EMC TEST REPORT
For

SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Digital Video Camera

Model No.: DV179

FCC ID: XJNDV179

Prepared for	:	SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
Address	:	Shuoying Road, Hebei Industry Area, Dalang, Longhua Town,Baoan, Shenzhen, China
Prepared by	:	SHENZHEN EMTEK CO., LTD.
Address	:	Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China
		Tel: (0755) 26954280
		Fax: (0755) 26954282

Report Number	:	ES120706030E
Date of Test	:	July 07, 2012 to July 11, 2012
Date of Report	:	July 12, 2012

TABLE OF CONTENT

TEST REPORT DESCRIPTION

Applicant	:	SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
Manufacturer	:	SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
Trade Mark	:	N/A
EUT	:	Digital Video Camera
Model No.	:	DV179
Power Supply	:	DC 3.7V from rechargeable Li-ion battery or DC 5V from PC connected to AC 120V/60 Hz

Measurement Procedure Used:

FCC Rules and Regulations Part 15: 2011Subpart B Class B & FCC / ANSI C63.4-2009

The device described above is tested by SHENZHEN EMTEK CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and SHENZHEN EMTEK CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of SHENZHEN EMTEK CO., LTD.

Date of Test	:	July 07, 2012 to July 11, 2012
Prepared by	:	Lesley Zhang Lesley Zhang/Editor
Reviewer	:	Frank Liu Frank Liu/Supervisor
Approved & Authorized Signer	:	Lisa Wang/Manager

1. SUMMARY OF TEST RESULT

Emission		
Description of Test Item	Standard & Limits	Results
Conducted Disturbance at Mains Terminals	FCC Part 15, Subpart B, Class B ANSI C63.4: 2009	Pass
Radiated Disturbance	FCC Part 15, Subpart B, Class B ANSI C63.4: 2009	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	Digital Video Camera
Model Number	:	DV179
Test Voltage	:	DC 3.7V from rechargeable Li-ion battery or DC 5V from PC connected to AC 120V/60 Hz
Applicant	:	SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
Address	:	Shuoying Road, Hebei Industry Area, Dalang, Longhua Town,Baoan, Shenzhen, China
Manufacturer	:	SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
Address	:	Shuoying Road, Hebei Industry Area, Dalang, Longhua Town,Baoan, Shenzhen, China
Date of Received	:	July 06, 2012
Date of Test	:	July 07, 2012 to July 11, 2012

2.2. Description of Support Device

PC (For EMI test)	:	Manufacturer: Lenovo M/N: ThinkCentre 8701 S/N: 8701A53L3BC108 CE, FCC: DOC
Mouse	:	Manufacturer: HP M/N: M-S48a S/N: LZE14823966AW CE, FCC: DOC
Keyboard	:	Manufacturer: HP M/N: SK-2502C S/N: C0111141546 CE, FCC: DOC
Printer	:	Manufacturer: HP M/N: C89520 S/N: CN25S182N6 CE, FCC: DOC

2.3. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2010.10.29
The certificate is valid until 2013.10.28
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2010.5.25
The Laboratory has been assessed according to the requirements ISO/IEC 17025.

Accredited by FCC, October 28, 2010
The Certificate Registration Number is 406365.

Accredited by Industry Canada, March 5, 2010
The Certificate Registration Number is 46405-4480.

Name of Firm : SHENZHEN EMTEK CO., LTD

Site Location : Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

2.4. Measurement Uncertainty

Conducted Emission Uncertainty : 2.8dB

Radiated Emission Uncertainty : 3.3dB (30M~1GHz Polarize: H)
3.2dB (30M~1GHz Polarize: V)
3.7dB (1~18GHz Polarize: H)
3.6dB (1~18GHz Polarize: V)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Power Line Conducted Emission Measurement

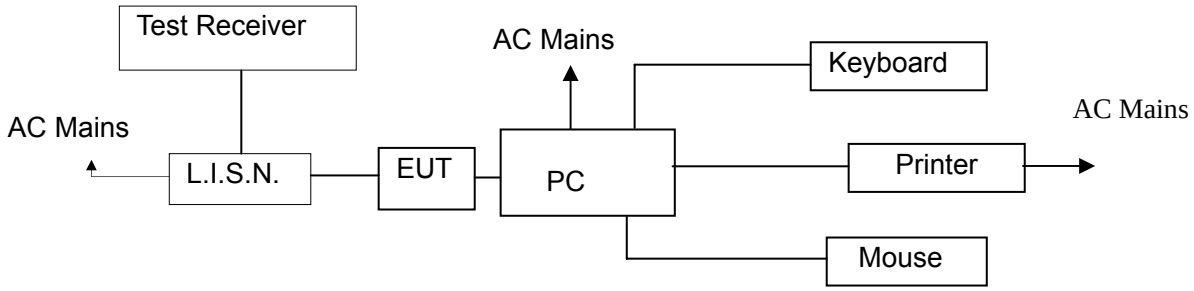
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100162	May 29, 2012	1 Year
2.	L.I.S.N.	Rohde & Schwarz	ENV216	101161	May 29, 2012	1 Year
3.	50Ω Coaxial Switch	Anritsu	MP59B	6100214550	N/A	N/A
4.	Voltage Probe	Rohde & Schwarz	TK9416	N/A	May 29, 2012	1 Year
5.	I.S.N	Teseq GmbH	ISN T800	30327	May 29, 2012	1 Year
6.	LCL adaoter	Teseq GmbH	ADT800-Cat.5	30327.01	May 29, 2012	1 Year
7.	LCL adaoter	Teseq GmbH	ADT800-Cat.3	30327.02	May 29, 2012	1 Year
8.	LCL adaoter	Teseq GmbH	ADT800-R	30327.02	May 29, 2012	1 Year

3.2. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 29, 2012	1 Year
2.	Pre-Amplifier	HP	8447D	2944A07999	May 29, 2012	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	142	May 29, 2012	1 Year
4.	Loop Antenna	ARA	PLA-1030/B	1029	May 29, 2012	1 Year
5.	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 29, 2012	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 29, 2012	1 Year
7.	Cable	Schwarzbeck	AK9513	ACRX1	May 29, 2012	1 Year
8.	Cable	Rosenberger	N/A	FP2RX2	May 29, 2012	1 Year
9.	Cable	Schwarzbeck	AK9513	CRPX1	May 29, 2012	1 Year
10.	Cable	Schwarzbeck	AK9513	CRRX2	May 29, 2012	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



(EUT: Digital Video Camera)

4.2. Measuring Standard

FCC Part 15, Subpart B, Class B ANSI C63.4: 2009

4.3. Power Line Conducted Emission Limits (Class B)

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

4.4. Configuration of EUT on Measurement

The following equipments are installed on Conducted Emission Measurement to meet FCC requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Digital Video Camera
Model Number : DV179

4.5. Operating Condition of EUT

4.5.1.Setup the EUT as shown on Section 4.1.

4.5.2.Turn on the power of all equipments.

4.5.3.Let the EUT work in measuring mode (Connect to PC) and measure it.

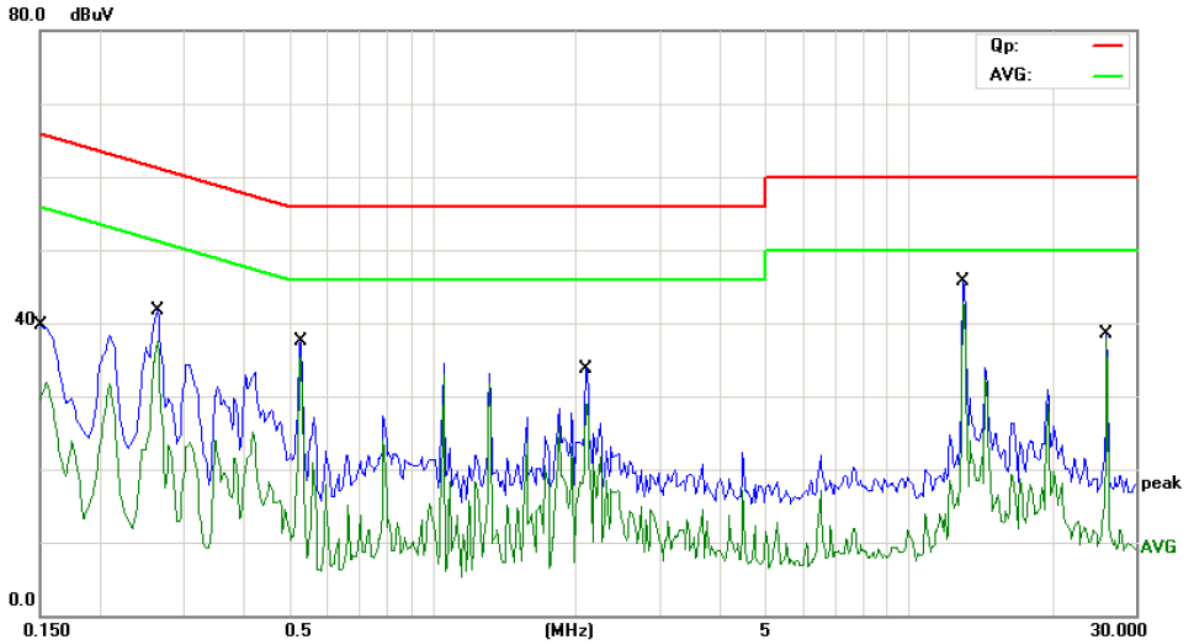
4.6. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the FCC regulations during conducted emission measurement.
The bandwidth of the field strength meter (R&S Test Receiver ESCS30) is set at 9kHz in 150kHz~30MHz and 200Hz in 9kHz~150kHz.
The frequency range from 150kHz to 30MHz is investigated
All the scanning waveforms in below a few pages.

4.7. Measuring Results

PASS.

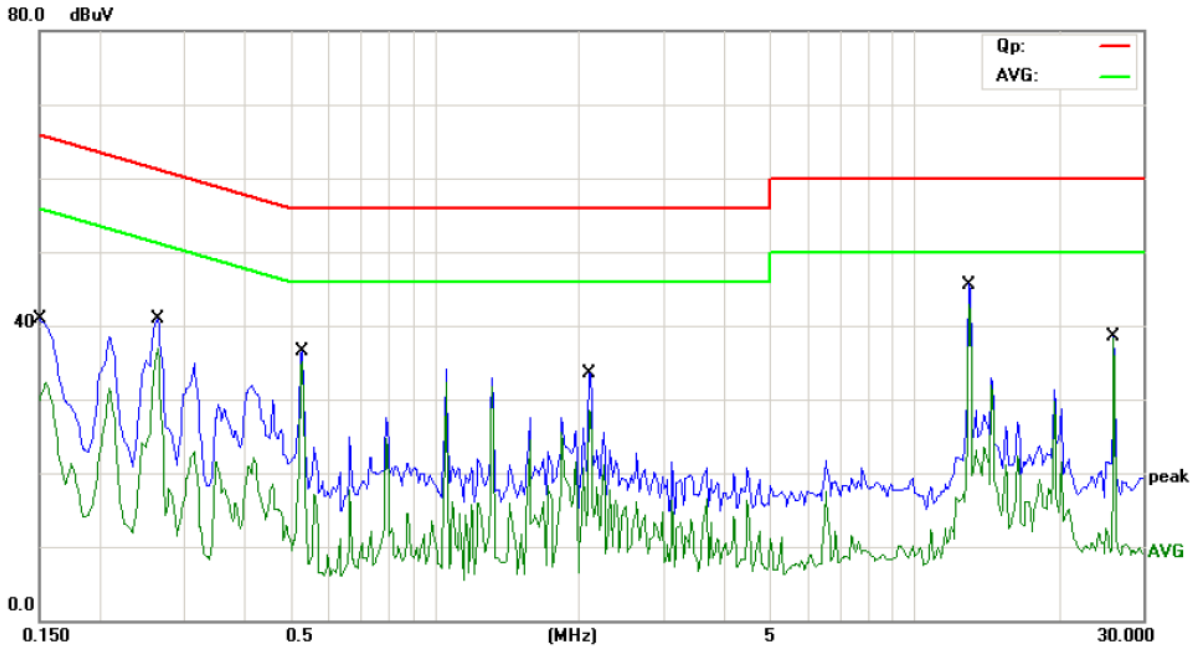
Please refer to below a few pages.



Site Conduction #1 Phase: *L1* Temperature: 26
Limit: (CE)FCC PART 15 class B_QP Power: DC 5V from PC Humidity: 60 %
Mode: CONNECT TO PC (apdata)
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	39.74	0.00	39.74	66.00	-26.26	QP	
2		0.1500	31.90	0.00	31.90	56.00	-24.10	AVG	
3		0.2650	41.72	0.00	41.72	61.27	-19.55	QP	
4		0.2650	37.48	0.00	37.48	51.27	-13.79	AVG	
5		0.5300	37.49	0.00	37.49	56.00	-18.51	QP	
6		0.5300	35.38	0.00	35.38	46.00	-10.62	AVG	
7		2.1100	33.78	0.00	33.78	56.00	-22.22	QP	
8		2.1100	28.99	0.00	28.99	46.00	-17.01	AVG	
9		13.0500	45.77	0.00	45.77	60.00	-14.23	QP	
10	*	13.0500	42.92	0.00	42.92	50.00	-7.08	AVG	
11		26.1000	38.47	0.00	38.47	60.00	-21.53	QP	
12		26.1000	37.93	0.00	37.93	50.00	-12.07	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: GUAN



Site Conduction #1 Phase: N Temperature: 26

Limit: (CE)FCC PART 15 class B_QP Power: DC 5V from PC Humidity: 60 %

Mode: CONNECT TO PC (apdata)

Note:

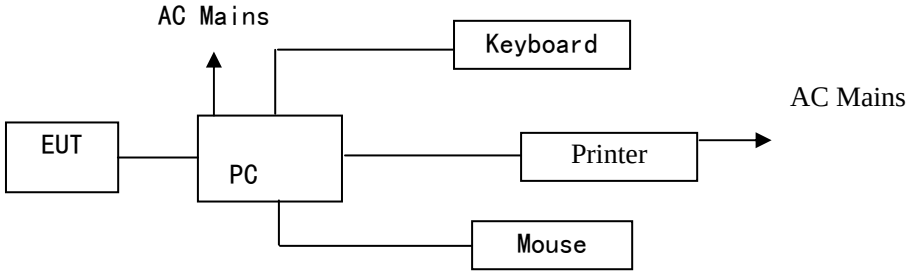
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.84	0.00	40.84	66.00	-25.16	QP	
2		0.1500	32.31	0.00	32.31	56.00	-23.69	AVG	
3		0.2650	40.96	0.00	40.96	61.27	-20.31	QP	
4		0.2650	36.96	0.00	36.96	51.27	-14.31	AVG	
5		0.5300	36.56	0.00	36.56	56.00	-19.44	QP	
6		0.5300	35.01	0.00	35.01	46.00	-10.99	AVG	
7		2.1100	33.56	0.00	33.56	56.00	-22.44	QP	
8		2.1100	28.42	0.00	28.42	46.00	-17.58	AVG	
9		13.0500	45.60	0.00	45.60	60.00	-14.40	QP	
10	*	13.0500	42.99	0.00	42.99	50.00	-7.01	AVG	
11		26.1000	38.59	0.00	38.59	60.00	-21.41	QP	
12		26.1000	38.26	0.00	38.26	50.00	-11.74	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: GUAN

5. RADIATED EMISSION MEASUREMENT

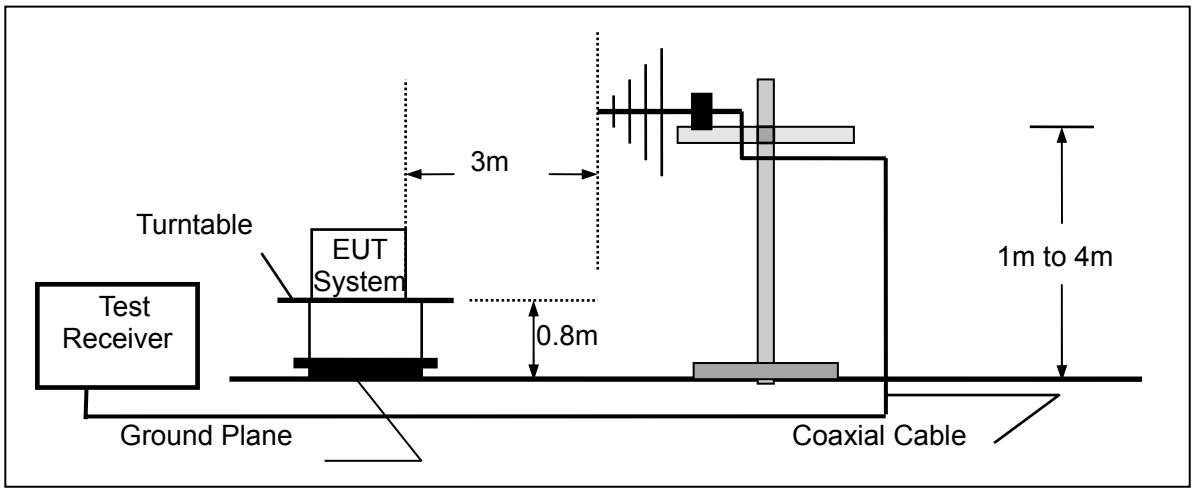
5.1. Block Diagram of Test Setup

5.1.1. Block diagram of EUT System



(EUT: Digital Video Camera)

5.1.2. Block diagram of test setup (In chamber)



(EUT: Digital Video Camera)

5.2. Measuring Standard

FCC Part 15, Subpart B, Class B ANSI C63.4: 2009

5.3. Radiated Emission Limits (class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Frequency (GHz)	Distance (Meters)	Field Strengths Limit	
		Average (dBμV/m)	Peak (dBμV/m)
1~6	3	54	74

Remark：(1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

5.4. Configuration of EUT on Measurement

The FCC Class B regulations test method must be used to find the maximum emission during radiated emission measurement.

EUT : Digital Video Camera
Model Number : DV179

5.5. Operating Condition of EUT

5.5.1.Setup the EUT as shown on Section 5.1.

5.5.2.Turn on the power of all equipments.

5.5.3.Let the EUT work in measuring mode (Camera Recording, Playing, Connect to PC) and measure it.

5.6. Test Procedure

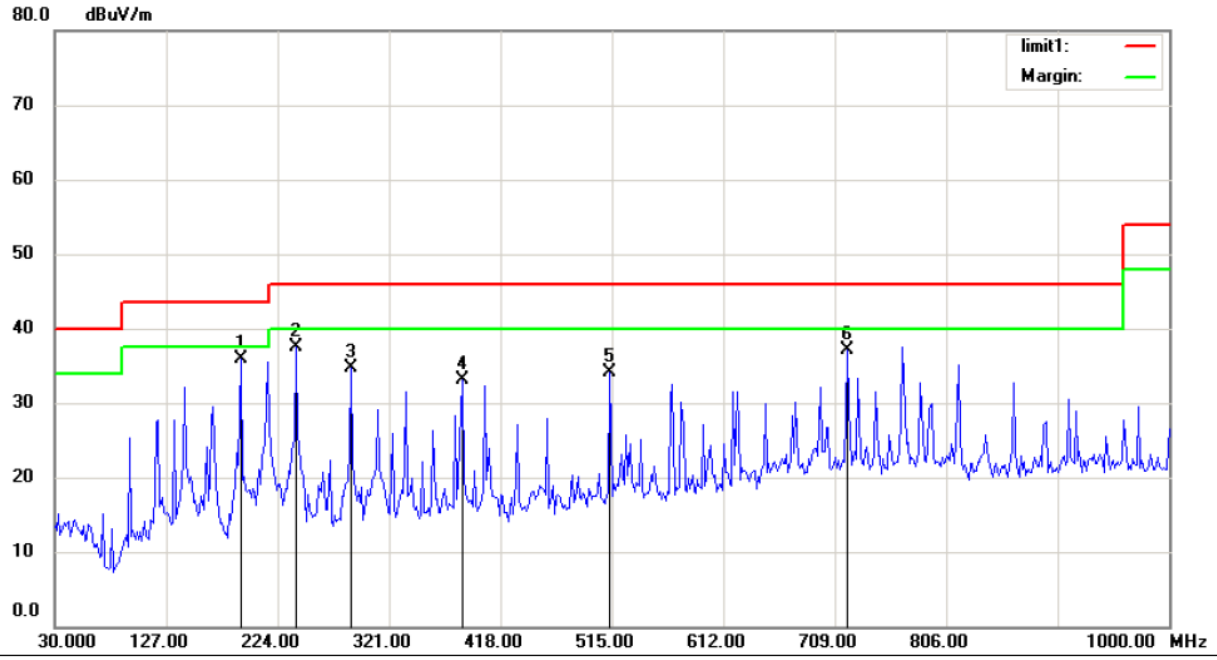
The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) or horn antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver (ESU26) is set at 120kHz.
All the scanning curves in below a few pages.

5.7. Measuring Results

PASS.

The frequency range from 30MHz to 6GHz is investigated.
Please refer to below a few pages.



Site site #1 Polarization: ***Horizontal*** Temperature: 26

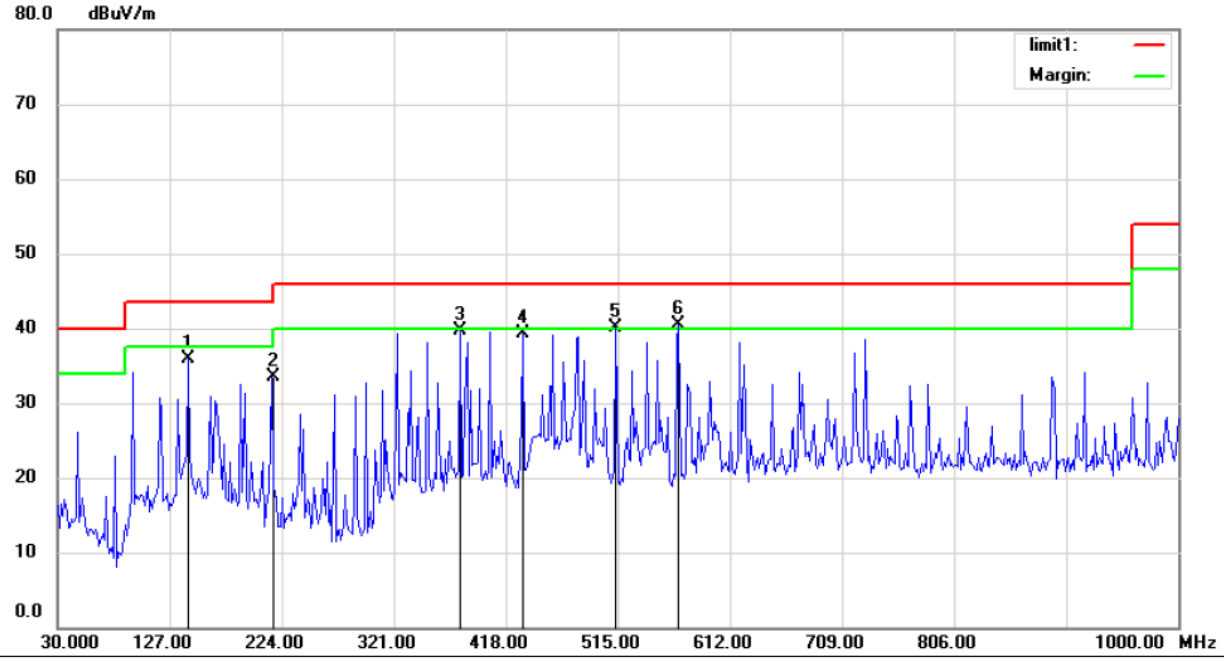
Limit: (RE)FCC PART 15 CLASS B Power: DC 3.7V Humidity: 60 %

Mode:Camera Recording

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	191.6666	22.66	13.15	35.81	43.50	-7.69	QP			
2		239.8557	23.82	13.63	37.45	46.00	-8.55	QP			
3		288.0448	21.02	13.60	34.62	46.00	-11.38	QP			
4		384.4230	16.38	16.67	33.05	46.00	-12.95	QP			
5		513.4455	14.97	19.15	34.12	46.00	-11.88	QP			
6		720.1923	13.68	23.51	37.19	46.00	-8.81	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Vertical* Temperature: 26

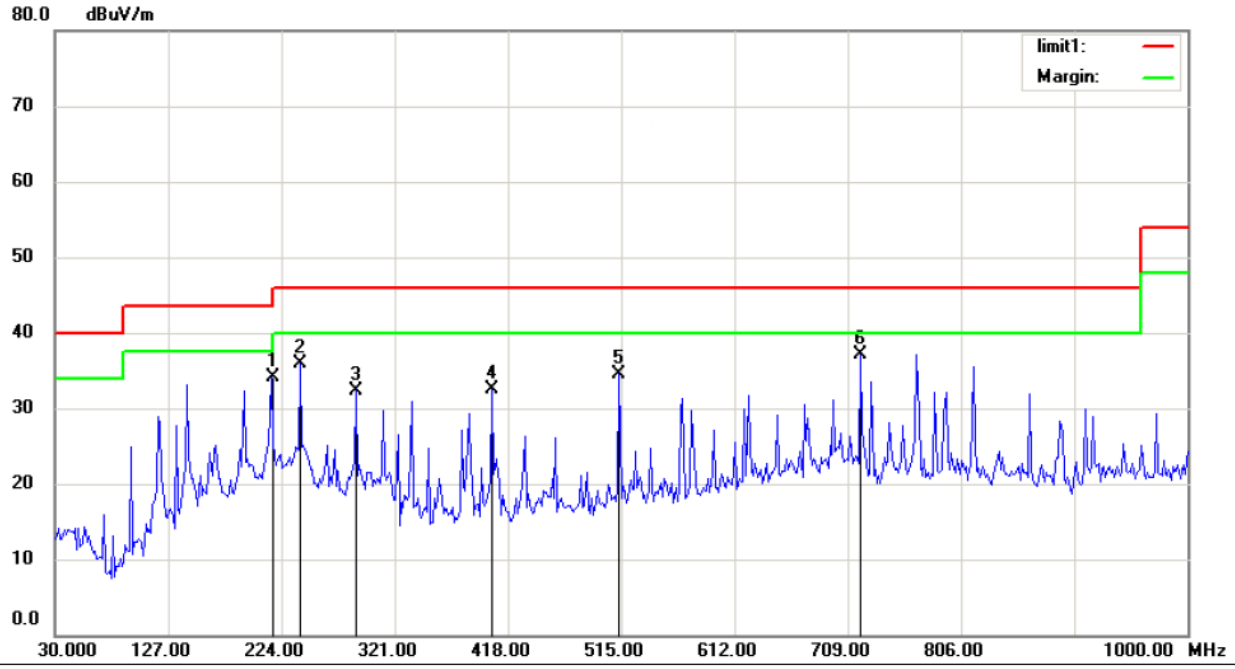
Limit: (RE)FCC PART 15 CLASS B Power: DC 3.7V Humidity: 60 %

Mode:Camera Recording

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		143.4774	26.99	8.90	35.89	43.50	-7.61	QP			
2		214.9840	21.43	12.10	33.53	43.50	-9.97	QP			
3		378.2051	23.21	16.47	39.68	46.00	-6.32	QP			
4		432.6121	21.72	17.54	39.26	46.00	-6.74	QP			
5	!	513.4455	20.99	19.15	40.14	46.00	-5.86	QP			
6	*	567.8525	20.78	19.67	40.45	46.00	-5.55	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Horizontal* Temperature: 26

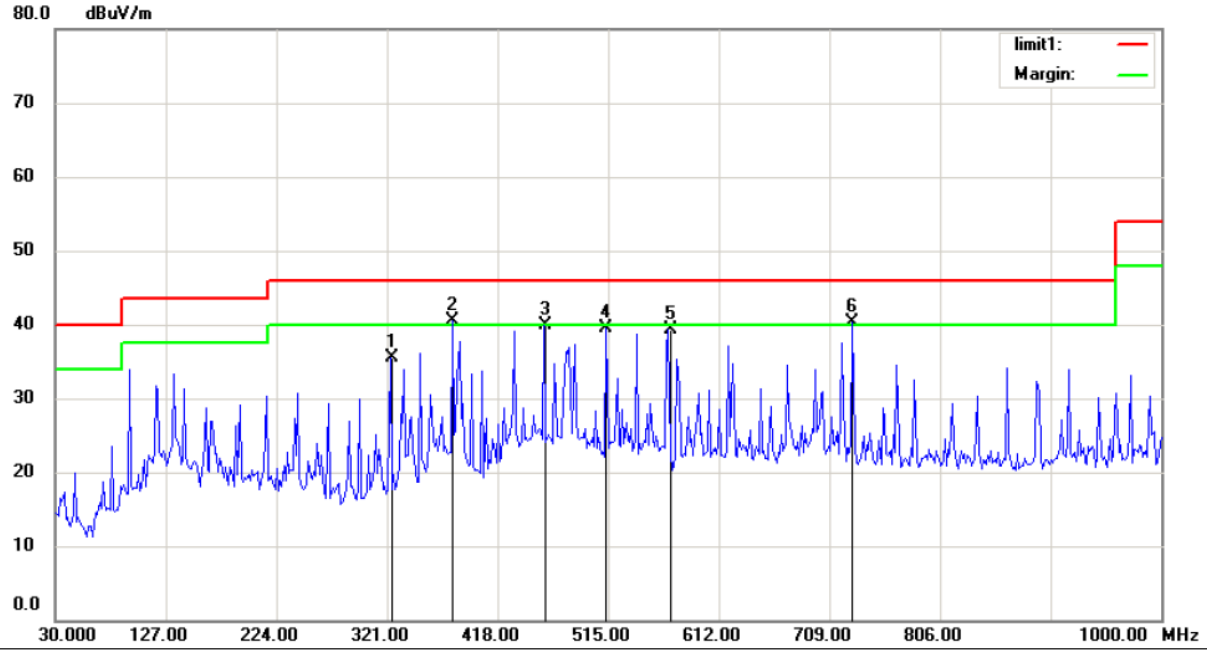
Limit: (RE)FCC PART 15 CLASS B Power: DC 3.7V Humidity: 60 %

Mode:playing

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		214.9840	22.00	12.10	34.10	43.50	-9.40	QP			
2		239.8557	22.37	13.63	36.00	46.00	-10.00	QP			
3		288.0448	18.76	13.60	32.36	46.00	-13.64	QP			
4		404.6314	15.44	17.14	32.58	46.00	-13.42	QP			
5		513.4455	15.31	19.15	34.46	46.00	-11.54	QP			
6	*	720.1923	13.67	23.51	37.18	46.00	-8.82	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Vertical* Temperature: 26

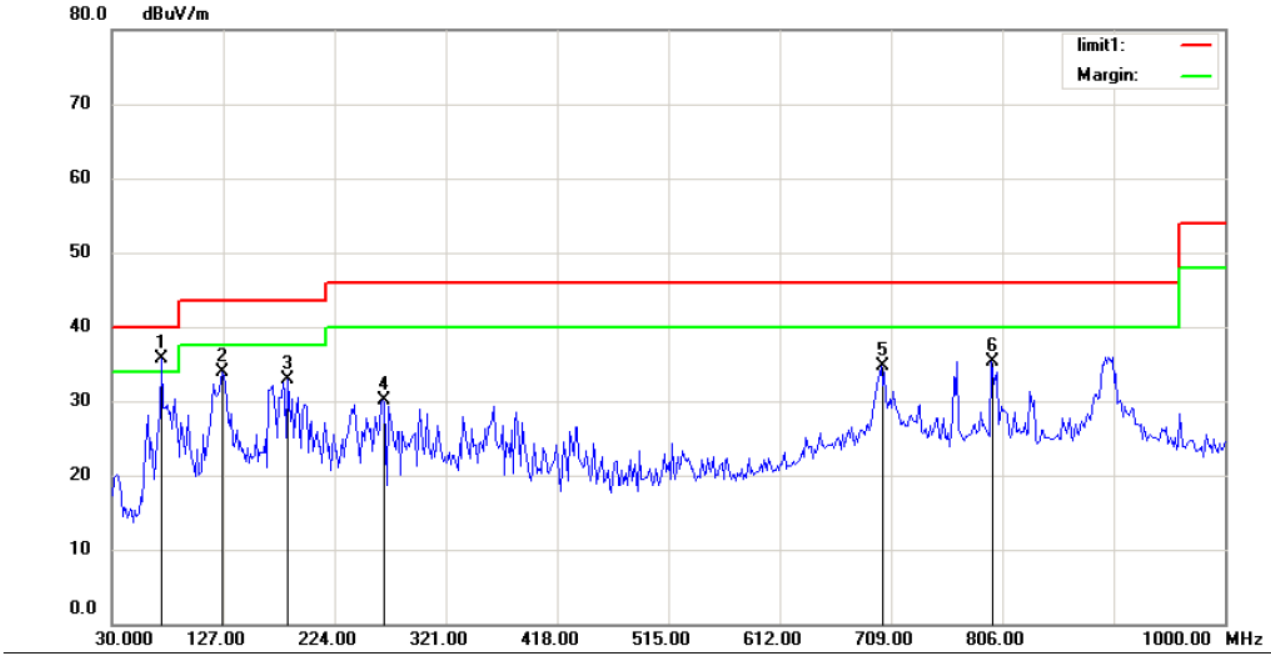
Limit: (RE)FCC PART 15 CLASS B Power: DC 3.7V Humidity: 60 %

Mode:playing

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		323.7981	20.79	14.64	35.43	46.00	-10.57	QP			
2	*	378.2051	24.10	16.47	40.57	46.00	-5.43	QP			
3		459.0385	21.81	18.17	39.98	46.00	-6.02	QP			
4		513.4455	20.30	19.15	39.45	46.00	-6.55	QP			
5		567.8526	19.54	19.67	39.21	46.00	-6.79	QP			
6	!	729.5192	17.01	23.26	40.27	46.00	-5.73	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Horizontal* Temperature: 26

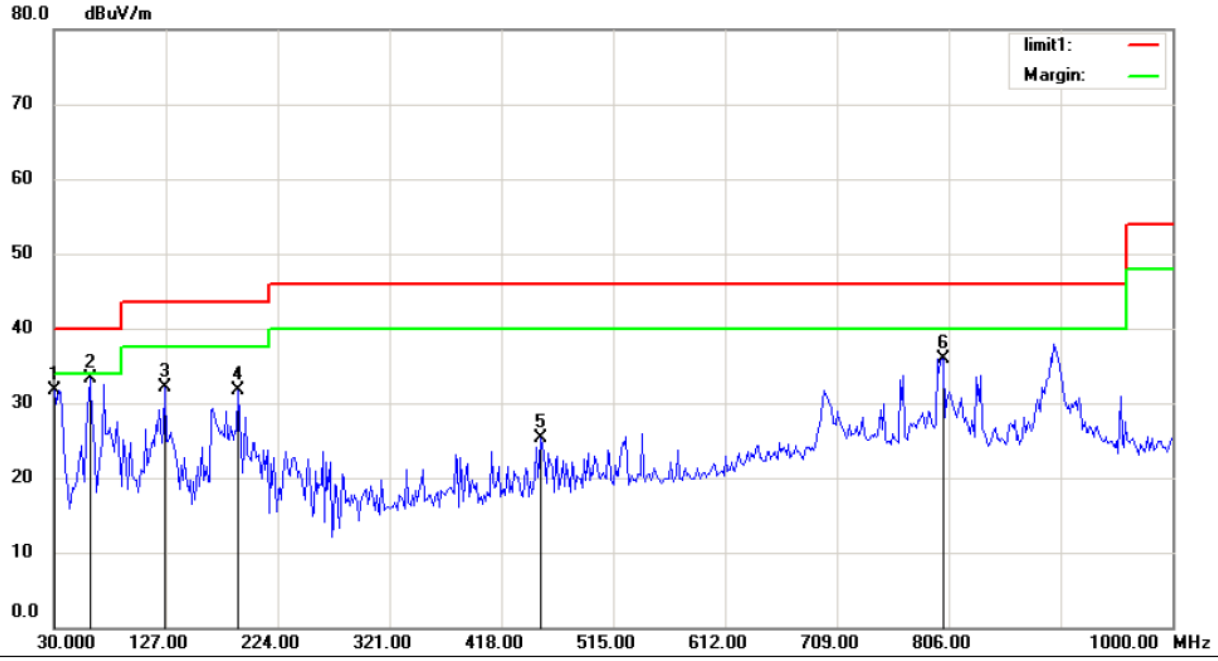
Limit: (RE)FCC PART 15 CLASS B Power: DC 5V from PC Humidity: 60 %

Mode:Connect to pc (updata)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	73.5256	26.54	9.16	35.70	40.00	-4.30	QP			
2		126.3782	22.83	11.11	33.94	43.50	-9.56	QP			
3		183.8942	21.40	11.52	32.92	43.50	-10.58	QP			
4		266.2821	17.05	12.99	30.04	46.00	-15.96	QP			
5		699.9840	10.73	24.01	34.74	46.00	-11.26	QP			
6		796.3622	13.02	22.37	35.39	46.00	-10.61	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Vertical* Temperature: 26

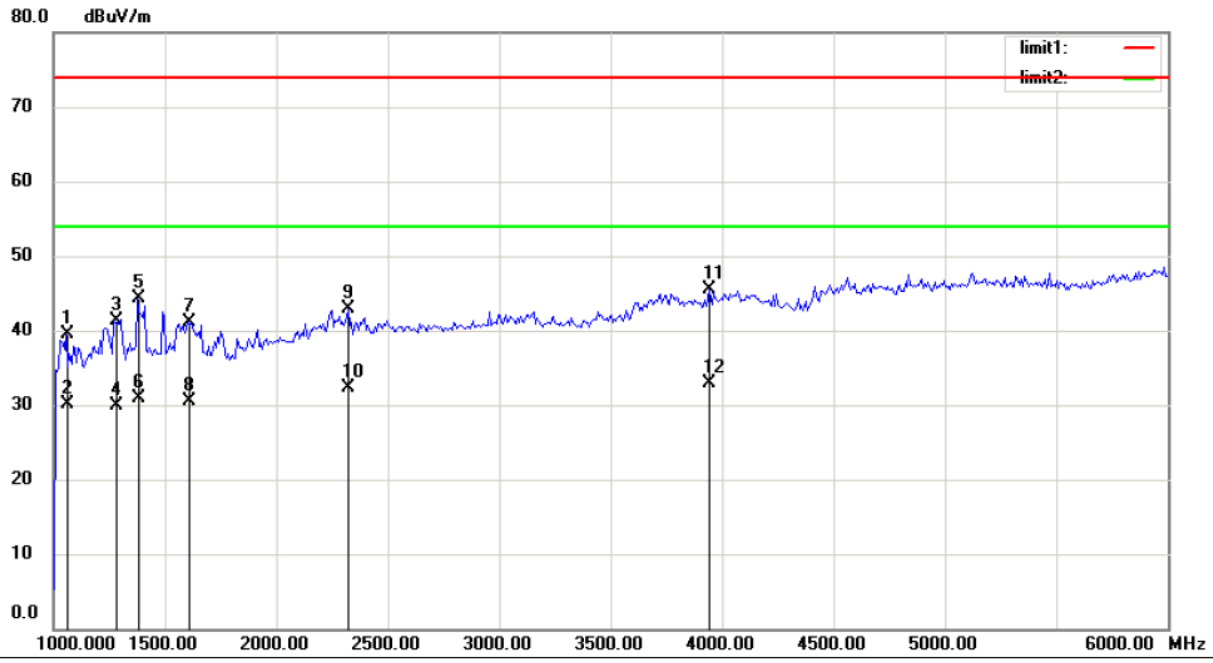
Limit: (RE)FCC PART 15 CLASS B Power: DC 5V from PC Humidity: 60 %

Mode:Connect to pc (updata)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		30.0000	17.82	13.93	31.75	40.00	-8.25	QP			
2	*	61.0897	20.49	12.72	33.21	40.00	-6.79	QP			
3		126.3782	21.03	11.11	32.14	43.50	-11.36	QP			
4		190.1121	18.54	13.08	31.62	43.50	-11.88	QP			
5		452.8205	6.61	18.69	25.30	46.00	-20.70	QP			
6		801.0256	13.51	22.47	35.98	46.00	-10.02	QP			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Horizontal* Temperature: 26

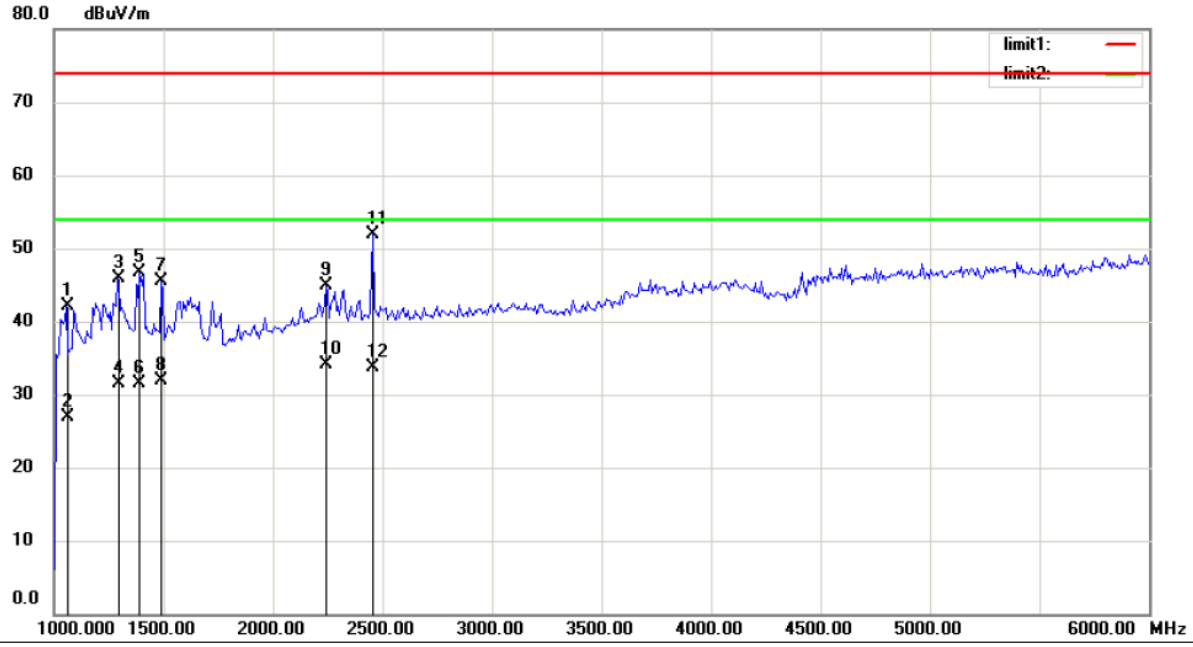
Limit: (RE)FCC PART 15 CLASS B Power: DC 5V from PC Humidity: 60 %

Mode:Connect to pc (updata)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1056.090	52.99	-13.52	39.47	74.00	-34.53	peak			
2		1056.090	43.60	-13.52	30.08	54.00	-23.92	AVG			
3		1272.436	53.78	-12.49	41.29	74.00	-32.71	peak			
4		1272.436	42.40	-12.49	29.91	54.00	-24.09	AVG			
5		1376.603	56.44	-12.17	44.27	74.00	-29.73	peak			
6		1376.603	43.10	-12.17	30.93	54.00	-23.07	AVG			
7		1600.962	53.33	-12.23	41.10	74.00	-32.90	peak			
8		1600.962	42.70	-12.23	30.47	54.00	-23.53	AVG			
9		2322.115	51.56	-8.59	42.97	74.00	-31.03	peak			
10		2322.115	40.90	-8.59	32.31	54.00	-21.69	AVG			
11		3940.705	51.62	-6.21	45.41	74.00	-28.59	peak			
12	*	3940.705	39.10	-6.21	32.89	54.00	-21.11	AVG			

*:Maximum data x:Over limit !:over margin Operator: Chensl



Site site #1 Polarization: *Vertical* Temperature: 26

Limit: (RE)FCC PART 15 CLASS B Power: DC 5V from PC Humidity: 60 %

Mode:Connect to pc (updata)

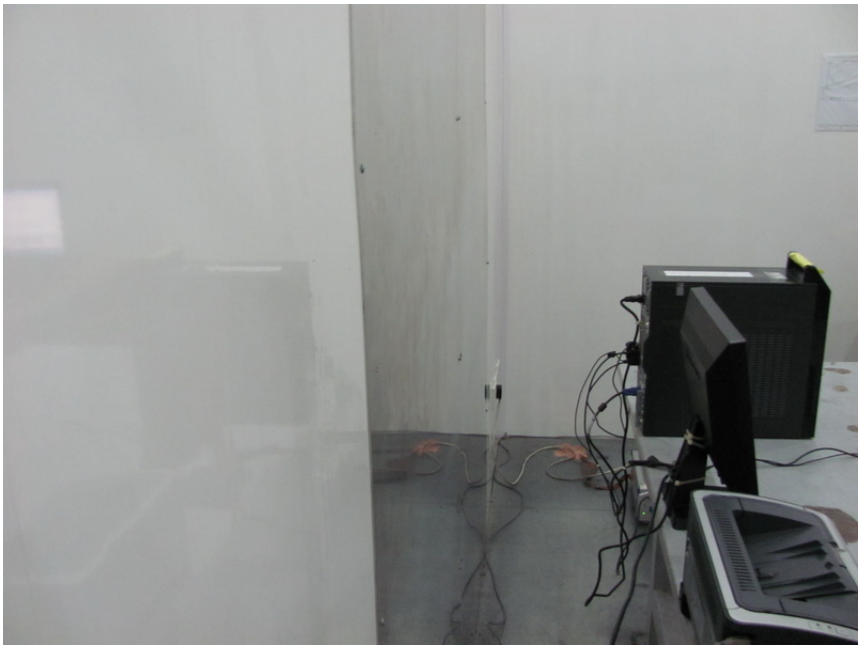
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1056.090	55.59	-13.52	42.07	74.00	-31.93	peak			
2		1056.090	40.50	-13.52	26.98	54.00	-27.02	AVG			
3		1288.462	58.22	-12.37	45.85	74.00	-28.15	peak			
4		1288.462	43.80	-12.37	31.43	54.00	-22.57	AVG			
5		1392.628	58.79	-12.13	46.66	74.00	-27.34	peak			
6		1392.628	43.60	-12.13	31.47	54.00	-22.53	AVG			
7		1488.782	57.70	-12.26	45.44	74.00	-28.56	peak			
8		1488.782	44.20	-12.26	31.94	54.00	-22.06	AVG			
9		2241.987	53.51	-8.60	44.91	74.00	-29.09	peak			
10	*	2241.987	42.80	-8.60	34.20	54.00	-19.80	AVG			
11		2458.333	60.58	-8.64	51.94	74.00	-22.06	peak			
12		2458.333	42.30	-8.64	33.66	54.00	-20.34	AVG			

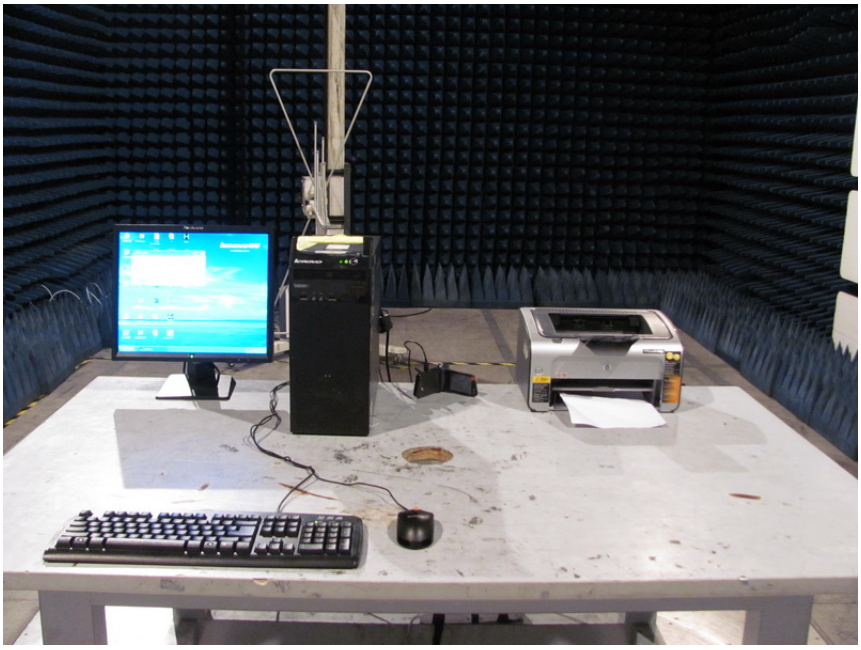
*:Maximum data x:Over limit !:over margin Operator: Chensl

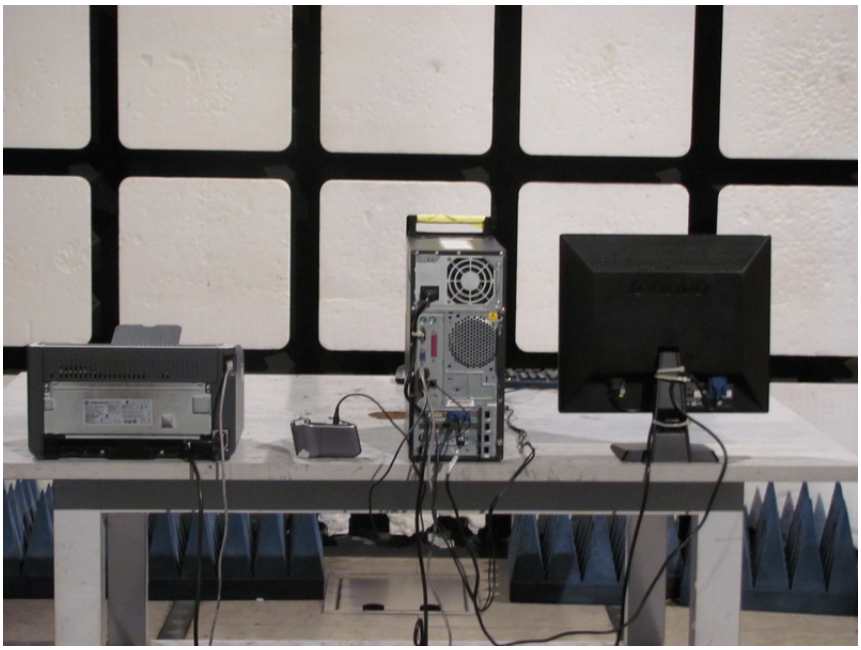
6. PHOTOGRAPHS

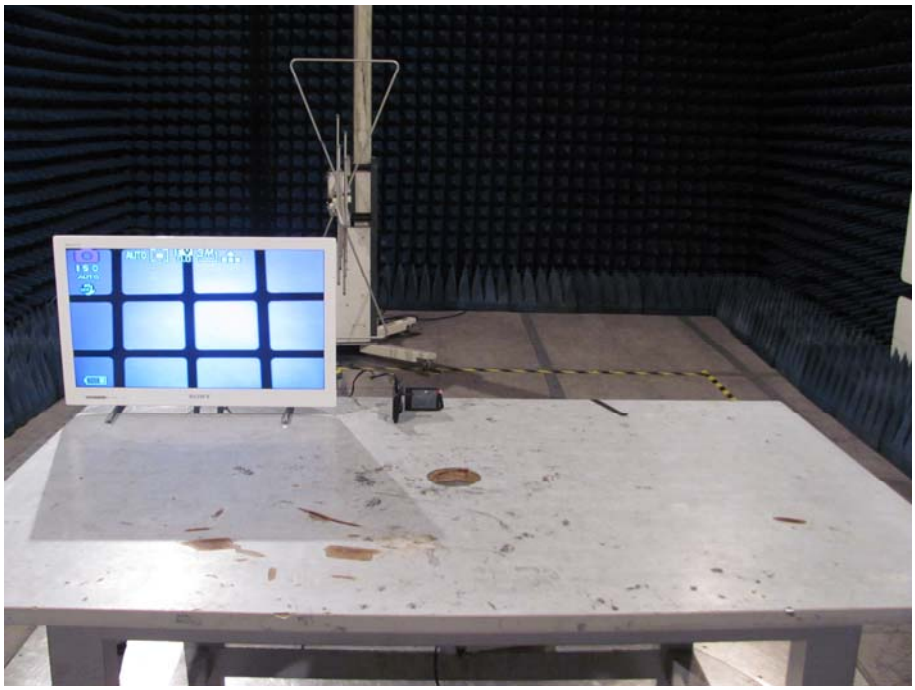
6.1.Photo of Power line Conducted Emission Measurement

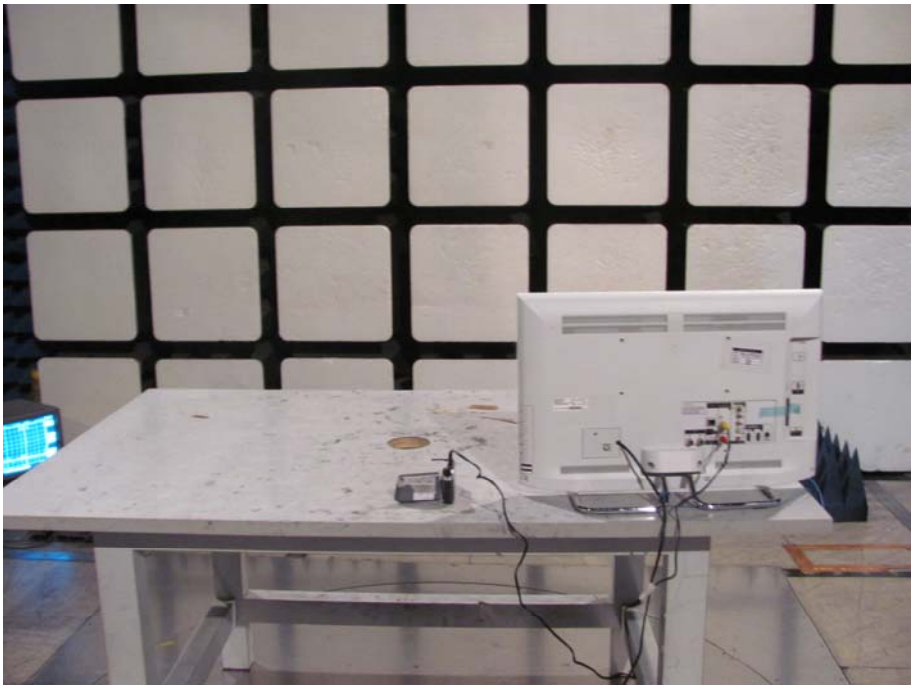


6.2.Photo of Radiation Emission Measurement



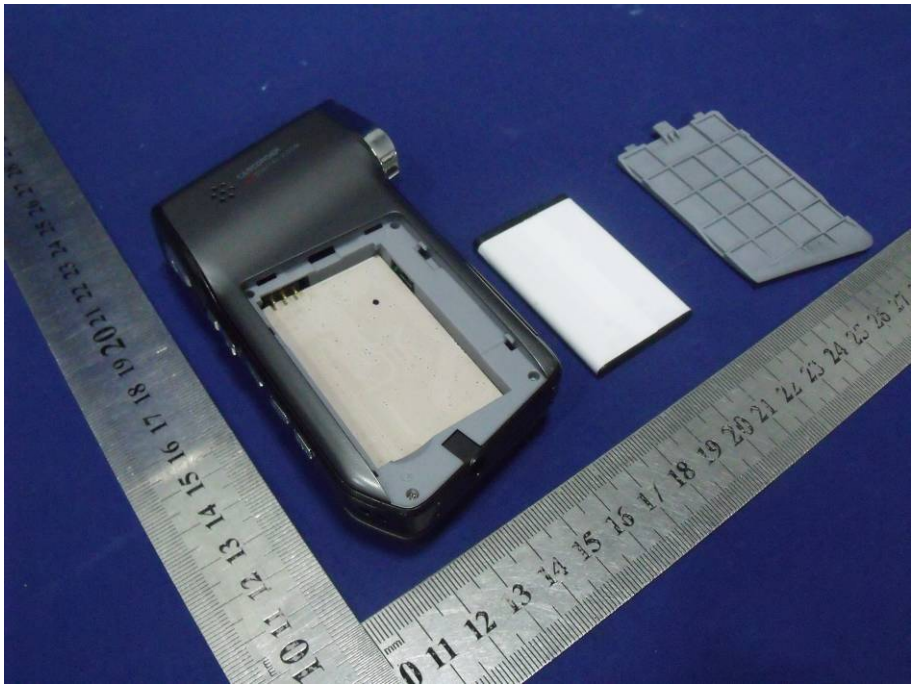


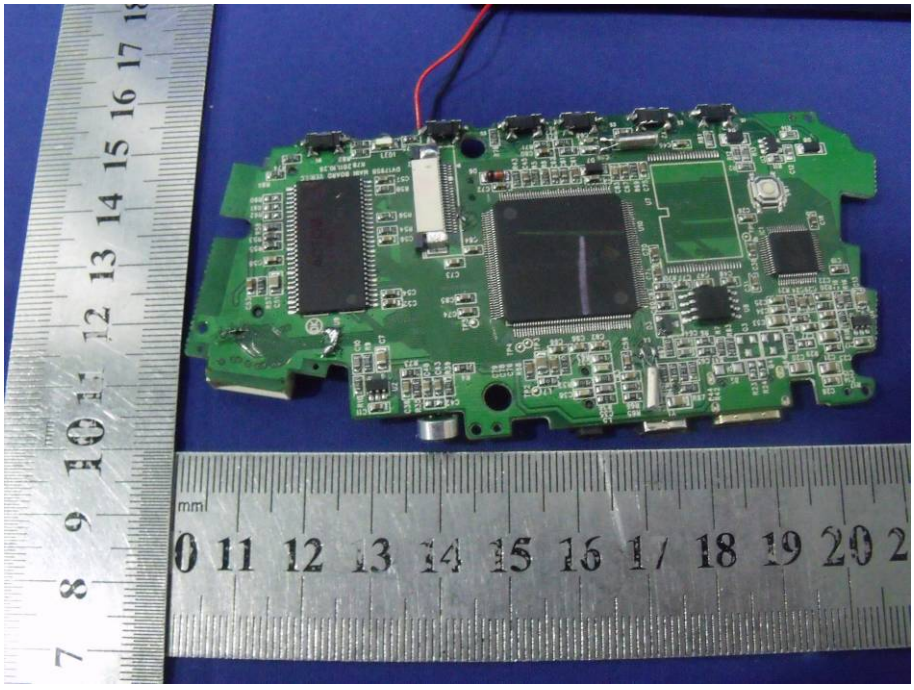


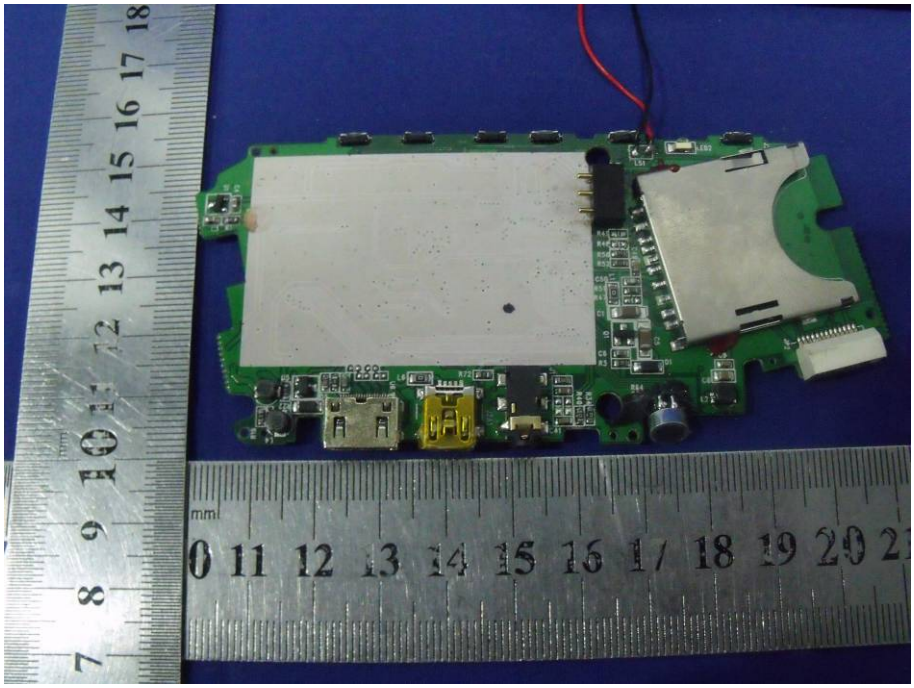


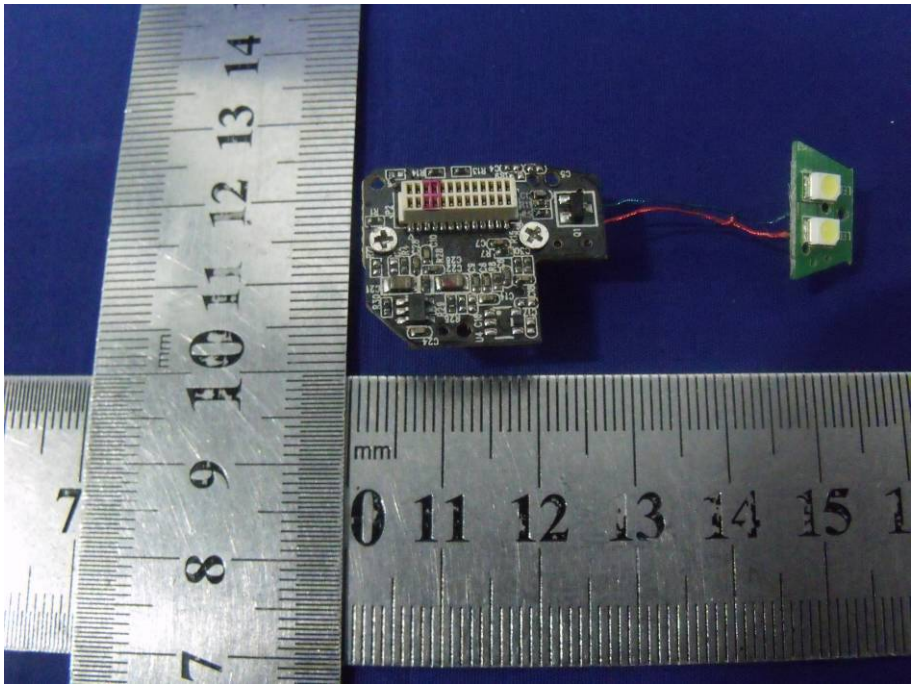
APPENDIX
(Photos of EUT)

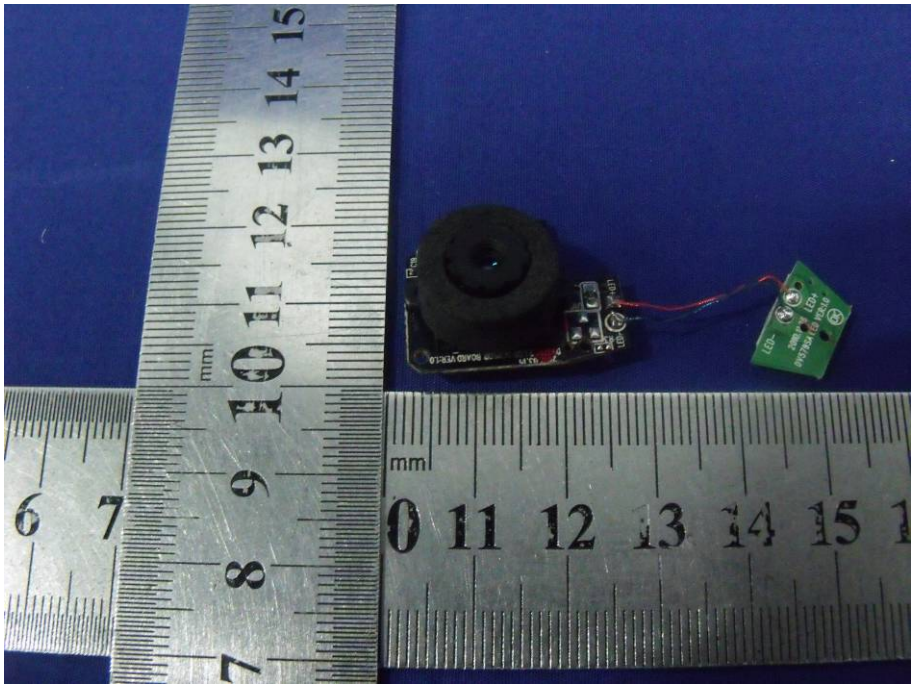

COBY






mm
0 11 12 13 14 15 16 17 18 19 20


mm
0 11 12 13 14 15


mm
0 11 12 13 14 15