



FCC PART 15 B TEST REPORT

For

FUJIAN HUANYUTONG TECHNOLOGY CO.,LTD

Fujian Hai-Xi High-Tech industrial zone, Fengze District, Quanzhou, Fujian China

FCC ID: ADZT0918

Report Type: Original Report	Product Type: wireless calling system
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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The **FUJIAN HUANYUTONG TECHNOLOGY CO.,LTD**'s product, model number: **T0918** (**FCC ID: ADZT0918**) (the "EUT") in this report was a **wireless calling system**, which rated input voltage: DC3.7V from Battery. The highest operation frequency is 433.92 MHz.

**All measurement and test data in this report was gathered from production sample serial number: 171107054 (Assigned by BACL,Dongguan). The EUT was received on 2017-11-07.*

Objective

This test report is prepared on behalf of **FUJIAN HUANYUTONG TECHNOLOGY CO.,LTD** in accordance with Part 2, Subpart J, and Part 15-Subparts A and B of the Federal Communications Commission's rules.

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

Related Submittal(s)/Grant(s)

FCC submissions with Part 15.231 DSR, FCC ID: ADZT0112.

FCC submissions with Part 15.231 DSC, FCC ID: ADZT0818.

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.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan).

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~26.5GHz: 5.23 dB
Temperature	±1 °C
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China

The test site has been approved by the FCC 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 test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in operating mode.

EUT Exercise Software

No software was used during test.

Equipment Modifications

No modification was made to the EUT tested.

Local Support Equipment List and Details

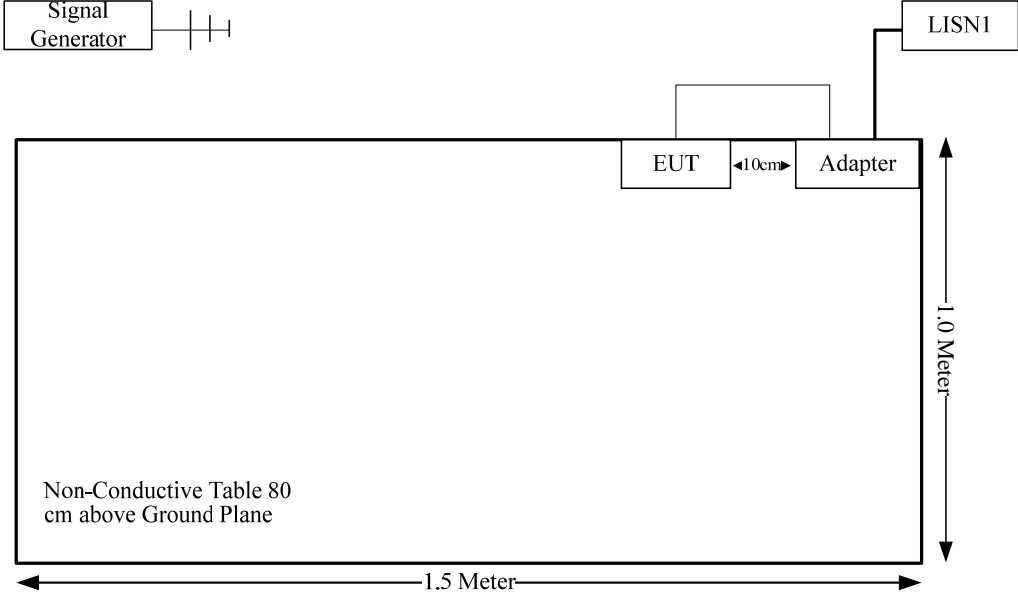
Manufacturer	Description	Model	Serial Number
Agilent	MXG Vector Signal Generator	N5182B	MY51350142
maxwest	Adapter	AsTro 5NLTE	/

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	Yes	No	1.03	Adapter	EUT

Configuration of Test Setup

Test Mode: Receiving

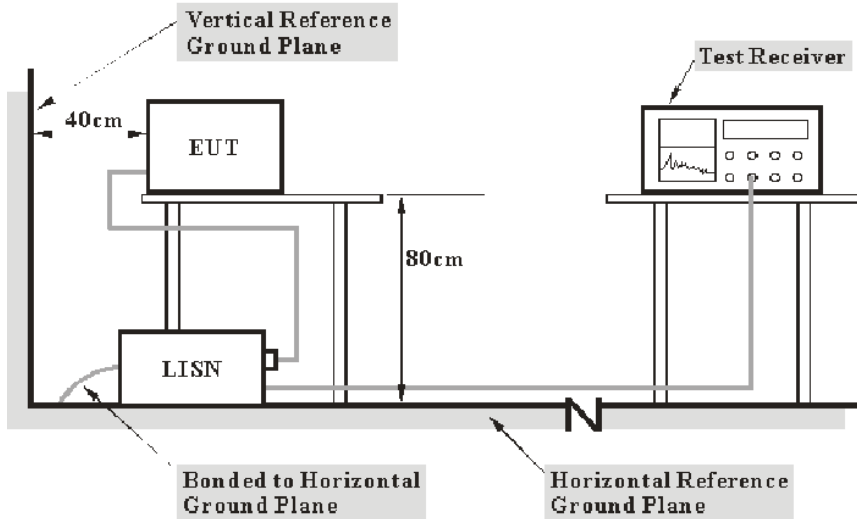


SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	Conducted Emissions	Compliant
§15.109	Radiated Emissions	Compliant

FCC§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 120V/60Hz 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 Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	L.I.S.N	ESH2-Z5	892107/021	2017-09-25	2018-09-25
R&S	Two-line V-network	ENV 216	3560.6550.12	2016-12-08	2017-12-08
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
N/A	Coaxial Cable	C-NJNJ-50	C-0200-01	2017-09-05	2018-09-05
R&S	EMI Test Receiver	ESCS 30	830245/006	2016-12-08	2017-12-08

* **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).

Test Procedure

During the conducted emission test, the adapter of laptop was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

Herein,

V_C : corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF : voltage division factor of AMN or ISN

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15 B Class B.

Test Data

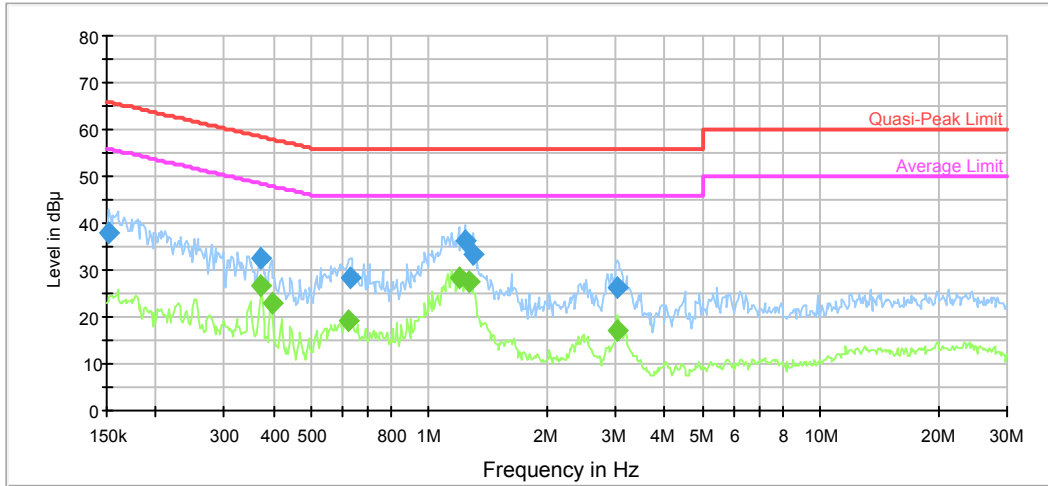
Environmental Conditions

Temperature:	24.7 °C
Relative Humidity:	40 %
ATM Pressure:	101.6kPa

The testing was performed by Alex You on 2017-11-22.

Test Mode: Receiving

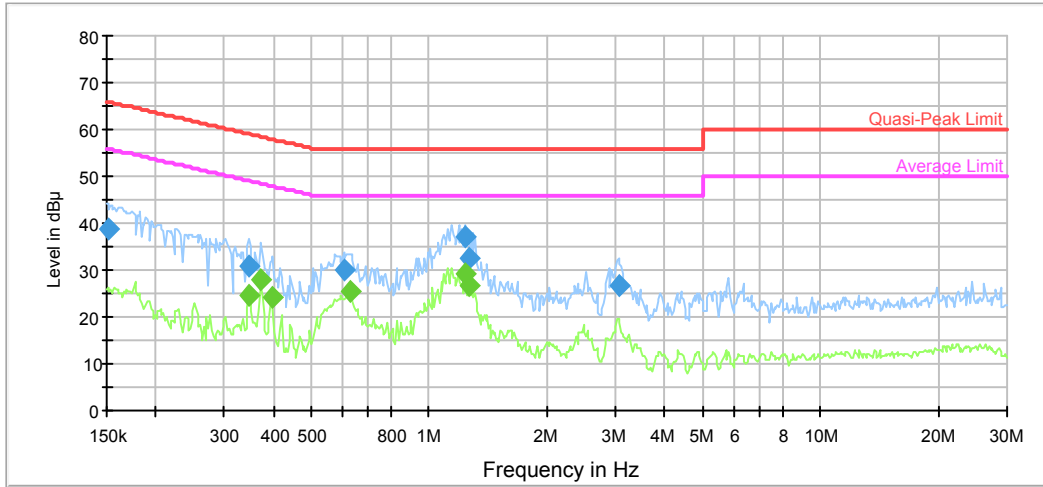
AC120V, 60Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.152410	37.8	9.000	L1	11.2	28.1	65.9	Compliance
0.372042	32.4	9.000	L1	10.0	26.1	58.5	Compliance
0.629488	28.5	9.000	L1	9.8	27.5	56.0	Compliance
1.239175	36.3	9.000	L1	9.8	19.7	56.0	Compliance
1.299858	33.2	9.000	L1	9.8	22.8	56.0	Compliance
3.024908	26.1	9.000	L1	9.8	29.9	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.372042	26.6	9.000	L1	10.0	21.9	48.5	Compliance
0.396530	23.0	9.000	L1	10.0	25.0	48.0	Compliance
0.624492	19.0	9.000	L1	9.8	27.0	46.0	Compliance
1.190776	28.1	9.000	L1	9.8	17.9	46.0	Compliance
1.259081	27.6	9.000	L1	9.8	18.4	46.0	Compliance
3.024908	17.2	9.000	L1	9.8	28.8	46.0	Compliance

AC120V, 60Hz, Neutral:



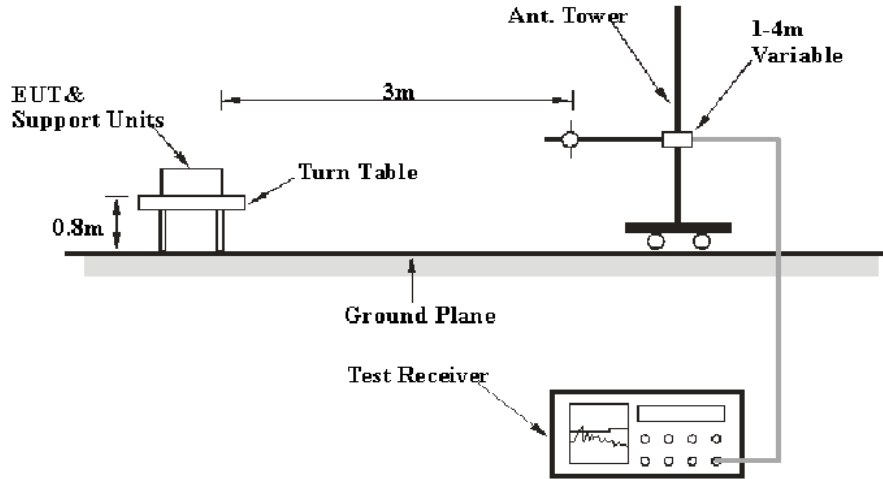
Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.151200	38.8	9.000	N	11.2	27.1	65.9	Compliance
0.346296	31.0	9.000	N	10.0	28.1	59.1	Compliance
0.604902	29.9	9.000	N	9.8	26.1	56.0	Compliance
1.239175	36.9	9.000	N	9.8	19.1	56.0	Compliance
1.259081	32.4	9.000	N	9.8	23.6	56.0	Compliance
3.049107	26.5	9.000	N	9.8	29.5	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.346296	24.5	9.000	N	10.0	24.6	49.1	Compliance
0.372042	27.9	9.000	N	10.0	20.6	48.5	Compliance
0.396530	24.3	9.000	N	10.0	23.6	47.9	Compliance
0.629488	25.5	9.000	N	9.8	20.5	46.0	Compliance
1.239175	29.3	9.000	N	9.8	16.7	46.0	Compliance
1.259081	26.7	9.000	N	9.8	19.3	46.0	Compliance

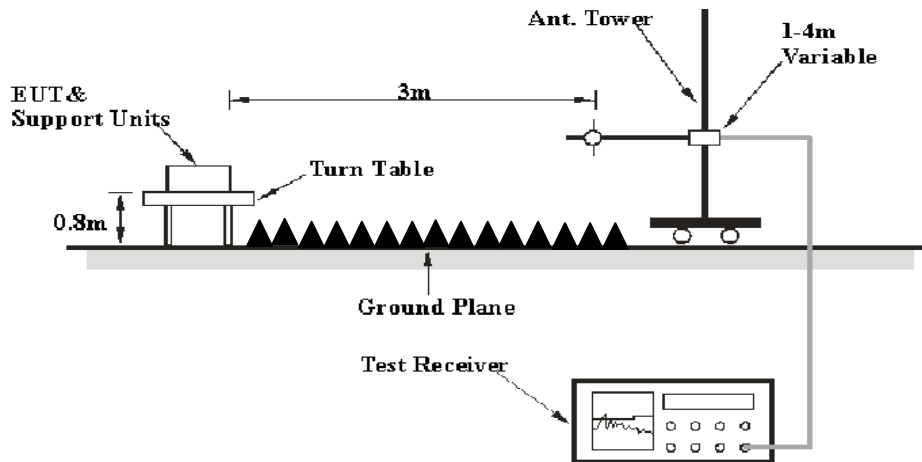
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site for the range 30MHz to 1GHz and the 3 meters chamber test site for above 1GHz, 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 5 GHz.

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	10 Hz	/	AVG

Test Procedure

During the radiated emissions, the adapter of laptop was connected to the first AC floor outlet and the other support equipments were connected to the second 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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2016-12-11	2017-12-11
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2016-12-08	2017-12-08
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
MITEQ	Amplifier	AFS42-00101800-2 5-S-42	2001271	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-0400-01	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-0075-01	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-1000-01	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-SJSJ-50	C-0800-01	2017-09-05	2018-09-05
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).

Corrected Amplitude & Margin Calculation

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

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

Environmental Conditions

Temperature:	24.9~25.8 °C
Relative Humidity:	28.5 ~41%
ATM Pressure:	100.8~100.9 kPa

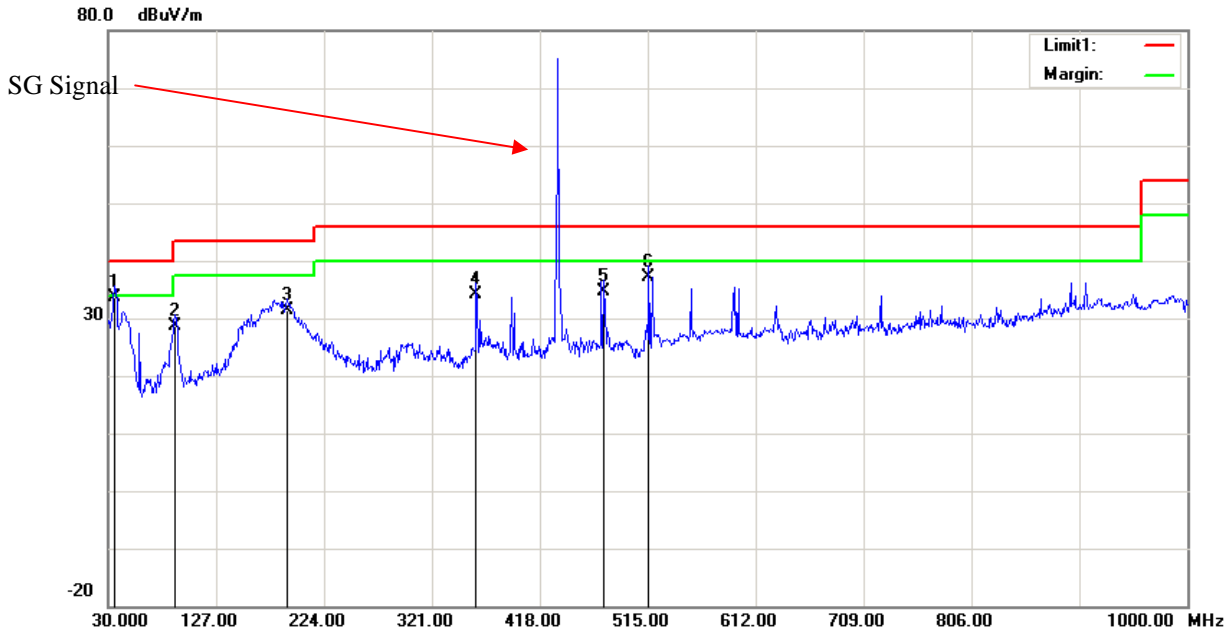
* The testing was performed by Black Yang and Steven Zuo from 2017-11-13 to 2017-12-05.

Test Result: Compliance

Test Mode: Receiving

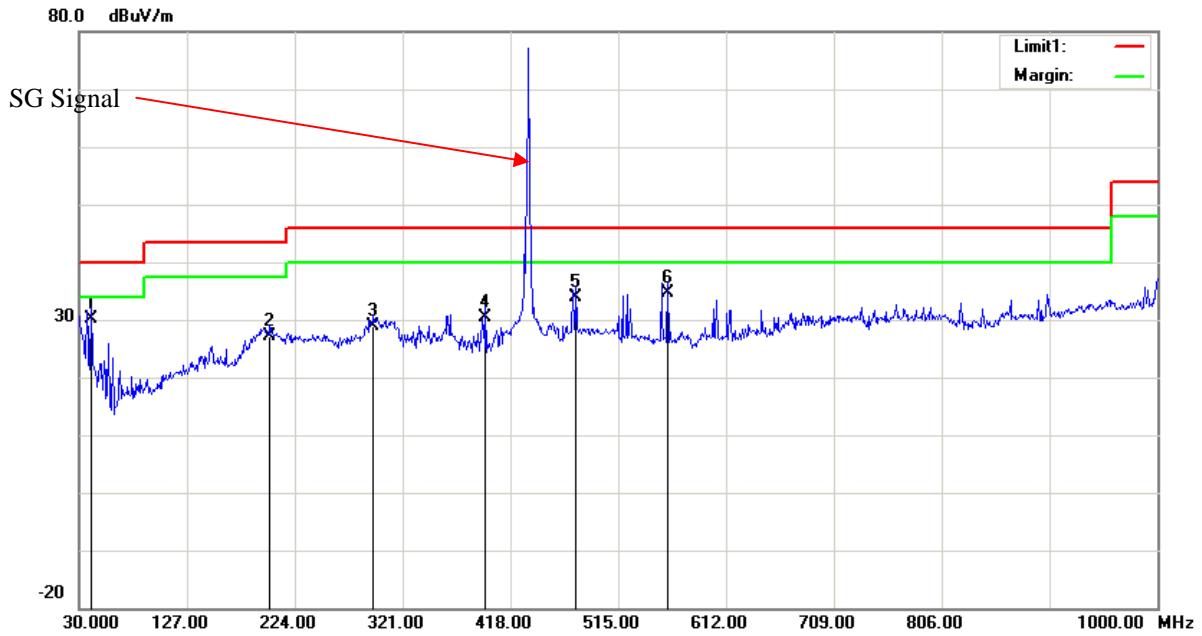
1) Below 1GHz:

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
35.8200	36.10	QP	-2.40	33.70	40.00	6.30
90.1400	39.34	QP	-10.74	28.60	43.50	14.90
191.0200	38.50	QP	-7.20	31.30	43.50	12.20
360.7700	36.81	QP	-2.71	34.10	46.00	11.90
475.2300	35.55	QP	-0.85	34.70	46.00	11.30
515.9700	37.87	QP	-0.67	37.20	46.00	8.80

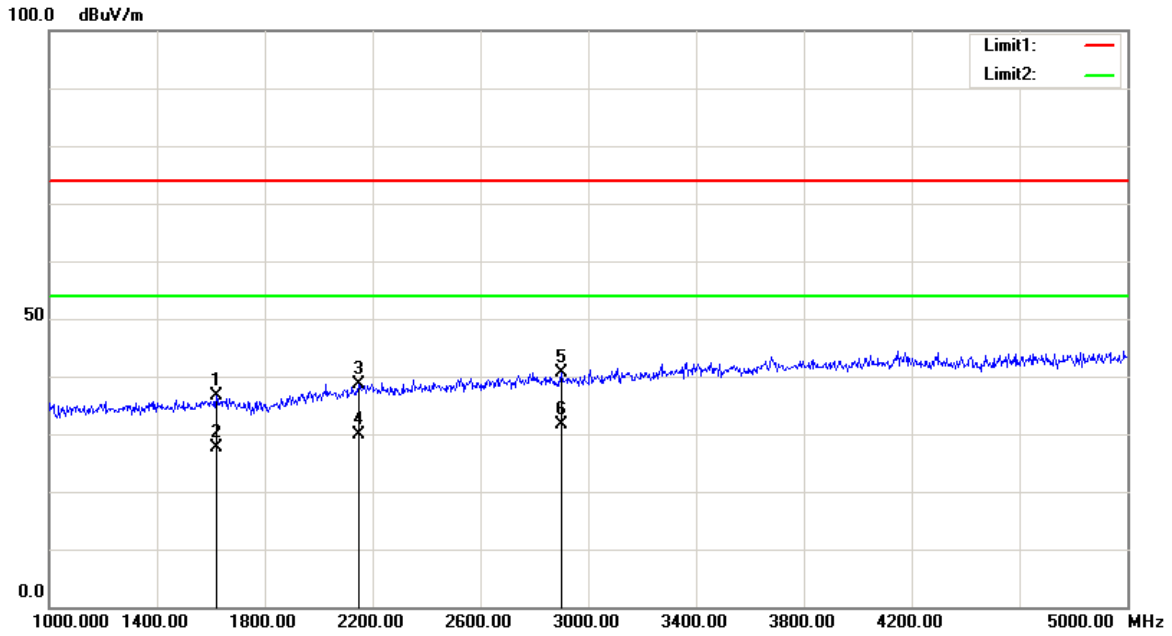
Vertical



Frequency (MHz)	Receiver Reading (dBμV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
40.6700	36.68	QP	-6.48	30.20	40.00	9.80
201.6900	33.11	QP	-6.01	27.10	43.50	16.40
294.8100	33.05	QP	-4.15	28.90	46.00	17.10
395.6900	32.69	QP	-2.29	30.40	46.00	15.60
477.1700	34.72	QP	-0.82	33.90	46.00	12.10
559.6200	34.70	QP	0.00	34.70	46.00	11.30

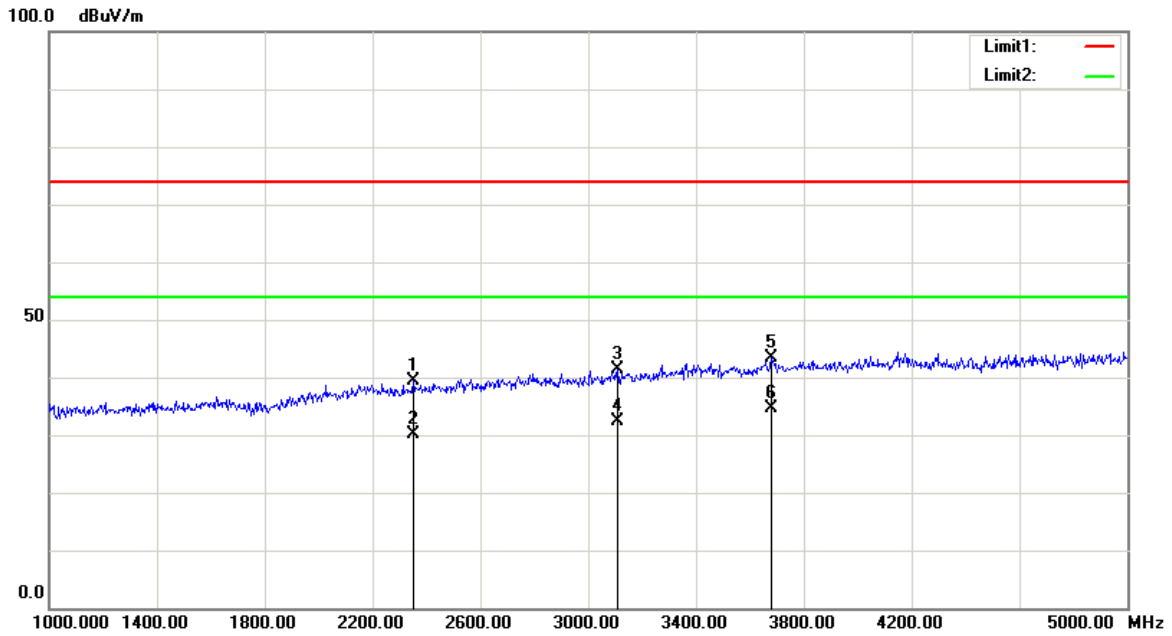
2) Above 1GHz:

Horizontal



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1622.000	45.25	peak	-8.67	36.58	74.00	37.42
1622.000	36.38	AVG	-8.67	27.71	54.00	26.29
2150.000	45.46	peak	-6.86	38.60	74.00	35.40
2150.000	36.75	AVG	-6.86	29.89	54.00	24.11
2900.000	45.90	peak	-5.23	40.67	74.00	33.33
2900.000	36.84	AVG	-5.23	31.61	54.00	22.39

Vertical



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
2352.000	45.99	peak	-6.64	39.35	74.00	34.65
2352.000	36.88	AVG	-6.64	30.24	54.00	23.76
3110.000	45.79	peak	-4.39	41.40	74.00	32.60
3110.000	36.84	AVG	-4.39	32.45	54.00	21.55
3682.000	46.06	peak	-2.79	43.27	74.00	30.73
3682.000	37.45	AVG	-2.79	34.66	54.00	19.34

END OF REPORT