



FCC RF Test Report

Product Name:
**HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with
Bluetooth; Ascend G600**

Model Number: HUAWEI U8950-1, U8950-1

**Report No: SYBH(Z-RF)018082012-2007
FCC ID:QISU8950-1**

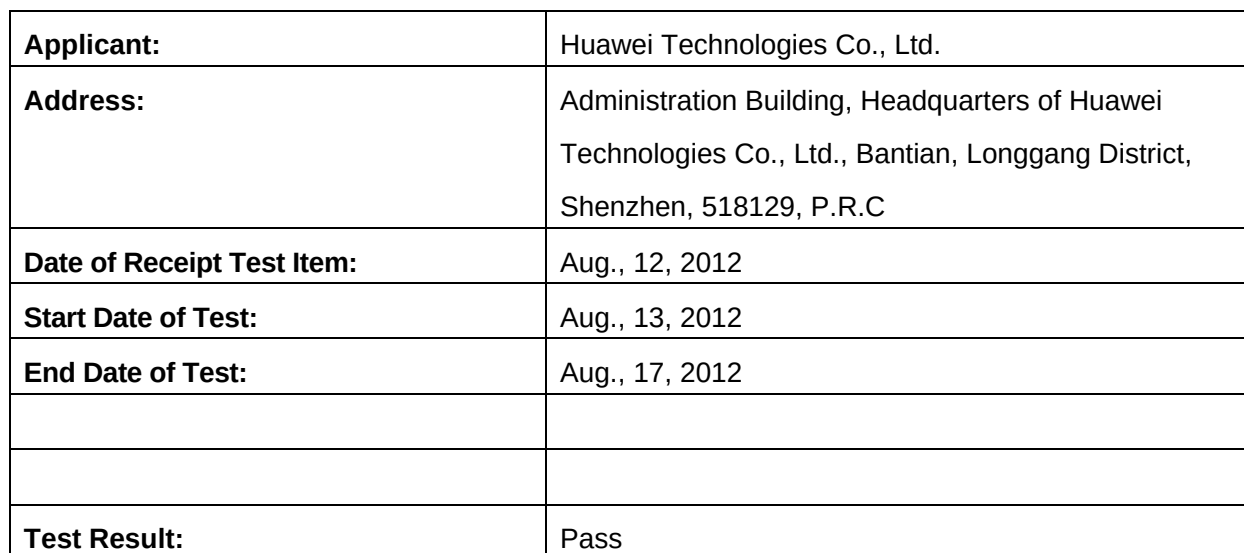
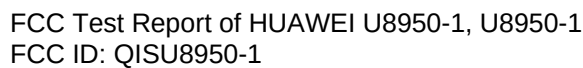
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2. The laboratory has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. The site recognition number is 97456.
3. The laboratory has been listed by industry Canada to perform electromagnetic emission measurement. The site recognition number is 6369A-2.
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Operated By	Aug., 28, 2012	Huang Qiuliang	
	Date	Name	Signature

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1 General Information

1.1 Applied Standard	
Applied Rules:	47 CFR FCC Part 2:2011, Subpart J 47 CFR FCC Part 22:2011, Subpart H ANSI/TIA 603C:2004
1.2 Test Location	
Test Location 1:	Reliability Laboratory of Huawei Technologies Co., Ltd.
Address:	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C
1.3 Test Environmental Condition	
Ambient Temperature:	20 – 25 °C
Ambient Relative Humidity:	45 – 55 %
Atmospheric Pressure:	101 kPa

2 Summary

Table 1 Summary of results

Test Case	FCC Part No.	Requirements	Result
Cellular Band			
Transmitter Output Power	2.1046 & 22.913	ERP not exceed 7 W	Pass
Modulation Characteristics	2.1047	Digital modulation	Pass
Occupied Bandwidth	2.1049	(Not specified)	Pass
Band Edges Compliance	2.1051 & 917	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	2.1051 & 2.917	Below -13 dBm/1 kHz, 9 kHz to 150 kHz Below -13 dBm/10 kHz, 150 kHz to 30 MHz Below -13 dBm/100 kHz, 30 MHz to 10 th harmonics	Pass
Field Strength of Spurious Radiation	2.1053 & 22.917	Below -13 dBm/100 kHz	Pass
Frequency Stability	2.1055 & 22.355	Maintained within the tolerances of ± 2.5 ppm	Pass

3 Product Description

3.1 Product Information

3.1.1 General Description

HUAWEI U8950-1, U8950-1 is subscriber equipment in the WCDMA/GSM system. The HSPA/UMTS frequency band is Band I and Band VIII. The GSM/GPRS/EDGE frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900, but only GSM850 band test data included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, HSDPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS and WIFI etc. Externally it provides micro SD card interface, earphone port(to provide voice service) and USIM card interface. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

NOTE:

1) : Model U8950-1 wasn't tested and all of U8950-1 test data was drawn from U8950N-1.

2):The difference of U8950N-1 and U8950-1:

1. The mobile phone U8950N-1 is a HSDPA/HSUPA/UMTS/GPRS/GSM/EDGE mobile phone with Bluetooth and NFC, which supports GSM850/900/1800/1900 and WCDMA900/2100

2. The mobile phone U8950-1 is a HSDPA/HSUPA/UMTS/GPRS/GSM/EDGE mobile phone with Bluetooth, which supports GSM850/900/1800/1900 and WCDMA900/2100

The difference between U8950N-1 and U8950-1 is showed in the following table.

	U8950N-1	U8950-1
GSM four bands	the same	the same
WCDMA bands	the same	the same
FLASH	the same	the same
Mainboard	the same	the same
Appearance	the same	the same
NFC	Have	Without
Bluetooth mode	the same	the same

WLAN mode	the same	the same
BT/ WLAN antenna	the same	the same
GSM/ WCDMA antenna	the same	the same
External camera	the same	the same
internal camera	the same	the same
Adapter	the same	the same
Battery	the same	the same
Chipset	the same	the same
Memory	the same	the same
Form factor	Bar type, Internal antenna	Bar type, Internal antenna
RF Parameter	The same RF Parameter in the same band	The same RF Parameter in the same band
BT RF Parameter	the same	the same
Dimension	the same	the same
Weight	the same	the same
Bluetooth	the same	the same
External camera	the same	the same
Main Frequency NV	The same NV in the same band	The same NV in the same band
BT conducted power	the same	the same
WIFI conducted power	the same	the same

So U8950-1 test data refer to No. SYBH(Z-RF)018082012 of U8950N-1 test report.

3.1.2 Board Information

Table 2 Board Information

HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; Ascend G600		
HUAWEI U8950-1, U8950-1		
Board and Module		
Equipment Designation / Description	Software	Hardware
Main board of Mobile Phone	U8950-1V100R001C00B930	HD2U8950M

3.1.3 Adapter Technical Data

AC/DCAdapter Model	HW-050100U1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A

Output Voltage	5V  1A
Rated Power	5W

AC/DCAdapter Model	HW-050100E1W
Manufacturer	Huawei Technologies Co., Ltd.
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AC/DCAdapter Model	HW-050100B1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W

AC/DCAdapter Model	HW-050100A1W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W

AC/DCAdapter Model	HW-050100U2W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W

AC/DCAdapter Model	HW-050100E3W
Manufacturer	Huawei Technologies Co., Ltd.
Input Voltage	~100-240V 50/60Hz 0.2A
Output Voltage	5V  1A
Rated Power	5W



3.1.4 Battery Technical Data

Name	Manufacture	Description
Rechargeable Li-ion	Huawei Technologies Co., Ltd.	Battery Model: HB5R1H Rated capacity: 1930mAh Nominal Voltage: +3.7V Charging Voltage: +4.2V

4 Test Description

4.1 Supported Frequency Range

Characteristics	Description
Downlink	869 to 894 MHz
Uplink	824 to 849 MHz

4.2 Transmitter / Receiver Characteristics

Characteristics	Description
System Type	GSM
TX Output Power (per Antenna Port)	GSM system: Power class 4
Channel Spacing(s) / Bandwidth(s)	GSM system: 200 kHz
Designation of Emissions	GSM system: 248KGXW (GMSK modulation), 244KG7W (8PSK modulation)

4.3 Antenna Gain

Antenna Gain(dBi)	0.75
Antenna Gain(dBd)	-1.40

4.4 Power Supply

Specification	Description
Power Supply Type	Directly Connected to DC /AC Power Supply
Input to EUT (DC power)	DC Voltage Nominal: $\pm$ +3.7 V DC Voltage Range: $\pm$ +3.5 V to +4.2 V
Input to EUT (AC power)	AC Voltage Nominal: ~ 120 V (50/60 Hz) AC Voltage Range: ~100-240V

5 General Test Conditions / Configurations

5.1 RF Channels under Test

Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
TM1/TM2	TX	Channel 128	Channel 192	Channel 251
		824.2MHz	837.0MHz	848.8MHz
	RX	Channel 128	Channel 192	Channel 251
		869.2MHz	882.0MHz	893.8MHz

5.2 Test Modes

Test Mode	Test Modes Description
TM1	GSM/GPRS, GMSK modulation
TM2	EDGE, 8PSK modulation

5.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	3.5V
	VN	3.7V
	VH	4.2V

NOTE: VL= lower extreme test voltage

VN= nominal voltage

VH= upper extreme test voltage

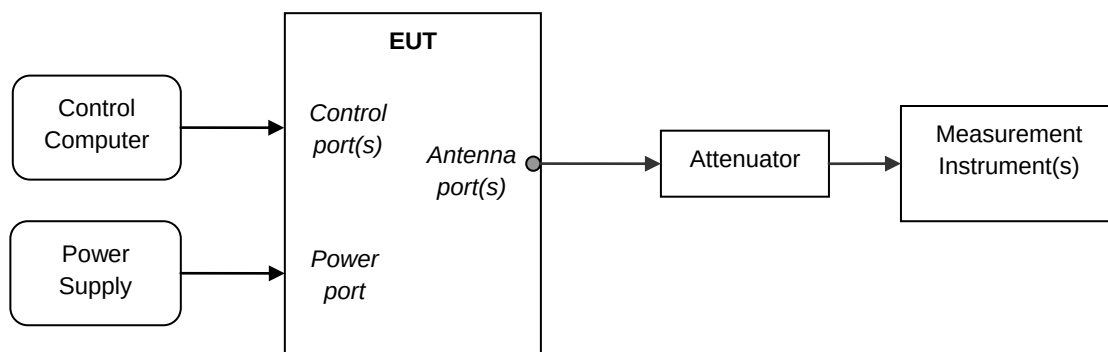
TN= normal temperature

5.4 Test Setup

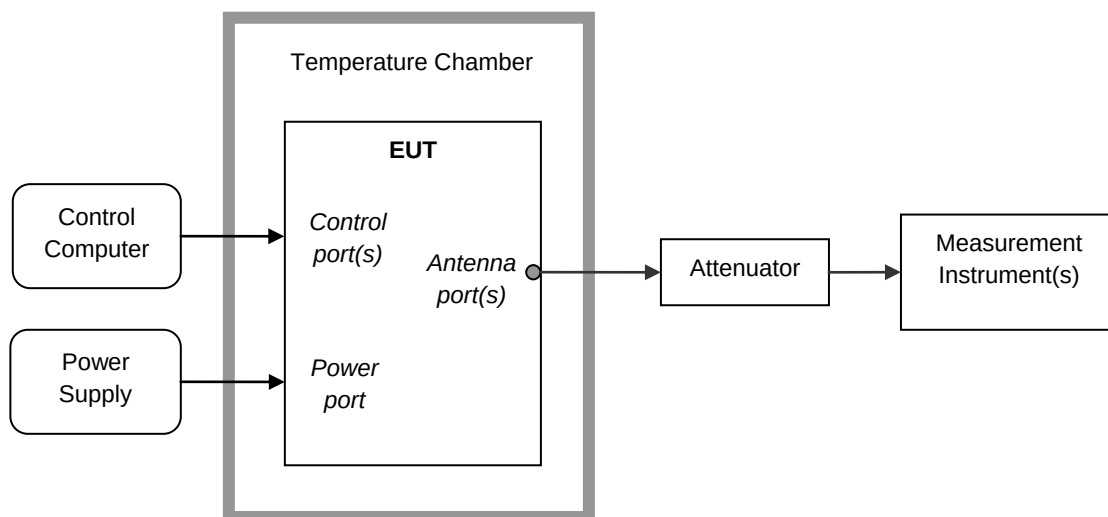
5.4.1 General Test Setup Configurations

Configuration	Description
Test Antenna Ports	Until otherwise declared, all TX tests are ONLY performed at the main Transmitter antenna port (e.g. TRXA, TXA and so on) of the EUT, and all RX tests are ONLY performed at the main Receiver antenna port (e.g. TRXA, RXA and so on) of the EUT.
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

5.4.2 Test Setup 1



5.4.3 Test Setup 2



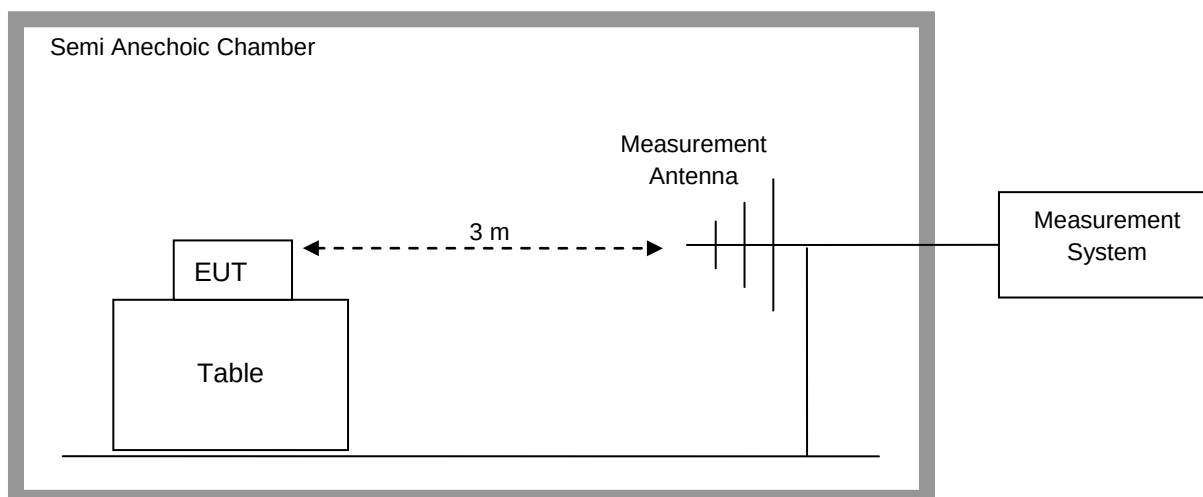
5.4.4 Test Setup 3

NOTE1: Effective radiated power (ERP) or Effective Isotropic radiated power (EIRP) refers to the EUT radiation power output, assuming all emissions are radiated from half-wave dipole antennas or horn antennas.

NOTE2: The EUT was set on insulator 80cm above the Ground Plane. The setup and test methods were according to ANSI-TIA-603C 2004. The measurements were carried through with a Rohde and Schwarz Test Receiver and control software.

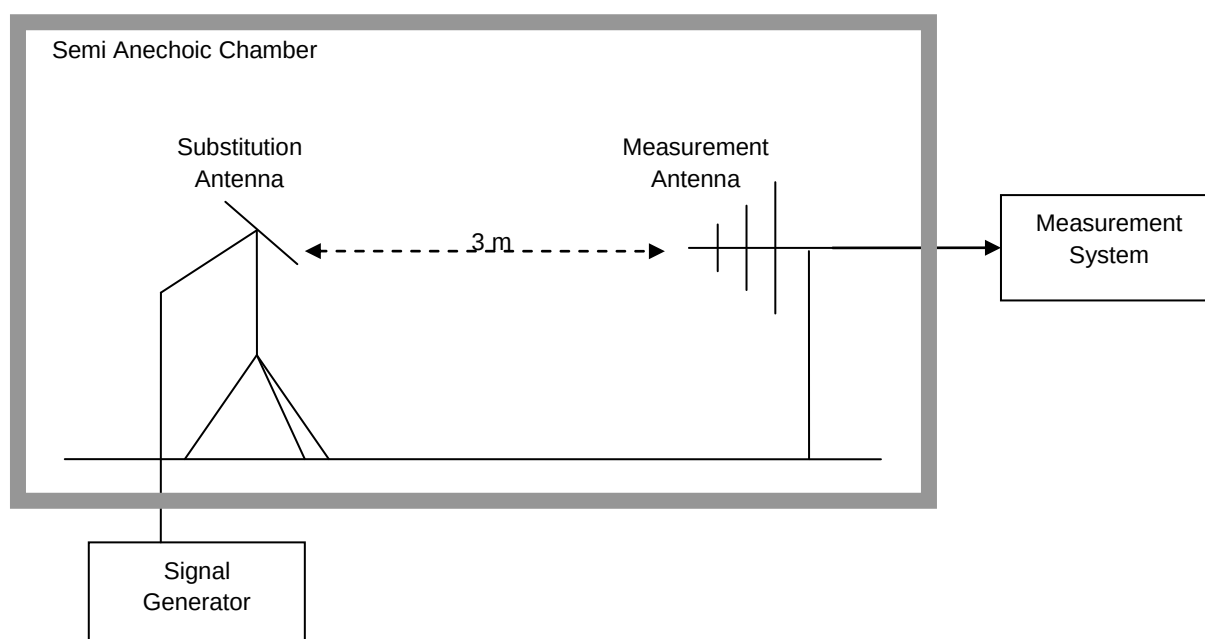
Step 1: Pre-test to find the Maximum ERP or EIRP

1. Connect the test system according to the following figure. EUT is running for 30 minutes before test, and measurement instruments are warming-up for 30 minutes.
2. Set up communication link between Universal radio communication tester and EUT, set EUT working frequency, and control EUT to transmit at maximum power.
3. Set the center frequency of the signal analyzer or receiver to the EUT's operating frequency, the RBW is equal to the emission bandwidth of the signal. Set RMS detector for the test, and the span is equal to 2 times of emission bandwidth, the other settings should remain automatic. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°. The receiver antenna has two polarizations V and H. A portable or small unlicensed wireless device shall be placed on a non-metallic test fixture or other non-metallic support during testing. The supporting fixture shall permit orientation of the EUT in each of three orthogonal (x, y, z) axis positions such that emissions from the EUT are maximized. Measure the EUT maximum RF power and record the result.
4. Changing EUT working frequency and measuring the RF power at channel T, M, B respectively.
Complete the test data.



Step 2: Substitution method to verify the maximum ERP or EIRP

1. Measurement setup is according to the following figure. EUT was substituted by antenna, and the polarization is identical with the test antenna; the signal generator was connected to the substitution antenna.
2. The radiated output power, measured by signal analyzer set, is the same as recorded in above. Then this power level is matched by a signal from a calibrated signal generator which is substituted for EUT. The power supplied by the generator is then equal to the ERP or EIRP after corrected by the antenna gain and cable loss.



5.5 Test Conditions

Test Case	Test Conditions	
Transmitter Output Power	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1 & Test Setup 3
	Detector	RMS
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2
Modulation Characteristics	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	RF Channels (TX)	M
	Test Mode	TM1/TM2
Occupied Bandwidth	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2
Band Edges Compliance	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	RMS
	RF Channels (TX)	L, H
	Test Mode	TM1/TM2
Spurious Emission at Antenna Terminals	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2
Field Strength of Spurious Radiation	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 3
	Detector	PK
	RF Channels (TX)	M
	Test Mode	TM1/TM2
Frequency Stability	Test Configuration	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) VL, VN,VH Voltage at Ambient Temperature.
	Test Setup	Test Setup 2
	RF Channels (TX)	M
	Test Mode	TM1/TM2

6 Main Test Instruments

Table 3 Main Test Equipments

Equipment Description	Manufacturer	Model	Serial Number	Calibrated until
Power supply	KEITHLEY	2303	1288003	Sep.27,2012
Universal Radio Communication Tester	R&S	CMU200	117341	Jan.12.2013
Universal Radio Communication Tester	Agilent	E5515C	MY50260239	Aug.31,2012
Spectrum Analyzer	Agilent	E4440A	MY49420179	Jul.17,2013
Signal Analyzer	R&S	FSQ31	200021	Sep.27,2012
Temperature Chamber	WEISS	WKL64	24600294	Feb.13,2013
Signal generator	Agilent	E8257D	MY49281095	Jul.09.2013
Spectrum analyzer	R&S	FSU3	200474	Mar., 05, 2013
Spectrum analyzer	R&S	FSU43	100144	Mar., 05, 2013
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100304	Apr., 05, 2013
Double-Ridged Waveguide Horn Antenna (1G~18GHz)	R&S	HF907	100391	Apr., 05, 2013
Trilog Broadband Antenna (30M~3GHz)	SCHWARZBECK	VULB 9163	9163-521	Jul., 07, 2013
Pyramidal Horn Antenna(26GHz-40GHz)	ETS-Lindgren	3160-10	00123940	Feb., 27, 2013
Pyramidal Horn Antenna(18GHz-26.5GHz)	ETS-Lindgren	3160-09	00125912	Feb.,27, 2013

NOTE: All the test equipment are calibrated once a year.

7 Test Results

No.	Test Item	Test Result
1	Transmitter Output Power	Appendix A
2	Modulation Characteristics	Appendix B
3	Occupied Bandwidth	Appendix C
4	Band Edges Compliance	Appendix D
5	Spurious Emission at Antenna Terminals	Appendix E
6	Radiated Spurious Emissions	Appendix F
7	Frequency Stability	Appendix G
8	Photos of Radiated Spurious Emissions	Appendix H

NOTE: There is no test data in Appendix H, only Photos of Test Setup for Field Strength of Spurious Radiation.

8 Measurement Uncertainty

For a 95% confidence level (k=2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmitter Output Power	Power (dBm)	U =0.39 dB
Occupied Bandwidth	Magnitude (%)	U=0.2%
Band Edge Compliance	Disturbance Power (dBm)	U=2.0 dB
Conducted Spurious Emissions	Disturbance Power (dBm)	U=2.0 dB
Field Strength of Spurious Radiation	ERP (dBm)	U=4.6 dB (30 MHz – 1GHz) U=3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy (ppm)	U=0.21 ppm

-----The END-----



Appendix A

Transmitter Output Power According to FCC Part 2.1046 & Part 22.913



Conducted Power of Transmitter

	RF Output Power (Conducted)					
TEST CONDITIONS	Channel128(L)		Channel192(M)		Channel251(H)	
	824.2MHz		837.0MHz		848.8MHz	
	dBm		dBm		dBm	
T_{nom} / V_{nom}	Measured	Limit	Measured	Limit	Measured	Limit
TM1	33.15	38.5	32.98	38.5	32.62	38.5
TM2	27.92	38.5	27.73	38.5	27.41	38.5



Effective Radiated Power of Transmitter (ERP)

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (ERP)	FCC limit [dBm]	Result
							[dBm]		
TM1	824.2	31.75	Dipole Ant.	35.13	-2.75	0.6	31.78	38.5	Pass
TM1	837.0	31.58	Dipole Ant.	35.03	-2.87	0.6	31.56	38.5	Pass
TM1	848.8	31.22	Dipole Ant.	34.70	-2.85	0.6	31.25	38.5	Pass
TM2	824.2	26.52	Dipole Ant.	29.88	-2.75	0.6	26.53	38.5	Pass
TM2	837.0	26.33	Dipole Ant.	29.81	-2.87	0.6	26.34	38.5	Pass
TM2	848.8	26.01	Dipole Ant.	29.53	-2.85	0.6	26.08	38.5	Pass

Note: a, For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

b, SGP=Signal Generator Level

-----The END-----



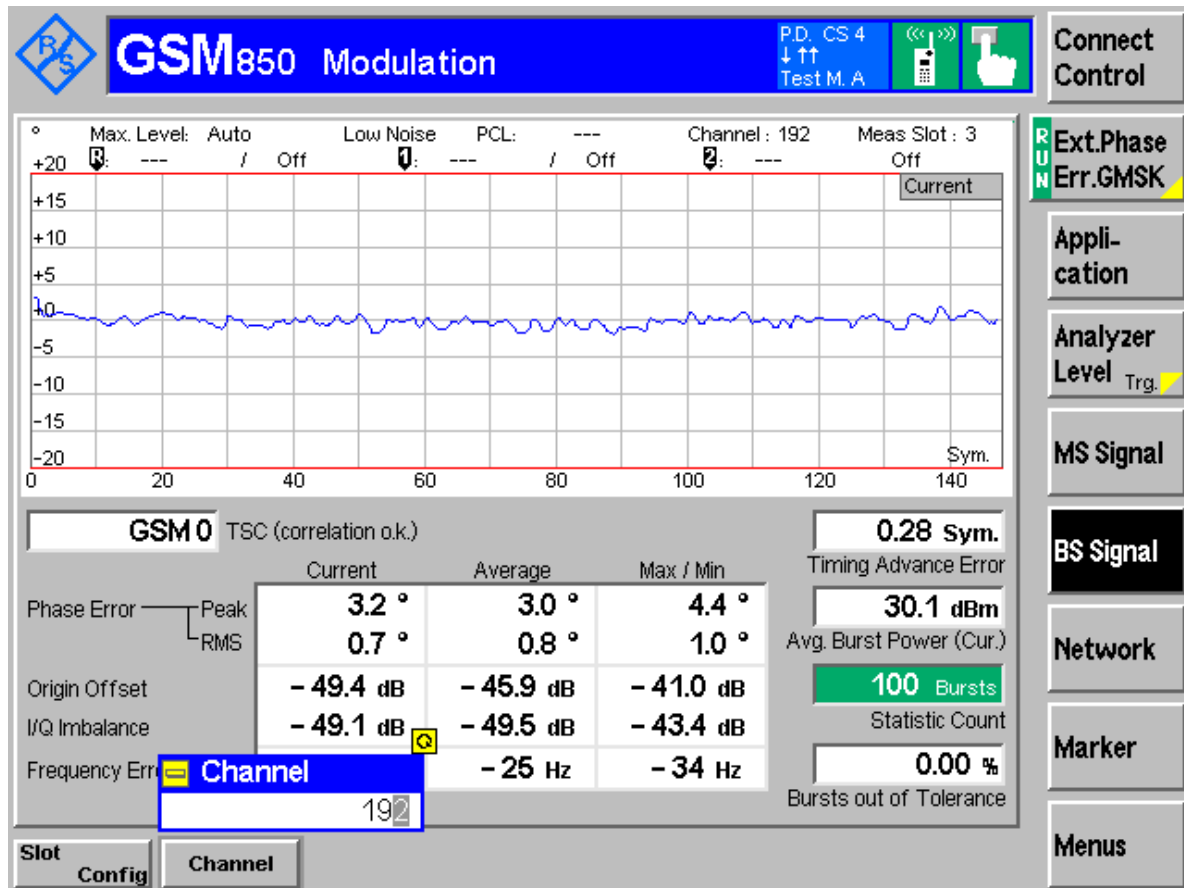
Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & Part22 Subpart H

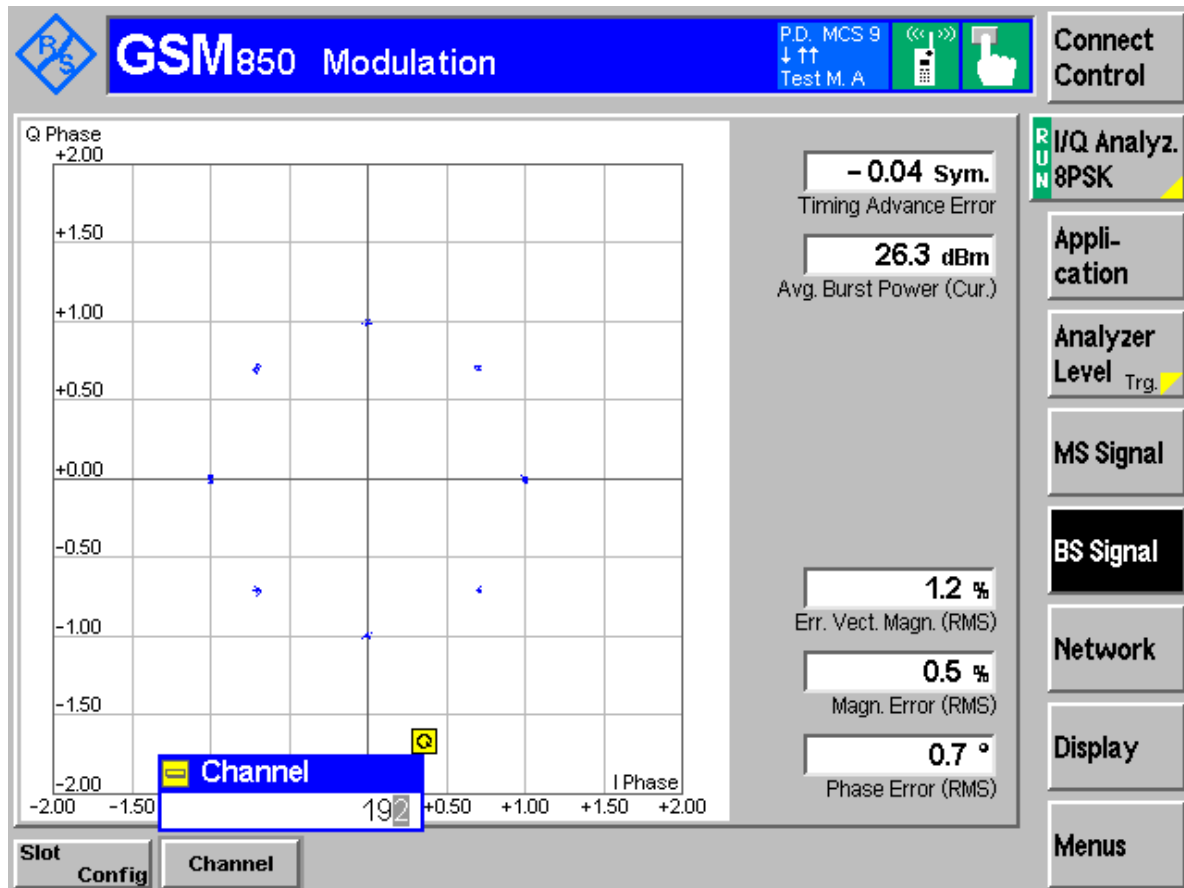


Channel 192 (TM1:GPRS/GSM)





Channel 192 (TM2:EDGE)



-----The END-----



Appendix C

Occupied Bandwidth According to FCC Part 2.1049 & Part 22 Subpart H



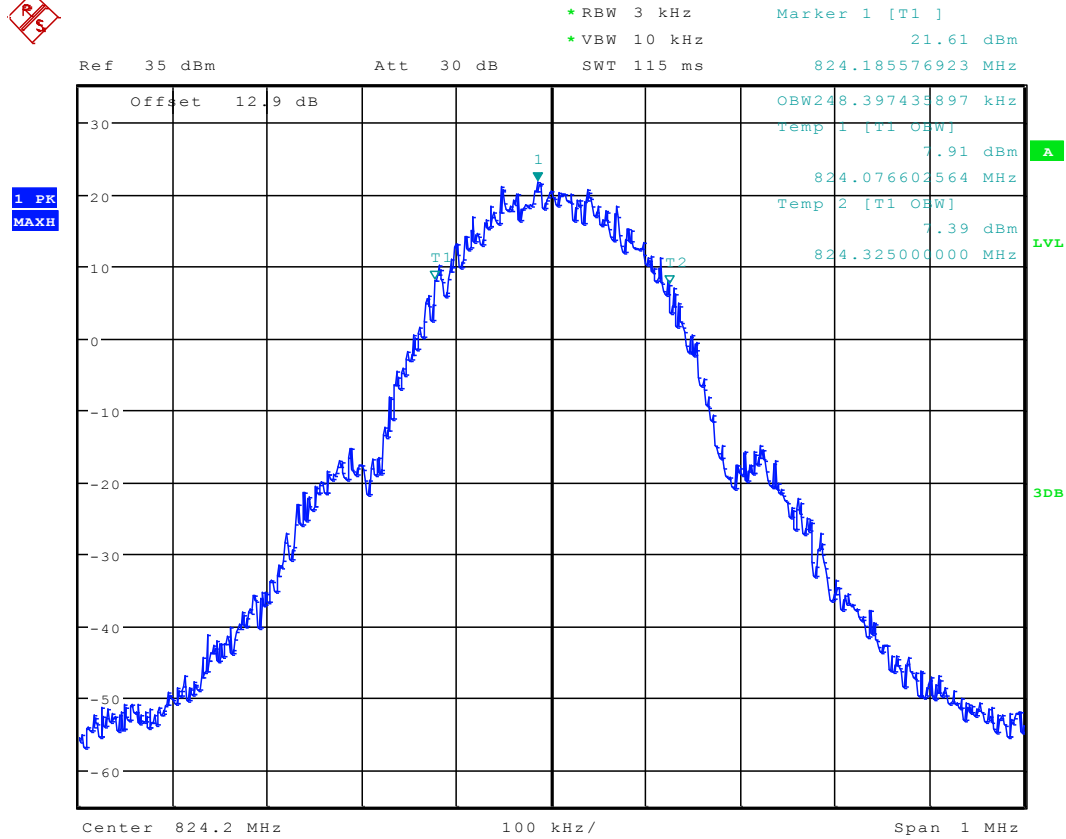
Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [kHz]	Verdict
TM1	128	248.40	Pass
	192	245.19	Pass
	251	243.59	Pass
TM2	128	238.78	Pass
	192	243.59	Pass
	251	237.18	Pass



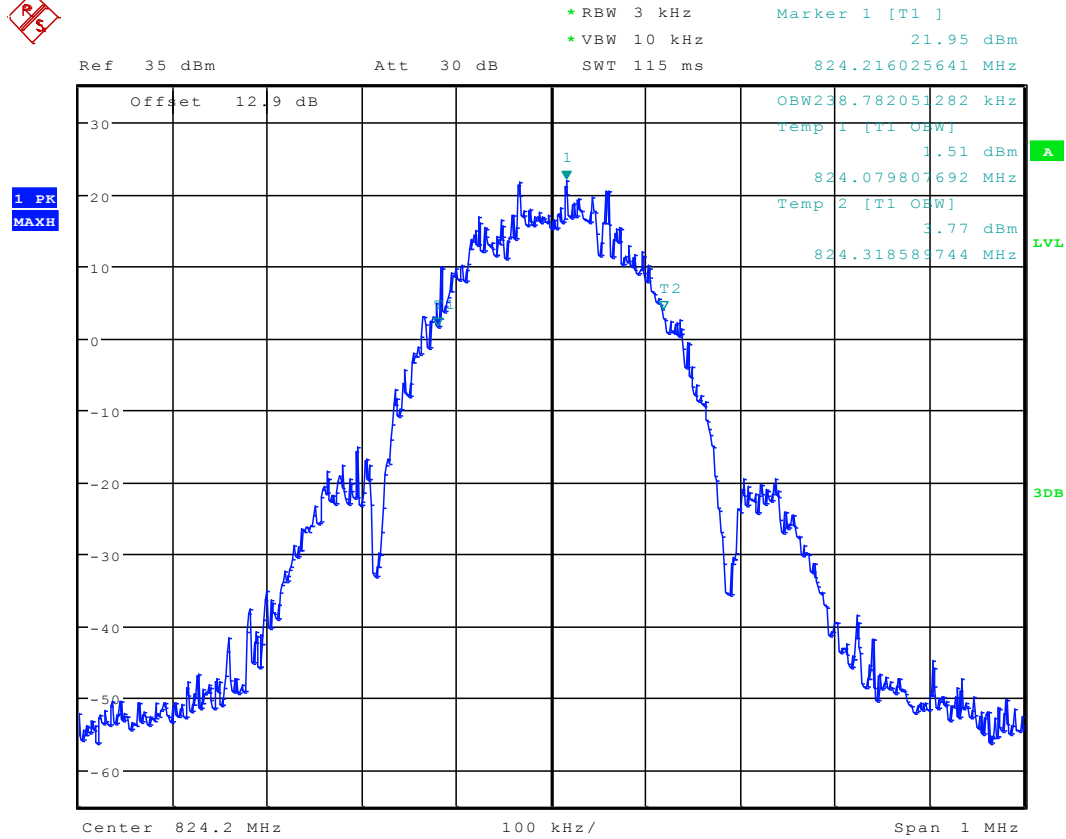
Channel 128 (TM1:GPRS/GSM)



Date: 12.AUG.2012 15:43:08



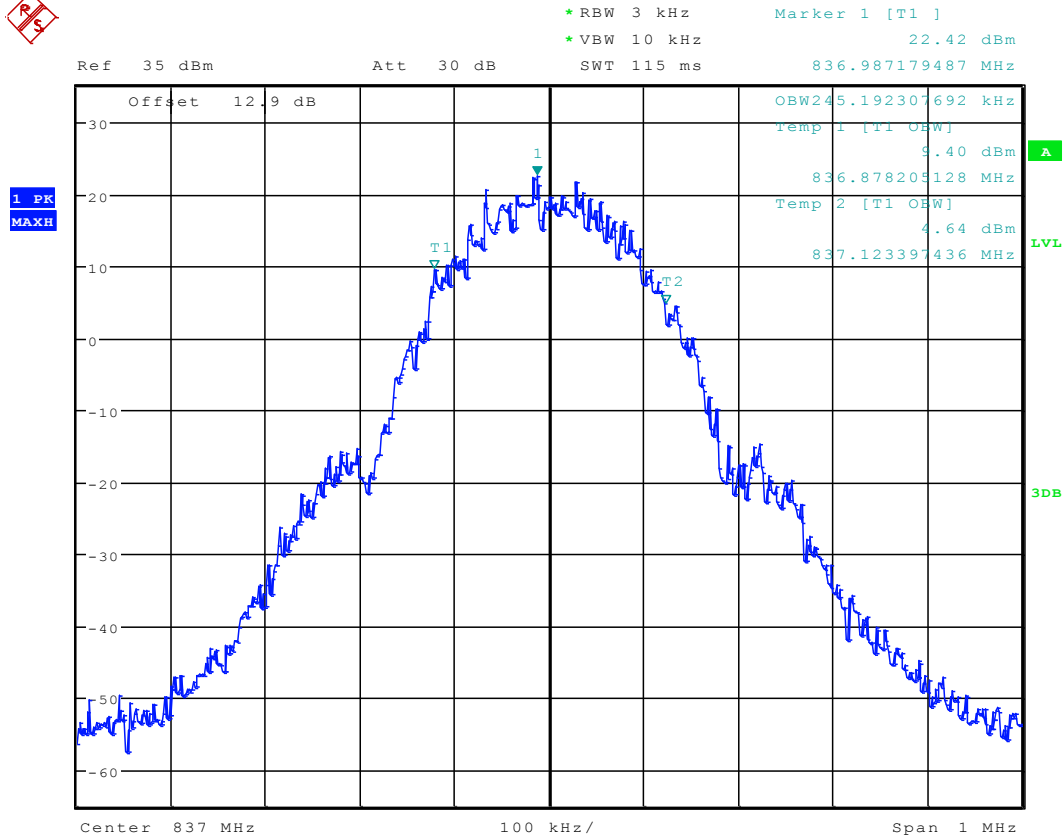
Channel 128 (TM2:EDGE)



Date: 12.AUG.2012 15:51:43



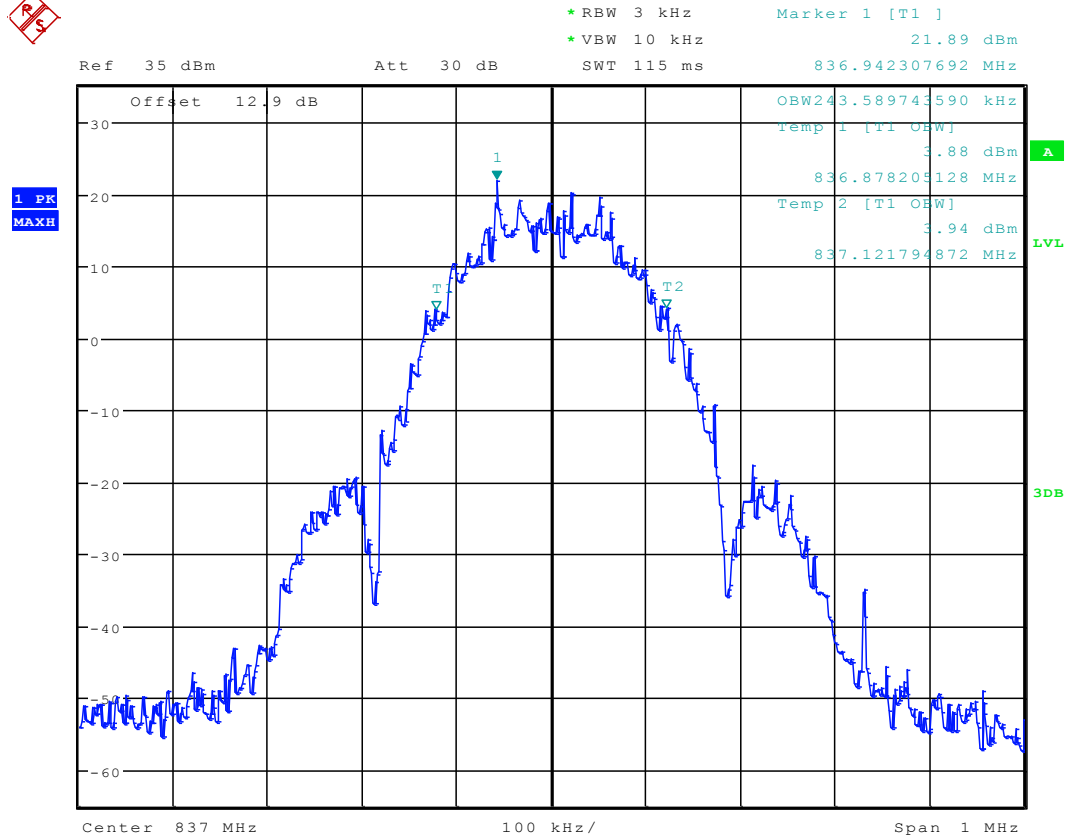
Channel 192 (TM1:GPRS/GSM)



Date: 12.AUG.2012 15:43:22



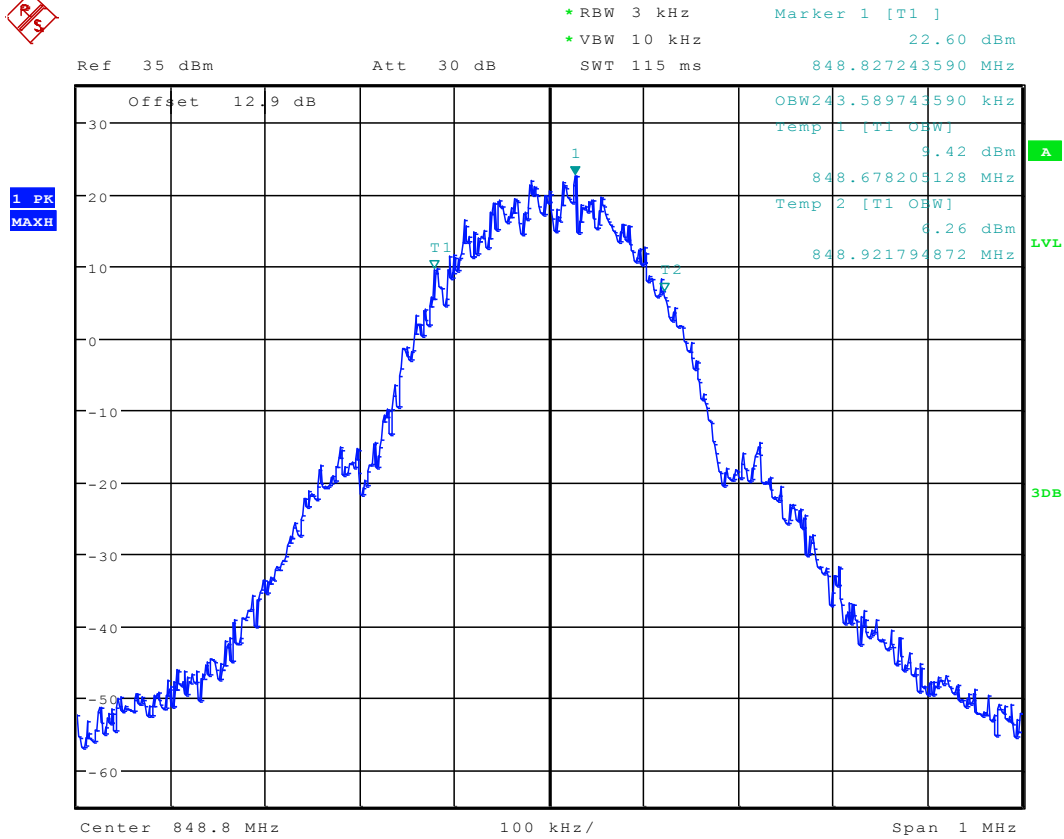
Channel 192 (TM2:EDGE)



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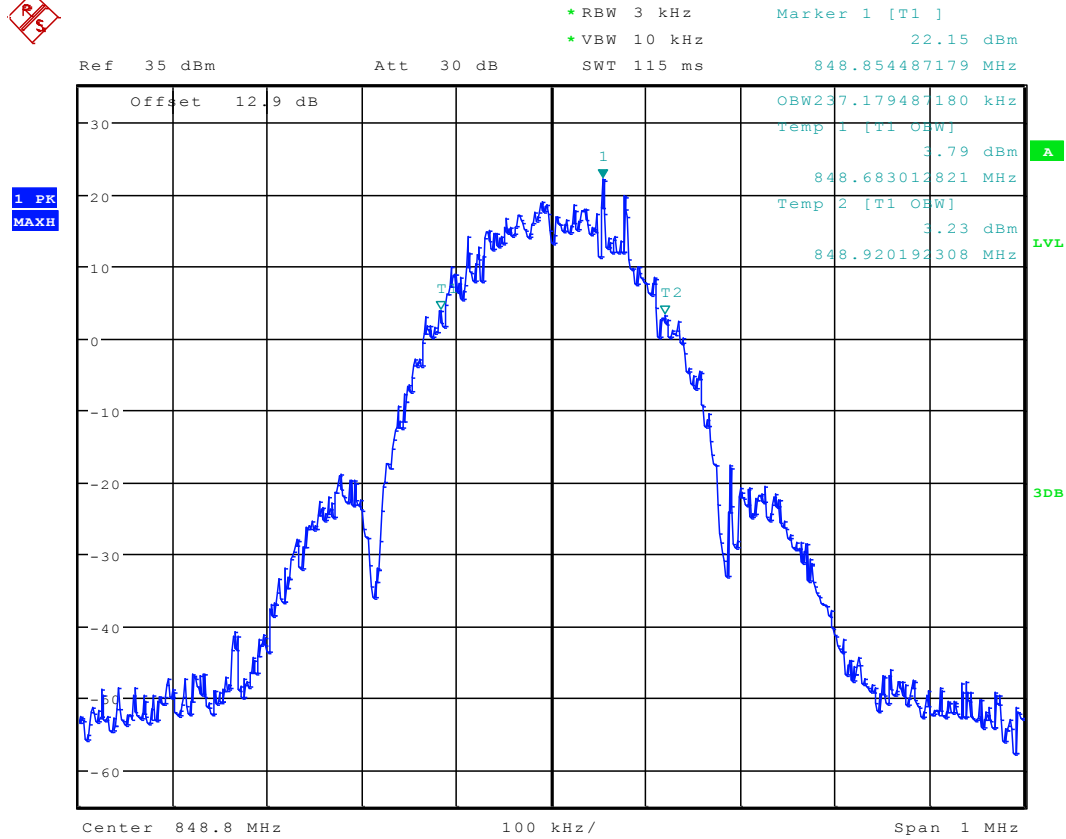
Channel 251 (TM1:GPRS/GSM)



Date: 12.AUG.2012 15:43:35



Channel 251 (TM2:EDGE)



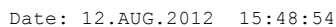
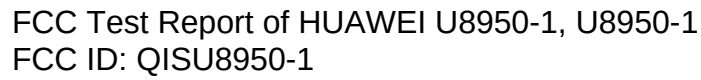
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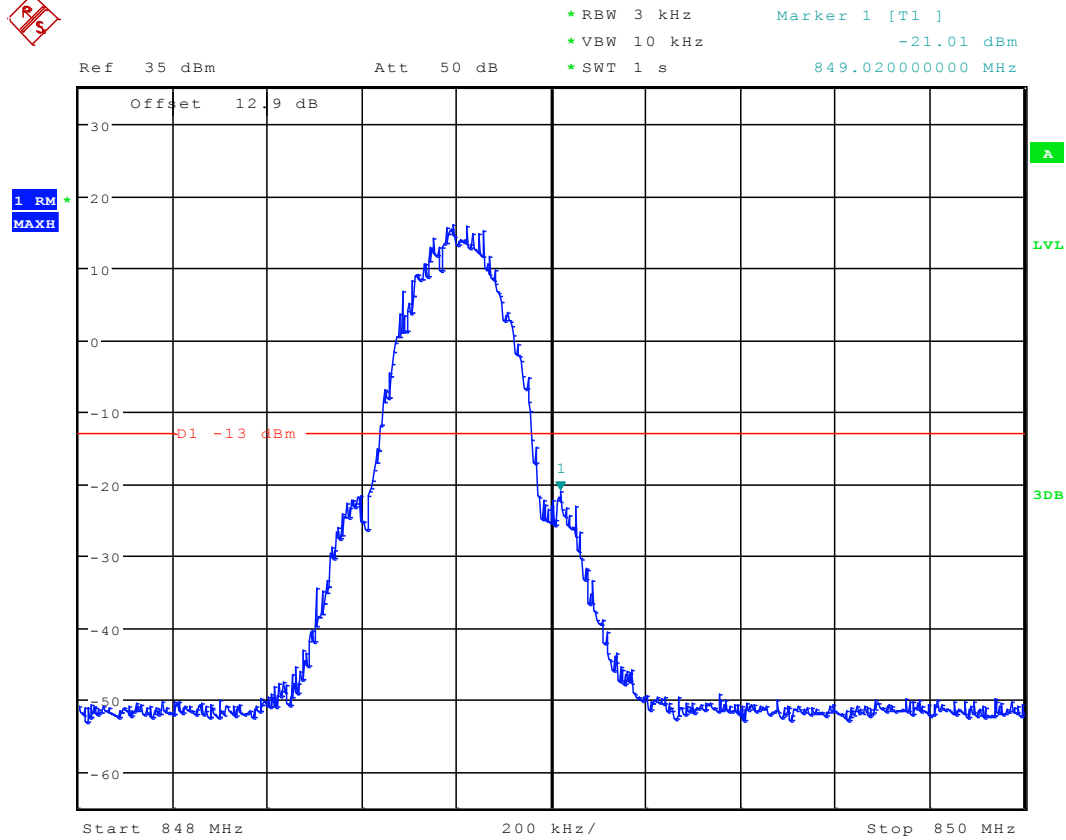
Appendix D

Band Edges Compliance According to FCC Part 2.1051 & Part22 Subpart H





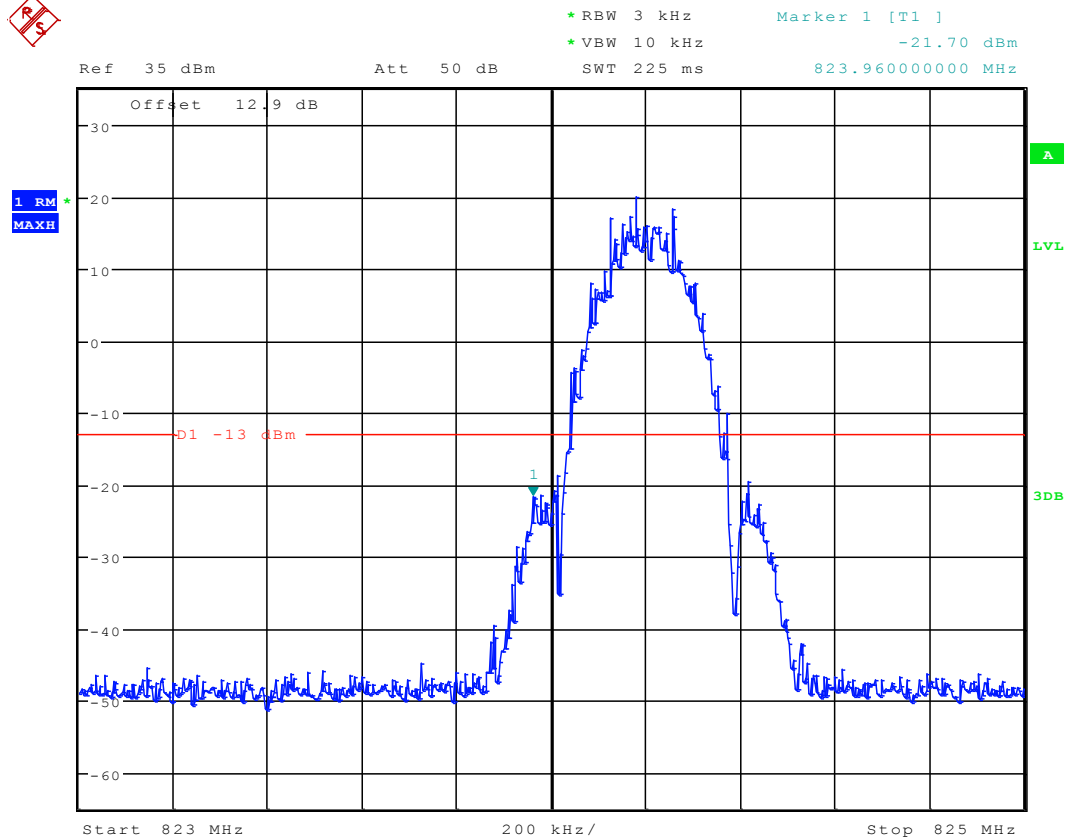
Right Edge Channel 251



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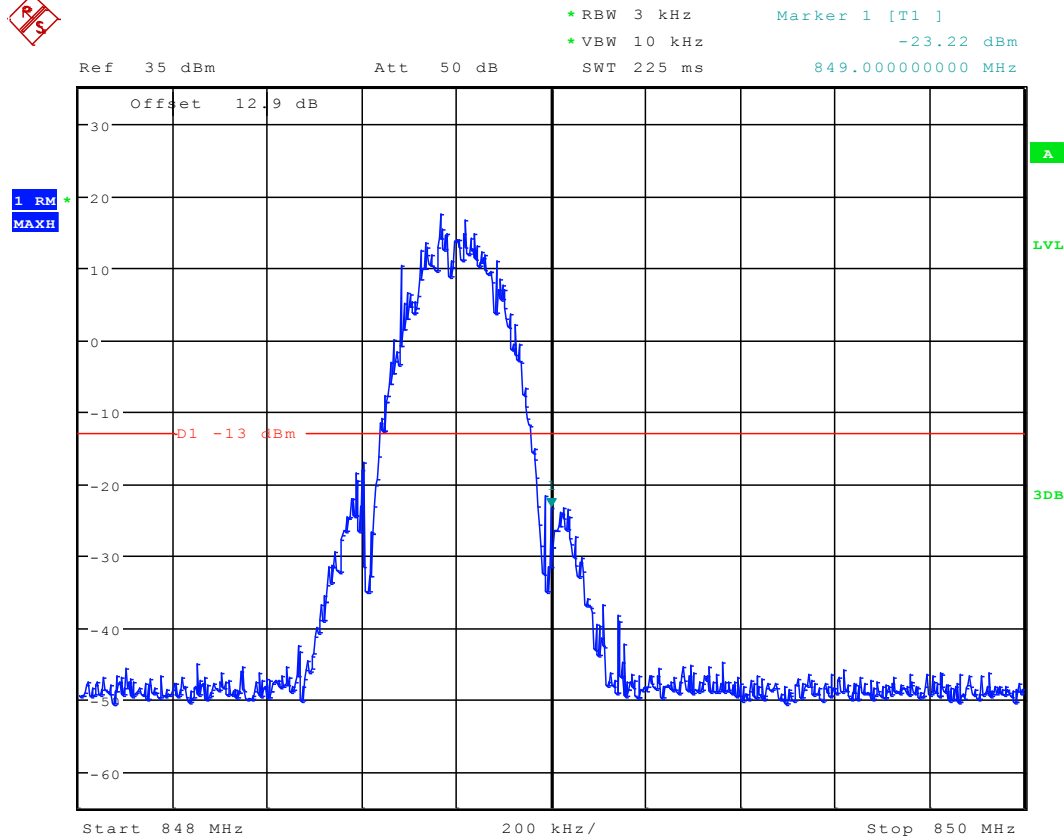
TM2:EDGE Left Edge Channel 128



Date: 12.AUG.2012 15:51:05



Right Edge Channel 251



Date: 12.AUG.2012 15:51:23

The END



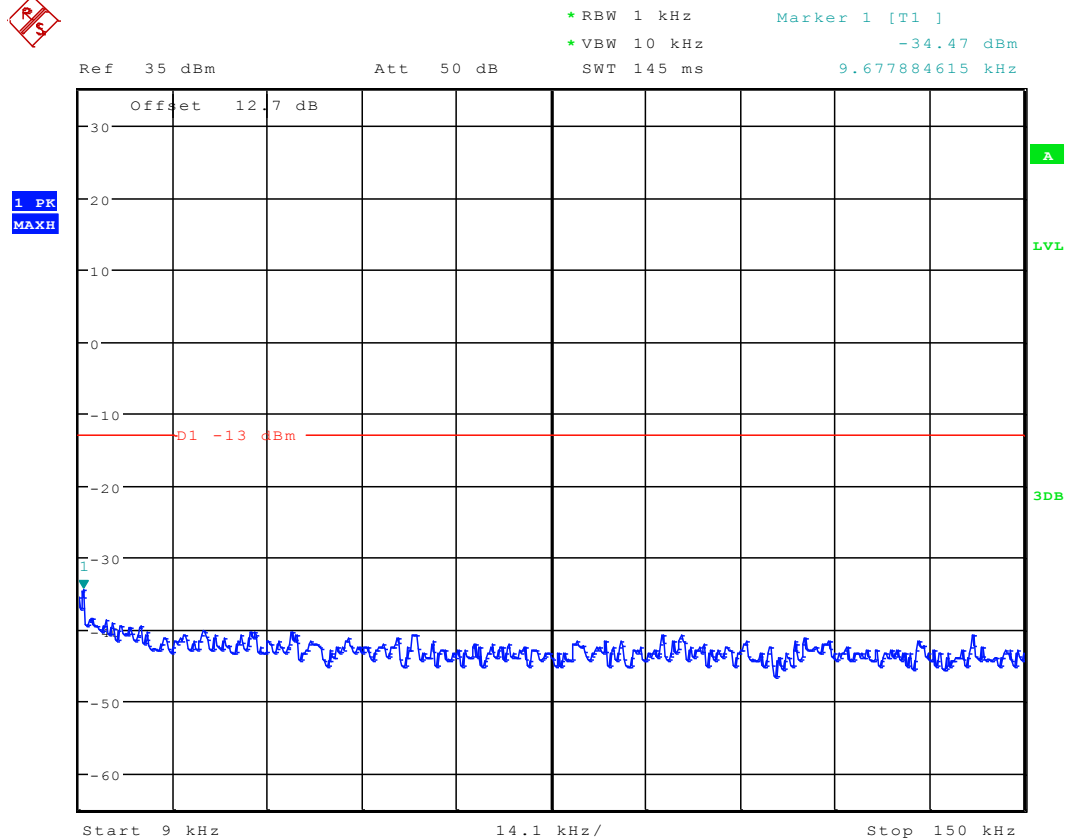
Appendix E

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part22 Subpart H



TM1:GPRS/GSM Channel 128



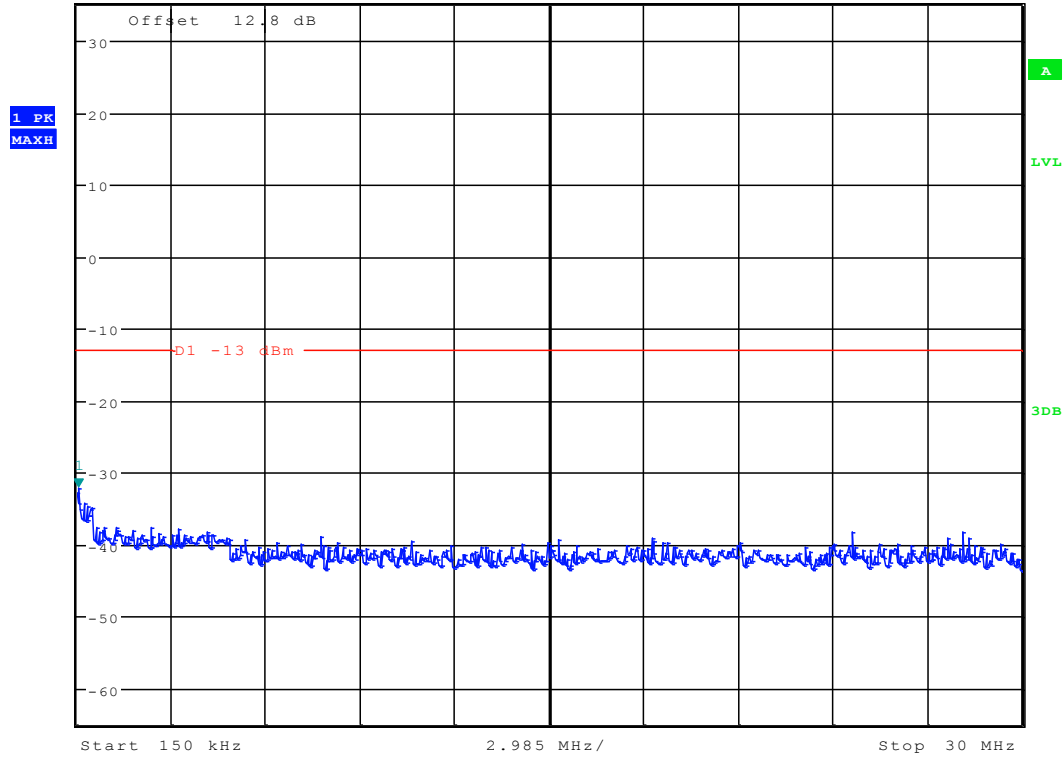
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FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



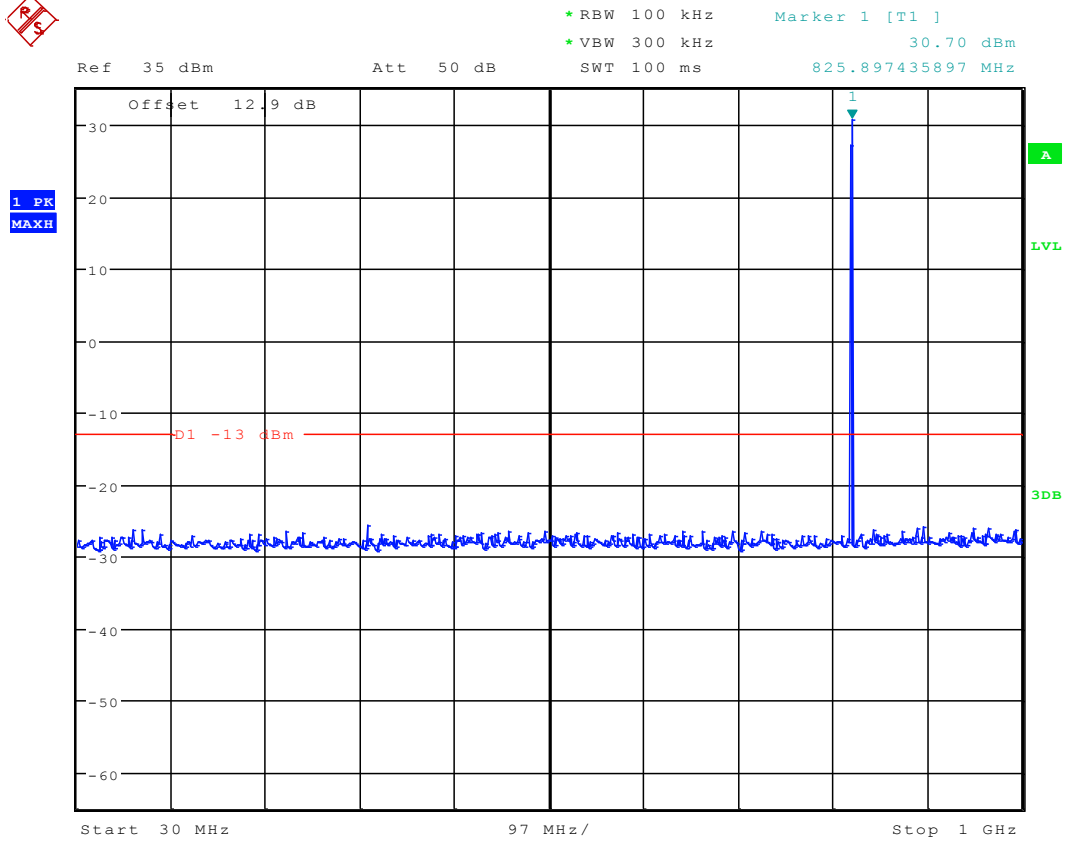
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -32.03 dBm
Ref 35 dBm Att 50 dB SWT 300 ms 197.836538462 kHz



Date: 12.AUG.2012 15:44:34



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



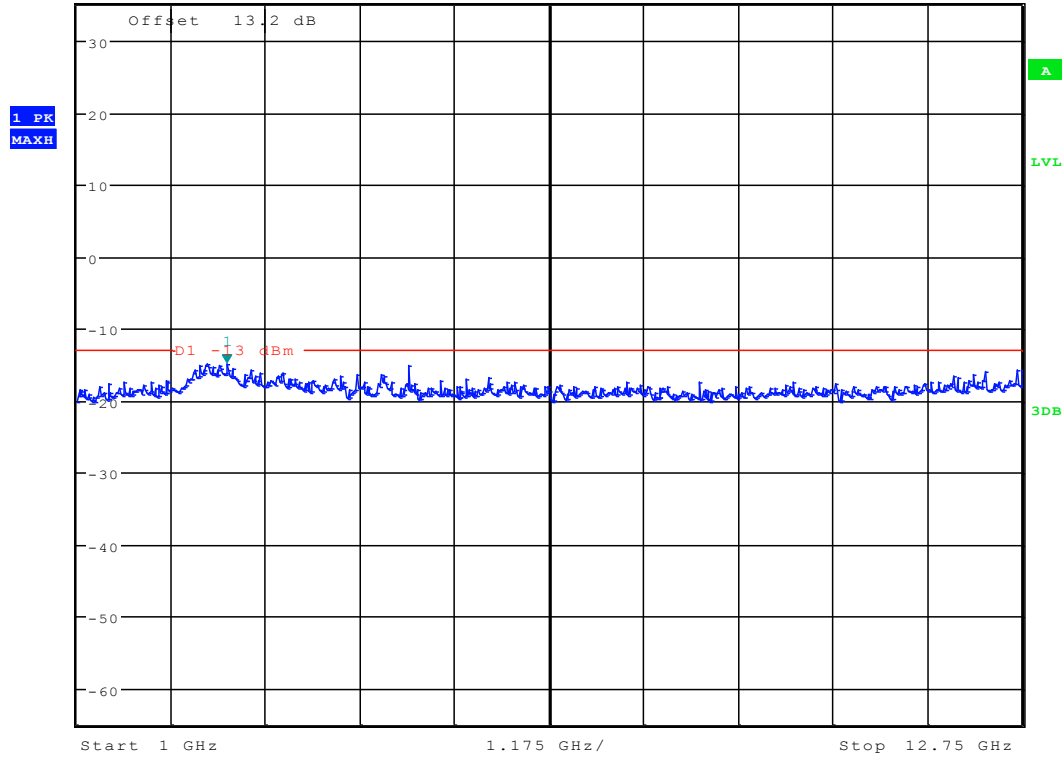
Date: 12.AUG.2012 15:45:18



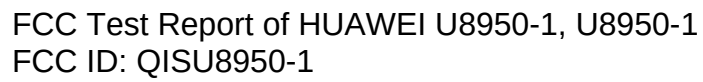
FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -14.87 dBm
Ref 35 dBm Att 50 dB SWT 70 ms 2.864182692 GHz



Date: 12.AUG.2012 15:46:02

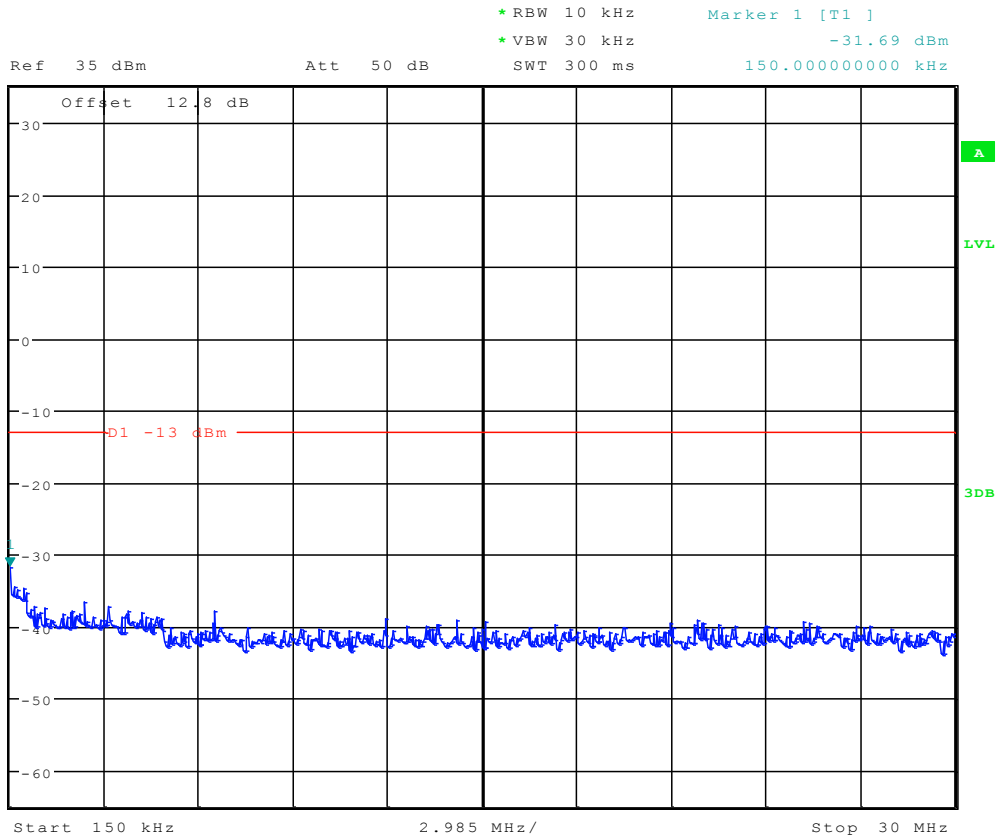




FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



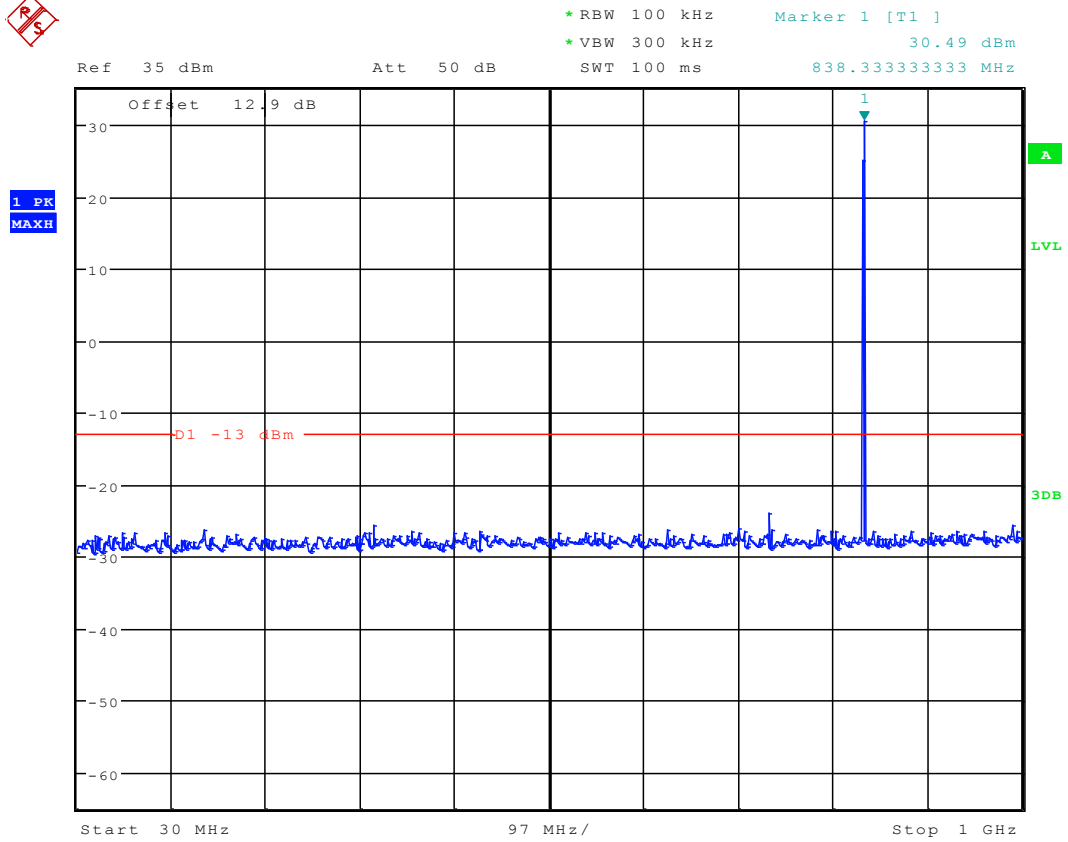
1 PK
MAXH



Date: 12.AUG.2012 15:44:48



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



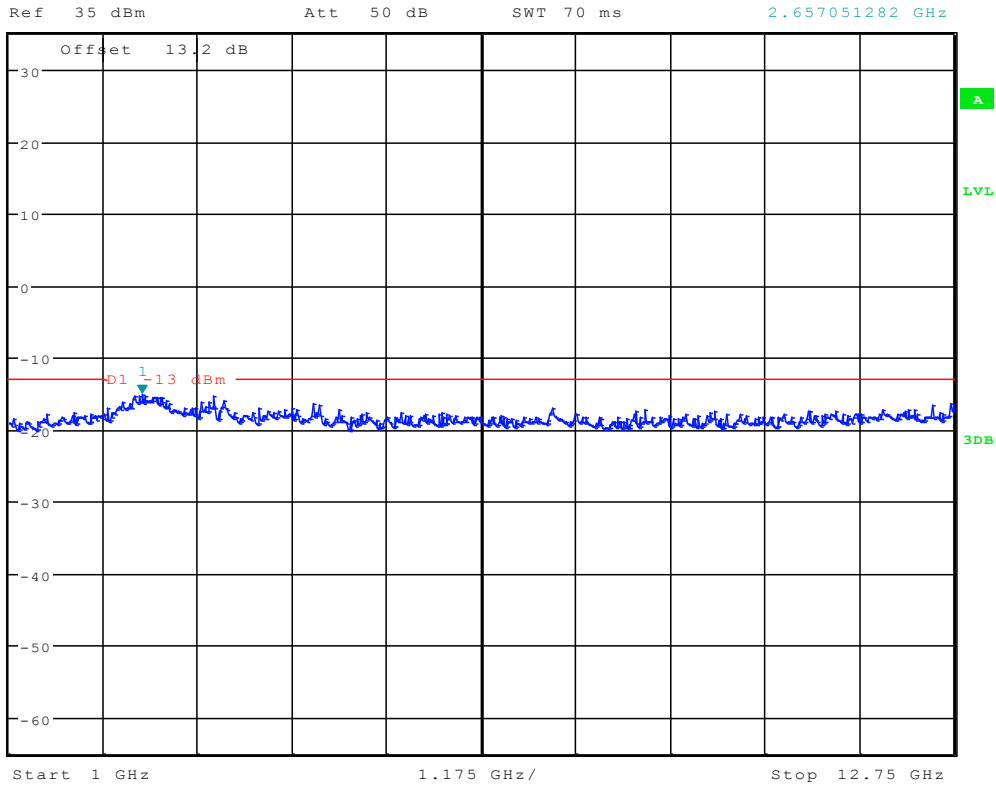
Date: 12.AUG.2012 15:45:32



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



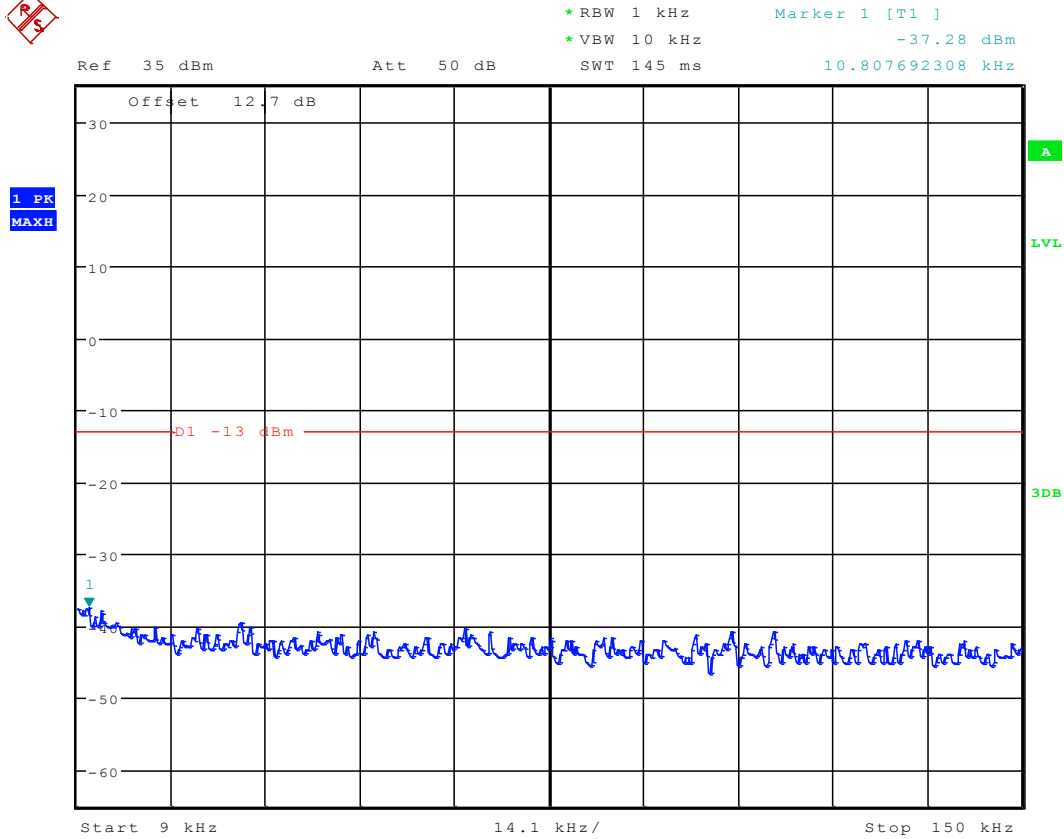
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -15.17 dBm
SWT 70 ms 2.657051282 GHz



Date: 12.AUG.2012 15:46:16



Channel 251



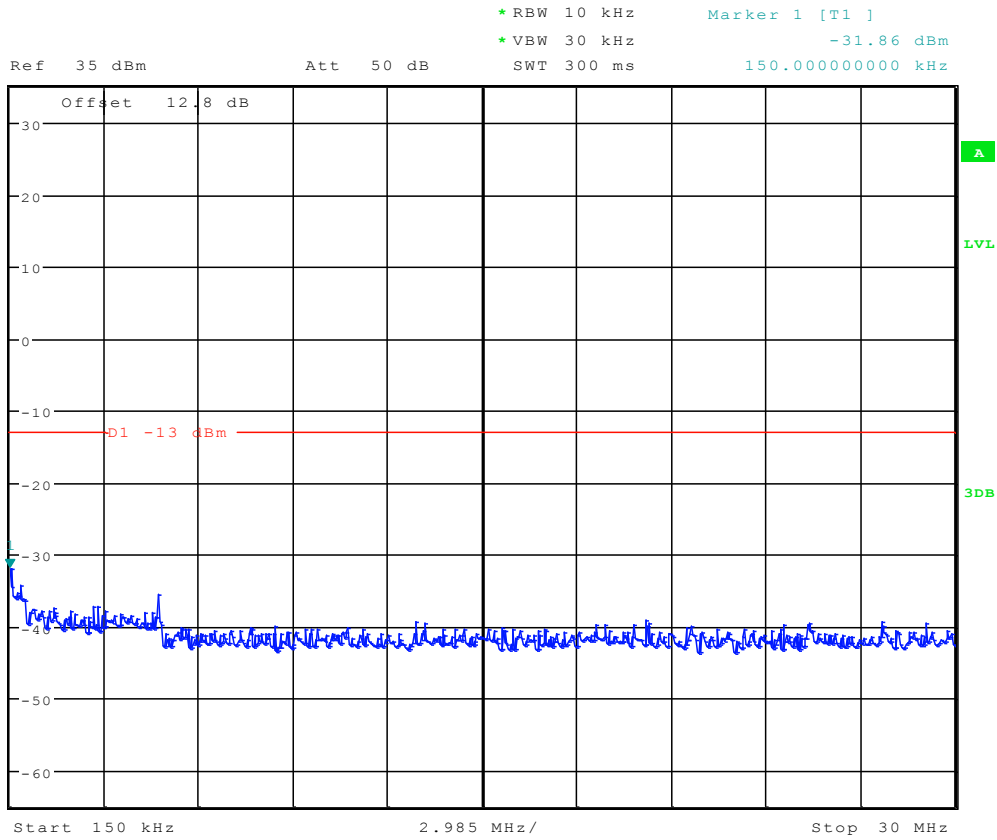
Date: 12.AUG.2012 15:44:19



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



1 PK
MAXH



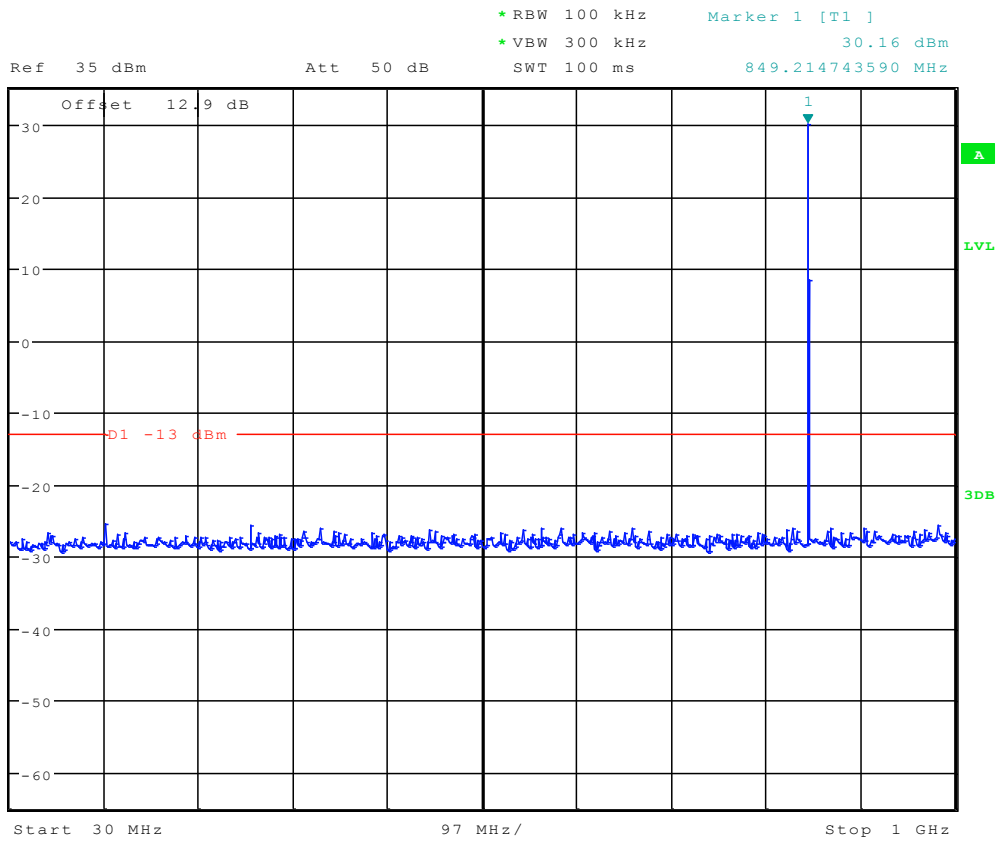
Date: 12.AUG.2012 15:45:03



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



1 PK
MAXH



Date: 12.AUG.2012 15:45:47



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -15.04 dBm
2.449919872 GHz

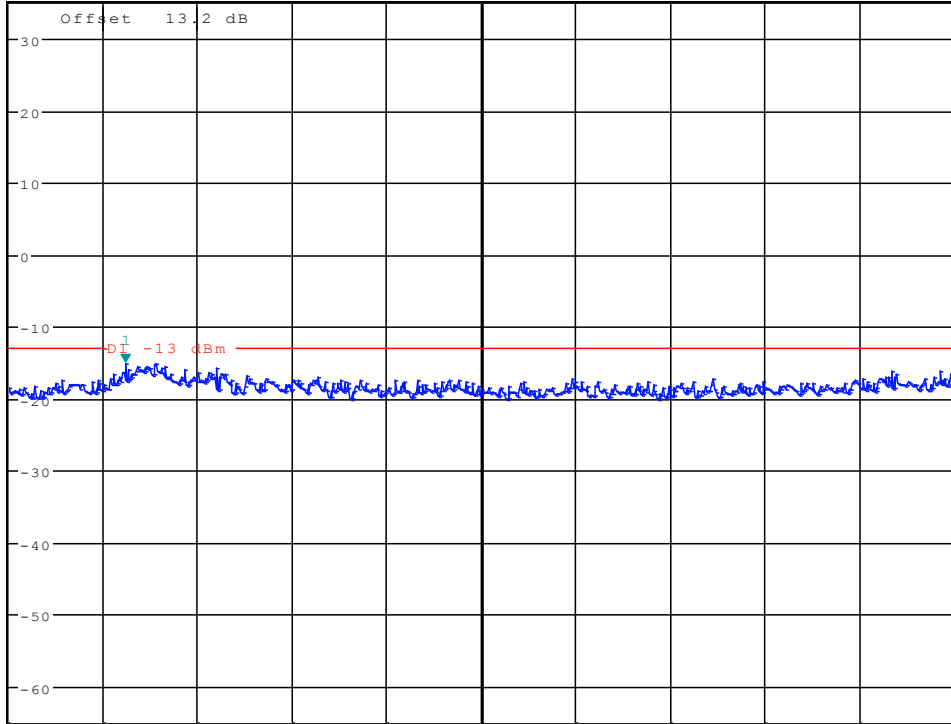
Ref 35 dBm

Att 50 dB

SWT 70 ms

2.449919872 GHz

1 PK
MAXH



Start 1 GHz

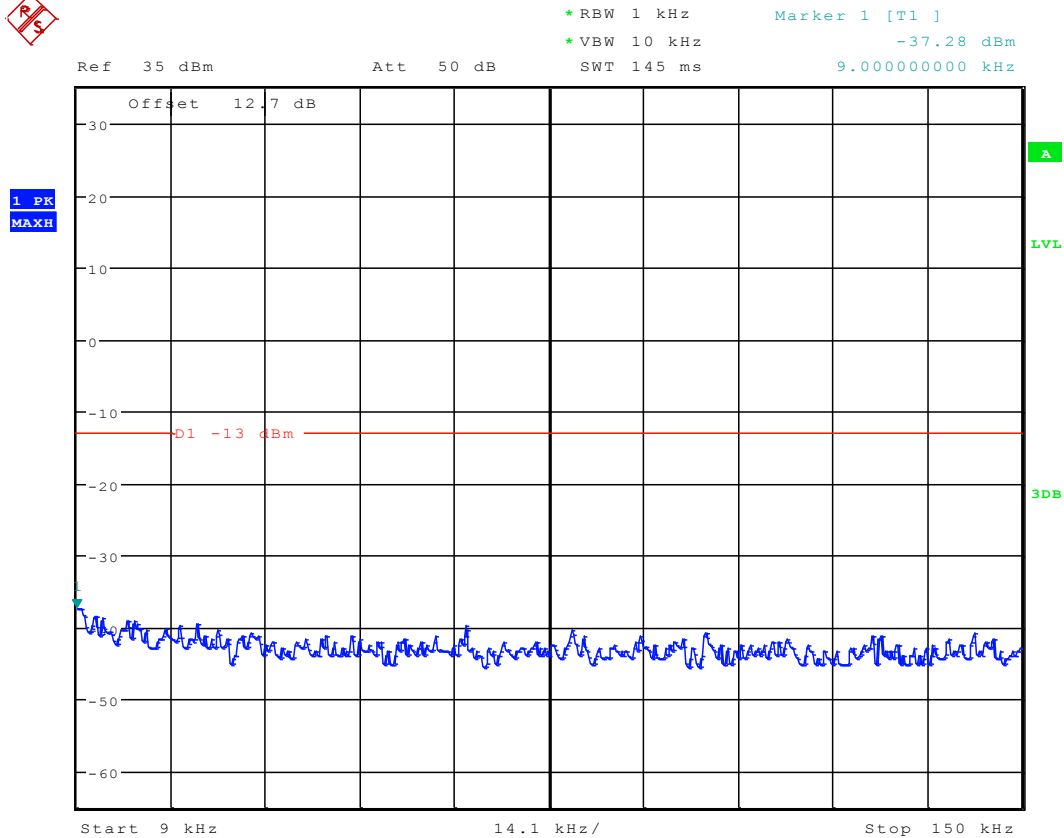
1.175 GHz/

Stop 12.75 GHz

Date: 12.AUG.2012 15:46:30



TM2:EDGE Channel 128



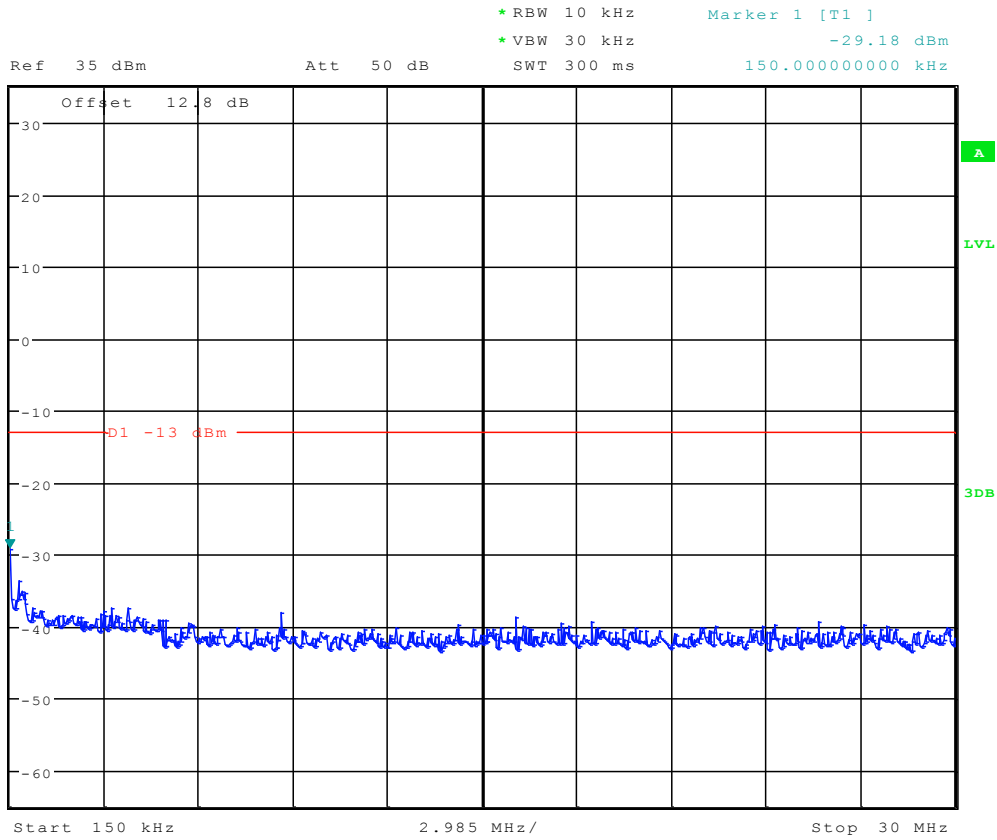
Date: 12.AUG.2012 15:52:25



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



1 PK
MAXH



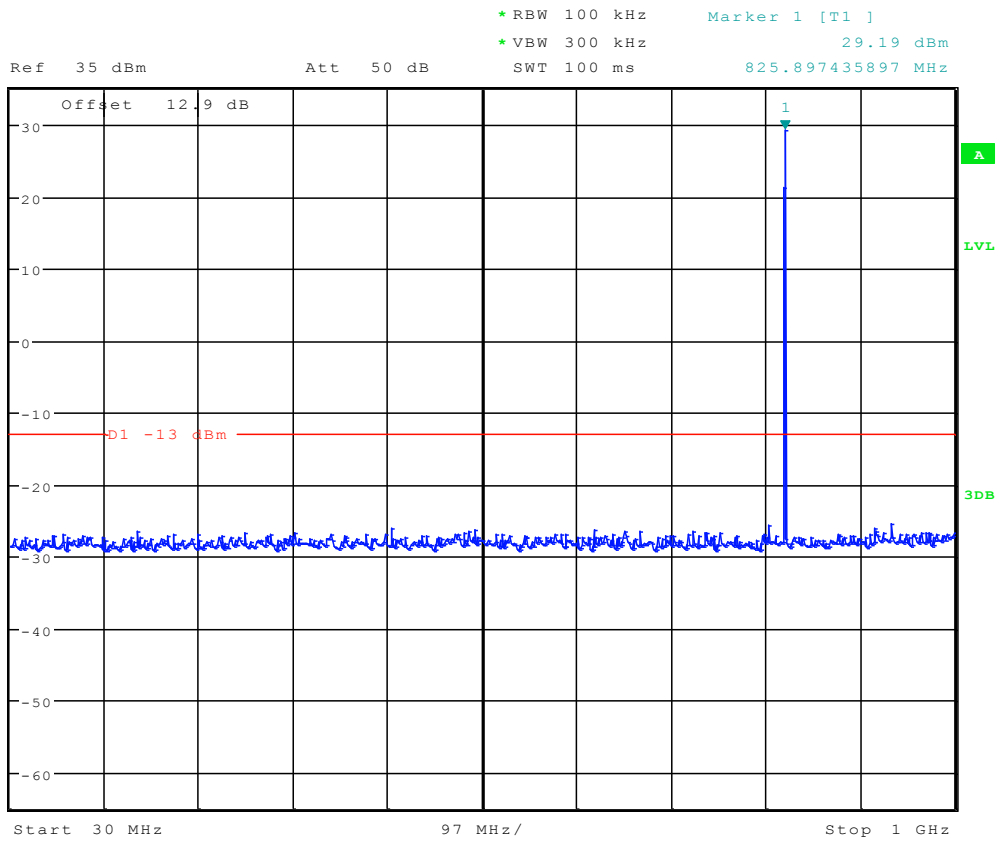
Date: 12.AUG.2012 15:53:08



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



1 PK
MAXH



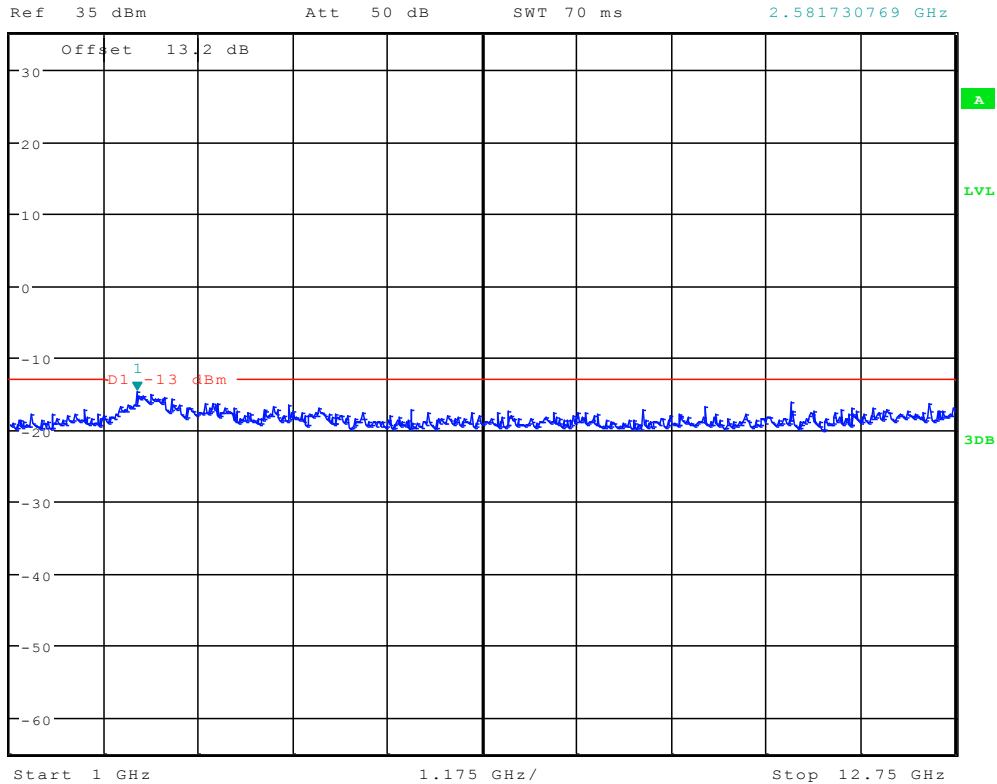
Date: 12.AUG.2012 15:53:52



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



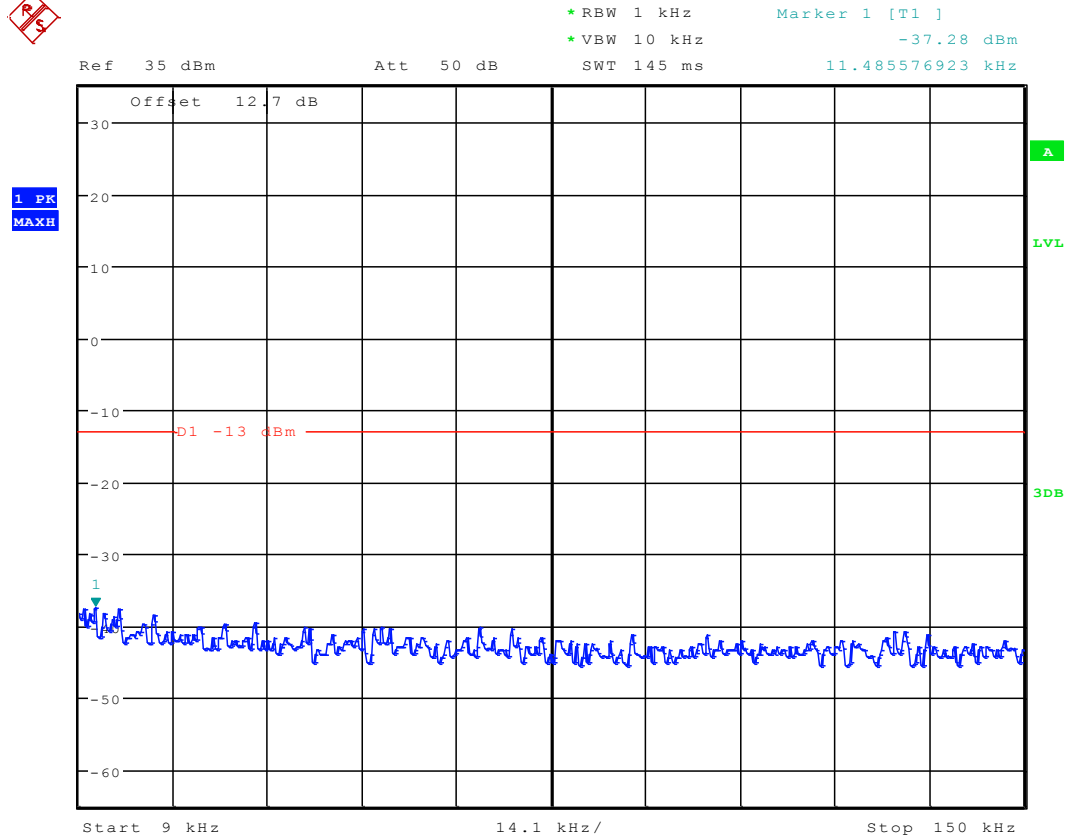
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -14.75 dBm
SWT 70 ms 2.581730769 GHz



Date: 12.AUG.2012 15:54:36



Channel 192



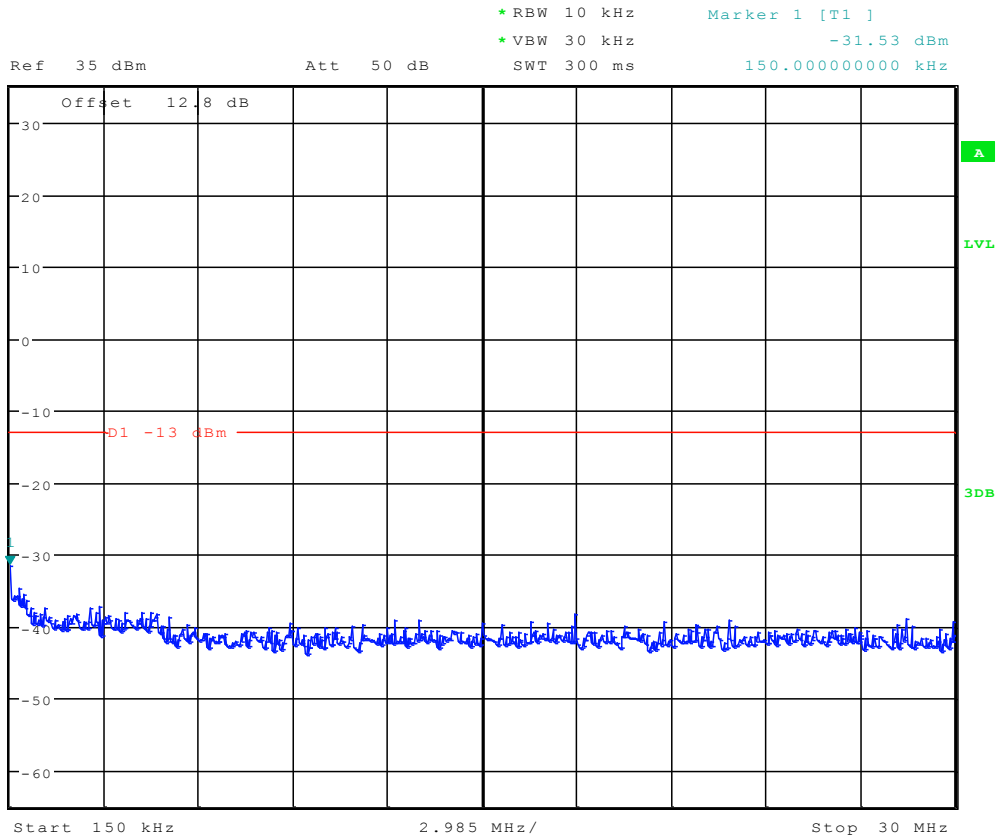
Date: 12.AUG.2012 15:52:39



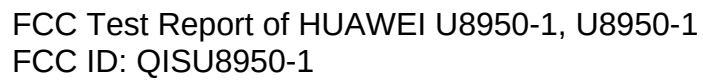
FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



1 PK
MAXH

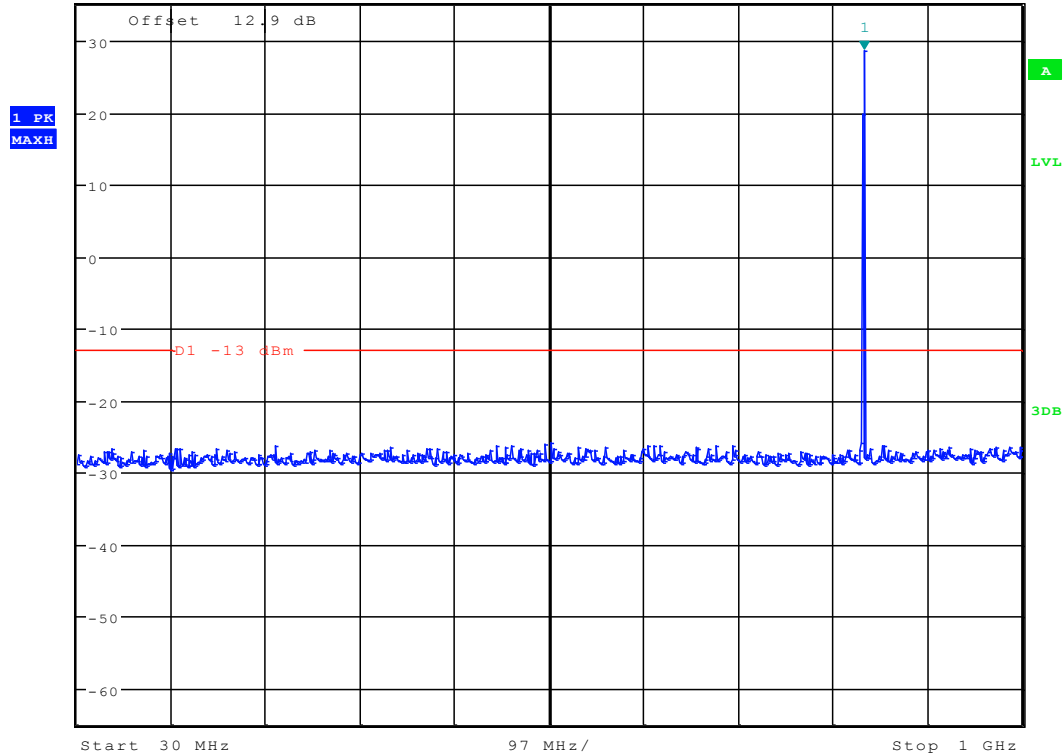


Date: 12.AUG.2012 15:53:23



```
* RBW 100 kHz      Marker 1 [T1 ]
* VBW 300 kHz      28.52 dBm
SWT 100 ms         838.333333333 MHz
```

838.333333333 MHz



Report No:
SYBH(Z-RF)018082012-2007

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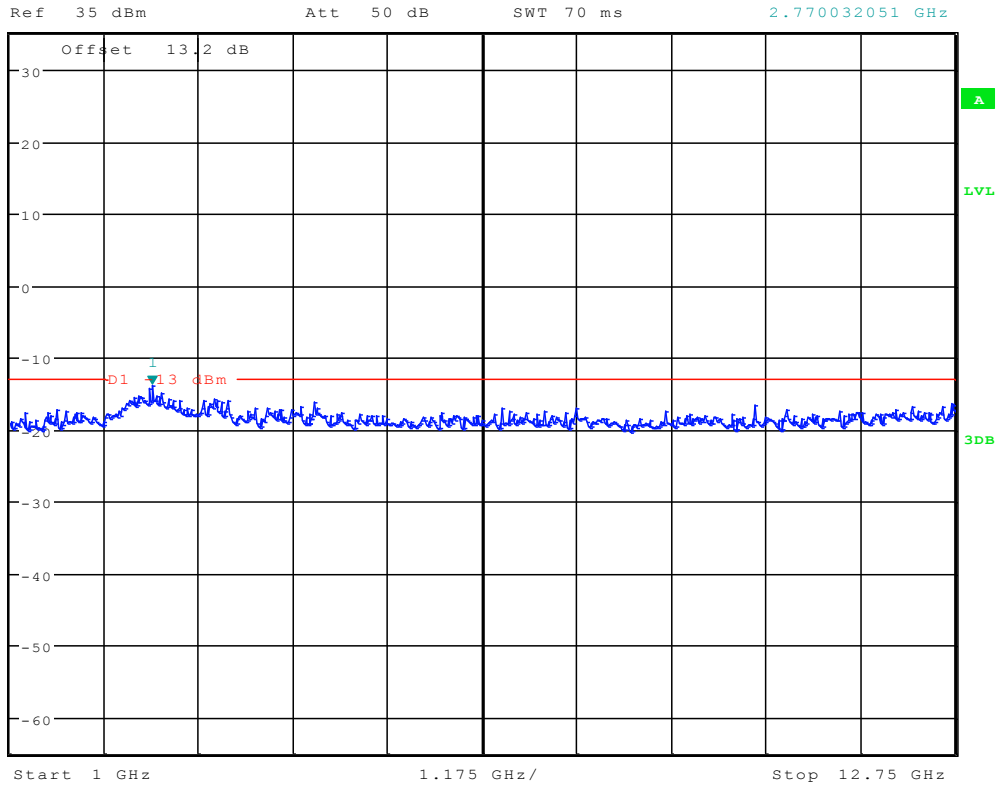
Page20,
Total25



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



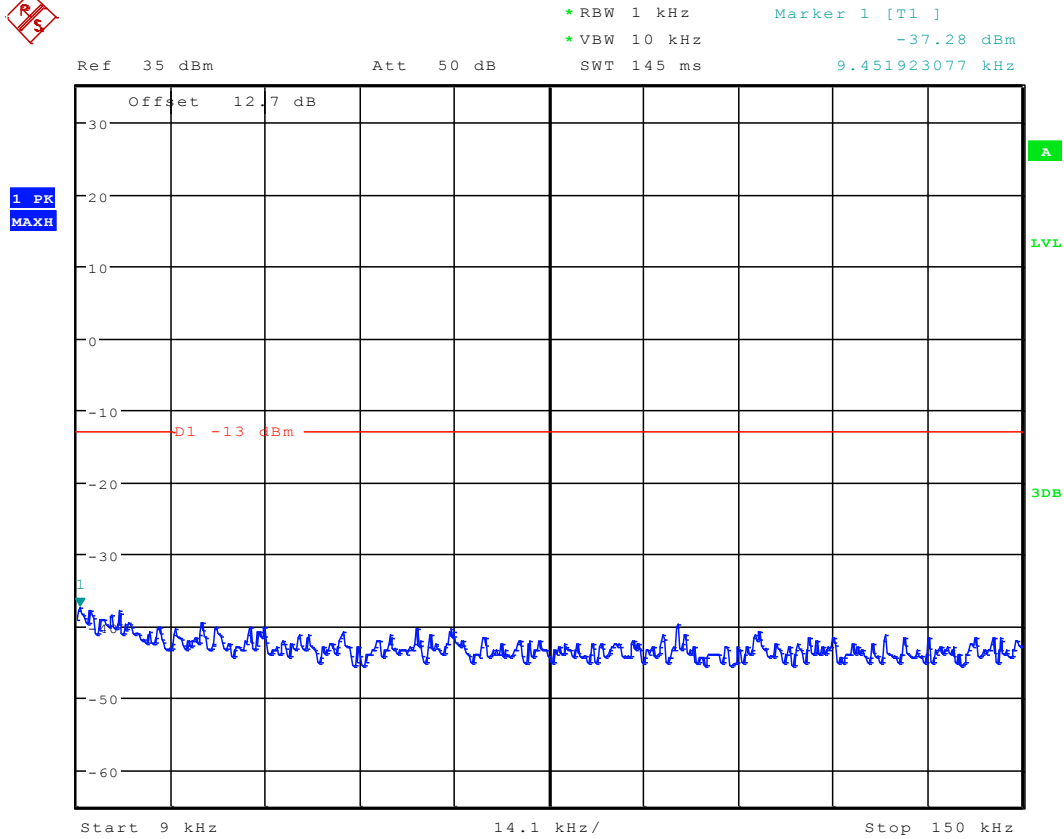
* RBW 1 MHz Marker 1 [T1]
* VBW 3 MHz -13.79 dBm
SWT 70 ms 2.770032051 GHz



Date: 12.AUG.2012 15:54:51



Channel 251



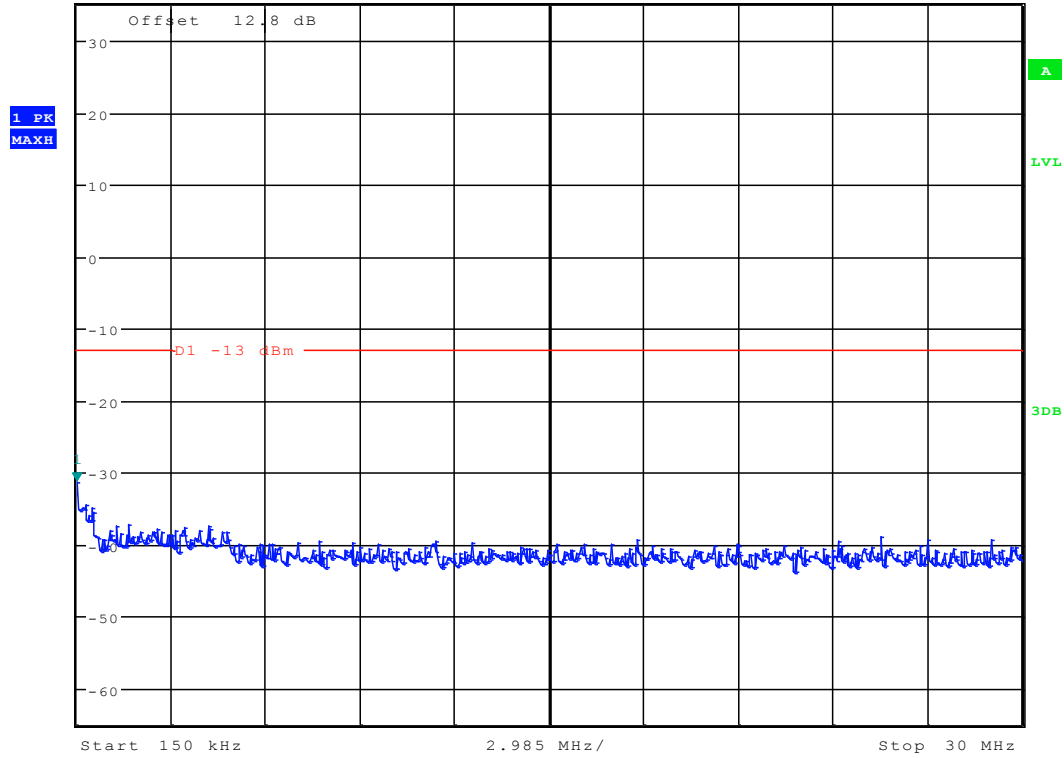
Date: 12.AUG.2012 15:52:54



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



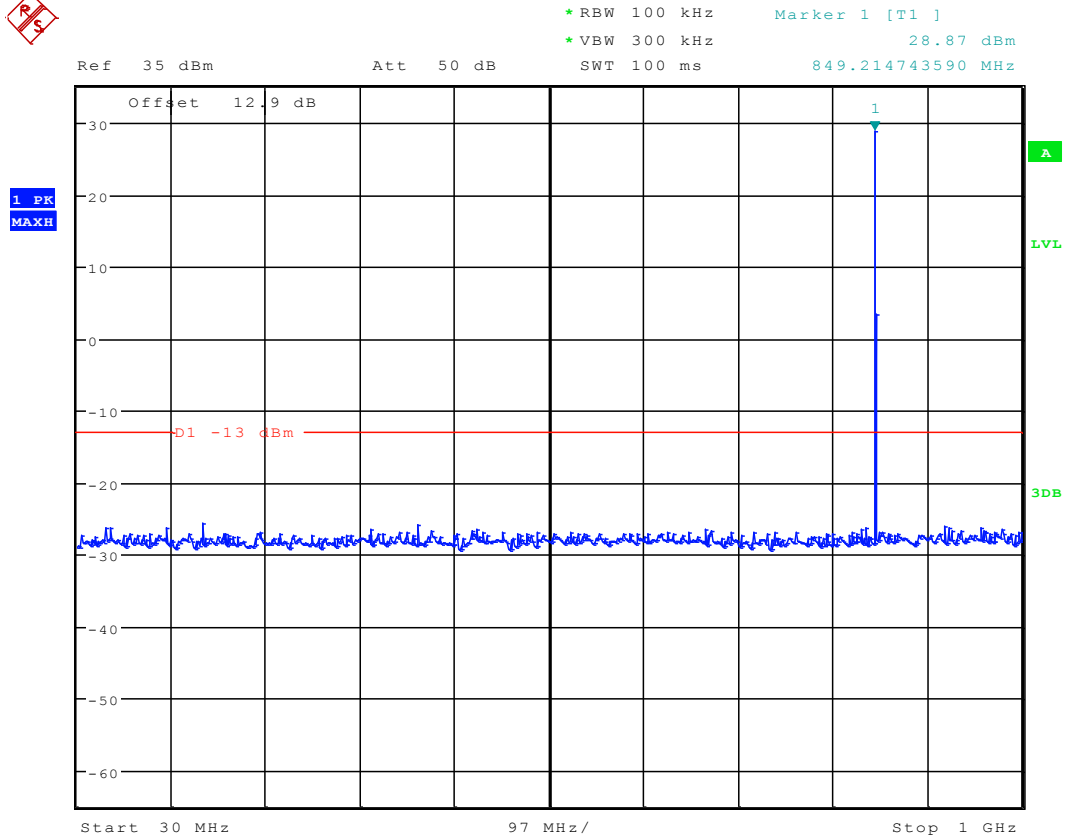
* RBW 10 kHz Marker 1 [T1]
* VBW 30 kHz -31.37 dBm
Ref 35 dBm Att 50 dB SWT 300 ms 150.000000000 kHz



Date: 12.AUG.2012 15:53:37



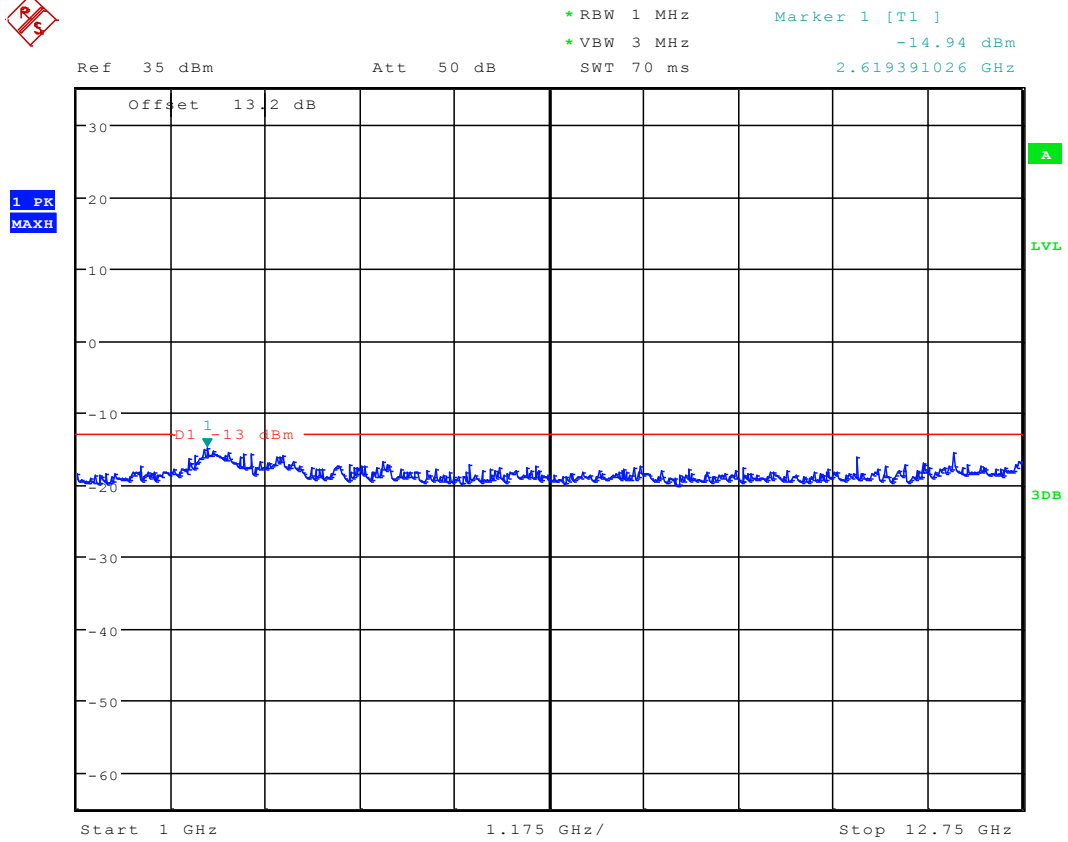
FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



Date: 12.AUG.2012 15:54:21



FCC Test Report of HUAWEI U8950-1, U8950-1
FCC ID: QISU8950-1



Date: 12.AUG.2012 15:55:05

The END



Appendix F

Radiated spurious emission

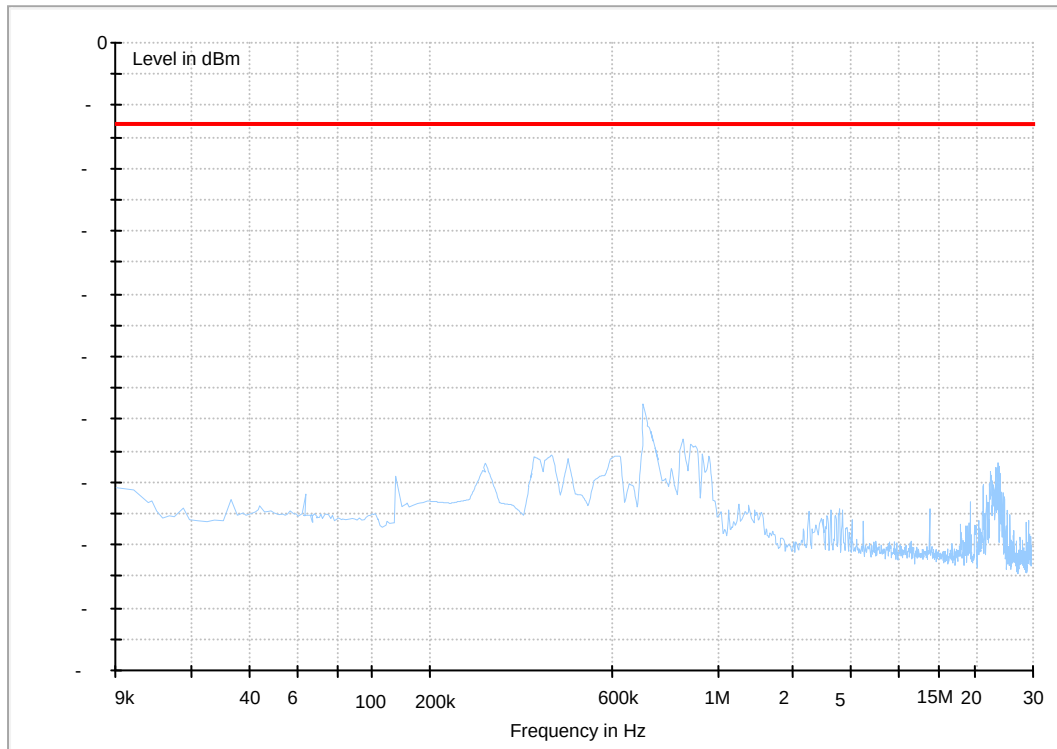
According to FCC Part 2.1053& Part 22.917



Note: 1. Simultaneous transmission was investigated and no new emissions were found.
2. $RBW \geq 1\text{MHz}$, $VBW > 3 \times RBW$

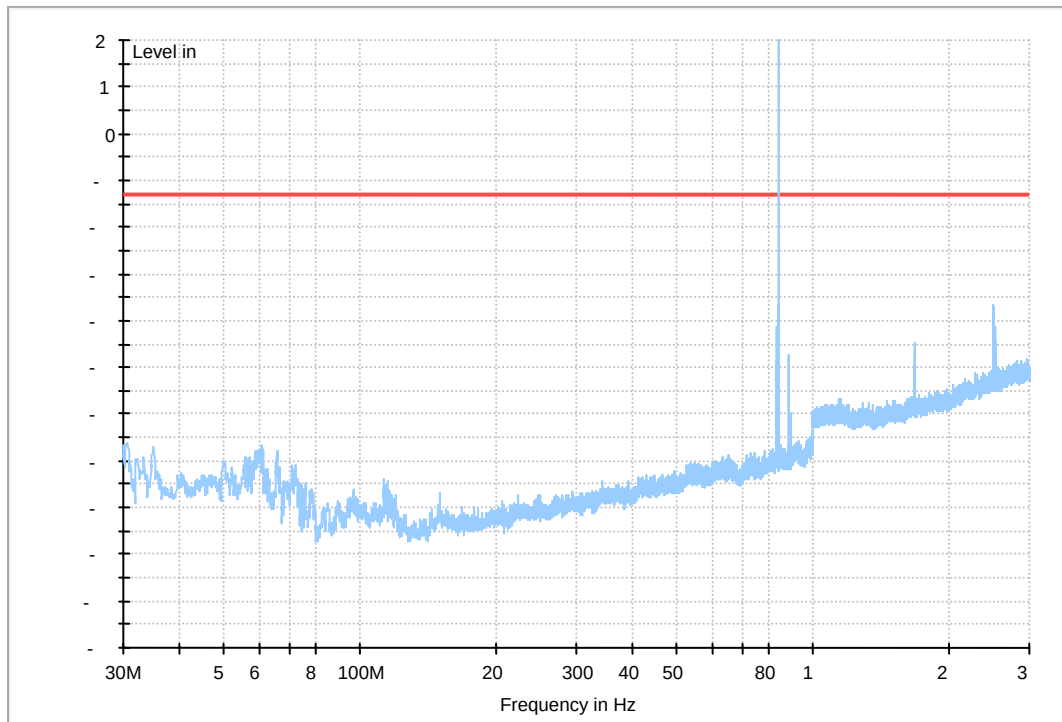
GSM850

(9kHz~30MHz)



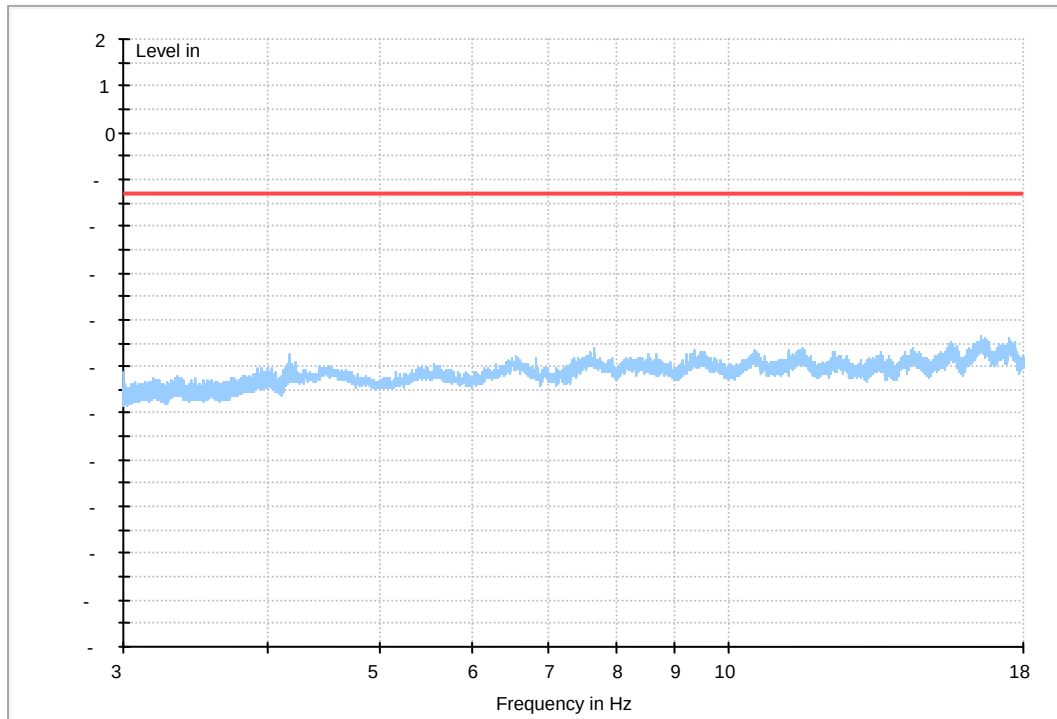


(30MHz~3GHz)





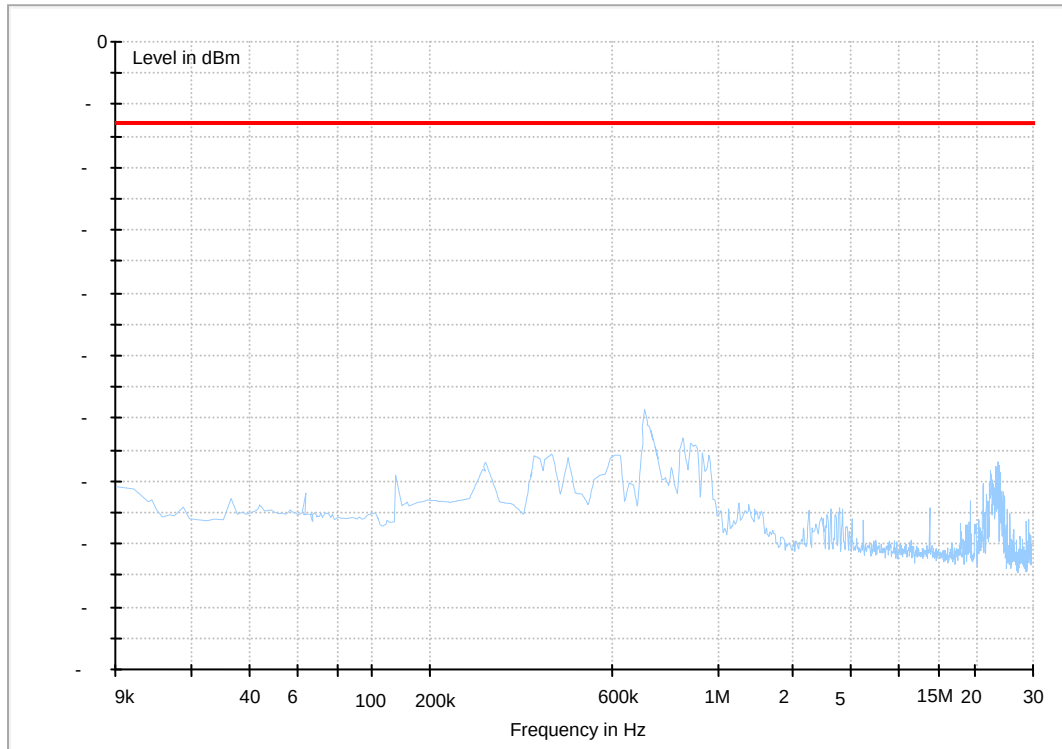
(3GHz~18GHz)





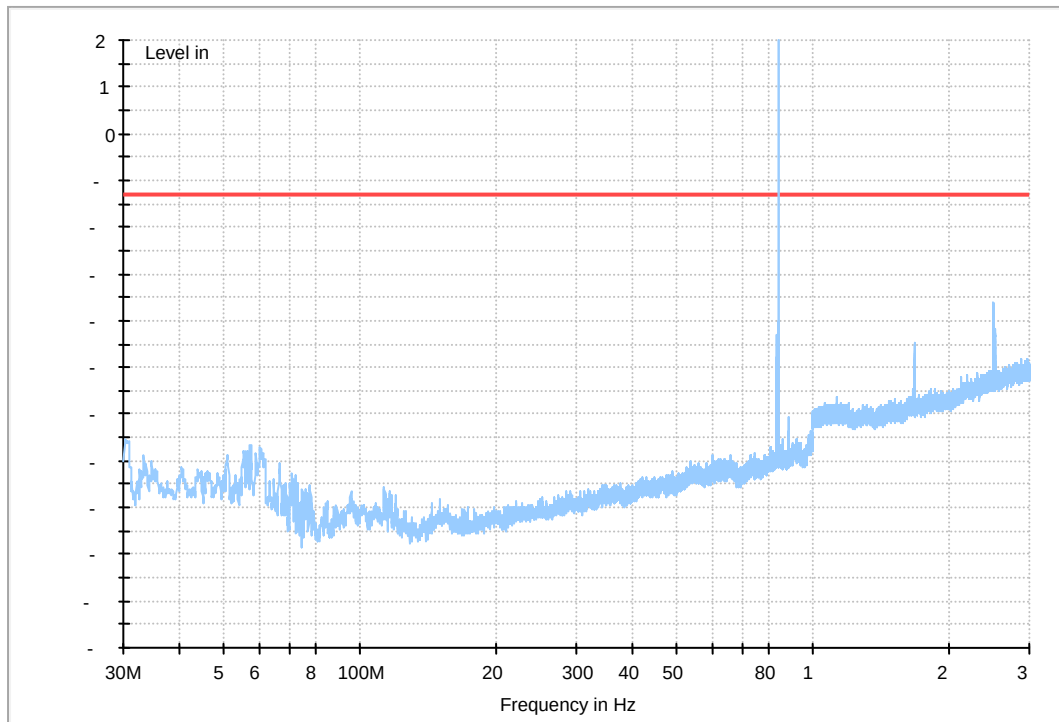
GPRS 850

(9kHz~30MHz)



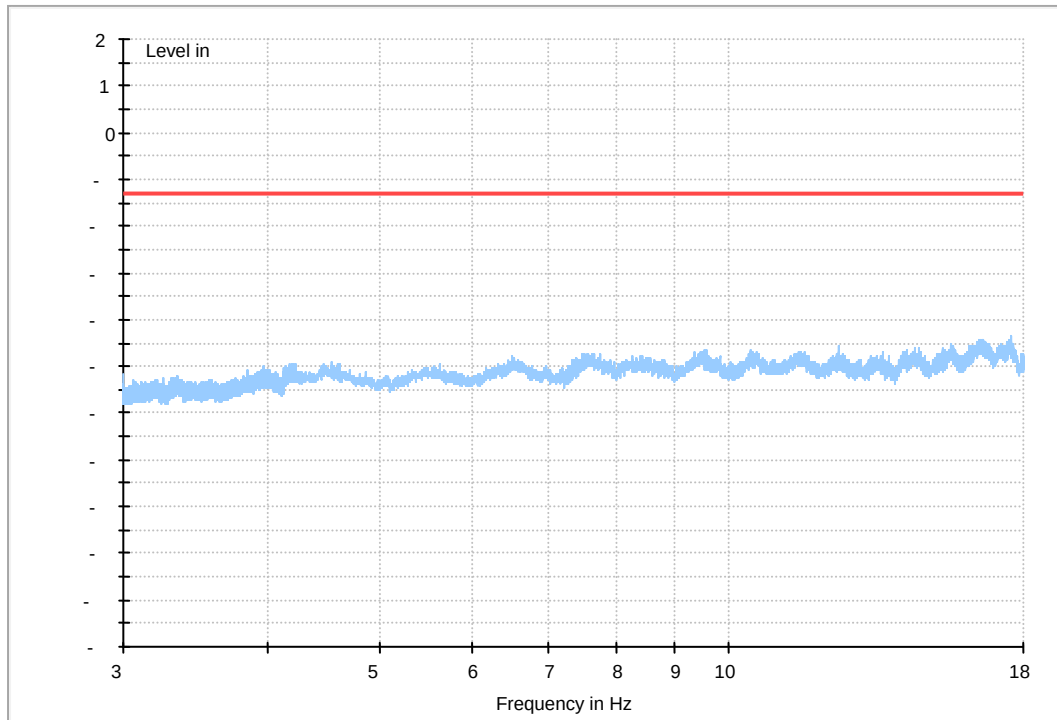


(30MHz~3GHz)





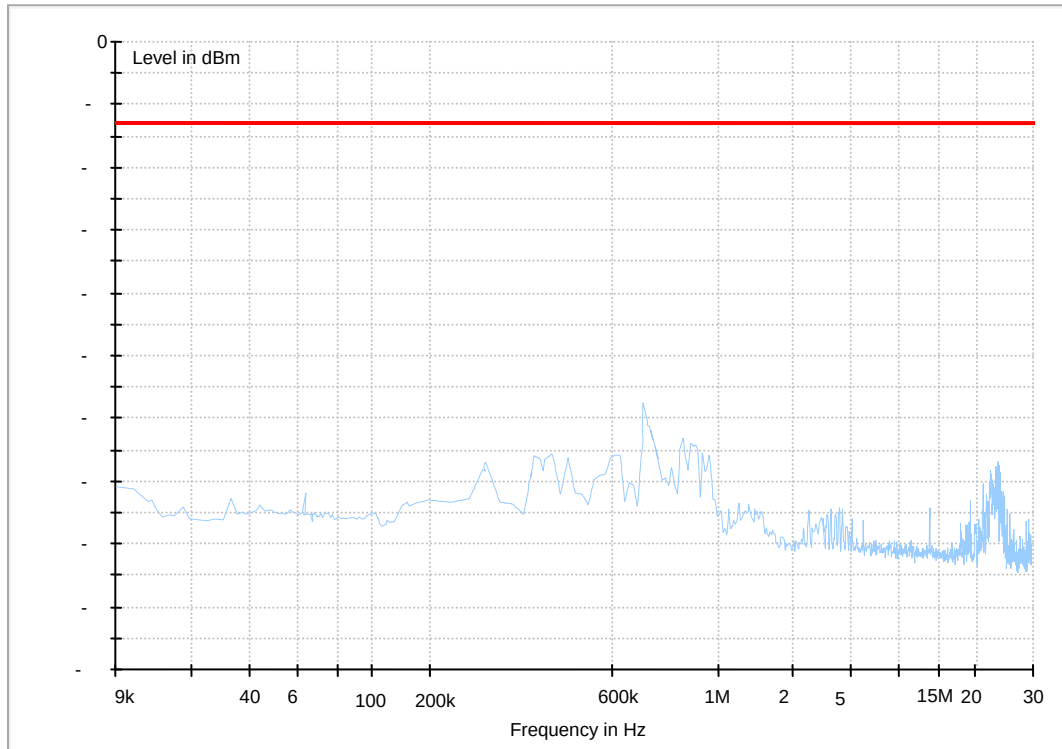
(3GHz~18GHz)





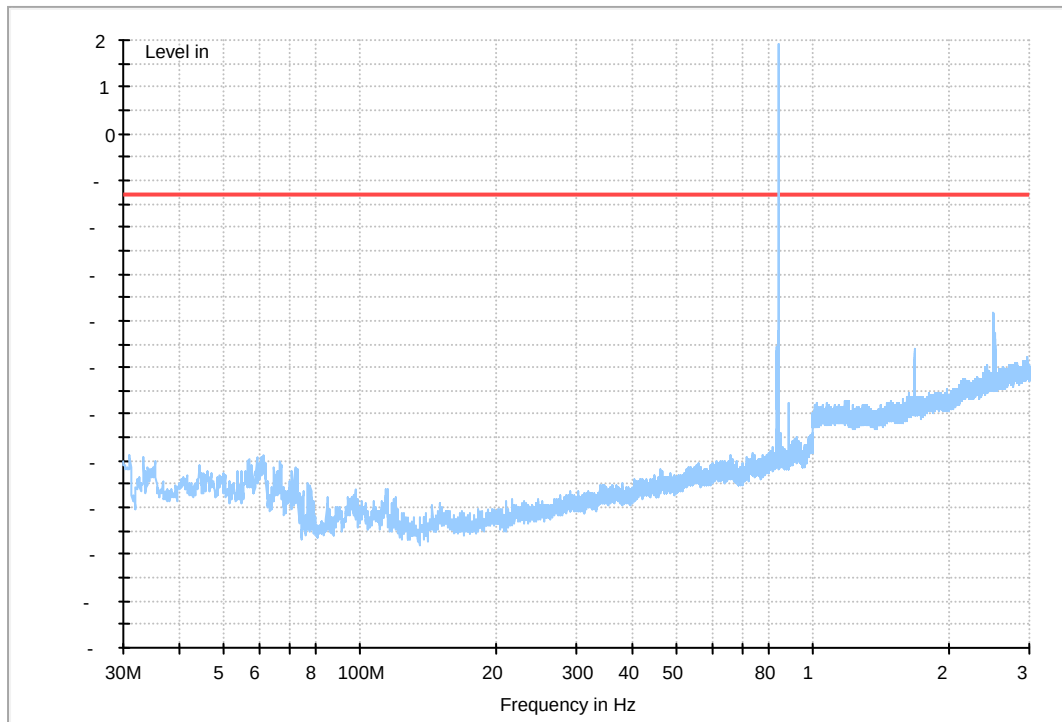
EDGE 850

(9kHz~30MHz)



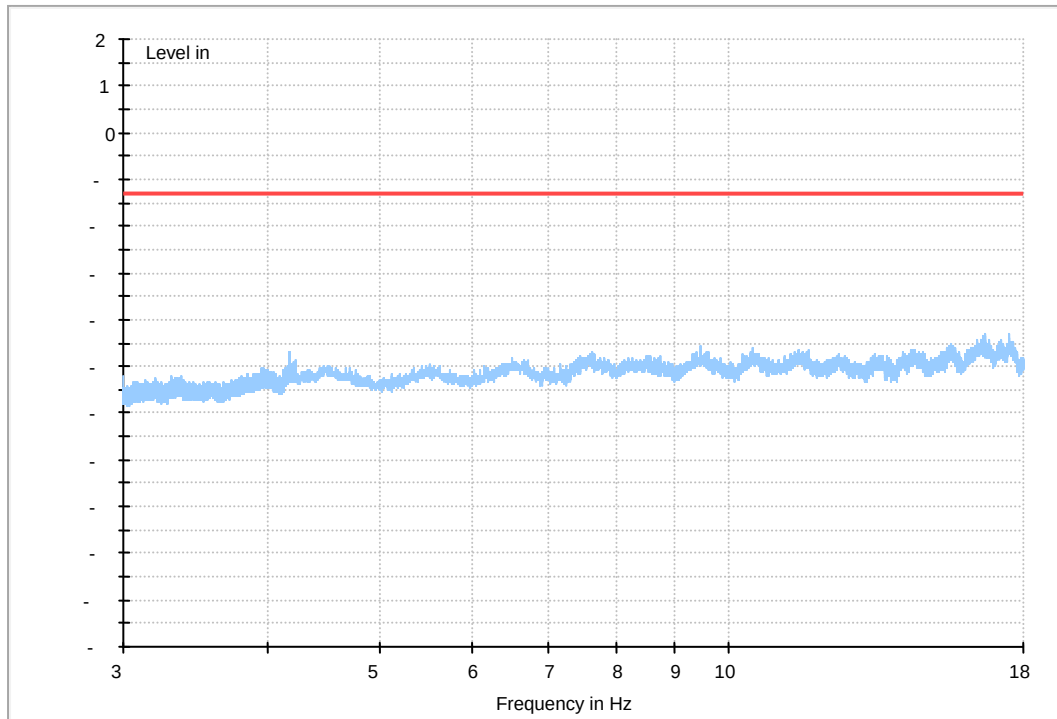


(30MHz~3GHz)





(3GHz~18GHz)



The END



Appendix G

Frequency Stability

According to FCC Part 2.1055 & Part 22.355



Frequency Error vs. Temperature:

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	VN	-30 °C	21	0.02509	---	±2.5	Pass
			-20 °C	16	0.01912	---	±2.5	Pass
			-10 °C	-20	-0.02389	---	±2.5	Pass
			0 °C	13	0.01553	---	±2.5	Pass
			10 °C	19	0.02270	---	±2.5	Pass
			20 °C	-7	-0.00836	---	±2.5	Pass
			30 °C	-25	-0.02987	---	±2.5	Pass
			40 °C	25	0.02987	---	±2.5	Pass
			50 °C	-13	-0.01553	---	±2.5	Pass
TM 2	M	VN	-30 °C	10	0.01195	---	±2.5	Pass
			-20 °C	13	0.01553	---	±2.5	Pass
			-10 °C	-19	-0.02270	---	±2.5	Pass
			0 °C	7	0.00836	---	±2.5	Pass
			10 °C	17	0.02031	---	±2.5	Pass
			20 °C	26	0.03106	---	±2.5	Pass
			30 °C	13	0.01553	---	±2.5	Pass
			40 °C	-21	-0.02509	---	±2.5	Pass
			50 °C	25	0.02987	---	±2.5	Pass



Frequency Error vs. Voltage:

Test Mode	RF Ch.	Temp.	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 °C [ppm]	Limit [ppm]	Verdict
TM 1	M	TN	VL	-19	-0.02270	---	±2.5	Pass
			VN	-19	-0.02270	---	±2.5	Pass
			VH	-14	-0.01673	---	±2.5	Pass
TM 2	M	TN	VL	28	0.03345	---	±2.5	Pass
			VN	19	0.02270	---	±2.5	Pass
			VH	25	0.02987	---	±2.5	Pass

-----The END-----
