FCC Part15.209 Test Report

Product Name	:	Floor Guard BTL System
Model No.	:	BTLFG
FCC ID	:	P9I-WGBTLFG

Applicant	:	WG Security Products, Inc
Address	:	3031 Tisch Way Suite 602, San JoseUnited, States

Date of Receipt	:	25/10/2011
Test Date	:	26/10/2011~ 09/11/2011
Issued Date	:	23/11/2011
Report No.	:	11AS050R-RF-US-P09V01
Report Version	:	V1.0

Test Report Certification

Issued Date : 23/11/2011
Report No. : 11AS050R-RF-US-P09V01

QuieTek

Product Name	:	Floor Guard BTL System
Applicant	:	WG Security Products, Inc
Address	:	3031 Tisch Way Suite 602, San JoseUnited, States
Manufacturer	:	SHANGHAI WINGUIDE DIGITAL TECHNOLOGY LTD.
Address	:	79 Wu XIANG Rd. Jiading district Xuhang, shanghai
Model No.	:	BTLFG
FCC ID	:	P9I-WGBTLFG
EUT Voltage	:	AC IN: 110~240V OUT: AC 26V
Brand Name	:	WG
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2009
		ANSI C63.4: 2009; ANSI C63.10: 2009
Test Result	:	Complied
Performed Location	:	Suzhou EMC Laboratory
		No.99 Hongye Rd., Suzhou Industrial Park Loufeng
		Hi-Tech Development Zone., Suzhou, China
		TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098
		FCC Registration Number: 800392

Documented By : Alice Ni
(Engineering ADM: Alice Ni)

Reviewed By : Jame yuan
(Senior Engineer: Jame Yuan)

Approved By : Marlinchen
(Engineering Manager: Marlin Chen)

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0

Testing Laboratory 1313

LinKou Testing Laboratory :
No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0

Testing Laboratory 0914

Suzhou (China) Testing Laboratory :
No. 99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou,China.
TEL : +86-512-6251-5088 / FAX : +86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0

Testing Laboratory 1596

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	Floor Guard BTL System
Model No.	BTLFG
Working Voltage	AC IN: 110~240V OUT: AC 26V
Working Frequency	58kHz
Type of modulation	Sine wave
Antenna Type	Loop Antenna

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmit, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit

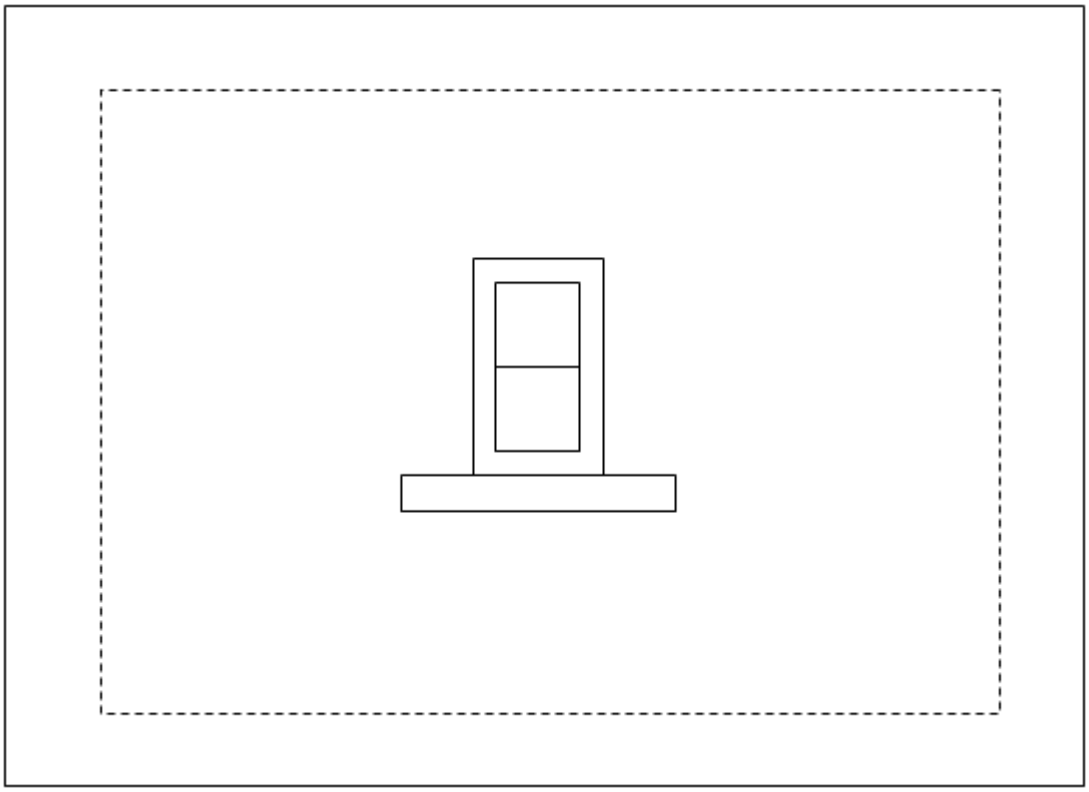
Note: In the process of testing, we always make the EUT transmit at the maximum value of amplitude.

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	N/A	N/A	N/A	N/A	N/A

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal cable Description
N/A	N/A	N/A

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Make the EUT work on transmit mode.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2009 Section 15.209	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

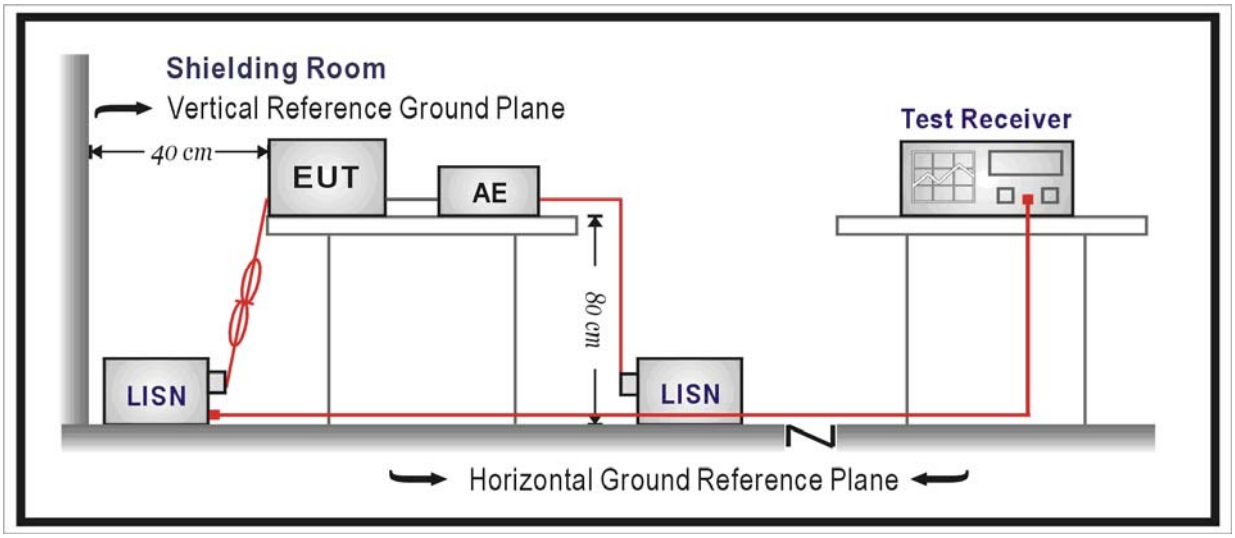
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100726	2012.04.23
Two-Line V-Network	R&S	ENV216	100043	2012.04.29
Two-Line V-Network	R&S	ENV216	100044	2012.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2012.05.05
50ohm Termination	SHX	TF2	07081401	2012.09.22
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2012.01.14

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

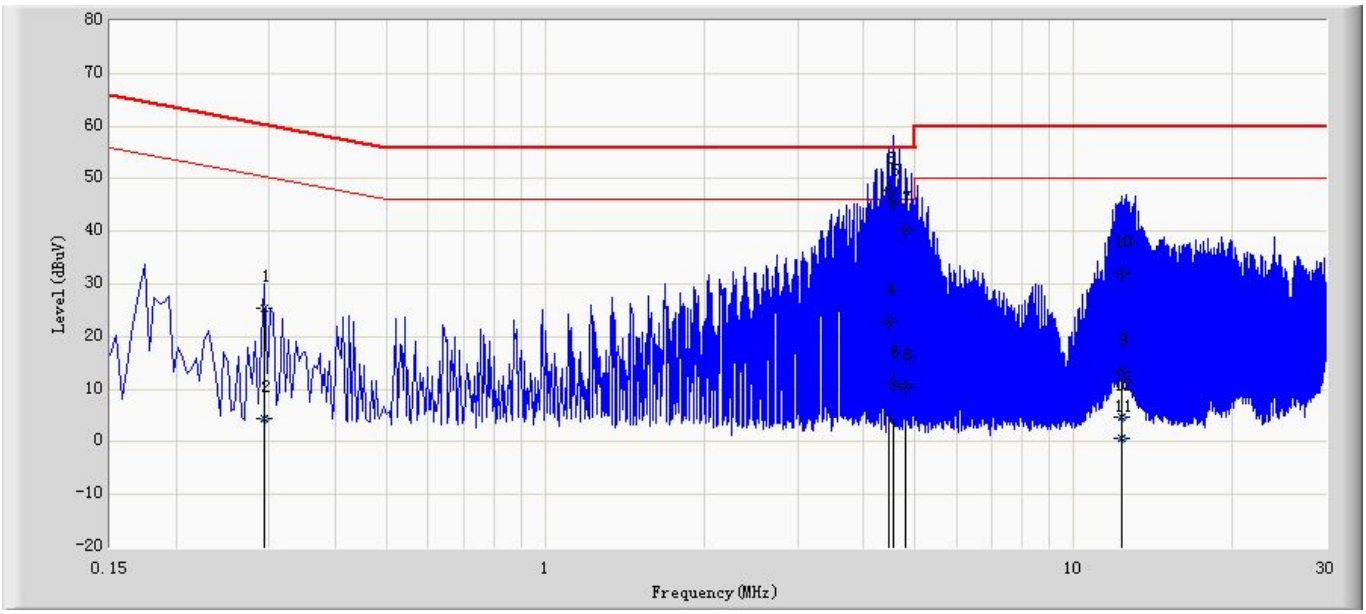
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

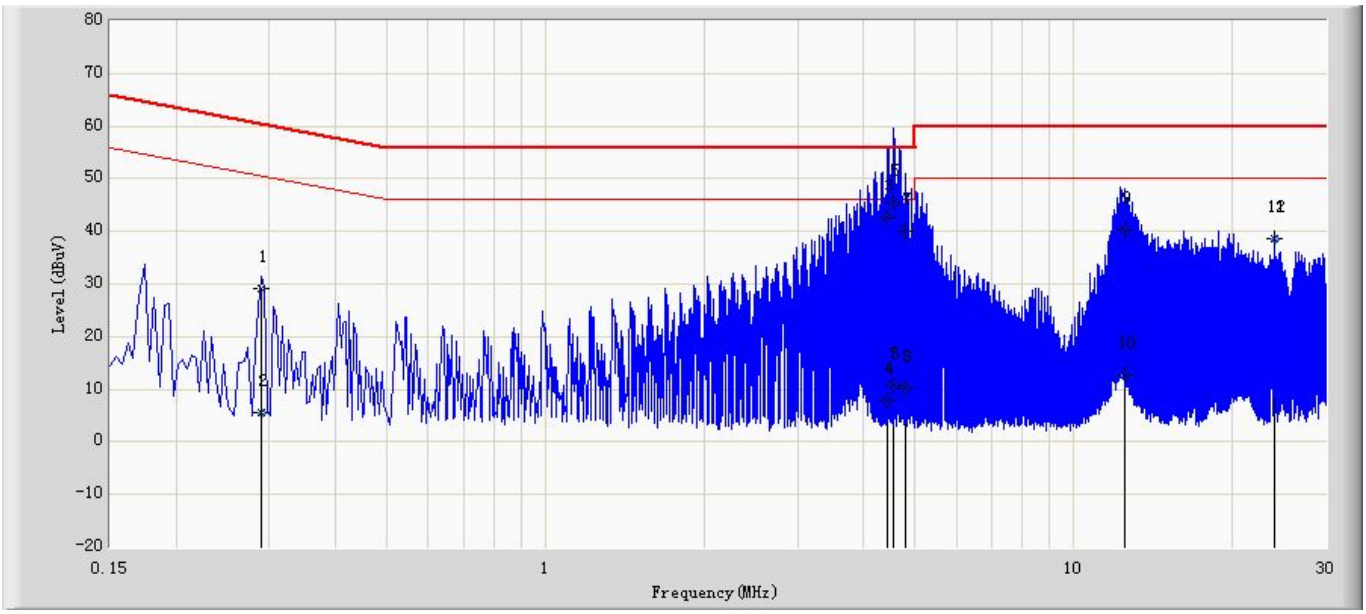
3.6. Test Result

Engineer: Toms	
Site: TR1	Time: 2011/10/29 - 11:35
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(0.009-30MHz)	Polarity: Line
EUT: Floor Guard BTL System	Power: AC 120V/60Hz
Note: Mode1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.294	25.529	15.849	-34.881	60.411	9.680	QP
2		0.294	4.397	-5.283	-46.014	50.411	9.680	AV
3	*	4.470	47.797	37.992	-8.203	56.000	9.805	QP
4		4.470	22.780	12.975	-23.220	46.000	9.805	AV
5		4.562	45.585	35.780	-10.415	56.000	9.806	QP
6		4.562	10.896	1.091	-35.104	46.000	9.806	AV
7		4.810	40.241	30.423	-15.759	56.000	9.818	QP
8		4.810	10.453	0.635	-35.547	46.000	9.818	AV
9		12.322	13.332	3.280	-46.668	60.000	10.052	QP
10		12.322	31.873	21.821	-28.127	60.000	10.052	QP
11		12.322	0.589	-9.463	-49.411	50.000	10.052	AV
12		12.322	4.569	-5.483	-45.431	50.000	10.052	AV

Engineer: Toms	
Site: TR1	Time: 2011/10/29 - 11:39
Limit: FCC_Part15.107_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101043(0.009-30MHz)	Polarity: Neutral
EUT: Floor Guard BTL System	Power: AC 120V/60Hz
Note: Mode1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.290	29.060	19.407	-31.464	60.524	9.653	QP
2		0.290	5.627	-4.026	-44.897	50.524	9.653	AV
3		4.434	42.520	32.716	-13.480	56.000	9.804	QP
4		4.434	7.865	-1.940	-38.135	46.000	9.804	AV
5	*	4.562	45.579	35.773	-10.421	56.000	9.806	QP
6		4.562	10.722	0.916	-35.278	46.000	9.806	AV
7		4.810	40.137	30.319	-15.863	56.000	9.818	QP
8		4.810	10.308	0.490	-35.692	46.000	9.818	AV
9		12.478	40.483	30.398	-19.517	60.000	10.085	QP
10		12.478	12.863	2.779	-37.137	50.000	10.085	AV
11		23.998	38.687	28.251	-21.313	60.000	10.436	QP
12		23.998	38.708	28.272	-11.292	50.000	10.436	AV

4. Radiated Emission

4.1. Test Equipment

Radiated Emissions / AC1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100175	2012.09.22
EMI Test Receiver	R&S	ESCI	100726	2012.04.23
Preamplifier	Quietek	AP-025C	CHM-0602008	2012.04.12
Preamplifier	Quietek	AP-025C	CHM-0503006	2012.04.12
Bilog Antenna	Schaffner	CBL6112B	2933	2012.10.18
Bilog Antenna	Schaffner	CBL6112B	2931	2012.10.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2011.11.22
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC1-L	2012.03.07
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC1-R	2012.03.07
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC1-C	2012.03.07
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC1-TH	2012.01.14

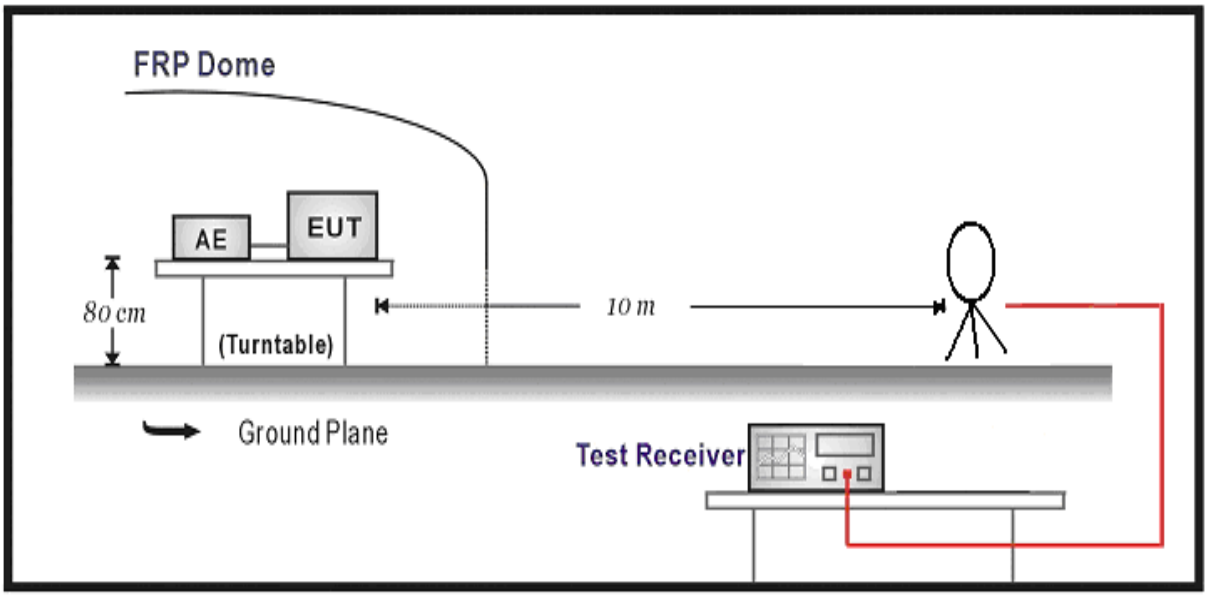
☒Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Due Date
EMI Test Receiver	R&S	ESCI	100573	2012.04.23
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2011.11.22
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.11
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2012.03.08
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2012.01.14

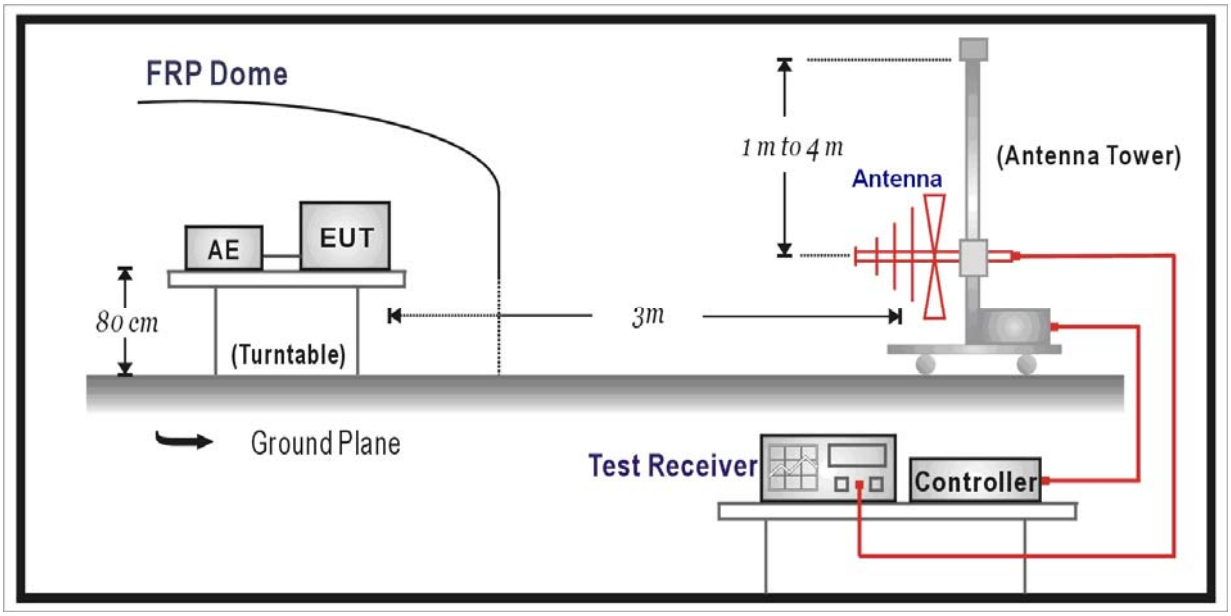
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

Below 30MHz Test Setup:



Above 30MHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Field Strengh (microvolts/meter)	Measurement Distance (uV/m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-80	100**	3
80-216	150**	3
216-960	200**	3
Above 960	500	3

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters for below 30MHz and 3 meters for above 30MHz.
For 3 meters above 30MHz, the antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2009 on radiated measurement.
The EUT should be operate in transmission mode.

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
below 1G is defined as ± 3.8 dB

4.6. Test Result

All of the test result shown indicates the worst case.

Working Frequency: 58kHz

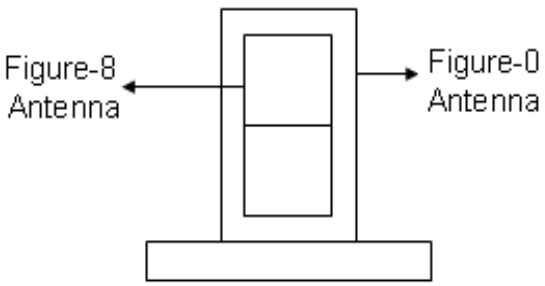
Radiated Emission Below 30MHz Measurement Distance: 10 Meters

Frequency (MHz)	Reading Level (dBuV/m)	Factor	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin [dB]	Detector	Note
Face ON							
0.058	76.20	22.92	99.12	111.42	-12.31	PK	Both Antennas
0.058	56.80	22.92	79.72	91.42	-11.71	AV	Both Antennas
0.058	76.10	22.92	99.02	111.42	-12.41	PK	Figure-O Antenna
0.058	53.50	22.92	76.42	91.42	-15.01	AV	Figure-O Antenna
0.116	26.00	22.92	48.92	105.40	-56.48	PK	Figure-O Antenna
0.116	5.30	22.92	28.22	85.40	-57.18	AV	Figure-O Antenna
0.174	32.40	22.93	55.33	101.87	-46.54	PK	Figure-O Antenna
0.174	11.70	22.93	34.63	81.87	-47.24	AV	Figure-O Antenna
0.232	29.50	22.94	52.44	99.37	-46.93	PK	Figure-O Antenna
0.232	5.60	22.94	28.54	79.37	-50.83	AV	Figure-O Antenna
0.290	25.80	22.95	48.75	97.44	-48.69	PK	Figure-O Antenna
0.290	5.90	22.95	28.85	77.44	-48.59	AV	Figure-O Antenna
0.348	20.20	22.95	43.15	95.85	-52.71	PK	Figure-O Antenna
0.348	2.30	22.95	25.25	75.85	-50.61	AV	Figure-O Antenna
0.406	22.60	22.94	45.54	94.51	-48.97	PK	Figure-O Antenna
0.406	3.10	22.94	26.04	74.51	-48.47	AV	Figure-O Antenna
0.464	13.30	22.94	36.24	93.35	-57.11	PK	Figure-O Antenna
0.464	1.20	22.94	24.14	73.35	-49.21	AV	Figure-O Antenna
0.522	7.90	22.94	30.84	52.33	-21.49	QP	Figure-O Antenna
0.580	5.50	22.95	28.45	51.42	-22.97	QP	Figure-O Antenna
0.058	76.20	22.92	99.12	111.42	-12.31	PK	Figure-8 Antenna
0.058	56.60	22.92	79.52	91.42	-11.91	AV	Figure-8 Antenna
0.116	26.30	22.92	49.22	105.40	-56.18	PK	Figure-8 Antenna
0.116	6.90	22.92	29.82	85.40	-55.58	AV	Figure-8 Antenna
0.174	37.60	22.93	60.53	101.87	-41.34	PK	Figure-8 Antenna
0.174	14.30	22.93	37.23	81.87	-44.64	AV	Figure-8 Antenna
0.232	29.40	22.94	52.34	99.37	-47.03	PK	Figure-8 Antenna

0.232	6.60	22.94	29.54	79.37	-49.83	AV	Figure-8 Antenna
0.290	31.70	22.95	54.65	97.44	-42.79	PK	Figure-8 Antenna
0.290	7.80	22.95	30.75	77.44	-46.69	AV	Figure-8 Antenna
0.348	20.00	22.95	42.95	95.85	-52.91	PK	Figure-8 Antenna
0.348	2.80	22.95	25.75	75.85	-50.11	AV	Figure-8 Antenna
0.406	22.70	22.94	45.64	94.51	-48.87	PK	Figure-8 Antenna
0.406	4.00	22.94	26.94	74.51	-47.57	AV	Figure-8 Antenna
0.464	13.70	22.94	36.64	93.35	-56.71	PK	Figure-8 Antenna
0.464	1.20	22.94	24.14	73.35	-49.21	AV	Figure-8 Antenna
0.522	10.90	22.94	33.84	52.33	-18.49	QP	Figure-8 Antenna
0.580	5.70	22.95	28.65	51.42	-22.77	QP	Figure-8 Antenna

Notes:

1. All measurements were performed using a loop antenna. The antenna was positioned in two orthogonal (face on and face off) and the position with the highest emission level was recorded.
2. The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
3. Measurements were perfored at 10m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).
   Extrapolation Factor = 40 * LOG(300/10) = 59 dB
   For example(58kHz):
   AV Limit = 20*LOG(2400/58) + 40*LOG(300/10) = 91.42 dBuV/m.



Radiated Emission(>30MHz) Measurement Distance: 3 Meters

Frequency (MHz)	Reading Level (dBuV/m)	Factor	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin [dB]	Detector
Horizontal						
95.96	10.95	16.72	27.67	43.50	-15.83	QP
131.97	9.61	18.47	28.08	43.50	-15.42	QP
155.98	11.00	16.65	27.65	43.50	-15.85	QP
203.99	7.27	16.17	23.44	43.50	-20.07	QP
335.91	9.04	21.68	30.72	46.00	-15.28	QP
383.93	8.25	23.24	31.49	46.00	-14.51	QP
Vertical						
104.33	7.29	17.89	25.18	43.50	-18.32	QP
143.98	13.84	17.45	31.29	43.50	-12.21	QP
167.98	9.68	16.17	25.85	43.50	-17.65	QP
240.01	11.25	18.31	29.56	46.00	-16.44	QP
264.01	11.65	20.26	31.91	46.00	-14.09	QP
312.03	9.81	21.13	30.94	46.00	-15.06	QP