



47 CFR PART 15 SUBPART B

TEST REPORT

of

EDGE Quadband with full QWERTY Keypad Mobile Phone/i720

Model Name: I720
Brand Name: Verykool
Report No.: SH09080017E01
FCC ID: WAI720

prepared for

Verykool USA Inc.

4350 Executive Dr., Suite 100, San Diego, CA 92121, USA



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CTIA Authorized Test Lab

LAB CODE 20081223-00

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TABLE OF CONTENTS

1	TEST CERTIFICATION	3
2	GENERAL INFORMATION.....	4
2.1	EUT Description	4
2.2	Test Standards and Results	5
2.3	Facilities and Accreditations	5
2.3.1	Facilities	5
2.3.2	Test Environment Conditions.....	5
3	TEST CONDITIONS SETTING	6
3.1	Test Mode	6
3.2	Test Setup and Equipments List	7
3.2.1	Conducted Emission.....	7
3.2.2	Radiated Emission.....	8
47 CFR PART 15B REQUIREMENTS.....		9
4	Conducted Emission	9
4.1	Requirement.....	9
4.2	Test Description	9
4.3	Test Result	9
5	Radiated Emission	11
5.1	Requirement.....	11
5.2	Test Description	11
5.3	Test Result	12



1 TEST CERTIFICATION

Equipment under Test: EDGE Quadband with full QWERTY Keypad Mobile Phone/i720

Brand Name: Verykool

Model Name: I720

FCC ID: WAI720

Applicant: Verykool USA Inc.

4350 Executive Dr. #100, San Diego, CA 92121, USA

Manufacturer: Verykool USA Inc.

4350 Executive Dr. #100, San Diego, CA 92121, USA

Test Standards: 47 CFR Part 15 Subpart B

Test Date(s): Nov 23, 2009 – Nov 27, 2009

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 Wenjie Dated: 2010.2.10
Zhang Wenjie

Reviewed by: Zhang Jun Dated: 2010.2.10
Zhang Jun

Approved by: Su Feng Dated: 2010.2.10
Su Feng



2 GENERAL INFORMATION

2.1 EUT Description

EUT Type: EDGE Quadband with full QWERTY Keypad Mobile Phone/i720
Model Name: I720
Serial No.....: (n.a)
IMEI: 0000000000000000
Hardware Version : W34ms00b1
Software Version: T081105
Modulation Type.....: GMSK
Power Supply: Battery

Brand name: Verykool
Mode Name.: A0381
Capacitance: 1030mAh
Rated voltage: 3.7V
Charge limited: 4.2V
Manufacturer: SHENZHEN BAK BATTERY CO.,LTD
BAK INDUSTRIAL ZONE KUICHONG
ST LONGGANG DISTRICT
SHENZHEN GUANGDONG CHINA

Ancillary Equipment 1: AC Adapter (Charger for Battery)
Brand name: Verykool
Mode Name.: P-032B
Rated Input: AC 100/240V,200mA,50/60Hz
Rated Output: DC 5V,500mA,Max 2.5W
Manufacturer: something high electroc(xiamen)co.,ltd
No. 421, Xiahushe, Houken Area,Huli
Industrial Park,Xiamen, PRC.

Note 1: The EUT is a model of GSM 850/1900、GPRS、EDGE、Bluetooth、WIFI mobile phone.

Note 2: The normal configuration for the EUT is the MS associated with ancillary equipments e.g.theBattery and/or the AC Adapter(Charger).

Note 3: 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
1	15.107	Conducted Emission	PASS
2	15.109	Radiated Emission	PASS

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 Laboratories (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

1. The test modes of the EUT are showed as below:

- a) The first test mode (GSM)

The EUT configuration of the emission tests is EUT + Battery + Charger.

During the measurement, the lithium battery was installed into the EUT, and the charger was connected to the EUT. A communication link was established between the EUT and a System Simulator (SS).

- b) The second test mode (GPRS)

The EUT configuration of the emission tests is EUT + Battery + Charger.

In this test mode, a GPRS 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.

- c) The third test mode (EDGE)

The EUT configuration of the emission tests is EUT + Battery + Charger.

In this test mode, a 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.

- d) The fourth test mode (Bluetooth)

The EUT configuration of the emission test is EUT + Battery + Charger.

In this test mode, a Bluetooth 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.

- e) The fifth test mode (WIFI)

The EUT configuration of the emission test is EUT + Battery + Charger.

In this test mode, a WIFI 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.

- f) The sixth test mode (EUT+PC)

The EUT configuration of the emission test is EUT + Battery + Charger.

In this test mode, a connection was established between the EUT and a PC; data was transmitted between EUT and the PC, and maintained during the measurement.

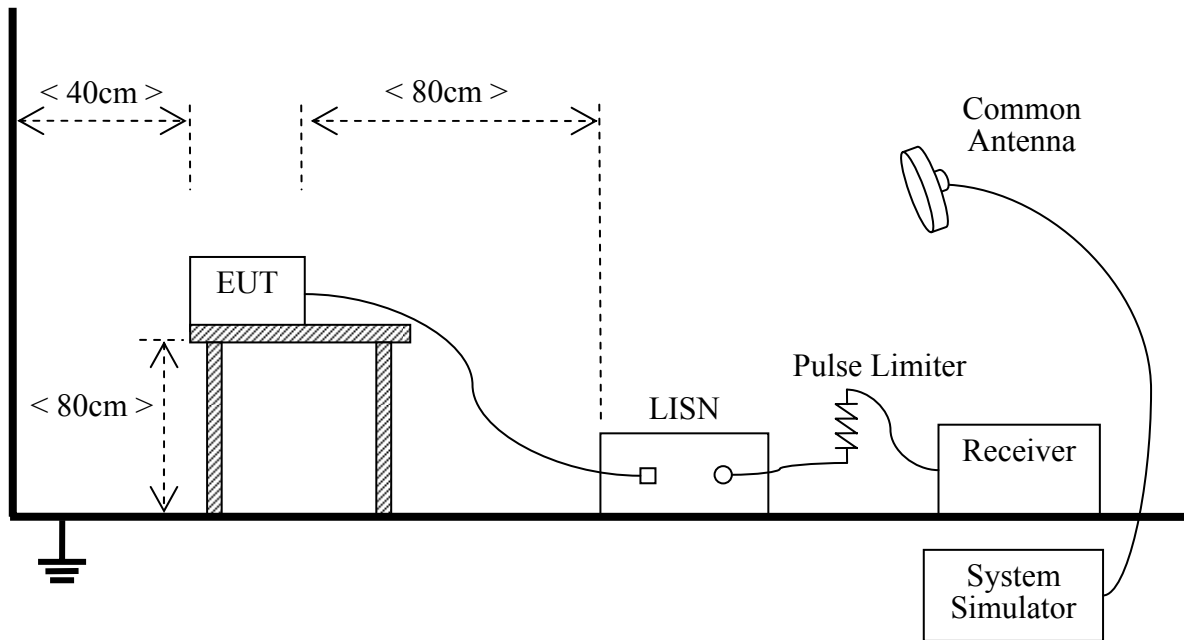
NOTE:

All 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:



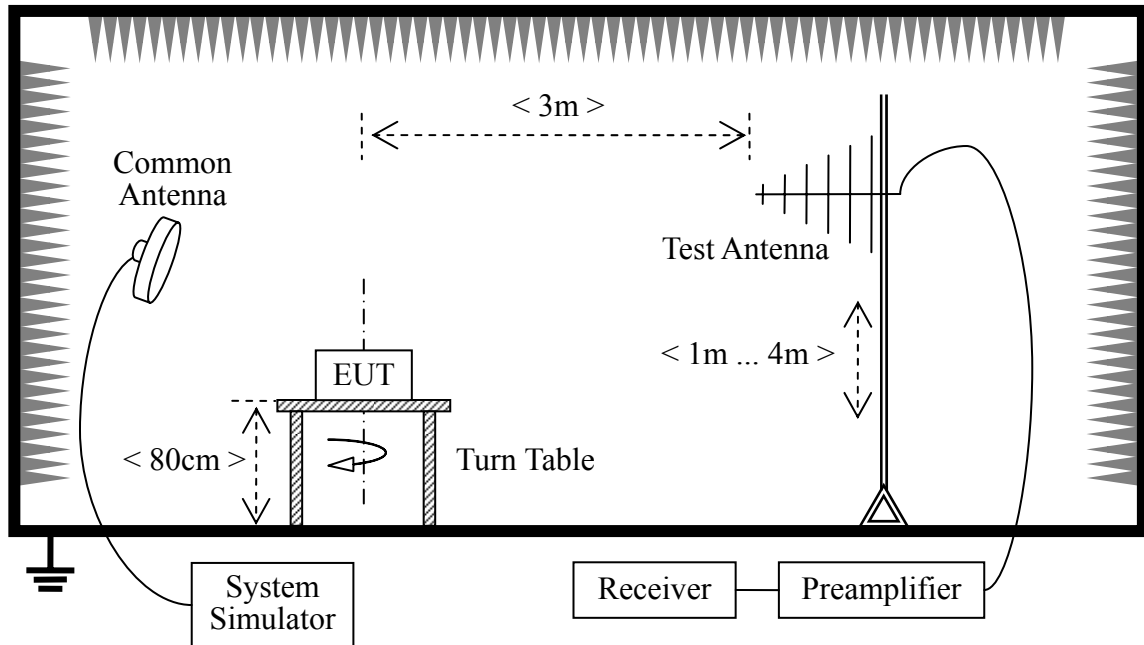
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument. The 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	Rohde&Schwarz	ESCI3	100666	2009.10	1year
LISN	Rohde&Schwarz	ENV216	812744	2009.10	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2009.10	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(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	Rohde&Schwarz	ESCI3	100666	2009.10	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.10	1year
Test Antenna - Bi-Log	Rohde&Schwarz	HL562	100385	2009.10	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2009.10	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(n.a.)	(n.a.)

47 CFR PART 15B REQUIREMENTS

4 Conducted Emission

4.1 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.

4.2 Test Description

See section 3.2.1 of this report.

4.3 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.

4.3.1.1 GSM Test Mode

4.3.1.1.1 The test mode

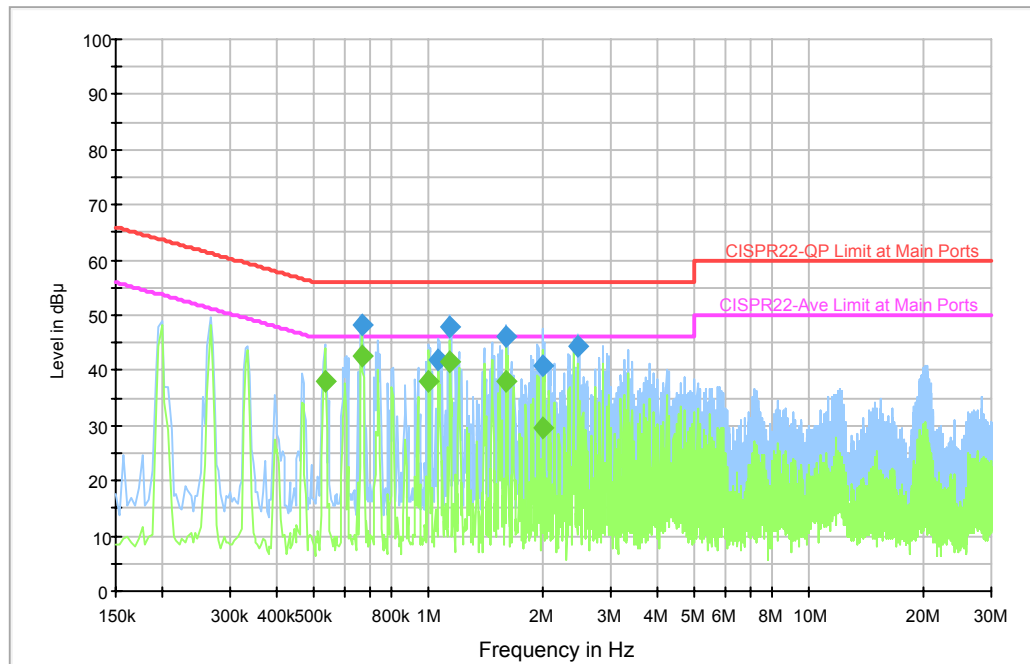
The EUT configuration of the emission tests is EUT + Battery + Charger.

A. Test Verdict Recorded for Suspicious Points:

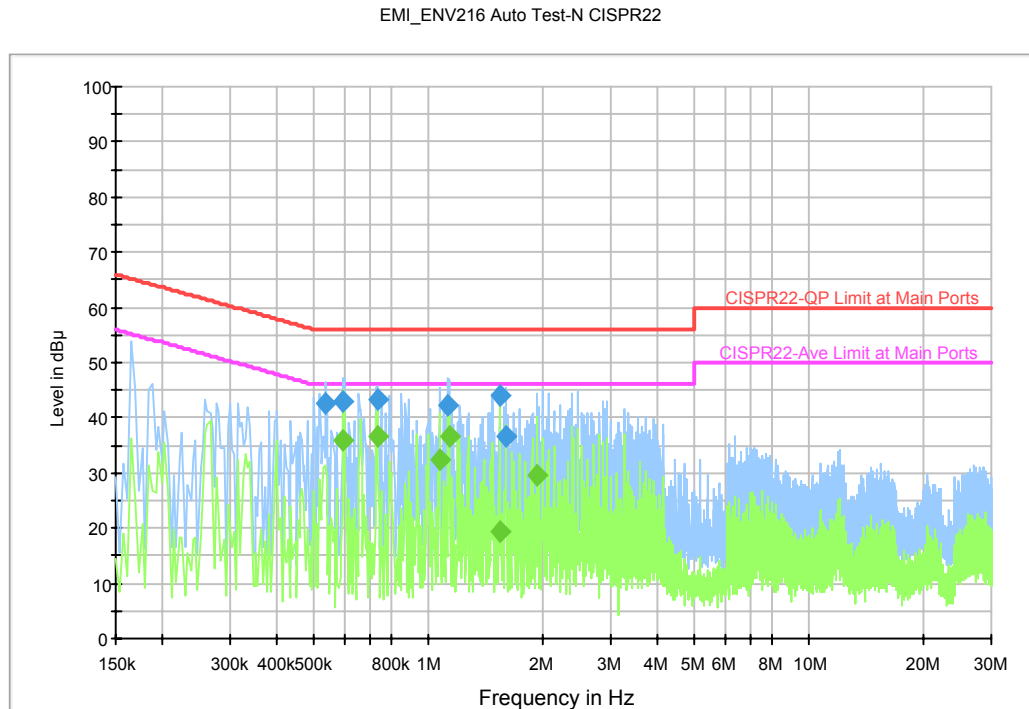
No.	@Frequency (MHz)	Measured Emission Level (dB μ V)			Limit (dB μ V)		Verdict
		QP	AV	Phase	QP	AV	
1	0.664912	48.2	42.6	L	56.0	46.0	PASS
2	1.060425	41.8	38.0	L	56.0	46.0	PASS
3	1.131319	47.7	41.6	L	56.0	46.0	PASS
4	1.597725	46.3	37.9	L	56.0	46.0	PASS
5	1.993238	40.8	29.6	L	56.0	46.0	PASS
6	2.467106	44.5	38.1	L	56.0	46.0	PASS
7	0.534319	42.5	32.3	N	56.0	46.0	PASS
8	0.594019	43.1	36.0	N	56.0	46.0	PASS
9	0.728344	43.3	36.7	N	56.0	46.0	PASS
10	1.123856	42.2	36.8	N	56.0	46.0	PASS
11	1.530562	44.1	19.4	N	56.0	46.0	PASS
12	1.586531	36.7	29.7	N	56.0	46.0	PASS

B. Test Plot:

EMI_ENV216 Auto Test-L CISPR22



(Plot: L Phase)



(Plot: N Phase)

5 Radiated Emission

5.1 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	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

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.

5.2 Test Description

See section 3.2.2 of this report.

5.3 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.

5.3.1.1 GSM test mode

5.3.1.1.1 The test mode

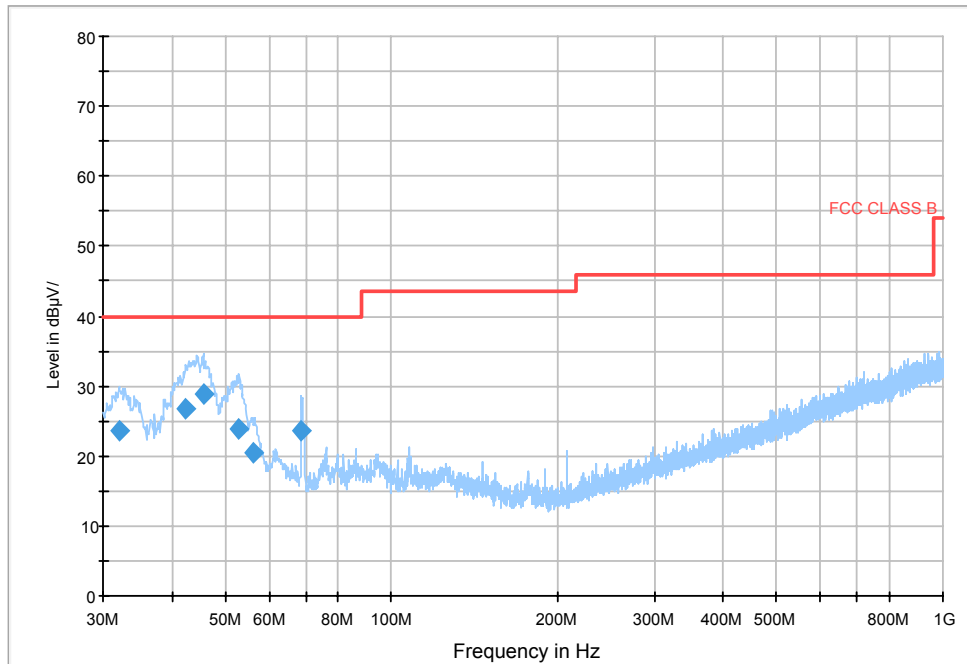
The EUT configuration of the emission tests is EUT + Battery + Charger.

A. Test Verdict Recorded:

No.	@Frequency (MHz)	Measured Emission Level (dBμV)		Limit (dBμV)	Margin (dB)	Verdict
		QP	Polarity			
1	32.061250	23.6	V	40.0	16.4	PASS
2	42.488750	26.8	V	40.0	13.2	PASS
3	45.762500	28.8	V	40.0	11.2	PASS
4	52.673750	23.8	V	40.0	16.2	PASS
5	56.068750	20.3	V	40.0	19.7	PASS
6	68.557500	23.7	V	40.0	29.3	PASS
7	30.970000	17.0	H	23.0	40.0	PASS
8	45.641250	11.0	H	29.0	40.0	PASS
9	56.796250	11.1	H	28.9	40.0	PASS
10	79.955000	13.0	H	27.0	40.0	PASS
11	104.811250	15.6	H	27.9	43.5	PASS
12	207.995000	25.4	H	18.1	43.5	PASS

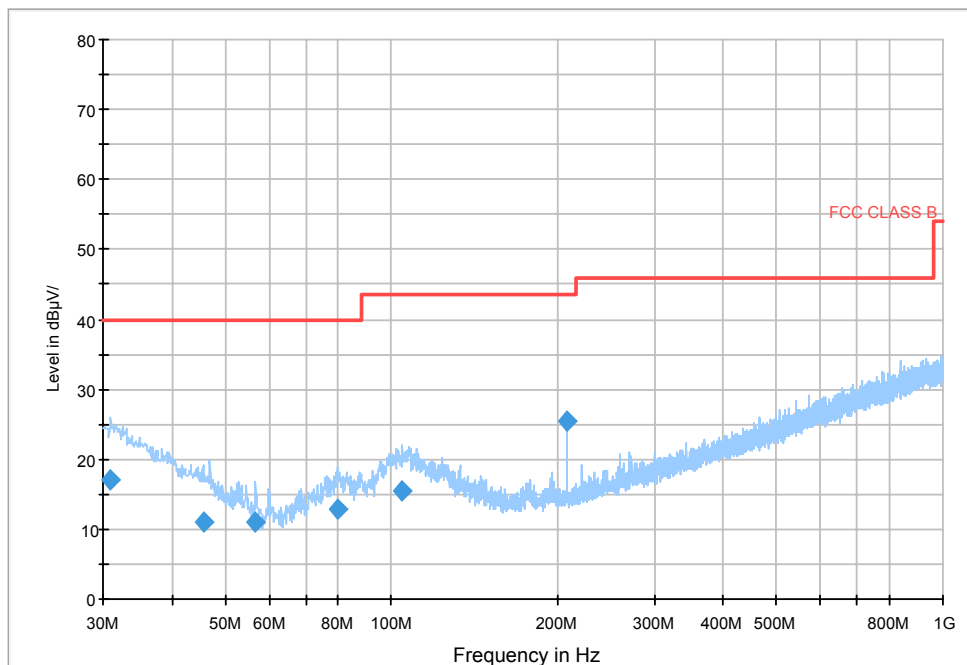
B. Test Plot:

Copy of EMI_HL562 AutoTest-V



(Plot: Test Antenna Vertical)

Copy of EMI_HL562 AutoTest-H



(Plot: Test Antenna Horizontal)

**** END OF REPORT ****