

# Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCISE180402403

# FCC REPORT

Applicant: HUNG WAI HOLDINGS LIMITED

Address of Applicant: Unit 11, 12/F., New Commerce Centre, 19 On Sum Street,

Shatin, Hong Kong

**Equipment Under Test (EUT)** 

Product Name: 21.5" LCD non-touch screen android guad core player

Model No.: DT215-AS4G1-1080-SL

**FCC ID:** 2AB6Z-DT215-AS4G1

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

Date of sample receipt: 09 Apr., 2018

**Date of Test:** 10 Apr., to 05 Jul., 2018

Date of report issued: 05 Jul., 2018

Test Result: PASS\*

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

### Authorized Signature:



Bruce Zhang Laboratory Manager

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

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# 2 Version

Version No.	Date	Description
00	05 Jul., 2018	Android player Main board with wireless module (FCC ID: 2AB6Z-A18RK31) and same antenna were used by the device, only AC Power Line Conducted Emission and Radiated emission were re-tested.

Tested by: Mike DU Date: 05 Jul., 2018

Test Engineer

Reviewed by: Date: 05 Jul., 2018

**Project Engineer** 



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# 4 Test Summary

Test Items	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*
6dB Emission Bandwidth 99% Occupied 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.

N/A: N/A: Not Applicable.

Pass\*: The test data refer to FCC ID: 2AB6Z-A18RK31.





# 5 General Information

# **5.1 Client Information**

Applicant:	HUNG WAI HOLDINGS LIMITED
Address:	Unit 11, 12/F., New Commerce Centre, 19 On Sum Street, Shatin, Hong Kong
Manufacturer/ Factory:	HUNG WAI ELECTRONICS (HUIZHOU) LTD
Address:	3rd floor, NO. 1, Minfeng Road, Huinan High and New Technology Industry Park, Huiao Avenue, Huizhou City, Guangdong

# 5.2 General Description of E.U.T.

Product Name:	21.5" LCD non-touch screen android quad core player			
Model No.:	DT215-AS4G1-1080-SL			
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20))			
Channel numbers:	11 for 802.11b/802.11g/802.11(H20)			
Channel separation:	5MHz			
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)			
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)			
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps			
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps			
Data speed (IEEE 802.11n):	Up to 72.2Mbps			
Antenna Type:	External Antenna			
Antenna gain:	2.0dBi			
Power supply:	AC 120V/60Hz			
AC adapter:	Model No.:PS36A120Y 3000S Input: AC100-240V, 50/60Hz,1 A Output: DC 12V, 3000mA			

Operation Frequency each of channel for 802.11b/g/n(H20)							
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:

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China
Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366

<sup>1.</sup> Channel 1, 6 & 11 selected for 802.11b/g/n-HT20 as Lowest, Middle and Highest channel, Middle and Highest channel, Channel.



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### 5.3 Test environment and test mode

Operating Environment:			
Temperature:	24.0 °C		
Humidity:	54 % RH		
Atmospheric Pressure:	1010 mbar		
Test mode:			

Transmitting mode Keep the EUT	in continuous transmit	ing with modulation
--------------------------------	------------------------	---------------------

The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

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, the follow list were the worst case.				
Mode Data rate				
802.11b	1Mbps			
802.11g	6Mbps			
802.11n(H20)	6.5Mbps			

# 5.4 Description of Support Units

The EUT has been tested as an independent unit.

## 5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty	
Conducted Emission (9kHz ~ 30MHz)	2.14 dB (k=2)	
Radiated Emission (9kHz ~ 30MHz)	4.24 dB (k=2)	
Radiated Emission (30MHz ~ 1000MHz)	4.35 dB (k=2)	
Radiated Emission (1GHz ~ 18GHz)	4.44 dB (k=2)	
Radiated Emission (18GHz ~ 26.5GHz)	4.56 dB (k=2)	

# 5.6 Laboratory Facility

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

### FCC - Registration No.: 727551

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

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

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

### CNAS - Registration No.: CNAS L6048

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

### A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a>

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# 5.7 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

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

Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

# 5.8 Test Instruments list

Radiated Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020	
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	02-25-2018	02-24-2019	
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	02-25-2018	02-24-2019	
Horn Antenna	SCHWARZBECK	BBHA9120D	916	02-25-2018	02-24-2019	
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A	
Pre-amplifier	HP	8447D	2944A09358	03-07-2018	03-06-2019	
Pre-amplifier	CD	PAP-1G18	11804	03-07-2018	03-06-2019	
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-07-2018	03-06-2019	
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-07-2018	03-06-2019	
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2018	03-06-2019	
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2018	03-06-2019	
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2018	03-06-2019	

Conducted Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-07-2018	03-06-2019	
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2018	03-06-2019	
LISN	CHASE	MN2050D	1447	02-25-2018	02-24-2019	
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2018	
Cable	HP	10503A	N/A	03-07-2018	03-06-2019	
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A	



## 6 Test results and Measurement Data

# 6.1 Antenna requirement

### Standard requirement: FCC Part 15 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 WiFi antenna is an external antenna which cannot replace by end-user, the best case gain of the antenna is 2.0 dBi.







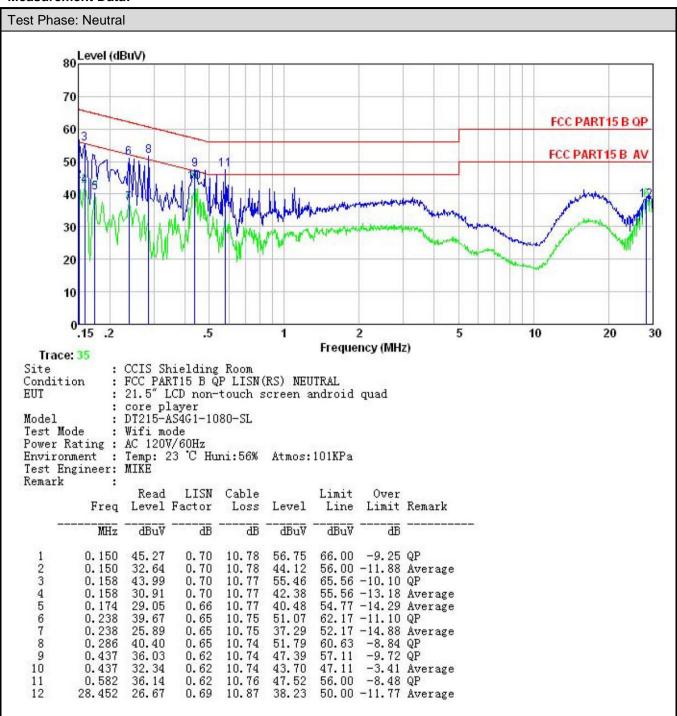
# 6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 1	5.207						
Test Method:		ANSI C63.10: 2013						
Test Frequency Range:	150 kHz to 30 MHz							
Class / Severity:	Class B							
Receiver setup:	RBW=9 kHz, VBW=30 kl	 Ц <sub>7</sub>						
Limit:	Frequency range Limit (dBuV)							
LIIIII.	(MHz)	Quasi-peak	Average					
	0.15-0.5	66 to 56*	56 to 46*					
	0.5-5	56	46					
	5-30	60	50					
	* Decreases with the logar							
Test procedure	<ol> <li>The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</li> </ol>							
Test setup:	AUX Equipment  Test table/Insula  Remark E.U.T. Equipment Under LISN: Line Impedence State Test table height=0.8m	E.U.T  EMI Receiver	I Ilter — AC power					
Test Instruments:	Refer to section 5.8 for d	etails						
Test mode:	Refer to section 5.3 for d	etails						
Test results:	Passed							





#### **Measurement Data:**

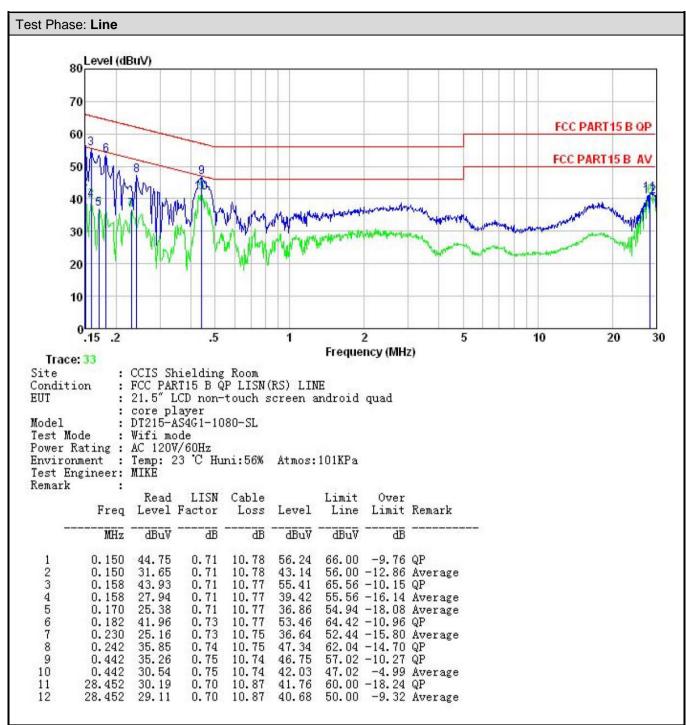


#### Notes:

- 1. An initial pre-scan was performed on the live 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.







### Notes:

- 1. An initial pre-scan was performed on the live and neutral lines with peak detector.
- Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss.





# **6.3 Conducted Output Power**

Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)					
Test Method:	ANSI C63.10:2013 and KDB 558074					
Limit:	30dBm					
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table					
	Ground Reference Plane					
Test Instruments:	Refer to section 5.8 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Refer to FCC ID: 2AB6Z-A18RK31					





# 6.4 Occupy Bandwidth

<b></b>						
Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)					
Test Method:	ANSI C63.10:2013 and KDB 558074					
Limit:	>500kHz					
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane					
Test Instruments:	Refer to section 5.8 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Refer to FCC ID: 2AB6Z-A18RK31					





# 6.5 Power Spectral Density

I						
Test Requirement:	FCC Part 15 C Section 15.247 (e)					
Test Method:	ANSI C63.10:2013 and KDB 558074					
Limit:	8dBm					
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane					
Test Instruments:	Refer to section 5.8 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Refer to FCC ID: 2AB6Z-A18RK31					



# 6.6 Band Edge

### 6.6.1 Conducted Emission Method

0.0.1 Conducted Linission						
Test Requirement:	FCC Part 15 C Section 15.247 (d)					
Test Method:	ANSI C63.10:2013 and KDB 558074					
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 5.8 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Refer to FCC ID: 2AB6Z-A18RK31					



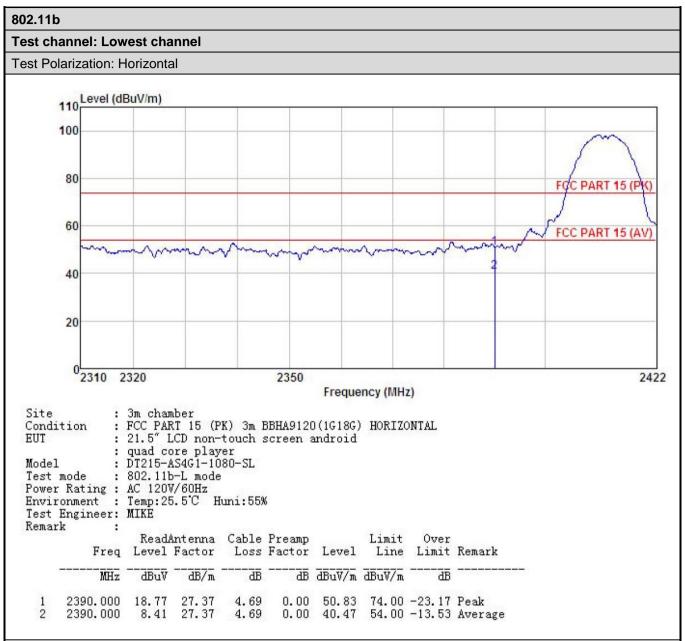


### 6.6.2 Radiated Emission Method

0.0.2	Radiated Emission Me	etnoa							
	Test Requirement:	FCC Part 15 C Section 15.209 and 15.205							
	Test Method:	ANSI C63.10: 2	013 and I	KDE	3 558074				
	Test Frequency Range:	2.3GHz to 2.5G	Hz						
	Test Distance:	3m							
	Receiver setup:	Frequency	Detecto		RBW		'BW	Remark	
		Above 1GHz	Peak RMS		1MHz 1MHz		MHz MHz	Peak Value Average Val	
	Limit:	Frequenc		Lin	nit (dBuV/m @		VII IZ	Remark	iue
	Little.	Above 1GI			54.00		A۱	verage Value	
					74.00			Peak Value	
	Test Procedure:	<ol> <li>The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data</li> </ol>							
	Test setup:	150cm	AE EUT	1	3m Ground Reference Plane	n Antenna	Antenna Tov	ver	
	Test Instruments:	Refer to section	5.8 for de	etails	S				
	Test mode:	Refer to section	5.3 for de	etails	S				
	Test results:	Passed							





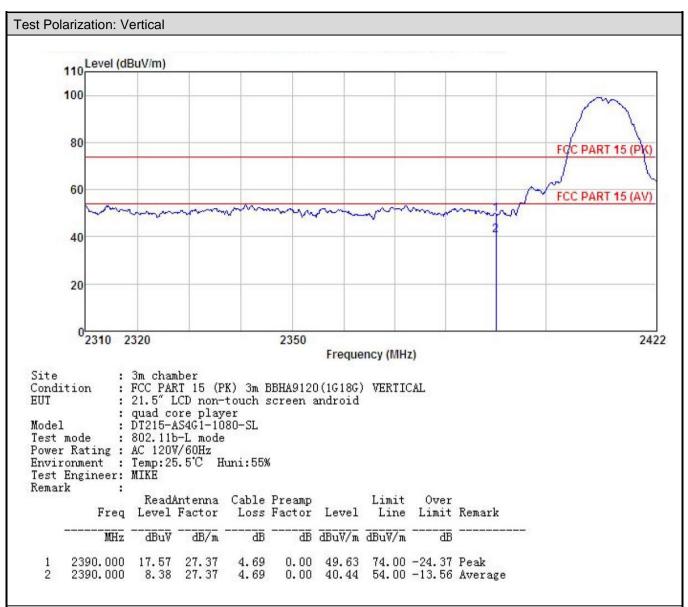


1. Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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



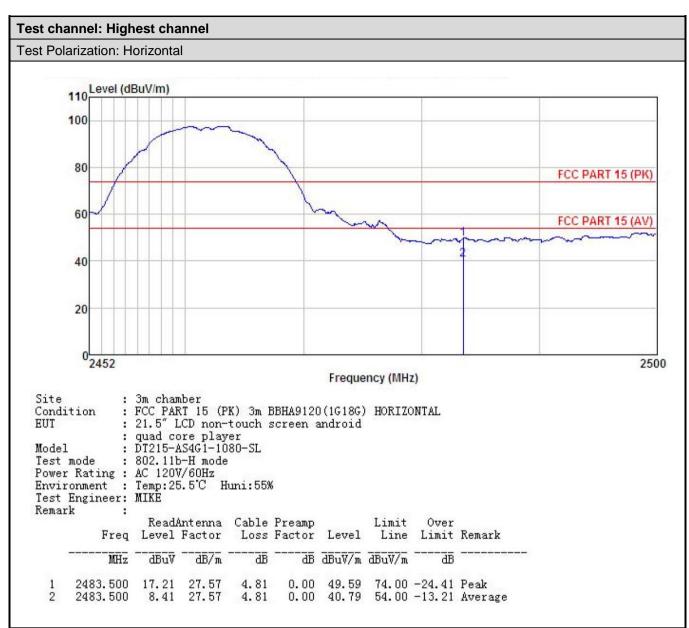




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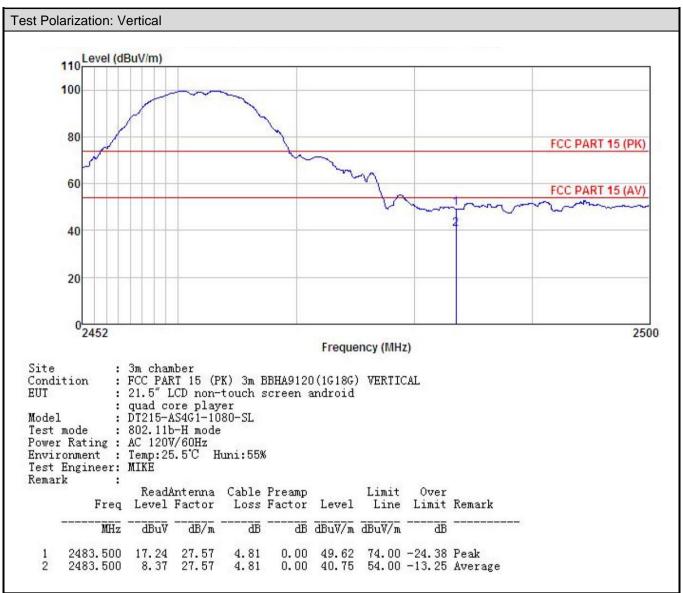


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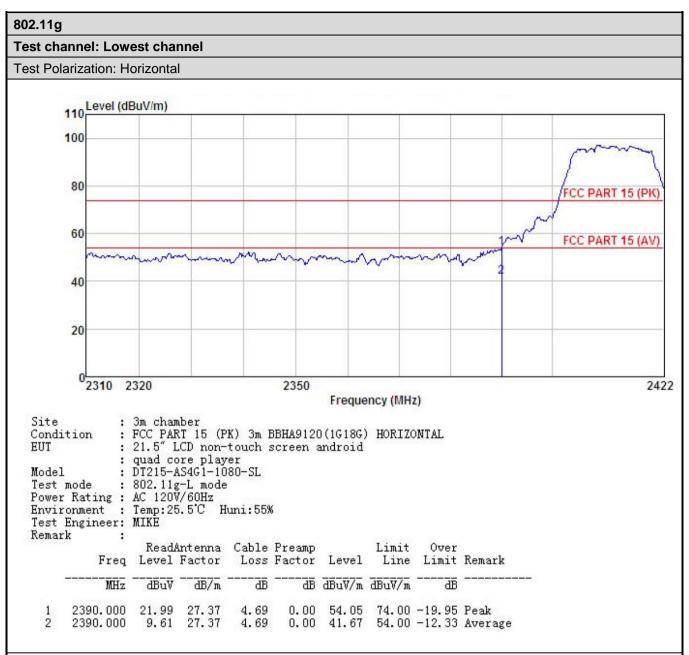


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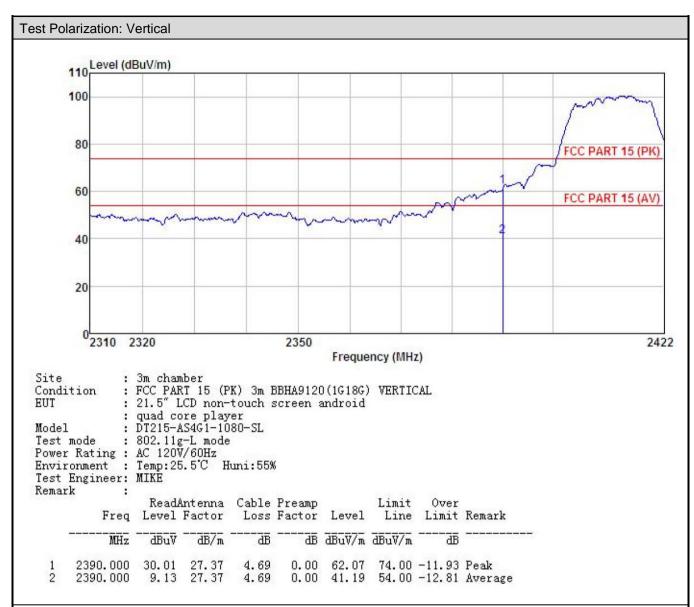


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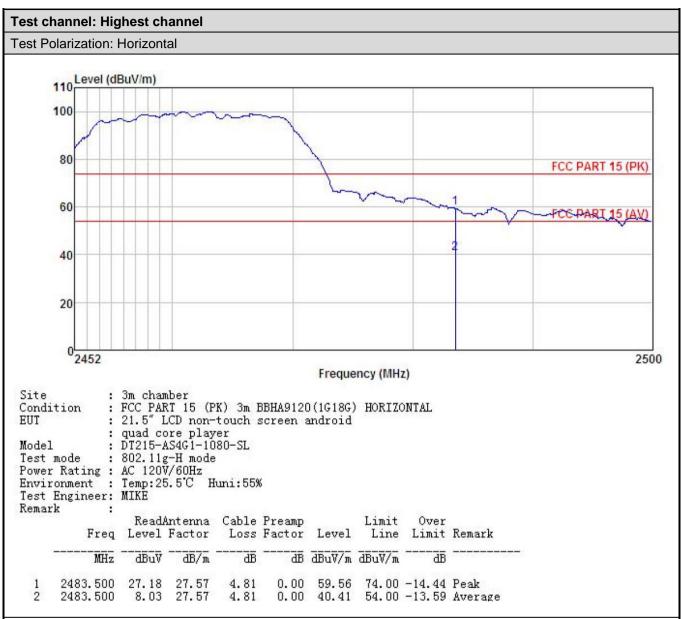


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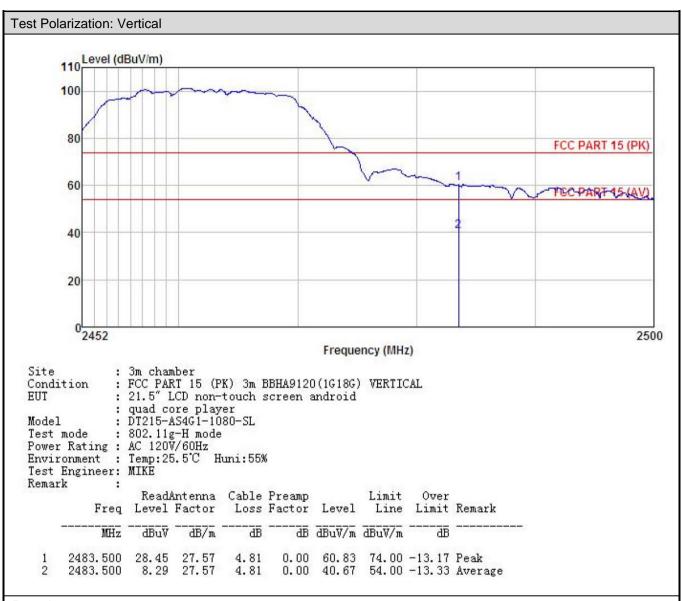


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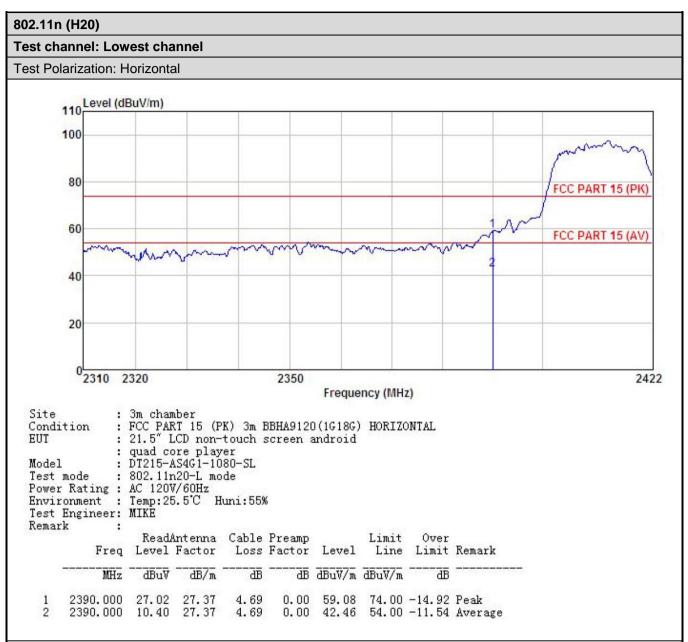


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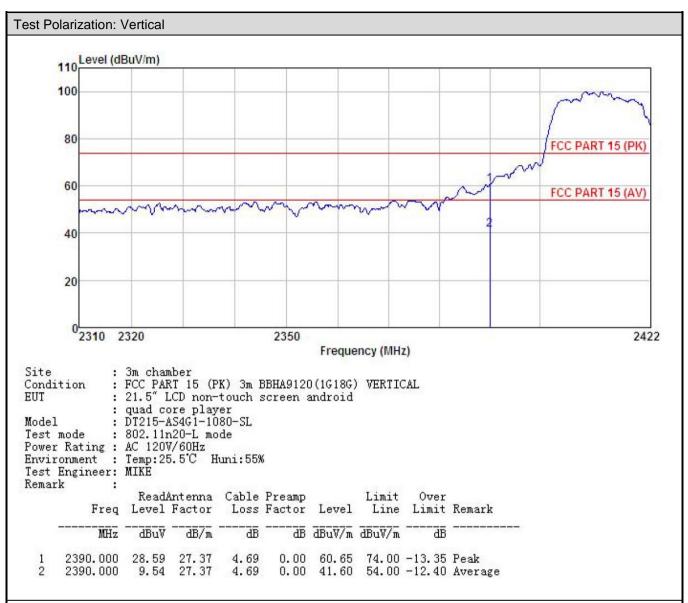


1. Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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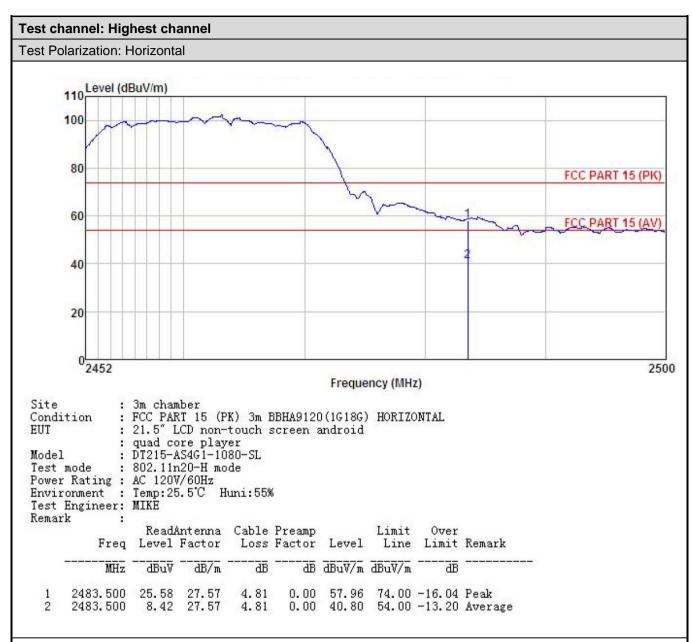




- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.





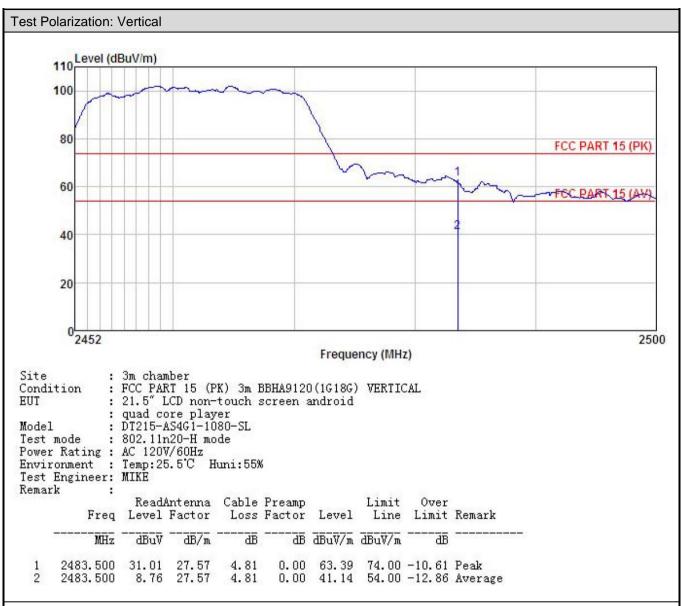


1. Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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







- 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.



# 6.7 Spurious Emission

### 6.7.1 Conducted Emission Method

FCC Part 15 C Section 15.247 (d)					
ANSI C63.10:2013 and KDB 558074					
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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.					
Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane					
Refer to section 5.8 for details					
Refer to section 5.3 for details					
Refer to FCC ID: 2AB6Z-A18RK31					





### 6.7.2 Radiated Emission Method

6.7.2	.2 Radiated Emission Method									
	Test Requirement:	FCC Part 15 C Section 15.209 and 15.205								
	Test Method:	ANSI C63.10:201	3							
	Test Frequency Range:	9kHz to 25GHz								
	Test Distance:	3m								
	Receiver setup:	Frequency	Detecto	ector RBW		VBW		Remark		
	•	30MHz-1GHz	Quasi-pe	eak	120KHz	300	KHz	Quasi-peak Value		
		Above 1GHz	Peak	-	1MHz		/IHz	Peak Value		
	1 to the		RMS		1MHz : (dBuV/m @3r		/lHz	Average Value Remark		
	Limit:	Frequency 30MHz-88MH	7	LIIIIII	40.0	11)	Oı	uasi-peak Value		
		88MHz-216MH			43.5			uasi-peak Value		
		216MHz-960MI			46.0			uasi-peak Value		
		960MHz-1GH	Z		54.0			uasi-peak Value		
		Above 1GHz			54.0		/	Average Value		
	Test Procedure:				74.0 e top of a rota			Peak Value		
		<ol> <li>1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data</li> </ol>								
	Test setup:	Below 1GHz  EUT  Turn Table  Ground P	0.8m	4m			_			





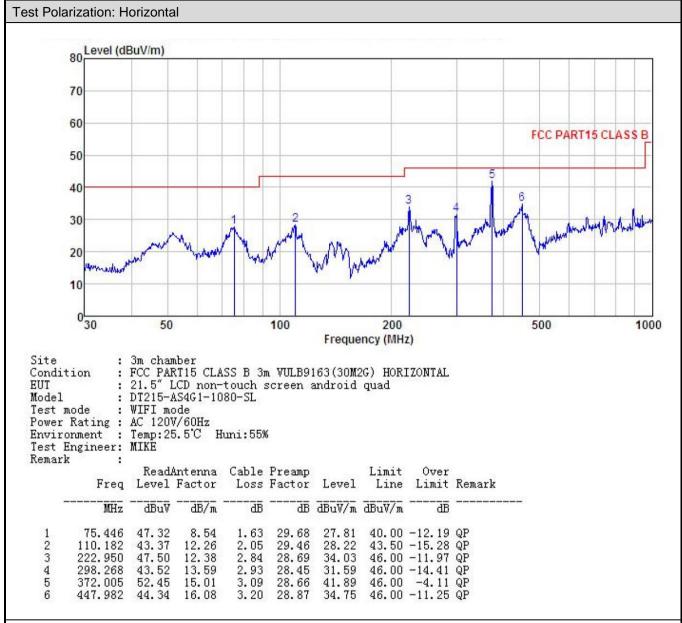
	Above 1GHz
	Horn Anianna Antenna Tower  Ground Reference Plane  Test Receiver Amptifier Controller
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	<ol> <li>Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.</li> <li>9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.</li> </ol>





### Measurement Data (worst case):

### **Below 1GHz:**



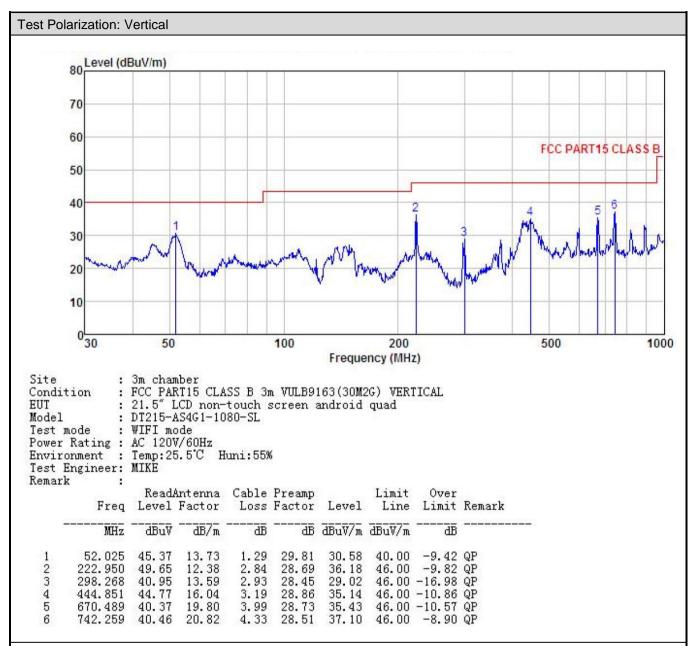
#### Remark:

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.







- 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.





### **Above 1GHz**

Above 1GHz				802.11b				
			Test ch	annel: Lowe				
				tector: Peak				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	46.89	30.94	6.81	41.82	42.82	74.00	-31.18	Vertical
4824.00	46.52	30.94	6.81	41.82	42.45	74.00	-31.55	Horizontal
			Dete	ctor: Averaç	ge 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	37.58	30.94	6.81	41.82	33.51	54.00	-20.49	Vertical
4824.00	37.37	30.94	6.81	41.82	33.30	54.00	-20.70	Horizontal
			Test ch	annel: Midd	lle channel			
			De	tector: 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	45.65	31.20	6.85	41.84	41.86	74.00	-32.14	Vertical
4874.00	44.56	31.20	6.85	41.84	40.77	74.00	-33.23	Horizontal
			Dete	ctor: Averaç	ge 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	36.33	31.20	6.85	41.84	32.54	54.00	-21.46	Vertical
4874.00	36.96	31.20	6.85	41.84	33.17	54.00	-20.83	Horizontal
				annel: Highe				
		T		tector: Peak	Value		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
4924.00	46.32	31.46	6.89	41.86	42.81	74.00	-31.19	Vertical
4924.00	45.16	31.46	6.89	41.86	41.65	74.00	-32.35	Horizontal
			Dete	ctor: Averaç	ge 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	36.52	31.46	6.89	41.86	33.01	54.00	-20.99	Vertical
4924.00 Remark:	35.25	31.46	6.89	41.86	31.74	54.00	-22.26	Horizontal

### Remark:

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

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





				802.11g				
			Test ch	annel: Lowe	est channel			
			De	tector: 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	47.11	30.94	6.81	41.82	43.04	74.00	-30.96	Vertical
4824.00	46.63	30.94	6.81	41.82	42.56	74.00	-31.44	Horizontal
			Dete	ctor: Averaç	ge 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	37.92	30.94	6.81	41.82	33.85	54.00	-20.15	Vertical
4824.00	37.24	30.94	6.81	41.82	33.17	54.00	-20.83	Horizontal
				annel: Mido				
				tector: Peak	: Value		I	T
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	45.79	31.20	6.85	41.84	42.00	74.00	-32.00	Vertical
4874.00	44.36	31.20	6.85	41.84	40.57	74.00	-33.43	Horizontal
			Dete	ctor: Averaç	ge 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	36.12	31.20	6.85	41.84	32.33	54.00	-21.67	Vertical
4874.00	37.29	31.20	6.85	41.84	33.50	54.00	-20.50	Horizontal
			T ( . l.		( . )			
				annel: Highe				
				tector: Peak	value			Ī
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	46.26	31.46	6.89	41.86	42.75	74.00	-31.25	Vertical
4924.00	46.64	31.46	6.89	41.86	43.13	74.00	-30.87	Horizontal
			Dete	ctor: Averaç	ge 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	36.63	31.46	6.89	41.86	33.12	54.00	-20.88	Vertical
4924.00	35.19	31.46	6.89	41.86	31.68	54.00	-22.32	Horizontal
Remark:								

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

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





				802.11n(HT	20)			
				annel: Lowe	•			
				tector: Peak				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4824.00	47.56	36.06	6.81	41.82	48.61	74.00	-25.39	Vertical
4824.00	46.32	36.06	6.81	41.82	47.37	74.00	-26.63	Horizontal
			Dete	ctor: Averaç	ge 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	37.29	36.06	6.81	41.82	38.34	54.00	-15.66	Vertical
4824.00	37.67	36.06	6.81	41.82	38.72	54.00	-15.28	Horizontal
			Test ch	annel: Mido	le channel			
			De	tector: 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	45.13	36.32	6.85	41.84	46.46	74.00	-27.54	Vertical
4874.00	43.63	36.32	6.85	41.84	44.96	74.00	-29.04	Horizontal
			Dete	ctor: Averaç	ge 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	36.22	36.32	6.85	41.84	37.55	54.00	-16.45	Vertical
4874.00	37.67	36.32	6.85	41.84	39.00	54.00	-15.00	Horizontal
			Test ch	annel: Highe	est channel			
				tector: Peak				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4924.00	46.67	36.58	6.89	41.86	48.28	74.00	-25.72	Vertical
4924.00	46.42	36.58	6.89	41.86	48.03	74.00	-25.97	Horizontal
			Dete	ctor: Averaç	ge 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	36.32	36.58	6.89	41.86	37.93	54.00	-16.07	Vertical
4924.00	35.56	36.58	6.89	41.86	37.17	54.00	-16.83	Horizontal
Remark:								

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

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