Microtest
微 测 检 测

Test Report

Report No.:	MTi230414004-01E3
Date of issue:	2023-05-08
Applicant:	Shenzhen Boyi Electronics Co., Ltd.
Product:	Wireless CarPlay Adapter
Model(s):	BY960
FCC ID:	2A5XO-BY960

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

Address: 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Tel: (86-755)88850135 Fax: (86-755) 88850136 Web: www.mtitest.com E-mail: mti@51mti.com

Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Table of contents

Test Result Certification	
Applicant:	**Shenzhen Boyi Electronics Co., Ltd.**
Address:	5F, #Building 5, Longbi Industrial Zone, NO.27 Dafa Road, Bantian Street, Longgang District Shenzhen, China
Manufacturer:	**Shenzhen Boyi Electronics Co., Ltd.**
Address:	5F, #Building 5, Longbi Industrial Zone, NO.27 Dafa Road, Bantian Street, Longgang District Shenzhen, China
Product description	
Product name:	Wireless CarPlay Adapter
Trademark:	N/A
Model name:	BY960
Series Model:	N/A
Standards:	FCC 47 CFR Part 15.407
Test method:	ANSI C63.10-2013 KDB 789033 D02 v02r01
Date of Test	
Date of test:	2023-04-27 ~ 2023-05-06
Test result:	Pass

Test Engineer : Yanice Xie

(Yanice Xie)

Reviewed By: : Leon Chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	Wireless CarPlay Adapter
Model name:	BY960
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input: DC 5V
Hardware version:	V2.0
Software version:	V1.0
Accessories:	N/A
Test sample(s) number:	MTi230414004-01S1001
RF specification:	
Operation frequency:	U-NII-1: 5150 MHz to 5250 MHz U-NII-3: 5725 MHz to 5850 MHz
Modulation type:	OFDM with BPSK/QPSK/16QAM/64QAM
Date Rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40): MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40): NSS1, MCS0-MCS9 802.11ax(VHT20): NSS1, MCS0-MCS8 802.11ax(VHT40): NSS1, MCS0-MCS9
Antenna(s) information:	Antenna type: FPC antenna Antenna gain: 4.79 dBi

1.2 Description of test modes

1.2.1 Operation channel list

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

20 MHz bandwidth		40 MHz bandwidth	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
149	5745	151	5755
153	5765	159	5795
157	5785	--	--
161	5805	--	--
165	5825	--	--

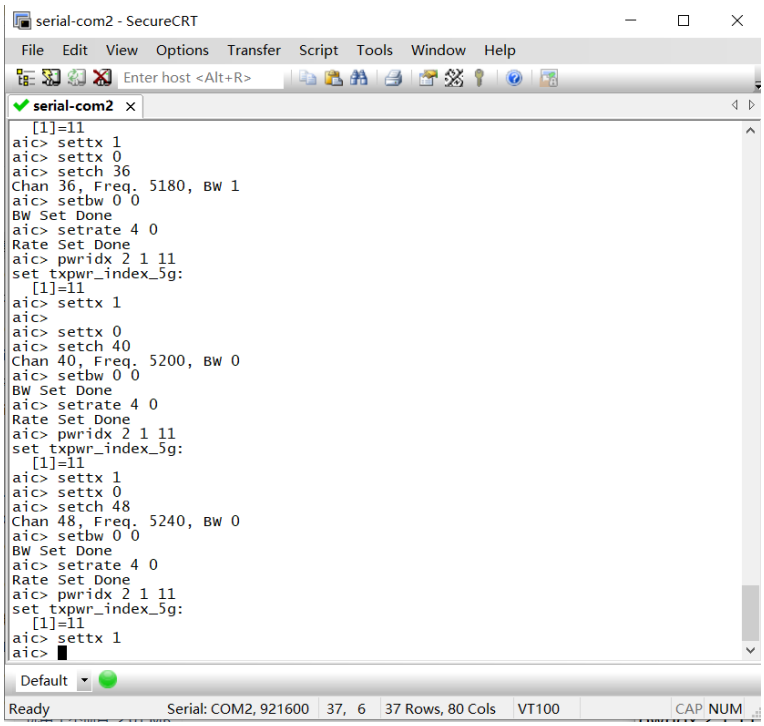
The test software has been used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software:	SecureCRT 8.1

For U-NII-1 band:			
802.11a		**802.11n20**	
Channel	Power setting	Channel	Power setting
36	Default	36	Default
40	Default	40	Default
48	Default	48	Default
802.11n40		**802.11ac20**	
Channel	Power setting	Channel	Power setting
38	Default	36	Default
46	Default	40	Default
--	--	48	
802.11ac40		**802.11ac40**	
38	Default	42	Default
46	Default	--	Default
--	--	--	--

For U-NII-3 band:			
802.11a		**802.11n20**	
Channel	Power setting	Channel	Power setting
149	Default	149	Default
157	Default	157	Default
165	Default	165	Default
802.11n40		**802.11ac20**	
Channel	Power setting	Channel	Power setting
151	Default	149	Default
159	Default	157	Default
--	--	165	Default
802.11ac40		**802.11ax20**	
151	Default	149	Default
159	Default	157	Default
--	--	165	Default
802.11ax40			
151	Default		
159	Default		
--	--		

The test software:



1.3 Environmental conditions for testing

Environment of test site:

Temperature:	15ºC~35ºC
Humidity:	20 % RH ~ 75 % RH

1.4 Description of support units

Support equipment list			
Description	Model	Serial No.	Manufacturer
Notebook	/	/	XIAOMI
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Measurement uncertainty

Parameter	Measurement uncertainty
AC power line conducted emission (9 kHz~30 MHz)	±2.5 dB
Occupied Bandwidth	±3 %
Conducted RF output power	±0.16 dB
Conducted spurious emissions	±0.21 dB
Radiated emission (9 kHz ~ 30 MHz)	±4.0 dB
Radiated emission (30 MHz~1 GHz)	±4.2 dB
Radiated emission (above 1 GHz)	±4.3 dB

Note: the measurement uncertainty is calculated and correspond to a factor k = 2 (which provide confidence levels of 95.45 %)

3 Summary of Test Result

No.	FCC reference	Description of test	Result
1	§15.203 & 15.407	Antenna requirement	Pass
2	§ 15.207	AC power line conducted emissions	N/A
4	§15.407(b)	Radiation Spurious Emissions	Pass
5	§15.407(a)	26dB emission bandwidth	Pass
6	§15.407(e)	6dB emission bandwidth	Pass
7	§15.407(a)	RF output power	Pass
8	§15.407(a)	Power spectral density	Pass
9	§15.407(b)	Conducted Spurious Emission	Pass
10	§15.407(b)	Conducted band edge	Pass
11	§15.407(g)	Frequency Stability	Pass

Notes:

N/A means not applicable.
The the EUT is not intended to be connected to AC mains power. Therefore, this test is not applicable.

4 Test Laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

5 Equipment List

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTi-E002	EMI Test Receiver	R&S	ESCI3	101368	2023/04/26	2024/04/25
MTi-E023	Artificial power network	Schwarzbeck	NSLK8127	NSLK8127# 841	2022/05/05	2023/05/04
MTi-E023	Artificial power network	Schwarzbeck	NSLK8127	NSLK8127# 841	2022/05/05	2023/05/04
MTi-E023	Artificial power network	Schwarzbeck	NSLK8127	NSLK8127# 841	2023/05/04	2024/05/03
MTi-E025	Artificial power network	Schwarzbeck	NSLK8127	8127183	2023/04/26	2024/04/25
MTI-E043	EMI test receiver	R&S	ESCI7	101166	2023/04/26	2024/04/25
MTI-E046	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00044	2021/05/30	2024/05/29
MTI-E044	Broadband antenna	Schwarzbeck	VULB9163	9163-1338	2021/05/30	2024/05/29
MTI-E045	Horn antenna	Schwarzbeck	BBHA9120D	9120D-2278	2021/05/30	2024/05/29
MTI-E047	Pre-amplifier	Hewlett-Packard	8447F	3113A06184	2023/04/26	2024/04/25
MTI-E048	Pre-amplifier	Agilent	8449B	3008A01120	2022/05/05	2023/05/04
MTI-E048	Pre-amplifier	Agilent	8449B	3008A01120	2023/05/04	2024/05/03
MTi-E120	Broadband antenna	Schwarzbeck	VULB9163	9163-1419	2021/05/30	2024/05/29
MTi-E121	Pre-amplifier	Hewlett-Packard	8447D	2944A09365	2022/05/05	2023/05/04
MTi-E123	Pre-amplifier	Agilent	8449B	3008A04723	2022/05/05	2023/05/04
MTi-E121	Pre-amplifier	Hewlett-Packard	8447D	2944A09365	2023/05/04	2024/05/03
MTi-E123	Pre-amplifier	Agilent	8449B	3008A04723	2023/05/04	2024/05/03
MTi-E135	Horn antenna	Schwarzbeck	BBHA 9170	00987	2021/05/30	2024/05/29
MTi-E136	Pre-amplifier	Space-Dtronics	EWLAN1840 G-G45	210405001	/	/
MTi-E062	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2023/04/25	2024/04/24
MTi-E067	RF Control Unit	Tonscend	JS0806-1	19D8060152	2023/04/26	2024/04/25
MTi-E068	RF Control Unit	Tonscend	JS0806-2	19D8060153	2023/04/26	2024/04/25
MTi-E069	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2022/05/05	2023/05/04
MTi-E069	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2023/05/04	2024/05/03
MTI-E010S	EMI Measurement Software	Farad	EZ-EMC Ver. EMEC-3A1	/	/	/
MTI-E014S	RF Test System	Tonscend	TS®JS1120 V2.6.88.0330	/	/	/

Note: the calibration interval of the test equipment is 12 or 24 months and the calibrations are traceable to international system unit(SI)

6 Test Result

6.1 Antenna requirement

15.203 requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Description of the antenna of EUT

The antenna of the EUT is permanently attached.

Conclusion:

The EUT complies with the requirement of § 15.203.

6.2 AC power line conducted emissions

6.2.1 Limits

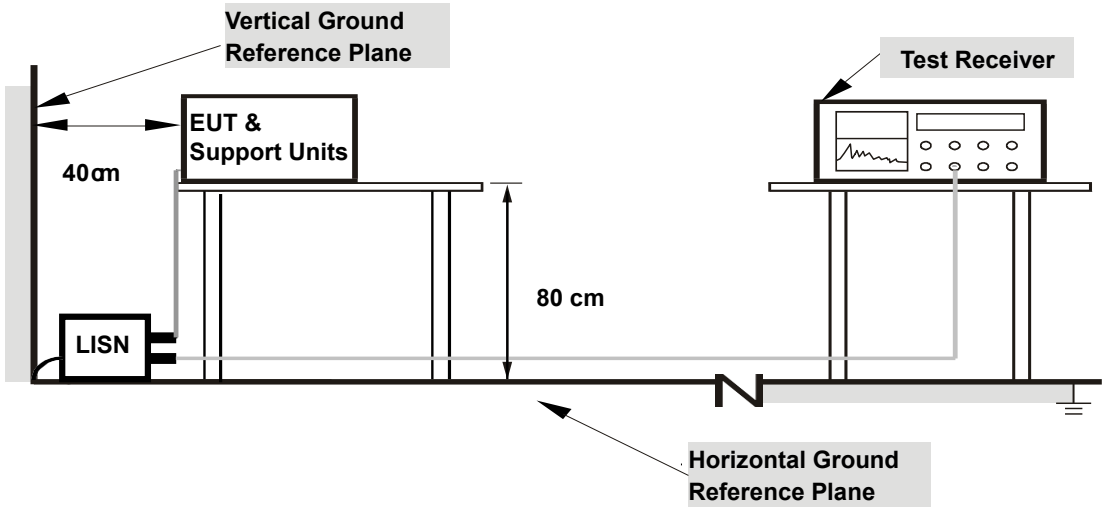
Frequency (MHz)	Detector type / Bandwidth	Limit-Quasi-peak dBµV	Limit-Average dBµV
0.15 -0.5	Average / 9 kHz	66 to 56	56 to 46
0.5 -5		56	46
5 -30		60	50

Note 1: the limit decreases with the logarithm of the frequency in the range of 0.15 MHz to 0.5 MHz.

6.2.2 Test Procedures

a) The test setup is refer to the standard ANSI C63.10-2013.
b) The EUT is connected to the main power through a line impedance stabilization network (LISN). All support equipment is powered from additional LISN(s).
c) Emissions were measured on each current carrying line of the EUT using an EMI test receiver connected to the LISN powering the EUT.
d) The test receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes described in Item 1.2.
e) The test data of the worst-case condition(s) was recorded.

6.2.3 Test setup



For the actual test configuration, please refer to the related item – Photographs of the test setup.

6.2.4 Test Result

Notes: N/A, the EUT is not intended to be connected to AC mains power. Therefore, this test is not applicable

6.3 Radiated spurious emission

6.3.1 Limits

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating solely in the 5.725-5.850 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

§ 15.209 Radiated emission limits at restricted bands:

Frequency (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

Note 1: the tighter limit applies at the band edges.
Note 2: the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector

§ 15.35 (b) requirements:
When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.253(d), 15.255, 15.256, and 15.509 through 15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.

According to ANSI C63.10-2013, the tests shall be performed in the frequency range shown in the following table:

Frequency range of measurements for unlicensed wireless device

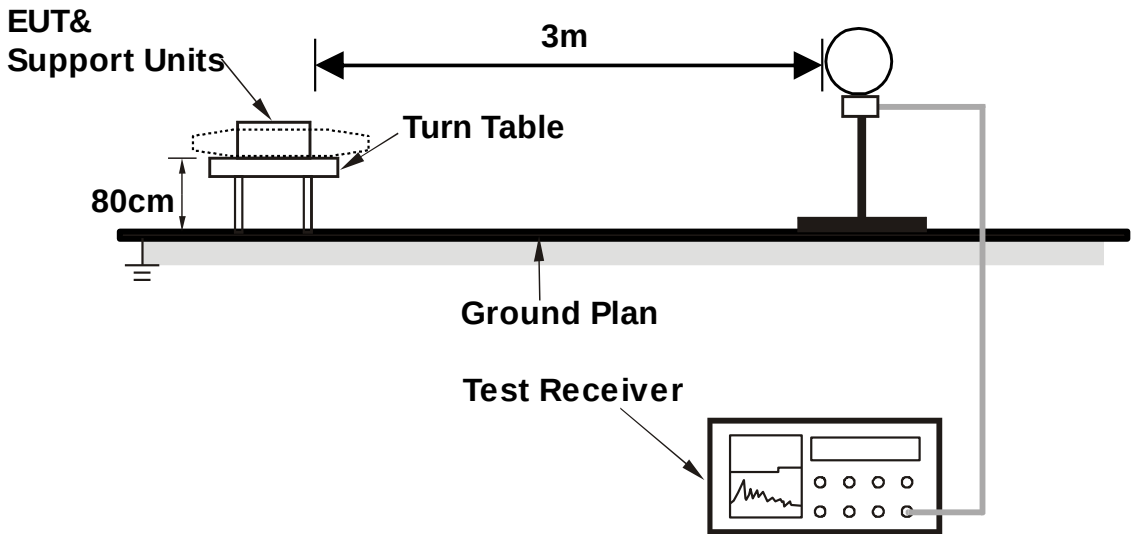
Lowest frequency generated in the device	Upper frequency range of measurement
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz, whichever is lower
At or above 10 GHz to below 30 GHz	5th harmonic of highest fundamental frequency or to 100 GHz, whichever is lower
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz, whichever is lower, unless otherwise specified

Frequency range of measurements for unlicensed wireless device with digital device

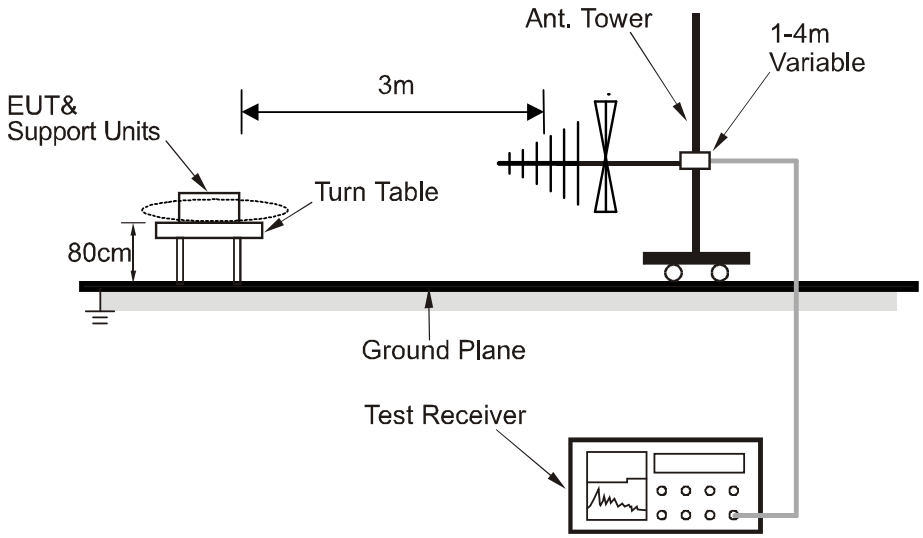
Highest frequency generated or used in the device or on which the device operates or tunes	Upper frequency range of measurement
Below 1.705 MHz	30 MHz
1.705 MHz to 108 MHz	1000 MHz
108 MHz to 500 MHz	2000 MHz
500 MHz to 1000 MHz	5000 MHz
Above 1000 MHz	5th harmonic of the highest frequency or 40 GHz, whichever is lower

6.3.2 Test setup

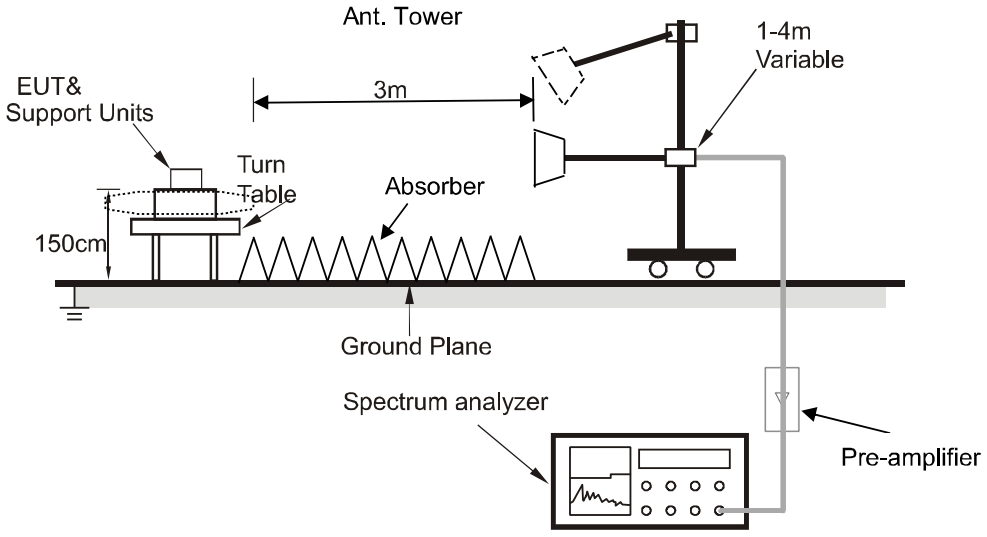
Below 30MHz:



30MHz~1GHz:



Above 1GHz:



For the actual test configuration, please refer to the related item – Photographs of the test setup.

6.3.3 Test procedure

a) Test method: ANSI C63.10-2013 Sections 6.3, 6.4, 6.5 and 6.6; KDB 789033 D02 v02r01 Sections G3, G4, G5, and G6.
b) The EUT is placed on an on-conducting table 0.8 meters above the ground plane for measurement below 1GHz, 1.5 meters above the ground plane for measurement above 1GHz.
c) Emission blew 18 GHz were measured at a 3 meters test distance, above 18 GHz were measured at 1-meter test distance with the application of a distance correction factor
d) The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Test instrument setup

Frequency	Test receiver / Spectrum analyzer setting
9 kHz ~ 150 kHz	Quasi Peak / RBW: 200 Hz
150 kHz ~ 30 MHz	Quasi Peak / RBW: 9 kHz
30 MHz ~ 1 GHz	Quasi Peak / RBW: 120 kHz
Above 1 GHz	Peak / RBW: 1 MHz, VBW: 3MHz, Peak detector AVG / RBW: 1 MHz, VBW: 3MHz, Average detector

6.3.4 Test results

Notes:

All emissions that are in the restricted bands specified in §15.205 are subject to the limit of §15.209.

All spurious emissions that are outside of the restricted bands are subject to a peak emission limit of § 15.407(b). And for above 1000 MHz, the field strength shall be computed as follows:

E [dBμV/m] = EIRP [dBm] + 95.2, for test distance = 3 m

All channels, modes and modulations/data rates were investigated among all U-NII bands. Only the worst-case results shown in the report.

For blew 30MHz tests, there were no emissions found within 20dB of the limit.

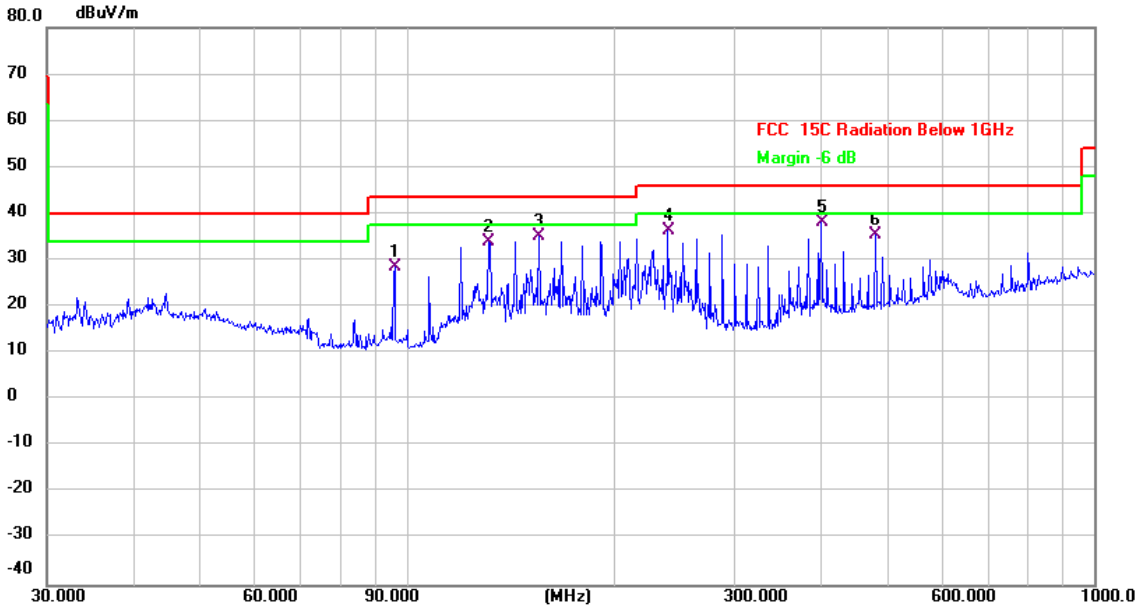
Calculation formula:

Measurement (dBμV/m) = Reading Level (dBμV) + Correct Factor (dB/m)

Over (dB) = Measurement (dBμV/m) – Limit (dBμV/m)

Radiated emissions between 30MHz – 1GHz

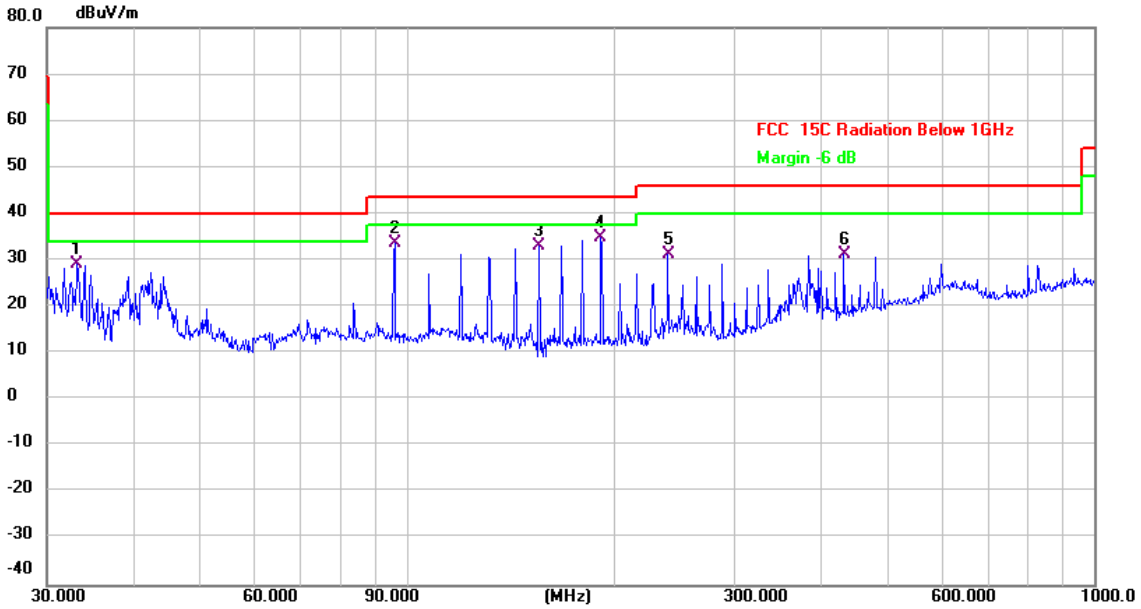
Test mode:	TX U-NII-1-802.11a-5240	Polarization:	Horizontal
Power supply:	DC 5V	Test site:	RE chamber 2



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		96.0986	39.16	-10.55	28.61	43.50	-14.89	QP
2		131.7577	46.68	-12.83	33.85	43.50	-9.65	QP
3		155.9101	47.17	-12.09	35.08	43.50	-8.42	QP
4		239.9874	44.79	-8.53	36.26	46.00	-9.74	QP
5	*	400.4319	45.01	-6.95	38.06	46.00	-7.94	QP
6		480.5276	41.48	-5.91	35.57	46.00	-10.43	QP

Radiated emissions between 30MHz – 1GHz

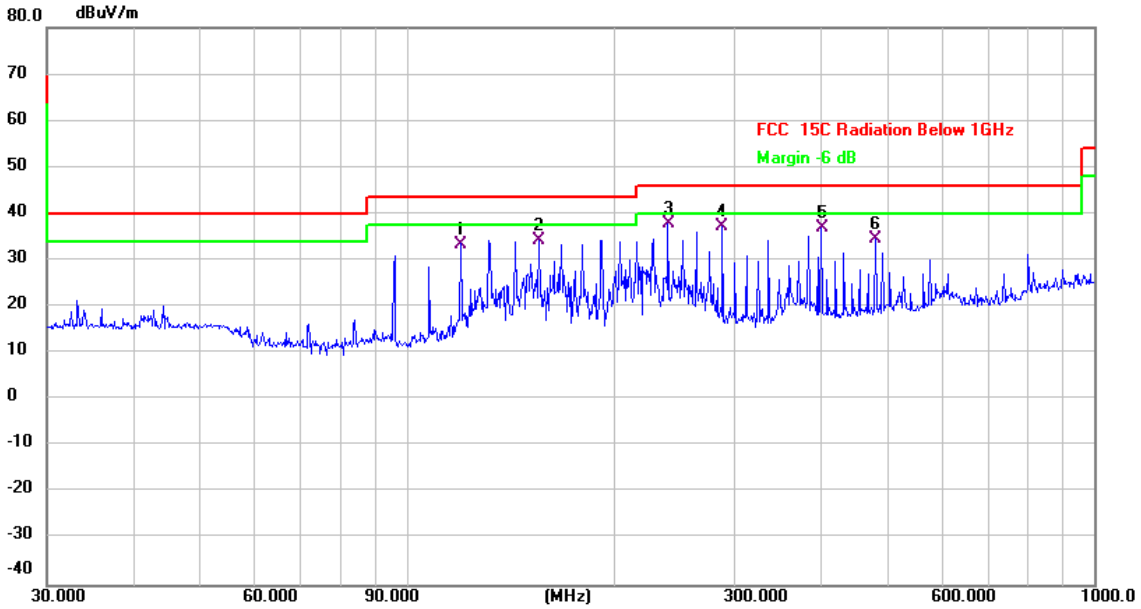
Test mode:	TX U-NII-1-802.11a-5240	Polarization:	Vertical
Power supply:	DC 5V	Test site:	RE chamber 2



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		33.2112	39.39	-10.35	29.04	40.00	-10.96	QP
2		96.0986	44.15	-10.55	33.60	43.50	-9.90	QP
3		155.9101	45.22	-12.09	33.13	43.50	-10.37	QP
4	*	191.7450	45.34	-10.52	34.82	43.50	-8.68	QP
5		239.9874	39.66	-8.53	31.13	46.00	-14.87	QP
6		432.5457	37.07	-5.90	31.17	46.00	-14.83	QP

Radiated emissions between 30MHz – 1GHz

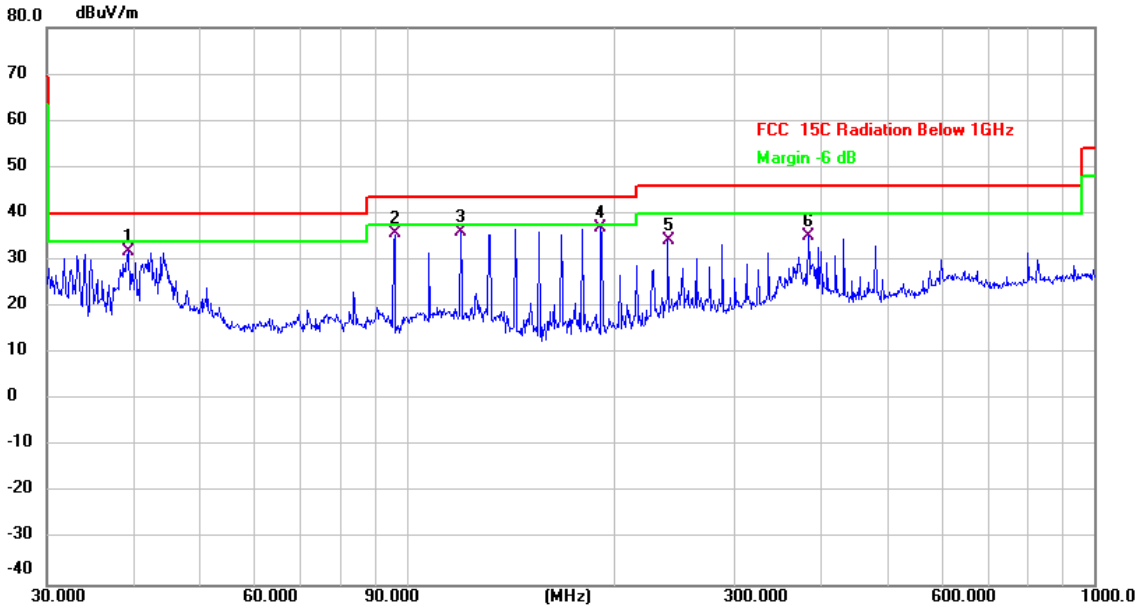
Test mode:	TX U-NII-3-802.11a-5825	Polarization:	Horizontal
Power supply:	DC 5V	Test site:	RE chamber 2



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		119.8556	45.70	-12.20	33.50	43.50	-10.00	QP
2		155.9101	46.48	-12.09	34.39	43.50	-9.11	QP
3	*	239.9874	46.31	-8.53	37.78	46.00	-8.22	QP
4		287.9904	45.31	-8.07	37.24	46.00	-8.76	QP
5		400.4319	43.94	-6.95	36.99	46.00	-9.01	QP
6		480.5276	40.50	-5.91	34.59	46.00	-11.41	QP

Radiated emissions between 30MHz – 1GHz

Test mode:	TX U-NII-3-802.11a-5825	Polarization:	Vertical
Power supply:	DC 5V	Test site:	RE chamber 2



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		39.4371	42.07	-10.11	31.96	40.00	-8.04	QP
2		96.0986	46.15	-10.55	35.60	43.50	-7.90	QP
3		119.8556	48.37	-12.20	36.17	43.50	-7.33	QP
4	*	191.7450	47.34	-10.52	36.82	43.50	-6.68	QP
5		239.9874	42.66	-8.53	34.13	46.00	-11.87	QP
6		383.9318	42.17	-6.95	35.22	46.00	-10.78	QP

Radiated emissions 1 GHz ~ 18 GHz (U-NII-1 band)

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH36 (5180 MHz)							
10360.00	42.84	6.93	49.77	74.00	-24.23	Peak	V
10360.00	33.30	6.93	40.23	54.00	-13.77	Peak	V
15540.00	45.19	13.65	58.84	74.00	-15.16	AVG	V
15540.00	34.91	13.65	48.56	54.00	-5.44	AVG	V
10360.00	42.97	6.93	49.90	74.00	-24.10	Peak	H
10360.00	33.59	6.93	40.52	54.00	-13.48	Peak	H
15540.00	44.63	13.65	58.28	74.00	-15.72	AVG	H
15540.00	34.48	13.65	48.13	54.00	-5.87	AVG	H
802.11a – CH40 (5200 MHz)							
10440.00	42.97	6.98	49.95	74.00	-24.05	Peak	V
10440.00	33.60	6.98	40.58	54.00	-13.42	Peak	V
15660.00	45.63	13.69	59.32	74.00	-14.68	AVG	V
15660.00	35.52	13.69	49.21	54.00	-4.79	AVG	V
10440.00	42.33	6.98	49.31	74.00	-24.69	Peak	H
10440.00	33.24	6.98	40.22	54.00	-13.78	Peak	H
15660.00	45.04	13.69	58.73	74.00	-15.27	AVG	H
15660.00	34.48	13.69	48.17	54.00	-5.83	AVG	H
802.11a – CH48 (5240 MHz)							
10480.00	42.41	7.00	49.41	74.00	-24.59	Peak	V
10480.00	33.23	7.00	40.23	54.00	-13.77	Peak	V
15720.00	44.84	13.63	58.47	74.00	-15.53	AVG	V
15720.00	34.59	13.63	48.22	54.00	-5.78	AVG	V
10480.00	42.96	7.00	49.96	74.00	-24.04	Peak	H
10480.00	33.54	7.00	40.54	54.00	-13.46	Peak	H
15720.00	45.71	13.63	59.34	74.00	-14.66	AVG	H
15720.00	35.58	13.63	49.21	54.00	-4.79	AVG	H

Radiated emissions 18 GHz ~ 40 GHz (U-NII-1 band)

Frequency	Reading Level	Correct Factor	Dist. Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	dB	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH36 (5180 MHz)								
20720	63.28	-7.9	-9.5	45.88	74	-28.12	Peak	V
20720	51.97	-7.9	-9.5	34.57	54	-19.43	AVG	V
36430	60.30	4.44	-9.5	55.24	74	-18.76	Peak	V
36430	51.39	4.44	-9.5	46.33	54	-7.67	AVG	V
20720	62.72	-7.9	-9.5	45.32	74	-28.68	Peak	H
20720	51.65	-7.9	-9.5	34.25	54	-19.75	AVG	H
36430	59.74	4.44	-9.5	54.68	74	-19.32	Peak	H
36430	50.65	4.44	-9.5	45.59	54	-8.41	AVG	H
802.11a – CH40 (5200 MHz)								
20800	61.44	-7.89	-9.5	44.05	74	-29.95	Peak	V
20800	52.15	-7.89	-9.5	34.76	54	-19.24	AVG	V
36430	59.00	4.44	-9.5	53.94	74	-20.06	Peak	V
36430	50.26	4.44	-9.5	45.20	54	-8.80	AVG	V
20800	61.05	-7.89	-9.5	43.66	74	-30.34	Peak	H
20800	52.40	-7.89	-9.5	35.01	54	-18.99	AVG	H
36430	59.08	4.44	-9.5	54.02	74	-19.98	Peak	H
36430	50.25	4.44	-9.5	45.19	54	-8.81	AVG	H
802.11a – CH48 (5240 MHz)								
20960	61.35	-7.87	-9.5	43.98	74	-30.02	Peak	V
20960	50.48	-7.87	-9.5	33.11	54	-20.89	AVG	V
36430	60.81	4.44	-9.5	55.75	74	-18.25	Peak	V
36430	50.28	4.44	-9.5	45.22	54	-8.78	AVG	V
20960	61.37	-7.87	-9.5	44.00	74	-30.00	Peak	H
20960	50.10	-7.87	-9.5	32.73	54	-21.27	AVG	H
36430	60.49	4.44	-9.5	55.43	74	-18.57	Peak	H
36430	50.41	4.44	-9.5	45.35	54	-8.65	AVG	H

Notes:

For above 18GHz tests, the test distance is 1m.

Radiated emissions 1 GHz ~ 18 GHz (U-NII-3 band)

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH149 (5745 MHz)							
11490.00	42.35	9.24	51.59	74.00	-22.41	Peak	V
11490.00	32.11	9.24	41.35	54.00	-12.65	AVG	V
17235.00	44.57	13.34	57.91	74.00	-16.09	Peak	V
17235.00	36.24	13.34	49.58	54.00	-4.42	AVG	V
11490.00	43.56	9.24	52.80	74.00	-21.20	Peak	H
11490.00	33.34	9.24	42.58	54.00	-11.42	AVG	H
17235.00	44.60	13.34	57.94	74.00	-16.06	Peak	H
17235.00	36.31	13.34	49.65	54.00	-4.35	AVG	H
802.11a – CH157 (5785 MHz)							
11568.00	43.45	9.43	52.88	74.00	-21.12	Peak	V
11568.00	34.25	9.43	43.68	54.00	-10.32	AVG	V
17355.00	45.42	13.44	58.86	74.00	-15.14	Peak	V
17355.00	35.30	13.44	48.74	54.00	-5.26	AVG	V
11568.00	43.19	9.43	52.62	74.00	-21.38	Peak	H
11568.00	32.95	9.43	42.38	54.00	-11.62	AVG	H
17355.00	44.65	13.44	58.09	74.00	-15.91	Peak	H
17355.00	36.03	13.44	49.47	54.00	-4.53	AVG	H
802.11a – CH165 (5825 MHz)							
11650.00	44.22	9.51	53.73	74.00	-20.27	Peak	V
11650.00	35.05	9.51	44.56	54.00	-9.44	AVG	V
17475.00	43.68	13.76	57.44	74.00	-16.56	Peak	V
17475.00	34.57	13.76	48.33	54.00	-5.67	AVG	V
11650.00	43.37	9.51	52.88	74.00	-21.12	Peak	H
11650.00	34.05	9.51	43.56	54.00	-10.44	AVG	H
17475.00	44.62	13.76	58.38	74.00	-15.62	Peak	H
17475.00	34.57	13.76	48.33	54.00	-5.67	AVG	H

Radiated emissions 18 GHz ~ 40 GHz (U-NII-3 band)

Frequency	Reading Level	Correct Factor	Dist. Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	dB	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH149 (5745 MHz)								
22980	63.36	-7.9	-9.5	45.96	74	-28.04	Peak	V
22980	51.84	-7.9	-9.5	34.44	54	-19.56	AVG	V
36430	60.26	4.44	-9.5	55.20	74	-18.80	Peak	V
36430	49.70	4.44	-9.5	44.64	54	-9.36	AVG	V
20720	62.44	-7.9	-9.5	45.04	74	-28.96	Peak	H
20720	50.58	-7.9	-9.5	33.18	54	-20.82	AVG	H
36430	60.69	4.44	-9.5	55.63	74	-18.37	Peak	H
36430	51.92	4.44	-9.5	46.86	54	-7.14	AVG	H
802.11a – CH157 (5785 MHz)								
23140	59.78	-5.22	-9.5	45.06	74	-28.94	Peak	V
23140	51.30	-5.22	-9.5	36.58	54	-17.42	Peak	V
36430	59.75	4.44	-9.5	54.69	74	-19.31	AVG	V
36430	49.51	4.44	-9.5	44.45	54	-9.55	AVG	V
23140	61.47	-7.89	-9.5	44.08	74	-29.92	Peak	H
23140	51.51	-7.89	-9.5	34.12	54	-19.88	Peak	H
36430	60.16	4.44	-9.5	55.10	74	-18.90	AVG	H
36430	49.36	4.44	-9.5	44.30	54	-9.70	AVG	H
802.11a – CH165 (5825 MHz)								
23300	62.12	-5.25	-9.5	47.37	74	-26.63	Peak	V
23300	50.97	-5.25	-9.5	36.22	54	-17.78	Peak	V
36430	60.55	4.44	-9.5	55.49	74	-18.51	AVG	V
36430	49.61	4.44	-9.5	44.55	54	-9.45	AVG	V
23300	61.32	-7.87	-9.5	43.95	74	-30.05	Peak	H
23300	51.27	-7.87	-9.5	33.90	54	-20.10	Peak	H
36430	59.27	4.44	-9.5	54.21	74	-19.79	AVG	H
36430	50.30	4.44	-9.5	45.24	54	-8.76	AVG	H

Notes:

For above 18GHz tests, the test distance is 1m.

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH36 (5180 MHz)							
4500	46.54	-0.91	45.63	74.00	-28.37	Peak	V
4500	36.51	-0.91	35.60	54.00	-18.40	AVG	V
5150	47.09	1.92	49.01	74.00	-24.99	Peak	V
5150	37.79	1.92	39.71	54.00	-14.29	AVG	V
4500	47.67	-0.91	46.76	74.00	-27.24	Peak	H
4500	36.47	-0.91	35.56	54.00	-18.44	AVG	H
5150	48.89	1.92	50.81	74.00	-23.19	Peak	H
5150	38.32	1.92	40.24	54.00	-13.76	AVG	H
802.11a – CH48 (5240 MHz)							
5350	47.12	2.03	49.15	74.00	-24.85	Peak	V
5350	37.41	2.03	39.44	54.00	-14.56	AVG	V
5460	47.78	2.14	49.92	74.00	-24.08	Peak	V
5460	37.50	2.14	39.64	54.00	-14.36	AVG	V
5350	48.00	2.03	50.03	74.00	-23.97	Peak	H
5350	38.76	2.03	40.79	54.00	-13.21	AVG	H
5460	48.71	2.14	50.85	74.00	-23.15	Peak	H
5460	38.86	2.14	41.00	54.00	-13.00	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11n20 – CH36 (5180 MHz)							
4500	46.18	-0.91	45.27	74.00	-28.73	Peak	V
4500	36.60	-0.91	35.69	54.00	-18.31	AVG	V
5150	47.61	1.92	49.53	74.00	-24.47	Peak	V
5150	37.95	1.92	39.87	54.00	-14.13	AVG	V
4500	46.30	-0.91	45.39	74.00	-28.61	Peak	H
4500	36.40	-0.91	35.49	54.00	-18.51	AVG	H
5150	48.57	1.92	50.49	74.00	-23.51	Peak	H
5150	38.37	1.92	40.29	54.00	-13.71	AVG	H
802.11n20 – CH48 (5240 MHz)							
5350	46.10	2.03	48.13	74.00	-25.87	Peak	V
5350	37.51	2.03	39.54	54.00	-14.46	AVG	V
5460	47.99	2.14	50.13	74.00	-23.87	Peak	V
5460	37.60	2.14	39.74	54.00	-14.26	AVG	V
5350	50.21	2.03	52.24	74.00	-21.76	Peak	H
5350	38.77	2.03	40.80	54.00	-13.20	AVG	H
5460	48.57	2.14	50.71	74.00	-23.29	Peak	H
5460	38.91	2.14	41.05	54.00	-12.95	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11n40 – CH38 (5190 MHz)							
4500	45.51	-0.91	44.60	74.00	-29.40	Peak	V
4500	36.57	-0.91	35.66	54.00	-18.34	AVG	V
5150	47.52	1.92	49.44	74.00	-24.56	Peak	V
5150	38.01	1.92	39.93	54.00	-14.07	AVG	V
4500	45.82	-0.91	44.91	74.00	-29.09	Peak	H
4500	36.44	-0.91	35.53	54.00	-18.47	AVG	H
5150	50.98	1.92	52.90	74.00	-21.10	Peak	H
5150	38.89	1.92	40.81	54.00	-13.19	AVG	H
802.11n40 – CH46 (5230 MHz)							
5350	47.99	2.03	50.02	74.00	-23.98	Peak	V
5350	37.30	2.03	39.33	54.00	-14.67	AVG	V
5460	47.61	2.14	49.75	74.00	-24.25	Peak	V
5460	37.67	2.14	39.81	54.00	-14.19	AVG	V
5350	48.58	2.03	50.61	74.00	-23.39	Peak	H
5350	38.56	2.03	40.59	54.00	-13.41	AVG	H
5460	50.05	2.14	52.19	74.00	-21.81	Peak	H
5460	38.95	2.14	41.09	54.00	-12.91	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ac20 – CH36 (5180 MHz)							
4500	45.82	-0.91	44.91	74.00	-29.09	Peak	V
4500	36.56	-0.91	35.65	54.00	-18.35	AVG	V
5150	47.39	1.92	49.31	74.00	-24.69	Peak	V
5150	37.97	1.92	39.89	54.00	-14.11	AVG	V
4500	46.96	-0.91	46.05	74.00	-27.95	Peak	H
4500	36.51	-0.91	35.60	54.00	-18.40	AVG	H
5150	47.81	1.92	49.73	74.00	-24.27	Peak	H
5150	38.40	1.92	40.32	54.00	-13.68	AVG	H
802.11ac20 – CH48 (5240 MHz)							
5350	47.21	2.03	49.24	74.00	-24.76	Peak	V
5350	37.47	2.03	39.50	54.00	-14.50	AVG	V
5460	47.00	2.14	49.14	74.00	-24.86	Peak	V
5460	37.71	2.14	39.85	54.00	-14.15	AVG	V
5350	48.14	2.03	50.17	74.00	-23.83	Peak	H
5350	38.86	2.03	40.89	54.00	-13.11	AVG	H
5460	49.04	2.14	51.18	74.00	-22.82	Peak	H
5460	38.77	2.14	40.91	54.00	-13.09	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ac40 – CH38 (5190 MHz)							
4500	46.47	-0.91	45.56	74.00	-28.44	Peak	V
4500	36.58	-0.91	35.67	54.00	-18.33	AVG	V
5150	48.28	1.92	50.20	74.00	-23.80	Peak	V
5150	38.15	1.92	40.07	54.00	-13.93	AVG	V
4500	47.75	-0.91	46.84	74.00	-27.16	Peak	H
4500	36.47	-0.91	35.56	54.00	-18.44	AVG	H
5150	48.51	1.92	50.43	74.00	-23.57	Peak	H
5150	39.02	1.92	40.94	54.00	-13.06	AVG	H
802.11ac40 – CH46 (5230 MHz)							
5350	46.83	2.03	48.86	74.00	-25.14	Peak	V
5350	37.33	2.03	39.36	54.00	-14.64	AVG	V
5460	49.21	2.14	51.35	74.00	-22.65	Peak	V
5460	37.58	2.14	39.72	54.00	-14.28	AVG	V
5350	47.76	2.03	49.79	74.00	-24.21	Peak	H
5350	38.49	2.03	40.52	54.00	-13.48	AVG	H
5460	50.81	2.14	52.95	74.00	-21.05	Peak	H
5460	39.02	2.14	41.16	54.00	-12.84	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ax20 –CH36 (5180 MHz)							
4500	46.77	-0.91	45.86	74.00	-28.14	Peak	V
4500	36.65	-0.91	35.74	54.00	-18.26	AVG	V
5150	47.34	1.92	49.26	74.00	-24.74	Peak	V
5150	37.92	1.92	39.84	54.00	-14.16	AVG	V
4500	46.52	-0.91	45.61	74.00	-28.39	Peak	H
4500	36.51	-0.91	35.60	54.00	-18.40	AVG	H
5150	48.71	1.92	50.63	74.00	-23.37	Peak	H
5150	38.54	1.92	40.46	54.00	-13.54	AVG	H
802.11ax20 –CH48 (5240 MHz)							
5350	47.66	2.03	49.69	74.00	-24.31	Peak	V
5350	37.32	2.03	39.35	54.00	-14.65	AVG	V
5460	48.08	2.14	50.22	74.00	-23.78	Peak	V
5460	37.59	2.14	39.73	54.00	-14.27	AVG	V
5350	48.51	2.03	50.54	74.00	-23.46	Peak	H
5350	38.79	2.03	40.82	54.00	-13.18	AVG	H
5460	48.99	2.14	51.13	74.00	-22.87	Peak	H
5460	38.98	2.14	41.12	54.00	-12.88	AVG	H

Radiated emissions at band edge – U-NII-1 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ax40 – CH38 (5190 MHz)							
4500	46.41	-0.91	45.50	74.00	-28.50	Peak	V
4500	36.60	-0.91	35.69	54.00	-18.31	AVG	V
5150	47.64	1.92	49.56	74.00	-24.44	Peak	V
5150	38.10	1.92	40.02	54.00	-13.98	AVG	V
4500	46.69	-0.91	45.78	74.00	-28.22	Peak	H
4500	36.65	-0.91	35.74	54.00	-18.26	AVG	H
5150	50.20	1.92	52.12	74.00	-21.88	Peak	H
5150	38.81	1.92	40.73	54.00	-13.27	AVG	H
802.11ax40 – CH46 (5230 MHz)							
5350	46.86	2.03	48.89	74.00	-25.11	Peak	V
5350	37.27	2.03	39.30	54.00	-14.70	AVG	V
5460	46.59	2.14	48.73	74.00	-25.27	Peak	V
5460	37.68	2.14	39.82	54.00	-14.18	AVG	V
5350	48.35	2.03	50.38	74.00	-23.62	Peak	H
5350	38.55	2.03	40.58	54.00	-13.42	AVG	H
5460	48.33	2.14	50.47	74.00	-23.53	Peak	H
5460	38.91	2.14	41.05	54.00	-12.95	AVG	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11a – CH149 (5745 MHz)							
5650	46.66	1.86	48.52	68.20	-19.68	Peak	V
5700	47.98	1.71	49.69	105.2	-55.51	Peak	V
5720	46.28	1.69	47.97	110.8	-62.83	Peak	V
5725	47.10	1.67	48.77	122.2	-73.43	Peak	V
5650	48.28	1.86	50.14	68.20	-18.06	Peak	H
5700	46.69	1.71	48.40	105.2	-56.80	Peak	H
5720	48.65	1.69	50.34	110.8	-60.46	Peak	H
5725	55.76	1.67	57.43	122.2	-64.77	Peak	H
802.11a – CH165 (5825 MHz)							
5850	45.95	1.54	47.49	122.2	-74.71	Peak	V
5855	46.60	1.55	48.15	110.8	-62.65	Peak	V
5875	46.31	1.53	47.84	105.2	-57.36	Peak	V
5925	46.33	1.44	47.77	68.20	-20.43	Peak	V
5850	47.37	1.54	48.91	122.2	-73.29	Peak	H
5855	48.31	1.55	49.86	110.8	-60.94	Peak	H
5875	47.69	1.53	49.22	105.2	-55.98	Peak	H
5925	48.83	1.44	50.27	68.20	-17.93	Peak	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11n20 – CH149 (5745 MHz)							
5650	48.73	1.86	50.59	68.20	-17.61	Peak	V
5700	46.44	1.71	48.15	105.2	-57.05	Peak	V
5720	48.08	1.69	49.77	110.8	-61.03	Peak	V
5725	55.77	1.67	57.44	122.2	-64.76	Peak	V
5650	46.88	1.86	48.74	68.20	-19.46	Peak	H
5700	45.59	1.71	47.30	105.2	-57.90	Peak	H
5720	45.97	1.69	47.66	110.8	-63.14	Peak	H
5725	49.43	1.67	51.10	122.2	-71.10	Peak	H
802.11 n20 – CH165 (5825 MHz)							
5850	47.09	1.54	48.63	122.2	-73.57	Peak	V
5855	46.85	1.55	48.40	110.8	-62.40	Peak	V
5875	47.61	1.53	49.14	105.2	-56.06	Peak	V
5925	47.47	1.44	48.91	68.20	-19.29	Peak	V
5850	48.53	1.54	50.07	122.2	-72.13	Peak	H
5855	49.33	1.55	50.88	110.8	-59.92	Peak	H
5875	49.38	1.53	50.91	105.2	-54.29	Peak	H
5925	47.72	1.44	49.16	68.20	-19.04	Peak	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11n40 – CH151 (5755 MHz)							
5650	47.31	1.86	49.17	68.20	-19.03	Peak	V
5700	46.78	1.71	48.49	105.2	-56.71	Peak	V
5720	45.73	1.69	47.42	110.8	-63.38	Peak	V
5725	51.88	1.67	53.55	122.2	-68.65	Peak	V
5650	48.78	1.86	50.64	68.20	-17.56	Peak	H
5700	48.06	1.71	49.77	105.2	-55.43	Peak	H
5720	50.07	1.69	51.76	110.8	-59.04	Peak	H
5725	60.40	1.67	62.07	122.2	-60.13	Peak	H
802.11 n40 – CH159 (5795 MHz)							
5850	46.31	1.54	47.85	122.2	-74.35	Peak	V
5855	46.19	1.55	47.74	110.8	-63.06	Peak	V
5875	46.56	1.53	48.09	105.2	-57.11	Peak	V
5925	46.38	1.44	47.82	68.20	-20.38	Peak	V
5850	48.50	1.54	50.04	122.2	-72.16	Peak	H
5855	48.54	1.55	50.09	110.8	-60.71	Peak	H
5875	47.58	1.53	49.11	105.2	-56.09	Peak	H
5925	48.18	1.44	49.62	68.20	-18.58	Peak	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ac20 – CH149 (5745 MHz)							
5650	46.08	1.86	47.94	68.20	-20.26	Peak	V
5700	45.82	1.71	47.53	105.2	-57.67	Peak	V
5720	46.21	1.69	47.90	110.8	-62.90	Peak	V
5725	50.37	1.67	52.04	122.2	-70.16	Peak	V
5650	47.96	1.86	49.82	68.20	-18.38	Peak	H
5700	46.18	1.71	47.89	105.2	-57.31	Peak	H
5720	48.64	1.69	50.33	110.8	-60.47	Peak	H
5725	57.35	1.67	59.02	122.2	-63.18	Peak	H
802.11ac20 – CH165 (5825 MHz)							
5850	47.23	1.54	48.77	122.2	-73.43	Peak	V
5855	46.53	1.55	48.08	110.8	-62.72	Peak	V
5875	47.28	1.53	48.81	105.2	-56.39	Peak	V
5925	48.54	1.44	49.98	68.20	-18.22	Peak	V
5850	48.40	1.54	49.94	122.2	-72.26	Peak	H
5855	48.83	1.55	50.38	110.8	-60.42	Peak	H
5875	47.44	1.53	48.97	105.2	-56.23	Peak	H
5925	48.04	1.44	49.48	68.20	-18.72	Peak	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ac40 – CH151 (5755 MHz)							
5650	46.50	1.86	48.36	68.20	-19.84	Peak	V
5700	46.43	1.71	48.14	105.2	-57.06	Peak	V
5720	46.12	1.69	47.81	110.8	-62.99	Peak	V
5725	50.21	1.67	51.88	122.2	-70.32	Peak	V
5650	48.01	1.86	49.87	68.20	-18.33	Peak	H
5700	48.15	1.71	49.86	105.2	-55.34	Peak	H
5720	51.02	1.69	52.71	110.8	-58.09	Peak	H
5725	59.04	1.67	60.71	122.2	-61.49	Peak	H
802.11ac40 – CH159 (5795 MHz)							
5850	46.99	1.54	48.53	122.2	-73.67	Peak	V
5855	46.71	1.55	48.26	110.8	-62.54	Peak	V
5875	46.81	1.53	48.34	105.2	-56.86	Peak	V
5925	46.93	1.44	48.37	68.20	-19.83	Peak	V
5850	48.12	1.54	49.66	122.2	-72.54	Peak	H
5855	48.14	1.55	49.69	110.8	-61.11	Peak	H
5875	48.39	1.53	49.92	105.2	-55.28	Peak	H
5925	47.36	1.44	48.80	68.20	-19.40	Peak	H

Radiated emissions at band edge – U-NII-3 band

Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ax20 – CH149 (5745 MHz)							
5650	47.05	1.86	48.91	68.20	-19.29	Peak	V
5700	46.52	1.71	48.23	105.2	-56.97	Peak	V
5720	47.04	1.69	48.73	110.8	-62.07	Peak	V
5725	49.89	1.67	51.56	122.2	-70.64	Peak	V
5650	49.24	1.86	51.10	68.20	-17.10	Peak	H
5700	47.73	1.71	49.44	105.2	-55.76	Peak	H
5720	48.33	1.69	50.02	110.8	-60.78	Peak	H
5725	58.28	1.67	59.95	122.2	-62.25	Peak	H
802.11ax20 – CH165 (5825 MHz)							
5850	47.04	1.54	48.58	122.2	-73.62	Peak	V
5855	47.69	1.55	49.24	110.8	-61.56	Peak	V
5875	47.85	1.53	49.38	105.2	-55.82	Peak	V
5925	46.93	1.44	48.37	68.20	-19.83	Peak	V
5850	48.66	1.54	50.20	122.2	-72.00	Peak	H
5855	49.11	1.55	50.66	110.8	-60.14	Peak	H
5875	47.77	1.53	49.30	105.2	-55.90	Peak	H
5925	47.60	1.44	49.04	68.20	-19.16	Peak	H

Radiated emissions at band edge – U-NII-3 band

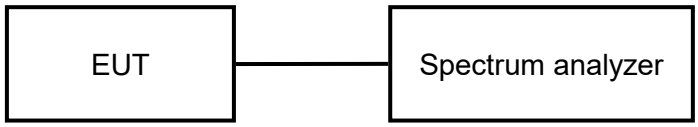
Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector	Polarization
(MHz)	(dBμV)	(dB/m)	(dBμV/m)	(dBμV/m)	(dB)	Peak/AVG	H/V
802.11ax40 – CH151 (5755 MHz)							
5650	46.95	1.86	48.81	68.20	-19.39	Peak	V
5700	47.02	1.71	48.73	105.2	-56.47	Peak	V
5720	46.86	1.69	48.55	110.8	-62.25	Peak	V
5725	52.35	1.67	54.02	122.2	-68.18	Peak	V
5650	48.80	1.86	50.66	68.20	-17.54	Peak	H
5700	47.93	1.71	49.64	105.2	-55.56	Peak	H
5720	50.57	1.69	52.26	110.8	-58.54	Peak	H
5725	59.65	1.67	61.32	122.2	-60.88	Peak	H
802.11ax40 – CH159 (5795 MHz)							
5850	48.11	1.54	49.65	122.2	-72.55	Peak	V
5855	47.94	1.55	49.49	110.8	-61.31	Peak	V
5875	47.66	1.53	49.19	105.2	-56.01	Peak	V
5925	48.18	1.44	49.62	68.20	-18.58	Peak	V
5850	48.98	1.54	50.52	122.2	-71.68	Peak	H
5855	47.94	1.55	49.49	110.8	-61.31	Peak	H
5875	48.72	1.53	50.25	105.2	-54.95	Peak	H
5925	48.46	1.44	49.90	68.20	-18.30	Peak	H

6.4 Emission bandwidth (26dB bandwidth)

6.4.1 Limits

The bandwidth at 26dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02 , and at the appropriate frequencies. The spectrum analyzer's bandwidth measurement function is configured to measure the 26dB bandwidth.

6.4.2 Test setup



6.4.3 Test procedure

Test method: KDB 789033 D02 v02r01 Section C.1.

6.4.4 Test results

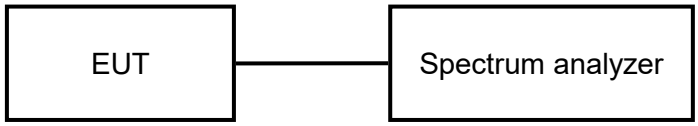
Note: See the appendix A1

6.5 Emission bandwidth (6dB bandwidth)

6.5.1 Limits

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

6.5.2 Test setup



6.5.3 Test procedure

Test method: KDB 789033 D02 v02r01 Section C.2.

6.5.4 Test results

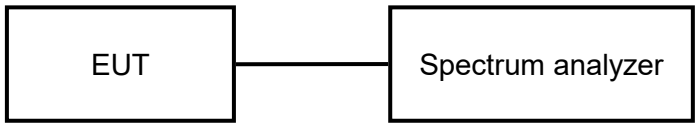
Note: See the appendix A2

6.6 Duty Cycle

6.6.1 Limits

None, for reporting purposes only.

6.6.2 Test setup



6.6.3 Test procedure

Test method: ANSI C63.10 section 12.2.

6.6.4 Test Results

Note: see the appendix B

6.7 Maximum conducted output power

6.7.1 Limits

5.15 - 5.25 GHz band

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.

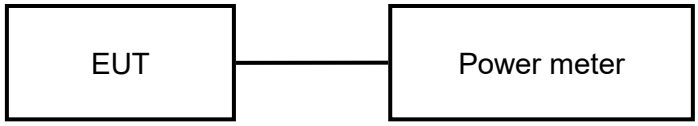
5.25-5.35 GHz and 5.47-5.725 GHz band

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.

5.725-5.85 GHz band

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

6.7.2 Test setup



6.7.3 Test procedure

Test method: 789033 D02 v02r01 Section E.3.a (Method PM)

6.7.4 Test results

Note: See the appendix C

6.8 Power spectral density

6.8.1 Limits

5.15 - 5.25 GHz band

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.

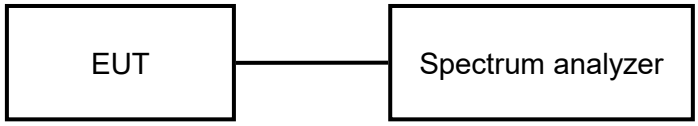
5.25-5.35 GHz and 5.47-5.725 GHz band

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.

5.725-5.85 GHz band

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

6.8.2 Test setup



6.8.3 Test procedure

Test method: KDB 789033 D02 v02r01 Section F.

6.8.4 Test results

Note: See the appendix D

6.9 Conducted spurious emissions

6.9.1 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:

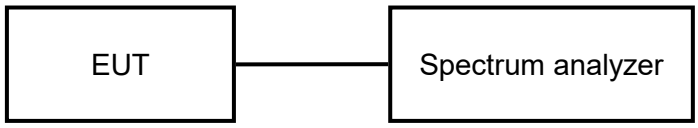
For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating solely in the 5.725-5.850 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

6.9.2 Test setup



6.9.3 Test procedure

Spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold
Allow the trace to stabilize

6.9.4 Test results

Note: See the appendix F

6.10 Conducted band edge

6.10.1 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:

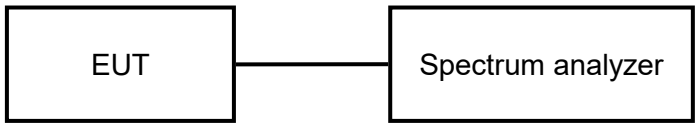
For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

For transmitters operating solely in the 5.725-5.850 GHz band:
All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

6.10.2 Test setup



6.10.3 Test procedure

Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
Repeat above procedures until all measured frequencies were complete.

6.10.4 Test results

Note: See the appendix E

6.11 Frequency Stability

6.11.1 Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

6.11.2 Test Procedures

Test method: ANSI C63.10-2013 Clause 6.8.

6.11.3 Test results

Note: See the appendix G

Appendix A1: Emission bandwidth (26dB bandwidth)

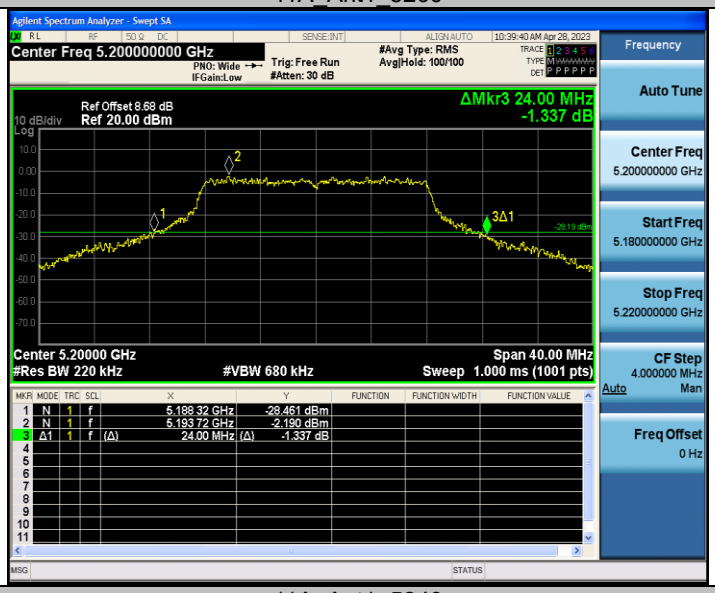
Test Result

Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]
11A	Ant1	5180	24.520
		5200	24.000
		5240	24.360
		5745	23.600
		5785	23.880
		5825	24.160
11N20SISO	Ant1	5180	25.320
		5200	24.680
		5240	25.200
		5745	24.640
		5785	24.680
		5825	24.840
11N40SISO	Ant1	5190	46.880
		5230	48.080
		5755	45.840
		5795	48.240
11AC20SISO	Ant1	5180	24.760
		5200	25.720
		5240	24.880
		5745	25.240
		5785	25.760
		5825	24.800
11AC40SISO	Ant1	5190	47.200
		5230	47.360
		5755	47.520
		5795	48.080
11AX20SISO	Ant1	5180	24.680
		5200	24.400
		5240	25.000
		5745	24.600
		5785	25.600
		5825	25.320
11AX40SISO	Ant1	5190	45.680
		5230	45.520
		5755	44.960
		5795	46.000

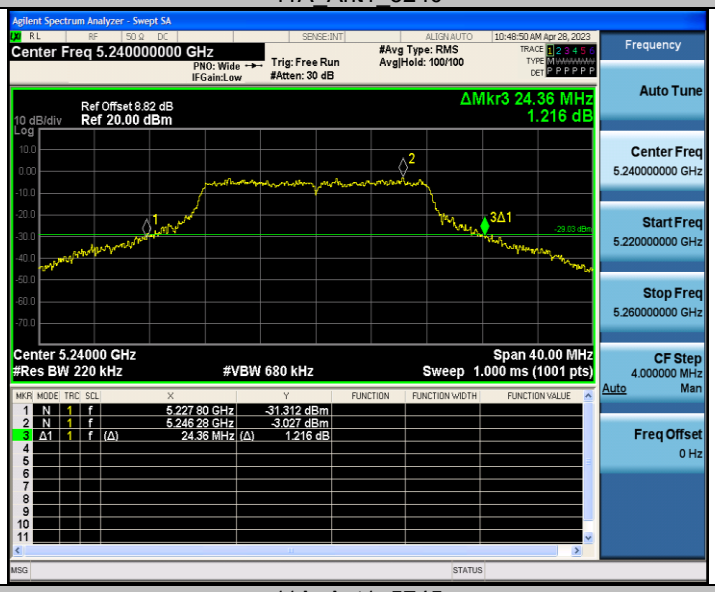
Test Graphs

11A_Ant1_5180

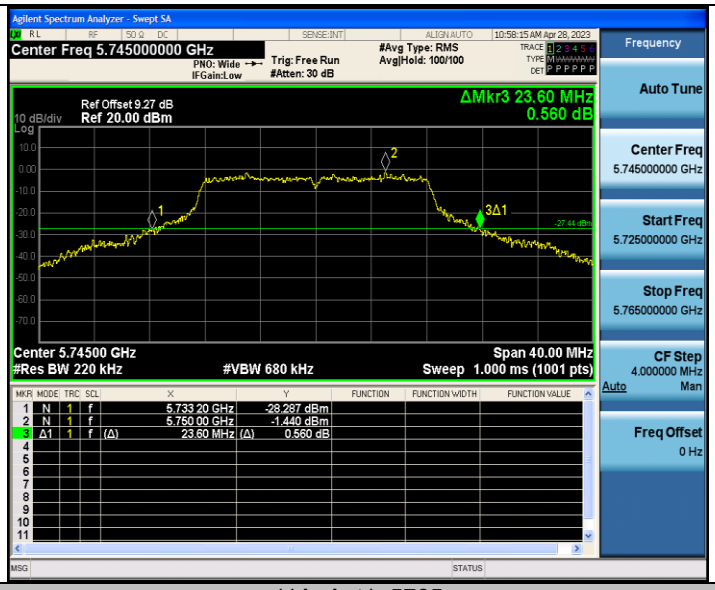
11A_Ant1_5200



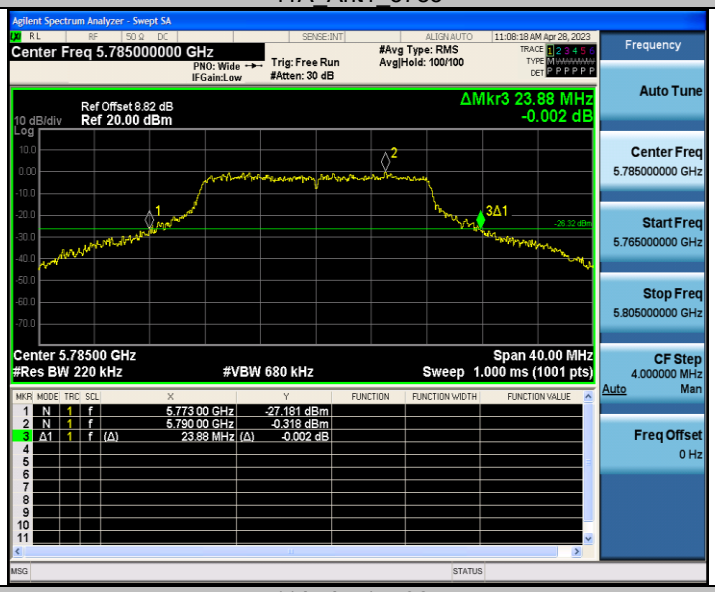
11A_Ant1_5240



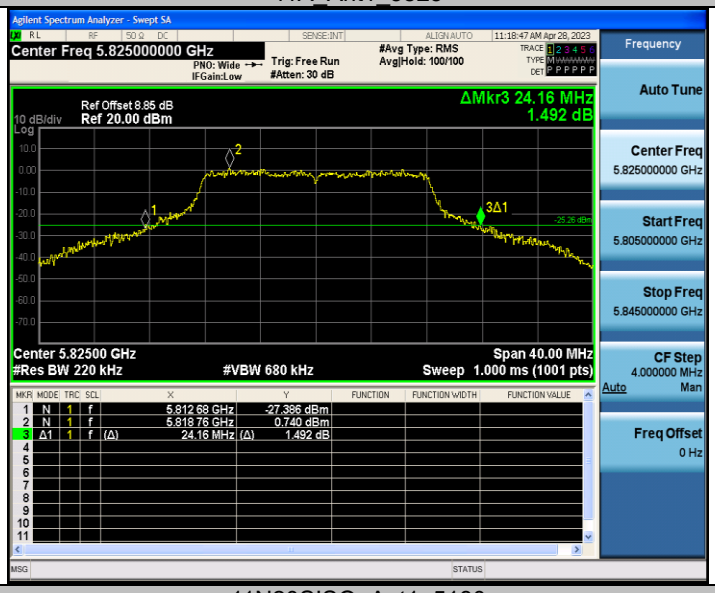
11A_Ant1_5745



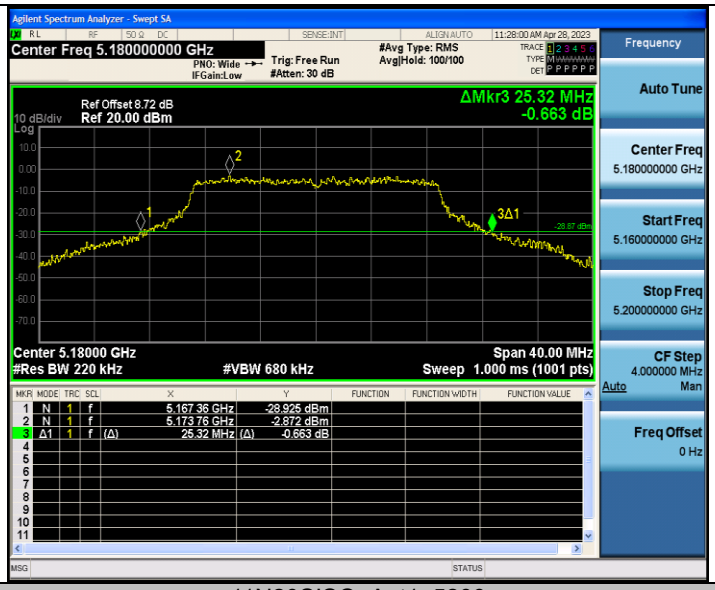
11A_Ant1_5785



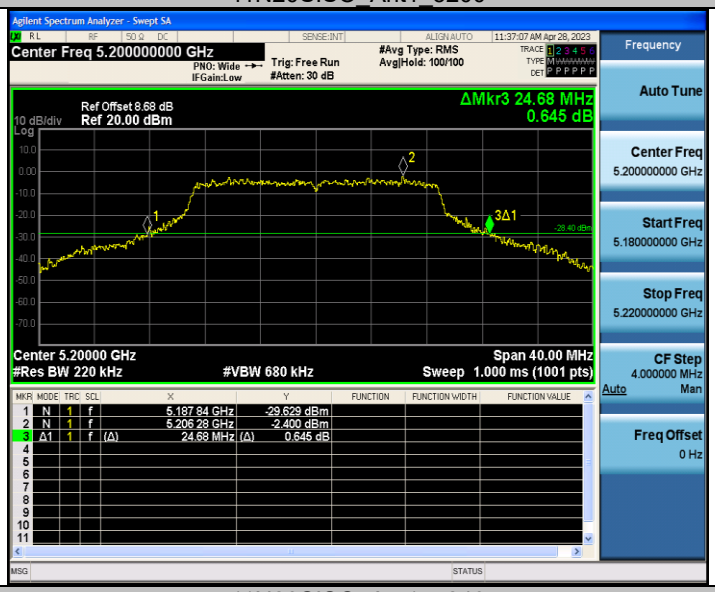
11A_Ant1_5825



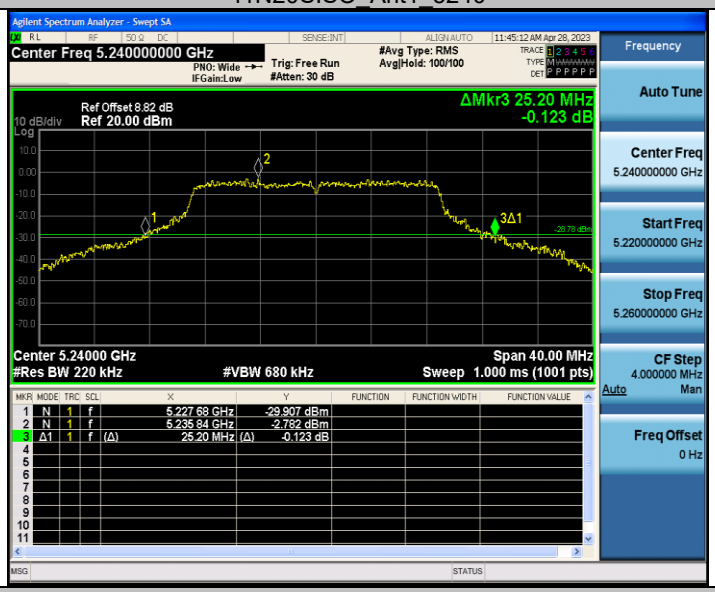
11N20SISO_Ant1_5180



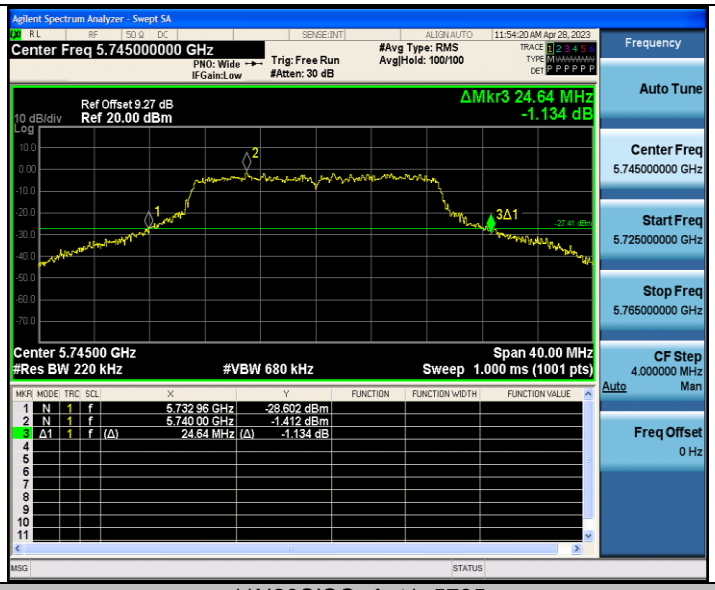
11N20SISO_Ant1_5200



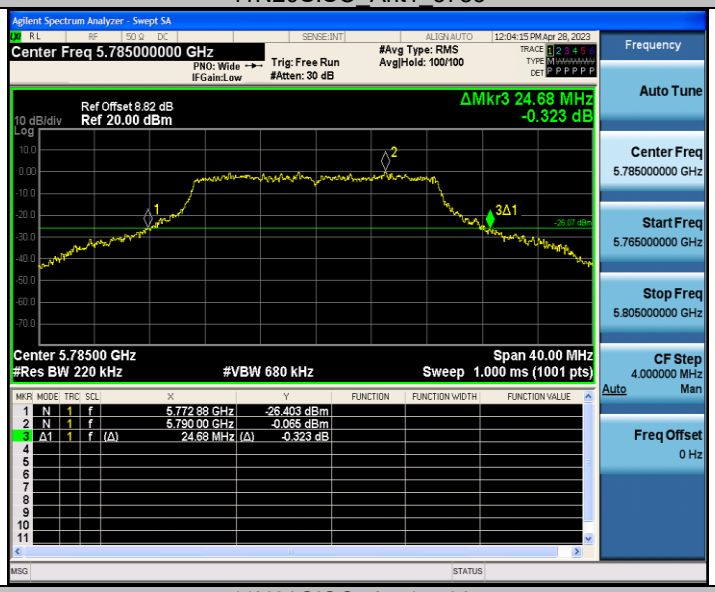
11N20SISO_Ant1_5240



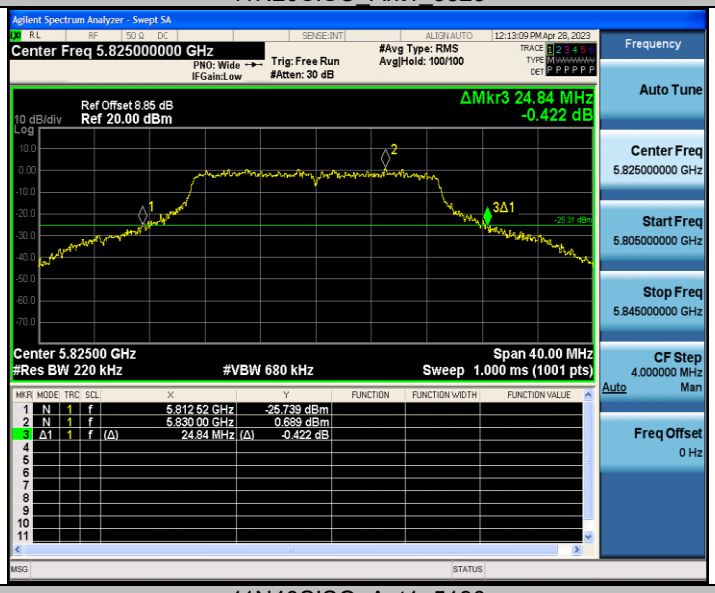
11N20SISO_Ant1_5745



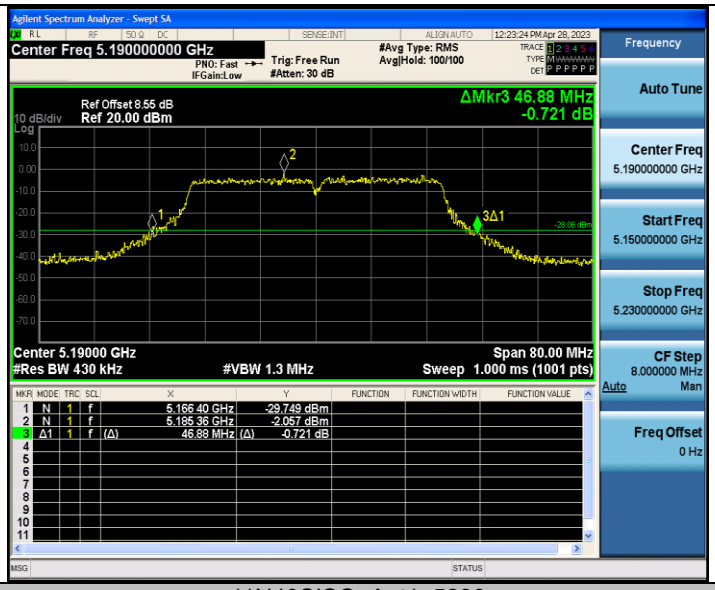
11N20SISO_Ant1_5785



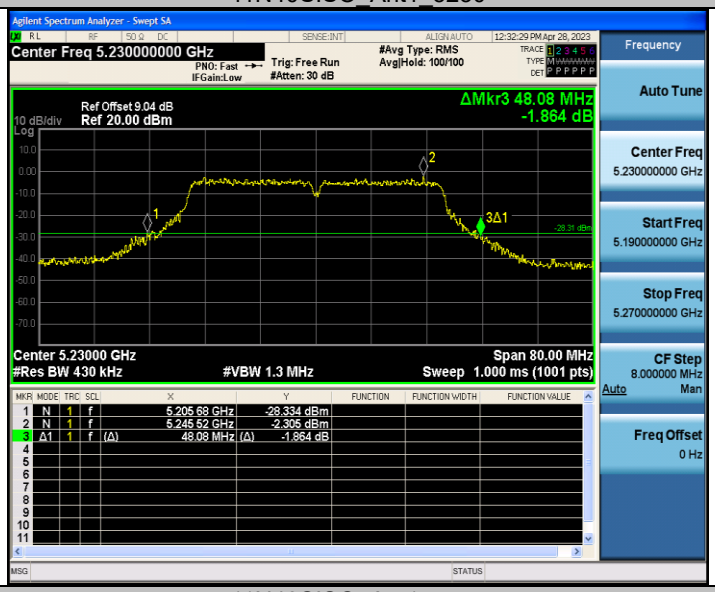
11N20SISO_Ant1_5825



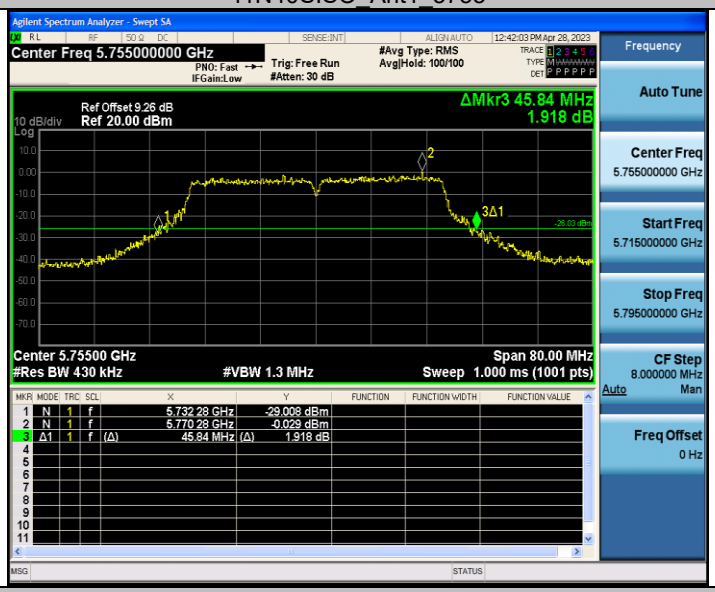
11N40SISO_Ant1_5190



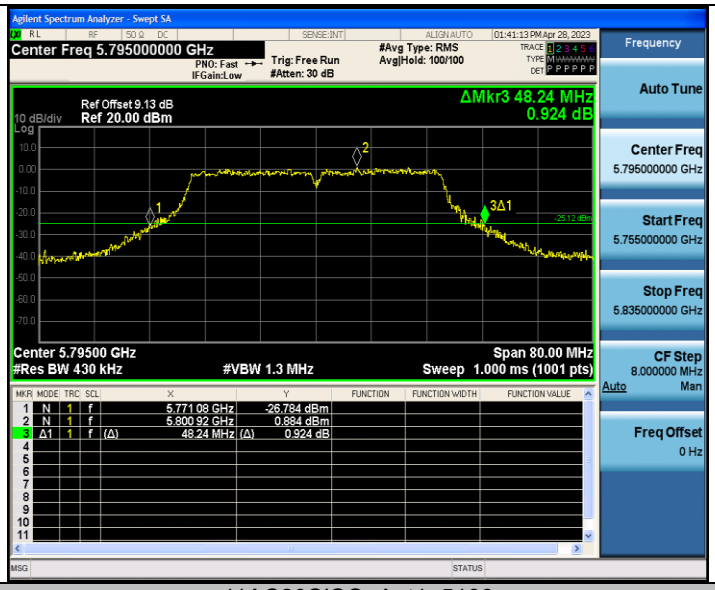
11N40SISO_Ant1_5230



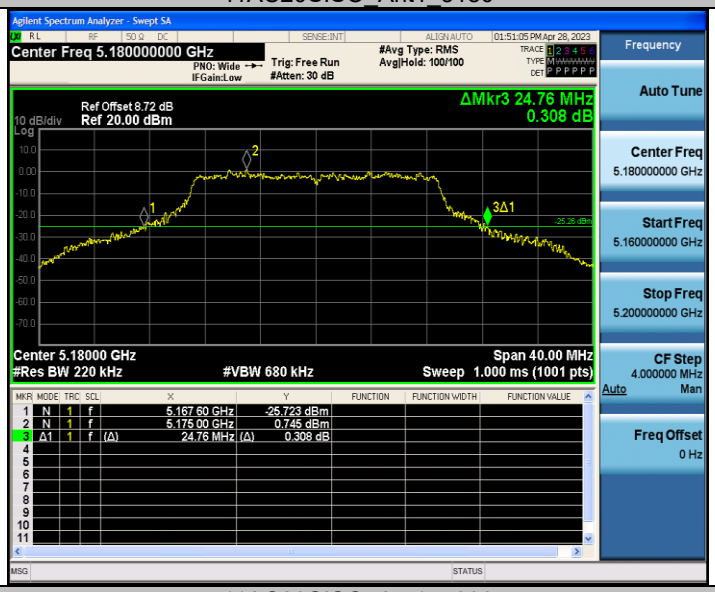
11N40SISO_Ant1_5755



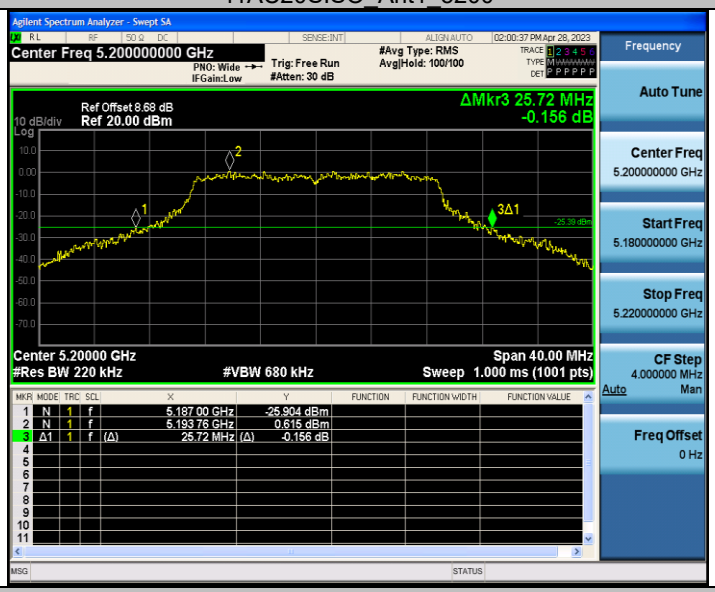
11N40SISO_Ant1_5795



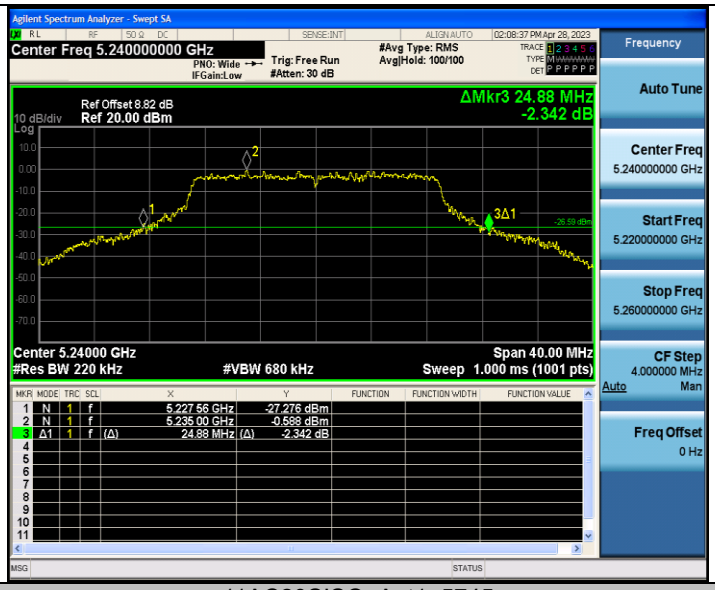
11AC20SISO_Ant1_5180



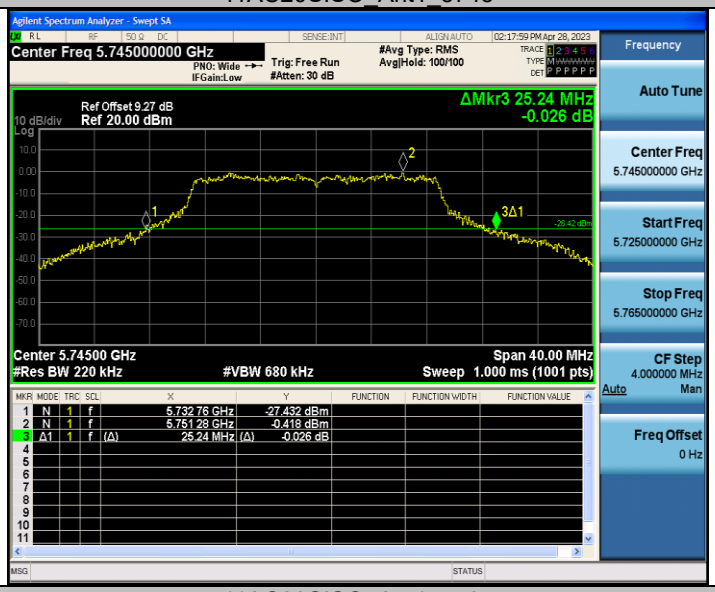
11AC20SISO_Ant1_5200



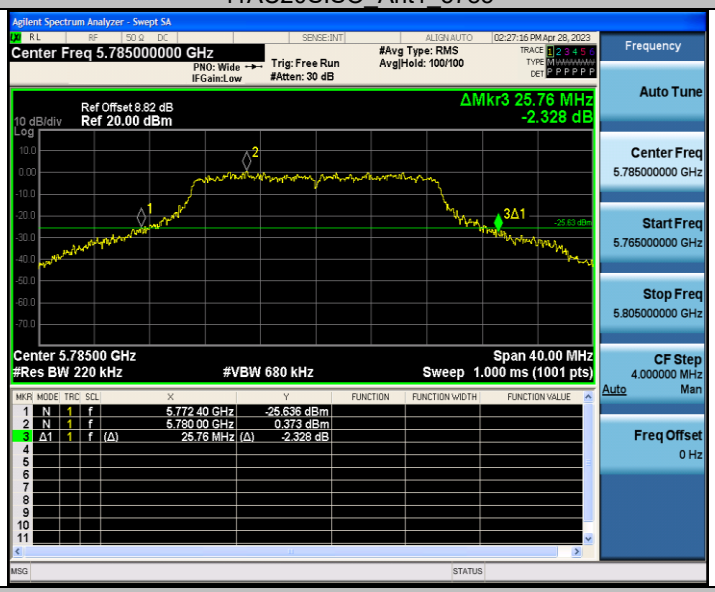
11AC20SISO_Ant1_5240



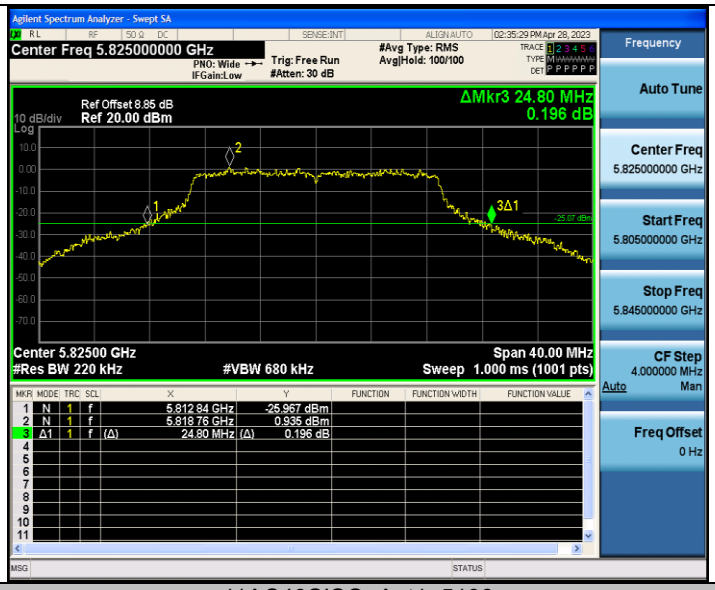
11AC20SISO_Ant1_5745



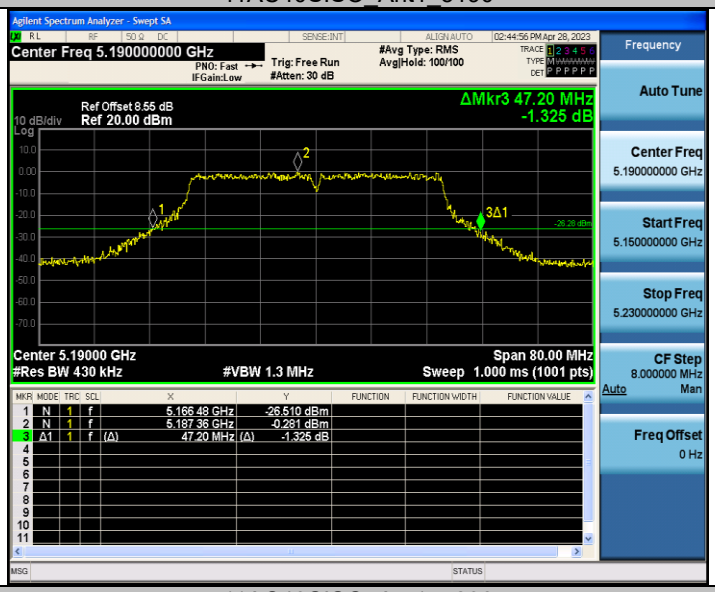
11AC20SISO_Ant1_5785



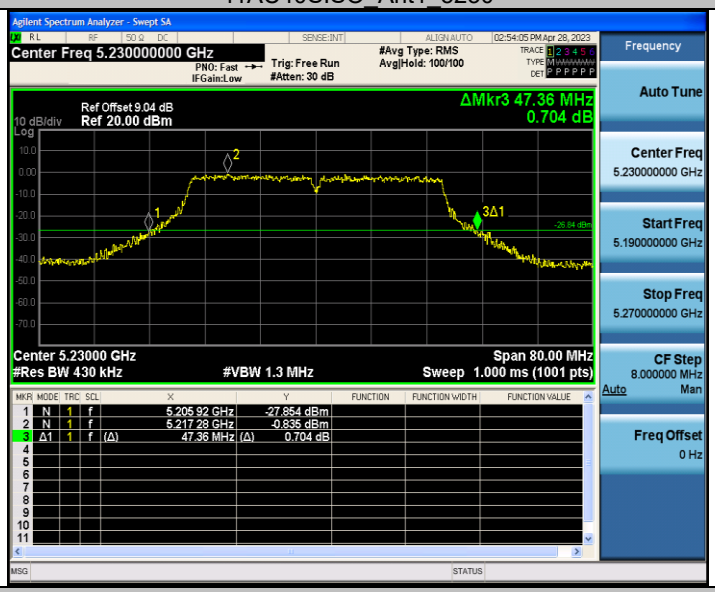
11AC20SISO_Ant1_5825



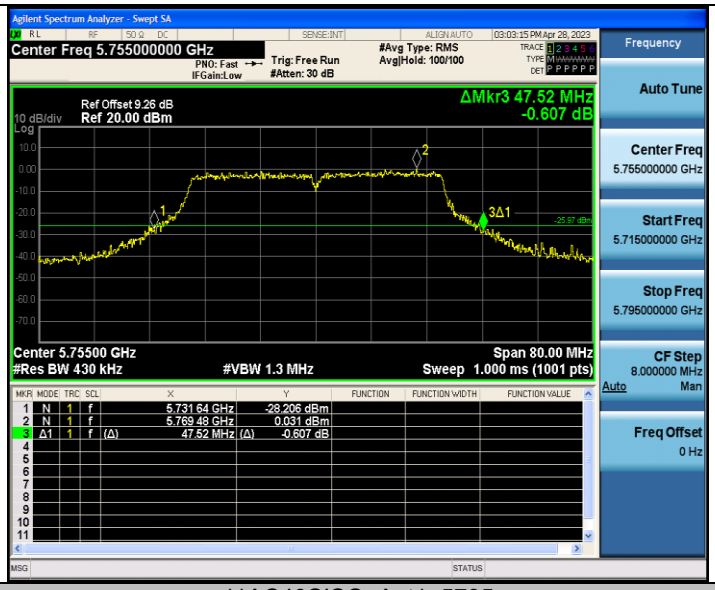
11AC40SISO_Ant1_5190



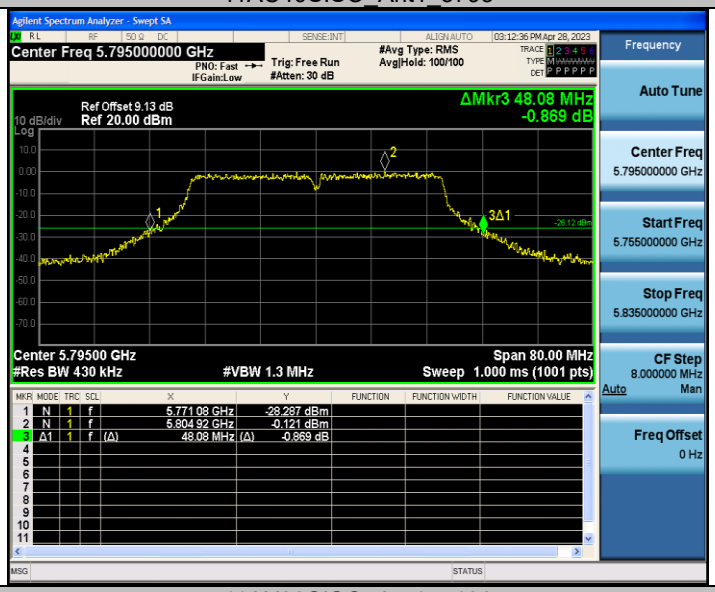
11AC40SISO_Ant1_5230



11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795

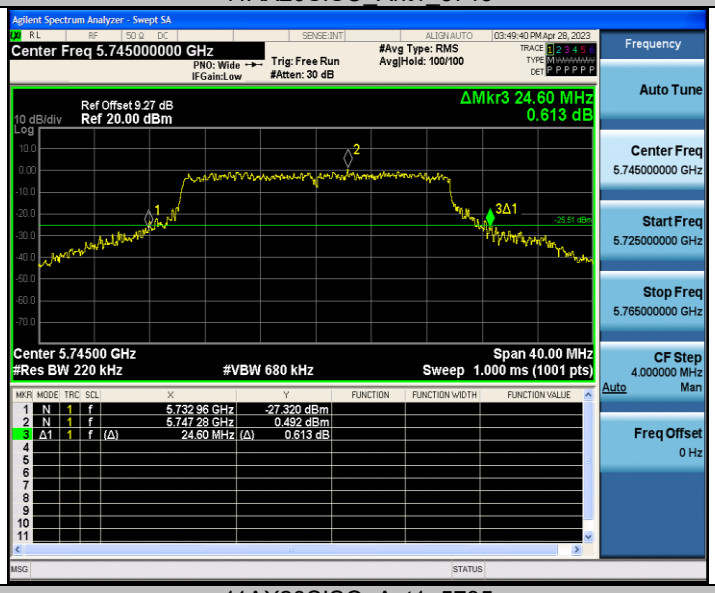


11AX20SISO_Ant1_5180

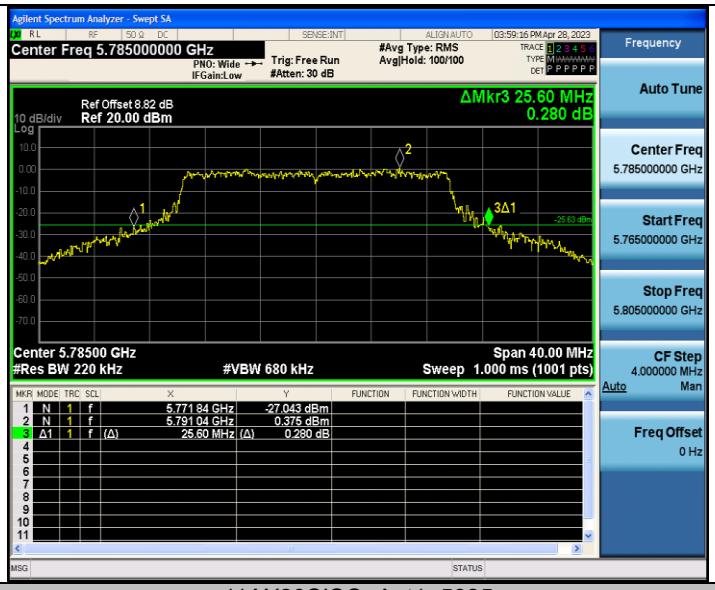
11AX20SISO_Ant1_5200

11AX20SISO_Ant1_5240

11AX20SISO_Ant1_5745

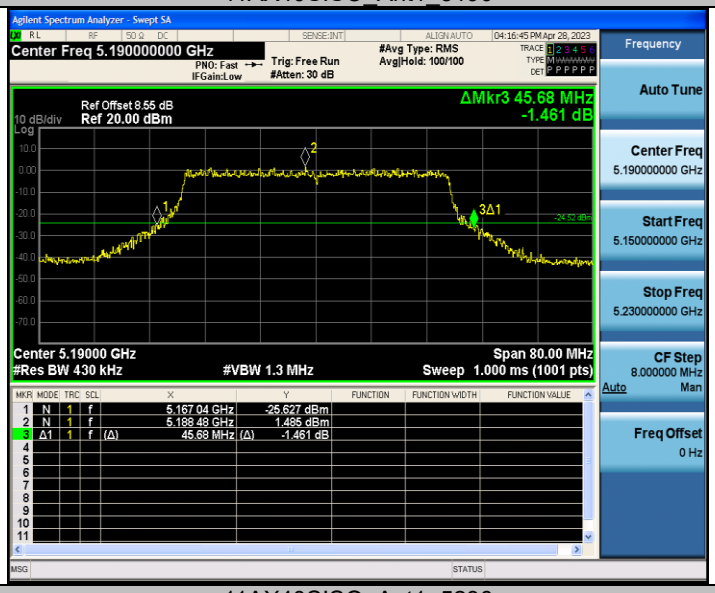


11AX20SISO_Ant1_5785

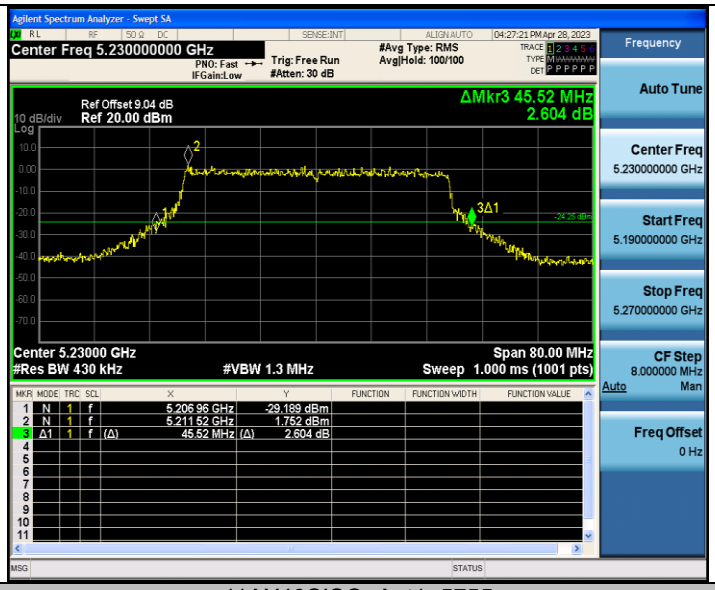


11AX20SISO_Ant1_5825

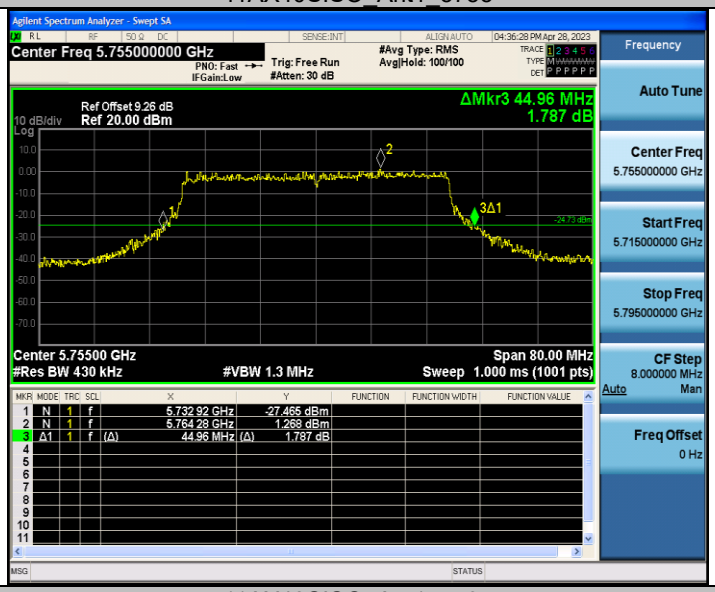
11AX40SISO_Ant1_5190



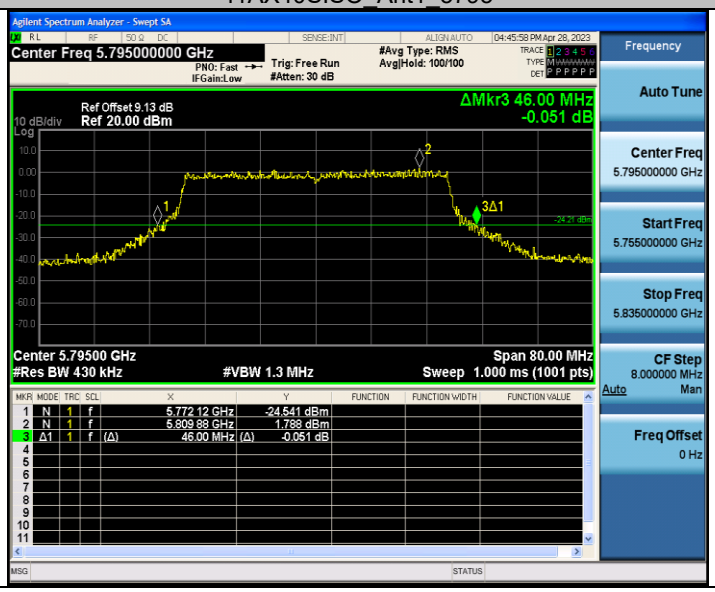
11AX40SISO_Ant1_5230



11AX40SISO_Ant1_5755



11AX40SISO_Ant1_5795



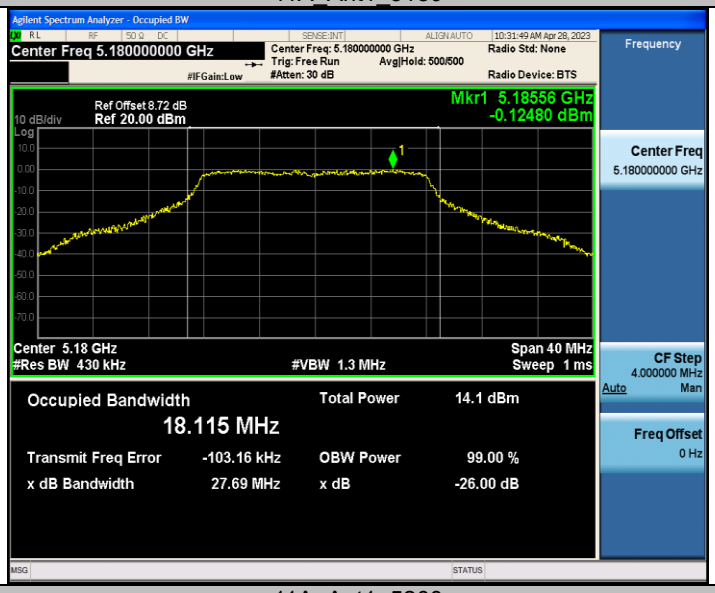
Appendix A2: Occupied channel bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	18.115	5170.8393	5188.9543	---	---
		5200	17.886	5190.9924	5208.8784	---	---
		5240	17.997	5230.9841	5248.9811	---	---
		5745	18.007	5736.0749	5754.0819	---	---
		5785	17.981	5775.9967	5793.9777	---	---
		5825	17.877	5816.0038	5833.8808	---	---
11N20SISO	Ant1	5180	19.204	5170.4847	5189.6887	---	---
		5200	19.056	5190.5591	5209.6151	---	---
		5240	19.195	5230.4999	5249.6949	---	---
		5745	19.240	5735.5542	5754.7942	---	---
		5785	19.136	5775.5196	5794.6556	---	---
		5825	19.082	5815.5099	5834.5919	---	---
11N40SISO	Ant1	5190	37.749	5171.1470	5208.8960	---	---
		5230	37.888	5211.0358	5248.9238	---	---
		5755	37.797	5736.3469	5774.1439	---	---
		5795	37.926	5776.2070	5814.1330	---	---
11AC20SISO	Ant1	5180	19.270	5170.3051	5189.5751	---	---
		5200	19.093	5190.4401	5209.5331	---	---
		5240	19.252	5230.4033	5249.6553	---	---
		5745	19.266	5735.4612	5754.7272	---	---
		5785	19.275	5775.3689	5794.6439	---	---
		5825	19.173	5815.4101	5834.5831	---	---
11AC40SISO	Ant1	5190	37.573	5171.1193	5208.6923	---	---
		5230	37.703	5210.9936	5248.6966	---	---
		5755	37.649	5736.3397	5773.9887	---	---
		5795	37.756	5776.1710	5813.9270	---	---
11AX20SISO	Ant1	5180	19.770	5170.1917	5189.9617	---	---
		5200	19.657	5190.2304	5209.8874	---	---
		5240	19.719	5230.2308	5249.9498	---	---
		5745	19.689	5735.2386	5754.9276	---	---
		5785	19.738	5775.2231	5794.9611	---	---
		5825	19.811	5815.1145	5834.9255	---	---
11AX40SISO	Ant1	5190	38.509	5170.6943	5209.2033	---	---
		5230	38.460	5210.7552	5249.2152	---	---
		5755	38.457	5735.8862	5774.3432	---	---
		5795	38.495	5775.8542	5814.3492	---	---

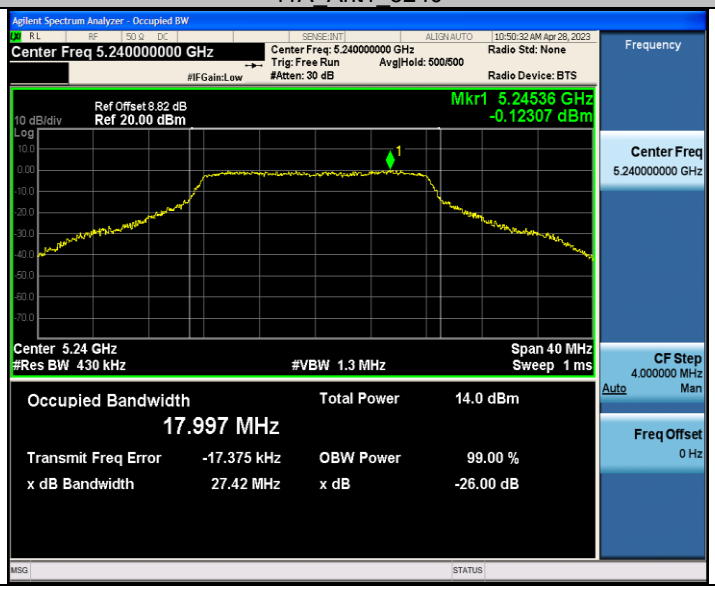
Test Graphs

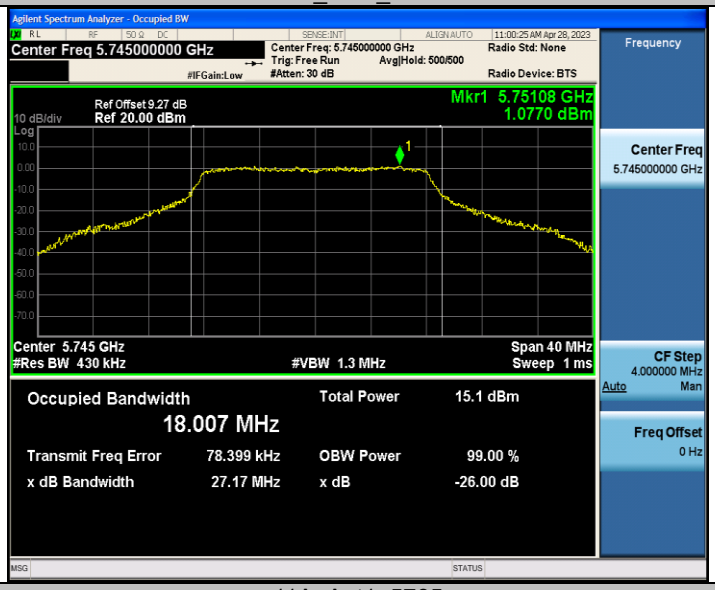
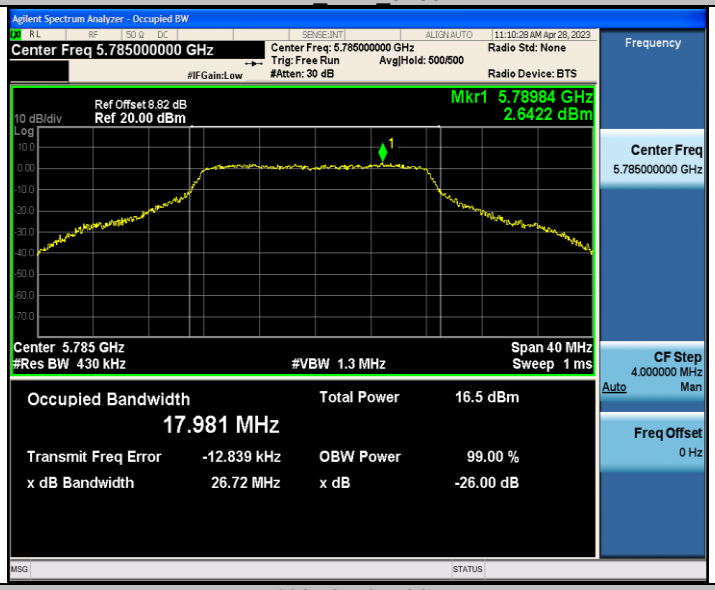
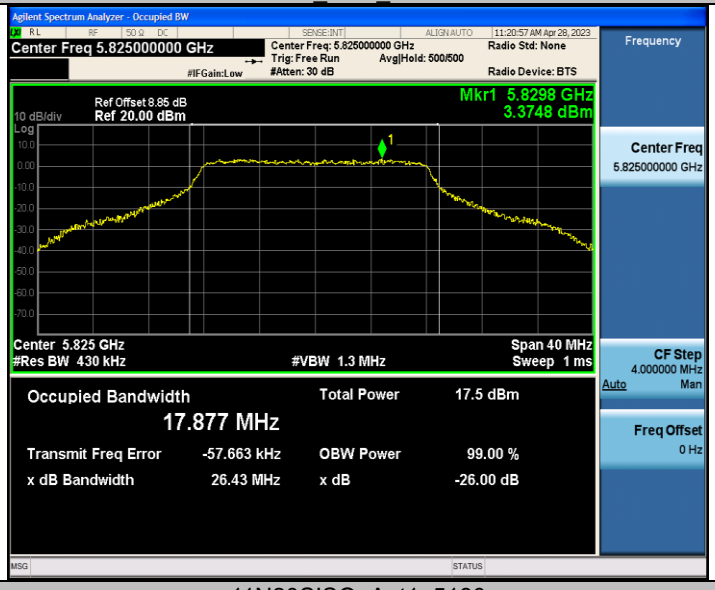
11A_Ant1_5180

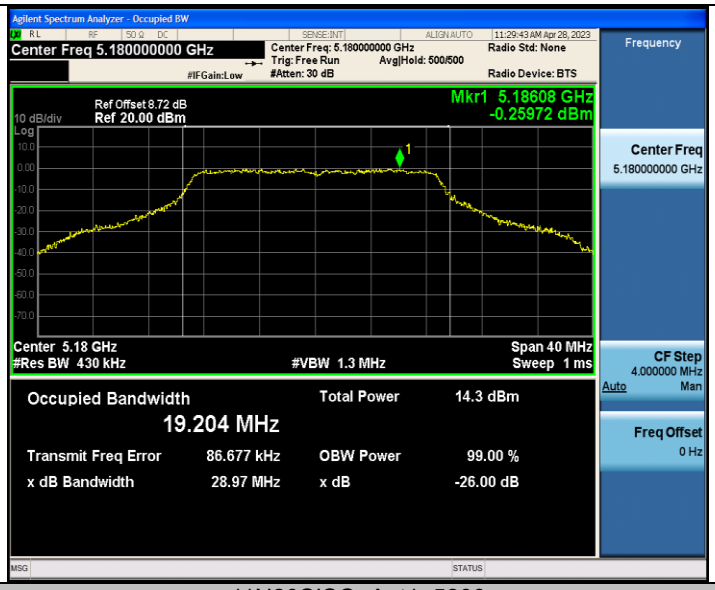


11A_Ant1_5200

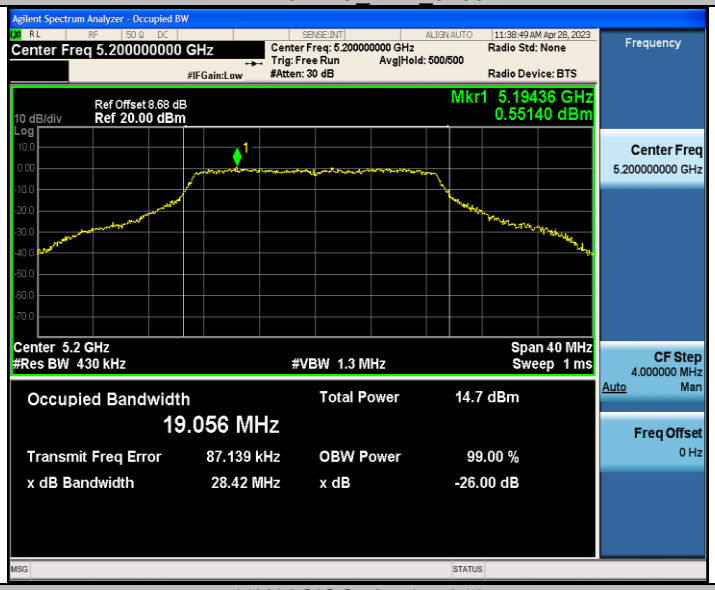
11A_Ant1_5240



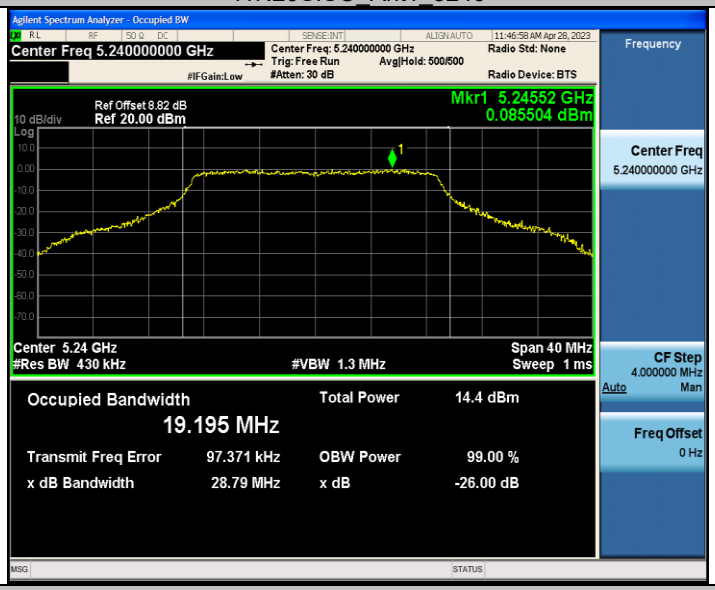
11A_Ant1_5745

11A_Ant1_5785

11A_Ant1_5825

11N20SISO_Ant1_5180



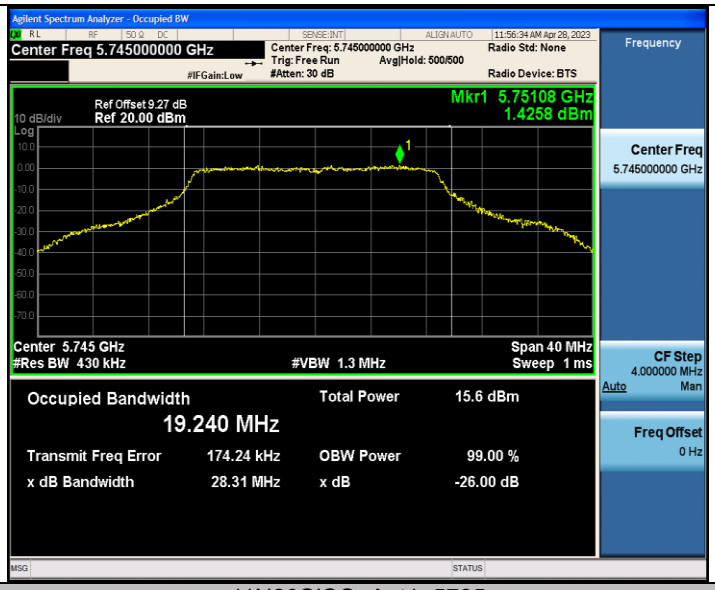
11N20SISO_Ant1_5200



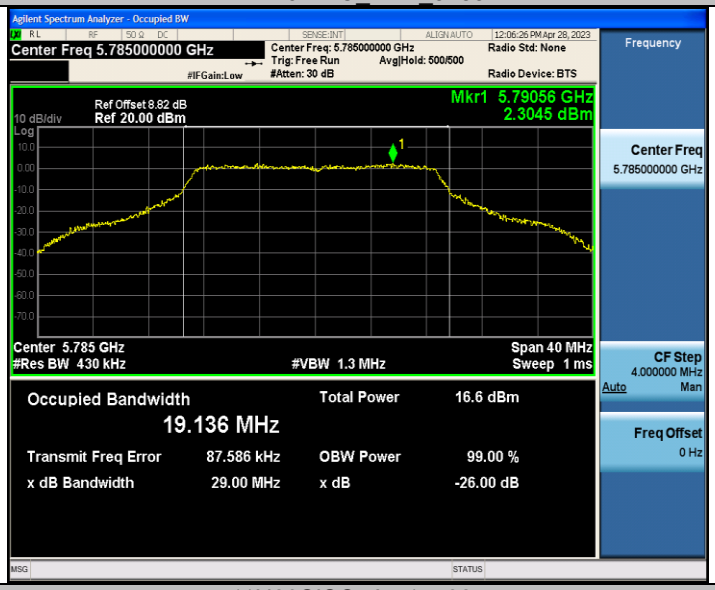
11N20SISO_Ant1_5240



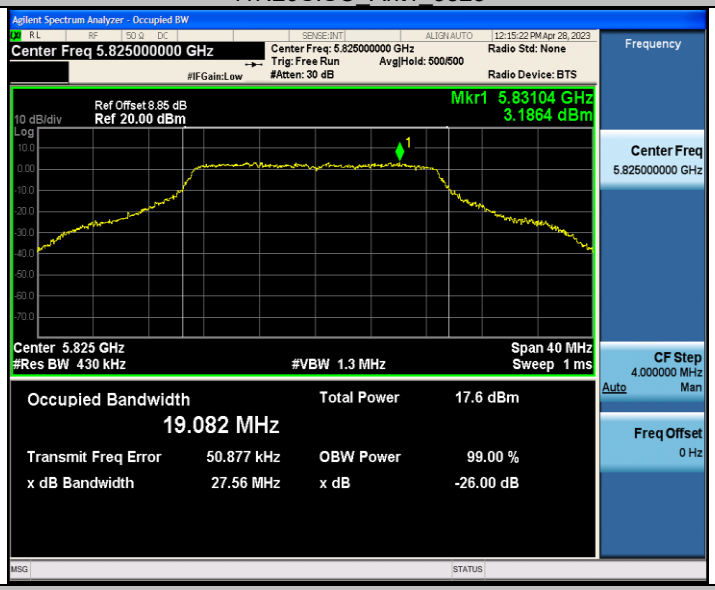
11N20SISO_Ant1_5745



11N20SISO_Ant1_5785

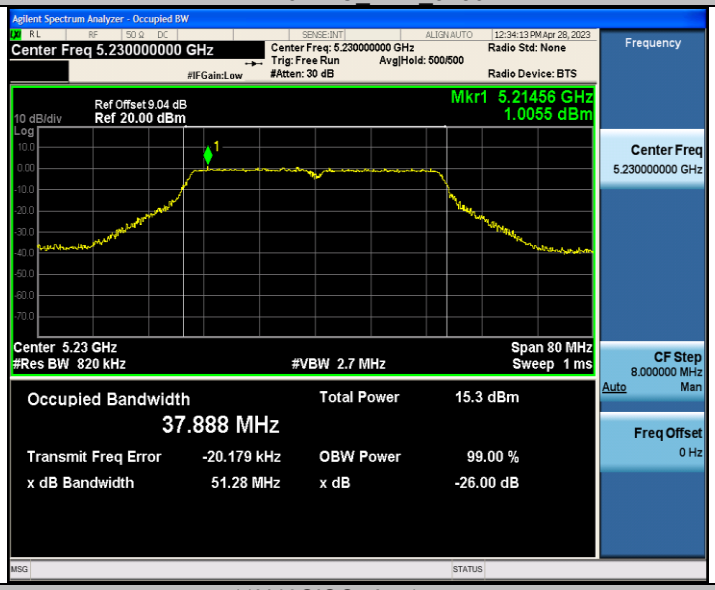


11N20SISO_Ant1_5825

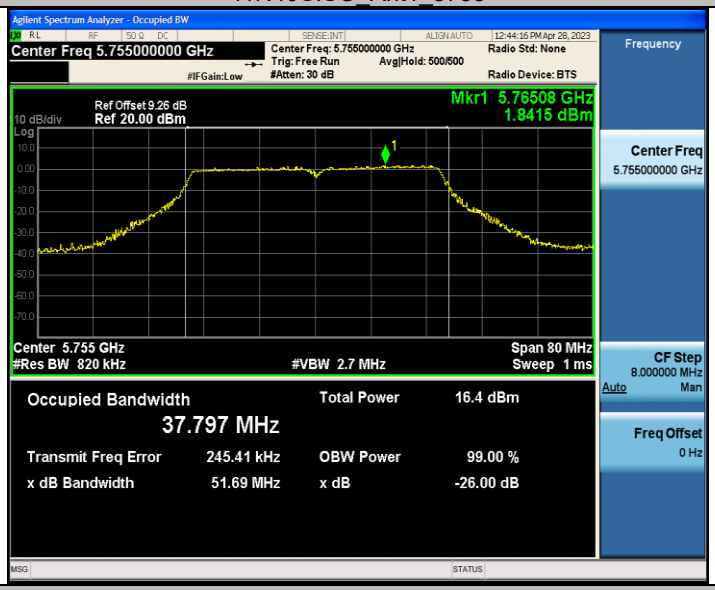


11N40SISO_Ant1_5190

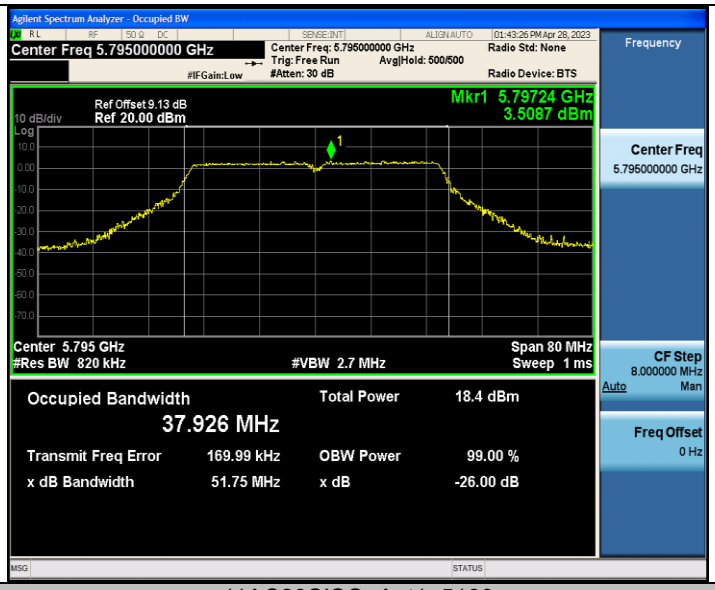
11N40SISO_Ant1_5230



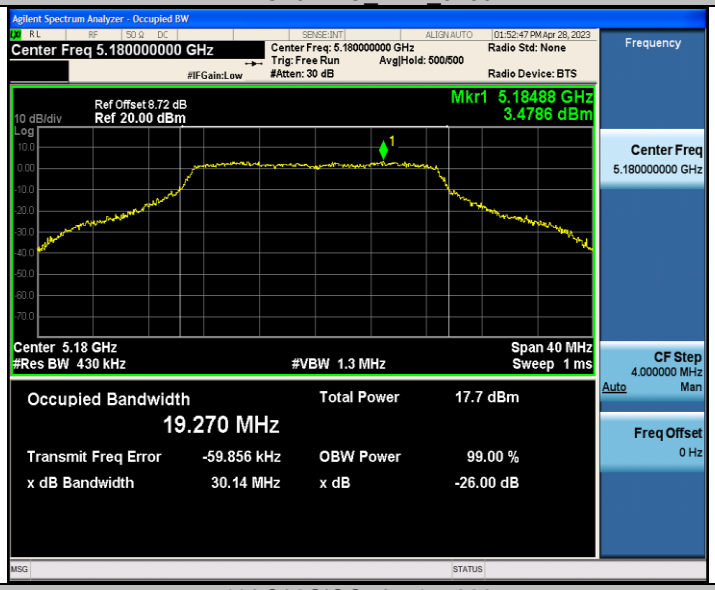
11N40SISO_Ant1_5755



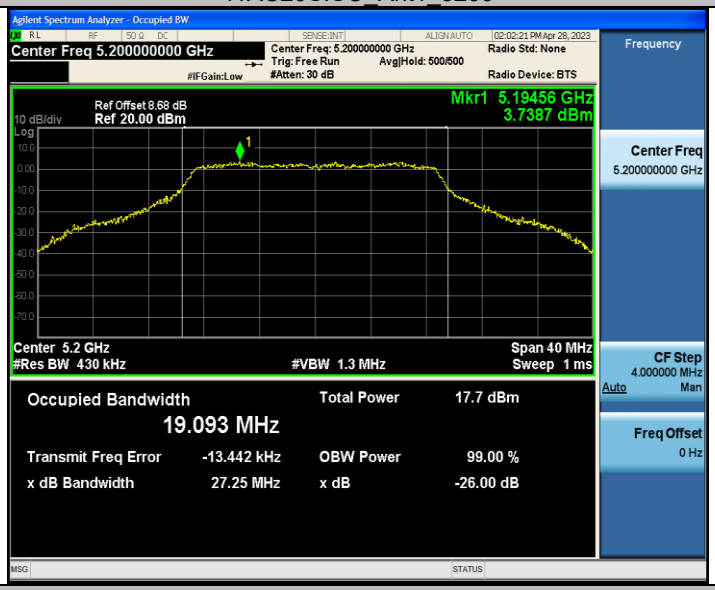
11N40SISO_Ant1_5795



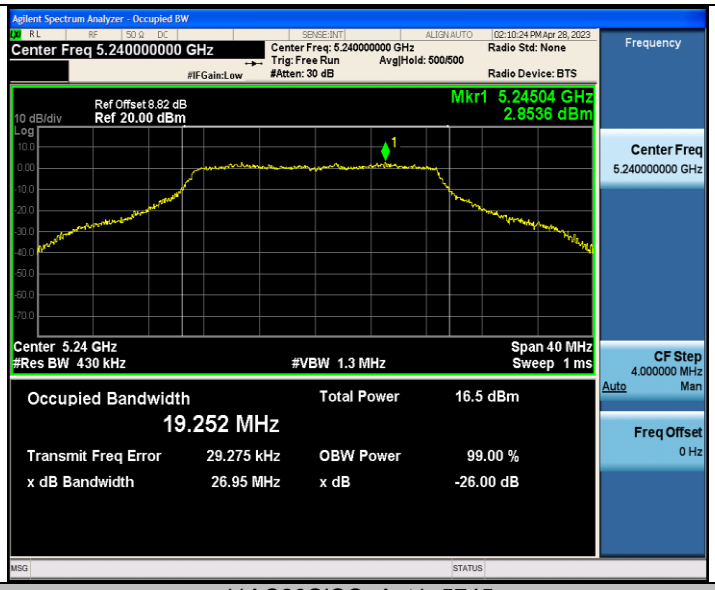
11AC20SISO_Ant1_5180



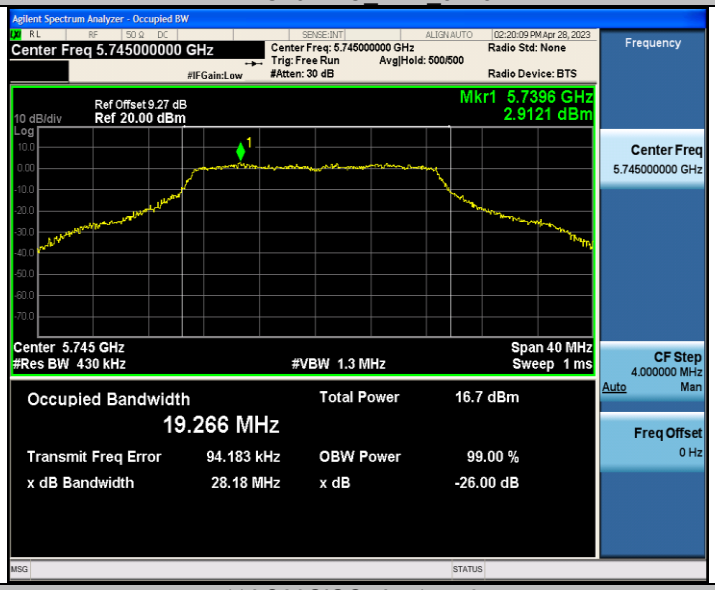
11AC20SISO_Ant1_5200



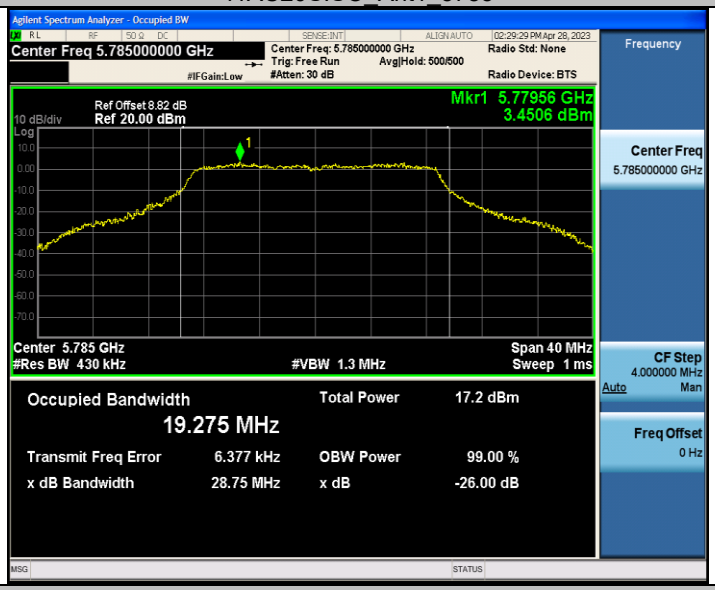
11AC20SISO_Ant1_5240



11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



11AC20SISO_Ant1_5825