EMC TEST REPORT

For

Wireless Speaker System

Model Number: AST258TX-U,AST158TX-U,AST358TX-U,AST458TX-U, AST558TX-U,AST658TX-U,AST758TX-U,AST858TX-U, AST958TX-U,AST168TX-AU,AST268TX-AU,AST368TX-AU, AST468TX-AU,AST568TX-AU,AST668TX-AU,AST768TX-AU, AST868TX-AU,AST968TX-AU,AST168TX-U,AST268TX-U, AST368TX-U,AST468TX-U,AST568TX-U,AST668TX-U, AST768TX-U,AST868TX-U,AST968TX-U，AST238AV, AST512AV，AST288A-8

FCC ID: VK7AST258TX-U

Report Number ： WT078001428

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory Guangdong EMC Compliance Test Center
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TEST REPORT DECLARATION

Applicant	:	MAINSTAR ELECTRICAL COMPANY LTD.
Address	:	Room 40,12/F,Block D, Wah Lok ind'l Centre, Shan Mei Street, Fo Tan, Shatin, N.T. Hong Kong
Manufacturer	:	MAINSTAR ELECTRICAL COMPANY LTD.
Address	:	Block A5& A6,Chang An Wu Sha International Industrial Park,Chang an,Dongguan,Guangdong Province,China
EUT Description	:	Wireless Speaker System
Model Number	:	AST258TX-U,AST158TX-U,AST358TX-U,AST458TX-U,AST558TX-U, AST658TX-U,AST758TX-U,AST858TX-U,AST958TX-U,AST168TX-AU, AST268TX-AU,AST368TX-AU,AST468TX-AU,AST568TX-AU, AST668TX-AU,AST768TX-AU,AST868TX-AU,AST968TX-AU, AST168TX-U,AST268TX-U,AST368TX-U,AST468TX-U,AST568TX-U, AST668TX-U,AST768TX-U,AST868TX-U,AST968TX-U ， AST238AV,AST512AV，AST288A-8
FCC ID Number	:	VK7AST258TX-U

Test Standards:

FCC Part 15 15.207, 15.209, 15.249

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results. 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 FCC Rules Part 15.207, 15.209, 15.249.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Tested by:	Winnie Hou (Winnie Hou)	Date:	Aug. 20，2007
Checked by:	Louis Lin (Louis Lin)	Date:	Aug. 20，2007
Approved by:	Peter (Peter Lin)	Date:	Aug. 20，2007

1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
Conducted Disturbance	15.207	Pass
Radiated Disturbance	15.209, 15.249	Pass
Occupied Bandwidth	15.249	Pass
Band Edges	15.249	Pass
Antenna Requirement	15.203	Pass

2. GENERAL INFORMATION

2.1. Report information

2.1.1.This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.

2.1.2.The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.

2.1.3.Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Committee for Laboratories (**CNAL**) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is L0579.

The Laboratory is listed in the United States of American Federal Communications Commission (**FCC**), and the registration number are **97379**(open area test site) and **274801**(semi anechoic chamber).

The Laboratory is listed in Voluntary Control Council for Interference by Information Technology Equipment (**VCCI**), and the registration number are **R-1974**(open area test site) , **R-1966**(semi anechoic chamber),**C-2117**(mains ports conducted interference measurement) and **T-180**(telecommunication ports conducted interference measurement).

The Laboratory is registered to perform emission tests with Industry Canada (**IC**), and the registration number is **IC4174**.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is **E2024086Z02**.

Measurement Uncertainty

2.3. Measurement Uncertainty

Radiated Disturbance: 30MHz~1000MHz 4.5dB
1GHz~18GHz 4.6dB

3. PRODUCT DESCRIPTION

3.1. EUT Description

Description	:	Wireless Speaker System
Manufacturer	:	MAINSTAR ELECTRICAL COMPANY LTD.
Model Number	:	AST258TX-U,AST158TX-U,AST358TX-U,AST458TX-U, AST558TX-U,AST658TX-U,AST758TX-U,AST858TX-U, AST958TX-U,AST168TX-AU,AST268TX-AU,AST368TX-AU,AST468TX-AU,AST568TX-AU,AST668TX-AU,AST768TX-AU,AST868TX-AU,AST968TX-AU,AST168TX-U,AST268TX-U,AST368TX-U,AST468TX-U,AST568TX-U, AST668TX-U,AST768TX-U,AST868TX-U,AST968TX-U， AST238AV,AST512AV，AST288A-8
Operate Frequency	:	2401.075MHz, 2402.875MHz, 2404.675MHz, 2405.875MHz
Modulation	:	FM
Antenna Designation	:	Integrated
Remark	:	AST258TX-U series products, they are identical in schematic, construction and critical components but different enclosure color and clients, we have done pretest on all models and model AST258TX-U is the worst. So, AST258TX-U is selected as representative model, the following test data is based on AST258TX-U.

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

This submittal(s) (test report) is intended for FCC ID: VK7AST258TX-U filing to comply with Section 15.207, 15.209, 15.249 of the FCC Part 15, Subpart C Rules.

3.3. Block Diagram of EUT Configuration

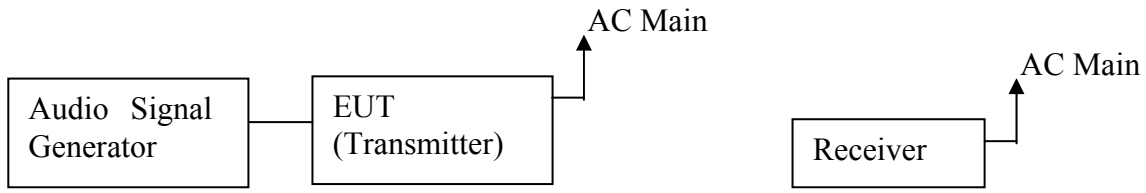


Figure 1 EUT setup 1

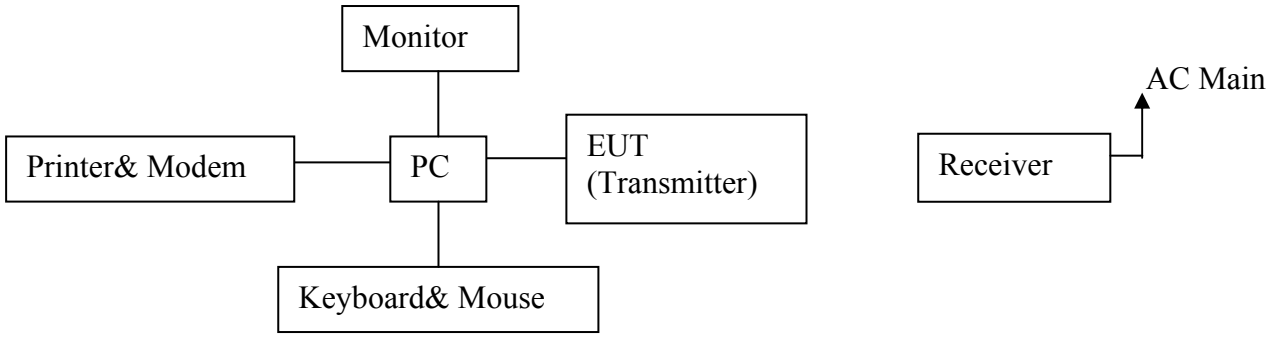


Figure 2 EUT setup 2

3.4. Operating Condition of EUT

Mode 1: Transmitting at 2401.075MHz
Mode 2: Transmitting at2405.875MHz
Mode 3: Connect to PC

3.5. Test voltage

AC main voltage: AC 120V/60Hz
Battery: DC3V (new battery)

3.6. Special Accessories

Not available for this EUT intended for grant.

3.7. Equipment Modifications

Not available for this EUT intended for grant.

3.8. Support Equipment List

Table 2 Support Equipment

Name	Model Number	S/N	Manufacture
PC	P9111A #AB2	CN31104346	COMPAQ
Monitor(LCD)	P4825	CN3087A026	COMPAQ
Adaptor for Monitor	PA-1400-02	3101571101LN	LITEON
Keyboard(PS2)	KB-0133	CT:B55930DGANN3NU	COMPAQ
Mouse(PS2)	M-S69	CT:F466BOMMSNS05J2	COMPAQ
Printer	BJC-265SP	EVX81604	CANON
Adapter for Printer	AD-300	--	CANON
Modem	56000BPS	200060057	KPT
Adapter for Modem	AM-1280AV	--	KPT
Wireless technology receiver	AST528A-U	--	MAINSTAR ELECTRICAL COMPANY
Adaptor	3P10-N0508	--	H.T.E. Power Suply

3.9. Test Conditions

Date of test：July 23, 2007- Aug. 13, 2007
Date of EUT Receive：July 20, 2007
Temperature: 25 ℃
Relative Humidity: 58%

4. TEST EQUIPMENT USED

Table 3 Test Equipment

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	Jan.25, 2007	1 Year
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	Jan.25, 2007	1 Year
SB2604	AMN	Rohde & Schwarz	ESH3-Z5	Jan.25, 2007	1 Year
SB3612	Audio generator	KENWOOD	AD-203D	July 2, 2007	1 Year
SB3436	EMI Test Receiver	Rohde & Schwarz	ESI26	Jan.25, 2007	1 Year
SB3440	Bilog Antenna	Chase	CBL6112B	Jan.25, 2007	1 Year
SB3435	Horn Antenna	Rohde & Schwarz	HF906	Jan.25, 2007	1 Year
SB3435/01	Amplifier(1-18GHz)	Rohde & Schwarz	---	Jan.25, 2007	1 Year
SB3435/02	Amplifier(18-40GHz)	Rohde & Schwarz	---	May.05, 2007	1 Year
SB3435/03	Horn Antenna	Rohde & Schwarz	AT4560	May.05, 2007	1 Year
SB3450/01	3m Semi-anechoic chamber	Albatross Projects	9X6X6	Jan.25, 2007	1 Year

5. CONDUCTED DISTURBANCE TEST

5.1. Test Standard and Limit

5.1.1.Test Standard

FCC Part 15 15.207

5.1.2.Test Limit

Table 4 Conducted Disturbance Test Limit (Class B)

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

- Decreasing linearly with logarithm of the frequency
- The lower limit shall apply at the transition frequency.

5.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. According to the requirements in Section 7 and 13 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. The bandwidth of EMI test receiver is set at 9kHz.

5.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

5.4. Test Data

Mode1 is the worse case in mode1 and mode2, so, test result of mode1 are listed in the following.

EUT are supply by USB port in mode3, so, ac mains of computer are tested in mode3.

Table 5 Conducted Disturbance Test Data (AC Mains of EUT)

Model：AST258TX-U

Mode: 1

Line							
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.230	9.8	45.2	55.0	62.4	33.3	43.1	52.4
0.465	9.8	37.4	47.2	56.6	27.1	36.9	46.6
1.155	9.9	31.8	41.7	56	14.8	24.7	46
1.400	9.9	31.2	41.1	56	14.6	24.5	46
1.630	9.9	30.0	39.9	56	13.5	23.4	46
2.075	10.0	30.7	40.7	56	17.3	27.3	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

Table 6 Conducted Disturbance Test Data (AC Mains of EUT)

Model：AST258TX-U

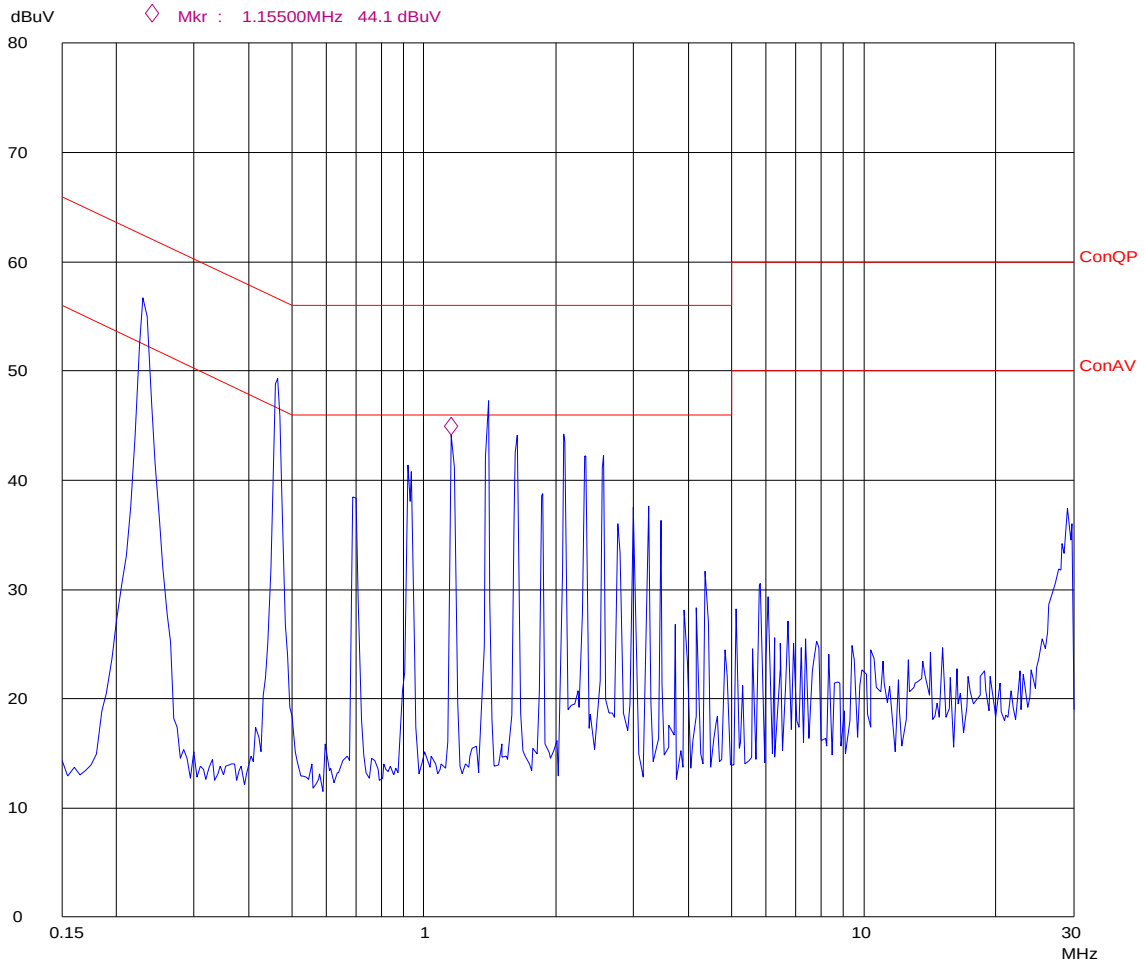
Mode: 1

Neural							
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.230	9.8	43.1	52.9	62.4	28.6	38.4	52.4
0.465	9.8	33.6	43.4	56.6	16.5	26.3	46.6
0.925	9.9	30.8	40.7	56	11.6	21.5	46
1.160	9.9	27.9	37.8	56	6.4	16.3	46
1.390	9.9	32.6	42.5	56	11.1	21.0	46
2.090	10.0	18.6	28.6	56	-2.4	7.6	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

Conducted Disturbance

EUT: M/N:AST258TX-U
Op Cond: Transmitting at 2401.075MHz
Test Spec: L
Comment: AC 120V/60Hz



Conducted Disturbance

EUT: M/N:AST258TX-U
Op Cond: Transmitting at 2401.075MHz
Test Spec: N
Comment: AC 120V/60Hz

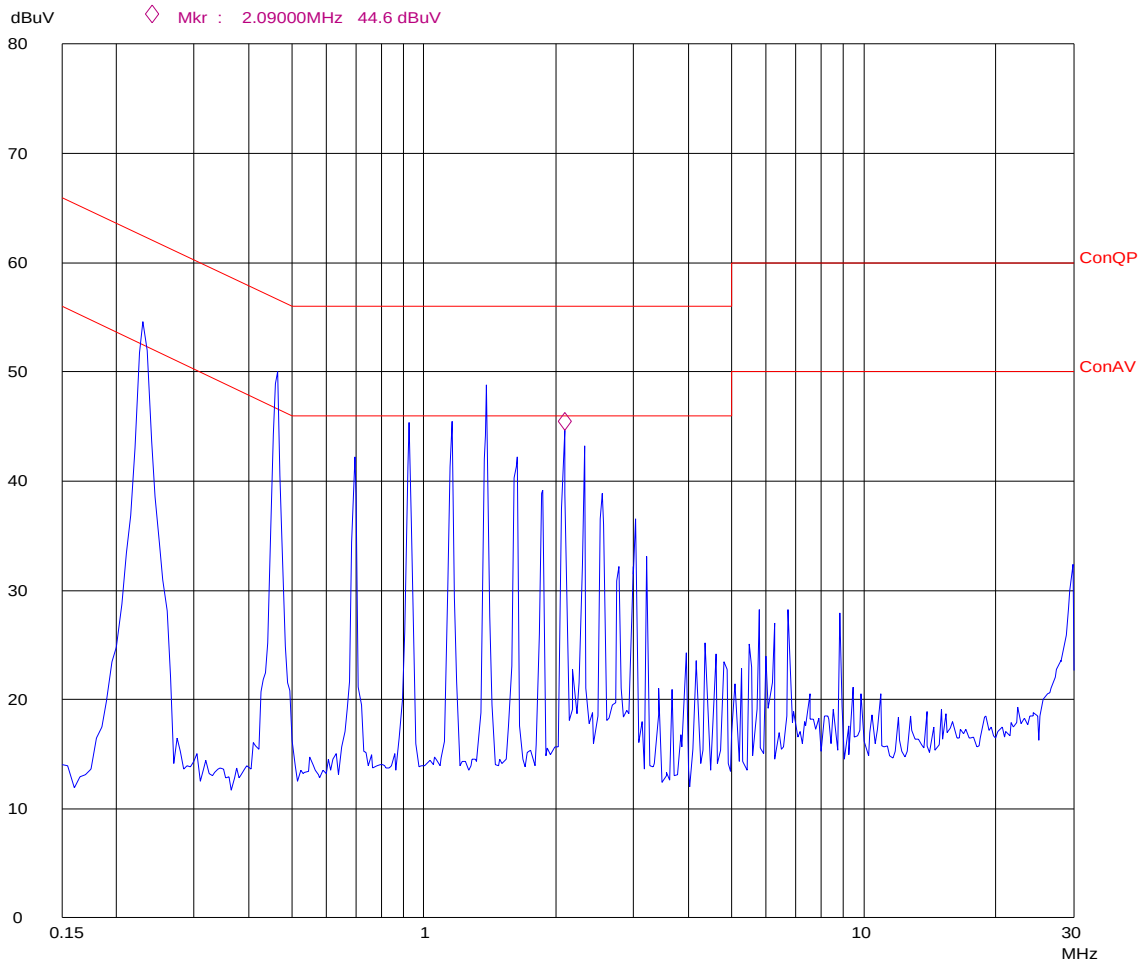


Table 7 Conducted Disturbance Test Data (AC mains of computer)

Model：AST258TX-U

Mode: 3

Line							
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.230	9.8	45.2	55.0	62.4	33.3	43.1	52.4
0.465	9.8	37.4	47.2	56.6	27.1	36.9	46.6
1.400	9.9	31.8	41.7	56	14.8	24.7	46
1.630	9.9	31.2	41.1	56	14.6	24.5	46
2.075	10.0	29.9	39.9	56	13.4	23.4	46
1.155	9.9	30.8	40.7	56	17.4	27.3	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

Table 8 Conducted Disturbance Test Data (AC mains of computer)

Model：AST258TX-U

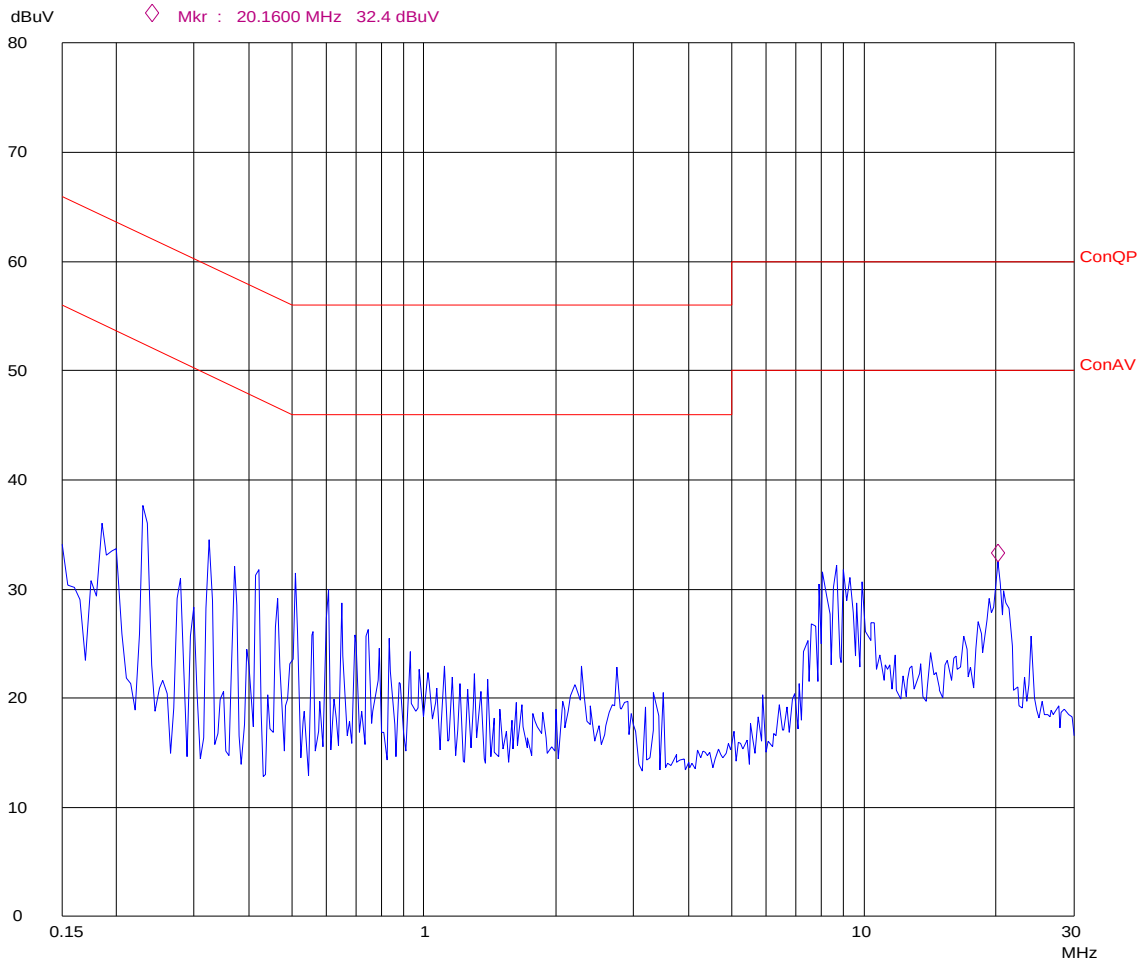
Mode: 3

Neural							
Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
		Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)
0.230	9.8	43.1	52.9	62.4	28.6	38.4	52.4
0.465	9.8	33.6	43.4	56.6	16.5	26.3	46.6
0.925	9.9	30.8	40.7	56	11.6	21.5	46
1.160	9.9	27.9	37.8	56	6.4	16.3	46
1.390	9.9	32.6	42.5	56	11.1	21.0	46
2.090	10.0	18.6	28.6	56	-2.4	7.6	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

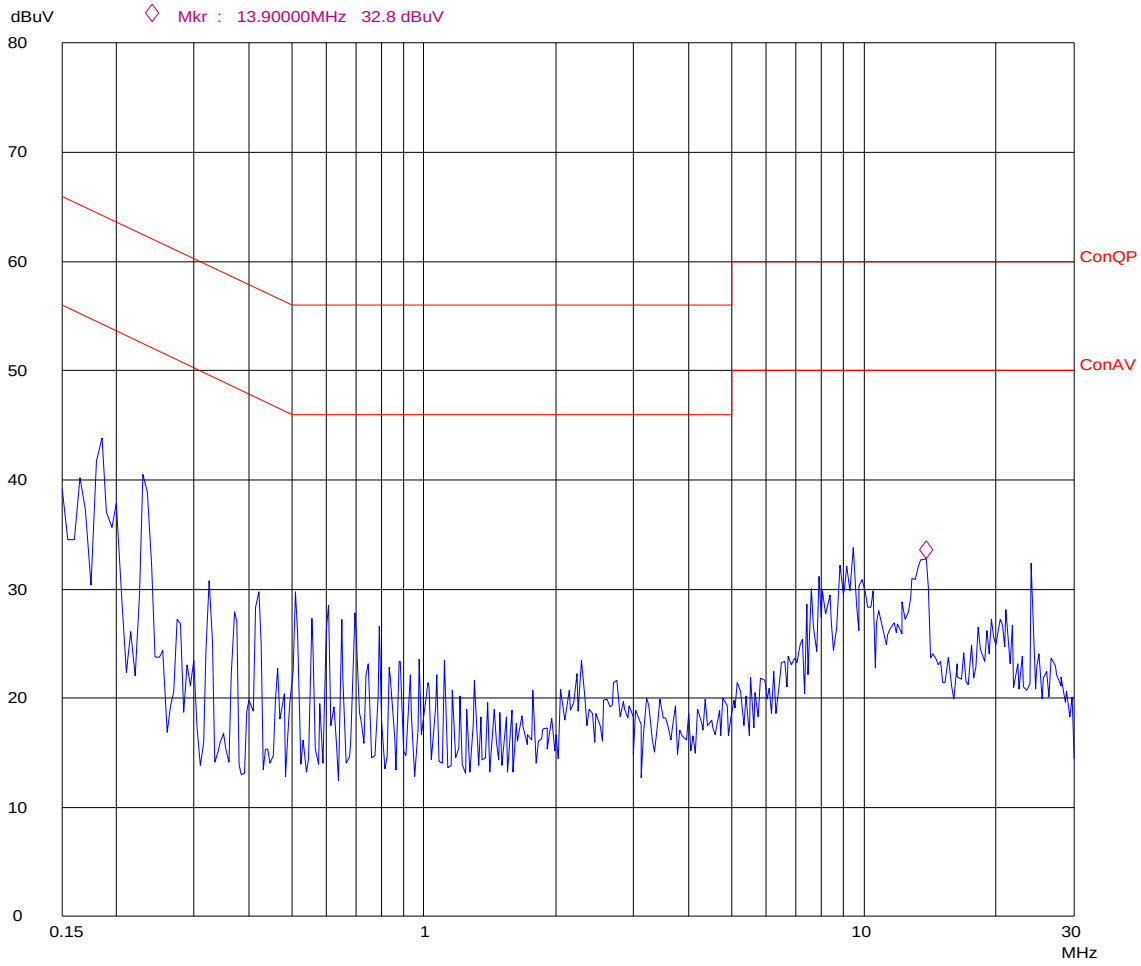
Conducted Disturbance

EUT: M/N:AST258TX-U
Op Cond: Connect to PC
Test Spec: L
Comment: AC 120V/60Hz



Conducted Disturbance

EUT: M/N:AST258TX-U
Op Cond: Connect to PC
Test Spec: N
Comment: AC 120V/60Hz



6. RADIATED DISTURBANCE TEST

6.1. Test Standard and Limit

6.1.1.Test Standard

FCC Part 15 15.249, 15.209

6.1.2.Test Limit

Table 9 Radiated Disturbance Test Limit

FREQUENCY MHz	FIELD STRENGTHS LIMITS （μV/m)	FIELD STRENGTHS LIMITS dB (μV/m)
Fundamental	50000	94.0
Harmonics	500	54.0
30 ~ 88	100	40.0
88 ~ 216	150	43.5
216 ~ 960	200	46.0
960 ~	500	54.0

* The lower limit shall apply at the transition frequency.
* The test distance is 3m.

6.2. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. 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 8 and13 of ANSI C63.4-2003.

Radiated test was performed on the frequency range from 30MHz to 25GHz. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz，VBW ≥RBW. All readings above 1 GHz are AV and PK values。RBW=1MHz and VBW=10Hz for AV value，RBW=1MHz and VBW≥RBW for peak value.
Measurements were made at 3 meters

6.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

6.4. Test Data

Table 10 Radiated Disturbance Test Data

Model number: AST258TX-U Mode:1								
Frequency (MHz)	Polarization	Reading Value (dBμV)	Correction Factor (dB)	Antenna Factor (dB/m)	Emission Level dB (μV/m)	Limits dB (μV/m)	Test voltage	Note
2401.087	V	86.3	-32.2	28.5	82.6	114.0	AC120V	PK
2401.087	V	86.1	-32.2	28.5	82.4	94.0	AC120V	AV
2401.087	H	94.4	-32.2	28.5	90.7	114.0	AC120V	PK
2401.087	H	94.2	-32.2	28.5	90.5	94.0	AC120V	AV
6014.613	H	54.0	-29.5	35.4	59.9	74.0	AC120V	PK
6014.613	H	40.5	-29.5	35.4	46.4	54.0	AC120V	AV
2401.087	H	92.4	-32.2	28.5	88.7	114.0	AC102V	PK
2401.087	H	90.2	-32.2	28.5	86.5	94.0	AC102V	AV
2401.087	V	84.6	-32.2	28.5	80.9	114.0	AC102V	PK
2401.087	V	82.8	-32.2	28.5	79.1	94.0	AC102V	AV
2401.087	H	93.3	-32.2	28.5	89.6	114.0	AC138V	PK
2401.087	H	91.7	-32.2	28.5	88.0	94.0	AC138V	AV
2401.087	V	85.7	-32.2	28.5	82.0	114.0	AC138V	PK
2401.087	V	85.1	-32.2	28.5	81.4	94.0	AC138V	AV
2401.087	H	91.2	-32.2	28.5	87.5	114.0	DC3V(new battery)	PK
2401.087	H	89.3	-32.2	28.5	85.6	94.0	DC3V(new battery)	AV
2401.087	V	84.1	-32.2	28.5	80.4	114.0	DC3V(new battery)	PK
2401.087	V	82.3	-32.2	28.5	78.6	94.0	DC3V(new battery)	AV

Note: 1. Emission level(dBuV/m)=Reading Value(dBuV) + Correction Factor(dB/m)+ Antenna Factor (dB/m)

2. Correction Factor(dB/m) = Cable Factor (dB)+Amplifier Factor(dB)

3. The other emission levels were less than the limit 20dB

Table 11 Radiated Disturbance Test Data

Model number: AST258TX-U Mode:2								
Frequency (MHz)	Polariz ation	Reading Value (dBμV)	Correction Factor (dB)	Antenna Factor (dB/m)	Emission Level dB (μV/m)	Limits dB (μV/m)	Test voltage	Note
2405.857	H	91.5	-32.2	28.5	87.8	114.0	AC120V	PK
2405.857	H	91.3	-32.2	28.5	87.6	94.0	AC120V	AV
6014.613	H	57.7	-29.5	35.4	63.6	74.0	AC120V	PK
6014.613	H	47.6	-29.5	35.4	53.5	54.0	AC120V	AV
2405.857	V	85.2	-32.2	28.5	81.5	114.0	AC120V	PK
2405.857	V	85.0	-32.2	28.5	81.3	94.0	AC120V	AV
2405.857	H	91.2	-32.2	28.5	87.5	114.0	AC102V	PK
2405.857	H	90.5	-32.2	28.5	86.8	94.0	AC102V	AV
2405.857	V	84.4	-32.2	28.5	80.7	114.0	AC102V	PK
2405.857	V	83.8	-32.2	28.5	80.1	94.0	AC102V	AV
2405.857	H	91.7	-32.2	28.5	88.0	114.0	AC138V	PK
2405.857	H	91.1	-32.2	28.5	87.4	94.0	AC138V	AV
2405.857	V	85.6	-32.2	28.5	81.9	114.0	AC138V	PK
2405.857	V	85.0	-32.2	28.5	81.3	94.0	AC138V	AV
2405.857	H	90.4	-32.2	28.5	86.7	114.0	DC3V(new battery)	PK
2405.857	H	89.5	-32.2	28.5	85.8	94.0	DC3V(new battery)	AV
2405.857	V	84.1	-32.2	28.5	80.4	114.0	DC3V(new battery)	PK
2405.857	V	82.3	-32.2	28.5	78.6	94.0	DC3V(new battery)	AV

Note: 1. Emission level(dBuV/m)=Reading (dBuV) + Correction Factor(dB/m)+ Antenna Factor (dB/m)
2. Correction Factor(dB/m) = Cable Factor (dB)+Amplifier Factor(dB)
3. The other emission levels were less than the limit 20dB

Table 12 Radiated Disturbance Test Data

Model number: AST258TX-U

Mode:3

Frequency (MHz)	Polariz ation	Reading Value (dBμV)	Correction Factor (dB)	Antenna Factor (dB/m)	Emission Level dB (μV/m)	Limits dB (μV/m)	Test voltage	Note
35.992	V	19.9	1.2	16.5	37.6	40.0	USB	QP
48.012	V	29.8	1.2	8.5	39.5	40.0	USB	QP
60.025	V	32.5	1.4	5.9	39.8	40.0	USB	QP
468.071	V	20.1	3.6	17.4	41.1	46.0	USB	QP
492.075	V	21.0	3.7	17.6	42.3	46.0	USB	QP
59.738	H	33.2	1.2	5.3	39.7	40.0	USB	QP
468.070	H	24.6	3.6	17.4	45.6	46.0	USB	QP
2401.087	V	84.1	-32.2	28.5	80.4	114.0	USB	PK
2401.087	V	85.0	-32.2	28.5	81.3	94.0	USB	AV
2401.087	H	93.2	-32.2	28.5	89.5	114.0	USB	PK
2401.087	H	92.4	-32.2	28.5	88.7	94.0	USB	AV
6014.615	H	55.3	-29.5	35.4	61.2	74.0	USB	PK
6014.615	H	41.7	-29.5	35.4	47.6	54.0	USB	AV

Note: 1. Emission level(dBuV/m)=Reading (dBuV) + Correction Factor(dB/m)+ Antenna Factor (dB/m)

2. Correction Factor(dB/m) = Cable Factor (dB)+Amplifier Factor(dB)

3. The other emission levels were less than the limit 20dB

Table 13 Restricted Band Radiated Emission Data

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
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	
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	
6.31175 - 6.31225	123 - 138	2200 - 2300	
8.291 - 8.294	149.9 - 150.05	2310 - 2390	
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	
12.29 - 12.293	167.72 - 173.2	3332 - 3339	
12.51975 - 12.52025	240 - 285	3345.8 - 3358	
12.57675 - 12.57725	322 - 335.4	3600 - 4400	
13.36 - 13.41			

All the emissions of the above band are 20dB less than the limit.

7. OCCUPIED BANDWIDTH

7.1. Test Standard and Limit

7.1.1.Test Standard

FCC Part 15 15.249

7.2. Test Procedure

The EUT was placed on a turn table which is 0.8m above ground plane.
Set EUT as normal operation
Set EMI test receiver (ESIB26) Center Frequency = fundamental frequency,
RBW≥bandwidth,VBW≥RBW.
Set EMI test receiver (ESIB26) Max hold. Mark peak, -26dB.

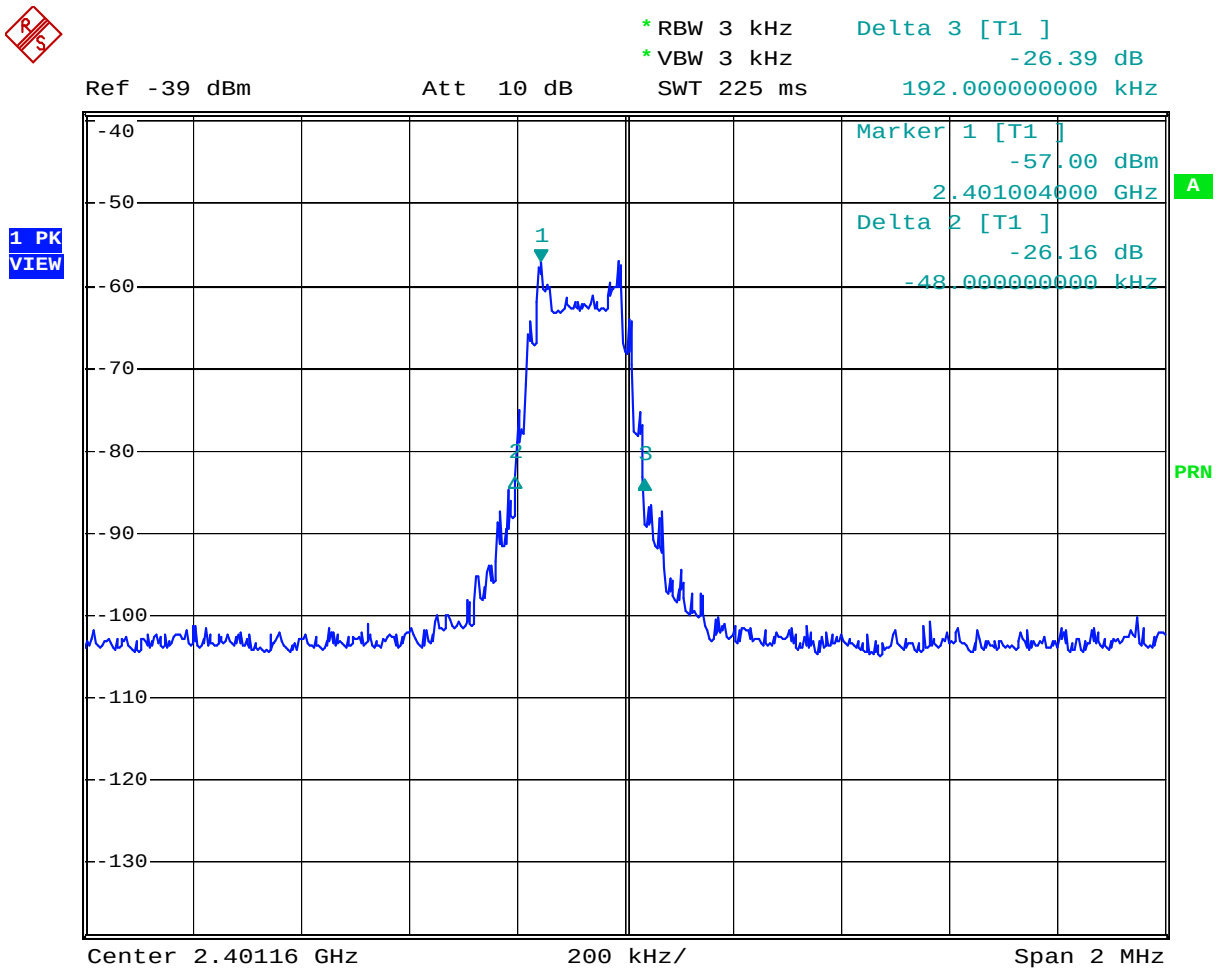
7.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

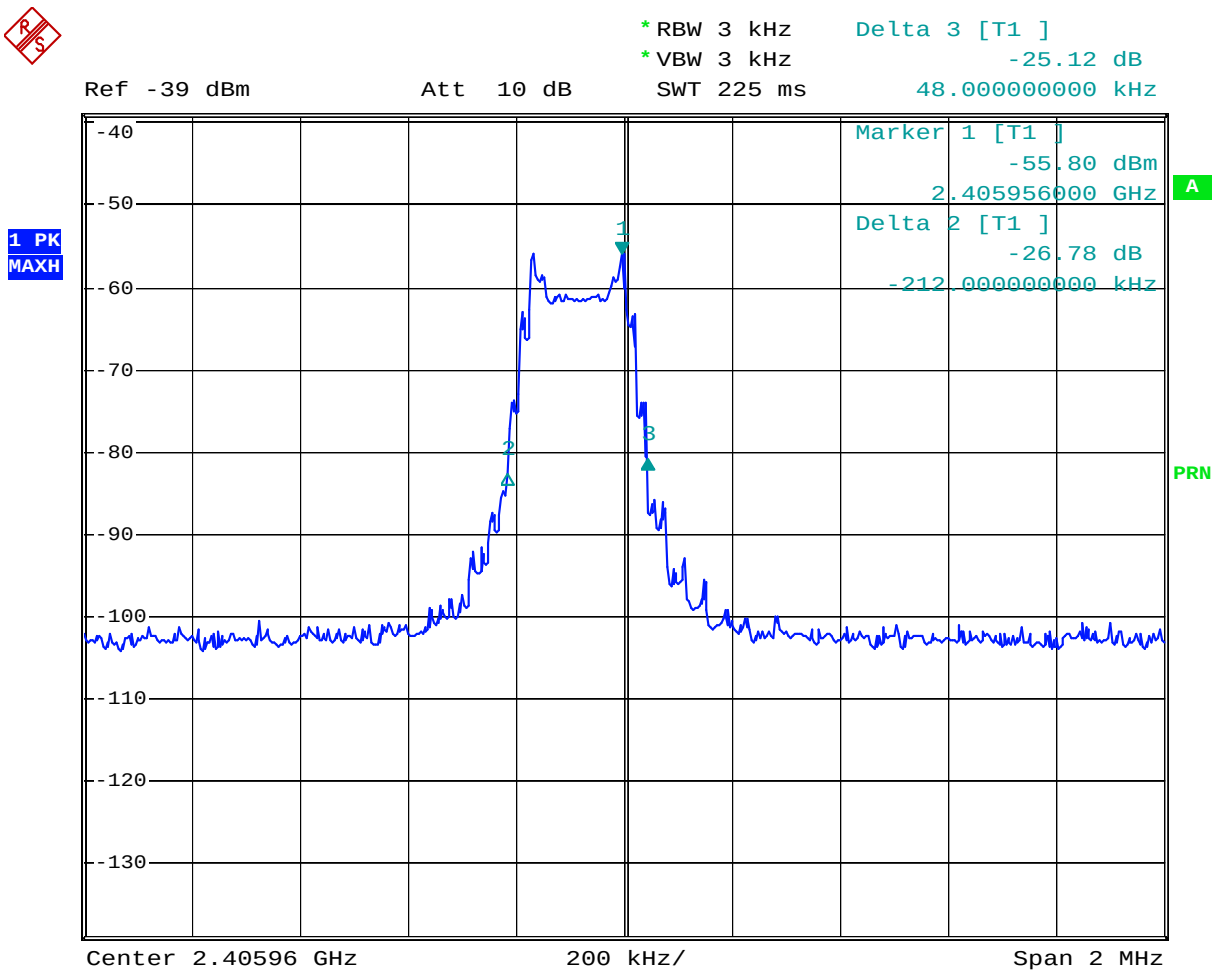
7.4. Test Data

26dB bandwidth in mode1 is 240.0 kHz

26dB bandwidth in mode2 is 260.0 kHz



Comment: Conducted Disturbance
Date: 27.JUN.2007 15:30:21



Comment: Conducted Disturbance
Date: 27.JUN.2007 15:34:20

8. BAND EDGE

8.1. Test Standard and Limit

8.1.1.Test Standard

FCC Part 15 15.249

8.2. Band Edge FCC 15.249(d) Limit

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation

8.3. Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instruments. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Measure the highest amplitude appearing on spectral display and set it as reference level. Plot the graph with marking the highest point and edge frequency.
4. Repeat above procedures until all measured frequencies were complete.

8.4. Test Arrangement

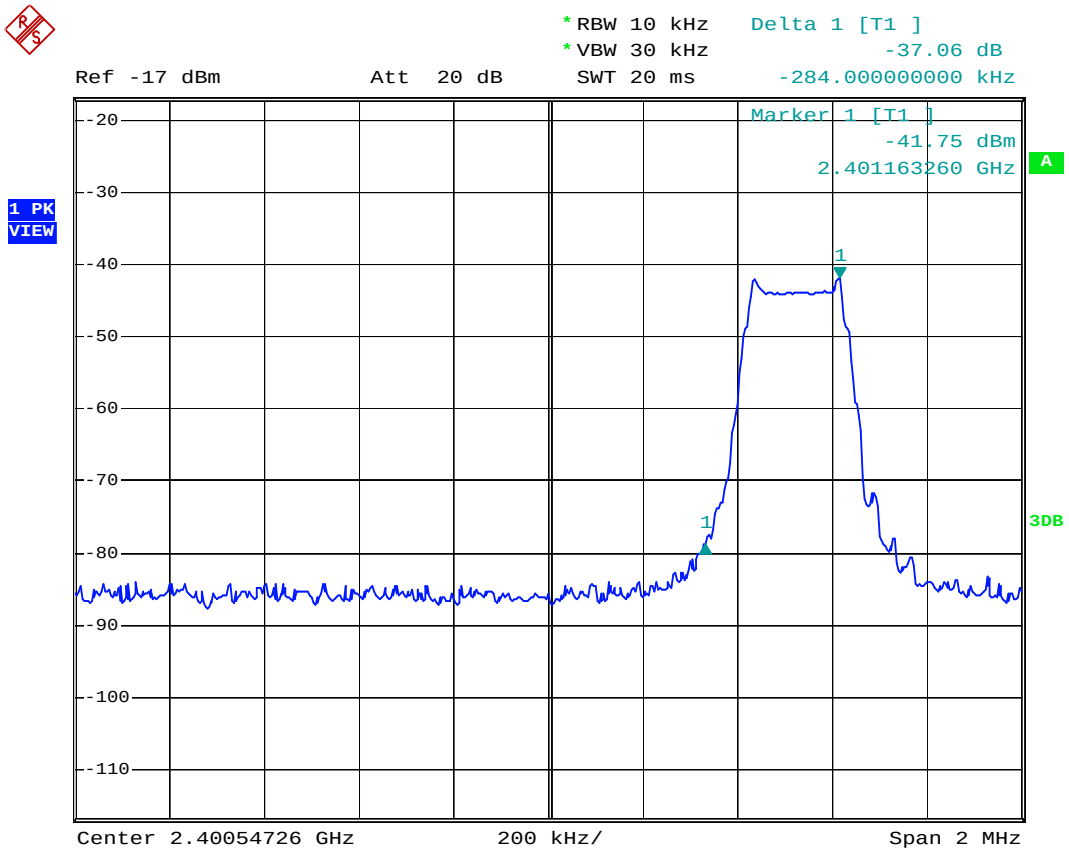
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

8.5. Test Data

All the emission outside 2.4GHz to 2.4835GHz is lower than 54 dB (μ V/m).

NOTE 1: The band edge emission plot shows low frequency is 2400.879MHz，which is higher than 2400MHz limit.

NOTE 2: The band edge emission plot shows high frequency is 2406.072MHz，which is lower than 2483.5MHz limit.



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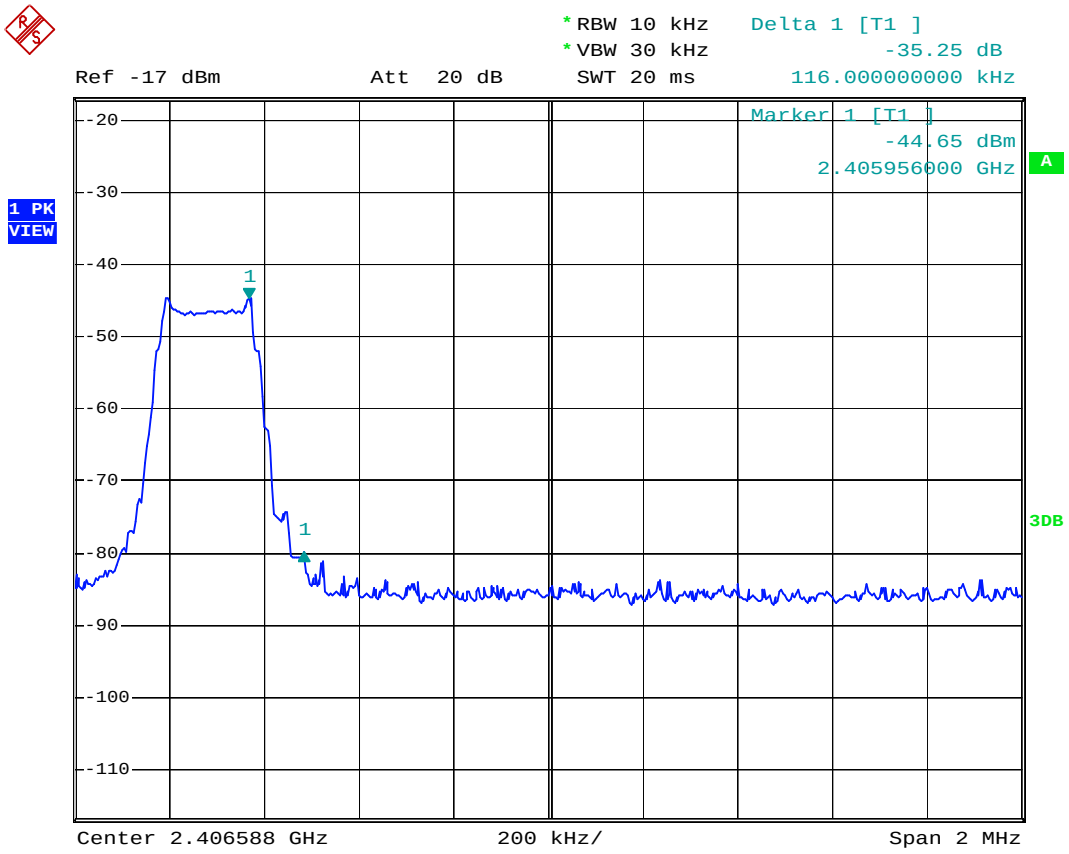
Date: 10.AUG.2007 11:59:46



UB-8H

Date: 10.AUG.2007 12:05:02

9. ANTENNA REQUIREMENT

9.1. STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

9.2. ANTENNA CONNECTED CONSTRUCTION

The EUT has a built in antenna which is integrated on the PCB, this is permanently attached antenna and meets the requirements of this section.

APPENDIX I TEST PHOTO

Photo 1 Conducted Emission Test

Photo2 Conducted Emission Test

Photo 3 Radiated Emission Test

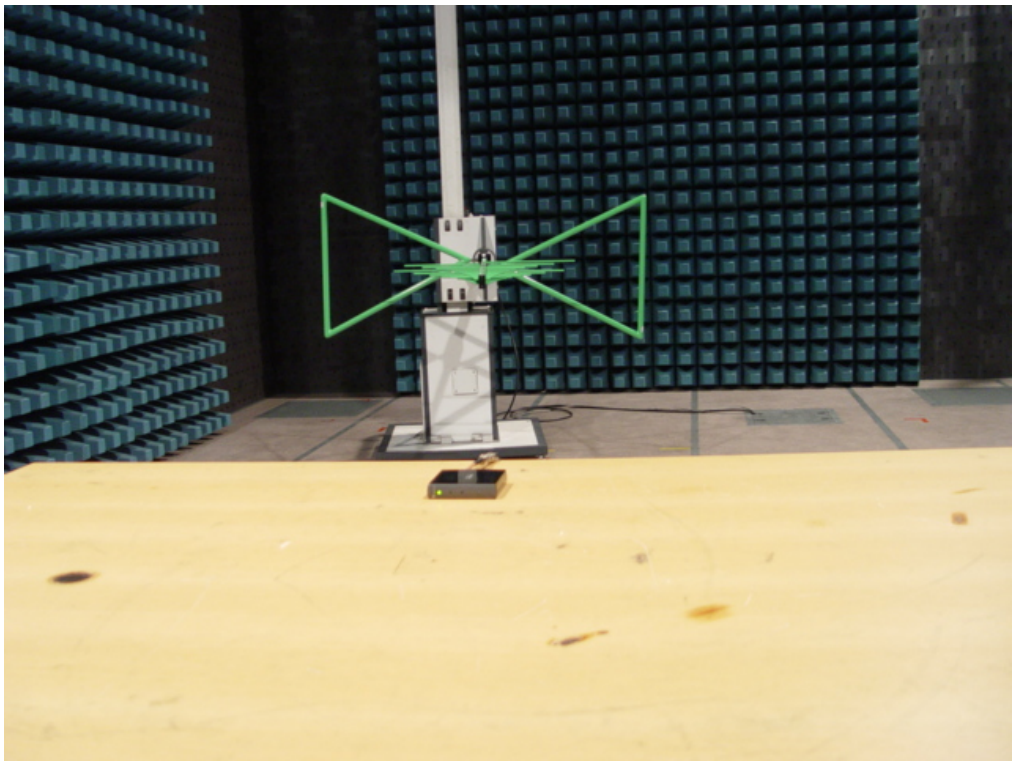


Photo 4 Radiated Emission Test

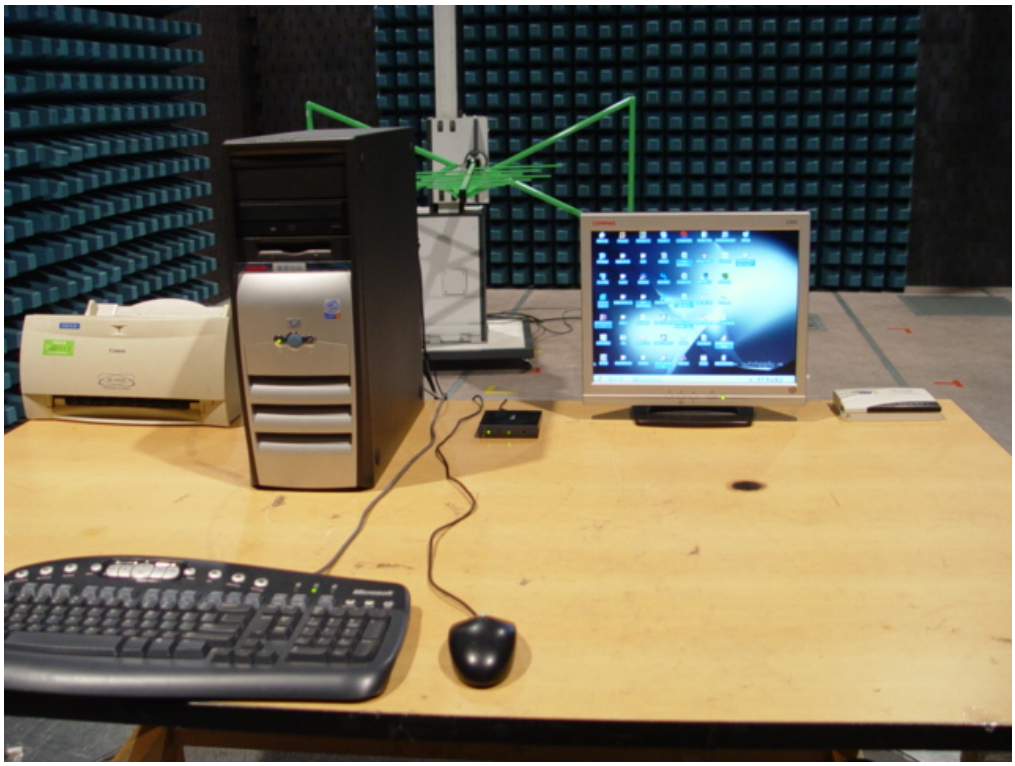
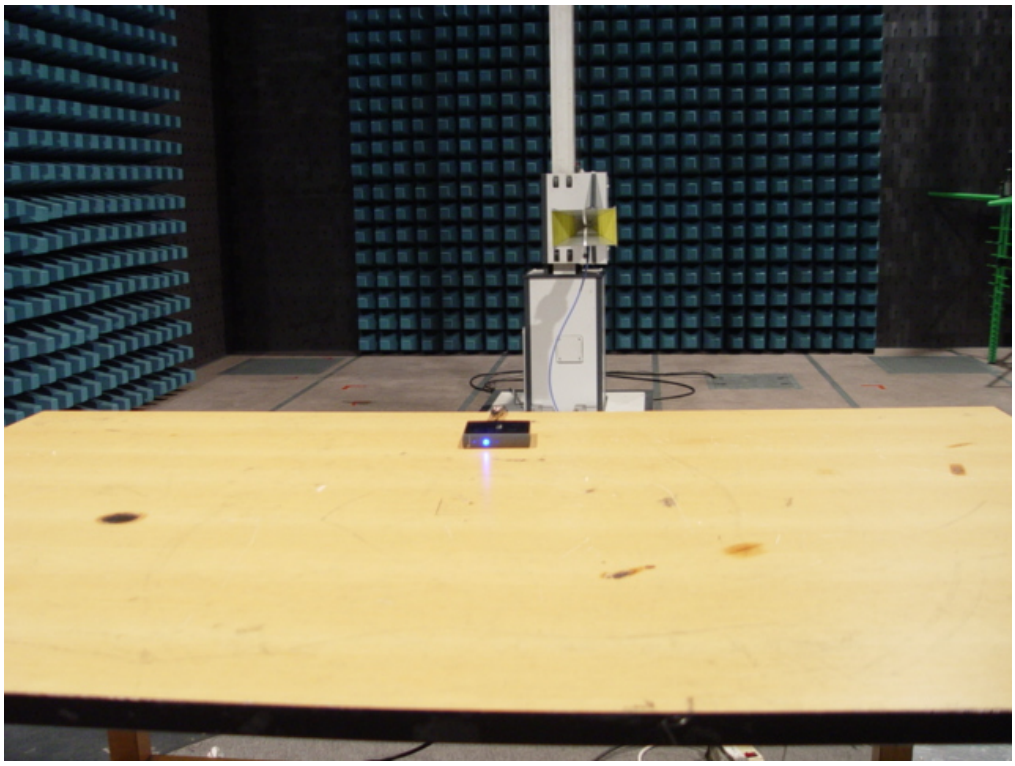


Photo 5 Radiated Emission Test



APPENDIX II EUT PHOTO

Photo 1 Appearance of EUT

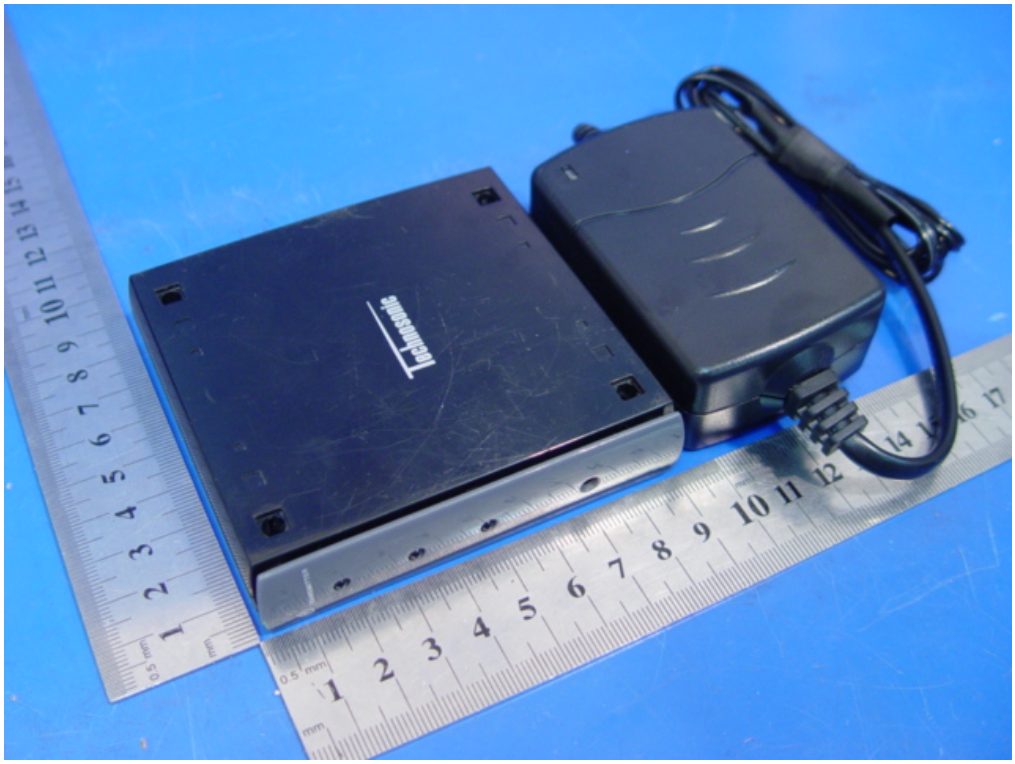


Photo 2 Appearance of EUT

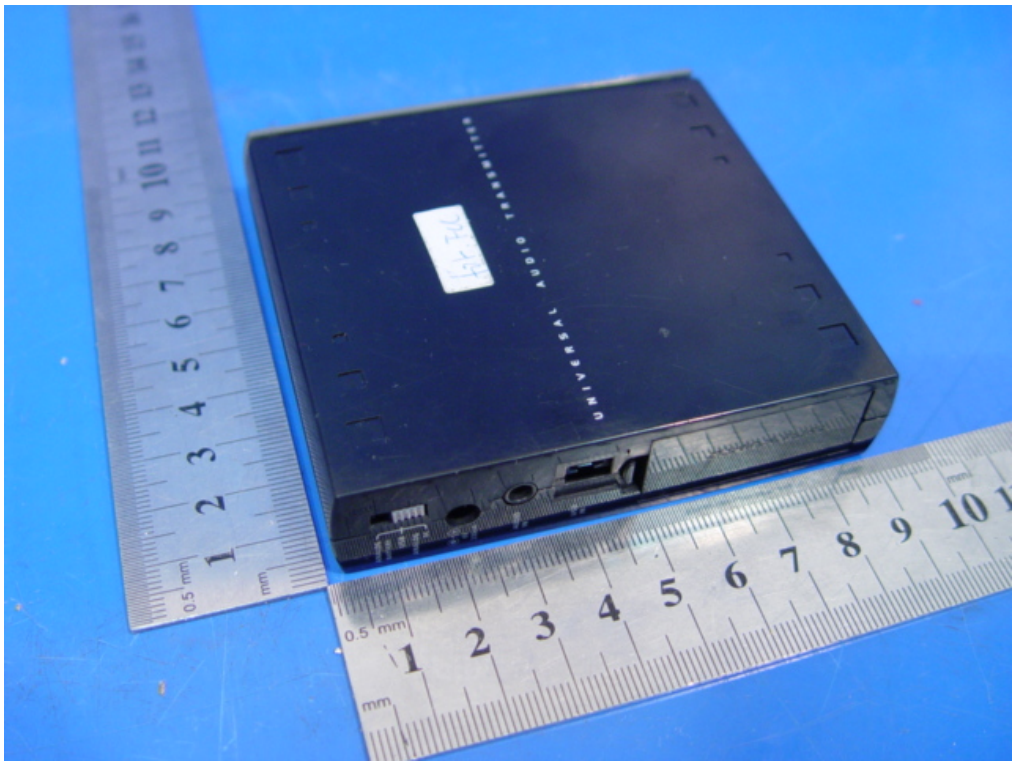


Photo 3 Inside of EUT

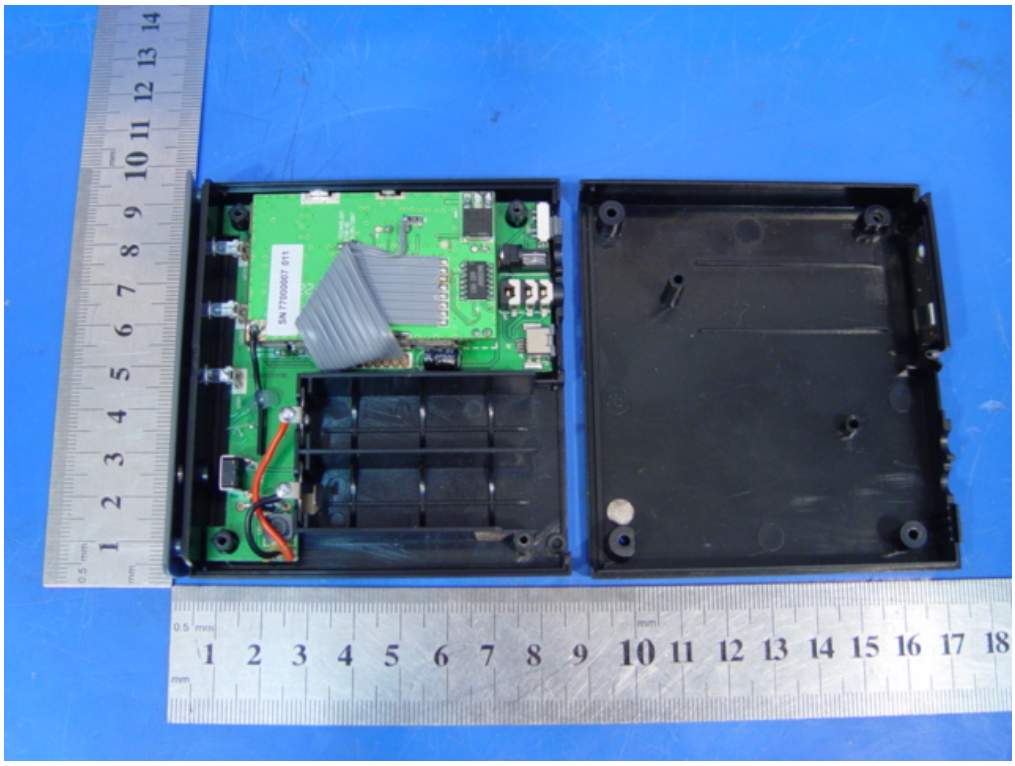


Photo 4 Inside of EUT

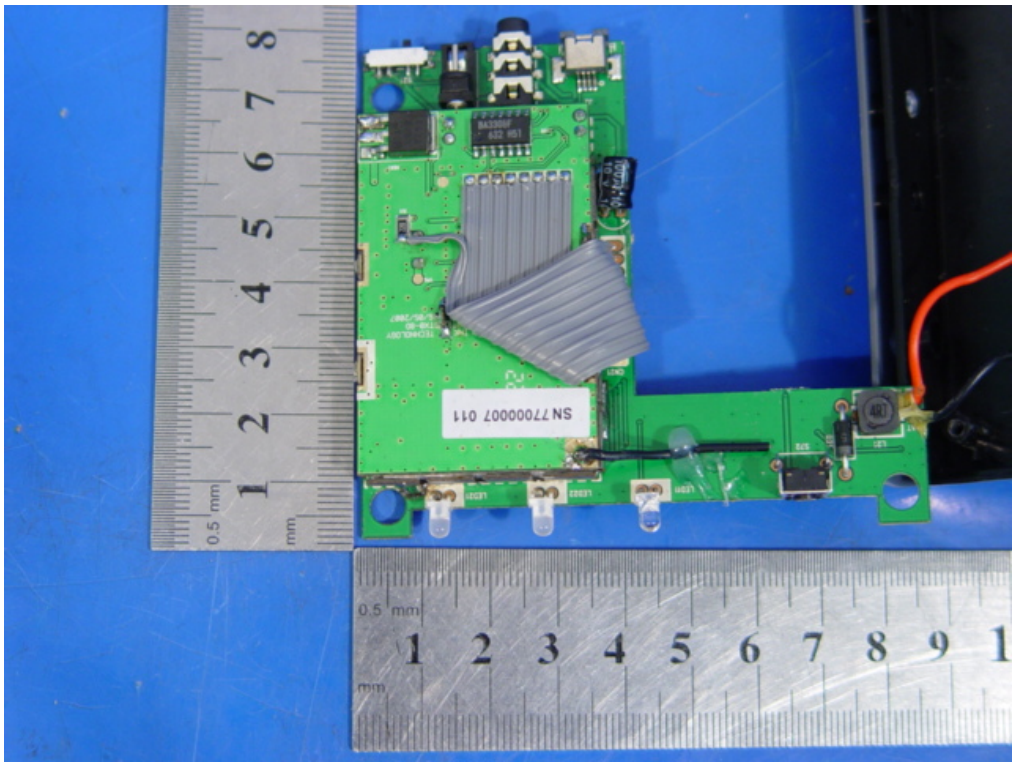


Photo 5 Inside of EUT

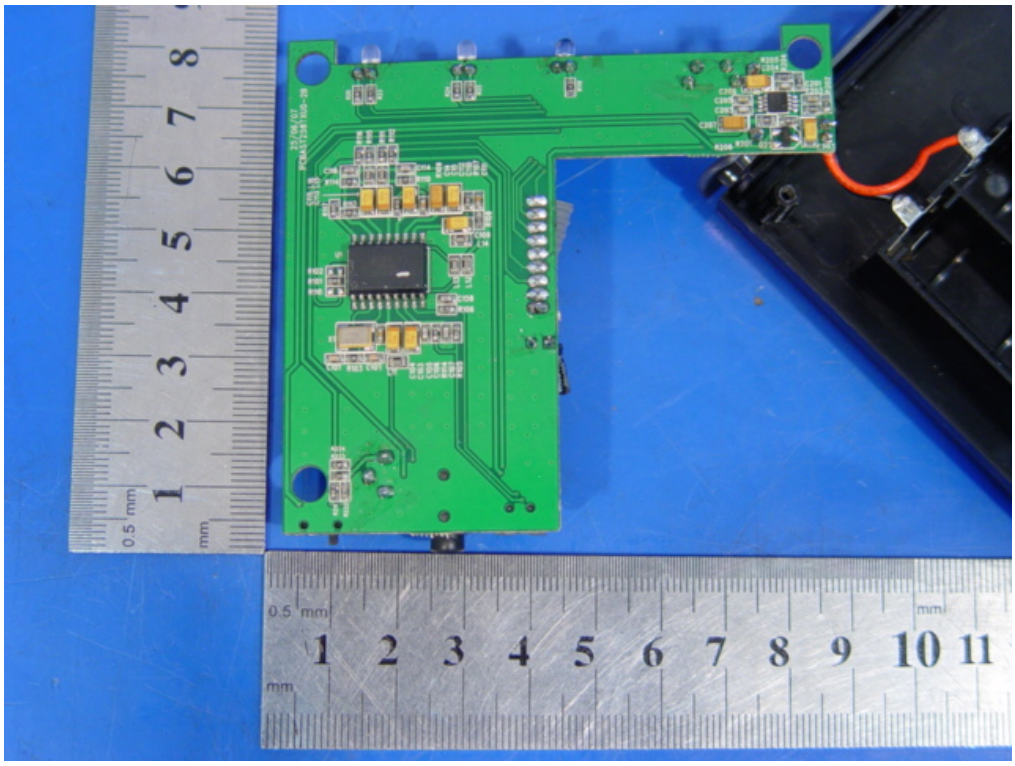


Photo 6 Inside of EUT

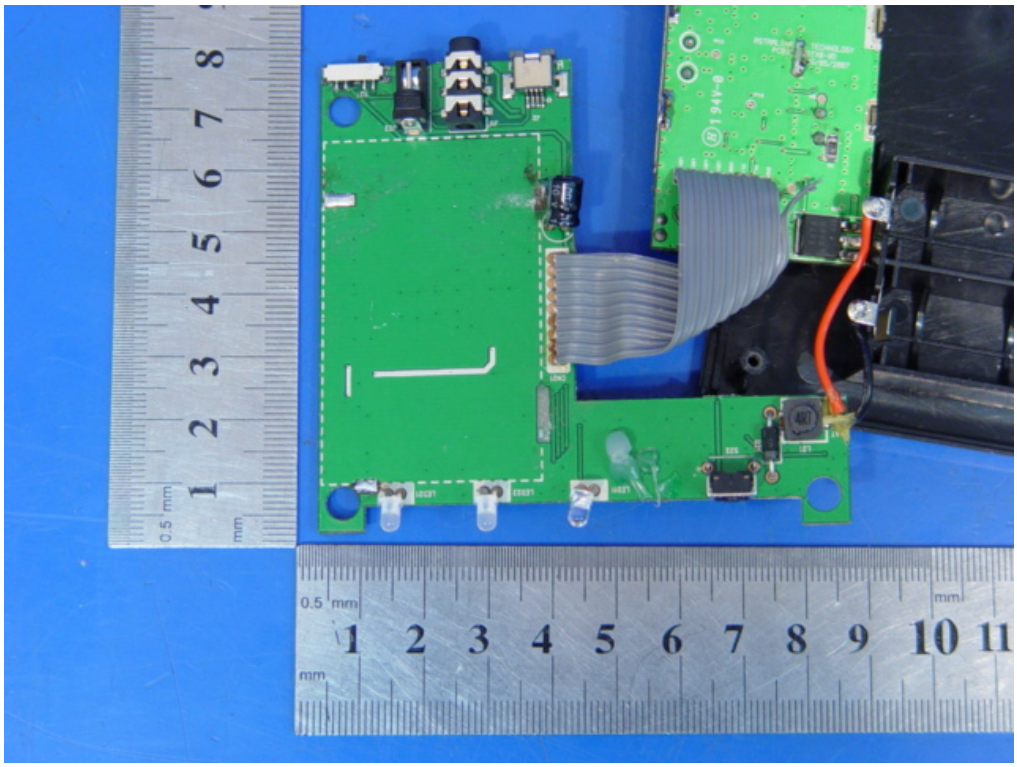


Photo 7 Inside of EUT