

Global United Technology Services Co., Ltd.

Report No.: GTSE13110178101

FCC REPORT

Applicant: Jade Electronics Co.,Ltd

Address of Applicant: Jade Industrial Park, East 24th Xiaochi Road, Development

District, Ganzhou

Equipment Under Test (EUT)

Product Name: Private Wireless Cloud Storage

Model No.: iSmart M8, iSmart M9, J-Smart Cast

FCC ID: 2ABK2ISMARTM8

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2012

Date of sample receipt: November 05, 2013

Date of Test: November 05-December 24, 2013

Date of report issue: December 06-December 24, 2013

Test Result: PASS *

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



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.

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 International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical

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	December 24, 2013	Original

Prepared By:	Sam. Gao	Date:	December 24, 2013	
	Project Engineer			
Check By:	Hans. Hu	Date:	December 24, 2013	
	Reviewer	_		



3 **Contents**

			Page
1	COVE	ER PAGE	1
2	VERS	SION	2
3	CON	TENTS	3
4	TEST	SUMMARY	4
5	GENI	ERAL INFORMATION	5
	5.1	CLIENT INFORMATION	5
		GENERAL DESCRIPTION OF E.U.T.	
	5.3	TEST MODE	6
		TEST FACILITY	
		TEST LOCATION	
	5.6	OTHER INFORMATION REQUESTED BY THE CUSTOMER	7
6	TEST	INSTRUMENTS LIST	8
7	TES1	RESULTS AND MEASUREMENT DATA	9
	7.1	Antenna requirement:	9
	7.2	CONDUCTED PEAK OUTPUT POWER	10
	7.3	CHANNEL BANDWIDTH	20
	7.4	Power Spectral Density	30
	7.5	BAND EDGE	
	7.5.1		
	7.5.2		
		Spurious Emission	
	7.6.1		
	7.6.2		
8	TEST	SETUP PHOTO	78
9	EUT	CONSTRUCTIONAL DETAILS	79



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)(3)	PASS
Channel Bandwidth	15.247 (a)(2)	PASS
Power Spectral Density	15.247 (e)	PASS
Band Edge	15.247(d)	PASS
Spurious Emission	15.205/15.209	PASS

Remark:

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

Project No.: GTSE131101781RF



5 **General Information**

5.1 Client Information

Applicant:	Jade Electronics Co.,Ltd
Address of Applicant:	Jade Industrial Park, East 24th Xiaochi Road, Development District, Ganzhou
Manufacturer/ Factory:	Jade Electronics Co.,Ltd
Address of Manufacturer/ Factory:	Jade Industrial Park, East 24th Xiaochi Road, Development District, Ganzhou

5.2 General Description of E.U.T.

Product Name:	Private Wireless Cloud Storage
Model No.:	iSmart M8, iSmart M9, J-Smart Cast
Test Model:	iSmart M8
Remark:	All above models are identical in the same PCB layout, interior structure and electrical circuits. The only difference is model name for commercial purpose.
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))
	2422MHz~2452MHz (802.11n(HT40))
Channel numbers:	11 for 802.11b/802.11g/802.11n(HT20)
	7 for 802.11n(HT40)
Channel separation:	5MHz
Modulation technology:	Direct Sequence Spread Spectrum (DSSS)
(IEEE 802.11b)	
Modulation technology:	Orthogonal Frequency Division Multiplexing(OFDM)
(IEEE 802.11g/802.11n)	
Antenna Type:	Integral Antenna
Antenna gain:	2dBi (declare by Applicant)
Directional gain:	2+10 log(3)=5dBi
Antenna number:	2 pcs with MIMO function
Power supply:	DC 3.7V



Operation Frequency each of channel								
Channel Frequency Channel Frequency Channel Frequency								
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz	
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz	
3	2422MHz	6	2437MHz	9	2452MHz			

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:

Test channel	Frequency (MHz)			
rest channel	802.11b/802.11g/802.11n(HT20)	802.11n(HT40)		
Lowest channel	2412MHz	2422MHz		
Middle channel	2437MHz	2437MHz		
Highest channel	2462MHz	2452MHz		

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. Keeping MIMO transmitter with duty cycle 100%

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case

Tel soull dil killa di data l'ate il lowest dilamoi, ana found the follow list which it was worst dase.							
Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)			
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps			



5.4 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 Testingand 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 fully 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.

5.5 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

5.6 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

Project No.: GTSE131101781RF



6 Test Instruments list

Rad	Radiated Emission:							
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 29 2013	Mar. 28 2014		
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	Dec. 5, 2013	Dec. 4, 2014		
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 02 2013	Jul. 01 2014		
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 24 2013	Feb. 23 2014		
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2013	June 27 2014		
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2013	Mar. 28 2014		
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 30 2013	Mar. 29 2014		
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 30 2013	Mar. 29 2014		
11	Coaxial cable	GTS	N/A	GTS210	Mar. 30 2013	Mar. 29 2014		
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 30 2013	Mar. 29 2014		
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 02 2013	Jul. 01 2014		
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 02 2013	Jul. 01 2014		
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2013	June 27 2014		
16	Band filter	Amindeon	82346	GTS219	Mar. 30 2013	Mar. 29 2014		

Con	Conducted Emission:							
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 07 2013	Sep. 06 2015		
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 02 2013	Jul. 01 2014		
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 02 2013	Jul. 01 2014		
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 02 2013	Jul. 01 2014		
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 02 2013	Jul. 01 2014		
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 02 2013	Jul. 01 2014		
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		

General used equipment:								
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)		
1	Barometer	ChangChun	DYM3	GTS257	July 09 2013	July 08 2014		



7 Test results and Measurement Data

7.1 Antenna requirement:

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

15.203 requirement:

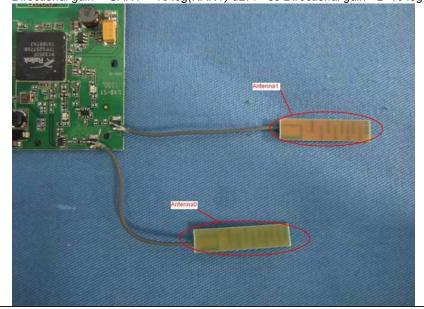
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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 antenna is Integral antenna, the best case gain of the antenna is 2.0dBi
Directional gain = GANT + 10 log(NANT) dBi , so Directional gain =2+10 log(3)=5dBi





7.2 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)				
Test Method:	ANSI C63.4:2003, KDB558074 D01 DTS Meas Guidance V03 and KDB 662911 D01 Multiple Transmitter Output v02r01				
Limit:	30dBm				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test procedure:	As an alternative to Publication: "662911 D01 Multiple Transmitter Output v02r01" Section E>1), The conducted emission level is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically to determine the total emission level from the device. Summing is performed in units that are directly proportional to power (e.g., mW or microvolts-squared—not dBm or microvolts)				
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Pass				

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

Page 10 of 84



Measurement Data

Modulation	Test CH	Peak Output Power (dBm)		Sum Output Power (dBm)	Limit(dBm)	Result
	Lowest	ANT0	6.56	9.52	30.00	Pass
		ANT1	6.45	9.52		
802.11b	Middle	ANT0	6.55	9.50		
002.110		ANT1	6.42	9.50	30.00	
	Highoot	ANT0	6.61	9.57		
	Highest	ANT1	6.51	9.57		
	Lowoot	ANT0	6.46	9.42	30.00	Pass
	Lowest	ANT1	6.35	9.42		
000.11~	Middle	ANT0	6.41	0.40		
802.11g		ANT1	6.37	9.40		
	Highest	ANT0	6.44	9.39		
		ANT1	6.32			
	Lowest	ANT0	6.36	0.24	30.00	Pass
		ANT1	6.24	9.31		
000 44~/LIT20\	Middle	ANT0	6.33	0.22		
802.11n(HT20)		ANT1	6.29	9.32		
	Highest	ANT0	6.39	0.00		
		ANT1	6.23	9.32		
	Lowest	ANT0	6.21	0.00	30.00	Pass
		ANT1	6.16	9.20		
000 44=/UT40	Middle	ANT0	6.36	0.07		
802.11n(HT40)		ANT1	6.15	9.27		
	LUmbant	ANT0	6.30	0.00		
	Highest	ANT1	6.19	9.26		

Shenzhen, China 518102

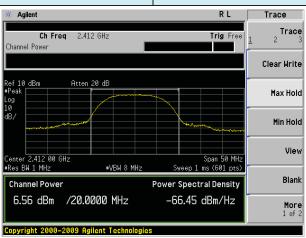
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

Project No.: GTSE131101781RF

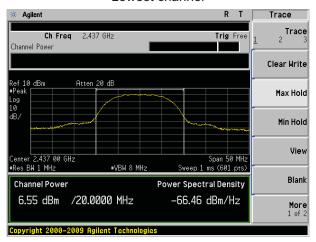


Test plot as follows:

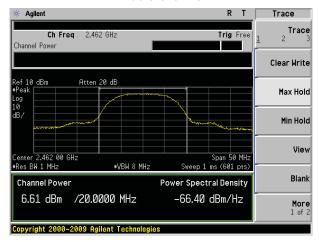
802.11b ANT0 Test mode: Antenna:



Lowest channel



Middle channel



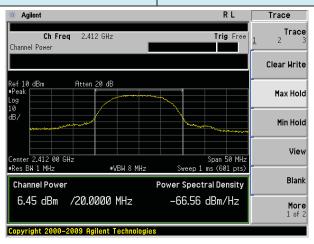
Highest channel

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

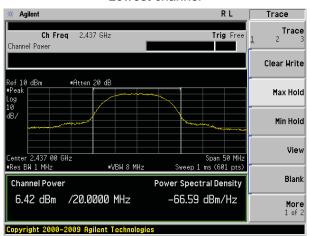
Project No.: GTSE131101781RF



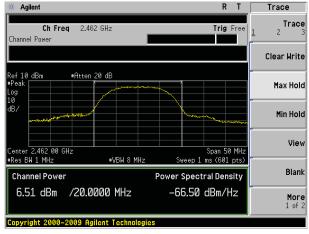
Test mode: 802.11b Antenna: ANT1



Lowest channel



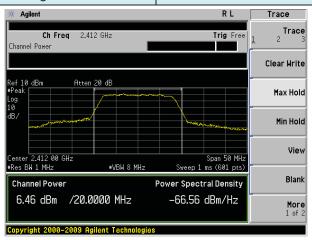
Middle channel



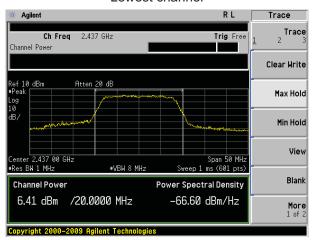
Highest channel



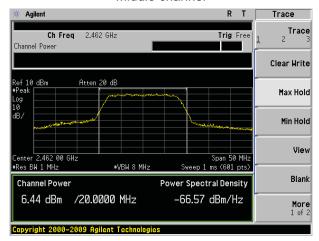
Test mode: 802.11g Antenna: ANT0



Lowest channel



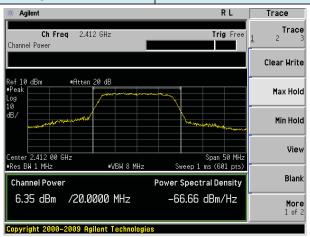
Middle channel



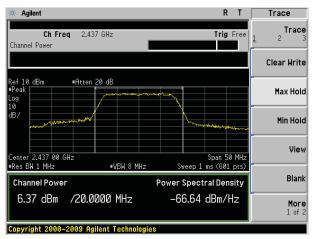
Highest channel



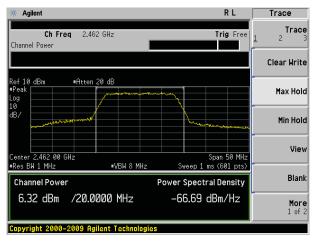
Test mode: 802.11g Antenna: ANT1



Lowest channel



Middle channel

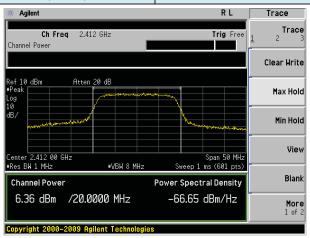


Highest channel

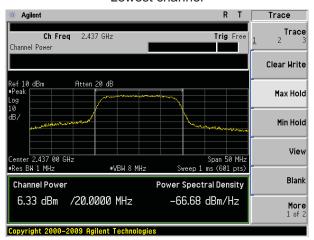
Shenzhen, China 518102



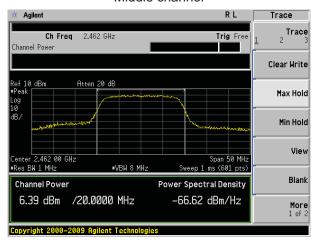
Test mode: 802.11n(HT20) Antenna: ANT0



Lowest channel



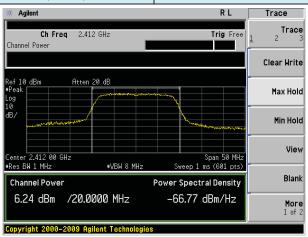
Middle channel



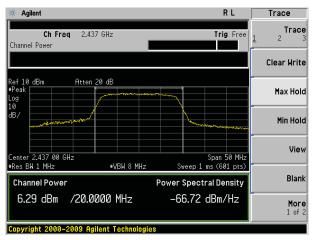
Highest channel



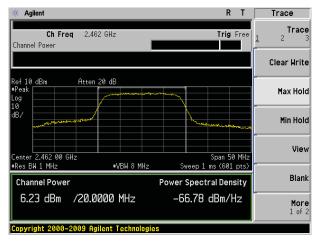
Test mode: 802.11n(HT20) Antenna: ANT1



Lowest channel



Middle channel

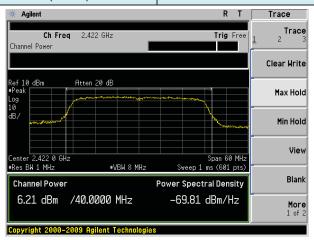


Highest channel

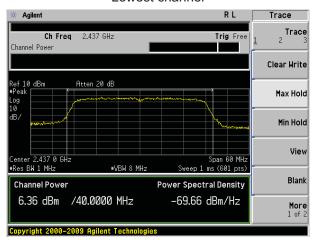
Shenzhen, China 518102



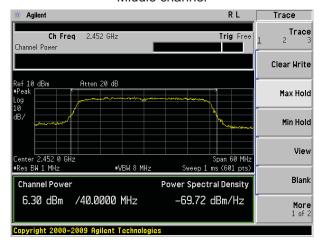
Test mode: 802.11n(HT40) Antenna: ANT0



Lowest channel



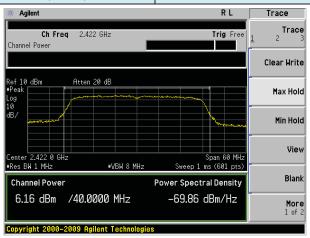
Middle channel



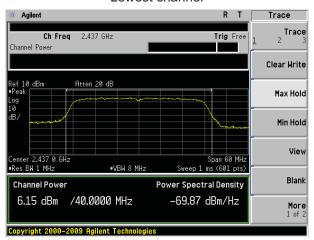
Highest channel



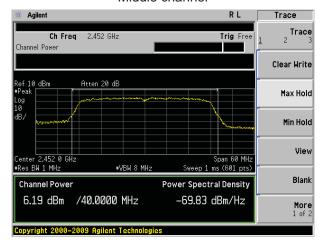
Test mode: 802.11n(HT40) Antenna: ANT1



Lowest channel



Middle channel



Highest channel



7.3 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)			
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03			
Limit:	>500KHz			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test Instruments:	Refer to section 6.0 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Pass			

Shenzhen, China 518102



Measurement Data

Modulation	Test CH	Channel Band	width (MHz)	Limit(KHz)	Result	
	Lawaat	ANT0	11.332			
	Lowest	ANT1	11.280		Pass	
802.11b	Middle	ANT0	11.298	>500		
002.110		ANT1	11.310	>500		
	Highoot	ANT0	11.273			
	Highest	ANT1	11.293			
	Lowest	ANT0	16.426		Pass	
	Lowest	ANT1	16.450			
802.11g	Middle	ANT0	16.423	>500		
802.11g		ANT1	16.451	>300		
	Highest	ANT0	16.447			
		ANT1	16.286			
	Lowest	ANT0	16.885		Pass	
		ANT1	17.116			
802.11n(HT20)	Middle	ANT0	16.778	>500		
002.1111(11120)		ANT1	16.732	>300		
	Highest	ANT0	16.960			
		ANT1	16.772			
	Lowest	ANT0	35.077		Pass	
	Lowest	ANT1	34.846			
802.11n(HT40)	Middle	ANT0	35.033	>500		
002.1111(1140)		ANT1	35.140	/500		
	Llighoot	ANT0	35.363			
	Highest	ANT1	35.667			

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

Project No.: GTSE131101781RF

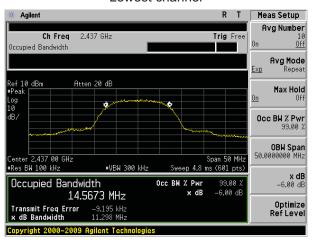


Test plot as follows:

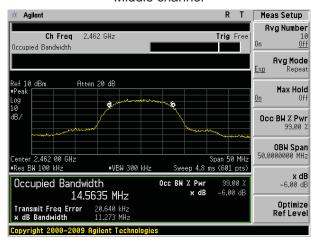
Test mode: 802.11b Antenna: ANT0



Lowest channel



Middle channel

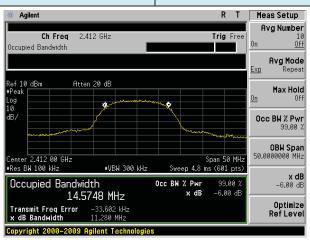


Highest channel

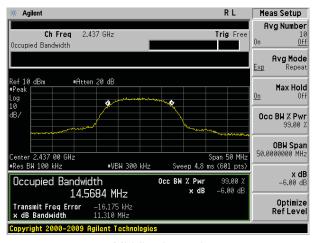
Shenzhen, China 518102



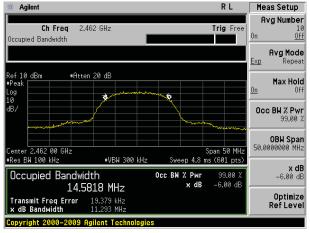
Test mode: 802.11b Antenna: ANT1



Lowest channel



Middle channel

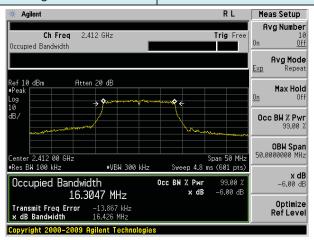


Highest channel

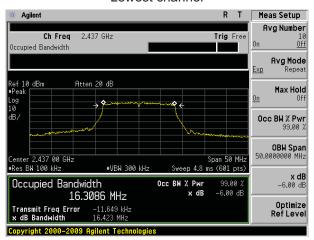
Shenzhen, China 518102



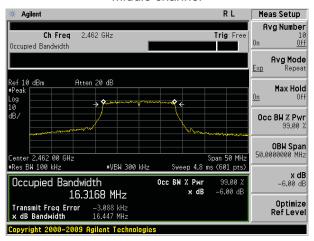
Test mode: 802.11g Antenna: ANT0



Lowest channel



Middle channel

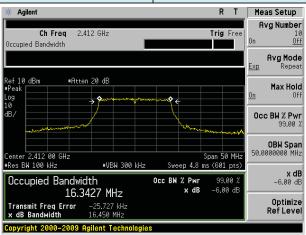


Highest channel

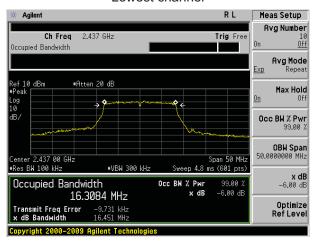
Shenzhen, China 518102



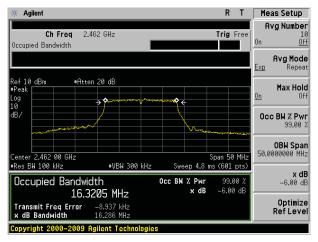
Test mode: 802.11g Antenna: ANT1



Lowest channel



Middle channel

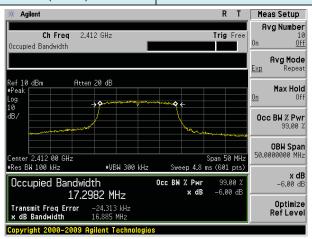


Highest channel

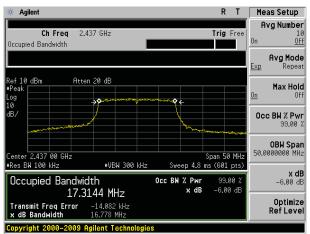
Shenzhen, China 518102



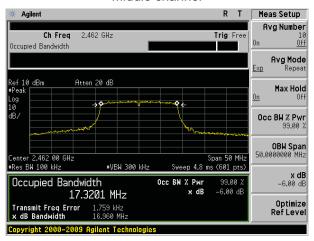
Test mode: 802.11n(HT20) Antenna: ANT0



Lowest channel



Middle channel

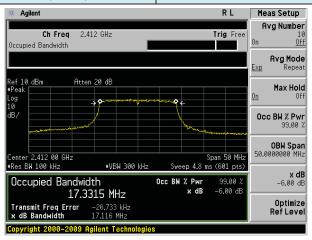


Highest channel

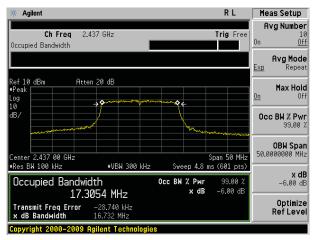
Shenzhen, China 518102



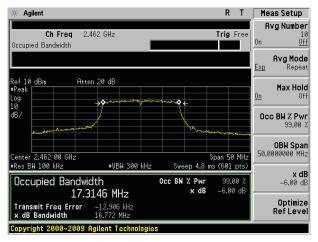
Test mode: 802.11n(HT20) Antenna: ANT1



Lowest channel



Middle channel

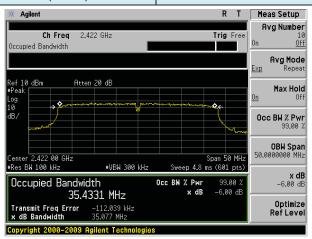


Highest channel

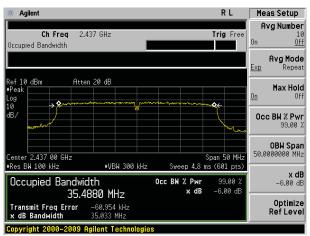
Shenzhen, China 518102



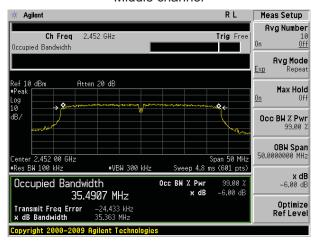
Test mode: 802.11n(HT40) Antenna: ANT0



Lowest channel



Middle channel

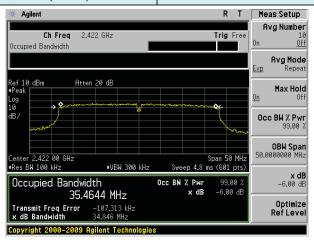


Highest channel

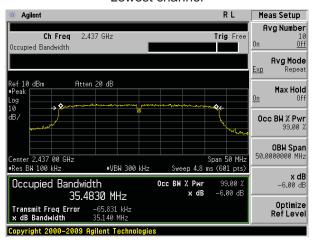
Shenzhen, China 518102



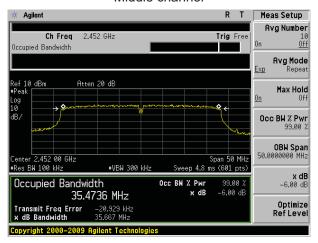
Test mode: 802.11n(HT40) Antenna: ANT1



Lowest channel



Middle channel



Highest channel

Shenzhen, China 518102



7.4 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)			
Test Method:	ANSI C63.4:2003, KDB558074 D01 DTS Meas Guidance V03 and KDB 662911 D01 Multiple Transmitter Output v02r01			
Limit:	8dBm/3kHz			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test procedure:	As an alternative to Publication: "662911 D01 Multiple Transmitter Output v02r01" Section E>2)>b), Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits			
Test Instruments:	Refer to section 6.0 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Pass			



Measurement Data

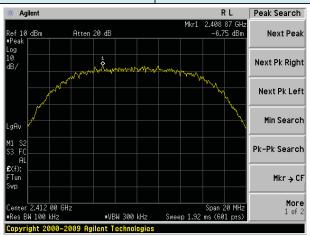
Modulation	Test CH	Power Spectral Density (dBm)		Sum Power Spectral density (dBm)	Limit (dBm/3kHz)	Result
	Lowest	ANT0	-6.75	-3.73	8.00	Pass
		ANT1	-6.74	-3.73		
802.11b	Middle	ANT0	-6.74	-3.67		
002.110		ANT1	-6.63			
	Lighoot	ANT0	-6.59	-3.71		
	Highest	ANT1	-6.85	-3.71		
	Lowest	ANT0	-8.52	-5.39		Pass
	Lowest	ANT1	-8.29	-5.39		
902.11~	Middle	ANT0	-8.58	F F1	8.00	
802.11g		ANT1	-8.46	-5.51		
	Highest	ANT0	-8.50	-5.55		
		ANT1	-8.63			
	Lowest	ANT0	-10.47	-7.34	8.00	Pass
		ANT1	-10.24			
802.11n(HT20)	Middle	ANT0	-10.17	-7.35		
002.1111(H120)		ANT1	-10.56			
	Highest	ANT0	-10.17	-7.09		
		ANT1	-10.03			
	Lowest	ANT0	-13.20	-10.55	8.00	Pass
		ANT1	-13.95			
902 11 _m /UT40\	Middle	ANT0	-13.22	-10.30		
802.11n(HT40)		ANT1	-13.40			
	Highest	ANT0	-13.31	-10.49		
		ANT1	-13.70			

Shenzhen, China 518102

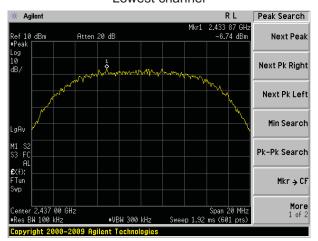


Test plot as follows:

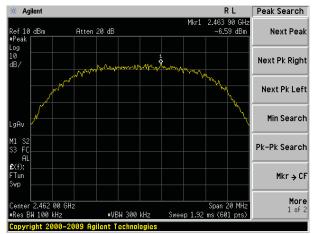
Test mode: 802.11b Antenna: ANT0



Lowest channel



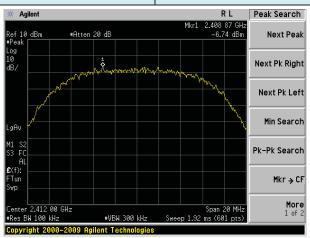
Middle channel



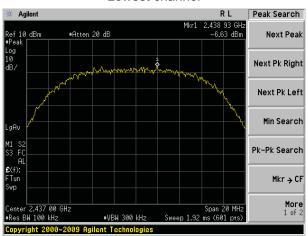
Highest channel



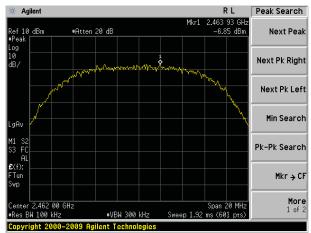
Test mode: 802.11b Antenna: ANT1



Lowest channel



Middle channel

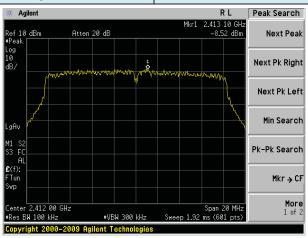


Highest channel

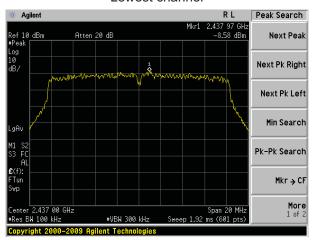
Shenzhen, China 518102



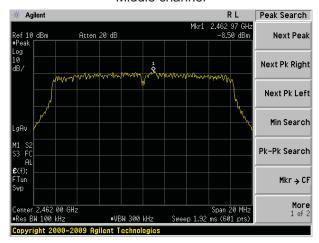
Test mode: 802.11g Antenna: ANT0



Lowest channel



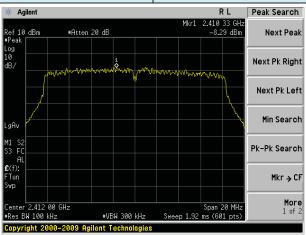
Middle channel



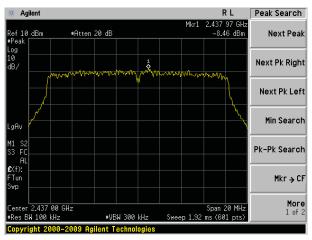
Highest channel



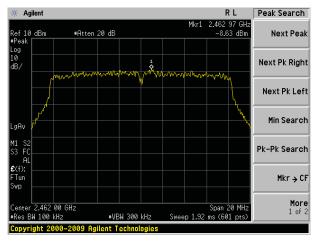
Test mode: 802.11g Antenna: ANT1



Lowest channel



Middle channel

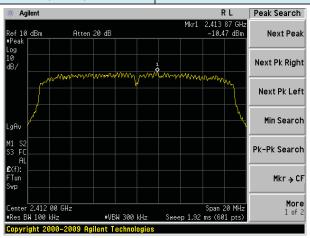


Highest channel

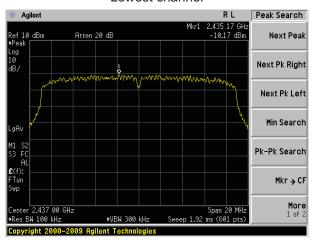
Shenzhen, China 518102



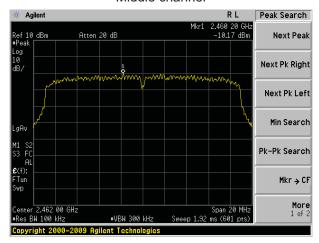
Test mode: 802.11n(HT20) Antenna: ANT0



Lowest channel



Middle channel

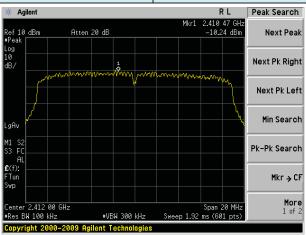


Highest channel

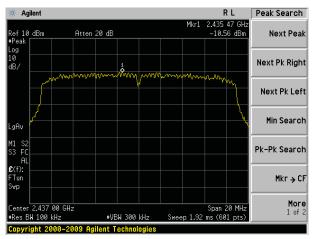
Shenzhen, China 518102



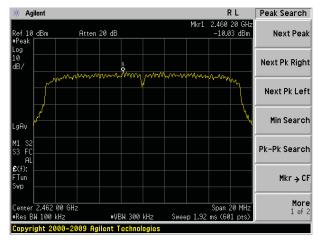
Test mode: 802.11n(HT20) Antenna: ANT1



Lowest channel



Middle channel

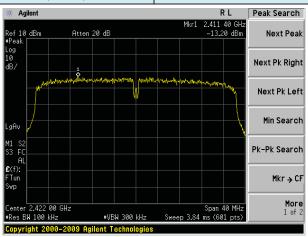


Highest channel

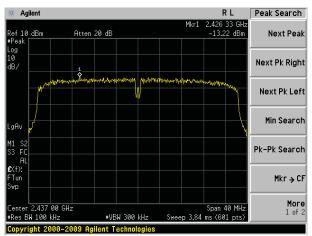
Shenzhen, China 518102



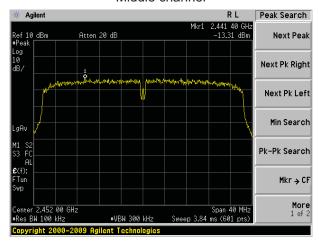
Test mode: 802.11n(HT40) Antenna: ANT0



Lowest channel



Middle channel

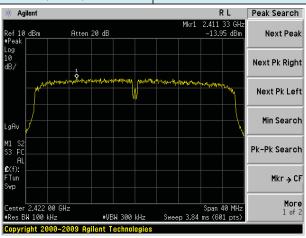


Highest channel

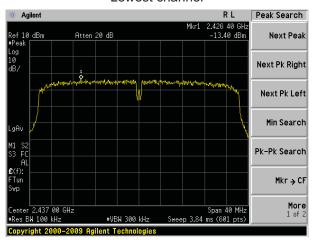
Shenzhen, China 518102



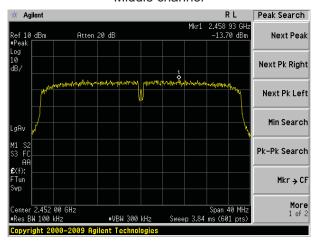
Test mode: 802.11n(HT40) Antenna: ANT1



Lowest channel



Middle channel



Highest channel



7.5 Band Edge

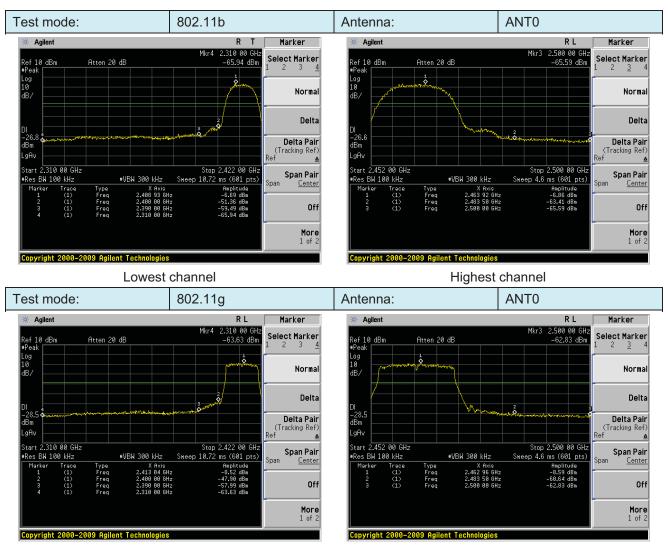
7.5.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)							
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03							
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.							
Test setup:	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							

Test plot as follows:

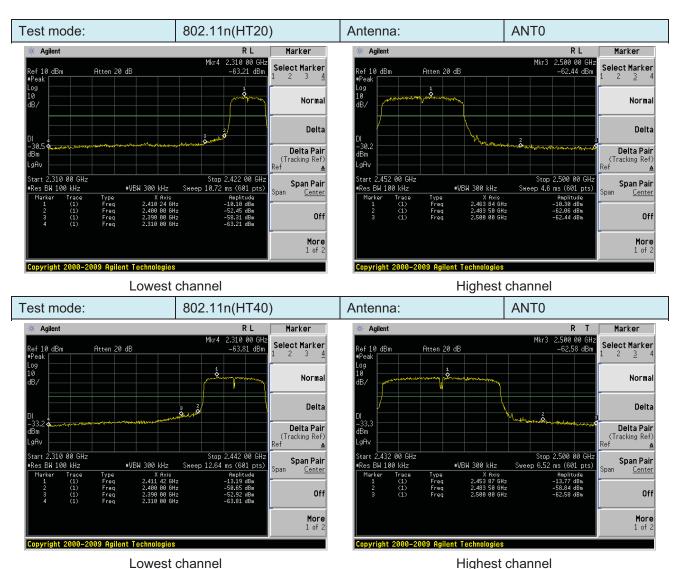
Shenzhen, China 518102





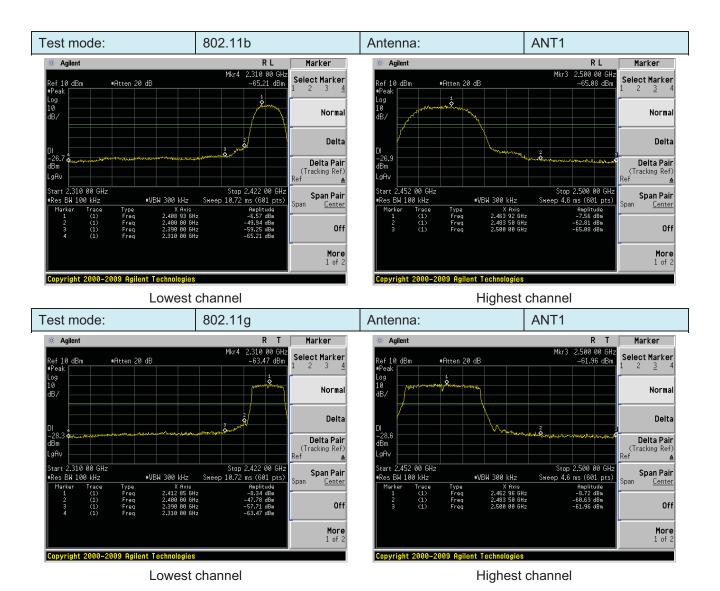
Lowest channel Highest channel



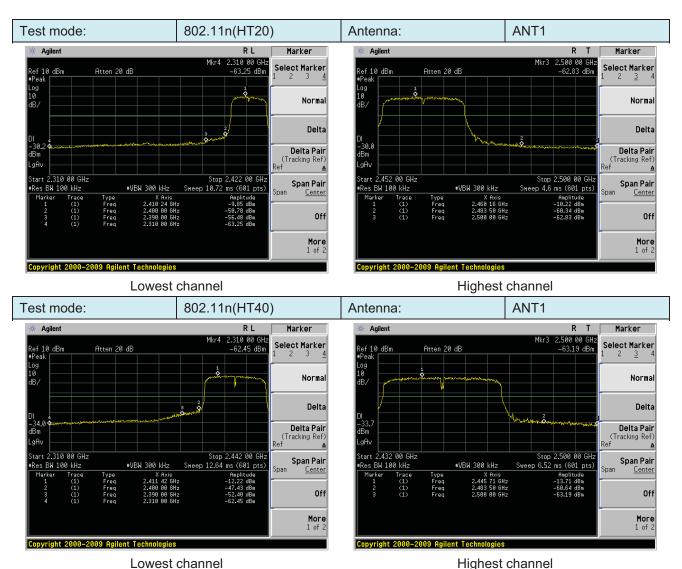


Highest channel











7.5.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205						
Test Method:	ANSI C63.4: 20	03					
Test Frequency Range:	All of the restrict 2500MHz) data		e tested, only	the worst	band's (2310MHz to		
Test site:	Measurement D	istance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Remark		
	Above 1GHz	Peak	1MHz	3MHz	Peak Value		
		Peak	1MHz	10Hz	Average Value		
Limit:	Freque	ncy	Limit (dBuV/ 54.0)	Remark Average Value		
	Above 1	GHz	74.0		Peak Value		
Test setup: Test Procedure:	Turn	→ 3m → 4m → 1m → 1m → 1m → 1m → 1m → 1m → 1	he top of a ro	Horn Ai Spectrum Analyzer			
	360 degrees b. The EUT wa antenna, wh tower. d. The antenna ground to de horizontal a measureme e. For each su and then the and the rota the maximu f. The test-rec Specified Ba g. If the emiss the limit spec of the EUT have 10dB	s to determine as set to opera set 3 meter as metermine the reduced emiser and vertical point. It is provided that the second with the second as the sec	e the position ate with MIMO is away from inted on the to ried from one maximum valuarizations of stuned to height turned from the EUT in peak sting could be orted. Otherwij be re-tested to the interval of	of the higher of modes, the interference of a varial meter to form of the field the antennal was arrangents from 1 of degrees to eak Detect Fold Mode, a mode was a stopped a se the emissione by one	ence-receiving ble-height antenna ur meters above the ld strength. Both a are set to make the ged to its worst case meter to 4 meters o 360 degrees to find		
Test Instruments:	Refer to section	4.7 for details	6				
Test mode:	Refer to section	4.3 for details	3				
	Remark:Keeping			cle 100%			
Test results:	Pass						



Measurement data:

Test mode:

802.11b

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

Lowest

Test 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	36.35	27.59	5.38	30.18	39.14	74.00	-34.86	Horizontal
2400.00	54.16	27.58	5.39	30.18	56.95	74.00	-17.05	Horizontal
2390.00	39.62	27.59	5.38	30.18	42.41	74.00	-31.59	Vertical
2400.00	54.68	27.58	5.39	30.18	57.47	74.00	-16.53	Vertical
Average va	lue:							
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	24.19	27.59	5.38	30.18	26.98	54.00	-27.02	Horizontal
2400.00	35.36	27.58	5.39	30.18	38.15	54.00	-15.85	Horizontal
2390.00	26.31	27.59	5.38	30.18	29.10	54.00	-24.90	Vertical
2400.00	37.52	27.58	5.39	30.18	40.31	54.00	-13.69	Vertical
Test mode:	802.1	1b	Test chann	nel: High	nest			
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	37.24	27.53	5.47	29.93	40.31	74.00	-33.69	Horizontal
2500.00	33.51	27.55	5.49	29.93	36.62	74.00	-37.38	Horizontal
2483.50	39.24	27.53	5.47	29.93	42.31	74.00	-31.69	Vertical
2500.00	35.80	27.55	5.49	29.93	38.91	74.00	-35.09	Vertical
Average va	lue:							
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

2500.00 Remark:

2483.50

2500.00

2483.50

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

5.47

5.49

5.47

5.49

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

29.93

29.93

29.93

29.93

28.16

24.38

30.05

26.46

54.00

54.00

54.00

54.00

Global United Technology Services Co., Ltd.

25.09

21.27

26.98

23.35

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

27.53

27.55

27.53

27.55

-25.84

-29.62

-23.95

-27.54

Horizontal

Horizontal

Vertical

Vertical



Test mode:	802.1	1g	Test chann	nel: L	OW	est			
Peak value:	:			•			•	•	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	r	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	45.17	27.59	5.38	30.18	3	47.96	74.00	-26.04	Horizontal
2400.00	55.63	27.58	5.39	30.18	3	58.42	74.00	-15.58	Horizontal
2390.00	53.24	27.59	5.38	30.18	3	56.03	74.00	-17.97	Vertical
2400.00	25.47	27.58	5.39	30.18	3	28.26	74.00	-45.74	Vertical
Average va	lue:	•	•	•	•				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	r	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	27.63	27.59	5.38	30.18	3	30.42	54.00	-23.58	Horizontal
2400.00	33.09	27.58	5.39	30.18	3	35.88	54.00	-18.12	Horizontal
2390.00	30.29	27.59	5.38	30.18	3	33.08	54.00	-20.92	Vertical
2400.00	35.64	27.58	5.39	30.18	3	38.43	54.00	-15.57	Vertical
Test mode:	802.1	1g	Test chann	nel: Highest		est			
Peak value:	!								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	r	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	55.64	27.53	5.47	29.93	3	58.71	74.00	-15.29	Horizontal
2500.00	34.06	27.55	5.49	29.93	3	37.17	74.00	-36.83	Horizontal
2483.50	55.26	27.53	5.47	29.93	3	58.33	74.00	-15.67	Vertical
2500.00	38.56	27.55	5.49	29.93	}	41.67	74.00	-32.33	Vertical
Average va	lue:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	r	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	29.56	27.53	5.47	29.93	3	32.63	54.00	-21.37	Horizontal
2500.00	22.24	27.55	5.49	29.93	3	25.35	54.00	-28.65	Horizontal
2483.50	32.14	27.53	5.47	29.93	3	35.21	54.00	-18.79	Vertical

2500.00 Remark:

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

5.49

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

29.93

25.27

Global United Technology Services Co., Ltd.

22.16

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

27.55

Project No.: GTSE131101781RF

-28.73

Vertical

54.00



802.11n(HT20)

Test channel:

Lowest

Test mode:

Peak value:

Report No.: GTSE13110178101

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	45.63	27.59	5.38	30.18	48.42	74.00	-25.58	Horizontal	
2400.00	55.49	27.58	5.39	30.18	58.28	74.00	-15.72	Horizontal	
2390.00	51.74	27.59	5.38	30.18	54.53	74.00	-19.47	Vertical	
2400.00	59.26	27.58	5.39	30.18	62.05	74.00	-11.95	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	28.09	27.59	5.38	30.18	30.88	54.00	-23.12	Horizontal	
2400.00	34.26	27.58	5.39	30.18	37.05	54.00	-16.95	Horizontal	
2390.00	31.26	27.59	5.38	30.18	34.05	54.00	-19.95	Vertical	
2400.00	34.17	27.58	5.39	30.18	36.96	54.00	-17.04	Vertical	
		•							
Test mode:	802.1	1n(HT20)	Test chann	nel: High	nest				
Peak value:									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit		
2483.50		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Polarization	
	50.41	27.53	(dB) 5.47	(dB) 29.93	(dBuV/m) 53.48	(dBuV/m) 74.00		Polarization Horizontal	
2500.00	50.41 37.45	,	` /	` '	` ′	` ,	(dB)		
		27.53	5.47	29.93	53.48	74.00	(dB) -20.52	Horizontal	
2500.00	37.45	27.53 27.55	5.47 5.49	29.93 29.93	53.48 40.56	74.00 74.00	(dB) -20.52 -33.44	Horizontal Horizontal	
2500.00 2483.50	37.45 51.39 40.01	27.53 27.55 27.53	5.47 5.49 5.47	29.93 29.93 29.93	53.48 40.56 54.46	74.00 74.00 74.00	(dB) -20.52 -33.44 -19.54	Horizontal Horizontal Vertical	
2500.00 2483.50 2500.00	37.45 51.39 40.01	27.53 27.55 27.53	5.47 5.49 5.47	29.93 29.93 29.93	53.48 40.56 54.46	74.00 74.00 74.00 74.00	(dB) -20.52 -33.44 -19.54	Horizontal Horizontal Vertical	
2500.00 2483.50 2500.00 Average va Frequency	37.45 51.39 40.01 lue: Read Level	27.53 27.55 27.53 27.55 Antenna Factor	5.47 5.49 5.47 5.49 Cable Loss	29.93 29.93 29.93 29.93 Preamp Factor	53.48 40.56 54.46 43.12 Level	74.00 74.00 74.00 74.00	(dB) -20.52 -33.44 -19.54 -30.88 Over Limit	Horizontal Horizontal Vertical Vertical	
2500.00 2483.50 2500.00 Average va Frequency (MHz)	37.45 51.39 40.01 lue: Read Level (dBuV)	27.53 27.55 27.53 27.55 Antenna Factor (dB/m)	5.47 5.49 5.47 5.49 Cable Loss (dB)	29.93 29.93 29.93 29.93 Preamp Factor (dB)	53.48 40.56 54.46 43.12 Level (dBuV/m)	74.00 74.00 74.00 74.00 Limit Line (dBuV/m)	(dB) -20.52 -33.44 -19.54 -30.88 Over Limit (dB)	Horizontal Horizontal Vertical Vertical Polarization	
2500.00 2483.50 2500.00 Average va Frequency (MHz) 2483.50	37.45 51.39 40.01 Iue: Read Level (dBuV) 26.59	27.53 27.55 27.53 27.55 Antenna Factor (dB/m) 27.53	5.47 5.49 5.47 5.49 Cable Loss (dB) 5.47	29.93 29.93 29.93 29.93 Preamp Factor (dB) 29.93	53.48 40.56 54.46 43.12 Level (dBuV/m) 29.66	74.00 74.00 74.00 74.00 Limit Line (dBuV/m) 54.00	(dB) -20.52 -33.44 -19.54 -30.88 Over Limit (dB) -24.34	Horizontal Horizontal Vertical Vertical Polarization 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.

Shenzhen, China 518102



Test mode:

Peak value:

802.11n(HT40)

Test channel:

Lowest

Report No.: GTSE13110178101

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	53.26	27.59	5.38	30.18	56.05	74.00	-17.95	Horizontal			
2400.00	54.63	27.58	5.39	30.18	57.42	74.00	-16.58	Horizontal			
2390.00	54.87	27.59	5.38	30.18	57.66	74.00	-16.34	Vertical			
2400.00	55.66	27.58	5.39	30.18	58.45	74.00	-15.55	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	29.97	27.59	5.38	30.18	32.76	54.00	-21.24	Horizontal			
2400.00	31.06	27.58	5.39	30.18	33.85	54.00	-20.15	Horizontal			
2390.00	32.01	27.59	5.38	30.18	34.80	54.00	-19.20	Vertical			
2400.00	34.58	27.58	5.39	30.18	37.37	54.00	-16.63	Vertical			
Test mode:	802.1	1n(HT40)	Test chann	nel: High	nest						
Peak value	:	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			
	Level	Factor	Loss	Factor			Limit	Polarization Horizontal			
(MHz)	Level (dBuV)	Factor (dB/m)	Loss (dB)	Factor (dB)	(dBuV/m)	(dBuV/m)	Limit (dB)				
(MHz) 2483.50	Level (dBuV) 56.54	Factor (dB/m) 27.53	Loss (dB) 5.47	Factor (dB) 29.93	(dBuV/m) 59.61	(dBuV/m) 74.00	Limit (dB) -14.39	Horizontal			
(MHz) 2483.50 2500.00	Level (dBuV) 56.54 46.52	Factor (dB/m) 27.53 27.55	Loss (dB) 5.47 5.49	Factor (dB) 29.93 29.93	(dBuV/m) 59.61 49.63	74.00 74.00	Limit (dB) -14.39 -24.37	Horizontal Horizontal			
(MHz) 2483.50 2500.00 2483.50	Level (dBuV) 56.54 46.52 56.47 45.89	Factor (dB/m) 27.53 27.55 27.53	Loss (dB) 5.47 5.49 5.47	Factor (dB) 29.93 29.93 29.93	(dBuV/m) 59.61 49.63 59.54	74.00 74.00 74.00 74.00	Limit (dB) -14.39 -24.37 -14.46	Horizontal Horizontal Vertical			
(MHz) 2483.50 2500.00 2483.50 2500.00	Level (dBuV) 56.54 46.52 56.47 45.89	Factor (dB/m) 27.53 27.55 27.53	Loss (dB) 5.47 5.49 5.47	Factor (dB) 29.93 29.93 29.93	(dBuV/m) 59.61 49.63 59.54	(dBuV/m) 74.00 74.00 74.00 74.00 Limit Line	Limit (dB) -14.39 -24.37 -14.46	Horizontal Horizontal Vertical			
(MHz) 2483.50 2500.00 2483.50 2500.00 Average va Frequency	Level (dBuV) 56.54 46.52 56.47 45.89 Iue: Read Level	Factor (dB/m) 27.53 27.55 27.55 27.55 Antenna Factor	Loss (dB) 5.47 5.49 5.49 Cable Loss	Factor (dB) 29.93 29.93 29.93 Preamp Factor	(dBuV/m) 59.61 49.63 59.54 49.00 Level	(dBuV/m) 74.00 74.00 74.00 74.00 Limit Line	Limit (dB) -14.39 -24.37 -14.46 -25.00 Over Limit	Horizontal Horizontal Vertical Vertical			
(MHz) 2483.50 2500.00 2483.50 2500.00 Average va Frequency (MHz)	Level (dBuV) 56.54 46.52 56.47 45.89 Ilue: Read Level (dBuV)	Factor (dB/m) 27.53 27.55 27.55 27.55 Antenna Factor (dB/m)	Loss (dB) 5.47 5.49 5.47 5.49 Cable Loss (dB)	Factor (dB) 29.93 29.93 29.93 Preamp Factor (dB)	(dBuV/m) 59.61 49.63 59.54 49.00 Level (dBuV/m)	(dBuV/m) 74.00 74.00 74.00 74.00 Limit Line (dBuV/m)	Limit (dB) -14.39 -24.37 -14.46 -25.00 Over Limit (dB)	Horizontal Horizontal Vertical Vertical Polarization			
(MHz) 2483.50 2500.00 2483.50 2500.00 Average va Frequency (MHz) 2483.50	Level (dBuV) 56.54 46.52 56.47 45.89 Iue: Read Level (dBuV) 28.69	Factor (dB/m) 27.53 27.55 27.55 27.55 Antenna Factor (dB/m) 27.53	Loss (dB) 5.47 5.49 5.47 5.49 Cable Loss (dB) 5.47	Factor (dB) 29.93 29.93 29.93 Preamp Factor (dB) 29.93	(dBuV/m) 59.61 49.63 59.54 49.00 Level (dBuV/m) 31.76	(dBuV/m) 74.00 74.00 74.00 74.00 Limit Line (dBuV/m) 54.00	Limit (dB) -14.39 -24.37 -14.46 -25.00 Over Limit (dB) -22.24	Horizontal Horizontal Vertical Vertical Polarization Horizontal			

Remark:

Shenzhen, China 518102

^{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.



7.6 Spurious Emission

7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)						
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03						
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.						
Test setup:	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						

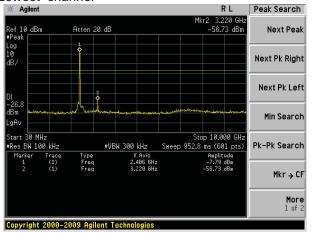
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



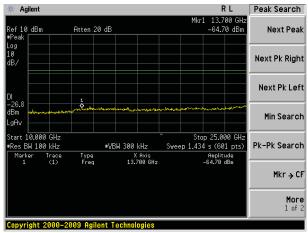
Test plot as follows:

Test mode: 802.11b Antenna: ANT0

Lowest channel

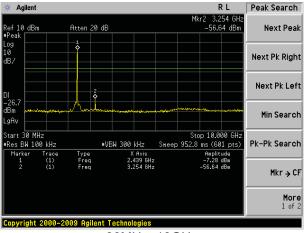


30MHz~10GHz

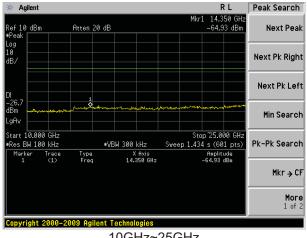


10GHz~25GHz

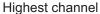
Middle channel

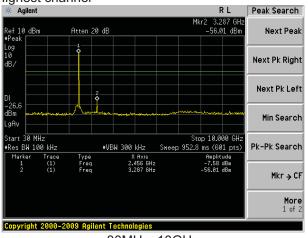


30MHz~10GHz

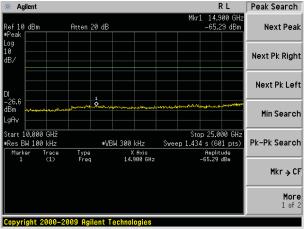


10GHz~25GHz





30MHz~10GHz

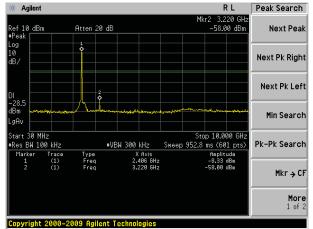


10GHz~25GHz



Test mode: 802.11g Antenna: ANT0



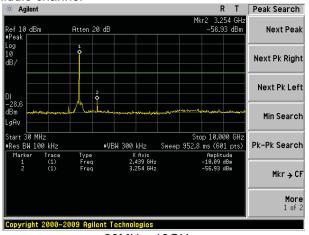


30MHz~10GHz

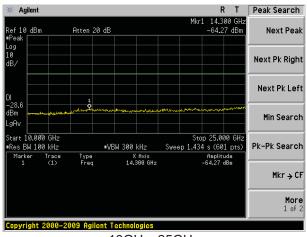
Peak Search Agilent 🖟 Ref 10 dBm Atten 20 dB Next Peak Next Pk Right Next Pk Left Min Search .gAv Start 10.000 GHz •Res BW 100 kHz Stop 25.000 GHz Sweep 1.434 s (601 pts) Pk-Pk Search *VBW 300 kHz Type Freq X Axis 15.375 GHz Mkr → CF More 1 of 2 Copyright 2000-2009 Agilent Technologies

10GHz~25GHz

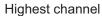
Middle channel

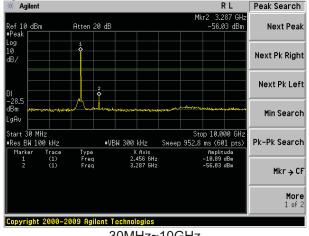


30MHz~10GHz

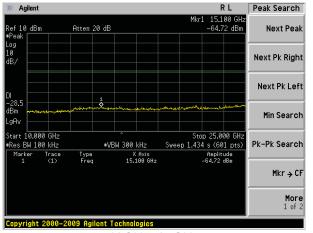


10GHz~25GHz





30MHz~10GHz

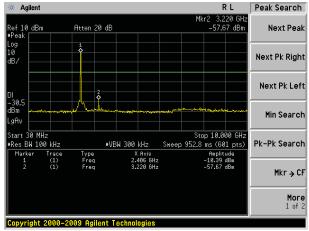


10GHz~25GHz



Test mode: 802.11n(HT20) Antenna: ANT0

Lowest channel

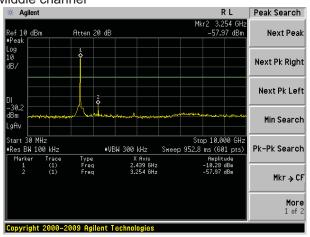


30MHz~10GHz

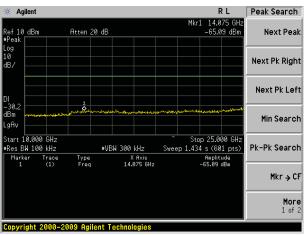
Peak Search Next Peak Atten 20 dB Next Pk Right Next Pk Left Min Search .gAv Start 10.000 GHz •Res BW 100 kHz Stop 25.000 GHz Sweep 1.434 s (601 pts) #VBW 300 kHz Pk-Pk Search X Axis 13.200 GHz Trace (1) Amplitude -65.45 dBm Mkr → CF Copyright 2000-2009 Agilent Technologies

10GHz~25GHz

Middle channel

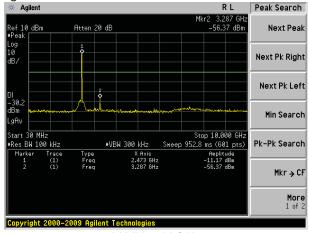


30MHz~10GHz

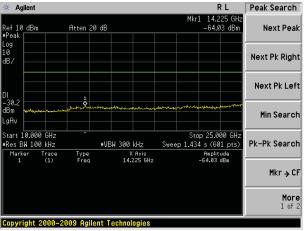


10GHz~25GHz

Highest channel



30MHz~10GHz



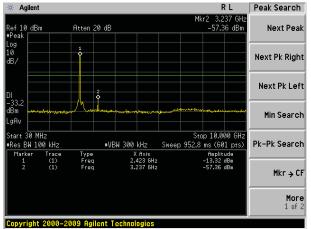
10GHz~25GHz

Shenzhen, China 518102



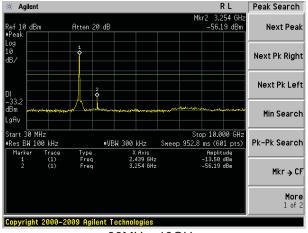
Test mode: 802.11n(HT40) ANT0 Antenna:

Lowest channel



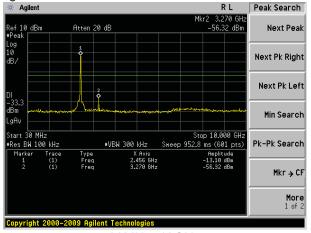
30MHz~10GHz

Middle channel

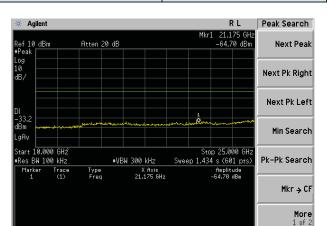


30MHz~10GHz

Highest channel

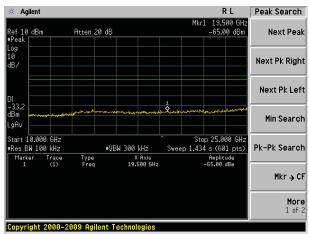


30MHz~10GHz

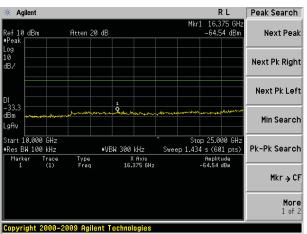


10GHz~25GHz

Copyright 2000-2009 Agilent Technologic



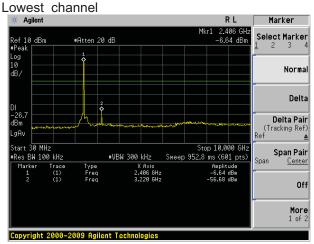
10GHz~25GHz



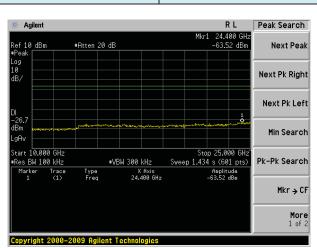
10GHz~25GHz



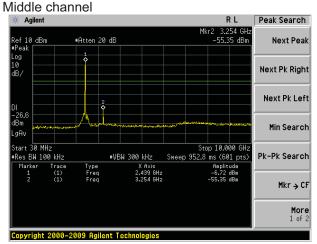
Test mode: 802.11b Antenna: ANT1



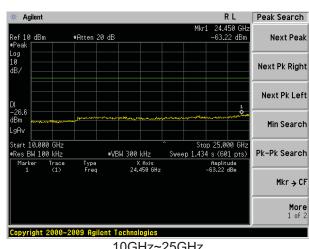
30MHz~10GHz



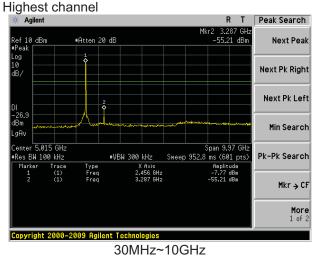
10GHz~25GHz

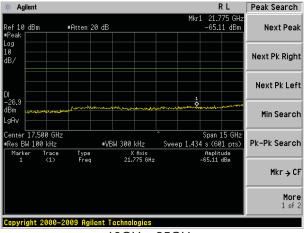


30MHz~10GHz



10GHz~25GHz



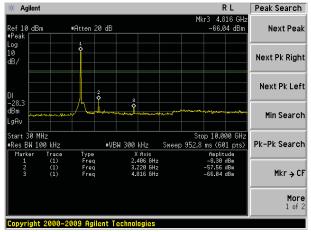


10GHz~25GHz



Test mode: 802.11g Antenna: ANT1

Lowest channel

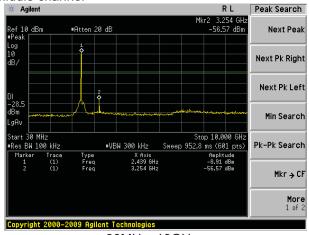


30MHz~10GHz

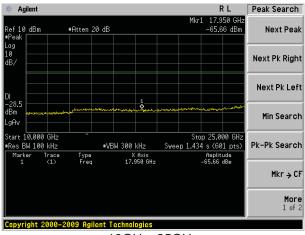
Peak Search Agilent 🖟 Ref 10 dBm #Atten 20 dB Next Peak Next Pk Right Next Pk Left Min Search .gAv Start 10.000 GHz •Res BW 100 kHz Stop 25.000 GHz Sweep 1.434 s (601 pts) Pk-Pk Search *VBW 300 kHz Type Freq X Axis 13.650 GHz Mkr → CF More 1 of 2 Copyright 2000-2009 Agilent Technologies

10GHz~25GHz

Middle channel

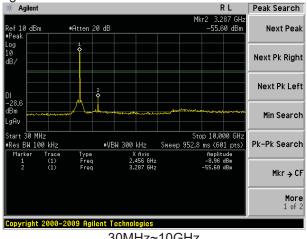


30MHz~10GHz

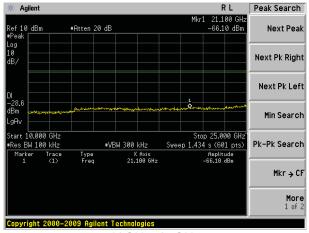


10GHz~25GHz





30MHz~10GHz

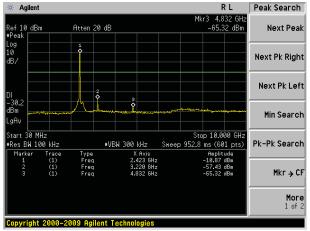


10GHz~25GHz



Test mode: 802.11n(HT20) Antenna: ANT1

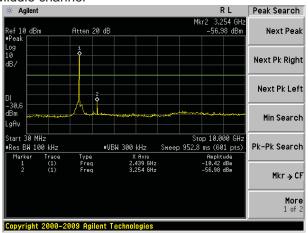
Lowest channel



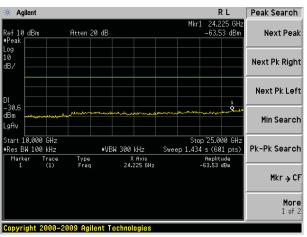
30MHz~10GHz

10GHz~25GHz

Middle channel

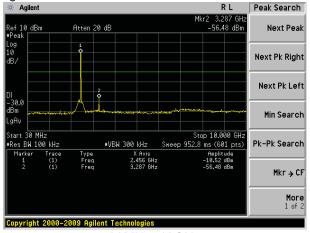


30MHz~10GHz

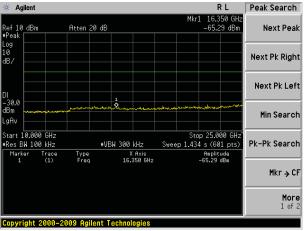


10GHz~25GHz

Highest channel



30MHz~10GHz

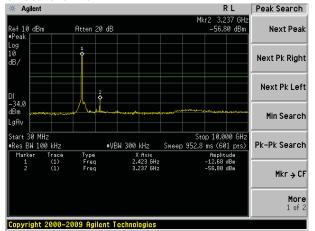


10GHz~25GHz

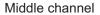


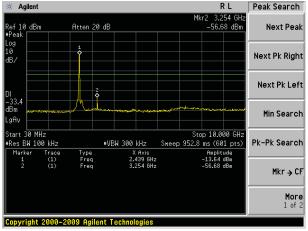
Test mode: 802.11n(HT40) ANT1 Antenna:

Lowest channel



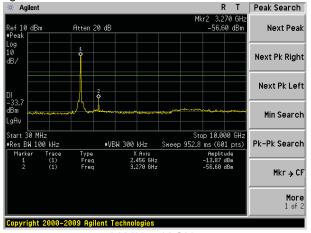
30MHz~10GHz



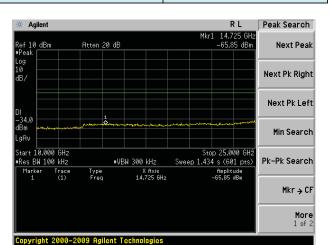


30MHz~10GHz

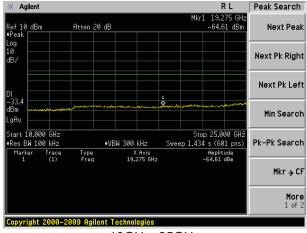
Highest channel



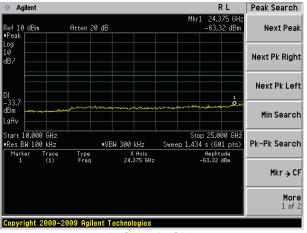
30MHz~10GHz



10GHz~25GHz



10GHz~25GHz



10GHz~25GHz



7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Se	FCC Part15 C Section 15.209						
Test Method:	ANSI C63.4: 200	3						
Test Frequency Range:	30MHz to 25GHz	7						
Test site:	Measurement Dis	stance: 3m						
Receiver setup:	Frequency	Detector	RBW	VBW	Value			
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak			
	Above 1GHz	Peak	1MHz	3MHz	Peak			
	Above TOTIZ	Peak	1MHz	10Hz	Average			
Limit:	Frequen	cy L	imit (dBuV	/m @3m)	Value			
	30MHz-88	MHz	40.0	0	Quasi-peak			
	88MHz-216	6MHz	43.5	0	Quasi-peak			
	216MHz-96	0MHz	46.0	0	Quasi-peak			
	960MHz-1	GHz	54.0	0	Quasi-peak			
	Above 10	NU	54.0	0	Average			
	Above 10	9N2	74.0	0	Peak			
	Tum 70.8m Table 0.8m Above 1GHz	Turn 0.8m Im A A A A A A A A A A A A A A A A A A						
	Antenna Tower Horn Antenna Spectrum Analyzer Turn Table A A A Amplifier							
Test Procedure:	1. The EUT was	placed on the	top of a rota	ating table 0	8 meters above			

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



	Report No.: GTSE13110178101
	the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
	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.
	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, quasipeak or average method as specified and then reported in a data sheet.
	7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Remark:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case. Keeping MIMO transmitter with duty cycle 100%

Shenzhen, China 518102



Measurement Data

■ Below 1GHz

- Below								
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
49.19	38.62	15.31	0.76	31.97	22.72	40.00	-17.28	Vertical
95.76	37.78	14.90	1.16	31.74	22.10	43.50	-21.40	Vertical
143.83	48.14	10.22	1.53	31.96	27.93	43.50	-15.57	Vertical
233.35	44.26	13.78	2.04	32.16	27.92	46.00	-18.08	Vertical
432.55	41.82	17.53	3.01	31.78	30.58	46.00	-15.42	Vertical
755.39	36.91	21.53	4.29	31.26	31.47	46.00	-14.53	Vertical
48.16	36.53	15.36	0.75	31.98	20.66	40.00	-19.34	Horizontal
143.83	45.25	10.22	1.53	31.96	25.04	43.50	-18.46	Horizontal
233.35	45.94	13.78	2.04	32.16	29.60	46.00	-16.40	Horizontal
249.43	45.99	14.07	2.12	32.16	30.02	46.00	-15.98	Horizontal
714.17	37.43	21.00	4.14	31.21	31.36	46.00	-14.64	Horizontal
993.01	36.43	23.68	5.19	31.24	34.06	54.00	-19.94	Horizontal



Above 1GHz

Test mode:		802.11b		Test	channel:	annel: Lowest			
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	
4824.00	31.53	31.79	8.62	32.10	39.84	74.00	-34.16	Vertical	
7236.00	27.26	36.19	11.68	31.97	43.16	74.00	-30.84	Vertical	
9648.00	27.98	38.07	14.16	31.56	48.65	74.00	-25.35	Vertical	
12060.00	*					74.00		Vertical	
14472.00	*					74.00		Vertical	
16884.00	*					74.00		Vertical	
4824.00	32.01	31.79	8.62	32.10	40.32	74.00	-33.68	Horizontal	
7236.00	27.13	36.19	11.68	31.97	43.03	74.00	-30.97	Horizontal	
9648.00	27.56	38.07	14.16	31.56	48.23	74.00	-25.77	Horizontal	
12060.00	*					74.00		Horizontal	
14472.00	*					74.00		Horizontal	
16884.00	*					74.00		Horizontal	
Average val									
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	
4824.00	22.45	31.79	8.62	32.10	30.76	54.00	-23.24	Vertical	
7236.00	16.81	36.19	11.68	31.97	32.71	54.00	-21.29	Vertical	
9648.00	17.15	38.07	14.16	31.56	37.82	54.00	-16.18	Vertical	
12060.00	*					54.00		Vertical	
14472.00	*					54.00		Vertical	
16884.00	*					54.00		Vertical	
4824.00	21.84	31.79	8.62	32.10	30.15	54.00	-23.85	Horizontal	
7236.00	16.43	36.19	11.68	31.97	32.33	54.00	-21.67	Horizontal	
9648.00	16.20	38.07	14.16	31.56	36.87	54.00	-17.13	Horizontal	
12060.00	*					54.00		Horizontal	
14472.00	*					54.00		Horizontal	
16884.00	*					54.00		Horizontal	

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11b			Test channel:			Middl	e	
Peak value:										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fact (dE	tor	Level (dBuV/m)	Limit I (dBu\		Over Limit (dB)	polarization
4874.00	32.62	31.85	8.66	32.	12	41.01	74.00		-32.99	Vertical
7311.00	28.20	36.37	11.71	31.9	91	44.37	74.0	00	-29.63	Vertical
9748.00	27.95	38.27	14.25	31.5	56	48.91	74.0	00	-25.09	Vertical
12185.00	*						74.0	00		Vertical
14622.00	*						74.0	00		Vertical
17059.00	*						74.0	00		Vertical
4874.00	33.37	31.85	8.66	32.	12	41.76	74.0	00	-32.24	Horizontal
7311.00	26.97	36.37	11.71	31.9	91	43.14	74.0	00	-30.86	Horizontal
9748.00	27.90	38.27	14.25	31.5	56	48.86	74.0	00	-25.14	Horizontal
12185.00	*						74.0	00		Horizontal
14622.00	*						74.0	00		Horizontal
17059.00	*						74.0	00		Horizontal
Average val										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fact (dE	tor	Level (dBuV/m)	Limit I (dBu\		Over Limit (dB)	polarization
4874.00	23.61	31.85	8.66	32.	12	32.00	54.0	00	-22.00	Vertical
7311.00	16.55	36.37	11.71	31.9	91	32.72	54.0	00	-21.28	Vertical
9748.00	17.24	38.27	14.25	31.5	56	38.20	54.0	00	-15.80	Vertical
12185.00	*						54.0	00		Vertical
14622.00	*						54.0	00		Vertical
17059.00	*						54.0	00		Vertical
4874.00	23.57	31.85	8.66	32.	12	31.96	54.0	00	-22.04	Horizontal
7311.00	16.09	36.37	11.71	31.9	91	32.26	54.0	00	-21.74	Horizontal
9748.00	17.64	38.27	14.25	31.5	56	38.60	54.0	00	-15.40	Horizontal
12185.00	*						54.0	00		Horizontal
14622.00	*						54.0	00		Horizontal
17059.00	*						54.0	00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11b		1	Test c	channel:	Hig	hest	
Peak value:									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prear Facto (dB	or	Level (dBuV/m)	Limit Line (dBuV/m)	I I Imit	polarization
4924.00	36.90	31.90	8.70	32.1	5	45.35	74.00	-28.65	Vertical
7386.00	28.08	36.49	11.76	31.8	3	44.50	74.00	-29.50	Vertical
9848.00	30.68	38.62	14.31	31.7	7	51.84	74.00	-22.16	Vertical
12310.00	*						74.00		Vertical
14772.00	*						74.00		Vertical
17234.00	*						74.00		Vertical
4924.00	36.67	31.90	8.70	32.1	5	45.12	74.00	-28.88	Horizontal
7386.00	27.22	36.49	11.76	31.8	3	43.64	74.00	-30.36	Horizontal
9848.00	26.96	38.62	14.31	31.7	7	48.12	74.00	-25.88	Horizontal
12310.00	*						74.00		Horizontal
14772.00	*						74.00		Horizontal
17234.00	*						74.00		Horizontal
Average val									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prear Facto (dB	or	Level (dBuV/m)	Limit Line (dBuV/m)	I Imit	polarization
4924.00	28.05	31.90	8.70	32.1	5	36.50	54.00	-17.50	Vertical
7386.00	18.06	36.49	11.76	31.8	3	34.48	54.00	-19.52	Vertical
9848.00	19.24	38.62	14.31	31.7	7	40.40	54.00	-13.60	Vertical
12310.00	*						54.00		Vertical
14772.00	*						54.00		Vertical
17234.00	*						54.00		Vertical
4924.00	27.19	31.90	8.70	32.1	5	35.64	54.00	-18.36	Horizontal
7386.00	16.66	36.49	11.76	31.8	3	33.08	54.00	-20.92	Horizontal
9848.00	16.26	38.62	14.31	31.7	7	37.42	54.00	-16.58	Horizontal
12310.00	*						54.00		Horizontal
14772.00	*						54.00		Horizontal
17234.00	*						54.00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g			Test channel:			lowest		
Peak value:		!								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fa	amp ctor IB)	Level (dBuV/m)	Limit Line (dBuV/m)		Over Limit (dB)	polarization
4824.00	31.26	31.79	8.62	32	.10	39.57	74.00		-34.43	Vertical
7236.00	26.44	36.19	11.68	31	.97	42.34	74.	00	-31.66	Vertical
9648.00	27.39	38.07	14.16	31	.56	48.06	74.	00	-25.94	Vertical
12060.00	*						74.	00		Vertical
14472.00	*						74.	00		Vertical
16884.00	*						74.	00		Vertical
4824.00	30.90	31.79	8.62	32	.10	39.21	74.	00	-34.79	Horizontal
7236.00	26.40	36.19	11.68	31	.97	42.30	74.	00	-31.70	Horizontal
9648.00	27.02	38.07	14.16	31	.56	47.69	74.	00	-26.31	Horizontal
12060.00	*						74.	00		Horizontal
14472.00	*						74.	00		Horizontal
16884.00	*						74.	00		Horizontal
Average val	ue:			'					•	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fa	amp ctor IB)	Level (dBuV/m)	Limit (dBu		Over Limit (dB)	polarization
4824.00	21.24	31.79	8.62	32	.10	29.55	54.	00	-24.45	Vertical
7236.00	16.01	36.19	11.68	31	.97	31.91	54.	00	-22.09	Vertical
9648.00	16.59	38.07	14.16	31	.56	37.26	54.	00	-16.74	Vertical
12060.00	*						54.	00		Vertical
14472.00	*						54.	00		Vertical
16884.00	*						54.	00		Vertica
4824.00	20.81	31.79	8.62	32	.10	29.12	54.	00	-24.88	Horizontal
7236.00	15.73	36.19	11.68	31	.97	31.63	54.	00	-22.37	Horizontal
9648.00	15.67	38.07	14.16	31	.56	36.34	54.	00	-17.66	Horizontal
12060.00	*						54.	00		Horizontal
14472.00	*						54.	00		Horizontal
16884.00	*						54.	00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g			Test chann			Midd	le	
Peak value:		!								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fac (dl	tor	Level (dBuV/m)	Limit Line (dBuV/m)		Over Limit (dB)	polarization
4874.00	31.54	31.85	8.66	32.	12	39.93	74.	00	-34.07	Vertical
7311.00	27.51	36.37	11.71	31.	91	43.68	74.	00	-30.32	Vertical
9748.00	27.46	38.27	14.25	31.	56	48.42	74.	00	-25.58	Vertical
12185.00	*						74.	00		Vertical
14622.00	*						74.	00		Vertical
17059.00	*						74.	00		Vertical
4874.00	32.46	31.85	8.66	32.	12	40.85	74.	00	-33.15	Horizontal
7311.00	26.38	36.37	11.71	31.	91	42.55	74.	00	-31.45	Horizontal
9748.00	27.45	38.27	14.25	31.	56	48.41	74.	00	-25.59	Horizontal
12185.00	*						74.	00		Horizontal
14622.00	*						74.	00		Horizontal
17059.00	*						74.	00		Horizontal
Average val				•					•	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fac (dl	tor	Level (dBuV/m)	Limit (dBu\		Over Limit (dB)	polarization
4874.00	22.61	31.85	8.66	32.	12	31.00	54.	00	-23.00	Vertical
7311.00	15.89	36.37	11.71	31.	91	32.06	54.	00	-21.94	Vertical
9748.00	16.77	38.27	14.25	31.	56	37.73	54.	00	-16.27	Vertical
12185.00	*						54.	00		Vertical
14622.00	*						54.	00		Vertical
17059.00	*						54.	00		Vertical
4874.00	22.71	31.85	8.66	32.	12	31.10	54.	00	-22.90	Horizontal
7311.00	15.51	36.37	11.71	31.	91	31.68	54.	00	-22.32	Horizontal
9748.00	17.21	38.27	14.25	31.	56	38.17	54.	00	-15.83	Horizontal
12185.00	*						54.	00		Horizontal
14622.00	*						54.	00		Horizontal
17059.00	*						54.	00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g		Test	channel:	Highe	est	
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
4924.00	35.03	31.90	8.70	32.15	43.48	74.00	-30.52	Vertical
7386.00	26.90	36.49	11.76	31.83	43.32	74.00	-30.68	Vertical
9848.00	29.84	38.62	14.31	31.77	51.00	74.00	-23.00	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	35.09	31.90	8.70	32.15	43.54	74.00	-30.46	Horizontal
7386.00	26.19	36.49	11.76	31.83	42.61	74.00	-31.39	Horizontal
9848.00	26.18	38.62	14.31	31.77	47.34	74.00	-26.66	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal
Average val								
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
4924.00	26.33	31.90	8.70	32.15	34.78	54.00	-19.22	Vertical
7386.00	16.92	36.49	11.76	31.83	33.34	54.00	-20.66	Vertical
9848.00	18.43	38.62	14.31	31.77	39.59	54.00	-14.41	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	25.71	31.90	8.70	32.15	34.16	54.00	-19.84	Horizontal
7386.00	15.66	36.49	11.76	31.83	32.08	54.00	-21.92	Horizontal
9848.00	15.51	38.62	14.31	31.77	36.67	54.00	-17.33	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	T20)		Test o	channel:	L	.owest	
Peak value:									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fact (dE	tor	Level (dBuV/m)	Limit Li (dBuV/	l limit	polarization
4824.00	31.32	31.79	8.62	32.	10	39.63	74.00	-34.37	Vertical
7236.00	26.47	36.19	11.68	31.9	97	42.37	74.00	-31.63	Vertical
9648.00	27.42	38.07	14.16	31.5	56	48.09	74.00	-25.91	Vertical
12060.00	*						74.00)	Vertical
14472.00	*						74.00)	Vertical
16884.00	*						74.00)	Vertical
4824.00	30.95	31.79	8.62	32.	10	39.26	74.00	-34.74	Horizontal
7236.00	26.44	36.19	11.68	31.9	97	42.34	74.00	-31.66	Horizontal
9648.00	27.04	38.07	14.16	31.5	56	47.71	74.00	-26.29	Horizontal
12060.00	*						74.00)	Horizontal
14472.00	*						74.00)	Horizontal
16884.00	*						74.00)	Horizontal
Average val									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Prea Fact (dE	tor	Level (dBuV/m)	Limit Li (dBuV/	I I Imit	polarization
4824.00	21.30	31.79	8.62	32.	10	29.61	54.00	-24.39	Vertical
7236.00	16.05	36.19	11.68	31.9	97	31.95	54.00	-22.05	Vertical
9648.00	16.61	38.07	14.16	31.5	56	37.28	54.00	-16.72	Vertical
12060.00	*						54.00)	Vertical
14472.00	*						54.00)	Vertical
16884.00	*						54.00)	Vertical
4824.00	20.86	31.79	8.62	32.	10	29.17	54.00	-24.83	Horizontal
7236.00	15.76	36.19	11.68	31.9	97	31.66	54.00	-22.34	Horizontal
9648.00	15.70	38.07	14.16	31.	56	36.37	54.00	-17.63	Horizontal
12060.00	*						54.00)	Horizontal
14472.00	*						54.00)	Horizontal
16884.00	*						54.00)	Horizontal

Remark:

Shenzhen, China 518102

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

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	IT20)	Tes	channel:	Midd	le	
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
4874.00	31.59	31.85	8.66	32.12	39.98	74.00	-34.02	Vertical
7311.00	27.54	36.37	11.71	31.91	43.71	74.00	-30.29	Vertical
9748.00	27.48	38.27	14.25	31.56	48.44	74.00	-25.56	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	32.50	31.85	8.66	32.12	40.89	74.00	-33.11	Horizontal
7311.00	26.40	36.37	11.71	31.91	42.57	74.00	-31.43	Horizontal
9748.00	27.47	38.27	14.25	31.56	48.43	74.00	-25.57	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal
Average val	ue:		l	l				
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
4874.00	22.66	31.85	8.66	32.12	31.05	54.00	-22.95	Vertical
7311.00	15.92	36.37	11.71	31.91	32.09	54.00	-21.91	Vertical
9748.00	16.79	38.27	14.25	31.56	37.75	54.00	-16.25	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	22.75	31.85	8.66	32.12	31.14	54.00	-22.86	Horizontal
7311.00	15.54	36.37	11.71	31.91	31.71	54.00	-22.29	Horizontal
9748.00	17.23	38.27	14.25	31.56	38.19	54.00	-15.81	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

Shenzhen, China 518102

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

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	IT20)		Test channel:			Highe		
Peak value:										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fa	amp ctor IB)	Level (dBuV/m)	Limit Line (dBuV/m)		Over Limit (dB)	polarization
4924.00	35.12	31.90	8.70	32.15		43.57	74.00		-30.43	Vertical
7386.00	26.96	36.49	11.76	31	.83	43.38	74.	00	-30.62	Vertical
9848.00	29.88	38.62	14.31	31	.77	51.04	74.	00	-22.96	Vertical
12310.00	*						74.	00		Vertical
14772.00	*						74.	00		Vertical
17234.00	*						74.	00		Vertical
4924.00	35.17	31.90	8.70	32	15	43.62	74.	00	-30.38	Horizontal
7386.00	26.23	36.49	11.76	31	.83	42.65	74.	00	-31.35	Horizontal
9848.00	26.21	38.62	14.31	31	.77	47.37	74.	00	-26.63	Horizontal
12310.00	*						74.	00		Horizontal
14772.00	*						74.	00		Horizontal
17234.00	*						74.	00		Horizontal
Average val	ue:			'		•			•	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fa	amp ctor IB)	Level (dBuV/m)	Limit (dBu		Over Limit (dB)	polarization
4924.00	26.41	31.90	8.70	32	.15	34.86	54.	00	-19.14	Vertical
7386.00	16.98	36.49	11.76	31	.83	33.40	54.	00	-20.60	Vertical
9848.00	18.47	38.62	14.31	31	.77	39.63	54.	00	-14.37	Vertical
12310.00	*						54.	00		Vertical
14772.00	*						54.	00		Vertical
17234.00	*						54.	00		Vertical
4924.00	25.78	31.90	8.70	32	.15	34.23	54.	00	-19.77	Horizontal
7386.00	15.70	36.49	11.76	31	.83	32.12	54.	00	-21.88	Horizontal
9848.00	15.55	38.62	14.31	31	.77	36.71	54.	00	-17.29	Horizontal
12310.00	*						54.	00		Horizontal
14772.00	*						54.	00		Horizontal
17234.00	*						54.	00		Horizontal

Remark:

Shenzhen, China 518102

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

^{2 &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	IT40)		Test	channel:		Lowe	st	
Peak value:										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fac	amp ctor B)	Level (dBuV/m)	Limit Line (dBuV/m)		Over Limit (dB)	polarization
4844.00	29.91	31.81	8.63	32	.11	38.24	74.00		-35.76	Vertical
7266.00	25.58	36.28	11.69	31	.94	41.61	74.	00	-32.39	Vertical
9688.00	26.78	38.13	14.21	31	.52	47.60	74.	00	-26.40	Vertical
12060.00	*						74.	00		Vertical
14472.00	*						74.	00		Vertical
16884.00	*						74.	00		Vertical
4844.00	29.77	31.81	8.63	32	.11	38.10	74.	00	-35.90	Horizontal
7266.00	25.66	36.28	11.69	31	.94	41.69	74.	00	-32.31	Horizontal
9688.00	26.46	38.13	14.21	31	.52	47.28	74.	00	-26.72	Horizontal
12060.00	*						74.	00		Horizontal
14472.00	*						74.	00		Horizontal
16884.00	*						74.	00		Horizontal
Average val			•							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fac	amp ctor B)	Level (dBuV/m)	Limit (dBu\		Over Limit (dB)	polarization
4844.00	20.00	31.81	8.63	32	.11	28.33	54.	00	-25.67	Vertical
7266.00	15.19	36.28	11.69	31	.94	31.22	54.	00	-22.78	Vertical
9688.00	16.00	38.13	14.21	31	.52	36.82	54.	00	-17.18	Vertical
12060.00	*						54.	00		Vertical
14472.00	*						54.	00		Vertical
16884.00	*						54.	00		Vertical
4844.00	19.74	31.81	8.63	32	.11	28.07	54.	00	-25.93	Horizontal
7266.00	15.01	36.28	11.69	31	.94	31.04	54.	00	-22.96	Horizontal
9688.00	15.13	38.13	14.21	31	.52	35.95	54.	00	-18.05	Horizontal
12060.00	*						54.	00		Horizontal
14472.00	*						54.	00		Horizontal
16884.00	*						54.	00		Horizontal

Remark:

Shenzhen, China 518102

^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

^{2. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	IT40)	Test	channel:	Midd	le	
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
4874.00	30.42	31.85	8.66	32.12	38.81	74.00	-35.19	Vertical
7311.00	26.81	36.37	11.71	31.91	42.98	74.00	-31.02	Vertical
9748.00	26.96	38.27	14.25	31.56	47.92	74.00	-26.08	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	31.51	31.85	8.66	32.12	39.90	74.00	-34.10	Horizontal
7311.00	25.76	36.37	11.71	31.91	41.93	74.00	-32.07	Horizontal
9748.00	26.98	38.27	14.25	31.56	47.94	74.00	-26.06	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal
Average val								
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
4874.00	21.59	31.85	8.66	32.12	29.98	54.00	-24.02	Vertical
7311.00	15.21	36.37	11.71	31.91	31.38	54.00	-22.62	Vertical
9748.00	16.28	38.27	14.25	31.56	37.24	54.00	-16.76	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	21.83	31.85	8.66	32.12	30.22	54.00	-23.78	Horizontal
7311.00	14.91	36.37	11.71	31.91	31.08	54.00	-22.92	Horizontal
9748.00	16.76	38.27	14.25	31.56	37.72	54.00	-16.28	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

Shenzhen, China 518102

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



Test mode:		802.11n(H	IT40)		Test	channel:	Highest			
Peak value:				<u> </u>						
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fac	amp ctor B)	Level (dBuV/m)	Limit Line (dBuV/m)		Over Limit (dB)	polarization
4904.00	33.11	31.88	8.68	32.	.13	41.54	74.	00	-32.46	Vertical
7356.00	25.69	36.45	11.75	31.	.86	42.03	74.	00	-31.97	Vertical
9808.00	28.97	38.43	14.29	31.	.68	50.01	74.	00	-23.99	Vertical
12310.00	*						74.	00		Vertical
14772.00	*						74.	00		Vertical
17234.00	*						74.	00		Vertical
4904.00	33.47	31.88	8.68	32.	.13	41.90	74.	00	-32.10	Horizontal
7356.00	25.12	36.45	11.75	31.	.86	41.46	74.	00	-32.54	Horizontal
9808.00	25.38	38.43	14.29	31.	.68	46.42	74.	00	-27.58	Horizontal
12310.00	*						74.	00		Horizontal
14772.00	*						74.	00		Horizontal
17234.00	*						74.	00		Horizontal
Average val										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Fac	amp ctor B)	Level (dBuV/m)	Limit (dBu\		Over Limit (dB)	polarization
4904.00	24.56	31.88	8.68	32.	.13	32.99	54.	00	-21.01	Vertical
7356.00	15.75	36.45	11.75	31	.86	32.09	54.	00	-21.91	Vertical
9808.00	17.60	38.43	14.29	31.	.68	38.64	54.	00	-15.36	Vertical
12310.00	*						54.	00		Vertical
14772.00	*						54.	00		Vertical
17234.00	*						54.	00		Vertical
4904.00	24.19	31.88	8.68	32.	.13	32.62	54.	00	-21.38	Horizontal
7356.00	14.63	36.45	11.75	31.	.86	30.97	54.	00	-23.03	Horizontal
9808.00	14.74	38.43	14.29	31.	.68	35.78	54.	00	-18.22	Horizontal
12310.00	*						54.	00		Horizontal
14772.00	*						54.	00		Horizontal
17234.00	*						54.	00		Horizontal

Remark:

Shenzhen, China 518102

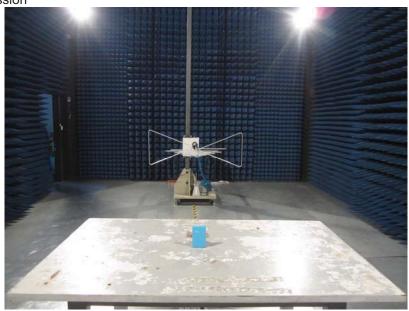
¹ Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

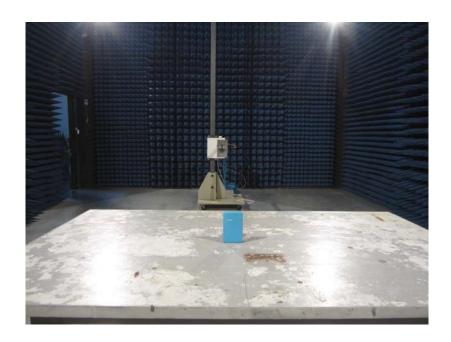
^{2 &}quot;*", means this data is the too weak instrument of signal is unable to test.



8 Test Setup Photo

Radiated Emission





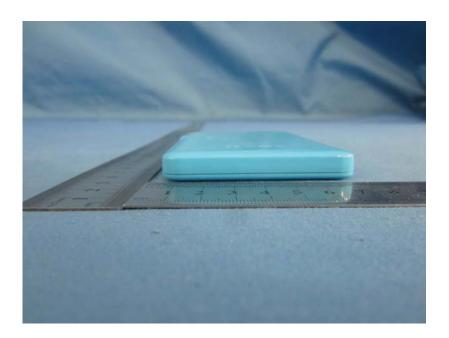


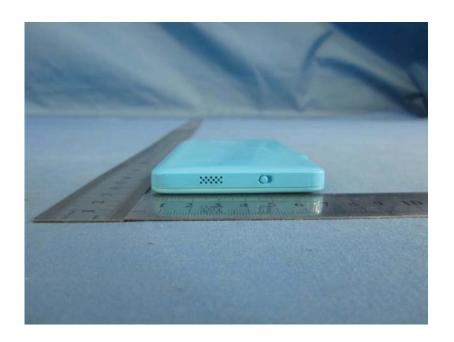
9 EUT Constructional Details



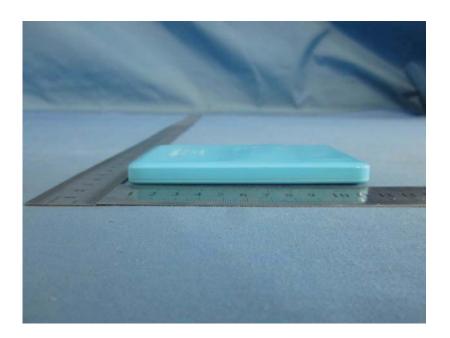








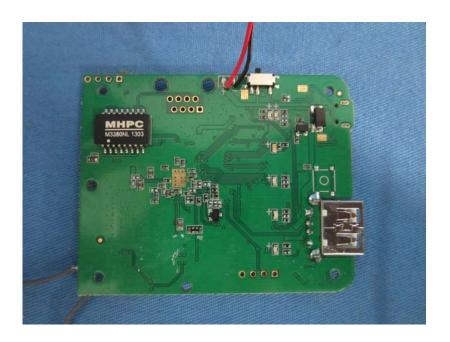










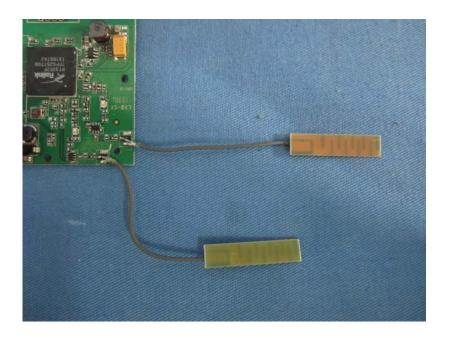












----end-----