LTE 4 (Channel Bandwidth: 1.4MHz)	QPSK	24.27	dBm
		16QAM	23.38	dBm
	LTE 4 (Channel Bandwidth: 3MHz)	QPSK	24.31	dBm
		16QAM	23.58	dBm
	LTE 4 (Channel Bandwidth: 5MHz)	QPSK	24.30	dBm
		16QAM	23.88	dBm
	LTE 4 (Channel Bandwidth: 10MHz)	QPSK	24.38	dBm
		16QAM	23.74	dBm
	LTE 4 (Channel Bandwidth: 15MHz)	QPSK	24.38	dBm
		16QAM	23.66	dBm
	LTE 4 (Channel Bandwidth: 20MHz)	QPSK	24.39	dBm
		16QAM	23.92	dBm
	LTE 7 (Channel Bandwidth: 5MHz)	QPSK	24.03	dBm
		16QAM	23.42	dBm
	LTE 7 (Channel Bandwidth: 10MHz)	QPSK	24.12	dBm
		16QAM	23.68	dBm
	LTE 7 (Channel Bandwidth: 15MHz)	QPSK	24.11	dBm
		16QAM	23.67	dBm
	LTE 7 (Channel Bandwidth: 20MHz)	QPSK	24.16	dBm
		16QAM	23.45	dBm
Max. ERP Power	LTE 12 (Channel Bandwidth: 1.4MHz)	QPSK	22.06	dBm
		16QAM	21.21	dBm
	LTE 12 (Channel Bandwidth: 3MHz)	QPSK	22.05	dBm
		16QAM	21.23	dBm
	LTE 12 (Channel Bandwidth: 5MHz)	QPSK	22.71	dBm
		16QAM	22.16	dBm
	LTE 12 (Channel Bandwidth: 10MHz)	QPSK	22.72	dBm
		16QAM	22.24	dBm
	LTE 17 (Channel Bandwidth: 5MHz)	QPSK	22.41	dBm
		16QAM	22.13	dBm
LTE 17 (Channel Bandwidth: 10MHz)	QPSK	22.50	dBm	
	16QAM	22.15	dBm	
Antenna Type	Internal Antenna			
Antenna Gain	WCDMA Band IV	0.2 dBi		
	LTE Band 4			
	LTE Band 7	0.8 dBi		
	LTE Band 12	-0.1 dBi		
	LTE Band 17			
Hardware Version	A6t6e			
Software Version	AGS2-L03 8.0.0.20(C605)			

IMEI No.	Radiated	004401721233332
	Conducted	004401721233373
Power Source	1# DC voltage supplied from AC/DC adapter. Model: HW-050100U01	
	2# Supplied from battery. Model: HB2899C0ECW-C	
Power Rating	1# I/P: 100-240V~,50/60Hz,0.2A O/P: DC 5V, 1A	
	2# DC 3.82V, 4980mAh	

Note:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT contains following accessory devices.

Item	Manufacturer	Factory	Description
Adapter	Huawei Technologies Co., Ltd.	HUIZHOU BYD ELECTRONIC CO., LTD.	PDM Number: 02220780 Model Name: HW-050100U01 Input Voltage : 100-240V ~50/60Hz, 0.2A Output Voltage: DC 5V,1A (The EU and US adapter are the same PCB board of same factory)
		Shenzhen Huntkey Electric Co., Ltd.	
		DONG GUAN PHITEK ELECTRONICS CO., LTD.	
Battery	Huawei Technologies Co.,Ltd.	SCUD (FUJIAN) Electronics Co., Ltd	PDM Number: 24022744 Model Name: HB2899C0ECW-C Rated Voltage: DC 3.82V Rated Capacity: 4980mAh
USB Cable	Huawei Technologies Co.,Ltd.	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	Model Name: 04071002
		HONGLIN TECHNOLOGY CO.,LTD	
		Luxshare Precision Industry Co., Ltd.	

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

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

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

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

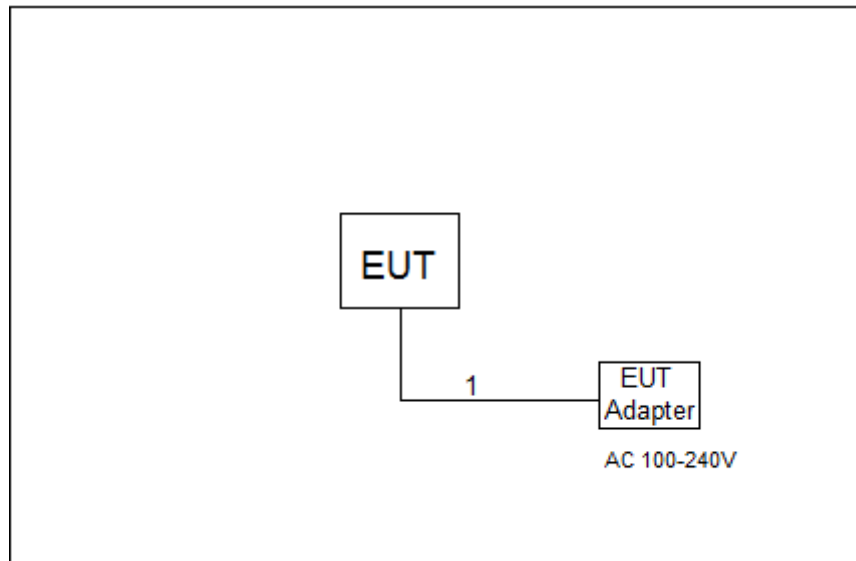
LTE BAND 12					
Test Item	Available Channel	Tested Channel	Channel	Modulation	Mode
ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1RB/25RB/50RB
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					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Occupied Bandwidth	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
Conducted Emission	706.5 to 713.5	23790	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23790	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	706.5 to 713.5	23790	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23790	10MHz	QPSK	1 RB / 0 RB Offset
Band Edge	706.5 to 713.5	23800	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
	709.0 to 711.0	23825	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
		23780	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
Peak To Average Ratio	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	706.5 to 713.5	23790	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23790	10MHz	QPSK	1 RB / 0 RB Offset

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP/ERP	24°C, 63%RH	DC 3.82V
Conducted Output Power	25°C, 65%RH	DC 3.82V
Occupied Bandwidth	25°C, 65%RH	DC 3.82V
Conducted Emission	25°C, 65%RH	DC 3.82V
Radiated Emission	25°C, 60%RH	AC 120V/60Hz
Band Edge	25°C, 65%RH	DC 3.82V
Peak to Average Ratio	25°C, 65%RH	DC 3.82V
Frequency Stability	Normal and Extreme	Normal and Extreme

3.3 BLOCK DIGRAM SHOWING THECONFIGURATIONOFSYSTEMTESTED 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

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)

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

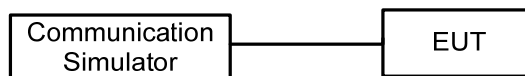
ERP power=EIPR power-2.15dBi.

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

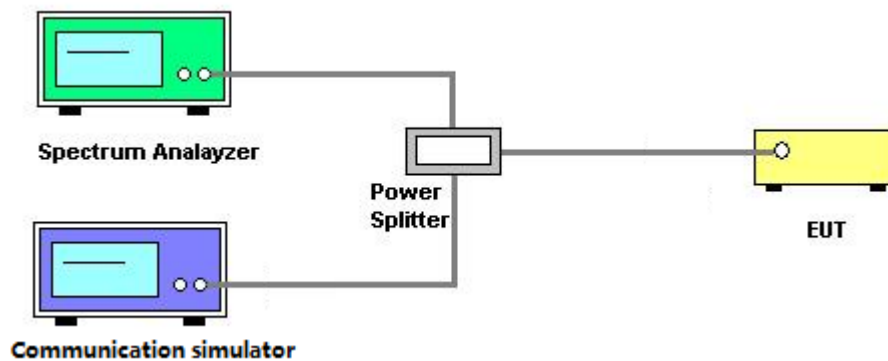
Please refer to the Appendix A.

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

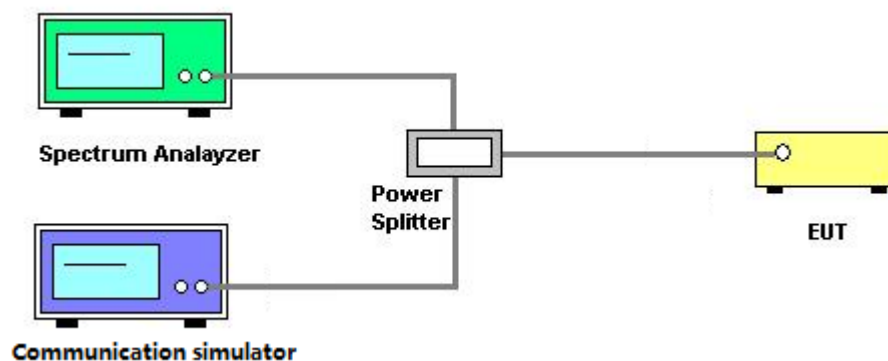
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (LTE 4,12,17)

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

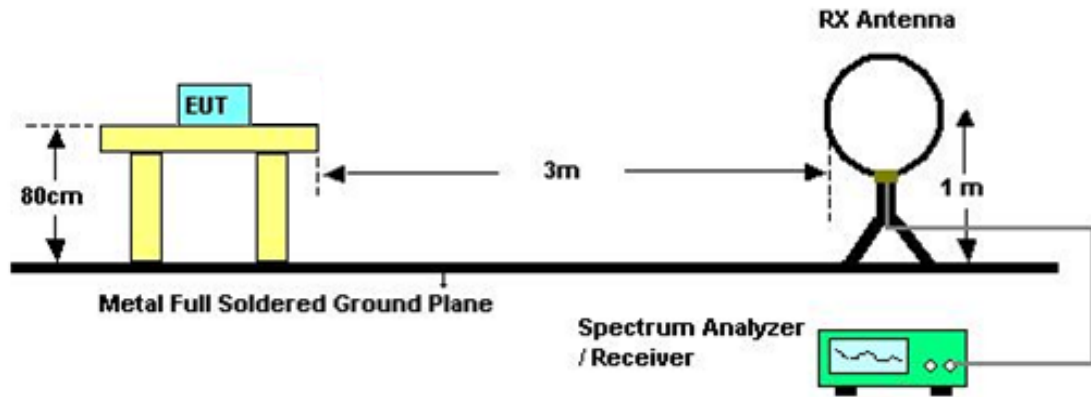
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (LTE 7)

4.4.2 TEST PROCEDURES

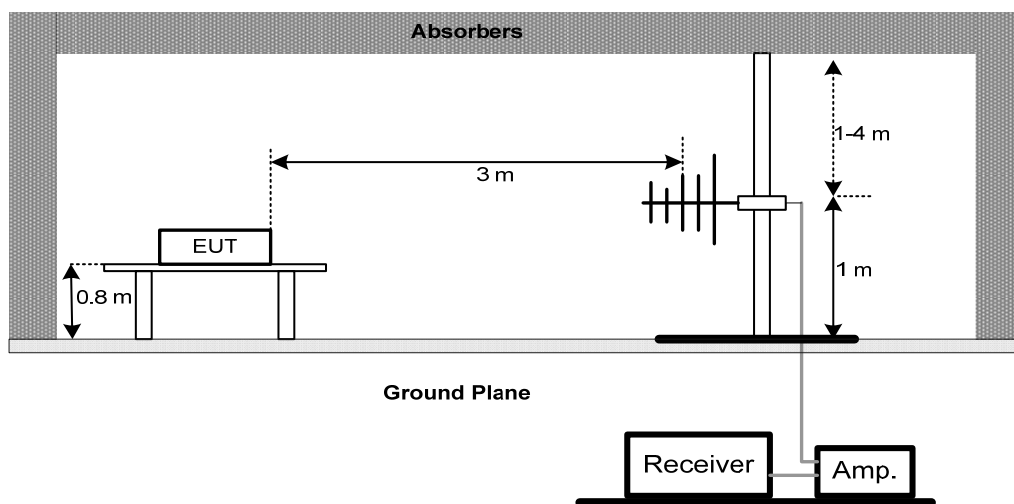
1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power.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

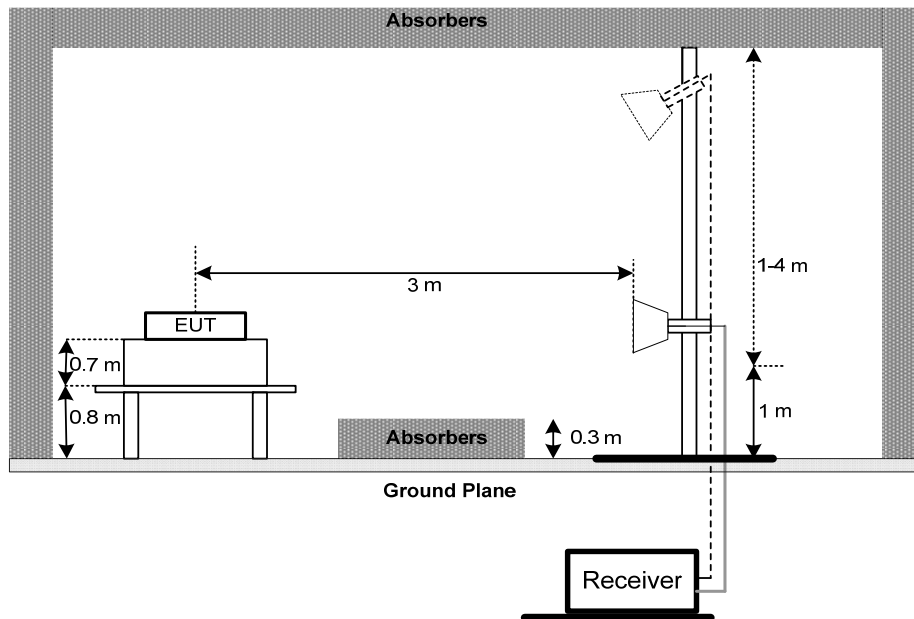
Below 30MHz



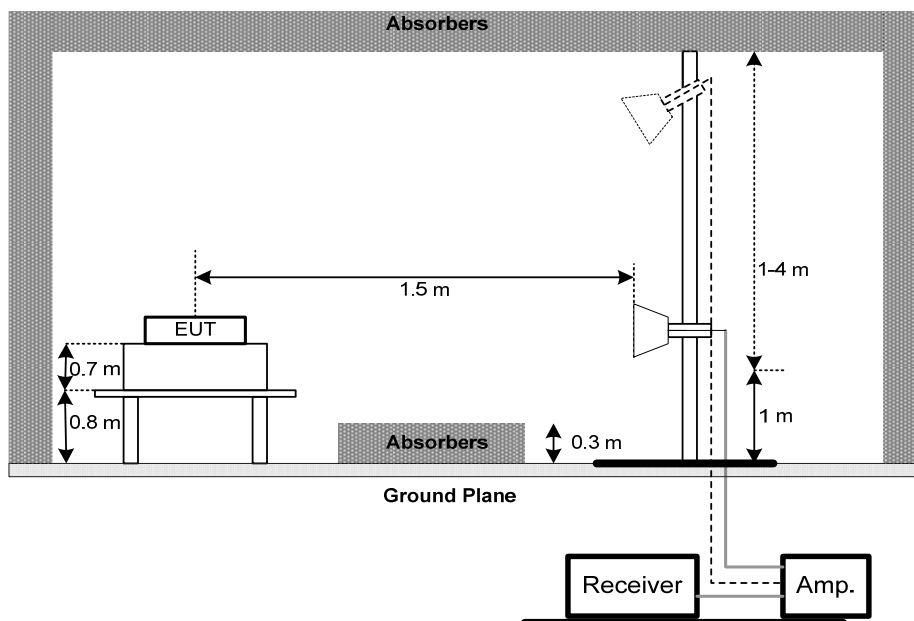
30MHz to 1GHz



1GHz to 18GHz



18GHz to 26.5GHz



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

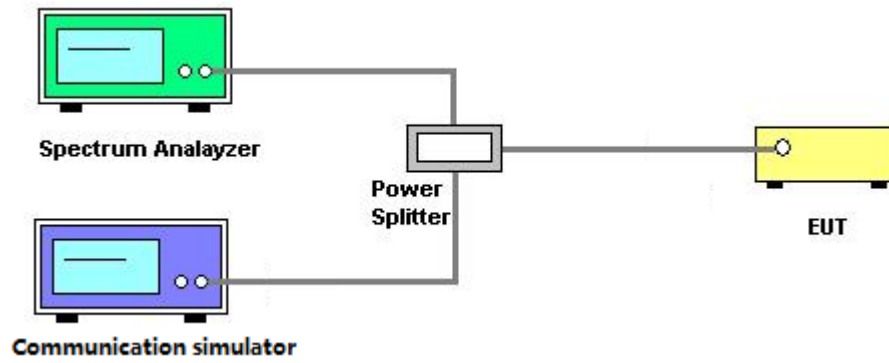
The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation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

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

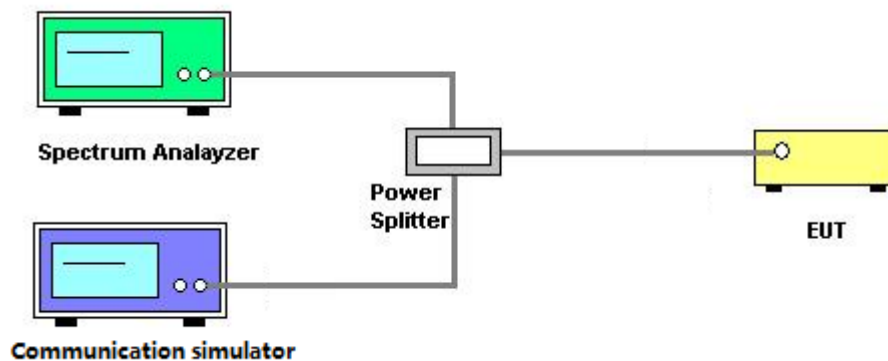
4.6.1 LIMIT

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

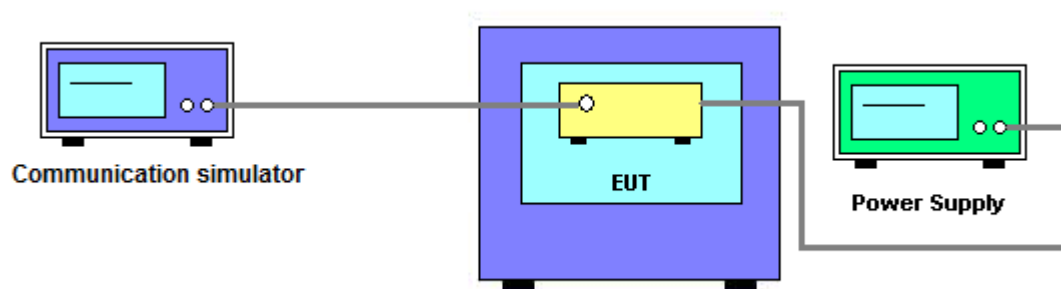
4.7.1 LIMIT

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	23.56	23.65	23.75
	RMC 64K	23.47	23.5	23.52
	RMC 144K	23.48	23.54	23.53
	RMC 384K	23.46	23.53	23.51
16QAM	HSDPA Subtest-1	23.48	23.58	23.65
	HSDPA Subtest-2	21.85	21.88	21.96
	HSDPA Subtest-3	21.88	21.93	22.02
	HSDPA Subtest-4	21.87	21.94	21.99
16QAM	HSUPA Subtest-1	21.4	20.96	20.94
	HSUPA Subtest-2	19.72	19.75	20.04
	HSUPA Subtest-3	21.1	21.12	20.83
	HSUPA Subtest-4	20.13	19.52	19.61
	HSUPA Subtest-5	22.97	23.05	23.13

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	23.64	23.34	24.02
		1	2	23.75	23.36	24.06
		1	5	23.65	23.30	23.93
		3	0	23.72	23.38	24.05
		3	1	23.76	23.38	24.07
		3	2	23.75	23.36	24.05
		6	0	22.45	22.02	22.77
	16QAM	1	0	22.99	22.85	23.13
		1	2	23.04	22.89	23.18
		1	5	23.00	22.77	23.06
		3	0	22.86	22.46	23.18
		3	1	22.88	22.47	23.18
		3	2	22.87	22.45	23.17
		6	0	21.99	21.46	22.29

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	23.44	23.23	23.92
		1	7	23.78	23.31	24.11
		1	14	23.45	23.10	23.80
		8	0	22.46	22.10	22.77
		8	4	22.49	22.02	22.76
		8	7	22.36	22.05	22.64
		15	0	22.50	22.09	22.71
	16QAM	1	0	23.01	22.49	23.23
		1	7	23.27	22.65	23.38
		1	14	23.01	22.34	23.11
		8	0	21.93	21.56	22.22
		8	4	21.96	21.50	22.22
		8	7	21.84	21.43	22.15
		15	0	21.88	21.45	22.18

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	23.66	23.44	23.98
		1	13	23.93	23.58	24.10
		1	24	23.53	23.22	23.81
		12	0	22.65	22.28	22.93
		12	6	22.72	22.26	22.99
		12	11	22.63	22.18	22.89
		25	0	22.60	22.16	22.88
	16QAM	1	0	22.99	22.70	23.47
		1	13	23.26	22.78	23.68
		1	24	22.88	22.42	23.29
		12	0	22.08	21.74	22.36
		12	6	22.09	21.72	22.42
		12	11	22.00	21.64	22.32
		25	0	21.98	21.55	22.26

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	23.56	23.32	23.57
		1	25	23.90	23.48	24.03
		1	49	23.90	23.70	24.18
		25	0	22.63	22.19	22.73
		25	13	22.62	22.22	22.86
		25	25	22.46	22.16	22.77
		50	0	22.50	22.15	22.73
	16QAM	1	0	22.99	22.78	22.88
		1	25	23.32	22.90	23.35
		1	49	23.30	23.13	23.54
		25	0	22.02	21.60	22.15
		25	13	22.02	21.63	22.26
		25	25	21.87	21.57	22.17
		50	0	21.94	21.53	22.09

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	23.61	23.49	23.47
		1	38	23.80	23.45	23.94
		1	74	23.81	23.65	24.18
		36	0	22.61	23.75	22.57
		36	18	22.59	22.23	22.74
		36	39	22.48	22.19	22.83
		75	0	22.53	22.19	22.68
	16QAM	1	0	23.09	22.94	22.67
		1	38	23.32	22.92	23.20
		1	74	23.29	23.15	23.46
		36	0	22.03	22.85	22.02
		36	18	22.02	21.63	22.12
		36	39	21.86	21.59	22.22
		75	0	21.92	21.59	22.07

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	24.00	23.85	23.69
		1	50	24.02	23.19	24.07
		1	99	23.61	23.70	24.19
		50	0	22.77	22.42	22.55
		50	25	22.71	22.41	22.80
		50	50	22.49	22.38	22.91
		100	0	22.64	22.39	22.77
	16QAM	1	0	23.46	23.11	23.25
		1	50	23.50	22.25	23.62
		1	99	23.11	22.98	23.72
		50	0	22.22	21.89	22.01
		50	25	22.16	21.87	22.26
		50	50	21.95	21.83	22.36
		100	0	22.08	21.84	22.18

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	22.74	22.84	22.84
		1	13	23.10	23.11	22.96
		1	24	23.23	23.08	22.85
		12	0	22.27	22.33	22.26
		12	6	22.38	22.43	22.23
		12	11	22.34	22.38	22.14
		25	0	22.26	22.35	22.16
	16QAM	1	0	22.16	22.37	22.22
		1	13	22.53	22.62	22.31
		1	24	22.62	22.60	22.21
		12	0	22.17	22.24	22.15
		12	6	22.31	22.33	22.11
		12	11	22.27	22.24	21.96
		25	0	22.19	22.22	22.02

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	22.86	22.84	22.75
		1	25	22.54	22.22	22.10
		1	49	23.32	23.25	22.86
		25	0	21.28	21.19	21.15
		25	13	21.51	21.35	21.12
		25	25	21.45	21.27	21.15
		50	0	21.45	21.29	21.22
	16QAM	1	0	22.19	22.18	21.95
		1	25	21.68	21.53	21.27
		1	49	22.88	22.63	22.09
		25	0	21.16	21.10	21.07
		25	13	21.40	21.25	21.04
		25	25	21.31	21.18	21.07
		50	0	21.33	21.20	21.10

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	22.74	22.58	22.75
		1	38	23.31	23.19	23.03
		1	74	23.25	23.19	22.72
		36	0	22.54	22.21	22.11
		36	18	22.75	22.48	22.19
		36	39	22.66	22.47	22.14
		75	0	22.76	22.31	22.31
	16QAM	1	0	22.18	21.86	22.14
		1	38	22.87	22.50	22.50
		1	74	22.74	22.48	22.20
		36	0	22.38	22.10	22.02
		36	18	22.64	22.36	22.12
		36	39	22.54	22.34	22.04
		75	0	22.66	22.21	22.17

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	22.89	22.68	23.11
		1	50	22.69	22.23	22.19
		1	99	23.00	23.36	23.04
		50	0	21.29	21.25	21.10
		50	25	21.41	21.28	21.07
		50	50	21.33	21.41	21.03
		100	0	21.45	21.18	21.14
	16QAM	1	0	22.27	21.99	22.44
		1	50	21.88	21.52	21.30
		1	99	22.32	22.65	22.26
		50	0	21.17	21.16	21.09
		50	25	21.41	21.20	21.11
		50	50	21.33	21.11	21.01
		100	0	21.34	21.05	21.03

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	23.70	24.18	24.25
		1	2	23.71	24.15	24.31
		1	5	23.57	23.83	24.08
		3	0	23.60	24.18	24.26
		3	1	23.61	24.15	24.29
		3	2	23.61	24.08	24.24
		6	0	21.77	22.35	22.30
	16QAM	1	0	22.76	23.46	23.25
		1	2	22.76	23.46	23.33
		1	5	22.63	23.15	23.11
		3	0	22.71	23.24	23.19
		3	1	22.79	23.21	23.24
		3	2	22.78	23.16	23.24
		6	0	21.65	22.22	22.26

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	23.60	24.29	23.83
		1	7	23.77	24.18	24.30
		1	14	23.74	23.67	24.00
		8	0	21.76	22.56	22.07
		8	4	21.80	22.36	22.23
		8	7	21.83	22.13	22.21
		15	0	21.82	22.30	22.13
	16QAM	1	0	22.89	23.48	22.76
		1	7	23.10	23.41	23.24
		1	14	22.84	22.75	22.97
		8	0	21.63	22.39	21.92
		8	4	21.67	22.14	22.07
		8	7	21.72	21.97	22.05
		15	0	21.65	22.06	21.96

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	24.53	24.96	24.46
		1	13	23.94	23.99	24.03
		1	24	24.91	24.67	24.87
		12	0	21.74	22.53	21.68
		12	6	21.84	22.40	21.93
		12	11	21.93	22.06	22.03
		25	0	21.68	22.20	21.87
	16QAM	1	0	23.86	24.39	23.76
		1	13	23.06	23.27	23.09
		1	24	24.41	24.04	24.35
		12	0	21.67	22.30	21.55
		12	6	21.76	22.18	21.87
		12	11	21.84	21.95	21.97
		25	0	21.53	22.06	21.72

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	24.43	24.91	24.97
		1	25	24.56	24.15	23.69
		1	49	24.70	24.37	24.87
		25	0	21.69	22.40	21.88
		25	13	22.37	22.23	21.66
		25	25	22.21	21.58	21.57
		50	0	21.83	22.00	21.70
	16QAM	1	0	23.64	24.49	24.34
		1	25	23.62	23.38	22.72
		1	49	24.14	23.93	24.34
		25	0	21.56	22.31	21.81
		25	13	22.24	22.15	21.57
		25	25	22.13	21.56	21.50
		50	0	21.68	21.84	21.54

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	24.66	24.41	23.92
		1	13	23.11	22.48	22.77
		1	24	24.09	24.00	24.41
		12	0	22.42	21.80	21.61
		12	6	22.51	21.72	21.86
		12	11	22.26	21.51	21.96
		25	0	22.31	21.67	21.80
	16QAM	1	0	24.38	24.34	24.23
		1	13	23.30	22.71	23.10
		1	24	24.21	24.22	24.35
		12	0	22.35	21.76	21.51
		12	6	22.44	21.68	21.76
		12	11	22.20	21.58	21.86
		25	0	22.23	21.60	21.70

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	24.75	24.55	24.57
		1	25	23.73	23.52	23.48
		1	49	24.47	24.60	24.73
		25	0	22.94	22.82	22.62
		25	13	22.59	22.52	22.39
		25	25	22.15	22.23	22.39
		50	0	22.55	22.43	22.42
	16QAM	1	0	24.35	24.37	24.40
		1	25	23.80	23.75	23.44
		1	49	24.34	24.32	24.36
		25	0	22.90	22.82	22.57
		25	13	22.56	22.43	22.40
		25	25	22.12	22.23	22.37
		50	0	22.49	22.38	22.37

EIRP Power (dBm):

Modulation	Band	WCDMA IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
BPSK	RMC 12.2K	23.76	23.85	23.95
	RMC 64K	23.67	23.70	23.72
	RMC 144K	23.68	23.74	23.73
	RMC 384K	23.66	23.73	23.71
16QAM	HSDPA Subtest-1	23.68	23.78	23.85
	HSDPA Subtest-2	22.05	22.08	22.16
	HSDPA Subtest-3	22.08	22.13	22.22
	HSDPA Subtest-4	22.07	22.14	22.19
16QAM	HSUPA Subtest-1	21.60	21.16	21.14
	HSUPA Subtest-2	19.92	19.95	20.24
	HSUPA Subtest-3	21.30	21.32	21.03
	HSUPA Subtest-4	20.33	19.72	19.81
	HSUPA Subtest-5	23.17	23.25	23.33

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	23.84	23.54	24.22
		1	2	23.95	23.56	24.26
		1	5	23.85	23.50	24.13
		3	0	23.92	23.58	24.25
		3	1	23.96	23.58	24.27
		3	2	23.95	23.56	24.25
		6	0	22.65	22.22	22.97
	16QAM	1	0	23.19	23.05	23.33
		1	2	23.24	23.09	23.38
		1	5	23.20	22.97	23.26
		3	0	23.06	22.66	23.38
		3	1	23.08	22.67	23.38
		3	2	23.07	22.65	23.37
		6	0	22.19	21.66	22.49

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	23.64	23.43	24.12
		1	7	23.98	23.51	24.31
		1	14	23.65	23.30	24.00
		8	0	22.66	22.30	22.97
		8	4	22.69	22.22	22.96
		8	7	22.56	22.25	22.84
		15	0	22.70	22.29	22.91
	16QAM	1	0	23.21	22.69	23.43
		1	7	23.47	22.85	23.58
		1	14	23.21	22.54	23.31
		8	0	22.13	21.76	22.42
		8	4	22.16	21.70	22.42
		8	7	22.04	21.63	22.35
		15	0	22.08	21.65	22.38

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	23.86	23.64	24.18
		1	13	24.13	23.78	24.30
		1	24	23.73	23.42	24.01
		12	0	22.85	22.48	23.13
		12	6	22.92	22.46	23.19
		12	11	22.83	22.38	23.09
		25	0	22.80	22.36	23.08
	16QAM	1	0	23.19	22.90	23.67
		1	13	23.46	22.98	23.88
		1	24	23.08	22.62	23.49
		12	0	22.28	21.94	22.56
		12	6	22.29	21.92	22.62
		12	11	22.20	21.84	22.52
		25	0	22.18	21.75	22.46

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	23.76	23.52	23.77
		1	25	24.10	23.68	24.23
		1	49	24.10	23.90	24.38
		25	0	22.83	22.39	22.93
		25	13	22.82	22.42	23.06
		25	25	22.66	22.36	22.97
		50	0	22.70	22.35	22.93
	16QAM	1	0	23.19	22.98	23.08
		1	25	23.52	23.10	23.55
		1	49	23.50	23.33	23.74
		25	0	22.22	21.80	22.35
		25	13	22.22	21.83	22.46
		25	25	22.07	21.77	22.37
		50	0	22.14	21.73	22.29

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	23.81	23.69	23.67
		1	38	24.00	23.65	24.14
		1	74	24.01	23.85	24.38
		36	0	22.81	23.95	22.77
		36	18	22.79	22.43	22.94
		36	39	22.68	22.39	23.03
		75	0	22.73	22.39	22.88
	16QAM	1	0	23.29	23.14	22.87
		1	38	23.52	23.12	23.40
		1	74	23.49	23.35	23.66
		36	0	22.23	23.05	22.22
		36	18	22.22	21.83	22.32
		36	39	22.06	21.79	22.42
		75	0	22.12	21.79	22.27

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	24.20	24.05	23.89
		1	50	24.22	23.39	24.27
		1	99	23.81	23.90	24.39
		50	0	22.97	22.62	22.75
		50	25	22.91	22.61	23.00
		50	50	22.69	22.58	23.11
		100	0	22.84	22.59	22.97
	16QAM	1	0	23.66	23.31	23.45
		1	50	23.70	22.45	23.82
		1	99	23.31	23.18	23.92
		50	0	22.42	22.09	22.21
		50	25	22.36	22.07	22.46
		50	50	22.15	22.03	22.56
		100	0	22.28	22.04	22.38

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	23.54	23.64	23.64
		1	13	23.90	23.91	23.76
		1	24	24.03	23.88	23.65
		12	0	23.07	23.13	23.06
		12	6	23.18	23.23	23.03
		12	11	23.14	23.18	22.94
		25	0	23.06	23.15	22.96
	16QAM	1	0	22.96	23.17	23.02
		1	13	23.33	23.42	23.11
		1	24	23.42	23.40	23.01
		12	0	22.97	23.04	22.95
		12	6	23.11	23.13	22.91
		12	11	23.07	23.04	22.76
		25	0	22.99	23.02	22.82

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	23.66	23.64	23.55
		1	25	23.34	23.02	22.90
		1	49	24.12	24.05	23.66
		25	0	22.08	21.99	21.95
		25	13	22.31	22.15	21.92
		25	25	22.25	22.07	21.95
		50	0	22.25	22.09	22.02
	16QAM	1	0	22.99	22.98	22.75
		1	25	22.48	22.33	22.07
		1	49	23.68	23.43	22.89
		25	0	21.96	21.90	21.87
		25	13	22.20	22.05	21.84
		25	25	22.11	21.98	21.87
		50	0	22.13	22.00	21.90

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	23.54	23.38	23.55
		1	38	24.11	23.99	23.83
		1	74	24.05	23.99	23.52
		36	0	23.34	23.01	22.91
		36	18	23.55	23.28	22.99
		36	39	23.46	23.27	22.94
		75	0	23.56	23.11	23.11
	16QAM	1	0	22.98	22.66	22.94
		1	38	23.67	23.30	23.30
		1	74	23.54	23.28	23.00
		36	0	23.18	22.90	22.82
		36	18	23.44	23.16	22.92
		36	39	23.34	23.14	22.84
		75	0	23.46	23.01	22.97

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	23.69	23.48	23.91
		1	50	23.49	23.03	22.99
		1	99	23.80	24.16	23.84
		50	0	22.09	22.05	21.90
		50	25	22.21	22.08	21.87
		50	50	22.13	22.21	21.83
		100	0	22.25	21.98	21.94
	16QAM	1	0	23.07	22.79	23.24
		1	50	22.68	22.32	22.10
		1	99	23.12	23.45	23.06
		50	0	21.97	21.96	21.89
		50	25	22.21	22.00	21.91
		50	50	22.13	21.91	21.81
		100	0	22.14	21.85	21.83

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	21.45	21.93	22.00
		1	2	21.46	21.90	22.06
		1	5	21.32	21.58	21.83
		3	0	21.35	21.93	22.01
		3	1	21.36	21.90	22.04
		3	2	21.36	21.83	21.99
		6	0	19.52	20.10	20.05
	16QAM	1	0	20.51	21.21	21.00
		1	2	20.51	21.21	21.08
		1	5	20.38	20.90	20.86
		3	0	20.46	20.99	20.94
		3	1	20.54	20.96	20.99
		3	2	20.53	20.91	20.99
		6	0	19.40	19.97	20.01

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	21.35	22.04	21.58
		1	7	21.52	21.93	22.05
		1	14	21.49	21.42	21.75
		8	0	19.51	20.31	19.82
		8	4	19.55	20.11	19.98
		8	7	19.58	19.88	19.96
		15	0	19.57	20.05	19.88
	16QAM	1	0	20.64	21.23	20.51
		1	7	20.85	21.16	20.99
		1	14	20.59	20.50	20.72
		8	0	19.38	20.14	19.67
		8	4	19.42	19.89	19.82
		8	7	19.47	19.72	19.80
		15	0	19.40	19.81	19.71

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	22.28	22.71	22.21
		1	13	21.69	21.74	21.78
		1	24	22.66	22.42	22.62
		12	0	19.49	20.28	19.43
		12	6	19.59	20.15	19.68
		12	11	19.68	19.81	19.78
		25	0	19.43	19.95	19.62
	16QAM	1	0	21.61	22.14	21.51
		1	13	20.81	21.02	20.84
		1	24	22.16	21.79	22.10
		12	0	19.42	20.05	19.30
		12	6	19.51	19.93	19.62
		12	11	19.59	19.70	19.72
		25	0	19.28	19.81	19.47

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	22.18	22.66	22.72
		1	25	22.31	21.90	21.44
		1	49	22.45	22.12	22.62
		25	0	19.44	20.15	19.63
		25	13	20.12	19.98	19.41
		25	25	19.96	19.33	19.32
		50	0	19.58	19.75	19.45
	16QAM	1	0	21.39	22.24	22.09
		1	25	21.37	21.13	20.47
		1	49	21.89	21.68	22.09
		25	0	19.31	20.06	19.56
		25	13	19.99	19.90	19.32
		25	25	19.88	19.31	19.25
		50	0	19.43	19.59	19.29

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	22.41	22.16	21.67
		1	13	20.86	20.23	20.52
		1	24	21.84	21.75	22.16
		12	0	20.17	19.55	19.36
		12	6	20.26	19.47	19.61
		12	11	20.01	19.26	19.71
		25	0	20.06	19.42	19.55
	16QAM	1	0	22.13	22.09	21.98
		1	13	21.05	20.46	20.85
		1	24	21.96	21.97	22.10
		12	0	20.10	19.51	19.26
		12	6	20.19	19.43	19.51
		12	11	19.95	19.33	19.61
		25	0	19.98	19.35	19.45

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	22.50	22.30	22.32
		1	25	21.48	21.27	21.23
		1	49	22.22	22.35	22.48
		25	0	20.69	20.57	20.37
		25	13	20.34	20.27	20.14
		25	25	19.90	19.98	20.14
		50	0	20.30	20.18	20.17
	16QAM	1	0	22.10	22.12	22.15
		1	25	21.55	21.50	21.19
		1	49	22.09	22.07	22.11
		25	0	20.65	20.57	20.32
		25	13	20.31	20.18	20.15
		25	25	19.87	19.98	20.12
		50	0	20.24	20.13	20.12

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	4.143	1312	1712.4	4.687
1413	1732.6	4.138	1413	1732.6	4.692
1513	1752.6	4.140	1513	1752.6	4.714



WCDMA Band IV_HSDPA					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.148	1312	1712.4	4.702
1413	1732.6	4.143	1413	1732.6	4.684
1513	1752.6	4.147	1513	1752.6	4.703

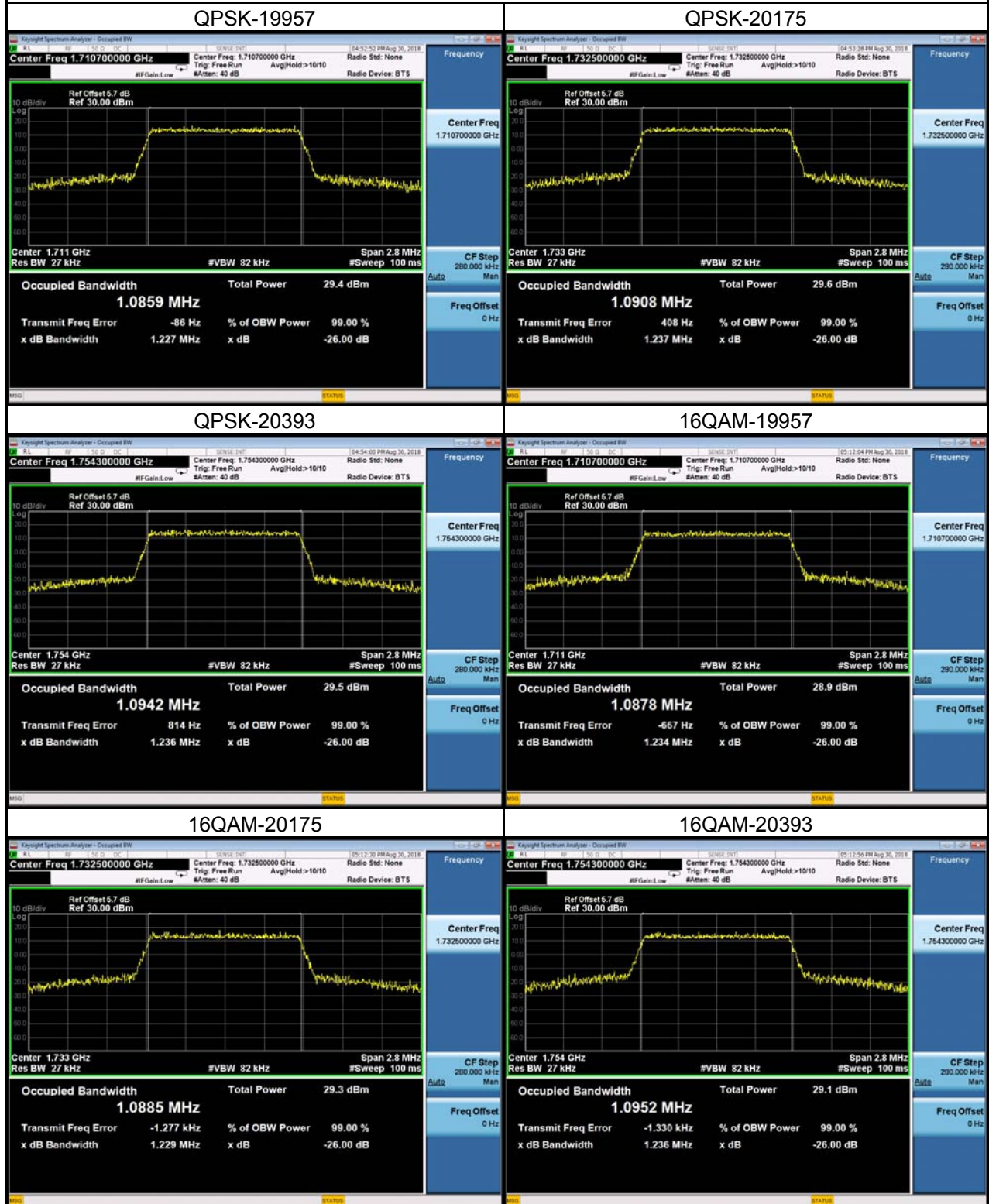


WCDMA Band IV_HSUPA					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.148	1312	1712.4	4.704
1413	1732.6	4.137	1413	1732.6	4.691
1513	1752.6	4.141	1513	1752.6	4.699



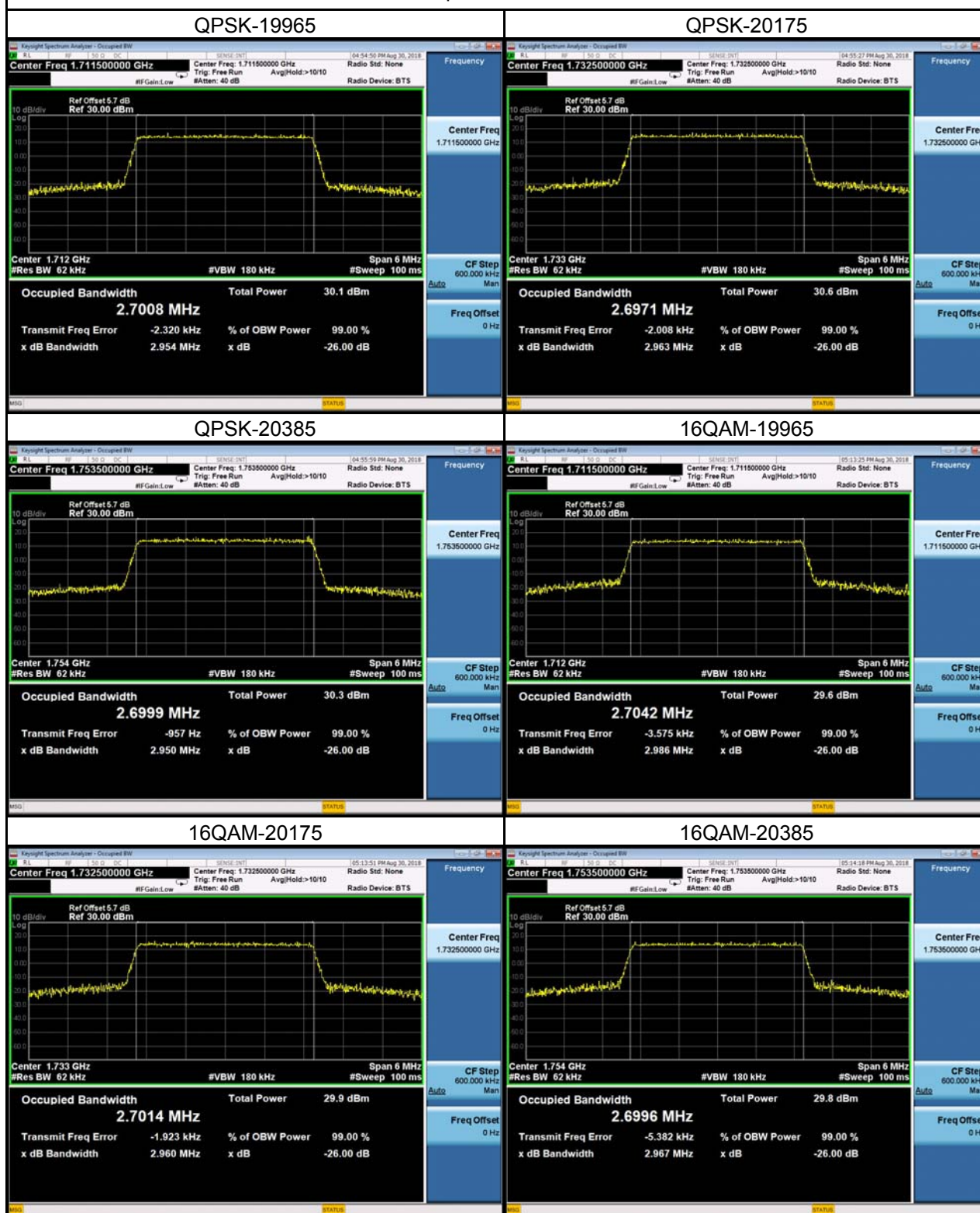
LTE Band 4_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19957	1710.7	1.086	19957	1710.7	1.088
20175	1732.5	1.091	20175	1732.5	1.089
20393	1754.3	1.094	20393	1754.3	1.095
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.227	19957	1710.7	1.234
20175	1732.5	1.237	20175	1732.5	1.229
20393	1754.3	1.236	20393	1754.3	1.236

Spectrum Plot



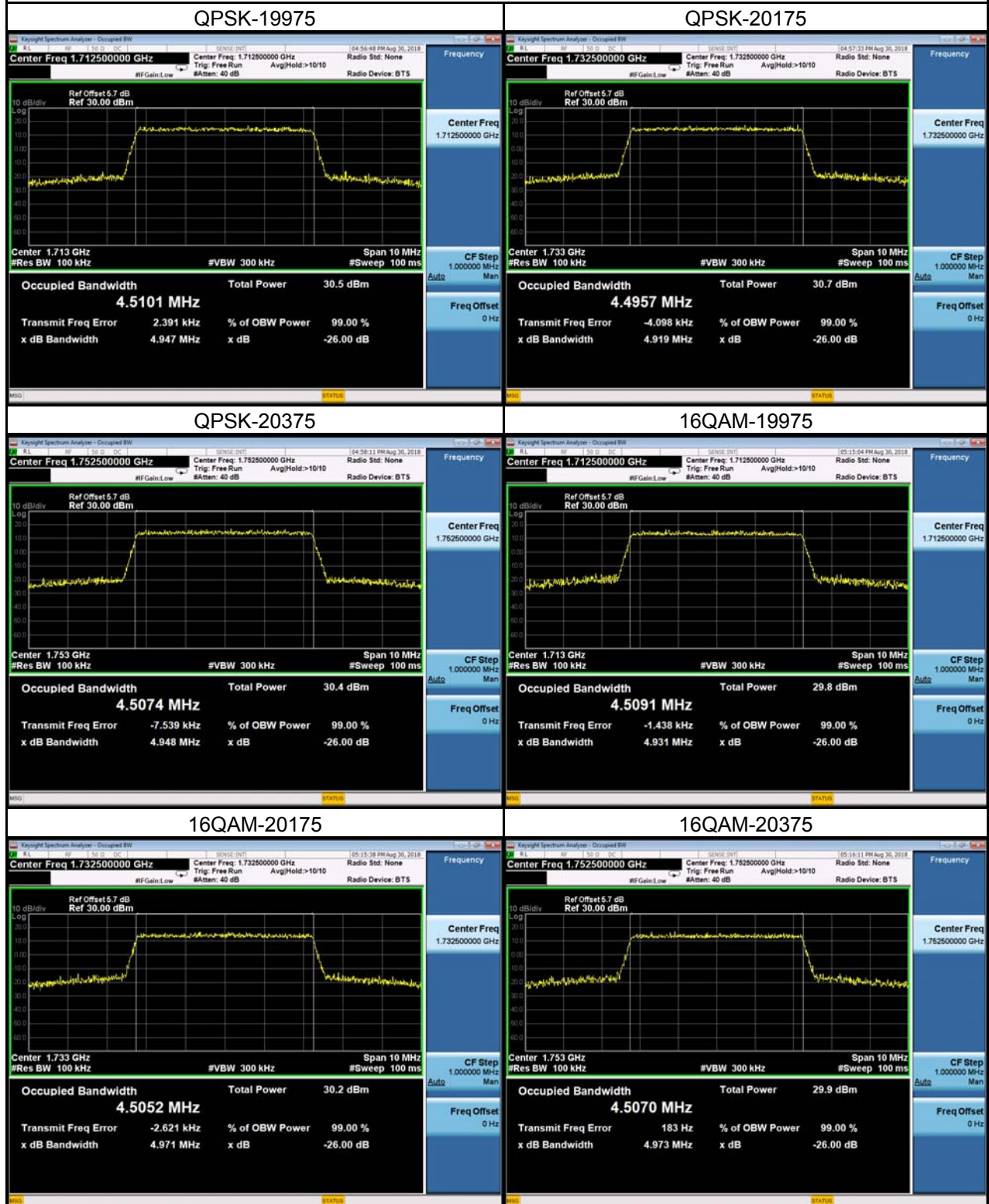
LTE Band 4_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19965	1711.5	2.701	19965	1711.5	2.704
20175	1732.5	2.697	20175	1732.5	2.701
20385	1753.5	2.700	20385	1753.5	2.700
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.954	19965	1711.5	2.986
20175	1732.5	2.963	20175	1732.5	2.960
20385	1753.5	2.950	20385	1753.5	2.967

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	4.510	19975	1712.5	4.509
20175	1732.5	4.496	20175	1732.5	4.505
20375	1752.5	4.507	20375	1752.5	4.507
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.947	19975	1712.5	4.931
20175	1732.5	4.919	20175	1732.5	4.971
20375	1752.5	4.948	20375	1752.5	4.973

Spectrum Plot



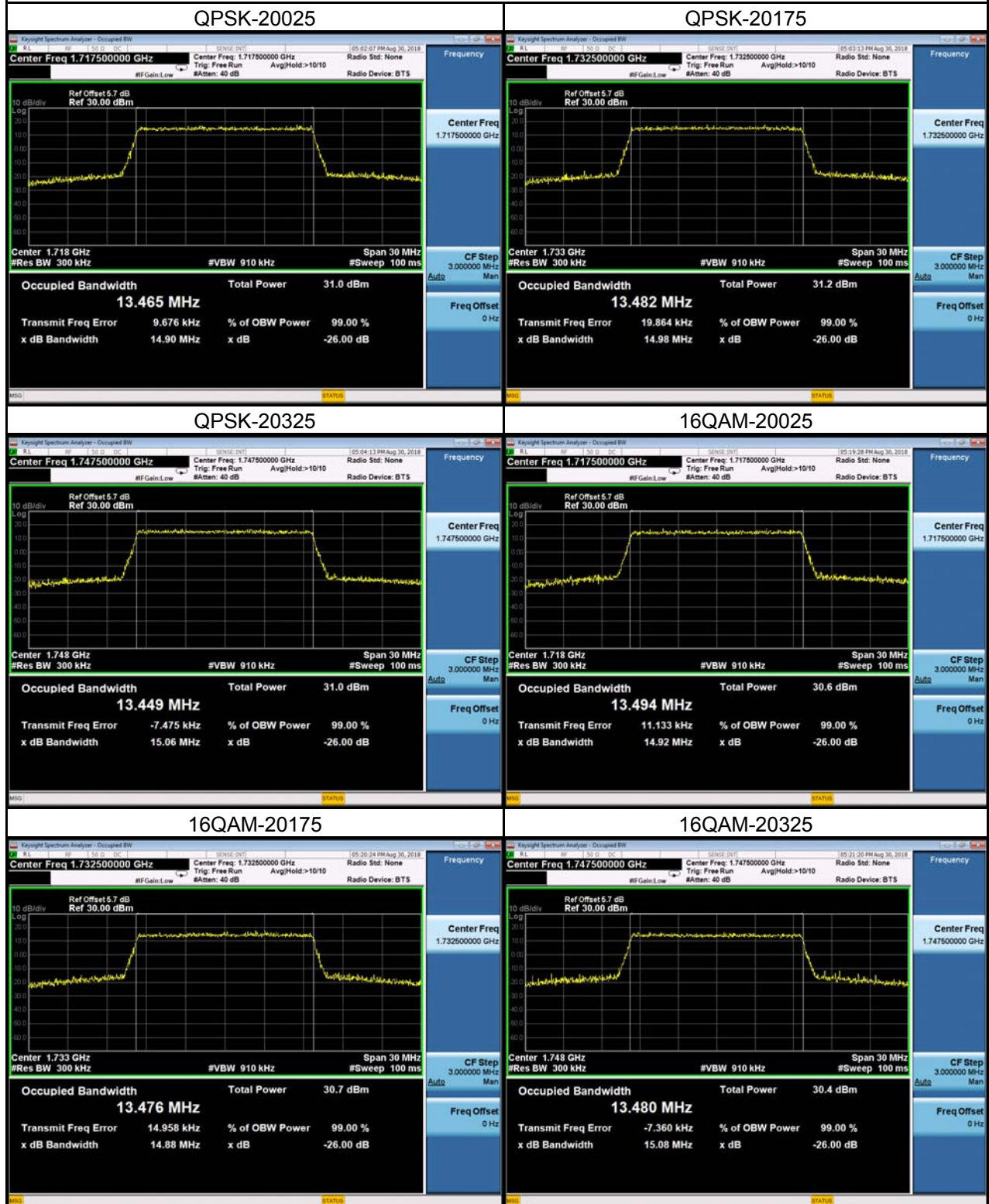
LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	8.989	20000	1715	8.988
20175	1732.5	8.990	20175	1732.5	8.979
20350	1750	7.991	20350	1750	8.993
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.924	20000	1715	9.838
20175	1732.5	9.877	20175	1732.5	9.785
20350	1750	9.868	20350	1750	9.870

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	13.645	20025	1717.5	13.494
20175	1732.5	13.482	20175	1732.5	13.476
20325	1747.5	13.449	20325	1747.5	13.480
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.900	20025	1717.5	14.920
20175	1732.5	14.980	20175	1732.5	14.880
20325	1747.5	15.060	20325	1747.5	15.080

Spectrum Plot



LTE Band 4_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20050	1720	17.969	20050	1720	17.971
20175	1732.5	17.944	20175	1732.5	17.963
20300	1745	17.997	20300	1745	17.981
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.680	20050	1720	19.73
20175	1732.5	19.730	20175	1732.5	19.72
20300	1745	19.760	20300	1745	19.76

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	4.509	20775	2502.5	4.507
21100	2535	4.500	21100	2535	4.505
21425	2567.5	4.506	21425	2567.5	4.506
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.999	20775	2502.5	4.961
21100	2535	4.957	21100	2535	4.947
21425	2567.5	4.952	21425	2567.5	4.939

Spectrum Plot

QPSK-20775



QPSK-21100



QPSK-21425



16QAM-20775



16QAM-21100

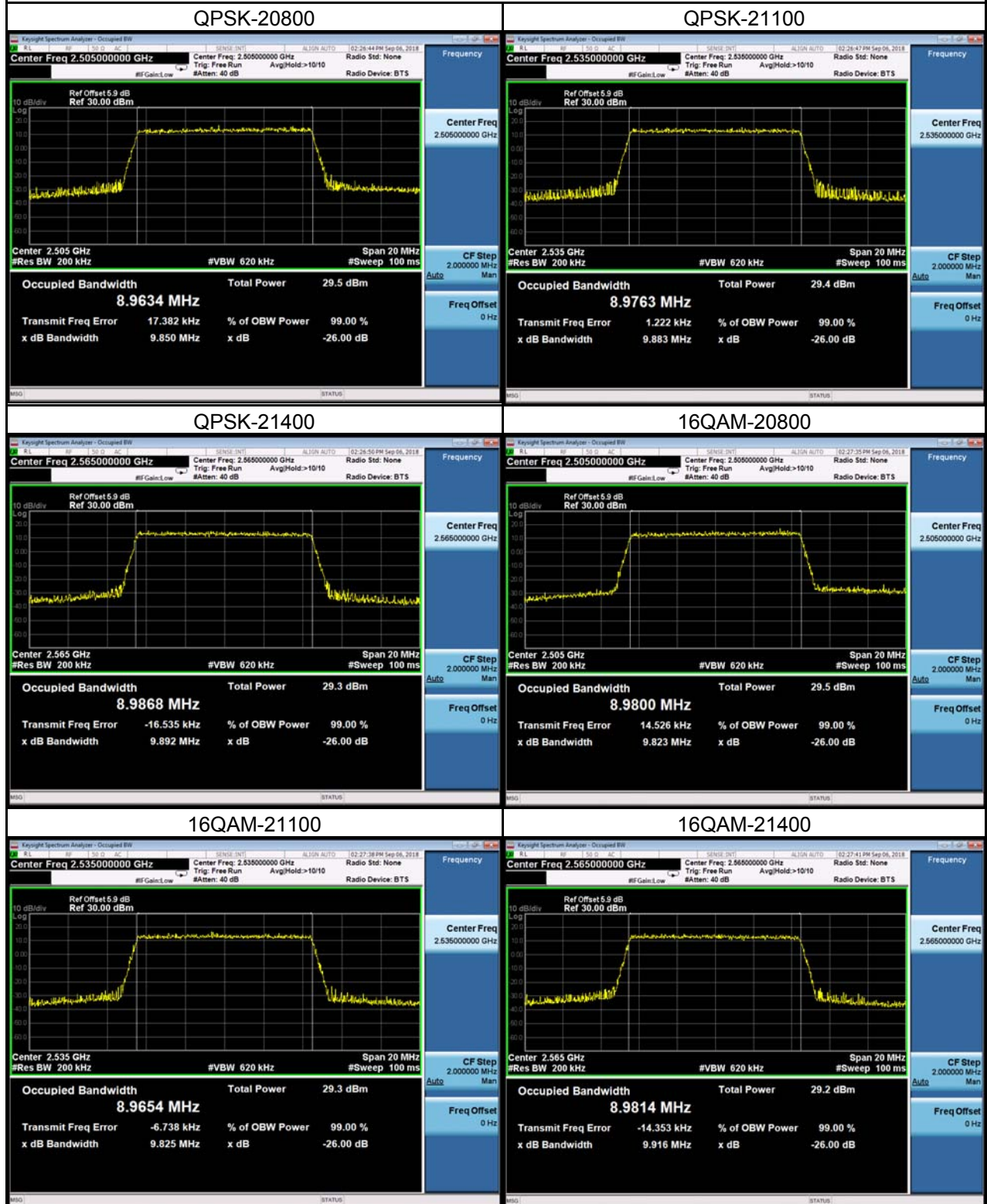


16QAM-21425



LTE Band 7_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20800	2505	8.963	20800	2505	8.980
21100	2535	8.976	21100	2535	8.965
21400	2565	8.987	21400	2565	8.981
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.850	20800	2505	9.823
21100	2535	9.883	21100	2535	9.825
21400	2565	9.892	21400	2565	9.916

Spectrum Plot



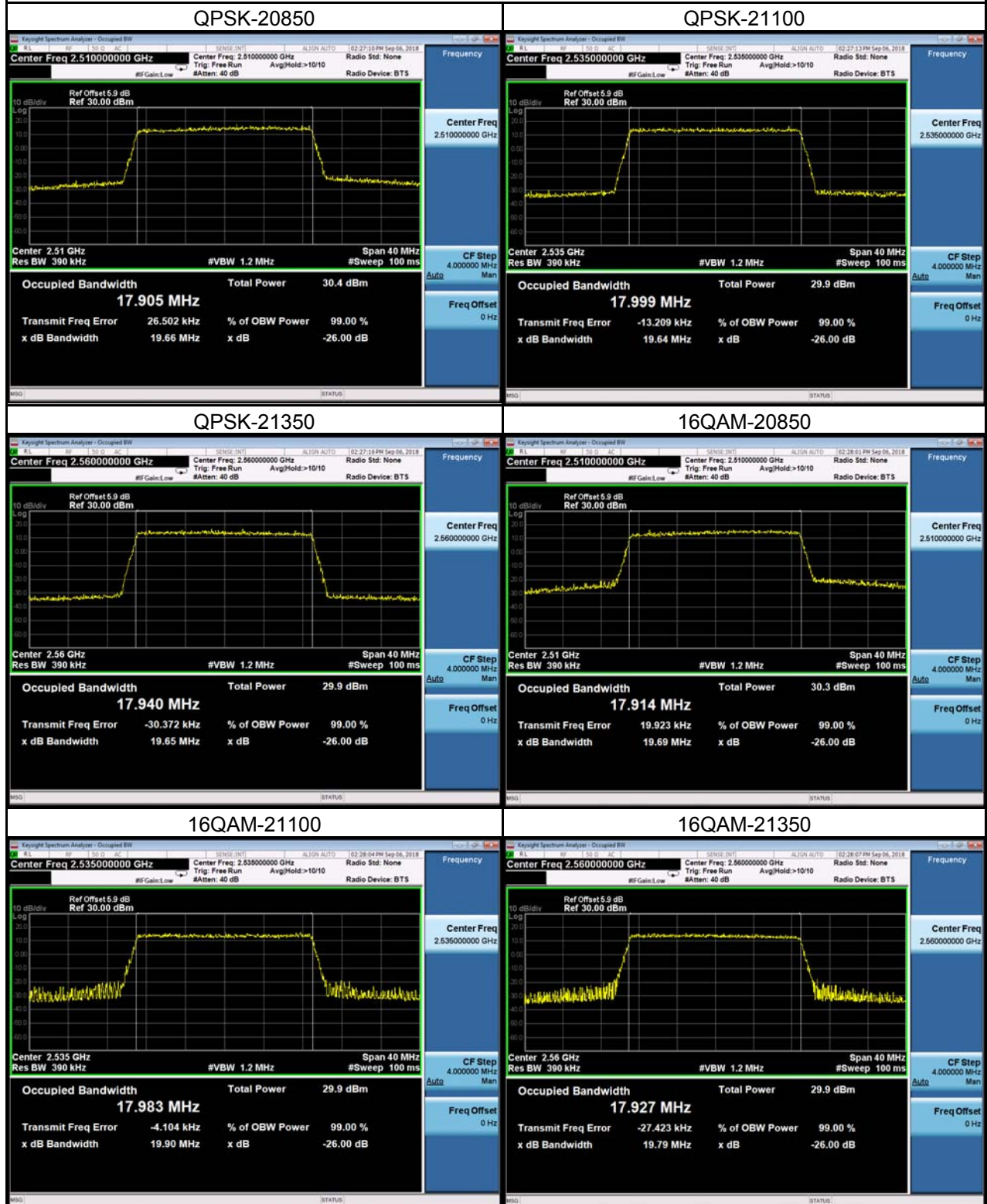
LTE Band 7_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20825	2507.5	13.448	20825	2507.5	13.442
21100	2535	13.457	21100	2535	13.457
21375	2562.5	13.455	21375	2562.5	13.463
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20825	2507.5	14.790	20825	2507.5	14.970
21100	2535	14.960	21100	2535	14.860
21375	2562.5	15.010	21375	2562.5	14.880

Spectrum Plot



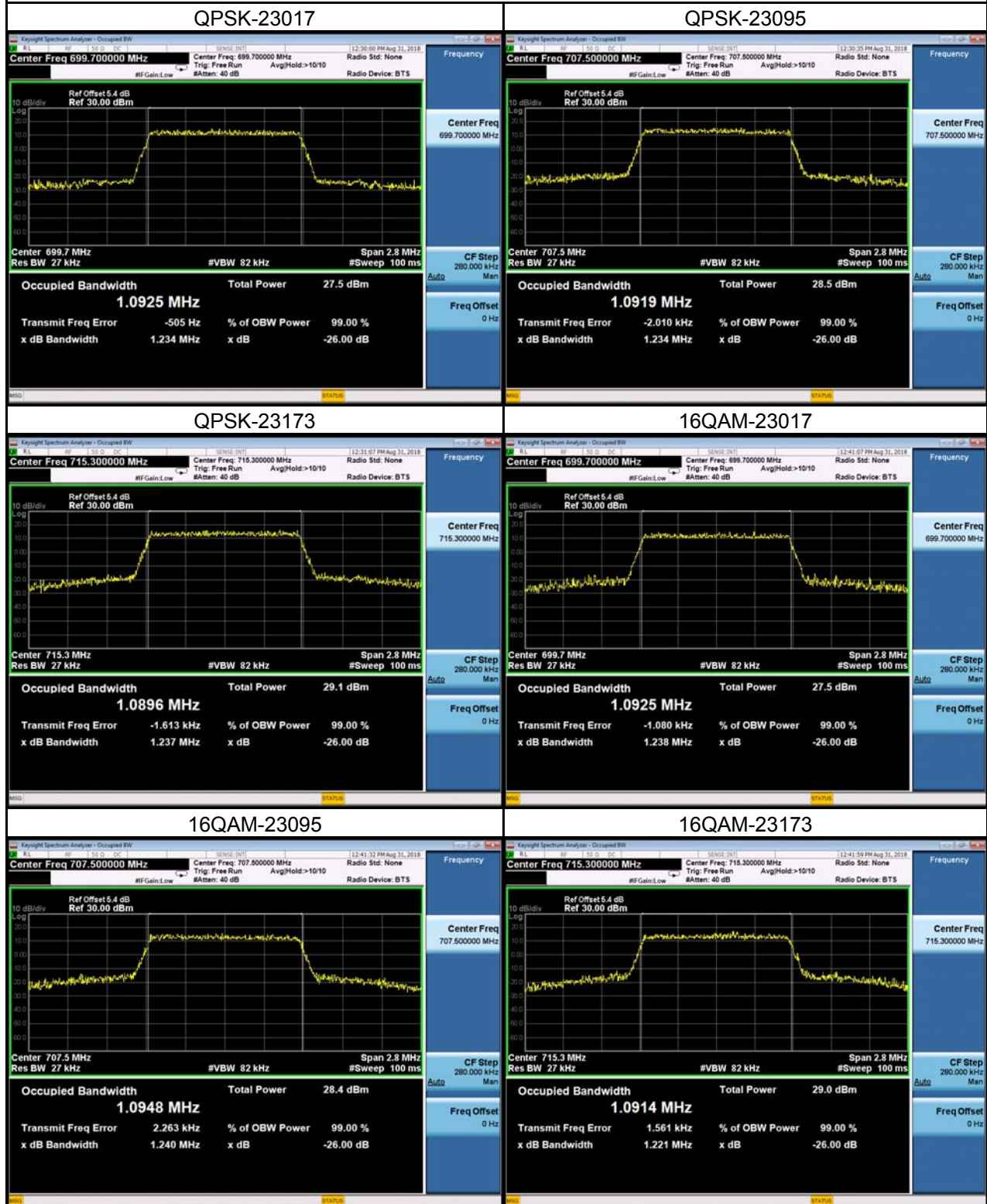
LTE Band 7_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20850	2510	17.905	20850	2510	17.914
21100	2535	17.999	21100	2535	17.983
21350	2560	17.940	21350	2560	17.927
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20850	2510	19.660	20850	2510	19.690
21100	2535	19.640	21100	2535	19.900
21350	2560	19.650	21350	2560	19.790

Spectrum Plot



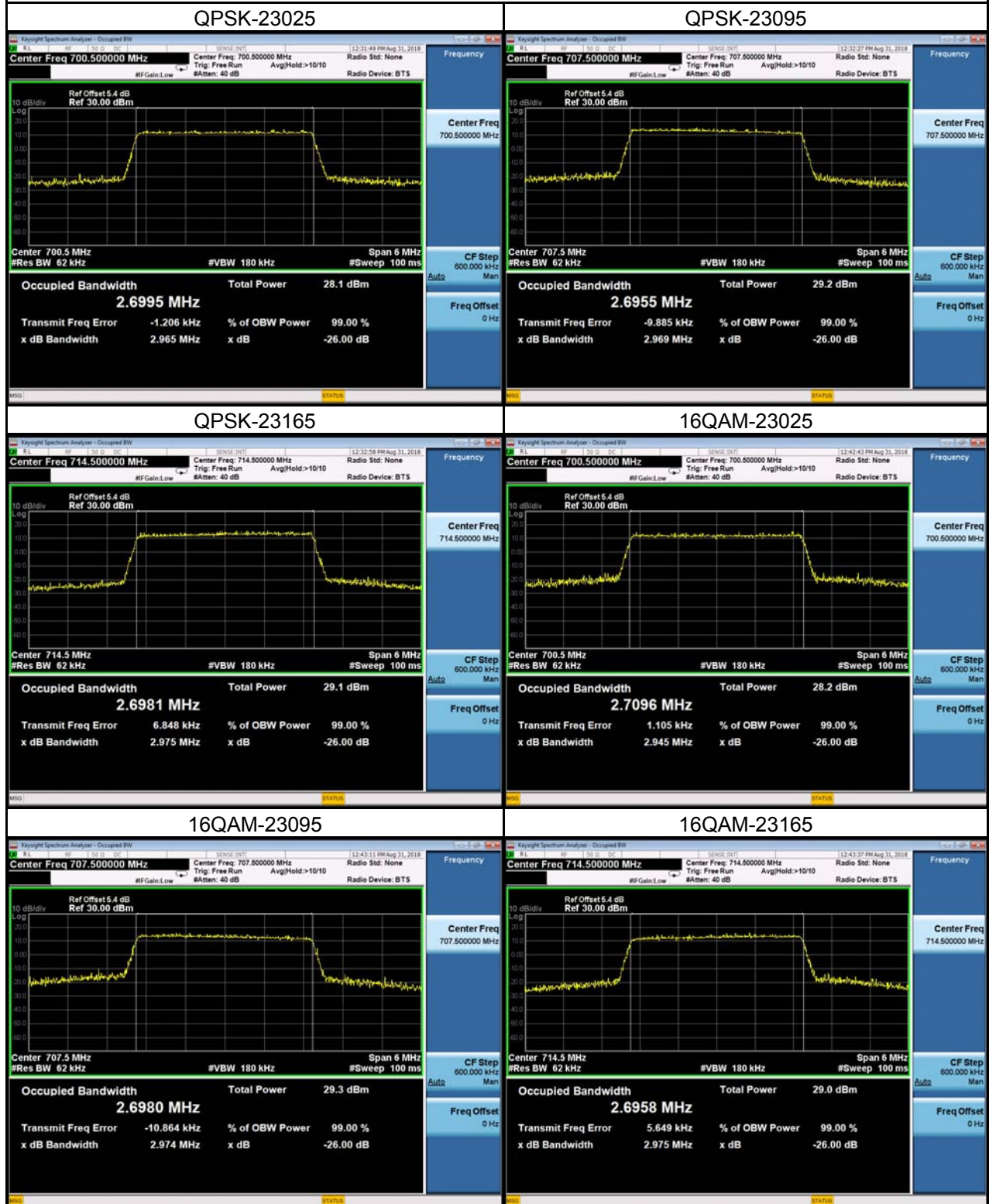
LTE Band 12_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23017	699.7	1.093	23017	699.7	1.093
23095	707.5	1.092	23095	707.5	1.095
23173	715.3	1.090	23173	715.3	1.091
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.234	23017	699.7	1.238
23095	707.5	1.234	23095	707.5	1.240
23173	715.3	1.237	23173	715.3	1.221

Spectrum Plot



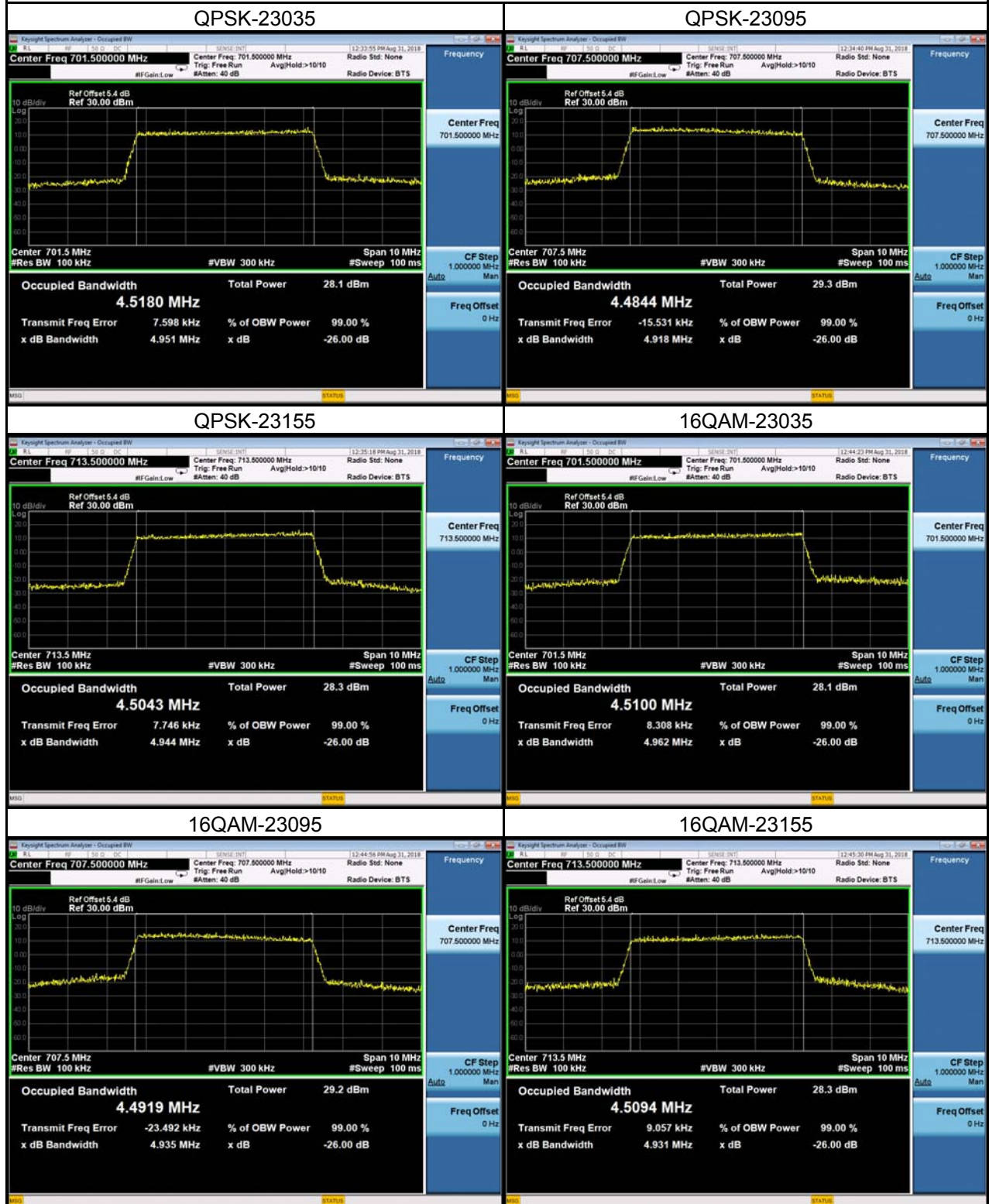
LTE Band 12_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23025	700.5	2.670	23025	700.5	2.710
23095	707.5	2.700	23095	707.5	2.698
23165	714.5	2.698	23165	714.5	2.696
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23025	700.5	2.965	23025	700.5	2.945
23095	707.5	2.969	23095	707.5	2.974
23165	714.5	2.975	23165	714.5	2.975

Spectrum Plot



LTE Band 12_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	4.518	23035	701.5	4.510
23095	707.5	4.484	23095	707.5	4.492
23155	713.5	4.504	23155	713.5	4.509
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23035	701.5	4.951	23035	701.5	4.962
23095	707.5	4.918	23095	707.5	4.935
23155	713.5	4.944	23155	713.5	4.931

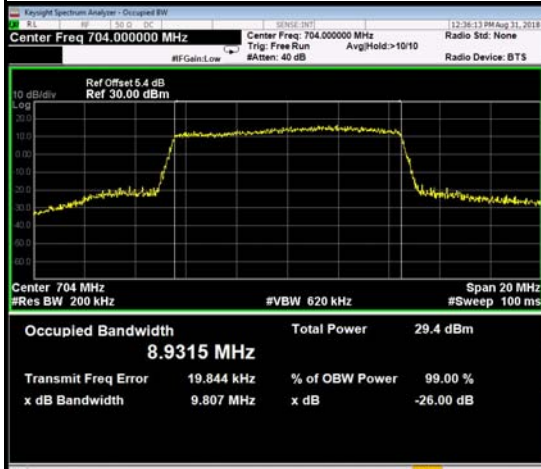
Spectrum Plot



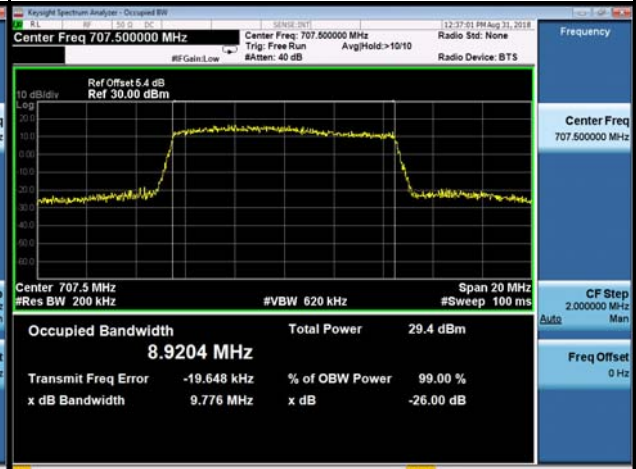
LTE Band 12_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23060	704.0	8.932	23060	704.0	8.921
23095	707.5	8.920	23095	707.5	8.911
23130	711.0	9.032	23130	711.0	9.048
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23060	704.0	9.807	23060	704.0	9.761
23095	707.5	9.776	23095	707.5	9.765
23130	711.0	9.928	23130	711.0	9.959

Spectrum Plot

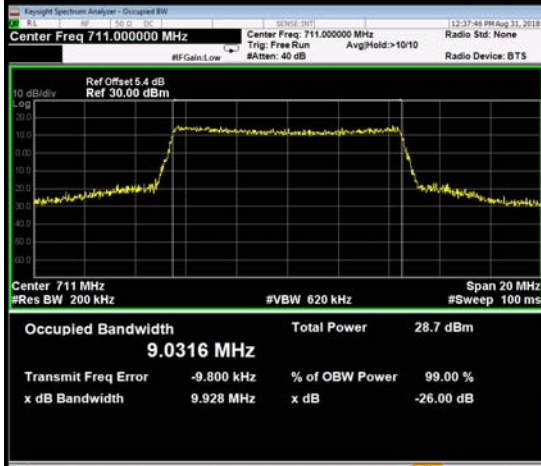
QPSK-23060



QPSK-23095



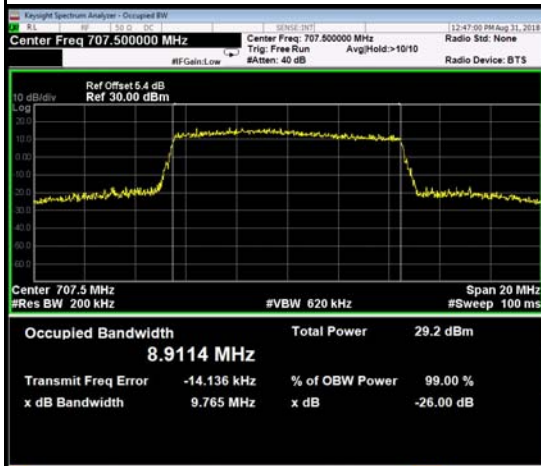
QPSK-23130



16QAM-23060



16QAM-23095

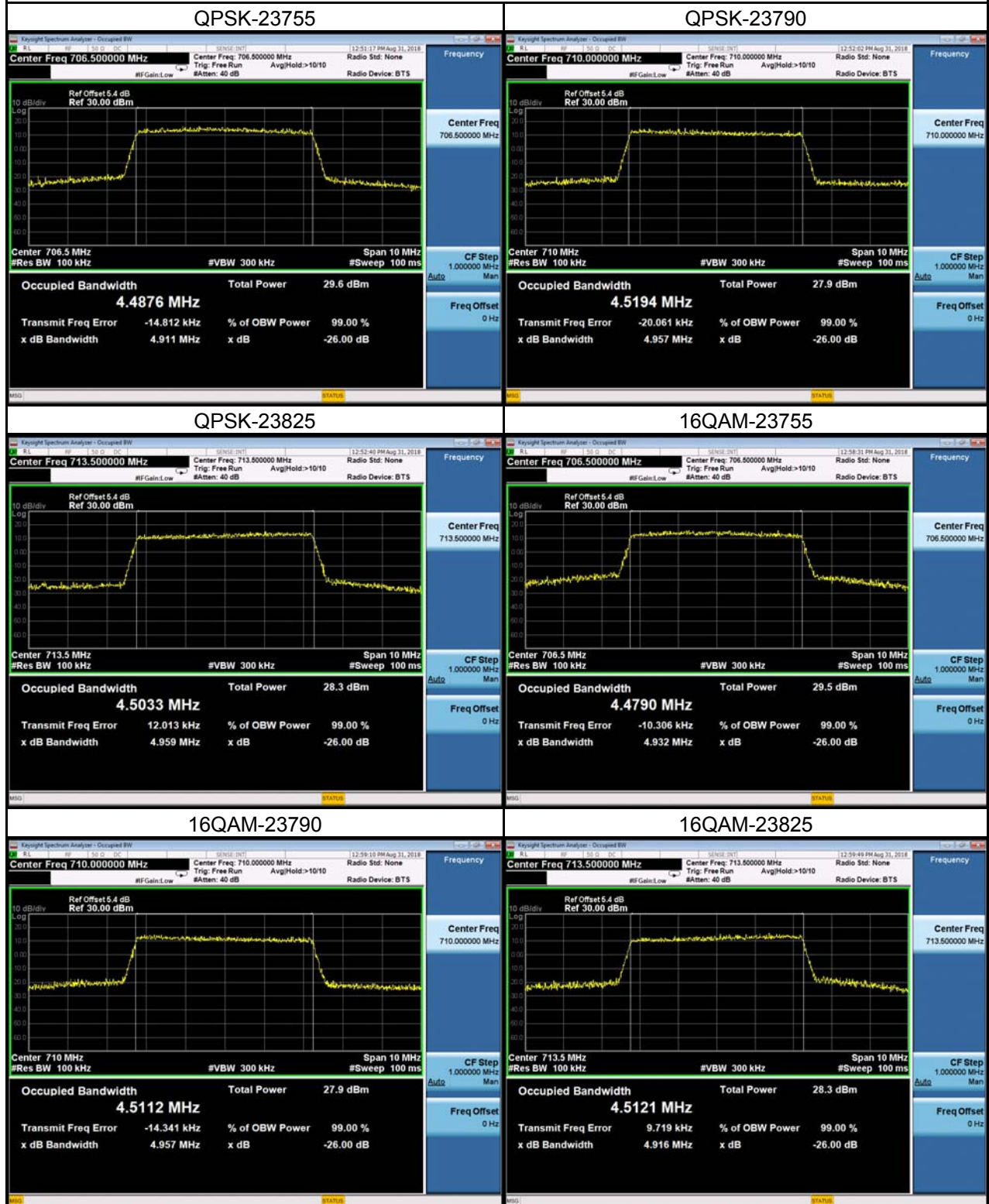


16QAM-23130



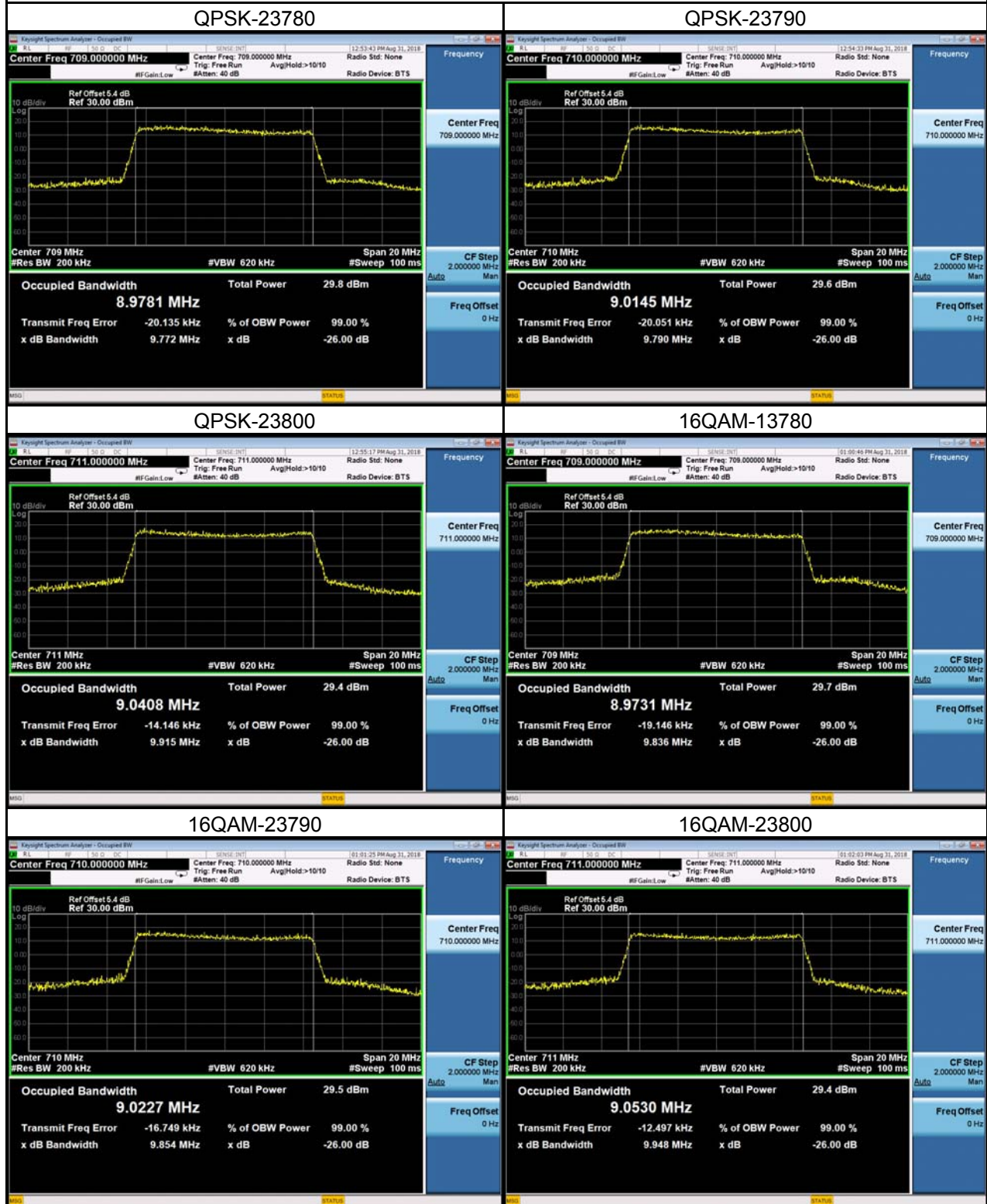
LTE Band 17_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23755	706.5	4.488	23755	706.5	4.479
23790	710.0	4.519	23790	710.0	4.511
23825	713.5	4.503	23825	713.5	4.512
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23755	706.5	4.911	23755	706.5	4.932
23790	710.0	4.957	23790	710.0	4.957
23825	713.5	4.959	23825	713.5	4.916

Spectrum Plot

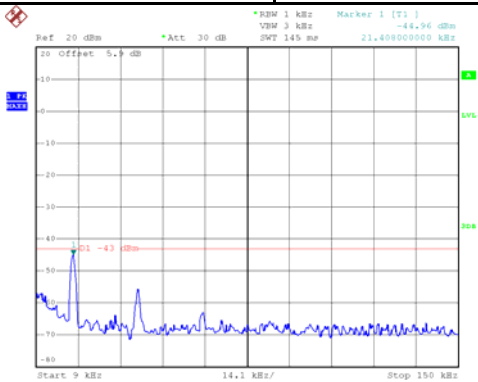
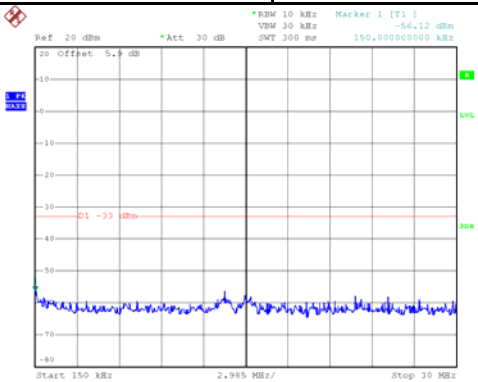
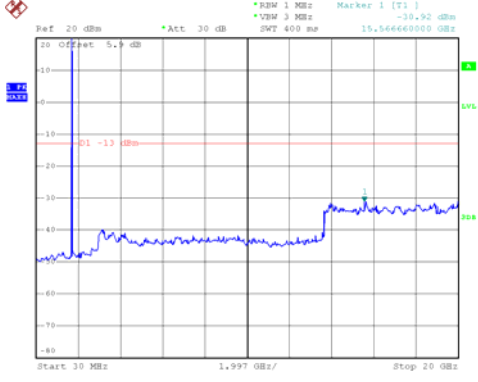


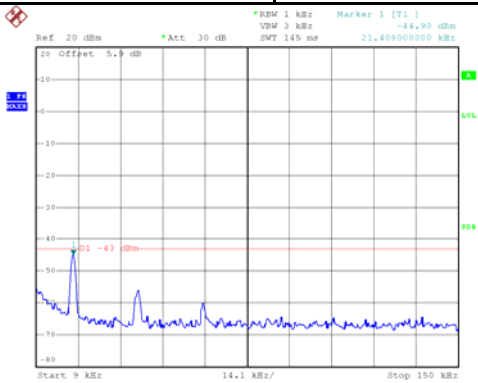
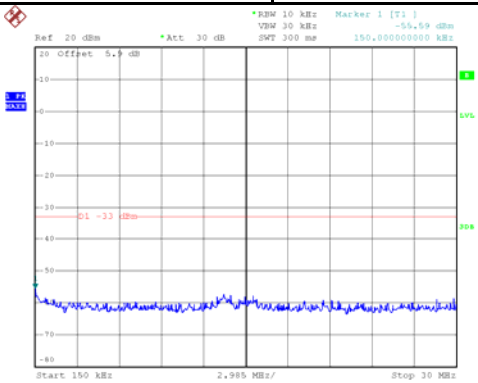
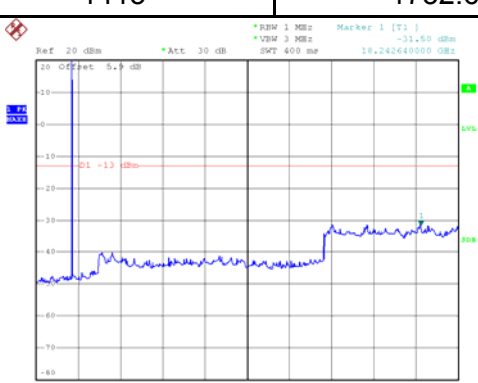
LTE Band 17_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23780	709.0	8.978	23780	709.0	8.973
23790	710.0	9.015	23790	710.0	9.023
23800	711.0	9.041	23800	711.0	9.053
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23780	709.0	9.772	23780	709.0	9.836
23790	710.0	9.790	23790	710.0	9.854
23800	711.0	9.915	23800	711.0	9.948

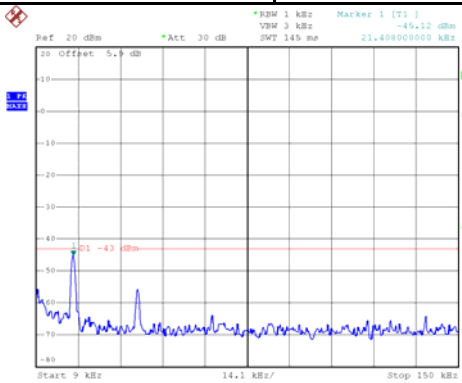
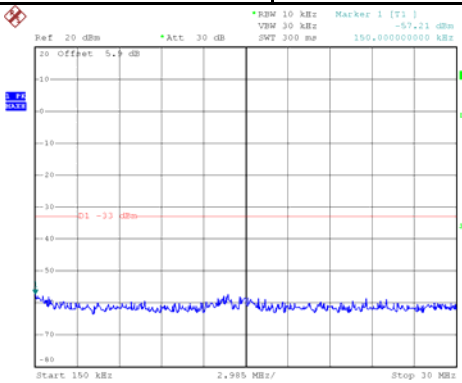
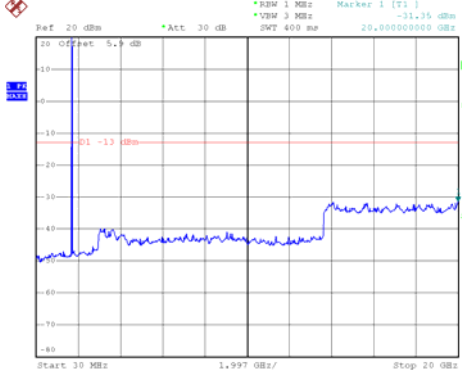
Spectrum Plot

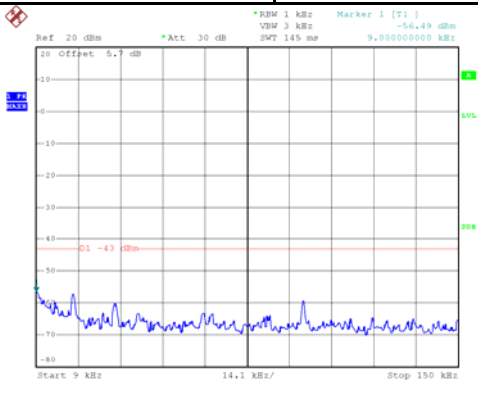
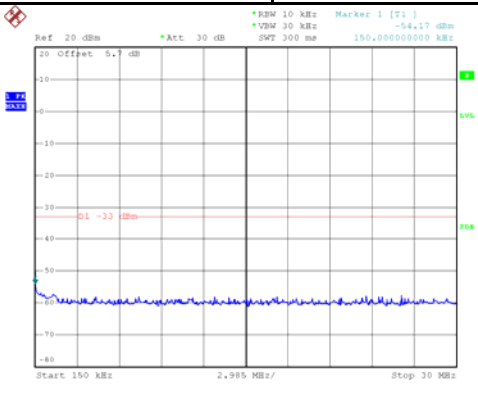
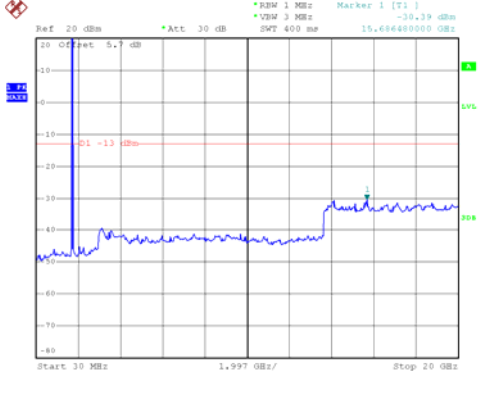


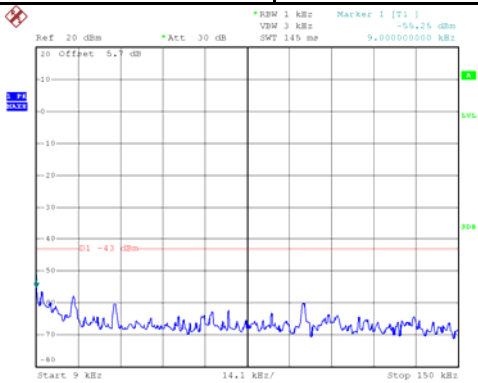
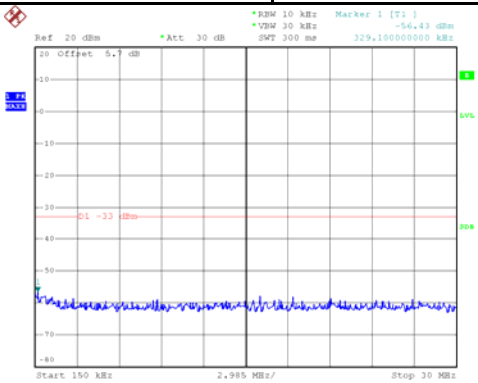
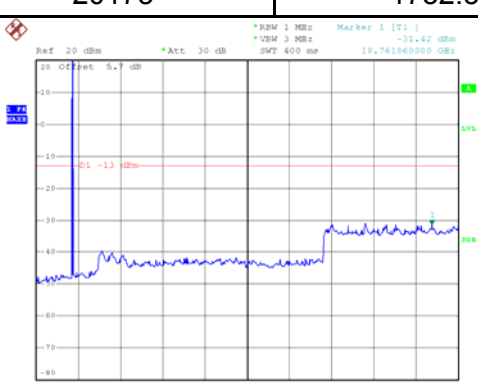
APPENDIX C - CONDUCTED EMISSIONS

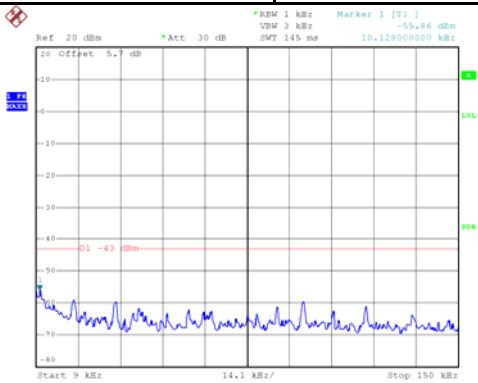
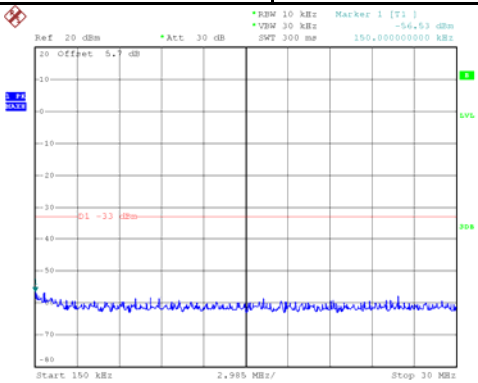
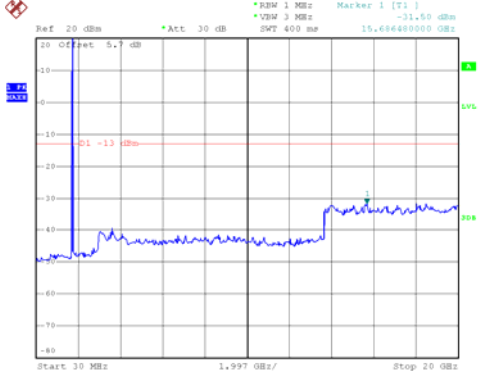
WCDMA Band IV_WCDMA			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1413	1732.6	1413	1732.6
 Ref: 20 dBm *Att: 30 dB *BW: 1 kHz Marker 1 [T1] -44.94 dBm VSW: 2 kHz SWT: 145 ms 21.408000000 kHz Start: 9 kHz 14.1 kHz/ Stop: 150 kHz Date: 1.SEP.2018 17:23:48		 Ref: 20 dBm *Att: 30 dB *BW: 10 kHz Marker 1 [T1] -56.12 dBm VSW: 30 kHz SWT: 308 ms 150.000000000 kHz Start: 150 kHz 2.995 MHz/ Stop: 30 MHz Date: 1.SEP.2018 17:24:35	
Channel	Frequency(MHz)	-	-
1413	1732.6	-	-
 Ref: 20 dBm *Att: 30 dB *BW: 1 MHz Marker 1 [T1] -39.92 dBm VSW: 3 MHz SWT: 400 ms 15.144440000 GHz Start: 30 MHz 1.997 GHz/ Stop: 20 GHz Date: 31.AUG.2018 17:04:43		-	

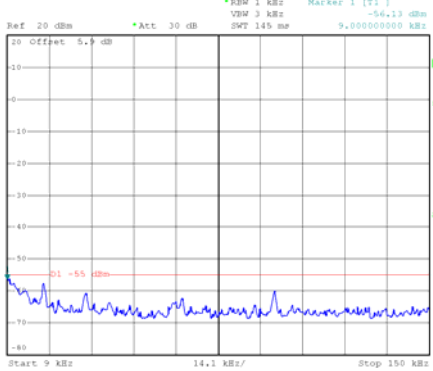
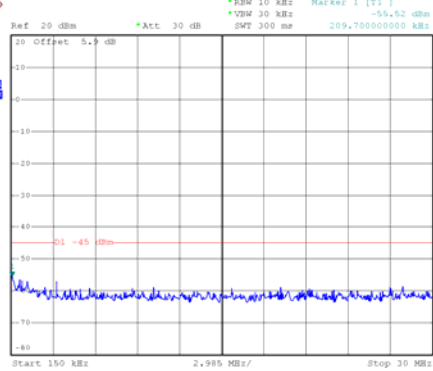
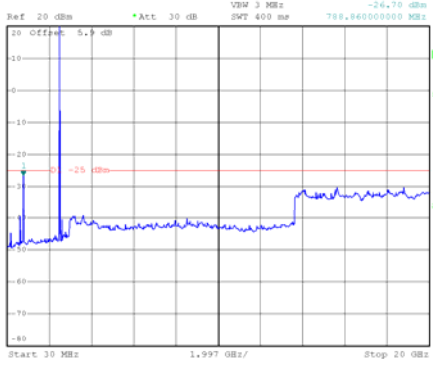
WCDMA Band IV _HSDPA			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1413	1732.6	1413	1732.6
 Date: 1.SEP.2018 17:23:28		 Date: 1.SEP.2018 17:24:54	
Channel	Frequency(MHz)	-	-
1413	1732.6	-	-
 Date: 31.AUG.2018 17:04:24		-	

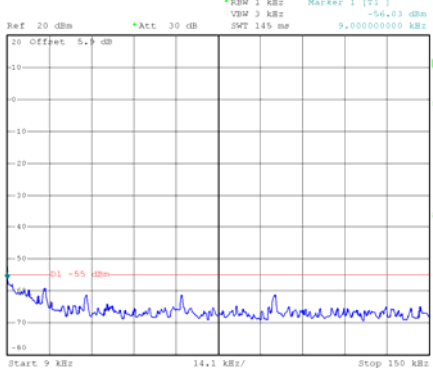
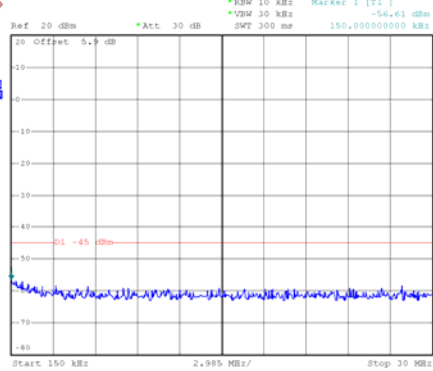
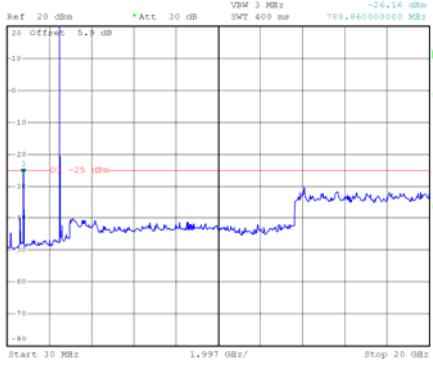
WCDMA Band IV _HSUPA			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1413	1732.6	1413	1732.6
 Ref: 20 dBm *Att: 30 dB *RBW: 1 kHz Marker 1 [T1] -45.12 dBm VSW: 3 kHz SWT: 145 ms 21.60000000 kHz Start: 9 kHz 14.1 kHz/ Stop: 150 kHz Date: 1.SEP.2018 17:23:38		 Ref: 20 dBm *Att: 30 dB *RBW: 10 kHz Marker 1 [T1] -57.21 dBm VSW: 30 kHz SWT: 300 ms 150.00000000 kHz Start: 150 kHz 2.985 MHz/ Stop: 30 MHz Date: 1.SEP.2018 17:24:45	
Channel	Frequency(MHz)	-	-
1413	1732.6	-	-
 Ref: 20 dBm *Att: 30 dB *RBW: 1 MHz Marker 1 [T1] -31.35 dBm VSW: 3 MHz SWT: 400 ms 20.00000000 GHz Start: 30 MHz 1.997 GHz/ Stop: 20 GHz Date: 31.AUG.2018 17:04:33		-	

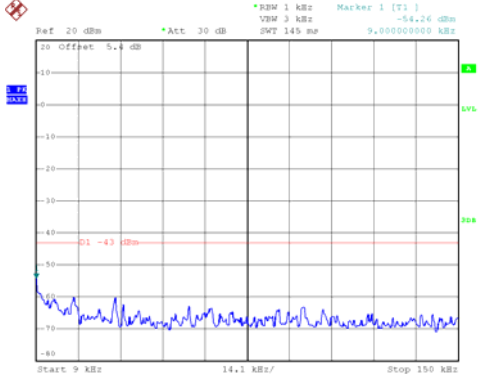
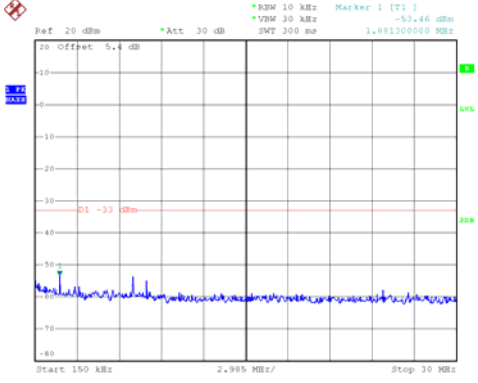
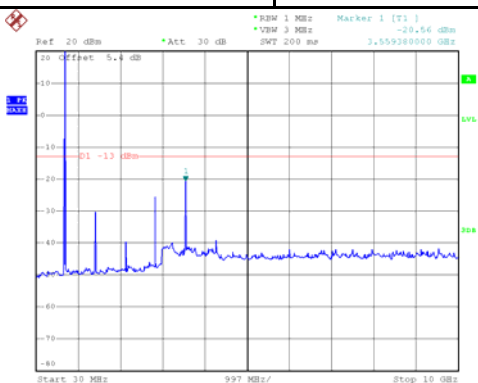
LTE Band 4_1.4M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

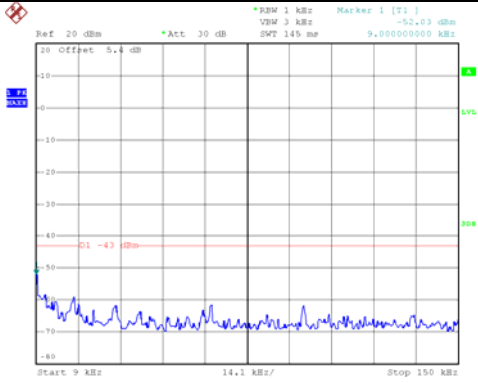
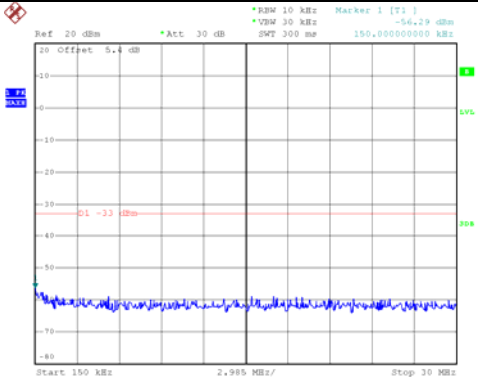
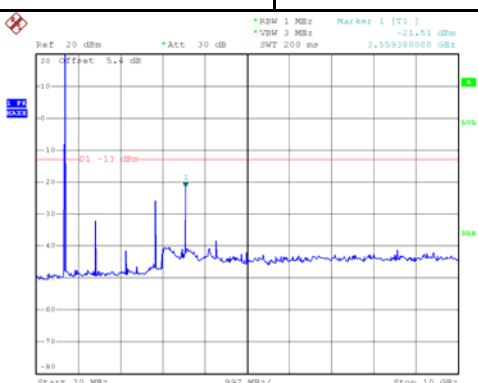
LTE Band 4_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

LTE Band 4_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
 Date: 31.AUG.2018 14:17:07		 Date: 31.AUG.2018 14:16:27	
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
 Date: 31.AUG.2018 16:33:58		-	

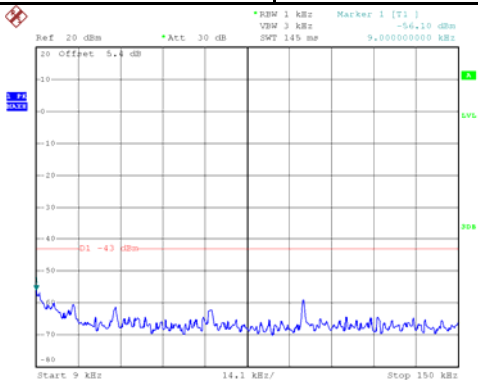
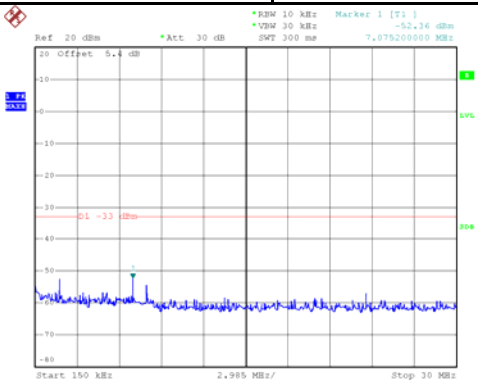
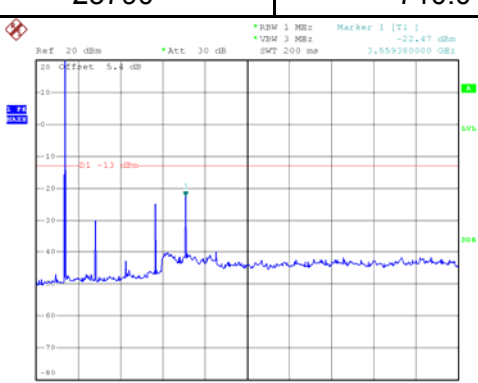
LTE Band 7_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

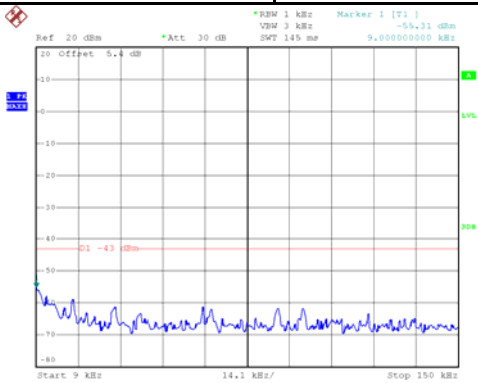
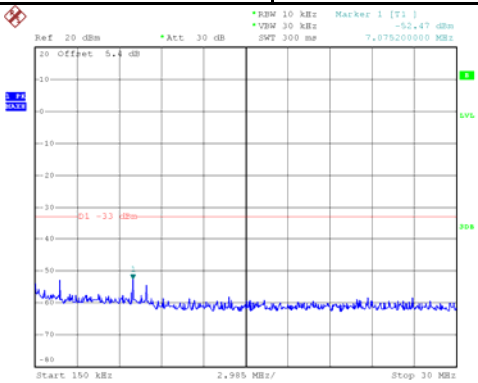
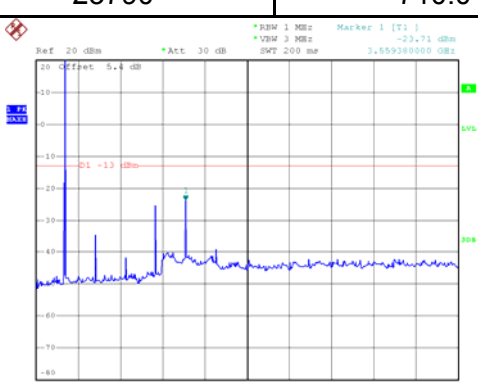
LTE Band 7_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
 Ref: 20 dBm *Att: 30 dB *RBW: 1 kHz Marker: 1 [T1] -54.03 dBm VSW: 2 kHz SWT: 145 ms 9.000000000 kHz Start: 9 kHz 14.1 kHz/ Stop: 150 kHz Date: 31.AUG.2018 14:26:12		 Ref: 20 dBm *Att: 30 dB *RBW: 10 kHz Marker: 1 [T1] -54.61 dBm VSW: 30 kHz SWT: 200 ms 150.000000000 kHz Start: 150 kHz 2.995 MHz/ Stop: 30 MHz Date: 31.AUG.2018 14:25:12	
Channel	Frequency(MHz)	-	-
21100	2535	-	-
 Ref: 20 dBm *Att: 30 dB *RBW: 1 MHz Marker: 1 [T1] -24.14 dBm VSW: 1 MHz SWT: 400 ms 700.040000000 MHz Start: 30 MHz 1.997 GHz/ Stop: 20 GHz Date: 1.SEP.2018 20:44:04		-	

LTE Band 12_1.4M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
 Date: 31.AUG.2018 14:28:29		 Date: 31.AUG.2018 14:29:50	
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
 Date: 31.AUG.2018 16:48:44		-	

LTE Band 12_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
 Ref: 20 dBm *Att: 30 dB *RBW: 1 kHz Marker: 1 [T1] -52.03 dBm VSW: 2 kHz SWT: 145 ms 9.000000000 kHz Start 9 kHz 14.1 kHz/ Stop 150 kHz Date: 31.AUG.2018 14:28:20		 Ref: 20 dBm *Att: 30 dB *RBW: 10 kHz Marker: 1 [T1] -56.29 dBm VSW: 30 kHz SWT: 300 ms 150.000000000 kHz Start 150 kHz 2.995 MHz/ Stop 30 MHz Date: 31.AUG.2018 14:29:30	
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
 Ref: 20 dBm *Att: 30 dB *RBW: 3 MHz Marker: 1 [T1] -21.51 dBm VSW: 3 MHz SWT: 200 ms 3.559200000 GHz Start 30 MHz 997 MHz/ Stop 10 GHz Date: 31.AUG.2018 16:48:55		-	

LTE Band 12_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
Date: 31.AUG.2018 14:28:41		Date: 31.AUG.2018 14:29:12	
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
Date: 31.AUG.2018 16:48:31		-	

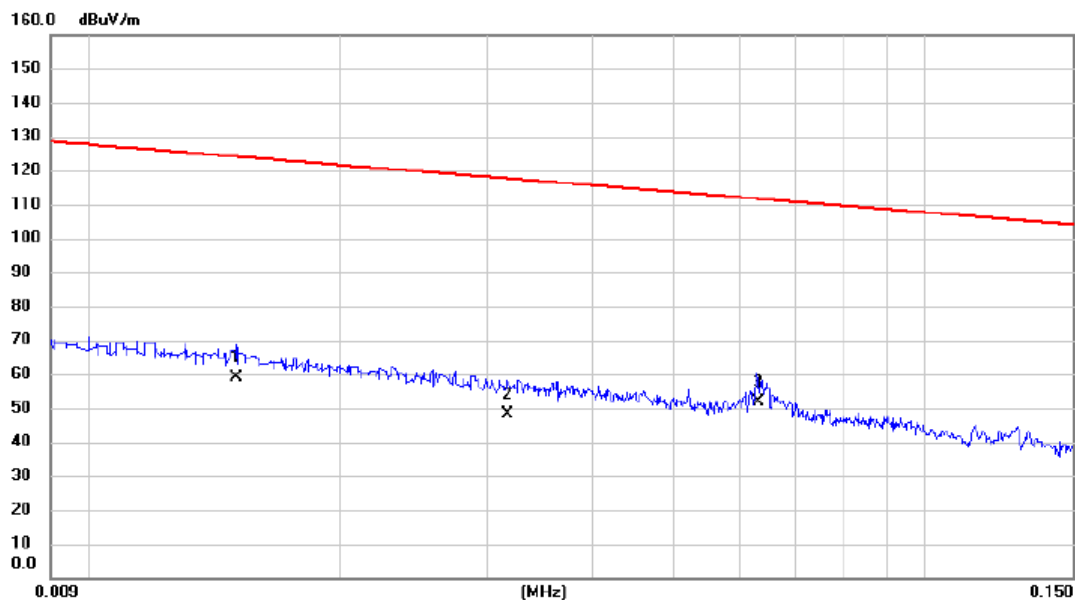
LTE Band 17_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23790	710.0	23790	710.0
 Date: 31.AUG.2018 14:33:20		 Date: 31.AUG.2018 14:32:46	
Channel	Frequency(MHz)	-	-
23790	710.0	-	-
 Date: 31.AUG.2018 16:51:43		-	

LTE Band 17_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23790	710.0	23790	710.0
 Date: 31.AUG.2018 14:33:34		 Date: 31.AUG.2018 14:33:02	
Channel	Frequency(MHz)	-	-
23790	710.0	-	-
 Date: 31.AUG.2018 16:52:05		-	

APPENDIX D - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode: TX Mode _Adapter: Huntkey

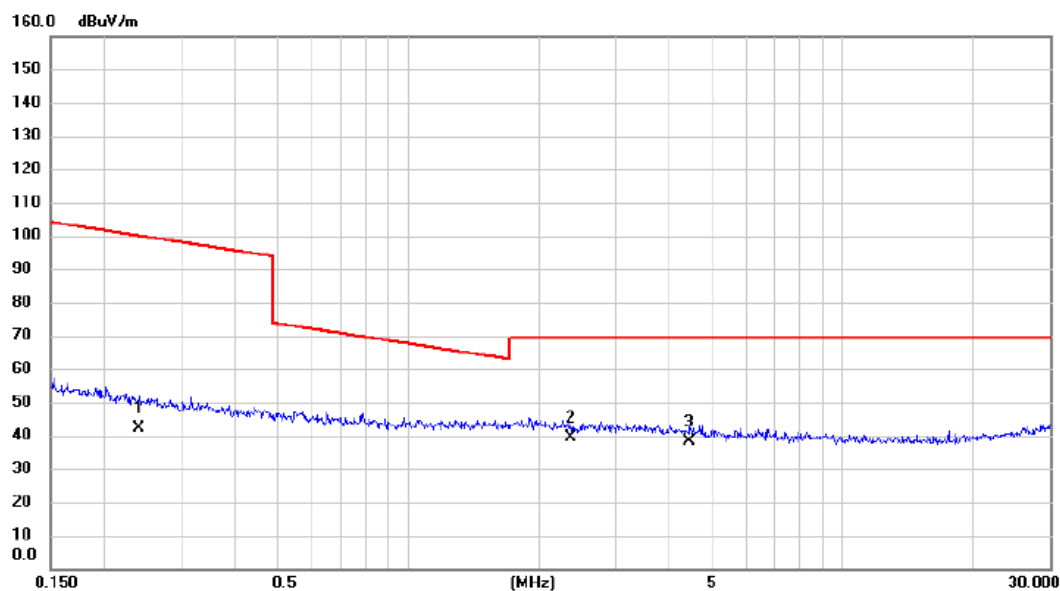
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0150	38.10	20.72	58.82	124.08	-65.26	AVG	
2		0.0317	28.30	19.82	48.12	117.58	-69.46	AVG	
3	*	0.0631	32.50	19.27	51.77	111.60	-59.83	AVG	

Test Mode: TX Mode_Adapter: Huntkey

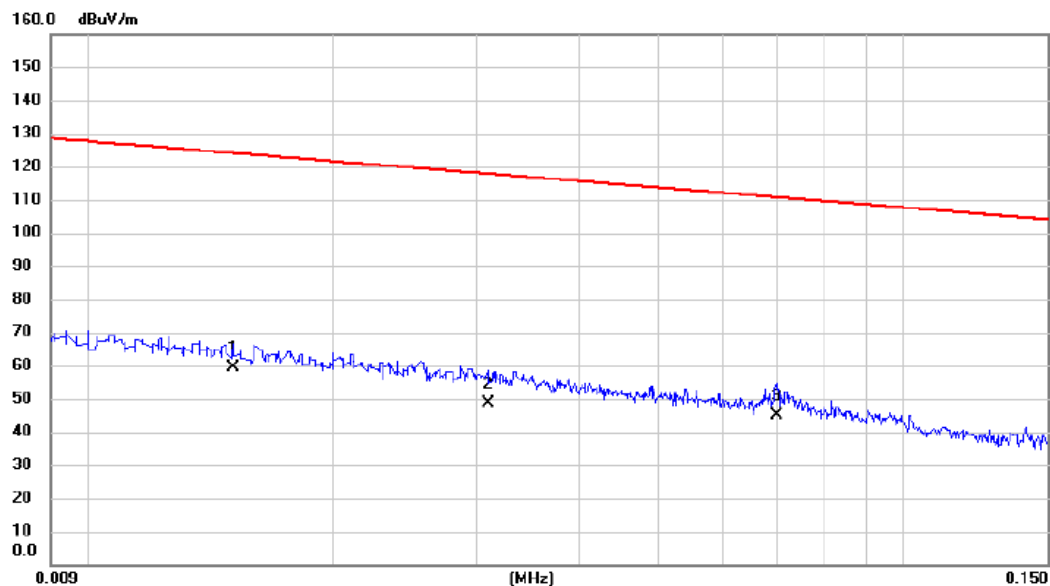
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2404	25.10	17.08	42.18	99.99	-57.81	AVG	
2	*	2.3585	22.70	16.90	39.60	69.54	-29.94	QP	
3		4.4540	22.80	15.49	38.29	69.54	-31.25	QP	

Test Mode: TX Mode_Adapter: Huntkey

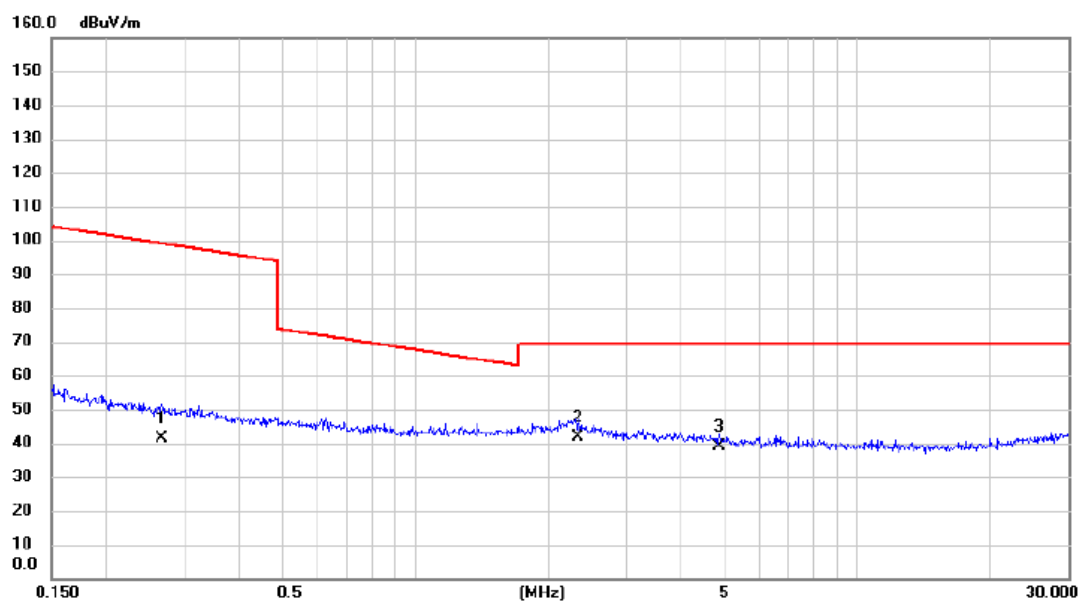
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0151	38.50	20.71	59.21	124.03	-64.82	AVG	
2		0.0310	28.80	19.84	48.64	117.78	-69.14	AVG	
3		0.0700	25.70	19.13	44.83	110.70	-65.87	AVG	

Test Mode: TX Mode_Adapter: Huntkey

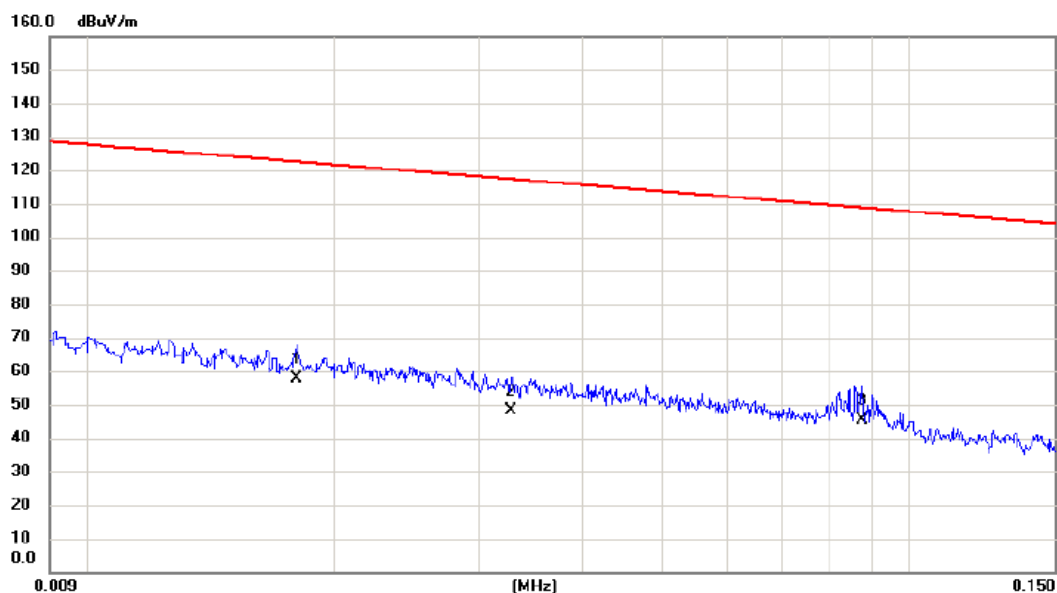
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2672	24.30	17.05	41.35	99.07	-57.72	AVG	
2	*	2.3336	24.70	16.92	41.62	69.54	-27.92	QP	
3		4.8738	23.60	15.25	38.85	69.54	-30.69	QP	

Test Mode: TX Mode_Adapter: PHITEK

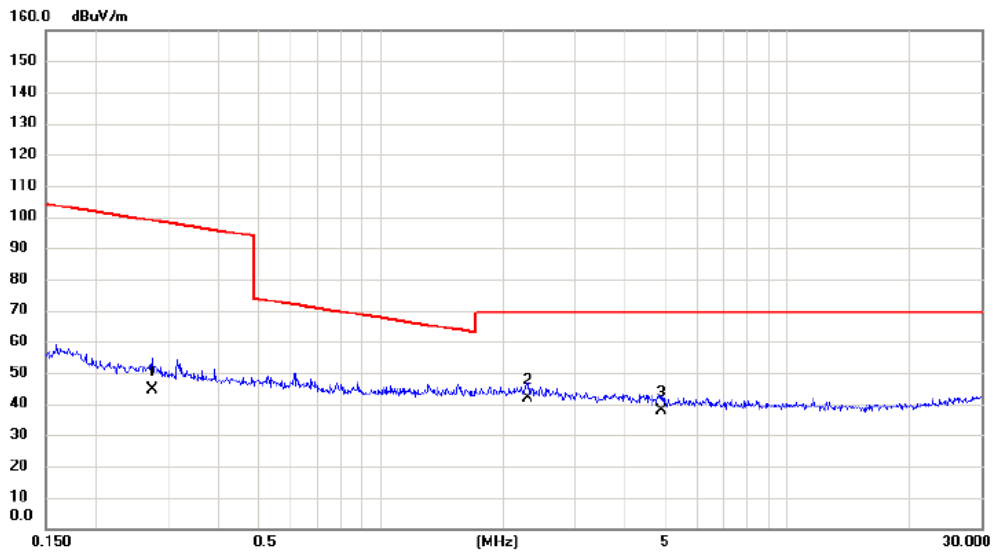
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0180	37.60	20.30	57.90	122.50	-64.60	AVG	
2		0.0328	28.50	19.81	48.31	117.29	-68.98	AVG	
3	*	0.0875	26.80	18.73	45.53	108.76	-63.23	AVG	

Test Mode: TX Mode_Adapter: PHITEK

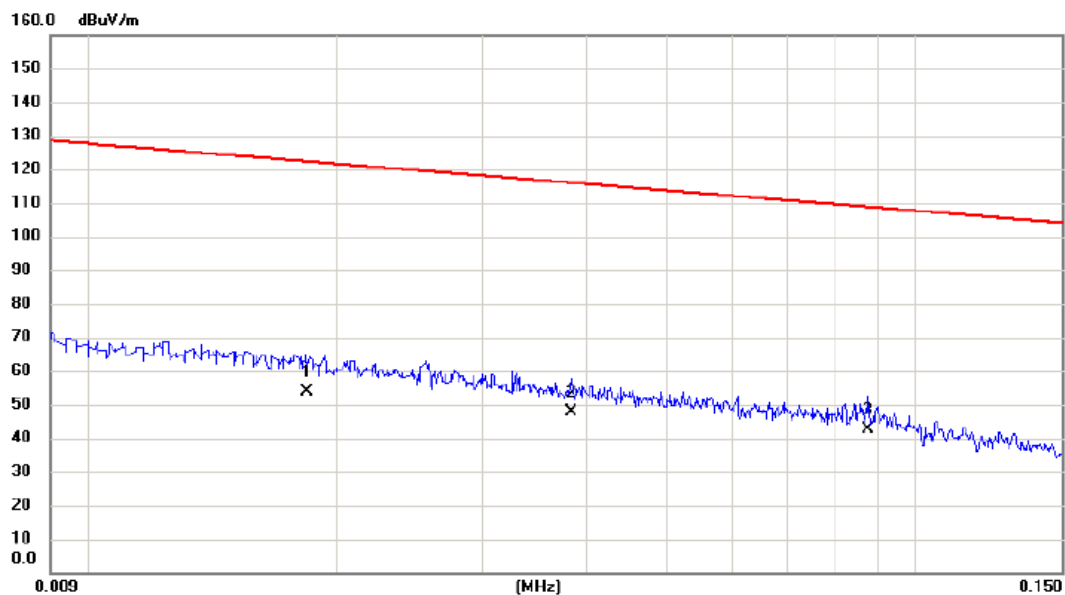
Ant 0°



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	0.2744	27.50	17.05	44.55	98.84	-54.29	AVG	
2 *	2.2968	24.80	16.94	41.74	69.54	-27.80	QP	
3	4.8997	22.40	15.23	37.63	69.54	-31.91	QP	

Test Mode: TX Mode_Adapter: PHITEK

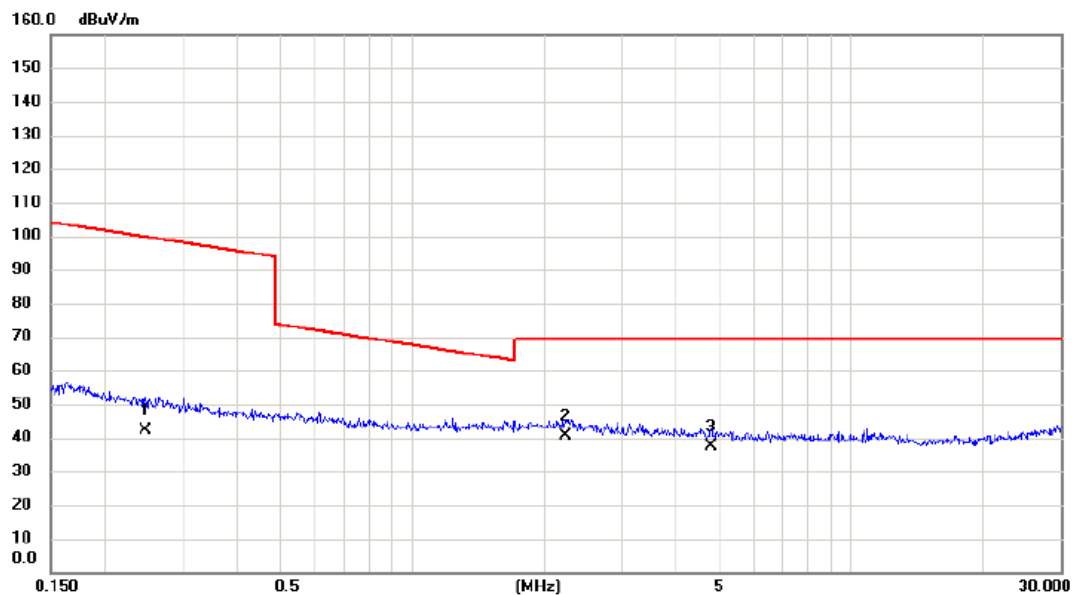
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0184	33.60	20.24	53.84	122.31	-68.47	AVG	
2		0.0383	28.10	19.72	47.82	115.94	-68.12	AVG	
3	*	0.0875	23.70	18.73	42.43	108.76	-66.33	AVG	

Test Mode: TX Mode_Adapter: PHITEK

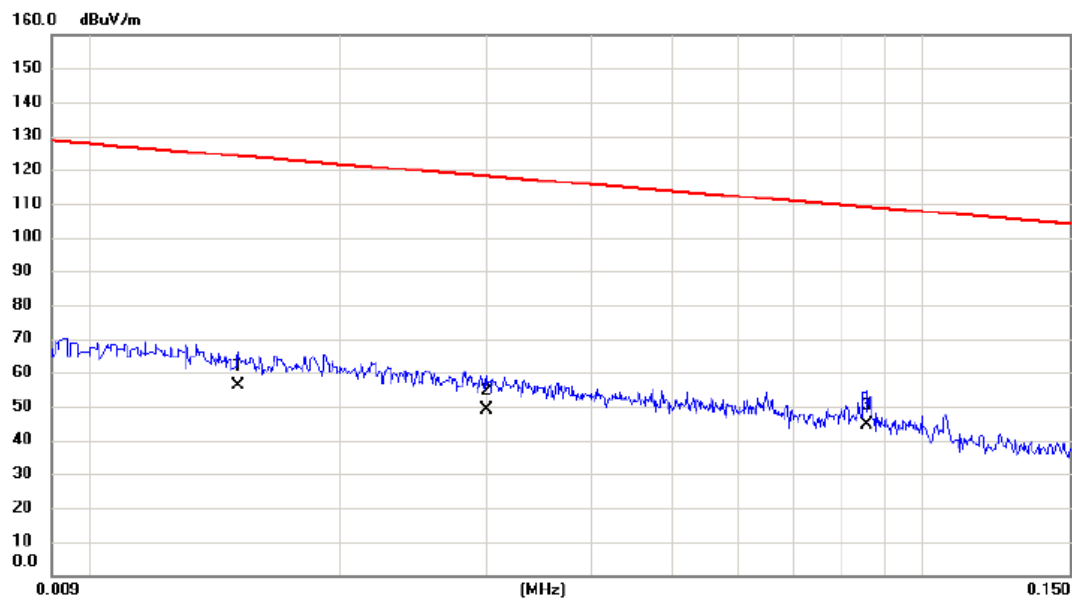
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2468	25.20	17.07	42.27	99.76	-57.49	AVG	
2	*	2.2367	23.60	16.97	40.57	69.54	-28.97	QP	
3		4.7970	22.20	15.29	37.49	69.54	-32.05	QP	

Test Mode: TX Mode _Adapter: BYD

Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0151	35.60	20.71	56.31	124.03	-67.72	AVG	
2		0.0300	29.21	19.85	49.06	118.06	-69.00	AVG	
3	*	0.0857	25.90	18.77	44.67	108.95	-64.28	AVG	