

Report No: CCISE181004704

FCC & IC REPORT

Applicant: Solaborate LLC

Address of Applicant: 8300 Utica Ave #283, Rancho Cucamonga, CA 91730

Equipment Under Test (EUT)

Product Name: HELLO 2

Model No.: HELLO2

FCC ID 2ALUI-HELLO2

IC ID: 24458-HELLO2

FCC CFR Title 47 Part 15 Subpart E Section 15.407

Applicable standards: RSS-Gen Issue 5, April 2018

RSS-247 Issue 2, February 2017

Date of sample receipt: 26 Oct., 2018

Date of Test: 26 Oct., to 21 Dec., 2018

Date of report issued: 23 Dec., 2018

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang Laboratory Manager

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

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Version

Version No.	Date	Description
00	23 Dec., 2018	Original

Caven Chen
Test Engineer Tested by: Date: 23 Dec., 2018

Reviewed by: 23 Dec., 2018 Date:

Project Engineer



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4 Test Summary

Test Item	Sec	Test Result	
rest item	FCC	IC	
AC Power Line Conducted Emission	15.207	RSS-GEN Section 8.8	Pass
Conducted Peak Output Power	15.407 (a) (1) (iv)	RSS-247 Section 6.2.1.1	Pass
26dB Occupied Bandwidth 99% Occupied Bandwidth	15.407 (a) (5)	RSS-247 Section 6.2.1.1	Pass
Power Spectral Density	15.407 (a) (1) (iv)	RSS-247 Section 6.2.1.1	Pass
Band Edge	15.407(b)	RSS-GEN Section 8.10 RSS-247 Section 6.2.1.2	Pass
Spurious Emission	15.407 (b) & 15.205 & 15.209	RSS-GEN Section 6.13 RSS-247 Section 6.2.1.2	Pass
Frequency Stability	15.407(g)	RSS-GEN Section 6.11	Pass

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

N/A: N/A: Not Applicable.



5 General Information

5.1 Client Information

Applicant:	Solaborate LLC
Address:	8300 Utica Ave #283, Rancho Cucamonga, CA 91730
Manufacturer	Shenzhen YITOA Digital Appliance CO.,LTD
Address:	5/F, Yitoa Building, Keji South Road 5th, Hi-tech Industrial Park, Nanshan District, Shenzhen

5.2 General Description of E.U.T.

Product Name:	HELLO 2
Model No.:	HELLO2
Operation Frequency:	Band 1: 5150MHz-5250MHz
Channel numbers:	Band 1: 802.11a/802.11n20: 4, 802.11n40: 2, 802.11ac: 1
Channel separation:	802.11a/802.11n20: 20MHz, 802.11n40: 40MHz, 802.11ac: 80MHz
Modulation technology (IEEE 802.11a):	BPSK, QPSK, 16-QAM, 64-QAM
Modulation technology (IEEE 802.11n):	BPSK, QPSK, 16-QAM, 64-QAM
Modulation technology (IEEE 802.11ac):	BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Data speed (IEEE 802.11a):	6Mbps, 9Mbps,12Mbps,18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n20&802.11ac20):	MCS0: 13Mbps, MCS1:26Mbps, MCS2:39Mbps, MCS3:52Mbps, MCS4:78Mbps, MCS5:104Mbps, MCS6:117Mbps, MCS7:130Mbps
Data speed (IEEE 802.11n40&802.11ac40):	MCS0:30Mbps, MCS1:60Mbps, MCS2:90Mbps, MCS3:120Mbps, MCS4:180Mbps, MCS5:240Mbps, MCS6:270Mbps, MCS7:300Mbps
Data speed (IEEE 802.11ac80):	Up to 866.6Mbps
Antenna Type:	FPC (EUT belongs to MIMO with dual antenna)
Antenna gain:	1.5 dBi
AC adapter:	Model: EA1019AVRS-050 Input: AC100-240V, 50/60Hz, 0.8A Output: DC 5.0V, 3A
Remarks:	EUT has camera cable from two different manufacturers. Their manufacturers and models are: Unison is HELLO2-274-V8.0, and Seasons is HELLO2-274-V8.0.1. They have the same lens, but the Camera cable is different.
Test Sample Condition:	The applicant provided engineering samples for staying in continuously transmitting for testing.





Operation Frequency	Operation Frequency each of channel						
	Band 1						
802.11a/802.11	ln20/802.11ac20	802.11n4	10/802.11ac40	802	.11ac80		
Channel	Frequency	Channel	Frequency	Channel	Frequency		
36	5180MHz	38	5190MHz	42	5210MHz		
40	5200MHz	46	5230MHz				
44	5220MHz						
48	5240MHz						





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:

Band 1						
802.11a/802.11r	n20/802.11ac20	802.11ac	30			
Channel	Frequency	Channel	Frequency	Channel	Frequency	
Lowest channel	5180MHz	Middle channel	5210MHz			
Middle channel	5200MHz					
Highest channel 5240MHz						
Note: 802.11a is SISO, 802.11n/802.11ac is MIMO.						

5.3 Test environment and test mode

Operating Environment:					
Temperature:	24.0 °C				
Humidity:	54 % RH				
Atmospheric Pressure:	1010 mbar				
Test mode:					
Continuously transmitting mode	Keep the EUT in 100	0% duty cycle transmitting with modulation.			
		operation. All the test modes were carried out with is test report and defined as follows:			
Per-scan all kind of data rate, and	d found the follow lis	t were the worst case.			
Mode		Data rate			
802.11a		6 Mbps			
802.11n20/802.11a	ac20	6.5 Mbps			
802.11n40/802.11a	ac40	13.5 Mbps			
802.11ac80		29.3 Mbps			



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)

Report No: CCISE181004704

5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

5.7 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: https://portal.a2la.org/scopepdf/4346-01.pdf

5.8 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

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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





5.9 Test Instruments list

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
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2018	03-15-2019
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-22-2017	06-21-2020
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
Tiomina	CONVINCEDECIN	DBII/COTTO	BB11/1017 0002	11-21-2018	11-20-2019
EMI Test Software	AUDIX	E3	Ve	ersion: 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
Spectrum analyzer	Ronde & Schwarz	F3F40	100303	11-21-2018	11-20-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-07-2018	03-06-2019
	A '1 4	Noossa	N/50540400	11-10-2017	11-09- 2018
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-10-2018	11-09- 2019
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-07-2018	03-06-2019
Signal Generator	R&S	SMR20	1008100050	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		
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
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	10-31-2018	10-30-2019
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	09-24-2018	09-23-2019
Simulated Station	Rohde & Schwarz	CMW500	140493	07-16-2018	07-15-2019

Conducted Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-07-2018	03-06-2019	
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2018	03-06-2019	
LISN	CHASE	MN2050D	1447	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	Software AUDIX E3 Version: 6.110919b)		





6 Test results and Measurement Data

6.1 Conducted Emission

Test Requirement: Test Method: ANSI C63.10: 2013 Test Frequency Range: Class / Severity: Class B Receiver setup: RBW=9kHz, VBW=30kHz Limit: Frequency range (MHz) Quasi-peak 0.15-0.5 66 to 56* 0.15-0.5 0.5-5 56 0.5-5 -5-30 60 5-30 * Decreases with the logarithm of the frequency. Test procedure Test setup and photographs) Test setup: Test setup: Test setup: Test table/insulation plane Test setup: Test table/insulation plane Test table/insulation plane Test table/insulation plane Test linstruments: Refer to section 5.9 for details Test mode: Refer to section 5.9 for details Test results: Passed	0.1 Conducted Emission	711				
Test Frequency Range: Class / Severity: Class B Receiver setup: RBW=9kHz, VBW=30kHz Limit: Frequency range (MHz) Quasi-peak 0.15-0.5 66 to 56* 0.15-0.5 5-30 60 5-30 * Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN	Test Requirement:					
Class / Severity: Receiver setup: RBW=9kHz, VBW=30kHz Limit: Frequency range (MHz) Quasi-peak 0.15-0.5 66 to 56* 0.15-0.5 0.5-5 56 0.5-5 5-30 60 0.5-5 5-30 60 0.5-5 5-30 60 0.5-8 1 Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN 40cm 80cm Filter AC power EQUIPMENT Line Impedence Stabilization Network Test table legist-2 bin Test Instruments: Refer to section 5.9 for details.	Test Method:	ANSI C63.10: 2013	ANSI C63.10: 2013			
Receiver setup: RBW=9kHz, VBW=30kHz Limit: Frequency range (MHz) Quasi-peak 0.15-0.5 66 to 56* 0.15-0.5 5-30 60 5-30 * Decreases with the logarithm of the frequency. Test procedure 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. 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). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN Reference Plane LISN Reguipment Under Test LISN Line impedence Stabilization Network Full Test Instruments: Refer to section 5.9 for details Refer to section 5.3 for details.	Test Frequency Range:	150kHz to 30MHz				
Limit: Frequency range (MHz)	Class / Severity:	Class B				
(MHz) Quasi-peak 0.15-0.5 66 to 56* 0.15-0.5 0.5-5 56 0.5-30 * Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane Comparison Filter AC power	Receiver setup:	RBW=9kHz, VBW=30kH	Z			
0.15-0.5 66 to 56* 0.15-0.5 0.5-5 56 0.5-5 5-30 60 5-30 * Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN 40cm 80cm Filter AC power Remark EUT: Equipment Under Test LISN Line impedence Stabilization Network Test table legist—0.5 in the impedence Stabilization Network Test table legist—0.5 in Conducted the second of the conducted to the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test table/Insulation plane Reference Plan	Limit:	Frequency range	Limit (dBuV)		
D.5-5 5-8 0.5-5 5-30 5-30 5-30 Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN		` '	·			
*Decreases with the logarithm of the frequency. Test procedure 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane Reference Plane Regulipment LISN AUX EQUIPMENT Test table/Insulation plane Remark E U.T. Equipment Under Test LISN Line impedence Stabilization Network Test table height-0 &m Test Instruments: Refer to section 5.9 for details.						
* Decreases with the logarithm of the frequency. 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane Reference Plane Reguipment LISN AC power EUT: Equipment Under Test LISN LISN Lish impedence Stabilization Network Test table height-0.8m Test Instruments: Refer to section 5.9 for details.						
1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN 40cm 80cm Filter AC power Remark EUT: Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m Test Instruments: Refer to section 5.9 for details.				5-30		
line impedance stabilization network (L.I.S.N.). It provides a 500hm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 500hm/50uH coupling impedance with 500hm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. Test setup: Reference Plane LISN 40cm 80cm Filter AC power Remark EUT Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m Test Instruments: Refer to section 5.9 for details.						
LISN 40cm 80cm Filter AC power Equipment E.U.T Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m Test Instruments: Refer to section 5.9 for details Test mode: Refer to section 5.3 for details.	I est procedure	 line impedance stabilization network (L.I.S.N.). It 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 				
Remark E.U.T Remark E.U.T: Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m Test Instruments: Refer to section 5.9 for details Refer to section 5.3 for details.	Test setup:	Reference Plane				
Test mode: Refer to section 5.3 for details.		AUX Equipment Test table/Insulation p Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilizar	.U.T Filter	AC power		
	Test Instruments:	Refer to section 5.9 for details				
Test results: Passed	Test mode:	Refer to section 5.3 for d	etails.			
	Test results:	Passed				



Measurement Data:

Product name:	HELLO 2	Product model:	HELLO 2
Test by:	Carey	Test mode:	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%
100 Level (dBuV) 90 70 50 2 3 30 10 -10 -15 .2 Trace: 27	.5 1	2 Frequency (MHz)	FCC PART 15.407 QP FCC PART 15.407 AV
Fre	Read LISN eq Level Factor		mit Over ine Limit Remark
ME	Iz dBuV dB	dB dBu∀ d	BuV dB
1 0.15 2 0.15 3 0.17 4 0.19 5 0.22 6 0.22 7 0.27 8 0.42 9 0.44 10 0.50 11 13.55 12 13.55	54 27.69 0.18 78 25.83 0.16 90 44.02 0.16 26 41.65 0.14 26 22.58 0.14 74 38.76 0.13 21 17.94 0.12 19 34.42 0.12 12 21.02 0.12 13 35.58 0.32	10. 78 38. 65 55 10. 77 36. 76 54 10. 76 54. 94 64 10. 75 52. 54 62 10. 75 33. 47 52 10. 74 49. 63 60 10. 73 28. 79 47 10. 74 45. 28 56 10. 76 31. 90 46 10. 91 46. 81 60	.78 -9.47 QP .78 -17.13 Average .59 -17.83 Average .02 -9.08 QP .61 -10.07 QP .61 -19.14 Average .98 -11.35 QP .42 -18.63 Average .89 -11.61 QP .00 -14.10 Average .00 -13.19 QP .00 -5.97 Average

Notes:

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



Product name:	HELLO 2	Product model:	HELLO 2
Test by:	Carey	Test mode:	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Huni: 55%
100 Level (dBuV) 90 70 50 2 30 10 -10.15 .2 Trace: 25	Read LISN C		10 20 30 nit Over ine Limit Remark
1 0.15 2 0.15 3 0.20 4 0.25 5 0.25 6 0.30 7 0.30 8 0.50 9 0.61 10 0.70 11 0.94 12 18.13	56 44.55 0.98 1 56 23.57 0.98 1 59 45.99 0.93 1 58 41.24 0.95 1 58 22.31 0.95 1 55 38.29 0.97 1 55 33.41 0.97 1 57 20.80 0.97 1 58 30.58 0.97 1 58 30.58 0.97 1	0.77 56.30 65. 0.77 35.32 55. 0.76 57.68 63. 0.75 52.94 61. 0.75 34.01 51. 0.74 50.00 60. 0.74 30.65 50. 0.76 45.14 56. 0.77 32.54 46. 0.77 42.32 56. 0.85 26.63 46.	69 -9.39 QP 69 -20.37 Average 23 -5.55 QP 51 -8.57 QP 51 -17.50 Average 10 -10.10 QP 10 -19.45 Average 00 -10.86 QP 00 -13.46 Average 00 -13.68 QP 00 -13.68 QP 00 -19.37 Average 00 -26.20 Average

Notes:

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





6.2 Conducted Output Power

Test Requirement: Test Method: Limit:	FCC Part15 E Section 15.407 (a) (1) (iv) RSS-247 Section 6.2.1.1 ANSI C63.10: 2013, KDB789033 Band 1: The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever is less.
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed





Measurement Data:

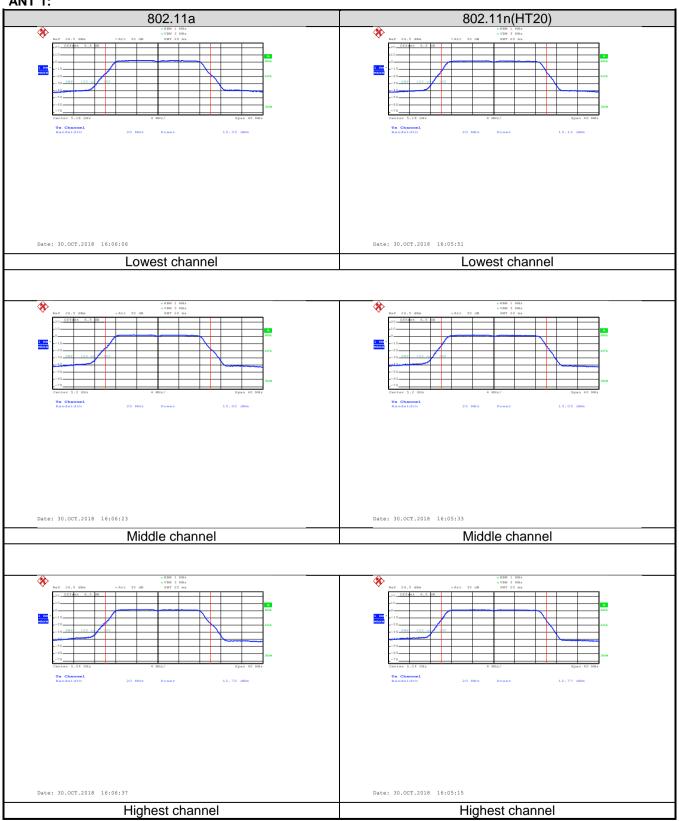
Test mode	Test channel	ANT port	Measured Power (dBm)	Total Power (dBm)	Limit(dBm)	Result
	Lowest	ANT 1	13.33	/		
	Lowest	ANT 2	13.28	,		
802.11a	Middle	ANT 1	13.02	/	24.00	
SISO	Middle	ANT 2	12.96	,	24.00	
	Highest	ANT 1	12.72	/		
	riigriest	ANT 2	12.66	,		
802.11n(H20) MIMO	Lowest	ANT 1	13.12	16.18		
	Lowest	ANT 2	13.22	10.10		
	Middle	ANT 1	13.05	16.00	24.00	Pass
		ANT 2	12.92	16.00	24.00	
	Highest	ANT 1	12.77	15.69		
		ANT 2	12.58	15.09		
	Lowest	ANT 1	12.76	15.79		
802.11n(H40)		ANT 2	12.80	15.79	24.00	
MIMO	Highest	ANT 1	12.29	15.33		
		ANT 2	12.34	15.55		
		ANT 1	13.13	40.47	24.00	
	Lowest	ANT 2	13.18	16.17		
802.11ac(H20)	Middle	ANT 1	13.09	16.04		
MIMO	ivildale	ANT 2	12.97	10.04	24.00	
	112.1	ANT 1	12.79	45.70		
	Highest	ANT 2	12.59	15.70		
802.11ac(H40) MIMO	Lowest	ANT 1	12.79	15.00		
	Lowest	ANT 2	12.78	15.80	24.00	
	Highest	ANT 1	12.31	45.07	24.00	_
		ANT 2	12.41	15.37		
802.11ac(H80)	Lowest	ANT 1	12.22	15.14	24.00	
MIMO	Lowest	ANT 2	12.04	15.14	24.00	



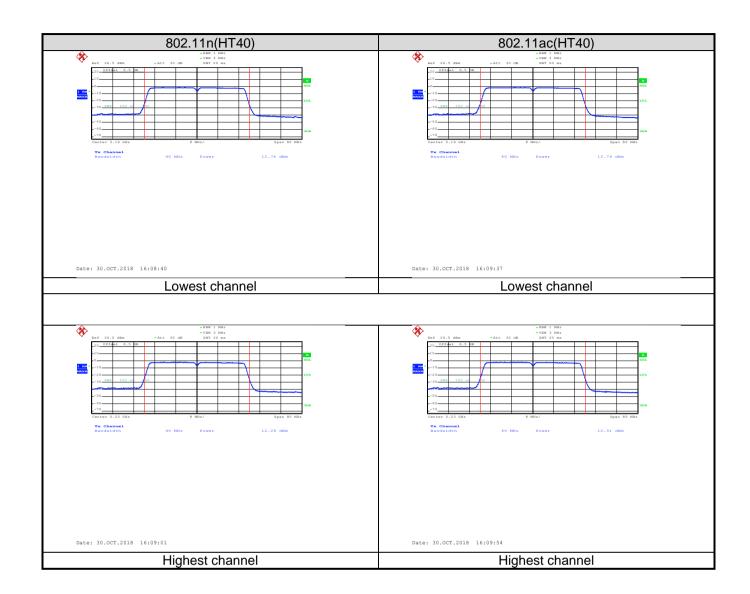


Test plot as follows:

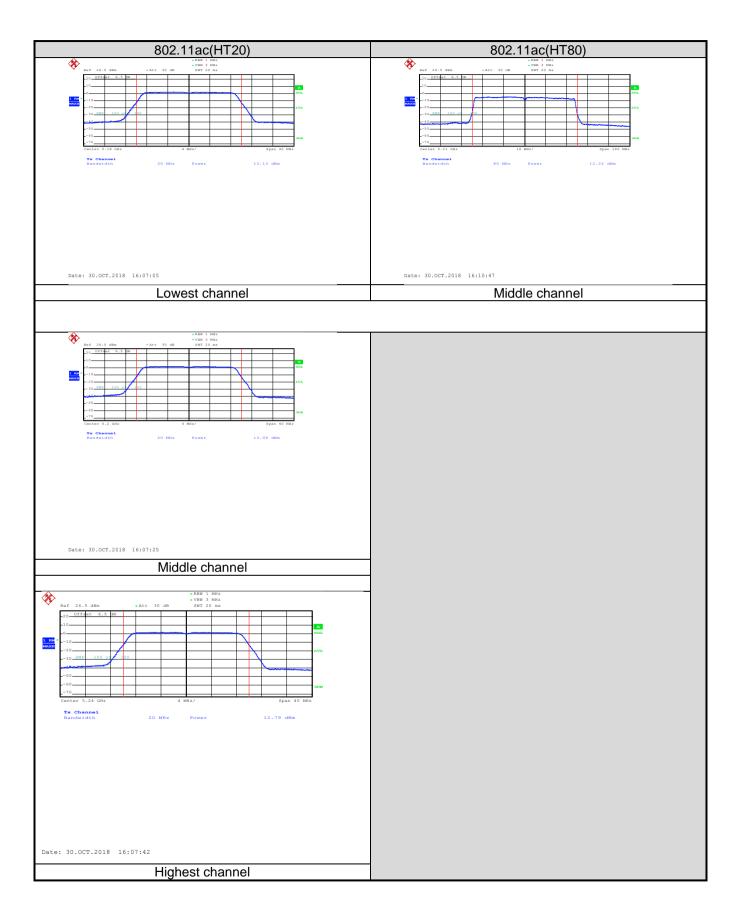
ANT 1:







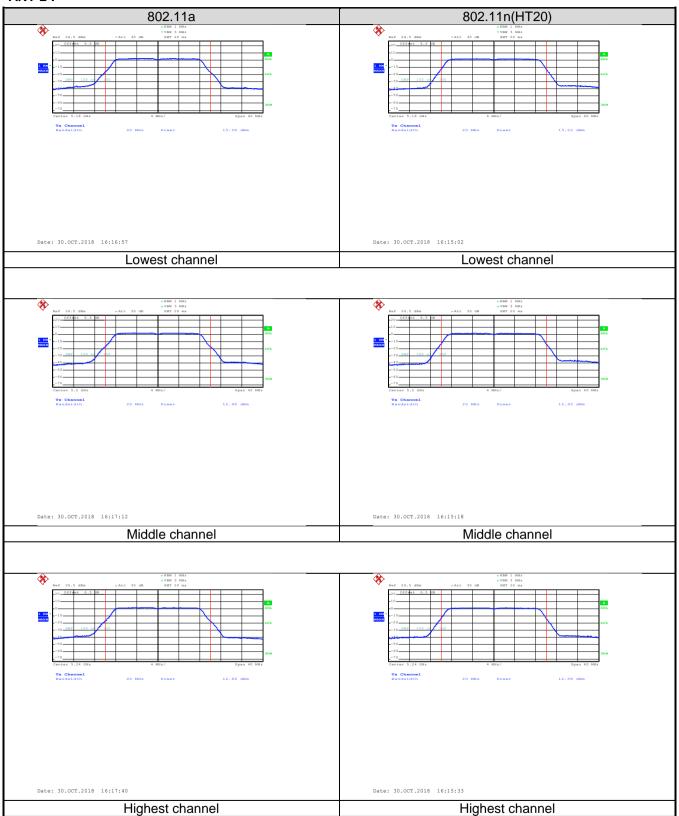




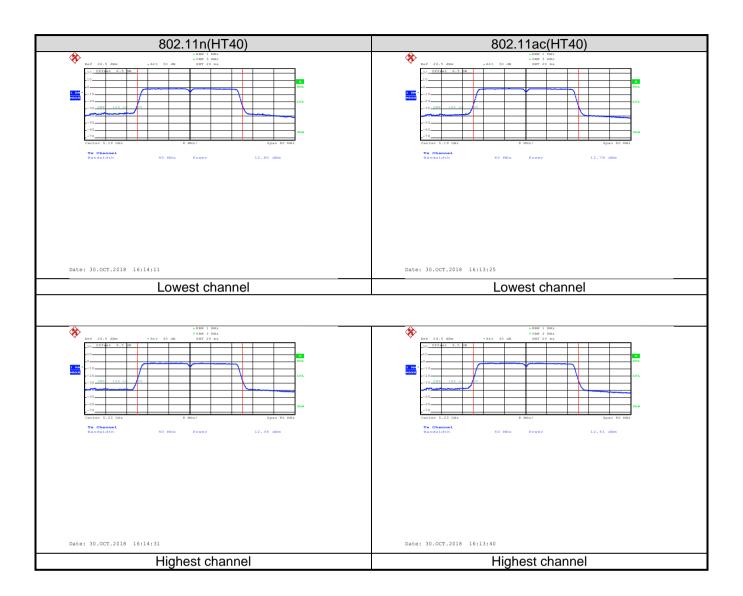




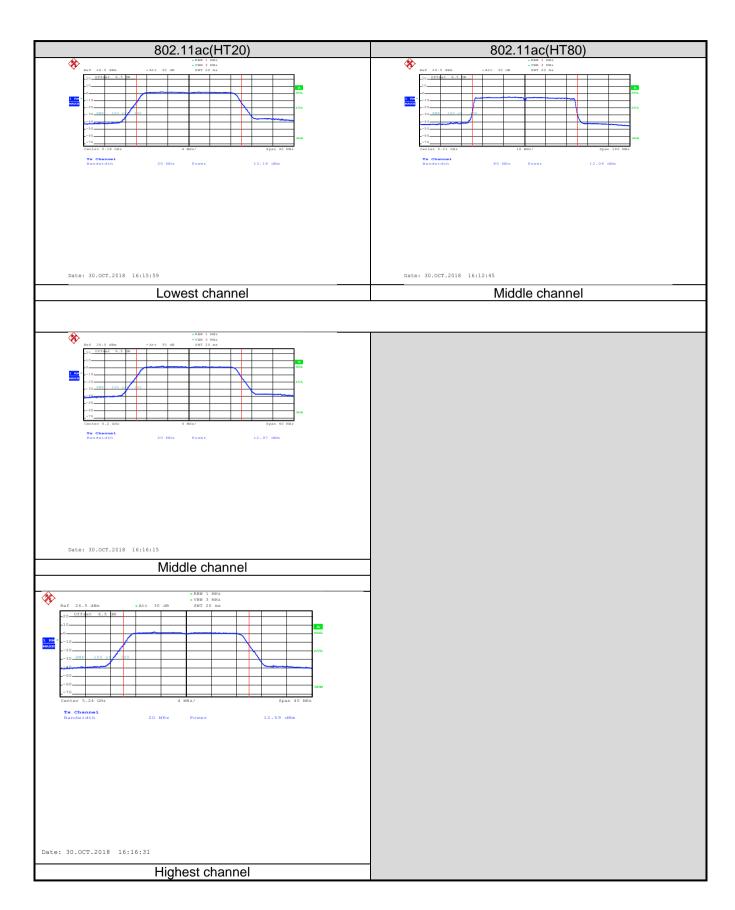
ANT 2:















6.3 Occupy Bandwidth

Test Requirement: Test Method:	FCC Part15 E Section 15.407 (a) (5) RSS-247 Section 6.2.1.2 ANSI C63.10:2013 and KDB 789033		
Limit:	Band 1: N/A (26dB Emission Bandwidth and 99% Occupy Bandwidth)		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Data:

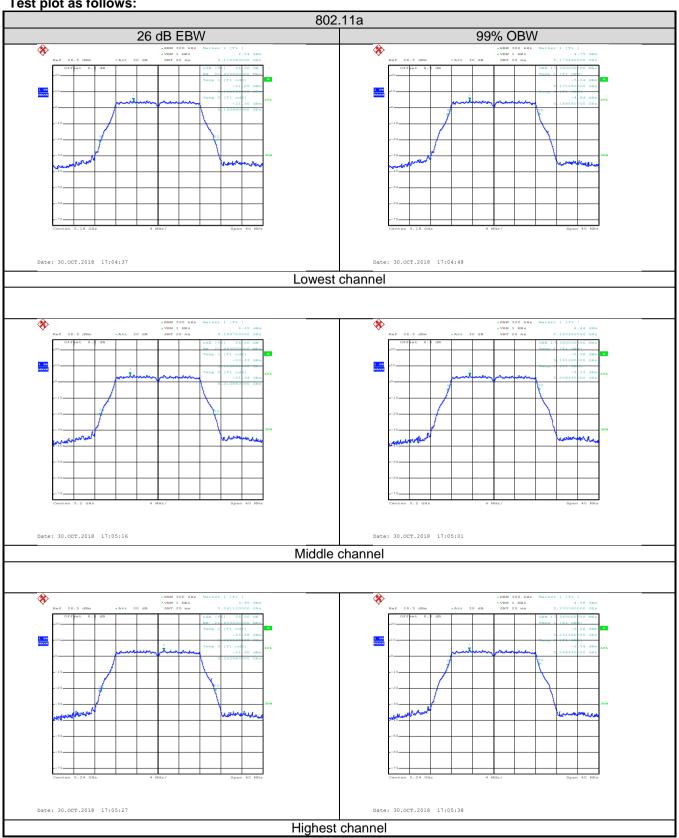
ANT1:

Toot		26dB Emission Bandwidth (MHz)						
Test Channel	802.11a	802.11n (HT20)	802.11n (HT40)	802.11ac (HT20)	802.11ac (HT40)	802.11ac (HT80)	Limit	Result
Lowest	21.92	22.24	42.08	21.92	42.08			
Middle	21.84	22.16		22.16		82.88	N/A	PASS
Highest	21.92	22.16	41.92	22.24	42.08			
T 1		999	% Occupy B	andwidth (Mh	Hz)			
Test Channel	802.11a	802.11n (HT20)	802.11n (HT40)	802.11ac (HT20)	802.11ac (HT40)	802.11ac (HT80)	Limit	Result
Lowest	17.36	18.48	37.12	18.16	37.12			
Middle	17.36	18.48		18.40		76.16	N/A	PASS
Highest	17.36	18.48	37.12	18.40	36.96			

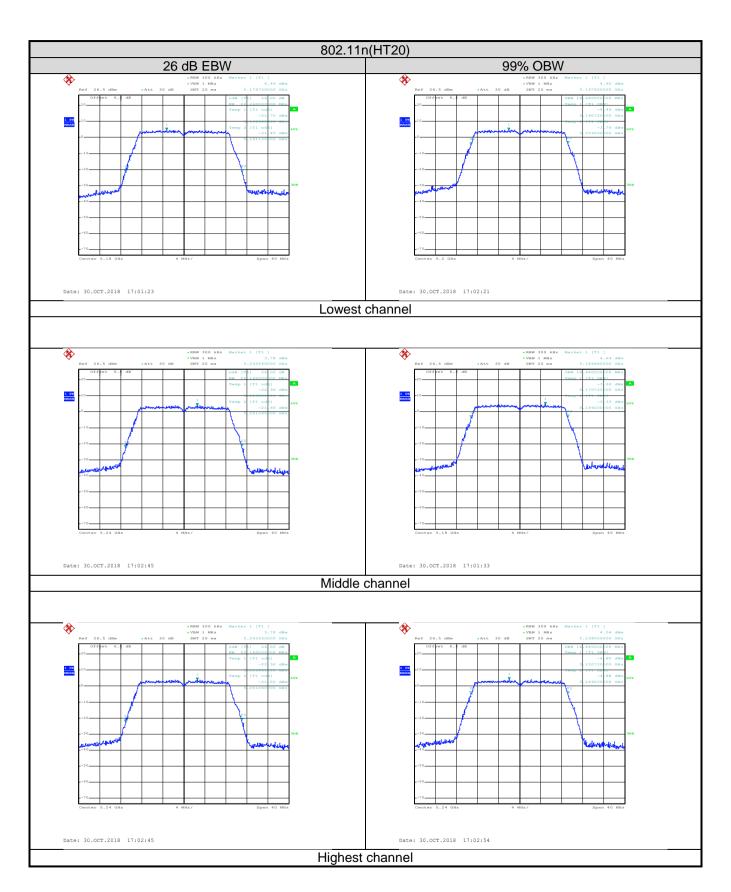




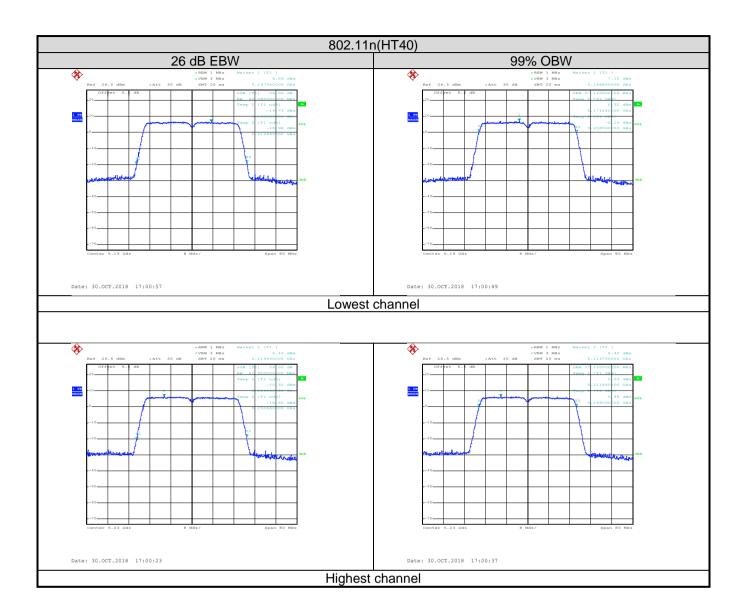
Test plot as follows:



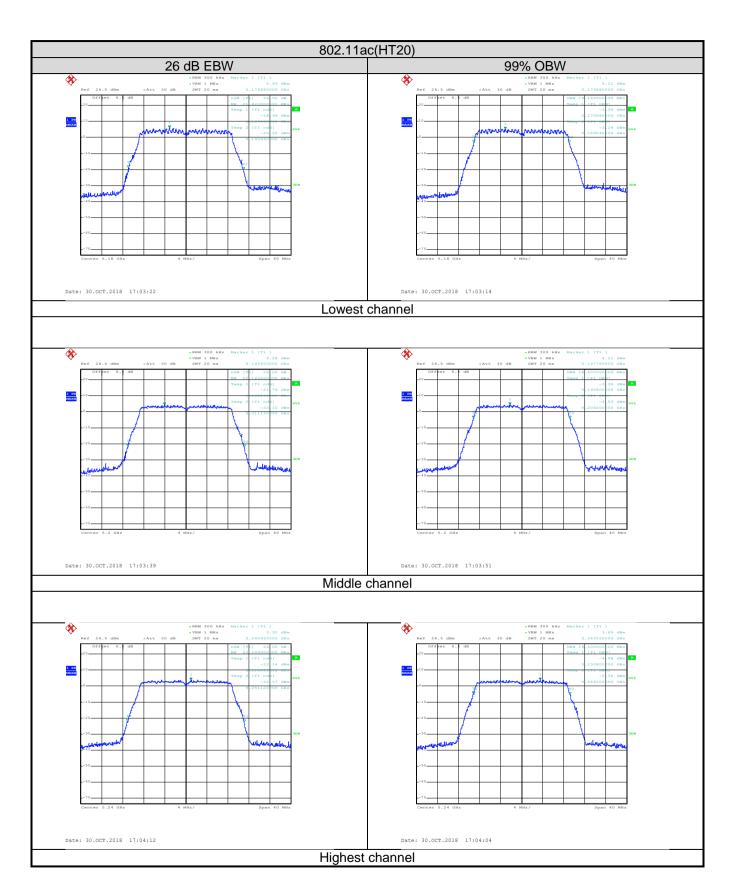




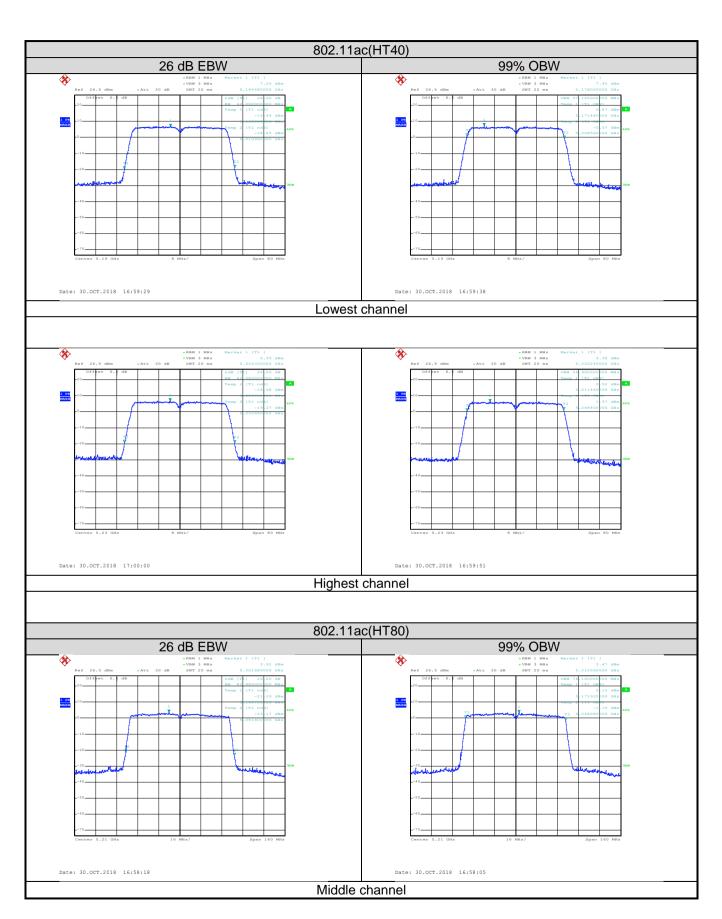
















Measurement Data:

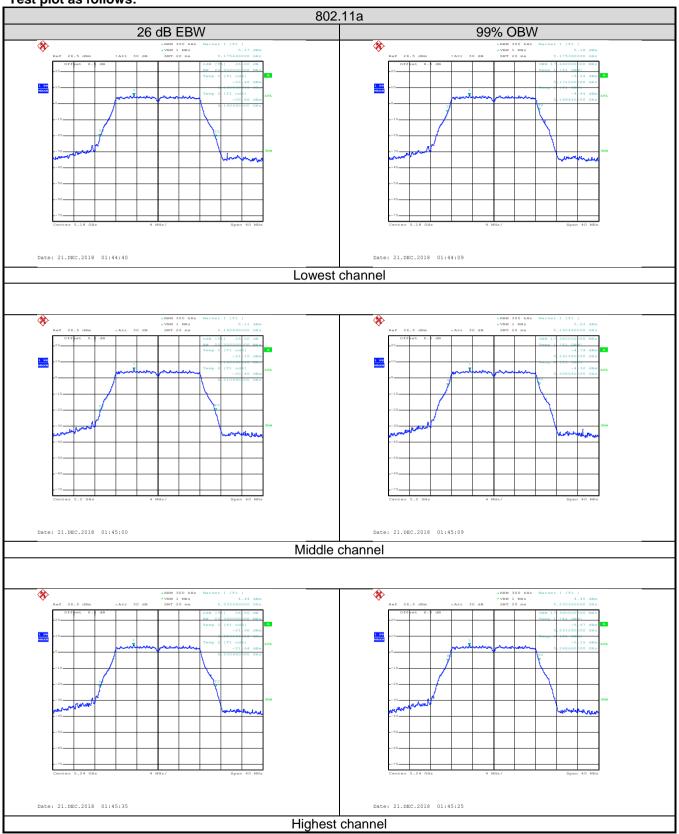
ANT2:

-		26dB Emission Bandwidth (MHz)						
Test Channel	802.11a	802.11n (HT20)	802.11n (HT40)	802.11ac (HT20)	802.11ac (HT40)	802.11ac (HT80)	Limit	Result
Lowest	22.00	22.16	41.92	22.24	41.92			
Middle	22.00	22.24		22.08		83.52	N/A	PASS
Highest	22.00	22.32	41.76	22.16	41.76			
Toot		999	% Occupy B	andwidth (Mh	Hz)			
Test Channel	802.11a	802.11n (HT20)	802.11n (HT40)	802.11ac (HT20)	802.11ac (HT40)	802.11ac (HT80)	Limit	Result
Lowest	17.44	18.40	37.12	18.40	37.12			
Middle	17.36	18.40		18.40		76.16	N/A	PASS
Highest	17.36	18.48	37.12	18.40	37.12			

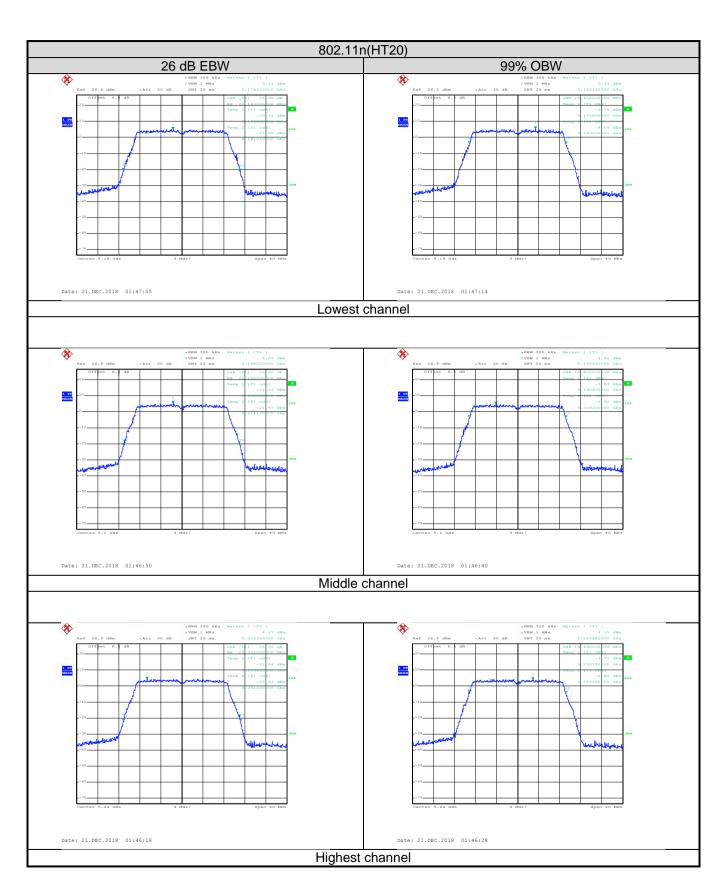




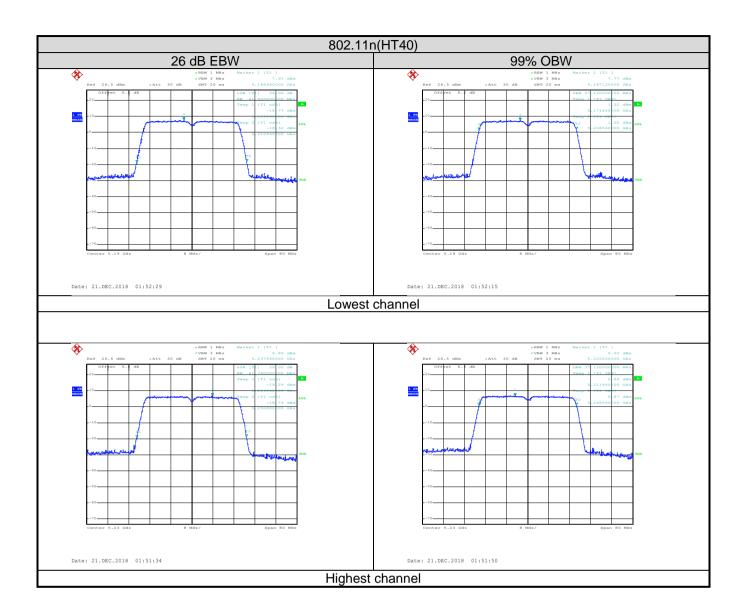
Test plot as follows:



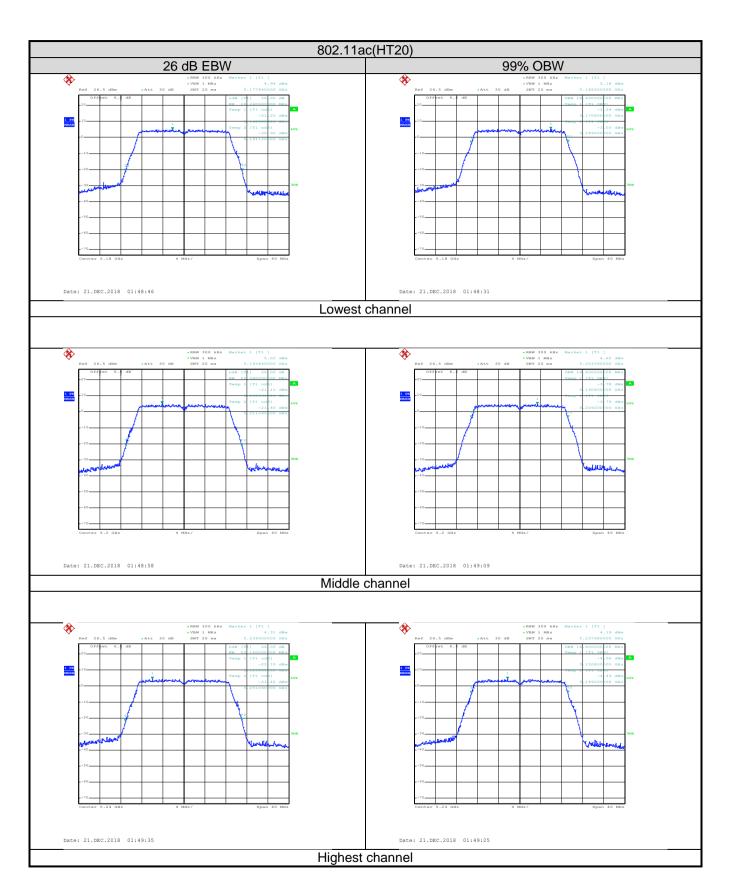




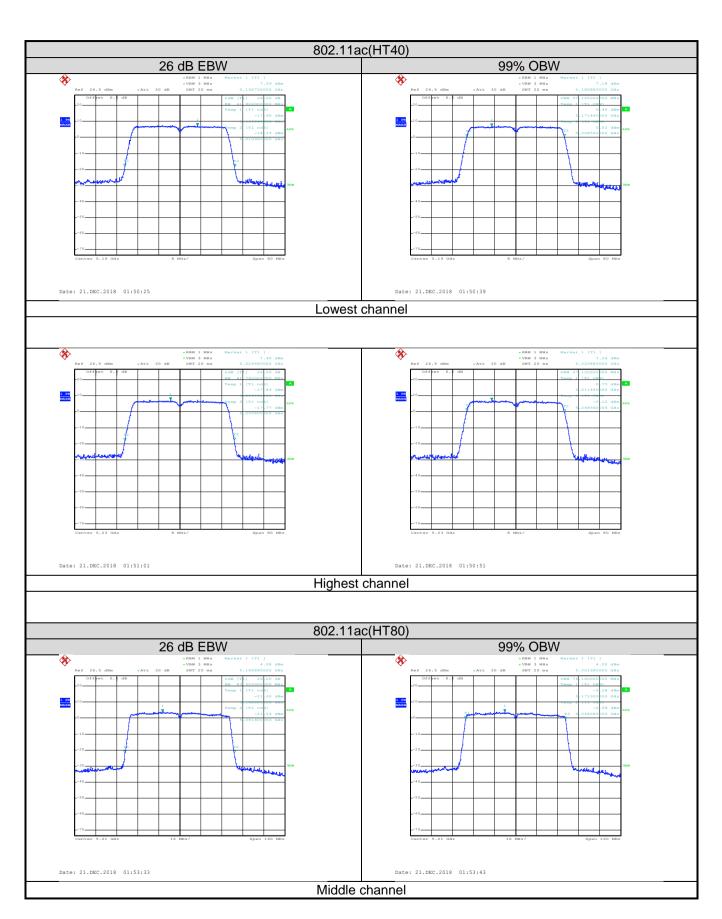
















6.4 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407 (a) (1) (iv) RSS-247 Section 6.2.1.1			
Test Method:	ANSI C63.10:2013, KDB 789033			
Limit:	Band 1: 11dBm/MHz			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test Instruments:	Refer to section 5.9 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Passed			





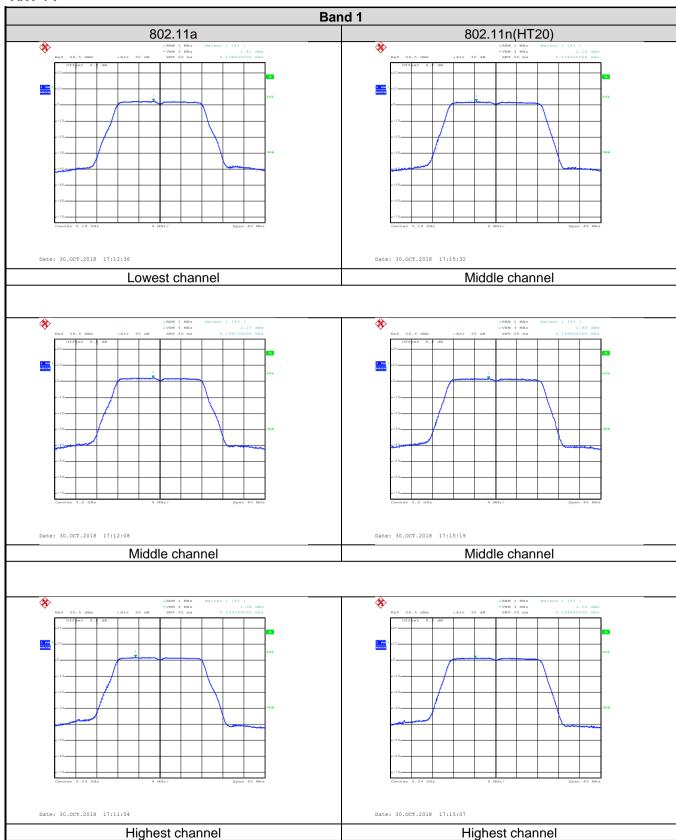
Measurement Data:

Test mode	Test channel	ANT port	Measured Power (dBm)	Total Power (dBm)	Limit(dBm)	Result
	Lowest	ANT 1	2.41	,		
	Lowest	ANT 2	2.53	/		
802.11a	Middle	ANT 1	2.17	/	11.00	
SISO	Middle	ANT 2	2.32	/		
	Highest	ANT 1	1.94	/		
	riignest	ANT 2	1.89	/		
	Laurant	ANT 1	2.15	F 4.4	11.00	
802.11n(H20) MIMO	Lowest	ANT 2	2.10	5.14		Pass
	Middle	ANT 1	1.80	4.00		
		ANT 2	1.90	4.86		
	Highest	ANT 1	1.55	4.54		
		ANT 2	1.51			
	Lowest	ANT 1	-1.39	1.60	11.00	
802.11n(H40)		ANT 2	-1.43			
MIMO	Highest	ANT 1	-1.70	1.30		
		ANT 2	-1.73			
		ANT 1	2.01		11.00	
	Lowest	ANT 2	2.45	5.25		
802.11ac(H20)	N 4: -1 -U -	ANT 1	1.80			
MIMO	Middle	ANT 2	1.70	4.76		
	Llimboot	ANT 1	1.38	4.00		
	Highest	ANT 2	1.15	4.28		
		ANT 1	-1.42	4.50	11.00	
802.11ac(H40) _ MIMO	Lowest	ANT 2	-1.44	1.58		
	Highest	ANT 1	-1.82	1.05		
		ANT 2	-2.11			
802.11ac(H80)		ANT 1	-4.44	4.00	11.00	
MIMO	Lowest	ANT 2	-4.95	-1.68		



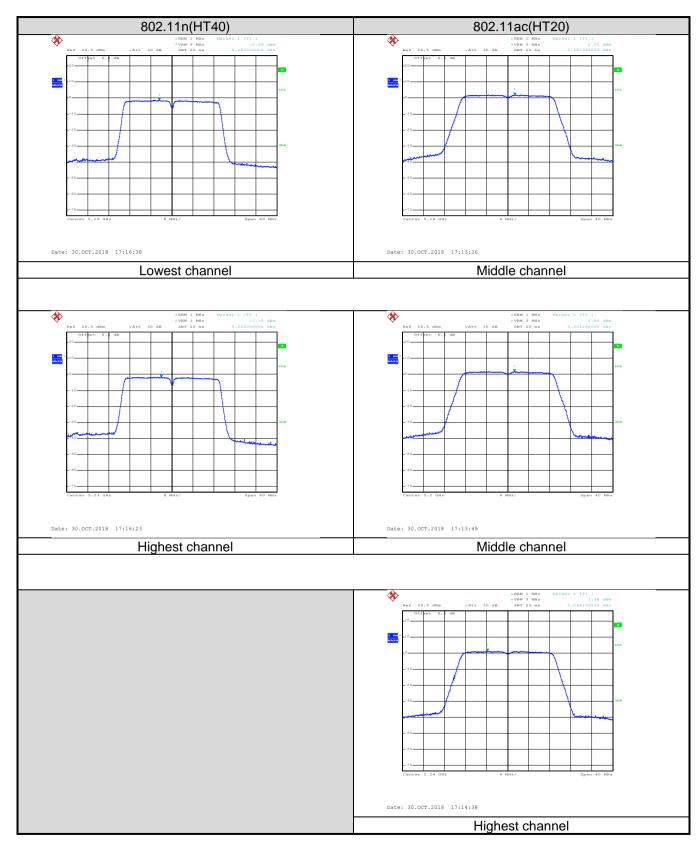
Test plot as follows:

ANT 1:



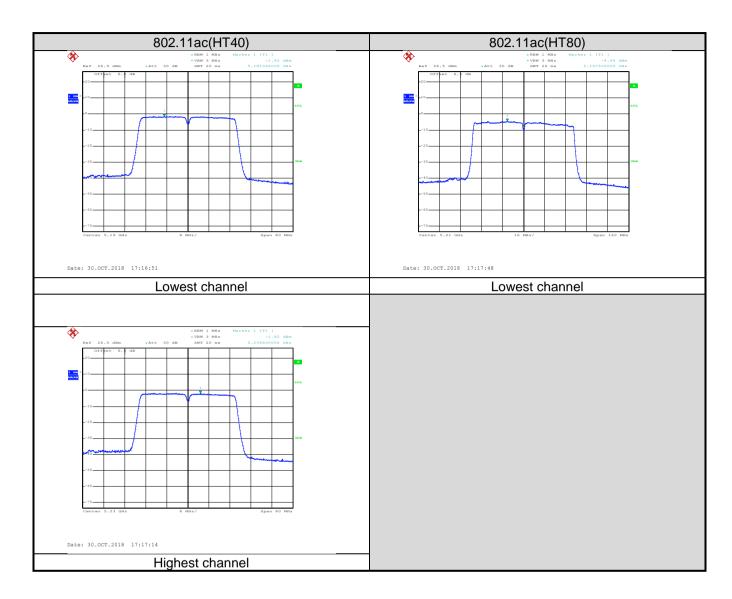








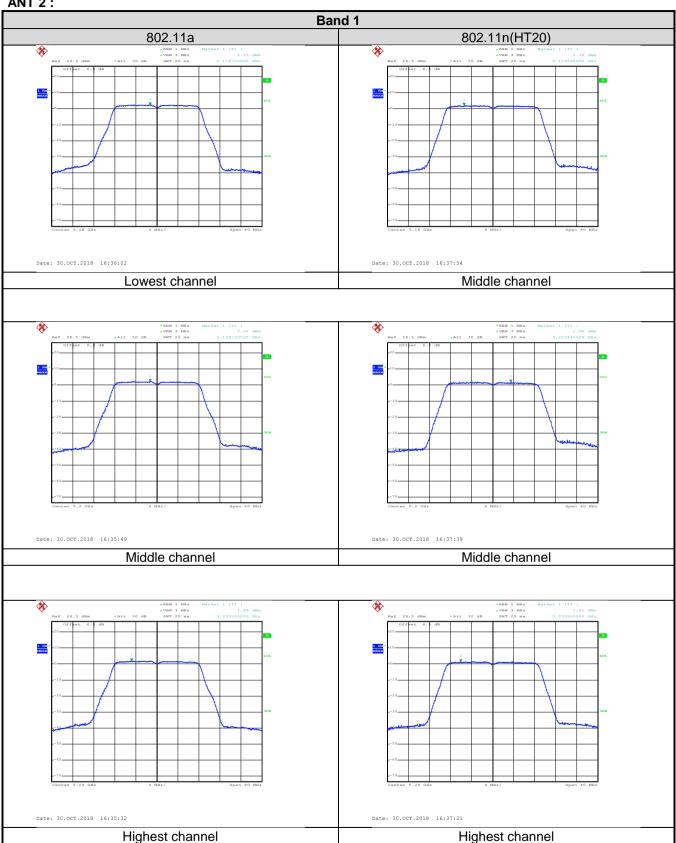






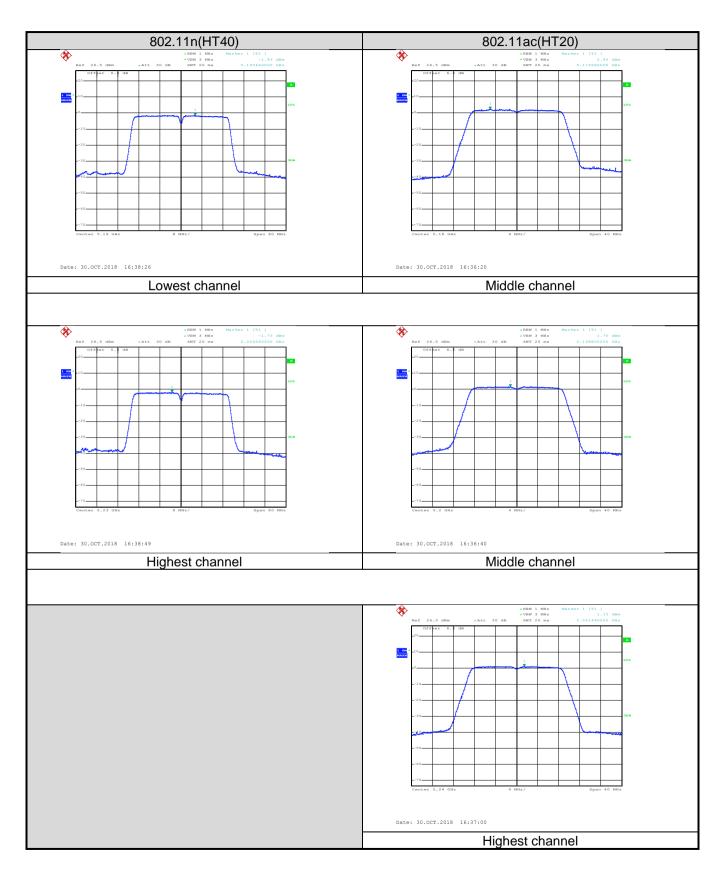


ANT 2:

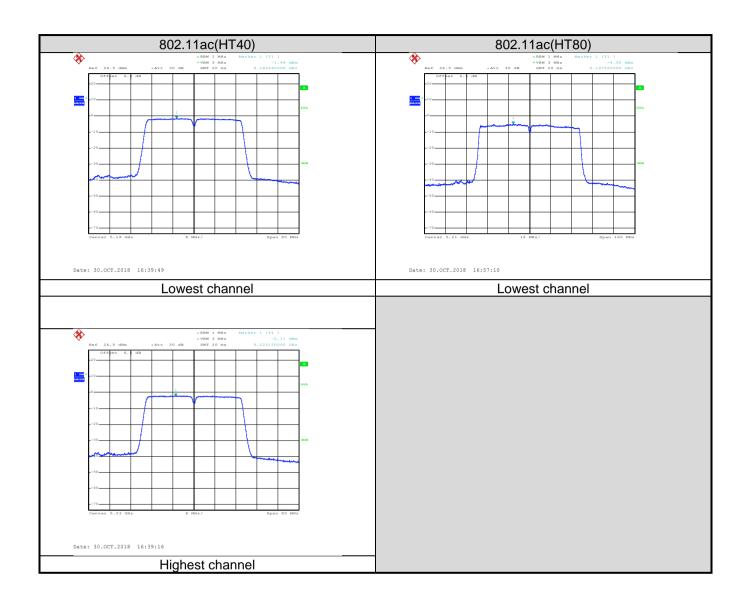
















6.5 Band Edge

Test Nethod: ANSI C63.10:2013 .KDB 789033 Receiver setup: Detector RBW VBW Remark Quasi-peak 120kHz 300kHz Quasi-peak Value RMS 1MHz 3MHz 3MHz Average Value RMS 1MHz 3MHz Average Value Limit: Band Limit (dBuV/m @3m) Remark Band 1 68.20 Peak Value Remark: 1. Band 1/2/3 limit: E[dByV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was turned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Test setup: Test instruments: Refer to section 5.9 for details Test rosults: Passed	6.5 Band Edge				
Detector RBW VBW Remark Quasi-peak Value RMS 1MHz 300kHz Quasi-peak Value RMS 1MHz Merage Value Band Limit (dBuV/m @3m) Remark Band 1 S4.00 Average Value Remark Remark	Test Requirement:		` '	ection 6.2.1.2	
Quasi-peak 120kHz 300kHz Average Value	Test Method:	ANSI C63.10:2013	, KDB 789033		
Cuasi-peak 120kHz 300kHz Quasi-peak Value	Receiver setup:	Detector	RBW	VBW	Remark
Band Limit (dBuV/m ®3m) Remark		Quasi-peak	120kHz	300kHz	Quasi-peak Value
Band 1 68.20 Peak Value Remark: 1. Band 1/2/3 limit: E[dBµV/m] = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm. Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Test Instruments: Refer to section 5.9 for details Refer to section 5.3 for details		RMS	1MHz	3MHz	Average Value
Remark: 1. Band 1/2/3 limit:	Limit:	Band			
Remark: 1. Band 1/2/3 limit:		Band 1			
1. Band 1/2/3 limit: EigByV/m = EIRP[dBm] + 95.2=68.2 dBuV/m, for EIPR[dBm]=-27dBm.			54	.00	Average Value
Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was turned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Refer to section 5.9 for details Refer to section 5.3 for details					
Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Refer to section 5.9 for details Refer to section 5.9 for details				2 dBu\//m for E	IDD[dDm]_ 27dDm
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. Test setup: Test setup: Test Instruments: Refer to section 5.9 for details Refer to section 5.3 for details	Test Procedure:	 The EUT was the ground at a to determine the to determine the second and the second at the ground to wer. The antenna he the ground to Both horizonta make the mea For each suspecase and then meters and the to find the maximum specified Bands. If the emission the limit specifier. 	placed on the top a 3 meter camber he position of the set 3 meters away has mounted or neight is varied frought is varied frought in the maximum reading. The antenna was the rotatable was turkimum reading. The reading the restrict of the EUT ried, then testing communication is a set of the EUT ried, then testing communication is a set of the set of	of a rotating ta . The table was highest radiation of from the inter- in the top of a va- m one meter to ximum value of trizations of the re EUT was are tuned to height right from 0 de to Peak Dete- tion peak mode in peak mode stopped	able 0.8 meters above is rotated 360 degrees on. Inference-receiving ariable-height antenna of four meters above if the field strength. It is antenna are set to a ranged to its worst its from 1 meter to 4 its from 1 mete
Test Instruments: Refer to section 5.9 for details Test mode: Refer to section 5.3 for details		have 10dB ma	argin would be re-t	tested one by d	one using peak, quasi-
Test Instruments: Refer to section 5.9 for details Test mode: Refer to section 5.3 for details			-		
Test mode: Refer to section 5.3 for details	Test setup:		(Turntable) Ground Re	reference Plane	na Tower
	Test Instruments:	Refer to section 5.9	ofor details		
Test results: Passed	Test mode:	Refer to section 5.3	3 for details		
	Test results:	Passed			





Measurement Data (worst case):

SISO ANT 1:

			Ва	nd 1 – 802.1	1a				
			Test cha	nnel: Lowest	channel				
			Dete	ctor: Peak Va	alue				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
5150.00	48.27	36.23	7.05	41.93	49.62	68.20	-18.58	Horizontal	
5150.00	47.99	36.23	7.05	41.93	49.34	68.20	-18.86	Vertical	
Detector: Average Value									
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
5150.00	38.68	36.23	7.05	41.93	40.03	54.00	-13.97	Horizontal	
5150.00	38.94	36.23	7.05	41.93	40.29	54.00	-13.71	Vertical	
			Test chai	nnel: Highest	channel				
			Dete	ctor: Peak Va	alue				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
5350.00	48.45	35.37	7.11	41.89	49.04	68.20	-19.16	Horizontal	
5350.00	47.39	35.37	7.11	41.89	47.98	68.20	-20.22	Vertical	
			Detec	tor: Average '	Value				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
5350.00	38.05	35.37	7.11	41.89	38.64	54.00	-15.36	Horizontal	
5350.00	38.68	35.37	7.11	41.89	39.27	54.00	-14.73	Vertical	
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.





SISO ANT 2:

			Ва	nd 1 – 802.1	1a			
			Test cha	nnel: Lowest	channel			
			Dete	ector: Peak V	alue			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.42	36.23	7.05	41.93	49.77	68.20	-18.43	Horizontal
5150.00	47.57	36.23	7.05	41.93	48.92	68.20	-19.28	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	38.99	36.23	7.05	41.93	40.34	54.00	-13.66	Horizontal
5150.00	38.15	36.23	7.05	41.93	39.50	54.00	-14.50	Vertical
				nnel: Highest				
	T		1	ector: Peak V	alue			I
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.36	35.37	7.11	41.89	48.95	68.20	-19.25	Horizontal
5350.00	47.74	35.37	7.11	41.89	48.33	68.20	-19.87	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.62	35.37	7.11	41.89	39.21	54.00	-14.79	Horizontal
5350.00	38.66	35.37	7.11	41.89	39.25	54.00	-14.75	Vertical
Damadu			-					

Remark

^{3.} Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

^{4.} The emission levels of other frequencies are very lower than the limit and not show in test report.





MIMO:

	Band 1 - 802.11n(HT20)										
			Test cha	nnel: Lowest	channel						
			D	etector: Peal	<						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5150.00	48.95	36.23	7.05	41.93	50.30	68.20	-17.90	Horizontal			
5150.00	47.41	36.23	7.05	41.93	48.76	68.20	-19.44	Vertical			
			De	tector: Avera	ge						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5150.00	38.54	36.23	7.05	41.93	39.89	54.00	-14.11	Horizontal			
5150.00	38.29	36.23	7.05	41.93	39.64	54.00	-14.36	Vertical			
			Test char	nnel: Highest	channel						
			Dete	ctor: Peak V	alue						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5350.00	48.96	35.37	7.11	41.89	49.55	68.20	-18.65	Horizontal			
5350.00	47.41	35.37	7.11	41.89	48.00	68.20	-20.20	Vertical			
			Detect	tor: Average	Value						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5350.00	38.82	35.37	7.11	41.89	39.41	54.00	-14.59	Horizontal			
0000.00											

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.





			Band	1 – 802.11n(l	HT40)			
			Test cha	nnel: Lowest	channel			
			Dete	ctor: Peak Va	alue			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.36	7.05	41.93	41.93	55.41	68.20	-12.79	Horizontal
5150.00	47.97	7.05	41.93	41.93	55.02	68.20	-13.18	Vertical
			Detec	tor: Average '	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	38.11	7.05	41.93	41.93	45.16	54.00	-8.84	Horizontal
5150.00	38.18	7.05	41.93	41.93	45.23	54.00	-8.77	Vertical
			Tost char	nnel: Highest	channol			
				ctor: Peak Va				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.31	35.37	35.37	7.11	41.89	68.20	-26.31	Horizontal
5350.00	48.05	35.37	35.37	7.11	41.89	68.20	-26.31	Vertical
			Detec	tor: Average '	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.22	35.37	7.11	41.89	38.81	54.00	-15.19	Horizontal
5350.00	38.58	35.37	7.11	41.89	39.17	54.00	-14.83	Vertical

^{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.





			Band 1	- 802.11ac(HT20)			
			Test cha	nnel: Lowest	channel			
			Dete	ector: Peak Va	alue			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	48.29	36.23	7.05	41.93	49.64	68.20	-18.56	Horizontal
5150.00	48.11	36.23	7.05	41.93	49.46	68.20	-18.74	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5150.00	38.19	36.23	7.05	41.93	39.54	54.00	-14.46	Horizontal
5150.00	38.68	36.23	7.05	41.93	40.03	54.00	-13.97	Vertical
				nnel: Highest				
		-		ector: Peak Va	alue		_	I
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	48.68	35.37	7.11	41.89	49.27	68.20	-18.93	Horizontal
5350.00	47.76	35.37	7.11	41.89	48.35	68.20	-19.85	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5350.00	38.47	35.37	7.11	41.89	39.06	54.00	-14.94	Horizontal
5350.00	38.54	35.37	7.11	41.89	39.13	54.00	-14.87	Vertical

^{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.





_ Read	Antenna			channel										
Read	Antenna	Dete		Test channel: Lowest channel										
Read	Antenna	Detector: Peak Value												
Frequency Level (MHz) (dBuV/r	Factor	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization							
5150.00 48.89	7.05	41.93	41.93	55.94	68.20	-12.26	Horizontal							
5150.00 47.93	7.05	41.93	41.93	54.98	68.20	-13.22	Vertical							
Detector: Average Value														
Frequency (MHz) Read Level (dBuV/r	Antenna Factor) (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization							
5150.00 38.89	7.05	41.93	41.93	45.94	54.00	-8.06	Horizontal							
5150.00 38.11	7.05	41.93	41.93	45.16	54.00	-8.84	Vertical							
		Test cha	nnel: Highest	channel										
_		Dete	ector: Peak V	alue										
Frequency (MHz) Read Level (dBuV/r	Antenna Factor) (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization							
5350.00 48.57	35.37	35.37	7.11	41.89	68.20	-26.31	Horizontal							
5350.00 48.35	35.37	35.37	7.11	41.89	68.20	-26.31	Vertical							
		Detec	tor: Average	Value										
Frequency (MHz) Read Level (dBuV/r	Antenna Factor) (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization							
5350.00 37.58	35.37	7.11	41.89	38.17	54.00	-15.83	Horizontal							
5350.00 37.97	35.37	7.11	41.89	38.56	54.00	-15.44	Vertical							

^{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.





	Band 1 – 802.11ac(HT80)										
	Test channel: Lowest channel										
	Detector: Peak Value										
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5150.00	48.54	35.37	35.37	7.11	41.89	68.20	-26.31	Horizontal			
5150.00	47.26	35.37	35.37	7.11	41.89	68.20	-26.31	Vertical			
			Detec	tor: Average	Value						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5150.00	38.66	35.37	7.11	41.89	39.25	54.00	-14.75	Horizontal			
5150.00	38.06	35.37	7.11	41.89	38.65	54.00	-15.35	Vertical			

^{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.



6.6 Spurious Emission

6.6.1 Restricted Band

0.0.1	Restricted Band							
	Test Requirement:	FCC Part15 E S		•	•			
		RSS-GEN Section		RSS-2	247 Section 6	.2.1.2		
	Test Method:	ANSI C63.10: 20)13					
	Test Frequency Range:	4.5 GHz to 5.15	GHz an	d 5.350	GHz to 5.46G	Hz		
	Test site:	Measurement Di	stance:	3m				<u>, </u>
	Receiver setup:	Frequency	Dete		RBW		BW	Remark
		Above 1GHz	Pea RM		1MHz 1MHz		ЛНz ЛНz	Peak Value Average Value
	Limit:	Frequency	1		t (dBuV/m @:		/11 12	Remark
		Above 1GH			74.00			Peak Value
					54.00			verage Value
	Test Procedure:	the ground to determine 2. The EUT was antenna, who tower. 3. The antennathe ground Both horizon make the m 4. For each sucase and the meters and to find the n 5. The test-reconspecified Both horizon make the meters and the find the number of the EUT have 10dB	at a 3 me the poets set 3 mich was a height to deternate and easurer spected en the rotal and the rotal and widt ion lever ecified, the would be margin versus and would be margin vers	steer casition of meters amount is variumine the verticament. If emission readily stem with life of the hen teste e report would be still a st	amber. The tape of the highest is away from the ted on the tope of the maximum of the maximum of the ted. Otherwise ted. Otherwise of the ted.	meter value as of the mode at the stoppes the pone by	as rota tion. erferer variab to four of the he ante arrange ghts fro degree tect Fu de. e was ped an emiss one u	r meters above field strength. enna are set to ed to its worst om 1 meter to 4 es to 360 degrees
	Test setup:		AE (Tu	EUT Intable) Test	Ground Reference Plane Receiver Argus	artenna Ann	sitenna Tower	
	Test Instruments:	Refer to section	5.9 for a	details				
	Test mode:	Refer to section						
	Test results:	Passed						
		I						

Measurement Data (worst case):





SISO ANT 1:

	Band 1 - 802.11a										
			Test cha	nnel: Lowest	channel						
			Dete	ector: Peak Va	alue						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
4500.00	47.56	31.00	6.80	42.05	43.31	74.00	-30.69	Horizontal			
4500.00	47.78	31.00	6.80	42.05	43.53	74.00	-30.47	Vertical			
			Detec	tor: Average	Value						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
4500.00	37.74	31.00	6.80	42.05	33.49	54.00	-20.51	Horizontal			
4500.00	37.62	31.00	6.80	42.05	33.37	54.00	-20.63	Vertical			
			Test cha	nnel: Highest	channel						
			Dete	ctor: Peak Va	alue						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5460.00	47.03	32.36	7.18	41.85	44.72	74.00	-29.28	Horizontal			
5460.00	47.58	32.36	7.18	41.85	45.27	74.00	-28.73	Vertical			
			Detec	tor: Average	Value						
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization			
5460.00	37.03	32.36	7.18	41.85	34.72	54.00	-19.28	Horizontal			
5460.00	37.62	32.36	7.18	41.85	35.31	54.00	-18.69	Vertical			

Remark:

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

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





SISO ANT 2:

4500.00	Read Level dBuV/m)	Antenna	Dete		channel											
(MHz) (c	Level	Antenna		ctor: Peak V	Test channel: Lowest channel											
(MHz) (c	Level	Antenna		Detector: Peak Value												
-	aba v/III)	Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization								
	47.58	31.00	6.80	42.05	43.33	74.00	-30.67	Horizontal								
4500.00	47.97	31.00	6.80	42.05	43.72	74.00	-30.28	Vertical								
			Detect	tor: Average '	Value											
Frequency (MHz)	Read Level dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization								
4500.00	37.53	31.00	6.80	42.05	33.28	54.00	-20.72	Horizontal								
4500.00	37.29	31.00	6.80	42.05	33.04	54.00	-20.96	Vertical								
				nnel: Highest												
				ctor: Peak Va	alue			I								
Frequency (MHz)	Read Level dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization								
5460.00	47.62	32.36	7.18	41.85	45.31	74.00	-28.69	Horizontal								
5460.00	47.41	32.36	7.18	41.85	45.10	74.00	-28.90	Vertical								
			Detect	tor: Average '	Value											
Frequency (MHz)	Read Level dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization								
5460.00	37.11	32.36	7.18	41.85	34.80	54.00	-19.20	Horizontal								
5460.00	37.98	32.36	7.18	41.85	35.67	54.00	-18.33	Vertical								

Remark:

^{3.} Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

^{4.} The emission levels of other frequencies are very lower than the limit and not show in test report.





MIMO:

MIMO:								
			Band	1 – 802.11n(l	HT20)			
			Test cha	nnel: Lowest	channel			
			Dete	ector: Peak Va	alue			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	47.26	31.00	6.80	42.05	43.01	74.00	-30.99	Horizontal
4500.00	47.52	31.00	6.80	42.05	43.27	74.00	-30.73	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4500.00	37.51	31.00	6.80	42.05	33.26	54.00	-20.74	Horizontal
4500.00	37.10	31.00	6.80	42.05	32.85	54.00	-21.15	Vertical
			Test cha	nnel: Highest	channel			
			Dete	ector: Peak Va	alue			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	47.37	32.36	7.18	41.85	45.06	74.00	-28.94	Horizontal
5460.00	47.36	32.36	7.18	41.85	45.05	74.00	-28.95	Vertical
			Detec	tor: Average	Value			
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5460.00	37.82	32.36	7.18	41.85	35.51	54.00	-18.49	Horizontal
5460.00	37.43	32.36	7.18	41.85	35.12	54.00	-18.88	Vertical
_								

Remark

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

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





	Band 1 – 802.11n(HT40)											
			Test cha	nnel: Lowest	channel							
			Dete	ctor: Peak V	alue							
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
4500.00	47.11	31.00	6.80	42.05	42.86	74.00	-31.14	Horizontal				
4500.00	47.18	31.00	6.80	42.05	42.93	74.00	-31.07	Vertical				
Detector: Average Value												
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
4500.00	37.25	31.00	6.80	42.05	33.00	54.00	-21.00	Horizontal				
4500.00	37.29	31.00	6.80	42.05	33.04	54.00	-20.96	Vertical				
				nnel: Highest								
			Dete	ctor: Peak V	alue							
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
5460.00	47.37	32.36	7.18	41.85	45.06	74.00	-28.94	Horizontal				
5460.00	47.82	32.36	7.18	41.85	45.51	74.00	-28.49	Vertical				
			Detec	tor: Average	Value							
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
5460.00	37.39	32.36	7.18	41.85	35.08	54.00	-18.92	Horizontal				
5460.00	37.48	32.36	7.18	41.85	35.17	54.00	-18.83	Vertical				
Domorla												

^{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.





			Band 1	l – 802.11ac	(HT20)					
			Test cha	nnel: Lowest	channel					
			Dete	ector: Peak V	alue					
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
4500.00	47.75	31.00	6.80	42.05	43.50	74.00	-30.50	Horizontal		
4500.00	47.03	31.00	6.80	42.05	42.78	74.00	-31.22	Vertical		
Detector: Average Value										
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
4500.00	37.11	31.00	6.80	42.05	32.86	54.00	-21.14	Horizontal		
4500.00	37.45	31.00	6.80	42.05	33.20	54.00	-20.80	Vertical		
				nnel: Highest						
	T			ector: Peak V	alue	T				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
5460.00	47.35	32.36	7.18	41.85	45.04	74.00	-28.96	Horizontal		
5460.00	47.67	32.36	7.18	41.85	45.36	74.00	-28.64	Vertical		
			Detec	tor: Average	Value					
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
5460.00	37.68	32.36	7.18	41.85	35.37	54.00	-18.63	Horizontal		
5460.00	37.31	32.36	7.18	41.85	35.00	54.00	-19.00	Vertical		
Remark [.]										

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

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





	Band 1 – 802.11ac(HT40)											
			Test cha	nnel: Lowest	channel							
			Dete	ctor: Peak V	alue							
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
4500.00	47.75	31.00	6.80	42.05	43.50	74.00	-30.50	Horizontal				
4500.00	47.77	31.00	6.80	42.05	43.52	74.00	-30.48	Vertical				
Detector: Average Value												
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
4500.00	37.91	31.00	6.80	42.05	33.66	54.00	-20.34	Horizontal				
4500.00	37.42	31.00	6.80	42.05	33.17	54.00	-20.83	Vertical				
				nnel: Highest								
			Dete	ctor: Peak V	alue			T				
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
5460.00	47.86	32.36	7.18	41.85	45.55	74.00	-28.45	Horizontal				
5460.00	47.42	32.36	7.18	41.85	45.11	74.00	-28.89	Vertical				
			Detec	tor: Average	Value							
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization				
5460.00	37.38	32.36	7.18	41.85	35.07	54.00	-18.93	Horizontal				
5460.00	37.66	32.36	7.18	41.85	35.35	54.00	-18.65	Vertical				
Domorla												

^{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.





			Band 1	– 802.11ac((HT80)					
			Test cha	nnel: Lowest	channel					
			Dete	ctor: Peak Va	alue					
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
4500.00	47.68	31.00	6.80	42.05	43.43	74.00	-30.57	Horizontal		
4500.00	47.39	31.00	6.80	42.05	43.14	74.00	-30.86	Vertical		
Detector: Average Value										
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
4500.00	37.25	31.00	6.80	42.05	33.00	54.00	-21.00	Horizontal		
4500.00	37.85	31.00	6.80	42.05	33.60	54.00	-20.40	Vertical		
				nnel: Highest						
			Dete	ctor: Peak Va	alue					
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
5460.00	47.56	32.36	7.18	41.85	45.25	74.00	-28.75	Horizontal		
5460.00	47.32	32.36	7.18	41.85	45.01	74.00	-28.99	Vertical		
			Detec	tor: Average	Value					
Frequency (MHz)	Read Level (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization		
5460.00	37.47	32.36	7.18	41.85	35.16	54.00	-18.84	Horizontal		
5460.00	37.42	32.36	7.18	41.85	35.11	54.00	-18.89	Vertical		

^{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.



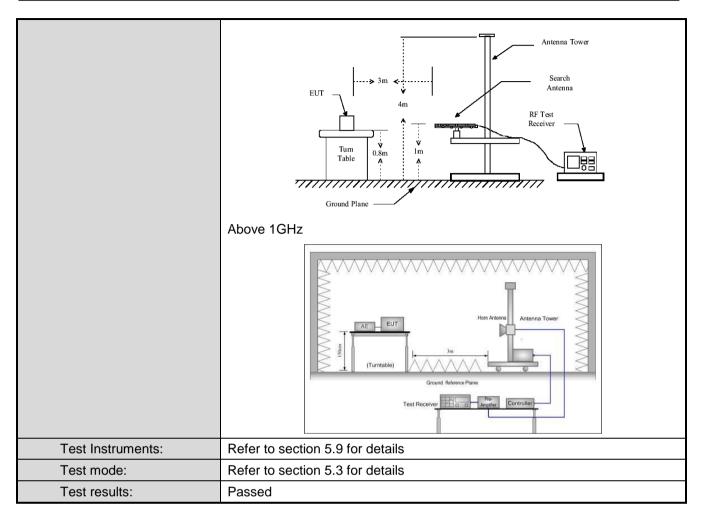


6.6.2 Unwanted Emissions out of the Restricted Bands

Test Requirement:	FCC Part15 C Se RSS-GEN Section				2.1.2				
Test Method:	ANSI C63.10: 20	13							
Test Frequency Range:	30MHz to 40GHz	<u> </u>							
Test site:	Measurement Di	stance: 3	3m						
Receiver setup:	Frequency	Detec	tor	RBW	VE	3W	Remark		
receiver cotap.	30MHz-1GHz	Quasi-p		100kHz		kHz	Quasi-peak Value		
	Above 1GHz Peak 1MHz 3M						Peak Value		
	Above 1GHz					1Hz	Average Value		
Limit:	Frequency	,	Lin	nit (dBuV/m @3	Bm)		Remark		
	30MHz-88MI	Hz		40.0		Q	uasi-peak Value		
	88MHz-216M			43.5			uasi-peak Value		
	216MHz-960MHz 46.0 Quasi-peak Value								
	960MHz-1GHz 54.0 Quasi-peak Value								
	Above 1GHz 68.20 Peak Value								
		54.00 Average Value							
	Remark:								
	Above 1GHz limit: E[dBµV/m] = EIRP)[dBm] ± 0)5 2_69	2.2 dBu\//m for	EIDDI	dPml_ 1	07dPm		
Test Procedure:				e top of a rota					
	table was ro radiation. 2. The EUT was antenna, who tower. 3. The antenna ground to do horizontal as measureme. 4. For each sus and then the and the rota maximum results. 5. The test-results specified Base. 6. If the emission limit specified EUT would a nod B margini.	as set 3 manich was a height in etermine and vertica nt. spected a antenna table was eading. Seriver system would be reported the would be reported to would be reported.	o degree meters mount so varied the male polar emission was turn stem with Nof the esting ed. Other esting the control of the	away from the ed on the top ed from one maximum value rizations of the ton, the EUT valued to height ed from 0 degras set to Peal Maximum Hold EUT in peak rould be stop herwise the e	e inter of a varieter to of the e ante was armits from grees to k Detect Mode who had a mission one us	e positi ference ariable o four m field s nna are canged m 1 me o 360 c ct Fune was 10 nd the ns that ing pe	theight antenna meters above the trength. Both e set to make the to its worst case eter to 4 meters degrees to find the ction and dB lower than the peak values of the did not have ak, quasi-peak or		
Test setup:	Below 1GHz			ou and month	201100	a a			
	Delow 10112								











Measurement Data (worst case):

Below 1GHz

Product	Name:	HELLO 2			Pro	duct Mode	el: H	HELLO 2		
Test By:		Carey			Tes	t mode:	5	G Wi-Fi Tx	mode	
Test Fre	quency:	30 MHz ~	- 1 GHz		Pola	arization:	V	'ertical		
Test Vol	tage:	AC 120/6	0Hz		Env	ironment:	Т	emp: 24℃	Huni:	57%
Leve	l (dBuV/m)									
80 Leve										
70										
60										
00								FCC PAR	T15 CLAS	SSB
50										
40										2/3
				3		4		, 5		Y
30			2	1		3 n			1,100	4
20	morning			\ / \	$\gamma \vee$	my many.	A PORT OF THE PROPERTY OF THE	A Physical Company	MANAMAN	-11701
- Mall	WALL Y	and Jayan	the word	W	M		1			
10			W							
030	50		100		200			500		1000
	E 150				uency (MH	z)				
	Freq		Antenna Factor		Preamp Factor	Level	Limit Line		Remark	
2									Nemark	
	MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	45.695	36.32	13.76	1.29	29.85	21.52		-18.48		
2	108.647	39.90	12.22 8.25	2.03	29.47	24.68		-18.82		
4	137.420 300.367	49.61 43.10	13.61	2.37 2.94	29. 29 28. 45	30.94 31.20		-12.56 -14.80	QP QP	
1 2 3 4 5 6	501.179	40.69	17.51	3.63	28.96	32.87	46.00	-13.13	QP	
6	601.427	41.29	19.22	3.94	28.93	35.52	46.00	-10.48	QP	

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.





·ouuot	Name:	HELLO 2			Prod	duct Mode	I: H	ELLO 2		
Γest By:		Carey			Test	mode:	50	3 Wi-Fi Tx	mode	
Test Fre	quency:	30 MHz ~	- 1 GHz		Pola	rization:	H	orizontal		
Test Vol	tage:	AC 120/6	60Hz		Envi	Environment:		emp: 24℃	Huni:	57%
Love	I I d Du V I mo V									
80 Leve	l (dBuV/m)								-111	
70										
70										
60		-			_					41 (1982)
4.25								FCC PAR	RT15 CLAS	SSB
50					0					
1000						5				
40										
40				3	A			6		
30	1			₹ /Î\/	4		الد ملالين بلي			
30	1		1		A my	harry william w	phypother and		handlighten below	ada Mar
	ا المداد		<i></i>		my	have distilled by	hylyhyyty y	WW MANAGER	harally barblada	ada Mar
30	and the state of	~~ <u>~</u> 444	myrand	Ň	My	have distilled by	phypodise, all	Mu _{man} 6	handly be before	afa Mar
20	accompany to the second	~~~\ _\ \\	organis 1		Two The state of t	And Market M	Myddise M	MU _{kana} n	handliff behilve	of a Maria
20	Company of the stand	~~ <u>~</u>	Myrand 100		200	Varen distrib	May be a second	500	begrifff befrach	1000
20	50		100		iency (MHz	harm distributed	why when we will		handliff by bolish a	1000
20	e e	Read	100 Antenna	Cable	iency (MHz Preamp	187 1500	Limit	Over	Bamari	
20	50 Freq	Read	100	Cable	iency (MHz	Level	Limit Line	Over	Remark	
20	e e	Read	100 Antenna Factor	Cable	ency (MHz Preamp Factor	187 1500	Line	Over Limit	Remark	
20 10 0 30	Freq MHz	Read/ Level dBuV	100 Antenna Factor — dB/m	Cable Loss dB	ency (MHz Preamp Factor dB	Level	Line dBuV/m	Over Limit ———————————————————————————————————		
30 20 10 0 30	Freq MHz 35.375 114.114	Read/ Level dBuV 43.47 43.28	100 Antenna Factor —— dB/m 11.79 11.41	Cable Loss dB 1.07 2.10	Preamp Factor dB 29.95 29.43	Level dBuV/m 26.38 27.36	Line dBuV/m 40.00 43.50	Over Limit dB -13.62 -16.14	QP QP	
30 20 10 0 30	Freq MHz 35.375 114.114 138.874	Read/ Level dBuV 43.47 43.28 52.27	100 Antenna Factor — dB/m 11.79 11.41 8.17	Cable Loss dB 1.07 2.10 2.38	Preamp Factor dB 29.95 29.43 29.28	Level dBuV/m 26.38 27.36 33.54	Line dBuV/m 40.00 43.50 43.50	Over Limit ———————————————————————————————————	QP QP QP	
20 10 0 30	Freq MHz 35.375 114.114	Read/ Level dBuV 43.47 43.28	100 Antenna Factor — dB/m 11.79 11.41 8.17	Cable Loss dB 1.07 2.10	Preamp Factor dB 29.95 29.43	Level dBuV/m 26.38 27.36	Line dBuV/m 40.00 43.50 43.50 43.50	Over Limit 	QP QP QP QP QP	

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





Above 1GHz: SISO ANT 1:

SISO AIVI I.			Band	1 1 – 802.1	1a			
			Test chann					
				or: Peak V				
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
10360.00	47.62	40.10	9.82	41.97	55.57	68.20	-12.63	Vertical
10360.00	47.34	40.10	9.82	41.97	55.29	68.20	-12.91	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
10360.00	37.53	40.10	9.82	41.97	45.48	54.00	-8.52	Vertical
10360.00	37.84	40.10	9.82	41.97	45.79	54.00	-8.21	Horizontal
			Test chann	alı Middla	abannal			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	or: Peak Va Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10400.00	47.39	40.00	9.85	41.95	55.29	68.20	-12.91	Vertical
10400.00	47.84	40.00	9.85	41.95	55.74	68.20	-12.46	Horizontal
10400.00	47.04	40.00		: Average		00.20	12.40	Honzontai
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
10400.00	37.61	40.00	9.85	41.95	45.51	54.00	-8.49	Vertical
10400.00	37.45	40.00	9.85	41.95	45.35	54.00	-8.65	Horizontal
			Test channe					
			Detecto	or: Peak Va	alue			
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
10480.00	47.37	39.70	9.96	41.88	55.15	68.20	-13.05	Vertical
10480.00	47.21	39.70	9.96	41.88	54.99	68.20	-13.21	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
10480.00	37.96	39.70	9.96	41.88	45.74	54.00	-8.26	Vertical
10480.00	37.94	39.70	9.96	41.88	45.72	54.00	-8.28	Horizontal
Damade								

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^{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.





SISO ANT 2:

			Band	1 – 802.1	1a			
			Test chann	el: Lowest	channel			
			Detecto	or: Peak V	alue			
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
10360.00	47.22	40.10	9.82	41.97	55.17	68.20	-13.03	Vertical
10360.00	47.63	40.10	9.82	41.97	55.58	68.20	-12.62	Horizonta
			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)	polarizatio
10360.00	37.17	40.10	9.82	41.97	45.12	54.00	-8.88	Vertical
10360.00	37.41	40.10	9.82	41.97	45.36	54.00	-8.64	Horizontal
			T (.)	. 1. 841 1 11 .	.1 1			
			Test chann					
			Detecti	or: Peak V	alue		0	
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)	polarizatio
10400.00	47.29	40.00	9.85	41.95	55.19	68.20	-13.01	Vertical
10400.00	47.36	40.00	9.85	41.95	55.26	68.20	-12.94	Horizonta
			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
10400.00	37.22	40.00	9.85	41.95	45.12	54.00	-8.88	Vertical
10400.00	37.29	40.00	9.85	41.95	45.19	54.00	-8.81	Horizonta
			Test channe	el· Highest	channel			
				or: Peak V				
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)	polarizatio
10480.00	47.17	39.70	9.96	41.88	54.95	68.20	-13.25	Vertical
10480.00	47.93	39.70	9.96	41.88	55.71	68.20	-12.49	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)	polarizatio
10480.00	37.35	39.70	9.96	41.88	45.13	54.00	-8.87	Vertical
10480.00	37.41	39.70	9.96	41.88	45.19	54.00	-8.81	Horizonta

Shenzhen Zhongjian Nanfang Testing Co., Ltd. No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

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

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MIMO:

MIMO:								
			Band 1 -	- 802.11n(HT20)			
			Test chann	el: Lowest	channel			
			Detecto	or: Peak V	alue			
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
10360.00	47.17	40.10	9.82	41.97	55.12	68.20	-13.08	Vertical
10360.00	47.69	40.10	9.82	41.97	55.64	68.20	-12.56	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
10360.00	37.35	40.10	9.82	41.97	45.30	54.00	-8.70	Vertical
10360.00	37.46	40.10	9.82	41.97	45.41	54.00	-8.59	Horizontal
			Test chann					
	1		Detect	or: Peak V	alue		_	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
10400.00	47.76	40.00	9.85	41.95	55.66	68.20	-12.54	Vertical
10400.00	47.22	40.00	9.85	41.95	55.12	68.20	-13.08	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
10400.00	37.52	40.00	9.85	41.95	45.42	54.00	-8.58	Vertical
10400.00	37.94	40.00	9.85	41.95	45.84	54.00	-8.16	Horizontal
			Test channe	al: Highest	channel			
				or: Peak V				
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
10480.00	47.19	39.70	9.96	41.88	54.97	68.20	-13.23	Vertical
10480.00	47.22	39.70	9.96	41.88	55.00	68.20	-13.20	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
10480.00	37.21	39.70	9.96	41.88	44.99	54.00	-9.01	Vertical
10480.00	37.46	39.70	9.96	41.88	45.24	54.00	-8.76	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.





			Danu i -	- 002.1111(111 7 0)			
			Test chann	el: Lowest	channel			
			Detecto	or: Peak V	alue			
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
10380.00	47.45	40.00	9.85	41.95	55.35	68.20	-12.85	Vertical
10380.00	47.87	40.00	9.85	41.95	55.77	68.20	-12.43	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
10380.00	37.28	40.00	9.85	41.95	45.18	54.00	-8.82	Vertical
10380.00	37.96	40.00	9.85	41.95	45.86	54.00	-8.14	Horizontal
			Test channe	el· Highest	channel			
				or: Peak V				
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
10460.00	47.96	39.80	9.92	41.90	55.78	68.20	-12.42	Vertical
10460.00	47.46	39.80	9.92	41.90	55.28	68.20	-12.92	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
10460.00	37.14	39.80	9.92	41.90	44.96	54.00	-9.04	Vertical
10460.00	37.93	39.80	9.92	41.90	45.75	54.00	-8.25	Horizontal

Band 1 - 802.11n(HT40)

Remark:

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

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





				802.11ac				
			Test chann	el: Lowest	channel			
			Detecto	or: Peak V	alue			
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
10360.00	47.85	40.10	9.82	41.97	55.80	68.20	-12.40	Vertical
10360.00	47.52	40.10	9.82	41.97	55.47	68.20	-12.73	Horizonta
			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)	polarizatio
10360.00	37.12	40.10	9.82	41.97	45.07	54.00	-8.93	Vertical
10360.00	37.74	40.10	9.82	41.97	45.69	54.00	-8.31	Horizonta
			Took ab an a	l. N.4: - - -	ah a l			
			Test chann					
			Detecto	or: Peak V	alue	1,	0	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)	polarizatio
10400.00	47.92	40.00	9.85	41.95	55.82	68.20	-12.38	Vertical
10400.00	47.37	40.00	9.85	41.95	55.27	68.20	-12.93	Horizonta
			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)	polarizatio
10400.00	37.98	40.00	9.85	41.95	45.88	54.00	-8.12	Vertical
10400.00	37.46	40.00	9.85	41.95	45.36	54.00	-8.64	Horizonta
			Test channe	el: Highest	channel			
				or: Peak V				
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)	polarizatio
10480.00	47.84	39.70	9.96	41.88	55.62	68.20	-12.58	Vertical
10480.00	47.52	39.70	9.96	41.88	55.30	68.20	-12.90	Horizonta
			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)	polarizatio
10480.00	37.24	39.70	9.96	41.88	45.02	54.00	-8.98	Vertical
10480.00	37.92	39.70	9.96	41.88	45.70	54.00	-8.30	Horizonta

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





Band 1 – 802.11ac(HT40)								
Test channel: Lowest channel								
Detector: 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
10380.00	47.63	40.00	9.85	41.95	55.53	68.20	-12.67	Vertical
10380.00	47.32	40.00	9.85	41.95	55.22	68.20	-12.98	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
10380.00	37.49	40.00	9.85	41.95	45.39	54.00	-8.61	Vertical
10380.00	37.29	40.00	9.85	41.95	45.19	54.00	-8.81	Horizontal
	Test channel: Highest channel							
	Detector: 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
10460.00	47.32	39.80	9.92	41.90	55.14	68.20	-13.06	Vertical
10460.00	47.41	39.80	9.92	41.90	55.23	68.20	-12.97	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
10460.00	37.32	39.80	9.92	41.90	45.14	54.00	-8.86	Vertical
10460.00	37.39	39.80	9.92	41.90	45.21	54.00	-8.79	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.





Band 1 – 802.11ac(HT80)								
Test channel: Lowest channel								
Detector: 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
10420.00	47.93	40.00	9.85	41.95	55.83	68.20	-12.37	Vertical
10420.00	47.29	40.00	9.85	41.95	55.19	68.20	-13.01	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
10420.00	37.94	40.00	9.85	41.95	45.84	54.00	-8.16	Vertical
10420.00	37.41	40.00	9.85	41.95	45.31	54.00	-8.69	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.





6.7 Frequency stability

o.r i requeriey stability			
Test Requirement:	FCC Part15 E Section 15.407 (g)		
	RSS-GEN Section 6.11		
Limit:	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.		
Test setup:	Temperature Chamber		
	Spectrum analyzer EUT Att. Variable Power Supply		
	Note: Measurement setup for testing on Antenna connector		
Test procedure:	 The EUT is installed in an environment test chamber with external power source. Set the chamber to operate at 50 centigrade and external power source to output at nominal voltage of EUT. A sufficient stabilization period at each temperature is used prior to each frequency measurement. When temperature is stabled, measure the frequency stability. The test shall be performed under -30 to 50 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions. 		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		





Measurement Data (the worst channel):

Band 1:

Voltage vs. Frequency Stability (Lowest channel=5180MHz)

Test conditions		Francisco (MILL)	May Davistian (nam)		
Temp(°C)	Voltage(ac)	Frequency(MHz)	Max. Deviation (ppm)		
	102V	5179.997643	0.45		
20	120V	5179.974779	4.87		
	138V	5179.963951	6.96		

Temperature vs. Frequency Stability (Lowest channel=5180MHz)

Test conditions		F(NILL=)	Man Paristina (ana)	
Voltage(ac)	Temp(°C)	Frequency(MHz)	Max. Deviation (ppm)	
	-20	5179.987033	2.50	
	-10	5179.995377	0.89	
	0	5179.968421	6.10	
400)/	10	5179.987556	2.40	
120V	20	5179.996681	0.64	
	30	5179.974290	4.96	
	40	5179.963775	6.99	
	50	5179.974929	4.84	