

Test Report

Report No.: MTi240304008-01E2

Date of issue: 2024-08-02

Applicant: iBaby Labs, Inc

Product name: iBaby Monitor i20

Model(s): i20, i20 Pro, i20 Plus, i20S, i20L, P20i

FCC ID: ZUXIBB-I20

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.cn>

The test report is only used for customer scientific research, teaching, internal quality control and other purposes, and is for internal reference only.




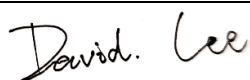
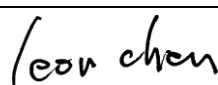
Instructions

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

1	General Description	5
1.1	Description of the EUT	5
1.2	Description of test modes	6
1.3	Environmental Conditions	8
1.4	Description of support units	8
1.5	Measurement uncertainty	8
2	Summary of Test Result	9
3	Test Facilities and accreditations	10
3.1	Test laboratory	10
4	List of test equipment.....	11
5	Evaluation Results (Evaluation).....	12
5.1	Antenna requirement	12
6	Radio Spectrum Matter Test Results (RF)	12
6.1	Conducted Emission at AC power line	12
6.2	Duty Cycle.....	17
6.3	Emission bandwidth and occupied bandwidth.....	18
6.4	Maximum conducted output power.....	20
6.5	Power spectral density.....	21
6.6	Band edge emissions (Conducted)	22
6.7	Band edge emissions (Radiated)	25
6.8	Undesirable emission limits (below 1GHz)	40
6.9	Undesirable emission limits (above 1GHz).....	47
	Photographs of the test setup	53
	Photographs of the EUT.....	54
	Appendix A1: Emission bandwidth (26dB bandwidth)	56
6.10	Appendix A2: Occupied channel bandwidth	62
	Appendix B: Duty Cycle	68
	Appendix C: Maximum conducted output power	74
	Appendix D: Maximum power spectral density.....	80
	Appendix E: Band edge measurements	86
	Appendix F: Conducted Spurious Emission	90
	Photographs of the Test Setup.....	100
	Photographs of the EUT.....	101

Test Result Certification	
Applicant:	iBaby Labs, Inc
Address:	Room 601, 6/F, Block T2-B, Software Park, No.22, S. Gaoxin7th Ave., Nanshan Distric, Shenzhen
Manufacturer:	iBaby Labs, Inc
Address:	Room 601, 6/F, Block T2-B, Software Park, No.22, S. Gaoxin7th Ave., Nanshan Distric, Shenzhen
Product description	
Product name:	iBaby Monitor i20
Trademark:	iBaby
Model name:	i20
Series Model(s):	i20 Pro, i20 Plus, i20S, i20L, P20i
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:	2024-06-20 to 2024-07-31
Test result:	Pass

Test Engineer	:	
		(Maleah Deng)
Reviewed By	:	
		(David Lee)
Approved By	:	
		(Leon Chen)

1 General Description

1.1 Description of the EUT

Product name:	iBaby Monitor i20
Model name:	i20
Series Model(s):	i20 Pro , i20 Plus, i20S, i20L, P20i
Model difference:	All the models are the same circuit and module, except the model name and 433 RX features.(The i20S and P20i are equipped with the 433RX function, other models do not come with it.)
Electrical rating:	Input: 5V/1.5A
Accessories:	Adaptor: i20: Mode: TPA-418G050150UU01 Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V 1.5A, 7.5W i20S: Mode: TPA-141A050150CU01 Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V 1.5A, 7.5W Cable: USB-A to USB-C cable 250cm
Hardware version:	V3.0
Software version:	V1.0.0
Test sample(s) number:	MTi240304008-01S1001 MTi240304008-01S1002
RF specification	
Operating frequency range:	802.11a/n(HT20)/ac(HT20): U-NII Band 1: 5180MHz to 5240MHz; 802.11n(HT40)/ac(HT40): U-NII Band 1: 5190MHz to 5230MHz; 802.11ac(HT80): U-NII 1: 5210MHz;
Date Rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40): MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40): NSS1, MCS0-MCS9 802.11ac(VHT80) :NSS1,MCS0-MCS9
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:	FPC Antenna
Antenna(s) gain:	5.76dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	TX-802.11 a
Mode2	TX-802.11n(HT 20)
Mode3	TX-802.11n(HT 40)
Mode4	TX-802.11ac(VHT 20)
Mode5	TX-802.11ac(VHT 40)
Mode6	TX-802.11ac(VHT 80)

1.2.1 Operation channel list

U-NII Band 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	/	/	/	/

Test Channel List

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

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:		serial-com2- SecureCRT	
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	--	--
--	--	--	--

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 (V)
LTLV	-10	4.5
NTNV	25	5
HTHV	55	5.5

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
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	Duty Cycle	47 CFR Part 15E		Pass
3	Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1: No limits, only for report use.	Pass
4	Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(iv)	Pass
5	Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(iv)	Pass
6	Band edge emissions (Conducted)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)	Pass
7	Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 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)(10)	Pass
10	Conducted Emission at AC power line	47 CFR Part 15E	47 CFR 15.207(a)	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	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
Band edge emissions (Conducted) Duty Cycle Emission bandwidth and occupied bandwidth Maximum conducted output power Power spectral density						
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	EWLAN1840 G	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.
Description of the antenna of EUT	The antenna of the EUT is permanently attached. There are no provisions for connection to an external antenna.
Conclusion:	The EUT complies with the requirement of § 15.203.

6 Radio Spectrum Matter Test Results (RF)

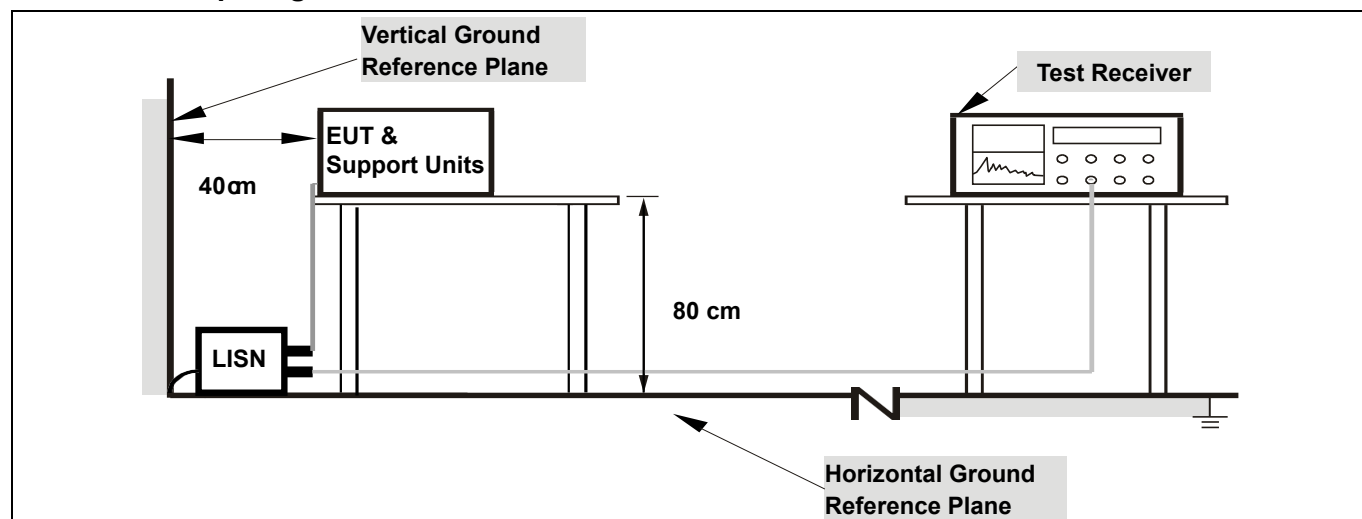
6.1 Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		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		
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

6.1.1 E.U.T. Operation:

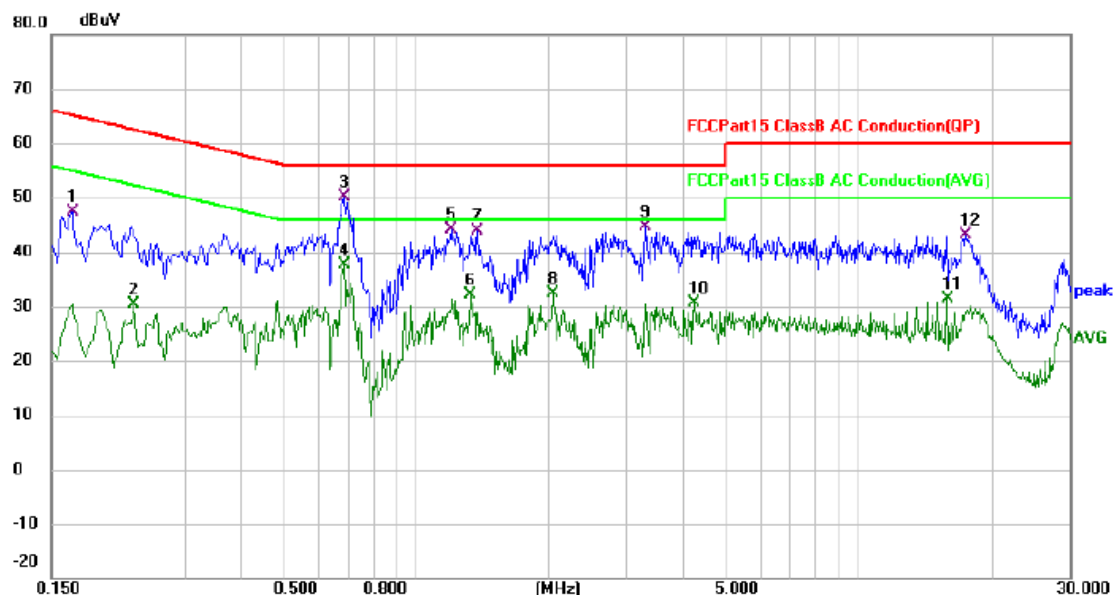
Operating Environment:			
Temperature:	25.9 °C	Humidity:	44 %
		Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6		
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report		

6.1.2 Test Setup Diagram:



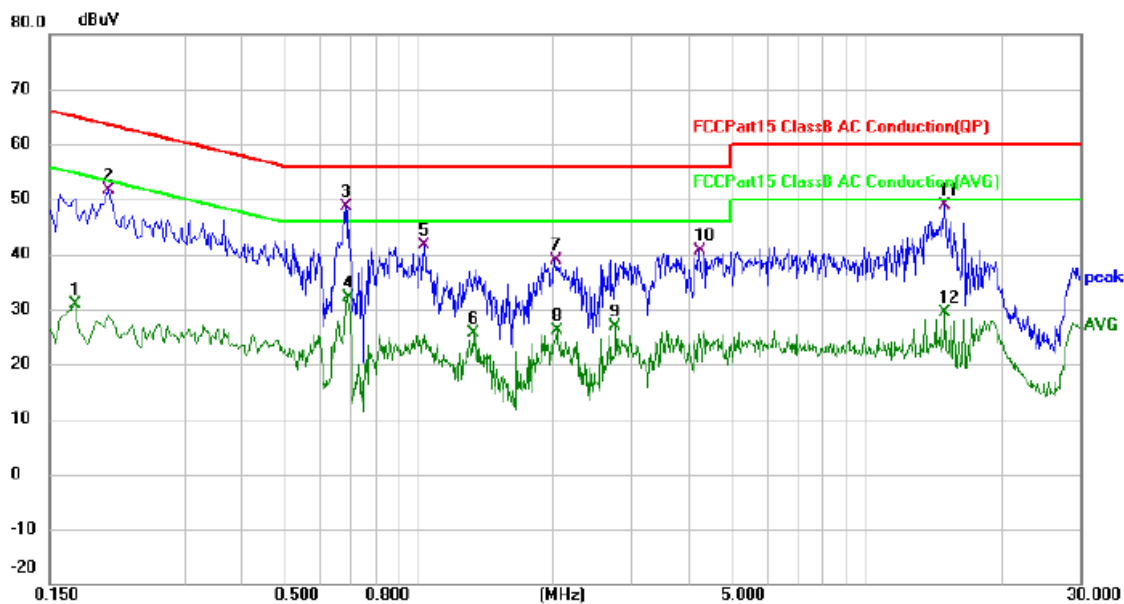
6.1.3 Test Data:

Mode1(Model: i20) / Line: Line / Band: 5150-5250 MHz / BW: 20 / CH: L



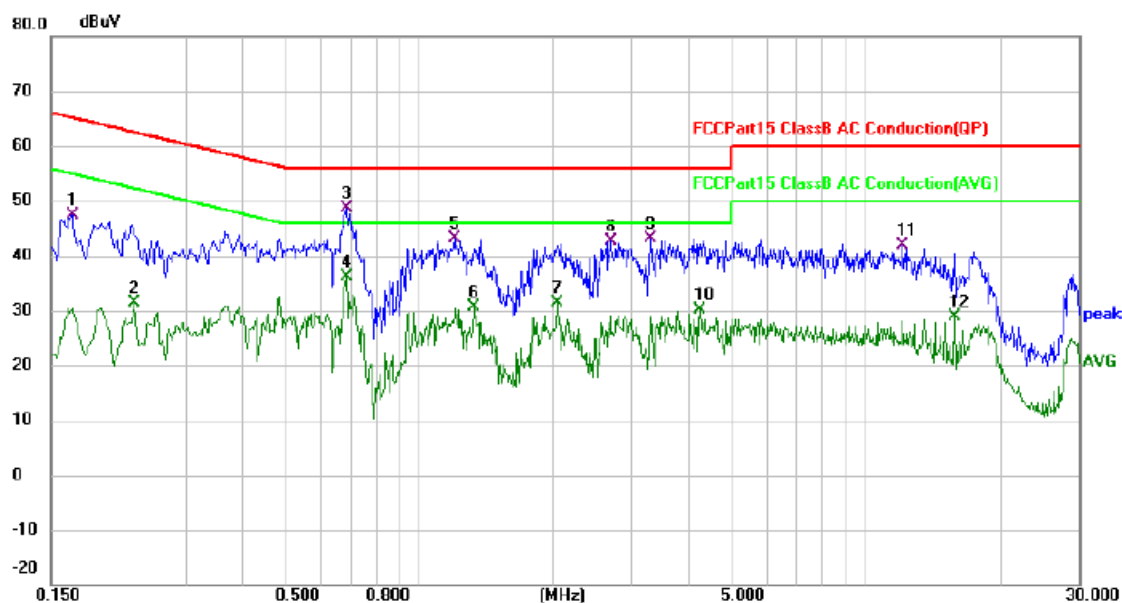
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1660	36.98	10.38	47.36	65.16	-17.80	QP	
2		0.2300	19.43	10.85	30.28	52.45	-22.17	AVG	
3	*	0.6860	38.09	11.93	50.02	56.00	-5.98	QP	
4		0.6860	25.76	11.93	37.69	46.00	-8.31	AVG	
5		1.1980	31.22	13.02	44.24	56.00	-11.76	QP	
6		1.3300	18.89	13.29	32.18	46.00	-13.82	AVG	
7		1.3740	30.51	13.36	43.87	56.00	-12.13	QP	
8		2.0420	21.63	10.63	32.26	46.00	-13.74	AVG	
9		3.3060	34.01	10.65	44.66	56.00	-11.34	QP	
10		4.2500	19.90	10.65	30.55	46.00	-15.45	AVG	
11		15.8140	20.25	11.05	31.30	50.00	-18.70	AVG	
12		17.5500	31.94	11.10	43.04	60.00	-16.96	QP	

Mode1(Model: i20) / Line: Neutral / Band: 5150-5250 MHz / BW: 20 / CH: L



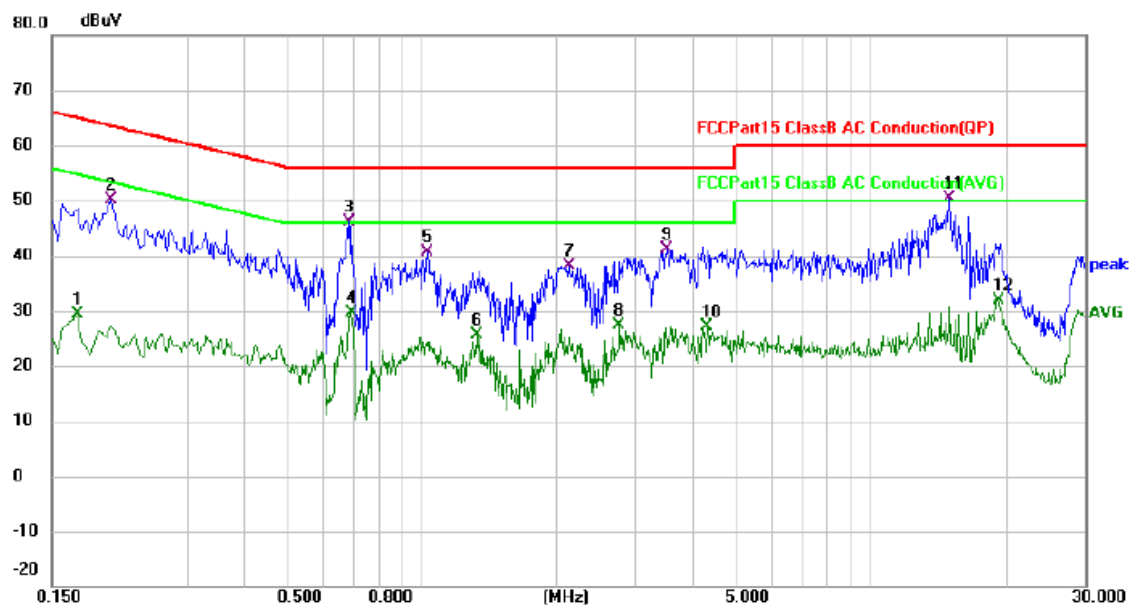
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1700	20.46	10.38	30.84	54.96	-24.12	AVG	
2		0.2020	40.87	10.78	51.65	63.53	-11.88	QP	
3	*	0.6860	36.61	11.93	48.54	56.00	-7.46	QP	
4		0.6940	20.29	11.94	32.23	46.00	-13.77	AVG	
5		1.0300	29.05	12.68	41.73	56.00	-14.27	QP	
6		1.3300	12.39	13.29	25.68	46.00	-20.32	AVG	
7		2.0140	28.20	10.63	38.83	56.00	-17.17	QP	
8		2.0420	15.48	10.63	26.11	46.00	-19.89	AVG	
9		2.7620	16.19	10.64	26.83	46.00	-19.17	AVG	
10		4.2459	30.08	10.64	40.72	56.00	-15.28	QP	
11		14.9859	37.85	11.03	48.88	60.00	-11.12	QP	
12		15.0300	18.26	11.03	29.29	50.00	-20.71	AVG	

Mode1(Model: i20S) / Line: Line / Band: 5150-5250 MHz / BW: 20 / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1660	36.98	10.38	47.36	65.16	-17.80	QP	
2		0.2300	20.43	10.85	31.28	52.45	-21.17	AVG	
3	*	0.6860	36.59	11.93	48.52	56.00	-7.48	QP	
4		0.6860	24.26	11.93	36.19	46.00	-9.81	AVG	
5		1.1979	30.22	13.02	43.24	56.00	-12.76	QP	
6		1.3300	17.39	13.29	30.68	46.00	-15.32	AVG	
7		2.0419	20.63	10.63	31.26	46.00	-14.74	AVG	
8		2.6900	31.91	10.64	42.55	56.00	-13.45	QP	
9		3.3060	32.51	10.65	43.16	56.00	-12.84	QP	
10		4.2500	19.40	10.65	30.05	46.00	-15.95	AVG	
11		12.1339	30.93	10.87	41.80	60.00	-18.20	QP	
12		15.8139	17.75	11.05	28.80	50.00	-21.20	AVG	

Mode1(Model: i20S) / Line: Neutral / Band: 5150-5250 MHz / BW: 20 / CH: L



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1700	18.96	10.38	29.34	54.96	-25.62	AVG	
2		0.2020	39.37	10.78	50.15	63.53	-13.38	QP	
3		0.6860	34.11	11.93	46.04	56.00	-9.96	QP	
4		0.6937	17.79	11.94	29.73	46.00	-16.27	AVG	
5		1.0300	28.05	12.68	40.73	56.00	-15.27	QP	
6		1.3300	12.39	13.29	25.68	46.00	-20.32	AVG	
7		2.1259	27.51	10.63	38.14	56.00	-17.86	QP	
8		2.7620	16.69	10.64	27.33	46.00	-18.67	AVG	
9		3.5259	30.60	10.64	41.24	56.00	-14.76	QP	
10		4.3258	16.60	10.65	27.25	46.00	-18.75	AVG	
11	*	14.9859	39.35	11.03	50.38	60.00	-9.62	QP	
12		19.2016	20.84	11.14	31.98	50.00	-18.02	AVG	

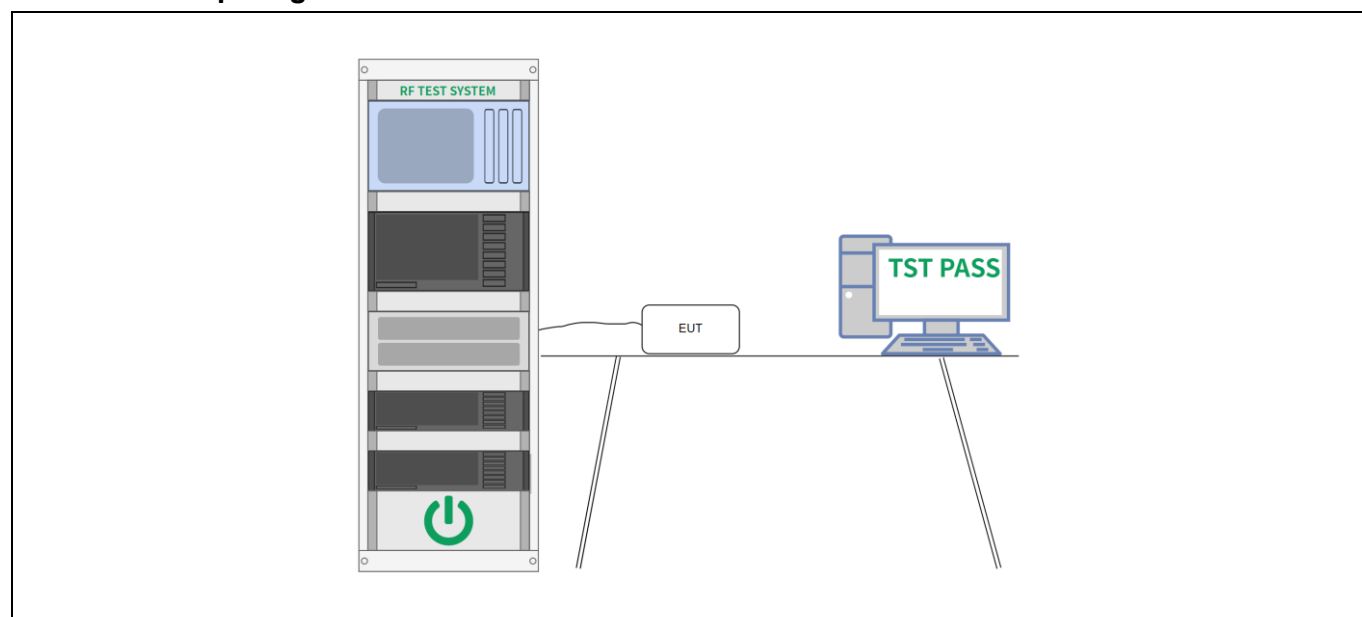
6.2 Duty Cycle

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 \geq EBW if possible; otherwise, set RBW to the largest available value. iii) Set VBW \geq 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:	24 °C	Humidity:	54 %	Atmospheric Pressure:	101 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 Emission bandwidth and occupied bandwidth

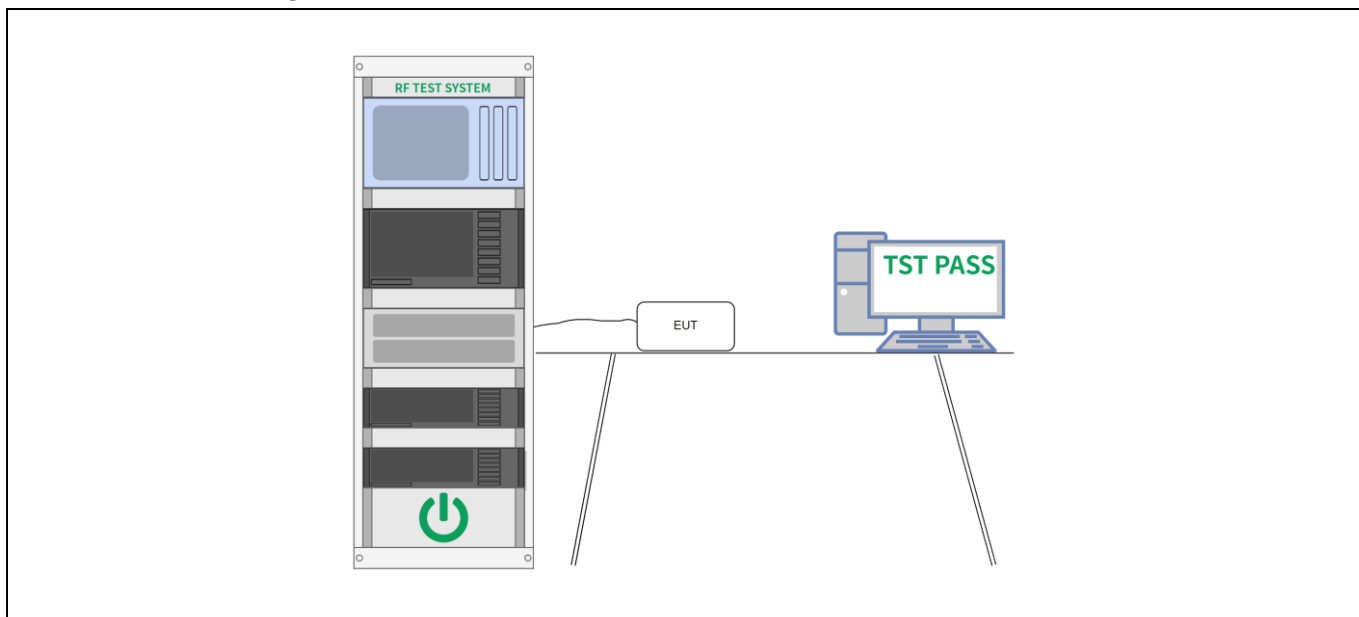
Test Requirement:	U-NII 1: No limits, only for report use.
Test Limit:	U-NII 1: No limits, only for report use.
Test Method:	ANSI C63.10-2013, section 6.9 & 12.5
Procedure:	<p>Emission bandwidth:</p> <ol style="list-style-type: none"> Set RBW = approximately 1% of the emission bandwidth. Set the VBW > RBW. Detector = peak. Trace mode = max hold. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. <p>Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.</p> <p>Occupied bandwidth:</p> <ol style="list-style-type: none"> 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. 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. 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. Step a) through step c) might require iteration to adjust within the specified range. 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. Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. 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. 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).
--	--

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24 °C	Humidity:	54 %	Atmospheric Pressure:	101 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.

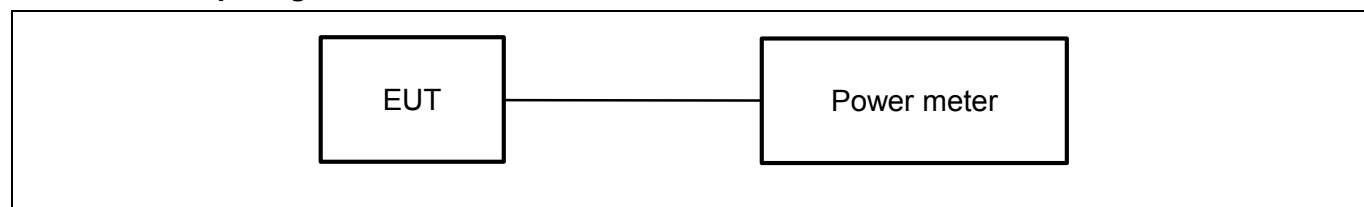
6.4 Maximum conducted output power

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. 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.
Test Method:	ANSI C63.10-2013, section 12.3
Procedure:	ANSI C63.10-2013, section 12.3.3

6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24 °C	Humidity:	54 %	Atmospheric Pressure:	101 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.

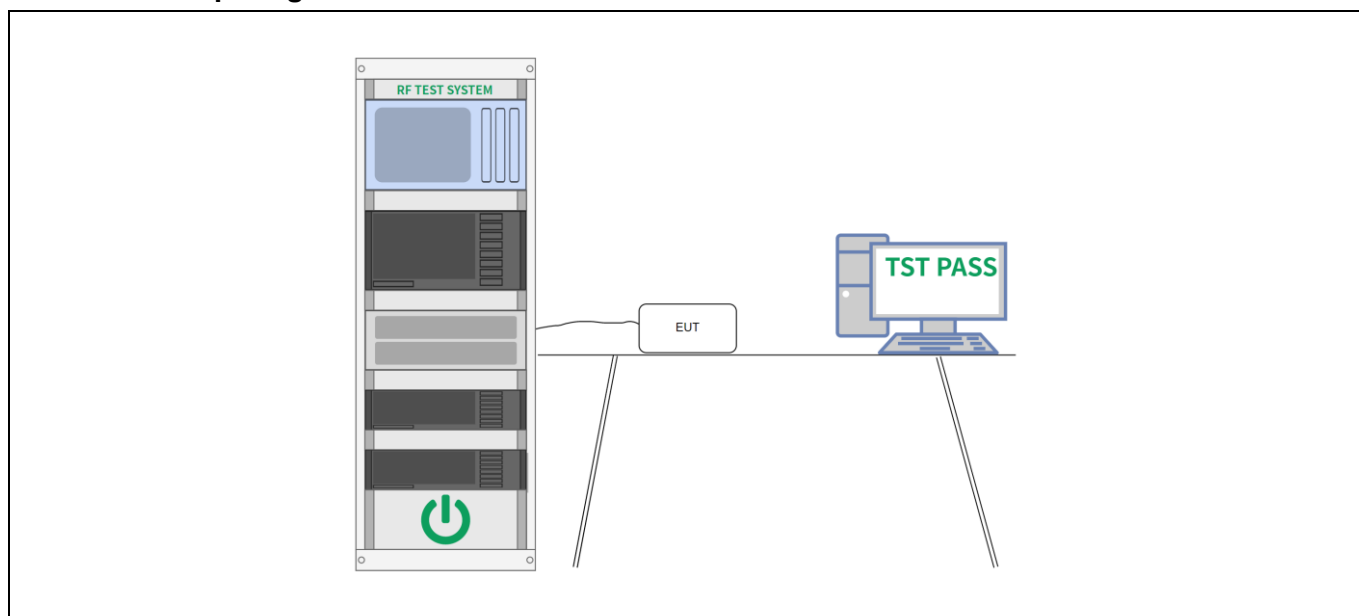
6.5 Power spectral density

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	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.
Test Method:	ANSI C63.10-2013, section 12.6
Procedure:	Refer to ANSI C63.10-2013, section 12.6

6.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24 °C	Humidity:	54 %	Atmospheric Pressure:	101 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 (Conducted)

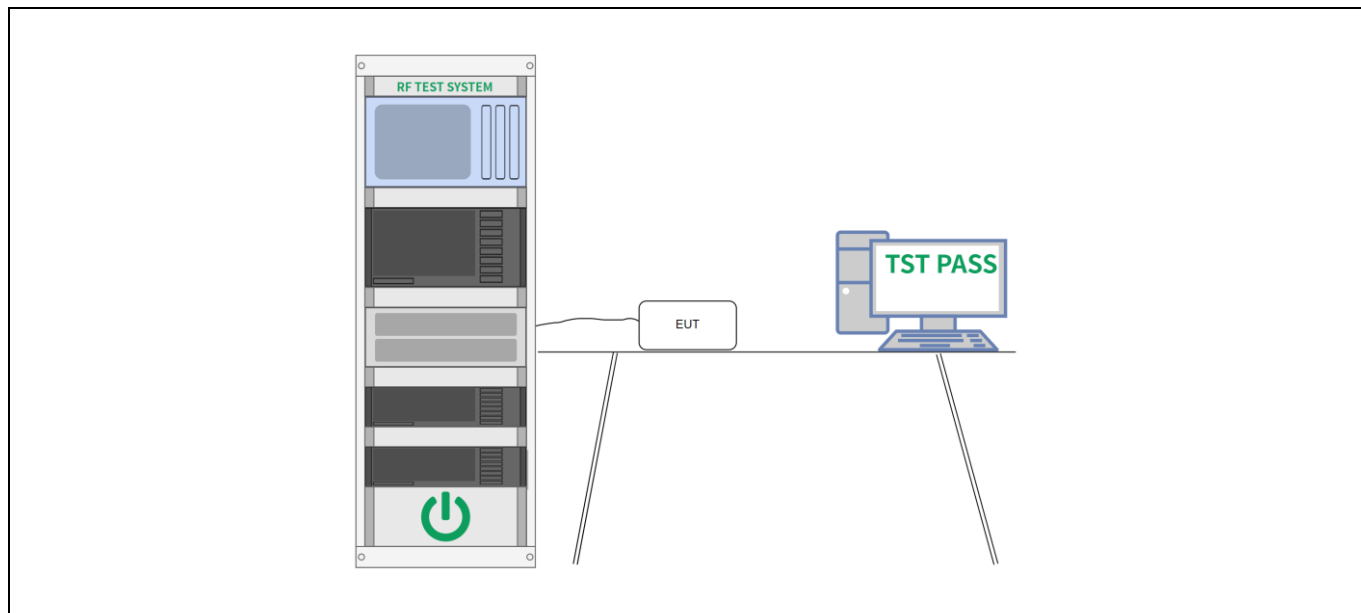
Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)																							
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.																							
	MHz	MHz	MHz	GHz																				
	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 § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply 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><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></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
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																						

	<table><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> <p>** 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.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>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.</p>	Above 960	500	3
Above 960	500	3		
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7			
Procedure:	<p>Above 1GHz:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>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.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <p>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p> <p>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.</p> <p>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.</p> <p>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.</p>			

6.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24 °C	Humidity:	54 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

Please Refer to Appendix for Details.

6.7 Band edge emissions (Radiated)

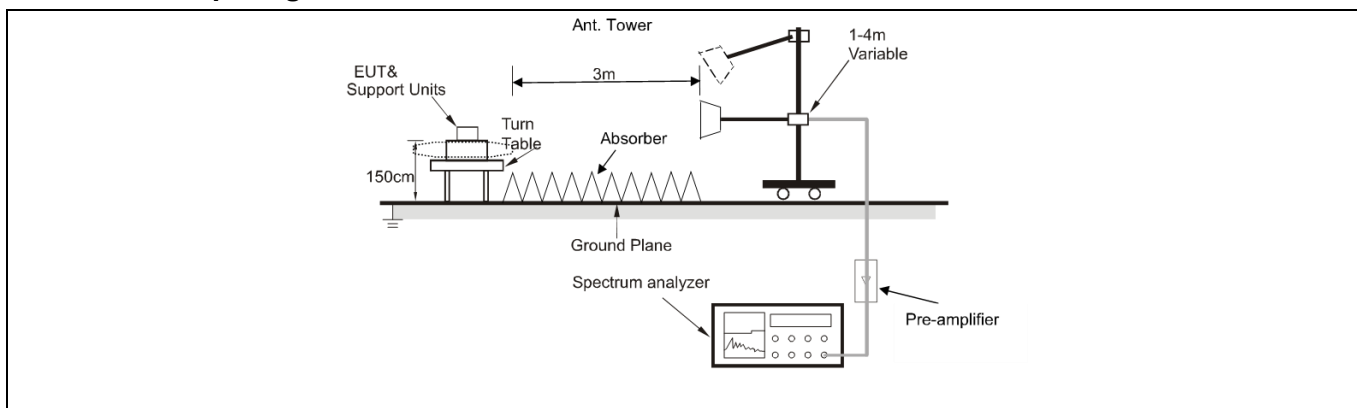
Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)			
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.			
	MHz	MHz	MHz	GHz
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
	¹ 0.495-0.505	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 § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply 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		

	<table><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> <p>** 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.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>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.</p>	Above 960	500	3
Above 960	500	3		
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7			
Procedure:	<p>Above 1GHz:</p> <ol style="list-style-type: none">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.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.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.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.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.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.Test the EUT in the lowest channel, the middle channel, the Highest channel.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.Repeat above procedures until all frequencies measured was complete. <p>Remark:</p> <ol style="list-style-type: none">Level= Read Level+ Cable Loss+ Antenna Factor- Preamp FactorScan 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.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.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:	24.32 °C	Humidity:	46.18 %	Atmospheric Pressure:	99 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Note: The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.					

6.7.2 Test Setup Diagram:



6.7.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	50.90	1.99	52.89	74.00	-21.11	peak
2		4500.000	40.68	1.99	42.67	54.00	-11.33	AVG
3		5150.000	61.42	5.36	66.78	74.00	-7.22	peak
4	*	5150.000	45.15	5.36	50.51	54.00	-3.49	AVG

Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	50.90	1.99	52.89	74.00	-21.11	peak
2		4500.000	40.38	1.99	42.37	54.00	-11.63	AVG
3		5150.000	56.45	5.36	61.81	74.00	-12.19	peak
4	*	5150.000	43.28	5.36	48.64	54.00	-5.36	AVG

Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	52.00	6.35	58.35	74.00	-15.65	peak
2		5350.000	41.51	6.35	47.86	54.00	-6.14	AVG
3		5460.000	53.10	6.24	59.34	74.00	-14.66	peak
4	*	5460.000	42.10	6.24	48.34	54.00	-5.66	AVG

Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	50.97	6.35	57.32	74.00	-16.68	peak
2		5350.000	40.87	6.35	47.22	54.00	-6.78	AVG
3		5460.000	52.47	6.24	58.71	74.00	-15.29	peak
4	*	5460.000	41.70	6.24	47.94	54.00	-6.06	AVG

Mode2 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	51.70	1.99	53.69	74.00	-20.31	peak
2		4500.000	40.22	1.99	42.21	54.00	-11.79	AVG
3		5150.000	60.19	5.36	65.55	74.00	-8.45	peak
4	*	5150.000	45.15	5.36	50.51	54.00	-3.49	AVG

Mode2 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	50.26	1.99	52.25	74.00	-21.75	peak
2		4500.000	40.34	1.99	42.33	54.00	-11.67	AVG
3		5150.000	56.02	5.36	61.38	74.00	-12.62	peak
4	*	5150.000	42.86	5.36	48.22	54.00	-5.78	AVG

Mode2 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	51.17	6.35	57.52	74.00	-16.48	peak
2		5350.000	41.08	6.35	47.43	54.00	-6.57	AVG
3		5460.000	52.56	6.24	58.80	74.00	-15.20	peak
4	*	5460.000	41.80	6.24	48.04	54.00	-5.96	AVG

Mode2 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	51.95	6.35	58.30	74.00	-15.70	peak
2		5350.000	41.01	6.35	47.36	54.00	-6.64	AVG
3		5460.000	52.00	6.24	58.24	74.00	-15.76	peak
4	*	5460.000	41.42	6.24	47.66	54.00	-6.34	AVG

Mode3 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 40 / 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	50.51	1.99	52.50	74.00	-21.50	peak
2		4500.000	40.35	1.99	42.34	54.00	-11.66	AVG
3		5150.000	57.76	5.36	63.12	74.00	-10.88	peak
4	*	5150.000	45.23	5.36	50.59	54.00	-3.41	AVG

Mode3 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 40 / 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	50.93	1.99	52.92	74.00	-21.08	peak
2		4500.000	40.48	1.99	42.47	54.00	-11.53	AVG
3		5150.000	54.25	5.36	59.61	74.00	-14.39	peak
4	*	5150.000	43.25	5.36	48.61	54.00	-5.39	AVG

Mode3 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 40 / 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	51.06	6.35	57.41	74.00	-16.59	peak
2		5350.000	41.09	6.35	47.44	54.00	-6.56	AVG
3		5460.000	51.82	6.24	58.06	74.00	-15.94	peak
4	*	5460.000	42.02	6.24	48.26	54.00	-5.74	AVG

Mode3 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 40 / 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	50.73	6.35	57.08	74.00	-16.92	peak
2		5350.000	40.88	6.35	47.23	54.00	-6.77	AVG
3		5460.000	52.49	6.24	58.73	74.00	-15.27	peak
4	*	5460.000	41.60	6.24	47.84	54.00	-6.16	AVG

Mode4 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	50.86	1.99	52.85	74.00	-21.15	peak
2		4500.000	40.34	1.99	42.33	54.00	-11.67	AVG
3		5150.000	59.28	5.36	64.64	74.00	-9.36	peak
4	*	5150.000	45.08	5.36	50.44	54.00	-3.56	AVG

Mode4 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	51.09	1.99	53.08	74.00	-20.92	peak
2		4500.000	40.30	1.99	42.29	54.00	-11.71	AVG
3		5150.000	55.66	5.36	61.02	74.00	-12.98	peak
4	*	5150.000	42.77	5.36	48.13	54.00	-5.87	AVG

Mode4 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	51.82	6.35	58.17	74.00	-15.83	peak
2		5350.000	41.45	6.35	47.80	54.00	-6.20	AVG
3		5460.000	53.10	6.24	59.34	74.00	-14.66	peak
4	*	5460.000	42.11	6.24	48.35	54.00	-5.65	AVG

Mode4 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	51.18	6.35	57.53	74.00	-16.47	peak
2		5350.000	40.80	6.35	47.15	54.00	-6.85	AVG
3		5460.000	51.89	6.24	58.13	74.00	-15.87	peak
4	*	5460.000	41.47	6.24	47.71	54.00	-6.29	AVG

Mode5 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 40 / 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	50.88	1.99	52.87	74.00	-21.13	peak
2		4500.000	40.38	1.99	42.37	54.00	-11.63	AVG
3		5150.000	59.17	5.36	64.53	74.00	-9.47	peak
4	*	5150.000	44.96	5.36	50.32	54.00	-3.68	AVG

Mode5 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 40 / 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	50.54	1.99	52.53	74.00	-21.47	peak
2		4500.000	40.44	1.99	42.43	54.00	-11.57	AVG
3		5150.000	54.02	5.36	59.38	74.00	-14.62	peak
4	*	5150.000	42.68	5.36	48.04	54.00	-5.96	AVG

Mode5 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 40 / 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	51.82	6.35	58.17	74.00	-15.83	peak
2		5350.000	41.18	6.35	47.53	54.00	-6.47	AVG
3		5460.000	51.78	6.24	58.02	74.00	-15.98	peak
4	*	5460.000	41.83	6.24	48.07	54.00	-5.93	AVG

Mode5 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 40 / 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	50.14	6.35	56.49	74.00	-17.51	peak
2		5350.000	40.58	6.35	46.93	54.00	-7.07	AVG
3		5460.000	52.03	6.24	58.27	74.00	-15.73	peak
4	*	5460.000	41.48	6.24	47.72	54.00	-6.28	AVG

Mode6 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 80 / 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	50.01	1.99	52.00	74.00	-22.00	peak
2		4500.000	40.44	1.99	42.43	54.00	-11.57	AVG
3		5150.000	54.04	5.36	59.40	74.00	-14.60	peak
4	*	5150.000	44.25	5.36	49.61	54.00	-4.39	AVG

Mode6 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 80 / 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	50.99	1.99	52.98	74.00	-21.02	peak
2		4500.000	40.39	1.99	42.38	54.00	-11.62	AVG
3		5150.000	53.15	5.36	58.51	74.00	-15.49	peak
4	*	5150.000	42.66	5.36	48.02	54.00	-5.98	AVG

Mode6 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 80 / 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	51.24	6.35	57.59	74.00	-16.41	peak
2	5350.000	41.24	6.35	47.59	54.00	-6.41	AVG
3	5460.000	51.93	6.24	58.17	74.00	-15.83	peak
4 *	5460.000	41.70	6.24	47.94	54.00	-6.06	AVG

Mode6 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 80 / 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	6.35	56.74	74.00	-17.26	peak
2	5350.000	40.71	6.35	47.06	54.00	-6.94	AVG
3	5460.000	51.86	6.24	58.10	74.00	-15.90	peak
4 *	5460.000	41.56	6.24	47.80	54.00	-6.20	AVG

6.8 Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)																								
Test Limit:	<p>Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.</p> <p>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:</p> <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> <p>** 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.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>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.</p>	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
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																							
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5																								
Procedure:	<p>Below 1GHz:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>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.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p>																								

	<p>Remark:</p> <ol style="list-style-type: none"> 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. <p>Above 1GHz:</p> <ol style="list-style-type: none"> 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. <p>Remark:</p> <ol style="list-style-type: none"> 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:

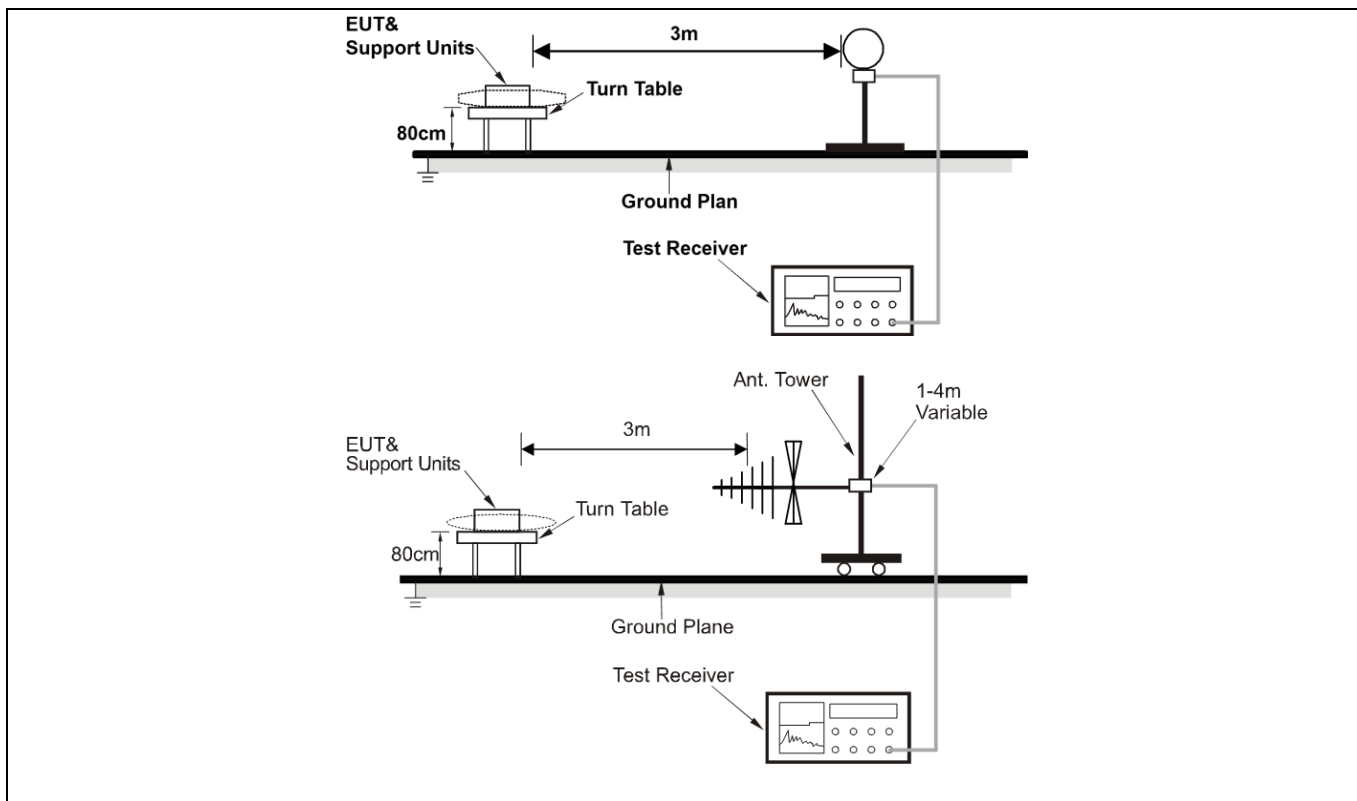
Temperature:	24.32 °C	Humidity:	46.18 %	Atmospheric Pressure:	99 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report				

Note:

The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.

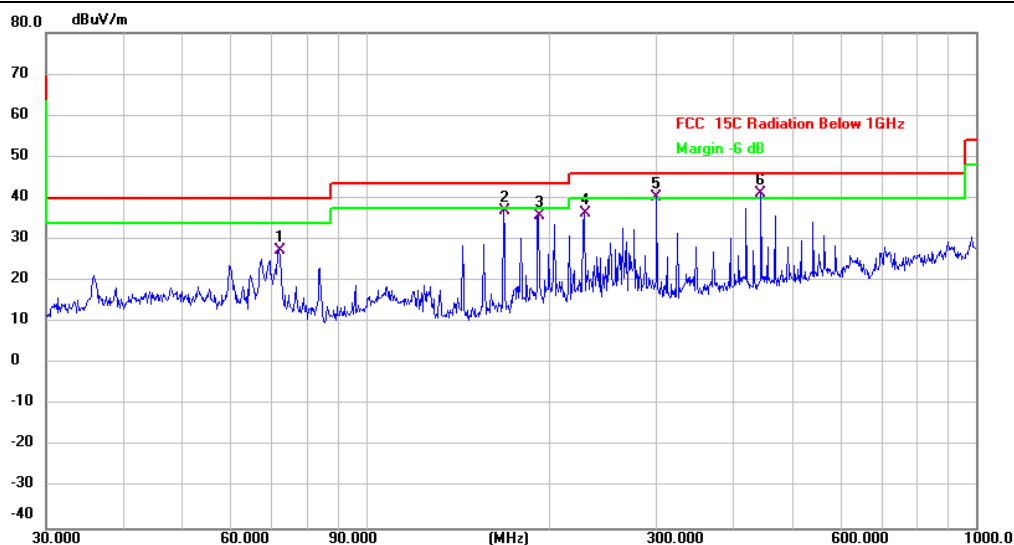
All modes of operation of the EUT were investigated, and only the worst-case results are reported.

There were no emissions found below 30MHz within 20dB of the limit.

6.8.2 Test Setup Diagram:


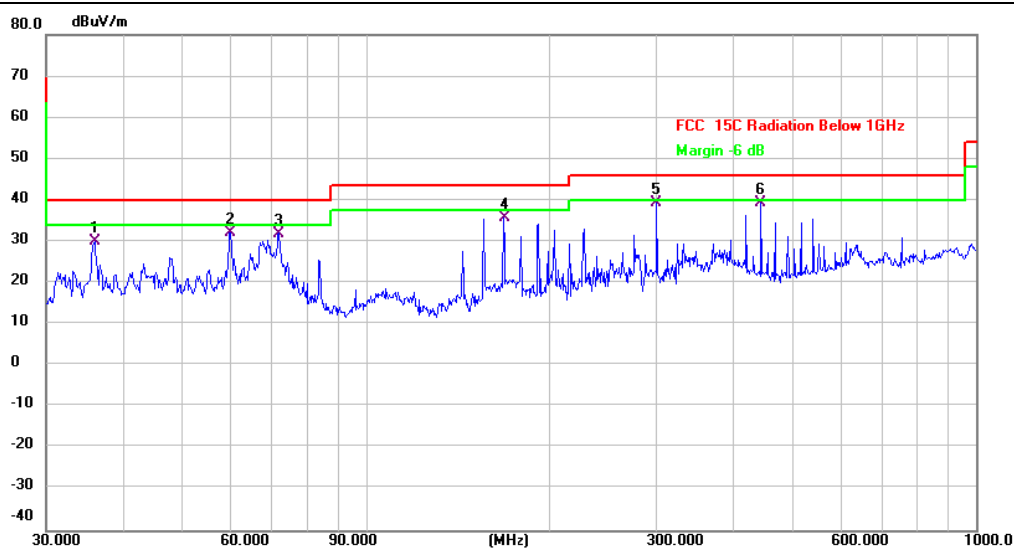
6.8.3 Test Data:

Mode1(Model: i20) / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: H



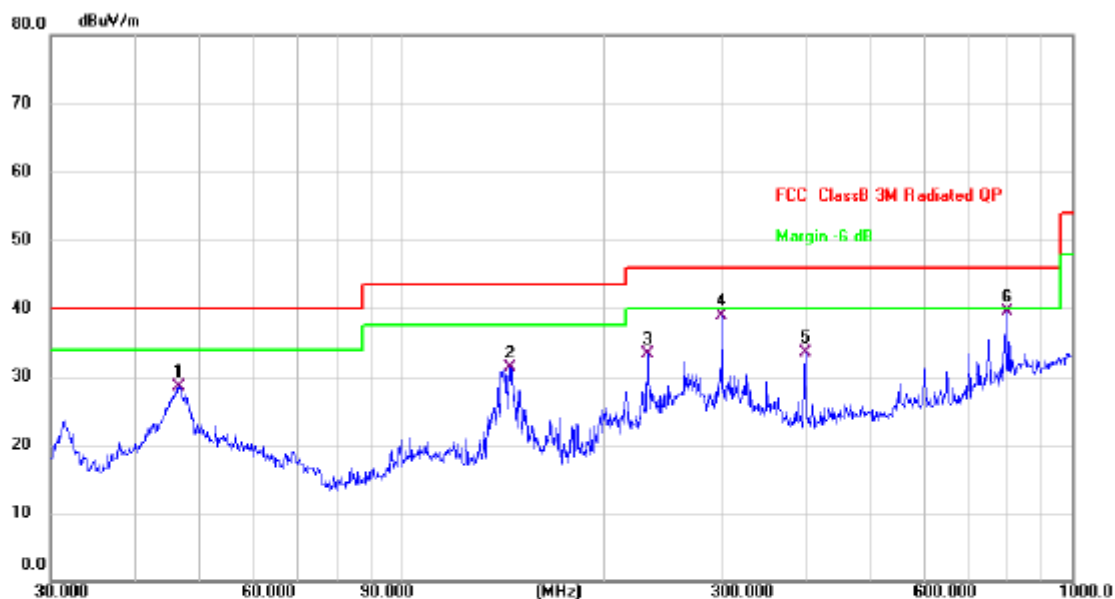
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		72.0843	38.75	-11.29	27.46	40.00	-12.54	QP	
2		167.8243	48.14	-11.04	37.10	43.50	-6.40	QP	
3		192.4186	45.60	-9.82	35.78	43.50	-7.72	QP	
4		228.4904	44.08	-7.69	36.39	46.00	-9.61	QP	
5	!	300.3672	44.92	-4.77	40.15	46.00	-5.85	QP	
6	*	444.8514	45.54	-4.30	41.24	46.00	-4.76	QP	

Mode1(Model: i20) / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: H



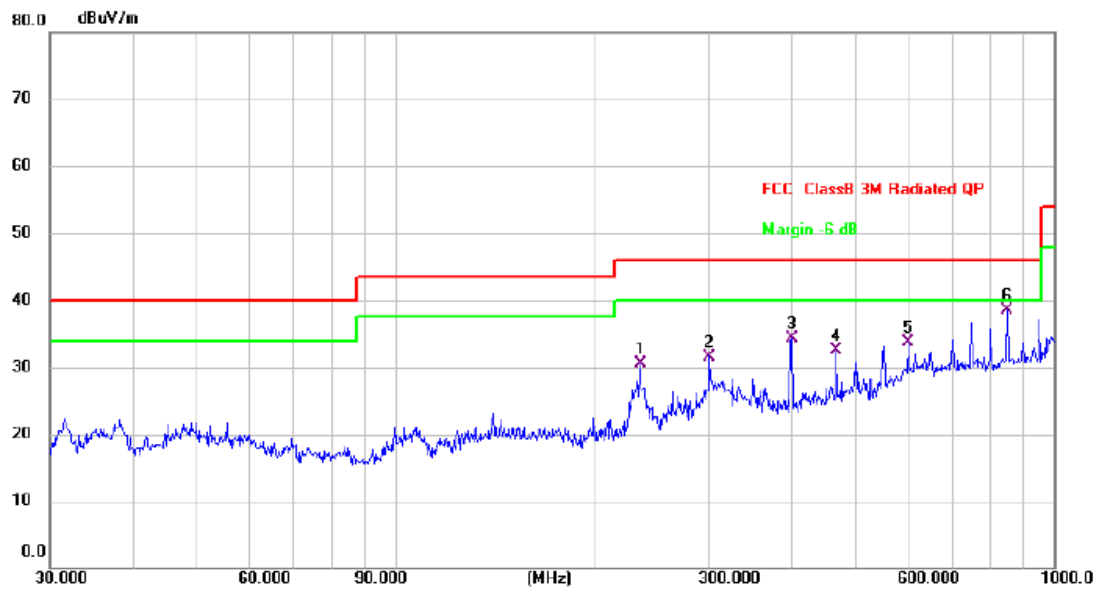
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		36.0007	39.73	-9.78	29.95	40.00	-10.05	QP	
2		60.0691	42.03	-9.78	32.25	40.00	-7.75	QP	
3		72.0843	43.29	-11.29	32.00	40.00	-8.00	QP	
4		167.8243	46.86	-11.04	35.82	43.50	-7.68	QP	
5	*	300.3672	44.04	-4.77	39.27	46.00	-6.73	QP	
6		444.8514	43.52	-4.30	39.22	46.00	-6.78	QP	

Mode1(Model: i20S) / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		46.6662	34.74	-6.33	28.41	40.00	-11.59	QP	
2		145.3505	41.16	-9.76	31.40	43.50	-12.10	QP	
3		232.5318	39.46	-6.19	33.27	46.00	-12.73	QP	
4		300.3672	42.71	-3.83	38.88	46.00	-7.12	QP	
5		400.4318	36.45	-3.00	33.45	46.00	-12.55	QP	
6	*	801.7862	36.22	3.37	39.59	46.00	-6.41	QP	

Mode1(Model: i20S) / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: H



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		235.8163	36.52	-6.00	30.52	46.00	-15.48	QP	
2		300.3672	35.43	-3.83	31.60	46.00	-14.40	QP	
3		400.4318	37.35	-3.00	34.35	46.00	-11.65	QP	
4		467.2348	34.02	-1.53	32.49	46.00	-13.51	QP	
5		601.4265	32.49	1.29	33.78	46.00	-12.22	QP	
6	*	851.0353	33.55	4.88	38.43	46.00	-7.57	QP	

6.9 Undesirable emission limits (above 1GHz)

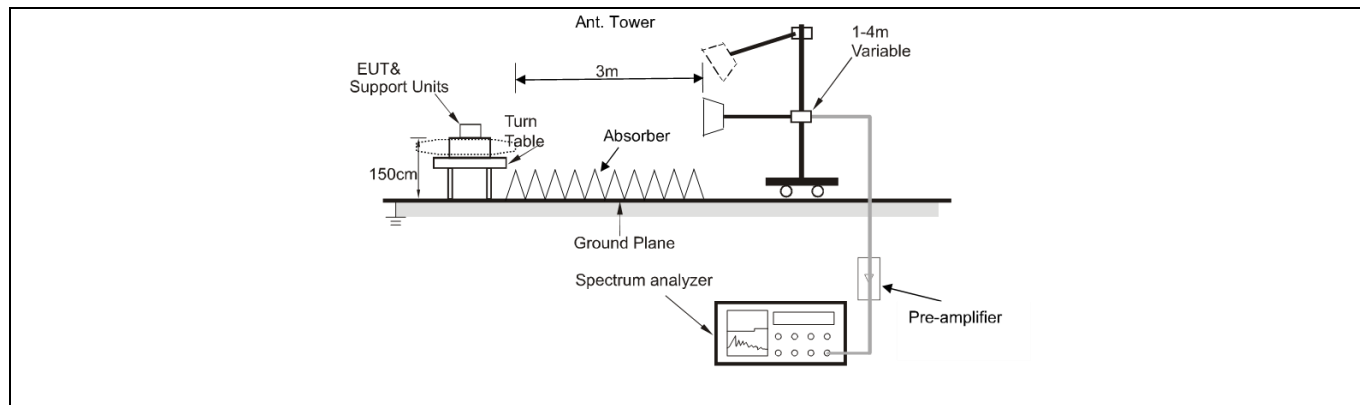
Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(10)			
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.			
	MHz	MHz	MHz	GHz
	0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
	¹ 0.495-0.505	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 § 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35 apply 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	

	<table><tr><td>Above 960</td><td>500</td><td>3</td></tr></table> <p>** 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.</p> <p>In the emission table above, the tighter limit applies at the band edges.</p> <p>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.</p>	Above 960	500	3
Above 960	500	3		
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.6, 12.7.7			
Procedure:	<p>Above 1GHz:</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p> <p>g. Test the EUT in the lowest channel, the middle channel, the Highest channel.</p> <p>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.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p> <p>Remark:</p> <p>1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor</p> <p>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.</p> <p>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.</p> <p>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.</p>			

6.9.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.32 °C	Humidity:	46.18 %	Atmospheric Pressure:	99 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				
Note: Test frequency are from 1GHz to 40GHz, the amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported. All modes of operation of the EUT were investigated, and only the worst-case results are reported.					

6.9.2 Test Setup Diagram:



6.9.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	48.09	3.46	51.55	74.00	-22.45	peak
2		10360.000	37.70	3.46	41.16	54.00	-12.84	AVG
3		15540.000	7.59	47.26	54.85	74.00	-19.15	peak
4	*	15540.000	-2.09	47.26	45.17	54.00	-8.83	AVG

Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / CH: L

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	48.29	3.46	51.75	74.00	-22.25	peak
2		10360.000	37.91	3.46	41.37	54.00	-12.63	AVG
3		15540.000	7.93	47.26	55.19	74.00	-18.81	peak
4	*	15540.000	-3.10	47.26	44.16	54.00	-9.84	AVG

Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	49.22	3.13	52.35	74.00	-21.65	peak
2		10400.000	39.05	3.13	42.18	54.00	-11.82	AVG
3		15600.000	8.05	46.52	54.57	74.00	-19.43	peak
4	*	15600.000	-2.03	46.52	44.49	54.00	-9.51	AVG

Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	48.73	3.13	51.86	74.00	-22.14	peak
2		10400.000	38.14	3.13	41.27	54.00	-12.73	AVG
3		15600.000	11.25	46.52	57.77	74.00	-16.23	peak
4	*	15600.000	1.62	46.52	48.14	54.00	-5.86	AVG

Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / 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	49.03	3.56	52.59	74.00	-21.41	peak
2		10480.000	38.62	3.56	42.18	54.00	-11.82	AVG
3		15720.000	7.23	46.46	53.69	74.00	-20.31	peak
4	*	15720.000	-4.12	46.46	42.34	54.00	-11.66	AVG

Mode1 / Polarization: Vertical / Band: 5150-5250 MHz / BW: 20 / 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	48.97	3.56	52.53	74.00	-21.47	peak
2		10480.000	38.58	3.56	42.14	54.00	-11.86	AVG
3		15720.000	9.13	46.46	55.59	74.00	-18.41	peak
4	*	15720.000	-3.17	46.46	43.29	54.00	-10.71	AVG

Photographs of the test setup

Refer to Appendix - Test Setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

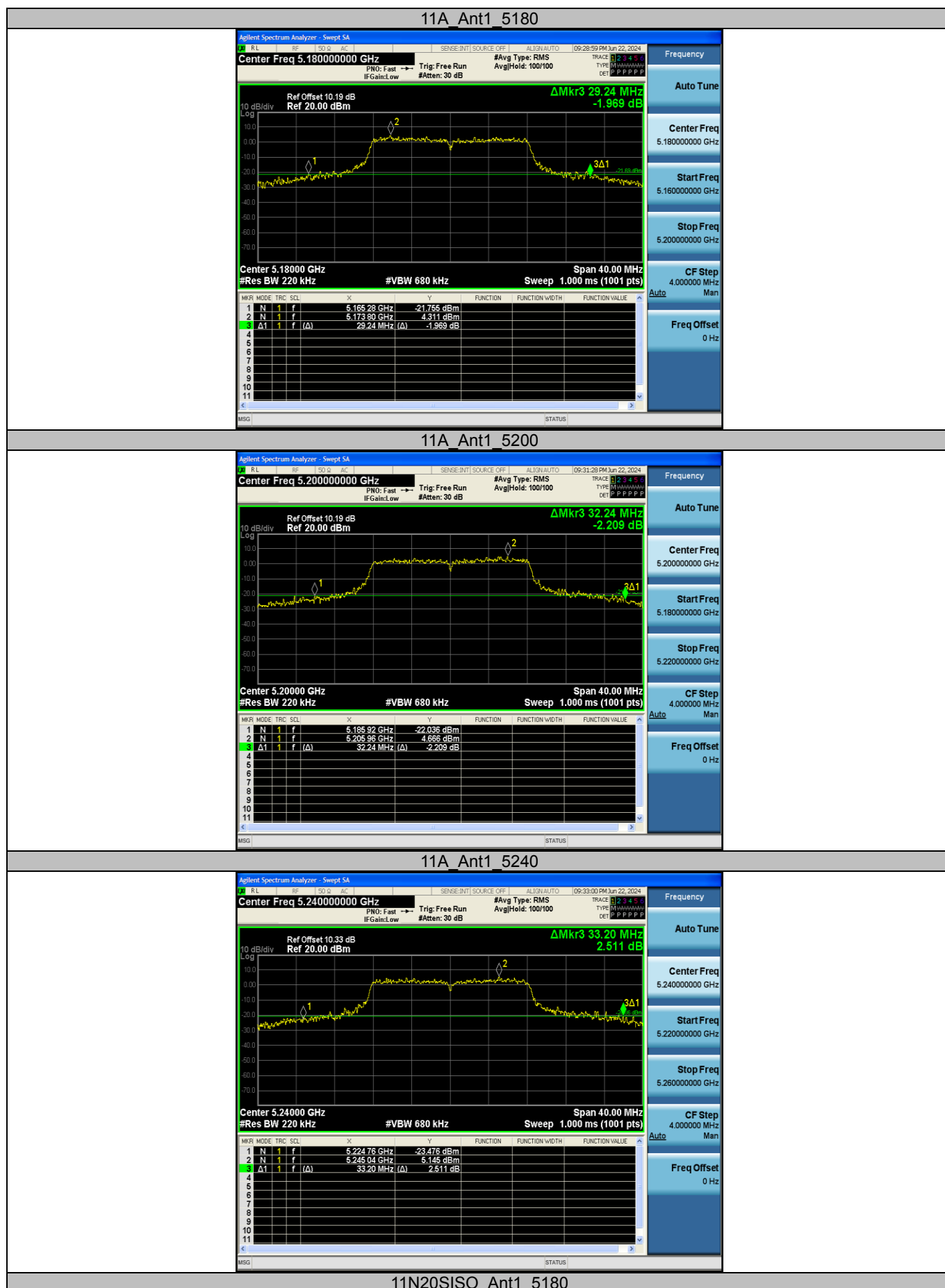
Appendix

Appendix A1: Emission bandwidth (26dB bandwidth)

Test Result

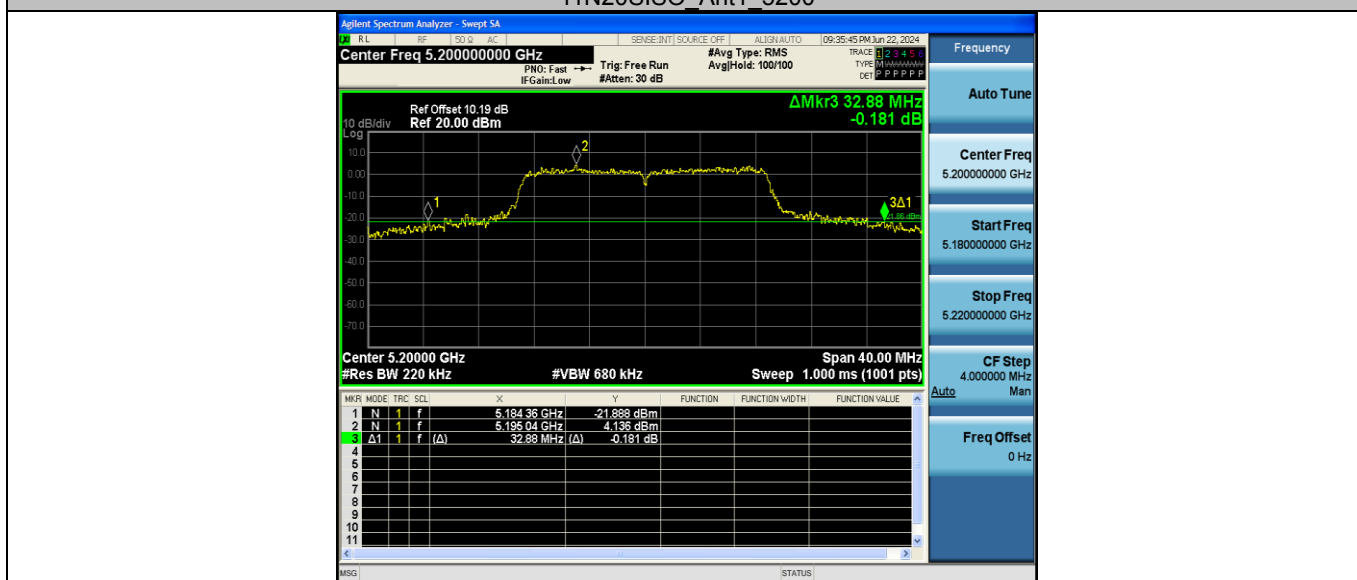
Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]
11A	Ant1	5180	29.24
		5200	32.24
		5240	33.20
11N20SISO	Ant1	5180	30.52
		5200	32.88
		5240	31.96
11N40SISO	Ant1	5190	42.40
		5230	71.20
11AC20SISO	Ant1	5180	33.72
		5200	34.96
		5240	35.84
11AC40SISO	Ant1	5190	70.32
		5230	70.40
11AC80SISO	Ant1	5210	91.52

Test Graphs





11N20SISO_Ant1_5200



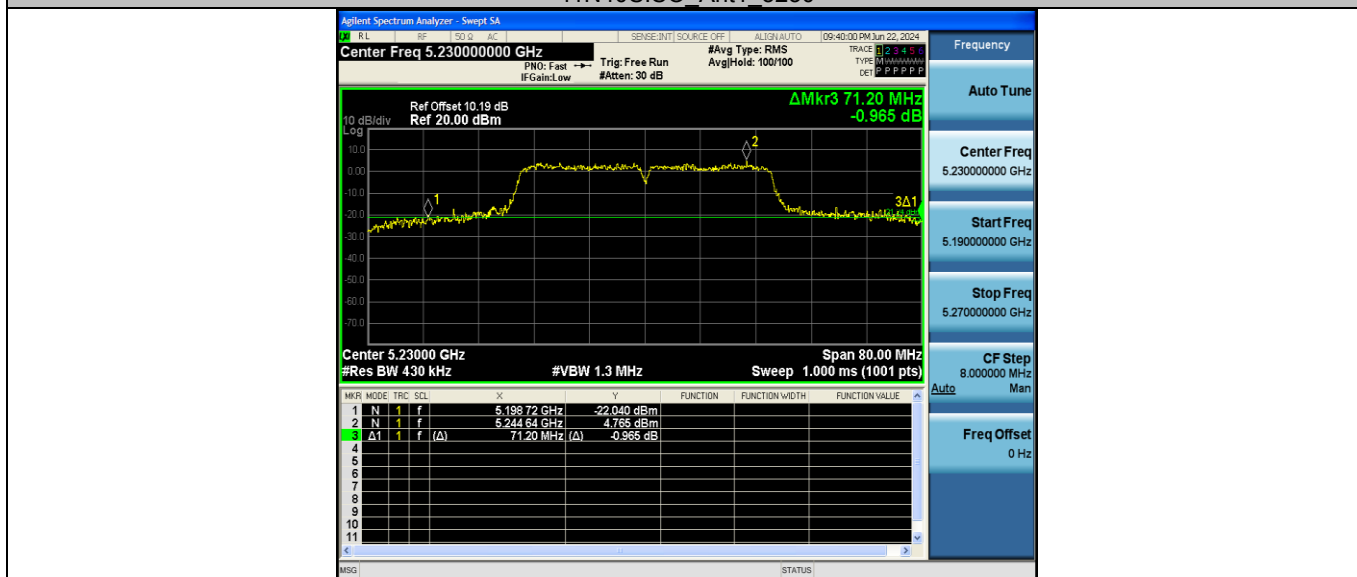
11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230



11AC20SISO_Ant1_5180



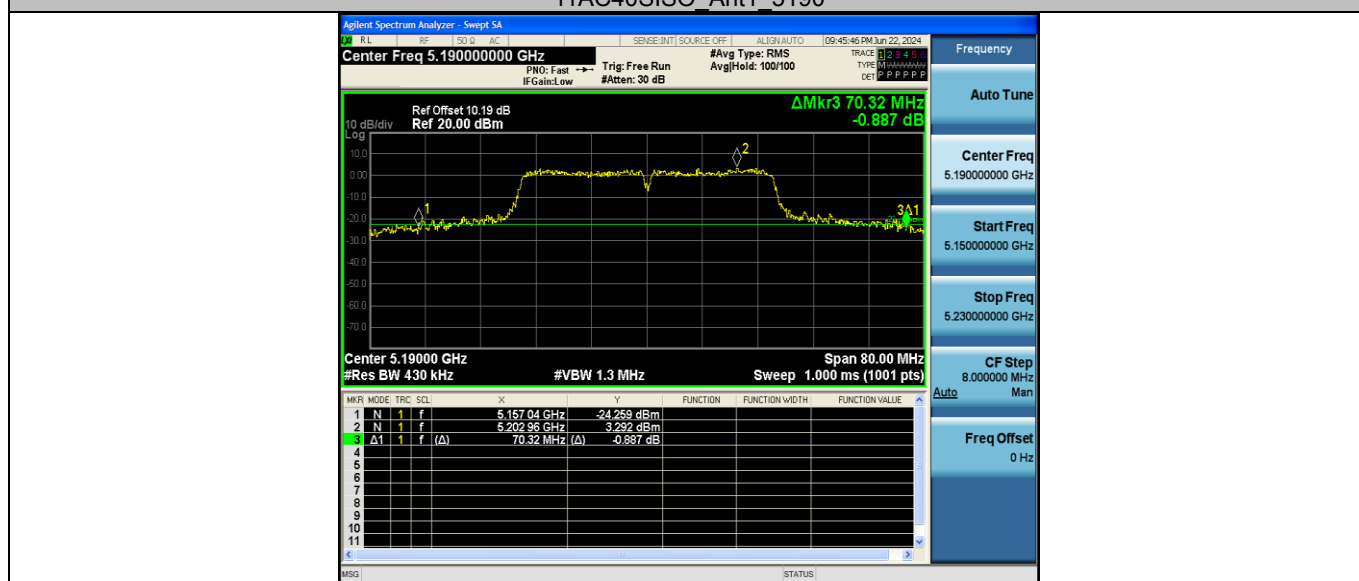
11AC20SISO_Ant1_5200



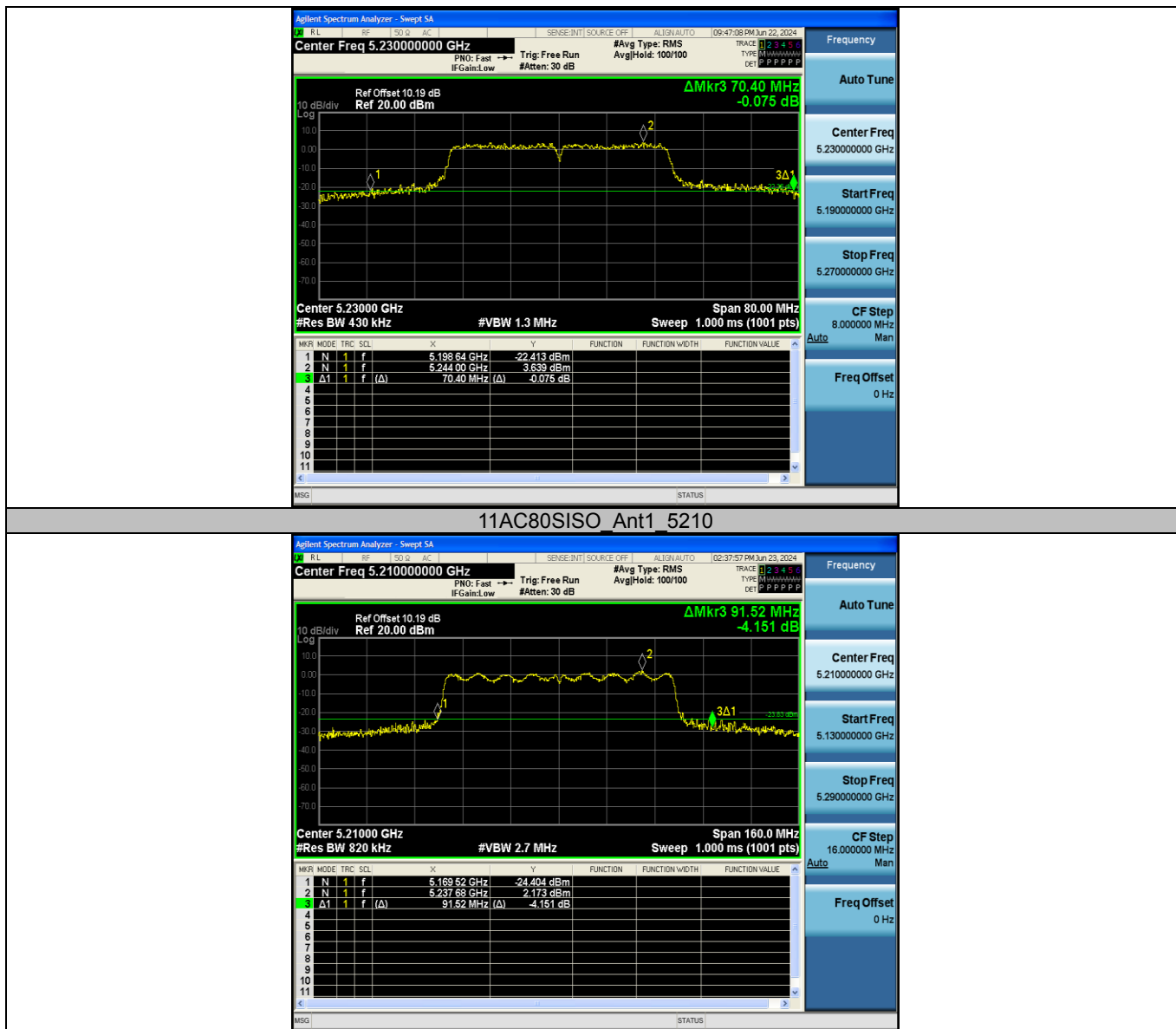
11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



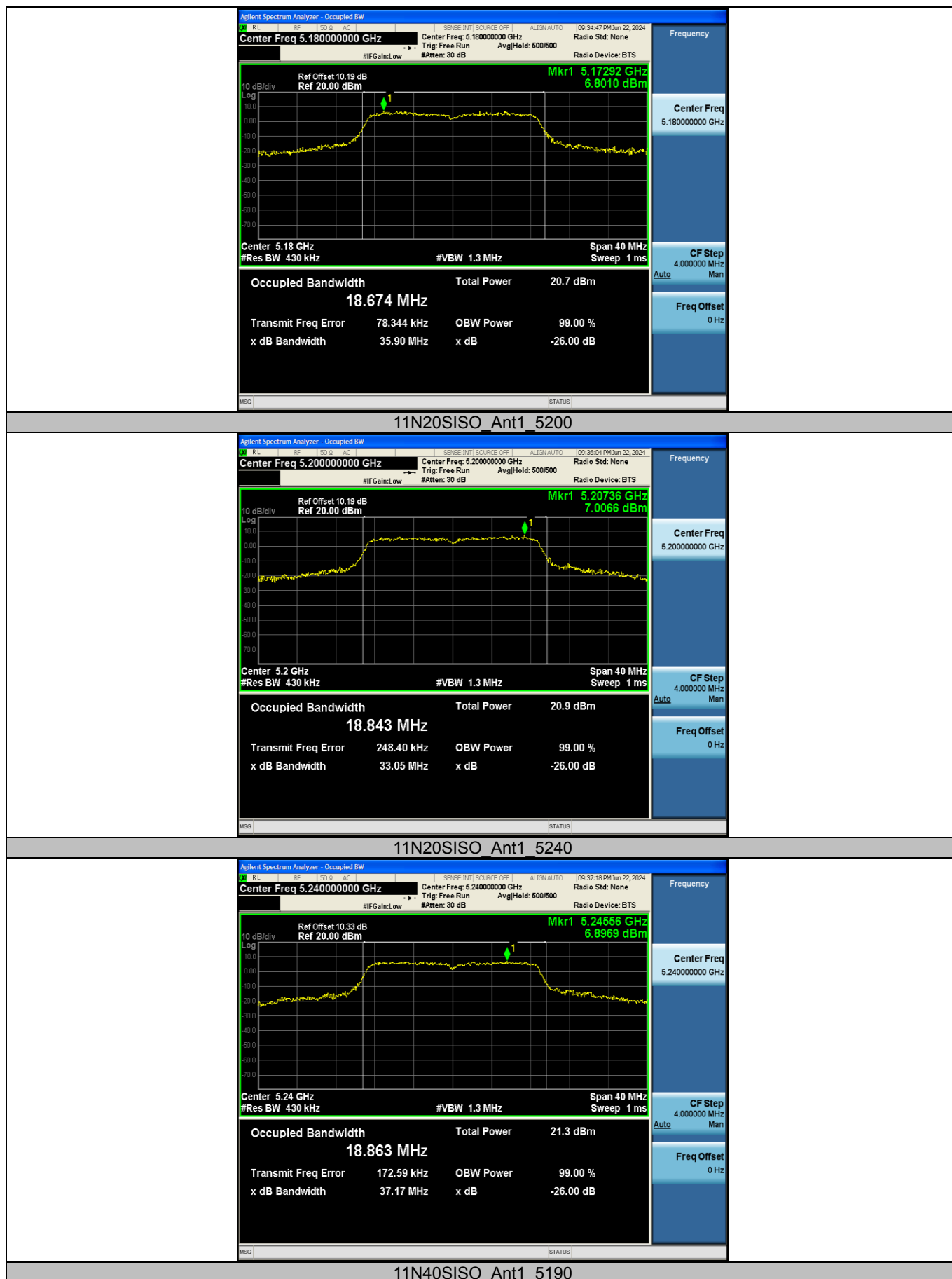
6.10 Appendix A2: Occupied channel bandwidth

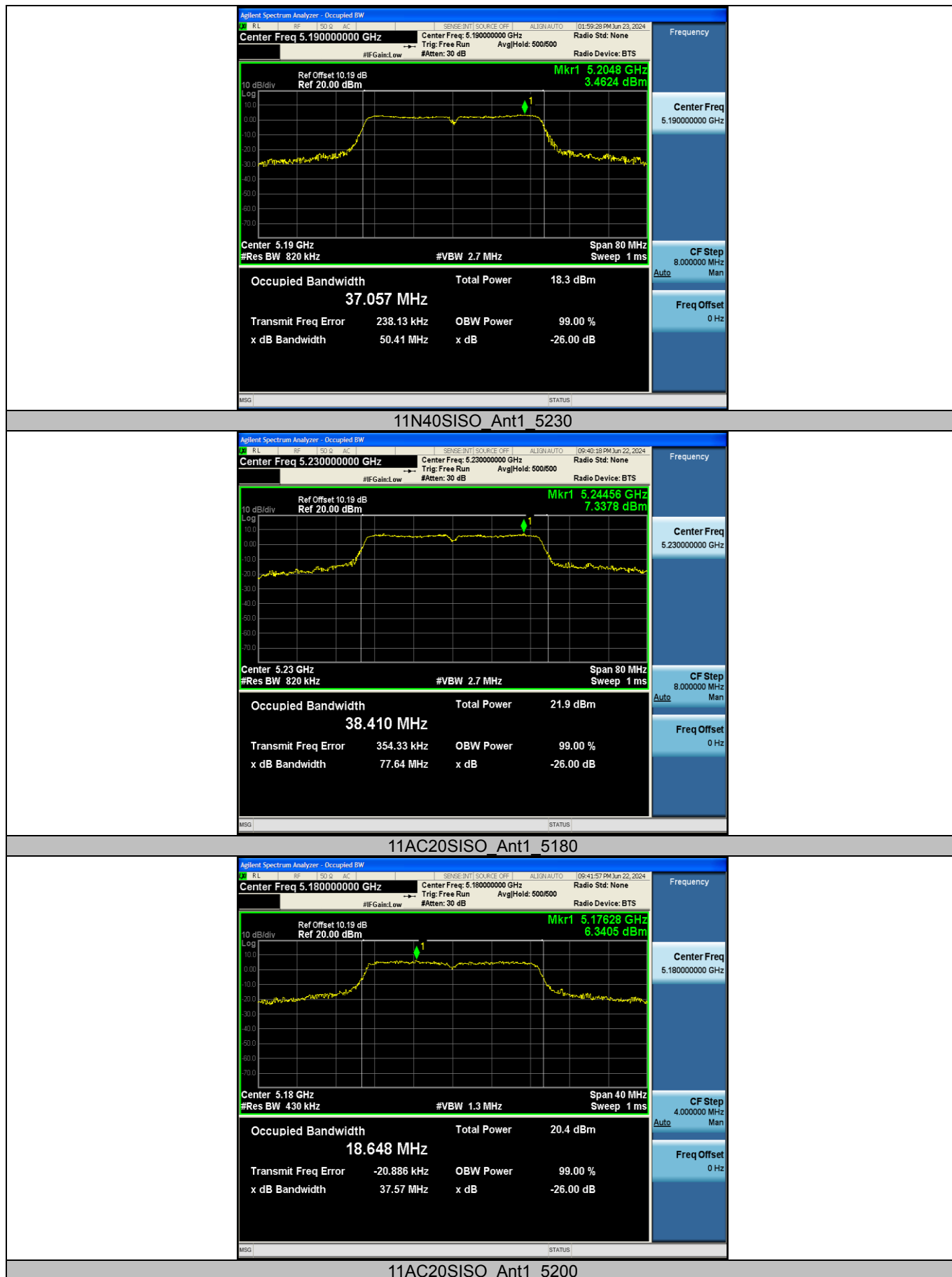
6.10.1 Test Result

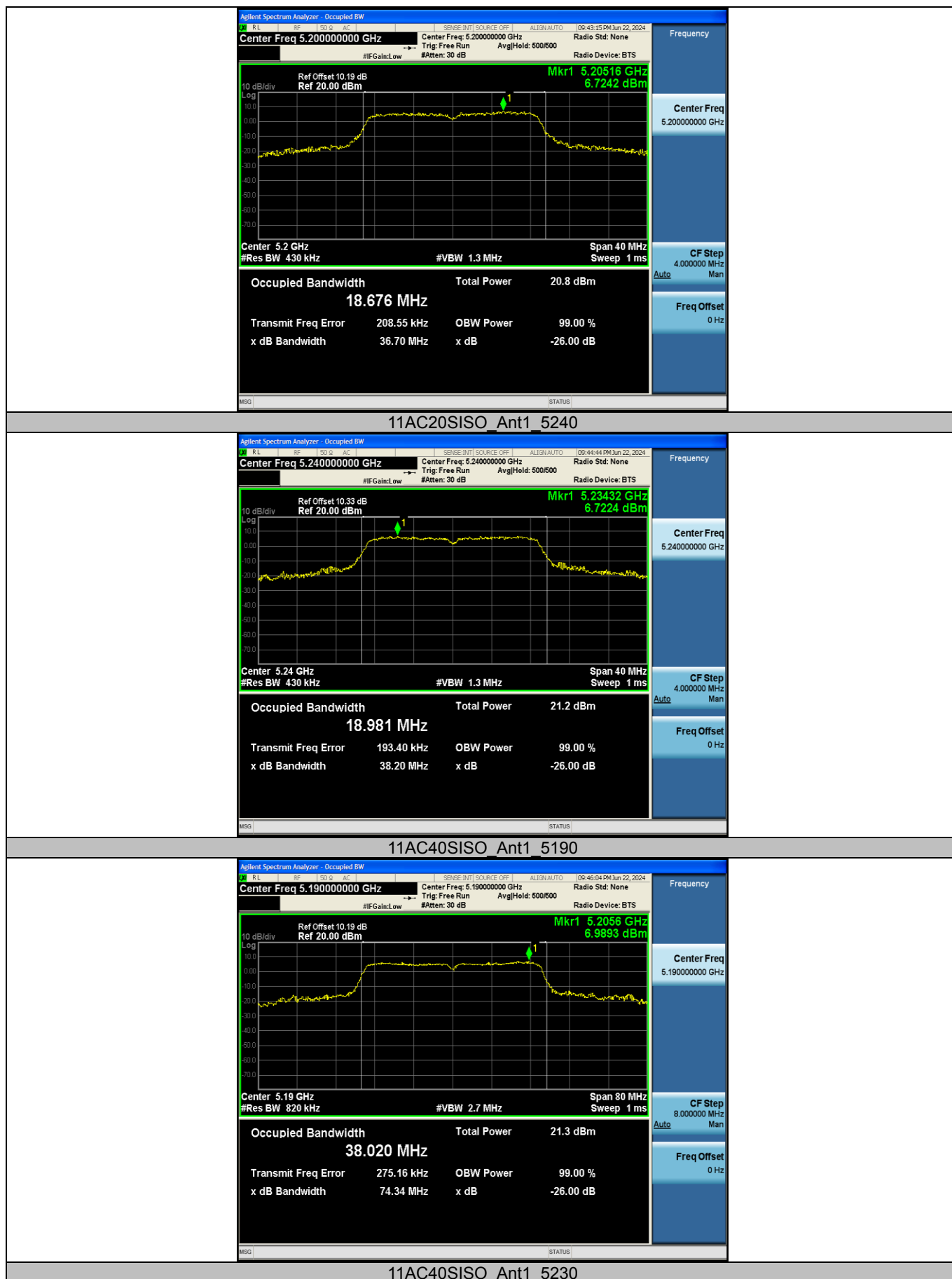
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	17.952	5171.0126	5188.9646
		5200	18.227	5191.2330	5209.4600
		5240	18.363	5231.1373	5249.5003
11N20SISO	Ant1	5180	18.674	5170.7413	5189.4153
		5200	18.843	5190.8269	5209.6699
		5240	18.863	5230.7411	5249.6041
11N40SISO	Ant1	5190	37.057	5171.7096	5208.7666
		5230	38.410	5211.1493	5249.5593
11AC20SISO	Ant1	5180	18.648	5170.6551	5189.3031
		5200	18.676	5190.8706	5209.5466
		5240	18.981	5230.7029	5249.6839
11AC40SISO	Ant1	5190	38.020	5171.2652	5209.2852
		5230	37.940	5211.3866	5249.3266
11AC80SISO	Ant1	5210	76.259	5172.0782	5248.3372

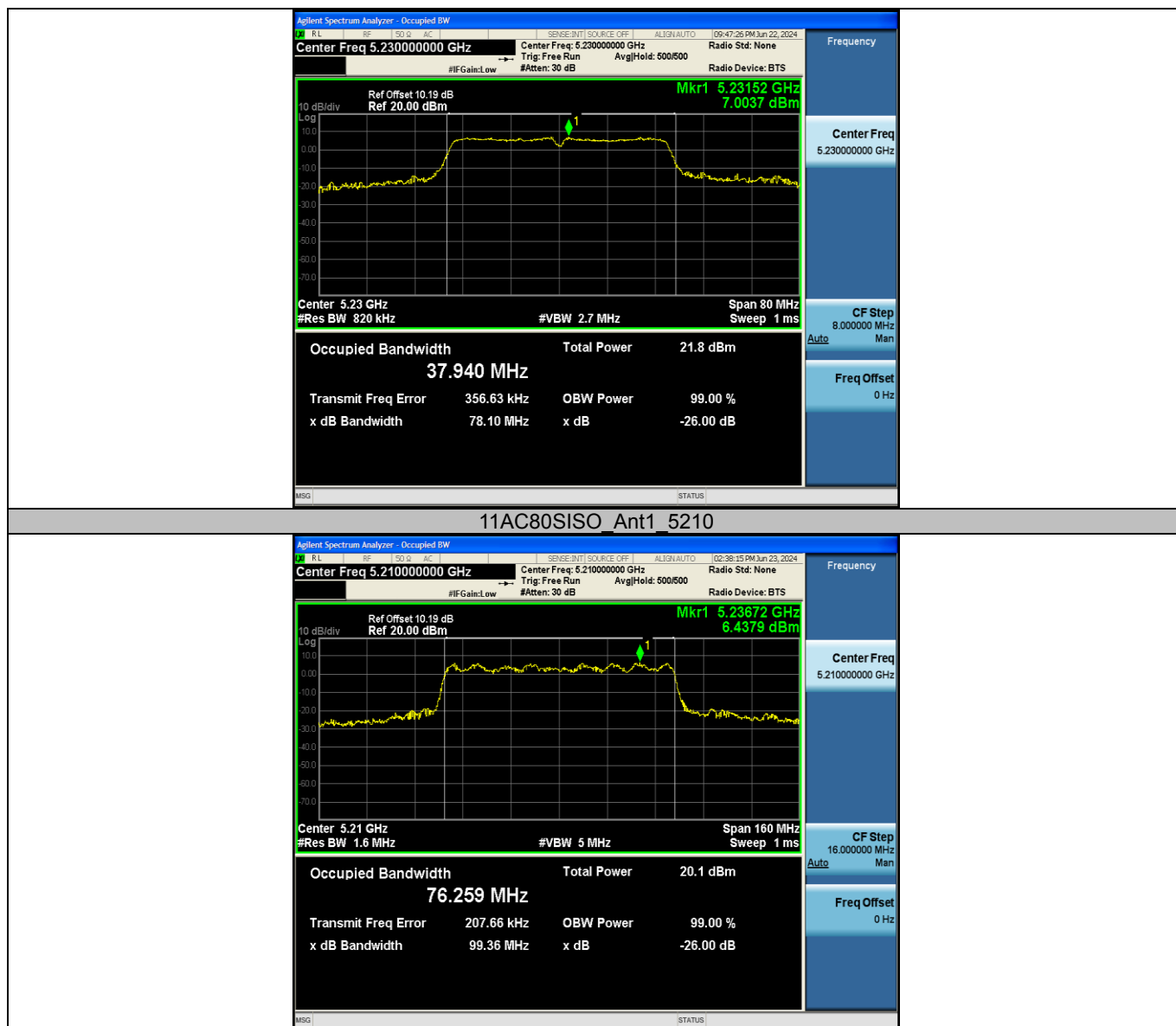
6.10.2 Test Graphs











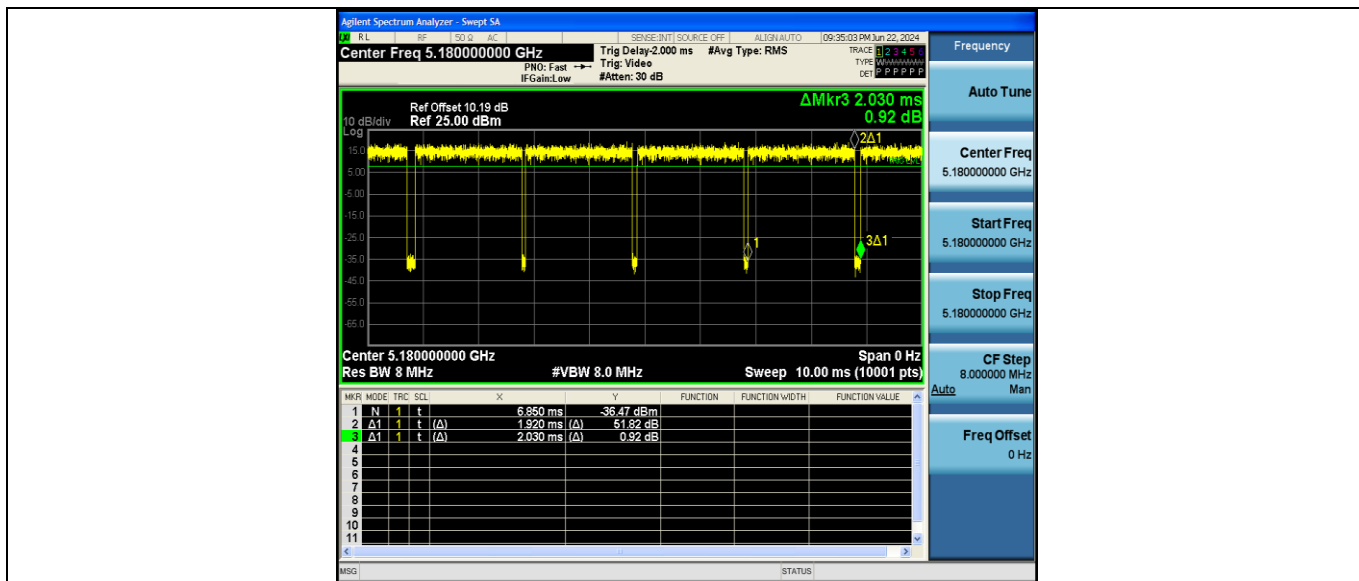
Appendix B: Duty Cycle

Test Result

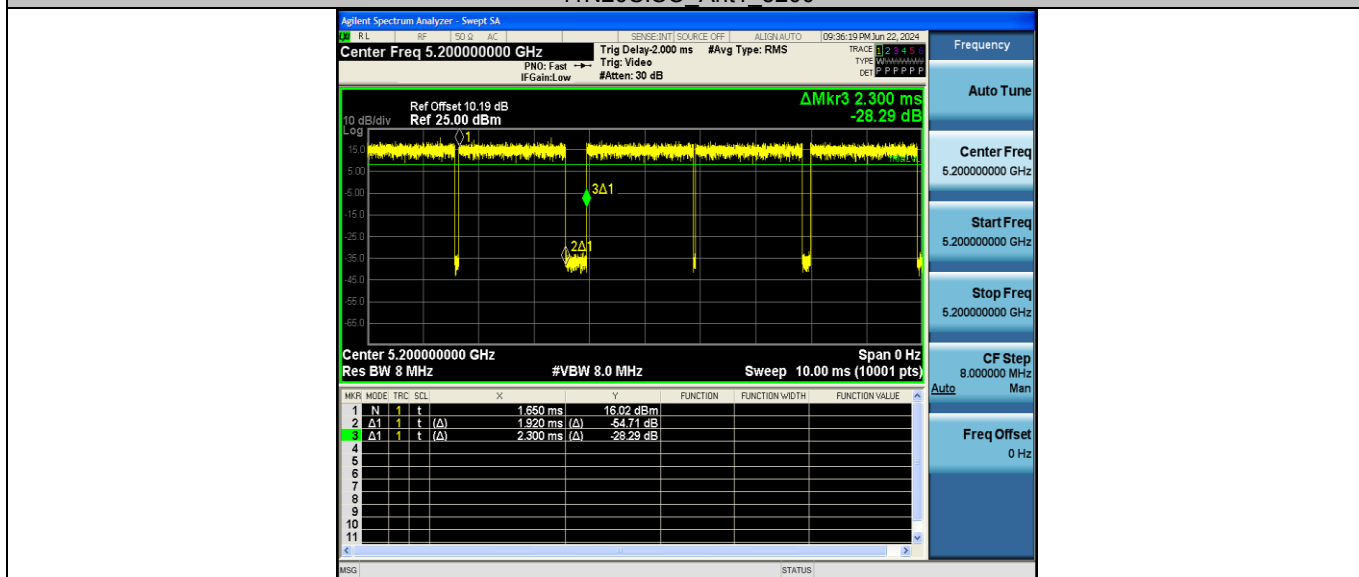
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	2.07	2.24	92.41
		5200	2.07	2.20	94.09
		5240	2.07	2.20	94.09
11N20SISO	Ant1	5180	1.92	2.03	94.58
		5200	1.92	2.30	83.48
		5240	1.92	2.08	92.31
11N40SISO	Ant1	5190	0.95	1.09	87.16
		5230	0.94	1.10	85.45
11AC20SISO	Ant1	5180	1.93	2.07	93.24
		5200	1.94	2.09	92.82
		5240	1.93	2.10	91.90
11AC40SISO	Ant1	5190	0.95	1.13	84.07
		5230	0.95	1.12	84.82
11AC80SISO	Ant1	5210	0.46	0.64	71.88

Test Graphs

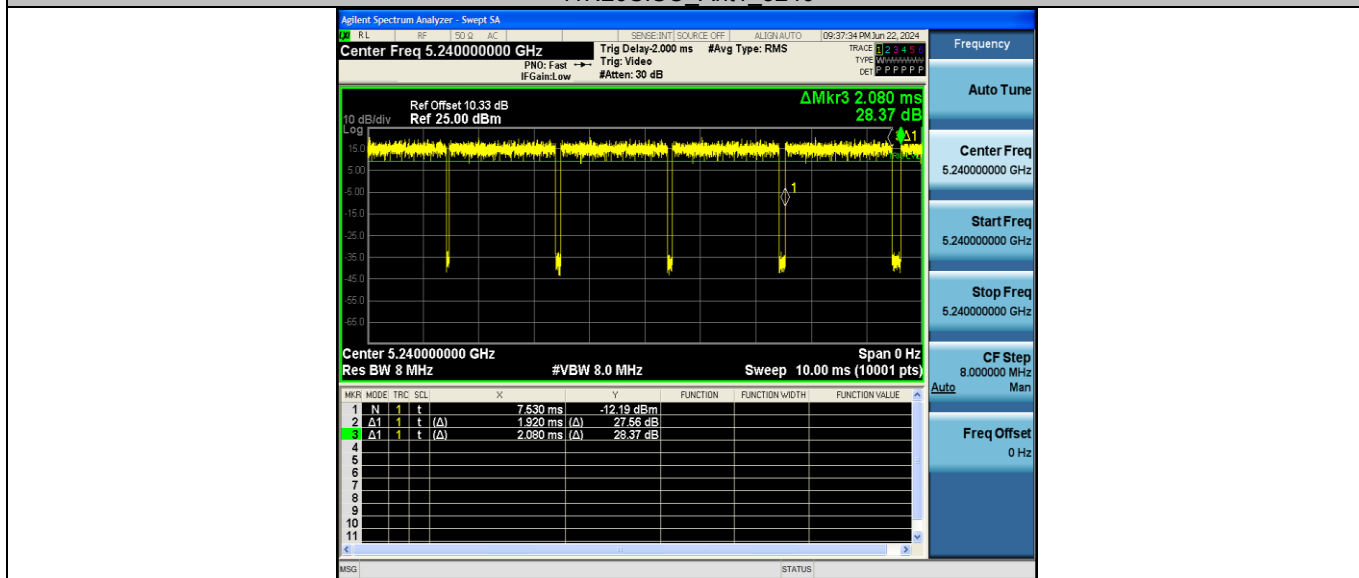




11N20SISO_Ant1_5200



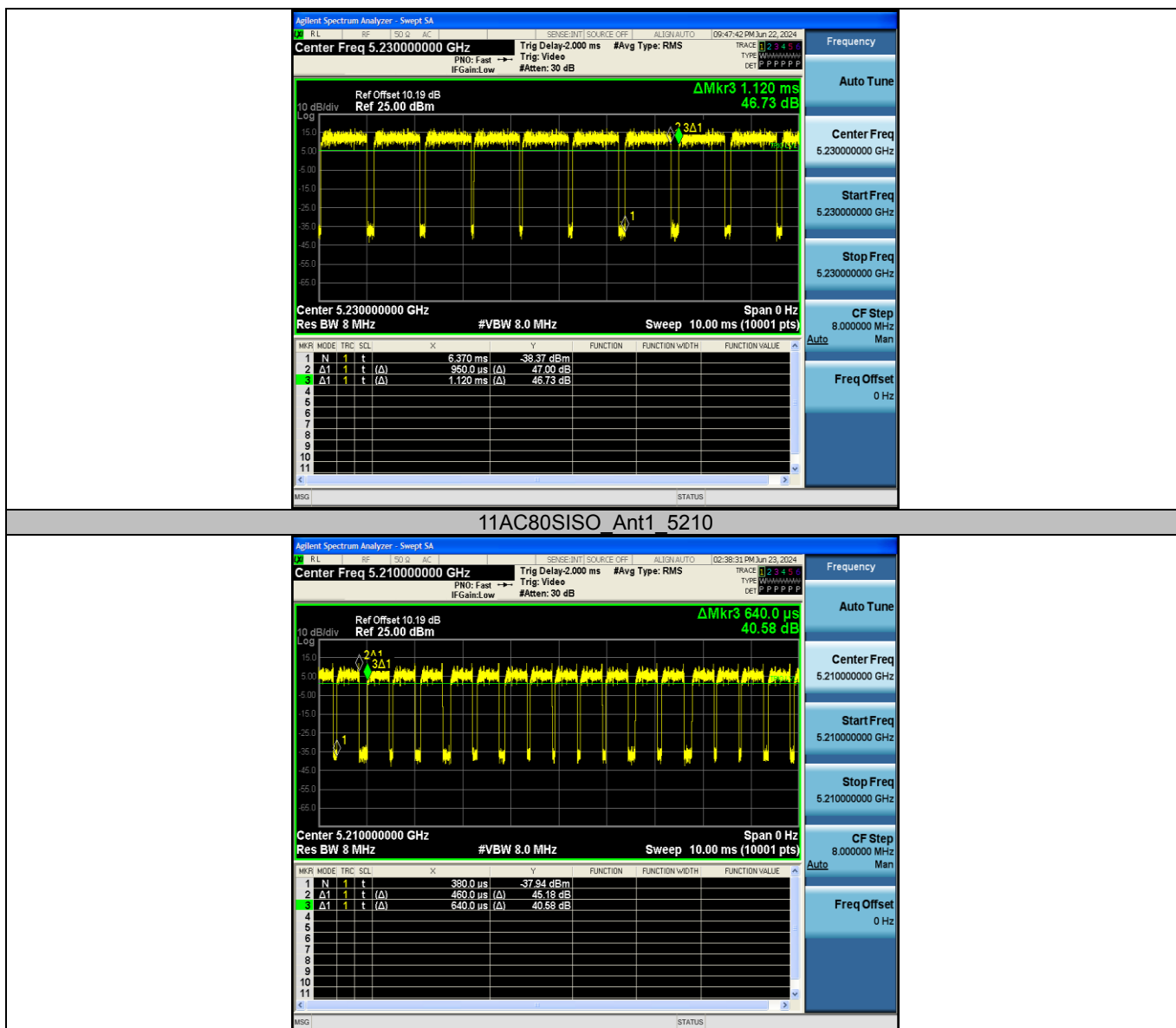
11N20SISO_Ant1_5240



11N40SISO_Ant1_5190





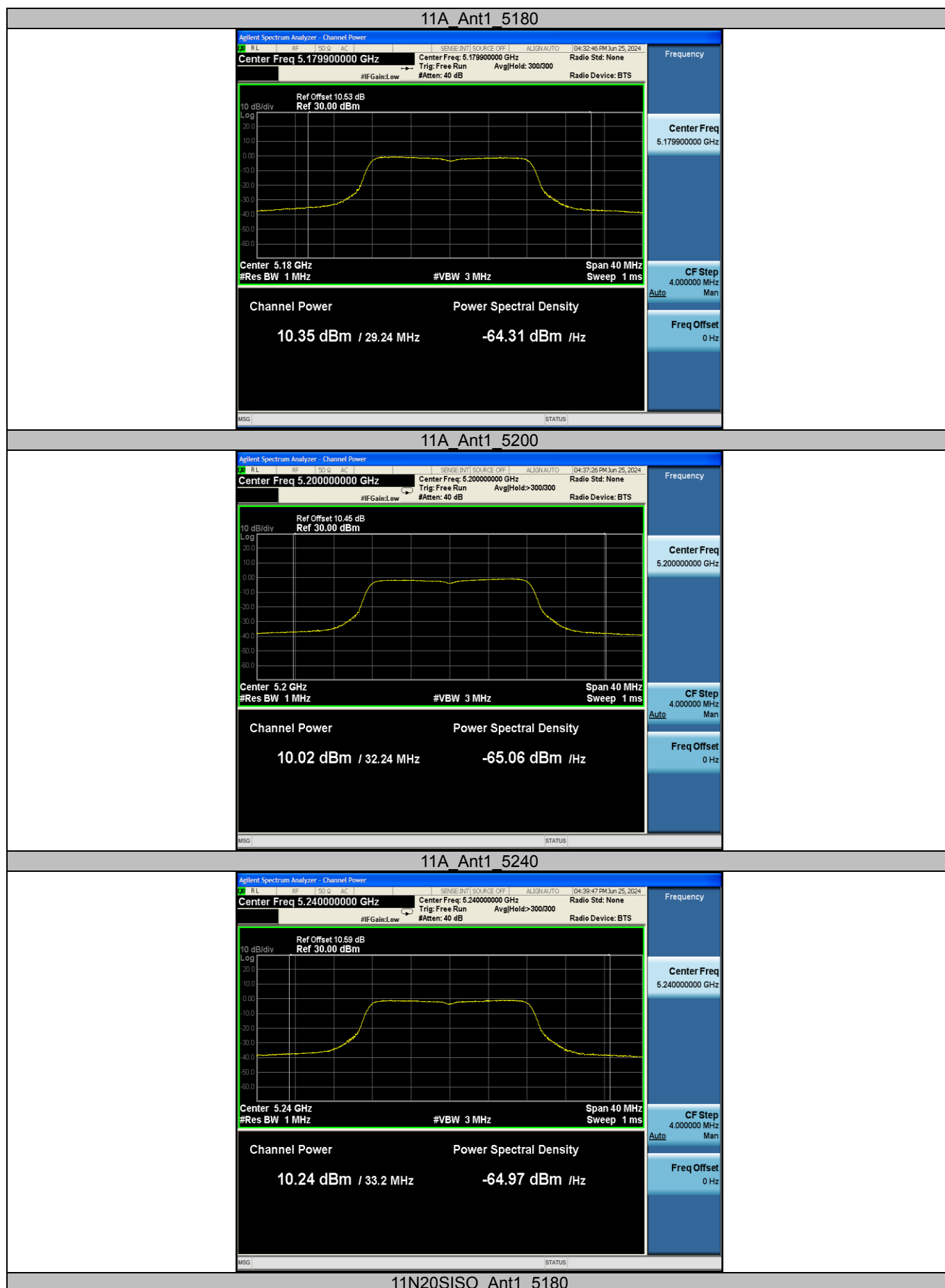


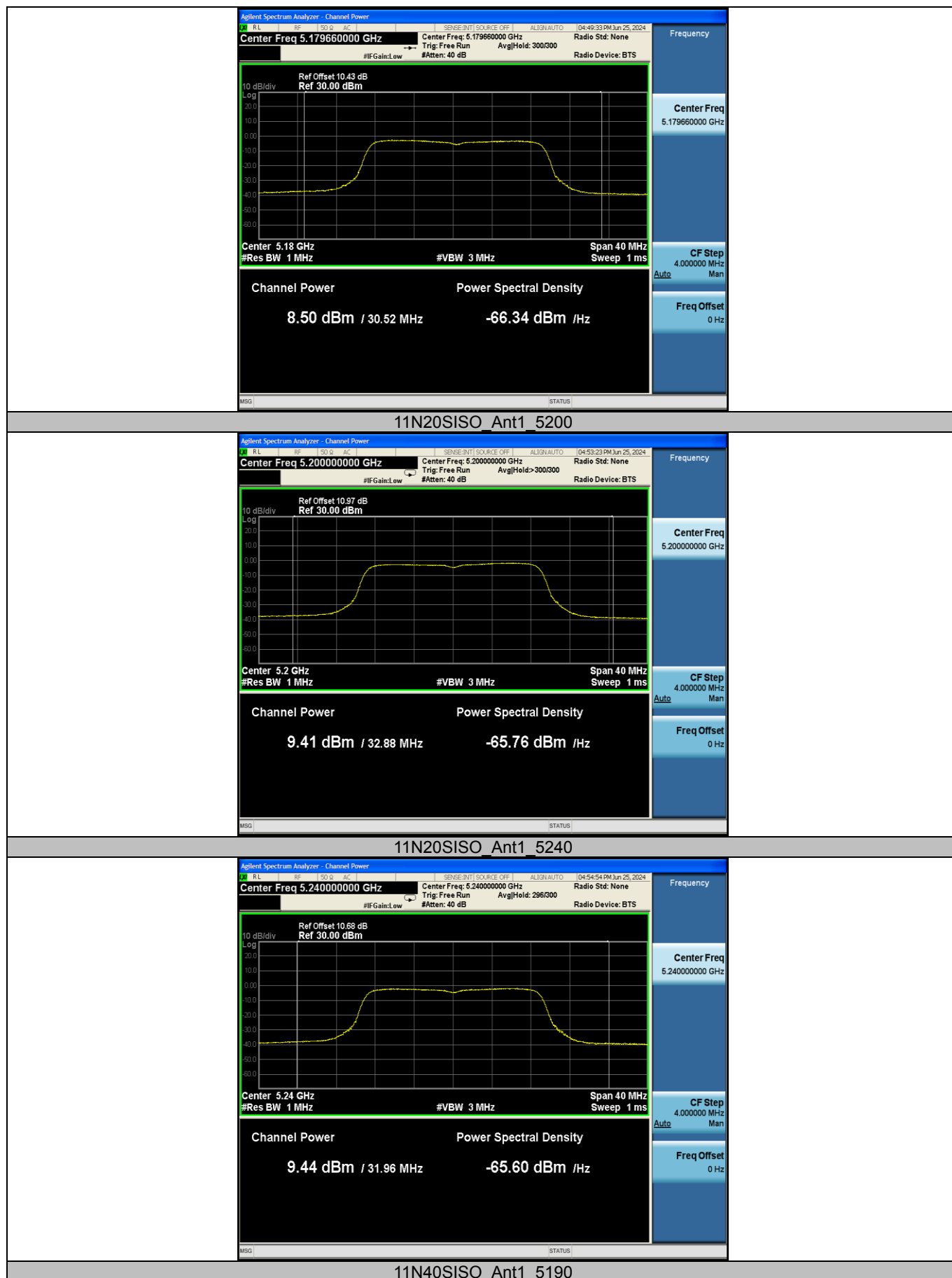
Appendix C: Maximum conducted output power

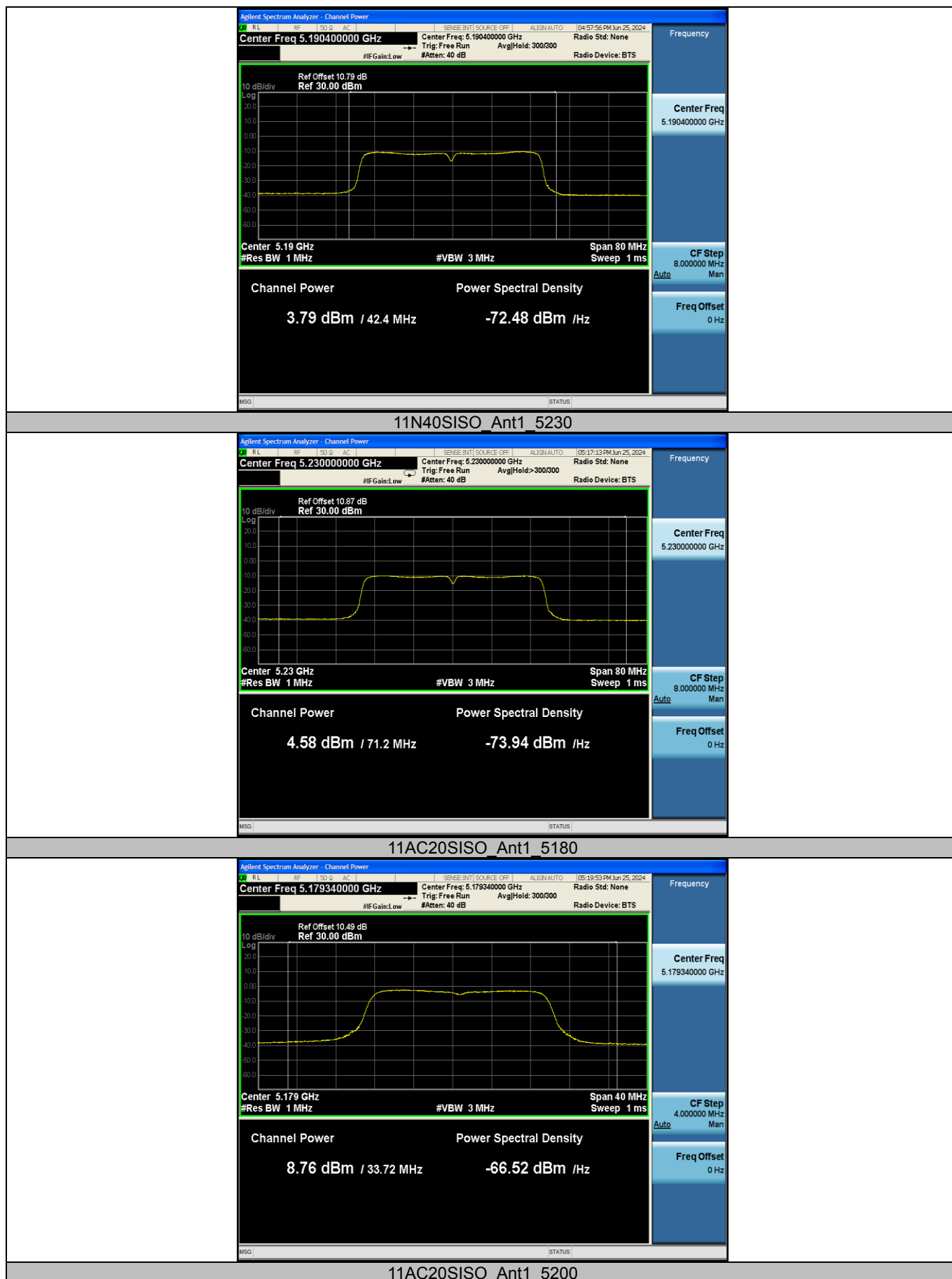
Test Result Channel Power

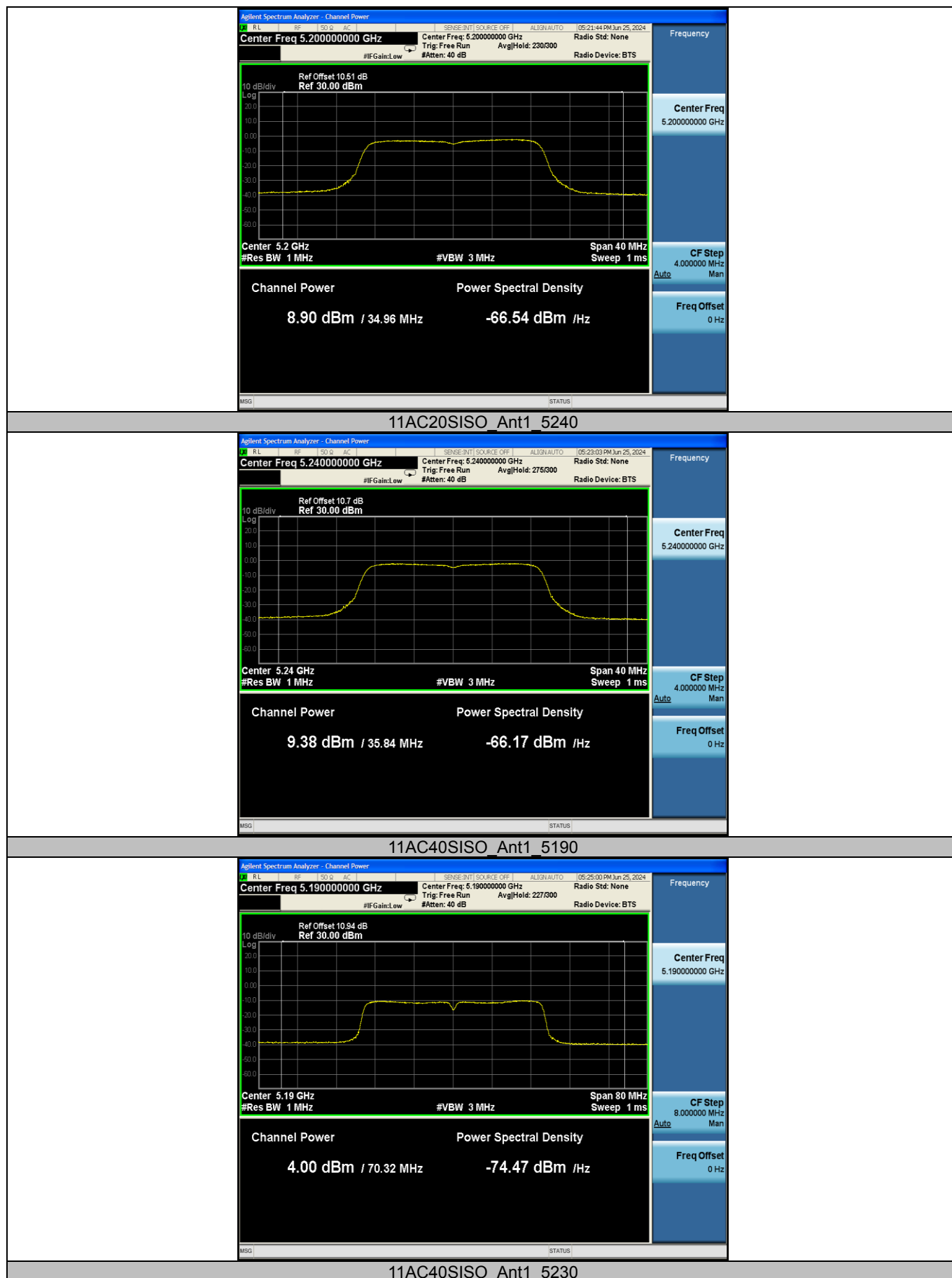
Test Mode	Antenna	Frequency [MHz]	Channel Power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	EIRP [dBm]	Verdict
11A	Ant1	5180	10.01	92.41	0.34	10.35	≤23.98	16.11	PASS
		5200	9.76	94.09	0.26	10.02	≤23.98	15.78	PASS
		5240	9.98	94.09	0.26	10.24	≤23.98	16.00	PASS
11N20SIS O	Ant1	5180	8.26	94.58	0.24	8.50	≤23.98	14.26	PASS
		5200	8.63	83.48	0.78	9.41	≤23.98	15.17	PASS
		5240	9.09	92.31	0.35	9.44	≤23.98	15.20	PASS
11N40SIS O	Ant1	5190	3.19	87.16	0.60	3.79	≤23.98	9.55	PASS
		5230	3.90	85.45	0.68	4.58	≤23.98	10.34	PASS
11AC20SIS O	Ant1	5180	8.46	93.24	0.30	8.76	≤23.98	14.52	PASS
		5200	8.58	92.82	0.32	8.90	≤23.98	14.66	PASS
		5240	9.01	91.90	0.37	9.38	≤23.98	15.14	PASS
11AC40SIS O	Ant1	5190	3.25	84.07	0.75	4.00	≤23.98	9.76	PASS
		5230	3.91	84.82	0.73	4.64	≤23.98	10.40	PASS
11AC80SIS O	Ant1	5210	1.85	71.88	1.43	3.28	≤23.98	9.04	PASS

Test Graphs











Appendix D: Maximum power spectral density

Test Result

Test Mode	Antenna	Frequency [MHz]	Result [dBm/MHz]	Limit [dBm/MHz]	Verdict
11A	Ant1	5180	-0.50	≤11.00	PASS
		5200	-0.93	≤11.00	PASS
		5240	-0.61	≤11.00	PASS
11N20SISO	Ant1	5180	-2.55	≤11.00	PASS
		5200	-1.48	≤11.00	PASS
		5240	-1.50	≤11.00	PASS
11N40SISO	Ant1	5190	-9.86	≤11.00	PASS
		5230	-9.33	≤11.00	PASS
11AC20SISO	Ant1	5180	-2.41	≤11.00	PASS
		5200	-1.87	≤11.00	PASS
		5240	-1.64	≤11.00	PASS
11AC40SISO	Ant1	5190	-10.01	≤11.00	PASS
		5230	-9.55	≤11.00	PASS
11AC80SISO	Ant1	5210	-12.89	≤11.00	PASS

Note: The Duty Cycle Factor and cable loss Factor is compensated in the graph.