TEST REPORT

Reference No.	:	WTU16S1164281E
FCC ID	:	2AIPV-BH70700-B
Applicant	:	Hoover, Inc.
Address	:	7005 Cochran Road Glenwillow Ohio 44139, United States
Manufacturer	:	Hoover, Inc.
Address	:	7005 Cochran Road Glenwillow Ohio 44139, United States
Factory	:	Suzhou Realpower Electric Appliance Co.,Ltd
Address	:	No.9 Shiyang Road,New District,Suzhou.China.
Product Name	:	Robotic Vacuum Cleaner
Model No.	:	BH70700, BH70600, BH70800, BH70705, BH70805
FStandards	:	FCC CFR47 Part 15 Section 15.247:2016
Date of Receipt sample	:	Nov. 02, 2016
Date of Test	:	Nov. 03 – 26, 2016
Date of Issue	:	Nov. 27, 2016
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
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Compiled by:

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Approved by:

Philo Zhong / Manager

2 Contents

3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTU16S1164281E	Nov. 02, 2016	Nov. 03 – 26, 2016	Nov. 27, 2016	original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product Name:	Robotic Vacuum Cleaner
Model No.:	BH70700, BH70600, BH70800, BH70705, BH70805
Model Difference:	All the models are same in all respects, only the model name is different for different market requirement, the model BH70700 is the test sample.
Bluetooth Version:	V4.0
Operation Frequency:	2402-2480MHz, /40(BLE) Channels in total
Type of Modulation:	GFSK(BLE only)
The lowest oscillator:	32.768 KHz
Antenna Gain:	0 dBi
Antenna installation:	PCB printed antenna

4.2 Details of E.U.T.

Technical Data..... : DC 12V, 2500mAh by Ni-MH battery

Charging: DC 17V, 850mA by charger from power supply.
(power supply Input: 100-240V~, 50/60Hz, 0.5A, Output: DC 17V, 850mA, Model: ZD12D170085, manufacturer: E-TEK Electronics Manufactory Ltd.)

4.3 Channel List

BLE mode

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	1	2404	2	2406	3	2408
4	2410	5	2412	6	2414	7	2416
8	2418	9	2420	10	2422	11	2424
12	2426	13	2428	14	2430	15	2432
16	2434	17	2436	18	2438	19	2440
20	2442	21	2444	22	2446	23	2448
24	2450	25	2452	26	2454	27	2456
28	2458	29	2460	30	2462	31	2464
32	2466	33	2468	34	2470	35	2472
36	2474	37	2476	38	2478	39	2480

4.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Table 1 Tests carried out under FCC part 15.247

Test mode	Low channel	Middle channel	High channel
Transmitting	2402MHz	2440MHz	2480MHz

Table 2 Tests carried out under FCC part 15.207 and 15.209

Test Item	Test Mode
Radiated Emissions	Transmitting, Charging + Transmitting
Conducted Emissions	Charging + Transmitting

4.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A-1**

  Waltek Services(Shenzhen) Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A-1, October 15, 2015.

- **FCC Test Site 1#– Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, April 29, 2014.

- **FCC Test Site 2#– Registration No.: 328995**

  Waltek Services(Shenzhen) Co., Ltd. EMC Laboratory `has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 328995, December 3, 2014.

5 Equipment Used during Test

5.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	Sep.12, 2016	Sep.11, 2017
2.	LISN	R&S	ENV216	101215	Sep.12, 2016	Sep.11, 2017
3.	Cable	Top	TYPE16(3.5M)	-	Sep.12, 2016	Sep.11, 2017
Conducted Emissions Test Site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	Sep.12, 2016	Sep.11, 2017
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Sep.12, 2016	Sep.11, 2017
3.	Limiter	York	MTS-IMP-136	261115-001-0024	Sep.12, 2016	Sep.11, 2017
4.	Cable	LARGE	RF300	-	Sep.12, 2016	Sep.11, 2017
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Amplifier	Agilent	8447D	2944A10178	Jan.13, 2016	Jan.12, 2017
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	0703	Oct.17, 2016	Oct.16, 2017
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	33 6	Apr.09, 2016	Apr.08, 2017
4	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	Sep.12, 2016	Sep.11, 2017
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Apr.09, 2016	Apr.08, 2017
6	Broad-band Horn Antenna (FCC/IC ID)	SCHWARZBECK	BBHA 9170	335	Apr.09, 2016	Apr.08, 2017
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Apr.13, 2016	Apr.12, 2017
8	Coaxial Cable (above 1GHz)	Top	1GHz-18GHz	EW02014-7	Apr.13, 2016	Apr.12, 2017
9	Amplifier	Agilent	8447D	2944A10178	Jan.13, 2016	Jan.12, 2017
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	Apr.13, 2016	Apr.12, 2017
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Apr.09, 2016	Apr.08, 2017

3	Amplifier	ANRITSU	MH648A	M43381	Apr.13, 2016	Apr.12, 2017
4	Cable	HUBER+SUHNER	CBL2	525178	Apr.13, 2016	Apr.12, 2017
RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	Sep.12, 2016	Sep.11, 2017
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	Sep.12, 2016	Sep.11, 2017
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	Sep.12, 2016	Sep.11, 2017

5.2 Measurement Uncertainty

Parameter	**Uncertainty**
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 4.74 dB (Horn antenna 1000M~25000MHz)
Conducted Spurious Emissions test	± 3.64 dB (AC mains 150KHz~30MHz)

5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

6 Test Summary

Test Items	Test Requirement	Result
Radiated Emissions	15.205(a) 15.209(a)	C
Conducted Emissions	15.207(a)	C
Bandwidth	15.247(a)(2)	C
Maximum Peak Output Power	15.247(b)(3),(4)	C
Power Spectral Density	15.247(e)	C
Band Edge	15.247(d)	C
Antenna Requirement	15.203	C
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	C
Note: C=compliance; NC=Not Compliance; NT=Not Tested; N/A=Not Applicable.		

7 Conducted Emission

Test Requirement:	FCC CFR 47 Part 15 Section 15.207
Test Method:	ANSI C63.10:2013&ANSI C63.4:2014
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)

7.1 E.U.T. Operation

Operating Environment **:**

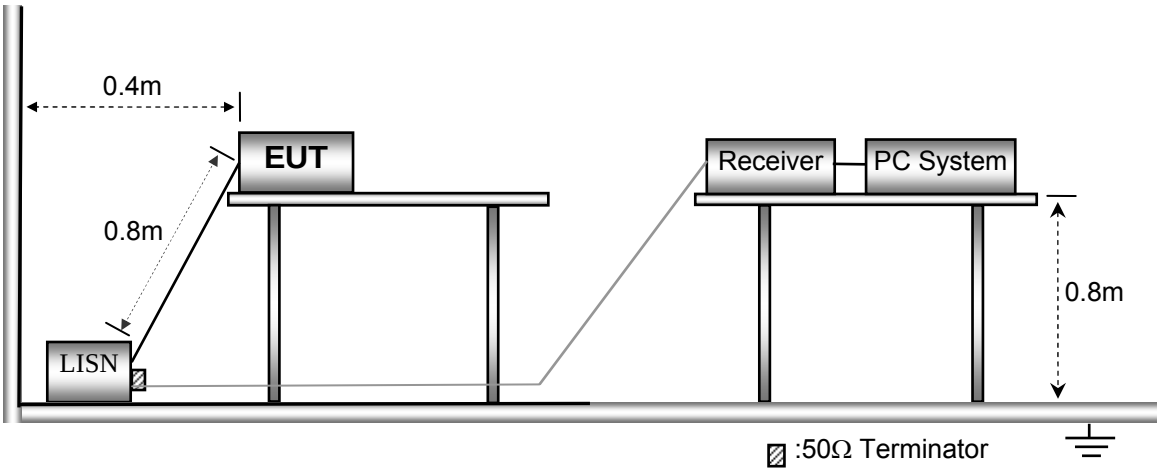
Temperature:	25.5 °C
Humidity:	51 % RH
Atmospheric Pressure:	101.2kPa

EUT Operation **:**

The test was performed in charging + transmitting mode, the test data were shown in the report.

7.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013.

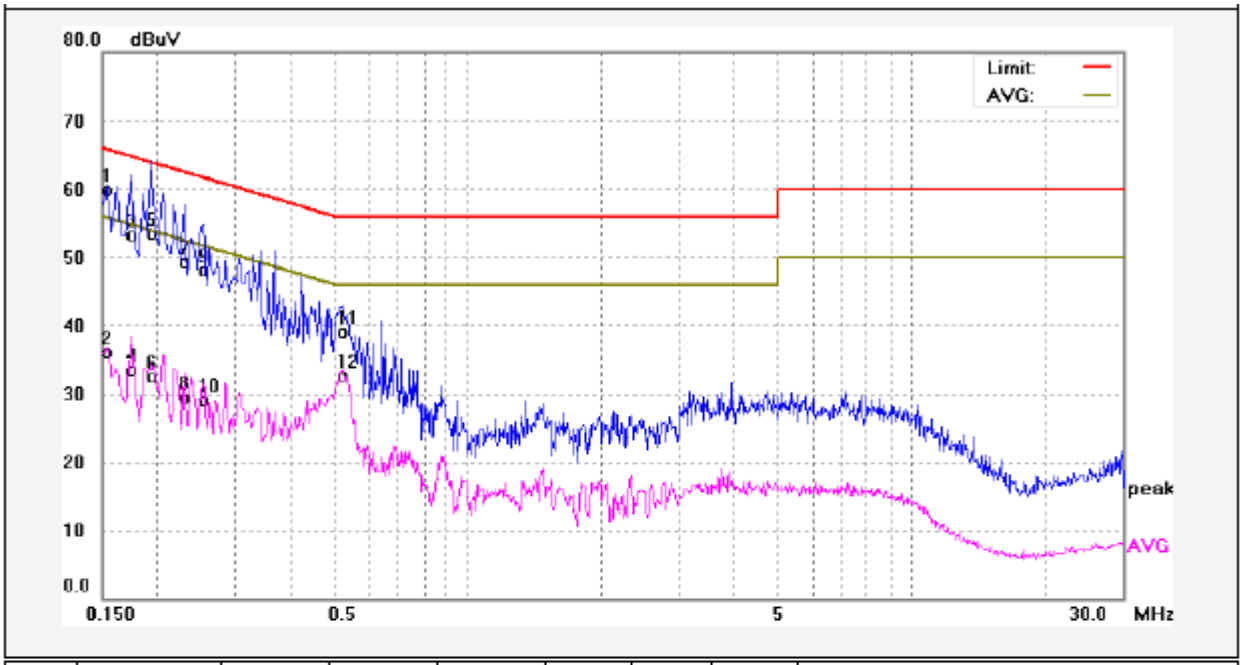


7.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

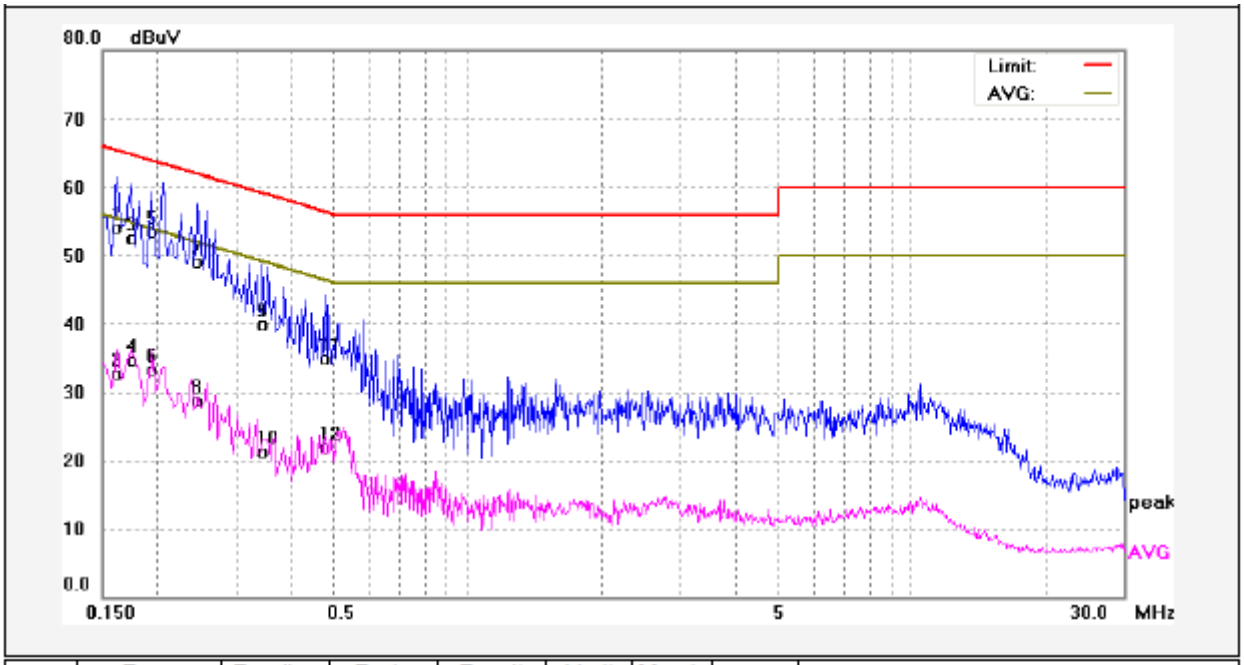
7.4 Conducted Emission Test Result

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1539	50.15	9.75	59.90	65.78	-5.88	QP	
2	0.1539	26.33	9.75	36.08	55.78	-19.70	AVG	
3	0.1740	43.60	9.74	53.34	64.76	-11.42	QP	
4	0.1740	23.76	9.74	33.50	54.76	-21.26	AVG	
5	0.1940	43.77	9.76	53.53	63.86	-10.33	QP	
6	0.1940	22.74	9.76	32.50	53.86	-21.36	AVG	
7	0.2300	39.47	9.75	49.22	62.45	-13.23	QP	
8	0.2300	19.80	9.75	29.55	52.45	-22.90	AVG	
9	0.2540	38.31	9.74	48.05	61.62	-13.57	QP	
10	0.2540	19.34	9.74	29.08	51.62	-22.54	AVG	
11	0.5220	29.33	9.76	39.09	56.00	-16.91	QP	
12	0.5220	22.86	9.76	32.62	46.00	-13.38	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1620	44.46	9.74	54.20	65.36	-11.16	QP	
2	0.1620	22.95	9.74	32.69	55.36	-22.67	AVG	
3	0.1740	42.83	9.74	52.57	64.76	-12.19	QP	
4	0.1740	24.96	9.74	34.70	54.76	-20.06	AVG	
5	0.1940	43.67	9.76	53.43	63.86	-10.43	QP	
6	0.1940	23.49	9.76	33.25	53.86	-20.61	AVG	
7	0.2460	39.40	9.74	49.14	61.89	-12.75	QP	
8	0.2460	18.88	9.74	28.62	51.89	-23.27	AVG	
9	0.3460	30.16	9.75	39.91	59.06	-19.15	QP	
10	0.3460	11.58	9.75	21.33	49.06	-27.73	AVG	
11	0.4780	25.09	9.76	34.85	56.37	-21.52	QP	
12	0.4780	12.05	9.76	21.81	46.37	-24.56	AVG	

8 Radiated Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209 & 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05 & ANSI C63.10:2013

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

8.1 EUT Operation

Operating Environment **:**

Temperature: 25.5 °C

Humidity: 51 % RH

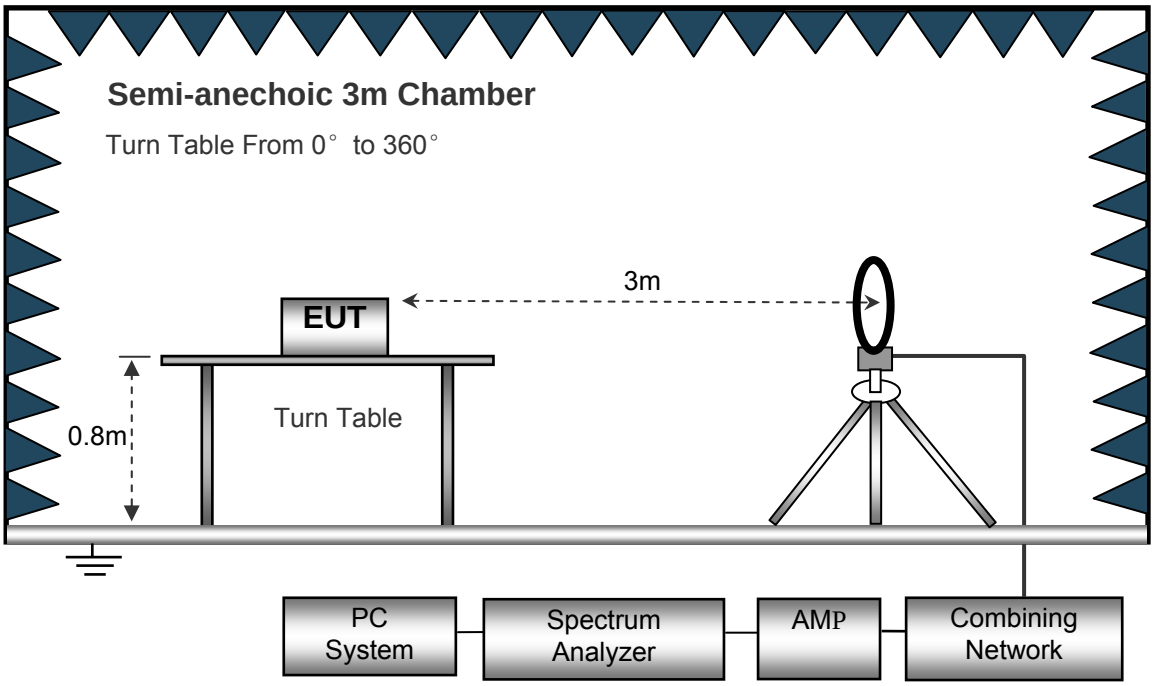
Atmospheric Pressure: 101.6kPa

EUT Operation **:**

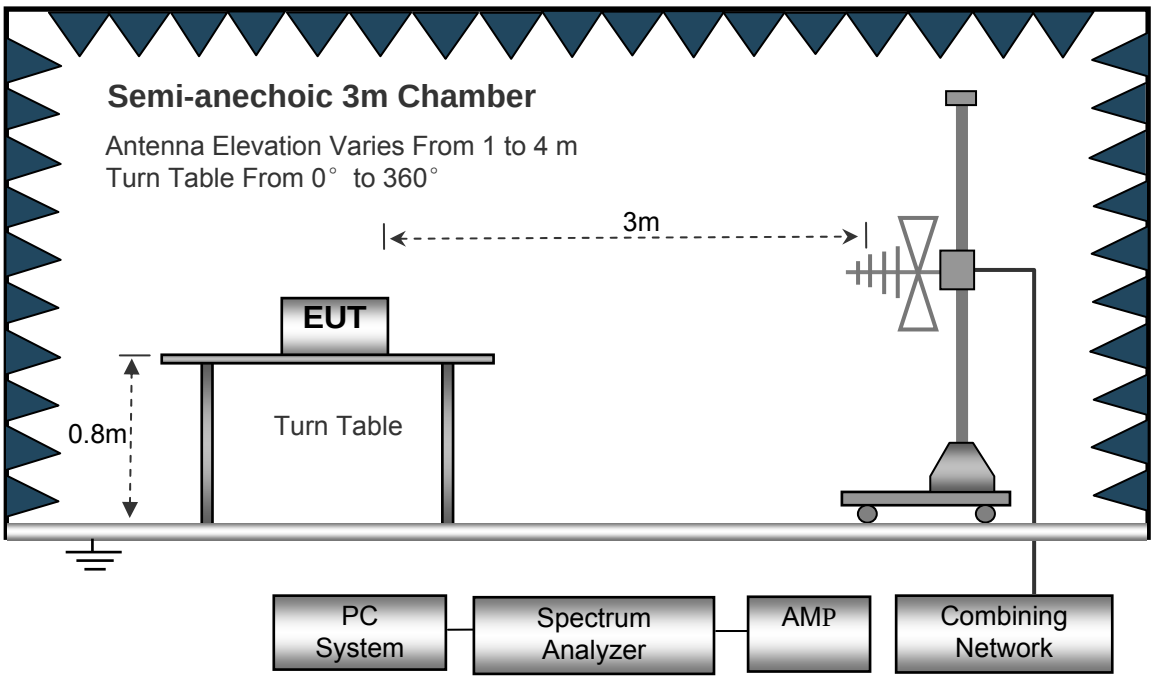
The test was performed in transmitting, charging+ transmitting mode, all mode are tested, only the worse test mode charging + transmitting test data were shown in the report.

8.2 Test Setup

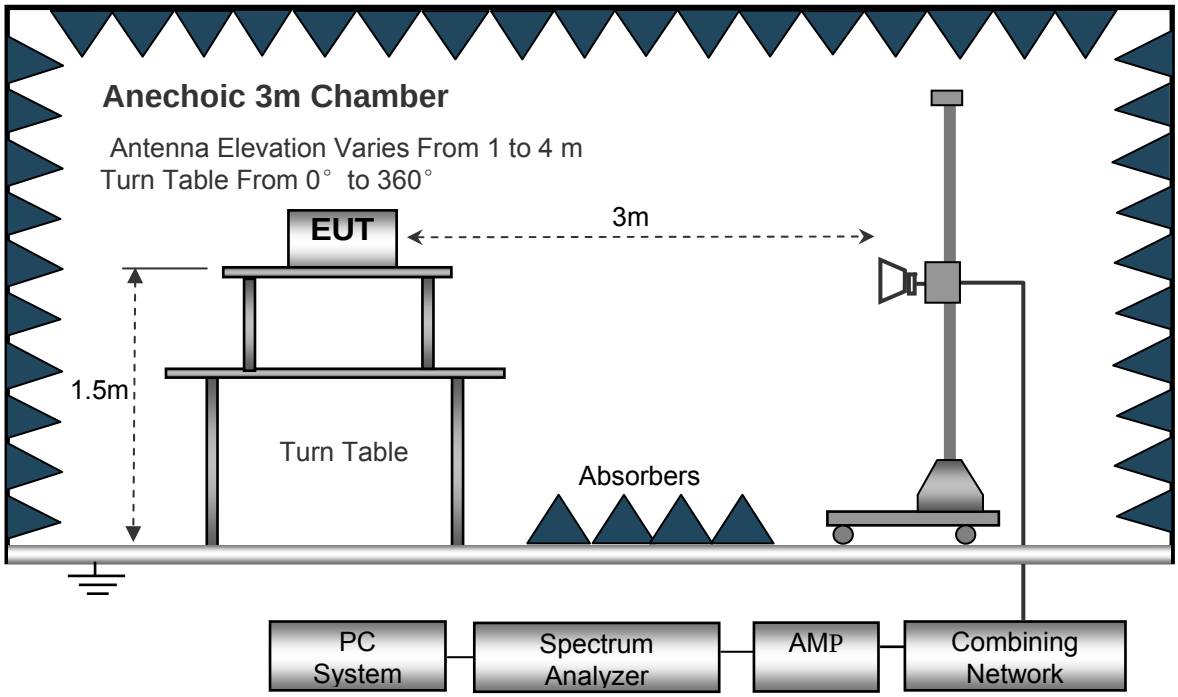
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



8.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed ..... Auto
IF Bandwidth..... 10kHz
Video Bandwidth..... 10kHz

Resolution Bandwidth..... 10kHz

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 10Hz

8.4 Test Procedure

1. The EUT is placed on a turntable. For below 1GHz, the EUT is 0.8m above ground plane;
For above1GHz, the EUT is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

8.5 Summary of Test Results

Test Frequency: 32.768 KHz to 30 MHz

The measurements were more than 20 dB below the limit and not reported

Test Frequency: 30 MHz ~ 18 GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) Low Channel									
178.99	34.55	QP	102	1.6	H	-13.35	21.20	43.00	-21.80
178.99	41.56	QP	266	1.6	V	-13.35	28.21	43.00	-14.79
4804.00	46.88	PK	121	1.5	V	-1.06	45.82	74.00	-28.18
4804.00	43.52	Ave	121	1.5	V	-1.06	42.46	54.00	-11.54
7206.00	41.78	PK	300	1.6	H	1.33	43.11	74.00	-30.89
7206.00	35.89	Ave	300	1.6	H	1.33	37.22	54.00	-16.78
2322.25	46.04	PK	4	1.5	V	-13.19	32.85	74.00	-41.15
2322.25	37.59	Ave	4	1.5	V	-13.19	24.40	54.00	-29.60
2372.20	43.64	PK	130	1.5	H	-13.14	30.50	74.00	-43.50
2372.20	36.03	Ave	130	1.5	H	-13.14	22.89	54.00	-31.11
2495.51	42.97	PK	224	1.8	V	-13.08	29.89	74.00	-44.11
2495.51	37.43	Ave	224	1.8	V	-13.08	24.35	54.00	-29.65

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) Middle Channel									
178.99	34.78	QP	56	1.9	H	-13.35	21.43	43.00	-21.57
178.99	41.65	QP	33	1.6	V	-13.35	28.30	43.00	-14.70
4880.00	46.80	PK	293	1.3	V	-0.62	46.18	74.00	-27.82
4880.00	43.34	Ave	293	1.3	V	-0.62	42.72	54.00	-11.28
7320.00	42.85	PK	22	1.7	H	2.21	45.06	74.00	-28.94
7320.00	35.96	Ave	22	1.7	H	2.21	38.17	54.00	-15.83
2312.28	46.13	PK	322	1.3	V	-13.19	32.94	74.00	-41.06
2312.28	37.69	Ave	322	1.3	V	-13.19	24.50	54.00	-29.50
2383.93	44.46	PK	310	1.7	H	-13.14	31.32	74.00	-42.68
2383.93	36.27	Ave	310	1.7	H	-13.14	23.13	54.00	-30.87
2484.86	42.42	PK	150	1.3	V	-13.08	29.34	74.00	-44.66
2484.86	37.49	Ave	150	1.3	V	-13.08	24.41	54.00	-29.59

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude	Limit	Margin
				Height	Polar				
(MHz)	(dBμV)	(PK/QP/Ave)	Degree	(m)	(H/V)	(dB)	(dBμV/m)	(dBμV/m)	(dB)
GFSK (BLE) High Channel									
178.99	35.56	QP	261	1.7	H	-13.35	22.21	43.00	-20.79
178.99	42.98	QP	47	1.7	V	-13.35	29.63	43.00	-13.37
4960.00	46.77	PK	49	1.1	V	-0.24	46.53	74.00	-27.47
4960.00	41.96	Ave	49	1.1	V	-0.24	41.72	54.00	-12.28
7440.00	43.80	PK	215	1.6	H	2.84	46.64	74.00	-27.36
7440.00	34.85	Ave	215	1.6	H	2.84	37.69	54.00	-16.31
2330.42	46.03	PK	222	1.1	V	-13.19	32.84	74.00	-41.16
2330.42	38.87	Ave	222	1.1	V	-13.19	25.68	54.00	-28.32
2355.98	44.39	PK	211	1.3	H	-13.14	31.25	74.00	-42.75
2355.98	38.71	Ave	211	1.3	H	-13.14	25.57	54.00	-28.43
2488.18	43.09	PK	258	1.3	V	-13.08	30.01	74.00	-43.99
2488.18	36.42	Ave	258	1.3	V	-13.08	23.34	54.00	-30.66

Test Frequency: 18GHz~25GHz

The measurements were more than 20 dB below the limit and not reported

9 Band Edge Measurement

Test Requirement:	Section 15.247(d) In addition, radiated emissions which fall in the restricted bands. as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) and 15.205(c).
Test Method:	558074 D01 DTS Meas Guidance v03r05
Test Mode:	Transmitting

9.1 Test Produce

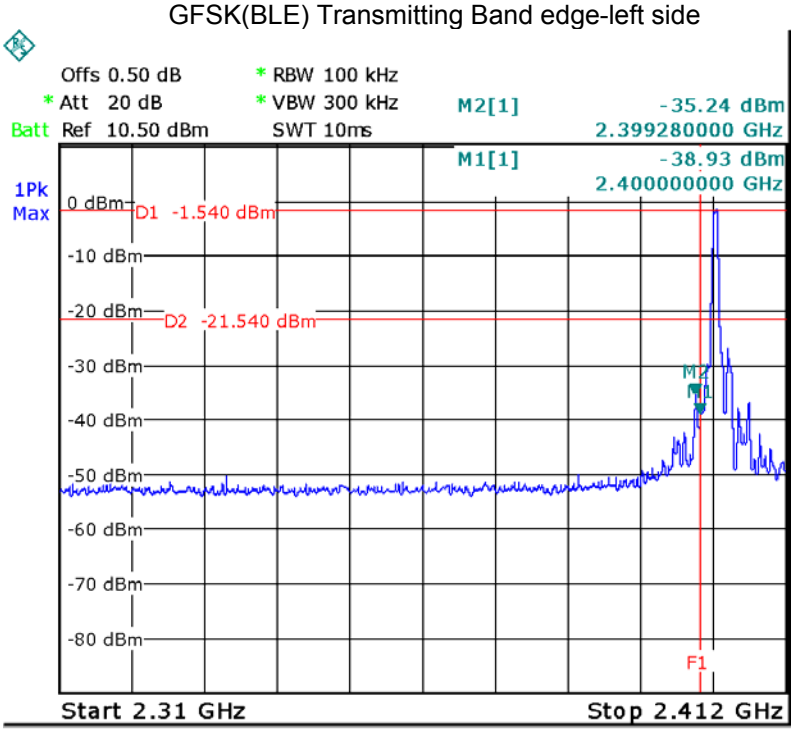
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto

   Detector function = peak, Trace = max hold
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

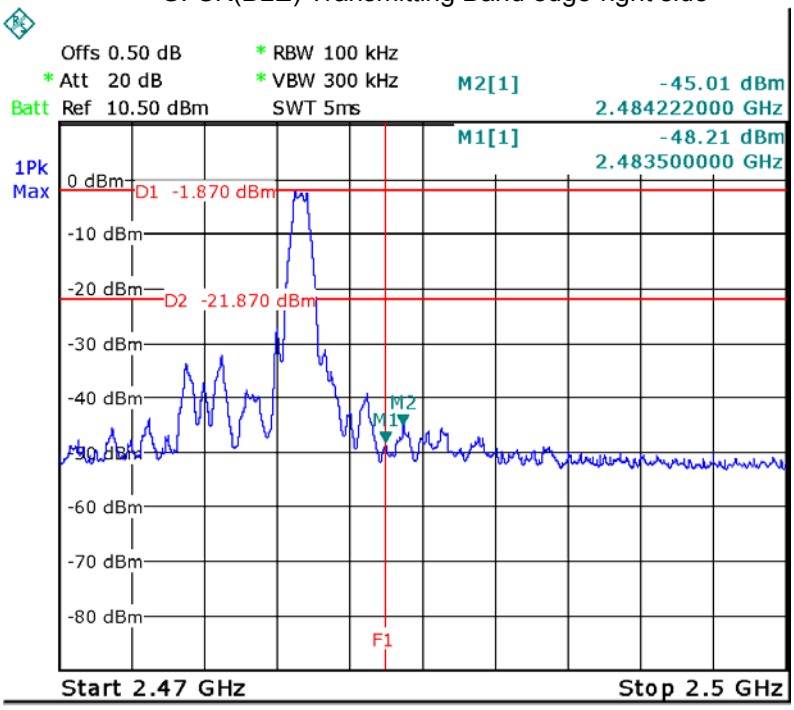
9.2 Test Result

Test plots

GFSK(BLE) Transmitting Band edge-left side



GFSK(BLE) Transmitting Band edge-right side



10 Bandwidth Measurement

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

10.1 Test Procedure

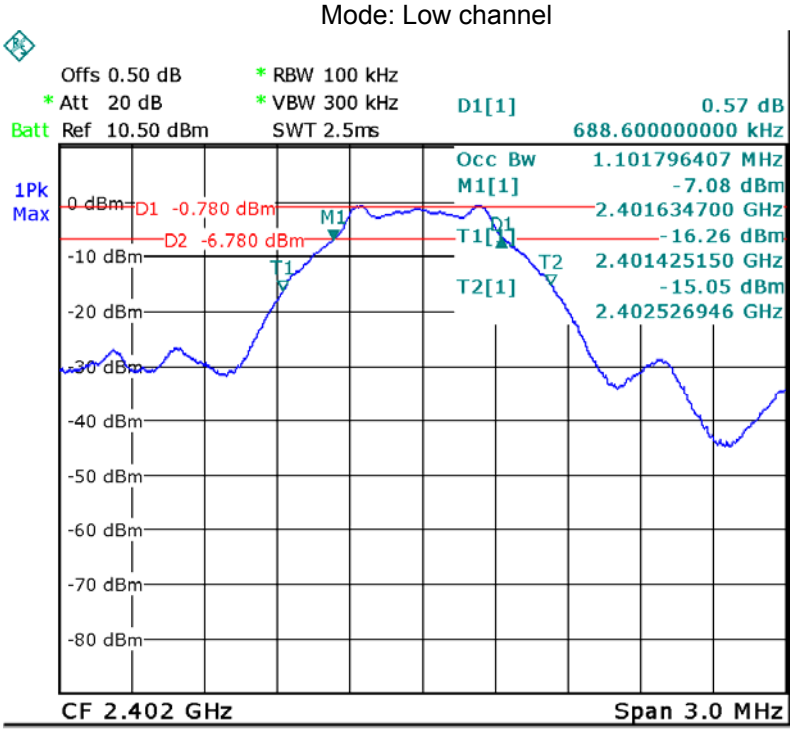
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

10.2 Test Result

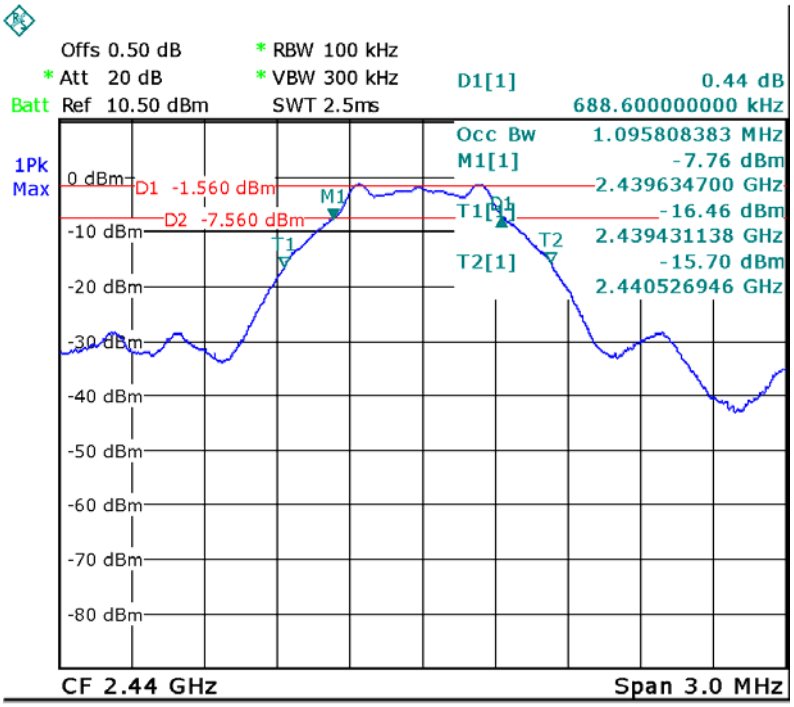
Operation mode	6dB Bandwidth (KHz)	99% Bandwidth(MHz)
Low channel	688.600	1.102
Middle channel	688.600	1.096
High channel	688.600	1.090

Test result plot as follows:

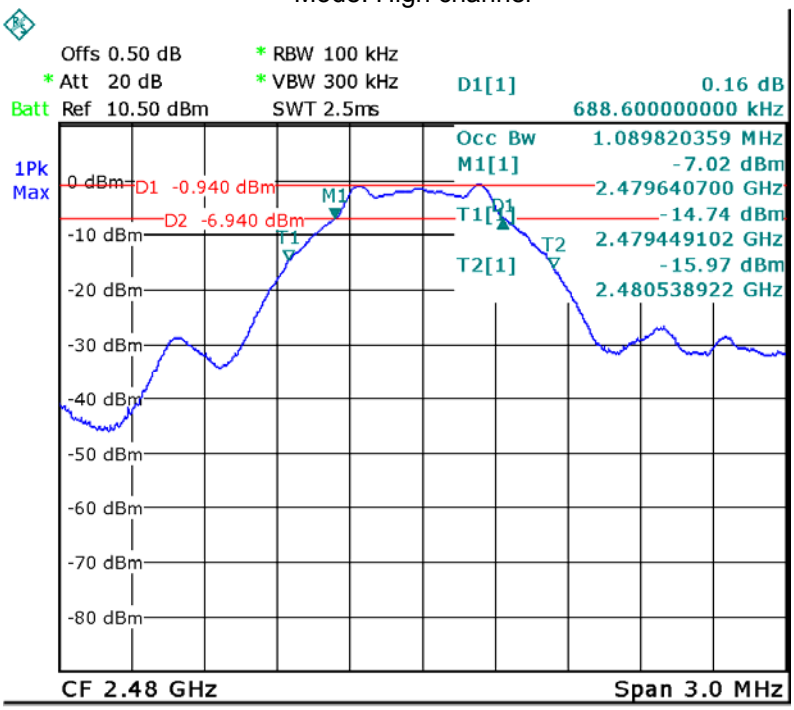
Mode: Low channel



Mode: Middle channel



Mode: High channel



11 Maximum Peak Output Power

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

11.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 9.1.1

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

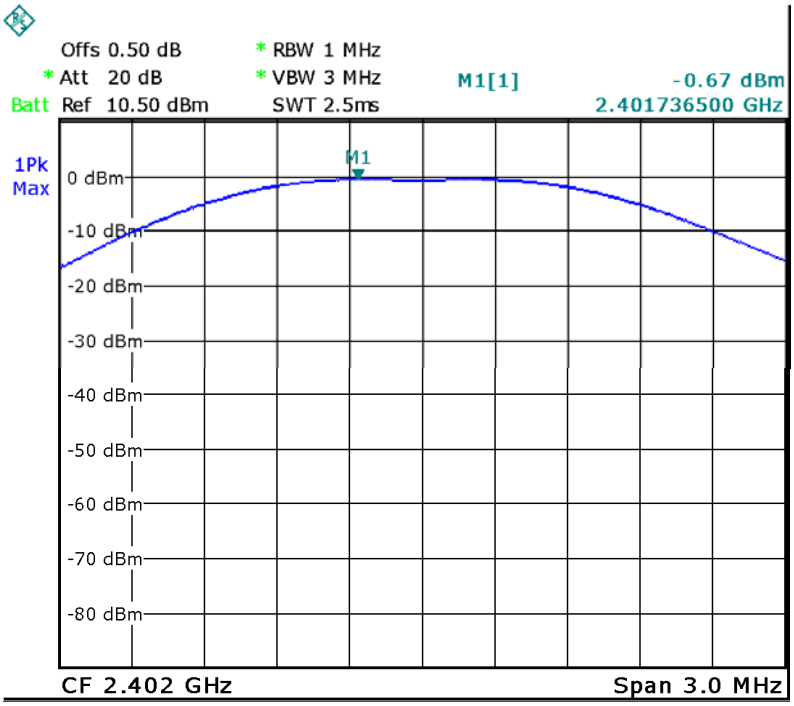
2. Set the spectrum analyzer: RBW = 1MHz. VBW = 3MHz. Sweep = auto; Detector Function = Peak, Set the span to fully encompass the DTS bandwidth.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

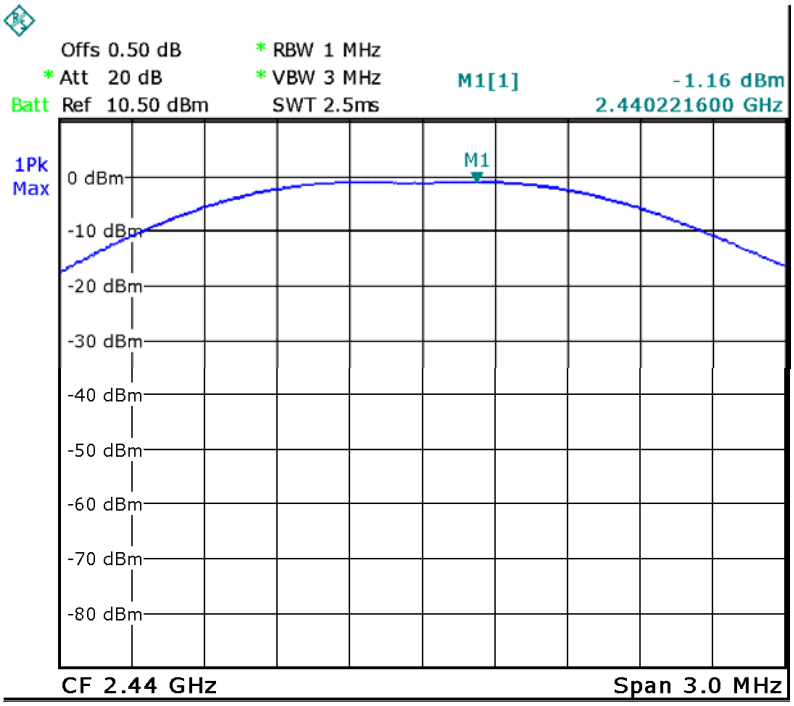
11.2 Test Result

Maximum Peak Output Power (dBm)		
Low channel	Middle channel	High channel
-0.67	-1.16	-0.85
Limit : 1W/30dBm		

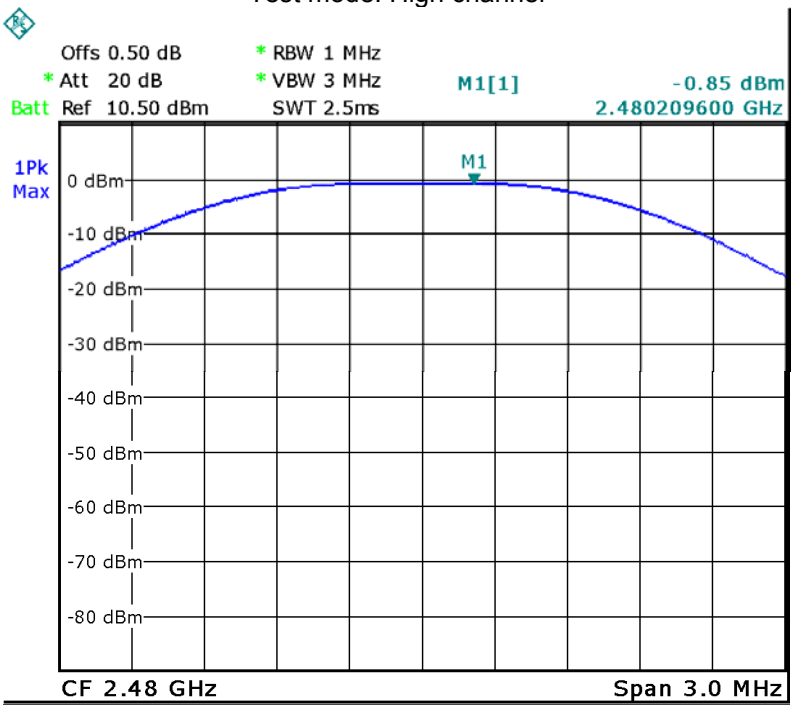
Test mode: Low channel



Test mode: Middle channel



Test mode: High channel



12 Power Spectral density

Test Requirement: FCC CFR47 Part 15 Section 15.247

Test Method: 558074 D01 DTS Meas Guidance v03r05

12.1 Test Procedure

558074 D01 DTS Meas Guidance v03r05 section 10.2

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

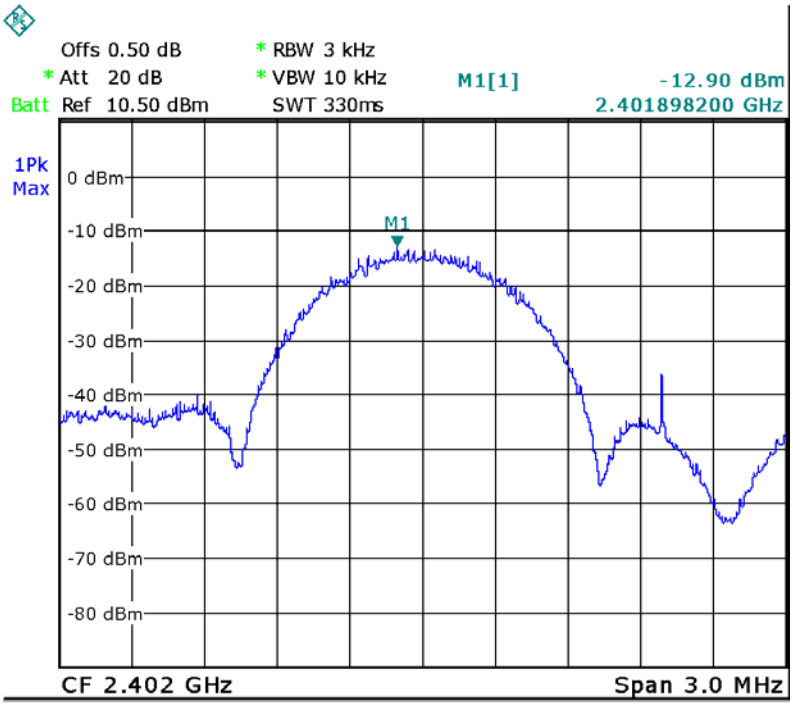
2. Set the spectrum analyzer: RBW = 3kHz. VBW = 10kHz , Span = 1.5 times the DTS channel bandwidth(6 dB bandwidth). Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

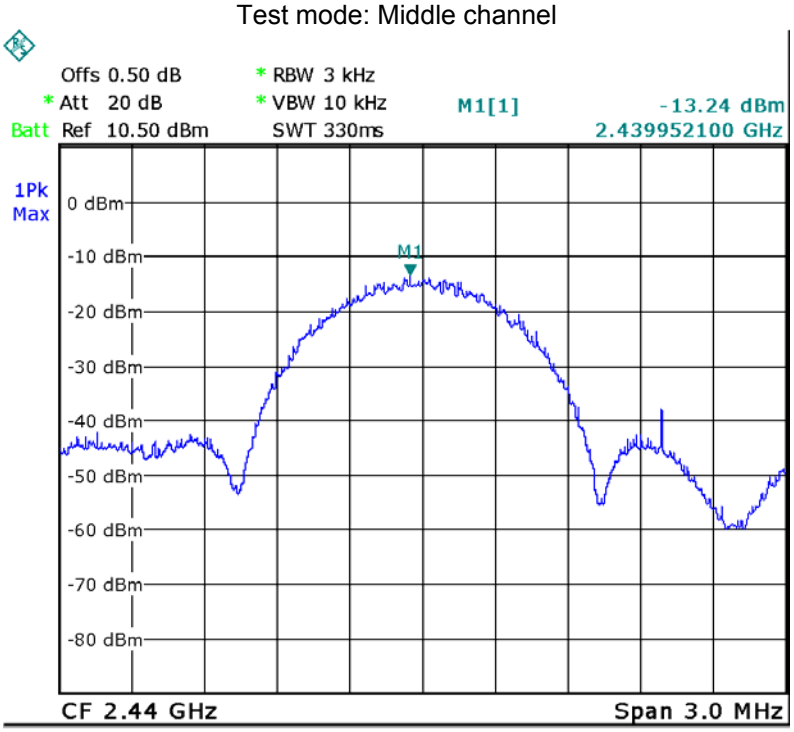
12.2 Test Result

Power Spectral Density		
Low channel	Middle channel	High channel
-12.90	-13.24	-13.57
Limit : 8dBm per 3kHz		

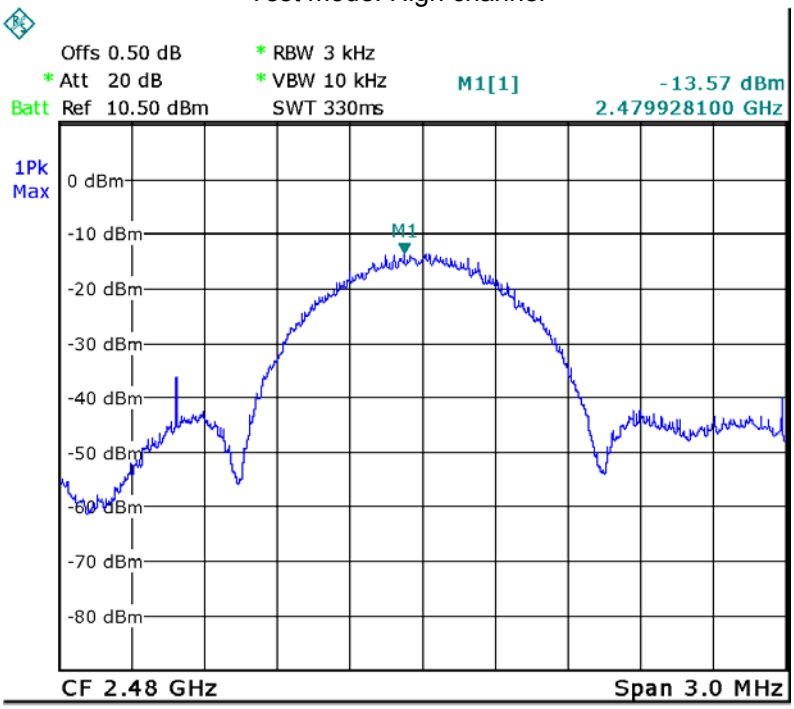
Test mode: Low channel



Test mode: Middle channel



Test mode: High channel



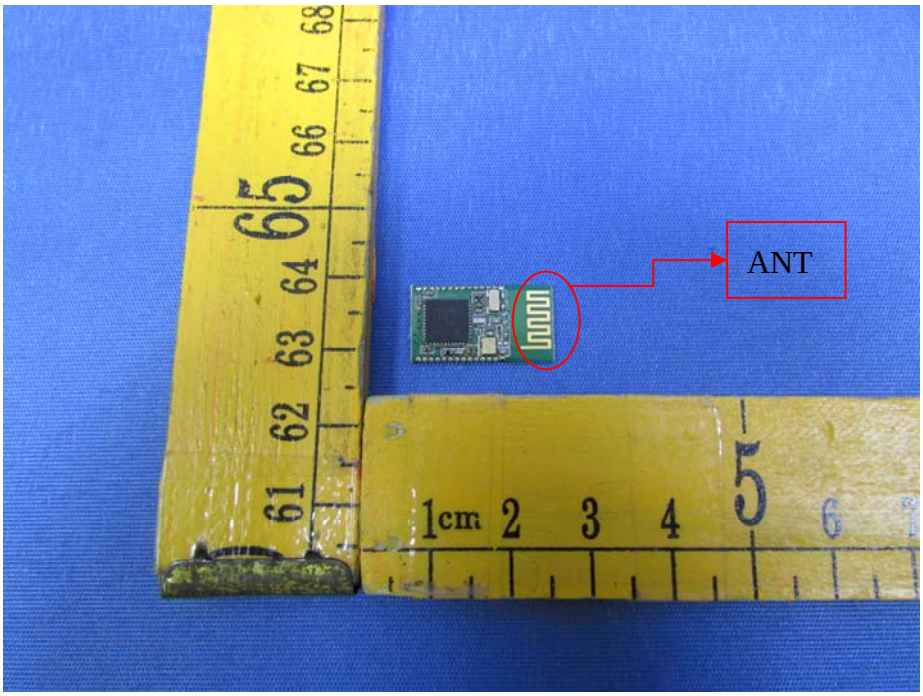
13 Antenna Requirement

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 §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 §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.

For intentional device, according to FCC 47 CFR Section 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.

Result:

The EUT has one PCB printed antenna, the gain is 0dBi. meets the requirements of FCC 15.203.



14 RF Exposure

Test Requirement: FCC Part 1.1307

Evaluation Method: FCC Part 2.1091 & KDB 447498 D01 General RF Exposure Guidance v06

14.1 Requirements

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

14.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

14.3 MPE Calculation Method

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

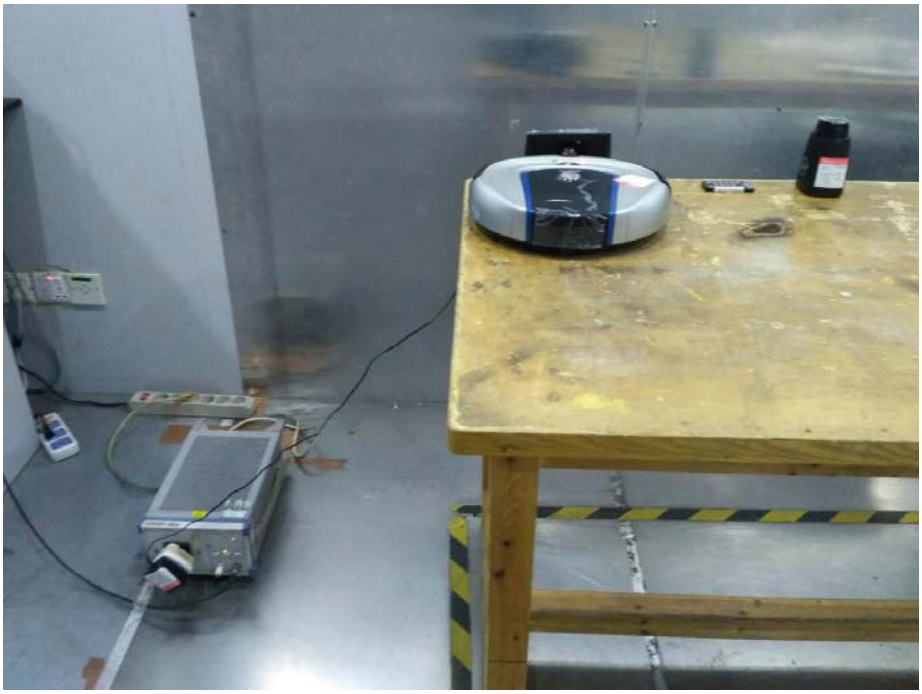
S = power density (in appropriate units, e.g. mW/cm^2)
P = output power to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

From the peak EUT RF output power, the minimum mobile separation distance, R=20cm, as well as the gain of the used antenna, the RF power density can be obtained

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (mW/cm2)	Limit of Power Density (mW/cm2)
0.00	1.000	-0.67	0.857	0.000170	1

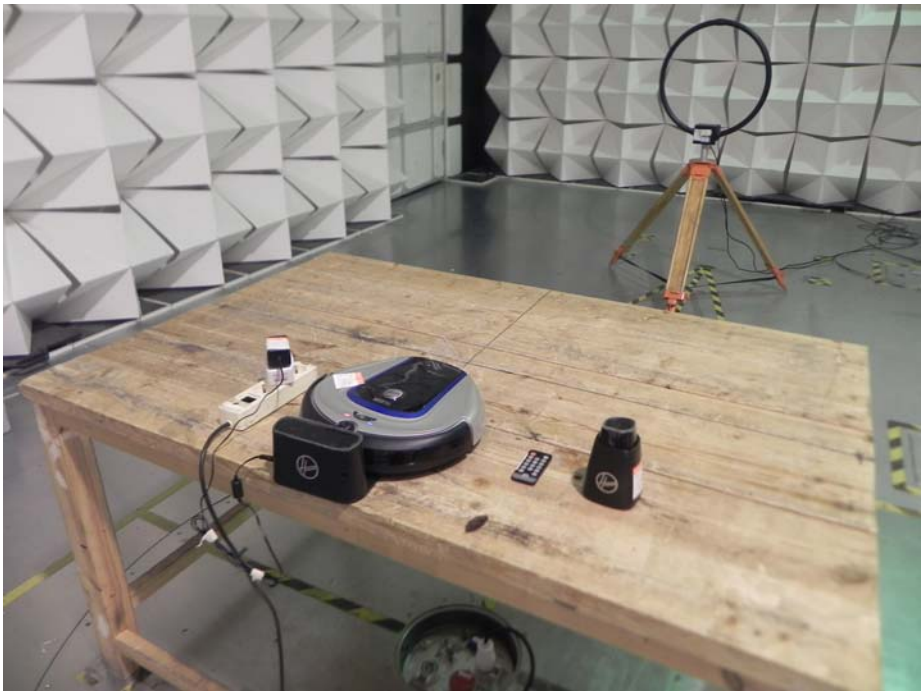
15 Photographs –Model BH70700 Test Setup Photos

15.1 Photograph – Conducted Emission Test Setup at Test Site 1#



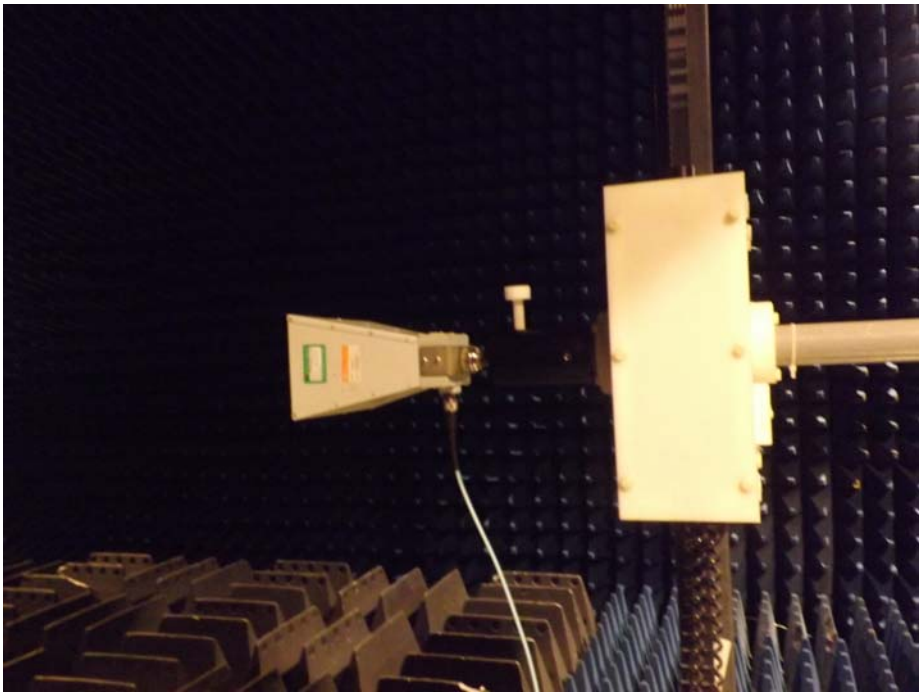
15.2 Photograph – Radiated Emission

Test frequency 32.768 kHz to 30 MHz Test Site 2#



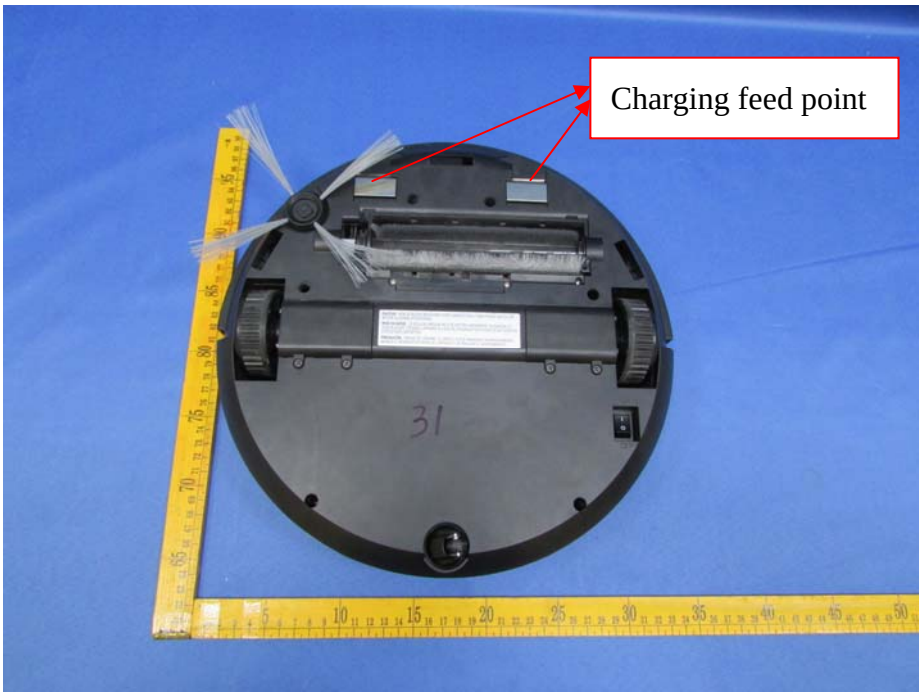
Test frequency from 30MHz to 1GHz Test Site 2#

Test frequency above 1GHz Test Site 1#



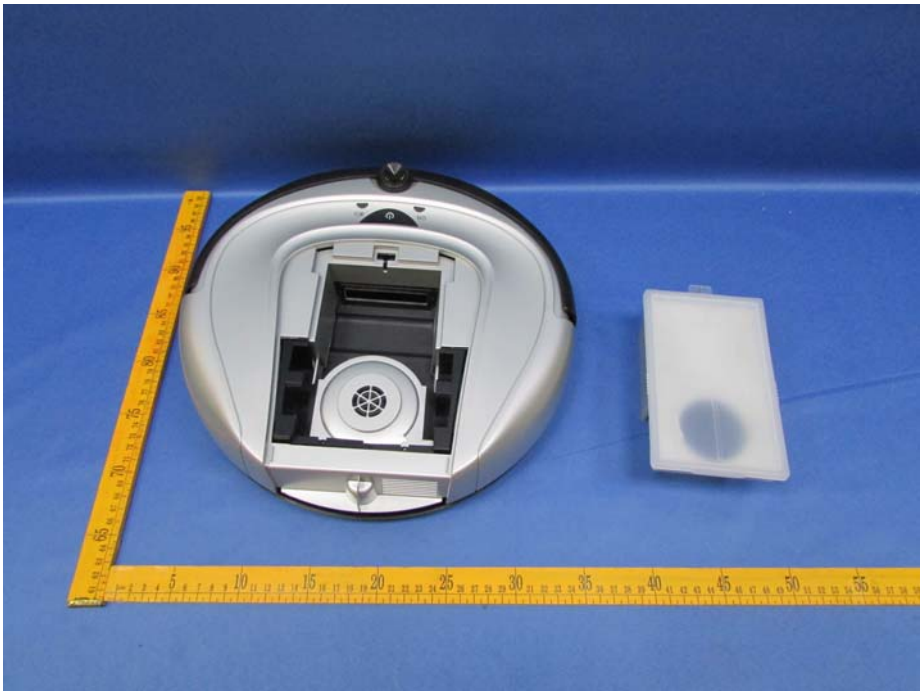
16 Photographs - Constructional Details

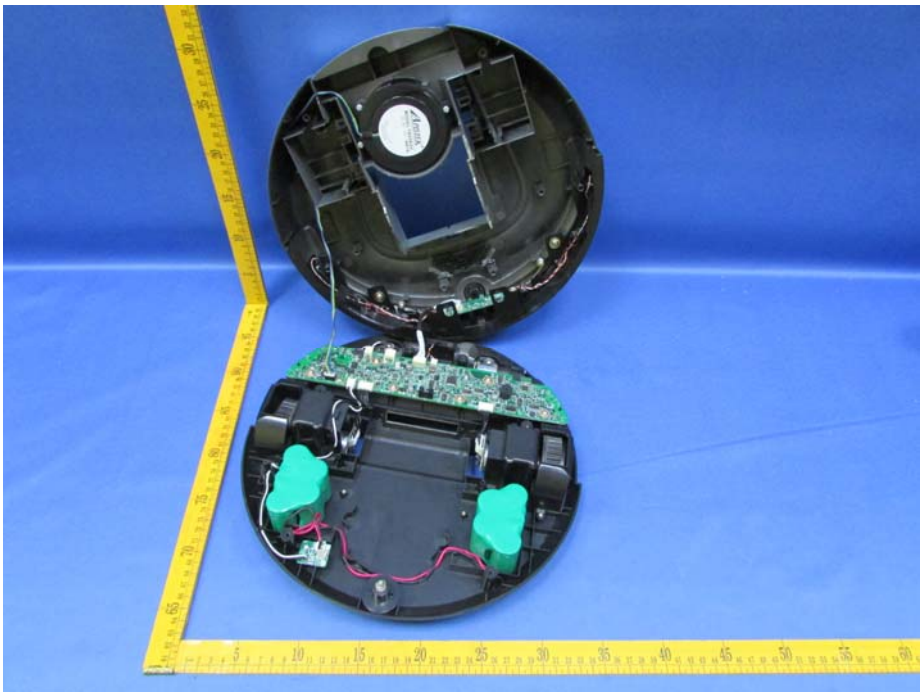
16.1 Model BH70700 - External Photos

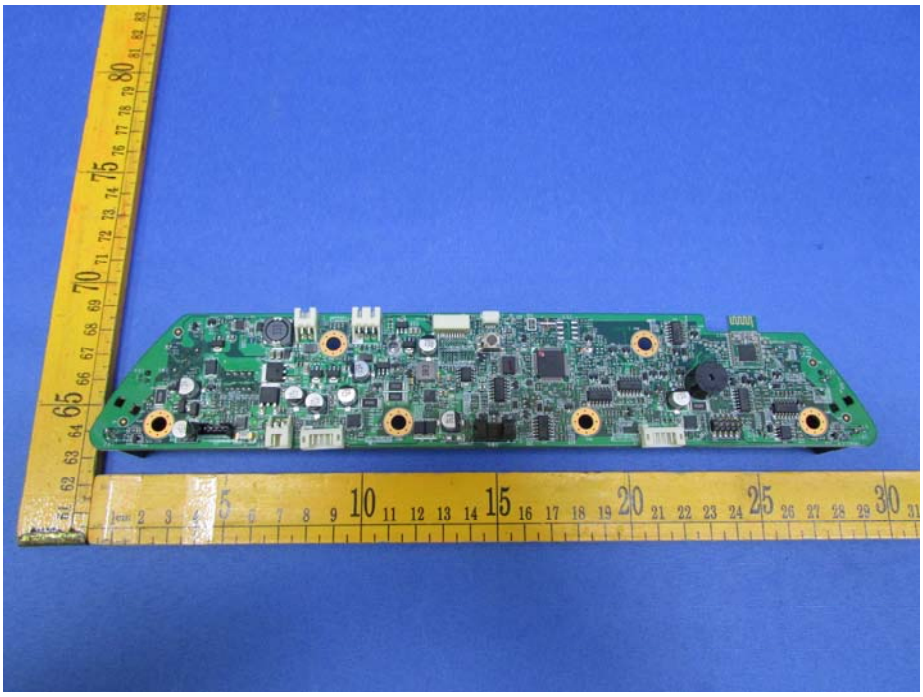

Charging feed point
31

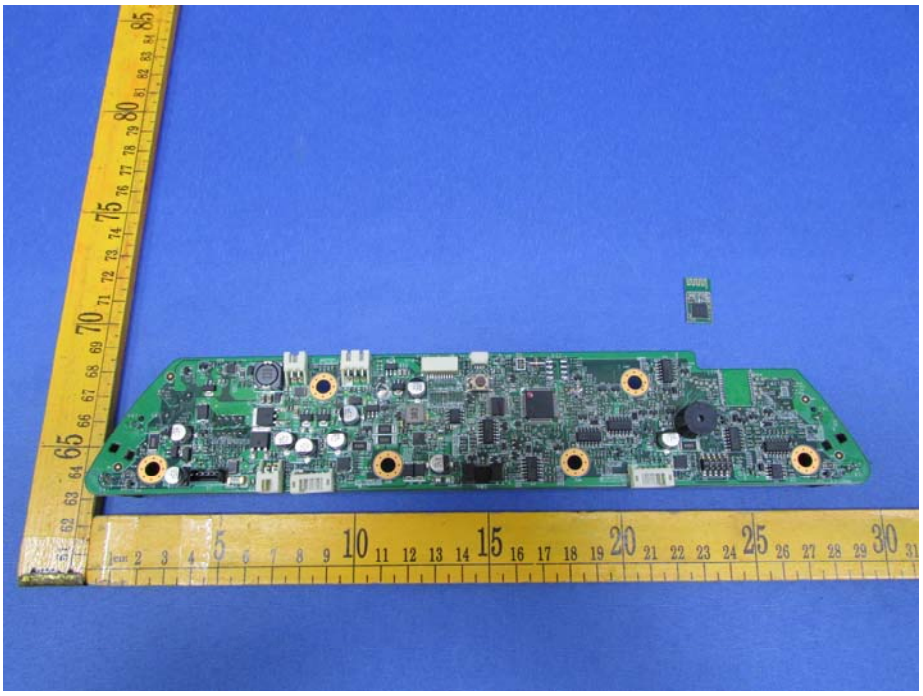

Class 2 power supply
Intertek
4007909
MADE IN CHINA
MODEL:ZDY12D170085
INPUT:100-240V~50/60Hz 0.5A
OUTPUT:17V⎓850mA
E-TEK Electronics Manufactory Ltd.
CAUTION
RISK OF ELECTRONIC SHOCK
DRY LOCATION USE ONLY
ATTENTION
POUR UTILISATION A
L'INTERIEUR SEULEMENT

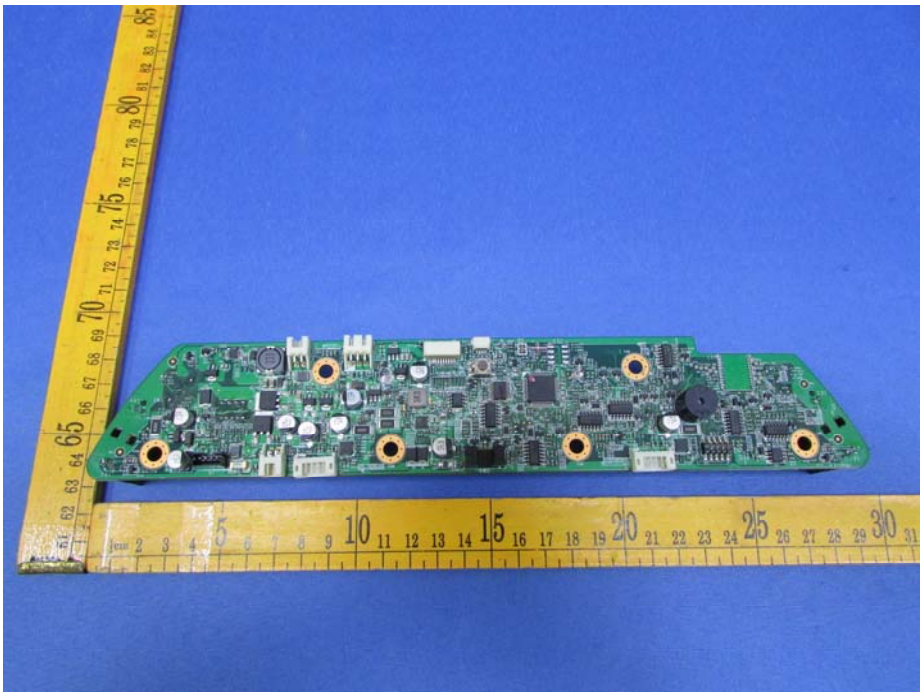
16.2 Model BH70700 - Internal Photos

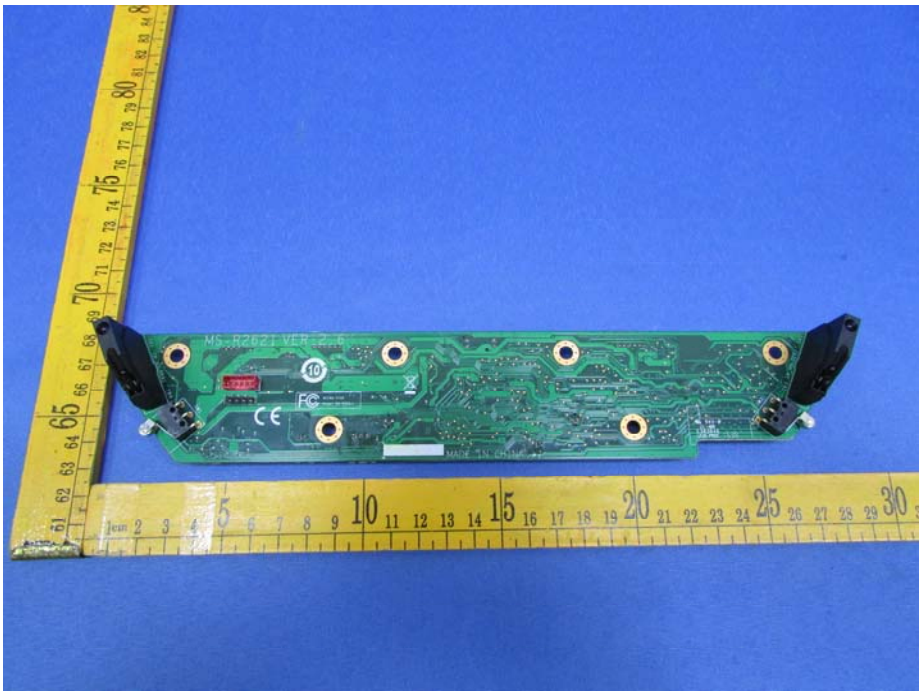


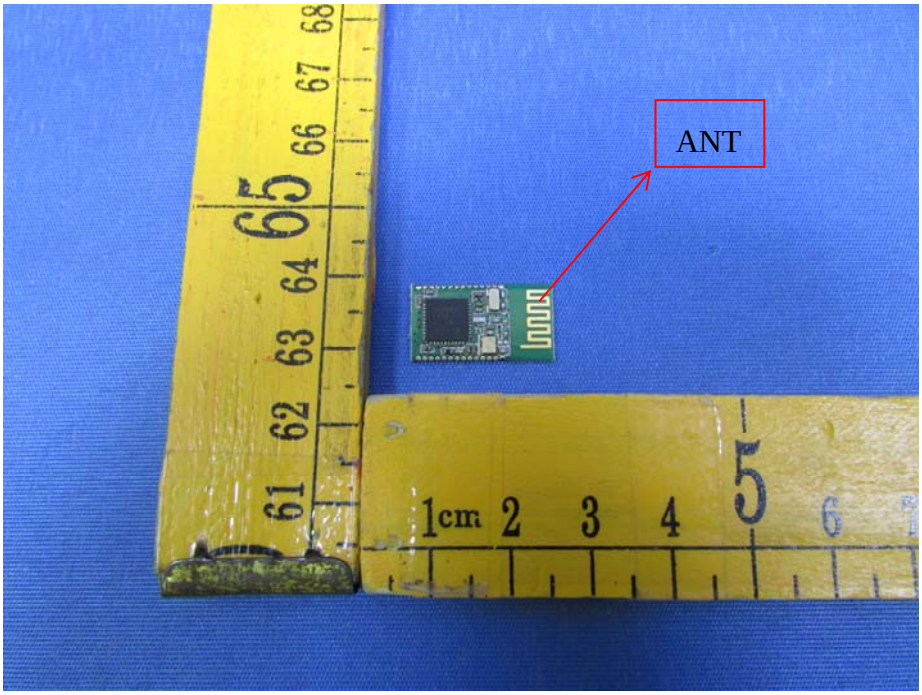




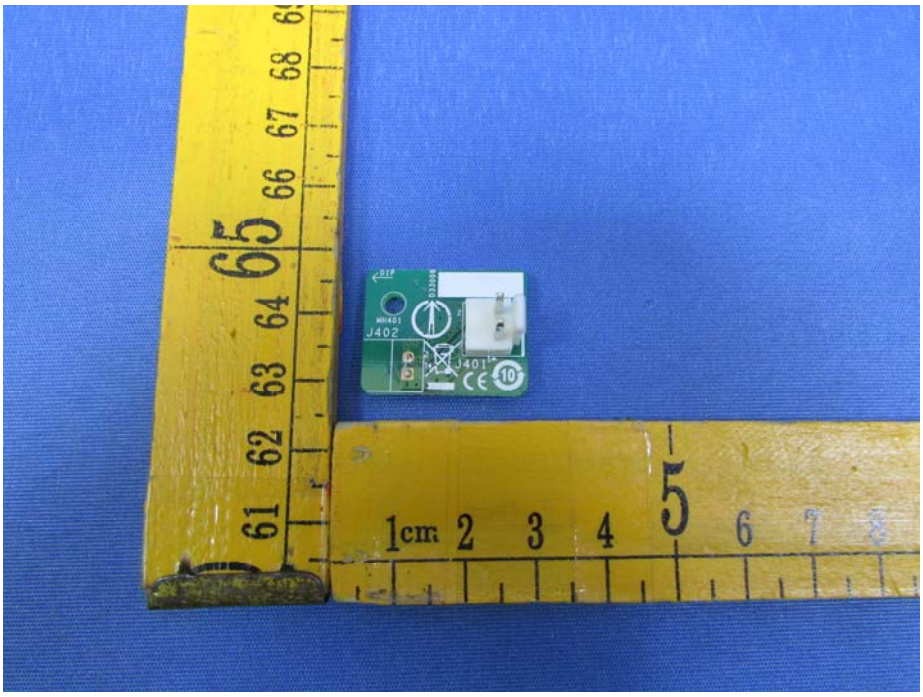


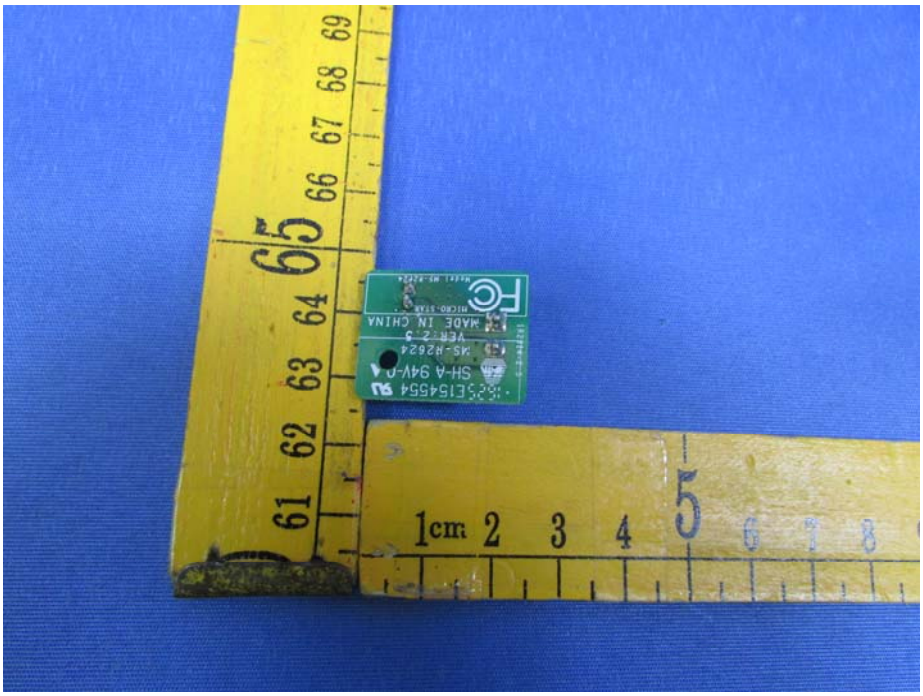


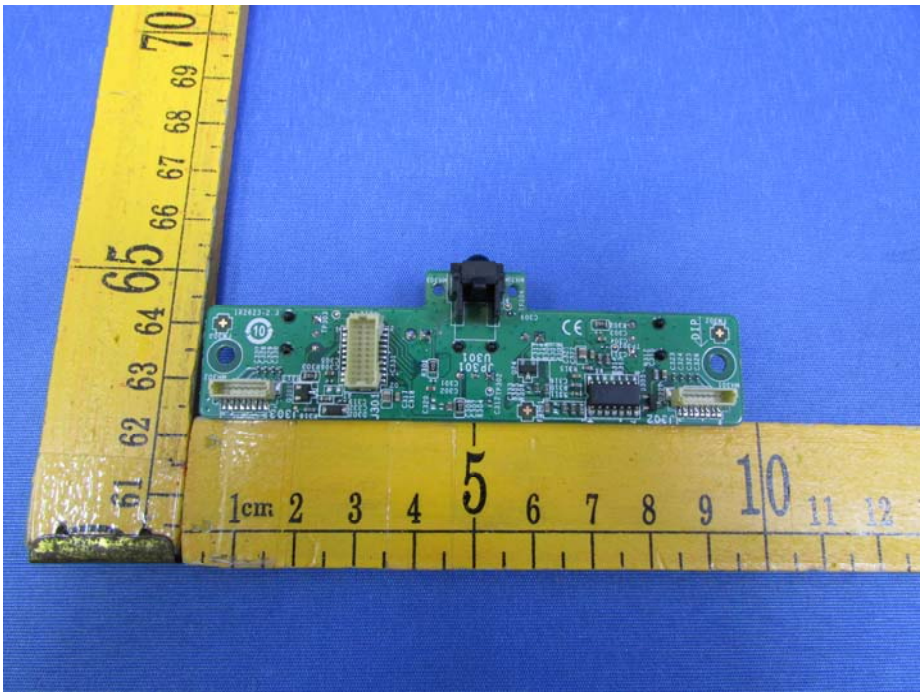


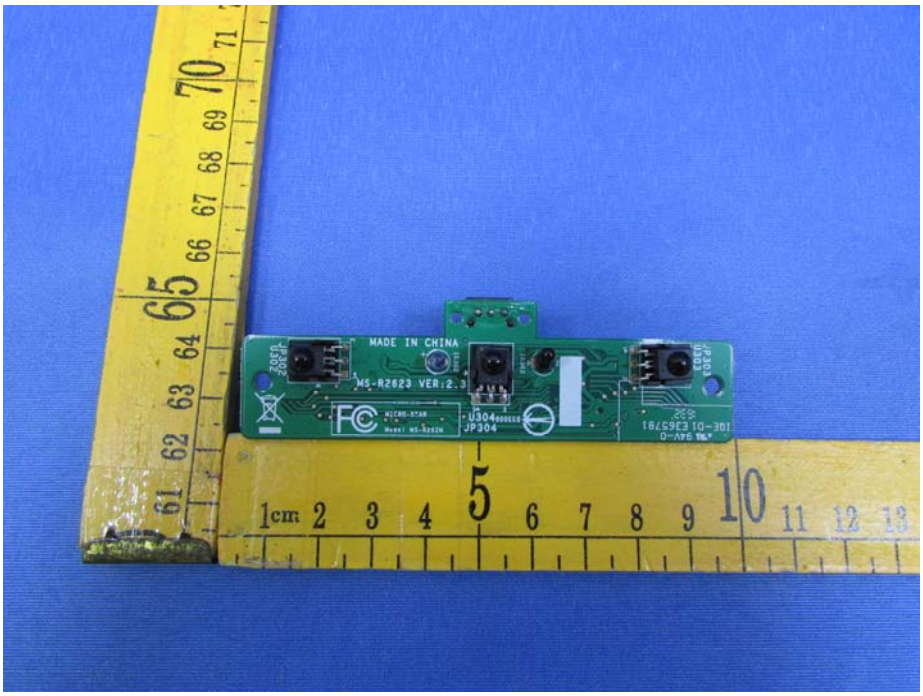

ANT


1cm 2 3 4 5 6


J402
J401
1cm 2 3 4 5


MADE IN CHINA
1cm 2 3 4 5 6 7 8


1cm 2 3 4 5 6 7 8 9 10 11 12


MADE IN CHINA
MS-R2623 VER:2.3
JP304

======End of Report======