

## FCC TEST REPORT

### 47 CFR FCC Part 15 Subpart B

**Report Reference No.....**: TRE1309000503 R/C: 18013

**FCC ID.....**: Y2L00004

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Date of issue.....: Oct 14, 2013

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

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

**Applicant's name.....**: Poly Media Communications (Asia) Co., Ltd.

Address .....: WORKSHOP B9,6/F,BLOCK B,CAMBRIDGE PLAZA NO.188 SAN WAN ROAD, SHEUNG SHUI,N.T.,HONG KONG

**Test specification .....**:

Standard .....: **47 CFR FCC Part 15 Subpart B - Unintentional Radiators**  
**ANSI C63.4: 2009**

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

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

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**Test item description .....**: MMS/GPRS Security Camera

Trade Mark .....: BOLYGUARD/SCOUTGUARD

Model/Type reference.....: BG500L

Listed Models .....: BG500K/BG500L-HD/BG500K-HD

**Manufacturer.....**: Poly Media Communications (shenzhen) Co., Ltd.

Rating .....: DC 5.0V adpater from AC 120V/60Hz

GPRS/ EGPRS Class.....: 12

GPRS operation mode .....: Class B

Frequency.....: GSM 850/PCS1900

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

Jerome Luo  
yuchao.wang  
Wenliang

## TEST REPORT

Test Report No. :	TRE1309000503	Oct 14, 2013 Date of issue
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Equipment under Test : MMS/GPRS Security Camera

Model /Type : BG500L

Listed Models : BG500K/BG500L-HD/BG500K-HD

Applicant : **Boly Media Communications (Asia) Co., Ltd.**

Address : WORKSHOP B9,6/F,BLOCK B,CAMBRIDGE PLAZA  
NO.188 SAN WAN ROAD, SHEUNG SHUI,N.T.,HONG  
KONG

Manufacturer : **Boly Media Communications (shenzhen) Co., Ltd.**

Address : 2F,Shanshui Building B,Yungu Innovation Industrial  
park,NO.1183,Liuxian Blvd, Nanshan  
District,Shenzhen..Guangdong,China

<b>Test Result</b> according to the standards on page 4:	<b>Positive</b>
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The test report merely corresponds to the test sample.

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

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## 1. TEST STANDARDS

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B - Unintentional Radiators](#)

[ANSI C63.4: 2009](#) – 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 40GHz

## 2. SUMMARY

### 2.1. General Remarks

Date of receipt of test sample	:	Sep 01, 2013
	:	
	:	
Testing commenced on	:	Sep 01, 2013
	:	
	:	
Testing concluded on	:	Oct 14, 2013

### 2.2. Equipment Under Test

#### Power supply system utilised

Power supply voltage	:	<input type="radio"/> 120V / 60 Hz	<input type="radio"/> 115V / 60Hz
	:	<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
	:	<input checked="" type="radio"/> Other (specified in blank below)	

DC 5.0V adapter from AC120V/60Hz

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

The Equipment Under Test (EUT) is a MMS/GPRS Security Camera with GPRS/EGPRS and 433.92MHz receiver function and integrated antenna

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

### 2.4. EUT operation mode

The EUT has been tested under typical operating condition.

### 2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID:Y2L00004** filing to comply with the FCC Part 15, Subpart B Rules.

### 2.6. Modifications

No modifications were implemented to meet testing criteria.

### 2.7. EUT configuration

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

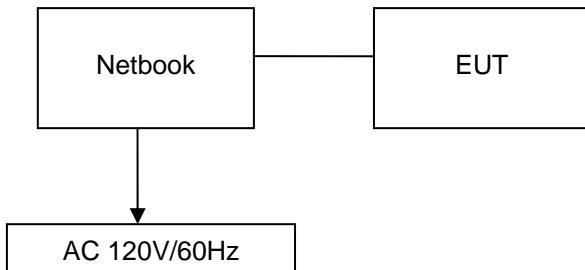
- supplied by the manufacturer

- supplied by the lab

<input type="radio"/>	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
<input type="radio"/>	Multimeter	Manufacturer :	/
		Model No. :	/

## 2.8. Configuration of Tested System

### Configuration of Tested System



### Equipment Used in Tested System

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/unshielded	Notes
1	Netbook	DELL	n43s	B7N0BC257930294	/	/	DOC
2	USB Cable (EUT to PC)	Genshuo	USB 2.0	N/A	0.60m	unshielded	N/A
3	Power line (Printer)	/	/	N/A	1.00m	unshielded	N/A
4	Power Adapter (PC)	HIPRO	HP-A0904A 3	F111207091666404	1.50m	unshielded	N/A

## 2.9. NOTE

1. The EUT is MID with WLAN function, The functions of the EUT listed as below:

	Test Standards	Reference Report
WLAN 802.11b/g/n	FCC Part 15 Subpart C	TRE1308004401
USB Port	FCC Part 15 Subpart B	TRE1308004402
MPE REPORT	FCC Per 47 CFR 2.1093(d)	TRE1308004403

### **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: Mar. 29, 2012. Valid time is until Feb. 28, 2015.

##### **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 until Sept. 30, 2013.

##### **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 June. 01, 2012, valid time is until June. 01, 2015.

##### **IC-Registration No.: 5377A**

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. 5377A on Jan. 25, 2011, valid time is until Jan. 24, 2014.

##### **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.

##### **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.: G-292. Date of Registration: Dec. 24, 2010. Valid time is until Dec. 23, 2013.

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: Dec. 20, 2009. Valid time is until Dec. 19, 2012.

Telecommunication 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.: T-1837. Date of Registration: May 07, 2010. Valid time is until May 06, 2013.

##### **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 Aug. 24, 2013.

### 3.3. Environmental conditions

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

Temperature: 15-35 °C

Humidity: 30-60 %

Atmospheric pressure: 950-1050mbar

### 3.4. 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	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

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

### 3.5. Equipments Used during the Test

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI TEST RECEIVER	Rohde & Schwarz	ESCI	100106	2012/10/27
2	ARTIFICIAL MAINS	Rohde & Schwarz	ESH2-Z5	100028	2012/10/27
3	PULSE LIMITER	Rohde & Schwarz	ESHSZ2	100044	2012/10/27
4	EMI TEST SOFTWARE	Rohde & Schwarz	ES-K1	N/A	N/A

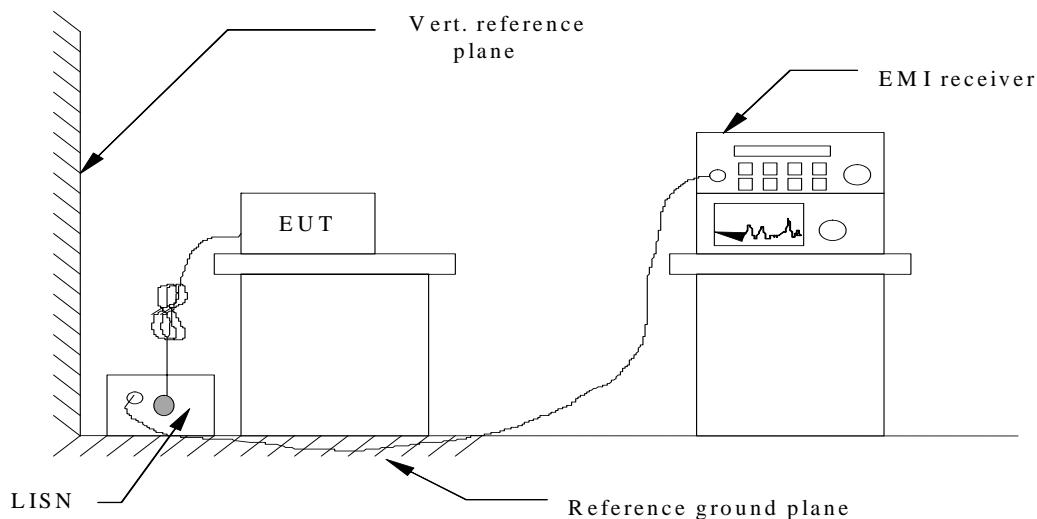
Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2012/10/27
2	EMI TEST RECEIVER	Rohde & Schwarz	ESI 26	100009	2012/10/27
3	EMI TEST SOFTWARE	Audix	E3	N/A	N/A
4	TURNTABLE	MATURO	TT2.0	----	N/A
5	ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A
6	EMI TEST SOFTWARE	Rohde & Schwarz	ESK1	N/A	N/A
7	HORN ANTENNA	ROHDE & SCHWARZ	HF906	100039	2012/10/27
8	Amplifier	Sonoma	310N	E009-13	2012/10/27
9	JS amplifier	Rohde & Schwarz	JS4-00101800-28-5A	F201504	2012/10/27

The calibration interval was one year.

## 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 C63.4-2009.
2. Support equipment, if needed, was placed as per ANSI C63.4-2009.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2009.
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 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

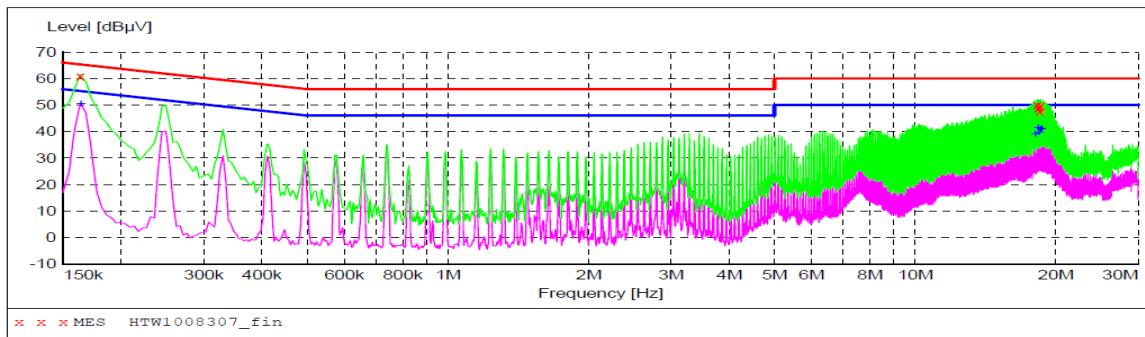
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following :

Frequency (MHz)	Maximum RF Line Voltage (dB $\mu$ V)			
	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

#### TEST RESULTS

**SCAN TABLE: "Voltage (9K-30M) FIN"**  
Short Description: 150K-30M Voltage



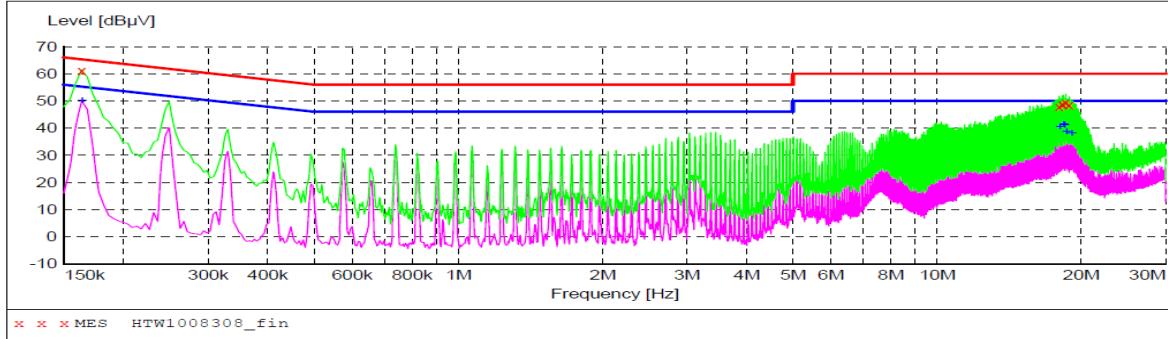
**MEASUREMENT RESULT: "HTW1008307\_fin"**

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.163500	61.00	10.3	65	4.3	QP	N	GND
18.249000	50.00	10.7	60	10.0	QP	N	GND
18.334500	48.90	10.7	60	11.1	QP	N	GND
18.402000	49.10	10.7	60	10.9	QP	N	GND
18.501000	47.50	10.7	60	12.5	QP	N	GND
18.582000	49.60	10.7	60	10.4	QP	N	GND

**MEASUREMENT RESULT: "HTW1008307\_fin2"**

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.163500	50.20	10.3	55	5.1	AV	N	GND
18.078000	39.00	10.7	50	11.0	AV	N	GND
18.321000	41.40	10.7	50	8.6	AV	N	GND
18.406500	39.40	10.7	50	10.6	AV	N	GND
18.568500	40.60	10.7	50	9.4	AV	N	GND
18.649500	41.10	10.7	50	8.9	AV	N	GND

**SCAN TABLE: "Voltage (9K-30M) FIN"**  
Short Description: 150K-30M Voltage



**MEASUREMENT RESULT: "HTW1008308\_fin"**

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.163500	61.10	10.3	65	4.2	QP	L1	GND
17.979000	48.00	10.7	60	12.0	QP	L1	GND
18.240000	48.70	10.7	60	11.3	QP	L1	GND
18.307500	48.90	10.7	60	11.1	QP	L1	GND
18.568500	49.30	10.7	60	10.7	QP	L1	GND
18.883500	48.60	10.7	60	11.4	QP	L1	GND

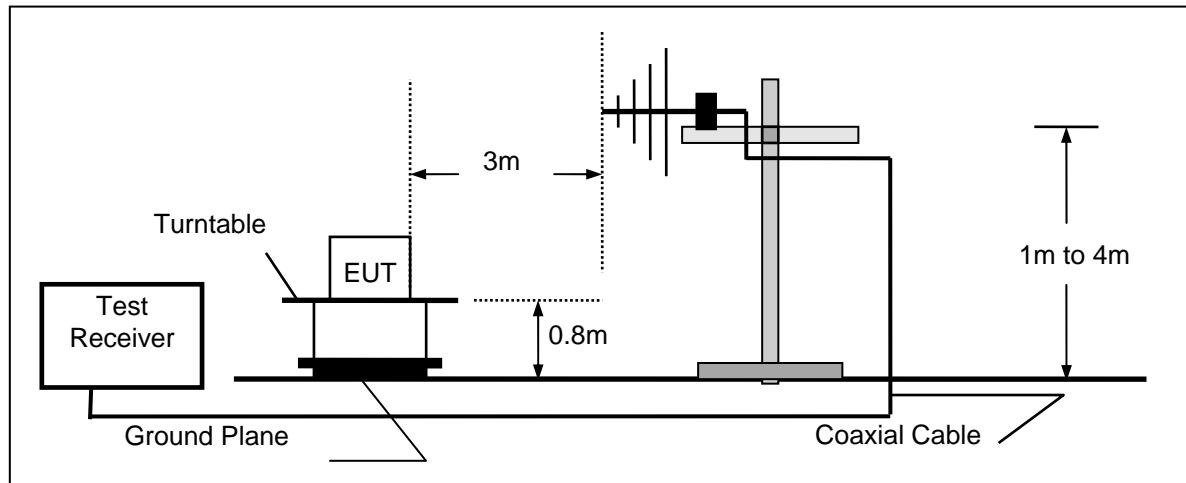
**MEASUREMENT RESULT: "HTW1008308\_fin2"**

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.163500	49.90	10.3	55	5.4	AV	L1	GND
18.060000	40.50	10.7	50	9.5	AV	L1	GND
18.388500	41.20	10.7	50	8.8	AV	L1	GND
18.469500	41.10	10.7	50	8.9	AV	L1	GND
18.640500	38.50	10.7	50	11.5	AV	L1	GND
19.131000	38.10	10.7	50	11.9	AV	L1	GND

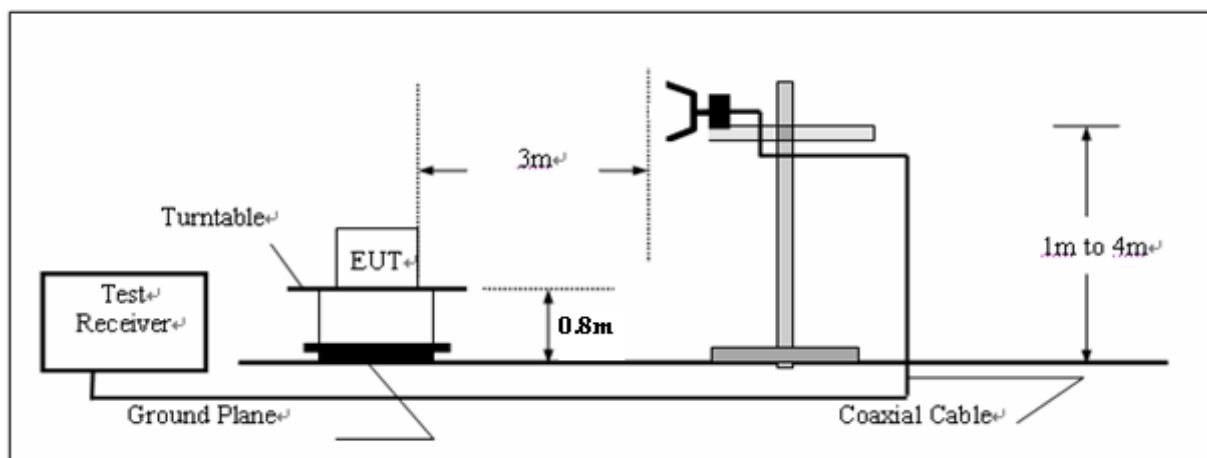
## 4.2. Radiated Emission Test

### TEST CONFIGURATION

a) Radiated Emission Test Set-Up, Frequency below 1000MHz



b) Radiated Emission Test Set-Up, Frequency above 1000MHz



### TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The maximum operation frequency was 512MHz, the radiated emission test frequency from 30MHz to 6GHz.

### 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:

$$\mathbf{FS = RA + AF - CL - AG}$$

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

For example

Frequency (MHz)	FS (dB $\mu$ V/m)	RA (dB $\mu$ V/m)	AF (dB)	CL (dB)	AG (dB)	Transd (dB)
300.00	40	58.1	12.2	1.6	31.90	-18.1

$$\text{Transd} = \text{AF} + \text{CL} - \text{AG}$$

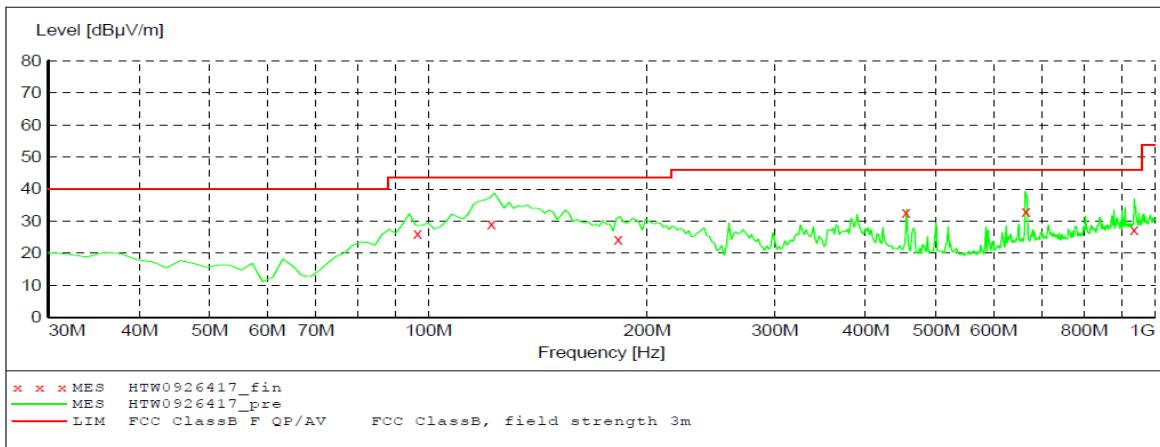
### RADIATION LIMIT

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 (dB $\mu$ V/m)	Radiated ( $\mu$ V/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

**TEST RESULTS****SCAN TABLE: "test Field(30M-1G) OP"**

Short Description:			Field Strength(30M-1G)			
Start Frequency	Stop Frequency	Step Width	Detector	Meas.	IF	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 201106

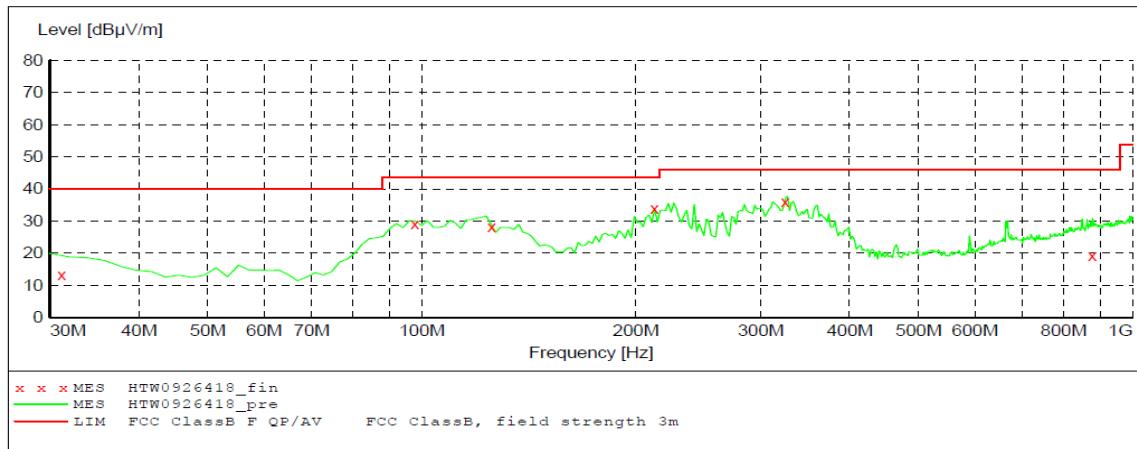
**MEASUREMENT RESULT: "HTW0926417\_fin"**

9/26/2013 5:15PM

Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB		cm	deg	
96.660000	26.10	-18.5	43.5	17.4	QP	100.0	285.00	VERTICAL
122.220000	29.10	-18.0	43.5	14.4	QP	125.0	338.00	VERTICAL
182.580000	24.30	-20.5	43.5	19.2	QP	100.0	213.00	VERTICAL
454.920000	32.60	-12.3	46.0	13.4	QP	100.0	207.00	VERTICAL
665.100000	33.10	-7.7	46.0	12.9	QP	100.0	209.00	VERTICAL
937.500000	27.20	-4.7	46.0	18.8	QP	100.0	360.00	VERTICAL

**SCAN TABLE: "test Field(30M-1G) OP"**

Short Description:			Field Strength(30M-1G)			
Start Frequency	Stop Frequency	Step Width	Detector	Meas.	IF	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 201106

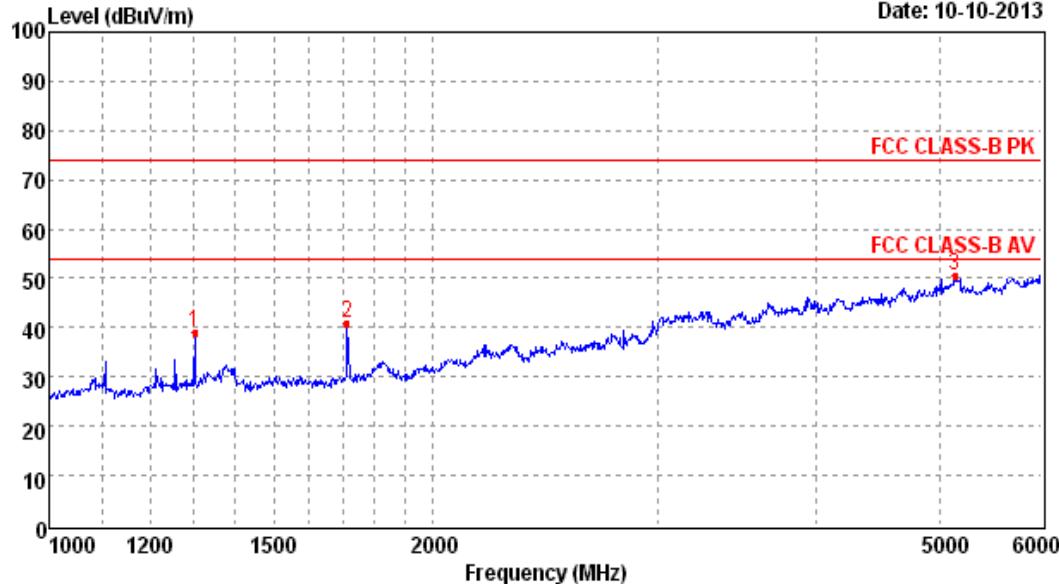
**MEASUREMENT RESULT: "HTW0926418\_fin"**

9/26/2013 5:28PM

Frequency	Level	Transd	Limit	Margin	Det.	Height	Azimuth	Polarization
MHz	dB $\mu$ V/m	dB	dB $\mu$ V/m	dB		cm	deg	
31.140000	13.30	-10.7	40.0	26.7	QP	114.0	59.00	HORIZONTAL
97.800000	29.10	-18.5	43.5	14.4	QP	332.0	348.00	HORIZONTAL
125.460000	28.20	-18.2	43.5	15.3	QP	292.0	228.00	HORIZONTAL
212.700000	33.80	-19.1	43.5	9.7	QP	114.0	256.00	HORIZONTAL
324.780000	36.00	-14.5	46.0	10.0	QP	101.0	312.00	HORIZONTAL
878.100000	19.20	-4.4	46.0	26.8	QP	311.0	56.00	HORIZONTAL

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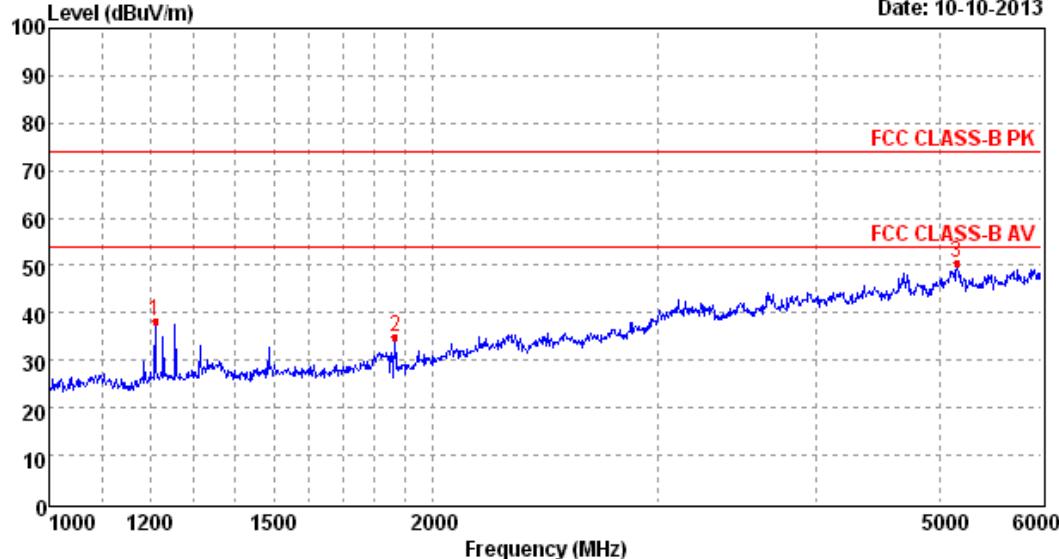
Date: 10-10-2013



Mark	Frequency MHz	Level dBuV/m	Factor dB	Reading dBuV/m	Limit dBuV/m	Margin dB	Polarization	Det.
1	1301.33	39.02	3.43	35.59	74.00	34.98	HORIZONTAL	Peak
2	1711.77	40.94	3.16	37.78	74.00	33.06	HORIZONTAL	Peak
3	5133.96	50.67	15.76	34.91	74.00	23.33	HORIZONTAL	Peak

Data: 401 File: D:\E3\HTW\20131223.EM6 (401)

Date: 10-10-2013



Mark	Frequency MHz	Level dBuV/m	Factor dB	Reading dBuV/m	Limit dBuV/m	Margin dB	Polarization	Det.
1	1211.33	38.15	1.98	36.17	74.00	35.85	VERTICAL	Peak
2	1868.85	34.81	3.77	31.04	74.00	39.19	VERTICAL	Peak
3	5152.39	50.55	15.50	35.05	74.00	23.45	VERTICAL	Peak

**5. Test Setup Photos of the EUT**

.....**End of Report**.....