

# Global United Technology Services Co., Ltd.

Report No.: GTS201606000092E01

# **FCC REPORT**

Applicant: Striiv Inc.

Address of Applicant: 570 El Camino Real #200 Suite 220, Redwood City, California

94063, United States

**Equipment Under Test (EUT)** 

Product Name: Swappable Wristband

Model No.: TOCHGM0005

FCC ID: ZXO-TOCHGM0005

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249:2015

Date of sample receipt: June 06, 2016

**Date of Test:** June 07-13, 2016

Date of report issued: June 15, 2016

Test Result: PASS \*

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

Authorized Signature:



#### Robinson Lo Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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## 2 Version

Version No.	Date	Description
00	June 15, 2016	Original

Prepared By:	Edward. Pan	Date:	June 15, 2016
Check By:	Project Engineer		June 15, 2016
<b>,</b> .	Reviewer		



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	GENERAL INFORMATION



## **Test Summary**

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

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

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

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



## **5** General Information

## 5.1 Client Information

Applicant:	Striiv Inc.
Address of Applicant:	570 El Camino Real #200 Suite 220, Redwood City, California 94063, United States
Manufacturer:	Striiv Inc.
Address of Manufacturer:	570 El Camino Real #200 Suite 220, Redwood City, California 94063, United States

## 5.2 General Description of EUT

Product Name:	Swappable Wristband	
Model No.:	TOCHGM0005	
Operation Frequency:	2402MHz~2480MHz	
Channel numbers:	40	
Channel separation:	2MHz	
Modulation type:	GFSK	
Antenna Type:	Integral Antenna	
Antenna gain:	3dBi(declare by Applicant)	
Power supply:	DC 5.0V	
	Or	
	DC 3.7V 85mAh Li-ion Battery	



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



#### 5.3 Test mode

Transmitting mode Keep the EUT in continuously transmitting mode

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.

#### Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	Х	Y	Z
Field Strength(dBuV/m)	87.97	88.15	87.51

## 5.4 Description of Support Units

Manufacturer	Description Model		Serial Number	FCC Approval
Emerson Network Power	USB Charger	A1299	N/A	FCC VoC

## 5.5 Test Facility

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

#### • FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

### • 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, June 26, 2013.

#### 5.6 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 Industrrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480 Fax: 0755-27798960

### 5.7 Description of Support Units

None.

## 5.8 Other Information Requested by the Customer

None.

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

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## 6 Test Instruments list

Rad	iated 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	Mar. 27 2016	Mar. 26 2017
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	Jun 30 2015	Jun 29 2016
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jun 30 2015	Jun 29 2016
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jun 30 2015	Jun 29 2016
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 26 2015	June 25 2016
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 26 2016	Mar. 25 2017
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2016	Mar. 26 2017
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 27 2016	Mar. 26 2017
11	Coaxial cable	GTS	N/A	GTS210	Mar. 27 2016	Mar. 26 2017
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 27 2016	Mar. 26 2017
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jun. 30, 2015	Jun 29 2016
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jun. 30, 2015	Jun 29 2016
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 26 2015	June 25 2016
16	Band filter	Amindeon	82346	GTS219	Mar. 27 2016	Mar. 26 2017

Cond	Conducted Emission:												
14	Tool Familian and	Manufacturer	MadalNa	Inventory	Cal.Date	Cal.Due date							
Item	tem Test Equipment	Manufacturer	Model No.	No.	(mm-dd-yy)	(mm-dd-yy)							
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Jun. 30 2015	Jun. 29 2016							
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jun. 30 2015	Jun. 29 2016							
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jun. 30 2015	Jun. 29 2016							
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jun. 30 2015	Jun. 29 2016							
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jun. 30 2015	Jun. 29 2016							
6	Coaxial Cable	GTS	N/A	GTS227	Jun. 30 2015	Jun. 29 2016							
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A							

Gen	General used equipment:											
Item	em Test Equipment Manufacturer		Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)						
1	Barometer	ChangChun	DYM3	GTS257	July 07 2015	July 06 2016						



## 7 Test results and Measurement Data

## 7.1 Antenna requirement

Standard requirement: FCC Part15 C Section 15.203

#### 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.

#### **EUT Antenna:**

The antenna is integrity antenna, the best case gain of the antenna is 3.0dBi





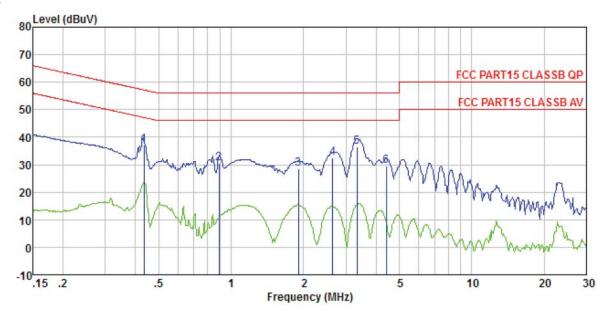
## 7.2 Conducted Emissions

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:	Fraguency range (MHz)	Limit (c	dBuV)					
	Frequency range (MHz)	Quasi-peak	Average					
	0.15-0.5	66 to 56*	56 to 46*					
	0.5-5	56	46 50					
	5-30 60							
T	* Decreases with the logarithm of the frequency.							
Test setup:	Reference Plane		•					
Tast procedure:	AUX Equipment  Test table/Insulation plane  Remark E.U.T  EMI Receiver  Receiver  Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m							
Test procedure:	The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling impe	n network (L.I.S.N.). Th	nis provides a					
	2. The peripheral devices are LISN that provides a 50ohn termination. (Please refer to photographs).	n/50uH coupling imped the block diagram of	dance with 50ohm the test setup and					
	3. 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 change according to ANSI C63.10:2013 on conducted measurement.							
Test Instruments:	Refer to section 6.0 for details							
Test mode:	Refer to section 5.3 for details							
Test results:	Pass							

## Measurement data:



#### Line:



Site : Shielded room

Condition : FCC PART15 CLASSB QP LISN-2013 LINE

Job No. : 0092

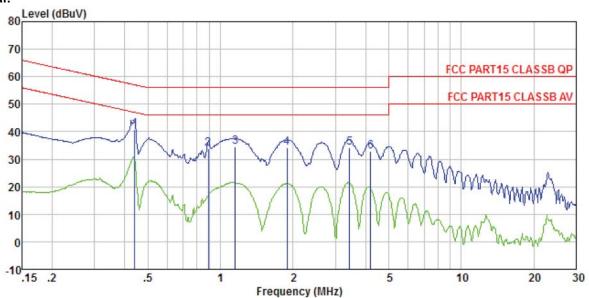
Test mode : Bluetooth mode

Test Engineer: Sky

051	Free	Read		LISN Factor			Over	Remark
	ried	rever	rever	ractor	LUSS	Line	LIMI	Kelliai k
	MHz	dBuV	dBuV	dB	d₿	dBuV	d₿	
1	0.435			0.12				
2 3	0.890	30.15	30.42	0.14	0.13	56.00	-25.58	QP
	1.908	28.33	28.59	0.12	0.14	56.00	-27.41	QP
4	2.650	32.34	32.63	0.14	0.15	56.00	-23.37	QP
4 5	3.328	36.24	36.57	0.18	0.15	56.00	-19.43	QP
6	4.407	29.10	29.45	0.20	0.15	56.00	-26.55	QP



#### Neutral:



Site : Shielded room

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL

Job No. : 0092

Test mode : Bluetooth mode

Test Engineer: Sky

	Freq	Řead Level		LISN Factor			Over Limit	Remark
	MHz	dBuV	dBuV	dB	d₿	dBuV	<del>d</del> B	
1 2 3 4 5 6	1.153 1.888 3.436	40. 61 33. 49 34. 45 33. 90 33. 83 32. 71	34. 66 34. 13 34. 11	0.07 0.08 0.09	0.15	56.00 56.00 56.00 56.00	-22.31 -21.34 -21.87	QP QP QP QP

#### 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 Radiated Emission Method

 rtadiated Elillooion me	tiloa			7.5 Radiated Ellission Method									
Test Requirement:	FCC Part15 C S	Section 15.20	9										
Test Method:	ANSI C63.10:20	013											
Test Frequency Range:	30MHz to 25GH	Ηz											
Test site:	Measurement D	Distance: 3m											
Receiver setup:	Frequency	Detector		RBW	VBW	Remark							
	30MHz- 1GHz	Quasi-pea	k	120KHz	300KHz	Quasi-peak Value							
	Above 1GHz	Peak		1MHz	3MHz	Peak Value							
	Above IGHZ	Peak		1MHz	10Hz	Average Value							
Limit:	Freque	ency	L	imit (dBuV/	/m @3m)	Remark							
(Field strength of the fundamental signal)	2400MHz-24	183.5MHz		94.0	0	Average Value							
Limit:	Freque		L	imit (dBuV/		Remark							
(Spurious Emissions)	30MHz-8			40.0		Quasi-peak Value							
	88MHz-2			43.5		Quasi-peak Value							
	216MHz-960MHz 960MHz-1GHz			46.0 54.0		Quasi-peak Value Quasi-peak Value							
	Above 1GHz			54.00		Average Value							
				74.0		Peak Value							
Limit: (band edge)	harmonics, sha	II be attenuat to the genera	ed l al ra	by at least adiated emi	50 dB belov	bands, except for w the level of the in Section 15.209,							
Test setup:	Below 1GHz												
	Antenna Tower  Search Antenna  RF Test Receiver  Tum Table  Ground Plane												
	Above 1GHz												



Report No.: GTS201606000092E01 Antenna Tower Horn Antenna Spectrum Analyzer Turn 1m Amplifier Test Procedure: 1. The EUT was placed on the top of a rotating table (0.8m for 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. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna 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. 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. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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. Test Instruments: Refer to section 6.0 for details Test mode: Refer to section 5.3 for details Test results: Pass

#### Measurement data:



## 7.3.1 Field Strength of The Fundamental Signal

### 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
2402.00	88.79	27.58	5.39	34.01	87.75	114.00	-26.25	Vertical
2402.00	84.21	27.58	5.39	34.01	83.17	114.00	-30.83	Horizontal
2440.00	89.20	27.48	5.43	33.96	88.15	114.00	-25.85	Vertical
2440.00	83.38	27.48	5.43	33.96	82.33	114.00	-31.67	Horizontal
2480.00	88.58	27.52	5.47	33.92	87.65	114.00	-26.35	Vertical
2480.00	82.89	27.52	5.47	33.92	81.96	114.00	-32.04	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
2402.00	79.36	27.58	5.39	34.01	78.32	94.00	-15.68	Vertical
2402.00	74.46	27.58	5.39	34.01	73.42	94.00	-20.58	Horizontal
2440.00	79.13	27.48	5.43	33.96	78.08	94.00	-15.92	Vertical
2440.00	72.75	27.48	5.43	33.96	71.70	94.00	-22.30	Horizontal
2480.00	78.10	27.52	5.47	33.92	77.17	94.00	-16.83	Vertical
2480.00	72.85	27.52	5.47	33.92	71.92	94.00	-22.08	Horizontal

Note: RBW 3MHz VBW 10MHz Peak detector is for PK Value, RMS detector is for AV Value



## 7.3.2 Spurious emissions

## ■ Below 1GHz

- Delow Total											
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			
47.83	27.35	15.38	0.75	30.01	13.47	40.00	-26.53	Vertical			
95.43	26.80	14.87	1.16	29.72	13.11	43.50	-30.39	Vertical			
190.41	26.24	12.56	1.79	29.23	11.36	43.50	-32.14	Vertical			
332.52	25.76	15.86	2.53	29.82	14.33	46.00	-31.67	Vertical			
468.88	26.41	17.83	3.18	29.36	18.06	46.00	-27.94	Vertical			
729.36	26.34	21.19	4.19	29.20	22.52	46.00	-23.48	Vertical			
42.30	26.99	15.57	0.69	30.03	13.22	40.00	-26.78	Horizontal			
102.72	26.81	14.92	1.22	29.68	13.27	43.50	-30.23	Horizontal			
234.17	25.50	13.83	2.04	29.52	11.85	46.00	-34.15	Horizontal			
425.03	25.62	17.49	2.97	29.45	16.63	46.00	-29.37	Horizontal			
645.12	25.48	20.61	3.89	29.25	20.73	46.00	-25.27	Horizontal			
866.09	25.68	22.78	4.73	29.13	24.06	46.00	-21.94	Horizontal			



#### Above 1GHz

#### Peak value:

reak 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
4804.00	37.39	31.78	8.60	32.09	45.68	74.00	-28.32	Vertical
7206.00	31.89	36.15	11.65	32.00	47.69	74.00	-26.31	Vertical
9608.00	31.52	37.95	14.14	31.62	51.99	74.00	-22.01	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	41.69	31.78	8.60	32.09	49.98	74.00	-24.02	Horizontal
7206.00	33.65	36.15	11.65	32.00	49.45	74.00	-24.55	Horizontal
9608.00	30.95	37.95	14.14	31.62	51.42	74.00	-22.58	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		Horizontal

#### Average value:

Average var	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			
4804.00	26.19	31.78	8.60	32.09	34.48	54.00	-19.52	Vertical			
7206.00	20.56	36.15	11.65	32.00	36.36	54.00	-17.64	Vertical			
9608.00	19.63	37.95	14.14	31.62	40.10	54.00	-13.90	Vertical			
12010.00	*					54.00		Vertical			
14412.00	*					54.00		Vertical			
4804.00	30.42	31.78	8.60	32.09	38.71	54.00	-15.29	Horizontal			
7206.00	22.74	36.15	11.65	32.00	38.54	54.00	-15.46	Horizontal			
9608.00	19.37	37.95	14.14	31.62	39.84	54.00	-14.16	Horizontal			
12010.00	*					54.00		Horizontal			
14412.00	*					54.00		Horizontal			

## Remark:

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

<sup>2. &</sup>quot;\*", means this data is the too weak instrument of signal is unable to test.



Test channel	annel: 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	36.82	31.85	8.67	32.12	45.22	74.00	-28.78	Vertical
7320.00	31.51	36.37	11.72	31.89	47.71	74.00	-26.29	Vertical
9760.00	31.18	38.35	14.25	31.62	52.16	74.00	-21.84	Vertical
12200.00	*					74.00		Vertical
14640.00	*					74.00		Vertical
4880.00	41.01	31.85	8.67	32.12	49.41	74.00	-24.59	Horizontal
7320.00	33.22	36.37	11.72	31.89	49.42	74.00	-24.58	Horizontal
9760.00	30.56	38.35	14.25	31.62	51.54	74.00	-22.46	Horizontal
12200.00	*					74.00		Horizontal
14640.00	*					74.00		Horizontal
Average val	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
4880.00	25.74	31.85	8.67	32.12	34.14	54.00	-19.86	Vertical
7320.00	20.26	36.37	11.72	31.89	36.46	54.00	-17.54	Vertical
9760.00	19.36	38.35	14.25	31.62	40.34	54.00	-13.66	Vertical
12200.00	*					54.00		Vertical
14640.00	*					54.00		Vertical
4880.00	29.91	31.85	8.67	32.12	38.31	54.00	-15.69	Horizontal
7320.00	22.40	36.37	11.72	31.89	38.60	54.00	-15.40	Horizontal
9760.00	19.06	38.35	14.25	31.62	40.04	54.00	-13.96	Horizontal

#### Remark:

12200.00

14640.00

\*

- 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.

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54.00

54.00

Horizontal

Horizontal



Test channel	Test 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	35.94	31.93	8.73	32.16	44.44	74.00	-29.56	Vertical
7440.00	30.93	36.59	11.79	31.78	47.53	74.00	-26.47	Vertical
9920.00	30.66	38.81	14.38	31.88	51.97	74.00	-22.03	Vertical
12400.00	*					74.00		Vertical
14880.00	*					74.00		Vertical
4960.00	39.95	31.93	8.73	32.16	48.45	74.00	-25.55	Horizontal
7440.00	32.56	36.59	11.79	31.78	49.16	74.00	-24.84	Horizontal
9920.00	29.96	38.81	14.38	31.88	51.27	74.00	-22.73	Horizontal
12400.00	*					74.00		Horizontal
14880.00	*					74.00		Horizontal
Average value:								
Frequency	Read	Antenna	Cable	Preamp	Level	Limit Line	Over	

Average var	uc.							
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	25.06	31.93	8.73	32.16	33.56	54.00	-20.44	Vertical
7440.00	19.80	36.59	11.79	31.78	36.40	54.00	-17.60	Vertical
9920.00	18.96	38.81	14.38	31.88	40.27	54.00	-13.73	Vertical
12400.00	*					54.00		Vertical
14880.00	*					54.00		Vertical
4960.00	29.14	31.93	8.73	32.16	37.64	54.00	-16.36	Horizontal
7440.00	21.88	36.59	11.79	31.78	38.48	54.00	-15.52	Horizontal
9920.00	18.58	38.81	14.38	31.88	39.89	54.00	-14.11	Horizontal
12400.00	*					54.00		Horizontal
14880.00	*					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.
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.



## 7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

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
2390.00	42.60	27.59	5.38	30.18	45.39	74.00	-28.61	Horizontal
2400.00	59.35	27.58	5.39	30.18	62.14	74.00	-11.86	Horizontal
2390.00	43.13	27.59	5.38	30.18	45.92	74.00	-28.08	Vertical
2400.00	61.36	27.58	5.39	30.18	64.15	74.00	-9.85	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
2390.00	33.22	27.59	5.38	30.18	36.01	54.00	-17.99	Horizontal
2400.00	44.44	27.58	5.39	30.18	47.23	54.00	-6.77	Horizontal
2390.00	33.14	27.59	5.38	30.18	35.93	54.00	-18.07	Vertical
2400.00	46.06	27.58	5.39	30.18	48.85	54.00	-5.15	Vertical

Т	est channel:	Highest channel
•	out originion.	riigiloot orialiiloi

#### 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	44.68	27.53	5.47	29.93	47.75	74.00	-26.25	Horizontal
2500.00	43.90	27.55	5.49	29.93	47.01	74.00	-26.99	Horizontal
2483.50	45.47	27.53	5.47	29.93	48.54	74.00	-25.46	Vertical
2500.00	44.87	27.55	5.49	29.93	47.98	74.00	-26.02	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	36.04	27.53	5.47	29.93	39.11	54.00	-14.89	Horizontal
2500.00	34.08	27.55	5.49	29.93	37.19	54.00	-16.81	Horizontal
2483.50	37.23	27.53	5.47	29.93	40.30	54.00	-13.70	Vertical
2500.00	33.98	27.55	5.49	29.93	37.09	54.00	-16.91	Vertical

#### Remark:

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



## 7.4 20dB Occupy Bandwidth

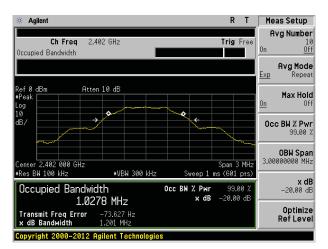
Test Requirement:	FCC Part15 C Section 15.249/15.215			
Test Method:	ANSI C63.10:2013			
Limit:	Operation Frequency range 2400MHz~2483.5MHz			
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane			
Test Instruments:	Refer to section 6.0 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Pass			

#### **Measurement Data**

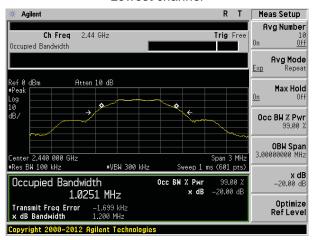
Test channel	20dB bandwidth(MHz)	Result
Lowest	1.201	Pass
Middle	1.200	Pass
Highest	1.194	Pass

Test plot as follows:

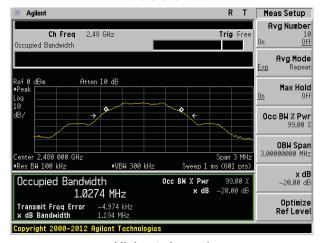




#### Lowest channel



#### Middle channel



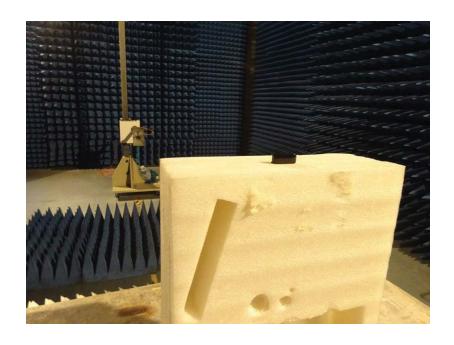
Highest channel



# 8 Test Setup Photo

Radiated Emission







### Conducted Emission





# 9 EUT Constructional Details





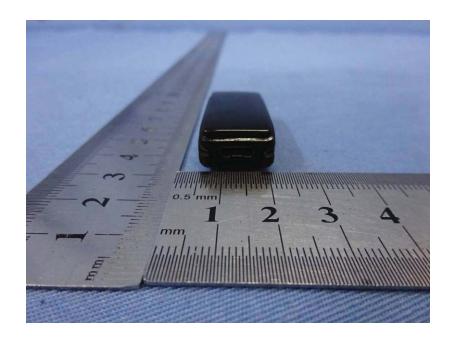




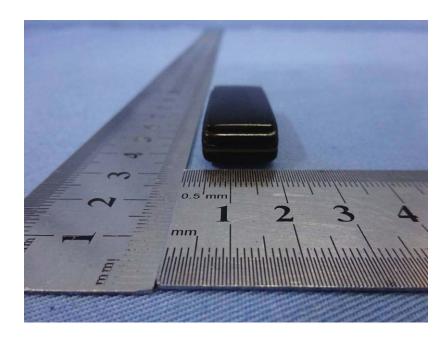






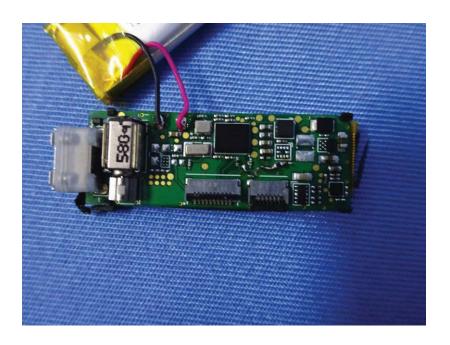






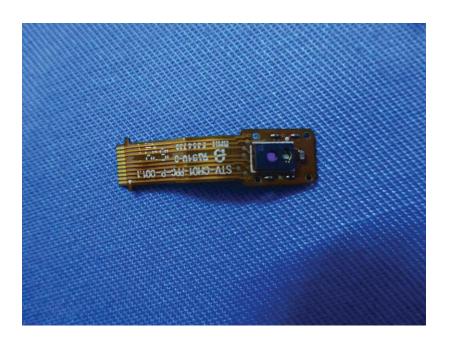


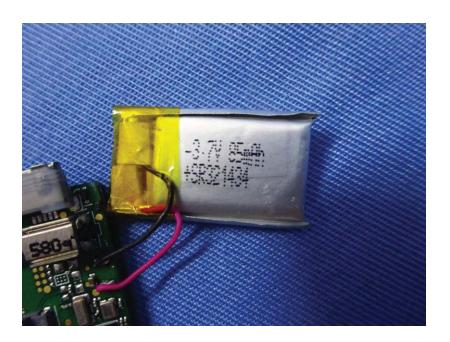












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