
FCC Test Report

Report No.: AGC10091010SZ01F1

FCC ID : YTKPC-68A
PRODUCT DESIGNATION : Wrist Oximeter
BRAND NAME : Boston Life Labs
MODEL NAME : PC-68A
CLIENT : Boston Life Labs LLC
DATE OF ISSUE : Dec.23, 2010
STANDARD(S) : FCC Part 15 Rules

Attestation of Global Compliance Co., Ltd.

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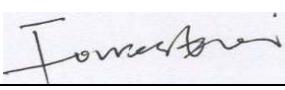
1. VERIFICATION OF COMPLIANCE

Product Designation: Wrist Oximeter
Brand Name: Boston Life Labs
Model Name: PC-68A
Boston Life Labs LLC.
Applicant: Cambridge Innovation Center,One Broadway 14th,
Cambridge,MA 02142,USA
Boston Life Labs LLC.(Shenzhen)
Manufacturer: 2017S,Building C,Tiley Plaza(II) ,Nanshan
Central District,Shenzhen,518067, China.
Type of Test: FCC Class B
Measurement Procedure: ANSI C63.4: 2003
File Number: AGC10091010SZ01F1
Date of test: Dec.22 ,2010
Deviation: None
Condition of Test Sample: Normal

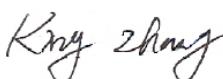
The above equipment was tested by Attestation of Global Compliance Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003 This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

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

Checked By:


Forrest Lei Dec.23, 2010

Authorized By:


King Zhang Dec.23, 2010

2. PRODUCT INFORMATION

Housing Type: Plastic

EUT Rating Voltage: DC3V supply by battery

Voltage During Test: DC3V

I/O Ports of EUT

I/O Port Type	Q'TY	Cable	Tested with
USB	1	N/A	1
Signal Port	1	0.2m,unshield	1

3. TEST FACILITY

Facility	Attestation of Global Compliance Co., Ltd.
Location:	1F, No.2 Building, Huafeng No.1 Technical,Industrial Park, Sanwei, Xixiang, Baoan District,Shenzhen,China
Description:	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003
Site Filing:	The FCC Registration Number is 259865 The IC Number is 9083A
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement.

4. TEST EQUIPMENT LIST

Equipment used during the tests:

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011
Test Receiver	R&S	ESCI	N/A	06/29/2010	06/28/2011
Biconilog Antenna	ETS	3142C	N/A	06/29/2010	06/28/2011
Multi_device Controller	ETS	2090	N/A	06/29/2010	06/28/2011
LISN	ETS	3816	N/A	06/29/2010	06/28/2011

The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

5. SUPPORT EQUIPMENT LIST

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	Lenovo	E301	N/A	N/A	N/A

***Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.*

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

6. SYSTEM DESCRIPTION

EUT test procedure:

1. Power on the EUT
2. Make sure the EUT work normally during the test.

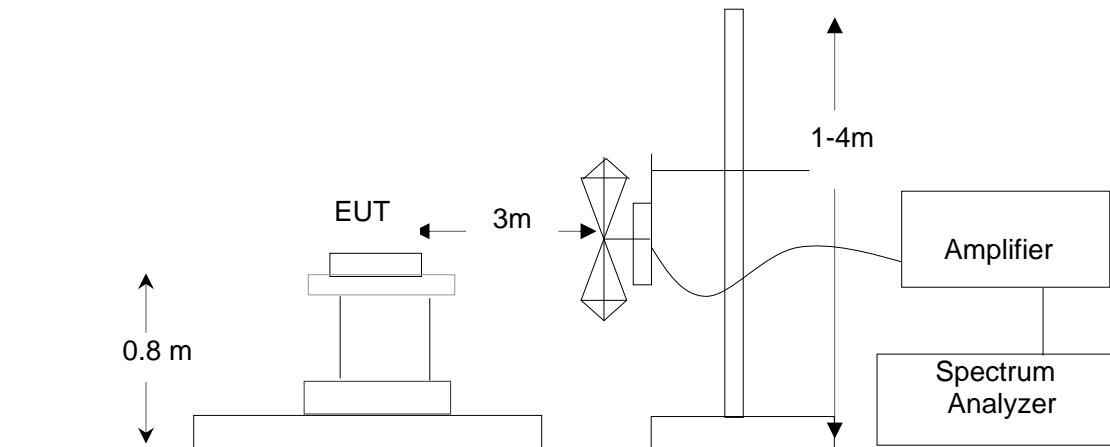
7. FCC RADIATED EMISSION TEST

7.1 LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

**Note: The lower limit shall apply at the transition frequency.

7.2 BLOCK DIAGRAM OF RADIATED EMISSION TEST



7.3 PRELIMINARY PROCEDURE OF RADIATED 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 turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (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 ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) All support equipments received AC 120V/60Hz power from socket under the turntable, if any.
- 5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected

to the Analyzer via a cable and at times a pre-amplifier would be used.

- 6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The following test mode(s) were scanned during the preliminary test:

Preliminary Radiated Emission Test				
Frequency Range Investigated			30 MHz TO 1000 MHz	
Mode of operation	Date of test	Report No.	Data#	Worst Mode
Measuring	12/22/2010	AGC10091010SZ01F1	PC-68A-0(H,V)	<input checked="" type="checkbox"/>
USB	12/22/2010	AGC10091010SZ01F1	PC-68A-1(H,V)	

Then, the EUT and cable(s) configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for final testing.

7.4 FINAL PROCEDURE OF RADIATED EMISSION TEST

EUT and support equipment were set up on the turntable as per step 7 of the preliminary test.

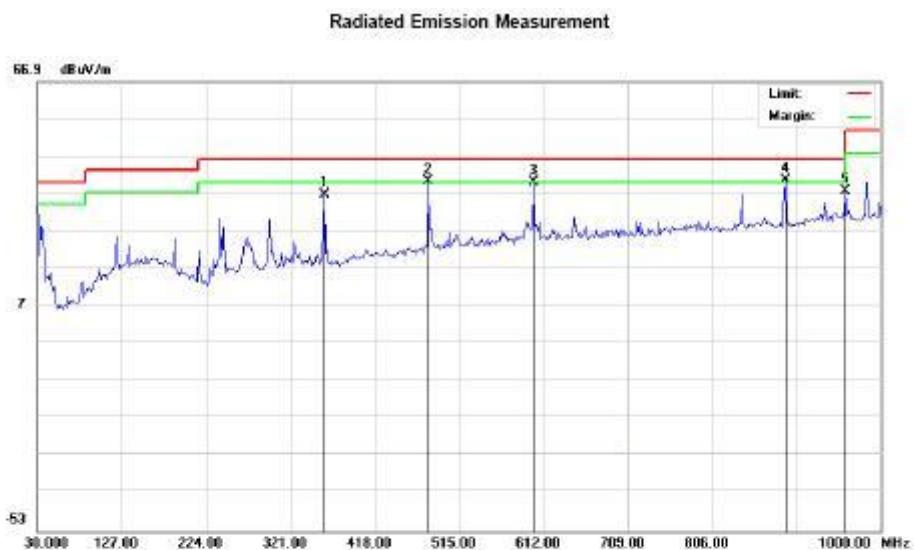
The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P/Peak. reading is presented.

The test data of the worst case condition(s) was reported on the Summary Data page.

7.5 TEST RESULT OF RADIATED EMISSION TEST

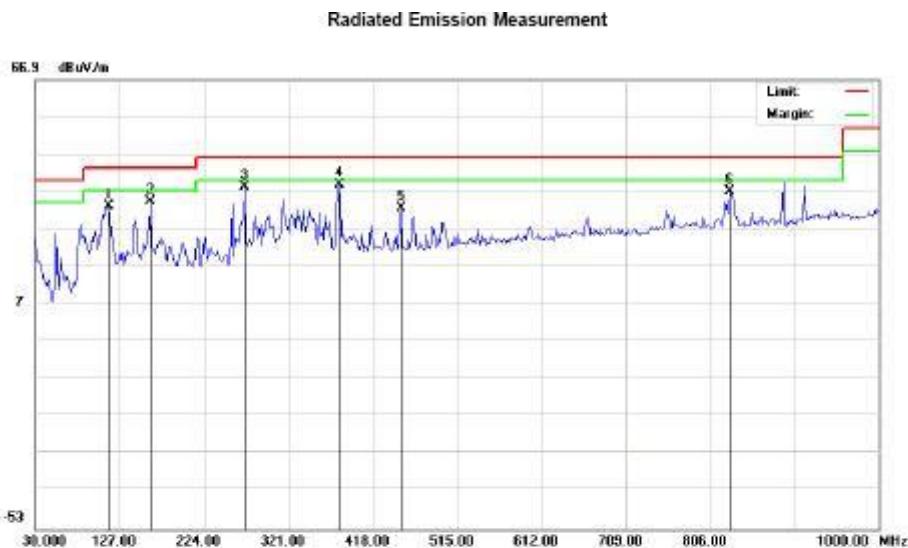
TEST RESULT OF RADIATED EMISSION AT-HORIZONTAL



Site: site #1	Polarization: Horizontal	Temperature: 26
Limit: FCC Class B 3M Radiation	Power:	Humidity: 60 %
EUT:	Distance: 3m	
M/N:		
Mode:		
Note:		

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB				
1		359.8000	17.73	19.08	36.81	46.00	-9.19	peak			
2	!	479.4333	18.39	21.00	40.29	46.00	-5.71	peak			
3		600.6833	15.05	24.92	39.97	46.00	-6.03	peak			
4	*	890.0667	11.66	28.97	40.63	46.00	-5.37	peak			
5		959.5833	7.36	30.32	37.68	46.00	-8.32	peak			

TEST RESULT OF RADIATED EMISSION AT-VERTICAL



Site: site #1 Polarization: Vertical Temperature: 26
Limit: FCC Class B 3M Radiation Power: Humidity: 60 %
EUT: Distance: 3m
M/N:
Mode:
Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		114.0067	15.63	17.52	33.15	43.50	-10.35	peak			
2		162.5067	14.44	20.03	34.47	43.50	-9.03	peak			
3		270.8833	21.16	17.20	38.36	46.00	-7.64	peak			
4	*	379.2000	19.31	19.51	38.82	46.00	-7.18	peak			
5		450.3333	10.89	21.52	32.41	46.00	-13.59	peak			
6		828.6333	8.76	28.22	36.98	46.00	-9.02	peak			

8 FCC LINE CONDUCTED EMISSION TEST

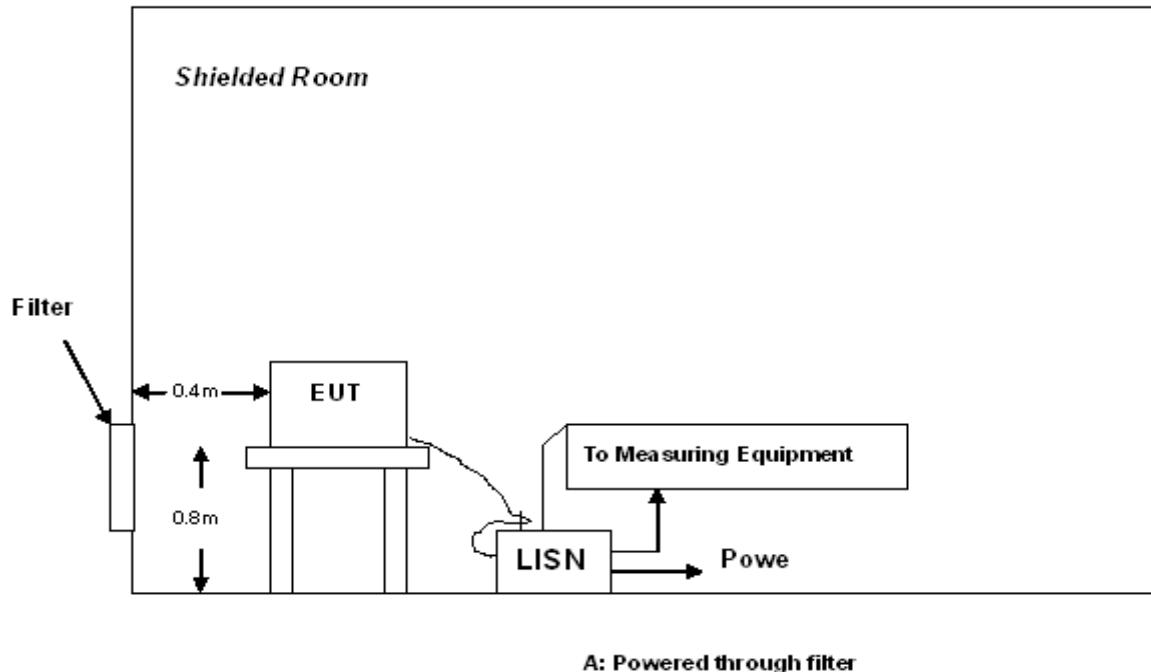
8.1 LIMITS OF LINE CONDUCTED EMISSION TEST

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

8.2 BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



8.3 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 ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a 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 ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) All support equipments received AC120V power from a LISN, if any.
- 5) The EUT received power from support PC
- 6) The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

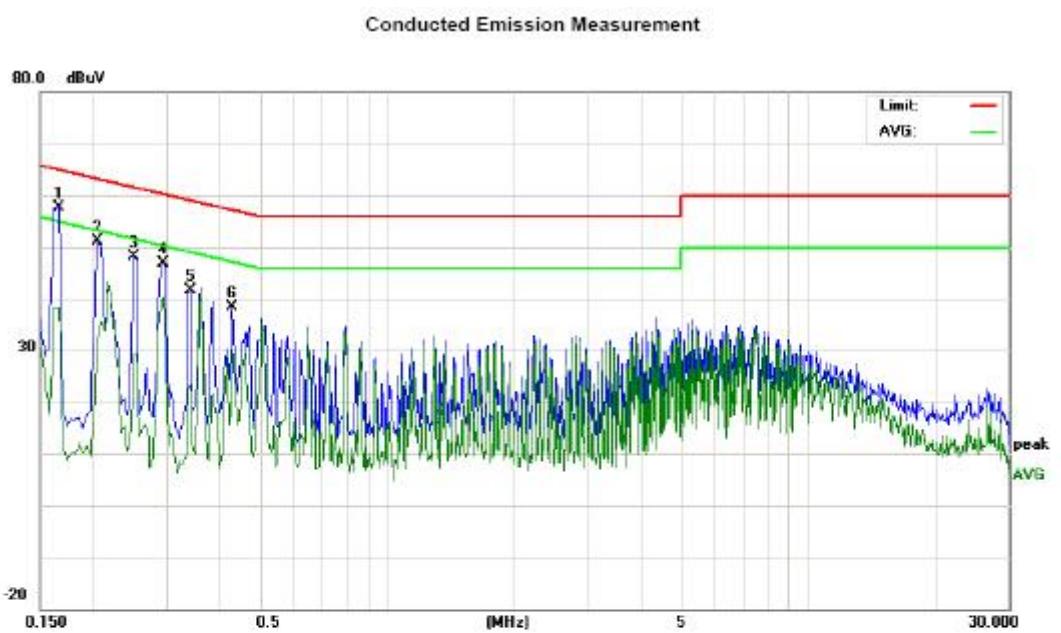
Preliminary Line Conducted Emission Test				
Frequency Range Investigated		150 KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
USB	12/22/2010	AGC10091010SZ01F1	PC-68A-0(H,V)	<input checked="" type="checkbox"/>

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

8.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2) 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.
- 3) The test data of the worst case condition(s) was reported on the Summary Data page.

8.5 TEST RESULT OF LINE CONDUCTED EMISSION TEST



Site: Conduction
Limit: FCC Class B Conduction(QP)

Phase: **L1**
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

EUT:

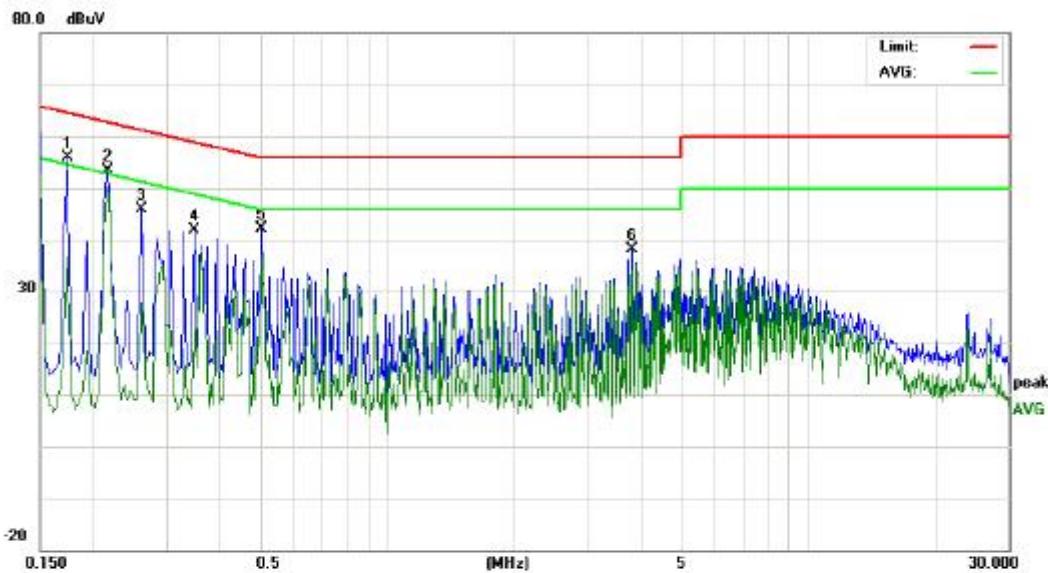
M/N:

Mode:

Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment	
		Peak	QP	AVG		Peak	QP	AVG	QP	AVG	QP	AVG			
1	0.1660	47.55	41.29	11.01	10.18	57.73	51.47	21.19	65.15	55.15	-13.68	-33.96	P		
2	0.2060	41.01		22.29	10.22	51.23			32.51	63.36	53.36	-12.13	-20.85	P	
3	0.2500	37.81		18.79	10.27	48.08			29.06	61.75	51.75	-13.67	-22.69	P	
4	0.2940	36.68	30.95	22.69	10.29	46.97	41.24	32.98	60.41	50.41	-19.17	-17.43	P		
5	0.3420	31.27	25.60	4.28	10.31	41.58	35.91	14.59	59.15	49.15	-23.24	-34.56	P		
6	0.4300	28.14		19.71	10.35	38.49			30.06	57.25	47.25	-18.76	-17.19	P	

Conducted Emission Measurement



Site: Conduction
Limit: FCC Class B Conduction(QP)

Phase: **N**
Power: AC 120V/60Hz

Temperature: 26
Humidity: 60 %

EUT:

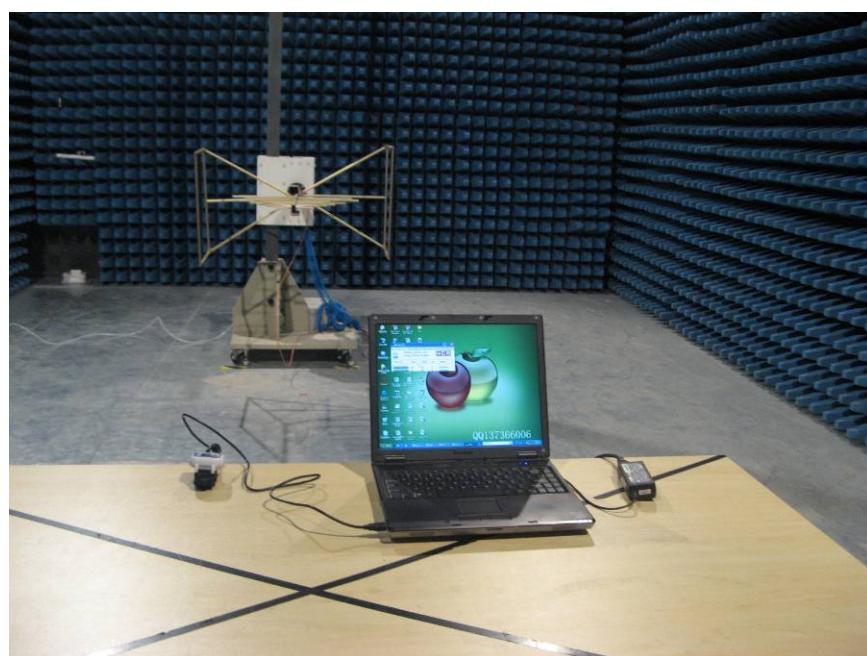
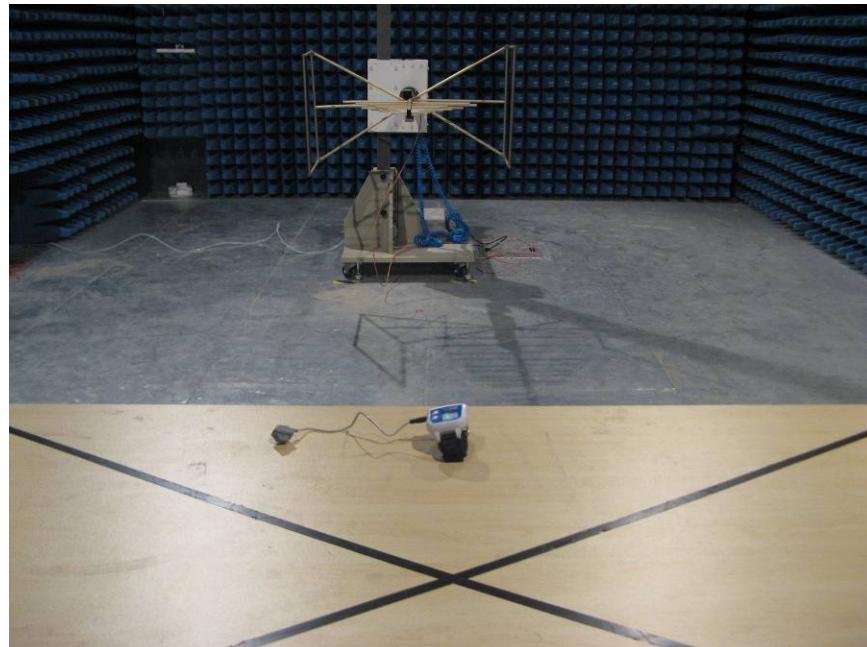
M/N:

Mode:

Note:

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		dB	Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.1740	45.71	39.34	9.78	10.19	55.90	49.53	19.95	64.76	54.76	-15.23	-34.81	P	
2	0.2180	43.21	41.70	32.38	10.23	53.44	51.93	42.61	62.89	52.89	-10.96	-10.28	P	
3	0.2620	35.60		17.48	10.27	45.87		27.75	61.36	51.36	-15.49	-23.81	P	
4	0.3500	31.45		12.63	10.31	41.78		22.94	58.96	48.96	-17.20	-26.02	P	
5	0.5060	31.71	28.27	25.76	10.39	42.10	38.66	36.15	56.00	46.00	-17.34	-9.85	P	
6	3.8340	27.59		23.78	10.46	38.05		34.24	56.00	46.00	-17.95	-11.76	P	

APPENDIX 1
PHOTOGRAPHS OF TEST SETUP
TEST SETUP OF RADIATED EMISSION



TEST SETUP OF CONDUCTED EMISSION



APPENDIX 2

PHOTOGRAPHS OF EUT

TOP VIEW OF EUT



BOTTOM VIEW OF EUT



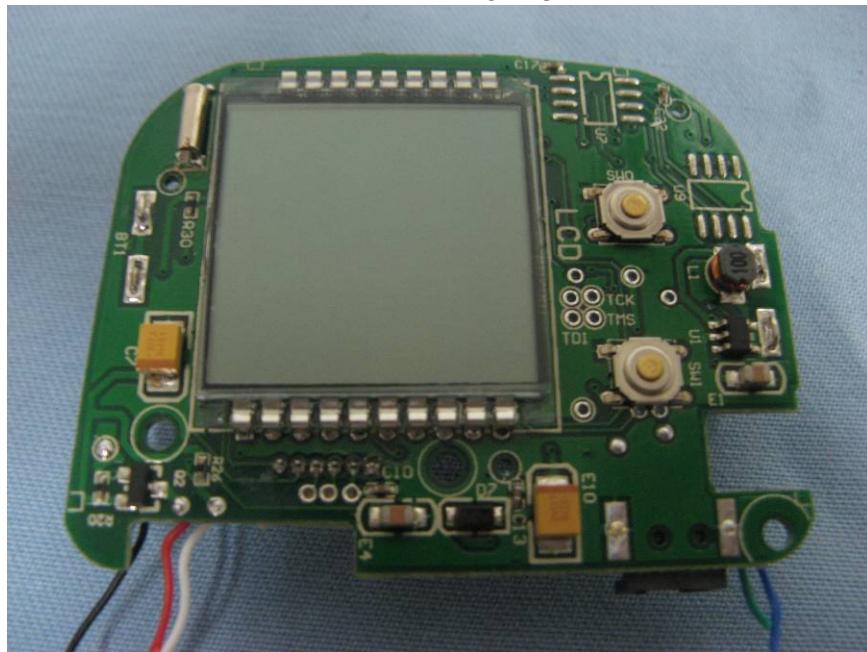
RIGHT VIEW OF EUT



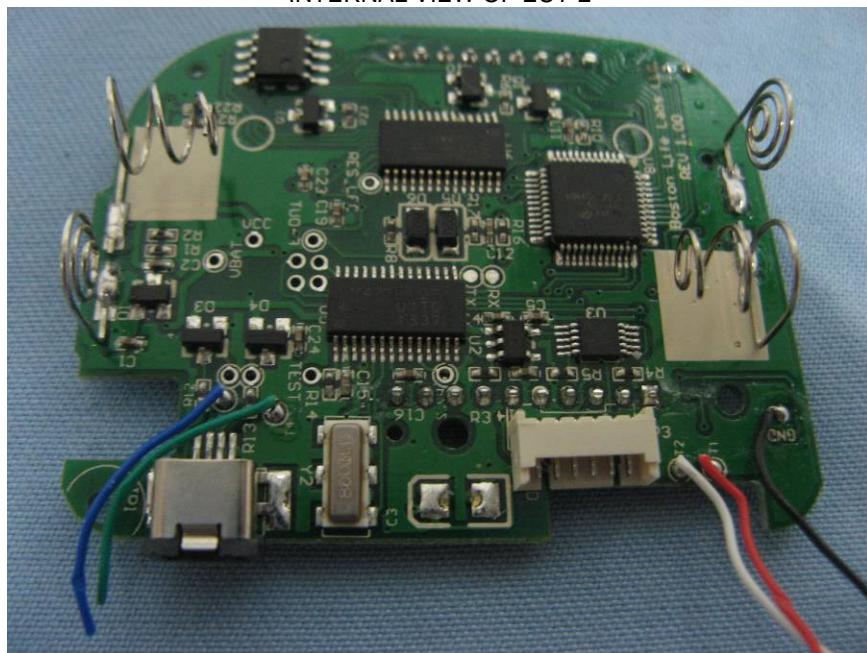
LEFT VIEW OF EUT



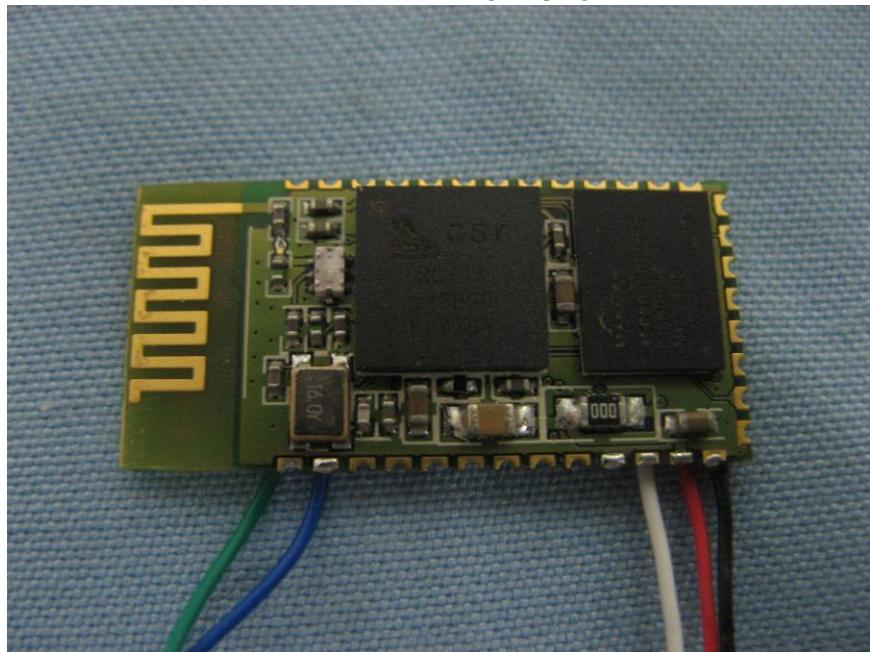
INTERNAL VIEW OF EUT-1



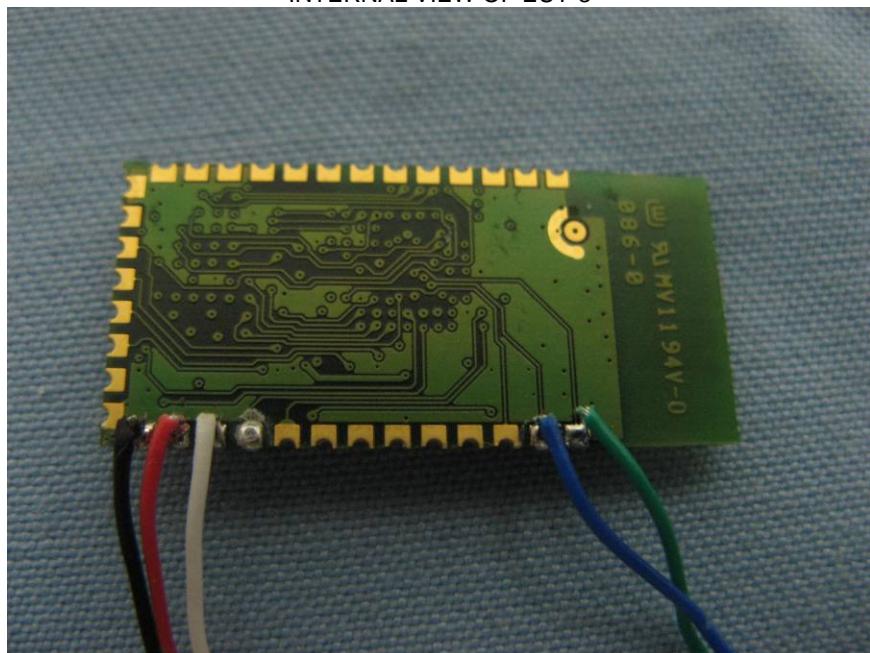
INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



INTERNAL VIEW OF EUT-3



---END OF REPORT---