

# FCC REPORT

**Applicant:** TILTA TECHNOLOGY CO., LTD

**Address of Applicant:** 2nd Floor, Building B, Qiaode High Technology Park, Road No.7, Guangming New Dist, Shenzhen China

**Manufacturer:** TILTA TECHNOLOGY CO., LTD

**Address of Manufacturer:** 2nd Floor, Building B, Qiaode High Technology Park, Road No.7, Guangming New Dist, Shenzhen China

## Equipment Under Test (EUT)

**Product Name:** Nucleus-M Wireless Follow Focus System

**Model No.:** WLC-T03 FIZ Hand Unit

**Trade mark:** TILTAMAX

**FCC ID:** 2AO2S-FIZHAND

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.247

**Date of sample receipt:** January 15, 2018

**Date of Test:** January 15-31, 2018

**Date of report issued:** February 01, 2018

**Test Result :** PASS \*

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

Authorized Signature:

A handwritten signature in black ink, appearing to read "Robinson Lo" followed by "February".

Robinson Lo

**Laboratory Manager**

This 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.

## 2 Version

Version No.	Date	Description
00	February 01, 2018	Original

**Prepared By:**

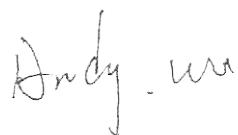


**Date:**

February 01, 2018

**Project Engineer**

**Check By:**



**Date:**

February 01, 2018

**Reviewer**

### 3 Contents

	Page
1 COVER PAGE .....	1
2 VERSION .....	2
3 CONTENTS .....	3
4 TEST SUMMARY .....	4
4.1 MEASUREMENT UNCERTAINTY .....	4
5 GENERAL INFORMATION .....	5
5.1 GENERAL DESCRIPTION OF EUT .....	5
5.2 TEST MODE .....	7
5.3 DESCRIPTION OF SUPPORT UNITS .....	7
5.4 TEST FACILITY .....	7
5.5 TEST LOCATION .....	7
5.6 ADDITIONAL INSTRUCTIONS .....	8
6 TEST INSTRUMENTS LIST .....	9
7 TEST RESULTS AND MEASUREMENT DATA .....	10
7.1 ANTENNA REQUIREMENT .....	10
7.2 CONDUCTED PEAK OUTPUT POWER .....	11
7.3 CHANNEL BANDWIDTH .....	13
7.4 POWER SPECTRAL DENSITY .....	15
7.5 BAND EDGES .....	17
7.5.1 Conducted Emission Method .....	17
7.5.2 Radiated Emission Method .....	19
7.6 SPURIOUS EMISSION .....	21
7.6.1 Conducted Emission Method .....	21
7.6.2 Radiated Emission Method .....	23
8 TEST SETUP PHOTO .....	30
9 EUT CONSTRUCTIONAL DETAILS .....	31

## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

*Pass: The EUT complies with the essential requirements in the standard.*

*Remark : Test according to ANSI C63.4:2014 and ANSI C63.10:2013*

*N/A means not applicable.*

### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

*Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.*

## 5 General Information

### 5.1 General Description of EUT

Product Name:	Nucleus-M Wireless Follow Focus System
Model No.:	WLC-T03 FIZ Hand Unit
Serial No.:	K0180201161
Test sample(s) ID:	GTS201801000064-1
Sample(s) Status	Engineer sample
Hardware:	V3
Software:	NUCLES-M-150-V18.01.04
Operation Frequency:	2405MHz~2480MHz
Channel numbers:	16
Channel separation:	5MHz
Modulation type:	O-QPSK
Antenna Type:	Integral Antenna
Antenna gain:	0.7dBi(declare by Applicant)
Power supply:	DC 7.2V

**Label:**



<b>Operation Frequency each of channel</b>							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2405MHz	5	2425MHz	9	2445MHz	13	2465MHz
2	2410MHz	6	2430MHz	10	2450MHz	14	2470MHz
3	2415MHz	7	2435MHz	11	2455MHz	15	2475MHz
4	2420MHz	8	2440MHz	12	2460MHz	16	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2405MHz
The middle channel	2440MHz
The Highest channel	2480MHz

## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

## 5.3 Description of Support Units

None

## 5.4 Test Facility

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

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 381383, January 08, 2018

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

## 5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China

Tel: 0755-27798480

Fax: 0755-27798960

## 5.6 Additional instructions

Software (Used for test) from client

Built-in by manufacture, power on and then it can be transmitted by operator.

Channel	Power level
Lowest	Default
Middle	Default
Highest	Default

Test software set



## 6 Test Instruments list

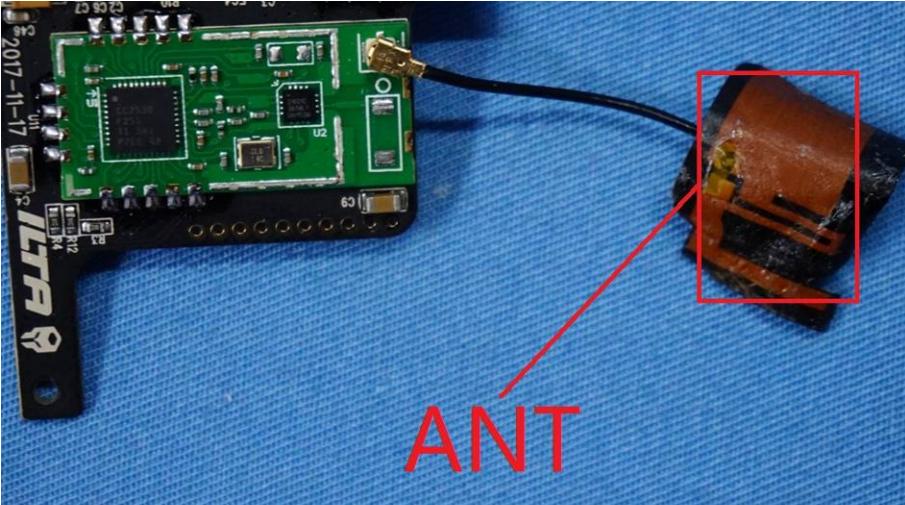
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June 28 2017	June 27 2018
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June 28 2017	June 27 2018
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June 28 2017	June 27 2018
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2017	June 27 2018
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 28 2017	June 27 2018
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	June 28 2017	June 27 2018
10	Coaxial Cable	GTS	N/A	GTS211	June 28 2017	June 27 2018
11	Coaxial cable	GTS	N/A	GTS210	June 28 2017	June 27 2018
12	Coaxial Cable	GTS	N/A	GTS212	June 28 2017	June 27 2018
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June 28 2017	June 27 2018
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June 28 2017	June 27 2018
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2017	June 27 2018
16	Band filter	Amindeon	82346	GTS219	June 28 2017	June 27 2018

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 28 2017	June 27 2018

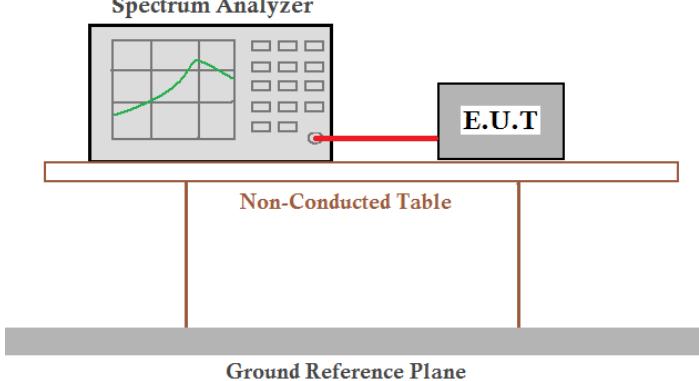
## 7 Test results and Measurement Data

### 7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<b>15.203 requirement:</b> 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.	
<b>15.247(c) (1)(i) requirement:</b> (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
<b>EUT Antenna:</b> <i>The antenna is integral Antenna, the best case gain of the antenna is 0.7dBi</i>	



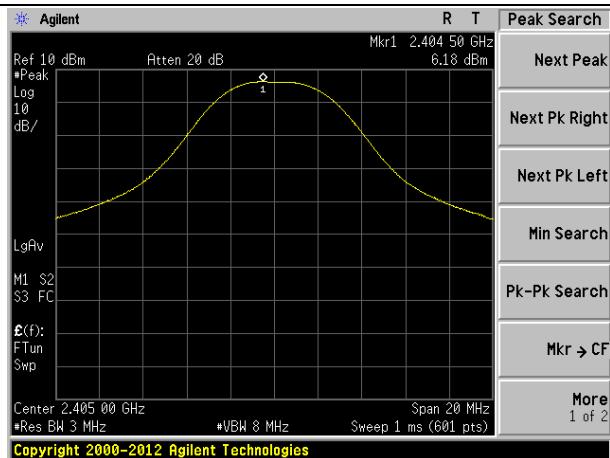
## 7.2 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V03
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

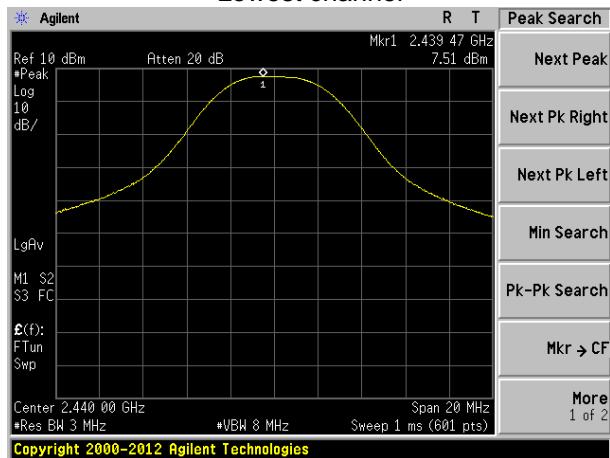
### Measurement Data

Frequency (MHz)	Peak Output Power (dBm)	Limit(dBm)	Result
2405	6.18	30	PASS
2440	7.15		
2480	6.32		

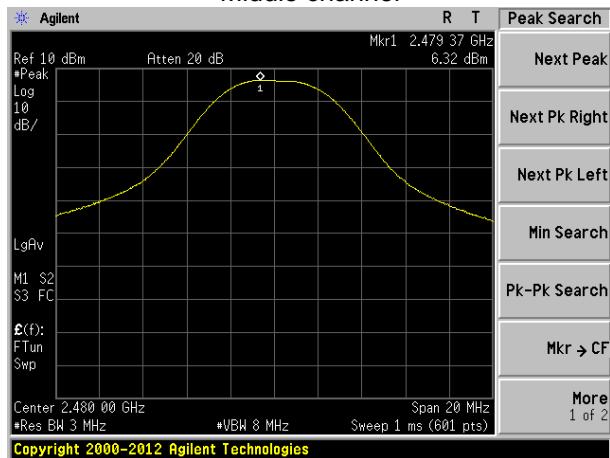
**Test plot as follows:**



Lowest channel

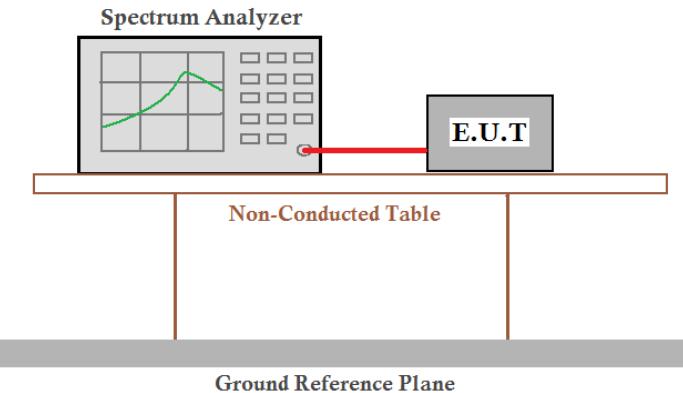


Middle channel



Highest channel

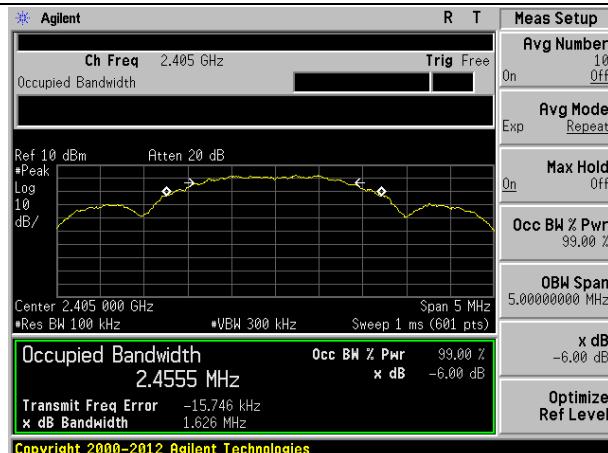
## 7.3 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V03
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

### Measurement Data

Frequency (MHz)	Channel Bandwidth (MHz)	Limit(KHz)	Result
2405	1.626	>500	Pass
2440	1.581		
2480	1.601		

### Test plot as follows:



Lowest channel

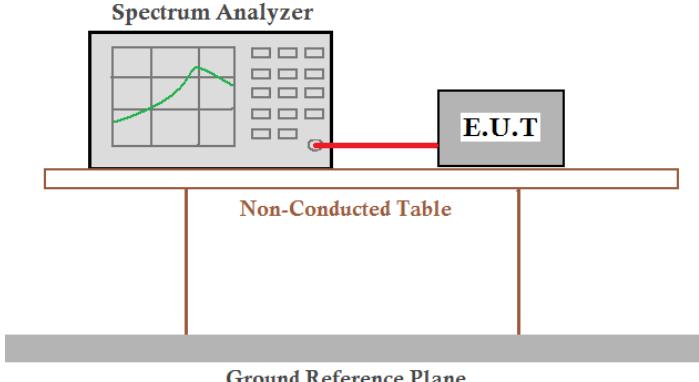


Middle channel



Highest channel

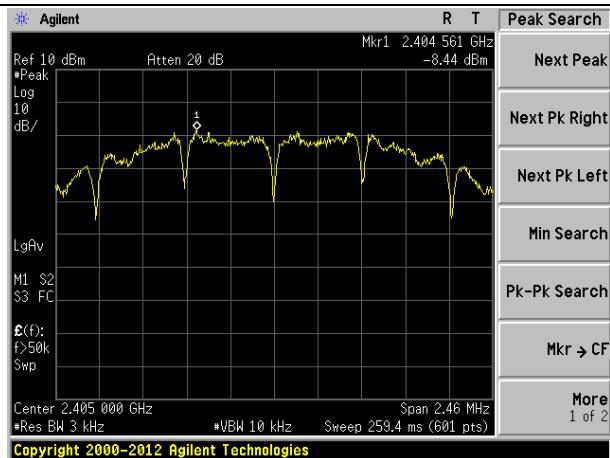
## 7.4 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V03
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

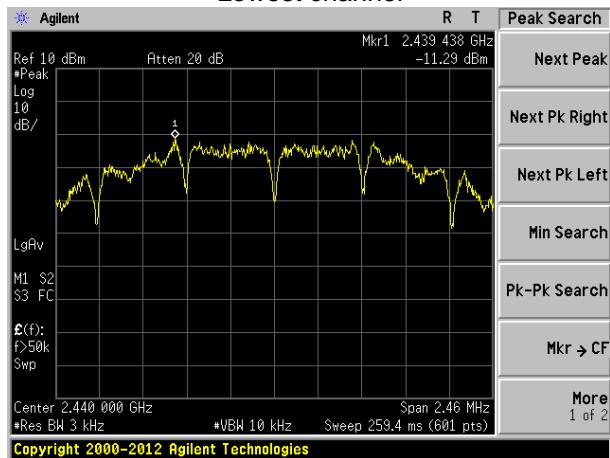
### Measurement Data

Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm/3kHz)	Result
2405	-8.44	8.00	Pass
2440	-11.29		
2480	-9.68		

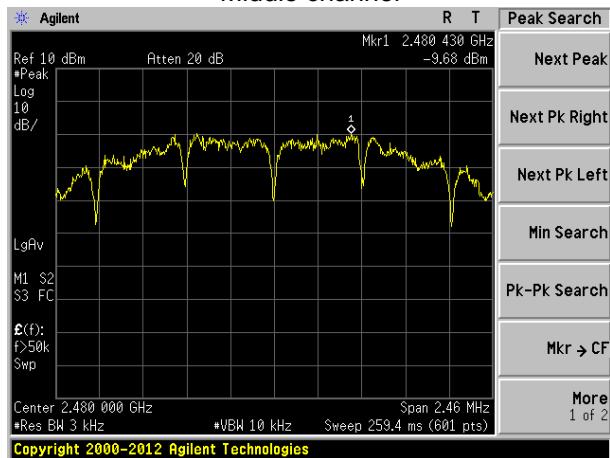
**Test plot as follows:**



Lowest channel



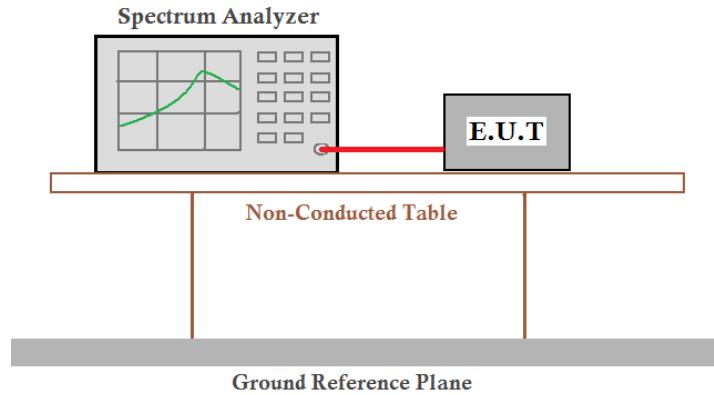
Middle channel



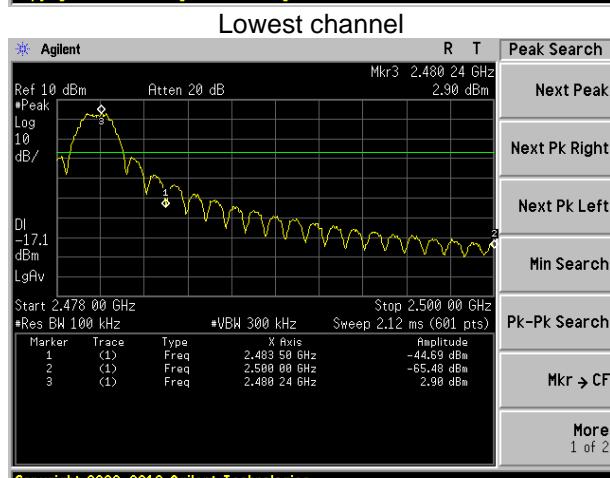
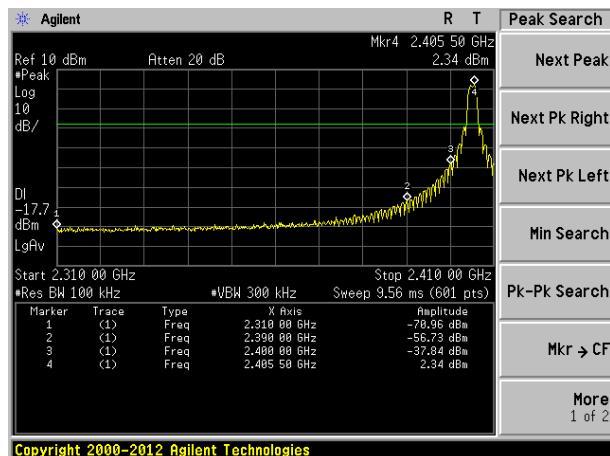
Highest channel

## 7.5 Band edges

### 7.5.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V03
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

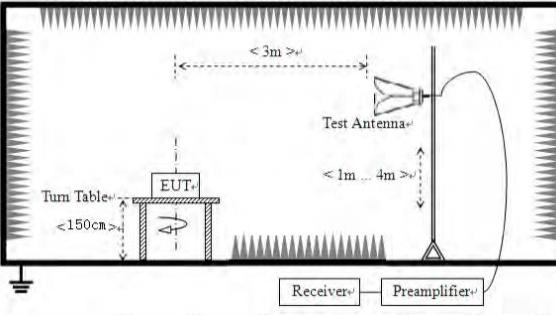
**Test plot as follows:**



Lowest channel

Highest channel

## 7.5.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205								
Test Method:	ANSI C63.10:2013								
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.								
Test site:	Measurement Distance: 3m								
Receiver setup:	Frequency	Detector	RBW	VBW	Value				
	Above 1GHz	Peak	1MHz	3MHz	Peak				
		RMS	1MHz	3MHz	Average				
Limit:	Frequency	Limit (dBuV/m @3m)		Value					
	Above 1GHz	54.00		Average					
		74.00		Peak					
Test setup:									
Test Procedure:	<ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>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.</li> <li>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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> <li>The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</li> </ol>								
Test Instruments:	Refer to section 6.0 for details								
Test mode:	Refer to section 5.2 for details								
Test results:	Pass								

**Measurement data:**

Remark: The pre-test were performed on lowest, middle and highest frequencies, only the worst case's was showed.

Test channel:	Lowest channel							
---------------	----------------	--	--	--	--	--	--	--

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	37.25	27.91	5.30	24.64	45.82	74.00	-28.18	Horizontal
2390.00	39.66	27.59	5.38	24.71	47.92	74.00	-26.08	Horizontal
2310.00	36.99	27.91	5.30	24.64	45.56	74.00	-28.44	Vertical
2390.00	38.96	27.59	5.38	24.71	47.22	74.00	-26.78	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	26.53	27.91	5.30	24.64	35.10	54.00	-18.90	Horizontal
2390.00	28.31	27.59	5.38	24.71	36.57	54.00	-17.43	Horizontal
2310.00	25.18	27.91	5.30	24.64	33.75	54.00	-20.25	Vertical
2390.00	27.00	27.59	5.38	24.71	35.26	54.00	-18.74	Vertical

Test channel:	Highest channel							
---------------	-----------------	--	--	--	--	--	--	--

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	45.53	27.53	5.47	24.80	53.73	74.00	-20.27	Horizontal
2500.00	41.33	27.55	5.49	24.86	49.51	74.00	-24.49	Horizontal
2483.50	44.36	27.53	5.47	24.80	52.56	74.00	-21.44	Vertical
2500.00	40.78	27.55	5.49	24.86	48.96	74.00	-25.04	Vertical

Average value:

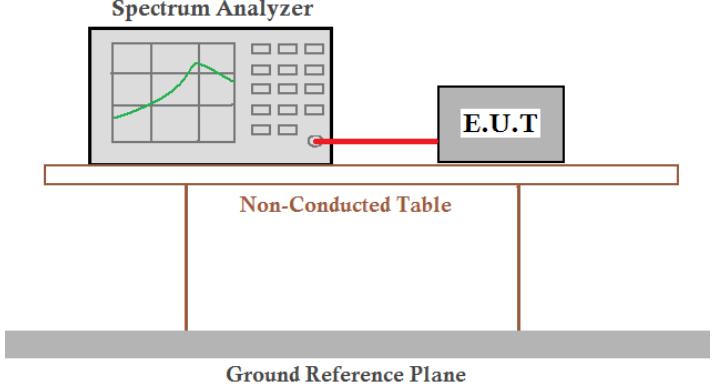
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	35.25	27.53	5.47	24.80	43.45	54.00	-10.55	Horizontal
2500.00	35.07	27.55	5.49	24.86	43.25	54.00	-10.75	Horizontal
2483.50	34.69	27.53	5.47	24.80	42.89	54.00	-11.11	Vertical
2500.00	34.74	27.55	5.49	24.86	42.92	54.00	-11.08	Vertical

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
- The emission levels of other frequencies are very lower than the limit and not show in test report.

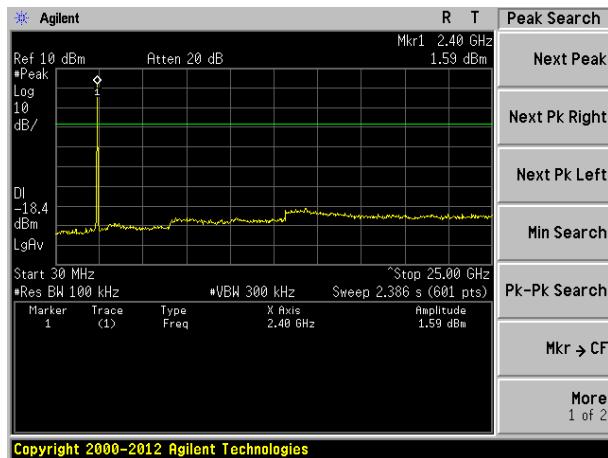
## 7.6 Spurious Emission

### 7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V03
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

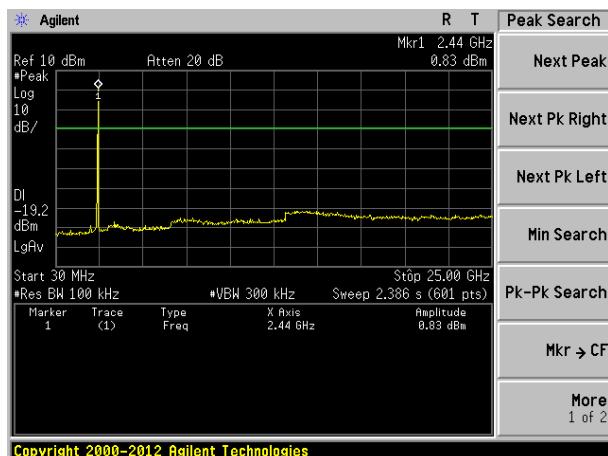
**Test plot as follows:**

Lowest channel



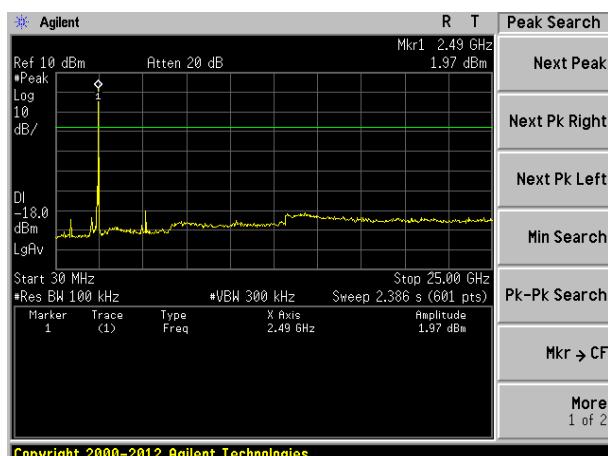
30MHz~25GHz

Middle channel



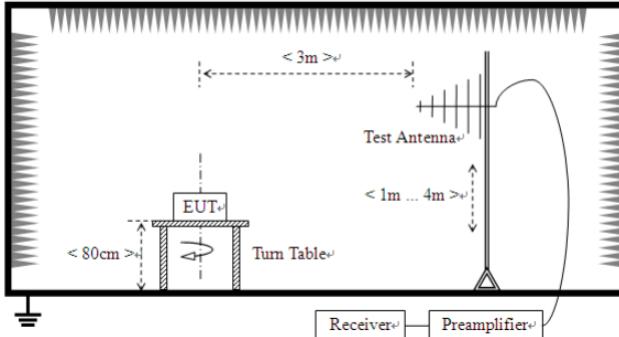
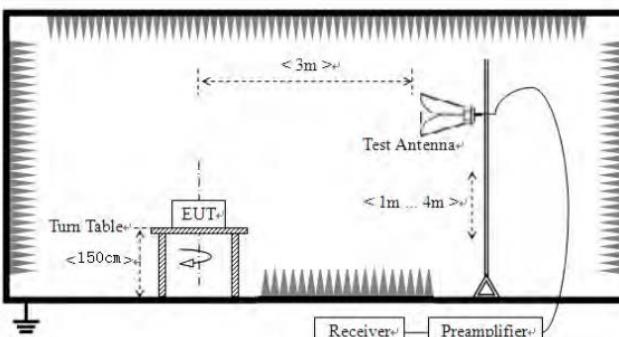
30MHz~25GHz

Highest channel



30MHz~25GHz

## 7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.10: 2013								
Test Frequency Range:	30MHz to 25GHz								
Test site:	Measurement Distance: 3m								
Receiver setup:	Frequency	Detector	RBW	VBW	Value				
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak				
	Above 1GHz	Peak	1MHz	3MHz	Peak				
		RMS	1MHz	3MHz	Average				
Limit:	Frequency	Limit (dBuV/m @3m)		Value					
	30MHz-88MHz	40.00		Quasi-peak					
	88MHz-216MHz	43.50		Quasi-peak					
	216MHz-960MHz	46.00		Quasi-peak					
	960MHz-1GHz	54.00		Quasi-peak					
	Above 1GHz	54.00		Average					
		74.00		Peak					
Test setup:	Below 1GHz								
									
	Above 1GHz								
									
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8 meters for								

	<p>below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <ol style="list-style-type: none"><li>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li><li>3. 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.</li><li>4. 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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li><li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li><li>6. 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.</li><li>7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</li></ol>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

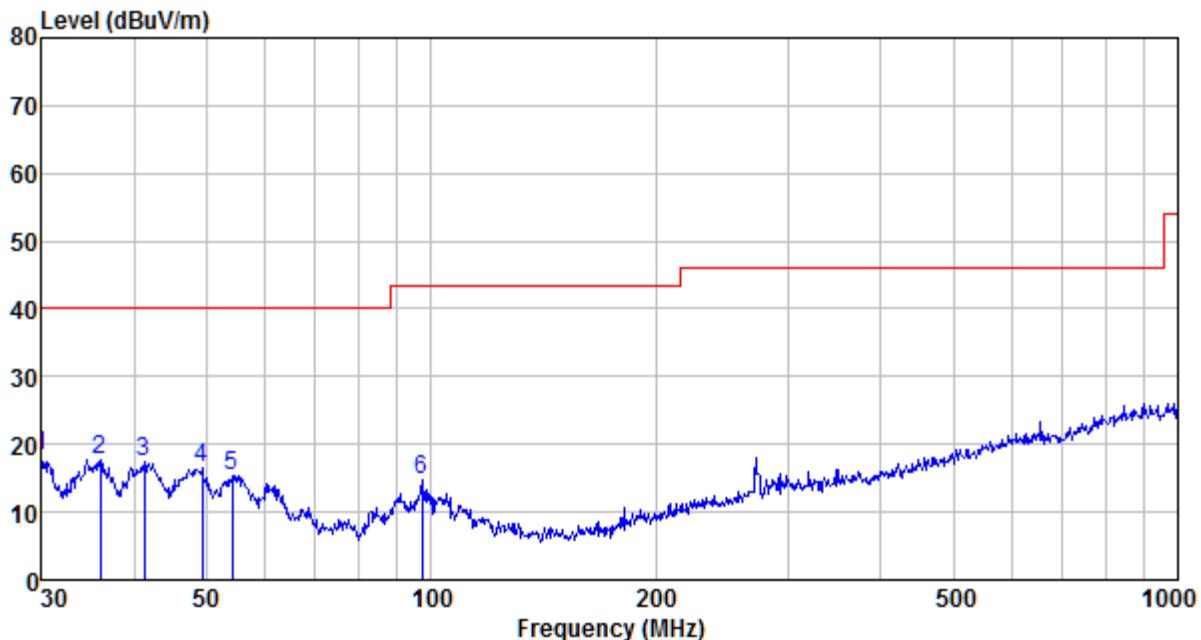
*Remark:*

*Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

## Measurement Data

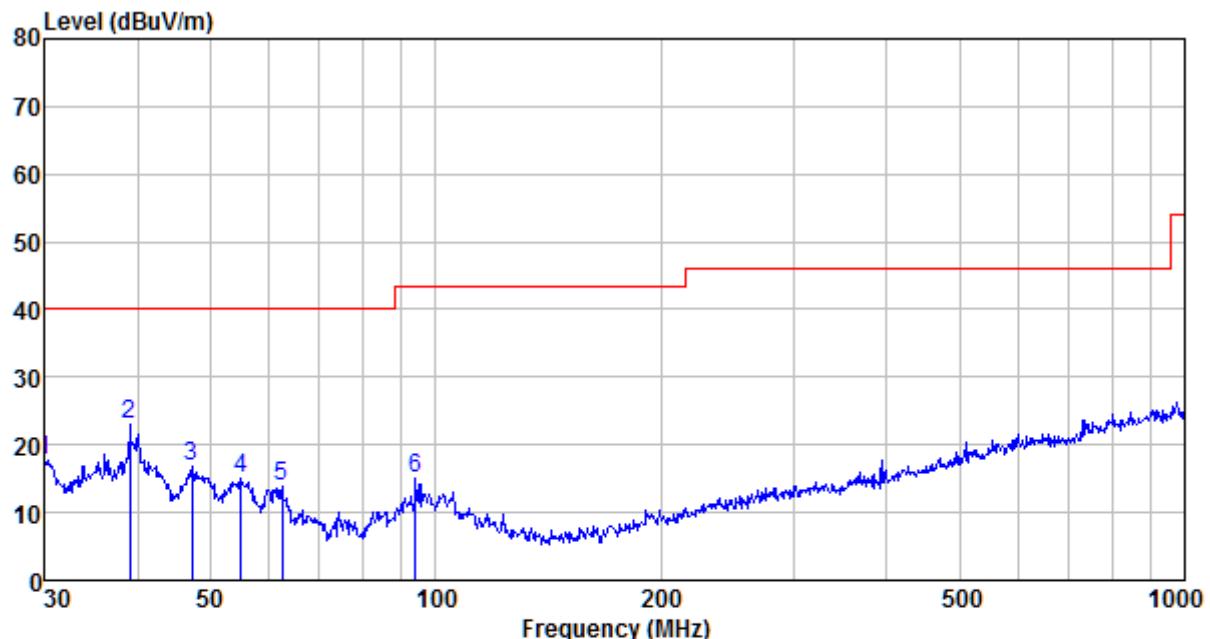
### ■ Below 1GHz

#### Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
30.000	41.58	11.20	0.55	35.00	18.33	40.00	-21.67	QP
36.001	40.94	11.52	0.62	35.42	17.66	40.00	-22.34	QP
41.277	40.41	12.21	0.68	35.74	17.56	40.00	-22.44	QP
49.359	39.55	12.29	0.77	36.15	16.46	40.00	-23.54	QP
54.071	39.00	11.88	0.81	36.24	15.45	40.00	-24.55	QP
97.115	38.46	11.79	1.17	36.70	14.72	43.50	-28.78	QP

**Vertical:**



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
30.000	41.01	11.20	0.55	35.00	17.76	40.00	-22.24	QP
39.024	45.96	12.04	0.65	35.61	23.04	40.00	-16.96	QP
47.326	39.71	12.28	0.74	36.05	16.68	40.00	-23.32	QP
55.027	38.77	11.78	0.82	36.25	15.12	40.00	-24.88	QP
62.431	38.99	10.38	0.88	36.35	13.90	40.00	-26.10	QP
94.098	39.32	11.31	1.14	36.67	15.10	43.50	-28.40	QP

## ■ Above 1GHz

Test channel:	Lowest channel
---------------	----------------

### Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4810.00	31.42	31.78	8.60	37.66	34.14	74.00	-39.86	Vertical
7222.00	33.08	36.19	11.66	35.69	45.24	74.00	-28.76	Vertical
9620.00	29.74	38.01	14.14	34.91	46.98	74.00	-27.02	Vertical
12025.00	28.11	39.08	15.03	36.13	46.09	74.00	-27.91	Vertical
14430.00	26.43	42.46	17.17	36.01	50.05	74.00	-23.95	Vertical
4810.00	33.55	31.78	8.60	37.66	36.27	74.00	-37.73	Horizontal
7222.00	32.46	36.19	11.66	35.69	44.62	74.00	-29.38	Horizontal
9620.00	27.93	38.01	14.14	34.91	45.17	74.00	-28.83	Horizontal
12025.00	27.19	39.08	15.03	36.13	45.17	74.00	-28.83	Horizontal
14430.00	27.87	42.46	17.17	36.01	51.49	74.00	-22.51	Horizontal

### Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4810.00	26.13	31.78	8.60	37.66	28.85	54.00	-25.15	Vertical
7222.00	25.08	36.19	11.66	35.69	37.24	54.00	-16.76	Vertical
9620.00	22.66	38.01	14.14	34.91	39.90	54.00	-14.10	Vertical
12025.00	19.46	39.08	15.03	36.13	37.44	54.00	-16.56	Vertical
14430.00	20.46	42.46	17.17	36.01	44.08	54.00	-9.92	Vertical
4810.00	25.72	31.78	8.60	37.66	28.44	54.00	-25.56	Horizontal
7222.00	24.11	36.19	11.66	35.69	36.27	54.00	-17.73	Horizontal
9620.00	23.32	38.01	14.14	34.91	40.56	54.00	-13.44	Horizontal
12025.00	19.85	39.08	15.03	36.13	37.83	54.00	-16.17	Horizontal
14430.00	20.99	42.46	17.17	36.01	44.61	54.00	-9.39	Horizontal

### Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. \*\*, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle channel
---------------	----------------

**Peak value:**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	28.41	31.85	8.66	37.68	31.24	74.00	-42.76	Vertical
7320.00	28.11	36.37	11.72	35.64	40.56	74.00	-33.44	Vertical
9760.00	27.64	38.35	14.25	34.98	45.26	74.00	-28.74	Vertical
12200.00	26.83	38.92	15.14	36.26	44.63	74.00	-29.37	Vertical
14640.00	25.95	42.21	17.28	35.72	49.72	74.00	-24.28	Vertical
4880.00	29.03	31.85	8.66	37.68	31.86	74.00	-42.14	Horizontal
7320.00	28.04	36.37	11.72	35.64	40.49	74.00	-33.51	Horizontal
9760.00	27.97	38.35	14.25	34.98	45.59	74.00	-28.41	Horizontal
12200.00	26.33	38.92	15.14	36.26	44.13	74.00	-29.87	Horizontal
14640.00	26.01	42.21	17.28	35.72	49.78	74.00	-24.22	Horizontal

**Average value:**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4880.00	23.36	31.85	8.66	37.68	26.19	54.00	-27.81	Vertical
7320.00	23.17	36.37	11.72	35.64	35.62	54.00	-18.38	Vertical
9760.00	20.55	38.35	14.25	34.98	38.17	54.00	-15.83	Vertical
12200.00	21.34	38.92	15.14	36.26	39.14	54.00	-14.86	Vertical
14640.00	20.41	42.21	17.28	35.72	44.18	54.00	-9.82	Vertical
4880.00	23.89	31.85	8.66	37.68	26.72	54.00	-27.28	Horizontal
7320.00	23.41	36.37	11.72	35.64	35.86	54.00	-18.14	Horizontal
9760.00	21.63	38.35	14.25	34.98	39.25	54.00	-14.75	Horizontal
12200.00	22.41	38.92	15.14	36.26	40.21	54.00	-13.79	Horizontal
14640.00	20.32	42.21	17.28	35.72	44.09	54.00	-9.91	Horizontal

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. \*\*, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest channel							
---------------	-----------------	--	--	--	--	--	--	--

**Peak value:**

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	30.12	31.93	8.73	37.78	33.00	74.00	-41.00	Vertical
7440.00	28.36	36.59	11.79	35.56	41.18	74.00	-32.82	Vertical
9920.00	27.41	38.81	14.38	35.14	45.46	74.00	-28.54	Vertical
12400.00	27.66	38.76	15.27	36.44	45.25	74.00	-28.75	Vertical
14880.00	27.37	41.52	17.39	35.47	50.81	74.00	-23.19	Vertical
4960.00	29.02	31.93	8.73	37.78	31.90	74.00	-42.10	Horizontal
7440.00	27.42	36.59	11.79	35.56	40.24	74.00	-33.76	Horizontal
9920.00	27.08	38.81	14.38	35.14	45.13	74.00	-28.87	Horizontal
12400.00	27.14	38.76	15.27	36.44	44.73	74.00	-29.27	Horizontal
14880.00	27.39	41.52	17.39	35.47	50.83	74.00	-23.17	Horizontal

**Average value:**

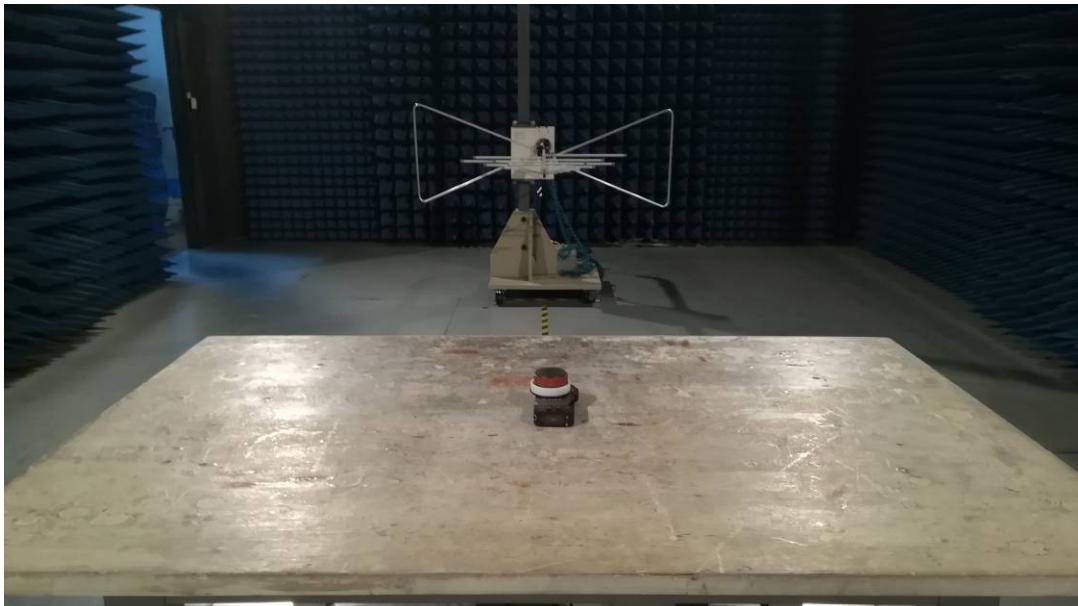
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	25.37	31.93	8.73	37.78	28.25	54.00	-25.75	Vertical
7440.00	22.58	36.59	11.79	35.56	35.40	54.00	-18.60	Vertical
9920.00	22.85	38.81	14.38	35.14	40.90	54.00	-13.10	Vertical
12400.00	22.42	38.76	15.27	36.44	40.01	54.00	-13.99	Vertical
14880.00	21.98	41.52	17.39	35.47	45.42	54.00	-8.58	Vertical
4960.00	25.41	31.93	8.73	37.78	28.29	54.00	-25.71	Horizontal
7440.00	22.54	36.59	11.79	35.56	35.36	54.00	-18.64	Horizontal
9920.00	21.09	38.81	14.38	35.14	39.14	54.00	-14.86	Horizontal
12400.00	21.34	38.76	15.27	36.44	38.93	54.00	-15.07	Horizontal
14880.00	21.69	41.52	17.39	35.47	45.13	54.00	-8.87	Horizontal

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. \*\*, means this data is the too weak instrument of signal is unable to test.

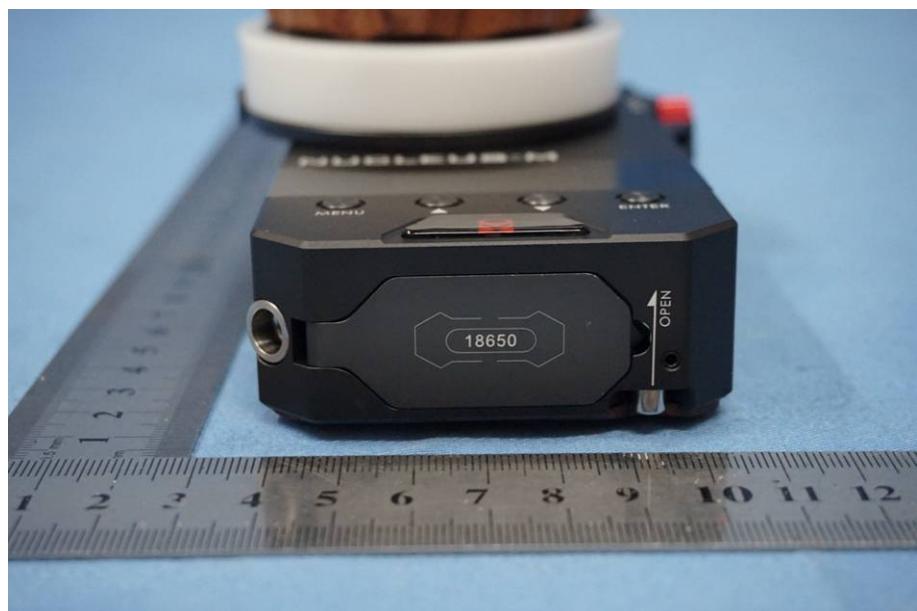
## 8 Test Setup Photo

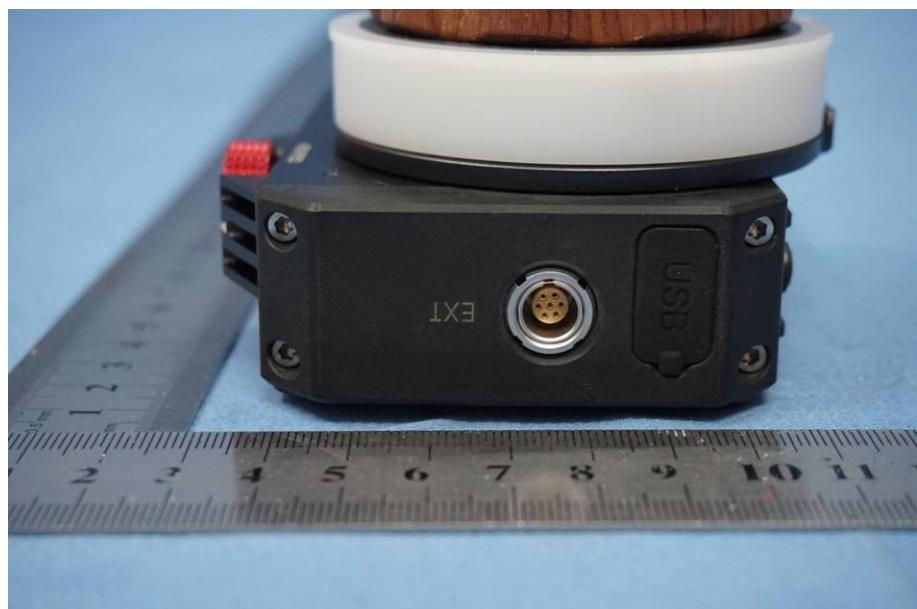
Radiated Emission

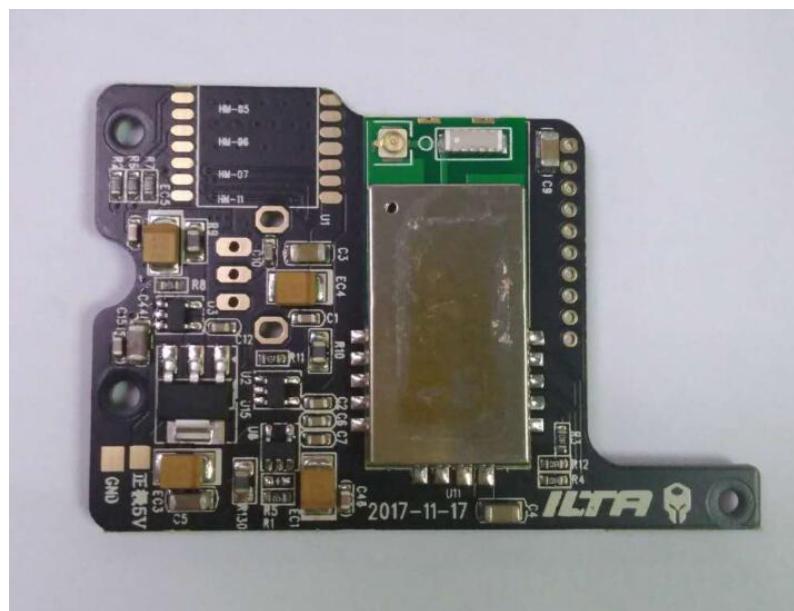


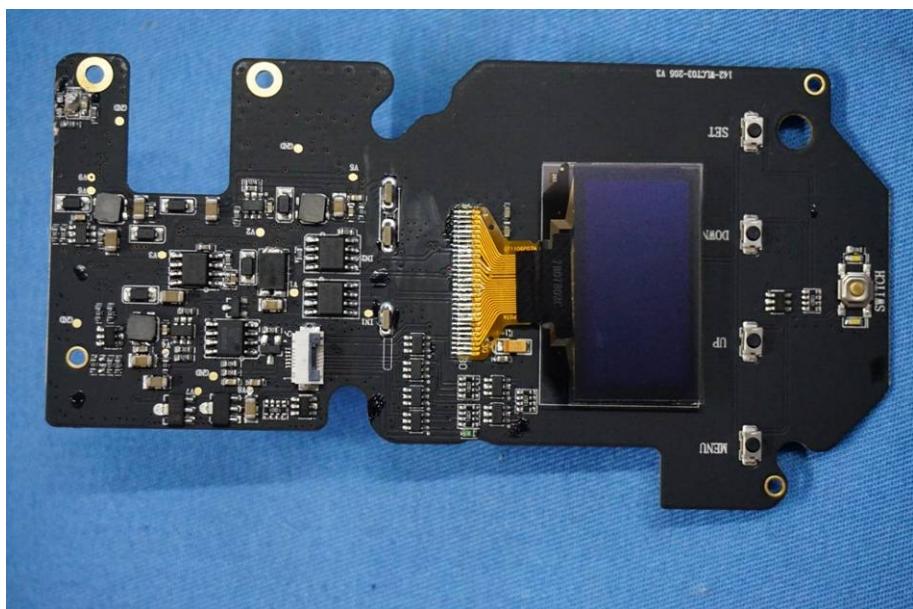
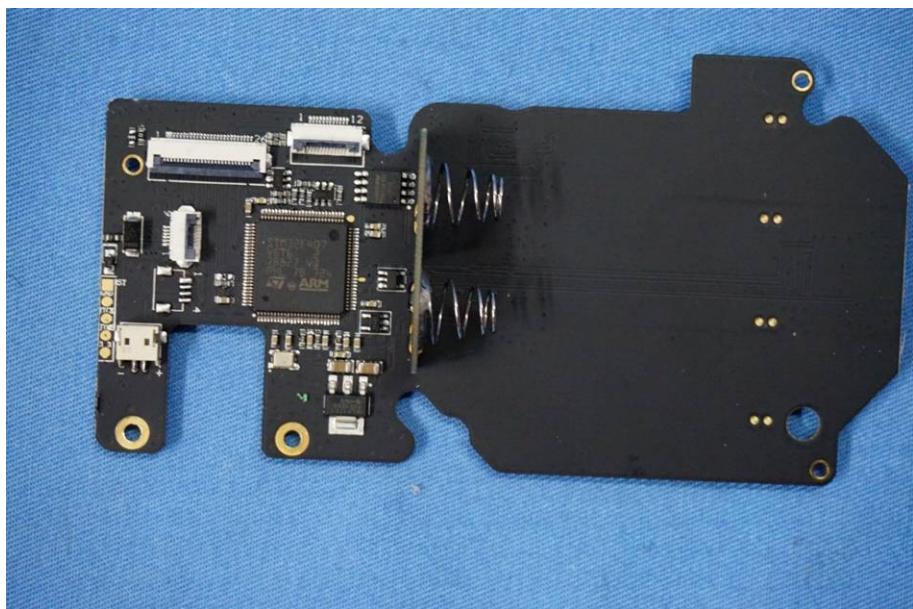
## 9 EUT Constructional Details

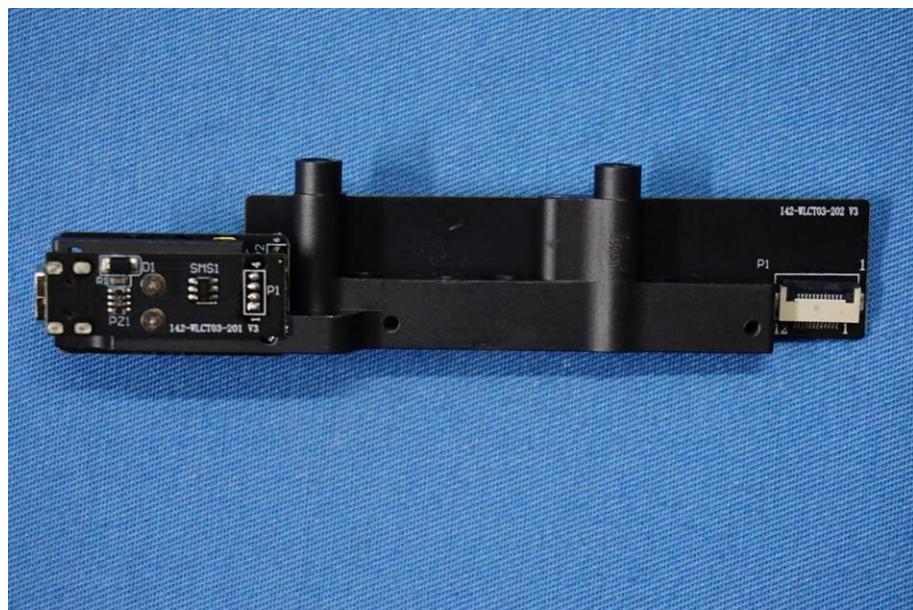
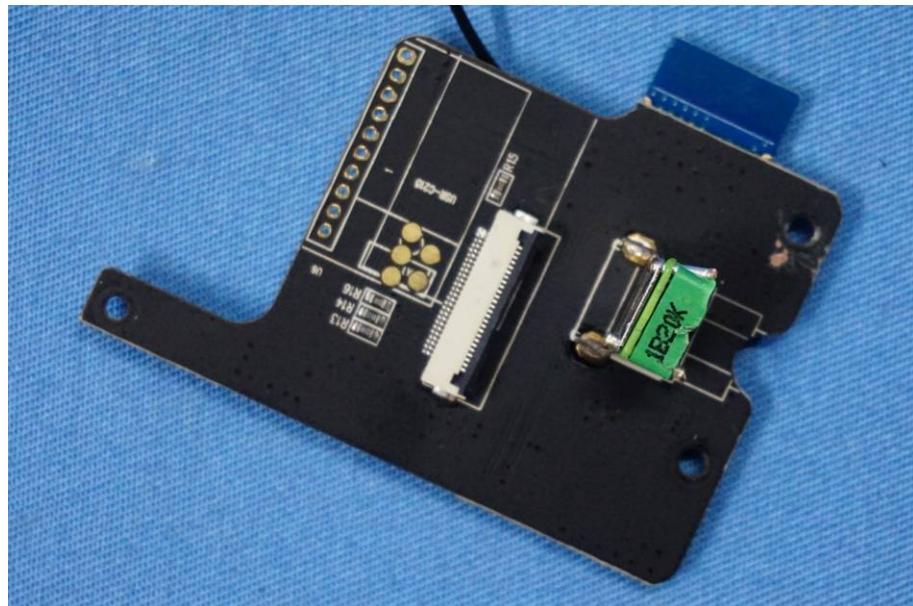




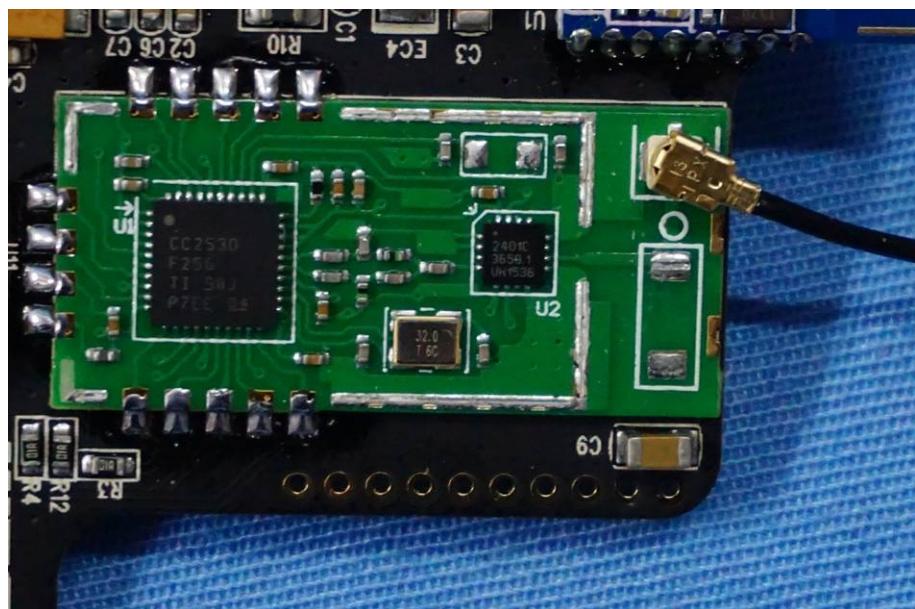












-----End-----