

## TEST REPORT

**Product** : RADAR  
**Trade mark** : Rentokil  
**Model/Type reference** : 304838, 304840  
**Serial Number** : N/A  
**Report Number** : EED32K00213801  
**FCC ID** : 2AK3PGSD-500349  
**Date of Issue** : Oct. 22, 2018  
**Test Standards** : 47 CFR Part 15 Subpart C  
**Test result** : PASS

Prepared for:

**Rentokil Initial 1927 plc**  
**Riverbank, Meadows Business Park, Camberley, GU17 9AB**

Prepared by:

**Centre Testing International Group Co., Ltd.**  
**Hongwei Industrial Zone, Bao'an 70 District,**  
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Date:

Oct. 22, 2018



Check No.: 2447667087

## 2 Version

Version No.	Date	Description
00	Oct. 22, 2018	Original

### 3 Test Summary

Test Item	Test Requirement	Test method	Result
<b>Antenna Requirement</b>	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
<b>Conducted Peak Output Power</b>	47 CFR Part 15 Subpart C Section 15.247 (b)(1)	ANSI C63.10-2013	PASS
<b>Radiated Spurious emissions</b>	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

**Remark:**

Test according to ANSI C63.4-2014 & ANSI C63.10-2013.

The tested samples and the sample information are provided by the client.

Model No.: 304838, 304840

This test report (Ref. No.: EED32K00213801) is only valid with the original test report (Ref. No.: TRA-033559-45-00C).

According to the declaration from the applicant, their module board, electrical circuit design, layout, components used and internal wiring are identical. Only the appearance and model are different.

Therefore in this report Conducted Peak Output Power and Radiated Spurious emissions were fully retested on model 304838, 304840 and shown the data in this report, other tests please refer to original report TRA-033559-45-00C.

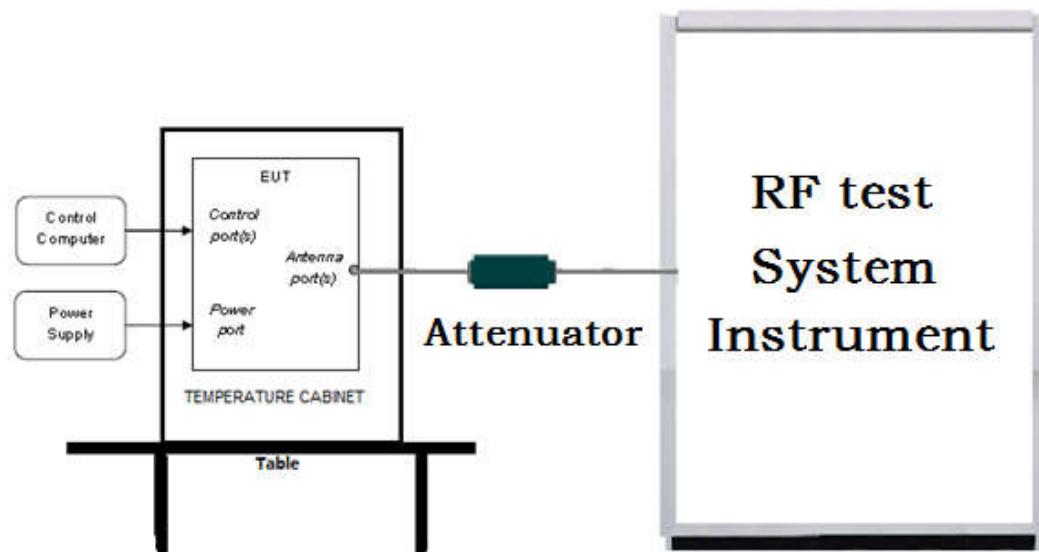
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## 5 Test Requirement

### 5.1 Test setup

#### 5.1.1 For Conducted test setup



#### 5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

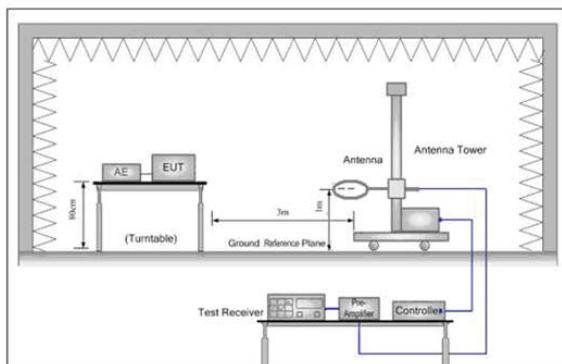


Figure 1. Below 30MHz

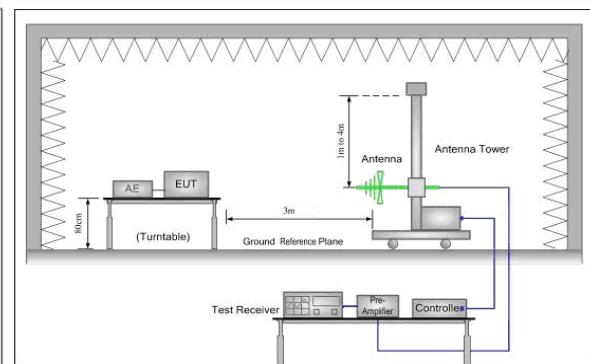


Figure 2. 30MHz to 1GHz

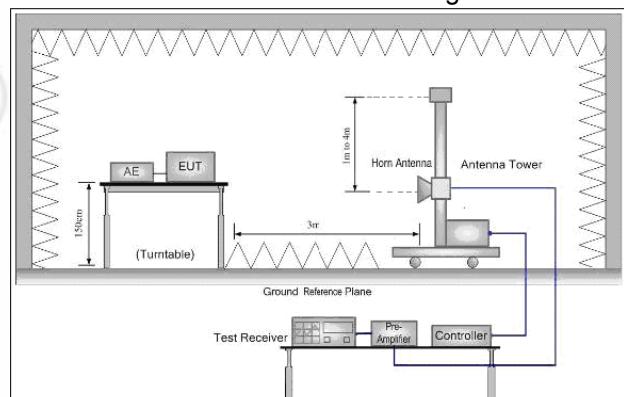


Figure 3. Above 1GHz

## 5.2 Test Environment

<b>Operating Environment:</b>	
Temperature:	24.1°C
Humidity:	52 % RH
Atmospheric Pressure:	1010mbar

## 5.3 Test Condition

## 5.4 Test Condition

Test Frequency Range	RF Channel		
	Low(L)	Middle(M)	High(H)
915.25MHz~927.5MHz	Channel 6	Channel 29	Channel 55
	915.25MHz	921MHz	927.5MHz

TX mode: The EUT transmitted the continuous signal at the specific channel(s).

Channel	Name	Frequency [MHz]
6	eFCC_CHANNEL_1	915.25
7	eFCC_CHANNEL_2	915.5
8	eFCC_CHANNEL_3	915.75
9	eFCC_CHANNEL_4	916
10	eFCC_CHANNEL_5	916.25
11	eFCC_CHANNEL_6	916.5
12	eFCC_CHANNEL_7	916.75
13	eFCC_CHANNEL_8	917
14	eFCC_CHANNEL_9	917.25
15	eFCC_CHANNEL_10	917.5
16	eFCC_CHANNEL_11	917.75
17	eFCC_CHANNEL_12	918
18	eFCC_CHANNEL_13	918.25
19	eFCC_CHANNEL_14	918.5
20	eFCC_CHANNEL_15	918.75
21	eFCC_CHANNEL_16	919
22	eFCC_CHANNEL_17	919.25
23	eFCC_CHANNEL_18	919.5
24	eFCC_CHANNEL_19	919.75
25	eFCC_CHANNEL_20	920
26	eFCC_CHANNEL_21	920.25
27	eFCC_CHANNEL_22	920.5

28	eFCC_CHANNEL_23	920.75
29	eFCC_CHANNEL_24	921
30	eFCC_CHANNEL_25	921.25
31	eFCC_CHANNEL_26	921.5
32	eFCC_CHANNEL_27	921.75
33	eFCC_CHANNEL_28	922
34	eFCC_CHANNEL_29	922.25
35	eFCC_CHANNEL_30	922.5
36	eFCC_CHANNEL_31	922.75
37	eFCC_CHANNEL_32	923
38	eFCC_CHANNEL_33	923.25
39	eFCC_CHANNEL_34	923.5
40	eFCC_CHANNEL_35	923.75
41	eFCC_CHANNEL_36	924
42	eFCC_CHANNEL_37	924.25
43	eFCC_CHANNEL_38	924.5
44	eFCC_CHANNEL_39	924.75
45	eFCC_CHANNEL_40	925
46	eFCC_CHANNEL_41	925.25
47	eFCC_CHANNEL_42	925.5
48	eFCC_CHANNEL_43	925.75
49	eFCC_CHANNEL_44	926
50	eFCC_CHANNEL_45	926.25
51	eFCC_CHANNEL_46	926.5
52	eFCC_CHANNEL_47	926.75
53	eFCC_CHANNEL_48	927
54	eFCC_CHANNEL_49	927.25
55	eFCC_CHANNEL_50	927.5

## 6 General Information

### 6.1 Client Information

Applicant:	Rentokil Initial 1927 plc
Address of Applicant:	Riverbank, Meadows Business Park, Camberley, GU17 9AB
Manufacturer:	Rentokil Initial 1927 plc
Address of Manufacturer:	Riverbank, Meadows Business Park, Camberley, GU17 9AB
Factory:	Rentokil Initial 1927 plc
Address of Factory:	Riverbank, Meadows Business Park, Camberley, GU17 9AB

### 6.2 General Description of EUT

Product Name:	RADAR
Model No.(EUT):	304838, 304840
Trade mark:	Rentokil
EUT Supports Radios application:	915.25MHz to 927.5MHz
Power Supply:	4 x LR6/AA Alkaline, 6V
Sample Received Date:	Sep. 21, 2018
Sample tested Date:	Sep. 21, 2018 to Oct. 19, 2018

### 6.3 Product Specification subjective to this standard

Operation Frequency:	915.25MHz to 927.5MHz
Modulation Type:	LoRa modulation - CSS modulation (Chirp Spread Spectrum modulation)
Number of Channel:	50
Firmware version of the sample:	2.35(Manufacturer declare)
Hardware version of the sample:	EB3(Manufacturer declare)
Test Power Grade:	N/A
Test Software of EUT:	N/A
Antenna Type:	Integral antenna
Antenna gain:	-3dBi
Test Voltage:	4 x LR6/AA Alkaline, 6V

### 6.4 Description of Support Units

The EUT has been tested independently.

## 6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd  
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China  
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385  
No tests were sub-contracted.  
FCC Designation No.: CN1164

## 6.6 Deviation from Standards

None.

## 6.7 Abnormalities from Standard Conditions

None.

## 6.8 Other Information Requested by the Customer

None.

## 6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	$7.9 \times 10^{-8}$
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

## 7 Equipment List

RF Conducted test					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	R&S	FSP40	100416	05-11-2018	05-10-2019
Temperature & Humidity Chamber	TAYLOR	1451	N/A	05-02-2018	05-01-2019
Signal Generator	Keysight	N5182B	MY53051549	03-13-2018	03-12-2019
Digital multimeter	FLUKE	15B	N/A	04-04-2018	04-03-2019

3M Semi/full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-04-2016	06-03-2019
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-401	04-26-2018	04-25-2019
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	07-30-2018	07-29-2019
Microwave Preamplifier	Agilent	8449B	3008A024 25	08-21-2018	08-20-2019
Microwave Preamplifier	Tonscend	EMC051845 SE	980380	01-19-2018	01-18-2019
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-18 69	04-25-2018	04-23-2021
Double ridge horn antenna	A.H.SYSTEM S	SAS-574	6042	06-05-2018	06-04-2021
Pre-amplifier	A.H.SYSTEM S	PAP-1840-60	6041	06-05-2018	06-04-2021
Loop Antenna	ETS	6502	00071730	06-22-2017	06-21-2019
Spectrum Analyzer	R&S	FSP40	100416	05-11-2018	05-10-2019
Receiver	R&S	ESCI	100435	05-25-2018	05-24-2019
Multi device Controller	maturo	NCD/070/107 11112	---	01-10-2018	01-09-2019
LISN	schwarzbeck	NNBM8125	81251547	05-11-2018	05-10-2019
LISN	schwarzbeck	NNBM8125	81251548	05-11-2018	05-10-2019
Signal Generator	Agilent	E4438C	MY45095 744	03-13-2018	03-12-2019
Signal Generator	Keysight	E8257D	MY53401 106	03-13-2018	03-12-2019
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-02-2018	05-01-2019
Communication test set	Agilent	E5515C	GB47050 534	03-16-2018	03-15-2019
Cable line	Fulai(7M)	SF106	5219/6A	01-10-2018	01-09-2019
Cable line	Fulai(6M)	SF106	5220/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5216/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5217/6A	01-10-2018	01-09-2019
Communication test set	R&S	CMW500	104466	02-05-2018	02-04-2019
High-pass filter	Sinoscite	FL3CX03WG 18NM12-039 8-002	---	01-10-2018	01-09-2019
High-pass filter	MICRO-TRONICS	SPA-F-63029 -4	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA0 9CL12-0395-001	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA0 8CL12-0393-001	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX02CA0 4CL12-0396-002	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX02CA0 3CL12-0394-001	---	01-10-2018	01-09-2019

## 8 Radio Technical Requirements Specification

### Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

### Test Results List:

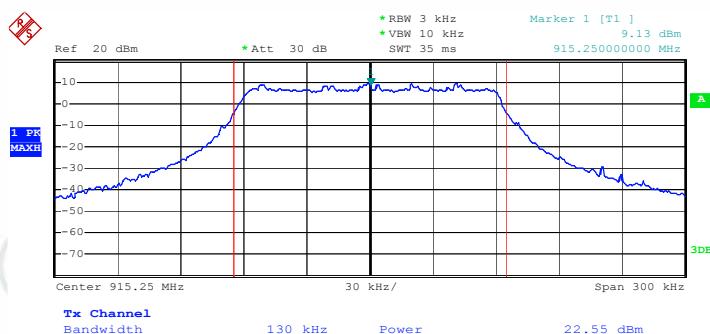
Test requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(1)	ANSI 63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.203/15.247 (c)	ANSI 63.10	Antenna Requirement	PASS	Appendix B)
Part15C Section 15.205/15.209	ANSI 63.10	Radiated Spurious Emissions	PASS	Appendix C)

## Appendix A): Conducted Peak Output Power

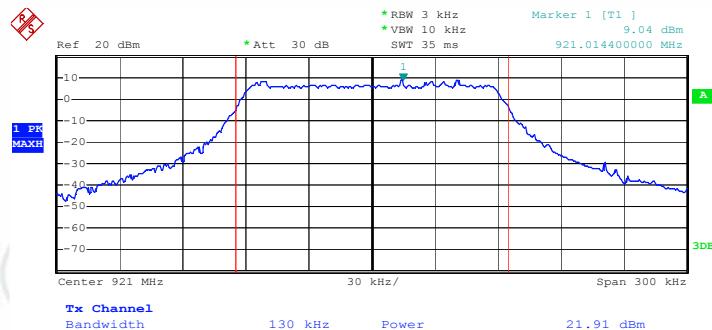
Test Model No.: 304838

Result Table

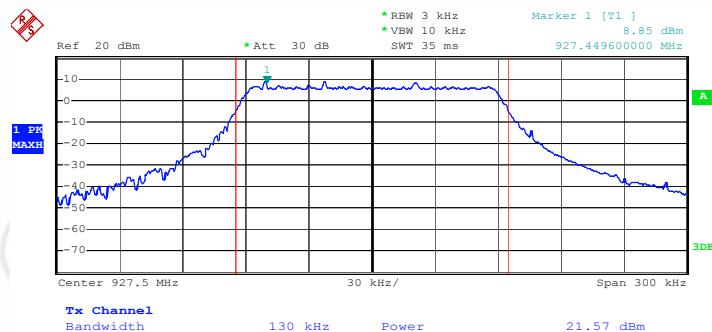
Channel	Conducted Peak Output Power [dBm]	Verdict
LCH	22.55	PASS
MCH	21.91	PASS
HCH	21.57	PASS



Date: 16.NOV.2018 15:57:02



Date: 16.NOV.2018 15:57:40

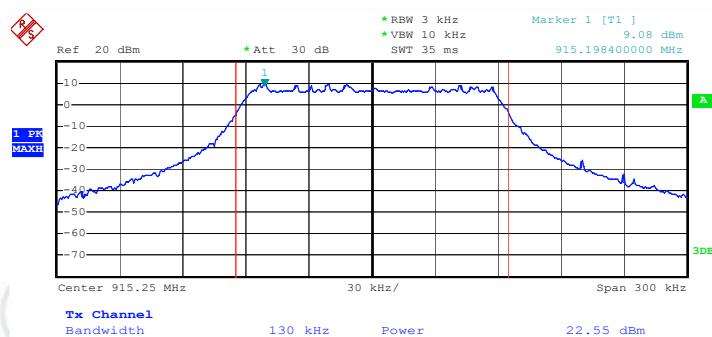


Date: 16.NOV.2018 15:58:06

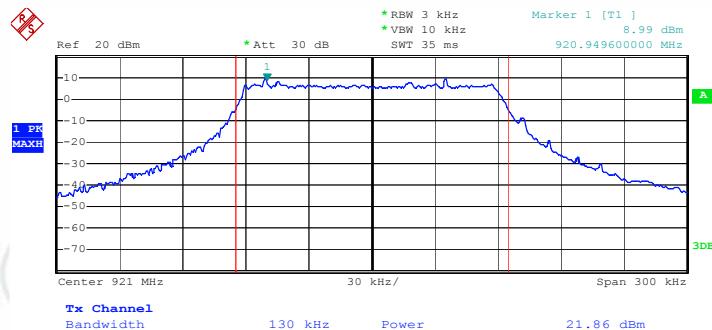
Test Model No.: 304840

Result Table

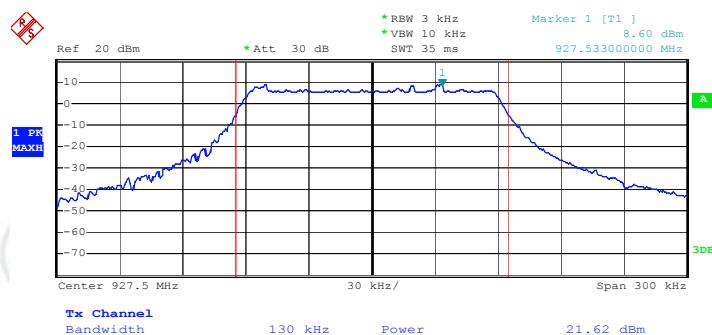
Channel	Conducted Peak Output Power [dBm]	Verdict
LCH	22.55	PASS
MCH	21.86	PASS
HCH	21.62	PASS



Date: 16.NOV.2018 16:23:31



Date: 16.NOV.2018 16:00:09



Date: 16.NOV.2018 16:00:37

## Appendix B): Antenna Requirement

### 15.203 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, 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.

### 15.247(b) (4) requirement:

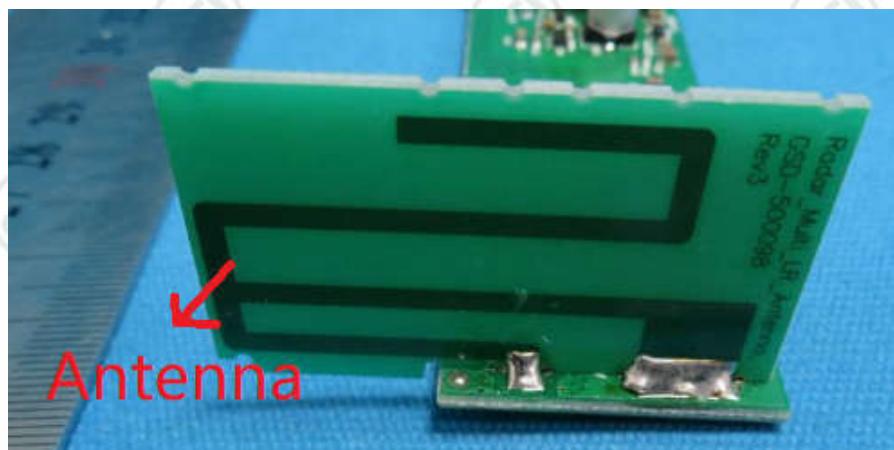
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

**EUT Antenna:**

Model No.: 304838



Model No.: 304840



The antenna is Integral antenna and no consideration of replacement. The best case gain of the antenna is -3dBi.

## Appendix C): Radiated Spurious Emissions

<b>Receiver Setup:</b>	Frequency	Detector	RBW	VBW	Remark					
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak					
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average					
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak					
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak					
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average					
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak					
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak					
	Above 1GHz	Peak	1MHz	3MHz	Peak					
		Peak	1MHz	10Hz	Average					
<b>Test Procedure:</b>										
<b>Below 1GHz test procedure as below:</b>										
a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.										
<b>Above 1GHz test procedure as below:</b>										
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter( Above 18GHz the distance is 1 meter and table is 1.5 meter). h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case. j. Repeat above procedures until all frequencies measured was complete.										
<b>Limit:</b>	Frequency	Field strength (microvolt/meter)	Limit (dB $\mu$ V/m)	Remark	Measurement distance (m)					
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300					
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30					
	1.705MHz-30MHz	30	-	-	30					
	30MHz-88MHz	100	40.0	Quasi-peak	3					
	88MHz-216MHz	150	43.5	Quasi-peak	3					
	216MHz-960MHz	200	46.0	Quasi-peak	3					
	960MHz-1GHz	500	54.0	Quasi-peak	3					
	Above 1GHz	500	54.0	Average	3					
	Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.									

## Radiated Spurious Emissions test Data:

Radiated Emission below 1GHz

Test Model No.: 304838

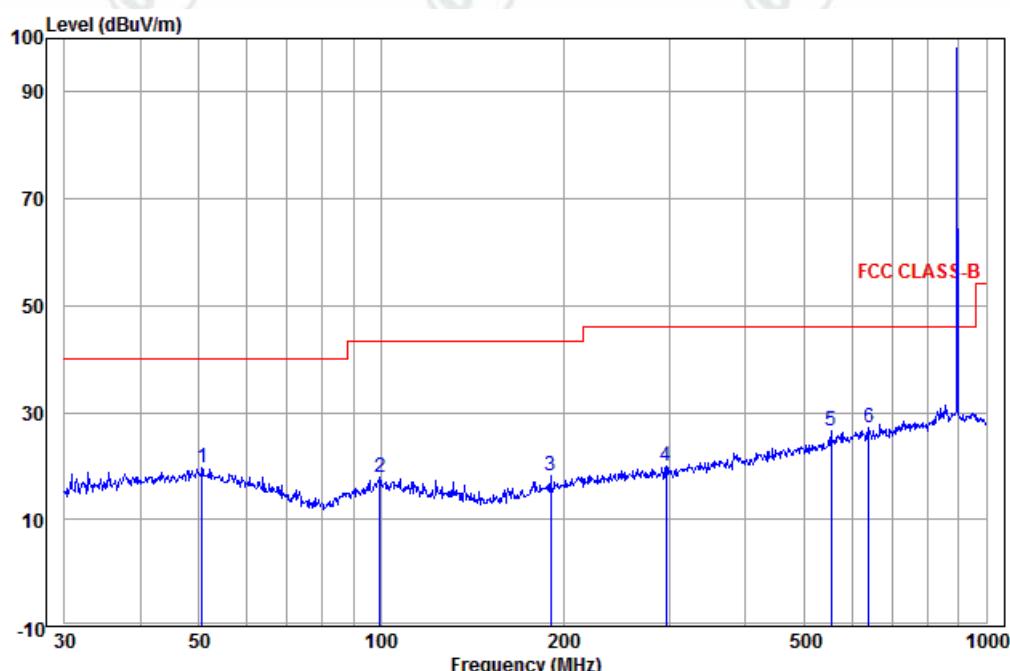
CH6

30MHz~1GHz (QP)

Test mode:

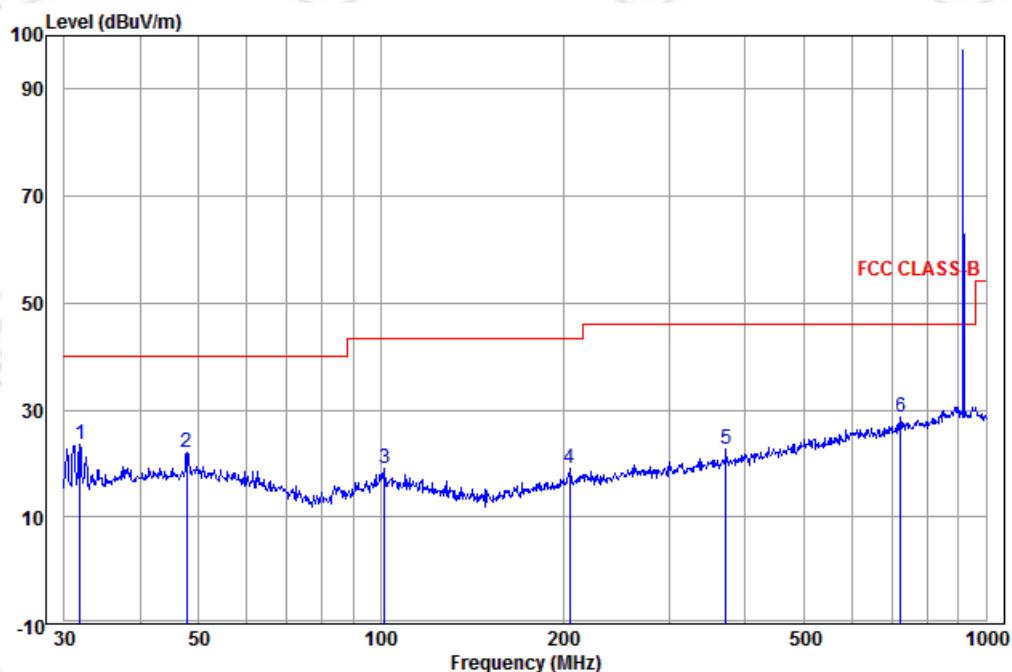
Transmitting

Horizontal



Freq	Ant Factor	Cable Loss	Read Level		Limit Line	Over Limit	Pol/Phase	Remark
			MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m
1	50.586	14.50	0.12	4.91	19.53	40.00	-20.47	Horizontal QP
2	99.528	12.43	0.58	4.94	17.95	43.50	-25.55	Horizontal QP
3	190.405	11.04	1.02	5.99	18.05	43.50	-25.45	Horizontal QP
4	296.184	13.34	1.09	5.69	20.12	46.00	-25.88	Horizontal QP
5	554.825	17.89	1.57	6.99	26.45	46.00	-19.55	Horizontal QP
6 pp	640.611	18.86	1.83	6.51	27.20	46.00	-18.80	Horizontal QP

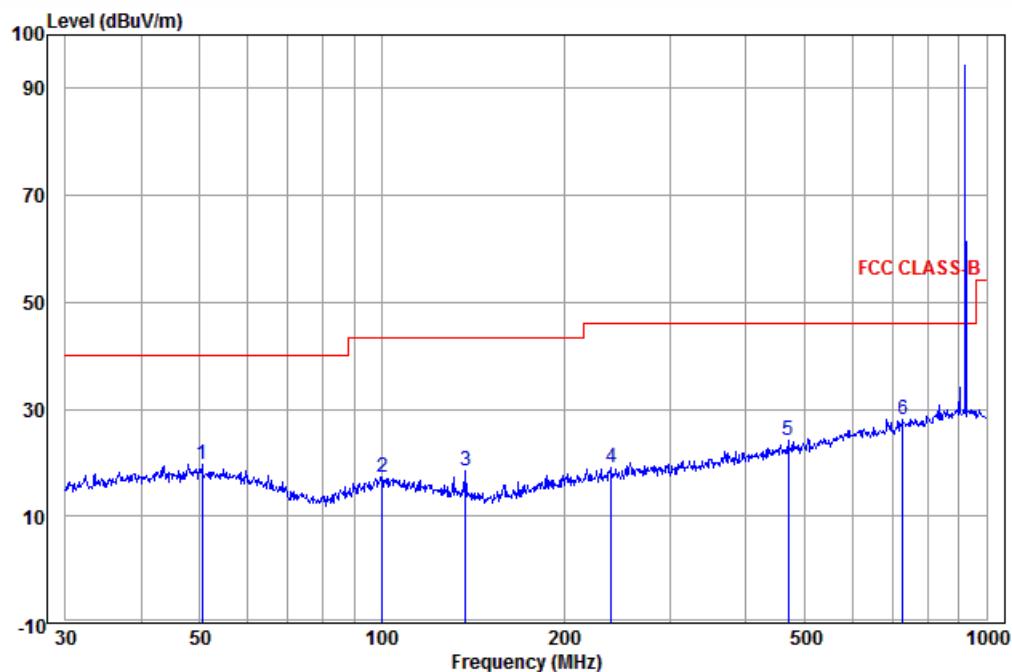
Test mode:	Transmitting	Vertical
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Freq	Ant Factor	Ant	Cable	Read	Limit	Over	Remark	
		MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	
1 pp	31.843	12.29	0.08	11.29	23.66	40.00	-16.34	Vertical QP
2	47.826	14.44	0.10	7.56	22.10	40.00	-17.90	Vertical QP
3	101.289	12.38	0.59	6.04	19.01	43.50	-24.49	Vertical QP
4	204.955	11.62	1.13	6.38	19.13	43.50	-24.37	Vertical QP
5	372.005	14.77	1.32	6.44	22.53	46.00	-23.47	Vertical QP
6	721.726	19.28	2.24	7.10	28.62	46.00	-17.38	Vertical QP

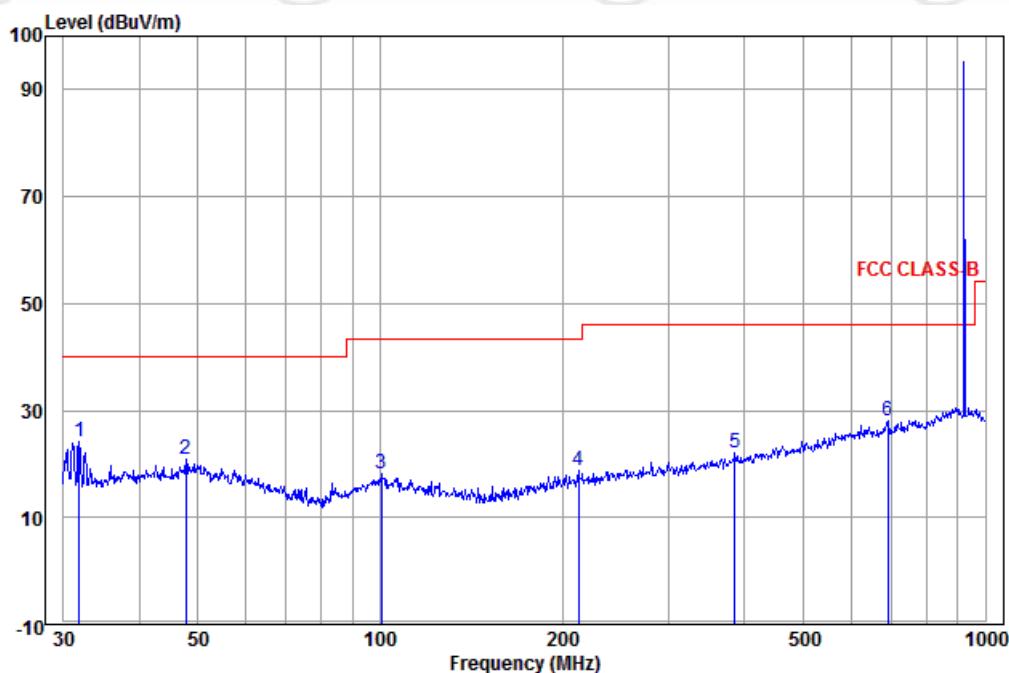
CH29

30MHz~1GHz (QP)		
Test mode:	Transmitting	Horizontal



Freq	Ant Factor	Cable Loss	Read	Limit	Over	Remark	
			Level	Level	Line Limit		
	MHz	dB/m	dB	dBuV	dBuV/m	dB	
1	50.409	14.53	0.11	5.17	19.81	40.00	-20.19 Horizontal QP
2	100.229	12.48	0.59	4.35	17.42	43.50	-26.08 Horizontal QP
3	137.420	9.60	0.61	8.33	18.54	43.50	-24.96 Horizontal QP
4	239.987	12.40	1.30	5.41	19.11	46.00	-26.89 Horizontal QP
5	470.523	16.50	1.49	6.23	24.22	46.00	-21.78 Horizontal QP
6 pp	726.805	19.32	2.29	6.55	28.16	46.00	-17.84 Horizontal QP

Test mode:	Transmitting	Vertical
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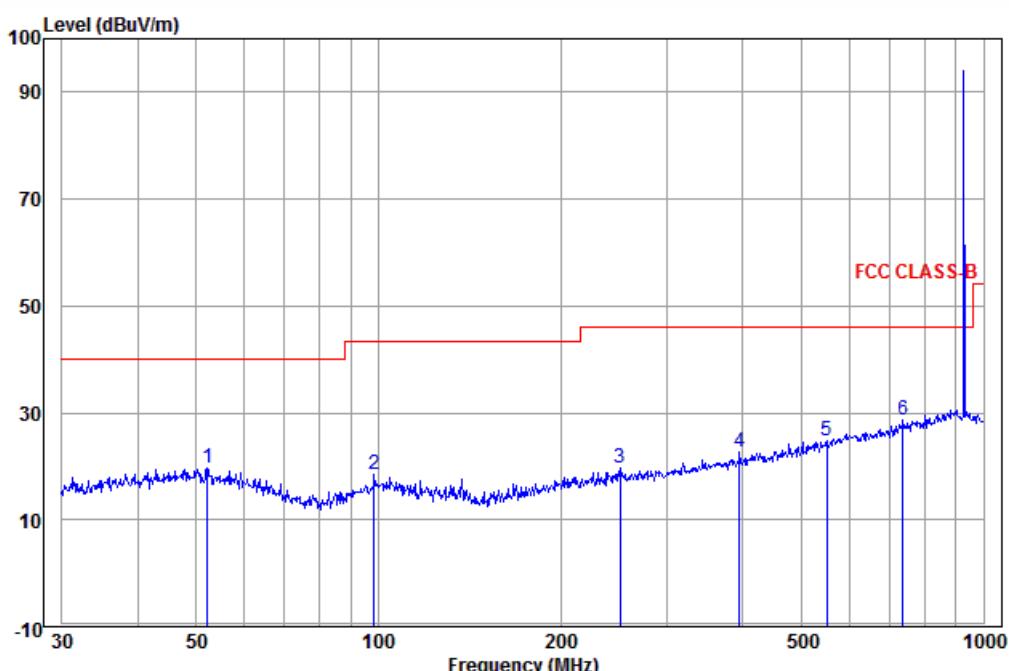


Line	Freq	Ant Factor	Ant	Cable	Read	Limit	Over	Pol/Phase	Remark
			MHz	dB/m	dB	dBuV	dBuV/m		
1	pp	31.843	12.29	0.08	11.91	24.28	40.00	-15.72	Vertical QP
2		47.826	14.44	0.10	6.36	20.90	40.00	-19.10	Vertical QP
3		100.581	12.45	0.59	5.11	18.15	43.50	-25.35	Vertical QP
4		213.015	11.81	1.17	5.88	18.86	43.50	-24.64	Vertical QP
5		385.281	14.98	1.32	5.75	22.05	46.00	-23.95	Vertical QP
6		689.565	19.06	1.98	6.94	27.98	46.00	-18.02	Vertical QP

CH55

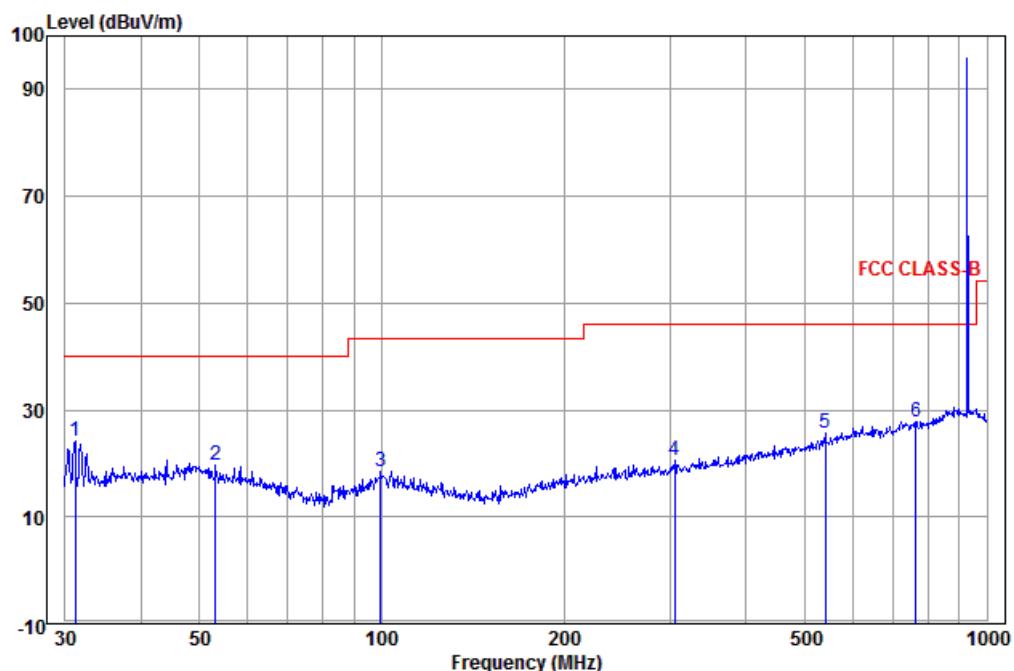
30MHz~1GHz (QP)

Test mode:	Transmitting	Horizontal
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Freq	Ant Factor	Cable Loss	Read	Limit Line	Over Limit	Pol/Phase	Remark
			Level				
MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m		
1	52.208	14.24	0.13	5.36	19.73	40.00	-20.27 Horizontal QP
2	98.487	12.27	0.56	5.57	18.40	43.50	-25.10 Horizontal QP
3	251.180	12.62	1.33	5.58	19.53	46.00	-26.47 Horizontal QP
4	394.855	15.12	1.32	6.11	22.55	46.00	-23.45 Horizontal QP
5	550.948	17.82	1.55	5.42	24.79	46.00	-21.21 Horizontal QP
6 pp	737.071	19.40	2.39	6.88	28.67	46.00	-17.33 Horizontal QP

Test mode:	Transmitting	Vertical
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Freq	Ant Factor	Ant	Cable	Read	Limit	Over	Pol/Phase	Remark	
		MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m		
1 pp	31.180	12.15	0.08	12.09	24.32	40.00	-15.68	Vertical	QP
2	53.131	14.10	0.14	5.50	19.74	40.00	-20.26	Vertical	QP
3	99.528	12.43	0.58	5.33	18.34	43.50	-25.16	Vertical	QP
4	304.610	13.50	1.09	6.11	20.70	46.00	-25.30	Vertical	QP
5	541.373	17.65	1.54	6.35	25.54	46.00	-20.46	Vertical	QP
6	763.376	19.58	2.50	5.78	27.86	46.00	-18.14	Vertical	QP

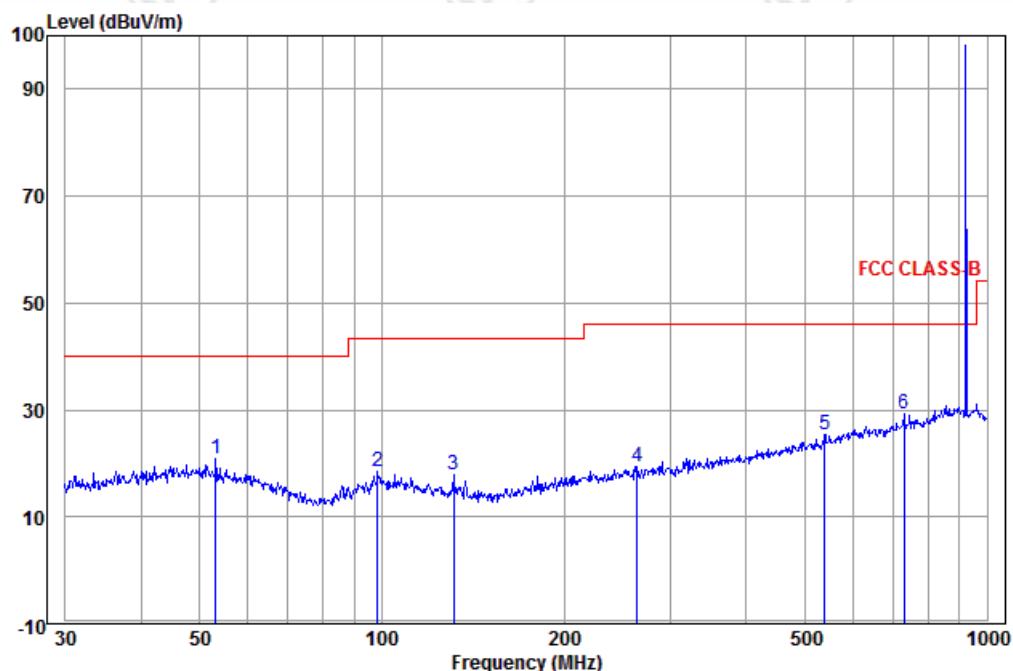
Radiated Emission below 1GHz

Test Model No.: 304840

CH6

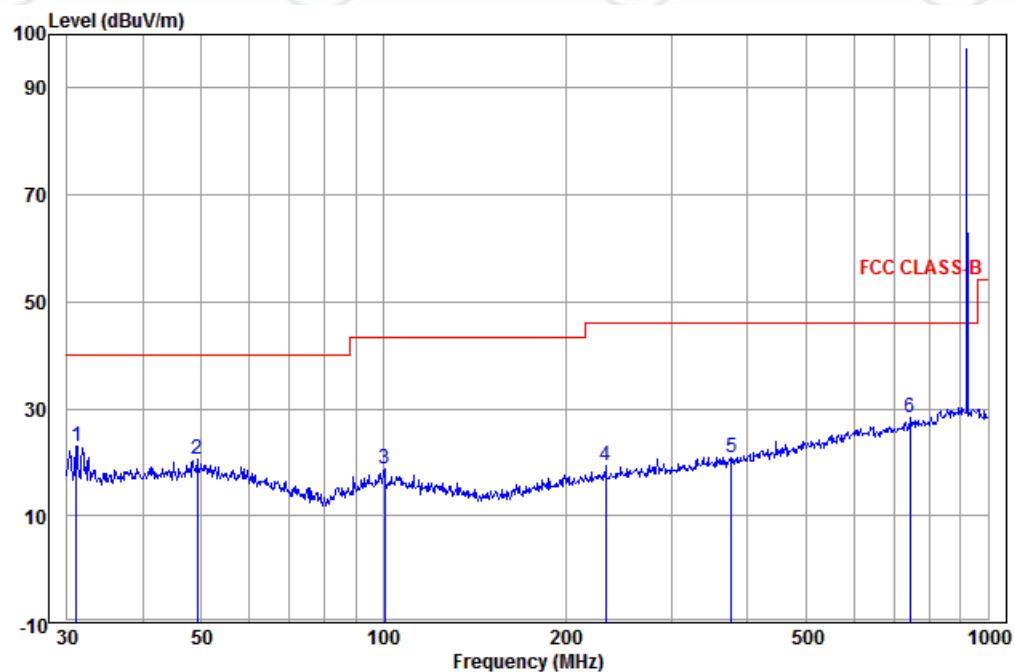
30MHz~1GHz (QP)

Test mode:	Transmitting	Horizontal
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	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	53.131	14.10	0.14	6.53	20.77	40.00	-19.23	Horizontal	QP
2	98.487	12.27	0.56	5.71	18.54	43.50	-24.96	Horizontal	QP
3	131.297	10.02	0.60	7.20	17.82	43.50	-25.68	Horizontal	QP
4	263.819	12.84	1.26	5.23	19.33	46.00	-26.67	Horizontal	QP
5	539.478	17.62	1.54	6.28	25.44	46.00	-20.56	Horizontal	QP
6 pp	729.358	19.34	2.31	7.60	29.25	46.00	-16.75	Horizontal	QP

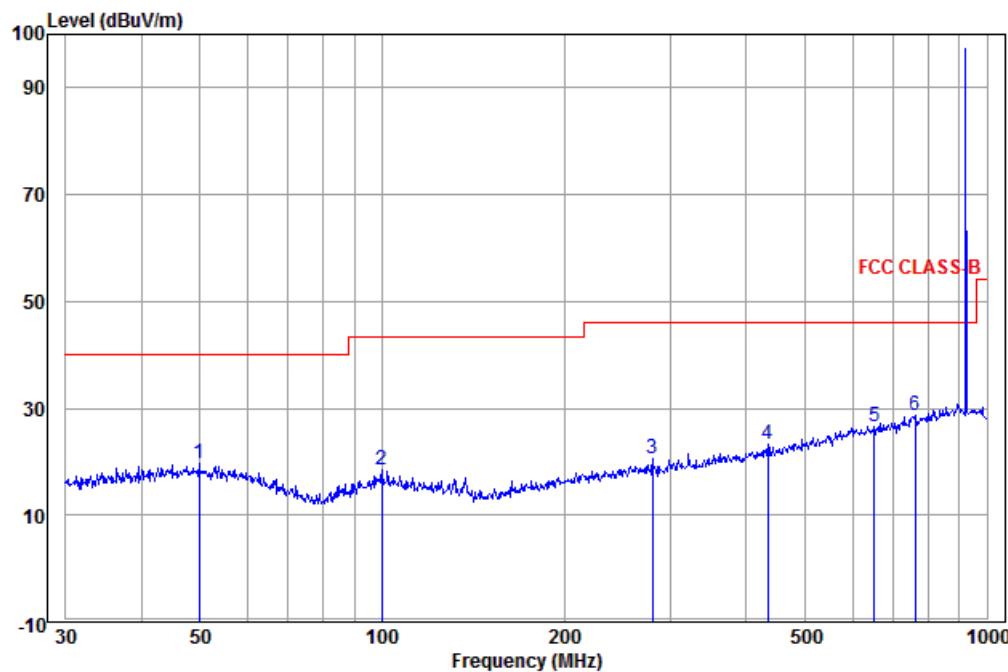
Test mode:	Transmitting	Vertical
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Freq	Ant Factor	Cable Loss	Read Level		Limit Line	Over Limit	Over Limit Pol/Phase	Remark	
			MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	31.071	12.13	0.09	10.79	23.01	40.00	-16.99	Vertical	QP
2	49.187	14.54	0.11	6.05	20.70	40.00	-19.30	Vertical	QP
3	100.581	12.45	0.59	5.69	18.73	43.50	-24.77	Vertical	QP
4	233.349	12.26	1.27	5.82	19.35	46.00	-26.65	Vertical	QP
5	375.939	14.83	1.32	4.85	21.00	46.00	-25.00	Vertical	QP
6	742.259	19.44	2.44	6.35	28.23	46.00	-17.77	Vertical	QP

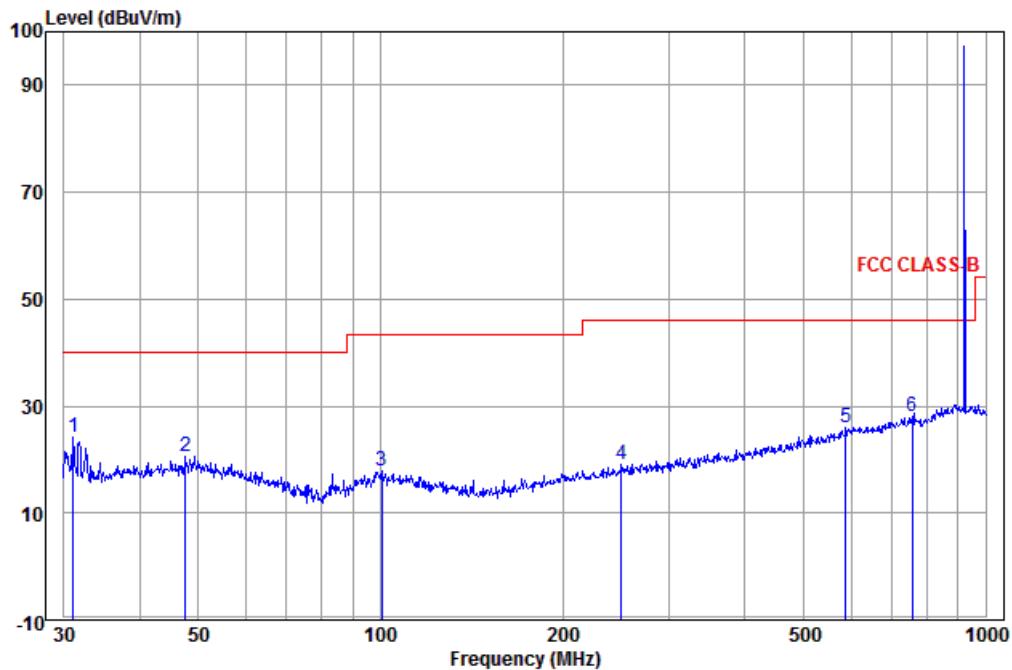
CH29

30MHz~1GHz (QP)		
Test mode:	Transmitting	Horizontal



Freq	Ant Factor	Cable Loss	Read	Limit Line	Over Limit	Over Line Pol/Phase	Remark
			Level				
MHz	dB/m	dB	dB <sub>BV</sub>	dB <sub>BV/m</sub>	dB <sub>BV/m</sub>	dB	
1	49.881	14.59	0.11	4.99	19.69	40.00	-20.31 Horizontal QP
2	99.878	12.48	0.59	5.40	18.47	43.50	-25.03 Horizontal QP
3	280.024	13.10	1.17	6.44	20.71	46.00	-25.29 Horizontal QP
4	434.065	15.89	1.42	6.07	23.38	46.00	-22.62 Horizontal QP
5	651.942	18.91	1.84	5.84	26.59	46.00	-19.41 Horizontal QP
6 pp	760.704	19.57	2.50	6.61	28.68	46.00	-17.32 Horizontal QP

Test mode:	Transmitting	Vertical
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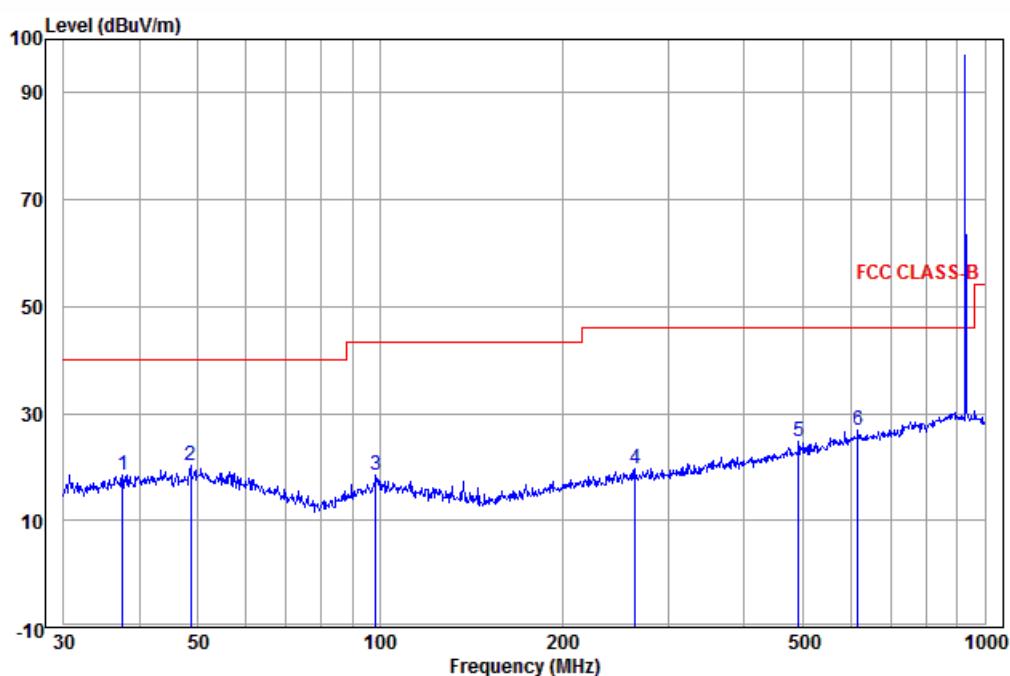


Freq	Ant Factor	Ant	Cable	Read	Limit	Over	Remark
		MHz	dB/m	dB	dBuV	dBuV/m	
1 pp	31.071	12.13	0.09	11.87	24.09	40.00	-15.91 Vertical QP
2	47.659	14.43	0.10	6.17	20.70	40.00	-19.30 Vertical QP
3	100.581	12.45	0.59	4.76	17.80	43.50	-25.70 Vertical QP
4	250.301	12.61	1.34	4.99	18.94	46.00	-27.06 Vertical QP
5	586.844	18.47	1.76	5.87	26.10	46.00	-19.90 Vertical QP
6	755.387	19.53	2.50	5.98	28.01	46.00	-17.99 Vertical QP

CH55

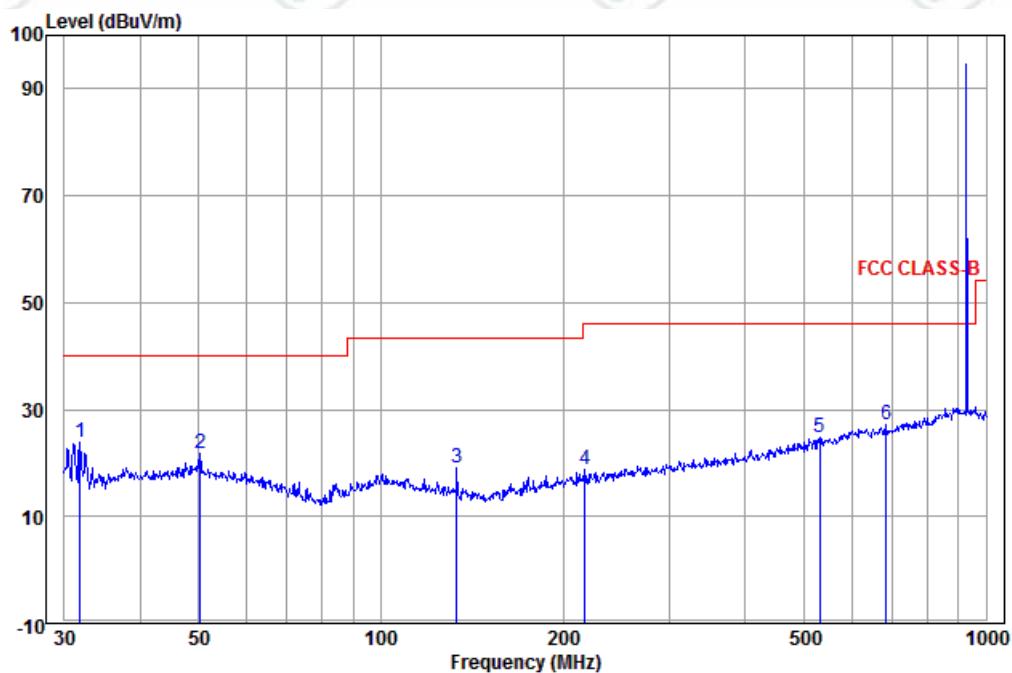
30MHz~1GHz (QP)

Test mode:	Transmitting	Horizontal
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Freq	Ant Factor	Cable Loss	Read	Limit	Over	Pol/Phase	Remark
			Level	Level	Line		
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	37.548	13.38	0.06	5.00	18.44	40.00	-21.56 Horizontal QP
2	48.672	14.50	0.10	5.63	20.23	40.00	-19.77 Horizontal QP
3	98.487	12.27	0.56	5.57	18.40	43.50	-25.10 Horizontal QP
4	263.819	12.84	1.26	5.53	19.63	46.00	-26.37 Horizontal QP
5	492.469	16.80	1.51	6.39	24.70	46.00	-21.30 Horizontal QP
6 pp	616.372	18.77	1.83	6.40	27.00	46.00	-19.00 Horizontal QP

Test mode:	Transmitting	Vertical
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Freq	Ant Factor	Cable Loss	Read Level	Limit		Over Line Limit	Over Pol/Phase	Remark	
				MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB
1 pp	31.843	12.29	0.08	11.56	23.93	40.00	-16.07	Vertical	QP
2	50.232	14.56	0.11	7.06	21.73	40.00	-18.27	Vertical	QP
3	133.619	9.86	0.60	8.67	19.13	43.50	-24.37	Vertical	QP
4	217.544	11.91	1.19	5.78	18.88	46.00	-27.12	Vertical	QP
5	531.964	17.49	1.53	5.78	24.80	46.00	-21.20	Vertical	QP
6	684.745	19.04	1.96	6.11	27.11	46.00	-18.89	Vertical	QP

Test Model No.: 304838

## Transmitter Emission above 1GHz

Worse case mode:		CH6		Test channel:		Lowest	Remark:Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1062.814	24.19	1.63	44.70	51.37	32.49	54.00	-21.51	Pass	H
1830.500	25.09	2.67	43.84	58.60	42.52	54.00	-11.48	Pass	H
2745.750	27.89	3.25	44.33	56.70	43.51	54.00	-10.49	Pass	H
3661.000	28.86	3.93	44.57	49.05	37.27	54.00	-16.73	Pass	H
4576.250	30.77	5.50	44.72	46.63	38.18	54.00	-15.82	Pass	H
5491.500	31.87	6.92	44.70	53.24	47.33	54.00	-6.67	Pass	H
1038.344	24.21	1.58	44.74	53.30	34.35	54.00	-19.65	Pass	V
1830.500	25.09	2.67	43.84	59.80	43.72	54.00	-10.28	Pass	V
2745.750	27.89	3.25	44.33	55.77	42.58	54.00	-11.42	Pass	V
3661.000	28.86	3.93	44.57	54.63	42.85	54.00	-11.15	Pass	V
4576.250	30.77	5.50	44.72	48.52	40.07	54.00	-13.93	Pass	V
5491.500	31.87	6.92	44.70	50.41	44.50	54.00	-9.50	Pass	V

Worse case mode:		CH29		Test channel:		Middle	Remark: Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1095.685	24.16	1.69	44.65	50.12	31.32	54.00	-22.68	Pass	H
1855.000	25.18	2.70	43.82	58.30	42.36	54.00	-11.64	Pass	H
2763.000	27.89	3.25	44.34	60.11	46.91	54.00	-7.09	Pass	H
3684.000	28.88	3.95	44.57	48.47	36.73	54.00	-17.27	Pass	H
4605.000	30.82	5.57	44.73	48.73	40.39	54.00	-13.61	Pass	H
5526.000	31.92	6.96	44.69	50.92	45.11	54.00	-8.89	Pass	H
1040.206	24.21	1.59	44.74	52.99	34.05	54.00	-19.95	Pass	V
1842.000	25.13	2.68	43.83	59.30	43.28	54.00	-10.72	Pass	V
2763.000	27.89	3.25	44.34	55.46	42.26	54.00	-11.74	Pass	V
3684.000	28.88	3.95	44.57	49.91	38.17	54.00	-15.83	Pass	V
4605.000	30.82	5.57	44.73	46.98	38.64	54.00	-15.36	Pass	V
5526.000	31.92	6.96	44.69	52.03	46.22	54.00	-7.78	Pass	V

Worse case mode:		CH55		Test channel:		Highest	Remark: Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1255.525	24.73	1.95	44.44	51.51	33.75	54.00	-20.25	Pass	H
1855.000	25.18	2.70	43.82	58.40	42.46	54.00	-11.54	Pass	H
2782.500	27.90	3.26	44.35	57.60	44.41	54.00	-9.59	Pass	H
3710.000	28.92	3.97	44.57	49.51	37.83	54.00	-16.17	Pass	H
4637.500	30.92	5.63	44.73	46.29	38.11	54.00	-15.89	Pass	H
5565.000	31.98	7.00	44.68	50.20	44.50	54.00	-9.50	Pass	H
1038.344	24.21	1.58	44.74	52.61	33.66	54.00	-20.34	Pass	V
1855.000	25.18	2.70	43.82	58.70	42.76	54.00	-11.24	Pass	V
2782.500	27.90	3.26	44.35	54.09	40.90	54.00	-13.10	Pass	V
3710.000	28.92	3.97	44.57	48.91	37.23	54.00	-16.77	Pass	V
4637.500	30.92	5.63	44.73	48.21	40.03	54.00	-13.97	Pass	V
5565.000	31.98	7.00	44.68	51.20	45.50	54.00	-8.50	Pass	V

Test Model No.: 304840

## Transmitter Emission above 1GHz

Worse case mode:		CH6		Test channel:		Lowest	Remark: Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1043.940	24.21	1.59	44.73	51.40	32.47	54.00	-21.53	Pass	H
1830.500	25.09	2.67	43.84	59.60	43.52	54.00	-10.48	Pass	H
2745.750	27.89	3.25	44.33	58.20	45.01	54.00	-8.99	Pass	H
3661.000	28.86	3.93	44.57	48.54	36.76	54.00	-17.24	Pass	H
4576.250	30.77	5.50	44.72	46.69	38.24	54.00	-15.76	Pass	H
5491.500	31.87	6.92	44.70	51.00	45.09	54.00	-8.91	Pass	H
1040.206	24.21	1.59	44.74	53.52	34.58	54.00	-19.42	Pass	V
1830.500	25.09	2.67	43.84	60.10	44.02	54.00	-9.98	Pass	V
2745.750	27.89	3.25	44.33	58.79	45.60	54.00	-8.40	Pass	V
3661.000	28.86	3.93	44.57	50.27	38.49	54.00	-15.51	Pass	V
4576.250	30.77	5.50	44.72	49.36	40.91	54.00	-13.09	Pass	V
5491.500	31.87	6.92	44.70	47.21	41.30	54.00	-12.70	Pass	V

Worse case mode:		CH29		Test channel:		Middle	Remark: Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1062.814	24.19	1.63	44.70	52.33	33.45	54.00	-20.55	Pass	H
1842.000	25.13	2.68	43.83	58.31	42.29	54.00	-11.71	Pass	H
2763.000	27.89	3.25	44.34	56.49	43.29	54.00	-10.71	Pass	H
3684.000	28.88	3.95	44.57	48.76	37.02	54.00	-16.98	Pass	H
4605.000	30.82	5.57	44.73	46.20	37.86	54.00	-16.14	Pass	H
5526.000	31.92	6.96	44.69	52.20	46.39	54.00	-7.61	Pass	H
1038.344	24.21	1.58	44.74	51.97	33.02	54.00	-20.98	Pass	V
1842.000	25.13	2.68	43.83	57.10	41.08	54.00	-12.92	Pass	V
2763.000	27.89	3.25	44.34	56.85	43.65	54.00	-10.35	Pass	V
3684.000	28.88	3.95	44.57	50.12	38.38	54.00	-15.62	Pass	V
4605.000	30.82	5.57	44.73	47.59	39.25	54.00	-14.75	Pass	V
5526.000	31.92	6.96	44.69	51.73	45.92	54.00	-8.08	Pass	V

Worse case mode:		CH55		Test channel:		Highest	Remark: Average		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dB $\mu$ V)	Level (dB $\mu$ V/m)	Limit Line (dB $\mu$ V/m)	Over Limit (dB)	Result	Antenna Polaxis
1030.929	24.22	1.57	44.75	51.05	32.09	54.00	-21.91	Pass	H
1855.000	25.18	2.70	43.82	58.30	42.36	54.00	-11.64	Pass	H
2782.500	27.90	3.26	44.35	56.67	43.48	54.00	-10.52	Pass	H
3710.000	28.92	3.97	44.57	47.62	35.94	54.00	-18.06	Pass	H
4637.500	30.92	5.63	44.73	46.52	38.34	54.00	-15.66	Pass	H
5565.000	31.98	7.00	44.68	50.00	44.30	54.00	-9.70	Pass	H
1040.206	24.21	1.59	44.74	52.61	33.67	54.00	-20.33	Pass	V
1855.000	25.18	2.70	43.82	60.00	44.06	54.00	-9.94	Pass	V
2782.000	27.90	3.26	44.35	55.84	42.65	54.00	-11.35	Pass	V
3710.000	28.92	3.97	44.57	49.96	38.28	54.00	-15.72	Pass	V
4637.500	30.92	5.63	44.73	46.94	38.76	54.00	-15.24	Pass	V
5565.000	31.98	7.00	44.68	50.00	44.30	54.00	-9.70	Pass	V

**Note:**

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor - Antenna Factor - Cable Factor

2) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported

## PHOTOGRAPHS OF TEST SETUP

Test model No.: 304838



Radiated spurious emission Test Setup-1(Below 30MHz)



Radiated spurious emission Test Setup-2(Below 1GHz)



**Radiated spurious emission Test Setup-3(Above 1GHz)**

Test model No.: 304840



**Radiated spurious emission Test Setup-1(Below 30MHz)**



**Radiated spurious emission Test Setup-2(Below 1GHz)**



**Radiated spurious emission Test Setup-3(Above 1GHz)**

## PHOTOGRAPHS OF EUT Constructional Details

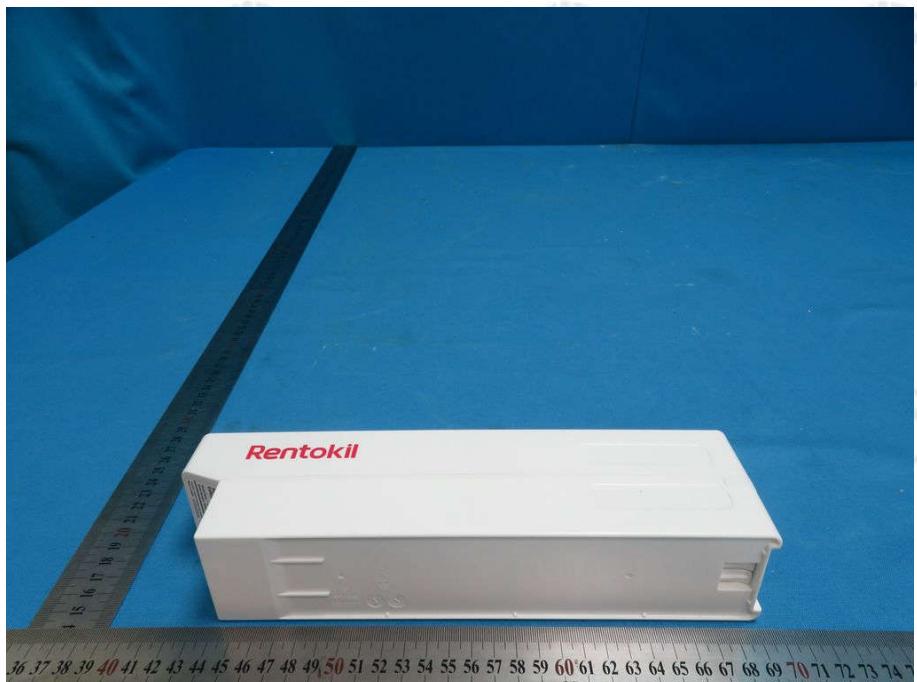
Test model No.: 304838



View of Product-1



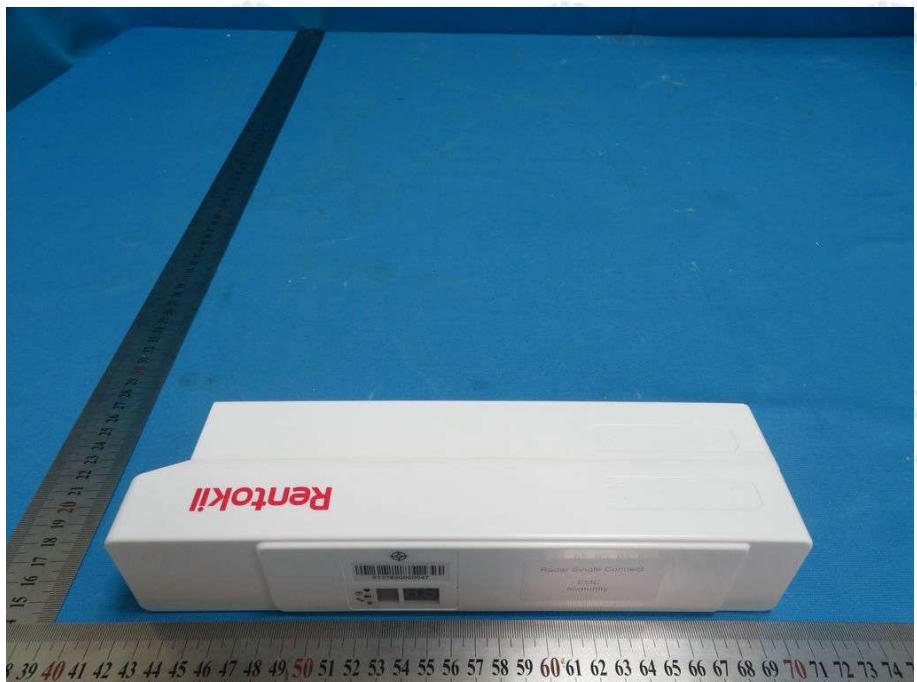
View of Product-2



View of Product-3



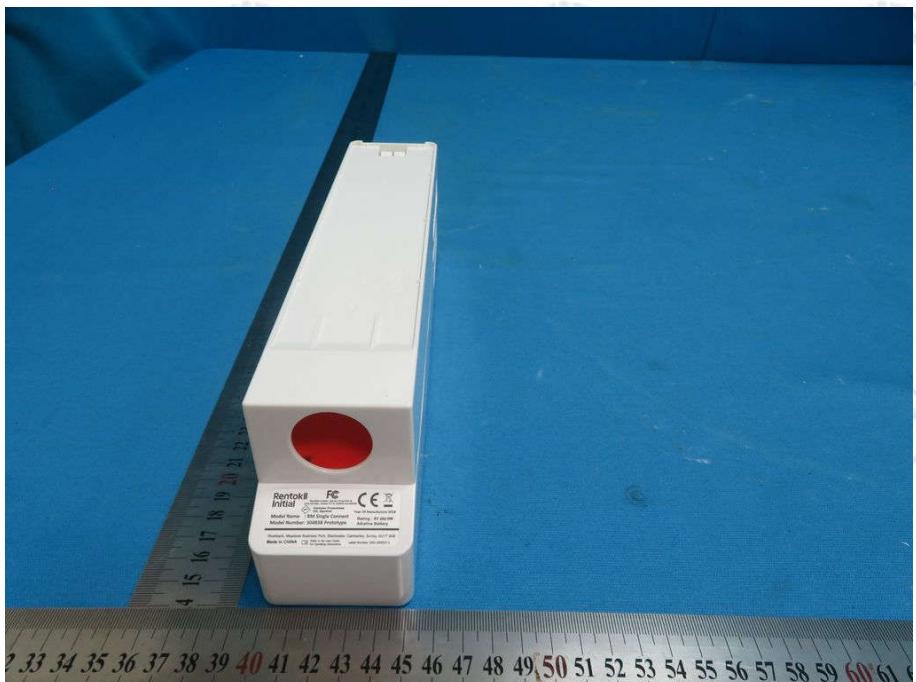
View of Product-4



View of Product-5



View of Product-6



View of Product-7



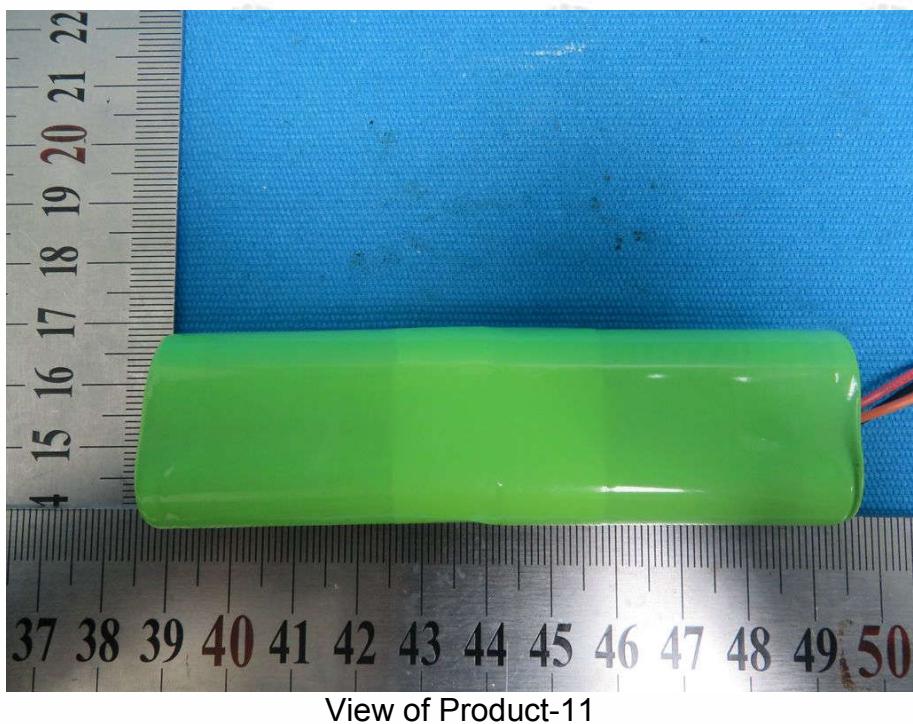
View of Product-8



View of Product-9



View of Product-10

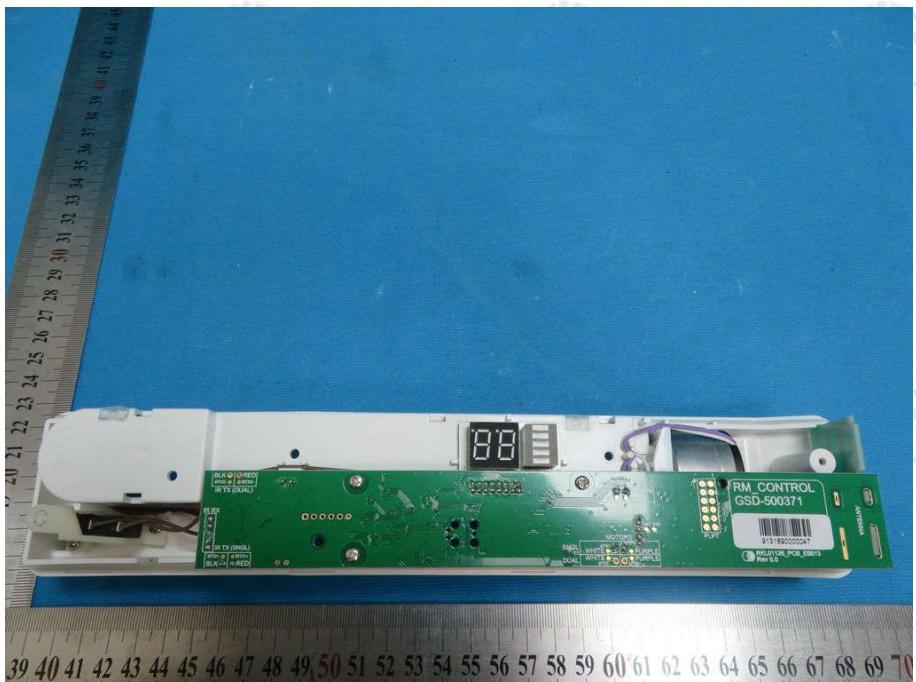




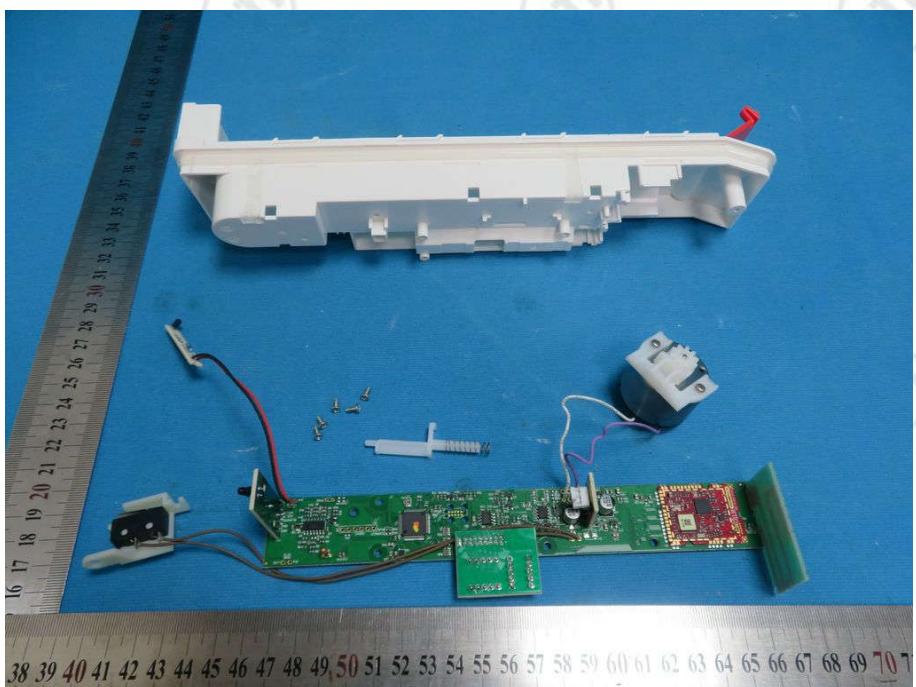
View of Product-13



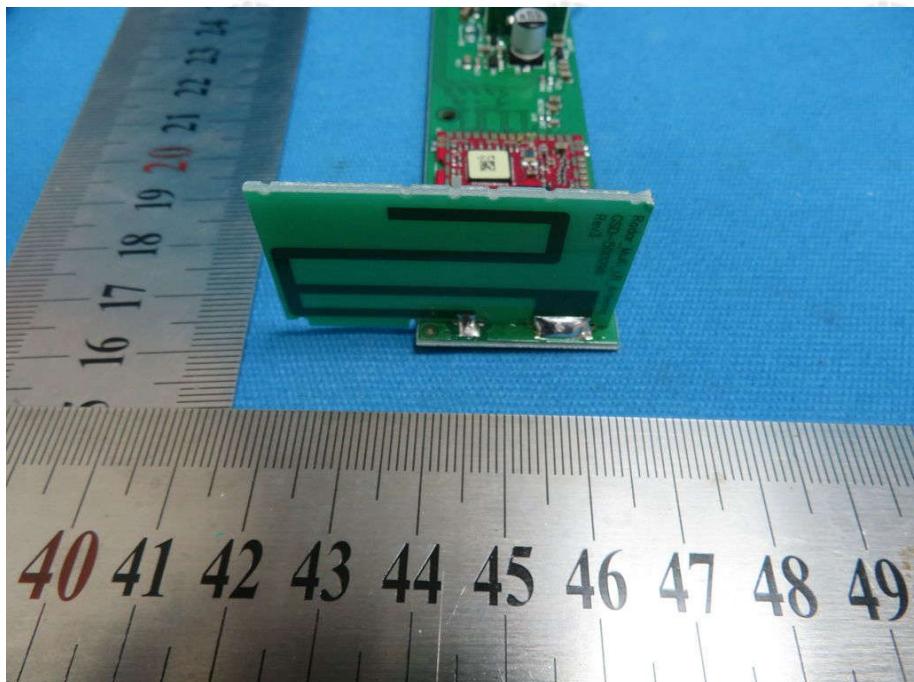
View of Product-14



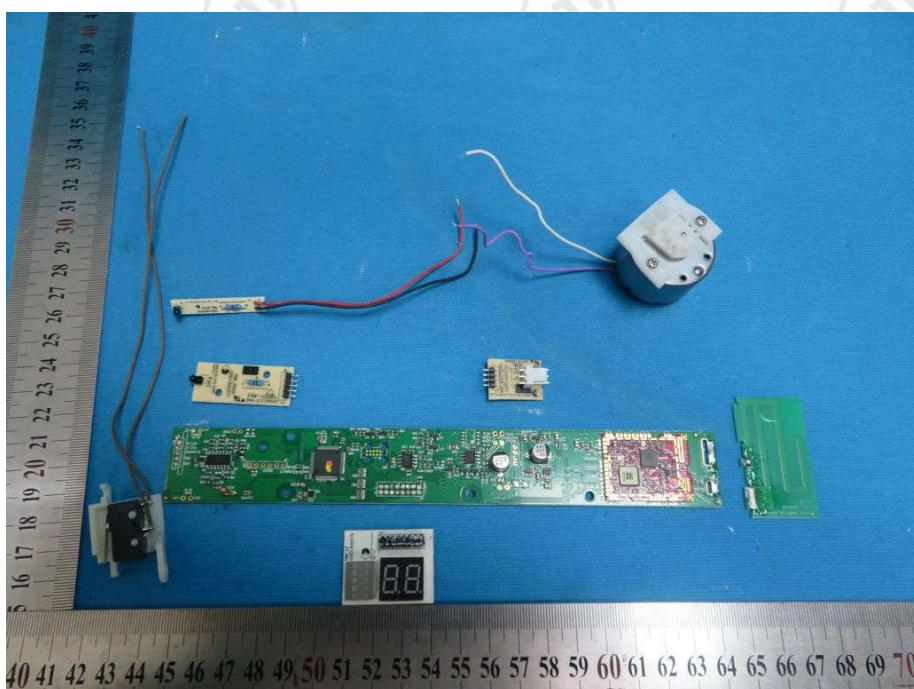
View of Product-15



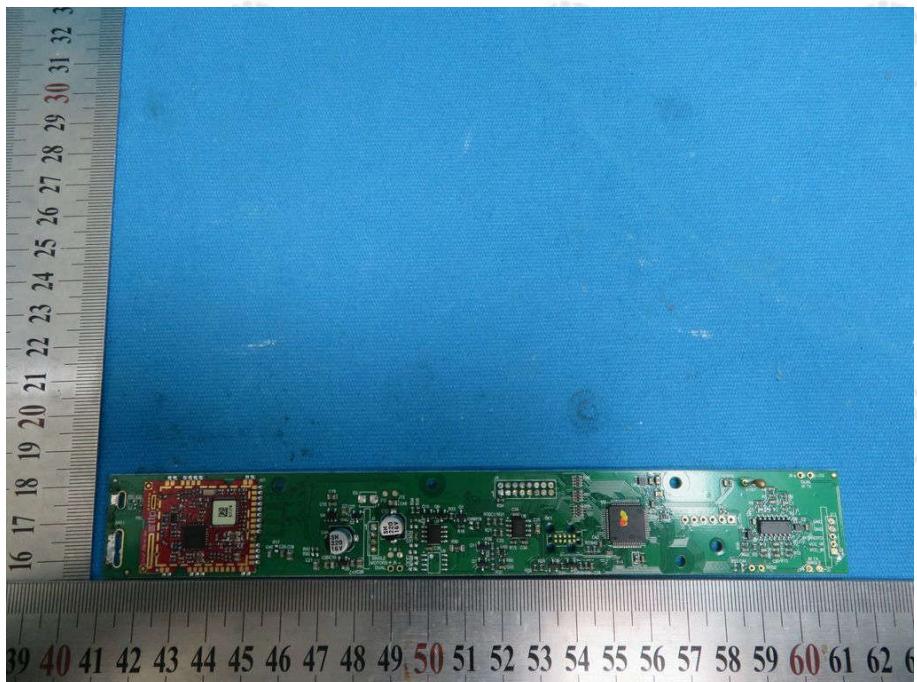
View of Product-16



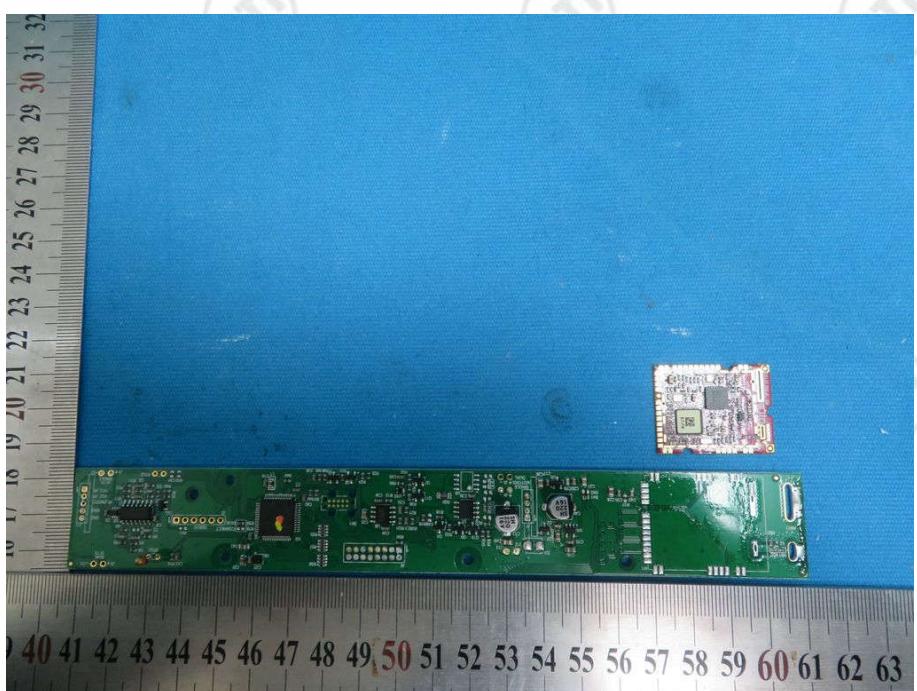
View of Product-17



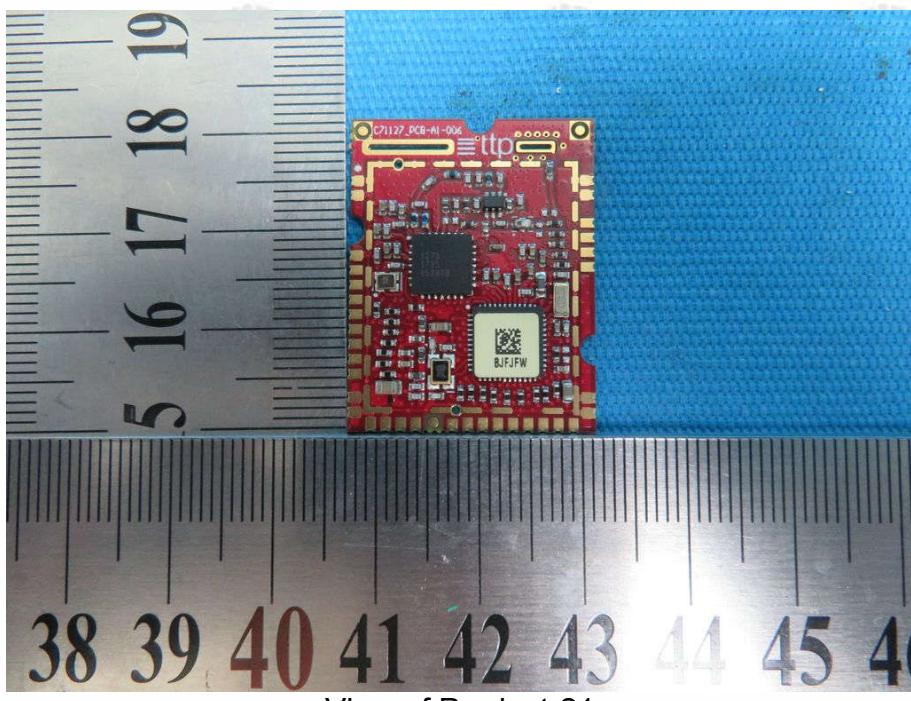
View of Product-18



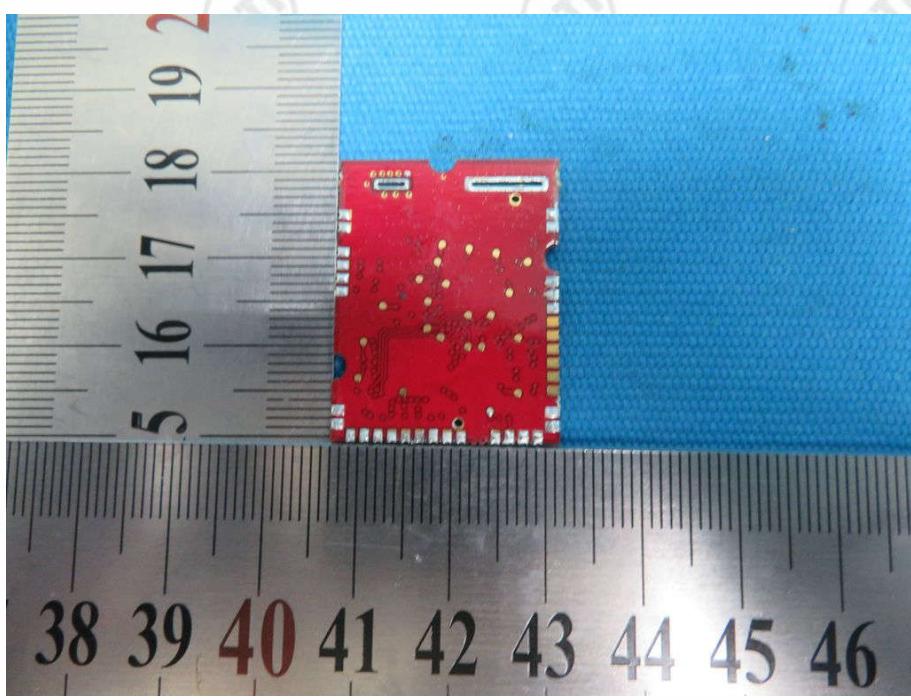
View of Product-19



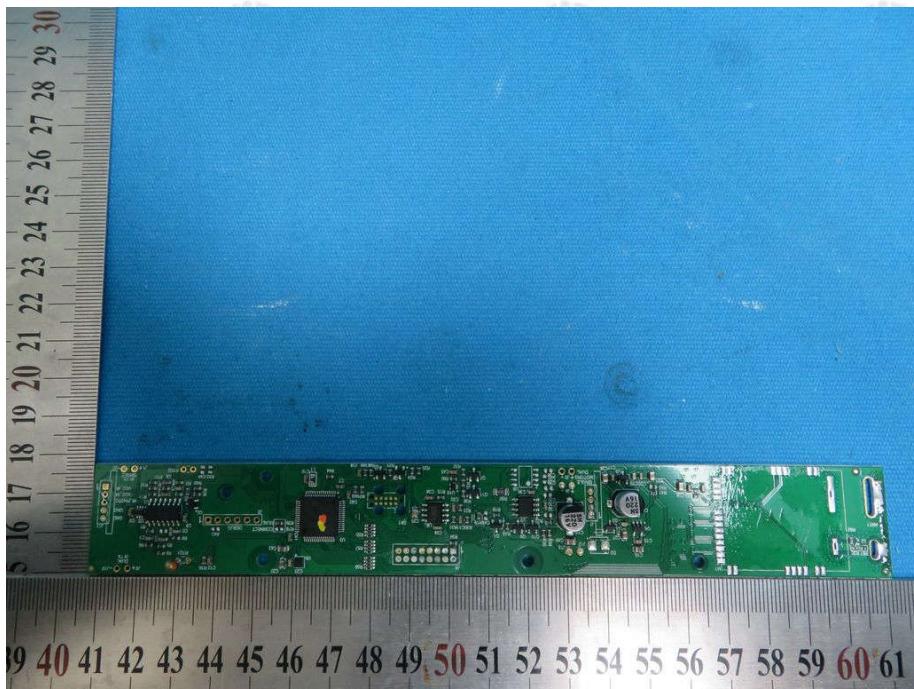
View of Product-20



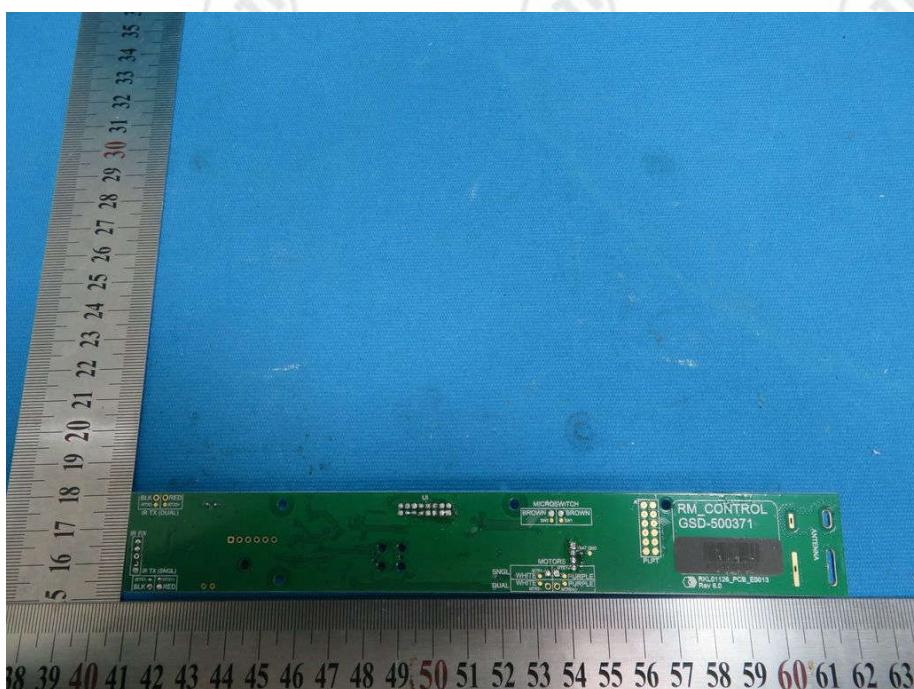
View of Product-21



View of Product-22



View of Product-23



View of Product-24

Test model No.: 304840



View of Product-1



View of Product-2



View of Product-3



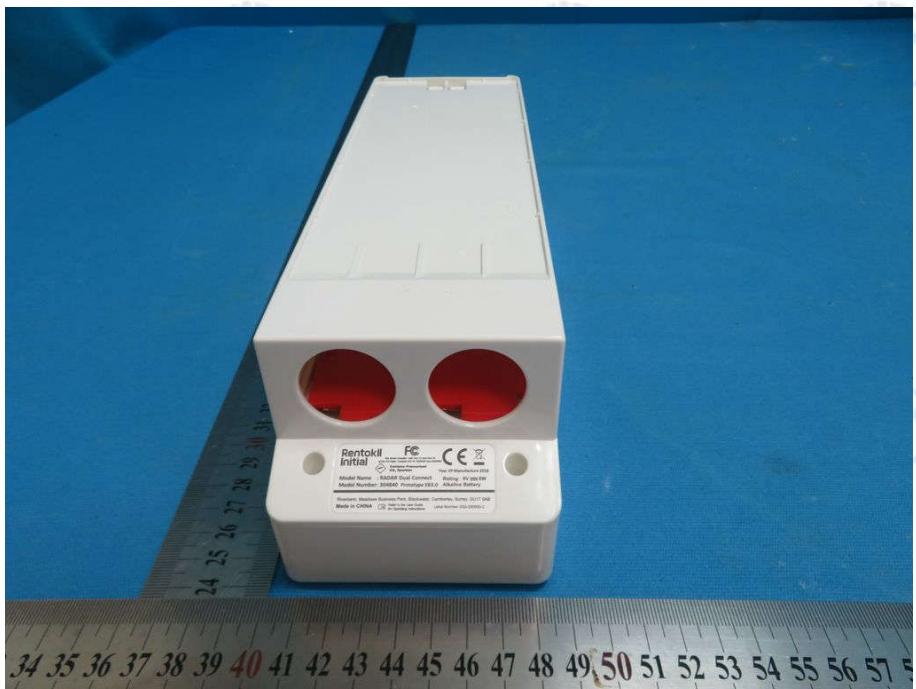
View of Product-4



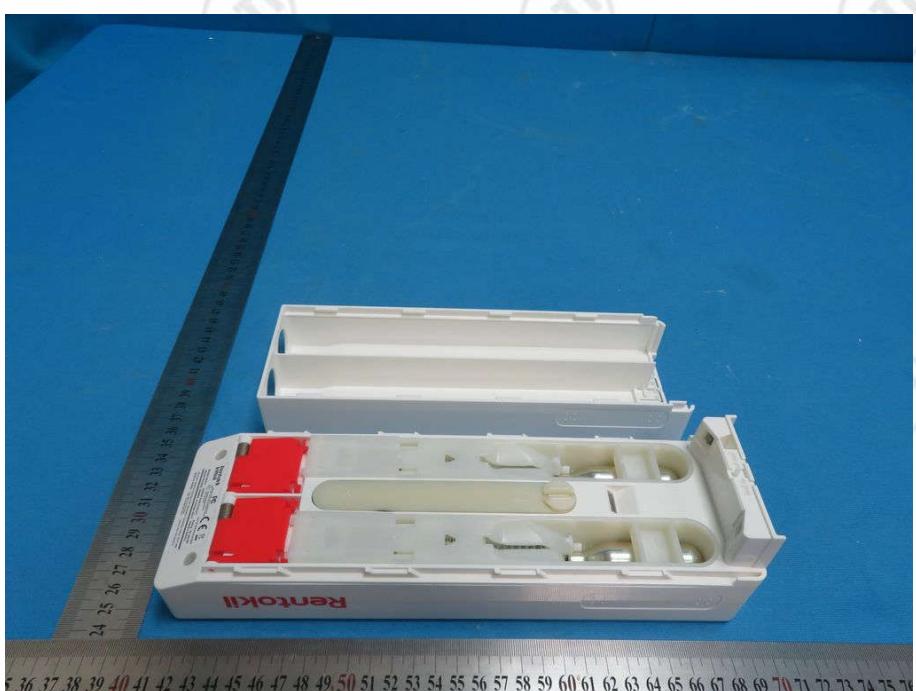
View of Product-5



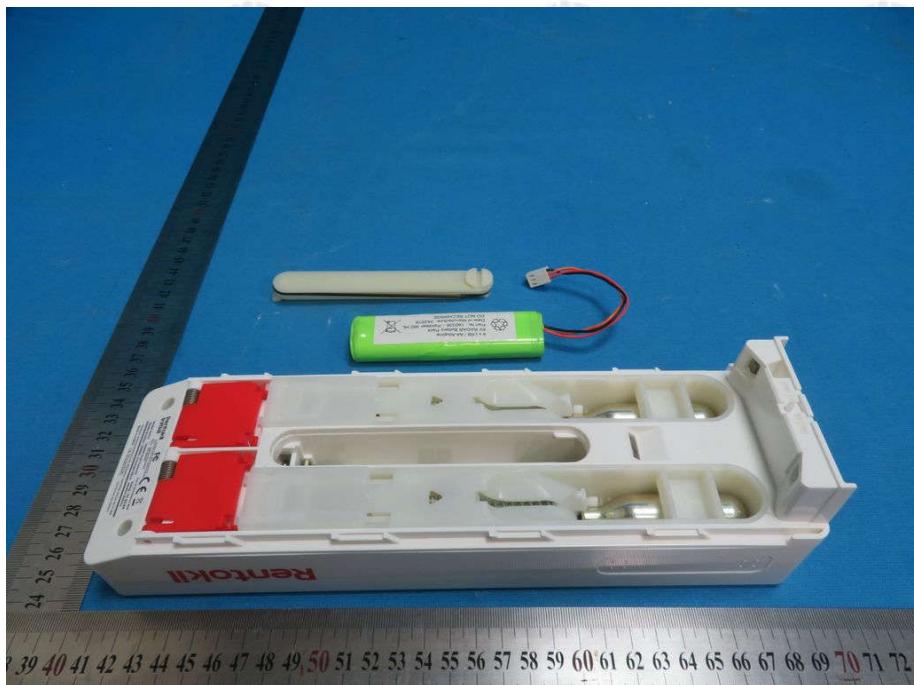
View of Product-6



View of Product-7



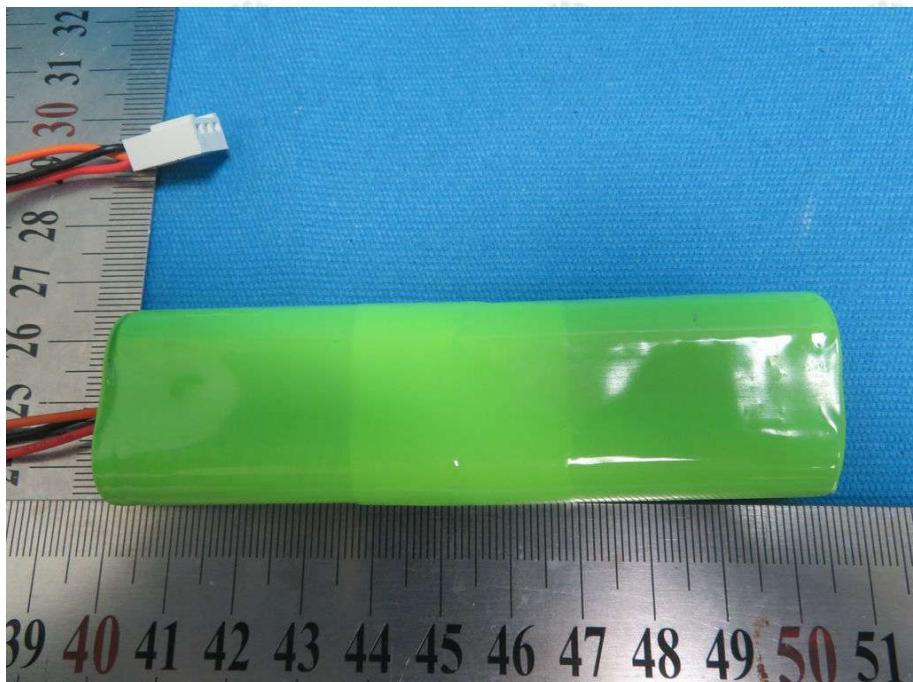
View of Product-8



View of Product-9



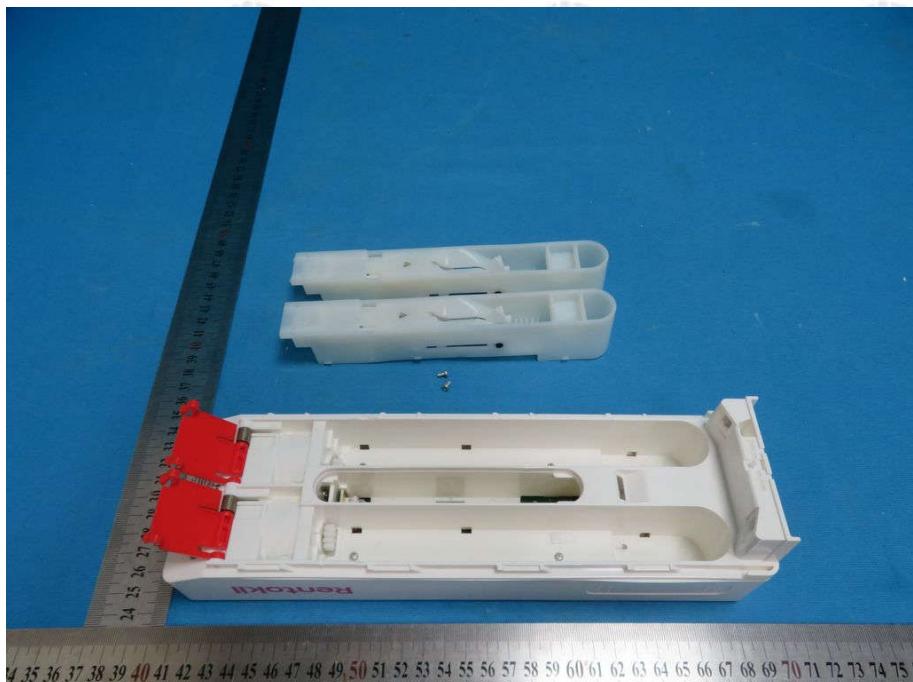
View of Product-10



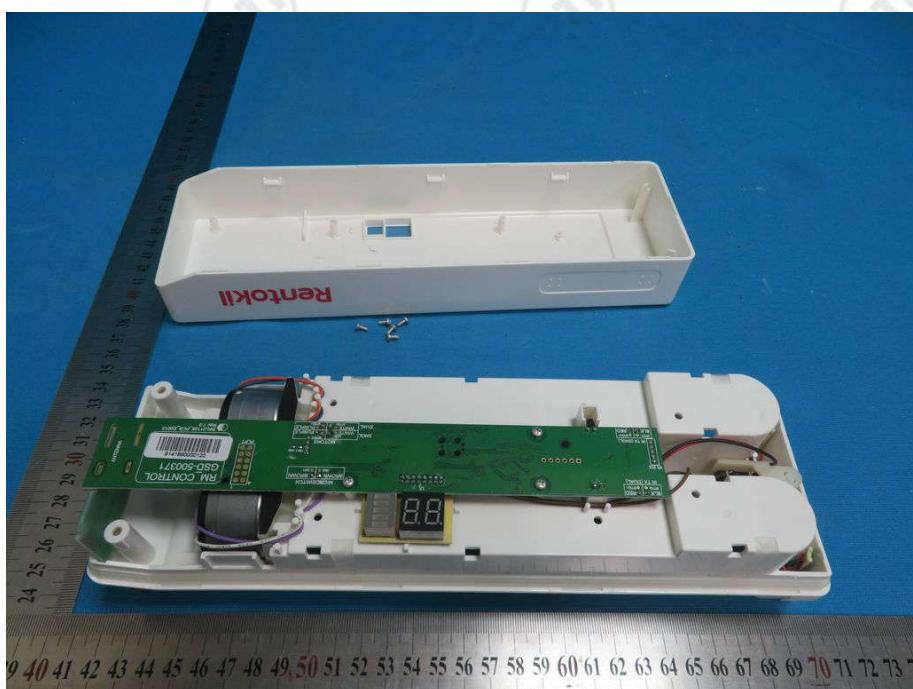
View of Product-11



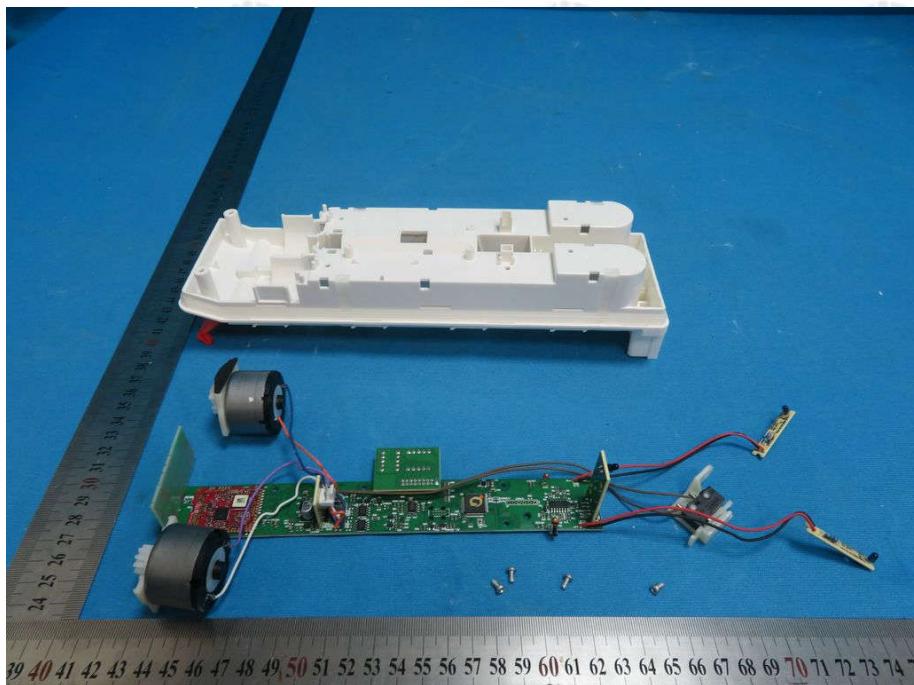
View of Product-12



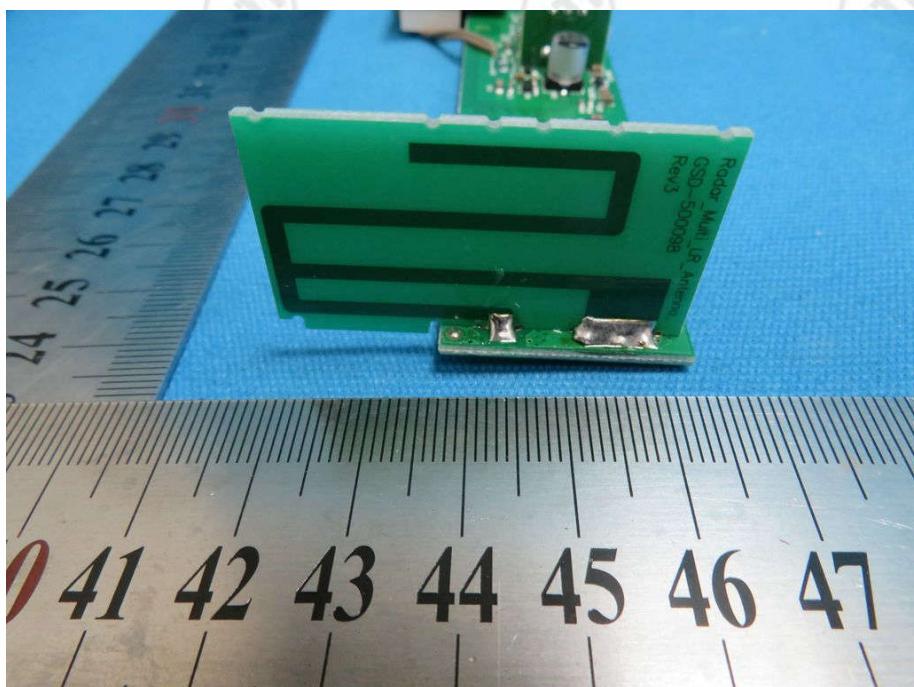
View of Product-13



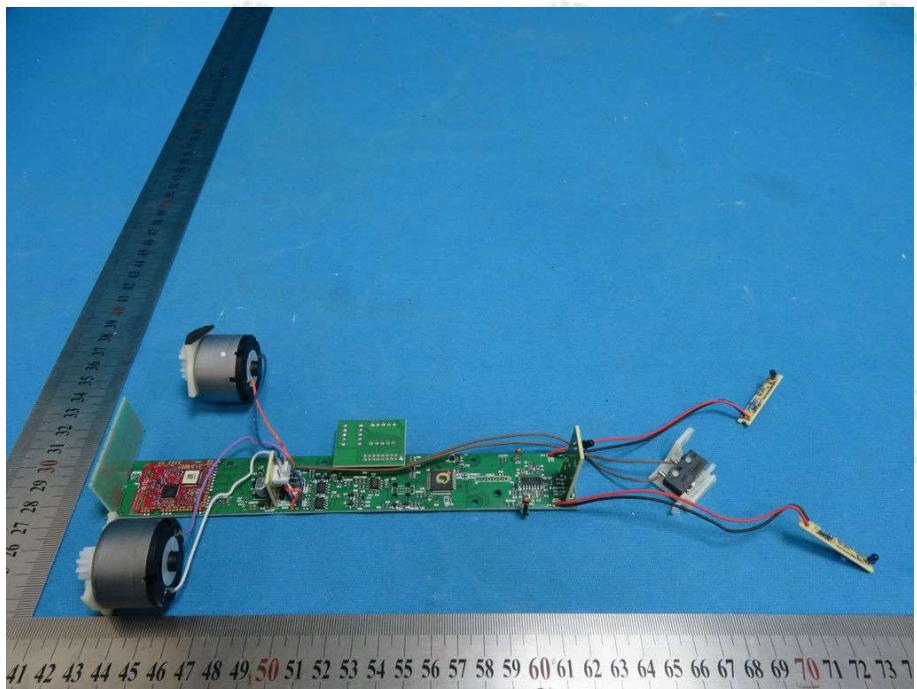
View of Product-14



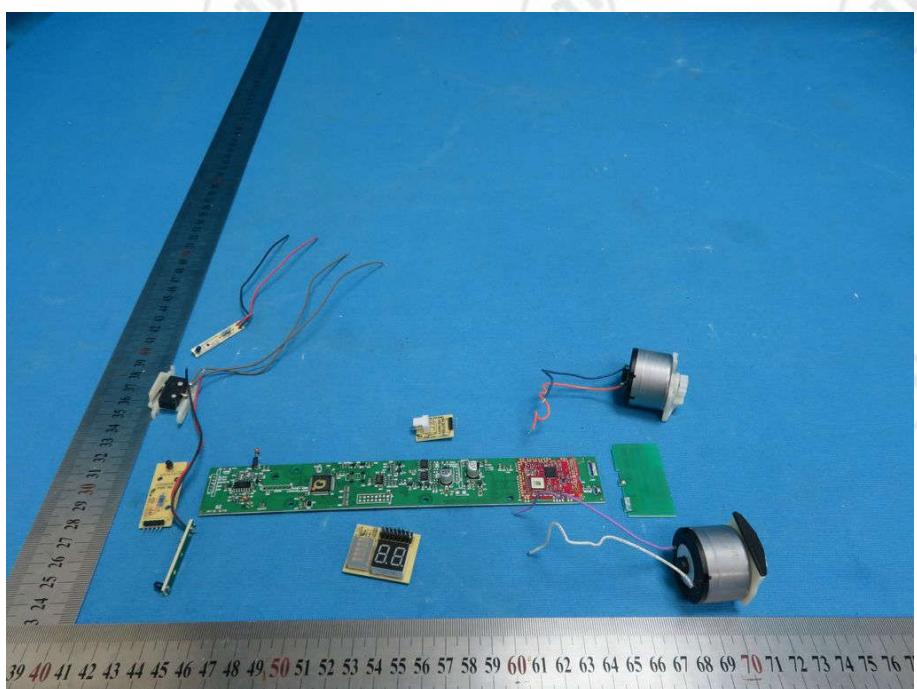
View of Product-15



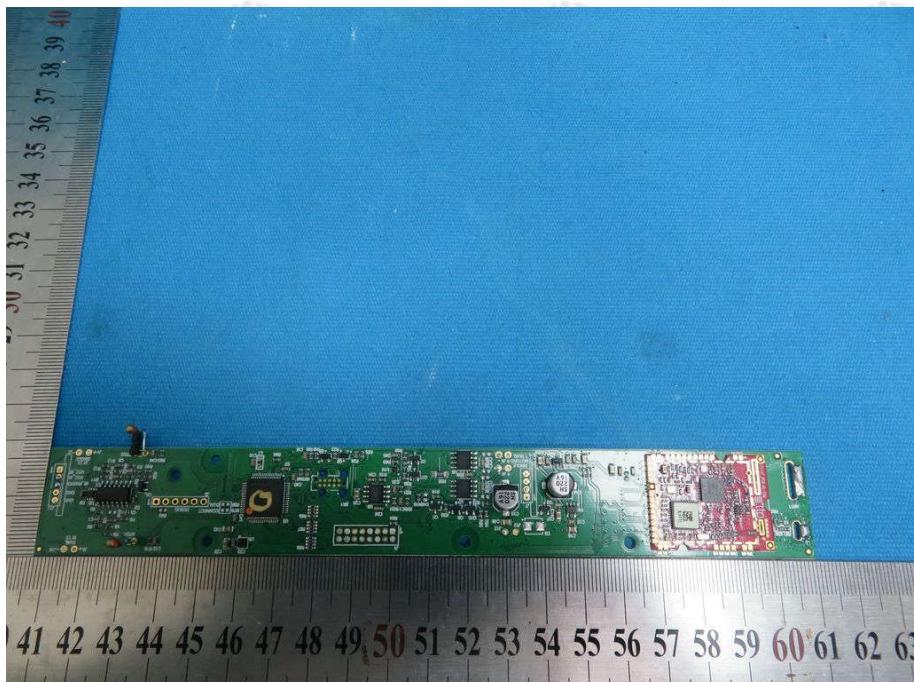
View of Product-16



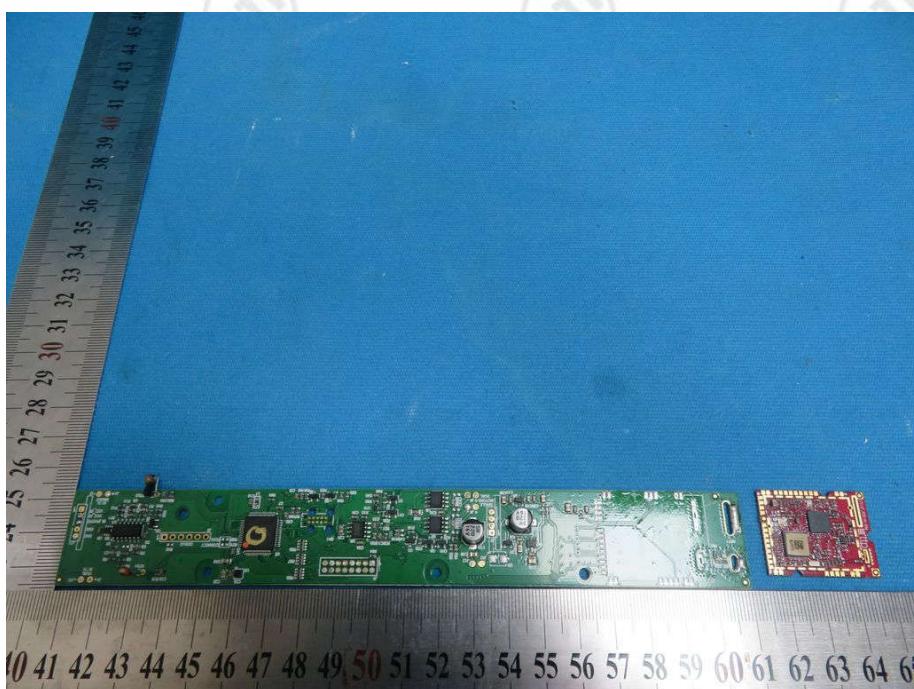
View of Product-17



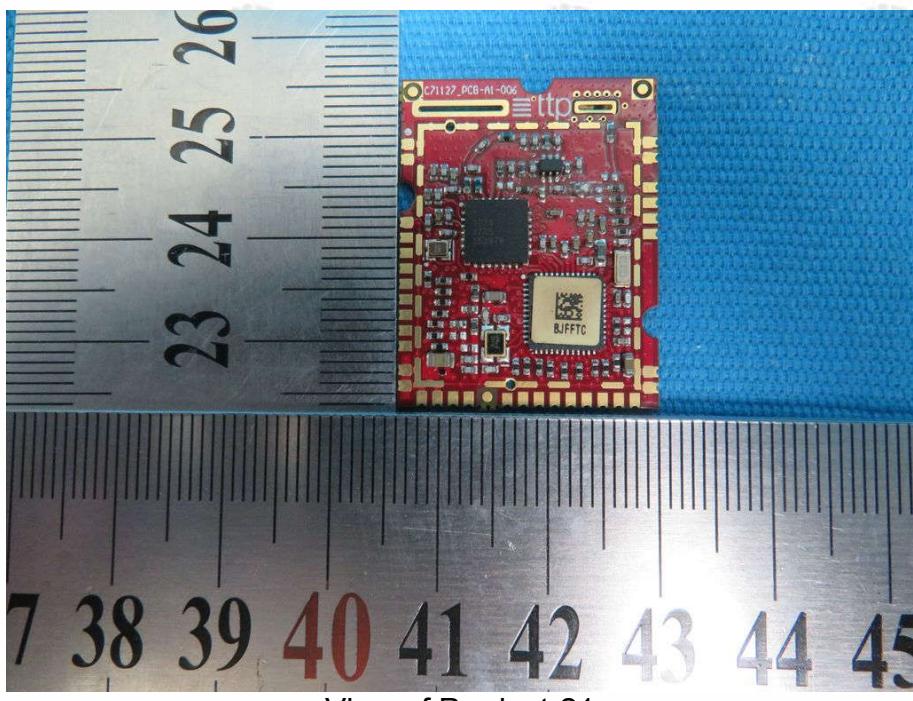
View of Product-18



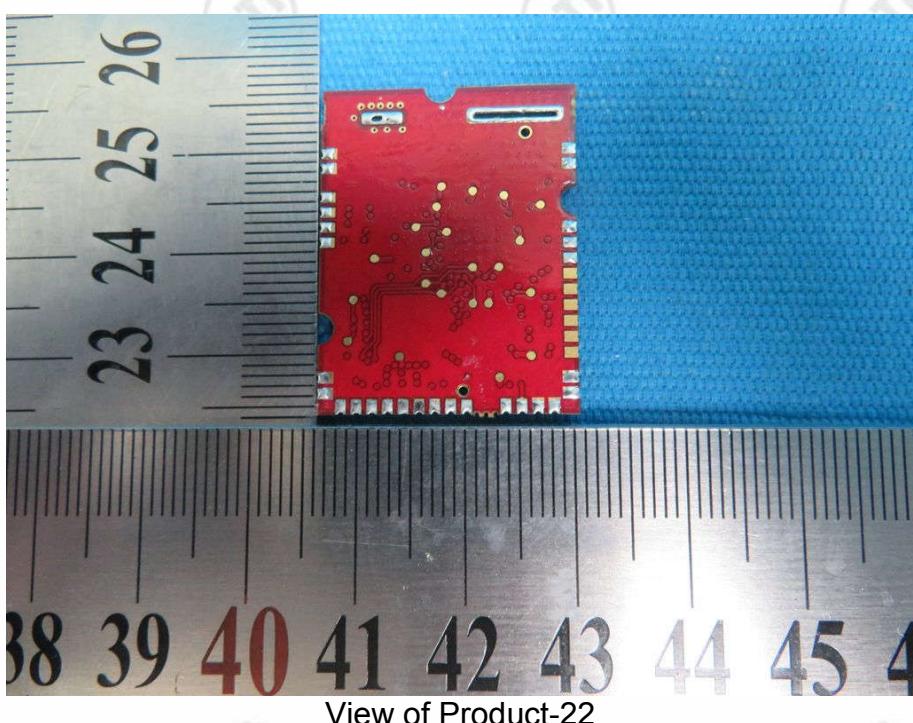
View of Product-19



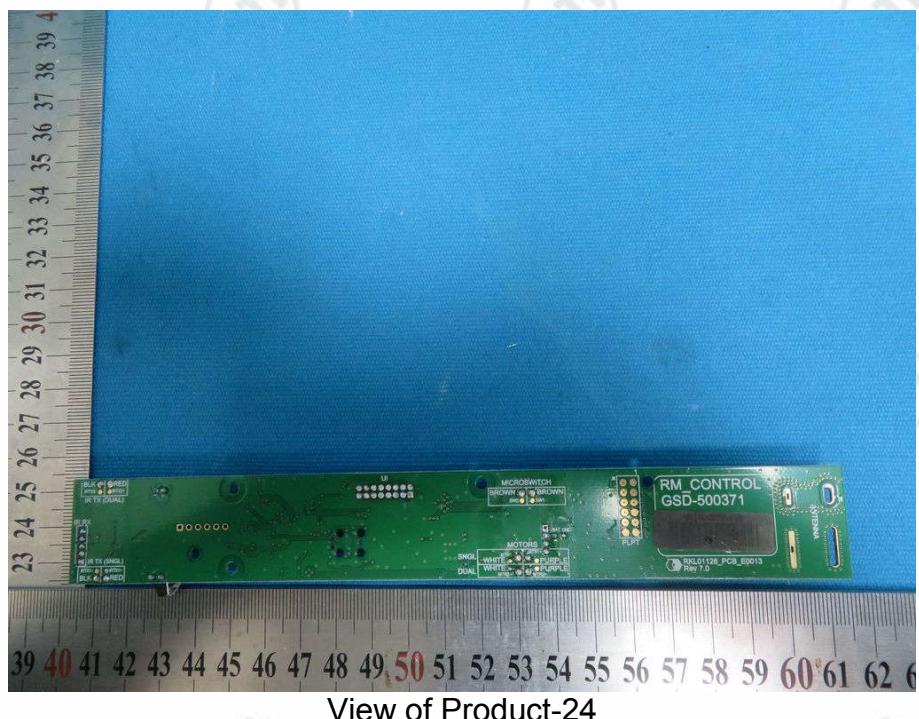
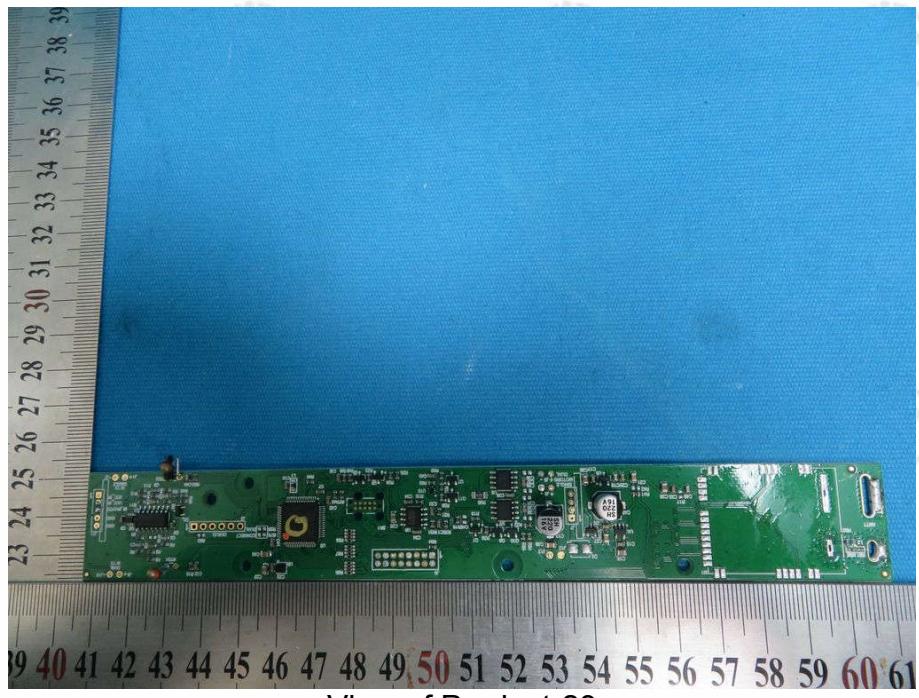
View of Product-20



View of Product-21



View of Product-22



\*\*\* End of Report \*\*\*

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