FCC Radio Test Report

FCC ID: QISE5573CS-509

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

Project No.	:	1702C058
Equipment	:	Mobile WiFi
Model Name	:	E5573Cs-509
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. 14, 2017
Date of Test	:	Feb. 14, 2017 ~ Mar. 06, 2017
Issued Date	:	Mar. 06, 2017
Tested by	:	BTL Inc.

Technical Engineer : Shawn xiao
(Shawn Xiao)

Authorized Signatory : Steven Lu
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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-3-1702C058	Original Issue.	Mar. 06, 2017

1. CERTIFICATION

Equipment	:	Mobile WiFi
Brand Name	:	HUAWEI
Model Name	:	E5573Cs-509
Applicant	:	Huawei Technologies Co., Ltd.
Manufacturer	:	Huawei Technologies Co., Ltd
Address	:	Administration Building, Huawei Base, Bantian, Longgang District , Shenzhen 518129, P.R.China
Factory	:	Huawei Technologies Co., Ltd
Address	:	Administration Building, Huawei Base, Bantian, Longgang District , Shenzhen 518129, P.R.China
Date of Test	:	Feb. 14, 2017 ~ Mar. 06, 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-3-1702C058) 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, 17 parts.

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	Biao Chen
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

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.
BTL's test firm number for FCC: 319330

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 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**%.

A. Radiated Measurement :

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

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

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

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

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile WiFi	
Brand Name	HUAWEI	
Model Name	E5573Cs-509	
Model Difference	N/A	
Modulation Type	WCDMA	Uplink: BPSK Downlink: QPSK
	WCDMA(HSDPA/HSUPA/HSPA+)	16QAM/64QAM
	LTE	QPSK, 16QAM
Operation Frequency	WCDMA Band 4	1712.4 ~1752.6MHz
	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: 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 17 (Channel Bandwidth: 10MHz)	706.5 ~ 713.5 MHz
	LTE 17 (Channel Bandwidth: 15MHz)	709.0 ~ 711.0 MHz

Max. EIRP Power	WCDMA Band 4(WCDMA)	BPSK	25.33	dBm
	WCDMA Band 4(HSDPA)	16QAM	25.11	dBm
	WCDMA Band 4(HSUPA)	16QAM	23.59	dBm
	LTE 4 (Channel Bandwidth: 5MHz)	QPSK	25.27	dBm
		16QAM	24.57	dBm
	LTE 4 (Channel Bandwidth: 10MHz)	QPSK	25.65	dBm
		16QAM	24.56	dBm
	LTE 4 (Channel Bandwidth: 15MHz)	QPSK	25.63	dBm
		16QAM	24.65	dBm
	LTE 4 (Channel Bandwidth: 20MHz)	QPSK	25.19	dBm
		16QAM	24.60	dBm
	LTE 7 (Channel Bandwidth: 5MHz)	QPSK	24.95	dBm
		16QAM	24.15	dBm
	LTE 7 (Channel Bandwidth: 10MHz)	QPSK	25.42	dBm
		16QAM	25.09	dBm
	LTE 7 (Channel Bandwidth: 15MHz)	QPSK	25.38	dBm
		16QAM	24.77	dBm
	LTE 7 (Channel Bandwidth: 20MHz)	QPSK	25.75	dBm
		16QAM	25.03	dBm
Max. ERP Power	LTE 12 (Channel Bandwidth: 5MHz)	QPSK	17.62	dBm
		16QAM	17.09	dBm
	LTE 12 (Channel Bandwidth: 10MHz)	QPSK	17.84	dBm
		16QAM	17.15	dBm
	LTE 13 (Channel Bandwidth: 5MHz)	QPSK	19.29	dBm
		16QAM	19.62	dBm
	LTE 13 (Channel Bandwidth: 10MHz)	QPSK	19.29	dBm
		16QAM	18.64	dBm
	LTE 17 (Channel Bandwidth: 5MHz)	QPSK	16.98	dBm
		16QAM	16.36	dBm
	LTE 17 (Channel Bandwidth: 10MHz)	QPSK	16.81	dBm
		16QAM	16.39	dBm

Antenna Type	Fixed Internal Antenna	
Antenna Gain	WCDMA Band 4	0.41 dBi(Diversity Ant),2.66 dBi(Main Ant)
	LTE Band 4	
	LTE Band 7	2.77 dBi(Diversity Ant),2.77 dBi(Main Ant)
	LTE Band 12	-3.17 dBi(Main Ant)
	LTE Band 13	-2.33 dBi(Diversity Ant),-1.62 dBi(Main Ant)
	LTE Band 17	-3.6 dBi(Main Ant)
Hardware Version	CL2E5573CSM01	
Softwarre Version	21.323.00.00.00	
IMEI No.1	Radiated	004401728362586
	Conducted	004401728362530
Power Source	#1 Supplied from PC USB port or adapter. #2 Battery Supplied.	
Power Rating	#1 100-240V~ 50/60Hz #2 ⎓4.0V（3.8V-4.2V）	

Note:

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

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

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

WCDMA 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	1312	WCDMA,HSDPA, HSUPA

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	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	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	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	19975 to 20375	20375	5MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20300	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Band Edge	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	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	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	21425	5MHz	QPSK	1 RB / 0 RB Offset
	20850 to 21350	21350	20MHz	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

LTE BAND 12					
Test Item	Available Channel	Tested Channel	Channel	Modulation	Mode
ERP	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	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	23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
	23060 to 23130	23095	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
	23060 to 23130	23060	10MHz	QPSK	1 RB / 0 RB Offset
Band Edge	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	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	23035 to 23155	23095	5MHz	QPSK	1 RB / 12 RB Offset
	23060 to 23130	23095	10MHz	QPSK	1 RB / 24 RB Offset

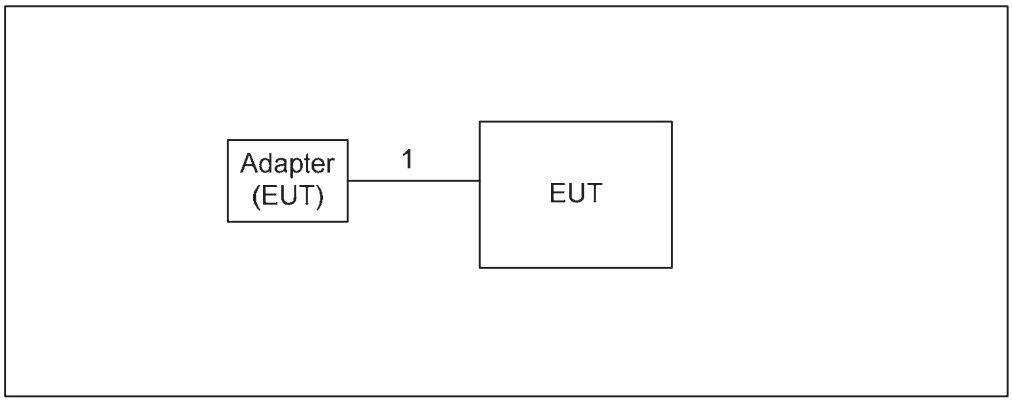
LTE BAND 13					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
Occupied Bandwidth	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	25 RB / 0 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	23205 to 23255	23255	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 24 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

LTE BAND 17					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23775	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Occupied Bandwidth	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23775	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
Conducted Emission	706.5 to 713.5	23790	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23790	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission	706.5 to 713.5	23755	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23780	10MHz	QPSK	1 RB / 0 RB Offset
Band Edge	706.5 to 713.5	23755	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		23825	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	709.0 to 711.0	23780	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		23775	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
Peak To Average Ratio	706.5 to 713.5	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	709.0 to 711.0	23780, 23790, 23775	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	706.5 to 713.5	23790	5MHz	QPSK	1 RB / 0 RB Offset
	709.0 to 711.0	23790	10MHz	QPSK	1 RB / 0 RB Offset

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
EIRP	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 BLOCK DIGRAM SHOWING THECONFIGURATIONOFSYSTEMTESTED FOR RADIATED



3.4 DESCRIPTION OF SUPPORT UNITS

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

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

Item	Shielded Type	Ferrite Core	Length	Note
1	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 and LTE 17)

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

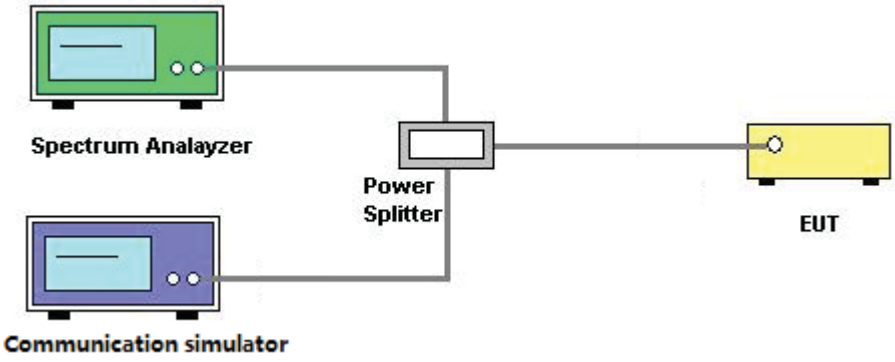
Please refer to the Attachment A.

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

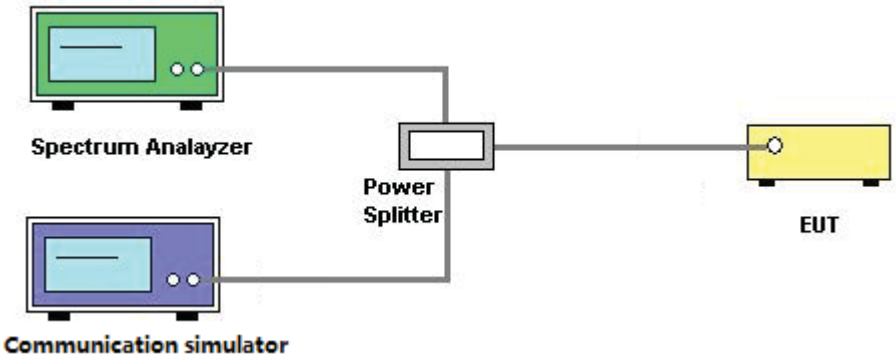
4.3.1 LIMIT

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

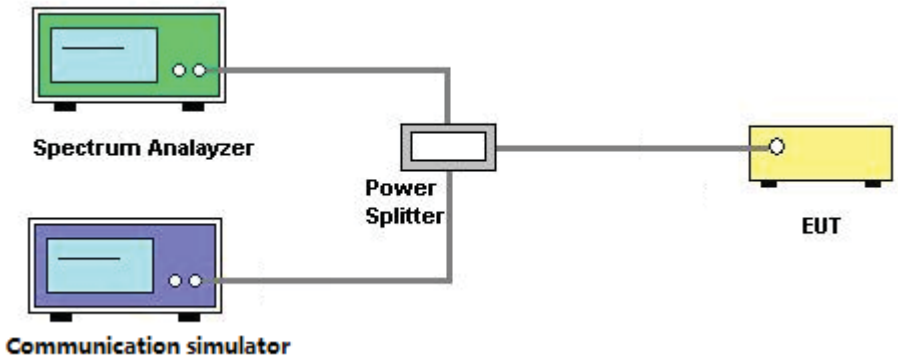
For operations in the 699-716 , 704-716 and 777-787MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this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

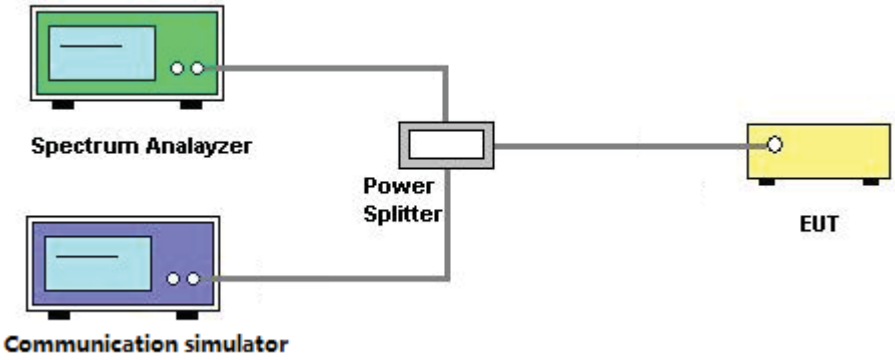
4.6.1 LIMIT

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

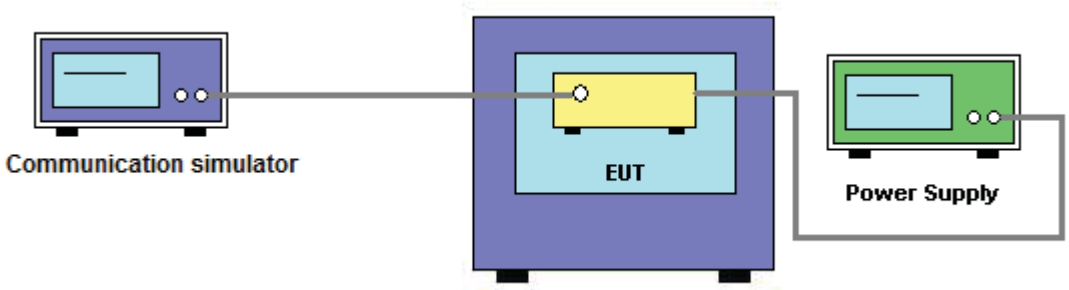
4.7.1 LIMIT

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	22.63	22.58	22.42
	RMC 64K	22.66	22.59	22.41
	RMC 144K	22.67	22.58	22.44
	RMC 384K	22.65	22.57	22.40
16QAM	HSDPA Subtest-1	22.44	22.45	22.21
	HSDPA Subtest-2	22.43	22.43	22.23
	HSDPA Subtest-3	21.85	21.93	21.74
	HSDPA Subtest-4	21.89	21.91	21.76
16QAM	HSUPA Subtest-1	20.28	19.98	20.21
	HSUPA Subtest-2	19.54	19.47	19.71
	HSUPA Subtest-3	20.57	20.77	20.75
	HSUPA Subtest-4	19.78	19.63	19.51
	HSUPA Subtest-5	20.93	20.93	20.47

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	21.74	21.87	21.98
		1	12	22.48	22.59	22.61
		1	24	21.97	21.98	21.92
		12	0	21.11	21.29	21.38
		12	6	21.38	21.55	21.60
		12	13	21.36	21.42	21.40
		25	0	21.41	21.33	21.26
	16QAM	1	0	21.08	21.29	21.30
		1	12	21.83	21.91	21.91
		1	24	21.34	21.42	21.26
		12	0	21.42	21.28	21.41
		12	6	21.70	21.54	21.62
		12	13	21.67	21.40	21.42
		25	0	21.41	21.25	21.26

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	22.09	22.11	22.55
		1	24	22.89	22.67	22.99
		1	49	21.91	21.73	21.99
		25	0	21.32	21.27	21.53
		25	12	21.52	21.39	21.77
		25	25	21.51	21.32	21.51
		50	0	21.35	21.56	21.50
	16QAM	1	0	21.45	21.68	21.69
		1	24	21.84	21.90	21.84
		1	49	21.16	21.32	21.11
		25	0	21.30	21.43	21.37
		25	12	21.59	21.56	21.60
		25	25	21.75	21.38	21.34
		50	0	21.59	21.34	21.31

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	22.64	22.66	22.49
		1	37	22.97	22.68	22.57
		1	74	22.25	22.31	22.19
		36	0	21.64	21.91	21.46
		36	19	21.89	21.59	21.55
		36	39	21.62	21.60	21.46
		75	0	21.80	21.49	21.42
	16QAM	1	0	21.90	21.92	21.89
		1	37	21.96	21.91	21.97
		1	74	21.47	21.99	21.60
		36	0	21.54	21.99	21.64
		36	19	21.76	21.75	21.71
		36	39	21.46	21.77	21.57
		75	0	21.62	21.63	21.54

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	22.39	22.47	22.53
		1	50	22.35	21.34	22.51
		1	99	21.93	22.14	22.31
		50	0	21.33	21.36	21.40
		50	25	21.19	20.99	21.27
		50	50	21.34	21.23	21.42
		100	0	21.34	21.25	21.47
	16QAM	1	0	21.90	21.94	21.86
		1	50	21.70	21.55	21.82
		1	99	21.33	21.62	21.65
		50	0	21.34	21.39	21.22
		50	25	21.34	21.09	21.10
		50	50	21.45	21.28	21.23
		100	0	21.46	21.32	21.26

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	21.81	21.32	21.50
		1	12	21.93	22.13	22.18
		1	24	21.24	21.75	21.52
		12	0	20.61	21.15	21.16
		12	6	20.86	21.43	21.34
		12	13	20.78	21.37	21.20
		25	0	20.62	21.21	21.11
	16QAM	1	0	20.43	20.53	20.66
		1	12	21.15	21.33	21.38
		1	24	20.49	20.70	20.69
		12	0	20.53	20.61	20.65
		12	6	20.73	20.88	20.82
		12	13	20.64	20.81	20.68
		25	0	20.53	20.63	20.53

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	22.07	22.49	22.59
		1	24	22.18	22.55	22.65
		1	49	22.06	22.18	21.90
		25	0	21.77	21.68	21.77
		25	12	21.98	21.95	21.92
		25	25	21.85	21.85	21.67
		50	0	21.80	21.76	21.84
	16QAM	1	0	21.26	21.54	21.63
		1	24	22.11	22.32	22.16
		1	49	20.96	21.20	20.93
		25	0	20.86	21.22	21.20
		25	12	21.13	21.49	21.36
		25	25	21.28	21.36	21.11
		50	0	21.20	21.24	21.22

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	22.13	22.41	22.61
		1	37	22.49	22.59	22.58
		1	74	21.80	22.17	21.86
		36	0	21.17	21.44	21.91
		36	19	21.29	21.56	21.74
		36	39	21.16	21.47	21.65
		75	0	21.18	21.50	21.84
	16QAM	1	0	21.50	21.59	21.97
		1	37	21.81	21.81	22.00
		1	74	21.15	21.36	21.18
		36	0	21.22	21.13	21.52
		36	19	21.33	21.23	21.56
		36	39	21.18	21.16	21.28
		75	0	21.14	21.37	21.58

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	22.35	22.36	22.98
		1	50	22.73	22.40	22.67
		1	99	22.09	22.55	22.09
		50	0	21.39	21.65	21.92
		50	25	21.35	21.65	21.83
		50	50	21.48	21.79	21.62
		100	0	21.33	21.76	21.88
	16QAM	1	0	21.84	21.83	22.26
		1	50	22.00	21.80	22.05
		1	99	21.63	21.70	21.37
		50	0	21.36	21.27	21.87
		50	25	21.32	21.24	21.78
		50	50	21.46	21.61	21.55
		100	0	21.28	21.70	21.81

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	22.07	22.45	22.31
		1	12	22.87	22.94	22.84
		1	24	22.67	22.38	22.23
		12	0	21.61	21.90	21.77
		12	6	21.99	21.97	21.85
		12	13	21.87	21.87	21.86
		25	0	21.69	21.74	21.73
	16QAM	1	0	21.45	21.80	21.88
		1	12	22.22	22.30	22.41
		1	24	21.79	21.72	21.86
		12	0	21.49	21.79	21.91
		12	6	21.85	21.93	21.99
		12	13	21.74	22.00	21.99
		25	0	21.55	21.82	21.80

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	22.27	22.55	22.77
		1	24	23.16	22.94	23.10
		1	49	22.10	22.04	22.14
		25	0	21.53	21.64	21.77
		25	12	21.79	21.63	21.75
		25	25	21.71	21.58	21.61
		50	0	21.53	21.77	21.61
	16QAM	1	0	21.74	21.91	21.87
		1	24	22.43	22.47	22.16
		1	49	21.44	21.67	21.27
		25	0	21.47	21.82	21.74
		25	12	21.74	21.81	21.73
		25	25	21.65	21.80	21.59
		50	0	21.46	21.68	21.57

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	21.78	22.16	22.19
		1	12	22.77	22.95	23.06
		1	24	22.11	22.23	22.25
		12	0	21.37	21.55	21.75
		12	6	21.79	21.83	22.00
		12	13	21.72	21.83	21.83
		25	0	21.65	21.63	21.74
	16QAM	1	0	21.16	21.60	21.44
		1	12	22.22	22.39	22.15
		1	24	21.61	21.71	21.53
		12	0	21.54	21.57	21.72
		12	6	21.79	21.84	21.97
		12	13	21.68	21.85	21.79
		25	0	21.56	21.64	21.61

LTE Band / BW	Modulation	RB Sizet	RB Offset	Mid CH
				23230 CH
				782.0 MHz
13 / 10M	QPSK	1	0	22.23
		1	24	23.06
		1	49	22.36
		25	0	21.61
		25	12	21.83
		25	25	21.87
		50	0	21.73
	16QAM	1	0	21.75
		1	24	22.41
		1	49	21.88
		25	0	21.60
		25	12	21.85
		25	25	21.87
		50	0	21.64

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23755 CH	23790 CH	23825 CH
				706.5 MHz	710.0 MHz	713.5 MHz
17 / 5M	QPSK	1	0	21.57	21.85	21.89
		1	12	22.73	22.62	22.54
		1	24	22.06	22.00	21.69
		12	0	21.43	21.33	21.33
		12	6	21.71	21.43	21.54
		12	13	21.64	21.35	21.43
		25	0	21.45	21.20	21.29
	16QAM	1	0	20.99	21.31	21.22
		1	12	22.11	22.09	21.90
		1	24	21.48	21.52	21.08
		12	0	21.60	21.47	21.47
		12	6	21.86	21.58	21.67
		12	13	21.78	21.49	21.56
		25	0	21.59	21.30	21.35

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23780 CH	23790 CH	23800 CH
				709.0 MHz	710.0 MHz	711.0 MHz
17 / 10M	QPSK	1	0	21.82	22.06	22.12
		1	24	22.56	22.51	22.43
		1	49	21.71	21.56	21.54
		25	0	21.10	21.08	21.08
		25	12	21.21	21.04	21.05
		25	25	20.96	21.05	21.05
		50	0	21.10	20.94	20.92
	16QAM	1	0	21.36	21.50	21.56
		1	24	22.14	21.97	21.88
		1	49	21.34	21.07	21.03
		25	0	21.41	21.31	21.30
		25	12	21.53	21.28	21.29
		25	25	21.29	21.30	21.28
		50	0	21.37	21.15	21.10

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	25.29	25.24	25.08
	RMC 64K	25.32	25.25	25.07
	RMC 144K	25.33	25.24	25.10
	RMC 384K	25.31	25.23	25.06
16QAM	HSDPA Subtest-1	25.10	25.11	24.87
	HSDPA Subtest-2	25.09	25.09	24.89
	HSDPA Subtest-3	24.51	24.59	24.40
	HSDPA Subtest-4	24.55	24.57	24.42
16QAM	HSUPA Subtest-1	22.94	22.64	22.87
	HSUPA Subtest-2	22.20	22.13	22.37
	HSUPA Subtest-3	23.23	23.43	23.41
	HSUPA Subtest-4	22.44	22.29	22.17
	HSUPA Subtest-5	23.59	23.59	23.13

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	24.40	24.53	24.64
		1	12	25.14	25.25	25.27
		1	24	24.63	24.64	24.58
		12	0	23.77	23.95	24.04
		12	6	24.04	24.21	24.26
		12	13	24.02	24.08	24.06
		25	0	24.07	23.99	23.92
	16QAM	1	0	23.74	23.95	23.96
		1	12	24.49	24.57	24.57
		1	24	24.00	24.08	23.92
		12	0	24.08	23.94	24.07
		12	6	24.36	24.20	24.28
		12	13	24.33	24.06	24.08
		25	0	24.07	23.91	23.92

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	24.75	24.77	25.21
		1	24	25.55	25.33	25.65
		1	49	24.57	24.39	24.65
		25	0	23.98	23.93	24.19
		25	12	24.18	24.05	24.43
		25	25	24.17	23.98	24.17
		50	0	24.01	24.22	24.16
	16QAM	1	0	24.11	24.34	24.35
		1	24	24.50	24.56	24.50
		1	49	23.82	23.98	23.77
		25	0	23.96	24.09	24.03
		25	12	24.25	24.22	24.26
		25	25	24.41	24.04	24.00
		50	0	24.25	24.00	23.97

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	25.30	25.32	25.15
		1	37	25.63	25.34	25.23
		1	74	24.91	24.97	24.85
		36	0	24.30	24.57	24.12
		36	19	24.55	24.25	24.21
		36	39	24.28	24.26	24.12
		75	0	24.46	24.15	24.08
	16QAM	1	0	24.56	24.58	24.55
		1	37	24.62	24.57	24.63
		1	74	24.13	24.65	24.26
		36	0	24.20	24.65	24.30
		36	19	24.42	24.41	24.37
		36	39	24.12	24.43	24.23
		75	0	24.28	24.29	24.20

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	25.05	25.13	25.19
		1	50	25.01	24.00	25.17
		1	99	24.59	24.80	24.97
		50	0	23.99	24.02	24.06
		50	25	23.85	23.65	23.93
		50	50	24.00	23.89	24.08
		100	0	24.00	23.91	24.13
	16QAM	1	0	24.56	24.60	24.52
		1	50	24.36	24.21	24.48
		1	99	23.99	24.28	24.31
		50	0	24.00	24.05	23.88
		50	25	24.00	23.75	23.76
		50	50	24.11	23.94	23.89
		100	0	24.12	23.98	23.92

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	24.58	24.09	24.27
		1	12	24.70	24.90	24.95
		1	24	24.01	24.52	24.29
		12	0	23.38	23.92	23.93
		12	6	23.63	24.20	24.11
		12	13	23.55	24.14	23.97
		25	0	23.39	23.98	23.88
	16QAM	1	0	23.20	23.30	23.43
		1	12	23.92	24.10	24.15
		1	24	23.26	23.47	23.46
		12	0	23.30	23.38	23.42
		12	6	23.50	23.65	23.59
		12	13	23.41	23.58	23.45
		25	0	23.30	23.40	23.30

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	24.84	25.26	25.36
		1	24	24.95	25.32	25.42
		1	49	24.83	24.95	24.67
		25	0	24.54	24.45	24.54
		25	12	24.75	24.72	24.69
		25	25	24.62	24.62	24.44
		50	0	24.57	24.53	24.61
	16QAM	1	0	24.03	24.31	24.40
		1	24	24.88	25.09	24.93
		1	49	23.73	23.97	23.70
		25	0	23.63	23.99	23.97
		25	12	23.90	24.26	24.13
		25	25	24.05	24.13	23.88
		50	0	23.97	24.01	23.99

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	24.90	25.18	25.38
		1	37	25.26	25.36	25.35
		1	74	24.57	24.94	24.63
		36	0	23.94	24.21	24.68
		36	19	24.06	24.33	24.51
		36	39	23.93	24.24	24.42
		75	0	23.95	24.27	24.61
	16QAM	1	0	24.27	24.36	24.74
		1	37	24.58	24.58	24.77
		1	74	23.92	24.13	23.95
		36	0	23.99	23.90	24.29
		36	19	24.10	24.00	24.33
		36	39	23.95	23.93	24.05
		75	0	23.91	24.14	24.35

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	25.12	25.13	25.75
		1	50	25.50	25.17	25.44
		1	99	24.86	25.32	24.86
		50	0	24.16	24.42	24.69
		50	25	24.12	24.42	24.60
		50	50	24.25	24.56	24.39
		100	0	24.10	24.53	24.65
	16QAM	1	0	24.61	24.60	25.03
		1	50	24.77	24.57	24.82
		1	99	24.40	24.47	24.14
		50	0	24.13	24.04	24.64
		50	25	24.09	24.01	24.55
		50	50	24.23	24.38	24.32
		100	0	24.05	24.47	24.58

ERP Power:

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	16.75	17.13	16.99
		1	12	17.55	17.62	17.52
		1	24	17.35	17.06	16.91
		12	0	16.29	16.58	16.45
		12	6	16.67	16.65	16.53
		12	13	16.55	16.55	16.54
		25	0	16.37	16.42	16.41
	16QAM	1	0	16.13	16.48	16.56
		1	12	16.90	16.98	17.09
		1	24	16.47	16.40	16.54
		12	0	16.17	16.47	16.59
		12	6	16.53	16.61	16.67
		12	13	16.42	16.68	16.67
		25	0	16.23	16.50	16.48

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	16.95	17.23	17.45
		1	24	17.84	17.62	17.78
		1	49	16.78	16.72	16.82
		25	0	16.21	16.32	16.45
		25	12	16.47	16.31	16.43
		25	25	16.39	16.26	16.29
		50	0	16.21	16.45	16.29
	16QAM	1	0	16.42	16.59	16.55
		1	24	17.11	17.15	16.84
		1	49	16.12	16.35	15.95
		25	0	16.15	16.50	16.42
		25	12	16.42	16.49	16.41
		25	25	16.33	16.48	16.27
		50	0	16.14	16.36	16.25

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	18.01	18.39	18.42
		1	12	19.00	19.18	19.29
		1	24	18.34	18.46	18.48
		12	0	17.60	17.78	17.98
		12	6	18.02	18.06	18.23
		12	13	17.95	18.06	18.06
		25	0	17.88	17.86	17.97
	16QAM	1	0	17.39	17.83	17.67
		1	12	18.45	18.62	18.38
		1	24	17.84	17.94	17.76
		12	0	17.77	17.80	17.95
		12	6	18.02	18.07	18.20
		12	13	17.91	18.08	18.02
		25	0	17.79	17.87	17.84

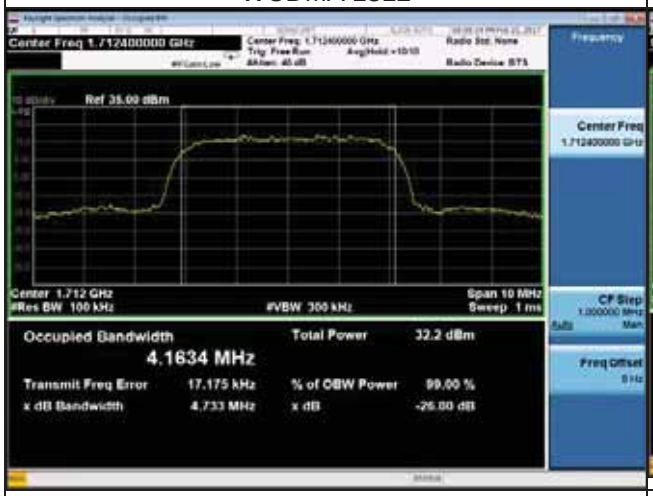
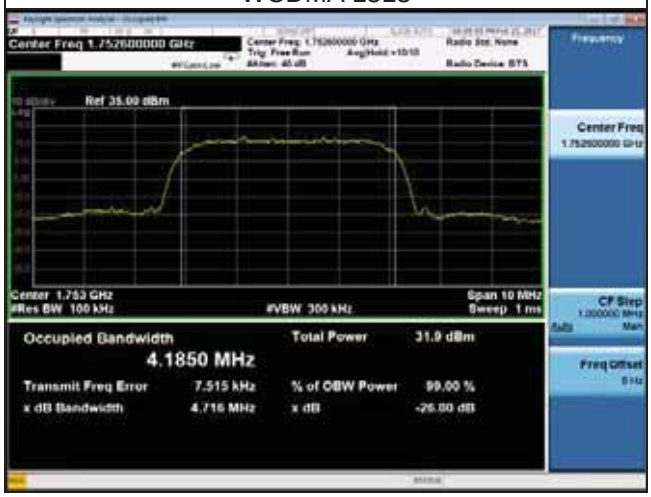
LTE Band / BW	Modulation	RB Sizet	RB Offset	Mid CH
				23230 CH
				782.0 MHz
13 / 10M	QPSK	1	0	18.46
		1	24	19.29
		1	49	18.59
		25	0	17.84
		25	12	18.06
		25	25	18.10
		50	0	17.96
	16QAM	1	0	17.98
		1	24	18.64
		1	49	18.11
		25	0	17.83
		25	12	18.08
		25	25	18.10
		50	0	17.87

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23755 CH	23790 CH	23825 CH
				706.5 MHz	710.0 MHz	713.5 MHz
17 / 5M	QPSK	1	0	15.82	16.10	16.14
		1	12	16.98	16.87	16.79
		1	24	16.31	16.25	15.94
		12	0	15.68	15.58	15.58
		12	6	15.96	15.68	15.79
		12	13	15.89	15.60	15.68
		25	0	15.70	15.45	15.54
	16QAM	1	0	15.24	15.56	15.47
		1	12	16.36	16.34	16.15
		1	24	15.73	15.77	15.33
		12	0	15.85	15.72	15.72
		12	6	16.11	15.83	15.92
		12	13	16.03	15.74	15.81
		25	0	15.84	15.55	15.60

LTE Band / BW	Modulation	RB Sizet	RB Offset	Low CH	Mid CH	High CH
				23780 CH	23790 CH	23800 CH
				709.0 MHz	710.0 MHz	711.0 MHz
17 / 10M	QPSK	1	0	16.07	16.31	16.37
		1	24	16.81	16.76	16.68
		1	49	15.96	15.81	15.79
		25	0	15.35	15.33	15.33
		25	12	15.46	15.29	15.30
		25	25	15.21	15.30	15.30
		50	0	15.35	15.19	15.17
	16QAM	1	0	15.61	15.75	15.81
		1	24	16.39	16.22	16.13
		1	49	15.59	15.32	15.28
		25	0	15.66	15.56	15.55
		25	12	15.78	15.53	15.54
		25	25	15.54	15.55	15.53
		50	0	15.62	15.40	15.35

ATTACHMENT B - OCCUPIED BANDWIDTH

WCDMA Band 4 WCDMA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1634	19957	1710.7	4.733
1413	1732.6	4.1613	20175	1732.5	4.731
1513	1752.6	4.1850	20393	1754.3	4.716

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	4.1632	19957	1710.7	4.731
1413	1732.6	4.1639	20175	1732.5	4.732
1513	1752.6	4.1646	20393	1754.3	4.729

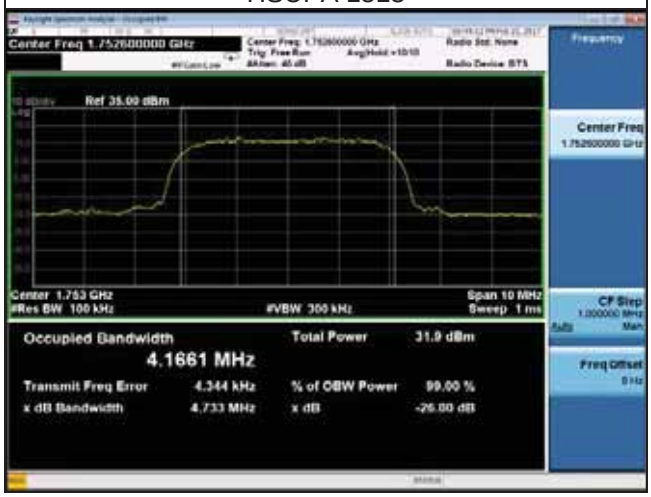
Spectrum Plot

HSDPA 1312

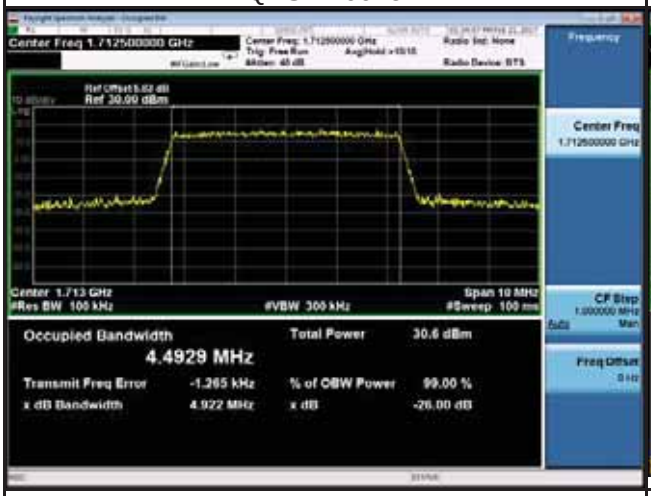
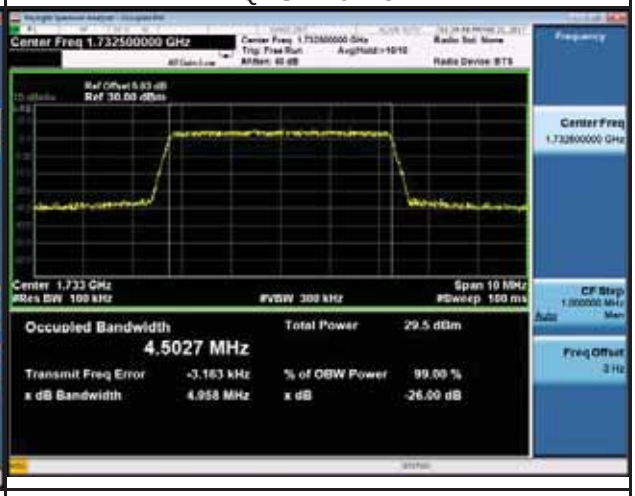
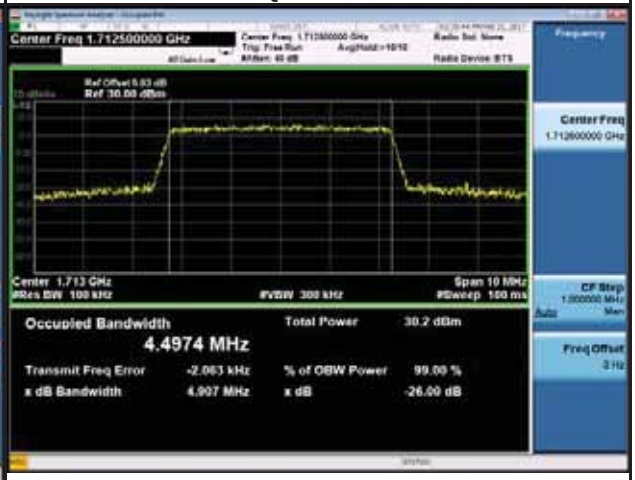
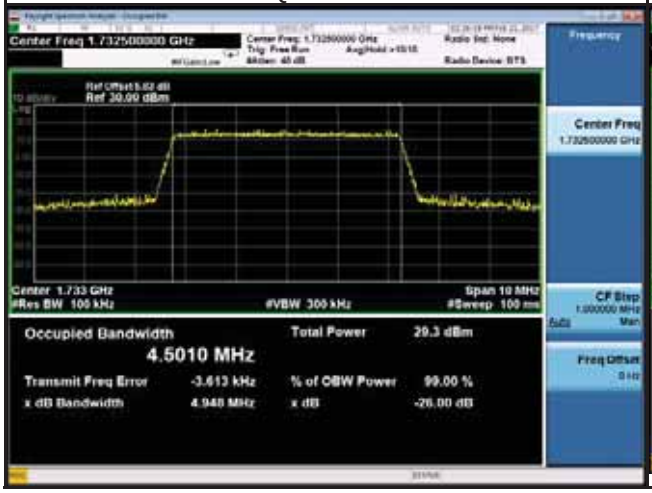
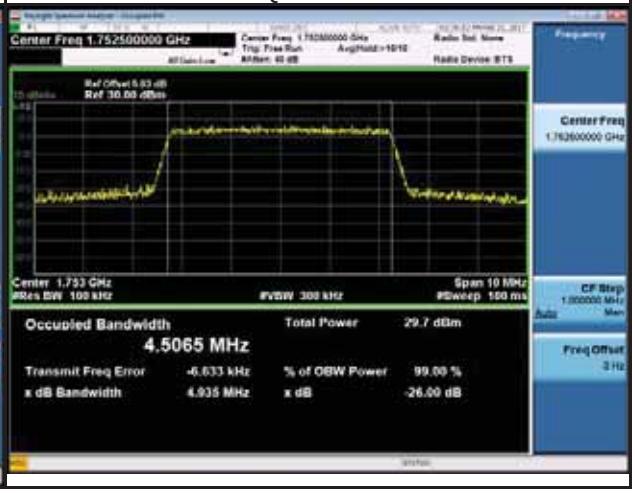
HSDPA 1413

HSDPA 1513

WCDMA Band 4 HSUPA					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.1640	19957	1710.7	4.734
1413	1732.6	4.1659	20175	1732.5	4.746
1513	1752.6	4.1661	20393	1754.3	4.733

Spectrum Plot	
HSUPA 1312	HSUPA 1413
HSUPA 1513	
	

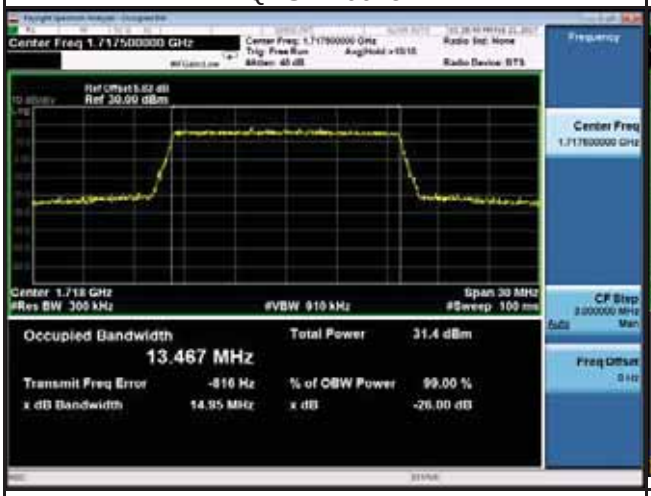
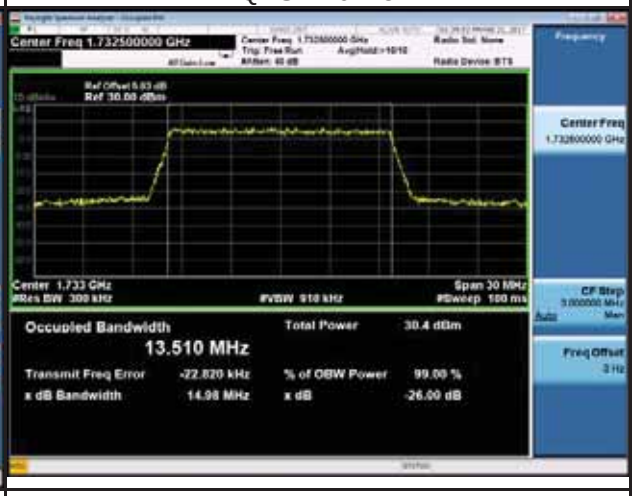
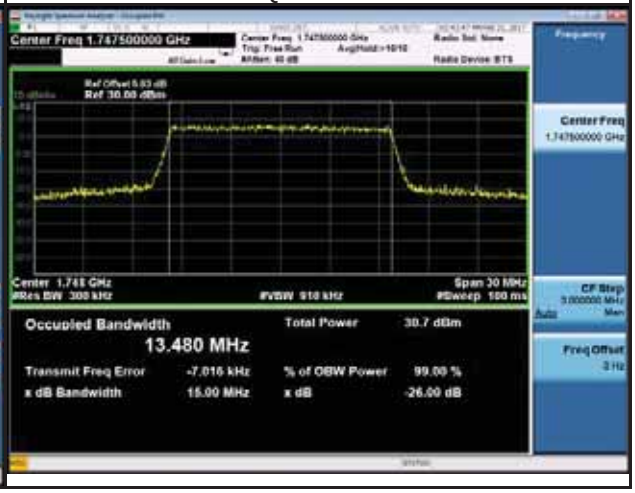
LTE Band 4_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
19975	1712.5	4.4929	19975	1712.5	4.4974
20175	1732.5	4.5027	20175	1732.5	4.5010
20375	1752.5	4.4939	20375	1752.5	4.5065
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.922	19975	1712.5	4.907
20175	1732.5	4.958	20175	1732.5	4.948
20375	1752.5	4.936	20375	1752.5	4.935

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

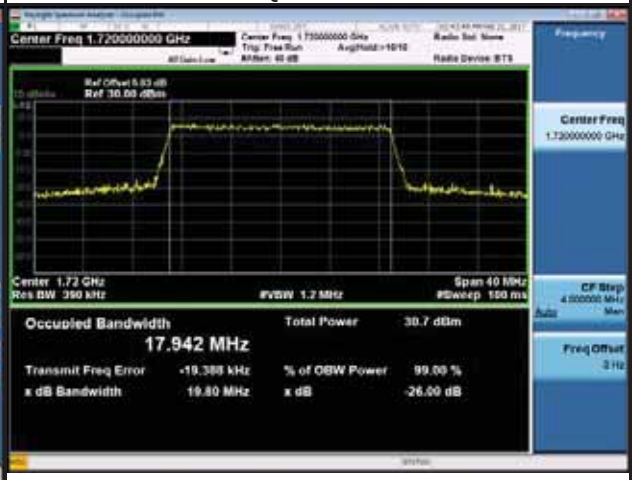
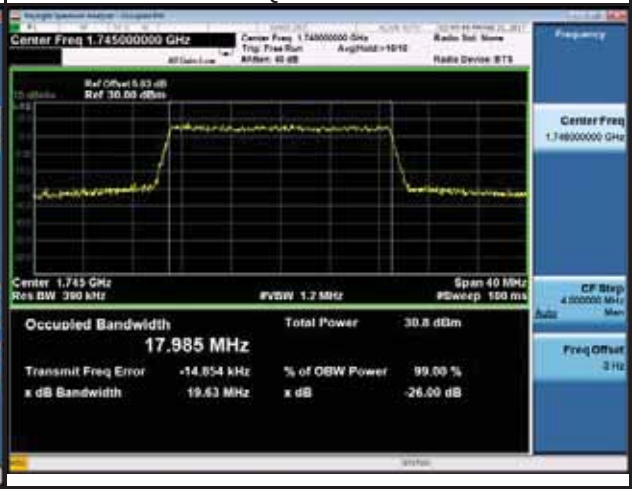
LTE Band 4_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20000	1715	8.9780	20000	1715	9.0049
20175	1732.5	9.0069	20175	1732.5	8.9902
20350	1750	8.9847	20350	1750	8.9861
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	9.876	20000	1715	9.886
20175	1732.5	9.901	20175	1732.5	9.893
20350	1750	9.925	20350	1750	9.839

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

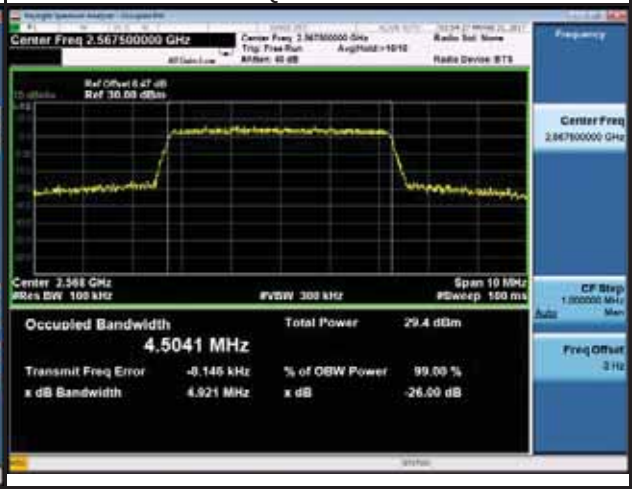
LTE Band 4_15M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20025	1717.5	13.467	20025	1717.5	13.474
20175	1732.5	13.510	20175	1732.5	13.517
20325	1747.5	13.490	20325	1747.5	13.480
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	14.95	20025	1717.5	14.78
20175	1732.5	14.98	20175	1732.5	14.90
20325	1747.5	14.94	20325	1747.5	15.00

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	17.999	20050	1720	17.942
20175	1732.5	17.995	20175	1732.5	18.019
20300	1745	17.974	20300	1745	17.985
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	19.75	20050	1720	19.80
20175	1732.5	19.76	20175	1732.5	19.67
20300	1745	19.66	20300	1745	19.63

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

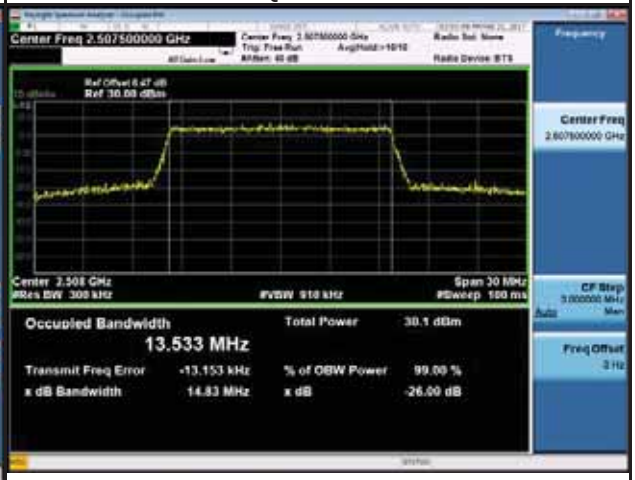
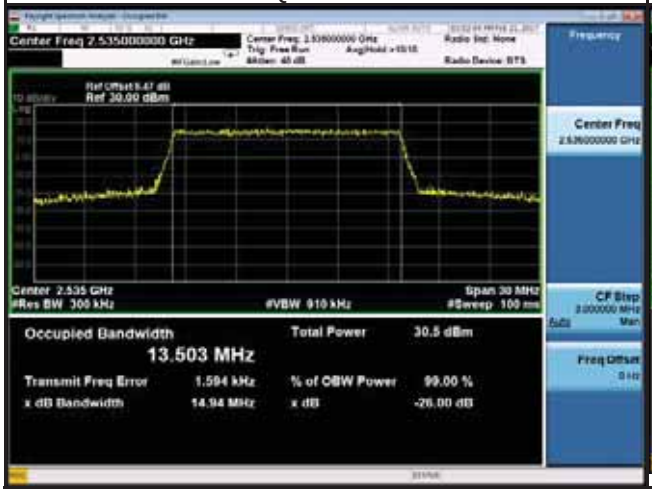
LTE Band 7_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20775	2502.5	4.5062	20775	2502.5	4.5119
21100	2535	4.5080	21100	2535	4.5097
21425	2567.5	4.5021	21425	2567.5	4.5041
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.964	20775	2502.5	4.964
21100	2535	4.959	21100	2535	4.946
21425	2567.5	4.953	21425	2567.5	4.921

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

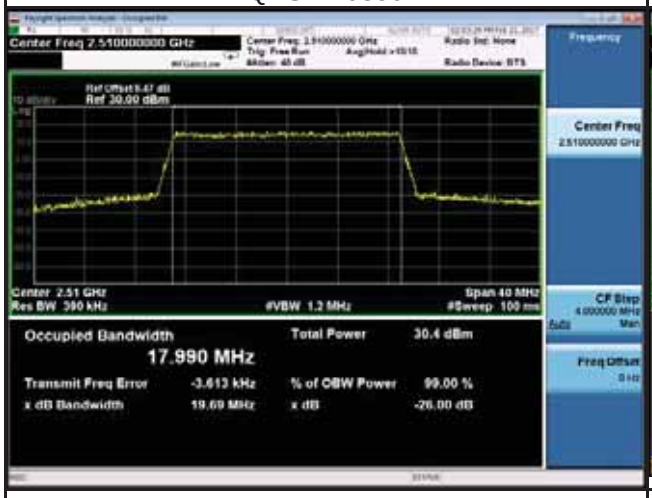
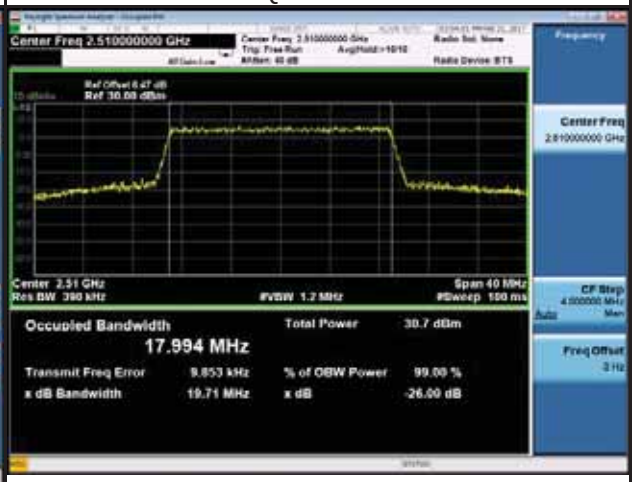
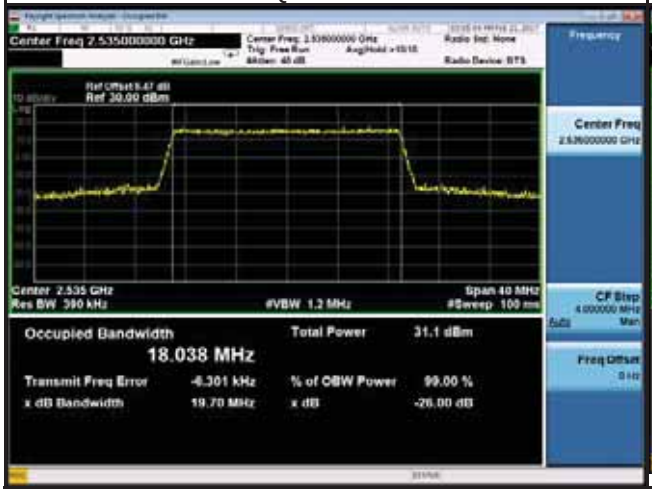
LTE Band 7_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20800	2505	9.0018	20800	2505	9.0053
21100	2535	9.0196	21100	2535	8.9806
21400	2565	9.0324	21400	2565	9.0005
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20800	2505	9.937	20800	2505	9.924
21100	2535	9.910	21100	2535	9.844
21400	2565	9.843	21400	2565	9.889

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	13.478	20825	2507.5	13.533
21100	2535	13.507	21100	2535	13.503
21375	2562.5	13.466	21375	2562.5	13.504
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20825	2507.5	14.87	20825	2507.5	14.83
21100	2535	15.02	21100	2535	14.94
21375	2562.5	14.96	21375	2562.5	14.95

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	17.990	20850	2510	17.994
21100	2535	18.021	21100	2535	18.038
21350	2560	17.946	21350	2560	17.965
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20850	2510	19.69	20850	2510	19.71
21100	2535	19.89	21100	2535	19.70
21350	2560	19.63	21350	2560	19.75

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

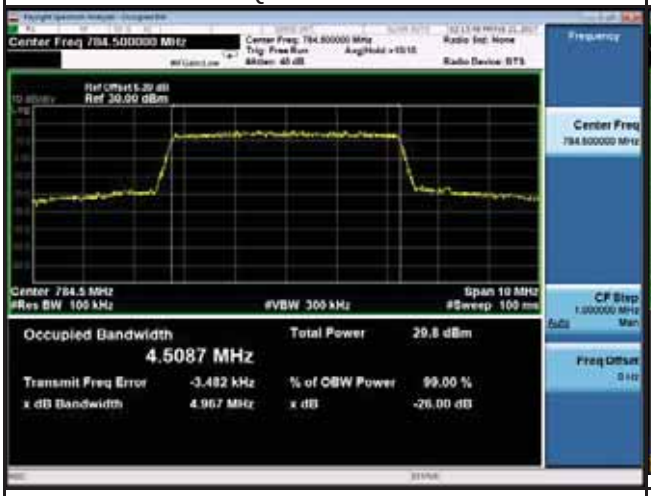
LTE Band 12_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23035	701.5	4.5166	23035	701.5	4.5234
23095	707.5	4.5043	23095	707.5	4.5019
23155	713.5	4.5056	23155	713.5	4.5186
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23035	701.5	4.934	23035	701.5	4.981
23095	707.5	4.917	23095	707.5	4.943
23155	713.5	4.962	23155	713.5	4.992

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	9.0117	23060	704.0	9.0196
23095	707.5	8.9964	23095	707.5	8.9925
23130	711.0	9.0021	23130	711.0	9.0270
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23060	704.0	9.882	23060	704.0	10.01
23095	707.5	9.861	23095	707.5	9.928
23130	711.0	9.889	23130	711.0	9.943

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

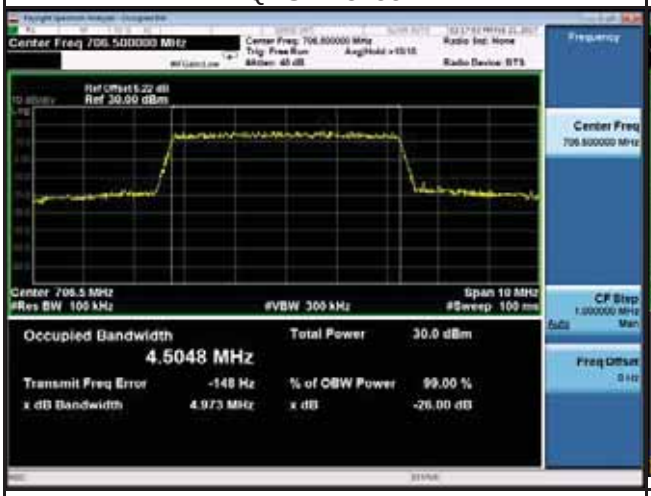
LTE Band 13_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23205	779.5	4.5148	23205	779.5	4.5100
23230	782.0	4.5120	23230	782.0	4.5052
23255	784.5	4.5087	23255	784.5	4.4972
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23205	779.5	4.945	23205	779.5	4.928
23230	782.0	4.934	23230	782.0	4.922
23255	784.5	4.967	23255	784.5	4.927

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

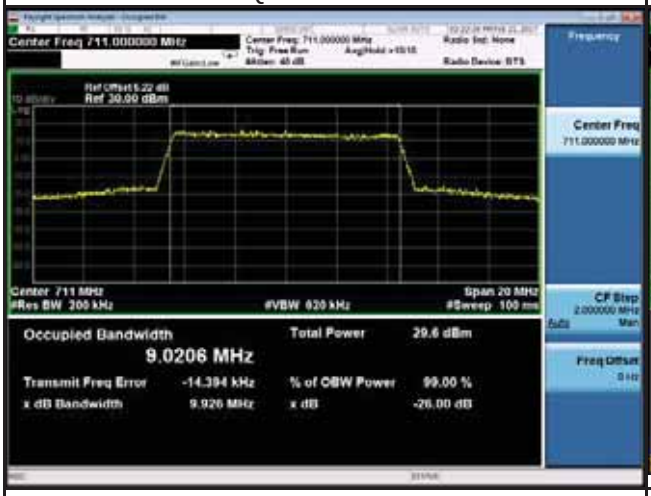
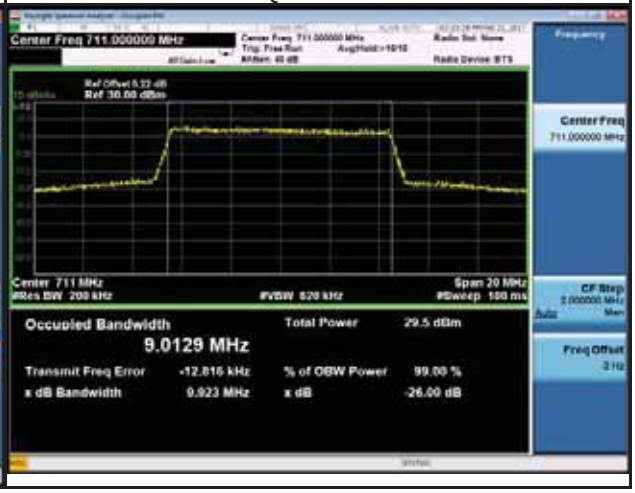
LTE Band 13_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23230	782.0	9.0159	23230	782.0	9.0094
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23230	782.0	9.904	23230	782.0	9.814

Spectrum Plot	
QPSK-23230	16QAM-23230

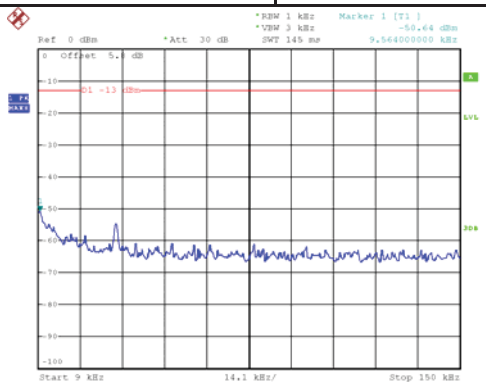
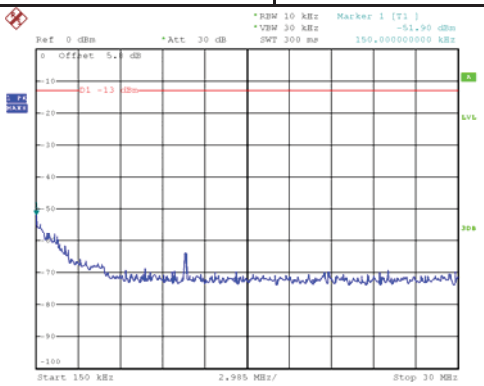
LTE Band 17_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23755	706.5	4.5048	23755	706.5	4.5043
23790	710.0	4.5172	23790	710.0	4.5094
23825	713.5	4.5041	23825	713.5	4.5075
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23755	706.5	4.973	23755	706.5	4.968
23790	710.0	4.968	23790	710.0	4.935
23825	713.5	4.954	23825	713.5	4.953

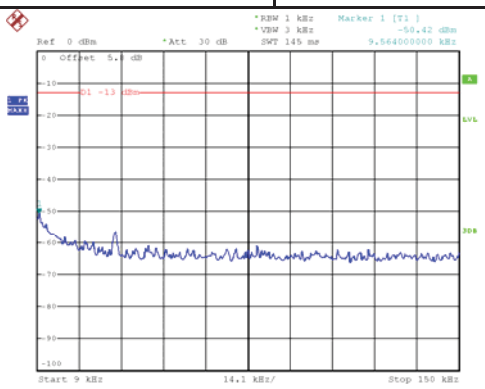
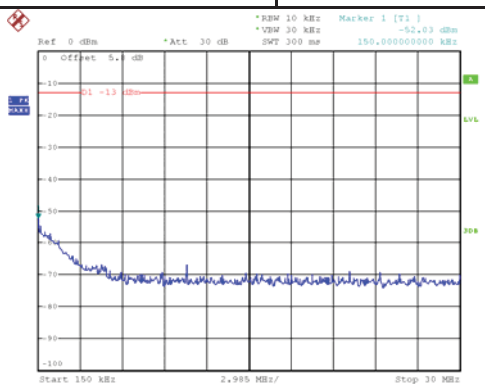
Spectrum Plot	
QPSK-23755	QPSK-23790
	
QPSK-23825	16QAM-23755
16QAM-23790	16QAM-23825

LTE Band 17_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
23780	709.0	8.9883	23780	709.0	8.9965
23790	710.0	9.0144	23790	710.0	9.0112
23800	711.0	9.0206	23800	711.0	9.0129
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23780	709.0	8.901	23780	709.0	9.951
23790	710.0	9.909	23790	710.0	9.923
23800	711.0	9.926	23800	711.0	9.923

Spectrum Plot	
QPSK-23780	QPSK-23790
QPSK-23800	16QAM-13780
	
16QAM-23790	16QAM-23800
	

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	-	-
		-	

<table>
<tr><th colspan="4">WCDMA Band 4_HSDPA</th></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
<tr><td>1413</td><td>1732.6</td><td>1413</td><td>1732.6</td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>1413</td><td>1732.6</td><td>-</td><td>-</td></tr>
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<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
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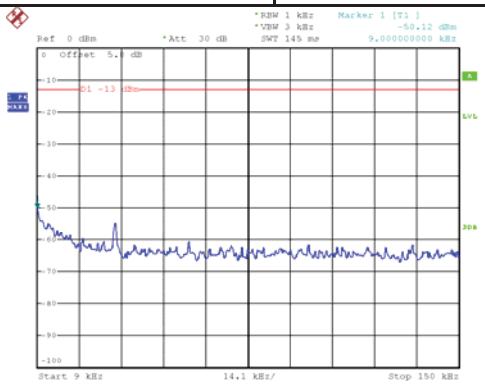
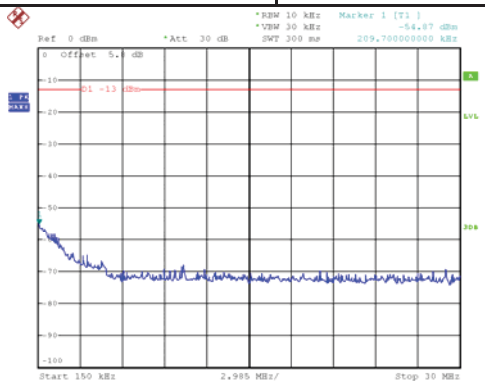
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>1413</td><td>1732.6</td><td>-</td><td>-</td></tr>
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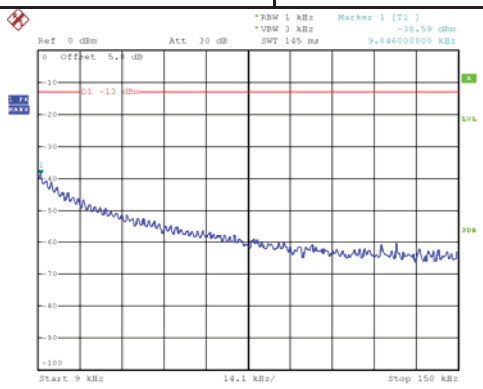
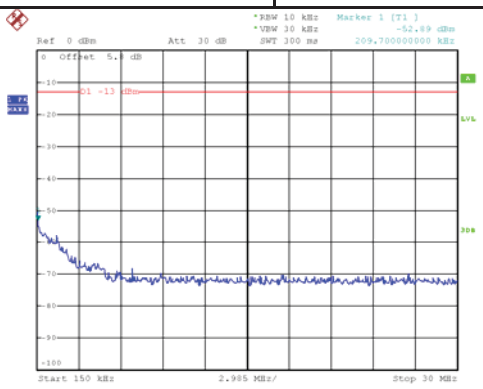
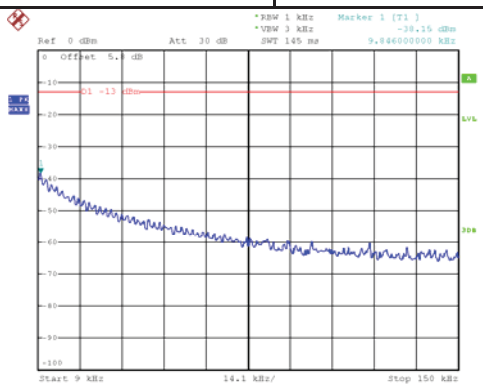
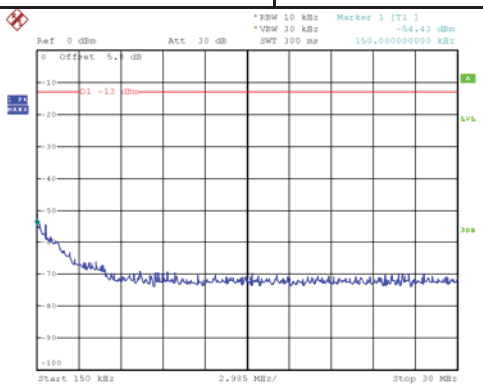
LTE Band 4_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

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

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<tr><td>Channel</td><td>Frequency(MHz)</td><td>Channel</td><td>Frequency(MHz)</td></tr>
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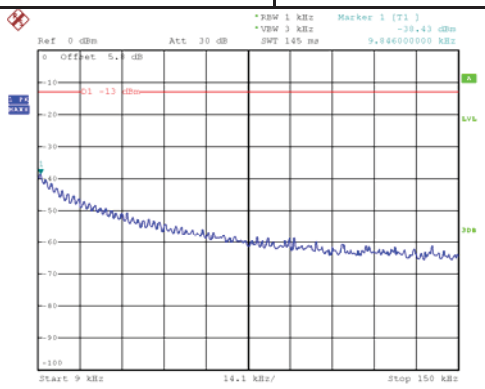
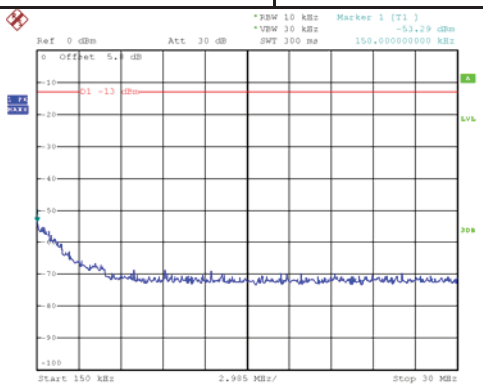
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td>Channel</td><td>Frequency(MHz)</td><td>-</td><td>-</td></tr>
<tr><td>20175</td><td>1732.5</td><td>-</td><td>-</td></tr>
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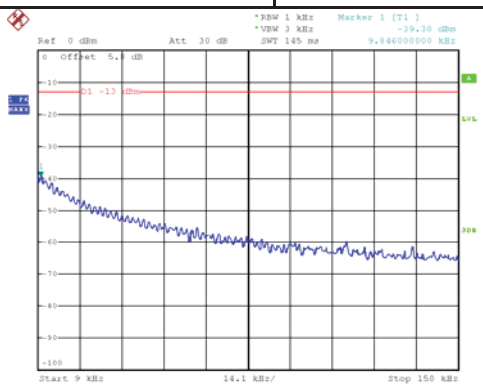
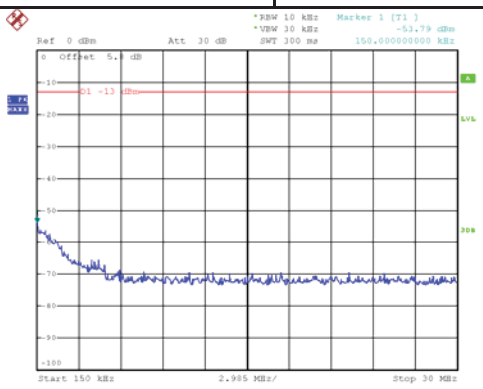
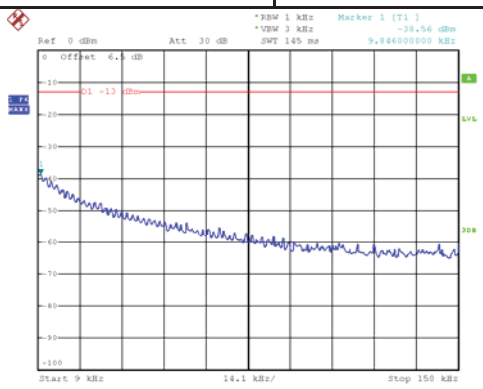
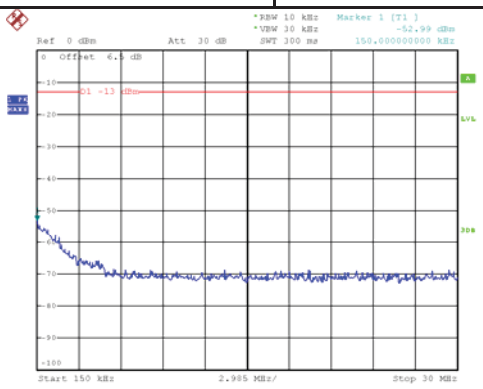
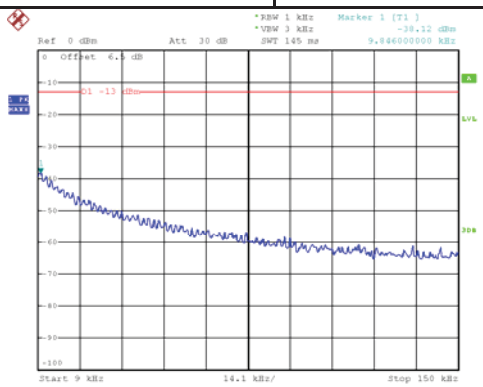
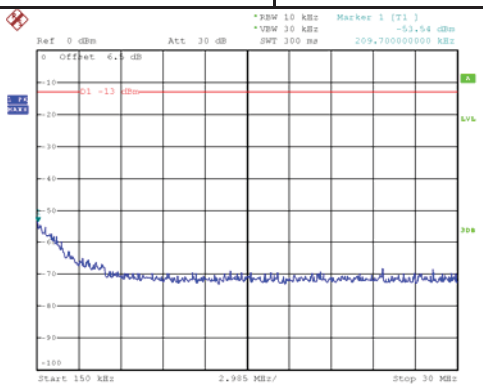
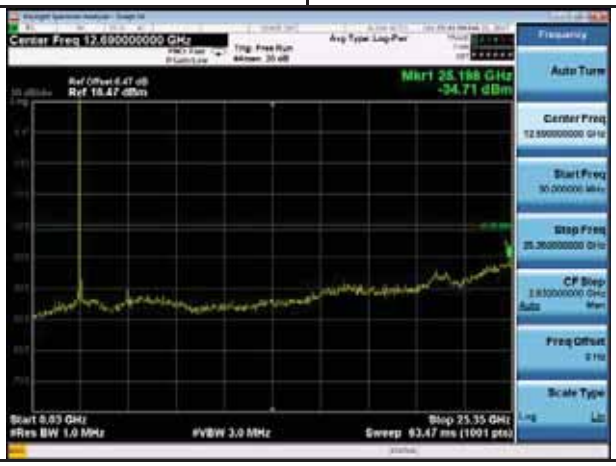
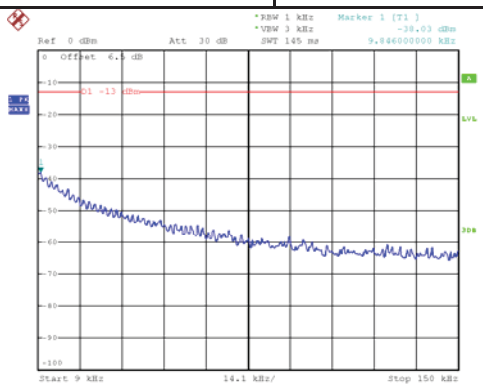
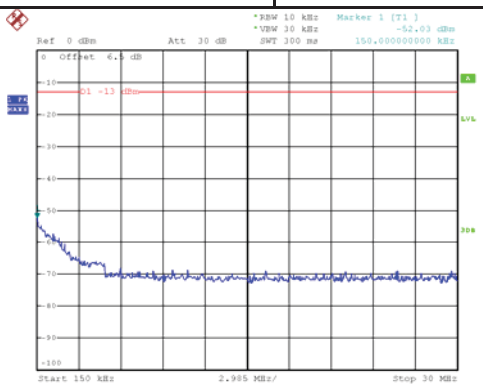
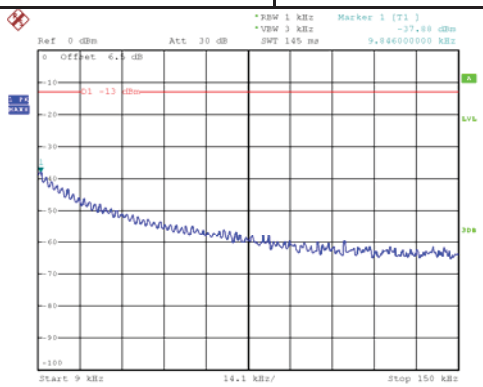
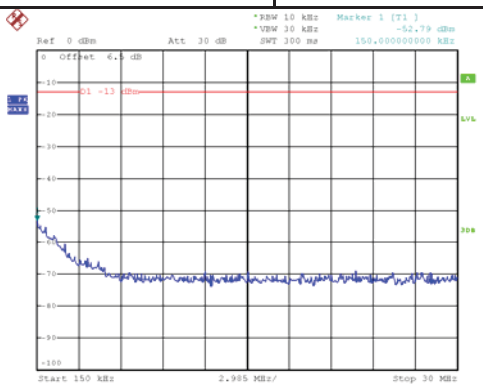
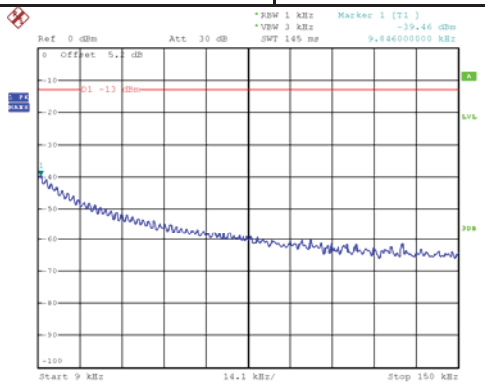
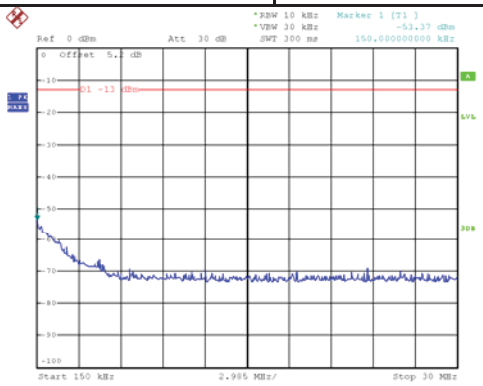
LTE Band 4_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20175	1732.5	20175	1732.5
			
Channel	Frequency(MHz)	-	-
20175	1732.5	-	-
		-	

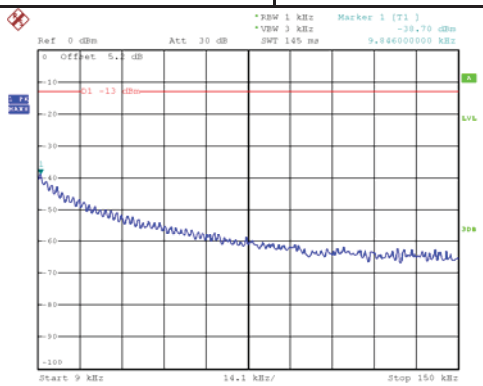
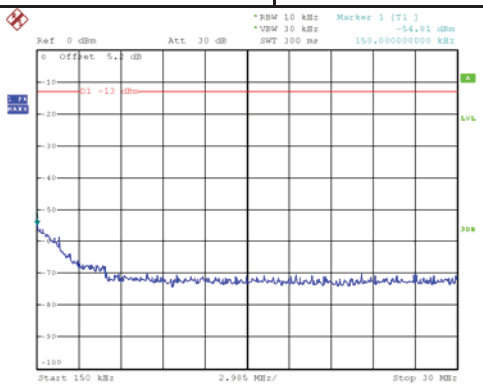
LTE Band 7_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

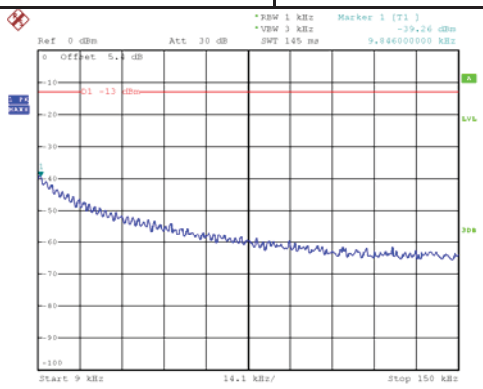
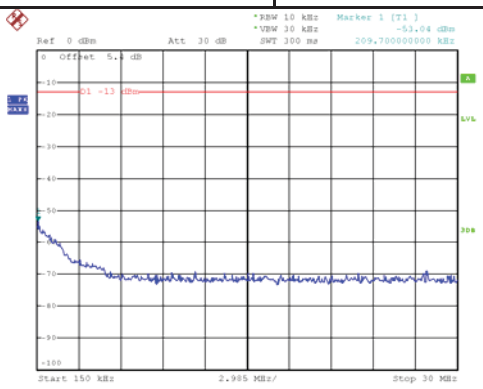
LTE Band 7_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

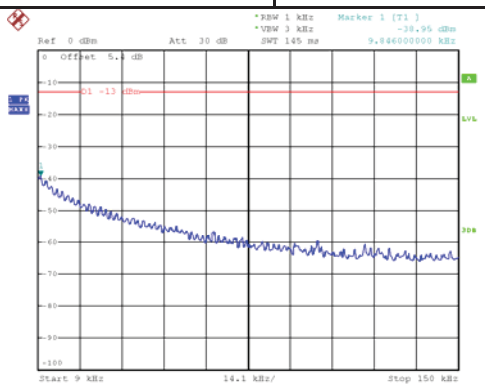
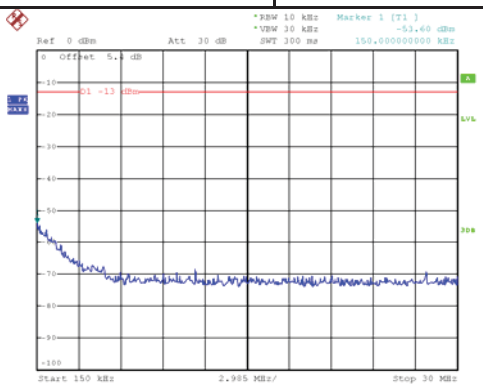
LTE Band 7_15M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

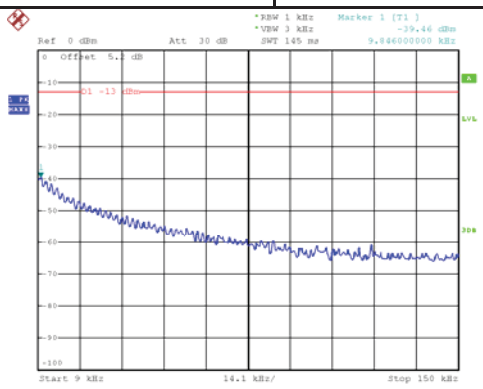
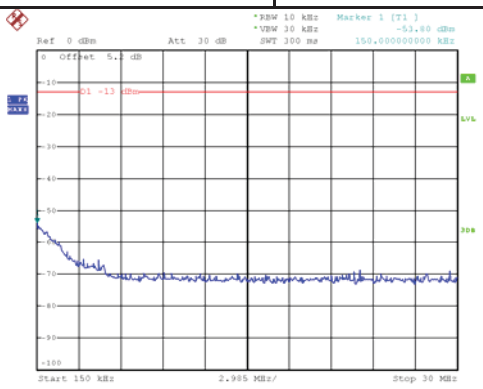
LTE Band 7_20M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
21100	2535	21100	2535
			
Channel	Frequency(MHz)	-	-
21100	2535	-	-
		-	

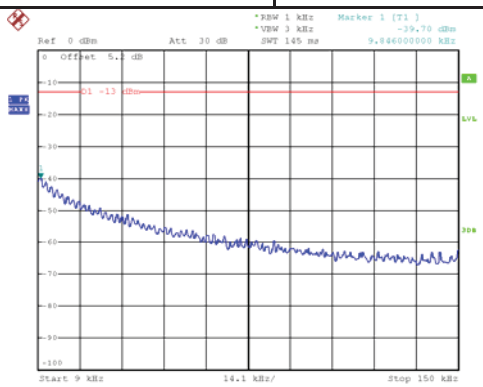
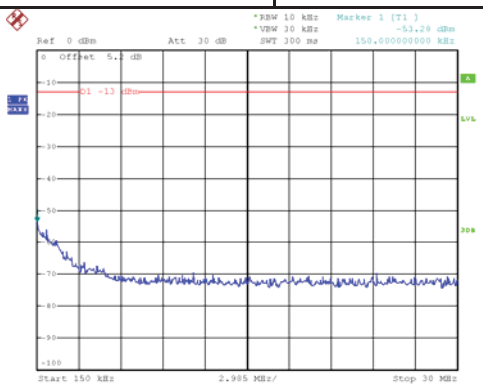
LTE Band 12_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23095	707.5	23095	707.5
			
Channel	Frequency(MHz)	-	-
23095	707.5	-	-
		-	

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	-	-
		-	

LTE Band 13_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23230	782.0	23230	782.0
			
Channel	Frequency(MHz)	-	-
23230	782.0	-	-
		-	

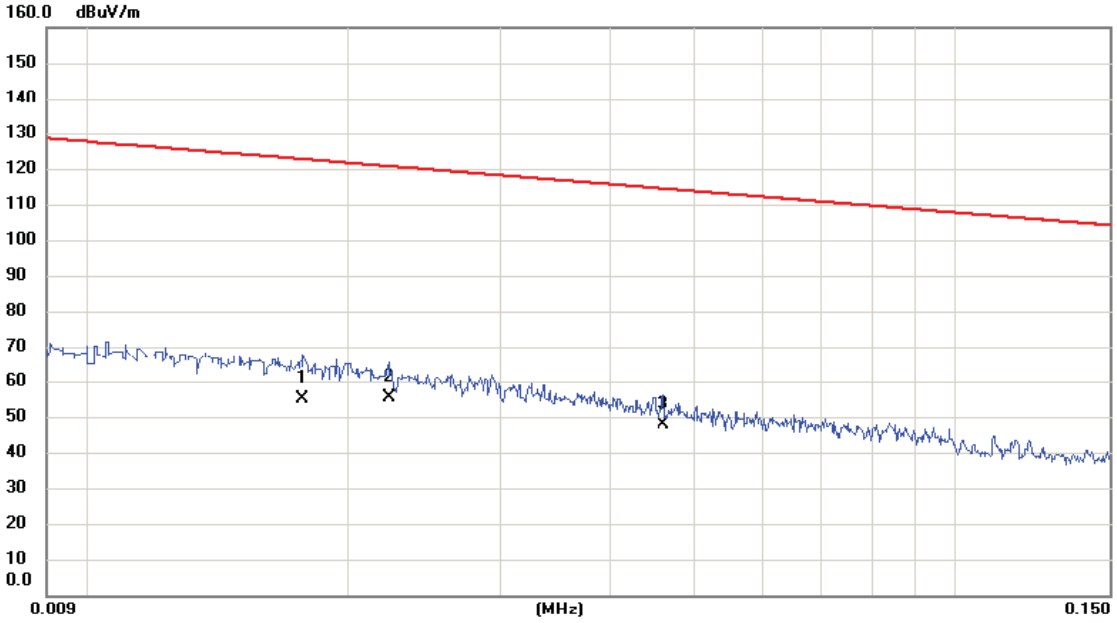
LTE Band 17_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23790	710.0	23790	710.0
			
Channel	Frequency(MHz)	-	-
23790	710.0	-	-
		-	

LTE Band 17_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
23790	710.0	23790	710.0
			
Channel	Frequency(MHz)	-	-
23790	710.0	-	-
		-	

ATTACHMENT D - RADIATED EMISSION

Test Mode:	TX Mode (Adapter: PHITEK)

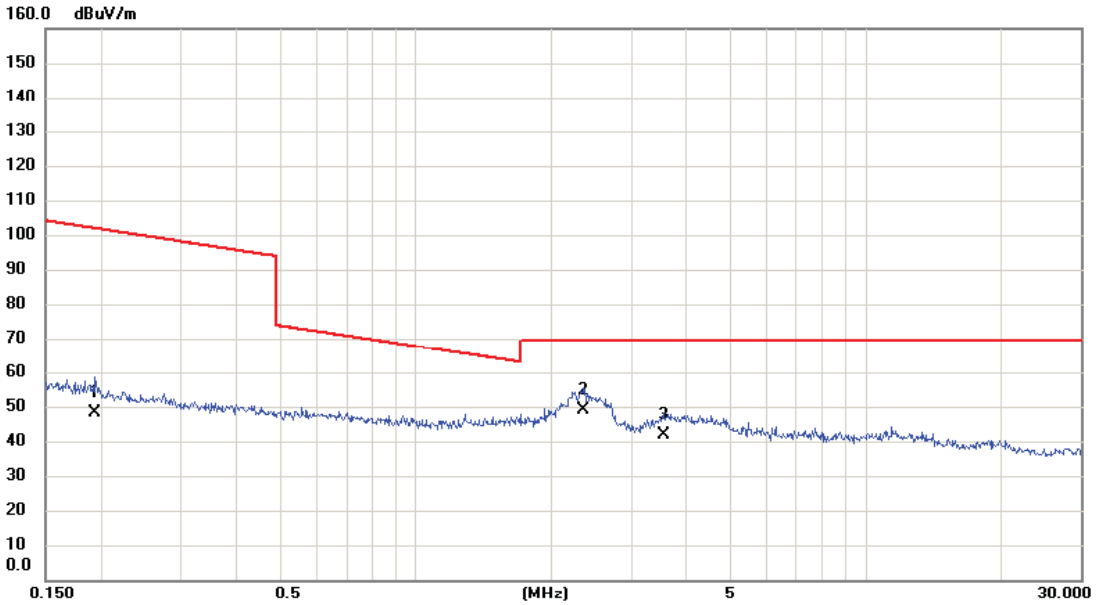
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0177	31.44	23.66	55.10	122.65	-67.55	AVG	
2	*	0.0223	32.16	23.24	55.40	120.64	-65.24	AVG	
3		0.0461	27.64	20.30	47.94	114.33	-66.39	AVG	

Test Mode:	TX Mode (Adapter: PHITEK)

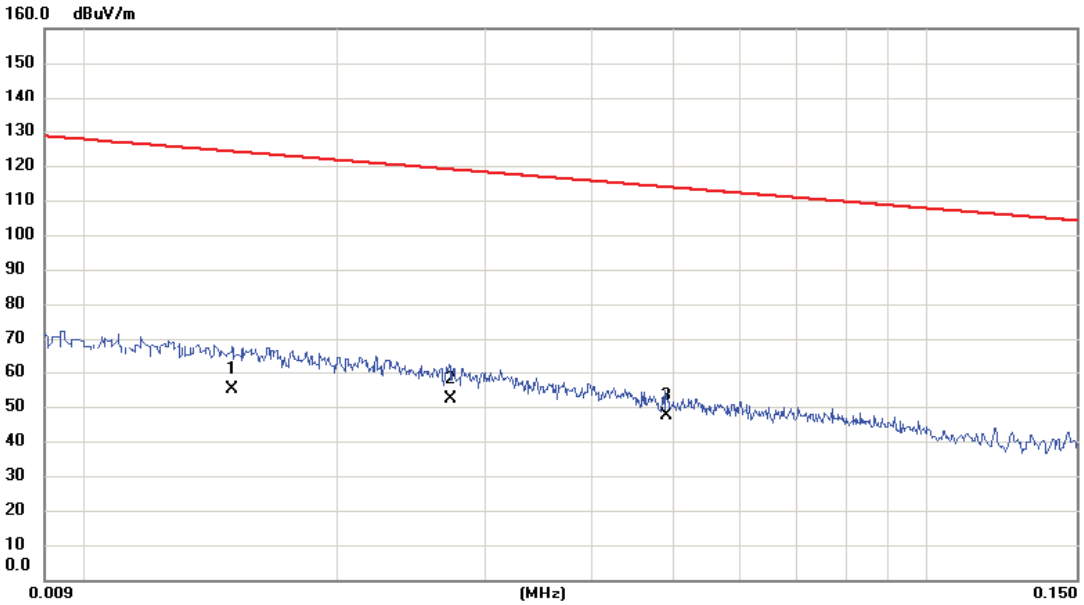
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1934	29.44	18.70	48.14	101.88	-53.74	AVG	
2	*	2.3584	31.42	17.44	48.86	69.54	-20.68	QP	
3		3.5653	24.12	17.83	41.95	69.54	-27.59	QP	

Test Mode:	TX Mode (Adapter: PHITEK)

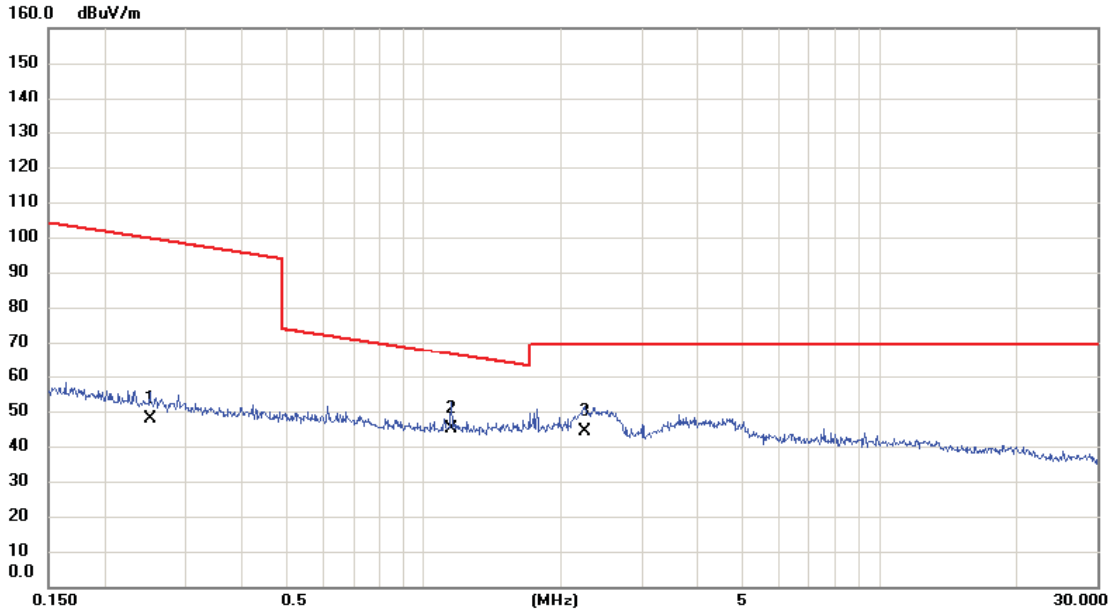
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0150	31.14	23.82	54.96	124.08	-69.12	AVG	
2		0.0273	29.55	22.62	52.17	118.88	-66.71	AVG	
3	*	0.0491	27.58	19.93	47.51	113.78	-66.27	AVG	

Test Mode:	TX Mode (Adapter: PHITEK)

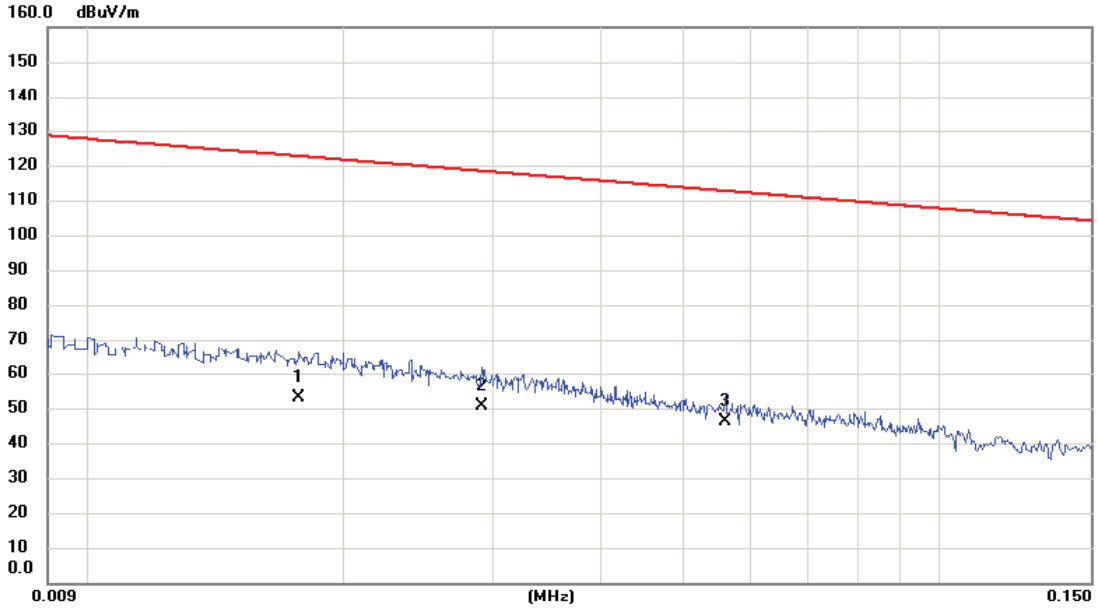
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2508	29.22	18.65	47.87	99.62	-51.75	AVG	
2	*	1.1534	27.33	17.71	45.04	66.36	-21.32	QP	
3		2.2486	26.74	17.59	44.33	69.54	-25.21	QP	

Test Mode:	TX Mode (Adapter: HUNTKEY)

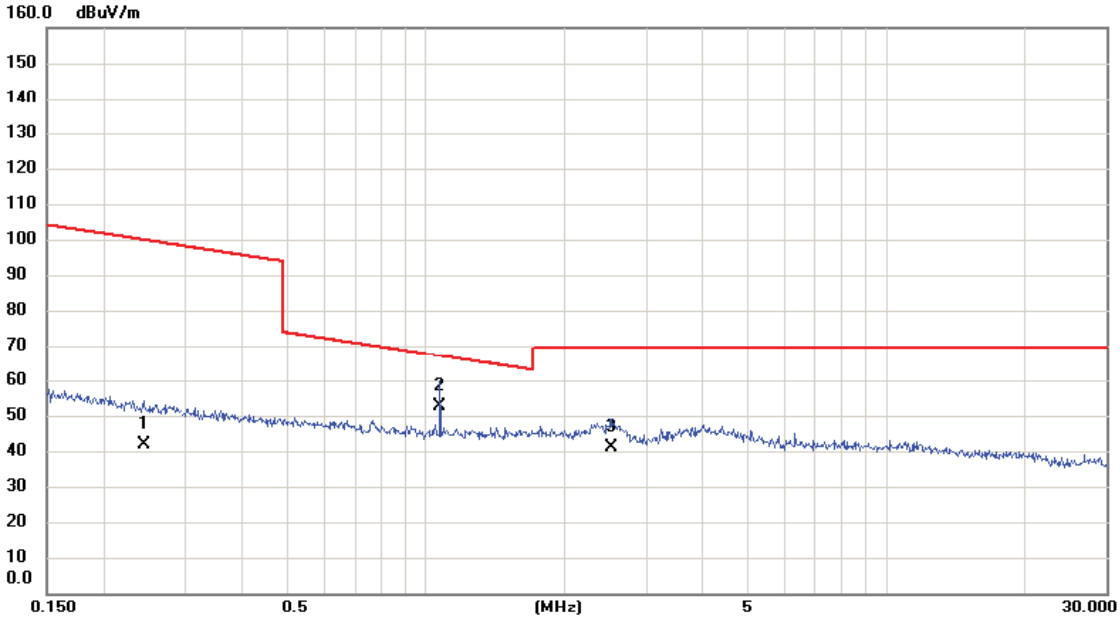
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0177	29.32	23.66	52.98	122.65	-69.67	AVG	
2		0.0291	28.15	22.40	50.55	118.33	-67.78	AVG	
3	*	0.0561	26.41	19.76	46.17	112.63	-66.46	AVG	

Test Mode:	TX Mode (Adapter: HUNTKEY)

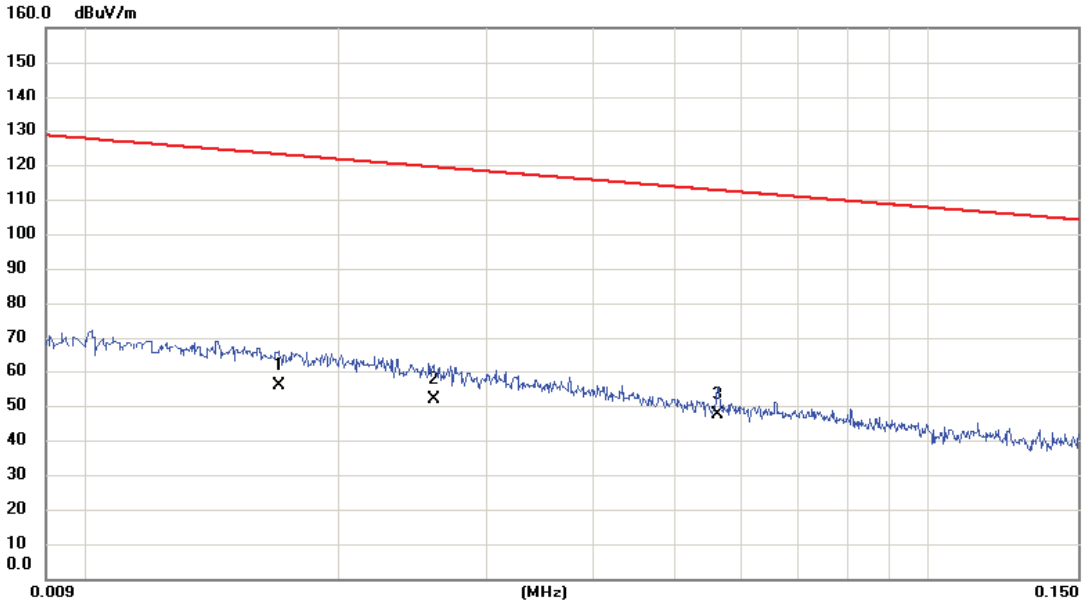
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2430	23.12	18.66	41.78	99.89	-58.11	AVG	
2	*	1.0766	34.96	17.70	52.66	66.96	-14.30	QP	
3		2.5133	23.70	17.25	40.95	69.54	-28.59	QP	

Test Mode:	TX Mode (Adapter: HUNTKEY)

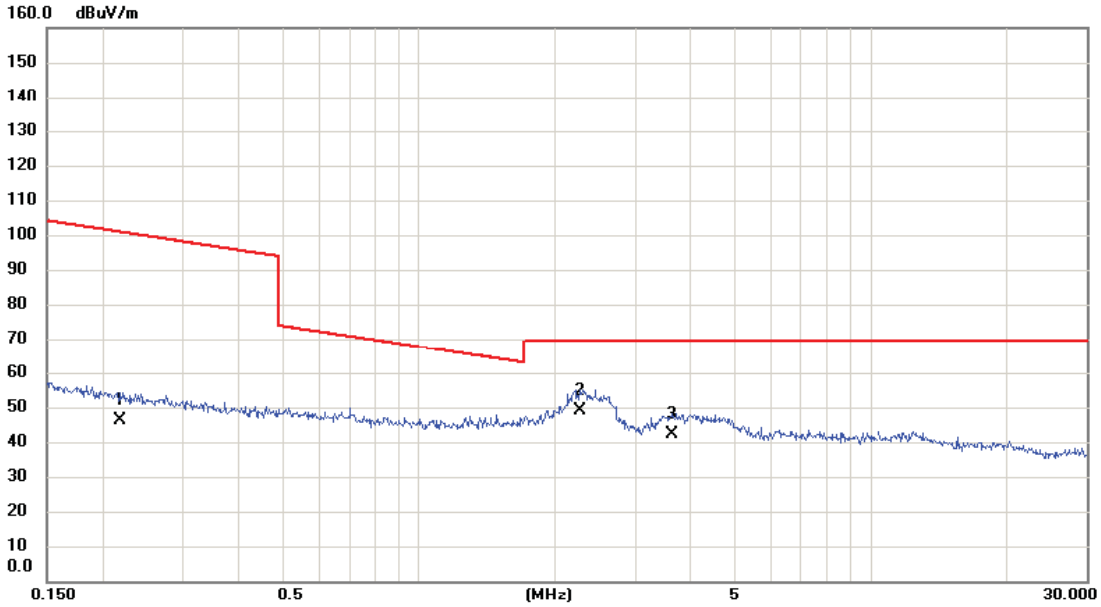
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0170	32.15	23.70	55.85	123.00	-67.15	AVG	
2		0.0260	29.04	22.78	51.82	119.31	-67.49	AVG	
3	*	0.0563	27.52	19.75	47.27	112.59	-65.32	AVG	

Test Mode:	TX Mode (Adapter: HUNTKEY)

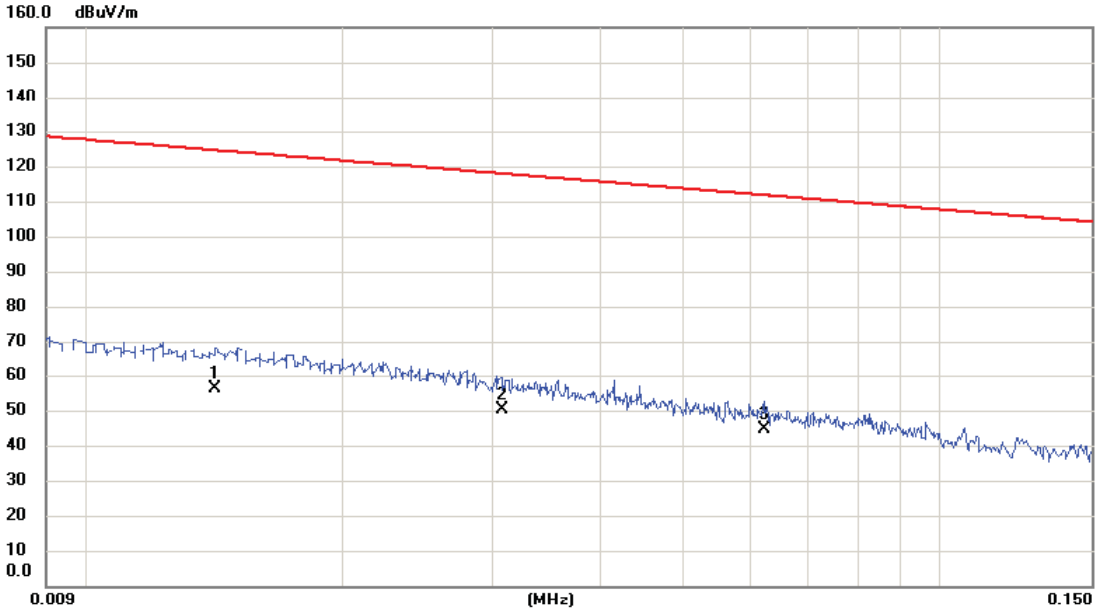
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2174	27.67	18.68	46.35	100.86	-54.51	AVG	
2	*	2.2725	31.55	17.56	49.11	69.54	-20.43	QP	
3		3.6417	24.11	18.00	42.11	69.54	-27.43	QP	

Test Mode:	TX Mode (Adapter: BYD)

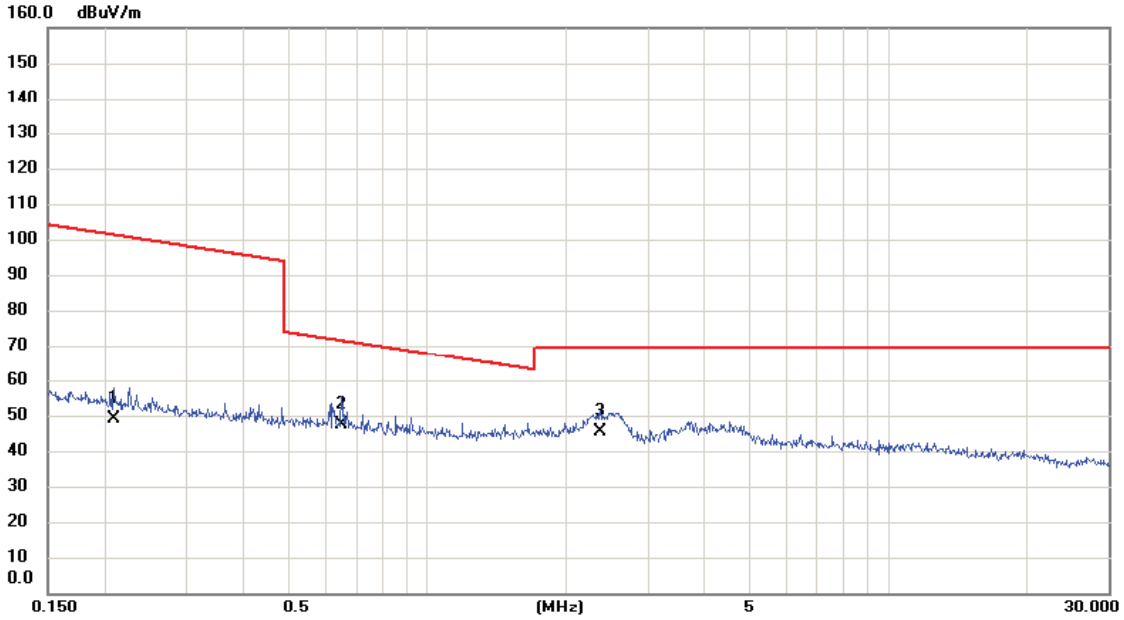
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0142	32.29	23.87	56.16	124.56	-68.40	peak	
2		0.0307	28.09	22.20	50.29	117.86	-67.57	peak	
3	*	0.0623	24.86	19.68	44.54	111.72	-67.18	peak	

Test Mode:	TX Mode (Adapter: BYD)

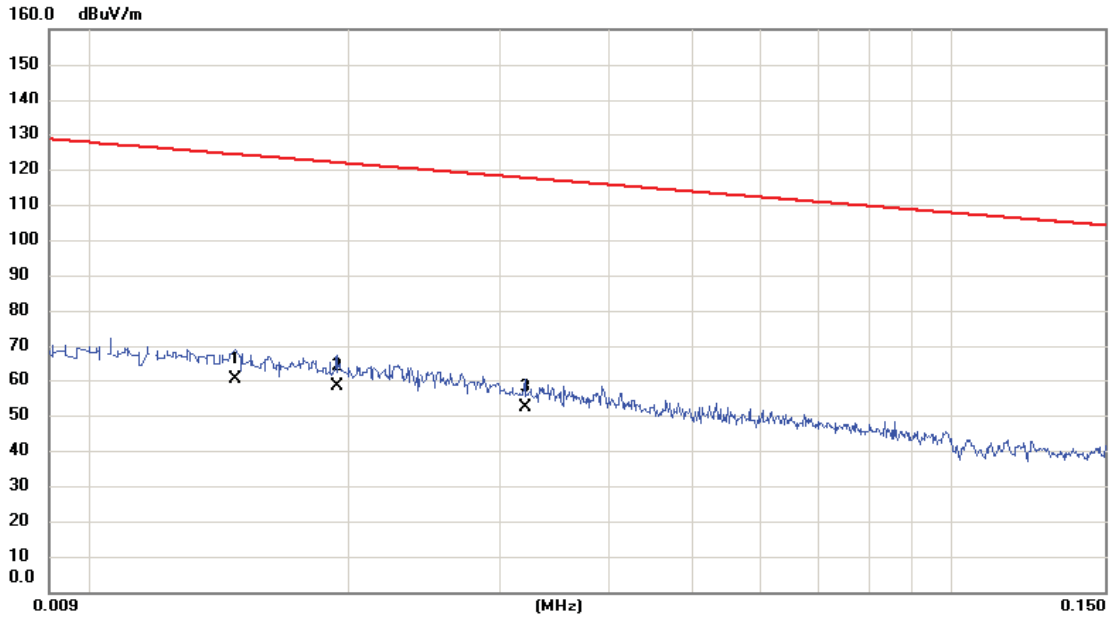
Ant 0°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2083	30.19	18.68	48.87	101.23	-52.36	AVG	
2	*	0.6508	28.96	18.43	47.39	71.34	-23.95	QP	
3		2.3710	27.84	17.43	45.27	69.54	-24.27	QP	

Test Mode:	TX Mode (Adapter: BYD)

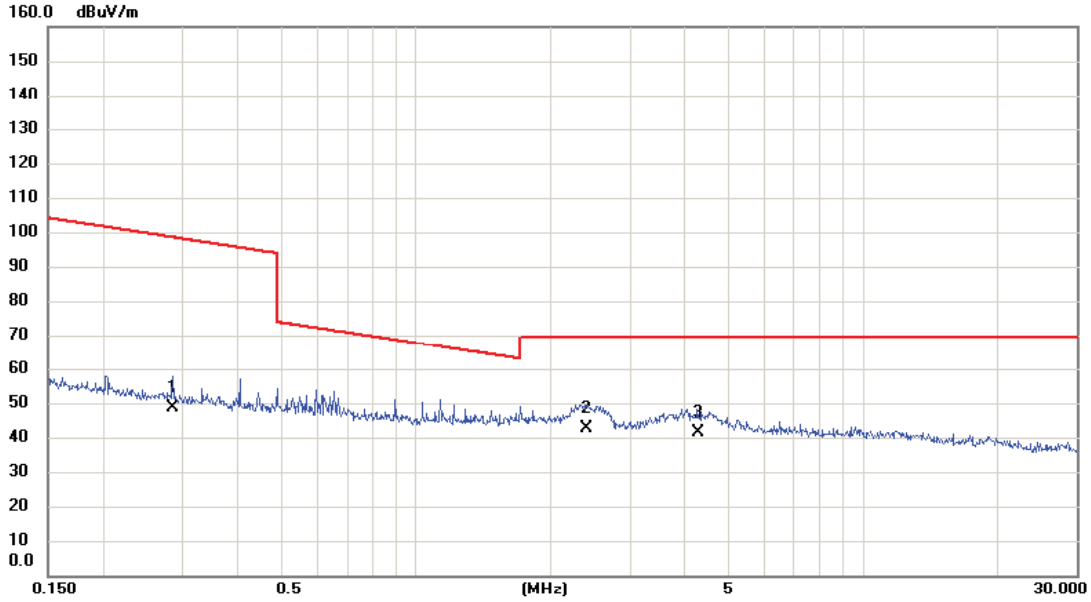
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.0148	36.26	23.83	60.09	124.20	-64.11	AVG	
2	*	0.0194	34.69	23.56	58.25	121.85	-63.60	AVG	
3		0.0320	30.01	22.04	52.05	117.50	-65.45	AVG	

Test Mode:	TX Mode (Adapter: BYD)

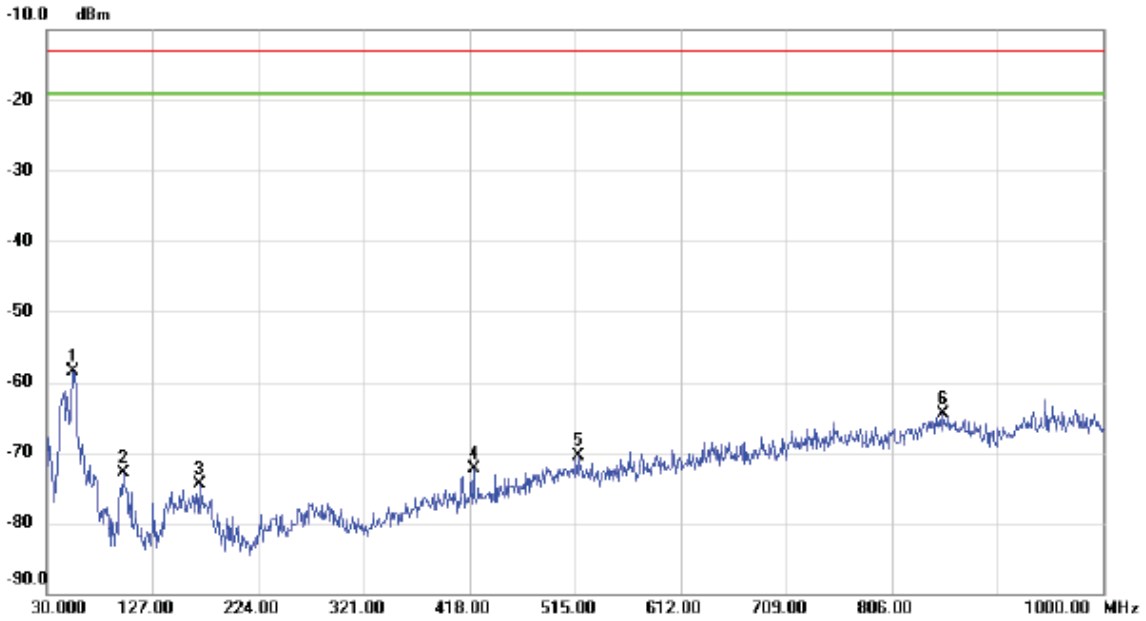
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2847	30.02	18.61	48.63	98.52	-49.89	AVG	
2	*	2.3962	25.18	17.39	42.57	69.54	-26.97	QP	
3		4.2692	23.02	18.19	41.21	69.54	-28.33	QP	

Test Mode:	WCDMA Band 4_TX CH1312

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	54.250	-60.87	2.40	-58.47	-13.00	-45.47	peak	
2		99.840	-71.46	-1.45	-72.91	-13.00	-59.91	peak	
3		169.680	-74.50	-0.01	-74.51	-13.00	-61.51	peak	
4		421.880	-76.97	4.62	-72.35	-13.00	-59.35	peak	
5		517.910	-78.01	7.51	-70.50	-13.00	-57.50	peak	
6		853.530	-78.87	14.35	-64.52	-13.00	-51.52	peak	

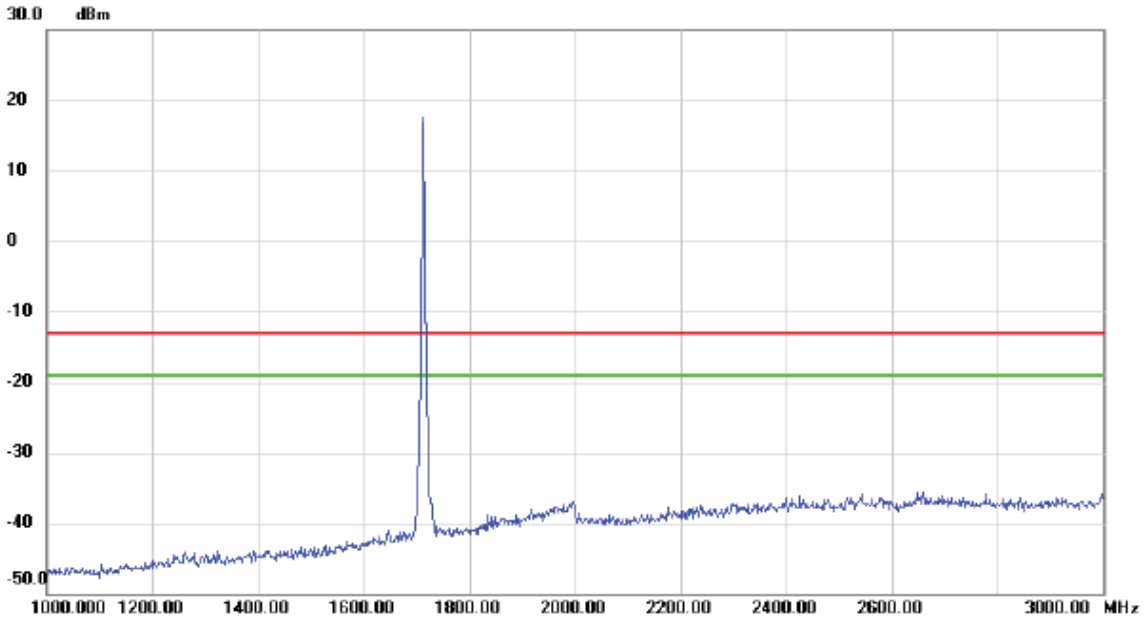
Test Mode:	WCDMA Band 4_TX CH1312

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		30.000	-72.46	1.88	-70.58	-13.00	-57.58	peak	
2		116.330	-70.96	-3.07	-74.03	-13.00	-61.03	peak	
3		134.760	-73.14	1.14	-72.00	-13.00	-59.00	peak	
4		259.890	-75.00	1.93	-73.07	-13.00	-60.07	peak	
5		614.910	-75.86	9.56	-66.30	-13.00	-53.30	peak	
6	*	696.390	-76.51	13.73	-62.78	-13.00	-49.78	peak	

Test Mode:	WCDMA Band 4_TX CH1312

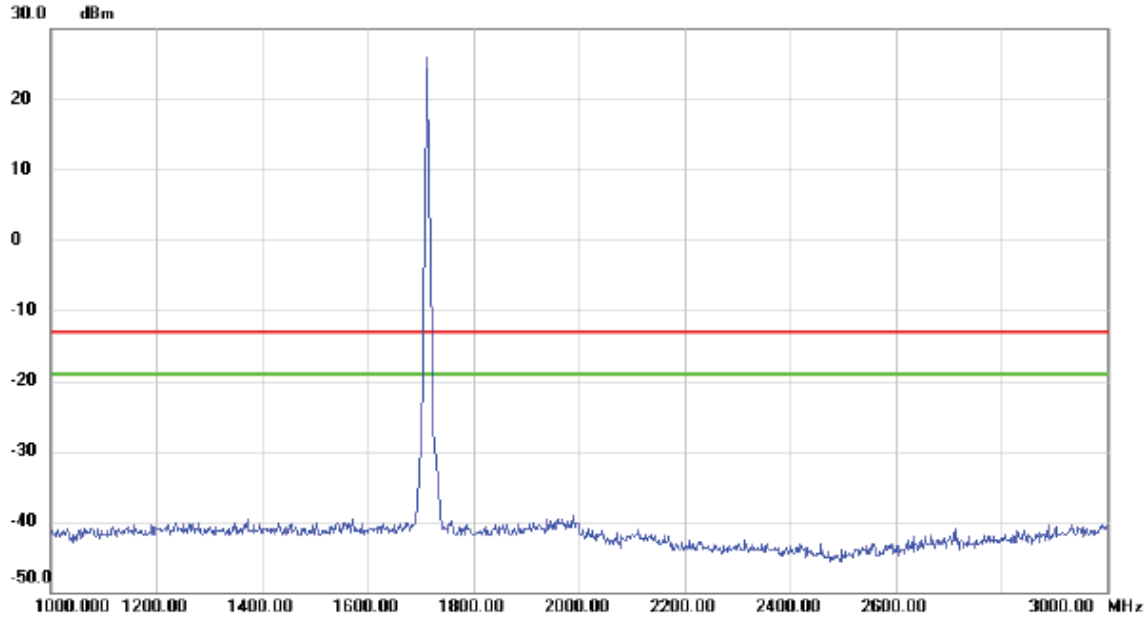
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312

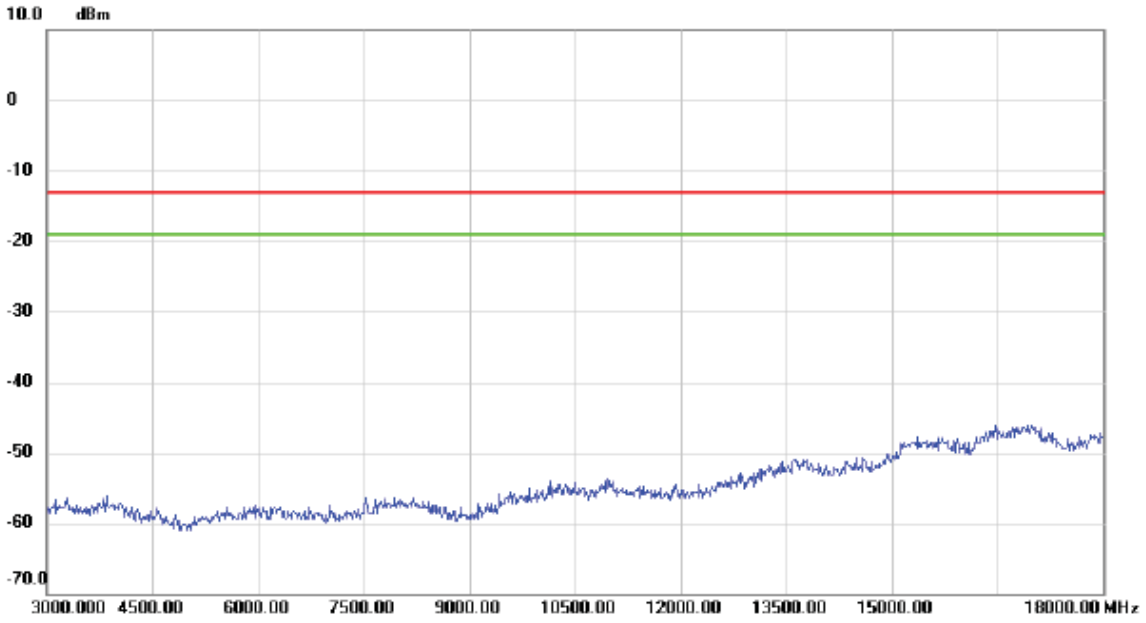
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312

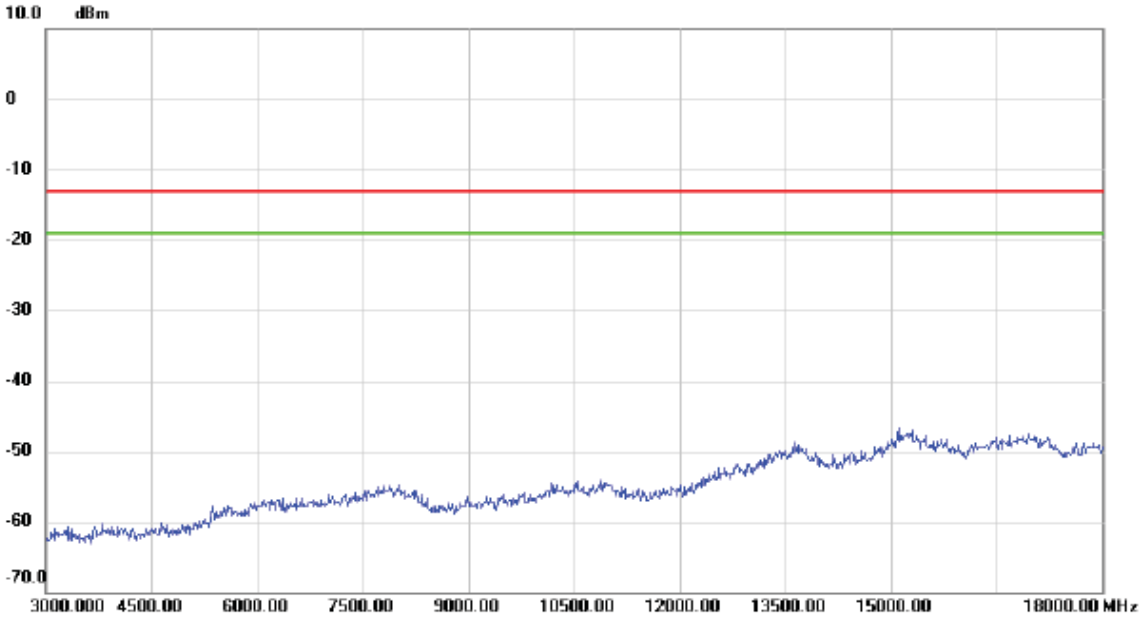
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312

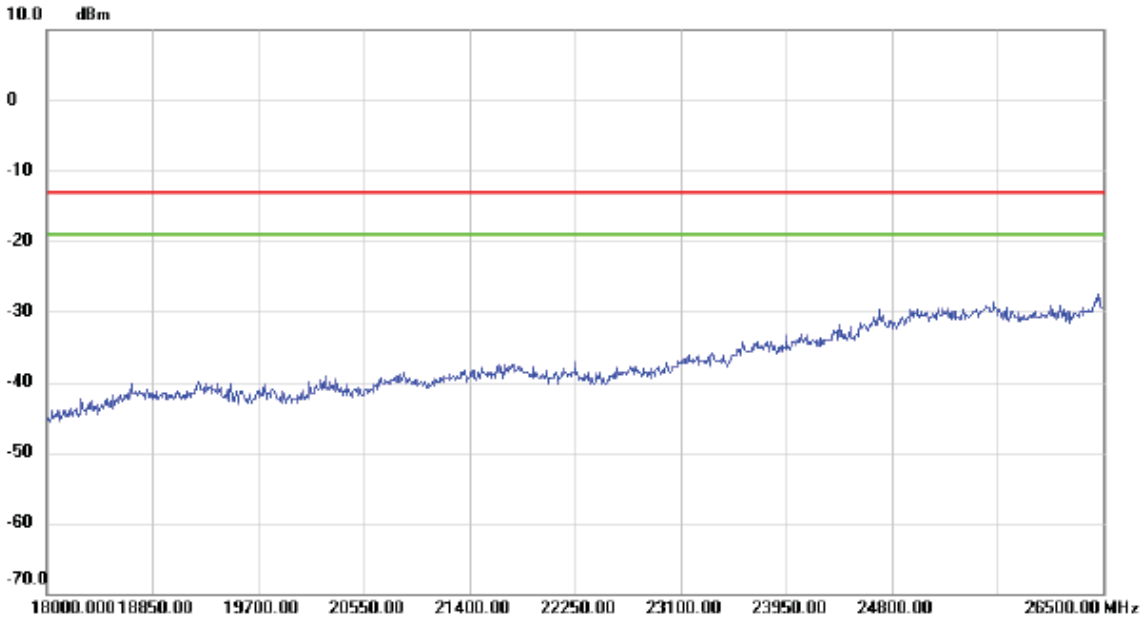
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312

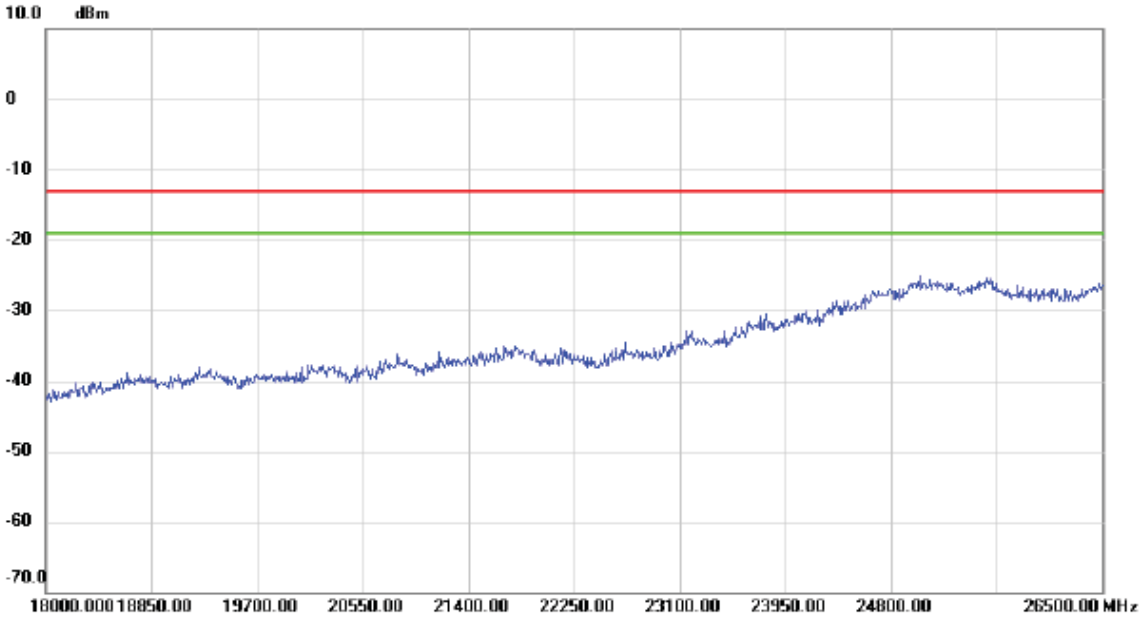
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312

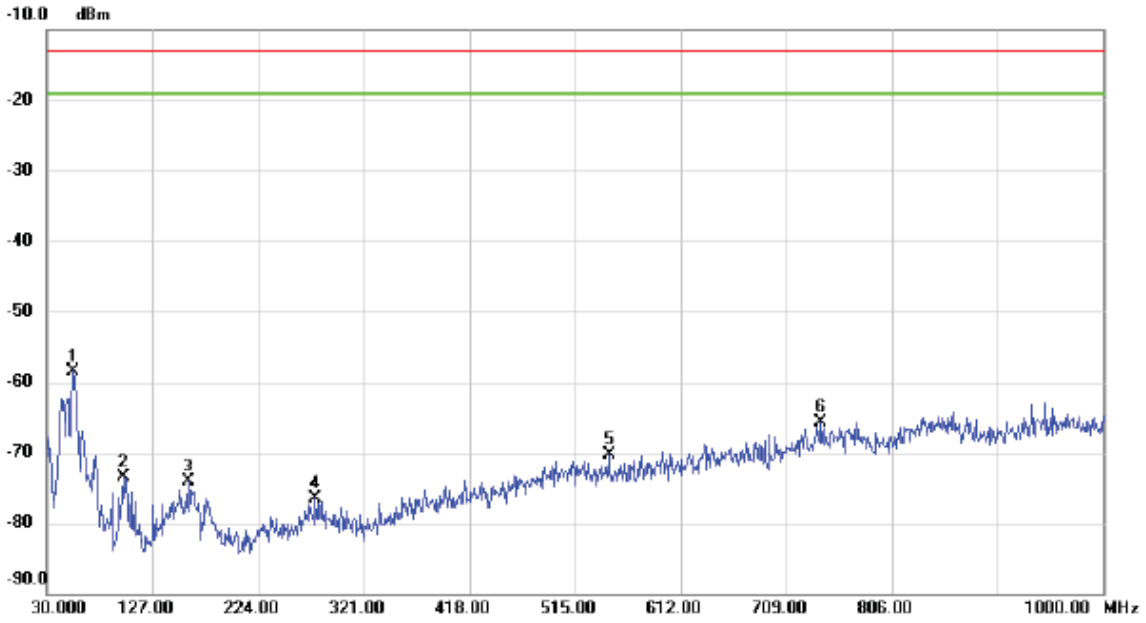
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

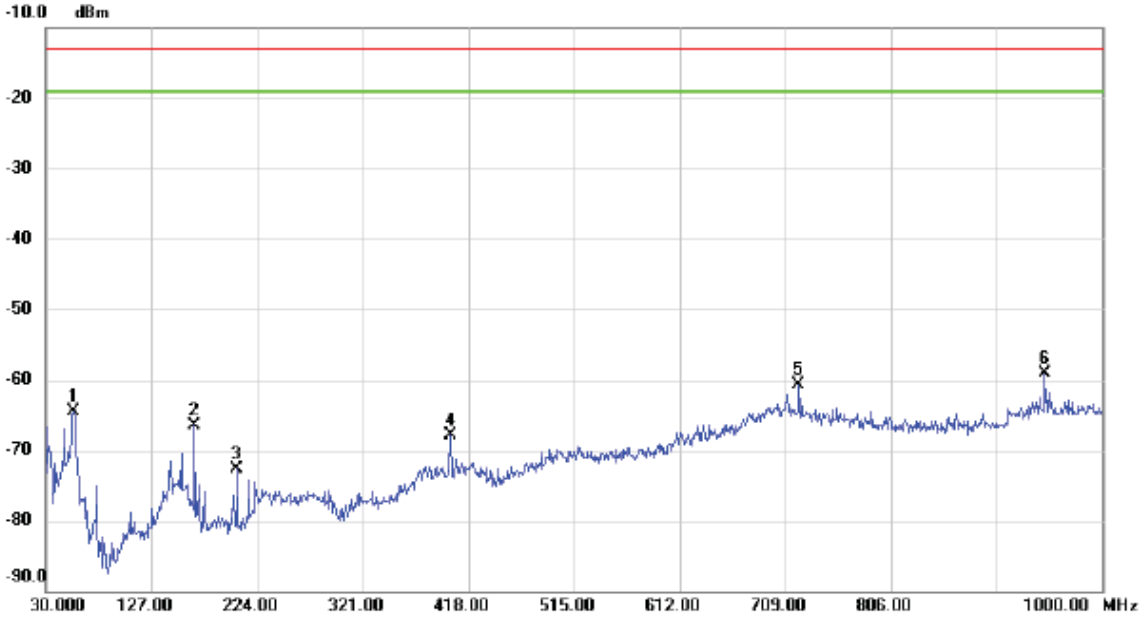
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	54.250	-60.80	2.40	-58.40	-13.00	-45.40	peak	
2		99.840	-71.97	-1.45	-73.42	-13.00	-60.42	peak	
3		159.980	-77.25	3.18	-74.07	-13.00	-61.07	peak	
4		276.380	-79.06	2.48	-76.58	-13.00	-63.58	peak	
5		546.040	-77.83	7.46	-70.37	-13.00	-57.37	peak	
6		741.010	-77.91	12.12	-65.79	-13.00	-52.79	peak	

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

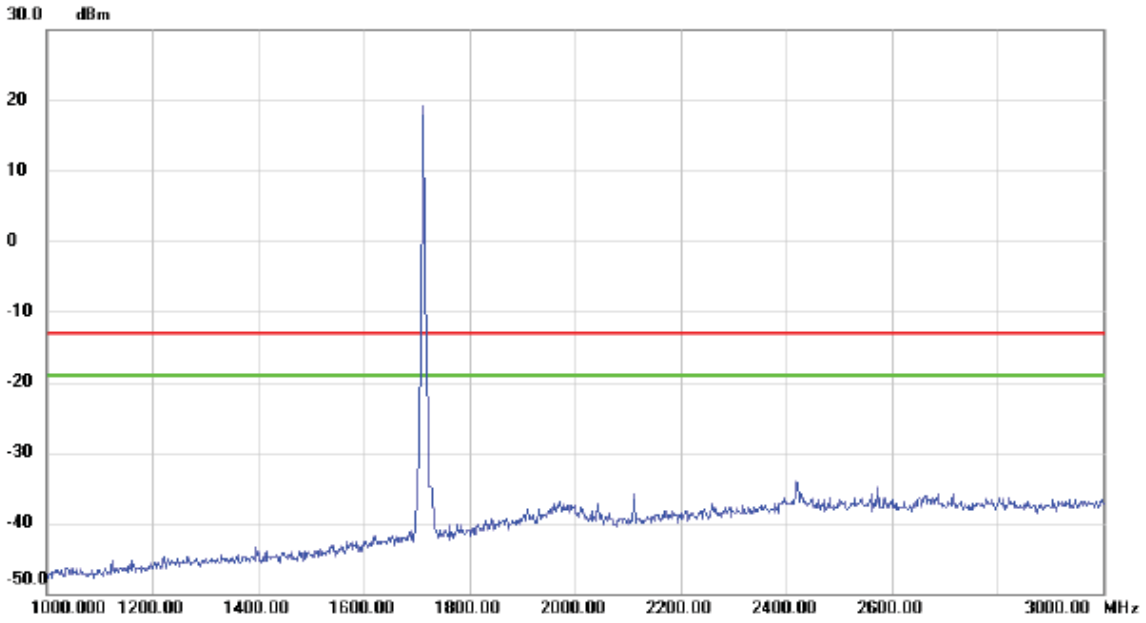
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		55.220	-67.12	2.53	-64.59	-13.00	-51.59	peak	
2		166.770	-66.51	-0.07	-66.58	-13.00	-53.58	peak	
3		205.570	-70.68	-1.93	-72.61	-13.00	-59.61	peak	
4		401.510	-73.95	5.96	-67.99	-13.00	-54.99	peak	
5		721.610	-74.21	13.46	-60.75	-13.00	-47.75	peak	
6	*	947.620	-74.00	14.85	-59.15	-13.00	-46.15	peak	

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

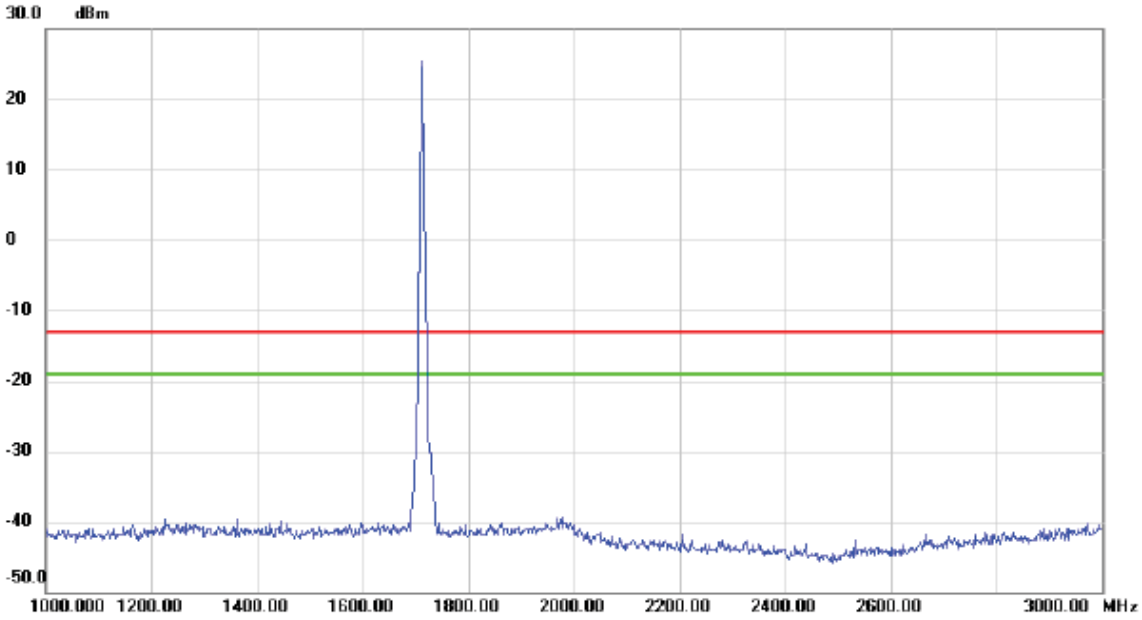
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

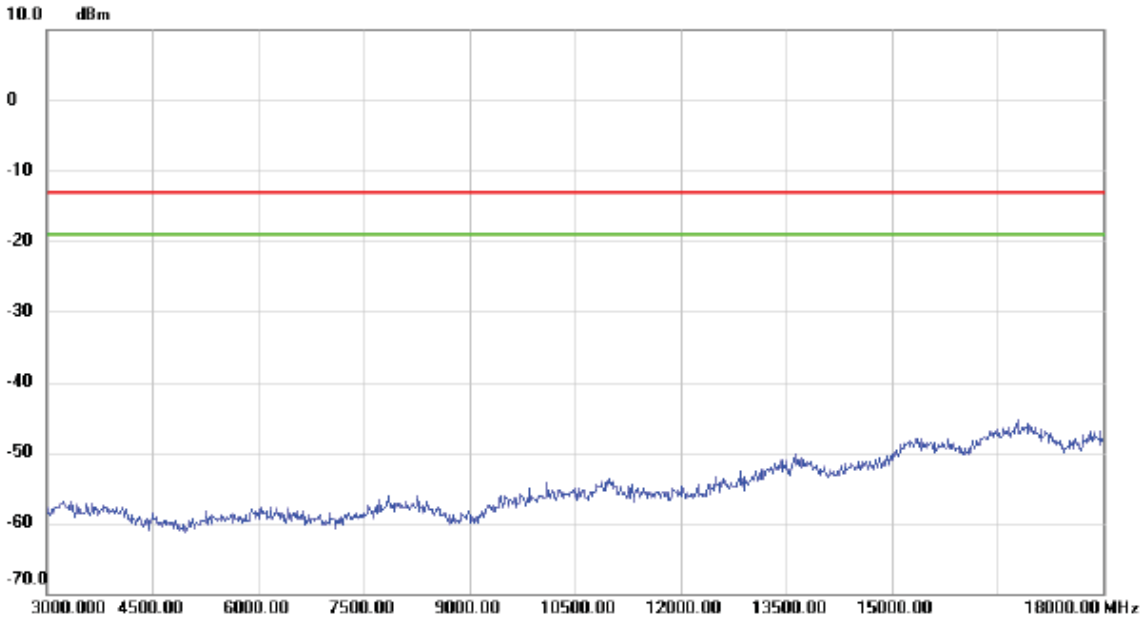
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

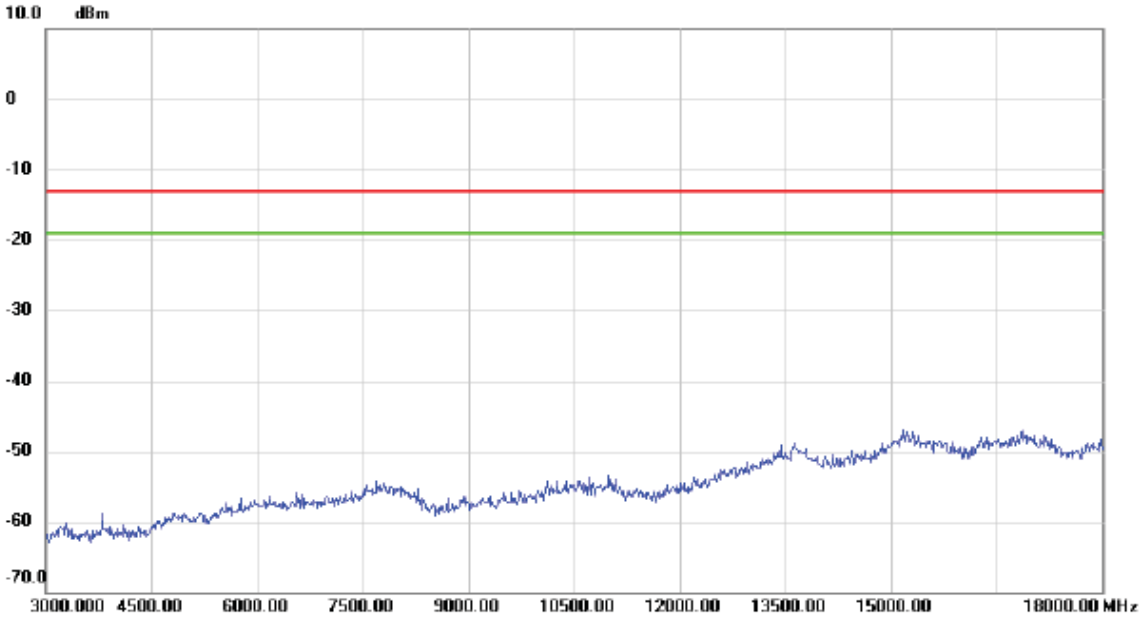
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

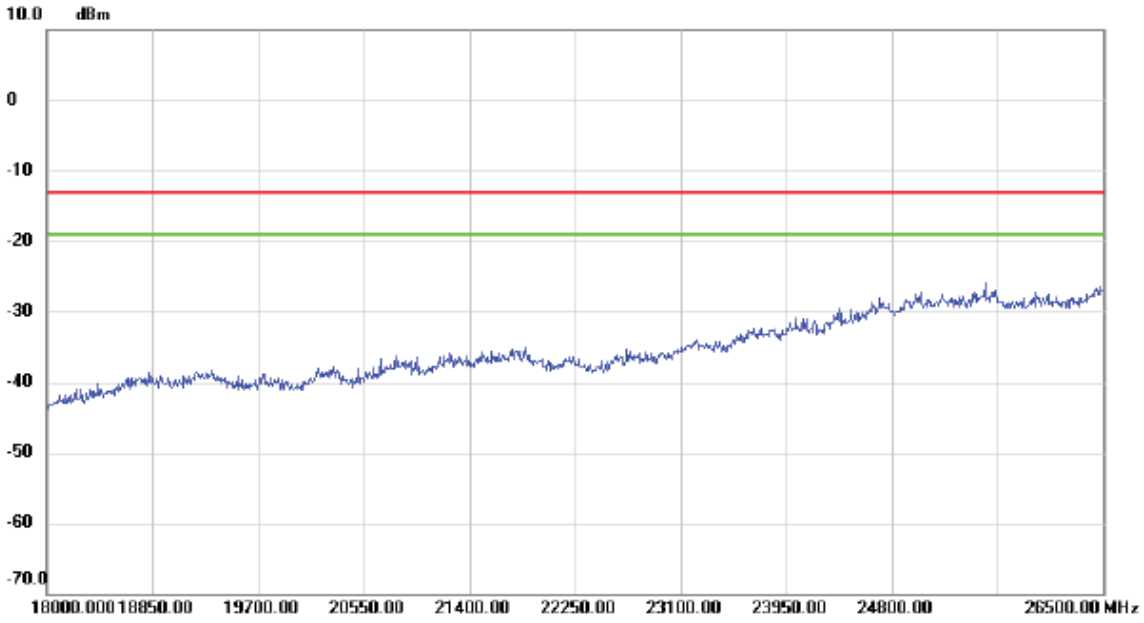
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

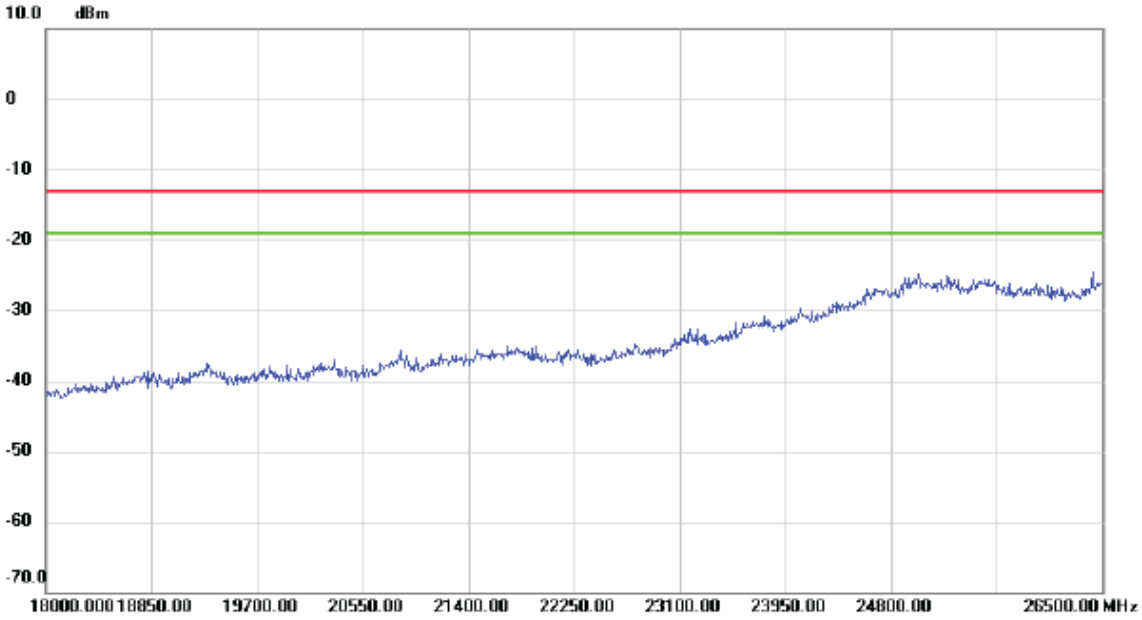
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSDPA

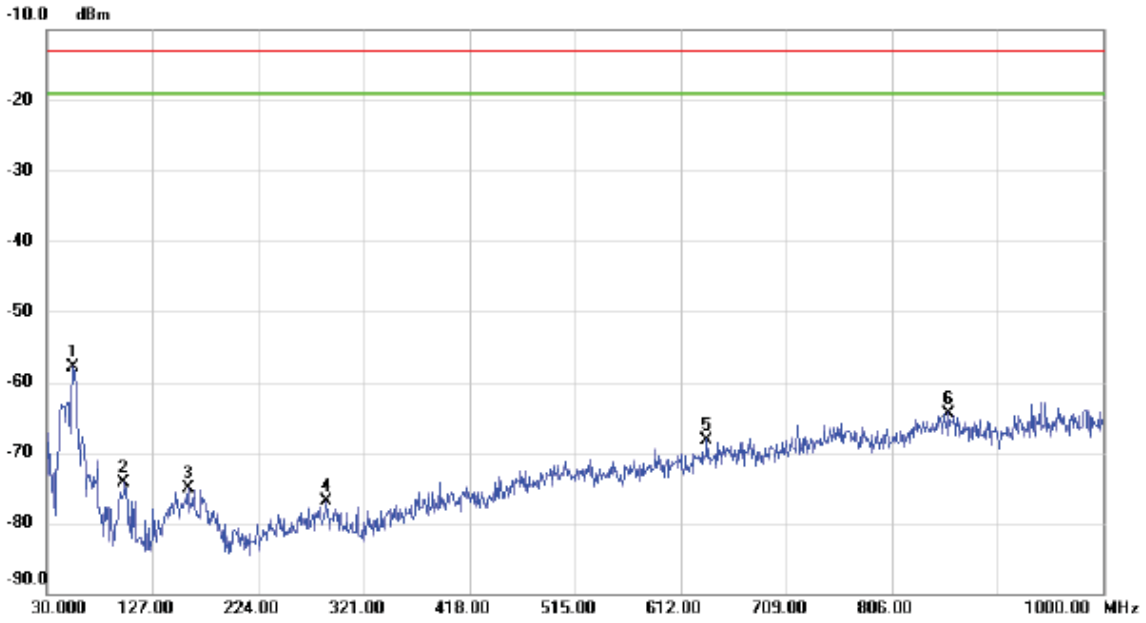
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

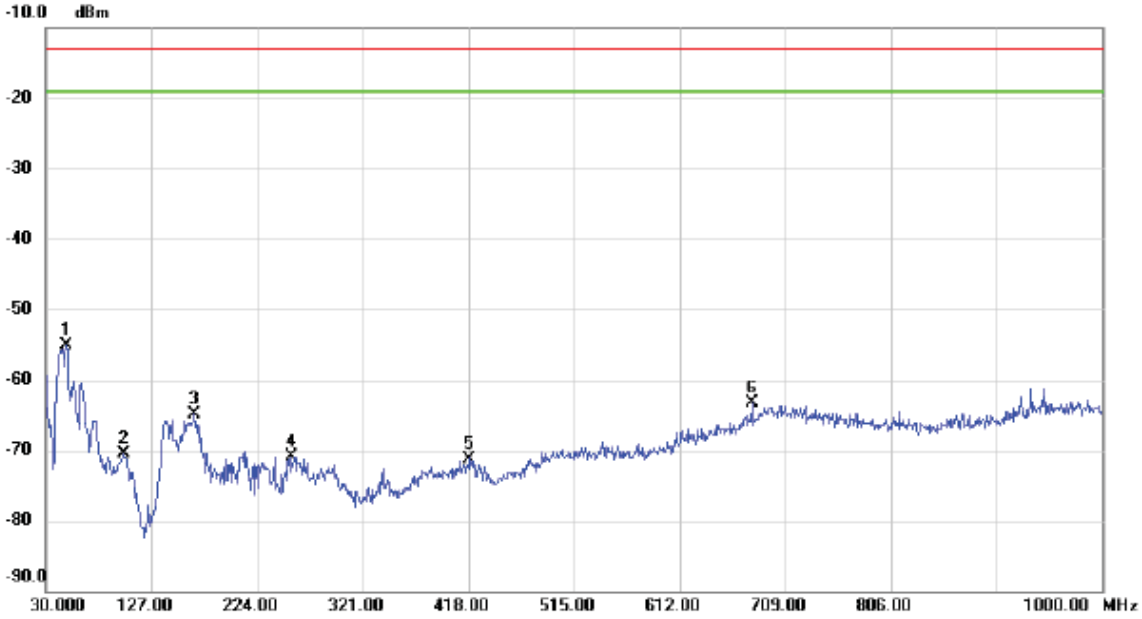
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	54.250	-60.24	2.40	-57.84	-13.00	-44.84	peak	
2		100.810	-73.03	-1.35	-74.38	-13.00	-61.38	peak	
3		159.980	-78.29	3.18	-75.11	-13.00	-62.11	peak	
4		287.050	-79.20	2.35	-76.85	-13.00	-63.85	peak	
5		636.250	-77.93	9.73	-68.20	-13.00	-55.20	peak	
6		858.380	-78.58	14.18	-64.40	-13.00	-51.40	peak	

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

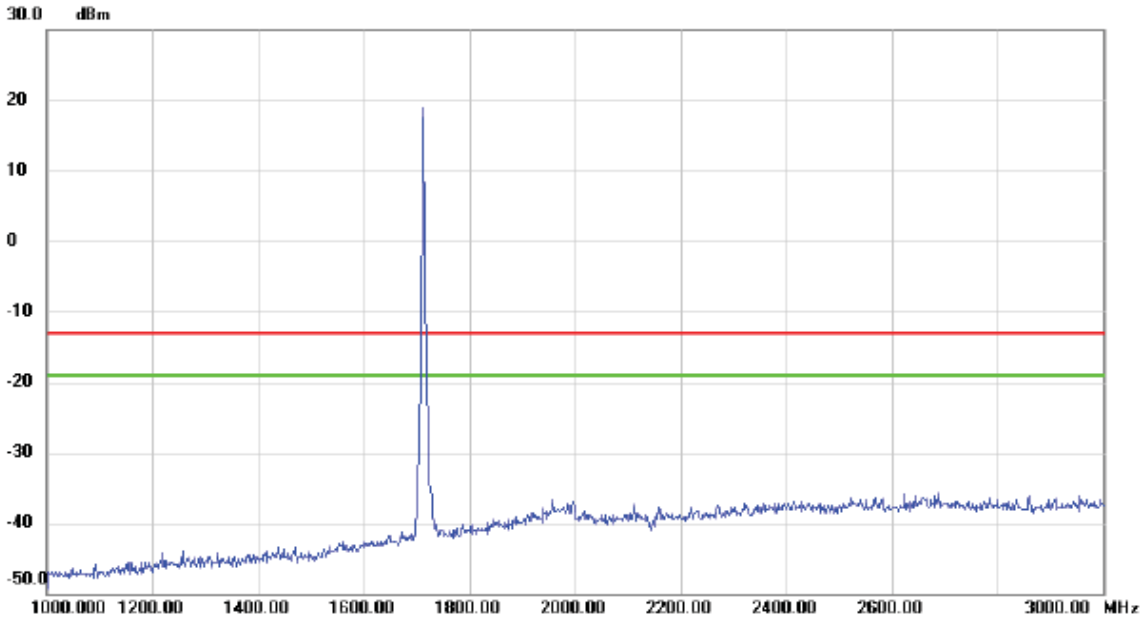
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	48.430	-56.94	1.83	-55.11	-13.00	-42.11	peak	
2		101.780	-66.99	-3.56	-70.55	-13.00	-57.55	peak	
3		166.770	-64.81	-0.07	-64.88	-13.00	-51.88	peak	
4		255.040	-72.86	1.90	-70.96	-13.00	-57.96	peak	
5		418.970	-78.03	6.83	-71.20	-13.00	-58.20	peak	
6		677.960	-75.82	12.48	-63.34	-13.00	-50.34	peak	

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

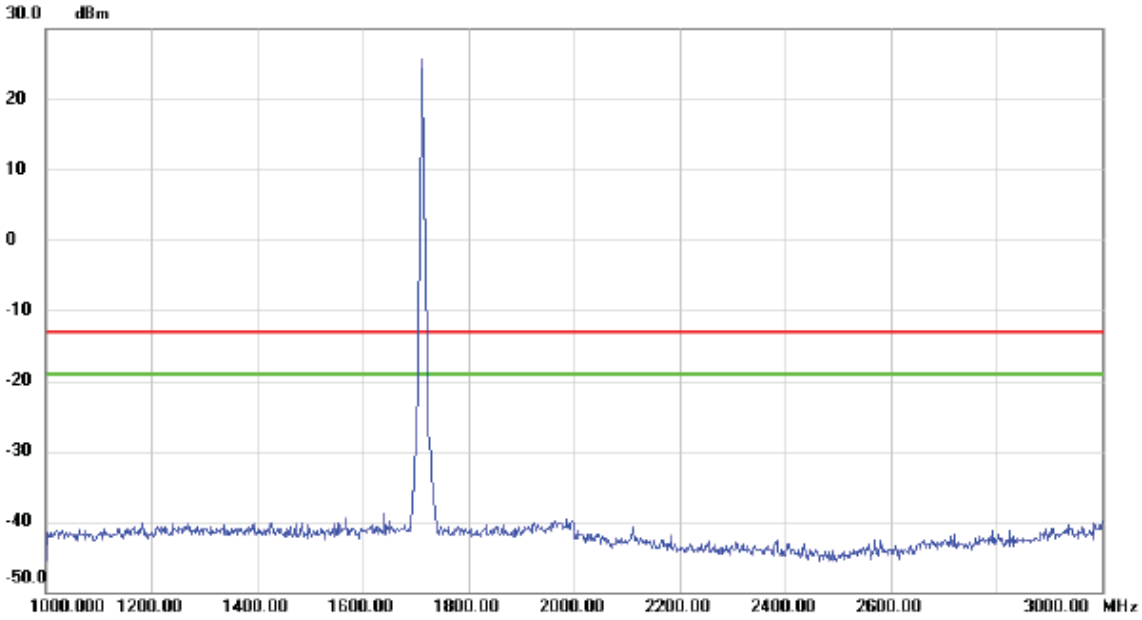
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

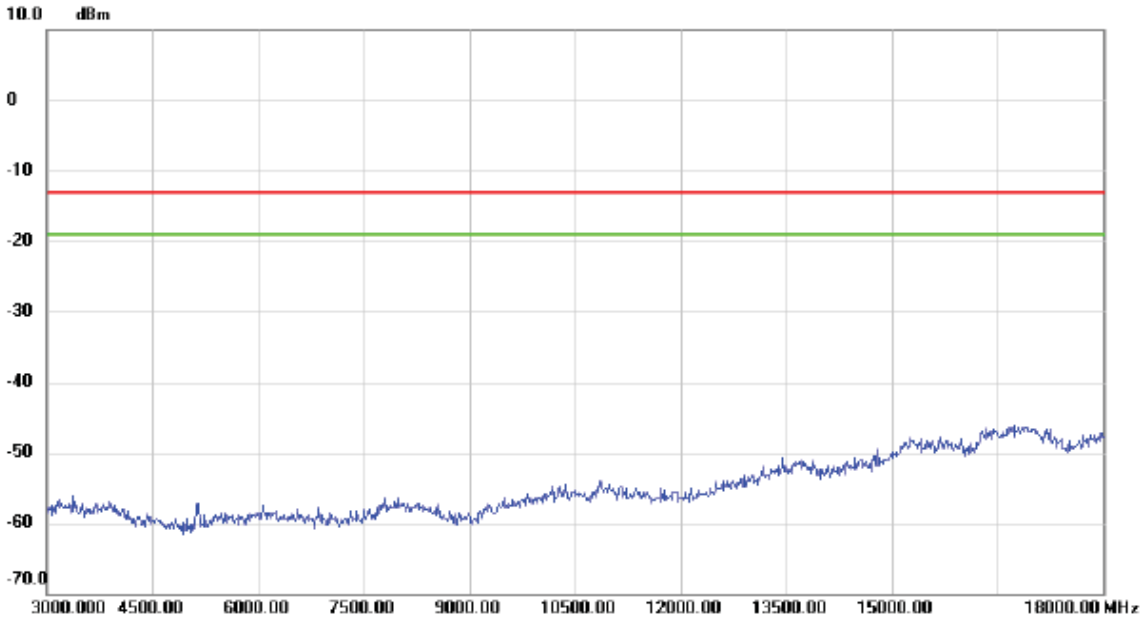
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

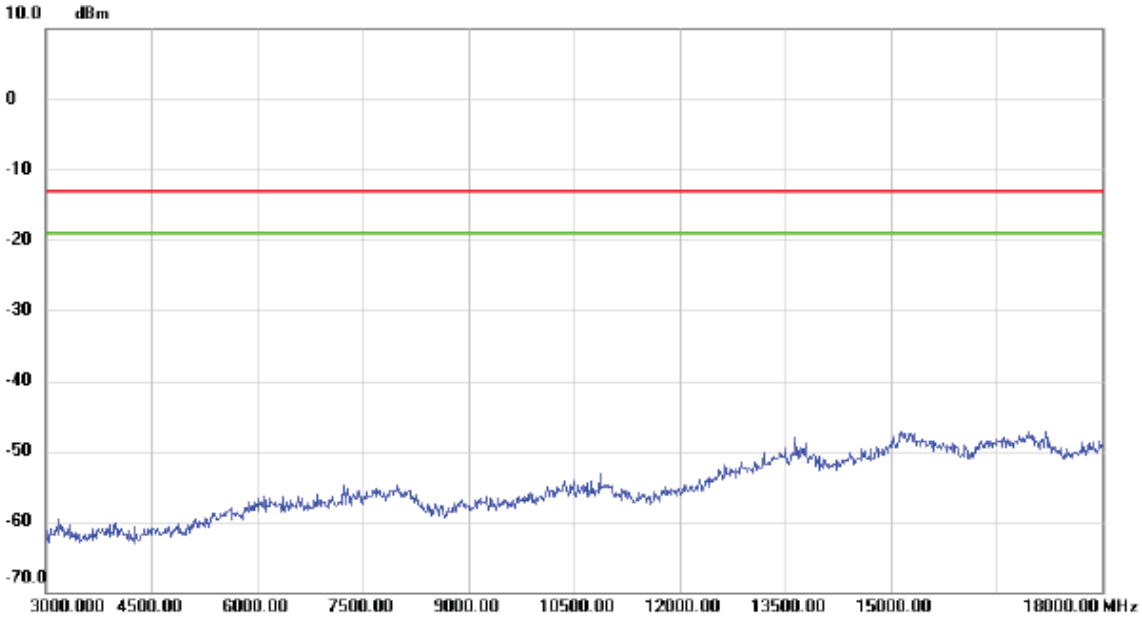
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

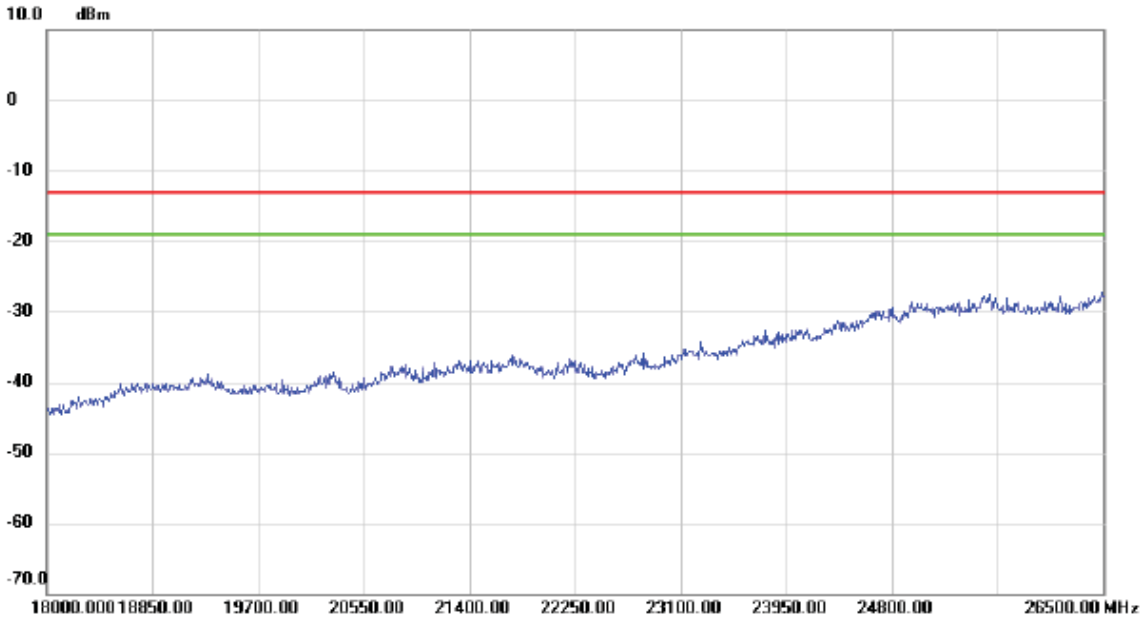
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

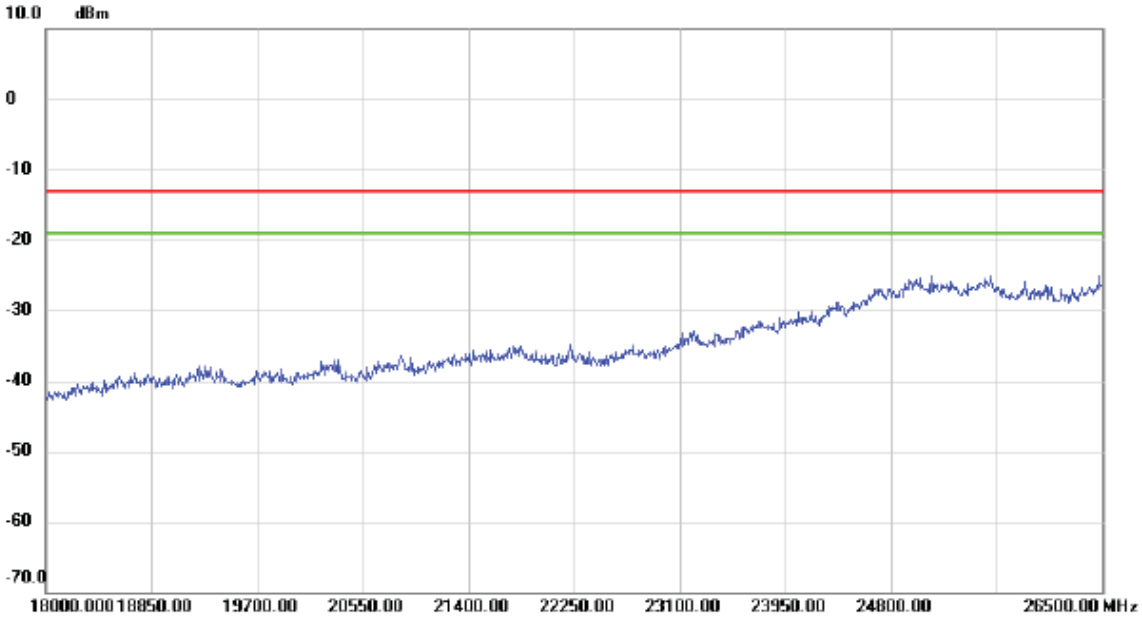
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	WCDMA Band 4_TX CH1312_ HSUPA

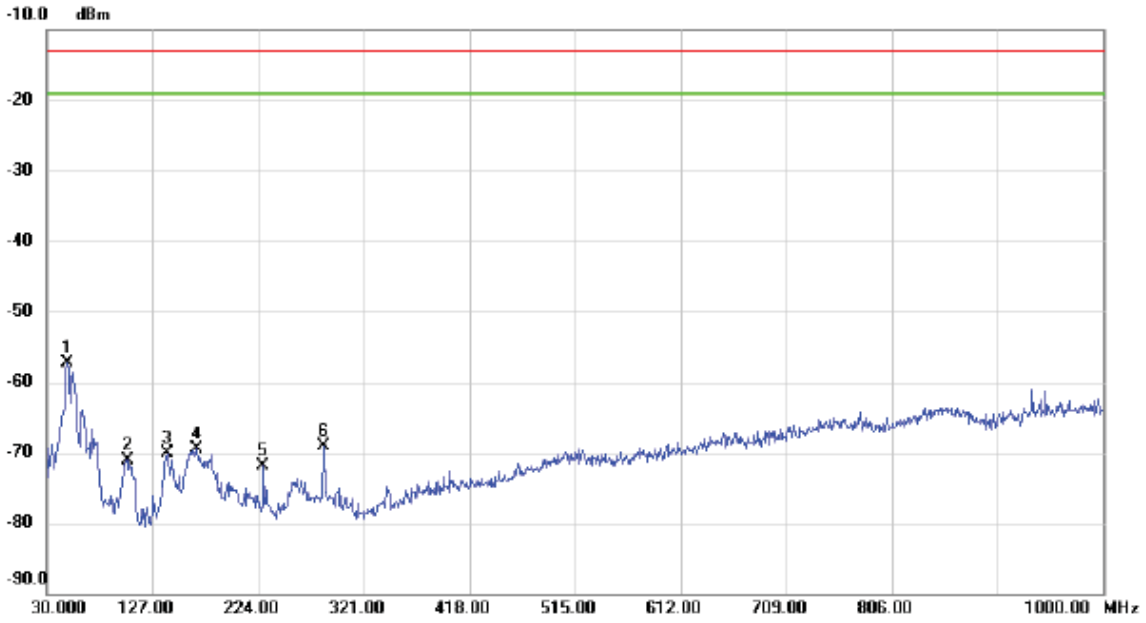
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

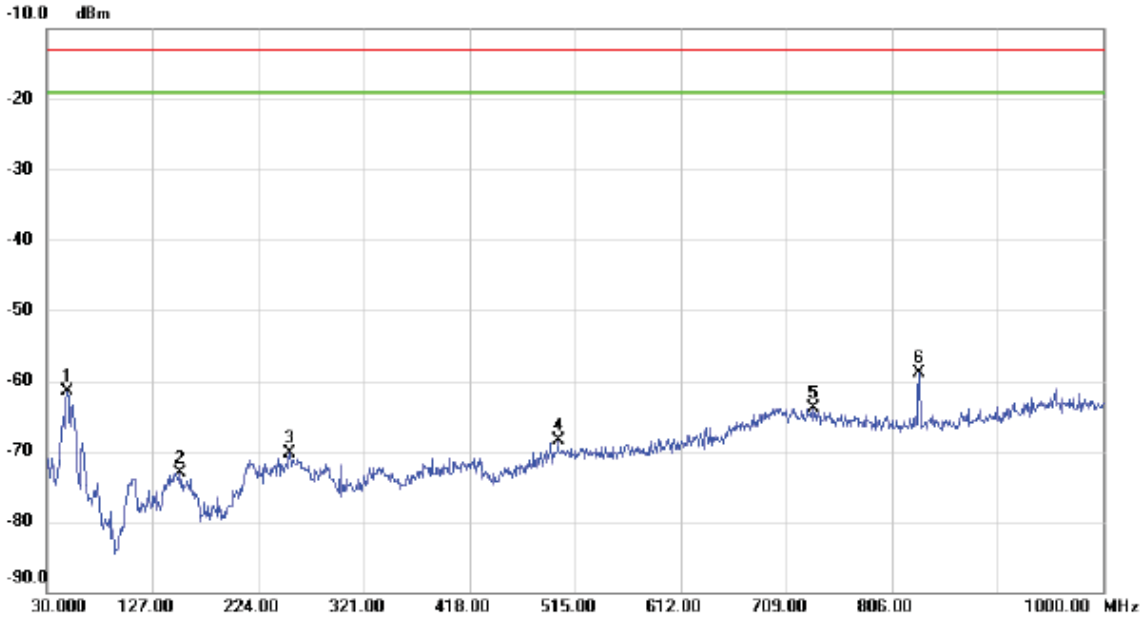
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	48.430	-58.38	1.03	-57.35	-13.00	-44.35	peak	
2		103.720	-69.78	-1.24	-71.02	-13.00	-58.02	peak	
3		140.580	-72.38	2.21	-70.17	-13.00	-57.17	peak	
4		167.740	-70.18	0.63	-69.55	-13.00	-56.55	peak	
5		228.850	-72.14	0.27	-71.87	-13.00	-58.87	peak	
6		284.140	-71.64	2.47	-69.17	-13.00	-56.17	peak	

Test Mode:	LTE Band 4_TX CH20375_5M

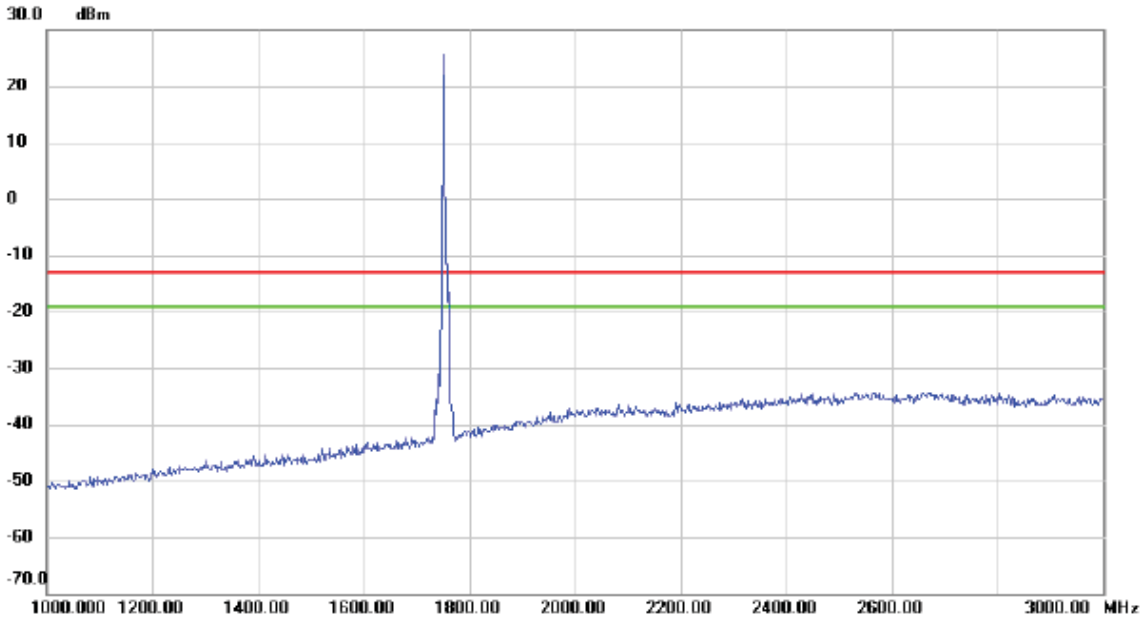
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		48.430	-63.37	1.83	-61.54	-13.00	-48.54	peak	
2		152.220	-77.04	3.91	-73.13	-13.00	-60.13	peak	
3		253.100	-72.16	1.89	-70.27	-13.00	-57.27	peak	
4		499.480	-76.53	8.02	-68.51	-13.00	-55.51	peak	
5		734.220	-76.97	13.15	-63.82	-13.00	-50.82	peak	
6	*	831.220	-70.76	11.92	-58.84	-13.00	-45.84	peak	

Test Mode:	LTE Band 4_TX CH20375_5M

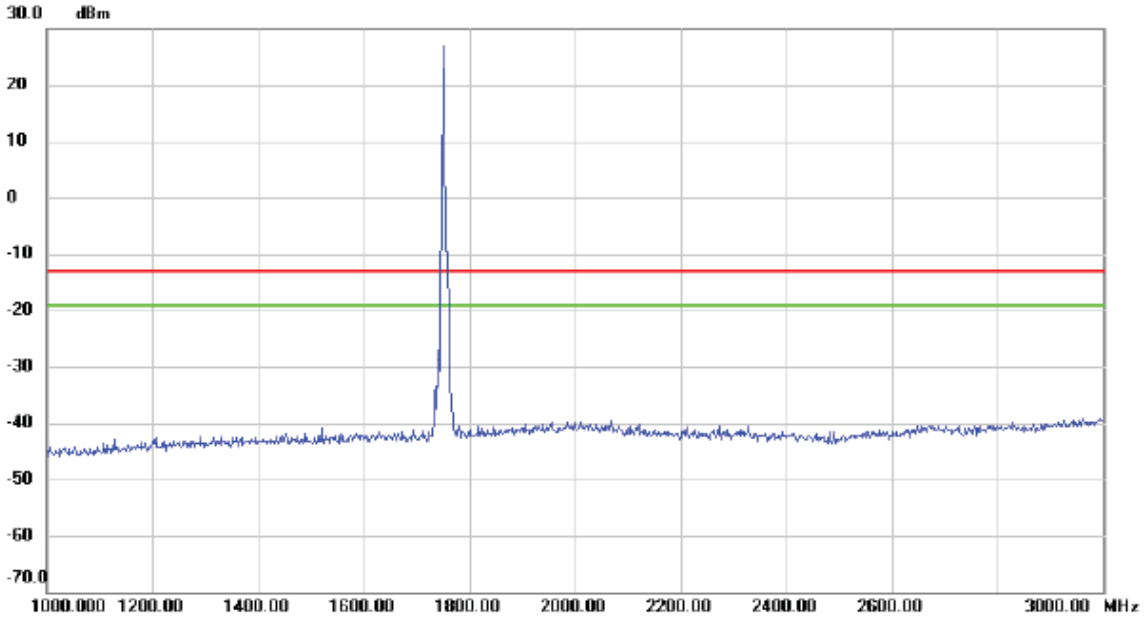
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

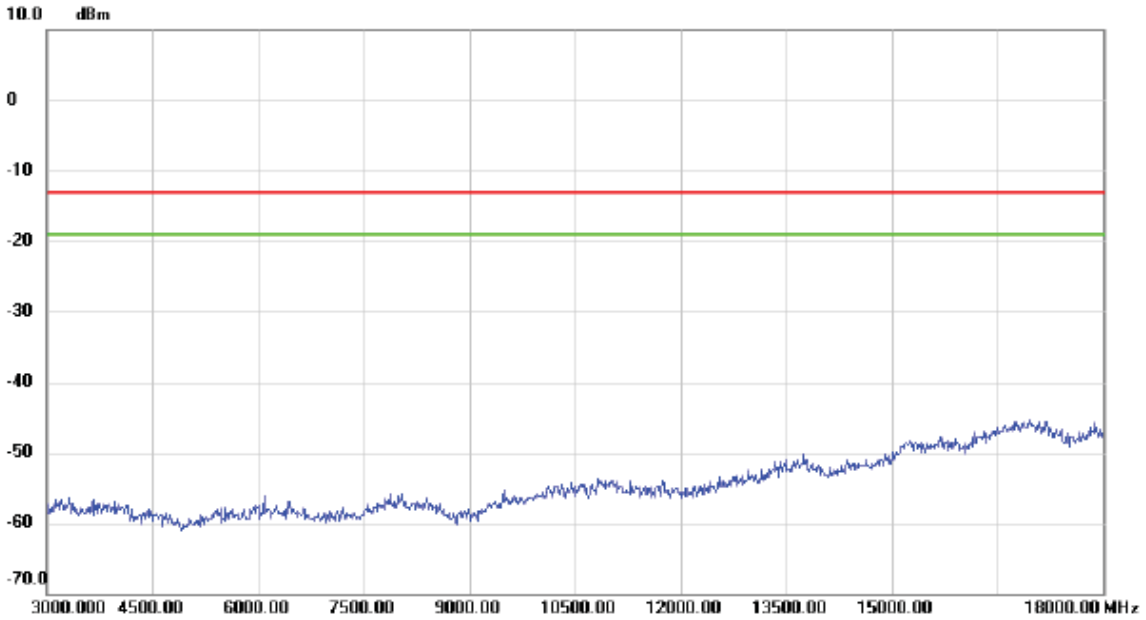
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

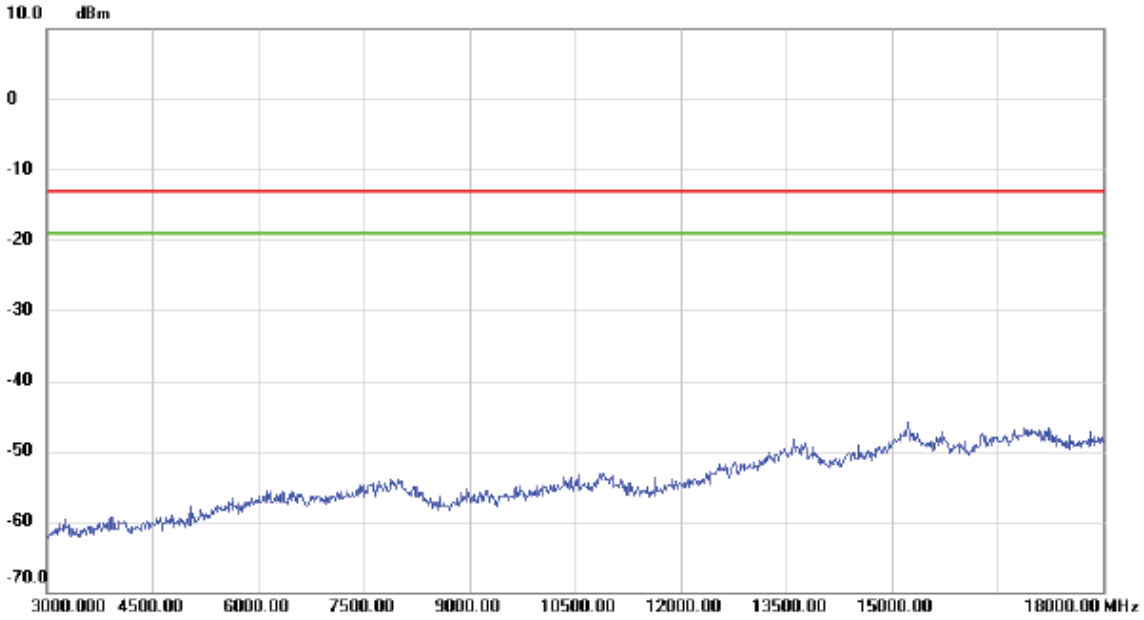
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

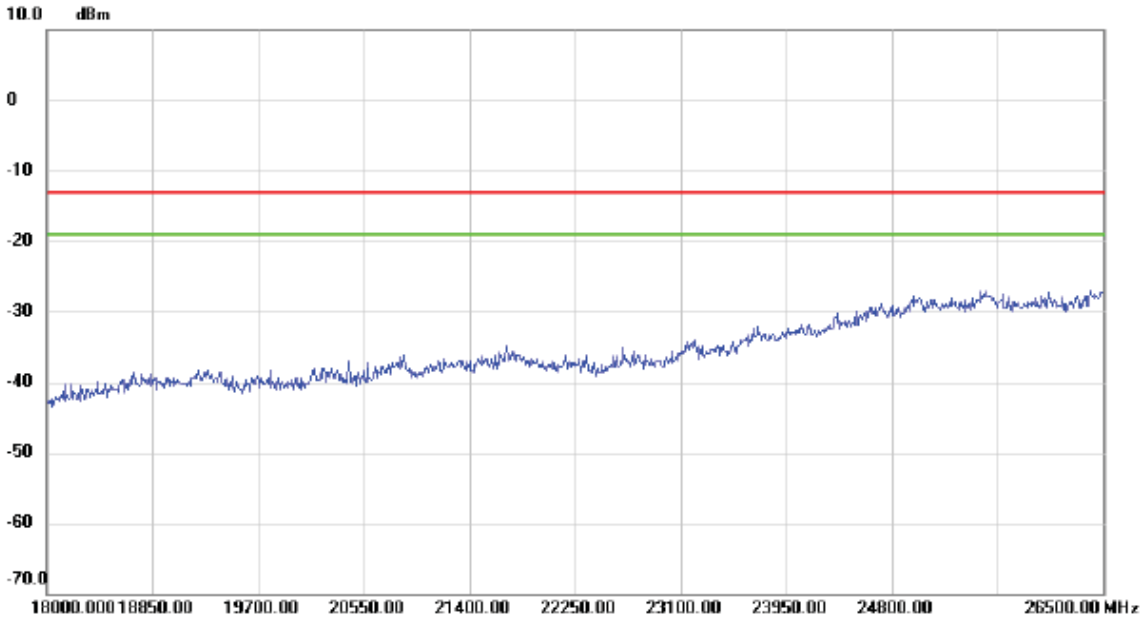
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

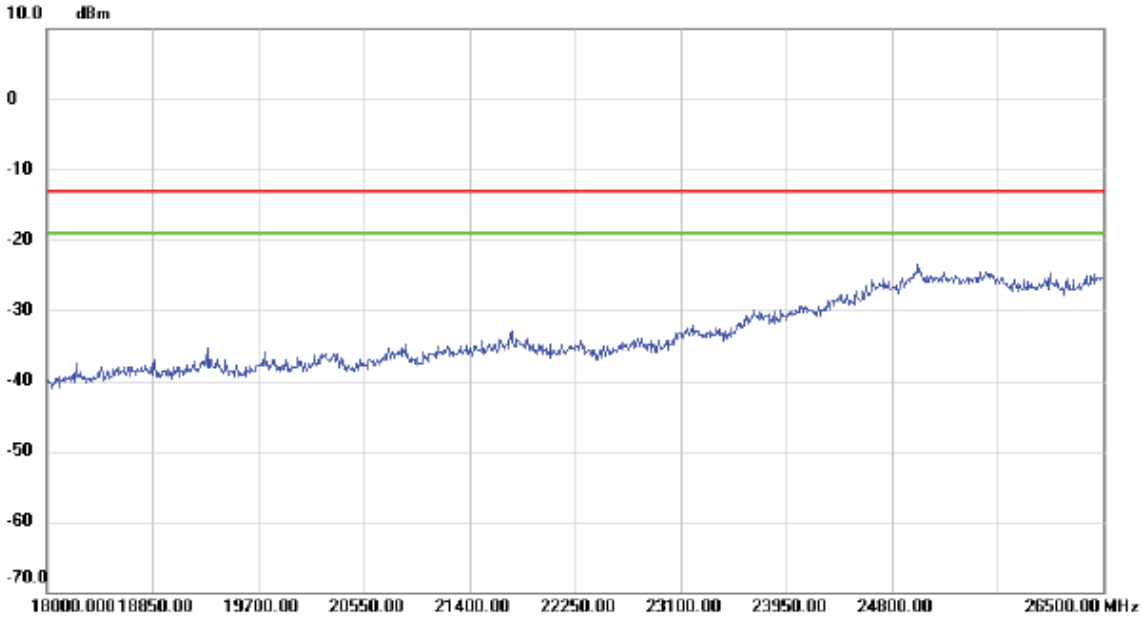
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

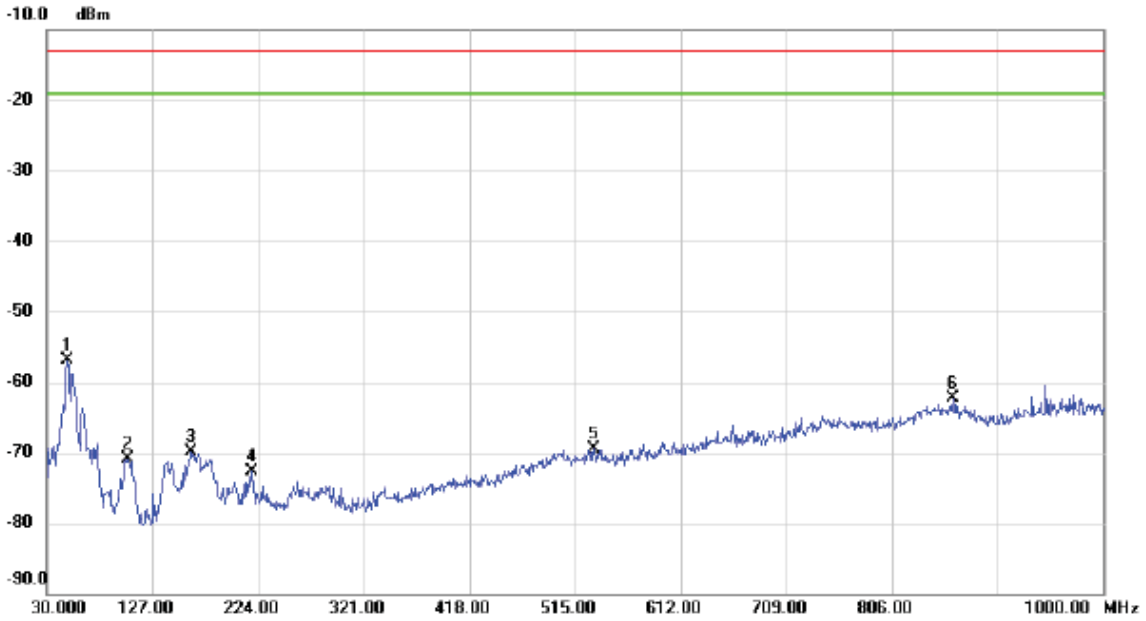
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

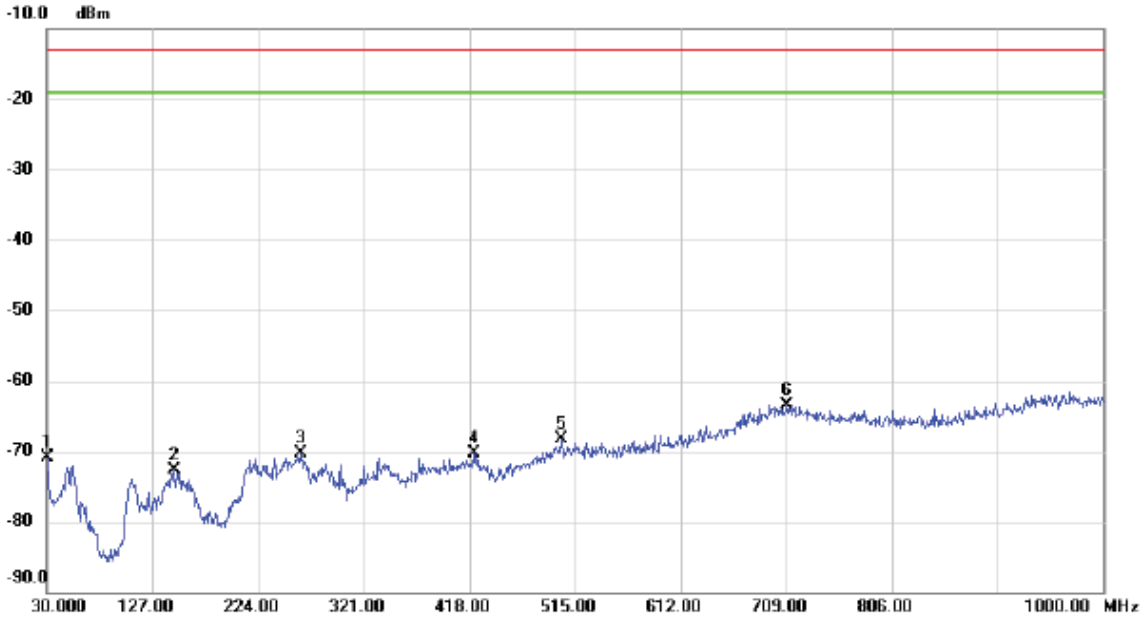
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	48.430	-58.01	1.03	-56.98	-13.00	-43.98	peak	
2		103.720	-69.67	-1.24	-70.91	-13.00	-57.91	peak	
3		162.890	-72.15	2.23	-69.92	-13.00	-56.92	peak	
4		218.180	-71.11	-1.59	-72.70	-13.00	-59.70	peak	
5		532.460	-77.07	7.49	-69.58	-13.00	-56.58	peak	
6		862.260	-76.43	14.04	-62.39	-13.00	-49.39	peak	

Test Mode:	LTE Band 4_TX CH20300_20M

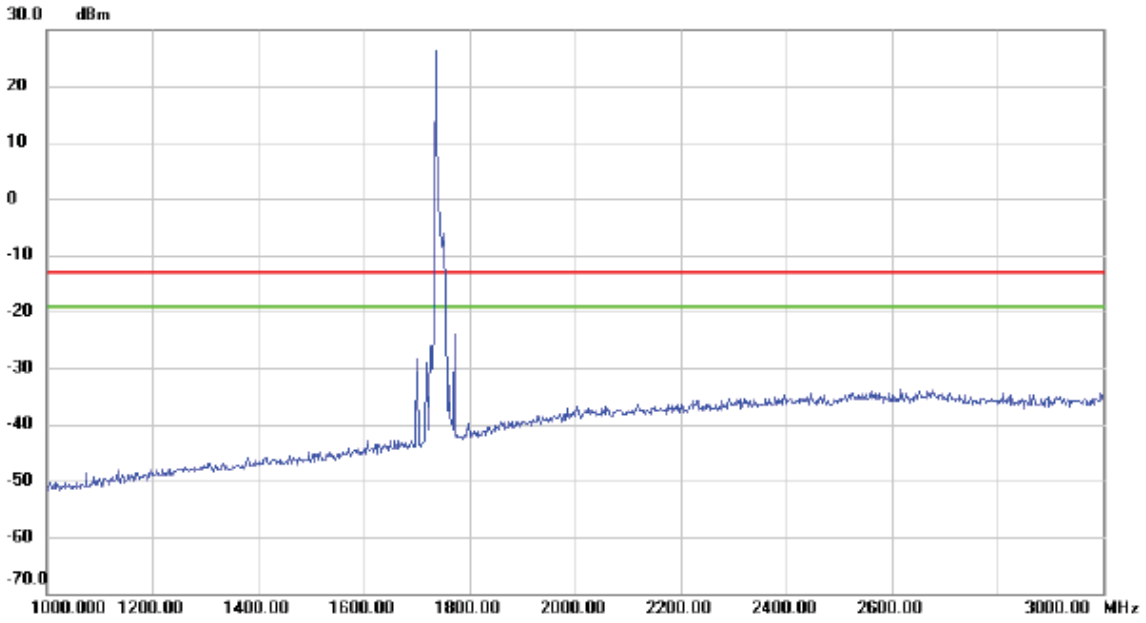
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		30.000	-72.74	1.88	-70.86	-13.00	-57.86	peak	
2		146.400	-76.58	3.84	-72.74	-13.00	-59.74	peak	
3		262.800	-72.58	2.24	-70.34	-13.00	-57.34	peak	
4		422.850	-76.95	6.56	-70.39	-13.00	-57.39	peak	
5		502.390	-76.36	8.06	-68.30	-13.00	-55.30	peak	
6	*	709.970	-77.25	13.74	-63.51	-13.00	-50.51	peak	

Test Mode:	LTE Band 4_TX CH20300_20M

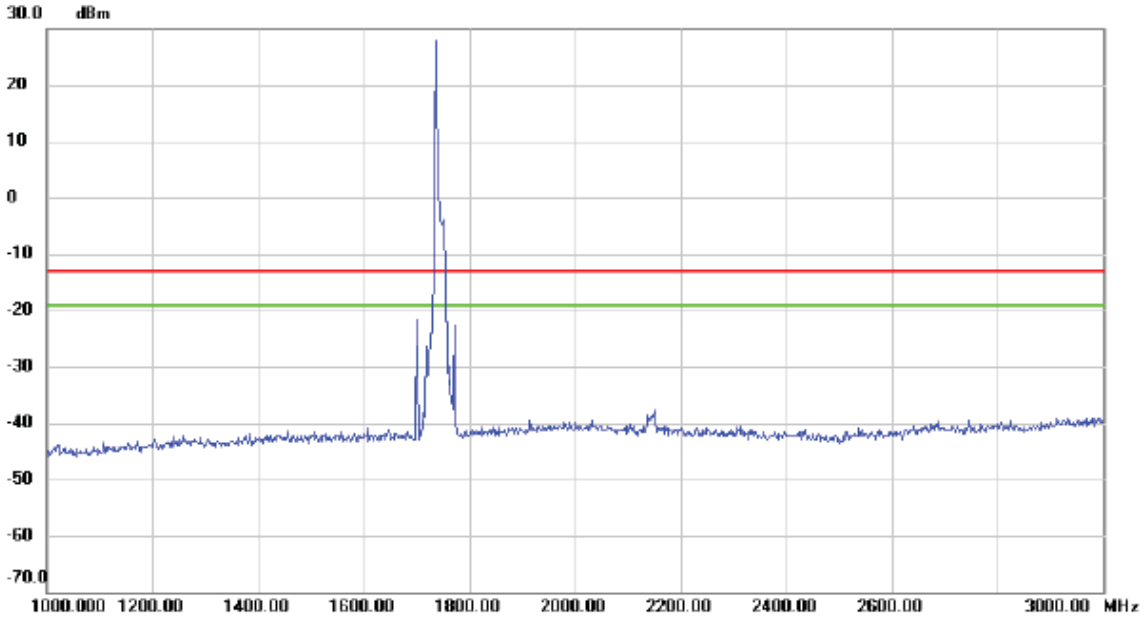
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

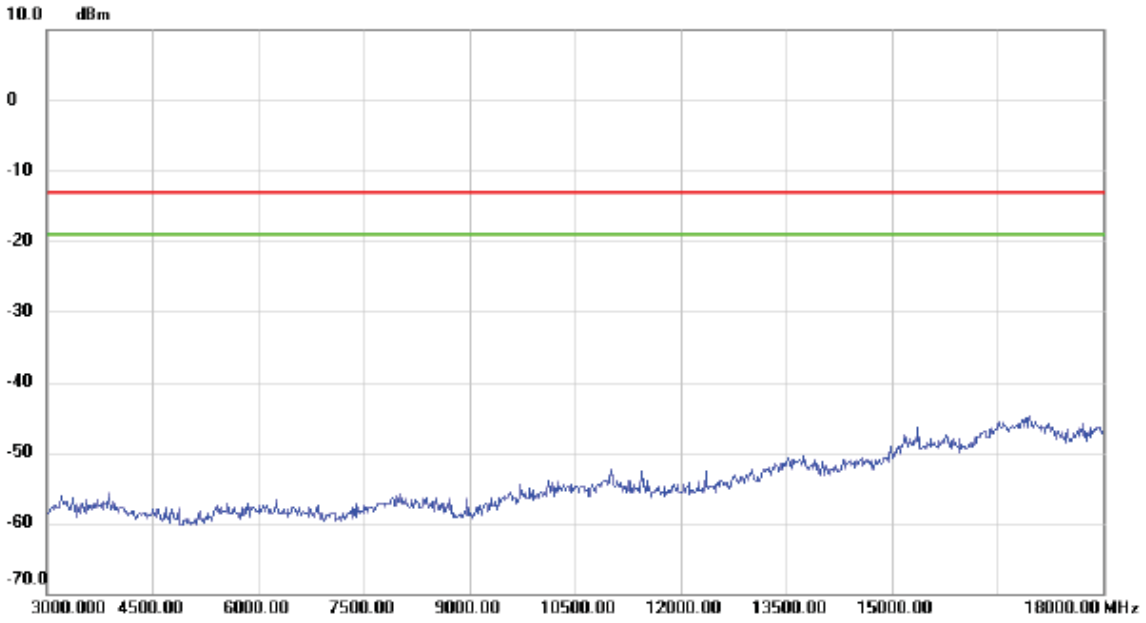
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

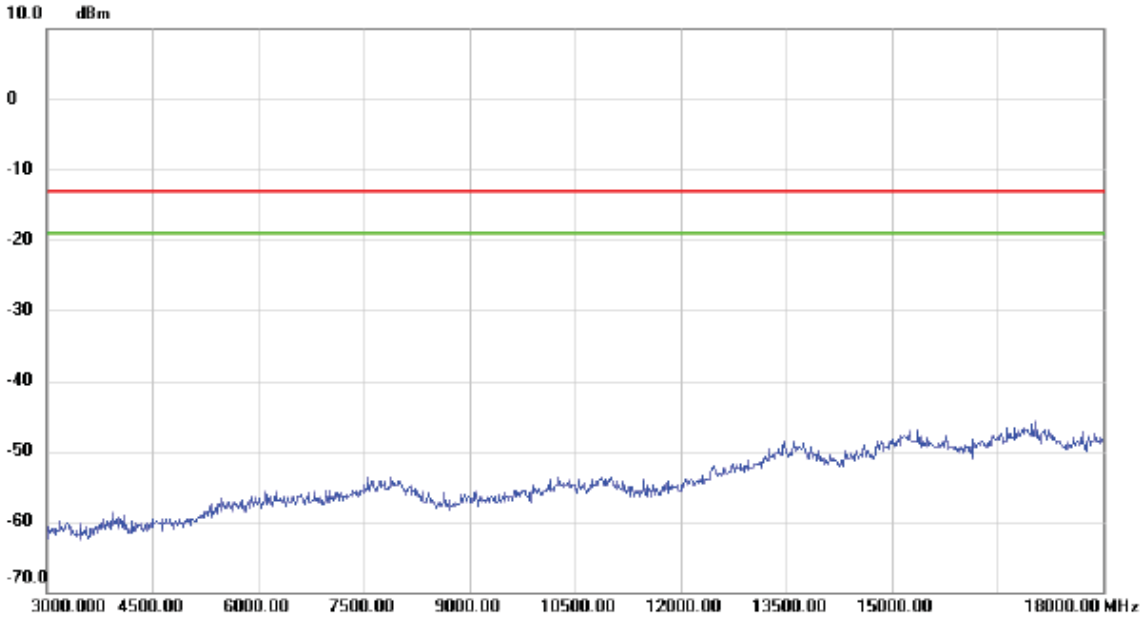
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

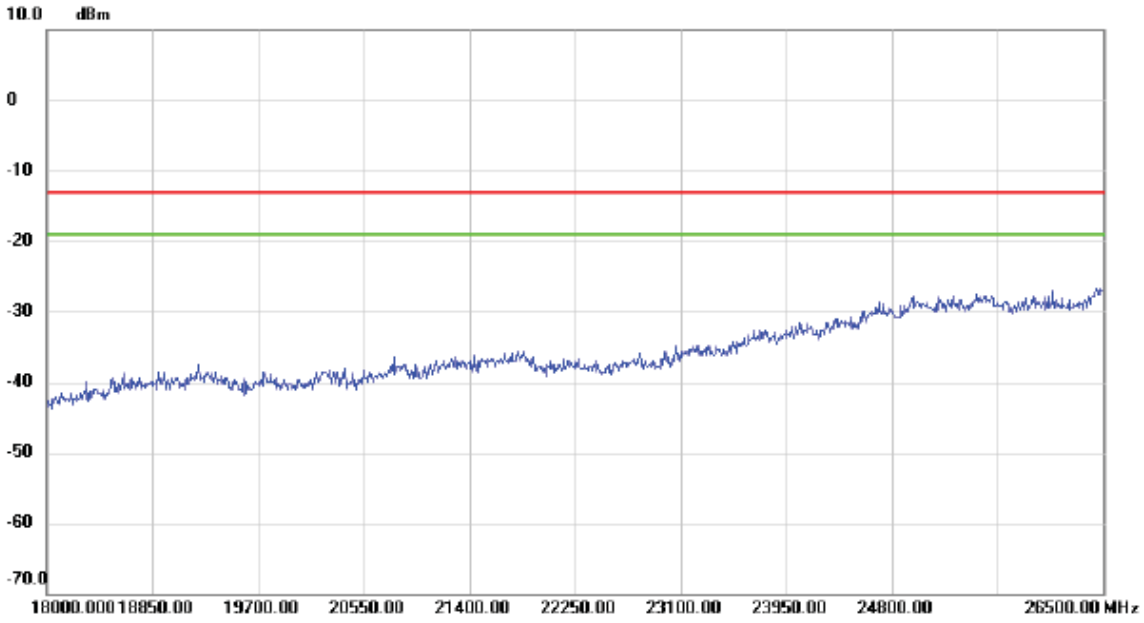
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

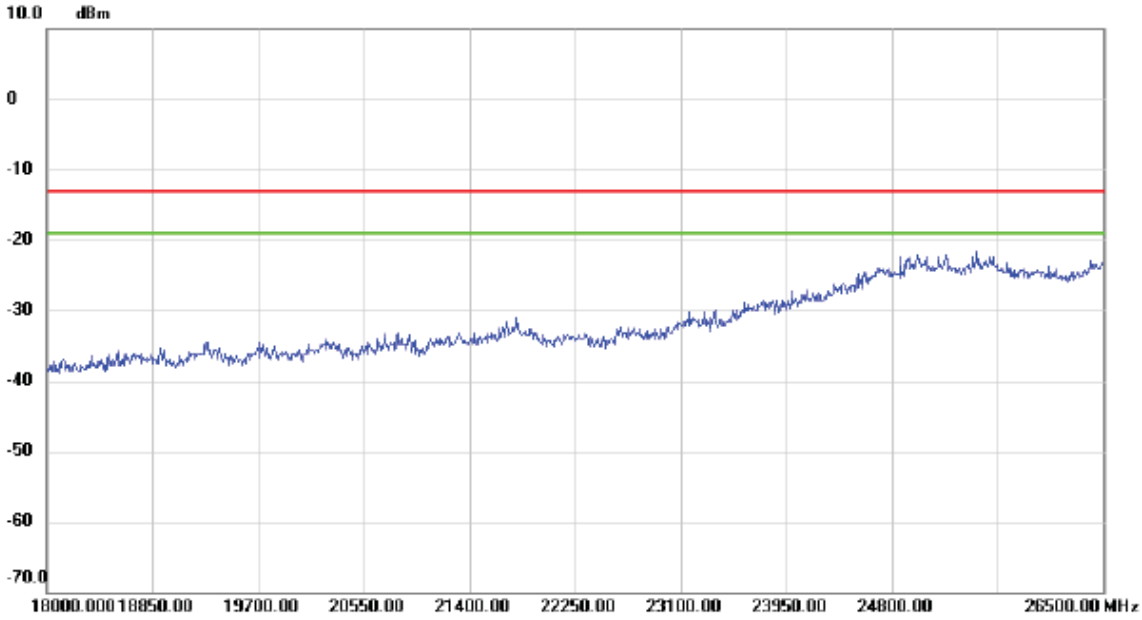
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20300_20M

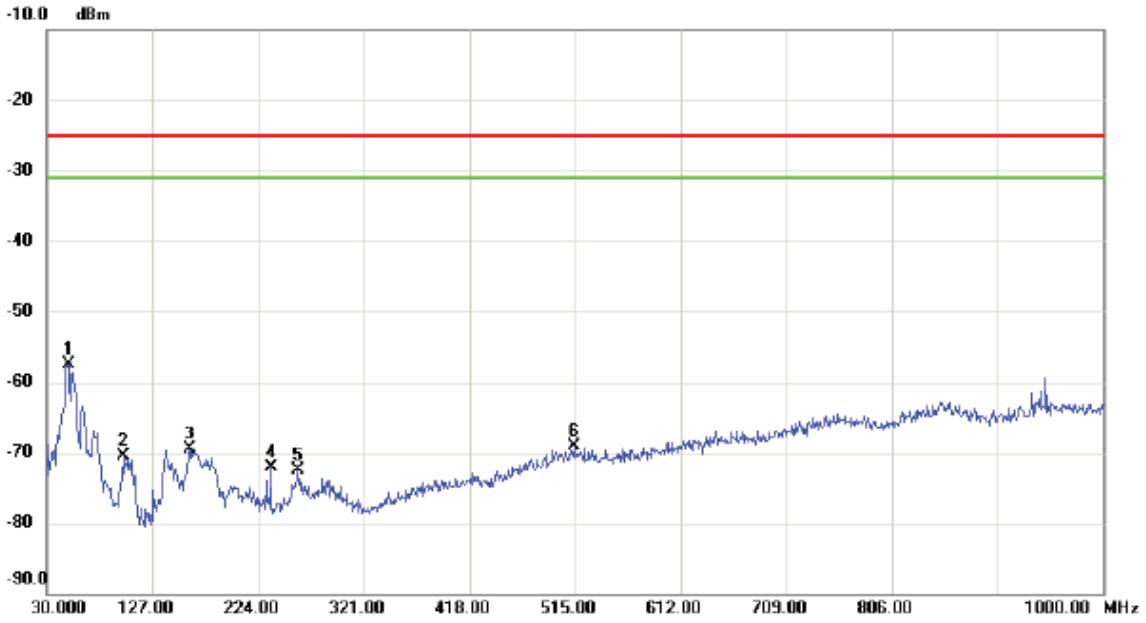
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 4_TX CH20375_5M

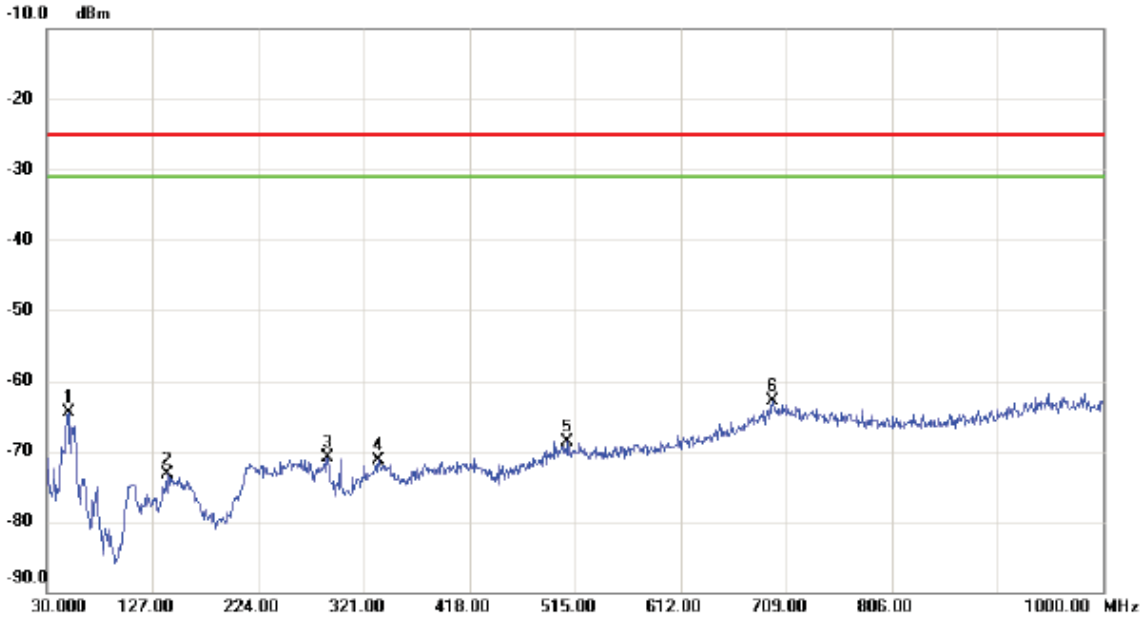
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	49.400	-58.28	0.77	-57.51	-25.00	-32.51	peak	
2		99.840	-69.03	-1.45	-70.48	-25.00	-45.48	peak	
3		160.950	-72.27	2.87	-69.40	-25.00	-44.40	peak	
4		235.640	-72.39	0.34	-72.05	-25.00	-47.05	peak	
5		260.860	-73.41	0.86	-72.55	-25.00	-47.55	peak	
6		514.030	-76.70	7.52	-69.18	-25.00	-44.18	peak	

Test Mode:	LTE Band 4_TX CH20375_5M

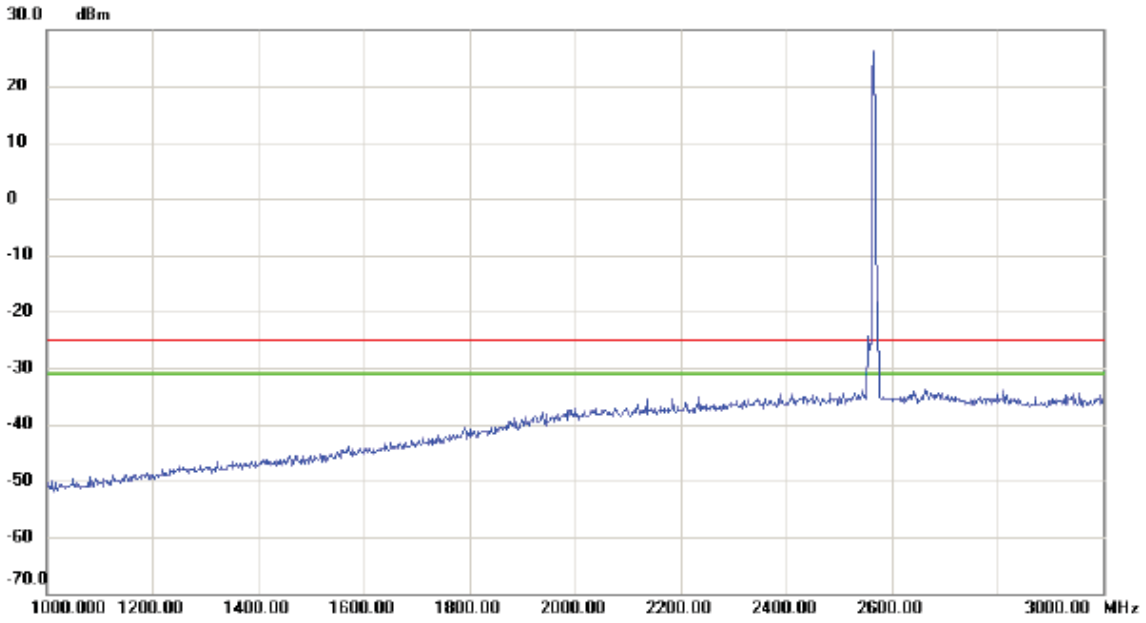
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		49.400	-65.98	1.48	-64.50	-25.00	-39.50	peak	
2		140.580	-76.50	3.19	-73.31	-25.00	-48.31	peak	
3		288.020	-72.72	1.76	-70.96	-25.00	-45.96	peak	
4		334.580	-73.74	2.46	-71.28	-25.00	-46.28	peak	
5		508.210	-76.76	8.07	-68.69	-25.00	-43.69	peak	
6	*	696.390	-76.65	13.73	-62.92	-25.00	-37.92	peak	

Test Mode:	LTE Band 7_TX CH21425_5M

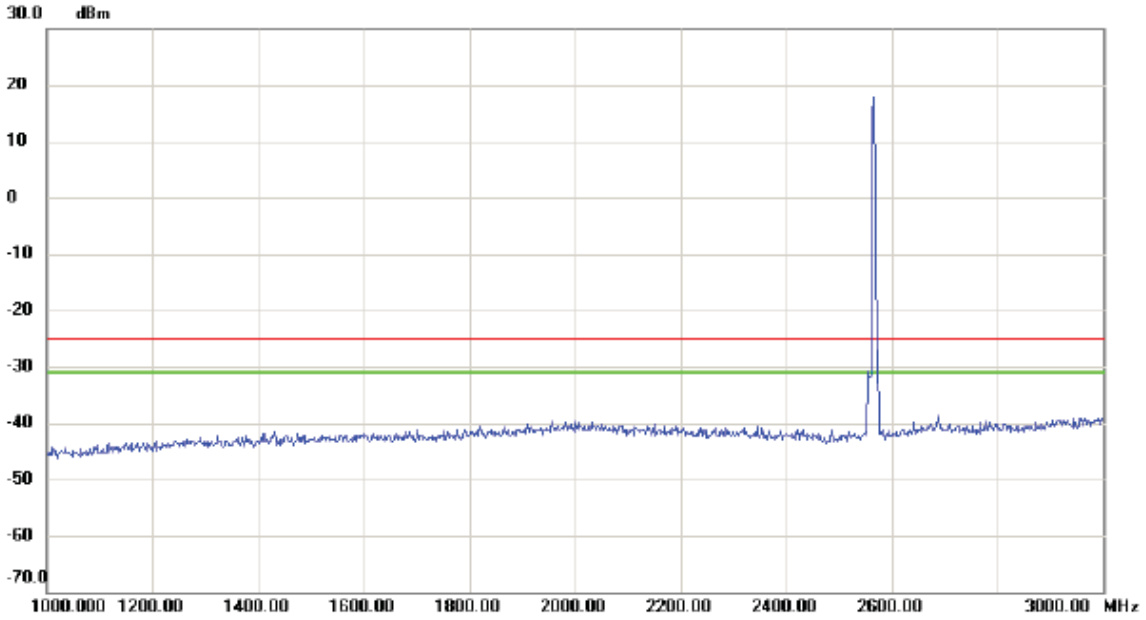
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21425_5M

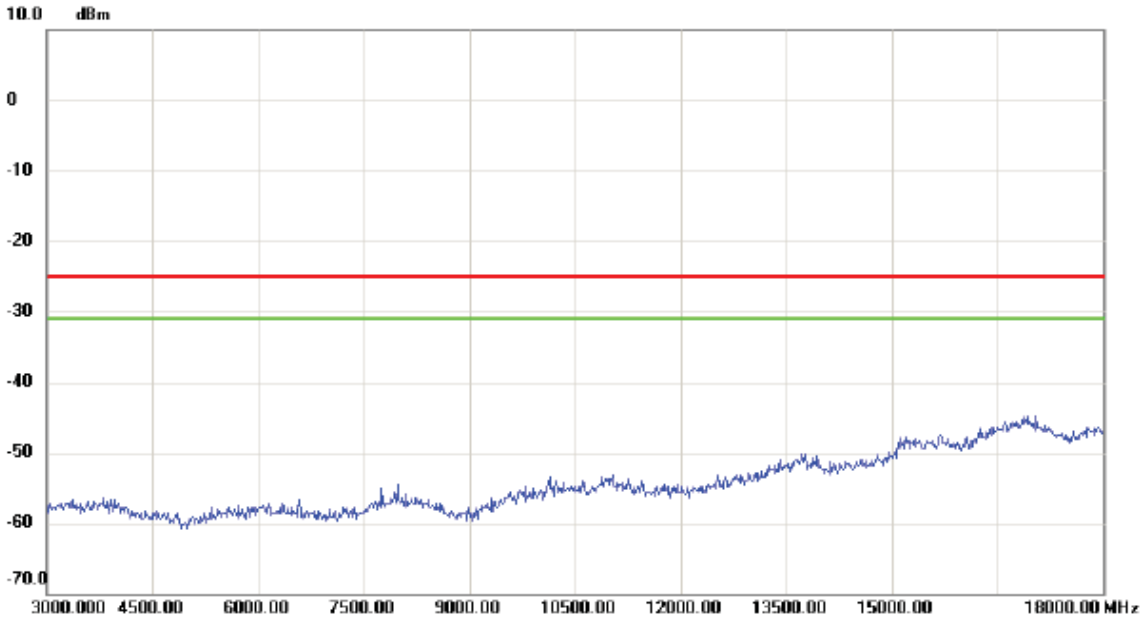
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21425_5M

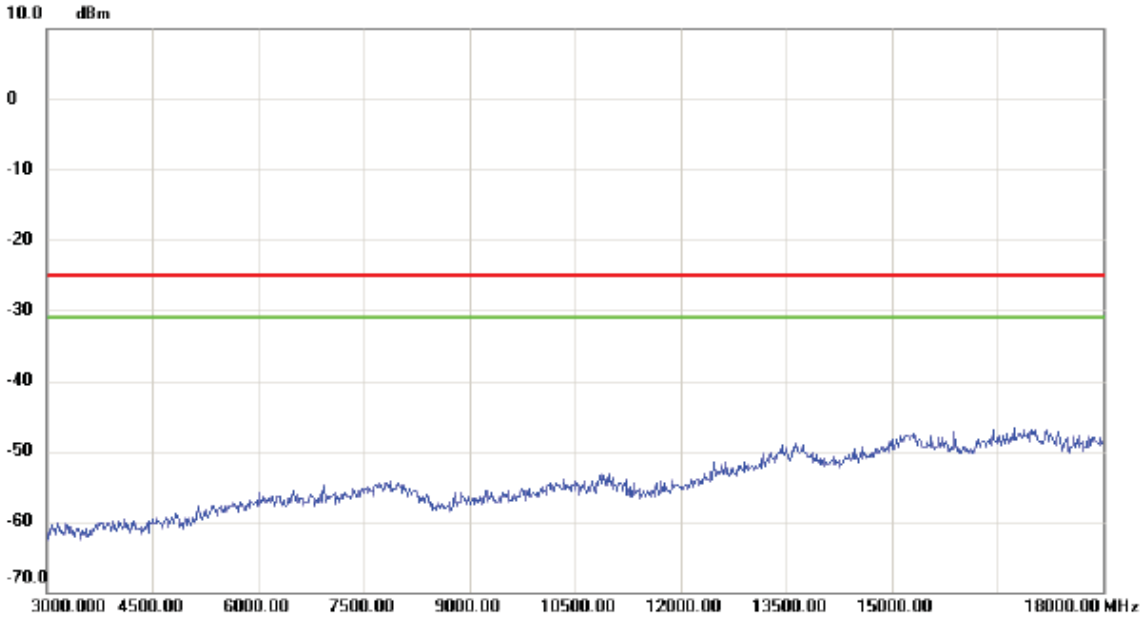
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21425_5M

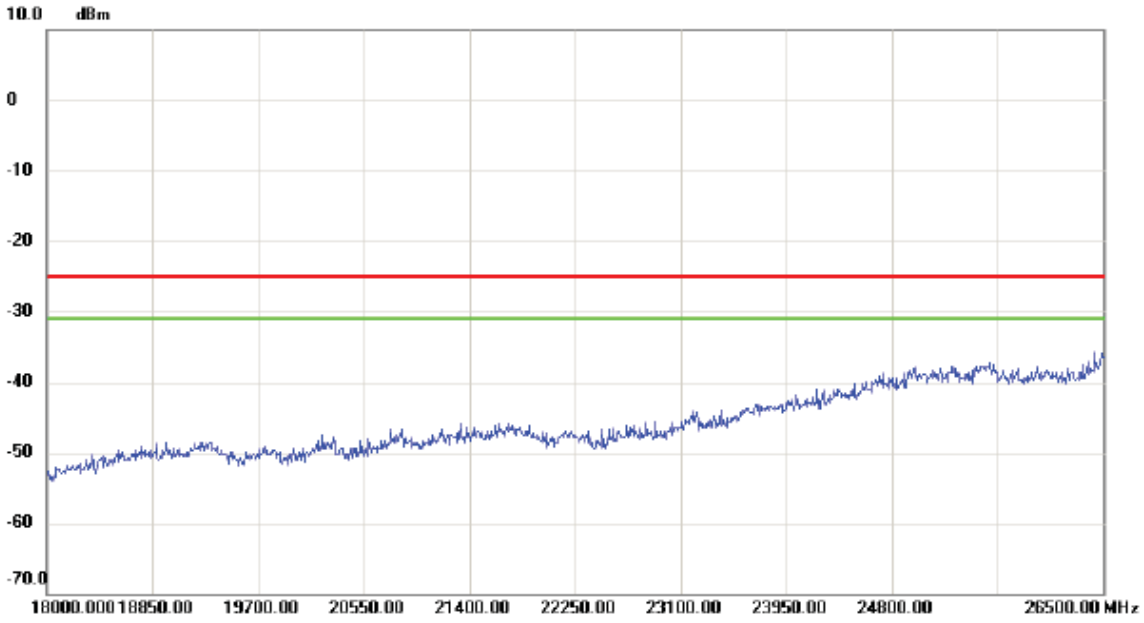
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21425_5M

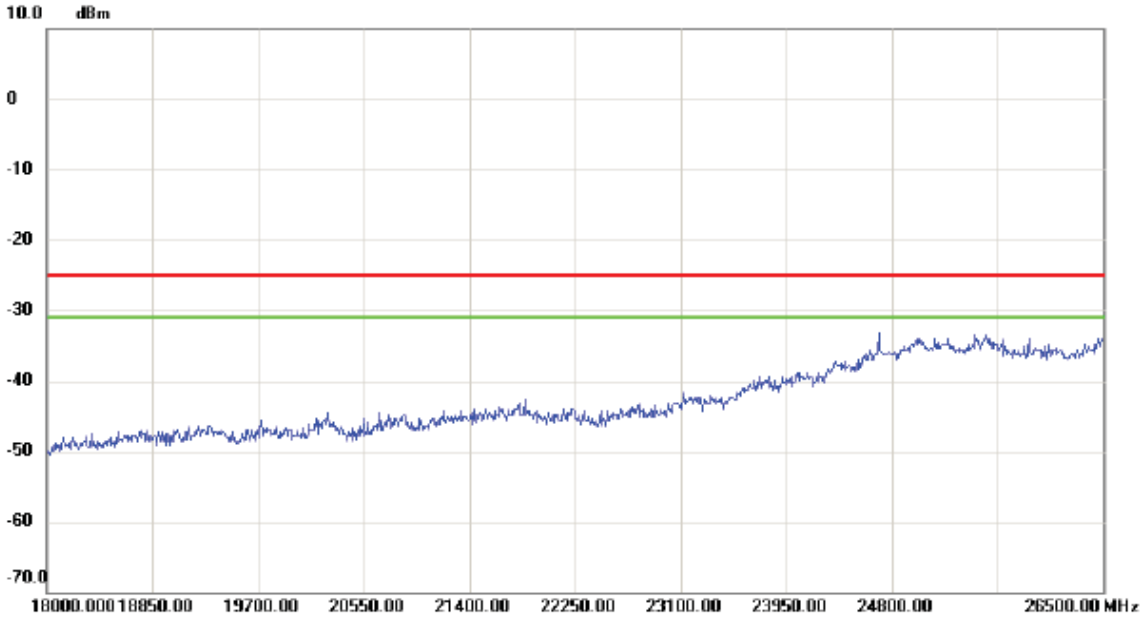
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21425_5M

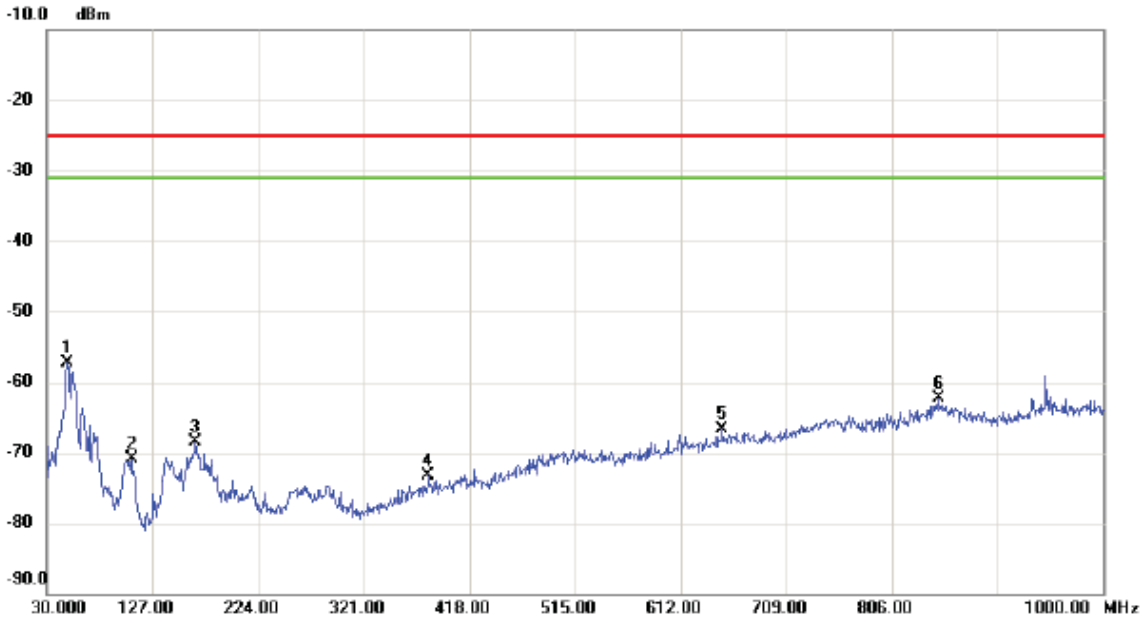
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

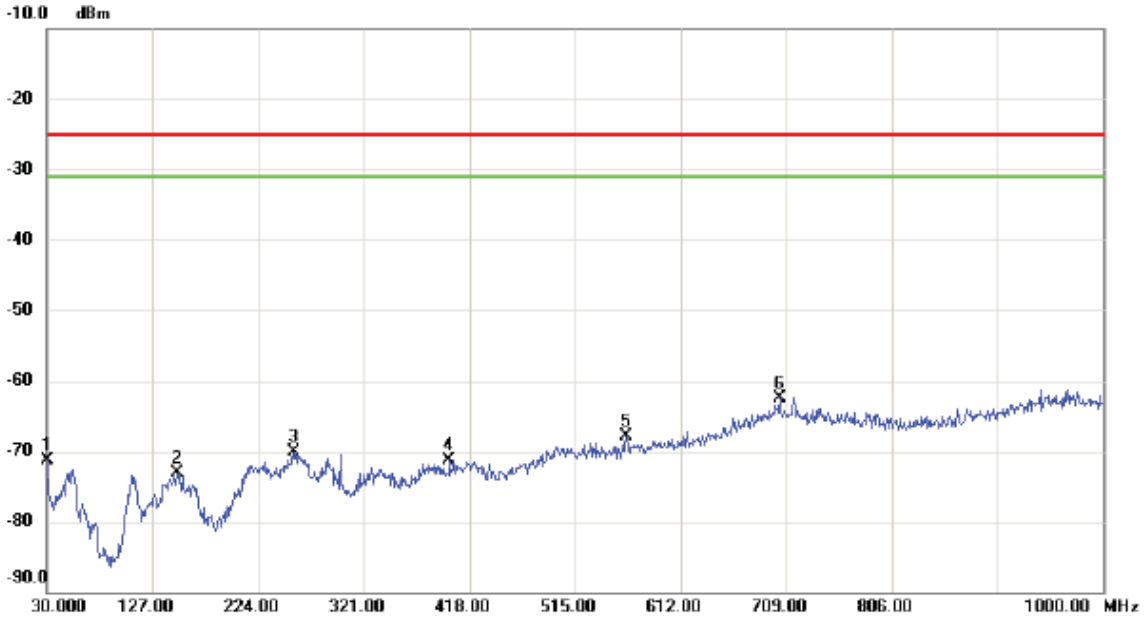
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	48.430	-58.37	1.03	-57.34	-25.00	-32.34	peak	
2		107.600	-69.80	-1.09	-70.89	-25.00	-45.89	peak	
3		166.770	-69.36	0.95	-68.41	-25.00	-43.41	peak	
4		380.170	-77.17	3.83	-73.34	-25.00	-48.34	peak	
5		650.800	-76.74	10.13	-66.61	-25.00	-41.61	peak	
6		848.680	-76.72	14.41	-62.31	-25.00	-37.31	peak	

Test Mode:	LTE Band 7_TX CH21350_20M

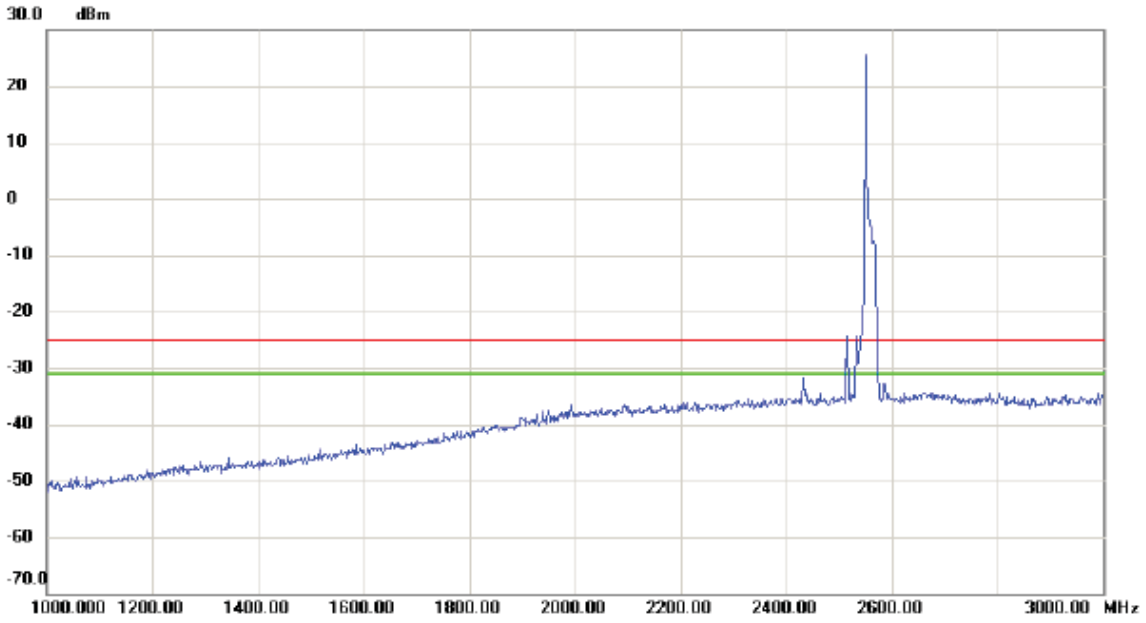
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		30.000	-73.24	1.88	-71.36	-25.00	-46.36	peak	
2		149.310	-77.29	4.16	-73.13	-25.00	-48.13	peak	
3		256.980	-72.03	1.91	-70.12	-25.00	-45.12	peak	
4		399.570	-77.25	5.88	-71.37	-25.00	-46.37	peak	
5		562.530	-76.35	8.36	-67.99	-25.00	-42.99	peak	
6	*	703.180	-76.42	13.90	-62.52	-25.00	-37.52	peak	

Test Mode:	LTE Band 7_TX CH21350_20M

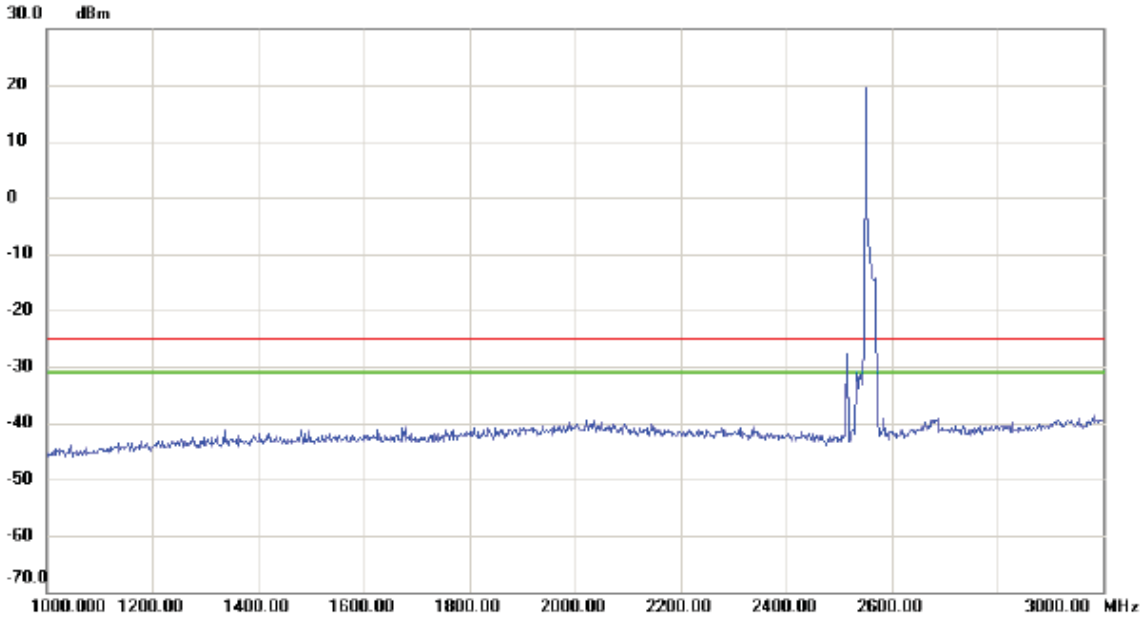
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

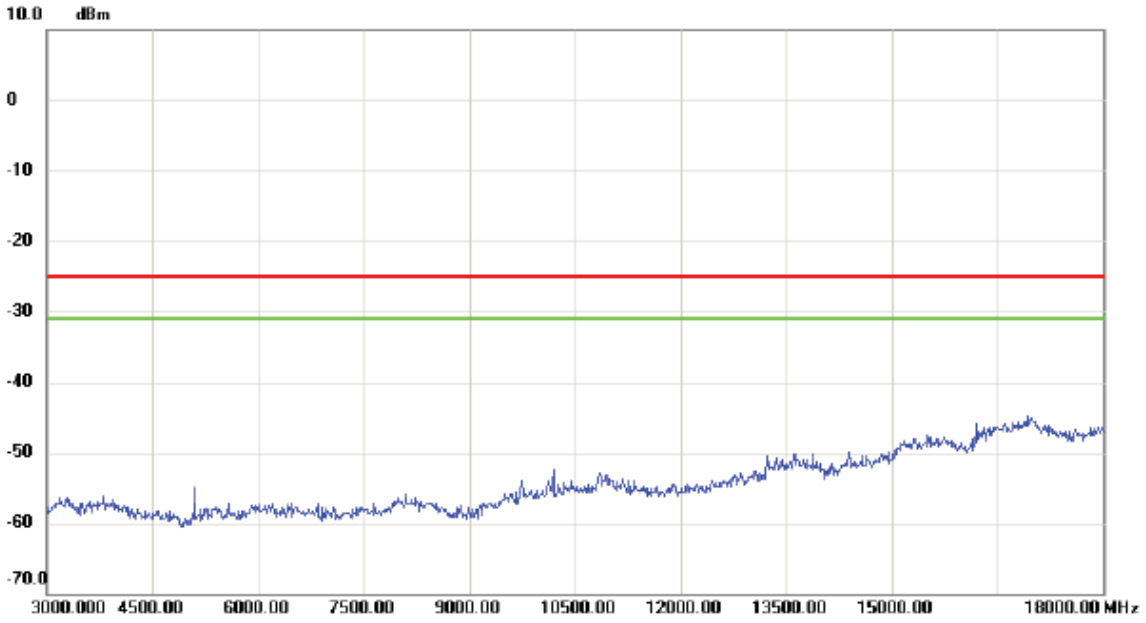
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

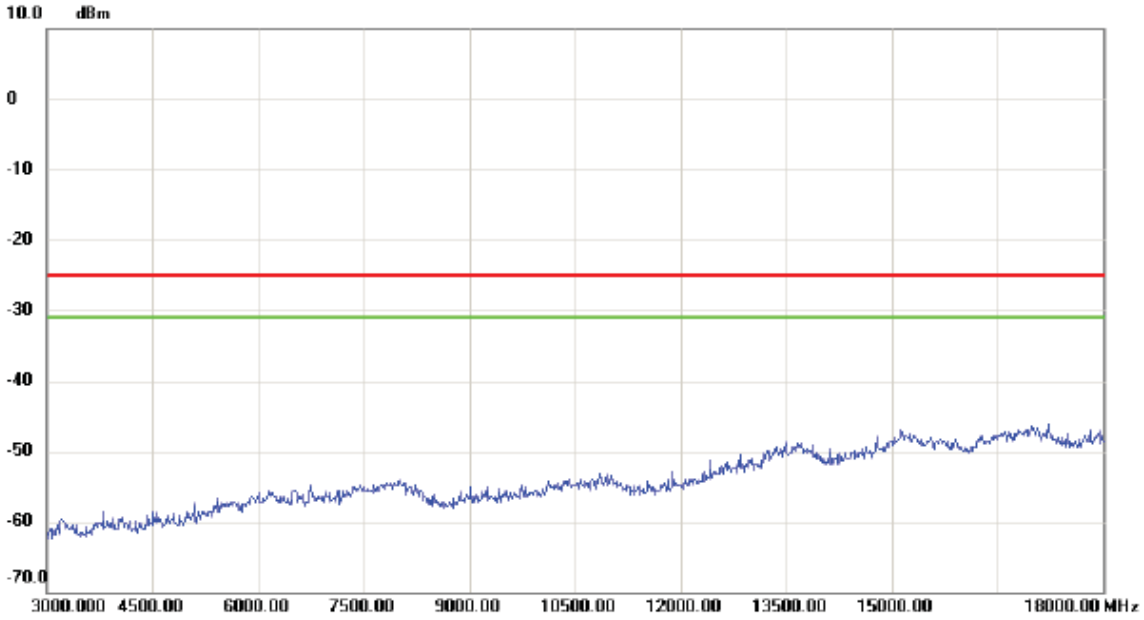
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

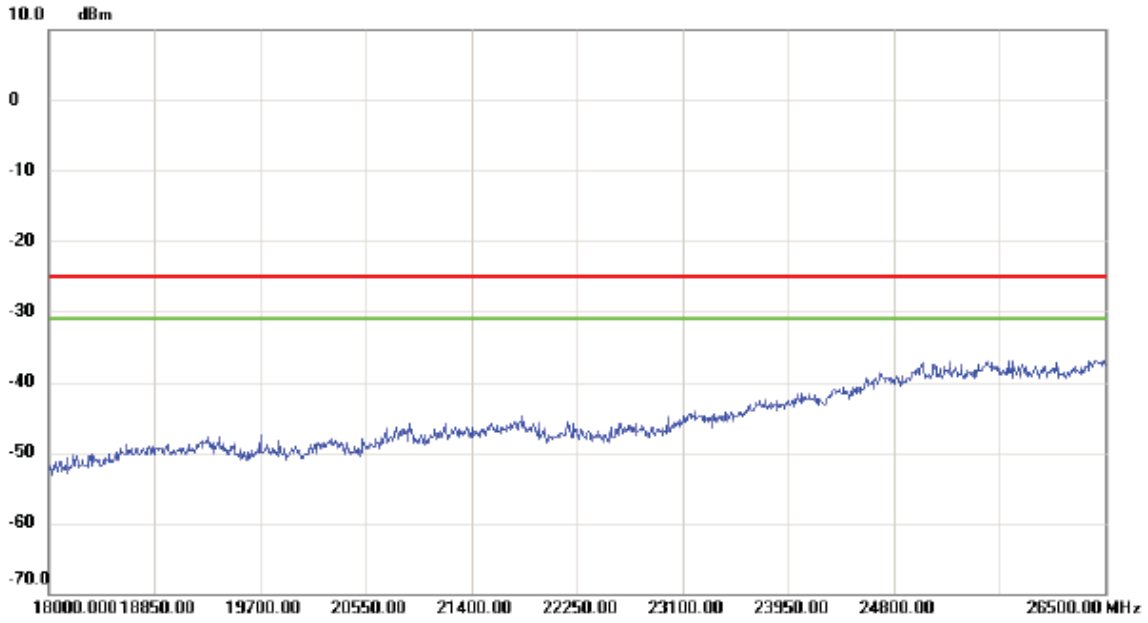
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

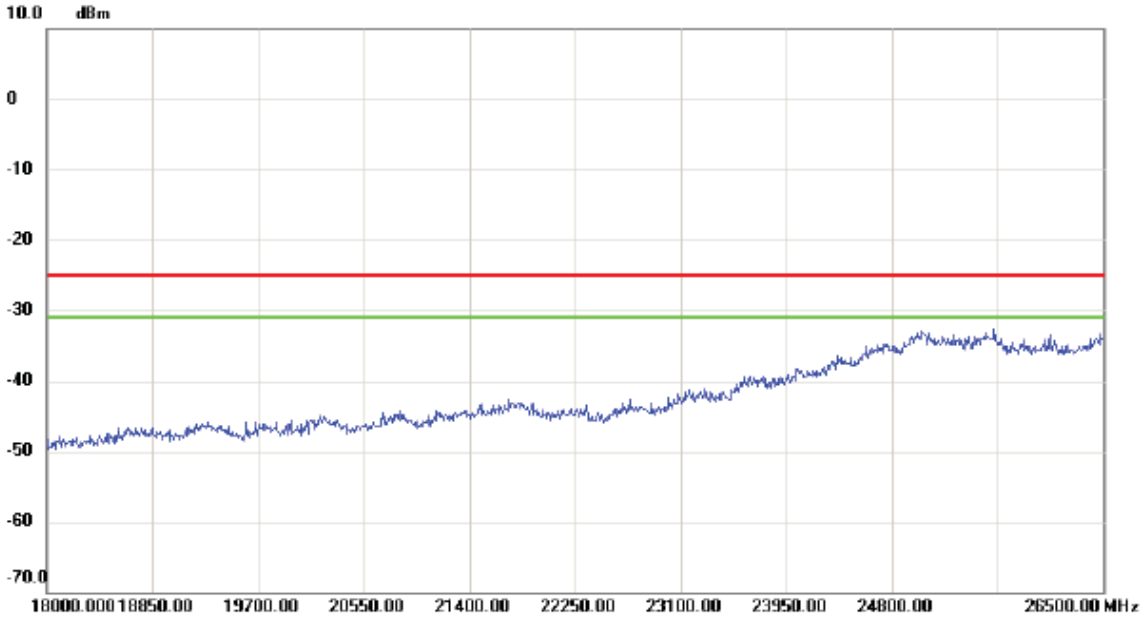
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 7_TX CH21350_20M

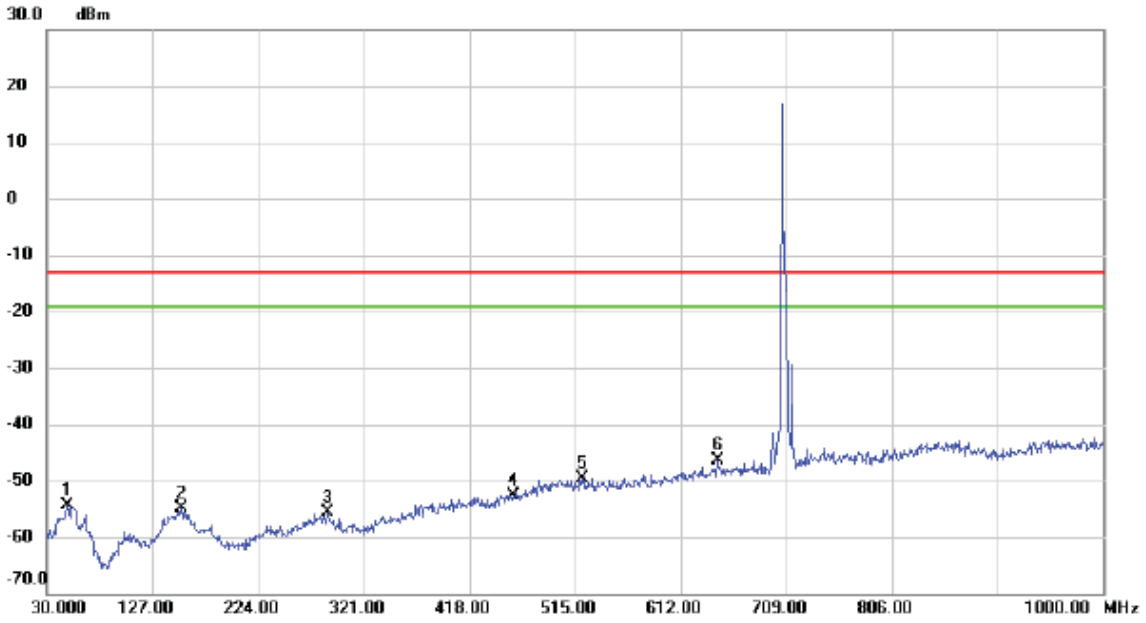
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 12_TX CH23095_5M

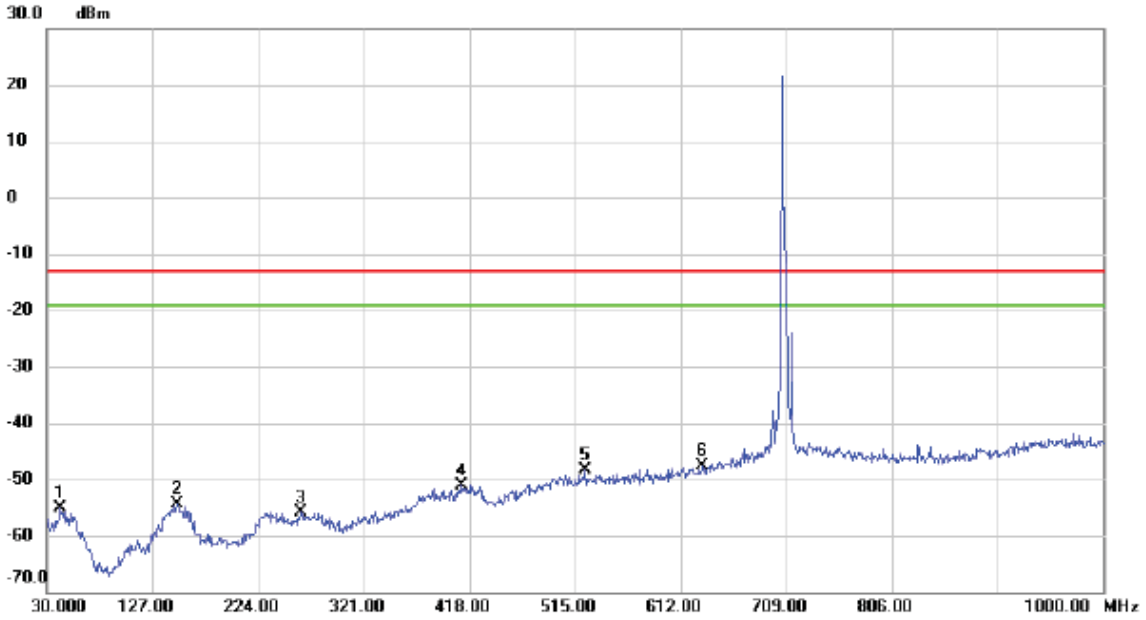
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		48.430	-75.39	21.03	-54.36	-13.00	-41.36	peak	
2		153.190	-78.14	23.16	-54.98	-13.00	-41.98	peak	
3		288.020	-77.99	22.31	-55.68	-13.00	-42.68	peak	
4		458.740	-78.29	25.77	-52.52	-13.00	-39.52	peak	
5		521.790	-77.17	27.51	-49.66	-13.00	-36.66	peak	
6	*	645.950	-76.48	30.00	-46.48	-13.00	-33.48	peak	

Test Mode:	LTE Band 12_TX CH23095_5M

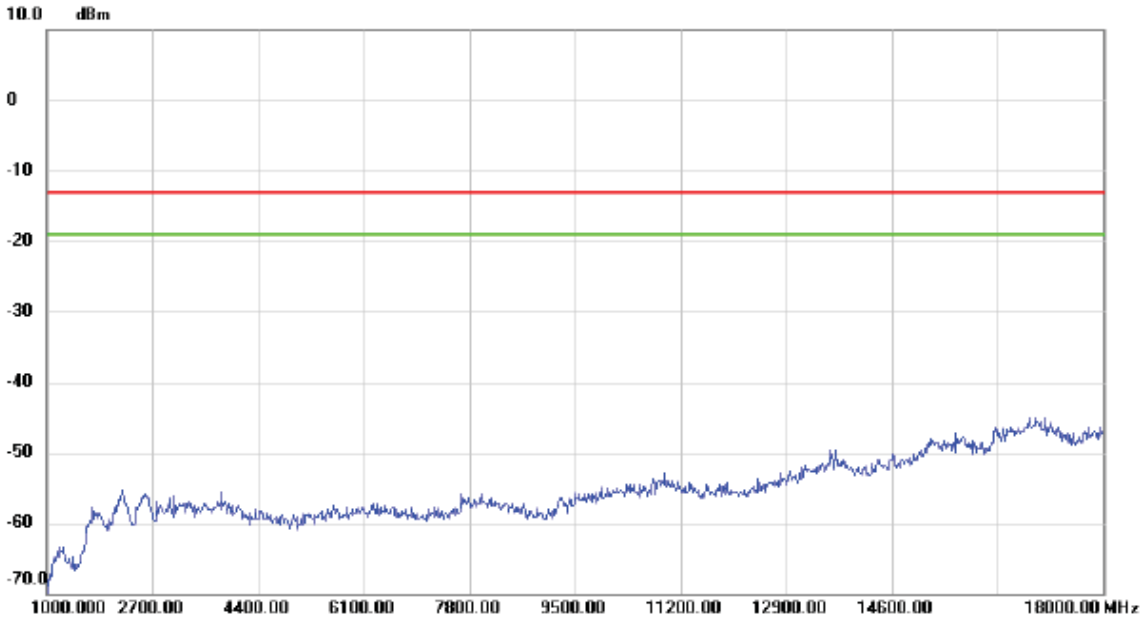
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		42.610	-77.69	22.59	-55.10	-13.00	-42.10	peak	
2		149.310	-78.57	24.16	-54.41	-13.00	-41.41	peak	
3		263.770	-78.16	22.34	-55.82	-13.00	-42.82	peak	
4		411.210	-77.61	26.44	-51.17	-13.00	-38.17	peak	
5		524.700	-76.36	28.08	-48.28	-13.00	-35.28	peak	
6	*	632.370	-77.57	30.06	-47.51	-13.00	-34.51	peak	

Test Mode:	LTE Band 12_TX CH23095_5M

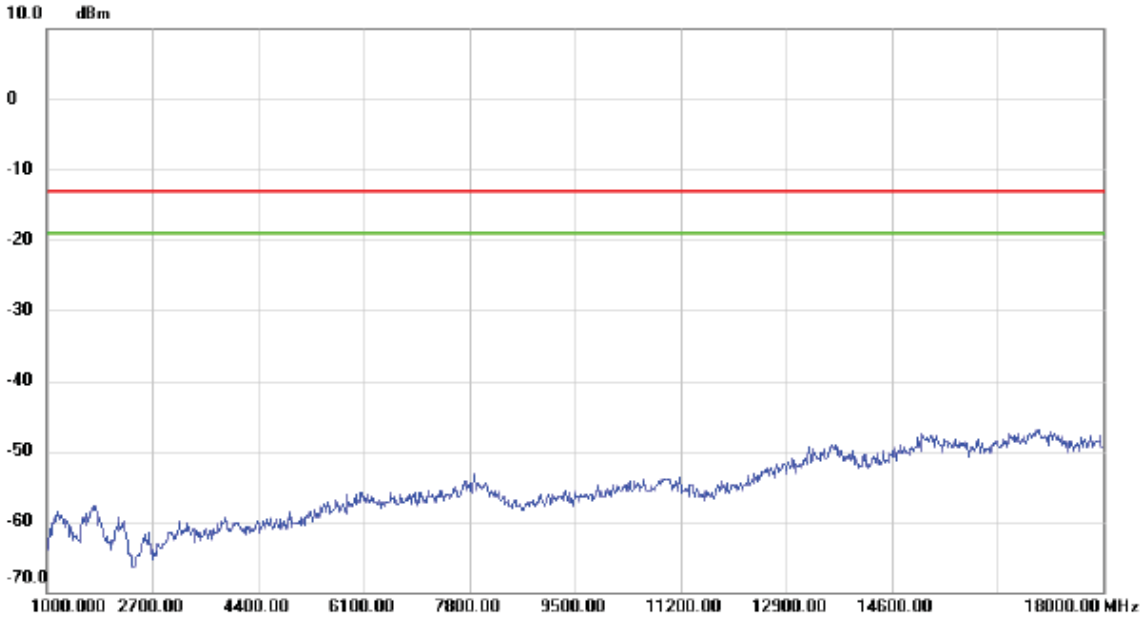
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 12_TX CH23095_5M

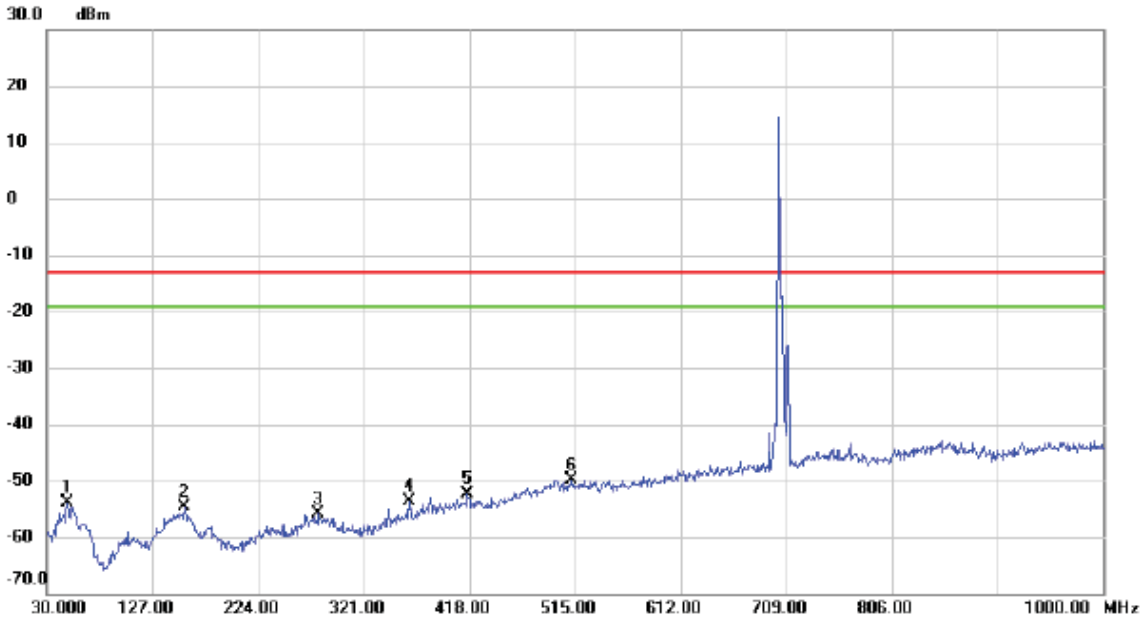
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 12_TX CH23060_10M

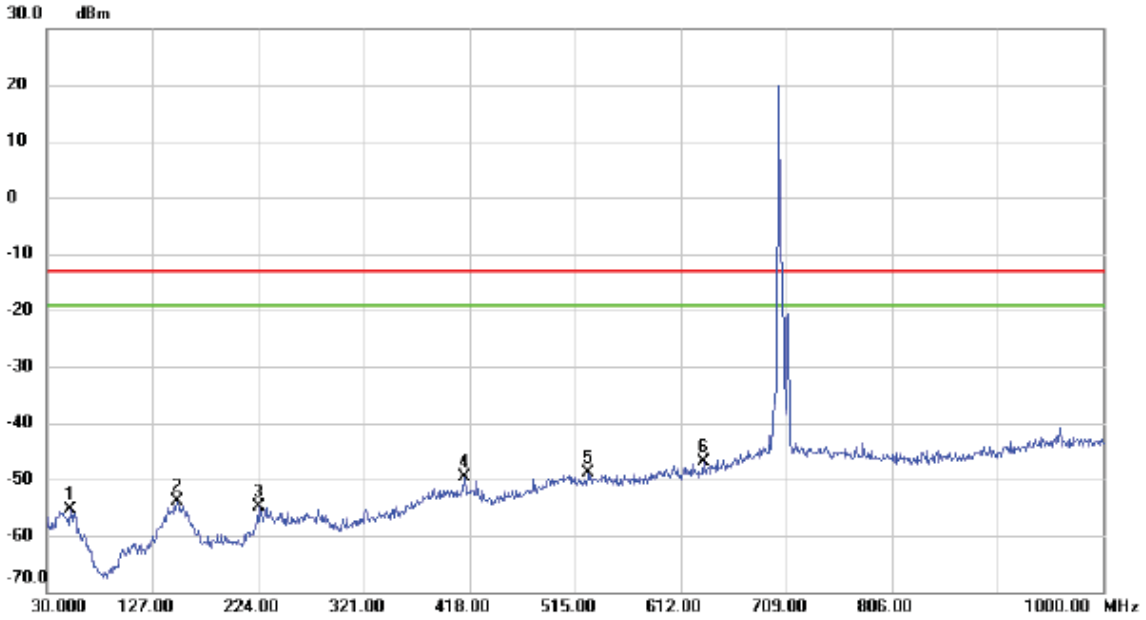
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		48.430	-75.01	21.03	-53.98	-13.00	-40.98	peak	
2		156.100	-77.90	23.17	-54.73	-13.00	-41.73	peak	
3		279.290	-78.41	22.62	-55.79	-13.00	-42.79	peak	
4		362.710	-76.53	22.96	-53.57	-13.00	-40.57	peak	
5		416.060	-76.82	24.54	-52.28	-13.00	-39.28	peak	
6	*	512.090	-77.29	27.53	-49.76	-13.00	-36.76	peak	

Test Mode:	LTE Band 12_TX CH23060_10M

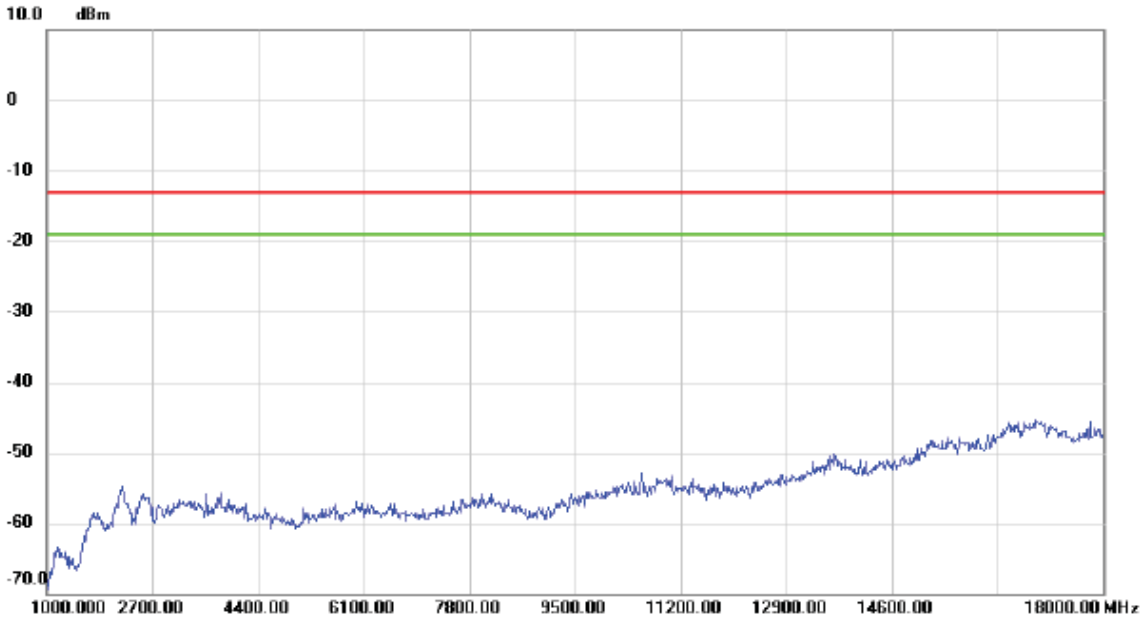
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		51.340	-77.08	21.64	-55.44	-13.00	-42.44	peak	
2		149.310	-77.93	24.16	-53.77	-13.00	-40.77	peak	
3		224.000	-76.39	21.62	-54.77	-13.00	-41.77	peak	
4		413.150	-76.27	26.54	-49.73	-13.00	-36.73	peak	
5		527.610	-76.98	28.08	-48.90	-13.00	-35.90	peak	
6	*	633.340	-76.90	30.09	-46.81	-13.00	-33.81	peak	

Test Mode:	LTE Band 12_TX CH23060_10M

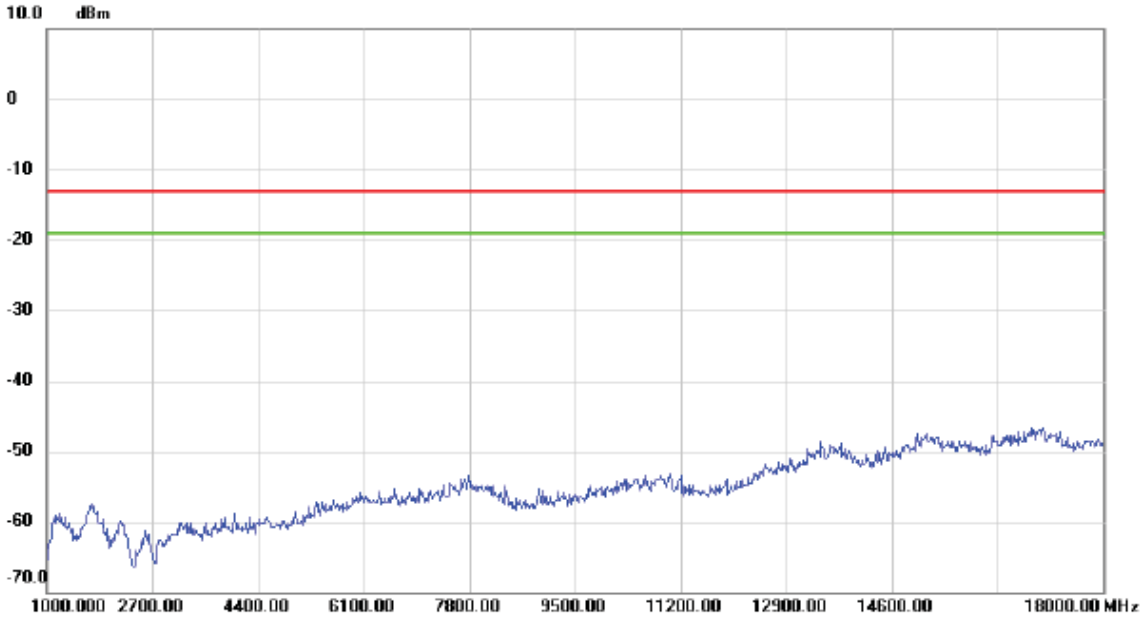
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 12_TX CH23060_10M

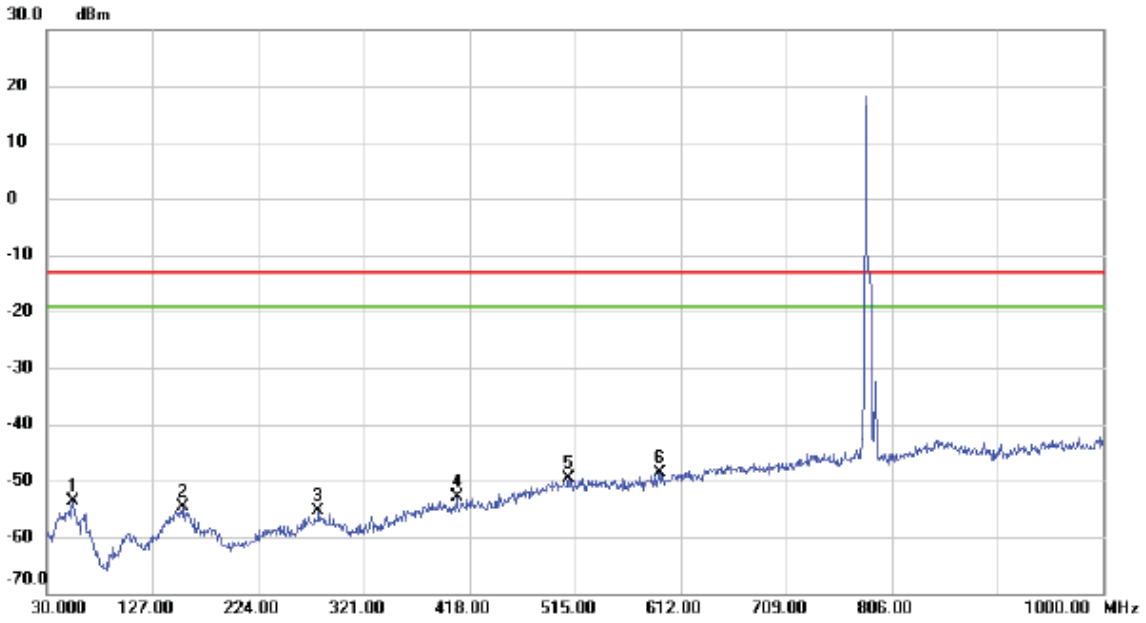
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 13_TX CH23255_5M

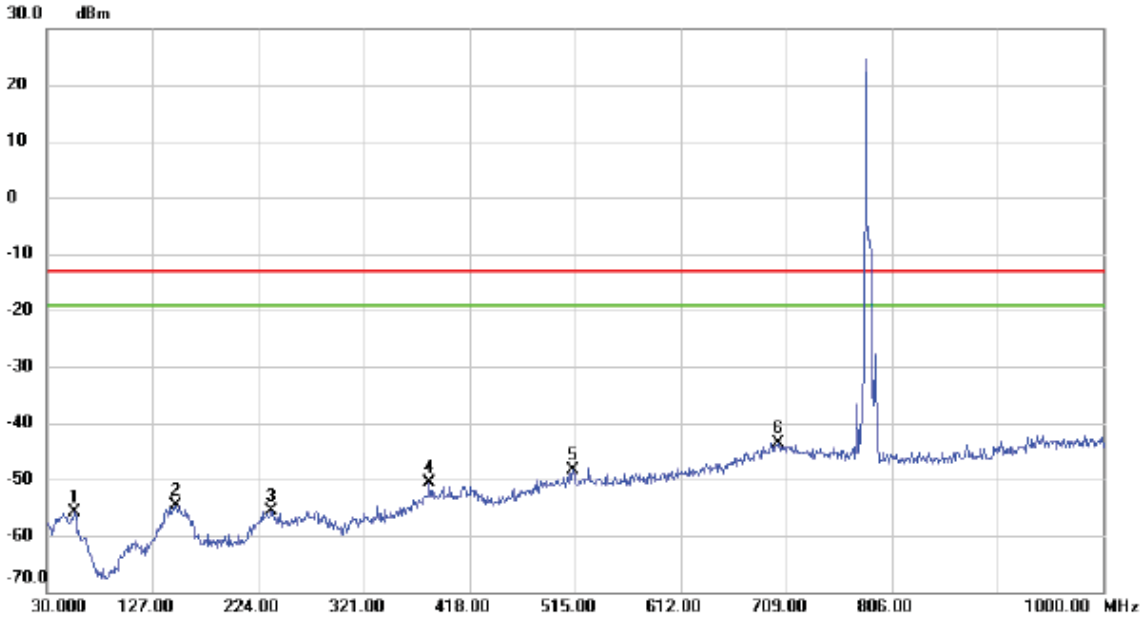
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		53.280	-75.63	21.99	-53.64	-13.00	-40.64	peak	
2		154.160	-77.69	23.16	-54.53	-13.00	-41.53	peak	
3		279.290	-78.02	22.62	-55.40	-13.00	-42.40	peak	
4		406.360	-77.19	24.28	-52.91	-13.00	-39.91	peak	
5		509.180	-77.05	27.53	-49.52	-13.00	-36.52	peak	
6	*	592.600	-77.16	28.52	-48.64	-13.00	-35.64	peak	

Test Mode:	LTE Band 13_TX CH23255_5M

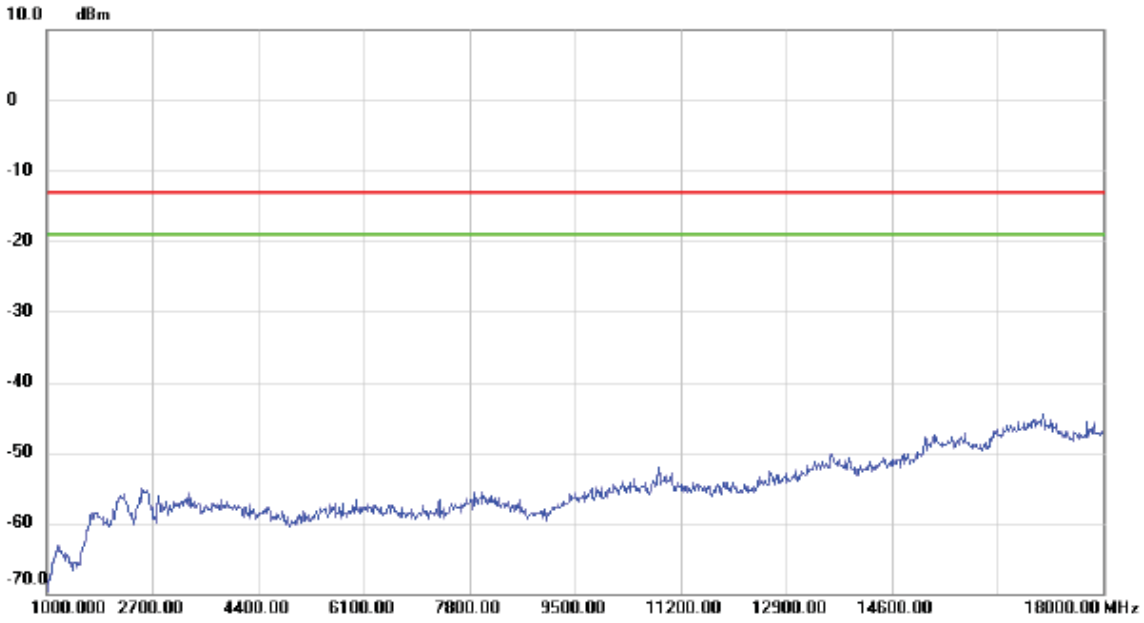
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		55.220	-78.51	22.53	-55.98	-13.00	-42.98	peak	
2		148.340	-78.62	24.06	-54.56	-13.00	-41.56	peak	
3		236.610	-78.36	22.69	-55.67	-13.00	-42.67	peak	
4		381.140	-76.76	26.09	-50.67	-13.00	-37.67	peak	
5		513.060	-76.47	28.07	-48.40	-13.00	-35.40	peak	
6	*	702.210	-77.49	33.93	-43.56	-13.00	-30.56	peak	

Test Mode:	LTE Band 13_TX CH23255_5M

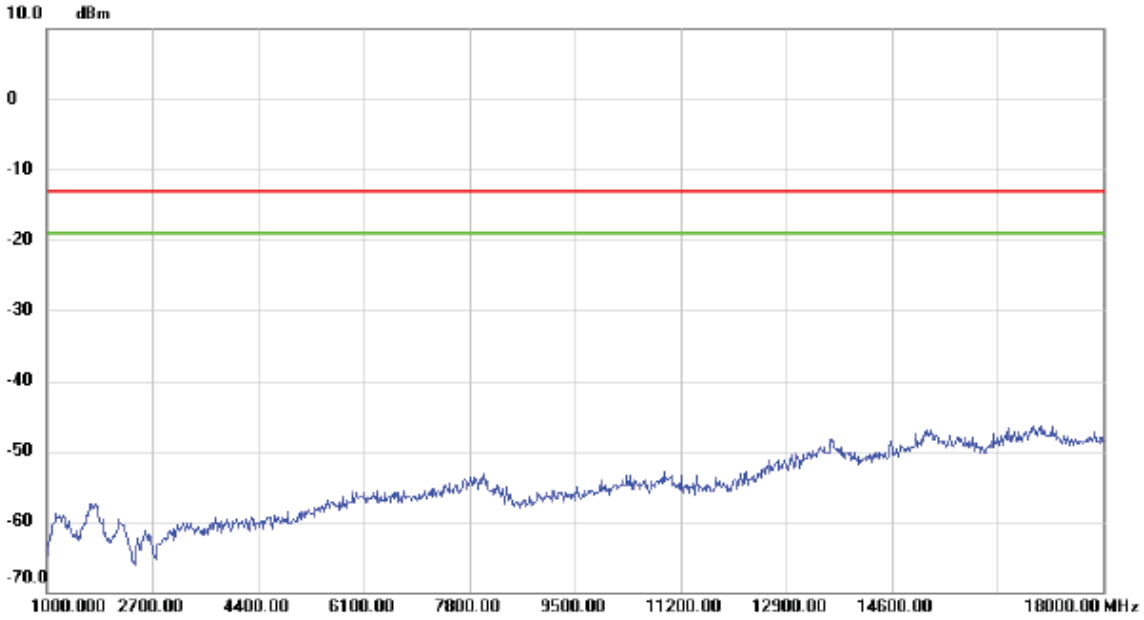
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 13_TX CH23255_5M

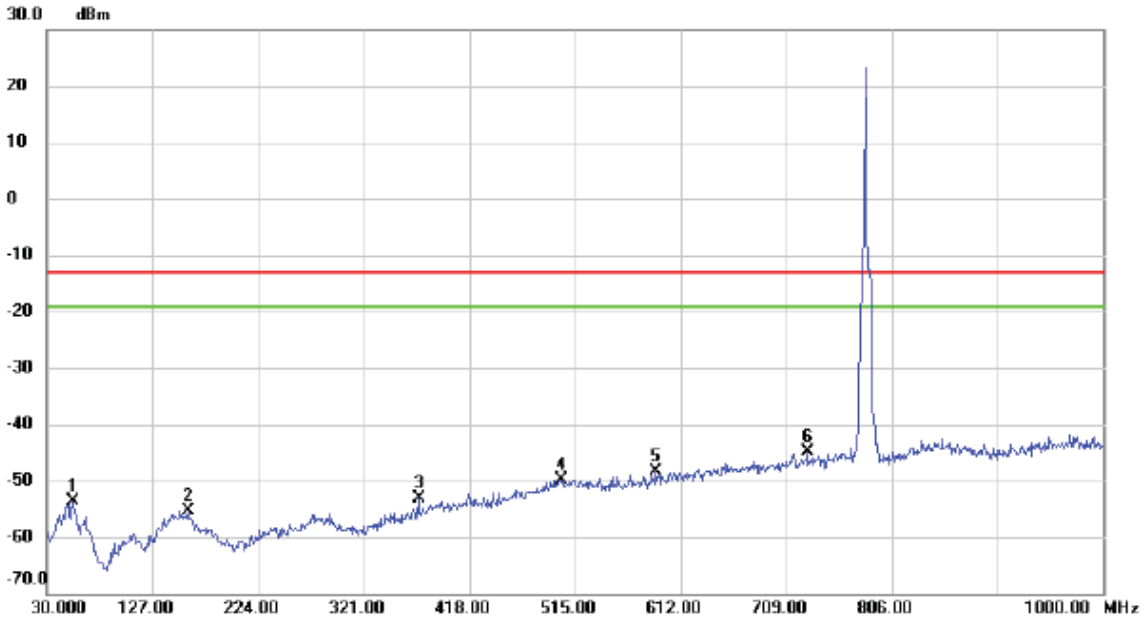
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 13_TX CH23230_10M

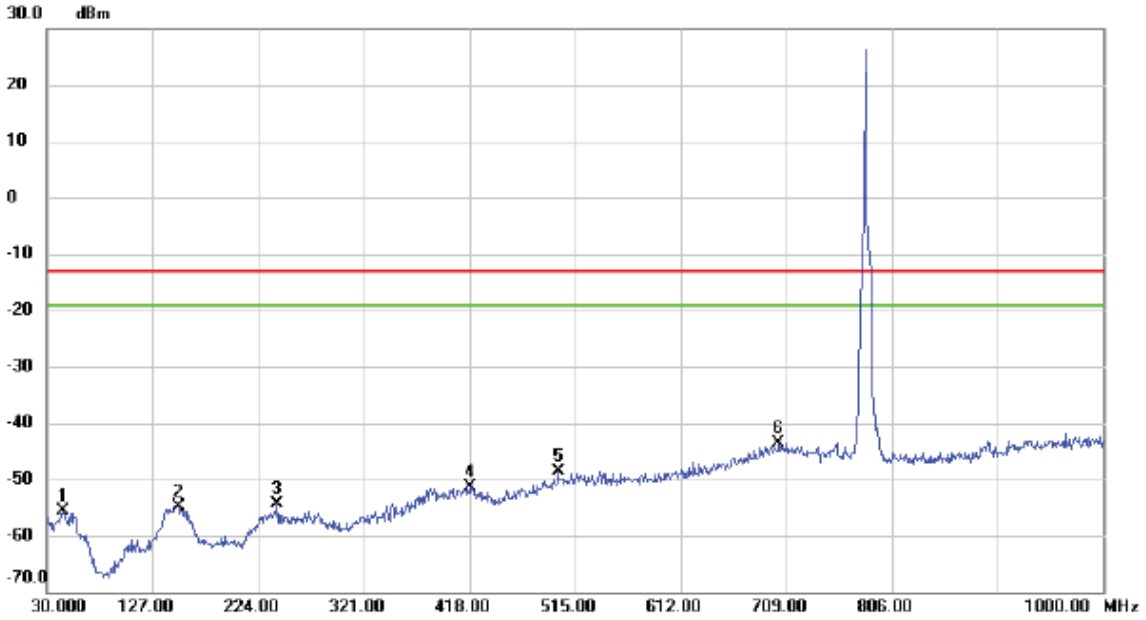
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		53.280	-75.65	21.99	-53.66	-13.00	-40.66	peak	
2		159.980	-78.52	23.18	-55.34	-13.00	-42.34	peak	
3		371.440	-76.62	23.40	-53.22	-13.00	-40.22	peak	
4		502.390	-77.33	27.55	-49.78	-13.00	-36.78	peak	
5		589.690	-76.73	28.44	-48.29	-13.00	-35.29	peak	
6	*	728.400	-76.55	31.62	-44.93	-13.00	-31.93	peak	

Test Mode:	LTE Band 13_TX CH23230_10M

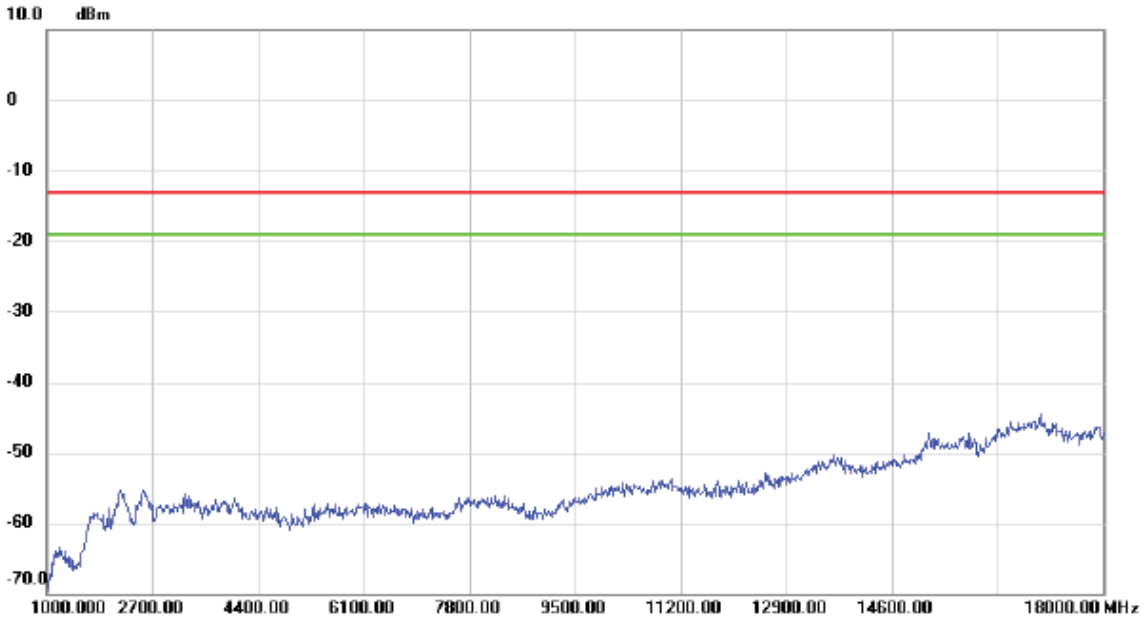
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		44.550	-78.51	22.97	-55.54	-13.00	-42.54	peak	
2		151.250	-78.98	24.05	-54.93	-13.00	-41.93	peak	
3		241.460	-76.79	22.32	-54.47	-13.00	-41.47	peak	
4		418.970	-78.24	26.83	-51.41	-13.00	-38.41	peak	
5		499.480	-76.67	28.02	-48.65	-13.00	-35.65	peak	
6	*	702.210	-77.45	33.93	-43.52	-13.00	-30.52	peak	

Test Mode:	LTE Band 13_TX CH23230_10M

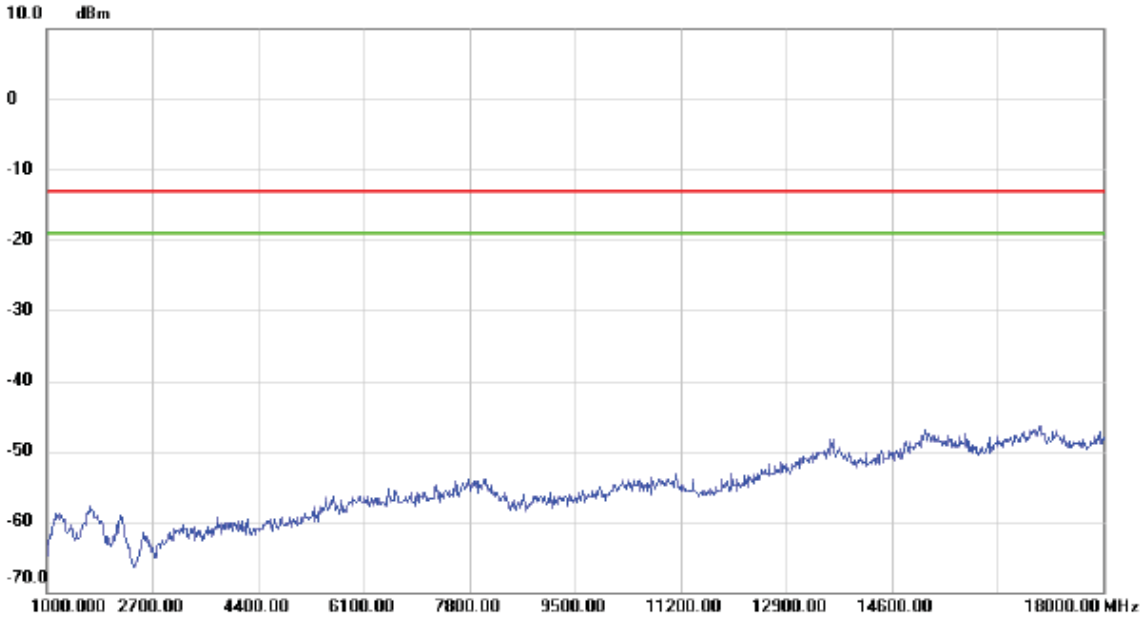
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 13_TX CH23230_10M

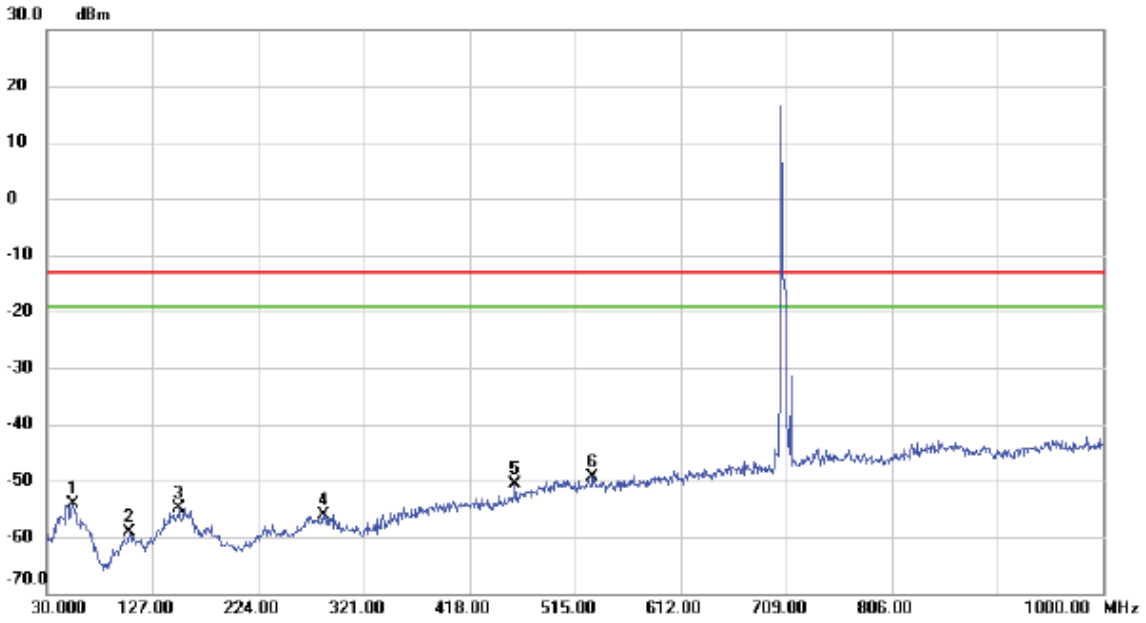
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment

Test Mode:	LTE Band 17_TX CH23755_5M

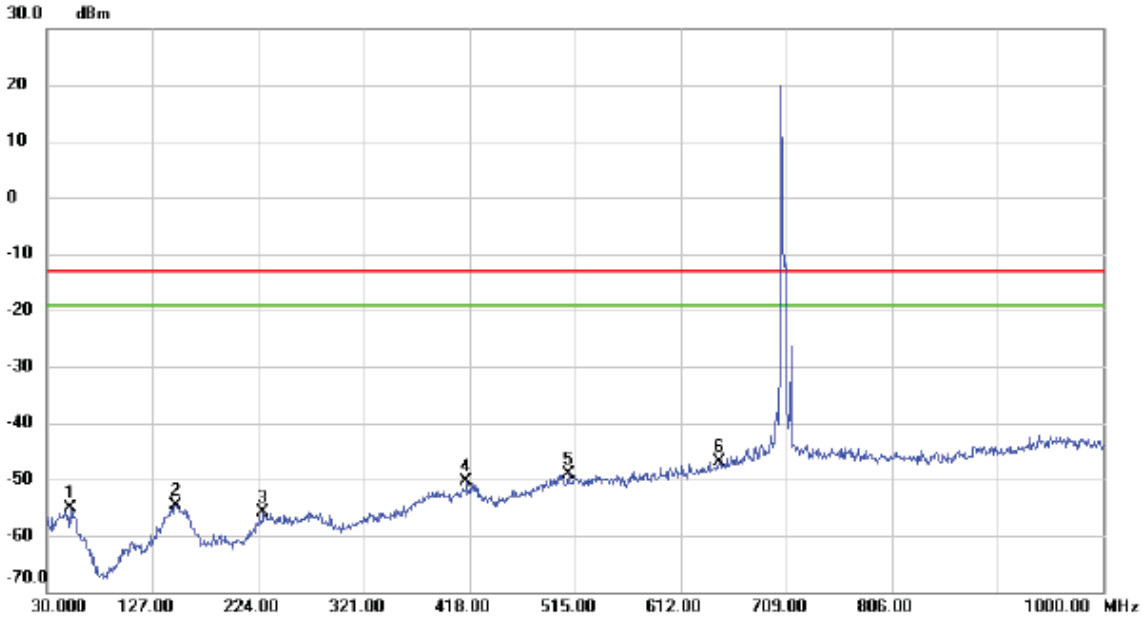
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		54.250	-76.42	22.40	-54.02	-13.00	-41.02	peak	
2		105.660	-78.01	18.84	-59.17	-13.00	-46.17	peak	
3		151.250	-78.03	23.15	-54.88	-13.00	-41.88	peak	
4		284.140	-78.64	22.47	-56.17	-13.00	-43.17	peak	
5		459.710	-76.47	25.84	-50.63	-13.00	-37.63	peak	
6	*	531.490	-76.86	27.49	-49.37	-13.00	-36.37	peak	

Test Mode:	LTE Band 17_TX CH23755_5M

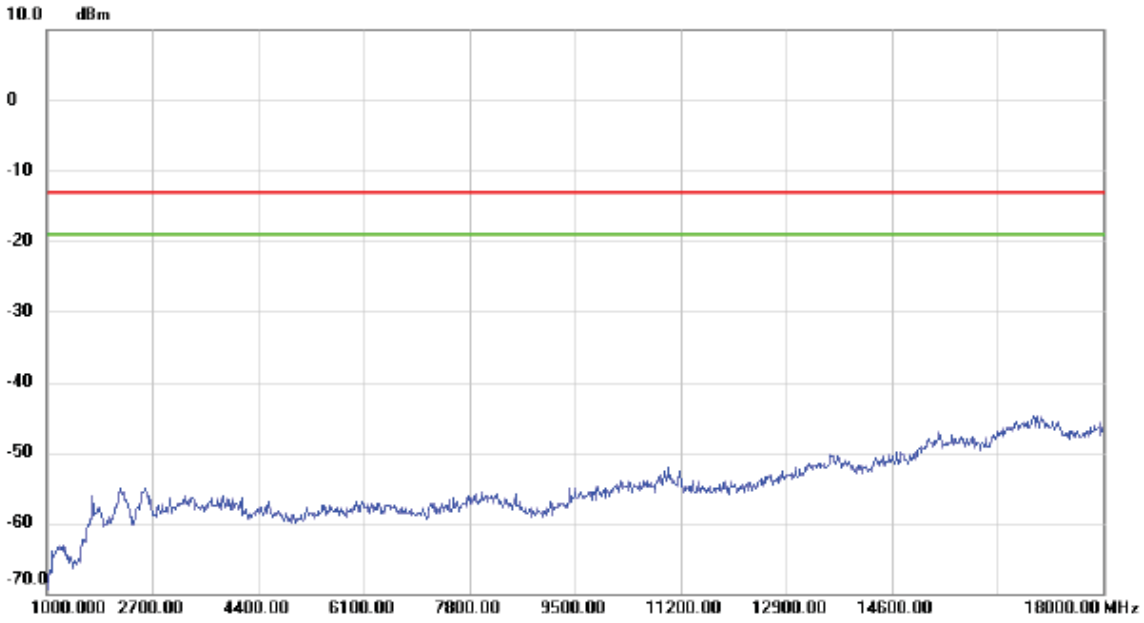
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		51.340	-76.70	21.64	-55.06	-13.00	-42.06	peak	
2		148.340	-78.59	24.06	-54.53	-13.00	-41.53	peak	
3		228.850	-78.70	22.94	-55.76	-13.00	-42.76	peak	
4		415.090	-76.90	26.63	-50.27	-13.00	-37.27	peak	
5		509.180	-77.13	28.07	-49.06	-13.00	-36.06	peak	
6	*	647.890	-77.30	30.51	-46.79	-13.00	-33.79	peak	

Test Mode:	LTE Band 17_TX CH23755_5M

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment