

FCC PART 15B MEASUREMENT AND TEST REPORT


For

SHENZHEN VOGUE INDUSTRIES CO., LTD.

Bldg. 38, 5th Cuigang Industry Zone, Huaide Village, Fuyong Town,

Bao'an District, Shenzhen, China

FCC ID: V97GPS600

Report Concerns: Original Report	Equipment Type: GPS
Model:	<u>GPS600</u>
Report No.:	<u>STR08048123E-3</u>
Test/Witness Engineer:	<u>Susan Su</u>
Test Date:	<u>2008-05-13 to 2008-05-15</u>
Prepared By:	Shenzhen SEM.Test Compliance Service Co., Ltd. 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101)
Approved & Authorized By:	 _____ Jandy So /PSQ Manager

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: SHENZHEN VOGUE INDUSTRIES CO., LTD.
Address of applicant: Bldg. 38, 5th Cuigang Industry Zone, Huaide Village,
Fuyong Town, Bao'an District, Shenzhen, China

Manufacturer: SHENZHEN VOGUE INDUSTRIES CO., LTD.
Address of manufacturer: Bldg. 38, 5th Cuigang Industry Zone, Huaide Village,
Fuyong Town, Bao'an District, Shenzhen, China

General Description of E.U.T

Items	Description
EUT Description:	GPS
Trade Name:	/
Model No.:	GPS600, GPS329, GPS349, GPS371, GPS352, GPS342, GPS321
Rated Voltage:	DC 5V
Power:	5W
Size:	9.3x8.3x2.3 cm
For more information refer to the circuit diagram form and the user's manual.	

The test data is gathered from a production sample, provided by the manufacturer. Test is carried out with GPS600 since the others listed in the report have the different appearance only without electronic construction changed.

1.2 Test Standards

The following report is prepared on behalf of the SHENZHEN VOGUE INDUSTRIES CO., LTD. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

1.3 Related Submittal(s)/Grant(s)

No Related Submittal(s).

1.4 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible immunity level. Test is carried with playing mode which worst case has been showed. Test setup was adapted accordingly in reference to the Operating Instructions.

1.5 Test Facility

The Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files which the Registration No.: **994117**. Measurement required was performed at laboratory of Shenzhen SEM.Test Compliance Service Co., Ltd. at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C. (518101).

1.6 Accessories Equipment List and Details

Manufacturer	Description	Model	Serial Number
IBM	Notebook	T22	/
TP-LINK	Modem	TM-EC5658V	KT99CTQC-508
Lenovo	Printer	3110	OD65133711480

1.7 EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	1.5	Shielded	Without Core

2. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.107 (a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. §15.107 (a)- CONDUCTED EMISSION

3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is $\pm 1.5\text{dB}$.

3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESCS30	830245/009	2007-06-30	2008-06-29
AMN	Rohde & Schwarz	ESH2-Z5	100002	2007-06-30	2008-06-29
Limiter	Rohde & Schwarz	ESH3-Z2	357.8810.52	2007-06-30	2008-06-29
AMN	Rohde & Schwarz	ESH3-Z5	828304/014	2007-06-30	2008-06-29
Spectrum Analyzer	Aglient	E4402B-ESA	US41192821	2007-06-30	2008-06-29

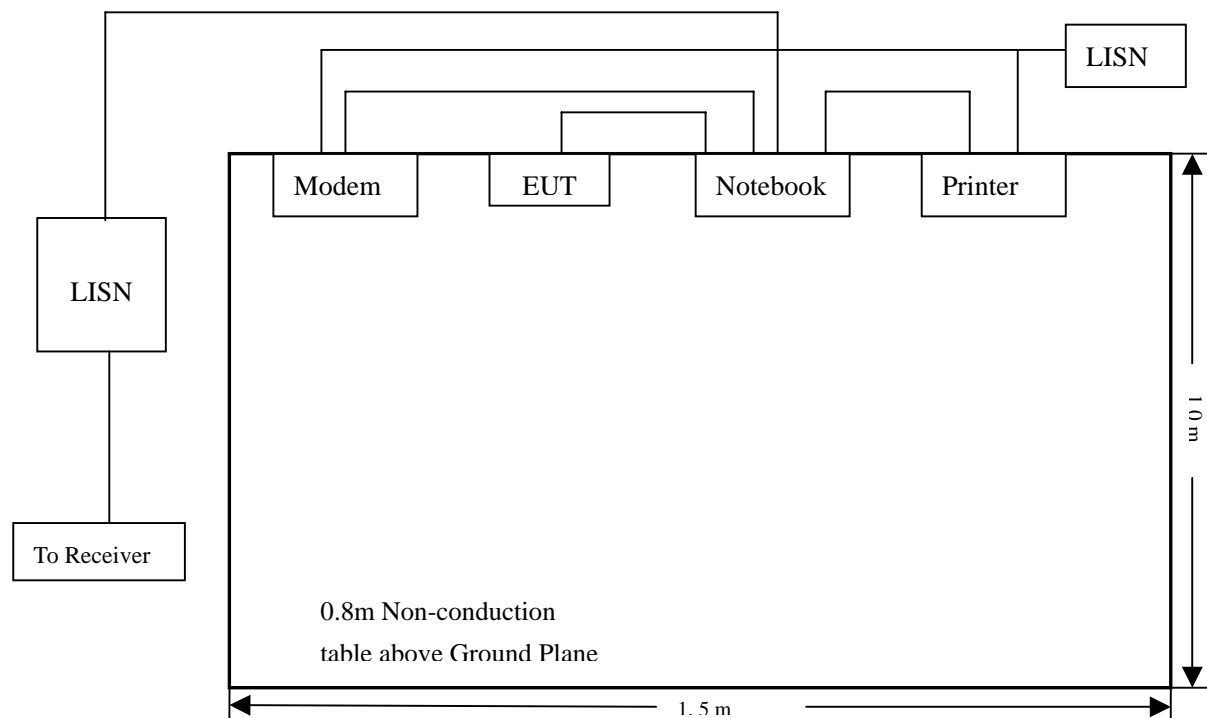
3.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

Temperature:	25° C
Relative Humidity:	55%
ATM Pressure:	1010 mbar

3.6 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency 150 kHz
 Stop Frequency..... 30 MHz
 Sweep Speed Auto
 IF Bandwidth..... 10 kHz
 Quasi-Peak Adapter Bandwidth 9 kHz
 Quasi-Peak Adapter Mode Normal

3.7 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC 15B Conducted margin for a Class B device, with the *worst* margin reading of:

-15.6 dB μ V at 0.16 MHz in the Line mode, 0.15-30MHz

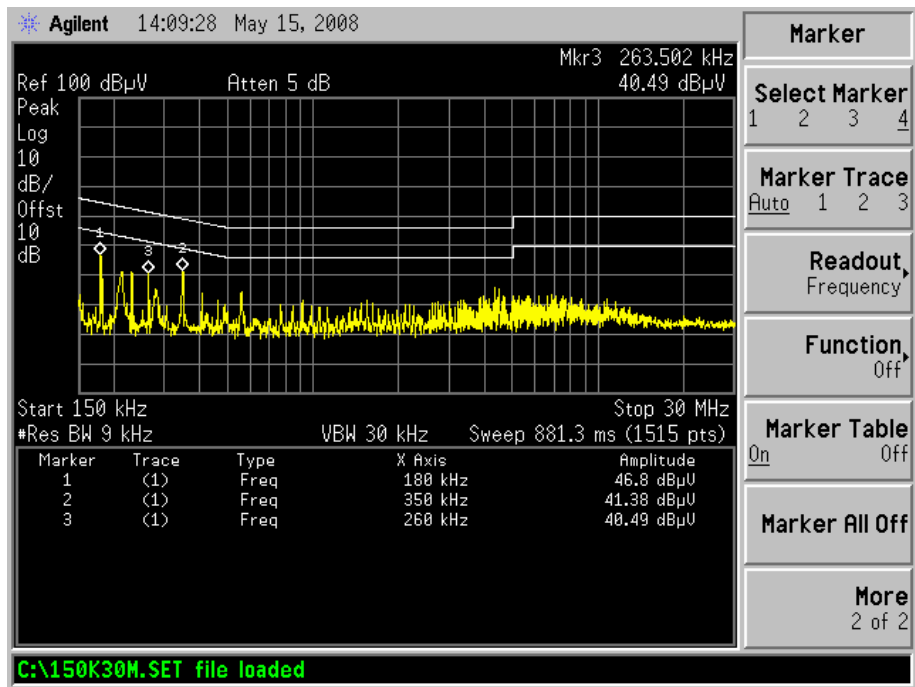
3.8 Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC15 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dB μ V	QP/Ave/Pk	Line/Neutral	dB μ V	dB
0.16	49.88	PK	Line	65.46	-15.6
0.21	47.13	PK	Line	63.21	-16.1
0.35	41.38	PK	Neutral	58.96	-17.6
0.18	46.80	PK	Neutral	64.49	-17.7
0.19	45.79	PK	Line	64.04	-18.2
0.26	40.49	PK	Neutral	61.43	-20.9

Since the peak reading is lower than the average limit, the average reading is omitted.

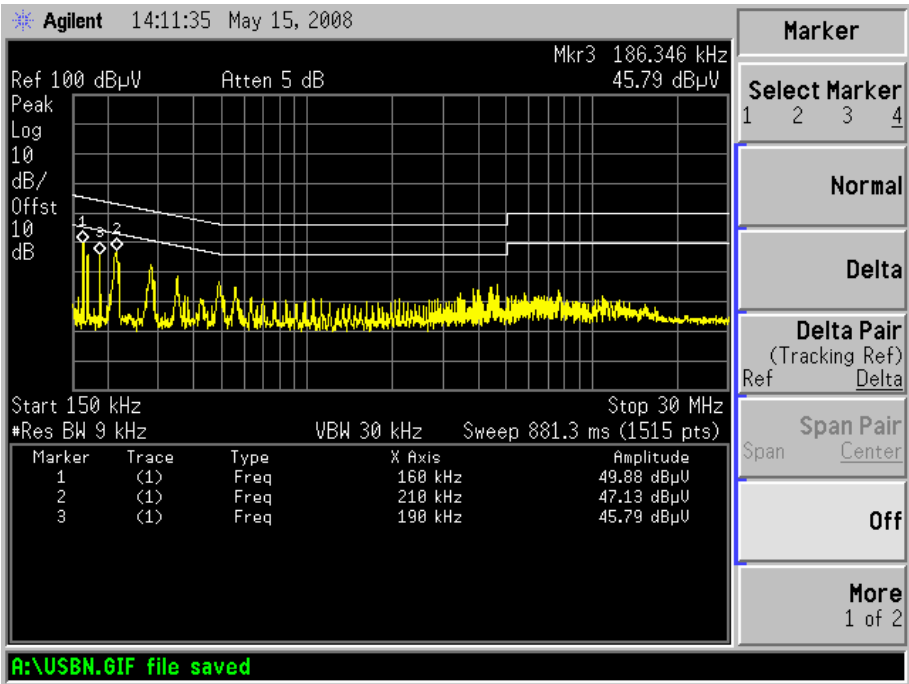
Plot of Conducted Emissions Test Data

Conducted Disturbance
EUT: GPS
M/N: GPS600
Operating Condition: Downloading
Test Specification: N
Comment: DC 5V



Plot of Conducted Emissions Test Data

Conducted Disturbance
EUT: GPS
M/N: GPS600
Operating Condition: Downloading
Test Specification: L
Comment: DC 5V



4. §15.109(a)- RADIATED EMISSION

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 3.0 dB.

4.2 Test Equipment List and Details

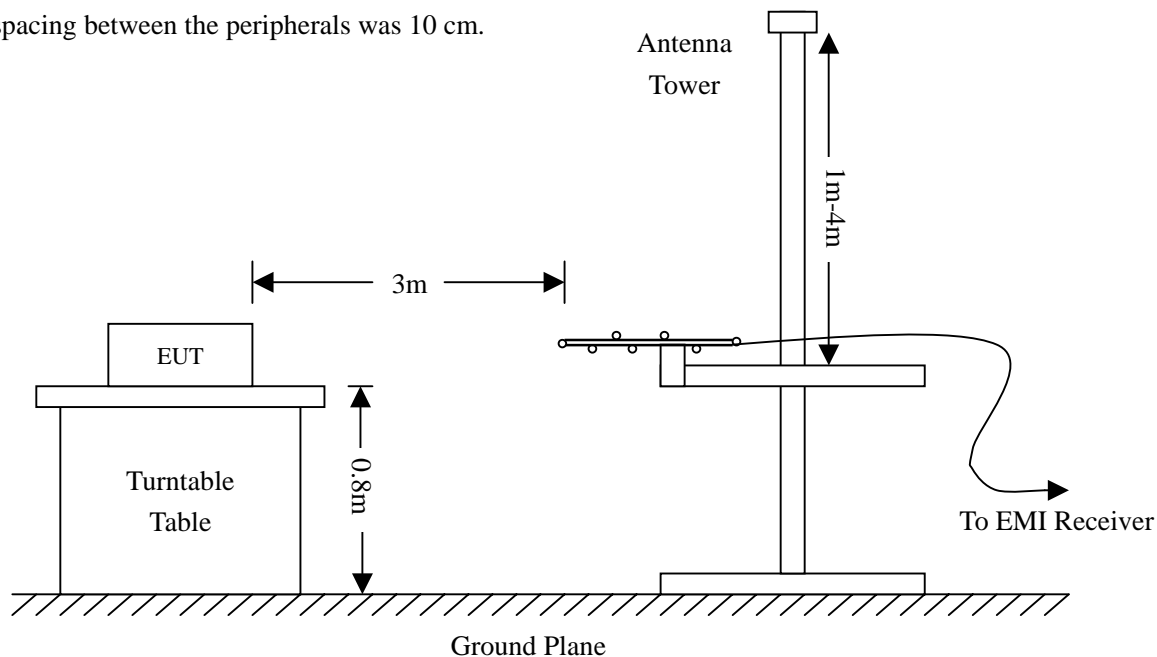
Manufacturer	Description	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	ROHDE&SCHWARZ	FSEA20	DE25181	2008-01-25	2009-01-24
Positioning Controller	C&C	CC-C-1F	N/A	2008-01-25	2009-01-24
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2008-01-25	2009-01-24
Horn Antenna	SCHWARZBECK	BBHX 9120	9120-426	2008-01-25	2009-01-24
RF Switch	EM	EMSW18	SW060023	2008-01-25	2009-01-24
Amplifier	Agilent	8447F	3113A06717	2008-01-25	2009-01-24
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2008-01-25	2009-01-24
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	25498514	2008-01-25	2009-01-24

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15B Limit}$$

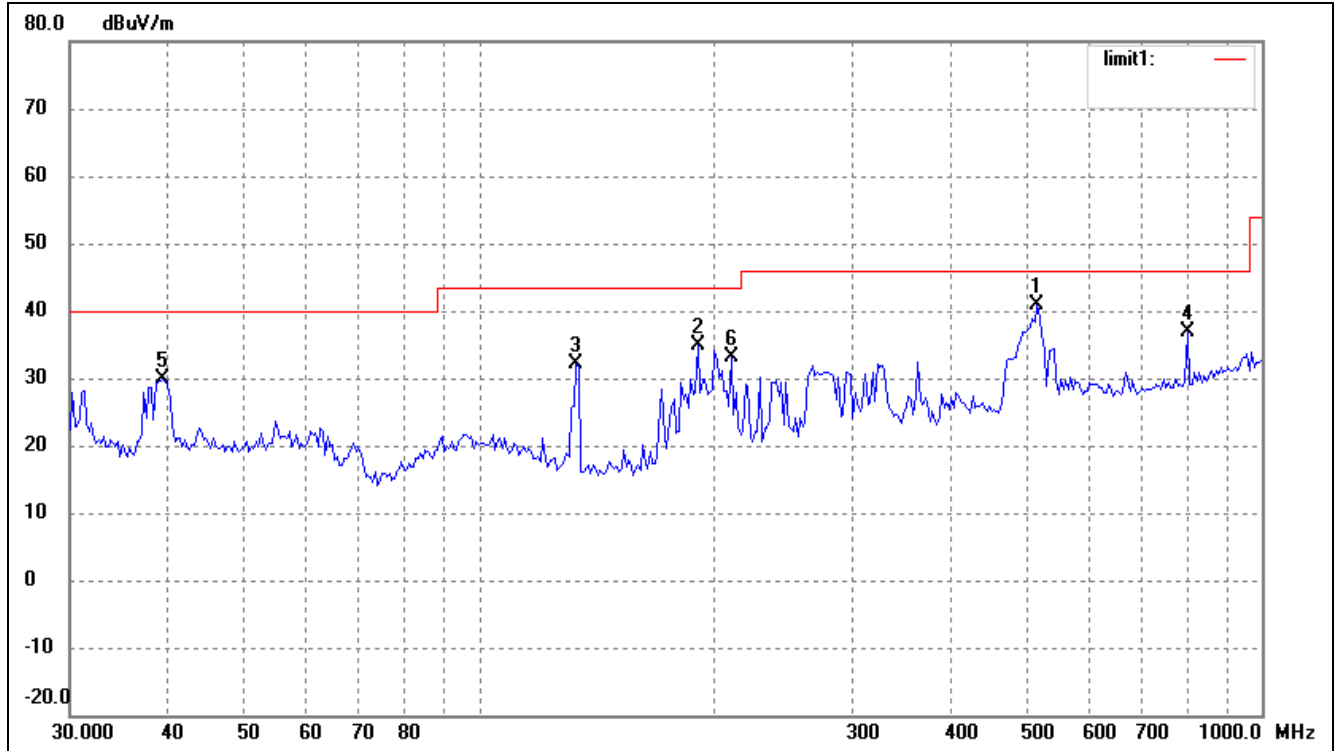
4.5 Environmental Conditions

Temperature:	25° C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

4.6 Summary of Test Results/Plots

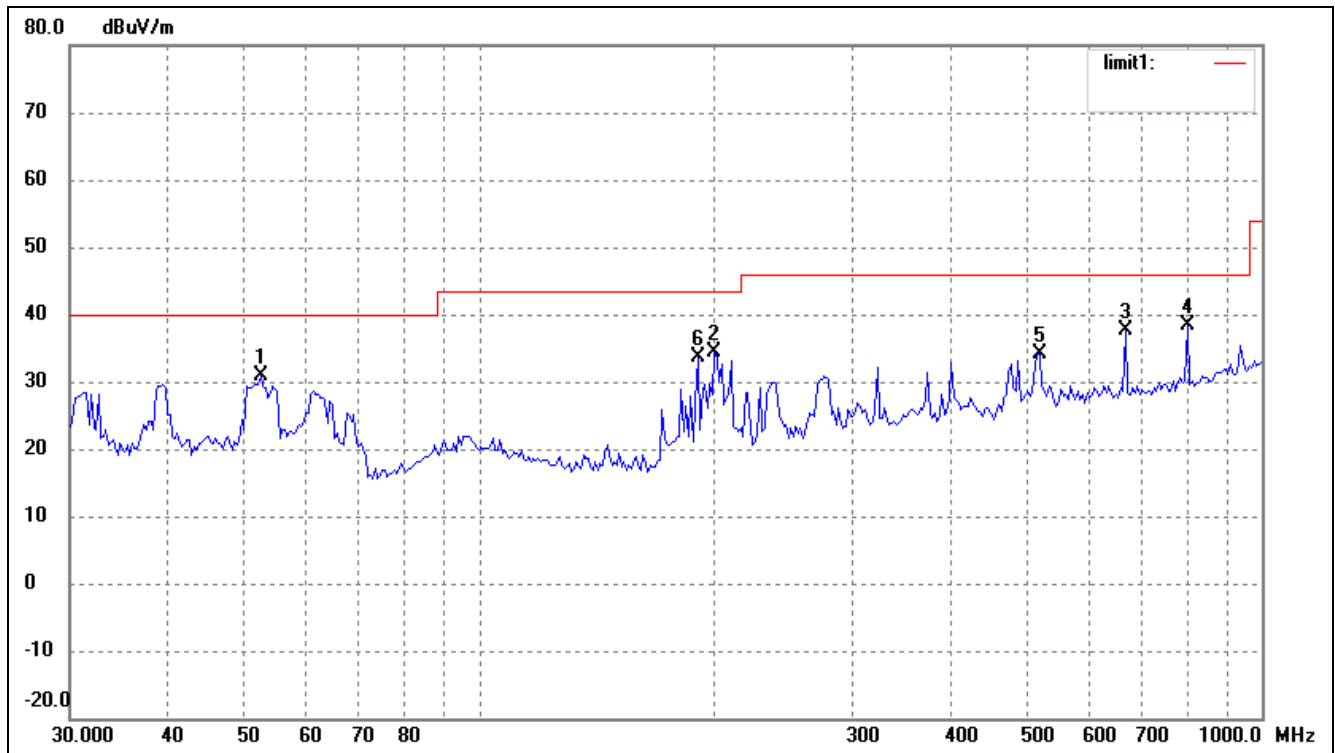
According to the data in section 4.6, the EUT complied with the FCC 15 Class B standards, and had the worst margin is:

-5.05 dB μ V at 516.5651 MHz in the Vertical polarization, 30 MHz to 1 GHz, 3Meters

Plot of Radiation Emissions Test Data*Radiated Disturbance**EUT: GPS**M/N: GPS600**Operating Condition: Downloading**Test Specification: Horizontal & Vertical**Comment: DC 5V**Horizontal:*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	516.5651	28.25	12.70	40.95	46.00	-5.05	250	100	QP
2	190.4411	28.23	6.54	34.77	43.50	-8.73	100	150	QP
3	133.0809	27.63	4.38	32.01	43.50	-11.49	0	100	QP
4	804.2523	21.34	15.57	36.91	46.00	-9.09	42	182	QP
5	39.4588	21.79	7.99	29.78	40.00	-10.22	352	115	QP
6	210.1294	26.16	6.94	33.10	43.50	-10.40	180	100	QP

Vertical:



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	52.6345	23.04	7.87	30.91	40.00	-9.09	320	100	QP
2	200.0432	27.85	6.58	34.43	43.50	-9.07	15	200	QP
3	669.9523	23.33	14.40	37.73	46.00	-8.27	8	145	QP
4	804.2523	22.71	15.57	38.28	46.00	-7.72	174	100	QP
5	520.2079	21.31	12.76	34.07	46.00	-11.93	0	120	QP
6	190.4411	27.03	6.54	33.57	43.50	-9.93	0	110	QP