

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCISE170804704

FCC REPORT

(WIFI)

Applicant: SHENZHEN COOTEL FONE TECHNOLOGY CO.,LTD

No.311, 3rd Floor, Langfeng Building, No.2, Kefa Road, Central

Address of Applicant: Area of Science and Technology Park, Nanshan District,

Shenzhen, China

Equipment Under Test (EUT)

Product Name: smart phone

Model No.: C7

Trade mark: CooTel

FCC ID: 2AHS2-C7

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

Date of sample receipt: 30 Jun., 2017

Date of Test: 30 Jun., to 08 Jul., 2017

Date of report issued: 09 Jul., 2017

Test Result: PASS*

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





2 Version

Version No.	Date	Description
00	09 Jul., 2017	Original

Tested by: Zora Lee Date: 09 Jul., 2017

Test Engineer

Reviewed by: Date: 09 Jul., 2017

Project Engineer



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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Conducted and Radiated Spurious Emission	15.205/15.209	Pass

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





5 General Information

5.1 Client Information

Applicant:	SHENZHEN COOTEL FONE TECHNOLOGY CO.,LTD		
Address of Applicant:	No.311, 3rd Floor, Langfeng Building, No.2, Kefa Road, Central Area of Science and Technology Park, Nanshan District, Shenzhen, China		
Manufacturer:	SHENZHEN COOTEL FONE TECHNOLOGY CO.,LTD		
Address of Manufacturer:	No.311, 3rd Floor, Langfeng Building, No.2, Kefa Road, Central Area of Science and Technology Park, Nanshan District, Shenzhen, China		

5.2 General Description of E.U.T.

Product Name:	smart phone		
	C7		
Model No.:	OI .		
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:	Internal Antenna		
Antenna gain:	0.37 dBi		
Power supply:	Rechargeable Li-ion Battery DC3.8V-3000mAh		
AC adapter:	Model: U0D2F0A050150		
	Input: AC100-240V, 50/60Hz, 250mA		
	Output: DC 5.0V, 1.5A		





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:

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:

802.11b/802.11g/802.11n (H20)

Channel	Frequency		
The lowest channel	2412MHz		
The middle channel	2437MHz		
The Highest channel	2462MHz		



5.3 Test environment and mode

Operating Environment:			
Temperature:	24.0 °C		
Humidity:	54 % RH		
Atmospheric Pressure:	1010 mbar		
Test mode:			
Operation mode	Keep the EUT in continuous transmitting with modulation		

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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:

Mode	Data rate		
802.11b	1Mbps		
802.11g	6Mbps		
802.11n(H20)	6.5Mbps		

Final Test Mode:

According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

5.4 Measurement Uncertainty

Items	Expanded Uncertainty (Confidence of 95%)		
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)		

5.5 Laboratory Facility

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

• FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

• 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.

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
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5.6 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

Website: http://www.ccis-cb.com

Tel: +86-755-23118282 Fax: +86-755-23116366 Email: info@ccis-cb.com

5.7 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	07-22-2017	07-22-2020
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	02-25-2017	02-24-2018
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	02-25-2017	02-24-2018
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	02-25-2017	02-24-2018
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	02-25-2017	02-24-2018
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	02-25-2017	02-24-2018
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	02-25-2017	02-24-2018
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	02-25-2017	02-24-2018
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	02-25-2017	02-24-2018
10	Loop antenna	Laplace instrument	RF300	EMC0701	02-25-2017	02-24-2018
11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
12	Coaxial Cable	N/A	N/A	CCIS0018	02-25-2017	02-24-2018
13	Coaxial Cable	N/A	N/A	CCIS0020	02-25-2017	02-24-2018

Cond	Conducted Emission:								
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)			
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	07-22-2017	07-22-2020			
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	02-25-2017	02-24-2018			
3	LISN	CHASE	MN2050D	CCIS0074	02-25-2017	02-24-2018			
4	Coaxial Cable	CCIS	N/A	CCIS0086	02-25-2017	02-24-2018			
5	EMI Test Software	AUDIX	E3	N/A	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 internal antenna which cannot replace by end-user, the best case gain of the antenna is 0.37 dBi.





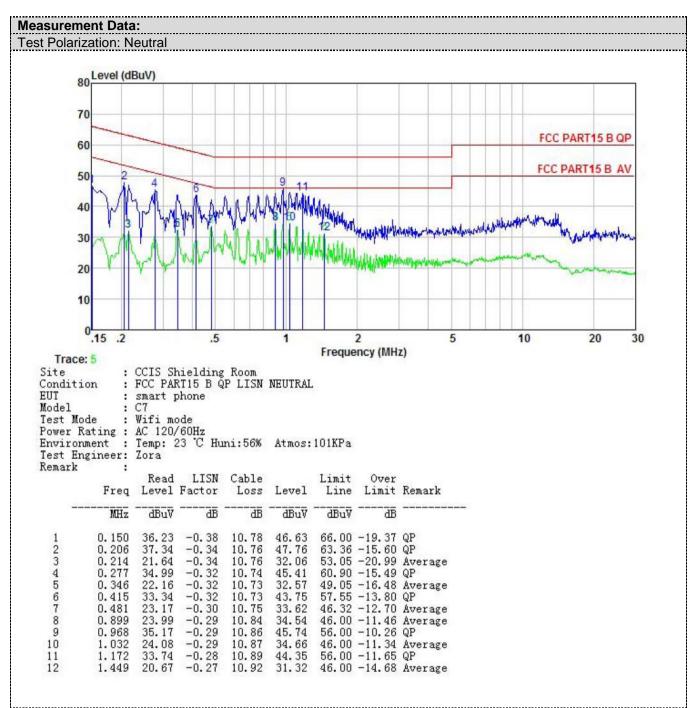


6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207						
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)				
Limit.	(MHz)						
	0.15-0.5	56 to 46*					
	0.5-5	56	46				
	5-30	60	50				
	* Decreases with the loga	arithm of the frequency.					
Test procedure	 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. 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). 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. 						
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	ilter — AC power				
Test Instruments:	Refer to section 5.6 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Passed						





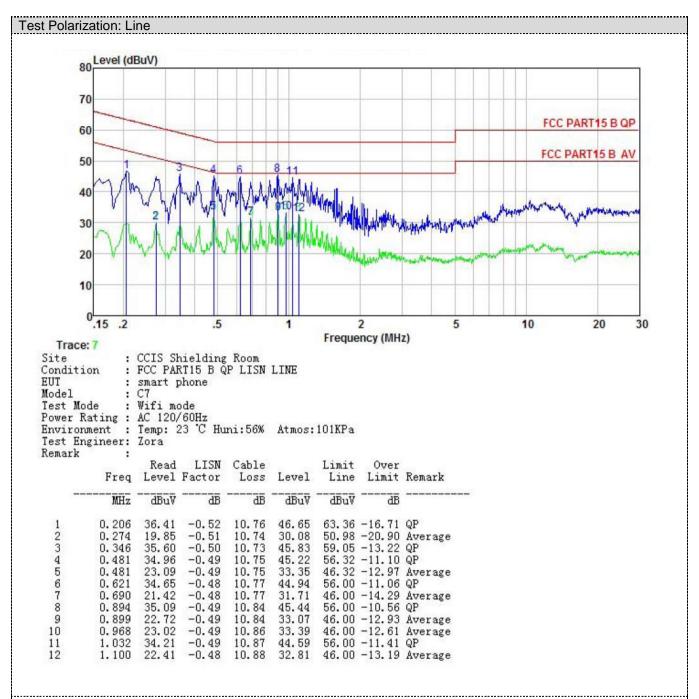


Notes

- 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.
- 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

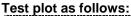
Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)			
Test Method:	ANSI C63.10: 2013 and KDB558074 D01 DTS Meas Guidance v04 section 9.2.2.2			
Limit:	30dBm			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test Instruments:	Refer to section 5.6 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Passed			

Measurement Data:

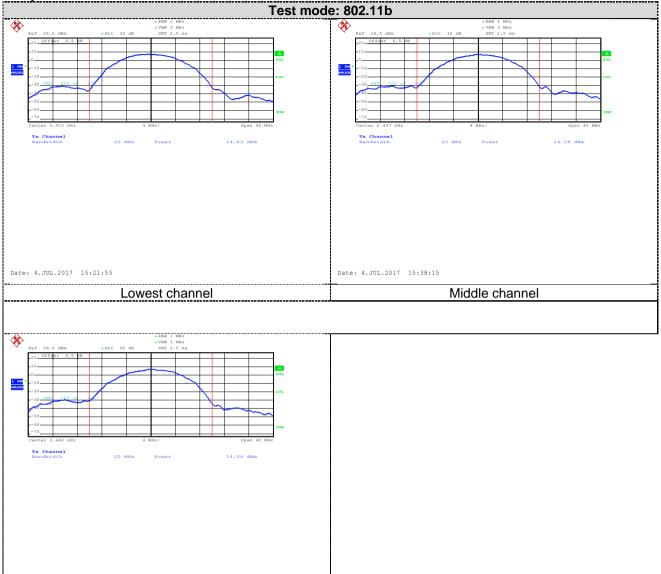
Test CH	Maximum Conducted Output Power (dBm)			Limit(dBm)	Result
1631 011	802.11b	802.11g	802.11n(H20)		
Lowest	14.83	13.97	12.72		Pass
Middle	14.28	13.80	12.78	30.00	
Highest	14.04	13.42	12.31		







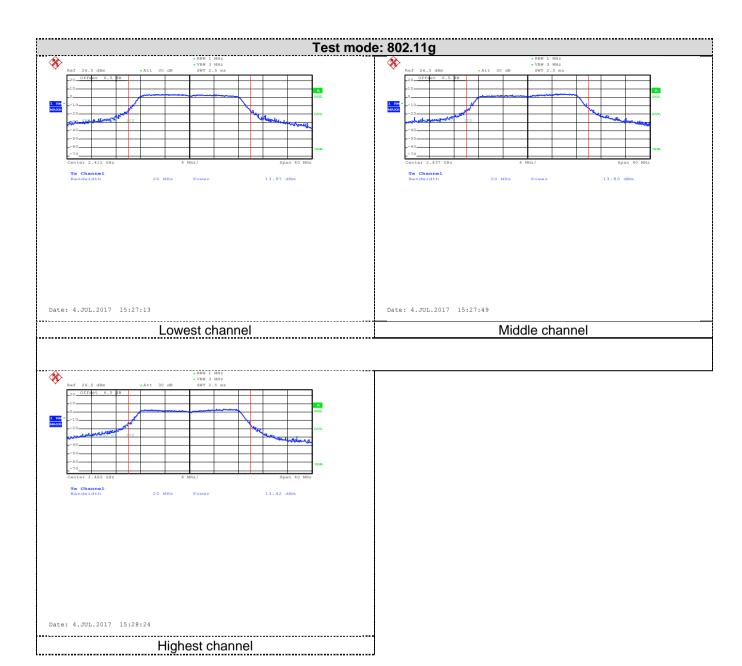
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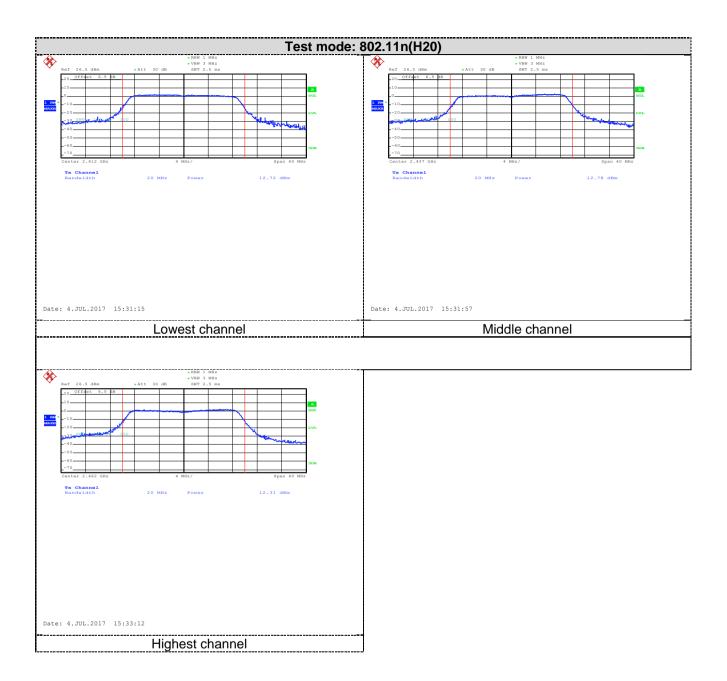
Highest channel















6.4 Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)		
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 8.1		
Limit:	>500kHz		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 5.6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

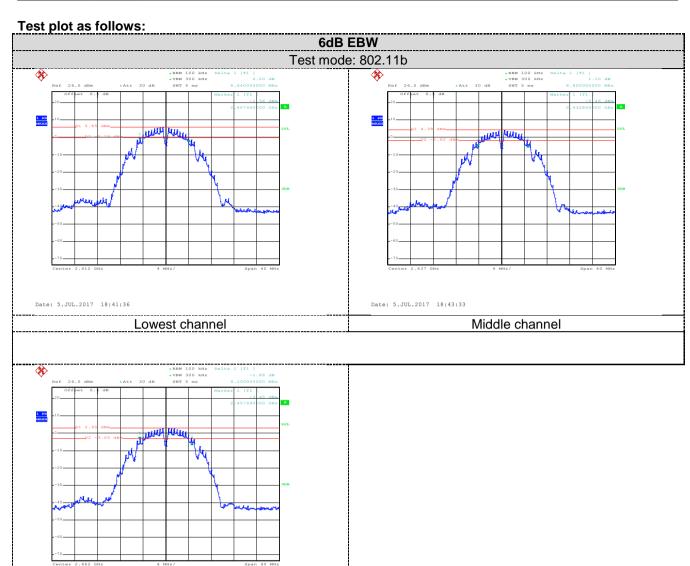
Measurement Data:

Test CH	6dB Eı	mission Bandwid	Limit(kHz)	Result		
1031 011	802.11b	802.11g	802.11n(H20)	Ellint(Ki iz)	resuit	
Lowest	8.64	16.56	17.52			
Middle	8.80	16.56	17.44	>500	Pass	
Highest	9.20	16.56	17.76			
Test CH	99% (Occupy Bandwid	Limit(kHz)	Result		
1031 011	802.11b	802.11g	802.11n(H20)	Ellint(Ki iz)	result	
Lowest	12.80	16.36	17.68		N/A	
Middle	12.72	16.80	17.84	N/A		
Highest	13.04	16.88	17.84			





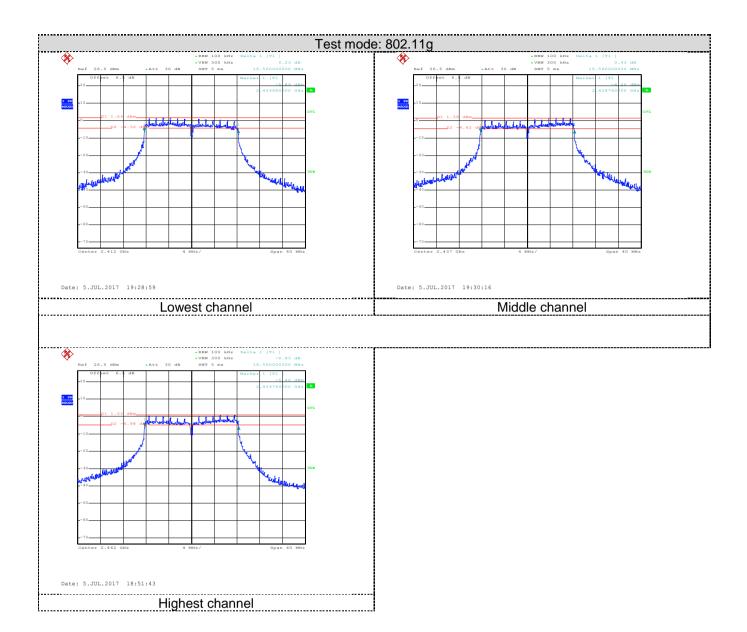
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Highest channel

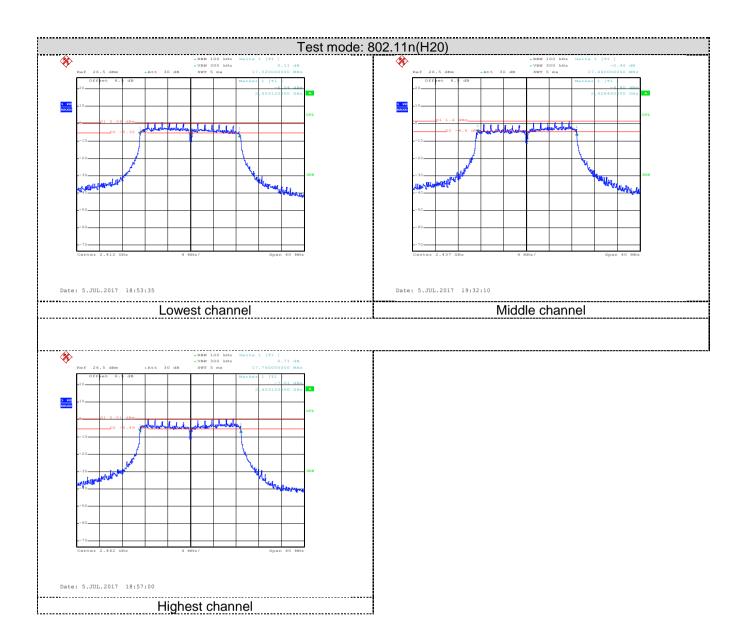






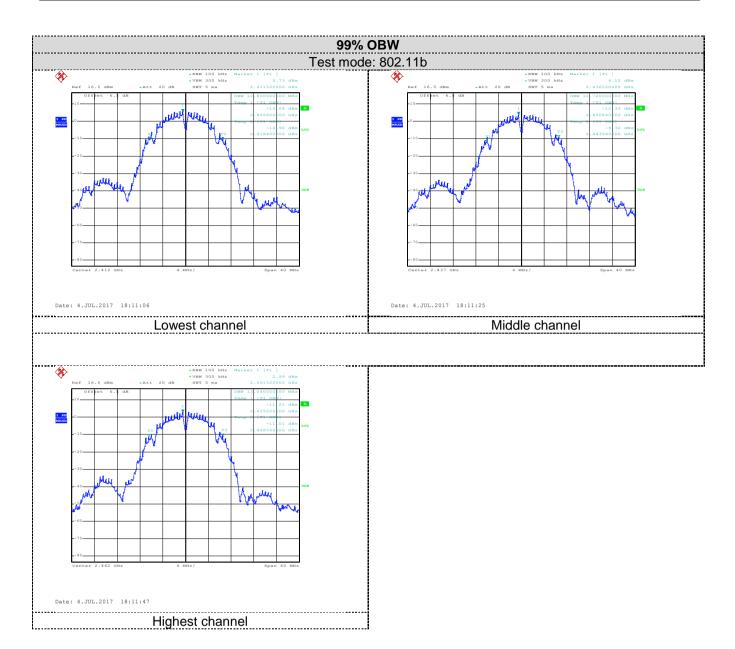






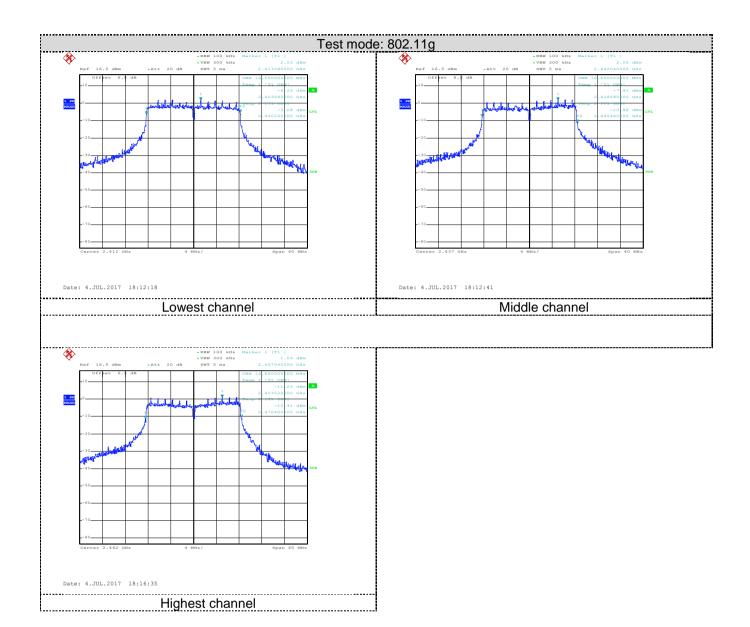






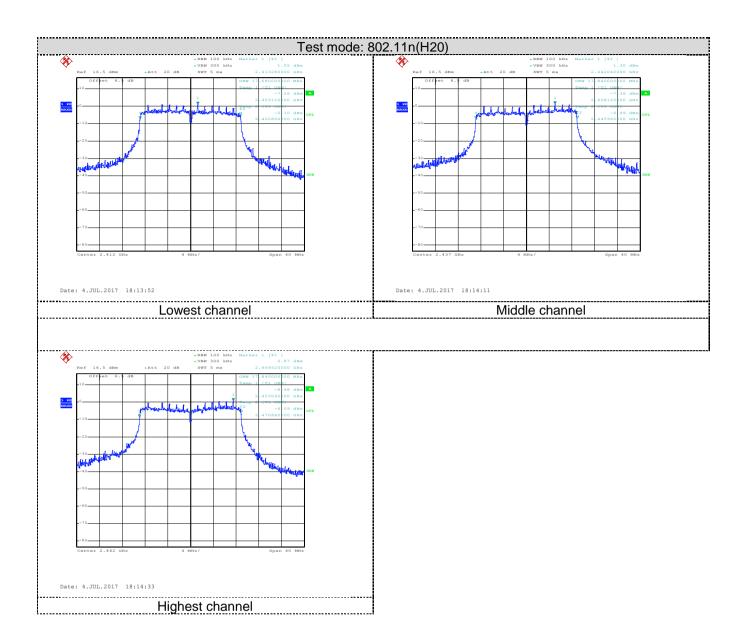














6.5 Power Spectral Density

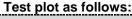
Test Requirement:	FCC Part 15 C Section 15.247 (e)			
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 10.2			
Limit:	8dBm			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test Instruments:	Refer to section 5.6 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Passed			

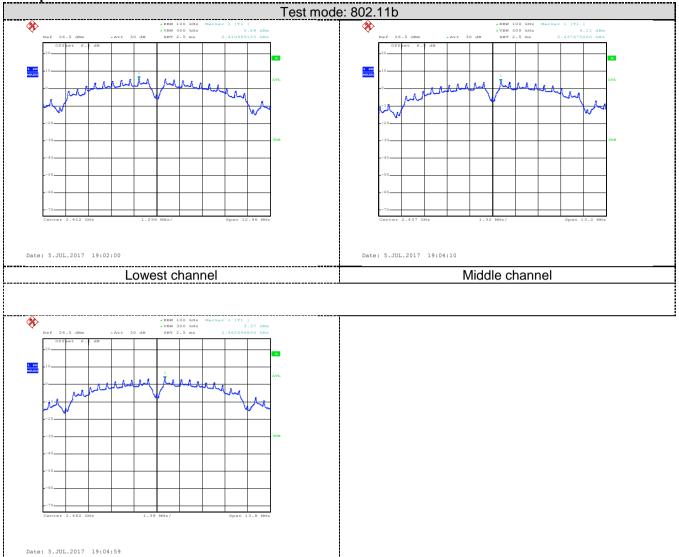
Measurement Data:

Test CH	Power	Spectral Dens	Limit(dBm)	Result			
1031 011	802.11b	802.11g	802.11n(H20)	Ziriit(GBiri)	resuit		
Lowest	5.68	1.47	0.61				
Middle	4.11	1.34	1.47	8.00	Pass		
Highest	3.37	0.76	0.56				





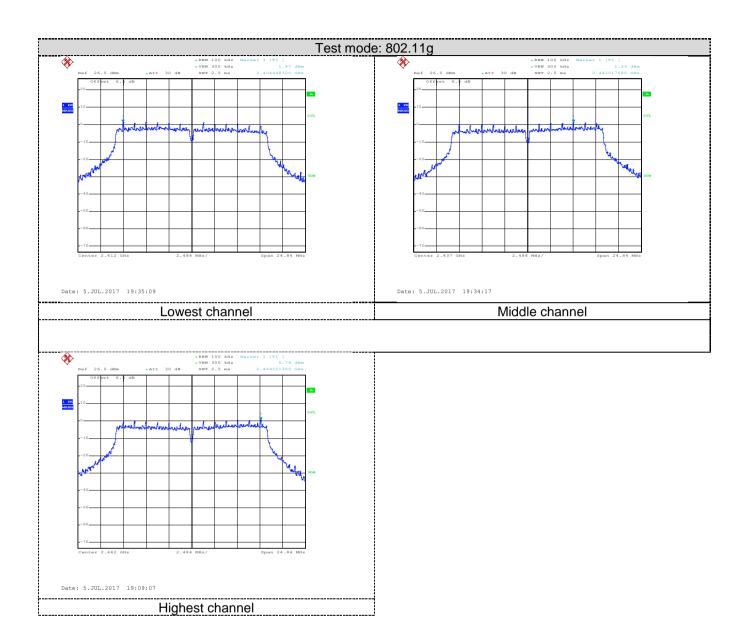




Highest channel

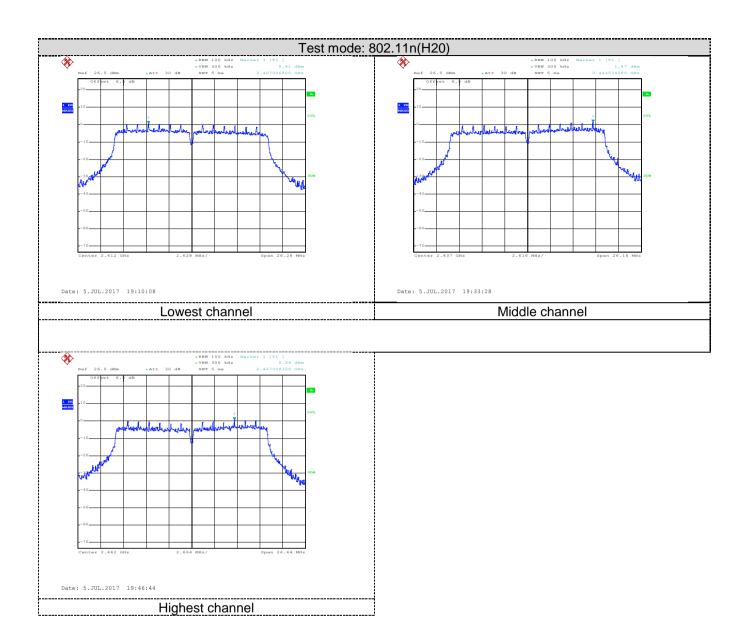














6.6 Band Edge

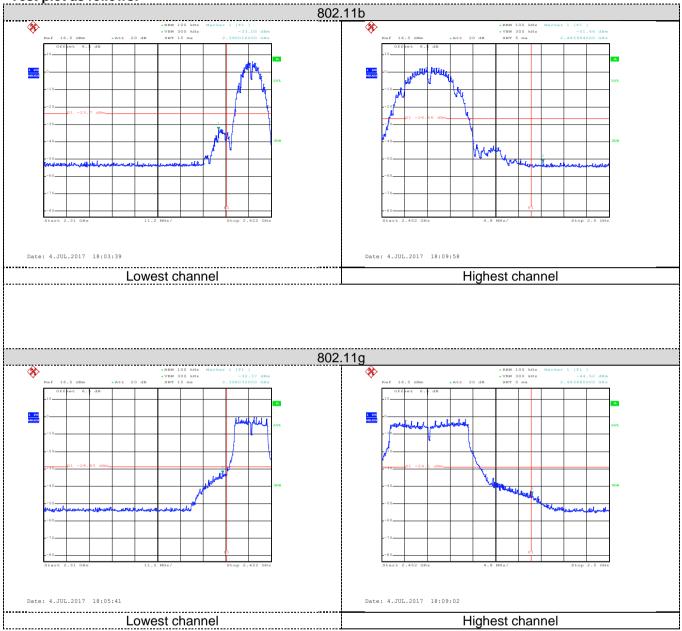
6.6.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)			
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 13			
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 5.6 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Passed			



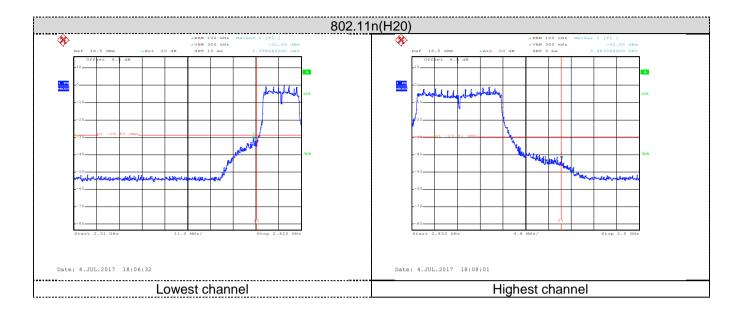












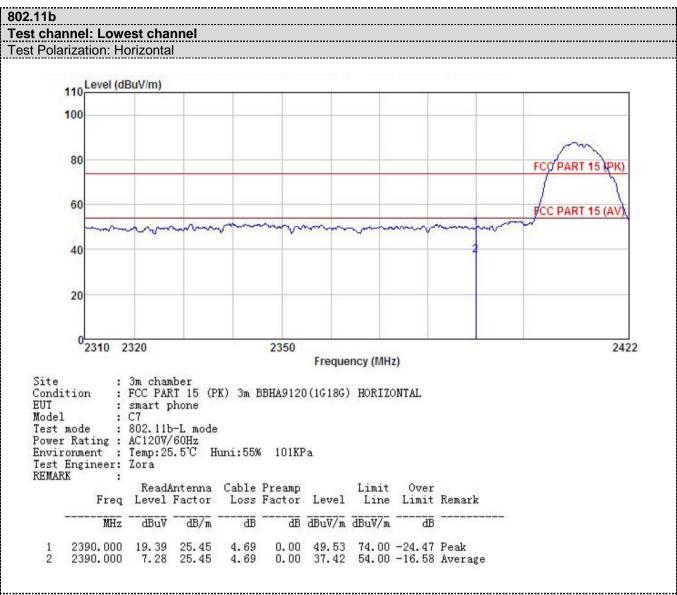


6.6.2 Radiated Emission Method

 Nadiated Lillission Method							
Test Requirement:	FCC Part 15 C Section 15.209 and 15.205						
Test Method:	ANSI C63.10: 2013 and KDB558074 D01 DTS Meas Guidance v04 section 12.1						
Test Frequency Range:	2.3GHz to 2.5GHz						
Test site:	Measurement Distance: 3m						
Receiver setup:	Frequency Detector RBW VBW Remark						
reconver octup.	Above 1GHz	Peak	1MF		MHz	Peak Value	
		RMS	1MF	1MHz 3		Average Value	
Limit:	Frequenc	у	Limit (dBuV/m @3m)		Remark		
	Above 1GH	Hz	54.0		Average Value		
Test Procedure:	1. The EUT w		74.0			Peak Value 5 meters above	
Toot setup:	 the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data 						
Test setup:	Horn Anlenna Tower AE EUT Horn Anlenna Tower Ground Reference Plane Test Receiver Areptier Controller					er	
Test Instruments:	Refer to section 5.6 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Passed						



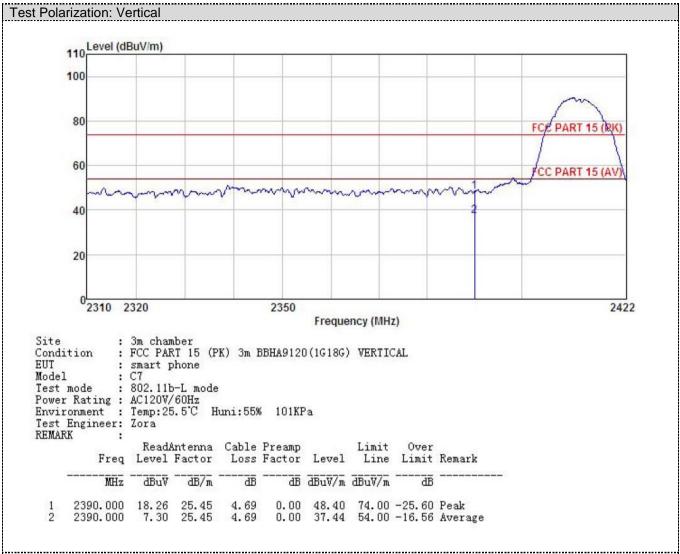




- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



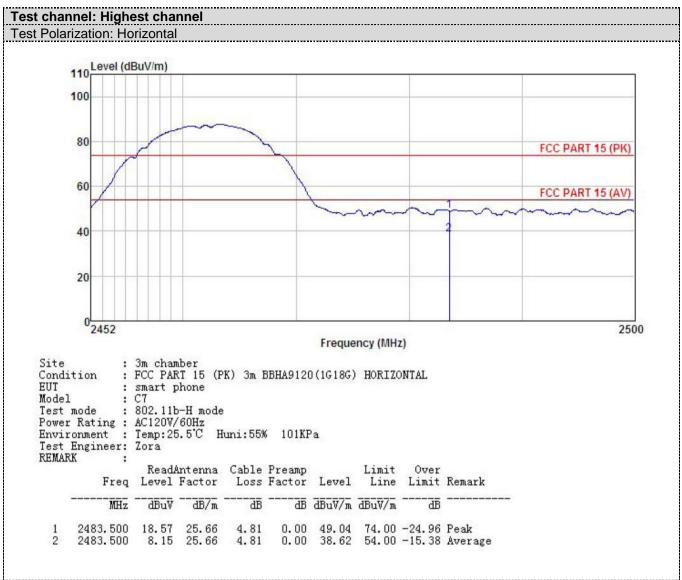




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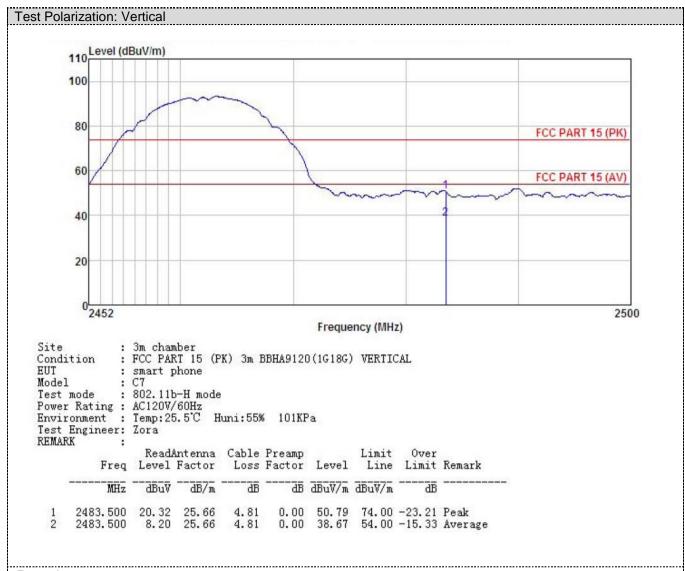




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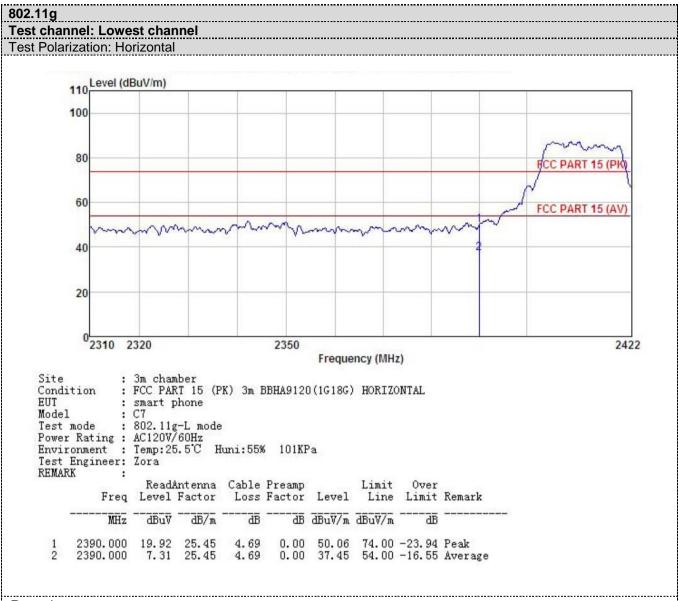




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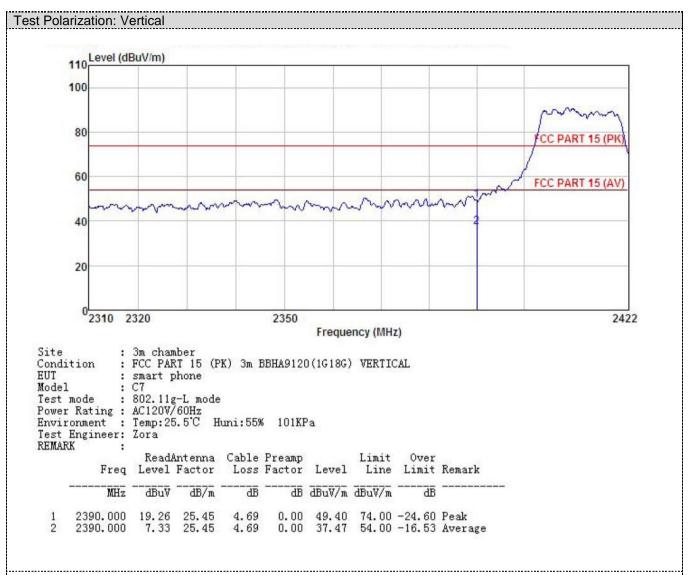




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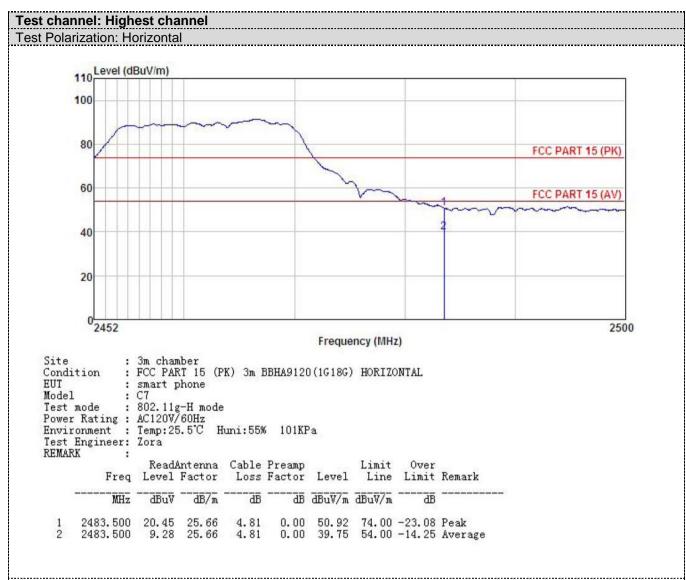




- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.

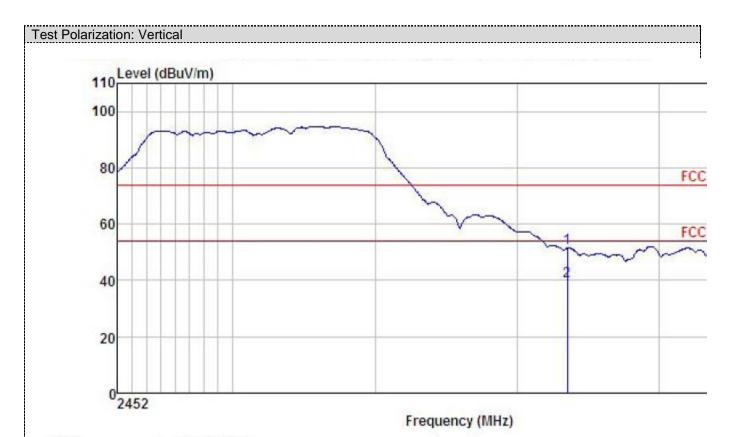






- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.





Site : 3m chamber

Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL

: smart phone

Model : C7
Test mode : 802.11g-H mode
Power Rating : AC120V/60Hz
Environment : Temp:25.5°C Huni:55% 101KPa
Test Engineer: Zora
REMARK :

		Read	Antenna	Cable	Preamp		Limit	Over	
	Freq		Factor						Remark
-	MHz	dBu∜	dB/m	<u>dB</u>	<u>dB</u>	dBuV/m	dBu√/m	dB	
1	2483.500	20.97	25.66	4.81	0.00	51.44	74.00	-22.56	Peak
2	2483.500	9.35	25.66	4.81	0.00	39.82	54.00	-14.18	Average

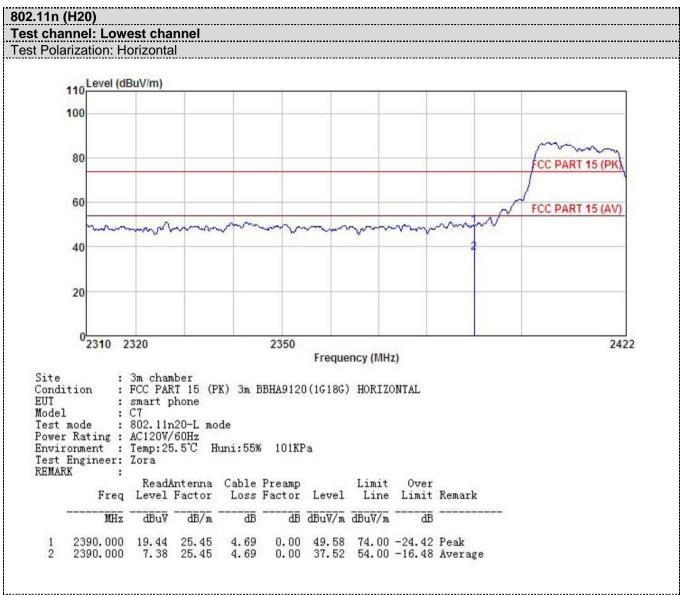
Remark:

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.



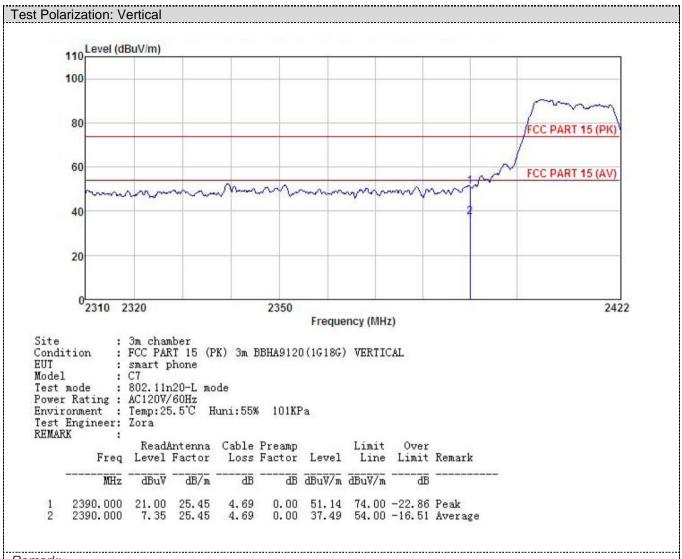




- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



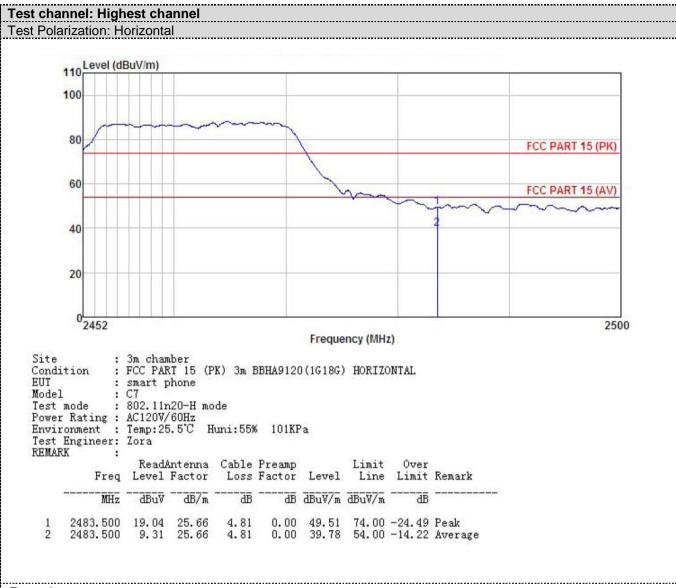




- Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



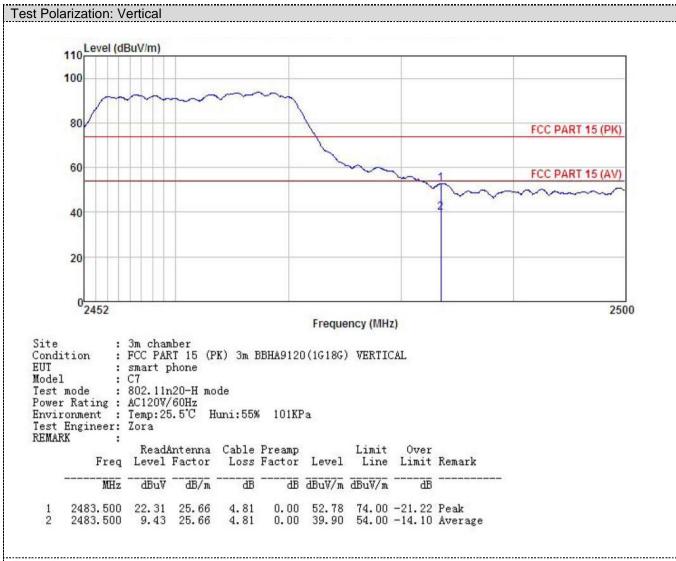




- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.







- 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

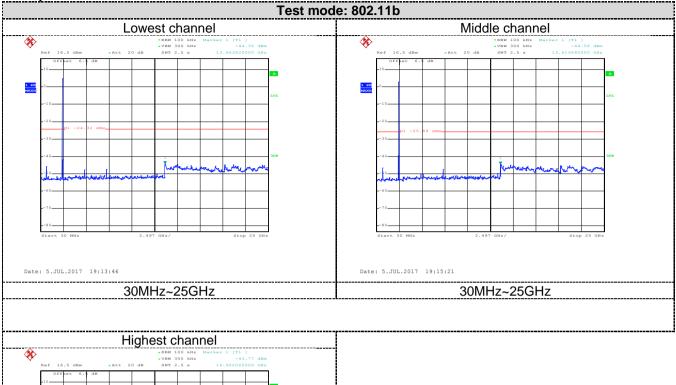
6.7.1 Conducted Emission Method

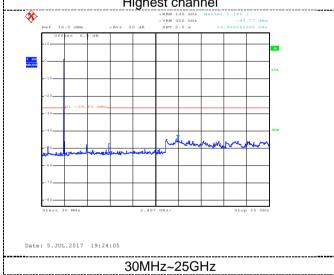
Test Requirement:	FCC Part 15 C Section 15.247 (d)						
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 11						
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is 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 5.6 for details						
Test mode:	Refer to section 5.3 for details						
Test results:	Passed						





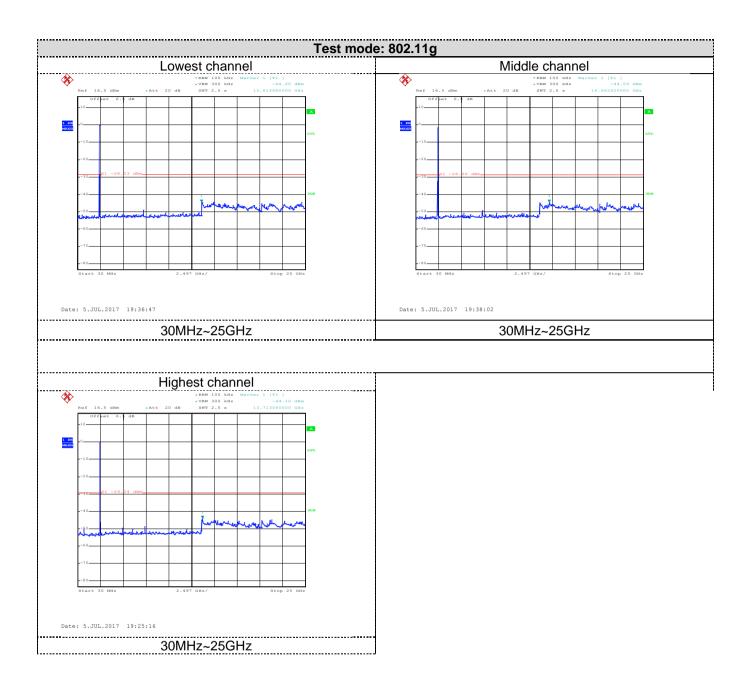
Test plot as follows:





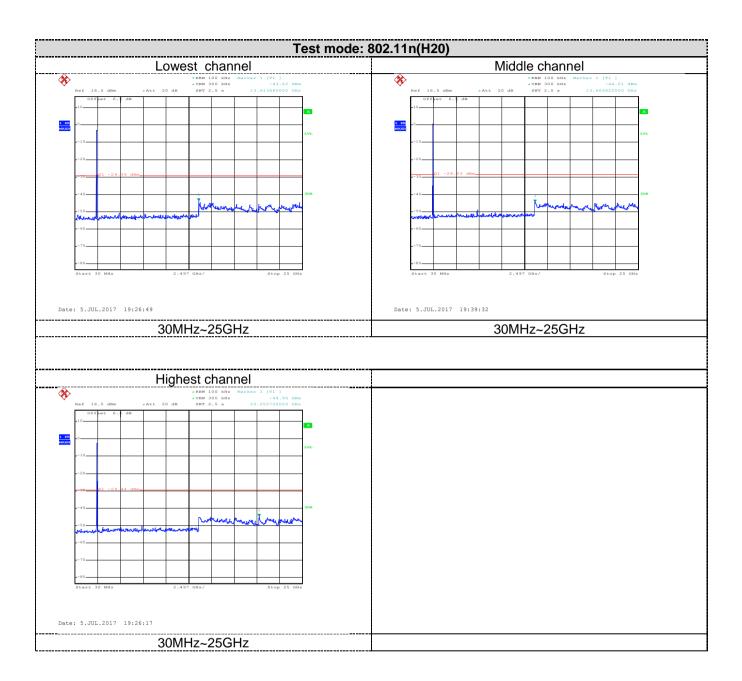














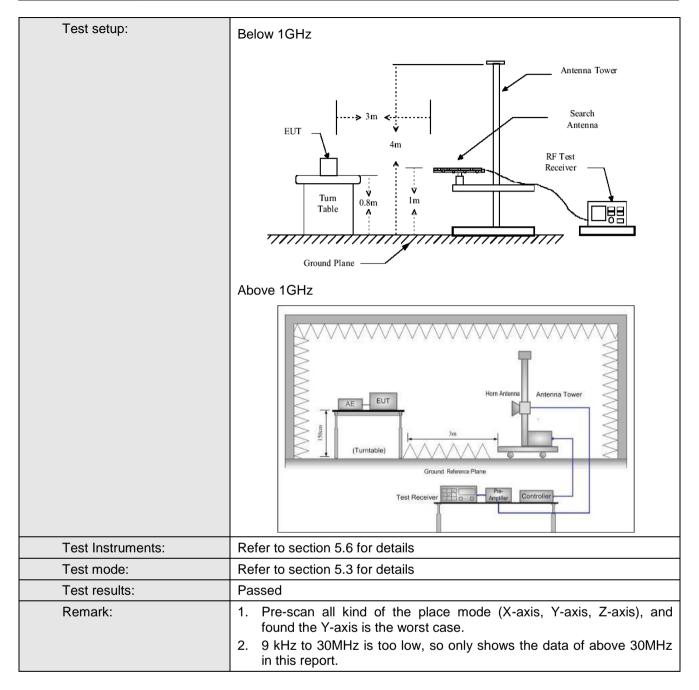


6.7.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205 ANSI C63.10:2013									
Test Method:	ANSI C63.10:201	13								
Test Frequency Range:	9kHz to 25GHz									
Test site:	Measurement Dis	stance: 3n	m							
Receiver setup:	Frequency	Detecto	tor	RBW	V	BW	Remark			
·	30MHz-1GHz	Quasi-pe	eak	120KHz	300KHz		Quasi-peak Value			
	Above 1GHz	Peak		1MHz 3i		ИHz	Peak Value			
		RMS		1MHz		ЛHz	Average Value			
Limit:	Frequency		Limit	(dBuV/m @3	m)		Remark			
	30MHz-88MH			40.0			uasi-peak Value			
	88MHz-216MH			43.5			uasi-peak Value			
	216MHz-960M			46.0			uasi-peak Value			
	960MHz-1GH	Z		54.0			uasi-peak Value			
	Above 1GHz	<u> </u>		54.0		F	Average Value			
Test Procedure:	1. The EUT wa		a.a. 4la.a.	74.0	- 4i	tabla 0	Peak Value			
	The table was highest radia 2. The EUT was antenna, who tower. 3. The antennathe ground to Both horizon make the med. 4. For each suscase and the meters and to find the med. 5. The test-reconspecified Base. 6. If the emission the limit spend the EUT we have 10dB med.	as rotated ation. Its set 3 miles set 3 miles was many a height is to determine the and verse spected elements aximum reiver system on level of cified, the vould be margin wo	d 360 d neters a mounte s varied ine the rertical ent. emissic tenna value able wa reading tem wa with M of the E en testi reporte buld be	degrees to degrees to degrees to degrees to degree degrees to degree deg	he into of a meter value s of the was a being om 0 of a mode stopped the ne by	erferent variable to four of the fine ante arrange that from the from the fine arrange that from the fine arrange that from the fine arrange that from the fine arrange of the fine arrange that from the fine arrange of the fine arrange from th	meters above field strength. enna are set to ed to its worst m 1 meter to 4 s to 360 degrees			

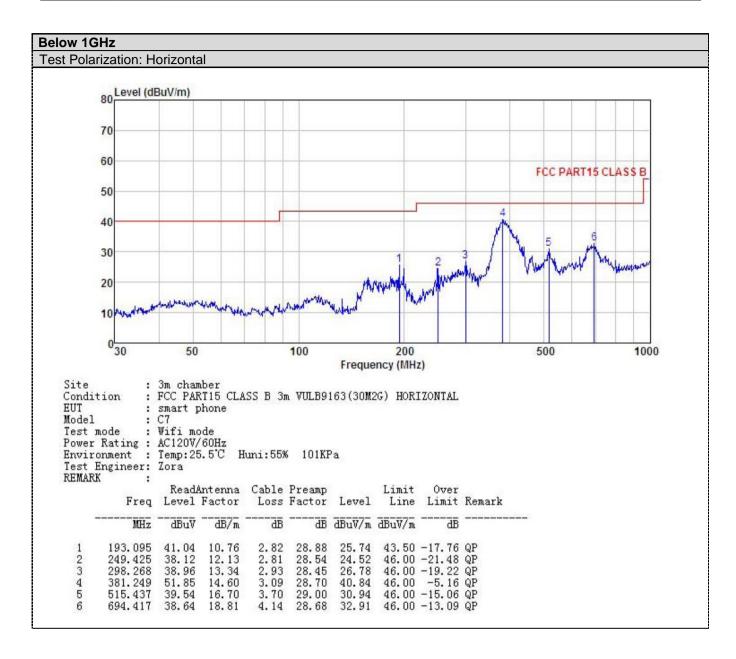






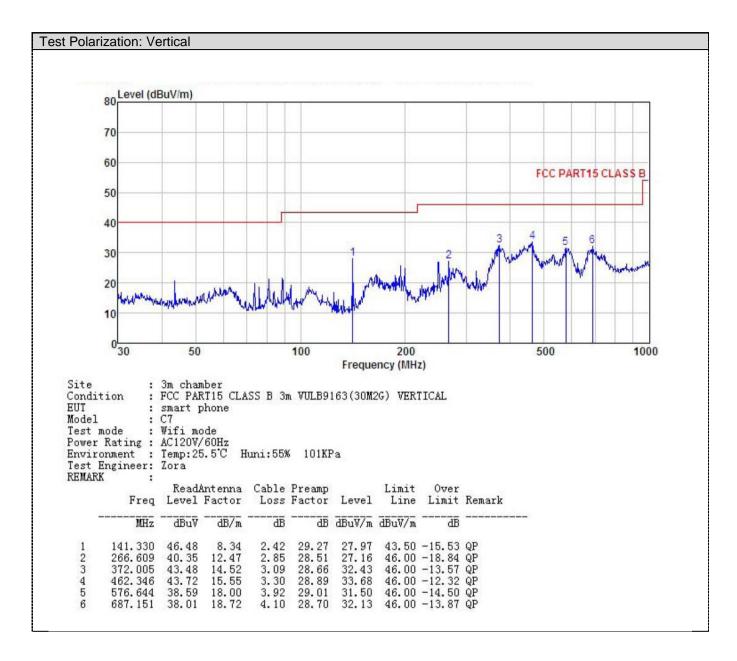














Above 1GHz

	Test mode: 802.11b											
Test channel: Lowest channel												
Peak Value												
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.				
4824.00	47.21	36.06	6.81	41.82	48.26	74.00	-25.74	Vertical				
4824.00	46.24	36.06	6.81	41.82	47.29	74.00	-26.71	Horizontal				
			А	verage 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)	Polar.				
4824.00	38.56	36.06	6.81	41.82	39.61	54.00	-14.39	Vertical				
4824.00	37.83	36.06	6.81	41.82	38.88	54.00	-15.12	Horizontal				

	Test channel: Middle channel												
Peak Value													
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4874.00	46.07	36.32	6.85	41.84	47.40	74.00	-26.60	Vertical					
4874.00	46.16	36.32	6.85	41.84	47.49	74.00	-26.51	Horizontal					
			А	verage 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)	Polar.					
4874.00	37.87	36.32	6.85	41.84	39.20	54.00	-14.80	Vertical					
4874.00	37.74	36.32	6.85	41.84	39.07	54.00	-14.93	Horizontal					

Test channel: Highest channel													
Peak Value													
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4924.00	45.86	36.58	6.89	41.86	47.47	74.00	-26.53	Vertical					
4924.00	45.93	36.58	6.89	41.86	47.54	74.00	-26.46	Horizontal					
			А	verage 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)	Polar.					
4924.00	37.09	36.58	6.89	41.86	38.70	54.00	-15.30	Vertical					
4924.00	37.14	36.58	6.89	41.86	38.75	54.00	-15.25	Horizontal					

Remark:

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



	Test mode: 802.11g												
	Test channel: Lowest channel												
Peak Value													
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4824.00	47.52	36.06	6.81	41.82	48.57	74.00	-25.43	Vertical					
4824.00	47.23	36.06	6.81	41.82	48.28	74.00	-25.72	Horizontal					
			Av	erage Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4824.00	38.75	36.06	6.81	41.82	39.80	54.00	-14.20	Vertical					
4824.00	37.94	36.06	6.81	41.82	38.99	54.00	-15.01	Horizontal					

	Test channel: Middle channel												
Peak Value													
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4874.00	46.87	36.32	6.85	41.84	48.20	74.00	-25.80	Vertical					
4874.00	46.59	36.32	6.85	41.84	47.92	74.00	-26.08	Horizontal					
			A۱	verage Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.					
4874.00	37.92	36.32	6.85	41.84	39.25	54.00	-14.75	Vertical					
4874.00	37.42	36.32	6.85	41.84	38.75	54.00	-15.25	Horizontal					

	Test channel: Highest channel												
Peak Value													
Fraguesay	Read	Antenna	Cable	Preamp	Lovel	Limit Line	Over						
Frequency	Level	Factor	Loss	Factor	Level		Limit	Polar.					
(MHz)	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)						
4924.00	46.35	36.58	6.89	41.86	47.96	74.00	-26.04	Vertical					
4924.00	46.55	36.58	6.89	41.86	48.16	74.00	-25.84	Horizontal					
			A۱	erage Value									
Fraguanay	Read	Antenna	Cable	Preamp	Lovel	Limit Line	Over						
Frequency	Level	Factor	Loss	Factor	Level		Limit	Polar.					
(MHz)	(dBuV)	(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)						
4924.00	37.42	36.58	6.89	41.86	39.03	54.00	-14.97	Vertical					
4924.00	37.56	36.58	6.89	41.86	39.17	54.00	-14.83	Horizontal					

- 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 m	ode: 802.11r	(H20)			Test mode: 802.11n(H20) Test channel: Lowest channel											
			Test cha	nnel: Lowest	channel														
				Peak Value															
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.											
4824.00	47.45	36.06	6.81	41.82	48.50	74.00	-25.50	Vertical											
4824.00	47.21	36.06	6.81	41.82	48.26	74.00	-25.74	Horizonta											
			А	verage 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)	Polar.											
,	(abav)	(42,)					45.07	Vertical											
4824.00	37.88	36.06	6.81	41.82	38.93	54.00	-15.07	Vertical											
, ,			6.81 6.81	41.82	38.61	54.00 54.00	-15.07 -15.39	1											
4824.00	37.88	36.06	6.81 6.81	41.82	38.61														
4824.00	37.88	36.06	6.81 6.81	41.82	38.61														
4824.00	37.88	36.06	6.81 6.81	41.82	38.61														
4824.00 4824.00 Frequency	37.88 37.56 Read Level	36.06 36.06 Antenna Factor	6.81 6.81 Test cha	nnel: Middle Peak Value Preamp Factor	38.61 channel Level	54.00 Limit Line	-15.39 Over Limit	Horizontal											
4824.00 4824.00 Frequency (MHz)	37.88 37.56 Read Level (dBuV)	36.06 36.06 Antenna Factor (dB/m)	6.81 6.81 Test cha Cable Loss (dB)	nnel: Middle Peak Value Preamp Factor (dB)	channel Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Horizontal											
4824.00 4824.00 Frequency (MHz) 4874.00	37.88 37.56 Read Level (dBuV) 46.27	36.06 36.06 Antenna Factor (dB/m) 36.32	Cable Loss (dB) 6.85 6.85	nnel: Middle Peak Value Preamp Factor (dB) 41.84	28.61 channel Level (dBuV/m) 47.60 47.89	Limit Line (dBuV/m)	Over Limit (dB) -26.40	Polar.											
4824.00 4824.00 Frequency (MHz) 4874.00	37.88 37.56 Read Level (dBuV) 46.27	36.06 36.06 Antenna Factor (dB/m) 36.32	Cable Loss (dB) 6.85 6.85	nnel: Middle Peak Value Preamp Factor (dB) 41.84 41.84	28.61 channel Level (dBuV/m) 47.60 47.89	Limit Line (dBuV/m)	Over Limit (dB) -26.40	Polar.											
4824.00 4824.00 Frequency (MHz) 4874.00 Frequency	37.88 37.56 Read Level (dBuV) 46.27 46.56 Read Level	Antenna Factor (dB/m) 36.32 36.32 Antenna Factor	Cable Loss (dB) 6.85 Cable Loss	nnel: Middle Peak Value Preamp Factor (dB) 41.84 41.84 verage Value Preamp Factor	28.61 Channel Level (dBuV/m) 47.60 47.89 Level	Limit Line (dBuV/m) 74.00 74.00 Limit Line	Over Limit (dB) -26.40 -26.11 Over Limit	Polar. Vertical Horizontal											

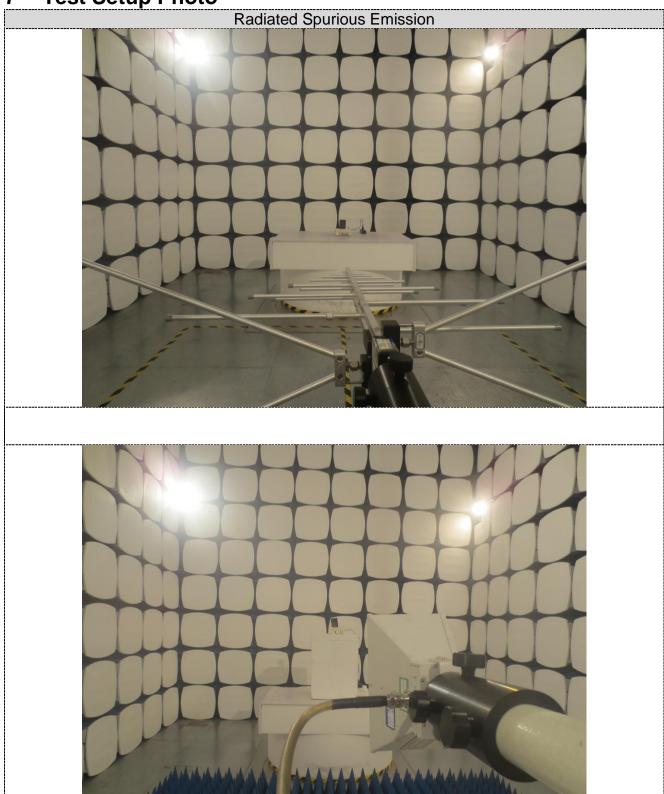
			Toot obor	analı Highaat	channal							
Test channel: Highest channel												
Peak Value												
Fraguenay	Read	Antenna	Cable	Preamp	Level	Limit Line	Over					
Frequency (MHz)	Level	Factor	Loss	Factor	(dBuV/m)	(dBuV/m)	Limit	Polar.				
(1711-12)	(dBuV)	(dB/m)	(dB)	(dB)	(ubu v/III)	(ubu v/III)	(dB)					
4924.00	46.38	36.58	6.89	41.86	47.99	74.00	-26.01	Vertical				
4924.00	46.51	36.58	6.89	41.86	48.12	74.00	-25.88	Horizontal				
			А	verage Value)							
- Croquenou	Read	Antenna	Cable	Preamp	Lovel	Limit Line	Over					
Frequency	Level	Factor	Loss	Factor	Level (dBuV/m)		Limit	Polar.				
(MHz)	(dBuV)	(dB/m)	(dB)	(dB)	(ubu v/III)	(dBuV/m)	(dB)					
4924.00	37.25	36.58	6.89	41.86	38.86	54.00	-15.14	Vertical				
4924.00	37.33	36.58	6.89	41.86	38.94	54.00	-15.06	Horizontal				

- 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.



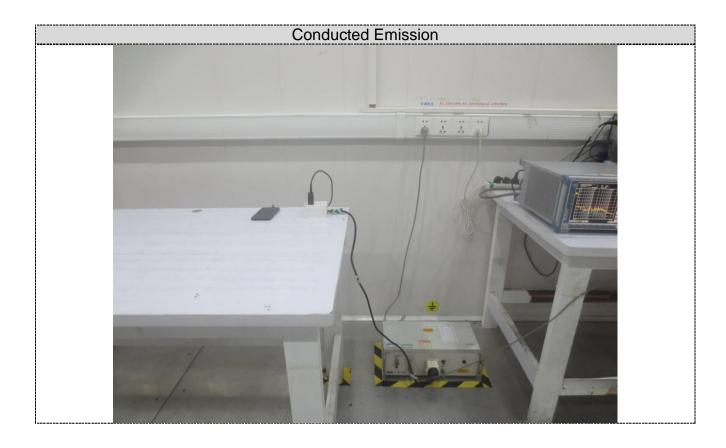


7 Test Setup Photo









8 EUT Constructional Details

Reference to the test report No. CCISE170804701

-----End of report-----