

# 🥇 Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCISE180907304

# FCC REPORT

**Applicant:** Telecell Mobile (H.K) Ltd.

Address of Applicant: RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong

**Equipment Under Test (EUT)** 

Product Name: Smart phone

Model No.: Ultra Plus F40G2

Trade mark: FIGO

FCC ID: 2ADX3F40G2

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

Date of sample receipt: 18 Sep., 2018

**Date of Test:** 18 Sep., to 16 Oct., 2018

Date of report issued: 17 Oct., 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.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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## 2 Version

Version No.	Date	Description		
00	17 Oct., 2018	Original		

**Tested by:** 17 Oct., 2018

Test Engine⊌

**Reviewed by:** 17 Oct., 2018

Project Engineer



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## **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: Not Applicable.



Report No: CCISE180907304

## 5 General Information

## **5.1 Client Information**

Applicant:	Telecell Mobile (H.K) Ltd.
Address:	RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong
Manufacturer/ Factory:	Telecell Mobile (H.K) Ltd.
Address:	RM 801 Metro Ctr II, 21 Lam Hing Street Kln Bay Hongkong

## 5.2 General Description of E.U.T.

Product Name:	Smart phone
Model No.:	Ultra Plus F40G2
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40))
Channel numbers:	11 for 802.11b/802.11g/802.11(H20) 7 for 802.11n(H40)
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 150Mbps
Antenna Type:	External Antenna
Antenna gain:	1.4 dBi
Power supply:	Rechargeable Li-ion Battery DC3.7V, 1400mAh
AC adapter:	Model: Ultra Plus Input: AC100-240V, 50/60Hz, 1500mA Output: DC 5.0V, 700mA
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

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

- 1. For 802.11n-HT40 mode, the channel number is from 3 to 9;
- 2. Channel 1, 6 & 11 selected for 802.11b/g/n-HT20 as Lowest, Middle and Highest channel, Channel; 3, 6 & 9 selected for 802.11n-HT40 as Lowest, Middle and Highest channel, Channel.

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
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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 Ke	ep the EUT in continuous transmitting 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			
802.11n(H40) 13.5Mbps				

## 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)	±2.22 dB (k=2)		
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)		
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)		
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)		
Radiated Emission (18GHz ~ 40GHz)	±2.88 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>

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



Report No: CCISE180907304

## 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	03-16-2018	03-15-2019		
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2018	03-15-2019		
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-16-2018	03-15-2019		
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020		
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2017	11-20-2018		
EMI Test Software	AUDIX	E3	V	Version: 6.110919b			
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		
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2017	11-20-2018		
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		
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A		
Test Software	MWRFTEST	MTS8200		Version: 2.0.0.0	·		

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	03-19-2018	03-18-2019		
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019		
Cable	HP	10503A	N/A	03-07-2018	03-06-2019		
EMI Test Software	AUDIX	E3	Version: 6.110919b				



## 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 Internal antenna which cannot replace by end-user, the best case gain of the antenna is 1.4 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	 Hz				
Limit:	Frequency range	Limit (	dBuV)			
	(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 loga	arithm of the frequency.				
Test procedure	line impedance stab 50ohm/50uH coupling 2. The peripheral device a LISN that provides termination. (Please photographs).  3. Both sides of A.C. ling interference. In order	<ul> <li>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>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed</li> </ul>				
Test setup:		Reference Plane				
	AUX Equipment  Test table/Insula  Remarkc E.U.T. Equipment Under LISN: Line Impedence State Test table height=0.8m	E.U.T  EMI Receiver	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					

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#### **Measurement Data:**

Product name:	Smart phone	Product model:	Ultra Plus F40G2
Test by:	Caffrey	Test mode:	BLE Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%
Level (dBuV)			
80 Level (dBdv)			
70			
60			FCC PART 15.247 QP
50 1	5		FCC PART 15.247 AV
1 3	1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12	
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10 WW W	AM N. L.		

Trace: 4			Frequency (MH:	Z)	
	Read	LISN	Cable	Limit	Over

Freq	Level	Factor	Loss	Level	Line	Limit	Kemark	
MHz	dBu₹		₫B	dBu₹	dBu∜	<u>dB</u>		
0.174	36.61	0.16	10.77	47.54	64.77	-17.23	QP	
0.174	30.51	0.16	10.77	41.44	54.77	-13.33	Average	
0.294	33.18	0.13	10.74	44.05	60.41	-16.36	QP	
0.294	24.87	0.13	10.74	35.74	50.41	-14.67	Average	
0.410	36.51	0.12	10.72	47.35	57.64	-10.29	QP	
0.410	31.26	0.12	10.72	42.10	47.64	-5.54	Average	
0.641	33.86	0.13	10.77	44.76	56.00	-11.24	QP	
0.641	27.45	0.13	10.77	38.35	46.00	-7.65	Average	
0.822	27.39	0.13	10.82	38.34	46.00	-7.66	Average	
1.106	32.67	0.13	10.88	43.68	56.00	-12.32	QP	
1.111	25.76	0.13	10.88	36.77	46.00	-9.23	Average	
2.099	31.81	0.14	10.96	42.91	56.00	-13.09	QP	
	MHz 0.174 0.174 0.294 0.294 0.410 0.410 0.641 0.641 0.822 1.106 1.111	MHz dBuV  0.174 36.61 0.174 30.51 0.294 33.18 0.294 24.87 0.410 36.51 0.410 31.26 0.641 33.86 0.641 27.45 0.822 27.39 1.106 32.67 1.111 25.76	MHz dBuV dB 0.174 36.61 0.16 0.174 30.51 0.16 0.294 33.18 0.13 0.294 24.87 0.13 0.410 36.51 0.12 0.410 31.26 0.12 0.641 33.86 0.13 0.641 27.45 0.13 0.822 27.39 0.13 1.106 32.67 0.13 1.111 25.76 0.13	MHz dBuV dB dB  0.174 36.61 0.16 10.77 0.174 30.51 0.16 10.77 0.294 33.18 0.13 10.74 0.294 24.87 0.13 10.74 0.410 36.51 0.12 10.72 0.410 31.26 0.12 10.72 0.641 33.86 0.13 10.77 0.641 27.45 0.13 10.77 0.822 27.39 0.13 10.82 1.106 32.67 0.13 10.88 1.111 25.76 0.13 10.88	MHz dBuV dB dB dBuV  0.174 36.61 0.16 10.77 47.54 0.174 30.51 0.16 10.77 41.44 0.294 33.18 0.13 10.74 44.05 0.294 24.87 0.13 10.74 35.74 0.410 36.51 0.12 10.72 47.35 0.410 31.26 0.12 10.72 42.10 0.641 33.86 0.13 10.77 44.76 0.641 27.45 0.13 10.77 38.35 0.822 27.39 0.13 10.82 38.34 1.106 32.67 0.13 10.88 43.68 1.111 25.76 0.13 10.88 36.77	MHz dBuV dB dB dBuV dBuV  0.174 36.61 0.16 10.77 47.54 64.77 0.174 30.51 0.16 10.77 41.44 54.77 0.294 33.18 0.13 10.74 44.05 60.41 0.294 24.87 0.13 10.74 35.74 50.41 0.410 36.51 0.12 10.72 47.35 57.64 0.410 31.26 0.12 10.72 47.35 57.64 0.410 33.86 0.13 10.77 44.76 56.00 0.641 33.86 0.13 10.77 44.76 56.00 0.641 27.45 0.13 10.77 38.35 46.00 0.822 27.39 0.13 10.82 38.34 46.00 1.106 32.67 0.13 10.88 43.68 56.00 1.111 25.76 0.13 10.88 36.77 46.00	MHz dBuV dB dB dBuV dBuV dB 0.174 36.61 0.16 10.77 47.54 64.77 -17.23 0.174 30.51 0.16 10.77 41.44 54.77 -13.33 0.294 33.18 0.13 10.74 44.05 60.41 -16.36 0.294 24.87 0.13 10.74 35.74 50.41 -14.67 0.410 36.51 0.12 10.72 47.35 57.64 -10.29 0.410 31.26 0.12 10.72 47.35 57.64 -5.54 0.641 33.86 0.13 10.77 44.76 56.00 -11.24 0.641 27.45 0.13 10.77 38.35 46.00 -7.65 0.822 27.39 0.13 10.82 38.34 46.00 -7.66 1.106 32.67 0.13 10.88 43.68 56.00 -12.32 1.111 25.76 0.13 10.88 36.77 46.00 -9.23	MHz dBuV dB dB dB dBuV dBuV dB  0.174 36.61 0.16 10.77 47.54 64.77 -17.23 QP 0.174 30.51 0.16 10.77 41.44 54.77 -13.33 Average 0.294 33.18 0.13 10.74 44.05 60.41 -16.36 QP 0.294 24.87 0.13 10.74 35.74 50.41 -14.67 Average 0.410 36.51 0.12 10.72 47.35 57.64 -10.29 QP 0.410 31.26 0.12 10.72 42.10 47.64 -5.54 Average 0.641 33.86 0.13 10.77 44.76 56.00 -11.24 QP 0.641 27.45 0.13 10.77 38.35 46.00 -7.65 Average 0.822 27.39 0.13 10.82 38.34 46.00 -7.66 Average 1.106 32.67 0.13 10.88 43.68 56.00 -12.32 QP 1.111 25.76 0.13 10.88 43.68 56.00 -9.23 Average

- 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.
- Final Level =Receiver Read level + LISN Factor + Cable Loss.

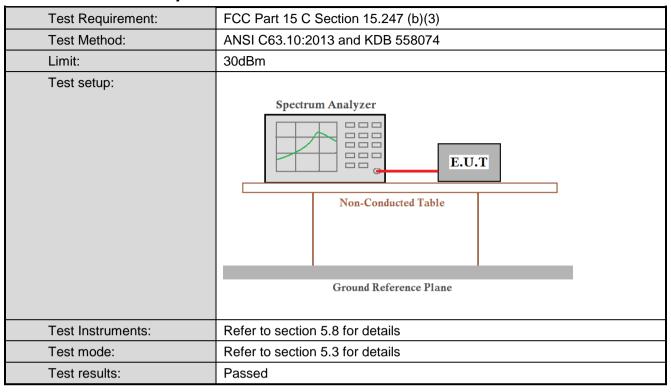


#### Notes:

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



## **6.3 Conducted Output Power**

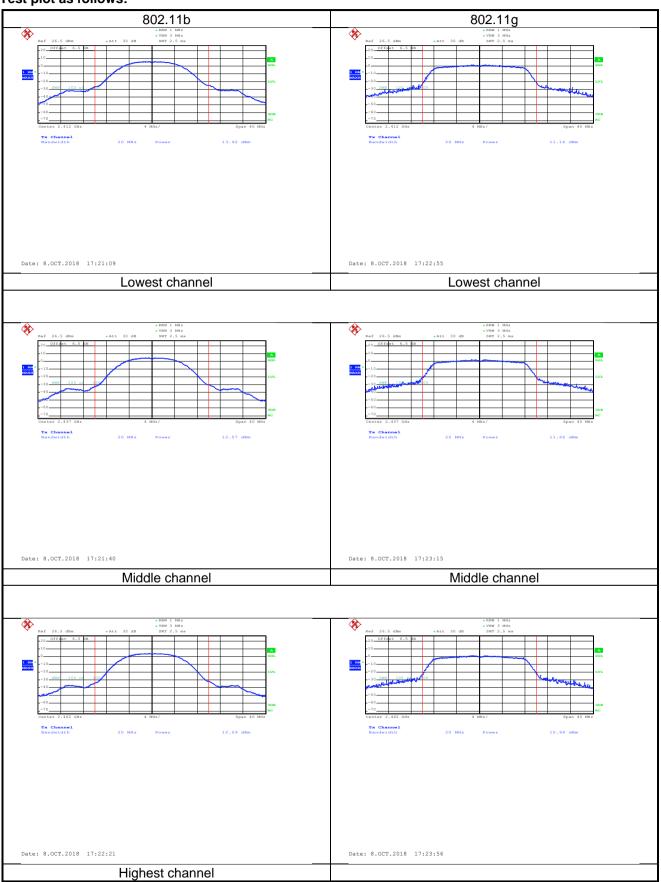


#### **Measurement Data:**

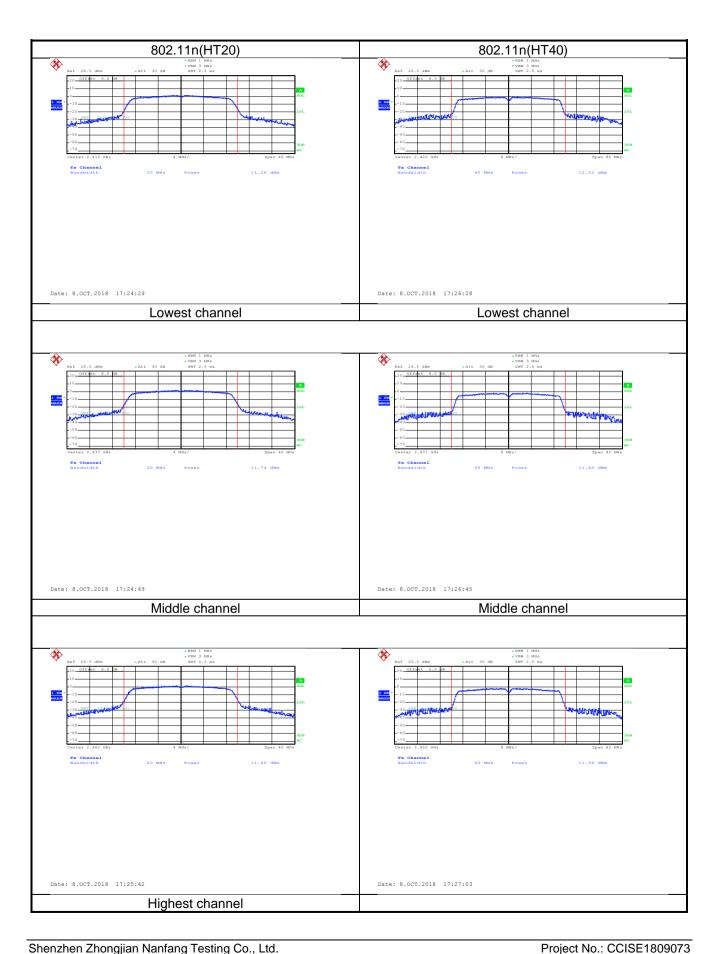
Test CH Maximum Conducted Output Power (dBm)						Popult	
Test CH	802.11b 802.11g 802.11n(H20) 802.11n(H40)				Limit(dBm)	Result	
Lowest	13.92	11.16	11.26	12.52			
Middle	12.57	11.66	11.74	11.42	30.00	Pass	
Highest	12.09	10.94	11.40	11.36			



#### Test plot as follows:









# 6.4 Occupy Bandwidth

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:	Passed		

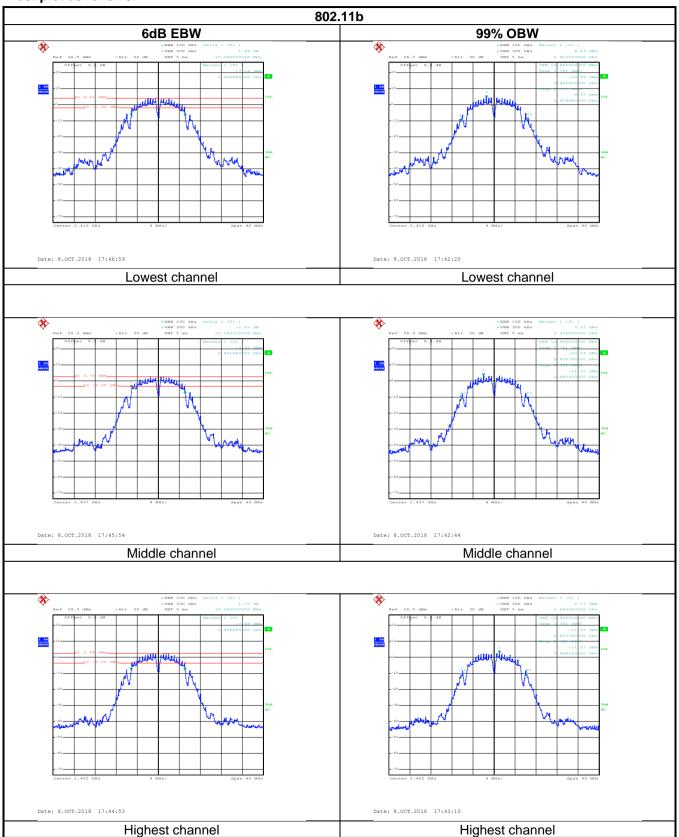
#### **Measurement Data:**

Test CH		6dB Emission B	andwidth (MHz)		Limit(kHz) Res			
Test CH	802.11b	802.11g	802.11n(H20)	802.11n(H40)	LIIIII(KHZ)	Result		
Lowest	10.24	15.20	15.28	35.52				
Middle	10.16	15.50	15.28	35.52	>500	Pass		
Highest	10.24	15.26	15.28	35.52				
Test CH		99% Occupy Ba	andwidth (MHz)		Limit/kU=\	Result		
Test CH	802.11b	802.11g	802.11n(H20)	802.11n(H40)	Limit(kHz)	Result		
Lowest	12.88	16.48	17.60	36.16				
Middle	12.64	16.48	17.60	36.00	N/A	N/A		
Highest	12.48	16.48	17.60	35.84				



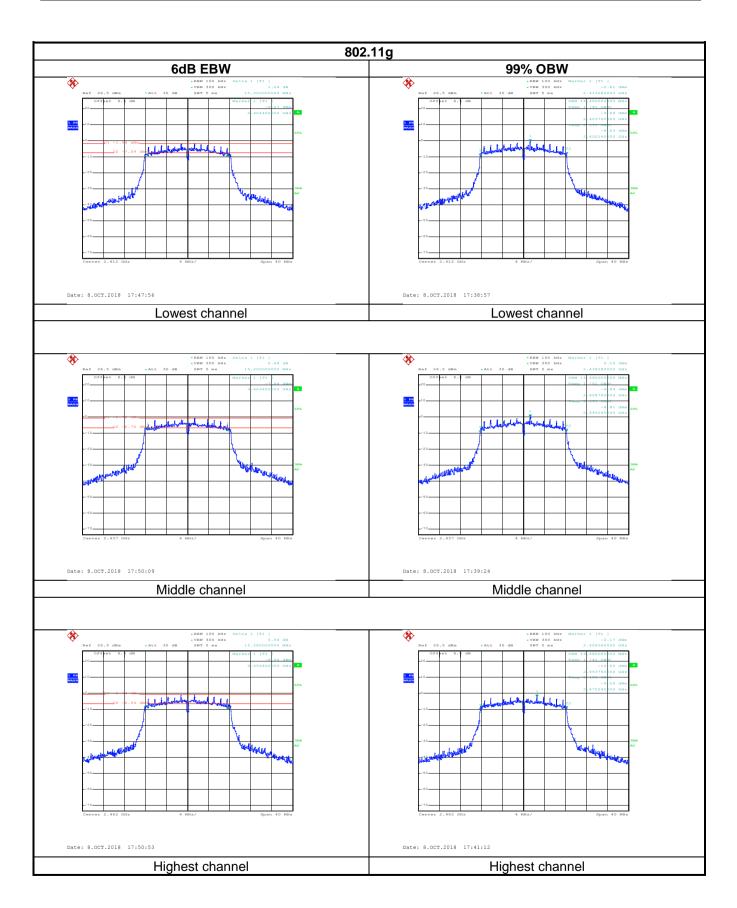


#### Test plot as follows:



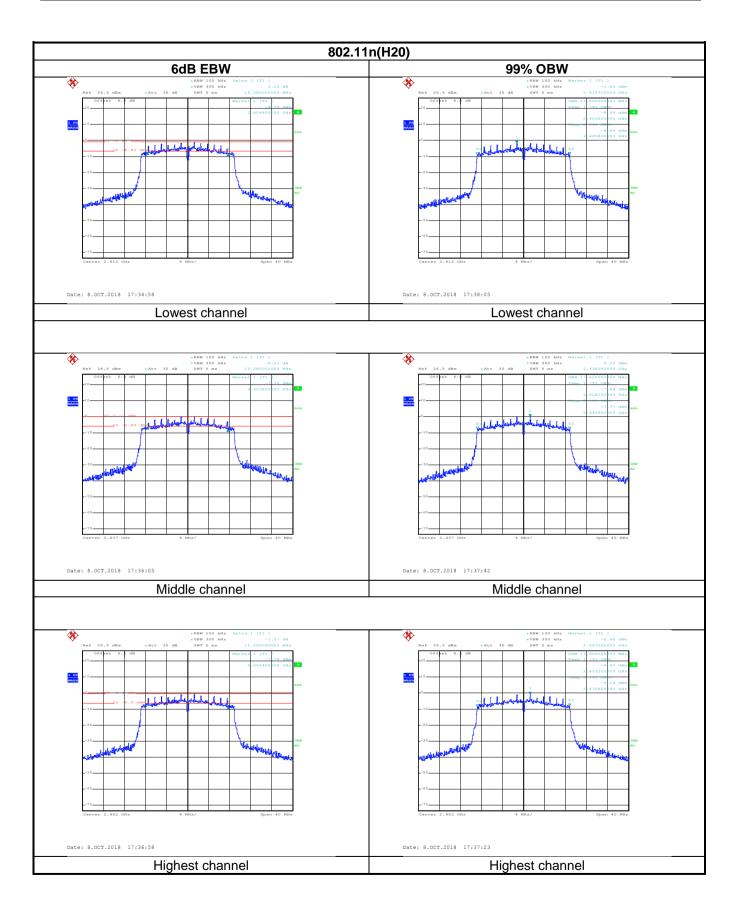




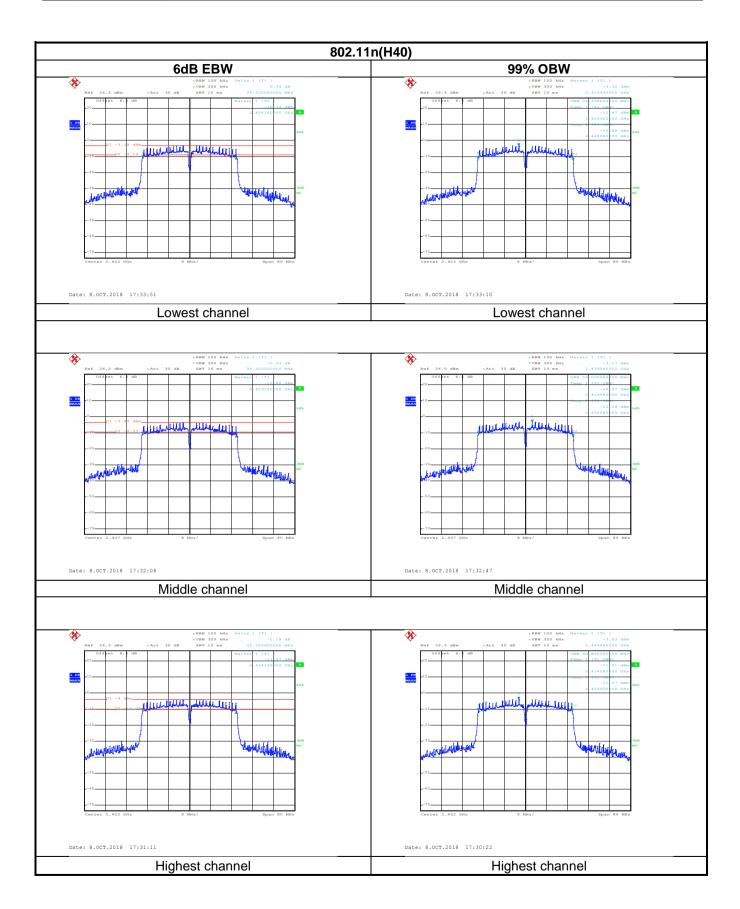














## 6.5 Power Spectral Density

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:	Passed		

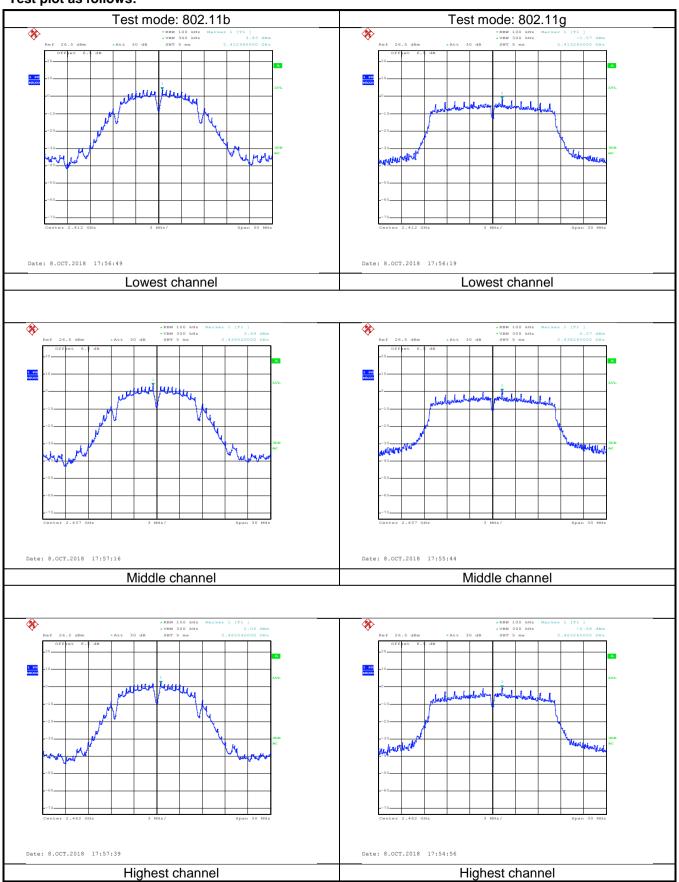
#### **Measurement Data:**

Toot CU		Power Spectra	al Density (dBm)		Line it/dDne	Dogult	
Test CH	802.11b	802.11g	802.11n(H20)	802.11n(H40)	Limit(dBm)	Result	
Lowest	3.83	-1.57	-1.51	-3.16			
Middle	3.49	0.07	-0.19	-3.80	8.00	Pass	
Highest	2.06	-0.68	-0.81	-3.90			



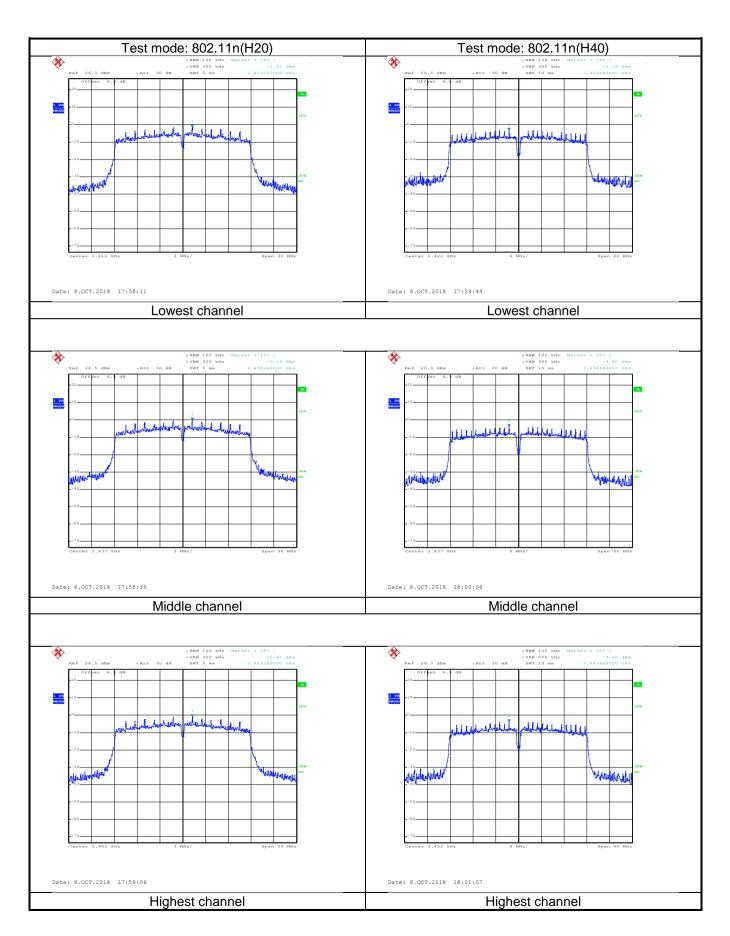


#### Test plot as follows:













## 6.6 Band Edge

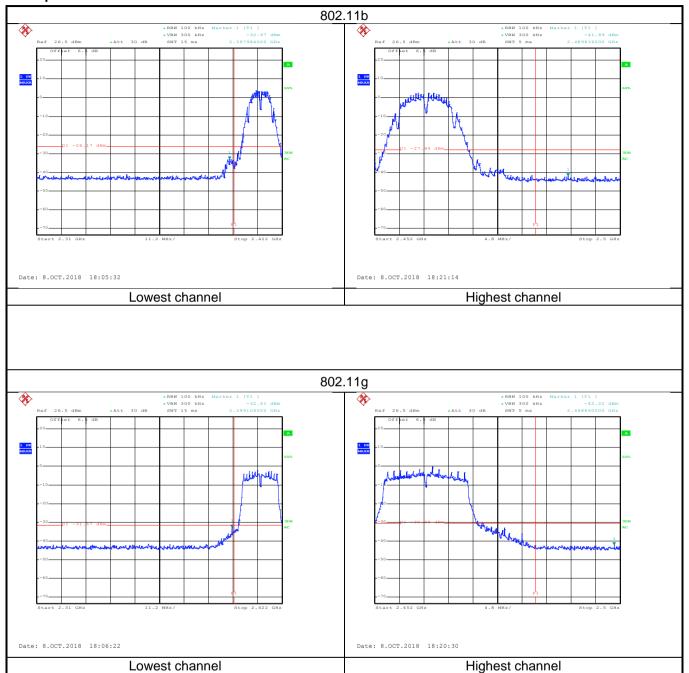
#### 6.6.1 Conducted Emission Method

0.0.1 Conducted Emission					
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  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:	Passed				



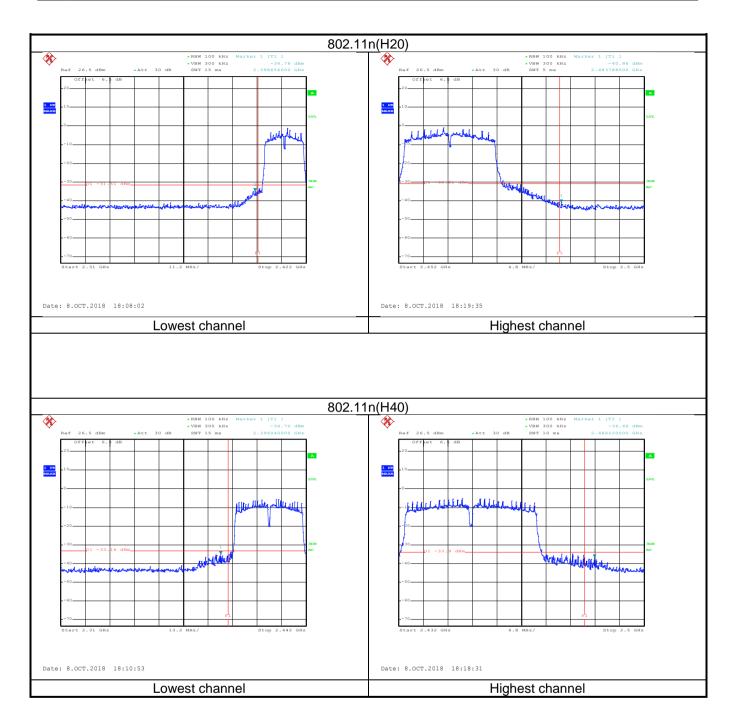


#### Test plot as follows:













#### 6.6.2 Radiated Emission Method

0.0.2	Radiated Emission Me	etnoa						
	Test Requirement:	FCC Part 15 C	Section 1	5.20	9 and 15.205			
	Test Method:	ANSI C63.10: 2	ANSI C63.10: 2013 and KDB 558074					
	Test Frequency Range:	2.3GHz to 2.5G	Hz					
	Test Distance:	3m						
	Receiver setup:	Frequency Detector RBW VBW Remark						
		Above 1GHz Peal			1MHz 1MHz		MHz MHz	Peak Value Average Value
	Limit:	Frequenc	· · · · · · · · · · · · · · · · · · ·		nit (dBuV/m @		VII 12	Remark
		Above 1GI			54.00	•		verage Value
				d 00	74.00	totina		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	(Turntable	, /	Ground Reference Plane	rn Antenna	Antenna To	wer
	Test Instruments:	Refer to section	5.8 for d	etail	S			
	Test mode:	Refer to section 5.3 for details						
	Test results:	Passed						





#### 802.11b mode:

Produc	ct Name:	Smart phone Caffrey Lowest channel				oduct Mo	del:	Ultra Plus I	F40G2	
Test B	y:					est mode:		802.11b Tx mode  Vertical		
Test C	hannel:					olarization				
Test V	oltage:	AC 120/6	60Hz		Eı	nvironmen	t:	Temp: 24°	C Huni: 57%	
120 Le	vel (dBuV/m)									
110										
90								1		
70								m	PART 15 (PK)	
50	manne		mm		~~	mayon	2	) FCI	C PART 15 (AV)	
30										
10										
023	10 2320		235		uency (Mi	łz)			2422	
	Freq	ReadA Level	ntenna Factor			Level	Limit Line			
	MHz	dBu₹	dB/m	<u>d</u> B	dB	dBuV/m	dBuV/n	dB		
1 2	2390.000 2390.000	21.35 10.57	27.37 27.37	4.69 4.69		53.41 42.63	74.00 54.00	7 -20.59 7 -11.37	Peak Average	

#### 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.





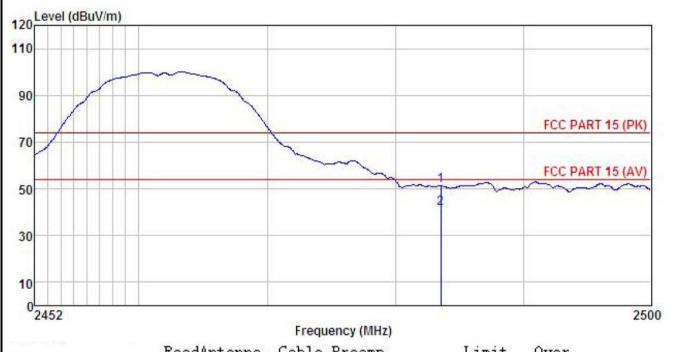
Product Name: Smart pho			mart phone			duct Mod	el: U	Ultra Plus F40G2		
Test B	y:	Caffrey			Tes	st mode:	80	02.11b Tx r	node	
Test C	hannel:	Lowest ch	hannel		Pol	arization:	H	Horizontal		
Test V	oltage:	AC 120/6	0Hz		Env	vironment:	Те	emp: <b>24</b> ℃	Huni: 57%	
Los	vel (dBuV/m)									
120	ver (dbdv/iii)									
110										
90										
								FCC	PART 15 (PK)	
70								m	A STREET OF STREET	
							1 /	FCC	PART 15 (AV)	
		0.44	0 0 0	0 0-0	0 - 10		~ T			
50~	····	~~~~	~~~~	Smoon	man	mayor	MA			
		~~~~	~~~~	mm	~~~~	monde	N.			
50 ~~ 30		~~~~		ma		many	~~~			
30		······	www.	ma		mayo				
30		~~~		Ama		mayo				
30	10 2320	~~~	235	1.7	uency (MH					
30	10 2320	ReadA		Freq	uency (MH:	z)	Limit	Over	2427	
30	_		int enna	Freq Cable	Preamp	z)	Limit	Over Limit	242	
30	_		int enna	Freq Cable	Preamp Factor	z)	Limit Line	Limit	242	
30	Freq	Level — <u>dBu</u> V	ntenna Factor ——dB/m	Freq Cable Loss ————dB	Preamp Factor dB	z) Level dBuV/m 54.73	Limit Line dBuV/m 74.00	Limit	242 Remark	

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





Product Name:	Smart phone	Product Model:	Ultra Plus F40G2
Test By:	Caffrey	Test mode:	802.11b Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq		Antenna Factor						
	MHz	dBu∇	dB/m	dB	<u>dB</u>	dBuV/m	dBuV/m	<u>d</u> B	 -
1 2	2483.500 2483.500								

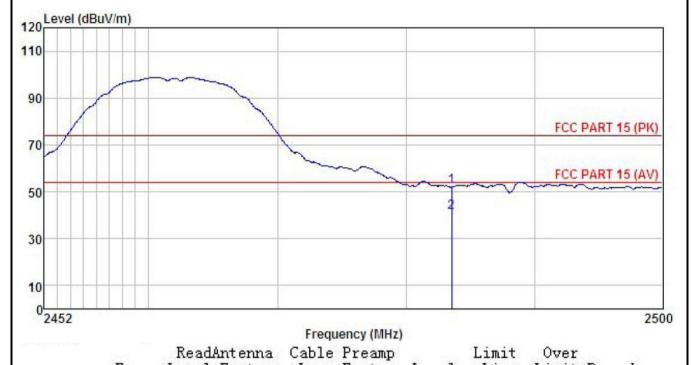
#### Remark:

- 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.





Product Name:	Smart phone	Product Model:	Ultra Plus F40G2
Test By:	Caffrey	Test mode:	802.11b Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



Level Factor Loss Factor Line Limit Remark Freq Level dBuV dB dBuV/m dBuV/m MHz dB/m dB 2483.500 19.70 27.57 4.81 0.00 52.08 74.00 -21.92 Peak 2483,500 8.99 27.57 4.81 0.00 41.37 54.00 -12.63 Average

#### 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.





#### 802.11g mode:

Product Name: Sm		Smart phone			Pro	oduct Mod	el: U	Ultra Plus F40G2		
Test By	<i>r</i> :	Caffrey			Tes	st mode:	8	802.11g Tx mode		
Test Ch	nannel:	Lowest channel				larization:	V	Vertical		
Test Vo	oltage:	AC 120/6	0Hz		Env	vironment	: Т	emp: 24°C	Huni: 57%	
Low	ol (dPu\//m\				•					
120	el (dBuV/m)					- M				
110										
								سمد	mon	
90										
								FCC	PART 15 (PK)	
70								M		
							1 1	TCC	DADT 45 (ALA	
							ala.	FLL	PART 15 (AV)	
50	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~	ann.	mm	mon	mun	months.	FCC	PART 15 (AV)	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	· · · · · · · · · · · · · · · · · · ·	m	mm	mm	2	rcc	PART 15 (AV)	
50 mm	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	~~~~	mm	mm	mm	2	FLC	PART 15 (AV)	
30	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	anne de la company	m	~~~~~	man	2	rcc	PART 15 (AV)	
				man		ma	2	rcc	PART 15 (AV)	
30		~~~~	235	0			2	rcc		
30				0 Frequ	uency (MHz	z)	4			
30			ınt enna	0 Frequ	uency (MHz Preamp	z)	Limit		2422	
30	0 2320		ınt enna	0 Frequ	uency (MHz Preamp Factor	z)	Limit Line	Over Limit	2422	
30	0 2320 Freq	Level	untenna Factor ——dB/m	O Frequence Cable Loss dB	uency (MHz Preamp Factor dB	z) Level dBuV/m	Limit Line	Over Limit	2422 Remark	

#### 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.





Product	Product Name: Smart phone			Pro	duct Mode	el: U	Ultra Plus F40G2			
Test By:	:	Caffrey			Tes	t mode:	80	)2.11g Tx r	node	
Test Ch	annel:	Lowest ch	annel		Polarization:			Horizontal		
Test Vo	Itage:	AC 120/60	OHz		Env	/ironment:	Te	emp: 24℃	Huni: 57%	
Leve	el (dBuV/m)									
120	a (abaviii)									
110									10.0	
								~	money	
90										
								FCC	PART 15 (PK)	
70								w N		
						100	1	FCC	PART 15 (AV)	
9.00		(A)	-							
50~~	man	mondy	m	Amount	mm	~~~~	2			
	m m	Jund	many	American A	~~~	and the second	2			
30	m m	mund	armin .	Same and a	~~~	and and and and				
30	m mm	v-v-v		American por	~~~	min				
30	m mp	mand h		and the same	~~~	~~~~~				
30		Jan	235						2422	
10		D 16		Frequ	uency (MH:	z)			2422	
10		ReadA Level	235 intenna Factor	Frequ Cable	uency (MH:	z)	Limit Line		2422 Remark	
10	0 2320	ReadA Level	ntenna	Frequ Cable	uency (MH: Preamp Factor	z)	Line	Limit		
10	D 2320 Freq	Level	ntenna Factor ——dB/m	Frequence Cable Loss	uency (MH: Preamp Factor dB	z) Level	Line dBuV/m	Limit ———————————————————————————————————	Remark	

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





Product N	Name:	Smart phone			Product Model:			ltra Plus F	40G2
Test By:		Caffrey			Tes	st mode:	8	02.11g Tx	mode
Test Cha	nnel:	Highest c	hannel		Pol	arization:	V	ertical	
Test Volta	age:	AC 120/6	0Hz		Env	vironment	: Т	emp: <b>24</b> ℃	Huni: 57%
Lovel	(dDu\//m)								
120	(dBuV/m)			100					1
110									
	~~~~		~~~						
90		100000	- 12 ON	1					
				1				FCC	PART 15 (PK)
70				~	Lund		-,		
					***	1	<u>~</u>	FCC	PART 15 (AV)
50						2	, the same	~~~	~~~
30									
10							T T		
02452				L			-		2500
				Freq	uency (MH	z)			
		ReadA	ntenna	Cable	Preamp		Limit		D 1
	Freq	revel	Factor	Loss	ractor	rever	Line	Limit	Kemark
	MHz	dBu₹	dB/m	₫B	₫B	dBuV/m	dBuV/m	₫B	
1 :	2483.500	25.41	27.57 27.57	4.81	11. 1111	57, 79	74.1111	-16.21	Peak

#### Remark:

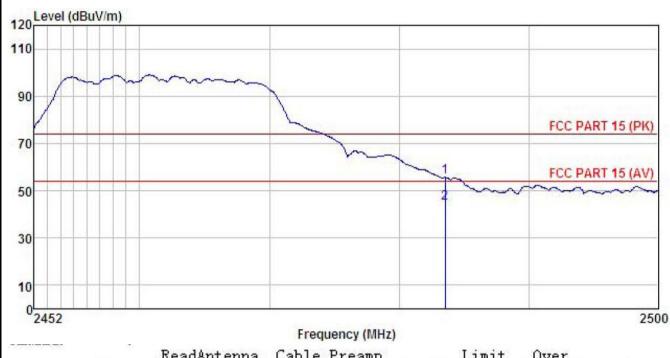
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name: Smart phone		Product Model:	Ultra Plus F40G2
Test By:	Caffrey	Test mode:	802.11g Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



				rieq	uency (WH	<i>L</i> )			
	Freq		Antenna Factor				Limit Line		Remark
	MHz	dBu∜	-dB/m	<u>d</u> B	<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
1 2	2483.500 2483.500				0.00 0.00				

#### Remark:

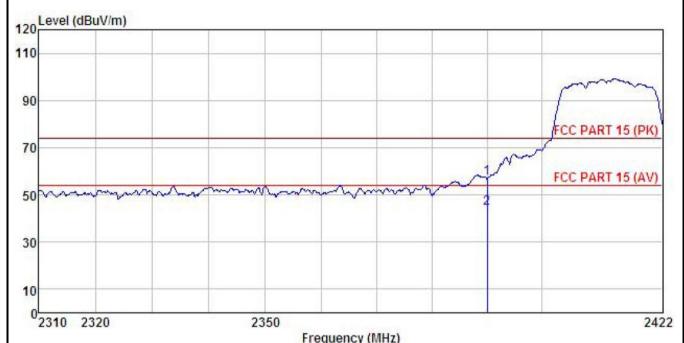
- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.





#### 802.11n(HT20):

Product Name:	Smart phone	Product Model:	Ultra Plus F40G2
Test By:	Caffrey	Test mode:	802.11n(HT20) Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



		, , , , , , , , , , , , , , , , , , , ,								
	Freq		Antenna Factor				Limit Line		Remark	
	MHz	dBu∀	<u>d</u> B/π		<u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>		-
<u>.</u>	2390.000 2390.000					57.00 44.42				

#### Remark

1 2

- 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.





Product Name: Test By: Test Channel: Test Voltage:		Smart phone Caffrey Lowest channel AC 120/60Hz			Pro	Product Model: Test mode: Polarization: Environment:		Ultra Plus F40G2  802.11n(HT20) Tx mode  Horizontal  Temp: 24°C Huni: 57%	
					Tes				
					Pol				
					En				
Levi	el (dBuV/m)								
120	or (abarrin)								
110									
								~	mm
90									
								FCC	PART 15 (PK)
								~	PART 15 (PR)
70								5	
70							and	1	
		. 0.45	100	-0 -	0 0	<u> </u>	-And	FCC	PART 15 (AV)
70 50	vu-v	~~~~~	www	m	~~~	Man	2/2/	FCC	PART 15 (AV)
50 🔨	~~~~	and the same	www	m	~~~	Maria	w/w	FCC	PART 15 (AV)
	~~~~~	mond	www.	m	~~~	Marin		FCC	PART 15 (AV)
50 🔨	v	more	www.	~~~	~~~~	Man		FCC	PART 15 (AV)
50 🔨	~~~~	more	www.		~~~	Maria		FCC	PART 15 (AV)
50 <del>***</del> 30	0 2320	more	2350	0	~~~	M		FCC	PART 15 (AV)
50 A	0 2320	mond			Jency (MHz			FCC	
50 A			2350 int enna	Frequ Cable	Preamp	z)	Limi	t Over	2422
50 A		ReadA	2350 int enna	Frequ Cable	Preamp Factor	2)	Limi Lin	t Over e Limit	2422 Remark
50 A	Freq	ReadA Level	2350 intenna Factor — dB/m	Frequ Cable Loss	Preamp Factor dB	Level	Limi Lin dBuV/	t Over e Limit	2422 Remark

#### Remark:

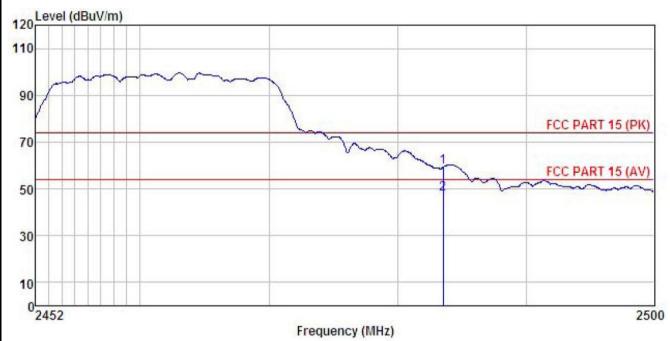
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smart phone	Product Model: Ultra Plus F40G2		
Test By:	Caffrey	Test mode: 802.11n(HT20) Tx mode		
Test Channel:	Highest channel	Polarization: Vertical		
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%	



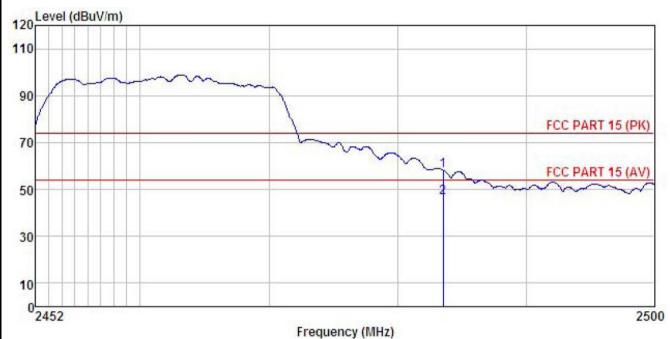
				are the control of the	uency (win	10			
	Freq		Antenna Factor				Limit Line		Remark
	MHz	dBu₹	<u>dB</u> /m	d <u>B</u>	<u>ab</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1 2		26.98	27.57 27.57	4.81				-14.64 -6.29	Peak Average

- 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.





Product Name:	Smart phone	Product Model:	Ultra Plus F40G2		
Test By:	Caffrey	Test mode:	802.11n(HT20) Tx mode		
Test Channel:	Highest channel	Polarization:	Horizontal		
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%		



				Fred	luency (MH	Z)			
	Frea		Antenna Factor				Limit Line	Remark	
	MHz	<u>d</u> Bu∇	<u>dB</u> /m			dBuV/m			_
1 2	2483.500 2483.500					58.21 46.43			

- 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.





## 802.11n(HT40):

Product Name: Smart phone Product		duct Mod	lel:	Ultra Plus F40G2					
Test B	y:	Caffrey				st mode:		302.11n(HT	40) Tx mode
Test C	hannel:	Lowest c	hannel		Pol	arization:	,	Vertical	
Test V	oltage: AC 120/60Hz Environment:		:	Temp: <b>24</b> ℃	Huni: 57%				
la	vel (dBuV/m)								
120	ver (abaviiii)								1
110									-
								~~~~~~	mm.a
90							M	V	
70							-	FCC	PART 15 (PK)
70						in	_d		
50		Morrow	00 0		a colomban	-m		FCC	PART 15 (AV)
2014	munn	A Day may	and Al	2000	7				- 1
30									141
30									
10									
0	40.0000		2252						2440
23	10 2320		2350	Frequ	uency (MHz	2)			2442
	Freq		ntenna Factor		Preamp Factor	Level	Limit Line	: Over e Limit	Remark
	MHz	—dBu∜	<u>dB</u> /π		<u>ab</u>	$\overline{dBuV/m}$	dBuV/i	n ————————————————————————————————————	
1 2	2390.000 2390.000	31.04 17.35	27.37 27.37	4.69 4.69	0.00 0.00	63.10	74.00	0 -10.90 0 -4.59	Peak

## Remark:

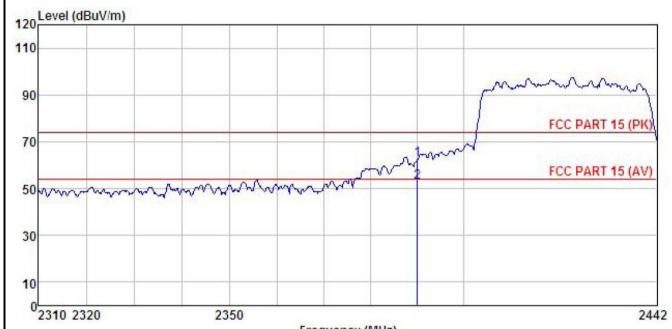
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smart phone	Product Model: Ultra Plus F40G2		
Test By:	Caffrey	Test mode:	802.11n(HT40) Tx mode	
Test Channel:	Lowest channel	Polarization:	Horizontal	
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%	



	Freq		Antenna Factor	Cable		Limit Line	Over Limit	Remark
	MHz	—dBuV	— <u>d</u> B/m	<u>d</u> B	 $\overline{dB} \overline{uV/m}$	dBuV/m	dB	
1 2	2390.000 2390.000		27.37 27.37		62.32 52.85			

- 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.





Product	Product Name: Smart phone		Pro	duct Mod	el:	Ultra Plus F40G2			
Test By	:	Caffrey			Tes	Test mode: Polarization:		802.11n(HT40) Tx mode  Vertical	
Test Ch	annel:	Highest c	st channel						
Test Voltage: AC 120/60Hz		En	vironment		Γemp: <b>24</b> ℃	Huni: 57%			
Low	ol /dPu\//m\								
120	el (dBuV/m)								
110									
i Parisi Alla	~	~~~							
90	/ W		V		and the same	1			
70/						1		FCC	PART 15 (PK)
70						ma	~~	1	Of the Control of the
50							Υ . 7	~~~recj	PART 15 (AV)
50									
30									
30									
10									
0		245							2500
243	2	245	00	Frequ	uency (MHz	z)			2500
			int enna				Limi		1005 UK
	Freq	Level	Factor	Loss	Factor	Level	Lin	e Limit	Remark
	MHz	dBu∜	dB/m			dBuV/m	dBuV/i	n dB	
1	2483.500	29.03		4.81				-12.59	
2	2483.500	16.13	27.57	4.81	0.00	48.51	54.0	-5.49	Average
Remark:									

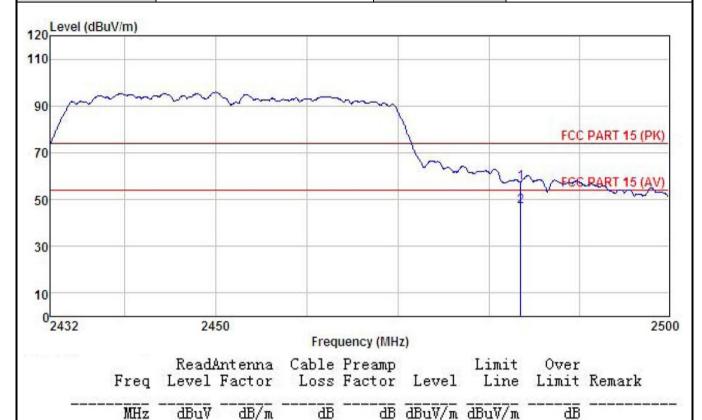
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smart phone	Product Model:	Ultra Plus F40G2
Test By:	Caffrey	Test mode:	802.11n(HT40) Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



1 2

2483,500

2483,500

24.87

14.66

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

27.57

27.57

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

4.81

4.81

0.00

57.25

74.00 -16.75 Peak

0.00 47.04 54.00 -6.96 Average



# 6.7 Spurious Emission

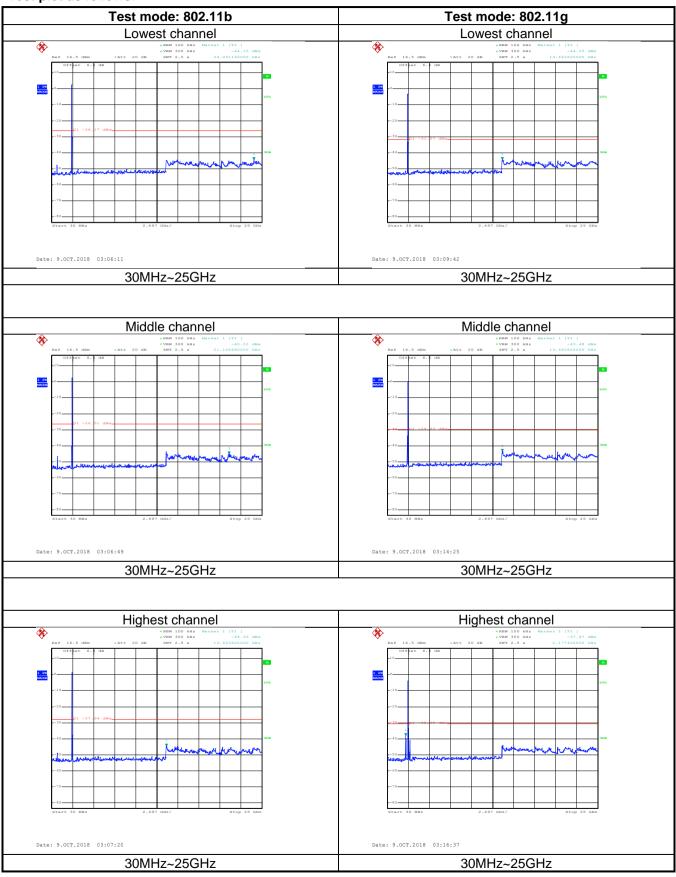
## 6.7.1 Conducted Emission Method

<del>••••</del>	Oonaactea Ennission	metriod					
	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 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.					
	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:	Passed					



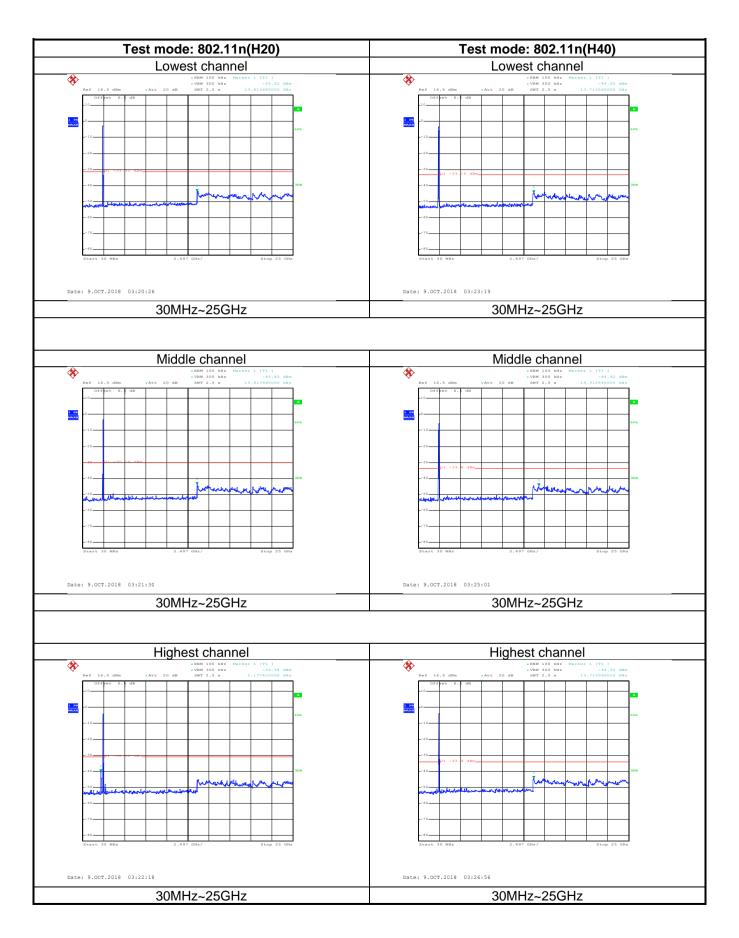


## Test plot as follows:













## 6.7.2 Radiated Emission Method

0.7.Z F	Radiated Emission Me	ated Emission Method						
T	est Requirement:	FCC Part 15 C S	ection 15.2	.209 a	and 15.205			
T	est Method:	ANSI C63.10:201	3					
T	est Frequency Range:	9kHz to 25GHz						
T	est Distance:	3m						
R	eceiver setup:	Frequency	Detecto	or	RBW V		BW	Remark
		30MHz-1GHz	eak	120KHz		)KHz	Quasi-peak Value	
		Above 1GHz				Peak Value		
1:	im it.	Fraguency	RMS		1MHz (dBuV/m @3r		/IHZ	Average Value Remark
LI	mit:	Frequency 30MHz-88MH	7	LIIIII	40.0	111)	Oı	uasi-peak Value
		88MHz-216MH			43.5			uasi-peak Value
		216MHz-960MI			46.0			uasi-peak Value
		960MHz-1GH	Z		54.0		Qı	uasi-peak Value
		Above 1GHz			54.0		A	Average Value
	est Procedure:				74.0		1-11-0	Peak Value
		<ol> <li>The EUT was placed on the top of a rotating table 0.8m(below 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 sheet.</li> </ol>						
Т	est setup:	Below 1GHz  EUT  Turn Table  Ground P		m N				





	Above 1GHz
	Horn Anienna Tower  AE EUT  Ground Reference Plane  Test Receiver Ampther 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:**

Product	Name:	Smart ph	one		Pro	duct Mode	el: U	Ultra Plus F40G2		
Test By:	1	Caffery	Caffery			t mode:	V	Wi-Fi Tx mode		
Test Fre	equency: 30 MHz ~ 1 GHz			GHz Polarization:				Vertical		
Test Vol	tage:	AC 120/6	0Hz		Env	rironment:	7	emp: 24℃	Нι	uni: 57%
80 Level	(dBuV/m)									
70										
60								FCC	PART	T 15.247
50			Part I							
40										
20	1	2		3	4 5				harten and	en some local
10	and a supplied by	M	Munday	July 1	Manage	Mandany	La Januario Brancha	de hilliproces		
030	50		100	From	200 Jency (MHz	1		500		1000
10 1964-010000000	Freq		Intenna Factor	Cable	Preamp Factor	Level	Limit Line		Rema	ark
_	MHz	dBu∀	dB/m	āB	dB	dBuV/m	dBuV/π	<u>d</u> B		
1 2 3 4 5	37. 680 76. 781 121. 976 157. 559 173. 814 303. 544	39.06 41.33 43.28 43.51 42.37 39.58	12.31 8.41 9.89 8.98 9.56 13.68	1. 14 1. 64 2. 19 2. 57 2. 68 2. 95	29. 92 29. 67 29. 38 29. 15 29. 02 28. 46	22.59 21.71 25.98 25.91 25.59 27.75	40.00 43.50 43.50 43.50	-17.41   -18.29   -17.52   -17.59   -17.91   -18.25	QP QP QP QP	

## Remark:

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

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





Name:	Smart phone				luct Mode	l: Ul	Ultra Plus F40G2		
	Caffery	,			Wi-Fi Tx mode Horizontal				
quency:	30 MHz ~								
age:	AC 120/6	0Hz		Envi	ronment:	Тє	Temp: 24°C Huni: 57%		
dD. d. U.s. )				<u> </u>					
aBuv/m)	7-1-1								
							FCC	PART 1	15.247 
				8-					
									To_ at
						3	5		6 th tank
		1	2	la tra	1	4	I make	SHAM HARVE	Makelman
	Jane 1	M	Le <sup>of</sup>	and the state of the state of	Christman Angrico	Andrew Marie	Mark Comment		
had yellow hay make the house	Mrs. A	maken 1 Col	Mangelph .					_	
50		100		200	44.		500		1000
50	D J			ency (MHz)		7:-:+			1000
		Antenna	Cable	ency (MHz) Preamp		Limit Line	Over	Rema	
Freq	Level	Antenna Factor	Cable Loss	ency (MHz) Preamp Factor	Level	Line	Over Limit	Rema	
		Antenna Factor	Cable	ency (MHz) Preamp Factor		Line	Over Limit	Rema	
Freq MHz	Level ——dBuV	Antenna Factor — dB/m	Cable Loss dB	ency (MHz) Preamp Factor dB	Level	Line dBuV/m	Over Limit ———————————————————————————————————	3 <u>4-34-</u>	
Freq	Level	Antenna Factor	Cable Loss	ency (MHz) Preamp Factor	Level	Line  dBuV/m  43.50	Over Limit	3 <u>4-34-</u>	
Freq MHz 102.719 157.559 327.887	Level  dBuV  34.54 39.41 37.33	Antenna Factor — dB/m 11.87 8.98 14.18	Cable Loss dB 1.96 2.57 3.03	ency (MHz) Preamp Factor dB 29.51 29.15 28.51	Level  dBuV/m  18.86 21.81 26.03	Line dBuV/m 43.50 43.50 46.00	Over Limit ———————————————————————————————————	QP QP QP	
Freq MHz 102.719 157.559	Level dBuV 34.54 39.41	Antenna Factor dB/m 11.87 8.98	Cable Loss dB 1.96 2.57	Preamp Factor dB 29.51 29.15	Level  dBuV/m  18.86 21.81	Line  dBuV/m  43.50 43.50 46.00 46.00	Over Limit ———————————————————————————————————	QP QP	
	age: dBuV/m)	guency: 30 MHz ~ age: AC 120/6	age: AC 120/60Hz  dBuV/m)	age: AC 120/60Hz  dBuV/m)	quency: 30 MHz ~ 1 GHz Pola age: AC 120/60Hz Envi	quency: 30 MHz ~ 1 GHz Polarization: age: AC 120/60Hz Environment:	quency: 30 MHz ~ 1 GHz Polarization: Ho age: AC 120/60Hz Environment: Te	Juency: 30 MHz ~ 1 GHz Polarization: Horizontal age: AC 120/60Hz Environment: Temp: 24°C	Juency: 30 MHz ~ 1 GHz Polarization: Horizontal  age: AC 120/60Hz Environment: Temp: 24°C Hur  dBuV/m)  FCC PART 1

<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.





### **Above 1GHz**

Above 1GHz				000 445					
			<b>-</b>	802.11b					
				annel: Lowe					
T				tector: Peak	Value		l		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
4824.00	49.37	31.63	6.82	41.82	49.33	74.00	-24.67	Vertical	
4824.00	53.87	31.63	6.82	41.82	53.83	74.00	-20.17	Horizontal	
Detector: 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	
4824.00	39.38	31.63	6.82	41.82	39.34	54.00	-14.66	Vertical	
4824.00	42.51	31.63	6.82	41.82	42.47	54.00	-11.53	Horizontal	
			T ( . )	NC 1					
				annel: Mido					
				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	48.72	31.71	6.85	41.84	48.77	74.00	-25.23	Vertical	
4874.00	52.43	31.71	6.85	41.84	52.48	74.00	-21.52	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	37.62	31.71	6.85	41.84	37.67	54.00	-16.33	Vertical	
4874.00	43.26	31.71	6.85	41.84	43.31	54.00	-10.69	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	47.71	31.80	6.89	41.86	47.88	74.00	-26.12	Vertical	
4924.00	51.60	31.80	6.89	41.86	51.77	74.00	-22.23	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	
4924.00	36.57	31.80	6.89	41.86	36.74	54.00	-17.26	Vertical	
4924.00 Remark:	48.73	31.80	6.89	41.86	48.90	54.00	-5.10	Horizontal	

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

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





				802.11g					
			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	46.07	31.63	6.82	41.82	46.03	74.00	-27.97	Vertical	
4824.00	49.02	31.63	6.82	41.82	48.98	74.00	-25.02	Horizontal	
Detector: 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	
4824.00	38.36	31.63	6.82	41.82	38.32	54.00	-15.68	Vertical	
4824.00	40.23	31.63	6.82	41.82	40.19	54.00	-13.81	Horizontal	
			Tost ch	annel: Mido	lle channel				
				tector: Peak					
Frequency (MHz)	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
, ,	(dBuV)	(dB/m)	(dB)	(dB)	` '	, ,	` ,	Marcal	
4874.00	45.55	31.71	6.85	41.84	45.60	74.00	-28.40	Vertical	
4874.00	48.85	31.71	6.85	41.84	48.90	74.00	-25.10	Horizontal	
				ctor: Averaç	ge Value		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	38.26	31.71	6.85	41.84	38.31	54.00	-15.69	Vertical	
4874.00	40.31	31.71	6.85	41.84	40.36	54.00	-13.64	Horizontal	
			Test ch	annel: Highe	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	
4924.00	46.72	31.80	6.89	41.86	46.89	74.00	-27.11	Vertical	
4924.00	45.64	31.80	6.89	41.86	45.81	74.00	-28.19	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	38.29	31.80	6.89	41.86	38.46	54.00	-15.54	Vertical	
4924.00	39.41	31.80	6.89	41.86	39.58	54.00	-14.42	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	47.82	31.63	6.82	41.82	47.78	74.00	-26.22	Vertical	
4824.00	49.78	31.63	6.82	41.82	49.74	74.00	-24.26	Horizontal	
Detector: 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	
4824.00	37.64	31.63	6.82	41.82	37.62	54.00	-16.38	Vertical	
4824.00	40.18	31.63	6.82	41.82	40.14	54.00	-13.86	Horizontal	
			Test ch	annel: Mido	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	46.92	31.71	6.85	41.84	47.97	74.00	-26.03	Vertical	
4874.00	50.13	31.71	6.85	41.84	50.18	74.00	-23.82	Horizontal	
			Dete	ctor: Averag	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	37.06	31.71	6.85	41.84	37.11	54.00	-16.89	Vertical	
4874.00	41.53	31.71	6.85	41.84	41.58	54.00	-12.42	Horizontal	
			Test ch	annel: Highe	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	
4924.00	46.73	31.80	6.89	41.86	46.90	74.00	-27.10	Vertical	
4924.00	47.11	31.80	6.89	41.86	47.28	74.00	-26.72	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	36.84	31.80	6.89	41.86	37.01	54.00	-16.99	Vertical	
4924.00	37.56	31.80	6.89	41.86	37.73	54.00	-16.27	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	40)					
				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		
4844.00	47.20	31.63	6.82	41.82	47.16	74.00	-26.84	Vertical		
4844.00	50.32	31.63	6.82	41.82	50.28	74.00	-23.72	Horizontal		
Detector: 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		
4844.00	38.41	31.63	6.82	41.82	38.37	54.00	-15.63	Vertical		
4844.00	41.36	31.63	6.82	41.82	41.32	54.00	-12.68	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	46.98	31.71	6.85	41.84	47.03	74.00	-26.97	Vertical		
4874.00	49.65	31.71	6.85	41.84	49.70	74.00	-24.30	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	37.12	31.71	6.85	41.84	37.17	54.00	-16.83	Vertical		
4874.00	40.22	31.71	6.85	41.84	40.27	54.00	-13.73	Horizontal		
			Test ch	annel: Highe	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		
4904.00	46.79	31.80	6.89	41.85	46.96	74.00	-27.04	Vertical		
4904.00	48.84	31.80	6.89	41.85	49.01	74.00	-24.99	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		
4904.00	36.89	31.80	6.89	41.85	37.06	54.00	-16.94	Vertical		
4904.00	40.23	31.80	6.89	41.85	40.40	54.00	-13.60	Horizontal		
Remark:		<del></del>		<del></del>						

<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.