

# Global United Technology Services Co., Ltd.

Report No.: GTSE14090160302

## **FCC REPORT**

Applicant: iDevices. LLC

**Address of Applicant:** 136 Simsbury Rd, Building 12 Avon, CT 06001 United States

**Equipment Under Test (EUT)** 

**Product Name:** iShower<sup>2</sup>

Model No.: ISH0001

Trade Mark: iDevices LLC

FCC ID: 2ABDJ-IDEV08

FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013 Applicable standards:

Date of sample receipt: September 27, 2014

Date of Test: October 11-13, 2014

Date of report issued: October 13, 2014

**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 may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS or testing done by GTS in connection with, distribution or use of the product described in this report must be approved by GTS in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



## 2 Version

Version No.	Date	Description	
00	October 13, 2014	Original	

Prepared By:	Zdward.Pan	Date:	October 13, 2014
	Project Engineer		
Check By:	hank. yan	Date:	October 13, 2014
	Reviewer		



## 3 Contents

			Page
1	COV	ER PAGE	1
2	VEF	RSION	2
3	COI	NTENTS	3
4		ST SUMMARY	
5		NERAL INFORMATION	
J			
	5.1 5.2	CLIENT INFORMATIONGENERAL DESCRIPTION OF EUT	5
	5.2 5.3	TEST MODE	
	5.4	DESCRIPTION OF SUPPORT UNITS	
	5.4 5.5	TEST FACILITY	
	5.6	TEST LOCATION	
	5.7	OTHER INFORMATION REQUESTED BY THE CUSTOMER	
6	TES	ST INSTRUMENTS LIST	8
7	TES	ST RESULTS AND MEASUREMENT DATA	9
	7.1	Antenna requirement	
	7.2	RADIATED EMISSION METHOD	
	7.2.	1 Field Strength of The Fundamental Signal	12
	7.2.	2 Spurious emissions	13
	7.2.	3 Bandedge emissions	17
	7.3	20DB OCCUPY BANDWIDTH	18
8	TES	ST SETUP PHOTO	20
9	EUT	CONSTRUCTIONAL DETAILS	20



## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	NA
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.

NA: Not applicable



## **5** General Information

## 5.1 Client Information

Applicant:	iDevices, LLC
Address of Applicant:	136 Simsbury Rd, Building 12 Avon, CT 06001 United States
Manufacturer:	DongGuan Q & S Manufacturing Co. Ltd
Address of Manufacturer:	Yin Shan Industrial District, Fu Gang Village, Xiang Mang West Road, Qing Xi Town, Dongguan City, Guang Dong Province, China

## 5.2 General Description of EUT

Product Name:	iShower <sup>2</sup>
Model No.:	ISH0001
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, π/4DQPSK, 8DPSK
Antenna Type:	Integral Antenna
Antenna gain:	2.5dBi (declare by Applicant)
Power supply:	DC 4.5V(3*1.5V "AA" Size Battery)

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



Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
							:
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

#### 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	2441MHz
The Highest channel	2480MHz

Project No.: GTSE140901603RF

Page 6 of 6



#### 5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode		
Remark: During the test, the new battery was used.			

#### 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)	97.26	99.95	96.35

#### **Final Test Mode:**

The EUT was tested in GFSK,  $\pi$ /4DQPSK, 8DPSK modulation, and found the GFSK modulation is the worst case.

According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup":

Y axis (see the test setup photo)

## 5.4 Description of Support Units

None

## 5.5 Test Facility

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

#### • CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

### • 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: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen,

China

Tel: 0755-27798480 Fax: 0755-27798960

## 5.7 Other Information Requested by the Customer

None.

Global United Technology Services Co., Ltd.

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,

Shenzhen, China 518102

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



## 6 Test Instruments list

Radi	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. 29 2014	Mar. 28 2015
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	Jul. 01 2014	Jun 30 2015
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun 30 2015
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jul. 01 2014	Jun 30 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015
Gen	eral 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	July 08 2014	July 07 2015

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



## 7 Test results and Measurement Data

## 7.1 Antenna requirement

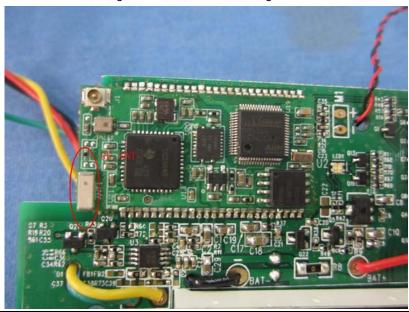
Standard requirement: FCC Part15 C Section 15.203

### 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.

#### E.U.T Antenna:

The antenna is Integral Antenna, the best case gain of the antenna is 2.5dBi





## 7.2 Radiated Emission Method

7.2 Radia	2 Radiated Emission Wethod					
Test R	Requirement:	FCC Part15 C Section 15.209				
Test M	/lethod:	ANSI C63.4:2003				
Test F	requency Range:	30MHz to 25GHz				
Test s	ite:	Measurement Distance: 3m				
Receiv	ver setup:	Frequency	Detector	RBW	VBW	Remark
		30MHz- 1GHz	Quasi-peal	120KHz	300KHz	Quasi-peak Value
		Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Above IGHZ	Peak	1MHz	10Hz	Average Value
Limit:		Freque	ency	Limit (dBuV		Remark
(Field	strength of the	2400MHz-24	183.5MHz	94.0		Average Value
fundar	mental signal)			114.	00	Peak Value
Limit:		Freque		Limit (dBuV		Remark
(Spuri	ous Emissions)	30MHz-8		40.0		Quasi-peak Value
		88MHz-2		43.5		Quasi-peak Value
		216MHz-9 960MHz-		46.00 54.00		Quasi-peak Value  Quasi-peak Value
				54.00		Average Value
		Above 1	IGHz	74.00		Peak Value
Limit: (band	edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test s	etup:	Below 1GHz	→ 3m ← → → → → → → → → → → → → → → → → → →		Anten  Sea Ante	



	Report No.: GTSE14090160302
	Antenna Tower  Horn Antenna  Spectrum Analyzer  Turn Table A A Amplifier
Test Procedure:	<ol> <li>The EUT was placed on the top of a rotating table 0.8 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> </ol>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

## Measurement data:

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



## 7.2.1 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	99.67	27.58	5.39	34.01	98.63	114.00	-15.37	Vertical
2402.00	97.67	27.58	5.39	34.01	96.63	114.00	-17.37	Horizontal
2441.00	99.69	27.48	5.43	33.96	98.64	114.00	-15.36	Vertical
2441.00	94.52	27.48	5.43	33.96	93.47	114.00	-20.53	Horizontal
2480.00	100.88	27.52	5.47	33.92	99.95	114.00	-14.05	Vertical
2480.00	93.18	27.52	5.47	33.92	92.25	114.00	-21.75	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	90.79	27.58	5.39	34.01	89.75	94.00	-4.25	Vertical
2402.00	89.79	27.58	5.39	34.01	88.75	94.00	-5.25	Horizontal
2441.00	89.33	27.48	5.43	33.96	88.28	94.00	-5.72	Vertical
2441.00	84.09	27.48	5.43	33.96	83.04	94.00	-10.96	Horizontal
2480.00	90.26	27.52	5.47	33.92	89.33	94.00	-4.67	Vertical
2480.00	85.12	27.52	5.47	33.92	84.19	94.00	-9.81	Horizontal

Remark: RBW 3MHz, VBW 10MHz, peak detector for PK value, RBW 3MHz, VBW 10MHz AV detector for AV value

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



## 7.2.2 Spurious emissions

## ■ Below 1GHz

- DCIOW I	0112							
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
37.81	39.24	15.06	0.64	32.06	22.88	40.00	-17.12	Vertical
60.28	39.28	14.69	0.86	31.94	22.89	40.00	-17.11	Vertical
96.10	36.92	14.90	1.16	31.75	21.23	43.50	-22.27	Vertical
155.91	43.37	10.51	1.60	32.00	23.48	43.50	-20.02	Vertical
480.53	42.75	18.07	3.22	31.62	32.42	46.00	-13.58	Vertical
672.85	40.97	20.72	3.99	31.15	34.53	46.00	-11.47	Vertical
40.42	36.99	15.58	0.66	32.05	21.18	40.00	-18.82	Horizontal
59.86	36.55	14.71	0.86	31.94	20.18	40.00	-19.82	Horizontal
96.78	34.69	14.97	1.17	31.75	19.08	43.50	-24.42	Horizontal
236.65	37.43	13.93	2.05	32.16	21.25	46.00	-24.75	Horizontal
495.93	37.72	18.52	3.29	31.58	27.95	46.00	-18.05	Horizontal
878.32	36.19	22.87	4.77	31.21	32.62	46.00	-13.38	Horizontal



#### 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
4804.00	36.40	31.78	8.60	32.09	44.69	74.00	-29.31	Vertical
7206.00	31.23	36.15	11.65	32.00	47.03	74.00	-26.97	Vertical
9608.00	30.93	37.95	14.14	31.62	51.40	74.00	-22.60	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	40.50	31.78	8.60	32.09	48.79	74.00	-25.21	Horizontal
7206.00	32.90	36.15	11.65	32.00	48.70	74.00	-25.30	Horizontal
9608.00	30.27	37.95	14.14	31.62	50.74	74.00	-23.26	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		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
4804.00	25.38	31.78	8.60	32.09	33.67	54.00	-20.33	Vertical
7206.00	20.02	36.15	11.65	32.00	35.82	54.00	-18.18	Vertical
9608.00	19.15	37.95	14.14	31.62	39.62	54.00	-14.38	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	29.51	31.78	8.60	32.09	37.80	54.00	-16.20	Horizontal
7206.00	22.13	36.15	11.65	32.00	37.93	54.00	-16.07	Horizontal
9608.00	18.80	37.95	14.14	31.62	39.27	54.00	-14.73	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. 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 o	hannel:	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
4882.00	35.40	31.85	8.67	32.12	43.80	74.00	-30.20	Vertical
7323.00	30.57	36.37	11.72	31.89	46.77	74.00	-27.23	Vertical
9764.00	30.35	38.35	14.25	31.62	51.33	74.00	-22.67	Vertical
12205.00	*					74.00		Vertical
14646.00	*					74.00		Vertical
4882.00	39.30	31.85	8.67	32.12	47.70	74.00	-26.30	Horizontal
7323.00	32.16	36.37	11.72	31.89	48.36	74.00	-25.64	Horizontal
9764.00	29.59	38.35	14.25	31.62	50.57	74.00	-23.43	Horizontal
12205.00	*					74.00		Horizontal
14646.00	*					74.00		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
4882.00	24.58	31.85	8.67	32.12	32.98	54.00	-21.02	Vertical
7323.00	19.47	36.37	11.72	31.89	35.67	54.00	-18.33	Vertical
9764.00	18.67	38.35	14.25	31.62	39.65	54.00	-14.35	Vertical
12205.00	*					54.00		Vertical
14646.00	*					54.00		Vertical
4882.00	28.60	31.85	8.67	32.12	37.00	54.00	-17.00	Horizontal
7323.00	21.52	36.37	11.72	31.89	37.72	54.00	-16.28	Horizontal
9764.00	18.24	38.35	14.25	31.62	39.22	54.00	-14.78	Horizontal
12205.00	*					54.00		Horizontal
14646.00	*					54.00		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.

Shenzhen, China 518102

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



Took about all	I limbook abanaal
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	35.58	31.93	8.73	32.16	44.08	74.00	-29.92	Vertical
7440.00	30.69	36.59	11.79	31.78	47.29	74.00	-26.71	Vertical
9920.00	30.45	38.81	14.38	31.88	51.76	74.00	-22.24	Vertical
12400.00	*					74.00		Vertical
14880.00	*					74.00		Vertical
4960.00	39.51	31.93	8.73	32.16	48.01	74.00	-25.99	Horizontal
7440.00	32.29	36.59	11.79	31.78	48.89	74.00	-25.11	Horizontal
9920.00	29.71	38.81	14.38	31.88	51.02	74.00	-22.98	Horizontal
12400.00	*					74.00		Horizontal
14880.00	*					74.00		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	24.75	31.93	8.73	32.16	33.25	54.00	-20.75	Vertical
7440.00	19.59	36.59	11.79	31.78	36.19	54.00	-17.81	Vertical
9920.00	18.77	38.81	14.38	31.88	40.08	54.00	-13.92	Vertical
12400.00	*					54.00		Vertical
14880.00	*					54.00		Vertical
4960.00	28.79	31.93	8.73	32.16	37.29	54.00	-16.71	Horizontal
7440.00	21.65	36.59	11.79	31.78	38.25	54.00	-15.75	Horizontal
9920.00	18.36	38.81	14.38	31.88	39.67	54.00	-14.33	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. 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.



## 7.2.3 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	44.02	27.59	5.38	30.18	46.81	74.00	-27.19	Horizontal
2400.00	60.97	27.58	5.39	30.18	63.76	74.00	-10.24	Horizontal
2390.00	44.67	27.59	5.38	30.18	47.46	74.00	-26.54	Vertical
2400.00	63.12	27.58	5.39	30.18	65.91	74.00	-8.09	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	34.31	27.59	5.38	30.18	37.10	54.00	-16.90	Horizontal
2400.00	45.61	27.58	5.39	30.18	48.40	54.00	-5.60	Horizontal
2390.00	34.33	27.59	5.38	30.18	37.12	54.00	-16.88	Vertical
2400.00	47.37	27.58	5.39	30.18	50.16	54.00	-3.84	Vertical

Test channel:	Highest channel
	1

### 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	46.25	27.53	5.47	29.93	49.32	74.00	-24.68	Horizontal
2500.00	45.21	27.55	5.49	29.93	48.32	74.00	-25.68	Horizontal
2483.50	47.29	27.53	5.47	29.93	50.36	74.00	-23.64	Vertical
2500.00	46.32	27.55	5.49	29.93	49.43	74.00	-24.57	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	37.15	27.53	5.47	29.93	40.22	54.00	-13.78	Horizontal
2500.00	34.99	27.55	5.49	29.93	38.10	54.00	-15.90	Horizontal
2483.50	38.46	27.53	5.47	29.93	41.53	54.00	-12.47	Vertical
2500.00	35.00	27.55	5.49	29.93	38.11	54.00	-15.89	Vertical

### Remark:

Global United Technology Services Co., Ltd.

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,

Shenzhen, China 518102

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

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



## 7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215	
Test Method:	ANSI C63.4:2003	
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	

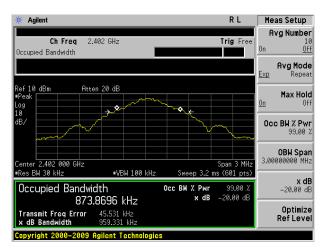
#### **Measurement Data**

Test channel	20dB bandwidth(MHz)	Result
Lowest	0.959	Pass
Middle	0.958	Pass
Highest	0.959	Pass

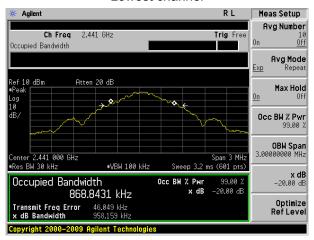
Test plot as follows:

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

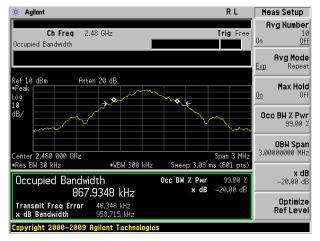




#### Lowest channel



#### Middle channel



Highest channel

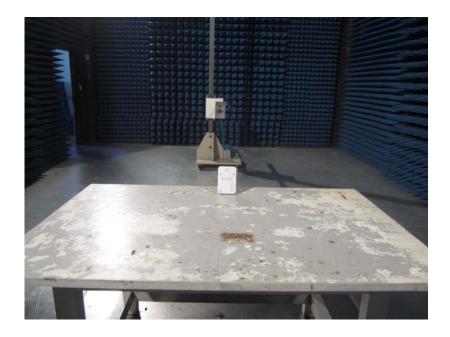
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



## 8 Test Setup Photo

Radiated Emission





## 9 EUT Constructional Details

Reference to the test report No. GTSE14090160301

-----End-----