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FCC Report (WIFI)

Applicant: Shenzhen Firstview Electronic Co. Ltd.

Address of Applicant: 3-4/F, Block B, Huafeng 1st Technology Zone Baoan Main

Road, Baoan District, Shenzhen, China

Equipment Under Test (EUT)

Product Name: 7 inch Tablet PC

Model No.: VTA0730, M741

FCC ID: YW5VTA0730

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2013

Date of sample receipt: November 3, 2014

Date of Test: November 3, 2014 To November 14, 2014

Date of report issued: November 14, 2014

Test Result: PASS *

Authorized Signature:

Kevin Yu 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 EBO product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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^{*} In the configuration tested, the EUT complied with the standards specified above.



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2 Version

Version No.	Date	Description
00	November 14, 2014	Original

Prepared By:	Jason	Date:	November 14, 2014
	Project Engineer		
Check By:	Cenyv	Date:	November 14, 2014



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

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



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5 General Information

5.1 Client Information

Applicant:	Shenzhen Firstview Electronic Co. Ltd.			
Address of Applicant:	3-4/F, Block B, Huafeng 1st Technology Zone Baoan Main Roa			
	Baoan District, Shenzhen, China			
Manufacturer:	Shenzhen Firstview Electronic Co., Ltd.			
Address of Manufacturer:	F3-6, Block B, Huafeng 1st Technology Zone, Baoan Main Road, Baoan			
	District, Shenzhen, P.R.China			

5.2 General Description of EUT

Product Name:	7 inch Tablet PC
Model No.:	VTA0730, M741
Test Model No.:	VTA0730
Operation Frequency:	802.11b/802.11g/802.11n(HT20): 2412MHz~2462MHz
	802.11n(HT40): 2422MHz~2452MHz
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11
	802.11(HT40): 7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS)
	802.11g/802.11n(H20)/802.11n(H40):
	Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	Integral Antenna
Antenna gain:	2dBi (declare by Applicant)
Power supply:	Input: DC 5V, 1500mA from adapter
	Or
	DC 3.7V, 2600mAh Li-ion Battery



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Operation Frequency each of channel								
Channel	Frequency	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:

Tastabannal	Frequency	y (MHz)
Test 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 with Duty cycle >98%

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.

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.

Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps

5.4 Description of Support Units

None



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5.5 Test Facility

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

CNAS —Registration No.: CNAS L5775

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

• FCC —Registration No.: 600491

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

• Industry Canada (IC) —Registration No.: 9079A-2

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

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



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6 Test Instruments list

Radi	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 2014	Mar. 28 2015		
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A		
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Jul. 01 2014	Jun 30 2015		
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	July 01 2014	June 30 2015		
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	July 01 2014	June 30 2015		
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015		
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015		
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015		
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015		
11	Coaxial Cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015		
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015		
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	July 01 2014	June 30 2015		
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	July 01 2014	June 30 2015		
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015		
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015		
17	Power Meter	Anritsu	ML2495A	GTS540	July 01 2014	June 30 2015		
18	Power Sensor	Anritsu	MA2411B	GTS541	July 01 2014	June 30 2015		

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	Jul. 01 2014	Jun. 30, 2015			
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	July 01 2014	June 30 2015			
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	July 01 2014	June 30 2015			
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July 01 2014	June 30 2015			
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	July 01 2014	June 30 2015			
6	Coaxial Cable	GTS	N/A	GTS227	July 01 2014	June 30 2015			
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			



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Gen	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 08 2014	July 07 2015		



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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 2dBi



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7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207	,				
Test Method:	ANSI C63.4:2003					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
	105V=31(12, VBV=301(12, 3		NP\/\			
Limit:	Frequency range (MHz) Limit (dBuV) Quasi-peak					
	Quasi-peak Average 0.15-0.5 66 to 56* 56 to 46*					
	0.15-0.5 66 to 56" 56 to 46" 0.5-5 56 46					
	5-30	60	50			
	* Decreases with the logarithn	n of the frequency.				
Test setup:	Reference Plane		_			
	AUX Filter AC power Equipment E.U.T Remark E.U.T Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m					
Test procedure:	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 500hm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 					
	3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					

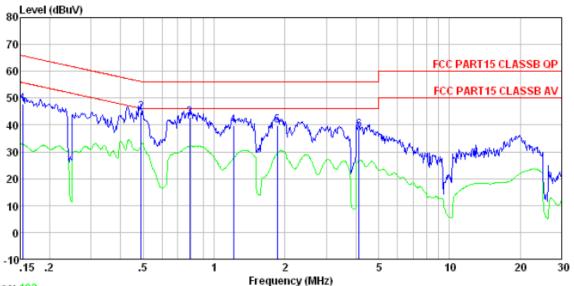


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Measurement data:





Trace: 192

: Shielded room

Site : FCC PART15 CLASSB QP LISN-2013 LINE Condition

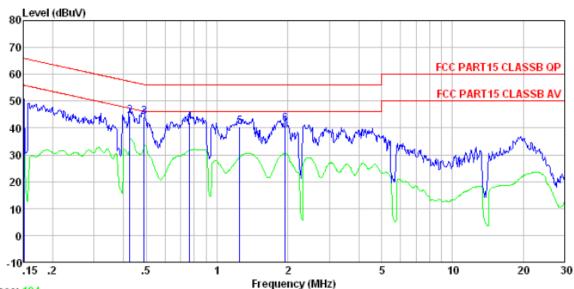
Test Engineer: Mike

CDC	Freq	Read	LISN Factor			Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBu₹	dBuV	dB	
1 2 3 4 5 6	0. 154 0. 489 0. 788 1. 210 1. 858 4. 136	42.55 39.53	0.14 0.13 0.12	0.11 0.13 0.13 0.14	44. 76 42. 82 39. 79	56.19 56.00 56.00 56.00	-13.18 -16.21 -16.14	QP QP QP QP



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Trace: 194

Site : Shielded room

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL Test Engineer: Mike

	Freq		LISN Factor					Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 2 3 4 5 6	0. 426 0. 489 0. 763	43.87 41.83 40.27	0.07 0.06 0.06 0.07 0.08 0.09	0.11 0.11 0.13 0.13	44. 48 44. 04 42. 03 40. 48	57.33 56.19 56.00 56.00	-12.85 -12.15 -13.97 -15.52	QP QP QP QP

Notes:

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



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7.3 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)		
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03		
Limit:	30dBm		
Test setup:	Power Meter E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

Measurement Data

Test CH Peak Output Power (dBm)					Limit(dBm)	Result
rest Cri	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(abin)	Kesuit
Lowest	8.76	7.85	7.44	6.71		
Middle	8.47	7.53	7.49	6.59	30.00	Pass
Highest	8.69	7.70	7.37	6.85		



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7.4 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		

Measurement Data

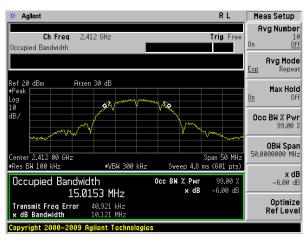
	Channel Bandwidth (MHz)					
Test CH	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(KHz)	Result
Lowest	10.121	16.639	17.883	36.508		
Middle	10.129	16.635	17.905	36.516	>500	Pass
Highest	10.127	16.599	16.632	36.490		

Test plot as follows:

Test mode:	802.11b
------------	---------



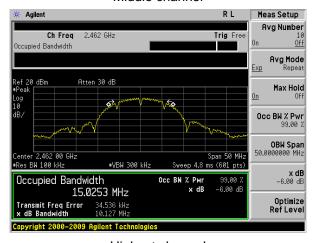
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Lowest channel



Middle channel

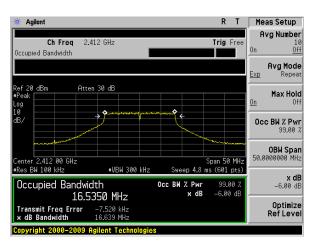


Highest channel

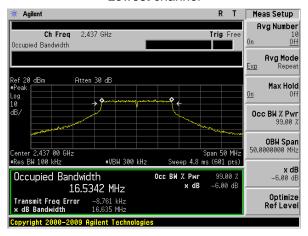
Test mode: 802.11g



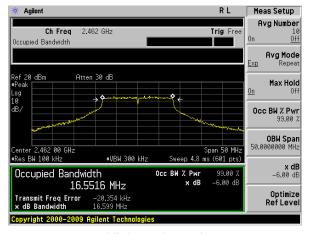
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Lowest channel



Middle channel

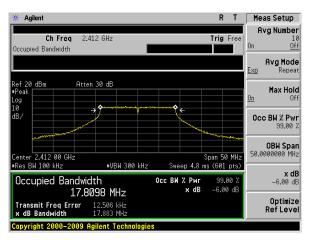


Highest channel

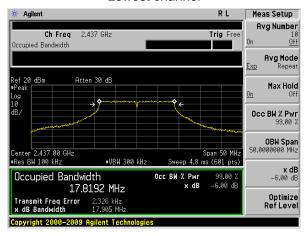
Test mode: 802.11n(HT20)



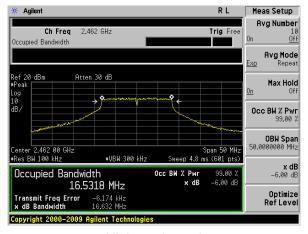
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Lowest channel



Middle channel

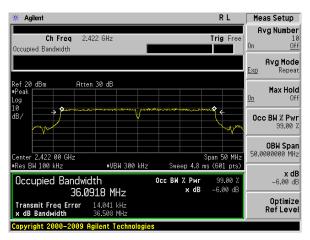


Highest channel

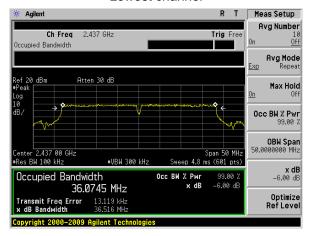
Test mode: 802.11n(HT40)



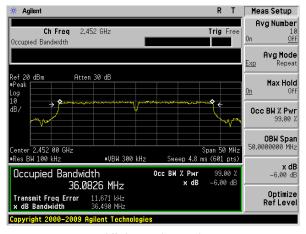
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Lowest channel



Middle channel



Highest channel



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7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.4:2003 and KDB558074 D01 DTS Meas Guidance V03
Limit:	8dBm
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

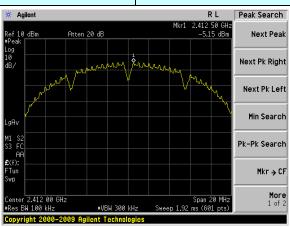
		Limit(dBm/3kHz				
Test CH	802.11b	802.11g	802.11n(HT20)	802.11n(HT40))	Result
Lowest	-5.15	-4.44	-5.65	-9.49		
Middle	-5.41	-4.27	-5.48	-9.13	8.00	Pass
Highest	-5.53	-4.26	-5.39	-9.34		



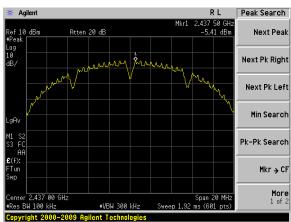
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Test plot as follows:

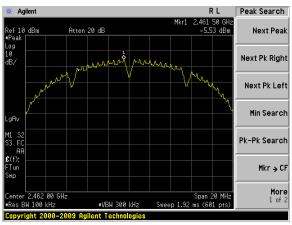
Test mode: 802.11b



Lowest channel



Middle channel

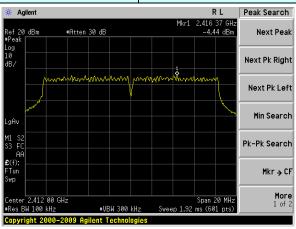


Highest channel

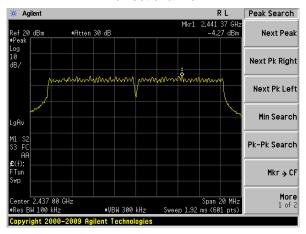


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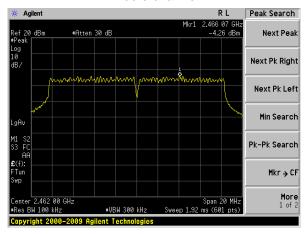
Test mode: 802.11g



Lowest channel



Middle channel

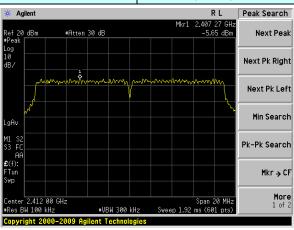


Highest channel

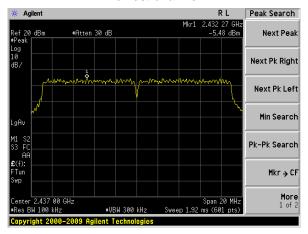


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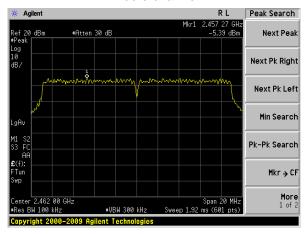
Test mode: 802.11n(HT20)



Lowest channel



Middle channel

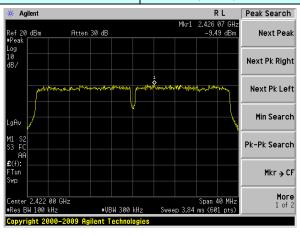


Highest channel

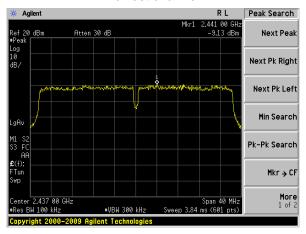


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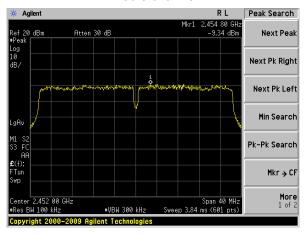
Test mode: 802.11n(HT40)



Lowest channel



Middle channel



Highest channel



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7.6 Band edges

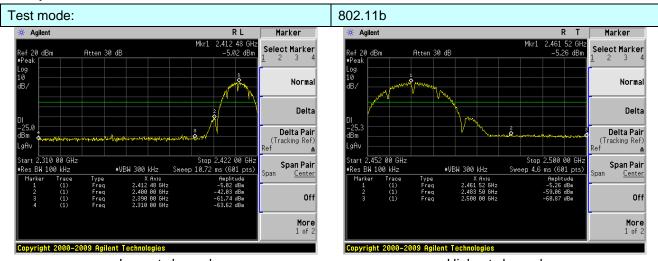
7.6.1 Conducted Emission Method

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 30 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				



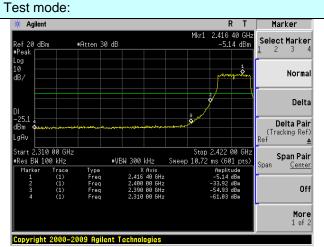
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Test plot as follows:

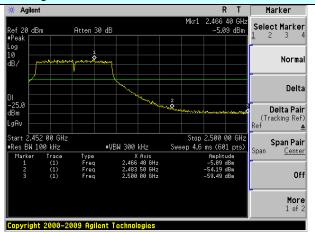


Lowest channel

Highest channel 802.11g



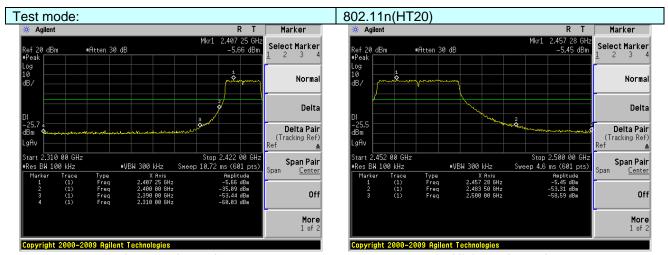
Lowest channel



Highest channel

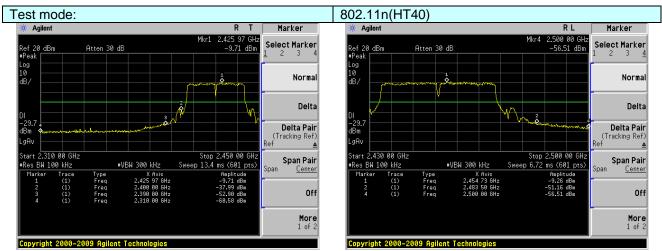


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Lowest channel

Highest channel



Lowest channel

Highest channel



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7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C S	Section 15.209	and 15.205				
Test Method:	ANSI C63.4: 2003						
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2390MHz to 2500MHz) data was showed.						
Test site:	Measurement Distance: 3m						
Receiver setup:		Frequency Detector RBW VBW Value					
·		Peak	1MHz	3MHz	Peak		
	Above 1GHz	Above 1GHz RMS		3MHz	Average		
Limit:	Freque		1MHz Limit (dBuV/		Value		
	Above 1		54.0	0	Average		
	Above i	GHZ	74.0	0	Peak		
Test setup:	Antenna Tower Horn Antenna Spectrum Analyzer Turn Table Amplifier						
Test Procedure:	 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. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. 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. 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. The radiation measurements are performed in X, Y, Z axis positioning. 						



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	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



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Measurement data:

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

Test mode:	, ,				Tes	st channel:		Lowest		
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	49.64	27.59	5.38	34.01		48.60	74.00	-25.40	Horizontal	
2400.00	57.98	27.58	5.39	34.01		56.94	74.00	-17.06	Horizontal	
2390.00	51.18	27.59	5.38	34.01		50.14	74.00	-23.86	Vertical	
2400.00	59.23	27.58	5.39	34.01		58.19	74.00	-15.81	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	36.98	27.59	5.38	34.01		35.94	54.00	-18.06	Horizontal	
2400.00	45.05	27.58	5.39	34.01		44.01	54.00	-9.99	Horizontal	
2390.00	38.64	27.59	5.38	34.01		37.60	54.00	-16.40	Vertical	
2400.00	46.03	27.58	5.39	34.01		44.99	54.00	-9.01	Vertical	
Test mode: 802.11b		1b Test channel:			Highest					
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	49.43	27.53	5.47	33.92	2	48.51	74.00	-25.49	Horizontal	
2500.00	45.90	27.55	5.49	29.93	3	49.01	74.00	-24.99	Horizontal	
2483.50	51.28	27.53	5.47	33.92	2	50.36	74.00	-23.64	Vertical	
2500.00	48.03	27.55	5.49	29.93	3	51.14	74.00	-22.86	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	37.04	27.53	5.47	33.92	2	36.12	54.00	-17.88	Horizontal	
2500.00	33.52	27.55	5.49	29.93	3	36.63	54.00	-17.37	Horizontal	
2483.50	38.81	27.53	5.47	33.92	2	37.89	54.00	-16.11	Vertical	
2500.00	35.33	27.55	5.49	29.93	3	38.44	54.00	-15.56	Vertical	
Remark:										

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



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

Test mode:	ode: 802.11g			Te	Test channel:			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		
2390.00	49.98	27.59	5.38	34.01	48.94	74.00	-25.06	Horizontal		
2400.00	58.43	27.58	5.39	34.01	57.39	74.00	-16.61	Horizontal		
2390.00	51.54	27.59	5.38	34.01	50.50	74.00	-23.50	Vertical		
2400.00	59.78	27.58	5.39	34.01	58.74	74.00	-15.26	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	37.22	27.59	5.38	34.01	36.18	54.00	-17.82	Horizontal		
2400.00	45.33	27.58	5.39	34.01	44.29	54.00	-9.71	Horizontal		
2390.00	38.91	27.59	5.38	34.01	37.87	54.00	-16.13	Vertical		
2400.00	46.33	27.58	5.39	34.01	45.29	54.00	-8.71	Vertical		
Test mode:		802.1	1g	Te	st channel:	ŀ	Highest			
Peak value:			0.11				I 6	1		
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	49.92	27.53	5.47	33.92	49.00	74.00	-25.00	Horizontal		
2500.00	46.28	27.55	5.49	29.93	49.39	74.00	-24.61	Horizontal		
2483.50	51.84	27.53	5.47	33.92	50.92	74.00	-23.08	Vertical		
2500.00	48.48	27.55	5.49	29.93	51.59	74.00	-22.41	Vertical		
Average va	lue:	· · · · · · · · · · · · · · · · · · ·		1	,		•			
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	37.33	27.53	5.47	33.92	36.41	54.00	-17.59	Horizontal		
2500.00	33.75	27.55	5.49	29.93	36.86	54.00	-17.14	Horizontal		
2483.50	39.13	27.53	5.47	33.92	38.21	54.00	-15.79	Vertical		
2500.00	35.57	27.55	5.49	29.93	38.68	54.00	-15.32	Vertical		



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Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- The emission levels of other frequencies are very lower than the limit and not show in test report.



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Test mode:		802.1	1n(HT20)	Tes	st channel:	L	owest	
Peak value:	i i	·		•				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	49.06	27.59	5.38	34.01	48.02	74.00	-25.98	Horizontal
2400.00	57.20	27.58	5.39	34.01	56.16	74.00	-17.84	Horizontal
2390.00	50.56	27.59	5.38	34.01	49.52	74.00	-24.48	Vertical
2400.00	58.30	27.58	5.39	34.01	57.26	74.00	-16.74	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	36.57	27.59	5.38	34.01	35.53	54.00	-18.47	Horizontal
2400.00	44.58	27.58	5.39	34.01	43.54	54.00	-10.46	Horizontal
2390.00	38.18	27.59	5.38	34.01	37.14	54.00	-16.86	Vertical
2400.00	45.50	27.58	5.39	34.01	44.46	54.00	-9.54	Vertical
Test mode:		802.1	802.11n(HT20)		Test channel:		Highest	
Peak value:		1			T	Г	1	1
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	48.60	27.53	5.47	33.92	47.68	74.00	-26.32	Horizontal
2500.00	45.26	27.55	5.49	29.93	48.37	74.00	-25.63	Horizontal
2483.50	50.33	27.53	5.47	33.92	49.41	74.00	-24.59	Vertical
2500.00	47.28	27.55	5.49	29.93	50.39	74.00	-23.61	Vertical
Average va	lue:	T			1	1	•	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	36.54	27.53	5.47	33.92	35.62	54.00	-18.38	Horizontal
2500.00	33.13	27.55	5.49	29.93	36.24	54.00	-17.76	Horizontal
	55.15							
2483.50	38.25	27.53	5.47	33.92	37.33	54.00	-16.67	Vertical

Remark:



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- 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.



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Test mode:		802.11n(HT40)		Tes	st 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	49.31	27.59	5.38	34.01	48.27	74.00	-25.73	Horizontal
2400.00	57.54	27.58	5.39	34.01	56.50	74.00	-17.50	Horizontal
2390.00	50.83	27.59	5.38	34.01	49.79	74.00	-24.21	Vertical
2400.00	58.70	27.58	5.39	34.01	57.66	74.00	-16.34	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	36.74	27.59	5.38	34.01	35.70	54.00	-18.30	Horizontal
2400.00	44.79	27.58	5.39	34.01	43.75	54.00	-10.25	Horizontal
2390.00	38.38	27.59	5.38	34.01	37.34	54.00	-16.66	Vertical
2400.00	45.73	27.58	5.39	34.01	44.69	54.00	-9.31	Vertical
T (000.4	4 - (LIT 40)	T-	-		Palacet	
Test mode:		802.1	1n(HT40)	Tes	st channel:	ŀ	Highest	
Peak value:	Read	Antenna	Cable	Droomn			Over	
Frequency (MHz)	Level (dBuV)	Factor (dB/m)	Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Limit (dB)	Polarization
2483.50	48.96	27.53	5.47	33.92	48.04	74.00	-25.96	Horizontal
2500.00	45.54	27.55	5.49	29.93	48.65	74.00	-25.35	Horizontal
2483.50	50.74	27.53	5.47	33.92	49.82	74.00	-24.18	Vertical
2500.00	47.61	27.55	5.49	29.93	50.72	74.00	-23.28	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
2483.50	36.76	27.53	5.47	33.92	35.84	54.00	-18.16	Horizontal
2500.00	33.30	27.55	5.49	29.93	36.41	54.00	-17.59	Horizontal
2483.50	38.49	27.53	5.47	33.92	37.57	54.00	-16.43	Vertical



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- 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.



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7.7 Spurious Emission

7.7.1 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							

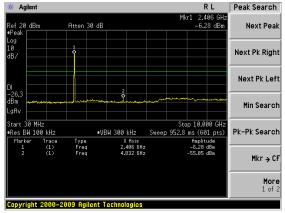


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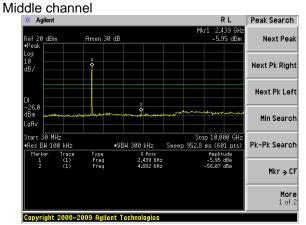
Test plot as follows:

Test mode: 802.11b

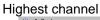
Lowest channel

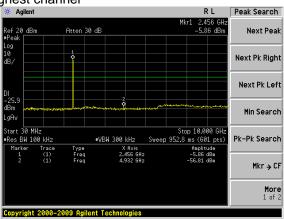


30MHz~10GHz

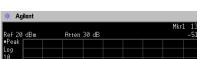


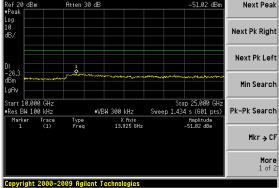
30MHz~10GHz



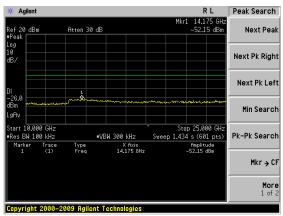


30MHz~10GHz

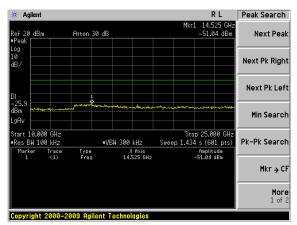




10GHz~25GHz



10GHz~25GHz



10GHz~25GHz

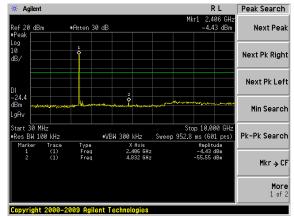


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Test mode:

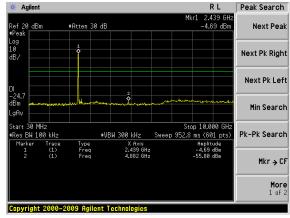
802.11g

Lowest channel



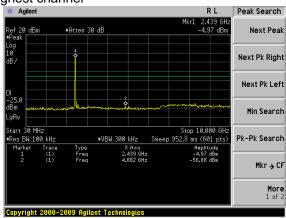
30MHz~10GHz

Middle channel

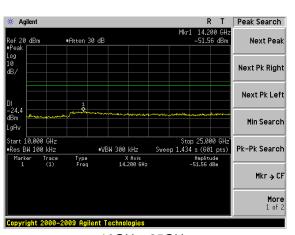


30MHz~10GHz

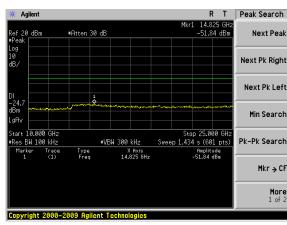
Highest channel



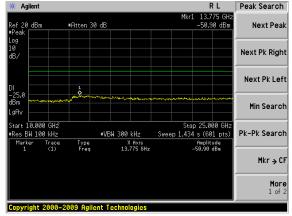
30MHz~10GHz



10GHz~25GHz



10GHz~25GHz



10GHz~25GHz

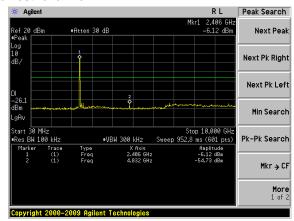


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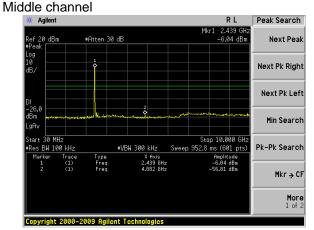
Test mode:

802.11n(HT20)

Lowest channel

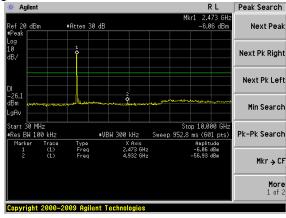


30MHz~10GHz

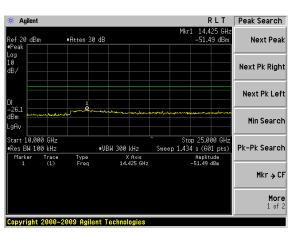


30MHz~10GHz

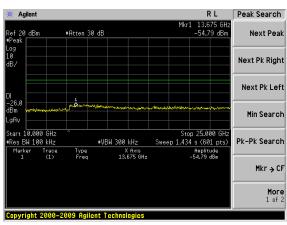
Highest channel



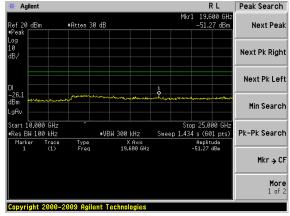
30MHz~10GHz



10GHz~25GHz



10GHz~25GHz



10GHz~25GHz

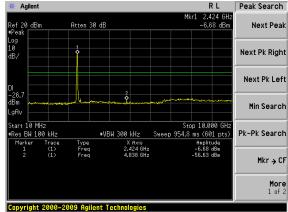


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Test mode:

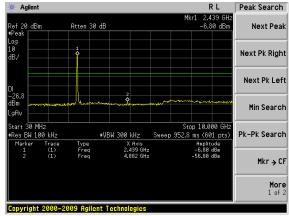
802.11n(HT40)

Lowest channel



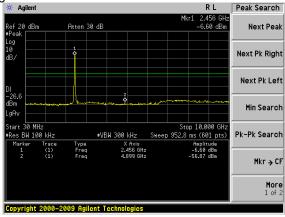
30MHz~10GHz

Middle channel

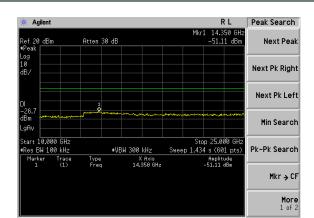


30MHz~10GHz

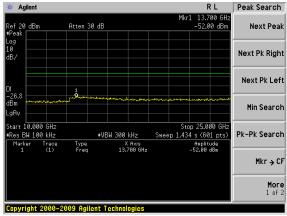
Highest channel



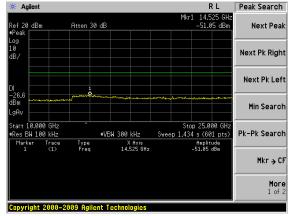
30MHz~10GHz



10GHz~25GHz



10GHz~25GHz



10GHz~25GHz



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7.7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.4: 2003								
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								
	RMS 1MHz 3MHz Average								
Limit:	Frequency Limit (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	2H7	54.0	0	Average				
	Above 10	J1 12	74.0	0	Peak				
Test setup:	Below 1GHz Tum Table Ground Plane Above 1GHz	4m		Antenna Tower Search Antenna RF Test Receiver	_				



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	Antenna Tower Horn Antenna Spectrum Analyzer Amplifier
Test Procedure:	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.
	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.



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Measurement Data

■ Below 1GHz

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
49.71	48.38	15.28	0.77	31.96	32.47	40.00	-7.53	Vertical
84.41	51.61	12.16	1.07	31.74	33.10	40.00	-6.90	Vertical
164.33	50.58	10.80	1.65	32.03	31.00	43.50	-12.50	Vertical
369.41	40.98	16.51	2.72	31.97	28.24	46.00	-17.76	Vertical
428.02	43.42	17.51	2.99	31.79	32.13	46.00	-13.87	Vertical
810.27	36.79	22.15	4.49	31.30	32.13	46.00	-13.87	Vertical
34.88	38.78	14.30	0.61	32.06	21.63	40.00	-18.37	Horizontal
49.19	42.67	15.31	0.76	31.97	26.77	40.00	-13.23	Horizontal
70.09	52.25	10.65	0.94	31.88	31.96	40.00	-8.04	Horizontal
187.75	41.01	12.32	1.78	32.11	23.00	43.50	-20.50	Horizontal
485.61	36.69	18.26	3.24	31.60	26.59	46.00	-19.41	Horizontal
851.04	37.45	22.60	4.66	31.25	33.46	46.00	-12.54	Horizontal



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■ Above 1GHz

Test mode:		802.11b		Test	channel:	Lowe		
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	39.13	31.79	8.62	32.10	47.44	74.00	-26.56	Vertical
7236.00	33.48	36.19	11.68	31.97	49.38	74.00	-24.62	Vertical
9648.00	32.19	38.07	14.16	31.56	52.86	74.00	-21.14	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	37.98	31.79	8.62	32.10	46.29	74.00	-27.71	Horizontal
7236.00	33.33	36.19	11.68	31.97	49.23	74.00	-24.77	Horizontal
9648.00	31.81	38.07	14.16	31.56	52.48	74.00	-21.52	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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	28.31	31.79	8.62	32.10	36.62	54.00	-17.38	Vertical
	1		ı	· -				

31.97

31.56

32.10

31.97

31.56

38.28

43.23

35.89

37.83

42.24

54.00

54.00

54.00

54.00

54.00

54.00

54.00

54.00

54.00

54.00

54.00

-15.72

-10.77

-18.11

-16.17

-11.76

Vertical

Vertical

Vertical Vertical

Vertical

Horizontal

Horizontal

Horizontal

Horizontal

Horizontal

Horizontal

16884.00 Remark:

7236.00

9648.00

12060.00

14472.00

16884.00

4824.00

7236.00

9648.00

12060.00

14472.00

22.38

22.56

27.58

21.93

21.57

*

36.19

38.07

31.79

36.19

38.07

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

11.68

14.16

8.62

11.68

14.16

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



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Test mode:		802.11b		Test	channel:	Midd	Middle		
Peak value:			T				1		
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	38.39	31.85	8.66	32.12	46.78	74.00	-27.22	Vertical	
7311.00	33.68	36.37	11.71	31.91	49.85	74.00	-24.15	Vertical	
9748.00	33.30	38.27	14.25	31.56	54.26	74.00	-19.74	Vertical	
12185.00	*					74.00		Vertical	
14622.00	*					74.00		Vertical	
17059.00	*					74.00		Vertical	
4874.00	39.02	31.85	8.66	32.12	47.41	74.00	-26.59	Horizontal	
7311.00	32.40	36.37	11.71	31.91	48.57	74.00	-25.43	Horizontal	
9748.00	33.22	38.27	14.25	31.56	54.18	74.00	-19.82	Horizontal	
12185.00	*					74.00		Horizontal	
14622.00	*					74.00		Horizontal	
17059.00	*					74.00		Horizontal	
Average val		ı	T	T	1		1	1	
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	29.32	31.85	8.66	32.12	37.71	54.00	-16.29	Vertical	
7311.00	22.02	36.37	11.71	31.91	38.19	54.00	-15.81	Vertical	
9748.00	22.57	38.27	14.25	31.56	43.53	54.00	-10.47	Vertical	
12185.00	*					54.00		Vertical	
14622.00	*					54.00		Vertical	
17059.00	*					54.00		Vertical	
4874.00	29.18	31.85	8.66	32.12	37.57	54.00	-16.43	Horizontal	
7311.00	21.50	36.37	11.71	31.91	37.67	54.00	-16.33	Horizontal	
9748.00	22.95	38.27	14.25	31.56	43.91	54.00	-10.09	Horizontal	
12185.00	*					54.00		Horizontal	
14622.00	*					54.00		Horizontal	
17059.00	*					54.00		Horizontal	

Remark:

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



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Test mode:		802.11b			Test	channel:		High	est	
Peak value:										
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	43.23	31.90	8.70	32	.15	51.68	74.	00	-22.32	Vertical
7386.00	33.92	36.49	11.76	31	.83	50.34	74.	00	-23.66	Vertical
9848.00	36.28	38.62	14.31	31	.77	57.44	74.	00	-16.56	Vertical
12310.00	*						74.	00		Vertical
14772.00	*						74.	00		Vertical
17234.00	*						74.	00		Vertical
4924.00	42.79	31.90	8.70	32	.15	51.24	74.	00	-22.76	Horizontal
7386.00	32.95	36.49	11.76	31	.83	49.37	74.	00	-24.63	Horizontal
9848.00	32.51	38.62	14.31	31	.77	53.67	74.	00	-20.33	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)	Fa	amp ctor IB)	Level (dBuV/m)	Limit (dBu\		Over Limit (dB)	polarization
4924.00	34.27	31.90	8.70	32	.15	42.72	54.	00	-11.28	Vertical
7386.00	23.87	36.49	11.76	31	.83	40.29	54.	00	-13.71	Vertical
9848.00	24.81	38.62	14.31	31	.77	45.97	54.	00	-8.03	Vertical
12310.00	*						54.	00		Vertical
14772.00	*						54.	00		Vertical
17234.00	*						54.	00		Vertical
4924.00	33.24	31.90	8.70	32	.15	41.69	54.	00	-12.31	Horizontal
7386.00	22.37	36.49	11.76	31	.83	38.79	54.	00	-15.21	Horizontal
9848.00	21.79	38.62	14.31	31	.77	42.95	54.	00	-11.05	Horizontal
12310.00	*						54.	00		Horizontal
14772.00	*						54.	00		Horizontal
17234.00	*						54.	00		Horizontal

Remark:

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



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Test mode:		802.11g			Test	channel:		lowes	st	
Peak value:										
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	37.37	31.79	8.62	32	.10	45.68	74.	00	-28.32	Vertical
7236.00	32.37	36.19	11.68	31	.97	48.27	74.	00	-25.73	Vertical
9648.00	31.39	38.07	14.16	31	.56	52.06	74.	00	-21.94	Vertical
12060.00	*						74.	00		Vertical
14472.00	*						74.	00		Vertical
16884.00	*						74.	00		Vertical
4824.00	36.49	31.79	8.62	32	.10	44.80	74.	00	-29.20	Horizontal
7236.00	32.35	36.19	11.68	31	.97	48.25	74.	00	-25.75	Horizontal
9648.00	31.07	38.07	14.16	31	.56	51.74	74.	00	-22.26	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	26.68	31.79	8.62	32	.10	34.99	54.	00	-19.01	Vertical
7236.00	21.30	36.19	11.68	31	.97	37.20	54.	00	-16.80	Vertical
9648.00	21.79	38.07	14.16	31	.56	42.46	54.	00	-11.54	Vertical
12060.00	*						54.	00		Vertical
14472.00	*						54.	00		Vertical
16884.00	*						54.	00		Vertica
4824.00	26.18	31.79	8.62	32	.10	34.49	54.	00	-19.51	Horizontal
7236.00	20.98	36.19	11.68	31	.97	36.88	54.	00	-17.12	Horizontal
9648.00	20.86	38.07	14.16	31	.56	41.53	54.	00	-12.47	Horizontal
12060.00	*						54.	00		Horizontal
14472.00	*						54.	00		Horizontal
16884.00	*						54.	00		Horizontal

Remark.

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



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Test mode:		802.11g		Test channel:				Midd	le	
Peak value:										
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
4874.00	36.93	31.85	8.66	32	.12	45.32	74.	00	-28.68	Vertical
7311.00	32.76	36.37	11.71	31	.91	48.93	74.	00	-25.07	Vertical
9748.00	32.64	38.27	14.25	31	.56	53.60	74.	00	-20.40	Vertical
12185.00	*						74.	00		Vertical
14622.00	*						74.	00		Vertical
17059.00	*						74.	00		Vertical
4874.00	37.78	31.85	8.66	32	.12	46.17	74.	00	-27.83	Horizontal
7311.00	31.59	36.37	11.71	31	.91	47.76	74.	00	-26.24	Horizontal
9748.00	32.61	38.27	14.25	31	.56	53.57	74.	00	-20.43	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)	Fa	amp ctor IB)	Level (dBuV/m)	Limit (dBu		Over Limit (dB)	polarization
4874.00	27.97	31.85	8.66	32	.12	36.36	54.	00	-17.64	Vertical
7311.00	21.13	36.37	11.71	31	.91	37.30	54.	00	-16.70	Vertical
9748.00	21.94	38.27	14.25	31	.56	42.90	54.	00	-11.10	Vertical
12185.00	*						54.	00		Vertical
14622.00	*						54.	00		Vertical
17059.00	*						54.	00		Vertical
4874.00	28.02	31.85	8.66	32	.12	36.41	54.	00	-17.59	Horizontal
7311.00	20.72	36.37	11.71	31	.91	36.89	54.	00	-17.11	Horizontal
9748.00	22.36	38.27	14.25	31	.56	43.32	54.	00	-10.68	Horizontal
12185.00	*						54.	00		Horizontal
14622.00	*						54.	00		Horizontal
17059.00	*						54.	00		Horizontal

Remark:

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



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Test mode:		802.11g		Te	est channel:		High		
Peak value:		•					•		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	·		nit Line BuV/m)	Over Limit (dB)	polarization
4924.00	40.71	31.90	8.70	32.15	49.10	5 7	4.00	-24.84	Vertical
7386.00	32.33	36.49	11.76	31.83	48.7	5 7	4.00	-25.25	Vertical
9848.00	35.14	38.62	14.31	31.77	56.30	7	4.00	-17.70	Vertical
12310.00	*					7	4.00		Vertical
14772.00	*					7	4.00		Vertical
17234.00	*					7	4.00		Vertical
4924.00	40.66	31.90	8.70	32.15	49.1	1 7	4.00	-24.89	Horizontal
7386.00	31.56	36.49	11.76	31.83	47.98	3 7	4.00	-26.02	Horizontal
9848.00	31.46	38.62	14.31	31.77	52.6	2 7	4.00	-21.38	Horizontal
12310.00	*					7	4.00		Horizontal
14772.00	*					7	4.00		Horizontal
17234.00	*					7	4.00		Horizontal
Average val				T				1	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Pream Facto (dB)	· 1 \(\alpha\)/\(\alpha\)		nit Line BuV/m)	Over Limit (dB)	polarization
4924.00	31.95	31.90	8.70	32.15	40.4) 5	4.00	-13.60	Vertical
7386.00	22.33	36.49	11.76	31.83	38.7	5 5	4.00	-15.25	Vertical
9848.00	23.72	38.62	14.31	31.77	44.8	3 5	4.00	-9.12	Vertical
12310.00	*					5	4.00		Vertical
14772.00	*					5	4.00		Vertical
17234.00	*					5	4.00		Vertical
4924.00	31.24	31.90	8.70	32.15	39.69	9 5	4.00	-14.31	Horizontal
7386.00	21.02	36.49	11.76	31.83	37.4	4 5	4.00	-16.56	Horizontal
9848.00	20.78	38.62	14.31	31.77	41.9	4 5	4.00	-12.06	Horizontal
12310.00	*					5	4.00		Horizontal
14772.00	*					5	4.00		Horizontal
17234.00	*					5	4.00		Horizontal

Remark:

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



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Test mode:		802.11n(H	IT20)	Test	channel:	Lowe	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
4824.00	38.07	31.79	8.62	32.10	46.38	74.00	-27.62	Vertical
7236.00	32.81	36.19	11.68	31.97	48.71	74.00	-25.29	Vertical
9648.00	31.71	38.07	14.16	31.56	52.38	74.00	-21.62	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	37.09	31.79	8.62	32.10	45.40	74.00	-28.60	Horizontal
7236.00	32.74	36.19	11.68	31.97	48.64	74.00	-25.36	Horizontal
9648.00	31.37	38.07	14.16	31.56	52.04	74.00	-21.96	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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4824.00	27.33	31.79	8.62	32.10	35.64	54.00	-18.36	Vertical
7236.00	21.73	36.19	11.68	31.97	37.63	54.00	-16.37	Vertical
9648.00	22.10	38.07	14.16	31.56	42.77	54.00	-11.23	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	26.74	31.79	8.62	32.10	35.05	54.00	-18.95	Horizontal
7236.00	21.36	36.19	11.68	31.97	37.26	54.00	-16.74	Horizontal
9648.00	21.15	38.07	14.16	31.56	41.82	54.00	-12.18	Horizontal
12060.00	*					54.00		Horizontal
14472.00	*					54.00		Horizontal
16884.00	*					54.00		Horizontal

Remark

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



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Test mode:		802.11n(H	IT20)		Test	channel:	Middle			
Peak value:										
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
4874.00	37.51	31.85	8.66	32	.12	45.90	74.00		-28.10	Vertical
7311.00	33.13	36.37	11.71	31	.91	49.30	74.0	00	-24.70	Vertical
9748.00	32.90	38.27	14.25	31	.56	53.86	74.0	00	-20.14	Vertical
12185.00	*						74.0	00		Vertical
14622.00	*						74.0	00		Vertical
17059.00	*						74.0	00		Vertical
4874.00	38.28	31.85	8.66	32	.12	46.67	74.0	00	-27.33	Horizontal
7311.00	31.91	36.37	11.71	31	.91	48.08	74.0	00	-25.92	Horizontal
9748.00	32.86	38.27	14.25	31	.56	53.82	74.0	00	-20.18	Horizontal
12185.00	*						74.0	00		Horizontal
14622.00	*						74.	00		Horizontal
17059.00	*						74.0	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
4874.00	28.51	31.85	8.66	32	.12	36.90	54.0	00	-17.10	Vertical
7311.00	21.48	36.37	11.71	31	.91	37.65	54.0	00	-16.35	Vertical
9748.00	22.19	38.27	14.25	31	.56	43.15	54.0	00	-10.85	Vertical
12185.00	*						54.0	00		Vertical
14622.00	*						54.0	00		Vertical
17059.00	*						54.0	00		Vertical
4874.00	28.49	31.85	8.66	32	.12	36.88	54.0	00	-17.12	Horizontal
7311.00	21.03	36.37	11.71	31	.91	37.20	54.0	00	-16.80	Horizontal
9748.00	22.60	38.27	14.25	31	.56	43.56	54.0	00	-10.44	Horizontal
12185.00	*						54.0	00		Horizontal
14622.00	*						54.0	00		Horizontal
17059.00	*						54.0	00		Horizontal

Remark:

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



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Test mode:	ode: 802.11n(HT20) Test channel:		channel:	Highest				
Peak value:				· · · · · · · · · · · · · · · · · · ·				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	41.71	31.90	8.70	32.15	50.16	74.00	-23.84	Vertical
7386.00	32.96	36.49	11.76	31.83	49.38	74.00	-24.62	Vertical
9848.00	35.60	38.62	14.31	31.77	56.76	74.00	-17.24	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	41.51	31.90	8.70	32.15	49.96	74.00	-24.04	Horizontal
7386.00	32.11	36.49	11.76	31.83	48.53	74.00	-25.47	Horizontal
9848.00	31.88	38.62	14.31	31.77	53.04	74.00	-20.96	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	32.88	31.90	8.70	32.15	41.33	54.00	-12.67	Vertical
7386.00	22.95	36.49	11.76	31.83	39.37	54.00	-14.63	Vertical
9848.00	24.16	38.62	14.31	31.77	45.32	54.00	-8.68	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	32.04	31.90	8.70	32.15	40.49	54.00	-13.51	Horizontal
7386.00	21.56	36.49	11.76	31.83	37.98	54.00	-16.02	Horizontal
9848.00	21.19	38.62	14.31	31.77	42.35	54.00	-11.65	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

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



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Test mode:		802.11n(H	IT40)	Tes	t channel:	Lowe	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
4844.00	36.78	31.81	8.63	32.11	45.11	74.00	-28.89	Vertical
7266.00	32.00	36.28	11.69	31.94	48.03	74.00	-25.97	Vertical
9688.00	31.13	38.13	14.21	31.52	51.95	74.00	-22.05	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4844.00	35.99	31.81	8.63	32.11	44.32	74.00	-29.68	Horizontal
7266.00	32.02	36.28	11.69	31.94	48.05	74.00	-25.95	Horizontal
9688.00	30.83	38.13	14.21	31.52	51.65	74.00	-22.35	Horizontal
12060.00	*					74.00		Horizontal
14472.00	*					74.00		Horizontal
16884.00	*					74.00		Horizontal

Average value:

7. Volugo Valuo									
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	
4844.00	26.14	31.81	8.63	32.11	34.47	54.00	-19.53	Vertical	
7266.00	20.94	36.28	11.69	31.94	36.97	54.00	-17.03	Vertical	
9688.00	21.54	38.13	14.21	31.52	42.36	54.00	-11.64	Vertical	
12060.00	*					54.00		Vertical	
14472.00	*					54.00		Vertical	
16884.00	*					54.00		Vertical	
4844.00	25.72	31.81	8.63	32.11	34.05	54.00	-19.95	Horizontal	
7266.00	20.67	36.28	11.69	31.94	36.70	54.00	-17.30	Horizontal	
9688.00	20.63	38.13	14.21	31.52	41.45	54.00	-12.55	Horizontal	
12060.00	*					54.00		Horizontal	
14472.00	*					54.00		Horizontal	
16884.00	*					54.00		Horizontal	

Remark:

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



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Test mode:		802.11n(H	n(HT40) Test channel:		Midd			
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	36.44	31.85	8.66	32.12	44.83	74.00	-29.17	Vertical
7311.00	32.45	36.37	11.71	31.91	48.62	74.00	-25.38	Vertical
9748.00	32.42	38.27	14.25	31.56	53.38	74.00	-20.62	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	37.37	31.85	8.66	32.12	45.76	74.00	-28.24	Horizontal
7311.00	31.32	36.37	11.71	31.91	47.49	74.00	-26.51	Horizontal
9748.00	32.41	38.27	14.25	31.56	53.37	74.00	-20.63	Horizontal
12185.00	*					74.00		Horizontal
14622.00	*					74.00		Horizontal
17059.00	*					74.00		Horizontal
Average val	ue:							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4874.00	27.52	31.85	8.66	32.12	35.91	54.00	-18.09	Vertical
7311.00	20.83	36.37	11.71	31.91	37.00	54.00	-17.00	Vertical
9748.00	21.72	38.27	14.25	31.56	42.68	54.00	-11.32	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	27.64	31.85	8.66	32.12	36.03	54.00	-17.97	Horizontal
7311.00	20.46	36.37	11.71	31.91	36.63	54.00	-17.37	Horizontal
9748.00	22.17	38.27	14.25	31.56	43.13	54.00	-10.87	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

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



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Test mode:		802.11n(H	IT40)		Test channel:			Highest		
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
4904.00	39.87	31.88	8.68	32.13		48.30	74.00		-25.70	Vertical
7356.00	31.80	36.45	11.75	31	.86	48.14	74.00		-25.86	Vertical
9808.00	34.76	38.43	14.29	31	.68	55.80	74.00		-18.20	Vertical
12310.00	*						74.00			Vertical
14772.00	*						74.00			Vertical
17234.00	*						74.	00		Vertical
4904.00	39.95	31.88	8.68	32	.13	48.38	74.	00	-25.62	Horizontal
7356.00	31.09	36.45	11.75	31	.86	47.43	74.	00	-26.57	Horizontal
9808.00	31.11	38.43	14.29	31.68		52.15	74.	00	-21.85	Horizontal
12310.00	*						74.	00		Horizontal
14772.00	*						74.	00		Horizontal
17234.00	*						74.	00		Horizontal
Average value:										
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
4904.00	31.18	31.88	8.68	32	.13	39.61	54.	00	-14.39	Vertical
7356.00	21.82	36.45	11.75	31	.86	38.16	54.	00	-15.84	Vertical
9808.00	23.36	38.43	14.29	31	.68	44.40	54.	00	-9.60	Vertical
12310.00	*						54.	00		Vertical
14772.00	*						54.	00		Vertical
17234.00	*						54.	00		Vertical
4904.00	30.58	31.88	8.68	32	.13	39.01	54.	00	-14.99	Horizontal
7356.00	20.57	36.45	11.75	31	.86	36.91	54.	00	-17.09	Horizontal
9808.00	20.45	38.43	14.29	31	.68	41.49	54.	00	-12.51	Horizontal
12310.00	*						54.	00		Horizontal
14772.00	*						54.	00		Horizontal
17234.00	*						54.	00		Horizontal

Remark:

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

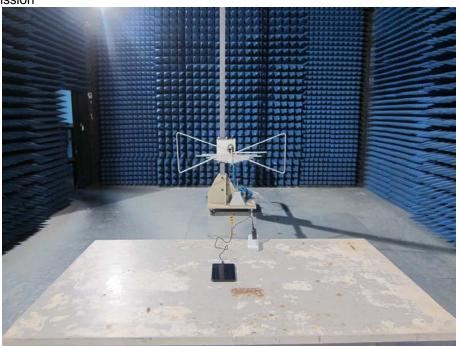


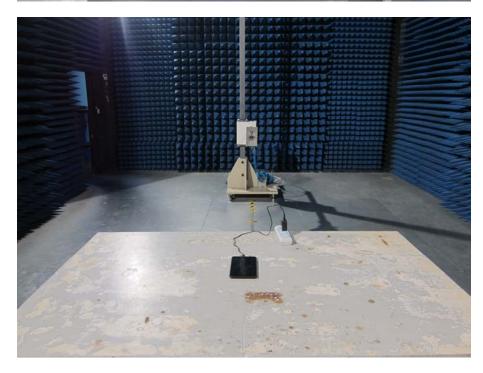
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8 Test Setup Photo

Radiated Emission







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Conducted Emission





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9 EUT Constructional Details

Reference to the test report No. EBO1410121-E308

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