



## 47 CFR PART 15 SUBPART B

# TEST REPORT

of

### GSM FWP

Model Name: Avvio G850P  
Trade Name: Avvio  
Report No.: SZ07020012E01  
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



**Shenzhen Electronic Product Quality Testing Center  
Morlab Laboratory**

3/F, Electronic Testing Building, Shahe Road, Xili,  
Nanshan District, Shenzhen, 518055 P. R. China

Tel: +86 755 86130398

Fax: +86 755 86130218



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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 15 Subpart B

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:

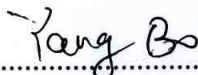


Zhang Weimin

Dated:

2007.03.22

Reviewed by:

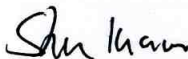


Yang Bo

Dated:

2007.03.22

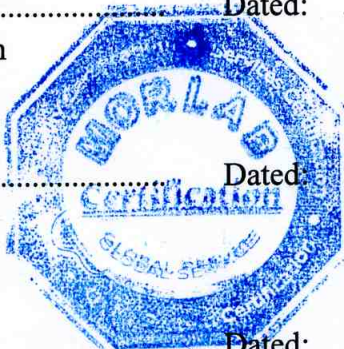
Approved by:



Shu Luan

Dated:

2007.03.22



## 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.)  
Modulation Type.....: GMSK  
Power Supply.....: Battery  
Trade Name: EVE  
Model Name: B0173A  
Manufacturer: EVE BATTERY CO., LTD  
Serial No.: (n.a., marked #1 by test site)  
Capacitance: 1500mAh  
Rated Voltage: 3.6VDC  
Ancillary Equipment .....: AC Adapter  
Trade Name: 华烨  
Model Name: HY0181-A  
Manufacturer: Shenzhen Huaye New Technology Industry Co., Ltd.  
Serial No.: (n.a., marked #1 by test site)  
Rated Input: ~ 100-240V, 47-63Hz, 0.2A  
Rated Output: = 4.25-4.75V, 1000mA  
Wire Length: 170cm

*Note 1:* The EUT, called "MS" for short, is classified as a Class B digital device.

*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 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

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

No.	Section	Description	Result	Date of Test
1	15.107	Conducted Emission	PASS	2007-03-06
2	15.109	Radiated Emission	PASS	2007-03-14

## **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. TEST CONDITIONS SETTING

#### 3.1 Test Mode

According to the functions of the EUT, several Test Modes listed below should be tested (also refer to section 3.2 for the test setup information):

##### A. "PHONE" Test Mode:

The EUT serves mainly as a mobile phone.

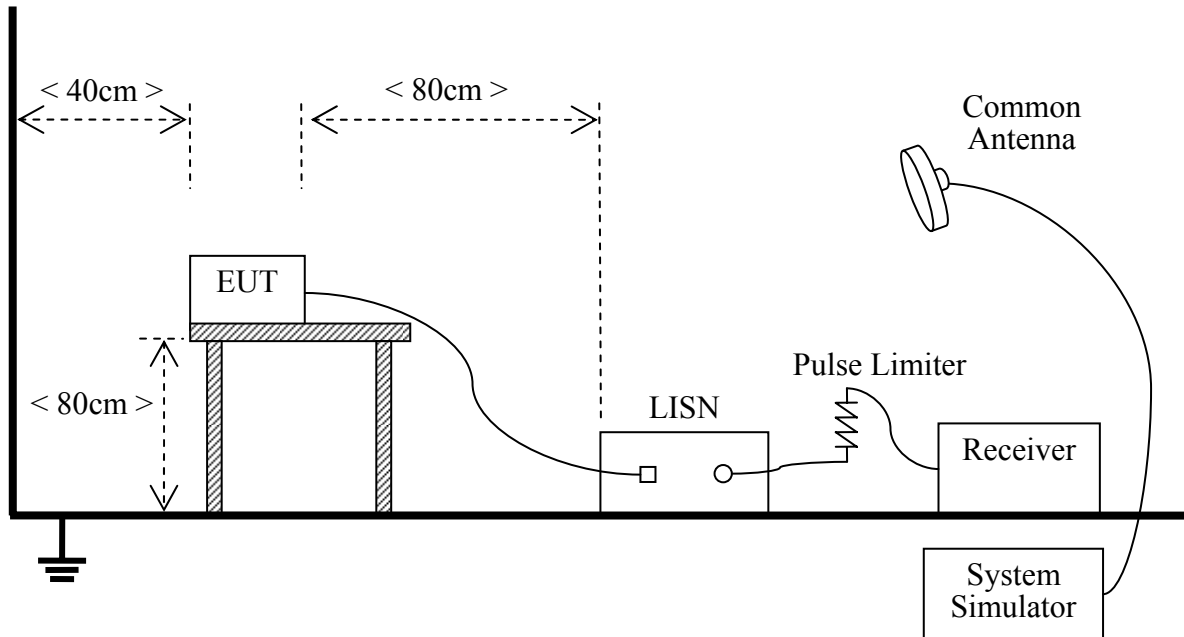
The EUT configuration is MS + Battery + Charger. During the measurement, the Charger, which is powered by 120V 60Hz AC mains supply, keeps charging the emptied Battery.

The EUT is commanded via a System Simulator to operate at GSM 1800MHz band, and to work at the maximum output power i.e. Power Control Level (PCL) = 0, Power Class = 1; the operating channel number is set to middle ARFCN 700. A call is established between the EUT and the System Simulator.

### 3.2 Test Setup and Equipments List

#### 3.2.1 Conducted Emission

##### A. Test Setup:



The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides  $50\Omega/50\mu\text{H}$  of coupling impedance for the measuring instrument. The Common Antenna is used for the call between the EUT and the System Simulator (SS). A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

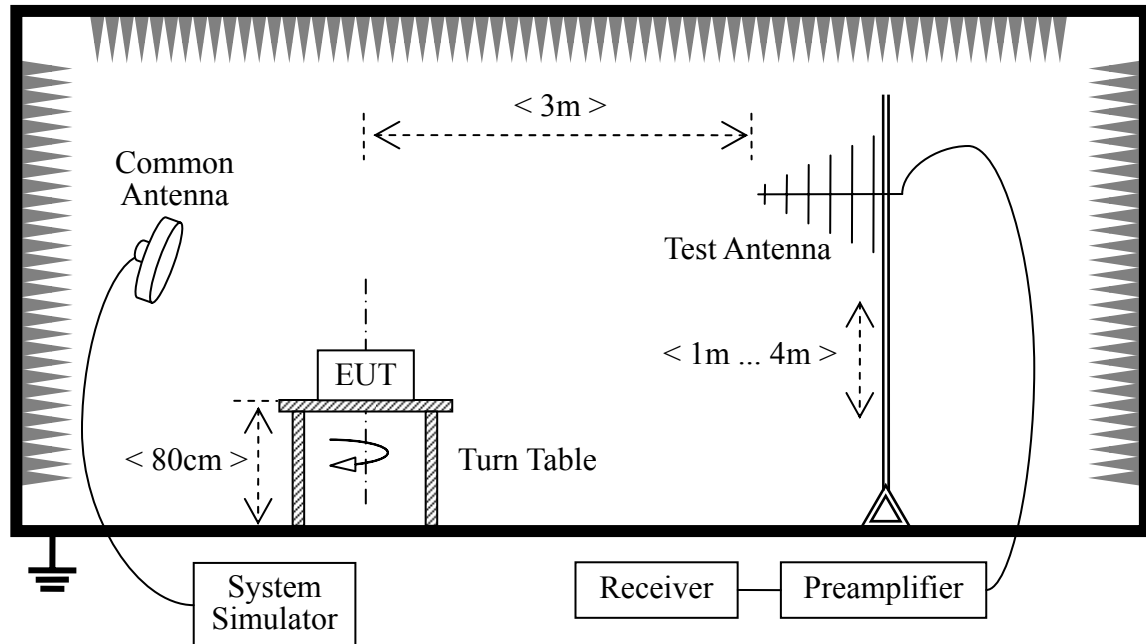
##### B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2006.07	1year
LISN	Schwarzbeck	NSLK 8127	812744	2006.08	1year
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)
System Simulator	Agilent	E5515C	GB43130131	2006.06	1year

#### 3.2.2 Radiated Emission

##### A. Test Setup:





The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower. The Common Antenna is used for the call between the EUT and the System Simulator (SS).

## B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2006.07	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2006.08	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2006.07	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2006.07	1year
System Simulator	Agilent	E5515C	GB43130131	2006.06	1year

## 4. 47 CFR PART 15B REQUIREMENTS

### 4.1 Conducted Emission

#### 4.1.1 Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

NOTE:

- The limit subjects to the Class B digital device.
- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

#### 4.1.2 Test Description

See section 3.2.1 of this report.

#### 4.1.3 Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

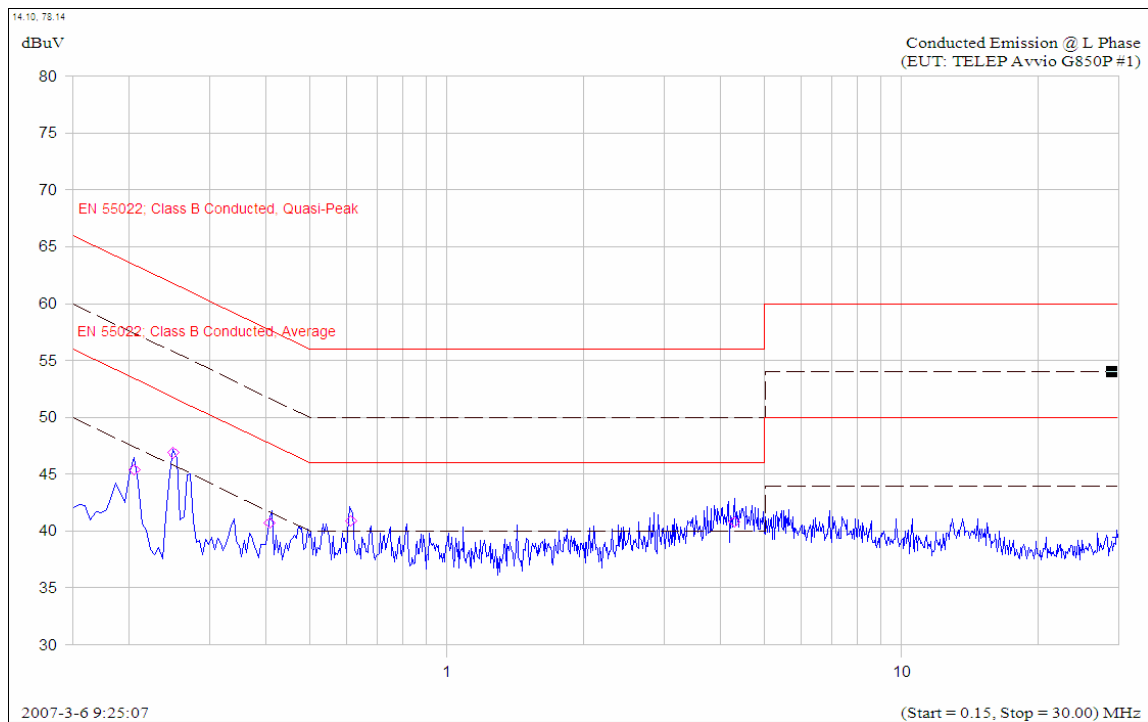
#### A. "PHONE" Test Mode:

##### Test Verdict Recorded for Suspicious Points

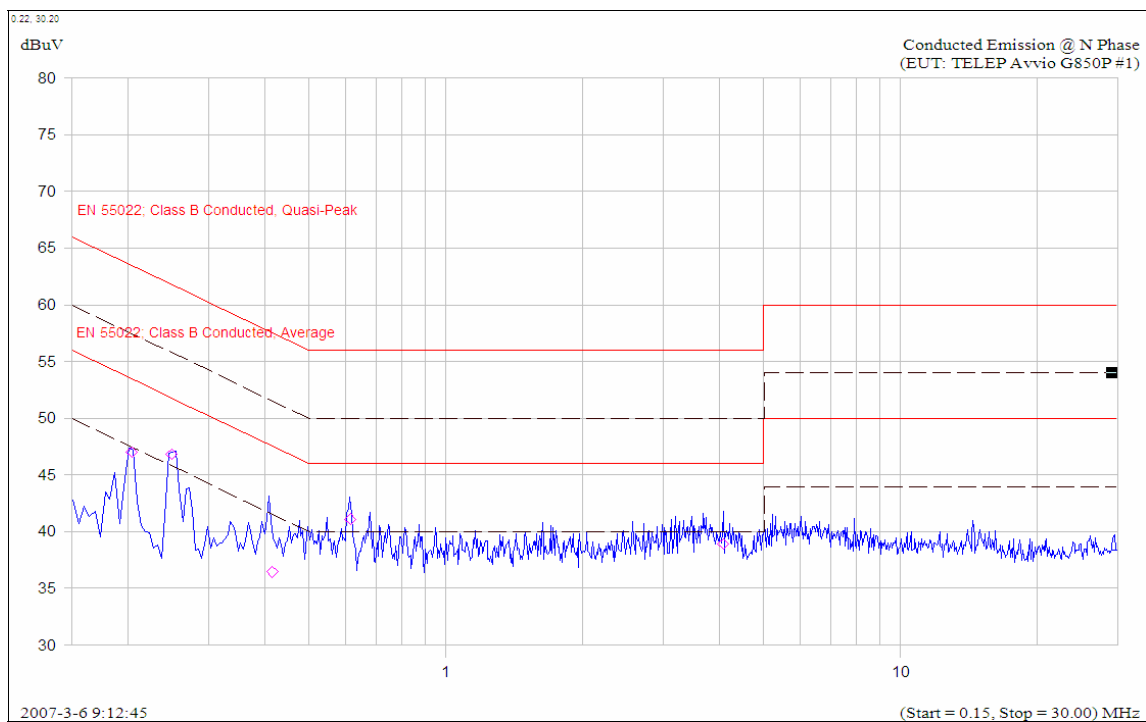
No.	@Frequency (MHz)	Measured Emission Level (dB $\mu$ V)				Limit (dB $\mu$ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
1	0.204	47.0	42.9	35.7	N	63.4	53.4	PASS
2	0.249	46.8	44.2	38.6	N	61.8	51.8	PASS
3	0.415	36.5	31.9	25.7	N	57.5	47.5	PASS

No.	@Frequency (MHz)	Measured Emission Level (dB $\mu$ V)				Limit (dB $\mu$ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
4	0.615	41.1	38.2	32.6	N	56.0	46.0	PASS
5	4.074	38.9	34.3	29.2	N	56.0	46.0	PASS
6	(n.a.)	(n.a.)	(n.a.)	(n.a.)	N	(n.a.)	(n.a.)	PASS
7	0.205	45.4	41.7	34.2	L	63.4	53.4	PASS
8	0.250	46.9	44.8	39.4	L	61.8	51.8	PASS
9	0.407	40.7	36.3	30.2	L	57.7	47.7	PASS
10	0.614	40.9	37.5	31.9	L	56.0	46.0	PASS
11	4.281	40.8	37.2	32.9	L	56.0	46.0	PASS
12	(n.a.)	(n.a.)	(n.a.)	(n.a.)	L	(n.a.)	(n.a.)	PASS

### Test Plot



(Plot A: L Phase)



(Plot B: N Phase)

## 4.2 Radiated Emission

### 4.2.1 Requirement

According to FCC section 15.109, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength	
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

NOTE:

- Field Strength ( $\text{dB}\mu\text{V/m}$ ) =  $20 \cdot \log[\text{Field Strength } (\mu\text{V/m})]$ .
- In the emission tables above, the tighter limit applies at the band edges.

### 4.2.2 Test Description

See section 3.2.2 of this report.

### 4.2.3 Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

#### A. "PHONE" Test Mode:

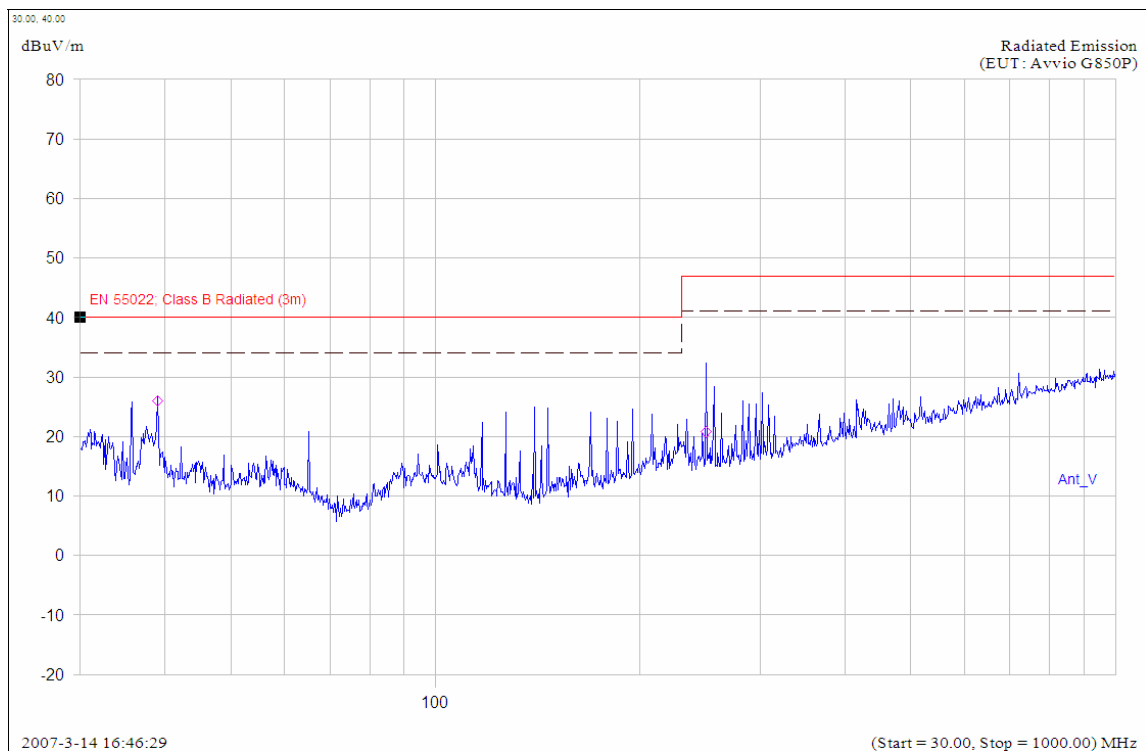
Test Verdict Recorded for Suspicious Points

No.	@Frequency (MHz)	Emission Level ( $\text{dB}\mu\text{V/m}$ )			Quasi-Peak Limit ( $\text{dB}\mu\text{V/m}$ )	Result
		PK	QK	Antenna Polarization		
1	39.026	26.0	22.3	Vertical	40	PASS
2	250.171	20.8	13.5	Vertical	47	PASS
3	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	PASS
4	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	PASS
5	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	PASS
6	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	PASS
7	139.663	21.8	11.5	Horizontal	40	PASS
8	165.616	19.4	10.9	Horizontal	40	PASS

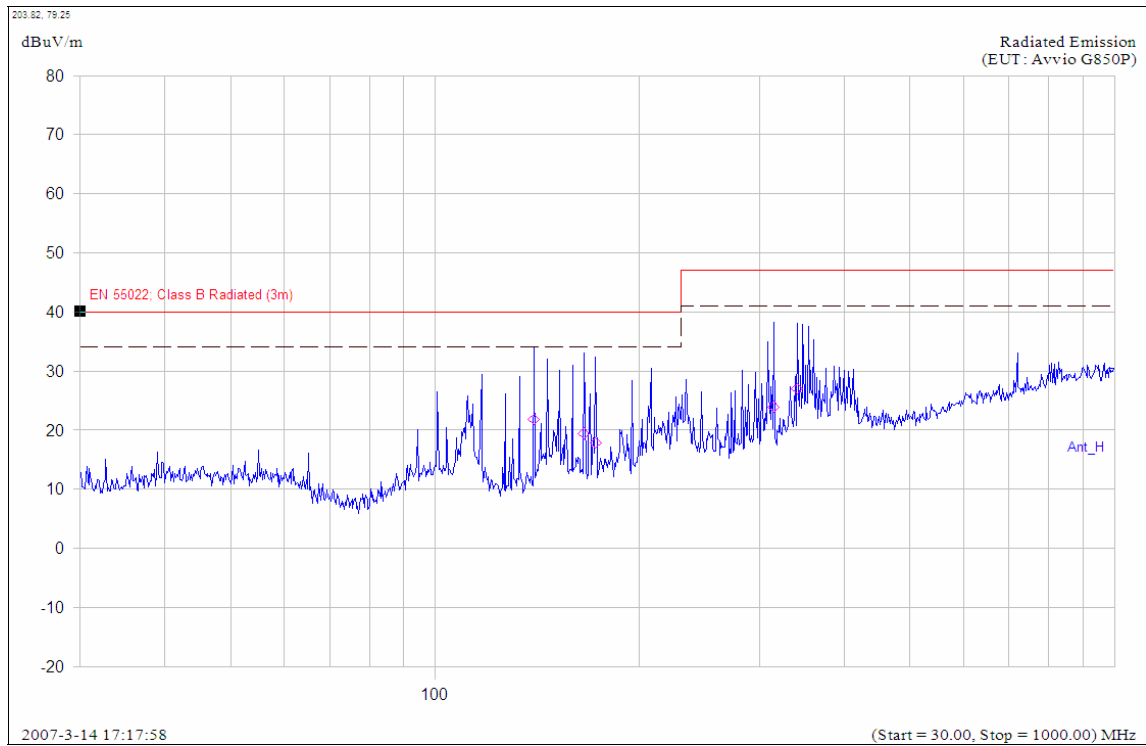
No.	@Frequency (MHz)	Emission Level (dB $\mu$ V/m)			Quasi-Peak Limit (dB $\mu$ V/m)	Result
		PK	QK	Antenna Polarization		
9	172.388	17.8	10.8	Horizontal	40	PASS
10	315.118	23.9	16.5	Horizontal	47	PASS
11	341.436	27.0	20.4	Horizontal	47	PASS
12	(n.a.)	(n.a.)	(n.a.)	Horizontal	(n.a.)	PASS

### Test Plot

Note: Following is the plots for emission measurement; please note that marked spikes with circle should be ignored because they are MS and SS carrier frequency.



(Plot A: Test Antenna Vertical)



(Plot B: Test Antenna Horizontal)

**\*\* END OF REPORT \*\***