

Global United Technology Services Co., Ltd.

Report No.: GTS201612000116F01

FCC Report (WIFI)

Applicant: Sunniwell Co., Ltd.

Address of Applicant: 1717 Haitai Building 229# Beisihuan Zhong Road, Bei jing

100083 P.R.China

Equipment Under Test (EUT)

Product Name: IP SET-TOP BOX

Model No.: S-BoxK140

Trade mark: Sunniwell

FCC ID: 2AJJP-K140A

FCC CFR Title 47 Part 15 Subpart C Section 15.247:2016 **Applicable standards:**

December 22, 2016 Date of sample receipt:

Date of Test: December 23-26, 2016

Date of report issued: December 27, 2016

PASS * Test Result:

Authorized Signature:

Robinson Lo Laboratory Manager

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

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



2 Version

Version No.	Date	Description
00	December 27, 2016	Original

Prepared By:	Tjør. Chen	Date:	December 27, 2016	
	Project Engineer			
Check By:	Andy wa	Date:	December 27, 2016	_
	Poviowor			



3 Contents

			Page
1	CO/	VER PAGE	1
2	VER	RSION	2
3	100	NTENTS	3
4		ST SUMMARY	
4			
5	GEN	NERAL INFORMATION	5
	5.1	CLIENT INFORMATION	5
	5.2	GENERAL DESCRIPTION OF EUT	
	5.3	TEST MODE	
	5.4	DESCRIPTION OF SUPPORT UNITS	
	5.5	TEST FACILITY	
	5.6	TEST LOCATION	7
6	TES	ST INSTRUMENTS LIST	8
7	TES	ST RESULTS AND MEASUREMENT DATA	9
	7.1	ANTENNA REQUIREMENT	9
	7.2	CONDUCTED EMISSIONS	
	7.3	CONDUCTED PEAK OUTPUT POWER	
	7.4	CHANNEL BANDWIDTH	
	7.5	Power Spectral Density	
	7.6	BAND EDGES	
	7.6. 7.6.2		
	7.0.2	Spurious Emission Method	
	7.7.		
	7.7.2		
8	TES	ST SETUP PHOTO	52
9	FUT	CONSTRUCTIONAL DETAILS	54



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.

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

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)



5 General Information

5.1 Client Information

Applicant:	Sunniwell Co., Ltd.
Address of Applicant:	1717 Haitai Building 229# Beisihuan Zhong Road, Bei jing 100083 P.R.China
Manufacturer/ Factory:	Sunniwell Co., Ltd.
Address of Manufacturer/ Factory:	1717 Haitai Building 229# Beisihuan Zhong Road, Bei jing 100083 P.R.China

5.2 General Description of EUT

Product Name:	IP SET-TOP BOX
Model No.:	S-BoxK140
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
	802.11n(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:	PCB antenna
Antenna gain:	2.0dBi (declare by Applicant)
Power supply:	AC/DC ADAPTER
	MODEL:GSCU1000S012V15T
	INPUT:AC 100-240V 50/60Hz Max 0.5A
	OUTPUT:DC 12V/1A



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:

Toot abound	Frequency	(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
-------------------	--

Remark: During the test, the dutycycle >98%, 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:

Pre-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

Manufacturer	Description	Model	Serial Number
PHILIPS	LCD TV	19PFL3120/T3	AU1A1212002906



5.5 Test Facility

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

• FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

• 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, August 15, 2016.

5.6 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

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

Tel: 0755-27798480 Fax: 0755-27798960



6 Test Instruments list

Radia	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	9.0(L)*6.0(W)* 6.0(H)	GTS250	July. 03 2015	July. 02 2020		
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A		
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	June. 29 2016	June. 28 2017		
4	Loop Antenna	Zhinan	ZN30900A	GTS534	June. 29 2016	June. 28 2017		
5	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	June. 29 2016	June. 28 2017		
6	Double-ridged horn antenna	SCHWARZBECK	9120D	GTS208	June. 29 2016	June. 28 2017		
7	Horn Antenna	ETS-LINDGREN	3160-09	GTS218	June. 29 2016	June. 28 2017		
8	RF Amplifier	HP	8347A	GTS204	June. 29 2016	June. 28 2017		
9	RF Amplifier	HP	8349B	GTS206	June. 29 2016	June. 28 2017		
10	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	June. 29 2016	June. 28 2017		
11	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	June. 29 2016	June. 28 2017		
12	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
13	Coaxial Cable	GTS	N/A	GTS210	June. 29 2016	June. 28 2017		
14	Coaxial Cable	GTS	N/A	GTS211	June. 29 2016	June. 28 2017		
15	Coaxial Cable	GTS	N/A	GTS210	June. 29 2016	June. 28 2017		
16	Coaxial Cable	GTS	N/A	GTS212	June. 29 2016	June. 28 2017		
17	Power Meter	Anritsu	ML2495A	GTS540	June. 29 2016	June. 28 2017		
18	Power Sensor	Anritsu	MA2411B	GTS541	June. 29 2016	June. 28 2017		

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	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019		
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 29 2016	June. 28 2017		
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 29 2016	June. 28 2017		
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 29 2016	June. 28 2017		
5	High voltage probe	SCHWARZBECK	TK9420	GTS537	June. 29 2016	June. 28 2017		
6	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 29 2016	June. 28 2017		
7	Coaxial Cable	GTS	N/A	GTS227	June. 29 2016	June. 28 2017		
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
9	Thermo meter	KTJ	TA328	GTS233	June. 29 2016	June. 28 2017		
10	10dB Pulse Limiter	Rohde & Schwarz	N/A	GTS224	June. 29 2016	June. 28 2017		

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	June. 29 2016	June. 28 2017			

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



7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement: FCC Part15 C Section 15.203 /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 PCB antenna, the best case gain of the antenna is 2.0dBi





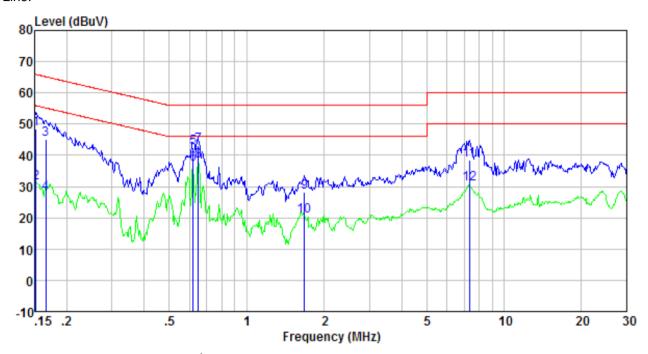
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207						
Test Method:	ANSI C63.10:2013						
Test Frequency Range:	150KHz to 30MHz						
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto					
Limit:	Frequency range (MHz)	Limit (d	lBuV)				
	Quasi-peak Avera						
	0.15-0.5	66 to 56*	56 to 46*				
	0.5-5	56	46				
	5-30	60	50				
Test setup:	* Decreases with the logarithm	of the frequency.					
	Reference Plane LISN 40cm 80cm Filter AC power Equipment Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m						
Test procedure:	 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). 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 C63.10:2013 on conducted measurement. 						
Test Instruments:	Refer to section 6.0 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Pass						



Measurement data

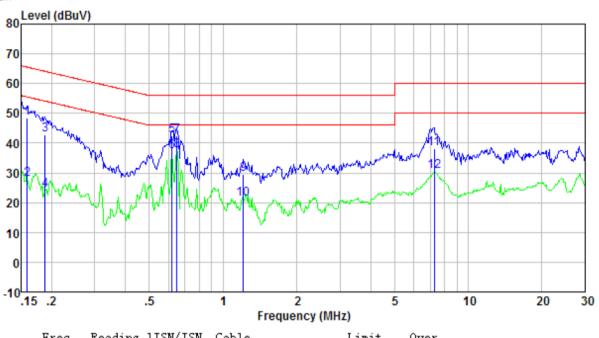
Line:



Freq MHz	Reading level dBuV	1ISN/ISN factor dB	Cable loss dBuV	level dB	Limit level dBuV	Over limit dB	Remark
0.152 0.152	47.90 30.51	0.42 0.42	0.12 0.12	48.44 31.05	65.91 55.91	-17.47 -24.86	QP
0.166	44.55	0.42	0.12	45.09	65.16	-20.07	Average QP
0.166	27.21	0.42	0.12	27.75	55.16	-27.41	Average
0.621	42.22	0.30	0.12	42.64	56.00	-13.36	QP
0.621	36.71	0.30	0.12	37.13	46.00	-8.87	Average
0.647	42.68	0.29	0.13	43.10	56.00	-12.90	QP
0.647	37.88	0.29	0.13	38.30	46.00	-7.70	Average
1.680	27.70	0.21	0.14	28.05	56.00	-27.95	QP
1.680	20.09	0.21	0.14	20.44	46.00	-25.56	Average
7.329	38.00	0.22	0.17	38.39	60.00	-21.61	QP
7.329	30.59	0.22	0.17	30.98	50.00	-19.02	Average



Neutral:



MHz	level dBuV	factor dB	loss dBuV	level dB	level dBuV	limit dB	Remark
0. 159 0. 159 0. 188 0. 188 0. 621 0. 621 0. 647 1. 210 1. 210 7. 252	47. 77 27. 34 42. 39 23. 62 42. 01 36. 70 42. 05 37. 05 29. 29 20. 80 37. 73	0. 41 0. 41 0. 41 0. 41 0. 27 0. 27 0. 26 0. 26 0. 21 0. 21	0. 12 0. 12 0. 13 0. 13 0. 12 0. 12 0. 12 0. 13 0. 13 0. 13 0. 13	48.30 27.87 42.93 24.16 42.40 37.09 42.44 37.44 29.63 21.14 38.12	65.52 55.52 64.11 54.11 56.00 46.00 56.00 46.00 56.00 60.00	-17. 22 -27. 65 -21. 18 -29. 95 -13. 60 -8. 91 -13. 56 -8. 56 -26. 37 -24. 86 -21. 88	QP Average
7.252	30.17	0.22	0.17	30.56	50.00	-19.44	Average

Notes

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



7.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)			
Test Method:	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 Outp	Limit(dBm)	Result		
1631 011	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Limit(abin)	Result
Lowest	14.41	11.71	12.03	12.79		
Middle	15.22	13.81	13.22	13.17	30.00	Pass
Highest	14.39	11.22	11.94	13.37		

Project No.: GTS201612000116

Page 13 of 58



7.4 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)		
Test Method:	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		

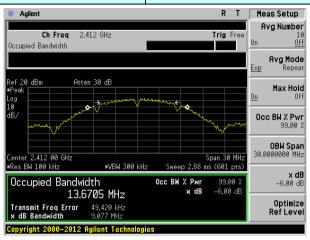
Measurement Data

Test CH		Channel E	Limit(KHz)	Result		
1631 011	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	Lillit(IXI12)	Result
Lowest	9.077	17.792	17.808	36.558		
Middle	9.091	16.544	17.771	36.551	>500	Pass
Highest	9.106	16.576	17.774	36.519		

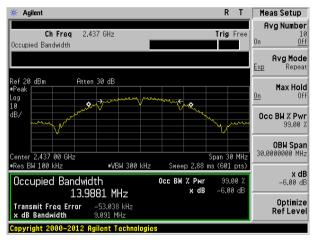
Test plot as follows:



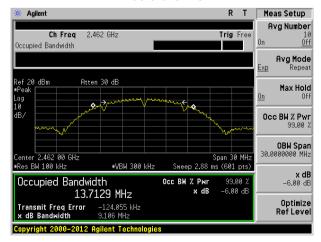
Test mode: 802.11b



Lowest channel



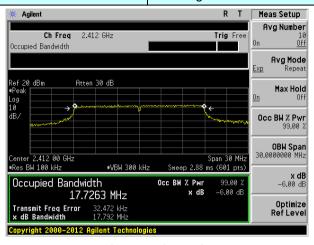
Middle channel



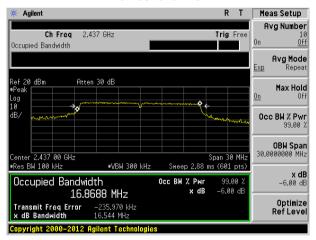
Highest channel



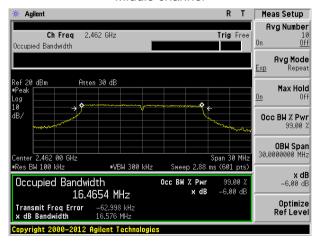
Test mode: 802.11g



Lowest channel



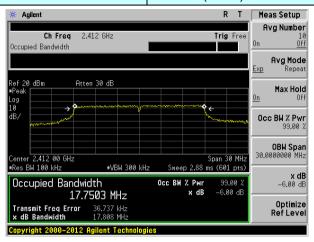
Middle channel



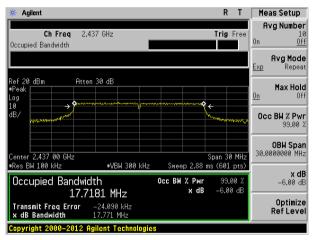
Highest channel



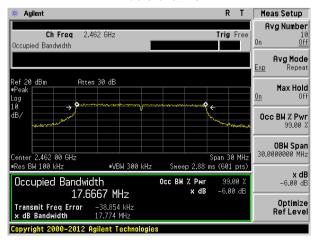
Test mode: 802.11n(HT20)



Lowest channel



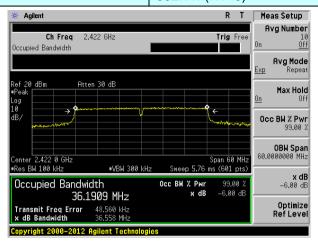
Middle channel



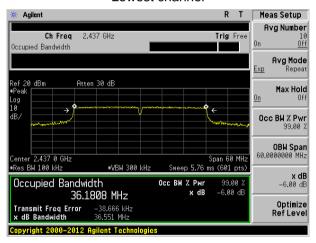
Highest channel



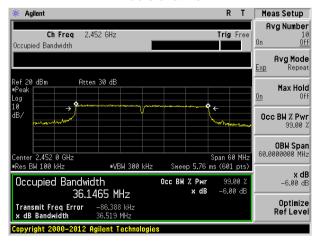
Test mode: 802.11n(HT40)



Lowest channel



Middle channel



Highest channel



7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)		
Test Method:	KDB558074 D01 DTS Meas Guidance V03		
Limit:	8dBm/3kHz		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

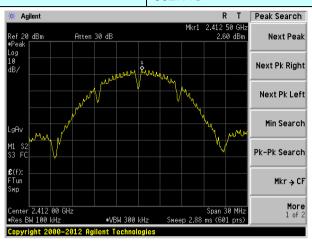
Measurement Data

Test CH		Power Spe	Limit	Result		
1631 011	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)	(dBm/3kHz)	Result
Lowest	2.60	-5.62	-5.42	-7.77		
Middle	3.14	-3.23	-4.35	-7.32	8.00	Pass
Highest	2.50	-6.35	-5.45	-7.15		

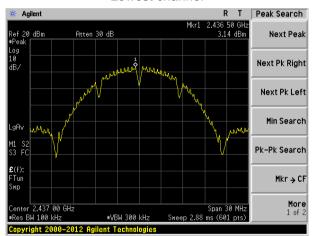


Test plot as follows:

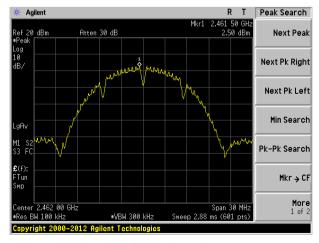
Test mode: 802.11b



Lowest channel



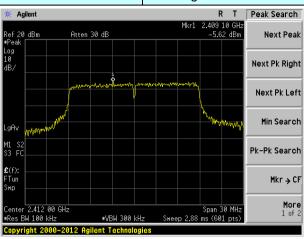
Middle channel



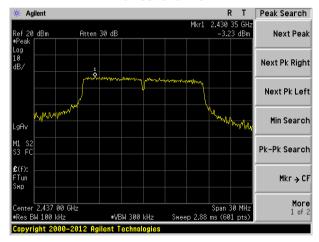
Highest channel



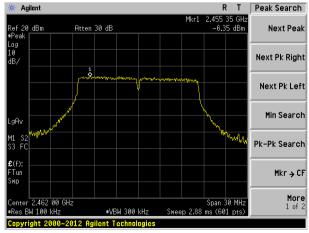
Test mode: 802.11g



Lowest channel



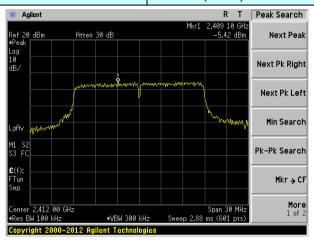
Middle channel



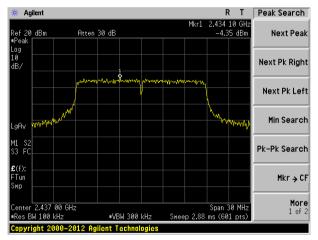
Highest channel



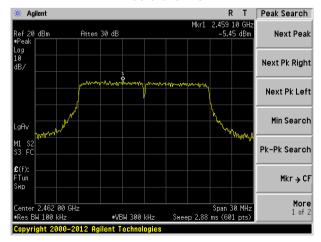
Test mode: 802.11n(HT20)



Lowest channel



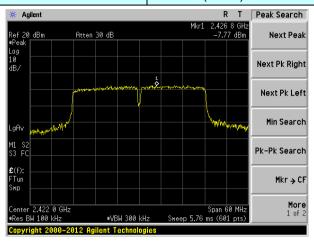
Middle channel



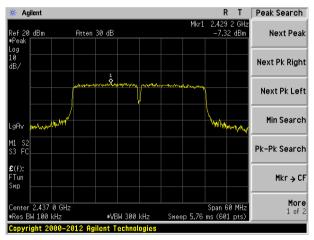
Highest channel



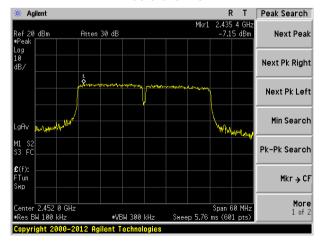
Test mode: 802.11n(HT40)



Lowest channel



Middle channel



Highest channel



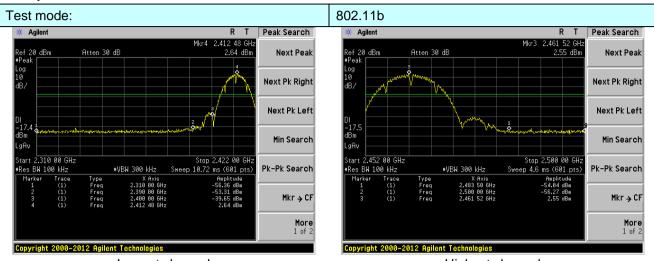
7.6 Band edges

7.6.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	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					



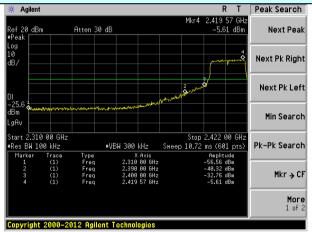
Test plot as follows:



Lowest channel

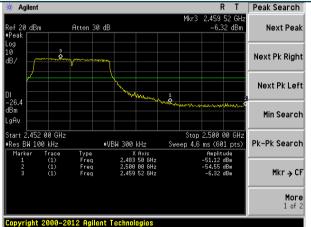
Highest channel

Test mode:



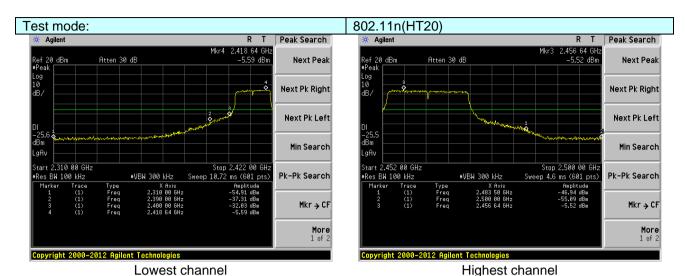
Lowest channel



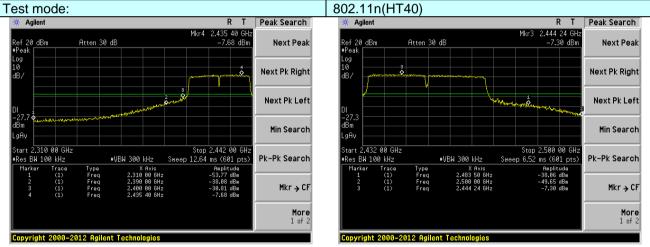


Highest channel









Lowest channel Highest channel



7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C S	Section 15.20	9 and 15.205				
Test Method:	ANSI C63.10:20)13					
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to						
	2500MHz) data	was showed.	•				
Test site:	Measurement D	istance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Value		
	Above 1GHz	Peak	1MHz	3MHz	Peak		
	Above IGHZ	RMS	1MHz	3MHz	Average		
Limit:	Freque	ncy	Limit (dBuV	/m @3m)	Value		
	A la 2002 d	OLI-	54.0	0	Average		
	Above 1	GHZ	74.0	0	Peak		
	Tum Table	< 3m	Test Antenna-	iplifier-			
Test Procedure:	determine the 2. The EUT was antenna, whi tower. 3. The antenna ground to de horizontal an measuremen 4. For each sus and then the and the rota the maximum 5. The test-rece Specified Ba 6. If the emission the limit spec of the EUT w have 10dB m peak or avera sheet. 7. The radiation	t a 3 meter case position of the position of t	amber. The tal he highest rac s away from the ted on the top ed from one n naximum value arizations of the sion, the EUT tuned to heigh ned from 0 de was set to Pea Maximum Hol EUT in peak sting could be red. Otherwis be re-tested of as specified ar ints are perfori	ble was rotated attion. The interference of a variable of a variable of the field are antenna at was arranged by the from 1 m grees to 360 at Detect Furd Mode. The mode was 10 stopped and the emission of the mode was arranged the emission of the mode was 10 stopped and the was 10 stopp	ed 360 degrees to be-receiving e-height antenna meters above the strength. Both re set to make the d to its worst case eter to 4 meters degrees to find anction and DdB lower than I the peak values ons that did not ing peak, quasi-		
			led in the repo	ort.			
Test Instruments:	Refer to section						
Test mode:	Refer to section	5.3 for detail	S				
Test results:	Pass						

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



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:	802.11b	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	51.77	27.59	5.38	34.01	50.73	74.00	-23.27	Horizontal
2400.00	60.82	27.58	5.39	34.01	59.78	74.00	-14.22	Horizontal
2390.00	53.46	27.59	5.38	34.01	52.42	74.00	-21.58	Vertical
2400.00	62.65	27.58	5.39	34.01	61.61	74.00	-12.39	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	38.49	27.59	5.38	34.01	37.45	54.00	-16.55	Horizontal
2400.00	46.80	27.58	5.39	34.01	45.76	54.00	-8.24	Horizontal
2390.00	40.32	27.59	5.38	34.01	39.28	54.00	-14.72	Vertical
2400.00	47.94	27.58	5.39	34.01	46.90	54.00	-7.10	Vertical

Test mode: 802.11b Test channel: Highest
--

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	52.48	27.53	5.47	33.92	51.56	74.00	-22.44	Horizontal
2500.00	48.26	27.55	5.49	29.93	51.37	74.00	-22.63	Horizontal
2483.50	54.76	27.53	5.47	33.92	53.84	74.00	-20.16	Vertical
2500.00	50.80	27.55	5.49	29.93	53.91	74.00	-20.09	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	38.88	27.53	5.47	33.92	37.96	54.00	-16.04	Horizontal
2500.00	34.96	27.55	5.49	29.93	38.07	54.00	-15.93	Horizontal
2483.50	40.84	27.53	5.47	33.92	39.92	54.00	-14.08	Vertical
2500.00	36.84	27.55	5.49	29.93	39.95	54.00	-14.05	Vertical

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.

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Test mode:		802.1	1g	Te	st 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	50.95	27.59	5.38	34.01	49.91	74.00	-24.09	Horizontal
2400.00	59.73	27.58	5.39	34.01	58.69	74.00	-15.31	Horizontal
2390.00	52.58	27.59	5.38	34.01	51.54	74.00	-22.46	Vertical
2400.00	61.34	27.58	5.39	34.01	60.30	74.00	-13.70	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	37.91	27.59	5.38	34.01	36.87	54.00	-17.13	Horizontal
2400.00	46.13	27.58	5.39	34.01	45.09	54.00	-8.91	Horizontal
2390.00	39.68	27.59	5.38	34.01	38.64	54.00	-15.36	Vertical
2400.00	47.20	27.58	5.39	34.01	46.16	54.00	-7.84	Vertical
Test mode:		802.1	1g	Те	st channel:		Highest	
Peak value:		1		7	•		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	51.31	27.53	5.47	33.92	50.39	74.00	-23.61	Horizontal
2500.00	47.36	27.55	5.49	29.93	50.47	74.00	-23.53	Horizontal
2483.50	53.42	27.53	5.47	33.92	52.50	74.00	-21.50	Vertical
2500.00	49.74	27.55	5.49	29.93	52.85	74.00	-21.15	Vertical
Average va	lue:	1		7	•		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	38.17	27.53	5.47	33.92	37.25	54.00	-16.75	Horizontal
2500.00	34.41	27.55	5.49	29.93	37.52	54.00	-16.48	Horizontal
2483.50	40.06	27.53	5.47	33.92	39.14	54.00	-14.86	Vertical

Remark:

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



Test mode:

Report No.: GTS201612000116F01

Lowest

(MHZ) (dBuV) (dB/m) (dB) (dB) (dB/m)				- /	_				
Frequency (MHz)	Peak value:								_
2400.00 59.95 27.58 5.39 34.01 58.91 74.00 -15.09 Horizonta		Level	Factor	Loss	Factor			Limit	Polarization
2390.00 52.76 27.59 5.38 34.01 51.72 74.00 -22.28 Vertical	2390.00	51.12	27.59	5.38	34.01	50.08	74.00	-23.92	Horizontal
Average value:	2400.00	59.95	27.58	5.39	34.01	58.91	74.00	-15.09	Horizontal
Read Level (dBuV)	2390.00	52.76	27.59	5.38	34.01	51.72	74.00	-22.28	Vertical
Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dBuV/m) Level (dBuV/m) Limit Line (dBuV/m) Over Limit Line (dBuV/m) Polarization 2390.00 38.03 27.59 5.38 34.01 36.99 54.00 -17.01 Horizonta 2400.00 46.27 27.58 5.39 34.01 45.23 54.00 -8.77 Horizonta 2390.00 39.81 27.59 5.38 34.01 38.77 54.00 -15.23 Vertical Test mode: 802.11n(HT20) Test channel: Highest Peak value: Factor (dBuV) Level (dBuV/m) Level (dBuV/m) Cover Limit Line (dBuV/m) Over Limit Line (dBuV/m) Polarizatio (dB) 2483.50 51.55 27.53 5.47 33.92 50.63 74.00 -23.37 Horizonta 2483.50 53.70 27.53 5.47 33.92 52.78 74.00 -21.22 Vertical Average value: <td>2400.00</td> <td>61.60</td> <td>27.58</td> <td>5.39</td> <td>34.01</td> <td>60.56</td> <td>74.00</td> <td>-13.44</td> <td>Vertical</td>	2400.00	61.60	27.58	5.39	34.01	60.56	74.00	-13.44	Vertical
Frequency (MHz)	Average va	lue:							
2400.00 46.27 27.58 5.39 34.01 45.23 54.00 -8.77 Horizontal Horizontal Horizontal Horizontal Horizontal 2390.00 39.81 27.59 5.38 34.01 38.77 54.00 -15.23 Vertical Vertical Vertical Vertical Yerical Y		Level	Factor	Loss	Factor			Limit	Polarization
2390.00 39.81 27.59 5.38 34.01 38.77 54.00 -15.23 Vertical	2390.00	38.03	27.59	5.38	34.01	36.99	54.00	-17.01	Horizontal
Test mode:	2400.00	46.27	27.58	5.39	34.01	45.23	54.00	-8.77	Horizontal
Test mode: 802.11n(HT20) Test channel: Highest Peak value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Cable Loss Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization 2483.50 51.55 27.53 5.47 33.92 50.63 74.00 -23.37 Horizonta 2483.50 53.70 27.55 5.49 29.93 50.65 74.00 -23.35 Horizonta 2500.00 49.95 27.55 5.49 29.93 53.06 74.00 -21.22 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarizatio 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizonta	2390.00	39.81	27.59	5.38	34.01	38.77	54.00	-15.23	Vertical
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 51.55 27.53 5.47 33.92 50.63 74.00 -23.37 Horizonta 2500.00 47.54 27.55 5.49 29.93 50.65 74.00 -23.35 Horizonta 2483.50 53.70 27.53 5.47 33.92 52.78 74.00 -21.22 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarizatio 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizonta	2400.00	47.35	27.58	5.39	34.01	46.31	54.00	-7.69	Vertical
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 51.55 27.53 5.47 33.92 50.63 74.00 -23.37 Horizonta 2500.00 47.54 27.55 5.49 29.93 50.65 74.00 -23.35 Horizonta 2483.50 53.70 27.53 5.47 33.92 52.78 74.00 -21.22 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarizatio 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizonta	•		•	•	•	•			
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 51.55 27.53 5.47 33.92 50.63 74.00 -23.37 Horizonta 2500.00 47.54 27.55 5.49 29.93 50.65 74.00 -23.35 Horizonta 2483.50 53.70 27.53 5.47 33.92 52.78 74.00 -21.22 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizonta	Test mode:		802.1	1n(HT20)	Те	st channel:	H	lighest	
Frequency (MHz)	Peak value:	:							
2500.00 47.54 27.55 5.49 29.93 50.65 74.00 -23.35 Horizontal		Level	Factor	Loss	Factor			Limit	Polarization
2483.50 53.70 27.53 5.47 33.92 52.78 74.00 -21.22 Vertical 2500.00 49.95 27.55 5.49 29.93 53.06 74.00 -20.94 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarizatio 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizontal	2483.50	51.55	27.53	5.47	33.92	50.63	74.00	-23.37	Horizontal
2500.00 49.95 27.55 5.49 29.93 53.06 74.00 -20.94 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarizatio 2483.50 38.32 27.53 5.47 33.92 37.40 54.00 -16.60 Horizonta	2500.00	47.54	27.55	5.49	29.93	50.65	74.00	-23.35	Horizontal
Average value:Frequency (MHz)Read Level (dBuV)Antenna Factor (dB/m)Cable Loss (dB)Preamp Factor (dB)Level (dBuV/m)Limit Line (dBuV/m)Over Limit (dB)Polarization (dB)2483.5038.3227.535.4733.9237.4054.00-16.60Horizonta	2483.50	53.70	27.53	5.47	33.92	52.78	74.00	-21.22	Vertical
Frequency (MHz) Read Level (dBuV) Read Level (dB/m) Read Loss Factor (dB/m) Read Level (dB/m) Factor (dB) Read Loss Factor (dB) Factor (dB) Read Loss Factor (dBuV/m) Factor (dB) Factor (dB) Factor (dB) Factor (dBuV/m) Factor (dBuV/	2500.00	49.95	27.55	5.49	29.93	53.06	74.00	-20.94	Vertical
Frequency (MHz)	Average va	lue:							
		Level	Factor	Loss	Factor			Limit	Polarization
2500.00 34.52 27.55 5.49 29.93 37.63 54.00 -16.37 Horizonta	2483.50	38.32	27.53	5.47	33.92	37.40	54.00	-16.60	Horizontal
	2500.00	34.52	27.55	5.49	29.93	37.63	54.00	-16.37	Horizontal
2483.50 40.22 27.53 5.47 33.92 39.30 54.00 -14.70 Vertical	2483.50	40.22	27.53	5.47	33.92	39.30	54.00	-14.70	Vertical
2500.00 36.38 27.55 5.49 29.93 39.49 54.00 -14.51 Vertical Remark:		36.38	27.55	5.49	29.93	39.49	54.00	-14.51	Vertical

Test channel:

802.11n(HT20)

Remark.

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

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



Test mode:

Report No.: GTS201612000116F01

Lowest

(MHZ) (dBUV) (dB/m) (dB) (dB) (dB/m)				- /	_				
Frequency (MHz)	Peak value:								_
Antenna		Level	Factor	Loss	Factor			Limit	Polarization
2390.00 51.88 27.59 5.38 34.01 50.84 74.00 -23.16 Vertical	2390.00	50.29	27.59	5.38	34.01	49.25	74.00	-24.75	Horizontal
Average value: Frequency (MHz)	2400.00	58.85	27.58	5.39	34.01	57.81	74.00	-16.19	Horizontal
Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB) Cable Loss (dB) Preamp Factor (dBuV/m) Level (dBuV/m) Limit Line (dB) Over Limit (dB) Polarization (dB) 2390.00 37.44 27.59 5.38 34.01 36.40 54.00 -17.60 Horizontal 2400.00 45.59 27.58 5.39 34.01 44.55 54.00 -9.45 Horizontal 2390.00 39.15 27.59 5.38 34.01 38.11 54.00 -9.45 Horizontal 2400.00 46.61 27.58 5.39 34.01 45.57 54.00 -9.45 Horizontal Test mode: 802.11n(HT40) Test channel: Highest Highest Peak value: Frequency (MHz) Read Level (dBw/m) Level (dBw/m) Limit Line (dBw/m) Over Limit Line (dBw/m) Polarization 2483.50 50.36 27.53 5.47 33.92 49.44 74.00 -24.56 Horizontal <td>2390.00</td> <td>51.88</td> <td>27.59</td> <td>5.38</td> <td>34.01</td> <td>50.84</td> <td>74.00</td> <td>-23.16</td> <td>Vertical</td>	2390.00	51.88	27.59	5.38	34.01	50.84	74.00	-23.16	Vertical
Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dB) Over Limit Line Line (dB)	2400.00	60.28	27.58	5.39	34.01	59.24	74.00	-14.76	Vertical
Frequency (MHz)	Average va	lue:				•			
2400.00		Level	Factor	Loss	Factor			Limit	Polarization
2390.00 39.15 27.59 5.38 34.01 38.11 54.00 -15.89 Vertical	2390.00	37.44	27.59	5.38	34.01	36.40	54.00	-17.60	Horizontal
Test mode: 802.11n(HT40) Test channel: Highest	2400.00	45.59	27.58	5.39	34.01	44.55	54.00	-9.45	Horizontal
Test mode: 802.11n(HT40) Test channel: Highest Peak value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB/m) Preamp Factor (dB/m) Level (dB/mV/m) Limit Line (dB/mV/m) Over Limit (dB/m) Polarization 2483.50 50.36 27.53 5.47 33.92 49.44 74.00 -24.56 Horizontal 2500.00 46.63 27.55 5.49 29.93 49.74 74.00 -24.26 Horizontal 2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.01 Vertical Average value: Frequency (MHz) Read Level (dB/m) Cable Factor (dB) Level (dB) Limit Line (dB) Over Limit (dB) Polarization 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal<	2390.00	39.15	27.59	5.38	34.01	38.11	54.00	-15.89	Vertical
Peak value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dB/m) Level (dB/m) Limit Line (dB/m) Over Limit Limit (dB) Polarization 2483.50 50.36 27.53 5.47 33.92 49.44 74.00 -24.56 Horizontal 2500.00 46.63 27.55 5.49 29.93 49.74 74.00 -24.26 Horizontal 2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.58 Vertical Average value: Frequency (MHz) Read Level (dB/m) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.943 27.55 5.49 29.93	2400.00	46.61	27.58	5.39	34.01	45.57	54.00	-8.43	Vertical
Peak value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dB/m) Level (dB/m) Limit Line (dB/m) Over Limit Limit (dB) Polarization 2483.50 50.36 27.53 5.47 33.92 49.44 74.00 -24.56 Horizontal 2500.00 46.63 27.55 5.49 29.93 49.74 74.00 -24.26 Horizontal 2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.58 Vertical Average value: Frequency (MHz) Read Level (dB/m) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.943 27.55 5.49 29.93	•		•	•	•	•		•	
Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit Linit (dB) Polarization (dB) 2483.50 50.36 27.53 5.47 33.92 49.44 74.00 -24.56 Horizontal 2500.00 46.63 27.55 5.49 29.93 49.74 74.00 -24.26 Horizontal 2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.01 Vertical Average value: Frequency (MHz) (dBuV) (dB/m) (dB) Cable Loss (dB) Preamp Factor (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization (dB) 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.943 27.53 5.47 33.92 38.51 54.00 -16.93 <td>Test mode:</td> <td></td> <td>802.1</td> <td>1n(HT40)</td> <td>Te</td> <td>st channel:</td> <td>H</td> <td>Highest</td> <td></td>	Test mode:		802.1	1n(HT40)	Te	st channel:	H	Highest	
Frequency (MHz) Level (dBuV) (dB/m) Loss (dB) Factor (dB) (dBuV/m) (dBuV/m) (dBuV/m) Limit (dB) Polarization	Peak value:	:							
2500.00 46.63 27.55 5.49 29.93 49.74 74.00 -24.26 Horizontal 2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.01 Vertical Average value: Frequency (MHz) (dBWV) Antenna Factor (dB/m) Cable Loss (dB) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical		Level	Factor	Loss	Factor			Limit	Polarization
2483.50 52.34 27.53 5.47 33.92 51.42 74.00 -22.58 Vertical 2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.01 Vertical Average value: Frequency (MHz) Read Level (dBwV) Antenna Factor (dB/m) Cable Loss (dB) Level (dBwV/m) Limit Line (dBwV/m) Over Limit (dB) Polarization 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2483.50	50.36	27.53	5.47	33.92	49.44	74.00	-24.56	Horizontal
2500.00 48.88 27.55 5.49 29.93 51.99 74.00 -22.01 Vertical Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dBuV/m) Level (dBuV/m) Limit Line (dBuV/m) Polarization (dB) 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2500.00	46.63	27.55	5.49	29.93	49.74	74.00	-24.26	Horizontal
Average value: Frequency (MHz) Read Level (dBuV) Antenna Factor (dB/m) Cable Loss (dB) Preamp Factor (dBuV/m) Level (dBuV/m) Limit Line (dBuV/m) Over Limit (dB) Polarization (dB) 2483.50 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2483.50	52.34	27.53	5.47	33.92	51.42	74.00	-22.58	Vertical
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 37.60 27.53 5.47 33.92 36.68 54.00 -17.32 Horizontal 2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2500.00	48.88	27.55	5.49	29.93	51.99	74.00	-22.01	Vertical
Frequency (MHz)	Average va	lue:			_	_			
2500.00 33.96 27.55 5.49 29.93 37.07 54.00 -16.93 Horizontal 2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical		Level	Factor	Loss	Factor			Limit	Polarization
2483.50 39.43 27.53 5.47 33.92 38.51 54.00 -15.49 Vertical 2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2483.50	37.60	27.53	5.47	33.92	36.68	54.00	-17.32	Horizontal
2500.00 35.79 27.55 5.49 29.93 38.90 54.00 -15.10 Vertical	2500.00	33.96	27.55	5.49	29.93	37.07	54.00	-16.93	Horizontal
	2483.50	39.43	27.53	5.47	33.92	38.51	54.00	-15.49	Vertical
	2500.00 Remark:	35.79	27.55	5.49	29.93	38.90	54.00	-15.10	Vertical

Test channel:

802.11n(HT40)

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.



7.7 Spurious Emission

7.7.1 Conducted Emission Method

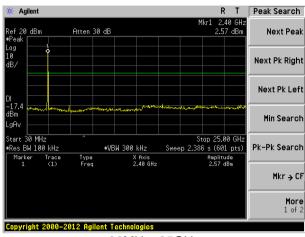
Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	KDB558074 D01 DTS Meas Guidance V03					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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:

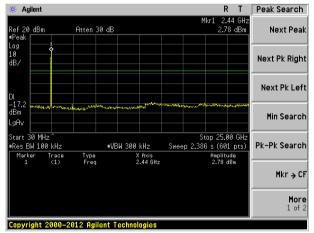
Test mode: 802.11b

Lowest channel



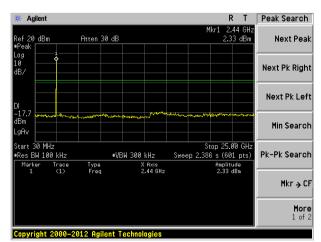
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel

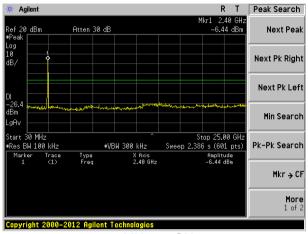


30MHz~25GHz



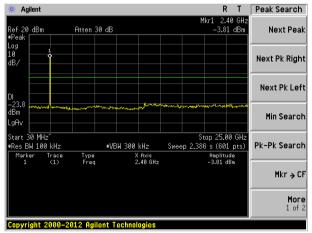
Test mode: 802.11g

Lowest channel



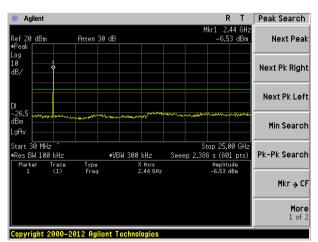
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel

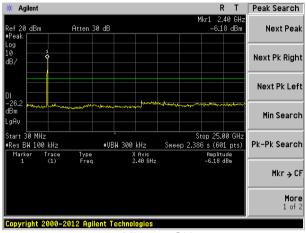


30MHz~25GHz



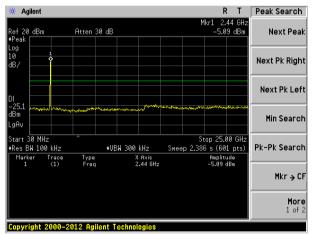
Test mode: 802.11n(HT20)

Lowest channel



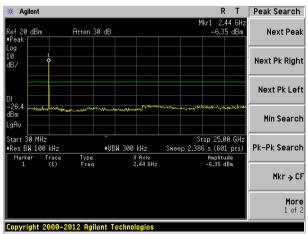
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel

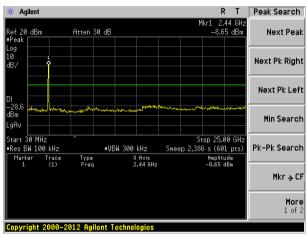


30MHz~25GHz



Test mode:

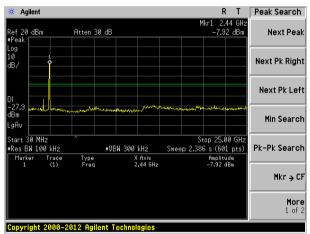
Lowest channel



802.11n(HT40)

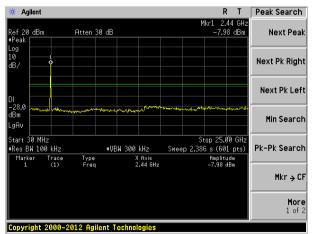
30MHz~25GHz

Middle channel



Highest channel

30MHz~25GHz



30MHz~25GHz

Page 36 of 58



7.7.2 Radiated Emission Method

FCC Part15 C Se	ection 15.209							
ANSI C63.10:2013								
30MHz to 25GHz								
Measurement Dis	stance: 3m							
Frequency								
30MHz-1GHz	30MHz-1GHz Quasi-peak 120KHz 300KHz C							
Above 1GHz	Peak	1MHz	3MHz	Peak				
Above 1G112	RMS	1MHz	3MHz	Average				
Frequen	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	960MHz-1GHz 54.00 Quasi-peak							
Above 10	2H-7	54.0	0	Average				
Above 10	JI 12	74.0	0	Peak				
Below 1GHz	EUT- Tur	< 1n n Table⊬	a 4m >√	ñer-				
	ANSI C63.10:201 30MHz to 25GHz Measurement Dis Frequency 30MHz-1GHz Above 1GHz Frequen 30MHz-88 88MHz-216 216MHz-96 960MHz-1 Above 1C	ANSI C63.10:2013 30MHz to 25GHz Measurement Distance: 3m Frequency Detector 30MHz-1GHz Quasi-peak Peak RMS Frequency 30MHz-88MHz 88MHz-216MHz 216MHz-960MHz 960MHz-1GHz Above 1GHz Below 1GHz Below 1GHz	Measurement Distance: 3m Frequency Detector RBW 30MHz-1GHz Quasi-peak 120KHz Above 1GHz Peak 1MHz RMS 1MHz Frequency Limit (dBuV/ 30MHz-88MHz 40.0 88MHz-216MHz 43.5 216MHz-960MHz 46.0 960MHz-1GHz 54.0 Above 1GHz 54.0 Below 1GHz Below 1GHz Tum Table Receivers	ANSI C63.10:2013 30MHz to 25GHz Measurement Distance: 3m Frequency Detector RBW VBW 30MHz-1GHz Quasi-peak 120KHz 300KHz Above 1GHz Peak 1MHz 3MHz RMS 1MHz 3MHz Frequency Limit (dBuV/m @3m) 30MHz-88MHz 40.00 88MHz-216MHz 43.50 216MHz-960MHz 46.00 960MHz-1GHz 54.00 Above 1GHz 54.00 Below 1GHz Tum Table Receiver Preamplif				



	Tum Table+ < lm 4m > + + + + + + + + + + + + + + + + + +
Test Procedure:	The EUT was placed on the top of a rotating table(0.8 meters below 1G and 1.5 meters above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
	2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
	3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
	4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
	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.



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
30.96	56.02	10.40	0.56	30.09	36.89	40.00	-3.11	Vertical
81.21	50.49	8.82	1.04	29.79	30.56	40.00	-9.44	Vertical
166.07	50.52	8.36	1.66	29.33	31.21	43.50	-12.29	Vertical
250.30	50.01	12.27	2.12	29.65	34.75	46.00	-11.25	Vertical
446.41	52.99	14.59	3.07	29.40	41.25	46.00	-4.75	Vertical
744.87	47.18	18.51	4.26	29.20	40.75	46.00	-5.25	Vertical
31.29	44.12	10.40	0.57	30.09	25.00	40.00	-15.00	Horizontal
82.94	42.88	8.94	1.05	29.78	23.09	40.00	-16.91	Horizontal
149.49	48.39	9.02	1.56	29.41	29.56	43.50	-13.94	Horizontal
185.14	44.90	8.10	1.77	29.25	25.52	43.50	-17.98	Horizontal
307.83	47.55	12.11	2.40	29.95	32.11	46.00	-13.89	Horizontal
744.87	46.73	18.51	4.26	29.20	40.30	46.00	-5.70	Horizontal



■ Above 1GHz

Test mode:		802.11b		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	40.47	31.79	8.62	32.10	48.78	74.00	-25.22	Vertical
7236.00	34.33	36.19	11.68	31.97	50.23	74.00	-23.77	Vertical
9648.00	32.79	38.07	14.16	31.56	53.46	74.00	-20.54	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.11	31.79	8.62	32.10	47.42	74.00	-26.58	Horizontal
7236.00	34.06	36.19	11.68	31.97	49.96	74.00	-24.04	Horizontal
9648.00	32.37	38.07	14.16	31.56	53.04	74.00	-20.96	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	29.54	31.79	8.62	32.10	37.85	54.00	-16.15	Vertical
7236.00	23.19	36.19	11.68	31.97	39.09	54.00	-14.91	Vertical
9648.00	23.14	38.07	14.16	31.56	43.81	54.00	-10.19	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	28.64	31.79	8.62	32.10	36.95	54.00	-17.05	Horizontal
7236.00	22.64	36.19	11.68	31.97	38.54	54.00	-15.46	Horizontal
9648.00	22.11	38.07	14.16	31.56	42.78	54.00	-11.22	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11b		Tes	t 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	39.50	31.85	8.66	32.12	47.89	74.00	-26.11	Vertical
7311.00	34.38	36.37	11.71	31.91	50.55	74.00	-23.45	Vertical
9748.00	33.80	38.27	14.25	31.56	54.76	74.00	-19.24	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.95	31.85	8.66	32.12	48.34	74.00	-25.66	Horizontal
7311.00	33.01	36.37	11.71	31.91	49.18	74.00	-24.82	Horizontal
9748.00	33.68	38.27	14.25	31.56	54.64	74.00	-19.36	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	30.34	31.85	8.66	32.12	38.73	54.00	-15.27	Vertical
7311.00	22.69	36.37	11.71	31.91	38.86	54.00	-15.14	Vertical
9748.00	23.05	38.27	14.25	31.56	44.01	54.00	-9.99	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.06	31.85	8.66	32.12	38.45	54.00	-15.55	Horizontal
7311.00	22.10	36.37	11.71	31.91	38.27	54.00	-15.73	Horizontal
9748.00	23.40	38.27	14.25	31.56	44.36	54.00	-9.64	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11b		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	45.13	31.90	8.70	32.15	53.58	74.00	-20.42	Vertical
7386.00	35.12	36.49	11.76	31.83	51.54	74.00	-22.46	Vertical
9848.00	37.14	38.62	14.31	31.77	58.30	74.00	-15.70	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	44.40	31.90	8.70	32.15	52.85	74.00	-21.15	Horizontal
7386.00	34.00	36.49	11.76	31.83	50.42	74.00	-23.58	Horizontal
9848.00	33.30	38.62	14.31	31.77	54.46	74.00	-19.54	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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	36.03	31.90	8.70	32.15	44.48	54.00	-9.52	Vertical
7386.00	25.03	36.49	11.76	31.83	41.45	54.00	-12.55	Vertical
9848.00	25.64	38.62	14.31	31.77	46.80	54.00	-7.20	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	34.75	31.90	8.70	32.15	43.20	54.00	-10.80	Horizontal
7386.00	23.39	36.49	11.76	31.83	39.81	54.00	-14.19	Horizontal
9848.00	22.56	38.62	14.31	31.77	43.72	54.00	-10.28	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g		Test	channel:	lowes	st	
Peak value:						<u> </u>		
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	40.47	31.79	8.62	32.10	48.78	74.00	-25.22	Vertical
7236.00	34.33	36.19	11.68	31.97	50.23	74.00	-23.77	Vertical
9648.00	32.79	38.07	14.16	31.56	53.46	74.00	-20.54	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.11	31.79	8.62	32.10	47.42	74.00	-26.58	Horizontal
7236.00	34.06	36.19	11.68	31.97	49.96	74.00	-24.04	Horizontal
9648.00	32.37	38.07	14.16	31.56	53.04	74.00	-20.96	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	29.54	31.79	8.62	32.10	37.85	54.00	-16.15	Vertical
7236.00	23.19	36.19	11.68	31.97	39.09	54.00	-14.91	Vertical
9648.00	23.14	38.07	14.16	31.56	43.81	54.00	-10.19	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertica
4824.00	28.64	31.79	8.62	32.10	36.95	54.00	-17.05	Horizontal
7236.00	22.64	36.19	11.68	31.97	38.54	54.00	-15.46	Horizontal
9648.00	22.11	38.07	14.16	31.56	42.78	54.00	-11.22	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g		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	39.50	31.85	8.66	32.12	47.89	74.00	-26.11	Vertical
7311.00	34.38	36.37	11.71	31.91	50.55	74.00	-23.45	Vertical
9748.00	33.80	38.27	14.25	31.56	54.76	74.00	-19.24	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.95	31.85	8.66	32.12	48.34	74.00	-25.66	Horizontal
7311.00	33.01	36.37	11.71	31.91	49.18	74.00	-24.82	Horizontal
9748.00	33.68	38.27	14.25	31.56	54.64	74.00	-19.36	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	30.34	31.85	8.66	32.12	38.73	54.00	-15.27	Vertical
7311.00	22.69	36.37	11.71	31.91	38.86	54.00	-15.14	Vertical
9748.00	23.05	38.27	14.25	31.56	44.01	54.00	-9.99	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.06	31.85	8.66	32.12	38.45	54.00	-15.55	Horizontal
7311.00	22.10	36.37	11.71	31.91	38.27	54.00	-15.73	Horizontal
9748.00	23.40	38.27	14.25	31.56	44.36	54.00	-9.64	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11g		Test	channel:	High	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	45.13	31.90	8.70	32.15	53.58	74.00	-20.42	Vertical
7386.00	35.12	36.49	11.76	31.83	51.54	74.00	-22.46	Vertical
9848.00	37.14	38.62	14.31	31.77	58.30	74.00	-15.70	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	44.40	31.90	8.70	32.15	52.85	74.00	-21.15	Horizontal
7386.00	34.00	36.49	11.76	31.83	50.42	74.00	-23.58	Horizontal
9848.00	33.30	38.62	14.31	31.77	54.46	74.00	-19.54	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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	36.03	31.90	8.70	32.15	44.48	54.00	-9.52	Vertical
7386.00	25.03	36.49	11.76	31.83	41.45	54.00	-12.55	Vertical
9848.00	25.64	38.62	14.31	31.77	46.80	54.00	-7.20	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	34.75	31.90	8.70	32.15	43.20	54.00	-10.80	Horizontal
7386.00	23.39	36.49	11.76	31.83	39.81	54.00	-14.19	Horizontal
9848.00	22.56	38.62	14.31	31.77	43.72	54.00	-10.28	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. &}quot;*", means this data is the too weak instrument of signal is unable to test.



Test mode:		802.11n(H	IT20)	Test	channel:	Lowe	st	
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	40.47	31.79	8.62	32.10	48.78	74.00	-25.22	Vertical
7236.00	34.33	36.19	11.68	31.97	50.23	74.00	-23.77	Vertical
9648.00	32.79	38.07	14.16	31.56	53.46	74.00	-20.54	Vertical
12060.00	*					74.00		Vertical
14472.00	*					74.00		Vertical
16884.00	*					74.00		Vertical
4824.00	39.11	31.79	8.62	32.10	47.42	74.00	-26.58	Horizontal
7236.00	34.06	36.19	11.68	31.97	49.96	74.00	-24.04	Horizontal
9648.00	32.37	38.07	14.16	31.56	53.04	74.00	-20.96	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	29.54	31.79	8.62	32.10	37.85	54.00	-16.15	Vertical
7236.00	23.19	36.19	11.68	31.97	39.09	54.00	-14.91	Vertical
9648.00	23.14	38.07	14.16	31.56	43.81	54.00	-10.19	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4824.00	28.64	31.79	8.62	32.10	36.95	54.00	-17.05	Horizontal
7236.00	22.64	36.19	11.68	31.97	38.54	54.00	-15.46	Horizontal
9648.00	22.11	38.07	14.16	31.56	42.78	54.00	-11.22	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.



Test mode:		802.11n(H	IT20)	Tes	st 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	39.50	31.85	8.66	32.12	47.89	74.00	-26.11	Vertical
7311.00	34.38	36.37	11.71	31.91	50.55	74.00	-23.45	Vertical
9748.00	33.80	38.27	14.25	31.56	54.76	74.00	-19.24	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.95	31.85	8.66	32.12	48.34	74.00	-25.66	Horizontal
7311.00	33.01	36.37	11.71	31.91	49.18	74.00	-24.82	Horizontal
9748.00	33.68	38.27	14.25	31.56	54.64	74.00	-19.36	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	30.34	31.85	8.66	32.12	38.73	54.00	-15.27	Vertical
7311.00	22.69	36.37	11.71	31.91	38.86	54.00	-15.14	Vertical
9748.00	23.05	38.27	14.25	31.56	44.01	54.00	-9.99	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	30.06	31.85	8.66	32.12	38.45	54.00	-15.55	Horizontal
7311.00	22.10	36.37	11.71	31.91	38.27	54.00	-15.73	Horizontal
9748.00	23.40	38.27	14.25	31.56	44.36	54.00	-9.64	Horizontal
12185.00	*					54.00		Horizontal
14622.00	*					54.00		Horizontal
17059.00	*					54.00		Horizontal

Remark:

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

^{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	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	45.13	31.90	8.70	32.15	53.58	74.00	-20.42	Vertical
7386.00	35.12	36.49	11.76	31.83	51.54	74.00	-22.46	Vertical
9848.00	37.14	38.62	14.31	31.77	58.30	74.00	-15.70	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4924.00	44.40	31.90	8.70	32.15	52.85	74.00	-21.15	Horizontal
7386.00	34.00	36.49	11.76	31.83	50.42	74.00	-23.58	Horizontal
9848.00	33.30	38.62	14.31	31.77	54.46	74.00	-19.54	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)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4924.00	36.03	31.90	8.70	32.15	44.48	54.00	-9.52	Vertical
7386.00	25.03	36.49	11.76	31.83	41.45	54.00	-12.55	Vertical
9848.00	25.64	38.62	14.31	31.77	46.80	54.00	-7.20	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4924.00	34.75	31.90	8.70	32.15	43.20	54.00	-10.80	Horizontal
7386.00	23.39	36.49	11.76	31.83	39.81	54.00	-14.19	Horizontal
9848.00	22.56	38.62	14.31	31.77	43.72	54.00	-10.28	Horizontal
12310.00	*	_				54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

Xixiang Road, Baoan District, Shenzhen, Guangdong, 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.



lead evel BuV) 9.94 4.00	Antenna Factor (dB/m) 31.81 36.28	Cable Loss (dB) 8.63 11.69	Preamp Factor (dB) 32.11	Level (dBuV/m) 48.27	Limit Line (dBuV/m) 74.00	Over Limit (dB)	polarization Vertical
evel BuV) 9.94 4.00	Factor (dB/m) 31.81 36.28	Loss (dB) 8.63	Factor (dB) 32.11	(dBuV/m) 48.27	(dBuV/m)	Limit (dB)	•
4.00	36.28				74.00	-25.73	Vertical
		11.69	31 94				
2.55	00.40		51.54	50.03	74.00	-23.97	Vertical
	38.13	14.21	31.52	53.37	74.00	-20.63	Vertical
*					74.00		Vertical
*					74.00		Vertical
*					74.00		Vertical
8.66	31.81	8.63	32.11	46.99	74.00	-27.01	Horizontal
3.77	36.28	11.69	31.94	49.80	74.00	-24.20	Horizontal
2.15	38.13	14.21	31.52	52.97	74.00	-21.03	Horizontal
*					74.00		Horizontal
*					74.00		Horizontal
*					74.00		Horizontal
8 3	* .66 .77 .15 * *	* .66 31.81 .77 36.28 .15 38.13 *	* .66 31.81 8.63 .77 36.28 11.69 .15 38.13 14.21 *	* .66 31.81 8.63 32.11 .77 36.28 11.69 31.94 .15 38.13 14.21 31.52 *	* .66 31.81 8.63 32.11 46.99 .77 36.28 11.69 31.94 49.80 .15 38.13 14.21 31.52 52.97 *	* 74.00 * 74.00 * 74.00 * 74.00 .66 31.81 8.63 32.11 46.99 74.00 .77 36.28 11.69 31.94 49.80 74.00 .15 38.13 14.21 31.52 52.97 74.00 * 74.00 * 74.00	* 74.00 * 74.00 * 74.00 * 74.00 .66 31.81 8.63 32.11 46.99 74.00 -27.01 .77 36.28 11.69 31.94 49.80 74.00 -24.20 .15 38.13 14.21 31.52 52.97 74.00 -21.03 * 74.00 * 74.00

Average value:

Avelage 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
4844.00	29.05	31.81	8.63	32.11	37.38	54.00	-16.62	Vertical
7266.00	22.87	36.28	11.69	31.94	38.90	54.00	-15.10	Vertical
9688.00	22.91	38.13	14.21	31.52	43.73	54.00	-10.27	Vertical
12060.00	*					54.00		Vertical
14472.00	*					54.00		Vertical
16884.00	*					54.00		Vertical
4844.00	28.22	31.81	8.63	32.11	36.55	54.00	-17.45	Horizontal
7266.00	22.36	36.28	11.69	31.94	38.39	54.00	-15.61	Horizontal
9688.00	21.90	38.13	14.21	31.52	42.72	54.00	-11.28	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.



Test mode:		802.11n(H	T40)	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	39.06	31.85	8.66	32.12	47.45	74.00	-26.55	Vertical
7311.00	34.11	36.37	11.71	31.91	50.28	74.00	-23.72	Vertical
9748.00	33.60	38.27	14.25	31.56	54.56	74.00	-19.44	Vertical
12185.00	*					74.00		Vertical
14622.00	*					74.00		Vertical
17059.00	*					74.00		Vertical
4874.00	39.58	31.85	8.66	32.12	47.97	74.00	-26.03	Horizontal
7311.00	32.77	36.37	11.71	31.91	48.94	74.00	-25.06	Horizontal
9748.00	33.50	38.27	14.25	31.56	54.46	74.00	-19.54	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	29.93	31.85	8.66	32.12	38.32	54.00	-15.68	Vertical
7311.00	22.43	36.37	11.71	31.91	38.60	54.00	-15.40	Vertical
9748.00	22.86	38.27	14.25	31.56	43.82	54.00	-10.18	Vertical
12185.00	*					54.00		Vertical
14622.00	*					54.00		Vertical
17059.00	*					54.00		Vertical
4874.00	29.71	31.85	8.66	32.12	38.10	54.00	-15.90	Horizontal
7311.00	21.86	36.37	11.71	31.91	38.03	54.00	-15.97	Horizontal
9748.00	23.22	38.27	14.25	31.56	44.18	54.00	-9.82	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.



Test mode:		802.11n(H	IT40)	Te	st channel:	High	est	
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	1 4//41	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4904.00	44.38	31.88	8.68	32.13	52.81	74.00	-21.19	Vertical
7356.00	34.65	36.45	11.75	31.86	50.99	74.00	-23.01	Vertical
9808.00	36.80	38.43	14.29	31.68	57.84	74.00	-16.16	Vertical
12310.00	*					74.00		Vertical
14772.00	*					74.00		Vertical
17234.00	*					74.00		Vertical
4904.00	43.76	31.88	8.68	32.13	52.19	74.00	-21.81	Horizontal
7356.00	33.59	36.45	11.75	31.86	49.93	74.00	-24.07	Horizontal
9808.00	32.99	38.43	14.29	31.68	54.03	74.00	-19.97	Horizontal
12310.00	*					74.00		Horizontal
14772.00	*					74.00		Horizontal
17234.00	*					74.00		Horizontal
Average val		<u> </u>					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
4904.00	35.33	31.88	8.68	32.13	43.76	54.00	-10.24	Vertical
7356.00	24.57	36.45	11.75	31.86	40.91	54.00	-13.09	Vertical
9808.00	25.31	38.43	14.29	31.68	46.35	54.00	-7.65	Vertical
12310.00	*					54.00		Vertical
14772.00	*					54.00		Vertical
17234.00	*					54.00		Vertical
4904.00	34.15	31.88	8.68	32.13	42.58	54.00	-11.42	Horizontal
7356.00	22.99	36.45	11.75	31.86	39.33	54.00	-14.67	Horizontal
9808.00	22.26	38.43	14.29	31.68	43.30	54.00	-10.70	Horizontal
12310.00	*					54.00		Horizontal
14772.00	*					54.00		Horizontal
17234.00	*					54.00		Horizontal

Remark:

Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

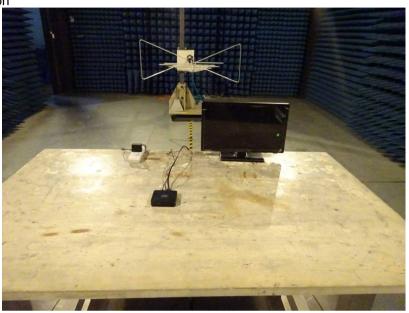
¹ Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor

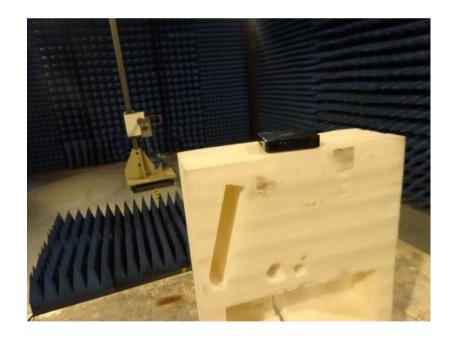
^{2 &}quot;*", means this data is the too weak instrument of signal is unable to test.



8 Test Setup Photo

Radiated Emission







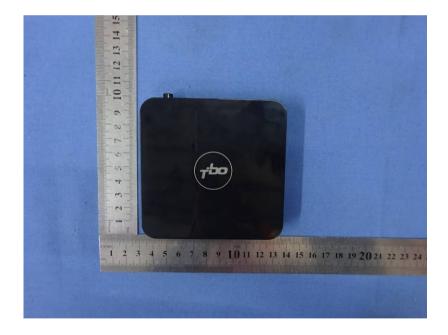
Conducted Emission



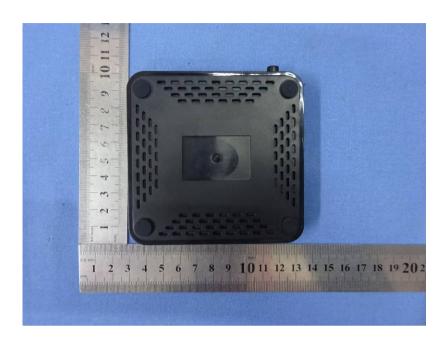


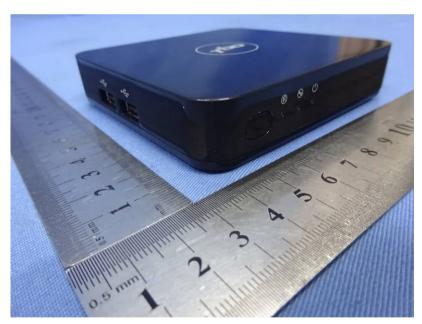
9 EUT Constructional Details









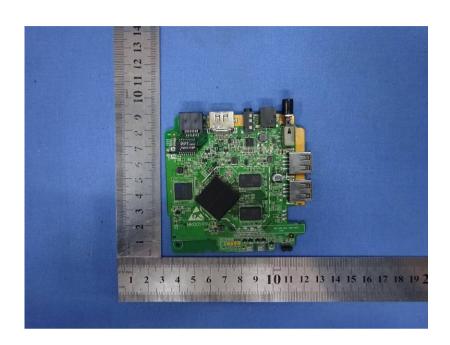


















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