ACCREDITED
CERT #3816.01

TEST REPORT

Application No.:	SZCR2106021641AT(SHEM2106005837CR)
Applicant:	Hangzhou Ezviz Software Co., Ltd.
Address of Applicant:	Room 302, Unit B, Building 2,399 Danfeng Road, Binjiang District, Hangzhou, Zhejiang
Manufacturer:	Hangzhou Ezviz Software Co., Ltd.
Address of Manufacturer:	Room 302, Unit B, Building 2,399 Danfeng Road, Binjiang District, Hangzhou, Zhejiang
Equipment Under Test (EUT):	
EUT Name:	Smart button
Model No.:	CS-T3C
Trade mark:	EZVIZ
Standard(s) :	EN 55032:2015+A11:2020
	EN 50130-4:2011 +A1:2014
Date of Receipt:	2021-06-11
Date of Test:	2021-06-13 to 2021-06-17
Date of Issue:	2021-06-18
Test Result:	**Pass***

* In the configuration tested, the EUT complied with the standards specified above.

Digitally signed by Keny Xu
Date: 2021.11.26 14:16:37 +08'00'

Keny Xu
EMC Laboratory Manager

Revision Record			
Version	**Description**	**Date**	**Remark**
01	*Original*	*2021-06-18*	*/*

Authorized for issue by:				
				
		Bill Chen /Project Engineer		
				
		Eric Fu /Reviewer		

2 Test Summary

Emission Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Radiated Emissions (30MHz-1GHz)	EN 55032:2015 +A11:2020	EN 55032:2015	Class B	Pass
Radiated Emissions (above 1GHz)	EN 55032:2015 +A11:2020	EN 55032:2015	Class B	Pass

Immunity Part				
Item	**Standard**	**Method**	**Requirement**	**Result**
Electrostatic Discharge	EN 50130-4:2011 +A1:2014	EN 61000-4-2:2009	6kV Contact Discharge 2,4,8kV Air Discharge	Pass
Radiated Immunity(80MHz-2.7GHz)	EN 50130-4:2011 +A1:2014	EN 61000-4-3:2006 +A1:2008+A2:2010	10V/m, 80%, 1kHz sinusoidal Amp. Mod.	Pass

InternalSource	UpperFrequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

3 Contents

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4 General Information

4.1 Details of E.U.T.

Power supply: DC 3V by Lithium Battery

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
2.4 G Router	CISCO	RV110W	/
Home Gateway	Hangzhou Ezviz Software Co., Ltd.	CS-A3	/
Mobile Phone	nubia	Z20	/
Open/Close Sensor	Hangzhou Ezviz Software Co., Ltd.	CS-T2C	/
PIR Sensor	Hangzhou Ezviz Software Co., Ltd.	CS-T1C	/

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4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.45dB (9kHz to 150kHz)
		± 3.0dB (150kHz to 30MHz)
2	Radiated Emission	± 3.1dB (9kHz-30MHz)
		± 4.5dB (30MHz-1GHz)
		± 4.8dB (1GHz-6GHz)
3	Radiated Emission (2m Loop antenna)	± 3.26dB (9kHz-30MHz)
4	Radiated Power	± 3.64dB
5	Harmonics & Flicker	± 0.068dB
6	Radiated Immunity	± 1.64dB
7	Conducted Immunity	± 0.96dB
8	ESD	± 6 %
9	EFT (Electrical Fast Transients)	± 5 %
10	Surge Immunity	± 5 %
11	Voltage Dips and Interruptions	± 4 %
12	20 system	± 1.5dB
13	Temperature test	± 1°C
14	Humidity test	± 3%
15	DC power test	± 0.5 %

Remark:

The U_{lab} (lab Uncertainty) is less than U_{cispr} (CISPR Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

RE in Chamber <1GHz						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date**	**Cal. Due date**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
2	MXE EMI receiver (3Hz-3.6GHz)	KEYSIGHT	N9038A	SEM004-15	2020-11-02	2021-11-01
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
4	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2021-03-24	2022-03-23
5	Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
6	Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

RE in Chamber >1GHz						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date**	**Cal. Due date**
1	3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-12	2024-03-11
2	EXA Signal Analyzer (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2021-04-07	2024-04-06
3	Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2021-04-12	2024-04-11
4	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22
5	Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
6	Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09

ESD						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date**	**Cal. Due date**
1	ESD Generator	TESEQ AG	NSG 437	SEM019-02	2021-04-16	2022-04-15
2	ESD Ground Plane	SGS(3m*3m)	N/A	SEN006-01	N/A	N/A

Radiated Immunity						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
1	Fully-Anechoic Chamber 2	Chang Zhou Zhong Shuo	854	SEM001-05	2020-07-10	2021-07-09
2	Power Sensor	Rohde & Schwarz	NRP-Z91	SEM009-09	2021-03-24	2022-03-23
3	Stacked Log.-Per.-Broadband Antenna (70MHz-10GHz)	Schwarzbeck	STLP 9129	SEM003-25	N/A	N/A
4	Signal Generator (9kHz-6GHz)	Rohde & Schwarz	SMB100A	SEM006-11	2021-03-24	2022-03-23
5	Broadband Amplifier (80MHz-1GHz)	Rohde & Schwarz	BBA150-BC250	SEM005-12	2020-09-23	2021-09-22
6	Broadband Amplifier (800MHz-3GHz)	Rohde & Schwarz	BBA150-D110	SEM005-13	2021-03-24	2022-03-23
7	Broadband Amplifier (2.5GHz-6GHz)	Rohde & Schwarz	BBA150-E60	SEM005-16	2021-04-08	2022-04-07
8	Measurement Software	Rohde & Schwarz	EMC32 V9.25.00	N/A	N/A	N/A

General used equipment						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date**	**Cal. Due date**
1	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2020-09-25	2021-09-24
2	Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-25	2021-09-24
3	Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-25	2021-09-24
4	Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2021-04-06	2022-04-05

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6 Emission Test Results

6.1 Radiated Emissions (30MHz-1GHz)

Test Requirement: EN 55032:2015+A11:2020

Test Method: EN 55032:2015

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

Limit:

30MHz-230MHz 40 dB(μV/m) quasi-peak

230MHz-1GHz 47 dB(μV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

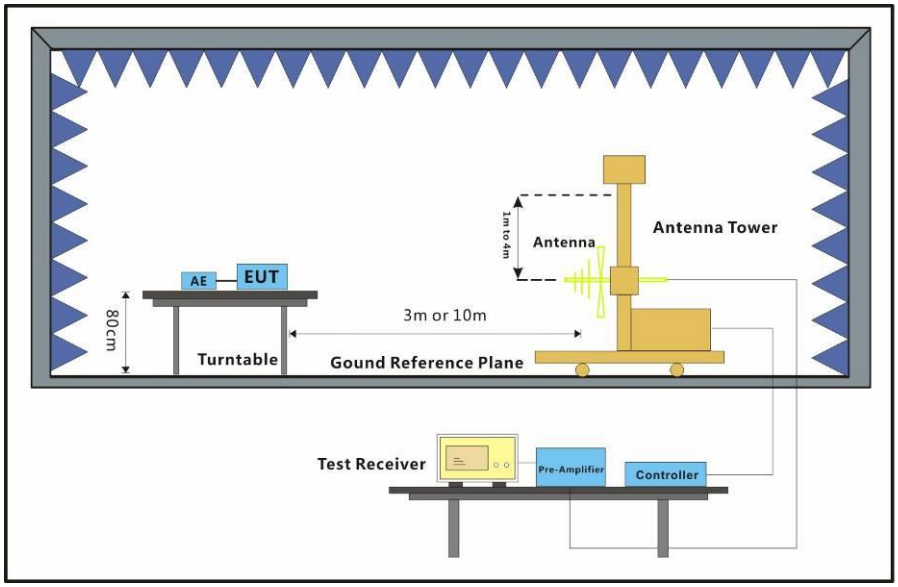
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:Normal Working_The Smart button, PIR Sensor, Open/Close Sensor connected with Home Gateway through ZigBee signal, and the Home Gate way connected with the wireless router through WiFi, use the mobile phone connected with the router to observe the status information.

6.1.2 Test Setup Diagram



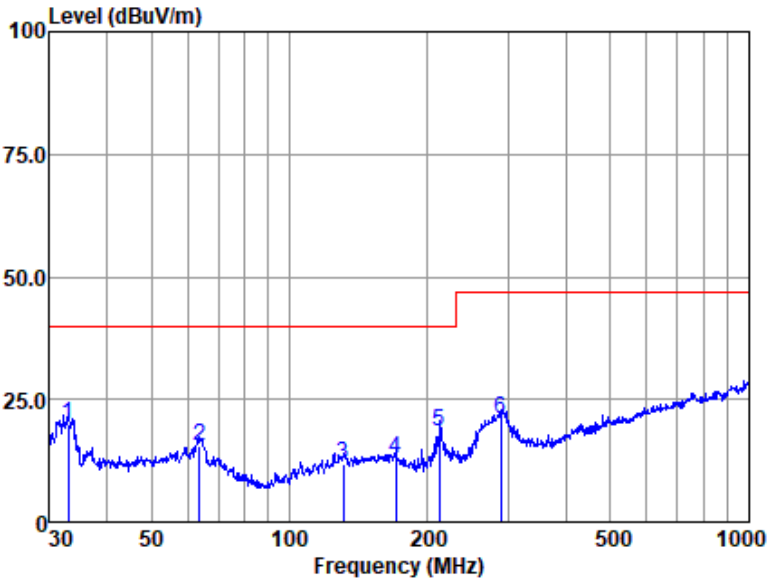
6.1.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

1.Result (dBuV/m) = Reading(dBuV) + Correction Factor (dB/m)

2.Correction Factor (dB/m)=Antenna Factor (dB/m)+Cable Loss (dB)- Amplifier (dB)

Mode:a; Polarization:Horizontal

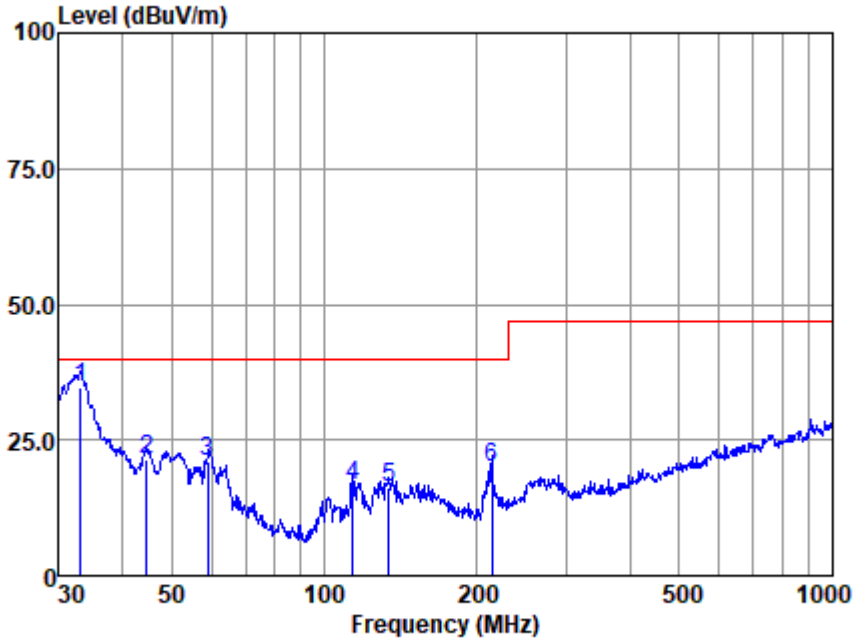


Antenna Polarity :HORIZONTAL
EUT/Project :5838CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	32.979	38.68	12.32	0.81	31.79	20.02	40.00	-19.98	QP
2	63.759	33.11	12.56	1.15	31.49	15.33	40.00	-24.67	QP
3	131.297	29.96	11.90	1.73	31.68	11.91	40.00	-28.09	QP
4	170.195	29.31	12.80	2.00	31.29	12.82	40.00	-27.18	QP
5	212.270	37.69	9.75	2.33	31.26	18.51	40.00	-21.49	QP
6	287.990	36.54	13.01	2.78	31.30	21.03	47.00	-25.97	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL
EUT/Project :5838CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	33.095	53.44	12.33	0.81	31.80	34.78	40.00	-5.22	QP
2	44.587	39.14	13.47	0.94	32.11	21.44	40.00	-18.56	QP
3	59.025	38.59	13.16	1.11	31.66	21.20	40.00	-18.80	QP
4	113.714	36.27	10.44	1.60	31.59	16.72	40.00	-23.28	QP
5	134.088	33.93	12.10	1.75	31.70	16.08	40.00	-23.92	QP
6	213.763	39.20	9.73	2.33	31.23	20.03	40.00	-19.97	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

6.2 Radiated Emissions (above 1GHz)

Test Requirement: EN 55032:2015+A11:2020

Test Method: EN 55032:2015

Frequency Range: Above 1GHz

Measurement Distance: 3m

Limit:

1GHz-3GHz 70 dB(μV/m) peak, 50 dB(μV/m) average

3GHz-6GHz 74 dB(μV/m) peak, 54dB(μV/m) average

Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 6000MHz

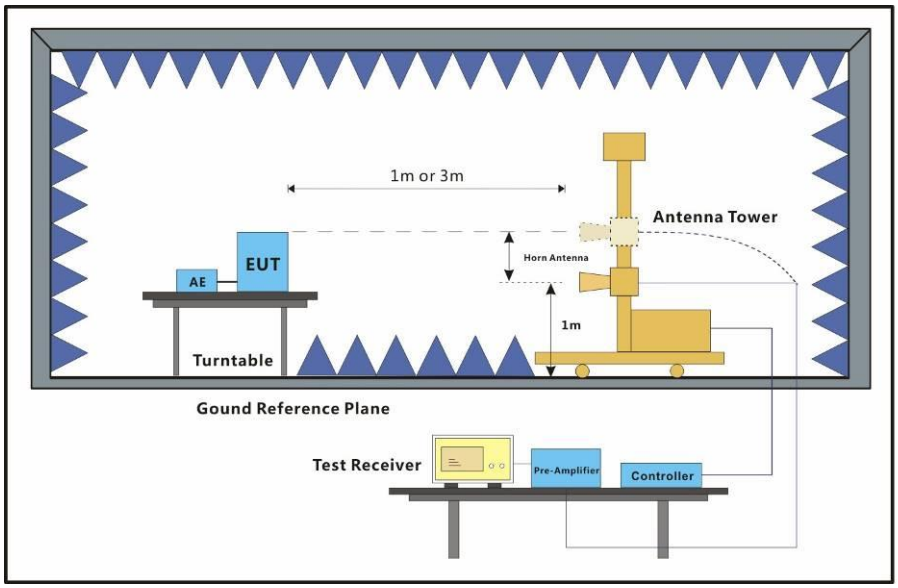
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:Normal Working_The Smart button, PIR Sensor, Open/Close Sensor connected with Home Gateway through ZigBee signal, and the Home Gate way connected with the wireless router through WiFi, use the mobile phone connected with the router to observe the status information.

6.2.2 Test Setup Diagram



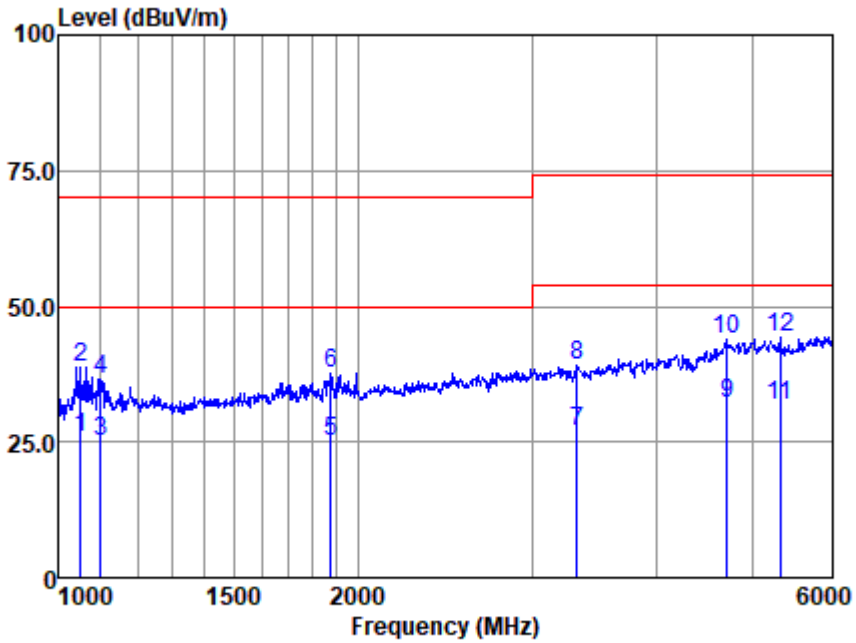
6.2.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

1.Result (dBuV/m) = Reading(dBuV) + Correction Factor (dB/m)

2.Correction Factor (dB/m)=Antenna Factor (dB/m)+Cable Loss (dB)- Amplifier (dB)

Mode:a; Polarization:Horizontal

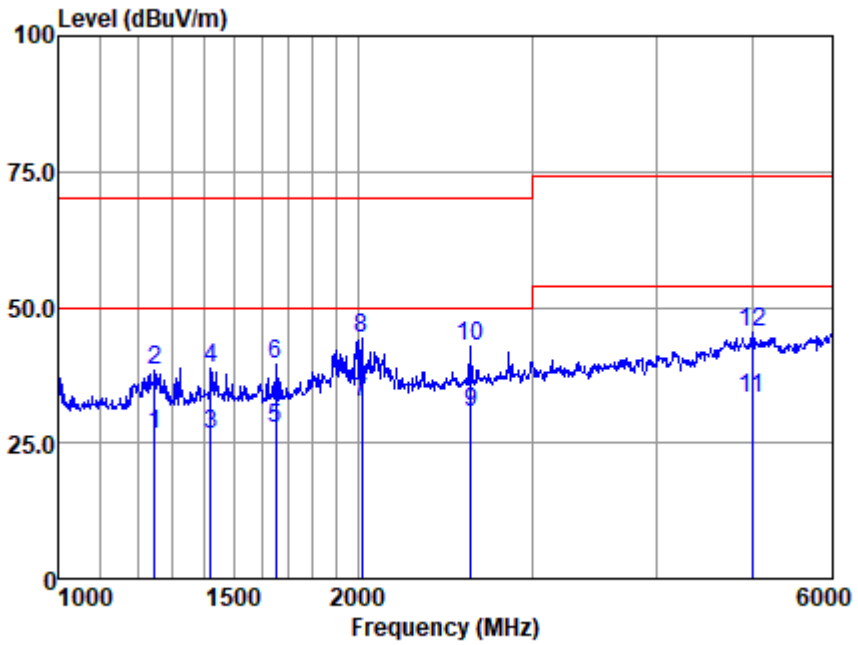


Antenna Polarity :HORIZONTAL
EUT/Project :5838CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1051.449	42.88	24.23	1.36	42.49	25.98	50.00	-24.02	Average
2	1051.449	55.67	24.23	1.36	42.49	38.77	70.00	-31.23	Peak
3	1101.590	41.86	24.36	1.52	42.48	25.26	50.00	-24.74	Average
4	1101.590	53.06	24.36	1.52	42.48	36.46	70.00	-33.54	Peak
5	1878.924	39.56	25.82	2.07	42.39	25.06	50.00	-24.94	Average
6	1878.924	52.03	25.82	2.07	42.39	37.53	70.00	-32.47	Peak
7	3321.707	37.85	28.70	2.91	42.34	27.12	54.00	-26.88	Average
8	3321.707	50.00	28.70	2.91	42.34	39.27	74.00	-34.73	Peak
9	4702.434	38.56	31.03	4.98	42.48	32.09	54.00	-21.91	Average
10	4702.434	50.48	31.03	4.98	42.48	44.01	74.00	-29.99	Peak
11	5321.268	37.96	31.79	4.52	42.55	31.72	54.00	-22.28	Average
12	5321.268	50.45	31.79	4.52	42.55	44.21	74.00	-29.79	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL
EUT/Project :5838CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1248.794	42.87	24.70	1.57	42.46	26.68	50.00	-23.32	Average
2	1248.794	54.74	24.70	1.57	42.46	38.55	70.00	-31.45	Peak
3	1423.298	42.21	25.06	1.71	42.44	26.54	50.00	-23.46	Average
4	1423.298	54.40	25.06	1.71	42.44	38.73	70.00	-31.27	Peak
5	1651.514	42.74	25.47	1.83	42.41	27.63	50.00	-22.37	Average
6	1651.514	54.57	25.47	1.83	42.41	39.46	70.00	-30.54	Peak
7	2018.530	46.73	26.05	2.11	42.37	32.52	50.00	-17.48	Average
8	2018.530	58.42	26.05	2.11	42.37	44.21	70.00	-25.79	Peak
9	2598.691	42.75	27.63	2.45	42.33	30.50	50.00	-19.50	Average
10	2598.691	55.22	27.63	2.45	42.33	42.97	70.00	-27.03	Peak
11	4988.864	39.88	31.57	4.39	42.50	33.34	54.00	-20.66	Average
12	4988.864	51.90	31.57	4.39	42.50	45.36	74.00	-28.64	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7 Immunity Test Results

7.1 Performance Criteria Description in EN 50130-4:2011 +A1:2014

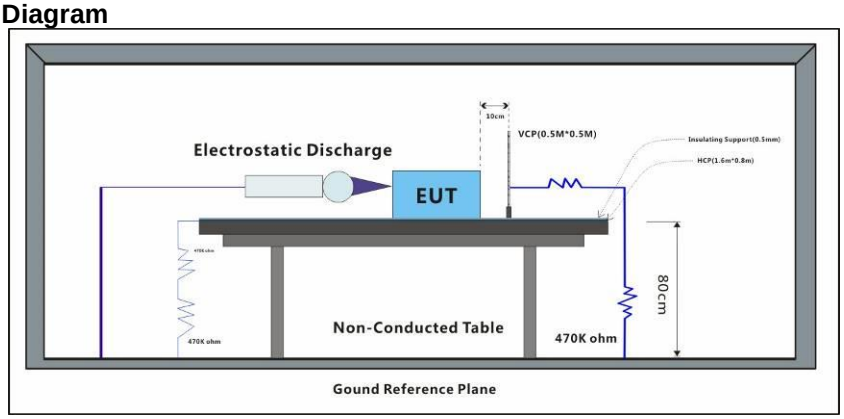
There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the discharges is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

For further details, please refer to Clause 7.4, 8.4, 9.4, 10.4, 11.4, 12.4 and 13.4, of EN 50130-4.

7.2 Electrostatic Discharge

Test Requirement: EN 50130-4:2011 +A1:2014
Test Method: EN 61000-4-2:2009
Number of Discharge: Minimum 10 times at each test point for Air Discharge
Minimum 50 times at each test point for Contact or VCP & HCP Discharge
Discharge Mode: Single Discharge
Discharge Period: 1 second minimum
Criteria for compliance: There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the discharges is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

7.2.1 Test Setup Diagram



7.2.2 E.U.T. Operation

Operating Environment:
Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar
Test mode: a:Normal Working_The Smart button, PIR Sensor, Open/Close Sensor connected with Home Gateway through ZigBee signal, and the Home Gate way connected with the wireless router through WiFi, use the mobile phone connected with the router to observe the status information.

7.2.3 Test Results:

Observations: Test Point:
1. All insulated enclosure and seams.
2. All accessible metal parts of the enclosure.
3. All side

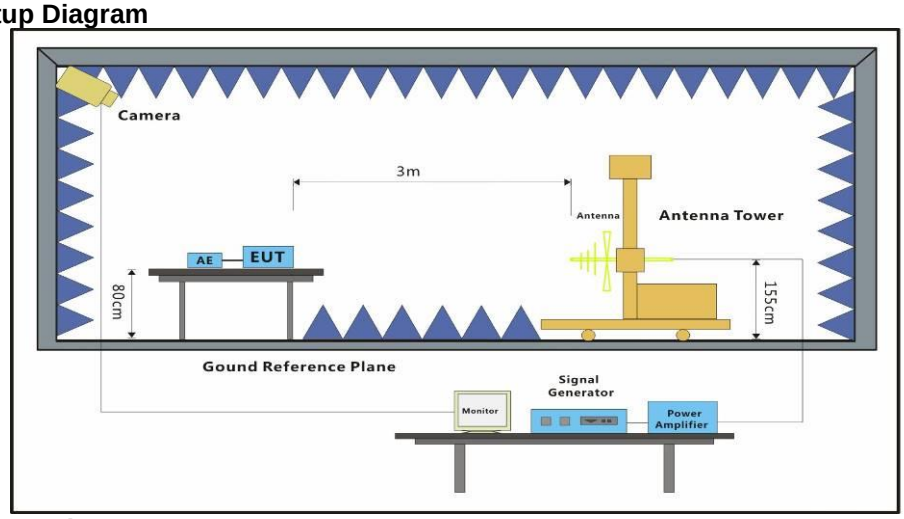
Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	A
Air Discharge	2,4,8	-	1	A
Contact Discharge	6	+	2	A
Contact Discharge	6	-	2	A
Horizontal Coupling	6	+	3	A
Horizontal Coupling	6	-	3	A
Vertical Coupling	6	+	3	A
Vertical Coupling	6	-	3	A

Results:
A: No degradation in the performance of the EUT was observed.

7.3 Radiated Immunity(80MHz-2.7GHz)

Test Requirement: EN 50130-4:2011 +A1:2014
Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010
Modulation: 80%, 1 kHz Amplitude Modulation
Criteria for compliance: There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the conditioning is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change, and no such flickering of indicators occurs at a field strength of 3 V/m.
For components of CCTV systems, where the status is monitored by observing the TV picture, then deterioration of the picture is allowed at 10 V/m, providing.
a) there is no permanent damage or change to the EUT (e.g. no corruption of memory or changes to programmable settings etc.);
b) at 3 V/m, any deterioration of the picture is so minor that the system could still be used; and
c) there is no observable deterioration of the picture at 1 V/m.

7.3.1 Test Setup Diagram



7.3.2 E.U.T. Operation

Operating Environment:
Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar
Test mode: a:Normal Working_The Smart button, PIR Sensor, Open/Close Sensor connected with Home Gateway through ZigBee signal, and the Home Gate way connected with the wireless router through WiFi, use the mobile phone connected with the router to observe the status information.

7.3.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-2.7GHz	10	Front	3s	A
80MHz-2.7GHz	10	Back	3s	A
80MHz-2.7GHz	10	Left	3s	A
80MHz-2.7GHz	10	Right	3s	A
80MHz-2.7GHz	10	Top	3s	A
80MHz-2.7GHz	10	Underside	3s	A

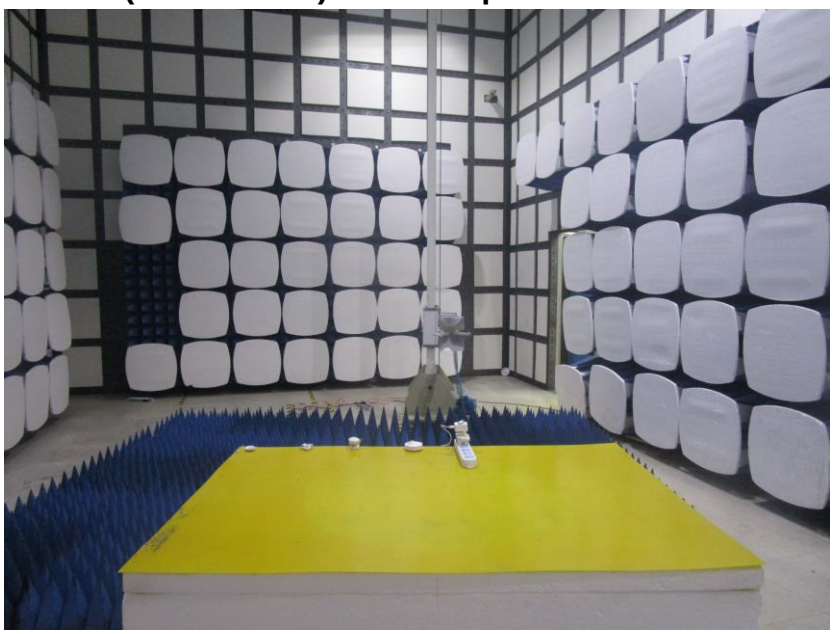
Results:

A: No degradation in the performance of the EUT was observed.

8 Photographs

8.1 Radiated Emissions (30MHz-1GHz) Test Setup

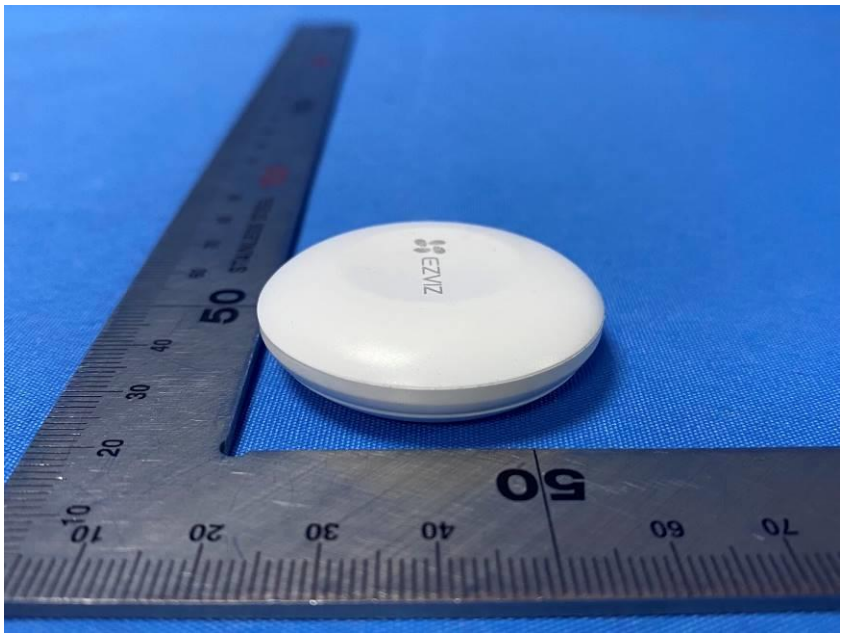
8.2 Radiated Emissions (above 1GHz) Test Setup

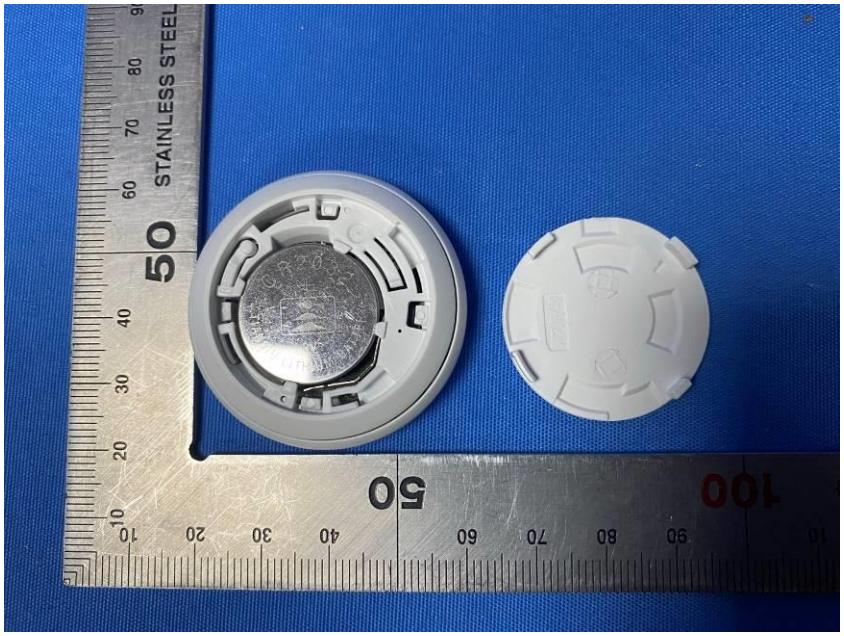


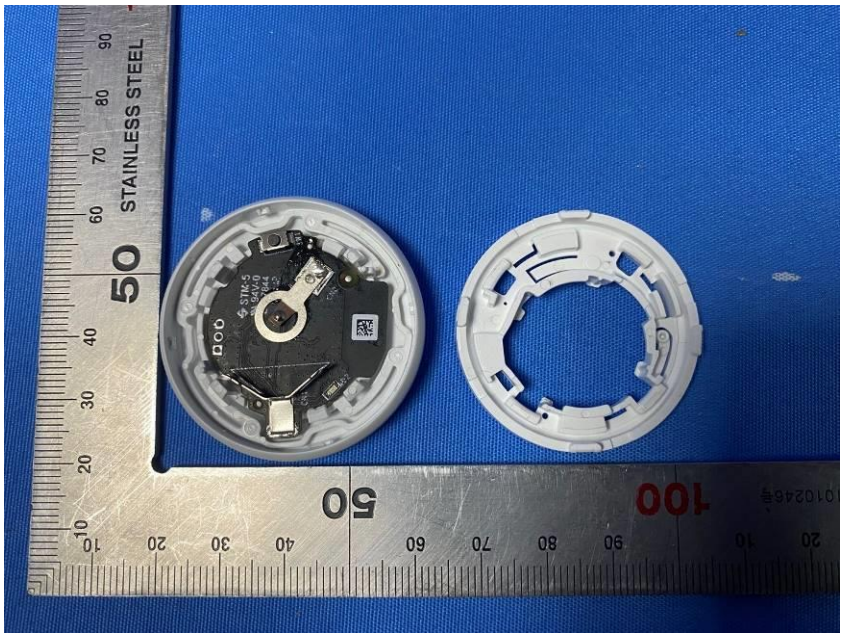
8.3 Electrostatic Discharge Test Setup

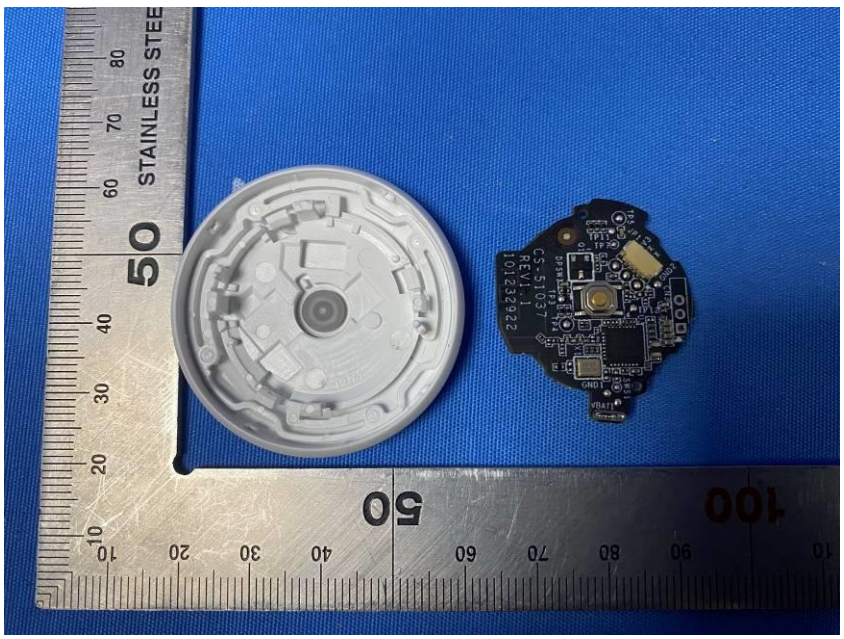
8.4 Radiated Immunity(80MHz-2.7GHz) Test Setup

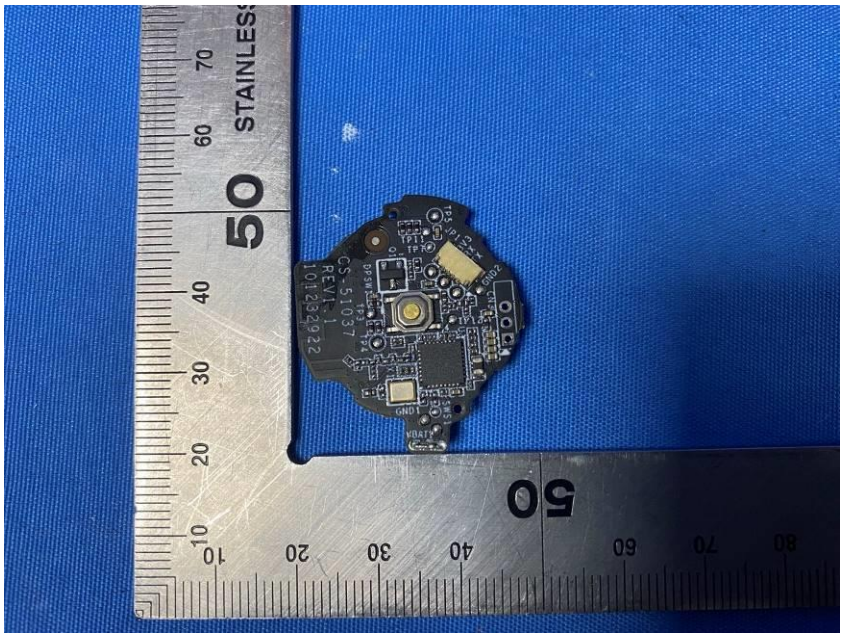
8.5 EUT Constructional Details (EUT Photos)

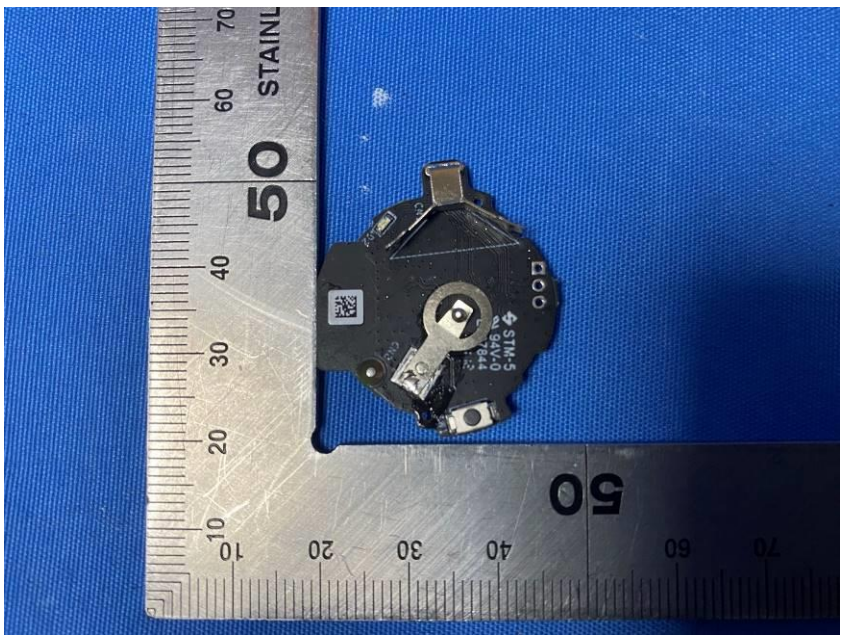


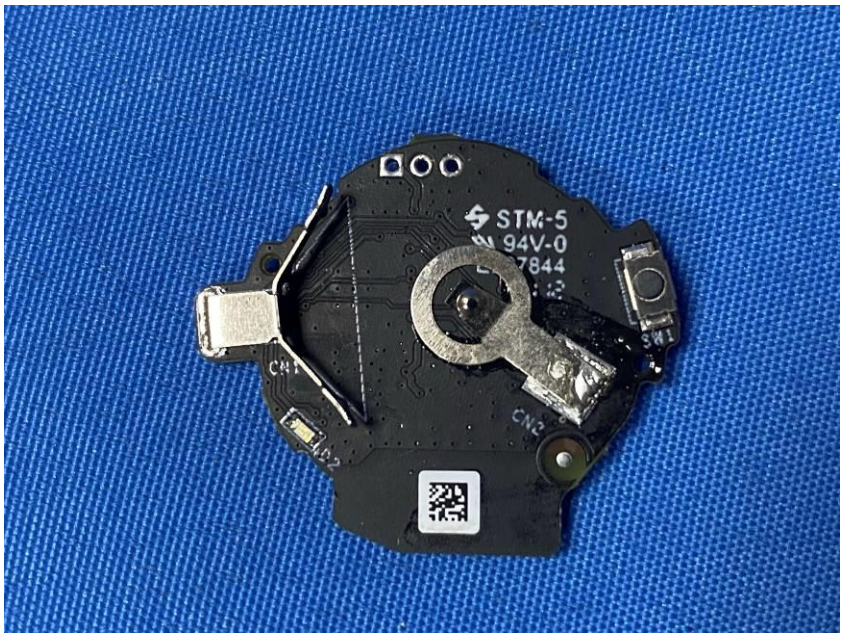


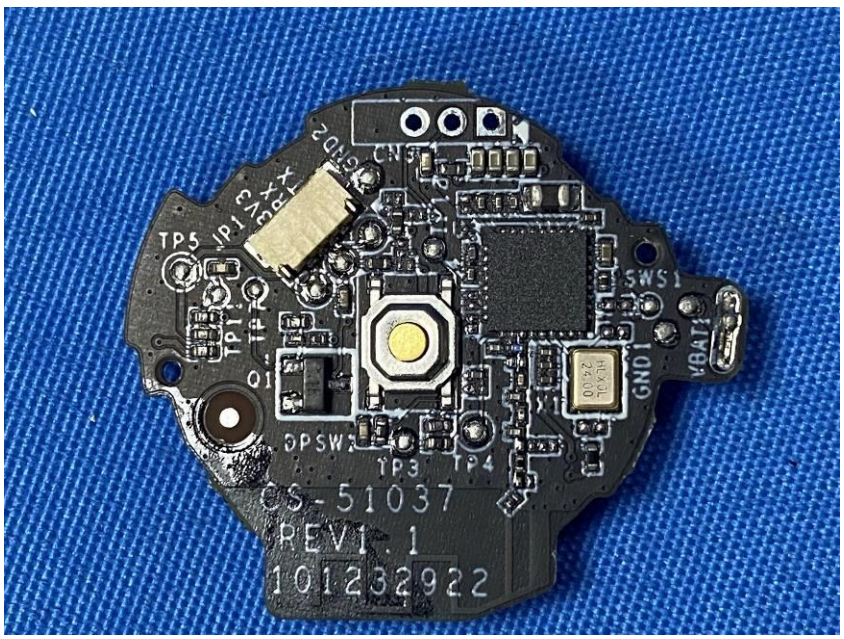


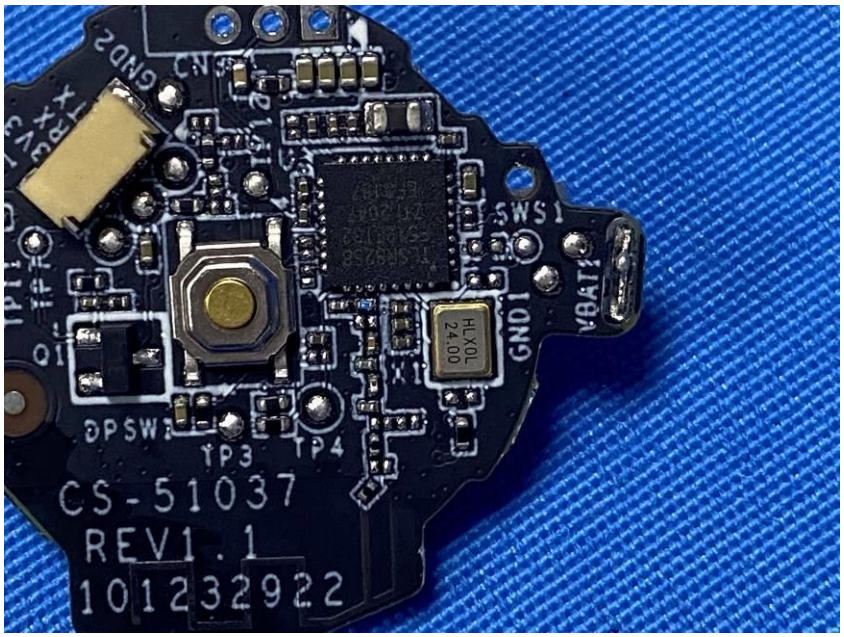












- End of the Report -

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