FCC Test Report

Report No.: AGC01705141203FE01

PRODUCT DESIGNATION	:	Wristband
BRAND NAME	:	N/A
MODEL NAME	:	See page 4
CLIENT	:	Dongguan Yuanfeng Technology Co., Ltd.
DATE OF ISSUE	:	Dec.24,2014
STANDARD(S)	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

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

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec.24,2014	Valid	Original Report

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1. VERIFICATION OF CONFORMITY

Applicant	Dongguan Yuanfeng Technology Co., Ltd.
Address	No. 18, Industrial East Road, Songshan Lake Hi-Tech Industrial Development Zone, Dongguan, Guangdong, 523808, China
Manufacturer	Dongguan Yuanfeng Technology Co., Ltd
Address	No. 18, Industrial East Road, Songshan Lake Hi-Tech Industrial Development Zone, Dongguan, Guangdong, 523808, China
Product Designation	Wristband
Brand Name	N/A
Test Model	BN01L02
Series Model	BN01L01,BN01L03, BN01L04,BN01L05,BN01L06, BN01L07,BN01L08,BN01L09, BN01L10,BN01L11,BN01L12, BN01L13,BN01L14,BN01L15, BN01L16,BN01L17,BN01L18, BN01L19,BN01L20,BN01L21,
Difference description	All the same except for the model name
Measurement Procedure	ANSI C63.4: 2003
Date of test	Dec.22,2014 to Dec.23,2014
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-IT/AC(2013-03-01)

The above equipment was tested by Attestation of Global Compliance (Shenzhen) 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.

Prepared By		
	Water Zuo	Dec.24,2014
Checked By		
	Forrest Lei	Dec.24,2014
Authorized By		
	Solger Zhang	Dec.24,2014

2. SYSTEM DESCRIPTION

TEST MODE DESCRIPTION		
NO.	**TEST MODE DESCRIPTION**	**WORST**
1	data exchange between EUT and PC	V
Note: 1. V means EMI worst mode 2. Only worst mode data recorded in the test report		

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB

Radiated measurement: +/- 3.2dB

4. PRODUCT INFORMATION

Housing Type	Plastic
Power Supply	DC 3.7V
Note: The highest working frequency of EUT is 2480MHz	

I/O Port Information (☒Applicable ☐Not Applicable)

I/O Port of EUT			
I/O Port Type	**Number**	**Cable Description**	**Tested With**
USB port	1	0	1

Note: All the cables were provided by AGC Lab.

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
PC	APPLE	A1465	--	--	--

Note:

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

2 “-- “means no any information.

6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location 1	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Location 2	B112-B113 Building 12, Baoan Building Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen, Guangdong, P.R.China
Note: The test items RS&CS were tested in the Laboratory of Location 2. Others were tested in the Laboratory of Location 1.	

TEST EQUIPMENT OF LINE CONDUCTED EMISSION TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	100694	04/01/2014	03/31/2015
LISN	R&S	ESH3-Z5	8389791009	07/15/2014	07/14/2015
Conduction Cable	Sat	CE1	C001	06/04/2014	06/03/2015

TEST EQUIPMENT OF RADIATED EMISSION

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/15/2014	07/14/2015
ANTENNA	A.H.	SAS-521-4	128	06/06/2014	06/05/2015
HORN ANTENNA	EM	EM-AH-10180	N/A	04/20/2014	04/19/2015
AMPLIFIER	EM	EM30180	0607030	02/27/2014	02/26/2015
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	--	--
Radiation Cable 1	Sat	RE1	R003	06/04/2014	06/03/2015
Radiation Cable 2	Sat	RE2	R002	06/04/2014	06/03/2015

Note:" -- "means it's not applicable.

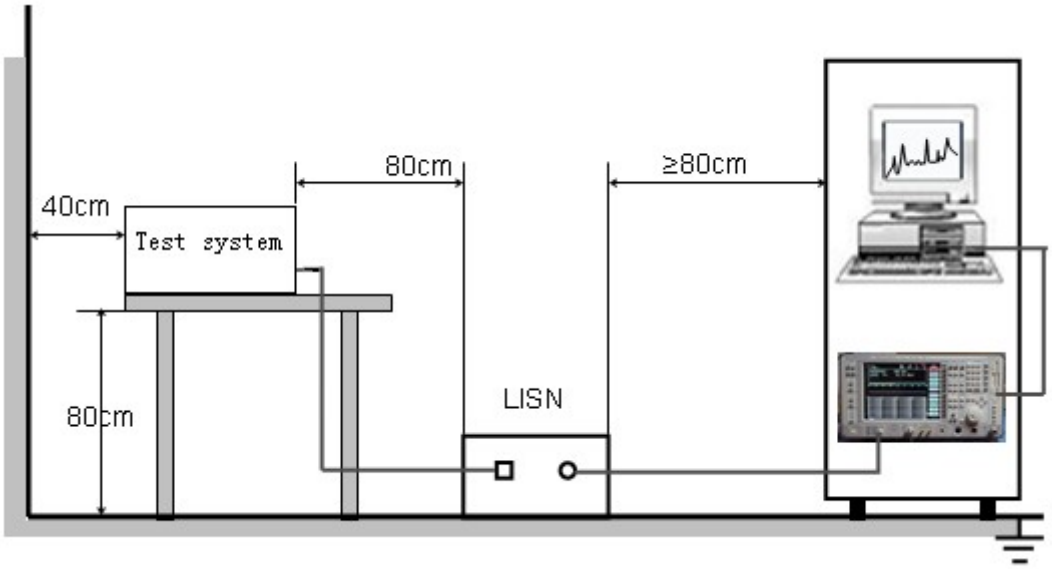
7. FCCLINE CONDUCTED EMISSION TEST

7.1. 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 0.50MHz.

7.2. BLOCK DIAGRAM OF TEST SETUP



7.3. 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) The EUT received DC5V power from PC with receive 120V/60Hz power from a LISN.

(5) 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.

(6) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

(7) During the above scans, the emissions were maximized by cable manipulation.

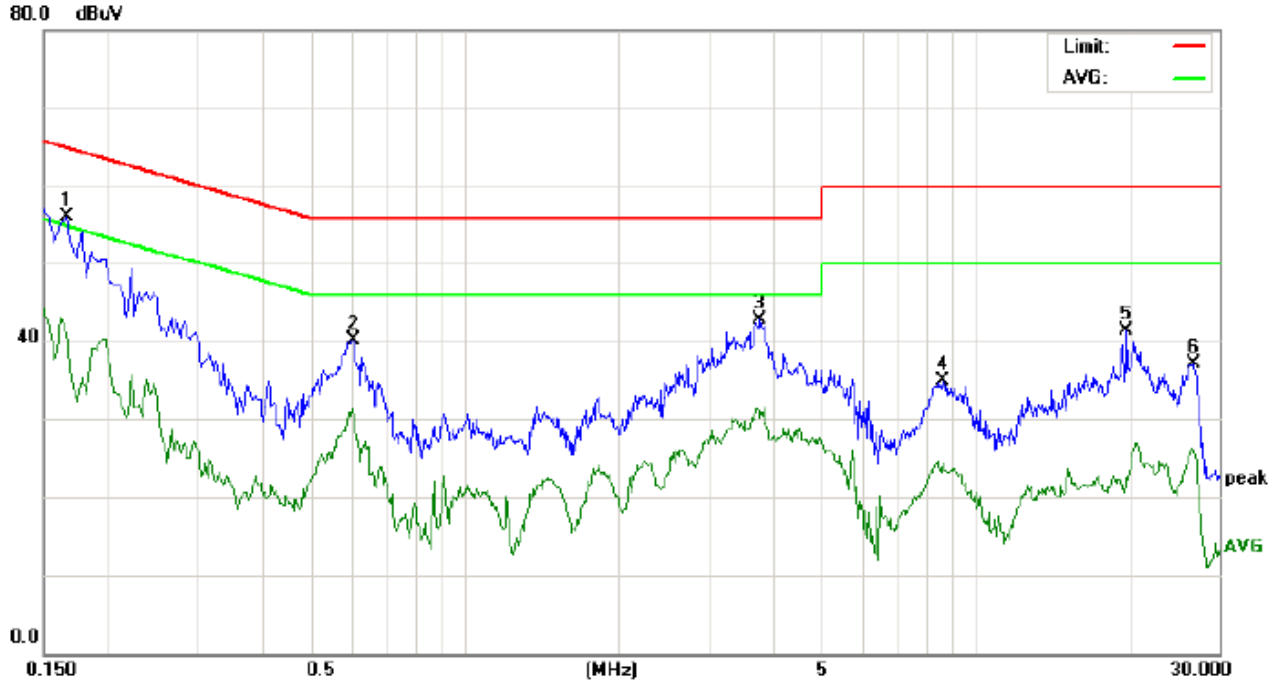
(8) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions.

(9) 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.

The test data of the worst case condition (mode 1) was reported on the Summary Data page.

7.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L

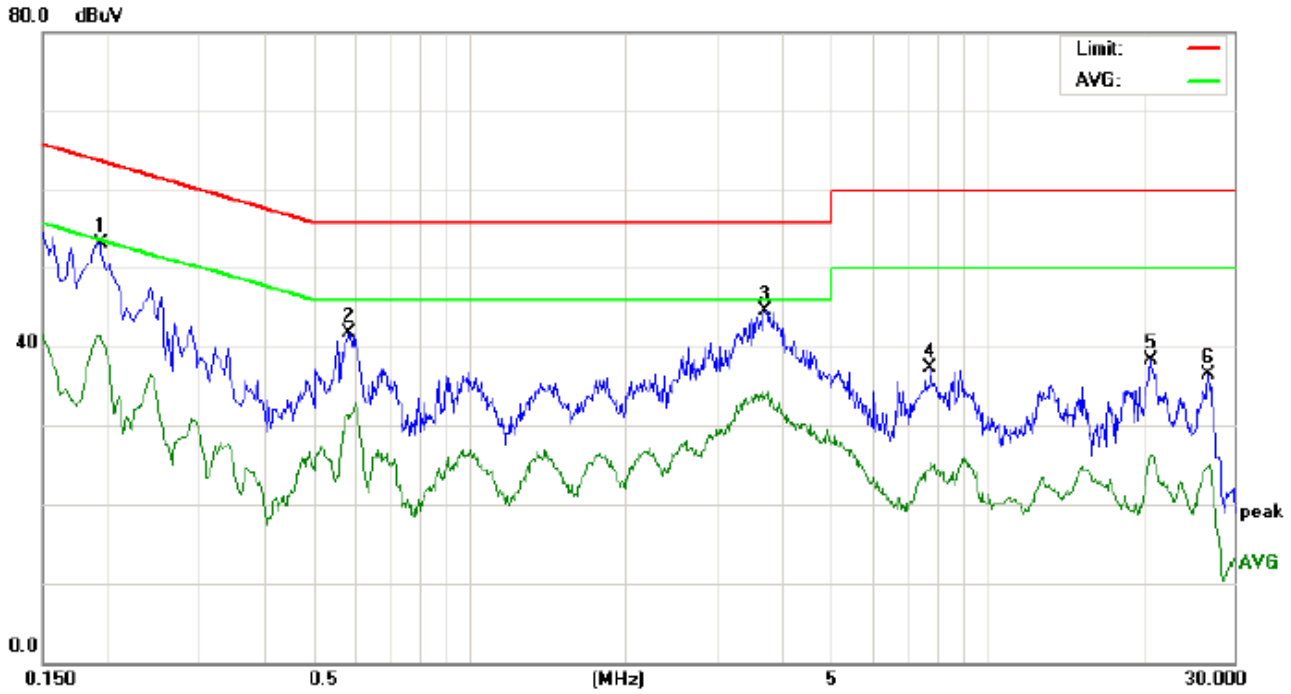


Site: Conduction
Phase: L1
Temperature: 26
Limit: FCC Class B Conduction(QP)
Power:
Humidity: 60 %
EUT: Wristband
M/N: BN01L02
Mode: data exchange between EUT and PC
Note:

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	0.1660	46.00		30.87	10.18	56.18		41.05	65.15	55.15	-8.97	-14.10	P	
2	0.6058	29.82		20.20	10.31	40.13		30.51	56.00	46.00	-15.87	-15.49	P	
3	3.7940	32.22		19.62	10.46	42.68		30.08	56.00	46.00	-13.32	-15.92	P	
4	8.6219	24.59		14.26	10.31	34.90		24.57	60.00	50.00	-25.10	-25.43	P	
5	19.7819	31.12		12.39	10.11	41.23		22.50	60.00	50.00	-18.77	-27.50	P	
6	26.7300	26.98		15.93	10.12	37.10		26.05	60.00	50.00	-22.90	-23.95	P	

RESULT: PASS

LINE CONDUCTED EMISSION TEST-N



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Wristband
M/N: BN01L02
Mode: data exchange between EUT and PC
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	43.07		31.10	10.21	53.28		41.31	63.86	53.86	-10.58	-12.55	P	
2	0.5856	31.28		20.56	10.32	41.60		30.88	56.00	46.00	-14.40	-15.12	P	
3	3.7259	34.08		22.98	10.47	44.55		33.45	56.00	46.00	-11.45	-12.55	P	
4	7.8059	26.91		14.88	10.34	37.25		25.22	60.00	50.00	-22.75	-24.78	P	
5	20.7740	28.08		16.15	10.13	38.21		26.28	60.00	50.00	-21.79	-23.72	P	
6	26.8297	26.28		14.71	10.12	36.40		24.83	60.00	50.00	-23.60	-25.17	P	

RESULT: PASS

8. FCC RADIATED EMISSION TEST

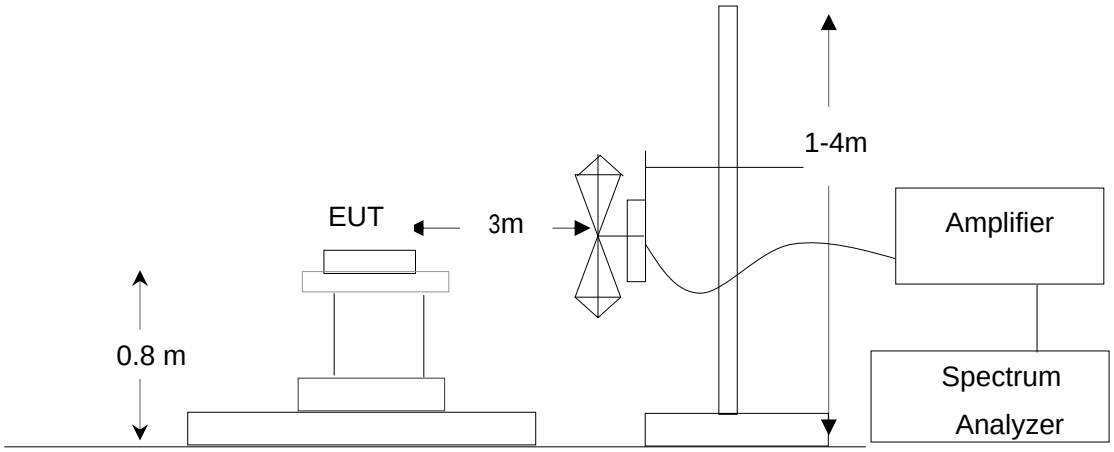
8.1. LIMITS OF RADIATED EMISSION TEST

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.

8.2. BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators



8.3. 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) The EUT received DC 5V power from PC with receive 120V/60Hz power from socket under the turntable through a LISN.

(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.

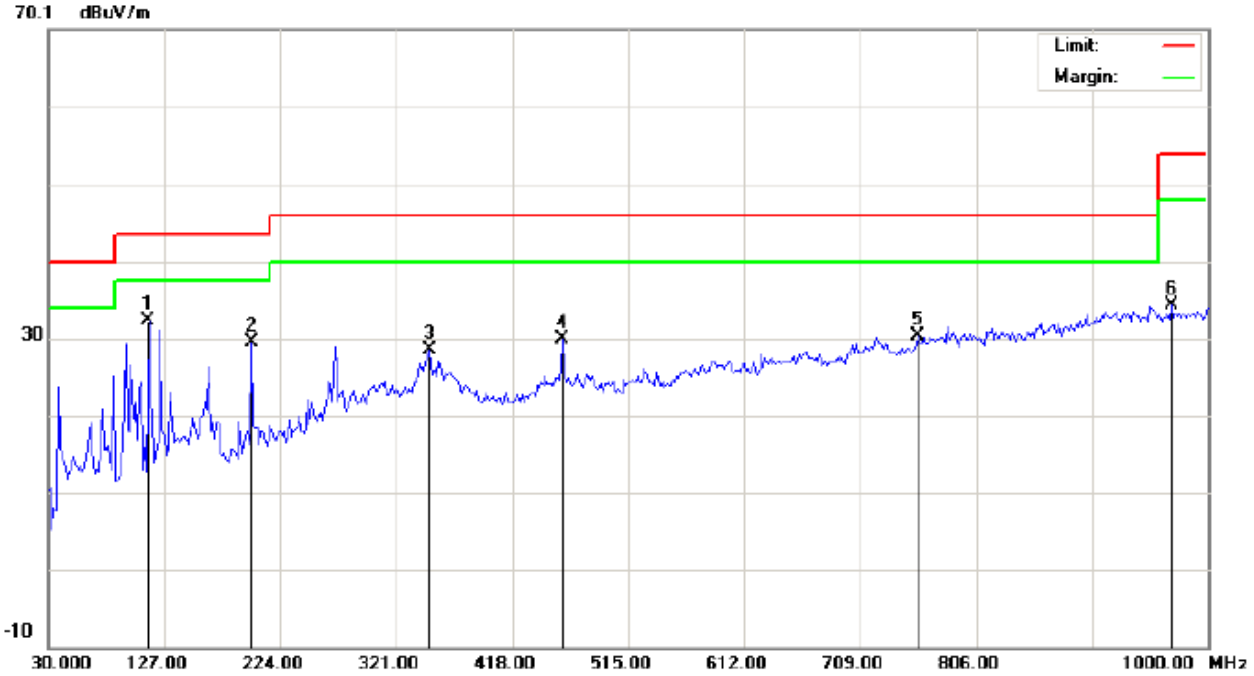
(7) The test mode(s) were scanned during the test:

(8) 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 (mode 1) was reported on the Summary Data page.

8.4. TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Test at 3m Distance-Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wristband
M/N: BN01L02
Mode: data exchange between EUT and PC
Note:

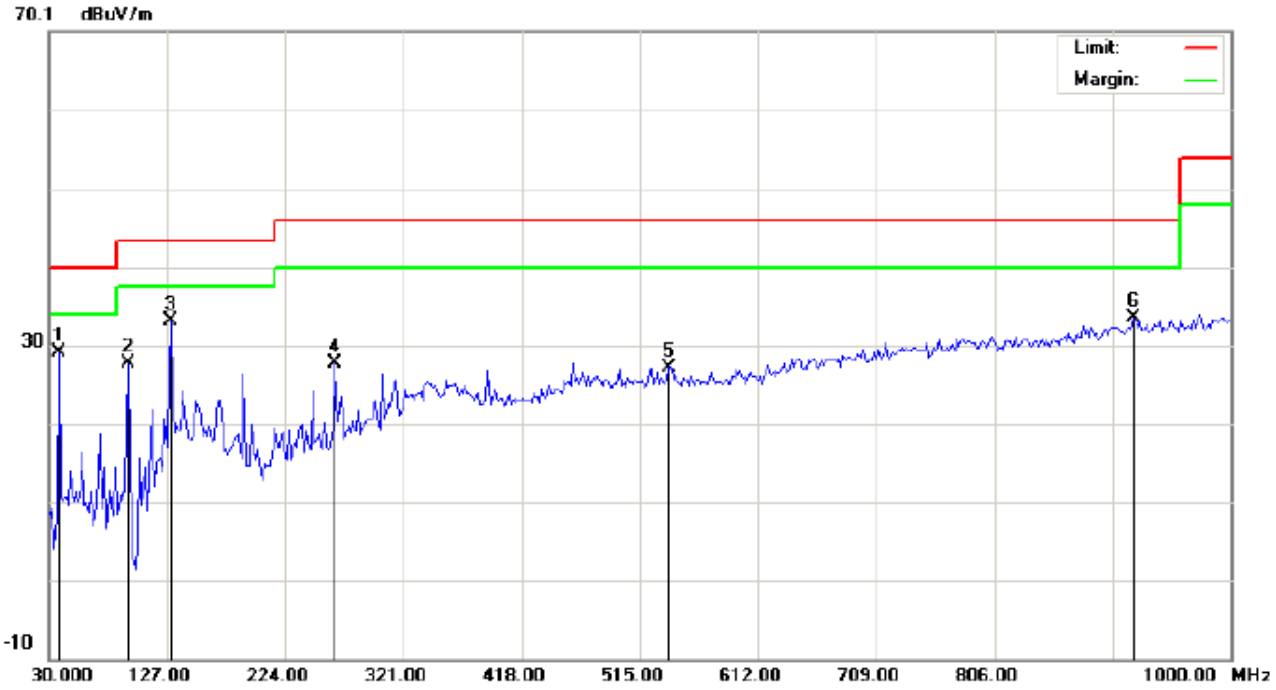
Polarization: *Horizontal*
Power:
Distance: 3m

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	*	114.0665	20.94	11.45	32.39	43.50	-11.11	peak			
2		199.7500	17.60	11.99	29.59	43.50	-13.91	peak			
3		348.4832	9.88	18.64	28.52	46.00	-17.48	peak			
4		460.0332	9.27	20.70	29.97	46.00	-16.03	peak			
5		757.5000	3.62	26.73	30.35	46.00	-15.65	peak			
6		969.2833	4.51	29.81	34.32	54.00	-19.68	peak			

RESULT: PASS

Radiated Emission Test at 3m Distance-Vertical



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Wristband
M/N: BN01L02
Mode: data exchange between EUT and PC
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	22.90	6.39	29.29	40.00	-10.71	peak			
2		94.6667	26.38	1.42	27.80	43.50	-15.70	peak			
3	*	130.2332	22.15	11.13	33.28	43.50	-10.22	peak			
4		264.4166	13.42	14.34	27.76	46.00	-18.24	peak			
5		539.2500	5.11	22.19	27.30	46.00	-18.70	peak			
6		920.7833	4.50	29.19	33.69	46.00	-12.31	peak			

RESULT: PASS

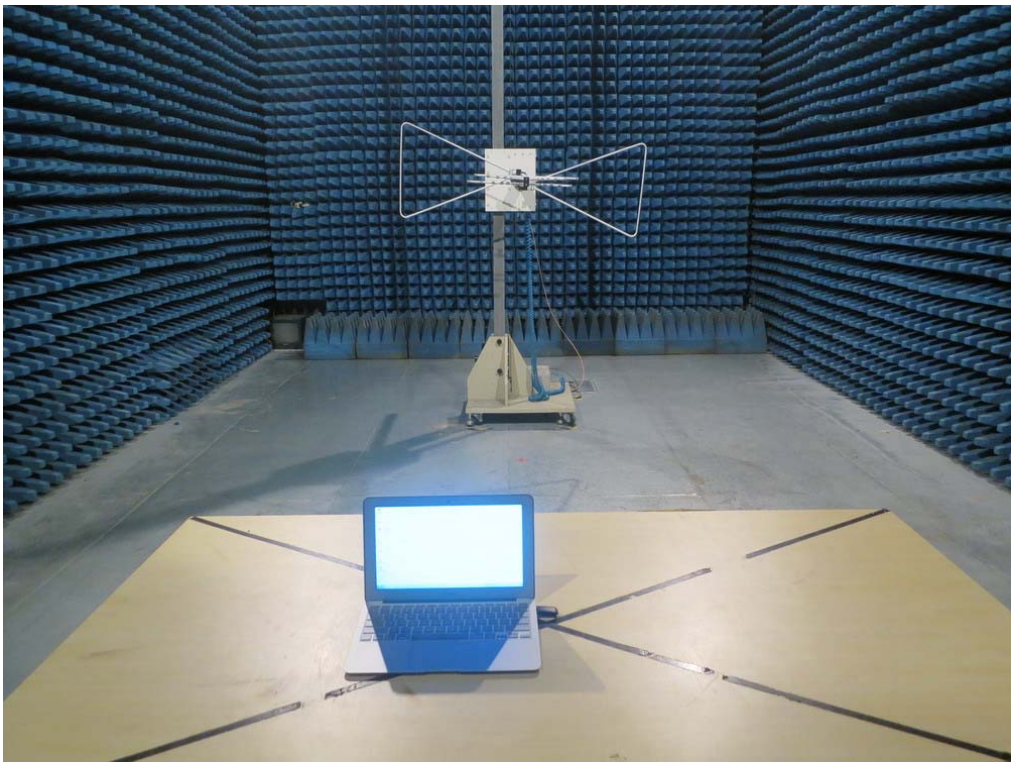
Note: Measurement = Reading + Factor, Over = Measurement – Limit.

The EUT has enough margin from 1GHz to 5th harmonics of highest operating frequency, no recording in the test report.

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP



APPENDIX B: PHOTOGRAPHS OF EUT

TOP VIEW OF EUT

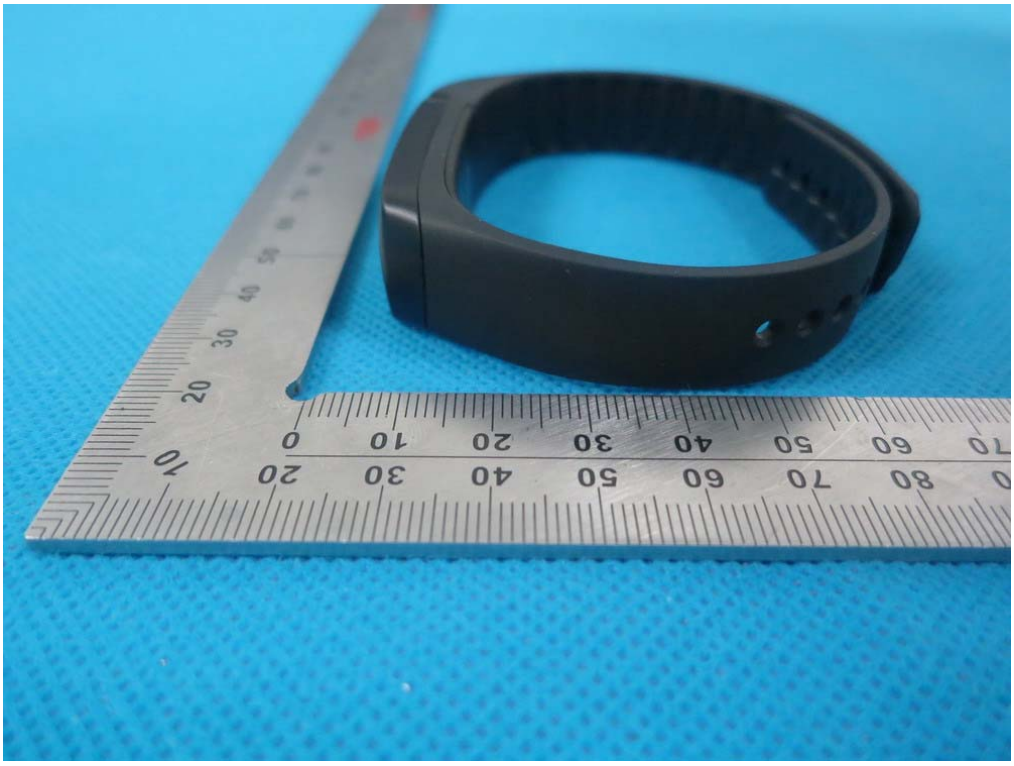
BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

BACK VIEW OF EUT

LEFT VIEW OF EUT

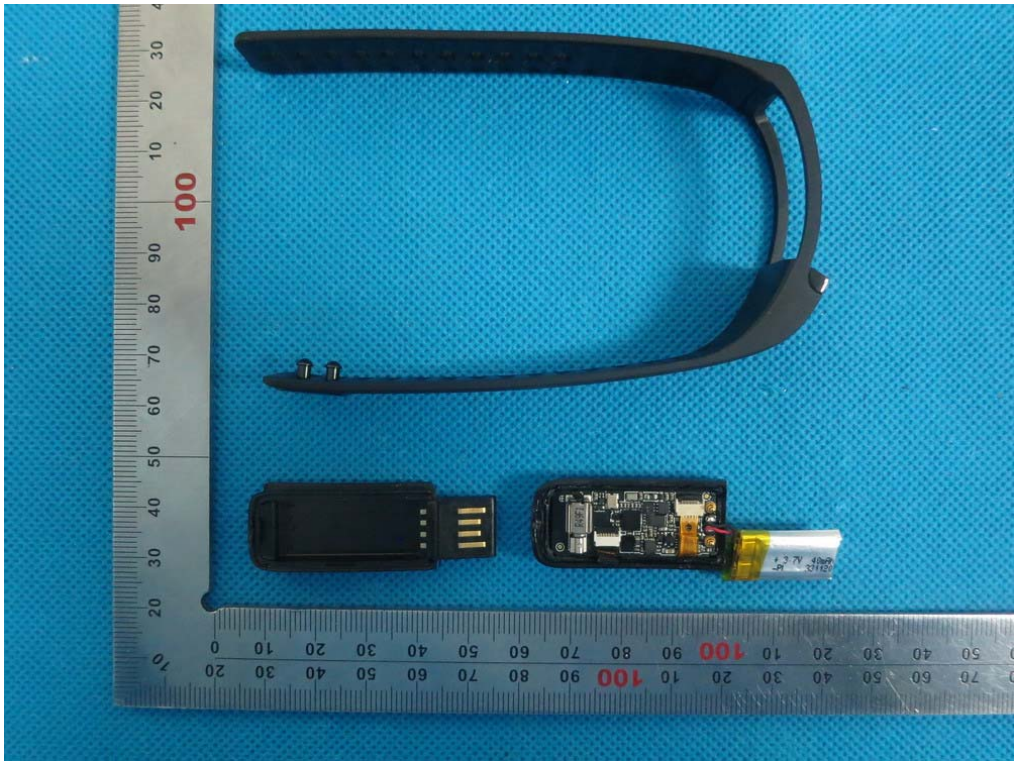
RIGHT VIEW OF EUT



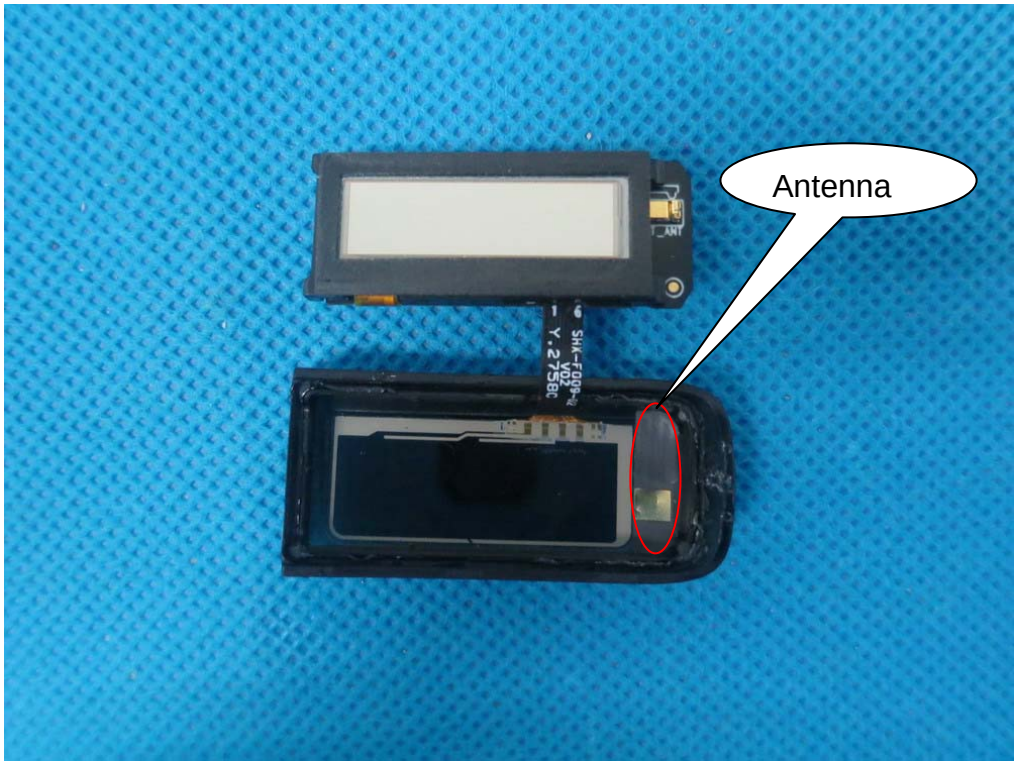
PORT OF EUT -1

PORT OF EUT -2

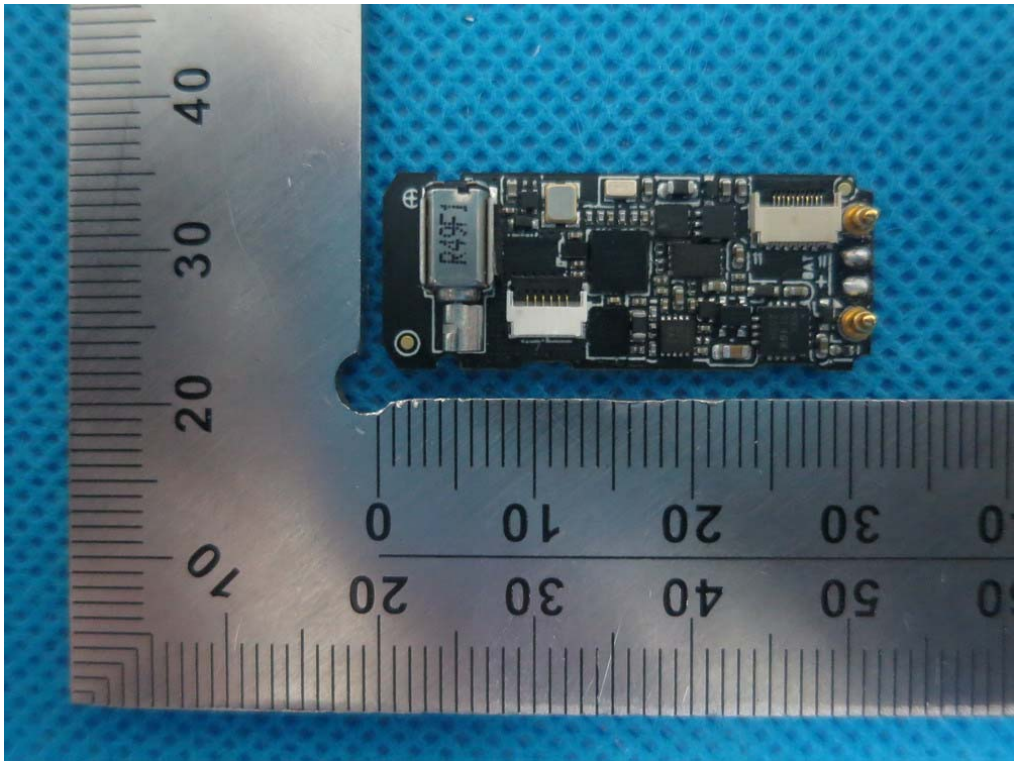
OPEN VIEW OF EUT-1



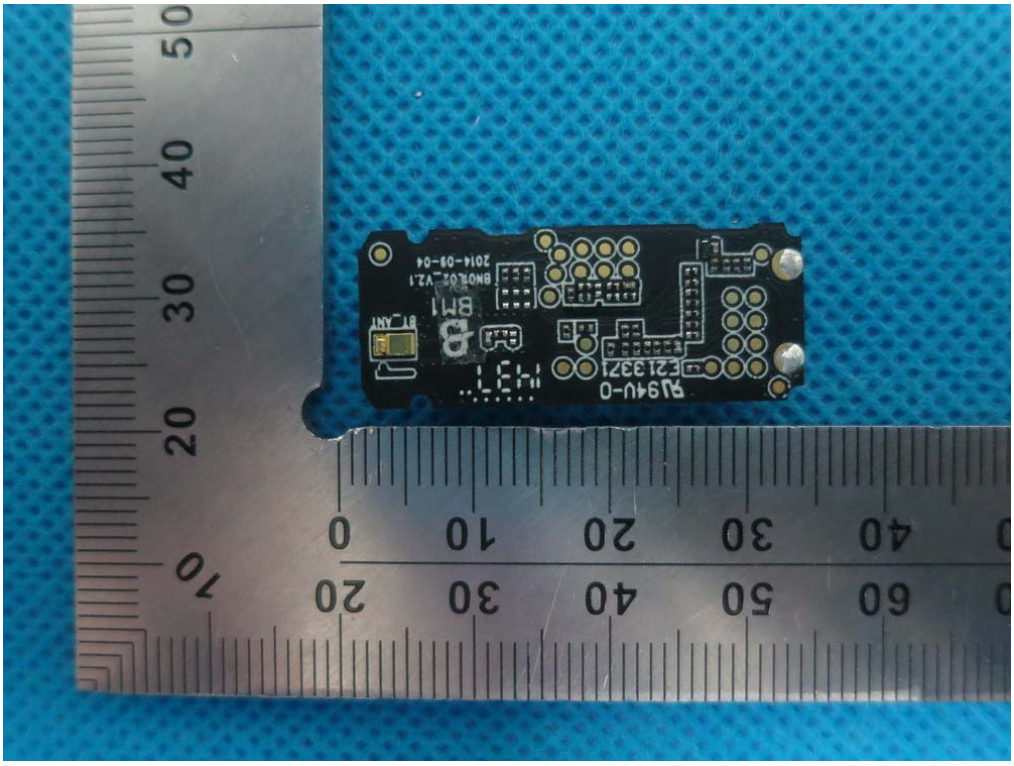
OPEN VIEW OF EUT-2



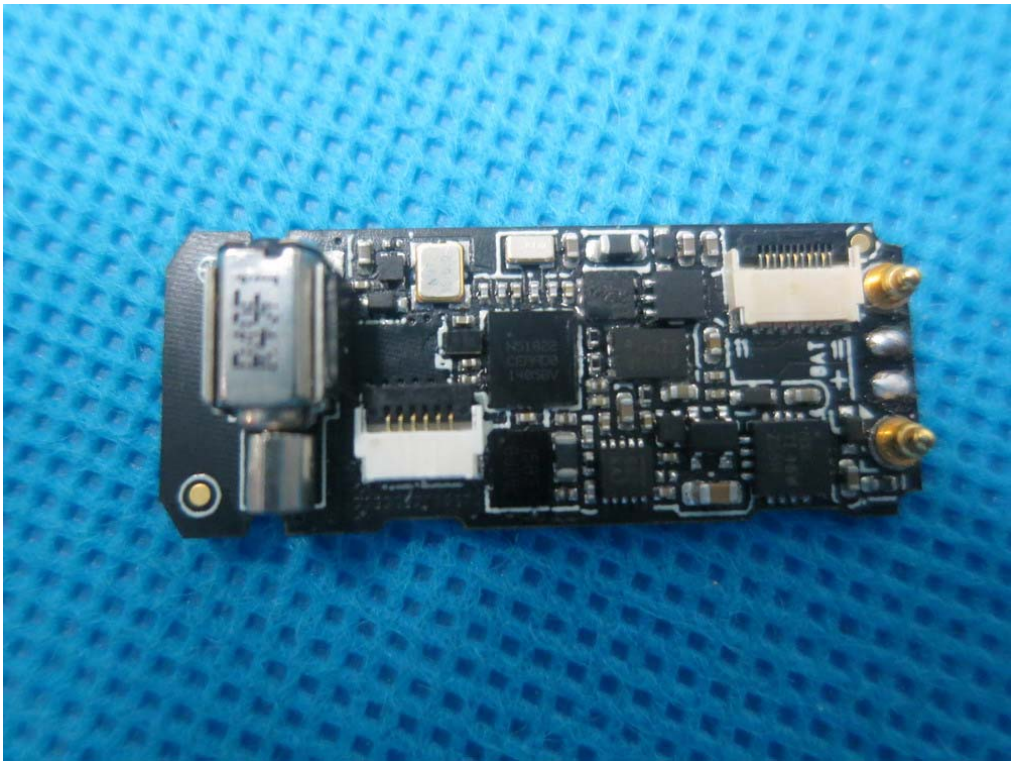
INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



INTERNAL VIEW OF EUT-3



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