FCC Test Report

Report No.: AGC026120602-3F2B

FCC ID	:	OXJOF40
IC	:	10549A-OF40
PRODUCT DESIGNATION	:	Smart Pulse Oximeter
BRAND NAME	:	NantLife
TEST MODEL	:	OF4.0
CLIENT	:	NantCare LLC
DATE OF ISSUE	:	Sep.13, 2012
STANDARD(S)	:	FCC Part 15 Rules& RSS-210

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd.

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1. VERIFICATION OF COMPLIANCE

Applicant:	NantCare LLC
Applicant Address:	2929 N. 44th Street, Suite 110 Phoenix, AZ 85018
Manufacturer:	Shenzhen Jian Lang Technology Co., Ltd
Manufacturer Address:	202,2F,Block 1,Nanyou Tian'an Industry Town SZ.R.P.C
Product Description:	Smart Pulse Oximeter
Brand Name:	NantLife
Model Name:	OF4.0
FCC ID:	OXJOF40
IC	10549A-OF40
Report Number:	AGC026120602-3F2F2B
Date of Test:	Aug.20,2012 to Aug.27,2012

WE HEREBY CERTIFY THAT:

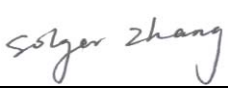
The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Tested By : 

Bart Xie Sep.13, 2012

Review By : 

Forrest Lei Sep.13, 2012

Approved By: 

Solger Zhang Sep.13, 2012

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)

The EUT is a HPod designed as a “Communication Device”. It is designed by way of utilizing the FHSS technology to achieve the system operation.

Operation Frequency	2.402 GHz to 2.480GHz
Max Output Power	3.97dBm
Bluetooth Version	V4.0
Modulation	GFSK
Number of channels	40 Channel(37 Hopping Channel,3 advertising Channel)
Channel Spacing	2M
Antenna Designation	Integrated Antenna
Antenna Gain	2.0dBi
Hardware Version	N/A
Software Version	N/A

2.2. TEST STANDARDS

The following report of is prepared on behalf of the Attestation of Global Compliance (Shenzhen) Co., Ltd. in accordance with FCC Part 15, Subpart C, and section 15.249, 15.203 and 15.209 of the Federal Communication Commission rules and RSS-Gen and RSS-210, section A2.9 of IC rules.
The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.249, 15.203 and 15.209 of the Federal Communication Commission rules and RSS-Gen and RSS210, section A2.9 of IC rules. Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for FCC ID: OXJOF40 and IC: 10549A-OF40, filing to comply with the FCC Part 15 and RS-210 requirements.

2.4. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

2.5. TEST FACILITY

All measurement facilities used to collect the measurement data are located at

Attestation of Global Compliance (Shenzhen) Co., Ltd.

2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.

FCC register No.: 259865

2.6. ACCESSORIES EQUIPMENT LIST AND DETAILS

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	Lenovo	SL410K	--	--	1.5m, unshielded

2.7. EUT PORT&CABLE LIST AND DETAILS

I/O Port Type	Q'TY	Cable	Tested with
--	--	--	--

3. SUMMARY OF TEST RESULTS

Description of Test	Rule	Result
Antenna Requirement	FCC §15.203, RSS-Gen	Compliant
Power Line Conducted Emission	FCC §15.207, RSS-Gen	Compliant
General Requirement	FCC §15.209, RSS-Gen	Compliant
Emission Bandwidth	FCC §15.249, RSS-Gen	Compliant
Spurious Emission	FCC §15.249, RSS-210 A2.9	Compliant

4. TEST MODES

No.	TEST MODES
1	2402MHZ TX
2	2442MHZ TX
3	2480MHZ TX
Note: Above 3 modes have performed at maximum emission conditions.3 axis have been tested and only the worst mode data recorded in the test report.	

5. § 15.203 - ANTENNA REQUIREMENT

5.1. STANDARD APPLICABLE

According to FCC 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

5.2. TEST RESULT

This product has a permanent antenna, fulfill the requirement of this section.

6.§15.209, §15.249 RADIATED EMISSION

6.1. MEASUREMENT UNCERTAINTY

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is +/-3.2 dB.

6.2. STANDARD APPLICABLE

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental Field Strength (mV/m)	Field Strength of Harmonics (μV/m)
902-928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

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

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

6.3. TEST EQUIPMENT LIST AND DETAILS

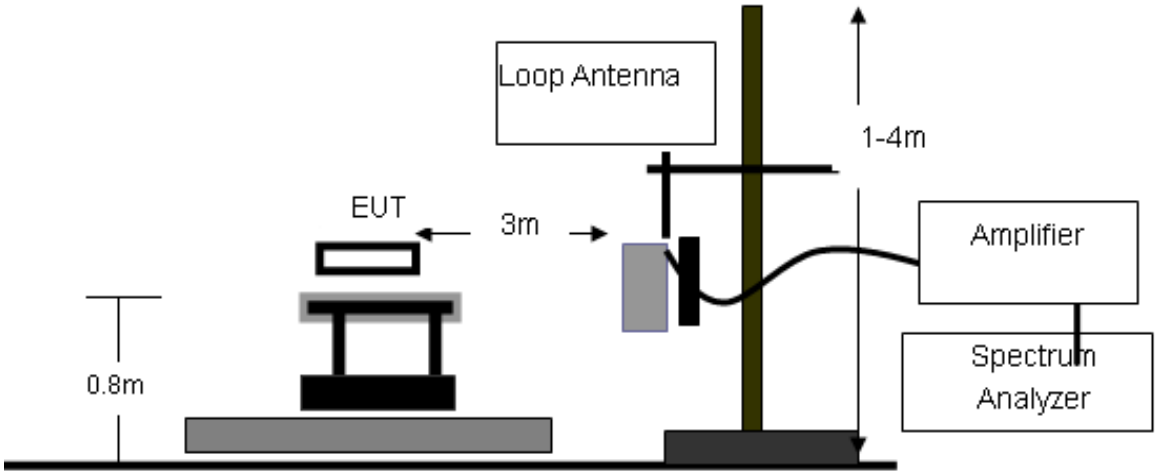
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2012	07/17/2013
BICONICAL ANTENNA	A.H.	SAS-521-4	128	07/18/2012	07/17/2013
LOOP ANTENNA	R&S	HM525	N/A	07/18/2012	07/17/2013
HORN ANTENNA	EM	EM-AH-10180	N/A	07/18/2012	07/17/2013
AMPLIFIER	EM	EM30180	0607030	07/18/2012	07/17/2013
COAXIAL CABLE	SCHWARZBECK	AK9513	9513-10	07/18/2012	07/17/2013
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	07/18/2012	07/17/2013

6.4. TEST PROCEDURE

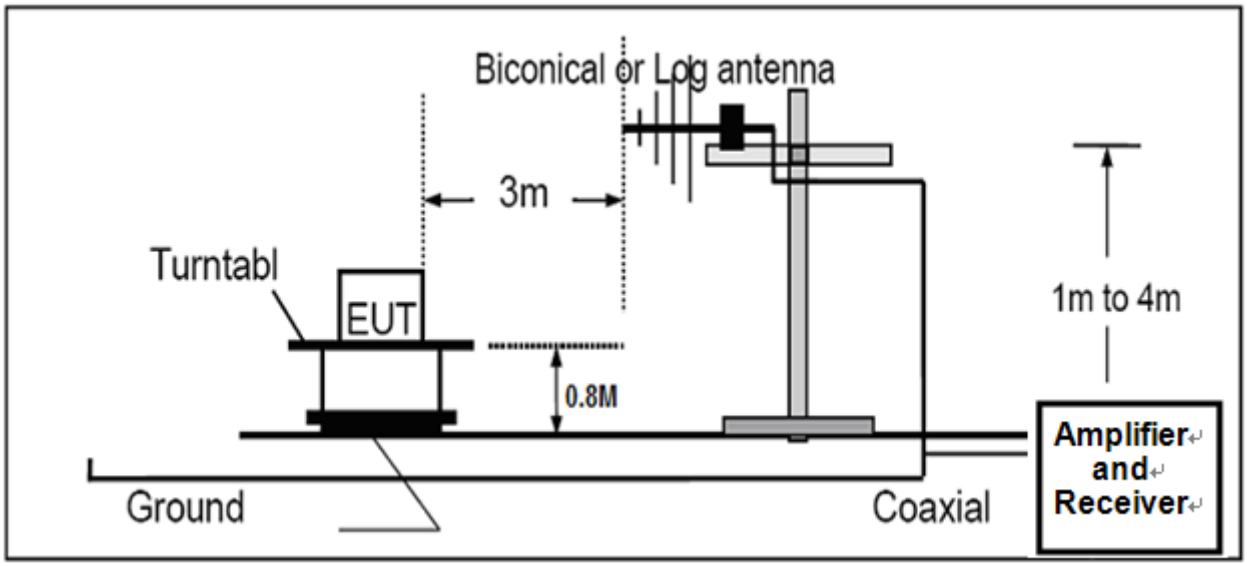
The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.249 and FCC Part 15.209 Limit.

6.5. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

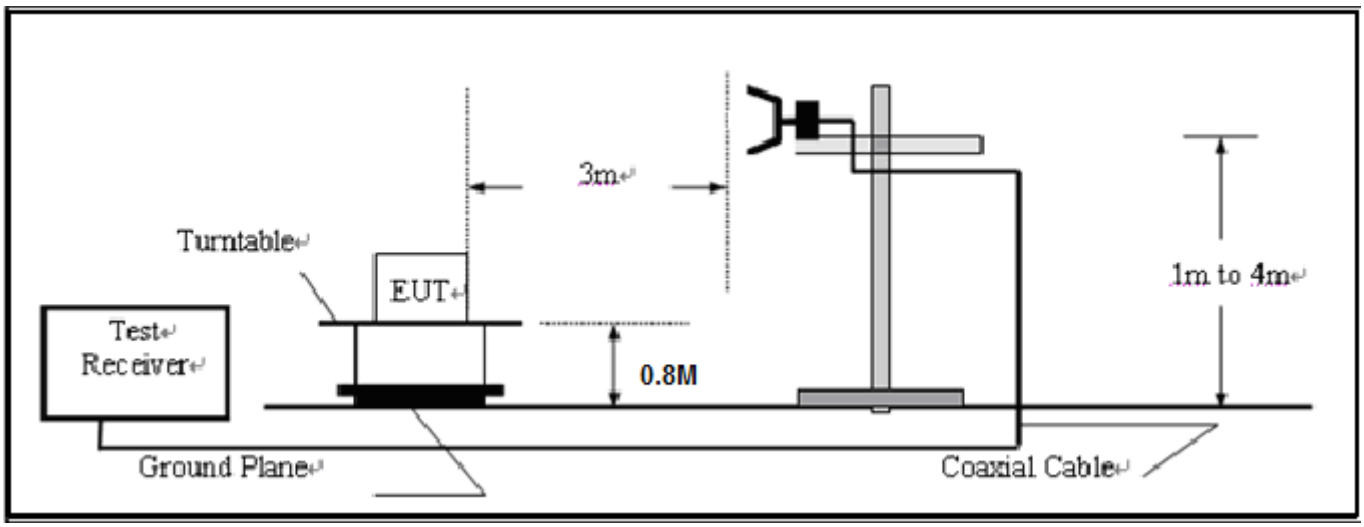
BELOW 30MHz:



30MHz-1000MHz:



ABOVE 1000MHz:



6.6. TEST RESULTS

6.6.1TEST RESULT OF RADIATED EMISSION TEST (9KHZ-30MHZ)

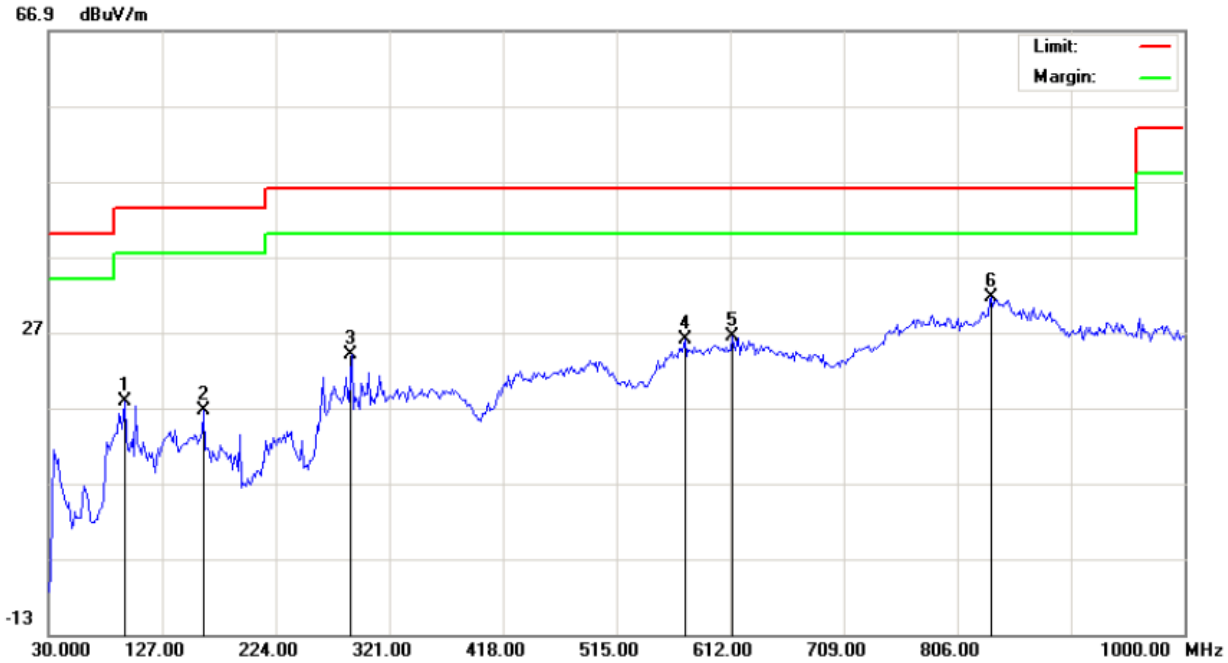
Freq. (MHz)	Level (dB uV)	Over Limit (dB)	Limit Line (dB uV)	Remark
--	--	--	--	Seen to Note

***Note:*

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be report.

6.6.2TEST RESULT OF RADIATED EMISSION TEST (30MHZ-1GHZ)

Horizontal:



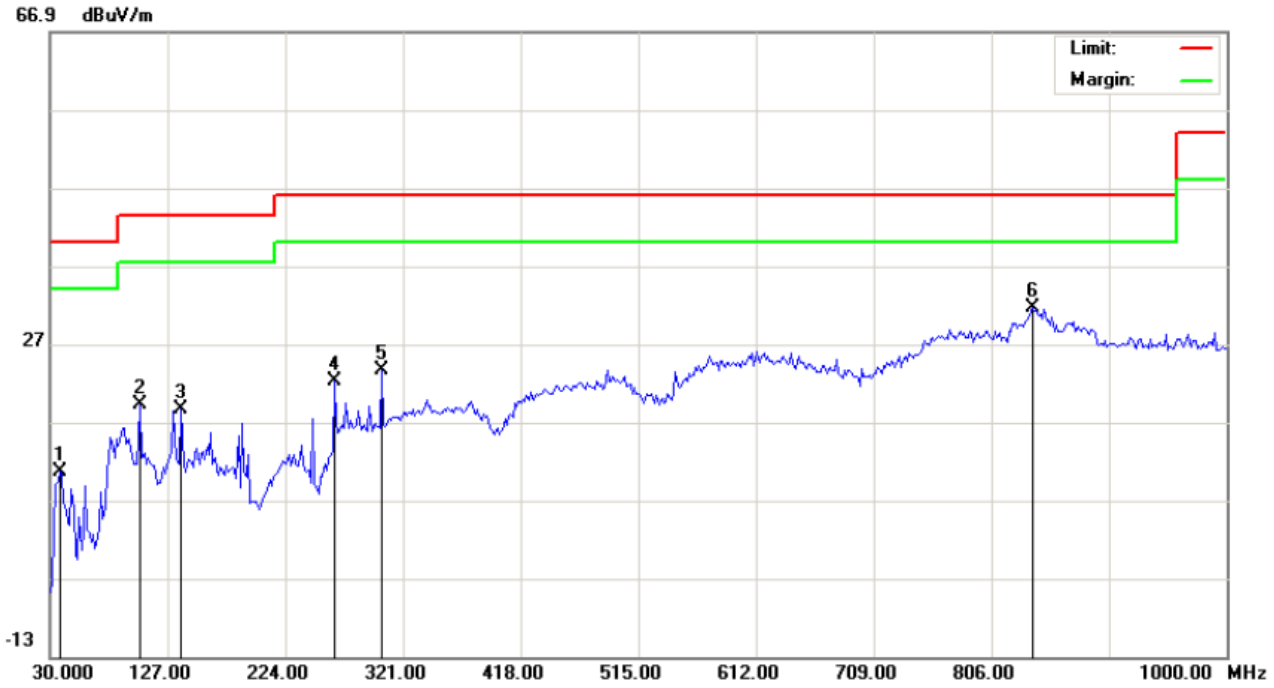
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Smart Pulse Oximeter
M/N: OF4.0
Mode: Middle channel TX
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

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		94.6667	2.67	15.06	17.73	43.50	-25.77	peak			
2		162.5667	3.34	13.20	16.54	43.50	-26.96	peak			
3		288.6666	6.88	17.11	23.99	46.00	-22.01	peak			
4		573.2000	1.48	24.44	25.92	46.00	-20.08	peak			
5		613.6167	1.32	25.02	26.34	46.00	-19.66	peak			
6	*	835.1000	0.98	30.55	31.53	46.00	-14.47	peak			

Vertical:



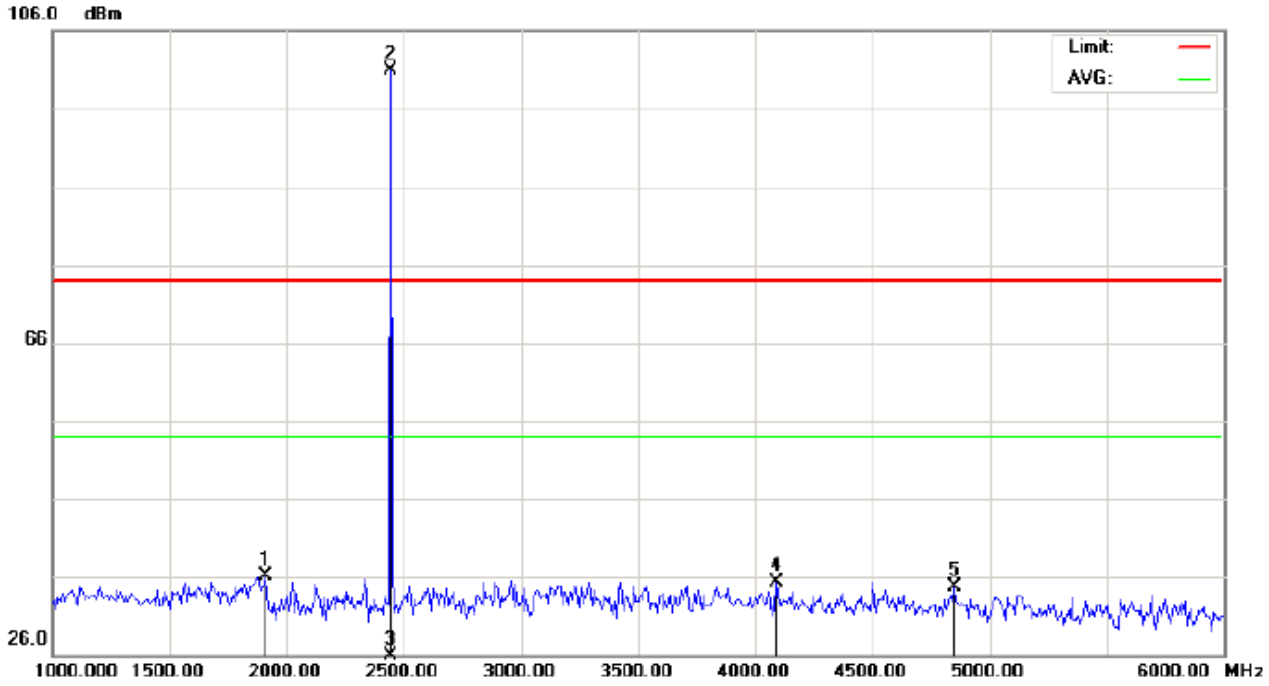
Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Smart Pulse Oximeter
M/N: OF4.0
Mode: Middle channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

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		38.0833	1.71	8.98	10.69	40.00	-29.31	peak			
2		104.3667	6.70	12.55	19.25	43.50	-24.25	peak			
3		138.3167	5.83	12.82	18.65	43.50	-24.85	peak			
4		264.4166	7.52	14.71	22.23	46.00	-23.77	peak			
5		303.2167	6.34	17.21	23.55	46.00	-22.45	peak			
6	*	839.9500	0.23	31.34	31.57	46.00	-14.43	peak			

6.6.3TEST RESULT OF RADIATED EMISSION TEST (ABOVE 1000MHZ)

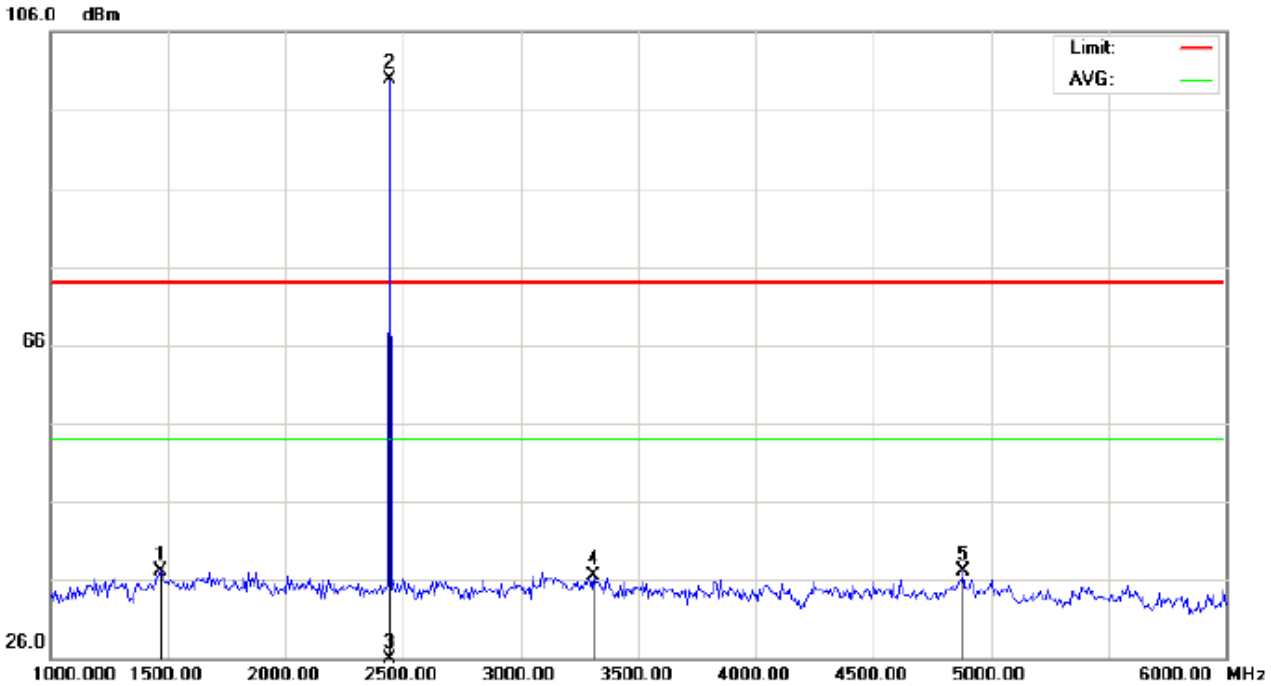


Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT:Smart Pulse Oximeter
M/N:OF4.0
Mode:Middle Channel TX
Note:

Polarization: *Horizontal*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBm	dB	dBm	dBm	dB		cm	degree	
1		1908.333	32.69	3.41	36.10	74.00	-37.90	peak			
2	*	2441.667	97.72	3.10	100.82	74.00	26.82	peak			
3		2441.667	75.14	3.10	78.24	54.00	24.24	AVG	150	0	
4		4091.667	32.60	2.78	35.38	74.00	-38.62	peak			
5		4850.000	31.37	3.34	34.71	74.00	-39.29	peak			



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: Hpod
M/N: Hpod4.0
Mode:Middle Channel TX
Note:

Polarization: *Vertical*
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBm	dB	dBm	dBm	dB		cm	degree	
1		1466.667	34.15	2.87	37.02	74.00	-36.98	peak			
2	*	2441.667	97.13	2.80	99.93	74.00	25.93	peak			
3		2441.66	74.68	2.80	77.48	54.00	23.48	AVG	150	0	
4		3308.333	33.69	2.85	36.54	74.00	-37.46	peak			
5		4883.333	34.27	2.76	37.03	74.00	-36.97	peak			

***Note:**

1. *Above test data Mark 2 is fundamental frequency and the AVG limit is 94dBuV/m and Peak Limit is 114dBuv/m. so comply with standard requirement.*
2. *The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be report.*

7. §15.249 EMISSION BANDWIDTH

7.1. STANDARD APPLICABLE

None; for reporting purposes only.

7.2. TEST EQUIPMENT LIST AND DETAILS

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2012	07/17/2013
RECEIVER ANTENNA	ETS	2175	57337	07/18/2012	07/17/2013
COAXIAL CABLE	ETS	SUCOFLEX 104	25498514	07/18/2012	07/17/2013

7.3. TEST PROCEDURE

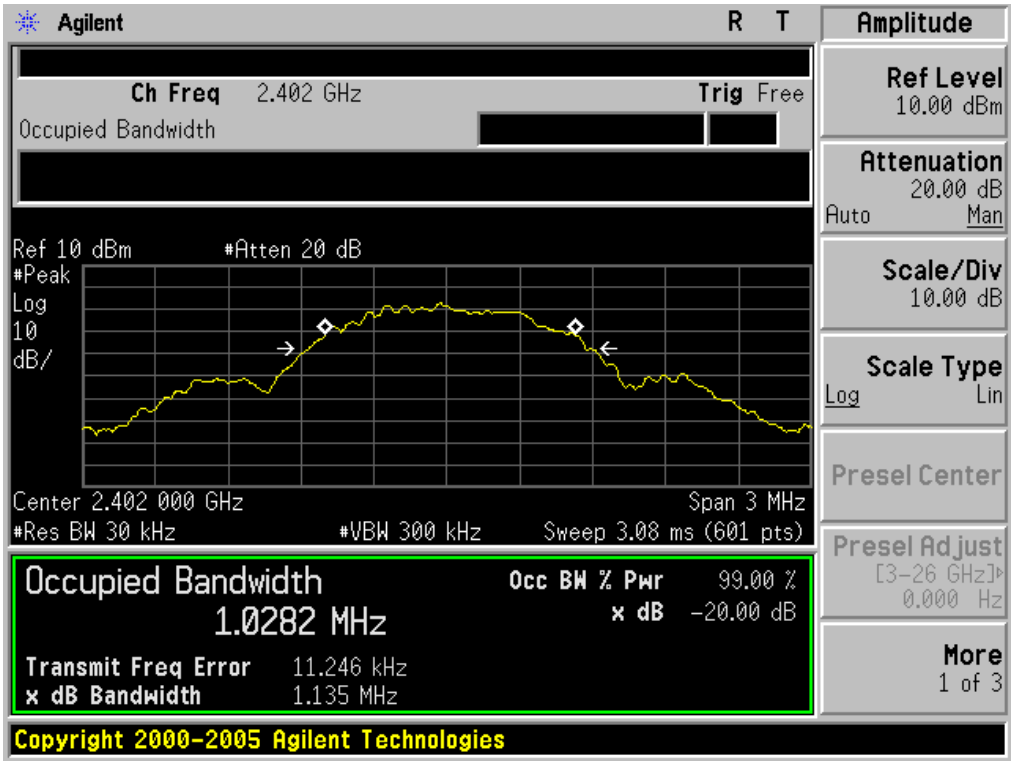
With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT's operation band.

7.4. SUMMARY OF TEST RESULTS/PLOTS

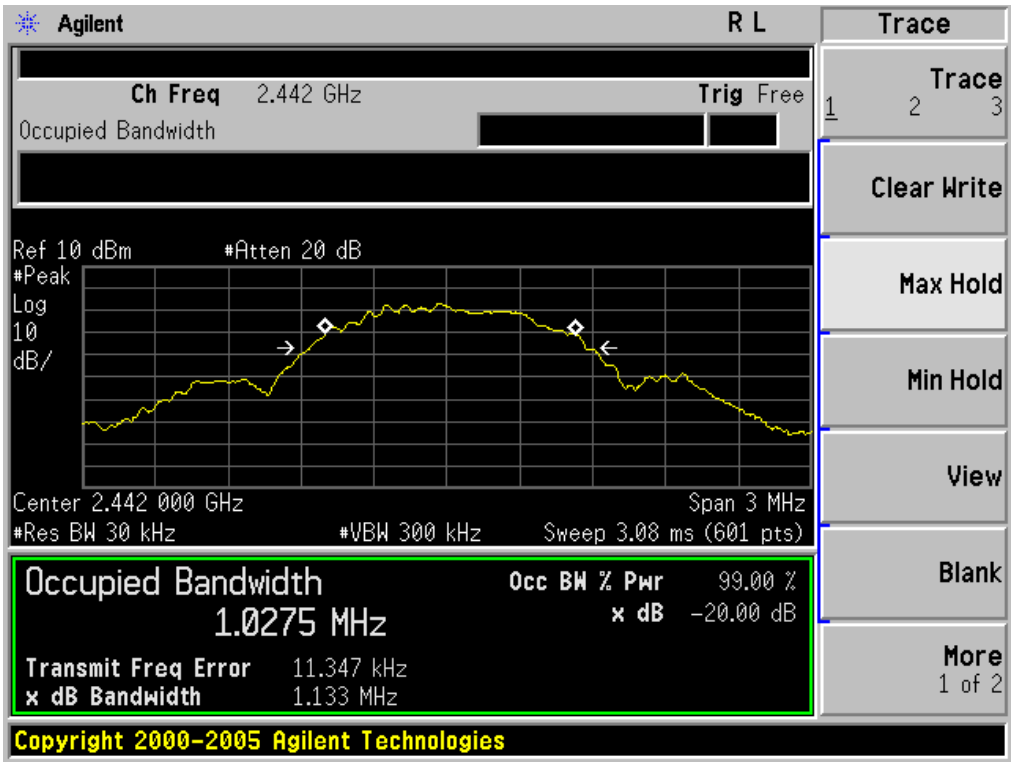
Channel	Emission Bandwidth (MHz)	Limit (KHz)
Low	1.135	N/A
Middle	1.133	
High	1.136	

Test Result: Pass

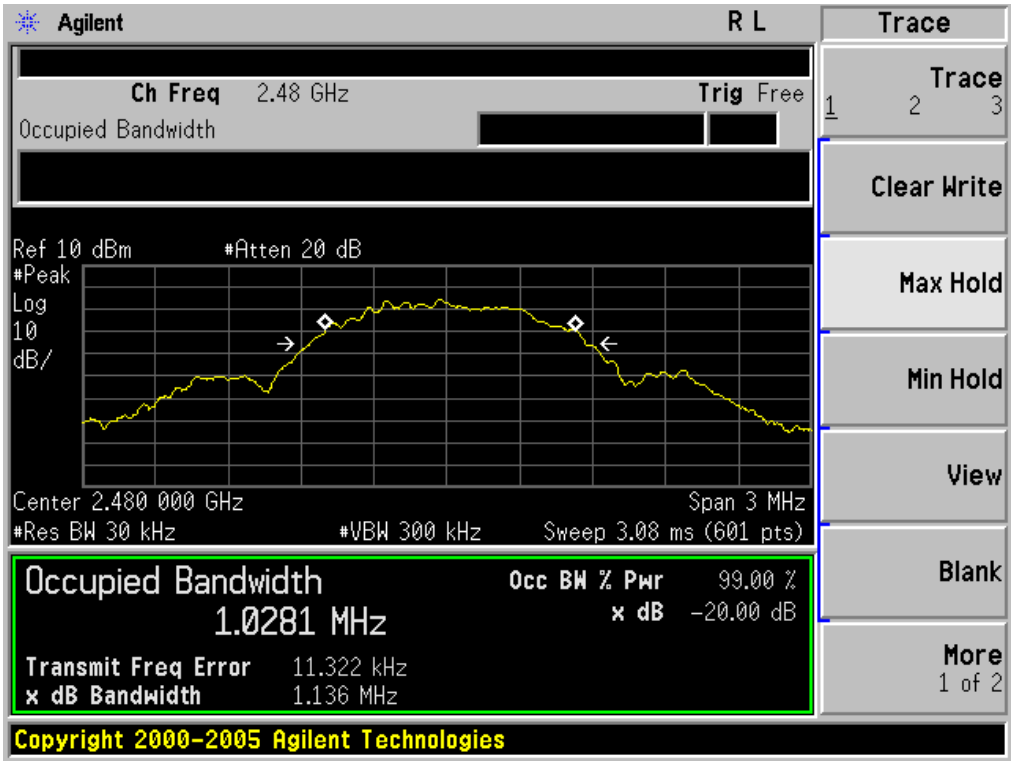
Low Channel Test Result



Middle Channel Test Result

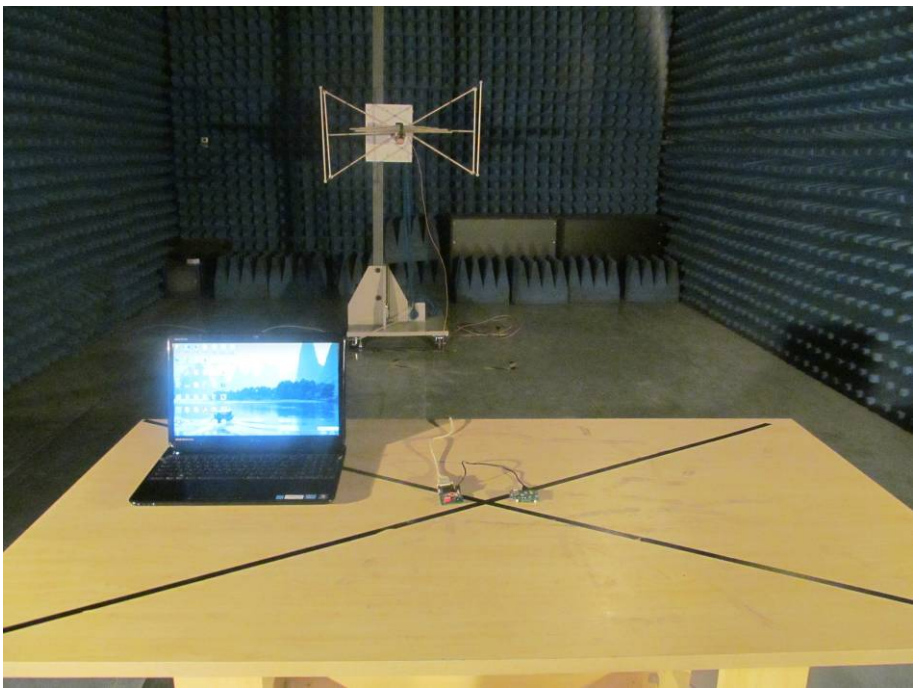


High Channel Test Result



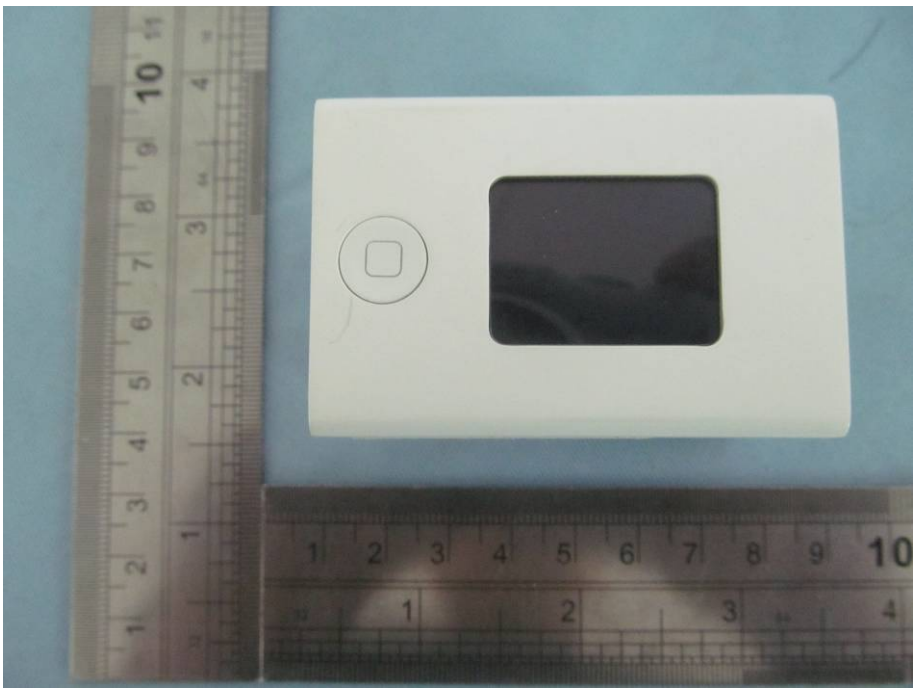
APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

RADIATED EMISSION TEST SETUP

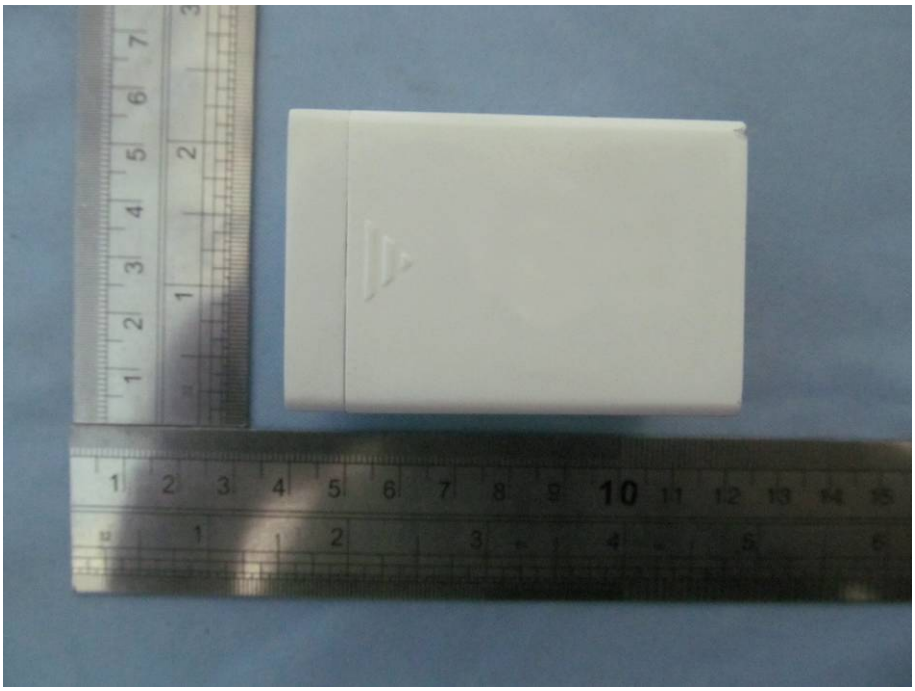


APPENDIX 2
PHOTOGRAPHS OF EUT

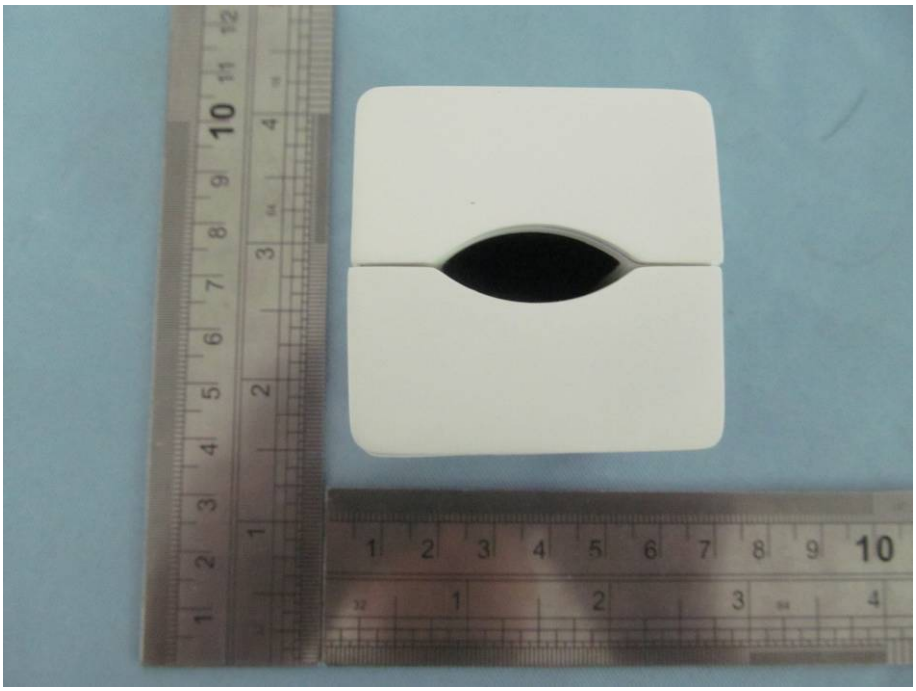
Top View of EUT



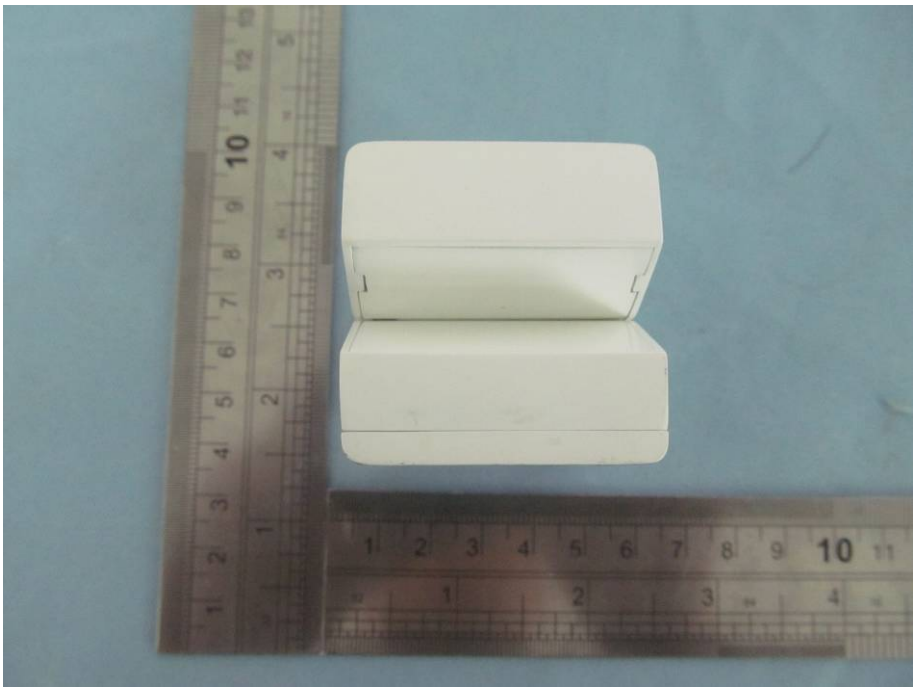
Button View of EUT



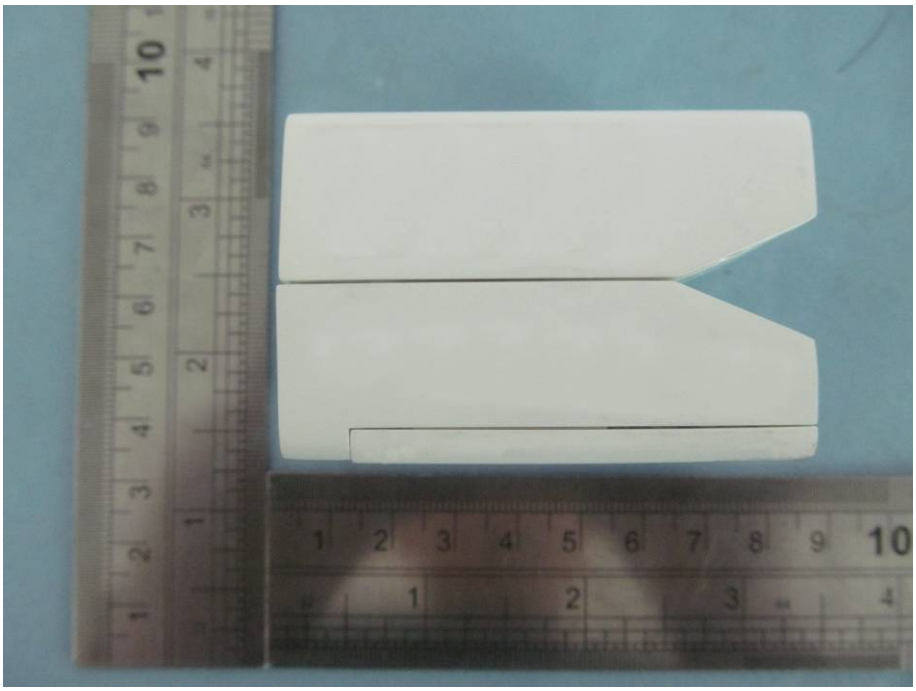
Front View of EUT



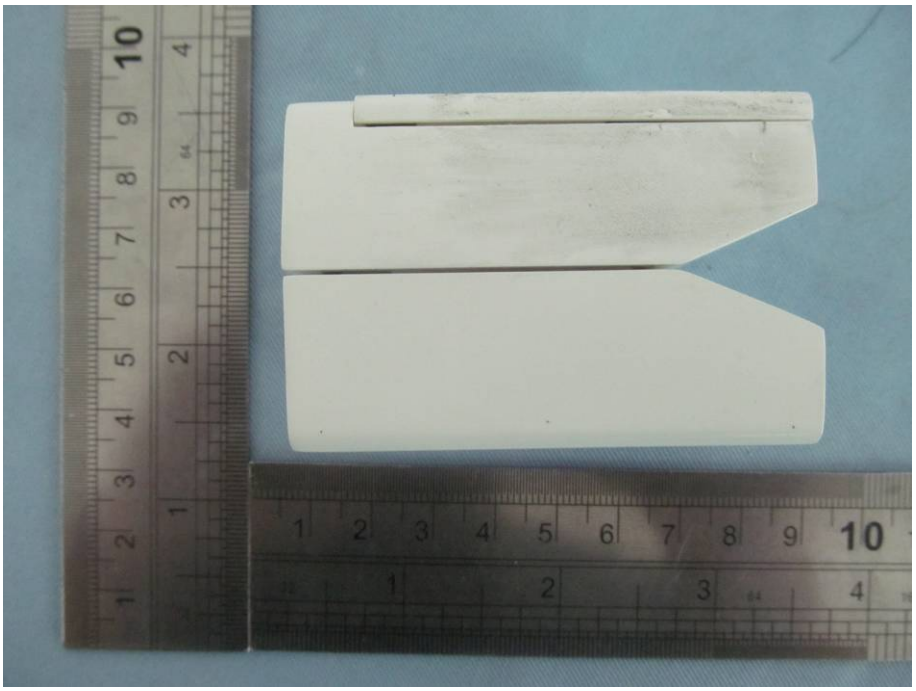
Back View of EUT



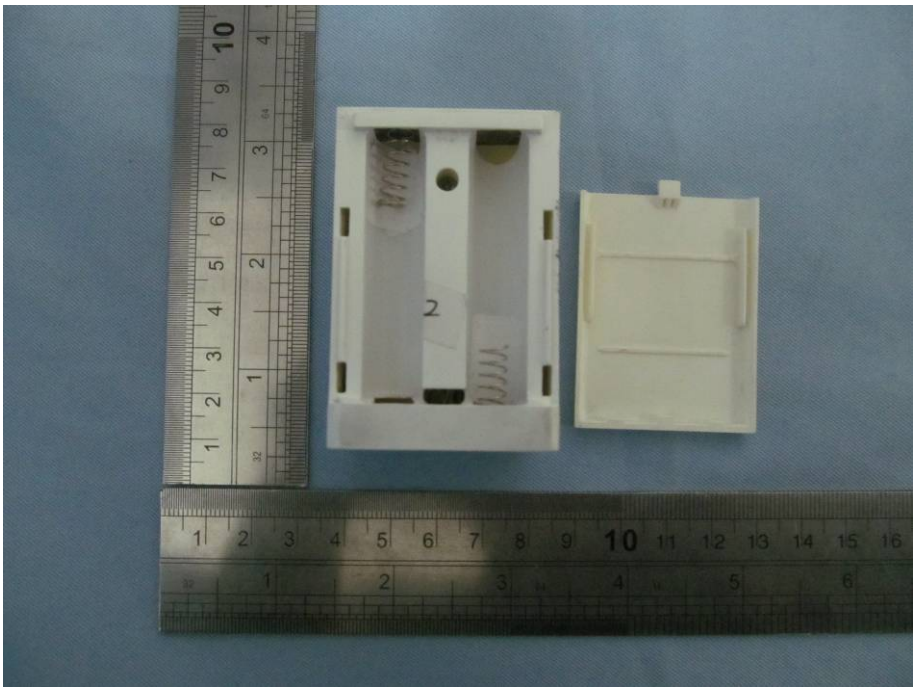
Left View of EUT



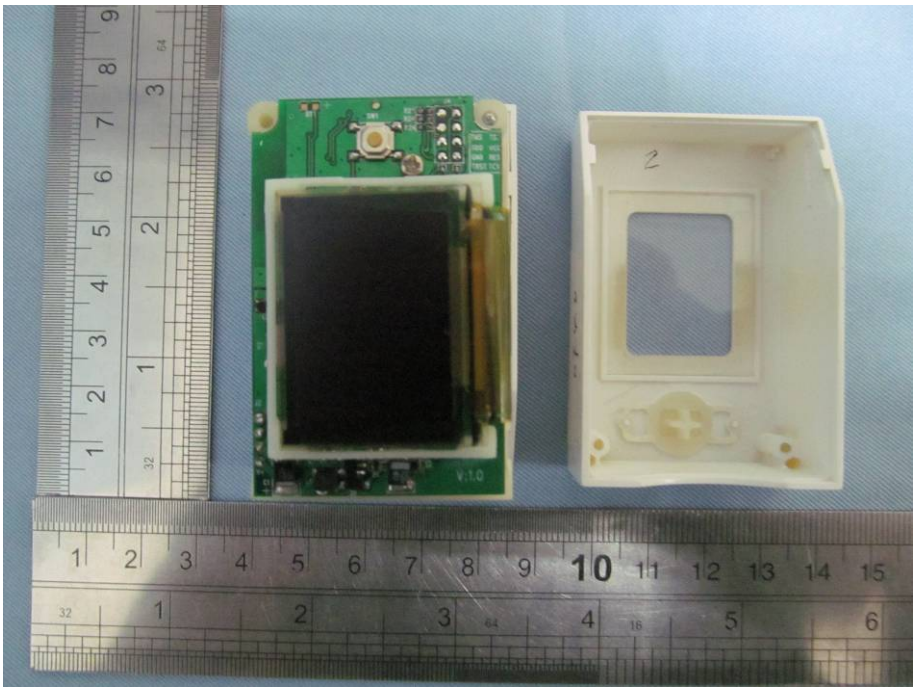
Right View of EUT



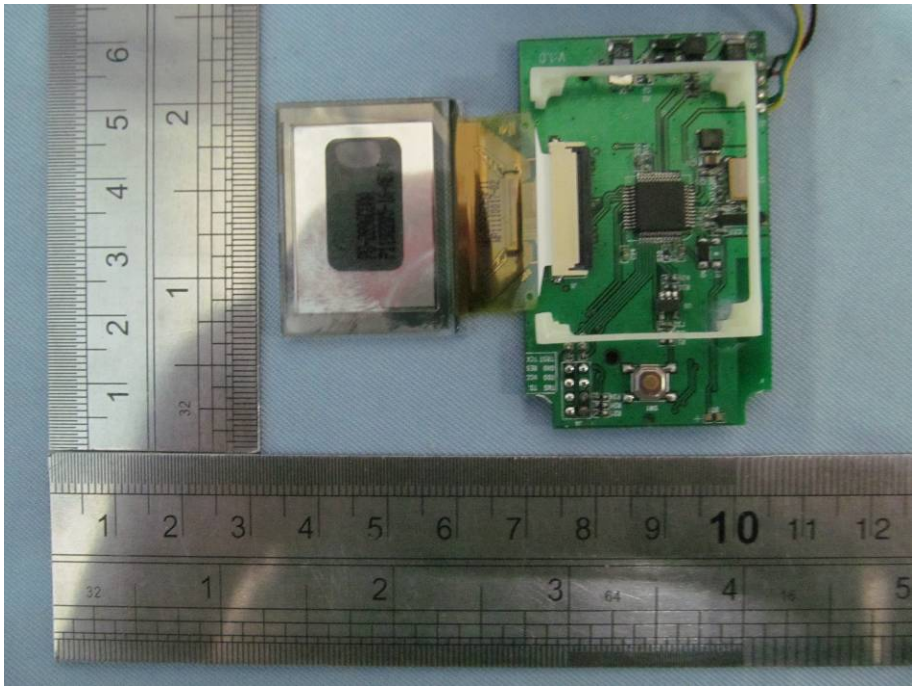
Open View of EUT-1



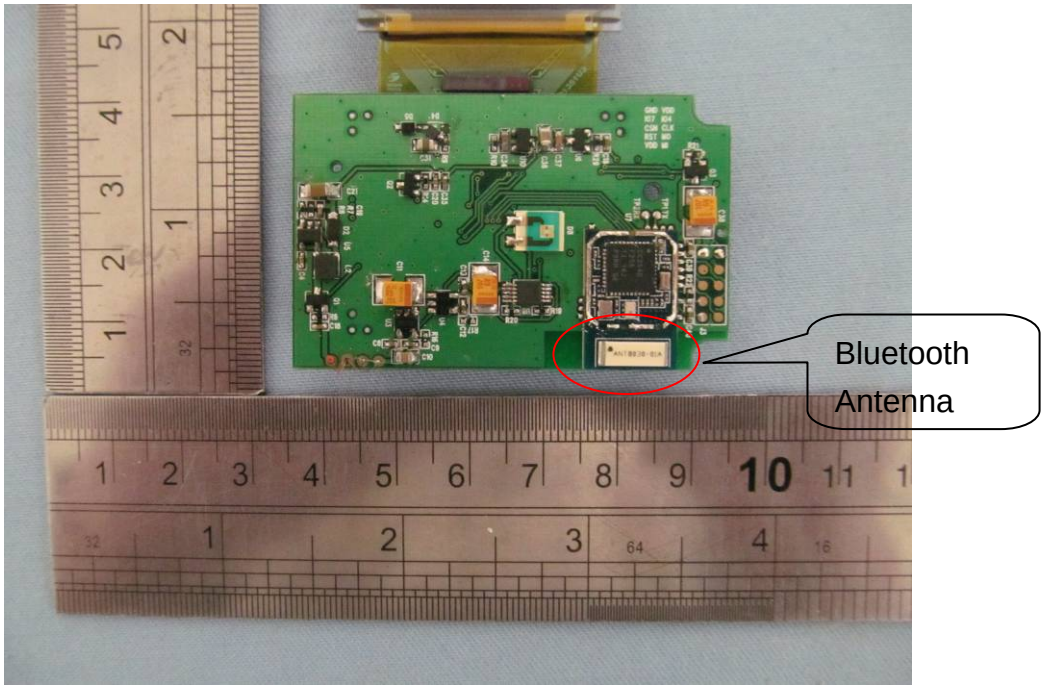
Internal View of EUT-1



Internal View of EUT-2



Internal View of EUT-3



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