Microtest
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Test Report

Report No.:	MTi231207011-04E4
Date of issue:	2024-09-05
Applicant:	IC Nexus Co., Ltd
Product name:	SBC_NSD_EC
Model(s):	EC3810, EC3807, EC3805, EC3810-HL, EC3810-HL-KK3, EC3807-HL, EC3807-HL-KK3, EC3805-HL, EC3805-HL-KK3, NSD3810, NSD3810-HL, NSD3810-HL-KK3, NSD3807, NSD3807-HL, NSD3807-HL-KK3, NSD3805, NSD3805-HL, NSD3805-HL-KK3, SBC3800, EC3800, NSD3815-HL-OUV, EC3815-HL-OUV
FCC ID:	2ACLCECNSDSBC380M60

Shenzhen Microtest Co., Ltd.

http://www.mtitest.cn

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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:	IC Nexus Co., Ltd
Address:	6F-1, No.3-2 Park Street, Nankang Software Park(NKSP), Taipei 115, Taiwan ROC
Manufacturer:	IC Nexus Co., Ltd
Address:	6F-1, No.3-2 Park Street, Nankang Software Park(NKSP), Taipei 115, Taiwan ROC
Factory:	IC Nexus Co., Ltd
Address:	6F-1, No.3-2 Park Street, Nankang Software Park(NKSP), Taipei 115, Taiwan ROC
Product description	
Product name:	SBC_NSD_EC
Trademark:	ICNexus
Model name:	EC3810
Series Model(s):	EC3807, EC3805, EC3810-HL, EC3810-HL-KK3, EC3807-HL, EC3807-HL-KK3, EC3805-HL, EC3805-HL-KK3, NSD3810, NSD3810-HL, NSD3810-HL-KK3, NSD3807, NSD3807-HL, NSD3807-HL-KK3, NSD3805, NSD3805-HL, NSD3805-HL-KK3, SBC3800, EC3800, NSD3815-HL-OUV, EC3815-HL-OUV
Standards:	47 CFR Part 15E
Test Method:	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Date of Test	
Date of test:	2024-03-27 to 2024-09-02
Test result:	Pass

Test Engineer	:	Letter. Lan.
		(Letter Lan)
Reviewed By	:	David. Lee
		(David Lee)
Approved By	:	Leon chen
		(Leon Chen)

1 General Description

1.1 Description of the EUT

Product name:	SBC_NSD_EC
Model name:	EC3810
Series Model(s):	EC3807, EC3805, EC3810-HL, EC3810-HL-KK3, EC3807-HL, EC3807-HL-KK3, EC3805-HL, EC3805-HL-KK3, NSD3810, NSD3810-HL, NSD3810-HL-KK3, NSD3807, NSD3807-HL, NSD3807-HL-KK3, NSD3805, NSD3805-HL, NSD3805-HL-KK3, SBC3800, EC3800, NSD3815-HL-OUV, EC3815-HL-OUV
Model difference:	All the models are the same circuit and module, except the model name.
Electrical rating:	Input: DC12V
Accessories:	Adaptor: Model: DSA-42PFB-12 1 120350 Input: AC100-240V, 50/60HZ, 1.2A Output: DC12V 3.5A, 42W Manufacturer: Dee Van Electronics (Longchuan) Co., Ltd.
Hardware version:	PCB0M600
Software version:	android & Linux
Test sample(s) number:	MTi231207011-04S1001
RF specification	
Operating frequency range:	802.11a/n(HT20)/ac(HT20): U-NII Band 1: 5180MHz to 5240MHz; U-NII Band 3: 5745MHz to 5825MHz; 802.11n(HT40)/ac(HT40): U-NII Band 1: 5190MHz to 5230MHz; U-NII Band 3: 5755MHz to 5795MHz; 802.11ac(HT80): U-NII Band 1: 5210MHz; U-NII Band 3: 5775MHz
Channel number:	802.11a/n(HT20)/ac(HT20): U-NII Band 1: 4; U-NII Band 3: 5; 802.11n(HT40)/ac(HT40): U-NII Band 1: 2; U-NII Band 3: 2; 802.11ac(HT80): U-NII Band 1: 1; U-NII Band 3: 1
Modulation type:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM);
Antenna(s) type:	Dipole ANT
Antenna(s) gain:	3dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	802.11a mode
Mode2	802.11n(HT20) mode
Mode3	802.11ac(VHT20) mode
Mode4	802.11ac(VHT40) mode
Mode5	802.11ac(VHT80) mode

1.2.1 Operation channel list

Test Channel List

Operation Band: 5150-5250 MHz

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
20	5180	5200	5240
40	5190	/	5230
80	5210	/	/

Operation Band: 5725-5850 MHz

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
20	5745	5785	5825
40	5755	/	5795
80	5775	/	/

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software: CMD

For power setting, refer to below table.

For U-NII-1 band:

Mode	LCH	MCH	HCH
802.11a	13	13	13
802.11n(HT20)	13	13	13
802.11ac(VHT20)	13	13	13
802.11ac(VHT40)	16	/	17
802.11ac(VHT80)	15	/	/

For U-NII-3 band:

Mode	LCH	MCH	HCH
802.11a	13	13	13
802.11n(HT20)	13	13	13
802.11ac(VHT20)	13	13	13
802.11ac(VHT40)	16	/	15
802.11ac(VHT80)	14	/	/

Note: The EUT is connected to the computer via USB, the computer use CMD and enters the command to adjust the EUT operating frequency and power setting.

1.3 Environmental Conditions

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

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

1.4 Description of support units

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

1.5 Measurement uncertainty

Measurement	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	±3.1dB
Time	±1 %
Occupied channel bandwidth	±3 %
RF output power, conducted	±1 dB
Power Spectral Density, conducted	±1 dB
Radiated spurious emissions (above 1GHz)	±5.3dB
Radiated spurious emissions (9kHz~30MHz)	±4.3dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Temperature	±1 °C
Humidity	± 5 %

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15E	Part 15.203	Pass
2	Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
3	Duty Cycle	47 CFR Part 15E		Pass
4	Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. 47 CFR Part 15.407(e)	Pass
5	Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)	Pass
6	Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)	Pass
7	Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass
8	Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(9)	Pass
9	Undesirable emission limits (above 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass

3 Test Facilities and accreditations

3.1 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
IC Registration No.:	21760
CABID:	CN0093

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Conducted Emission at AC power line						
1	EMI Test Receiver	Rohde&schwarz	ESCI3	101368	2023-04-26	2024-04-25
2	Artificial mains network	Schwarzbeck	NSLK 8127	183	2023-05-05	2024-05-04
3	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100263	2023-06-03	2024-06-02
Duty Cycle Maximum conducted output power Power spectral density Emission bandwidth and occupied bandwidth						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2023-04-26	2024-04-25
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2023-04-25	2024-04-24
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2023-04-25	2024-04-24
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2023-04-25	2024-04-24
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2023-04-26	2024-04-25
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2023-04-26	2024-04-25
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2023-05-05	2024-05-04
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2023-04-25	2024-04-24
9	DC Power Supply	Agilent	E3632A	MY40027695	2023-05-05	2024-05-04
Band edge emissions (Radiated) Undesirable emission limits (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2023-04-26	2024-04-25
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2023-06-17	2025-06-16
3	Amplifier	Agilent	8449B	3008A01120	2023-06-26	2024-06-25
4	Multi-device Controller	TuoPu	TPMDC	/	2023-05-04	2024-05-03
5	MXA signal analyzer	Agilent	N9020A	MY54440859	2023-06-01	2024-05-31
Undesirable emission limits (below 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2023-04-26	2024-04-25
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2023-06-11	2025-06-10
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2023-04-25	2024-04-24
5	Multi-device Controller	TuoPu	TPMDC	/	2023-05-04	2024-05-03

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Conducted Emission at AC power line						
1	EMI Test Receiver	Rohde&schwarz	ESCI3	101368	2024-03-20	2025-03-19
2	Artificial mains network	Schwarzbeck	NSLK 8127	183	2024-03-21	2025-03-20
3	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100263	2024-03-20	2025-03-19
Duty Cycle Maximum conducted output power Power spectral density Emission bandwidth and occupied bandwidth						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2024-03-20	2025-03-19
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2024-03-21	2025-03-20
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2024-03-21	2025-03-20
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2024-03-21	2025-03-20
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2024-03-21	2025-03-20
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2024-03-21	2025-03-20
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2024-03-21	2025-03-20
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2024-03-20	2025-03-19
9	DC Power Supply	Agilent	E3632A	MY40027695	2024-03-21	2025-03-20
Band edge emissions (Radiated) Undesirable emission limits (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2023-06-17	2025-06-16
3	Amplifier	Agilent	8449B	3008A01120	2024-03-20	2025-03-19
4	Multi-device Controller	TuoPu	TPMDC	/	2024-03-20	2025-03-19
5	MXA signal analyzer	Agilent	N9020A	MY54440859	2024-03-21	2025-03-20
6	Horn antenna	Schwarzbeck	BBHA 9170	00987	2023-06-17	2025-06-16
7	Pre-amplifier	Space-Dtronics	EWLAN1840 G	210405001	2023-05-04	2024-05-03
8	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2024-04-25	2025-04-24
8	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2023-04-25	2024-04-24
Undesirable emission limits (below 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2025-03-22
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2024-03-20	2025-03-19

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
5	Multi-device Controller	TuoPu	TPMDC	/	2024-03-20	2025-03-19

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 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. 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.

6 Radio Spectrum Matter Test Results (RF)

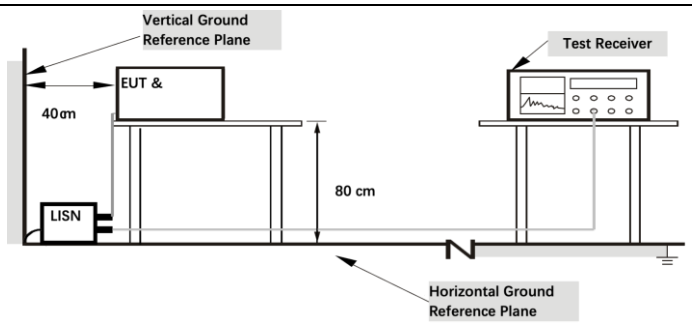
6.1 Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dBμV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.10-2013 section 6.2		

6.1.1 E.U.T. Operation:

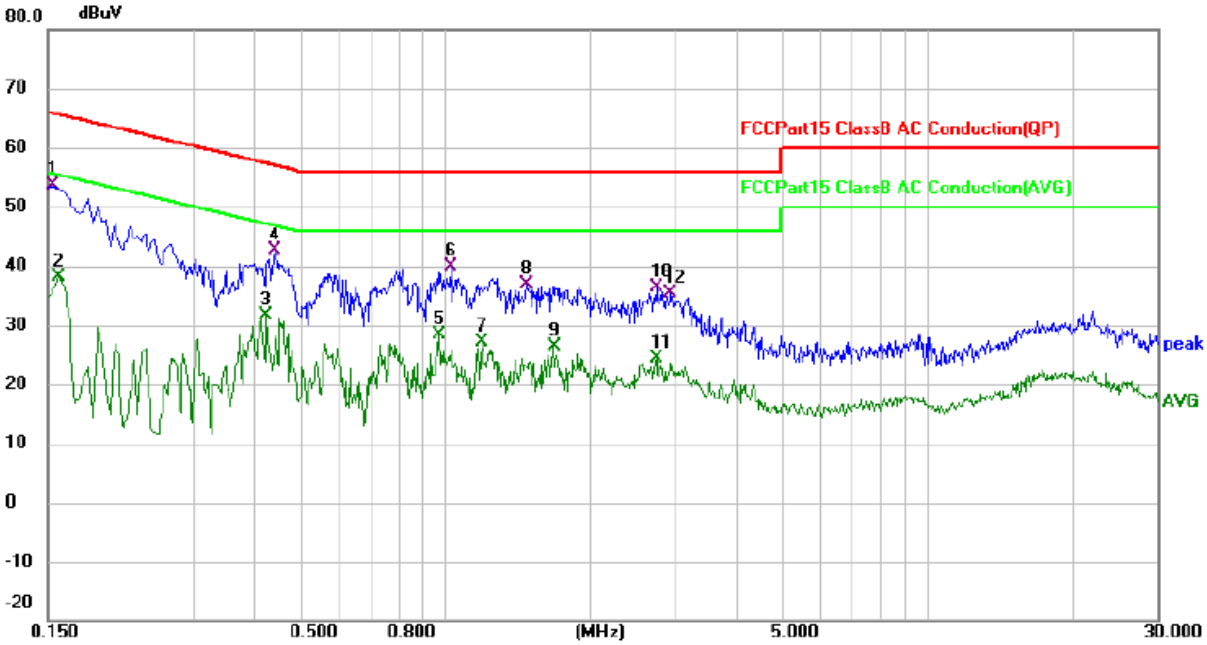
Operating Environment:					
Temperature:	33.8 °C	Humidity:	68.6 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1 U-NII 1) is recorded in the report				

6.1.2 Test Setup Diagram:



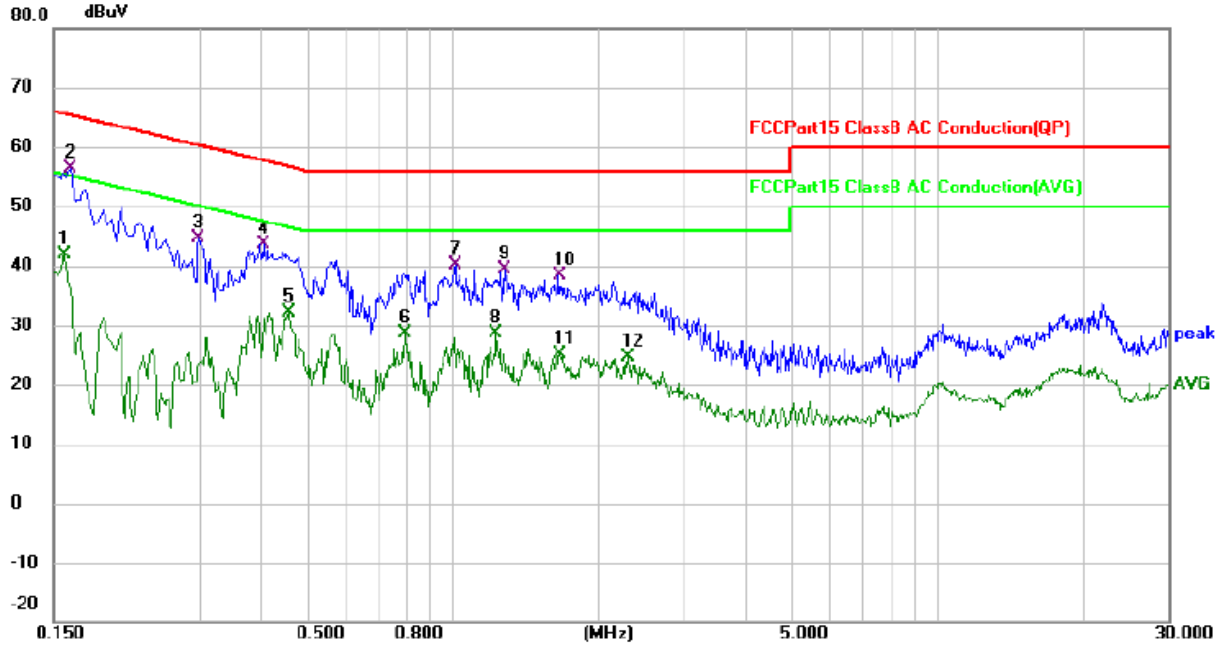
6.1.3 Test Data:

Mode1 / Line: Line / CH: L / U-NII 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1539	43.24	10.28	53.52	65.79	-12.27	QP	
2		0.1580	27.88	10.28	38.16	55.57	-17.41	AVG	
3		0.4259	20.41	11.17	31.58	47.33	-15.75	AVG	
4		0.4420	31.44	11.19	42.63	57.02	-14.39	QP	
5		0.9737	15.96	12.35	28.31	46.00	-17.69	AVG	
6		1.0300	27.45	12.46	39.91	56.00	-16.09	QP	
7		1.1935	14.48	12.71	27.19	46.00	-18.81	AVG	
8		1.4778	23.60	13.17	36.77	56.00	-19.23	QP	
9		1.6734	12.93	13.47	26.40	46.00	-19.60	AVG	
10		2.7458	26.14	10.21	36.35	56.00	-19.65	QP	
11		2.7458	14.05	10.21	24.26	46.00	-21.74	AVG	
12		2.9380	25.14	10.25	35.39	56.00	-20.61	QP	

Mode1 / Line: Neutral / CH: L/ U-NII 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1580	31.60	10.28	41.88	55.57	-13.69	AVG	
2	*	0.1620	46.21	10.27	56.48	65.36	-8.88	QP	
3		0.2977	33.85	10.84	44.69	60.31	-15.62	QP	
4		0.4060	32.61	11.06	43.67	57.73	-14.06	QP	
5		0.4580	21.00	11.21	32.21	46.73	-14.52	AVG	
6		0.7980	16.56	11.96	28.52	46.00	-17.48	AVG	
7		1.0140	27.66	12.35	40.01	56.00	-15.99	QP	
8		1.2300	15.75	12.82	28.57	46.00	-17.43	AVG	
9		1.2780	26.52	12.93	39.45	56.00	-16.55	QP	
10		1.6534	24.54	13.72	38.26	56.00	-17.74	QP	
11		1.6700	11.30	13.76	25.06	46.00	-20.94	AVG	
12		2.3020	14.30	10.41	24.71	46.00	-21.29	AVG	

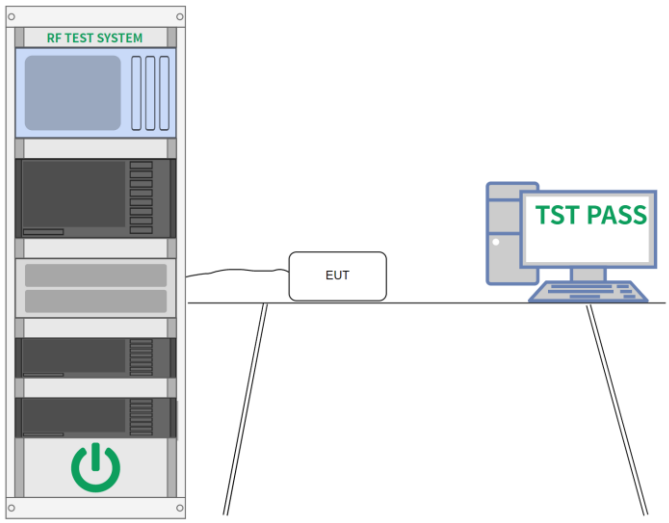
6.2 Duty Cycle

Test Requirement:	All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum-power transmission duration, T, are required for each tested mode of operation.
Test Limit:	No limits, only for report use.
Test Method:	ANSI C63.10-2013 section 12.2 (b)
Procedure:	i) Set the center frequency of the instrument to the center frequency of the transmission. ii) Set RBW >= EBW if possible; otherwise, set RBW to the largest available value. iii) Set VBW >= RBW. iv) Set detector = peak. v) The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in item a1) of 12.2, and the number of sweep points across duration T exceeds 100.

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	33.8 °C	Humidity:	68.6 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

6.3 Emission bandwidth and occupied bandwidth

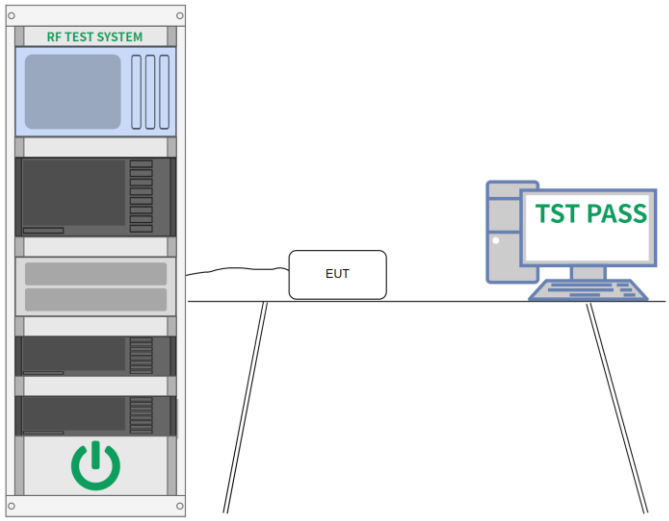
Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.
Test Method:	ANSI C63.10-2013, section 6.9 & 12.4 KDB 789033 D02, Clause C.2
Procedure:	Emission bandwidth: a) Set RBW = approximately 1% of the emission bandwidth. b) Set the VBW > RBW. c) Detector = peak. d) Trace mode = max hold. e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Step a) through step c) might require iteration to adjust within the specified range. e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used. f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the

	total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies. h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s). 6 dB emission bandwidth: a) Set RBW = 100 kHz. b) Set the video bandwidth (VBW) ≥ 3 >= RBW. c) Detector = Peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	33.8 °C	Humidity:	68.6 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

6.4 Maximum conducted output power

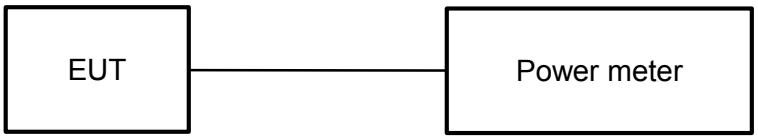
Test Requirement:	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)
Test Limit:	For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm). For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. 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. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. 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. 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. For the band 5.725-5.850 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems

	employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test Method:	ANSI C63.10-2013, section 12.3
Procedure:	Refer to ANSI C63.10-2013 section 12.3.3

6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	33.8 °C	Humidity:	68.6 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Please Refer to Appendix for Details.

6.5 Power spectral density

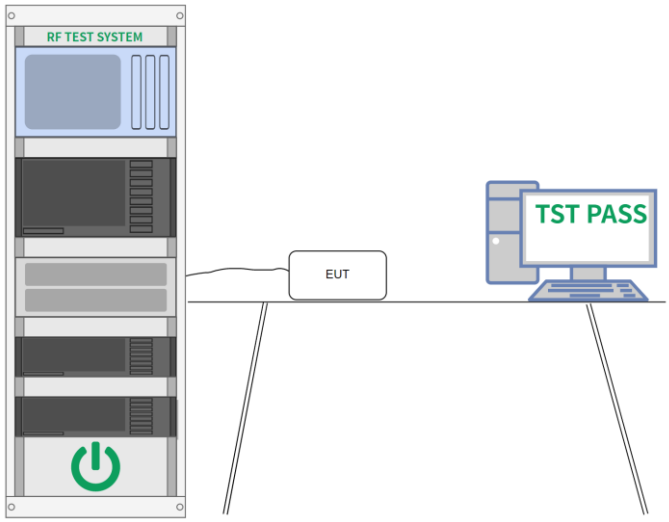
Test Requirement:	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)
Test Limit:	For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in 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 an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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 fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. 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 5.725-5.850 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Test Method:	ANSI C63.10-2013, section 12.5

Procedure:	Refer to ANSI C63.10-2013, section 12.5

6.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	33.8 °C	Humidity:	68.6 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Please Refer to Appendix for Details.

6.6 Band edge emissions (Radiated)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(1)
47 CFR Part 15.407(b)(4)
47 CFR Part 15.407(b)(10)</td></tr>
<tr><td>Test Limit:</td><td>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 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.
<table>
<tr><th>MHz</th><th>MHz</th><th>MHz</th><th>GHz</th></tr>
<tr><td>0.090-0.110</td><td>16.42-16.423</td><td>399.9-410</td><td>4.5-5.15</td></tr>
<tr><td>[1] 0.495-0.505</td><td>16.69475-16.69525</td><td>608-614</td><td>5.35-5.46</td></tr>
<tr><td>2.1735-2.1905</td><td>16.80425-16.80475</td><td>960-1240</td><td>7.25-7.75</td></tr>
<tr><td>4.125-4.128</td><td>25.5-25.67</td><td>1300-1427</td><td>8.025-8.5</td></tr>
<tr><td>4.17725-4.17775</td><td>37.5-38.25</td><td>1435-1626.5</td><td>9.0-9.2</td></tr>
<tr><td>4.20725-4.20775</td><td>73-74.6</td><td>1645.5-1646.5</td><td>9.3-9.5</td></tr>
<tr><td>6.215-6.218</td><td>74.8-75.2</td><td>1660-1710</td><td>10.6-12.7</td></tr>
<tr><td>6.26775-6.26825</td><td>108-121.94</td><td>1718.8-1722.2</td><td>13.25-13.4</td></tr>
<tr><td>6.31175-6.31225</td><td>123-138</td><td>2200-2300</td><td>14.47-14.5</td></tr>
<tr><td>8.291-8.294</td><td>149.9-150.05</td><td>2310-2390</td><td>15.35-16.2</td></tr>
<tr><td>8.362-8.366</td><td>156.52475-156.52525</td><td>2483.5-2500</td><td>17.7-21.4</td></tr>
<tr><td>8.37625-8.38675</td><td>156.7-156.9</td><td>2690-2900</td><td>22.01-23.12</td></tr>
<tr><td>8.41425-8.41475</td><td>162.0125-167.17</td><td>3260-3267</td><td>23.6-24.0</td></tr>
<tr><td>12.29-12.293</td><td>167.72-173.2</td><td>3332-3339</td><td>31.2-31.8</td></tr>
<tr><td>12.51975-12.52025</td><td>240-285</td><td>3345.8-3358</td><td>36.43-36.5</td></tr>
<tr><td>12.57675-12.57725</td><td>322-335.4</td><td>3600-4400</td><td>([2])</td></tr>
<tr><td>13.36-13.41</td><td></td><td></td><td></td></tr>
</table>
[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:</td></tr>
</table>

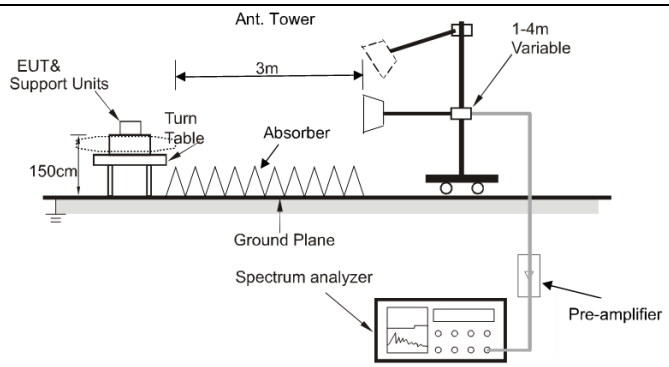
	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. 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.
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7
Procedure:	Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength

	limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

6.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25 °C	Humidity:	59 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

U-NII 1:

Mode1 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.62	-8.46	42.16	74.00	-31.84	peak
2		4500.000	40.88	-8.46	32.42	54.00	-21.58	AVG
3	*	5150.000	65.32	-5.61	59.71	74.00	-14.29	peak
4		5150.000	44.66	-5.61	39.05	54.00	-14.95	AVG

Mode1 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.41	-8.46	41.95	74.00	-32.05	peak
2		4500.000	40.75	-8.46	32.29	54.00	-21.71	AVG
3		5150.000	60.46	-5.61	54.85	74.00	-19.15	peak
4	*	5150.000	42.73	-5.61	37.12	54.00	-16.88	AVG

Mode1 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	49.27	-5.17	44.10	74.00	-29.90	peak
2		5350.000	39.81	-5.17	34.64	54.00	-19.36	AVG
3		5460.000	49.25	-5.16	44.09	74.00	-29.91	peak
4	*	5460.000	40.13	-5.16	34.97	54.00	-19.03	AVG

Mode1 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	47.34	-5.17	42.17	74.00	-31.83	peak
2		5350.000	39.33	-5.17	34.16	54.00	-19.84	AVG
3		5460.000	50.29	-5.16	45.13	74.00	-28.87	peak
4	*	5460.000	39.95	-5.16	34.79	54.00	-19.21	AVG

Mode2 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.55	-8.46	42.09	74.00	-31.91	peak
2		4500.000	40.77	-8.46	32.31	54.00	-21.69	AVG
3		5150.000	54.36	-5.61	48.75	74.00	-25.25	peak
4	*	5150.000	42.93	-5.61	37.32	54.00	-16.68	AVG

Mode / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.91	-8.46	42.45	74.00	-31.55	peak
2		4500.000	40.88	-8.46	32.42	54.00	-21.58	AVG
3		5150.000	51.50	-5.61	45.89	74.00	-28.11	peak
4	*	5150.000	41.95	-5.61	36.34	54.00	-17.66	AVG

Mode2 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	49.11	-5.17	43.94	74.00	-30.06	peak
2		5350.000	39.97	-5.17	34.80	54.00	-19.20	AVG
3		5460.000	49.68	-5.16	44.52	74.00	-29.48	peak
4	*	5460.000	40.28	-5.16	35.12	54.00	-18.88	AVG

Mode2 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	49.20	-5.17	44.03	74.00	-29.97	peak
2		5350.000	39.98	-5.17	34.81	54.00	-19.19	AVG
3		5460.000	49.89	-5.16	44.73	74.00	-29.27	peak
4	*	5460.000	40.07	-5.16	34.91	54.00	-19.09	AVG

Mode3 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.60	1.99	52.59	74.00	-21.41	peak
2		4500.000	40.84	1.99	42.83	54.00	-11.17	AVG
3		5150.000	53.87	5.36	59.23	74.00	-14.77	peak
4	*	5150.000	43.08	5.36	48.44	54.00	-5.56	AVG

Mode3 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.21	1.99	52.20	74.00	-21.80	peak
2		4500.000	40.69	1.99	42.68	54.00	-11.32	AVG
3		5150.000	55.93	5.36	61.29	74.00	-12.71	peak
4	*	5150.000	41.67	5.36	47.03	54.00	-6.97	AVG

Mode3 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	50.39	-5.17	45.22	74.00	-28.78	peak
2		5350.000	39.86	-5.17	34.69	54.00	-19.31	AVG
3		5460.000	49.31	-5.16	44.15	74.00	-29.85	peak
4	*	5460.000	40.36	-5.16	35.20	54.00	-18.80	AVG

Mode3 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	49.08	-5.17	43.91	74.00	-30.09	peak
2		5350.000	39.74	-5.17	34.57	54.00	-19.43	AVG
3		5460.000	49.80	-5.16	44.64	74.00	-29.36	peak
4	*	5460.000	40.30	-5.16	35.14	54.00	-18.86	AVG

Mode4 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.92	-8.46	42.46	74.00	-31.54	peak
2		4500.000	41.02	-8.46	32.56	54.00	-21.44	AVG
3		5150.000	71.91	-5.61	66.30	74.00	-7.70	peak
4	*	5150.000	55.74	-5.61	50.13	54.00	-3.87	AVG

Mode4 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	49.59	-8.46	41.13	74.00	-32.87	peak
2		4500.000	40.82	-8.46	32.36	54.00	-21.64	AVG
3		5150.000	67.35	-5.61	61.74	74.00	-12.26	peak
4	*	5150.000	52.73	-5.61	47.12	54.00	-6.88	AVG

Mode4 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	51.25	-5.17	46.08	74.00	-27.92	peak
2	*	5350.000	41.28	-5.17	36.11	54.00	-17.89	AVG
3		5460.000	50.41	-5.16	45.25	74.00	-28.75	peak
4		5460.000	40.29	-5.16	35.13	54.00	-18.87	AVG

Mode4 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	51.05	-5.17	45.88	74.00	-28.12	peak
2	*	5350.000	40.41	-5.17	35.24	54.00	-18.76	AVG
3		5460.000	49.78	-5.16	44.62	74.00	-29.38	peak
4		5460.000	40.18	-5.16	35.02	54.00	-18.98	AVG

Mode5 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	50.47	-8.46	42.01	74.00	-31.99	peak
2		4500.000	40.63	-8.46	32.17	54.00	-21.83	AVG
3		5150.000	66.19	-5.61	60.58	74.00	-13.42	peak
4	*	5150.000	55.76	-5.61	50.15	54.00	-3.85	AVG

Mode5 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4500.000	51.56	-8.46	43.10	74.00	-30.90	peak
2		4500.000	40.99	-8.46	32.53	54.00	-21.47	AVG
3		5150.000	64.52	-5.61	58.91	74.00	-15.09	peak
4	*	5150.000	52.40	-5.61	46.79	54.00	-7.21	AVG

Mode5 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	51.41	-5.17	46.24	74.00	-27.76	peak
2	*	5350.000	41.63	-5.17	36.46	54.00	-17.54	AVG
3		5460.000	50.73	-5.16	45.57	74.00	-28.43	peak
4		5460.000	41.10	-5.16	35.94	54.00	-18.06	AVG

Mode5 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5350.000	50.43	-5.17	45.26	74.00	-28.74	peak
2		5350.000	40.41	-5.17	35.24	54.00	-18.76	AVG
3		5460.000	50.49	-5.16	45.33	74.00	-28.67	peak
4	*	5460.000	40.59	-5.16	35.43	54.00	-18.57	AVG

U-NII 3:

Mode1 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	50.19	-4.01	46.18	68.20	-22.02	peak
2		5700.000	50.51	-4.07	46.44	105.20	-58.76	peak
3		5720.000	51.48	-4.23	47.25	110.80	-63.55	peak
4		5725.000	57.77	-4.27	53.50	122.20	-68.70	peak

Mode1 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	50.25	-4.01	46.24	68.20	-21.96	peak
2		5700.000	49.72	-4.07	45.65	105.20	-59.55	peak
3		5720.000	52.43	-4.23	48.20	110.80	-62.60	peak
4		5725.000	57.25	-4.27	52.98	122.20	-69.22	peak

Mode1 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	60.61	-4.31	56.30	122.20	-65.90	peak
2		5855.000	54.99	-4.23	50.76	110.80	-60.04	peak
3		5875.000	52.08	-3.93	48.15	105.20	-57.05	peak
4	*	5925.000	49.03	-3.60	45.43	68.20	-22.77	peak

Mode1 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	49.82	-4.31	45.51	122.20	-76.69	peak
2		5855.000	50.17	-4.23	45.94	110.80	-64.86	peak
3		5875.000	48.57	-3.93	44.64	105.20	-60.56	peak
4	*	5925.000	50.42	-3.60	46.82	68.20	-21.38	peak

Mode2 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	49.40	-4.01	45.39	68.20	-22.81	peak
2		5700.000	49.62	-4.07	45.55	105.20	-59.65	peak
3		5720.000	55.70	-4.23	51.47	110.80	-59.33	peak
4		5725.000	61.57	-4.27	57.30	122.20	-64.90	peak

Mode / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	49.27	-4.01	45.26	68.20	-22.94	peak
2		5700.000	49.41	-4.07	45.34	105.20	-59.86	peak
3		5720.000	53.53	-4.23	49.30	110.80	-61.50	peak
4		5725.000	60.10	-4.27	55.83	122.20	-66.37	peak

Mode2 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	55.58	-4.31	51.27	122.20	-70.93	peak
2		5855.000	53.08	-4.23	48.85	110.80	-61.95	peak
3		5875.000	50.17	-3.93	46.24	105.20	-58.96	peak
4	*	5925.000	51.30	-3.60	47.70	68.20	-20.50	peak

Mode2 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	50.18	-4.31	45.87	122.20	-76.33	peak
2		5855.000	48.14	-4.23	43.91	110.80	-66.89	peak
3		5875.000	49.48	-3.93	45.55	105.20	-59.65	peak
4	*	5925.000	49.25	-3.60	45.65	68.20	-22.55	peak

Mode3 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	49.76	-4.01	45.75	68.20	-22.45	peak
2		5700.000	50.09	-4.07	46.02	105.20	-59.18	peak
3		5720.000	55.43	-4.23	51.20	110.80	-59.60	peak
4		5725.000	62.51	-4.27	58.24	122.20	-63.96	peak

Mode3 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	49.49	-4.01	45.48	68.20	-22.72	peak
2		5700.000	49.13	-4.07	45.06	105.20	-60.14	peak
3		5720.000	55.15	-4.23	50.92	110.80	-59.88	peak
4		5725.000	59.62	-4.27	55.35	122.20	-66.85	peak

Mode3 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	57.53	-4.31	53.22	122.20	-68.98	peak
2		5855.000	51.92	-4.23	47.69	110.80	-63.11	peak
3		5875.000	51.08	-3.93	47.15	105.20	-58.05	peak
4	*	5925.000	48.94	-3.60	45.34	68.20	-22.86	peak

Mode3 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	49.84	-4.31	45.53	122.20	-76.67	peak
2		5855.000	48.94	-4.23	44.71	110.80	-66.09	peak
3		5875.000	50.63	-3.93	46.70	105.20	-58.50	peak
4	*	5925.000	49.15	-3.60	45.55	68.20	-22.65	peak

Mode4 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	50.94	-4.01	46.93	68.20	-21.27	peak
2		5700.000	57.24	-4.07	53.17	105.20	-52.03	peak
3		5720.000	71.57	-4.23	67.34	110.80	-43.46	peak
4		5725.000	74.63	-4.27	70.36	122.20	-51.84	peak

Mode4 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	49.95	-4.01	45.94	68.20	-22.26	peak
2		5700.000	54.87	-4.07	50.80	105.20	-54.40	peak
3		5720.000	67.48	-4.23	63.25	110.80	-47.55	peak
4		5725.000	70.28	-4.27	66.01	122.20	-56.19	peak

Mode4 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	60.12	-4.31	55.81	122.20	-66.39	peak
2		5855.000	56.83	-4.23	52.60	110.80	-58.20	peak
3		5875.000	50.96	-3.93	47.03	105.20	-58.17	peak
4	*	5925.000	49.37	-3.60	45.77	68.20	-22.43	peak

Mode4 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	51.13	-4.31	46.82	122.20	-75.38	peak
2		5855.000	49.87	-4.23	45.64	110.80	-65.16	peak
3		5875.000	48.88	-3.93	44.95	105.20	-60.25	peak
4	*	5925.000	48.91	-3.60	45.31	68.20	-22.89	peak

Mode5 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	53.72	-4.01	49.71	68.20	-18.49	peak
2		5700.000	58.50	-4.07	54.43	105.20	-50.77	peak
3		5720.000	65.02	-4.23	60.79	110.80	-50.01	peak
4		5725.000	63.87	-4.27	59.60	122.20	-62.60	peak

Mode5 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	5650.000	52.24	-4.01	48.23	68.20	-19.97	peak
2		5700.000	59.67	-4.07	55.60	105.20	-49.60	peak
3		5720.000	61.59	-4.23	57.36	110.80	-53.44	peak
4		5725.000	61.27	-4.27	57.00	122.20	-65.20	peak

Mode5 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	66.93	-4.31	62.62	122.20	-59.58	peak
2		5855.000	65.57	-4.23	61.34	110.80	-49.46	peak
3		5875.000	58.48	-3.93	54.55	105.20	-50.65	peak
4	*	5925.000	54.53	-3.60	50.93	68.20	-17.27	peak

Mode5 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		5850.000	60.49	-4.31	56.18	122.20	-66.02	peak
2		5855.000	58.18	-4.23	53.95	110.80	-56.85	peak
3		5875.000	54.77	-3.93	50.84	105.20	-54.36	peak
4	*	5925.000	51.55	-3.60	47.95	68.20	-20.25	peak

6.7 Undesirable emission limits (below 1GHz)

<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15.407(b)(9)</td></tr>
<tr><td>Test Limit:</td><td>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

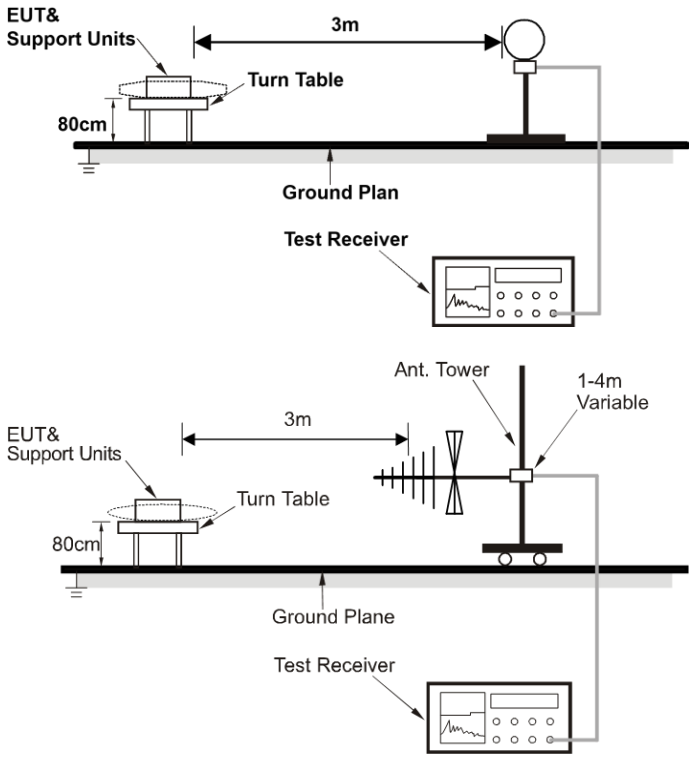
Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:
<table>
<tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr>
<tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr>
<tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr>
<tr><td>1.705-30.0</td><td>30</td><td>30</td></tr>
<tr><td>30-88</td><td>100 **</td><td>3</td></tr>
<tr><td>88-216</td><td>150 **</td><td>3</td></tr>
<tr><td>216-960</td><td>200 **</td><td>3</td></tr>
<tr><td>Above 960</td><td>500</td><td>3</td></tr>
</table>
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
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.</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10-2013, section 12.7.4, 12.7.5</td></tr>
<tr><td>Procedure:</td><td>Below 1GHz:
a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
i. Repeat above procedures until all frequencies measured was complete.</td></tr>
</table>

	Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

6.7.1 E.U.T. Operation:

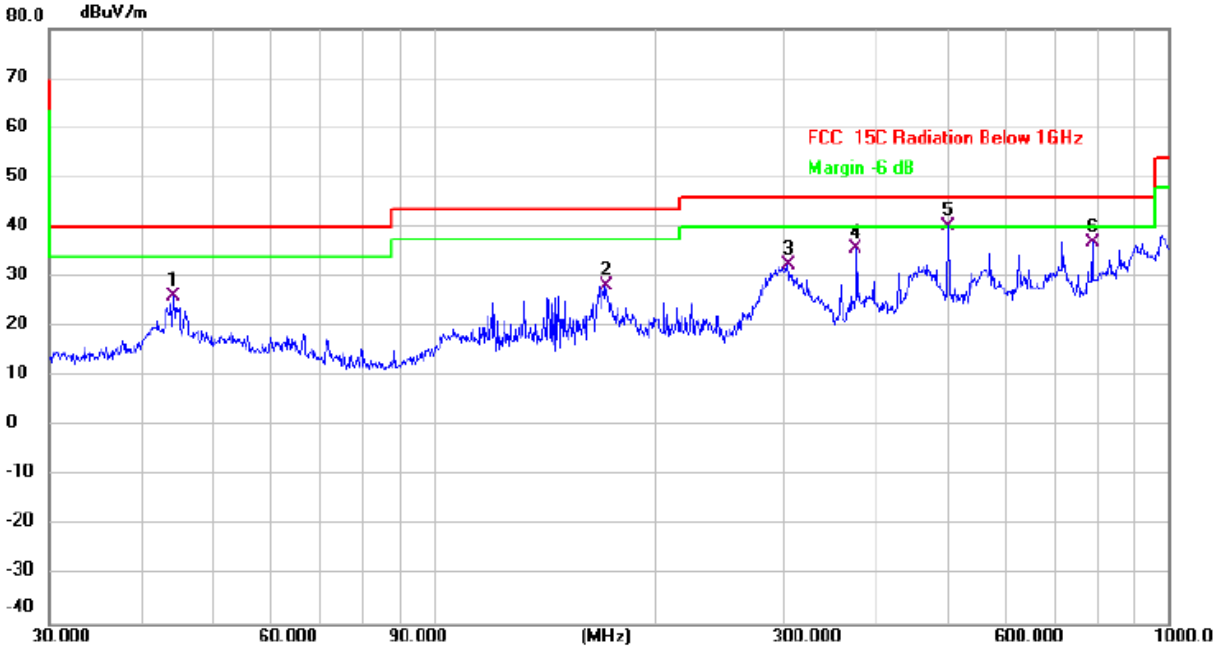
Operating Environment:					
Temperature:	25 °C	Humidity:	59 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1 U-NII-1) is recorded in the report				

6.7.2 Test Setup Diagram:



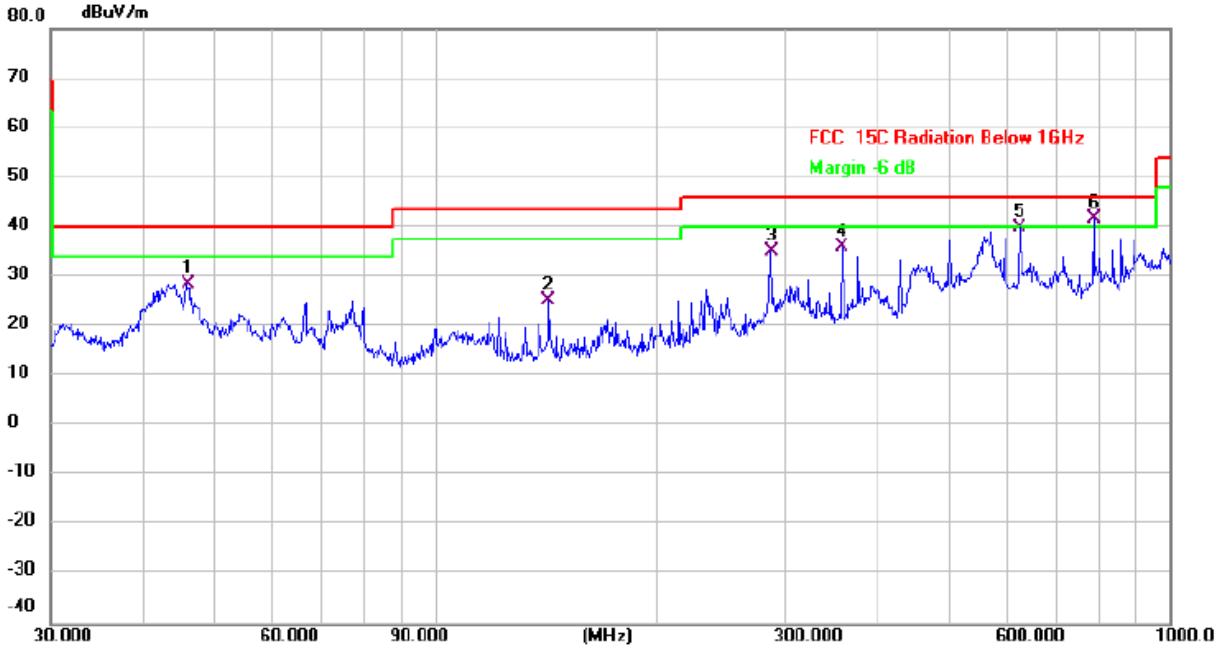
6.7.3 Test Data:

Mode1 / Polarization: Horizontal / CH: H / U-NII-1



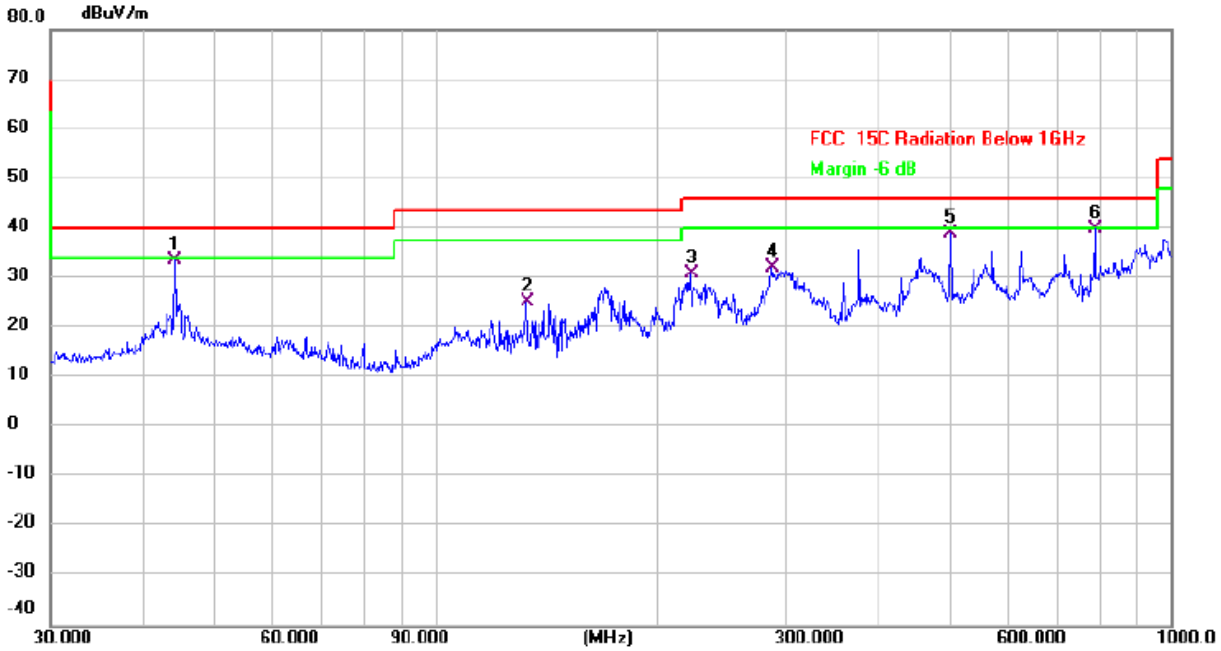
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.2752	33.64	-7.50	26.14	40.00	-13.86	QP	
2		171.3926	39.43	-11.13	28.30	43.50	-15.20	QP	
3		302.4812	37.66	-5.27	32.39	46.00	-13.61	QP	
4		375.9385	40.39	-4.63	35.76	46.00	-10.24	QP	
5	*	501.1790	43.81	-3.42	40.39	46.00	-5.61	QP	
6		787.8513	36.08	0.97	37.05	46.00	-8.95	QP	

Mode1 / Polarization: Vertical / CH: H / U-NII-1



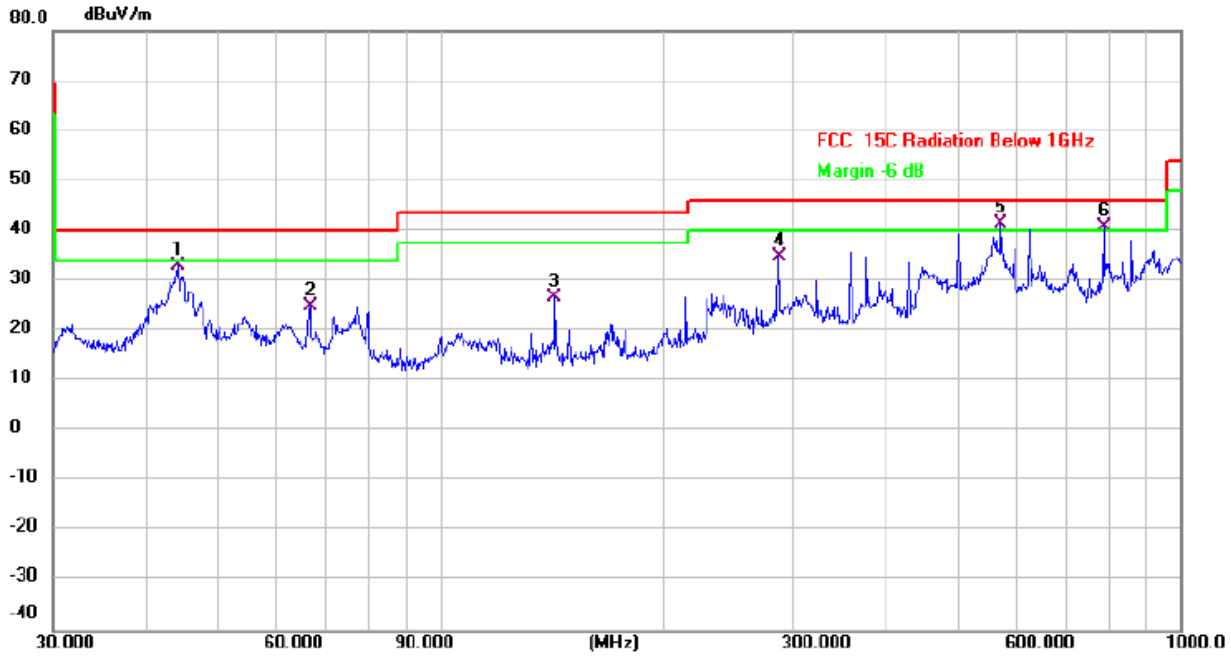
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		46.0164	35.92	-7.23	28.69	40.00	-11.31	QP	
2		142.8243	35.07	-9.74	25.33	43.50	-18.17	QP	
3		285.9778	41.03	-6.01	35.02	46.00	-10.98	QP	
4		357.9287	41.57	-5.61	35.96	46.00	-10.04	QP	
5	!	625.0780	40.05	-0.04	40.01	46.00	-5.99	QP	
6	*	787.8513	40.65	0.97	41.62	46.00	-4.38	QP	

Mode1 / Polarization: Horizontal / CH: H / U-NII-3



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.2752	41.01	-7.50	33.51	40.00	-6.49	QP	
2		133.1511	36.79	-11.48	25.31	43.50	-18.19	QP	
3		222.1698	39.31	-8.47	30.84	46.00	-15.16	QP	
4		285.9778	38.07	-6.01	32.06	46.00	-13.94	QP	
5		501.1790	42.48	-3.42	39.06	46.00	-6.94	QP	
6	*	787.8513	38.87	0.97	39.84	46.00	-6.16	QP	

Mode1 / Polarization: Vertical / CH: H / U-NII-3



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		44.2752	40.57	-7.50	33.07	40.00	-6.93	QP	
2		66.7325	36.06	-11.03	25.03	40.00	-14.97	QP	
3		142.8243	36.38	-9.74	26.64	43.50	-16.86	QP	
4		285.9778	40.98	-6.01	34.97	46.00	-11.03	QP	
5	*	572.6144	43.73	-2.28	41.45	46.00	-4.55	QP	
6	!	787.8513	39.74	0.97	40.71	46.00	-5.29	QP	

6.8 Undesirable emission limits (above 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. For transmitters operating 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.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1] 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100 **</td><td>3</td></tr><tr><td>88-216</td><td>150 **</td><td>3</td></tr><tr><td>216-960</td><td>200 **</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. 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.
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7
Procedure:	Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength

	limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

6.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25 °C	Humidity:	59 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report				

6.8.2 Test Data:

U-NII 1:

Mode1 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	47.57	4.04	51.61	68.20	-16.59	peak
2		10360.000	37.21	4.04	41.25	54.00	-12.75	AVG
3		15540.000	5.15	47.56	52.71	68.20	-15.49	peak
4	*	15540.000	-5.17	47.56	42.39	54.00	-11.61	AVG

Mode1 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	46.94	4.04	50.98	68.20	-17.22	peak
2		10360.000	36.35	4.04	40.39	54.00	-13.61	AVG
3		15540.000	5.89	47.56	53.45	68.20	-14.75	peak
4	*	15540.000	-4.30	47.56	43.26	54.00	-10.74	AVG

Mode1 / Polarization: Horizontal / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10440.000	47.66	3.92	51.58	68.20	-16.62	peak
2		10440.000	37.41	3.92	41.33	54.00	-12.67	AVG
3		15660.000	6.68	46.87	53.55	68.20	-14.65	peak
4	*	15660.000	-3.58	46.87	43.29	54.00	-10.71	AVG

Mode1 / Polarization: Vertical / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10440.000	47.55	3.92	51.47	68.20	-16.73	peak
2		10440.000	37.40	3.92	41.32	54.00	-12.68	AVG
3		15560.000	6.05	47.35	53.40	68.20	-14.80	peak
4	*	15560.000	-4.10	47.35	43.25	54.00	-10.75	AVG

Mode1 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10480.000	46.93	4.06	50.99	68.20	-17.21	peak
2		10480.000	36.27	4.06	40.33	54.00	-13.67	AVG
3		15720.000	5.23	46.86	52.09	68.20	-16.11	peak
4	*	15720.000	-5.38	46.86	41.48	54.00	-12.52	AVG

Mode1 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10480.000	46.94	4.06	51.00	68.20	-17.20	peak
2		10480.000	36.30	4.06	40.36	54.00	-13.64	AVG
3		15720.000	6.64	46.86	53.50	68.20	-14.70	peak
4	*	15720.000	-3.71	46.86	43.15	54.00	-10.85	AVG

U-NII 3:

Mode1 / Polarization: Horizontal / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11490.000	6.21	48.62	54.83	74.00	-19.17	peak
2		11490.000	-4.27	48.62	44.35	54.00	-9.65	AVG
3		17235.000	6.99	48.39	55.38	68.20	-12.82	peak
4	*	17235.000	-3.23	48.39	45.16	54.00	-8.84	AVG

Mode1 / Polarization: Vertical / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11490.000	5.09	48.62	53.71	74.00	-20.29	peak
2		11490.000	-5.15	48.62	43.47	54.00	-10.53	AVG
3		17235.000	6.00	48.39	54.39	68.20	-13.81	peak
4	*	17235.000	-4.21	48.39	44.18	54.00	-9.82	AVG

Mode1 / Polarization: Horizontal / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11568.000	5.09	48.34	53.43	74.00	-20.57	peak
2		11568.000	-5.08	48.34	43.26	54.00	-10.74	AVG
3		17355.000	5.88	48.58	54.46	68.20	-13.74	peak
4	*	17355.000	-4.40	48.58	44.18	54.00	-9.82	AVG

Mode1 / Polarization: Vertical / CH: M

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11568.000	5.03	48.34	53.37	74.00	-20.63	peak
2	*	11568.000	-5.12	48.34	43.22	54.00	-10.78	AVG
3		17355.000	5.04	48.58	53.62	68.20	-14.58	peak
4		17355.000	-5.42	48.58	43.16	54.00	-10.84	AVG

Mode1 / Polarization: Horizontal / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11650.000	4.23	47.96	52.19	74.00	-21.81	peak
2		11650.000	-5.90	47.96	42.06	54.00	-11.94	AVG
3		17475.000	5.45	48.95	54.40	68.20	-13.80	peak
4	*	17475.000	-4.80	48.95	44.15	54.00	-9.85	AVG

Mode1 / Polarization: Vertical / CH: H

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		11650.000	4.06	47.96	52.02	74.00	-21.98	peak
2		11650.000	-6.61	47.96	41.35	54.00	-12.65	AVG
3		17475.000	5.49	48.95	54.44	68.20	-13.76	peak
4	*	17475.000	-4.54	48.95	44.41	54.00	-9.59	AVG

Photographs of the test setup

Refer to Appendix - Test Setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

Appendix

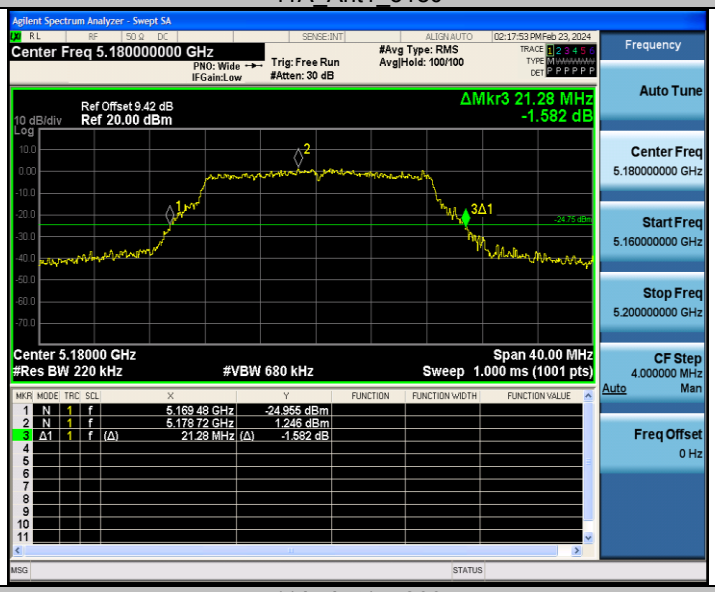
Appendix A1: Emission Bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	21.280	5169.480	5190.760
		5200	21.000	5189.640	5210.640
		5240	21.360	5229.560	5250.920
		5745	20.960	5734.720	5755.680
		5785	21.120	5774.600	5795.720
		5825	21.160	5814.640	5835.800
11N20SISO	Ant1	5180	21.560	5169.360	5190.920
		5200	21.240	5189.520	5210.760
		5240	21.240	5229.640	5250.880
		5745	21.520	5734.440	5755.960
		5785	21.480	5774.560	5796.040
		5825	21.160	5814.680	5835.840
11AC20SISO	Ant1	5180	21.320	5169.560	5190.880
		5200	21.200	5189.640	5210.840
		5240	21.640	5229.520	5251.160
		5745	21.320	5734.520	5755.840
		5785	21.400	5774.640	5796.040
		5825	21.200	5814.640	5835.840
11AC40SISO	Ant1	5190	64.720	5161.520	5226.240
		5230	73.360	5194.800	5268.160
		5755	62.320	5729.880	5792.200
		5795	59.200	5769.800	5829.000
11AC80SISO	Ant1	5210	141.440	5135.280	5276.720
		5775	82.560	5734.040	5816.600

Test Graphs

11A_Ant1_5180



11A_Ant1_5200

11A_Ant1_5240

11A_Ant1_5745

11A_Ant1_5785

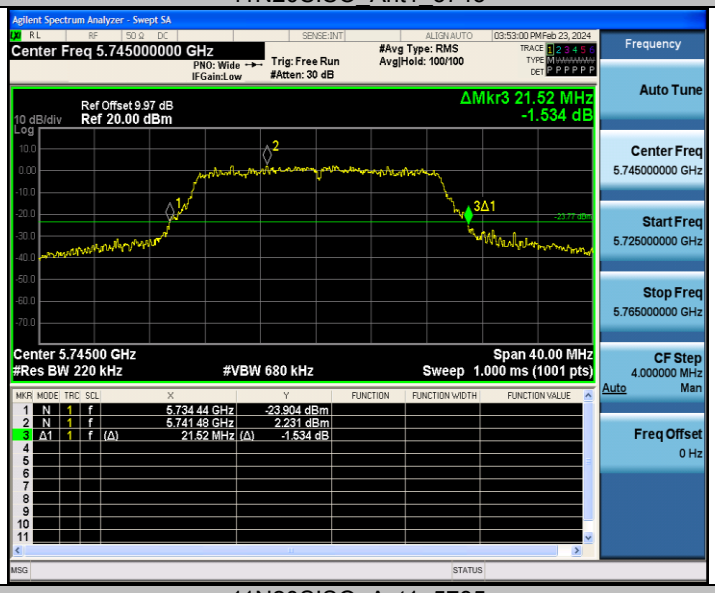
11A_Ant1_5825

11N20SISO_Ant1_5180

11N20SISO_Ant1_5200

11N20SISO_Ant1_5240

11N20SISO_Ant1_5745



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11AC20SISO_Ant1_5180

11AC20SISO_Ant1_5200

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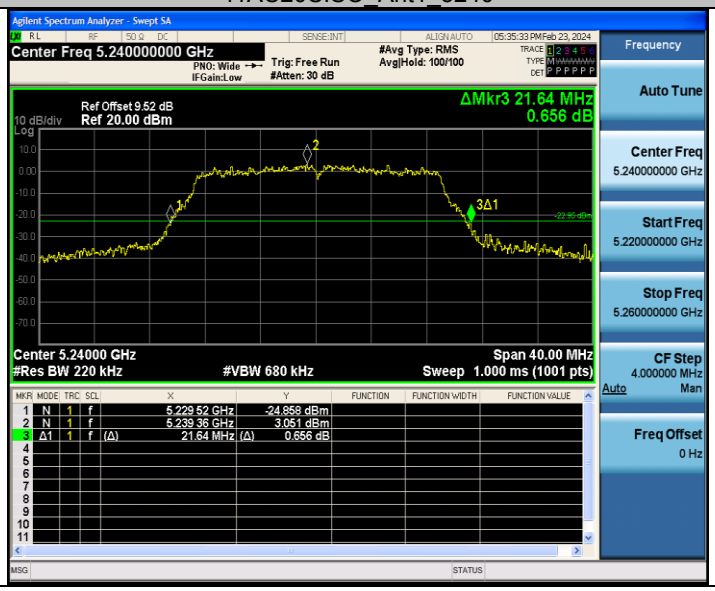

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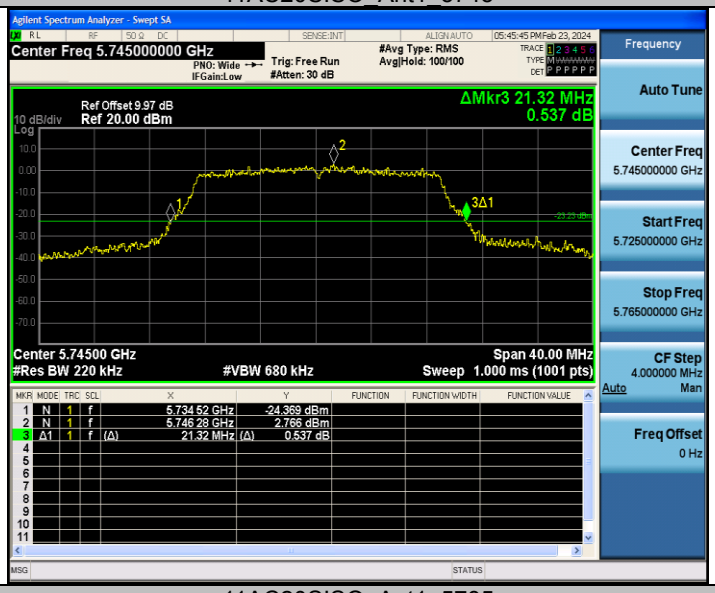

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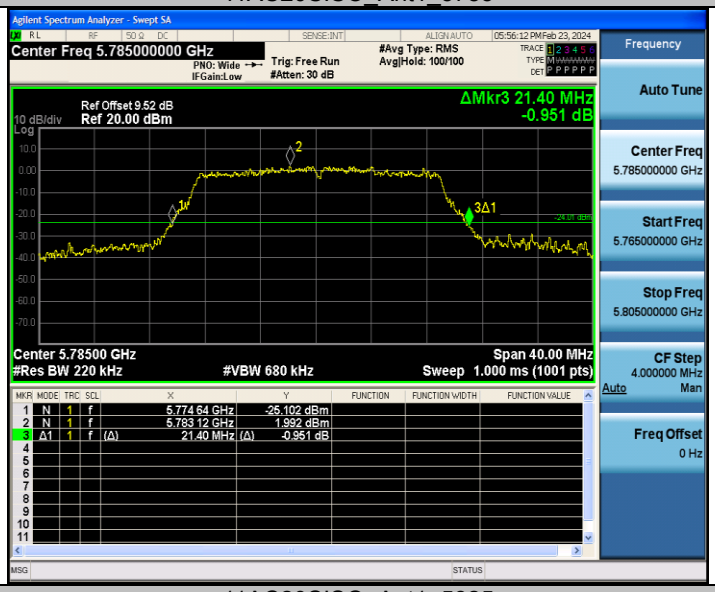

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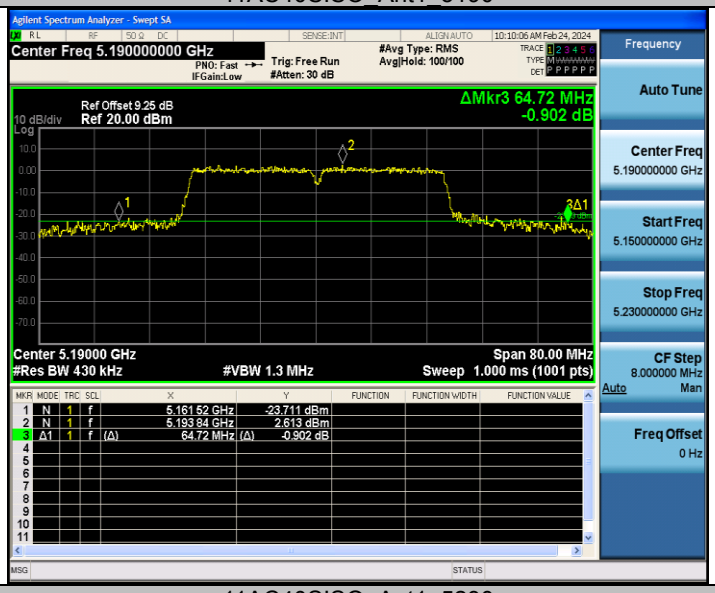
11AC40SISO_Ant1_5190



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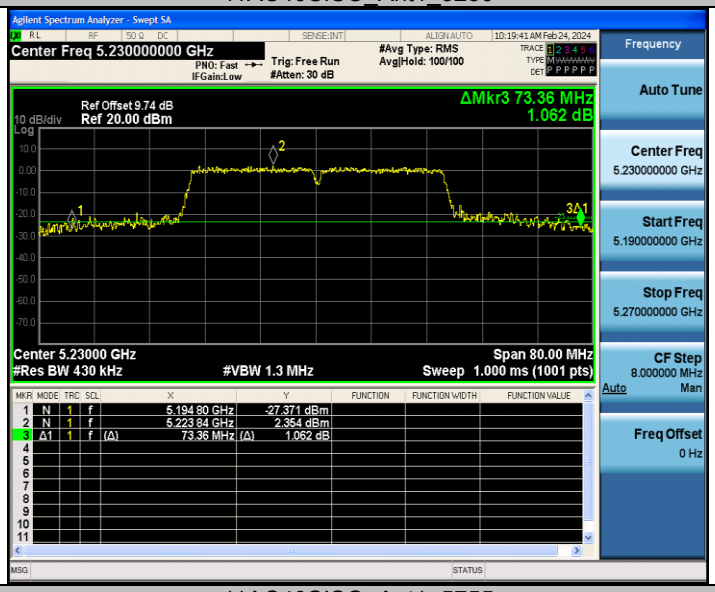

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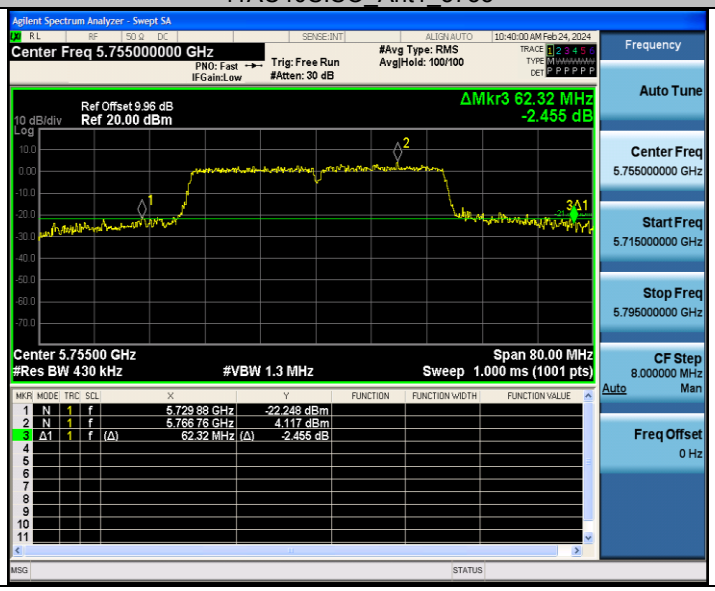

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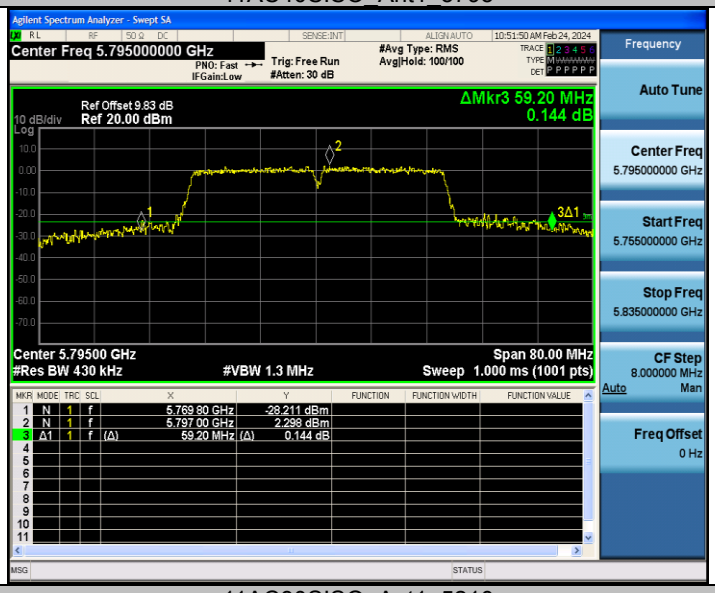
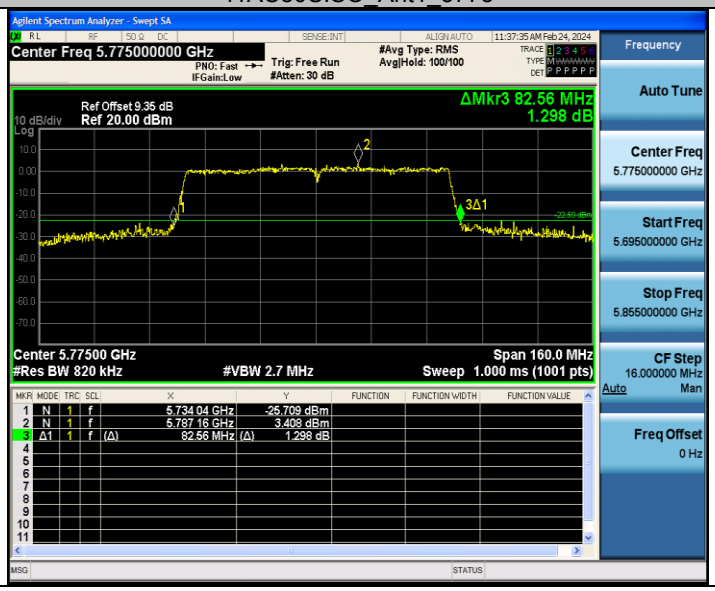


11AC80SISO_Ant1_5210

11AC80SISO_Ant1_5775



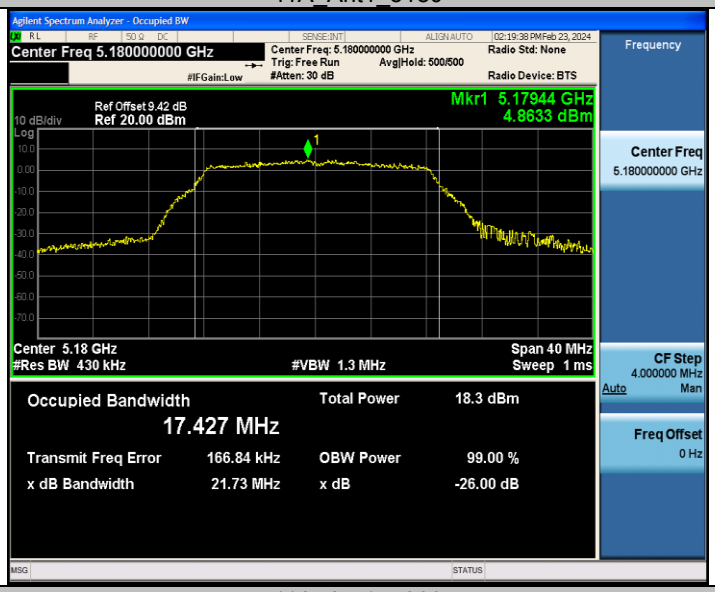
Appendix A2: Occupied channel bandwidth

Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	17.427	5171.4533	5188.8803
		5200	17.304	5191.5531	5208.8571
		5240	17.418	5231.5173	5248.9353
		5745	17.444	5736.4952	5753.9392
		5785	17.325	5776.5698	5793.8948
		5825	17.313	5816.5596	5833.8726
11N20SISO	Ant1	5180	18.416	5170.9858	5189.4018
		5200	18.366	5191.0353	5209.4013
		5240	18.363	5231.0693	5249.4323
		5745	18.352	5736.0353	5754.3873
		5785	18.309	5776.0727	5794.3817
		5825	18.326	5816.0736	5834.3996
11AC20SISO	Ant1	5180	18.427	5170.9633	5189.3903
		5200	18.338	5191.0368	5209.3748
		5240	18.418	5231.0320	5249.4500
		5745	18.407	5736.0349	5754.4419
		5785	18.340	5776.0646	5794.4046
		5825	18.252	5816.0839	5834.3359
11AC40SISO	Ant1	5190	37.347	5171.5552	5208.9022
		5230	37.678	5211.5237	5249.2017
		5755	37.324	5736.7519	5774.0759
		5795	37.092	5776.8367	5813.9287
11AC80SISO	Ant1	5210	76.822	5171.7713	5248.5933
		5775	76.274	5737.3321	5813.6061

Test Graphs

11A_Ant1_5180



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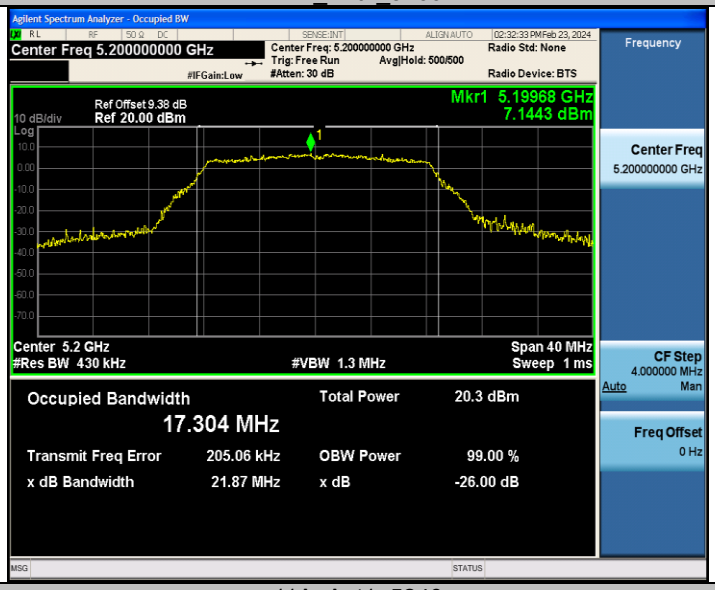

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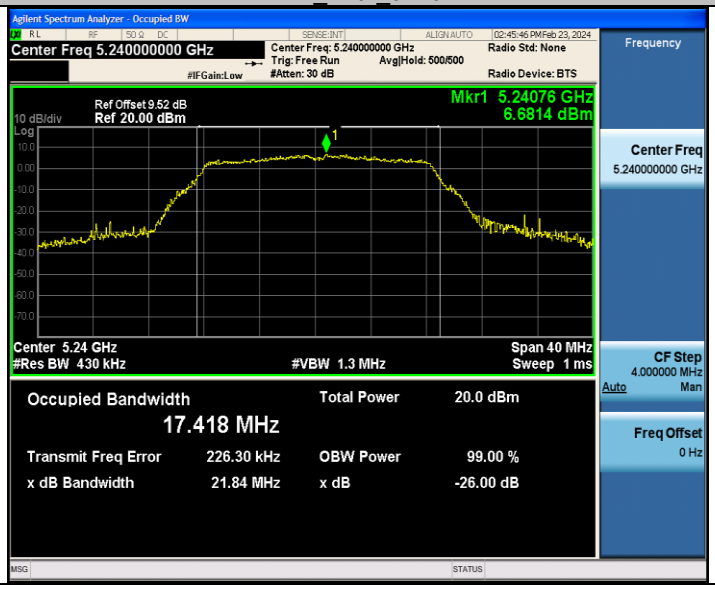
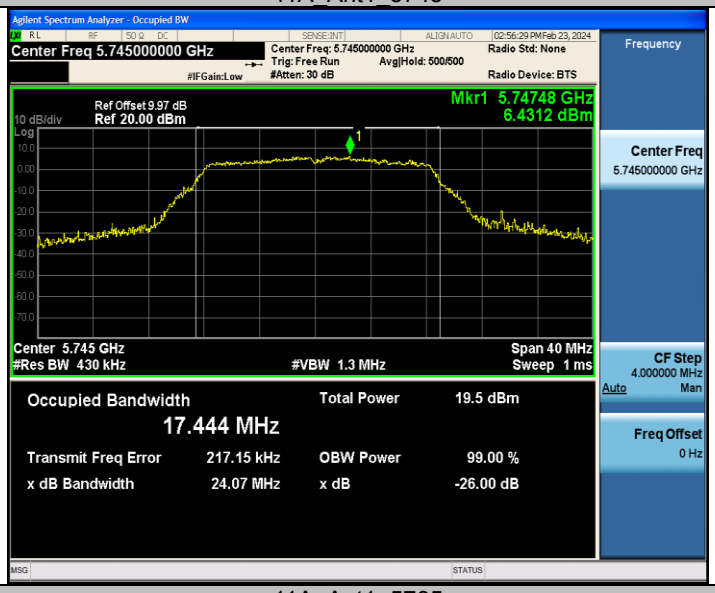
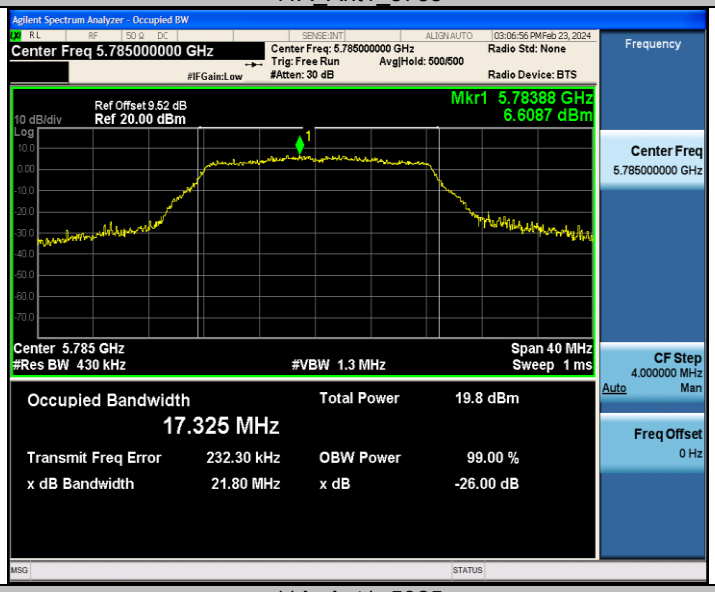


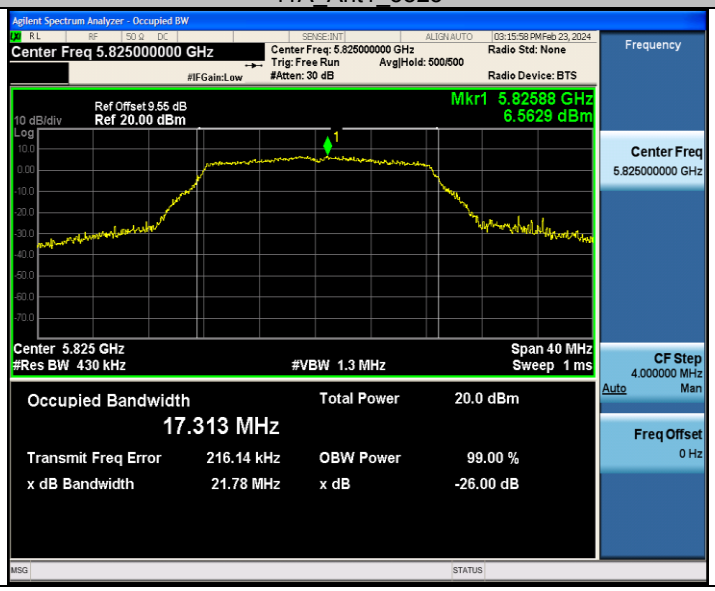
11A_Ant1_5745



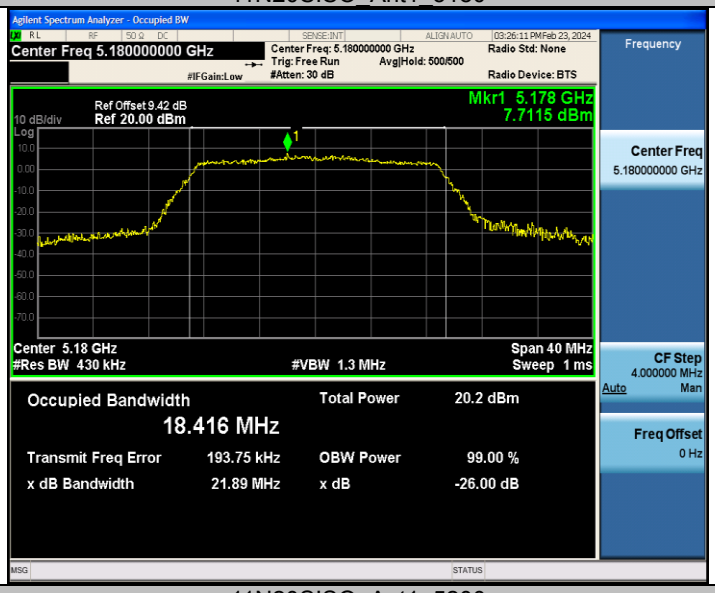
11A_Ant1_5785



11A_Ant1_5825



11N20SISO_Ant1_5180



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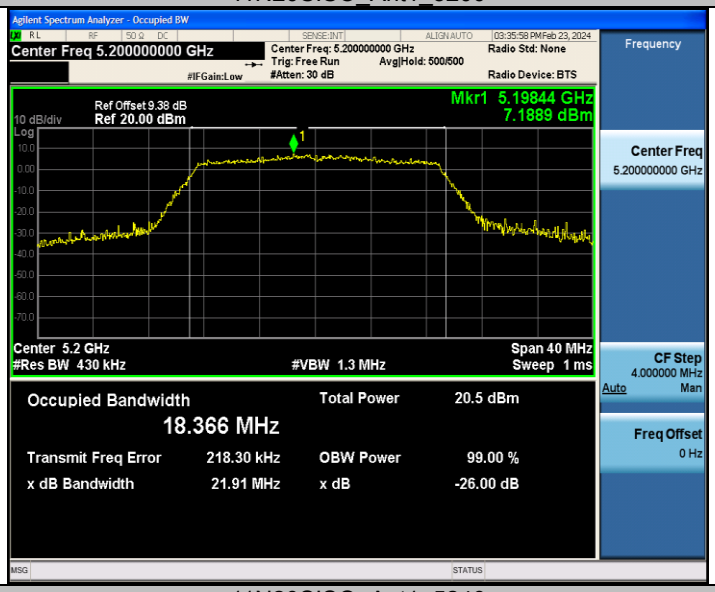
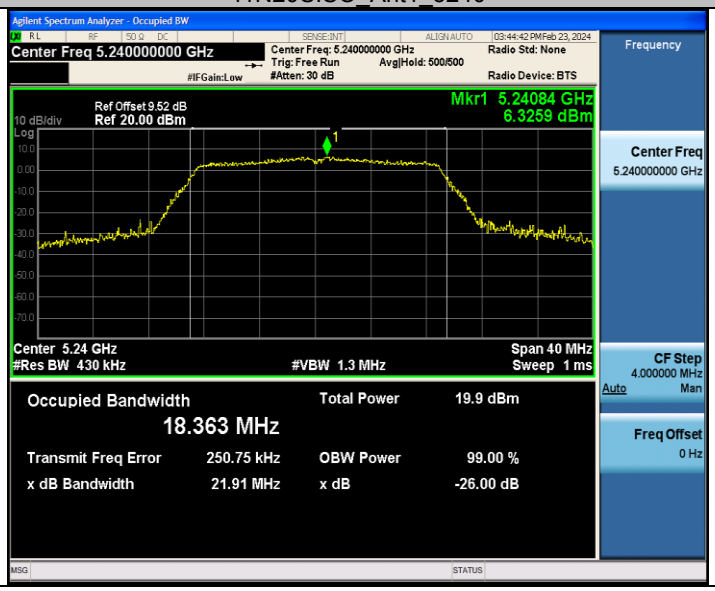


11N20SISO_Ant1_5240



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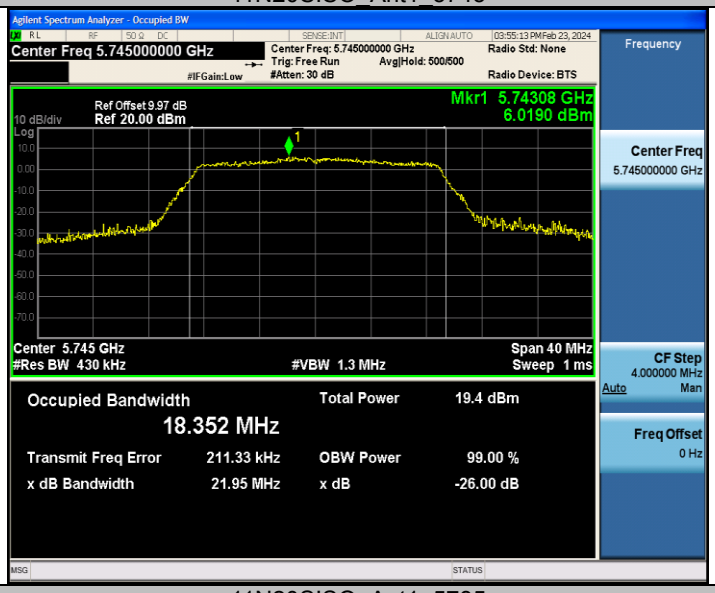
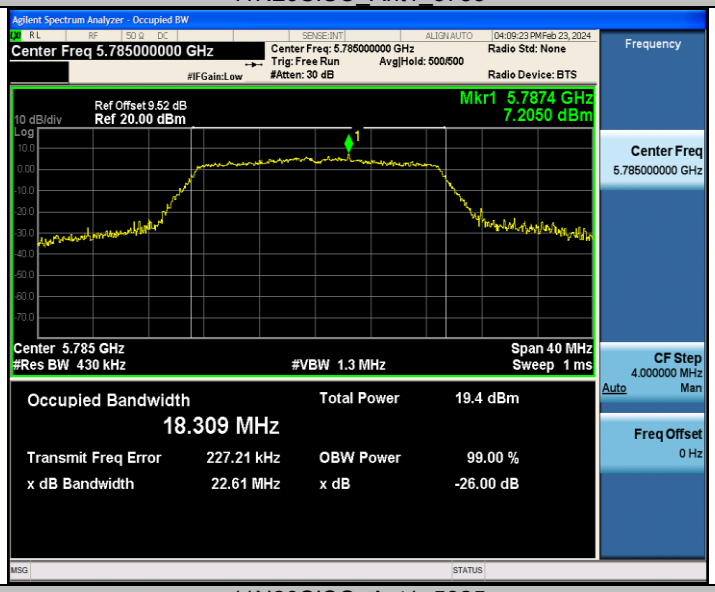


11N20SISO_Ant1_5785



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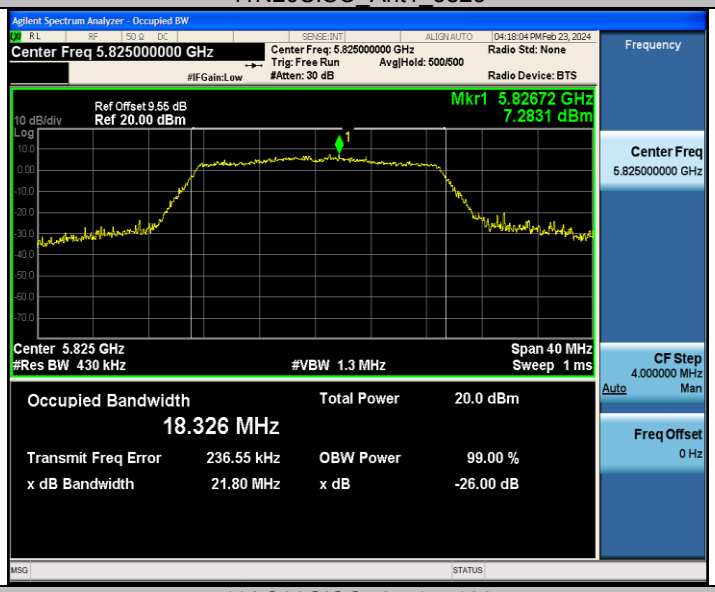
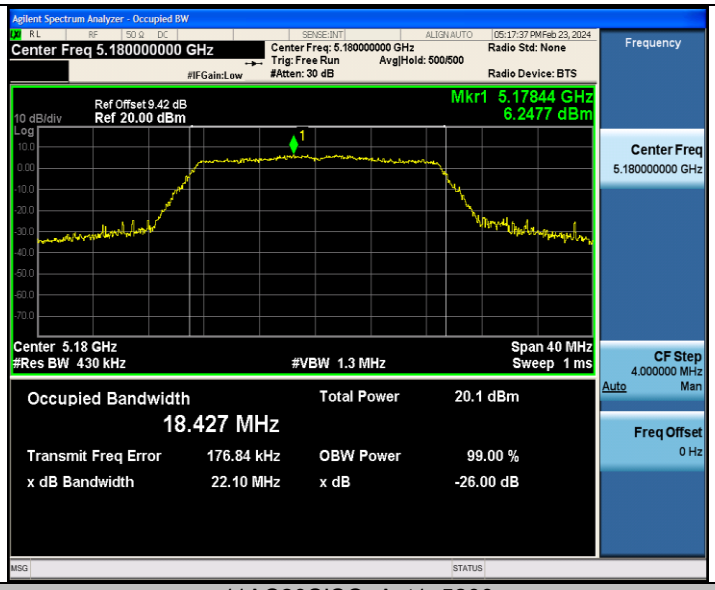


11AC20SISO_Ant1_5180



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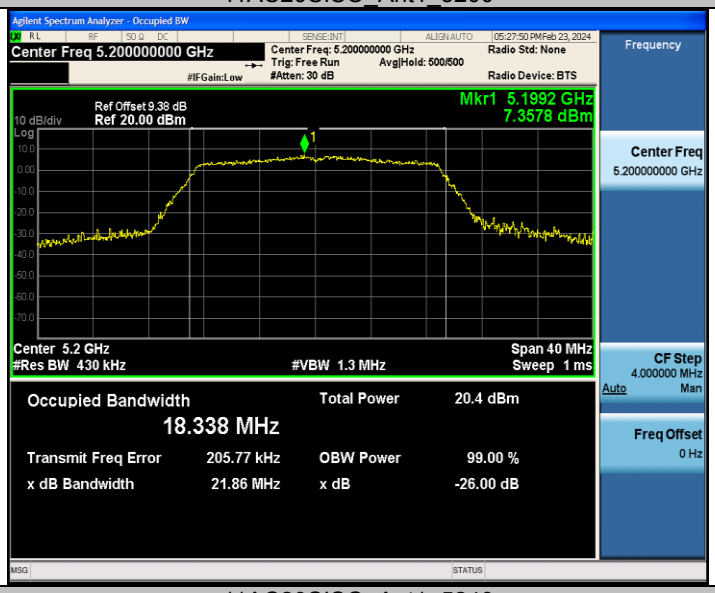
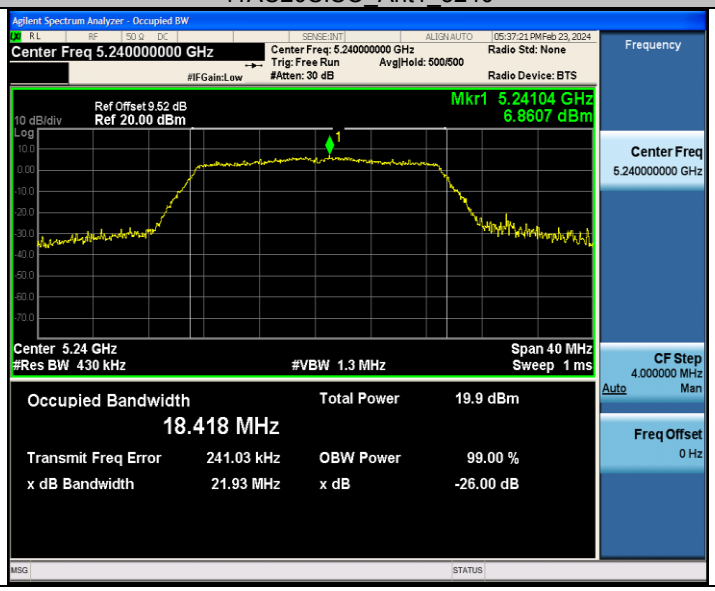


11AC20SISO_Ant1_5240



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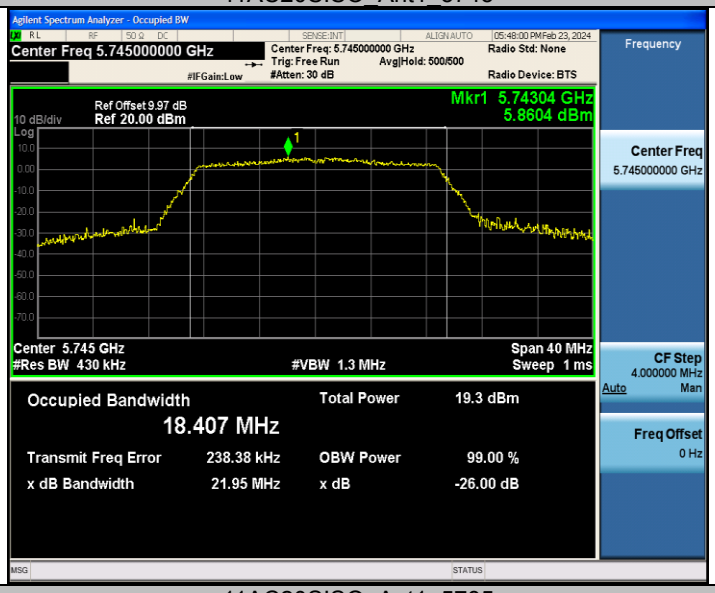

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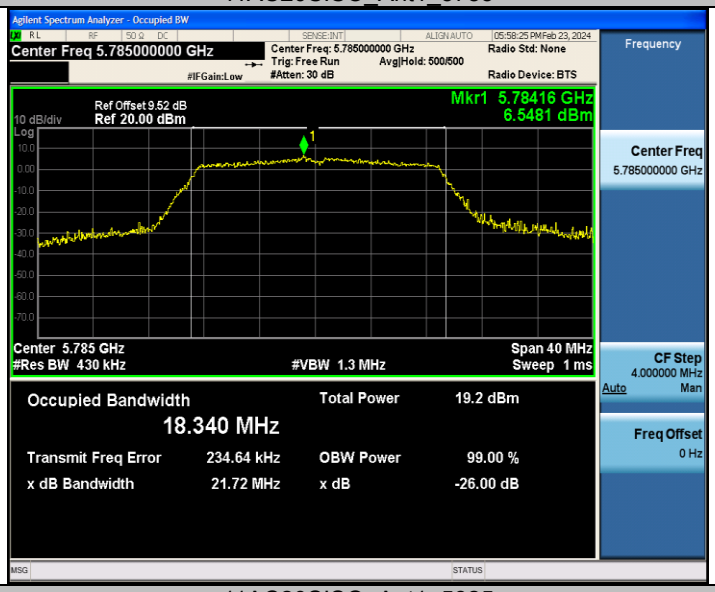
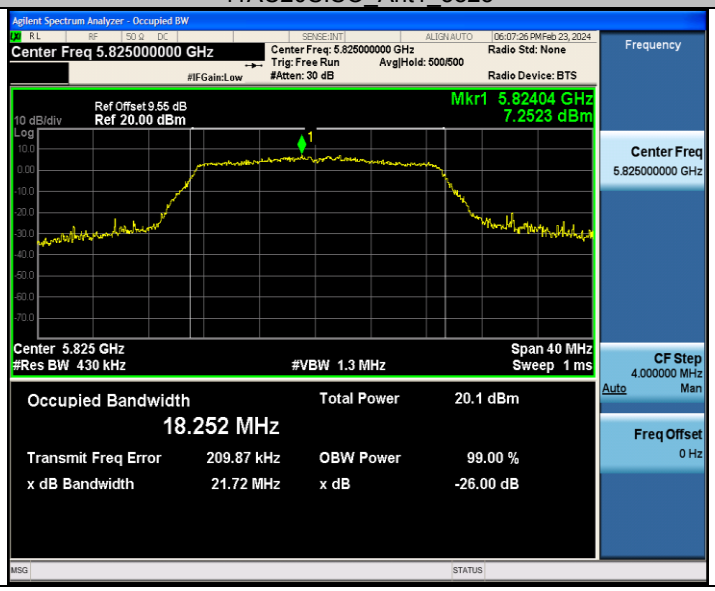
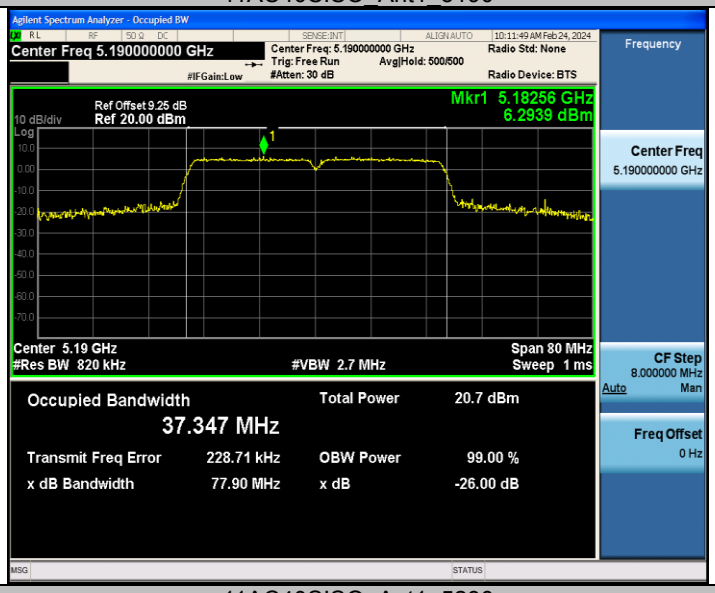


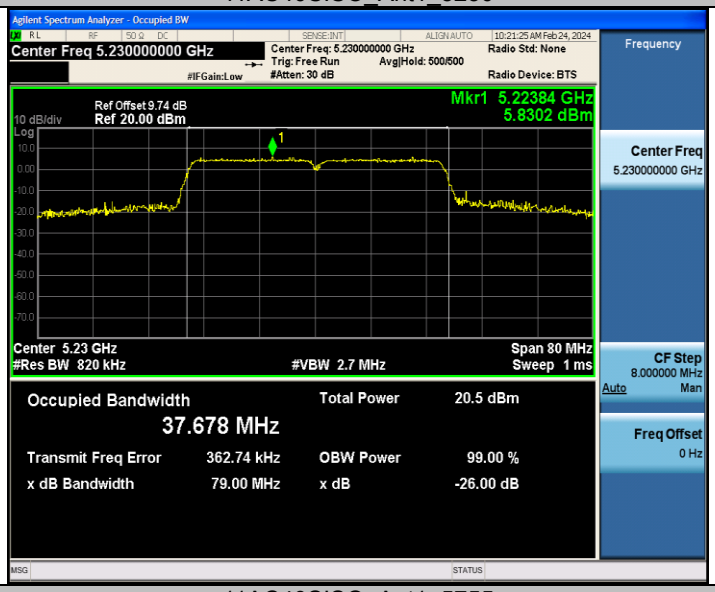
11AC20SISO_Ant1_5825



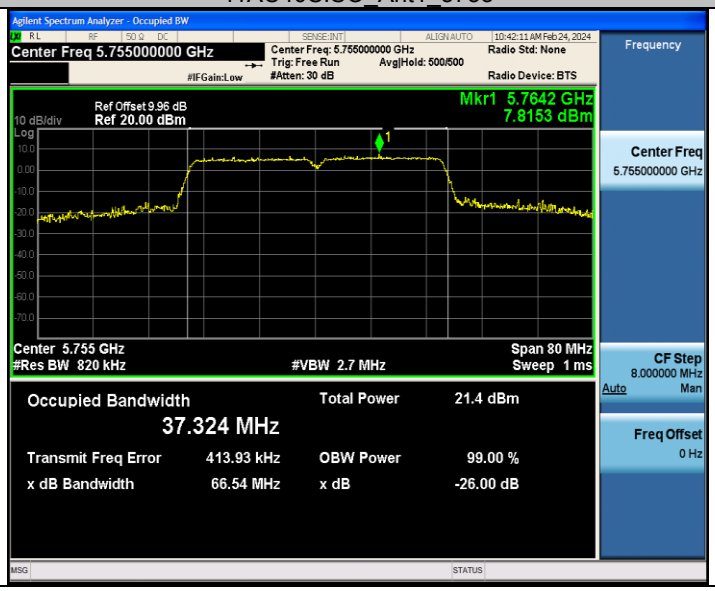
11AC40SISO_Ant1_5190



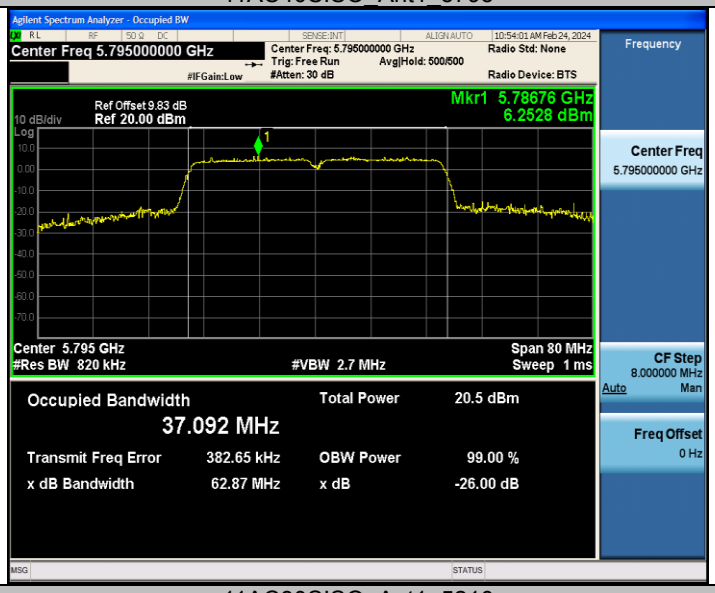
11AC40SISO_Ant1_5230



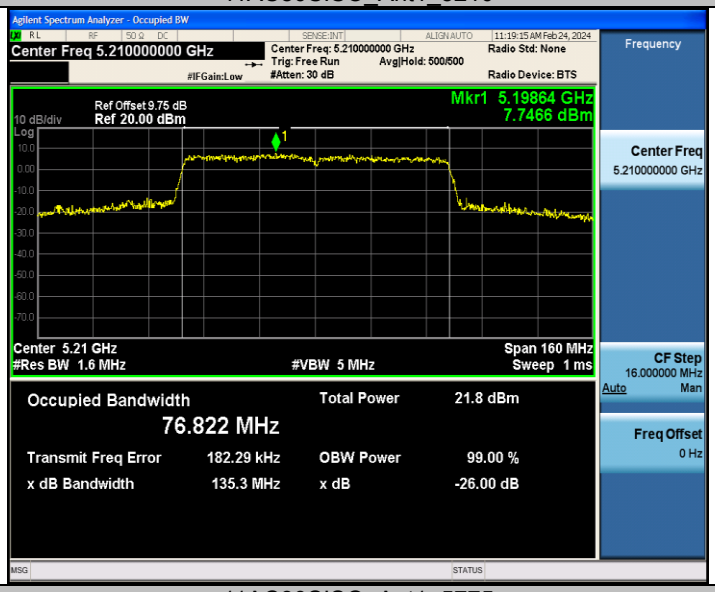
11AC40SISO_Ant1_5755



11AC40SISO_Ant1_5795



11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5775

Appendix A3: Min emission bandwidth

Test Result B4

TestMode	Antenna	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.320	5737.040	5753.360	0.5	PASS
		5785	16.320	5777.040	5793.360	0.5	PASS
		5825	16.320	5817.040	5833.360	0.5	PASS
11N20SISO	Ant1	5745	17.160	5736.800	5753.960	0.5	PASS
		5785	17.520	5776.440	5793.960	0.5	PASS
		5825	17.520	5816.440	5833.960	0.5	PASS
11AC20SISO	Ant1	5745	17.520	5736.440	5753.960	0.5	PASS
		5785	17.520	5776.440	5793.960	0.5	PASS
		5825	16.680	5816.680	5833.360	0.5	PASS
11AC40SISO	Ant1	5755	36.320	5737.080	5773.400	0.5	PASS
		5795	36.240	5777.080	5813.320	0.5	PASS
11AC80SISO	Ant1	5775	75.680	5737.720	5813.400	0.5	PASS