

TEST REPORT

Applicant: Sony Corporation
EUT Description: GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, NFC and GNSS
Brand: Sony
FCC ID: PY7-37016L
Standards: FCC 47 CFR Part 2 Subpart J
FCC 47 CFR Part 15 Subpart E
Date of Receipt: 2023/11/14
Date of Test: 2023/11/14 to 2024/02/18 (FCC ID: PY7-64228M (Lead Model))
2023/11/14 to 2024/02/22 (FCC ID: PY7-37016L (This Model))
Date of Issue: 2024/03/14

TOWE. Tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. Without written approval of TOWE, the test report shall not be reproduced except in full.



Handwritten signature of Huang Kun.

Huang Kun
Approved By:

Handwritten signature of Chen Chengfu.

Chen Chengfu
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2024/02/22	Original	Chen Chengfu
02	2024/03/07	Revise KDB version number on Page 7	Chen Chengfu
03	2024/03/14	Change the "This Mode" on page 7 to "This Model"	Chen Chengfu

Summary of Test Results

Clause	FCC Part	Test Items	Test Bands	Result
4.1	§15.203	Antenna Requirement	---	PASS
4.2	§15.407(g)	Frequency Stability	---	---
4.3	§15.207	AC Power Line Conducted Emission	Section 2.2	PASS
4.4	§15.407(a)(1)(iv) §15.407(a)(2) §15.407(a)(3)(i)	Maximum Conducted Output Power	U-NII-1 U-NII-2A U-NII-2C U-NII-3	PASS*
4.5	§KDB 789033 II.C.1	Emission Bandwidth	U-NII-1 U-NII-2A U-NII-2C	Reporting purposes only
4.6	§15.407(e)	Minimum Emission Bandwidth	U-NII-3	PASS
4.7	§KDB 789033 II.D	Occupied Bandwidth	U-NII-1 U-NII-2A U-NII-2C U-NII-3	Reporting purposes only
4.8	§5.407(a)(1)(iv) §15.407(a)(2) §15.407(a)(3)(i)	Maximum Power Spectral Density	U-NII-1 U-NII-2A U-NII-2C U-NII-3	PASS
4.9	§15.407(b) §15.209(d)	Radiated Spurious Emissions and Band Edge	U-NII-1 U-NII-2A U-NII-2C U-NII-3	PASS*

Test Method:

ANSI C63.10-2013,
KDB 789033 D02 General UNII Test Procedures New Rules v02r01

Remark:

Pass: refers to FCC ID PY7-64228M (lead) data.

PASS: There is FCC ID PY7-37016L (this model) spot check data.*

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1 General Description

1.1 Lab Information

1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014
Tel.: +86-755-27212361
Contact Email: info@towewireless.com

1.1.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Has been recognized as an accredited testing laboratory. Designation Number: CN1353.

ISED CAB identifier: CN0152

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. Has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152
Company Number: 31000

1.2 Client Information

1.2.1 Applicant

Applicant:	Sony Corporation
Address:	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

1.2.2 Manufacturer:

Manufacturer:	Sony Corporation
Address:	1-7-1 Konan Minato-ku Tokyo, 108-0075 Japan

1.3 Product Information

EUT Description:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, NFC and GNSS			
Brand:	Sony			
Hardware Version:	A			
Software Version:	1.89			
SN.:	HQ63B104BC HQ63B1049E			
Modulation Type:	802.11a&n:	OFDM-BPSK, QPSK, 16QAM, 64QAM		
	802.11ac:	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM		
Smart System:	<input checked="" type="checkbox"/> SISO:	802.11a/n/ac	/	
	<input checked="" type="checkbox"/> MIMO:	802.11n/ac	(2)TX(2)RX	
	<input checked="" type="checkbox"/> CDD:	802.11a	(2)TX(2)RX	
EUT Function	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Outdoor AP	<input type="checkbox"/> Indoor AP <input type="checkbox"/> Fixed P2P AP	
DFS Function:	<input type="checkbox"/> Master <input type="checkbox"/> Slave with radar detection <input checked="" type="checkbox"/> Slave without radar detection			
Frequency Range:	U-NII-1:	5150 ~ 5250MHz		
	U-NII-2A:	5250 ~ 5350MHz		
	U-NII-2C:	5470 ~ 5725MHz		
	U-NII-3:	5725 ~ 5850MHz		
Channel Frequency:	20M BWch.:	U-NII-1:	5180 ~ 5240MHz	4 Channels
		U-NII-2A:	5260 ~ 5320MHz	4 Channels
		U-NII-2C:	5500 ~ 5700MHz	11 Channels
		U-NII-3:	5745 ~ 5825MHz	5 Channels
		Straddle Channel:	5720MHz	1 Channel
	40M BWch.:	U-NII-1:	5190 ~ 5230MHz	2 Channels
		U-NII-2A:	5270 ~ 5310MHz	2 Channels
		U-NII-2C:	5510 ~ 5670MHz	5 Channels
		U-NII-3:	5755 ~ 5795MHz	2 Channels
		Straddle Channel:	5710MHz	1 Channel
	80M BWch.:	U-NII-1:	5210MHz	1 Channel
		U-NII-2A:	5290MHz	1 Channel
		U-NII-2C:	5530 ~ 5610MHz	2 Channels
		U-NII-3:	5775MHz	1 Channel
		Straddle Channel:	5690MHz	1 Channel
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.				

1.4 REUSE OF TEST DATA

1.4.1 INTRODUCTION

According to the manufacturer the major change between FCC ID: PY7-64228M (Lead Model), and FCC ID: PY7-37016L (This Model) is changing band configuration by software, The FCC ID: PY7-64228M (Lead Model) conducted test data shall remain representative of FCC ID: PY7-37016L so, FCC ID: PY7-37016L (This Model) leverages conducted test data from FCC ID: PY7-64228M (Lead Model).

1.4.2 DEVICE DIFFERENCES

The equipment under test (EUT) in this filing FCC ID: PY7-37016L (This Model) and the reference device certified under FCC ID: PY7-64228M (Lead Model) share a common design. The components used for 2.4GHz and 5GHz Wi-Fi and BT and NFC, including antennas and output power are identical between the EUT and reference device.

1.4.3 Spot Check Verification Data

In this filing, the worst-case data and spot checks were tested on the EUT as noted below, against the reference device. All the necessary test cases were performed to verify the variant EUT is still in compliance with the spot checked results to the reference device and was performed using the guidance of ANSI C63.10-2013.

According to FCC KDB 484596 D01 v02r02, Spot checks of the following tests were performed:

Sport check Items	PY7-37016L		PY7-64228M		Delta(dB)	
	Worst case Result		Worst case Result			
Output Power	Average:	13.60	Average:	13.69	Peak:	0.09
Radiated Spurious Emission	Average:	42.80	Average:	42.26	Peak:	0.54
Radiated Band Edge	Average:	49.31	Average:	50.88	Average:	1.57

2 Test Configuration

2.1 Test Channel

Frequency Channels for U-NII-1							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz
38	5190MHz	42	5210MHz	46	5230MHz	/	
Remark: 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:							
Modulation Type	Test Channel			Test Frequency			
802.11a/n20/ac20	The Lowest channel (CH36)			5180MHz			
	The Middle channel (CH40)			5200MHz			
	The Highest channel (CH48)			5240MHz			
Modulation Type	Test Channel			Test Frequency			
802.11n40/ac40	The Lowest channel (CH38)			5190MHz			
	The Highest channel (CH46)			5230MHz			
Modulation Type	Test Channel			Test Frequency			
802.11ac80	The Middle channel (CH42)			5210MHz			

Frequency Channels for U-NII-2A							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260MHz	56	5280MHz	60	5300MHz	64	5320MHz
54	5270MHz	58	5290MHz	62	5310MHz	/	
Remark: 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:							
Modulation Type	Test Channel			Test Frequency			
802.11a/n20/ac20	The Lowest channel (CH52)			5260MHz			
	The Middle channel (CH56)			5280MHz			
	The Highest channel (CH64)			5320MHz			
Modulation Type	Test Channel			Test Frequency			
802.11n40/ac40	The Lowest channel (CH54)			5270MHz			
	The Highest channel (CH62)			5310MHz			
Modulation Type	Test Channel			Test Frequency			
802.11ac80	The Middle channel (CH58)			5290MHz			

Frequency Channels for U-NII-2C							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
100	5500MHz	110	5550MHz	122	5610MHz	134	5670MHz
102	5510MHz	112	5560MHz	124	5620MHz	136	5680MHz
104	5520MHz	116	5580MHz	126	5630MHz	140	5700MHz
106	5530MHz	118	5590MHz	128	5640MHz	/	
108	5540MHz	120	5600MHz	132	5660MHz		

Remark:

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:

Modulation Type	Test Channel	Test Frequency
802.11a/n20/ac20	The Lowest channel (CH100)	5500MHz
	The Middle channel (CH120)	5600MHz
	The Highest channel (CH140)	5700MHz
Modulation Type	Test Channel	Test Frequency
802.11n40/ac40	The Lowest channel (CH102)	5510MHz
	The Middle channel (CH118)	5590MHz
	The Highest channel (CH134)	5670MHz
Modulation Type	Test Channel	Test Frequency
802.11ac80	The Lowest channel (CH106)	5530MHz
	The Highest channel (CH122)	5610MHz

Frequency Channels for U-NII-3							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745MHz	153	5765MHz	157	5785MHz	161	5805MHz
151	5755MHz	155	5775MHz	159	5795MHz	165	5825MHz

Remark:

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:

Modulation Type	Test Channel	Test Frequency
802.11a/n20/ac20	The Lowest channel (CH149)	5745MHz
	The Middle channel (CH157)	5785MHz
	The Highest channel (CH165)	5825MHz
Modulation Type	Test Channel	Test Frequency
802.11n40/ac40	The Lowest channel (CH151)	5755MHz
	The Highest channel (CH159)	5795MHz
Modulation Type	Test Channel	Test Frequency
802.11ac80	The Middle channel (CH155)	5775MHz

Straddle Channel		
Modulation Type	Test Channel	Test Frequency
802.11a/n20/ac20	The channel (CH144)	5720MHz
Modulation Type	Test Channel	Test Frequency
802.11n40/ac40	The channel (CH142)	5710MHz
Modulation Type	Test Channel	Test Frequency
802.11ac80	The channel (CH138)	5690MHz

2.2 Worst-case configuration and Mode

Modulation Type	SISO - Data Rate	MIMO(2)TX(2)RX Data Rate
802.11a	6 Mbps	12 Mbps
802.11n20	MCS0 (6.5 Mbps)	MCS0 (13 Mbps)
802.11n40	MCS0 (13.5 Mbps)	MCS0 (27 Mbps)
802.11ac20	MCS0 (6.5 Mbps)	MCS0 (13 Mbps)
802.11ac40	MCS0 (13.5 Mbps)	MCS0 (27 Mbps)
802.11ac80	MCS0 (29.3 Mbps)	MCS0 (58.6 Mbps)
Transmitting mode:	Keep the EUT was programmed to be in continuously transmitting mode.	
Normal Link:	Keep the EUT operation to normal function.	

2.3 Test Duty Cycle

Test Type	T(ms)	T Period(ms)	Duty Cycle(%)	1/T	VBW Set
802.11a	2.06	2.1	98.10	0.49	10Hz
802.11n20	1.92	1.96	97.96	0.52	1KHz
802.11n40	0.94	0.98	95.92	1.06	3KHz
802.11ac20	1.93	1.97	97.97	0.52	1KHz
802.11ac40	0.95	0.99	95.96	1.05	3KHz
802.11ac80	0.46	0.5	92.00	2.17	3KHz

Note: If Duty Cycle>98% VBW is set to 10Hz.

2.4 Support Unit used in test

The EUT has been tested as an independent unit.

2.5 Test Environment

Temperature:	Normal: 15°C ~ 35°C
Humidity:	40-75 % RH Ambient
DC Voltage:	DC 3.89V
AC Voltage:	AC 120V/60Hz
Remark: The testing environment is within the scope of the EUT user manual and meets the requirements of the standard testing environment.	

2.6 Test RF Cable

For all conducted test items: The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

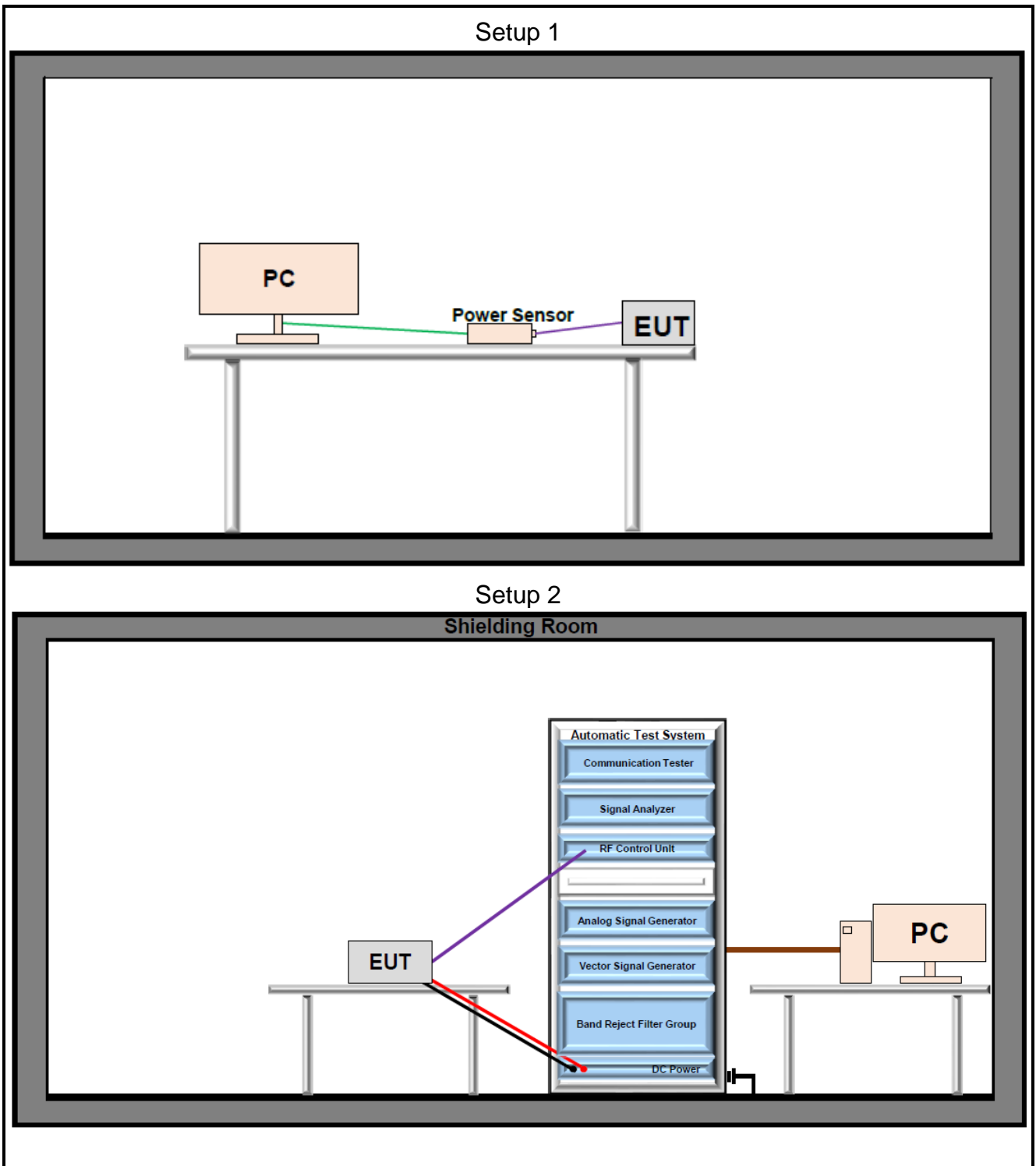
Offset = RF cable loss + attenuator factor.

2.7 Modifications

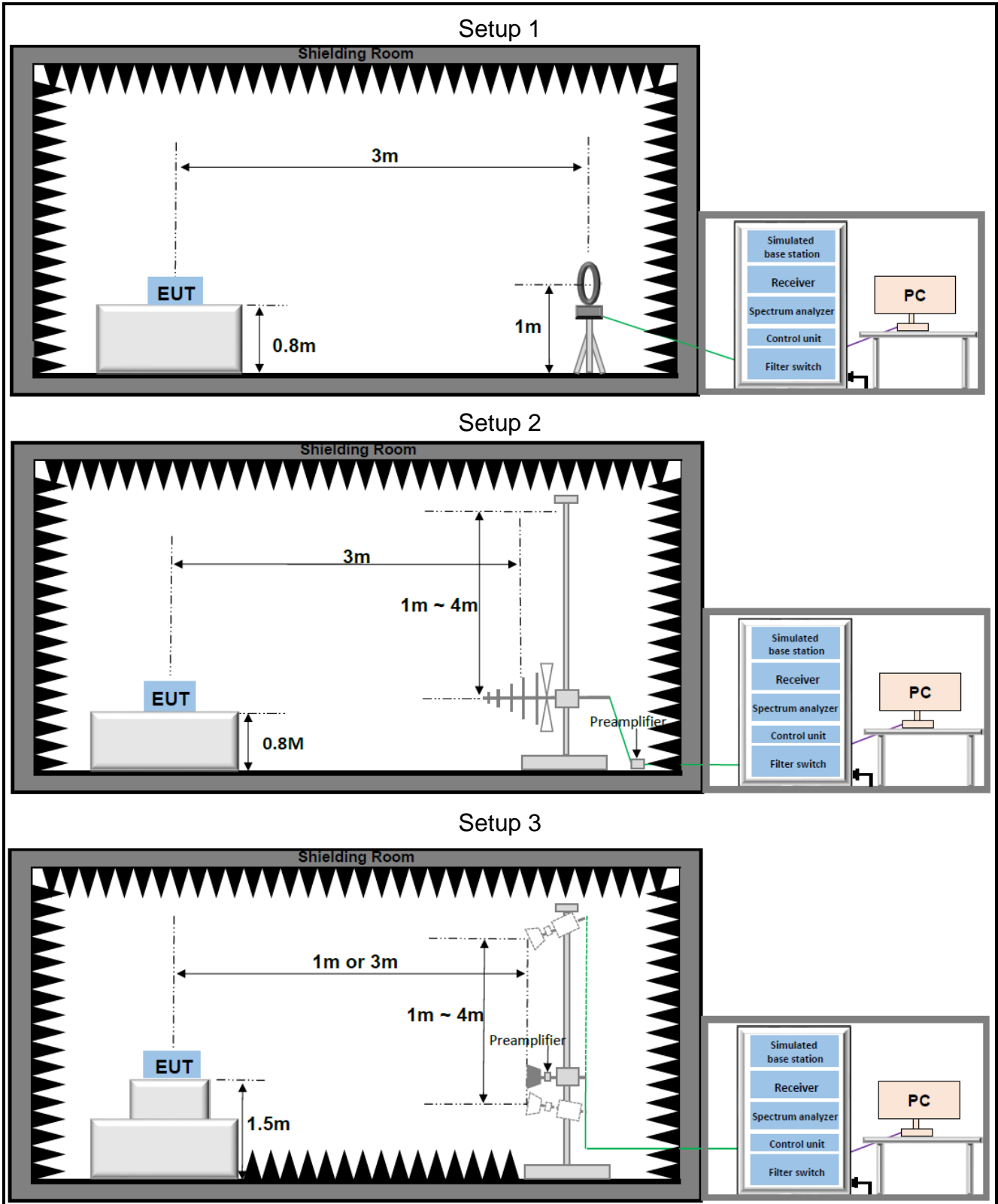
No modifications were made during testing.

2.8 Test Setup Diagram

2.8.1 Conducted Configuration



2.8.2 Radiated Configuration



Directional gain calculations:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices

$$\text{Array Gain} = 10 \log(N_{ANT}/N_{SS}=1) \text{ dB}$$

- For power measurements on IEEE 802.11 devices:

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for } N_{ANT} \leq 4;$$

$$\text{Array Gain} = 0 \text{ dB (i.e., no array gain) for channel widths } \geq 40 \text{ MHz for any } N_{ANT};$$

$$\text{Array Gain} = 5 \log(N_{ANT}/N_{SS}=1) \text{ dB or } 3 \text{ dB, whichever is less, for } 20\text{-MHz channel widths with } N_{ANT} \geq 5.$$

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

Unequal antenna gains, with equal transmit powers. For antenna gains given by G_1, G_2, \dots, G_N dBi

- If transmit signals are correlated, then

$$\text{Directional gain} = 10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}] \text{ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]}$$

- If all transmit signals are completely uncorrelated, then

$$\text{Directional gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}) / N_{ANT}] \text{ dBi}$$

The Power and PSD limit should be modified if the directional gain of EUT is over 6dBi.

The EUT supports CDD System.

Transmit signals are completely uncorrelated						
Operation Band	ANT Gain6 (dBi)	ANT Gain7 (dBi)	Directional gain For Power (dBi)	Directional gain For PSD (dBi)	Power Limit Reduction (dBm)	PSD Limit Reduction (dBm)
5150~5250MHz	-2.9	-1.5	-1.5	0.83	0	0
5250~5350MHz	-2.3	-1.6	-1.6	1.07	0	0
5470~5725MHz	-1.6	-1.8	-1.6	1.31	0	0
5725~5850MHz	-1.6	-3.8	-1.6	0.38	0	0

3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

3.1 Test Equipment List

RF-03					
Description	Manufacturer	Model	SN	Last Due	Cal Due
Signal Analyzer	Keysight	N9020A	US46470429	2023/04/08	2024/04/07
Signal Generator	R&S	SMR20	101027	2023/04/08	2024/04/07
Wireless Communication Tester	R&S	CMW270	102840	2023/06/27	2024/06/26
UP/Down-Converter	R&S	CMW-Z800A	100572	2023/06/27	2024/06/26
Hygrometer	BingYu	HTC-1	N/A	2023/06/01	2024/05/31
Vector Signal Generator	R&S	SMM100A	549353	2023/06/27	2024/06/26
RF Control Unit	Tonscend	JS0806-2	23C80620671	2023/06/27	2024/06/26
Power Sensor	Anritsu	MA24408A	12520	2023/07/28	2024/07/27
Shielding Room 13	Taihemaorui	4*3*3	N/A	2023/04/01	2026/03/31
Measurement Software	Tonscend	JS1120-3	10659	N/A	N/A

Radiated Emission					
Description	Manufacturer	Model	S.N.	Last Due	Cal Due
Loop Antenna	Schwarzbeck	FMZB 1519C	1519C-028	2023/06/29	2025/06/28
Biconic Logarithmic Periodic Antennas	Schwarzbeck	VULB9163	1643	2023/06/25	2025/06/24
Double-Ridged Horn Antennas	Schwarzbeck	BBHA 9120D	2809	2023/06/25	2025/06/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	1290	2023/06/25	2025/06/24
Signal Analyzer	Keysight	N9020A	MY49100252	2023/04/08	2024/04/07
Signal Analyzer	Keysight	N9010B	MY63440541	2023/06/27	2024/06/26
EMI Tester Receiver	Rohde & Schwarz	ESR7	102719	2023/08/17	2024/08/16
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	150645	2023/04/08	2024/04/07
Low Noise Amplifier	Tonscend	TAP9K3G40	AP23A8060273	2023/04/08	2025/04/07
Low Noise Amplifier	Tonscend	TAP01018050	AP22G806258	2023/04/08	2025/04/07
Band Reject Filter Group	Townshend	JS0806-F	23A806F0652	N/A	N/A
Test Software	Tonscend	TS+	Version: 5.0.0	N/A	N/A

Conducted Emission					
Description	Manufacturer	Model	S.N.	Last Due	Cal Due
EMI Tester Receiver	Rohde & Schwarz	ESR3	103108	2023/07/28	2024/07/27
LISN	Rohde & Schwarz	ENV 216	102836	2023/04/08	2024/04/07
Test software	Rohde & Schwarz	ELEKTRA v4.61	N/A	N/A	N/A

3.2 Measurement Uncertainty

Parameter	U _{lab}
Frequency Error	679.98Hz
Output Power	0.76dB
Conducted Spurious Emissions	2.22dB
Conducted Emissions(150KHz~30MHz)	2.43dB
Radiated Emissions(30MHz~1000MHz)	4.66dB
Radiated Emissions(1GHz~18GHHz)	5.42dB
Radiated Emissions(18GHz~40GHHz)	5.46dB

Uncertainty figures are valid to a confidence level of 95%

4 Test Results

4.1 Antenna Requirement

Standard Applicable:		47 CFR Part 15C Section 15.203
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.		
The antenna gain and type as provided by the manufacturer are as follows: The antenna Type is PIFA. With Antenna gain:		
Ant 6 Gain	Ant 7 Gain	
5150~5250MHz: -2.9dBi	5150~5250MHz: -1.5dBi	
5250~5350MHz: -2.3dBi	5250~5350MHz: -1.6dBi	
5470~5725MHz: -1.6dBi	5470~5725MHz: -1.8dBi	
5725~5850MHz: -1.6dBi	5725~5850MHz: -3.8dBi	
Antenna Anti-Replacement Construction: An embedded-in antenna design is used.		

4.2 Frequency Stability

Standard Applicable:	47 CFR Part 15C Section 15.407(g)
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.	

4.3 AC Power Line Conducted Emissions

Limits

Frequency range (MHz)	Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

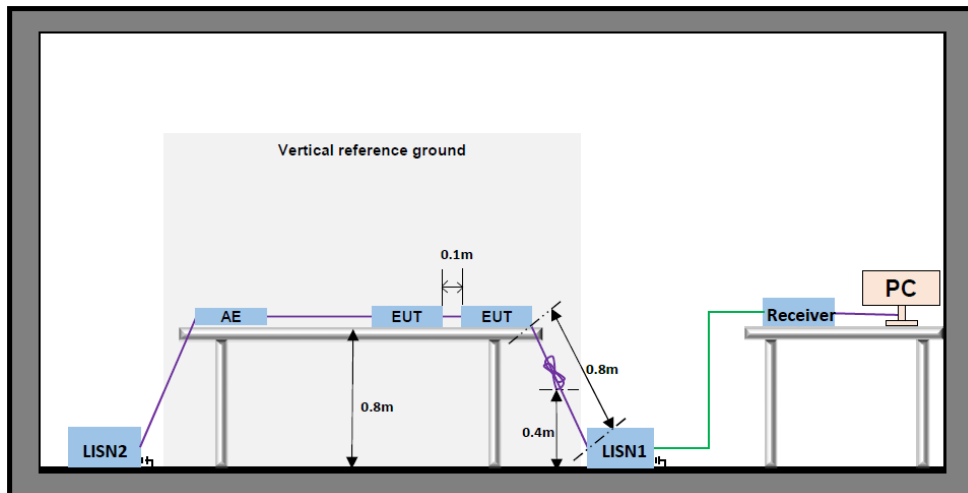
Test Procedure

ANSI C63.10-2013, Section 6.2.

Test Settings

1. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50 Ω /50 μ H + 5 Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
3. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
4. Set the test-receiver system to Peak detect function and specified bandwidth (if bandwidth =9kHz) with maximum hold mode. Then measurement is also conducted by average detector and Quasi-Peak detector function respectively
5. Both sides of AC 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 on conducted measurement.

Test Setup

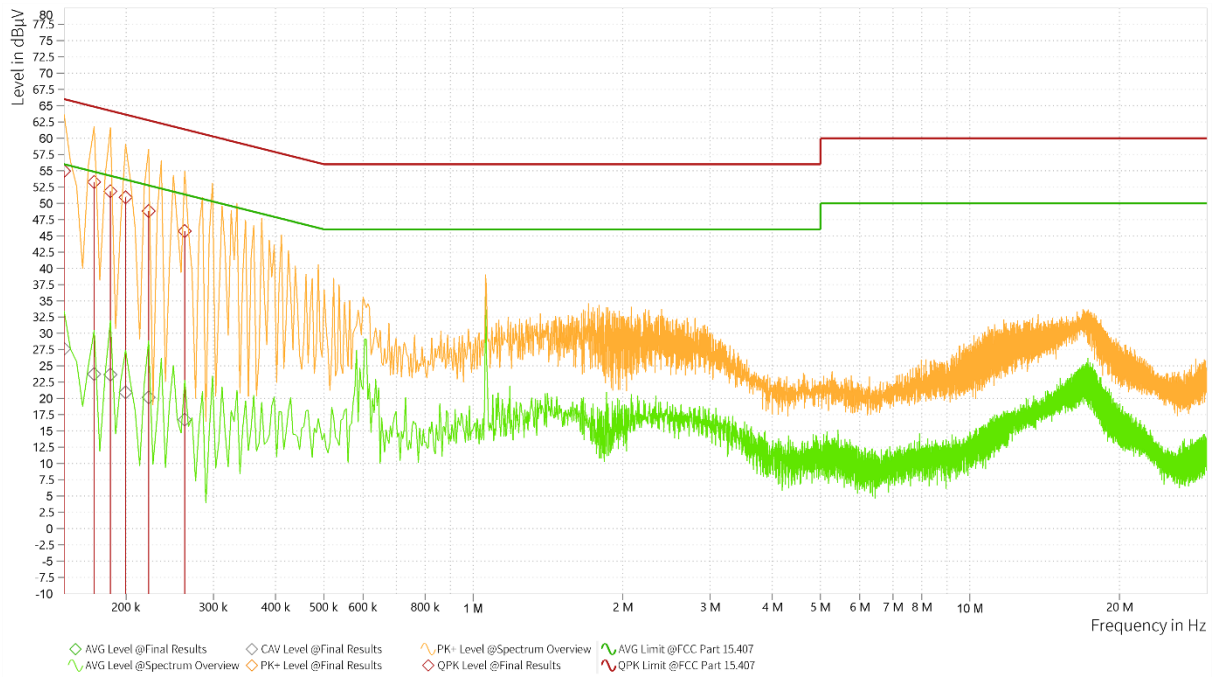


Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result:

Test mode:	Transmitting		
Test Voltage:	AC 120V / 60Hz	Phase:	Line

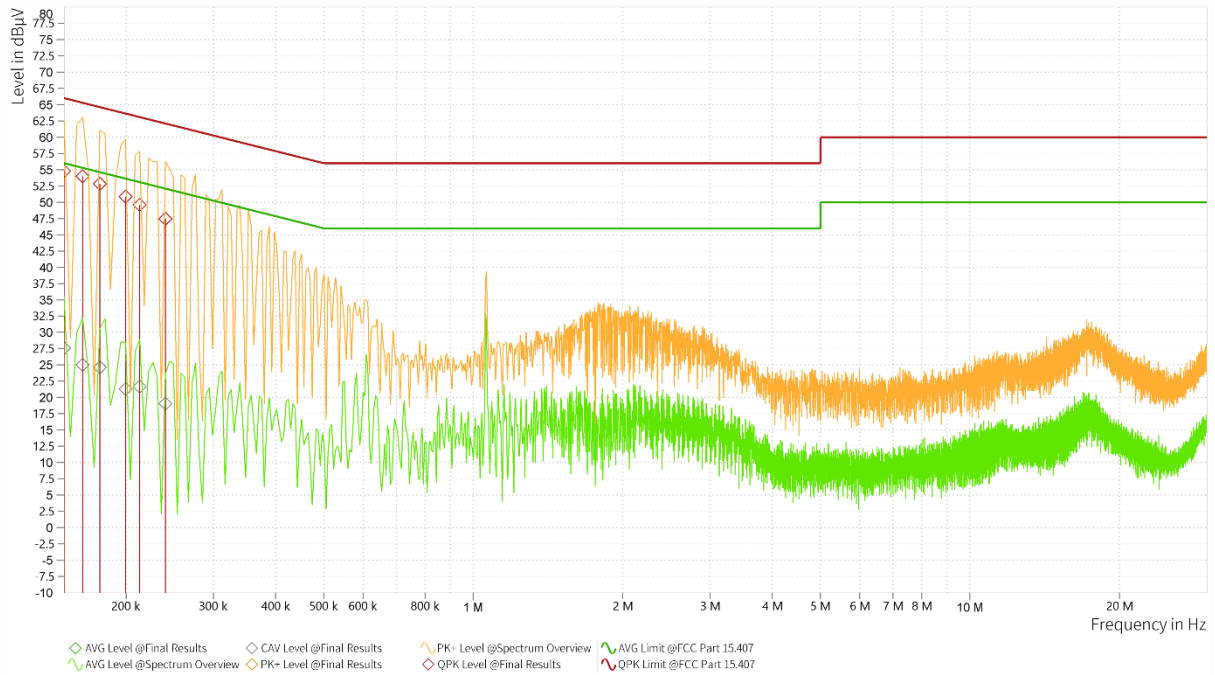


Rg	Frequency [MHz]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	CAV Raw Lvl [dBµV]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	QPK Raw Lvl [dBµV]	Correction [dB]	Line
1	0.150	27.64	56.00	28.36	17.16	54.93	66.00	11.07	44.45	10.48	L1
1	0.173	23.76	54.84	31.08	13.27	53.25	64.84	11.59	42.76	10.49	L1
1	0.186	23.67	54.21	30.54	13.18	51.83	64.21	12.39	41.34	10.49	L1
1	0.200	20.94	53.63	32.69	10.45	50.91	63.63	12.72	40.42	10.49	L1
1	0.222	20.18	52.74	32.57	9.68	48.78	62.74	13.97	38.28	10.50	L1
1	0.263	16.75	51.35	34.60	6.25	45.71	61.35	15.64	35.21	10.50	L1

Note:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Level = Raw Level[dBµV] + Correction[dB]
3. Margin = Limit[dBµV] - Level[dBµV]

Test mode:	Transmitting		
Test Voltage:	AC 120V / 60Hz	Phase:	Neutral



Rg	Frequency [MHz]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	CAV Raw Lvl [dBµV]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	QPK Raw Lvl [dBµV]	Correction [dB]	Line
1	0.150	27.59	56.00	28.41	17.16	54.80	66.00	11.20	44.37	10.43	N
1	0.164	25.03	55.28	30.25	14.61	53.99	65.28	11.30	43.57	10.42	N
1	0.177	24.64	54.63	29.98	14.22	52.82	64.63	11.80	42.40	10.42	N
1	0.200	21.28	53.63	32.35	10.88	50.86	63.63	12.78	40.45	10.40	N
1	0.213	21.67	53.09	31.42	11.26	49.59	63.09	13.50	39.18	10.40	N
1	0.240	19.04	52.10	33.06	8.63	47.46	62.10	14.64	37.05	10.41	N

Note:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Level = Raw Level[dBµV] + Correction[dB]
3. Margin = Limit[dBµV] - Level[dBµV]

4.4 Maximum Conducted Output Power

Limits

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.E.2.b (Other Channel)

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.E.3.b(Straddle Channel)

Test Settings

1. PM-G:

Set to the maximum power setting and enable the EUT transmit continuously.

The power output was measured on the EUT antenna port using RF Cable with attenuator connected to a power meter via wideband power sensor. Peak output power was read directly from power meter.

Measure and record the results in the test report.

2. SA:

RBW = 1MHz

VBW ≥ 3MHz

Span = Encompass the EBW (or, alternatively, the entire 99% occupied bandwidth)

Sweep = Auto

Detector = power averaging (rms)

Test Setup

Refer to section 2.8.1 Setup 1 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.5 Emission Bandwidth

Limits

None, for reporting purposes only.

Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.C.1.

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 1% - 5%(99%BW)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

Test Notes

The signal analyzers' automatic bandwidth measurement capability of the spectrum analyzer was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X= 26. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.

Test Setup

Refer to section 2.8.1 Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.6 Minimum Emission Bandwidth

Limits

Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.C.2.

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 100kHz(DTS)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

Test Notes

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Setup

Refer to section 2.8.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.7 Occupied Bandwidth

Limits

None, for reporting purposes only.

Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.D.

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously.
2. The transmitter output is connected to a spectrum analyzer:
3. RBW = 1% - 5%(99%BW)
4. VBW = 3 times the RBW
5. Sweep = Auto
6. Detector = Peak
7. Trace = Max hold
8. The trace was allowed to stabilize
9. Measure and record the results in the test report.

Test Setup

Refer to section 2.8.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.8 Maximum Power Spectral Density

Limits

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1-megahertz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1-megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

Test Procedure

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.F

Test Settings

1. Set to the maximum power setting and enable the EUT transmit continuously
2. The transmitter output is connected to a spectrum analyzer
3. RBW = 1MHz (for 5.15–5.25 GHz, 5.25–5.35 GHz, and 5.47–5.725 GHz)
4. RBW = 500kHz (for 5.725–5.85 GHz)
5. VBW \geq 3 times RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize
10. Measure and record the results in the test report.

Test Setup

Refer to section 2.8.1- Setup 2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

4.9 Radiated Spurious Emissions and Band Edge

Limits

Spurious emissions are permitted in an of the frequency bands:

MHz	MHz	MHz	MHz	GHz	GHz
0.090 - 0.110	12.29 - 12.293	149.9 - 150.05	1660 - 1710	4.5 - 5.15	14.47 - 14.5
0.495 - 0.505	12.51975 - 12.52025	156.52475 - 156.52525	1718.8 - 1722.2	5.35 - 5.46	15.35 - 16.2
2.1735 - 2.1905	12.5767 - 12.57725	156.7 - 156.9	2200 - 2300	7.25 - 7.75	17.7 - 21.4
4.125 - 128	13.36 - 13.41	162.0125 - 167.17	2310 - 2390	8.025 - 8.5	22.01 - 23.12
4.17725 - 4.17775	16.42 - 16.423	167.72 - 173.2	2483.5 - 2500	9.0 - 9.2	23.6 - 24.0
4.20725 - 4.20775	16.69475 - 16.69525	240 - 285	2655 - 2900	9.3 - 9.5	31.2 - 31.8
6.215 - 6.218	1680425 - 1680475	322 - 335.4	3260 - 3267	10.6 - 12.7	36.43 - 36.5
6.26775 - 6.26825	25.5 - 25.67	399.9 - 410	3332 - 3339	13.25 - 13.4	
6.31175 - 6.31225	37.5 - 38.25	608 - 614	3345.8 - 3358		
8.291 - 8.294	73 - 74.6	960 - 1240	3600 - 4400		
8.362 - 8.366	74.8 - 75.2	1300 - 1427			
8.37625 - 8.38675	108 - 121.94	1435 - 1626.5			
8.41425 - 8.41475	123 - 138	1645.5 - 1646.5			

Radiated disturbance of an intentional radiator:

Frequency	Field strength (μV/m)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	74.0	Peak	3
		54.0	Average	

Un-restricted band emissions above 1GHz limit:

For transmitters operating in the 5.15-5.25 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band:

All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating solely in the 5.725-5.850 GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Test Procedure

ANSI C63.10:2013 Section 6.4 & 6.5 & 6.6.

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II.G.3 ~ 6.

Test Settings

1. For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
2. For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the ground plane.
3. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
4. For each suspected emission, the EUT was ranged its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) find the maximum reading. Preamplifier and a high pass filter are used for the test in order get better signal level comply with the guidelines.
5. The simulated base station was set to force the EUT to its maximum transmitting power.
6. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
7. spectrum analyzer setting:
Measurements Below 1000MHz: RBW = 120 kHz; VBW ≥ 300 kHz; Detector = Peak
Measurements Above 1000MHz: RBW = 1 MHz; VBW ≥ 3 MHz; Detector = Peak
Average Measurements Above 1000MHz:
RBW = 1 MHz, VBW ≥ 1/T, with peak detector for average measurements.
8. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:
Level = Reading(dBμV) + AF(dB/m) + Factor(dB):
AF = Antenna Factor(dB/m)
Factor = Cable Factor(dB) - Preamplifier gain(dB)
Margin = Limit(dBμV/m) – Level(dBμV/m)
9. Repeat above procedures until all frequencies measured was complete.
10. Measure and record the results in the test report.

Test Notes

1. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9KHz to 30MHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be recorded, so only the harmonics had been displayed.
2. If the peak measurement value does not exceed the average limit, it is determined that further investigation is not necessary.

Test Setup

Refer to section 2.8.2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix**.

5 Test Setup Photos

The detailed test data see: **Test Setup Photos**

Appendix

Emission Bandwidth Test Result

TestMode	Antenna	Frequency[MHz]	26dB EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A-CDD	Ant6	5180	21.600	5169.480	5191.080	---	---
11A-CDD	Ant7	5180	24.240	5168.520	5192.760	---	---
11A-CDD	Ant6	5200	22.880	5188.760	5211.640	---	---
11A-CDD	Ant7	5200	21.560	5189.480	5211.040	---	---
11A-CDD	Ant6	5240	22.480	5228.880	5251.360	---	---
11A-CDD	Ant7	5240	23.720	5228.520	5252.240	---	---
11A-CDD	Ant6	5260	22.040	5249.000	5271.040	---	---
11A-CDD	Ant7	5260	26.760	5246.360	5273.120	---	---
11A-CDD	Ant6	5300	22.240	5288.840	5311.080	---	---
11A-CDD	Ant7	5300	24.920	5287.280	5312.200	---	---
11A-CDD	Ant6	5320	22.200	5308.880	5331.080	---	---
11A-CDD	Ant7	5320	23.560	5308.560	5332.120	---	---
11A-CDD	Ant6	5500	22.360	5488.720	5511.080	---	---
11A-CDD	Ant7	5500	22.720	5488.600	5511.320	---	---
11A-CDD	Ant6	5600	22.120	5588.960	5611.080	---	---
11A-CDD	Ant7	5600	21.680	5589.280	5610.960	---	---
11A-CDD	Ant6	5700	22.640	5688.840	5711.480	---	---
11A-CDD	Ant7	5700	22.080	5689.320	5711.400	---	---
11A-CDD	Ant6	5745	22.160	5733.840	5756.000	---	---
11A-CDD	Ant7	5745	22.520	5734.240	5756.760	---	---
11A-CDD	Ant6	5785	22.040	5774.000	5796.040	---	---
11A-CDD	Ant7	5785	30.120	5769.840	5799.960	---	---
11A-CDD	Ant6	5825	22.640	5813.920	5836.560	---	---
11A-CDD	Ant7	5825	22.120	5814.160	5836.280	---	---
11A-CDD	Ant6	5720	22.760	5709.320	5732.080	---	---
11A-CDD	Ant7	5720	22.760	5708.520	5731.280	---	---
11A-CDD	Ant6	5720_UNII-2C	15.68	5709.320	5725	---	---
11A-CDD	Ant7	5720_UNII-2C	16.48	5708.520	5725	---	---
11A-CDD	Ant6	5720_UNII-3	7.08	5725	5732.080	---	---
11A-CDD	Ant7	5720_UNII-3	6.28	5725	5731.280	---	---
11N20MIMO	Ant6	5180	23.040	5168.640	5191.680	---	---
11N20MIMO	Ant7	5180	25.160	5166.920	5192.080	---	---
11N20MIMO	Ant6	5200	22.040	5189.000	5211.040	---	---
11N20MIMO	Ant7	5200	23.720	5188.440	5212.160	---	---
11N20MIMO	Ant6	5240	22.760	5228.880	5251.640	---	---
11N20MIMO	Ant7	5240	24.480	5227.760	5252.240	---	---
11N20MIMO	Ant6	5260	23.480	5248.160	5271.640	---	---
11N20MIMO	Ant7	5260	28.800	5245.600	5274.400	---	---
11N20MIMO	Ant6	5300	22.880	5288.720	5311.600	---	---
11N20MIMO	Ant7	5300	28.120	5286.880	5315.000	---	---
11N20MIMO	Ant6	5320	22.960	5308.680	5331.640	---	---
11N20MIMO	Ant7	5320	23.840	5308.040	5331.880	---	---
11N20MIMO	Ant6	5500	23.000	5488.680	5511.680	---	---
11N20MIMO	Ant7	5500	24.080	5488.040	5512.120	---	---
11N20MIMO	Ant6	5600	22.480	5588.880	5611.360	---	---
11N20MIMO	Ant7	5600	23.240	5588.400	5611.640	---	---
11N20MIMO	Ant6	5700	23.080	5688.640	5711.720	---	---
11N20MIMO	Ant7	5700	23.560	5688.360	5711.920	---	---
11N20MIMO	Ant6	5745	22.720	5733.640	5756.360	---	---
11N20MIMO	Ant7	5745	23.080	5733.560	5756.640	---	---
11N20MIMO	Ant6	5785	22.640	5773.640	5796.280	---	---
11N20MIMO	Ant7	5785	25.720	5771.240	5796.960	---	---
11N20MIMO	Ant6	5825	23.080	5813.640	5836.720	---	---
11N20MIMO	Ant7	5825	22.840	5813.640	5836.480	---	---
11N20MIMO	Ant6	5720	23.520	5708.920	5732.440	---	---
11N20MIMO	Ant7	5720	23.480	5708.000	5731.480	---	---
11N20MIMO	Ant6	5720_UNII-2C	16.08	5708.920	5725	---	---
11N20MIMO	Ant7	5720_UNII-2C	17	5708.000	5725	---	---
11N20MIMO	Ant6	5720_UNII-3	7.44	5725	5732.440	---	---
11N20MIMO	Ant7	5720_UNII-3	6.48	5725	5731.480	---	---
11N40MIMO	Ant6	5190	42.080	5169.120	5211.200	---	---

11N40MIMO	Ant7	5190	42.400	5168.880	5211.280	---	---
11N40MIMO	Ant6	5230	42.160	5208.880	5251.040	---	---
11N40MIMO	Ant7	5230	79.680	5190.000	5269.680	---	---
11N40MIMO	Ant6	5270	42.000	5249.040	5291.040	---	---
11N40MIMO	Ant7	5270	42.800	5249.040	5291.840	---	---
11N40MIMO	Ant6	5310	41.680	5289.520	5331.200	---	---
11N40MIMO	Ant7	5310	50.240	5287.600	5337.840	---	---
11N40MIMO	Ant6	5510	42.400	5488.800	5531.200	---	---
11N40MIMO	Ant7	5510	42.000	5489.200	5531.200	---	---
11N40MIMO	Ant6	5590	41.440	5569.440	5610.880	---	---
11N40MIMO	Ant7	5590	47.440	5564.000	5611.440	---	---
11N40MIMO	Ant6	5670	41.920	5649.120	5691.040	---	---
11N40MIMO	Ant7	5670	54.720	5640.400	5695.120	---	---
11N40MIMO	Ant6	5755	42.400	5733.880	5776.280	---	---
11N40MIMO	Ant7	5755	68.480	5718.200	5786.680	---	---
11N40MIMO	Ant6	5795	42.320	5773.800	5816.120	---	---
11N40MIMO	Ant7	5795	65.440	5757.400	5822.840	---	---
11N40MIMO	Ant6	5710	42.240	5689.200	5731.440	---	---
11N40MIMO	Ant7	5710	41.840	5689.280	5731.120	---	---
11N40MIMO	Ant6	5710_UNII-2C	35.8	5689.200	5725	---	---
11N40MIMO	Ant7	5710_UNII-2C	35.72	5689.280	5725	---	---
11N40MIMO	Ant6	5710_UNII-3	6.44	5725	5731.440	---	---
11N40MIMO	Ant7	5710_UNII-3	6.12	5725	5731.120	---	---
11AC20MIMO	Ant6	5180	22.360	5168.720	5191.080	---	---
11AC20MIMO	Ant7	5180	24.000	5168.000	5192.000	---	---
11AC20MIMO	Ant6	5200	22.480	5188.880	5211.360	---	---
11AC20MIMO	Ant7	5200	23.800	5188.080	5211.880	---	---
11AC20MIMO	Ant6	5240	23.440	5228.280	5251.720	---	---
11AC20MIMO	Ant7	5240	25.360	5226.840	5252.200	---	---
11AC20MIMO	Ant6	5260	22.440	5248.640	5271.080	---	---
11AC20MIMO	Ant7	5260	28.960	5245.240	5274.200	---	---
11AC20MIMO	Ant6	5300	23.040	5288.680	5311.720	---	---
11AC20MIMO	Ant7	5300	24.320	5287.440	5311.760	---	---
11AC20MIMO	Ant6	5320	22.960	5308.360	5331.320	---	---
11AC20MIMO	Ant7	5320	25.800	5306.760	5332.560	---	---
11AC20MIMO	Ant6	5500	22.960	5488.720	5511.680	---	---
11AC20MIMO	Ant7	5500	23.360	5488.360	5511.720	---	---
11AC20MIMO	Ant6	5600	23.040	5588.640	5611.680	---	---
11AC20MIMO	Ant7	5600	22.160	5589.160	5611.320	---	---
11AC20MIMO	Ant6	5700	22.600	5688.960	5711.560	---	---
11AC20MIMO	Ant7	5700	23.280	5688.360	5711.640	---	---
11AC20MIMO	Ant6	5745	22.600	5733.640	5756.240	---	---
11AC20MIMO	Ant7	5745	23.280	5733.360	5756.640	---	---
11AC20MIMO	Ant6	5785	22.800	5773.880	5796.680	---	---
11AC20MIMO	Ant7	5785	30.160	5769.880	5800.040	---	---
11AC20MIMO	Ant6	5825	22.920	5813.360	5836.280	---	---
11AC20MIMO	Ant7	5825	23.200	5813.440	5836.640	---	---
11AC20MIMO	Ant6	5720	24.240	5708.800	5733.040	---	---
11AC20MIMO	Ant7	5720	23.800	5708.120	5731.920	---	---
11AC20MIMO	Ant6	5720_UNII-2C	16.2	5708.800	5725	---	---
11AC20MIMO	Ant7	5720_UNII-2C	16.88	5708.120	5725	---	---
11AC20MIMO	Ant6	5720_UNII-3	8.04	5725	5733.040	---	---
11AC20MIMO	Ant7	5720_UNII-3	6.92	5725	5731.920	---	---
11AC40MIMO	Ant6	5190	41.920	5169.120	5211.040	---	---
11AC40MIMO	Ant7	5190	41.520	5169.680	5211.200	---	---
11AC40MIMO	Ant6	5230	41.760	5209.200	5250.960	---	---
11AC40MIMO	Ant7	5230	42.160	5208.960	5251.120	---	---
11AC40MIMO	Ant6	5270	42.240	5248.800	5291.040	---	---
11AC40MIMO	Ant7	5270	54.400	5243.360	5297.760	---	---
11AC40MIMO	Ant6	5310	41.520	5289.520	5331.040	---	---
11AC40MIMO	Ant7	5310	54.560	5283.280	5337.840	---	---
11AC40MIMO	Ant6	5510	41.680	5489.360	5531.040	---	---
11AC40MIMO	Ant7	5510	41.600	5489.440	5531.040	---	---
11AC40MIMO	Ant6	5590	41.280	5569.360	5610.640	---	---
11AC40MIMO	Ant7	5590	41.920	5569.440	5611.360	---	---
11AC40MIMO	Ant6	5670	41.600	5649.200	5690.800	---	---
11AC40MIMO	Ant7	5670	51.840	5640.560	5692.400	---	---
11AC40MIMO	Ant6	5755	41.920	5734.200	5776.120	---	---
11AC40MIMO	Ant7	5755	42.080	5733.880	5775.960	---	---
11AC40MIMO	Ant6	5795	41.280	5774.440	5815.720	---	---
11AC40MIMO	Ant7	5795	67.600	5759.080	5826.680	---	---
11AC40MIMO	Ant6	5710	41.920	5689.280	5731.200	---	---
11AC40MIMO	Ant7	5710	40.800	5689.760	5730.560	---	---
11AC40MIMO	Ant6	5710_UNII-2C	35.72	5689.280	5725	---	---
11AC40MIMO	Ant7	5710_UNII-2C	35.24	5689.760	5725	---	---

11AC40MIMO	Ant6	5710_UNII-3	6.2	5725	5731.200	---	---
11AC40MIMO	Ant7	5710_UNII-3	5.56	5725	5730.560	---	---
11AC80MIMO	Ant6	5210	84.960	5167.920	5252.880	---	---
11AC80MIMO	Ant7	5210	93.920	5166.000	5259.920	---	---
11AC80MIMO	Ant6	5290	85.760	5246.480	5332.240	---	---
11AC80MIMO	Ant7	5290	87.840	5247.920	5335.760	---	---
11AC80MIMO	Ant6	5530	84.480	5487.280	5571.760	---	---
11AC80MIMO	Ant7	5530	86.080	5486.960	5573.040	---	---
11AC80MIMO	Ant6	5610	84.480	5567.600	5652.080	---	---
11AC80MIMO	Ant7	5610	84.960	5567.120	5652.080	---	---
11AC80MIMO	Ant6	5775	86.720	5731.640	5818.360	---	---
11AC80MIMO	Ant7	5775	89.760	5730.200	5819.960	---	---
11AC80MIMO	Ant6	5690	85.440	5647.120	5732.560	---	---
11AC80MIMO	Ant7	5690	84.960	5648.240	5733.200	---	---
11AC80MIMO	Ant6	5690_UNII-2C	77.88	5647.120	5725	---	---
11AC80MIMO	Ant7	5690_UNII-2C	76.76	5648.240	5725	---	---
11AC80MIMO	Ant6	5690_UNII-3	7.56	5725	5732.560	---	---
11AC80MIMO	Ant7	5690_UNII-3	8.2	5725	5733.200	---	---

Test Graphs



11A-CDD-Ant6-5180



11A-CDD-Ant7-5180



11A-CDD-Ant6-5200



11A-CDD-Ant7-5200



11A-CDD-Ant6-5240



11A-CDD-Ant7-5240



11A-CDD-Ant6-5260



11A-CDD-Ant7-5260



11A-CDD-Ant6-5300



11A-CDD-Ant7-5300



11A-CDD-Ant6-5320



11A-CDD-Ant7-5320



11A-CDD-Ant6-5500



11A-CDD-Ant7-5500



11A-CDD-Ant6-5600



11A-CDD-Ant7-5600



11A-CDD-Ant6-5700



11A-CDD-Ant7-5700



11A-CDD-Ant6-5745



11A-CDD-Ant7-5745



11A-CDD-Ant6-5785



11A-CDD-Ant7-5785



11A-CDD-Ant6-5825



11A-CDD-Ant7-5825



11N20MIMO-Ant6-5180



11N20MIMO-Ant7-5180



11N20MIMO-Ant6-5200



11N20MIMO-Ant7-5200



11N20MIMO-Ant6-5240



11N20MIMO-Ant7-5240



11N20MIMO-Ant6-5260



11N20MIMO-Ant7-5260



11N20MIMO-Ant6-5300



11N20MIMO-Ant7-5300



11N20MIMO-Ant6-5320



11N20MIMO-Ant7-5320



11N20MIMO-Ant6-5500



11N20MIMO-Ant7-5500



11N20MIMO-Ant6-5600



11N20MIMO-Ant7-5600



11N20MIMO-Ant6-5700



11N20MIMO-Ant7-5700



11N20MIMO-Ant6-5745



11N20MIMO-Ant7-5745



11N20MIMO-Ant6-5785



11N20MIMO-Ant7-5785