RF TEST REPORT

Product Name: Smartphone

Model Number: Hyper 8 Ultra, Hyper 8, Hyper 8 Pro, Hyper 8E, Hyper 8S, Hyper 8 Plus, Hyper 9S, Hyper 9 Plus, Hyper 9, Hyper 9 Ultra

FCC ID: 2AOKUHYPER8

Issued For	:	SHENZHEN TUGAO INTELLIGENT CO.,LTD 8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong, Bao'an District Shenzhen, China
Issued By	:	Shenzhen LGT Test Service Co., Ltd. Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China

Report Number:	LGT25I189RF15
Sample Received Date:	Sep. 25, 2025
Date of Test:	Sep. 25, 2025 ~ Nov. 12, 2025
Date of Issue:	Nov. 12, 2025

The test report is effective only with both signature and specialized stamp. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report only apply to the tested sample.

TEST REPORT CERTIFICATION

Applicant:	SHENZHEN TUGAO INTELLIGENT CO.,LTD
Address:	8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong, Bao'an District Shenzhen, China
Manufacturer:	SHENZHEN TUGAO INTELLIGENT CO.,LTD
Address:	8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong, Bao'an District Shenzhen, China
Product Name:	Smartphone
Trademark:	HOTWAV
Model Number:	Hyper 8 Ultra, Hyper 8, Hyper 8 Pro, Hyper 8E, Hyper 8S, Hyper 8 Plus, Hyper 9S, Hyper 9 Plus, Hyper 9, Hyper 9 Ultra
Sample Status:	Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15.407, Subpart E ANSI C63.10-2020	PASS

Prepared by:

Zane Shan

Zane Shan
Engineer

Approved by:

Vita Li
Technical Director

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Revision History

Rev.	Issue Date	Contents
00	Nov. 12, 2025	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
Part 15.407,KDB 789033 D02 General U-NII Test Procedures New Rules v02r01

FCC Part 15.407		
FCC standard	Test Item	Results
15.207	AC Conducted Emission	PASS
15.407 (a) /15.407 (e)	26dB/6dB &99% Bandwidth	PASS
15.407(a)	Maximum Conducted Output Power	PASS
15.407(b)/15.205/15.209	Radiated Emission And (bandedge Emissions) Measurement	PASS
15.407(a)	Power Spectral Density	PASS
15.407(c)	Automatically Discontinue Transmission	PASS
15.203/15.204	Antenna Requirement	PASS

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2020.

(3) 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 users manual.

1.1 TEST LABORATORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate:	FCC Registration No.: 746540
	CAB ID: CN0136

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	Occupied Channel Bandwidth	±0.46%
2	RF Output Power, Conducted	±0.71dB
3	Power Spectral Density, Conducted	±1.57dB
4	Unwanted Emission, Conducted	±0.63dB
5	Conducted emission	±2.80dB
6	All Emissions, Radiated (0.009-30MHz)	±2.16dB
7	All Emissions, Radiated (30MHz-1GHz)	±4.61dB
8	All Emissions, Radiated (1GHz-18GHz)	±5.49dB
9	Temperature	±0.5°C
10	Humidity	±2%
11	Duty Cycle	±2.3%

Note: The measurement uncertainty is not included in the test result.

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

<table>
<tr><td>Product Name:</td><td>Smartphone</td></tr>
<tr><td>Test Model Number:</td><td>Hyper 8 Ultra</td></tr>
<tr><td>Series Number:</td><td>Hyper 8, Hyper 8 Pro, Hyper 8E, Hyper 8S, Hyper 8 Plus, Hyper 9S, Hyper 9 Plus, Hyper 9, Hyper 9 Ultra</td></tr>
<tr><td>Model Difference:</td><td>Only model different.</td></tr>
<tr><td>Product Description:</td><td>
<table>
<tr><td rowspan="4">Operation Frequency:</td><td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz
IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz
IEEE 802.11ac(VHT80): 5.210GHz</td></tr>
<tr><td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.260GHz-5.320GHz
IEEE 802.11 n(HT40)/ac(VHT40): 5.270GHz-5.310GHz
IEEE 802.11ac(VHT80): 5.290GHz</td></tr>
<tr><td>IEEE 802.11a/n(HT20)/ac(VHT20): 5.500GHz-5.700GHz
IEEE 802.11 n(HT40)/ac(VHT40): 5.510GHz-5.670GHz
IEEE 802.11ac(VHT80): 5.530GHz-5.610GHz</td></tr>
<tr><td>I IEEE 802.11a/n(HT20)/ac(VHT20): 5.745GHz-5.825GHz
IEEE 802.11a/n(HT40)/ac(VHT40): 5.755GHz-5.795GHz
IEEE 802.11ac(VHT80): 5.775GHz</td></tr>
<tr><td>Modulation Type:</td><td>802.11a(OFDM): BPSK, QPSK, 16-QAM, 64-QAM
802.11n(OFDM): BPSK, QPSK, 16-QAM, 64-QAM
802.11ac (OFDM): BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM</td></tr>
<tr><td>Antenna Designation:</td><td>PIFA</td></tr>
<tr><td>Antenna Gain(dBi)</td><td>ANT 1: 0.48
ANT 2: 0.48
MIMO: 3.49</td></tr>
</table>
More details of EUT technical specification, please refer to the User Manual.
</td></tr>
<tr><td>Test Channel:</td><td>Please refer to the Note 3.</td></tr>
<tr><td>Adapter:</td><td>Model 1: QZ-05500AC00
Input: 100-240V 50/60Hz 1.2A
Output(PD): 5.0V, 3.0A 15.0W or 9.0V, 3.0A 27.0W or 12.0V, 3.0A 36.0W or 15.0V, 3.0A 45.0W or 20.0V, 2.75A 55.0W Max
(PPS): 5.0V~11.0V, 3.0A 33.0W Max
(PPS): 5.0V~20.0V, 2.75A 55.0W Max

Model 2: HJ-55WPD-US
Input: 100-240V 50/60Hz 1.5A
Output(PD): 5.0V, 3.0A 15.0W or 9.0V, 3.0A 27.0W or 12.0V, 3.0A 36.0W or 15.0V, 3.0A 45.0W or 20.0V, 2.75A 55.0W Max
(PPS): 5.0V, 20.0V 2.75A 55.0W Max</td></tr>
<tr><td>Battery:</td><td>Capacity: 6000mAh
Rated Voltage: 7.74V</td></tr>
</table>

Hardware Version:	F253_MAIN_PCB_V1.2
Software Version:	N/A
Connecting I/O Port(s):	Please refer to the Note 1.

Note

1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
2. The antenna information refers to the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.
3.

Operation Frequency of channel			
5.180GHz-5.240GHz		5.260GHz-5.320GHz	
Channel	Frequency	Channel	Frequency
36	5180	52	5260
38	5190	54	5270
40	5200	56	5280
42	5210	58	5290
44	5220	60	5300
46	5230	62	5310
48	5240	64	5320
5.500GHz-5.720GHz		5.745GHz-5.825GHz	
Channel	Frequency	Channel	Frequency
100	5500	149	5745
102	5510	151	5755
104	5520	153	5765
108	5540	157	5785
110	5550	159	5795
112	5560	161	5805
116	5580	165	5825
118	5590		
120	5600		
124	5620		
126	5630		
128	5640		
132	5660		
134	5670		
136	5680		
140	5700		
142	5710		
144	5720		

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:
Carrier Frequency Channel

Channel List for 802.11a/n/ac(20MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	52	5260	100	5500	149	5745
40	5200	60	5300	116	5580	157	5785
48	5240	64	5320	140	5700	165	5825

Channel List for 802.11n/ac(40MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	54	5270	102	5510	151	5755
46	5230	62	5310	110	5550	159	5795
--	--	--	--	134	5670	--	--

Channel List for 802.11ac(80MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	58	5290	106	5530	155	5775
--	--	--	--	122	5610	--	--

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Worst Mode	Description	Data Rate
Mode 1	TX IEEE 802.11a HT20 CH36&CH40&CH48	6 Mbps
Mode 2	TX IEEE 802.11a HT20 CH52&CH60&CH64	6 Mbps
Mode 3	TX IEEE 802.11a HT20 CH100&CH116&CH140	6 Mbps
Mode 4	TX IEEE 802.11a HT20 CH149&CH157&CH165	6 Mbps
Mode 5	TX IEEE 802.11n HT20 CH36&CH40&CH48	MCS 0
Mode 6	TX IEEE 802.11ac VHT20 CH36&CH40&CH48	NSS1 MCS0
Mode 7	TX IEEE 802.11n HT20 CH52&CH60&CH64	MCS 0
Mode 8	TX IEEE 802.11ac VHT20 CH52&CH60&CH64	NSS1 MCS0
Mode 9	TX IEEE 802.11n HT20 CH100&CH116&CH140	MCS 0
Mode 10	TX IEEE 802.11ac VHT20 CH100&CH116&CH140	NSS1 MCS0
Mode 11	TX IEEE 802.11n HT20 CH149&CH157&CH165	MCS 0
Mode 12	TX IEEE 802.11ac VHT20 CH149&CH157&CH165	NSS1 MCS0
Mode 13	TX IEEE 802.11n HT40 CH38&CH46	MCS 0
Mode 14	TX IEEE 802.11ac VHT40 CH38&CH46	NSS1 MCS0
Mode 15	TX IEEE 802.11n HT40 CH54 &CH62	MCS 0
Mode 16	TX IEEE 802.11ac VHT40 CH54 &CH62	NSS1 MCS0
Mode 17	TX IEEE 802.11n HT40 CH102&CH110&CH134	MCS 0
Mode 18	TX IEEE 802.11ac VHT40 CH102&CH110&CH134	NSS1 MCS0
Mode 19	TX IEEE 802.11n HT40 CH151&CH159	MCS 0

Mode 20	TX IEEE 802.11ac VHT40 CH151&CH159	NSS1 MCS0
Mode 21	TX IEEE 802.11ac VHT80 CH42	NSS1 MCS0
Mode 22	TX IEEE 802.11ac VHT80 CH58	NSS1 MCS0
Mode 23	TX IEEE 802.11ac VHT80 CH106&CH122	NSS1 MCS0
Mode 24	TX IEEE 802.11ac VHT80 CH155	NSS1 MCS0

Note: (1) The measurements are performed at the highest, middle, lowest available channels.

(2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

(3) We have be tested for all avaiable U.S. voltage and frequencies(For 120V,50/60Hz and 240V, 50/60Hz) for which the device is capable of operation.

(4) The battery is fully-charged during the radited and RF conducted test.

(5) All bandwidth modes have been tested, and the report only shown the worst mode data.

(6)The 802.11ax mode is investigated among different tones(26/52/106/242-tone RU channel), full resource units (RU), partial resourceunits. The partial RU has no higher power than full RU's, thus the full RU is chosen as main testconfiguration.

AC Conducted Emission

Test Case	
AC Conducted Emission	Mode 25: TX Mode

2.3 TEST SOFTWARE AND POWER LEVEL

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test software Version	Test program: 5G WIFI U-NII-1		
Engineering Mode	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	Default	-
	n20	Default	Default
	n40	Default	Default
	ac20	Default	Default
	ac40	Default	Default
	ac80	Default	Default
Test software Version	Test program: 5G WIFI U-NII-2A		
Engineering Mode	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	Default	-
	n20	Default	Default
	n40	Default	Default
	ac20	Default	Default
	ac40	Default	Default
	ac80	Default	Default
Test software Version	Test program: 5G WIFI U-NII-2C		
Engineering Mode	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	Default	-
	n20	Default	Default
	n40	Default	Default
	ac20	Default	Default
	ac40	Default	Default
	ac80	Default	Default
Test software Version	Test program: 5G WIFI U-NII-3		
Engineering Mode	Mode Or Modulation type	SISO Power setting	MIMO Power setting
	a	Default	-
	n20	Default	Default
	n40	Default	Default
	ac20	Default	Default
	ac40	Default	Default
	ac80	Default	Default

2.4 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Accessories Equipment

Description	Manufacturer	Model	S/N	Rating
Adapter	Shenzhen Huajin Electronics Co..Ltd	HJ-55WPD-US	N/A	Input: 100-240V 50/60z 1.5A Output: 5V 3A or 9V 3A or 12V 3A or15V 3A or 20V 2.75A
USB-C to USB-C Cable	N/A	N/A	N/A	1m, shielded, without ferrite core
Adapter	Guangdong Quanzhi Technology Co., Ltd.	QZ-05500AC00	N/A	Input: 100-240V 50/60Hz 1.2A Output: 5V 3A or 9V 3A or 12V 3A or 15V 3A or 20V 2.75A

Auxiliary Equipment

Description	Manufacturer	Model	S/N	Rating

Note:

(1) For detachable type I/O cable should be specified the length in cm in『Length』column.

(2) “YES” is means “with core”; “NO” is means “without core”.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
EMI Test Receiver	R&S	ESU8	100372	2025.03.06	2026.03.05
LISN	COM-POWER	LI-115	02032	2025.03.05	2026.03.04
LISN	SCHWARZBECK	NNLK 8122	00160	2025.03.05	2026.03.04
Transient Limiter	CYBERTEK	EM5010A	E2250100049	2025.03.05	2026.03.04
Coaxial cables (9kHz-30MHz)	Juncoax	JMR600 -NMNM-2M	N.A	2025.03.06	2026.03.05
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09
Testing Software	EMC-I_V1.4.0.3_SKET				

Radiated Test equipment					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
EMI Test Receiver	R&S	ESU8	100372	2025.03.06	2026.03.05
Active loop Antenna	ETS	6502	00049544	2025.03.11	2028.03.10
Spectrum Analyzer	Keysight	N9010B	MY60242508	2025.03.05	2026.03.04
Trilog Broadband Antenna (30M-1G)	SCHWARZBECK	VULB 9168	2705	2024.05.17	2027.05.16
Horn Antenna(1-18G)	SCHWARZBECK	3115	10SL0060	2025.03.10	2028.03.09
Horn Antenna(18-40G)	SCHWARZBECK	BBHA 9170	685	2023.10.23	2026.10.22
Pre-amplifier(30M-1G)	EMtrace	RP01A	02019	2025.03.06	2026.03.05
Pre-amplifier(1-26.5G)	Agilent	8449B	3008A4722	2025.03.06	2026.03.05
Pre-amplifier(18-40G)	SCHWARZBECK	BBV 9721	9721-019	2024.10.21 2025.10.20	2025.10.20 2026.10.19
Coaxial cables (9kHz-1GHz)	Juncoax	JMR600 -NMNM-8M	N.A	2025.03.06	2026.03.05
Coaxial cables (1GHz-18GHz)	TaiHe	UCD460B -NMSM-1M9	N.A	2025.03.06	2026.03.05
Coaxial cables (18GHz-40GHz)	Junkosha Inc.	MWX241 -05000KMSKMS	N.A	2025.03.08	2026.03.07
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2025.07.30	2026.07.29
Antenna Tower	SAEMC	BK-4AT-BS-D	SK2021093008	N.A	N.A
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09
Testing Software	EMC-I_V1.4.0.3_SKET				

RF Conducted Test equipment					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date**	**Cal. Until**
Signal Analyzer	Keysight	N9020A	MY50530994	2025.03.05	2026.03.04
Power Sensor	R&S	NRP8S	149.0006K02-104963-Ae	2025.03.06	2026.03.05
RF Automatic Test system	TST	TST PASS	293	2025.07.15	2026.07.14
MXG Vector Signal Generator	Keysight	N5182B	MY59100717	2025.03.05	2026.03.04
Temperature& Humidity test chamber	AISRY	LX-1000L	171200018	2025.07.30	2026.07.29

Attenuator	eastsheep	90db	N.A	2025.03.06	2026.03.05
Temperature & Humidity	JINGCHUANG	BT-3	N.A	2025.03.10	2026.03.09
Digital multimeter	MASTECH	MS8261	MBGBC83053	2025.03.05	2026.03.04
DC source	Keysight	E3634A	MY58036468	2025.03.06	2026.03.05
Testing Software	TST Pass_2.0.2				

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

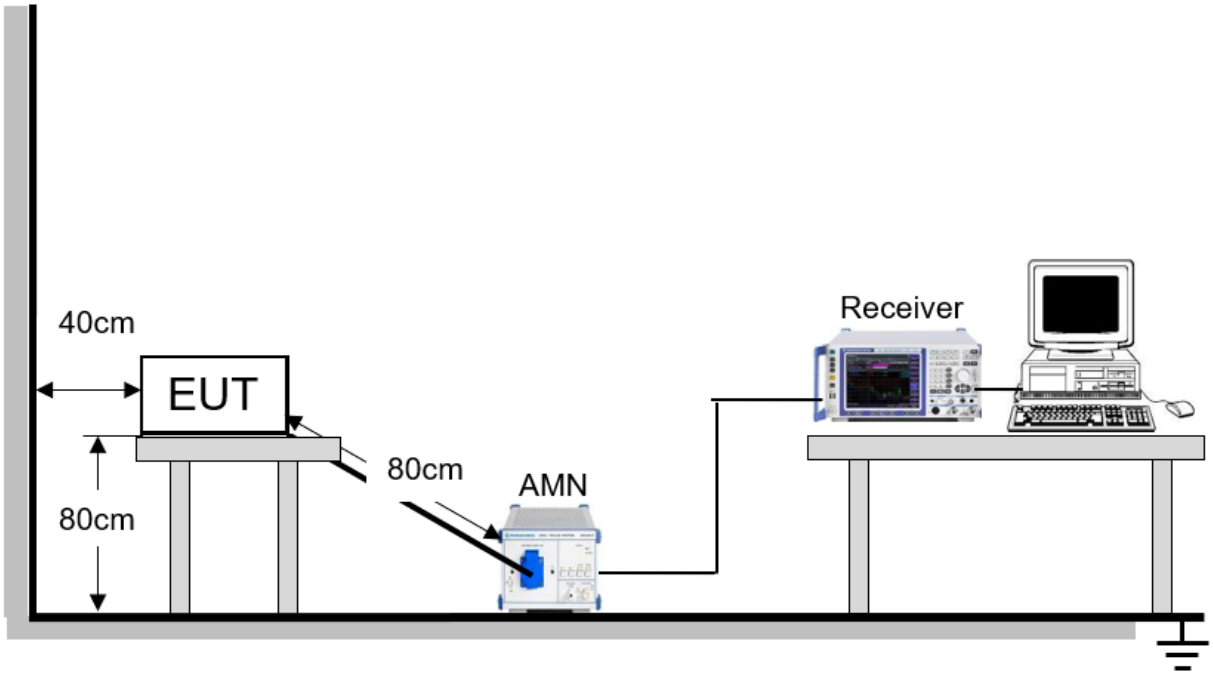
3.1.2 TEST PROCEDURE

a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN is at least 80 cm from the nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



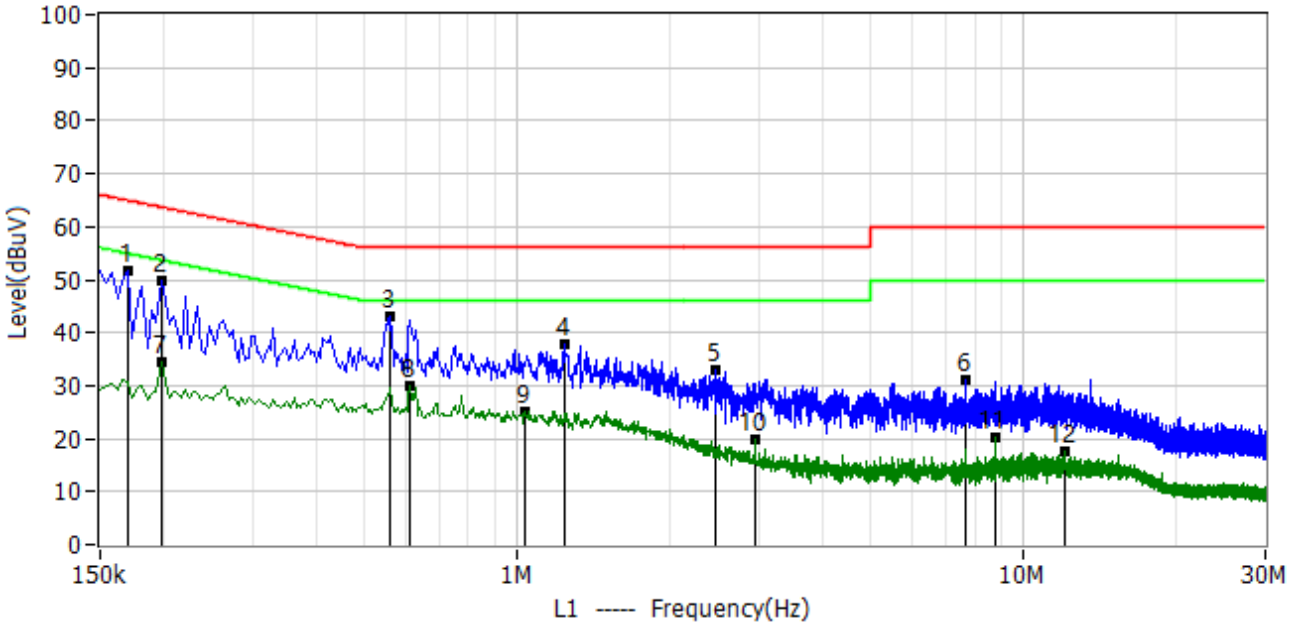
3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6 TEST RESULTS

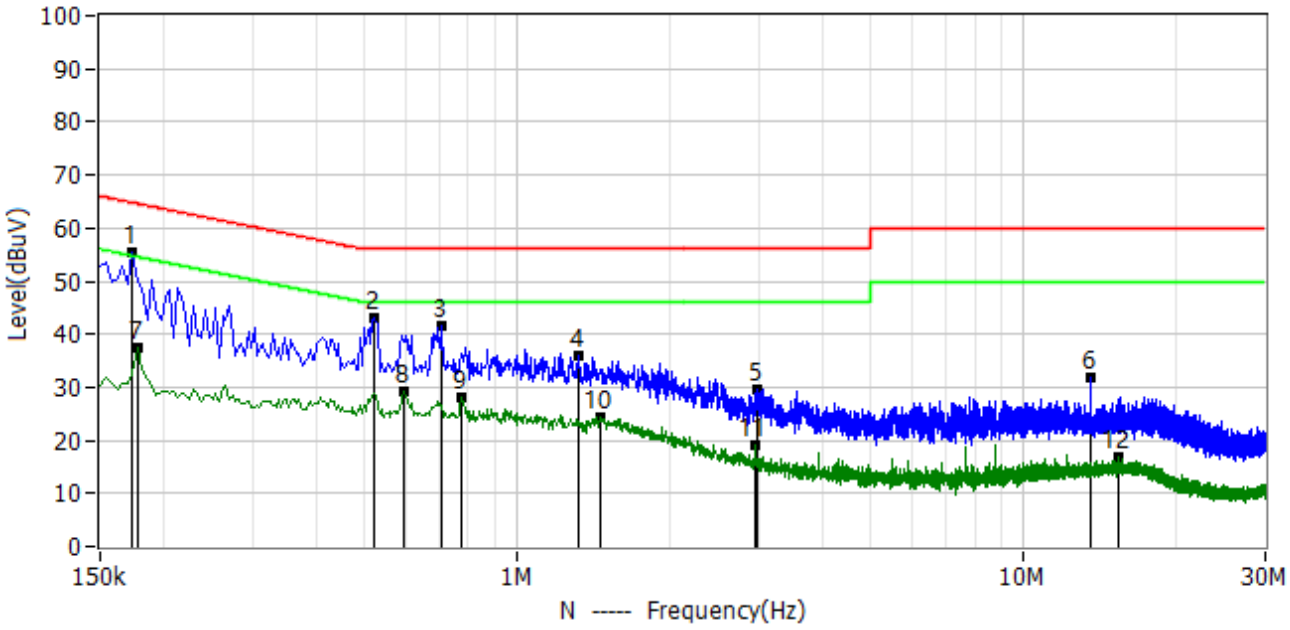
Note: Level = Reading + Factor
Margin = Level – Limit

Project: LGT25I189	Test Engineer: LiuH
EUT: Smartphone	Temperature: 26.1℃
M/N: Hyper 8 Ultra	Humidity: 46%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-10-11
Test Mode: TX 802.11a 5180	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.170	41.02	10.63	51.65	64.96	-13.31	QP	L1
2*	0.198	38.91	10.72	49.63	63.69	-14.06	QP	L1
3*	0.562	32.04	10.94	42.98	56.00	-13.02	QP	L1
4*	1.238	26.76	11.03	37.79	56.00	-18.21	QP	L1
5*	2.470	21.76	11.15	32.91	56.00	-23.09	QP	L1
6*	7.694	19.57	11.43	31.00	60.00	-29.00	QP	L1
7*	0.198	23.62	10.72	34.34	53.69	-19.35	AV	L1
8*	0.614	18.99	10.93	29.92	46.00	-16.08	AV	L1
9*	1.034	14.37	10.86	25.23	46.00	-20.77	AV	L1
10*	2.946	8.55	11.32	19.87	46.00	-26.13	AV	L1
11*	8.786	8.89	11.46	20.35	50.00	-29.65	AV	L1
12*	12.094	6.01	11.59	17.60	50.00	-32.40	AV	L1

Project: LGT25I189	Test Engineer: LiuH
EUT: Smartphone	Temperature: 26.1℃
M/N: Hyper 8 Ultra	Humidity: 46%RH
Test Voltage: AC 120V/60Hz	Test Data: 2025-10-11
Test Mode: TX 802.11a 5180	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Detector	Polar
1*	0.174	44.66	10.63	55.29	64.77	-9.48	QP	N
2*	0.522	32.08	10.84	42.92	56.00	-13.08	QP	N
3*	0.710	30.84	10.85	41.69	56.00	-14.31	QP	N
4*	1.326	25.04	11.00	36.04	56.00	-19.96	QP	N
5*	2.966	18.41	11.23	29.64	56.00	-26.36	QP	N
6*	13.590	20.08	11.61	31.69	60.00	-28.31	QP	N
7*	0.178	26.87	10.64	37.51	54.58	-17.07	AV	N
8*	0.598	18.18	10.86	29.04	46.00	-16.96	AV	N
9*	0.778	17.21	10.83	28.04	46.00	-17.96	AV	N
10*	1.454	13.17	11.07	24.24	46.00	-21.76	AV	N
11*	2.950	7.90	11.23	19.13	46.00	-26.87	AV	N
12*	15.422	5.02	11.66	16.68	50.00	-33.32	AV	N

3.2 RADIATED EMISSION AND (BANDEDGE) MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

In case the emission fall within the restricted band specified on 15.407(b)7&15.205/209(a), then the limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15E.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Note: In case the emission radiated emission above 1000MHz fall within the restricted band the restricted frequency bands, the peak limit is 74 dBuV/m.

LIMITS OF EMISSIONS OUTSIDE OF THE FREQUENCY BANDS

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) 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.

(2) 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.

(3) 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.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) 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.

Note: dBuV/m(at 3M) = EIRP(dBm) + 95.2.

Peak Limit = -27dBm/MHz + 95.2 = 68.2 dBuV/m.

Spectrum Parameter	**Setting**
Attenuation	Auto
Detector	Peak
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier harmonic (Peak/AV)
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

For Band edge

Spectrum Parameter	Setting
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 1 MHz, AV=1 MHz /3 MHz

Receiver Parameter	**Setting**
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

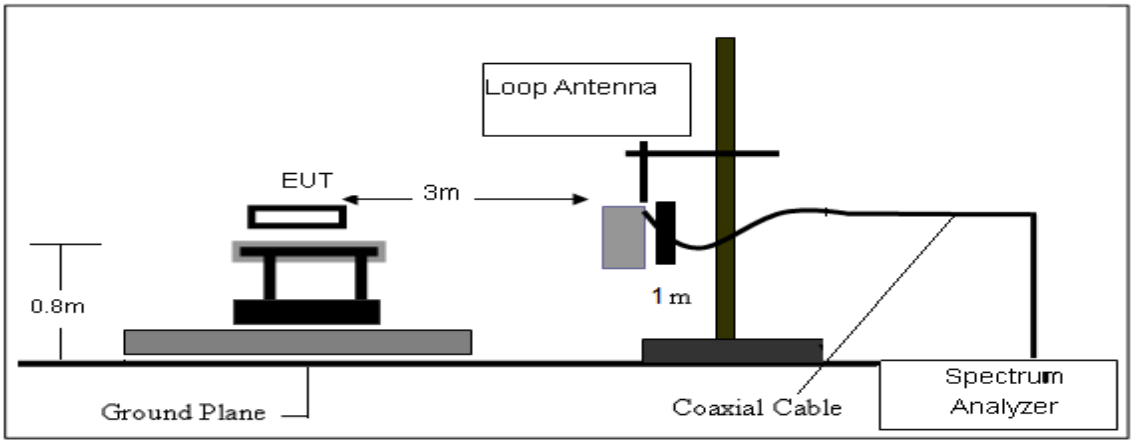
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.2 DEVIATION FROM TEST STANDARD

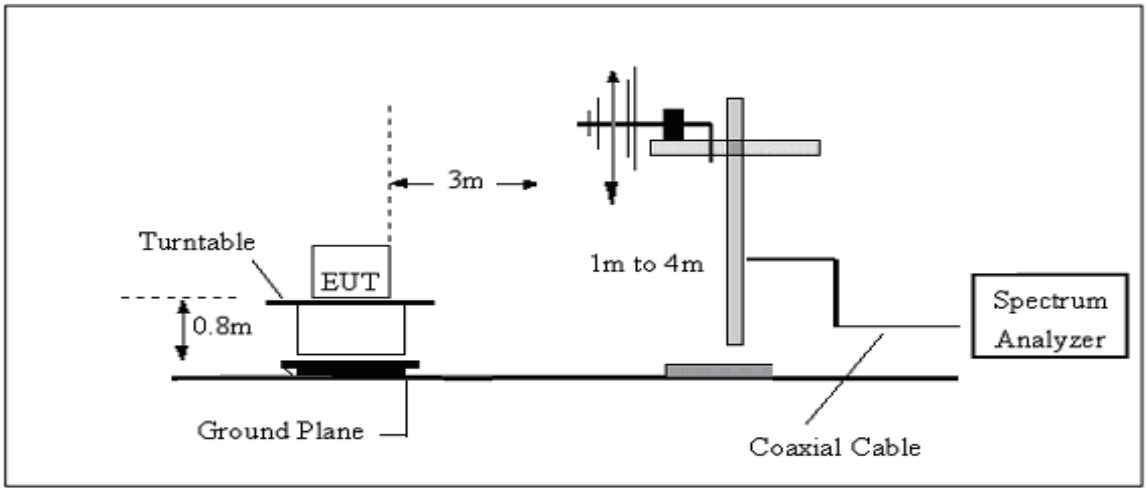
No deviation

3.2.3 TEST SETUP

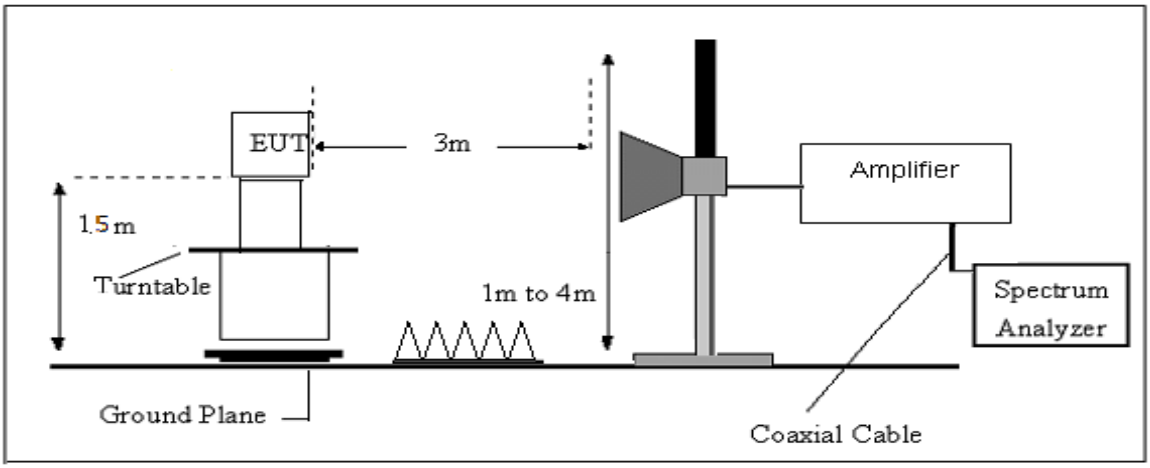
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:
FS = RA + AF + CL - AG
Where
FS = Field Strength
CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude
AG = Amplifier Gain
AF = Antenna Factor
For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBμV/m)	(dBμV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.6 TEST RESULTS

Results of Radiated Emissions (9 KHz~30MHz)

No.	Frequency	Reading dBuV	Factor dB/m	Level dBuV/m	Limit dBuV/m	Margin dB	Detector	Remark
1*	-	-	-	-	-	-	-	See Note

Note:

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and the permissible value has no need to be reported.

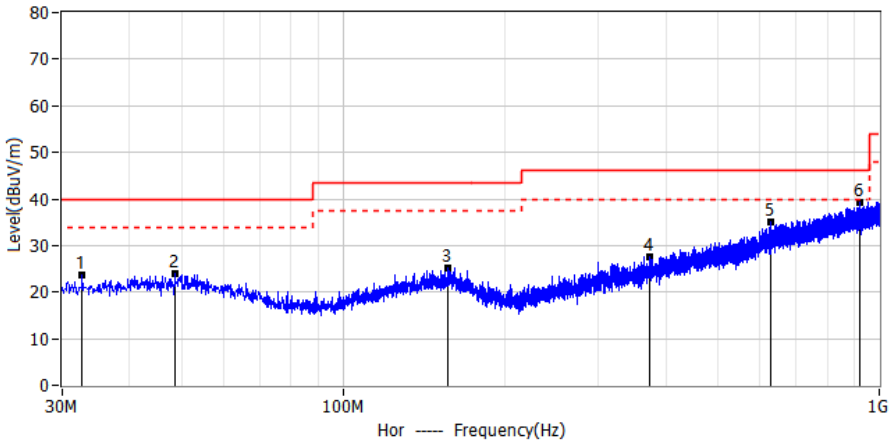
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

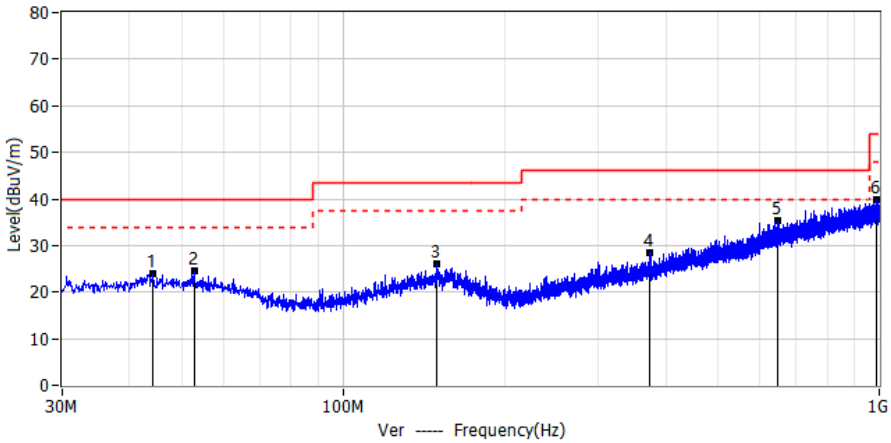
Results of Radiated Emissions (30MHz~1000MHz)

Note:1. All mode has been tested, only shown the worst case data.
2. Level = Reading + Factor
Margin = Level – Limit

Project: LGT25I189	Test Engineer: LiuH
EUT: Smartphone	Temperature: 25.7℃
M/N: Hyper 8 Ultra	Humidity: 42%RH
Test Voltage: Battery	Test Data: 2025-10-14
Test Mode: TX 802.11a 5180	
Note:	



No.	Frequency MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	32.668	4.03	19.63	23.66	40.00	-16.34	QP	Hor
2*	48.551	3.29	20.81	24.10	40.00	-15.90	QP	Hor
3*	157.313	3.05	22.25	25.30	43.50	-18.20	QP	Hor
4*	374.108	3.26	24.44	27.70	46.00	-18.30	QP	Hor
5*	628.733	4.97	29.94	34.91	46.00	-11.09	QP	Hor
6*	919.490	4.81	34.57	39.38	46.00	-6.62	QP	Hor



No.	Frequency MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Detector	Polar
1*	44.308	3.13	20.90	24.03	40.00	-15.97	QP	Ver
2*	52.795	3.66	20.91	24.57	40.00	-15.43	QP	Ver
3*	150.038	4.12	21.80	25.92	43.50	-17.58	QP	Ver
4*	372.289	4.20	24.32	28.52	46.00	-17.48	QP	Ver
5*	646.435	4.83	30.45	35.28	46.00	-10.72	QP	Ver
6*	985.208	4.42	35.49	39.91	54.00	-14.09	QP	Ver

Results of Radiated Emissions (Above 1000MHz)

Note:1. All mode has been tested, only shown the worst case data.

UNII-1(5.15-5.25) GHz							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB)	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
Low Channel (802.11/ 5180 MHz)							
3987.62	53.25	-6.89	46.36	74.00	-27.64	PK	Vertical
3987.62	42.83	-6.89	35.94	54.00	-18.06	AV	Vertical
3993.16	53.05	-6.89	46.16	74.00	-27.84	PK	Horizontal
3993.16	42.74	-6.89	35.85	54.00	-18.15	AV	Horizontal
8906.47	53.03	-3.80	49.23	68.20	-18.97	PK	Vertical
8906.47	43.46	-3.80	39.66	54.00	-14.34	AV	Vertical
8918.05	53.79	-3.80	49.99	68.20	-18.21	PK	Horizontal
8918.05	43.61	-3.80	39.81	54.00	-14.19	AV	Horizontal
10359.98	56.47	-2.92	53.55	68.20	-14.65	PK	Vertical
10359.98	44.35	-2.92	41.43	54.00	-12.57	AV	Vertical
10359.97	56.37	-2.92	53.45	68.20	-14.75	PK	Horizontal
10359.97	44.18	-2.92	41.26	54.00	-12.74	AV	Horizontal
13287.23	54.72	-0.67	54.05	74.00	-19.95	PK	Vertical
13287.23	43.82	-0.67	43.15	54.00	-10.85	AV	Vertical
13281.17	54.84	-0.67	54.17	74.00	-19.83	PK	Horizontal
13281.17	44.03	-0.67	43.36	54.00	-10.64	AV	Horizontal
Mid Channel (802.11/ 5200 MHz)							
3980.62	52.93	-6.89	46.04	74.00	-27.96	PK	Vertical
3980.62	42.89	-6.89	36.00	54.00	-18.00	AV	Vertical
3982.30	53.44	-6.89	46.55	74.00	-27.45	PK	Horizontal
3982.30	42.76	-6.89	35.87	54.00	-18.13	AV	Horizontal
7224.90	53.27	-3.80	49.47	68.20	-18.73	PK	Vertical
7224.90	43.28	-3.80	39.48	54.00	-14.52	AV	Vertical
7228.19	53.09	-3.80	49.29	68.20	-18.91	PK	Horizontal
7228.19	43.73	-3.80	39.93	54.00	-14.07	AV	Horizontal
10400.18	56.24	-2.92	53.32	68.20	-14.88	PK	Vertical
10400.18	44.09	-2.92	41.17	54.00	-12.83	AV	Vertical
10399.94	56.49	-2.92	53.57	68.20	-14.63	PK	Horizontal
10399.94	44.53	-2.92	41.61	54.00	-12.39	AV	Horizontal
13293.44	54.55	-0.67	53.88	74.00	-20.12	PK	Vertical
13293.44	44.43	-0.67	43.76	54.00	-10.24	AV	Vertical
13281.94	53.55	-0.67	52.88	74.00	-21.12	PK	Horizontal
13281.94	43.90	-0.67	43.23	54.00	-10.77	AV	Horizontal
High Channel (802.11/ 5240 MHz)							
3992.76	52.69	-6.89	45.80	74.00	-28.20	PK	Vertical
3992.76	43.12	-6.89	36.23	54.00	-17.77	AV	Vertical
3996.21	52.06	-6.89	45.17	74.00	-28.83	PK	Horizontal
3996.21	42.34	-6.89	35.45	54.00	-18.55	AV	Horizontal
7217.19	53.98	-3.80	50.18	68.20	-18.02	PK	Vertical
7217.19	43.03	-3.80	39.23	54.00	-14.77	AV	Vertical
7226.70	53.65	-3.80	49.85	68.20	-18.35	PK	Horizontal
7226.70	44.25	-3.80	40.45	54.00	-13.55	AV	Horizontal
10480.31	56.18	-2.92	53.26	68.20	-14.94	PK	Vertical
10480.31	44.71	-2.92	41.79	54.00	-12.21	AV	Vertical
10480.07	55.64	-2.92	52.72	68.20	-15.48	PK	Horizontal
10480.07	44.33	-2.92	41.41	54.00	-12.59	AV	Horizontal
13290.05	54.97	-0.67	54.30	74.00	-19.70	PK	Vertical
13290.05	44.27	-0.67	43.60	54.00	-10.40	AV	Vertical
13284.71	54.44	-0.67	53.77	74.00	-20.23	PK	Horizontal
13284.71	44.39	-0.67	43.72	54.00	-10.28	AV	Horizontal

UNII-1A(5.25-5.35) GHz							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB)	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
Low Channel (802.11/ 5260 MHz)							
3982.35	52.33	-6.89	45.44	74.00	-28.56	PK	Vertical
3982.35	42.94	-6.89	36.05	54.00	-17.95	AV	Vertical
3980.79	52.49	-6.89	45.60	74.00	-28.40	PK	Horizontal
3980.79	43.35	-6.89	36.46	54.00	-17.54	AV	Horizontal
8924.14	53.85	-3.80	50.05	68.20	-18.15	PK	Vertical
8924.14	44.09	-3.80	40.29	54.00	-13.71	AV	Vertical
8919.56	54.49	-3.80	50.69	68.20	-17.51	PK	Horizontal
8919.56	43.10	-3.80	39.30	54.00	-14.70	AV	Horizontal
10520.12	55.10	-2.92	52.18	68.20	-16.02	PK	Vertical
10520.12	45.42	-2.92	42.50	54.00	-11.50	AV	Vertical
10520.26	56.31	-2.92	53.39	68.20	-14.81	PK	Horizontal
10520.26	44.77	-2.92	41.85	54.00	-12.15	AV	Horizontal
13281.31	54.54	-0.67	53.87	74.00	-20.13	PK	Vertical
13281.31	43.93	-0.67	43.26	54.00	-10.74	AV	Vertical
13286.10	53.52	-0.67	52.85	74.00	-21.15	PK	Horizontal
13286.10	43.50	-0.67	42.83	54.00	-11.17	AV	Horizontal
Mid Channel (802.11/ 5300 MHz)							
3988.46	52.81	-6.89	45.92	74.00	-28.08	PK	Vertical
3988.46	42.11	-6.89	35.22	54.00	-18.78	AV	Vertical
3985.58	52.76	-6.89	45.87	74.00	-28.13	PK	Horizontal
3985.58	43.11	-6.89	36.22	54.00	-17.78	AV	Horizontal
8923.04	53.96	-3.80	50.16	68.20	-18.04	PK	Vertical
8923.04	43.12	-3.80	39.32	54.00	-14.68	AV	Vertical
8920.10	53.63	-3.80	49.83	68.20	-18.37	PK	Horizontal
8920.10	44.21	-3.80	40.41	54.00	-13.59	AV	Horizontal
10600.36	55.05	-2.92	52.13	74.00	-21.87	PK	Vertical
10600.36	44.48	-2.92	41.56	54.00	-12.44	AV	Vertical
10600.05	55.17	-2.92	52.25	74.00	-21.75	PK	Horizontal
10600.05	44.42	-2.92	41.50	54.00	-12.50	AV	Horizontal
13280.58	54.93	-0.67	54.26	74.00	-19.74	PK	Vertical
13280.58	44.12	-0.67	43.45	54.00	-10.55	AV	Vertical
13288.15	54.26	-0.67	53.59	74.00	-20.41	PK	Horizontal
13288.15	43.66	-0.67	42.99	54.00	-11.01	AV	Horizontal
High Channel (802.11/ 5320 MHz)							
3981.60	53.32	-6.89	46.43	74.00	-27.57	PK	Vertical
3981.60	42.12	-6.89	35.23	54.00	-18.77	AV	Vertical
3989.40	53.06	-6.89	46.17	74.00	-27.83	PK	Horizontal
3989.40	43.29	-6.89	36.40	54.00	-17.60	AV	Horizontal
8913.75	53.81	-3.80	50.01	68.20	-18.19	PK	Vertical
8913.75	43.19	-3.80	39.39	54.00	-14.61	AV	Vertical
8912.59	53.18	-3.80	49.38	68.20	-18.82	PK	Horizontal
8912.59	44.43	-3.80	40.63	54.00	-13.37	AV	Horizontal
10640.27	55.87	-2.92	52.95	74.00	-21.05	PK	Vertical
10640.27	45.34	-2.92	42.42	54.00	-11.58	AV	Vertical
10640.04	56.37	-2.92	53.45	74.00	-20.55	PK	Horizontal
10640.04	45.21	-2.92	42.29	54.00	-11.71	AV	Horizontal
13293.00	54.25	-0.67	53.58	74.00	-20.42	PK	Vertical
13293.00	44.31	-0.67	43.64	54.00	-10.36	AV	Vertical
13297.83	53.57	-0.67	52.90	74.00	-21.10	PK	Horizontal
13297.83	44.93	-0.67	44.26	54.00	-9.74	AV	Horizontal

UNII-2C(5.47-5.725) GHz							
Frequency (MHz)	Reading (dBμV)	Orrected Factor（dB）	Reslut (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
Low Channel (802.11/ 5500 MHz)							
3990.16	52.25	-6.89	45.36	74.00	-28.64	PK	Vertical
3990.16	42.01	-6.89	35.12	54.00	-18.88	AV	Vertical
3983.55	53.27	-6.89	46.38	74.00	-27.62	PK	Horizontal
3983.55	42.77	-6.89	35.88	54.00	-18.12	AV	Horizontal
8913.50	53.13	-3.80	49.33	68.20	-18.87	PK	Vertical
8913.50	43.18	-3.80	39.38	54.00	-14.62	AV	Vertical
8917.85	53.47	-3.80	49.67	68.20	-18.53	PK	Horizontal
8917.85	44.49	-3.80	40.69	54.00	-13.31	AV	Horizontal
10996.81	56.26	-2.92	53.34	74.00	-20.66	PK	Vertical
10996.81	44.17	-2.92	41.25	54.00	-12.75	AV	Vertical
10988.89	55.28	-2.92	52.36	74.00	-21.64	PK	Horizontal
10988.89	44.61	-2.92	41.69	54.00	-12.31	AV	Horizontal
13290.37	54.03	-0.35	53.68	74.00	-20.32	PK	Vertical
13290.37	44.88	-0.35	44.53	54.00	-9.47	AV	Vertical
13291.49	53.87	-0.35	53.52	74.00	-20.48	PK	Horizontal
13291.49	43.55	-0.35	43.20	54.00	-10.80	AV	Horizontal
Mid Channel (802.11/ 5580 MHz)							
3988.41	53.42	-6.89	46.53	74.00	-27.47	PK	Vertical
3988.41	42.32	-6.89	35.43	54.00	-18.57	AV	Vertical
3991.65	52.97	-6.89	46.08	74.00	-27.92	PK	Horizontal
3991.65	42.39	-6.89	35.50	54.00	-18.50	AV	Horizontal
8909.36	54.16	-3.80	50.36	68.20	-17.84	PK	Vertical
8909.36	43.44	-3.80	39.64	54.00	-14.36	AV	Vertical
8912.61	53.73	-3.80	49.93	68.20	-18.27	PK	Horizontal
8912.61	44.43	-3.80	40.63	54.00	-13.37	AV	Horizontal
11147.34	56.40	-2.92	53.48	74.00	-20.52	PK	Vertical
11147.34	44.67	-2.92	41.75	54.00	-12.25	AV	Vertical
11148.49	56.08	-2.92	53.16	74.00	-20.84	PK	Horizontal
11148.49	44.50	-2.92	41.58	54.00	-12.42	AV	Horizontal
13282.55	53.94	-0.35	53.59	74.00	-20.41	PK	Vertical
13282.55	44.94	-0.35	44.59	54.00	-9.41	AV	Vertical
13294.63	54.88	-0.35	54.53	74.00	-19.47	PK	Horizontal
13294.63	44.18	-0.35	43.83	54.00	-10.17	AV	Horizontal
High Channel (802.11/ 5700 MHz)							
3991.22	52.77	-6.89	45.88	74.00	-28.12	PK	Vertical
3991.22	42.39	-6.89	35.50	54.00	-18.50	AV	Vertical
3989.95	52.76	-6.89	45.87	74.00	-28.13	PK	Horizontal
3989.95	42.41	-6.89	35.52	54.00	-18.48	AV	Horizontal
8912.26	53.83	-3.80	50.03	68.20	-18.17	PK	Vertical
8912.26	43.38	-3.80	39.58	54.00	-14.42	AV	Vertical
8925.80	53.96	-3.80	50.16	68.20	-18.04	PK	Horizontal
8925.80	44.00	-3.80	40.20	54.00	-13.80	AV	Horizontal
11386.00	56.23	-2.92	53.31	74.00	-20.69	PK	Vertical
11386.00	44.92	-2.92	42.00	54.00	-12.00	AV	Vertical
11394.44	55.25	-2.92	52.33	74.00	-21.67	PK	Horizontal
11394.44	44.50	-2.92	41.58	54.00	-12.42	AV	Horizontal
13289.66	54.61	-0.35	54.26	74.00	-19.74	PK	Vertical
13289.66	44.15	-0.35	43.80	54.00	-10.20	AV	Vertical
13283.69	53.57	-0.35	53.22	74.00	-20.78	PK	Horizontal
13283.69	43.87	-0.35	43.52	54.00	-10.48	AV	Horizontal

UNII-3(5.725-5.85) GHz							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB)	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
Low Channel (802.11/ 5745 MHz)							
3986.93	52.90	-6.89	46.01	74.00	-27.99	PK	Vertical
3986.93	42.07	-6.89	35.18	54.00	-18.82	AV	Vertical
3992.39	52.76	-6.89	45.87	74.00	-28.13	PK	Horizontal
3992.39	43.16	-6.89	36.27	54.00	-17.73	AV	Horizontal
8912.07	54.43	-3.80	50.63	68.20	-17.57	PK	Vertical
8912.07	43.06	-3.80	39.26	54.00	-14.74	AV	Vertical
8922.78	53.00	-3.80	49.20	68.20	-19.00	PK	Horizontal
8922.78	43.39	-3.80	39.59	54.00	-14.41	AV	Horizontal
11474.84	55.07	-2.92	52.15	74.00	-21.85	PK	Vertical
11474.84	44.68	-2.92	41.76	54.00	-12.24	AV	Vertical
11481.23	55.24	-2.92	52.32	74.00	-21.68	PK	Horizontal
11481.23	44.35	-2.92	41.43	54.00	-12.57	AV	Horizontal
13282.88	54.44	-0.35	54.09	74.00	-19.91	PK	Vertical
13282.88	44.95	-0.35	44.60	54.00	-9.40	AV	Vertical
13280.47	54.14	-0.35	53.79	74.00	-20.21	PK	Horizontal
13280.47	44.55	-0.35	44.20	54.00	-9.80	AV	Horizontal
Mid Channel (802.11/ 5785 MHz)							
3984.85	52.63	-6.89	45.74	74.00	-28.26	PK	Vertical
3984.85	43.14	-6.89	36.25	54.00	-17.75	AV	Vertical
3997.79	52.29	-6.89	45.40	74.00	-28.60	PK	Horizontal
3997.79	42.26	-6.89	35.37	54.00	-18.63	AV	Horizontal
8920.09	54.17	-3.80	50.37	68.20	-17.83	PK	Vertical
8920.09	44.22	-3.80	40.42	54.00	-13.58	AV	Vertical
8915.97	53.26	-3.80	49.46	68.20	-18.74	PK	Horizontal
8915.97	44.09	-3.80	40.29	54.00	-13.71	AV	Horizontal
11551.51	56.26	-2.92	53.34	74.00	-20.66	PK	Vertical
11551.51	44.53	-2.92	41.61	54.00	-12.39	AV	Vertical
11569.13	55.91	-2.92	52.99	74.00	-21.01	PK	Horizontal
11569.13	44.11	-2.92	41.19	54.00	-12.81	AV	Horizontal
13289.50	54.42	-0.35	54.07	74.00	-19.93	PK	Vertical
13289.50	44.71	-0.35	44.36	54.00	-9.64	AV	Vertical
13287.69	54.68	-0.35	54.33	74.00	-19.67	PK	Horizontal
13287.69	44.05	-0.35	43.70	54.00	-10.30	AV	Horizontal
High Channel (802.11/ 5825 MHz)							
3987.38	52.34	-6.89	45.45	74.00	-28.55	PK	Vertical
3987.38	42.03	-6.89	35.14	54.00	-18.86	AV	Vertical
3988.64	52.81	-6.89	45.92	74.00	-28.08	PK	Horizontal
3988.64	42.40	-6.89	35.51	54.00	-18.49	AV	Horizontal
8918.48	53.04	-3.80	49.24	68.20	-18.96	PK	Vertical
8918.48	43.36	-3.80	39.56	54.00	-14.44	AV	Vertical
8916.13	53.80	-3.80	50.00	68.20	-18.20	PK	Horizontal
8916.13	44.32	-3.80	40.52	54.00	-13.48	AV	Horizontal
11648.64	55.56	-2.92	52.64	74.00	-21.36	PK	Vertical
11648.64	44.03	-2.92	41.11	54.00	-12.89	AV	Vertical
11650.19	55.19	-2.92	52.27	74.00	-21.73	PK	Horizontal
11650.19	44.60	-2.92	41.68	54.00	-12.32	AV	Horizontal
13283.84	54.18	-0.35	53.83	74.00	-20.17	PK	Vertical
13283.84	43.73	-0.35	43.38	54.00	-10.62	AV	Vertical
13287.39	54.71	-0.35	54.36	74.00	-19.64	PK	Horizontal
13287.39	44.42	-0.35	44.07	54.00	-9.93	AV	Horizontal

Remark:
In frequency ranges 18~40GHz no any other harmonic emissions detected which are tested to compliance with the limit. No recording in the test report. No any other emissions level which are attenuated less than 20dB below the limit. No recording in the test report.

3.2.7 TEST RESULTS(Band edge Requirements)

Note:1. All mode has been tested, only shown the worst case data.

UNII-1/UNII-2A(5.15-5.35) GHz							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB)	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
802.11n BW20MHz							
5150	55.30	-7.51	47.79	74	-26.21	PK	Vertical
5150	44.29	-7.51	36.78	54	-17.22	AV	Vertical
5150	55.79	-7.51	48.28	74	-25.72	PK	Horizontal
5150	45.18	-7.51	37.67	54	-16.33	AV	Horizontal
5350	54.12	-8.19	45.93	74	-28.07	PK	Vertical
5350	44.74	-8.19	36.55	54	-17.45	AV	Vertical
5350	54.26	-8.19	46.07	74	-27.93	PK	Horizontal
5350	43.85	-8.19	35.66	54	-18.34	AV	Horizontal
802.11n BW40MHz							
5150	56.02	-7.51	48.51	74	-25.49	Peak	Vertical
5150	45.04	-7.51	37.53	54	-16.47	AVG	Vertical
5150	56.26	-7.51	48.75	74	-25.25	Peak	Horizontal
5150	44.84	-7.51	37.33	54	-16.67	AVG	Horizontal
5350	54.45	-8.19	46.26	74	-27.74	Peak	Vertical
5350	43.86	-8.19	35.67	54	-18.33	AVG	Vertical
5350	54.84	-8.19	46.65	74	-27.35	Peak	Horizontal
5350	43.62	-8.19	35.43	54	-18.57	AVG	Horizontal
802.11ac BW80MHz							
5150	55.23	-7.51	47.72	74	-26.28	Peak	Vertical
5150	44.07	-7.51	36.56	54	-17.44	AVG	Vertical
5150	55.15	-7.51	47.64	74	-26.36	Peak	Horizontal
5150	44.69	-7.51	37.18	54	-16.82	AVG	Horizontal
5350	54.75	-8.19	46.56	74	-27.44	Peak	Vertical
5350	44.08	-8.19	35.89	54	-18.11	AVG	Vertical
5350	54.29	-8.19	46.10	74	-27.90	Peak	Horizontal
5350	44.83	-8.19	36.64	54	-17.36	AVG	Horizontal

UNII-2C(5.47-5.725 GHz)							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB）	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
802.11n BW20MHz							
5460	53.11	-8.27	44.84	74	-29.16	PK	Vertical
5460	42.69	-8.27	34.42	54	-19.58	AV	Vertical
5460	54.12	-8.27	45.85	74	-28.15	PK	Horizontal
5460	42.63	-8.27	34.36	54	-19.64	AV	Horizontal
7250	54.18	-6.33	47.85	74	-26.15	PK	Vertical
7250	44.11	-6.33	37.78	54	-16.22	AV	Vertical
7250	54.61	-6.33	48.28	74	-25.72	PK	Horizontal
7250	44.48	-6.33	38.15	54	-15.85	AV	Horizontal
802.11n BW40MHz							
5460	54.15	-8.27	45.88	74	-28.12	PK	Vertical
5460	42.63	-8.27	34.36	54	-19.64	AV	Vertical
5460	53.13	-8.27	44.86	74	-29.14	PK	Horizontal
5460	42.70	-8.27	34.43	54	-19.57	AV	Horizontal
7250	55.45	-6.33	49.12	74	-24.88	PK	Vertical
7250	44.89	-6.33	38.56	54	-15.44	AV	Vertical
7250	54.13	-6.33	47.80	74	-26.20	PK	Horizontal
7250	44.47	-6.33	38.14	54	-15.86	AV	Horizontal
802.11ac BW80MHz							
5460	53.71	-8.27	45.44	74	-28.56	PK	Vertical
5460	43.94	-8.27	35.67	54	-18.33	AV	Vertical
5460	53.56	-8.27	45.29	74	-28.71	PK	Horizontal
5460	43.32	-8.27	35.05	54	-18.95	AV	Horizontal
7250	54.06	-6.33	47.73	74	-26.27	PK	Vertical
7250	44.89	-6.33	38.56	54	-15.44	AV	Vertical
7250	55.34	-6.33	49.01	74	-24.99	PK	Horizontal
7250	43.90	-6.33	37.57	54	-16.43	AV	Horizontal

UNII-3(5.725-5.85 GHz)							
Frequency (MHz)	Reading (dBμV)	Corrected Factor (dB）	Result (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector	Polarity
802.11n BW20MHz							
5460	54.08	-8.27	45.81	74	-28.19	PK	Vertical
5460	43.64	-8.27	35.37	54	-18.63	AV	Vertical
5460	53.75	-8.27	45.48	74	-28.52	PK	Horizontal
5460	43.67	-8.27	35.40	54	-18.60	AV	Horizontal
7250	54.10	-6.33	47.77	74	-26.23	PK	Vertical
7250	43.65	-6.33	37.32	54	-16.68	AV	Vertical
7250	54.84	-6.33	48.51	74	-25.49	PK	Horizontal
7250	43.78	-6.33	37.45	54	-16.55	AV	Horizontal
802.11n BW40MHz							
5460	53.61	-8.27	45.34	74	-28.66	PK	Vertical
5460	43.48	-8.27	35.21	54	-18.79	AV	Vertical
5460	53.72	-8.27	45.45	74	-28.55	PK	Horizontal
5460	42.86	-8.27	34.59	54	-19.41	AV	Horizontal
7250	54.00	-6.33	47.67	74	-26.33	PK	Vertical
7250	44.32	-6.33	37.99	54	-16.01	AV	Vertical
7250	54.65	-6.33	48.32	74	-25.68	PK	Horizontal
7250	44.87	-6.33	38.54	54	-15.46	AV	Horizontal
802.11ac BW80MHz							
5460	53.22	-8.27	44.95	74	-29.05	PK	Vertical
5460	42.68	-8.27	34.41	54	-19.59	AV	Vertical
5460	53.83	-8.27	45.56	74	-28.44	PK	Horizontal
5460	43.43	-8.27	35.16	54	-18.84	AV	Horizontal
7250	55.36	-6.33	49.03	74	-24.97	PK	Vertical
7250	43.93	-6.33	37.60	54	-16.40	AV	Vertical
7250	54.47	-6.33	48.14	74	-25.86	PK	Horizontal
7250	43.81	-6.33	37.48	54	-16.52	AV	Horizontal

4. POWER SPECTRAL DENSITY TEST

4.1 LIMIT

1. For mobile and portable 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. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. 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. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3.For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.2 TEST PROCEDURE

1. The setting follows Method SA-1 of FCC KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

For devices operating in the band, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (*i.e.,* 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:
a) Set RBW ≥ 1/*T*, where *T* is defined in section II.B.I.a).
b) Set VBW ≥ 3 RBW.
c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10 log (500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10 log (1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.
Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

4.3 DEVIATION FROM STANDARD

No deviation.

4.4 TEST SETUP

4.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

4.6 TEST RESULTS

For the measurement records, refer to the appendix I.

5. BANDWIDTH MEASUREMENT

5.1 EMISSION BANDWIDTH (EBW) 26 BANDWID PROCEDURES / LIMIT

The following procedure shall be used for measuring 26 bandwidth.

5.1.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > =RBW.
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP

5.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5 TEST RESULTS

For the measurement records, refer to the appendix I.

5.2 OCCUPIED BANDWIDTH (99%) TEST APPLIED PROCEDURES / LIMIT

The following procedure shall be used for measuring (99 %) power bandwidth.

5.2.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
The following procedure shall be used for measuring (99 %) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

5.2.2 DEVIATION FROM STANDARD

No deviation.

5.2.3 TEST SETUP

5.2.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.2.5 TEST RESULTS

For the measurement records, refer to the appendix I.

5.3 MINIMUM EMISSION BANDWIDTH(6 DB) PROCEDURES / LIMIT

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth.

5.3.1 TEST PROCEDURE

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures v02r01.
a) Set RBW = 100 kHz.
b) Set the video bandwidth (VBW) ≥ 3 × RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) 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.

5.3.2 DEVIATION FROM STANDARD

No deviation.

5.3.3 TEST SETUP

5.3.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.3.5 TEST RESULTS

For the measurement records, refer to the appendix I.

6. MAXIMUM CONDUCTED OUTPUT POWER

6.1 LIMIT

For mobile and portable 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. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 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,If transmitting antennas of directional gain greater than 6 dBi are used.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used.

<table>
<tr><td colspan="5">FCC Part15 (15.407) , Subpart E</td></tr>
<tr><td>Section</td><td>Test Item</td><td>Limit</td><td>Frequency Range (MHz)</td><td>Result</td></tr>
<tr><td rowspan="2">15.407(a) (1) (iv)</td><td rowspan="3">Output Power</td><td>0.25 watt</td><td>5150-5250</td><td rowspan="3">PASS</td></tr>
<tr><td>The lesser of 250 mW or 11 dBm + 10 log (26 dB emission bandwidth)</td><td>5250-5350
5470-5725</td></tr>
<tr><td>15.407(a) (3)</td><td>1 watt</td><td>5725-5825</td></tr>
</table>

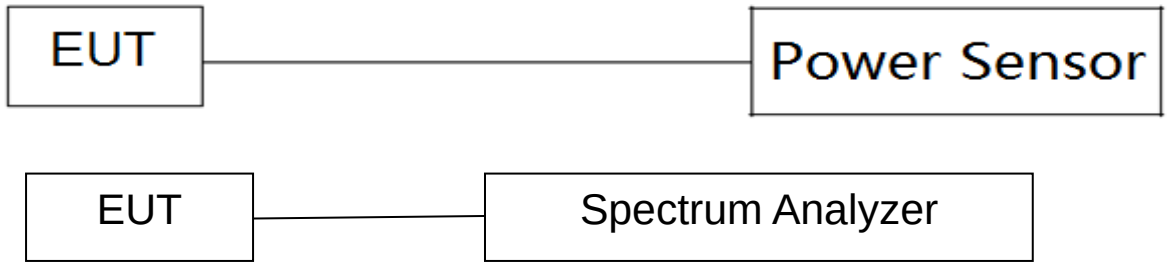
6.2 TEST PROCEDURE

The EUT was directly connected to the Power Sensor&PC.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 5 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

For the measurement records, refer to the appendix I.

7. CONDUCTED BANDEDGE

7.1 LIMIT

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) 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.
(2) 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.
(3) 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.
(4) For transmitters operating in the 5.725-5.85 GHz band:
a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

7.2 TEST PROCEDURE

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak
RB / VB (emission in restricted band)	1 MHz / 3 MHz
Offset	Ant Gain+Test system loss

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP

7.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.6 TEST RESULTS

For the measurement records, refer to the appendix I.

8. AUTOMATICALLY DISCONTINUE TRANSMISSION

8.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization to describe how this requirement is met.

8.2 TEST RESULT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission

9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

Part 15.203 requirement: For intentional device, according to 15.203: 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.

9.2 EUT ANTENNA

The EUT antenna is PIFA Antenna. It comply with the standard requirement.

APPENDIX I - TEST RESULTS

1. Duty Cycle
1.1 Test Result
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.401	1.494	93.78	0.28	0.04
802.11n (HT20)	SISO	5180	1.307	1.406	92.96	0.32	0.00
802.11n (HT40)	SISO	5190	0.651	0.747	87.15	0.60	0.04
802.11n (HT20)	MIMO	5180	1.310	1.407	93.11	0.31	0.03
802.11n (HT40)	MIMO	5190	0.651	0.747	87.15	0.60	0.04
802.11ac (VHT20)	SISO	5180	1.318	1.415	93.14	0.31	0.00
802.11ac (VHT40)	SISO	5190	0.661	0.755	87.55	0.58	0.07
802.11ac (VHT80)	SISO	5210	0.330	0.423	78.01	1.08	0.21
802.11ac (VHT20)	MIMO	5180	1.318	1.415	93.14	0.31	0.03
802.11ac (VHT40)	MIMO	5190	0.659	0.755	87.28	0.59	0.07
802.11ac (VHT80)	MIMO	5210	0.324	0.424	76.42	1.17	0.06

1.1.2 Ant2

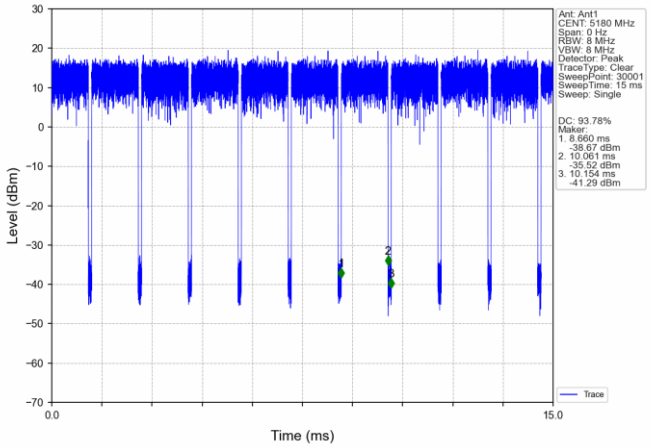
Ant2							
Mode	TX Type	Frequency (MHz)	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
802.11a	SISO	5180	1.398	1.494	93.57	0.29	0.03
802.11n (HT20)	SISO	5180	1.309	1.406	93.10	0.31	0.03
802.11n (HT40)	SISO	5190	0.653	0.747	87.42	0.58	0.07

802.11n (HT20)	MIMO	5180	1.310	1.407	93.11	0.31	0.03
802.11n (HT40)	MIMO	5190	0.651	0.747	87.15	0.60	0.03
802.11ac (VHT20)	SISO	5180	1.317	1.414	93.14	0.31	0.03
802.11ac (VHT40)	SISO	5190	0.662	0.755	87.68	0.57	0.04
802.11ac (VHT80)	SISO	5210	0.327	0.423	77.30	1.12	0.03
802.11ac (VHT20)	MIMO	5180	1.317	1.414	93.14	0.31	0.03
802.11ac (VHT40)	MIMO	5190	0.662	0.755	87.68	0.57	0.07
802.11ac (VHT80)	MIMO	5210	0.330	0.423	78.01	1.08	0.22

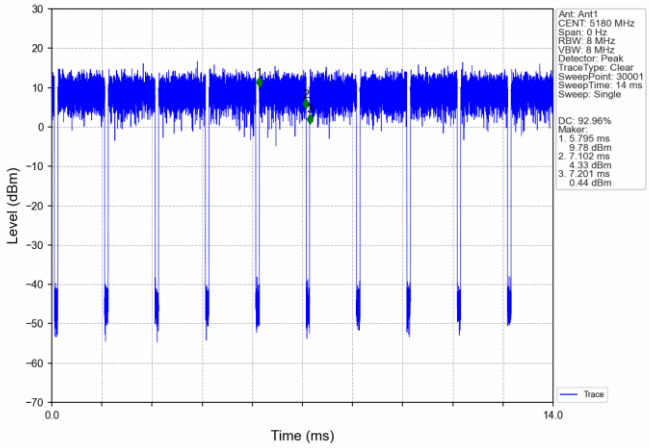
1.2 Test Graph

1.2.1 Ant1

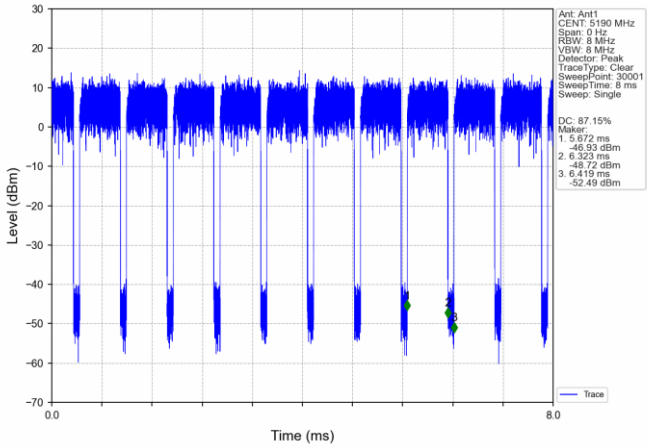
802.11a_LCH_5180MHz_Ant1_NTNV

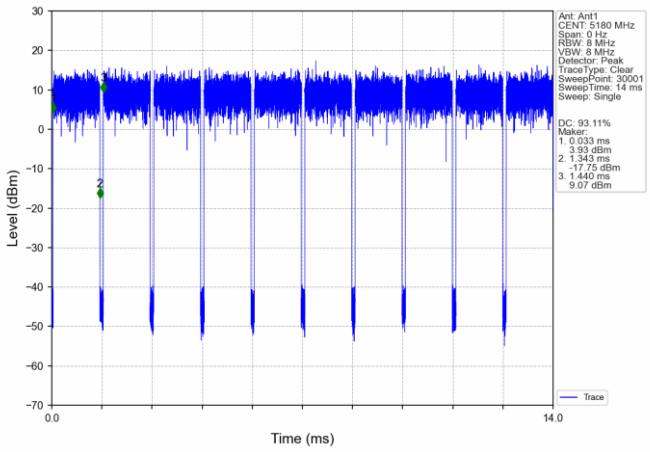
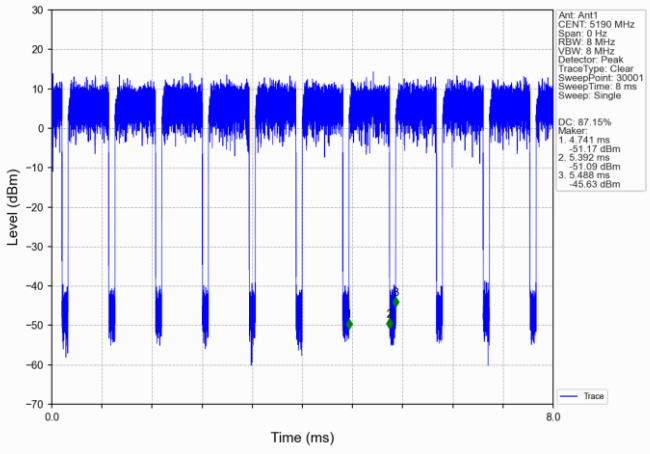
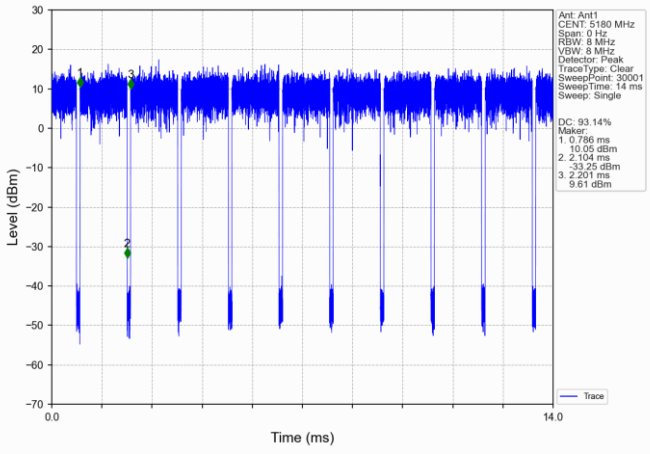


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

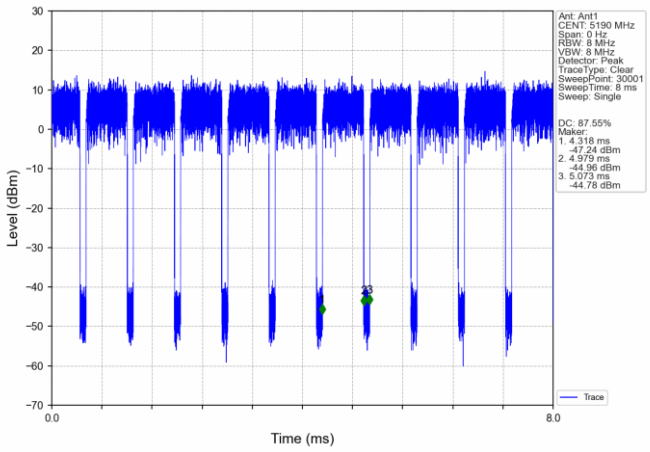


802.11n(HT40)_LCH_5190MHz_Ant1_NTNV

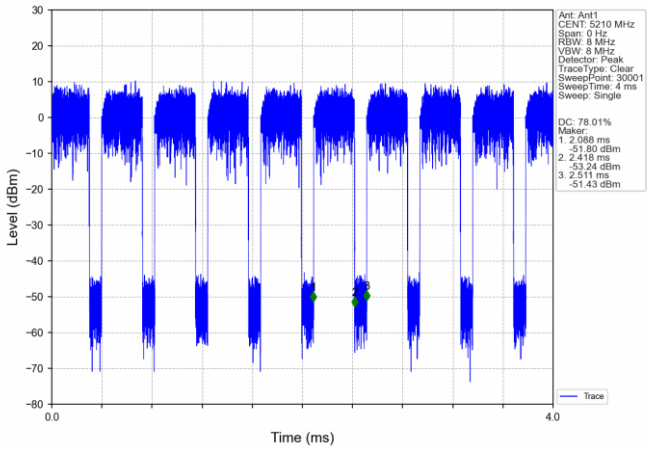


802.11n(HT20)_LCH_5180MHz_Ant1_NTNV

802.11n(HT40)_LCH_5190MHz_Ant1_NTNV

802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV


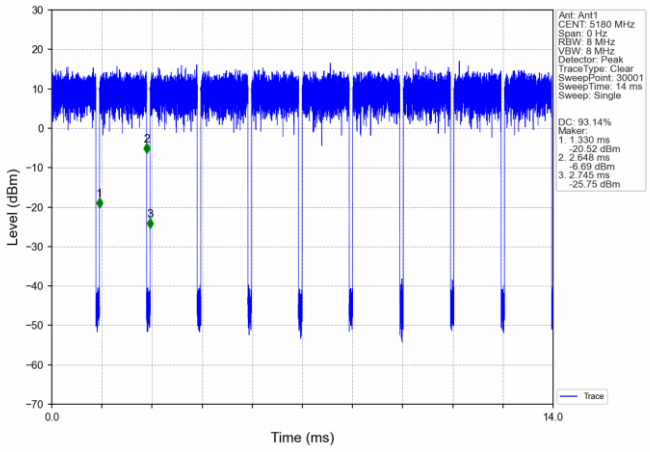
802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV

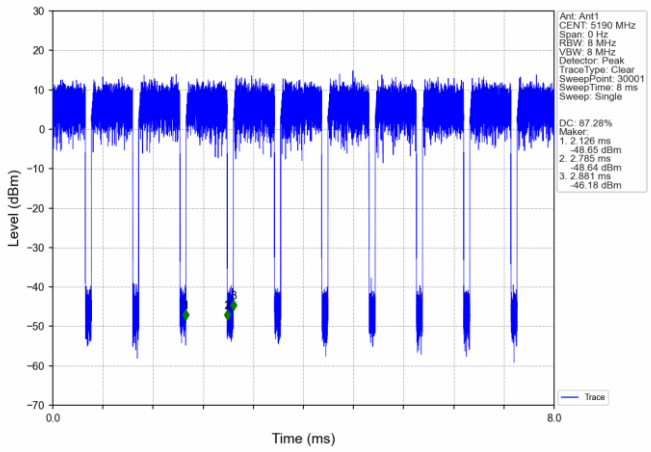
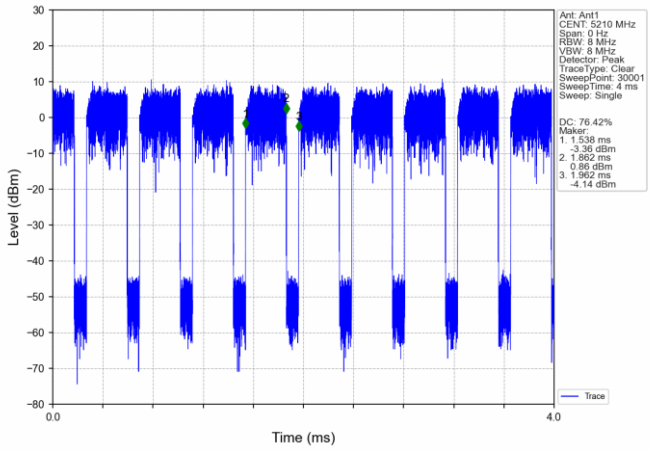


802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV

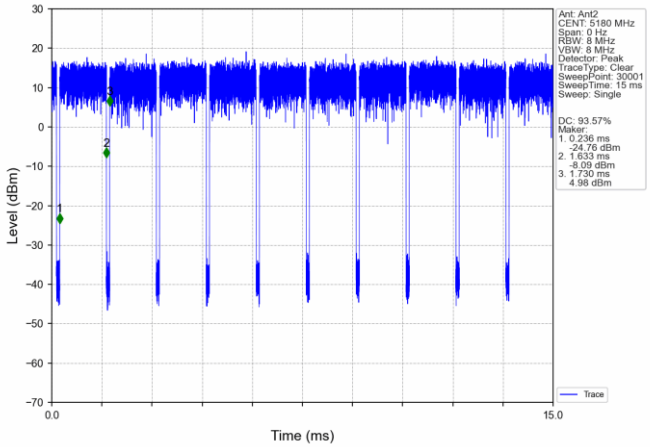
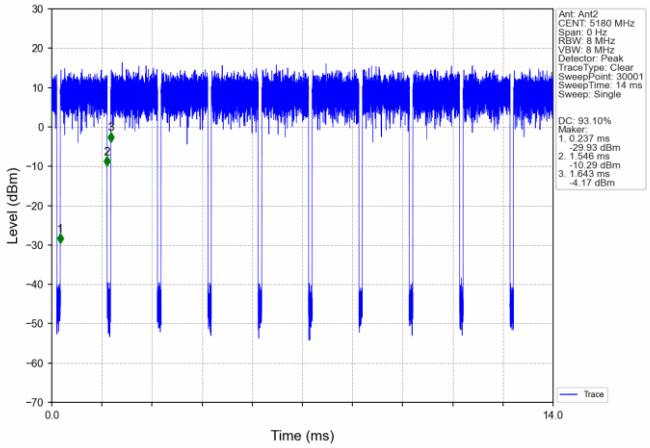
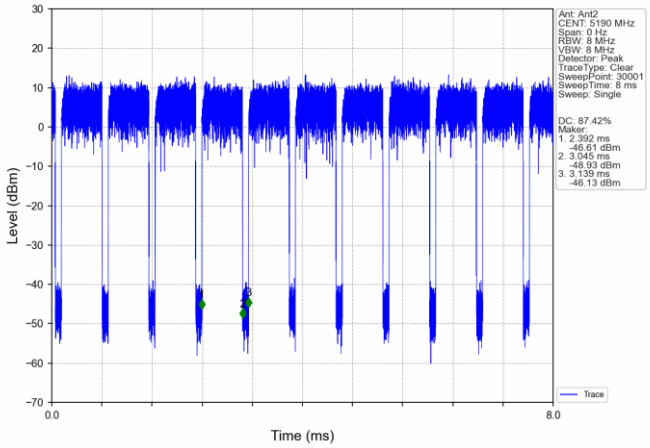


802.11ac(VHT20)_LCH_5180MHz_Ant1_NTNV

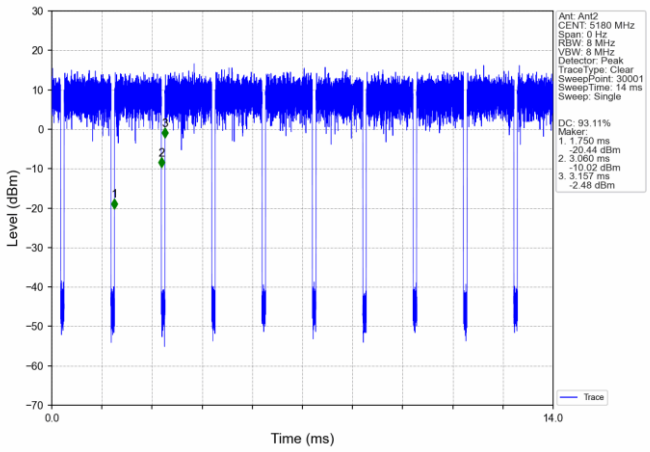


802.11ac(VHT40)_LCH_5190MHz_Ant1_NTNV

802.11ac(VHT80)_MCH_5210MHz_Ant1_NTNV


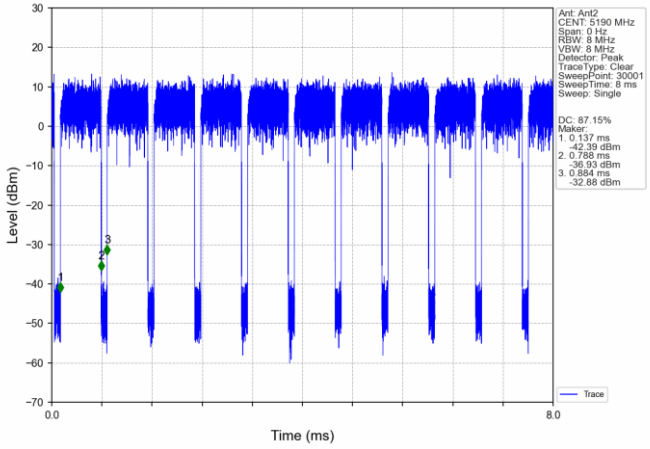
1.2.2 Ant2

802.11a_LCH_5180MHz_Ant2_NTNV

802.11n(HT20)_LCH_5180MHz_Ant2_NTNV

802.11n(HT40)_LCH_5190MHz_Ant2_NTNV


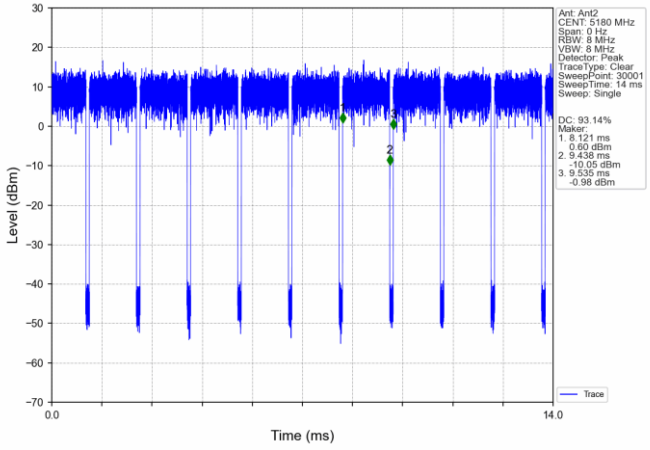
802.11n(HT20)_LCH_5180MHz_Ant2_NTNV



802.11n(HT40)_LCH_5190MHz_Ant2_NTNV



802.11ac(VHT20)_LCH_5180MHz_Ant2_NTNV



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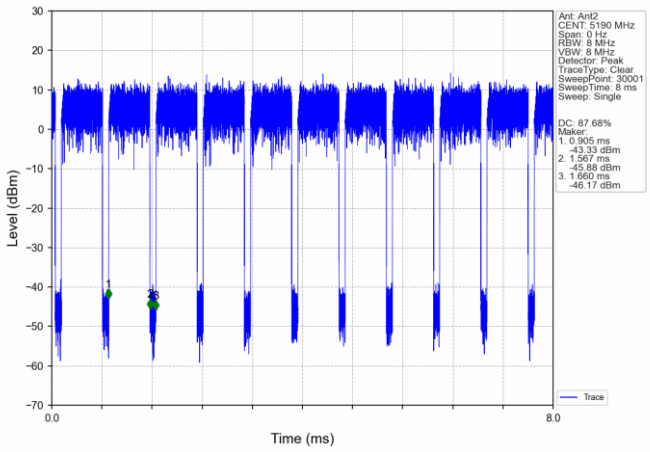
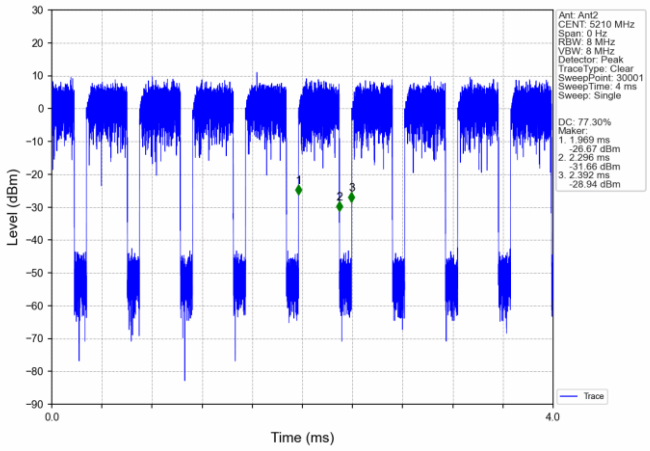
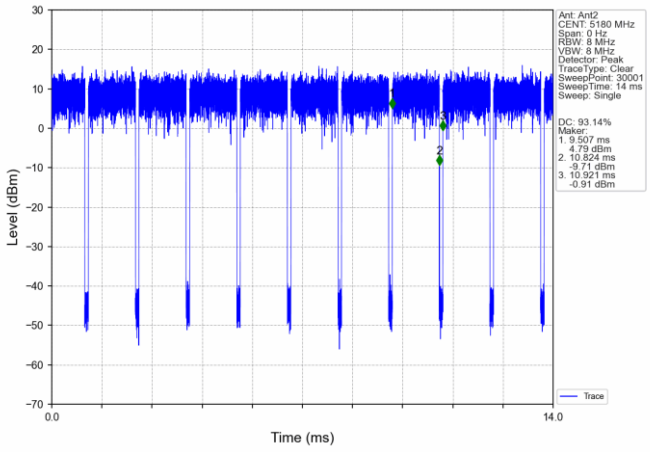
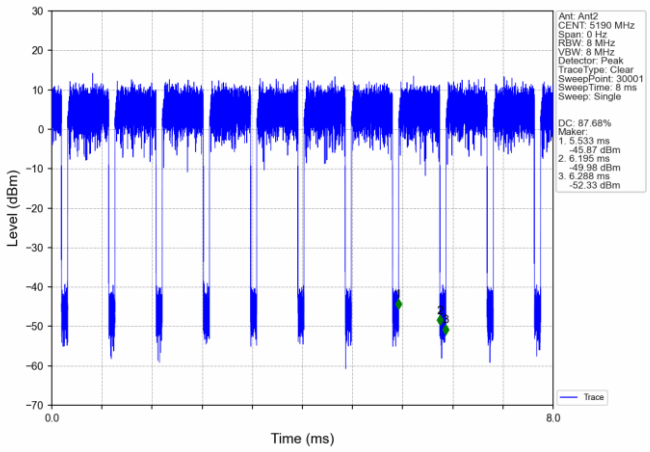
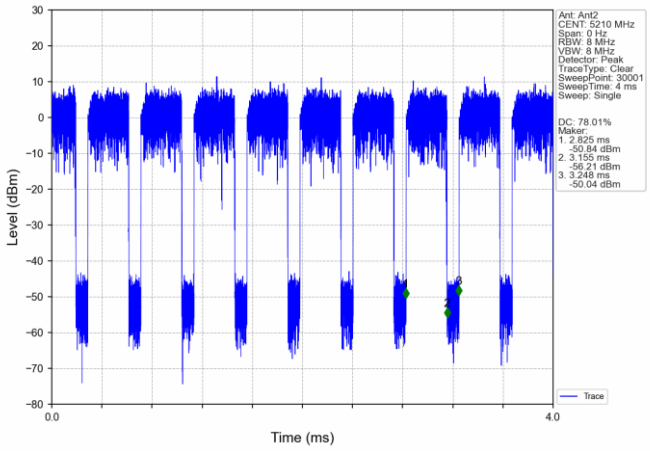

802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV

802.11ac(VHT20)_LCH_5180MHz_Ant2_NTNV


802.11ac(VHT40)_LCH_5190MHz_Ant2_NTNV

802.11ac(VHT80)_MCH_5210MHz_Ant2_NTNV


2. Bandwidth
2.1 Test Result
2.1.1 OBW

Mode	TX Type	Frequency (MHz)	ANT	99% Occupied Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	17.686	/	Pass
			2	17.583	/	Pass
		5200	1	17.831	/	Pass
			2	17.824	/	Pass
		5240	1	17.759	/	Pass
			2	17.893	/	Pass
		5260	1	17.848	/	Pass
			2	17.860	/	Pass
		5300	1	17.850	/	Pass
			2	17.769	/	Pass
		5320	1	17.580	/	Pass
			2	17.668	/	Pass
		5500	1	17.662	/	Pass
			2	17.702	/	Pass
		5580	1	17.865	/	Pass
			2	17.818	/	Pass
		5700	1	17.810	/	Pass
			2	17.865	/	Pass
		5745	1	17.894	/	Pass
			2	17.860	/	Pass
		5785	1	17.852	/	Pass
			2	17.772	/	Pass
		5825	1	17.819	/	Pass
			2	17.840	/	Pass
802.11n (HT20)	SISO	5180	1	18.575	/	Pass
			2	18.579	/	Pass
		5200	1	18.758	/	Pass
			2	18.753	/	Pass
		5240	1	18.679	/	Pass
			2	18.798	/	Pass
		5260	1	18.750	/	Pass
			2	18.656	/	Pass
		5300	1	18.703	/	Pass
			2	18.766	/	Pass
		5320	1	18.647	/	Pass

			2	18.688	/	Pass
		5500	1	18.591	/	Pass
			2	18.547	/	Pass
		5580	1	18.726	/	Pass
			2	18.777	/	Pass
		5700	1	18.774	/	Pass
			2	18.785	/	Pass
		5745	1	18.747	/	Pass
			2	18.689	/	Pass
		5785	1	18.743	/	Pass
			2	18.754	/	Pass
		5825	1	18.735	/	Pass
			2	18.668	/	Pass
802.11n (HT40)	SISO	5190	1	36.345	/	Pass
			2	36.350	/	Pass
		5230	1	36.680	/	Pass
			2	36.577	/	Pass
		5270	1	36.717	/	Pass
			2	36.621	/	Pass
		5310	1	36.382	/	Pass
			2	36.449	/	Pass
		5510	1	36.386	/	Pass
			2	36.365	/	Pass
		5550	1	36.675	/	Pass
			2	36.615	/	Pass
		5670	1	36.596	/	Pass
			2	36.713	/	Pass
		5755	1	36.738	/	Pass
			2	36.600	/	Pass
		5795	1	36.493	/	Pass
			2	36.486	/	Pass
802.11n (HT20)	MIMO	5180	1	18.589	/	Pass
			2	18.229	/	Pass
		5200	1	18.697	/	Pass
			2	18.398	/	Pass
		5240	1	18.791	/	Pass
			2	18.368	/	Pass
		5260	1	18.715	/	Pass
			2	18.349	/	Pass

		5300	1	18.787	/	Pass
			2	18.351	/	Pass
		5320	1	18.610	/	Pass
			2	18.221	/	Pass
		5500	1	18.520	/	Pass
			2	18.212	/	Pass
		5580	1	18.718	/	Pass
			2	18.408	/	Pass
		5700	1	18.712	/	Pass
			2	18.402	/	Pass
		5745	1	18.816	/	Pass
			2	18.367	/	Pass
		5785	1	18.779	/	Pass
			2	18.392	/	Pass
		5825	1	18.830	/	Pass
			2	18.329	/	Pass
802.11n (HT40)	MIMO	5190	1	36.292	/	Pass
			2	36.401	/	Pass
		5230	1	36.578	/	Pass
			2	36.561	/	Pass
		5270	1	36.528	/	Pass
			2	36.524	/	Pass
		5310	1	36.353	/	Pass
			2	36.454	/	Pass
		5510	1	36.422	/	Pass
			2	36.397	/	Pass
		5550	1	36.711	/	Pass
			2	36.566	/	Pass
		5670	1	36.675	/	Pass
			2	36.524	/	Pass
		5755	1	36.682	/	Pass
			2	36.516	/	Pass
		5795	1	36.494	/	Pass
			2	36.552	/	Pass
802.11ac (VHT20)	SISO	5180	1	18.570	/	Pass
			2	18.645	/	Pass
		5200	1	18.748	/	Pass
			2	18.822	/	Pass
		5240	1	18.759	/	Pass

			2	18.699	/	Pass
		5260	1	18.798	/	Pass
			2	18.779	/	Pass
		5300	1	18.687	/	Pass
			2	18.743	/	Pass
		5320	1	18.584	/	Pass
			2	18.632	/	Pass
		5500	1	18.514	/	Pass
			2	18.575	/	Pass
		5580	1	18.849	/	Pass
			2	18.817	/	Pass
		5700	1	18.815	/	Pass
			2	18.755	/	Pass
		5745	1	18.766	/	Pass
			2	18.797	/	Pass
		5785	1	18.746	/	Pass
			2	18.682	/	Pass
		5825	1	18.714	/	Pass
			2	18.691	/	Pass
802.11ac (VHT40)	SISO	5190	1	36.343	/	Pass
			2	36.468	/	Pass
		5230	1	36.576	/	Pass
			2	36.583	/	Pass
		5270	1	36.695	/	Pass
			2	36.660	/	Pass
		5310	1	36.357	/	Pass
			2	36.372	/	Pass
		5510	1	36.349	/	Pass
			2	36.391	/	Pass
		5550	1	36.595	/	Pass
			2	36.588	/	Pass
		5670	1	36.522	/	Pass
			2	36.596	/	Pass
		5755	1	36.584	/	Pass
			2	36.667	/	Pass
		5795	1	36.530	/	Pass
			2	36.519	/	Pass
802.11ac (VHT80)	SISO	5210	1	75.758	/	Pass
			2	75.979	/	Pass

		5290	1	75.947	/	Pass
			2	75.890	/	Pass
		5530	1	75.937	/	Pass
			2	75.874	/	Pass
		5610	1	76.367	/	Pass
			2	76.425	/	Pass
		5775	1	76.253	/	Pass
			2	76.374	/	Pass
802.11ac (VHT20)	MIMO	5180	1	18.563	/	Pass
			2	18.237	/	Pass
		5200	1	18.733	/	Pass
			2	18.366	/	Pass
		5240	1	18.818	/	Pass
			2	18.418	/	Pass
		5260	1	18.779	/	Pass
			2	18.403	/	Pass
		5300	1	18.749	/	Pass
			2	18.383	/	Pass
		5320	1	18.600	/	Pass
			2	18.254	/	Pass
		5500	1	18.597	/	Pass
			2	18.256	/	Pass
		5580	1	18.743	/	Pass
			2	18.380	/	Pass
		5700	1	18.755	/	Pass
			2	18.508	/	Pass
		5745	1	18.769	/	Pass
			2	18.385	/	Pass
		5785	1	18.668	/	Pass
			2	18.403	/	Pass
		5825	1	18.751	/	Pass
			2	18.469	/	Pass
802.11ac (VHT40)	MIMO	5190	1	36.420	/	Pass
			2	36.370	/	Pass
		5230	1	36.596	/	Pass
			2	36.653	/	Pass
		5270	1	36.602	/	Pass
			2	36.486	/	Pass
		5310	1	36.436	/	Pass

			2	36.357	/	Pass
		5510	1	36.385	/	Pass
			2	36.460	/	Pass
		5550	1	36.617	/	Pass
			2	36.572	/	Pass
		5670	1	36.622	/	Pass
			2	36.690	/	Pass
		5755	1	36.735	/	Pass
			2	36.544	/	Pass
		5795	1	36.498	/	Pass
			2	36.483	/	Pass
802.11ac (VHT80)	MIMO	5210	1	75.900	/	Pass
			2	75.773	/	Pass
		5290	1	76.000	/	Pass
			2	75.811	/	Pass
		5530	1	75.797	/	Pass
			2	75.869	/	Pass
		5610	1	76.277	/	Pass
			2	76.235	/	Pass
		5775	1	76.349	/	Pass
			2	76.356	/	Pass

2.1.2 26dB BW

Mode	TX Type	Frequency (MHz)	ANT	26dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5180	1	21.554	/	Pass
			2	21.421	/	Pass
		5200	1	21.863	/	Pass
			2	21.716	/	Pass
		5240	1	21.957	/	Pass
			2	21.838	/	Pass
		5260	1	21.562	/	Pass
			2	21.730	/	Pass
		5300	1	21.845	/	Pass
			2	21.808	/	Pass
		5320	1	21.364	/	Pass
			2	21.322	/	Pass
		5500	1	21.406	/	Pass
			2	21.653	/	Pass

		5580	1	21.759	/	Pass
			2	21.712	/	Pass
		5700	1	21.858	/	Pass
			2	21.615	/	Pass
802.11n (HT20)	SISO	5180	1	21.822	/	Pass
			2	21.810	/	Pass
		5200	1	21.934	/	Pass
			2	21.949	/	Pass
		5240	1	21.917	/	Pass
			2	22.022	/	Pass
		5260	1	21.927	/	Pass
			2	22.222	/	Pass
		5300	1	22.036	/	Pass
			2	22.140	/	Pass
		5320	1	21.636	/	Pass
			2	22.082	/	Pass
		5500	1	21.557	/	Pass
			2	22.065	/	Pass
		5580	1	21.935	/	Pass
			2	22.092	/	Pass
		5700	1	21.878	/	Pass
			2	22.101	/	Pass
802.11n (HT40)	SISO	5190	1	40.154	/	Pass
			2	40.240	/	Pass
		5230	1	40.532	/	Pass
			2	40.602	/	Pass
		5270	1	40.518	/	Pass
			2	40.452	/	Pass
		5310	1	40.105	/	Pass
			2	40.007	/	Pass
		5510	1	40.127	/	Pass
			2	40.220	/	Pass
		5550	1	40.584	/	Pass
			2	40.482	/	Pass
		5670	1	40.723	/	Pass
			2	40.393	/	Pass
802.11n (HT20)	MIMO	5180	1	21.671	/	Pass
			2	21.787	/	Pass
		5200	1	22.303	/	Pass

			2	21.654	/	Pass
		5240	1	22.037	/	Pass
			2	21.728	/	Pass
		5260	1	21.952	/	Pass
			2	21.353	/	Pass
		5300	1	22.081	/	Pass
			2	21.849	/	Pass
		5320	1	21.819	/	Pass
			2	21.181	/	Pass
		5500	1	21.685	/	Pass
			2	21.290	/	Pass
		5580	1	22.035	/	Pass
			2	21.621	/	Pass
		5700	1	21.733	/	Pass
			2	21.713	/	Pass
802.11n (HT40)	MIMO	5190	1	40.329	/	Pass
			2	39.728	/	Pass
		5230	1	40.301	/	Pass
			2	40.230	/	Pass
		5270	1	40.589	/	Pass
			2	40.204	/	Pass
		5310	1	40.174	/	Pass
			2	39.881	/	Pass
		5510	1	40.183	/	Pass
			2	39.512	/	Pass
		5550	1	40.704	/	Pass
			2	40.046	/	Pass
		5670	1	40.553	/	Pass
			2	40.297	/	Pass
802.11ac (VHT20)	SISO	5180	1	21.669	/	Pass
			2	21.652	/	Pass
		5200	1	21.912	/	Pass
			2	22.245	/	Pass
		5240	1	21.969	/	Pass
			2	21.991	/	Pass
		5260	1	21.855	/	Pass
			2	22.039	/	Pass
		5300	1	21.956	/	Pass
			2	21.993	/	Pass

		5320	1	21.896	/	Pass
			2	21.815	/	Pass
		5500	1	21.821	/	Pass
			2	21.720	/	Pass
		5580	1	21.972	/	Pass
			2	22.010	/	Pass
		5700	1	22.079	/	Pass
			2	22.077	/	Pass
802.11ac (VHT40)	SISO	5190	1	40.271	/	Pass
			2	40.261	/	Pass
		5230	1	40.778	/	Pass
			2	40.358	/	Pass
		5270	1	40.570	/	Pass
			2	40.552	/	Pass
		5310	1	40.322	/	Pass
			2	40.283	/	Pass
		5510	1	40.105	/	Pass
			2	40.221	/	Pass
		5550	1	40.498	/	Pass
			2	40.595	/	Pass
		5670	1	40.708	/	Pass
			2	40.672	/	Pass
802.11ac (VHT80)	SISO	5210	1	82.013	/	Pass
			2	81.592	/	Pass
		5290	1	81.779	/	Pass
			2	82.189	/	Pass
		5530	1	81.797	/	Pass
			2	81.828	/	Pass
		5610	1	82.484	/	Pass
			2	82.598	/	Pass
802.11ac (VHT20)	MIMO	5180	1	21.943	/	Pass
			2	21.660	/	Pass
		5200	1	21.920	/	Pass
			2	21.704	/	Pass
		5240	1	21.975	/	Pass
			2	21.539	/	Pass
		5260	1	22.136	/	Pass
			2	21.724	/	Pass
		5300	1	22.081	/	Pass

			2	21.704	/	Pass
		5320	1	21.932	/	Pass
			2	21.453	/	Pass
		5500	1	21.593	/	Pass
			2	21.285	/	Pass
		5580	1	21.986	/	Pass
			2	21.776	/	Pass
		5700	1	22.024	/	Pass
			2	21.806	/	Pass
802.11ac (VHT40)	MIMO	5190	1	40.208	/	Pass
			2	39.942	/	Pass
		5230	1	40.472	/	Pass
			2	40.128	/	Pass
		5270	1	40.384	/	Pass
			2	40.307	/	Pass
		5310	1	40.404	/	Pass
			2	39.753	/	Pass
		5510	1	40.544	/	Pass
			2	39.764	/	Pass
		5550	1	40.478	/	Pass
			2	40.324	/	Pass
		5670	1	40.549	/	Pass
			2	40.087	/	Pass
802.11ac (VHT80)	MIMO	5210	1	81.648	/	Pass
			2	81.508	/	Pass
		5290	1	81.693	/	Pass
			2	81.510	/	Pass
		5530	1	81.629	/	Pass
			2	81.302	/	Pass
		5610	1	82.597	/	Pass
			2	82.163	/	Pass

2.1.3 6dB BW

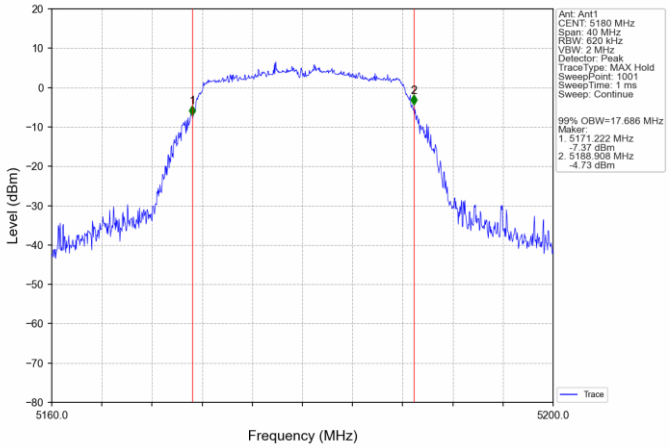
Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
802.11a	SISO	5745	1	16.426	>=0.5	Pass
			2	16.382	>=0.5	Pass
		5785	1	16.390	>=0.5	Pass
			2	16.389	>=0.5	Pass

		5825	1	16.398	>=0.5	Pass
			2	16.404	>=0.5	Pass
802.11n (HT20)	SISO	5745	1	17.657	>=0.5	Pass
			2	17.659	>=0.5	Pass
		5785	1	17.663	>=0.5	Pass
			2	17.657	>=0.5	Pass
		5825	1	17.645	>=0.5	Pass
			2	17.634	>=0.5	Pass
802.11n (HT40)	SISO	5755	1	36.339	>=0.5	Pass
			2	36.368	>=0.5	Pass
		5795	1	36.031	>=0.5	Pass
			2	36.087	>=0.5	Pass
802.11n (HT20)	MIMO	5745	1	17.663	>=0.5	Pass
			2	17.662	>=0.5	Pass
		5785	1	17.646	>=0.5	Pass
			2	17.666	>=0.5	Pass
		5825	1	17.620	>=0.5	Pass
			2	17.664	>=0.5	Pass
802.11n (HT40)	MIMO	5755	1	36.361	>=0.5	Pass
			2	36.399	>=0.5	Pass
		5795	1	36.081	>=0.5	Pass
			2	36.372	>=0.5	Pass
802.11ac (VHT20)	SISO	5745	1	17.665	>=0.5	Pass
			2	17.667	>=0.5	Pass
		5785	1	17.607	>=0.5	Pass
			2	17.634	>=0.5	Pass
		5825	1	17.604	>=0.5	Pass
			2	17.609	>=0.5	Pass
802.11ac (VHT40)	SISO	5755	1	36.365	>=0.5	Pass
			2	36.353	>=0.5	Pass
		5795	1	36.111	>=0.5	Pass
			2	36.346	>=0.5	Pass
802.11ac (VHT80)	SISO	5775	1	75.540	>=0.5	Pass
			2	76.030	>=0.5	Pass
802.11ac (VHT20)	MIMO	5745	1	17.631	>=0.5	Pass
			2	17.659	>=0.5	Pass
		5785	1	17.620	>=0.5	Pass
			2	17.647	>=0.5	Pass
		5825	1	17.629	>=0.5	Pass

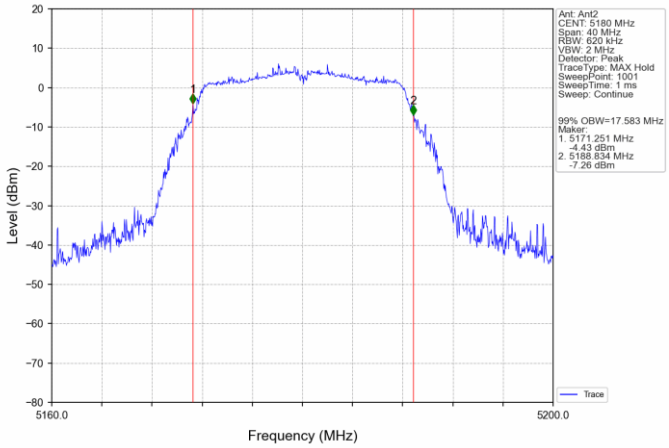
			2	17.648	>=0.5	Pass
802.11ac (VHT40)	MIMO	5755	1	36.367	>=0.5	Pass
			2	36.409	>=0.5	Pass
		5795	1	36.084	>=0.5	Pass
			2	36.380	>=0.5	Pass
802.11ac (VHT80)	MIMO	5775	1	75.770	>=0.5	Pass
			2	76.332	>=0.5	Pass

2.2 Test Graph
2.2.1 OBW

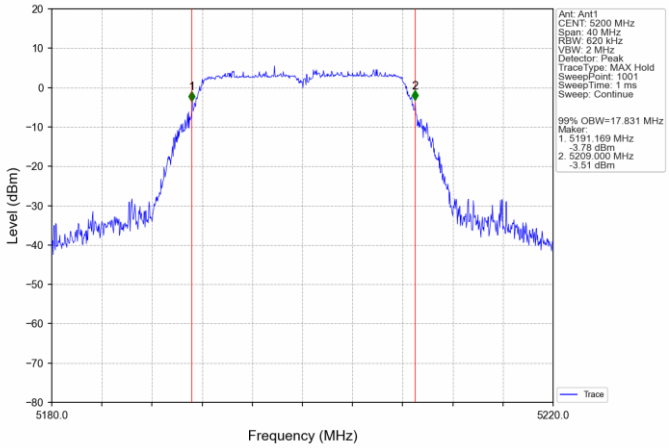
802.11a_LCH_5180MHz_Ant1_NTNV



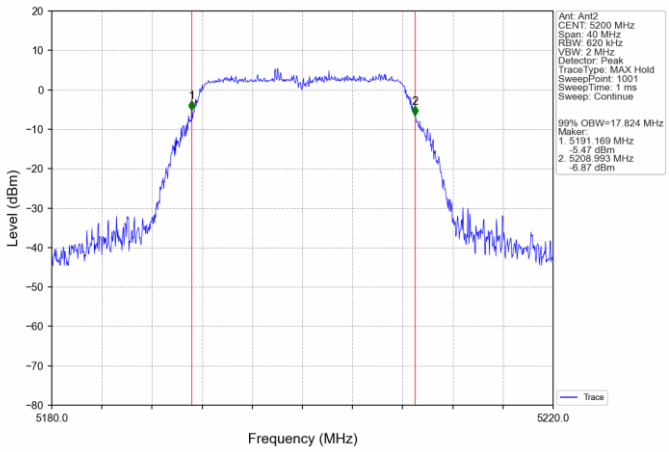
802.11a_LCH_5180MHz_Ant2_NTNV



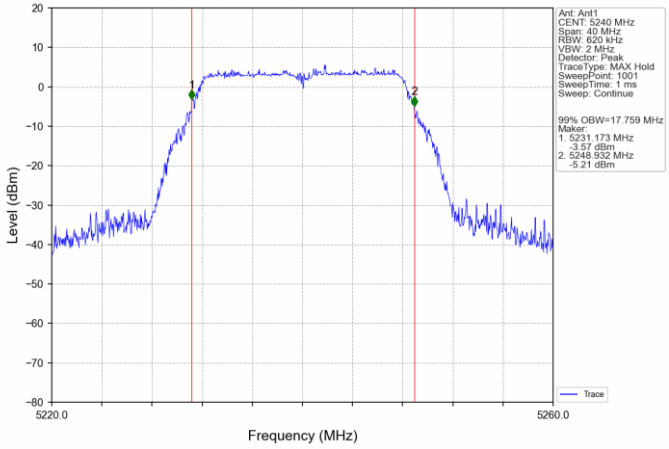
802.11a_MCH_5200MHz_Ant1_NTNV



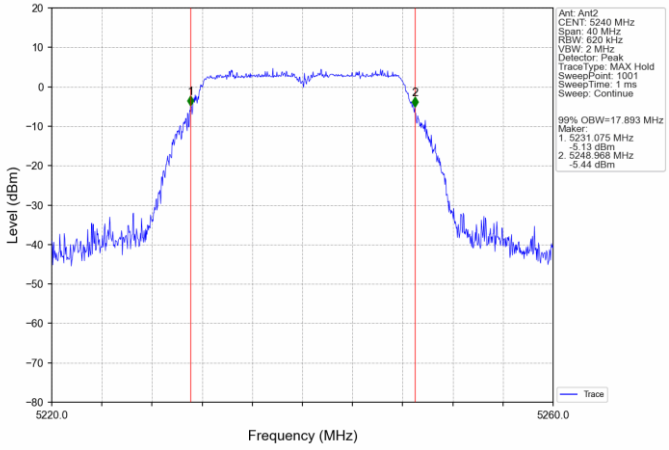
802.11a_MCH_5200MHz_Ant2_NTNV



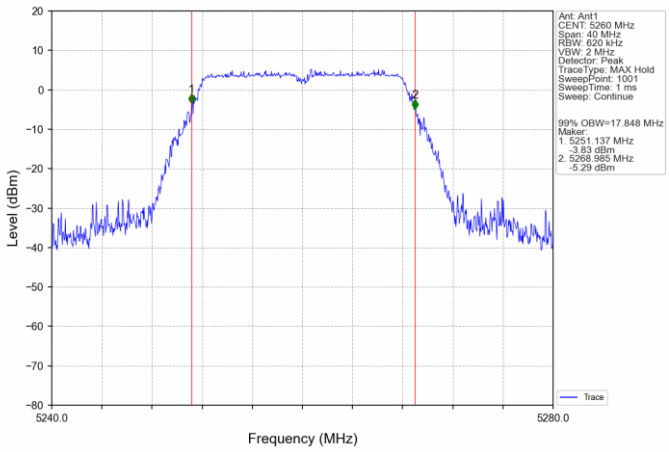
802.11a_HCH_5240MHz_Ant1_NTNV



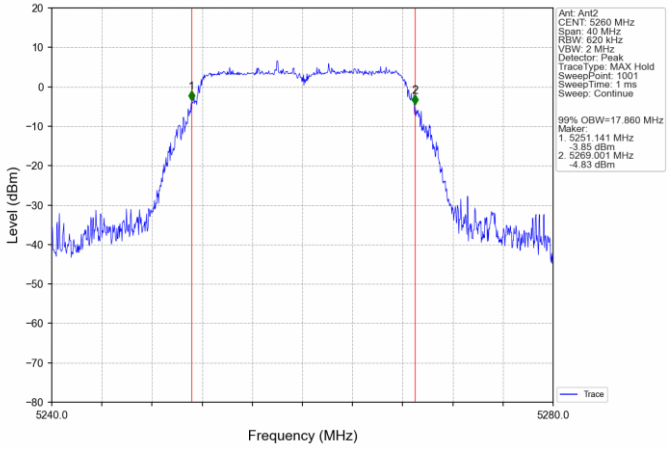
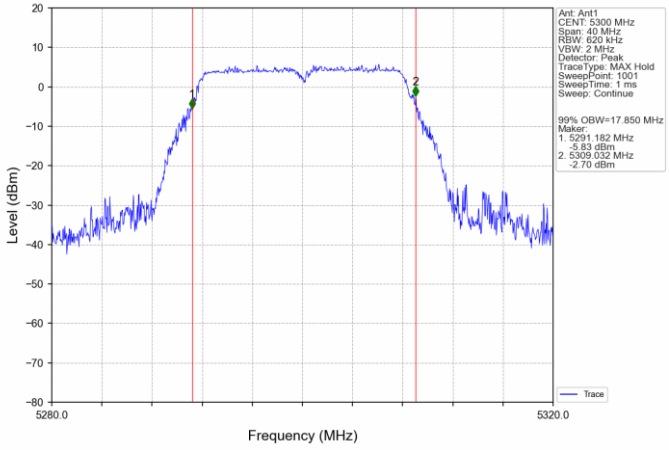
802.11a_HCH_5240MHz_Ant2_NTNV



802.11a_LCH_5260MHz_Ant1_NTNV



802.11a_LCH_5260MHz_Ant2_NTNV



802.11a_MCH_5300MHz_Ant1_NTNV