



47 CFR PART 15 SUBPART B

TEST REPORT

of

USB EDGE Modem

Model Name: SEGM-520C
Brand Name: SOLOMON
Report No.: SZ08040038E02
FCC ID: NIT-SEGM520C

prepared for

SOLOMON Technology Corp

No.42.Sing Zhong Rd.,Nei Hu Dist.,Taipei,Taiwan, R.O.C

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1. TEST CERTIFICATION

Equipment under Test: USB EDGE Modem

Brand Name: SOLOMON

Model Name: SEGM-520C

FCC ID: NIT-SEGM520C

Applicant: SOLOMON Technology Corp

No.42.Sing Zhong Rd.,Nei Hu Dist.,Taipei,Taiwan, R.O.C

Manufacturer: SOLOMON Technology Corp

No.42.Sing Zhong Rd.,Nei Hu Dist.,Taipei,Taiwan, R.O.C

Emission Designator 300KGXW

Test Standards: 47 CFR Part 15 Subpart B

Test Date(s): May 12, 2008 –Jun 3, 2008

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: Chen Chao Dated: 2008.06.05
Chen Chao

Reviewed by: Wei Yanquan Dated: 2008.06.05
Wei Yanquan

Approved by: Shu Luan Dated: 2008.06.05
Shu Luan



2. GENERAL INFORMATION

2.1 EUT Description

EUT Type.....: USB EDGE Modem
Model Name: SEGM-520C
Serial No.....: (n.a, marked #1 by test site)
IMEI.....: 351274001368230
Hardware Version: X520 B
Software Version.....: V1.2.3.13
Modulation Type.....: GMSK
Power Supply.....: The EUT was powered by PC via USB port

Note 1: The EUT is a GSM/GPRS/EDGE wireless modem; it supports GSM 850MHz, 900MHz, GSM 1800MHz, 1900MHz. Only GSM 850MHz , PCS 1900MHz ,GPRS and EDGE model are tested in this report.

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	Test date
1	15.107	Conducted Emission	PASS	2008-5-28
2	15.109	Radiated Emission	PASS	2008-5-21

NOTE:

The tests were performed according to the method of measurements prescribed in ANSI C63.4 2003.

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 Service for Conformity Assessment (CNAS) 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):	96

3. TEST CONDITIONS SETTING

3.1 Test Mode

During the measurement, there are two Test Modes that will be tested in Conducted Emission and Radiated Emission. These test modes are showed as below:

(1) The first test mode (GSM)

The EUT configuration of the emission tests is EUT + USB Cable+ PC.

In this test mode, the EUT will be working under the Traffic operating mode and Idle operating mode.

During the measurement of Traffic operating mode, a communication link was established between the EUT and a System Simulator (SS). The EUT operated at GSM 850MHz mid ARFCN (190) and maximum output power (level 5).

(2) The second test mode (GPRS/EDGE)

The EUT configuration of the emission tests is EUT + USB Cable+ PC.

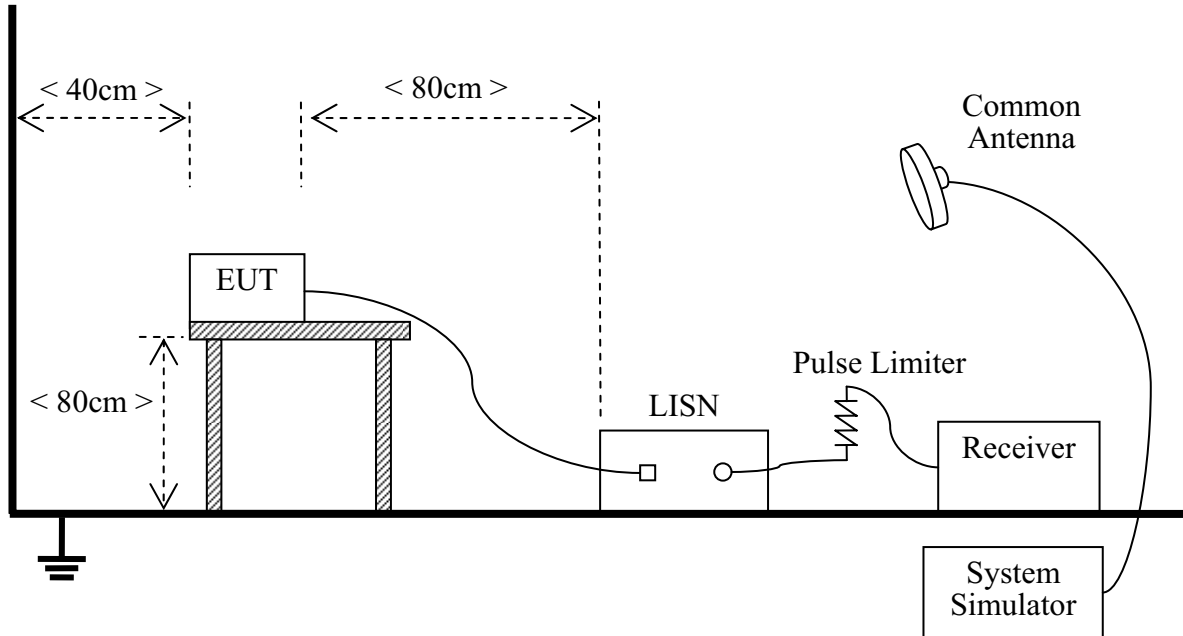
In this test mode, a GPRS/EDGE link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

NOTE: These test modes are performed, only the worst cases are recorded in this report.

3.2 Test Setup and Equipments List

3.2.1 Conducted Emission

A. Test Setup:



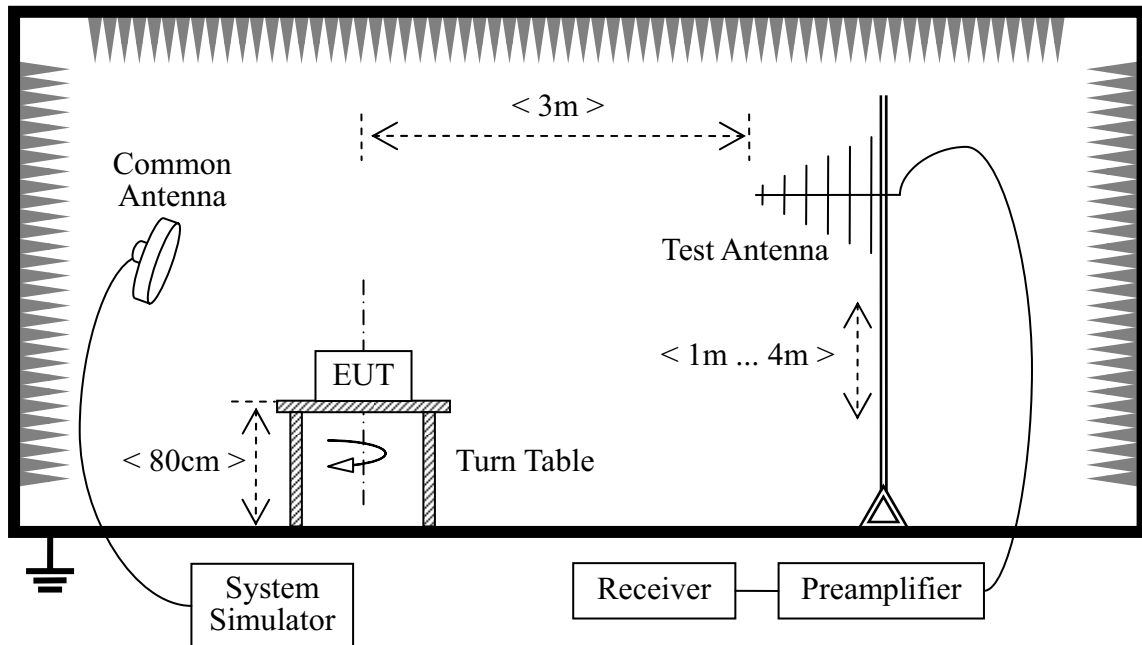
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument. The 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	2007.07	1year
LISN	Schwarzbeck	NSLK 8127	812744	2007.08	1year
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)
System Simulator	Agilent	E5515C	GB43130131	2007.06	1year
Personal Computer	IBM	T20	78-N7117	(n.a.)	(n.a.)

3.2.2 Radiated Emission

C. 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).

D. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2007.07	1year
Semi-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2006.08	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2007.07	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2007.07	1year
System Simulator	Agilent	E5515C	GB43130131	2007.06	1year
Personal Computer	IBM	T20	78-N7117	(n.a.)	(n.a.)

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 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 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.

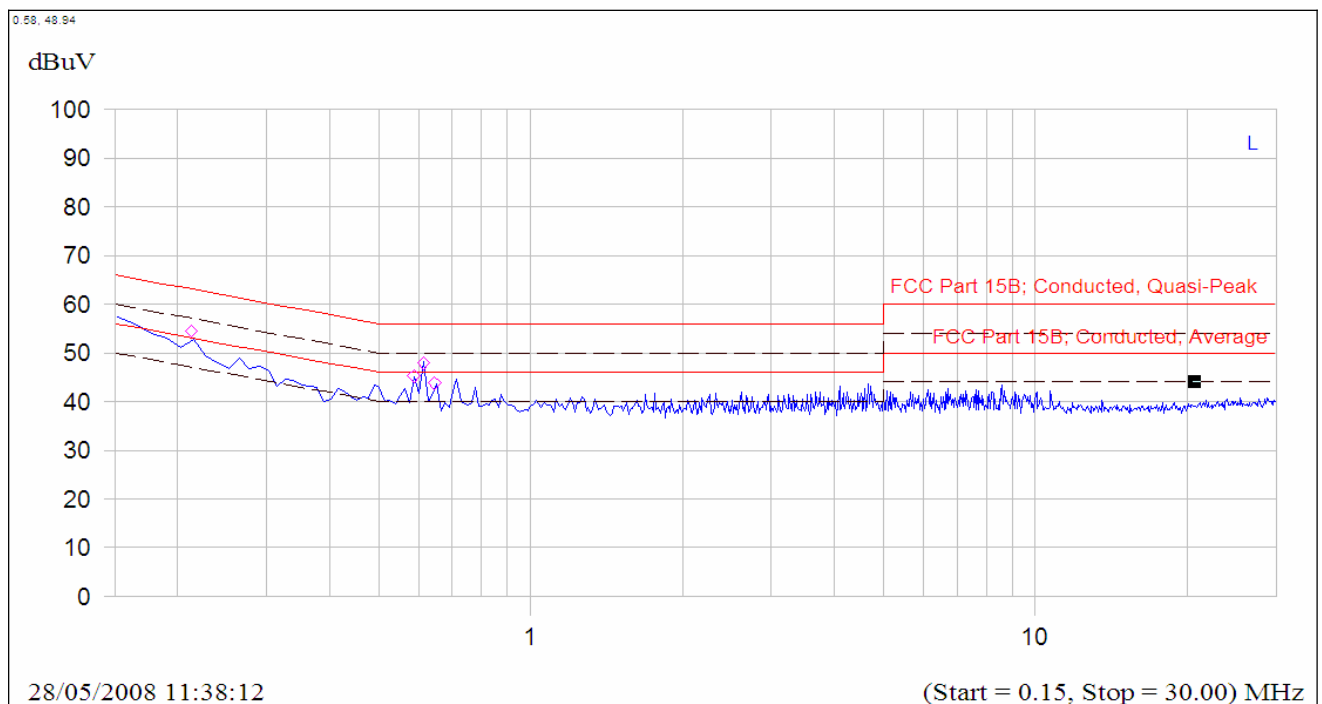
A. Test Verdict Recorded for Suspicious Points:

No.	@Frequency (MHz)	Measured Emission Level (dB μ V)				Limit (dB μ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
1	0.213	54.5	49.5	42.0	L	63.1	53.1	PASS
2	0.588	45.2	42.7	33.4	L	56.0	46.0	PASS
3	0.615	47.9	44.9	35.2	L	56.0	46.0	PASS

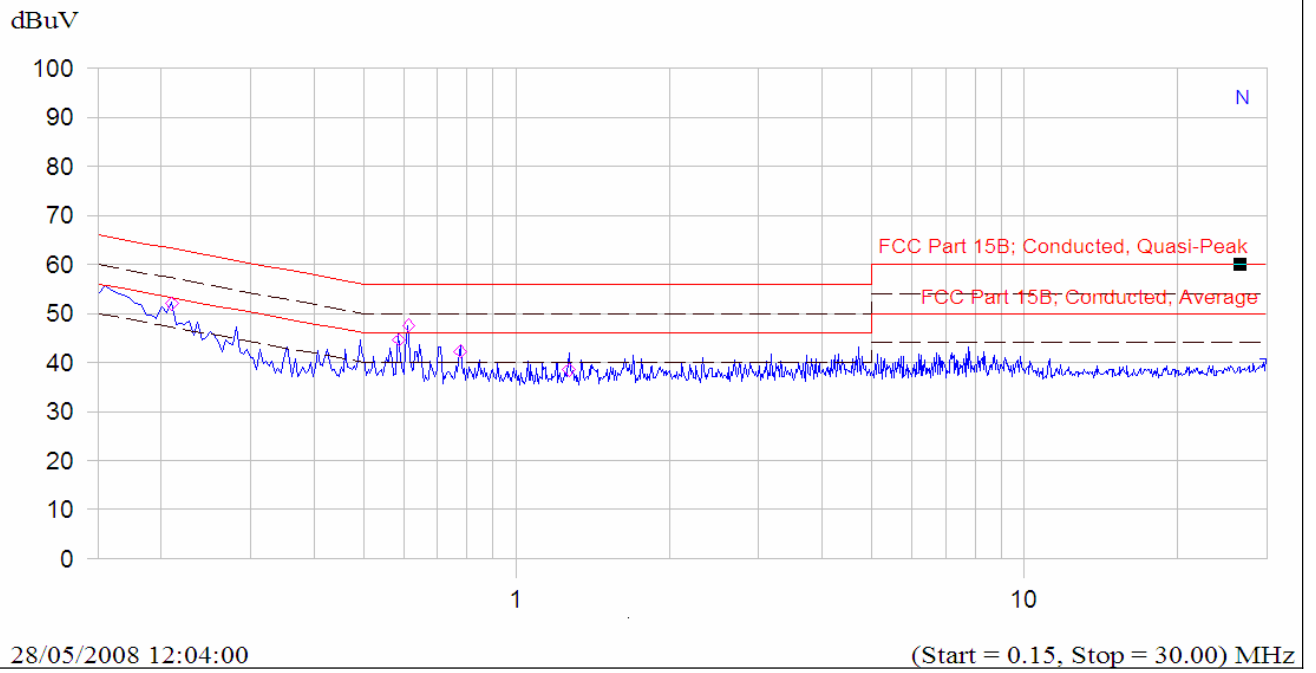
No.	@Frequency (MHz)	Measured Emission Level (dB μ V)				Limit (dB μ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
4	0.645	43.8	38.0	29.0	L	56.0	46.0	PASS
5	(n.a.)	(n.a.)	(n.a.)	(n.a.)	L	(n.a.)	(n.a.)	(n.a.)
6	(n.a.)	(n.a.)	(n.a.)	(n.a.)	L	(n.a.)	(n.a.)	(n.a.)
7	0.210	52.0	45.9	39.5	N	63.2	53.2	PASS
8	0.588	44.6	42.1	32.6	N	56.0	46.0	PASS
9	0.614	47.6	44.6	34.5	N	56.0	46.0	PASS
10	0.776	42.3	38.9	36.2	N	56.0	46.0	PASS
11	1.270	38.5	36.3	33.8	N	56.0	46.0	PASS
12	(n.a.)	(n.a.)	(n.a.)	(n.a.)	N	(n.a.)	(n.a.)	(n.a.)

Note: "--" in the table above means that the emissions are too small to be measured and are at least 10 dB below the limit.

B. 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. Test Verdict Recorded for Suspicious Points:

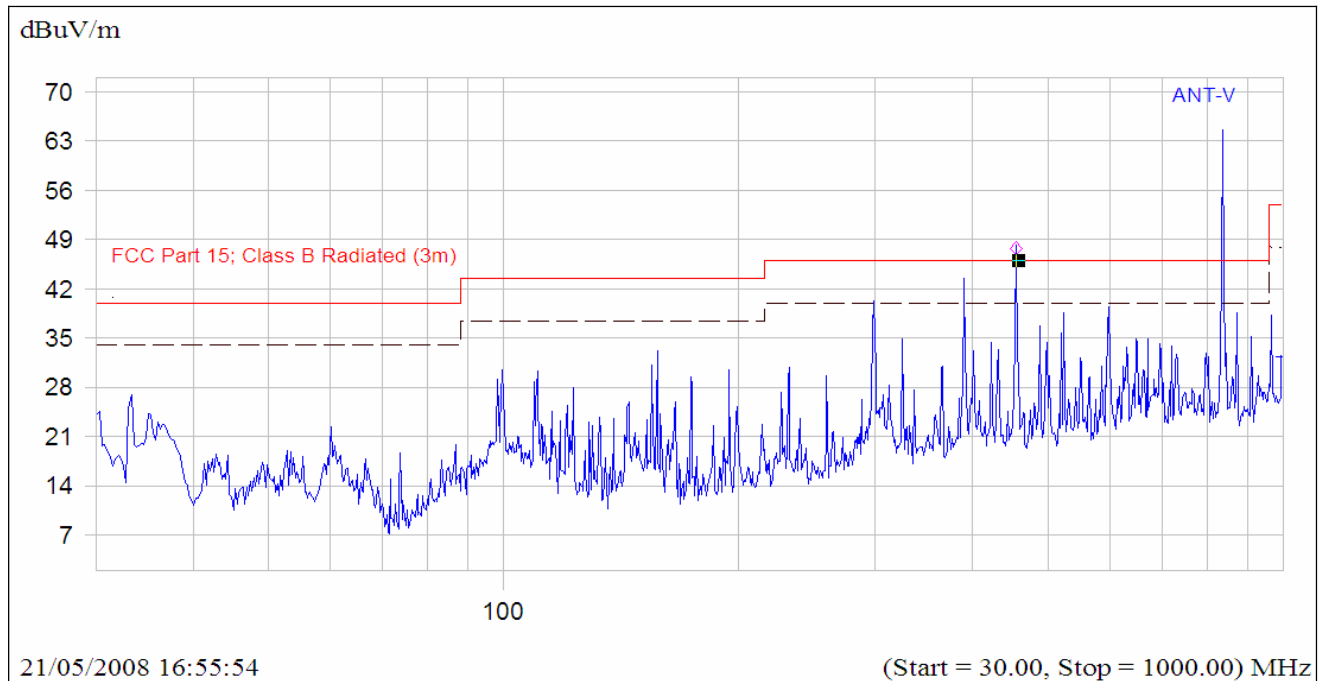
No.	@Frequency (MHz)	Emission Level ($\text{dB}\mu\text{V/m}$)			Quasi-Peak Limit ($\text{dB}\mu\text{V/m}$)	Result
		PK	QP	Antenna Polarization		
1	299.172	33.9	31.1	Vertical	46	PASS
2	389.882	45.8	43.7	Vertical	46	PASS
3	454.863	47.8	45.4	Vertical	46	PASS
4	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	(n.a.)
5	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	(n.a.)
6	(n.a.)	(n.a.)	(n.a.)	Vertical	(n.a.)	(n.a.)
7	298.721	43.7	39.8	Horizontal	46	PASS
8	389.887	43.4	41.3	Horizontal	46	PASS

No.	@Frequency (MHz)	Emission Level (dB μ V/m)			Quasi-Peak Limit (dB μ V/m)	Result
		PK	QP	Antenna Polarization		
9	454.874	44.2	41.9	Horizontal	46	PASS
10	(n.a.)	(n.a.)	(n.a.)	Horizontal	(n.a.)	(n.a.)
11	(n.a.)	(n.a.)	(n.a.)	Horizontal	(n.a.)	(n.a.)
12	(n.a.)	(n.a.)	(n.a.)	Horizontal	(n.a.)	(n.a.)

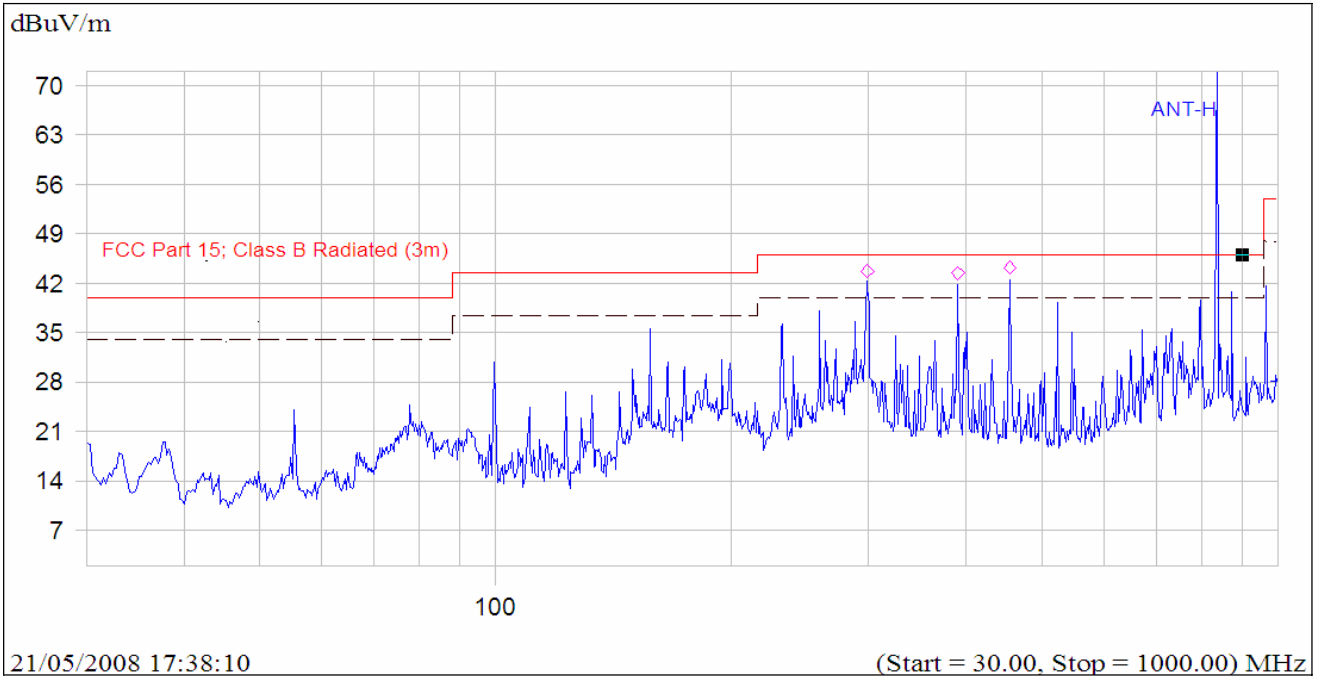
Note: "--" in the table above means that the emissions are too small to be measured and are at least 10 dB below the limit.

B. 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 **