Test Report

Report No.	:	MTi241217015-08E4
Date of issue	:	2025-02-18
Applicant	:	Hamilton Rotax, LLC
Product	:	Car Multimedia Player
Model(s)	:	16GX-HMC-L1, 07LC-HMC-L1, 09LC-HMC-L1, 12LC-HMC-L1, 16LC-HMC-L1, 16LX-HMC-L1, 16GSH-HMC-L1, 16RX-HMC-L1, 16RXH-HMC-L1, 16RCH-HMC-L1, 19ISH-HMC-L1, 09GX-HMC-L1, 13LX-HMC-L1, 20ES-HMC-L1, 184R-HMC-L1, 16TCM-HMC-L1, 16CMR-HMC-L1, 16TD-HMC-L1, 16HLD-HMC-L1, 16SQ-HMC-L1, 16SN-HMC-L1, 14PRD-HMC-L1, 18PRD-HMC-L1, 16AVA-HMC-L1, 16GR86-HMC-L1, 15CR-HMC-L1, 15CRH-HMC-L1
FCC ID	:	2BNAW-CP-MODULE

Shenzhen Microtest Co., Ltd.

Table of contents

1 General Description 4

1.1 Description of the EUT 4

1.2 Description of test modes 4

1.3 Environmental Conditions 7

1.4 Description of support units 7

1.5 Measurement uncertainty 7

2 Summary of Test Result 8

3 Test Facilities and accreditations 9

3.1 Test laboratory 9

4 List of test equipment 10

5 Evaluation Results (Evaluation) 11

5.1 Antenna requirement 11

6 Radio Spectrum Matter Test Results (RF) 11

6.1 Duty Cycle 11

6.2 Emission bandwidth and occupied bandwidth 12

6.3 Maximum conducted output power 14

6.4 Power spectral density 16

6.5 Band edge emissions (Conducted) 18

6.6 Band edge emissions (Radiated) 21

6.7 Undesirable emission limits (below 1GHz) 36

6.8 Undesirable emission limits (above 1GHz) 43

Photographs of the test setup 52

Photographs of the EUT 53

Appendix A1: Emission bandwidth (26dB bandwidth) 55

Appendix A2: Occupied channel bandwidth 66

Appendix A3: Min emission bandwidth 77

Appendix B: Duty Cycle 83

Appendix C: Maximum conducted output power 94

Appendix D: Maximum power spectral density 105

Appendix E: Band edge measurements 116

Appendix F: Conducted Spurious Emission 126

Appendix G: Frequency Stability 145

Photographs of the Test Setup 151

Photographs of the EUT 152

TEST REPORT

Report No.: MTi241217015-08E4

Test Result Certification	
Applicant	Hamilton Rotax, LLC
Applicant Address	3434 Edwards Mill Rd Suite 112-132 Raleigh, NC 27612, United States
Manufacturer	Shenzhen Binary Technology Co., Ltd.
Manufacturer Address	Third Floor No.C, Second Floor B209 and B211, HANG TIAN KE GONG YUAN, NO.8 Min Huan road, Fu Kang community, Longhua district, shenzhen city, Guangdong Province, China
Product description	
Product name	Car Multimedia Player
Trademark	Hamilton Motor Company
Model name	16GX-HMC-L1
Series Model(s)	07LC-HMC-L1, 09LC-HMC-L1, 12LC-HMC-L1, 16LC-HMC-L1, 16LX-HMC-L1, 16GSH-HMC-L1, 16RX-HMC-L1, 16RXH-HMC-L1, 16RCH-HMC-L1, 19ISH-HMC-L1, 09GX-HMC-L1, 13LX-HMC-L1, 20ES-HMC-L1, 184R-HMC-L1, 16TCM-HMC-L1, 16CMR-HMC-L1, 16TD-HMC-L1, 16HLD-HMC-L1, 16SQ-HMC-L1, 16SN-HMC-L1, 14PRD-HMC-L1, 18PRD-HMC-L1, 16AVA-HMC-L1, 16GR86-HMC-L1, 15CR-HMC-L1, 15CRH-HMC-L1
Standards	47 CFR Part 15E
Test Method	ANSI C63.10-2013 KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Testing Information	
Date of test	2025-01-17 to 2025-02-11
Test result	Pass

Prepared by:	Maleah Deng	Maleah Deng
Reviewed by:	David Lee	David. Lee
Approved by:	Leon Chen	Leon chen

1 General Description

1.1 Description of the EUT

Product name:	Car Multimedia Player
Model name:	16GX-HMC-L1
Series Model(s):	07LC-HMC-L1, 09LC-HMC-L1, 12LC-HMC-L1, 16LC-HMC-L1, 16LX-HMC-L1, 16GSH-HMC-L1, 16RX-HMC-L1, 16RXH-HMC-L1, 16RCH-HMC-L1, 19ISH-HMC-L1, 09GX-HMC-L1, 13LX-HMC-L1, 20ES-HMC-L1, 184R-HMC-L1, 16TCM-HMC-L1, 16CMR-HMC-L1, 16TD-HMC-L1, 16HLD-HMC-L1, 16SQ-HMC-L1, 16SN-HMC-L1, 14PRD-HMC-L1, 18PRD-HMC-L1, 16AVA-HMC-L1, 16GR86-HMC-L1, 15CR-HMC-L1, 15CRH-HMC-L1
Model difference:	All the models are the same circuit and module, except the model name and Accessories(LVDS Wire with vehicle docking port).
Electrical rating:	Input: DC 12V
Accessories:	Power Wire*1 USB Wire*1 WIFI ANT Wire*1 LVDS Wire*1
Hardware version:	V3
Software version:	V2.16
Test sample(s) number:	MTi241217015-08S1001
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
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:	External antenna
Antenna(s) gain:	2.43dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	802.11a
Mode2	802.11n(HT20)
Mode3	802.11n(HT40)
Mode4	802.11ac(VHT20)

Mode5	802.11ac(VHT40)
Mode6	802.11ac(VHT80)

1.2.1 Operation channel list

U-NII 1

Bandwidth:	**20MHz**	**Bandwidth:**	**40MHz**	**Bandwidth:**	**80MHz**
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	/	/
44	5220	/	/	/	/
48	5240	/	/	/	/

U-NII 3

Bandwidth:	**20MHz**	**Bandwidth:**	**40MHz**	**Bandwidth:**	**80MHz**
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795	/	/
157	5785	/	/	/	/
161	5805	/	/	/	/
165	5825	/	/	/	/

Test Channel List

U-NII 1:

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

U-NII 3:

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:
For power setting, refer to below table.

Test Software:	**Bluetooth RF Test Tool**

For U-NII-1 band:			
802.11a		**802.11n20**	
Channel	Power setting	Channel	Power setting
36	50	36	48
40	50	40	48
48	50	48	48
802.11n40		**802.11ac20**	
Channel	Power setting	Channel	Power setting
38	37	36	48
46	37	40	48
--	--	48	48
802.11ac40		**802.11ac80**	
38	37	42	33
46	37	--	--
--	--	--	--

For U-NII-3 band:			
802.11a		**802.11n20**	
Channel	Power setting	Channel	Power setting
149	48	149	40
157	42	157	40
165	40	165	40
802.11n40		**802.11ac20**	
Channel	Power setting	Channel	Power setting
151	40	149	40
159	40	157	40
--	--	165	40
802.11ac40		**802.11ac80**	
151	40	155	40
159	40	--	--
--	--	--	--

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

ENV	Temperature (°C)	Voltage (VDC)
NTNV	25	12
LTLV	-30	10.8
HTHV	70	13.2

1.4 Description of support units

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

Support equipment list			
Description	Model	Serial No.	Manufacturer
DC power source	RNX-305D	/	SHENZHEN ZHAOXIN ELECTRONIC INSTRUMENT EQUIPMENT CO., LTD.
Display screen	86110-48620-E0	/	Panasonic Corporation
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
Unwanted Emissions, 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)	N/A
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)(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)(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 (Conducted)	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	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
9	Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(9)	Pass
10	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

Note1: Since the EUT is the DC input, therefore AC power line conducted emissions test is not required.

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
Duty Cycle Emission bandwidth and occupied bandwidth Maximum conducted output power Power spectral density Band edge emissions (Conducted)						
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	MXA signal analyzer	Agilent	N9020A	MY54440859	2024-03-21	2025-03-20
5	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2024-03-21	2025-03-20
6	Horn antenna	Schwarzbeck	BBHA 9170	00987	2023-06-17	2025-06-16
7	Pre-amplifier	Space-Dtronics	EWLAN1840G	210405001	2024-03-21	2025-03-20
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

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)

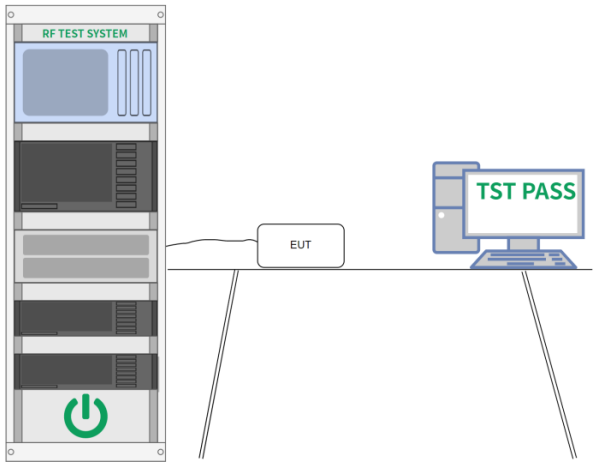
6.1 Duty Cycle

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.

6.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	19.3 °C	Humidity:	45.8 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.1.2 Test Setup Diagram:



6.1.3 Test Data:

Please Refer to Appendix for Details.

6.2 Emission bandwidth and occupied bandwidth

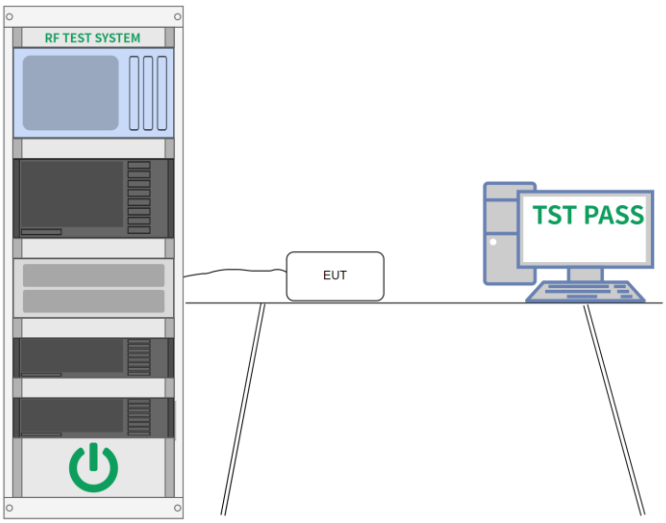
Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices 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.

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	19.3 °C	Humidity:	45.8 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

6.3 Maximum conducted output power

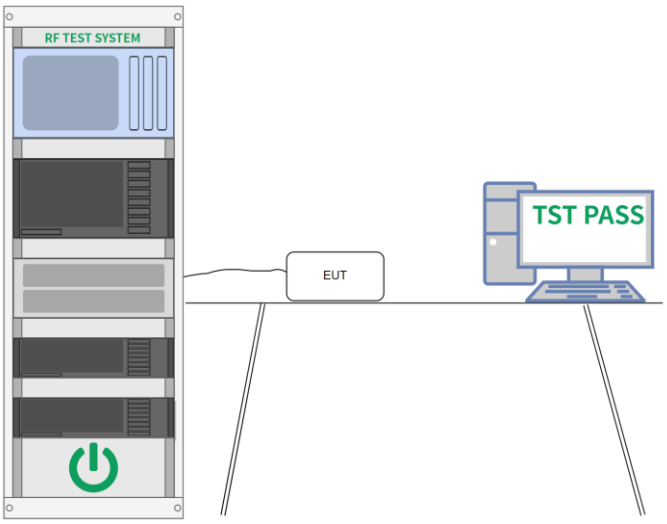
Test Requirement:	47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(3)(i)
Test Limit:	For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 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

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	19.3 °C	Humidity:	45.8 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

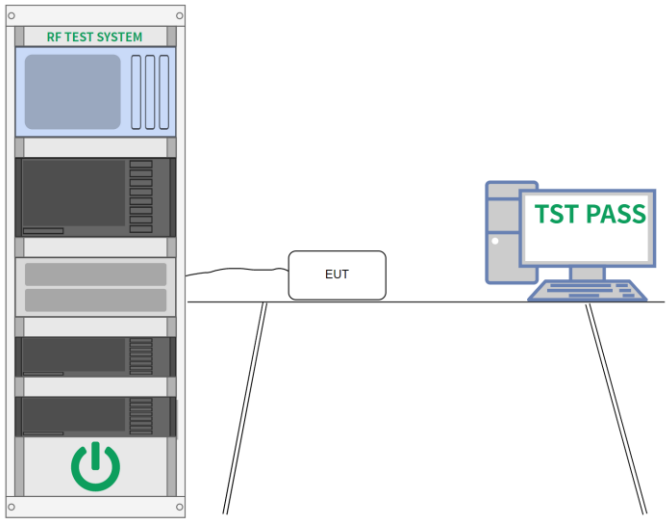
6.4 Power spectral density

Test Requirement:	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 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

6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	19.3 °C	Humidity:	45.8 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.4.2 Test Setup Diagram:



6.4.3 Test Data:

Please Refer to Appendix for Details.

6.5 Band edge emissions (Conducted)

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:

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

** 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:

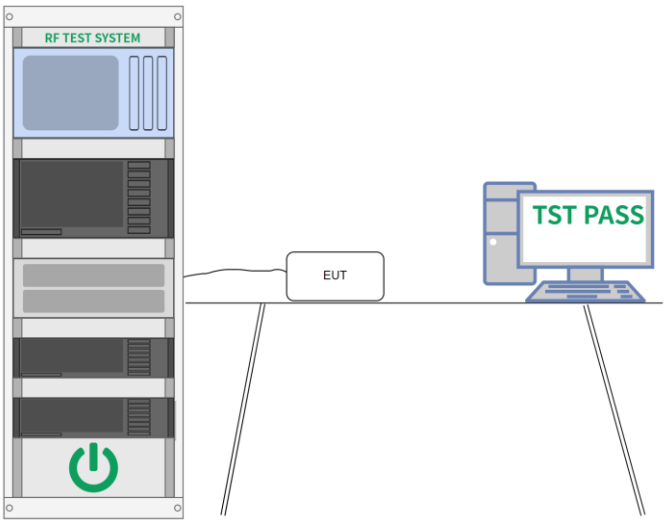
Above 1GHz:
a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, 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.

6.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	19.3 °C	Humidity:	45.8 %	Atmospheric Pressure:	100 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Please Refer to Appendix for Details.

6.6 Band edge emissions (Radiated)

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:

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

** 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:

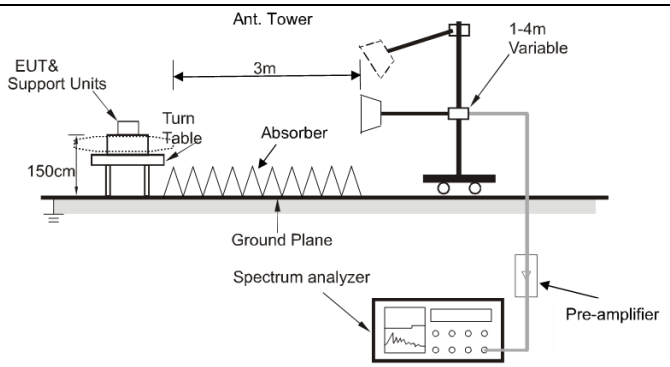
Above 1GHz:
a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, 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:	25.6 °C	Humidity:	55 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode2, Mode5, Mode6) is recorded in the report				

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

U-NII 1:

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	46.67	-1.08	45.59	74.00	-28.41	peak
2		4500.000	37.18	-1.08	36.10	54.00	-17.90	AVG
3	*	5150.000	67.67	1.85	69.52	74.00	-4.48	peak
4		5150.000	47.64	1.85	49.49	54.00	-4.51	AVG

Mode2 / 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	48.20	-1.08	47.12	74.00	-26.88	peak
2		4500.000	37.28	-1.08	36.20	54.00	-17.80	AVG
3	*	5150.000	66.01	1.85	67.86	74.00	-6.14	peak
4		5150.000	45.13	1.85	46.98	54.00	-7.02	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	48.49	2.30	50.79	74.00	-23.21	peak
2		5350.000	37.83	2.30	40.13	54.00	-13.87	AVG
3		5460.000	48.68	2.24	50.92	74.00	-23.08	peak
4	*	5460.000	38.09	2.24	40.33	54.00	-13.67	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	47.83	2.30	50.13	74.00	-23.87	peak
2		5350.000	37.61	2.30	39.91	54.00	-14.09	AVG
3		5460.000	46.57	2.24	48.81	74.00	-25.19	peak
4	*	5460.000	37.99	2.24	40.23	54.00	-13.77	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	46.29	-1.08	45.21	74.00	-28.79	peak
2		4500.000	37.30	-1.08	36.22	54.00	-17.78	AVG
3	*	5150.000	66.13	1.85	67.98	74.00	-6.02	peak
4		5150.000	45.85	1.85	47.70	54.00	-6.30	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	47.78	-1.08	46.70	74.00	-27.30	peak
2		4500.000	37.16	-1.08	36.08	54.00	-17.92	AVG
3		5150.000	63.21	1.85	65.06	74.00	-8.94	peak
4	*	5150.000	43.81	1.85	45.66	54.00	-8.34	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	46.52	2.30	48.82	74.00	-25.18	peak
2		5350.000	37.71	2.30	40.01	54.00	-13.99	AVG
3		5460.000	48.66	2.24	50.90	74.00	-23.10	peak
4	*	5460.000	38.00	2.24	40.24	54.00	-13.76	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	46.74	2.30	49.04	74.00	-24.96	peak
2		5350.000	37.57	2.30	39.87	54.00	-14.13	AVG
3		5460.000	48.27	2.24	50.51	74.00	-23.49	peak
4	*	5460.000	37.79	2.24	40.03	54.00	-13.97	AVG

Mode6 / 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	46.53	-1.08	45.45	74.00	-28.55	peak
2		4500.000	37.16	-1.08	36.08	54.00	-17.92	AVG
3		5150.000	65.66	1.85	67.51	74.00	-6.49	peak
4	*	5150.000	47.98	1.85	49.83	54.00	-4.17	AVG

Mode6 / 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	46.90	-1.08	45.82	74.00	-28.18	peak
2		4500.000	37.05	-1.08	35.97	54.00	-18.03	AVG
3		5150.000	63.95	1.85	65.80	74.00	-8.20	peak
4	*	5150.000	46.04	1.85	47.89	54.00	-6.11	AVG

Mode6 / 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	47.17	2.30	49.47	74.00	-24.53	peak
2		5350.000	37.73	2.30	40.03	54.00	-13.97	AVG
3		5460.000	47.29	2.24	49.53	74.00	-24.47	peak
4	*	5460.000	38.07	2.24	40.31	54.00	-13.69	AVG

Mode6 / 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	48.09	2.30	50.39	74.00	-23.61	peak
2		5350.000	37.67	2.30	39.97	54.00	-14.03	AVG
3		5460.000	47.47	2.24	49.71	74.00	-24.29	peak
4	*	5460.000	37.93	2.24	40.17	54.00	-13.83	AVG

U-NII 3:

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	48.90	2.79	51.69	68.20	-16.51	peak
2		5700.000	60.36	2.86	63.22	105.20	-41.98	peak
3		5720.000	73.30	2.77	76.07	110.80	-34.73	peak
4		5725.000	81.33	2.75	84.08	122.20	-38.12	peak

Mode2 / 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	48.14	2.79	50.93	68.20	-17.27	peak
2		5700.000	59.33	2.86	62.19	105.20	-43.01	peak
3		5720.000	70.37	2.77	73.14	110.80	-37.66	peak
4		5725.000	79.32	2.75	82.07	122.20	-40.13	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	77.02	2.67	79.69	122.20	-42.51	peak
2		5855.000	75.59	2.72	78.31	110.80	-32.49	peak
3		5875.000	63.34	2.91	66.25	105.20	-38.95	peak
4	*	5920.000	47.93	3.22	51.15	71.90	-20.75	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	73.55	2.67	76.22	122.20	-45.98	peak
2		5855.000	70.12	2.72	72.84	110.80	-37.96	peak
3		5875.000	58.55	2.91	61.46	105.20	-43.74	peak
4	*	5920.000	49.30	3.22	52.52	71.90	-19.38	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	52.75	2.79	55.54	68.20	-12.66	peak
2		5700.000	66.66	2.86	69.52	105.20	-35.68	peak
3		5720.000	80.25	2.77	83.02	110.80	-27.78	peak
4		5725.000	81.98	2.75	84.73	122.20	-37.47	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	51.20	2.79	53.99	68.20	-14.21	peak
2		5700.000	66.01	2.86	68.87	105.20	-36.33	peak
3		5720.000	77.05	2.77	79.82	110.80	-30.98	peak
4		5725.000	81.25	2.75	84.00	122.20	-38.20	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	64.35	2.67	67.02	122.20	-55.18	peak
2		5855.000	60.52	2.72	63.24	110.80	-47.56	peak
3		5875.000	51.44	2.91	54.35	105.20	-50.85	peak
4	*	5920.000	49.36	3.22	52.58	71.90	-19.32	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	60.37	2.67	63.04	122.20	-59.16	peak
2		5855.000	55.75	2.72	58.47	110.80	-52.33	peak
3		5875.000	47.78	2.91	50.69	105.20	-54.51	peak
4	*	5920.000	47.71	3.22	50.93	71.90	-20.97	peak

Mode6 / 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	56.62	2.79	59.41	68.20	-8.79	peak
2		5700.000	70.22	2.86	73.08	105.20	-32.12	peak
3		5720.000	76.24	2.77	79.01	110.80	-31.79	peak
4		5725.000	78.24	2.75	80.99	122.20	-41.21	peak

Mode6 / 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	54.91	2.79	57.70	68.20	-10.50	peak
2		5700.000	69.56	2.86	72.42	105.20	-32.78	peak
3		5720.000	75.77	2.77	78.54	110.80	-32.26	peak
4		5725.000	77.08	2.75	79.83	122.20	-42.37	peak

Mode6 / 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	72.81	2.67	75.48	122.20	-46.72	peak
2		5855.000	73.91	2.72	76.63	110.80	-34.17	peak
3		5875.000	68.12	2.91	71.03	105.20	-34.17	peak
4	*	5920.000	56.04	3.22	59.26	71.90	-12.64	peak

Mode6 / 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	69.94	2.67	72.61	122.20	-49.59	peak
2		5855.000	71.10	2.72	73.82	110.80	-36.98	peak
3		5875.000	63.28	2.91	66.19	105.20	-39.01	peak
4	*	5920.000	51.27	3.22	54.49	71.90	-17.41	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><td>Frequency (MHz)</td><td>Field strength (microvolts/meter)</td><td>Measurement distance (meters)</td></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</td></tr>
</table>

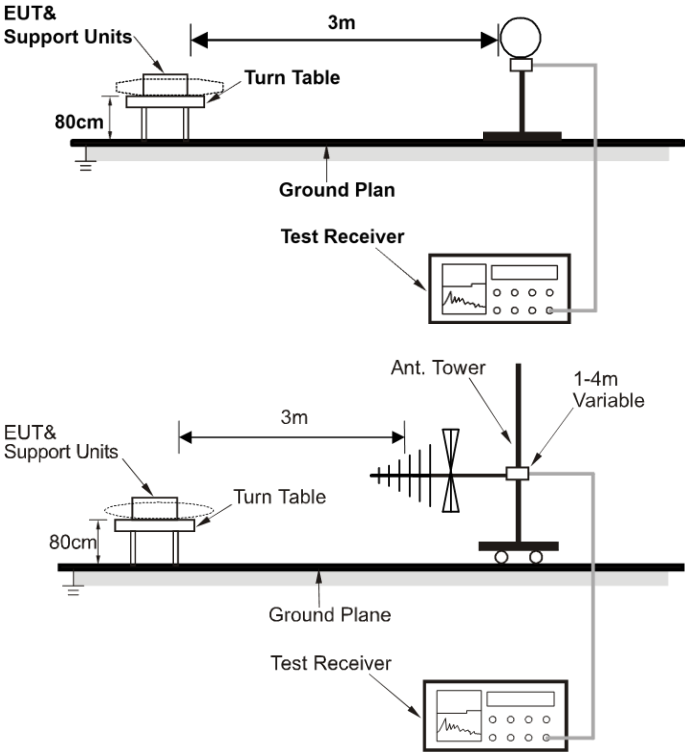
	method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 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:	25.6 °C	Humidity:	55 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
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				

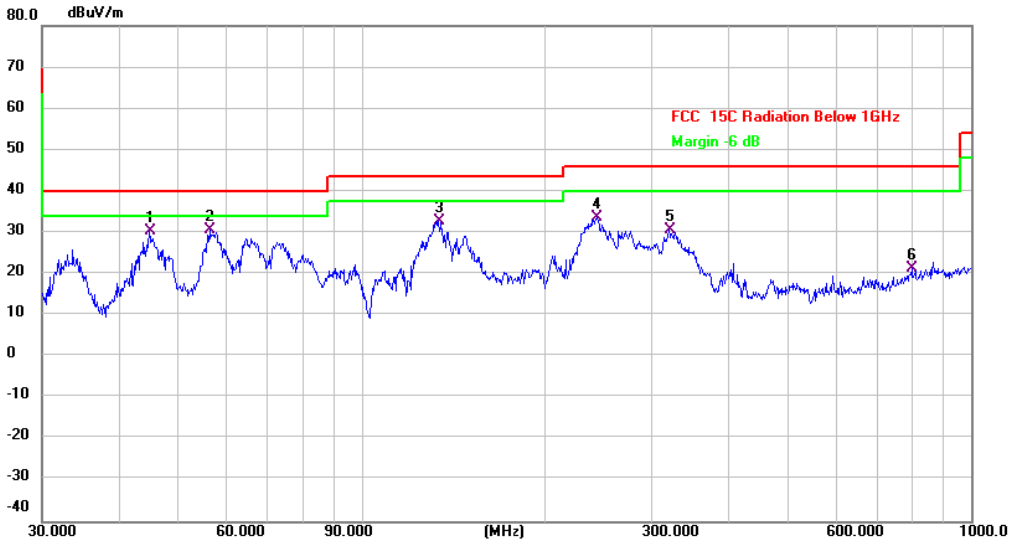
6.7.2 Test Setup Diagram:



6.7.3 Test Data:

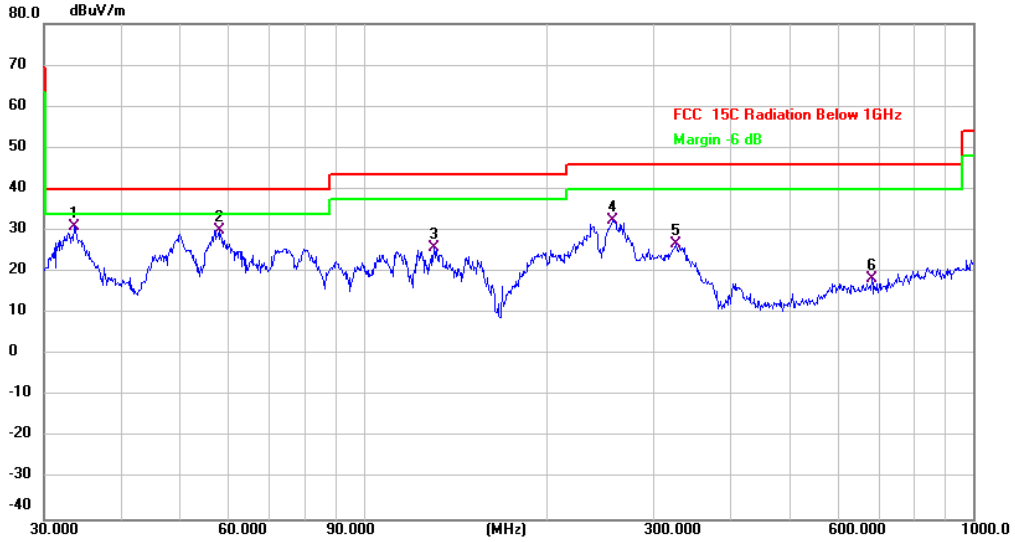
U-NII-1:

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	Comment
1		44.9006	45.29	-15.07	30.22	40.00	-9.78	QP	
2	*	56.3948	46.73	-16.06	30.67	40.00	-9.33	QP	
3		133.6188	55.33	-22.68	32.65	43.50	-10.85	QP	
4		244.2321	48.85	-15.24	33.61	46.00	-12.39	QP	
5		319.9370	47.37	-16.66	30.71	46.00	-15.29	QP	
6		798.9797	27.27	-6.05	21.22	46.00	-24.78	QP	

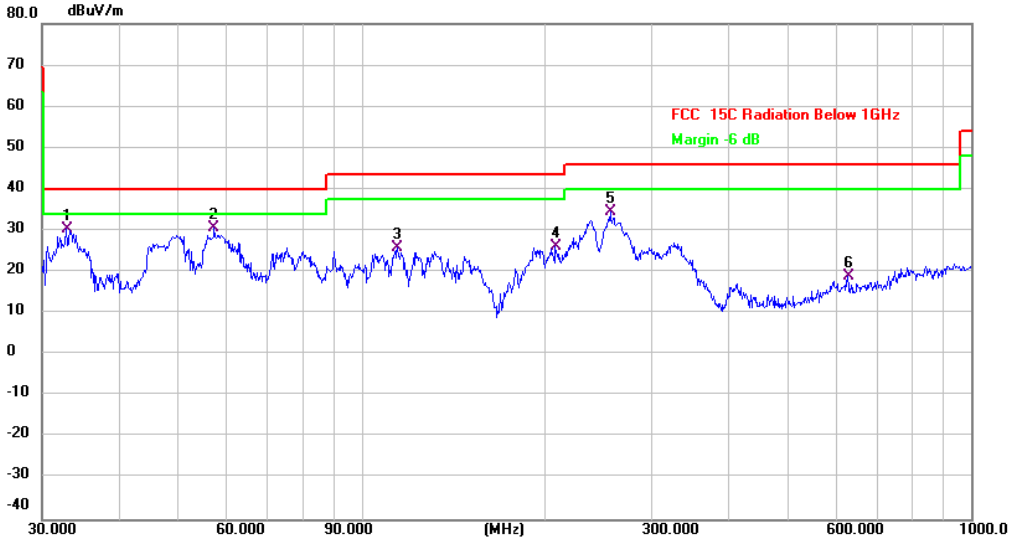
Mode1 / Polarization: Vertical / CH: H



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	33.5624	55.90	-25.06	30.84	40.00	-9.16	QP	
2		57.9993	51.60	-21.47	30.13	40.00	-9.87	QP	
3		130.3789	41.14	-15.36	25.78	43.50	-17.72	QP	
4		256.5211	50.32	-17.74	32.58	46.00	-13.42	QP	
5		325.5958	40.79	-14.11	26.68	46.00	-19.32	QP	
6		682.3484	27.55	-9.08	18.47	46.00	-27.53	QP	

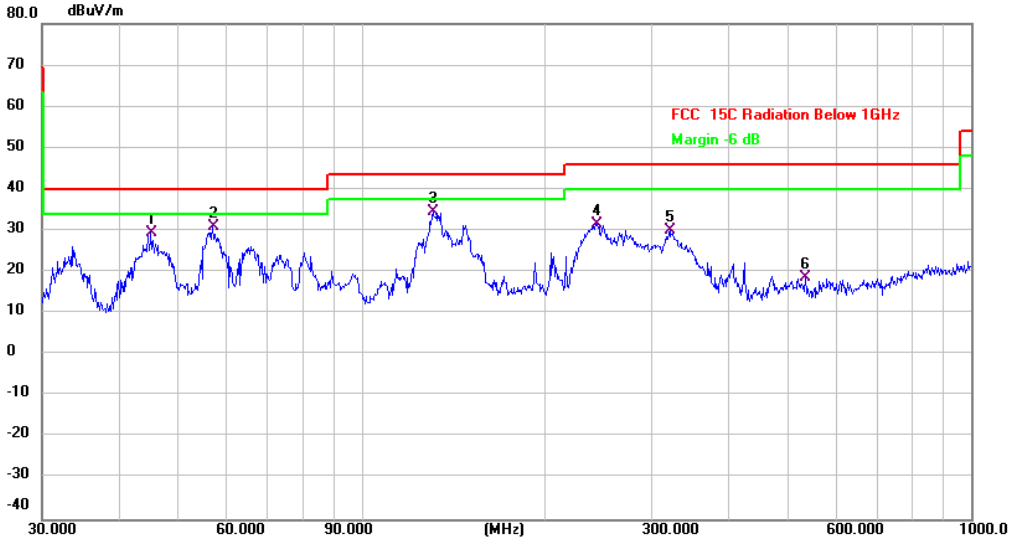
U-NII-3:

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	Comment
1		32.8637	55.50	-25.21	30.29	40.00	-9.71	QP	
2	*	57.3923	52.06	-21.36	30.70	40.00	-9.30	QP	
3		114.5146	42.21	-16.48	25.73	43.50	-17.77	QP	
4		208.5803	48.59	-22.55	26.04	43.50	-17.46	QP	
5		256.5211	52.23	-17.74	34.49	46.00	-11.51	QP	
6		627.2738	30.67	-11.70	18.97	46.00	-27.03	QP	

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	Comment
1		45.2166	44.63	-15.14	29.49	40.00	-10.51	QP	
2		56.9912	47.08	-16.10	30.98	40.00	-9.02	QP	
3	*	130.8369	57.26	-22.61	34.65	43.50	-8.85	QP	
4		244.2321	46.82	-15.24	31.58	46.00	-14.42	QP	
5		321.0608	46.73	-16.69	30.04	46.00	-15.96	QP	
6		535.7073	31.65	-12.97	18.68	46.00	-27.32	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:

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

** 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:	25.6 °C	Humidity:	55 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
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	45.67	10.75	56.42	74.00	-17.58	peak
2		10360.000	35.84	10.75	46.59	54.00	-7.41	AVG
3		15540.000	47.15	13.16	60.31	74.00	-13.69	peak
4	*	15540.000	37.16	13.16	50.32	54.00	-3.68	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	44.41	10.75	55.16	74.00	-18.84	peak
2		10360.000	34.57	10.75	45.32	54.00	-8.68	AVG
3		15540.000	46.69	13.16	59.85	74.00	-14.15	peak
4	*	15540.000	36.52	13.16	49.68	54.00	-4.32	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		10400.000	44.47	10.85	55.32	74.00	-18.68	peak
2		10400.000	34.62	10.85	45.47	54.00	-8.53	AVG
3		15600.000	46.61	12.71	59.32	74.00	-14.68	peak
4	*	15600.000	36.91	12.71	49.62	54.00	-4.38	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		10400.000	44.72	10.85	55.57	74.00	-18.43	peak
2		10400.000	34.51	10.85	45.36	54.00	-8.64	AVG
3		15600.000	47.00	12.71	59.71	74.00	-14.29	peak
4	*	15600.000	36.86	12.71	49.57	54.00	-4.43	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	43.94	10.65	54.59	74.00	-19.41	peak
2		10480.000	34.03	10.65	44.68	54.00	-9.32	AVG
3		15720.000	48.20	12.68	60.88	74.00	-13.12	peak
4	*	15720.000	37.46	12.68	50.14	54.00	-3.86	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	44.39	10.65	55.04	74.00	-18.96	peak
2		10480.000	34.67	10.65	45.32	54.00	-8.68	AVG
3		15720.000	47.67	12.68	60.35	74.00	-13.65	peak
4	*	15720.000	37.77	12.68	50.45	54.00	-3.55	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	44.95	12.51	57.46	68.20	-10.74	peak
2		11490.000	31.96	12.51	44.47	54.00	-9.53	AVG
3		17235.000	45.58	14.54	60.12	68.20	-8.08	peak
4	*	17235.000	32.82	14.54	47.36	54.00	-6.64	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	45.15	12.51	57.66	68.20	-10.54	peak
2		11490.000	31.81	12.51	44.32	54.00	-9.68	AVG
3		17235.000	45.93	14.54	60.47	68.20	-7.73	peak
4	*	17235.000	33.08	14.54	47.62	54.00	-6.38	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		11570.000	44.66	12.37	57.03	68.20	-11.17	peak
2		11570.000	31.99	12.37	44.36	54.00	-9.64	AVG
3		17355.000	46.03	14.60	60.63	68.20	-7.57	peak
4	*	17355.000	33.09	14.60	47.69	54.00	-6.31	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		11570.000	44.68	12.37	57.05	68.20	-11.15	peak
2		11570.000	32.10	12.37	44.47	54.00	-9.53	AVG
3		17355.000	45.95	14.60	60.55	68.20	-7.65	peak
4	*	17355.000	32.97	14.60	47.57	54.00	-6.43	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	45.03	12.19	57.22	68.20	-10.98	peak
2		11650.000	32.40	12.19	44.59	54.00	-9.41	AVG
3		17475.000	46.40	14.88	61.28	68.20	-6.92	peak
4	*	17475.000	33.44	14.88	48.32	54.00	-5.68	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	45.62	12.19	57.81	68.20	-10.39	peak
2		11650.000	32.49	12.19	44.68	54.00	-9.32	AVG
3		17475.000	48.59	14.88	63.47	68.20	-4.73	peak
4	*	17475.000	35.48	14.88	50.36	54.00	-3.64	AVG

Photographs of the test setup

Refer to Appendix - Test Setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

Appendix

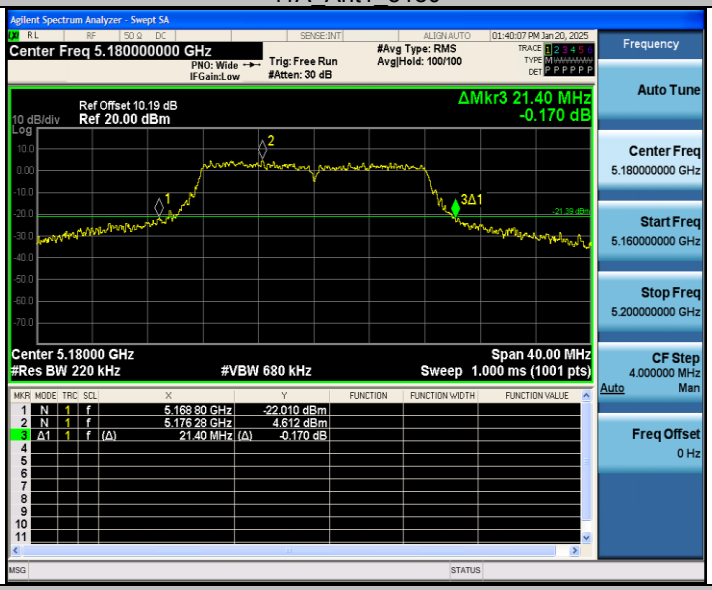
Appendix A1: Emission bandwidth (26dB bandwidth)

Test Result

Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]
11A	Ant1	5180	21.400
		5200	22.680
		5240	20.480
		5745	20.880
		5785	20.320
		5825	23.760
11N20SISO	Ant1	5180	21.800
		5200	23.520
		5240	21.440
		5745	21.000
		5785	20.520
		5825	21.240
11N40SISO	Ant1	5190	40.960
		5230	41.040
		5755	41.920
		5795	41.600
11AC20SISO	Ant1	5180	24.200
		5200	22.040
		5240	20.960
		5745	20.800
		5785	21.040
		5825	20.880
11AC40SISO	Ant1	5190	41.600
		5230	41.440
		5755	41.200
		5795	42.320
11AC80SISO	Ant1	5210	80.800
		5775	82.880

Test Graphs

11A_Ant1_5180



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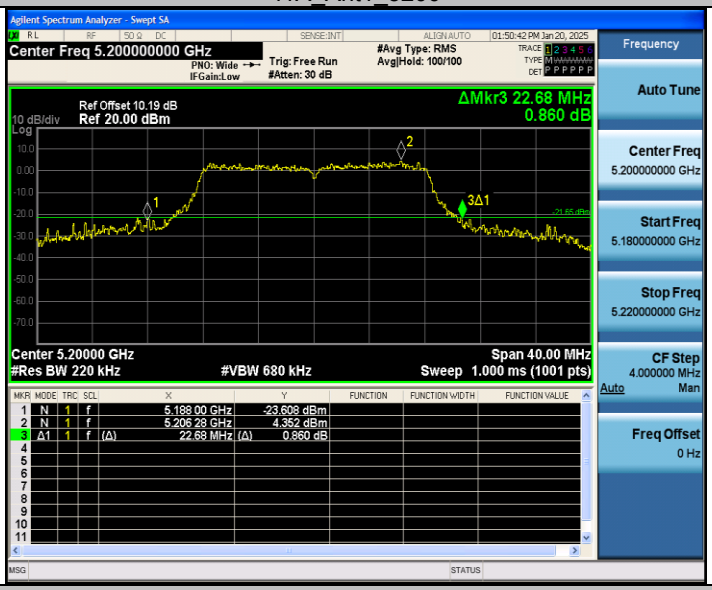
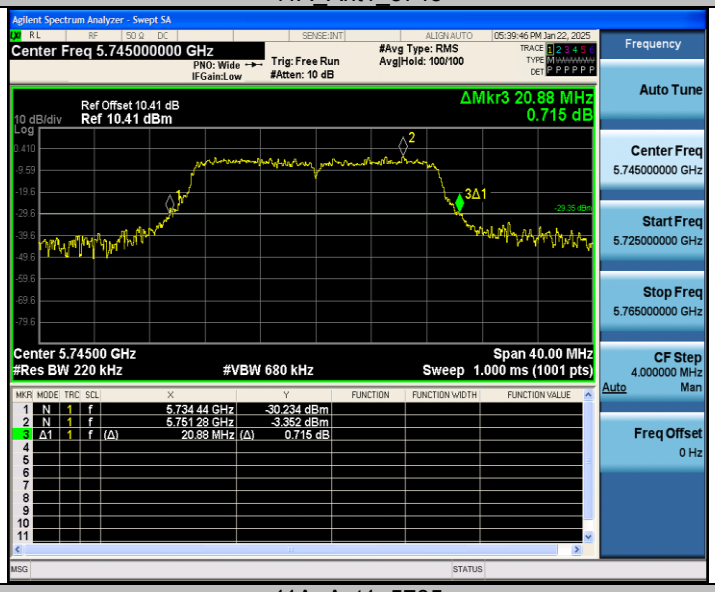


11A_Ant1_5240

11A_Ant1_5745



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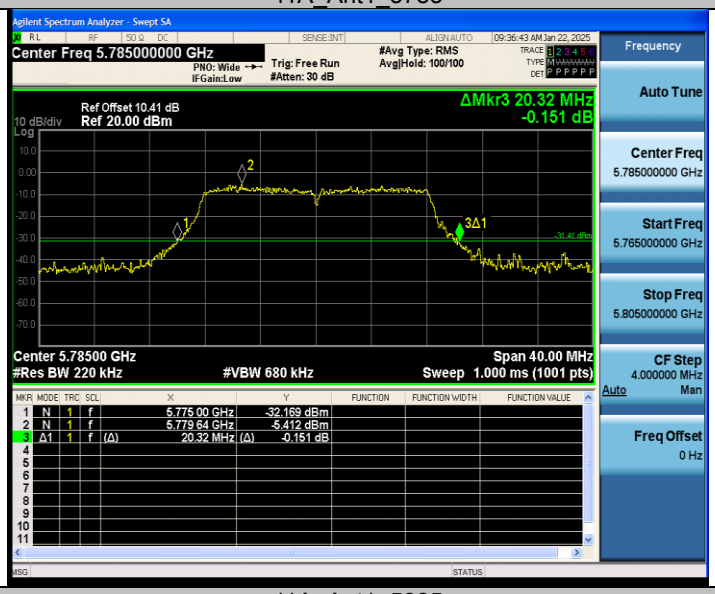

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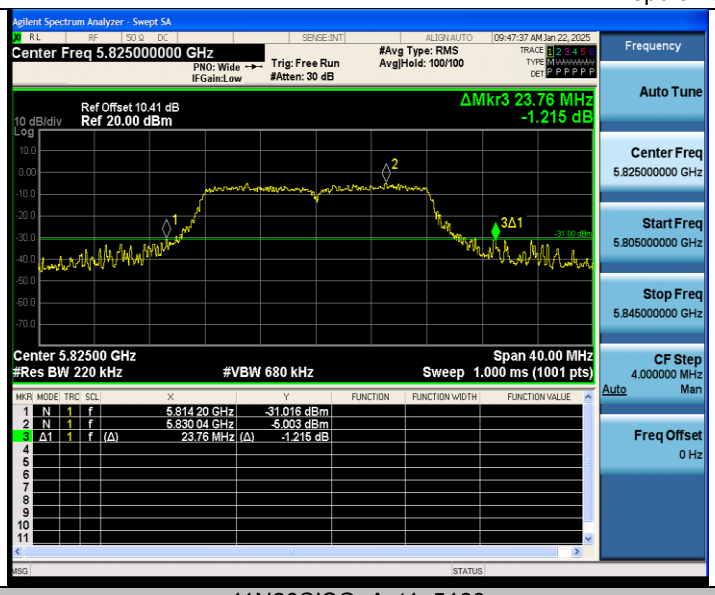

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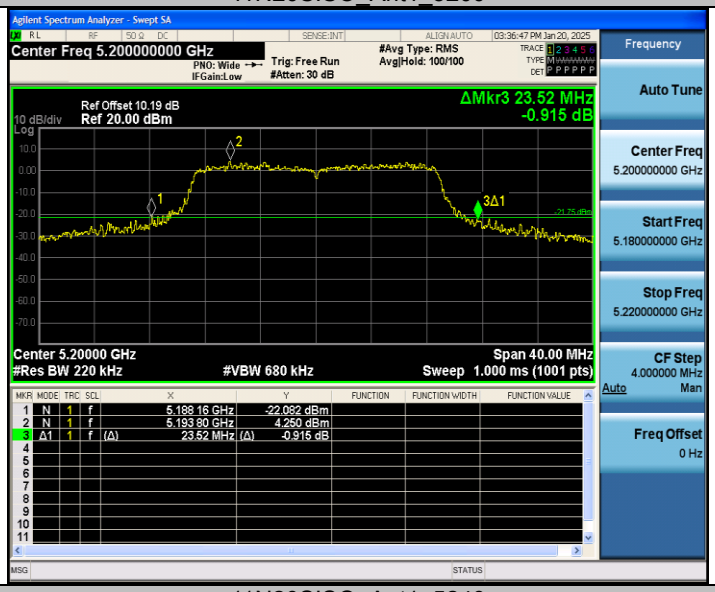

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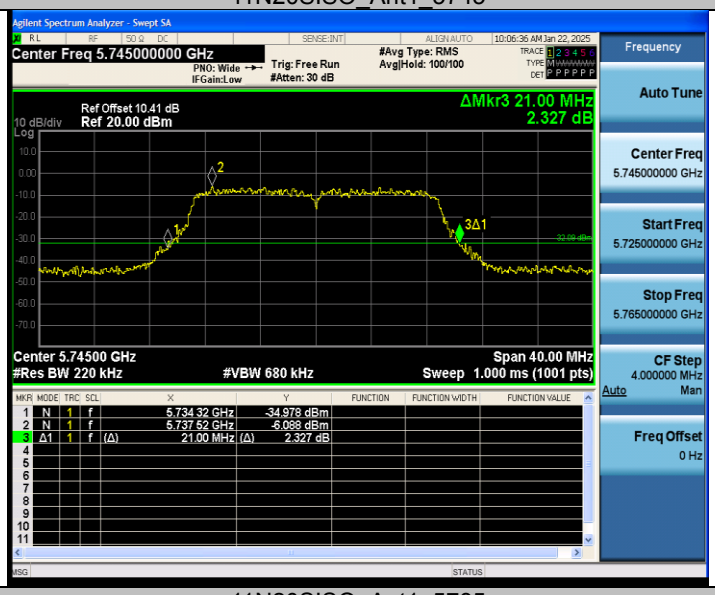

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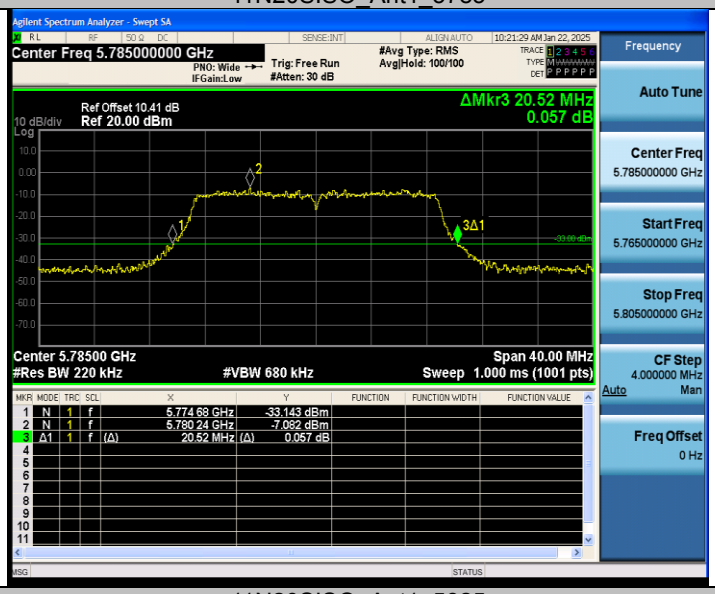

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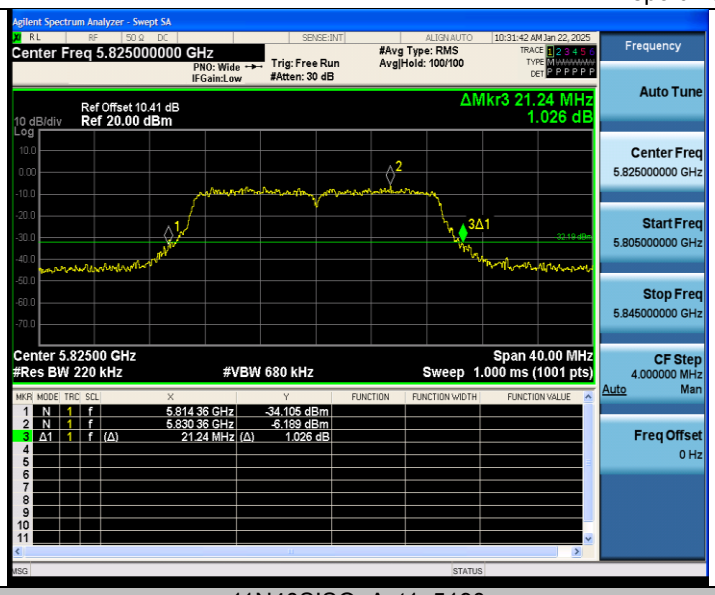

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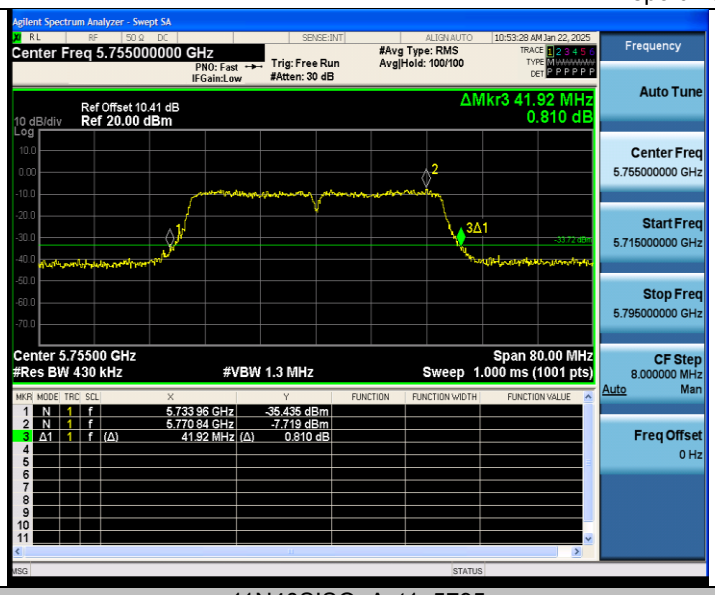
11N40SISO_Ant1_5230

11N40SISO_Ant1_5755



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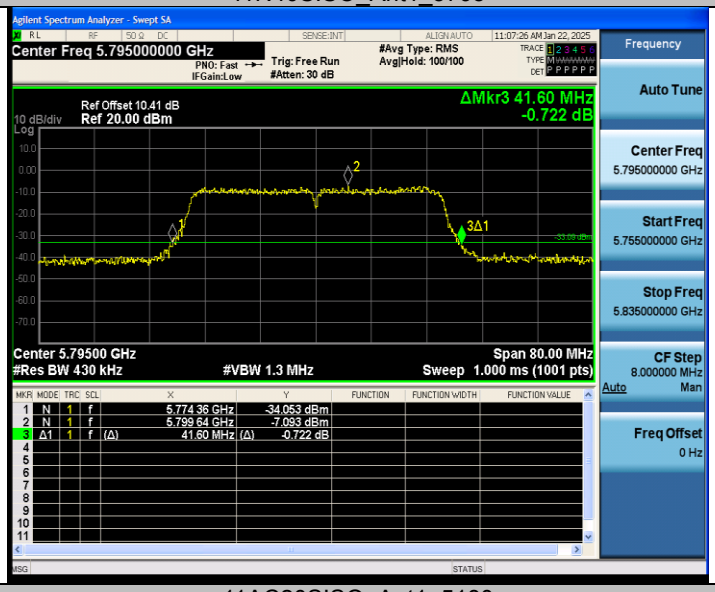

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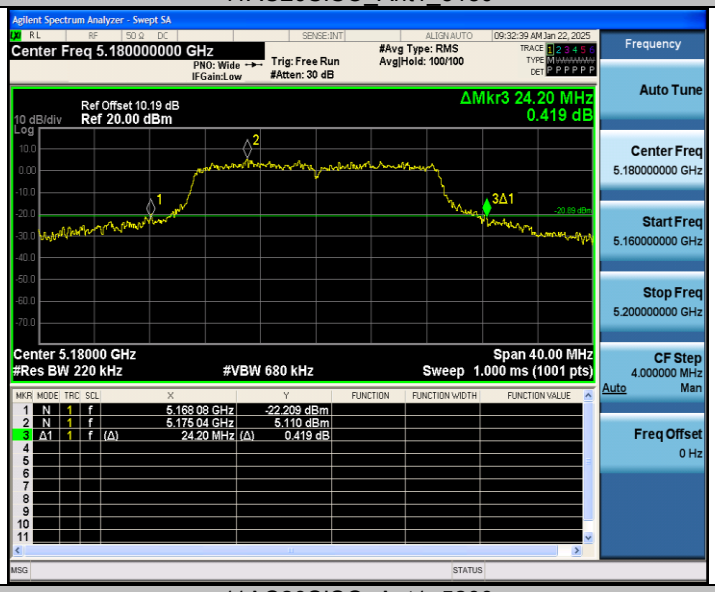

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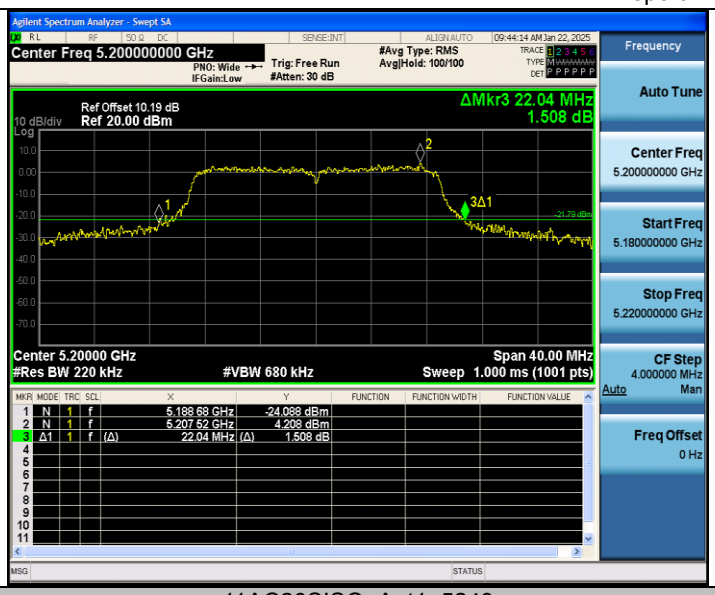

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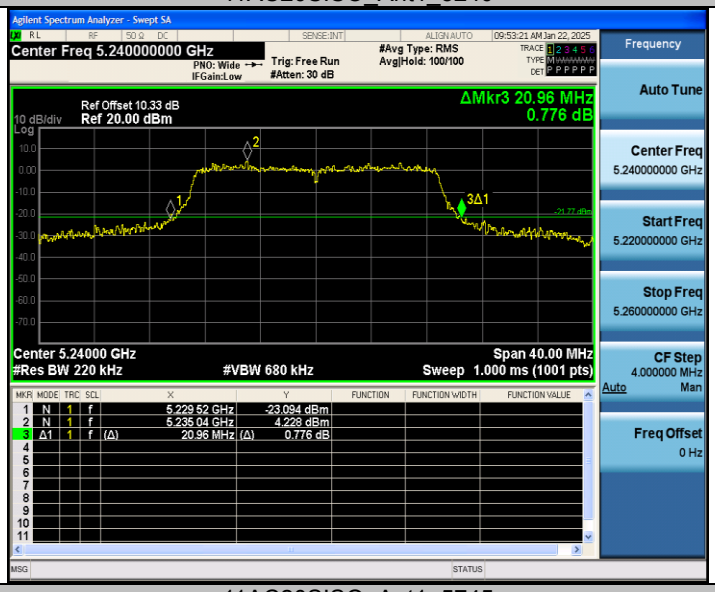

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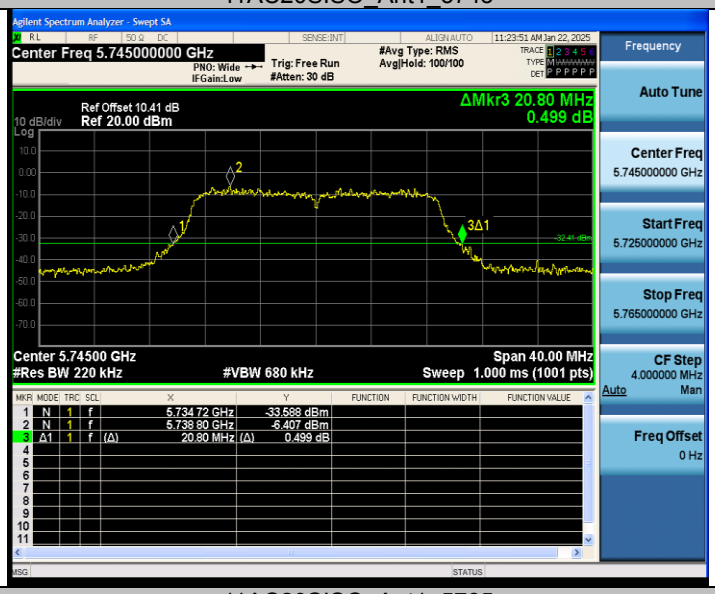

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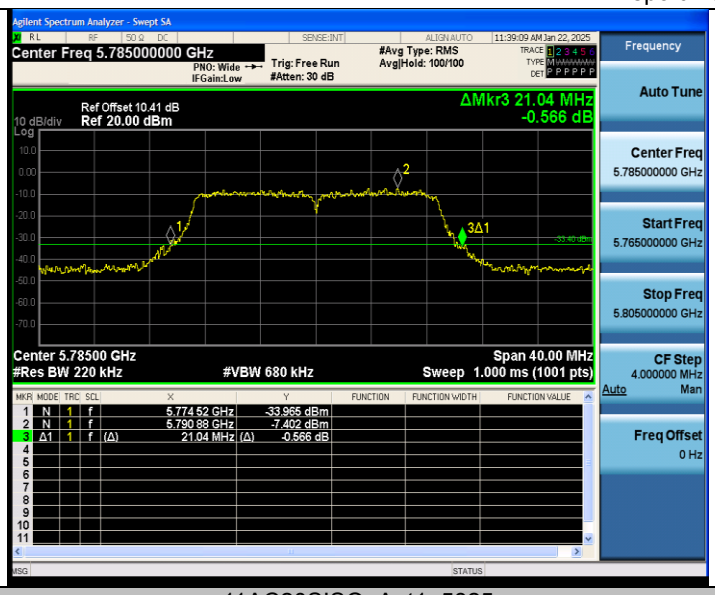

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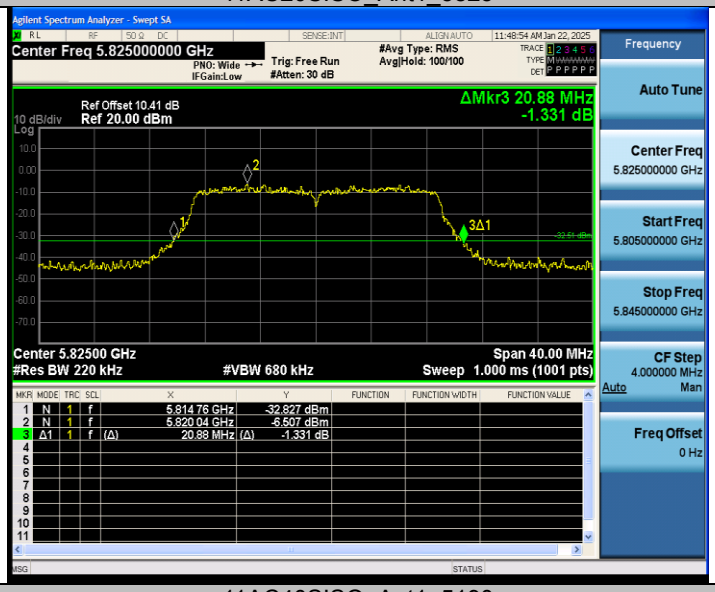

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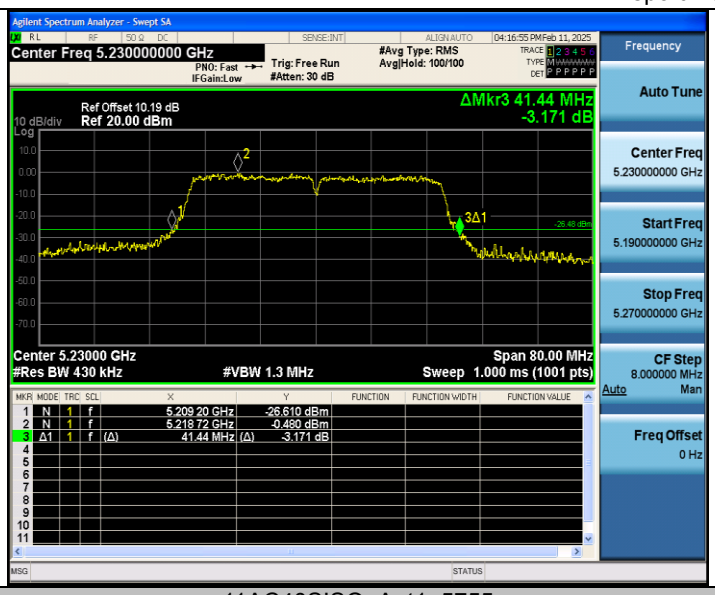
11AC40SISO_Ant1_5230



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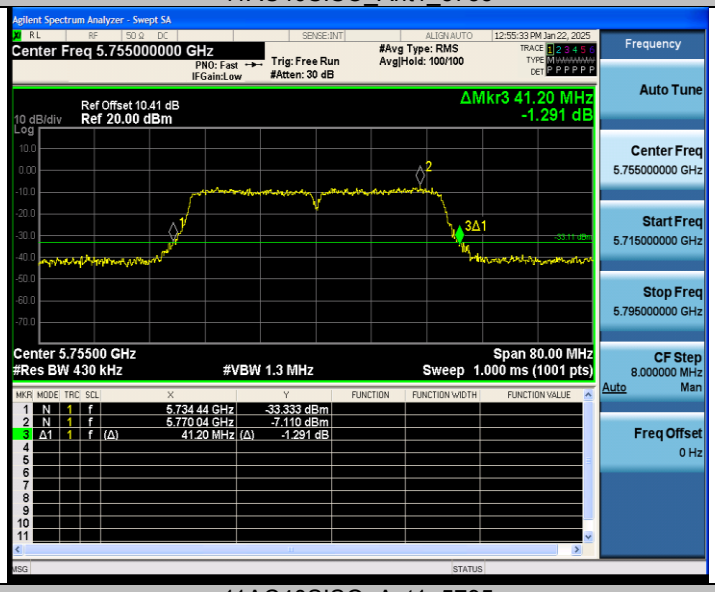

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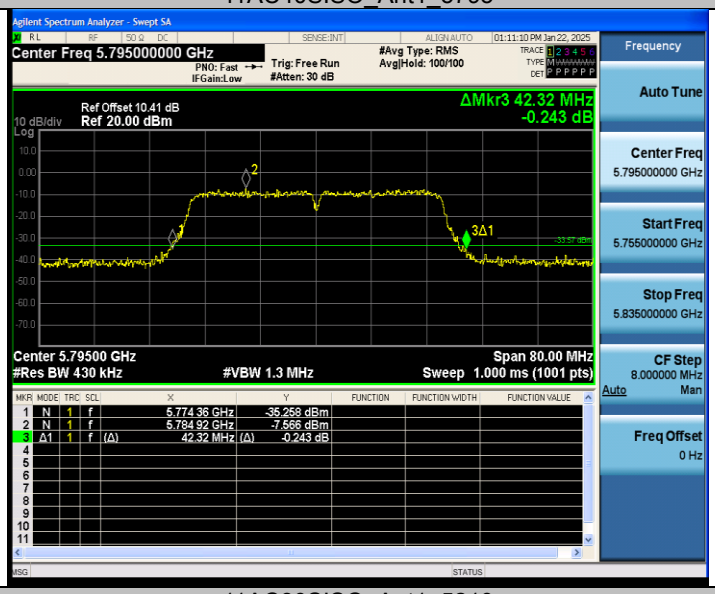

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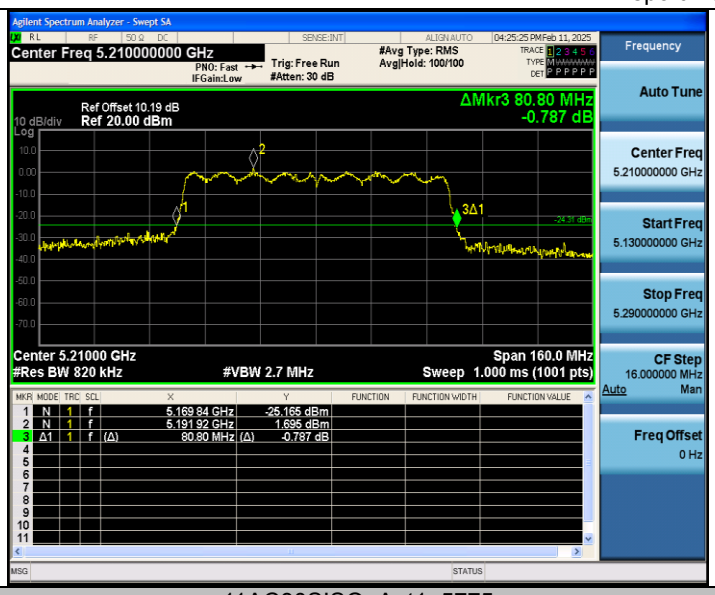

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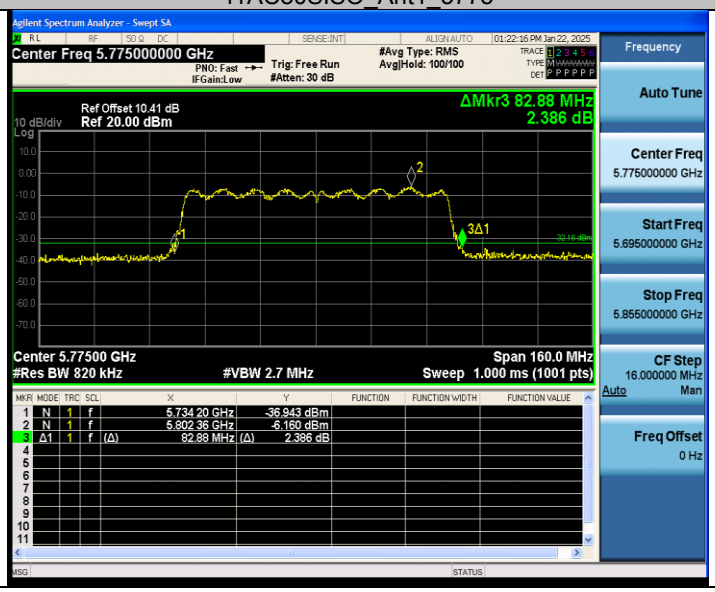


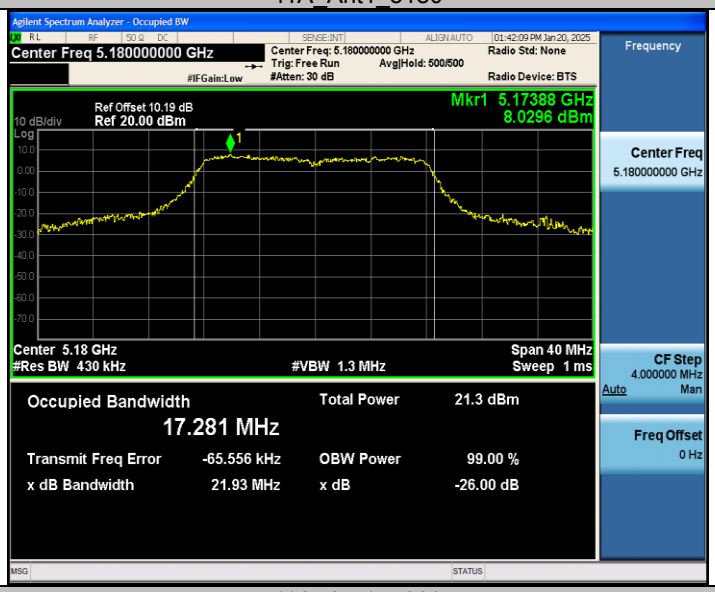
Appendix A2: Occupied channel bandwidth

Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	17.281	5171.2939	5188.5749
		5200	17.208	5191.4613	5208.6693
		5240	17.219	5231.3185	5248.5375
		5745	17.992	5735.2110	5756.4020
		5785	17.059	5772.9694	5798.4474
		5825	17.358	5811.9105	5840.1855
11N20SISO	Ant1	5180	18.081	5170.9692	5189.0502
		5200	18.179	5190.9397	5209.1187
		5240	18.117	5230.9693	5249.0863
		5745	18.102	5733.5549	5757.7409
		5785	17.932	5772.6424	5799.0994
		5825	17.997	5811.0707	5839.7187
11N40SISO	Ant1	5190	36.515	5171.7775	5208.2925
		5230	36.445	5211.7601	5248.2051
		5755	36.661	5733.4541	5781.8121
		5795	36.626	5771.7867	5826.0327
11AC20SISO	Ant1	5180	18.340	5171.0168	5189.3568
		5200	18.157	5190.9784	5209.1354
		5240	18.041	5231.0164	5249.0574
		5745	17.918	5735.1851	5756.0701
		5785	17.973	5773.1661	5798.8131
		5825	18.080	5811.4442	5840.0262
11AC40SISO	Ant1	5190	36.488	5171.7899	5208.2779
		5230	36.412	5211.7561	5248.1681
		5755	36.665	5735.9239	5781.1559
		5795	36.670	5773.3279	5825.6659
11AC80SISO	Ant1	5210	75.700	5172.1450	5247.8450
		5775	75.950	5736.5815	5827.1365

Test Graphs

11A_Ant1_5180



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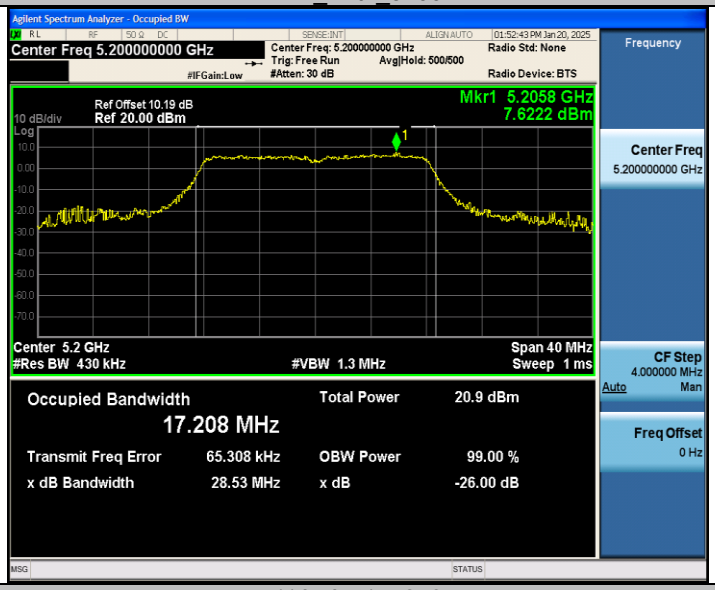

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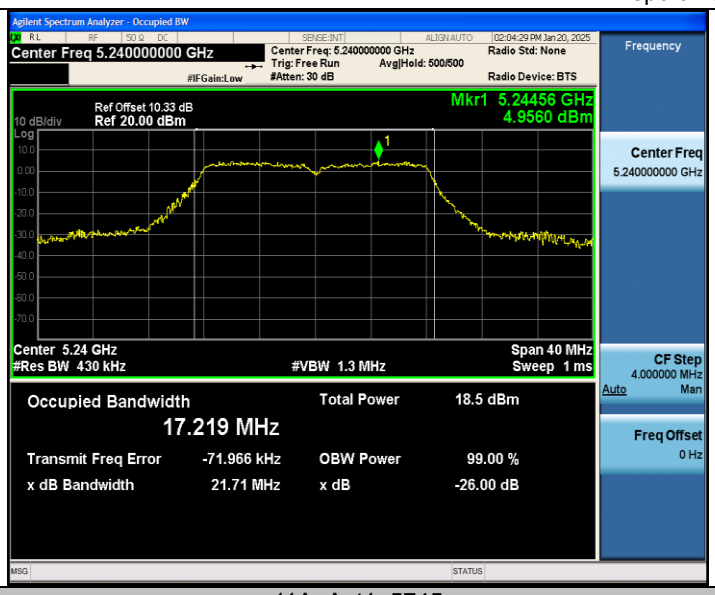

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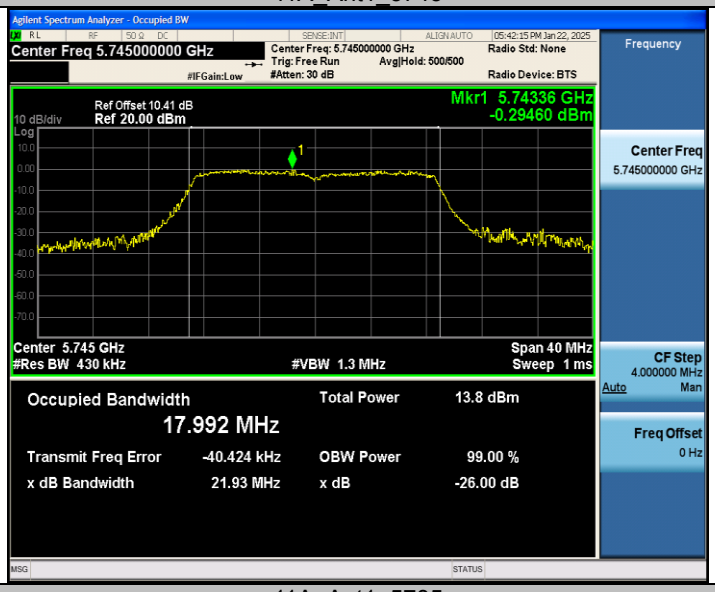

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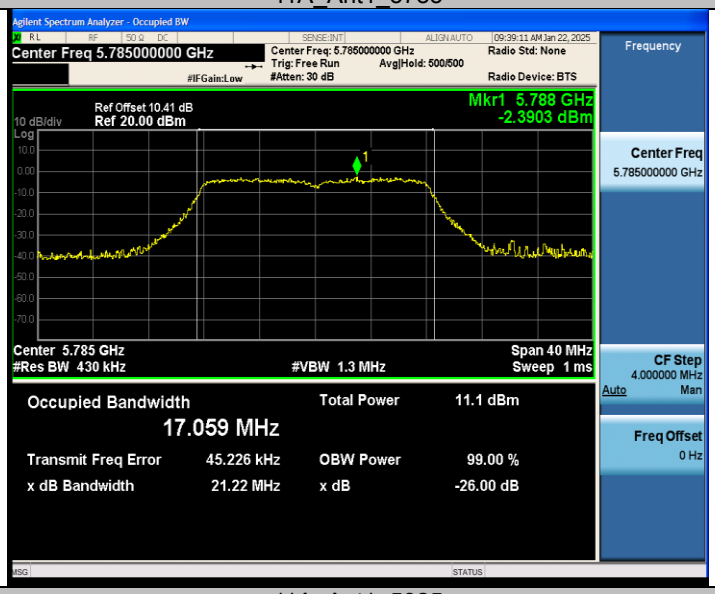

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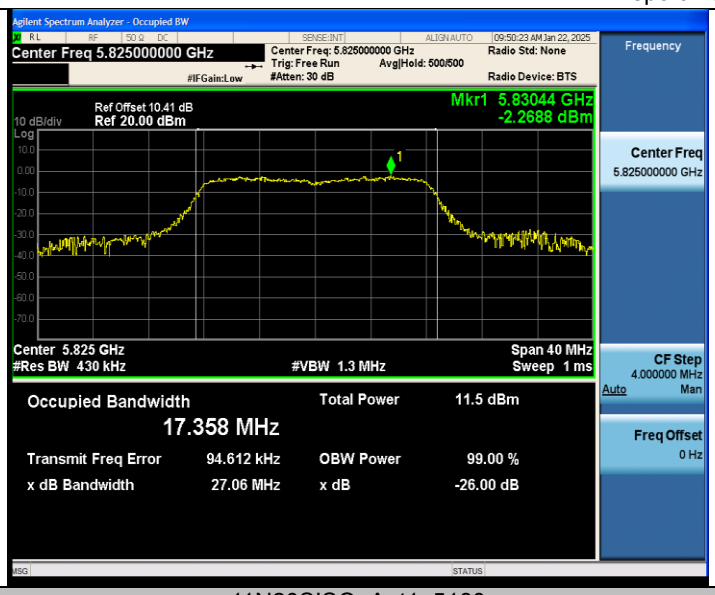

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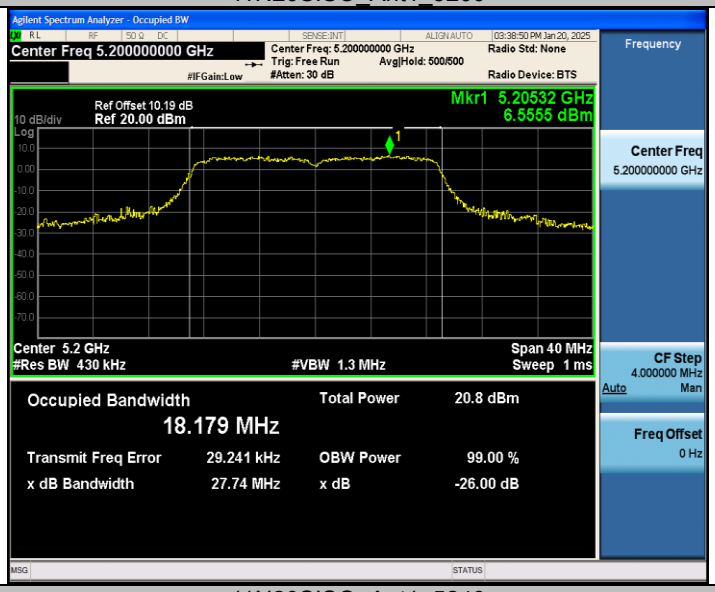

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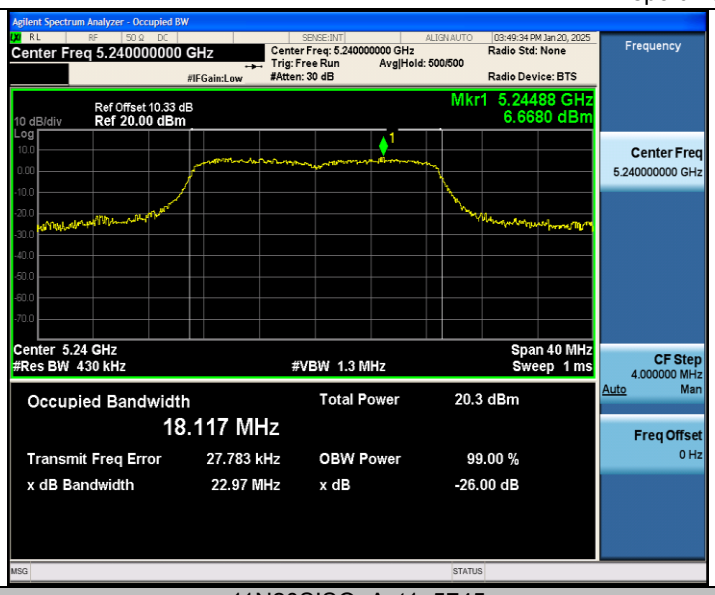

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11N20SISO_Ant1_5785

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