



TEST REPORT

**Draft ETSI EN 301 489-1 V2.2.0 (2017-03)/ Draft ETSI EN 301 489-17 V3.2.0 (2017-03)/
Draft ETSI EN 301 489-19 V2.1.0 (2017-03)/Draft ETSI EN 301 489-52 V1.1.0 (2016-11)/
EN 55032: 2015/ EN 55035: 2017/ EN 61000-3-2: 2014/ EN 61000-3-3: 2013**

Report Reference No.....: TZ181200486-RE

Compiled by

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Approved by

(position+printed name+signature)..: Manager Andy Zhang

Date of issue.....: 2018/12/14

Testing Laboratory Name: Shenzhen Tongzhou Testing Co.,Ltd

Address.....: 1th Floor, Building 1, Haomai High-tech Park, Huating Road 387,
Dalang Street, Longhua, Shenzhen, China

Applicant's name: Decade Smart Technology Co.,Ltd

Address.....: Floor 3th,Building 5th Haomai Hi-Tech Park Huating Road,Dalang
Zone ,Longhua District, Shenzhen, China

Test specification:

Standard: **Draft ETSI EN 301 489-1 V2.2.0 (2017-03)/ Draft ETSI EN 301
489-17 V3.2.0 (2017-03)/ Draft ETSI EN 301 489-19 V2.1.0 (2017-
03)/Draft ETSI EN 301 489-52 V1.1.0 (2016-11)/EN 55032: 2015/
EN 55035: 2017/ EN 61000-3-2: 2014/ EN 61000-3-3: 2013**

TRF Originator: Shenzhen Tongzhou Testing Co.,Ltd

Master TRF: Dated 2017-05

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Test item description: Smart Bracelet

Trade Mark: /

Model/Type reference.....: SN66

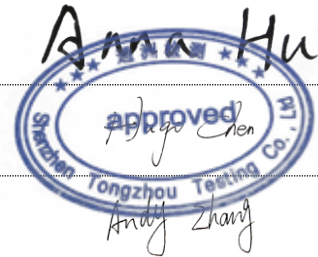
Listed Models: SN18, SN58, CNE-SB11BB

Hardware Version.....: V2.0

Software Version: V1.0

Rating: DC 3.7V by Battery

Result.....: **Positive**





TEST REPORT

Test Report No. :	TZ181200486-RE	2018/12/14
		Date of issue

Equipment under Test : Smart Bracelet

Model /Type : SN66

Listed Models : SN18, SN58, CNE-SB11BB

Applicant : Decade Smart Technology Co.,Ltd

Address : Floor 3th,Building 5th Haomai Hi-Tech Park Huating Road,Dalang Zone ,Longhua District, Shenzhen, China

Manufacturer : Decade Smart Technology Co.,Ltd

Address : Floor 3th,Building 5th Haomai Hi-Tech Park Huating Road,Dalang Zone ,Longhua District, Shenzhen, China

Test Result according to the standards on page 5:	Positive
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

**** Modified History ****

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	2018/12/14	Andy Zhang



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1. TEST STANDARDS

The tests were performed according to following standards:

[Draft ETSI EN 301 489-1 V2.2.0 \(2017-03\)](#)

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU

[Draft ETSI EN 301 489-17 V3.2.0 \(2017-03\)](#)

ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

[EN 55032: 2015](#) Electromagnetic compatibility of multimedia equipment - Emission Requirements

[EN 55035:2017](#) Electromagnetic compatibility of multimedia equipment - Immunity requirements

[EN 61000-3-2:2014](#) Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)

[EN 61000-3-3:2013](#) Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection



2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	2018/12/10
Testing commenced on	:	2018/12/10
Testing concluded on	:	2018/12/14

2.2. Product Description

The **Decade Smart Technology Co.,Ltd**'s Model: SN66 or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

Name of EUT	Smart Bracelet
Model(s) Number	SN66
List Models	SN18, SN58, CNE-SB11BB
Difference description	All the same except for the model name.
Hardware version	V2.0
Software version	V1.0
Antenna Type	Integral

Wireless Type	Working Frequency	Modulation Type	Version
Bluetooth	2402MHz-2480MHz	GFSK	BLE

2.3. Equipment under Test

Power supply system utilised

Power supply voltage	:	<input type="radio"/> 120V / 60 Hz	<input type="radio"/> 115V / 60Hz
		<input type="radio"/> 12 V DC	<input type="radio"/> 24 V DC
		<input type="radio"/> Other (specified in blank below)	

DC 3.7V by Battery

2.4. Short description of the Equipment under Test (EUT)

For details, refer to the user's manual of EUT.

Serial number: Prototype



2.5. EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test Item	
EMI	
Mode 1	Bluetooth Link
EMS	
Mode 1	Bluetooth Link



2.6. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - Supplied by the lab

2.7. Performance level

For Draft ETSI EN 301 489-1 V2.2.0 (2017-03)
Refer to clause 6 Performance criteria

For Draft ETSI EN 301 489-17 V3.2.0 (2017-03)
Refer to clause 6 Performance criteria



2.8. Modifications

No modifications were implemented to meet testing criteria.

2.9. NOTE

Function	Test Standards	Reference Report
BLE	ETSI EN 300 328 V2.1.1 (2016-11)	TZ181200486-BLE
EMC	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Draft ETSI EN 301 489-17 V3.2.0 (2017-03) EN 55032: 2015 EN 55035: 2017 EN 61000-3-2: 2014 EN 61000-3-3: 2013	TZ181200486-RE
EMF	EN 62479: 2010	TZ181200486-EMF



3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Tongzhou Testing Co.,Ltd
1th Floor, Building 1, Haomai High-tech Park, Huating Road 387, Dalang Street, Longhua, Shenzhen,
China
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2014)
and CISPR Publication 22.

3.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

3.3. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

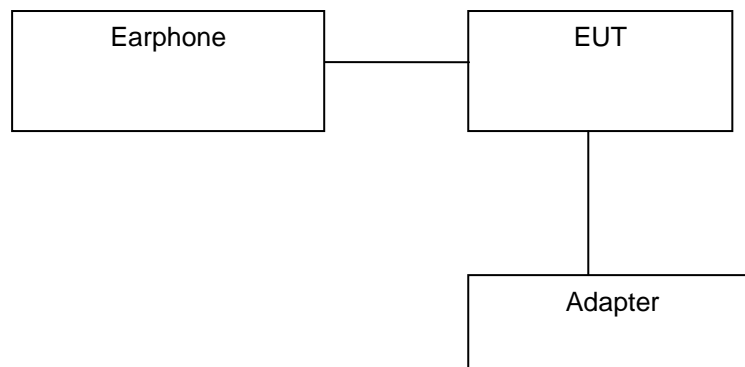


Table 2-1 Equipment Used in Tested System

No.	Product	Manufacturer	Model No.	FCC ID



3.4. Test Description

Draft ETSI EN 301 489-1/-17/-19/-52 requirements		
Radiated Emission	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.1 EN 55032: 2015 Annex A.2	PASS
Conducted Emission(AC Mains)	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.1 EN 55032: 2015 Annex A.3	N/A
Conducted Emission(Telcommunication Ports)	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.1 EN 55032: 2015 Annex A.3	N/A
Harmonic Current Emissions	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.1 EN 61000-3-2: 2014	N/A
Voltage Fluctuations and Flicker	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.1 EN 61000-3-3: 2013	N/A
Electrostatic Discharge	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	PASS
RF Electromagnetic Field	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	PASS
Fast Transients Common Mode	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	N/A
RF Common Mode 0,15 MHz to 80 MHz	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	N/A
Transients and Surges	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	N/A
Voltage Dips and Interruptions	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	N/A
Surges, Line to Line and Line to Ground	Draft ETSI EN 301 489-1 V2.2.0 (2017-03) Clause 7.2	N/A

Remark: The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Tongzhou Testing Co.,Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Tongzhou Testing Co.,Ltd is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24 dB	(1)
Radiated Emission	1~18GHz	5.16 dB	(1)
Radiated Emission	18-40GHz	5.54 dB	(1)
Conducted Disturbance	0.15~30MHz	3.39 dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



3.6. Equipments Used during the Test

Radiated emission						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	Test Receiver	R&S	ESCI-7	100849/003	2018/1/11	2019/1/10
2	wideband Antenna	schwarzbeck	VULB 9163	958	2018/11/20	2020/11/19
3	Horn Antenna	schwarzbeck	9120D-1141	1574	2018/11/20	2020/11/19
4	Amplifier	schwarzbeck	BBV 9743	209	2017/12/29	2018/12/28
5	Amplifier	Tonscend	TSAMP-0518SE	--	2018/1/6	2019/1/5
6	Postional Controller	MF	MF7802	--	--	--
7	Coaxial Cable	HUBER+SUHNER	RG214	N/A	2018/1/6	2019/1/5
8	Wideband Radio Communication Tester	R&S	CMW500	103974	2017/12/28	2018/12/27
9	Horn Antenna	ETS	3117	00218874	2018/11/20	2020/11/19

Electrostatic Discharge						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	ESD Simulator	TESEQ	NSG 437	976	2018/1/4	2019/1/3
2	Wideband Radio Communication Tester	R&S	CMW500	103974	2017/12/28	2018/12/27



RF Electromagnetic Field						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due
1	Signal Generator	IFR	2032	203002/100	2018/9/20	2019/9/19
2	AMPLIFIER	AR	150W1000	301584	2018/9/20	2019/9/19
3	DUAL DIRECTIONAL COUPLER	AR	DC6080	301508	2018/9/20	2019/9/19
4	POWER HEAD	AR	PH2000	301193	2018/9/20	2019/9/19
5	POWER METER	AR	PM2002	302799	2018/9/20	2019/9/19
6	TRANSMITTING AERIAL	AR	AT1080	28570	2018/9/20	2019/9/19
7	POWER AMPLIFIER	AR	25S1G4A	0325511	2018/9/20	2019/9/19
8	DUAL DIRECTIONAL COUPLER	AR	DC7144A	0325100	2018/9/20	2019/9/19
9	TRANSMITTING AERIAL	AR	AT4002A	0324848	2018/9/20	2019/9/19
10	Wideband Radio Communication Tester	R&S	CMW500	103974	2017/12/28	2018/12/27
11	Audio Analyzer	R&S	UPA	SB4037	2017/12/29	2018/12/28

4. TEST CONDITIONS AND RESULTS

4.1. REQUIREMENTS

4.1.1. Radiated Emission

LIMIT

Please refer to Draft ETSI EN 301 489-1 Clause 8.2.3

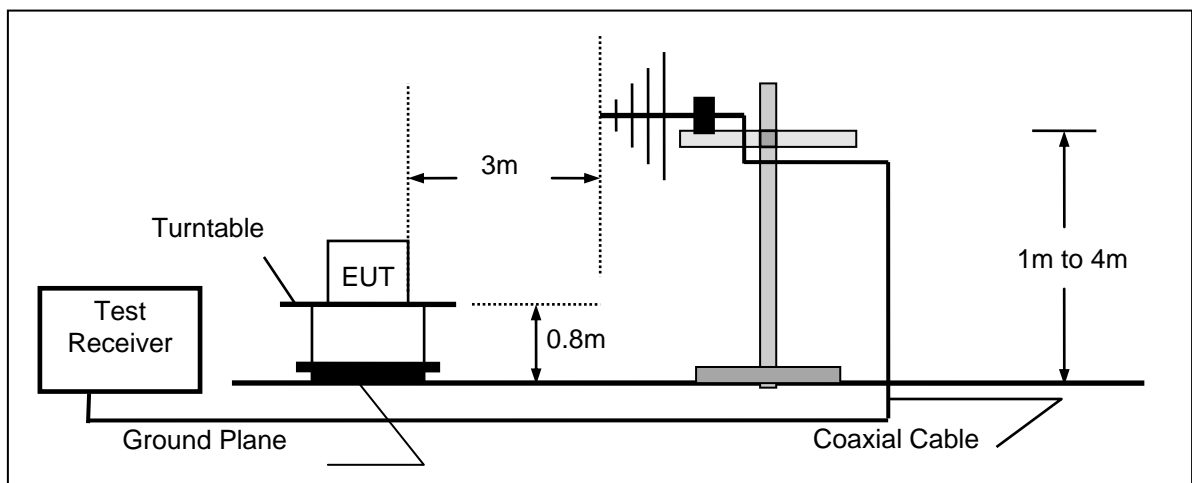
The ancillary equipment shall meet the class B limits given in CENELEC EN 55032 [1], annex A tables A.4 and A.5.

Alternatively, for ancillary equipment intended to be used exclusively in an industrial environment or telecommunication centres, the class A limits given in CENELEC EN 55032 [1], annex A tables A.2 and A.3 may be used.

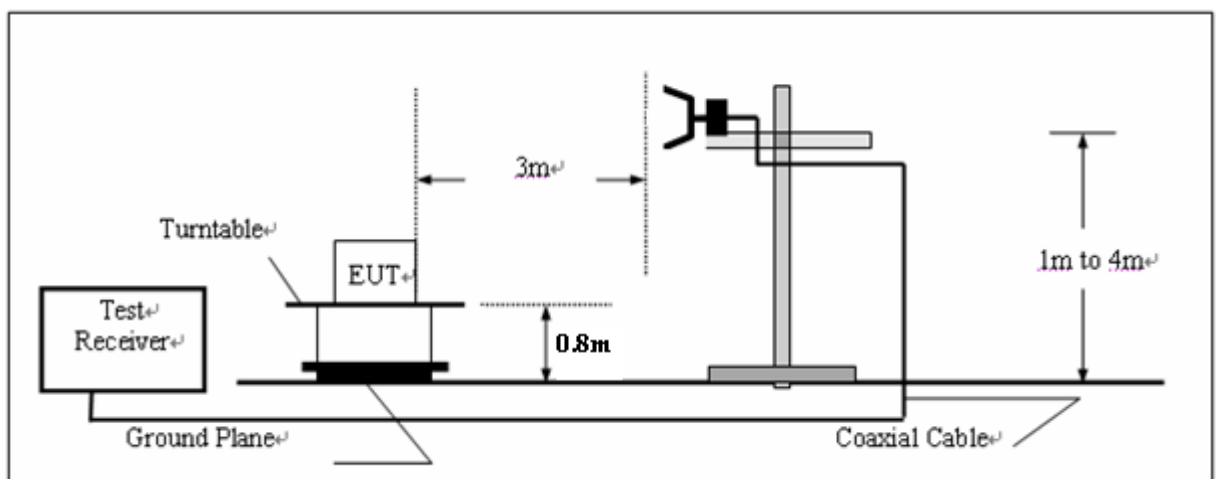
If EUT is also a FM Receiver, it shall meet CENELEC EN 55032 [3], annex A tables A.6

TEST CONFIGURATION

(a) Radiated Emission Test Set-Up, Frequency below 1000MHz



(b) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE



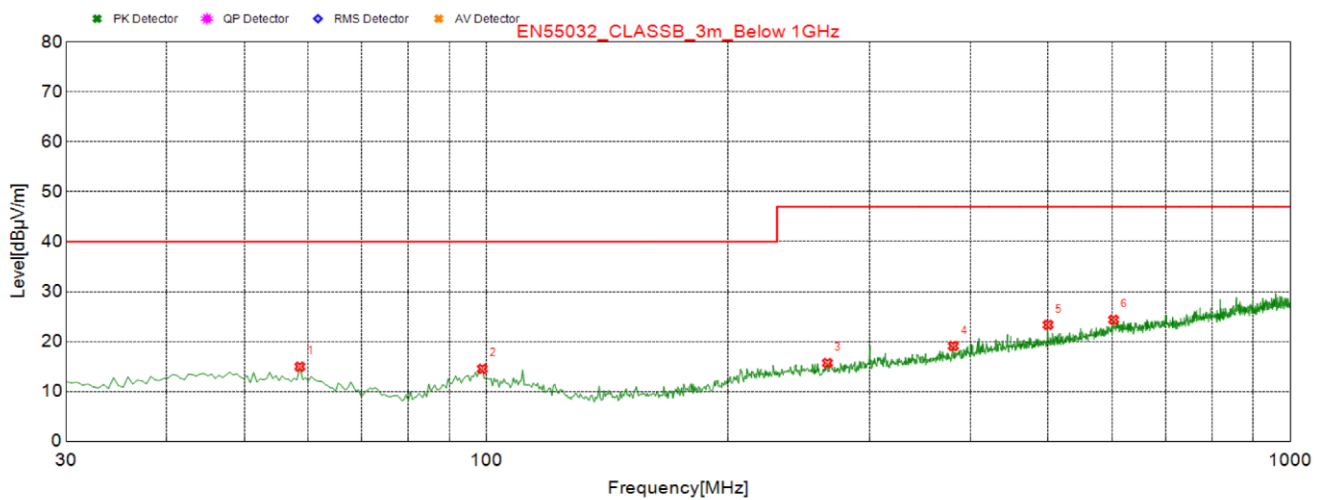
Please refer to Draft ETSI EN 301 489-1 Clause 8.2.2 and The test method shall be in accordance with CENELEC EN 55032 [1], annex A.2. for the measurement methods.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

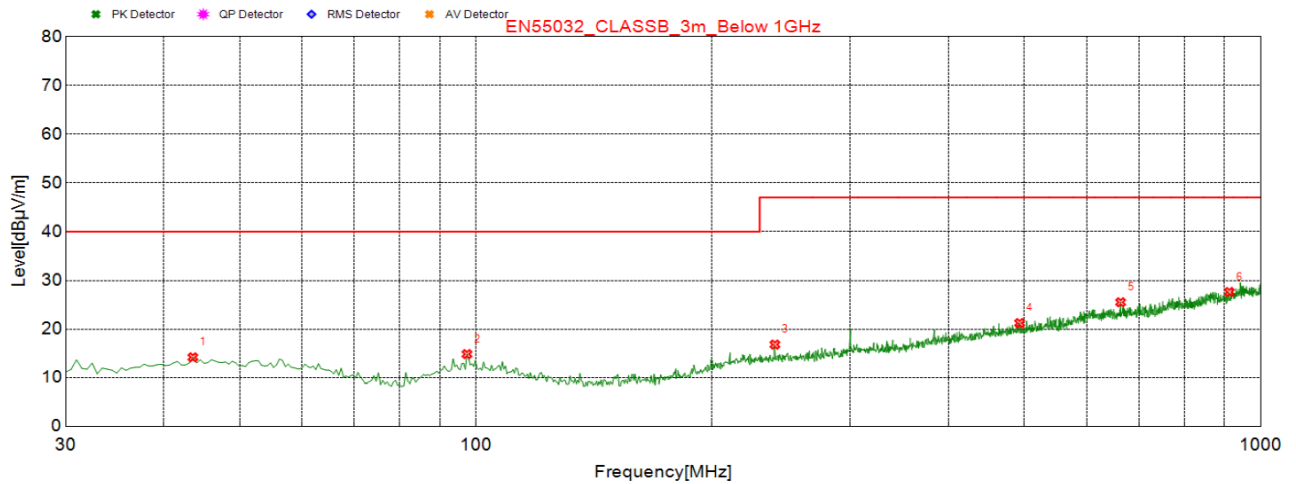
TEST RESULTS

Below 1000MHz



NO.	Freq. [MHz]	Result Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle[°]	Polarity
1	58.615	14.95	-15.44	40.00	25.05	200	319	Vertical
2	98.870	14.51	-16.17	40.00	25.49	100	55	Vertical
3	265.710	15.69	-13.53	47.00	31.31	200	166	Vertical
4	381.140	19.09	-10.56	47.00	27.91	100	342	Vertical
5	499.965	23.33	-8.06	47.00	23.67	100	58	Vertical
6	603.270	24.36	-5.55	47.00	22.64	200	183	Vertical

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

Radiated Emission From 1 GHz to 6 GHz

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (KHz)	Height (cm)	Pol	Azimuth (deg)
1162.83	43.52	---	70	26.48	100	1000	100	V	225
1035.24	44.52	---	70	25.48	100	1000	100	V	24
2520.32	45.44	---	70	24.56	100	1000	100	H	252
2359.78	45.31	---	70	24.69	100	1000	100	H	235
3048.05	47.31	---	74	26.69	100	1000	100	V	63
2755.37	47.28	---	70	22.72	100	1000	100	H	11

4.1.2. Electrostatic Discharge

LIMIT

Please refer to EN 61000-4-2

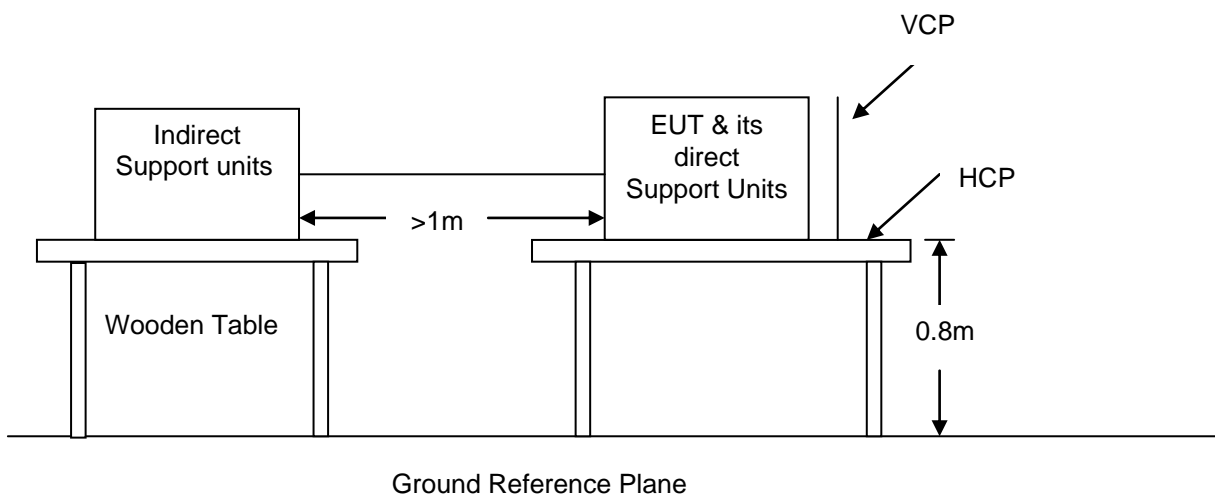
SEVERITY LEVELS OF ELECTROSTATIC DISCHARGE

Test level: Contact Discharge at $\pm 2\text{KV}, \pm 4\text{KV}$ Air Discharge at $\pm 2\text{KV}, \pm 4\text{KV}, \pm 8\text{KV}$

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1	2	2
2	4	4
3	6	8
4	8	15
X	Special	Special

Performance criterion: **B**

Test Configuration



Test procedure

Please refer to Draft ETSI EN 301 489-1 Clause 9.3.2 and EN 61000-4-2 for the measurement methods.

Test results

Contact Discharge:

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

Air Discharge:

Air discharge is used where contact discharge can't be applied. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated at least 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

**Indirect discharge for horizontal coupling plane:**

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

Indirect discharge for vertical coupling plane:

At least 10 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Climatic conditions

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

Description of the Electrostatic Discharges (ESD)

Point of Discharge	Applied Voltage (KV)	Total No. of Discharge (Each Point)	Results	Criteria Level	Remark
Air Test Point	±2	50	Pass	B	-
	±4	50	Pass	B	-
	±8	50	Pass	B	-
Contact Discharge Test Points	±2	50	Pass	B	
	±4	50	Pass	B	
VCP (4 sides)	±2	50	Pass	B	-
	±4	50	Pass	B	-
HCP (4 sides)	±2	50	Pass	B	-
	±4	50	Pass	B	-

The requirements are **Fulfilled**

Performance Criterion: **B**

Remarks: The ancillary equipment's specification for an acceptable level of performance or degradation of performance during and/or after the ESD tests.

Description of Discharge Point

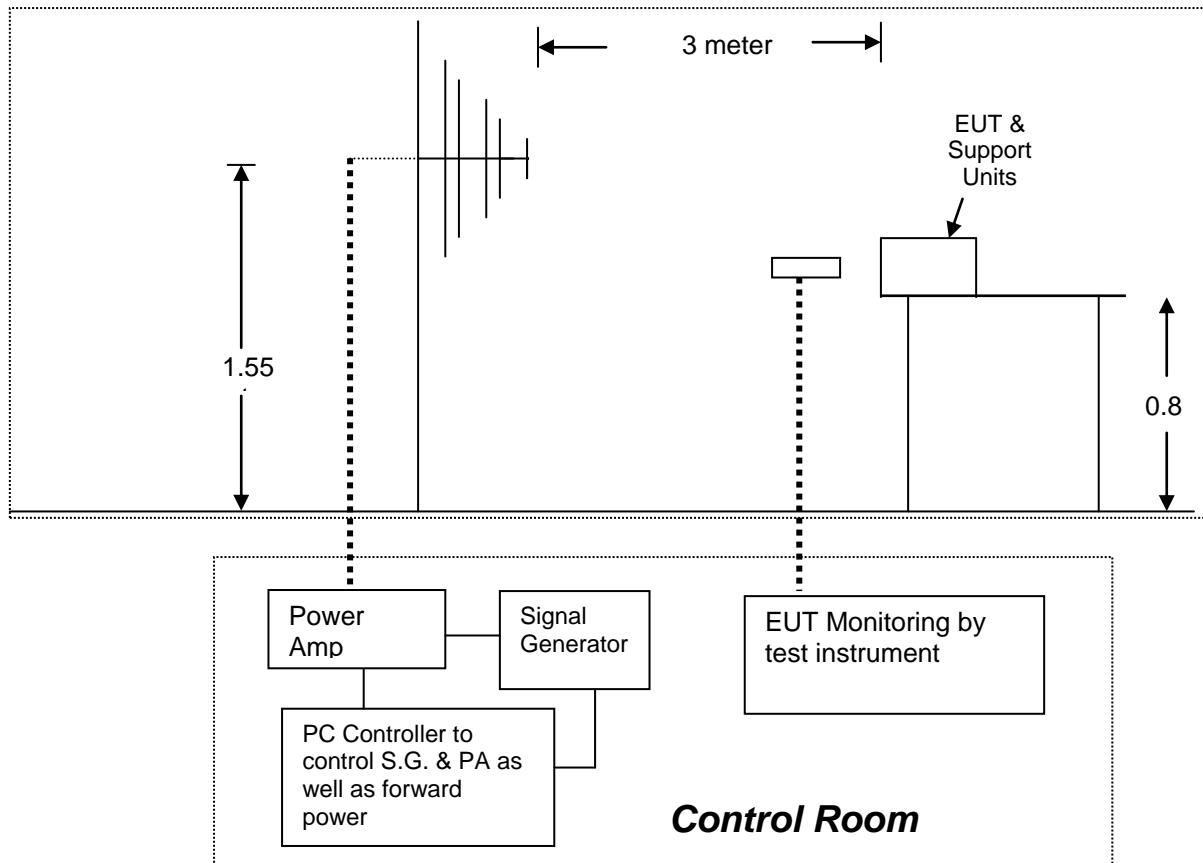
Contact Discharge		Air Discharge	
○	Metallic Screws	○	Plastic Screws
○	Metallic Case	●	Plastic Case(gap)
●	Metallic Connect ports	●	Plastic Connect Ports
●	Metallic Junctions	●	Plastic Junctions
○	Others (Antenna Port)	○	Others

4.1.3. RF Electromagnetic Field

LIMIT

Please refer to EN 61000-4-3

Test Configuration



Test Levels of RF Electromagnetic Field

Test level: RF Field Strength: 3V/m

Level	RF Field Strength(V/m)
1	1
2	3
3	10
X	Special

Performance criterion: **A**

TEST PROCEDURE

Please refer to Draft ETSI EN 301 489-1 Clause 9.2.2 and EN 61000-4-3 for the measurement methods.

**Climatic conditions**

- ambient temperature : 25 °C
- relative humidity: 55%
- atmospheric pressure: 960 mbar

TEST RESULTS**☒ Result of Final Tests (Operating Mode & Standby (Receiving) Mode)**

	Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
1	80-1000	3V/m	Yes	H / V	Front	Normal Operating	Pass
	1000-6000	3V/m	Yes	H / V	Front		Pass
2	80-1000	3V/m	Yes	H / V	Right	Normal Operating	Pass
	1000-6000	3V/m	Yes	H / V	Right		Pass
3	80-1000	3V/m	Yes	H / V	Back	Normal Operating	Pass
	1000-6000	3V/m	Yes	H / V	Back		Pass
4	80-1000	3V/m	Yes	H / V	Left	Normal Operating	Pass
	1000-6000	3V/m	Yes	H / V	Left		Pass

☒ Result of Final Tests(EN 55035)**☒ Swept Test**

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
80-1000	3V/m	Yes	H / V	Front	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Right	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Back	Normal Operating	PASS
80-1000	3V/m	Yes	H / V	Left	Normal Operating	PASS

☒ Spot Test

Freq. Range (MHz)	Field	Modulation	Polarity	Position	Mode	Result (Pass/Fail)
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Front	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Right	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Back	Normal Operating	PASS
1800, 2600, 3500, 5000	3V/m	Yes	H / V	Left	Normal Operating	PASS

PERFORMANCE CRITERIA

Criteria requested	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C
Criteria meet	<input checked="" type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C

5. Test Set-up Photos of the EUT

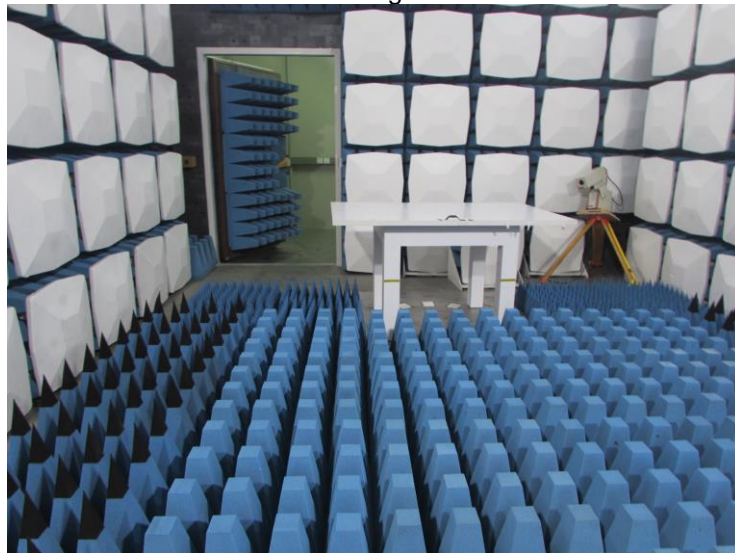
Radiated Emission (30MHz-1GHz)



Radiated Emission (1GHz-6GHz)



RF Electromagnetic Field



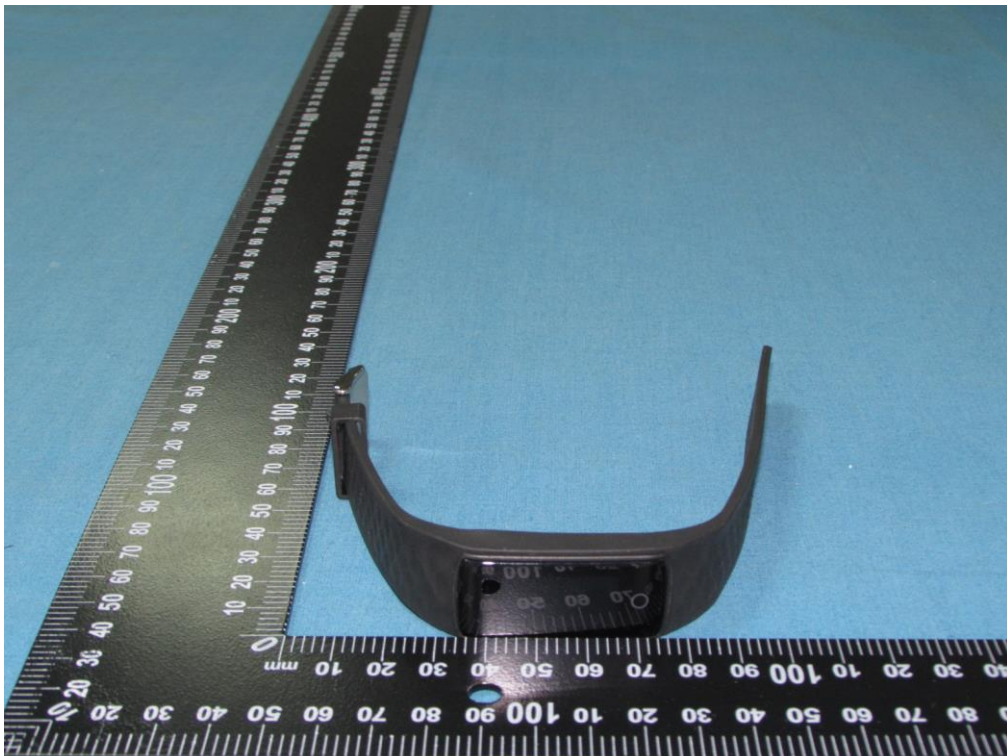
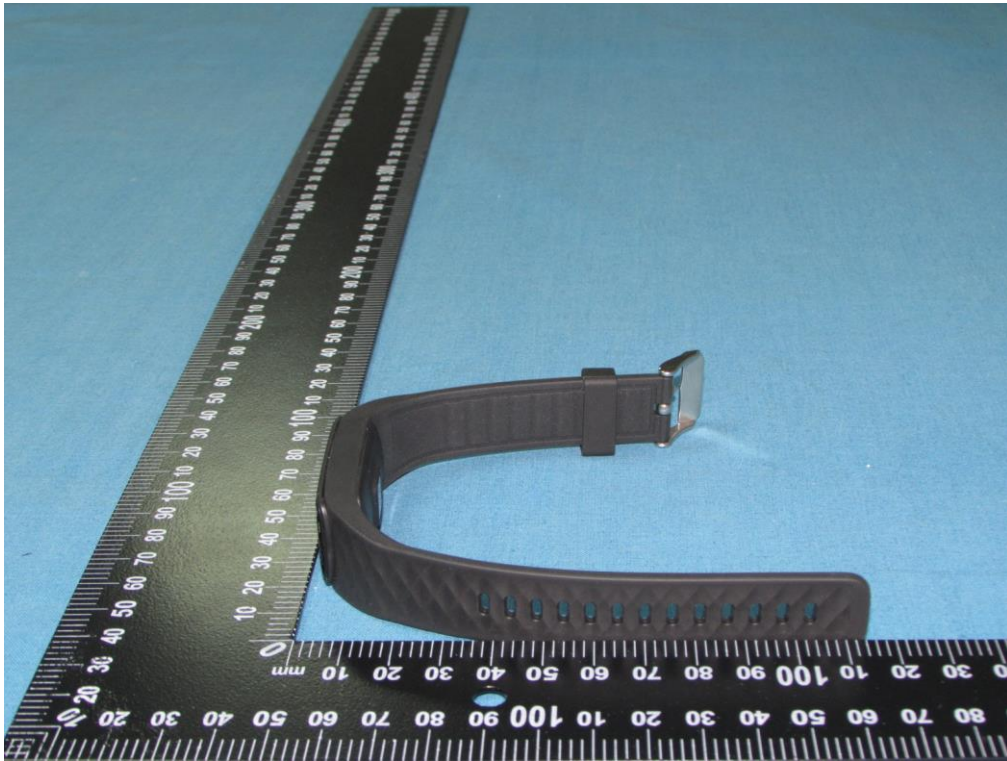


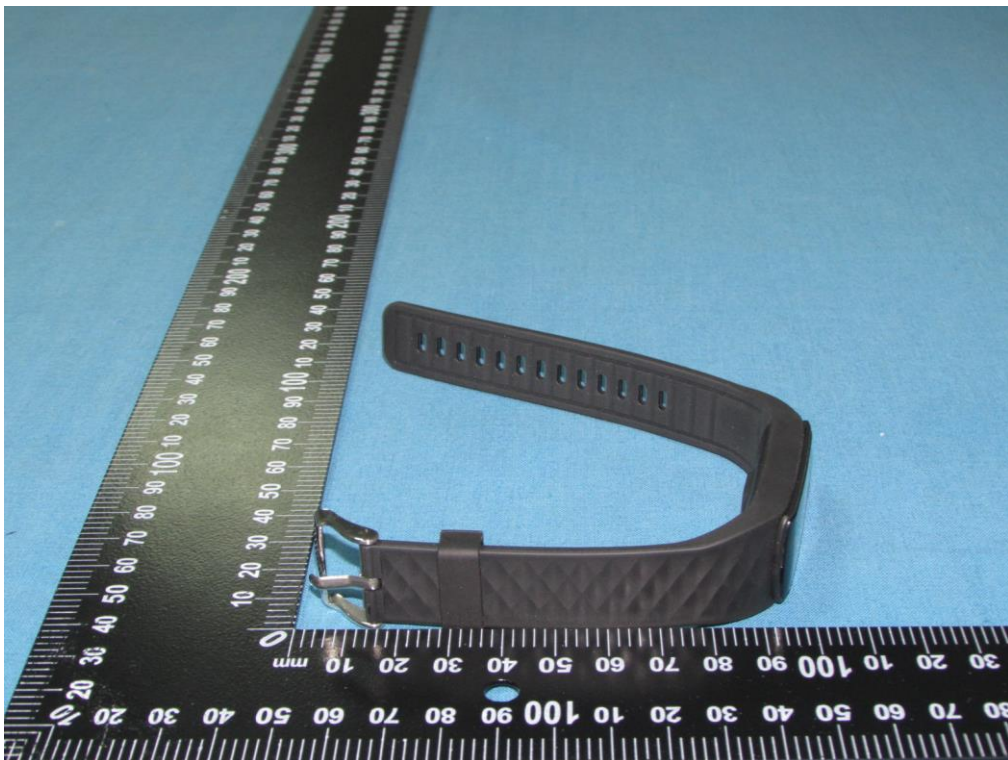
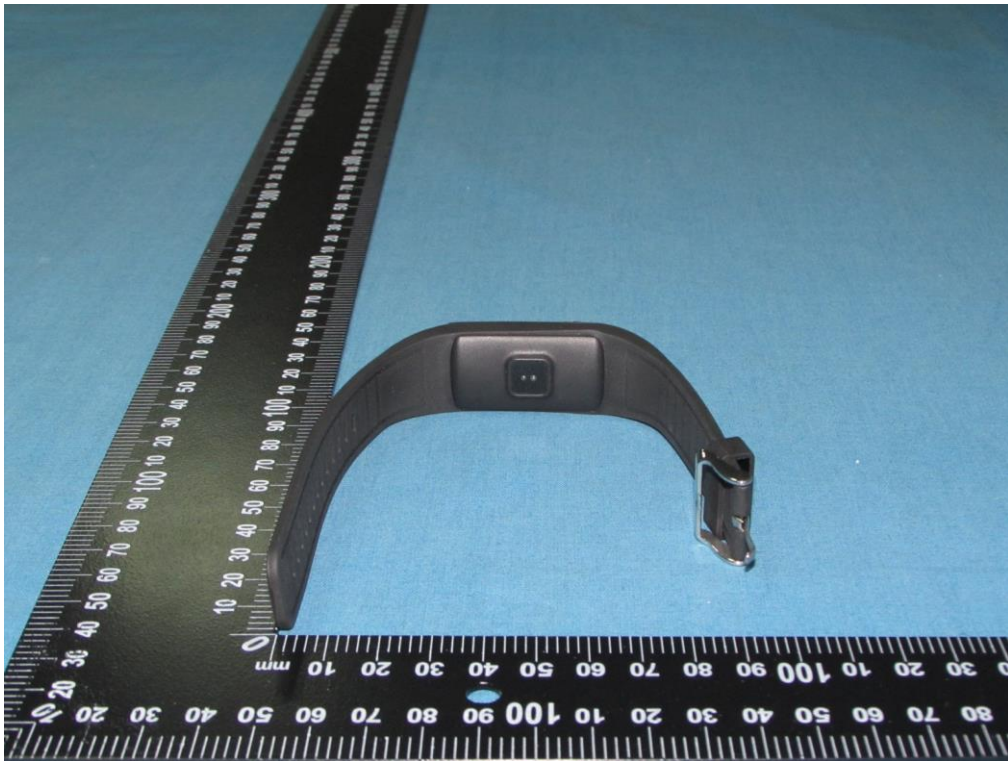
Electrostatic Discharge



6. PHOTOS OF THE EUT

External Photos

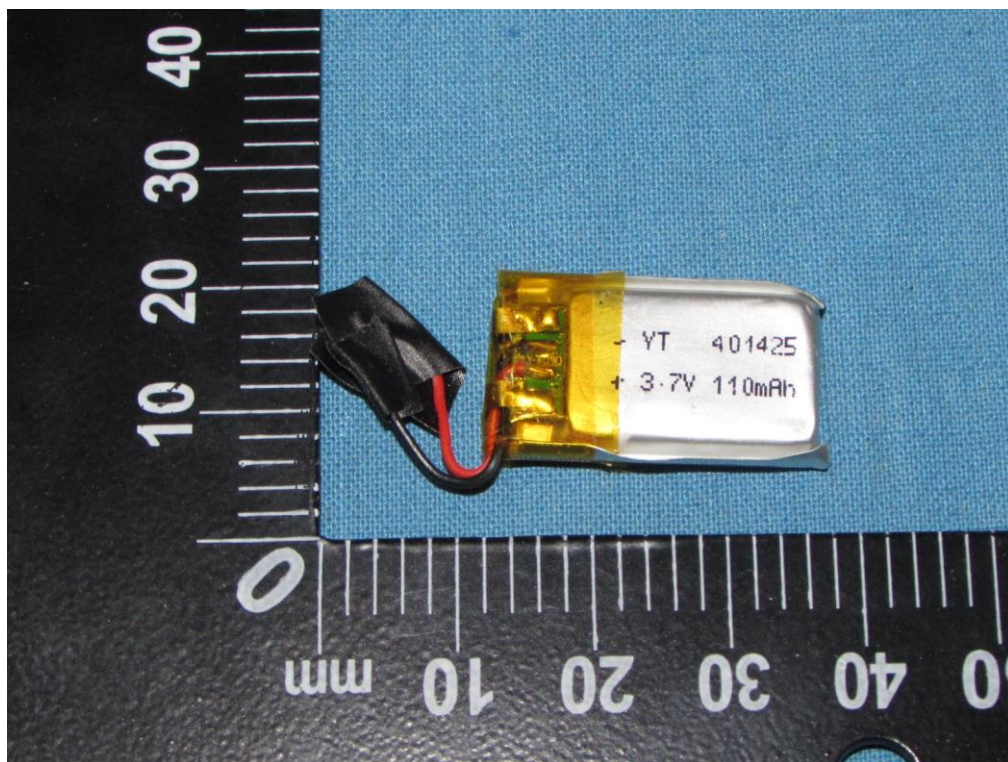
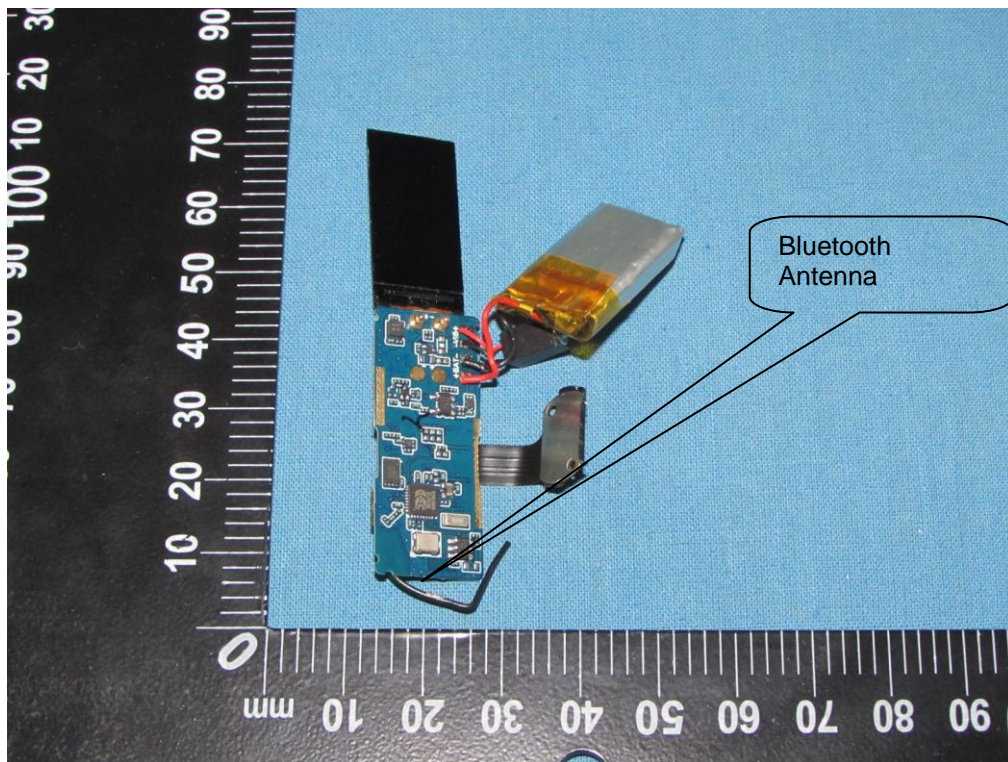


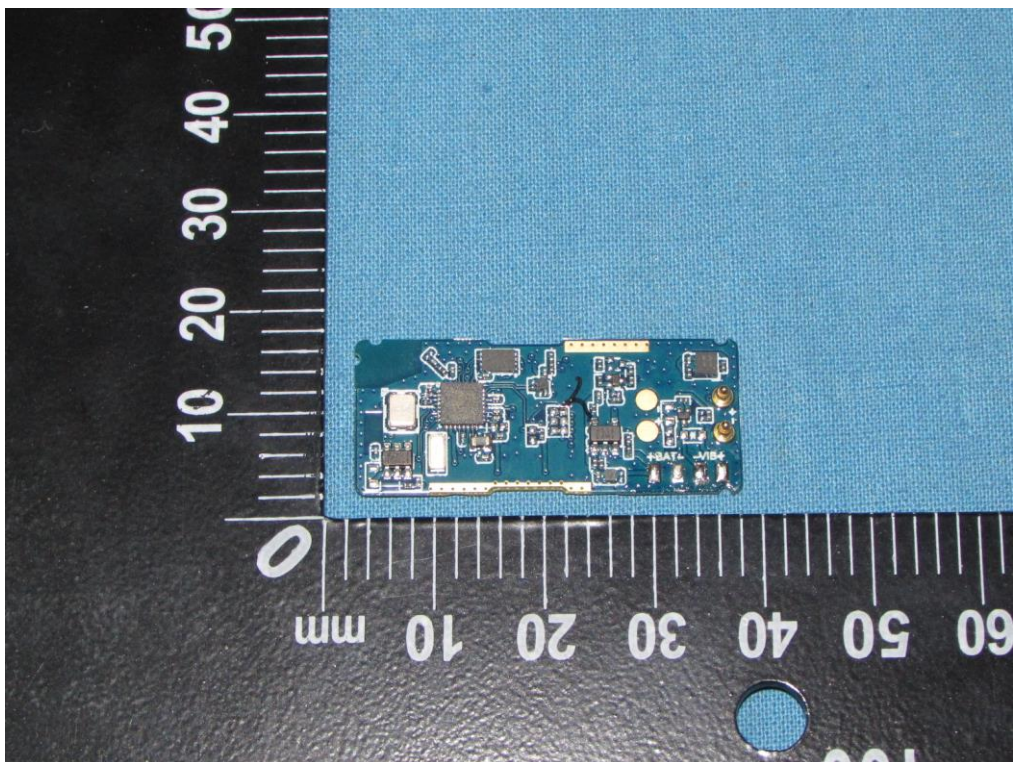
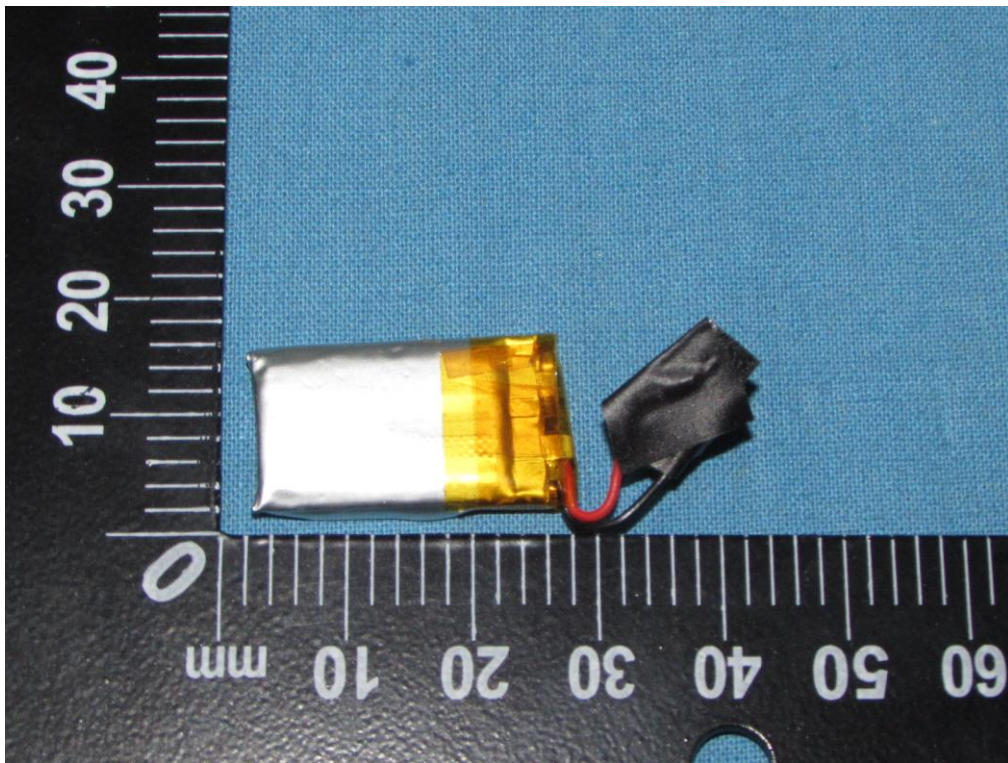


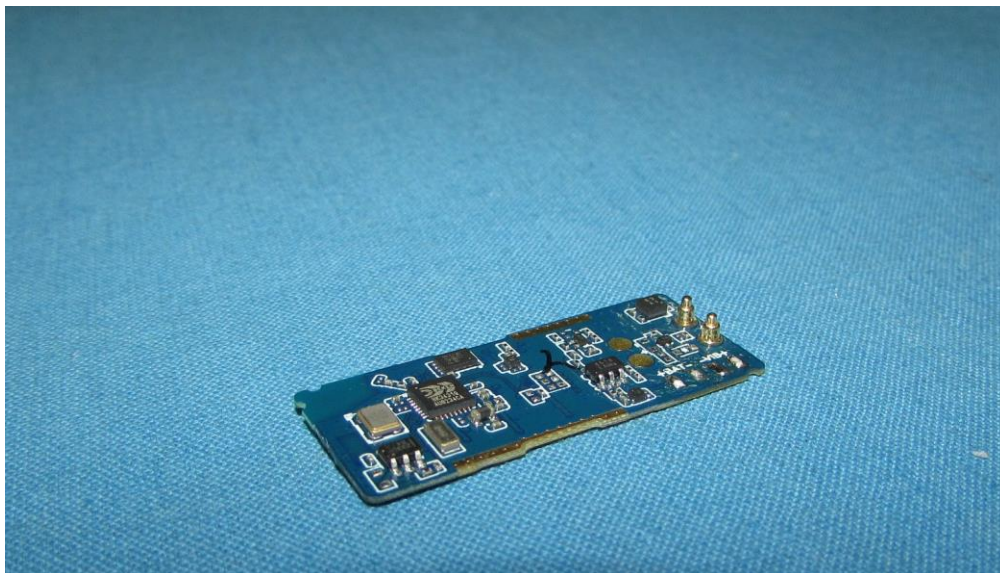
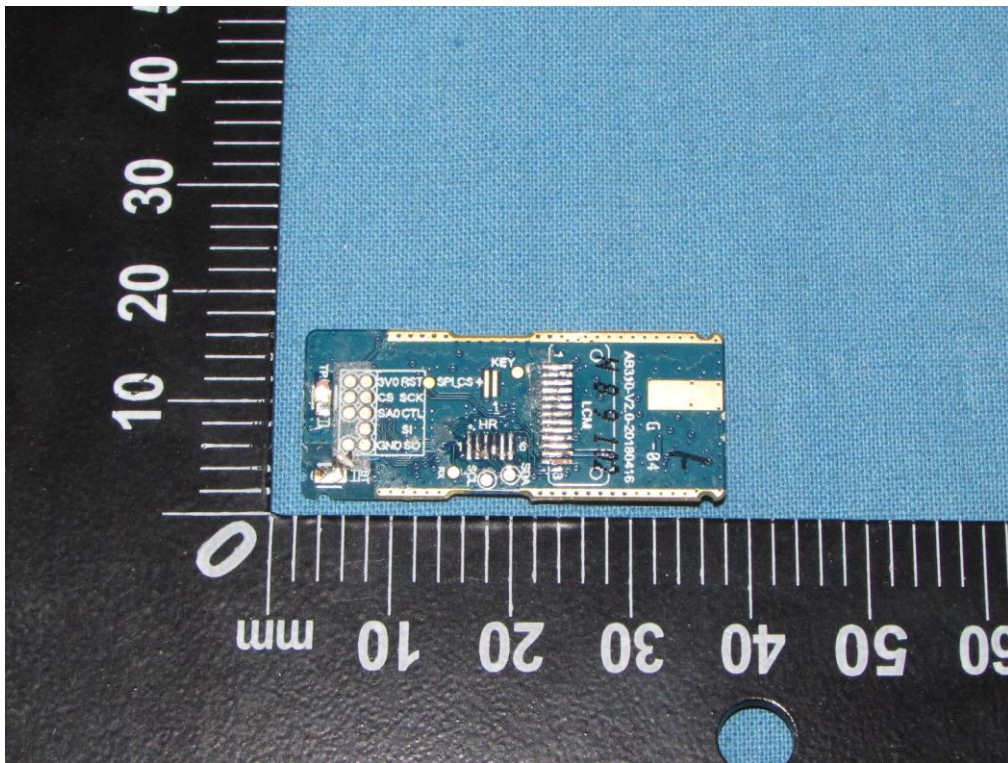


Internal Photos









.....End of Report.....