



FCC PART 15 SUBPART B TEST REPORT

FCC PART 15B

FCC ID: **L5C960071C**

Report Reference No......: **WE09040002**

Compiled by

(position+printed name+signature)...: File administrators Wenliang Li

Supervised by

(position+printed name+signature)...: Test Engineer Cary Li

Approved by

(position+printed name+signature)...: Manager Jimmy Li

Date of issue.....: Apr 30, 2009

Testing Laboratory Name: **Shenzhen Huatongwei International Inspection Co., Ltd**

Address.....: Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name.....: **Ansen Electronics Co**

Address.....: Rm 78,2/F,Sino Industrial Plaza,9 Kai Cheung Rd,Kowloon Bay

Manufacturer's name: **Ansen Electronics Company**

Address.....: Chen Tung Industrial Zone,Ning Tau Administrative District,Qiao Tau Zhen,Dongguan,Guangdong

Test specification:

Standard: **FCC Part Subpart 15B 2008 – Unintentional Radiators**

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description: 7-day Golf Weather Forecaster

Trade Mark: /

Model/Type reference.....: 960071C

Listed Models: /

Result.....: **Positive**

TEST REPORT

Test Report No. :	WE09040002	May 06, 2009
		Date of issue

Equipment under Test : 7-day Golf Weather Forecaster

Model /Type : 960071C

Listed Models : /

Applicant : Ansen Electronics Co

Address : Rm 78,2/F,Sino Industrial Plaza,9 Kai Cheung Rd,Kowloon Bay

Manufacturer : Ansen Electronics Company

Address : Chen Tung Industrial Zone,Ning Tau Administrative District,Qiao Tau Zhen,Dongguan,Guangdong

SUMMARY OF STANDARDS AND RUSELT

No.	Test Item	Test Standards and Procedure	Result
1	Conducted Emission Test	FCC Subpart 15B § 15.107 ANSI C63.4-2003 section 7	Complied
2	Radiated Emission Test	FCC Subpart 15B § 15.109 ANSI C63.4-2003 section 8	Complied

NOTE: 1),The detailed test result please see section 4.

2),The test report merely corresponds to the test sample.

3),It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

<u>1.</u>	<u>TEST STANDARDS</u>	<u>4</u>
<u>2.</u>	<u>SUMMARY</u>	<u>5</u>
2.1.	General Remarks	5
2.2.	Equipment Under Test	5
2.3.	Short description of the Equipment under Test (EUT)	5
2.4.	EUT operation mode	5
2.5.	EUT configuration	6
2.6.	Related Submittal(s) / Grant (s)	6
2.7.	Modifications	6
<u>3.</u>	<u>TEST ENVIRONMENT</u>	<u>7</u>
3.1.	Address of the test laboratory	7
3.2.	Test Facility	7
3.3.	Environmental conditions	8
3.4.	Configuration of Tested System	8
3.5.	Statement of the measurement uncertainty	9
3.6.	Equipments Used during the Test	9
<u>4.</u>	<u>TEST CONDITIONS AND RESULTS</u>	<u>10</u>
4.1.	Conducted Emissions Test	10
4.2.	Radiated Emission Test	13
<u>5.</u>	<u>TEST SETUP PHOTOS OF THE EUT</u>	<u>19</u>
<u>6.</u>	<u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT</u>	<u>20</u>

1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Rules Part 15 Subpart B 2008 - Unintentional Radiators](#)

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample : Apr 30, 2009

Testing commenced on : Apr 30, 2009

Testing concluded on : May 04, 2009

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : ☐ 120V / 60 Hz ☐ 115V / 60Hz
☐ 12 V DC ☐ 24 V DC
☒ Other (specified in blank below)

DC 6V Adapter From AC 120V/60Hz

DC 6V Battery

2.3. Short description of the Equipment under Test (EUT)

Product Name : 7-day Golf Weather Forecaster

Model Number : 960071C

Operation Frequency : 915MHz

Channel Number : 1

Modulation Technology : FSK

Equipment Type : Normal receiver

Sample Type : Prototype

For more details, refer to the user's manual.

2.4. EUT operation mode

The EUT has been tested under typical operating mode(RX mode).

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

☒ - supplied by the manufacturer

☐ - supplied by the lab

☒ AC Adaptor

MODEL : KU2B-060-0350D

INPUT : 120VAC 60Hz 7W

OUTPUT : 6VDC 350mA

☒ Adaptor Cable

Length : 180cm

☐ Shield

☒ Unshield

☒ Detachable

☐ Undetachable

2.6. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **L5C960071C** filing to comply with the FCC Part 15, Subpart B Rules 2008.

2.7. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2003) and CISPR Publication 22.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: August 02, 2007. Valid time is until March 29, 2012.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is from Aug 24, 2005 to Sept 30, 2009.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date September, 2009.

IC-Registration No.: 5377

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377 on November 28th, 2005.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

NEMKO-Aut. No.: ELA125

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025:2005 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10, the Authorization is valid through April 25, 2009.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2006. Valid time is until December 19, 2009.

DNV

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until 09 July, 2010.

3.3. Environmental conditions

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

Temperature:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

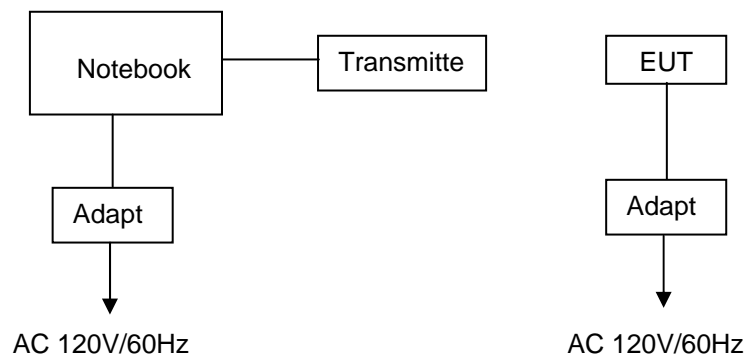


Table 2-1 Equipment Used in Tested System

No.	Product	Manufacturer	Model No.	Serial No.	Note
1	Transmitter	Ansen	-	-	-
2	Notebook	ASUS	Z9100	--	--

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.22dB	(1)
Radiated Emission	1~12.75GHz	4.35dB	(1)
Conducted Disturbance	0.15~30MHz	3.29dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

AC Power Conducted Emission					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCI	100106	2008/11
2	ARTIFICIAL MAINS	ROHDE & SCHWARZ	ESH2-Z5	100028	2008/11
3	PULSE LIMITER	ROHDE & SCHWARZ	ESHSZ2	100044	2008/11
4	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ES-K1 1.71	N/A	2008/11

Radiated Emissions					
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2008/11
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2008/11
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2008/11
4	TURNTABLE	ETS	2088	2149	2008/11
5	ANTENNA MAST	ETS	2075	2346	2008/11
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2008/11
7	HORN ANTENNA	ROHDE & SCHWARZ	HF906	N/A	2008/06/

4. TEST CONDITIONS AND RESULTS

4.1. Conducted Emissions Test

TEST CONFIGURATION



TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. 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 ANSI C63.4.
- 2 Support equipment, if needed, was placed as per ANSI C63.4.
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4 The EUT received DC6V power from the adapter, the adapter 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 AC power from a second LISN, 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 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

Conducted Power Line Emission Limit

For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following :

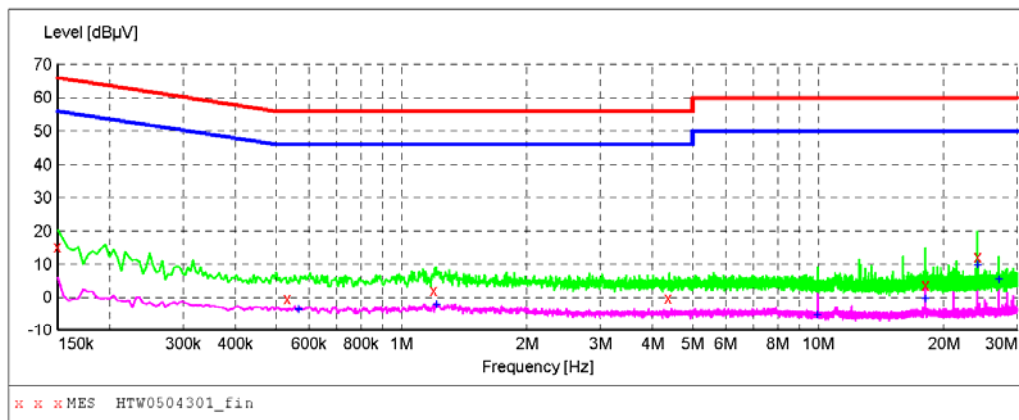
Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

* For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

TEST RESULTS**SCAN TABLE: "Voltage (9K-30M)FIN"**

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0504301_fin"**

5/4/2009 9:08AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	15.40	10.2	66	50.6	QP	N	GND
0.532500	-0.40	10.2	56	56.4	QP	N	GND
1.194000	2.20	10.3	56	53.8	QP	N	GND
4.371000	-0.10	10.4	56	56.1	QP	N	GND
18.087000	3.70	10.8	60	56.3	QP	N	GND
24.117000	12.20	11.1	60	47.8	QP	N	GND

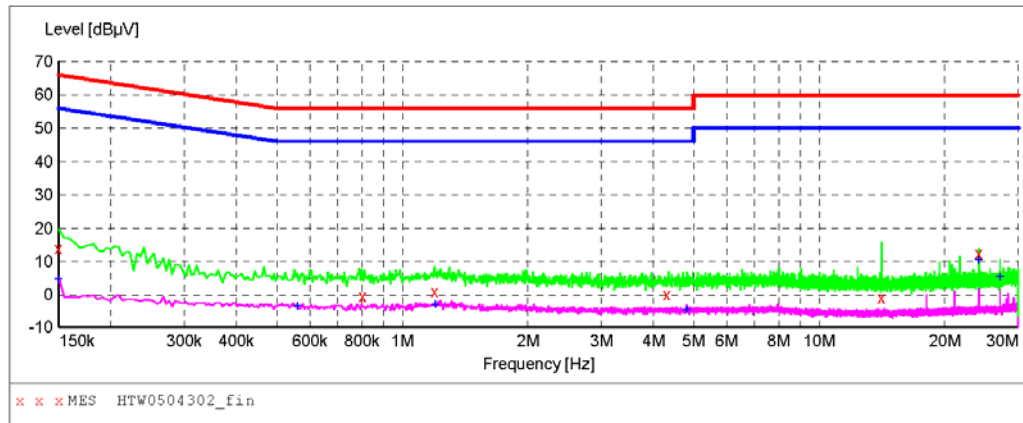
MEASUREMENT RESULT: "HTW0504301_fin2"

5/4/2009 9:08AM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.568500	-3.50	10.2	46	49.5	AV	N	GND
1.216500	-2.30	10.3	46	48.3	AV	N	GND
9.973500	-5.30	10.6	50	55.3	AV	N	GND
18.087000	-0.30	10.8	50	50.3	AV	N	GND
24.117000	9.80	11.1	50	40.2	AV	N	GND
27.132000	5.50	11.2	50	44.5	AV	N	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "HTW0504302_fin"**

5/4/2009 9:11AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	13.80	10.2	66	52.2	QP	L1	GND
0.802500	-0.30	10.2	56	56.3	QP	L1	GND
1.194000	1.00	10.3	56	55.0	QP	L1	GND
4.317000	0.00	10.4	56	56.0	QP	L1	GND
14.118000	-0.80	10.6	60	60.8	QP	L1	GND
24.117000	12.60	11.1	60	47.4	QP	L1	GND

MEASUREMENT RESULT: "HTW0504302_fin2"

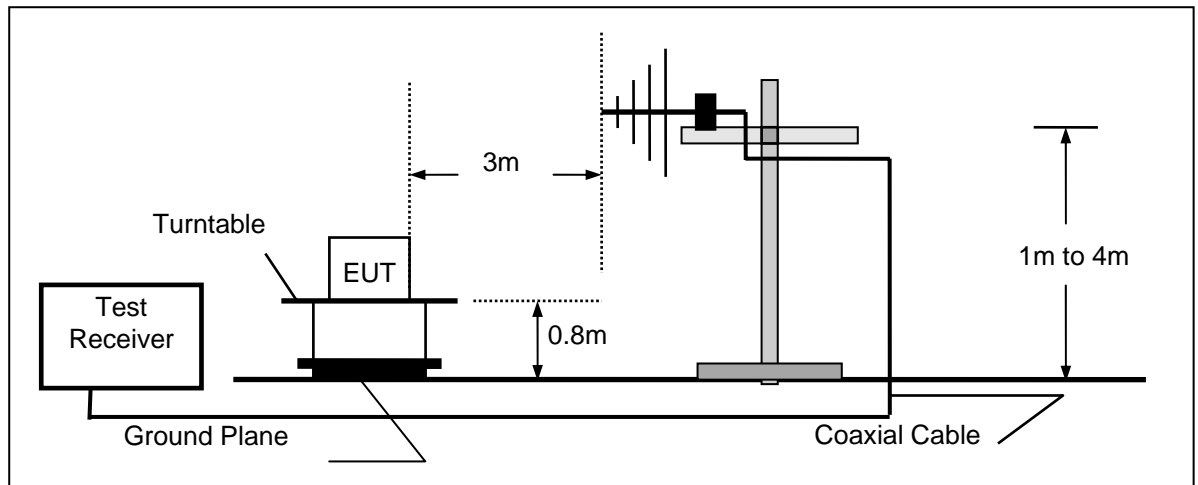
5/4/2009 9:11AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	4.60	10.2	56	51.4	AV	L1	GND
0.559500	-3.40	10.2	46	49.4	AV	L1	GND
1.203000	-2.90	10.3	46	48.9	AV	L1	GND
4.803000	-4.60	10.4	46	50.6	AV	L1	GND
24.117000	10.40	11.1	50	39.6	AV	L1	GND
27.132000	5.50	11.2	50	44.5	AV	L1	GND

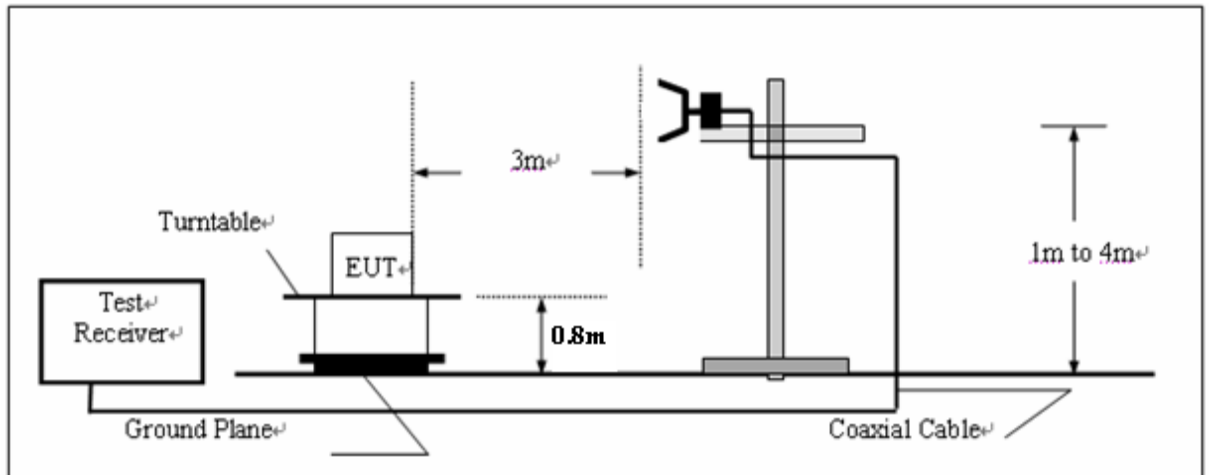
4.2. Radiated Emission Test

TEST CONFIGURATION

Radiated Emission Test Set-Up, Frequency range 30 - 1000MHz



Radiated Emission Test Set-Up, Frequency range 1GHz-5GHz



TEST PROCEDURE

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 The test was beforehand carried out both battery and AC adaptor supply, and AC adaptor supply was worse mode, finally test was carried out under this mode.
- 3 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0° to 360° to acquire the highest emissions from EUT
- 4 And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 5 Repeat above procedures until all frequency measurements have been completed.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

RADIATION LIMIT

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

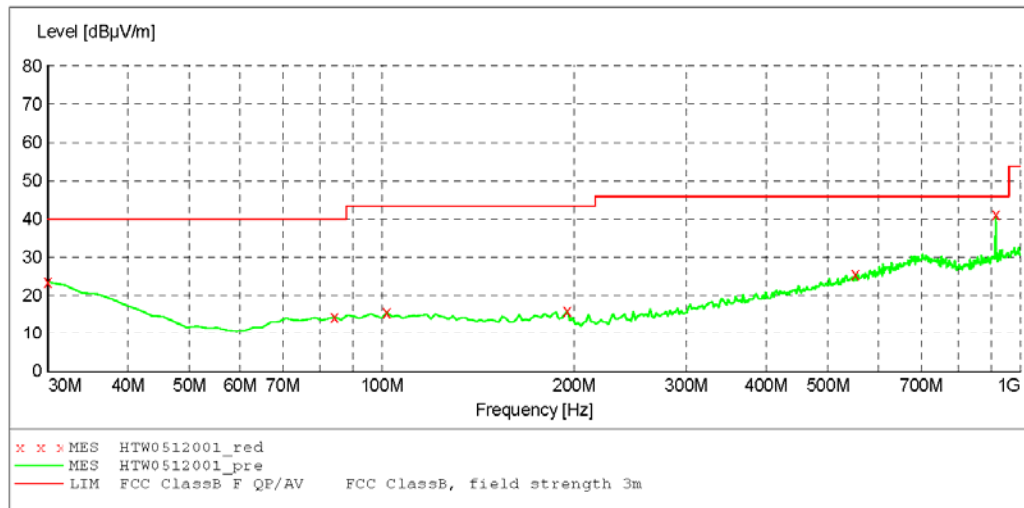
TEST RESULTS

All emissions from 30MHz to 5GHz are peak measured and comply with average limit, detailed test data please see the following pages.

Operation Mode: RX mode Temperature: 20 °C Humidity: 70 % RH Polarity: Hor.

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562 08

**MEASUREMENT RESULT: "HTW0512001_red"**

5/12/2009 5:22PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.60	21.2	39.5	15.9	QP	100.0	360.00	HORIZONTAL
84.428858	14.50	11.6	40.0	25.5	QP	300.0	0.00	HORIZONTAL
101.923848	15.60	11.7	43.5	27.9	QP	300.0	23.00	HORIZONTAL
195.230461	16.10	10.9	43.5	27.4	QP	100.0	49.00	HORIZONTAL
552.905812	25.60	21.6	46.0	20.4	QP	100.0	242.00	HORIZONTAL
915.851703	41.10	26.1	46.0	4.9	QP	100.0	3.00	HORIZONTAL

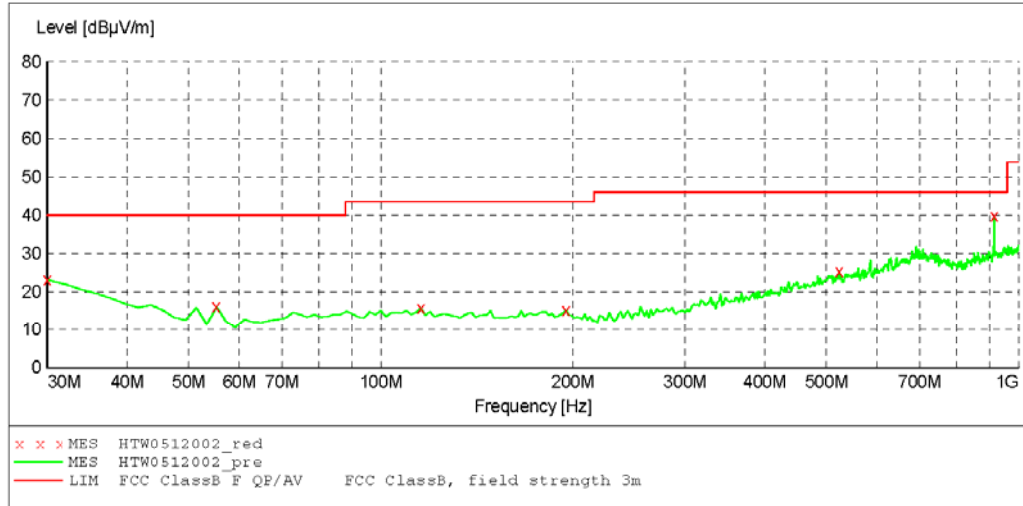
Operation Mode: RX mode

Temperature: 20oC Humidity: 70 % RH

Polarity: Ver.

SWEEP TABLE: "test (30M-1G)"

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	120 kHz	HL562 08

***MEASUREMENT RESULT: "HTW0512002_red"***

5/12/2009 5:33PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.20	21.2	39.5	16.3	QP	100.0	169.00	VERTICAL
55.270541	16.20	8.6	40.0	23.8	QP	100.0	359.00	VERTICAL
115.531062	15.80	11.8	43.5	27.7	QP	100.0	300.00	VERTICAL
195.230461	15.30	10.9	43.5	28.2	QP	100.0	73.00	VERTICAL
523.747495	25.50	20.8	46.0	20.5	QP	100.0	3.00	VERTICAL
915.921844	39.80	26.4	46.0	6.2	QP	100.0	236.00	VERTICAL

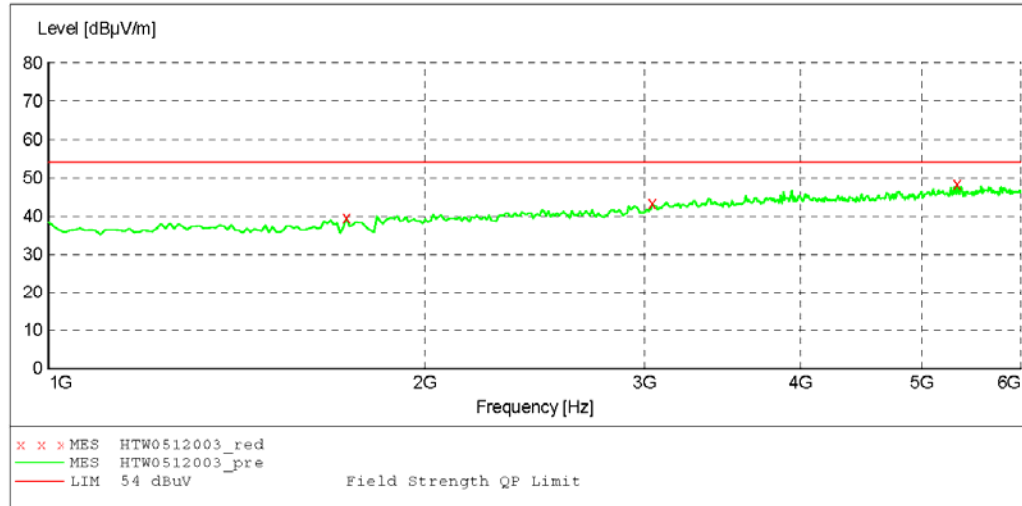
Operation Mode: RX mode

Temperature: 20oC Humidity: 70 % RH

Polarity: Ver.

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency	Time	Bandw.		
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	HF906(2008)

**MEASUREMENT RESULT: "HTW0512003_red"**

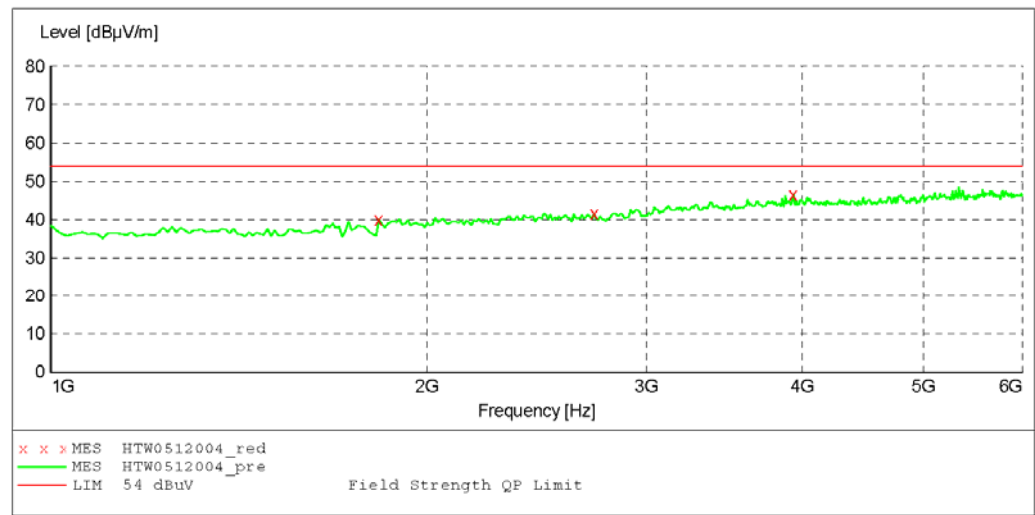
5/12/2009 5:19PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1731.462926	39.50	-1.3	54.0	14.5	Peak	100.0	154.00	VERTICAL
3044.088176	43.30	5.9	54.0	10.7	Peak	100.0	360.00	VERTICAL
5338.677355	48.40	8.2	54.0	5.6	Peak	100.0	345.00	VERTICAL

Operation Mode: RX mode Temperature: 20oC Humidity: 70 % RH Polarity: Hor.

SWEEP TABLE: "test (1G-18G) P"

Short Description:		EN 55022 Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
1.0 GHz	18.0 GHz	MaxPeak	Coupled	1 MHz	HF906(2008)



MEASUREMENT RESULT: "HTW0512004_red"

5/12/2009 4:23PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
1831.663327	39.95	-1.3	54.0	14.1	Peak	100.0	154.00	HORIZONTAL
2723.446894	41.62	5.9	54.0	12.4	Peak	100.0	360.00	HORIZONTAL
3935.871743	46.65	8.2	54.0	7.4	Peak	100.0	345.00	HORIZONTAL