ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

RF Transmitter

MODEL No.: SY-IPFM-08

FCC ID: UWLSYIPFM08

REPORT NO: E0612645E

ISSUE DATE: January 03, 2007

Prepared for

Shengyih Electronics Plastic Manufactory(Dongguan)

Mu-Lun Administration Area, Charmping Town, Dongguan City, Guangdong Province, China

Prepared by

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VERIFICATION OF COMPLIANCE

Applicant:	Shengyih Electronics Plastic Manufactory(Dongguan) Mu-Lun Administration Area, Charmping Town, Dongguan City, Guangdong Province, China
Product Description:	RF Transmitter
Model Number:	SY-IPFM-08
Serial Number:	N/A
File Number:	E0612645E
Date of Test:	December 25, 2006 to January 03, 2007

We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.239.

The test results of this report relate only to the tested sample identified in this report.

Approved By

David Lee / Q.A. Manager
SHENZHEN EMTEK CO., LTD.

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1. GENERAL INFORMATION

1.1 Product Description

The Shengyih Electronics Plastic Manufactory(Dongguan) Model: SY-IPFM-08 (referred to as the EUT in this report). The EUT is a car using stereo FM transmitter, with a high quality stereo FM transmitter IC inside, The actual tuning Controls can be manually adjusted to from 88.3 MHz to 102.0MHz with total channel spacing of 0.1MHz, All 138 channels: 88.3, 88.4, 88.5, 88.6, 88.7, 88.8, 88.9, 89.0, 89.1, 89.2, 89.3, 89.4, 89.5, 89.6, 89.7, 89.8, 89.9, 90.0, 90.1, 90.2, 90.3, 90.4, 90.5, 90.6, 90.7, 90.8, 90.9, 91.0, 91.1, 91.2, 91.3, 91.4, 91.5, 91.6, 91.7, 91.8, 91.9, 92.0, 92.1, 92.2, 92.3, 92.4, 92.5, 92.6, 92.7, 92.8, 92.9, 93.0, 93.1, 93.2, 93.3, 93.4, 93.5, 93.6, 93.7, 93.8, 93.9, 94.0, 94.1, 94.2, 94.3, 94.4, 94.5, 94.6, 94.7, 94.8, 94.9, 95.0, 95.1, 95.2, 95.3, 95.4, 95.5, 95.6, 95.7, 95.8, 95.9, 96.0, 96.1, 96.2, 96.3, 96.4, 96.5, 96.6, 96.7, 96.8, 96.9, 97.0, 97.1, 97.2, 97.3, 97.4, 97.5, 97.6, 97.7, 97.8, 97.9, 98.0, 98.1, 98.2, 98.3, 98.4, 98.5, 98.6, 98.7, 98.8, 98.9, 99.0, 99.1, 99.2, 99.3, 99.4, 99.5, 99.6, 99.7, 99.8, 99.9, 100.0, 100.1, 100.2, 100.3, 100.4, 100.5, 100.6, 100.7, 100.8, 100.9, 101.0, 101.1, 101.2, 101.3, 101.4, 101.5, 101.6, 101.7, 101.8, 101.9, 102.0MHz were examined.

A major technical descriptions of EUT is described as following:

A). Operation Frequency: 88.3MHz~102.0MHz.
B). Antenna Designation: Internal.
C). Power Supply: DC3.3V
D). Channel Spacing: 0.1MHz

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: UWLSYIPFM08 filing to comply with Section 15.239 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description

EMC Lab. : Accredited by CNAL, 2005.11.02
The certificate is valid until 2010.11
The Laboratory has been assessed and proved to be in compliance with CNAL/AC01:2003(identical to ISO/IEC17025:1999)
The Certificate Registration Number is L2291

Accredited by TUV Rheinland Guangzhou, 2005.1
The certificate is valid until 2008.2
The Laboratory has been assessed according to the requirements ISO/IEC 17025:1999

Accredited by FCC, July 07, 2005
The Certificate Registration Number is 709623.

Accredited by Industry Canada, August 30, 2005
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. System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The Tx frequency was 88.3MHz~102.0MHz.

2.3 Test Procedure

2.3.1 Conducted Emissions (Not apply in the report)

The EUT is a placed on as turn table 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 mode**.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table 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 max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

2.4 Limitation

(1) Radiated Emission

(a) The field strength of any emissions within the permitted 200kHz band shall not exceed 250 microvolts/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.

(b) The field strength of any emissions radiated on any frequency outside of the specified 200kHz band shall not exceed the general radiated emission limits in Section 15.209.

Remark: The limit for average field strength dBuv/m for the fundamental frequency=48.0 dBuv/m.
And the limit for peak field strength dBuv/m for the fundamental frequency=68.0 dBuv/m.

Intentional Radiators general limit).as below.

Frequency (MHz)	Field strength μV/m	Distance(m)	Field strength at 3m dBμV/m
1.705-30	30	30	69.54
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

(2) Occupied Bandwidth

(a) Emissions from the intentional radiator shall be confined within a band 200kHz wide centered on the operation frequency, The 200kHz band shall lie wholly within the frequency range of 88.3-102.0MHz.

2.5 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

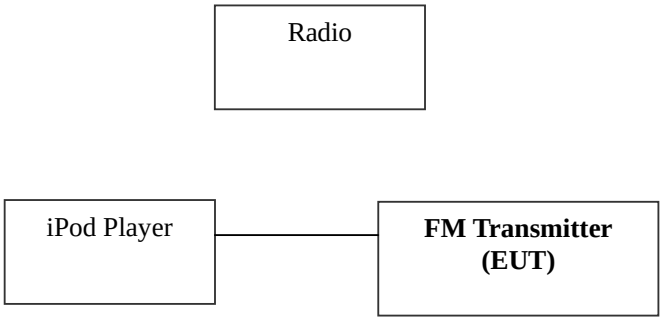


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1.	RF Transmitter	N/A	SY-IPFM-08	UWLSYIPFM08	N/A	***EUT***
2.	iPod Player	iPod	A1099	N/A	2Z6110XUSAY	
3.	Radio	sayin	FM21	N/A	N/A	

Note:

(1) Unless otherwise denoted as EUT in『Remark』column , device(s) used in tested system is a support equipment.

3. Summary Of Test Results

FCC Rules	Description Of Test	Result
§ 15.239	Radiated Emission	Compliant
§ 15.239	Bandwidth Test	Compliant

4. Description of test modes

The EUT (RF Transmitter) has been tested under normal operating condition.
Three channels of EUT (the lowest channel, the middle channel and the highest channel) have been chosen for testing under Normal Operating condition. In this report, all the measured datum of the three channels have been reported. No software used to control the EUT for staying in continuous transmitting mode for testing.

1. For lowest channel : 88.3MHz
2. For middle channel : 95.1MHz
3. For highest channel: 102.0MHz

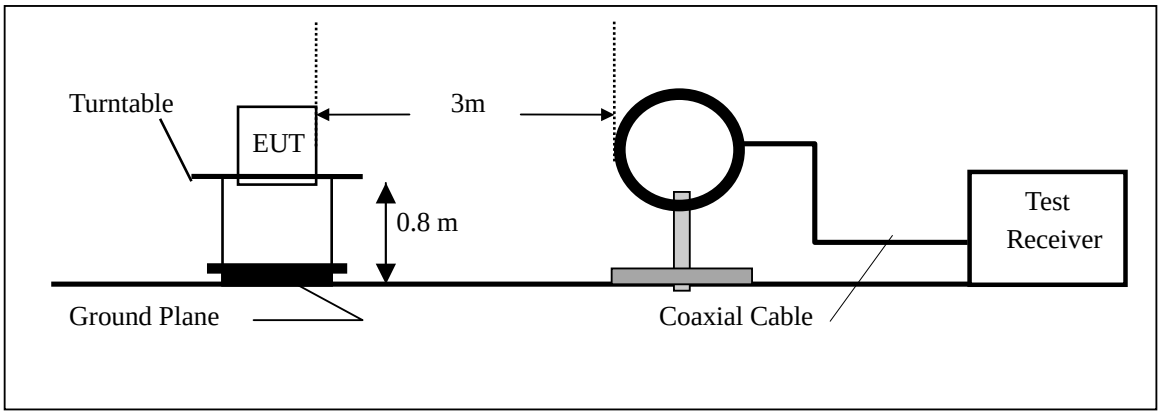
5. Radiated Emission Test

5.1 Measurement Procedure

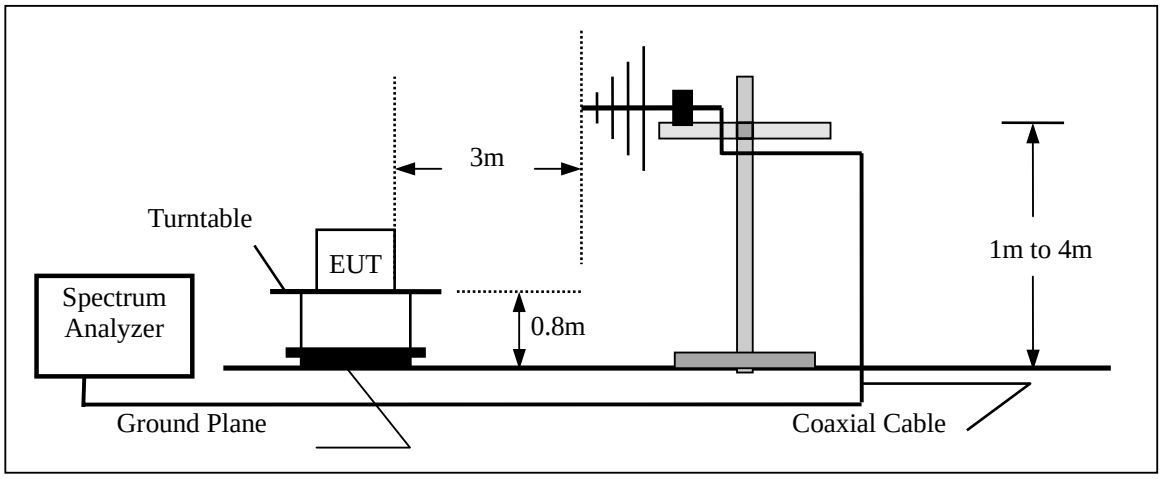
1 The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



5.3 Measurement Equipment Used:

Open Area Test Site # 3					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	ANRITSU	MS2661C	6200140915	05/29/2006	05/29/2007
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2006	05/29/2007
Pre-Amplifier	HP	8447D	2944A07999	05/29/2006	05/29/2007
Bilog Antenna	Schwarzbeck	VULB9163	142	05/29/2006	05/29/2007
Loop Antenna	ARA	PLA-1030/B	1029	05/29/2006	05/29/2007

5.4 Measurement Result

A. Fundamental Radiated Emission Data

Operation Mode:	Transmitting Mode	Test Date :	December 30, 2006
Test Item:	Fundamental Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Lowest channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Peak Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
88.30	V	44.60	68.00	-23.40	Peak
88.30	H	43.80	68.00	-24.20	Peak

Average Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
88.30	V	43.12	48.00	-4.68	AV
88.30	H	42.63	48.00	-5.37	AV

Note: (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode:	Transmitting Mode	Test Date :	December 30, 2006
Test Item:	Fundamental Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Middle channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Peak Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
95.10	V	45.60	68.00	-22.40	Peak
95.10	H	44.30	68.00	-23.70	Peak

Average Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
95.10	V	43.60	48.00	-4.40	AV
95.10	H	43.10	48.00	-4.90	AV

Note: (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

Operation Mode:	Transmitting Mode	Test Date :	October 16, 2006
Test Item:	Fundamental Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Highest channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Peak Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
107.70	V	46.10	68.00	-21.90	Peak
107.70	H	44.80	68.00	-23.20	Peak

Average Measurement

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
107.70	V	44.20	48.00	-3.80	AV
107.70	H	42.90	48.00	-5.10	AV

Note: (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss
(3) The average measurement was not performed when the peak measured data under the limit of average detection.

B. General Radiated Emission Data

Operation Mode:	Transmitting Mode	Test Date :	December 30, 2006
Test Item:	General Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Lowest channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
172.50	V	39.20	43.50	-4.30	Peak
259.12	V	38.60	46.00	-7.40	Peak
356.13	V	38.30	46.00	-7.70	Peak
456.46	V	42.30	46.00	-3.70	Peak
551.53	V	43.20	46.00	-2.80	Peak
688.23	V	41.20	46.00	-4.80	Peak
146.83	H	38.90	43.50	-4.60	Peak
261.76	H	40.50	46.00	-5.50	Peak
383.23	H	41.30	46.00	-4.70	Peak
480.16	H	38.90	46.00	-7.10	Peak
581.45	H	41.23	46.00	-4.77	Peak
695.68	H	41.50	46.00	-4.50	Peak

Note: Emission Level= Reading Level+ Probe Factor +Cable Loss

Operation Mode:	Transmitting Mode	Test Date :	December 30, 2006
Test Item:	General Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Middle channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
179.60	V	38.60	43.50	-4.90	Peak
261.41	V	39.10	46.00	-6.90	Peak
365.11	V	40.10	46.00	-5.90	Peak
460.12	V	40.30	46.00	-5.70	Peak
558.11	V	41.52	46.00	-4.48	Peak
692.16	V	41.20	46.00	-4.80	Peak
182.56	H	41.60	43.60	-2.00	Peak
265.98	H	38.60	46.00	-7.40	Peak
364.44	H	41.30	46.00	-4.70	Peak
465.49	H	39.80	46.00	-6.20	Peak
560.21	H	38.60	46.00	-7.40	Peak
695.79	H	41.70	46.00	-4.30	Peak

Note: Emission Level= Reading Level+ Probe Factor +Cable Loss

Operation Mode:	Transmitting Mode	Test Date :	October 16, 2006
Test Item:	General Radiated Emission Data	Temperature :	28 ℃
Fundamental Frequency:	Highest channel	Humidity :	65 %
Test Result:	PASS	Test By:	Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV)	Limit 3m (dBuV/m)	Margin (dB)	Note
209.18	V	38.60	43.50	-4.90	Peak
312.42	V	39.40	46.00	-6.60	Peak
420.23	V	40.60	46.00	-5.40	Peak
531.45	V	41.30	46.00	-4.70	Peak
659.12	V	42.60	46.00	-3.40	Peak
831.48	V	41.80	46.00	-4.20	Peak
191.69	H	39.15	43.50	-4.35	Peak
287.89	H	42.10	46.00	-3.90	Peak
360.22	H	42.80	46.00	-3.20	Peak
433.12	H	42.55	46.00	-3.45	Peak
519.87	H	40.62	46.00	-5.38	Peak
619.12	H	41.60	46.00	-4.40	Peak

Note: Emission Level= Reading Level+ Probe Factor +Cable Loss

5.5 Radiation Measurement Photos

6. Occupied Bandwidth

6.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Center Frequency = fundamental frequency , RBW = 10KHz, ,VBW= 30KHz
4. Set SPA Max hold. Mark peak.

Notes: The EUT can be connected to iPod Player. The input signal of EUT is controlled by iPod Player. So the volume control of iPod Player was set to maximum during the test. It means that the test was performed with the maximum audio input.

6.2 Test SET-UP (Block Diagram of Configuration)

Same as 4.2 Radiated Emission Measurement.

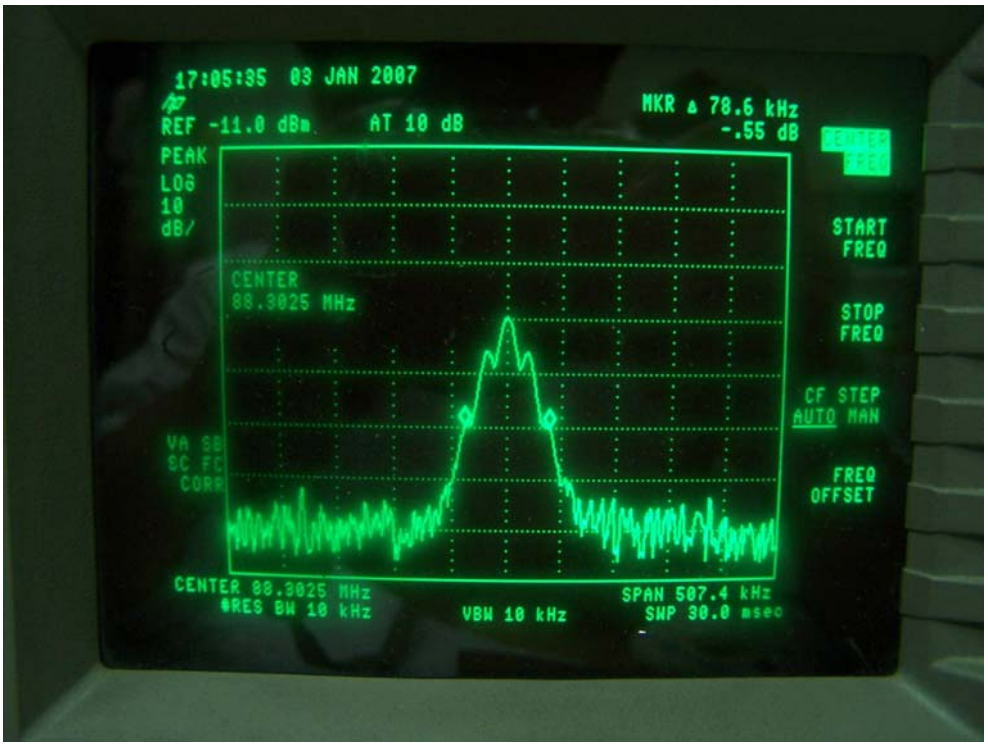
6.3 Measurement Equipment Used:

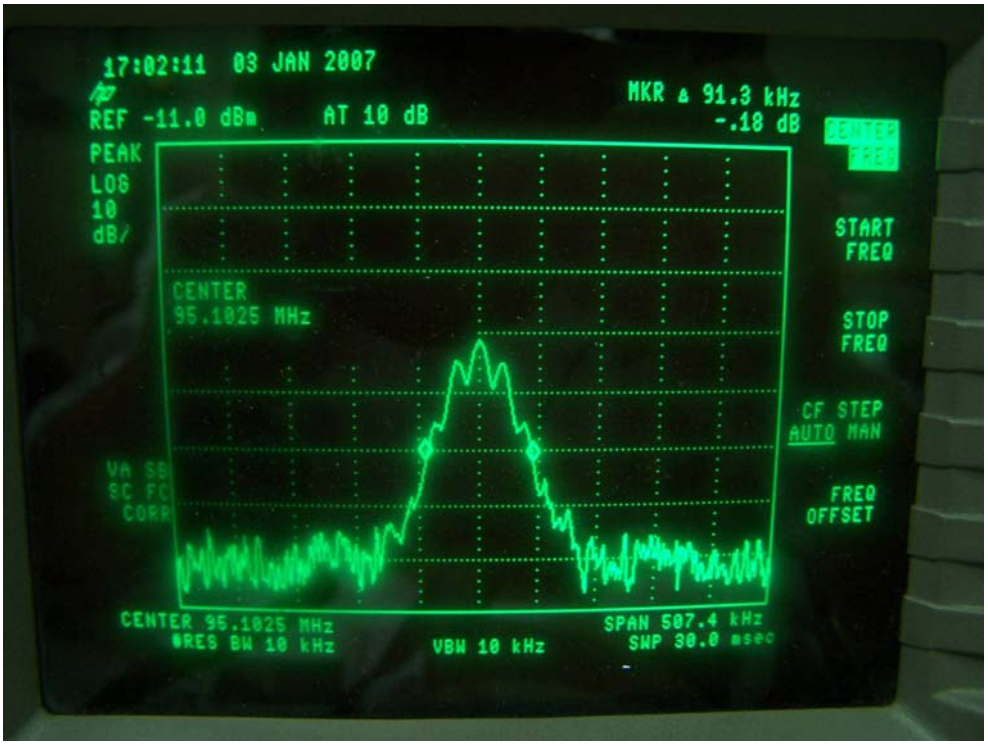
Same as 4.2 Radiated Emission Measurement.

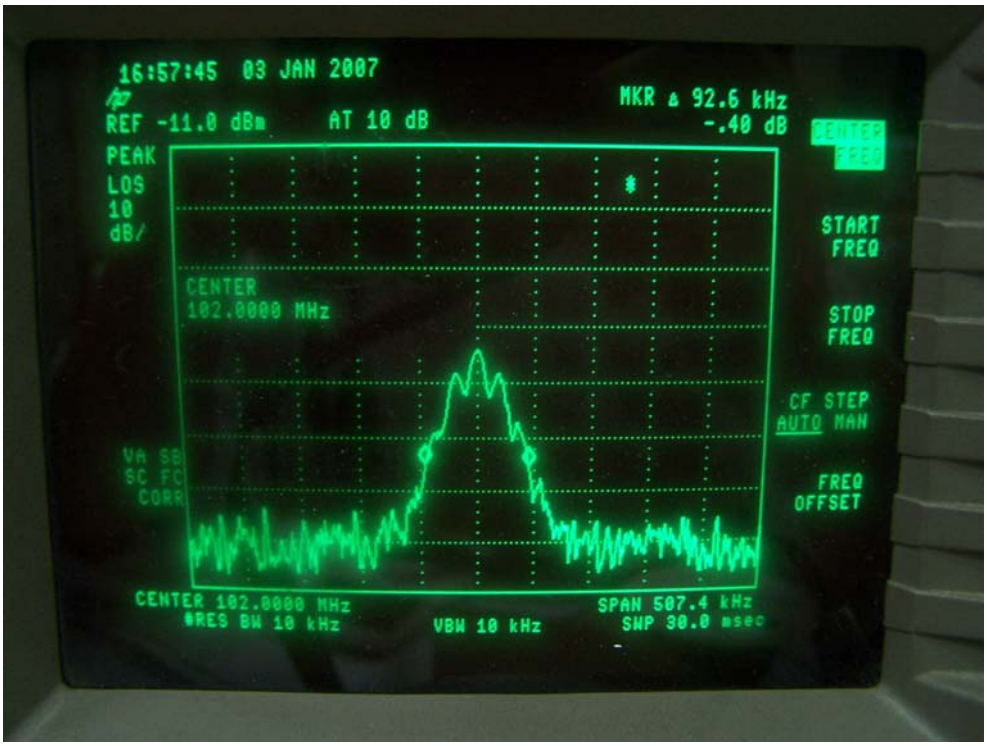
6.4 Measurement Results:

The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in section 15.209.
Refer to attached data chart.

Band Width Test Data





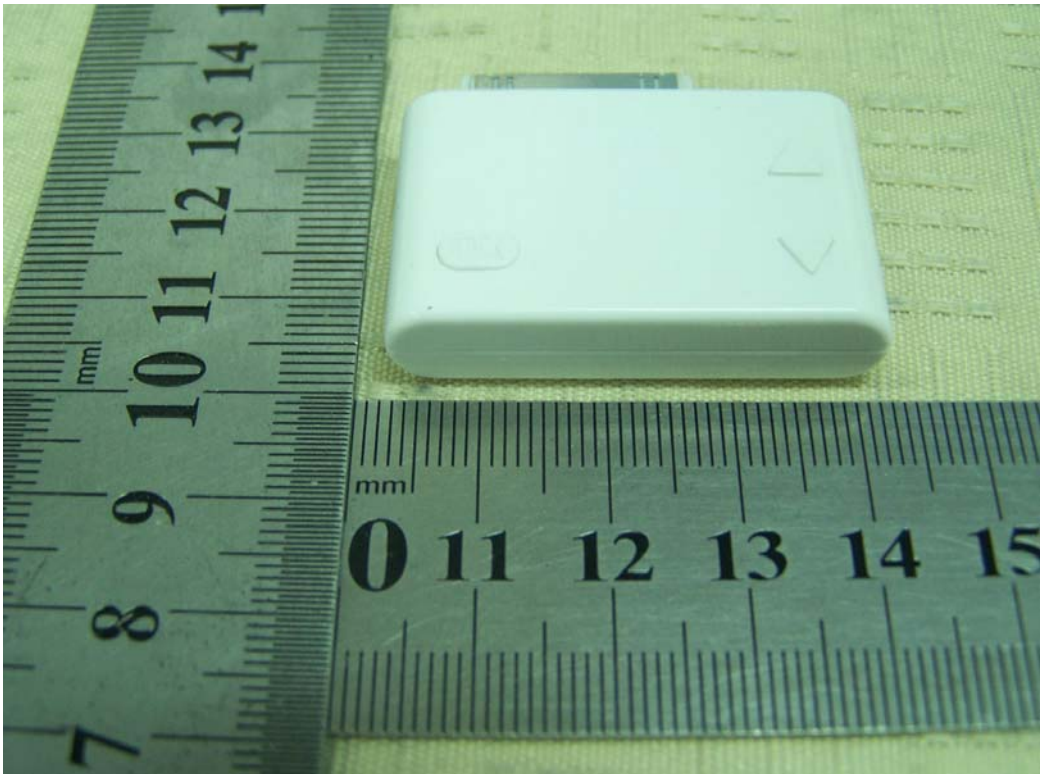

16:57:45 03 JAN 2007
MKR Δ 92.6 kHz
REF -11.0 dBm
AT 10 dB
-.40 dB
PEAK
LOG
10
dB/
CENTER
102.0000 MHz
START FREQ
STOP FREQ
CF STEP
AUTO MAN
FREQ OFFSET
VA SB
SC FC
CORR
CENTER 102.0000 MHz
#RES BW 10 kHz
VBW 10 kHz
SPAN 507.4 kHz
SWP 30.0 msec

Radiated Emission Setup Photos

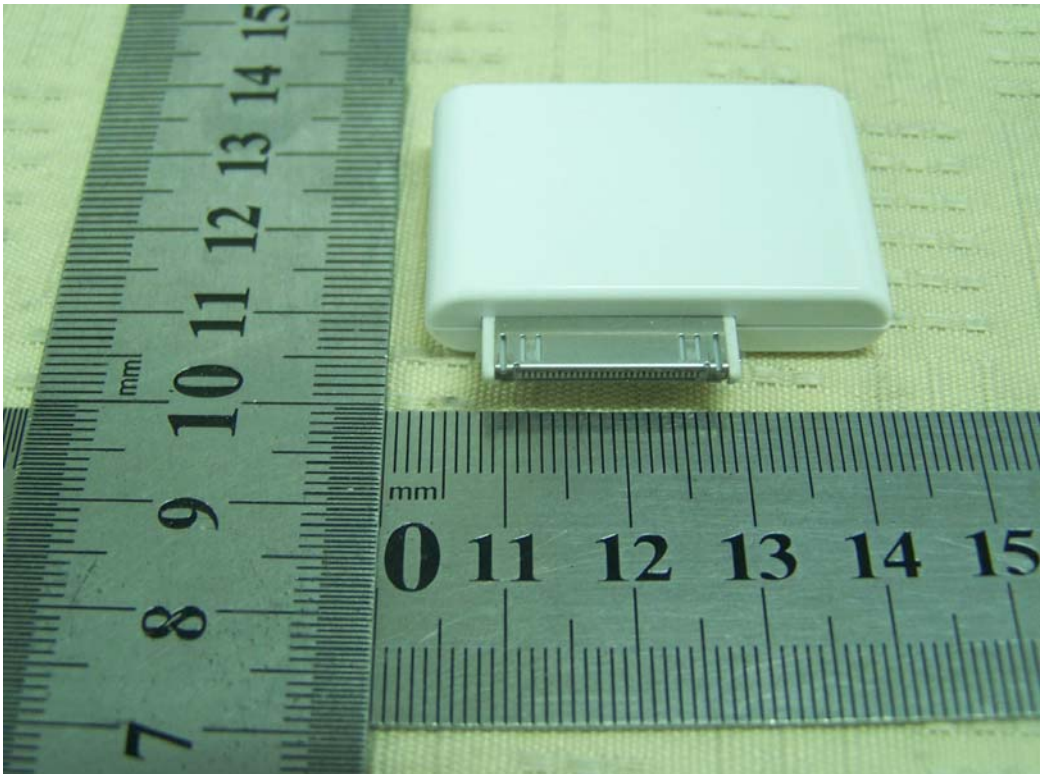
APPENDIX 1

PHOTOGRAPHS OF EUT

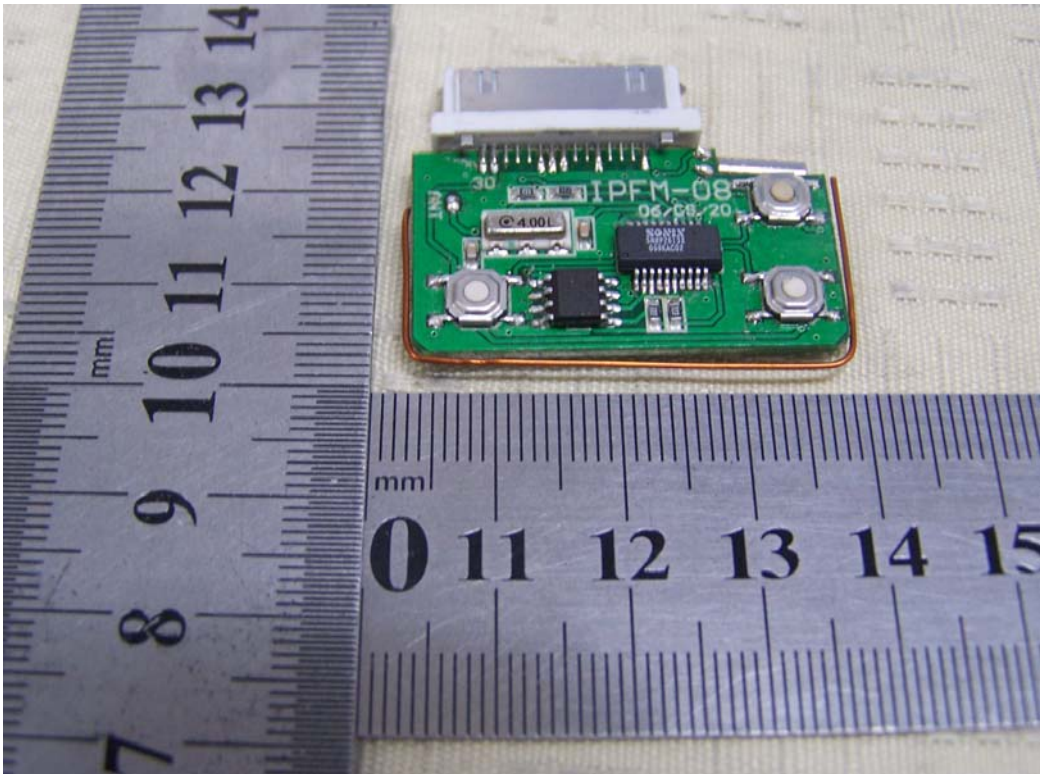
UP View of EUT



Bottom View of EUT



Internal of EUT



Internal of EUT