

FCC PART 15B

TEST REPORT

For

GOCOM Technology Co., Ltd.

UNIT12, 14/F, LIPPO SUN PLAZA, 28 CANTON ROAD TSIM SHA TSUI, KOWLOON, Hong Kong, China

FCC ID: 2ARRE-2020G125

Report Type: Original Report	Product Type: walkie talkie
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Report Number:	RSZ210108003-00B
Report Date:	2021-02-08
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	walkie talkie
EUT Model:	G 150
Highest Operation Frequency:	467.7125 MHz
Rated Input Voltage:	DC 3.6V from Battery
Serial Number:	RSZ210108003-RF-S1
EUT Received Date:	2021.01.12
EUT Received Status:	Good

Objective

This report is prepared on behalf of **GOCOM Technology Co., Ltd.** in accordance with FCC Part 15B Part 2, Part J, and Part 15, Subpart A and B of the Federal Communications Commission's rules.

The objective is to determine the compliance of EUT with: FCC Part 15B.

Related Submittal(s)/Grant(s)

FCC Part 95 FRF submissions with FCC ID: 2ARRE-2020G125

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014 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.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~13GHz: 5.23 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in typical fashion (as normally used by a typical user)

Test mode 1: Charging and Receiving

Test mode 2: Charging and Scanning

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

No software was used in test.

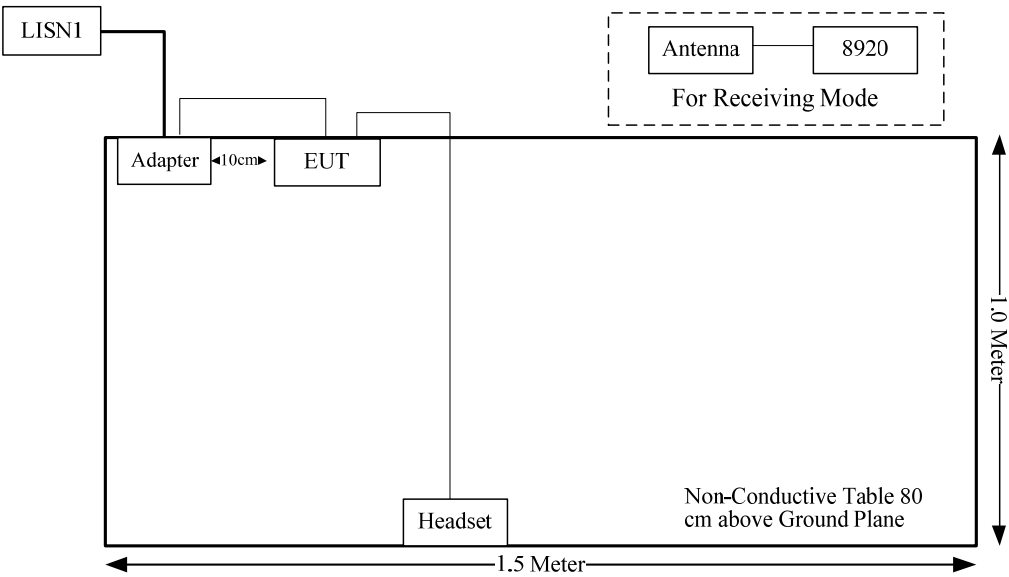
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
HP	RF Communications Test Set	8920A	3438A05201
Gocom	Adapter	TPA-97H050055U U01	TPA-97H050055UU01

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Adapter Cable	No	No	1.2	Adapter	EUT
Headset Cable	No	No	1.2	EUT	Headset

Block Diagram of Test Setup



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emissions					
R&S	LISN	ENV 216	101614	2020-09-12	2021-09-12
R&S	EMI Test Receiver	ESCI	101121	2020-07-07	2021-07-07
MICRO-COAX	Coaxial Cable	C-NJNJ-50	C-0200-01	2020-09-05	2021-09-05
R&S	Test Software	EMC32	Version 9.10.00	N/A	N/A
Radiated emissions Below 1GHz					
Sunol Sciences	Antenna	JB3	A060611-1	2020-11-10	2023-11-10
R&S	EMI Test Receiver	ESR3	102453	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2020-05-06	2021-05-06
HP	Amplifier	8447D	2727A05902	2020-09-05	2021-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Radiated emissions Above 1GHz					
TDK RF	Horn Antenna	HRN-0118	130 084	2018-10-12	2021-10-12
R&S	Spectrum Analyzer	FSP 38	100478	2020-07-07	2021-07-07
HUBER+SUHNER	Coaxial Cable	SUCOFLEX 126EA	MY369/26/26EA	2020-09-25	2021-09-25
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2020-09-05	2021-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

Test Item:	Conducted emissions	Radiated emissions (Below 1GHz)	Radiated emissions (Above 1GHz)
Temperature:	19.6~21.8℃	22.7 °C	23.2℃
Relative Humidity:	51~53%	43%	52%
ATM Pressure:	100.8~101.5kPa	100.8kPa	100.8kPa
Tester:	BarryYang	Joker Chen	Jalon Liu
Test Date:	2021.01.20~2021.02.05	2021.01.31	2021.01.23

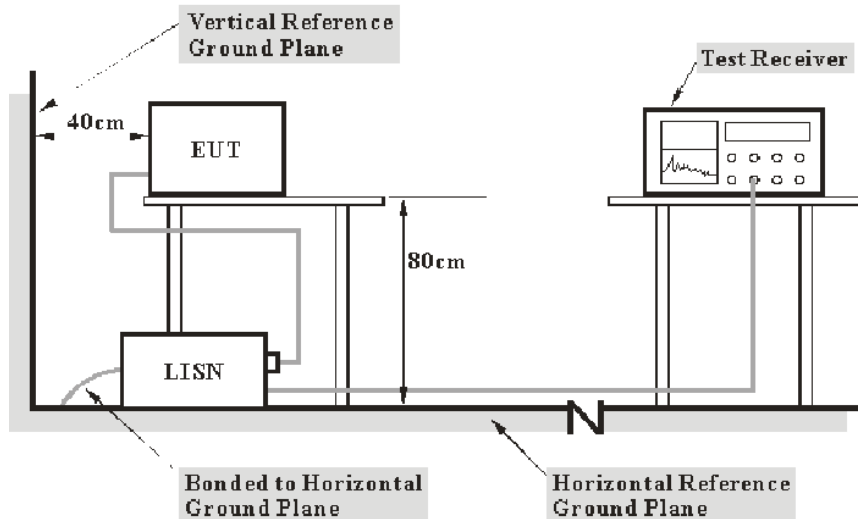
SUMARY OF TEST RESULTS

FCC Part 15B

Clause	Description of Test	Test Result
§15.107	Conducted emissions	Compliance
§15.109	Radiated emissions	Compliance

FCC PART 15B §15.107 – CONDUCTED EMISSIONS

EUT Setup



Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

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

The adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter or EUT was connected to the first LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase (“hot”) line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result (QuasiPeak or Average) = Meter Reading + Corr.

Note:

Corr. = Cable loss + Factor of coupling device

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

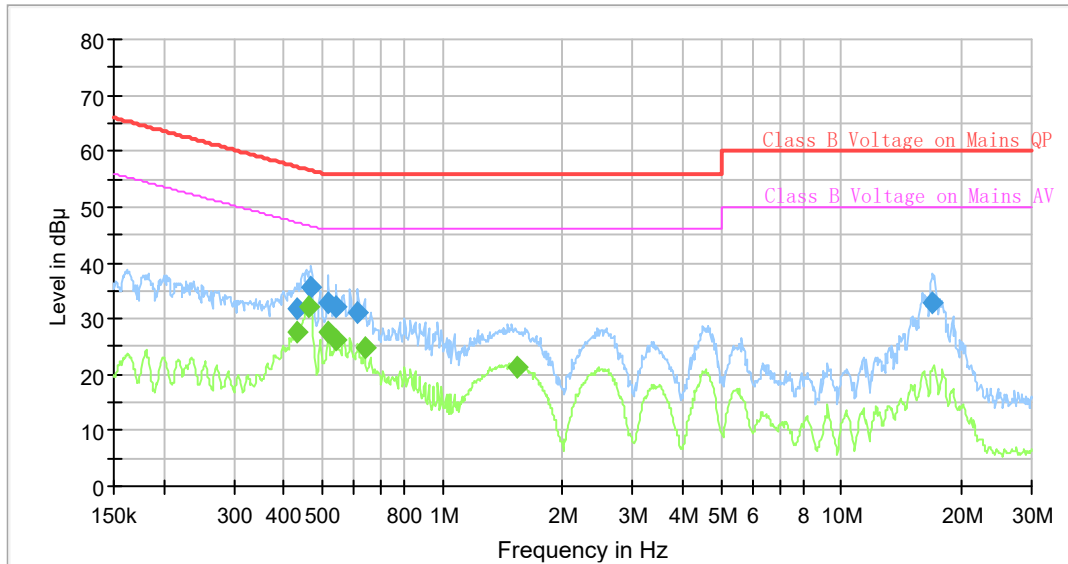
Margin = Limit – Result

Test Data

Test Result: Compliance, *Please refer to following table and plots:*

Please refer to following table and plots:

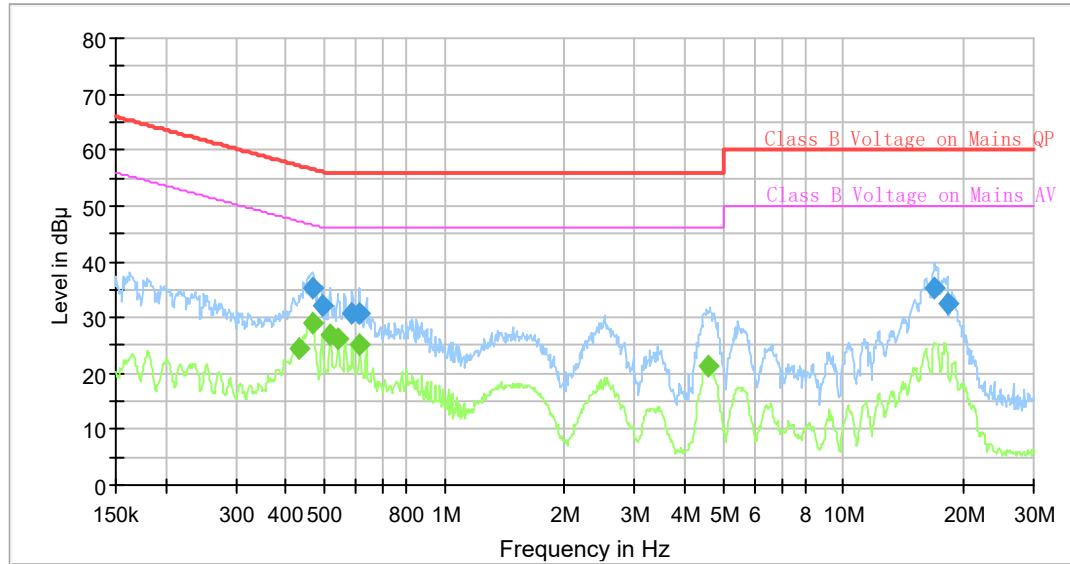
Port: L
 Test Mode: Charging&Receiving
 Power Source: AC 120V/60Hz



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.431814	---	27.76	47.22	19.46	9.000	L1	9.6
0.431814	31.72	---	57.22	25.50	9.000	L1	9.6
0.460739	---	32.06	46.68	14.62	9.000	L1	9.6
0.467685	35.66	---	56.55	20.89	9.000	L1	9.6
0.516743	---	27.77	46.00	18.23	9.000	L1	9.6
0.516743	32.79	---	56.00	23.21	9.000	L1	9.6
0.540467	32.18	---	56.00	23.82	9.000	L1	9.6
0.543169	---	26.34	46.00	19.66	9.000	L1	9.6
0.612239	31.20	---	56.00	24.80	9.000	L1	9.6
0.637161	---	24.88	46.00	21.12	9.000	L1	9.6
1.548133	---	21.41	46.00	24.59	9.000	L1	9.7
16.963591	32.86	---	60.00	27.14	9.000	L1	10.1

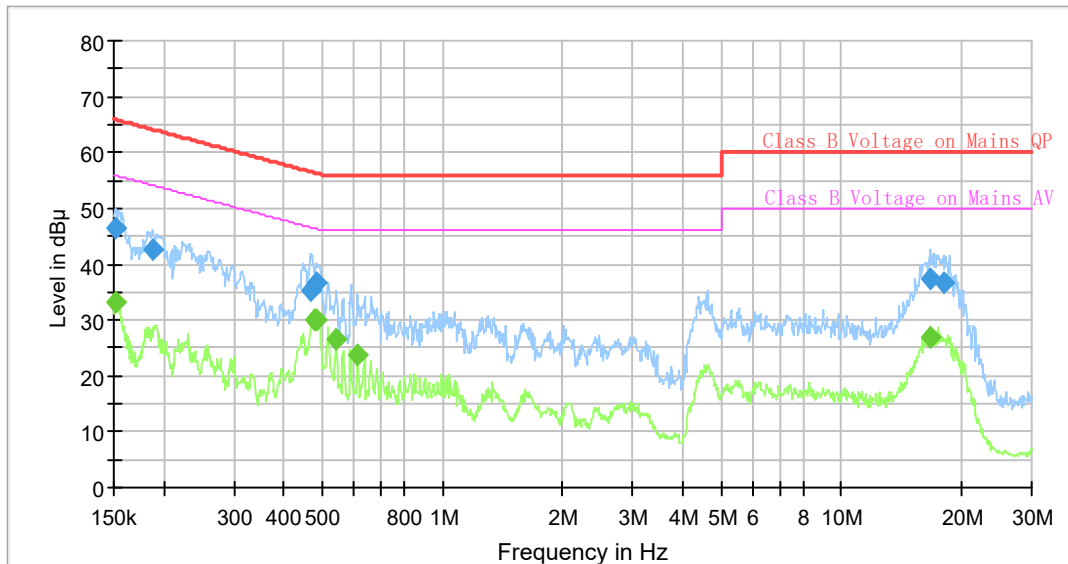
Port: N
Test Mode: Charging&Receiving
Power Source: AC 120V/60Hz



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.431814	---	24.57	47.22	22.65	9.000	N	9.6
0.467685	---	28.98	46.55	17.57	9.000	N	9.6
0.467685	35.14	---	56.55	21.41	9.000	N	9.6
0.494060	32.12	---	56.10	23.98	9.000	N	9.6
0.516743	---	27.02	46.00	18.98	9.000	N	9.6
0.540467	---	26.16	46.00	19.84	9.000	N	9.6
0.588291	30.85	---	56.00	25.15	9.000	N	9.6
0.612239	30.62	---	56.00	25.38	9.000	N	9.6
0.612239	---	25.06	46.00	20.94	9.000	N	9.6
4.569236	---	21.15	46.00	24.85	9.000	N	9.6
16.963591	35.19	---	60.00	24.81	9.000	N	9.9
18.190418	32.47	---	60.00	27.53	9.000	N	9.9

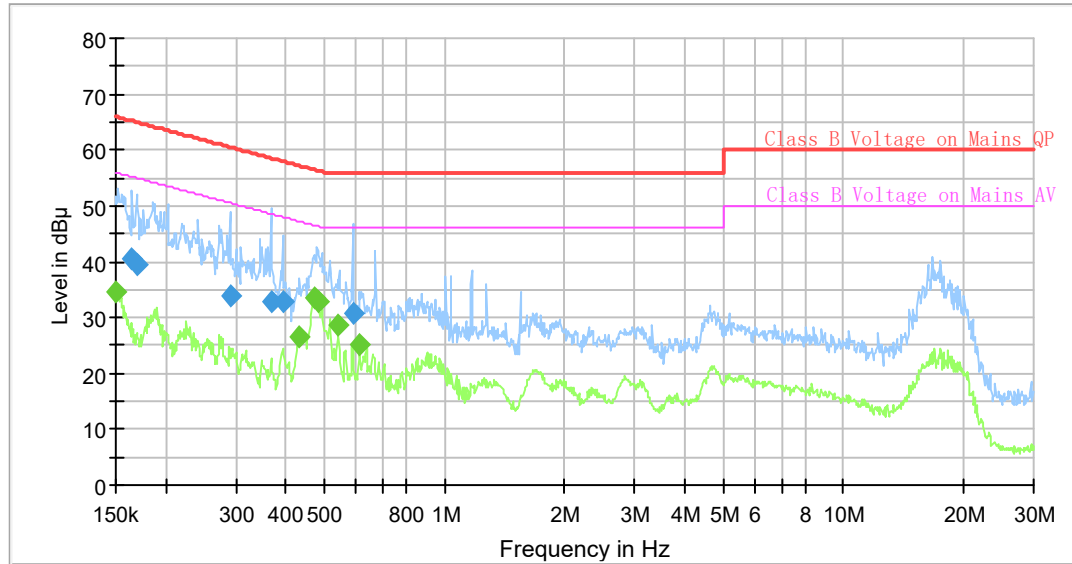
Port: L
Test Mode: Charging&Scanning
Power Source: AC 120V/60Hz



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.151504	46.30	---	65.92	19.62	9.000	L1	9.6
0.152261	---	33.20	55.88	22.68	9.000	L1	9.6
0.186809	42.45	---	64.18	21.73	9.000	L1	9.6
0.465358	35.23	---	56.60	21.37	9.000	L1	9.6
0.479495	---	30.15	46.35	16.20	9.000	L1	9.6
0.481892	36.67	---	56.31	19.64	9.000	L1	9.6
0.481892	---	30.06	46.31	16.25	9.000	L1	9.6
0.540467	---	26.71	46.00	19.29	9.000	L1	9.6
0.612239	---	23.84	46.00	22.16	9.000	L1	9.6
16.628518	---	27.02	50.00	22.98	9.000	L1	10.1
16.711661	37.32	---	60.00	22.68	9.000	L1	10.1
18.009869	36.60	---	60.00	23.40	9.000	L1	10.1

Port: N
 Test Mode: Charging&Scanning
 Power Source: AC 120V/60Hz

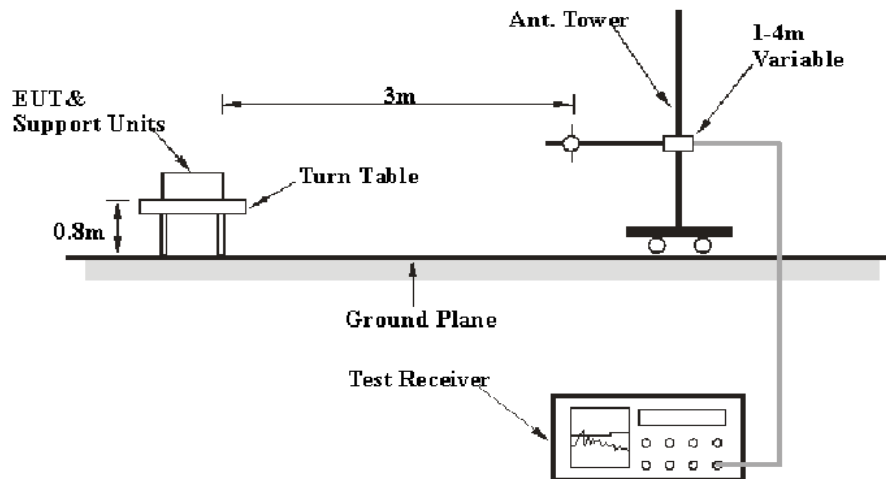


Final Result

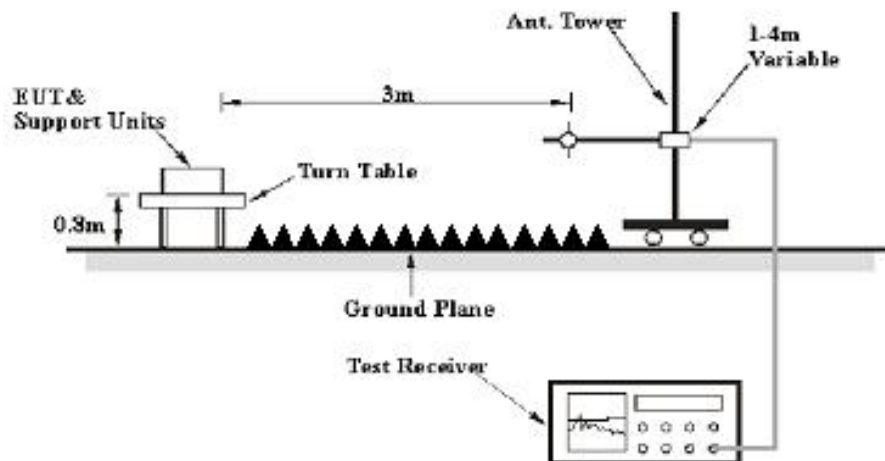
Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.150750	---	34.53	55.96	21.43	9.000	N	9.6
0.164910	40.59	---	65.21	24.62	9.000	N	9.6
0.169074	39.64	---	65.01	25.37	9.000	N	9.6
0.289742	33.92	---	60.53	26.61	9.000	N	9.6
0.368114	32.94	---	58.54	25.60	9.000	N	9.6
0.392773	32.69	---	58.00	25.31	9.000	N	9.6
0.431814	---	26.48	47.22	20.74	9.000	N	9.6
0.474735	---	33.42	46.43	13.01	9.000	N	9.6
0.481892	---	32.91	46.31	13.40	9.000	N	9.6
0.540467	---	28.62	46.00	17.38	9.000	N	9.6
0.591232	30.78	---	56.00	25.22	9.000	N	9.6
0.612239	---	25.13	46.00	20.87	9.000	N	9.6

FCC PART 15B §15.109 – RADIATED EMISSIONS**EUT Setup**

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed at the 3 meters distance, above 1GHz were performed at the 3 meters, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 2GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Meter Reading+ Corrected

Corrected = Antenna Factor + Cable Loss - Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

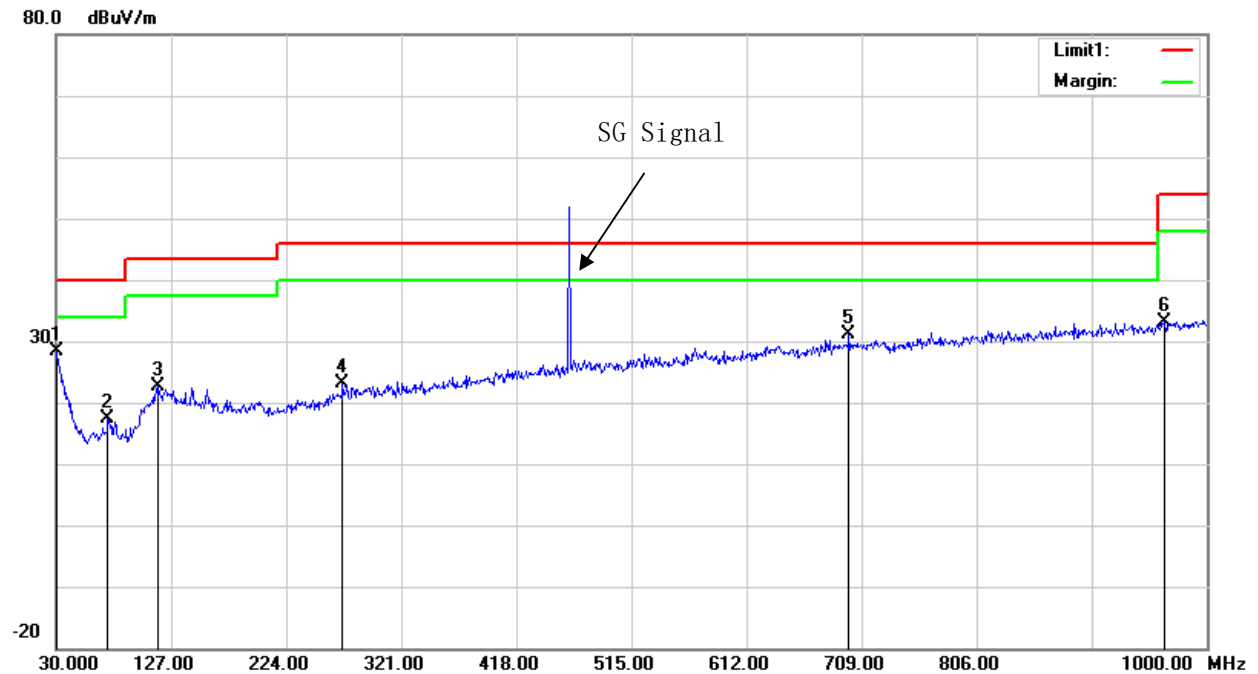
$$\text{Margin} = \text{Limit} - \text{Result}$$

Test Data

Please refer to following table and plots:

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Receiving

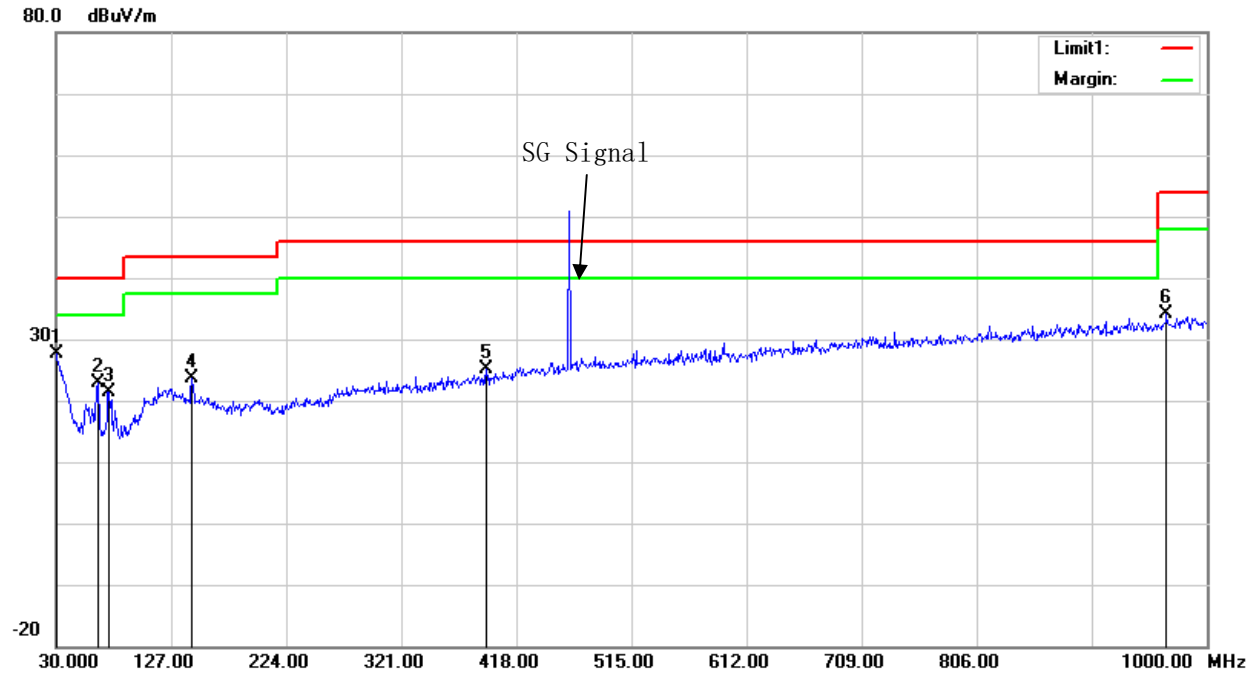
Polarization: Horizontal
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	30.0000	27.01	peak	1.46	28.47	40.00	11.53
2	73.6500	28.53	peak	-11.23	17.30	40.00	22.70
3	116.3300	27.94	peak	-5.33	22.61	43.50	20.89
4	271.5300	27.13	peak	-4.12	23.01	46.00	22.99
5	698.3300	28.60	peak	2.52	31.12	46.00	14.88
6	964.1100	33.13	peak	0.07	33.20	54.00	20.80

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Receiving

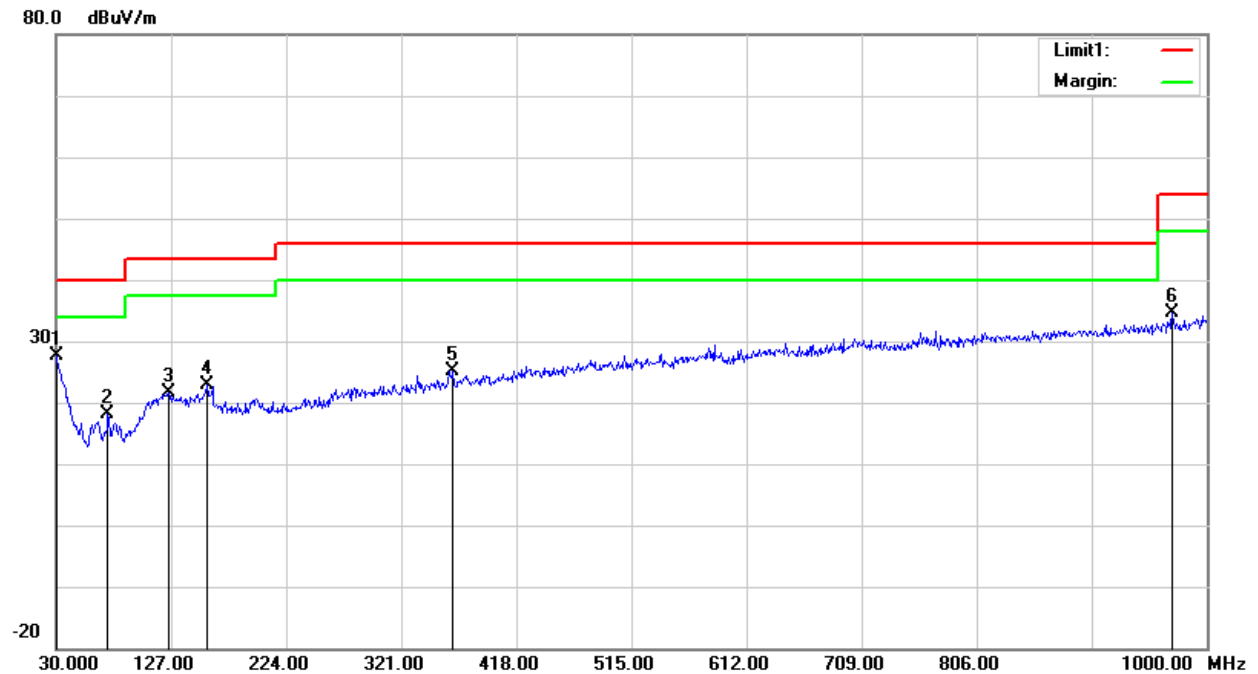
Polarization: Vertical
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	30.0000	26.17	peak	1.46	27.63	40.00	12.37
2	65.8900	34.59	peak	-11.77	22.82	40.00	17.18
3	74.6200	32.67	peak	-11.24	21.43	40.00	18.57
4	144.4600	29.82	peak	-6.15	23.67	43.50	19.83
5	392.7800	27.47	peak	-2.31	25.16	46.00	20.84
6	966.0500	34.10	peak	0.11	34.21	54.00	19.79

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Scanning

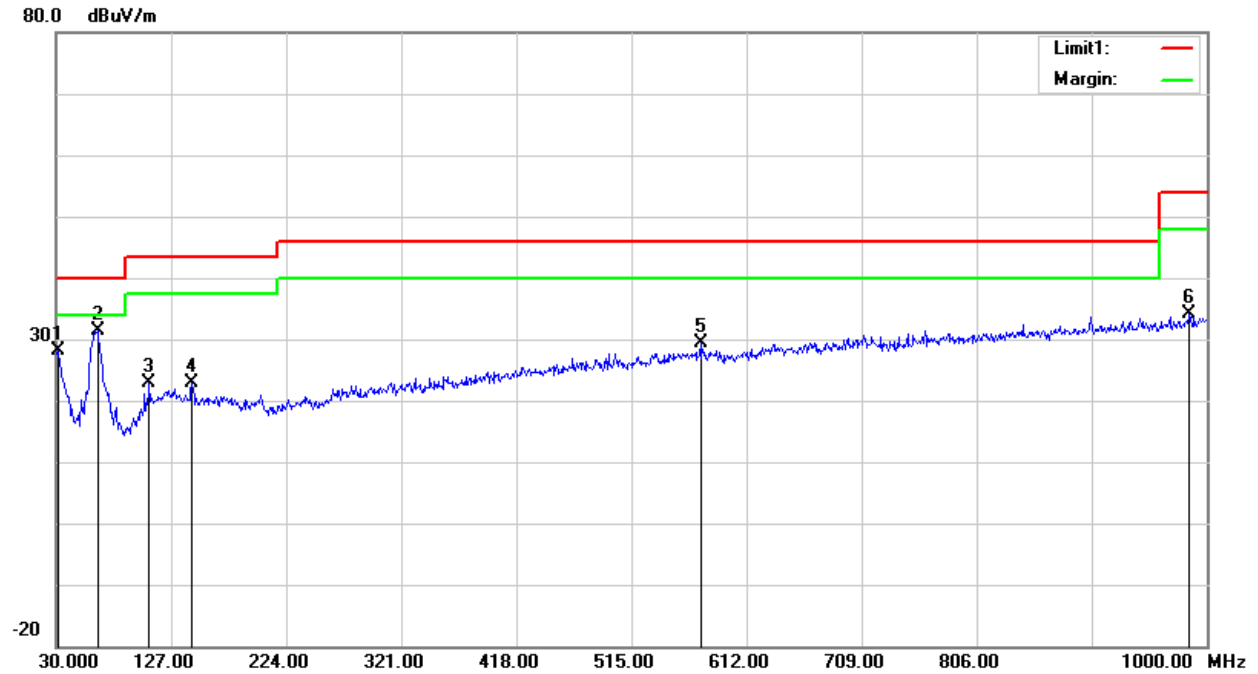
Polarization: Horizontal
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	30.9700	26.78	peak	0.74	27.52	40.00	12.48
2	73.6500	29.35	peak	-11.23	18.12	40.00	21.88
3	125.0600	26.34	peak	-4.81	21.53	43.50	21.97
4	157.0700	28.92	peak	-5.96	22.96	43.50	20.54
5	364.6500	27.79	peak	-2.72	25.07	46.00	20.93
6	970.9000	34.21	peak	0.37	34.58	54.00	19.42

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Scanning

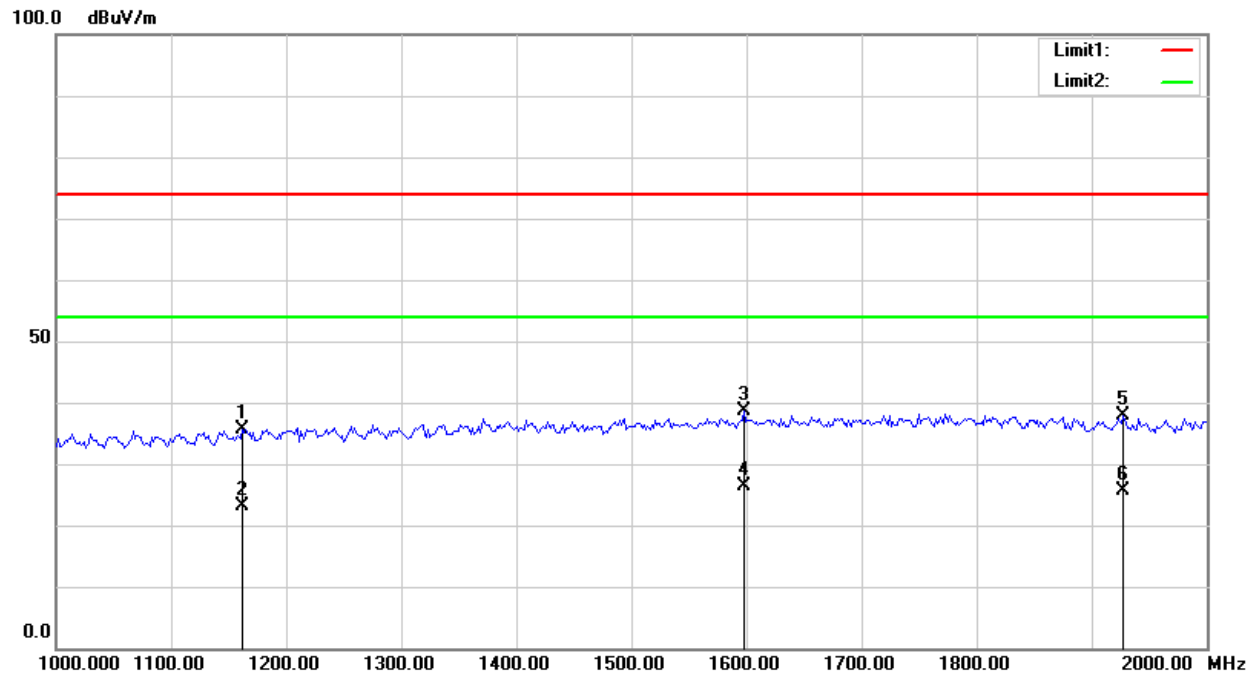
Polarization: Vertical
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	31.9400	28.14	peak	0.01	28.15	40.00	11.85
2	64.9200	43.20	peak	-11.81	31.39	40.00	8.61
3	108.5700	29.66	peak	-6.86	22.80	43.50	20.70
4	144.4600	29.09	peak	-6.15	22.94	43.50	20.56
5	573.2000	28.53	peak	0.79	29.32	46.00	16.68
6	985.4500	33.58	peak	0.45	34.03	54.00	19.97

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Receiving

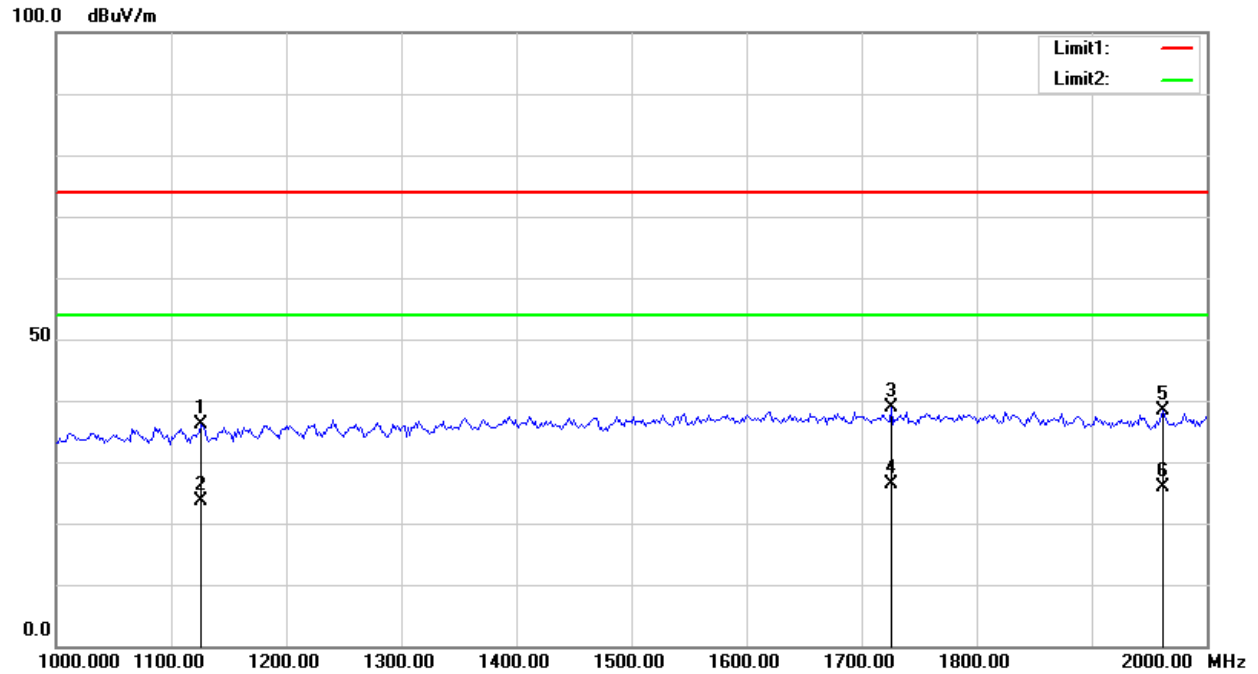
Polarization: Horizontal
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1161.859	39.04	peak	-3.39	35.65	74.00	38.35
2	1161.859	26.59	AVG	-3.39	23.20	54.00	30.80
3	1597.756	39.64	peak	-1.12	38.52	74.00	35.48
4	1597.756	27.43	AVG	-1.12	26.31	54.00	27.69
5	1927.885	39.55	peak	-1.62	37.93	74.00	36.07
6	1927.885	27.31	AVG	-1.62	25.69	54.00	28.31

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Receiving

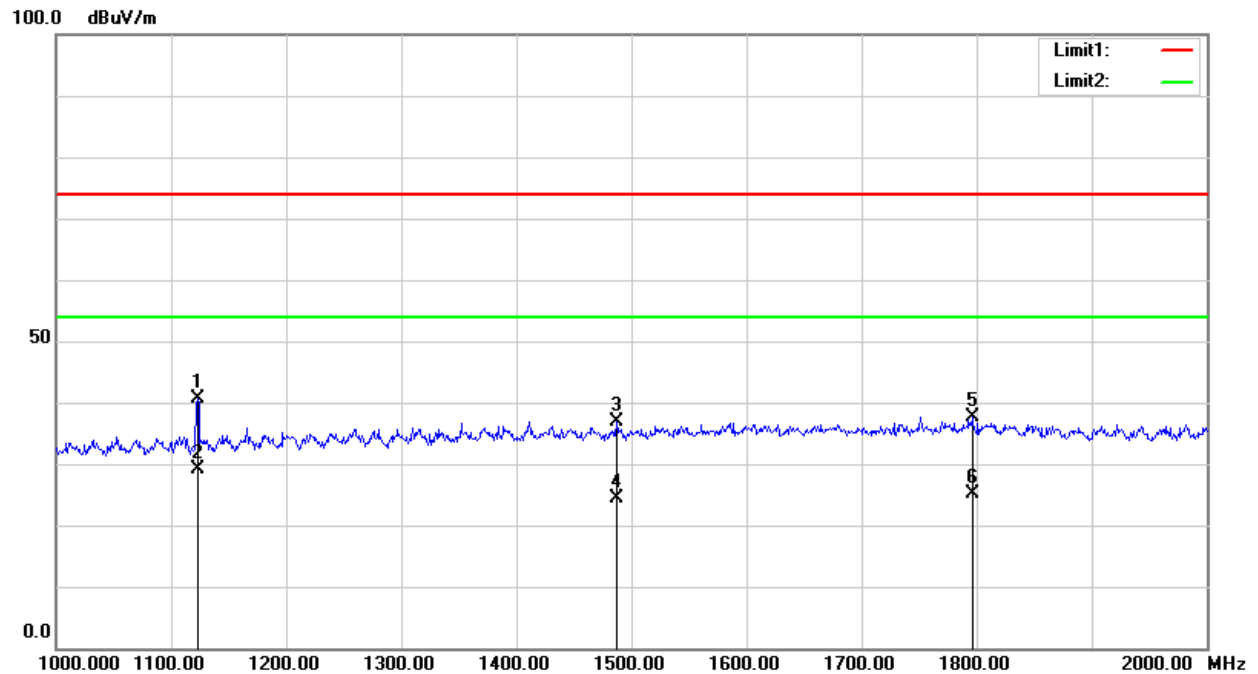
Polarization: Vertical
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1126.602	39.78	peak	-3.69	36.09	74.00	37.91
2	1126.602	27.41	AVG	-3.69	23.72	54.00	30.28
3	1725.961	39.88	peak	-1.05	38.83	74.00	35.17
4	1725.961	27.50	AVG	-1.05	26.45	54.00	27.55
5	1961.539	39.87	peak	-1.57	38.30	74.00	35.70
6	1961.539	27.39	AVG	-1.57	25.82	54.00	28.18

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Scanning

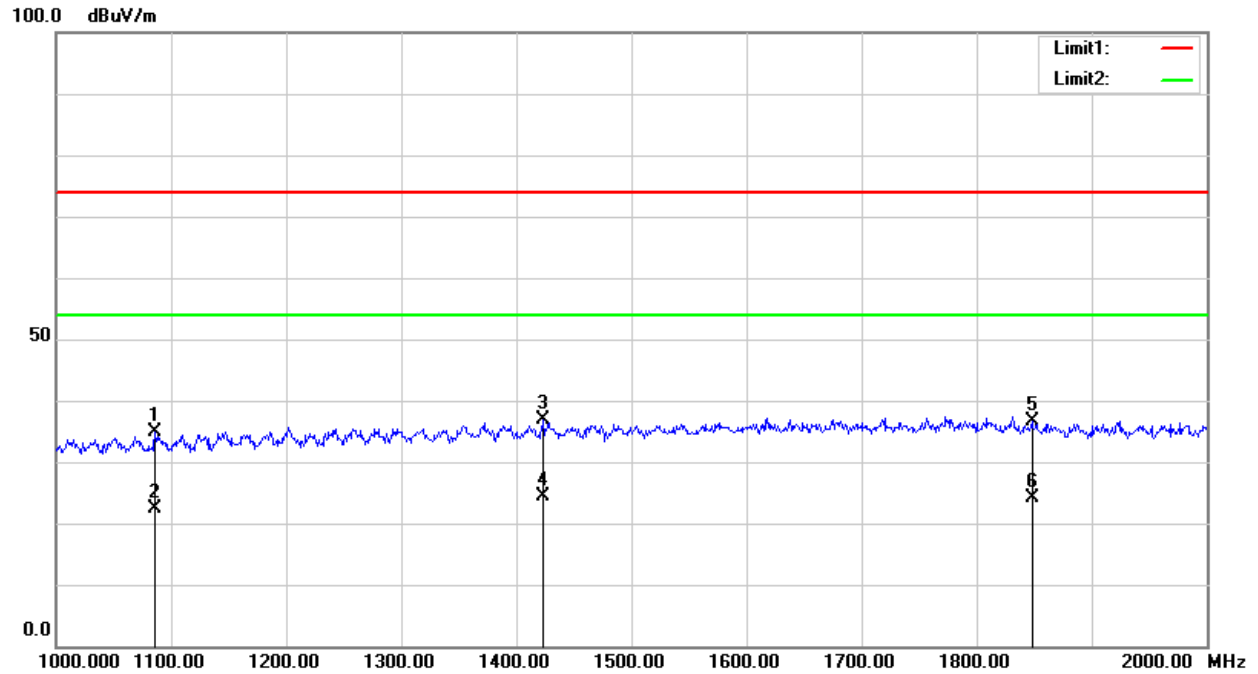
Polarization: Horizontal
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1123.500	44.30	peak	-3.72	40.58	74.00	33.42
2	1123.500	32.79	AVG	-3.72	29.07	54.00	24.93
3	1487.500	38.73	peak	-1.92	36.81	74.00	37.19
4	1487.500	26.25	AVG	-1.92	24.33	54.00	29.67
5	1796.000	38.48	peak	-0.78	37.70	74.00	36.30
6	1796.000	25.88	AVG	-0.78	25.10	54.00	28.90

Condition: FCC Part 15B Class B
Model: G 150
Test Mode: Charging&Scanning

Polarization: Vertical
Power: AC 120V/60Hz
Distance: 3m



No.	Frequency (MHz)	Reading (dB μ V)	Detector	Corrected (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
1	1086.000	38.82	peak	-3.98	34.84	74.00	39.16
2	1086.000	26.34	AVG	-3.98	22.36	54.00	31.64
3	1423.500	38.71	peak	-1.92	36.79	74.00	37.21
4	1423.500	26.26	AVG	-1.92	24.34	54.00	29.66
5	1848.500	37.85	peak	-1.20	36.65	74.00	37.35
6	1848.500	25.41	AVG	-1.20	24.21	54.00	29.79

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