Lab Code: 200707-0

FCC PART 15B, CLASS B

TEST REPORT

For

Shenzhen Gospell Smarthome Electronic Co., Ltd.

5 Floor/Block 2, Vision (SZ) Park, Hi-Tech Industrial Park,

Shenzhen, Guangdong, China

FCC ID: TW5GB7303

Report Type:	**Product Type:**
Original Report	Inspection Camera (Rx)

Test Engineer:	Sula Huang
Report Number:	RSZ110926002-00
Report Date:	2011-11-18
Reviewed By:	Merry Zhao EMC Engineer
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen Gospell Smarthome Electronic Co., Ltd.'s* product, model number: GB7303, FCC ID: TW5GB7303, or the "EUT" in this report was a receiver of Inspection Camera, which was measured approximately: 100 mm (L) x 90 mm (W) x 45 mm (H), rated input voltage: DC 3.7V battery or DC 5V charging from adapter. The highest operating frenquency is less than 108 MHz.

All measurement and test data in this report was gathered from production sample serial number: 1109094 (Assigned by BACL, Shenzhen). The EUT was received on 2011-09-26.

Objective

This Type approval report is prepared on behalf of *Shenzhen Gospell Smarthome Electronic Co., Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

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

Related Submittal(s)/Grant(s)

N/A

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

Test Mode 1: Charging & AV OUT
Test Mode 2: Charging & Receiving
Test Mode 3: Downloading

EUT Exercise Software

No exercise software.

Equipment Modifications

No modification was made to the EUT tested.

Local Support Equipment List and Details

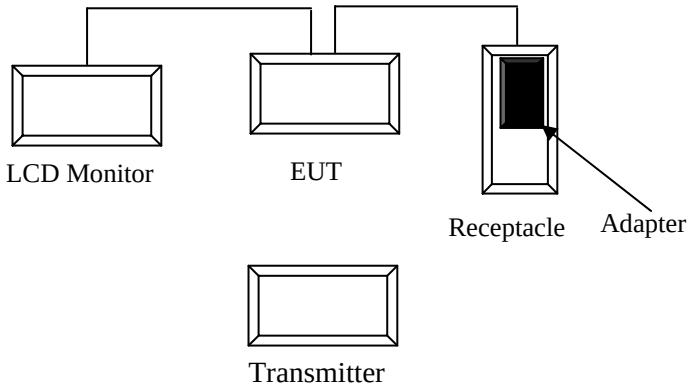
Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP05L	N/A
HP	Laser Jet5L	C3941A	JPTVOB2337
SAST	Modem	AEM-2100	0293
Kingston	Micro SD	2GB	N/A
SAMSUNG	Color TV PG	225MS	CR22HVZP401073M

External I/O Cable

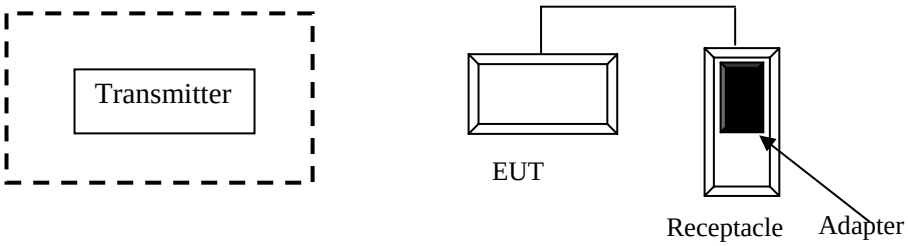
Cable Description	Length (m)	From/Port	To
Shielded Detachable Printer Cable	1.8	Parallel Port	Printer
Shielded Detachable Serial Cable	1.8	Serial Port	Modem
Shielded Detachable USB Cable with a core	1.0	USB Port	Laptop
Unshielded Detachable Video Cable	1.1	Video Output Port	LCD Monitor
Unshielded Detachable Power Cable	1.8	Power Jack	Adapter

Configuration of Test Setup

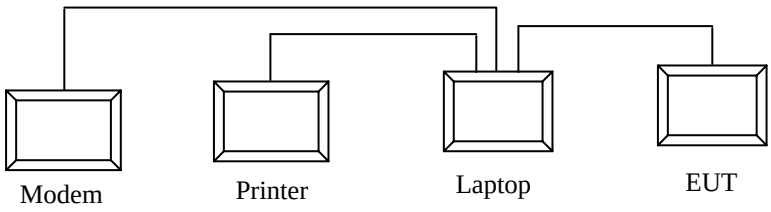
Test Mode 1:



Test Mode 2:

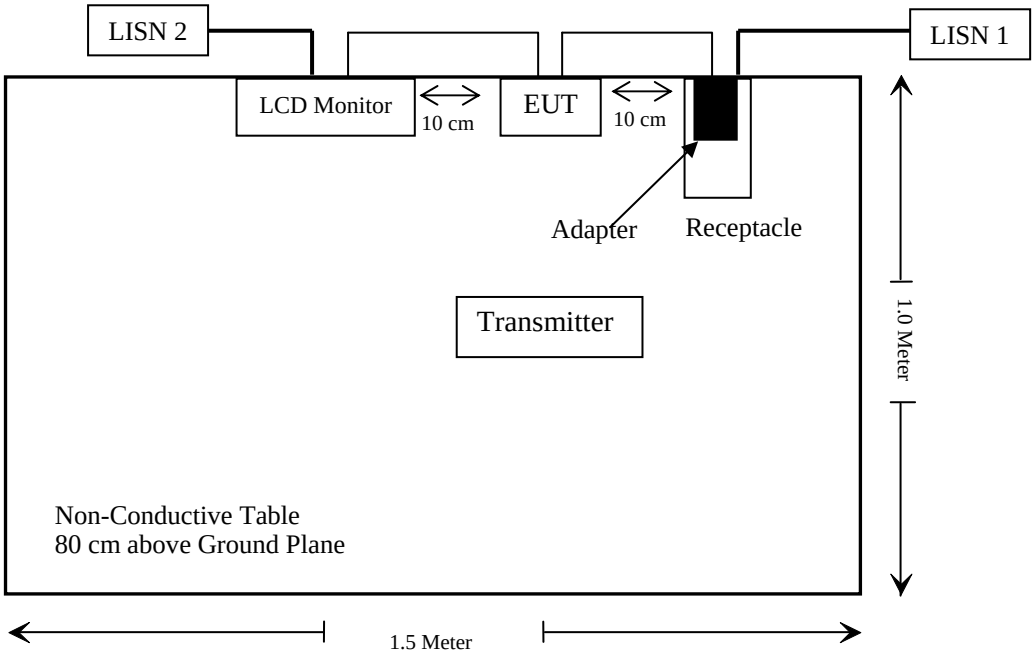


Test Mode 3:

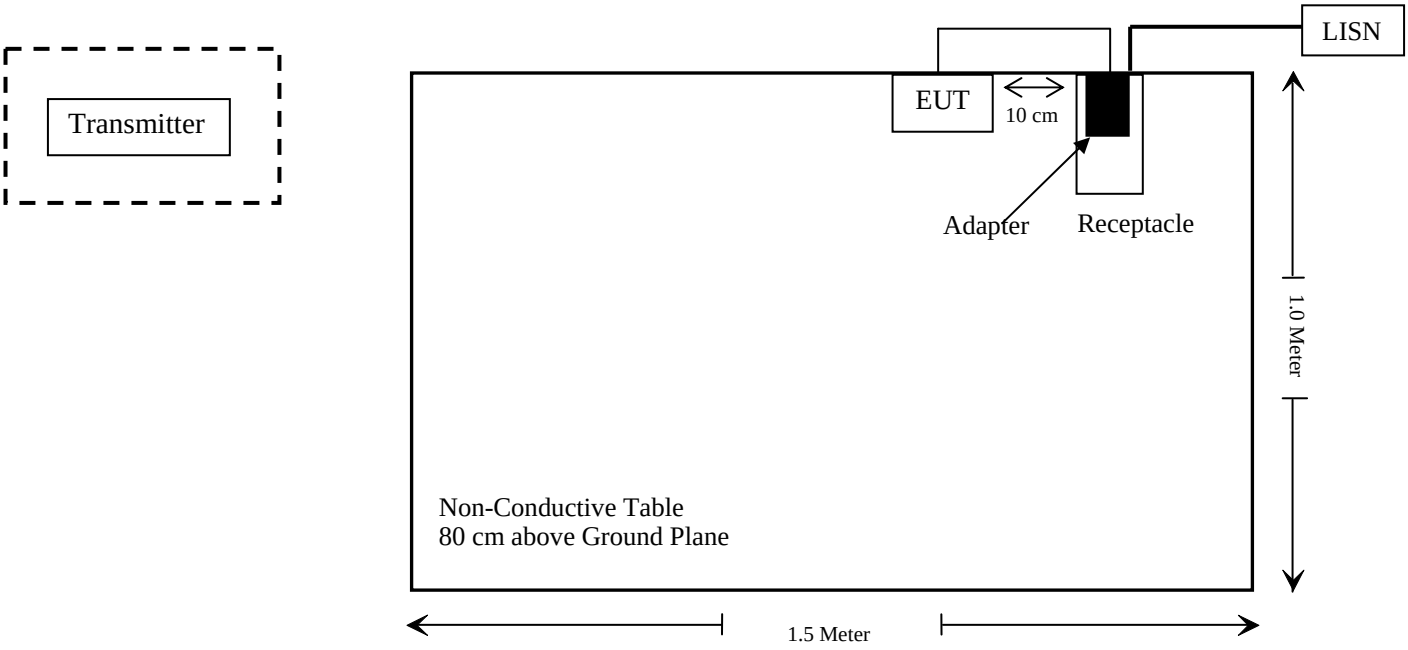


Block Diagram of Test Setup

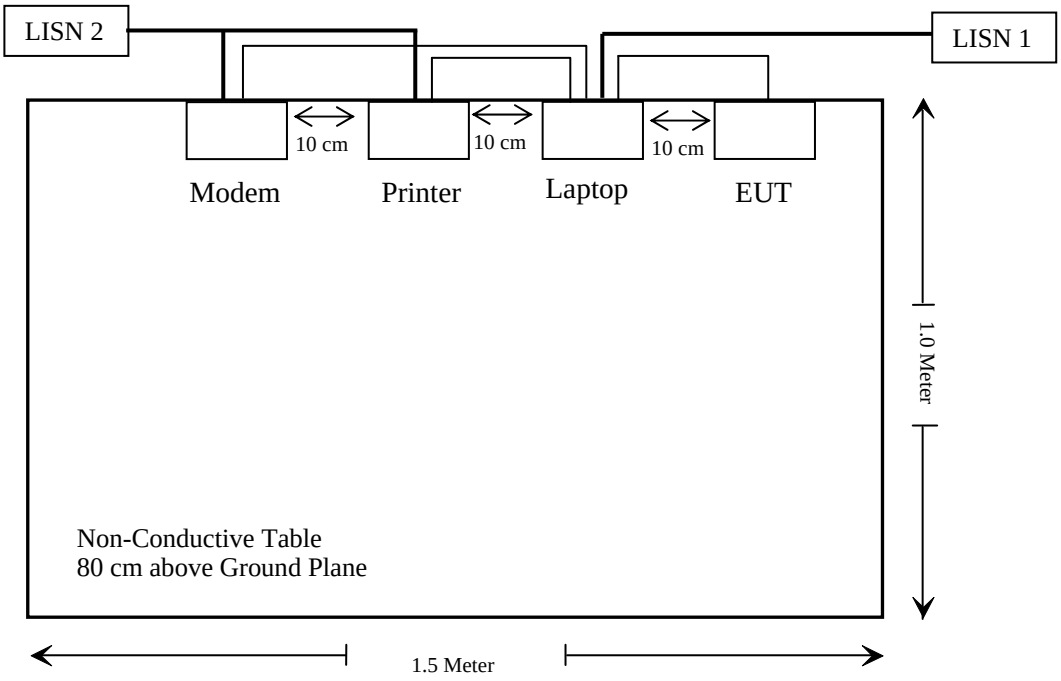
Test Mode 1:



Test Mode 2:



Test Mode 3:


LISN 2
LISN 1
10 cm
10 cm
10 cm
Modem
Printer
Laptop
EUT
1.0 Meter
Non-Conductive Table
80 cm above Ground Plane
1.5 Meter

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Spurious Emissions	Compliance

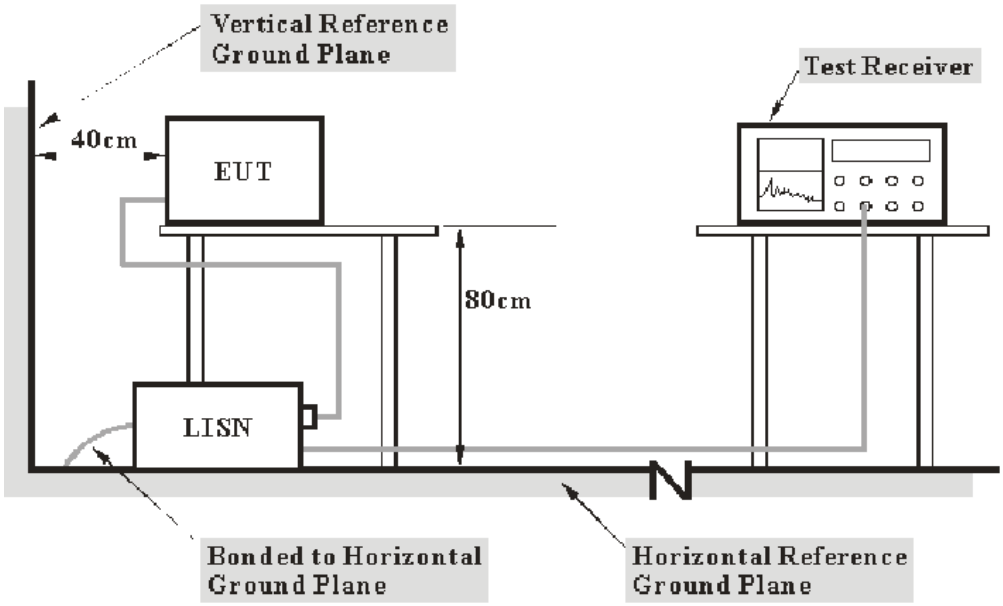
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ±2.4 dB.(k=2, 95% level of confidence)

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 C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The spacing between the peripherals was 10 cm.

For test mode1 and test mode2, the adapter was connected to a 120VAC/60 Hz power source.

For test mode3, the adapter of laptop was connected to a 120VAC/60 Hz 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, for test mode1 and test mode2, the adapter was connected to the outlet of the LISN; for test mode3, the adapter of laptop was connected to the outlet of the 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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2011-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08

*** Statement of Traceability:** Bay Area Compliance Laboratory Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

3.66 dB at **0.560 MHz** in the **Neutral** conducted mode for test mode3.

Test Data

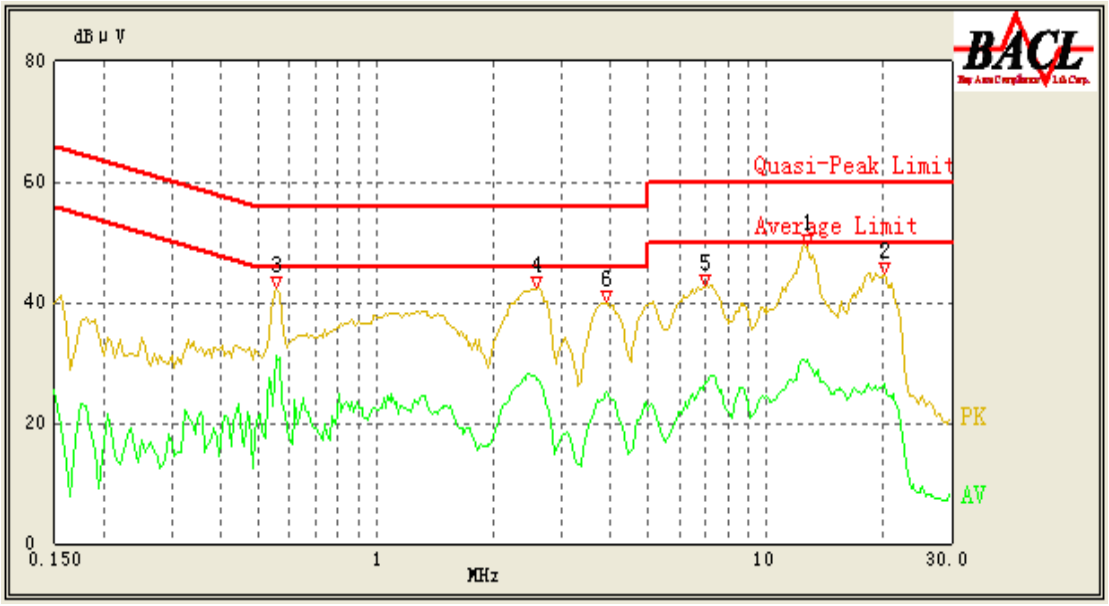
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

The testing was performed by Sula Huang on 2011-10-17.

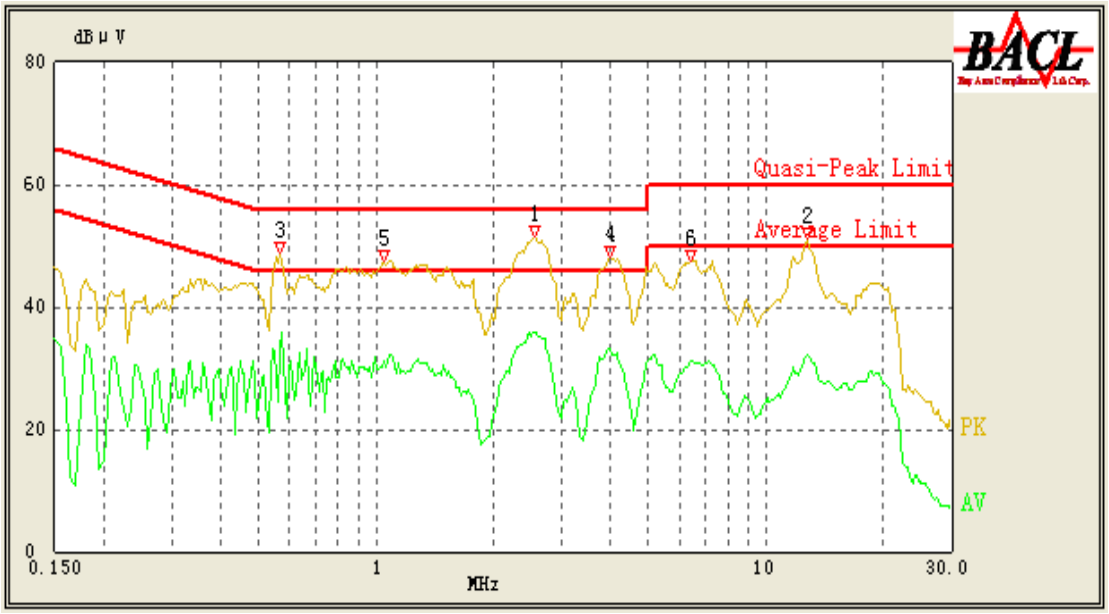
Test Mode 1:

AC 120V/60 Hz, Line



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
0.555	31.03	10.10	46.00	14.97	Ave.
0.555	40.00	10.10	56.00	16.00	QP
2.590	37.74	10.10	56.00	18.26	QP
2.590	27.33	10.10	46.00	18.67	Ave.
12.760	40.93	10.10	60.00	19.07	QP
12.795	30.50	10.10	50.00	19.50	Ave.
3.905	35.55	10.10	56.00	20.45	QP
3.905	25.12	10.10	46.00	20.88	Ave.
20.225	37.42	10.10	60.00	22.58	QP
7.015	37.23	10.10	60.00	22.77	QP
7.065	26.91	10.10	50.00	23.09	Ave.
20.255	26.36	10.10	50.00	23.64	Ave.

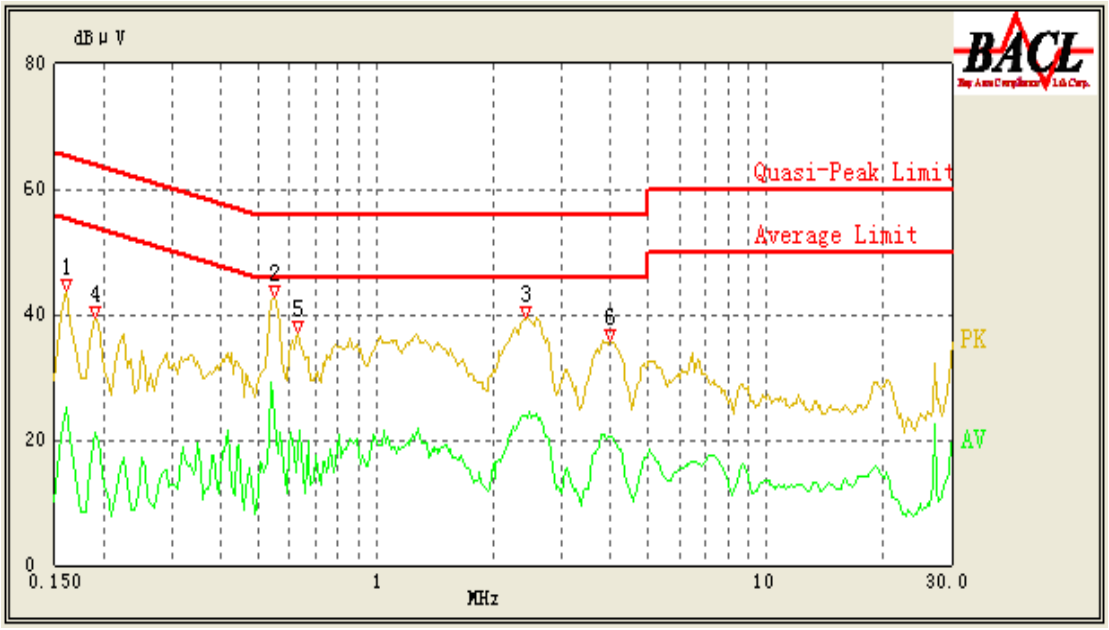
AC 120V/60 Hz, Neutral



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
2.570	35.89	10.10	46.00	10.11	Ave.
0.565	45.47	10.10	56.00	10.53	QP
2.560	45.40	10.10	56.00	10.60	QP
0.570	33.63	10.10	46.00	12.37	Ave.
3.965	33.17	10.10	46.00	12.83	Ave.
1.050	42.50	10.10	56.00	13.50	QP
3.985	42.48	10.10	56.00	13.52	QP
1.050	31.31	10.10	46.00	14.69	Ave.
12.810	44.26	10.10	60.00	15.74	QP
12.760	32.01	10.10	50.00	17.99	Ave.
6.410	41.60	10.10	60.00	18.40	QP
6.450	31.32	10.10	50.00	18.68	Ave.

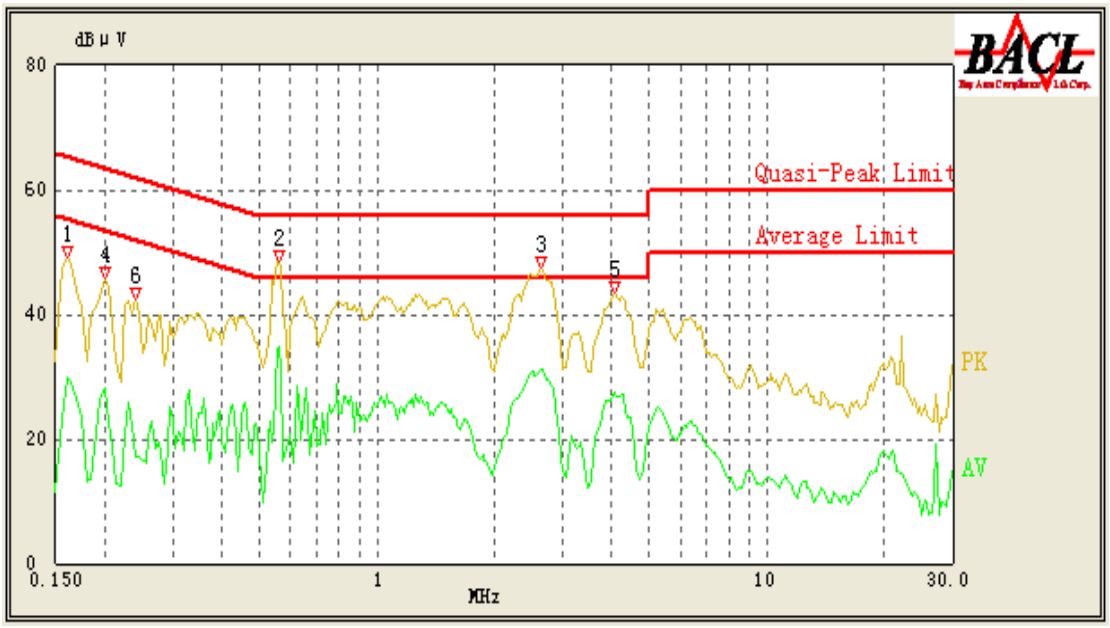
Test Mode 2:

AC 120V/60 Hz, Line



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
0.550	36.53	10.10	56.00	19.47	QP
2.430	34.63	10.10	56.00	21.37	QP
2.450	23.56	10.10	46.00	22.44	Ave.
0.630	33.53	10.10	56.00	22.47	QP
0.550	23.04	10.10	46.00	22.96	Ave.
0.635	21.51	10.10	46.00	24.49	Ave.
3.975	20.57	10.10	46.00	25.43	Ave.
3.975	29.76	10.10	56.00	26.24	QP
0.160	25.31	10.10	55.71	30.40	Ave.
0.160	35.30	10.10	65.71	30.41	QP
0.190	34.35	10.10	64.86	30.51	QP
0.190	21.22	10.10	54.86	33.64	Ave.

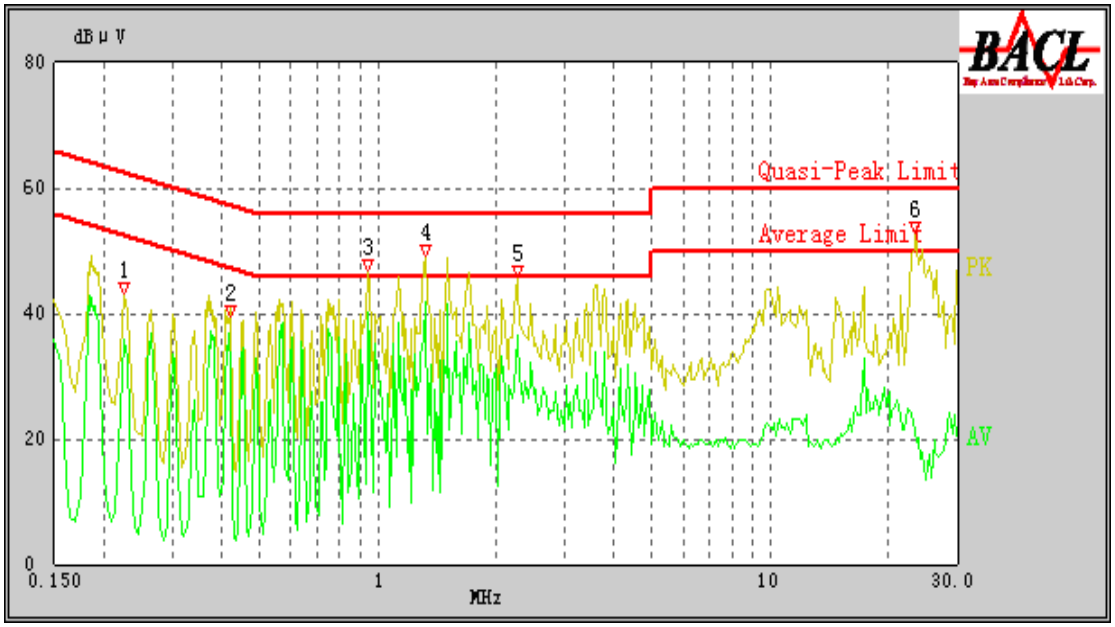
AC 120V/60 Hz, Neutral



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
0.560	34.99	10.10	46.00	11.01	Ave.
0.560	41.90	10.10	56.00	14.10	QP
2.645	41.37	10.10	56.00	14.63	QP
2.645	31.17	10.10	46.00	14.83	Ave.
4.065	27.60	10.10	46.00	18.40	Ave.
4.085	37.44	10.10	56.00	18.56	QP
0.160	29.74	10.10	55.71	25.97	Ave.
0.160	39.57	10.10	65.71	26.14	QP
0.200	28.12	10.10	54.57	26.45	Ave.
0.200	36.26	10.10	64.57	28.31	QP
0.240	17.28	10.10	53.43	36.15	Ave.
0.240	25.32	10.10	63.43	38.11	QP

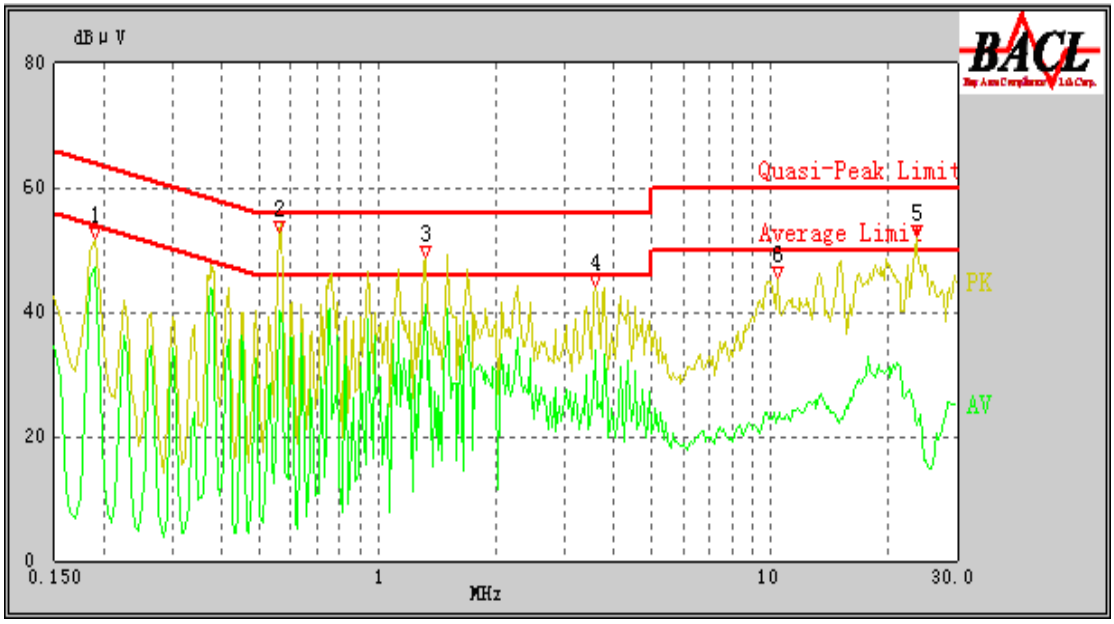
Test Mode 3:

AC 120V/60 Hz, Line



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
1.320	41.75	10.10	46.00	4.25	Ave.
0.945	40.12	10.10	46.00	5.88	Ave.
2.265	36.47	10.10	46.00	9.53	Ave.
1.320	46.01	10.10	56.00	9.99	QP
0.945	44.93	10.10	56.00	11.07	QP
2.265	40.70	10.10	56.00	15.30	QP
0.420	31.16	10.10	48.29	17.13	Ave.
0.225	35.94	10.10	53.86	17.92	Ave.
23.385	40.70	10.10	60.00	19.30	QP
0.420	38.16	10.10	58.29	20.13	QP
0.225	40.18	10.10	63.86	23.68	QP
23.580	19.52	10.10	50.00	30.48	Ave.

AC 120V/60 Hz, Neutral



Conducted Emissions			FCC Part 15.107, Class B		
Frequency (MHz)	**Corrected Amplitude (dBµV)**	**Correction Factor (dB)**	**Limit (dBµV)**	**Margin (dB)**	**Detector (PK/Ave./QP)**
0.560	42.34	10.10	46.00	3.66	Ave.
1.320	41.20	10.10	46.00	4.80	Ave.
0.190	47.23	10.10	54.86	7.63	Ave.
0.560	48.12	10.10	56.00	7.88	QP
1.320	46.05	10.10	56.00	9.95	QP
3.580	33.99	10.10	46.00	12.01	Ave.
0.190	48.53	10.10	64.86	16.33	QP
3.575	38.75	10.10	56.00	17.25	QP
10.410	38.46	10.10	60.00	21.54	QP
10.525	23.98	10.10	50.00	26.02	Ave.
23.355	22.75	10.10	50.00	27.25	Ave.
23.565	22.60	10.10	60.00	37.40	QP

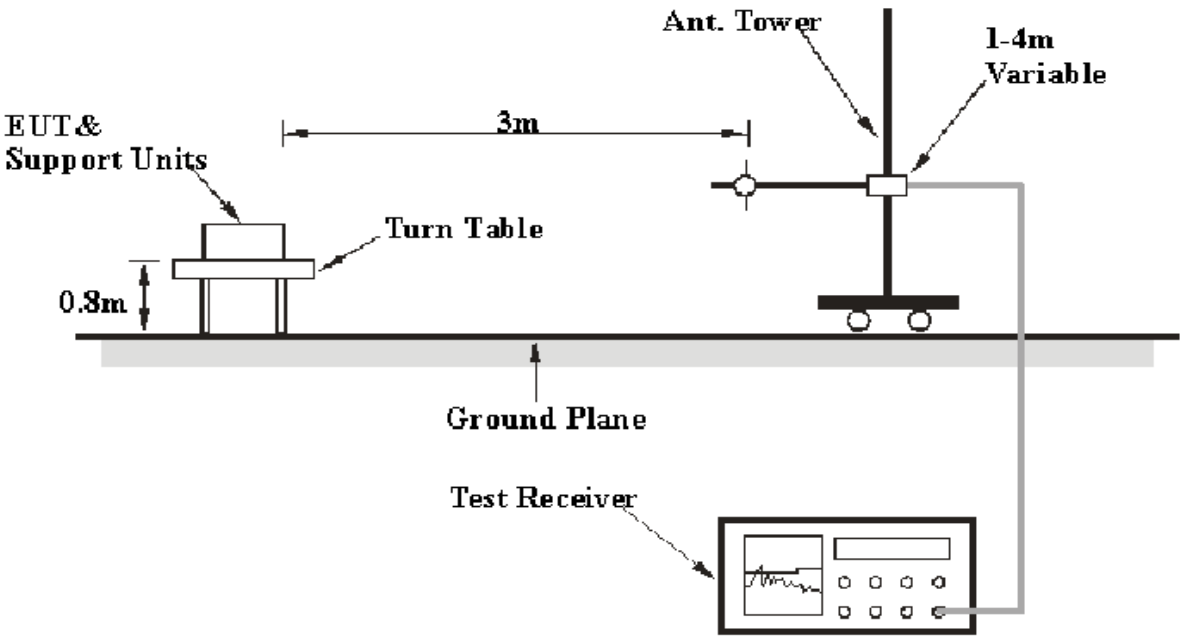
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, the Treatment of Uncertainty in EMC Measurements, the estimation of the uncertainty of radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ±4.0 dB. (k=2, 95% level of confidence)

EUT Setup



The radiated emission tests were performed in the 3 meters chamber B test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109 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 spacing between the peripherals was 10 cm.

For test mode 1 and test mode 2, the adapter was connected to a 120 VAC/60 Hz power source.

For test mode 3, the adapter of laptop was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

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

Frequency	***RB/W***	***VB/W***	***IF B/W***	***Detection***
30 MHz-1 GHz	100 kHz	300 kHz	120 kHz	Quasi-peak

Test Procedure

During the radiated emissions test, for test mode 1 and test mode 2, the adapter was connected to the AC floor outlet; for test mode 3, the adapter of laptop was connected to the AC floor outlet.

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

All the data was recorded in the Quasi-peak detection mode from 30 MHz to 1 GHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Pre-amplifier	HP8447E	1937A01046	2011-08-02	2012-08-01
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2010-11-11	2011-11-10
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Loss + 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:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109 Class B, with the worst margin reading of:

6.1 dB at **836.666 MHz** in the **Horizontal** polarization for test mode 3

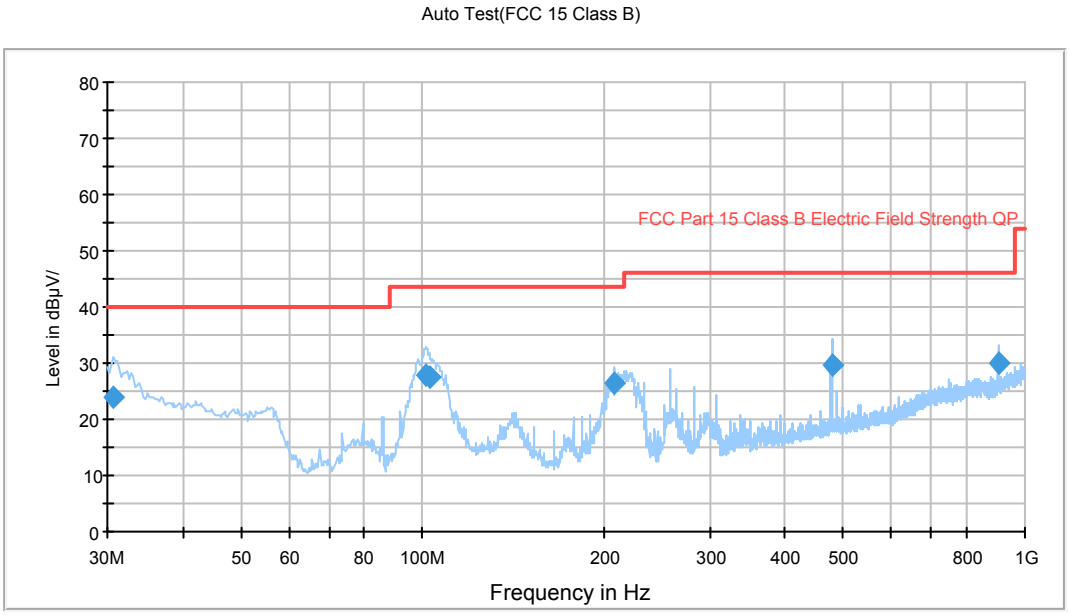
Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

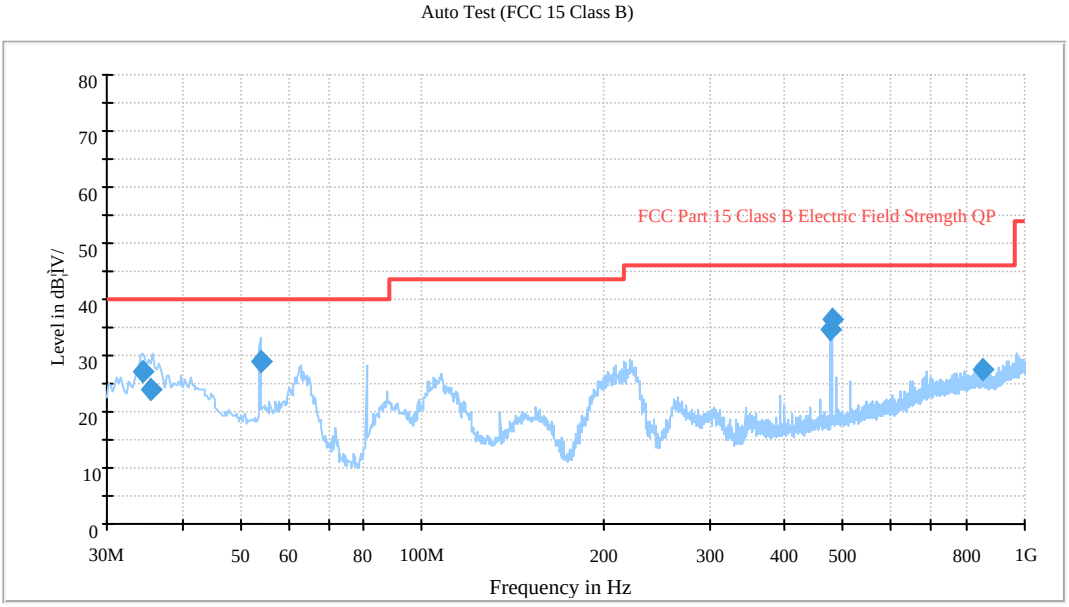
The testing was performed by Sula Huang on 2011-10-21.

Test Mode 1:



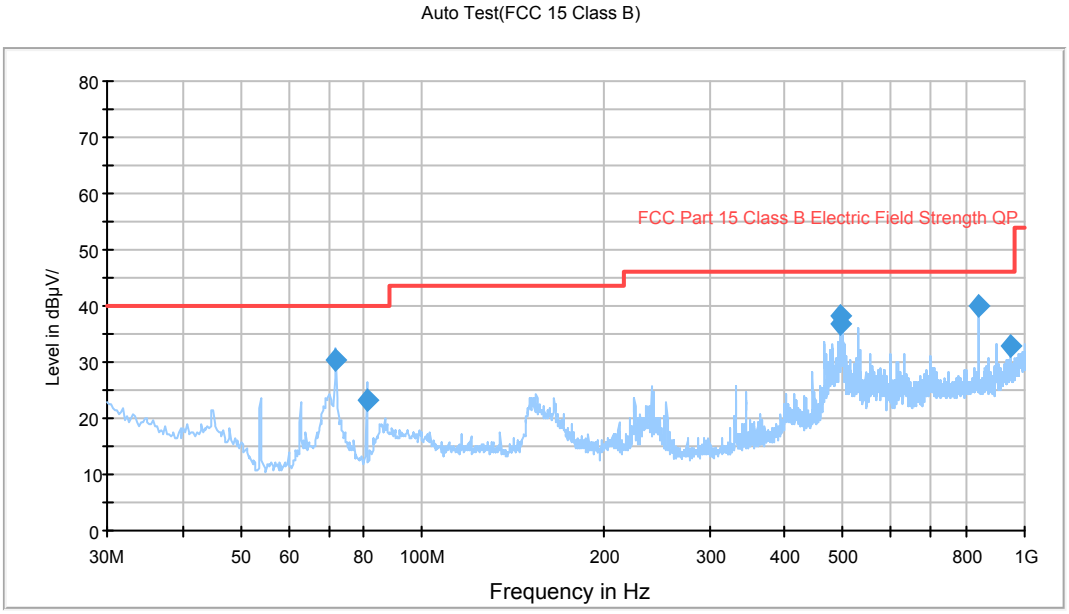
Frequency (MHz)	Corrected Amplitude (dBµV/m)	Test Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
101.331500	27.7	103.0	V	251.0	-14.4	43.5	15.8
102.571500	27.7	102.0	V	264.0	-14.3	43.5	15.8
30.809000	24.0	102.0	V	198.0	-6.0	40.0	16.0
902.064500	30.0	303.0	H	135.0	-0.8	46.0	16.0
478.166500	29.7	103.0	H	59.0	-8.7	46.0	16.3
208.721750	26.6	190.0	H	281.0	-14.2	43.5	16.9

Test Mode 2:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Test Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
478.393500	36.6	102.0	H	30.0	-8.7	46.0	9.4
53.957250	29.0	102.0	V	87.0	-17.9	40.0	11.0
475.936250	34.5	102.0	H	7.0	-8.7	46.0	11.5
34.526750	27.1	102.0	V	130.0	-8.5	40.0	12.9
35.480000	23.9	123.0	V	231.0	-9.1	40.0	16.1
848.856750	27.5	172.0	H	94.0	-1.1	46.0	18.5

Test Mode 3:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Test Antenna		Turntable Position (degree)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
		Height (cm)	Polarity (H/V)				
836.666000	39.9	206.0	H	0.0	-1.3	46.0	6.1
495.681250	38.3	123.0	V	269.0	-8.5	46.0	7.7
495.817250	36.9	154.0	V	269.0	-8.4	46.0	9.1
72.001250	30.4	170.0	V	193.0	-18.2	40.0	9.6
948.692500	32.8	139.0	H	5.0	0.6	46.0	13.2
81.058000	23.1	400.0	H	239.0	-18.1	40.0	16.9

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