

GTS Global United Technology Services Co., Ltd.

Report No.: GTS201807000089F01

# FCC Report (Bluetooth)

Applicant:	Ningbo Weifeng Intelligent Technology Co., Ltd.
Address of Applicant:	NO.1230 south cihai road,luotuo street,zhenhai,Ningbo,Zhejiang, China
Manufacturer/Factory:	Ningbo Weifeng Intelligent Technology Co., Ltd.
Address of Manufacturer/Factory:	NO.1230 south cihai road,luotuo street,zhenhai,Ningbo,Zhejiang, China
Equipment Under Test (E	EUT)
Product Name:	3-Axis Stabilizer
Model No.:	WI310
FCC ID:	2AQQY-WI310
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	July 16, 2018
Date of Test:	July 17-25, 2018
Date of report issued:	July 25, 2018
Test Result :	PASS *

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

Authorized Signature:



Robinson 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	July 25, 2018	Original

Prepared By:

handlu

Date:

July 25, 2018

Project Engineer

Check By:

N

Date:

July 25, 2018

Reviewer



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## 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	Pass
Conducted 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 C63.10:2013.

#### **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 unce	ertainty is for coverage factor of k	=2 and a level of confidence of 9	95%.



## 5 General Information

## 5.1 General Description of EUT

Product Name:	3-Axis Stabilizer	
Model No.:	WI310	
Serial No.:	WI310201807220001	
Test sample(s) ID:	GTS201807000089-1	
Sample(s) Status	Engineer sample	
Operation Frequency:	2402MHz~2480MHz	
Channel Numbers:	40	
Channel Separation:	2MHz	
Modulation Type:	GFSK	
Antenna Type:	Internal Antenna	
Antenna Gain:	0dBi(declare by applicant)	
Power Supply:	Rechargeable battery: DC7.4V	
	Charging Voltage/current: 5V/1500mA	
	Power Output: 5V/2000mA	



Operation Frequency each of channel								
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz	
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz	
		·		•		· .		
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz	
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz	

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	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz



### 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
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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.

### 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 518102 Tel: 0755-27798480 Fax: 0755-27798960



## 6 Test Instruments list

Rad	Radiated Emission:							
ltem	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	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 27 2018	June. 26 2019		
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019		
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 27 2018	June. 26 2019		
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019		
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019		
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019		
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019		
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019		
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019		
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 27 2018	June. 26 2019		
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019		
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019		
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019		
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019		
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 27 2018	June. 26 2019		
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019		
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019		



Conduct	Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019	
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019	
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 27 2018	June. 26 2019	
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 27 2018	June. 26 2019	
5	Coaxial Cable	GTS	N/A	GTS227	June. 27 2018	June. 26 2019	
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
7	Thermo meter	KTJ	TA328	GTS233	June. 27 2018	June. 26 2019	
8	Absorbing clamp	Elektronik- Feinmechanik	MDS21	GTS229	June. 27 2018	June. 26 2019	

Cond	Conducted:							
ltem	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019		
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019		
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019		
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019		
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019		
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019		
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019		
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019		
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019		

Gene	General used equipment:							
ltem	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 27 2018	June. 26 2019		
2	Barometer	ChangChun	DYM3	GTS255	June. 27 2018	June. 26 2019		



## 7 Test results and Measurement Data

### 7.1 Antenna requirement

	Antenna requirement				
	Standard requirement:	FCC Part15 C Section 15.203 /247(c)			
	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 ar antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electric connector is prohibited.				
	15.247(c) (1)(i) requiremen	ht:			
	operations may employ tran	2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point smitting antennas with directional gain greater than 6dBi provided the power of the intentional radiator is reduced by 1 dB for every 3 dB that the na exceeds 6dBi.			
	E.U.T Antenna:				
The antenna is internal antenna, the best case gain of the antenna is 0dBi					



### 7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207			
Test Method:	ANSI C63.10:2013			
Test Frequency Range:	150KHz to 30MHz			
Class / Severity:	Class B			
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto		
Limit:	Limit (dBuV)			
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	
	5-30	60	50	
	* Decreases with the logarithm	n of the frequency.		
Test setup:	Reference Plane			
	AUX       Filter       AC power         Equipment       E.U.T       Filter       AC power         Test table/Insulation plane       EMI       Receiver         Remark:       E.U.T. Equipment Under Test       LISN: Line Impedence Stabilization Network         Test table height=0.8m       Bm			
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.			
	<ol> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</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

0.99

1.37

1.37

1.80

1.80

12.37

22.58

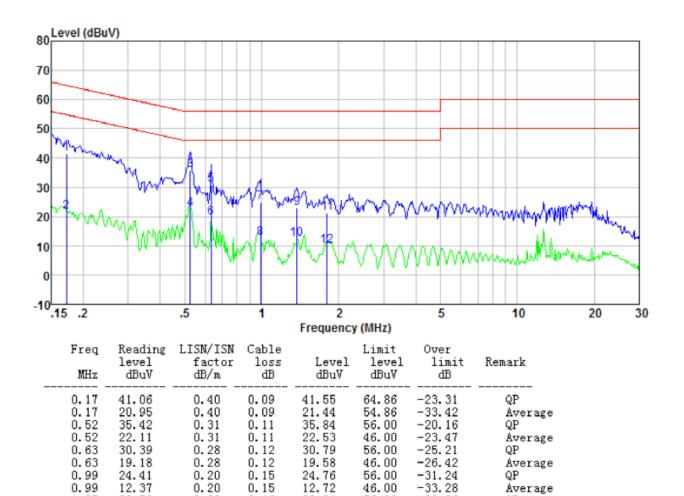
11.73

20.69

9.68

#### Report No.: GTS201807000089F01

Mode:	Transmitting mode	Test by:	Jason	
Temp./Hum.(%H):	26℃/56%RH	Probe:	Line	



12.72

22.94

12.09

21.06

10.05

0.15

0.16

0.16

0.17

0.17

0.20

0.20

0.20

0.20

-33.28

-33.06

-33.91

-34.94

-35.95

Average

Average

Average

QP

QP

46.00

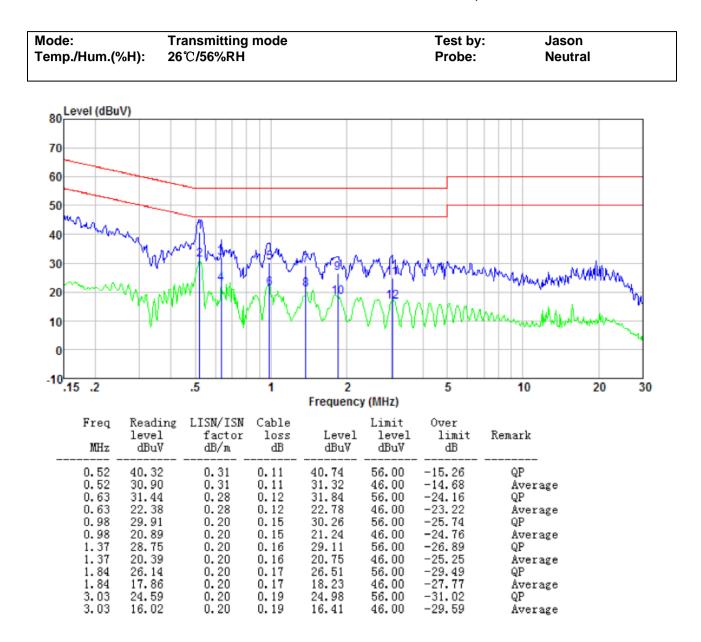
56.00

46.00

56.00

46.00





Notes:

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



### 7.3 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V04	
Limit:	30dBm	
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane	
Test Instruments:	Refer to section 6.0 for details	
Test mode:	Refer to section 5.2 for details	
Test results:	Pass	

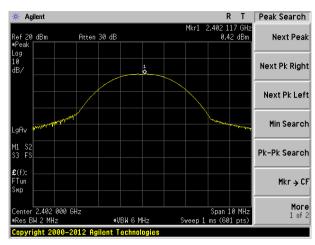
#### **Measurement Data**

Test channel	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	0.42		
Middle	0.80	30.00	Pass
Highest	0.56		

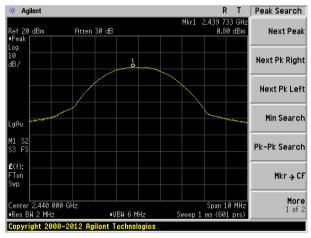


#### Test plot as follows:

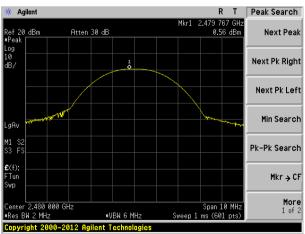
#### Report No.: GTS201807000089F01



Lowest channel



Middle channel



Highest channel



### 7.4 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)		
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V04		
Limit:	>500KHz		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.2 for details		
Test results:	Pass		

#### **Measurement Data**

Test channel	Channel Bandwidth (MHz)	Limit(KHz)	Result
Lowest	0.696		
Middle	0.697	>500	Pass
Highest	0.704		



#### Test plot as follows:

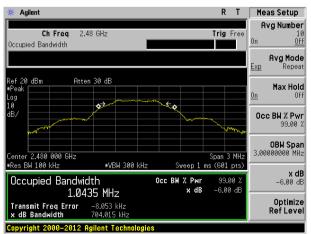
### Report No.: GTS201807000089F01

* Agilent		RT	Meas Setup
Ch Freq 2.402 GHz Occupied Bandwidth		Trig Free	Avg Number 10 On <u>Of</u>
			Avg Mode Exp Repea
Ref 20 dBm Atten 30 dB *Peak			Max Hold On Of
10 dB/	÷ \$		Occ BW % Pwi 99.00 2
Center 2.402 000 GHz		Span 3 MHz	<b>OBW Spar</b> 3.00000000 MH;
•Res BW 100 kHz •VBW 300 kH Occupied Bandwidth 1.0449 MHz	Z Sweep 1 Occ BW % Pwr x dB		<b>x di</b> -6.00 di
1.0449 MMZ Transmit Freq Error –4.232 kHz × dB Bandwidth 695.672 kHz			Optimize RefLeve
Copyright 2000-2012 Agilent Technolog	lies		

Lowest channel

🔆 Agilent	RT	Meas Setup
	Tuin C	Avg Number
Ch Freq 2.44 GHz Occupied Bandwidth	Trig Free	10 On <u>Off</u>
		Avg Mode
		Exp Repeat
Ref 20 dBm Atten 30 dB		
#Peak		Max Hold On Off
Log 10 <b>9</b>	£	
dB/		Occ BW % Pwr
and a second		99.00 %
		OBW Span
Center 2.440 000 GHz	Span 3 MHz	3.00000000 MHz
•Res BW 100 kHz •VBW 300 kHz	Sweep 1 ms (601 pts)	x dB
Occupied Bandwidth	Occ BW % Pwr 99.00 %	-6.00 dB
1.0448 MHz	<b>x dB</b> -6.00 dB	
Transmit Freq Error -6.898 kHz		Optimize RefLevel
x dB Bandwidth 697.069 kHz		
Copyright 2000–2012 Agilent Technologie	S	

Middle channel



Highest channel



### 7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)	
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V04	
Limit:	8dBm/3kHz	
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane	
Test Instruments:	Refer to section 6.0 for details	
Test mode:	Refer to section 5.2 for details	
Test results:	Pass	

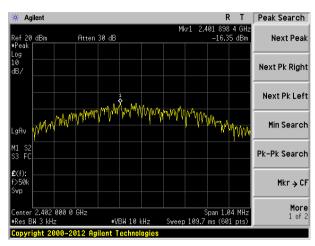
#### **Measurement Data**

Test channel	Power Spectral Density (dBm/3kHz)	Limit(dBm/3kHz)	Result
Lowest	-16.35		
Middle	-13.97	8.00	Pass
Highest	-15.98		

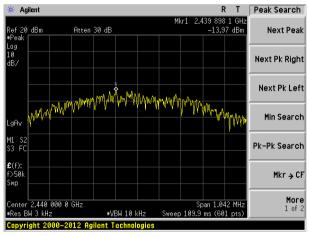


#### Test plot as follows:

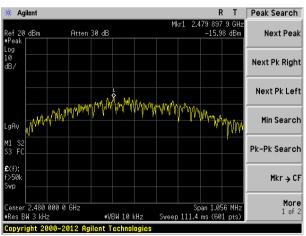
#### Report No.: GTS201807000089F01



Lowest channel



Middle channel



Highest channel

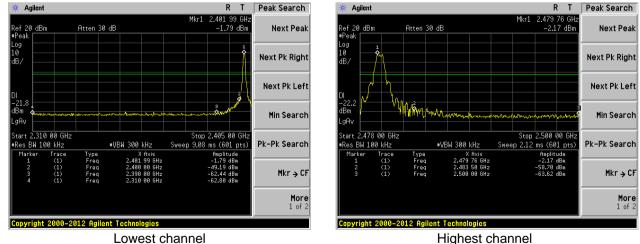


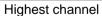
### 7.6 Band edges

### 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 V04				
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:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
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:







### 7.6.2 Radiated Emission Method

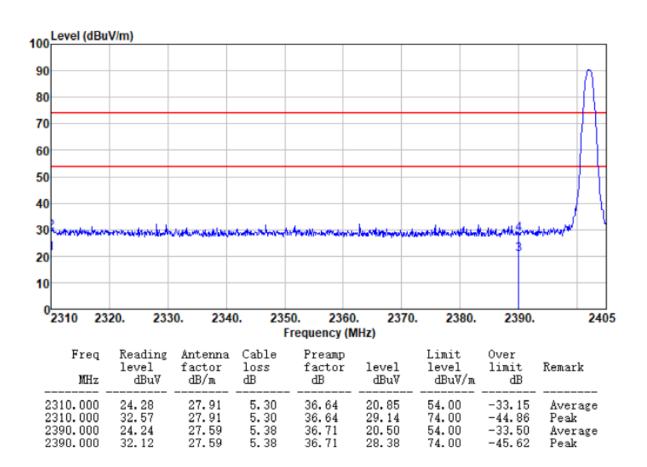
Test Requirement:	FCC Part15 C S	Section 15.209	and 15.205			
Test Method:	ANSI C63.10:2013					
Test Frequency Range:			e tested, only	the worst ba	nd's (2310MHz to	
	2500MHz) data					
Test site:	Measurement D					
Receiver setup:	Frequency	Detector	RBW	VBW	Value	
	Above 1GHz	Peak	1MHz	3MHz	Peak	
		RMS	1MHz	3MHz	Average	
Limit:	Freque	ncy	Limit (dBuV/	'm @3m)	Value	
	Above 1	GH7	54.0	0	Average	
Test setup:	7,00701	OTIZ	74.0	0	Peak	
	Tum Table <150cm>			Antenna- 4m >0		
Test Procedure:	<ul> <li>determine the</li> <li>2. The EUT was antenna, whi tower.</li> <li>3. The antenna ground to de horizontal an measuremer</li> <li>4. For each sus and then the</li> </ul>	t a 3 meter ca e position of the s set 3 meters ch was mount height is varie termine the m d vertical pola it. pected emiss antenna was table was turn n reading.	mber. The tak he highest rac s away from the ted on the top ed from one m aximum value arizations of the ion, the EUT tuned to heigh hed from 0 dec was set to Pea	ble was rotate liation. The interference of a variable neter to four r of the field s e antenna ar was arranged hts from 1 me grees to 360 k Detect Fun	ed 360 degrees to re-receiving -height antenna meters above the strength. Both e set to make the d to its worst case eter to 4 meters degrees to find	
	Specified Ba 6. If the emission limit specified the EUT wou 10dB margin average met 7. The radiation And found th	d, then testing Id be reported would be re-t nod as specifi measuremer e X axis posit	EUT in peak could be stop d. Otherwise the ested one by ed and then runts are perform ioning which in	mode was 10 oped and the ne emissions one using pe eported in a c ned in X, Y, 2 t is worse cas	OdB lower than the peak values of that did not have ak, quasi-peak or data sheet. Z axis positioning. se, only the test	
Test Instruments:	Specified Ba 6. If the emission limit specified the EUT woud 10dB margin average meth 7. The radiation And found th worst case m	In level of the d, then testing ld be reported would be re-t nod as specifi measuremer e X axis posit	EUT in peak could be stop d. Otherwise th ested one by ed and then re- tis are perform ioning which in ed in the repo	mode was 10 oped and the ne emissions one using pe eported in a c ned in X, Y, 2 t is worse cas	peak values of that did not have ak, quasi-peak or data sheet. Z axis positioning.	
Test Instruments: Test mode:	Specified Ba 6. If the emission limit specified the EUT wou 10dB margin average met 7. The radiation And found th	In level of the d, then testing ld be reported would be re-t nod as specifi measuremen e X axis posit node is record 6.0 for details	EUT in peak could be stop d. Otherwise th ested one by ed and then ro this are perform ioning which in ed in the reports	mode was 10 oped and the ne emissions one using pe eported in a c ned in X, Y, 2 t is worse cas	peak values of that did not have ak, quasi-peak or data sheet. Z axis positioning.	



Measurement data:

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

Mode:	Transmitting mode	Test Frequency :	2402MHz	
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Horizontal	

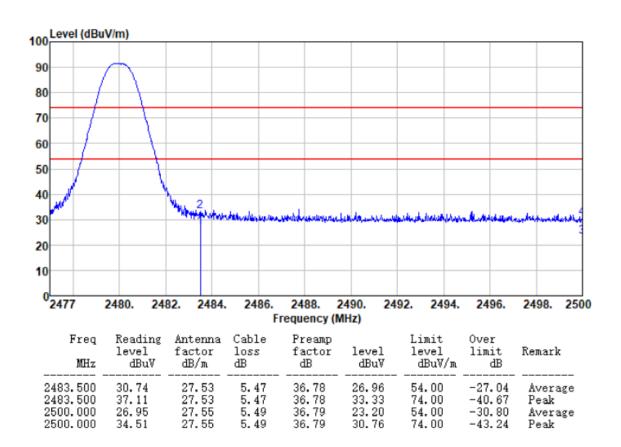




ode:		Tran	smitting r	node		Test Fre	equency :	2	2402MHz
Temp./Hum.(%H):		): <b>26</b> ℃	26℃/56%RH			Polarzia	١	Vertical	
ما	evel (dBu)	V/m)							
100	TCI (UDU	vally							
90									
80									n
70									
60									
50									
40									
30	moher	No while where the	where the second second second	man and an	west-house-stample	www.www.witelatelatelatelatelatelatelatelatelatela	1 Herenaute	an water	www.wat
20								3	
40									
10									
	310 23	20. 233	0. 2340				2380.	2390.	2405
				I	Frequency (I				2405
	3 <b>10 23</b> 2 Freq MHz	20. 233 Reading level dBuV	0. 2340 Antenna factor dB/m				2380. Limit level dBuV/m	2390. Over limit dB	2405 Remark
023	Freq	Reading level	Antenna factor	Cable loss	F <b>requency (I</b> Preamp factor	MH <b>z)</b> level	Limit level	Over limit	

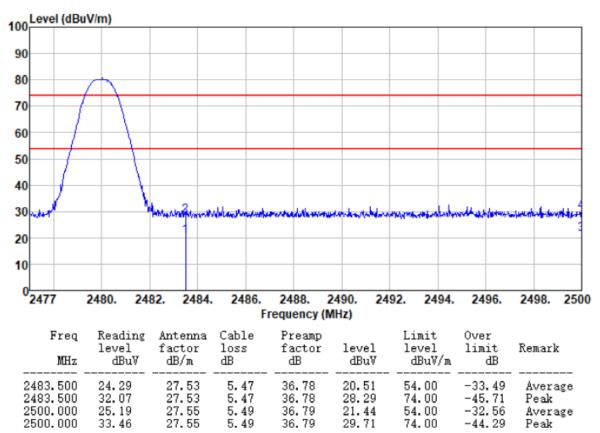


Mode:	Transmitting mode	Test Frequency :	2480MHz
Temp./Hum.(%H):	26°C/56%RH	Polarziation:	Horizontal





Mode:	Transmitting mode	Test Frequency :	2480MHz
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Vertical



#### Remark:

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor



### 7.7 Spurious Emission

### 7.7.1 Conducted Emission Method

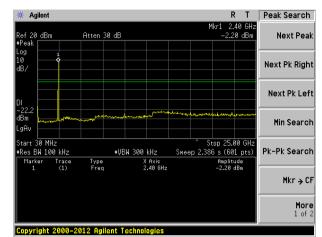
Test Requirement:	FCC Part15 C Section 15.247 (d)				
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V04				
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the 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:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
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

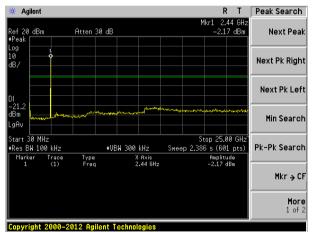
### Report No.: GTS201807000089F01



30MHz~25GHz

### Middle channel

Highest channel



30MHz~25GHz

#### Peak Search 🔆 Agilent RT 2.49 GH Atten 30 dB 38 dBm Next Peak Next Pk Right Next Pk Left Min Search Stop 25.00 GHz Sweep 2.386 s (601 pts) Start 30 MHz^ Res BW 100 kHz Pk-Pk Search ∎VBW 300 kHz X Axis 2.49 GHz Trace (1) Type Freq Marker Amplitude -2.38 dBm Mkr → CF More 1 of 2 Copyright 2000-2012 Agilent Technologies

#### 30MHz~25GHz

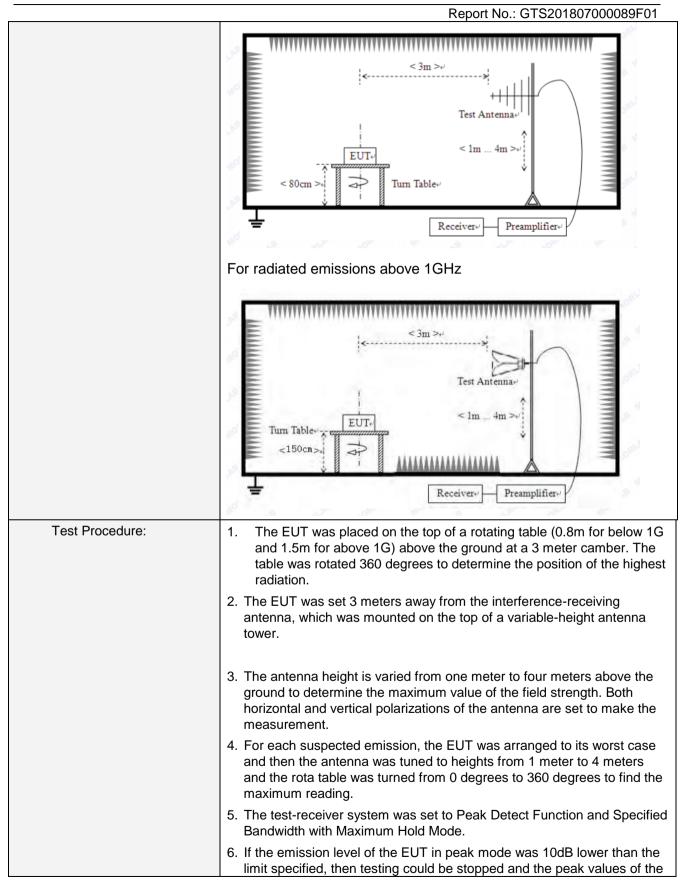
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### 7.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.10:2013	ANSI C63.10:2013							
Test Frequency Range:	9kHz to 25GHz	9kHz to 25GHz							
Test site:	Measurement Distar	nce: 3	3m						
Receiver setup:									
	FrequencyDetectorRBWVBW30MHz-1GHzQuasi-peak120KHz300KHz						Value		
	30MHz-1GHz	· · · ·					Iz Quasi-peak		
	Above 1GHz	Above 10Hz Pea			Hz	3MHz	z Peak		
	Above TOTIZ		Peak	1M	Hz	10Hz	Average		
Limit:	Frequency		Limit (u\	//m)	V	/alue	Measurement Distance		
	0.009MHz-0.490M	IHz	2400/F(k	(Hz)	PK/	AV/QP	300m		
	0.490MHz-1.705M	IHz	24000/F(	KHz)		QP	30m		
	1.705MHz-30MH	lz	30	30		QP	30m		
	30MHz-88MHz		100		QP				
	88MHz-216MHz	<u>Z</u>	150			QP			
	216MHz-960MH	Z	200			QP	3m		
	960MHz-1GHz		500			QP	om		
	Above 1GHz		500	3		-			
			5000		Peak				
Test setup:	For radiated emiss		< 3m	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	¥	Z			
	For radiated emiss	sions	from 30N	IHz to	1GH	Z	_		





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	Report No.: GTS201807000089F01
	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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

#### Measurement data:

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.

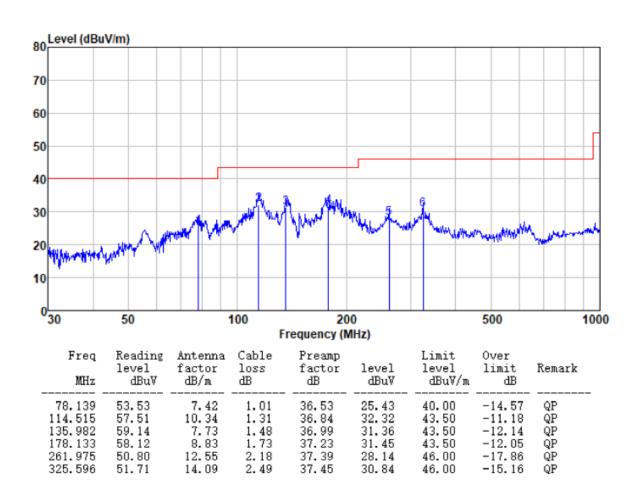
#### ■ 9kHz~30MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.



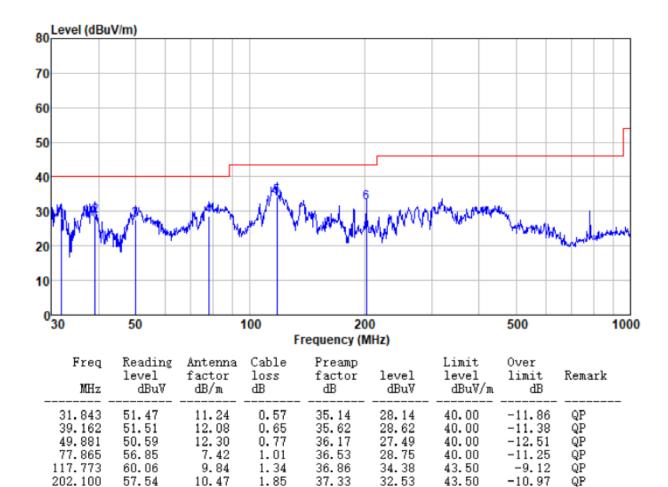
#### Below 1GHz

Mode:	Transmitting mode	Test by:	Jason
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Horizontal





Mode:	Transmitting mode	Test by:	Jason
Temp./Hum.(%H):	26℃/56%RH	Polarziation:	Vertical





#### Above 1GHz

### Report No.: GTS201807000089F01

	GHZ							
Test channel	:			Lowe	est			
Peak value:		l .	I	I	1		I	
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
4804.00	36.88	31.78	8.60	32.09	45.17	74.00	-28.83	Vertical
7206.00	31.55	36.15	11.65	32.00	47.35	74.00	-26.65	Vertical
9608.00	31.22	37.95	14.14	31.62	51.69	74.00	-22.31	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	41.08	31.78	8.60	32.09	49.37	74.00	-24.63	Horizontal
7206.00	33.27	36.15	11.65	32.00	49.07	74.00	-24.93	Horizontal
9608.00	30.60	37.95	14.14	31.62	51.07	74.00	-22.93	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		Horizontal
Average value	ue:			•				
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
4804.00	25.77	31.78	8.60	32.09	34.06	54.00	-19.94	Vertical
7206.00	20.28	36.15	11.65	32.00	36.08	54.00	-17.92	Vertical
9608.00	19.39	37.95	14.14	31.62	39.86	54.00	-14.14	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	29.96	31.78	8.60	32.09	38.25	54.00	-15.75	Horizontal
7206.00	22.43	36.15	11.65	32.00	38.23	54.00	-15.77	Horizontal
9608.00	19.08	37.95	14.14	31.62	39.55	54.00	-14.45	Horizontal
12010.00	*					54.00		Horizontal
14412.00	*					54.00		Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor

2. "\*", means this data is the too weak instrument of signal is unable to test.



Test channel: Middle											
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	36.76	31.85	8.67	32.12	45.16	74.00	-28.84	Vertical			
7320.00	31.47	36.37	11.72	31.89	47.67	74.00	-26.33	Vertical			
9760.00	31.15	38.35	14.25	31.62	52.13	74.00	-21.87	Vertical			
12200.00	*					74.00		Vertical			
14640.00	*					74.00		Vertical			
4880.00	40.94	31.85	8.67	32.12	49.34	74.00	-24.66	Horizontal			
7320.00	33.18	36.37	11.72	31.89	49.38	74.00	-24.62	Horizontal			
9760.00	30.52	38.35	14.25	31.62	51.50	74.00	-22.50	Horizontal			
12200.00	*					74.00		Horizontal			
14640.00	*					74.00		Horizontal			
Average val	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	25.69	31.85	8.67	32.12	34.09	54.00	-19.91	Vertical			
7320.00	20.23	36.37	11.72	31.89	36.43	54.00	-17.57	Vertical			
9760.00	19.34	38.35	14.25	31.62	40.32	54.00	-13.68	Vertical			
12200.00	*					54.00		Vertical			
14640.00	*					54.00		Vertical			
4880.00	29.86	31.85	8.67	32.12	38.26	54.00	-15.74	Horizontal			
7320.00	22.36	36.37	11.72	31.89	38.56	54.00	-15.44	Horizontal			
9760.00	19.02	38.35	14.25	31.62	40.00	54.00	-14.00	Horizontal			
12200.00	*					54.00		Horizontal			
14640.00	*					54.00		Horizontal			

Remark:

Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
 "\*", means this data is the too weak instrument of signal is unable to test.



Test channel	est channel: Highest										
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	36.23	31.93	8.73	32.16	44.73	74.00	-29.27	Vertical			
7440.00	31.12	36.59	11.79	31.78	47.72	74.00	-26.28	Vertical			
9920.00	30.84	38.81	14.38	31.88	52.15	74.00	-21.85	Vertical			
12400.00	*					74.00		Vertical			
14880.00	*					74.00		Vertical			
4960.00	40.30	31.93	8.73	32.16	48.80	74.00	-25.20	Horizontal			
7440.00	32.78	36.59	11.79	31.78	49.38	74.00	-24.62	Horizontal			
9920.00	30.16	38.81	14.38	31.88	51.47	74.00	-22.53	Horizontal			
12400.00	*					74.00		Horizontal			
14880.00	*					74.00		Horizontal			
Average valu	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	25.30	31.93	8.73	32.16	33.80	54.00	-20.20	Vertical			
7440.00	19.96	36.59	11.79	31.78	36.56	54.00	-17.44	Vertical			
9920.00	19.10	38.81	14.38	31.88	40.41	54.00	-13.59	Vertical			
12400.00	*					54.00		Vertical			
14880.00	*					54.00		Vertical			
4960.00	29.42	31.93	8.73	32.16	37.92	54.00	-16.08	Horizontal			
7440.00	22.07	36.59	11.79	31.78	38.67	54.00	-15.33	Horizontal			
9920.00	18.75	38.81	14.38	31.88	40.06	54.00	-13.94	Horizontal			
12400.00	*					54.00		Horizontal			
14880.00	*					54.00		Horizontal			

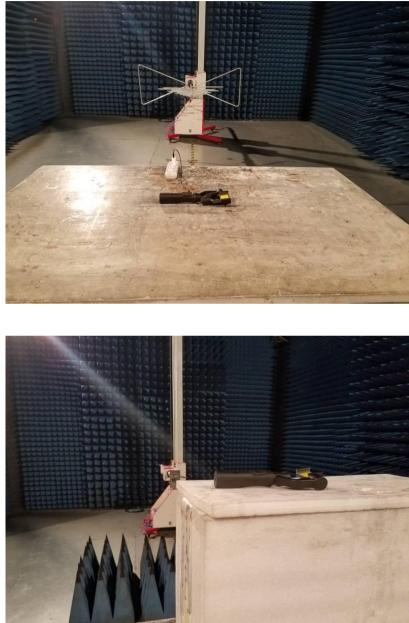
Remark:

Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
 "\*", means this data is the too weak instrument of signal is unable to test.



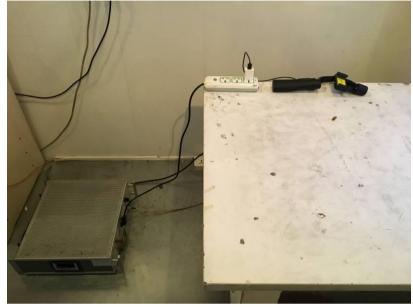
## 8 Test Setup Photo

Radiated Emission





Conducted Emission



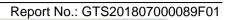


## 9 EUT Constructional Details





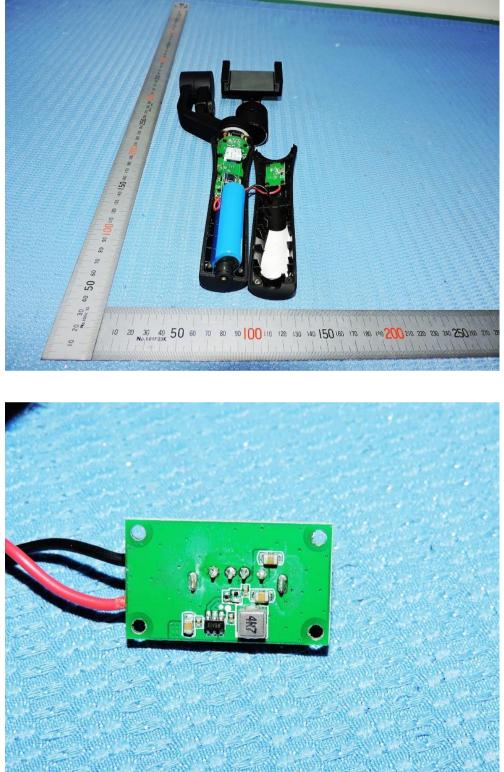
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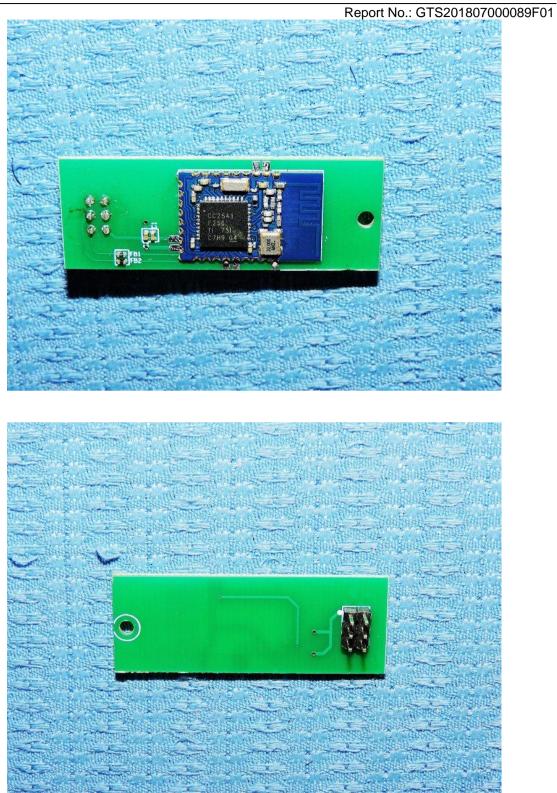




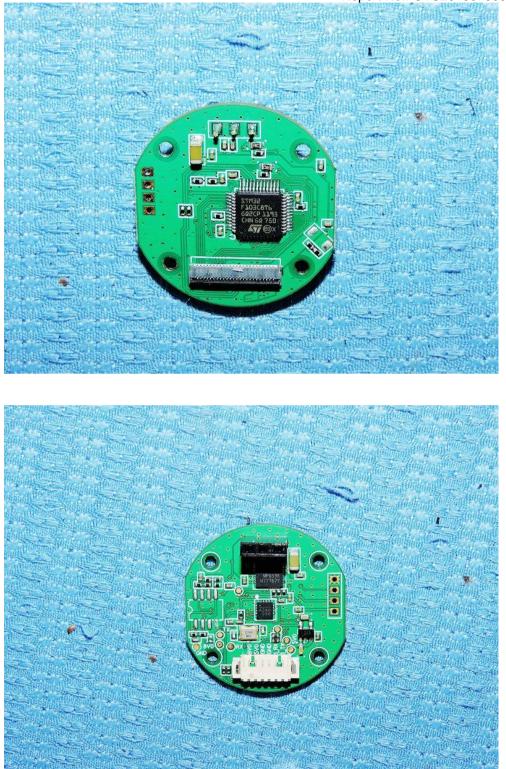




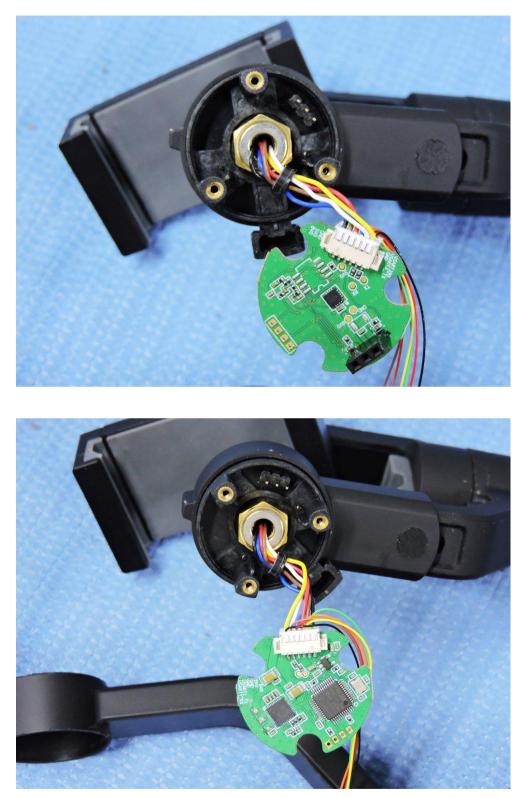




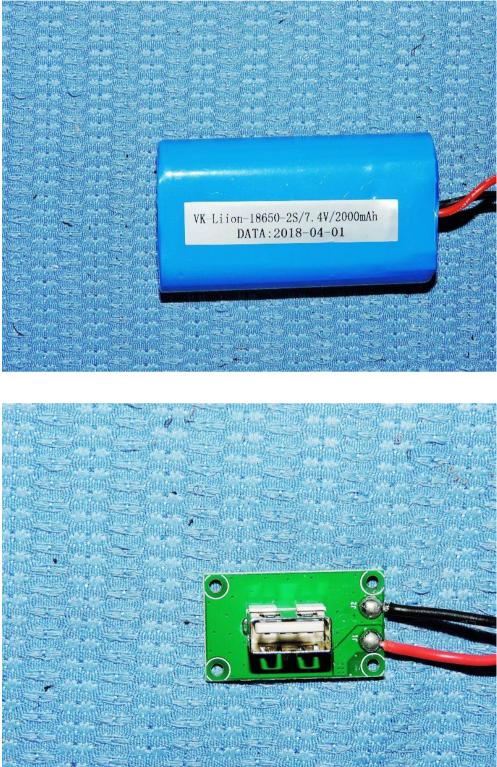












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