

FCC Test Report

Report No.: AGC01110181107FE01

APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : Smart Scale
BRAND NAME : eufy
MODEL NAME : T9146
CLIENT : Anker Innovations Limited
DATE OF ISSUE : Nov. 06, 2018
STANDARD(S) : FCC Part 15 Subpart B
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 06, 2018	Valid	Initial release

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TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY	4
2. SYSTEM DESCRIPTION	5
3. MEASUREMENT UNCERTAINTY	5
4. SUMMARY OF TEST RESULTS	5
5. PRODUCT INFORMATION	6
6. SUPPORT EQUIPMENT	6
7. TEST FACILITY	7
8. TEST EQUIPMENT LIST	7
9. FCC LINE CONDUCTED EMISSION TEST	8
9.1. LIMITS OF LINE CONDUCTED EMISSION TEST	8
9.2. BLOCK DIAGRAM OF TEST SETUP	8
9.3. PROCEDURE OF LINE CONDUCTED EMISSION TEST	9
9.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST	9
10. FCC RADIATED EMISSION TEST	10
10.1. LIMITS OF RADIATED EMISSION TEST	10
10.2. BLOCK DIAGRAM OF TEST SETUP	11
10.3. PROCEDURE OF RADIATED EMISSION TEST	12
10.4. TEST RESULT OF RADIATED EMISSION TEST	13
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	17
APPENDIX B: PHOTOGRAPHS OF EUT	18

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1. VERIFICATION OF CONFORMITY

Applicant	Anker Innovations Limited
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong
Manufacturer	Anker Innovations Limited
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong
Factory	Shenzhen Unique Scales Co., Ltd.
Address	6th FL., Building A, Huafeng Green Energy Innovation Park, No.22 Longteng Road, Pingdi Street, Longgang District 518117, ShenZhen, China.
Product Designation	Smart Scale
Brand Name	eufy
Test Model	T9146
Date of test	Nov. 06, 2018
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-IT/AC

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 15B, the measurement procedure according to ANSI C63.4:2014. 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.

Tested By



Henry Zhang(Zhang Zhuorui) Nov. 06, 2018

Reviewed By



Cool Cheng(Cheng Mengguo) Nov. 06, 2018

Approved By



Forrest Lei(Lei Yonggang) Nov. 06, 2018
 Authorized Officer

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2. SYSTEM DESCRIPTION

EUT set up procedure:

1. Connect the EUT with mobile phone.
2. Make sure the EUT normally during the test.

Test Mode

TEST MODE DESCRIPTION		
NO.	TEST MODE DESCRIPTION	WORST
1	Standby	V

Note: V means EMI worst mode.

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission, $U_c = \pm 3.2\text{dB}$

Uncertainty of Radiated Emission below 1GHz, $U_c = \pm 3.9\text{ dB}$

Uncertainty of Radiated Emission above 1GHz, $U_c = \pm 4.8\text{ dB}$

4. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.107	Conduction Emission	N/A
§15.109	Radiated Emission	Compliant

Note: N/A means it's not applicable to this item.

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5. PRODUCT INFORMATION

Housing Type	Glass, Plastic and Metal
Power Supply	DC 4.5V by AAA battery

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

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

6. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Power Cable
Battery	Nanfu	AAA	--	--

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

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7. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1F, B5 Building, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

8. TEST EQUIPMENT LIST

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Spectrum Analyzer	AGILENT	E4440A	US41421290	Jul. 13, 2018	Jul. 12, 2019
EMI Test Receiver	SCHWARZBECK	VULB9168	VULB9168-494	Mar.12,2018	Mar. 11, 2019
Wideband Frequency Antenna	MF	MF-7802	MF780208285	Mar.12, 2018	Mar.11, 2019
Amplifier	EM	EM30180	060552	Mar.01,2018	Feb. 28, 2019
Horn Antenna	EM	EM-AH-10180	67	Mar.01,2018	Feb. 28, 2019

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9. FCC LINE CONDUCTED EMISSION TEST

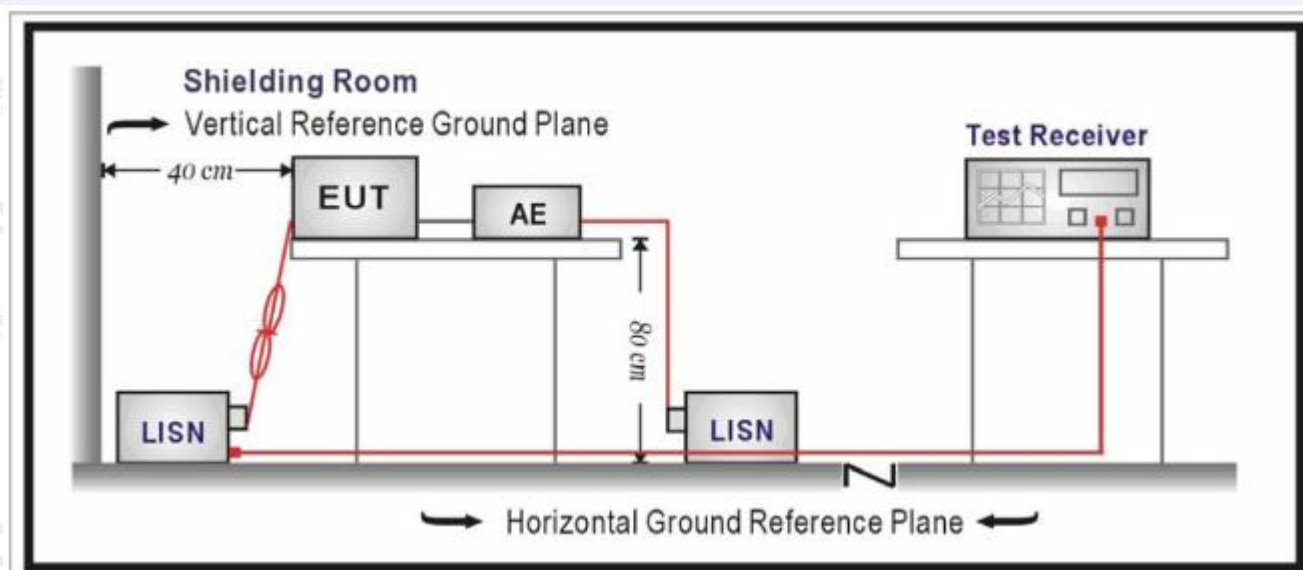
9.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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.

9.2. BLOCK DIAGRAM OF TEST SETUP



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9.3. 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 voltage by PC or adapter which receive AC120V/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.

9.4. TEST RESULT OF LINE CONDUCTED EMISSION TEST

N/A

Note: The EUT power supplied by AAA battery.

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10. FCC RADIATED EMISSION TEST

10.1. LIMITS OF RADIATED EMISSION TEST

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dB μ V/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
960~1000	3	54.0
Above 1000	3	Other:74.0 dB(μ V)/m (Peak) 54.0 dB(μ V)/m (Average)

Note: The lower limit shall apply at the transition frequency.

10.1.1 The following table is the setting of spectrum analyzer and receiver:

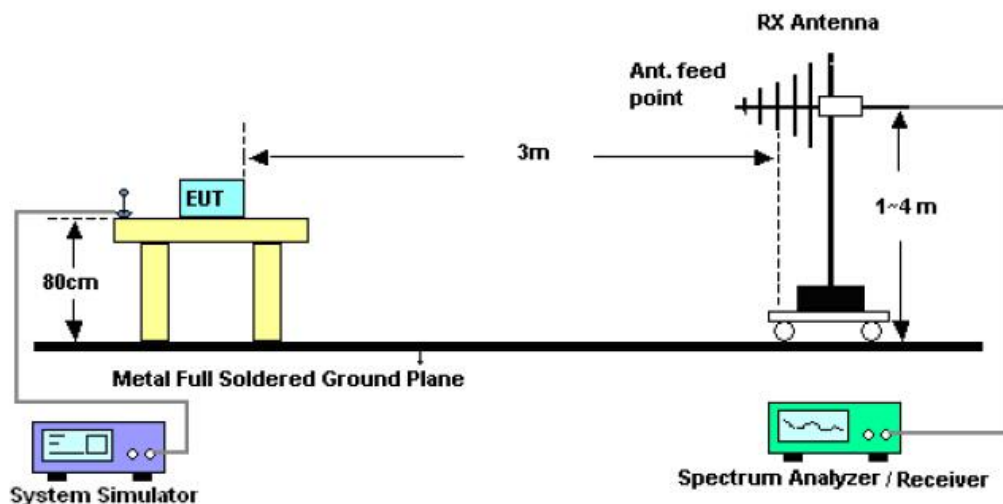
Spectrum Parameter	Setting
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~13GHz RBW 1MHz/ VBW 3MHz for Peak, RBW 1MHz/ VBW 10Hz for Average

Receiver Parameter	Setting
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

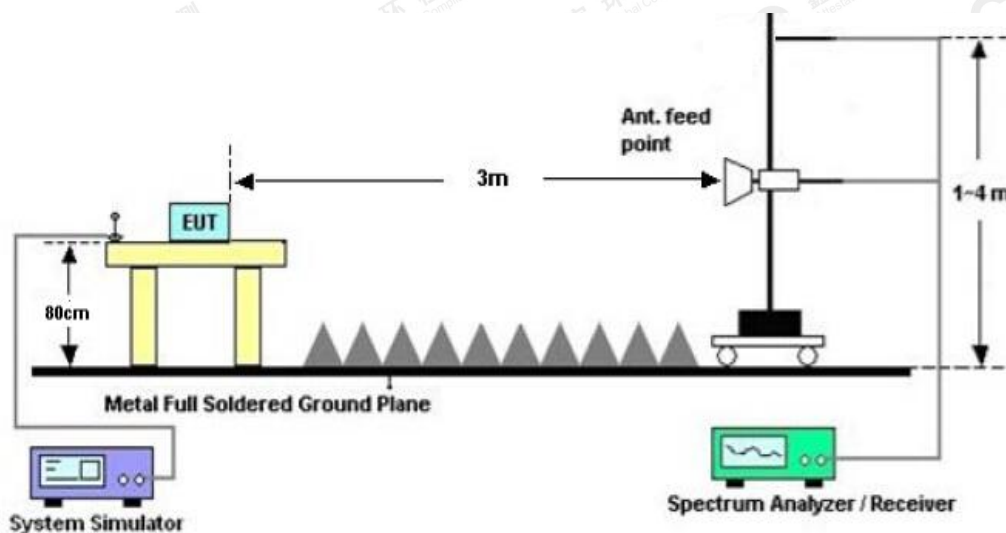
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10.2. BLOCK DIAGRAM OF TEST SETUP

RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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10.3. PROCEDURE OF RADIATED EMISSION TEST

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.

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10.4. TEST RESULT OF RADIATED EMISSION TEST

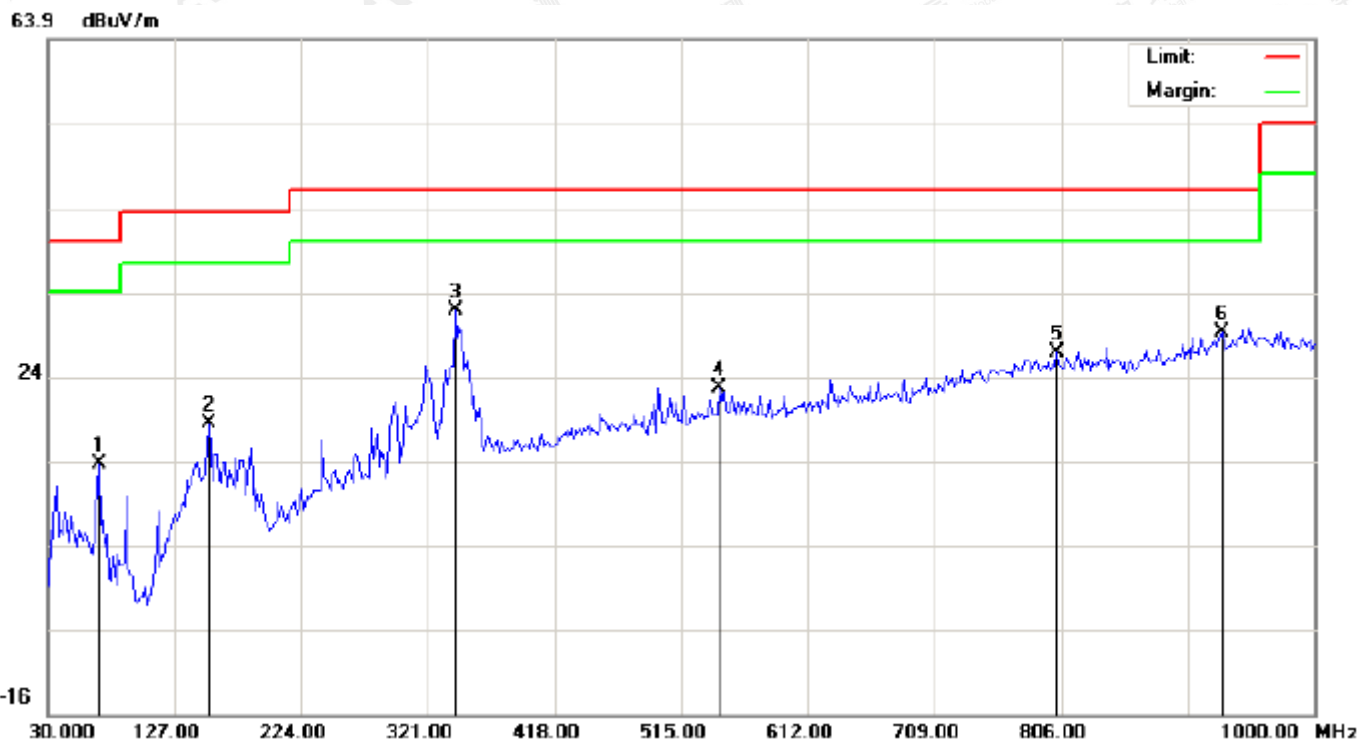
Radiated Emission Test at 3m Distance-Horizontal



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		70.4167	3.73	9.85	13.58	40.00	-26.42	peak			
2		185.2000	13.94	11.31	25.25	43.50	-18.25	peak			
3	*	335.5500	17.28	17.78	35.06	46.00	-10.94	peak			
4		505.3000	7.90	21.27	29.17	46.00	-16.83	peak			
5		797.9167	-1.46	27.29	25.83	46.00	-20.17	peak			
6		943.4167	-0.91	29.82	28.91	46.00	-17.09	peak			

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Radiated Emission Test at 3m Distance-Vertical



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		68.8000	8.95	4.73	13.68	40.00	-26.32	peak			
2		152.8667	3.04	15.28	18.32	43.50	-25.18	peak			
3	*	342.0167	13.68	18.21	31.89	46.00	-14.11	peak			
4		544.1000	0.37	22.32	22.69	46.00	-23.31	peak			
5		802.7667	-0.43	27.32	26.89	46.00	-19.11	peak			
6		928.8667	-0.30	29.41	29.11	46.00	-16.89	peak			

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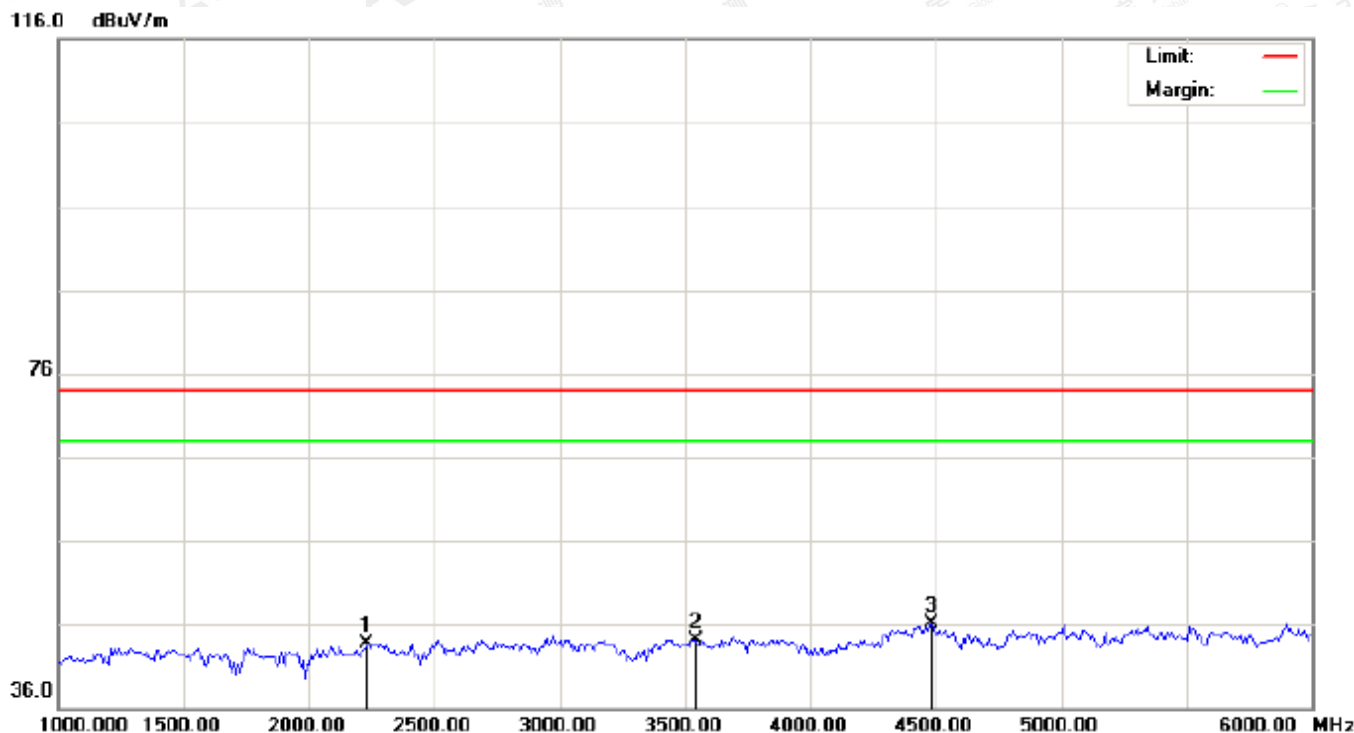
Radiated Emission Test at 3m Distance (Above 1G)-Horizontal



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		2175.000	34.50	10.07	44.57	74.00	-29.43	peak			
2		3616.667	32.05	12.83	44.88	74.00	-29.12	peak			
3	*	4841.667	37.51	7.78	45.29	74.00	-28.71	peak			

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Radiated Emission Test at 3m Distance(Above 1G)-Vertical



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		2233.333	33.55	10.14	43.69	74.00	-30.31	peak			
2		3541.667	31.82	12.37	44.19	74.00	-29.81	peak			
3	*	4483.333	38.92	7.17	46.09	74.00	-27.91	peak			

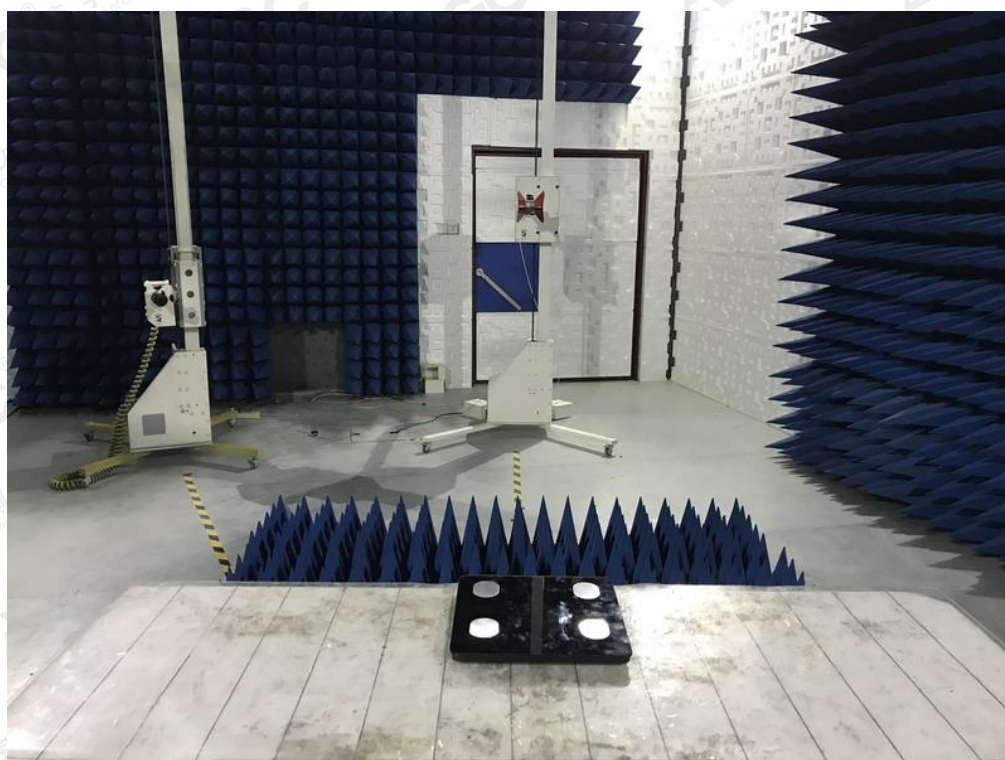
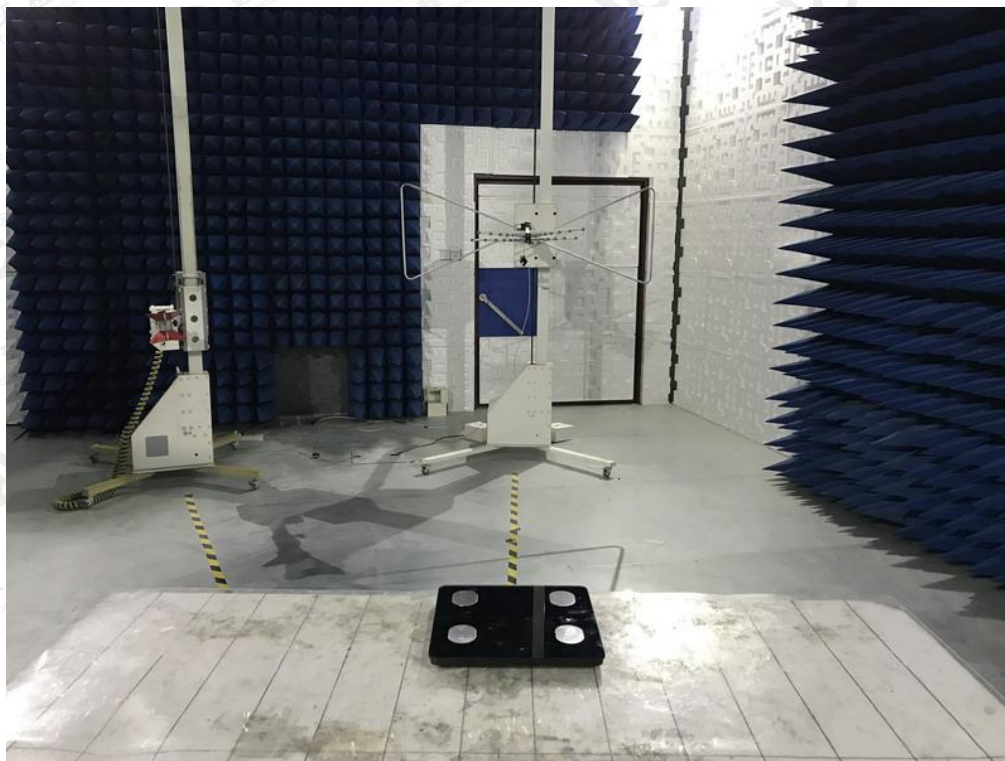
RESULT: PASS

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

6~13GHz at least have 20dB margin. No recording in the test report.

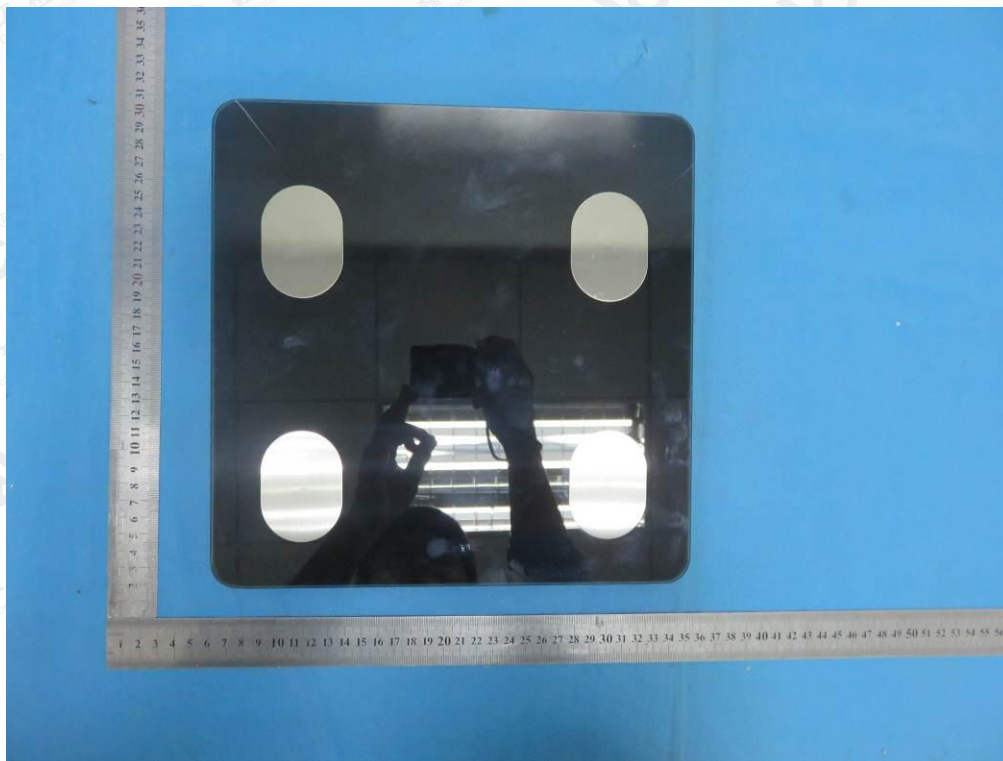
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APPENDIX A: PHOTOGRAPHS OF TEST SETUP
FCC RADIATED EMISSION TEST SETUP

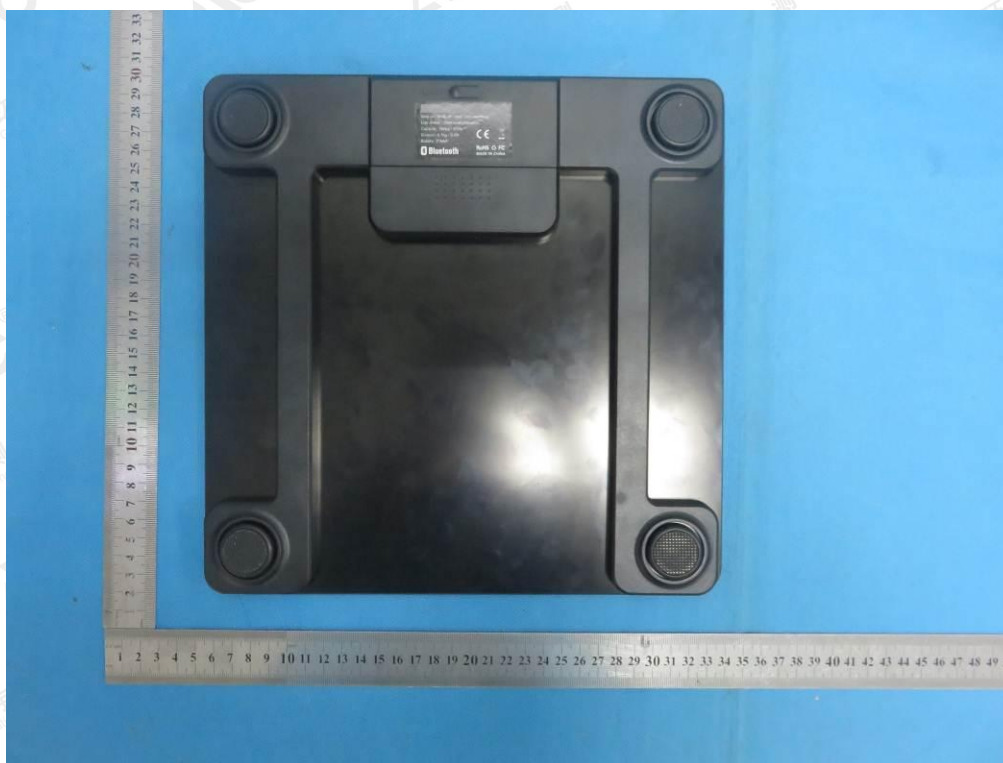


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APPENDIX B: PHOTOGRAPHS OF EUT
TOP VIEW OF EUT

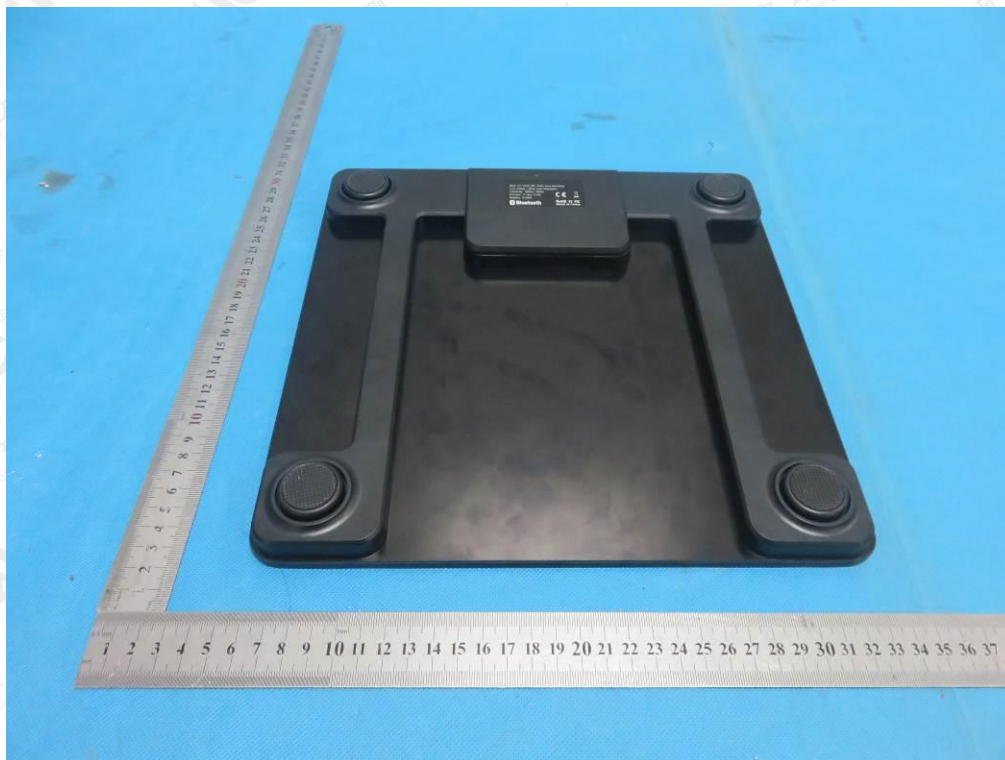


BOTTOM VIEW OF EUT

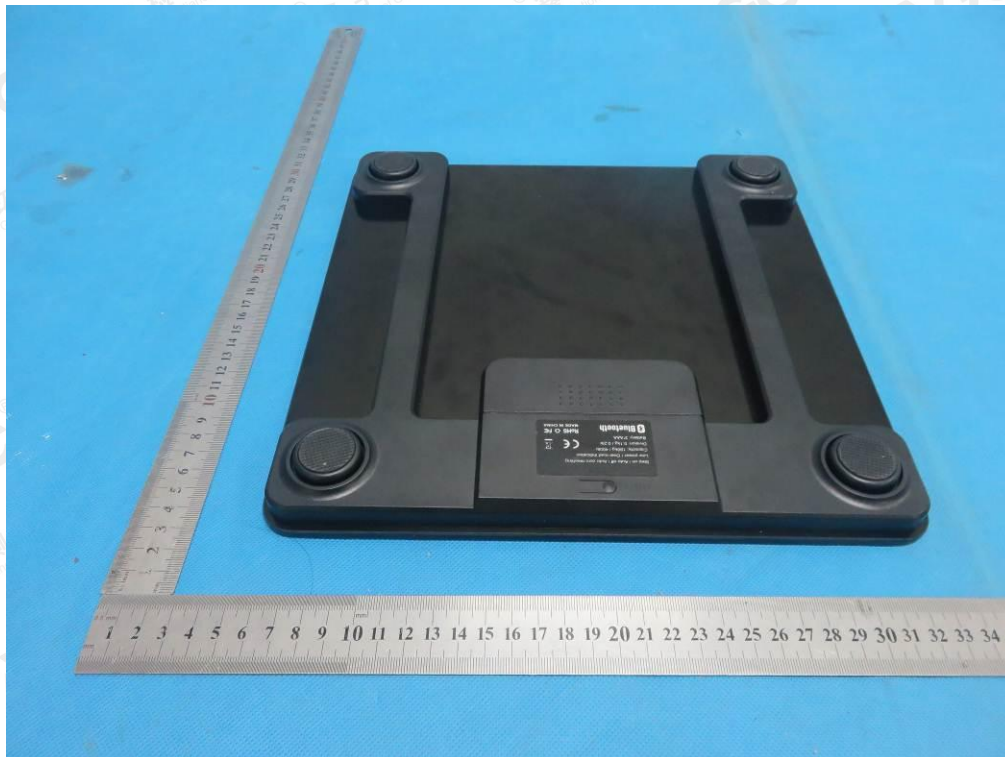


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FRONT VIEW OF EUT



BACK VIEW OF EUT

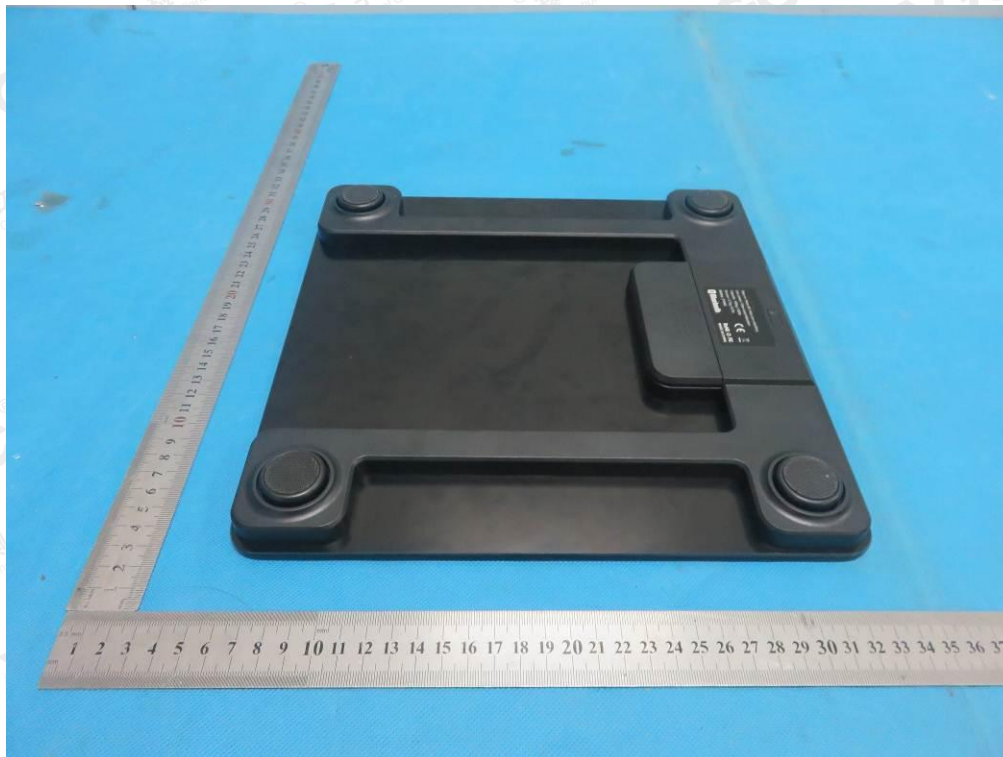


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LEFT VIEW OF EUT



RIGHT VIEW OF EUT

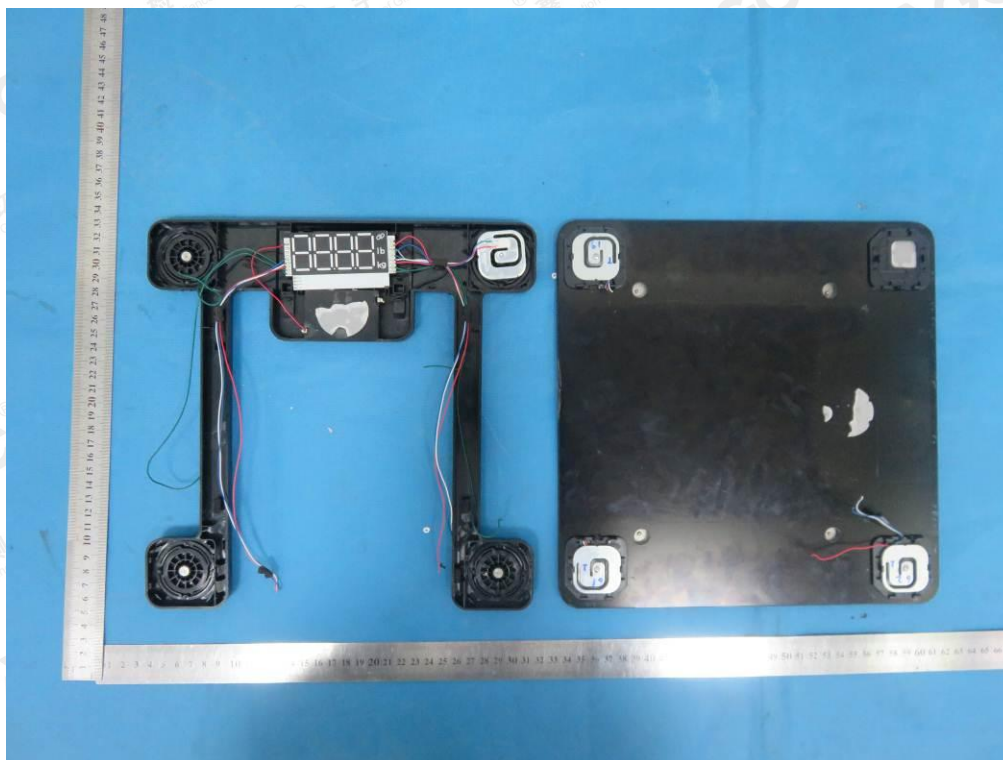


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VIEW OF EUT (PORT)-1

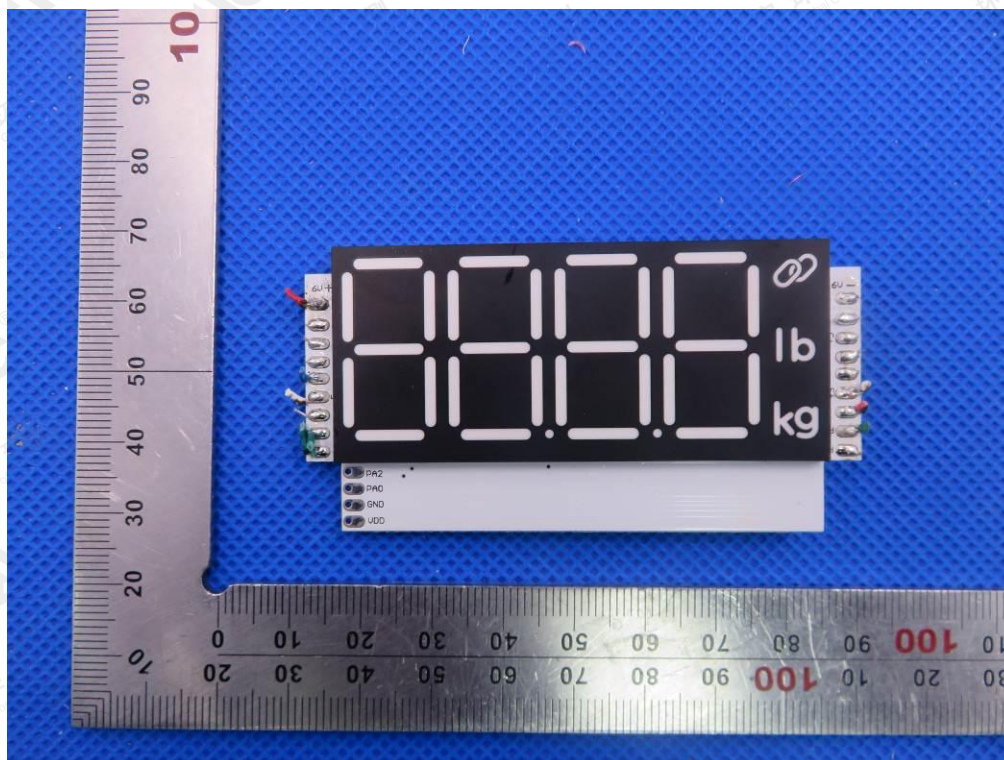


OPEN VIEW OF EUT

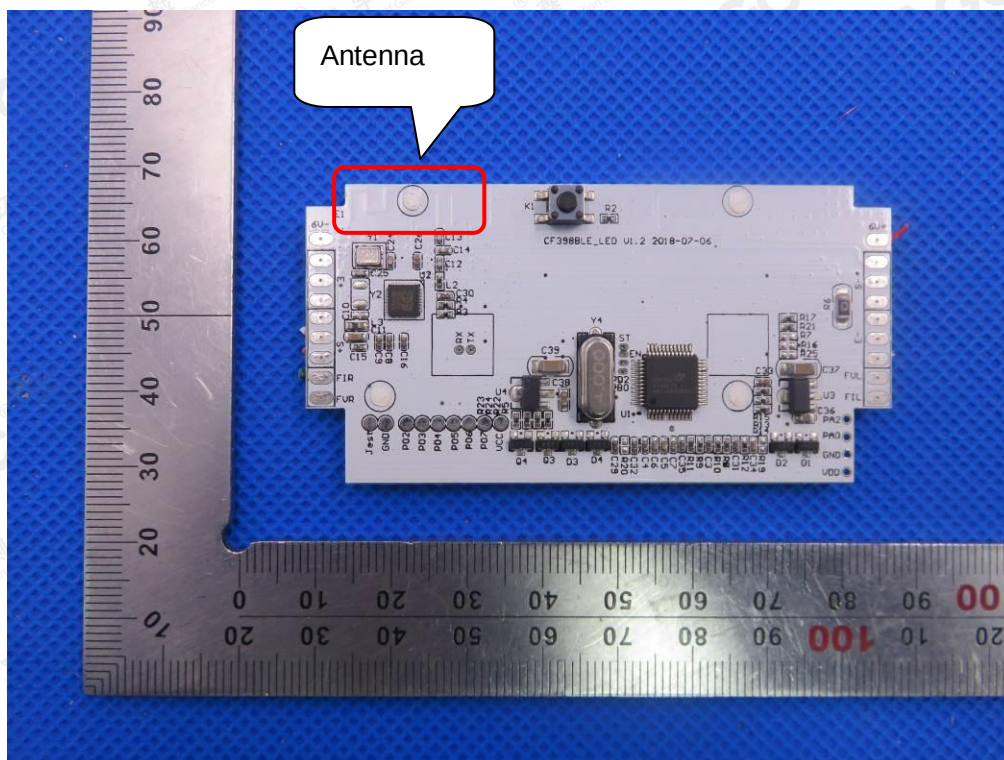


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INTERNAL VIEW OF EUT-1

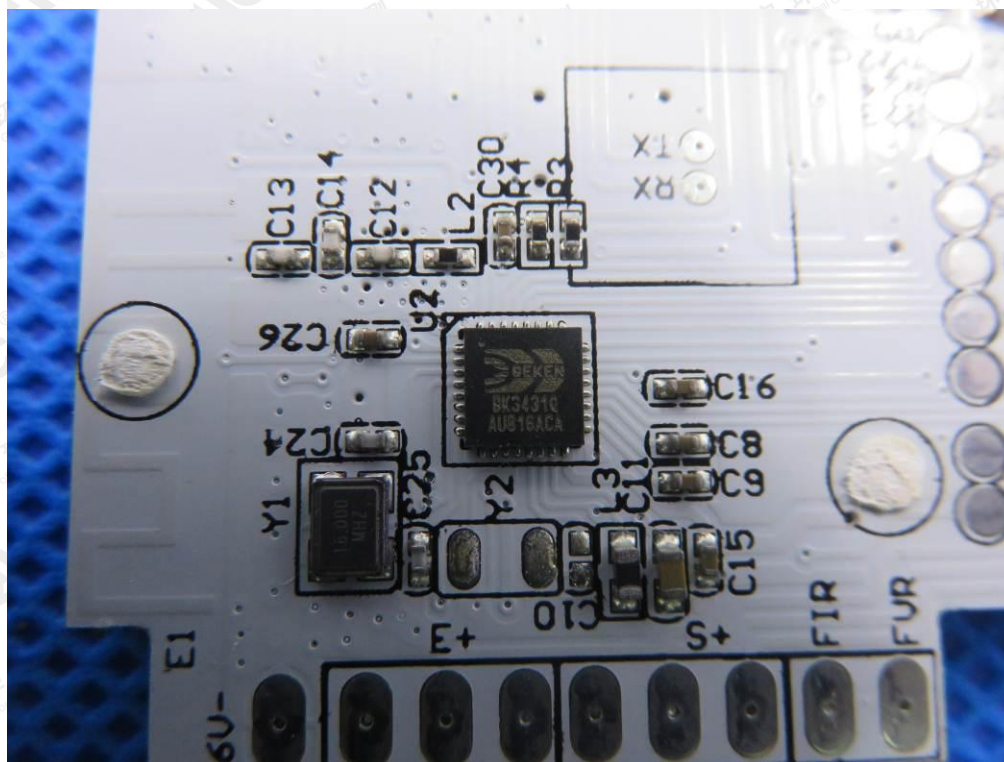


INTERNAL VIEW OF EUT-2



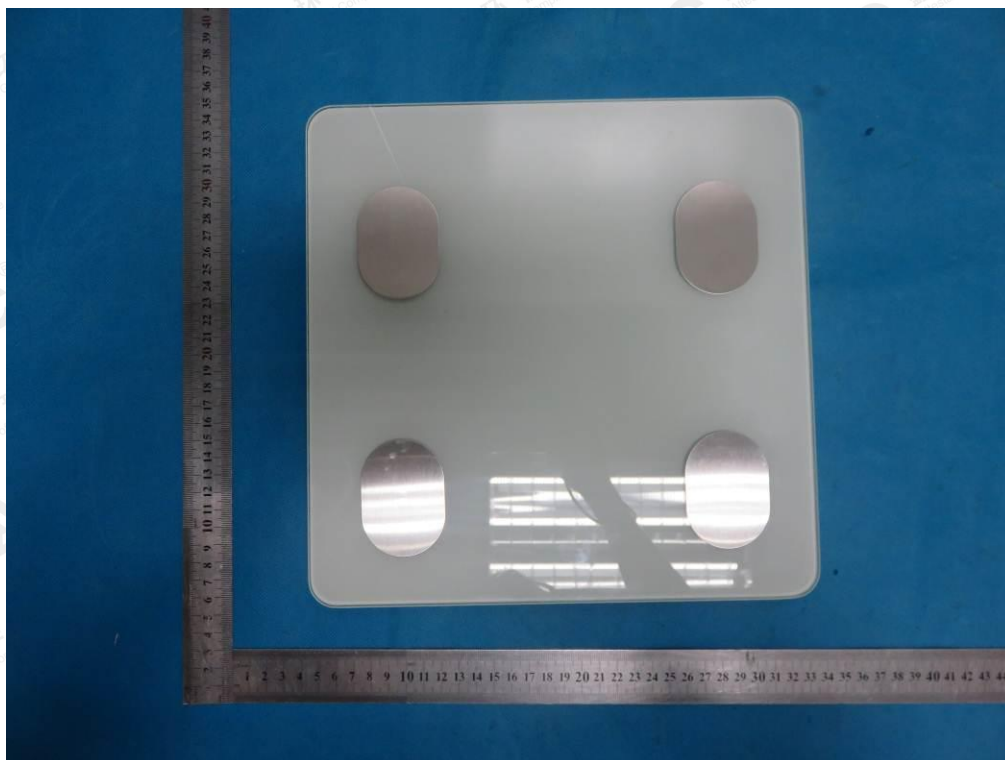
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INTERNAL VIEW OF EUT-3



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Other Color Sample
TOP VIEW OF EUT



BOTTOM VIEW OF EUT



----END OF REPORT----

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