

Test Report

Report No.: MTi230317009-01E2

Date of issue: 2023-11-27

Applicant: RT Stream International Co., Ltd.

Product: Body Worn Camera

Model(s): F01

FCC ID: 2BAY3-F01

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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Test Result Certification	
Applicant:	RT Stream International Co., Ltd.
Address:	2F-7, No. 14, Xiwei St., Sanchong Dist., New Taipei City, Taiwan, China.
Manufacturer:	RT Stream International Co., Ltd.
Address:	2F-7, No. 14, Xiwei St., Sanchong Dist., New Taipei City, Taiwan, China.
Product description	
Product name:	Body Worn Camera
Trade mark:	N/A
Model name:	F01
Series Model:	N/A
Standards:	FCC 47 CFR Part 15.407
Test method:	ANSI C63.10-2013 KDB 789033 D02 v02r01
Date of Test	
Date of test:	2023-07-24 ~ 2023-08-23
Test result:	Pass

Test Engineer	:	 (Yanice.Xie)
Reviewed By	:	 (Leon Chen)
Approved By	:	 (Tom Xue)



1 General Description

1.1 Description of the EUT

Product name:	Body Worn Camera
Model name:	F01
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input: DC 5V Battery: DC 3.7V 6000mAh
Accessories:	1. Adapter Model:HYT-0502000U INPUT:AC100-240V~ 50/60Hz 0.3A Max OUTPUT:5.0V/ 2A 2. Cable:USB-A to USB-C:1.5 cm 3. Cable:USB-A to DC Charger:0.6 cm
Hardware version:	V0
Software version:	V1.96
Test sample(s) number:	MTi230317009-01S1001

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 Band 1: 5210MHz;
Channel number:	802.11a/n(HT20)/ac(HT20) U-NII Band 1: 4; 802.11n(HT40)/ac(HT40) U-NII Band 1: 2; 802.11ac(HT80) U-NII Band 1: 1;
Modulation type:	802.11a: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM);
Antenna(s) type:	FPC Antenna
Antenna(s) gain:	2.11 dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	802.11a
Mode2	802.11n20
Mode3	802.11n40
Mode4	802.11ac20



Mode5	802.11ac40
Mode6	802.11ac80

1.2.1 Operation channel list

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.

For U-NII-1 band:					
20 MHz bandwidth		40 MHz bandwidth		80 MHz bandwidth	
Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)	Channel Number	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	--	--
44	5220	--	--	--	--
48	5240	--	--	--	--

Test Software:

For power setting, refer to below table.

Test Software:	COM4-PuTTY
For U-NII-1 band:	
802.11a	802.11n20
Channel	Power setting
36	13
40	13
48	13
802.11n40	802.11ac20
Channel	Power setting
38	12
46	12
--	--
48	13
802.11ac40	802.11ac80
38	12
46	12
--	--
	S--
	--

1.3 Environmental Conditions

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

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

1.4 Description of support units

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

1.5 Measurement uncertainty

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

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



2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15E	Part 15.203	Pass
2	Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
3	Duty Cycle	47 CFR Part 15E		Pass
4	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	Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1 No limits, only for report use. 47 CFR Part 15.407(e)	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

3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093



4 List of test equipment

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



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.
Conclusion:	The EUT complies with the requirement of FCC PART 15.203.

6 Radio Spectrum Matter Test Results (RF)

6.1 Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)		
Test Limit:	Frequency of emission (MHz)	Conducted limit (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

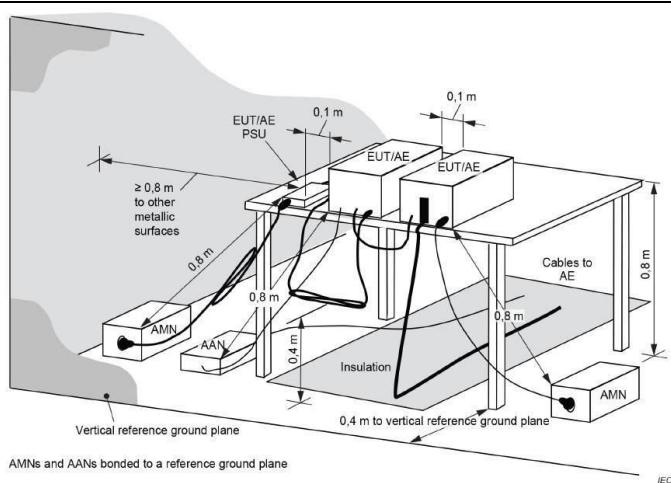
*Decreases with the logarithm of the frequency.

Test Method: 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 %
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6		

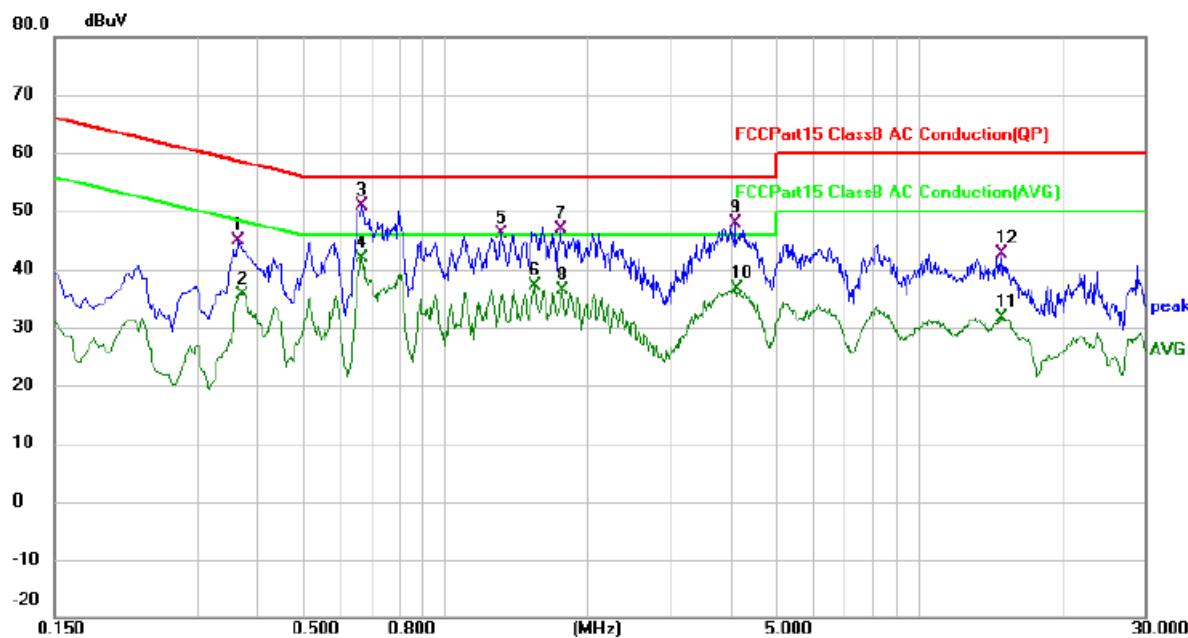
6.1.2 Test Setup Diagram:





6.1.3 Test Data:

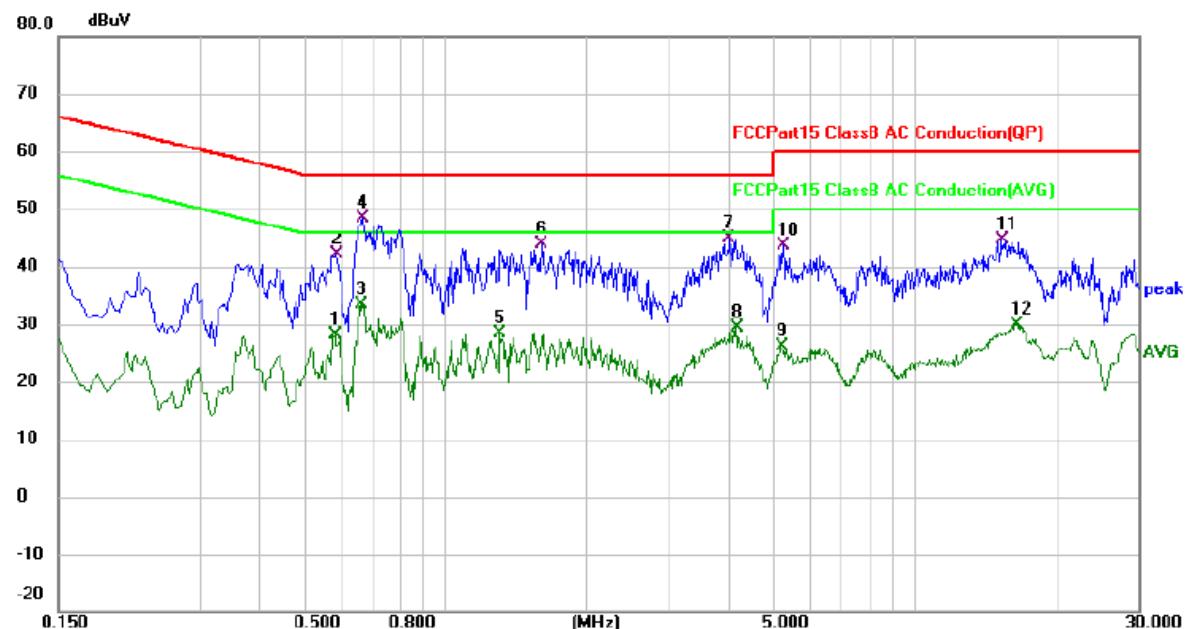
Mode1 / Line: Line (AC 120V/60Hz)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dB	Detector	Comment
1		0.3660	33.86	11.03	44.89	58.59	-13.70	QP
2		0.3740	24.69	11.03	35.72	48.41	-12.69	AVG
3		0.6700	39.16	11.70	50.86	56.00	-5.14	QP
4	*	0.6700	30.26	11.70	41.96	46.00	-4.04	AVG
5		1.3220	33.11	12.92	46.03	56.00	-9.97	QP
6		1.5540	23.94	13.28	37.22	46.00	-8.78	AVG
7		1.7620	33.27	13.62	46.89	56.00	-9.11	QP
8		1.7740	22.66	13.63	36.29	46.00	-9.71	AVG
9		4.0939	37.57	10.27	47.84	56.00	-8.16	QP
10		4.1340	26.26	10.26	36.52	46.00	-9.48	AVG
11		14.8660	21.19	10.51	31.70	50.00	-18.30	AVG
12		15.0500	32.03	10.51	42.54	60.00	-17.46	QP



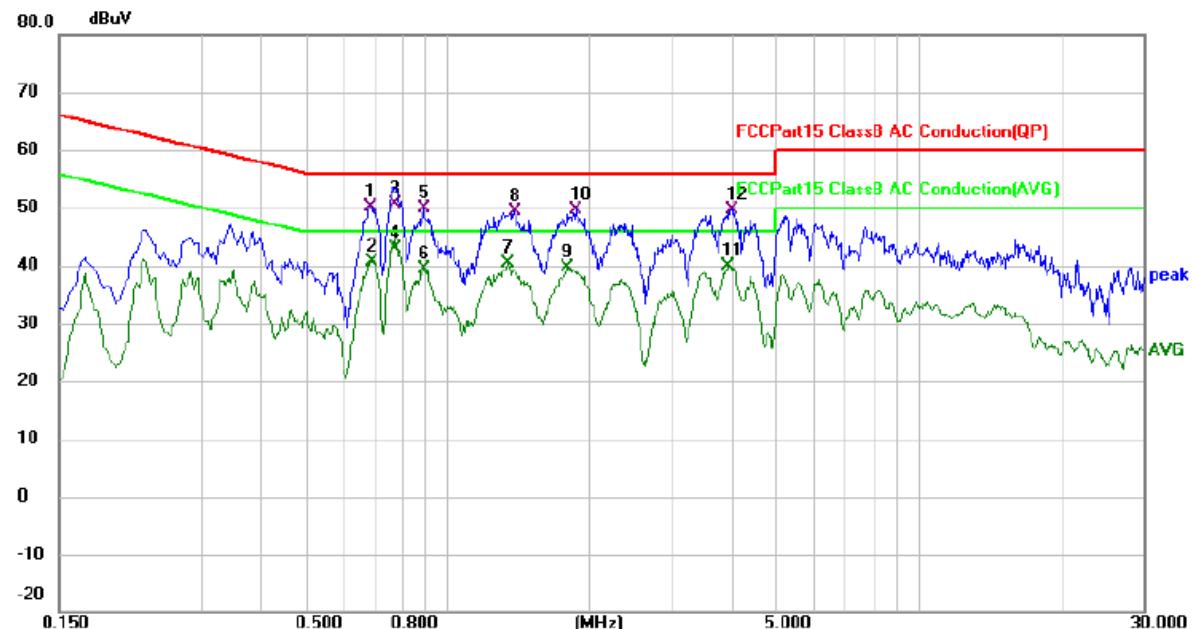
Mode1 / Line: Neutral (AC 120V/60Hz)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Detector	Over Comment
1		0.5820	16.54	11.51	28.05	46.00	-17.95	AVG
2		0.5860	30.67	11.53	42.20	56.00	-13.80	QP
3		0.6620	21.68	11.69	33.37	46.00	-12.63	AVG
4	*	0.6700	36.77	11.71	48.48	56.00	-7.52	QP
5		1.3140	15.36	13.00	28.36	46.00	-17.64	AVG
6		1.6019	30.36	13.62	43.98	56.00	-12.02	QP
7		4.0339	34.60	10.29	44.89	56.00	-11.11	QP
8		4.1739	19.10	10.28	29.38	46.00	-16.62	AVG
9		5.1979	15.90	10.27	26.17	50.00	-23.83	AVG
10		5.2659	33.25	10.27	43.52	60.00	-16.48	QP
11		15.3339	34.03	10.51	44.54	60.00	-15.46	QP
12		16.5700	19.42	10.56	29.98	50.00	-20.02	AVG



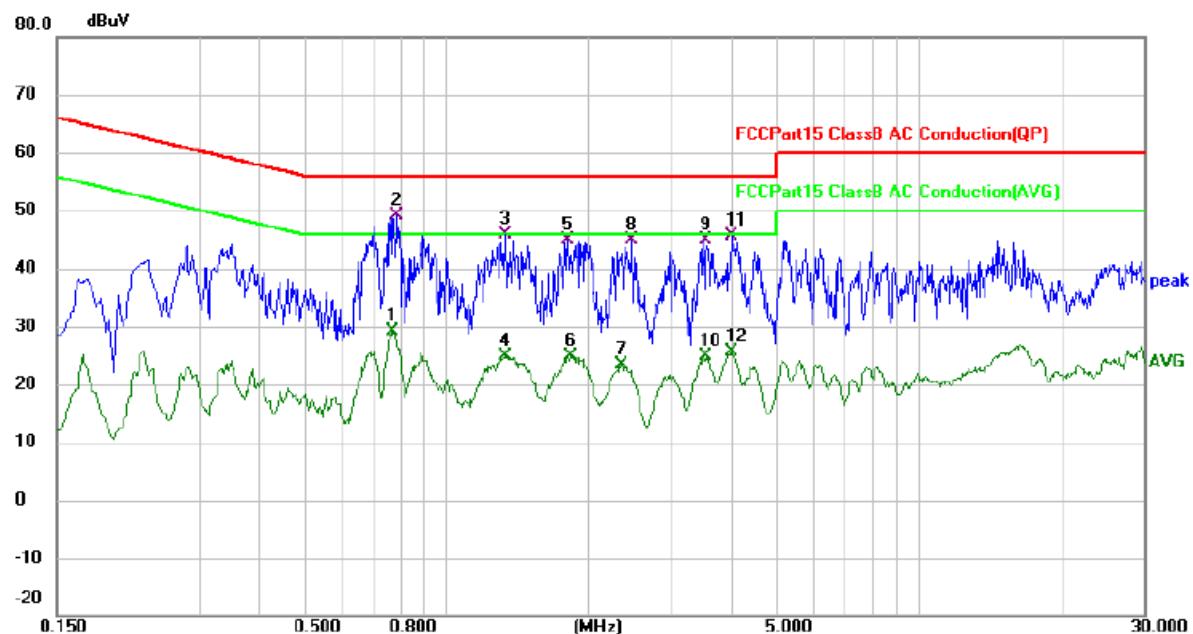
Mode1 / Line: Line (AC 240V/60Hz)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.6860	38.47	11.74	50.21	56.00	-5.79	QP	
2		0.6900	28.96	11.75	40.71	46.00	-5.29	AVG	
3		0.7780	38.73	11.94	50.67	56.00	-5.33	QP	
4	*	0.7780	31.06	11.94	43.00	46.00	-3.00	AVG	
5		0.8940	37.61	12.17	49.78	56.00	-6.22	QP	
6		0.8940	27.31	12.17	39.48	46.00	-6.52	AVG	
7		1.3500	27.30	12.97	40.27	46.00	-5.73	AVG	
8		1.3860	36.25	13.03	49.28	56.00	-6.72	QP	
9		1.8060	25.84	13.70	39.54	46.00	-6.46	AVG	
10		1.8700	39.69	10.06	49.75	56.00	-6.25	QP	
11		3.9620	29.62	10.27	39.89	46.00	-6.11	AVG	
12		4.0100	39.45	10.27	49.72	56.00	-6.28	QP	



Mode1 / Line: Neutral (AC 240V/60Hz)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1		0.7740	17.24	11.91	29.15	46.00	-16.85	AVG
2	*	0.7900	37.06	11.95	49.01	56.00	-6.99	QP
3		1.3420	32.88	13.06	45.94	56.00	-10.06	QP
4		1.3420	11.94	13.06	25.00	46.00	-21.00	AVG
5		1.8140	30.84	14.07	44.91	56.00	-11.09	QP
6		1.8380	14.38	10.45	24.83	46.00	-21.17	AVG
7		2.3540	13.08	10.40	23.48	46.00	-22.52	AVG
8		2.4739	34.51	10.38	44.89	56.00	-11.11	QP
9		3.5140	34.67	10.28	44.95	56.00	-11.05	QP
10		3.5140	14.53	10.28	24.81	46.00	-21.19	AVG
11		4.0140	35.43	10.29	45.72	56.00	-10.28	QP
12		4.0140	15.45	10.29	25.74	46.00	-20.26	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:	<ol style="list-style-type: none"> Set the center frequency of the instrument to the center frequency of the transmission. Set RBW \geq EBW if possible; otherwise, set RBW to the largest available value. Set VBW \geq RBW. Set detector = peak. 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.

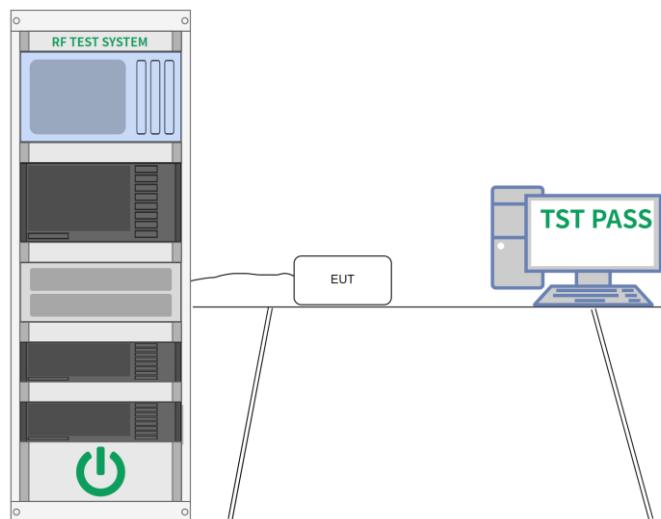
6.2.1 E.U.T. Operation:

Operating Environment:

Temperature:	25 °C	Humidity:	57 %	Atmospheric Pressure:	98 kPa
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Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.



7 Maximum conducted output power

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
Test Method:	ANSI C63.10-2013, section 12.3
Procedure:	<p>Method SA-1</p> <ul style="list-style-type: none">a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.b) Set RBW = 1 MHz.c) Set VBW \geq 3 MHz.d) Number of points in sweep \geq $[2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing \leq RBW / 2, so that narrowband signals are not lost between frequency bins.)e) Sweep time = auto.f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.g) If transmit duty cycle $<$ 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle \geq 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."h) Trace average at least 100 traces in power averaging (rms) mode.i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function, with band limits set equal to the

EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

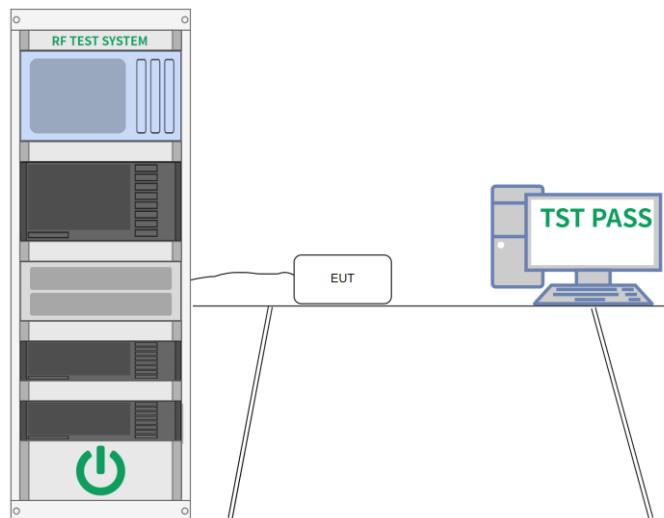
7.1.1 E.U.T. Operation:

Operating Environment:

Temperature:	25 °C	Humidity:	57 %	Atmospheric Pressure:	98 kPa
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Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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7.1.2 Test Setup Diagram:



7.1.3 Test Data:

Please Refer to Appendix for Details.



7.2 Power spectral density

Test Requirement:	47 CFR Part 15.407(a)(1)(iv)
Test Limit:	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
Test Method:	ANSI C63.10-2013, section 12.5
Procedure:	<p>a) Create an average power spectrum for the EUT operating mode being tested by following the instructions in 12.3.2 for measuring maximum conducted output power using a spectrum analyzer or EMI receiver; that is, select the appropriate test method (SA-1, SA-2, SA-3, or their respective alternatives) and apply it up to, but not including, the step labeled, "Compute power...." (This procedure is required even if the maximum conducted output power measurement was performed using the power meter method PM.)</p> <p>b) Use the peak search function on the instrument to find the peak of the spectrum.</p> <p>c) Make the following adjustments to the peak value of the spectrum, if applicable:</p> <ol style="list-style-type: none">1) If method SA-2 or SA-2A was used, then add $[10 \log (1 / D)]$, where D is the duty cycle, to the peak of the spectrum.2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7, add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. <p>d) The result is the PPSD.</p> <p>e) The procedure in item a) through item c) requires the use of 1 MHz resolution bandwidth to</p>

satisfy the 1 MHz measurement bandwidth specified by some regulatory authorities. This requirement also permits use of resolution bandwidths less than 1 MHz "provided that the measured power is integrated to show the total power over the measurement bandwidth" (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 1 MHz bandwidth, the following adjustments to the procedures apply:

- 1) Set RBW $\geq 1 / T$, where T is defined in 12.2 a).
- 2) Set VBW $\geq [3 \times RBW]$.
- 3) Care shall be taken such that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

7.2.1 E.U.T. Operation:

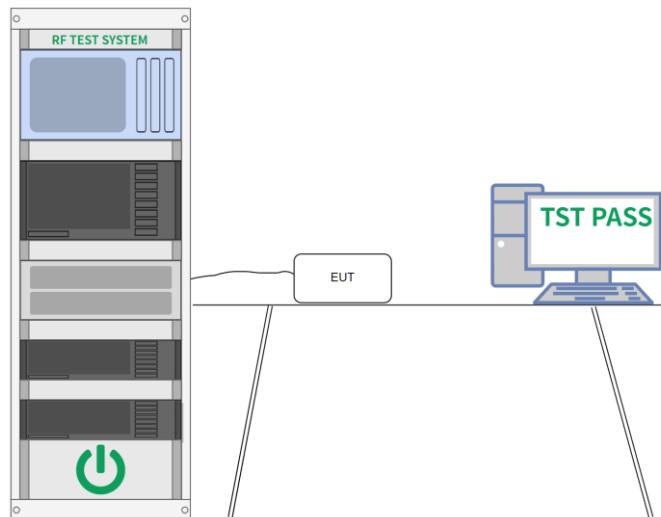
Operating Environment:

Temperature:	25 °C	Humidity:	57 %
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Atmospheric Pressure:	98 kPa
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Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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7.2.2 Test Setup Diagram:



7.2.3 Test Data:

Please Refer to Appendix for Details.



7.3 Emission bandwidth and occupied bandwidth

Test Requirement:	U-NII 1: No limits, only for report use. U-NII 3: 47 CFR Part 15.407(e)
Test Limit:	U-NII 1: No limits, only for report use. U-NII 3: 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 6.9.3 & 12.4 KDB 789033 D02, Clause C.2
Procedure:	<p>Emission bandwidth:</p> <ul style="list-style-type: none">a) Set RBW = approximately 1% of the emission bandwidth.b) Set the VBW > RBW.c) Detector = peak.d) Trace mode = max hold. <p>e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission.</p> <p>Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement</p> <p>as needed until the RBW/EBW ratio is approximately 1%.</p> <p>Occupied bandwidth:</p> <ul style="list-style-type: none">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).

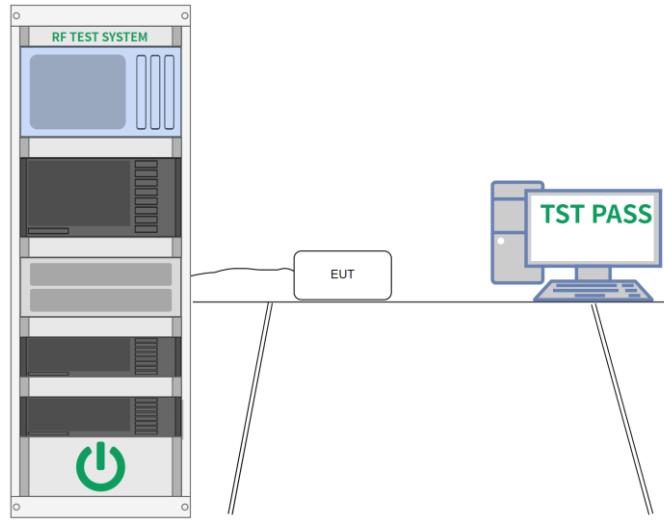
7.3.1 E.U.T. Operation:

Operating Environment:

Temperature:	25 °C	Humidity:	57 %	Atmospheric Pressure:	98 kPa
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Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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7.3.2 Test Setup Diagram:



7.3.3 Test Data:

Please Refer to Appendix for Details.



7.4 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			

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

²Above 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



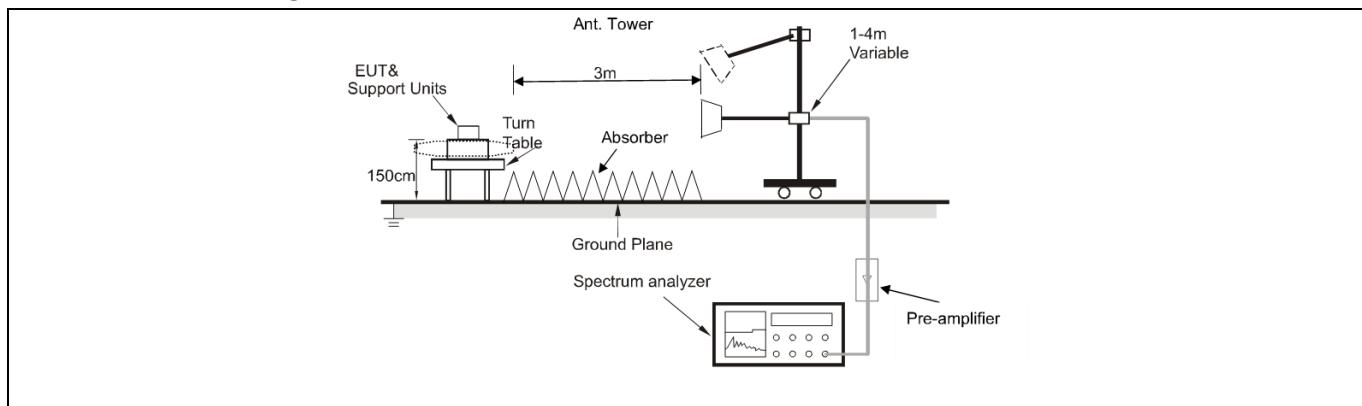
	Above 960	500	3
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6		
Procedure:	<p>Above 1GHz:</p> <p>a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position 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>		

7.4.1 E.U.T. Operation:

Operating Environment:								
Temperature:	23.7 °C	Humidity:	26.8 %	Atmospheric Pressure: 98 kPa				
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.								
All modes of operation of the EUT were investigated, and only the worst-case results are reported.								



7.4.2 Test Setup Diagram:



7.4.3 Test Data:

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
1		4500.000	45.77	1.99	47.76	74.00	-26.24
2		4500.000	36.48	1.99	38.47	54.00	-15.53
3		5150.000	61.74	5.36	67.10	74.00	-6.90
4	*	5150.000	45.15	5.36	50.51	54.00	-3.49

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
1		4500.000	45.21	1.99	47.20	74.00	-26.80
2		4500.000	36.28	1.99	38.27	54.00	-15.73
3		5150.000	58.01	5.36	63.37	74.00	-10.63
4	*	5150.000	41.83	5.36	47.19	54.00	-6.81



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
1		5350.000	47.12	6.35	53.47	74.00	-20.53
2		5350.000	37.10	6.35	43.45	54.00	-10.55
3		5460.000	47.12	6.24	53.36	74.00	-20.64
4	*	5460.000	37.36	6.24	43.60	54.00	-10.40
							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
1		5350.000	46.81	6.35	53.16	74.00	-20.84
2		5350.000	37.03	6.35	43.38	54.00	-10.62
3		5460.000	46.62	6.24	52.86	74.00	-21.14
4	*	5460.000	37.45	6.24	43.69	54.00	-10.31
							AVG



7.5 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 border="1"><thead><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr></thead><tbody><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></tbody></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
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, 12.7.6																										
Procedure:	<p>Below 1GHz:</p> <ol style="list-style-type: none">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.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.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 quasi-peak 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 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.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.

7.5.1 E.U.T. Operation:

Operating Environment:

Temperature:	21.4 °C	Humidity:	74.6 %	Atmospheric Pressure:	98 kPa
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Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6
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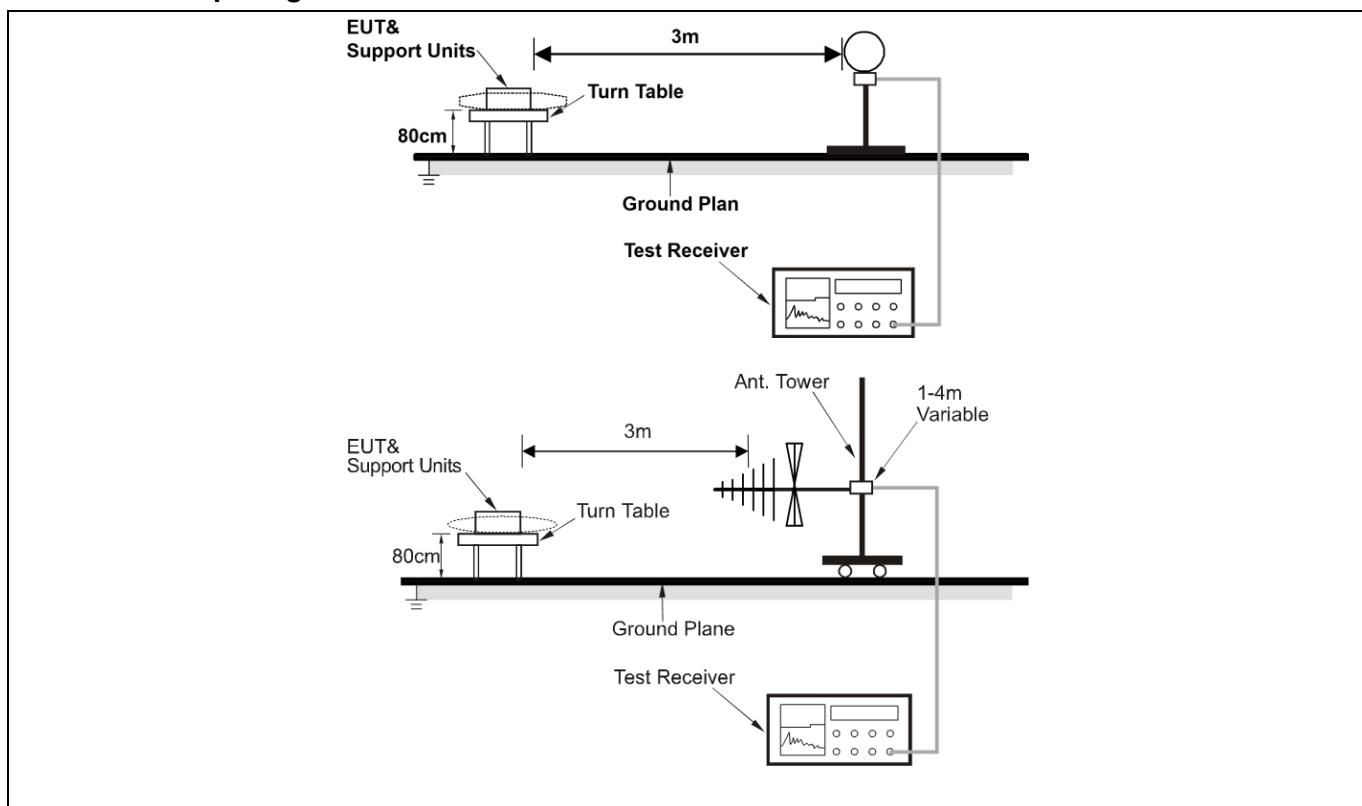
Note:

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.

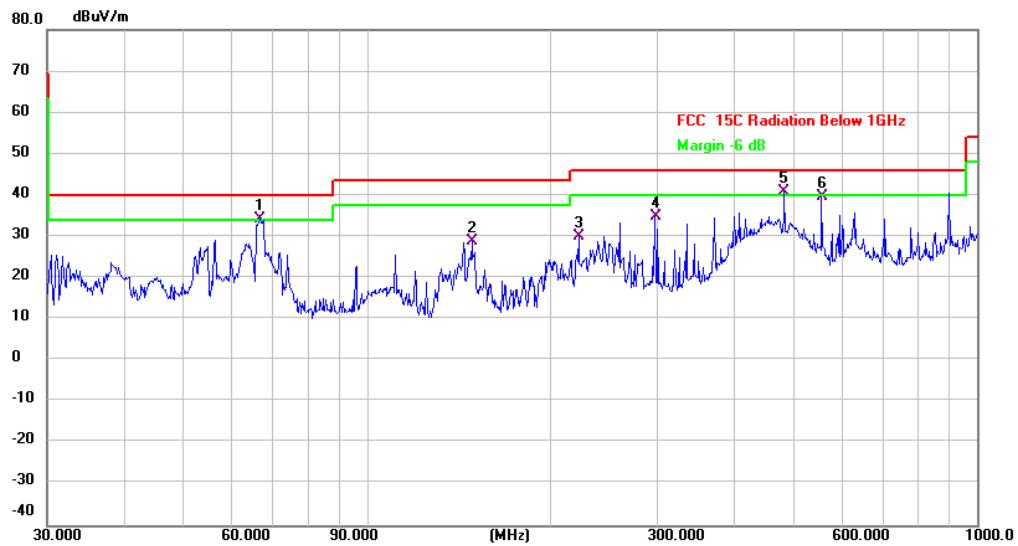


7.5.2 Test Setup Diagram:



7.5.3 Test Data:

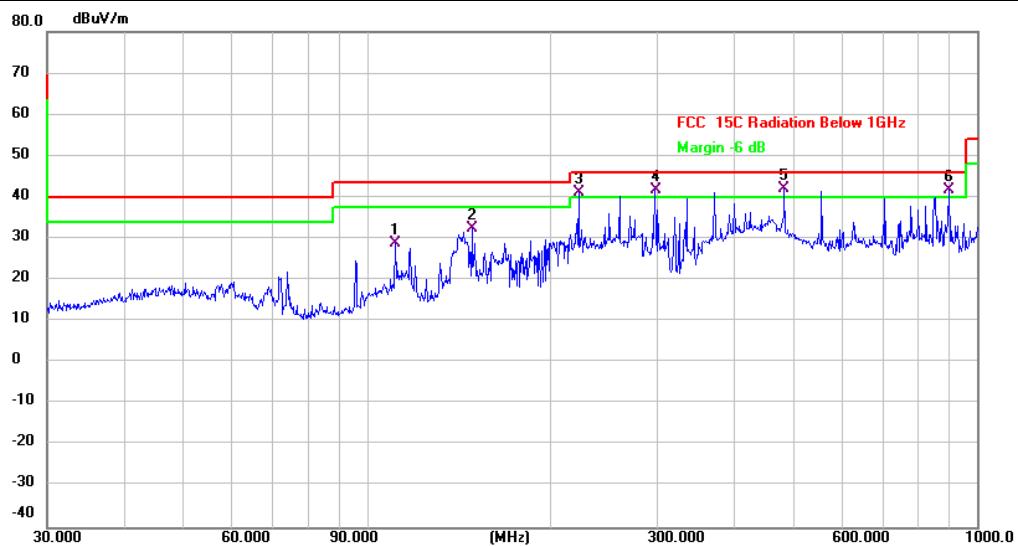
Mode1 / Polarization: Horizontal / Band: 5150-5250 MHz / BW: 20 / CH: H



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	!	66.9669	45.25	-10.99	34.26	40.00	-5.74	QP	
2		148.4410	40.66	-11.70	28.96	43.50	-14.54	QP	
3		222.9502	38.62	-8.46	30.16	46.00	-15.84	QP	
4		297.2241	39.72	-4.84	34.88	46.00	-11.12	QP	
5	*	483.9094	44.54	-3.73	40.81	46.00	-5.19	QP	
6		556.7744	41.64	-2.08	39.56	46.00	-6.44	QP	



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	Comment
1	111.3468	36.28	-7.56	28.72	43.50	-14.78	QP		
2	148.4410	44.08	-11.70	32.38	43.50	-11.12	QP		
3	! 222.9502	49.73	-8.46	41.27	46.00	-4.73	QP		
4	! 297.2241	46.47	-4.84	41.63	46.00	-4.37	QP		
5	* 483.9094	45.65	-3.73	41.92	46.00	-4.08	QP		
6	! 900.1474	38.24	3.39	41.63	46.00	-4.37	QP		



7.6 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			

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

²Above 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



	Above 960	500	3
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6		
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>		

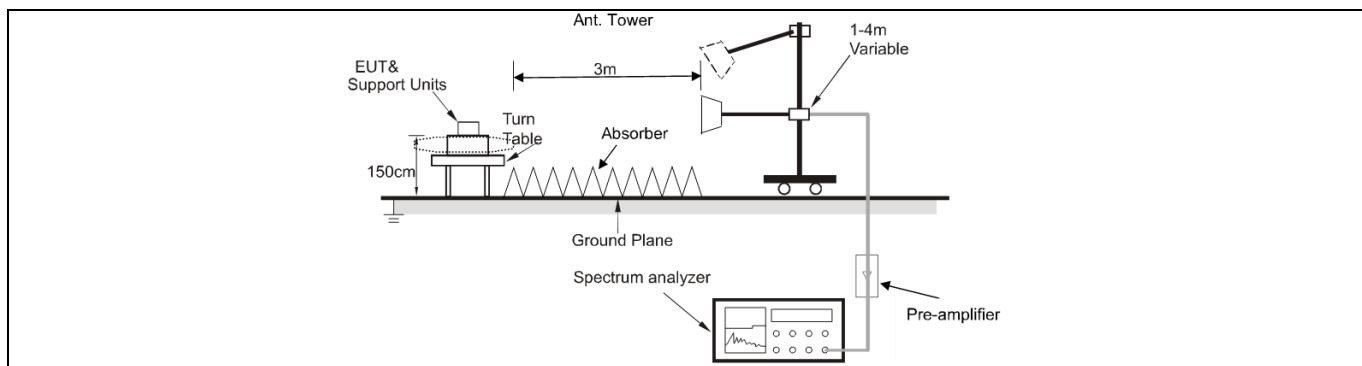
7.6.1 E.U.T. Operation:

Operating Environment:				
Temperature:	21.4 °C	Humidity:	74.6 %	Atmospheric Pressure: 98 kPa
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6			
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.

7.6.2 Test Setup Diagram:







7.6.3 Test Data:

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	42.38	13.10	55.48	74.00	-18.52	peak	
2		10360.000	32.59	13.10	45.69	54.00	-8.31	AVG	
3		15540.000	10.98	47.56	58.54	74.00	-15.46	peak	
4	*	15540.000	1.39	47.56	48.95	54.00	-5.05	AVG	

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10360.000	43.13	13.10	56.23	74.00	-17.77	peak	
2		10360.000	34.72	13.10	47.82	54.00	-6.18	AVG	
3		15540.000	11.69	47.56	59.25	74.00	-14.75	peak	
4	*	15540.000	2.52	47.56	50.08	54.00	-3.92	AVG	



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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10440.000	43.87	13.04	56.91	74.00	-17.09	peak	
2		10440.000	34.81	13.04	47.85	54.00	-6.15	AVG	
3		15660.000	11.07	46.87	57.94	74.00	-16.06	peak	
4	*	15660.000	1.64	46.87	48.51	54.00	-5.49	AVG	

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10440.000	42.69	13.04	55.73	74.00	-18.27	peak	
2		10440.000	33.62	13.04	46.66	54.00	-7.34	AVG	
3		15660.000	12.22	46.87	59.09	74.00	-14.91	peak	
4	*	15660.000	2.84	46.87	49.71	54.00	-4.29	AVG	



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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10480.000	43.06	12.94	56.00	74.00	-18.00	peak	
2		10480.000	32.17	12.94	45.11	54.00	-8.89	AVG	
3		15720.000	11.39	46.86	58.25	74.00	-15.75	peak	
4	*	15720.000	0.78	46.86	47.64	54.00	-6.36	AVG	

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

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
			Level	Factor	ment				
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		10480.000	42.41	12.94	55.35	74.00	-18.65	peak	
2		10480.000	32.75	12.94	45.69	54.00	-8.31	AVG	
3		15720.000	10.83	46.86	57.69	74.00	-16.31	peak	
4	*	15720.000	-0.01	46.86	46.85	54.00	-7.15	AVG	

Photographs of the test setup

Refer to Appendix - Test setup Photos

Photographs of the EUT

Refer to Appendix - EUT Photos

Appendix

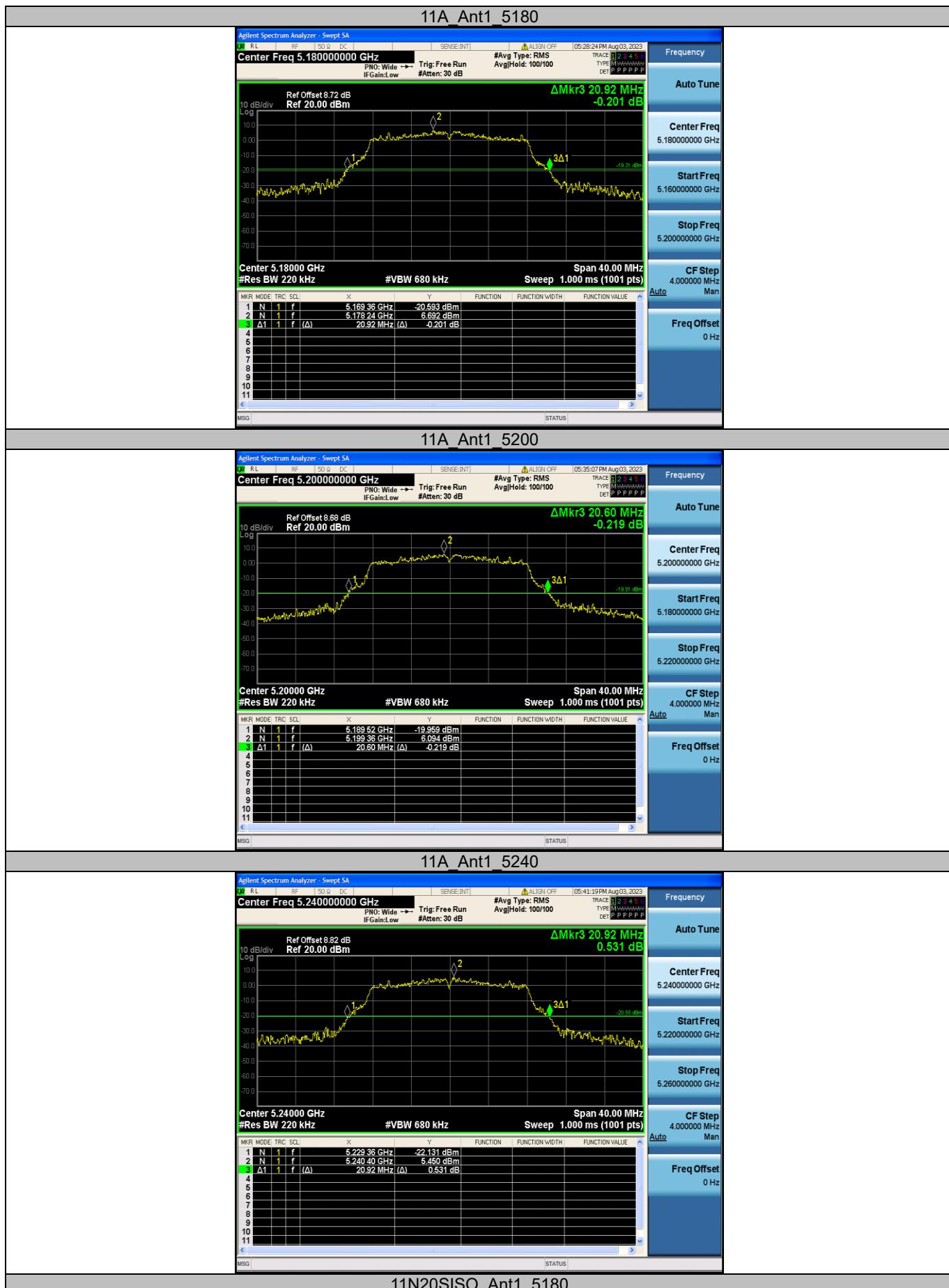
Appendix A: Emission Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]
11A	Ant1	5180	20.920	5169.360	5190.280
		5200	20.600	5189.520	5210.120
		5240	20.920	5229.360	5250.280
11N20SISO	Ant1	5180	21.080	5169.440	5190.520
		5200	20.880	5189.600	5210.480
		5240	21.240	5229.440	5250.680
11N40SISO	Ant1	5190	39.440	5170.240	5209.680
		5230	40.400	5209.920	5250.320
11AC20SISO	Ant1	5180	21.200	5169.240	5190.440
		5200	21.200	5189.360	5210.560
		5240	21.320	5229.320	5250.640
11AC40SISO	Ant1	5190	39.360	5170.240	5209.600
		5230	39.360	5210.240	5249.600
11AC80SISO	Ant1	5210	80.640	5169.840	5250.480



Test Graphs





11N20SISO Ant1_5200



11N20SISO Ant1_5240



11N40SISO Ant1_5190



11N40SISO Ant1 5230



11AC20SISO Ant1 5180



11AC20SISO Ant1 5200



11AC20SISO Ant1 5240



11AC20SISO Ant1 5240



11AC40SISO Ant1 5190



11AC80SISO_Ant1_5210



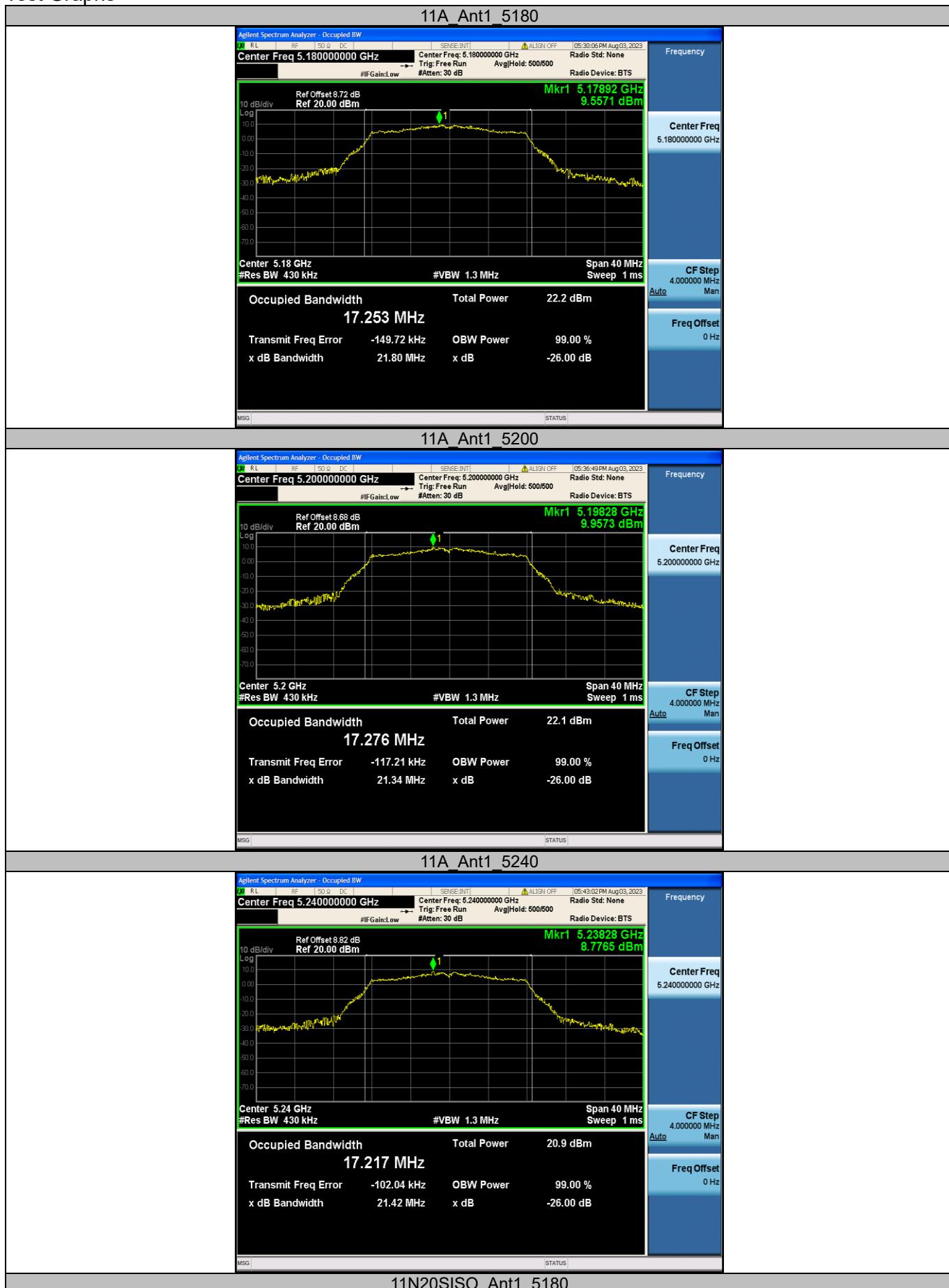
Appendix B: Occupied channel bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	OBW [MHz]	FL [MHz]	FH [MHz]
11A	Ant1	5180	17.253	5171.2238	5188.4768
		5200	17.276	5191.2448	5208.5208
		5240	17.217	5231.2895	5248.5065
11N20SISO	Ant1	5180	18.265	5170.7639	5189.0289
		5200	18.166	5190.8504	5209.0164
		5240	18.268	5230.7934	5249.0614
11N40SISO	Ant1	5190	36.359	5171.7442	5208.1032
		5230	36.343	5211.7292	5248.0722
11AC20SISO	Ant1	5180	18.329	5170.6956	5189.0246
		5200	18.256	5190.7950	5209.0510
		5240	18.305	5230.7629	5249.0679
11AC40SISO	Ant1	5190	36.318	5171.7822	5208.1002
		5230	36.335	5211.7157	5248.0507
11AC80SISO	Ant1	5210	75.386	5172.1593	5247.5453



Test Graphs

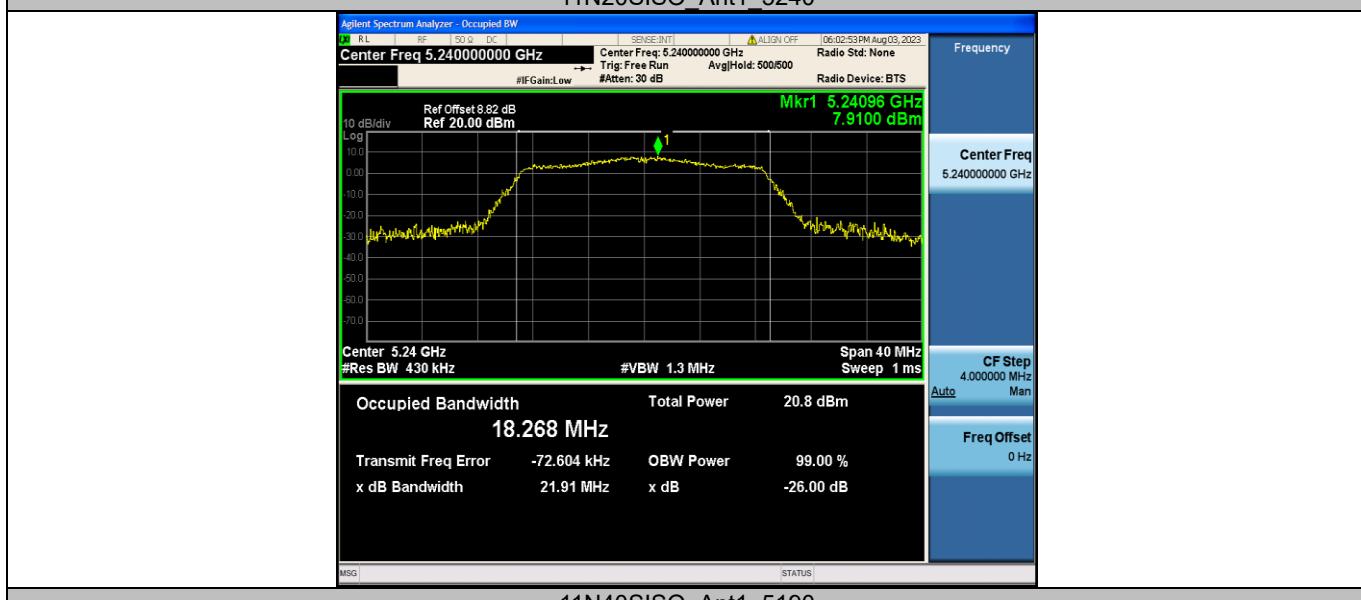




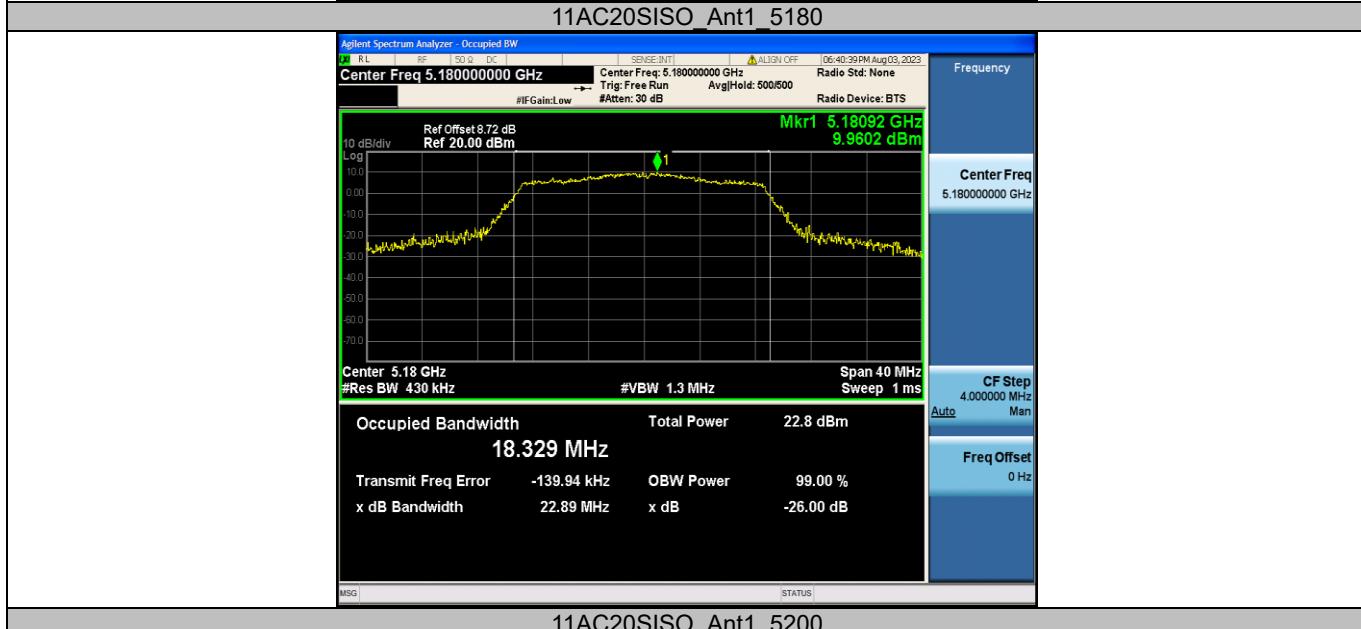
11N20SISO_Ant1_5200

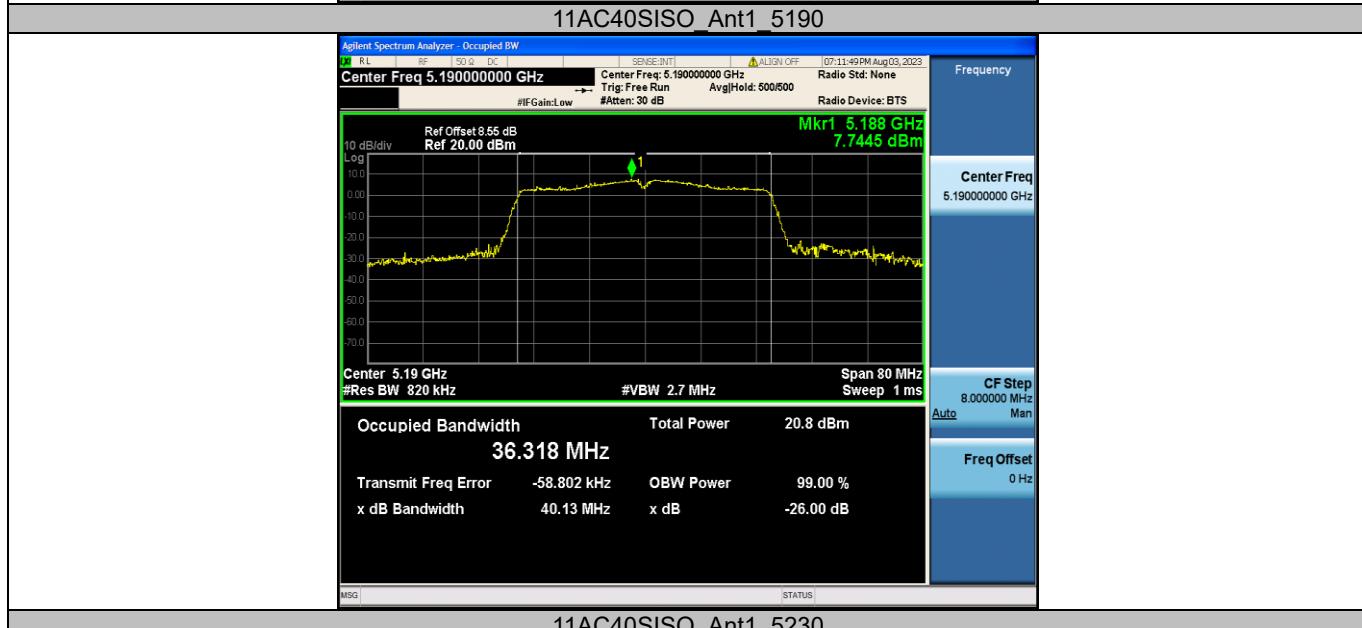


11N20SISO_Ant1_5240



11N40SISO_Ant1_5190







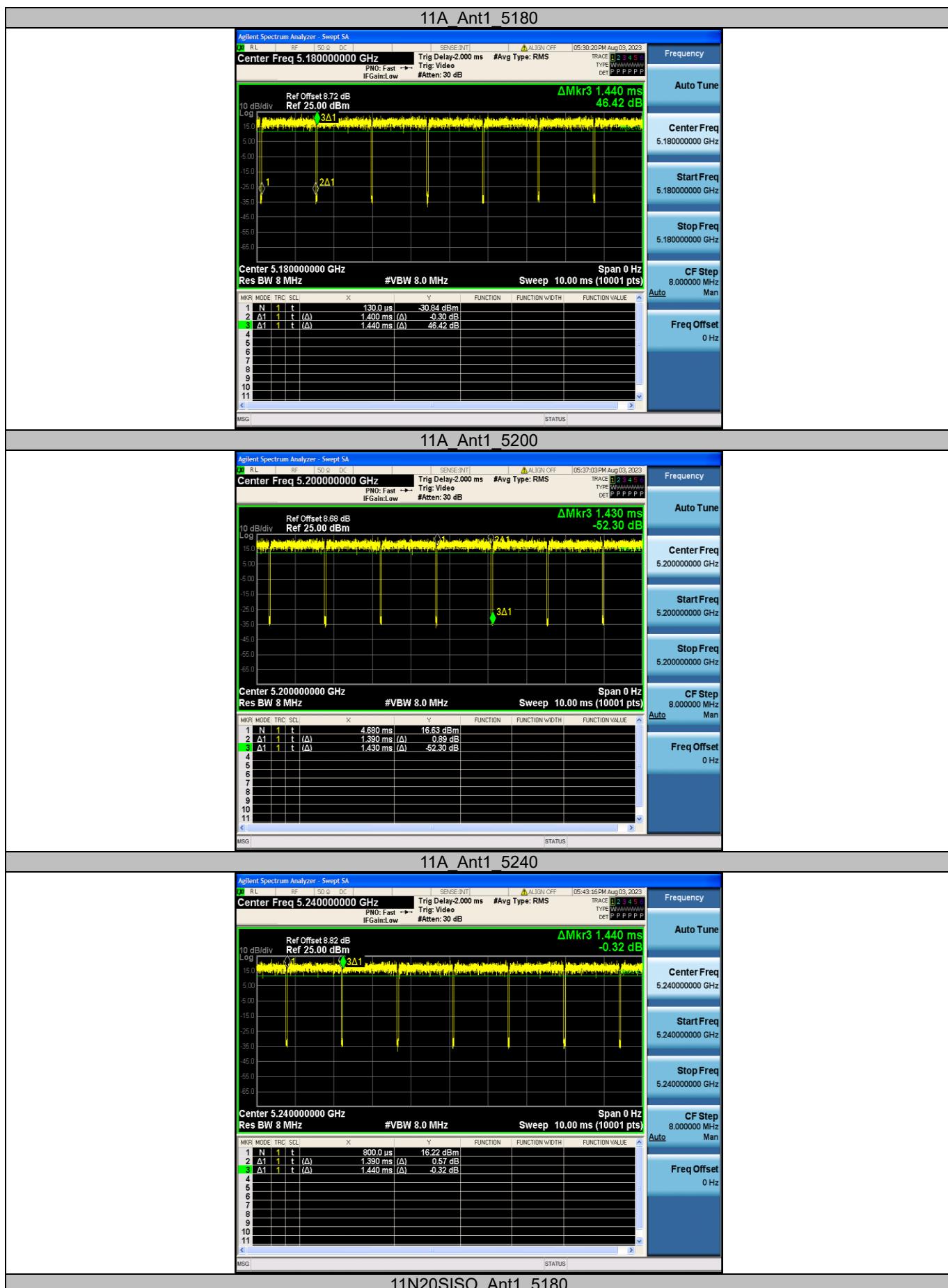
Appendix B: Duty Cycle

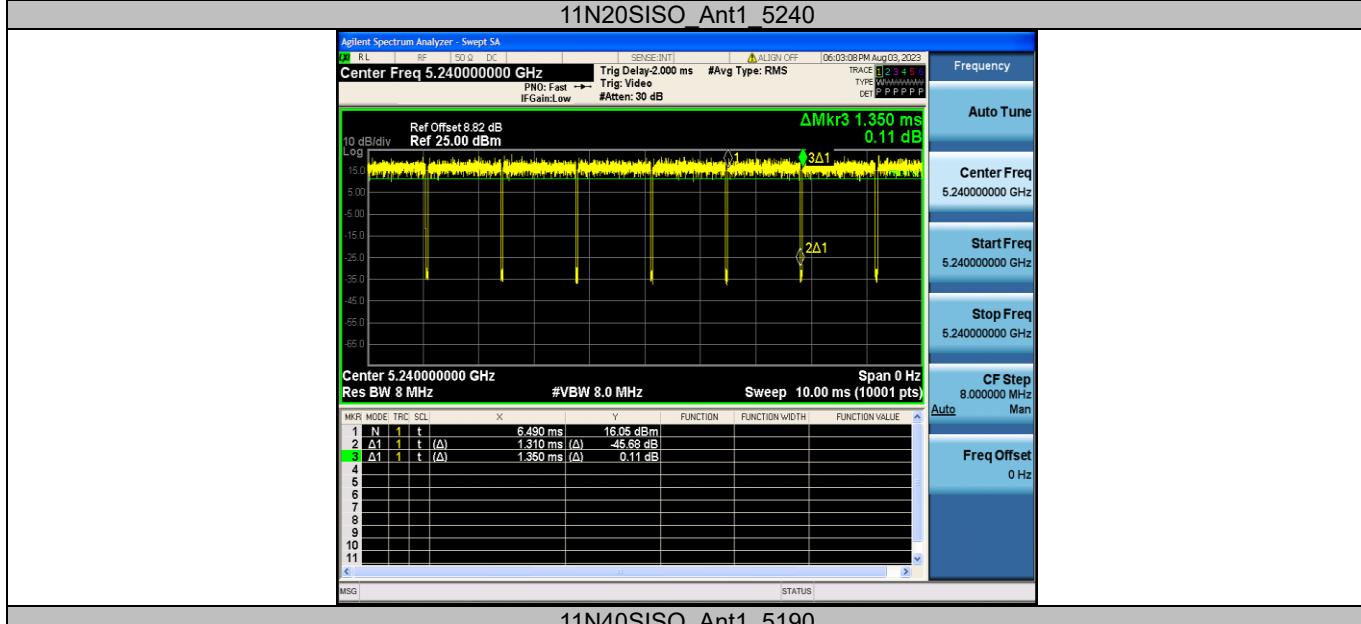
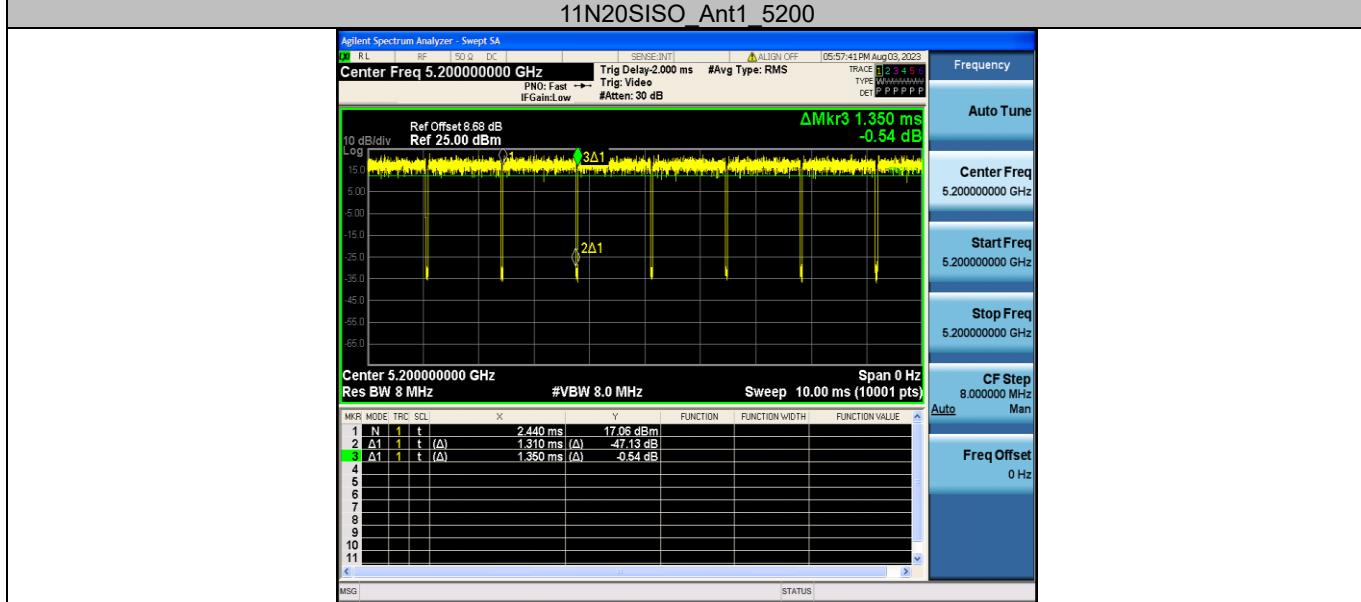
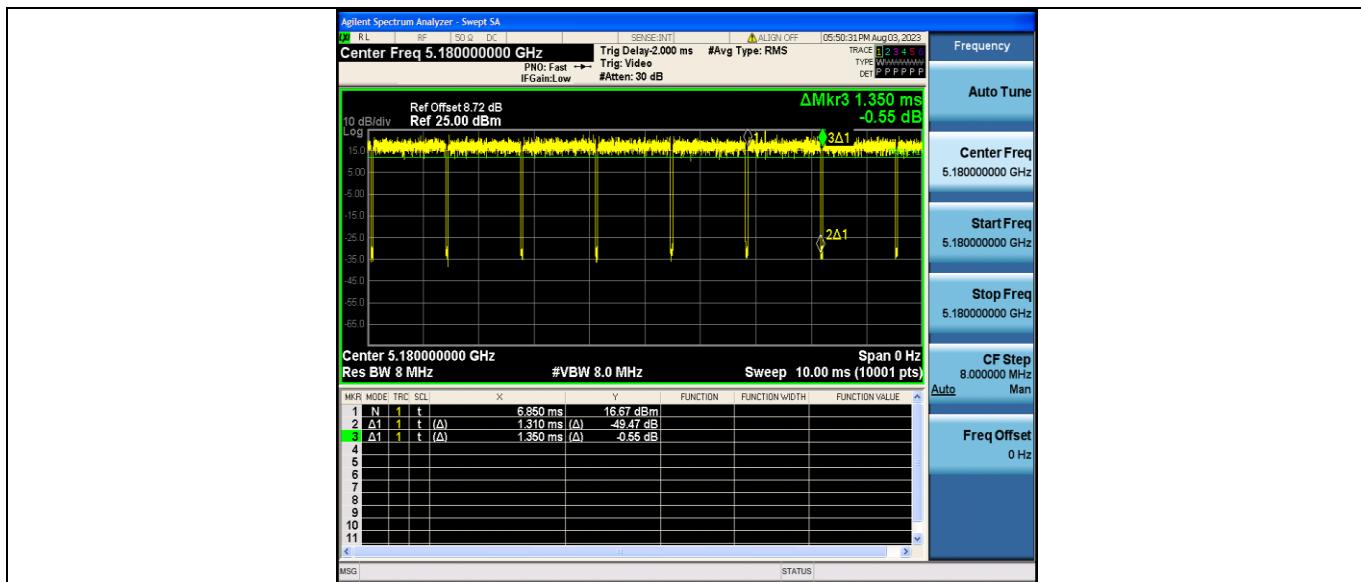
Test Result

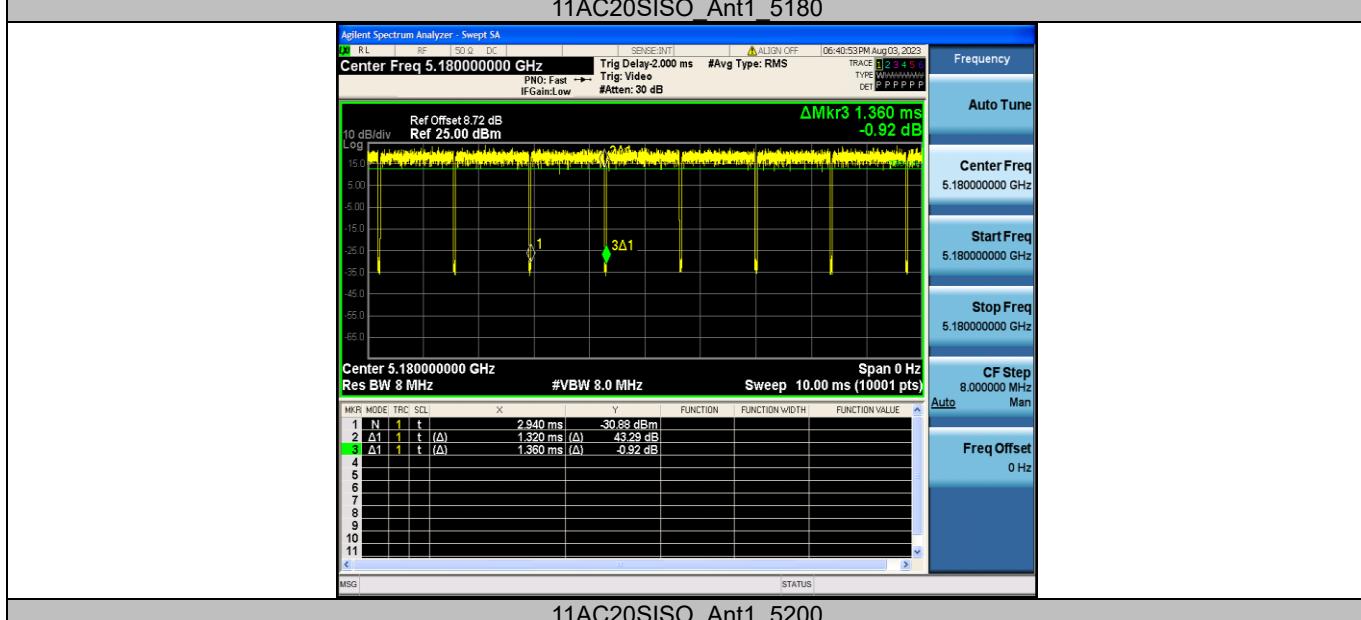
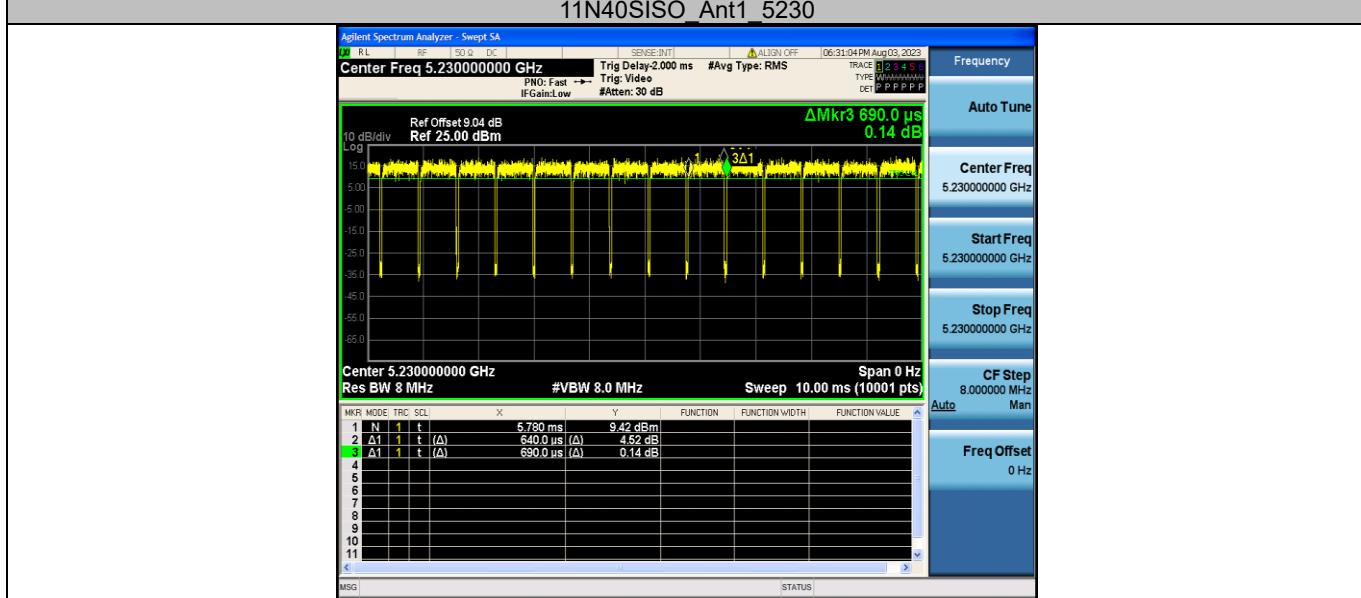
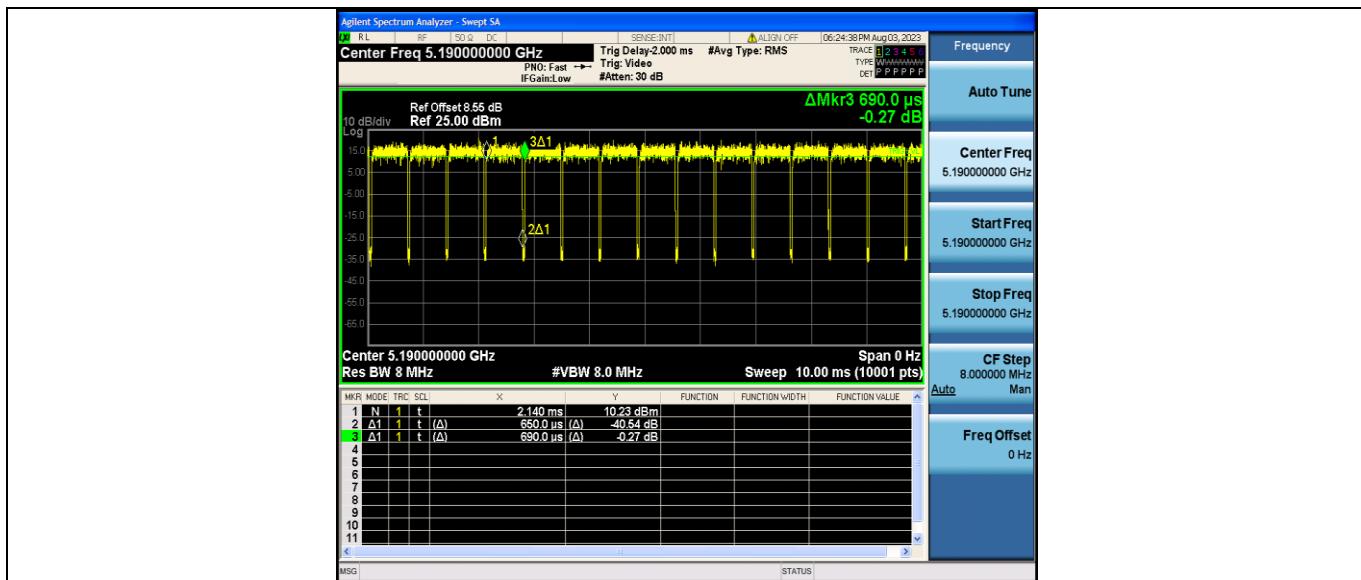
Test Mode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	1.40	1.44	97.22
		5200	1.39	1.43	97.20
		5240	1.39	1.44	96.53
11N20SISO	Ant1	5180	1.31	1.35	97.04
		5200	1.31	1.35	97.04
		5240	1.31	1.35	97.04
11N40SISO	Ant1	5190	0.65	0.69	94.20
		5230	0.64	0.69	92.75
11AC20SISO	Ant1	5180	1.32	1.36	97.06
		5200	1.31	1.35	97.04
		5240	1.31	1.35	97.04
11AC40SISO	Ant1	5190	0.66	0.70	94.29
		5230	0.65	0.70	92.86
11AC80SISO	Ant1	5210	0.32	0.36	88.89

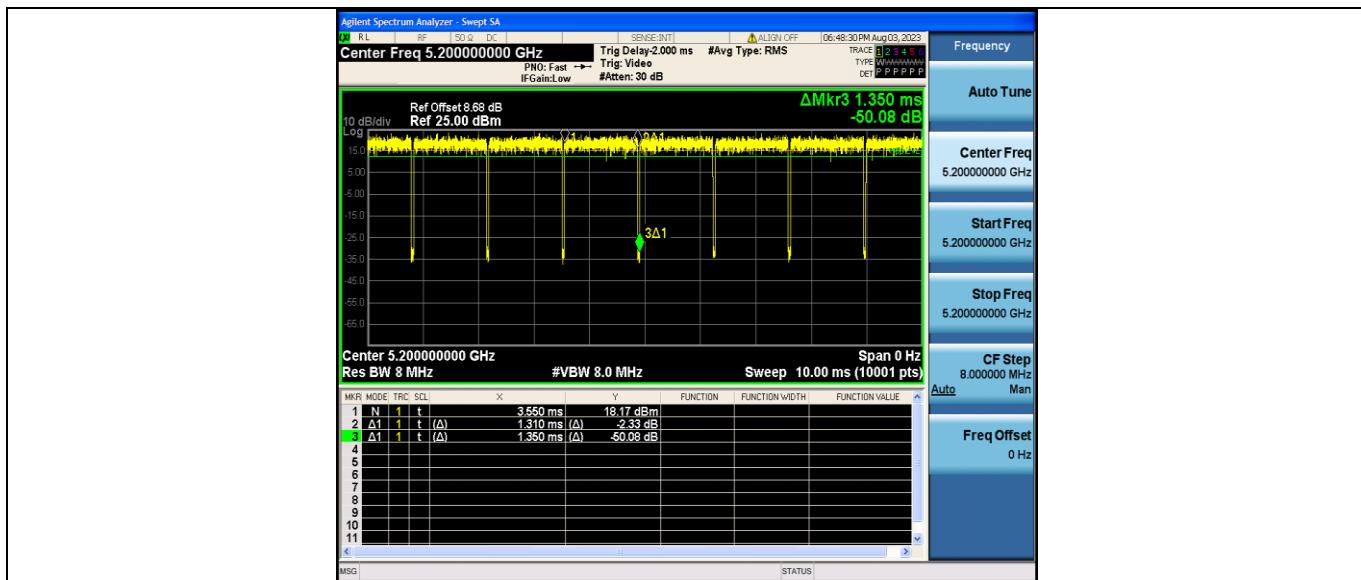


Test Graphs

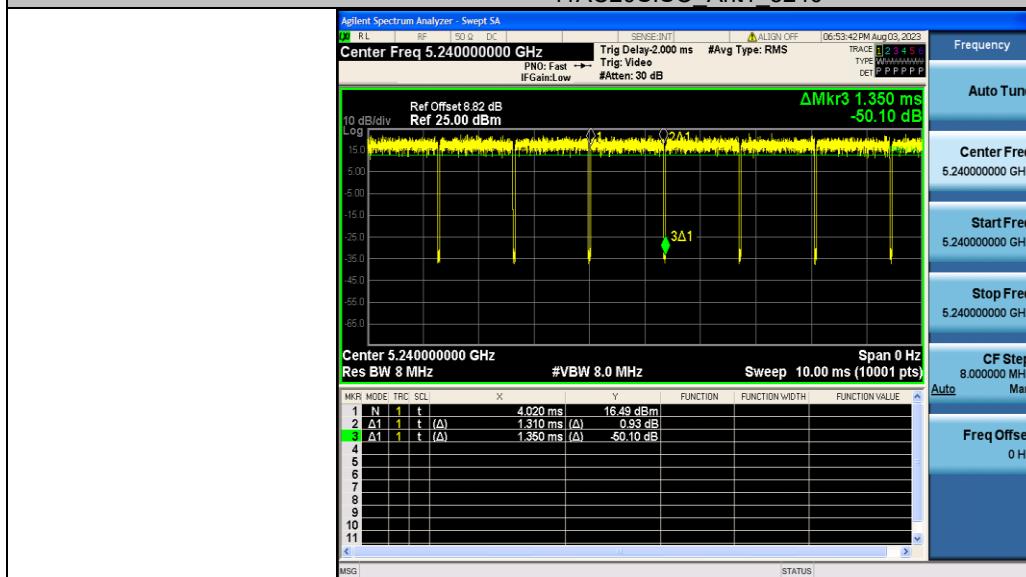




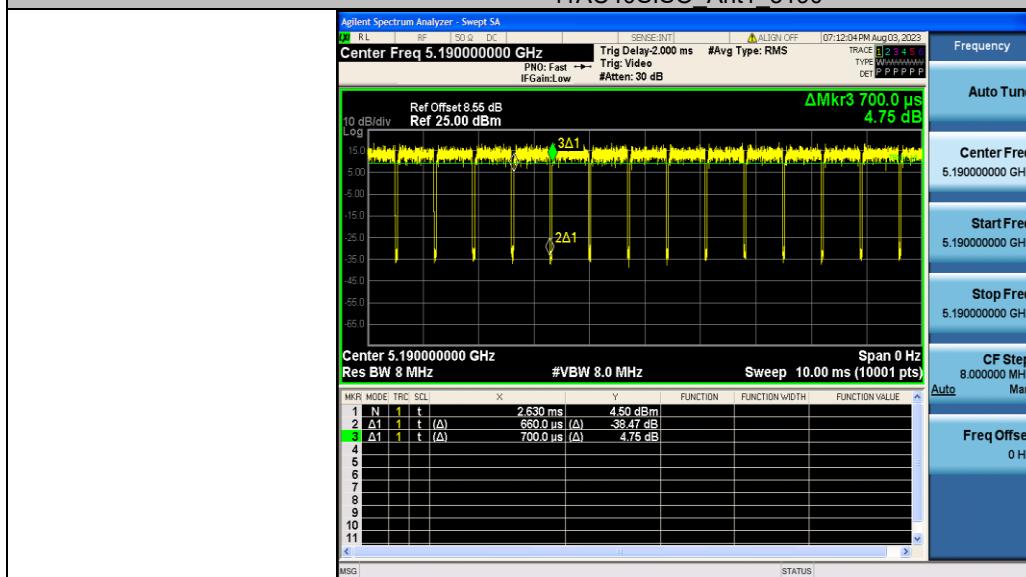




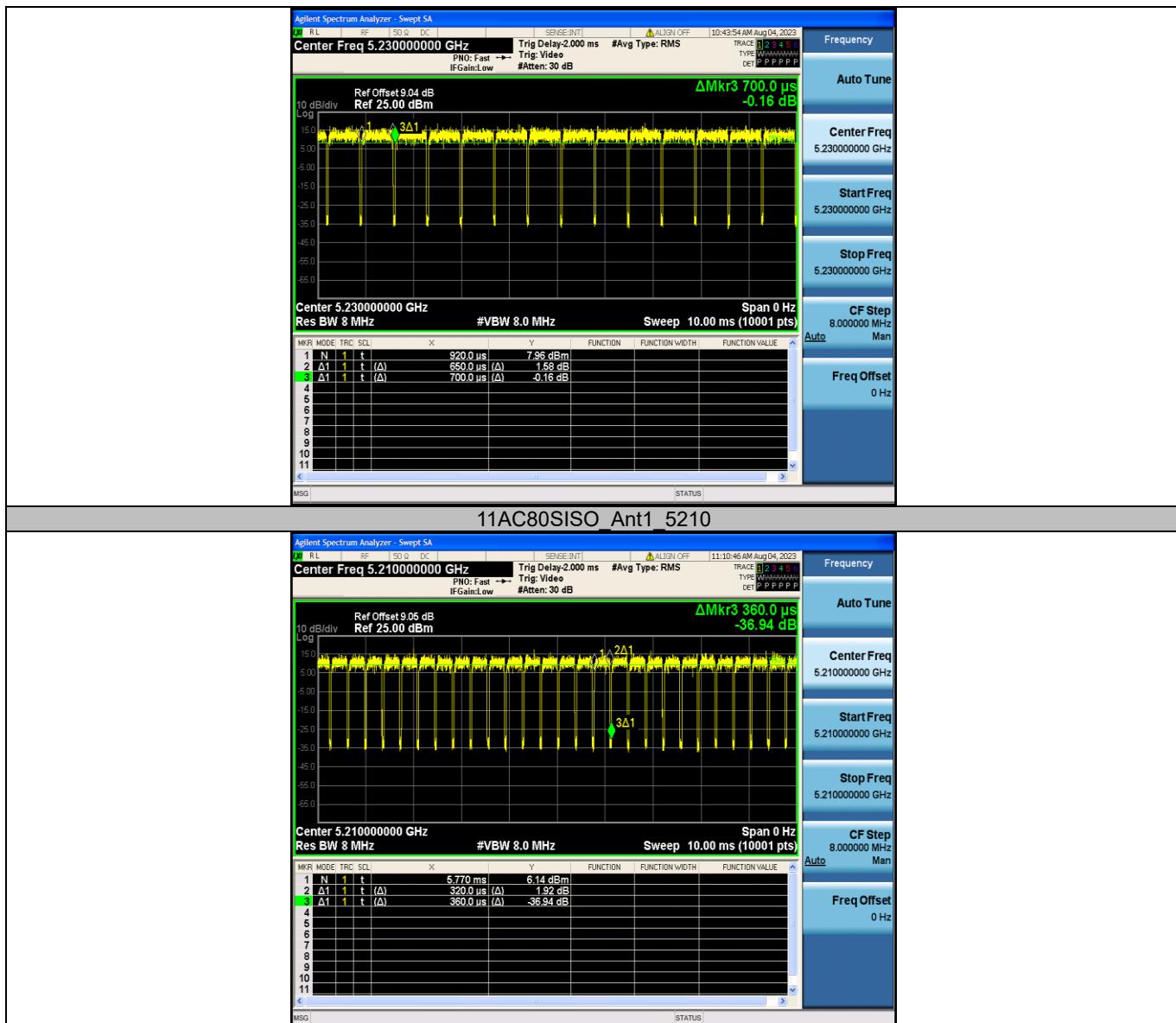
11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190



11AC40SISO_Ant1_5230



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	13.74	97.22	0.12	13.86	≤23.98	15.97	PASS
		5200	13.62	97.20	0.12	13.74	≤23.98	15.85	PASS
		5240	12.72	96.53	0.15	12.87	≤23.98	14.98	PASS
11N20SISO	Ant1	5180	13.17	97.04	0.13	13.30	≤23.98	15.41	PASS
		5200	13.26	97.04	0.13	13.39	≤23.98	15.50	PASS
		5240	12.24	97.04	0.13	12.37	≤23.98	14.48	PASS
11N40SISO	Ant1	5190	9.85	94.20	0.26	10.11	≤23.98	12.22	PASS
		5230	9.63	92.75	0.33	9.96	≤23.98	12.07	PASS
11AC20SISO	Ant1	5180	13.16	97.06	0.13	13.29	≤23.98	15.40	PASS
		5200	13.23	97.04	0.13	13.36	≤23.98	15.47	PASS
		5240	12.39	97.04	0.13	12.52	≤23.98	14.63	PASS
11AC40SISO	Ant1	5190	9.96	94.29	0.26	10.22	≤23.98	12.33	PASS
		5230	9.56	92.86	0.32	9.88	≤23.98	11.99	PASS
11AC80SISO	Ant1	5210	6.25	88.89	0.51	6.76	≤23.98	8.87	PASS

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



Test Graphs

