FCC Test Report

Report No.: AGC10091010SZ02F2D

FCC ID	:	YTKH-BOX
PRODUCT DESIGNATION	:	Wireless Telehealth Hub
BRAND NAME	:	Boston Life Labs
TEST MODEL	:	H-Box
CLIENT	:	Boston Life Labs LLC
DATE OF ISSUE	:	Nov.19, 2010
STANDARD(S)	:	FCC Part 15 Rules

Attestation of ***G***lobal ***C***ompliance Co., Ltd.

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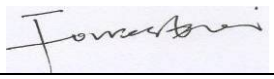
VERIFICATION OF COMPLIANCE

Applicant	Boston Life Labs LLC.
	Cambridge Innovation Center,One Broadway 14th, Cambridge,MA 02142,USA
Manufacturer	Boston Life Labs LLC.(Shenzhen)
	2106C,block C,Tin Lee Central Square,Nanshan District,Shenzhen City.
Product Designation	Wireless Telehealth Hub
Brand Name	Boston Life Labs
Test Model	H-Box
FCC ID	YTKH-BOX
Report Number	AGC10091010SZ02F2D
Date of Test	Nov.13, 2010 to Nov.15, 2010

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance 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 radiated emission limits of FCC Rules Part 15.225.

Checked By: 

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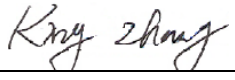
Authorized By 

King Zhang Nov.19, 2010

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a **wireless Telehealth Hub** designed as an “Communication Device”. It is designed by way of utilizing the AM technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	13.56MHZ
Rated Output Power	59dBuV/m
Modulation	AM
Number of channels	1
Antenna Designation	Integrated Antenna
Power Supply	DC3.7V by battery (charged by adapter,adapter input AC120V)

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: YTKH-BOX** filing to comply with Section 15.225 of the FCC Part 15, Subpart C Rules.

1.3 TEST METHODOLOGY

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

1.4 TEST FACILITY

All measurement facilities used to collect the measurement data are located at
Attestation of Global Compliance Co., Ltd.
1F., No.2 Building, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen
The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.
FCC register No.: 259865

1.5 SPECIAL ACCESSORIES

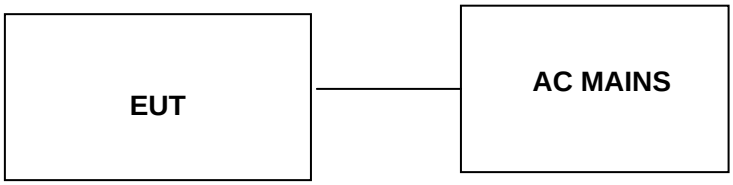
Not available for this EUT intended for grant.

1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 CONFIGURATION OF TESTED SYSTEM



2.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID
1	Wireless Telehealth Hub	Boston Life Labs LLC.	H-Box	YTKH-BOX

3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.207	Conduction Emission	Compliant
§15.225	Radiated Emission	Compliant
§15.225	Frequency Deviation	Compliant

4. DESCRIPTION OF TEST MODES

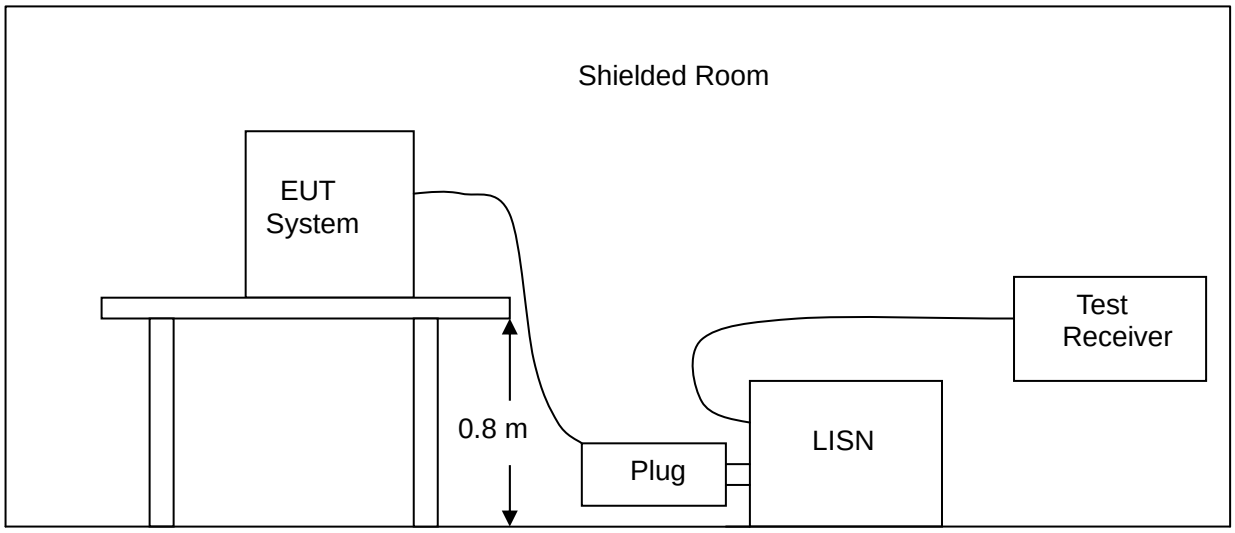
1. The EUT has been set to operate continuously on the operation frequency.
2. The EUT stays in continuous transmitting mode on the operation frequency being set.

5 CONDUCTION EMISSIONS

5.1 MEASUREMENT PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. 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.
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. The EUT received AC120V through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, 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 30MHz for emissions in each of the test modes.
8. Following is charging mode test data and It is the worst.

5.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



5.3 MEASUREMENT EQUIPMENT USED

Conducted Emission Test Site				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Cal. Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	06/29/2010
LISN 1	Rohde & Schwarz	ESH3-Z5	N/A	06/29/2010
50Ω Coaxial Switch	Anritsu	MP59B	M20531	06/29/2010

5.4 LIMITS AND MEASUREMENT RESULT

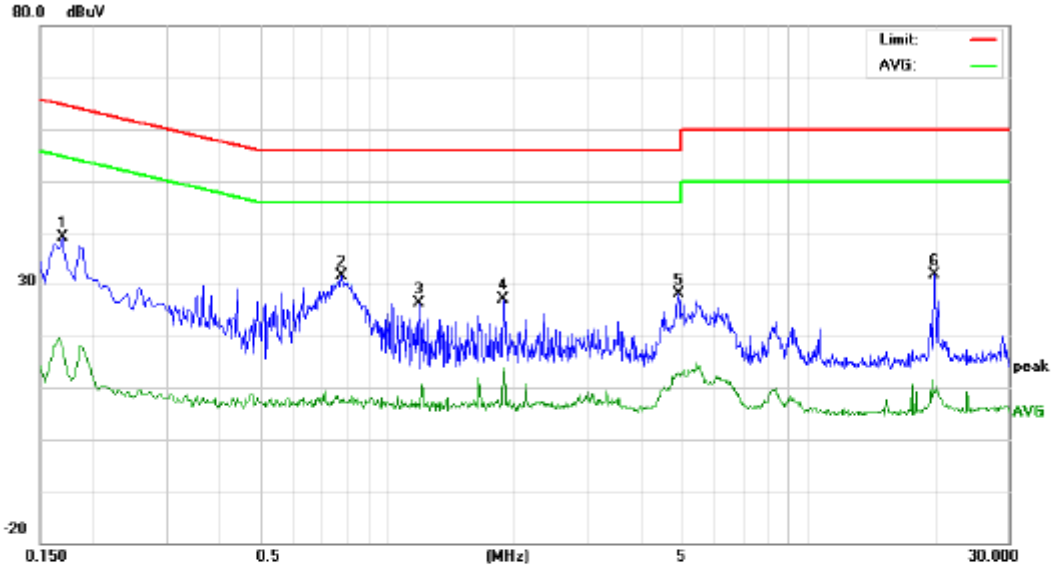
LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

1**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

TEST RESULT OF LINE –L CONDUCTED EMISSION TEST

Conducted Emission Measurement



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Wireless Thelehealth Hub
M/N: HBox
Mode: RFID
Note:

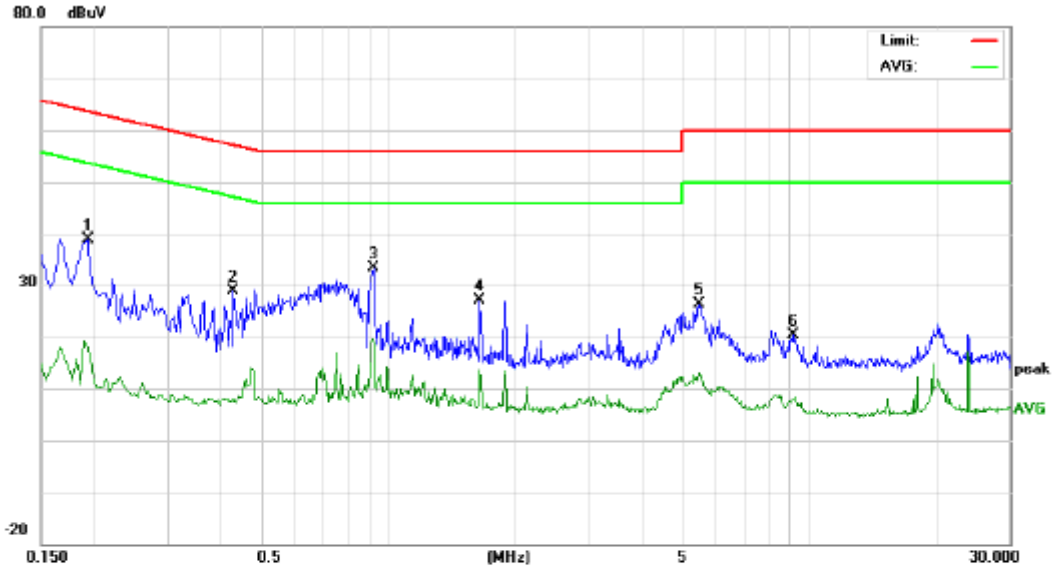
Phase: L1
Power:

Temperature: 26
Humidity: 60 %

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	0.1700	28.91		7.61	10.18	39.09		17.79	64.96	54.96	-25.87	-37.17	P	
2	0.7820	21.22		-2.90	10.29	31.51		7.39	56.00	46.00	-24.49	-38.61	P	
3	1.1940	16.09		-3.63	10.37	26.46		6.74	56.00	46.00	-29.54	-39.26	P	
4	1.8940	16.94		2.39	10.25	27.19		12.64	56.00	46.00	-28.81	-33.36	P	
5	4.9340	17.92		2.48	10.24	28.16		12.72	56.00	46.00	-27.84	-33.28	P	
6	20.0140	21.66		-0.70	10.11	31.77		9.41	60.00	50.00	-28.23	-40.59	P	

TEST RESULT OF LINE –N CONDUCTED EMISSION TEST

Conducted Emission Measurement



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Wireless Telehealth Hub
M/N: H-BOX
Mode: RFID
Note:

Phase: N
Power:

Temperature: 26
Humidity: 60 %

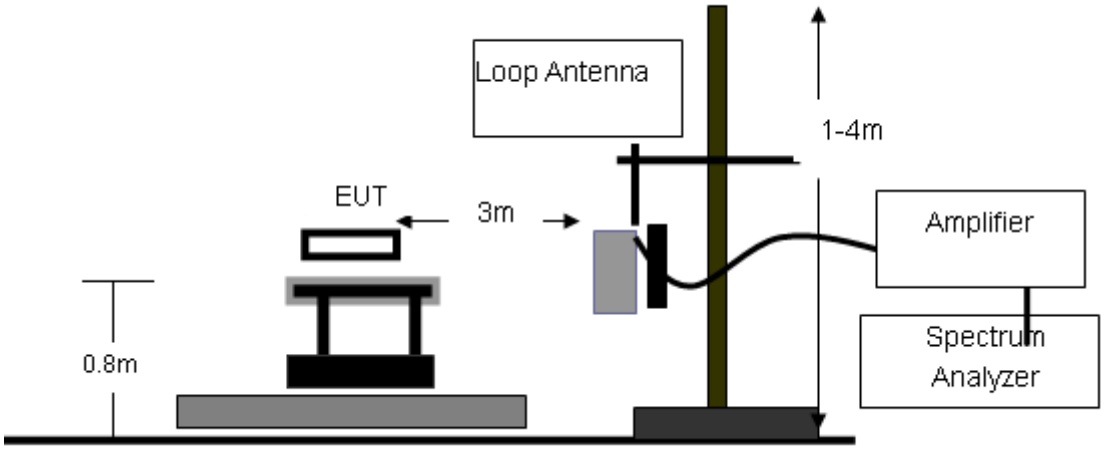
No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1940	28.65	20.00	4.69	10.21	38.86	30.21	14.90	63.86	53.86	-33.65	-38.96	P	
2	0.4300	18.42		-2.28	10.35	28.77		8.07	57.25	47.25	-28.48	-39.18	P	
3	0.9260	22.99		8.69	10.40	33.39		19.09	56.00	46.00	-22.61	-26.91	P	
4	1.6620	16.88		3.34	10.33	27.21		13.67	56.00	46.00	-28.79	-32.33	P	
5	5.4860	16.11		2.80	10.25	26.36		13.05	60.00	50.00	-33.64	-36.95	P	
6	9.1899	10.11		-2.12	10.27	20.38		8.15	60.00	50.00	-39.62	-41.85	P	

6 RADIATED EMISSION

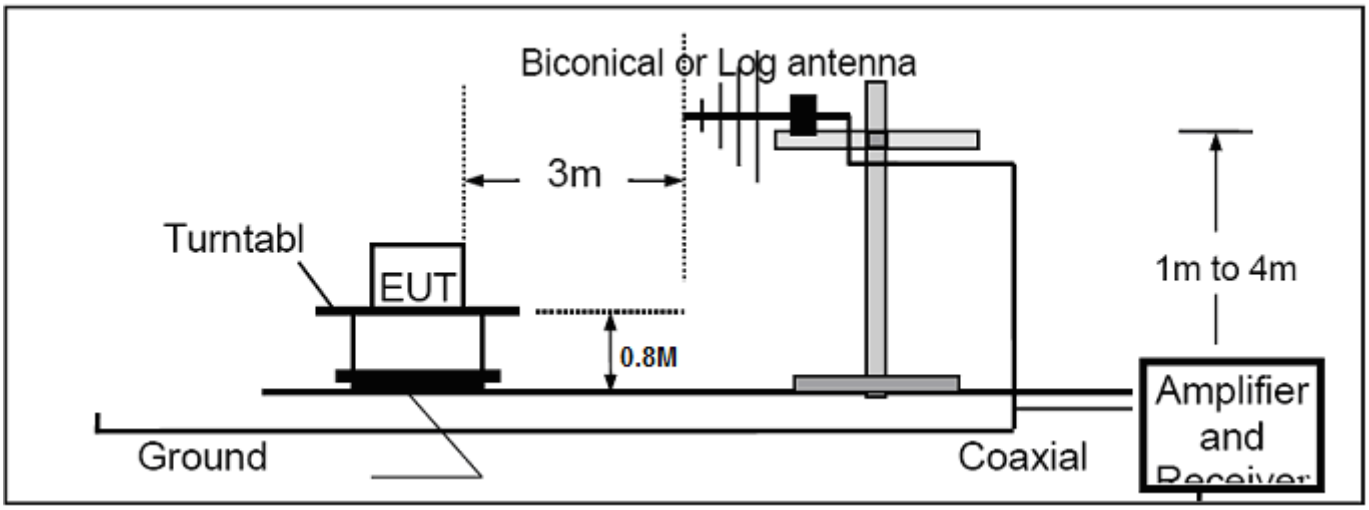
6.1 MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set the EUT Work on the operation frequency.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz,
   VBW= 100 KHz for Below 1GHZ,RBW=1MHZ,VBW=1MHZ for Above 1GHZ.
4. The Analyzer / Receiver quickly scanned . 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

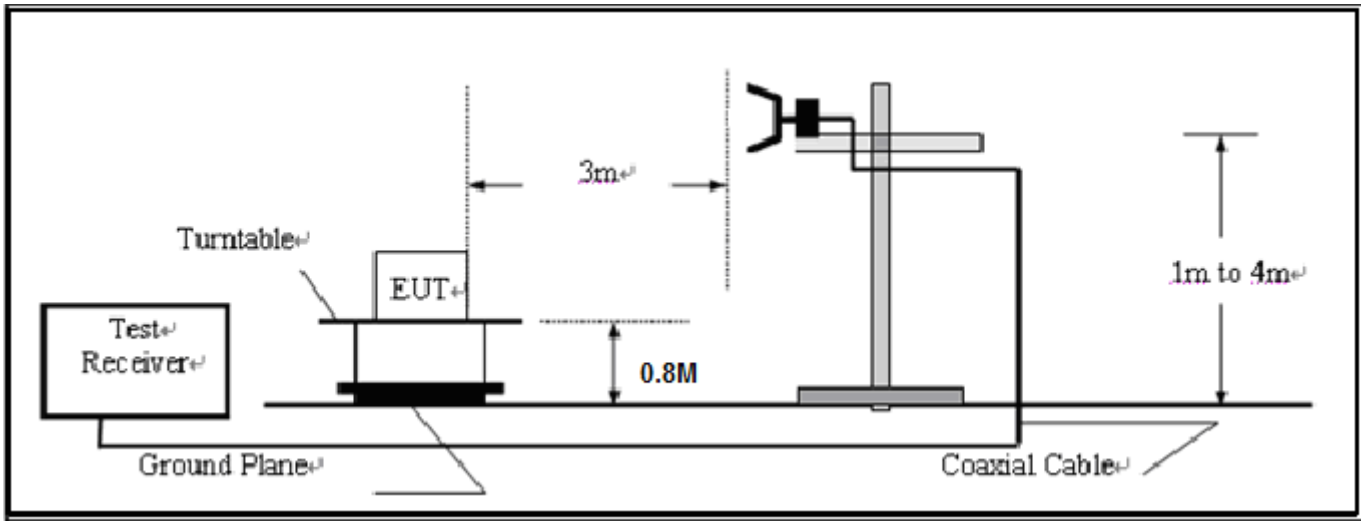
6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



Below 30MHZ TEST SETUP



Below 1GHZ TEST SETUP



Above 1GHZ TEST SETUP

6.3 MEASUREMENT EQUIPMENT USED

Description	Manufacturer	Model	SERIAL NUMBER	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4440A	N/A	06/29/2010	06/28/2011
Amplifier	EM	EM30180	0607030	06/29/2010	06/28/2011
Horn Antenna	EM	EM-AH-10180	N/A	06/29/2010	06/28/2011
EMI Test Receiver	Rohde & Schwarz	ESCI	N/A	06/29/2010	06/28/2011
Amplifier	EM	EM30180	N/A	06/29/2010	06/28/2011
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	N/A	06/29/2010	06/28/2011
Loop Antenna	Daze	ZN30900N	SEL0097	06/29/2010	06/28/2011
Isolation Transformer	LETEAC	LTBK	--	06/08/2010	06/07/2011

6.4 LIMITS AND MEASUREMENT RESULT

a The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
b Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
c Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

d 15.209 limit

Frequency	Field Strength	Measurement distance
(MHz)	(microvolts/meter)	(meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100 **	3
88–216	150 **	3
216–960	200 **	3
Above 960	500	3

9KHZ~1GHZ RADIATED EMISSION TEST RESULT

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	AC120V/60Hz
Test Mode	13.56MHZ TX		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
13.56	N/A	PK	50.66	8.34	59	123	64
13.56	N/A	QP	49.04	8.34	57.38	123	65.62
27.12	N/A	QP	27.3	8.97	36.27	49.5	13.23
40.7	V	QP	13.14	10.5	23.64	40	16.36
135.6	H	QP	11.48	10.5	21.98	43.5	21.52
203.4	H	QP	9.57	12.1	21.67	43.5	21.83
298.3	V	QP	6.35	18.7	25.05	46	20.95
433.9	H	QP	5.41	19.6	25.01	46	20.99
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

EUT	Wireless Telehealth Hub	Model Name	H-Box
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	DC3.7V
Test Mode	13.56MHZ TX		

Freq. (MHZ)	Ant.Pol. H/V	Detector (PK/QP)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
--	--	--	--	--	--	--	--
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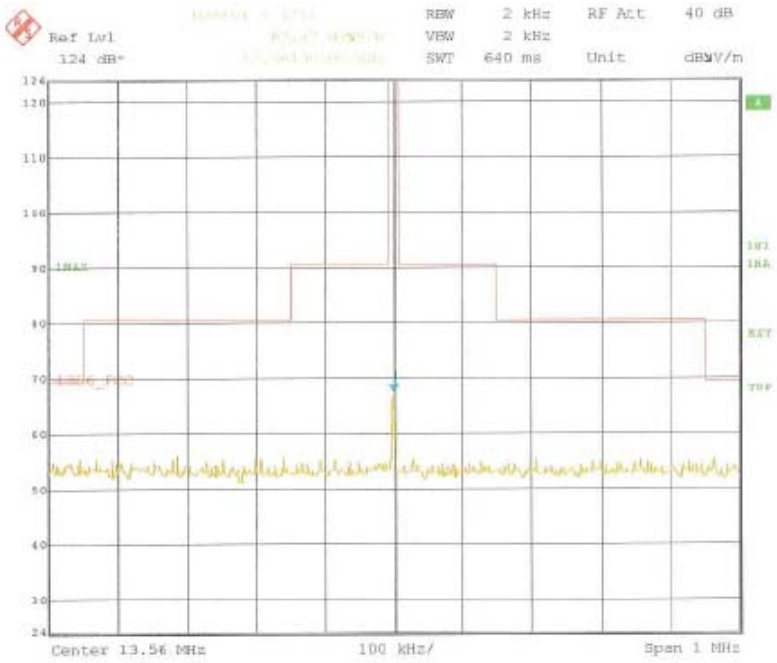
Note: Above is 3m test data and the worst-case data was presented.
Note:"--"means the other frequencies at least have 20dB margin.



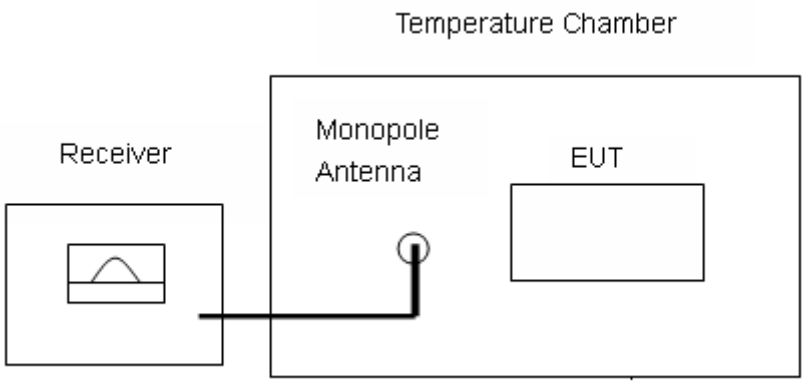
Spectrum Mask Test Plot

7 FREQUENCY DEVIATION

7.1 MEASUREMENT PROCEDURE

Prease refer to ANSI C63.4

7.2TEST SETUP



7.3TEST LIMIT AND RESULT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test Result

Comply with the standard requirement,for more details,please see the next page.

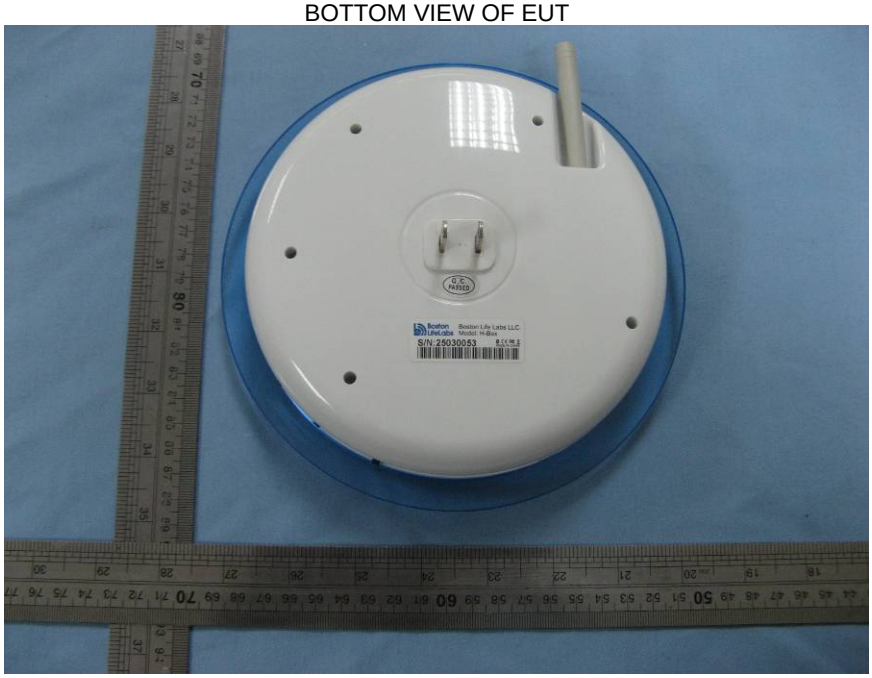
Test Condition	Measured Frequency (MHZ)	Frequency Error (MHZ)	Result (ppm)	Limit (+/-0.01%) (+/-ppm)
20℃ AC138V	13.560025	0.000025	1.84	100
20℃ AC120V	13.560016	0.000016	1.18	100
20℃ AC102V	13.560008	0.000008	0.59	100
50℃ AC120V	13.559966	-0.000034	-2.51	100
40℃ AC120V	13.559991	-0.000009	-0.66	100
30℃ AC120V	13.559991	-0.000009	-0.66	100
20℃ AC120V	13.560008	0.000008	0.59	100
10℃ AC120V	13.560041	0.000041	3.02	100
0℃ AC120V	13.560025	0.000025	1.84	100
-10℃ AC120V	13.560041	0.000041	3.02	100
-20℃ AC120V	13.559975	-0.000025	-1.84	100
-30℃ AC120V	13.559841	-0.000159	-11.73	100

Test Condition	Measured Frequency (MHZ)	Frequency Error (MHZ)	Result (ppm)	Limit (+/-0.01%) (+/-ppm)
20℃ DC4.2V	13.560024	0.000024	1.76	100
20℃ DC3.7V	13.560017	0.000017	1.25	100
20℃ DC3.1V	13.560009	0.000009	0.66	100
50℃ DC3.7V	13.559968	-0.000032	-2.35	100
40℃ DC3.7V	13.559992	-0.000008	-0.58	100
30℃ DC3.7V	13.559993	-0.000007	-0.51	100
20℃ DC3.7V	13.560001	0.000001	0.73	100
10℃ DC3.7V	13.560040	0.000040	2.9	100
0℃ DC3.7V	13.560024	0.000024	1.76	100
-10℃ DC3.7V	13.560043	0.000043	3.17	100
-20℃ DC3.7V	13.559974	-0.000026	-1.91	100
-30℃ DC3.7V	13.559843	-0.000157	-11.57	100

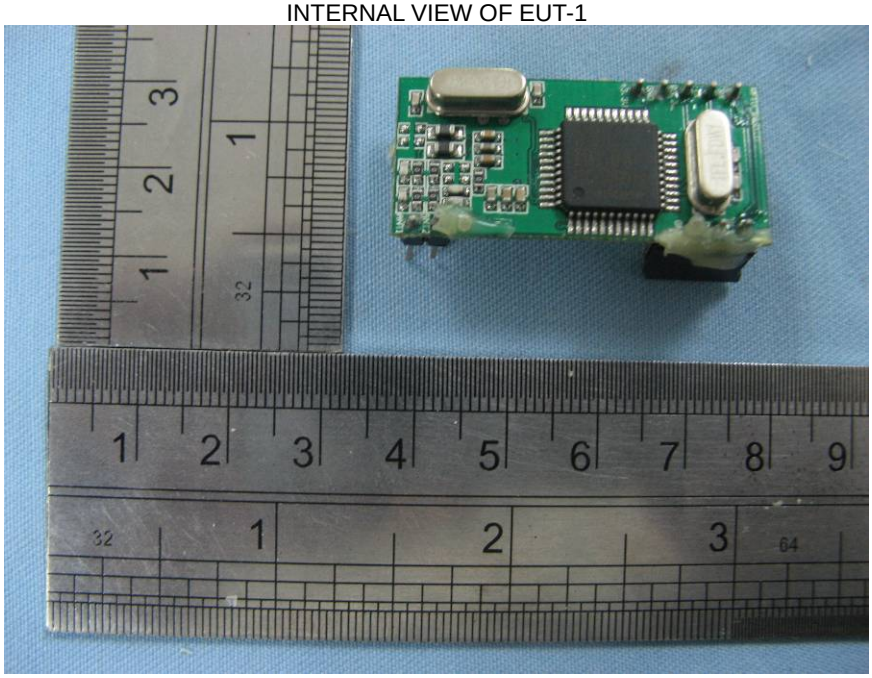
APPENDIX I
PHOTOGRAPHS OF THE EUT

TOP VIEW OF EUT

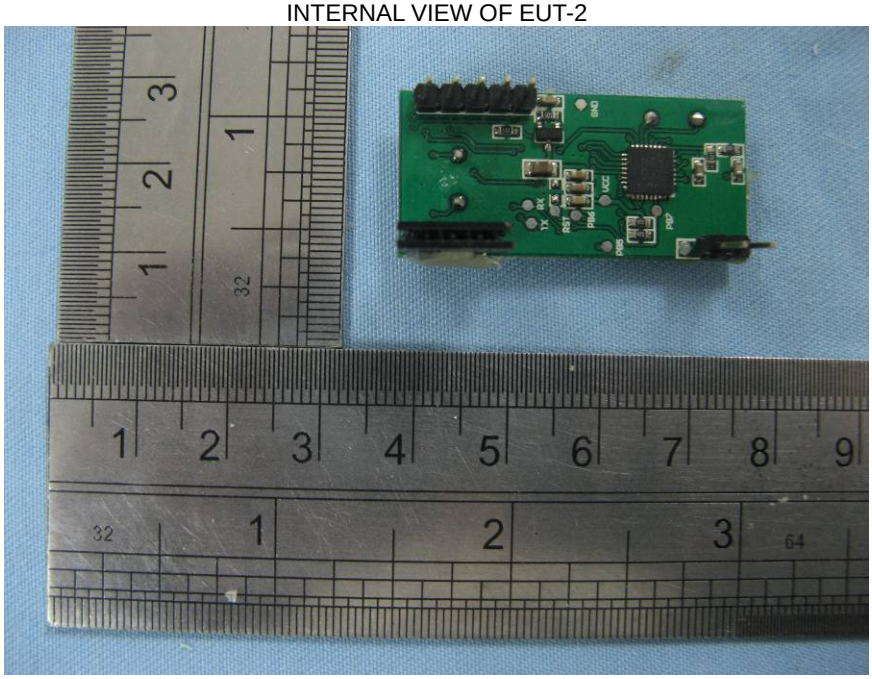
BOTTOM VIEW OF EUT



INTERNAL VIEW OF EUT-1



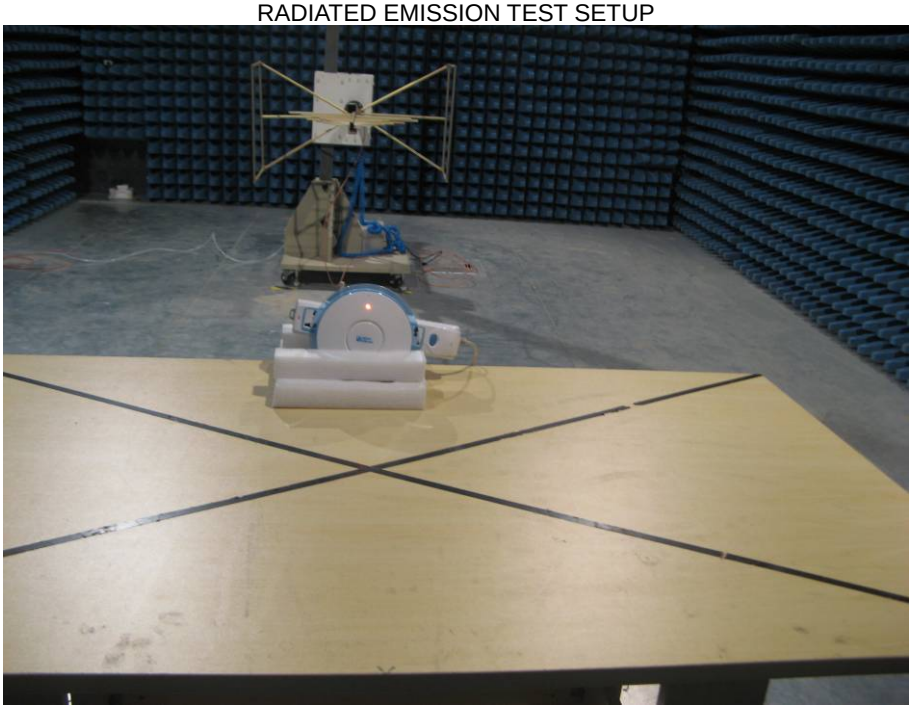
INTERNAL VIEW OF EUT-2



PPENDIX II

PHOTOGRAPHS OF THE TEST SETUP

RADIATED EMISSION TEST SETUP



RADIATED EMISSION TEST SETUP

----END OF REPORT----