FCC Radio Test Report

FCC ID: QISME919BS-567A

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

Project No.	: 1702C029
Equipment	: LTE Module
Model Name	: ME919Bs-567bN
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	: Feb. 08, 2017
Date of Test	: Feb. 08, 2017 ~ Feb. 16, 2017
Issued Date	: Feb. 16, 2017
Tested by	: BTL Inc.

Technical Engineer : shawn xiao
(Shawn Xiao)

Authorized Signatory : Steven Lu
(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).

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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-3-1702C029	Original Issue.	Feb. 16, 2017

1. CERTIFICATION

Equipment	:	LTE Module
Brand Name	:	HUAWEI
Model Name	:	ME919Bs-567bN
Applicant	:	Huawei Technologies Co., Ltd.
Manufacturer	:	Huawei Technologies Co., Ltd
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China
Factory	:	Huawei Technologies Co., Ltd
Address	:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China
Date of Test	:	Feb. 08, 2017 ~ Feb. 16, 2017
Test Sample	:	Engineering Sample
Standard(s)	:	47 CFR FCC Part 27 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-3-1702C029) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

Test results included in this report is only for the WCDMA Band 4, LTE Band 4, 7, 12, 13, 29 parts and the LTE Band 29 only Downlink function.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

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

NOTE:

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

2.1 TEST FACILITY

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

Radiated: No.2 New City Avenue Songshan Lake Sci. &Tech. Industry Park, Dongguan, Guangdong, P.R.C

BTL's test firm number for FCC: 319330

HUAWEI's test firm number for FCC: 97456

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. The BTL / HUAWEI measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

The reported uncertainty of measurement **y** ± **U**, where expanded uncertainty **U** is based on astandard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95**%.

System Measurement Uncertainty	
Items	Extended Uncertainty
RE(9KHz-30MHz)	U(E)=4.2, k=2
RSE(30MHz-26.5GHz)	U=4.9,k=2

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	LTE Module	
Brand Name	HUAWEI	
Model Name	ME919Bs-567bN	
Model Difference	N/A	
Modulation Type	WCDMA	Uplink: BPSK Downlink: QPSK
	WCDMA(HSDPA/HSUPA/HSPA+/DC-HSDPA/DC-HSUPA)	16QAM/64QAM
	LTE	QPSK, 16QAM
Operation Frequency	WCDMA Band 4	1712.4 ~1752.6MHz
	LTE 4 (Channel Bandwidth: 1.4MHz)	1710.7 ~ 1754.3 MHz
	LTE 4 (Channel Bandwidth: 3MHz)	1711.5 ~ 1753.5 MHz
	LTE 4 (Channel Bandwidth: 5MHz)	1712.5 ~ 1752.5 MHz
	LTE 4 (Channel Bandwidth: 10MHz)	1715.0 ~ 1750.0 MHz
	LTE 4 (Channel Bandwidth: 15MHz)	1717.5 ~ 1747.5 MHz
	LTE 4 (Channel Bandwidth: 20MHz)	1720.0 ~ 1745.0 MHz
	LTE 7 (Channel Bandwidth: 5MHz)	2502.5 ~ 2567.5 MHz
	LTE 7 (Channel Bandwidth: 10MHz)	2505.0 ~ 2565.0 MHz
	LTE 7 (Channel Bandwidth: 15MHz)	2507.5 ~ 2562.5 MHz
	LTE 7 (Channel Bandwidth: 20MHz)	2510.0 ~ 2560.0 MHz
	LTE 12 (Channel Bandwidth: 1.4MHz)	699.7 ~ 715.3MHz
	LTE 12 (Channel Bandwidth: 3MHz)	700.5 ~ 714.5MHz
	LTE 12 (Channel Bandwidth: 5MHz)	701.5 ~ 713.5MHz
	LTE 12 (Channel Bandwidth: 10MHz)	704.0 ~ 711.0MHz
	LTE 13 (Channel Bandwidth: 5MHz)	779.5 ~ 784.5MHz
	LTE 13 (Channel Bandwidth: 10MHz)	782.0MHz
	LTE 29	716~728 MHz(Downlink)

Max. EIRP Power	WCDMA Band 4(WCDMA)	BPSK	25.83	dBm
	WCDMA Band 4(HSDPA)	16QAM	25.89	dBm
	WCDMA Band 4(HSUPA)	16QAM	25.90	dBm
	LTE 4 (Channel Bandwidth: 1.4MHz)	QPSK	24.60	dBm
		16QAM	23.85	dBm
	LTE 4 (Channel Bandwidth: 3MHz)	QPSK	24.63	dBm
		16QAM	23.95	dBm
	LTE 4 (Channel Bandwidth: 5MHz)	QPSK	24.71	dBm
		16QAM	23.88	dBm
	LTE 4 (Channel Bandwidth: 10MHz)	QPSK	24.77	dBm
		16QAM	23.99	dBm
	LTE 4 (Channel Bandwidth: 15MHz)	QPSK	24.87	dBm
		16QAM	24.80	dBm
	LTE 4 (Channel Bandwidth: 20MHz)	QPSK	24.91	dBm
		16QAM	24.17	dBm
	LTE 7 (Channel Bandwidth: 5MHz)	QPSK	24.50	dBm
		16QAM	23.92	dBm
	LTE 7 (Channel Bandwidth: 10MHz)	QPSK	24.50	dBm
		16QAM	23.90	dBm
	LTE 7 (Channel Bandwidth: 15MHz)	QPSK	24.52	dBm
		16QAM	23.93	dBm
	LTE 7 (Channel Bandwidth: 20MHz)	QPSK	24.53	dBm
		16QAM	23.92	dBm
Max. ERP Power	LTE 12 (Channel Bandwidth: 1.4MHz)	QPSK	22.45	dBm
		16QAM	21.79	dBm
	LTE 12 (Channel Bandwidth: 3MHz)	QPSK	22.44	dBm
		16QAM	21.97	dBm
	LTE 12 (Channel Bandwidth: 5MHz)	QPSK	22.82	dBm
		16QAM	22.16	dBm
	LTE 12 (Channel Bandwidth: 10MHz)	QPSK	22.93	dBm
		16QAM	22.11	dBm
	LTE 13 (Channel Bandwidth: 5MHz)	QPSK	22.99	dBm
		16QAM	22.30	dBm
	LTE 13 (Channel Bandwidth: 10MHz)	QPSK	22.76	dBm
		16QAM	22.06	dBm

Antenna Type	External Antenna	
Antenna Gain	2.5 dBi	
Hardware Version	RM1ME919BSTM	
Softwarre Version	11.670.05.00.1400	
IMEI No.1	Radiated	863663030004896
	Conducted	863663030007800
Power Source	#1 Supplied from PC USB port or adapter. #2 Battery Supplied.	
Power Rating	#1 100-240V~ 50/60Hz #2 ⎓ 4.0V	

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

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

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

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
Conducted Emission	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Band Edge	19957 to 20393	19957	1.4MHz	QPSK	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		20393	1.4MHz	QPSK	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	19965 to 20385	19965	3MHz	QPSK	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		20385	3MHz	QPSK	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	19975 to 20375	19975	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		20375	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20000 to 20350	20000	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		20350	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	20025 to 20325	20025	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		20325	15MHz	QPSK	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	20050 to 20300	20050	20MHz	QPSK	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		20300	20MHz	QPSK	1 RB / 99 RB Offset
					100 RB / 0 RB Offset
Peak To Average Ratio	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 7					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Occupied Bandwidth	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
Conducted Emission	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
	20800 to 21400	21100	10MHz	QPSK	1 RB / 0 RB Offset
	20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
	20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
	20850 to 21350	21100	20MHz **(Note)**	QPSK	1 RB / 0 RB Offset
Band Edge	20775 to 21425	20775	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		21425	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20800 to 21400	20800	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		21400	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	20825 to 21375	20825	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		21375	15MHz	QPSK	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	20850 to 21350	20850	20MHz	QPSK	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		21350	20MHz	QPSK	1 RB / 99 RB Offset
					100 RB / 0 RB Offset
Peak To Average Ratio	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
	20800 to 21400	21100	10MHz	QPSK	1 RB / 0 RB Offset
	20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
	20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB Offset

Note: For 18G to 26.5G, the hightest bandwidth is worst case and recording in the test report.

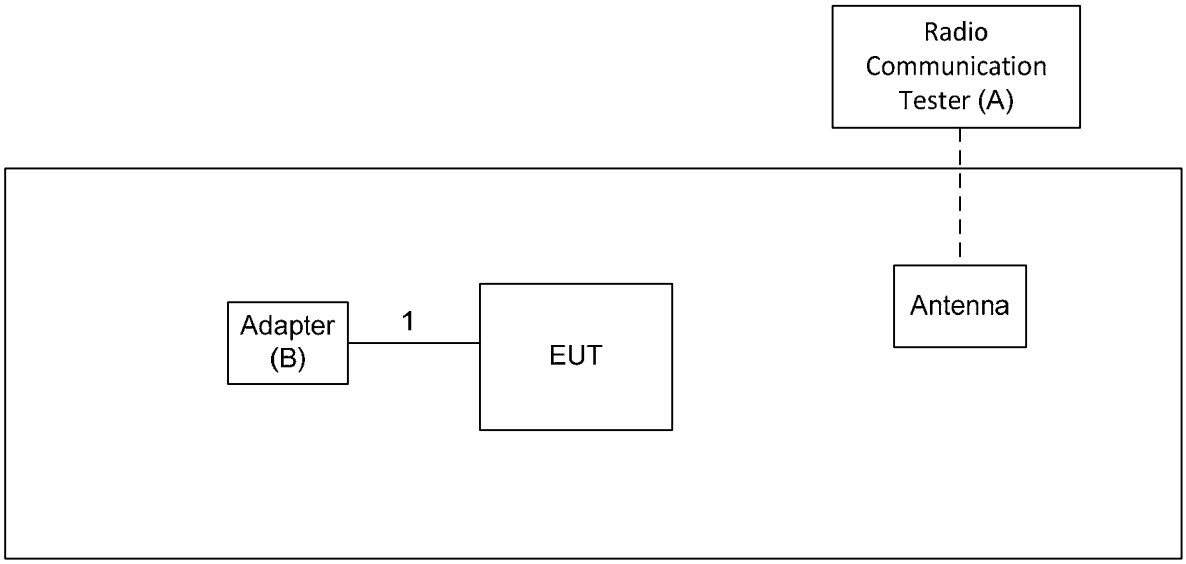
LTE BAND 12					
Test Item	Available Channel	Tested Channel	Channel	Modulation	Mode
ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB / 2 RB Offset
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1 RB / 7 RB Offset
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
Conducted Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
	23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
	23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
	23060 to 23130	23095	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
	23060 to 23130	23095	10MHz	QPSK	1 RB / 0 RB Offset
Band Edge	23017 to 23173	23017	1.4MHz	QPSK	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		23173	1.4MHz	QPSK	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	23025 to 23165	23025	3MHz	QPSK	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		23165	3MHz	QPSK	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	23035 to 23155	23035	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		23155	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	23060 to 23130	23060	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		23130	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 2 RB Offset
	23025 to 23165	23095	3MHz	QPSK	1 RB / 7 RB Offset
	23035 to 23155	23095	5MHz	QPSK	1 RB / 12 RB Offset
	23060 to 23130	23095	10MHz	QPSK	1 RB / 24 RB Offset

LTE BAND 13					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
Occupied Bandwidth	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
Conducted Emission	23205 to 23255	23230	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	23230	23230	10MHz	QPSK	1 RB / 24 RB Offset
					1 RB / 50 RB Offset
Band Edge	23205 to 23255	23205	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		23255	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		23230	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
Peak to Average Ratio	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	23205 to 23255	23230	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 24 RB Offset

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP	24°C, 63%RH	DC 4.0V
Conducted Output Power	25°C, 65%RH	DC 4.0V
Occupied Bandwidth	25°C, 65%RH	DC 4.0V
Conducted Emission	25°C, 65%RH	DC 4.0V
Radiated Emission	25°C, 60%RH	AC 120V/60Hz
Band Edge	25°C, 65%RH	DC 4.0V
Peak to Average Ratio	25°C, 65%RH	DC 4.0V
Frequency Stability	25°C, 65%RH	DC 4.0V

3.3 BLOCKDIGRAMSHOWINGTHECONFIGURATIONOFSYSTEMTESTED 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.
A	Radio Communication Tester	R&S	CMU200	N/A	3608082535
		Anritsu	MT8820C	N/A	A110518805
B	Adaptor	Huawei	HW-050200U3W	N/A	HWHKA8G62400013

Item	Shielded Type	Ferrite Core	Length	Note
1	YES	NO	1m	USB 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 4 & 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, LTE 13)

4.1.2 TEST PROCEDURE

EIRP/ERP:

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

Conducted Power:

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

4.1.3 TESTSETUP LAYOUT

Conducted Power Measurement

4.1.4 TEST DEVIATION

No deviation

4.1.5 TEST RESULTS

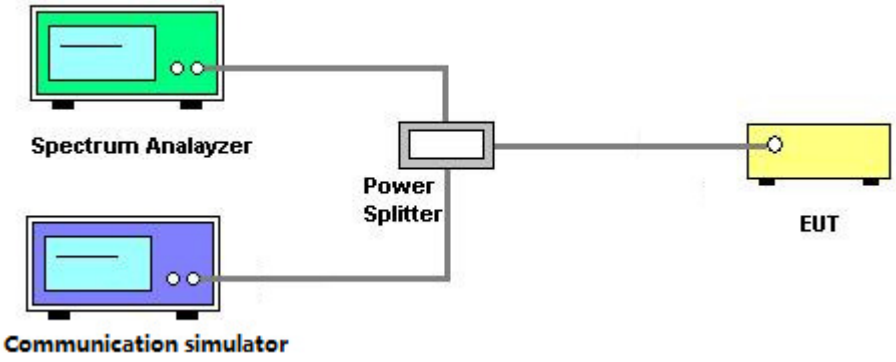
Please refer to the Attachment A.

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 Attachment B.

4.3 CONDUCTED EMISSIONS MEASUREMENT

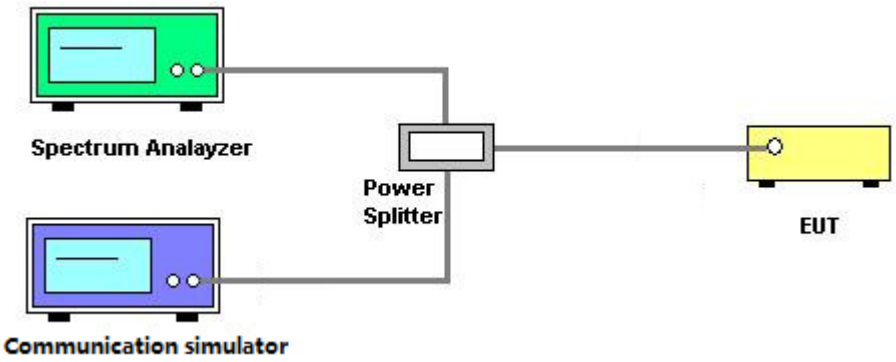
4.3.1 LIMIT

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.

4.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v02r02 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.
6. The limit line is derived from 43+10log(P)dB below the transmitter power P(Watts)
   =P(W)-[43+10log(P)](dB)
   =[30+10log(P)](dBm)-[43+10log(P)](dB)
   =-13dBm

4.3.3 TESTSETUP LAYOUT



4.3.4 TESTDEVIATION

No deviation

4.3.5 TEST RESULTS

Please refer to the Attachment 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.

4.4.2 TEST PROCEDURES

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

4.4.3 TESTSETUP LAYOUT

This test setup layout is the same as that shown in **section 4.1.3.**

4.4.4 TESTDEVIATION

No deviation

4.4.5 TEST RESULTS

Please refer to the Attachment D.

4.5 BAND EDGE MEASUREMENT

4.5.1 LIMIT

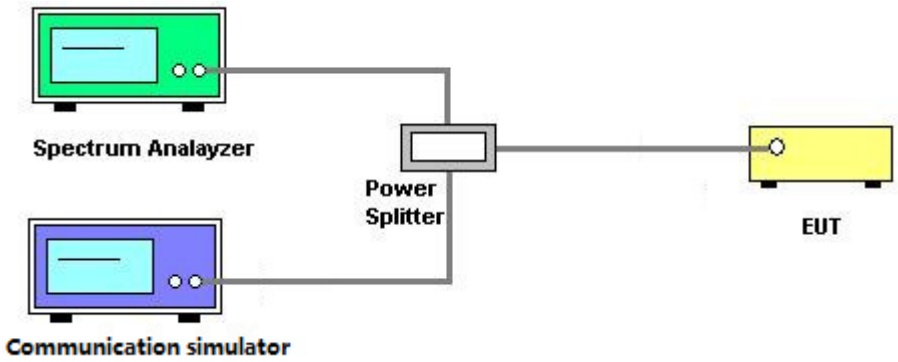
For operations in the 699-716 , 704-716 and 777-787MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this 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.

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

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 5MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA).
3. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 13kHz and VB of the spectrum is 51kHz (LTE Bandwidth 1.4MHz).
4. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Bandwidth 3MHz).
5. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 5MHz/10MHz).
6. 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 Attachment E.

4.6 PEAK TO AVERAGE RATIO MEASUREMENT

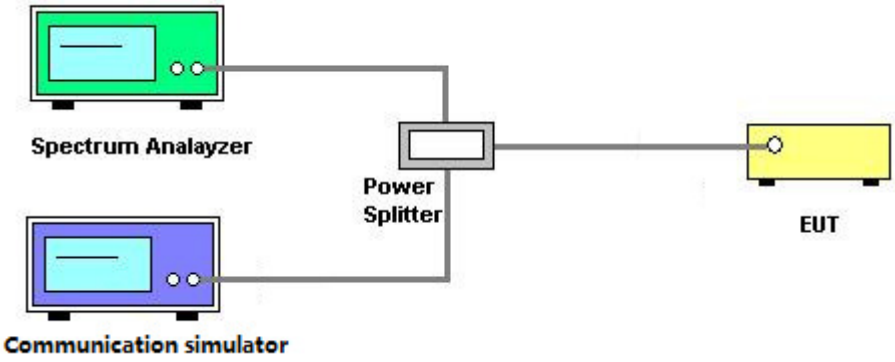
4.6.1 LIMIT

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 ≥ 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 Attachment F.

4.7 FREQUENCY STABILITY MEASUREMENT

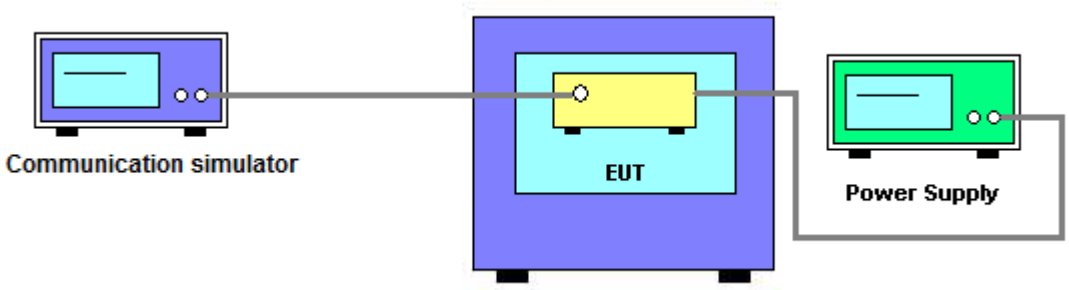
4.7.1 LIMIT

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 ±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.

4.7.3 TESTSETUP LAYOUT



4.7.4 TESTDEVIATION

No deviation

4.7.5 TEST RESULTS

Please refer to the Attachment G.

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Test receiver	R&S	ESU26	100387	Jul. 21, 2017
2	LOOP Antennas(9kHz-30MHz)	R&S	HFH2-Z2	100263	Apr. 29, 2017
3	Spectrum analyzer	R&S	FSU3	200474	May 24, 2017
4	Spectrum analyzer	R&S	FSU43	100144	Jun. 02, 2017
5	Trilog Broadband Antenna (30M~3GHz)	SCHWARZBECK	VULB 9163	9163-521	Apr. 08, 2017
6	Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100304	Apr. 29, 2017
7	Pyramidal Horn Antenna(18GHz-26.5GHz)	ETS-Lindgren	Sep-60	5140299	Jul. 14, 2017
8	Radio Communication Tester	R&S	CMU200	3608082535	Mar. 30, 2017
9	Radio Communication Tester	Anritsu	MT8820C	A110518805	May 23, 2017

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 27, 2017
2	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Feb. 26, 2017
3	wideband radio communication tester	R&S	CMW500	152372	Mar. 27, 2017
4	Cable	N/A	RG316(0.3m)	N/A	Jul. 06, 2017
5	Cable	N/A	RG316(0.3m)	N/A	Jul. 06, 2017

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	DC power supply	GW Instek	GPC-3030DN	EK880675	Oct. 13, 2017
2	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Feb. 26, 2017
3	wideband radio communication tester	R&S	CMW500	152372	Mar. 27, 2017
4	Const Temp,& Humidity Chamber	Giant Force	ITH-225-20-S	IAB0309-001	Sep. 04, 2017
5	Cable	N/A	RG316(0.3m)	N/A	Jul. 06, 2017

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

ATTACHMENT A - OUTPUT POWER

Conducted Power:

Modulation	Band	WCDMA IV		
	Tx Channel	1312 CH	1413 CH	1513 CH
	Rx Channel	1537 CH	1638 CH	1738 CH
	Frequency	1712.4	1732.6	1752.6
BPSK	RMC 12.2K	23.31	23.13	23.24
	RMC 64K	23.33	23.16	23.27
	RMC 144K	23.26	23.15	23.25
	RMC 384K	23.16	22.96	23.03
16QAM	HSDPA Subtest-1	23.39	23.14	23.26
	HSDPA Subtest-2	22.90	22.64	22.79
	HSDPA Subtest-3	22.39	22.14	22.32
	HSDPA Subtest-4	22.34	22.15	22.27
16QAM	HSUPA Subtest-1	22.74	22.66	22.76
	HSUPA Subtest-2	23.40	23.17	22.98
	HSUPA Subtest-3	22.76	22.14	22.36
	HSUPA Subtest-4	23.36	23.17	23.04
	HSUPA Subtest-5	22.78	23.16	23.30

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19957 CH	20175 CH	20393 CH
				1710.7 MHz	1732.5 MHz	1754.3 MHz
4 / 1.4M	QPSK	1	0	21.51	22.00	21.94
		1	2	21.57	22.06	22.06
		1	5	21.48	22.02	22.03
		3	0	21.49	22.09	21.99
		3	1	21.51	22.10	22.02
		3	3	21.47	22.08	22.06
		6	0	20.61	21.18	21.08
	16QAM	1	0	20.69	21.30	21.11
		1	2	20.79	21.35	21.17
		1	5	20.69	21.33	21.14
		3	0	20.71	21.27	21.16
		3	1	20.75	21.27	21.18
		3	3	20.70	21.30	21.22
		6	0	19.70	20.37	20.26

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19965 CH	20175 CH	20385 CH
				1711.5 MHz	1732.5 MHz	1753.5 MHz
4 / 3M	QPSK	1	0	21.34	21.89	21.98
		1	7	21.53	22.13	22.06
		1	14	21.30	21.92	21.92
		8	0	20.47	21.06	21.00
		8	3	20.51	21.16	20.98
		8	7	20.41	21.13	20.94
		15	0	20.49	21.12	20.93
	16QAM	1	0	20.69	21.20	21.04
		1	7	20.95	21.45	21.16
		1	14	20.51	21.24	21.00
		8	0	19.69	20.27	20.05
		8	3	19.75	20.36	20.04
		8	7	19.67	20.33	20.00
		15	0	19.65	20.33	19.98

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19975 CH	20175 CH	20375 CH
				1712.5 MHz	1732.5 MHz	1752.5 MHz
4 / 5M	QPSK	1	0	21.41	21.87	22.21
		1	12	21.54	22.16	22.02
		1	24	21.31	21.94	21.81
		12	0	20.53	21.10	21.17
		12	6	20.58	21.18	21.11
		12	13	20.46	21.22	20.94
		25	0	20.43	21.11	21.01
	16QAM	1	0	20.74	21.11	21.36
		1	12	20.67	21.38	21.29
		1	24	20.39	21.09	21.09
		12	0	19.68	20.23	20.38
		12	6	19.74	20.30	20.25
		12	13	19.68	20.30	20.10
		25	0	19.55	20.29	20.05

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20000 CH	20175 CH	20350 CH
				1715 MHz	1732.5 MHz	1750 MHz
4 / 10M	QPSK	1	0	21.29	21.64	22.20
		1	24	21.63	22.11	22.27
		1	49	21.36	22.14	21.87
		25	0	20.53	21.07	21.30
		25	12	20.37	21.18	21.25
		25	25	20.41	21.23	21.04
		50	0	20.58	21.09	21.16
	16QAM	1	0	20.68	20.98	21.45
		1	24	20.79	21.46	21.49
		1	49	20.59	21.37	21.11
		25	0	19.72	20.20	20.37
		25	12	19.47	20.34	20.38
		25	25	19.54	20.34	20.08
		50	0	19.75	20.24	20.29

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20025 CH	20175 CH	20325 CH
				1717.5 MHz	1732.5 MHz	1747.5 MHz
4 / 15M	QPSK	1	0	21.31	21.67	22.23
		1	37	21.55	22.11	22.37
		1	74	21.57	22.16	21.79
		36	0	20.47	22.16	21.44
		36	19	20.57	21.12	21.36
		36	39	20.53	21.32	21.05
		75	0	20.61	21.13	21.29
	16QAM	1	0	20.78	21.11	21.37
		1	37	20.91	21.56	21.58
		1	74	20.98	21.50	21.03
		36	0	19.72	21.50	20.66
		36	19	19.79	20.27	20.58
		36	39	19.71	20.44	20.16
		75	0	19.79	20.32	20.47

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20050 CH	20175 CH	20300 CH
				1720 MHz	1732.5 MHz	1745 MHz
4 / 20M	QPSK	1	0	20.99	21.35	21.88
		1	50	21.49	20.75	22.41
		1	99	21.25	21.86	21.56
		50	0	20.44	20.94	21.46
		50	25	20.57	21.11	21.43
		50	50	20.75	21.32	21.12
		100	0	20.70	21.16	21.26
	16QAM	1	0	20.49	20.74	21.26
		1	50	20.91	19.92	21.67
		1	99	20.69	21.22	20.88
		50	0	19.67	20.14	20.65
		50	25	19.68	20.32	20.67
		50	50	19.92	20.57	20.34
		100	0	19.77	20.29	20.48

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20775 CH	21100 CH	21425 CH
				2502.5 MHz	2535 MHz	2567.5 MHz
7 / 5M	QPSK	1	0	21.49	22.00	22.00
		1	12	21.48	21.94	21.81
		1	24	21.26	21.80	21.46
		12	0	20.64	21.15	21.22
		12	6	20.66	21.22	21.20
		12	13	20.62	21.26	21.06
		25	0	20.55	21.23	21.14
	16QAM	1	0	20.92	21.28	21.42
		1	12	20.81	21.22	21.19
		1	24	20.61	21.02	20.94
		12	0	19.81	20.34	20.44
		12	6	19.88	20.37	20.44
		12	13	19.84	20.46	20.30
		25	0	19.72	20.41	20.32

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20800 CH	21100 CH	21400 CH
				2505 MHz	2535 MHz	2565 MHz
7 / 10M	QPSK	1	0	21.51	22.00	21.96
		1	24	21.55	21.97	21.96
		1	49	21.44	21.79	21.49
		25	0	20.68	21.17	21.21
		25	12	20.70	21.31	21.21
		25	25	20.69	21.28	21.09
		50	0	20.73	21.27	21.20
	16QAM	1	0	20.83	21.40	21.15
		1	24	20.79	21.38	21.10
		1	49	20.70	21.21	20.72
		25	0	19.76	20.28	20.34
		25	12	19.76	20.45	20.40
		25	25	19.75	20.42	20.29
		50	0	19.82	20.43	20.37

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20825 CH	21100 CH	21375 CH
				2507.5 MHz	2535 MHz	2562.5 MHz
7 / 15M	QPSK	1	0	21.38	21.85	21.78
		1	37	21.61	22.02	21.90
		1	74	21.35	21.57	21.36
		36	0	20.70	21.11	21.13
		36	19	20.79	21.21	21.21
		36	39	20.71	21.22	21.10
		75	0	20.70	21.20	21.24
	16QAM	1	0	20.64	21.25	21.15
		1	37	20.83	21.43	21.22
		1	74	20.71	21.03	20.71
		36	0	19.82	20.29	20.24
		36	19	19.91	20.37	20.34
		36	39	19.84	20.35	20.27
		75	0	19.79	20.35	20.40

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20850 CH	21100 CH	21350 CH
				2510 MHz	2535 MHz	2560 MHz
7 / 20M	QPSK	1	0	21.49	21.95	21.88
		1	50	21.58	22.03	21.87
		1	99	21.66	21.60	21.52
		50	0	20.75	21.25	21.25
		50	25	20.80	21.32	21.29
		50	50	20.85	21.22	21.18
		100	0	20.81	21.24	21.27
	16QAM	1	0	21.15	21.38	21.39
		1	50	21.15	21.42	21.35
		1	99	21.27	21.11	21.05
		50	0	19.88	20.42	20.44
		50	25	19.89	20.49	20.49
		50	50	19.92	20.37	20.40
		100	0	19.89	20.40	20.46

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23017 CH	23095 CH	23173 CH
				699.7 MHz	707.5 MHz	715.3 MHz
12 / 1.4M	QPSK	1	0	21.10	22.00	21.90
		1	2	21.24	22.02	22.08
		1	5	21.14	21.95	22.08
		3	0	21.19	22.00	22.00
		3	1	21.25	22.06	22.02
		3	3	21.21	22.10	22.03
		6	0	20.83	21.68	21.61
	16QAM	1	0	20.40	21.36	21.10
		1	2	20.58	21.44	21.23
		1	5	20.45	21.35	21.23
		3	0	20.36	21.27	21.13
		3	1	20.41	21.33	21.15
		3	3	20.40	21.36	21.21
		6	0	20.20	21.02	21.00

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23025 CH	23095 CH	23165 CH
				700.5 MHz	707.5 MHz	714.5 MHz
12 / 3M	QPSK	1	0	20.96	21.92	21.50
		1	7	21.34	22.09	21.94
		1	14	21.25	21.68	21.89
		8	0	20.82	21.64	21.44
		8	3	20.89	21.69	21.50
		8	7	20.99	21.58	21.54
		15	0	20.89	21.61	21.52
	16QAM	1	0	20.34	21.39	20.83
		1	7	20.76	21.62	21.21
		1	14	20.64	21.16	21.18
		8	0	20.24	20.99	20.80
		8	3	20.27	21.08	20.93
		8	7	20.40	20.88	20.96
		15	0	20.27	20.96	20.90

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23035 CH	23095 CH	23155 CH
				701.5 MHz	707.5 MHz	713.5 MHz
12 / 5M	QPSK	1	0	21.64	22.47	22.16
		1	12	21.54	22.01	21.73
		1	24	22.13	22.04	22.27
		12	0	20.93	21.54	21.34
		12	6	21.16	21.59	21.48
		12	13	21.24	21.43	21.50
		25	0	21.08	21.53	21.41
	16QAM	1	0	20.81	21.81	21.53
		1	12	20.65	21.31	21.13
		1	24	21.33	21.30	21.67
		12	0	20.27	20.87	20.71
		12	6	20.49	20.96	20.84
		12	13	20.60	20.67	20.88
		25	0	20.40	20.90	20.77

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23060 CH	23095 CH	23130 CH
				704 MHz	707.5 MHz	711 MHz
12 / 10M	QPSK	1	0	21.64	22.19	22.58
		1	24	21.97	22.08	21.66
		1	49	22.09	21.73	22.09
		25	0	21.10	21.51	21.38
		25	12	21.37	21.53	21.31
		25	25	21.39	21.23	21.11
		50	0	21.16	21.43	21.33
	16QAM	1	0	20.90	21.62	21.76
		1	24	21.22	21.54	20.77
		1	49	21.34	21.14	21.24
		25	0	20.45	20.82	20.67
		25	12	20.76	20.92	20.58
		25	25	20.80	20.49	20.43
		50	0	20.50	20.74	20.62

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23205 CH	23230 CH	23255 CH
				779.5 MHz	782.0 MHz	784.5 MHz
13 / 5M	QPSK	1	0	22.36	22.53	22.64
		1	12	22.05	22.23	22.26
		1	24	22.58	22.55	22.60
		12	0	21.52	21.73	21.85
		12	6	21.61	21.85	21.86
		12	13	21.63	21.73	21.77
		25	0	21.50	21.71	21.69
	16QAM	1	0	21.55	21.59	21.95
		1	12	21.26	21.32	21.64
		1	24	21.79	21.57	21.93
		12	0	20.67	20.72	20.97
		12	6	20.76	20.85	21.01
		12	13	20.76	20.73	20.94
		25	0	20.60	20.75	20.76

LTE Band / BW	Modulation	RB Sizet	RB Offset	Mid CH
				23230 CH
				782.0 MHz
13 / 10M	QPSK	1	0	22.27
		1	24	22.25
		1	49	22.41
		25	0	21.51
		25	12	21.72
		25	25	21.50
		50	0	21.41
	16QAM	1	0	21.57
		1	24	21.58
		1	49	21.71
		25	0	20.55
		25	12	20.75
		25	25	20.64
		50	0	20.51

EIRP Power:

Modulation	Band	WCDMA IV		
	Tx Channel	1312 CH	1413 CH	1513 CH
	Rx Channel	1537 CH	1638 CH	1738 CH
	Frequency	1712.4	1732.6	1752.6
BPSK	RMC 12.2K	25.81	25.63	25.74
	RMC 64K	25.83	25.66	25.77
	RMC 144K	25.76	25.65	25.75
	RMC 384K	25.66	25.46	25.53
16QAM	HSDPA Subtest-1	25.89	25.64	25.76
	HSDPA Subtest-2	25.40	25.14	25.29
	HSDPA Subtest-3	24.89	24.64	24.82
	HSDPA Subtest-4	24.84	24.65	24.77
16QAM	HSUPA Subtest-1	25.24	25.16	25.26
	HSUPA Subtest-2	25.90	25.67	25.48
	HSUPA Subtest-3	25.26	24.64	24.86
	HSUPA Subtest-4	25.86	25.67	25.54
	HSUPA Subtest-5	25.28	25.66	25.80

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19957 CH	20175 CH	20393 CH
				1710.7 MHz	1732.5 MHz	1754.3 MHz
4 / 1.4M	QPSK	1	0	24.01	24.50	24.44
		1	2	24.07	24.56	24.56
		1	5	23.98	24.52	24.53
		3	0	23.99	24.59	24.49
		3	1	24.01	24.60	24.52
		3	3	23.97	24.58	24.56
		6	0	23.11	23.68	23.58
	16QAM	1	0	23.19	23.80	23.61
		1	2	23.29	23.85	23.67
		1	5	23.19	23.83	23.64
		3	0	23.21	23.77	23.66
		3	1	23.25	23.77	23.68
		3	3	23.20	23.80	23.72
		6	0	22.20	22.87	22.76

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19965 CH	20175 CH	20385 CH
				1711.5 MHz	1732.5 MHz	1753.5 MHz
4 / 3M	QPSK	1	0	23.84	24.39	24.48
		1	7	24.03	24.63	24.56
		1	14	23.80	24.42	24.42
		8	0	22.97	23.56	23.50
		8	3	23.01	23.66	23.48
		8	7	22.91	23.63	23.44
		15	0	22.99	23.62	23.43
	16QAM	1	0	23.19	23.70	23.54
		1	7	23.45	23.95	23.66
		1	14	23.01	23.74	23.50
		8	0	22.19	22.77	22.55
		8	3	22.25	22.86	22.54
		8	7	22.17	22.83	22.50
		15	0	22.15	22.83	22.48

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				19975 CH	20175 CH	20375 CH
				1712.5 MHz	1732.5 MHz	1752.5 MHz
4 / 5M	QPSK	1	0	23.91	24.37	24.71
		1	12	24.04	24.66	24.52
		1	24	23.81	24.44	24.31
		12	0	23.03	23.60	23.67
		12	6	23.08	23.68	23.61
		12	13	22.96	23.72	23.44
		25	0	22.93	23.61	23.51
	16QAM	1	0	23.24	23.61	23.86
		1	12	23.17	23.88	23.79
		1	24	22.89	23.59	23.59
		12	0	22.18	22.73	22.88
		12	6	22.24	22.80	22.75
		12	13	22.18	22.80	22.60
		25	0	22.05	22.79	22.55

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20000 CH	20175 CH	20350 CH
				1715 MHz	1732.5 MHz	1750 MHz
4 / 10M	QPSK	1	0	23.79	24.14	24.70
		1	24	24.13	24.61	24.77
		1	49	23.86	24.64	24.37
		25	0	23.03	23.57	23.80
		25	12	22.87	23.68	23.75
		25	25	22.91	23.73	23.54
		50	0	23.08	23.59	23.66
	16QAM	1	0	23.18	23.48	23.95
		1	24	23.29	23.96	23.99
		1	49	23.09	23.87	23.61
		25	0	22.22	22.70	22.87
		25	12	21.97	22.84	22.88
		25	25	22.04	22.84	22.58
		50	0	22.25	22.74	22.79

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20025 CH	20175 CH	20325 CH
				1717.5 MHz	1732.5 MHz	1747.5 MHz
4 / 15M	QPSK	1	0	23.81	24.17	24.73
		1	37	24.05	24.61	24.87
		1	74	24.07	24.66	24.29
		36	0	22.97	24.66	23.94
		36	19	23.07	23.62	23.86
		36	39	23.03	23.82	23.55
		75	0	23.11	23.63	23.79
	16QAM	1	0	23.28	23.61	23.87
		1	37	23.41	24.06	24.08
		1	74	23.48	24.00	23.53
		36	0	22.22	24.00	23.16
		36	19	22.29	22.77	23.08
		36	39	22.21	22.94	22.66
		75	0	22.29	22.82	22.97

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20050 CH	20175 CH	20300 CH
				1720 MHz	1732.5 MHz	1745 MHz
4 / 20M	QPSK	1	0	23.49	23.85	24.38
		1	50	23.99	23.25	24.91
		1	99	23.75	24.36	24.06
		50	0	22.94	23.44	23.96
		50	25	23.07	23.61	23.93
		50	50	23.25	23.82	23.62
		100	0	23.20	23.66	23.76
	16QAM	1	0	22.99	23.24	23.76
		1	50	23.41	22.42	24.17
		1	99	23.19	23.72	23.38
		50	0	22.17	22.64	23.15
		50	25	22.18	22.82	23.17
		50	50	22.42	23.07	22.84
		100	0	22.27	22.79	22.98

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20775 CH	21100 CH	21425 CH
				2502.5 MHz	2535 MHz	2567.5 MHz
7 / 5M	QPSK	1	0	23.99	24.50	24.50
		1	12	23.98	24.44	24.31
		1	24	23.76	24.30	23.96
		12	0	23.14	23.65	23.72
		12	6	23.16	23.72	23.70
		12	13	23.12	23.76	23.56
		25	0	23.05	23.73	23.64
	16QAM	1	0	23.42	23.78	23.92
		1	12	23.31	23.72	23.69
		1	24	23.11	23.52	23.44
		12	0	22.31	22.84	22.94
		12	6	22.38	22.87	22.94
		12	13	22.34	22.96	22.80
		25	0	22.22	22.91	22.82

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20800 CH	21100 CH	21400 CH
				2505 MHz	2535 MHz	2565 MHz
7 / 10M	QPSK	1	0	24.01	24.50	24.46
		1	24	24.05	24.47	24.46
		1	49	23.94	24.29	23.99
		25	0	23.18	23.67	23.71
		25	12	23.20	23.81	23.71
		25	25	23.19	23.78	23.59
		50	0	23.23	23.77	23.70
	16QAM	1	0	23.33	23.90	23.65
		1	24	23.29	23.88	23.60
		1	49	23.20	23.71	23.22
		25	0	22.26	22.78	22.84
		25	12	22.26	22.95	22.90
		25	25	22.25	22.92	22.79
		50	0	22.32	22.93	22.87

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20825 CH	21100 CH	21375 CH
				2507.5 MHz	2535 MHz	2562.5 MHz
7 / 15M	QPSK	1	0	23.88	24.35	24.28
		1	37	24.11	24.52	24.40
		1	74	23.85	24.07	23.86
		36	0	23.20	23.61	23.63
		36	19	23.29	23.71	23.71
		36	39	23.21	23.72	23.60
		75	0	23.20	23.70	23.74
	16QAM	1	0	23.14	23.75	23.65
		1	37	23.33	23.93	23.72
		1	74	23.21	23.53	23.21
		36	0	22.32	22.79	22.74
		36	19	22.41	22.87	22.84
		36	39	22.34	22.85	22.77
		75	0	22.29	22.85	22.90

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				20850 CH	21100 CH	21350 CH
				2510 MHz	2535 MHz	2560 MHz
7 / 20M	QPSK	1	0	23.99	24.45	24.38
		1	50	24.08	24.53	24.37
		1	99	24.16	24.10	24.02
		50	0	23.25	23.75	23.75
		50	25	23.30	23.82	23.79
		50	50	23.35	23.72	23.68
		100	0	23.31	23.74	23.77
	16QAM	1	0	23.65	23.88	23.89
		1	50	23.65	23.92	23.85
		1	99	23.77	23.61	23.55
		50	0	22.38	22.92	22.94
		50	25	22.39	22.99	22.99
		50	50	22.42	22.87	22.90
		100	0	22.39	22.90	22.96

ERP Power:

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23017 CH	23095 CH	23173 CH
				699.7 MHz	707.5 MHz	715.3 MHz
12 / 1.4M	QPSK	1	0	21.45	22.35	22.25
		1	2	21.59	22.37	22.43
		1	5	21.49	22.30	22.43
		3	0	21.54	22.35	22.35
		3	1	21.60	22.41	22.37
		3	3	21.56	22.45	22.38
		6	0	21.18	22.03	21.96
	16QAM	1	0	20.75	21.71	21.45
		1	2	20.93	21.79	21.58
		1	5	20.80	21.70	21.58
		3	0	20.71	21.62	21.48
		3	1	20.76	21.68	21.50
		3	3	20.75	21.71	21.56
		6	0	20.55	21.37	21.35

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23025 CH	23095 CH	23165 CH
				700.5 MHz	707.5 MHz	714.5 MHz
12 / 3M	QPSK	1	0	21.31	22.27	21.85
		1	7	21.69	22.44	22.29
		1	14	21.60	22.03	22.24
		8	0	21.17	21.99	21.79
		8	3	21.24	22.04	21.85
		8	7	21.34	21.93	21.89
		15	0	21.24	21.96	21.87
	16QAM	1	0	20.69	21.74	21.18
		1	7	21.11	21.97	21.56
		1	14	20.99	21.51	21.53
		8	0	20.59	21.34	21.15
		8	3	20.62	21.43	21.28
		8	7	20.75	21.23	21.31
		15	0	20.62	21.31	21.25

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23035 CH	23095 CH	23155 CH
				701.5 MHz	707.5 MHz	713.5 MHz
12 / 5M	QPSK	1	0	21.99	22.82	22.51
		1	12	21.89	22.36	22.08
		1	24	22.48	22.39	22.62
		12	0	21.28	21.89	21.69
		12	6	21.51	21.94	21.83
		12	13	21.59	21.78	21.85
		25	0	21.43	21.88	21.76
	16QAM	1	0	21.16	22.16	21.88
		1	12	21.00	21.66	21.48
		1	24	21.68	21.65	22.02
		12	0	20.62	21.22	21.06
		12	6	20.84	21.31	21.19
		12	13	20.95	21.02	21.23
		25	0	20.75	21.25	21.12

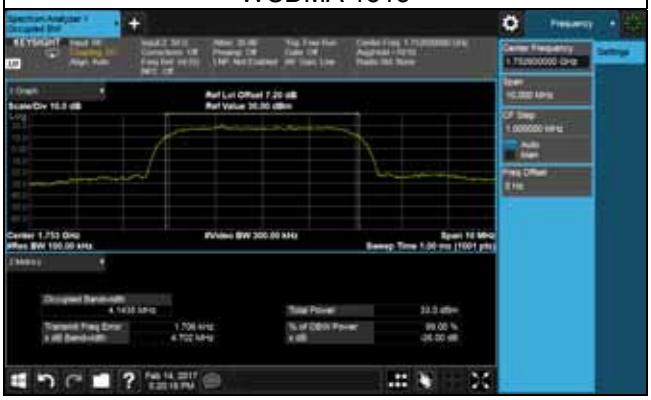
LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23060 CH	23095 CH	23130 CH
				704 MHz	707.5 MHz	711 MHz
12 / 10M	QPSK	1	0	21.99	22.54	22.93
		1	24	22.32	22.43	22.01
		1	49	22.44	22.08	22.44
		25	0	21.45	21.86	21.73
		25	12	21.72	21.88	21.66
		25	25	21.74	21.58	21.46
		50	0	21.51	21.78	21.68
	16QAM	1	0	21.25	21.97	22.11
		1	24	21.57	21.89	21.12
		1	49	21.69	21.49	21.59
		25	0	20.80	21.17	21.02
		25	12	21.11	21.27	20.93
		25	25	21.15	20.84	20.78
		50	0	20.85	21.09	20.97

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23205 CH	23230 CH	23255 CH
				779.5 MHz	782.0 MHz	784.5 MHz
13 / 5M	QPSK	1	0	22.71	22.88	22.99
		1	12	22.40	22.58	22.61
		1	24	22.93	22.90	22.95
		12	0	21.87	22.08	22.20
		12	6	21.96	22.20	22.21
		12	13	21.98	22.08	22.12
		25	0	21.85	22.06	22.04
	16QAM	1	0	21.90	21.94	22.30
		1	12	21.61	21.67	21.99
		1	24	22.14	21.92	22.28
		12	0	21.02	21.07	21.32
		12	6	21.11	21.20	21.36
		12	13	21.11	21.08	21.29
		25	0	20.95	21.10	21.11

LTE Band / BW	Modulation	RB Sizet	RB Offset	Mid CH
				23230 CH
				782.0 MHz
13 / 10M	QPSK	1	0	22.62
		1	24	22.60
		1	49	22.76
		25	0	21.86
		25	12	22.07
		25	25	21.85
		50	0	21.76
	16QAM	1	0	21.92
		1	24	21.93
		1	49	22.06
		25	0	20.90
		25	12	21.10
		25	25	20.99
		50	0	20.86

ATTACHMENT B - OCCUPIED BANDWIDTH

WCDMA Band 4 WCDMA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1435	19957	1710.7	4.6980
1413	1732.6	4.1411	20175	1732.5	4.7300
1513	1752.6	4.1435	20393	1754.3	4.7020

Spectrum Plot	
WCDMA 1312	WCDMA 1413
	
WCDMA 1513	
	

WCDMA Band 4 HSDPA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1473	19957	1710.7	4.7190
1413	1732.6	4.1406	20175	1732.5	4.6810
1513	1752.6	4.1400	20393	1754.3	4.6910

Spectrum Plot

HSDPA 1312

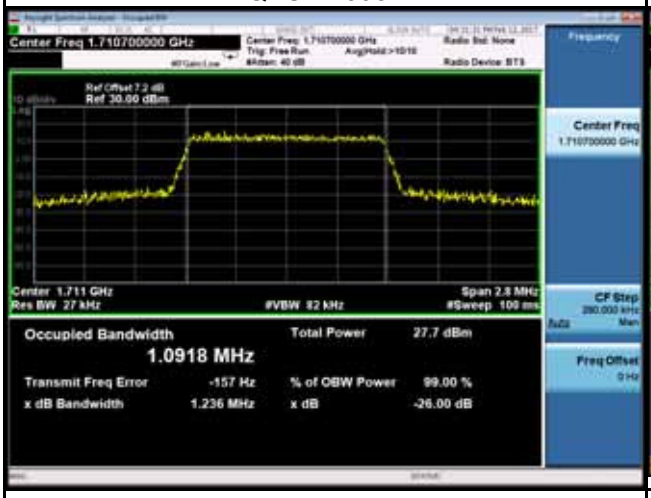
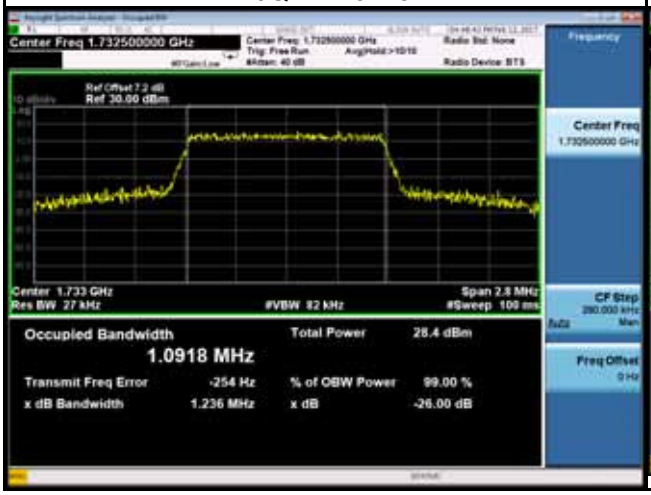
HSDPA 1413

HSDPA 1513

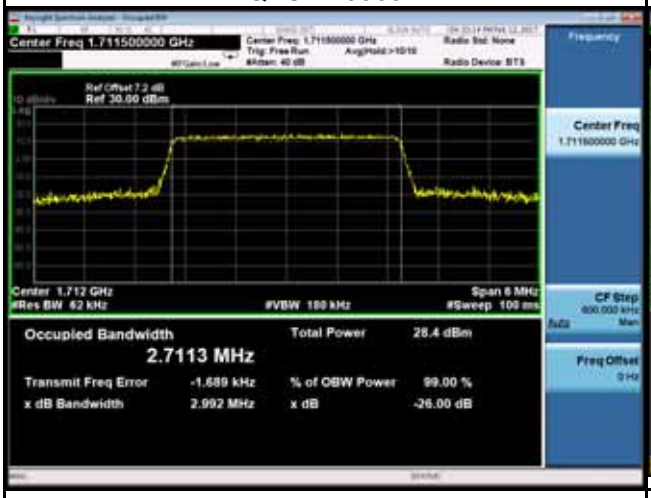
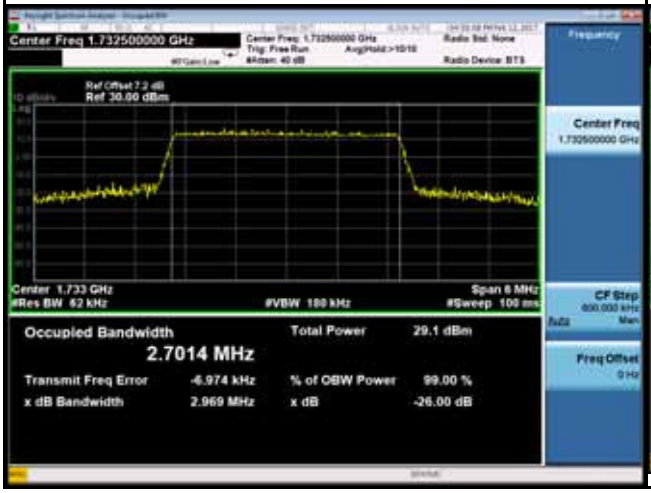
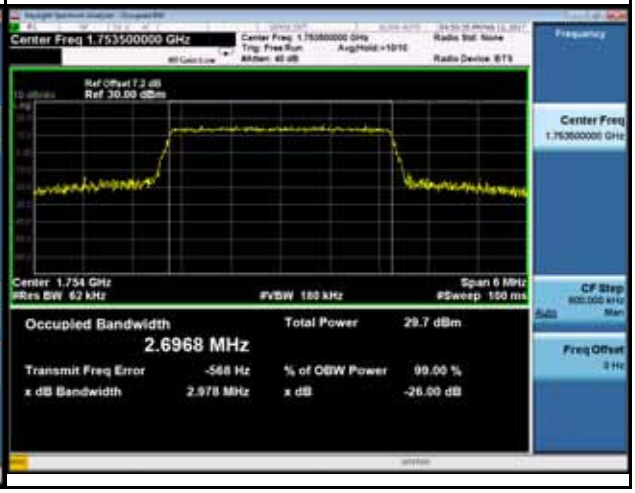
WCDMA Band 4 HSUPA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1507	19957	1710.7	4.7100
1413	1732.6	4.1527	20175	1732.5	4.6990
1513	1752.6	4.1386	20393	1754.3	4.6920

Spectrum Plot	
HSUPA 1312	HSUPA 1413
	
HSUPA 1513	
	

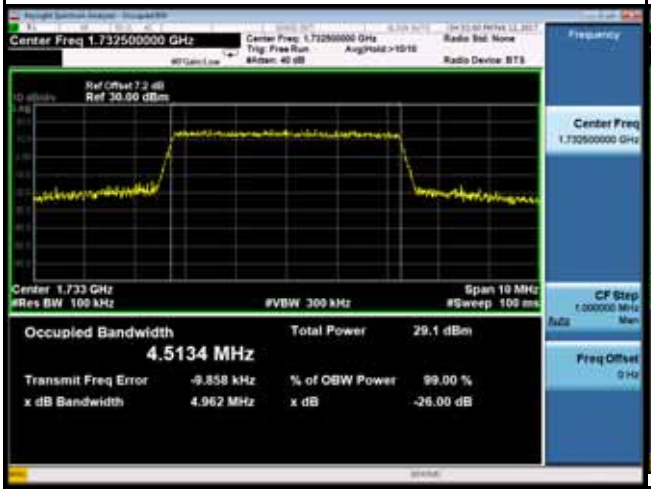
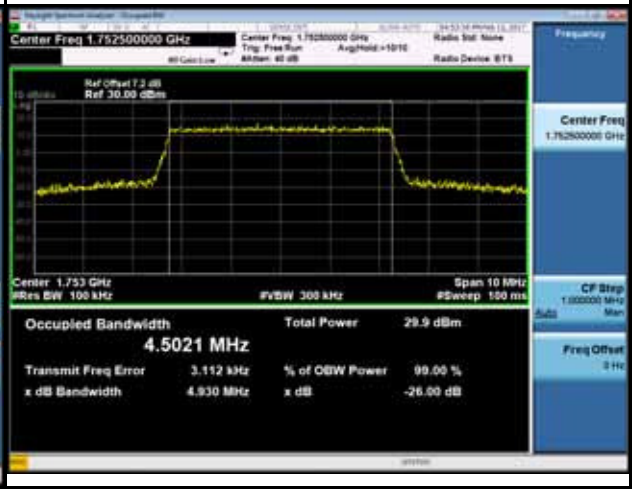
LTE Band 4_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19957	1710.7	1.0918	19957	1710.7	1.0903
20175	1732.5	1.0862	20175	1732.5	1.0918
20393	1754.3	1.0929	20393	1754.3	1.0985
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.2360	19957	1710.7	1.2330
20175	1732.5	1.2370	20175	1732.5	1.2360
20393	1754.3	1.2220	20393	1754.3	1.2410

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

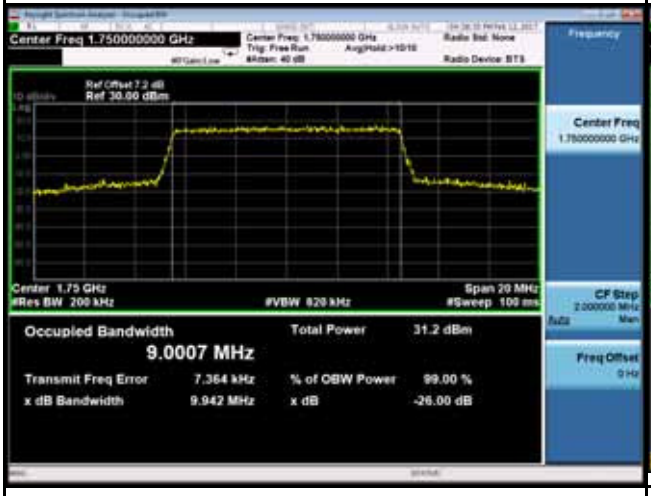
LTE Band 4_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19965	1711.5	2.7113	19965	1711.5	2.7058
20175	1732.5	2.6979	20175	1732.5	2.7014
20385	1753.5	2.7040	20385	1753.5	2.6968
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.9920	19965	1711.5	2.9650
20175	1732.5	2.9570	20175	1732.5	2.9690
20385	1753.5	2.9540	20385	1753.5	2.9780

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

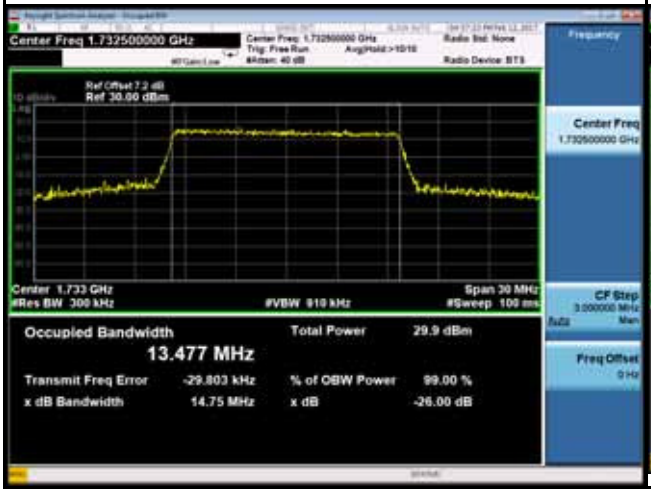
LTE Band 4_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19975	1712.5	4.1529	19975	1712.5	4.5026
20175	1732.5	4.5101	20175	1732.5	4.5134
20375	1752.5	4.5046	20375	1752.5	4.5021
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.9520	19975	1712.5	4.9680
20175	1732.5	4.9490	20175	1732.5	4.9620
20375	1752.5	4.9760	20375	1752.5	4.9300

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

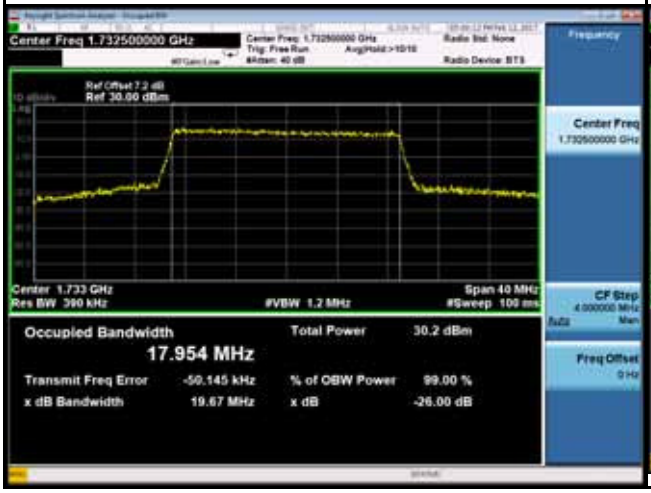
LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	9.0069	20000	1715	8.9864
20175	1732.5	8.9895	20175	1732.5	8.9904
20350	1750	9.0007	20350	1750	8.9973
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.8620	20000	1715	9.8580
20175	1732.5	9.9090	20175	1732.5	9.8200
20350	1750	9.9420	20350	1750	9.9250

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	13.4660	20025	1717.5	13.5080
20175	1732.5	13.4660	20175	1732.5	13.4770
20325	1747.5	13.4810	20325	1747.5	13.4750
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.9100	20025	1717.5	14.8400
20175	1732.5	14.8500	20175	1732.5	14.7500
20325	1747.5	15.1400	20325	1747.5	14.9300

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	17.8560	20050	1720	17.8570
20175	1732.5	17.9910	20175	1732.5	17.9540
20300	1745	18.0020	20300	1745	18.0080
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.5100	20050	1720	19.5600
20175	1732.5	19.7000	20175	1732.5	19.6700
20300	1745	19.6800	20300	1745	19.7500

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

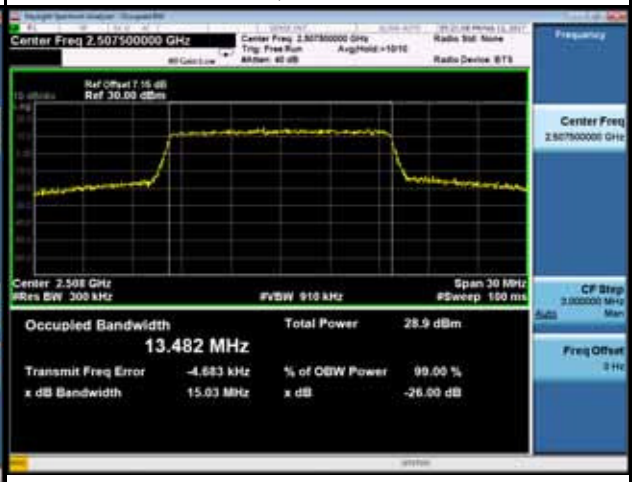
LTE Band 7_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20775	2502.5	4.5125	20775	2502.5	4.5131
21100	2535	4.5159	21100	2535	4.5203
21425	2567.5	4.5100	21425	2567.5	4.4996
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.9870	20775	2502.5	4.9570
21100	2535	4.9880	21100	2535	4.9520
21425	2567.5	4.9790	21425	2567.5	4.9570

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	9.0001	20800	2505	9.0031
21100	2535	9.0143	21100	2535	9.0031
21400	2565	8.9858	21400	2565	8.9914
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.9430	20800	2505	9.9310
21100	2535	9.9310	21100	2535	9.8900
21400	2565	9.9600	21400	2565	9.9000

Spectrum Plot	
QPSK-20800	QPSK-21100
	
QPSK-21400	16QAM-20800
	
16QAM-21100	16QAM-21400
	

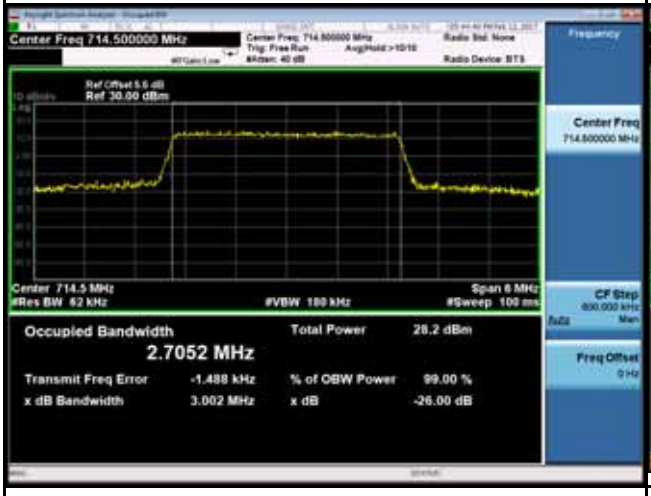
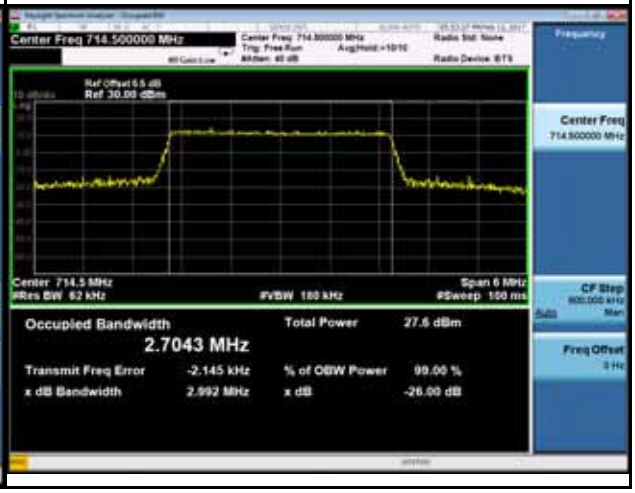
LTE Band 7_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20825	2507.5	13.4490	20825	2507.5	13.4820
21100	2535	13.5090	21100	2535	13.4840
21375	2562.5	13.4790	21375	2562.5	13.5040
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20825	2507.5	14.9500	20825	2507.5	15.0300
21100	2535	15.0300	21100	2535	15.0500
21375	2562.5	14.9700	21375	2562.5	15.0500

Spectrum Plot	
QPSK-20825	QPSK-21100
	
QPSK-21375	16QAM-20825
	
16QAM-21100	16QAM-21375
	

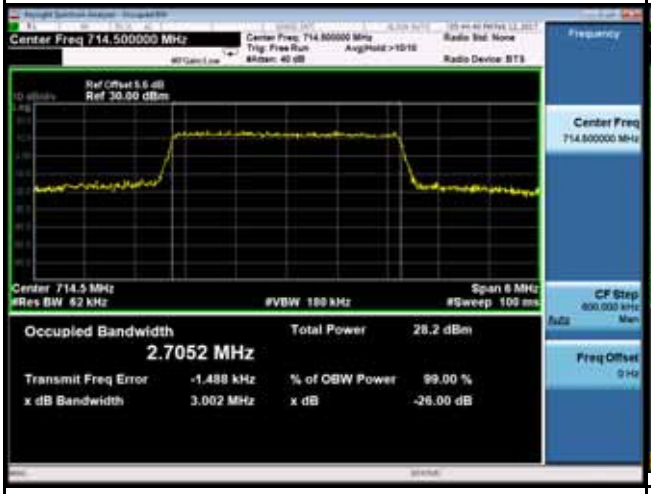
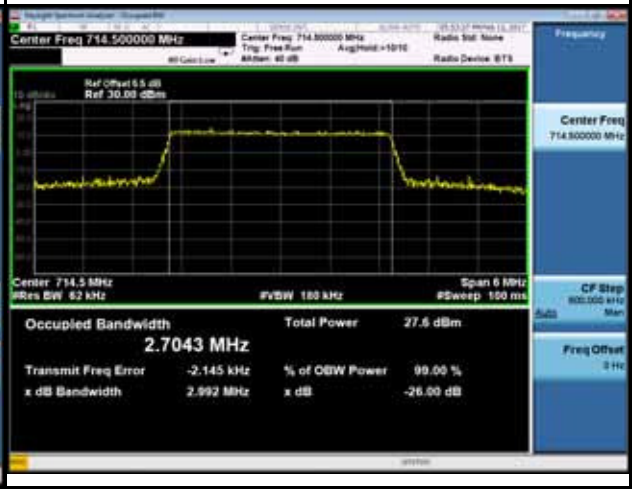
LTE Band 7_20M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20850	2510	17.9560	20850	2510	17.9570
21100	2535	17.9970	21100	2535	19.5200
21350	2560	17.9870	21350	2560	17.9880
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20850	2510	19.6500	20850	2510	19.7900
21100	2535	19.8400	21100	2535	19.8400
21350	2560	19.7400	21350	2560	19.7400

Spectrum Plot	
QPSK-20850	QPSK-21100
	
QPSK-21350	16QAM-20850
	
16QAM-21100	16QAM-21350
	

LTE Band 12_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23017	699.7	1.0957	23017	699.7	1.0941
23095	707.5	2.6984	23095	707.5	2.6997
23173	715.3	2.7052	23173	715.3	2.7043
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.6480	23017	699.7	1.3930
23095	707.5	2.9490	23095	707.5	2.9560
23173	715.3	3.0020	23173	715.3	2.9920

Spectrum Plot	
QPSK-23017	QPSK-23095
	
QPSK-23173	16QAM-23017
	
16QAM-23095	16QAM-23173
	

LTE Band 12_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23025	700.5	2.6944	23025	700.5	2.7079
23095	707.5	2.6984	23095	707.5	2.6997
23165	714.5	2.7052	23165	714.5	2.7043
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23025	700.5	3.5920	23025	700.5	3.5760
23095	707.5	2.9490	23095	707.5	2.9560
23165	714.5	3.0020	23165	714.5	2.9920

Spectrum Plot	
QPSK-23025	QPSK-23095
	
QPSK-23165	16QAM-23025
	
16QAM-23095	16QAM-23165
	

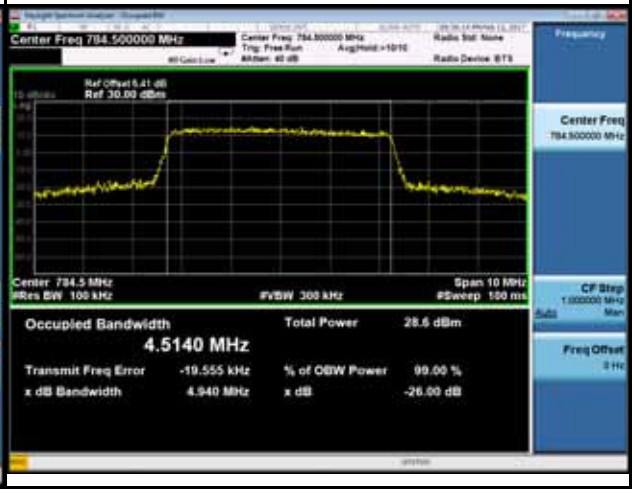
LTE Band 12_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	4.5166	23035	701.5	4.5295
23095	707.5	4.5013	23095	707.5	4.5032
23155	713.5	4.5324	23155	713.5	4.5473
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23035	701.5	5.9340	23035	701.5	5.2750
23095	707.5	4.8980	23095	707.5	4.9360
23155	713.5	5.0850	23155	713.5	5.7690

Spectrum Plot	
QPSK-23035	QPSK-23095
	
QPSK-23155	16QAM-23035
	
16QAM-23095	16QAM-23155
	

LTE Band 12_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23060	704.0	9.0531	23060	704.0	9.0665
23095	707.5	8.9593	23095	707.5	8.9813
23130	711.0	8.9055	23130	711.0	8.8849
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23060	704.0	9.9160	23060	704.0	9.8550
23095	707.5	9.7910	23095	707.5	9.7850
23130	711.0	9.7070	23130	711.0	9.6570

Spectrum Plot	
QPSK-23060	QPSK-23095
	
QPSK-23130	16QAM-23060
	
16QAM-23095	16QAM-23130
	

LTE Band 13_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23205	779.5	4.5193	23205	779.5	4.5246
23230	782.0	4.4943	23230	782.0	4.5037
23255	784.5	4.4943	23255	784.5	4.5140
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23205	779.5	4.9690	23205	779.5	4.9520
23230	782.0	4.9150	23230	782.0	4.9410
23255	784.5	4.9380	23255	784.5	4.9400

Spectrum Plot	
QPSK-23205	QPSK-23230
	
QPSK-23255	16QAM-23205
	
16QAM-23230	16QAM-23255
	

LTE Band 13_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23230	782.0	8.9376	23230	782.0	8.9418
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23230	782.0	9.8760	23230	782.0	9.8070

Spectrum Plot	
QPSK-23230	16QAM-23230
	

ATTACHMENT C - CONDUCTED EMISSIONS

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

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

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

<table>
<tr><td colspan="4">LTE Band 4_1.4M</td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>20175</td><td>1732.5</td><td>20175</td><td>1732.5</td></tr>
<tr><td>  </td><td colspan="3">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>20175</td><td>1732.5</td><td>-</td><td>-</td></tr>
<tr><td>  </td><td colspan="3">-</td></tr>
</table>

LTE Band 4_3M			
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_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

LTE Band 4_15M			
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
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

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

LTE Band 7_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

<table>
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<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>21100</td><td>2535</td><td>21100</td><td>2535</td></tr>
<tr><td>  </td><td colspan="3">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>21100</td><td>2535</td><td>-</td><td>-</td></tr>
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LTE Band 7_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

LTE Band 12_1.4M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
			
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
		-	

<table>
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<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>23095</td><td>707.5</td><td>23095</td><td>707.5</td></tr>
<tr><td>  </td><td></td><td>  </td><td></td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>23095</td><td>707.5</td><td>-</td><td>-</td></tr>
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<tr><td colspan="4">LTE Band 12_5M</td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>23095</td><td>707.5</td><td>23095</td><td>707.5</td></tr>
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<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>23095</td><td>707.5</td><td>-</td><td>-</td></tr>
<tr><td>  </td><td></td><td>-</td><td></td></tr>
</table>

LTE Band 12_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
			
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
		-	

LTE Band 13_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23230	782.0	23230	782.0
			
Channel	Frequency(MHz)	-	-
23230	782.0	-	-
		-	

<table>
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<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>23230</td><td>782.0</td><td>23230</td><td>782.0</td></tr>
<tr><td>  </td><td colspan="3">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>23230</td><td>782.0</td><td>-</td><td>-</td></tr>
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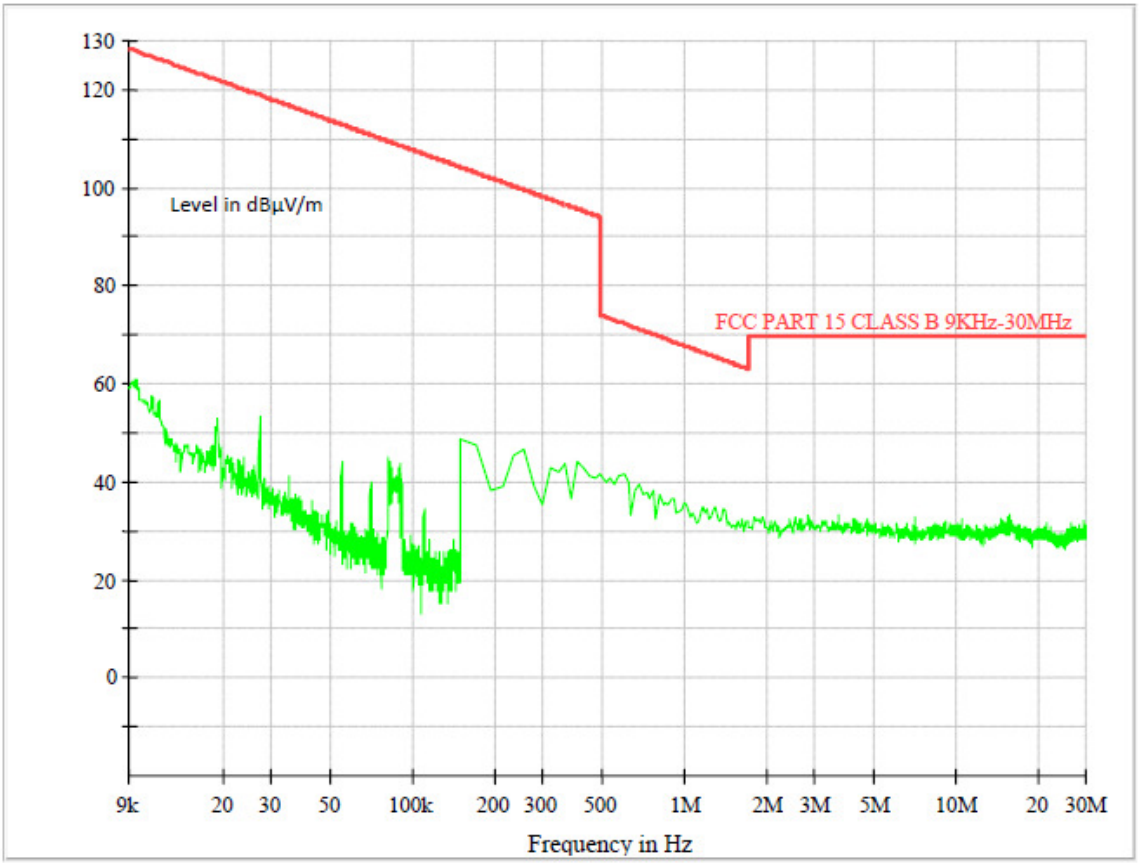
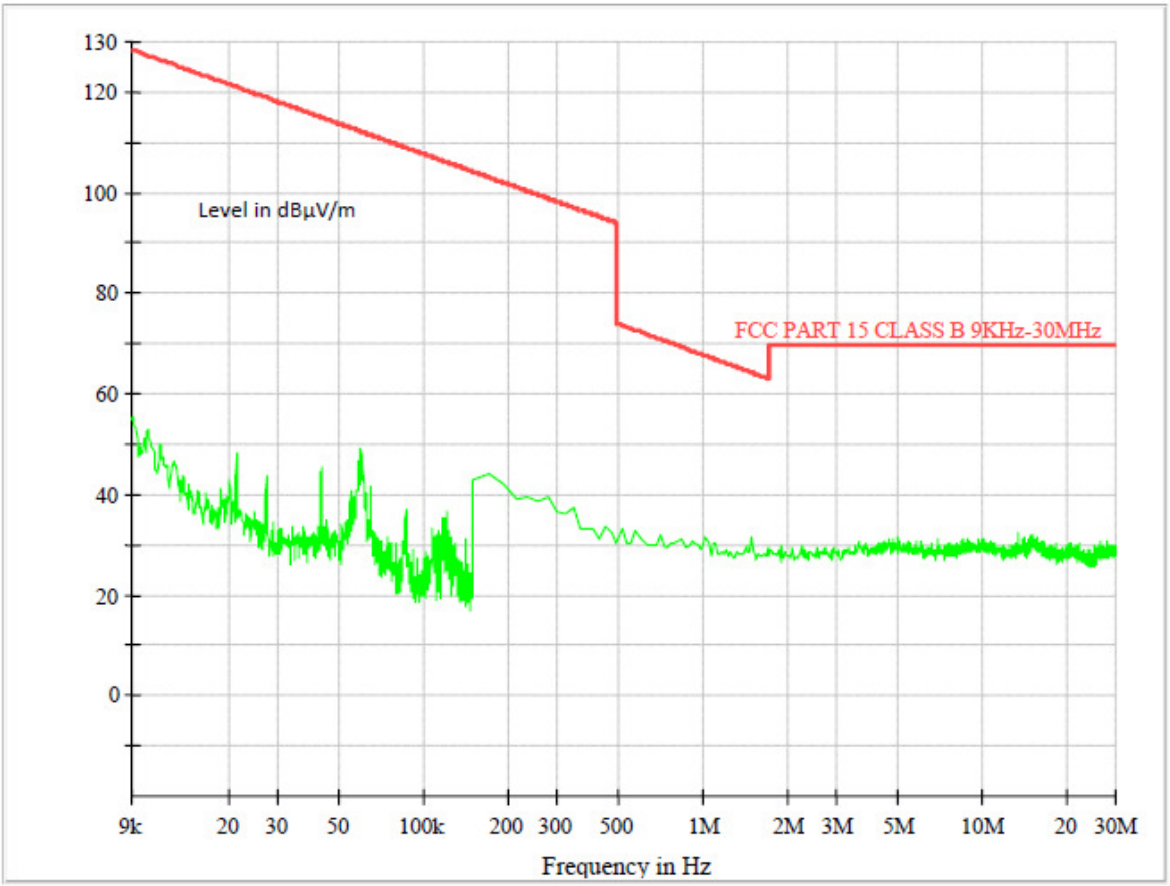
ATTACHMENT D - RADIATED EMISSION

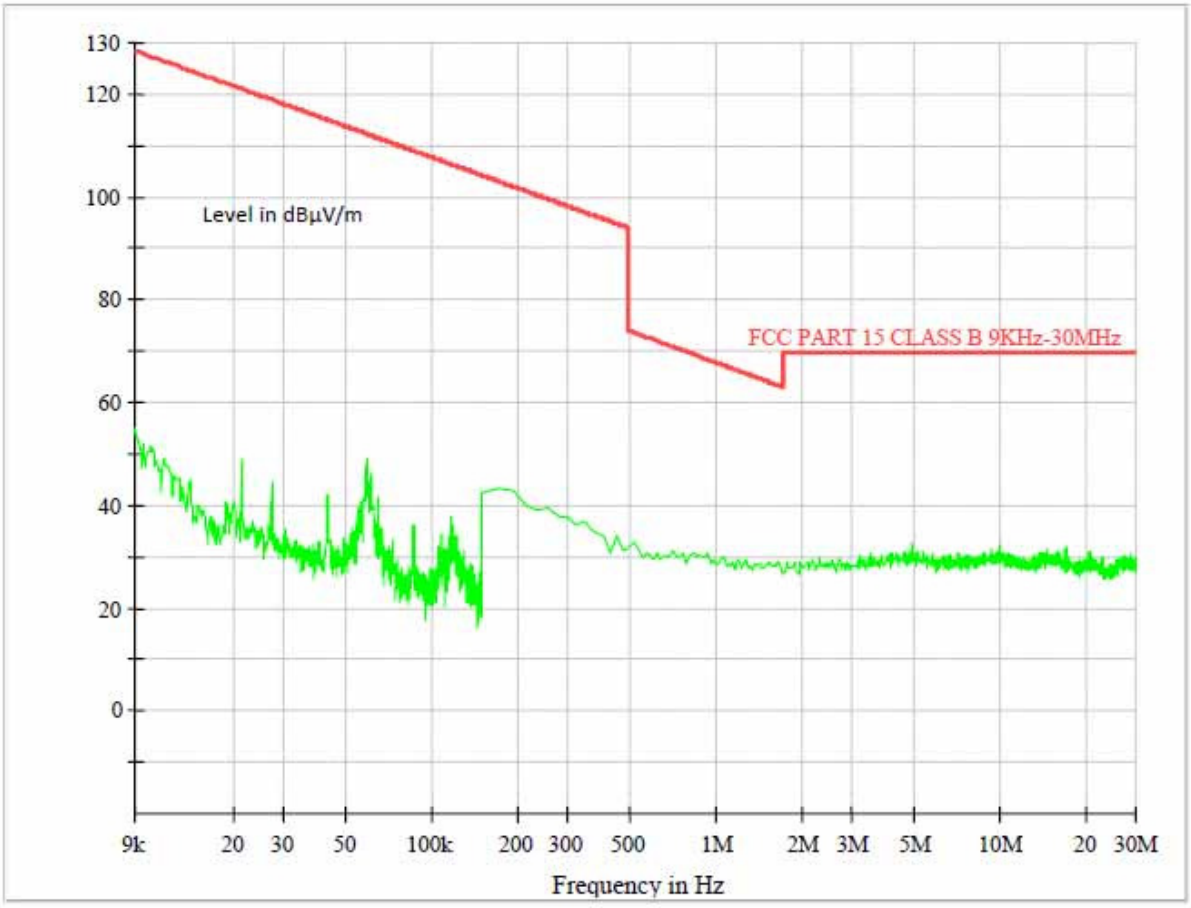
Test Mode:	TX Mode_WCDMA Band 4



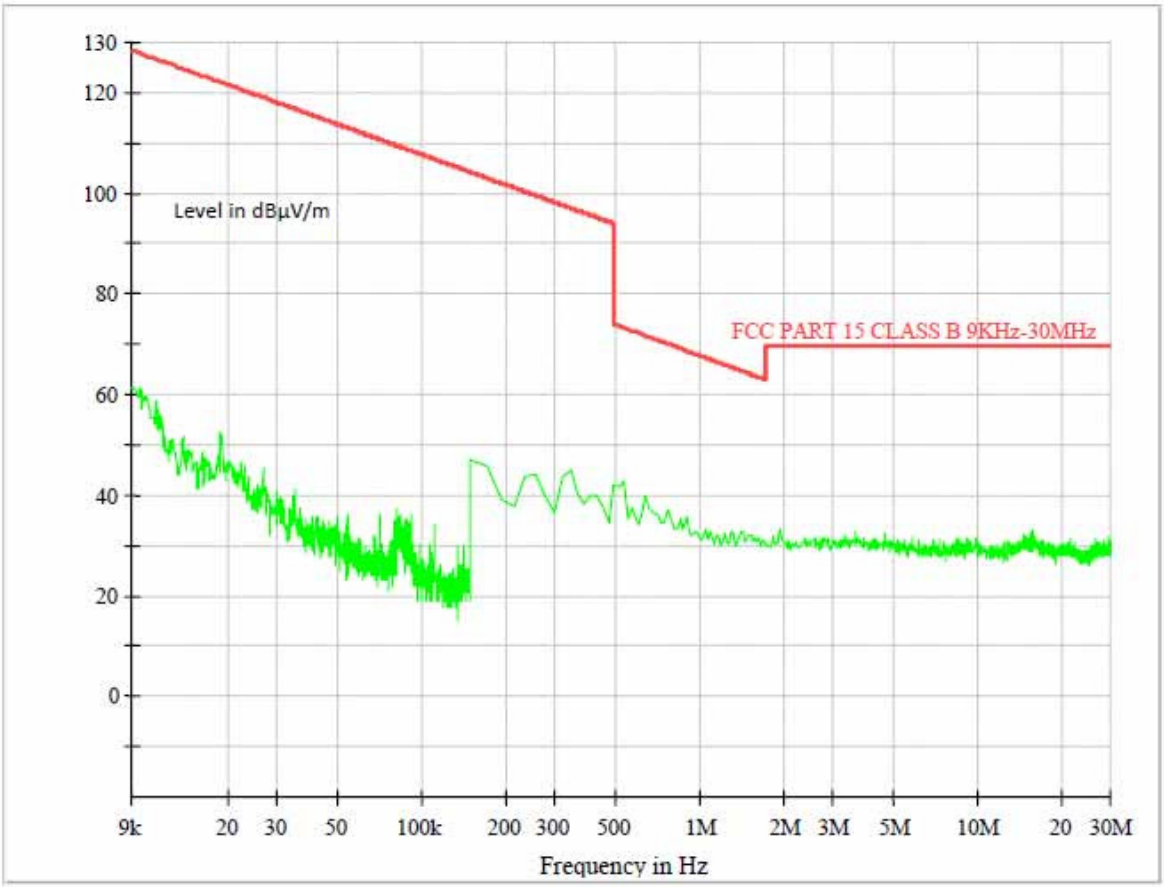
Test Mode:	TX Mode_LTE Band 4



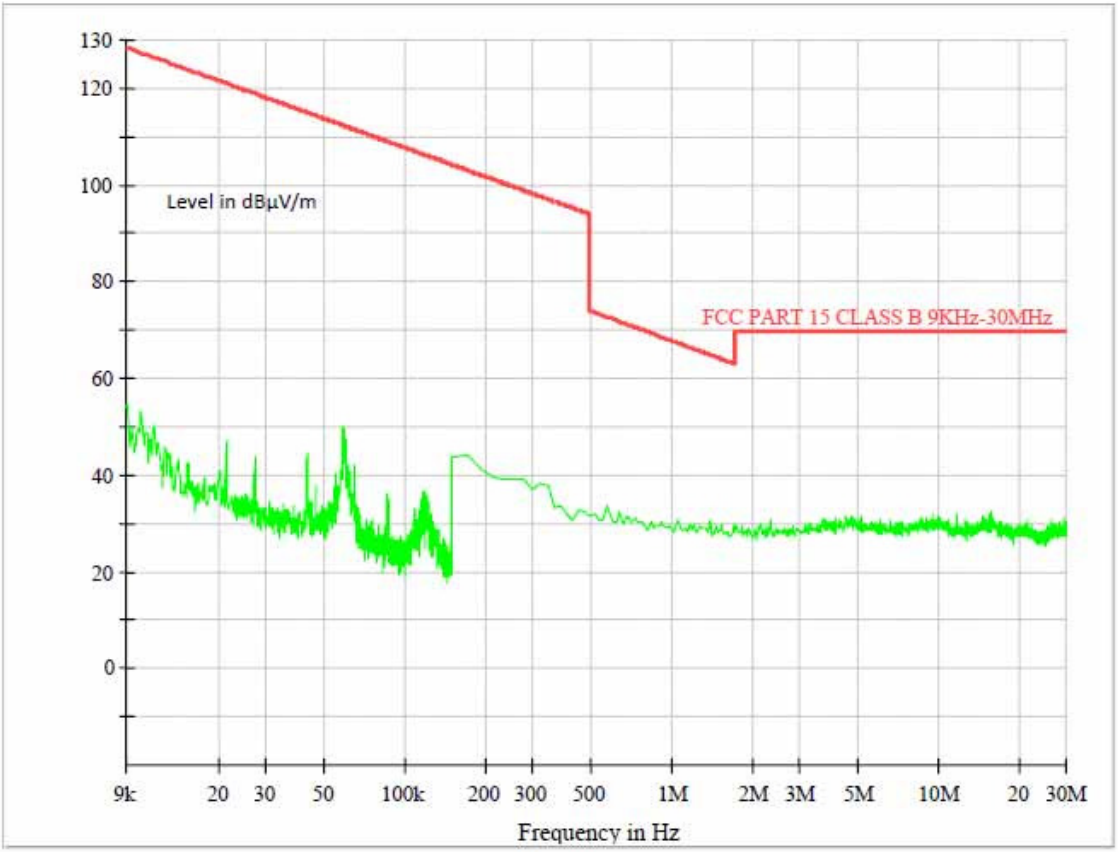
Test Mode:	TX Mode_LTE Band 7



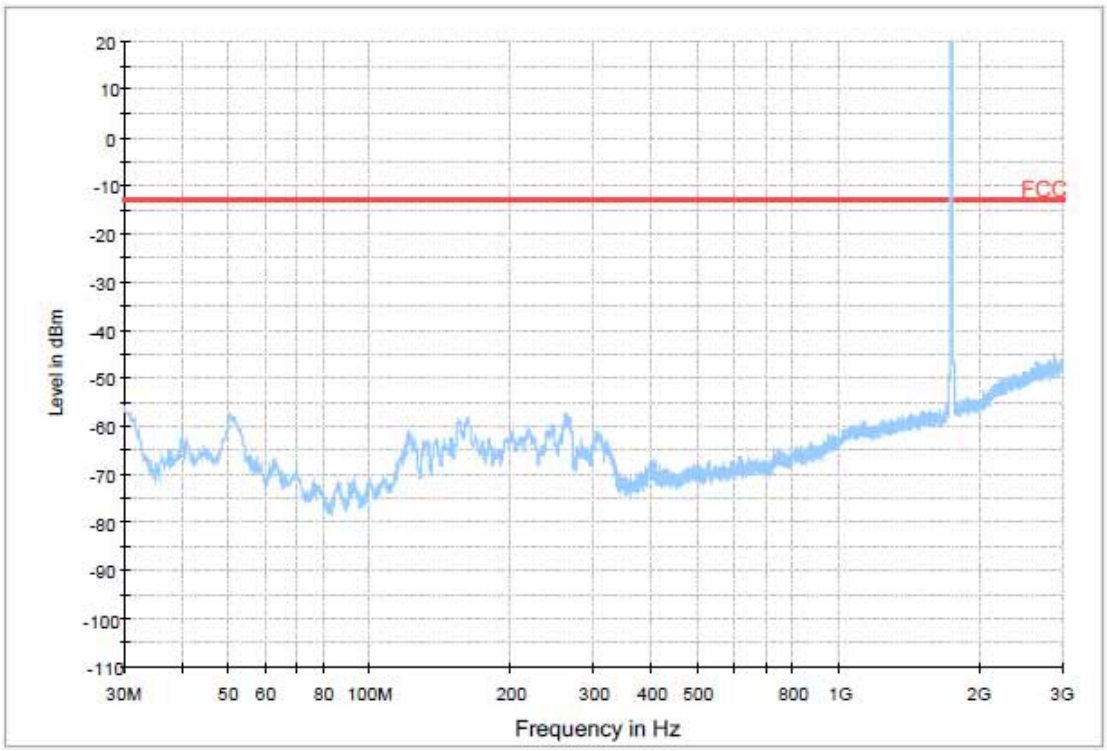
Test Mode:	TX Mode_LTE Band 12

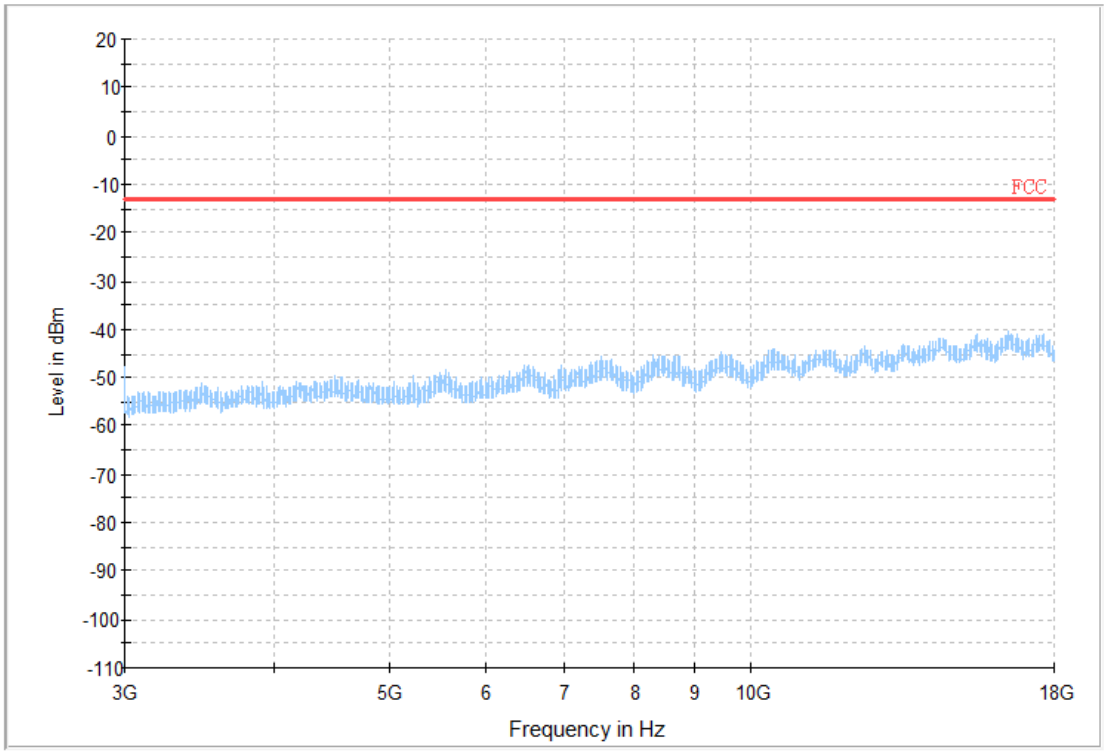


Test Mode:	TX Mode_LTE Band 13

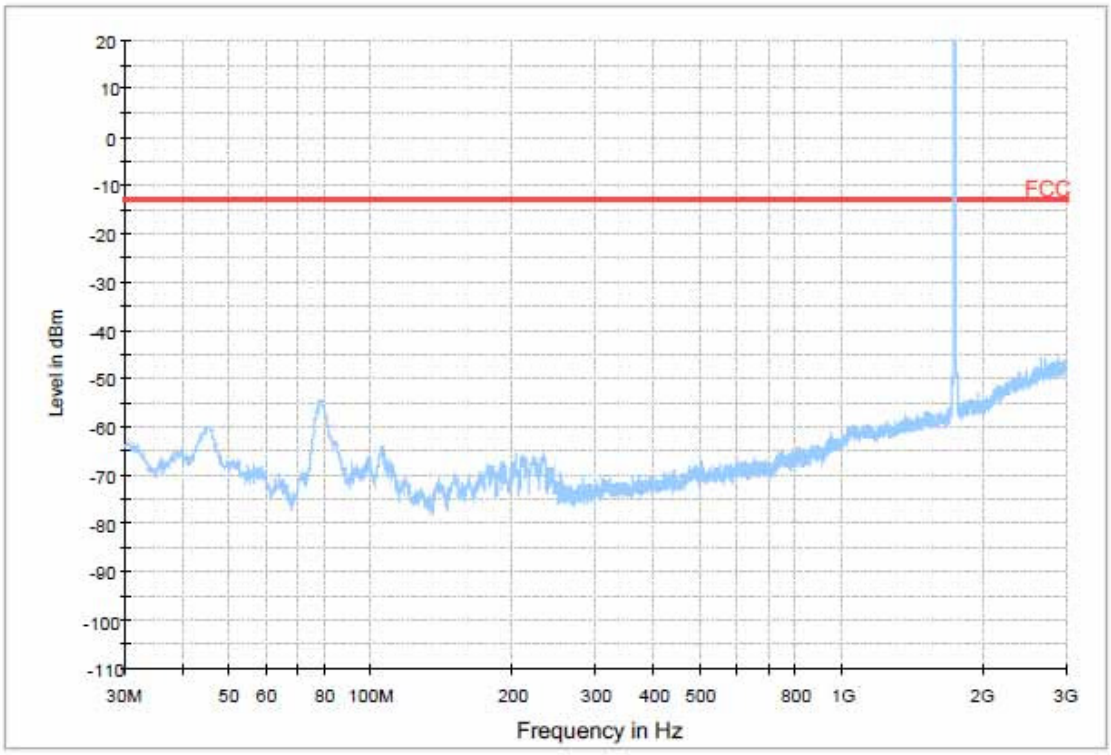


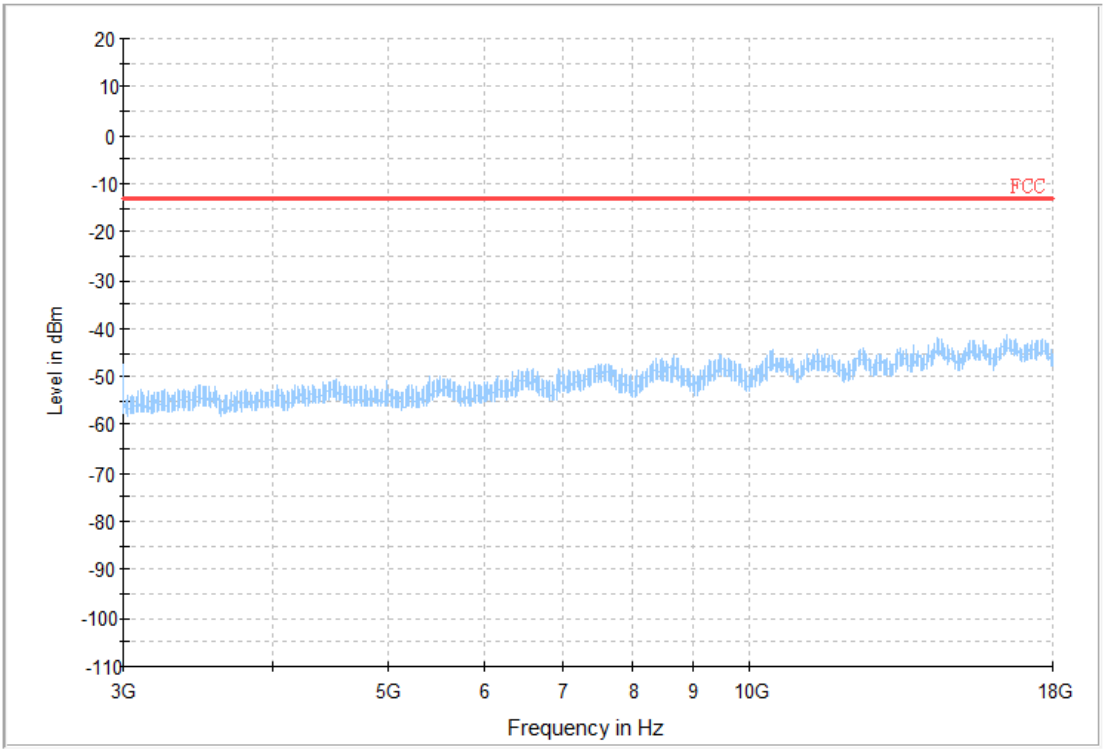
Test Mode:	WCDMA Band 4_TX CH1413_WCDMA



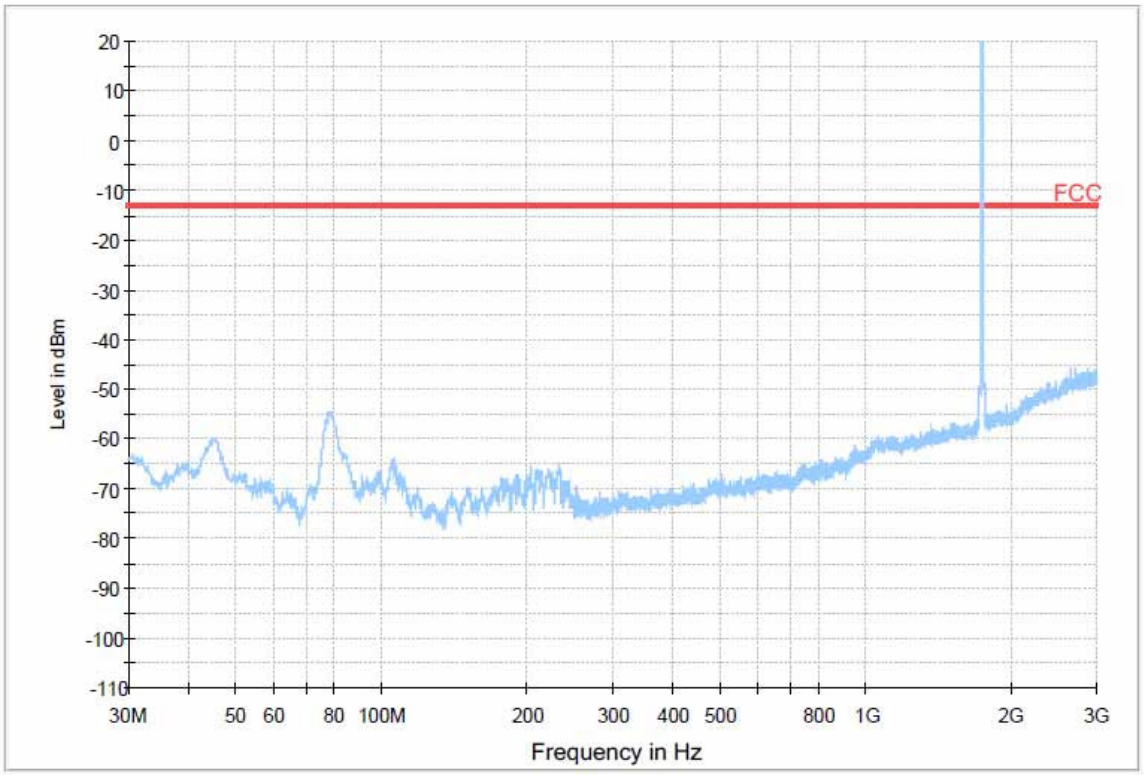


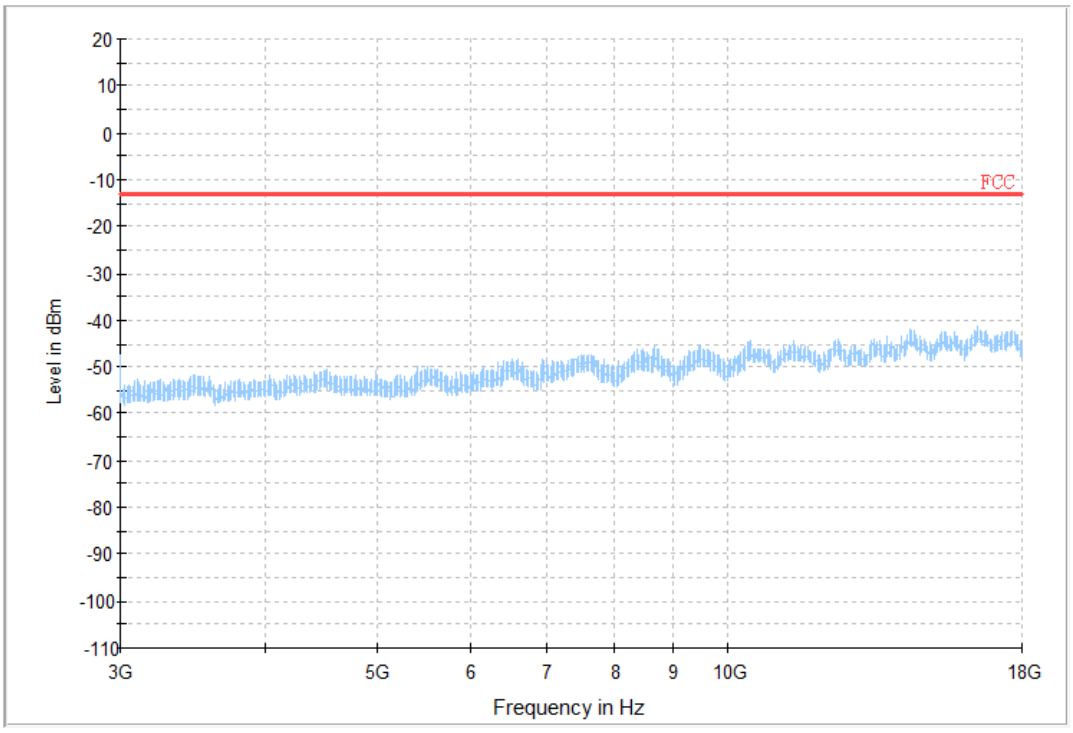
Test Mode:	WCDMA Band 4_TX CH1413_HSDPA





Test Mode:	WCDMA Band 4_TX CH1413_HSUPA





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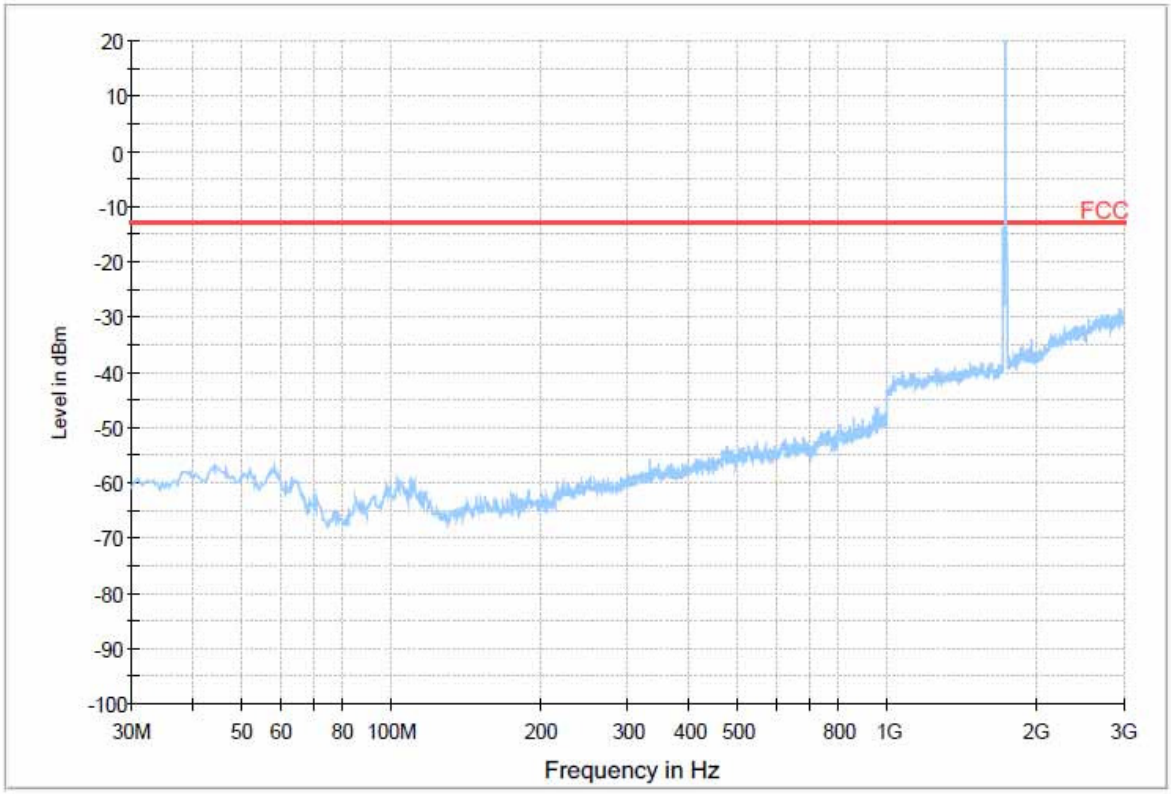
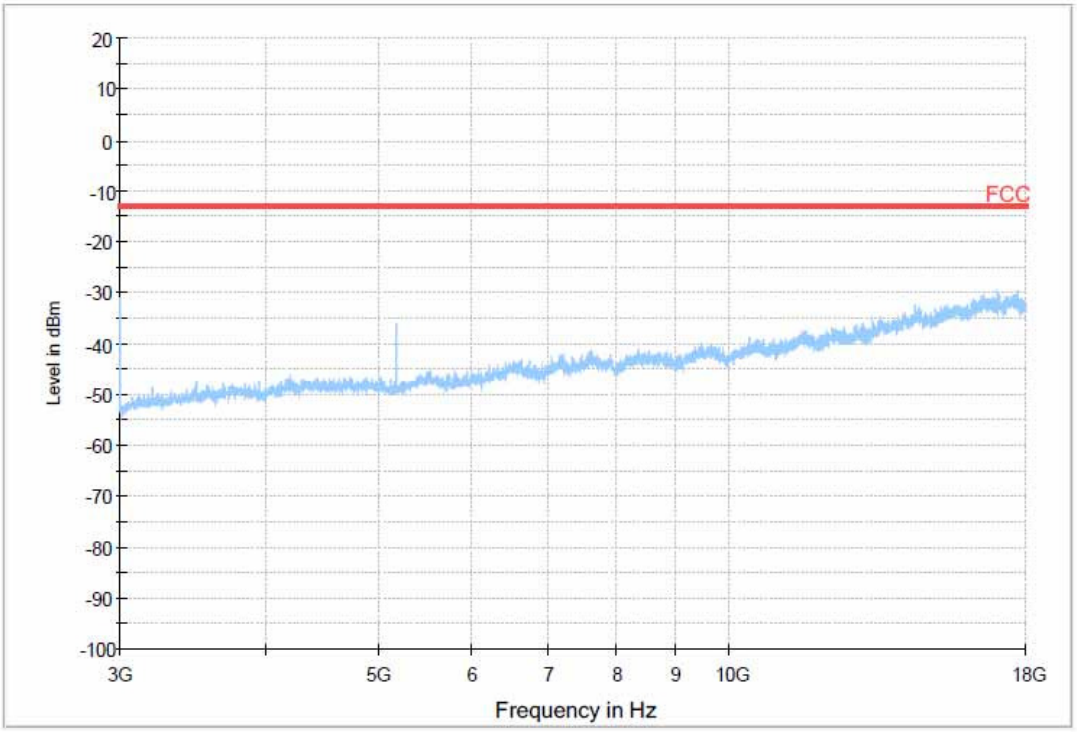
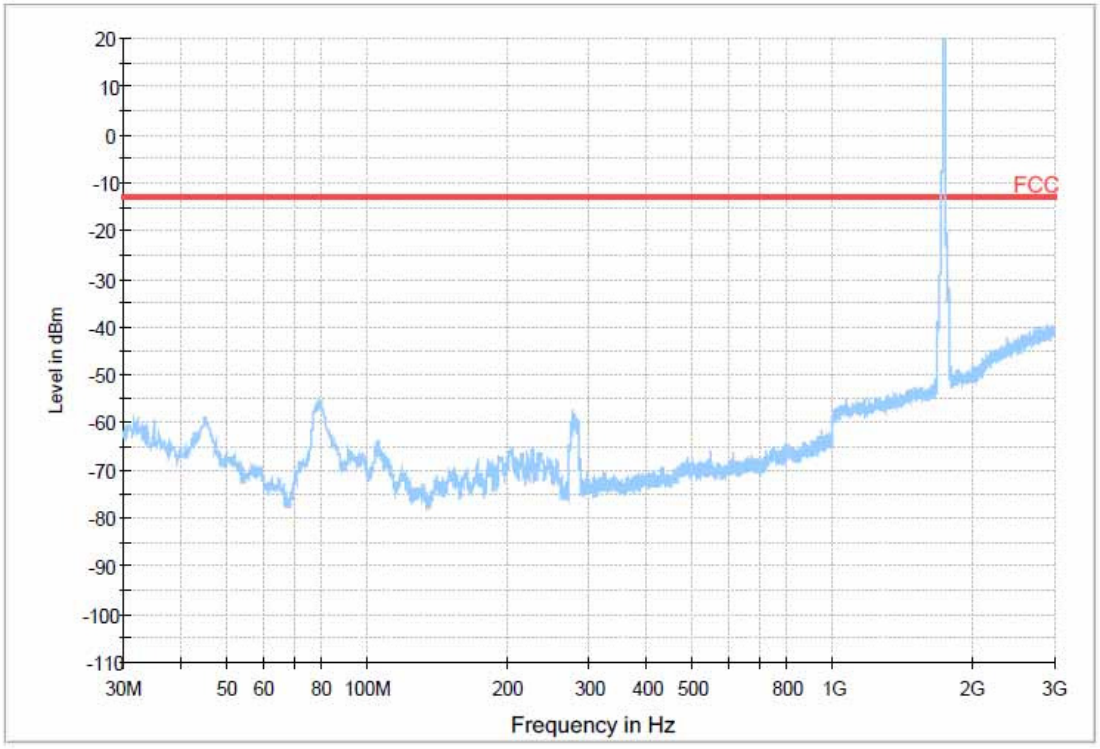
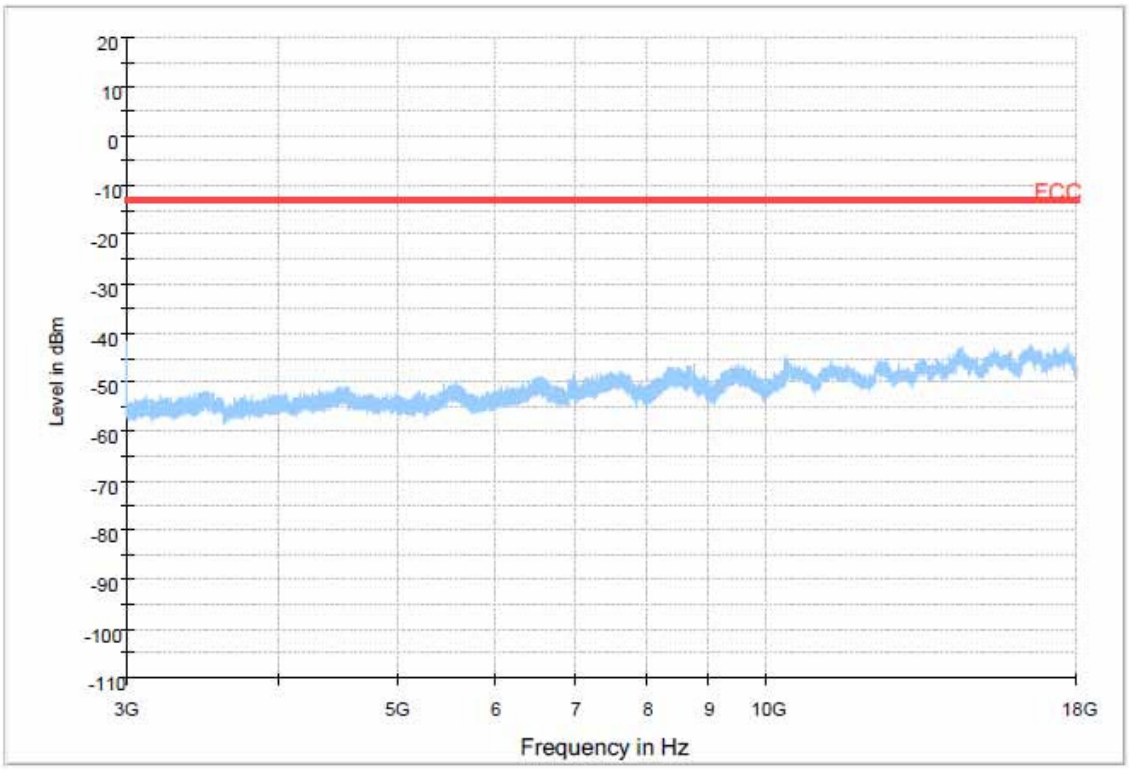




Test Mode:	LTE Band 4_TX CH20175_20M





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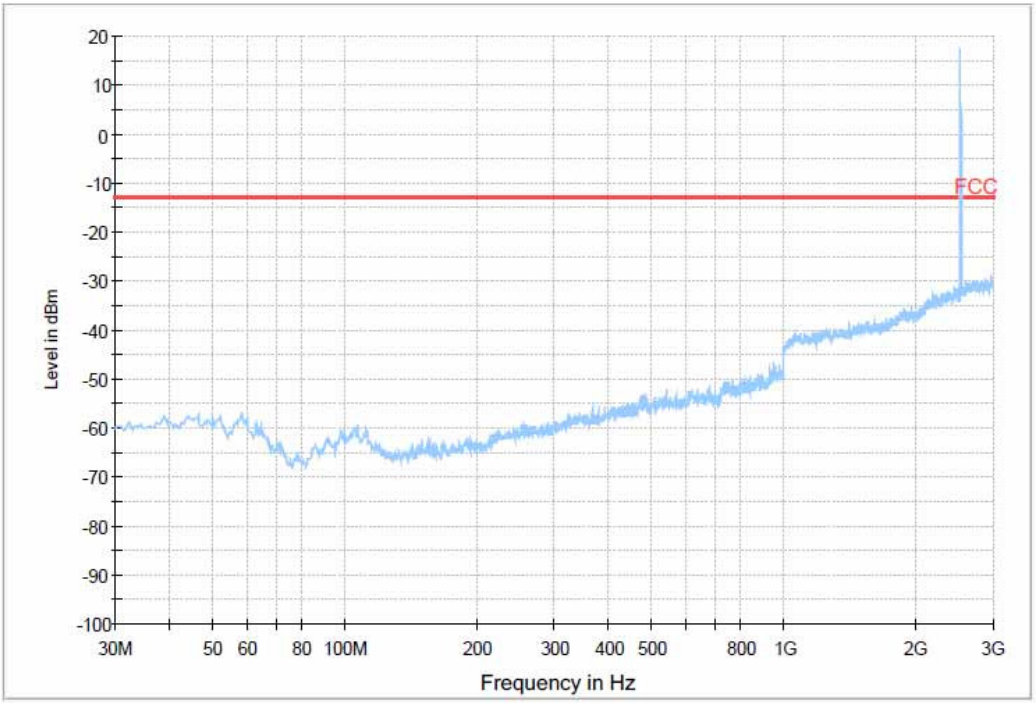
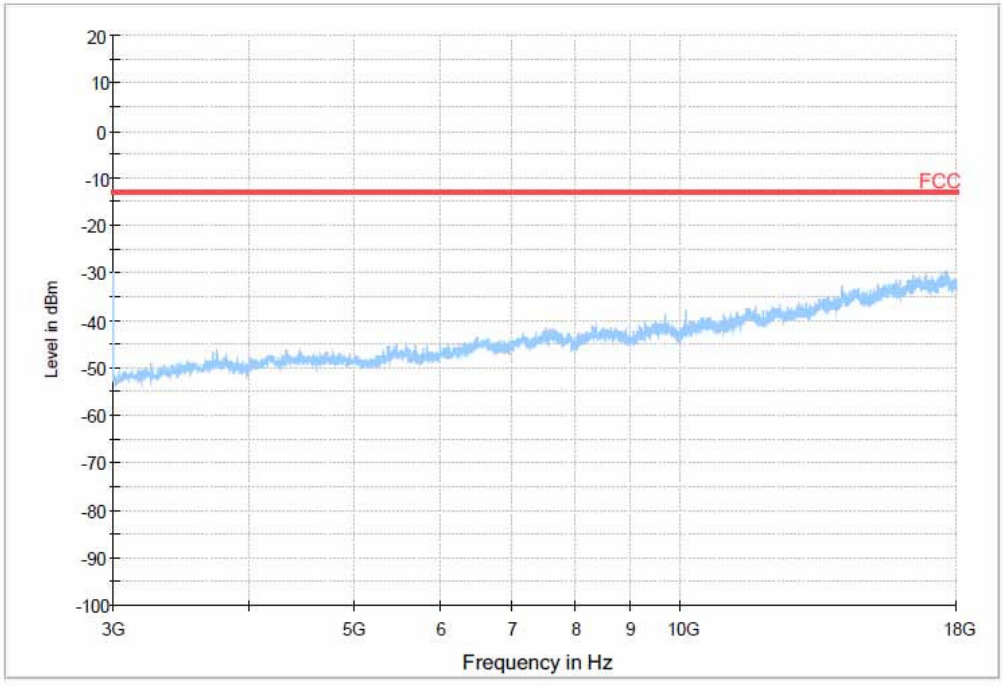
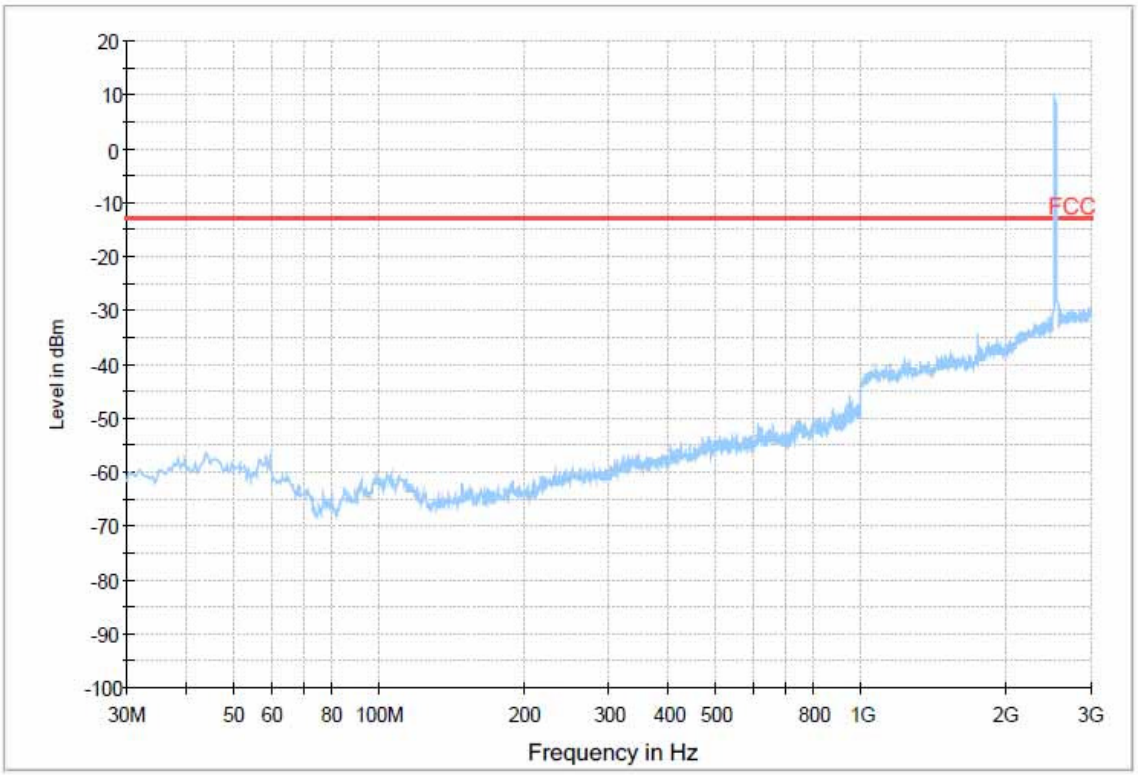
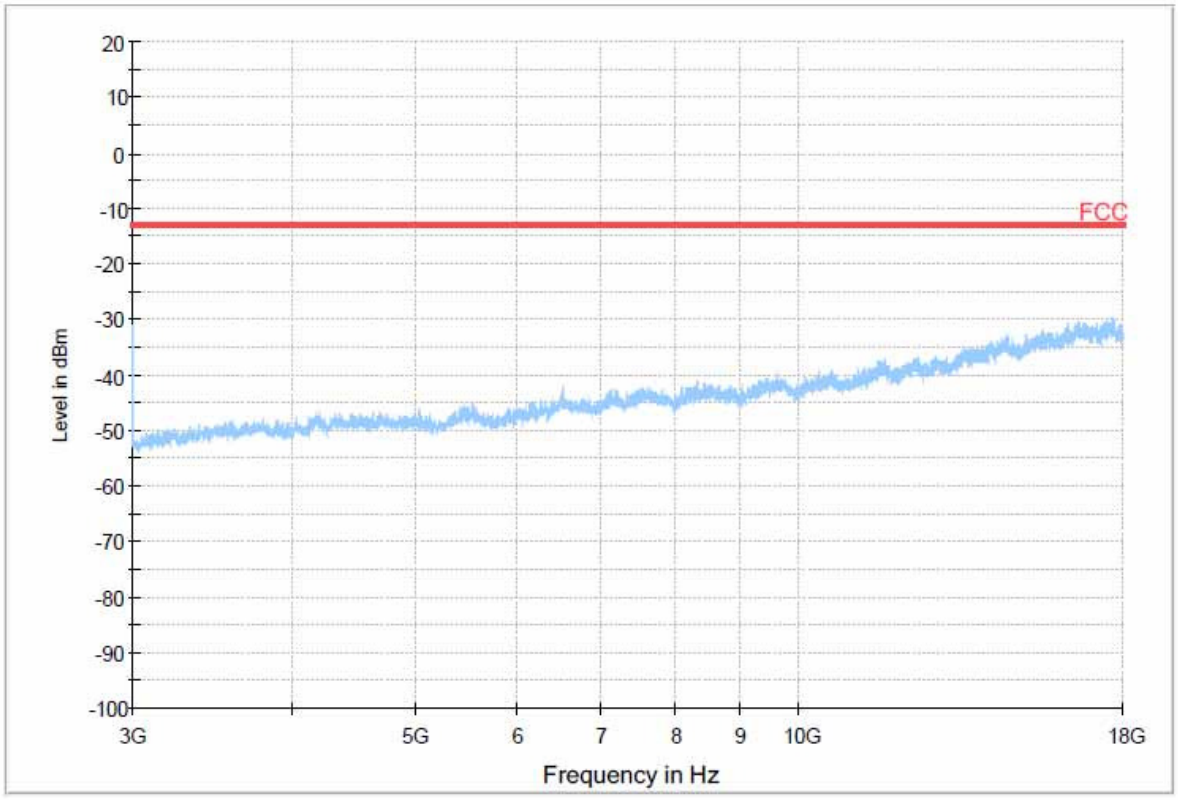




Test Mode:	LTE Band 7_TX CH21100_20M





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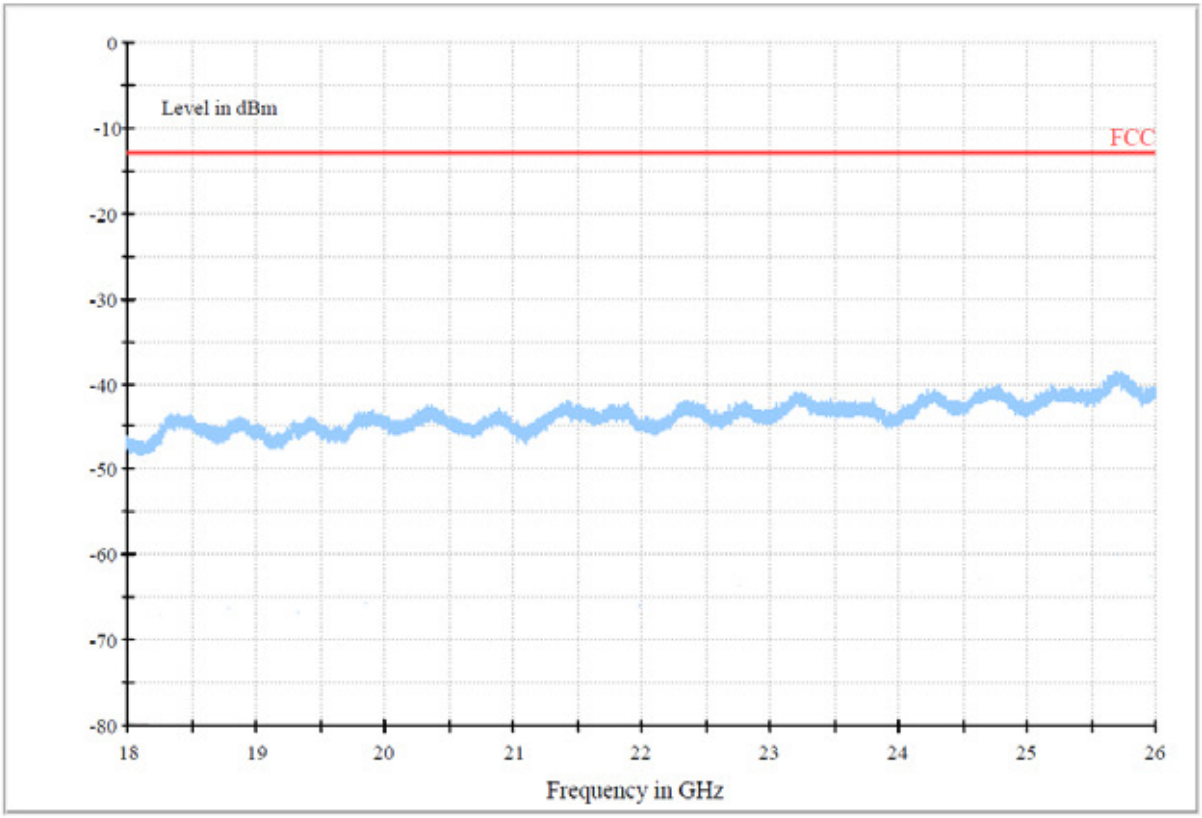
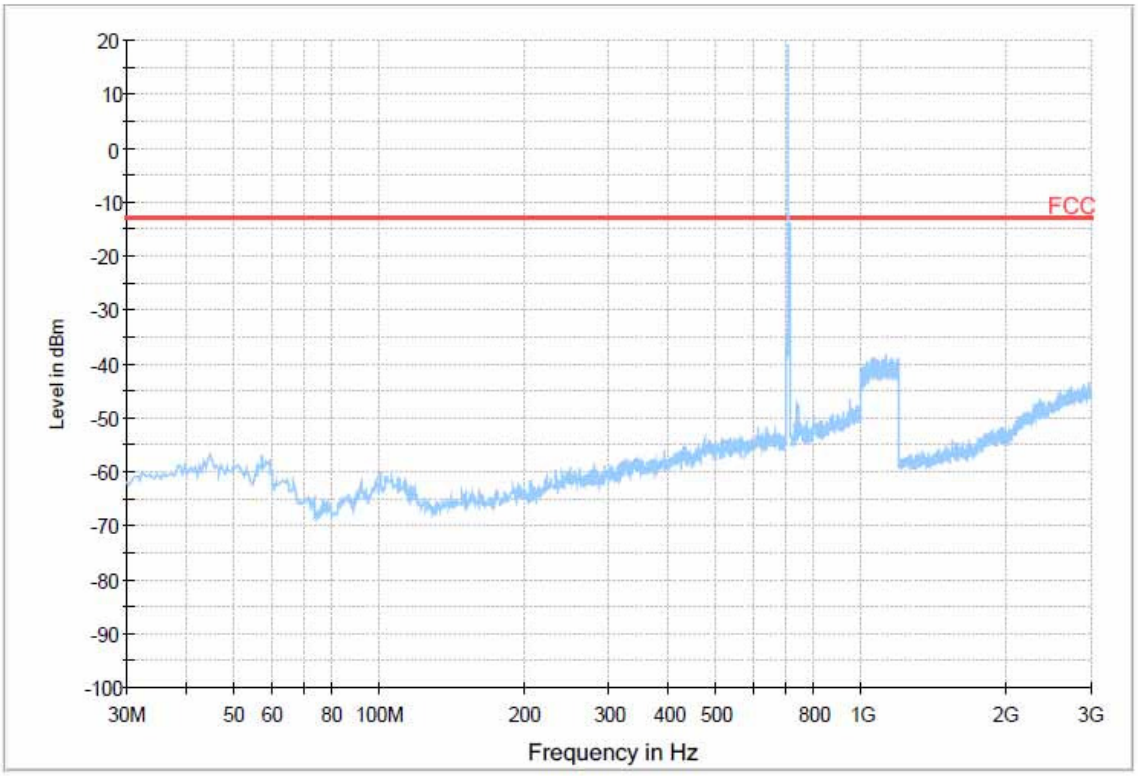
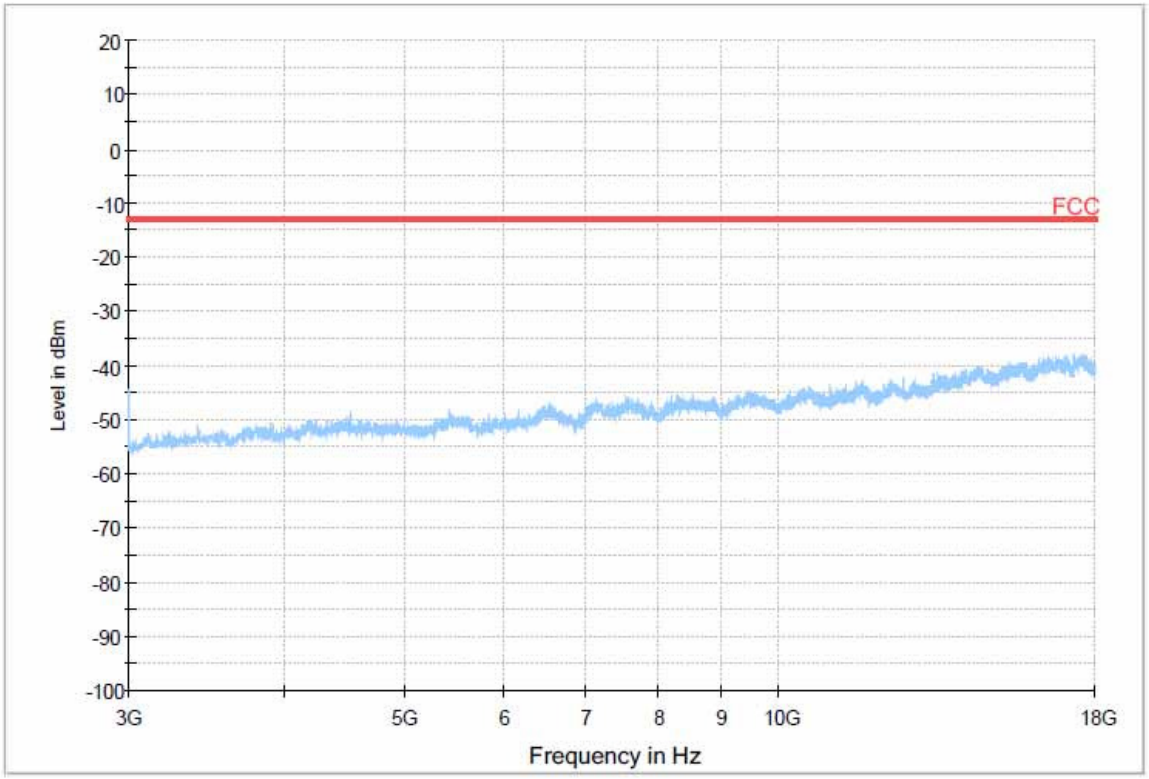


Test Mode:	LTE Band 12_TX CH23095_1.4M





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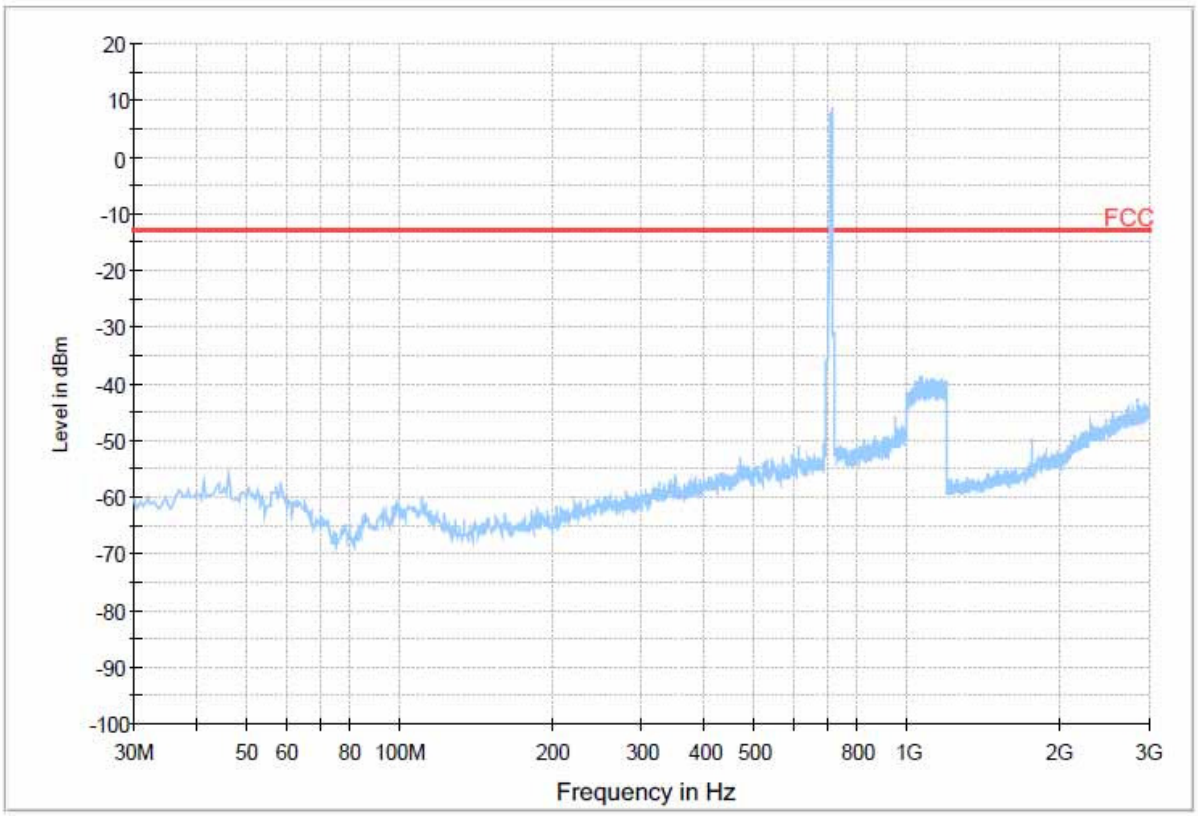

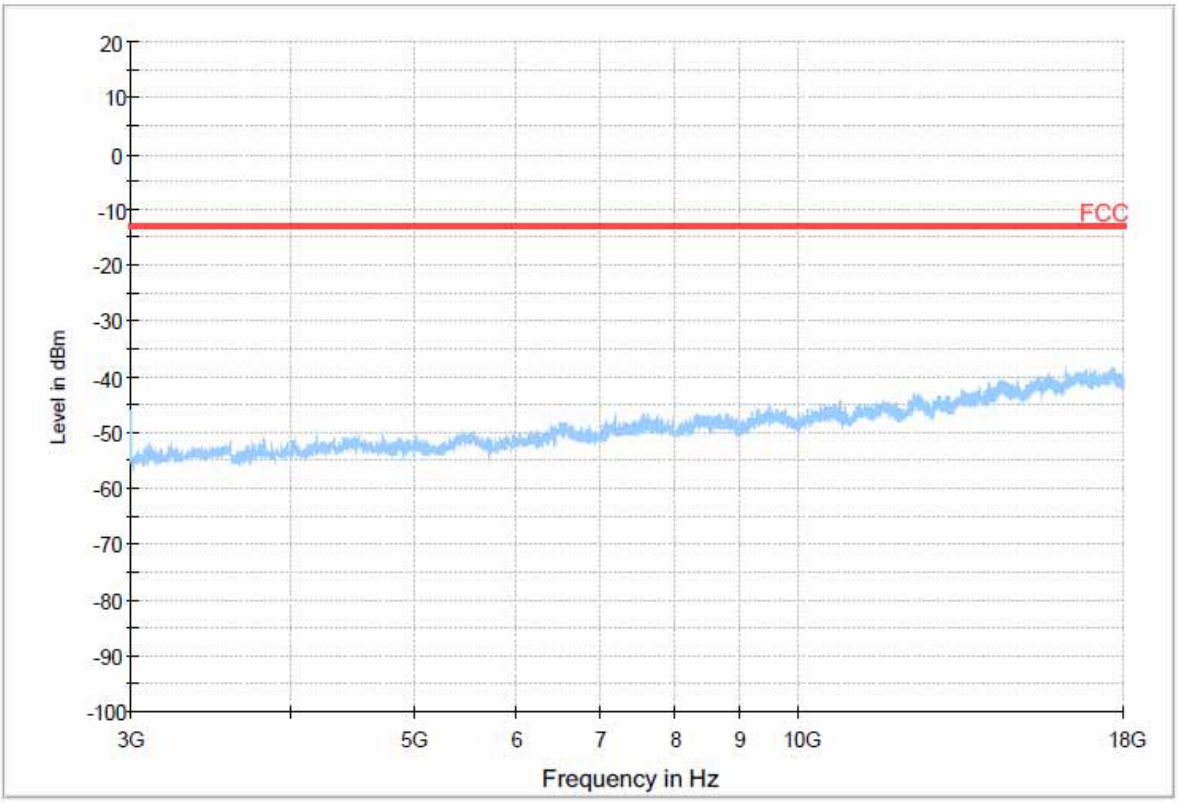

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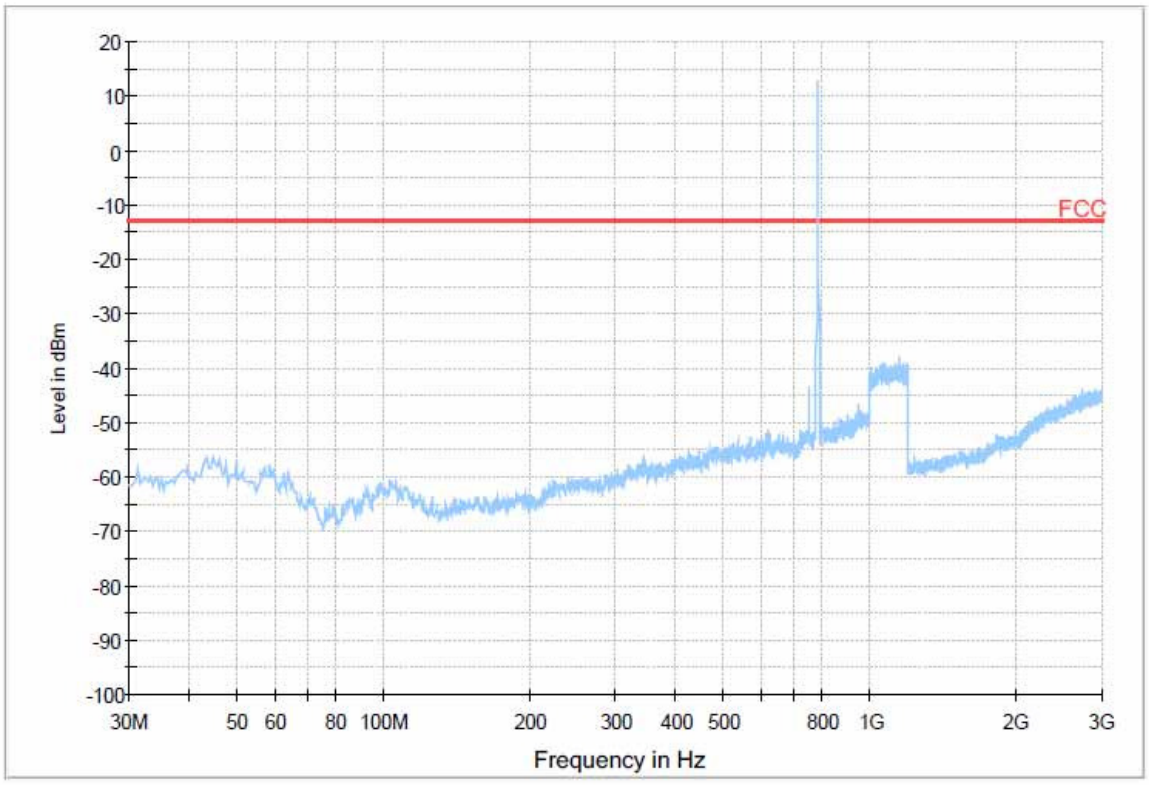

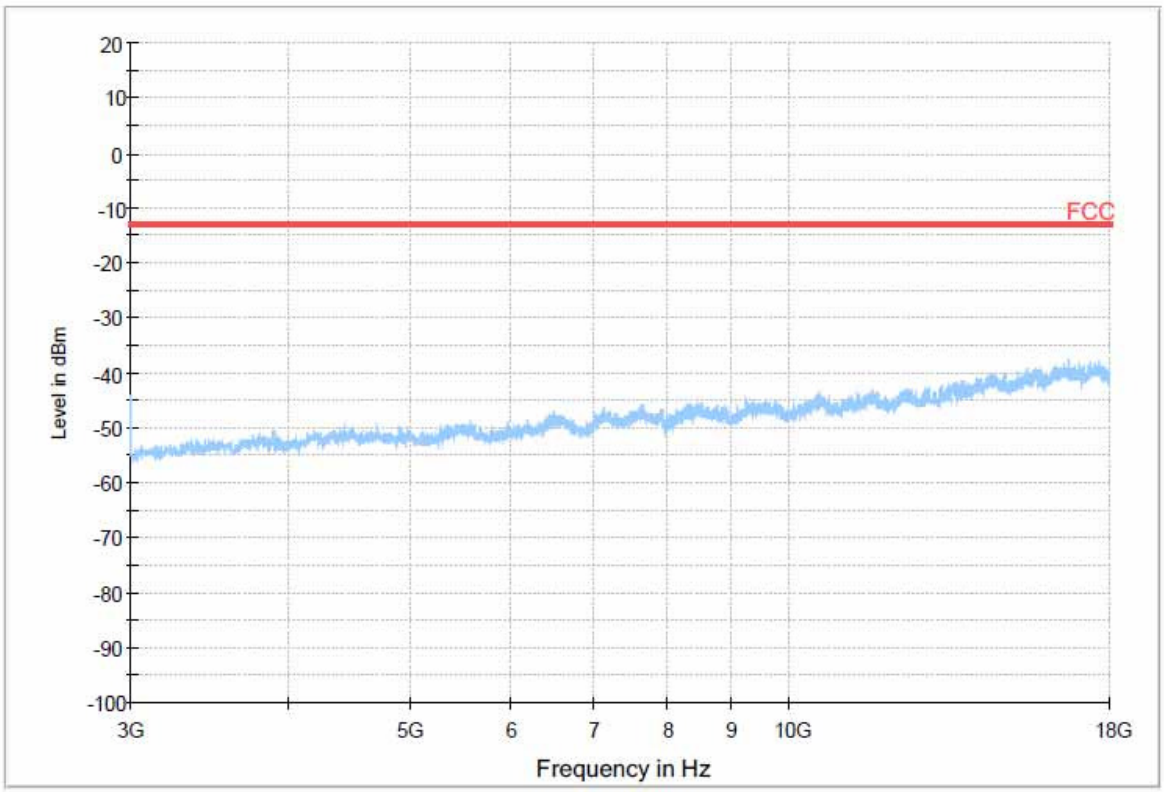

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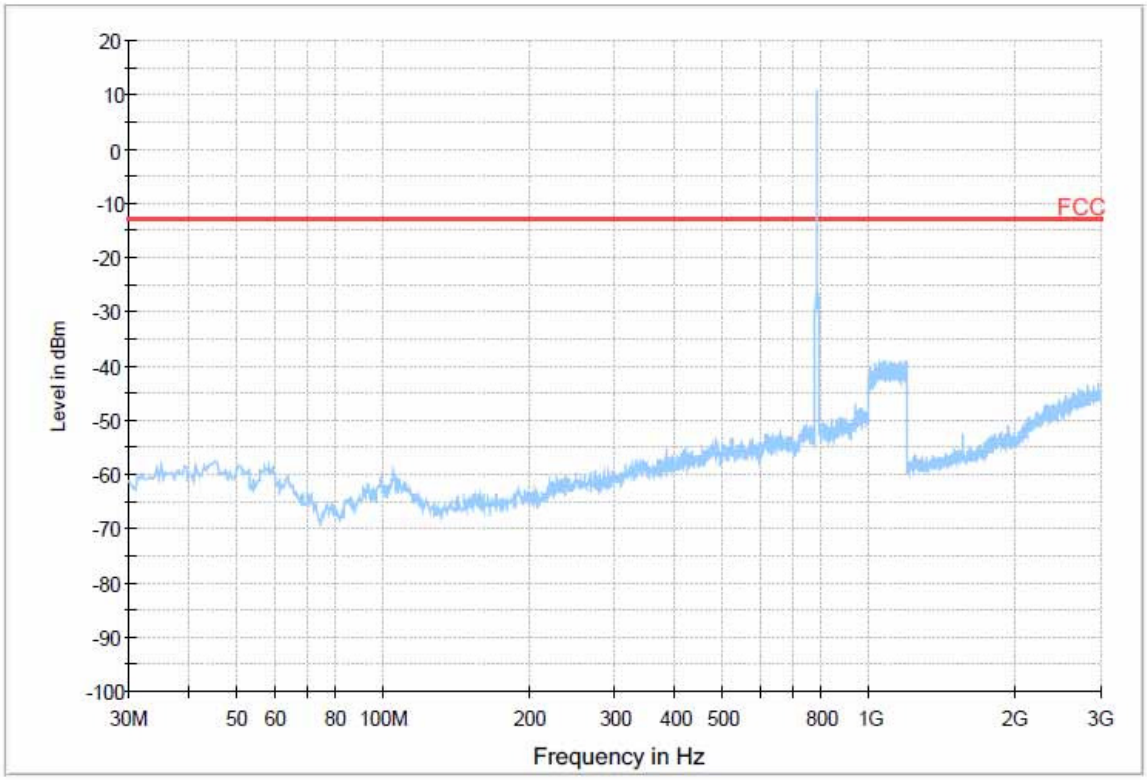

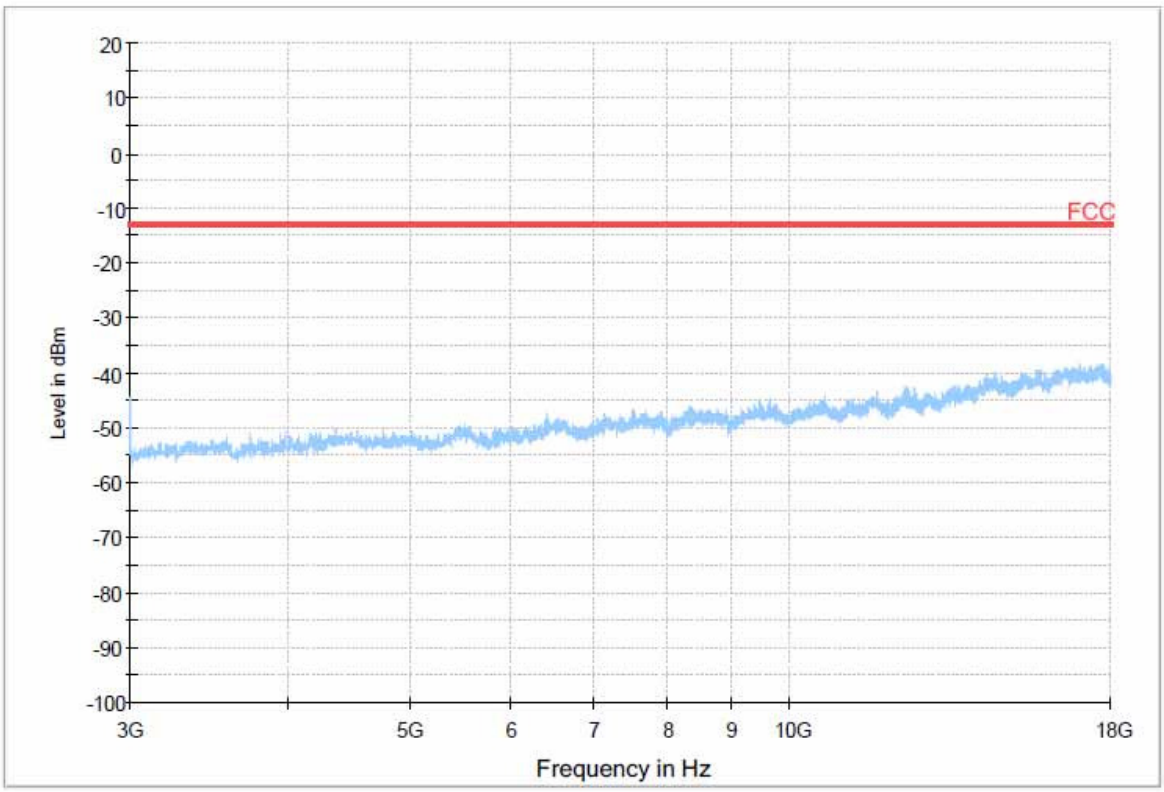

ATTACHMENT E - BAND EDGE

WCDMA Band 4_WCDMA			
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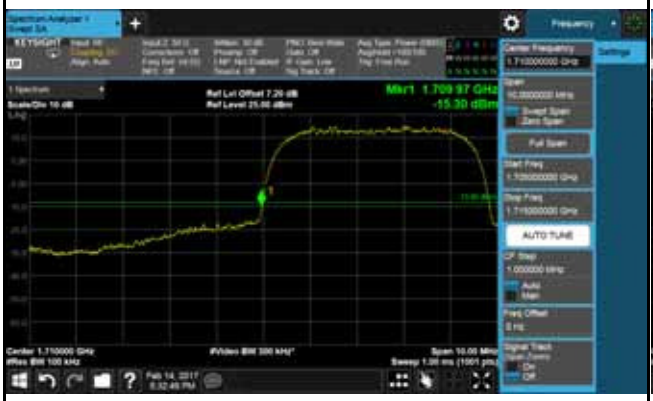			

WCDMA Band 4_HSDPA			
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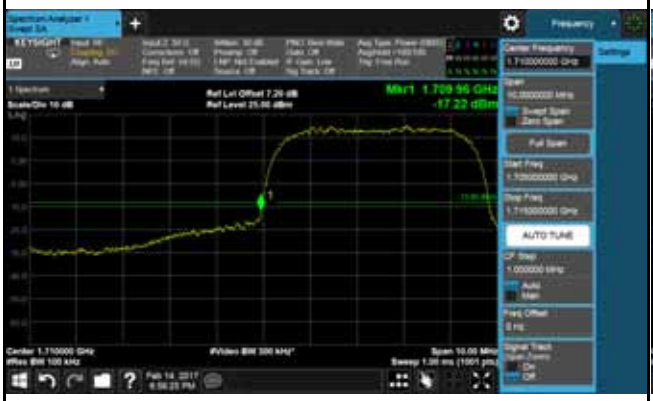
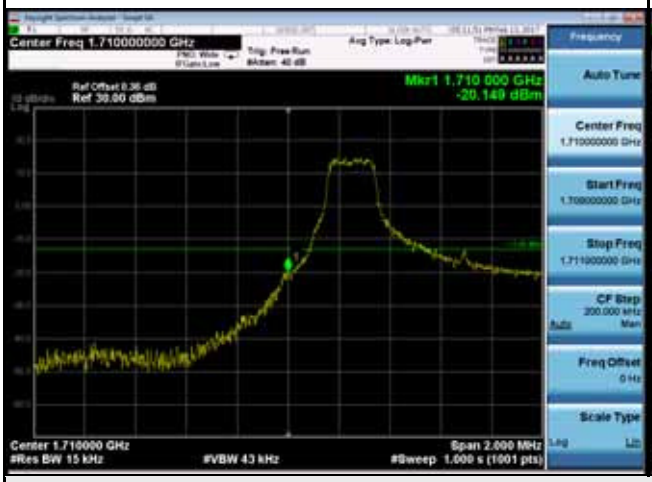
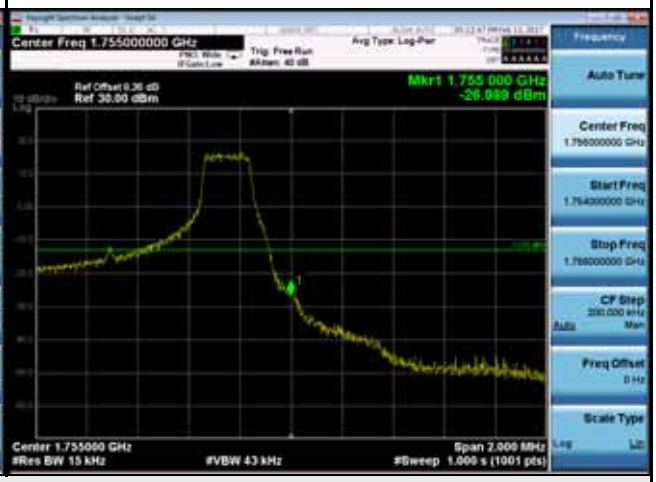
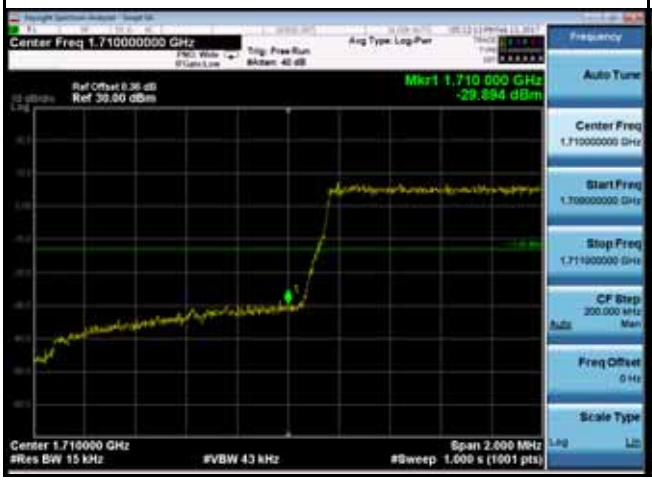
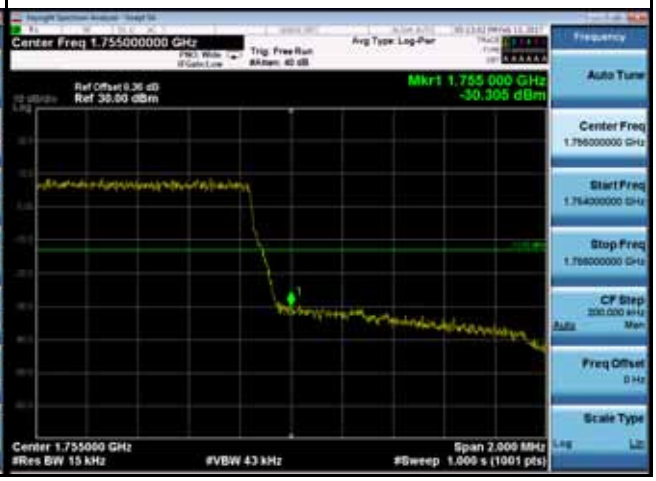
			

WCDMA Band 4_HSUPA			
Channel	1312	Channel	1513
			

LTE Band 4_1.4M			
1RB0		1RB5	
Channel	19957	Channel	20393
			
6RB0			
Channel	19957	Channel	20393
			

LTE Band 4_3M			
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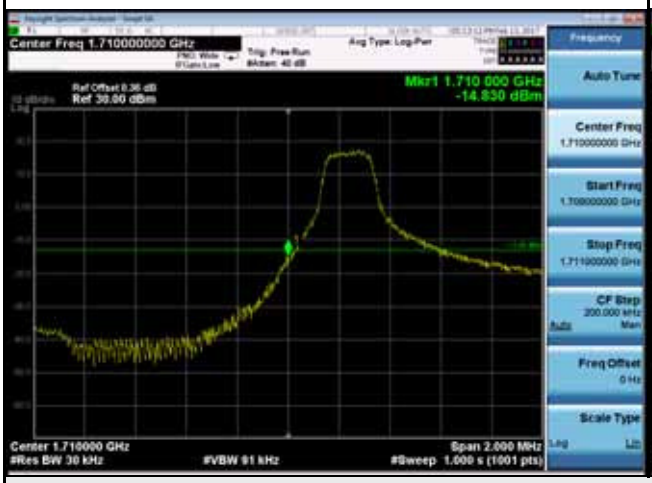
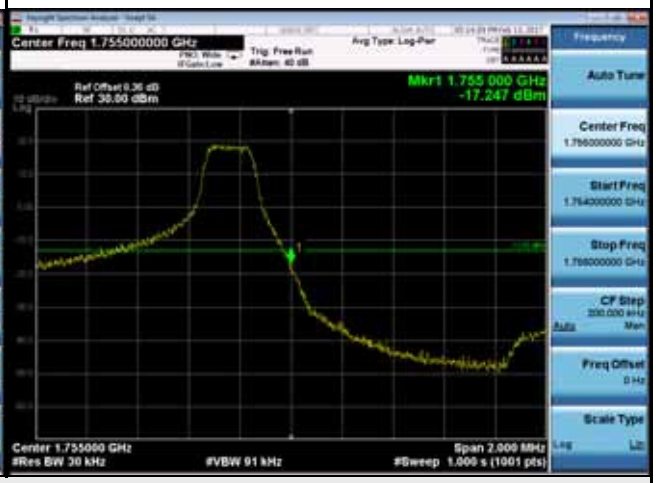
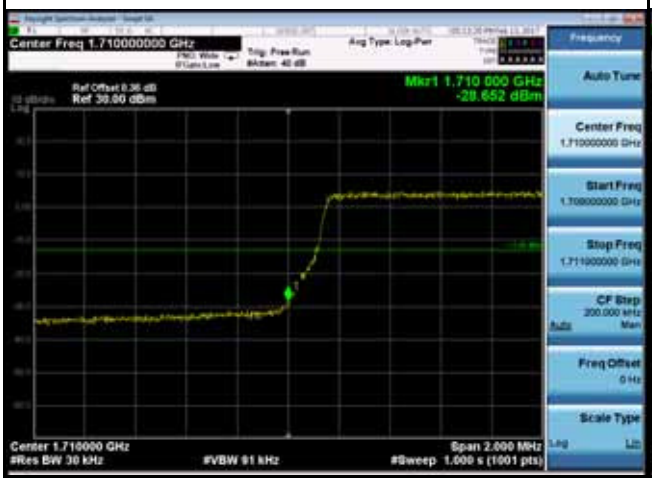
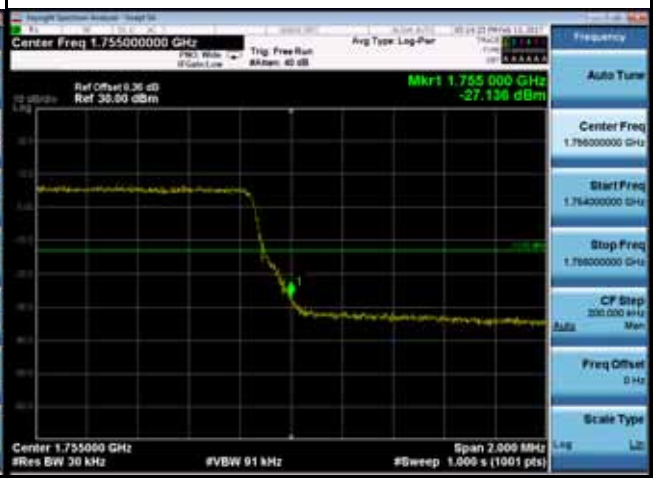
			
15RB0			
Channel	19965	Channel	20385
			

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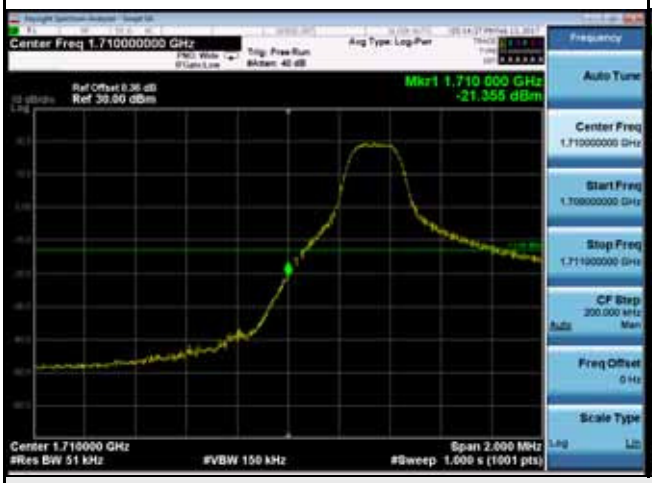		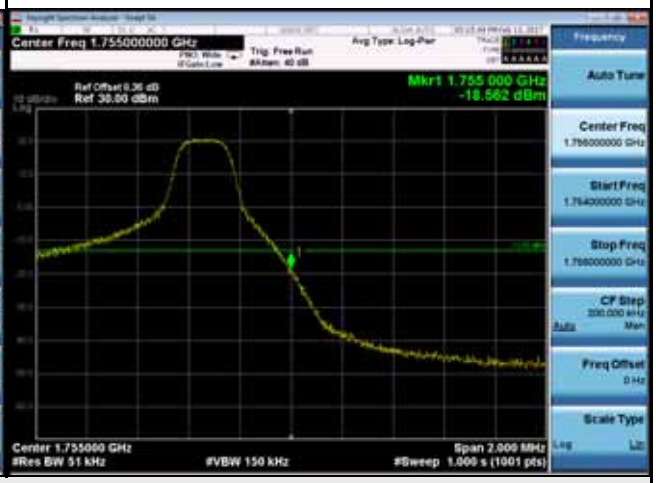	
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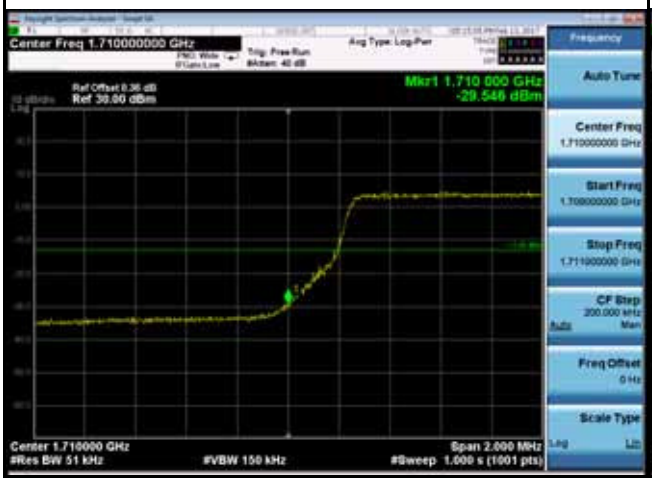
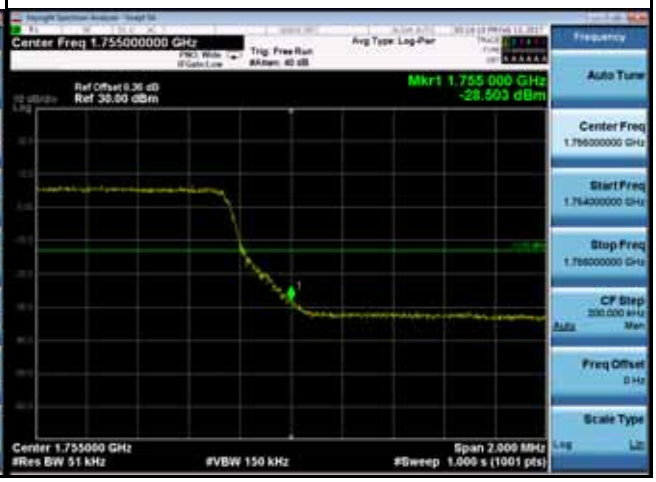
Channel	19975	Channel	20375
			

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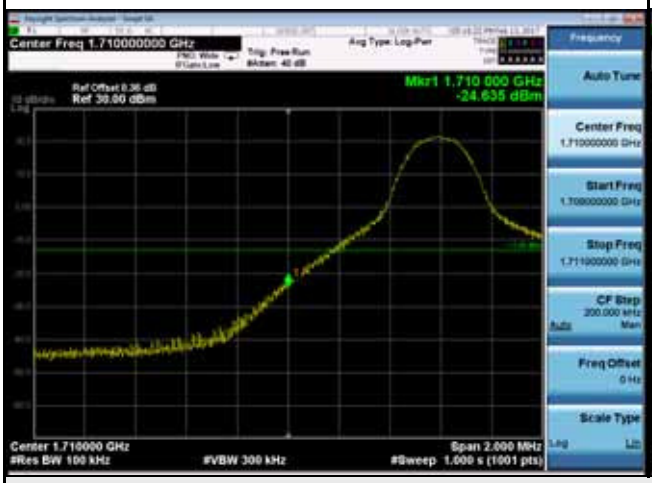
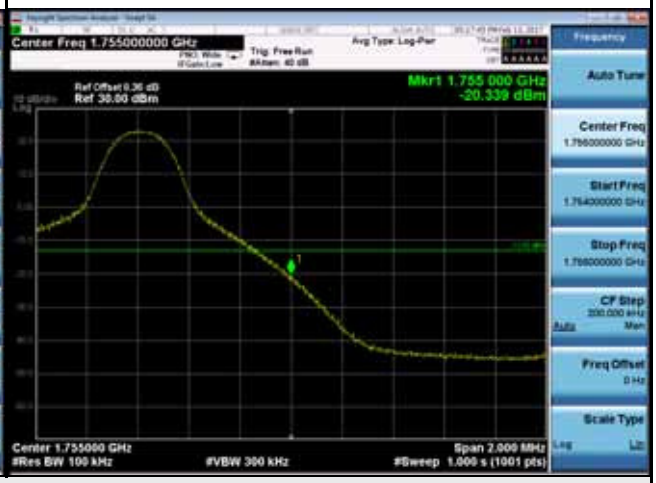
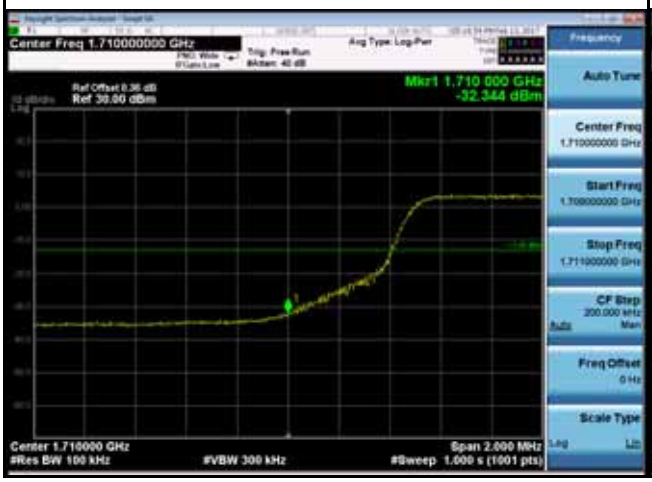
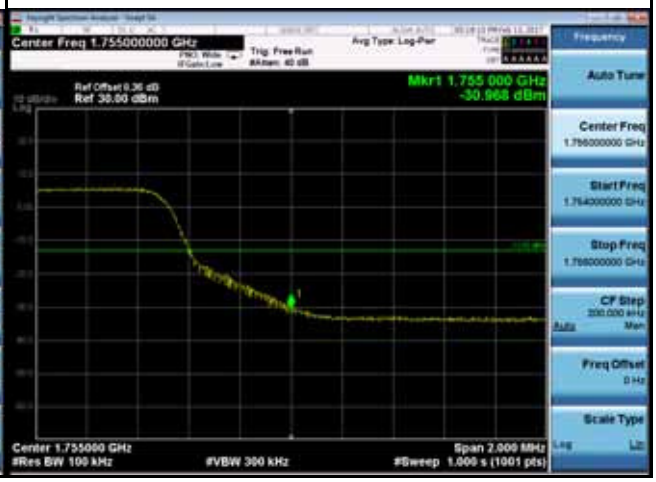
			
50RB0			
Channel	20000	Channel	20350
			

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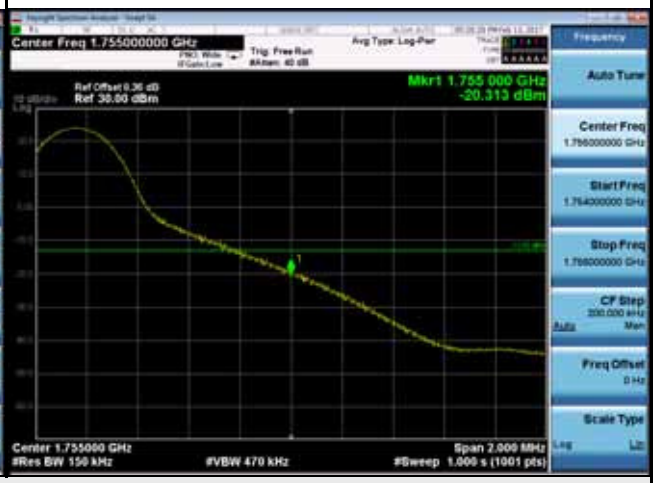
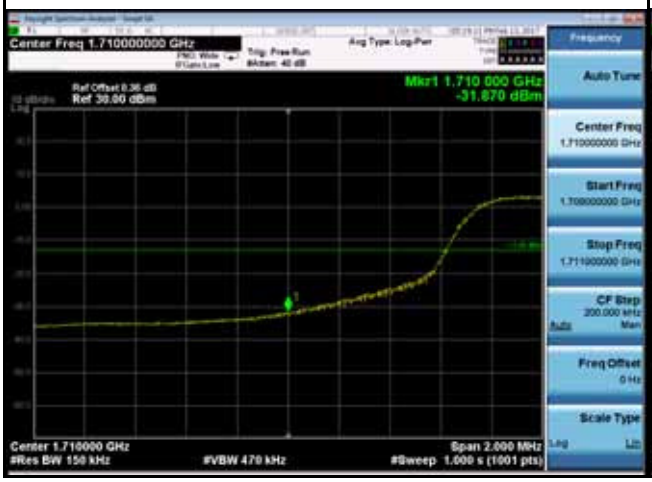
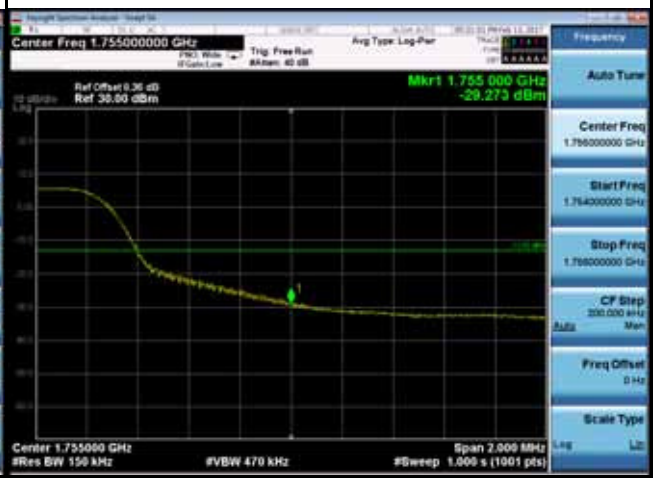
			
75RB0			
Channel	20025	Channel	20325
			

LTE Band 4_20M			
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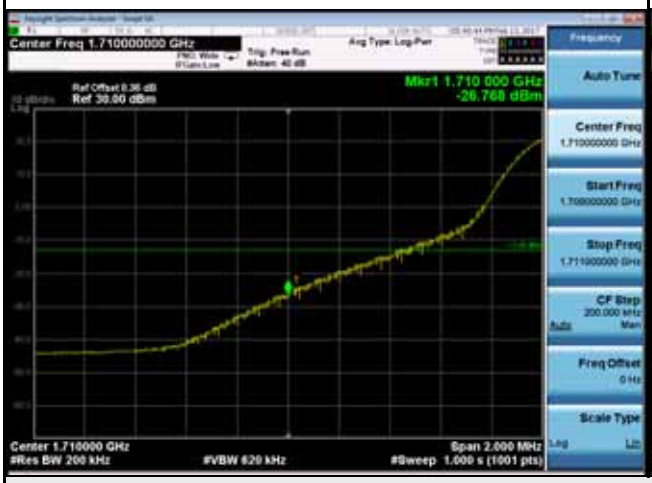
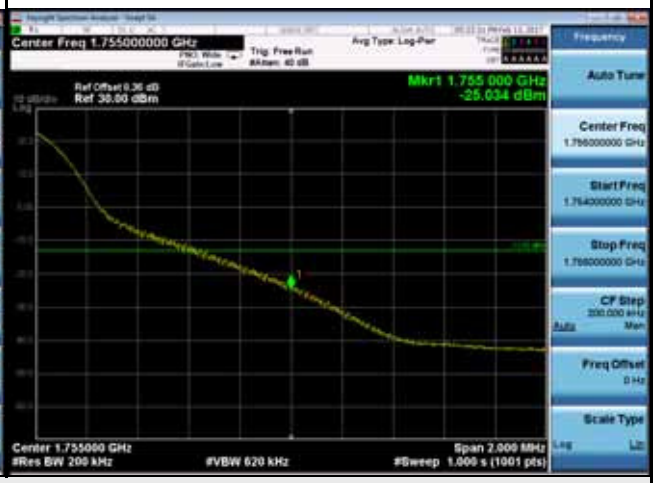
Channel	20050	Channel	20300
			
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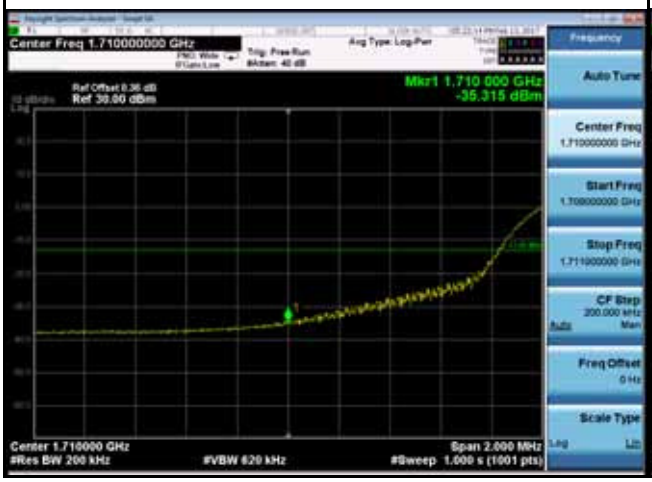
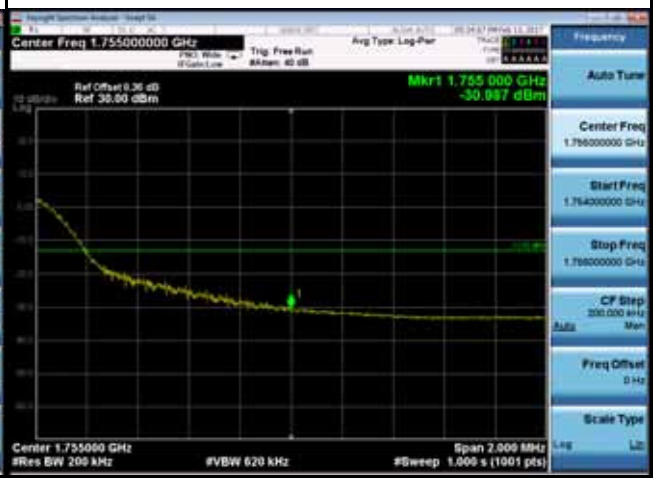
Channel	20050	Channel	20300
			

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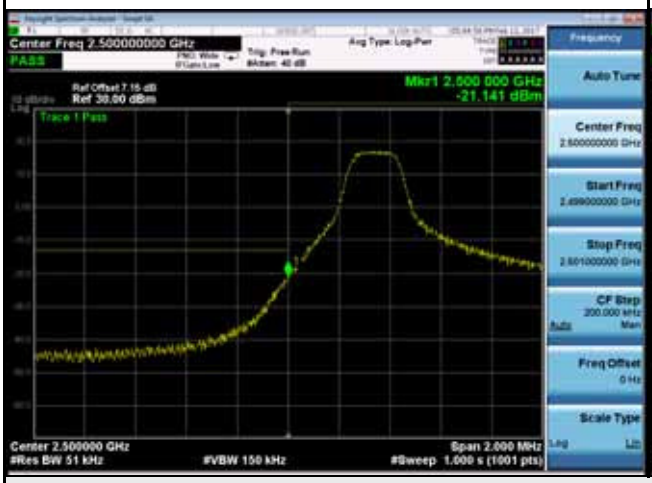
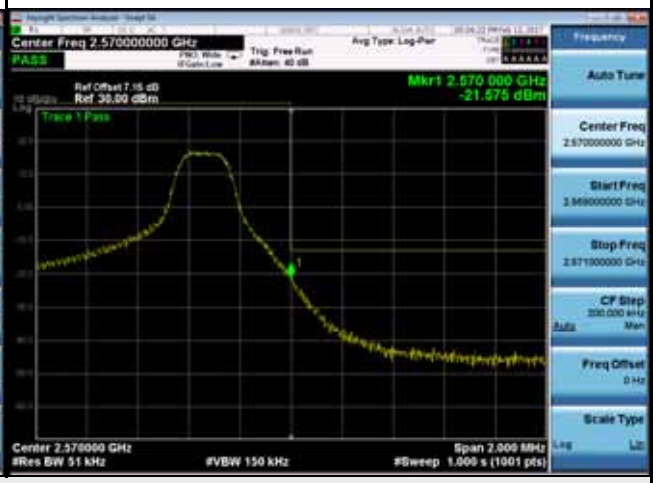
<tr><td colspan="2"> 
</td><td colspan="2"> 
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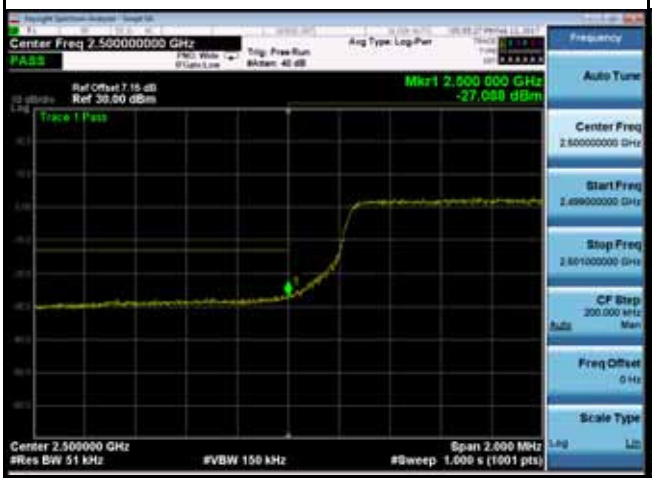
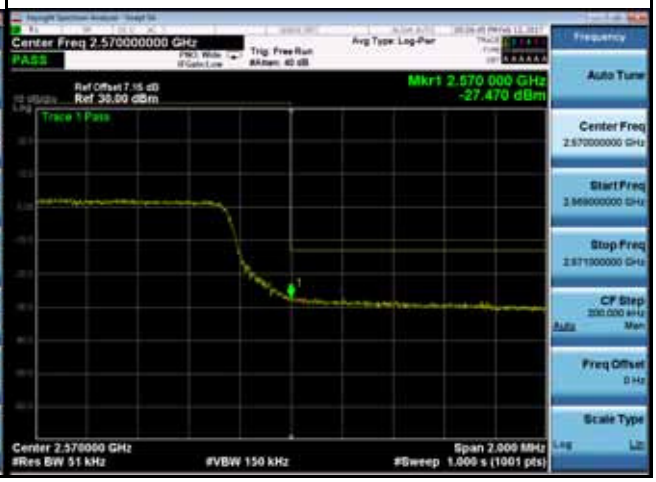
<tr><td colspan="2"> 
</td><td colspan="2"> 
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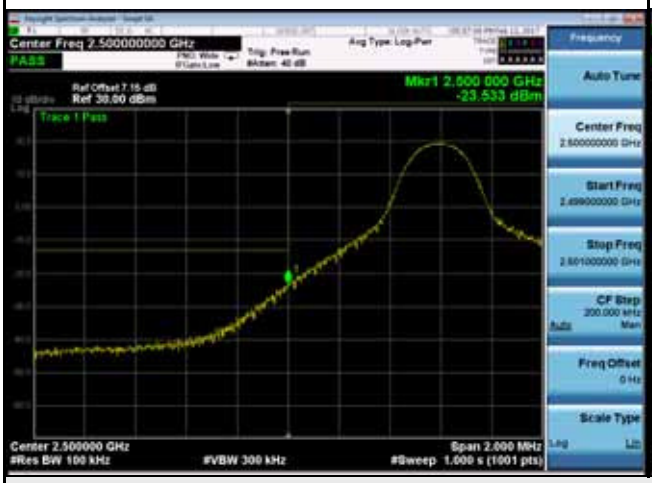		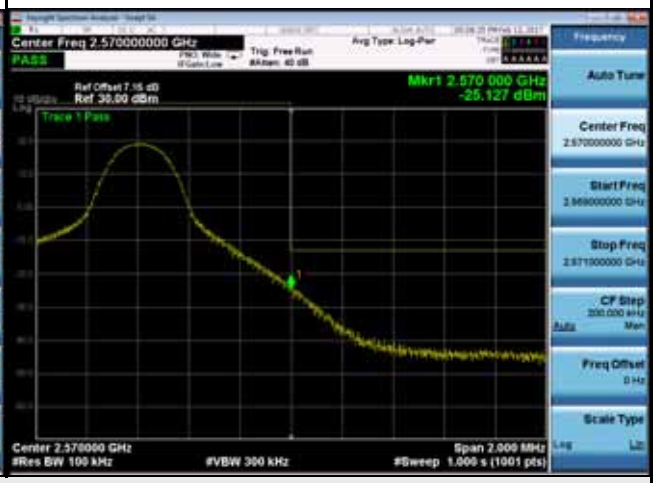	
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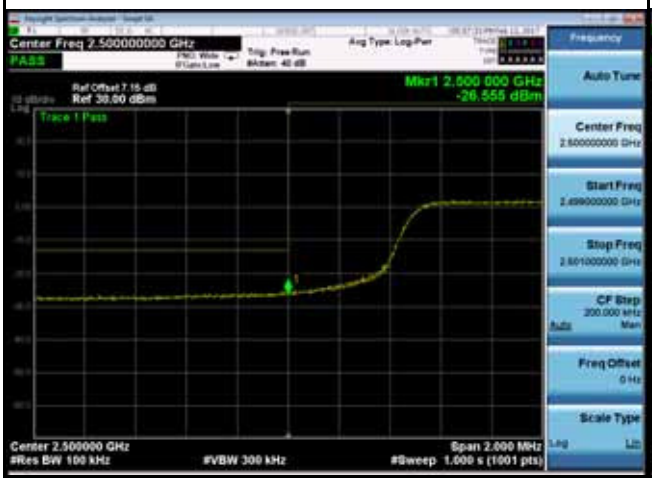
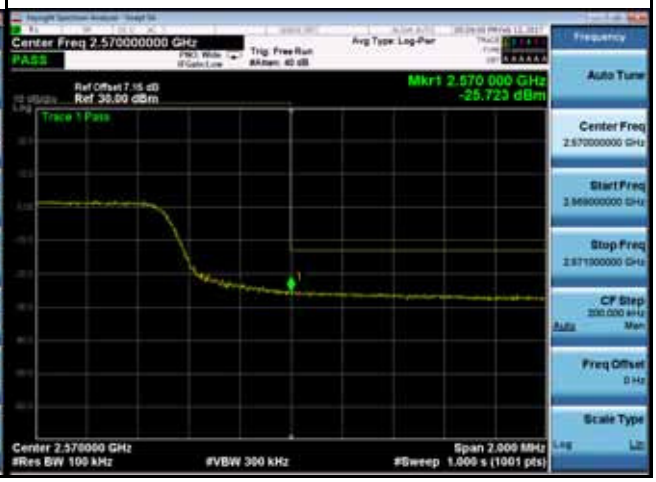
Channel	20800	Channel	21400
			

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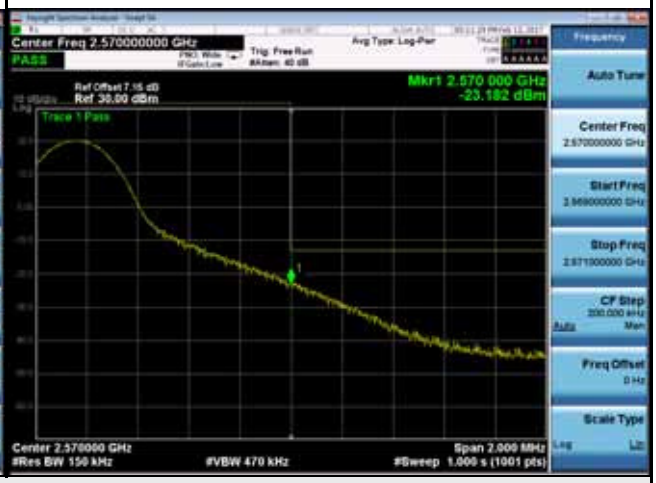
</td><td colspan="2"> 
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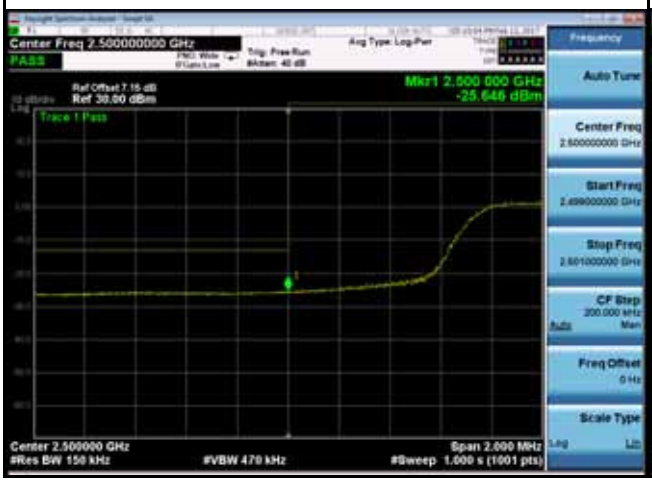
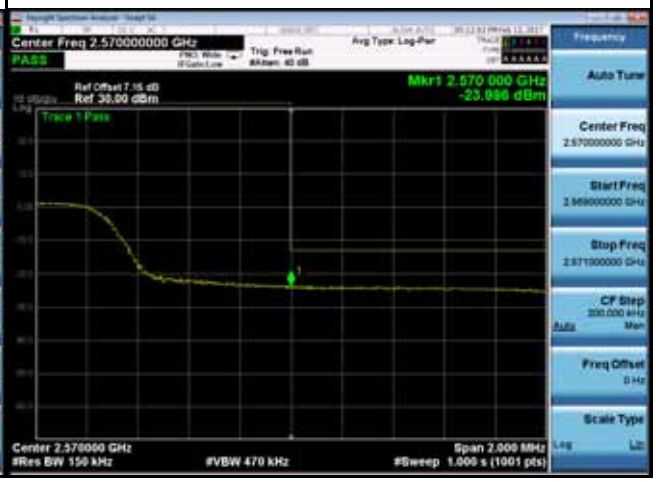
<tr><td colspan="2"> 
</td><td colspan="2"> 
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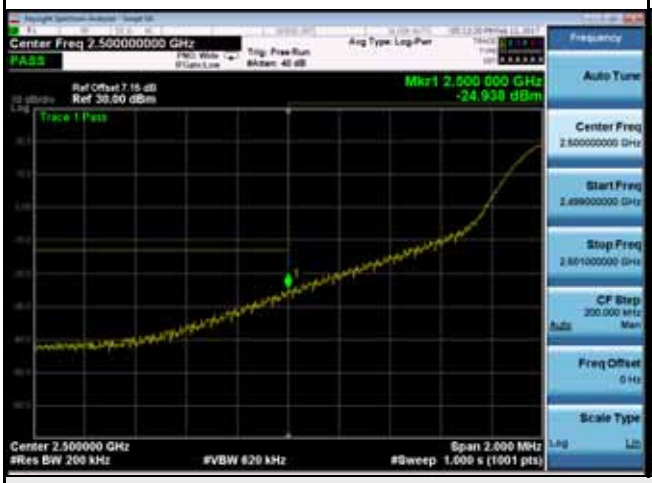		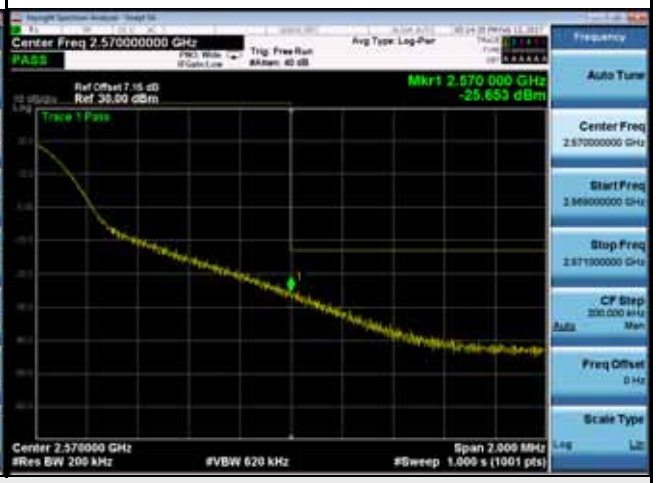	
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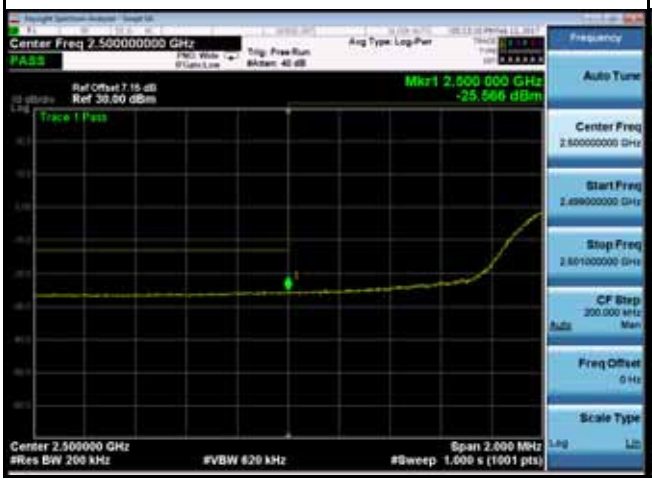		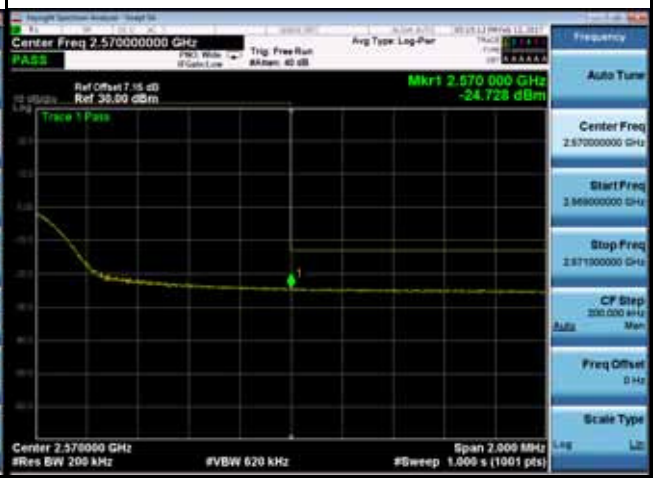	

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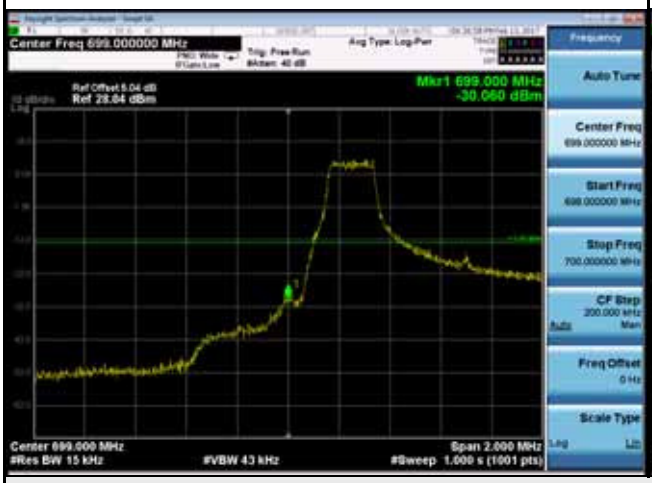		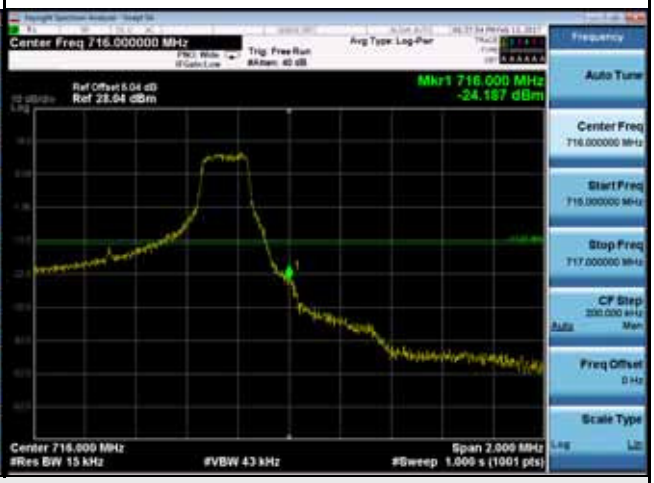	
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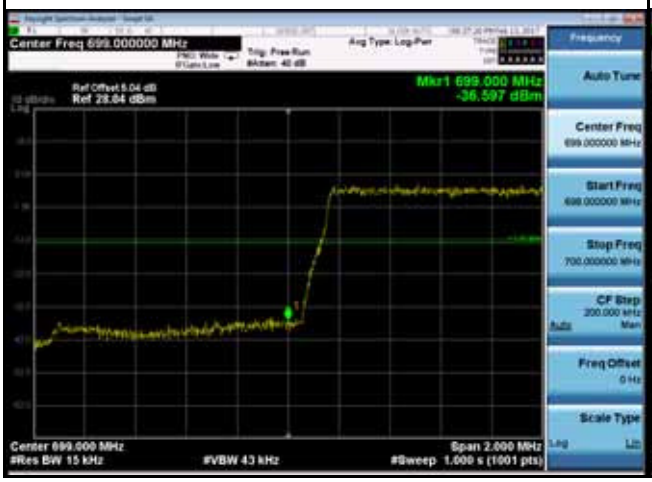		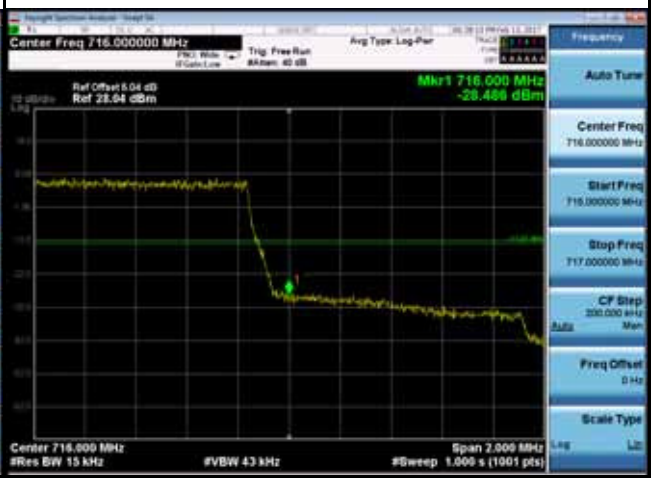	

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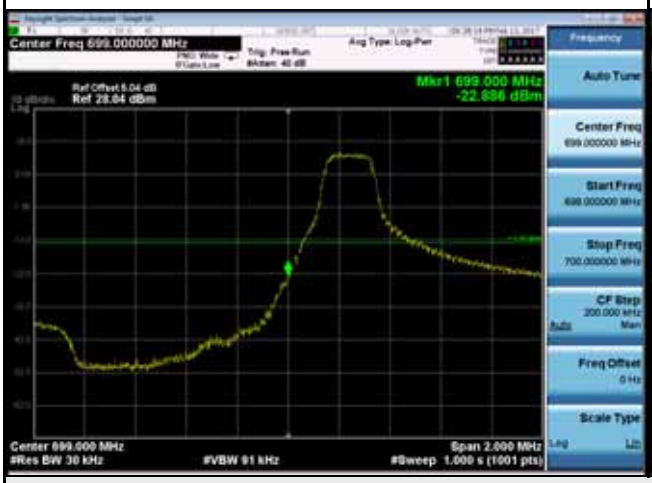		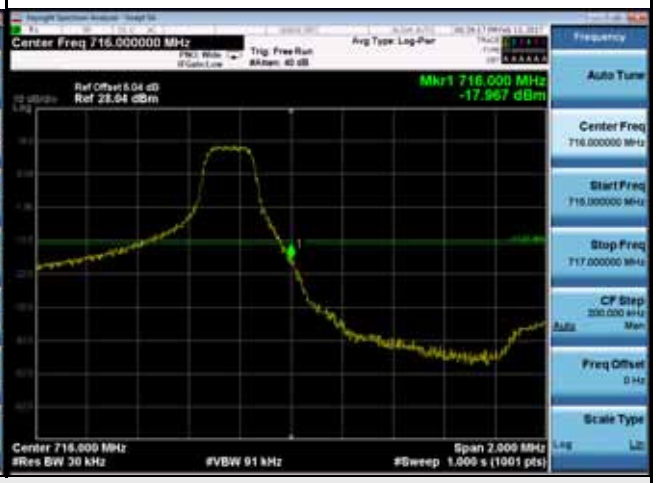	
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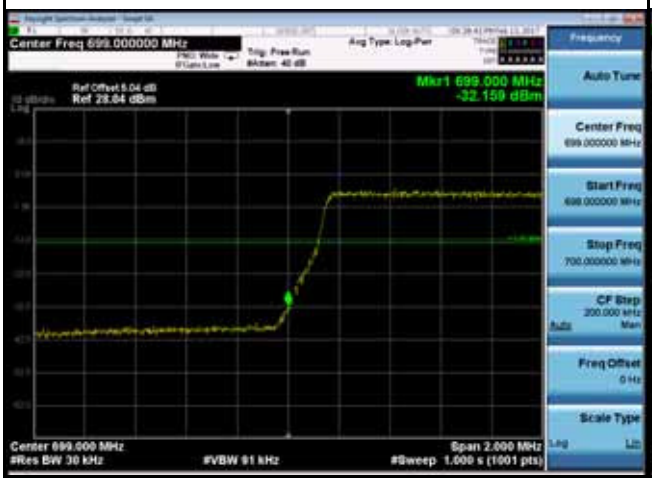		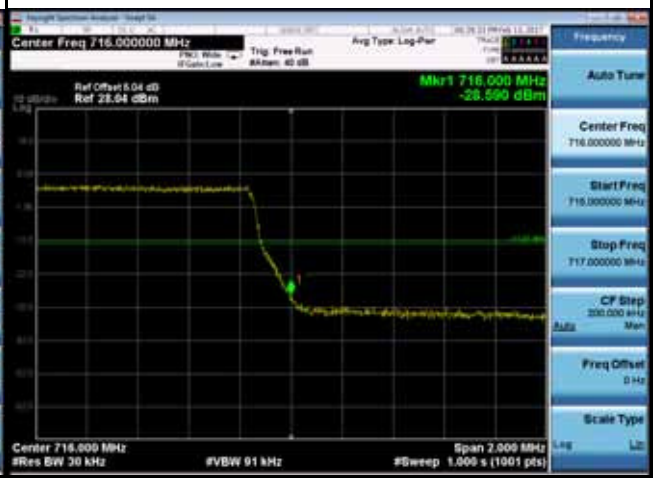	

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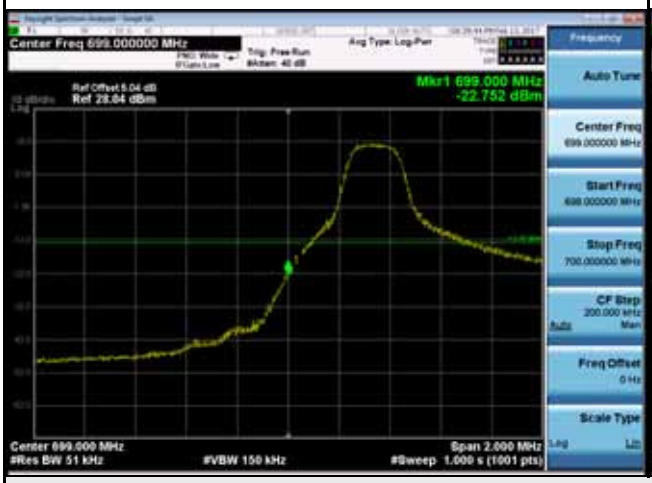		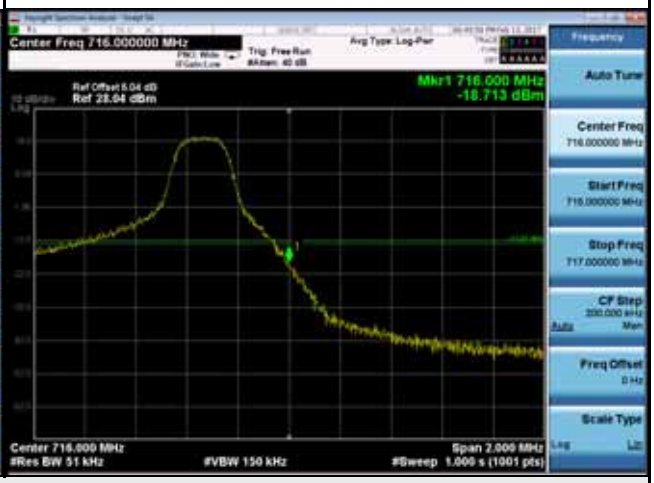	
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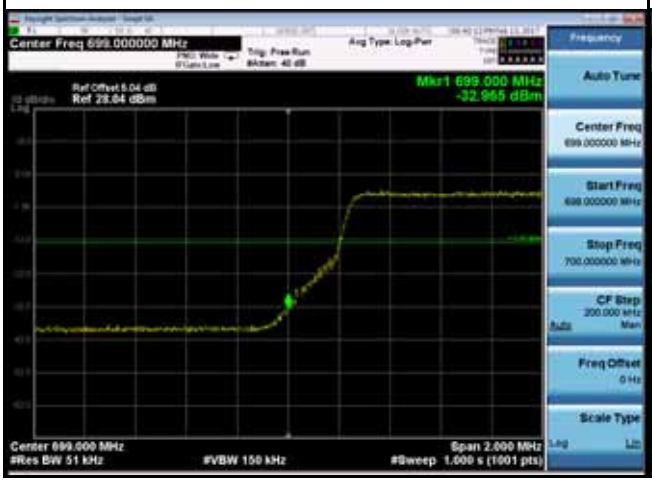
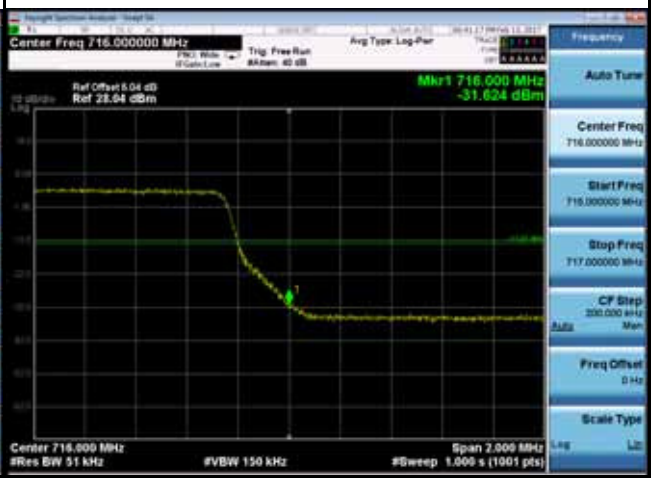
Channel	23035	Channel	23155
			

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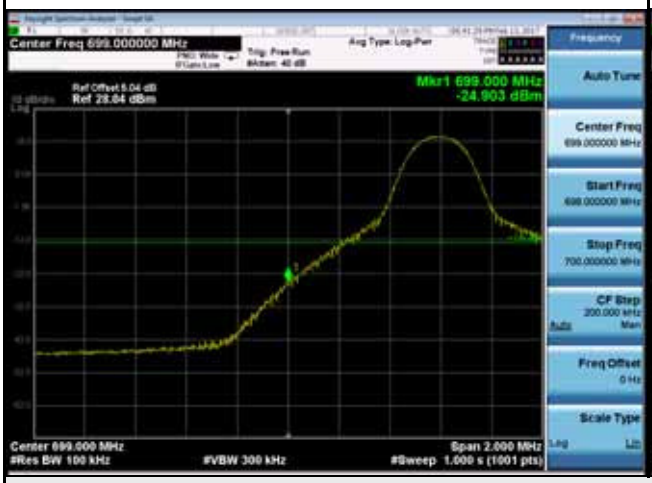		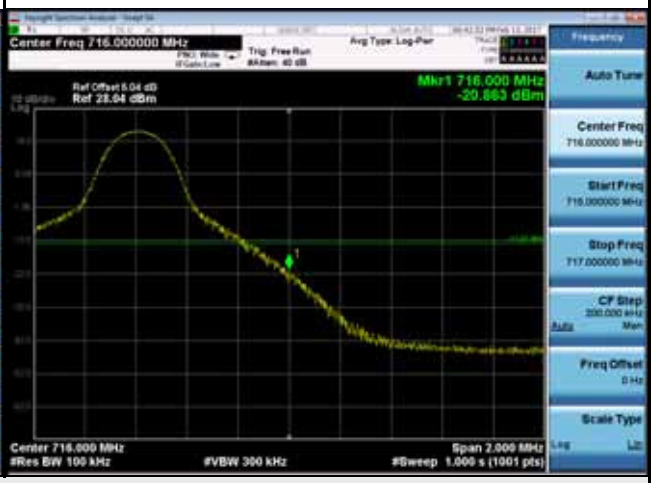	
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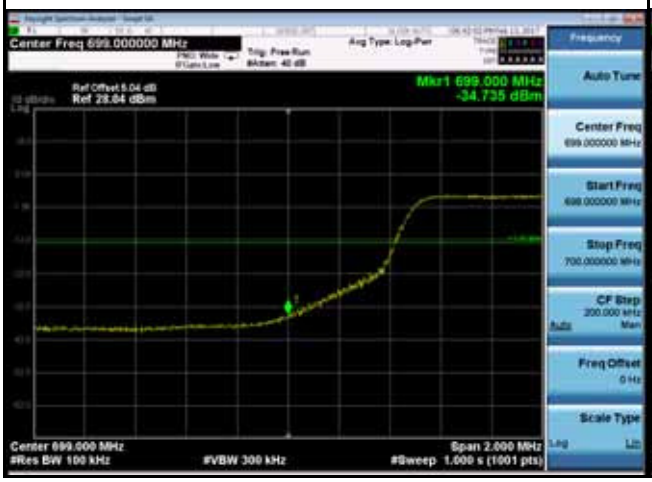
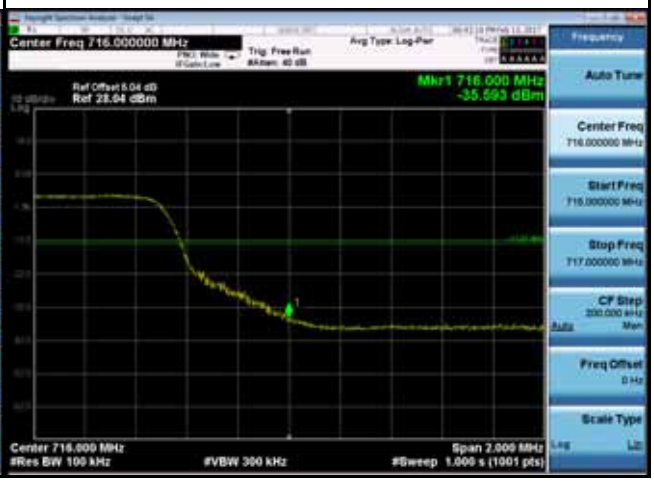
Channel	23060	Channel	20350
			

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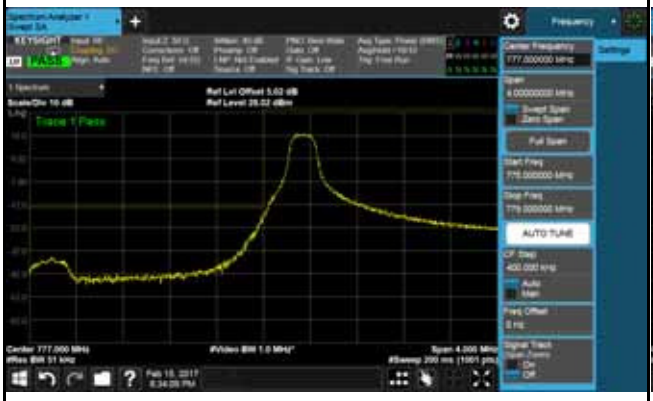		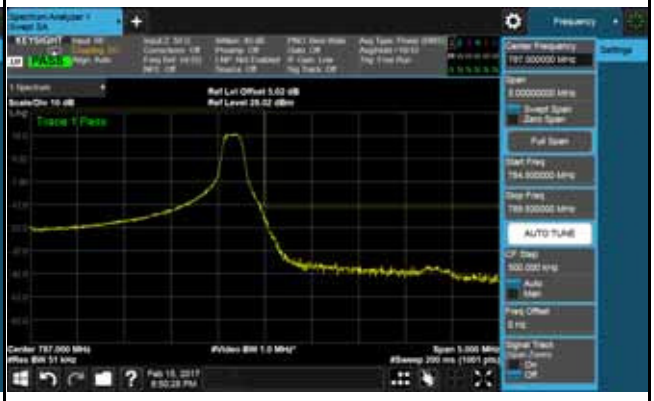	
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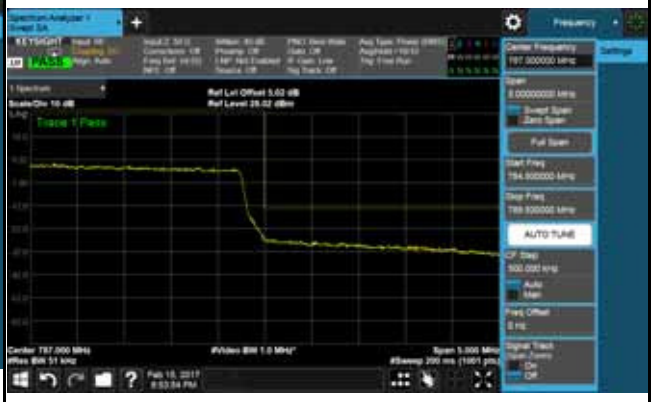
Channel	23205	Channel	23255
			

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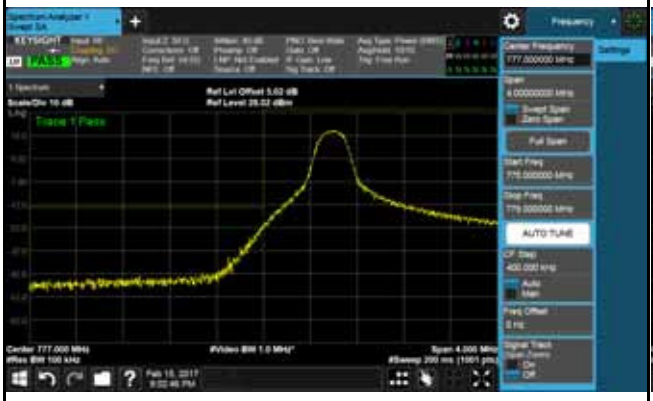		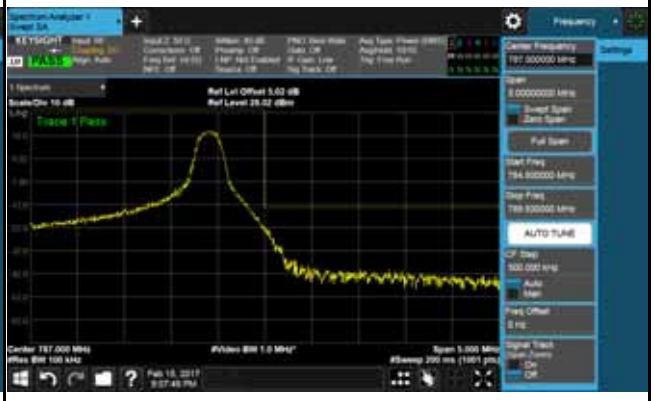	
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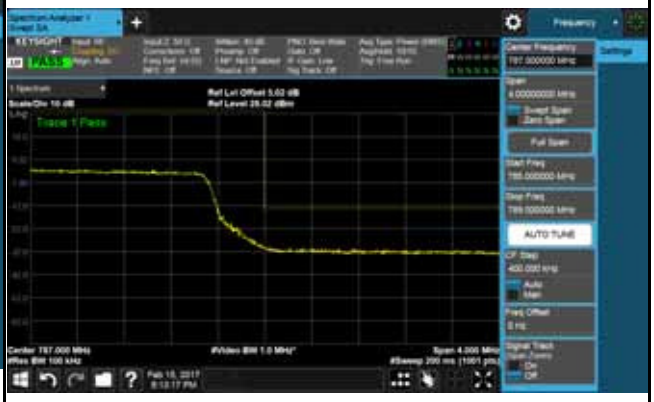
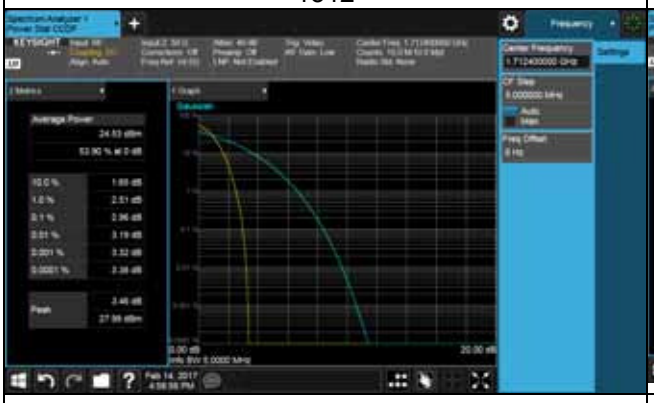
			

ATTACHMENT F - PEAK TO AVERAGE RATIO

WCDMA Band 4 Spectrum Plot_WCDMA	
1312	1413
	
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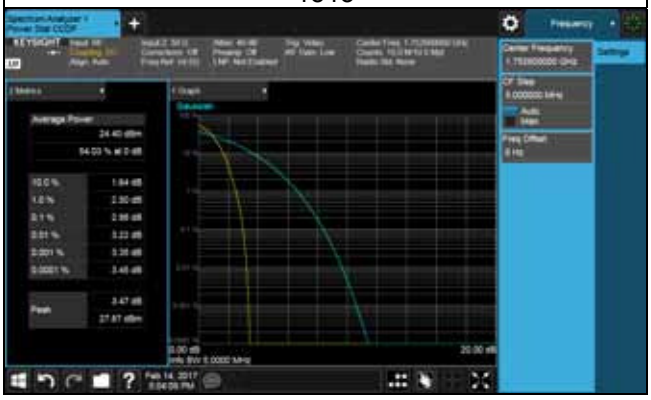	

WCDMA Band 4 Spectrum Plot_HSDPA	
1312	1413
	
1513	
	

WCDMA Band 4 Spectrum Plot_HSUPA	
1312	1413
	
1513	
	

LTE Band 4 Spectrum Plot_1.4M	
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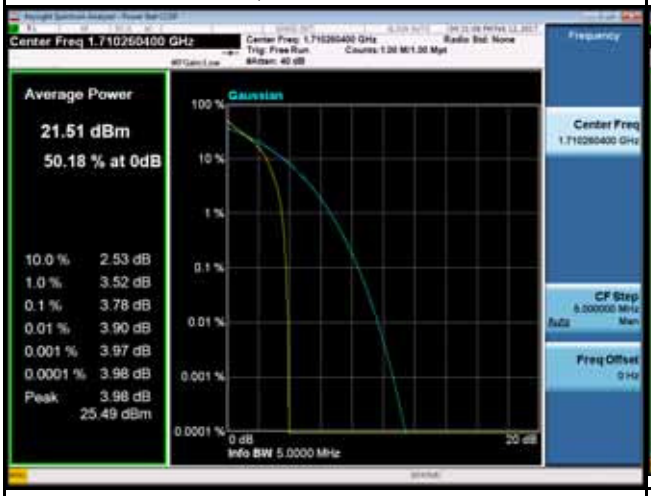	
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	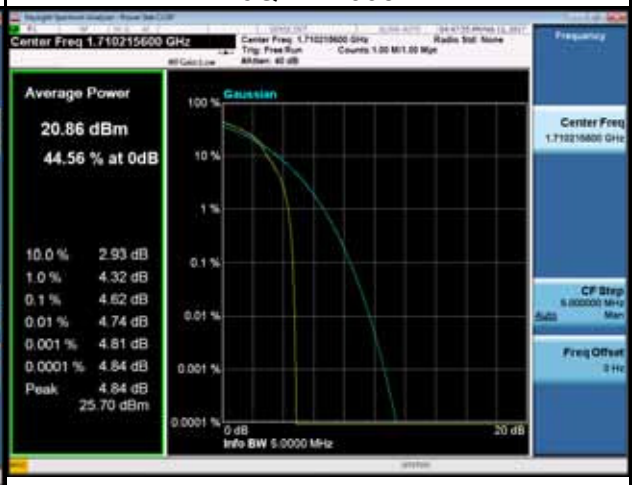
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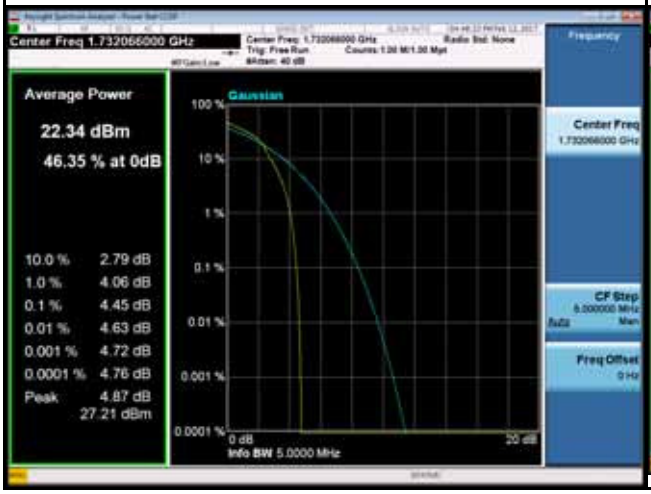
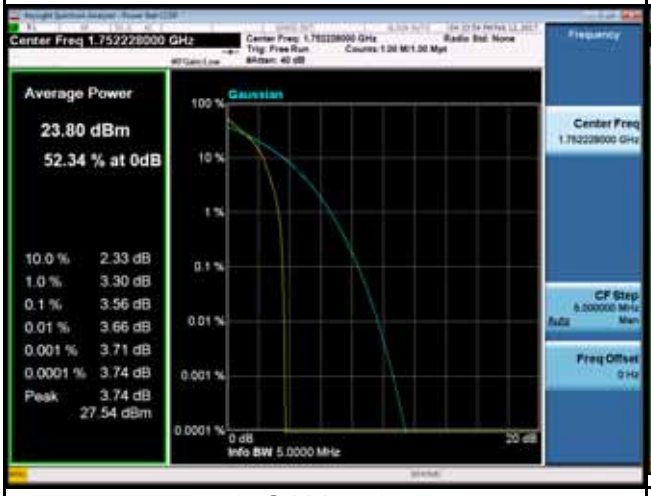
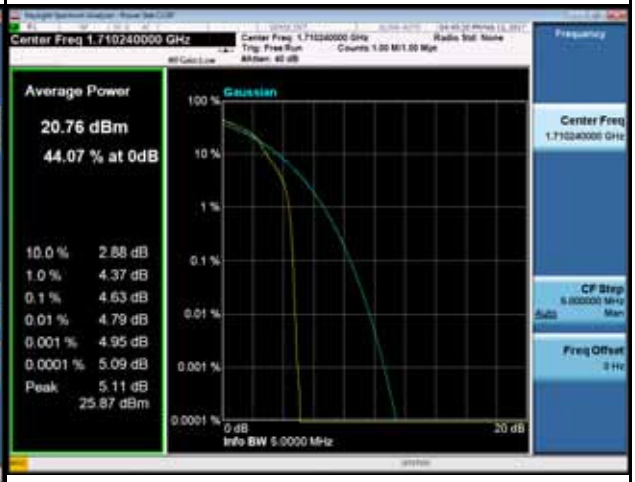
	

LTE Band 4 Spectrum Plot_3M	
QPSK-19965	QPSK-20175
	
QPSK-20385	16QAM-19965
	
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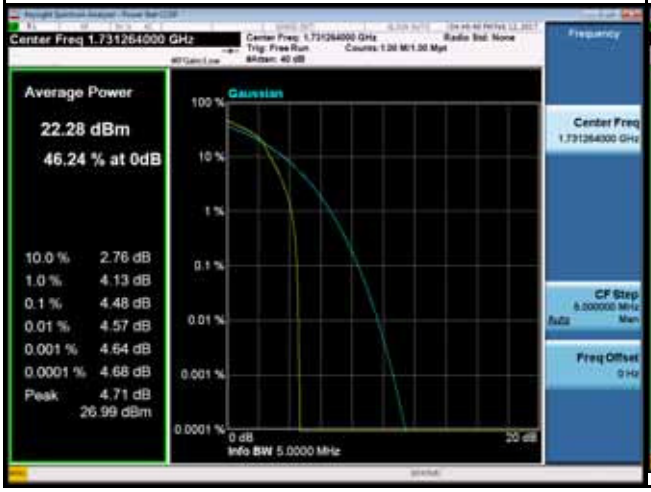	

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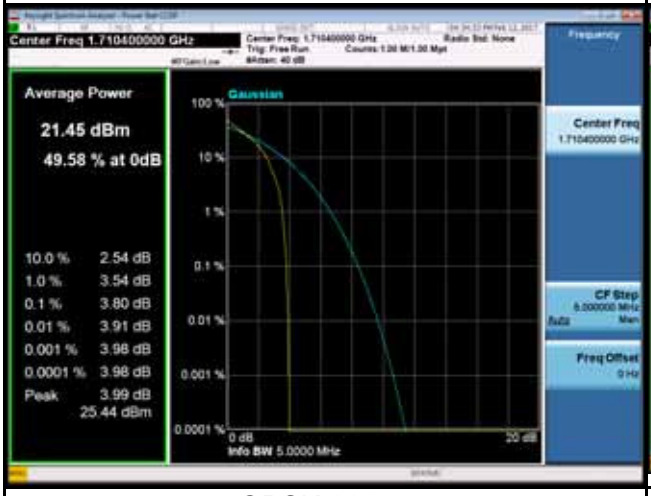
QPSK-19975	QPSK-20175
	
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	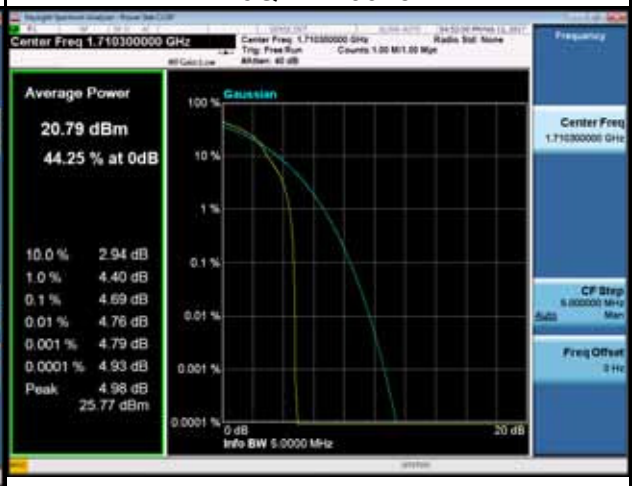
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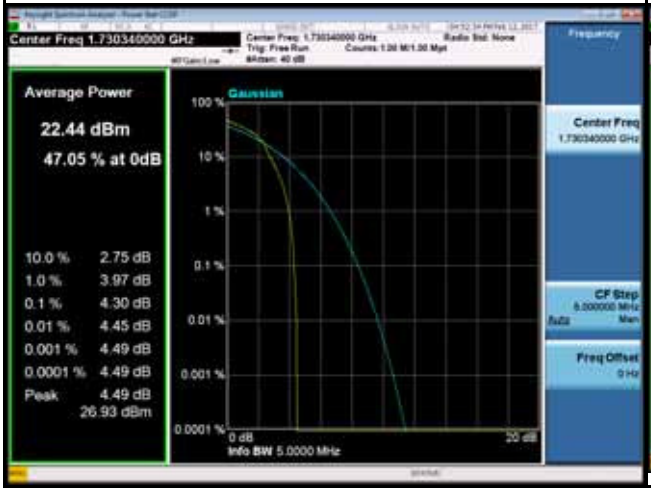	

LTE Band 4 Spectrum Plot_10M	
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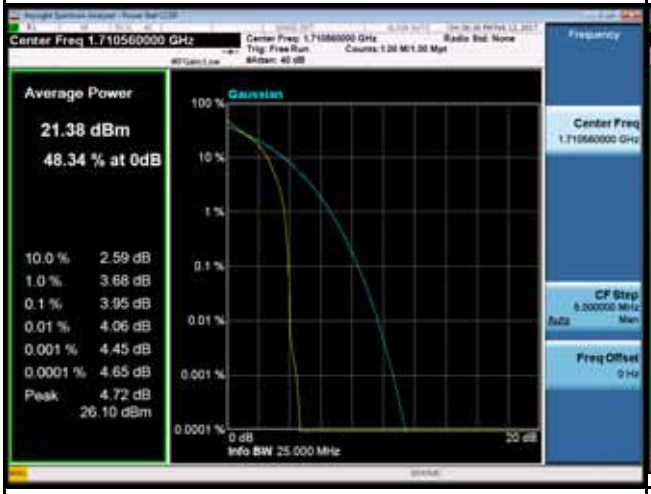	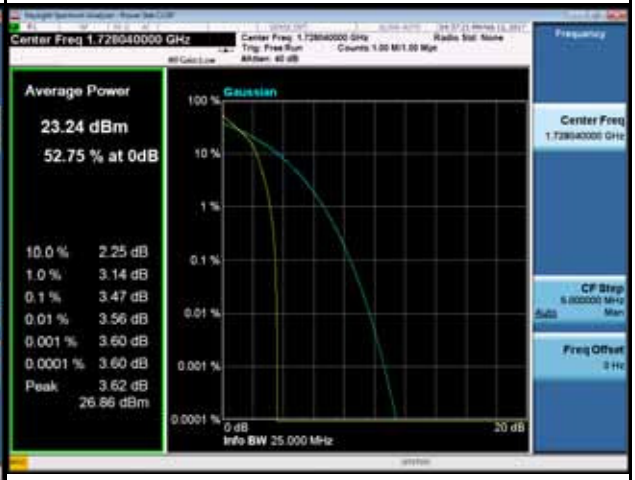
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	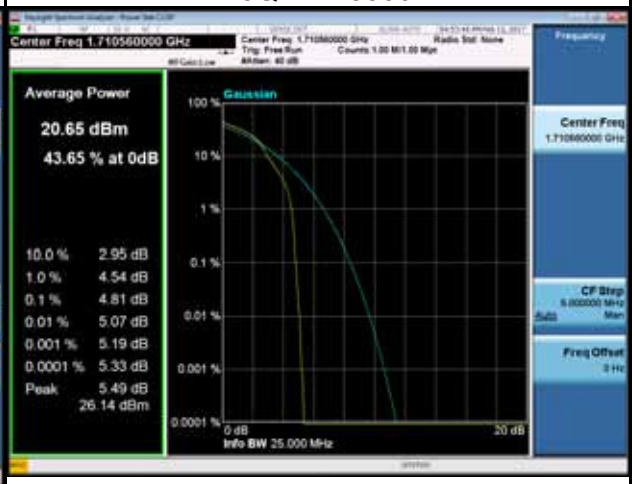
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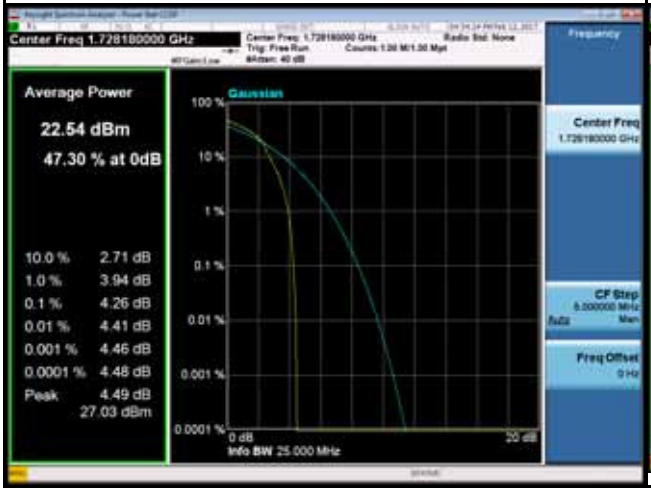	

LTE Band 4 Spectrum Plot_15M	
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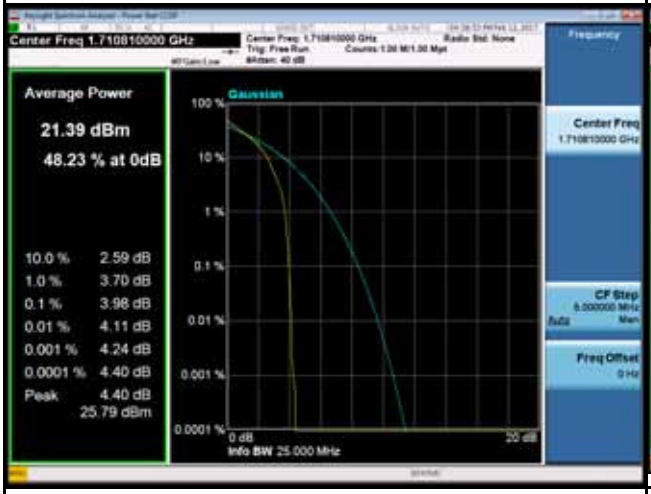	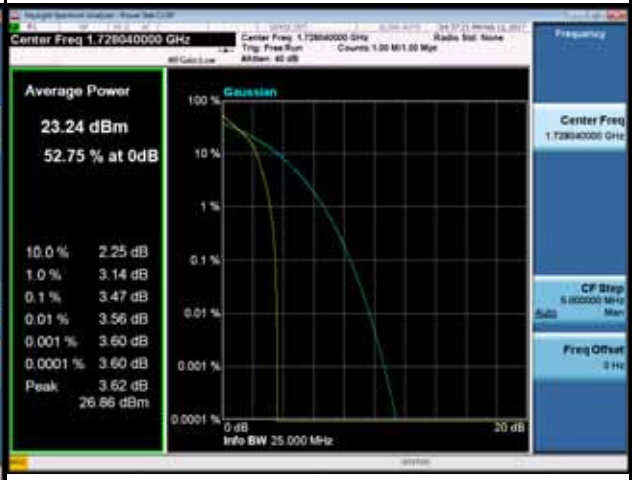
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	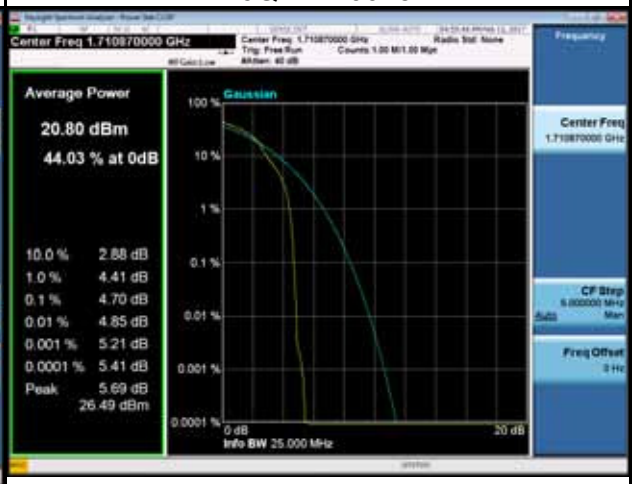
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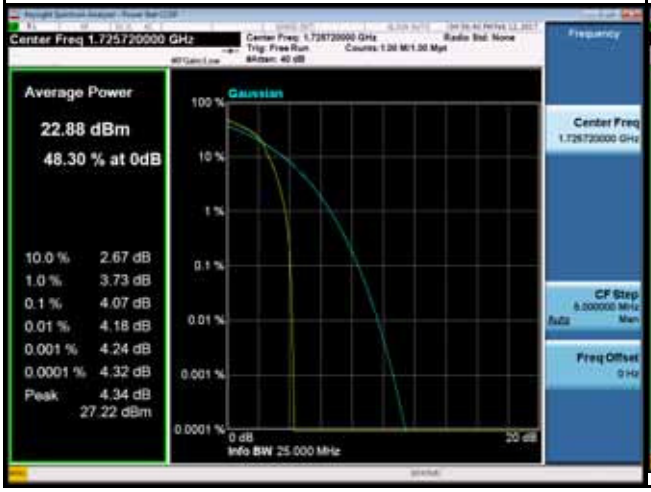	

LTE Band 4 Spectrum Plot_20M	
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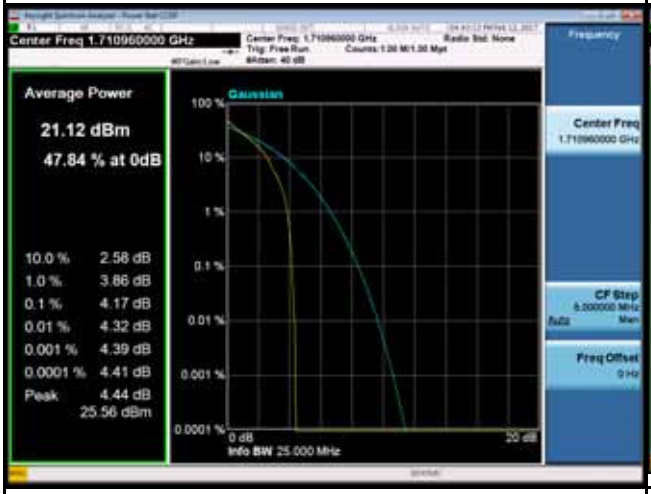	
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	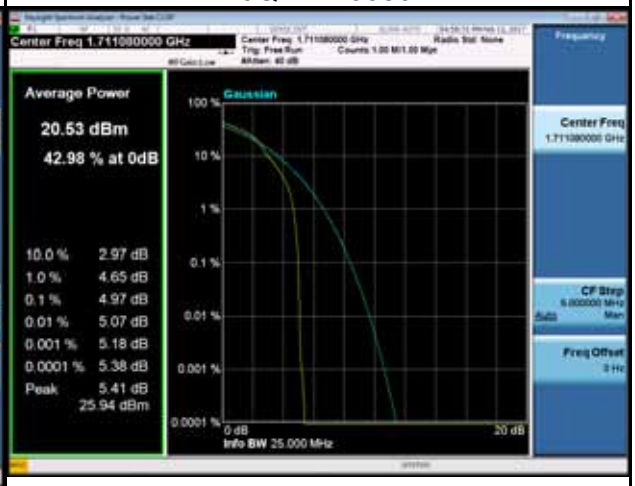
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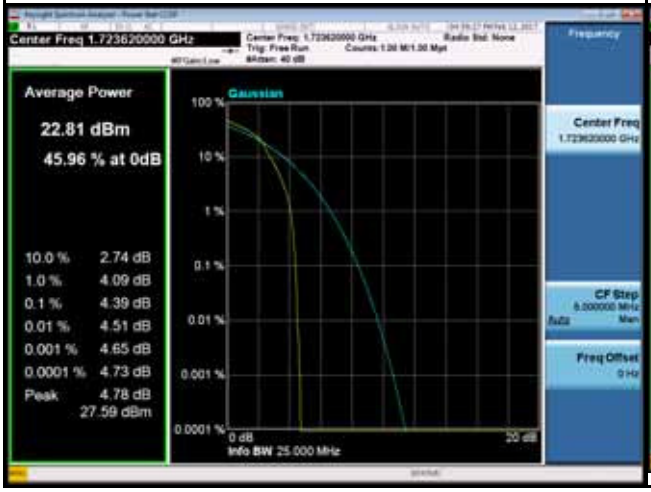	

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	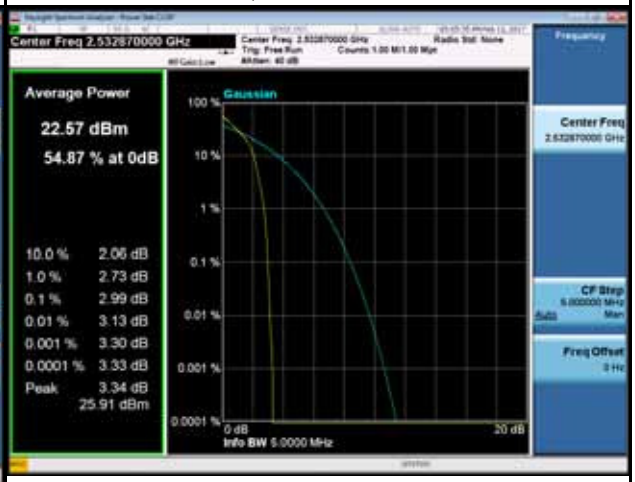
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	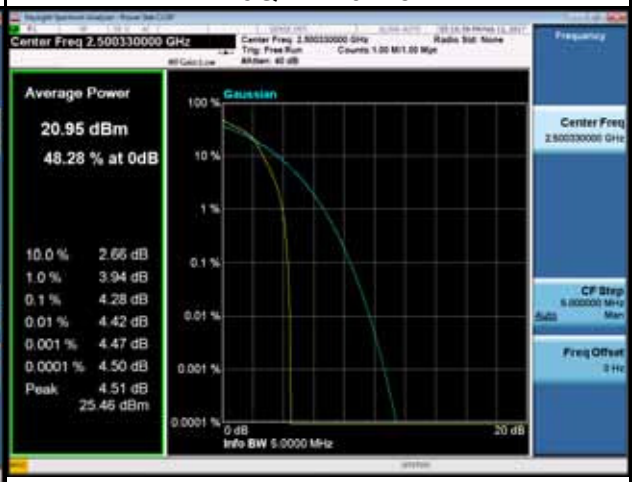
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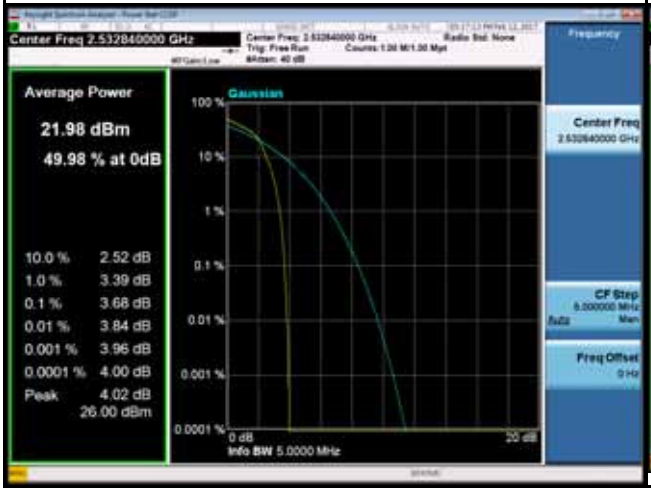	

LTE Band 7 Spectrum Plot_10M	
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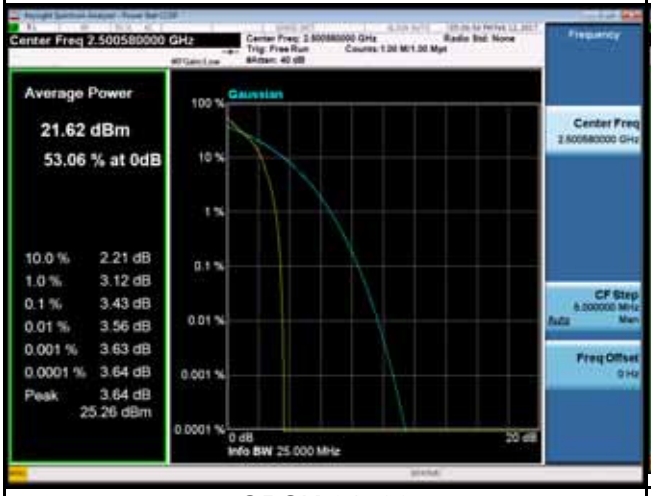	
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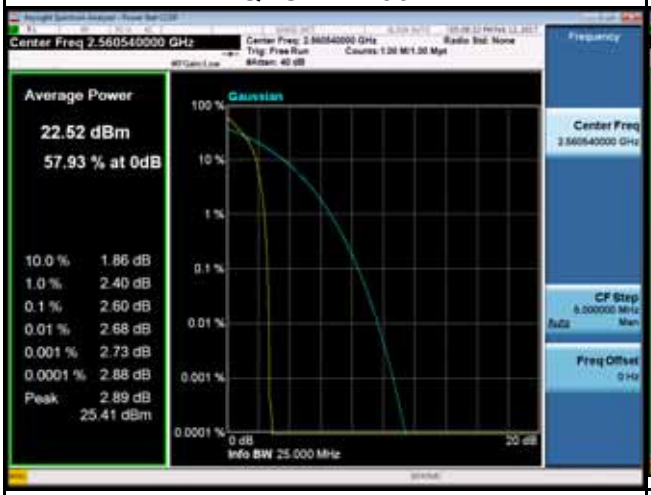	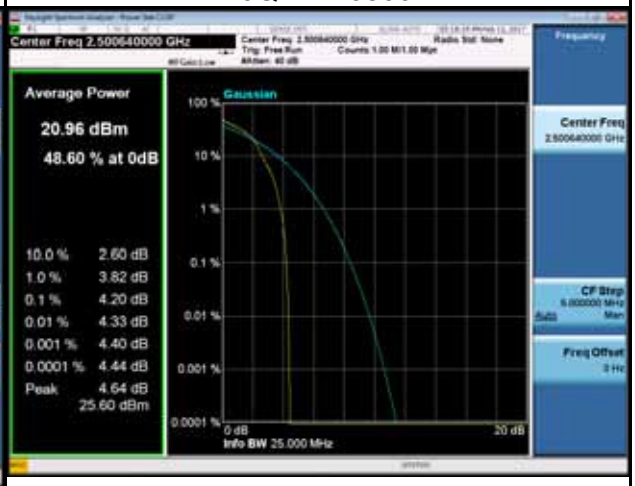
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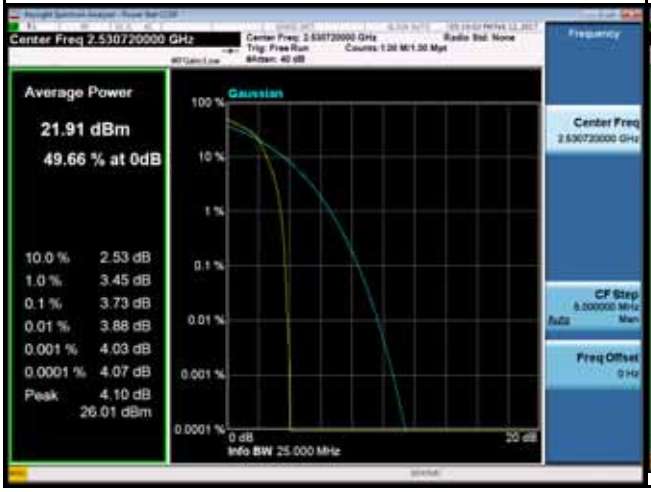
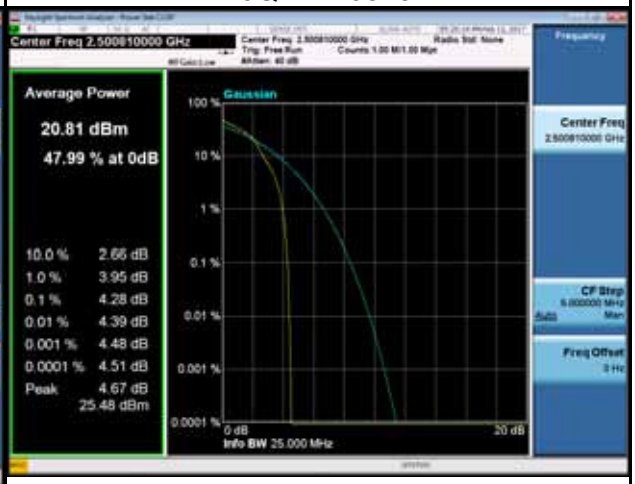
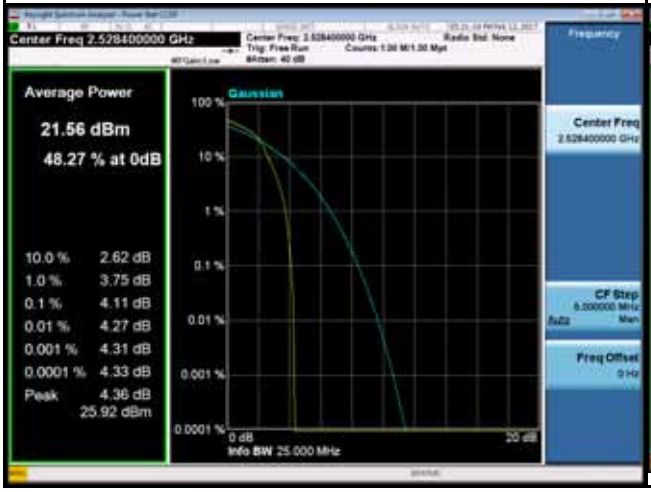
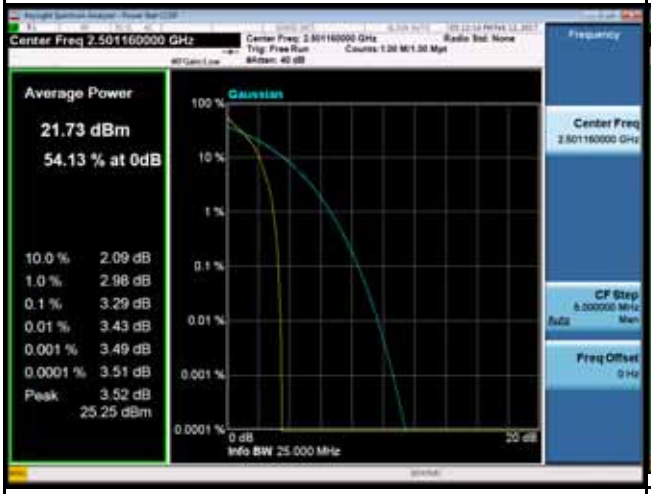
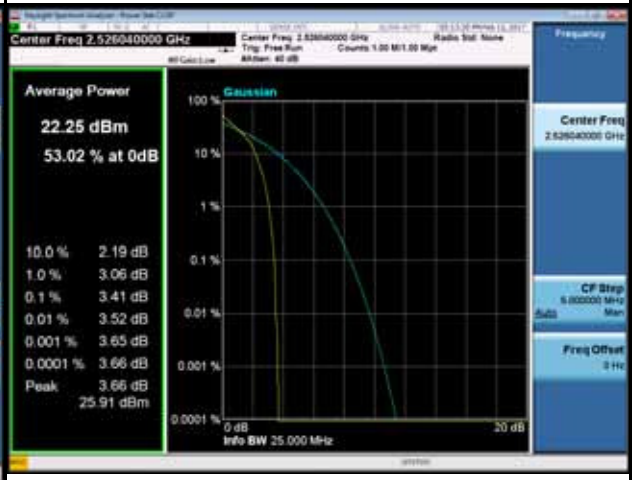
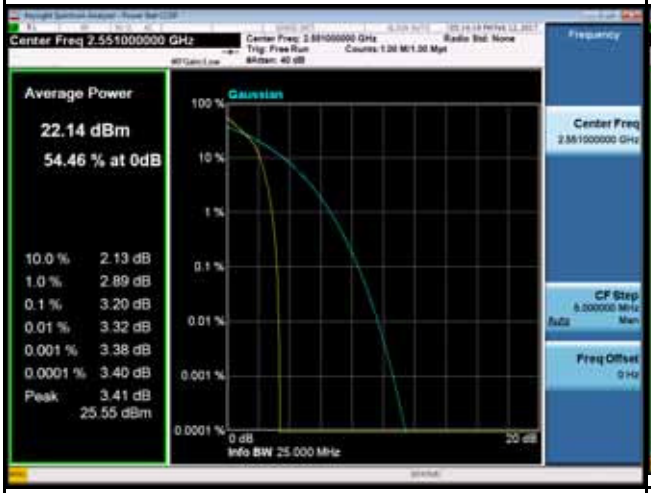
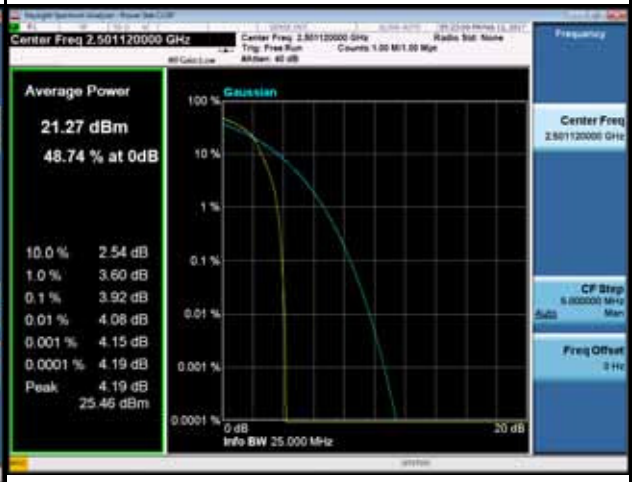
	

LTE Band 7 Spectrum Plot_15M	
QPSK-20825	QPSK-21100
	
QPSK-21375	16QAM-20825
	
16QAM-21100	16QAM-21375
	

LTE Band 7 Spectrum Plot_20M	
QPSK-20850	QPSK-21100
	
QPSK-21350	16QAM-20850
	
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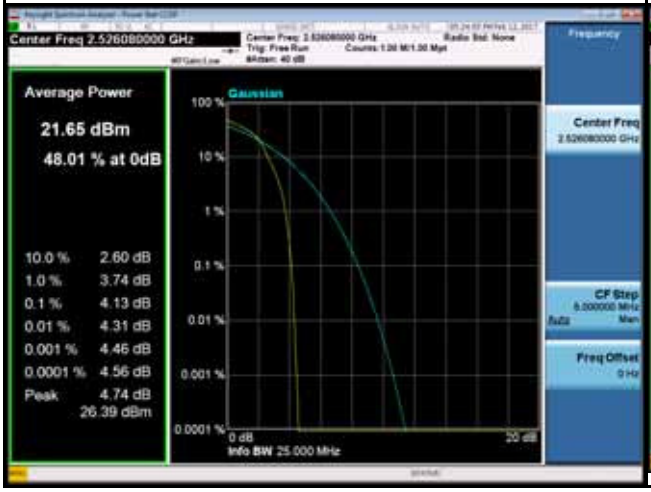
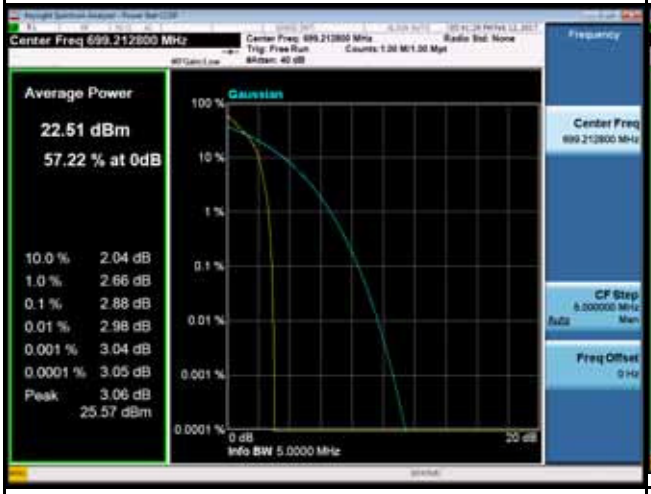
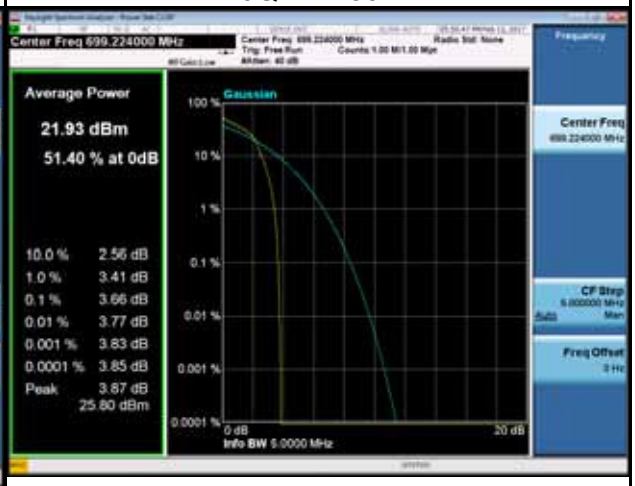
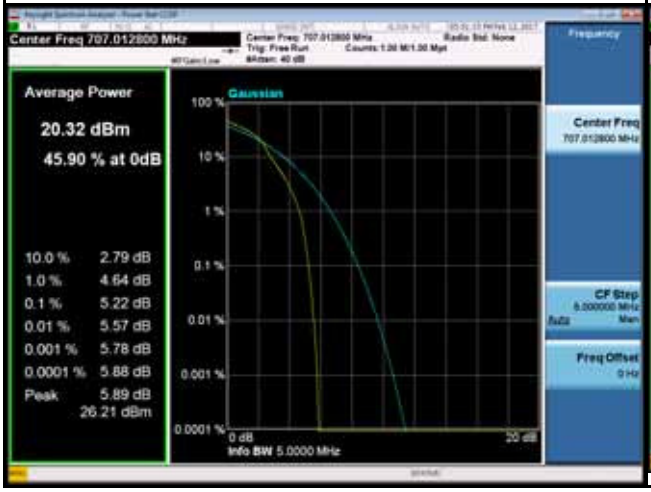
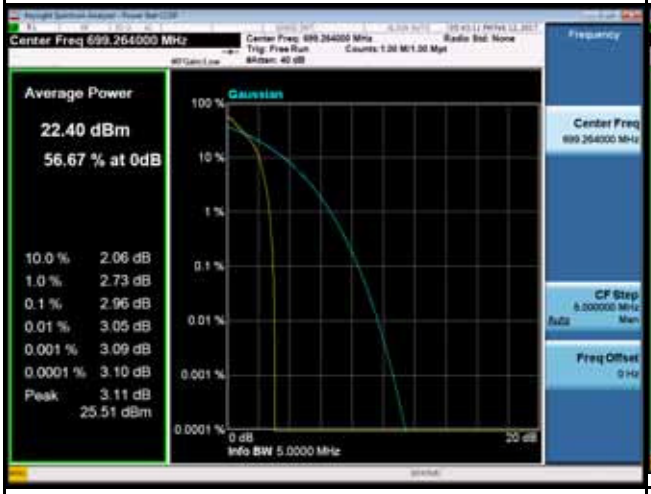
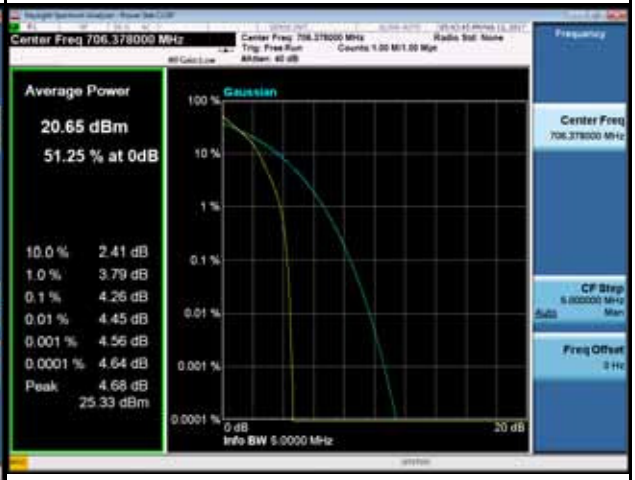
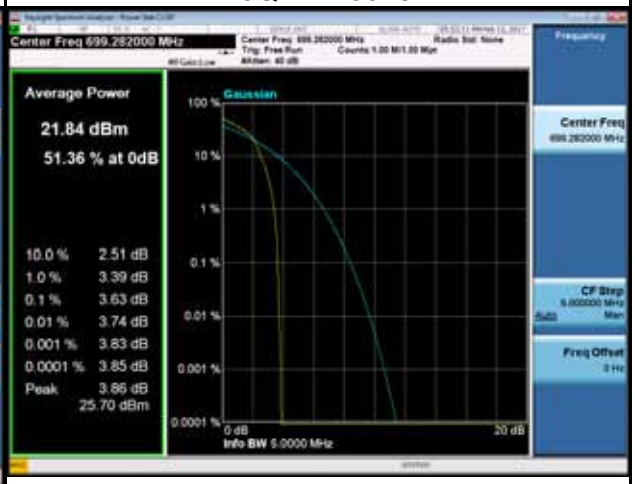
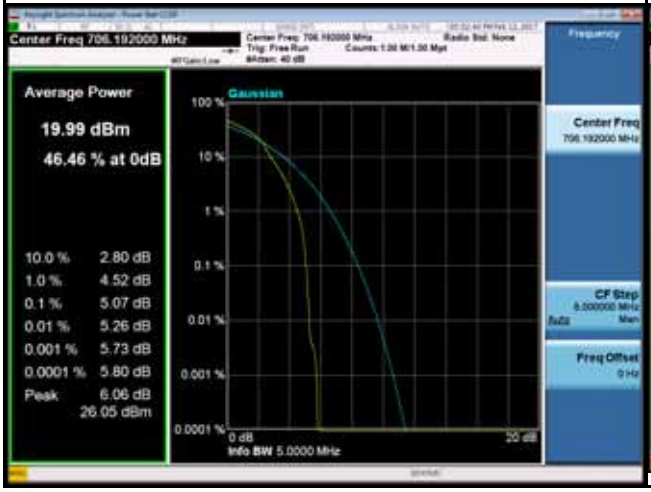
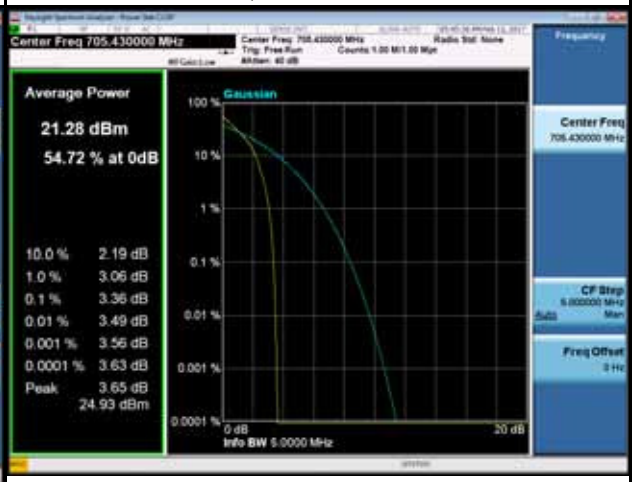
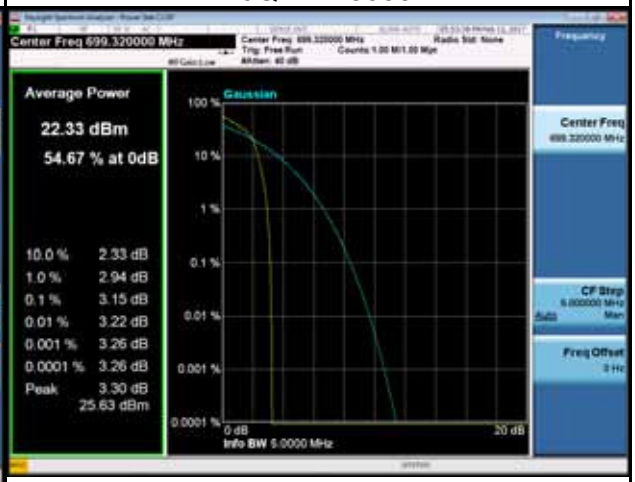
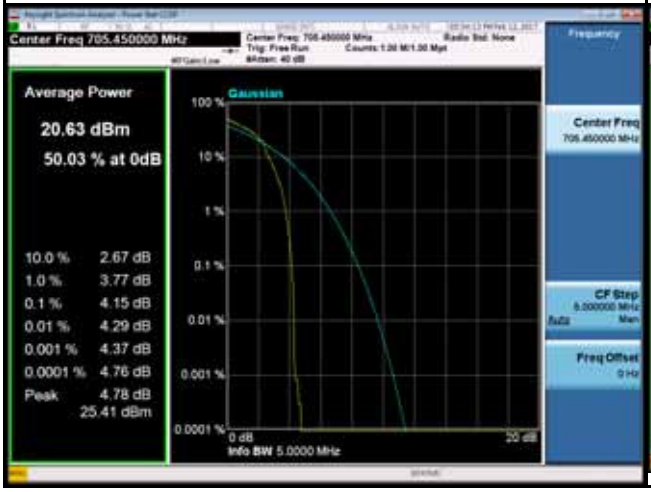
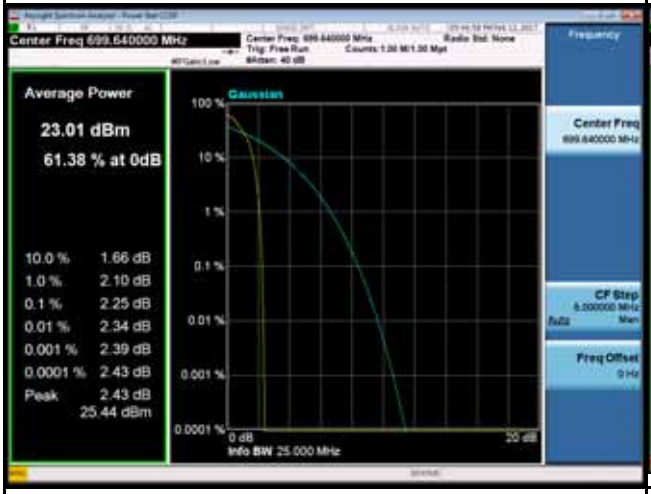
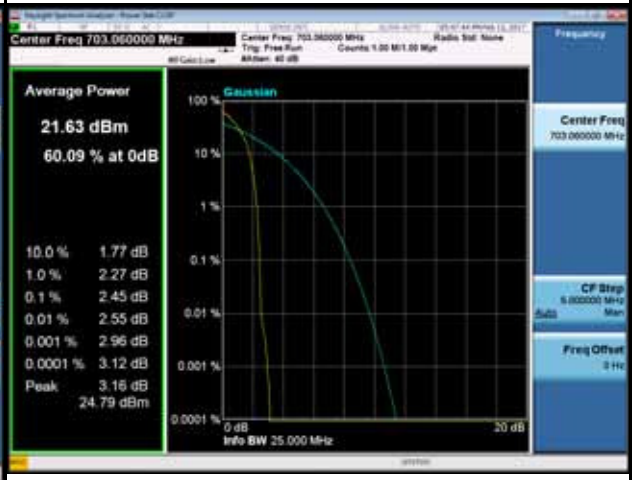
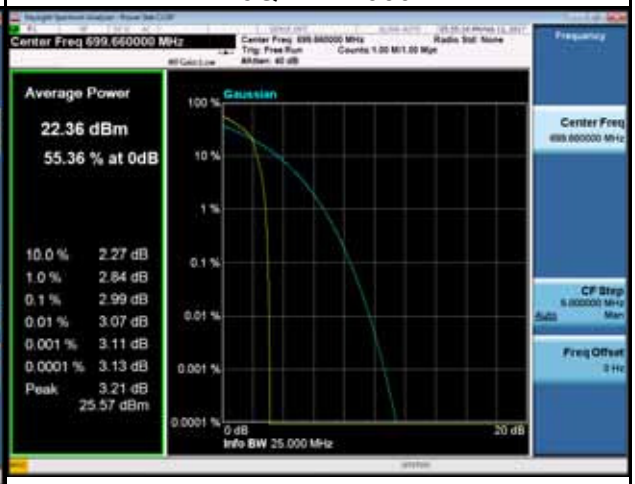
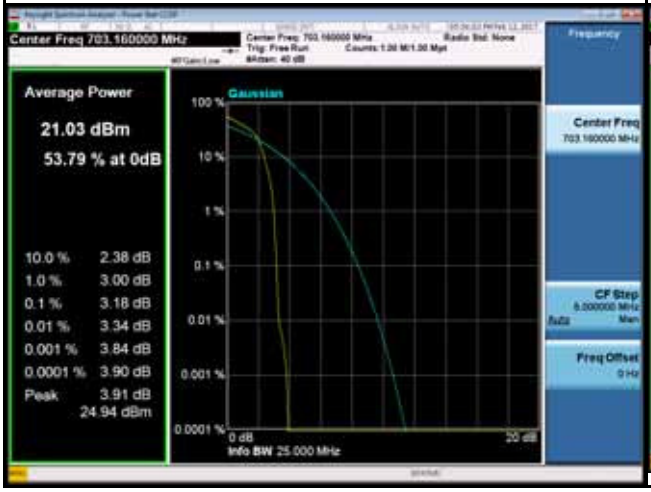
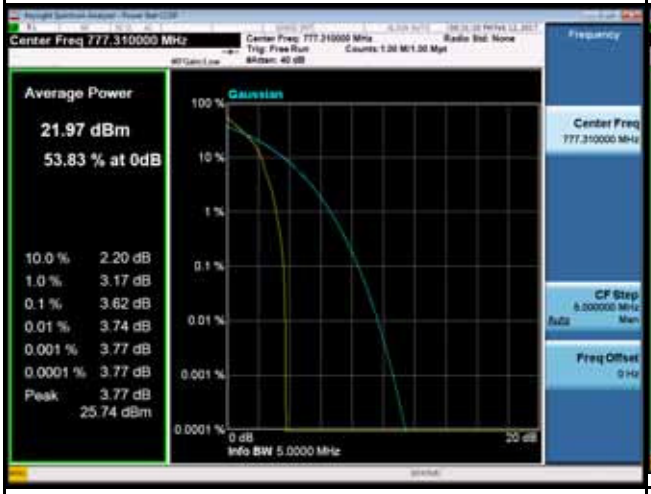
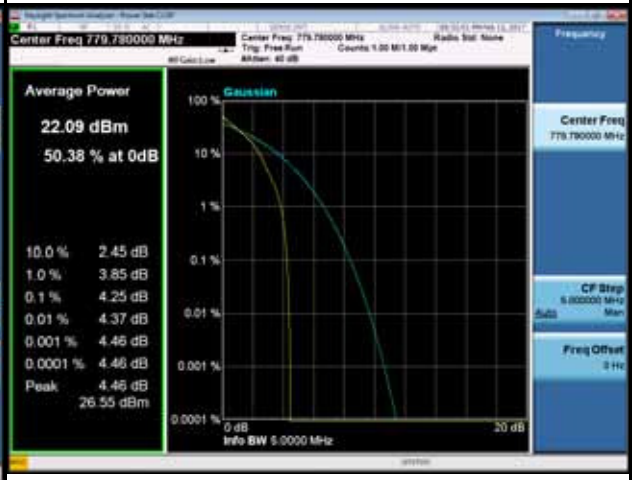
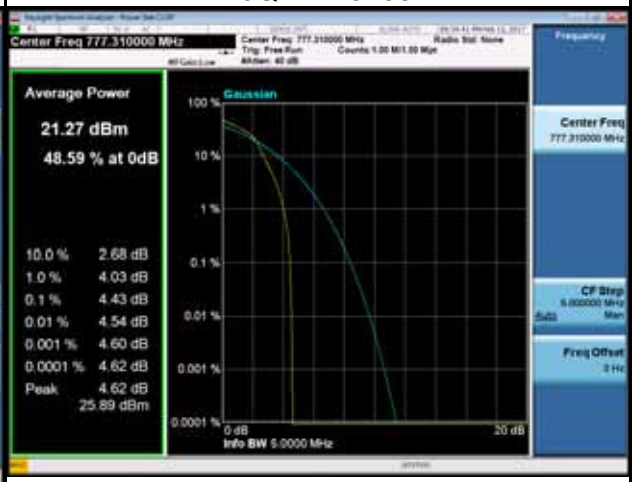
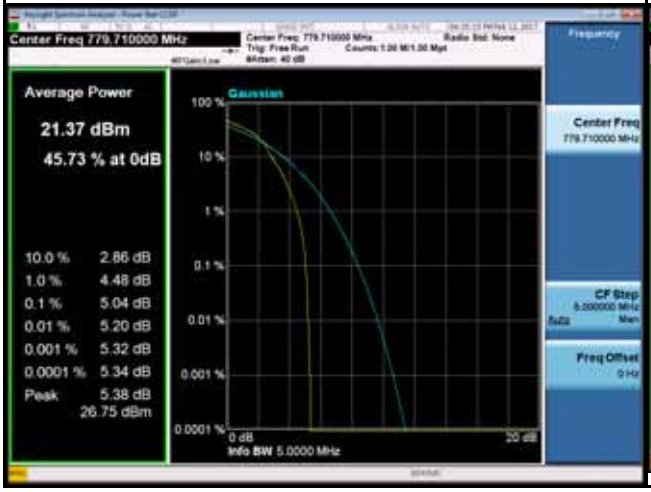
	

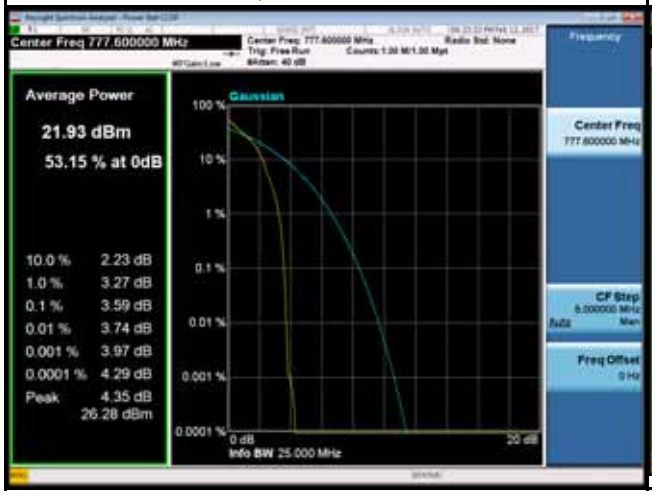
LTE Band 12 Spectrum Plot_1.4M	
QPSK-23017	QPSK-23095
	
QPSK-23173	16QAM-23017
	
16QAM-23095	16QAM-23173
	

LTE Band 12 Spectrum Plot_3M	
QPSK-23025	QPSK-23095
	
QPSK-23165	16QAM-23025
	
16QAM-23095	16QAM-23165
	

LTE Band 12 Spectrum Plot_5M	
QPSK-23035	QPSK-23095
	
QPSK-23155	16QAM-23035
	
16QAM-23095	16QAM-23155
	

LTE Band 12 Spectrum Plot_10M	
QPSK-22060	QPSK-20175
	
QPSK-23130	16QAM-22060
	
16QAM-20175	16QAM-23130
	

LTE Band 13 Spectrum Plot_5M	
QPSK-23205	QPSK-23230
	
QPSK-23255	16QAM-23205
	
16QAM--23230	16QAM-23255
	

LTE Band 13 Spectrum Plot_10M	
QPSK-23230	16QAM-23230
	

ATTACHMENT G - FREQUENCY STABILITY

Test Mode:	WCDMA Band 4_CH1413

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_1.4M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_3M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_5M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_10M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_15M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 4_CH20175_20M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 7_CH21100_5M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 7_CH21100_10M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 7_CH21100_15M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 7_CH21100_20M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 12_CH23095_1.4M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 12_CH23095_3M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 12_CH23095_5M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 12_CH23095_10M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 13_CH23230_5M

Temperature vs. Frequency Stabiility

Temperature(

Test Mode:	LTE Band 13_CH23230_10M

Temperature vs. Frequency Stabiility

Temperature(