Test Report

Product: Wireless carplay adapter

Trade Mark: N/A

Model Number: KY-4194

FCC ID: 2BPTS-KY-4194

Prepared for

Dongguan Kinspeed Technology co., Ltd.

Room 608, Building 5, No. 9 Yuhu Road, Fenggang Town, Dongguan City, Guangdong Province

Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name	:	Dongguan Kinspeed Technology co., Ltd.
Address	:	Room 608, Building 5, No. 9 Yuhu Road, Fenggang Town, Dongguan City, Guangdong Province
Manufacturer's Name	:	Dongguan Kinspeed Technology co., Ltd.
Address	:	Room 608, Building 5, No. 9 Yuhu Road, Fenggang Town, Dongguan City, Guangdong Province

Product description

Product name	:	Wireless carplay adapter
Model Number	:	KY-4194
Standards	:	FCC Part 15.407 IEEE/ANSI C63.10-2020
Test procedure	:	KDB 789033 D02 General U-NII Test Procedures New Rules v01r01

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test

Date (s) of performance of tests .....: July 09, 2025~ July 31, 2025

Test Result.....: **Pass**

Testing Engineer : Zoe Su

(Zoe Su)

Technical Manager : Gary Lu

(Gary Lu)

Authorized Signatory : Leo Su

(Leo Su)

Revision History

Revised No.	Date of Issue	Description
01	Aug. 01, 2025	Original

1 General Description

1.1 Description of EUT

Product name:	Wireless carplay adapter
Model name:	KY-4194
Series Model:	KY-4195, KY-4196, KY-4197, KY-4198, KY-4199, KY-4220, KY-4221, KY-4248, KY-4249, KY-4250, KY-4251, KY-4252, KY-4253, KY-4254
Different of series model:	Except for the model, appearance color, appearance shape, appearance materials, electronic accessories, and software differences, all models have the same circuits and modules.
Frequency range:	U-NII-1: 5180 MHz to 5240 MHz U-NII-2A: 5260 MHz to 5320 MHz U-NII-2C: 5500 MHz to 5700 MHz U-NII-3: 5745 MHz to 5825 MHz
Modulation type:	IEEE 802.11a/n: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20 IEEE 802.11n-HT40/ac-VHT40
Bit Rate of transmitter:	IEEE 802.11a: Up to 54 Mbps IEEE 802.11n-HT20/40: Up to MCS7 IEEE 802.11ac-VHT20/40: Up to MCS9
Channel bandwidth:	IEEE 802.11a/n-HT20/ac-VHT20 IEEE 802.11n-HT40/ac-VHT40
Antenna type:	PCB antenna
Antenna gain:	-0.35dBi
Max. output power:	U-NII-1: 14.24dBm U-NII-2A: 14.94dBm U-NII-2C: 13.41dBm U-NII-3: 17.86dBm
Hardware version:	V1.0
Software version:	V1.0
Battery:	N/A
Power supply:	Input: DC 5V/1A
Adapter information:	N/A

Note: The circuit and electronic structure of all models listed in the report have not changed, and differences between all models have been tested. The final report only reflects the test data of the

KY-4194 main model in the worst-case scenario.

1.2 Operation Channel List

For U-NII-1:

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190	--	--
40	5200	46	5230	--	--
44	5220	--	--	--	--
48	5240	--	--	--	--

For U-NII-2A:

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
52	5260	54	5270	--	--
56	5280	62	5310	--	--
60	5300	--	--	--	--
64	5320	--	--	--	--
--	--	--	--	--	--

For U-NII-2C:

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
100	5500	102	5510	--	--
104	5520	110	5550	--	--
108	5540	118	5590	--	--
112	5560	126	5630	--	--
116	5580	134	5670	--	--
120	5600	--	--	--	--
124	5620	--	--	--	--
128	5640	--	--	--	--
132	5660	--	--	--	--
136	5680	--	--	--	--
140	5700	--	--	--	--
--	--	--	--	--	--

For U-NII-3:

20 MHz		40 MHz		80 MHz	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
149	5745	151	5755	--	--
153	5765	159	5795	--	--
157	5785	--	--	--	--

161	5805	--	--	--	--
165	5825	--	--	--	--

1.3 Test Mode

For 802.11a/n (HT20)/ac (VHT20)

U-NII-1 (5150 - 5250 MHz)			U-NII-2A(5250 - 5350 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
36	Low	5180	52	Low	5260
40	Mid	5200	56	Mid	5280
48	High	5240	64	High	5320

For 802.11n (HT40)/ac (VHT40)

U-NII-1 (5150 - 5250 MHz)			U-NII-2A(5250 - 5350 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
38	Low	5190	54	Low	5270
46	High	5230	62	High	5310

For 802.11a/n (HT20)/ac (VHT20)

U-NII-2C (5470 - 5725 MHz)			U-NII-3(5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
100	Low	5500	149	Low	5745
120	Mid	5600	157	Mid	5785
140	High	5700	165	High	5825

For 802.11n (HT40)/ac (VHT40)

U-NII-2C (5470 - 5725 MHz)			U-NII-3(5725 - 5850 MHz)		
Channel Number	Channel	Frequency (MHz)	Channel Number	Channel	Frequency (MHz)
102	Low	5510	151	Low	5755
110	Mid	5550	159	High	5795
134	High	5670	--	--	--

1.4 Power setting configuration parameters

During testing, Channel and Power Controlling Software provided by the customer was used to control theoperating channel as well as the output power level. The RF output power selection is for the setting of RFoutput power expected by the customer and is going to be fixed on the firmware of the final end product.Transmitting duty cycle is no less 98%.
The software is PUSH and CMD tool Use together.

Test Items	Mode	Data Rate	TX/RX
Radiated Emissions	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
Duty Cycle	802.11a(HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
Band Edge	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
6dB Bandwidth	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
26dB Bandwidth and 99% Occupied Bandwidth	802.11a (HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
Conducted Output Power	802.11a(HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
Power Spectral Density	802.11a(HT20)	6 Mbps	TX
	802.11n/ac(HT20/40)	MCS0	TX
Frequency Stability	Un-modulation	/	TX

1.5 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.6 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
Adapter	CD289	35810	Ugreen Group Limited
Laptop	BDR-WDH	A3RQPM242 0004454	HONR

Note: The laptop is used to assist the RF test. In order to prevent the laptop from causing unnecessary impact on the test, the laptop will be removed from the test environment after the EUT successfully transmits at a fixed frequency using the laptop.

2 Summary of Test Result

No.	Standard Section	Test Item	Result	Remark
1	15.203/15.407	Antenna Requirement	Pass	
2	15.207	Power Line Conducted Emission	Pass	
3	15.407(b) 15.209	Radiation Spurious Emission	Pass	
4	15.407(a)	RF Output Power	Pass	
5	15.407(a)	Power Spectral Density	Pass	
6	15.407(a)	26dB Emission Bandwidth and Occupied bandwidth	Pass	
7	15.407(e)	6 dB bandwidth	Pass	
8	15.407(b)	Out Of Band Emission	Pass	
9	15.407(b)	Spurious RF Conducted Emissions	Pass	

3 Test Facilities and Accreditations

3.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
FCC Registration No.:	CN1341
A2LA Certificate No.:	6765.01

3.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15ºC~35ºC
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

3.3 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 %.
The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.
In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

Measurement Frequency Range	U, (dB)	Note
RF frequency	2x 10^{-5}	
RF power, conducted	± 0.57 dB	
Conducted emission(150kHz~30MHz)	± 2.5 dB	
Radiated emission(9kHz-30MHz)	± 2.5 dB	
Radiated emission(30MHz~1GHz)	± 4.2 dB	
Radiated emission (above 1GHz)	± 4.7 dB	
Occupied Bandwidth	±3%	
Temperature	±1 degree	
Humidity	± 5 %	

3.4 Test Software

Software name	Manufacturer	Model	Version
Conducted Emission test Software	Farad	EZ-EMC	EMC-CON 3A1.1+
Radiated Emission test Software	Farad	EZ-EMC	FA-03A2
RF Test System	MWRF	MTS 8310	2.0.0.0

4 List of Test Equipment

Radiation emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E001	Horn Antenna	Schwarzbeck	BBHA 9120D	02592	2024-05-18	2026-05-17
2	HB-E002	Biconical log-periodic composite antenna	Schwarzbeck	VULB 9168	01340	2024-05-18	2026-05-17
3	HB-E003	SHF-EHF Horn	Schwarzbeck	BBHA 91270	01193	2024-05-18	2026-05-17
4	HB-E005	Preamplifier	Noyetec	LAN-0118	NYCM1420102	2025-05-07	2026-05-06
5	HB-E006	Preamplifier	Noyetec	LAN-1840	NYCM1420103	2025-05-07	2026-05-06
6	HB-E007	EMI TEST RECEIVER	R&S	ESR7	102520	2025-05-07	2026-05-06
7	HB-E009	POSITINAL COTROLLER	Noyetec	N/A	N/A	/	/
8	HB-E013	RF switch	Noyetec	NY-RF4	NY0CM1420204	/	/
9	HB-E066	Illuminance Tester	TASI	TA8121	N/A	2025-05-13	2026-05-12
10	HB-E075	Active loop antenna	Schwarzbeck	FMZB 1519B	1519B-245	2024-05-18	2026-05-17
11	HB-E076	Preamplifier	Hewlett Packard	8447D	1937A02278	2025-05-07	2026-05-06
12	HB-E044	Signal& spectrum Analyzer	R&S	FSV3044	101264	2025-05-07	2026-05-06

Conduction emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E014	4 Path V-LISN	Schwarzbeck	NNLK 8121	00770	2025-05-07	2026-05-06
2	HB-E015	Pulse Limiter	Schwarzbeck	VTSD 9561-F	00949	2025-05-07	2026-05-06
3	HB-E016	ZN23201	Noyetec	ZN23201	N/A	2025-05-10	2026-05-09
4	HB-E059	Attenuator	Xianghua	TS2-6-1	220215166	2025-05-10	2026-05-09
5	HB-E069	EMI TEST RECEIVER	R&S	ESCI	N/A	2025-05-07	2026-05-06

RF							
Item	Equipmen	Equipment	Manufact	Model	Serial No.	Calibration	Due date

	t No.	name	urer			date	
1	HB-E041	MXG Anaiog Signal Generator	Agilent	N5181A	MY47070421	2025-05-07	2026-05-06
2	HB-E042	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	132108	2025-05-08	2026-05-07
3	HB-E043	MXG Anaiog Signal Generator	Agilent	N5182A	US46240335	2025-05-08	2026-05-07
4	HB-E044	Signal& spectrum Analyzer	R&S	FSV3044	101264	2025-05-07	2026-05-06
5	HB-E045	RF Control Box	Noyetec	NY100-RFCB	N/A	2025-05-08	2026-05-07
6	HB-E058	Thermometer Clock Humidity Monitor	N/A	HTC-1S	N/A	2025-05-09	2026-05-08

Note:

1. The calibration interval of the above test instruments is 12&24 months and the calibrations are traceable to international system unit (SI).
2. The instrument RF Control Box, numbered HB-E045, contains power meter.

5 Test Item And Results

5.1 Antenna Requirement

5.1.1 Standard Requirement

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

5.1.2 Test Result

The EUT antenna is PCB antenna. It comply with the standard requirement. In case of replacement of broken antenna the same antenna type must be used.

5.2 Power Line Conducted Emission

5.2.1 Limits

Limits – Class B		
Frequency (MHz)	Limit (dBμV)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50

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.

5.2.2 Test Procedures

a) 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.

b) 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

c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d) 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.

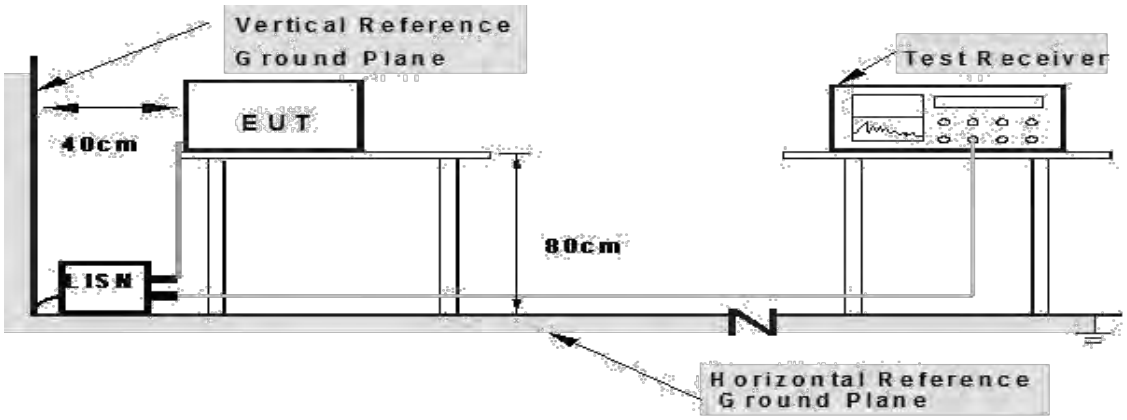
e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

f) LISN is at least 80 cm from nearest part of EUT chassis.

g) For the actual test configuration, please refer to the related Item – photographs of the test

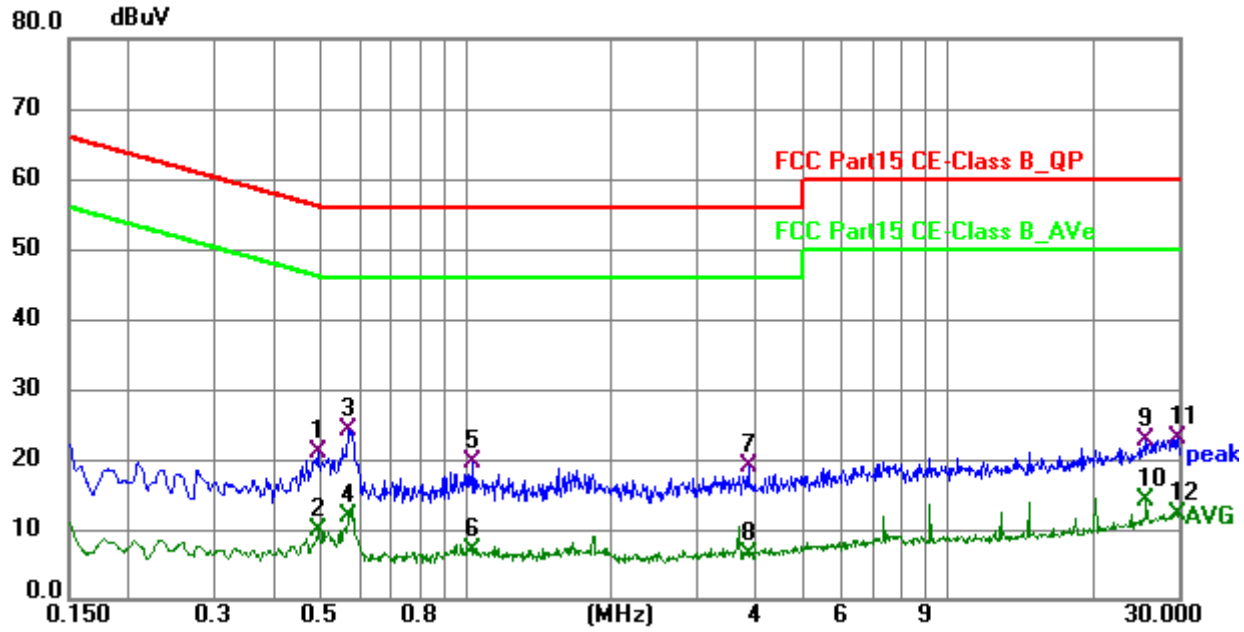
setup.

5.2.3 Test Setup



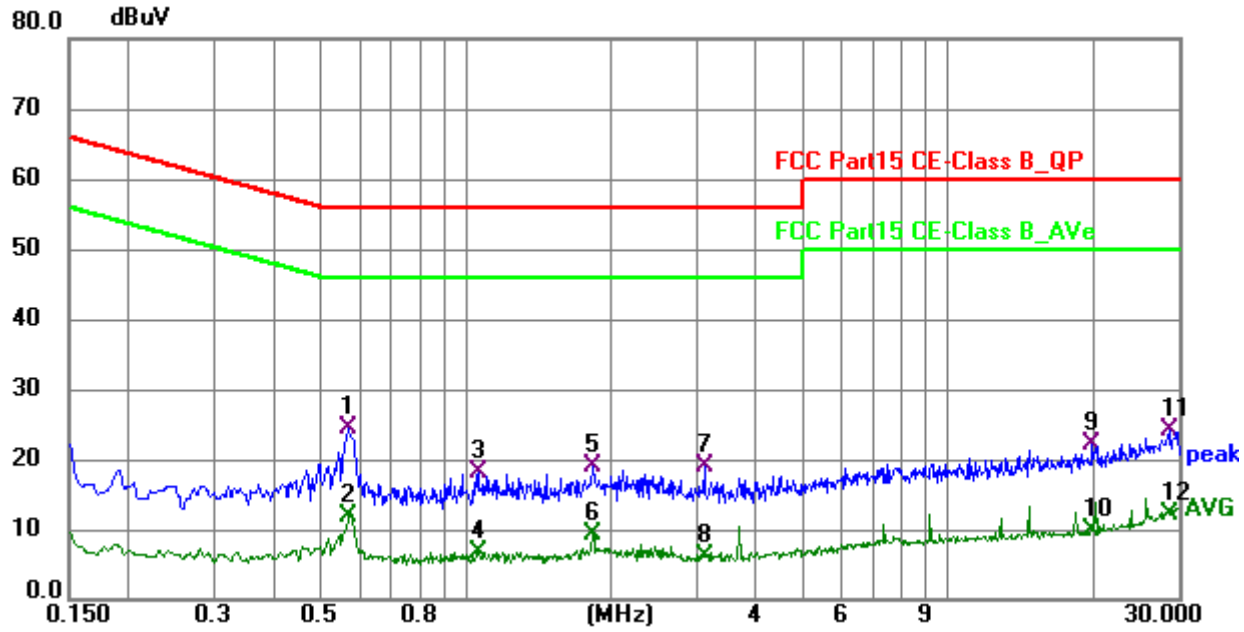
5.2.4 Test Result

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Test Mode:	TX	Phase:	L
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.492	10.86	10.11	20.97	56.13	-35.16	QP
2	0.492	-0.36	10.11	9.75	46.13	-36.38	AVG
3 *	0.569	14.03	10.11	24.14	56.00	-31.86	QP
4	0.569	1.82	10.11	11.93	46.00	-34.07	AVG
5	1.032	9.40	10.14	19.54	56.00	-36.46	QP
6	1.032	-3.09	10.14	7.05	46.00	-38.95	AVG
7	3.845	7.99	10.88	18.87	56.00	-37.13	QP
8	3.845	-4.44	10.88	6.44	46.00	-39.56	AVG
9	25.746	7.39	15.44	22.83	60.00	-37.17	QP
10	25.746	-1.38	15.44	14.06	50.00	-35.94	AVG
11	29.967	7.00	16.02	23.02	60.00	-36.98	QP
12	29.967	-3.74	16.02	12.28	50.00	-37.72	AVG

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Test Mode:	TX	Phase:	N
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1 *	0.569	14.22	10.12	24.34	56.00	-31.66	QP
2	0.569	1.63	10.12	11.75	46.00	-34.25	AVG
3	1.063	7.95	10.14	18.09	56.00	-37.91	QP
4	1.063	-3.50	10.14	6.64	46.00	-39.36	AVG
5	1.837	8.60	10.31	18.91	56.00	-37.09	QP
6	1.837	-1.00	10.31	9.31	46.00	-36.69	AVG
7	3.138	8.38	10.68	19.06	56.00	-36.94	QP
8	3.138	-4.43	10.68	6.25	46.00	-39.75	AVG
9	19.855	7.45	14.61	22.06	60.00	-37.94	QP
10	19.855	-4.66	14.61	9.95	50.00	-40.05	AVG
11	28.730	8.25	15.89	24.14	60.00	-35.86	QP
12	28.730	-3.74	15.89	12.15	50.00	-37.85	AVG

5.3 Radiated Emission

5.3.1 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.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

Frequencies (MHz)	Field Strength (microvolts/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

Frequency Range	RBW	VBW	Measurement
30MHz-1GHz	1MHz	3MHz	Peak
Above 1GHz	1MHz	10Hz[Note1]	Average
	1MHz	>1/T [Note2]	Average
Note1	When duty cycle is no less than 98%		

Note2	When duty cycle is less than 98%

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

5.3.2 Test Procedures

The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. Final measurements for the EUT require a measurement antenna height scan of 1 m to 4 m.

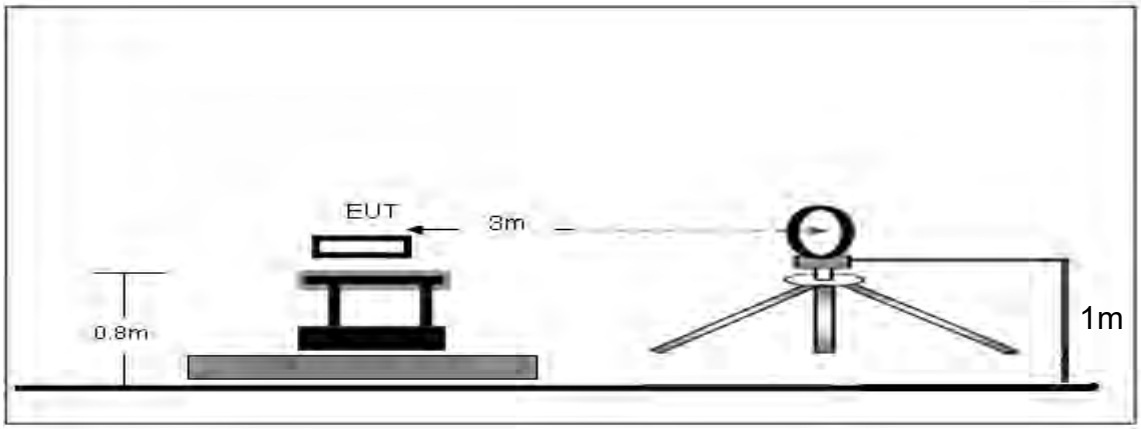
The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
For the actual test configuration, please refer to the related Item –EUT Test Photos.

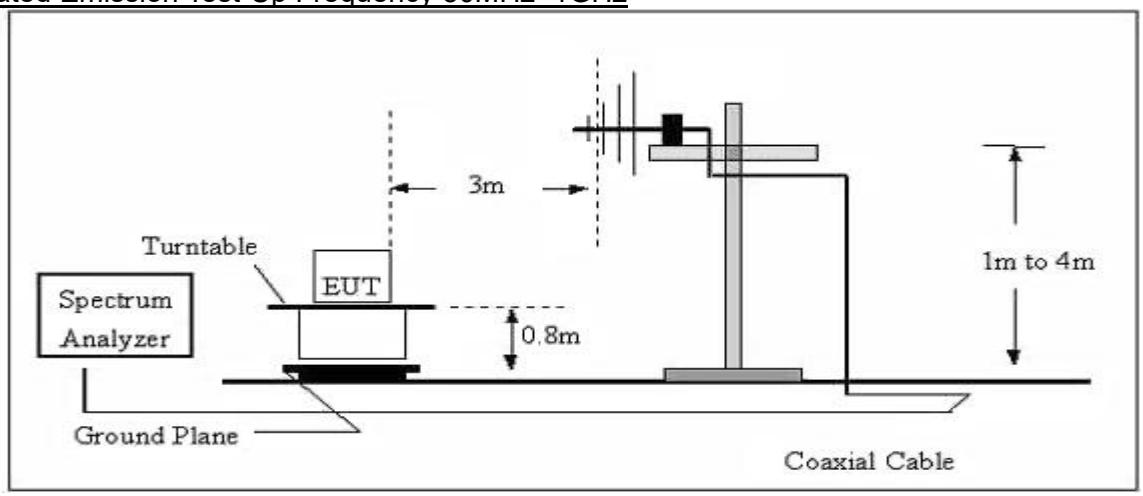
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

5.3.3 Test Setup

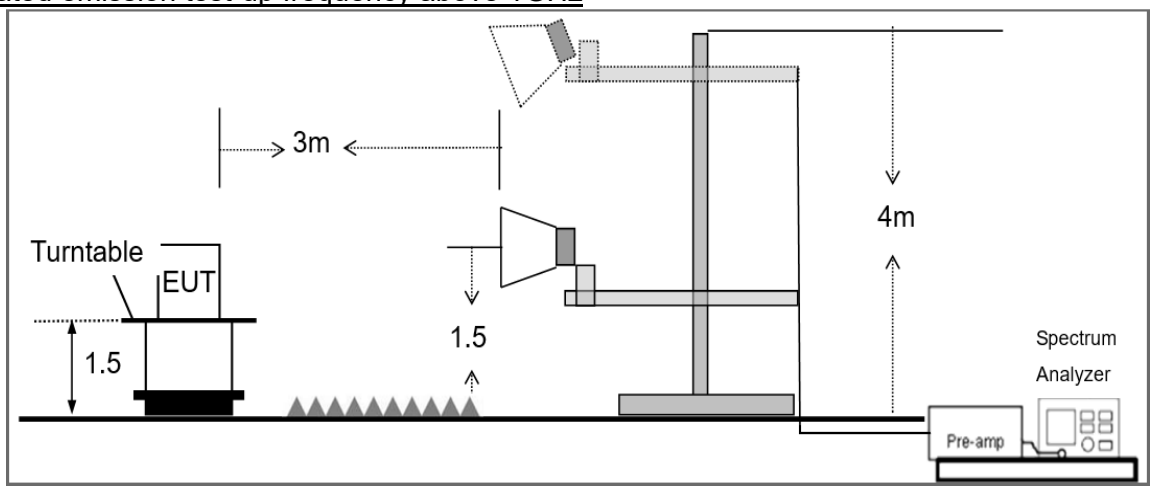
Radiated Emission Test-Up Frequency Below 30MHz



Radiated Emission Test-Up Frequency 30MHz~1GHz



Radiated emission test-up frequency above 1GHz



5.3.4 Test Result

Below 30MHz

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Pressure:	1010 hPa	Test Voltage:	DC 5V from adapter AC 120V/60Hz
Test Mode:	TX	Polarization:	--

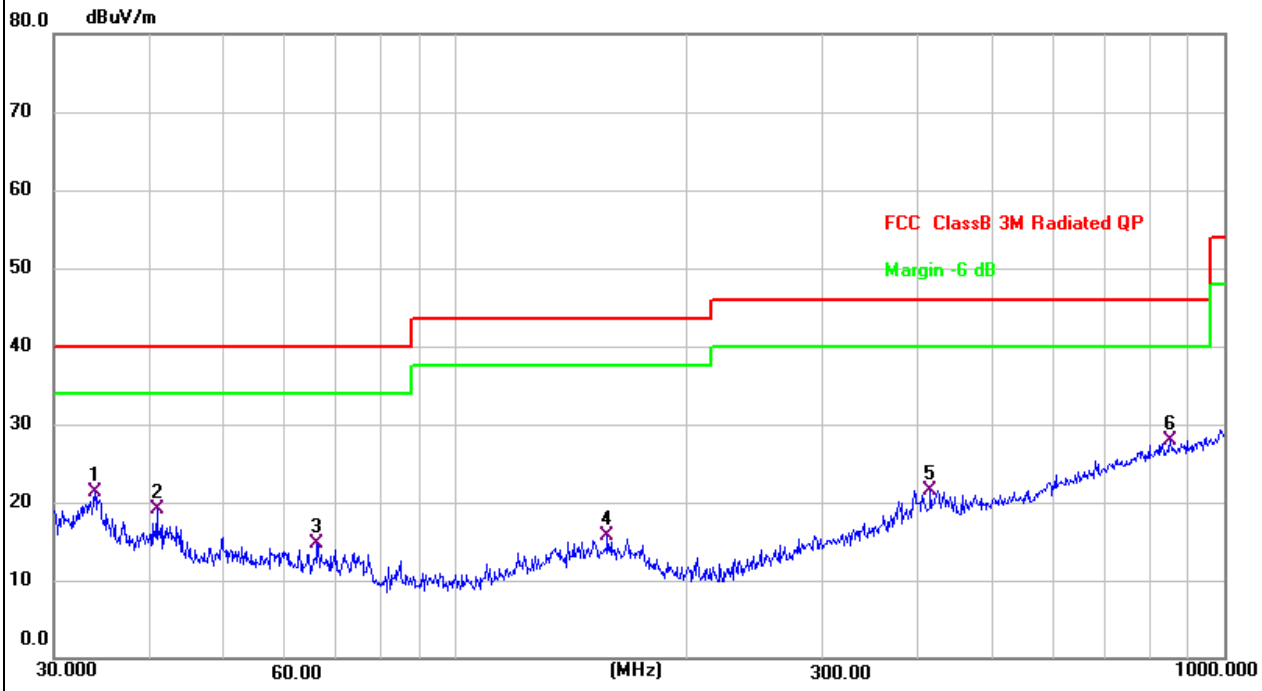
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

1. For 9kHz-30MHz, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =40 log (specific distance/test distance)(dB);
3. Limit line = specific limits (dBuV) + distance extrapolation factor.

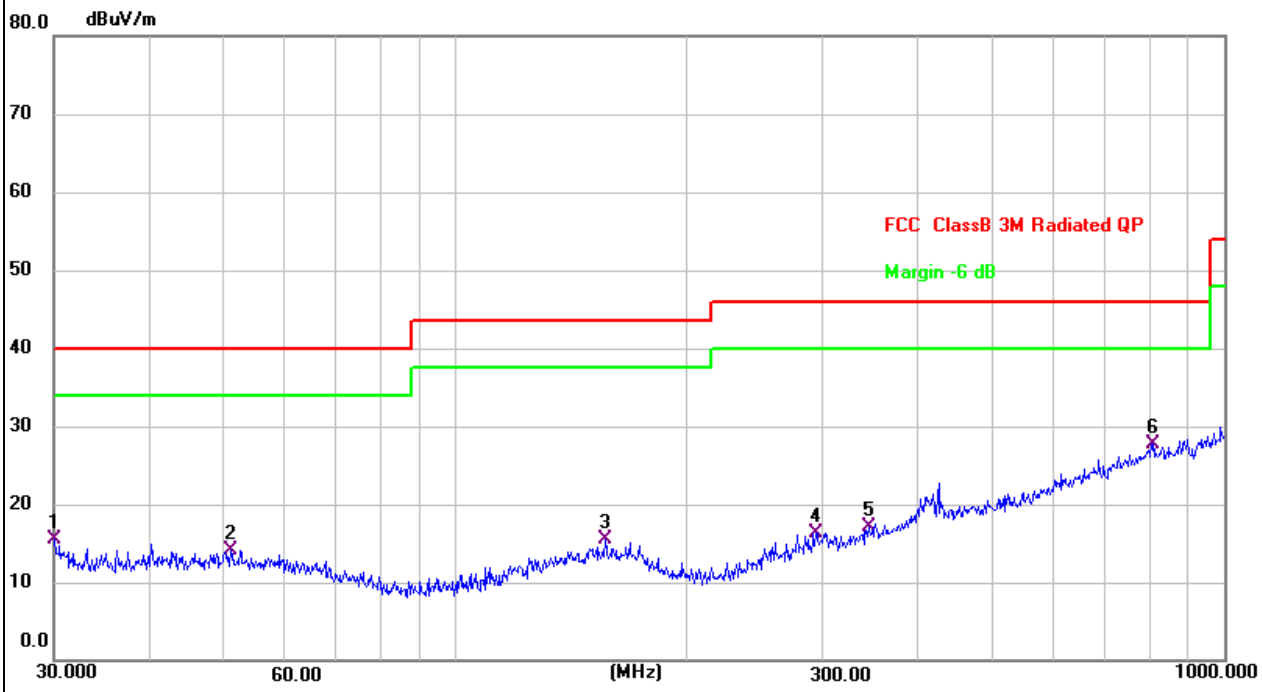
Frequency range (30MHz – 1GHz)

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Test Mode:	11a 5180MHz(Worst)	Phase:	Vertical
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	33.9174	36.17	-14.78	21.39	40.00	-18.61	QP
2	40.8446	33.01	-13.81	19.20	40.00	-20.80	QP
3	66.0342	30.15	-15.39	14.76	40.00	-25.24	QP
4	157.5588	28.87	-13.21	15.66	43.50	-27.84	QP
5	414.7223	30.40	-8.88	21.52	46.00	-24.48	QP
6 *	851.0353	26.89	0.96	27.85	46.00	-18.15	QP

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Test Mode:	11a 5180MHz(Worst)	Phase:	Horizontal
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.1054	30.82	-15.29	15.53	40.00	-24.47	QP
2	50.9420	28.20	-14.05	14.15	40.00	-25.85	QP
3	156.4578	28.59	-13.12	15.47	43.50	-28.03	QP
4	294.1137	29.04	-12.69	16.35	46.00	-29.65	QP
5	344.3855	28.30	-11.13	17.17	46.00	-28.83	QP
6 *	807.4291	27.02	0.65	27.67	46.00	-18.33	QP

Note: All modes have been tested, and only the worst mode data is mentioned in the report.

Frequency range (1GHz-40GHz)
For U-NII-1

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/	(dB)	
Low Channel (5180 MHz)-Above 1G									
Vertical	4435.808	56.25	5.94	35.40	44.00	53.59	74.00	-20.41	Pk
Vertical	4435.492	44.69	5.94	35.40	44.00	42.03	54.00	-11.97	AV
Vertical	10371.055	61.54	8.46	39.75	44.50	65.25	74.00	-8.75	Pk
Vertical	10371.101	43.97	8.46	39.75	44.50	47.68	54.00	-6.32	AV
Vertical	15540.496	55.69	10.12	38.80	44.10	60.51	74.00	-13.49	Pk
Vertical	15541.059	42.96	10.12	38.80	42.70	49.18	54.00	-4.82	AV
Horizontal	4435.249	59.38	5.94	35.18	44.00	56.50	74.00	-17.50	Pk
Horizontal	4435.432	44.13	5.94	35.18	44.00	41.25	54.00	-12.75	AV
Horizontal	10371.416	61.63	8.46	38.71	44.50	64.30	74.00	-9.70	Pk
Horizontal	10730.736	44.51	8.46	38.71	44.50	47.18	54.00	-6.82	AV
Horizontal	15540.277	58.10	10.12	38.38	44.10	62.50	74.00	-11.50	Pk
Horizontal	15541.389	43.54	10.12	38.38	44.10	47.94	54.00	-6.06	AV
middle Channel (5200 MHz)-Above 1G									
Vertical	4592.155	58.11	6.48	36.35	44.05	56.89	74.00	-17.11	Pk
Vertical	4592.383	41.98	6.48	36.35	44.05	40.76	54.00	-13.24	AV
Vertical	10401.345	61.86	8.47	37.88	44.51	63.70	74.00	-10.30	Pk
Vertical	10402.099	46.60	8.47	37.88	44.51	48.44	54.00	-5.56	AV
Vertical	15602.144	56.35	10.12	38.8	44.10	61.17	74.00	-12.83	Pk
Vertical	15601.146	41.85	10.12	38.8	42.70	48.07	54.00	-5.93	AV
Horizontal	4594.055	59.82	6.48	36.37	44.05	58.62	74.00	-15.38	Pk
Horizontal	4592.579	42.50	6.48	36.37	44.05	41.30	54.00	-12.70	AV
Horizontal	10401.590	60.92	8.47	38.64	44.50	63.53	74.00	-10.47	Pk
Horizontal	10400.511	48.25	8.47	38.64	44.50	50.86	54.00	-3.14	AV
Horizontal	15601.565	58.93	10.12	38.38	44.10	63.33	74.00	-10.67	Pk
Horizontal	15600.804	42.62	10.12	38.38	44.10	47.02	54.00	-6.98	AV
High Channel (5240 MHz)-Above 1G									
Vertical	4739.700	59.26	7.10	37.24	43.50	60.10	74.00	-13.90	Pk
Vertical	4739.277	45.20	7.10	37.24	43.50	46.04	54.00	-7.96	AV
Vertical	10480.599	60.51	8.46	37.68	44.50	62.15	74.00	-11.85	Pk
Vertical	10480.652	45.98	8.46	37.68	44.50	47.62	54.00	-6.38	AV
Vertical	15722.105	58.62	10.12	38.8	44.10	63.44	74.00	-10.56	Pk
Vertical	15720.549	43.07	10.12	38.8	42.70	49.29	54.00	-4.71	AV
Horizontal	4739.716	58.89	7.10	37.24	43.50	59.73	74.00	-14.27	Pk
Horizontal	4739.305	43.55	7.10	37.24	43.50	44.39	54.00	-9.61	AV
Horizontal	10482.766	58.77	8.46	38.57	44.50	61.30	74.00	-12.70	Pk
Horizontal	10482.377	42.45	8.46	38.57	44.50	44.98	54.00	-9.02	AV
Horizontal	15721.332	57.75	10.12	38.38	44.10	62.15	74.00	-11.85	Pk
Horizontal	15720.358	41.90	10.12	38.38	44.10	46.30	54.00	-7.70	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

Frequency range (1GHz-40GHz)
U-NII-2A

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5260 MHz)-Above 1G									
Vertical	4435.054	56.55	5.94	35.40	44.00	53.89	74.00	-20.11	Pk
Vertical	4436.025	44.28	5.94	35.40	44.00	41.62	54.00	-12.38	AV
Vertical	10372.104	63.09	8.46	39.75	44.50	66.80	74.00	-7.20	Pk
Vertical	10372.040	43.93	8.46	39.75	44.50	47.64	54.00	-6.36	AV
Vertical	15541.067	56.34	10.12	38.80	44.10	61.16	74.00	-12.84	Pk
Vertical	15542.000	42.97	10.12	38.80	42.70	49.19	54.00	-4.81	AV
Horizontal	4435.766	59.03	5.94	35.18	44.00	56.15	74.00	-17.85	Pk
Horizontal	4435.781	44.31	5.94	35.18	44.00	41.43	54.00	-12.57	AV
Horizontal	10370.807	62.09	8.46	38.71	44.50	64.76	74.00	-9.24	Pk
Horizontal	10731.561	45.60	8.46	38.71	44.50	48.27	54.00	-5.73	AV
Horizontal	15540.999	56.94	10.12	38.38	44.10	61.34	74.00	-12.66	Pk
Horizontal	15542.138	42.52	10.12	38.38	44.10	46.92	54.00	-7.08	AV
middle Channel (5280 MHz)-Above 1G									
Vertical	4592.546	56.84	6.48	36.35	44.05	55.62	74.00	-18.38	Pk
Vertical	4592.909	42.08	6.48	36.35	44.05	40.86	54.00	-13.14	AV
Vertical	10401.742	62.45	8.47	37.88	44.51	64.29	74.00	-9.71	Pk
Vertical	10401.851	46.76	8.47	37.88	44.51	48.60	54.00	-5.40	AV
Vertical	15600.649	56.22	10.12	38.8	44.10	61.04	74.00	-12.96	Pk
Vertical	15601.871	42.47	10.12	38.8	42.70	48.69	54.00	-5.31	AV
Horizontal	4593.681	60.53	6.48	36.37	44.05	59.33	74.00	-14.67	Pk
Horizontal	4593.785	41.22	6.48	36.37	44.05	40.02	54.00	-13.98	AV
Horizontal	10402.104	61.17	8.47	38.64	44.50	63.78	74.00	-10.22	Pk
Horizontal	10401.164	46.94	8.47	38.64	44.50	49.55	54.00	-4.45	AV
Horizontal	15600.691	57.91	10.12	38.38	44.10	62.31	74.00	-11.69	Pk
Horizontal	15601.298	43.70	10.12	38.38	44.10	48.10	54.00	-5.90	AV
High Channel (5320 MHz)-Above 1G									
Vertical	4741.256	59.06	7.10	37.24	43.50	59.90	74.00	-14.10	Pk
Vertical	4741.337	46.46	7.10	37.24	43.50	47.30	54.00	-6.70	AV
Vertical	10481.812	61.23	8.46	37.68	44.50	62.87	74.00	-11.13	Pk
Vertical	10481.735	46.30	8.46	37.68	44.50	47.94	54.00	-6.06	AV
Vertical	15720.226	58.47	10.12	38.8	44.10	63.29	74.00	-10.71	Pk
Vertical	15722.148	43.66	10.12	38.8	42.70	49.88	54.00	-4.12	AV
Horizontal	4740.783	59.70	7.10	37.24	43.50	60.54	74.00	-13.46	Pk
Horizontal	4739.993	45.24	7.10	37.24	43.50	46.08	54.00	-7.92	AV
Horizontal	10481.716	58.92	8.46	38.57	44.50	61.45	74.00	-12.55	Pk
Horizontal	10482.075	42.99	8.46	38.57	44.50	45.52	54.00	-8.48	AV
Horizontal	15722.302	57.79	10.12	38.38	44.10	62.19	74.00	-11.81	Pk
Horizontal	15720.827	43.33	10.12	38.38	44.10	47.73	54.00	-6.27	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

Frequency range (1GHz-40GHz)
U-NII-2C

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5500 MHz)-Above 1G									
Vertical	4435.933	55.19	5.94	35.40	44.00	52.53	74.00	-21.47	Pk
Vertical	4434.674	43.51	5.94	35.40	44.00	40.85	54.00	-13.15	AV
Vertical	10372.193	61.60	8.46	39.75	44.50	65.31	74.00	-8.69	Pk
Vertical	10370.219	42.73	8.46	39.75	44.50	46.44	54.00	-7.56	AV
Vertical	15540.565	56.44	10.12	38.80	44.10	61.26	74.00	-12.74	Pk
Vertical	15540.482	42.77	10.12	38.80	42.70	48.99	54.00	-5.01	AV
Horizontal	4435.764	59.36	5.94	35.18	44.00	56.48	74.00	-17.52	Pk
Horizontal	4436.126	42.92	5.94	35.18	44.00	40.04	54.00	-13.96	AV
Horizontal	10371.166	61.14	8.46	38.71	44.50	63.81	74.00	-10.19	Pk
Horizontal	10731.872	46.09	8.46	38.71	44.50	48.76	54.00	-5.24	AV
Horizontal	15541.010	57.32	10.12	38.38	44.10	61.72	74.00	-12.28	Pk
Horizontal	15541.538	42.32	10.12	38.38	44.10	46.72	54.00	-7.28	AV
middle Channel (5600 MHz)-Above 1G									
Vertical	4592.613	56.36	6.48	36.35	44.05	55.14	74.00	-18.86	Pk
Vertical	4593.387	42.38	6.48	36.35	44.05	41.16	54.00	-12.84	AV
Vertical	10402.541	62.00	8.47	37.88	44.51	63.84	74.00	-10.16	Pk
Vertical	10402.231	45.82	8.47	37.88	44.51	47.66	54.00	-6.34	AV
Vertical	15602.293	57.89	10.12	38.8	44.10	62.71	74.00	-11.29	Pk
Vertical	15601.425	42.30	10.12	38.8	42.70	48.52	54.00	-5.48	AV
Horizontal	4593.429	60.63	6.48	36.37	44.05	59.43	74.00	-14.57	Pk
Horizontal	4593.496	41.26	6.48	36.37	44.05	40.06	54.00	-13.94	AV
Horizontal	10401.751	61.44	8.47	38.64	44.50	64.05	74.00	-9.95	Pk
Horizontal	10401.589	47.08	8.47	38.64	44.50	49.69	54.00	-4.31	AV
Horizontal	15601.320	58.36	10.12	38.38	44.10	62.76	74.00	-11.24	Pk
Horizontal	15601.665	42.94	10.12	38.38	44.10	47.34	54.00	-6.66	AV
High Channel (5700 MHz)-Above 1G									
Vertical	4739.605	58.56	7.10	37.24	43.50	59.40	74.00	-14.60	Pk
Vertical	4739.427	46.15	7.10	37.24	43.50	46.99	54.00	-7.01	AV
Vertical	10480.962	61.48	8.46	37.68	44.50	63.12	74.00	-10.88	Pk
Vertical	10481.046	46.77	8.46	37.68	44.50	48.41	54.00	-5.59	AV
Vertical	15720.231	58.93	10.12	38.8	44.10	63.75	74.00	-10.25	Pk
Vertical	15720.923	43.65	10.12	38.8	42.70	49.87	54.00	-4.13	AV
Horizontal	4741.141	60.57	7.10	37.24	43.50	61.41	74.00	-12.59	Pk
Horizontal	4741.178	43.61	7.10	37.24	43.50	44.45	54.00	-9.55	AV
Horizontal	10483.432	58.70	8.46	38.57	44.50	61.23	74.00	-12.77	Pk
Horizontal	10483.522	43.43	8.46	38.57	44.50	45.96	54.00	-8.04	AV
Horizontal	15722.019	57.98	10.12	38.38	44.10	62.38	74.00	-11.62	Pk
Horizontal	15721.811	41.74	10.12	38.38	44.10	46.14	54.00	-7.86	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

Frequency range (1GHz-40GHz)
U-NII-3

Polar	Frequency	Meter Reading	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(H/V)	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G									
Vertical	4679.151	58.70	5.94	35.40	44.00	56.04	74.00	-17.96	Pk
Vertical	4679.397	46.76	5.94	35.40	44.00	44.10	54.00	-9.90	AV
Vertical	11492.072	59.01	8.46	39.75	44.50	62.72	74.00	-11.28	Pk
Vertical	11491.325	45.40	8.46	39.75	44.50	49.11	54.00	-4.89	AV
Vertical	17236.549	57.05	10.12	38.80	44.10	61.87	74.00	-12.13	Pk
Vertical	17236.515	41.95	10.12	38.80	42.70	48.17	54.00	-5.83	AV
Horizontal	4679.562	59.54	5.94	35.18	44.00	56.66	74.00	-17.34	Pk
Horizontal	4679.762	45.45	5.94	35.18	44.00	42.57	54.00	-11.43	AV
Horizontal	11491.515	59.63	8.46	38.71	44.50	62.30	74.00	-11.70	Pk
Horizontal	11491.077	44.52	8.46	38.71	44.50	47.19	54.00	-6.81	AV
Horizontal	17235.306	60.19	10.12	38.38	44.10	64.59	74.00	-9.41	Pk
Horizontal	17235.570	43.16	10.12	38.38	44.10	47.56	54.00	-6.44	AV
middle Channel (5785 MHz)-Above 1G									
Vertical	4593.670	58.84	6.48	36.35	44.05	57.62	74.00	-16.38	Pk
Vertical	4593.533	44.55	6.48	36.35	44.05	43.33	54.00	-10.67	AV
Vertical	11571.679	61.31	8.47	37.88	44.51	63.15	74.00	-10.85	Pk
Vertical	11570.312	43.50	8.47	37.88	44.51	45.34	54.00	-8.66	AV
Vertical	17357.002	58.24	10.12	38.8	44.10	63.06	74.00	-10.94	Pk
Vertical	17355.760	41.32	10.12	38.8	42.70	47.54	54.00	-6.46	AV
Horizontal	4592.724	60.32	6.48	36.37	44.05	59.12	74.00	-14.88	Pk
Horizontal	4592.647	45.43	6.48	36.37	44.05	44.23	54.00	-9.77	AV
Horizontal	11570.835	61.25	8.47	38.64	44.50	63.86	74.00	-10.14	Pk
Horizontal	11570.749	47.02	8.47	38.64	44.50	49.63	54.00	-4.37	AV
Horizontal	17356.307	59.64	10.12	38.38	44.10	64.04	74.00	-9.96	Pk
Horizontal	17357.060	44.32	10.12	38.38	44.10	48.72	54.00	-5.28	AV
High Channel (5825 MHz)-Above 1G									
Vertical	5039.884	60.92	7.10	37.24	43.50	61.76	74.00	-12.24	Pk
Vertical	5039.335	47.32	7.10	37.24	43.50	48.16	54.00	-5.84	AV
Vertical	11650.735	56.46	8.46	37.68	44.50	58.10	74.00	-15.90	Pk
Vertical	11650.826	42.79	8.46	37.68	44.50	44.43	54.00	-9.57	AV
Vertical	17476.172	59.66	10.12	38.8	44.10	64.48	74.00	-9.52	Pk
Vertical	17475.508	40.99	10.12	38.8	42.70	47.21	54.00	-6.79	AV
Horizontal	5041.063	68.14	7.10	37.24	43.50	68.98	74.00	-5.02	Pk
Horizontal	5039.578	44.08	7.10	37.24	43.50	44.92	54.00	-9.08	AV
Horizontal	11650.209	58.48	8.46	38.57	44.50	61.01	74.00	-12.99	Pk
Horizontal	11651.702	44.73	8.46	38.57	44.50	47.26	54.00	-6.74	AV
Horizontal	17475.684	61.56	10.12	38.38	44.10	65.96	74.00	-8.04	Pk
Horizontal	17476.504	45.28	10.12	38.38	44.10	49.68	54.00	-4.32	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

5.3.5 Radiated Band Edge

For U-NII-1&U-NII-2A
For 802.11a mode: (CH36 5180MHz&CH64 5320MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150	66.28	8.69	29.4	42.59	61.78	74	-12.22	Pk
Horizontal	5350	63.47	9.37	30.41	43.25	60.00	74	-14.00	Pk
Vertical	5150	67.46	9.21	29.4	42.59	63.48	74	-10.52	Pk
Vertical	5350	60.26	9.12	30.41	43.25	56.54	74	-17.46	Pk

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5150	47.73	8.69	29.4	42.59	43.23	54	-10.77	AV
Horizontal	5350	50.34	8.46	30.41	43.25	45.96	54	-8.04	AV
Vertical	5150	48.46	9.21	29.4	42.59	44.48	54	-9.52	AV
Vertical	5350	51.78	9.12	30.41	43.25	48.06	54	-5.94	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

For U-NII-2C
For 802.11a mode: (CH100 5500MHz&CH140 5700MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5460	65.72	8.69	29.4	42.59	61.22	74	-12.78	Pk
Horizontal	5725	62.81	9.37	30.41	43.25	59.34	74	-14.66	Pk
Vertical	5460	67.63	9.21	29.4	42.59	63.65	74	-10.35	Pk
Vertical	5725	61.30	9.12	30.41	43.25	57.58	74	-16.42	Pk
Horizontal	5460	46.52	8.69	29.4	42.59	42.02	54	-11.98	AV
Horizontal	5725	51.42	8.46	30.41	43.25	47.04	54	-6.96	AV
Vertical	5460	49.37	9.21	29.4	42.59	45.39	54	-8.61	AV
Vertical	5725	50.00	9.12	30.41	43.25	46.28	54	-7.72	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

For U-NII-3
For 802.11a mode: (CH149 5745MHz&CH165 5825MHz)

Polarization	Frequency	Read Lavel	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Over Limit	Detector Type
/	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	5725	67.71	8.69	29.4	42.59	63.21	74	-10.79	Pk
Horizontal	5850	67.46	9.37	30.41	43.25	63.99	74	-10.01	Pk
Vertical	5725	60.31	9.21	29.4	42.59	56.33	74	-17.67	Pk
Vertical	5850	61.04	9.12	30.41	43.25	57.32	74	-16.68	Pk
Horizontal	5725	45.49	8.69	29.4	42.59	40.99	54	-13.01	AV
Horizontal	5850	46.84	8.46	30.41	43.25	42.46	54	-11.54	AV
Vertical	5725	44.93	9.21	29.4	42.59	40.95	54	-13.05	AV
Vertical	5850	49.29	9.12	30.41	43.25	45.57	54	-8.43	AV

Note: All modes have been tested, and only the worst mode 802.11a mode is mentioned in the report.

5.4 Peak Output Power

5.4.1 Limit

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. In addition, 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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz band

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. In addition, 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.

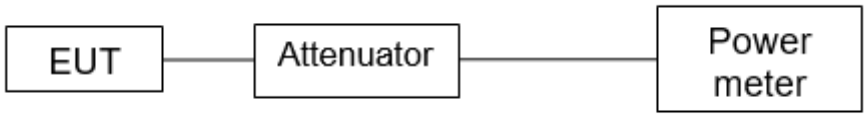
For the band 5.725-5.85 GHz

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, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.4.2 Test Procedure

The maximum peak conducted output power may be measured using a broadband Average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

5.4.3 Test Setup



5.4.4 Test Results

EUT:	Wireless carplay adapter	Model Name:	KY-4194
Test Mode:	TX	Test Voltage:	DC 5V from adapter AC 120V/60Hz

For U-NII-1

Modulation mode	Test Channel	Frequency(MHz)	Conducted Power (dBm)	Limit(dBm)
11a	CH36	5180	13.56	24
11a	CH40	5200	13.59	24
11a	CH48	5240	13.52	24
11n (HT20)	CH36	5180	13.75	24
11n (HT20)	CH40	5200	14.04	24
11n (HT20)	CH48	5240	14.24	24
11n (HT40)	CH38	5190	13.45	24
11n (HT40)	CH46	5230	13.58	24
11ac (HT20)	CH36	5180	14.09	24
11ac (HT20)	CH40	5200	14.21	24
11ac (HT20)	CH48	5240	14.03	24
11ac (HT40)	CH38	5190	13.4	24
11ac (HT40)	CH46	5230	13.43	24

U-NII-2A

Modulation mode	Test Channel	Frequency(MHz)	Conducted Power (dBm)	Limit(dBm)
11a	CH52	5260	13.94	24
11a	CH56	5280	14.42	24
11a	CH64	5320	13.18	24
11n (HT20)	CH52	5260	13.87	24
11n (HT20)	CH56	5280	14.36	24
11n (HT20)	CH64	5320	13.62	24
11n (HT40)	CH54	5270	14.33	24
11n (HT40)	CH62	5310	13.6	24
11ac (HT20)	CH52	5260	14.07	24
11ac (HT20)	CH56	5280	14.94	24
11ac (HT20)	CH64	5320	13.34	24
11ac (HT40)	CH54	5270	14.2	24
11ac (HT40)	CH62	5310	13.52	24

U-NII-2C

Modulation mode	Test Channel	Frequency(MHz)	Conducted Power (dBm)	Limit(dBm)
11a	CH100	5500	12.5	24
11a	CH120	5600	11.62	24
11a	CH140	5700	11.5	24
11n (HT20)	CH100	5500	13.41	24
11n (HT20)	CH120	5600	12.31	24
11n (HT20)	CH140	5700	12.08	24
11n (HT40)	CH102	5510	13.22	24
11n (HT40)	CH110	5550	12.95	24
11n (HT40)	CH134	5670	12.4	24
11ac (HT20)	CH100	5500	13.17	24
11ac (HT20)	CH120	5600	12.33	24
11ac (HT20)	CH140	5700	12.32	24
11ac (HT40)	CH102	5510	12.69	24
11ac (HT40)	CH110	5550	12.97	24
11ac (HT40)	CH134	5670	12.02	24

For U-NII-3

Modulation mode	Test Channel	Frequency(MHz)	Conducted Power (dBm)	Limit(dBm)
11a	CH149	5745	17.18	30
11a	CH157	5785	16.38	30
11a	CH165	5825	17.15	30
11n (HT20)	CH149	5745	17.41	30
11n (HT20)	CH157	5785	17.65	30
11n (HT20)	CH165	5825	17.11	30
11n (HT40)	CH151	5755	17.86	30
11n (HT40)	CH159	5795	17.27	30
11ac (HT20)	CH149	5745	17.75	30
11ac (HT20)	CH157	5785	17.29	30
11ac (HT20)	CH165	5825	16.5	30
11ac (HT40)	CH151	5755	17.37	30
11ac (HT40)	CH159	5795	17.19	30

5.5 Power Spectral Density

5.5.1 Limit

For the band 5.15-5.25 GHz
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. If transmitting antennas of directional gain greater than 6 dBi are used, 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 band 5.25-5.35 GHz and 5.47-5.725 GHz
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, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

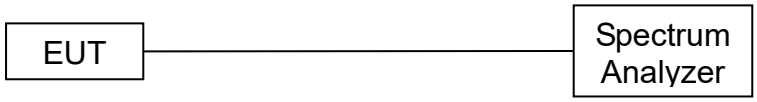
For the band 5.725-5.85 GHz
The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.5.2 Test Procedure

For U-NII-1, U-NII-2A, U-NII-2C
1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW ≥ 1MHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = RMS.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

For U-NII-3
1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW ≥ 500kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = RMS.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

5.5.3 Test Setup



5.5.4 Test Results

For U-NII-1

Mode	Channel	Frequency(MHz)	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm/MHz)	Result
11a	CH36	5180	3.52	2.38	5.9	11	Pass
11a	CH40	5200	3.56	2.38	5.94	11	Pass
11a	CH48	5240	3.12	2.38	5.5	11	Pass
11n(HT20)	CH36	5180	3.18	0.79	3.97	11	Pass
11n(HT20)	CH40	5200	3.42	0.79	4.21	11	Pass
11n(HT20)	CH48	5240	3.09	0.79	3.88	11	Pass
11n(HT40)	CH38	5190	0.05	0.83	0.88	11	Pass
11n(HT40)	CH46	5230	0.11	0.83	0.94	11	Pass
11ac(HT20)	CH36	5180	3.24	0.79	4.03	11	Pass
11ac(HT20)	CH40	5200	3.54	0.79	4.33	11	Pass
11ac(HT20)	CH48	5240	3.13	0.79	3.92	11	Pass
11ac(HT40)	CH38	5190	0.13	0.82	0.95	11	Pass
11ac(HT40)	CH46	5230	-0.3	0.82	0.52	11	Pass

U-NII-2A

Mode	Channel	Frequency(MHz)	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm/MHz)	Result
11a	CH52	5260	3.59	2.38	5.97	11	Pass
11a	CH56	5280	4.11	2.38	6.49	11	Pass
11a	CH64	5320	3.18	2.39	5.57	11	Pass
11n(HT20)	CH52	5260	3.39	0.79	4.18	11	Pass
11n(HT20)	CH56	5280	3.88	0.79	4.67	11	Pass
11n(HT20)	CH64	5320	2.85	0.82	3.67	11	Pass
11n(HT40)	CH54	5270	0.6	0.82	1.42	11	Pass
11n(HT40)	CH62	5310	-0.19	0.83	0.64	11	Pass
11ac(HT20)	CH52	5260	3.28	0.79	4.07	11	Pass
11ac(HT20)	CH56	5280	3.86	0.79	4.65	11	Pass
11ac(HT20)	CH64	5320	2.58	0.8	3.38	11	Pass
11ac(HT40)	CH54	5270	0.74	0.82	1.56	11	Pass
11ac(HT40)	CH62	5310	-0.14	0.82	0.68	11	Pass

U-NII-2C

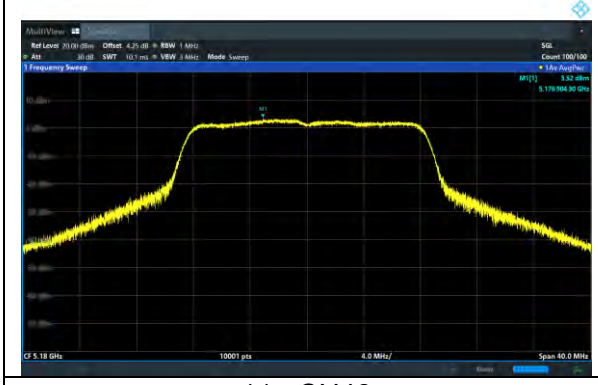
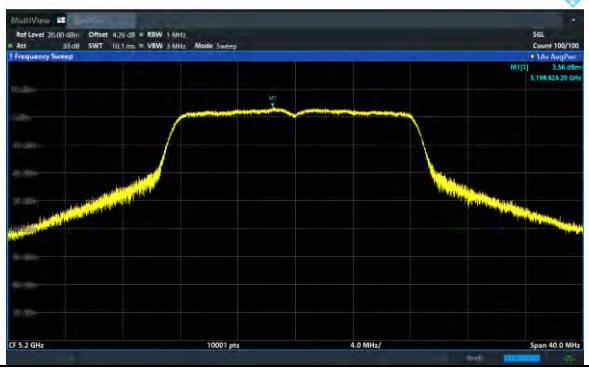
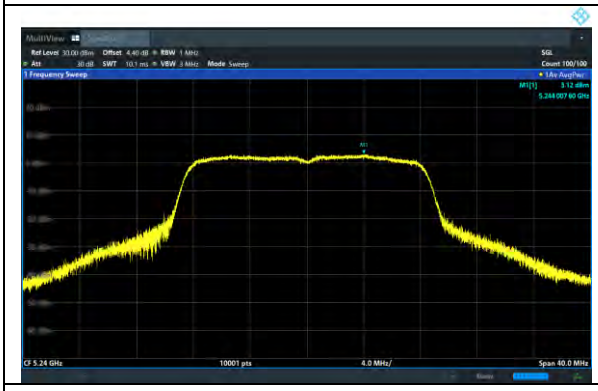
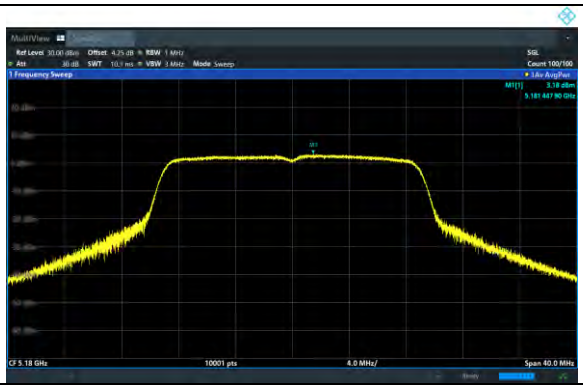
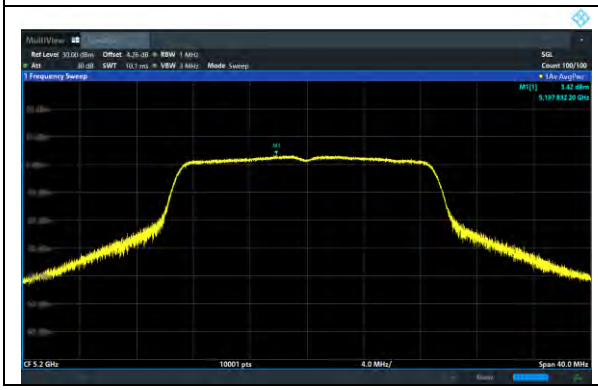
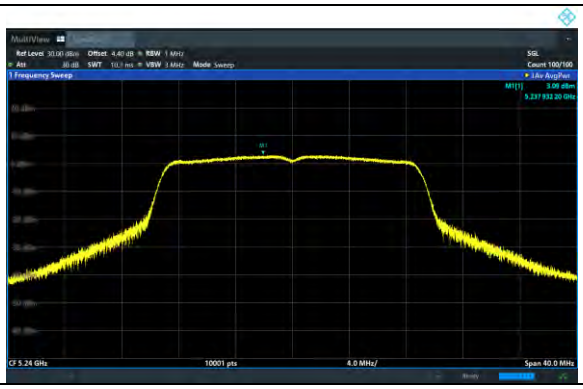
Mode	Channel	Frequency(MHz)	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm/MHz)	Result
11a	CH100	5500	2.55	2.38	4.93	11	Pass
11a	CH120	5600	1.53	2.4	3.93	11	Pass
11a	CH140	5700	1.61	2.38	3.99	11	Pass
11n(HT20)	CH100	5500	2.65	0.79	3.44	11	Pass
11n(HT20)	CH120	5600	1.67	0.79	2.46	11	Pass
11n(HT20)	CH140	5700	1.62	0.8	2.42	11	Pass
11n(HT40)	CH102	5510	-0.19	0.83	0.64	11	Pass
11n(HT40)	CH110	5550	-0.45	0.82	0.37	11	Pass
11n(HT40)	CH134	5670	-1.19	0.82	-0.37	11	Pass
11ac(HT20)	CH100	5500	2.94	0.79	3.73	11	Pass
11ac (HT20)	CH120	5600	1.77	0.79	2.56	11	Pass
11ac (HT20)	CH140	5700	1.72	0.79	2.51	11	Pass
11ac (HT40)	CH102	5510	-0.24	0.82	0.58	11	Pass
11ac (HT40)	CH110	5550	-0.21	0.82	0.61	11	Pass
11ac (HT40)	CH134	5670	-1.17	0.82	-0.35	11	Pass

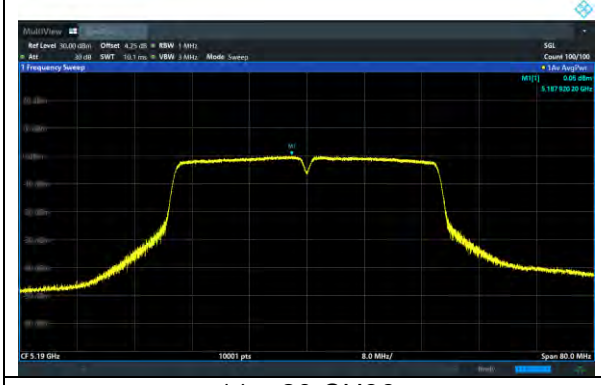
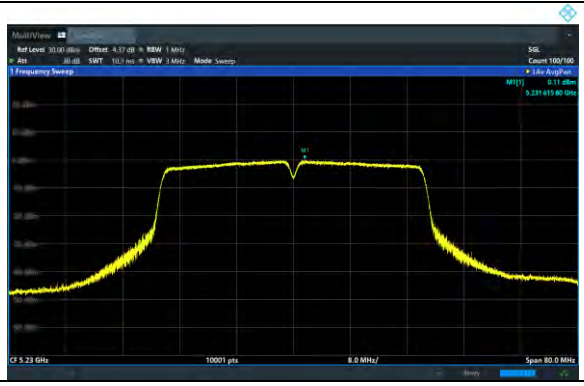
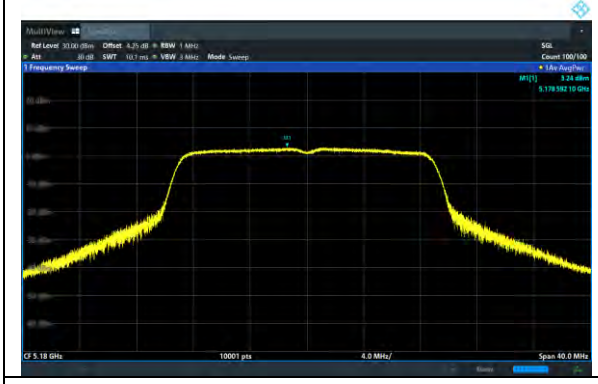
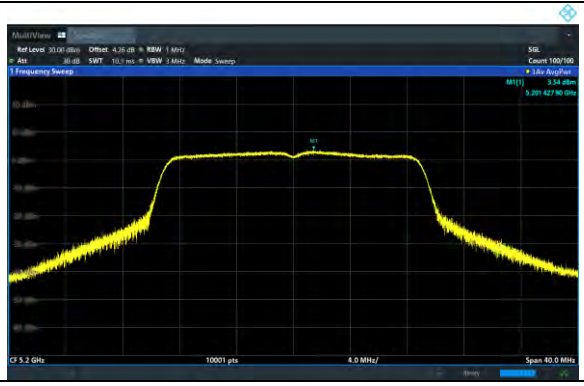
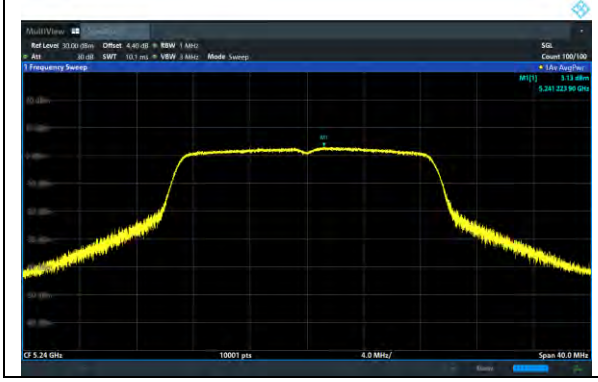
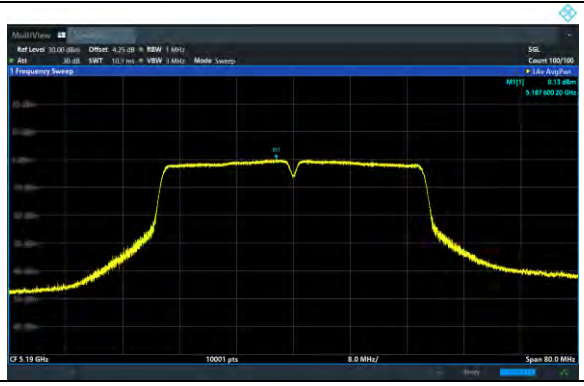
For U-NII-3

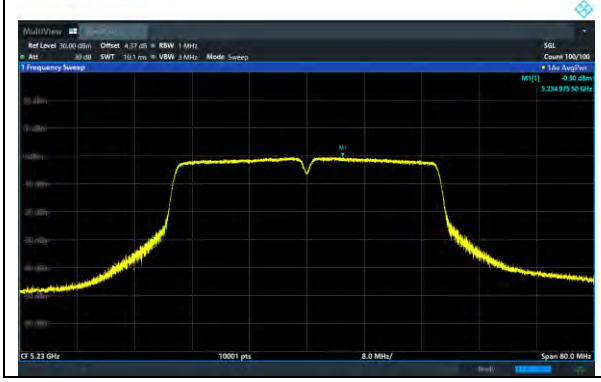
Mode	Channel	Frequency (MHz)	Conducted PSD (dBm)	Duty Factor (dB)	Total PSD (dBm)	Limit (dBm/500kHz)	Result
11a	CH149	5745	4.05	2.38	6.43	30	Pass
11a	CH157	5785	3.77	2.38	6.15	30	Pass
11a	CH165	5825	4.54	2.37	6.91	30	Pass
11n(HT20)	CH149	5745	4.46	0.79	5.25	30	Pass
11n(HT20)	CH157	5785	4.19	0.79	4.98	30	Pass
11n(HT20)	CH165	5825	3.35	0.79	4.14	30	Pass
11n(HT40)	CH151	5755	1.08	0.82	1.9	30	Pass
11n(HT40)	CH159	5795	0.67	0.82	1.49	30	Pass
11ac(HT20)	CH149	5745	4.2	0.79	4.99	30	Pass
11ac(HT20)	CH157	5785	4.11	0.79	4.9	30	Pass
11ac(HT20)	CH165	5825	3.32	0.79	4.11	30	Pass
11ac(HT40)	CH151	5755	1.08	0.82	1.9	30	Pass
11ac(HT40)	CH159	5795	0.87	0.82	1.69	30	Pass

Test plots

For U-NII-1

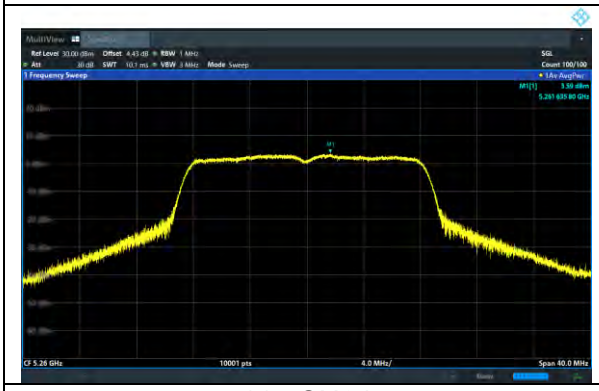
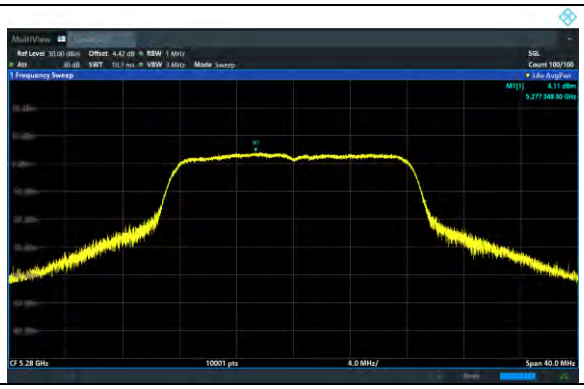
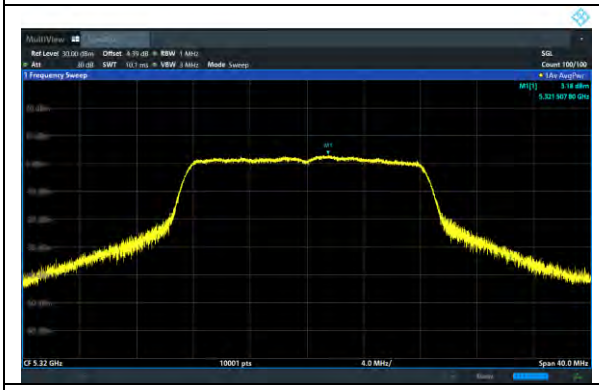
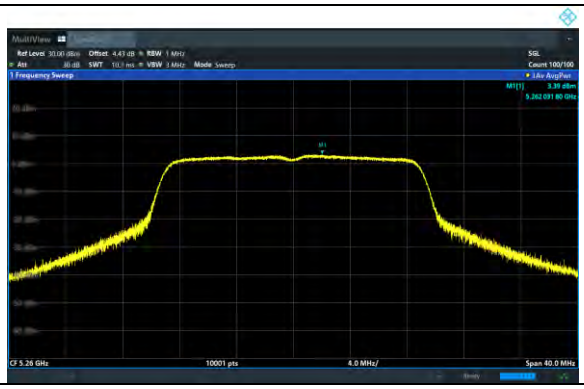
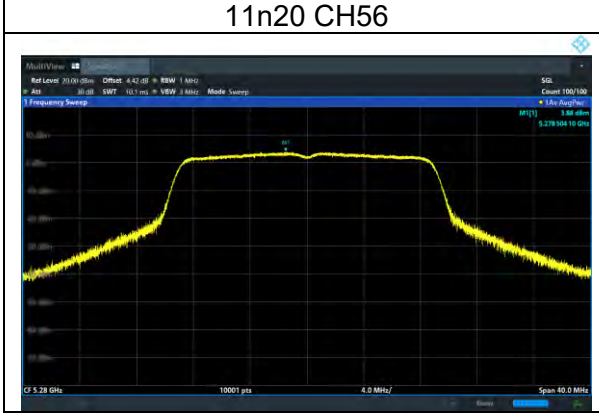
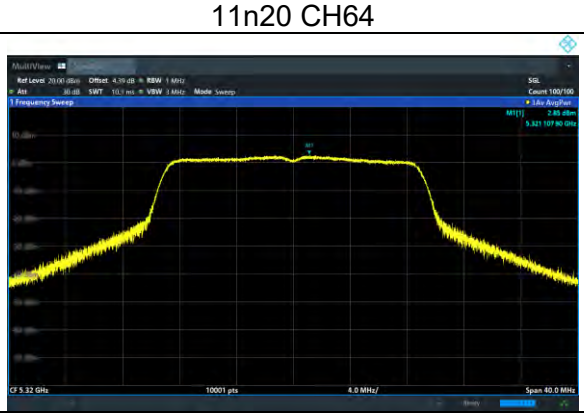
11a CH36	11a CH40
	
11a CH48	**11n20 CH36**
	
11n20 CH40	**11n20 CH48**
	

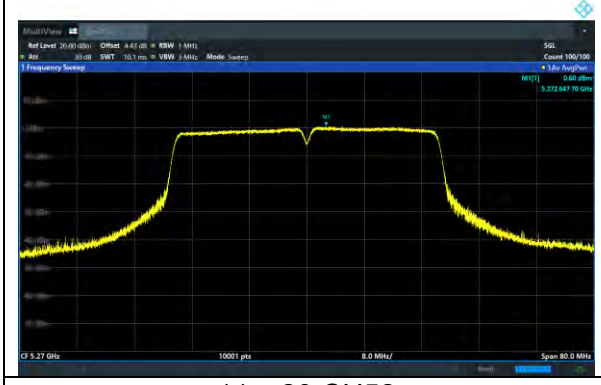
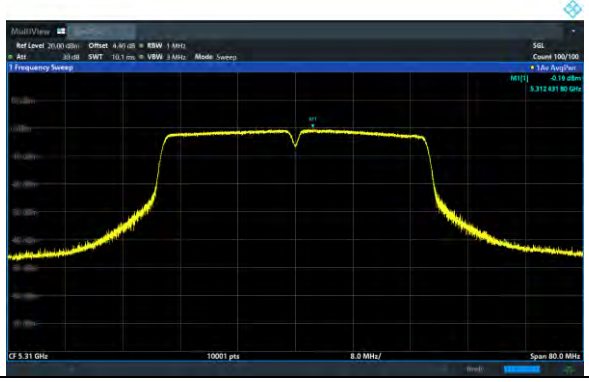
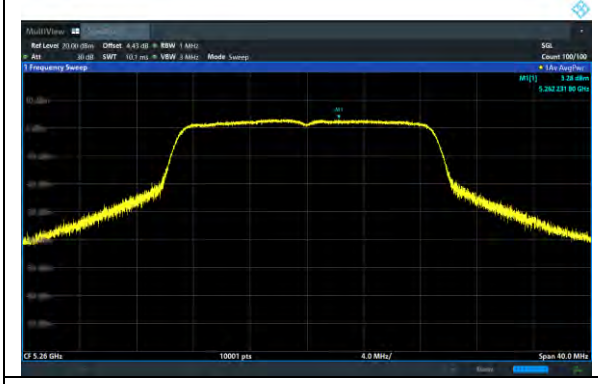
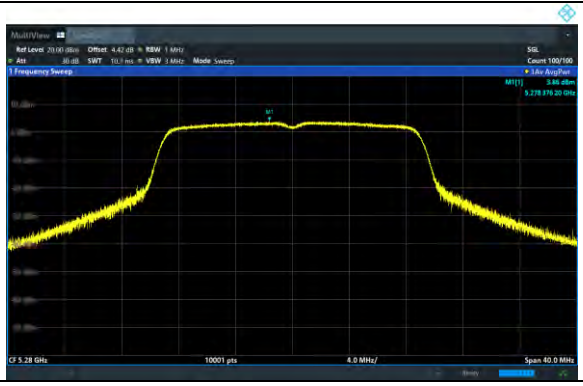
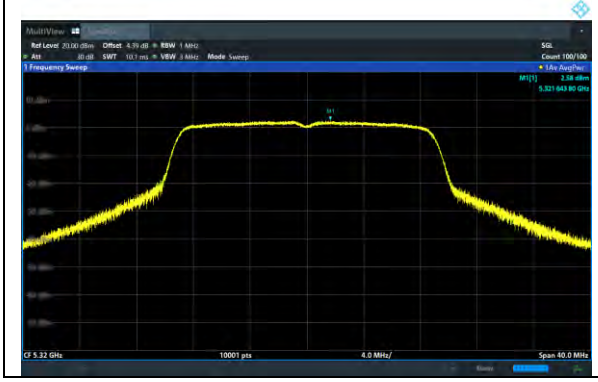
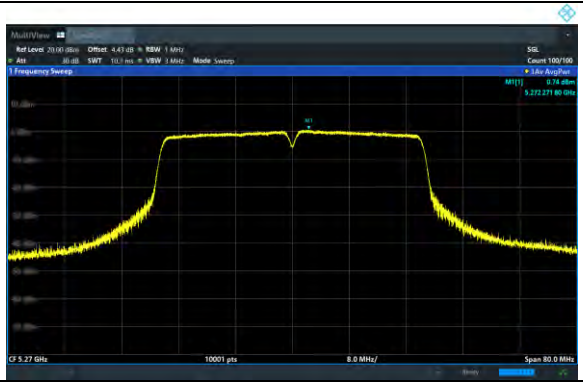
11n40 CH38	11n40 CH46
	
11ac20 CH36	**11ac20 CH40**
	
11ac20 CH48	**11ac40 CH38**
	

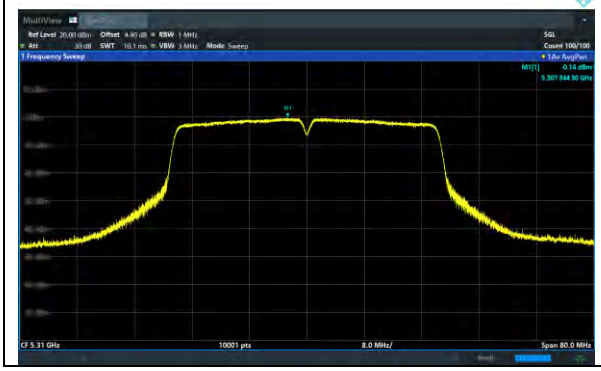
11ac40 CH46	/
	/

Test plots

U-NII-2A

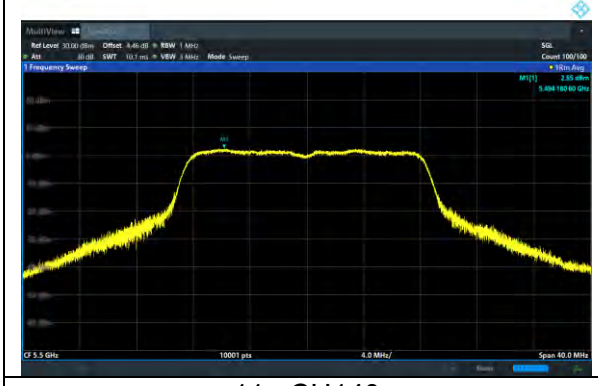
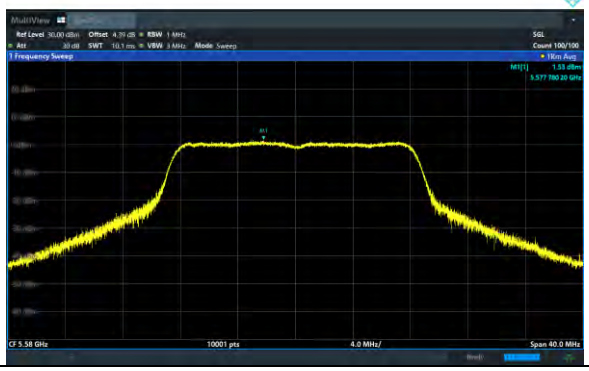
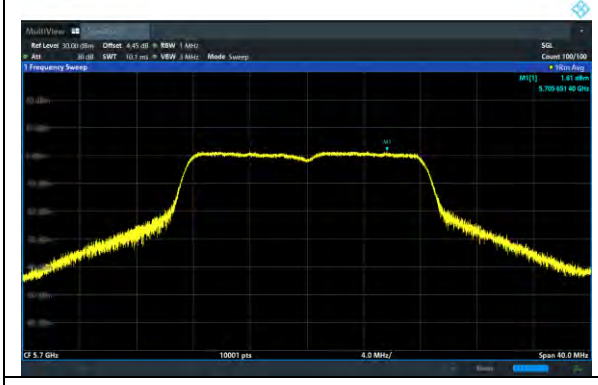
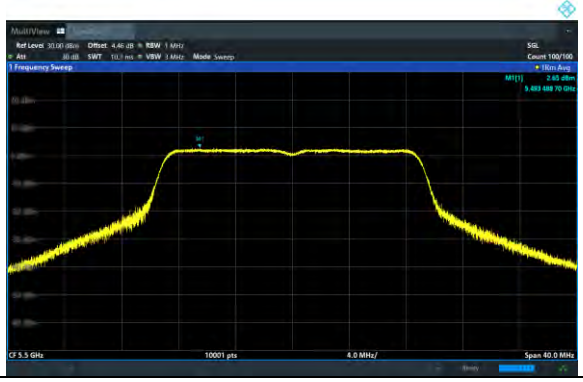
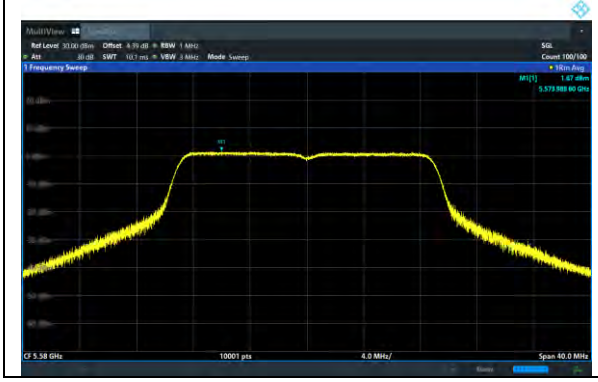
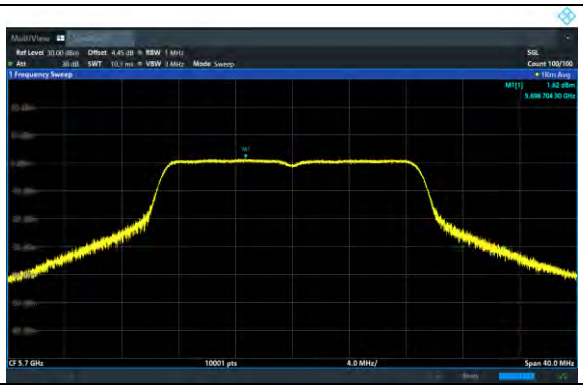
11a CH52	11a CH56
	
11a CH64	11n20 CH52
	
11n20 CH56	11n20 CH64
	

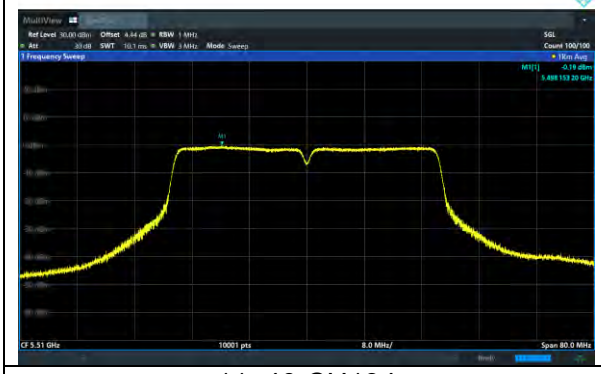
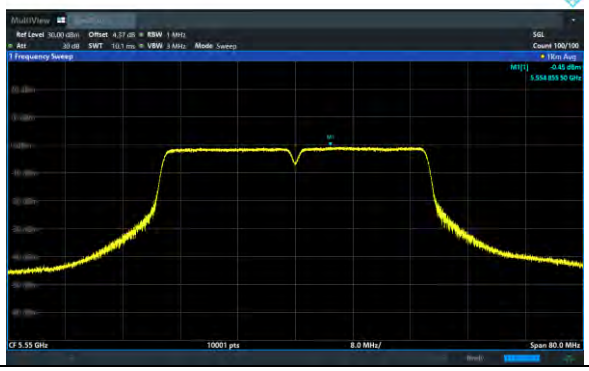
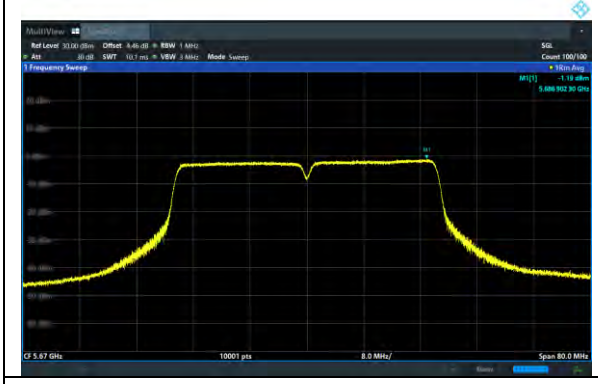
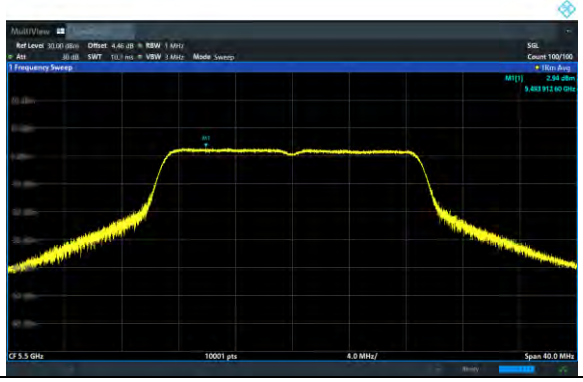
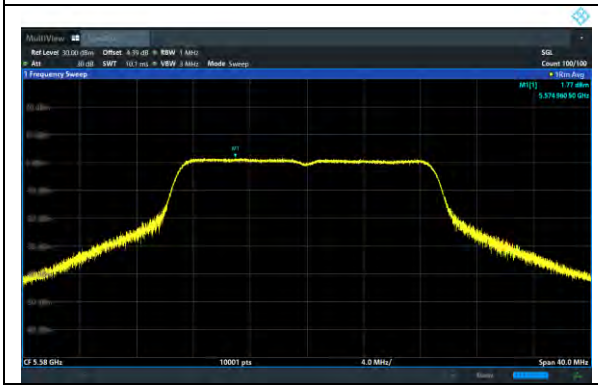
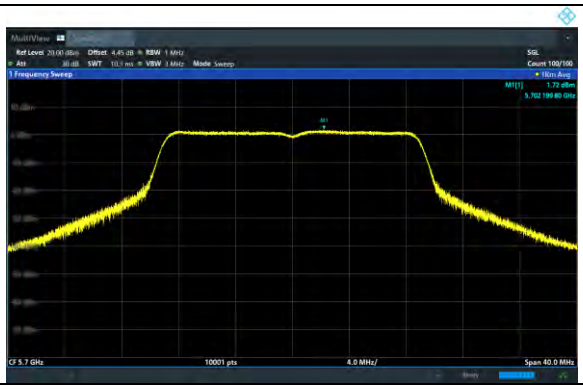
11n40 CH54	11n40 CH62
	
11ac20 CH52	**11ac20 CH56**
	
11ac20 CH64	**11ac40 CH54**
	

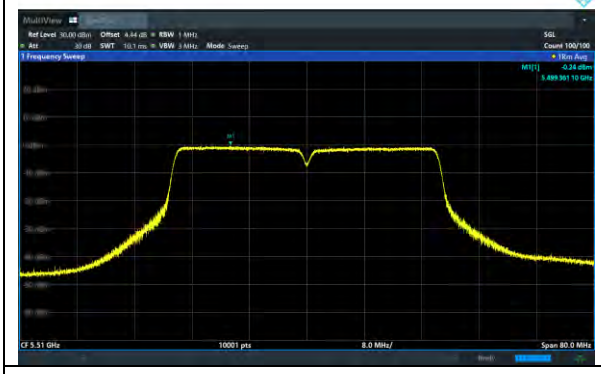
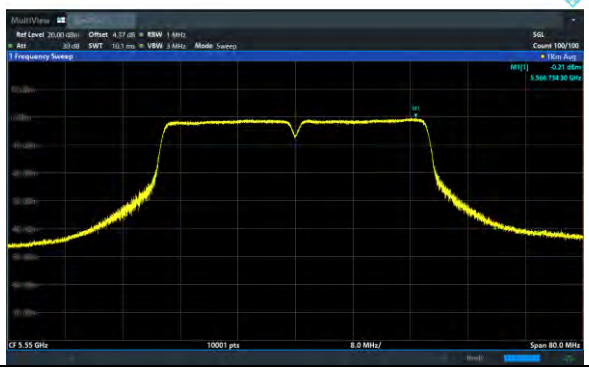
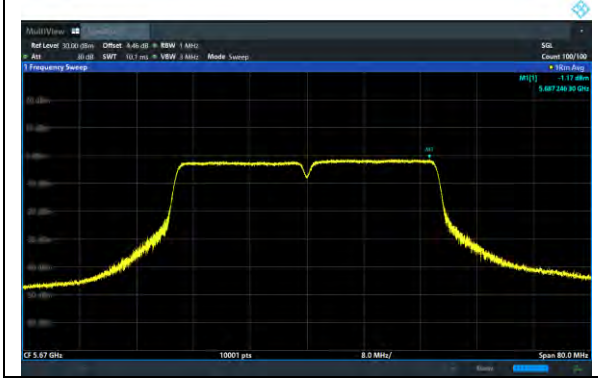
11ac40 CH62	/
	/

Test plots

U-NII-2C

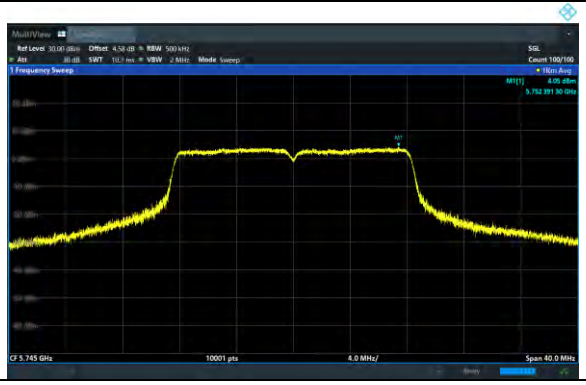
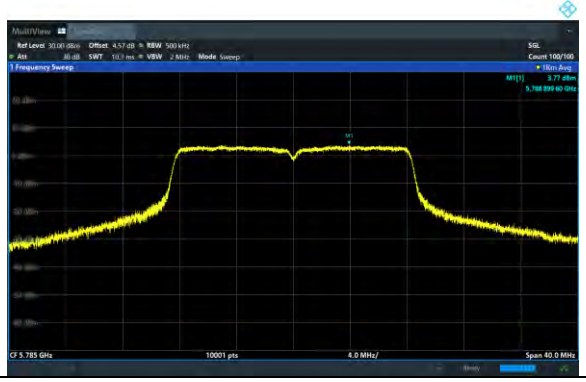
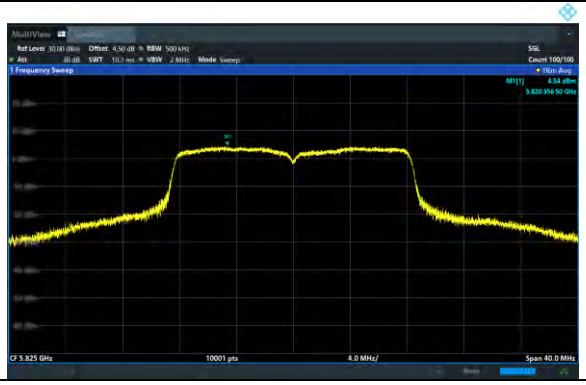
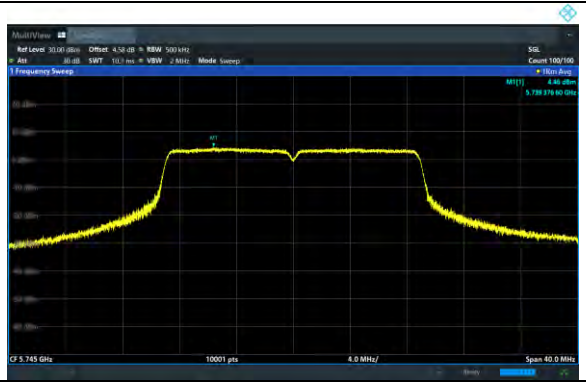
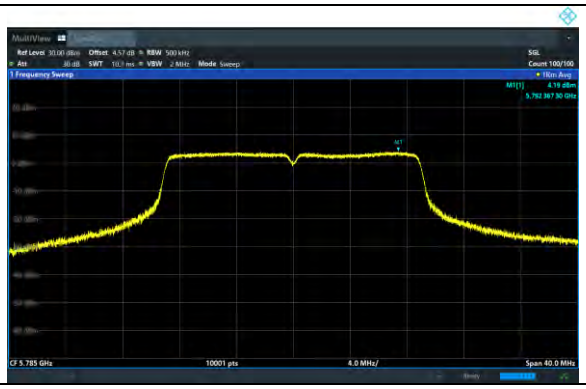
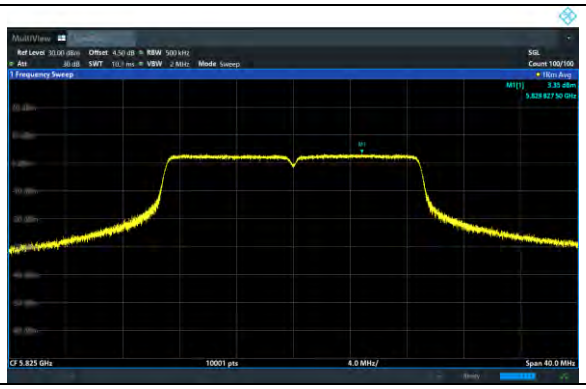
11a CH100	11a CH120
	
11a CH140	**11n20 CH100**
	
11n20 CH120	**11n20 CH140**
	

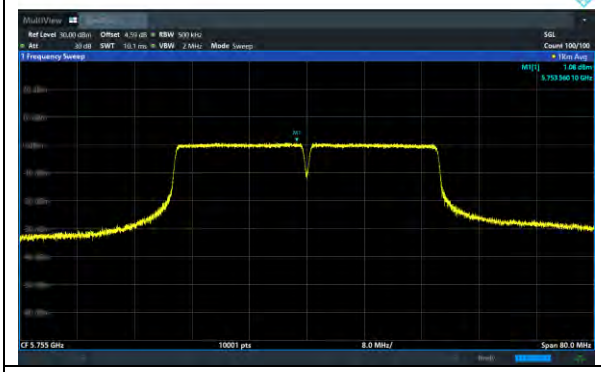
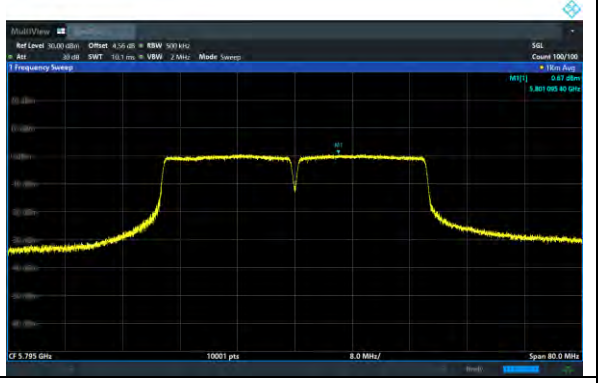
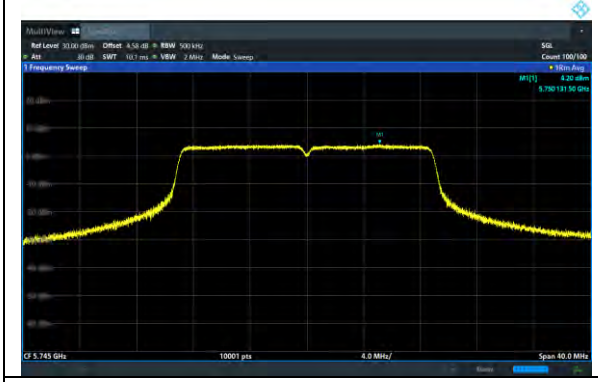
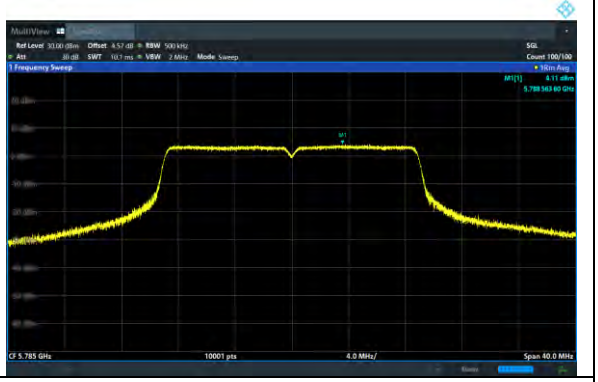
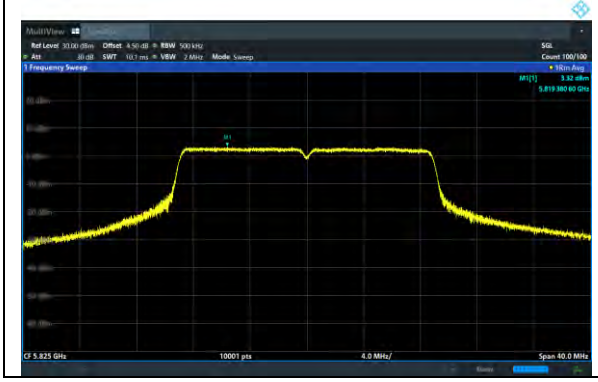
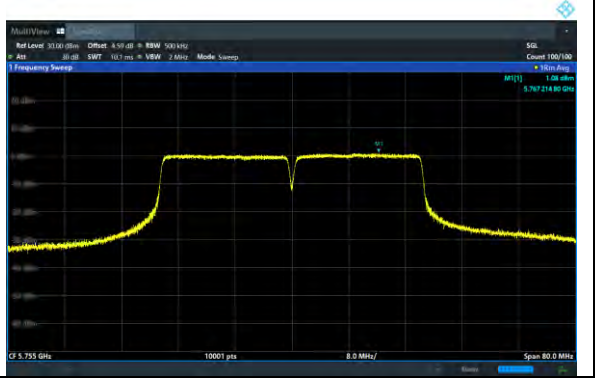
11n40 CH102	11n40 CH110
	
11n40 CH134	11ac20 CH100
	
11ac20 CH120	11ac20 CH140
	

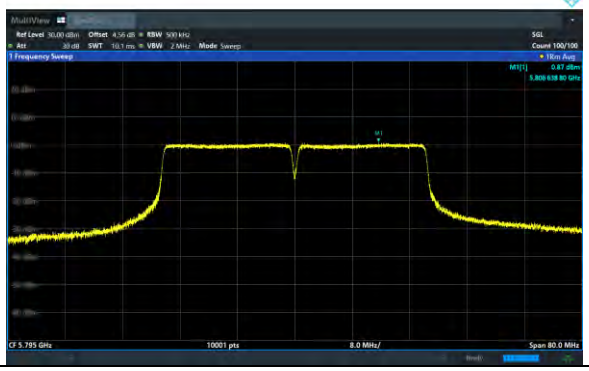
11ac40 CH102	11ac40 CH110
	
11ac40 CH134	/
	/

Test plots

For U-NII-3

11a CH149	11a CH157
	
11a CH165	**11n20 CH149**
	
11n20 CH157	**11n20 CH165**
	

11n40 CH151	11n40 CH159
	
11ac20 CH149	11ac20 CH157
	
11ac20 CH165	11ac40 CH151
	

11ac40 CH159	/
	/

5.6 26dB Emission Bandwidth and Occupied bandwidth

5.6.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

5.6.2 Test Procedure

26dB Emission bandwidth

Set RBW = approximately 1% of the emission bandwidth.

Set VBW ≥ 3*RBW

Detector = Peak.

Trace mode = Max hold.

Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

Set Span = 1.5 times to 5.0 times the OBW

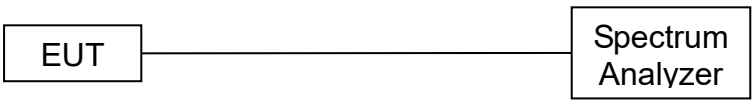
Set RBW = 1% to 5% of the OBW.

Set VBW ≥ 3*RBW, Detector = Peak.

Trace mode = Max hold.

Use the 99% power bandwidth function of the instrument.

5.6.3 Test Setup



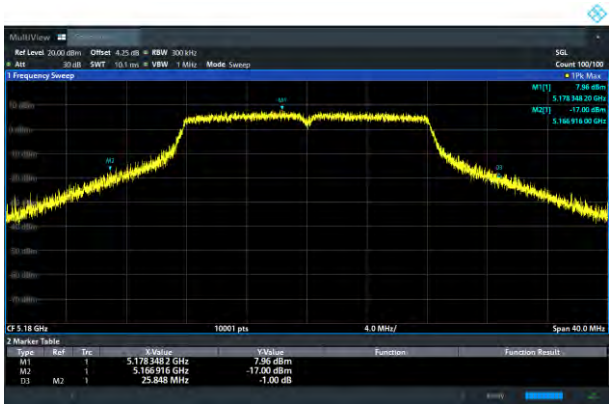
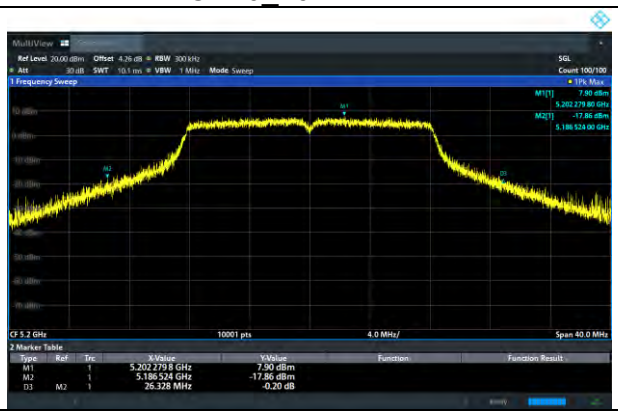
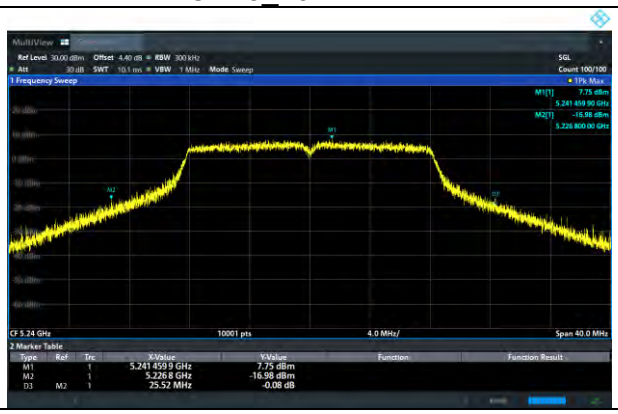
5.6.4 Test Results

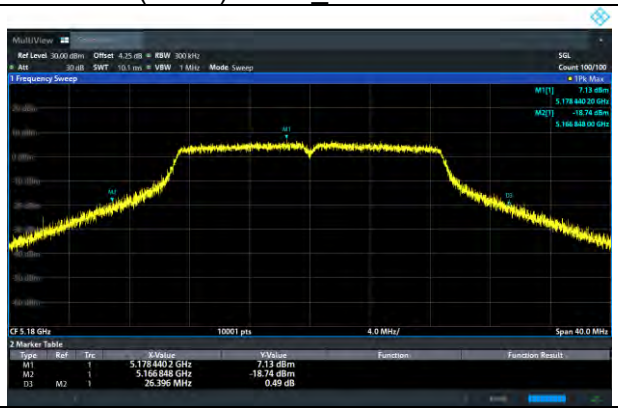
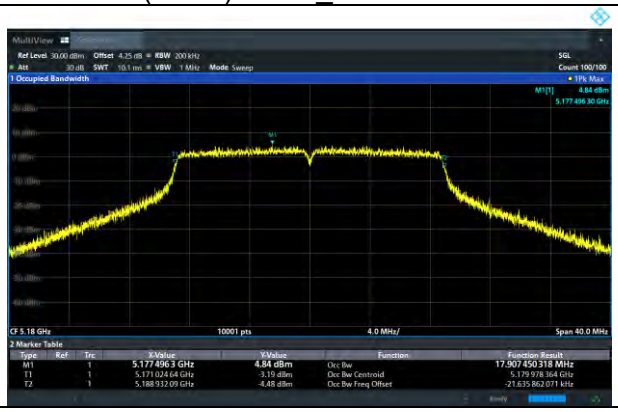
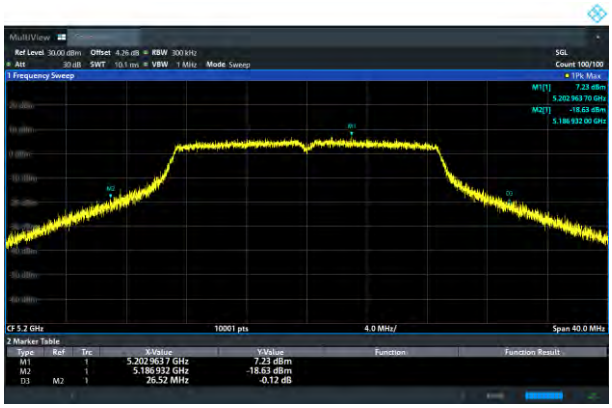
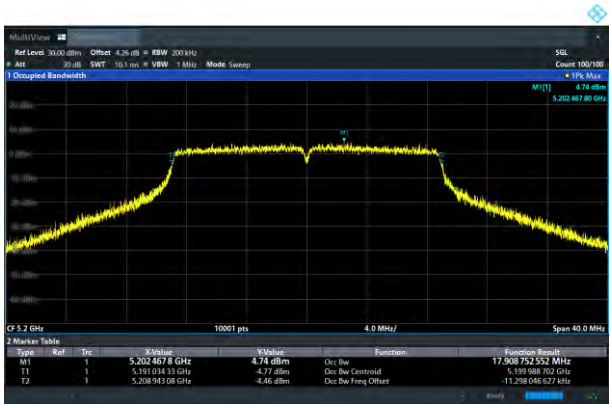
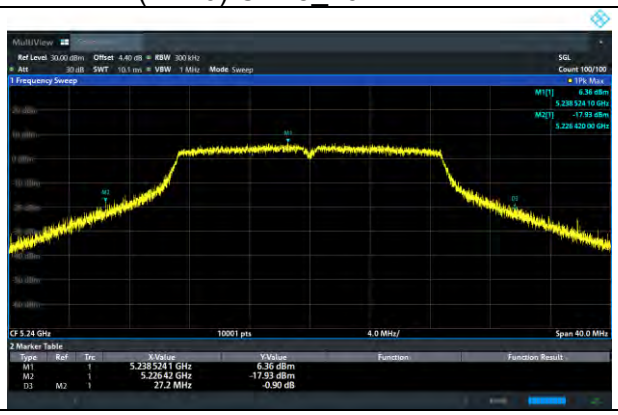
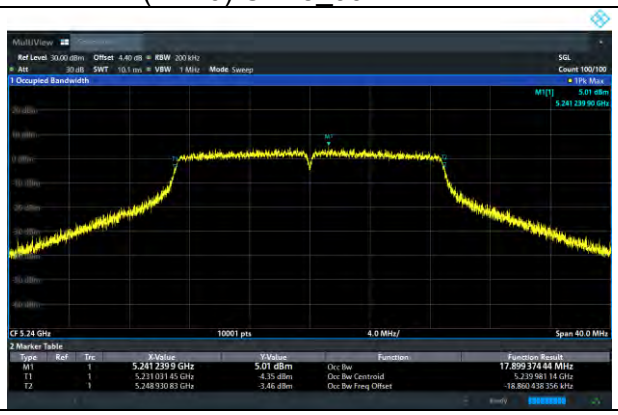
For U-NII-1

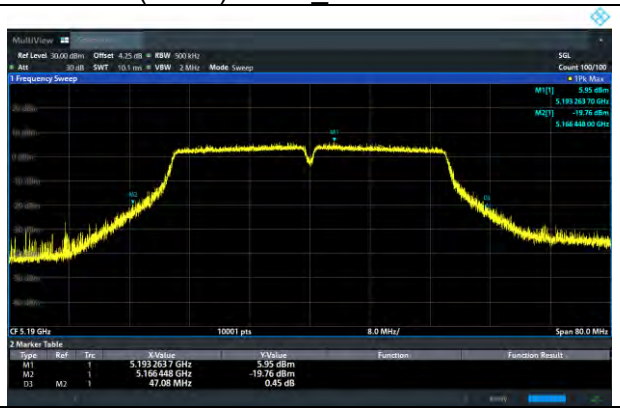
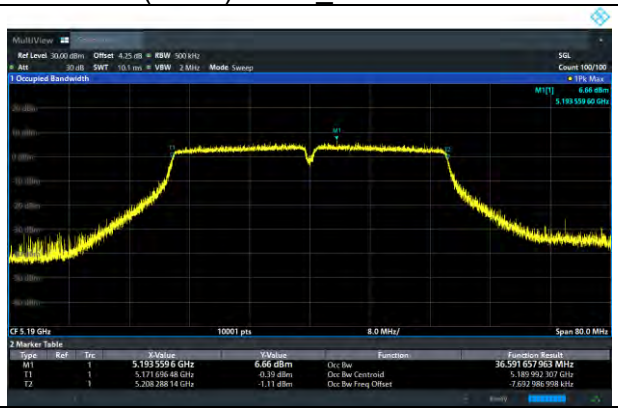
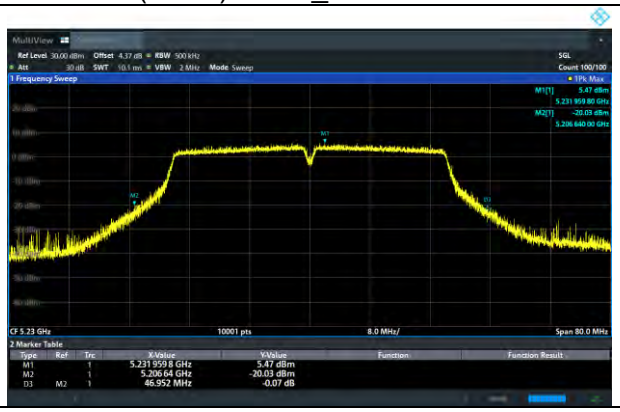
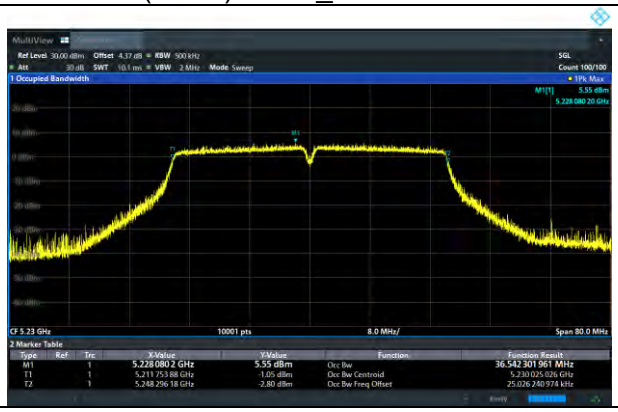
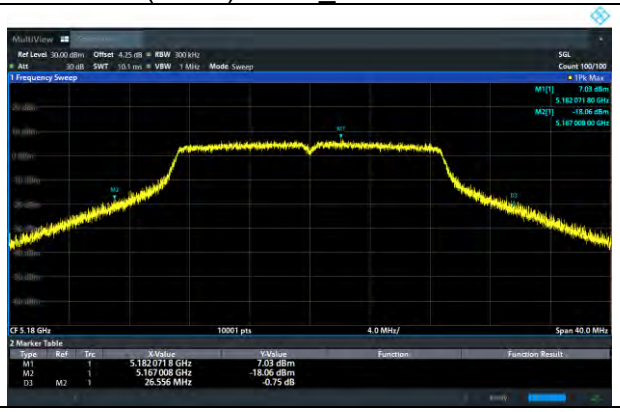
Channel	Test Channel	Frequency (MHz)	26dB bandwidth (MHz)	Limit (kHz)	99% bandwidth	Limit (kHz)	Result
11a	CH36	5180	25.848	/	16.702	/	Pass
11a	CH40	5200	26.328	/	16.716	/	Pass
11a	CH48	5240	25.52	/	16.668	/	Pass
11n (HT20)	CH36	5180	26.396	/	17.907	/	Pass
11n (HT20)	CH40	5200	26.52	/	17.909	/	Pass
11n (HT20)	CH48	5240	27.2	/	17.899	/	Pass
11n (HT40)	CH38	5190	47.08	/	36.592	/	Pass
11n (HT40)	CH46	5230	46.952	/	36.542	/	Pass
11ac (HT20)	CH36	5180	26.556	/	17.915	/	Pass
11ac (HT20)	CH40	5200	27.044	/	17.901	/	Pass
11ac (HT20)	CH48	5240	26.612	/	17.904	/	Pass
11ac (HT40)	CH38	5190	46.16	/	36.566	/	Pass
11ac (HT40)	CH46	5230	46.864	/	36.556	/	Pass

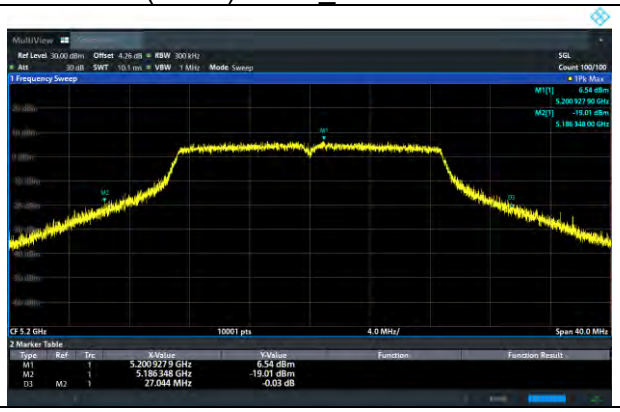
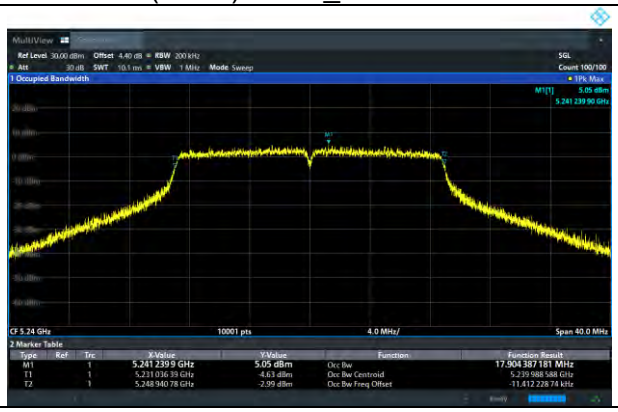
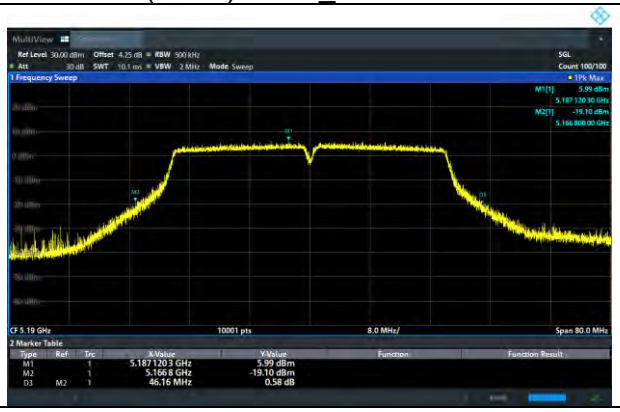
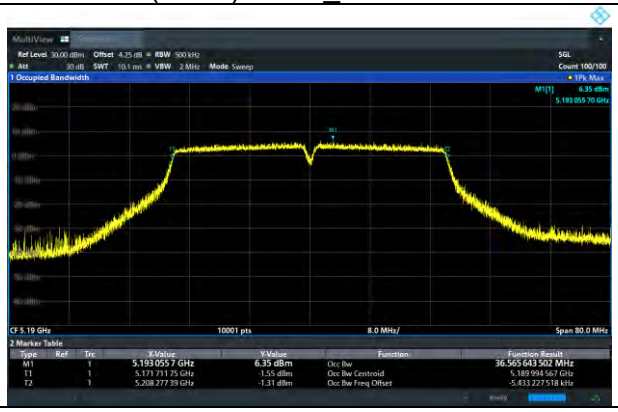
Test plots:

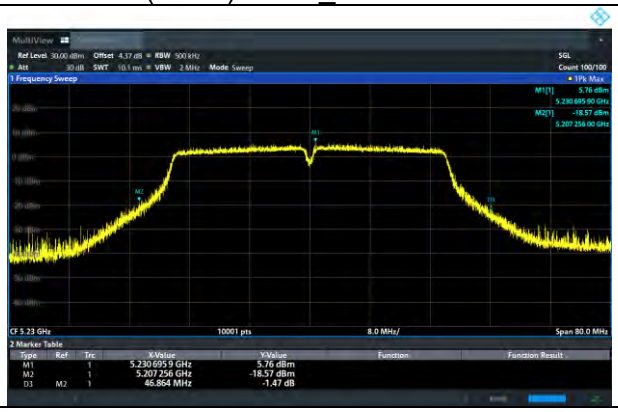
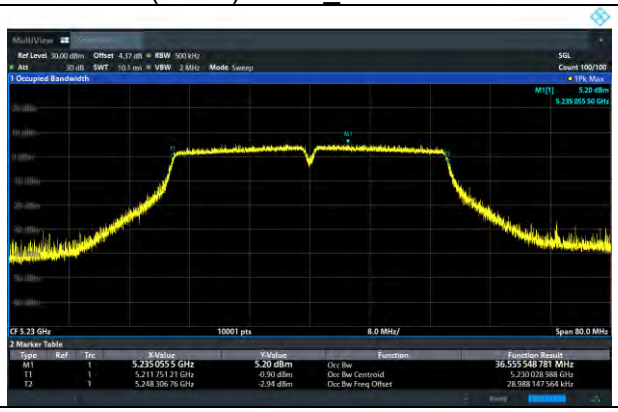
For U-NII-1

11a CH36_26dB bandwidth	11a CH36_99% bandwidth
	
11a CH40_26dB bandwidth	11a CH40_99% bandwidth
	
11a CH48_26dB bandwidth	11a CH48_99% bandwidth
	

11n (HT20) CH36_26dB bandwidth	11n (HT20) CH36_99% bandwidth
	
11n (HT20) CH40_26dB bandwidth	**11n (HT20) CH40_99% bandwidth**
	
11n (HT20) CH48_26dB bandwidth	**11n (HT20) CH48_99% bandwidth**
	

11n (HT40) CH38_26dB bandwidth	11n (HT40) CH38_99% bandwidth
	
11n (HT40) CH46_26dB bandwidth	11n (HT40) CH46_99% bandwidth
	
11ac (HT20) CH36_26dB bandwidth	11ac (HT20) CH36_99% bandwidth
	

11ac (HT20) CH40_26dB bandwidth	11ac (HT20) CH40_99% bandwidth
	
11ac (HT20) CH48_26dB bandwidth	11ac (HT20) CH48_99% bandwidth
	
11ac (HT40) CH38_26dB bandwidth	11ac (HT40) CH38_99% bandwidth
	

11ac (HT40) CH46_26dB bandwidth	11ac (HT40) CH46_99% bandwidth
	

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Channel	Test Channel	Frequency (MHz)	26dB bandwidth (MHz)	Limit (kHz)	99% bandwidth	Limit (kHz)	Result
11a	CH52	5260	26.504	/	16.713	/	Pass
11a	CH56	5280	25.36	/	16.673	/	Pass
11a	CH64	5320	25.62	/	16.679	/	Pass
11n (HT20)	CH52	5260	26.668	/	17.94	/	Pass
11n (HT20)	CH56	5280	26.348	/	17.903	/	Pass
11n (HT20)	CH64	5320	26.948	/	17.886	/	Pass
11n (HT40)	CH54	5270	47.232	/	36.601	/	Pass
11n (HT40)	CH62	5310	46.728	/	36.525	/	Pass
11ac (HT20)	CH52	5260	27.428	/	17.924	/	Pass
11ac (HT20)	CH56	5280	28.128	/	17.898	/	Pass
11ac (HT20)	CH64	5320	26.408	/	17.913	/	Pass
11ac (HT40)	CH54	5270	45.912	/	36.614	/	Pass
11ac (HT40)	CH62	5310	46.656	/	36.546	/	Pass

Test plots:

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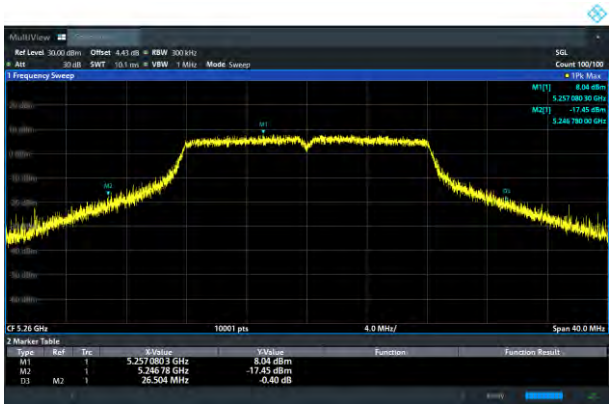
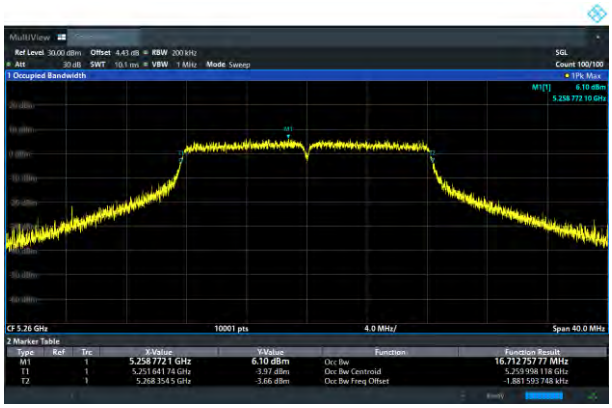
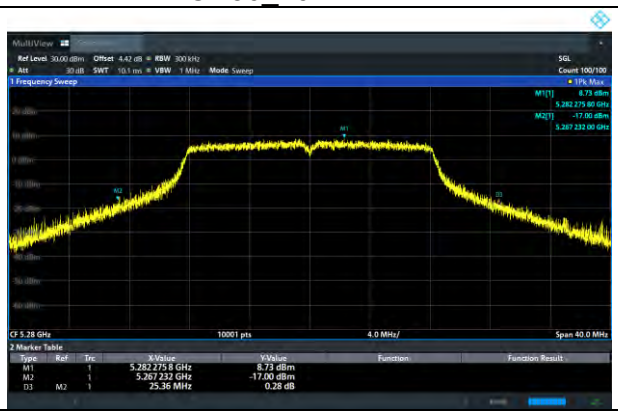
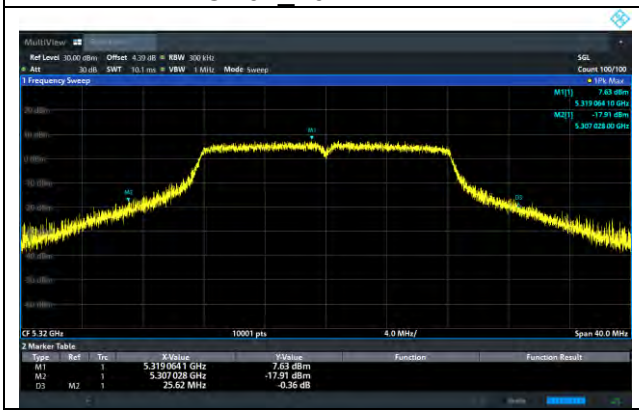
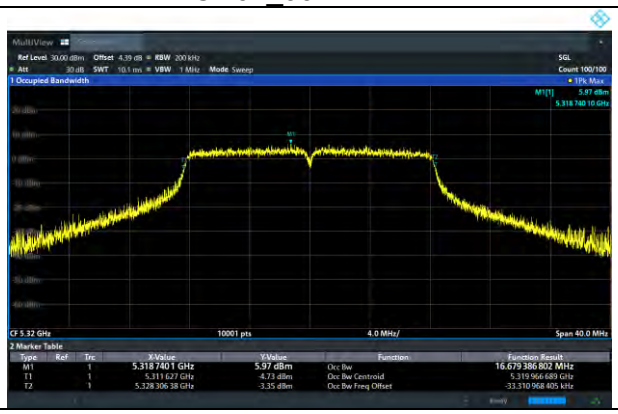
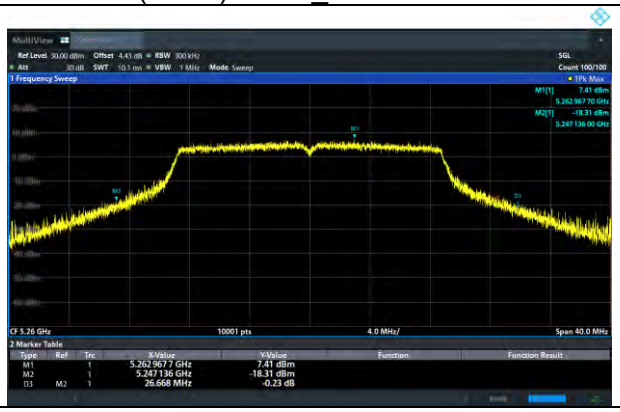
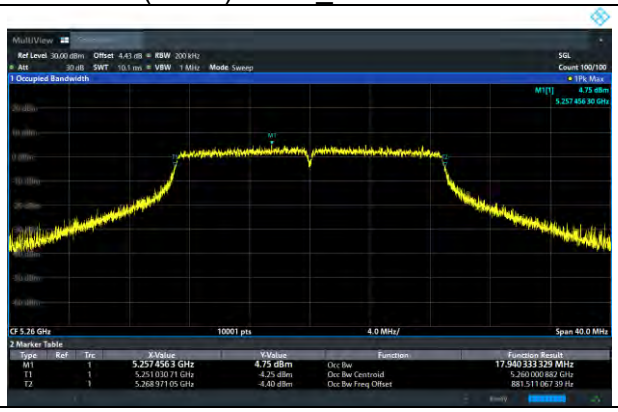
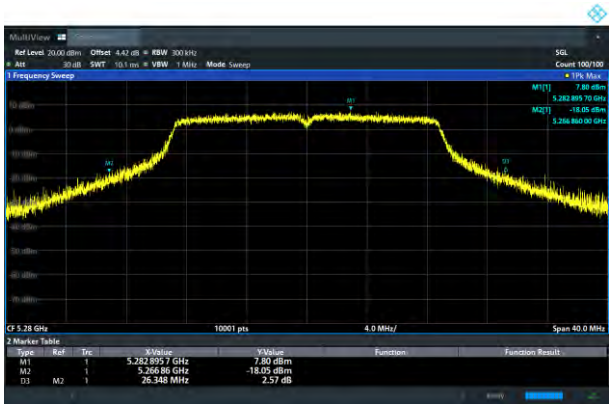
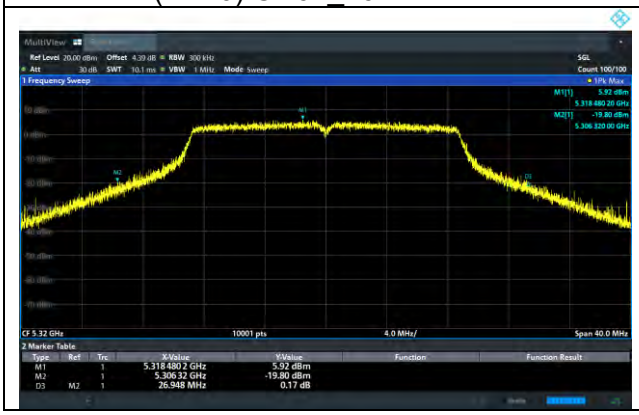
11a CH52_26dB bandwidth	11a CH52_99% bandwidth
	
11a CH56_26dB bandwidth	11a CH56_99% bandwidth
	
11a CH64_26dB bandwidth	11a CH64_99% bandwidth
	

11n (HT20) CH52_26dB bandwidth	11n (HT20) CH52_99% bandwidth
	
11n (HT20) CH56_26dB bandwidth	**11n (HT20) CH56_99% bandwidth**
	
11n (HT20) CH64_26dB bandwidth	**11n (HT20) CH64_99% bandwidth**
	

11n (HT40) CH54_26dB bandwidth	11n (HT40) CH54_99% bandwidth
	
11n (HT40) CH62_26dB bandwidth	**11n (HT40) CH62_99% bandwidth**
	
11ac (HT20) CH52_26dB bandwidth	**11ac (HT20) CH52_99% bandwidth**