



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Applicant : World Enterprise Sino Ltd.

Address : 15/F Shiu Fung Hong Building, 239-241 Wing Lok Street, Sheung Wan, Hong Kong

Product Name : Night Light Doorbell

Model Name : F035A

Brand Name : N/A

FCC ID : U53-F035A

Report No. : MOST/STS091006F1

Date of Issue : October 26, 2009

Issued by : Most Technology Service Co., Ltd.

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1. VERIFICATION OF CONFORMITY


Equipment Under Test: Night Light Doorbell
Brand Name: N/A
Model Number: F035A
FCC ID: U53-F035A
Applicant: World Enterprise Sino Ltd.
 15/F Shiu Fung Hong Building, 239-241 Wing Lok Street, Sheung Wan, Hong Kong
Manufacturer: Shenzhen Qiyao Plastic & Electronic Co.,LTD
 6th Building, Chuangye NO2.RD, Zhangbei industrial zone, Ailian Town, Longgang, Shenzhen, China
Technical Standards: 47 CFR Part 15 Subpart C
File Number: MOST/STS091006F1
Date of test: October 20,2009 - October 26, 2009
Deviation: None
Condition of Test Sample: Normal
Test Result: PASS

The above equipment was tested by MOST. for compliance with the requirements set forth in FCC rules and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested by (+ signature): *Candy*
 Candy Zhang October 26, 2009

Review by (+ signature): *Sam*
 Sam Zhong October 26, 2009

Approved by (+ signature): *Yvette* 
 Yvette Zhou October 26, 2009

2. GENERAL INFORMATION

2.1 Product Information

EUT- Bluetooth headset	
Description:	Night Light Doorbell
Model Name:	F035A
Series Number:	N/A
Model Difference description:	N/A
Power Supply:	DC 12V by Battery
Frequency Range:	315MHz
Antenna Designation	PCB Antenna
Temperature Range:	-10°C ~ +55°C

NOTE:

1. Please refer to Appendix I for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User’s Manual.

2.2 Objective

The objective of the report is to perform tests according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

2.3 Test Standards and Results

Test items and the results are as bellow:

No.	Section	Description	Result	Date of Test
1	15.231	20dB Bandwidth	PASS	2009-10-24
2	15.231	Limit of Transmission Time	PASS	2009-10-24
3	15.231	Radiated Emission	PASS	2009-10-26
4	15.203	Conducted Emission	Not Applicable	--

Note: 1. The test result judgment is decided by the limit of measurement standard
 2. The information of measurement uncertainty is available upon the customer's request.

2.4 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3. TEST METHODOLOGY

3.1 TEST FACILITY

Test Site:	Most Technology Service Co.,Ltd
Location:	Add: No.5, Nangshan 2nd Rd., North Hi-Tech Industrial park , Nanshan Shenzhen, Guangdong ,China
Description:	<p>There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 16 requirements.</p> <p>The FCC Registration Number is 490827.</p>
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

3.2 General Test Procedures

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.

3.3 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

4 SETUP OF EQUIPMENT UNDER TEST

4.1 Setup Configuration of EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.2 Support Equipment

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
N/A						

Remark:

All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test. Grounding was established in accordance with the manufacturer’s requirements and conditions for the intended use.

4.3 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at Most for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calculator due date
1	Test Receiver	Rohde & Schwarz	ESCI	100492	2010/03/14
2	Spectrum Analyzer	Agilent	E7405A	US44210471	2010/03/14
3	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2010/03/14
4	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2010/03/14
5	Terminator	Hubersuhner	50Ω	No.1	2010/03/14
6	RF Cable	SchwarzBeck	N/A	No.1	2010/03/14
7	Test Receiver	Rohde & Schwarz	ESPI	101202	2010/03/14
8	Bilog Antenna	Sunol	JB3	A121206	2010/03/14
9	Horn Antenna	TRC	N/A	N/A	2010/03/14
10	Cable	Resenberger	N/A	NO.1	2010/03/14
11	Cable	SchwarzBeck	N/A	NO.2	2010/03/14
12	Cable	SchwarzBeck	N/A	NO.3	2010/03/14
13	DC Power Filter	DuoJi	DL2×30B	N/A	2010/03/14
14	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2010/03/14
15	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2010/03/14
16	Test Receiver	Rohde & Schwarz	ESCI	100492	2010/03/14
17	Absorbing Clamp	Luthi	MDS21	3635	2010/03/14
18	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2010/03/14
19	AC Power Source	Kikusui	AC40MA	LM003232	2010/03/14
20	Test Analyzer	Kikusui	KHA1000	LM003720	2010/03/14
21	Line Impedence Network	Kikusui	LIN40MA-PCR-L	LM002352	2010/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2010/03/14
23	EMC PRO System	EM Test	UCS-500-M4	V0648102026	2010/03/14
24	Signal Generator	IFR	2032	203002/100	2010/03/14
25	Amplifier	A&R	150W1000	301584	2010/03/14
26	CDN	FCC	FCC-801-M2-25	47	2010/03/14
27	CDN	FCC	FCC-801-M3-25	107	2010/03/14
28	EM Injection Clamp	FCC	F-203I-23mm	403	2010/03/14
29	RF Cable	MIYAZAKI	N/A	No.1/No.2	2010/03/14
30	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2010/03/14
31	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2010/03/14

NOTE: Equipments listed above have been calibrated and are in the period of validation.

5. 47 CFR FCC PART 15.231 REQUIREMENTS

5.1 20dB Bandwidth

5.1.1 Definition

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

5.1.2 Test Description

The EUT was placed on a non-conductive table 0.8 meters above the floor. The table was rotated to an angle which presented the highest signal level. The occupied bandwidth was based on a 20 dB criteria (20 dB down either side of the emission from the peak emission). A drawing showing the test setup is given as Figure 1.

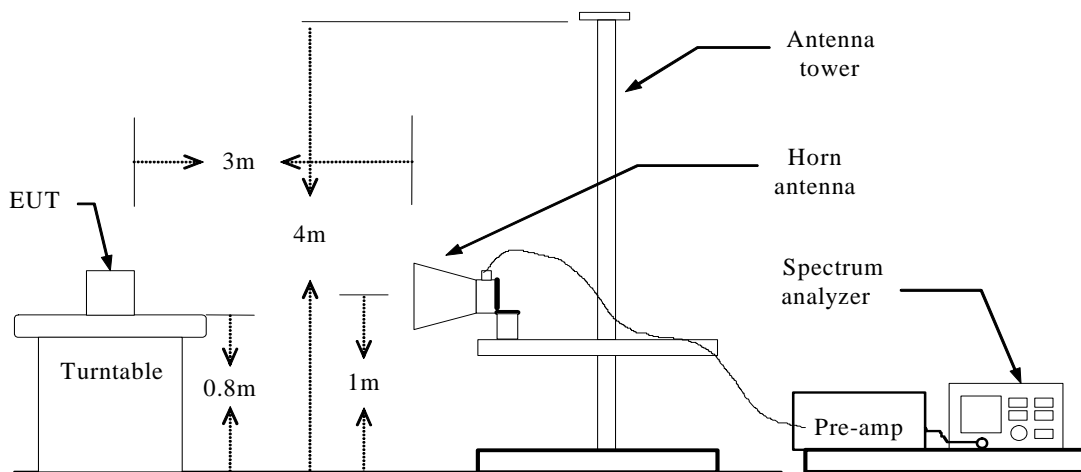
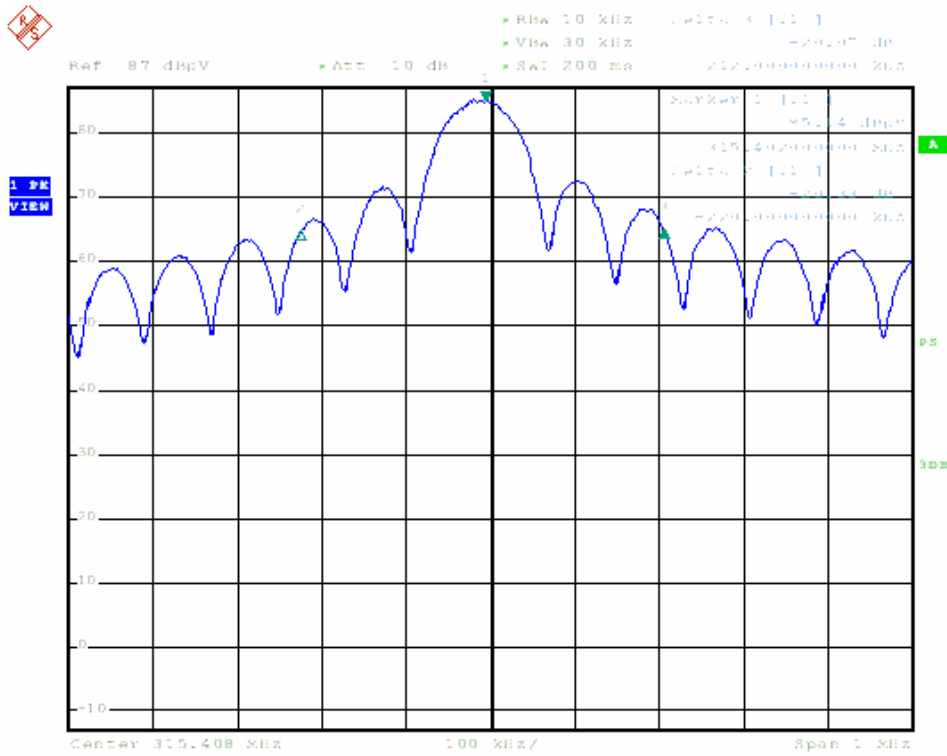


Figure 1: Radiated Emission Test Setup

5.1.3 Test Result

Frequency (MHz)	20 dB Bandwidth (MHz)	Limit (MHz)	Result
315.00	0.432	0.7875	PASS

Test Plot:

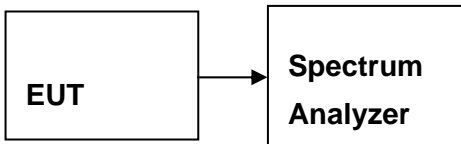


5.2 Limit of Transmission Time

5.2.1 Definition

According to 15.231 (a) (1), a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

5.2.2 Test Description

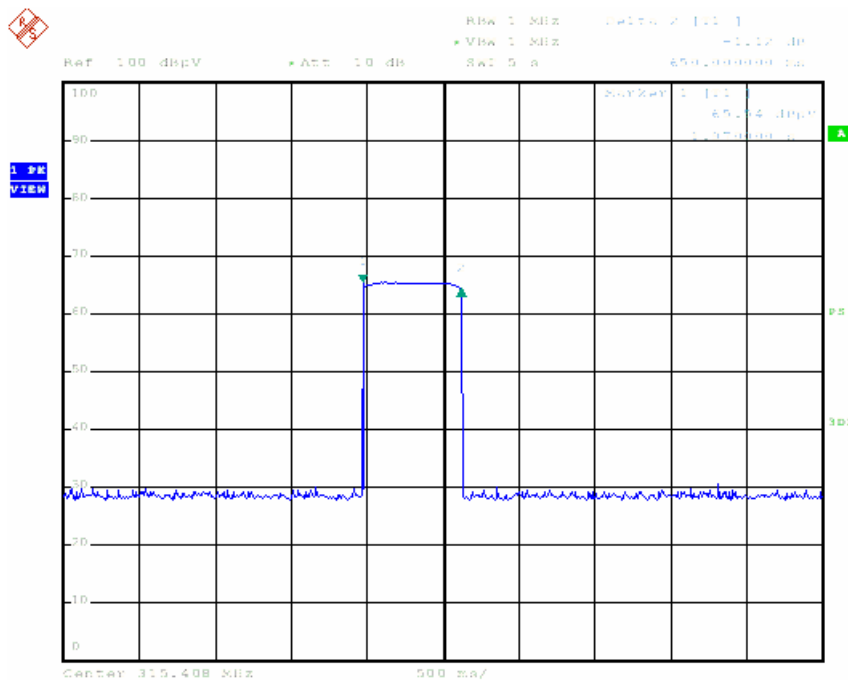


5.2.3 Test Procedure

The transmitter output is connected to the spectrum analyzer. The spectrum analyzer center frequency is set to the transmitter frequency. The RBW and VBW are set to 1MHz.

5.2.4 Test Result

Frequency (MHz)	Transmission time (ms)	Limit (s)	Result
315.00	650.00	5.00	PASS



5.3 Radiated Emissions

5.3.1 Definition

1. The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209(Intentional Radiators general limit), as below.

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

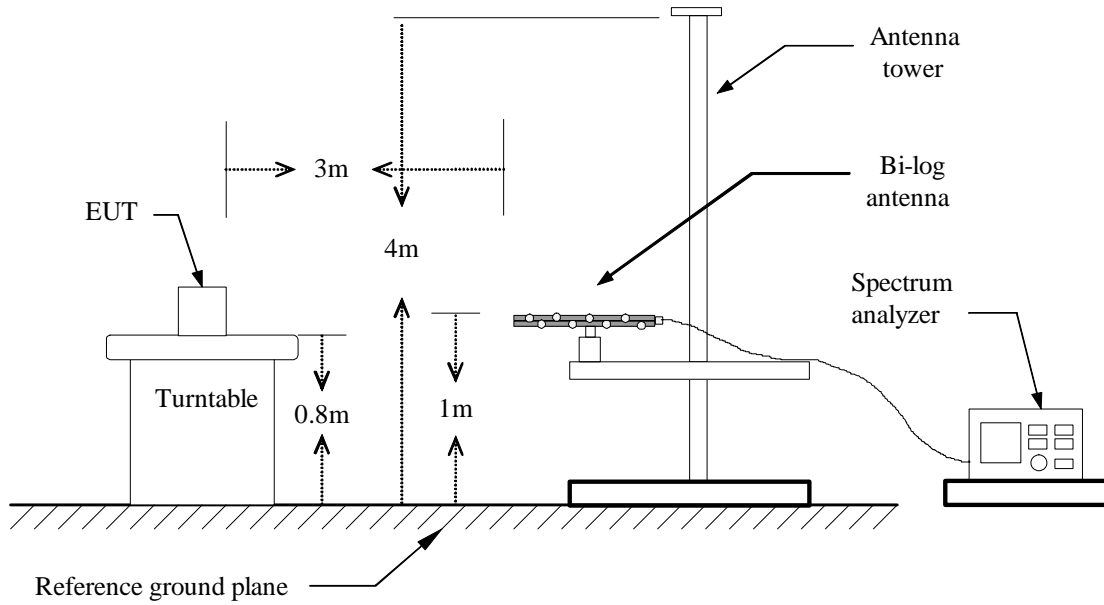
2. In the above emission table, the tighter limit applies at the band edges.

Frequency (Hz)	Field Strength ($\mu\text{V}/\text{m}$ at 3-meter)	Test Distance (m)	Field Strength (dB $\mu\text{V}/\text{m}$ at 3-meter)
1.705-30	30	3	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54
Fundamental	250	3	48

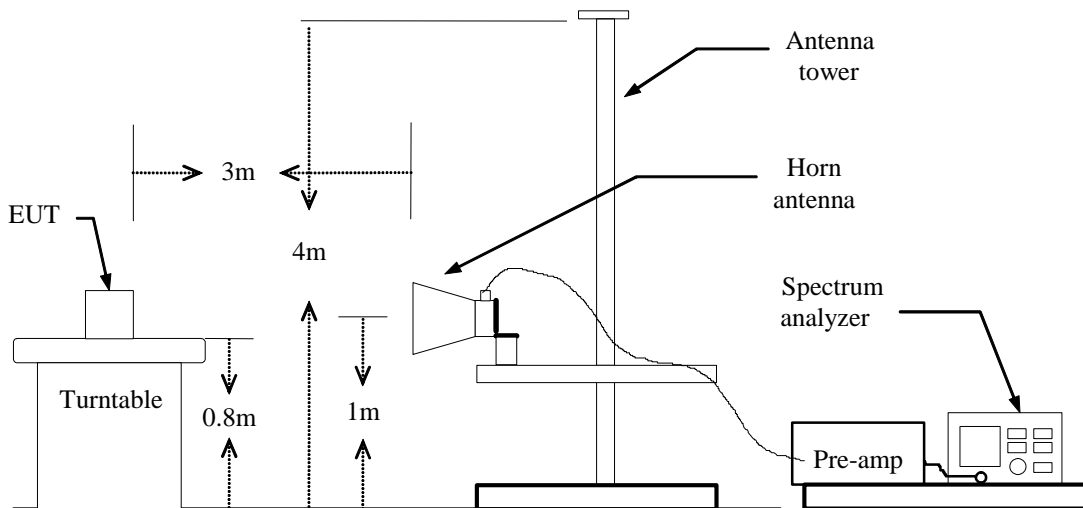
5.3.2 Test Configuration

Test Setup:

Below 1GHz:



Above 1GHz:



Operation Mode: TX/ Operating

Test Date: October 24, 2009

Temperature: 20°C

Tested by: Petter Ping

Humidity: 70 % RH

Polarity: Ver. / Hor.

Above 1 GHz

Freq. (MHz)	Ant. Pol H/V	Peak Reading g	AV Reading g	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
N/A										
N/A										

Notes:

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “--- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100 kHz.

5.4 Conducted Emission (Not Applicable)

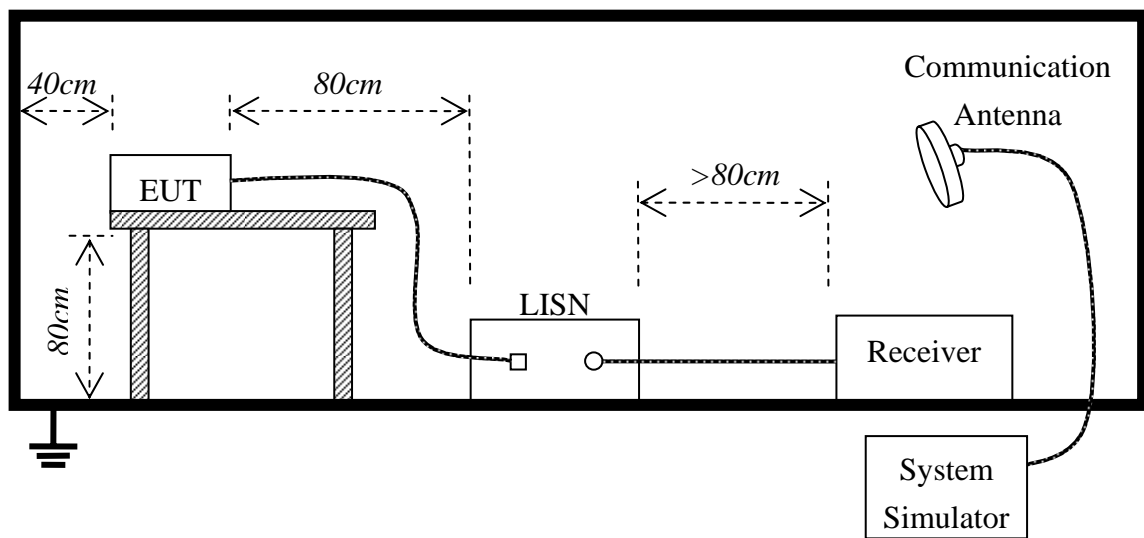
5.4. 1 Definition

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

****Note:** 1. the lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

5.4. 2 Block Diagram of Test Setup



5.4.3 Preliminary Procedure of Line Conducted Emission Test

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user’s manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per FCC Part 15.
- 3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
- 4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test				
Frequency Range Investigated		150KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
--				

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

5.4.4 Final Procedure of Line Conducted Emission Test

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(s) was reported on the Summary Data page.

5.4.5 Test Result of Line Conducted Emission Test

Not applicable (Since the EUT is powered by battery).

5.5 Antenna Requirement

5.5.1 Definition

An analysis of the F035A was performed to determine compliance with FCC Section 15.203. This section requires specific handling and control of antennas used for devices subject to regulations.

5.5.2 Evaluation Procedure

The structure and application of the F035A was analyzed with respect to the rules. The antenna is an internal antenna, and is not accessible to the user. An auxiliary antenna port is not present.

5.5.3 Evaluation Criteria

Section 15.203 of the rules states that the subject device must meet at least one of the following criteria:

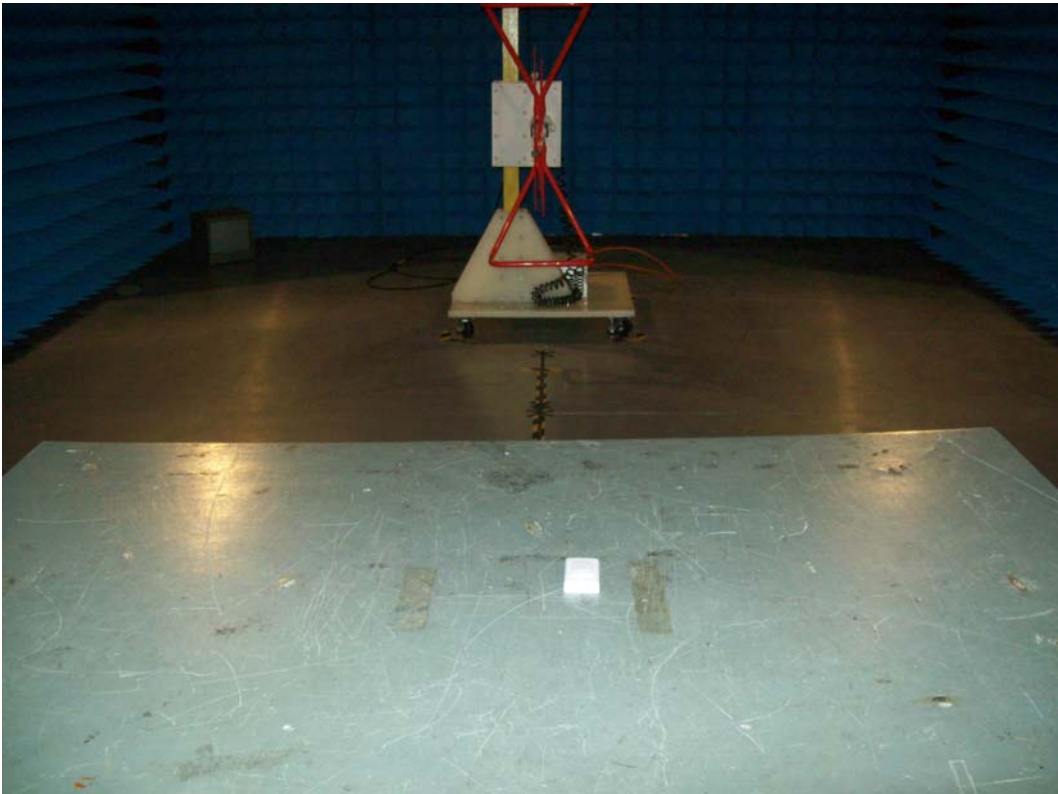
- (a) Antenna must be permanently attached to the unit.
- (b) Antenna must use a unique type of connector to attach to the EUT.
- (c) Unit must be professionally installed. Installer shall be responsible for verifying that the correct antenna is employed with the unit.

5.5.4 Evaluation Results

The F035A meets the criteria of this rule by virtue of having an internal antenna inaccessible to the user. The EUT is therefore compliant.

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

Radiated Emission Test Setup



**APPENDIX 2
PHOTOGRAPHS OF EUT**

FRONT VIEW OF SAMPLE



BACK VIEW OF SAMPLE



TOP VIEW OF SAMPLE



BOTTOM VIEW OF SAMPLE



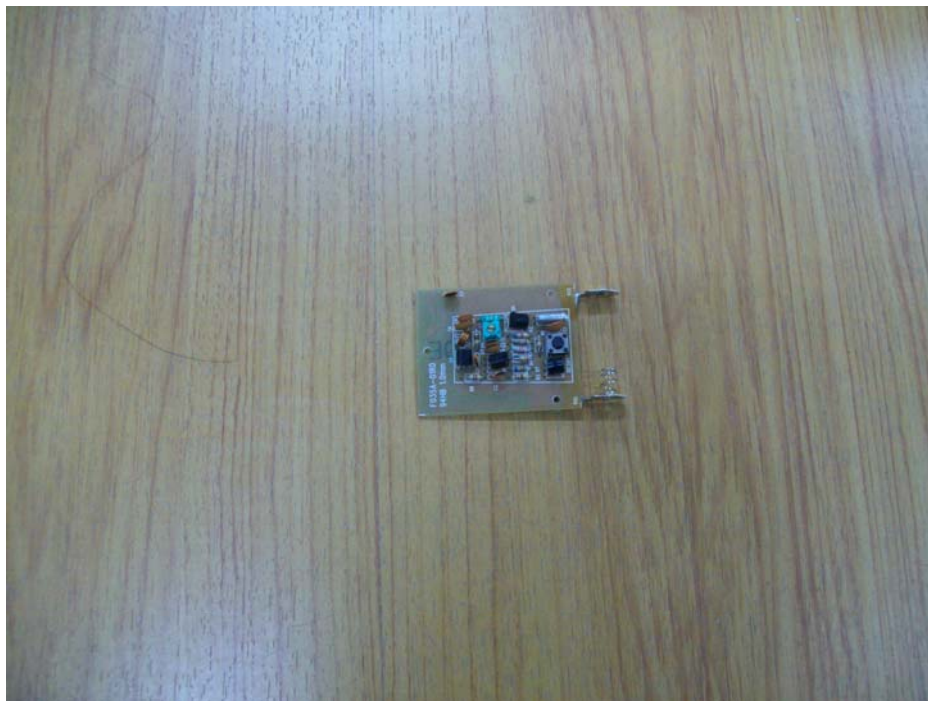
LEFT VIEW OF SAMPLE



RIGHT VIEW OF SAMPLE



INTERNAL PHOTO OF SAMPLE-1



INTERNAL PHOTO OF SAMPLE-2



-----END OF REPORT-----