# **FCC REPORT**

Applicant: Worldex International Ltd

Address of Applicant: 3A-8A, Mont Orchid Riverlet, Gongye 3rd Rd, Nanshan,

Shenzhen, China

**Equipment Under Test (EUT)** 

Product Name: Tablet PC

SP6601, MW6617, MID6617, MW6625, MID6625, MW6617D,

Model No.: MW6617Q, MW6625D, MW6625Q, MID6617Q, MID6617D,

MID6625Q, MID6625D

Trade mark: Touch+

**FCC ID:** 2ACZ2-MW6617

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

Date of sample receipt: 13 Aug., 2014

**Date of Test:** 14 Aug., to 27 Aug., 2014

Date of report issued: 27 Aug., 2014

Test Result: PASS \*

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

#### Authorized Signature:



Bruce Zhang 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 CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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.

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	27 Aug., 2014	Original

Luna Gao Report Clerk Prepared by: 27 Aug., 2014 Date:

Reviewed by: 27 Aug., 2014 Date:

**Project Engineer** 



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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 Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

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



### 5 General Information

### 5.1 Client Information

Applicant:	Worldex International Ltd
Address of Applicant:	3A-8A, Mont Orchid Riverlet, Gongye 3rd Rd, Nanshan, Shenzhen, China
Manufacturer:	Hena Digital Techonlogy (shenzhen)Co.Ltd.
Address of Manufacturer:	13F, BlockB, Tairan Building, Futian District, Shenzhen, China

# 5.2 General Description of E.U.T.

Product Name:	Tablet PC
Model No.:	SP6601,MW6617,MID6617,MW6625,MID6625,MW6617D,MW6617Q, MW6625D, MW6625Q, MID6617Q, MID6617D, MID6625Q, MID6625D
Operation Frequency:	2402MHz~2480MHz
Transfer rate:	1/2/3 Mbits/s
Number of channel:	79
Modulation type:	GFSK, π/4-DQPSK, 8DPSK
Modulation technology:	FHSS
Antenna Type:	Internal Antenna
Antenna gain:	0 dBi
Power supply:	Rechargeable Li-ion Battery DC3.7V-1800mAh
AC adapter:	Model:STC-A515A-Z Input:100-240V AC,50/60Hz 0.3A Output:5.0V DC MAX1500mA
Remark:	Item No.: SP6601, MW6617, MID6617, MW6625, MID6625, MW6617D, MW6617Q, MW6625D, MW6625Q, MID6617Q, MID6617D, MID6625Q, MID6625D were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being color



Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
6	2408MHz	26	2428MHz	46	2448MHz	66	2468MHz
7	2409MHz	27	2429MHz	47	2449MHz	67	2469MHz
8	2410MHz	28	2430MHz	48	2450MHz	68	2470MHz
9	2411MHz	29	2431MHz	49	2451MHz	69	2471MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
12	2414MHz	32	2434MHz	52	2454MHz	72	2474MHz
13	2415MHz	33	2435MHz	53	2455MHz	73	2475MHz
14	2416MHz	34	2436MHz	54	2456MHz	74	2476MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		



#### 5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with worst case data rate.
Remark	GFSK (1 Mbps) is the worst case mode.

The sample was placed 0.8m above the ground plane of 3m chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working with a fresh battery, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

### 5.4 Laboratory Facility

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

#### ● FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. 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 out files. Registration 817957, February 27, 2012.

#### ● IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

### ● CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

### 5.5 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No.B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282 Fax: +86-755-23116366



### 5.6 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	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	June 09 2014	June 08 2015	
2	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK  VULB9163  CCIS0005		May 25 2014	May 24 2015		
3	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 25 2014	May 24 2015	
4	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
5	Coaxial Cable	CCIS	N/A	CCIS0016	Apr. 01 2014	Mar. 31 2015	
6	Coaxial Cable	CCIS	N/A	CCIS0017	Apr. 01 2014	Mar. 31 2015	
7	Coaxial cable	CCIS	N/A	CCIS0018	Apr. 01 2014	Mar. 31 2015	
8	Coaxial Cable	CCIS	N/A CCIS00		Apr. 01 2014	Mar. 31 2015	
9	Coaxial Cable	CCIS	N/A	CCIS0087	Apr. 01 2014	Mar. 31 2015	
10	Amplifier(10kHz- 1.3GHz)	HP 8447D CCIS0003		CCIS0003	Apr. 01 2014	Mar. 31 2015	
11	Amplifier(1GHz- 18GHz)	Compliance Direction Systems Inc.	PAP-1G18   CCIS0011		June 09 2014	June 08 2015	
12	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Apr. 01 2014	Mar. 31 2015	
13	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2014	Mar. 29 2015	
14	Printer	HP	HP LaserJet P1007	N/A	N/A	N/A	
15	Positioning Controller	UC	UC3000	CCIS0015	N/A	N/A	
16	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	May. 25 2014	May. 24 2015	
17	EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2014	Mar. 31 2015	
18	Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 12 2014	Aug. 11 2015	
19	Universal radio communication tester	Rhode & Schwarz	CMU200	CCIS0069	May. 25 2014	May. 24 2015	
20	Signal Analyzer	Rohde & Schwarz	FSIQ3	CCIS0088	May. 25 2014	May. 24 2015	

Conducted Emission:								
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)		
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2014	June 08 2015		
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	May 25 2014	May 24 2015		
3	LISN	CHASE	MN2050D	CCIS0074	Apr 01 2014	Mar. 31 2015		
4	Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2014	Mar. 31 2015		
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		



### 6 Test results and Measurement Data

### 6.1 Antenna requirement

### Standard requirement: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

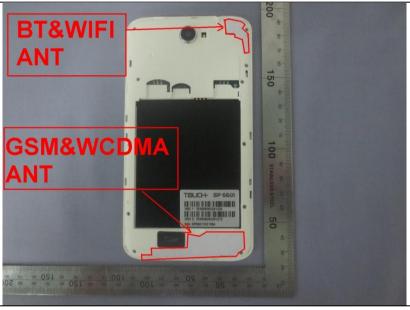
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(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.

### E.U.T Antenna:

The Bluetooth antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 0 dBi.





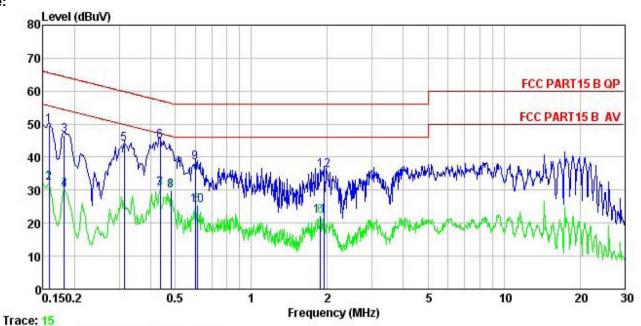
# 6.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207					
Test Method:	ANSI C63.4:2003					
Test Frequency Range:	150 kHz to 30 MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto					
Limit:	Frequency range (MHz)	Limit (d	BuV)			
	Frequency range (MH2)	Quasi-peak	Average			
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	5-30	60	50			
Test setup:	* Decreases with the logarithm of Reference Plane	•				
	LISN  40cm  80cm  Filter  AC power  Equipment  Test table/Insulation plane  Remark  E.U.T. Equipment Under Test  LISN Line Impedence Stabilization Network  Test table height=0.8m					
Test procedure:	<ol> <li>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.</li> <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 C63.4: 2003 on conducted measurement.</li> </ol>					
Test Instruments:	Refer to section 5.7 for details					
Test mode:	Bluetooth (Continuous transmittin	g) mode				
Test results:	Pass	-				
	I.					

#### **Measurement Data**



#### Line:



Site

: CCIS Shielding Room : FCC PART15 B QP LISN LINE Condition

Job No. EUT : 676RF : Tablet PC : SP6601 Model Test Mode : BT mode Power Rating : AC 120V/60Hz Environment : Temp: 23 °C Huni:56% Atmos:101KPa

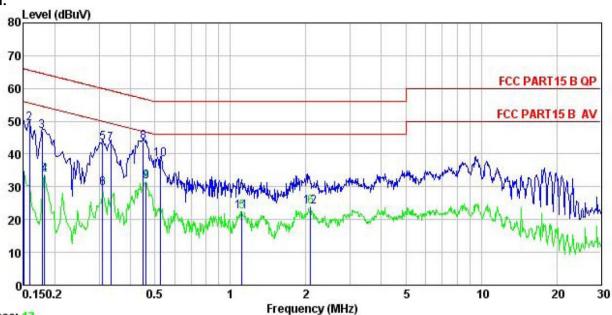
Test Engineer: Wendell

Remark

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu∜	₫B	dB	dBu₹	dBu∀	dB	
1	0.158	38.57	0.27	10.78	49.62	65.56	-15.94	QP
2	0.158	21.26	0.27	10.78	32.31	55.56	-23.25	Average
3	0.182	35.50	0.28	10.77	46.55	64.42	-17.87	QP
1 2 3 4 5 6 7 8 9	0.182	18.94	0.28	10.77	29.99	54.42	-24.43	Average
5	0.313	32.90	0.26	10.74	43.90	59.88	-15.98	QP
6	0.435	33.94	0.28	10.73	44.95	57.15	-12.20	QP
7	0.435	19.48	0.28	10.73	30.49	47.15	-16.66	Average
8	0.481	18.84	0.29	10.75	29.88	46.32	-16.44	Average
9	0.601	27.35	0.25	10.77	38.37	56.00	-17.63	QP
10	0.611	14.26	0.25	10.77	25.28	46.00	-20.72	Average
11	1.878	10.80	0.26	10.95	22.01	46.00	-23.99	Average
12	1.939	24.89	0.26	10.96	36.11		-19.89	



#### Neutral:



Trace: 13

Site

: CCIS Shielding Room : FCC PART15 B QP LISN NEUTRAL Condition

: 676RF Job No. EUT : Tablet PC Model SP6601 Test Mode : BT mode Power Rating : AC 120V/60Hz

Environment : Temp: 23 °C Huni:56% Atmos:101KPa

Test Engineer: Wendell

Remark

Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark	
MHz	dBu∜		₫B	dBu₹	dBu⊽	dB		
0.150	23.85	0.25	10.78	34.88	56.00	-21.12	Average	
0.158	38.29	0.25	10.78	49.32	65.56	-16.24	QP	
0.178	35.80	0.25	10.77	46.82	64.59	-17.77	QP	
0.182	22.54	0.25	10.77	33.56	54.42	-20.86	Average	
0.310	32.44	0.26	10.74	43.44	59.97	-16.53	QP	
0.310	18.56	0.26	10.74	29.56	49.97	-20.41	Average	
0.334	32.14	0.26	10.73	43.13	59.35	-16.22	QP	
0.449	32.69	0.27	10.74	43.70	56.89	-13.19	QP	
0.461	20.50	0.28	10.75	31.53	46.67	-15.14	Average	
0.527	27.37	0.27	10.76	38.40	56.00	-17.60	QP	
1.111	11.30	0.23	10.88	22.41	46.00	-23.59	Average	
2.088	12.70	0.29	10.96	23.95	46.00	-22.05	Average	
	MHz 0. 150 0. 158 0. 178 0. 182 0. 310 0. 310 0. 334 0. 449 0. 461 0. 527 1. 111	MHz dBuV  0.150 23.85 0.158 38.29 0.178 35.80 0.182 22.54 0.310 32.44 0.310 18.56 0.334 32.14 0.449 32.69 0.461 20.50 0.527 27.37 1.111 11.30	MHz         dBuV         dB           0.150         23.85         0.25           0.158         38.29         0.25           0.178         35.80         0.25           0.182         22.54         0.25           0.310         32.44         0.26           0.310         18.56         0.26           0.334         32.14         0.26           0.449         32.69         0.27           0.461         20.50         0.28           0.527         27.37         0.27           1.111         11.30         0.23	MHz         dBuV         dB         dB           0.150         23.85         0.25         10.78           0.158         38.29         0.25         10.78           0.178         35.80         0.25         10.77           0.182         22.54         0.25         10.77           0.310         32.44         0.26         10.74           0.310         18.56         0.26         10.74           0.334         32.14         0.26         10.73           0.449         32.69         0.27         10.74           0.461         20.50         0.28         10.75           0.527         27.37         0.27         10.76           1.111         11.30         0.23         10.88	MHz         dBuV         dB         dB         dBuV           0.150         23.85         0.25         10.78         34.88           0.158         38.29         0.25         10.78         49.32           0.178         35.80         0.25         10.77         46.82           0.182         22.54         0.25         10.77         33.56           0.310         32.44         0.26         10.74         43.44           0.310         18.56         0.26         10.74         29.56           0.334         32.14         0.26         10.73         43.13           0.449         32.69         0.27         10.74         43.70           0.461         20.50         0.28         10.75         31.53           0.527         27.37         0.27         10.76         38.40           1.111         11.30         0.23         10.88         22.41	MHz         dBuV         dB         dB         dBuV         dBuV           0.150         23.85         0.25         10.78         34.88         56.00           0.158         38.29         0.25         10.78         49.32         65.56           0.178         35.80         0.25         10.77         46.82         64.59           0.182         22.54         0.25         10.77         33.56         54.42           0.310         32.44         0.26         10.74         43.44         59.97           0.310         18.56         0.26         10.74         29.56         49.97           0.334         32.14         0.26         10.73         43.13         59.35           0.449         32.69         0.27         10.74         43.70         56.89           0.461         20.50         0.28         10.75         31.53         46.67           0.527         27.37         0.27         10.76         38.40         56.00           1.111         11.30         0.23         10.88         22.41         46.00	MHz         dBuV         dB         dB         dBuV         dBuV         dB           0.150         23.85         0.25         10.78         34.88         56.00         -21.12           0.158         38.29         0.25         10.78         49.32         65.56         -16.24           0.178         35.80         0.25         10.77         46.82         64.59         -17.77           0.182         22.54         0.25         10.77         33.56         54.42         -20.86           0.310         32.44         0.26         10.74         43.44         59.97         -16.53           0.310         18.56         0.26         10.74         43.44         59.97         -16.53           0.334         32.14         0.26         10.74         29.56         49.97         -20.41           0.349         32.69         0.27         10.74         43.70         56.89         -13.19           0.461         20.50         0.28         10.75         31.53         46.67         -15.14           0.527         27.37         0.27         10.76         38.40         56.00         -17.60           1.111         11.30         0.23	MHz         dBuV         dB         dB         dBuV         dBuV         dB           0.150         23.85         0.25         10.78         34.88         56.00         -21.12         Average           0.158         38.29         0.25         10.78         49.32         65.56         -16.24         QP           0.178         35.80         0.25         10.77         46.82         64.59         -17.77         QP           0.182         22.54         0.25         10.77         33.56         54.42         -20.86         Average           0.310         32.44         0.26         10.74         43.44         59.97         -16.53         QP           0.310         18.56         0.26         10.74         43.44         59.97         -20.41         Average           0.334         32.14         0.26         10.73         43.13         59.35         -16.22         QP           0.449         32.69         0.27         10.74         43.70         56.89         -13.19         QP           0.461         20.50         0.28         10.75         31.53         46.67         -15.14         Average           0.527         27.37

#### 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



# 6.3 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)	
Test Method:	ANSI C63.4:2003 and DA00-705	
Receiver setup:	RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤1 MHz) RBW=3MHz, VBW=10MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz)	
Limit:	125 mW(21 dBm)	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.7 for details	
Test mode:	Non-hopping mode	
Test results:	Pass	

#### **Measurement Data**

weasurement Data				
	GFSK mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result	
Lowest	4.17	21.00	Pass	
Middle	5.08	21.00	Pass	
Highest	5.55	21.00	Pass	
	π/4-DQPSK	mode		
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result	
Lowest	3.93	21.00	Pass	
Middle	4.90	21.00	Pass	
Highest	5.01	21.00	Pass	
	8DPSK mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result	
Lowest	3.58 21.00		Pass	
Middle	4.67 21.00 Pass		Pass	
Highest	4.80	21.00	Pass	

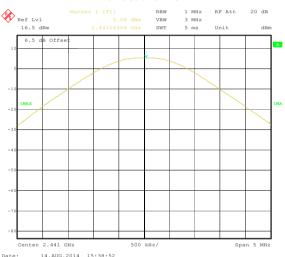


Test plot as follows:

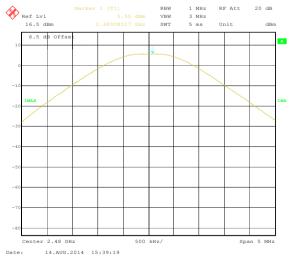
Modulation mode:



#### Lowest channel



### Middle channel



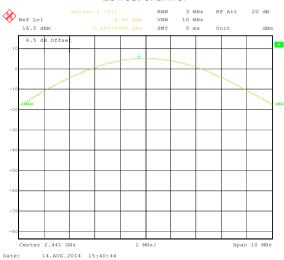
Highest channel



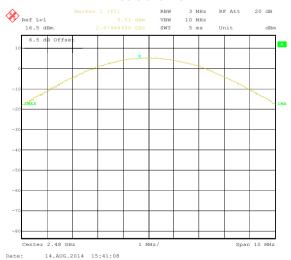
Modulation mode: π/4-DQPSK



#### Lowest channel



#### Middle channel



Highest channel



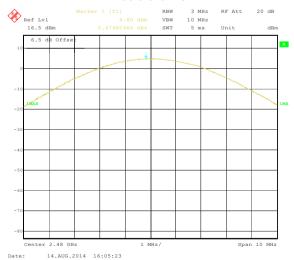
Modulation mode: 8DPSK



#### Lowest channel



#### Middle channel



Highest channel



# 6.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.4:2003 and DA00-705	
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak	
Limit:	NA	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.7 for details	
Test mode:	Non-hopping mode	
Test results:	Pass	

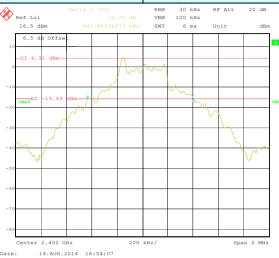
#### **Measurement Data**

Toot showned	20dB Occupy Bandwidth (kHz)		
Test channel	GFSK	π/4-DQPSK	8DPSK
Lowest	841.68	1142.28	1170.34
Middle	841.68	1130.26	1174.35
Highest	841.68	1142.28	1174.35

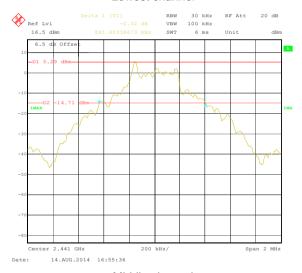
### Test plot as follows:



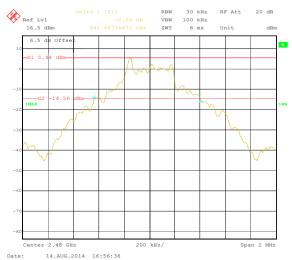
Modulation mode: GFSK



#### Lowest channel



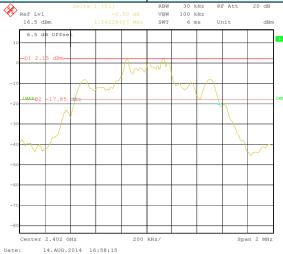
### Middle channel



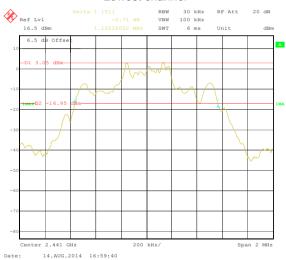
Highest channel



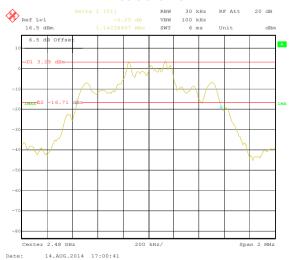
Modulation mode: π/4-DQPSK



#### Lowest channel



#### Middle channel



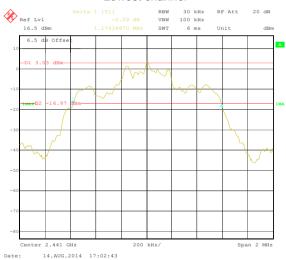
Highest channel



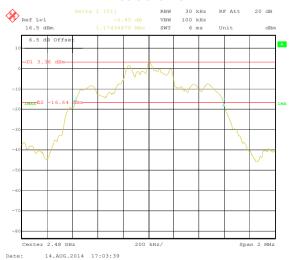
Modulation mode: 8DPSK



#### Lowest channel



#### Middle channel



Highest channel



# 6.5 Carrier Frequencies Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.4:2003 and DA00-705	
Receiver setup:	RBW=100 kHz, VBW=300 kHz, detector=Peak	
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.7 for details	
Test mode:	Hopping mode	
Test results:	Pass	

#### **Measurement Data**



	GFSK mode			
Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result	
Lowest	1002	561.12	Pass	
Middle	1002	561.12	Pass	
Highest	1002	561.12	Pass	
	π/4-DQPSK mod	le		
Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result	
Lowest	1002	761.52	Pass	
Middle	1002	761.52	Pass	
Highest	1002	761.52	Pass	
	8DPSK mode			
Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result	
Lowest	1002	782.90	Pass	
Middle	1002 782.90 Pass		Pass	
Highest	1002 782.90 Pass		Pass	

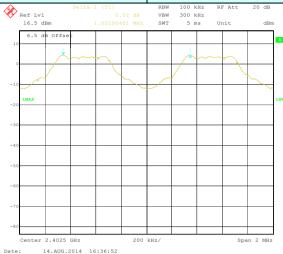
Note: According to section 6.4

Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
GFSK	841.68	561.12
π/4-DQPSK	1142.28	761.52
8DPSK	1174.35	782.90

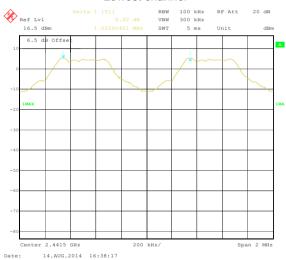
Test plot as follows:



Modulation mode: GFSK



#### Lowest channel



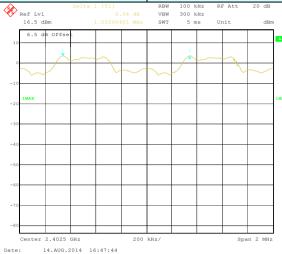
### Middle channel



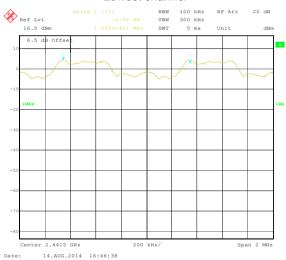
Highest channel



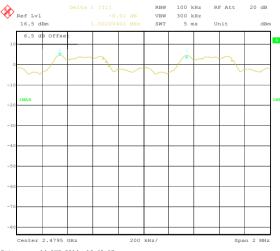
Modulation mode: π/4-DQPSK



#### Lowest channel



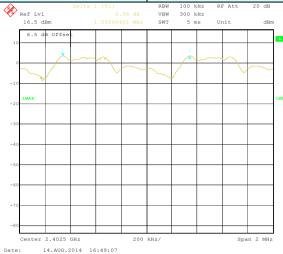
### Middle channel



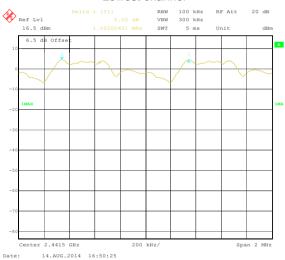
Highest channel



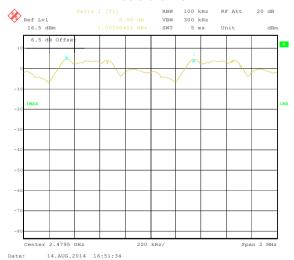
Modulation mode: 8DPSK



#### Lowest channel



#### Middle channel



Highest channel



# 6.6 Hopping Channel Number

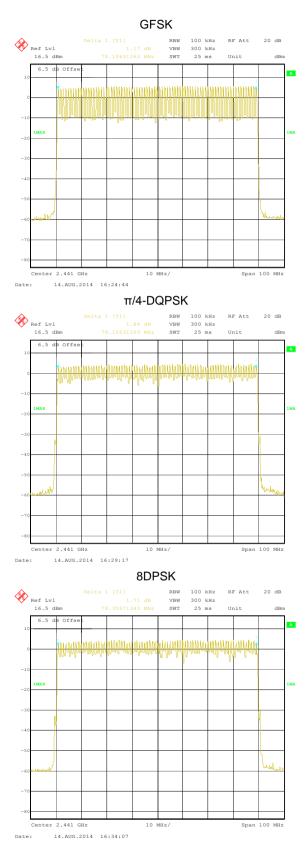
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.4:2003 and DA00-705	
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak	
Limit:	15 channels	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.7 for details	
Test mode:	Hopping mode	
Test results:	Pass	

#### **Measurement Data:**

Mode	Hopping channel numbers	Limit	Result
GFSK, π/4-DQPSK, 8DPSK	79	15	Pass









#### 6.7 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.4:2003 and KDB DA00-705	
Receiver setup:	RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak	
Limit:	0.4 Second	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.7 for details	
Test mode:	Hopping mode	
Test results:	Pass	

### **Measurement Data (Worse case)**

Mode	Packet	Dwell time (second)	Limit (second)	Result
	DH1	0.12896		
GFSK	DH3	0.26640	0.4	Pass
	DH5	0.31211		
	2-DH1	0.12576		
π /4-DQPSK	2-DH3	0.26832	0.4	Pass
	2-DH5	0.31211		
	3-DH1	0.12768		
8DPSK	3-DH3	0.26640	0.4	Pass
	3-DH5	0.31125		

For GFSK,  $\pi/4$ -DQPSK and 8DPSK:

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

DH1 time slot=0.403\*(1600/(2\*79))\*31.6=128.96ms DH3 time slot=1.665\*(1600/(4\*79))\*31.6=266.40ms DH5 time slot=2.926(1600/(6\*79))\*31.6=312.11ms

2-DH1 time slot=0.393\*(1600/ (2\*79))\*31.6=125.76ms

2-DH3 time slot=1.677\*(1600/ (4\*79))\*31.6=268.32ms

2-DH5 time slot=2.926(1600/ (6\*79))\*31.6=312.11ms

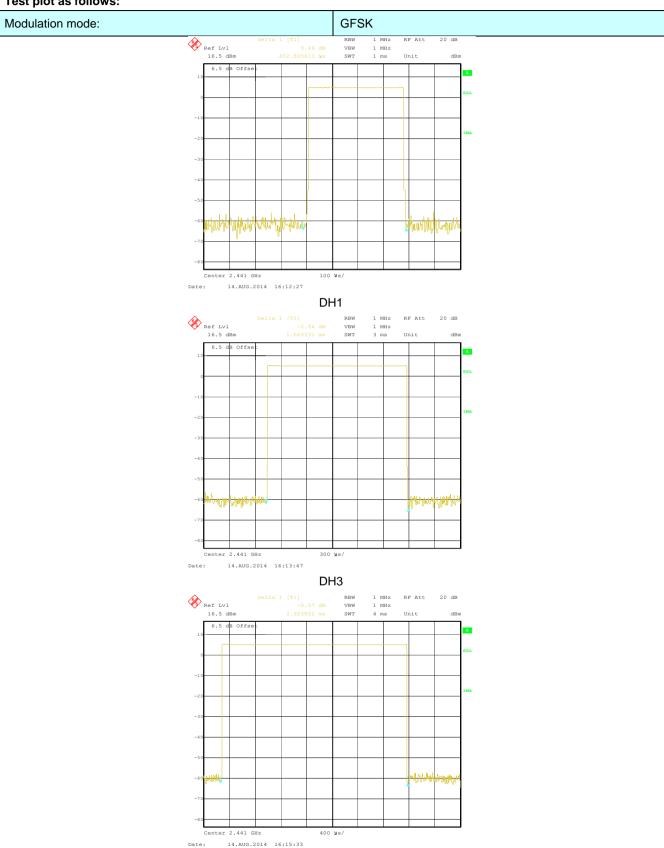
3-DH1 time slot=0.399\*(1600/ (2\*79))\*31.6=127.68ms

3-DH3 time slot=1.665\*(1600/ (4\*79))\*31.6=266.40ms

3-DH5 time slot=2.918(1600/ (6\*79))\*31.6=311.25ms



#### Test plot as follows:



DH5



π/4-DQPSK Modulation mode: 1 MHz 1 MHz 1 ms Ref Lvl 16.5 dBm VBW SWT 14.AUG.2014 16:16:24 2-DH1 1 MHz 1 MHz 3 ms 14.AUG.2014 16:17:19 2-DH3 Ref Lvl 16.5 dBm RF Att 1 MHz 4 ms VBW SWT Unit

Date:

Center 2.441 GHz

14.AUG.2014 16:18:20

2-DH5



8DPSK Modulation mode: 1 MHz 1 MHz 1 ms Ref Lvl 16.5 dBm VBW SWT 14.AUG.2014 16:19:12 3-DH1 1 MHz 1 MHz 3 ms 14.AUG.2014 16:19:52 3-DH3 Ref Lvl 16.5 dBm RF Att 1 MHz 4 ms VBW SWT Unit

Date:

Center 2.441 GHz

14.AUG.2014 16:20:34

3-DH5



### 6.8 Pseudorandom Frequency Hopping Sequence

### Test Requirement: FCC Part15 C Section 15.247 (a)(1) requirement:

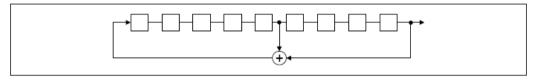
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

#### **EUT Pseudorandom Frequency Hopping Sequence**

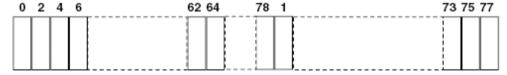
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence:  $2^9 1 = 511$  bits
- Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.



# 6.9 Band Edge

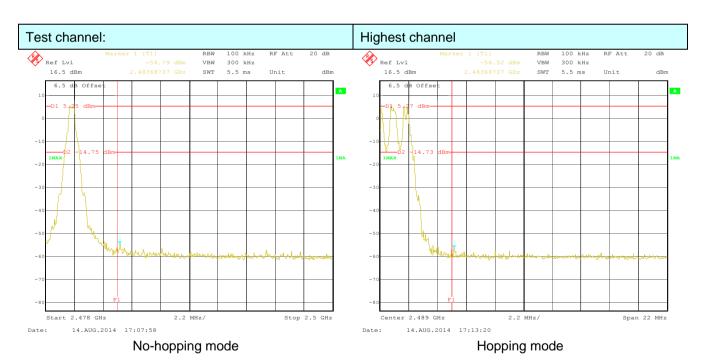
### 6.9.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)	
Test Method:	ANSI C63.4:2003 and DA00-705	
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Detector=Peak	
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 5.7 for details	
Test mode:	Non-hopping mode and hopping mode	
Test results:	Pass	

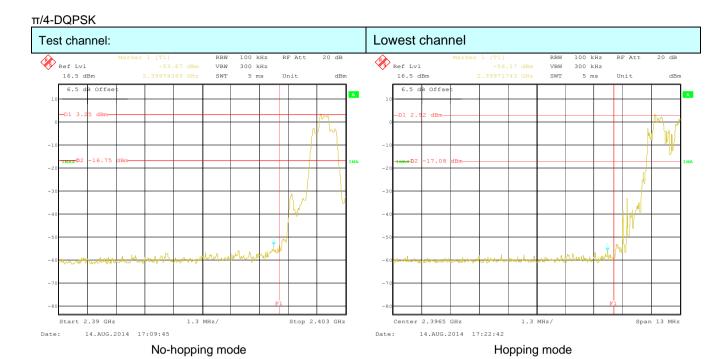
Test plot as follows:

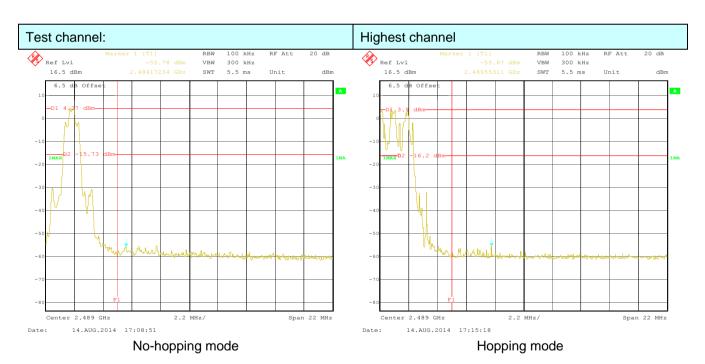




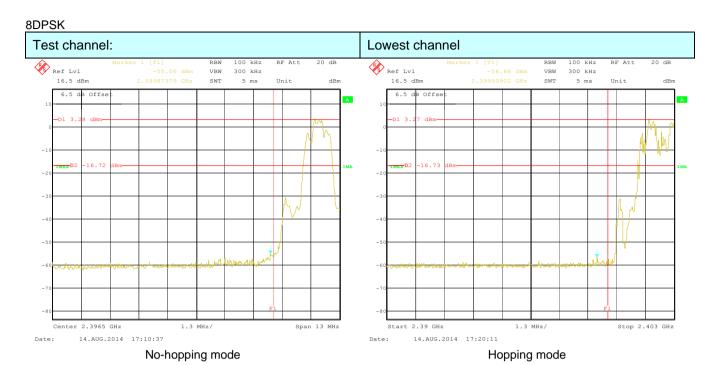


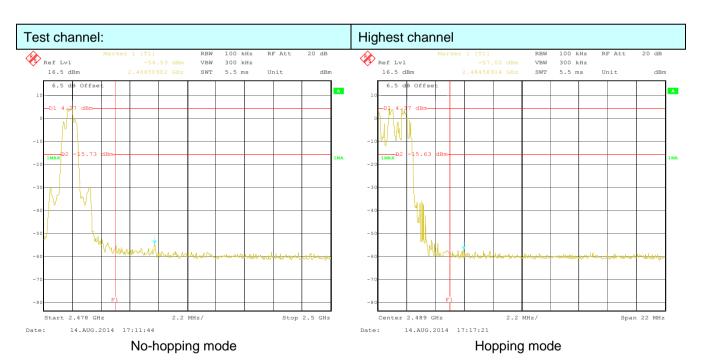














# 6.9.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Se	ection 15.209 an	d 15.205		
Test Method:	ANSI C63.4: 2003	3			
Test Frequency Range:	2.3GHz to 2.5GH	Z			
Test site:	Measurement Dis				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
receiver detap.		Peak	1MHz	3MHz	Peak Value
	Above 1GHz	Peak	1MHz	10Hz	Average Value
Limit:	Freque		Limit (dBuV/	m @3m)	Remark
	Above 1	CH-z	54.0	0	Average Value
	Above i	GHZ	74.0	0	Peak Value
Test setup:	EUT Turn Table	→ 3m ← 4m		Antenna Horn Ant Spectrum Analyzer  Ampli	tenna
Test Procedure:	at a 3 meter or position of the position of the 2. The EUT was was mounted 3. The antenna hadetermine the polarizations of 4. For each susp the antenna was turned from 5. The test-receive Bandwidth with 6. If the emission specified, there had be reported. Or re-tested one in the position of the positi	amber. The table highest radiation set 3 meters awon the top of a valeight is varied for maximum value of the antenna and ected emission, as tuned to heigh modegrees to ever system was high Maximum Hole level of the EU to testing could be otherwise the emission.	e was rotated in.  yay from the in yariable-height rom one metel of the field stire set to make the EUT was ghts from 1 me 360 degrees to set to Peak Dod Mode.  T in peak mode stopped and hissions that diak, quasi-peak	terference-re antenna tow r to four meter rength. Both the measure arranged to find the mater to 4 meter to 4 meter to 10 mete	ers above the ground to horizontal and vertical ement. its worst case and then ers and the rota table eximum reading.
Test Instruments:	Refer to section 5				
Test mode:	Non-hopping mod	de			
Test results:	Passed				
	•				

#### Remark:

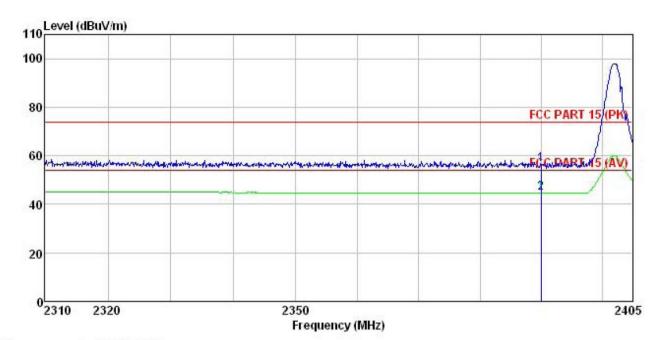
- 1. During the test, pre-scan the GFSK,  $\pi/4$ -DQPSK, 8DPSK, and all data were shown in report.
- 2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.



GFSK mode

Test channel: Lowest

Horizontal:



Site : 3m chamber

Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL

Job No. : 676RF EUT : Tablet PC Model : SP6601 Test mode : DH1-L mode Power Rating : AC 120V/60Hz

Power Rating: AC 120V/60Hz Environment: Temp:25.5°C Huni:55%

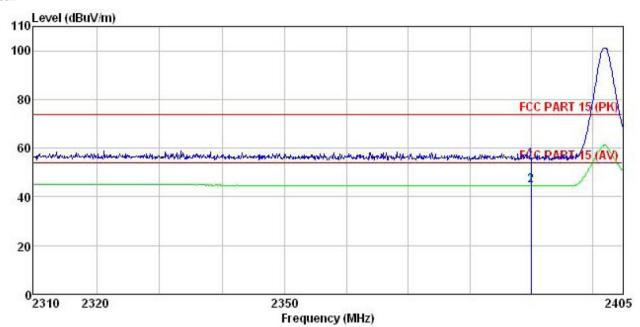
Test Engineer: Wendell

Remark :

	Freq		Antenna Factor						Remark	
	MHz	dBm	dB/m	₫B	<u>dB</u>	_dBm/m	dBm/m	dB		
1	2390.000	23.32	27.58	5.67	0.00	56.57	74.00	-17.43	Peak	
2	2390.000	11.30	27.58	5.67	0.00	44.55	54.00	-9.45	Average	



#### Vertical:



Site : 3m chamber

Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL

Job No. : 676RF EUT : Tablet PC Model : SP6601 Test mode : DH1-L mode Power Rating : AC 120V/60Hz

Power Rating: AC 120V/60Hz Environment: Temp:25.5°C Huni:55%

Test Engineer: Wendell

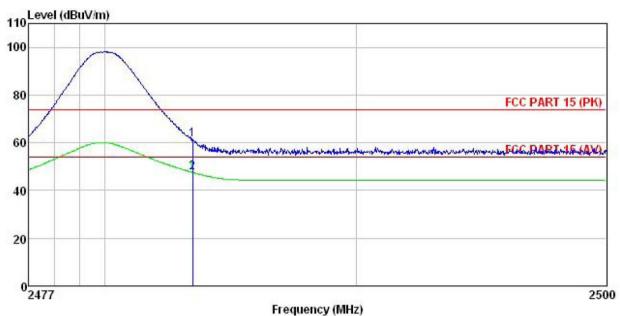
Remark

JAC LE	57			Preamp Factor			Over Limit	Remark
Ī	MHz	dBm	<u>dB</u> /m	 <u>ab</u>	_dBm/m	_dBm/m		1
	2390.000 2390.000							



Test channel: Highest

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

Job No. : 676RF EUT : Tablet PC Model : SP6601 Test mode : DH1-H mode Power Rating : AC 120V/60Hz

Environment : Temp: 25.5°C Huni: 55%

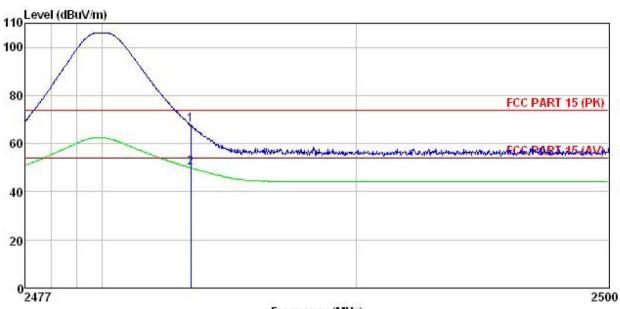
Test Engineer: Wendell

Reл

mar.	K :	Read	Ant enna	Cable	Preamo		Limit	Over		
	Freq		Factor						Remark	
•	MHz	dBm	—dB/m	<u>d</u> B	<u>ab</u>	_dBm/m	_dBm/m	<u>dB</u>		
1	2483.500	28.21	27.52	5.70	0.00	61.43	74.00	-12.57	Peak	
2	2483 500	14 34	27 52	5 70	0.00	47.56	54 00	-6 44	Average	



#### Vertical:



Frequency (MHz)

Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL : 676RF Condition

Job No. EUT : Tablet PC Model : SP6601 : DH1-H mode Test mode Power Rating: AC 120V/60Hz Environment: Temp:25.5°C Huni:55% Test Engineer: Wendell

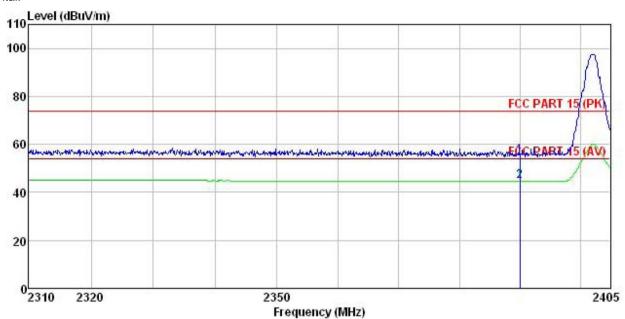
Remark

	i	Read	Antenna	Cable	Preamo		Limit	Over		
	Freq		Factor							
ā	MHz	dBm	—dB/m	dB	<u>dB</u>	dBm/m	dBm/m	<u>dB</u>		
1	2483.500	34.49	27.52	5.70	0.00	67.71	74.00	-6.29	Peak	
2	2483.500	16.72	27.52	5.70	0.00	49.94	54.00	-4.06	Average	



π/4-DQPSK mode Test channel: Lowest

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

Job No. : 676RF : Tablet PC EUT Model : SP6601 Test mode : 2DH1-L mode Power Rating : AC 120V/60Hz

Environment : Temp: 25.5°C Huni: 55%

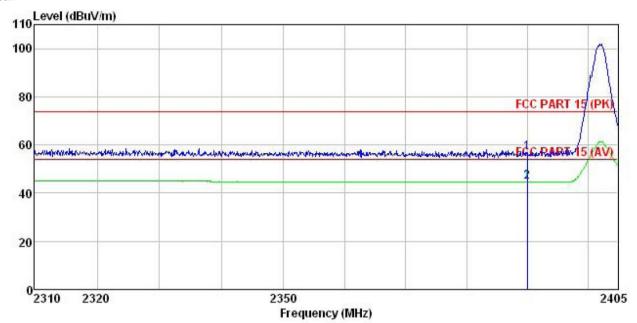
Test Engineer: Wendell

Remark :

	Freq		Antenna Factor						Remark
,	MHz	dBm	<u>dB</u> /m	dB	dB	_dBm/m	_dBm/m	<u>dB</u>	
1 2	2390.000 2390.000				0.00 0.00				Peak Average



#### Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL : 676RF Condition

Job No. : Tablet PC EUT : SP6601 Model Test mode : 2DH1-L mode

Power Rating: AC 120V/60Hz Environment: Temp:25.5°C Huni:55% Test Engineer: Wendell

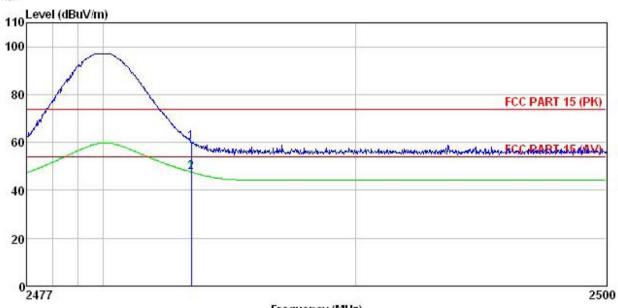
Re

lemarl	ĸ :	Read	Antenna	Cable	Preamp		Limit	Over	
	Freq		Factor			Level	Line	Limit	Remark
-	MHz	dBm	dB/m	dB	<u>dB</u>	_dBm/m	dBm/m	<u>dB</u>	
1	2390.000	23.75	27.58	5.67	0.00	57.00	74.00	-17.00	Peak
2	2390.000	11.31	27.58	5.67	0.00	44.56	54.00	-9.44	Average



Test channel: Highest

Horizontal:



Frequency (MHz)

Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

Job No. : 676RF : Tablet PC : SP6601 EUT Model Test mode : 2DH1-H mode Power Rating : AC 120V/60Hz Environment : Temp:25.5°C Huni:55%

Test Engineer: Wendell

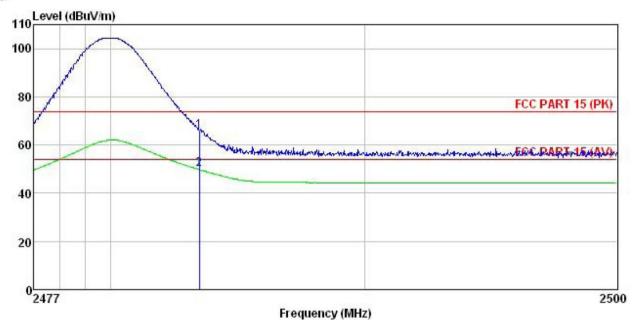
Remark

1 2

	(B)		Antenna Factor				Limit Line	Remark	
	MHz	dBm	<u>dB</u> /m	<u>d</u> B	<u>d</u> B			 	
2	2483.500 2483.500		27.52 27.52			59.96 47.58		Peak Average	



#### Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL Condition

: 676RF Job No. : Tablet PC : SP6601 EUT Model Test mode : 2DH1-H mode Power Rating: AC 120V/60Hz
Environment: Temp:25.5°C Huni:55%
Test Engineer: Wendell
Remark:

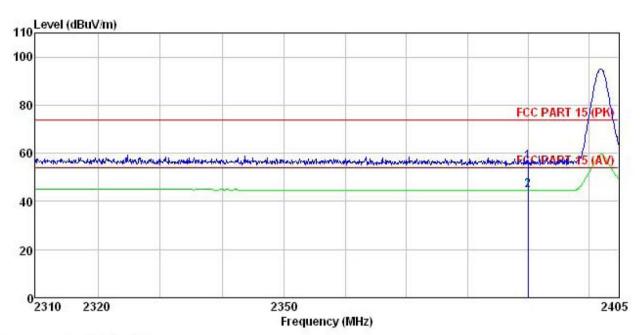
emari	K :								
	Freq		Antenna Factor			Level			Remark
	MHz	dBm		dB	<u>ab</u>	_dBm/m	_dBm/m	<u>d</u> B	
1	2483.500	32.71	27.52	5.70	0.00	65.93	74.00	-8.07	Peak
2	2483, 500	16.54	27. 52	5, 70	0.00	49.76	54,00	-4.24	Average



8DPSK mode

Test channel: Lowest

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

: 676RF Job No. EUT : Tablet PC Model : SP6601 : 3DH1-L mode Test mode Power Rating: AC 120V/60Hz

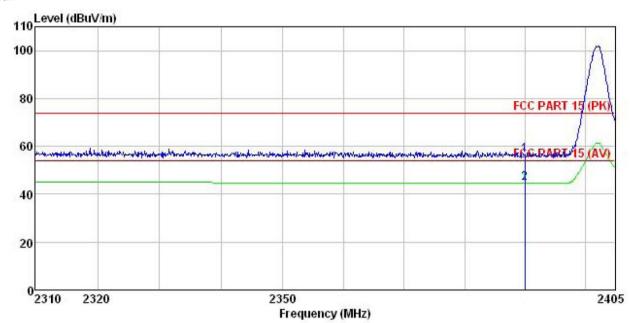
Environment : Temp:25.5°C Huni:55% Test Engineer: Wendell

Remark

	Freq	ReadAntenna Level Factor					Limit Line		Remark
	MHz	dBm	dB/m	₫B	<u>dB</u>	dBm/m	dBm/m	<u>dB</u>	
1	2390.000	23.10	27.58	5.67	0.00	56.35	74.00	-17.65	Peak
2	2390.000	11.31	27.58	5.67	0.00	44.56	54.00	-9.44	Average



#### Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL : 676RF Condition

Job No. : Tablet PC : SP6601 EUT Model Test mode

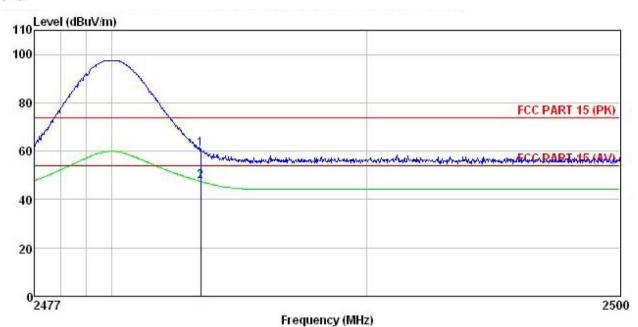
: 3DH1-L mode Power Rating: AC 120V/60Hz Environment: Temp:25.5°C Huni:55% Test Engineer: Wendell

xemar.	51. (3).				Preamp Factor		Limit Line	Over Limit	Remark	
	MHz	dBm	<u>dB</u> /m	<u>d</u> B	āB	_dBm/m	_dBm/m	dB		
1 2	2390.000 2390.000								Peak Average	



Test channel: Highest

Horizontal:



Site

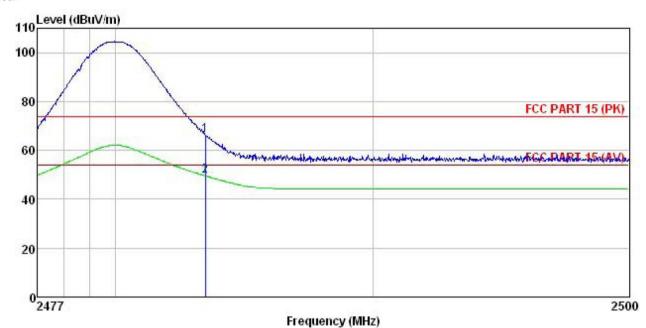
: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

: 676RF Job No. : Tablet PC : SP6601 EUT Model Test mode : 3DH1-H mode Power Rating: AC 120V/60Hz
Environment: Temp:25.5°C Huni:55%
Test Engineer: Wendell
Remark:

	Read	intenna	C-11-	-					
Freq					Level			Remark	
MHz	dBm	dB/m	dB	<u>dB</u>	dBm/m	dBm/m	dB		-
	MHz 500	MHz dBm .500 27.72	MHz dBm dB/m .500 27.72 27.52	MHz dBm dB/m dB .500 27.72 27.52 5.70	MHz dBm dB/m dB dB .500 27.72 27.52 5.70 0.00	MHz dBm dB/m dB dB dBm/m .500 27.72 27.52 5.70 0.00 60.94	MHz dBm dB/m dB dB dBm/m dBm/m .500 27.72 27.52 5.70 0.00 60.94 74.00	MHz dBm dB/m dB dB dBm/m dBm/m dB .500 27.72 27.52 5.70 0.00 60.94 74.00 -13.06	Freq Level Factor Loss Factor Level Line Limit Remark  MHz dBm dB/m dB dB dBm/m dBm/m dB  .500 27.72 27.52 5.70 0.00 60.94 74.00 -13.06 Peak  .500 14.20 27.52 5.70 0.00 47.42 54.00 -6.58 Average



#### Vertical:



Site Condition : 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL

Job No. EUT : 676RF : Tablet PC Model : SP6601 Test mode : 3DH1-H mode Power Rating : AC 120V/60Hz

Environment : Temp:25.5°C Huni:55% Test Engineer: Wendell

Remark

CMari			Antenna Factor				Limit Line	Over Limit	Remark
	MHz	dBm	<u>dB</u> /m	<u>dB</u>	<u>dB</u>	_dBm/m	_dBm/m	<u>dB</u>	
1	2483.500	32.97	27.52	5.70	0.00	66.19	74.00	-7.81	Peak
2	2483.500	16.31	27.52	5.70	0.00	49.53	54.00	-4.47	Average



# 6.10 Spurious Emission

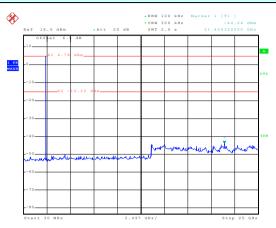
# 6.10.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)						
Test Method:	ANSI C63.4:2003 and DA00-705						
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 5.7 for details						
Test mode:	Non-hopping mode						
Test results:	Pass						



# **GFSK**

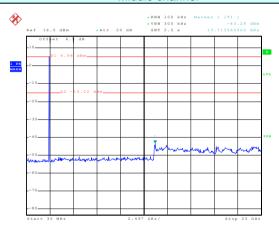




Date: 21.AHG.2014 19:59:09

30MHz~25GHz

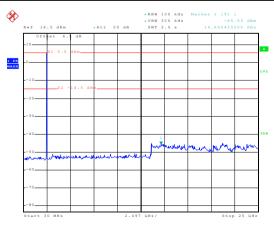
# Middle channel



Date: 21.AUG.2014 20:00:29

30MHz~25GHz

# Highest channel



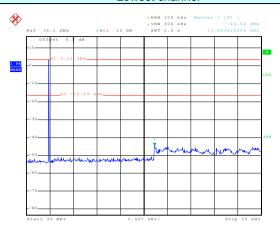
Date: 21.AUG.2014 20:01:19

30MHz~25GHz



# $\pi/4$ -DQPSK

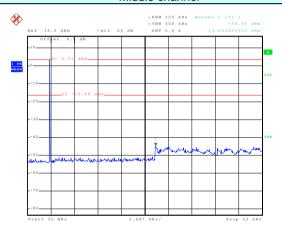
# Lowest channel



Date: 21.AUG.2014 20:05:00

30MHz~25GHz

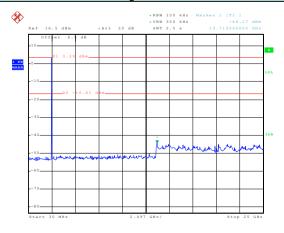
# Middle channel



Date: 21.AUG.2014 20:05:00

30MHz~25GHz

#### Highest channel



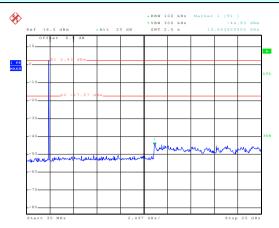
Date: 21.AUG.2014 20:02:32

30MHz~25GHz



# 8DPSK

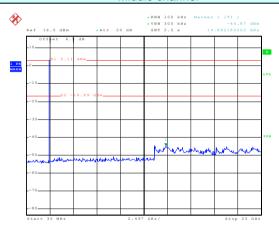




Date: 21.AHG.2014 20:05:50

30MHz~25GHz

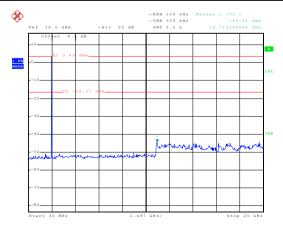
# Middle channel



Date: 21.AUG.2014 20:06:30

30MHz~25GHz

# Highest channel



Date: 21.AUG.2014 20:08:01

30MHz~25GHz





# 6.10.2 Radiated Emission Method

6.10.2 Radiated Emission Me	tillou											
Test Requirement:	FCC Part15 C Section 15.209											
Test Method:	ANSI C63.4: 2003	ANSI C63.4: 2003										
Test Frequency Range:	9 kHz to 25 GHz											
Test site:	Measurement Dis	stance: 3m										
Receiver setup:	Frequency	Detector	RBW	VBW	Remark							
	30MHz-1GHz											
	Above 1GHz	Peak	1MHz	3MHz	Peak Value							
	Peak 1MHz 10Hz Average Value											
Limit:	Freque	ncy	Limit (dBuV/	m @3m)	Remark							
	30MHz-8	8MHz	40.0	)	Quasi-peak Value							
	88MHz-21	I6MHz	43.5	5	Quasi-peak Value							
	216MHz-960MHz 46.0 Quasi-peak Value											
	960MHz-	1GHz	54.0	)	Quasi-peak Value							
	Above 1	CH <sub>7</sub>	54.0	)	Average Value							
	Above i	GHZ	74.0	)	Peak Value							
	Turn Table  Ground Plane  Above 1GHz	3m		Antenra Sear Anter RF Test Receiver  Antenna Tower  Horn Antenna Spectrum Analyzer								



Test Procedure:	1. 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.
	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.
	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 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

#### Remark:

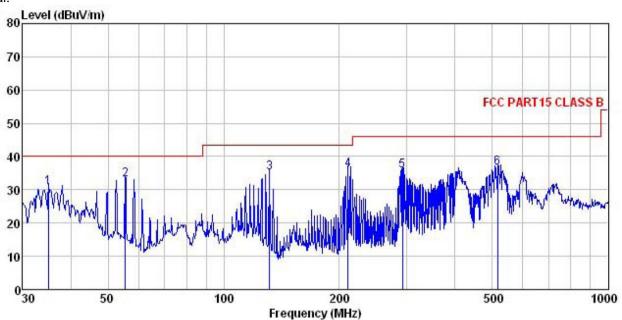
- 1. During the test, pre-scan the GFSK,  $\pi/4$ -DQPSK, 8DPSK modulation, and found the GFSK modulation is the worst case.
- 2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.
- 3. 9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report.

#### Measurement data:



#### **Below 1GHz**

Vertical:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL : 676RF Condition

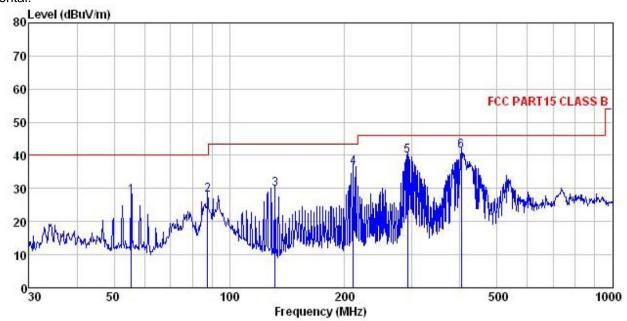
Job No. EUT : Tablet PC Model : SP6601 : BT mode Test mode Power Rating : AC 120V/60Hz

Environment : Temp:25.5°C Huni:55% Test Engineer: Wendell Remark :

CHILLY									
	Freq		Antenna Factor					Over Limit	Remark
-	MHz	dBu∜	d <u>B</u> /m		<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
1	35.005	47.96	12.30	0.48	29.95	30.79	40.00	-9.21	QP
2	55.415	49.32	13.01	0.65	29.80	33.18	40.00	-6.82	QP
3	131.758	54.44	8.82	1.21	29.32	35.15	43.50	-8.35	QP
4	210.786	52.58	10.90	1.44	28.76	36.16	43.50	-7.34	QP
5	292.058	49.58	12.89	1.75	28.46	35.76	46.00	-10.24	QP
6	515.437	46.37	16.89	2.45	29.00	36.71	46.00	-9.29	QP



#### Horizontal:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL Condition

Job No. : 676RF Tablet PC EUT Model : SP6601 Test mode : BT mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5°C Huni:55%
Test Engineer: Wendell

Remark

CHICALE									
	Erec		Antenna Factor						
	rreq	rever	ractor	F022	ractor	rever	Line	LIMIT	Kemark
750	MHz	dBu∜	dB/m	₫B	₫B	dBu∜/m	dBuV/m	₫B	
1	55.415	43.97	13.01	0.65	29.80	27.83	40.00	-12.17	QP
2	87.725	45.53	11.18	0.90	29.58	28.03	40.00	-11.97	QP
	131.758	49.02	8.82	1.21	29.32	29.73	43.50	-13.77	QP
4 5	210.786	52.85	10.90	1.44	28.76	36.43	43.50	-7.07	QP
5	292.058	53.55	12.89	1.75	28.46	39.73	46.00	-6.27	QP
	403.250	52.76	15.14	2.13	28.79	41.24	46.00	-4.76	QP



# **Above 1GHz:**

Test channel:			owest		Level:		Peak	
Frequency	Read	Antenna	Cable	Preamp	Level	Limit Line	Over	
(MHz)	Level	Factor	Loss	Factor	(dBuV/m)	(dBuV/m)	Limit	Polarization
(1011 12)	(dBuV)	(dB/m)	(dB)	(dB)	(ubu v/III)	(ubu v/III)	(dB)	
4804.00	46.28	31.53	8.90	40.24	46.47	74.00	-27.53	Vertical
7206.00	46.07	36.47	10.59	41.24	51.89	74.00	-22.11	Vertical
4804.00	45.85	31.53	8.90	40.24	46.04	74.00	-27.96	Horizontal
7206.00	46.06	36.47	10.59	41.24	51.88	74.00	-22.12	Horizontal

Test channe	l:	I	Lowest		Level:	Level:		Average	
Frequency	Read	Antenna	Cable	Preamp	Level	Limit Line	Over		
(MHz)	Level	Factor	Loss	Factor	(dBuV/m)	(dBuV/m)	Limit	Polarization	
(IVII IZ)	(dBuV)	(dB/m)	(dB)	(dB)	(ubu v/III)	(ubu v/III)	(dB)		
4804.00	36.48	31.53	8.90	40.24	36.67	54.00	-17.33	Vertical	
7206.00	36.63	36.47	10.59	41.24	42.45	54.00	-11.55	Vertical	
4804.00	35.45	31.53	8.90	40.24	35.64	54.00	-18.36	Horizontal	
7206.00	36.98	36.47	10.59	41.24	42.80	54.00	-11.20	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.



Test channe	l:	M	1iddle		Level:		Peak	
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	45.70	31.58	8.98	40.15	46.11	74.00	-27.89	Vertical
7323.00	46.11	36.47	10.69	41.15	52.12	74.00	-21.88	Vertical
4882.00	45.48	31.58	8.98	40.15	45.89	74.00	-28.11	Horizontal
7323.00	46.75	36.47	10.69	41.15	52.76	74.00	-21.24	Horizontal

Test channe	l:	N	1iddle		Level:		Average		
			T						
Eroguenov	Read	Antenna	Cable	Preamp	Lovol	Limit Line	Over		
Frequency	Level	Factor	Loss	Factor	Level		Limit	Polarization	
(MHz)	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
4882.00	35.89	31.58	8.98	40.15	36.30	54.00	-17.70	Vertical	
7323.00	36.78	36.47	10.69	41.15	42.79	54.00	-11.21	Vertical	
4882.00	35.96	31.58	8.98	40.15	36.37	54.00	-17.63	Horizontal	
7323.00	36.94	36.47	10.69	41.15	42.95	54.00	-11.05	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.



Test channe	l:	ŀ	Highest		Level:	Level:		Peak	
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	45.51	31.69	9.08	40.03	46.25	74.00	-27.75	Vertical	
7440.00	46.74	36.60	10.80	41.05	53.09	74.00	-20.91	Vertical	
4960.00	47.87	31.69	9.08	40.03	48.61	74.00	-25.39	Horizontal	
7440.00	46.11	36.60	10.80	41.05	52.46	74.00	-21.54	Horizontal	

Test channe	l:	ŀ	Highest		Level:		Average		
Fraguenav	Read	Antenna	Cable	Preamp	Level	Limit Line	Over		
Frequency	Level	Factor	Loss	Factor			Limit	Polarization	
(MHz)	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
4960.00	35.35	31.69	9.08	40.03	36.09	54.00	-17.91	Vertical	
7440.00	36.35	36.60	10.80	41.05	42.70	54.00	-11.30	Vertical	
4960.00	37.11	31.69	9.08	40.03	37.85	54.00	-16.15	Horizontal	
7440.00	36.42	36.60	10.80	41.05	42.77	54.00	-11.23	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.