47 CFR PART 22 SUBPART H

TEST REPORT

of

GSM FWP

Model Name:	Avvio G850P
Trade Name:	Avvio
Report No.:	SZ07020012E02
FCC ID:	U46-G850P

prepared for

TELEEPOCH CO., LTD
2/F, R2-A North gate, Shenzhen High-Tech Industrial Park (South),
Nanshan District, Shenzhen, 518057 China

prepared by

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1. TEST CERTIFICATION

Equipment under Test:	GSM FWP
Trade Name:	Avvio
Model Name:	Avvio G850P
FCC ID:	U46-G850P
Applicant:	TELEEPOCH CO., LTD 2/F, R2-A North gate, Shenzhen High-Tech Industrial Park (South), Nanshan District, Shenzhen, 518057 China
Manufacturer:	Tcl Communication Equipment (Huizhou) Co., Ltd. TCL Mansion, 10 DaLing Rd., LongFeng, HuiZhou, GuangDong, P. R. China
Test Standards:	47 CFR Part 2 47 CFR Part 22 Subpart H
EUT Received Date:	February 15, 2007
Test Date(s):	March 8, 2007 - March 17, 2007
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: ..... Dated: 2007.03.22
Zhang Weimin

Reviewed by: ..... Dated: 2007.03.22
Yang Bo

Approved by: ..... Dated: 2007.03.22
Shu Luan

2. GENERAL INFORMATION

2.1 EUT Description

EUT Type.....:	GSM FWP
Model Name.....:	Avvio G850P
Serial No.....:	(n.a.)
IMEI .....:	004400003501112
Hardware Version .....:	V1.1
Software Version .....:	(n.a.)
Emission Designator.....:	300KGXW
Modulation Type.....:	GMSK
Frequency Range.....:	Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz)
Output Power.....:	2Watt (Typical)
Power Supply.....:	Battery (Rated Voltage 3.6VDC.); The Highest and Lowest extreme voltages are separately 4.2VDC and 3.4VDC, which are specified by the applicant.
Ancillary Equipments.....:	AC Adapter Charger for the Battery

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula F(n)=824.2+0.2*(n-128), 128<=n<=251; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

2.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-05 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-05 Edition)	Public Mobile Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result	Date of Test
1	2.106 22.905	Frequencies	PASS	2007-03-16
2	2.1046	Conducted RF Output Power	PASS	2007-03-16
3	2.1049	20dB Occupied Bandwidth	(n.a.)	2007-03-16
4	2.1055 22.355	Frequency Stability	PASS	2007-03-17
5	2.1051 2.1057 22.917	Conducted Out of Band Emissions	PASS	2007-03-16
6	2.1051 2.1057 22.917	Band Edge	PASS	2007-03-16
7	22.913	Transmitter Radiated Power (EIPR/ERP)	PASS	2007-03-08
8	2.1053 2.1057 22.917	Radiated Out of Band Emissions	PASS	2007-03-08

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Board for Laboratories (CNAL) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

2.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	960

3. 47 CFR PART 2, PART 22H REQUIREMENTS

3.1 Frequencies

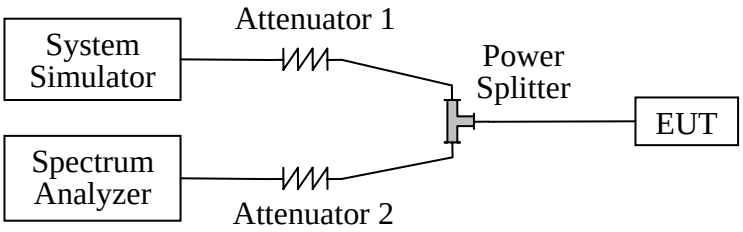
3.1.1 Requirement

According to FCC section 22.905, the frequency blocks assignment for the cellular radiotelephone service is listed as below:

(a) Channel Block A:
Mobile 824 - 835MHz, Base 869 - 880MHz;
Mobile 845 - 846.5MHz, Base 890 - 891.5MHz
(b) Channel Block B:
Mobile 835 - 845 MHz, Base 880 - 890MHz;
Mobile 846.5 - 849 MHz, Base 891.5 - 894MHz

3.1.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2006.06	1year
Spectrum Analyzer	Agilent	E7405A	US44210471	2006.07	1year
Spectrum Analyzer	HP	8562E	3846A01010	2006.12	1year
Power Splitter	Weinschel	1506A	NW521	(n.a.)	(n.a.)
Attenuator 1	Resnet	20dB	(n.a.)	(n.a.)	(n.a.)

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)	(n.a.)

3.1.3 Test Result

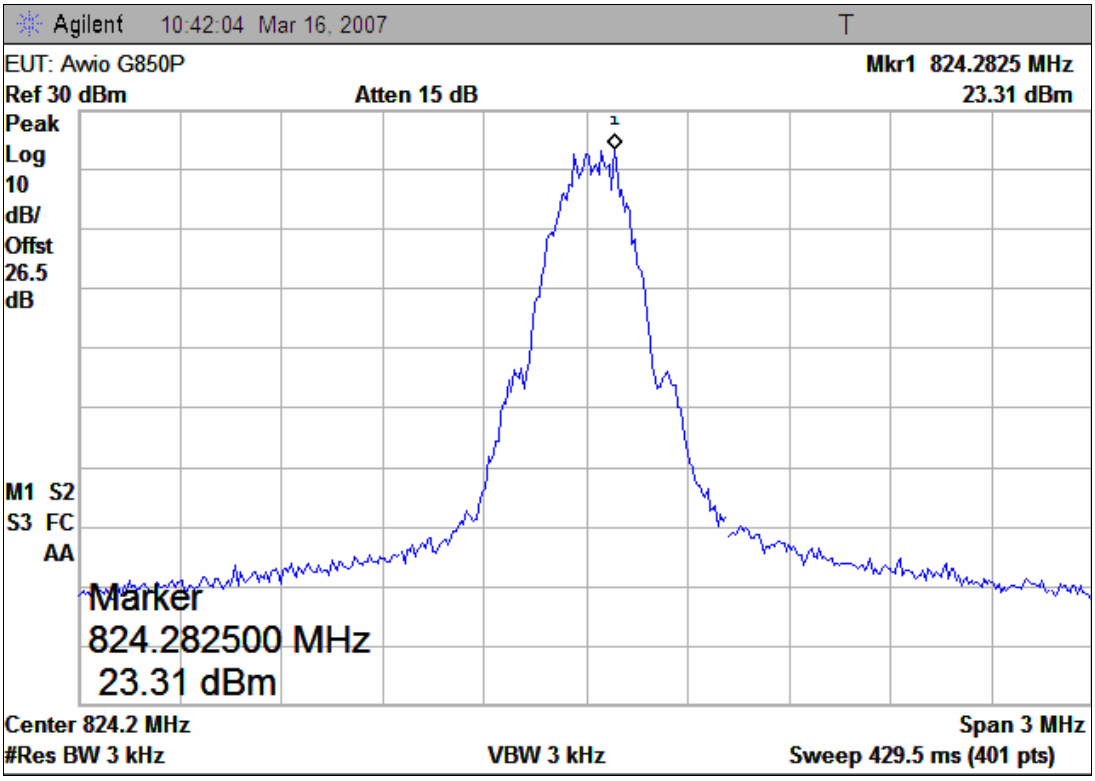
The Tx frequency arrangement of the Cellular 850MHz band employed by the EUT should be from 824.2MHz to 848.8MHz (the corresponding frequency block is from 824MHz to 849MHz). Here the lowest and highest channels are tested to verify the EUT's using the frequency block required.

1. Test Verdict:

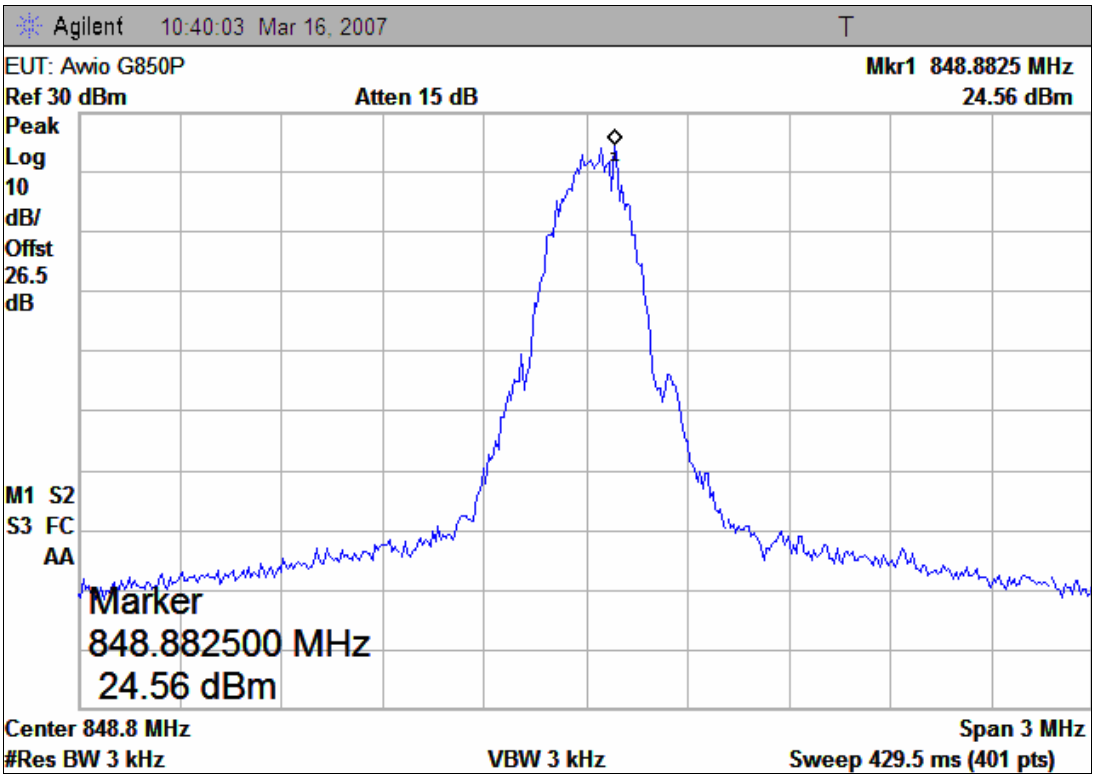
The required frequency block is employed legally, the verdict is PASS.

Channel	Frequency (MHz)	Measured Carrier (dBm)	Refer to Plot
128	824.2	23.31	Plot A
251	848.8	24.56	Plot B

2. Test Plot:



(Plot A: Channel = 128)



(Plot B: Channel = 251)

3.2 Conducted RF Output Power

3.2.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

3.2.2 Test Description

See section 3.1.2 of this report.

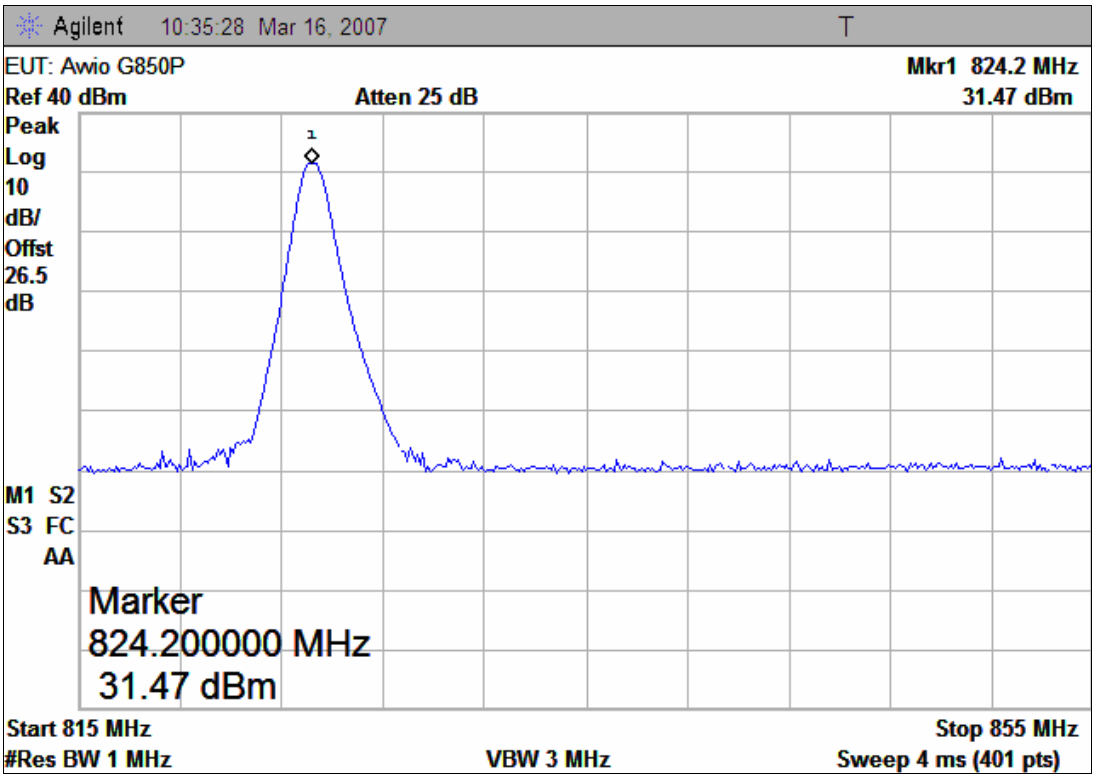
3.2.3 Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT. For the mobile phone operates at PCL=5 (where Power Class is 4), the rated conducted RF output power is 33dBm within the tolerance of ±3dB.

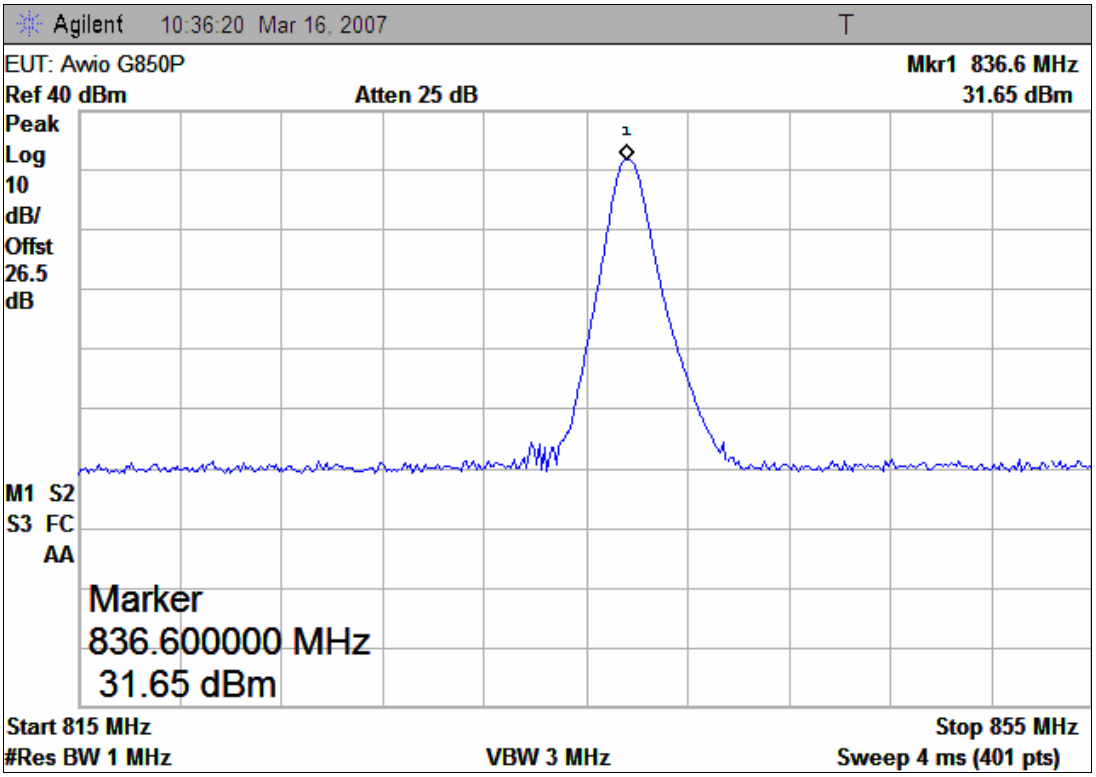
1. Test Verdict:

Channel	Frequency (MHz)	Measured Output Power		Rated Output Power		Verdict
		dBm	Refer to Plot	dBm	Tolerance (dB)	
128	824.2	31.47	Plot A	33	±3	PASS
190	836.6	31.65	Plot B			PASS
251	848.8	31.94	Plot C			PASS

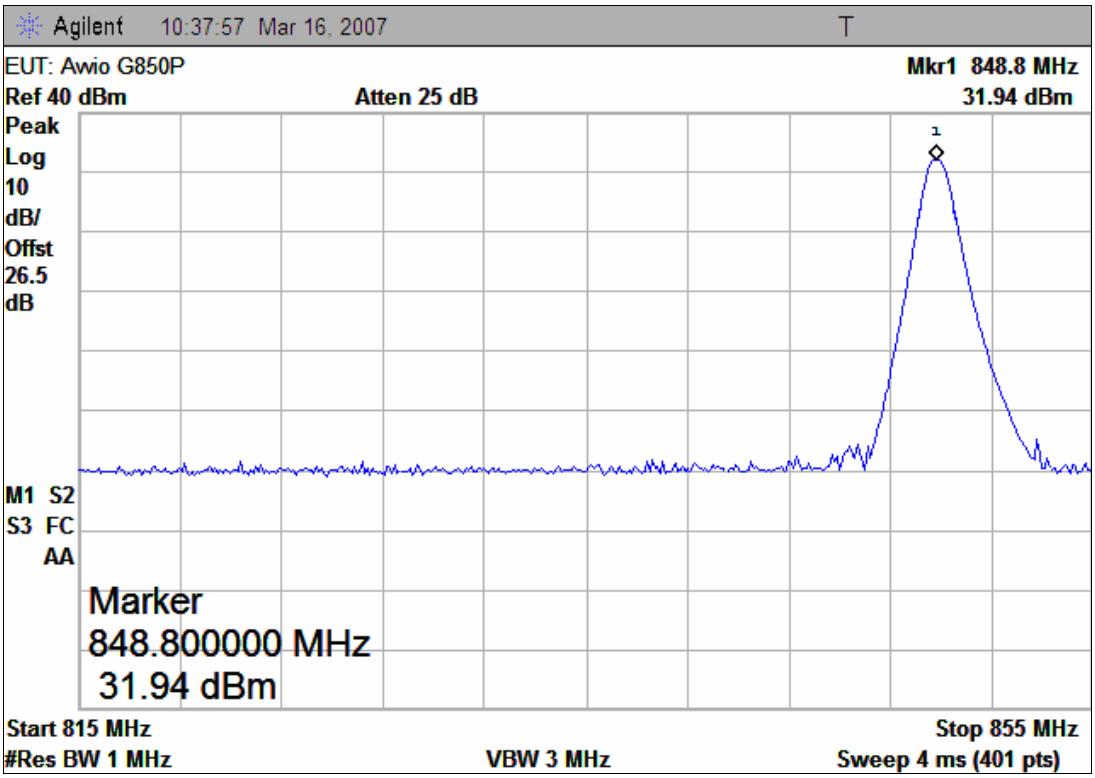
2. Test Plot:



(Plot A: Channel = 128)



(Plot B: Channel = 190)



(Plot C: Channel = 251)

3.3 20dB Occupied Bandwidth

3.3.1 Definition

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth, or 20dB bandwidth (10*log1% = 20dB) taking the total RF output power as reference.

3.3.2 Test Description

See section 3.1.2 of this report.

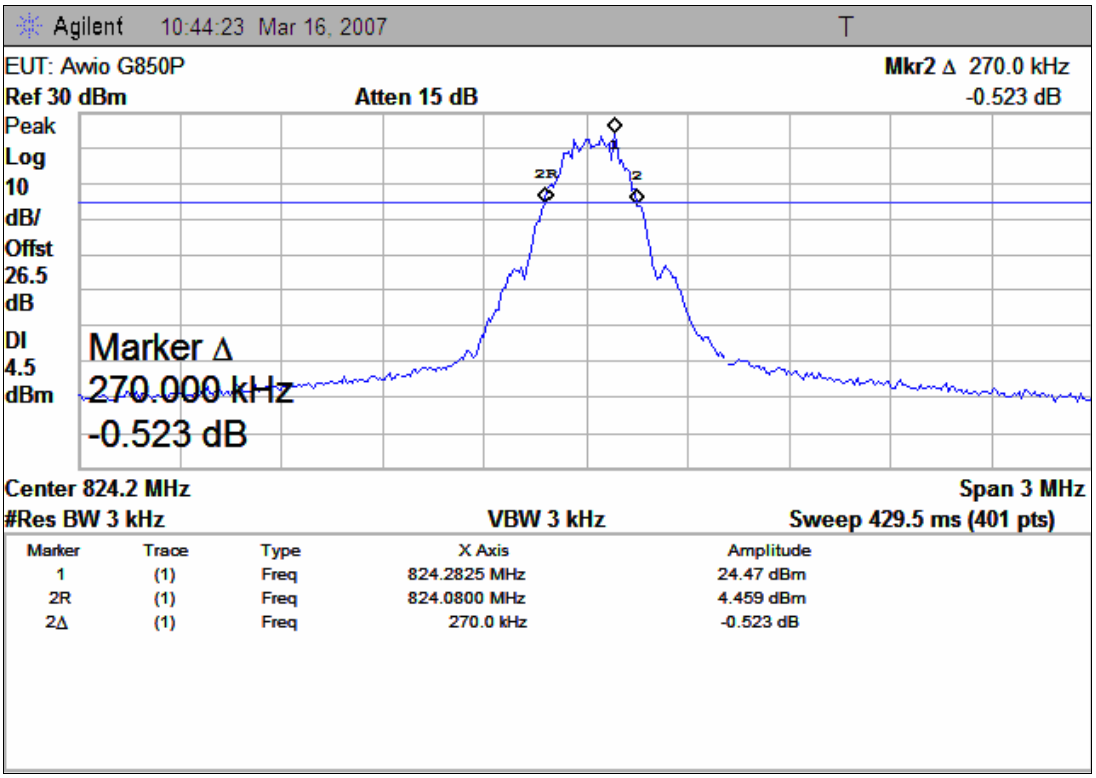
3.3.3 Test Result

Here the lowest, middle and highest channels are tested to record the 20dB occupied bandwidth, it's about 300kHz.

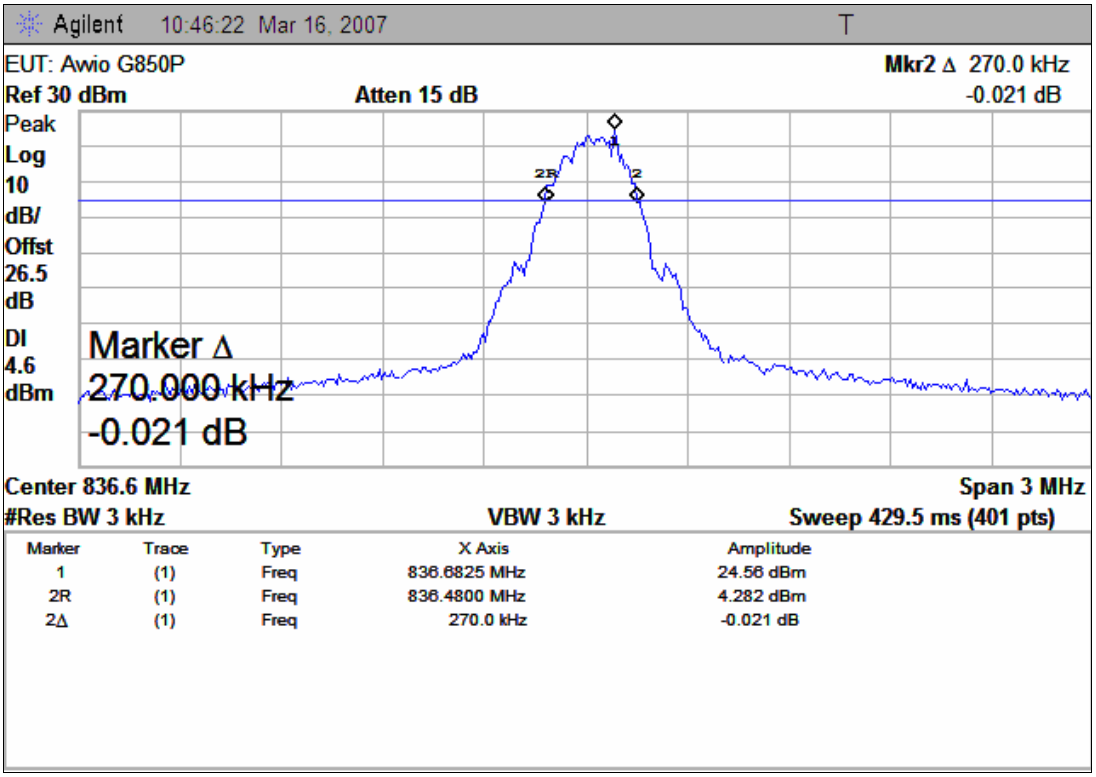
1. Test Verdict:

Channel	Frequency (MHz)	Measured 20dB Occupied Bandwidth (kHz)	Refer to Plot
128	824.2	270.0	Plot A
190	836.6	270.0	Plot B
251	848.8	292.5	Plot C

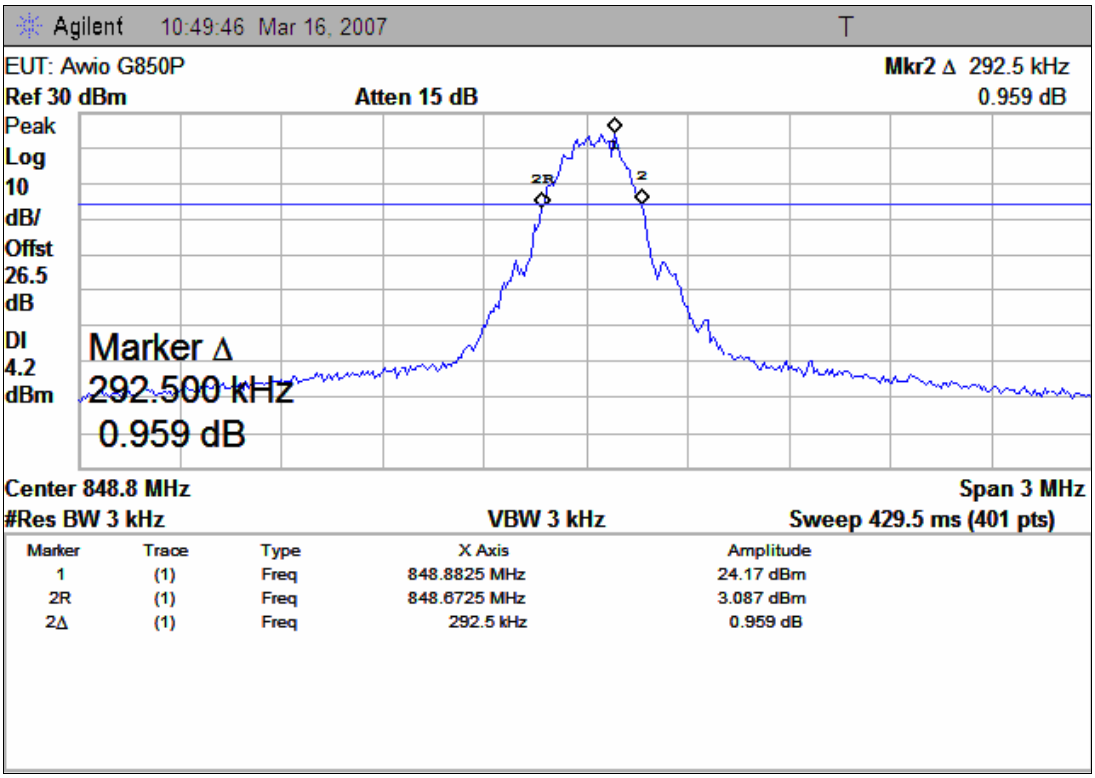
2. Test Plot:



(Plot A: Channel = 128)



(Plot B: Channel = 190)



(Plot C: Channel = 251)

3.4 Frequency Stability

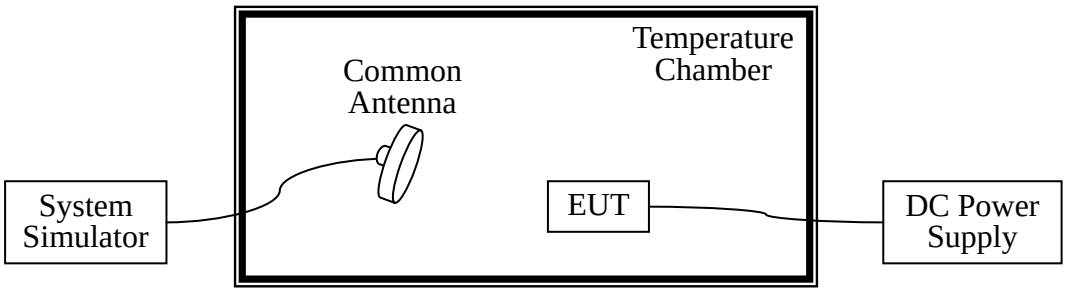
3.4.1 Requirement

According to FCC section 22.355, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.
(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

3.4.2 Test Description

1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2006.06	1year
DC Power Supply	Good Will	GPS-3030DD	EF920938	2006.06	2year
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2006.03	1year

3.4.3 Test Result

The nominal, highest and lowest extreme voltages are separately 3.6VDC, 4.2VDC and 3.4VDC, which are specified by the applicant; the normal temperature here used is 20°C. The frequency

deviation limit is ±2.5ppm.

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.6	-30	-54.10	±2060.5	-32.52	±2091.5	-22.79	±2122.0	PASS
	-20	-56.97		-31.94		-19.34		
	-10	-38.77		-24.75		-19.34		
	0	-53.51		-20.85		-16.66		
	+10	-47.30		-19.46		-9.55		
	+20	-60.04		-31.87		-16.86		
	+30	61.69		-37.30		-25.24		
	+40	-57.95		31.59		-27.55		
	+50	-59.03		-32.80		-28.14		
4.2	+20	27.93		26.21		-19.25		
3.4	+20	-54.36		-17.89		15.59		

3.5 Conducted Out of Band Emissions

3.5.1 Requirement

According to FCC section 22.917(a), 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. This calculated to be -13dBm.

3.5.2 Test Description

See section 3.1.2 of this report.

3.5.3 Test Result

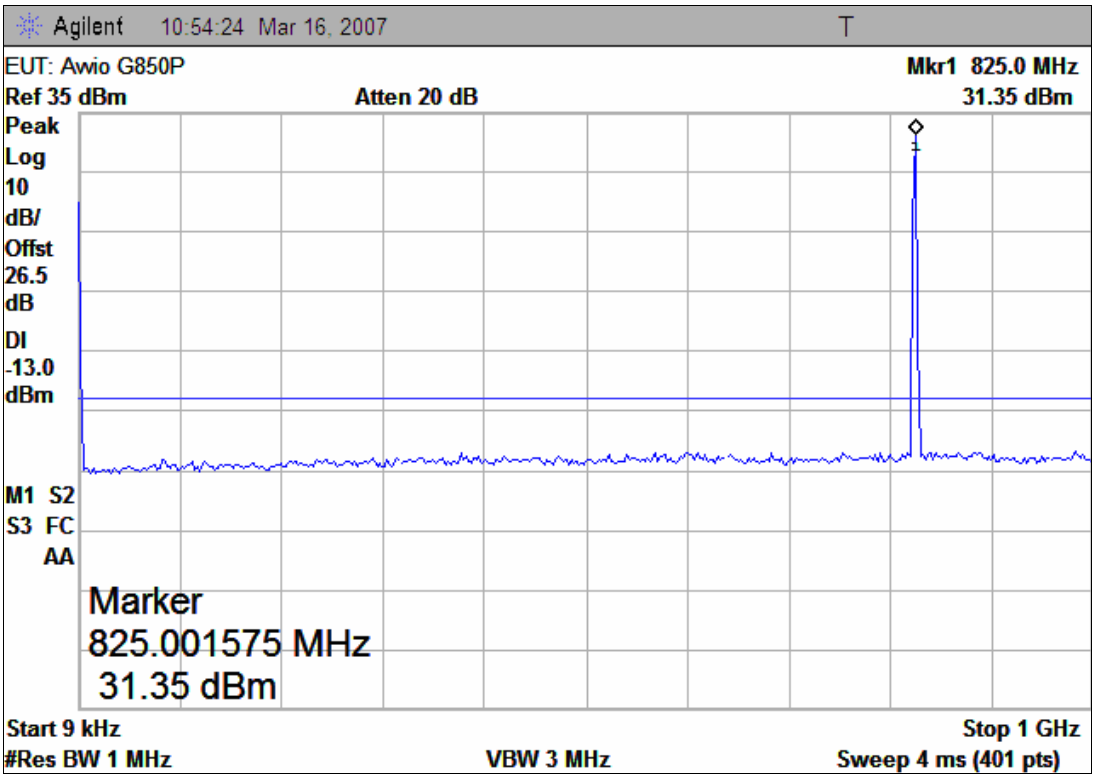
The measurement frequency range is from 9kHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

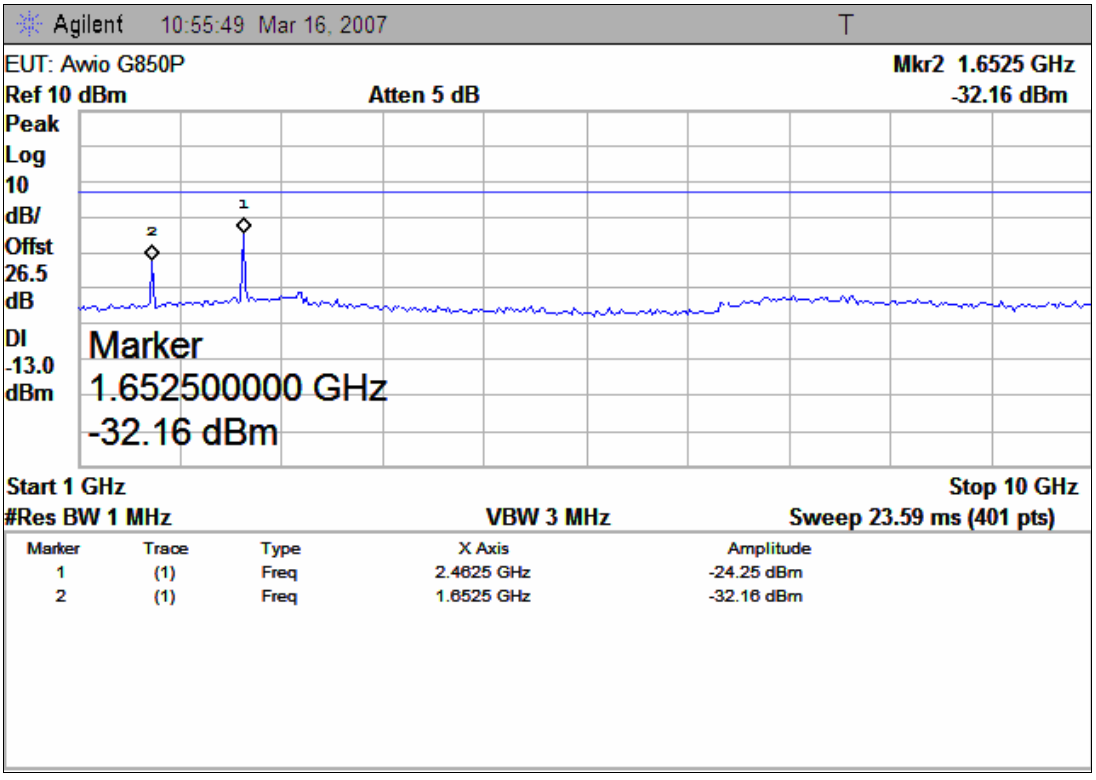
Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
128	824.2	-32.16	Plot A.1/A.2	-13	PASS
190	836.6	-32.12	Plot B.1/B.2		PASS
251	848.8	-32.29	Plot C.1/C.2		PASS

2. Test Plot for the Whole Measurement Frequency Range:

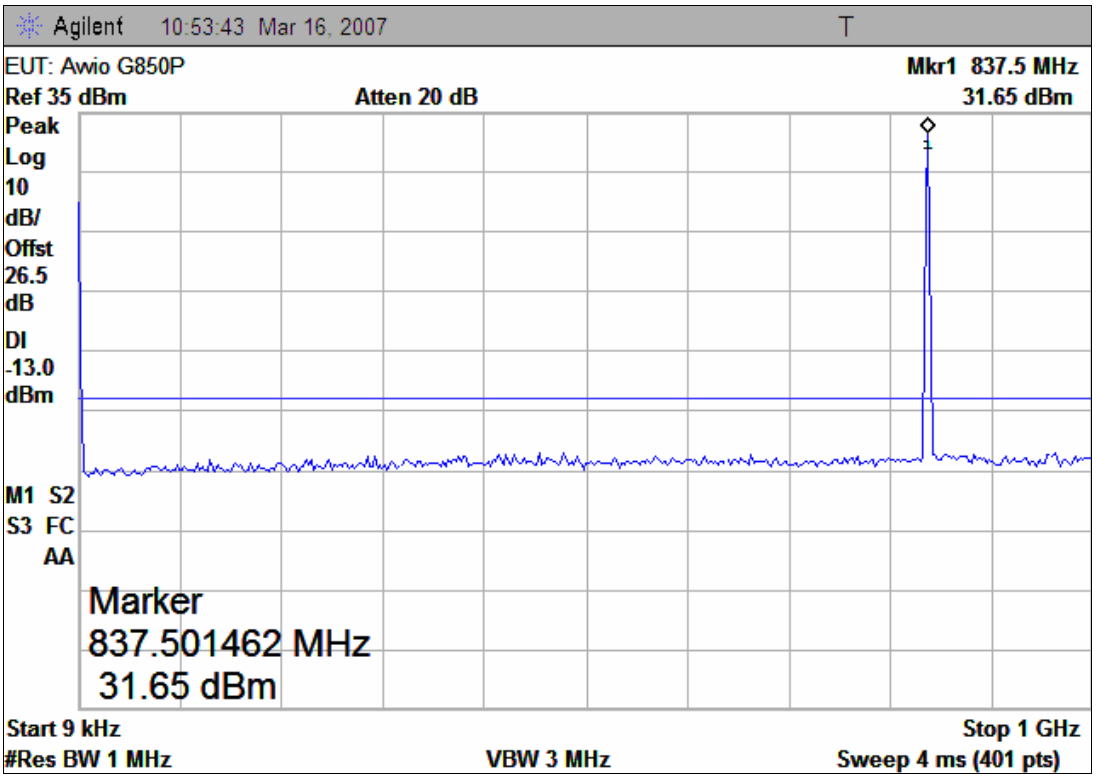
Note: the power of the EUT transmitting frequency should be ignored.



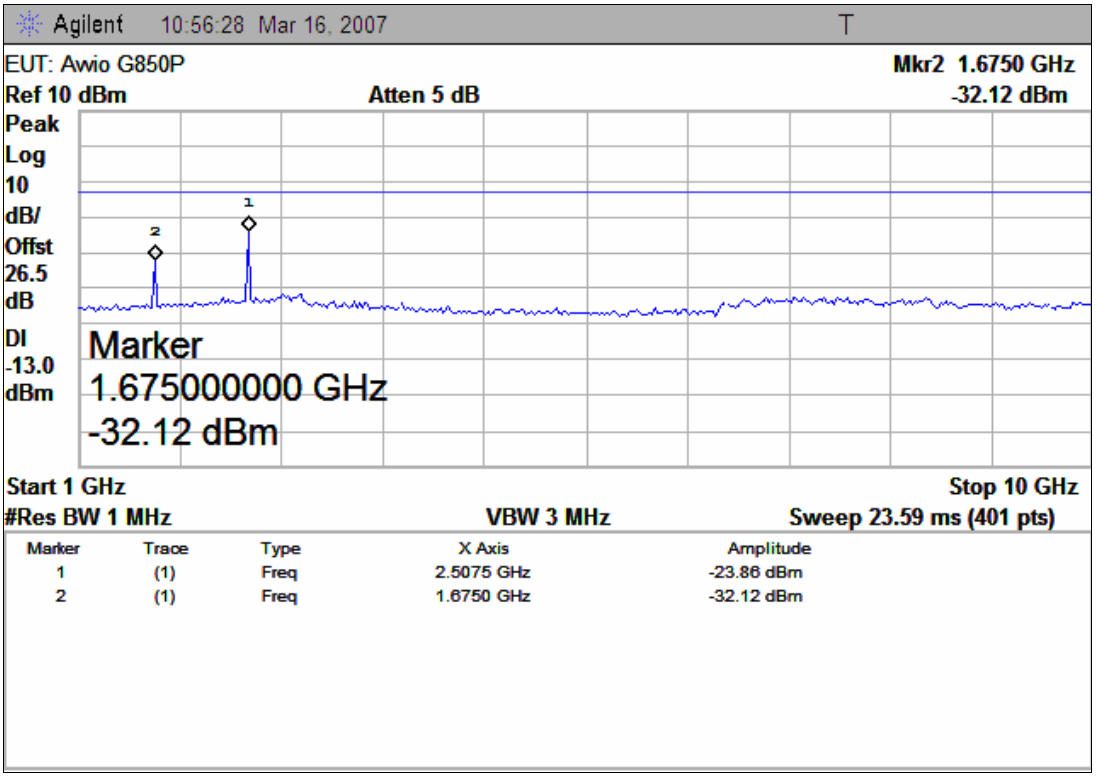
(Plot A.1: Channel = 128, 9kHz to 1GHz)



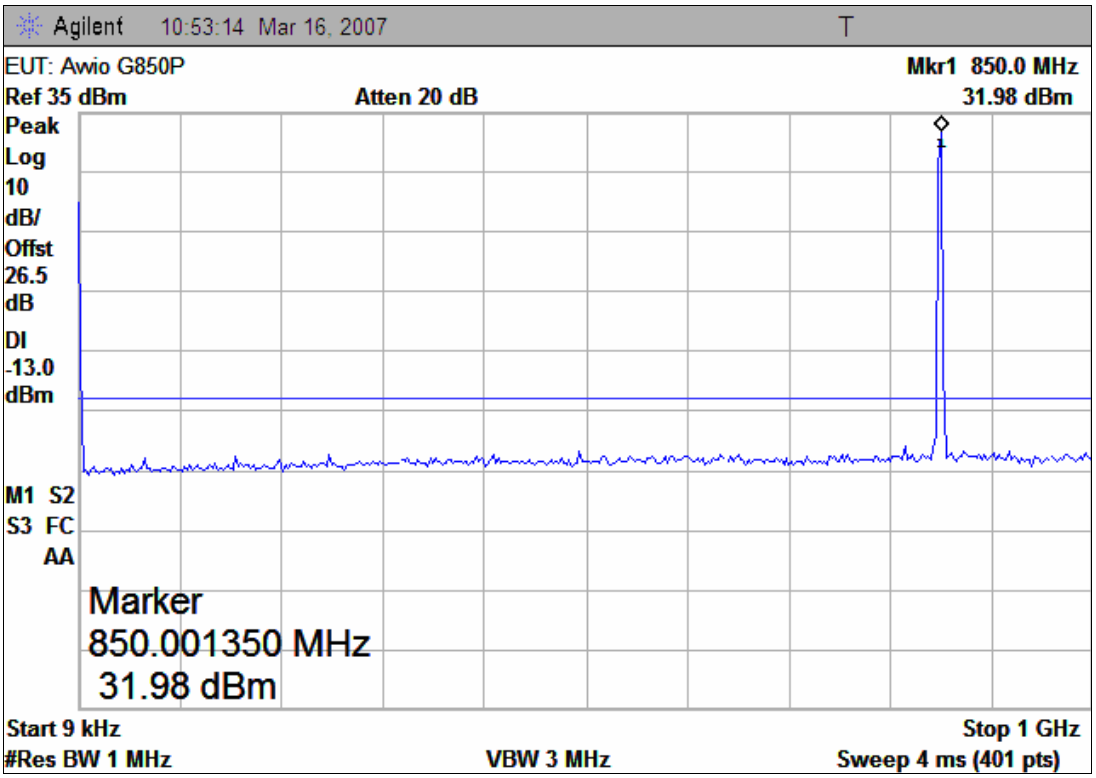
(Plot A.2: Channel = 128, 1GHz to 9GHz)



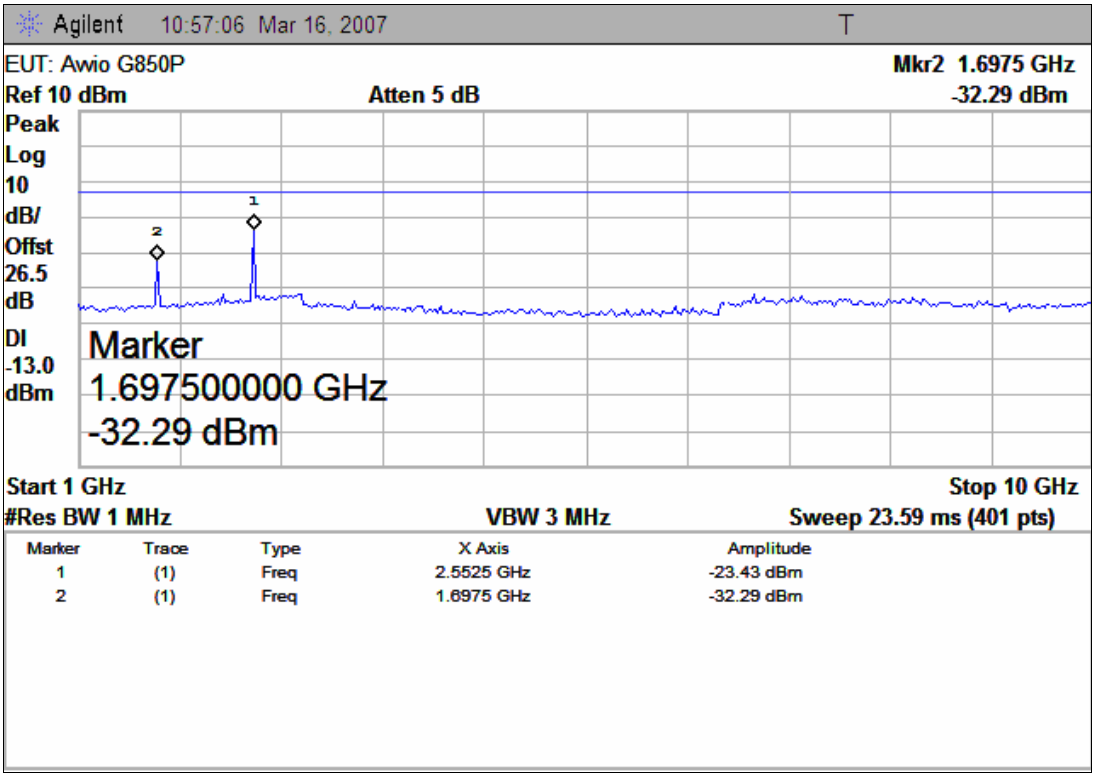
(Plot B.1: Channel = 190, 9kHz to 1GHz)



(Plot B.2: Channel = 190, 1GHz to 9GHz)



(Plot C.1: Channel = 251, 9kHz to 1GHz)



(Plot C.2: Channel = 251, 1GHz to 9GHz)

3.6 Band Edge

3.6.1 Requirement

According to FCC section 22.917(b), in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

3.6.2 Test Description

See section 3.1.2 of this report.

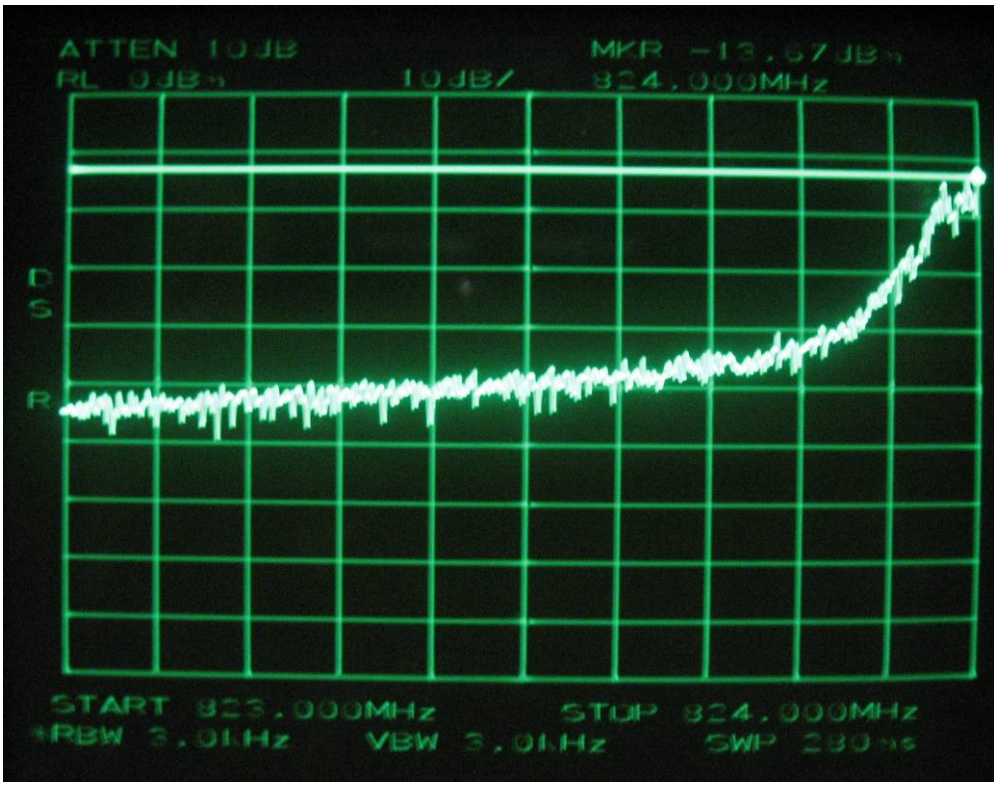
3.6.3 Test Result

The lowest and highest channels are tested to verify the band edge emissions.

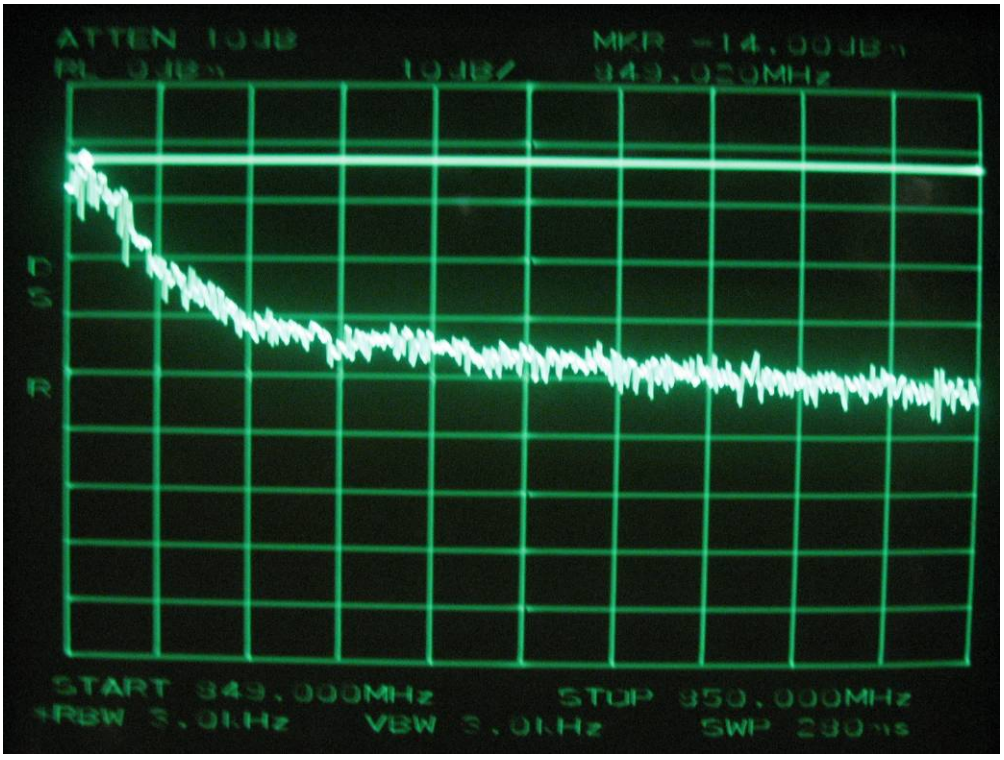
1. Test Verdict:

Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
128	824.2	-13.67	Plat A	-13	PASS
251	848.8	-14.00	Plot B		PASS

2. Test Plot:



(Plot A: Channel = 128)



(Plot B: Channel = 251)

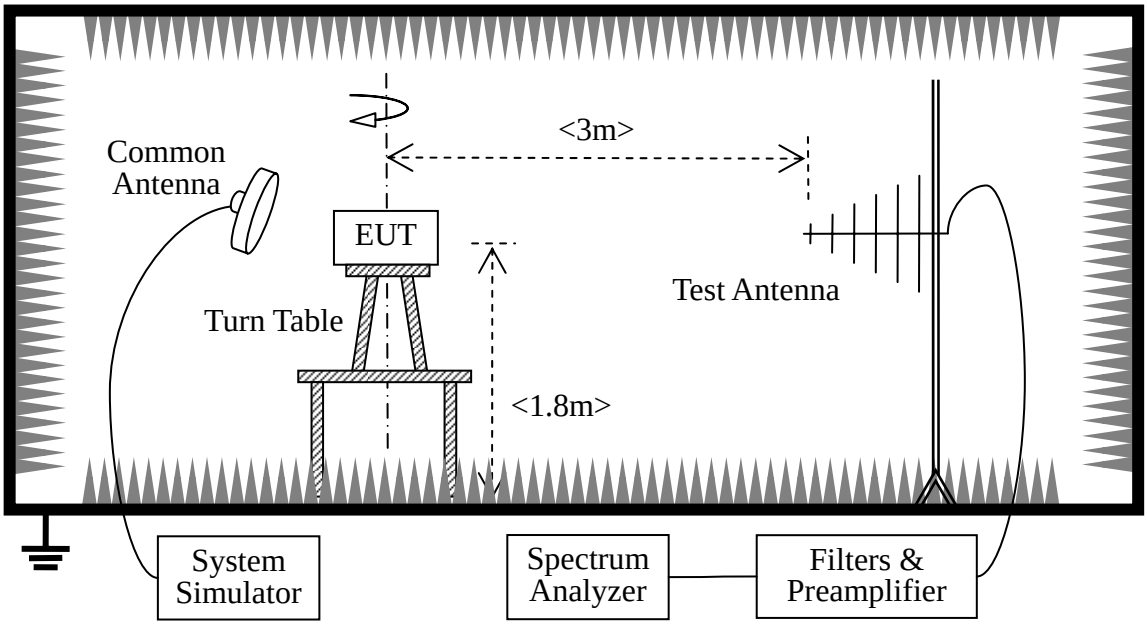
3.7 Transmitter Radiated Power (EIRP/ERP)

3.7.1 Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts.

3.7.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2006.06	1year
Spectrum Analyzer	Agilent	E7405A	US44210471	2006.07	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2006.08	2year

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2006.07	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2006.07	1year

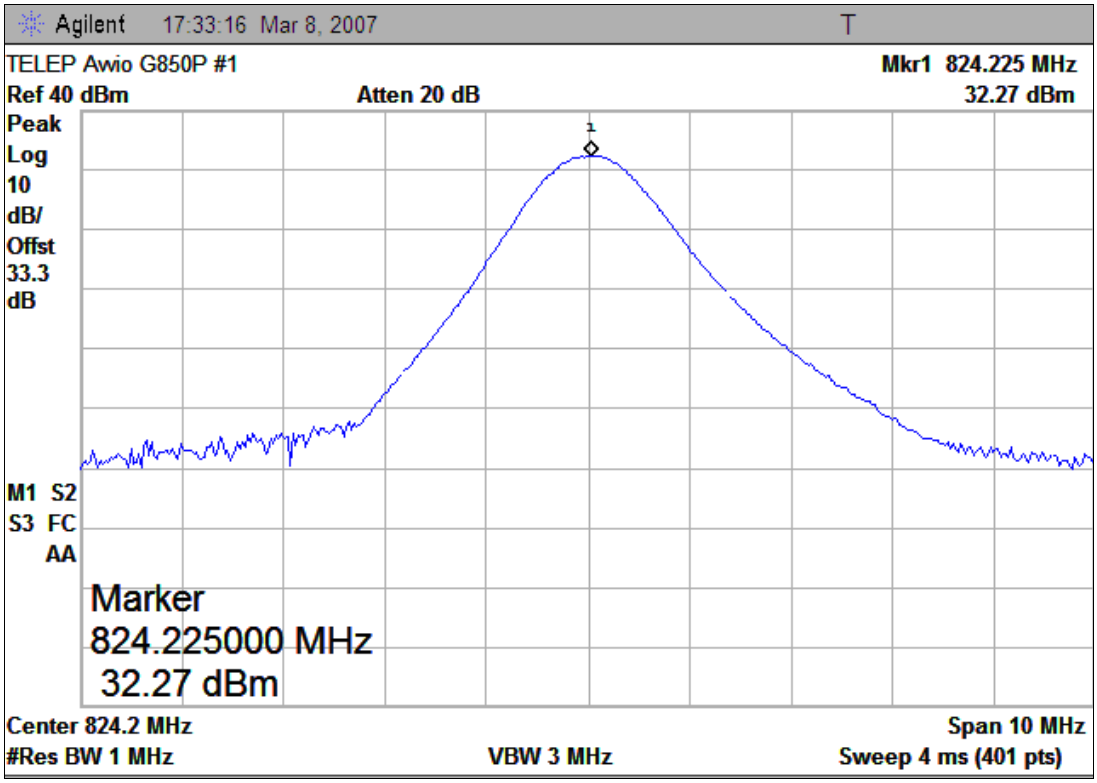
3.7.3 Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

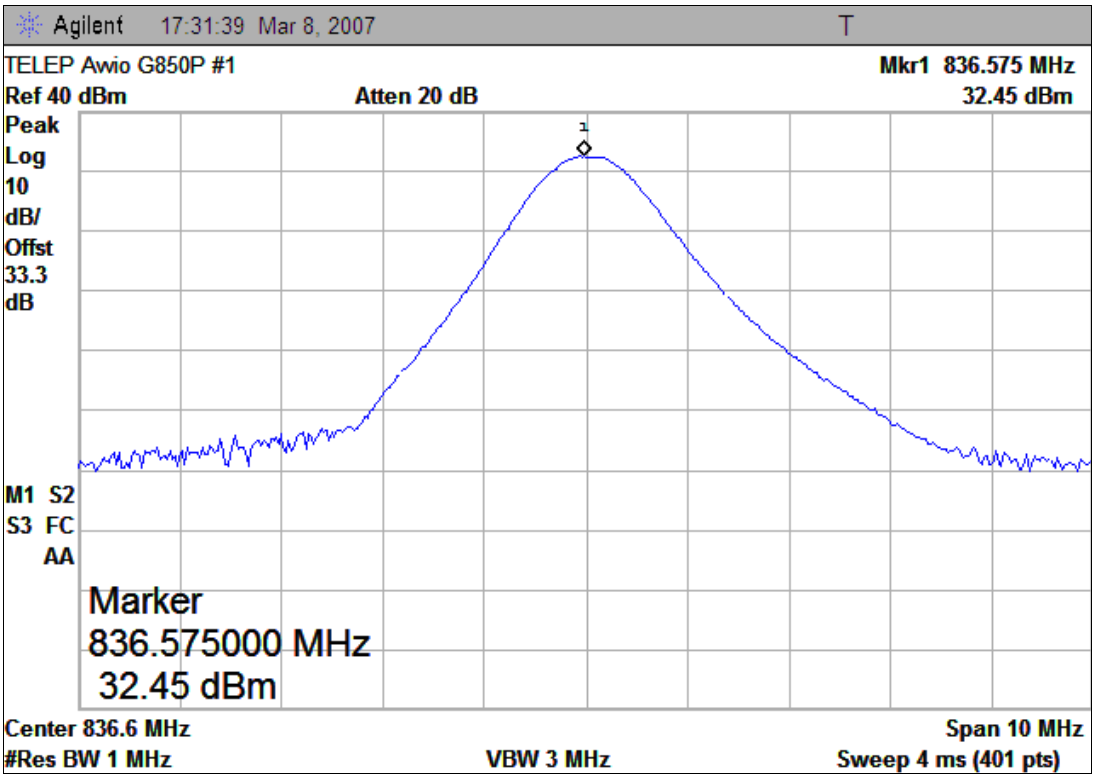
1. Test Verdict:

Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
		dBm	W	Refer to Plot	dBm	W	
128	824.20	32.27	1.69	Plot A	38.45	7	PASS
190	836.60	32.45	1.76	Plot B			PASS
251	848.80	32.16	1.64	Plot C			PASS

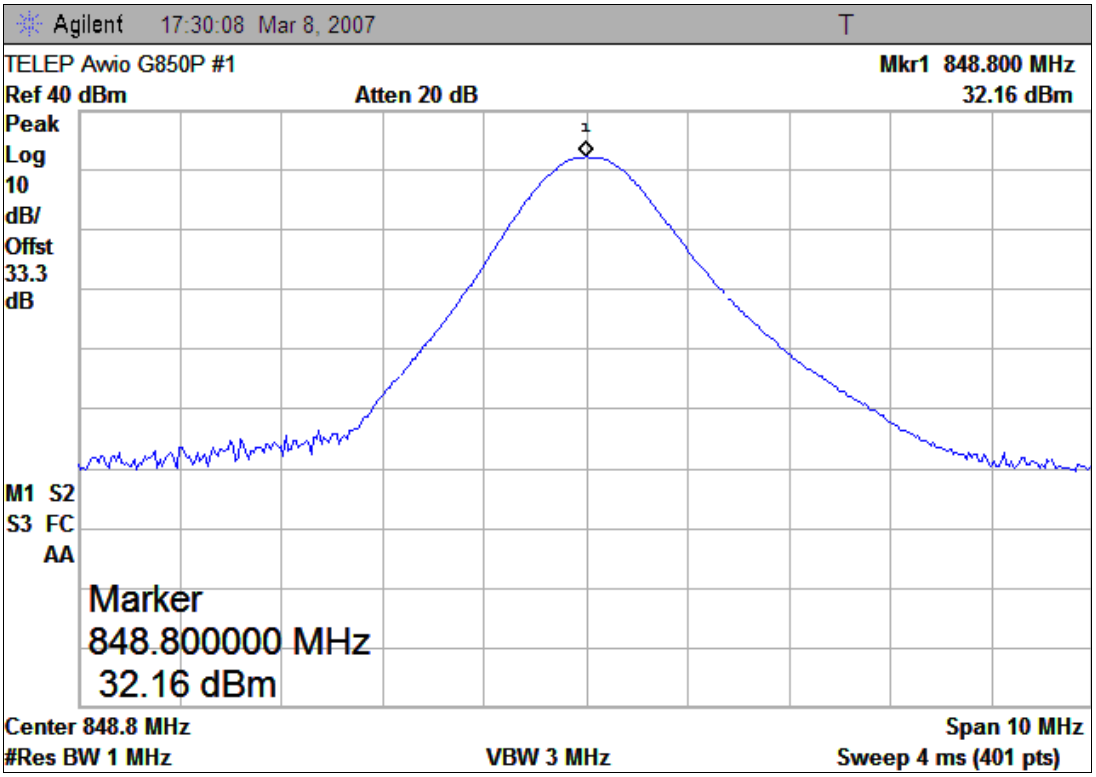
2. Test Plot:



(Plot A: Channel = 128)



(Plot B: Channel = 190)



(Plot C: Channel = 251)

3.8 Radiated Out of Band Emissions

3.8.1 Requirement

According to FCC section 22.917(a), 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. This calculated to be -13dBm.

3.8.2 Test Description

See section 3.7.2 of this report.

3.8.3 Test Result

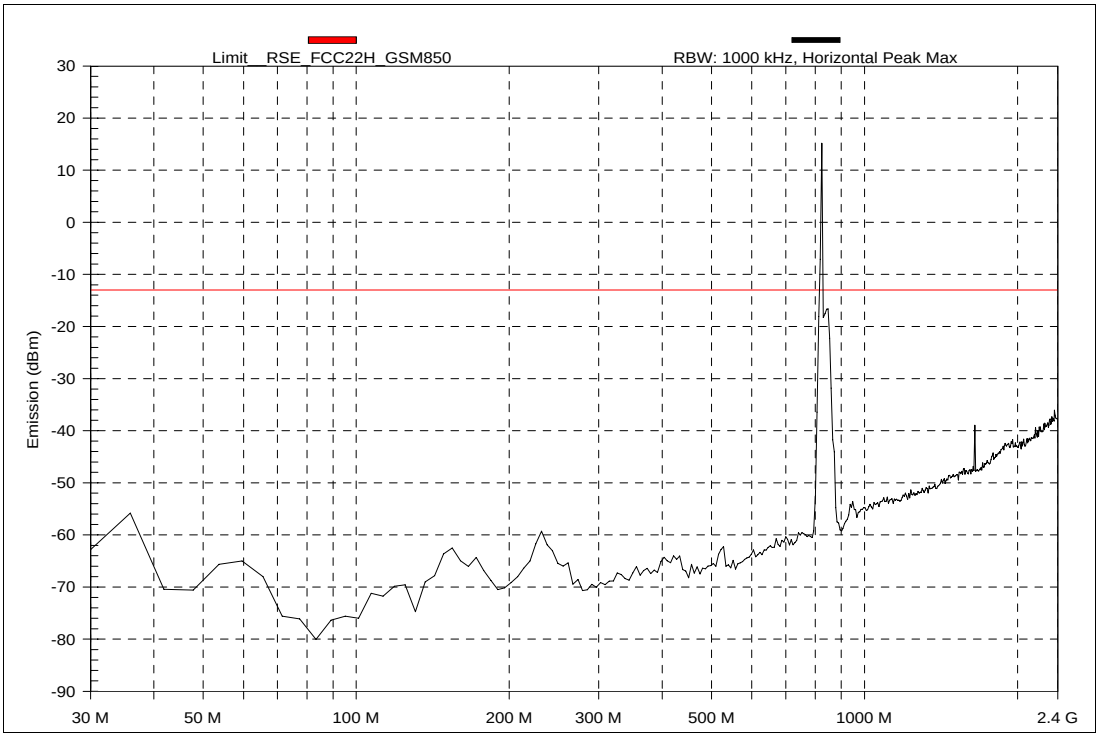
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

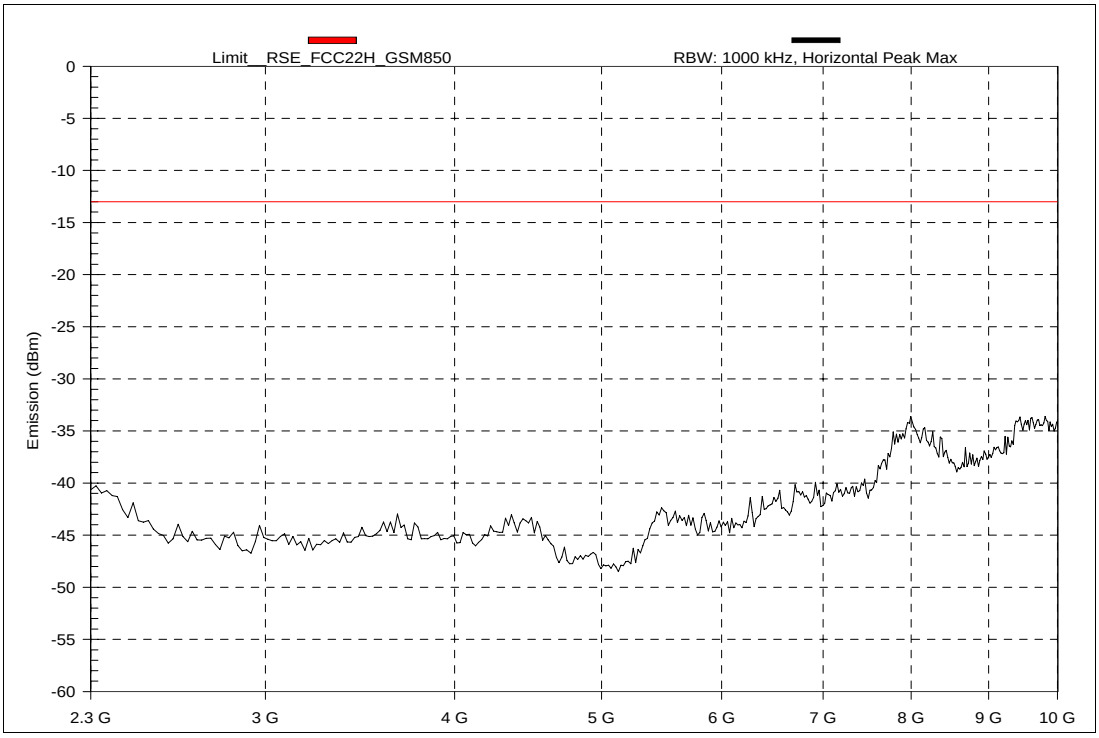
Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
		Test Antenna Horizontal	Test Antenna Vertical			
128	824.2	< -30	< -30	Plot A.1 to A.4	-13	PASS
190	836.6	< -25	< -25	Plot B.1 to B.4		PASS
251	848.8	< -30	< -30	Plot C.1 to C.4		PASS

2. Test Plot for the Whole Measurement Frequency Range:

Note: the power of the EUT transmitting frequency should be ignored.

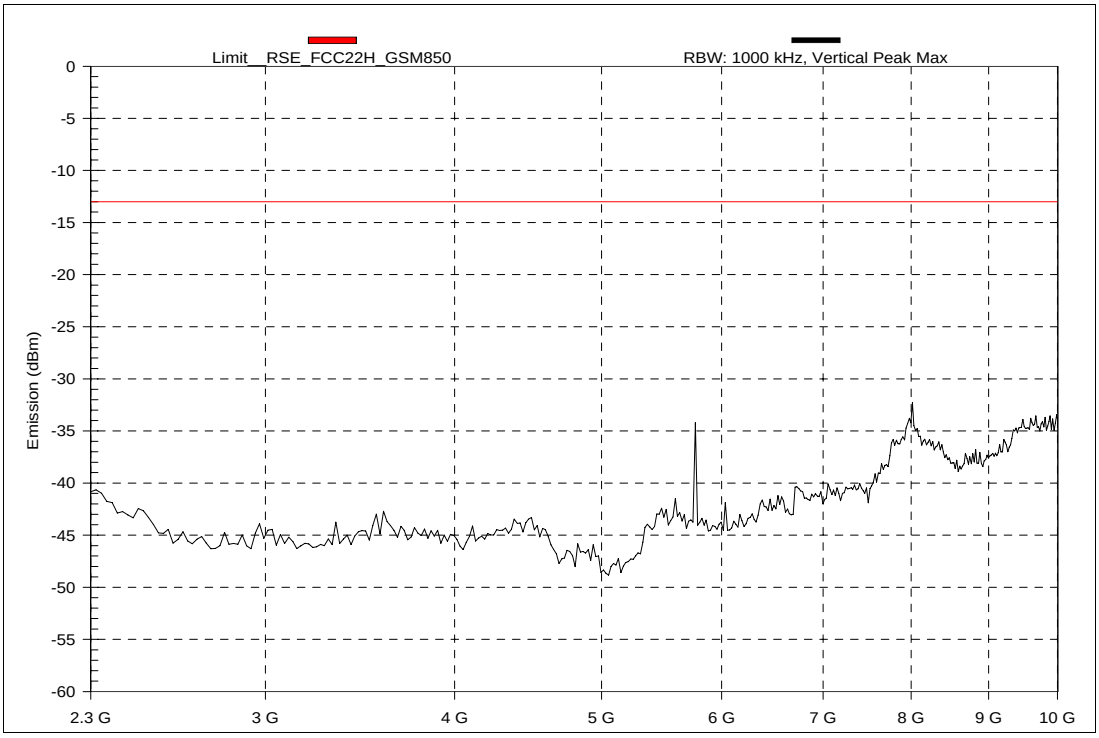


(Plot A.1: Channel = 128, Test Antenna Horizontal, 30MHz - 2.4GHz)



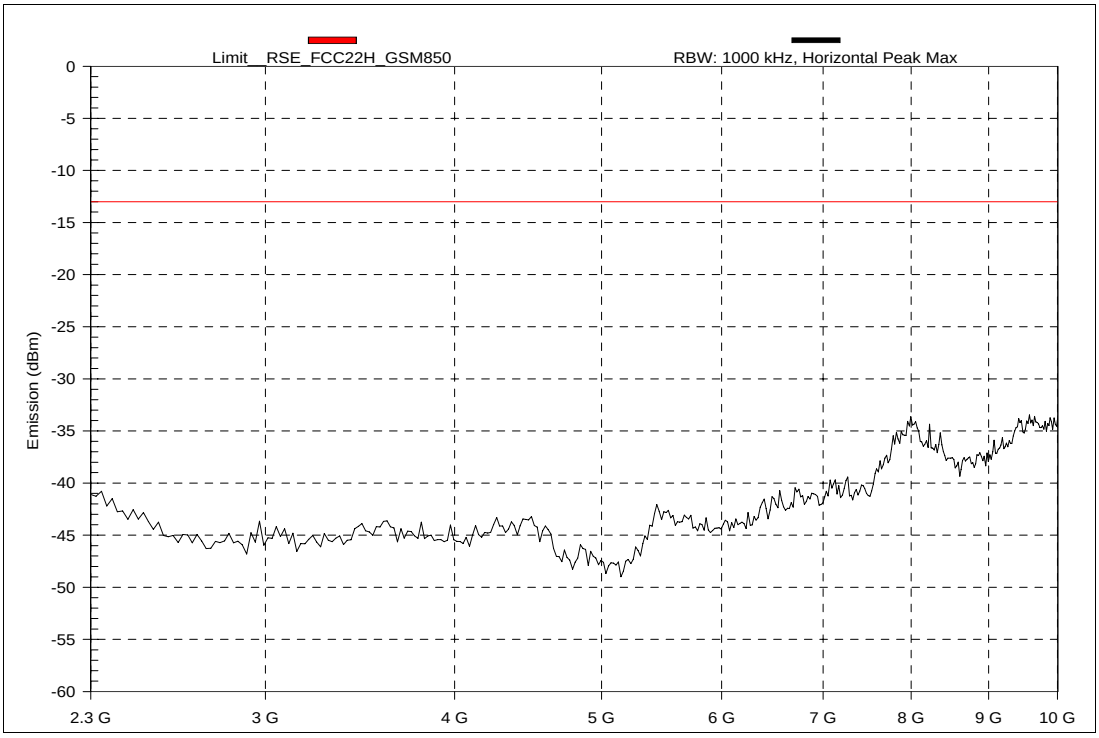
(Plot A.2: Channel = 128, Test Antenna Horizontal, 2.4GHz - 10GHz)

(Plot A.3: Channel = 128, Test Antenna Vertical, 30MHz - 2.4GHz)

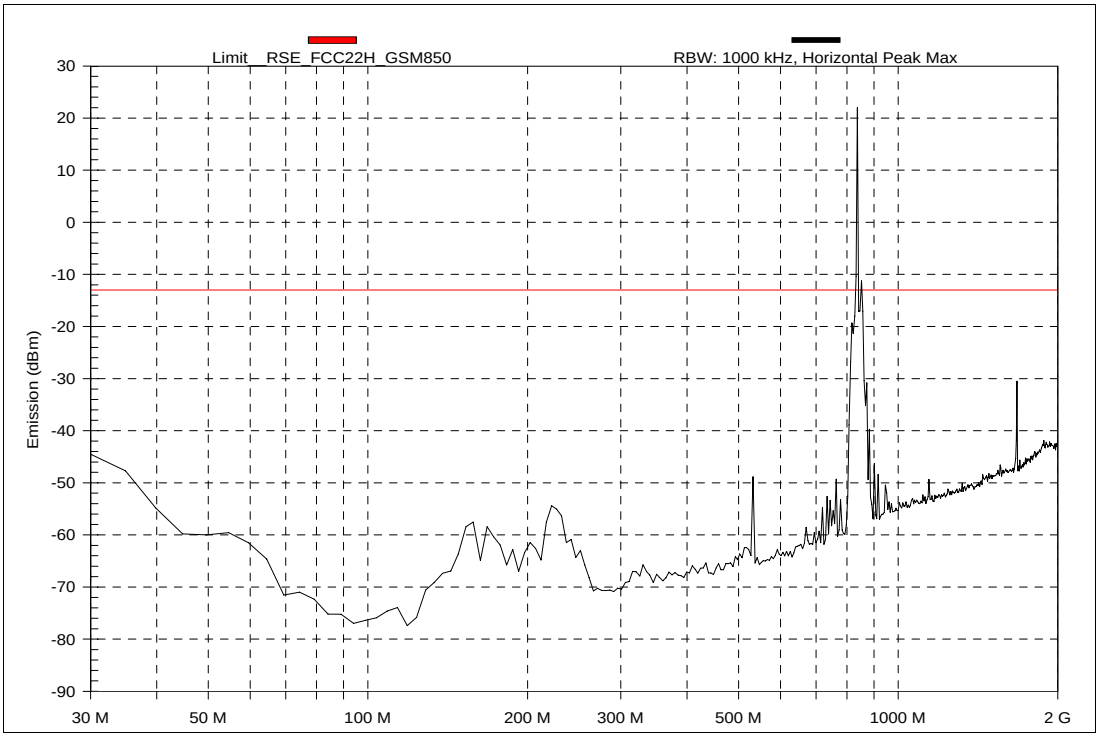


(Plot A.4: Channel = 128, Test Antenna Vertical, 2.4GHz - 10GHz)

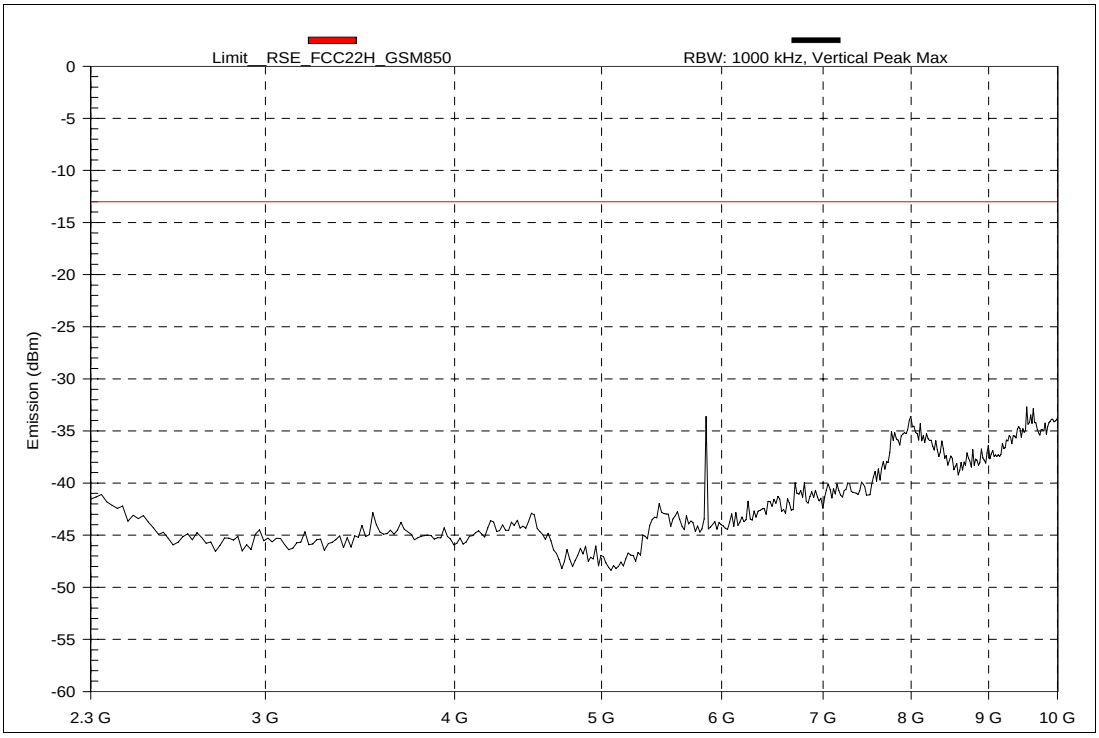
(Plot B.1: Channel = 190, Test Antenna Horizontal, 30MHz - 2.4GHz)



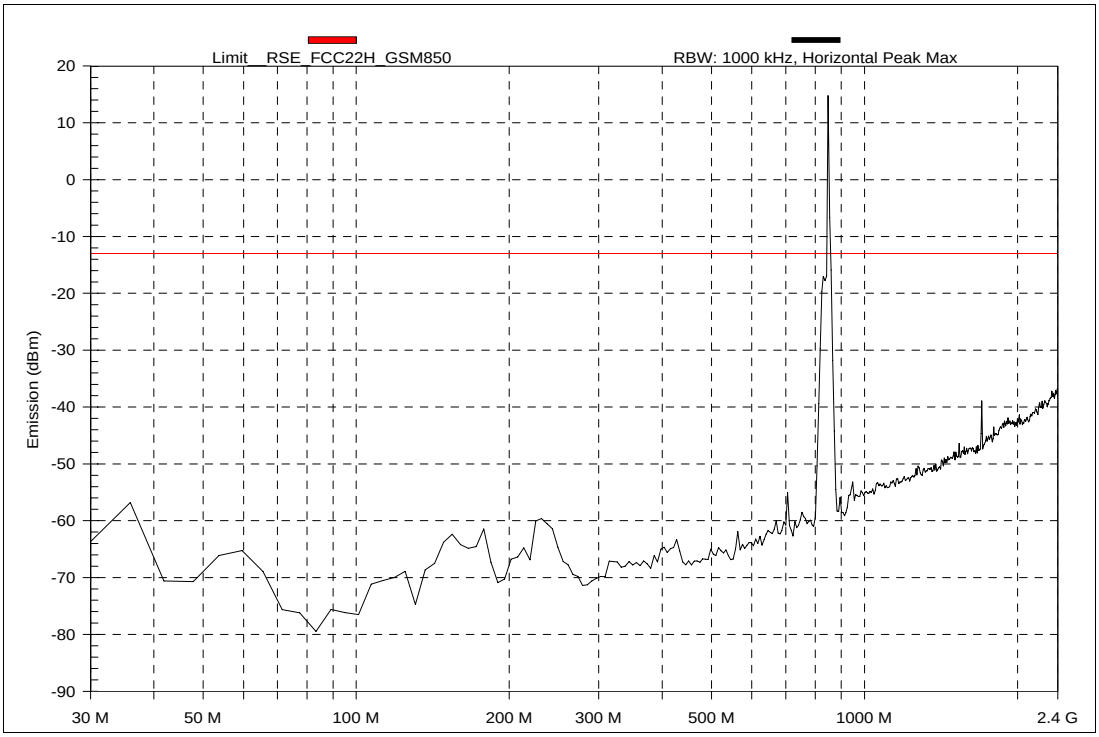
(Plot B.2: Channel = 190, Test Antenna Horizontal, 2.4GHz - 10GHz)



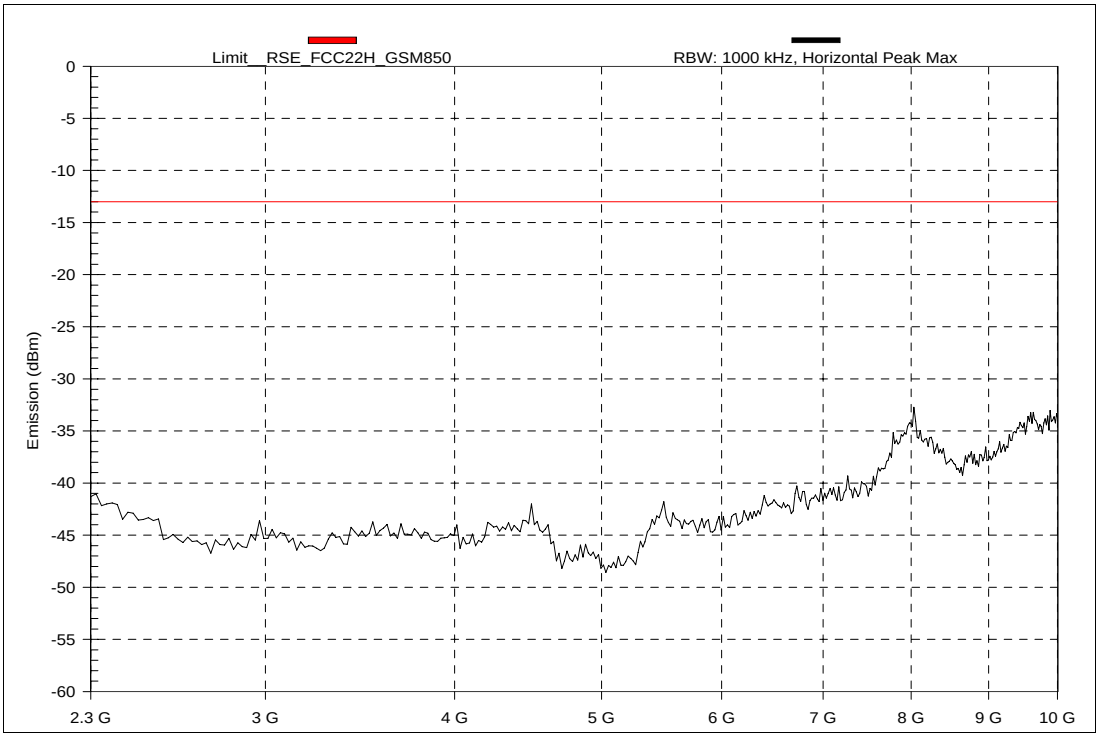
(Plot B.3: Channel = 190, Test Antenna Vertical, 30MHz - 2.4GHz)



(Plot B.4: Channel = 190, Test Antenna Vertical, 2.4GHz - 10GHz)

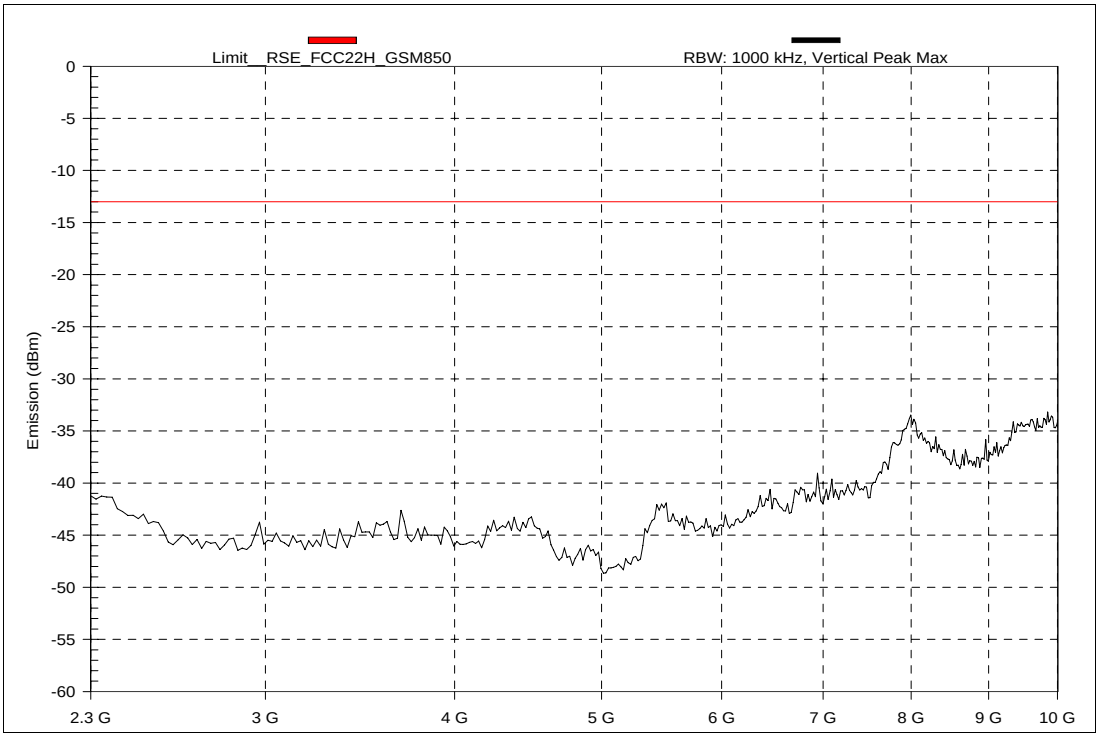


(Plot C.1: Channel = 251, Test Antenna Horizontal, 30MHz - 2.4GHz)



(Plot C.2: Channel = 251, Test Antenna Horizontal, 2.4GHz - 10GHz)

(Plot C.3: Channel = 251, Test Antenna Vertical, 30MHz - 2.4GHz)



(Plot C.4: Channel = 251, Test Antenna Vertical, 2.4GHz - 10GHz)

** END OF REPORT **