



# FCC 47 CFR PART 15 SUBPART C TEST REPORT

*For*

**Applicant :** ESI Cases and Accessories

**Address :** 240 madison ave 11th floor new york, new york 10016  
usa.

**Product Name :** FM Transmitter

**Model Name :** BIG-FMT/IM512

**Brand Name :** N/A

**FCC ID :** UTOBIG-FMTIM512

**Report No. :** MOST100302F1

**Date of Issue :** Mar. 06, 2009

**Issued by :** Most Technology Service Co., Ltd.

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1. VERIFICATION OF CONFORMITY

**Equipment Under Test:** FM Transmitter  
**Brand Name:** N/A  
**Model Number:** BIG-FMT/IM512  
**FCC ID:** UTOBIG-FMTIM512  
**Applicant:** ESI Cases and Accessories  
 240 madison ave 11th floor new york, new york 10016 usa.  
**Manufacturer:** China Gate Group Ltd  
 Rm 717, Tian an hi-technology development plaza, panyu district,  
 Guang Zhou City, Guang Dong Province, China  
**Technical Standards:** 47 CFR Part 15 Subpart C  
**File Number:** MOST100302F1  
**Date of test:** Mar. 01 - Mar. 06, 2010  
**Deviation:** None  
**Condition of Test Sample:** Normal  
**Test Result:** PASS


The above equipment was tested by Shenzhen Super Test Service Technology Co., Ltd. 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): Petter Ping  
 Petter Ping Mar. 06, 2010

Review by (+ signature): July Wen  
 July Wen Mar. 06, 2010

Approved by (+ signature): Terry Yang  
 Terry Yang Mar. 06, 2010



## 2. GENERAL INFORMATION

### 2.1 Product Information

EUT	
Description:	FM Transmitter
Model Name:	BIG-FMT/IM512
Series Number:	N/A
Model Difference description:	N/A
Power Supply:	DC 12.0V or DC 3.0V by battery
Frequency Range:	88.1 MHz – 107.9MHz
Channel Number:	99
Channel Spacing:	200 KHz
Antenna Gain:	0.1 dB
Modulation Technique:	FM
Temperature Range:	-10°C ~ +55°C

**NOTE:**

1. Please refer to Appendix 2 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	15.239	26dB Bandwidth	PASS	2010-03-06
2	15.239	Frequency Range	PASS	2010-03-06
3	15.239 15.209 15.205	Radiated Emission	PASS	2010-03-06
4	15.239	Conducted Emission	PASS	2010-03-06
5	15.203	Antenna Requirement	PASS	2010-03-06

- 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

### 2.5 Support Equipment

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
MP3 Player	ipod	A1137	---	5K7250CCSZC	---	---

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.

### 3. 3. TEST METHODOLOGY

#### 3. 1TEST FACILITY

Test Site:	Most Technology Service Co.,ltd
Location:	No.5, Langshan 2nd Rd, North Hi-Tech Industrial park, Nanshan Shenzhen, Guangdong, China
Description:	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 C63.4:2003 and CISPR 16 requirements. The FCC Registration Number is <b>490827</b> . The <b>CNAS</b> Registration Number is <b>CNAS L3573</b> .
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 C63.4:2003 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 C63.4:2003,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 C63.4:2003.

**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
<sup>1</sup> 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	( <sup>2</sup> )
13.36 - 13.41			

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

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. 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	2011/03/14
2	Spectrum Analyzer	Agilent	E7405A	US44210471	2011/03/14
3	L.I.S.N.	Rohde & Schwarz	ENV216	100093	2011/03/14
4	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2011/03/14
5	Terminator	Hubersuhner	50Ω	No.1	2011/03/14
6	RF Cable	SchwarzBeck	N/A	No.1	2011/03/14
7	Test Receiver	Rohde & Schwarz	ESPI	101202	2011/03/14
8	Bilog Antenna	Sunol	JB3	A121206	2011/03/14
9	Horn Antenna	TRC	N/A	N/A	2011/03/14
10	Cable	Resenberger	N/A	NO.1	2011/03/14
11	Cable	SchwarzBeck	N/A	NO.2	2011/03/14
12	Cable	SchwarzBeck	N/A	NO.3	2011/03/14
13	DC Power Filter	DuoJi	DL2×30B	N/A	2011/03/14
14	Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	2011/03/14
15	3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	2011/03/14
16	Test Receiver	Rohde & Schwarz	ESCI	100492	2011/03/14
17	Absorbing Clamp	Luthi	MDS21	3635	2011/03/14
18	Coaxial Switch	Anritsu Corp	MP59B	6200283933	2011/03/14
19	AC Power Source	Kikusui	AC40MA	LM003232	2011/03/14
20	Test Analyzer	Kikusui	KHA1000	LM003720	2011/03/14
21	Line Impedance Network	Kikusui	LIN40MA-PCR-L	LM002352	2011/03/14
22	ESD Tester	Kikusui	KES4021	LM003537	2011/03/14
23	EMC PRO System	EM Test	UCS-500-M4	V0648102026	2011/03/14
24	Signal Generator	IFR	2032	203002/100	2011/03/14
25	Amplifier	A&R	150W1000	301584	2011/03/14
26	CDN	FCC	FCC-801-M2-25	47	2011/03/14
27	CDN	FCC	FCC-801-M3-25	107	2011/03/14
28	EM Injection Clamp	FCC	F-203I-23mm	403	2011/03/14
29	RF Cable	MIYAZAKI	N/A	No.1/No.2	2011/03/14
30	Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU200	0304789	2011/03/14
31	Telecommunication Antenna	European Antennas	PSA 75301R/170	0304213	2011/03/14

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

## 5. 47 CFR Part 15 C Requirements

### 5.1 26dB Bandwidth

#### 5.1.1 Definition

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

#### 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 26 dB criteria (26 dB down either side of the emission from the peak emission). A drawing showing the test setup is given as Figure 1.

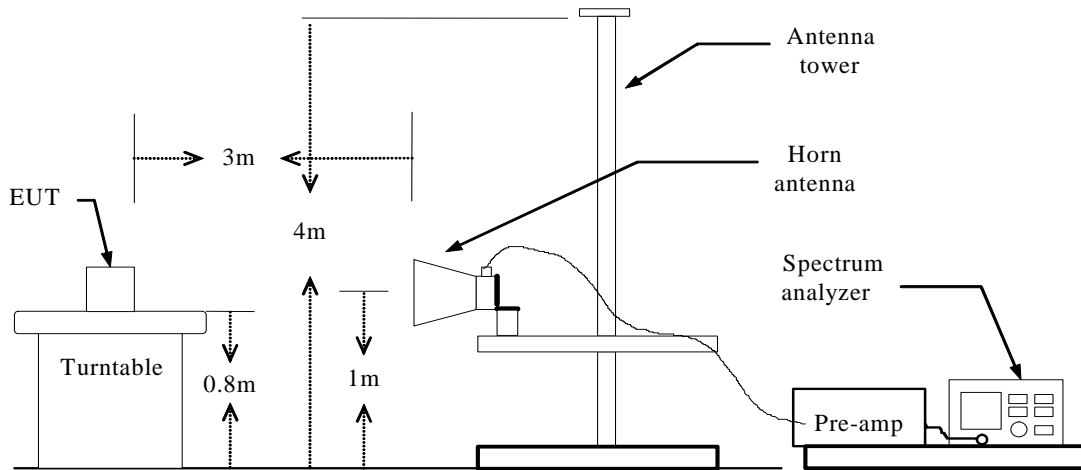


Figure 1: Radiated Emission Test Setup

#### 5.1.3 Test Result

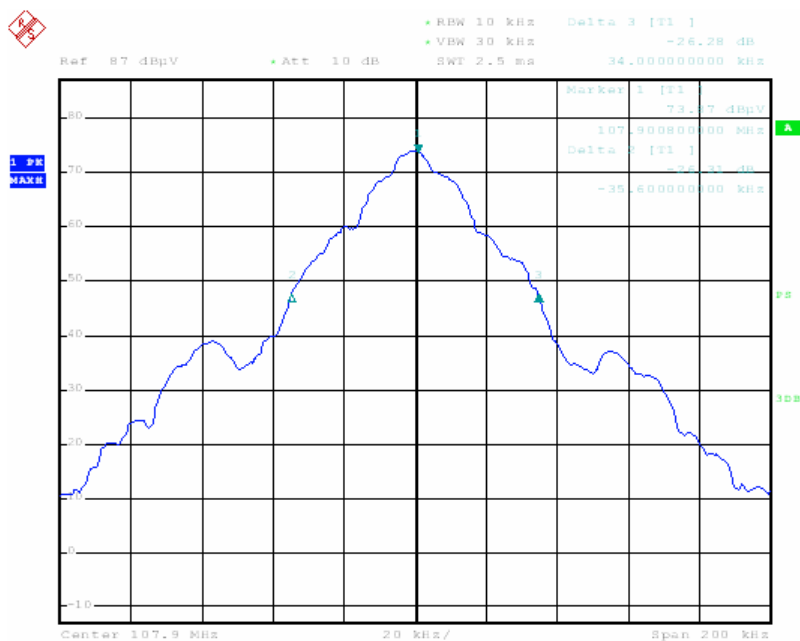
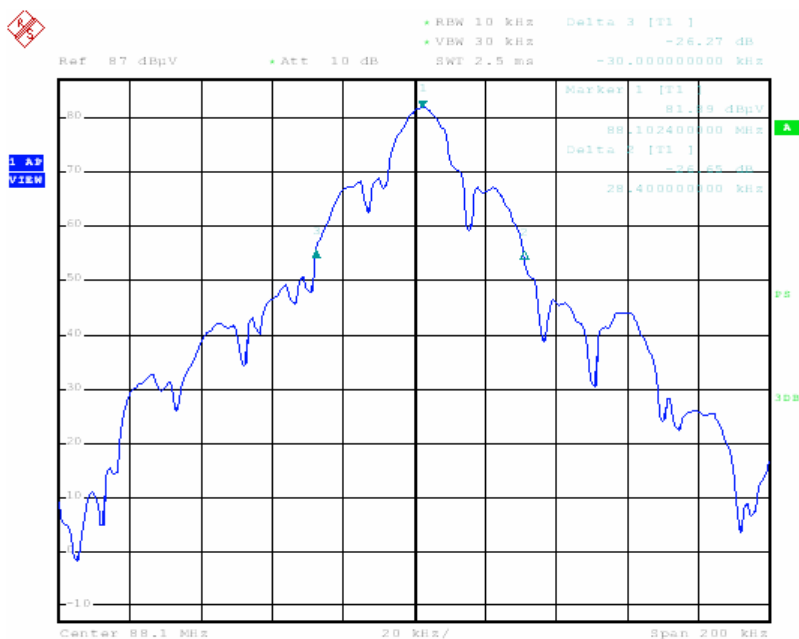
The maximum occupied bandwidth for the fundamental frequency 88.1 MHz is 187.9 kHz. This occupied bandwidth complies with the FCC requirement.

The occupied bandwidth test data is included in Plot A.

26 dB Bandwidth (High Channel) = 69.6 KHz

26 dB Bandwidth (Low Channel) = 58.4 KHz

Test Plot:



## **5.2 Frequency Range**

### **5.2.1 Definition**

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

### **5.2.2 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 26 dB criteria (26 dB down either side of the emission from the peak emission). A drawing showing the test setup is given as Figure 1.

### **5.2.3 Test Result**

The operation frequency band is form 88.1 MHz to 107.9 MHz.

This frequency range complies with the FCC requirement.

Refer to the occupied bandwidth test Plot A.

### 5.3 Radiated Emission

#### 5.3.1 Definition

The field strength of any emission within this band (section 15.239, frequency between 88 MHz –108 MHz) shall not exceed 250 micro volts /meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in section 15.35 for limiting peak emissions apply.

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 (µV/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.

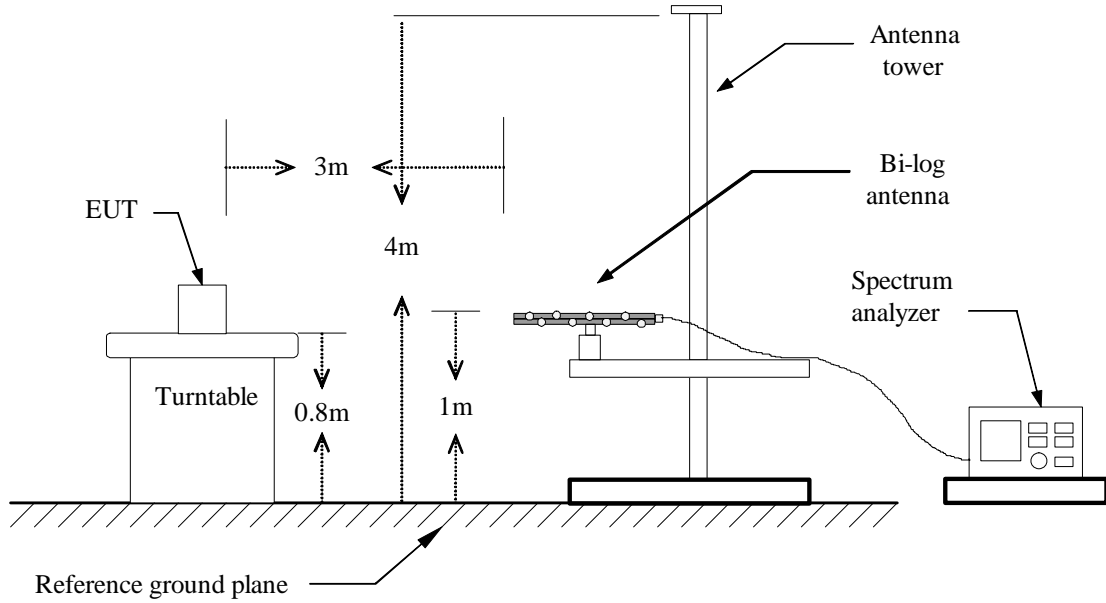
2. In the above emission table, the tighter limit applies at the band edges.

Frequency (Hz)	Field Strength (µV/m at 3-meter)	Test Distance (m)	Field Strength (dBµV/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

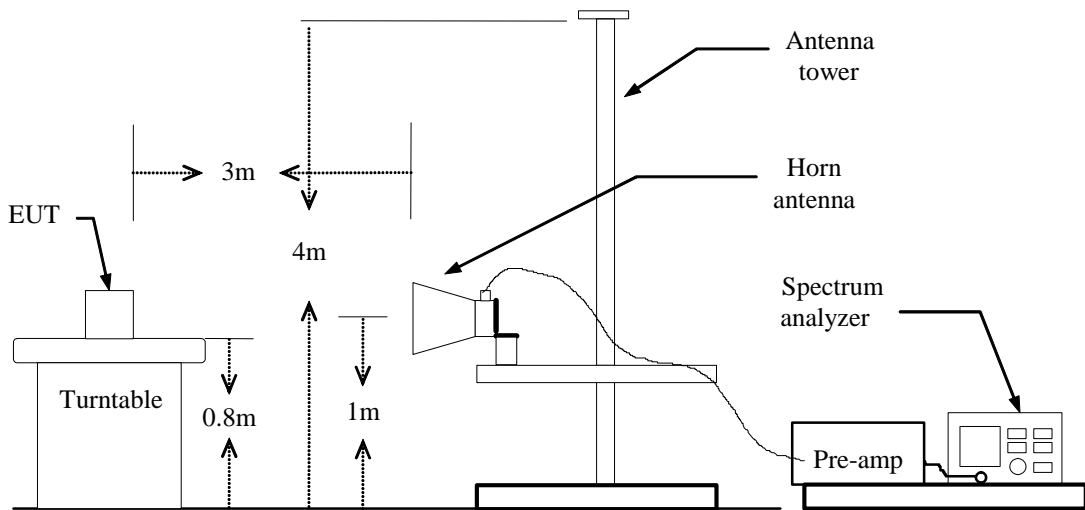
### 5.3.2 Test Configuration

#### Test Setup:

#### Below 1GHz:



#### Above 1GHz:



### 5.3.3 Test Description

- The EUT is placed on a turntable, which is 0.8m above ground plane.
- The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- Set the spectrum analyzer in the following setting as:  
 Below 1GHz: RBW=100 kHz / VBW=300 kHz / Sweep=AUTO  
 Above 1GHz : ( a ) PEAK: RBW=VBW=1MHz / Sweep=AUTO  
               (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
- Repeat above procedures until the measurements for all frequencies are complete.

### 5.3.4 Test Result

Operation Mode: CH Low

Test Date: Mar. 06, 2010

Temperature: 20°C

Tested by: Petter Ping

Humidity: 70 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
88.10	V	Peak	34.82	11.36	46.18	48.00	-1.82
216.24	V	Peak	11.84	16.14	27.98	46.00	-18.02
384.05	V	Peak	10.80	18.18	28.98	46.00	-17.02
612.00	V	Peak	8.04	23.26	31.30	46.00	-14.70
874.87	V	Peak	5.49	27.00	32.49	46.00	-13.51
88.10	H	Peak	33.73	11.36	45.09	48.00	-2.91
176.47	H	Peak	16.02	16.88	32.90	43.50	-10.60
384.05	H	Peak	14.90	18.18	33.08	46.00	-12.92
612.00	H	Peak	11.16	23.26	34.42	46.00	-11.58
756.53	H	Peak	7.02	25.67	32.69	46.00	-13.31

**Notes:**

- Measuring frequencies from 30 MHz to the 1GHz.
- Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
- 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.
- The IF bandwidth of SPA between 30MHz to 1GHz was 100 kHz.

**Operation Mode:** CH Middle  
**Temperature:** 20°C  
**Humidity:** 70 % RH

**Test Date:** Mar. 06, 2010  
**Tested by:** Petter Ping  
**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
97.90	V	Peak	33.86	12.72	46.58	48.00	-1.42
195.87	V	Peak	11.52	16.95	28.47	43.50	-15.03
299.66	V	Peak	8.18	19.30	27.48	46.00	-18.52
480.08	V	Peak	5.24	21.70	26.94	46.00	-19.06
708.03	V	Peak	5.85	24.68	30.53	46.00	-15.47
97.90	H	Peak	30.13	12.72	42.85	48.00	-5.15
195.87	H	Peak	19.06	16.95	36.01	43.50	-7.49
384.05	H	Peak	14.58	18.18	32.76	46.00	-13.24
480.08	H	Peak	12.60	21.70	34.30	46.00	-11.70
732.28	H	Peak	8.58	25.01	33.59	46.00	-12.41

**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.



**Operation Mode:** CH High

**Test Date:** Mar. 06, 2010

**Temperature:** 20°C

**Tested by:** Petter Ping

**Humidity:** 70 % RH

**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
107.90	V	Peak	31.37	15.41	46.78	48.00	-1.22
215.27	V	Peak	20.52	16.12	36.64	43.50	-6.86
359.80	V	Peak	11.38	18.30	29.68	46.00	-16.32
633.34	V	Peak	4.92	23.80	28.72	46.00	-17.28
708.03	V	Peak	6.36	24.68	31.04	46.00	-14.96
107.90	H	Peak	28.52	15.41	43.93	48.00	-4.07
215.27	H	Peak	24.93	16.12	41.05	43.50	-2.45
431.58	H	Peak	13.88	20.32	34.20	46.00	-11.80
587.75	H	Peak	9.63	22.87	32.50	46.00	-13.50
732.28	H	Peak	7.29	25.01	32.30	46.00	-13.70

**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.

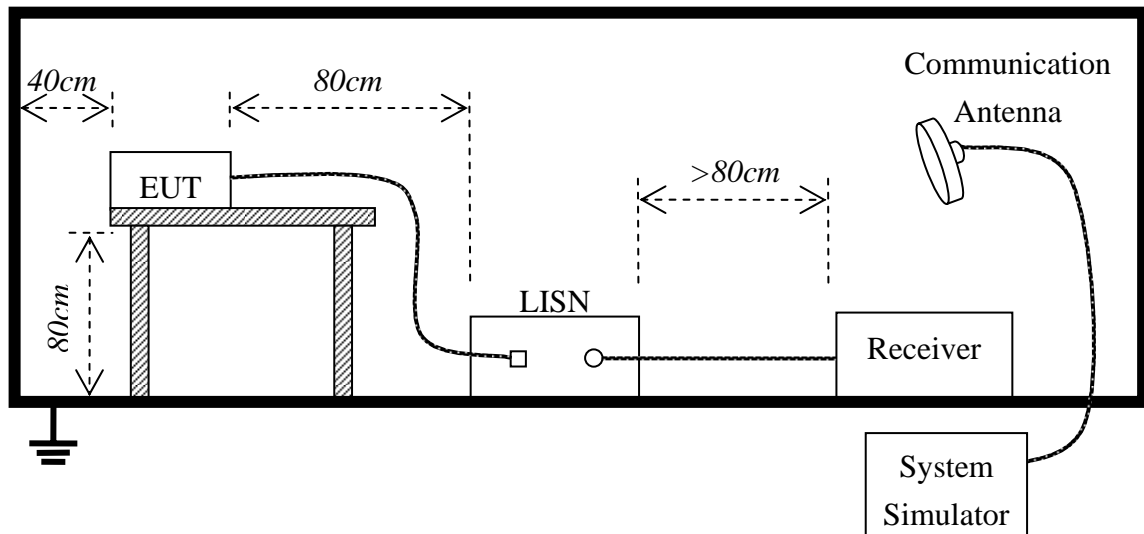
### 5.4 Conducted Emission

#### 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

#### 5.4.1 Block Diagram of Test Setup



**5.4. 2 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 DC12V 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:

<b>Preliminary Conducted Emission Test</b>				
<b>Frequency Range Investigated</b>		<b>150KHz TO 30 MHz</b>		
<b>Mode of operation</b>	<b>Date</b>	<b>Report No.</b>	<b>Data#</b>	<b>Worst Mode</b>
Standby Mode	2010-03-06	MOST100302F1	1_ (L,N)	
Audio Input+ FM Transmit Mode	2010-03-06	MOST100302F1	2_ (L,N)	▲

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

**5.4.3 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.

### 5.4.4 Test Result of Line Conducted Emission Test

**EUT** : FM Transmitter **Power** : DC 12V  
**M/N** : FM 88.3MHz **Temperature** : 26 °C  
**Mode** : Audio Input+ FM Transmit Mode **Humidity** : 60%

FREQ MHz	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.294	53.37	48.17	60.41	50.41	-7.04	-2.24	L
0.470	54.23	42.80	56.51	46.51	-2.28	-3.71	L
0.714	50.33	40.61	56.00	46.00	-5.67	-5.39	L
2.242	42.84	31.76	56.00	46.00	-13.16	-14.24	L
3.482	42.80	33.20	56.00	46.00	-13.20	-12.80	L
0.290	53.40	47.90	60.52	50.52	-7.12	-2.62	N
0.398	54.81	45.03	57.90	47.90	-3.09	-2.87	N
0.750	50.23	40.40	56.00	46.00	-5.77	-5.60	N
1.026	48.57	37.12	56.00	46.00	-7.43	-8.88	N
1.786	44.38	32.82	56.00	46.00	-11.62	-13.18	N

Freq. = Emission frequency in MHz  
 Reading level = Uncorrected Analyzer/Receiver reading  
 Factor = Cable loss + LISN inserting loss  
 Emission level = Reading level + Factor  
 Limit = Limit stated in standard  
 Margin = Reading in reference to limit  
 “---“ = The emission level complied with the Average limits, with at least 2 dB margin, so no further recheck.

## **5.5 Antenna Requirement**

### **5.5.1 Definition**

An analysis of the BIG-FMT/IM512 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 BIG-FMT/IM512 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.

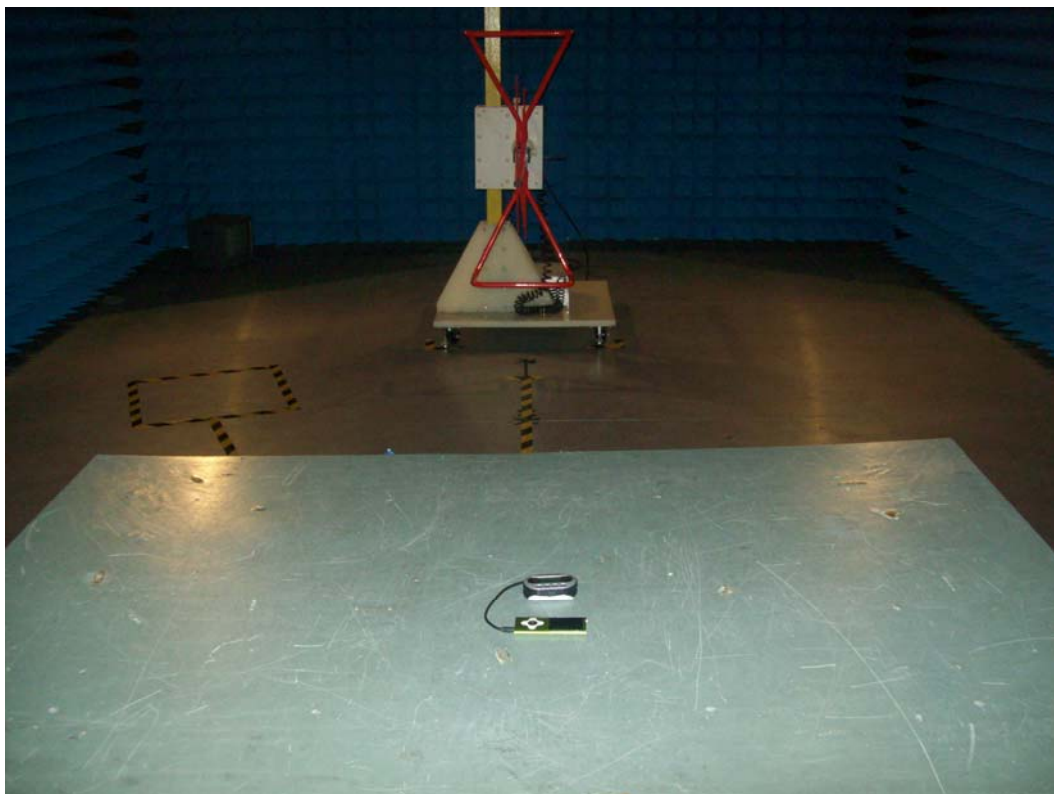
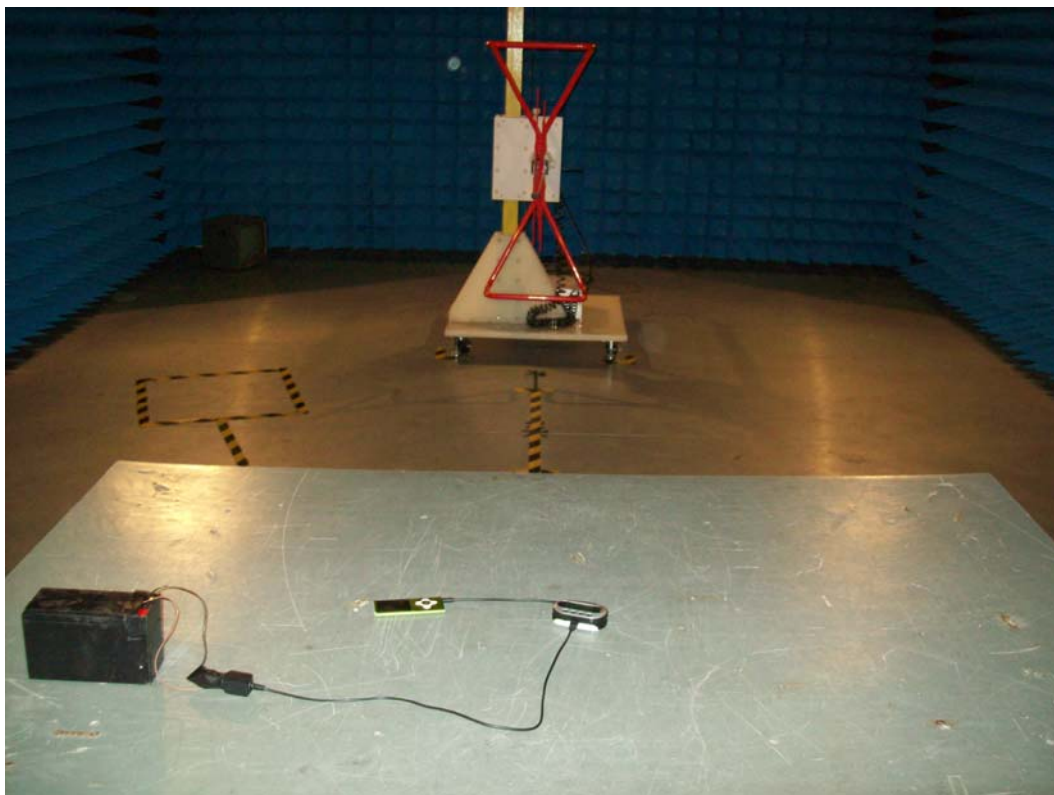
### **5.5.4 Evaluation Results**

The BIG-FMT/IM512 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



Conducted Emission Test Setup





**APPENDIX 2  
PHOTOGRAPHS OF EUT**

FRONT VIEW OF SAMPLE



BACK VIEW OF SAMPLE



TOP VIEW OF SAMPLE



BOTTOM VIEW OF SAMPLE



VIEW OF EXPANDING SAMPLE



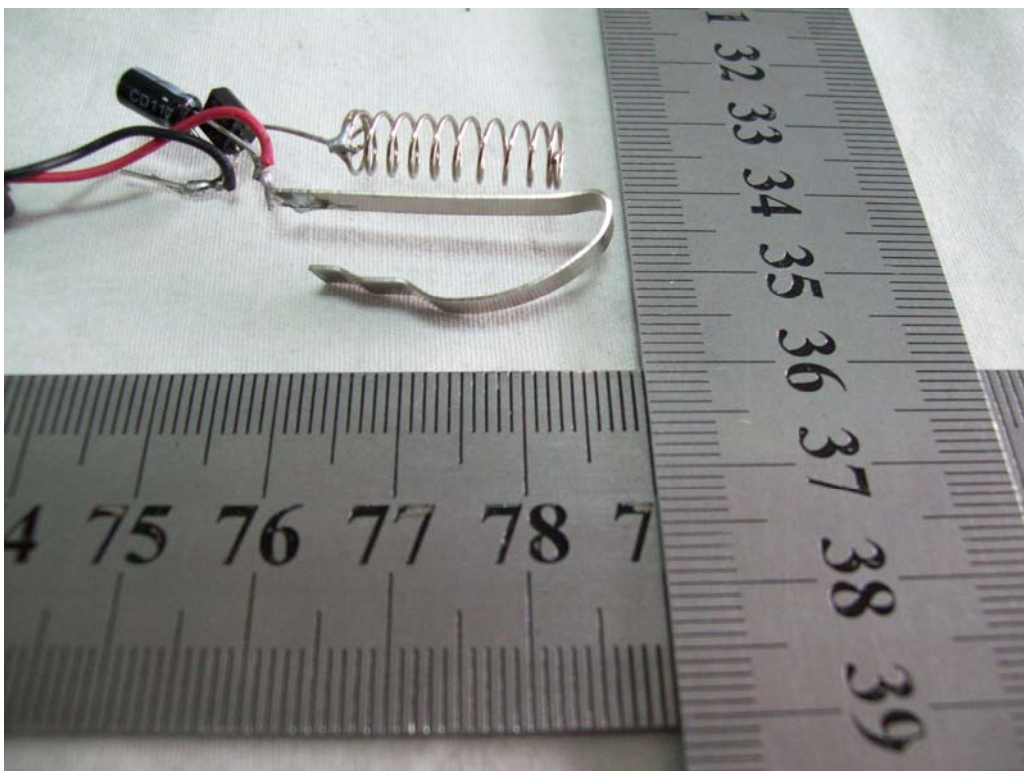
PHOTO OF THE ADAPTER



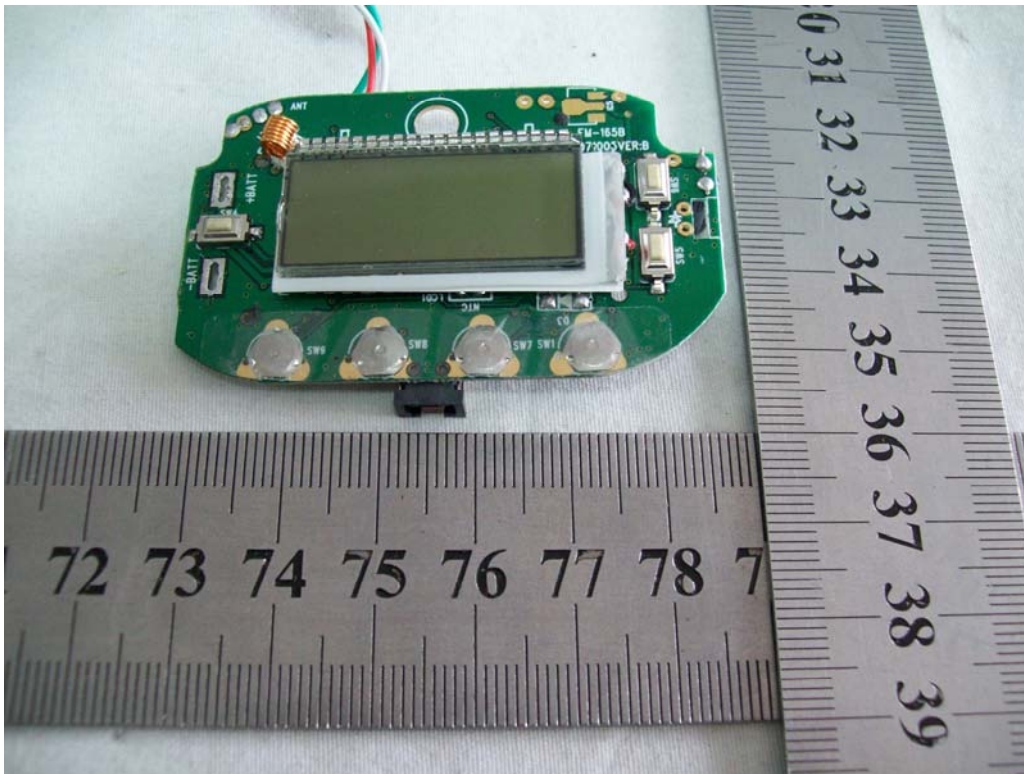
PHOTO OF THE ENTIRE EUT



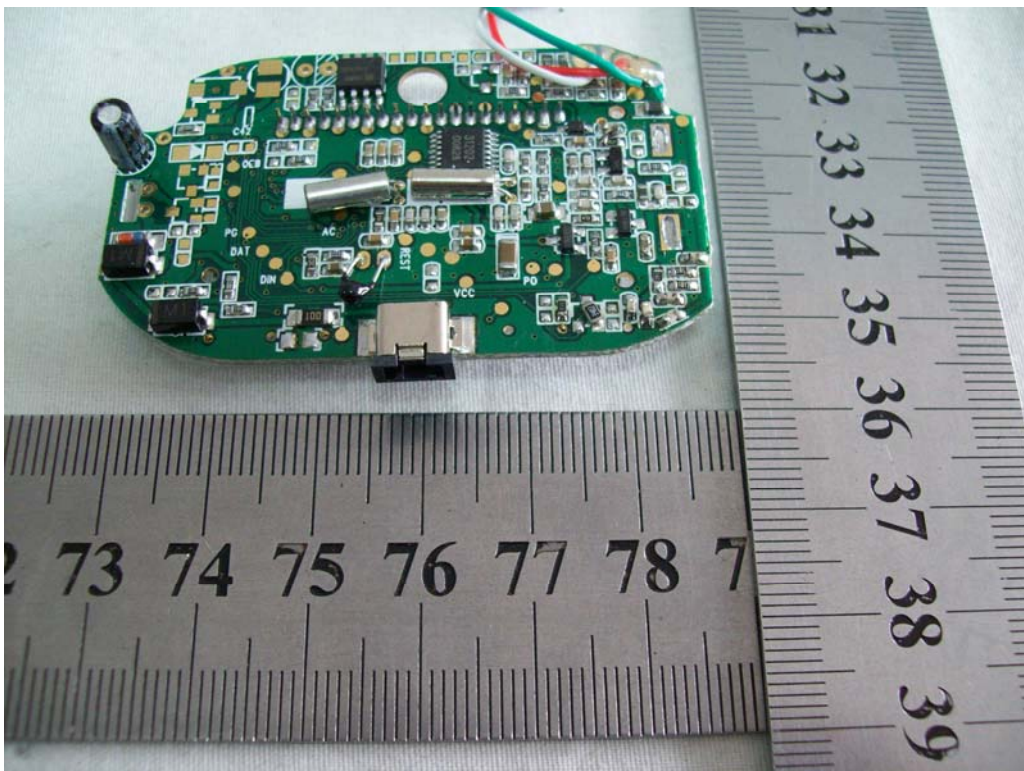
INTERNAL PHOTO OF THE ADAPTER



INTERNAL PHOTO OF THE EUT-1



INTERNAL PHOTO OF THE EUT-2



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