

Test Report

Report No.: MTi230805003-06E3

Date of issue: 2023-08-22

Applicant: Beijing Cozyla Technology Ltd.

Product: Cozyla Canvas

Model(s): Cozyla CD-3M341F

FCC ID: 2BCES-CD3M341F

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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Test Result Certification	
Applicant:	Beijing Cozyla Technology Ltd.
Address:	Room A419 Building1, No. 12 Shangdi Information Road, Haidian District, Beijing PRC 100080
Manufacturer:	Beijing Cozyla Technology Ltd.
Address:	Room A419 Building1, No. 12 Shangdi Information Road, Haidian District, Beijing PRC 100080
Product description	
Product name:	Cozyla Canvas
Trademark:	Cozyla
Model name:	Cozyla CD-3M341F
Series Model:	N/A
Standards:	47 CFR Part 15.247
Test Method:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02
Date of Test	
Date of test:	2023-08-16 to 2023-08-22
Test result:	Pass

Test Engineer	:	<i>Letter Lan.</i>
		(Letter Lan)
Reviewed By	:	<i>Leon Chen</i>
		(Leon Chen)
Approved By	:	<i>Tom Xue</i>
		(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	Cozyla Canvas
Model name:	Cozyla CD-3M341F
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input: DC 12V2A
Accessories:	Adaptor: Model: KA24D-1202000US Input: 100-240V~ 50/60Hz 0.6A Max Output: 12V=2000mA
Hardware version:	JHA133-DDR3-AI-C V1.0
Software version:	20230818
Test sample(s) number:	MTi230805003-06S1001
RF specification	
Bluetooth version:	V5.0
Operating frequency range:	802.11b/g/n(HT20)ax(20MHz): 2412MHz to 2462MHz; 802.11n(HT40) ax(40MHz): 2422MHz to 2452MHz
Channel number:	802.11b/g/n(HT20) ax(20MHz): 11 Channels; 802.11n(HT40) ax(40MHz): 7 Channels
Modulation type:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20 and HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ax(20MHz and 40MHz): OFDMA(BPSK, QPSK, 16QAM, 64QAM)
Antenna(s) type:	FPC Antenna
Antenna(s) gain:	2.07dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	TX-802.11b
Mode2	TX-802.11g
Mode3	TX-802.11N20
Mode4	TX-802.11N40
Mode5	TX-802.11ax20
Mode6	TX-802.11ax40

Note:

802.11ax mode only support full resource unit size.

1.2.1 Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467

3	2422	8	2447	13	2472
4	2427	9	2452	/	/
5	2432	10	2457	/	/

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: Engineering mode

For power setting, refer to below table.

Mode	2412MHz	2437MHz	2462MHz
802.11b	0	4	4
802.11g	3	7	7
802.11n 20	0	5	5
802.11ax 20	0	3	3
Mode	2422MHz	2437MHz	2452MHz
802.11n 40	3	5	5
802.11ax 40	0	3	3

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
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 %
Conducted emissions (AMN 150kHz~30MHz)	±3.1dB

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.	FCC reference	Description of test	Result
1	§ 15.203	Antenna requirement	Pass
2	§ 15.207	AC power line conducted emissions	Pass
3	§ 15.247(d)	Radiated spurious emissions	Pass
4	15.247(a)(2)	DTS bandwidth	Pass
5	15.247(b)(3)	Maximum conducted output power	Pass
6	15.247(e)	Power Spectral Density	Pass
7	15.247(d)	Band edge (Conducted)	Pass
8	15.247(d)	Conducted spurious emissions	Pass
9	/	Duty Cycle	Pass

3 Test Facilities and accreditations

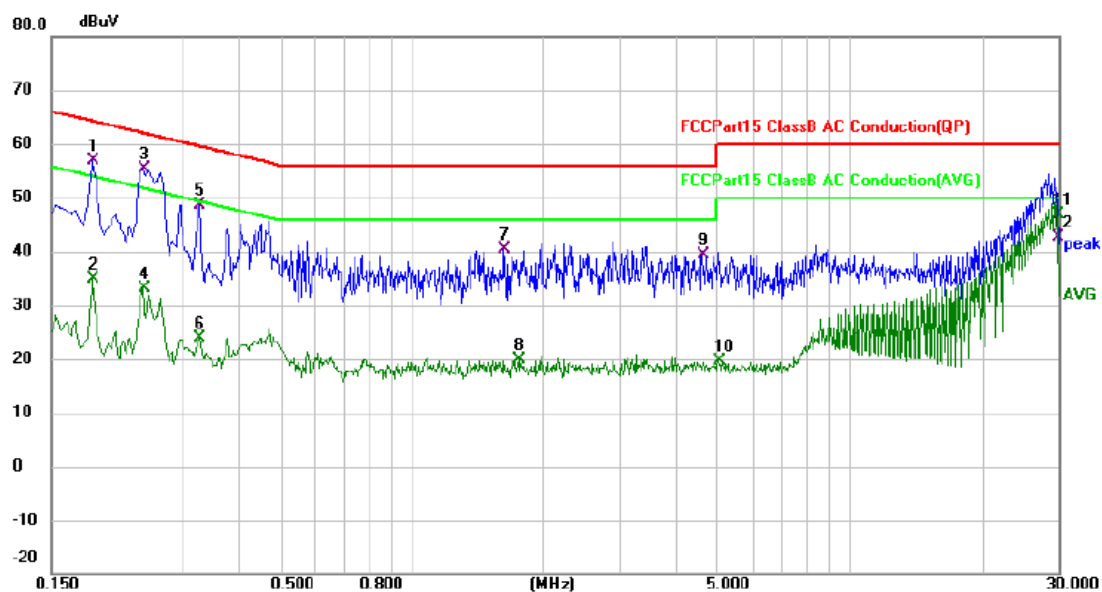
3.1 Test laboratory

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

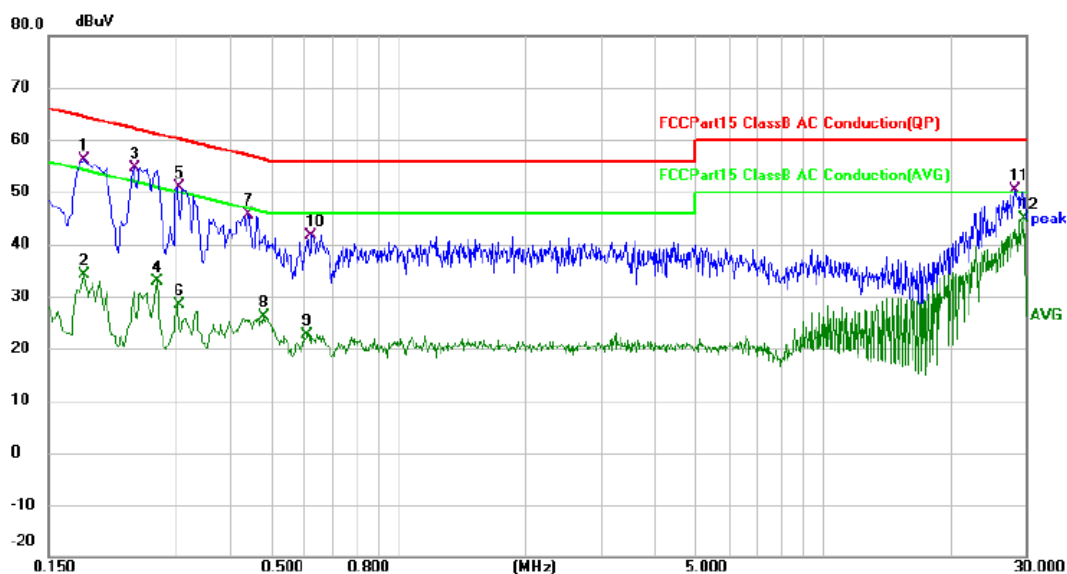
No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Conducted Emission at AC power line						
Power Spectral Density Unwanted emission Occupied Bandwidth Maximum Conducted Output Power						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2023-04-26	2024-04-25
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2023-04-25	2024-04-24
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2023-04-25	2024-04-24
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2023-04-25	2024-04-24
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2023-04-26	2024-04-25
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2023-04-26	2024-04-25
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2023-05-05	2024-05-04
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2023-04-25	2024-04-24
9	DC Power Supply	Agilent	E3632A	MY40027695	2023-05-05	2024-05-04
Band edge emissions (Radiated) Emissions in frequency bands (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2023-04-26	2024-04-25
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2023-05-26	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
Emissions in frequency bands (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	2021/05/30	2024/05/29

Mode1(AC120V/60Hz) / Line: Line



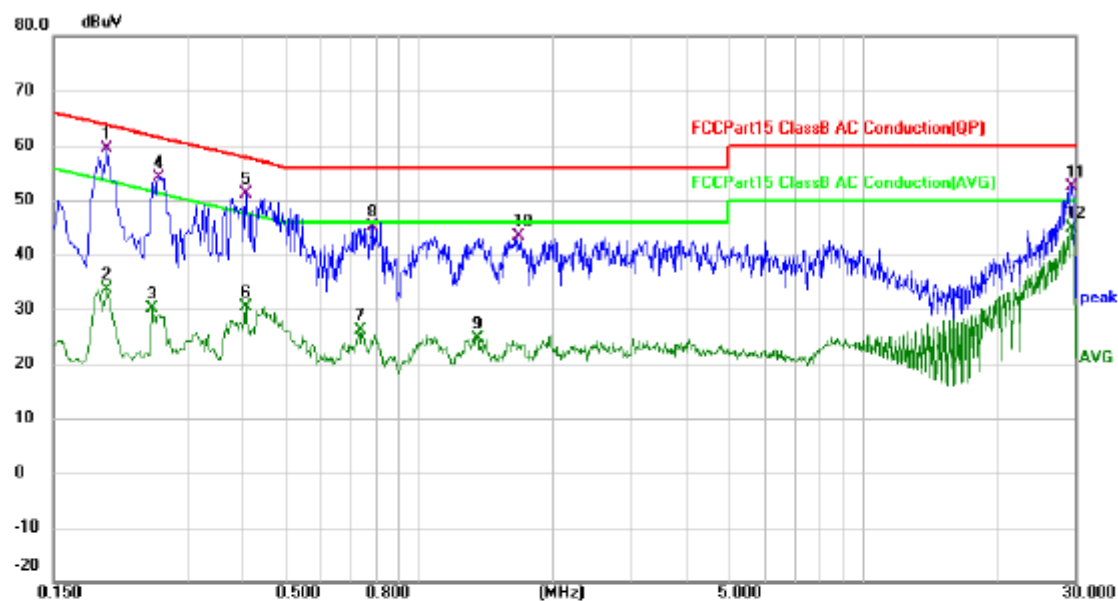
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1860	46.75	10.17	56.92	64.21	-7.29	QP	
2	0.1860	24.80	10.17	34.97	54.21	-19.24	AVG	
3	0.2420	45.14	10.15	55.29	62.03	-6.74	QP	
4	0.2420	22.93	10.15	33.08	52.03	-18.95	AVG	
5	0.3260	38.50	10.15	48.65	59.55	-10.90	QP	
6	0.3260	13.81	10.15	23.96	49.55	-25.59	AVG	
7	1.6260	30.18	10.23	40.41	56.00	-15.59	QP	
8	1.7620	9.58	10.25	19.83	46.00	-26.17	AVG	
9	4.5980	28.77	10.60	39.37	56.00	-16.63	QP	
10	5.0060	9.04	10.64	19.68	50.00	-30.32	AVG	
11 *	29.7660	36.21	10.77	46.98	50.00	-3.02	AVG	
12	29.7734	31.75	10.77	42.52	60.00	-17.48	QP	

Mode1(AC120V/60Hz) / Line: Neutral



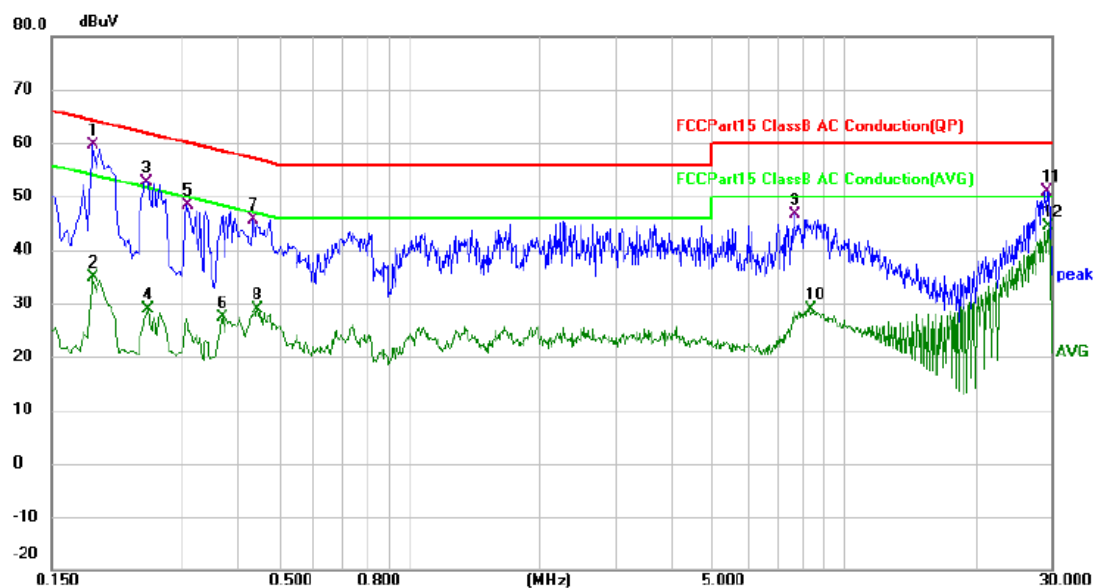
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1819	46.15	10.10	56.25	64.40	-8.15	QP	
2		0.1819	24.10	10.10	34.20	54.40	-20.20	AVG	
3		0.2380	44.58	10.06	54.64	62.17	-7.53	QP	
4		0.2700	22.79	10.04	32.83	51.12	-18.29	AVG	
5		0.3020	40.85	10.03	50.88	60.19	-9.31	QP	
6		0.3020	18.32	10.03	28.35	50.19	-21.84	AVG	
7		0.4420	35.63	10.05	45.68	57.02	-11.34	QP	
8		0.4820	15.98	10.05	26.03	46.30	-20.27	AVG	
9		0.6100	12.53	10.09	22.62	46.00	-23.38	AVG	
10		0.6260	31.65	10.10	41.75	56.00	-14.25	QP	
11		28.4460	39.72	10.72	50.44	60.00	-9.56	QP	
12	*	29.6740	34.11	10.74	44.85	50.00	-5.15	AVG	

Mode1(AC240V/60Hz) / Line: Line



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1980	49.29	10.16	59.45	63.69	-4.24	QP	
2		0.1980	23.59	10.16	33.75	53.69	-19.94	AVG	
3		0.2500	19.90	10.15	30.05	51.76	-21.71	AVG	
4		0.2580	43.98	10.15	54.13	61.50	-7.37	QP	
5		0.4060	41.04	10.18	51.22	57.73	-6.51	QP	
6		0.4060	20.16	10.18	30.34	47.73	-17.39	AVG	
7		0.7340	15.96	10.15	26.11	46.00	-19.89	AVG	
8		0.7900	34.97	10.14	45.11	56.00	-10.89	QP	
9		1.3540	14.49	10.17	24.66	46.00	-21.34	AVG	
10		1.6660	33.05	10.24	43.29	56.00	-12.71	QP	
11		29.6460	41.53	10.77	52.30	60.00	-7.70	QP	
12		29.6460	34.15	10.77	44.92	50.00	-5.08	AVG	

Mode1(AC240V/60Hz) / Line: Neutral



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1860	49.45	10.10	59.55	64.21	-4.66	QP	
2		0.1860	24.81	10.10	34.91	54.21	-19.30	AVG	
3		0.2460	42.57	10.06	52.63	61.89	-9.26	QP	
4		0.2500	18.95	10.05	29.00	51.76	-22.76	AVG	
5		0.3060	38.26	10.03	48.29	60.08	-11.79	QP	
6		0.3700	17.23	10.04	27.27	48.50	-21.23	AVG	
7		0.4340	35.61	10.05	45.66	57.18	-11.52	QP	
8		0.4460	18.86	10.05	28.91	46.95	-18.04	AVG	
9		7.6740	35.93	10.68	46.61	60.00	-13.39	QP	
10		8.3460	18.30	10.69	28.99	50.00	-21.01	AVG	
11		29.2220	40.22	10.73	50.95	60.00	-9.05	QP	
12		29.6340	33.74	10.74	44.48	50.00	-5.52	AVG	

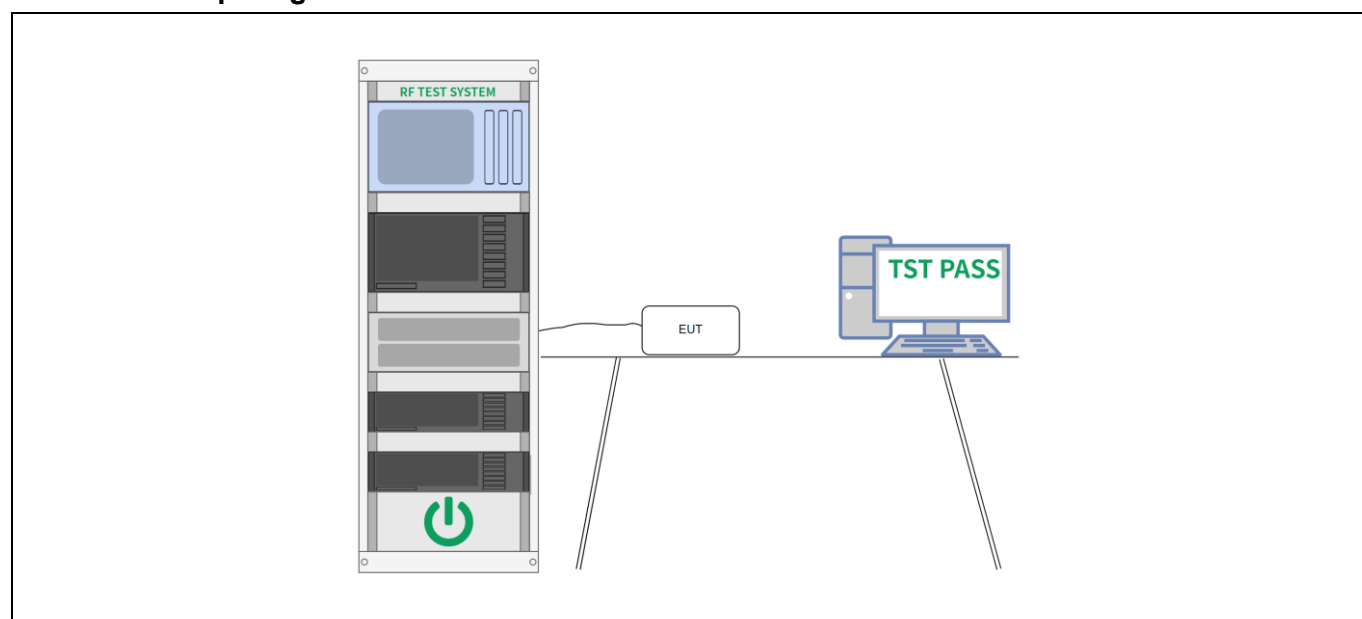
6.2 Occupied Bandwidth

Test Requirement:	47 CFR 15.247(a)(2)
Test Limit:	Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.
Test Method:	ANSI C63.10-2013, section 11.8 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	a) Set RBW = 100 kHz. b) Set the VBW $\geq [3 \times \text{RBW}]$. c) Detector = peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	57 %	Atmospheric Pressure:	101 kPa
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.2.2 Test Setup Diagram:



6.2.3 Test Data:

Please Refer to Appendix for Details.

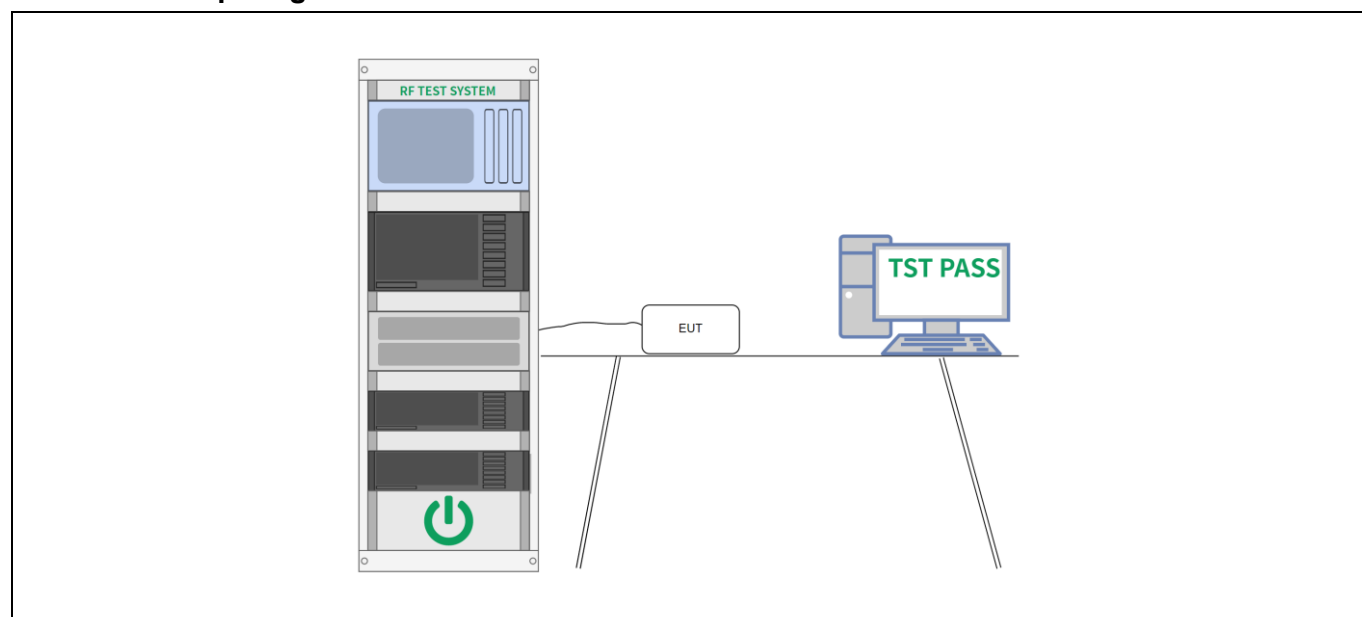
6.3 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(3)
Test Limit:	Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
Test Method:	ANSI C63.10-2013, section 11.9.1 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.9.1 Maximum peak conducted output power

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	57 %	Atmospheric Pressure:	101 kPa
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

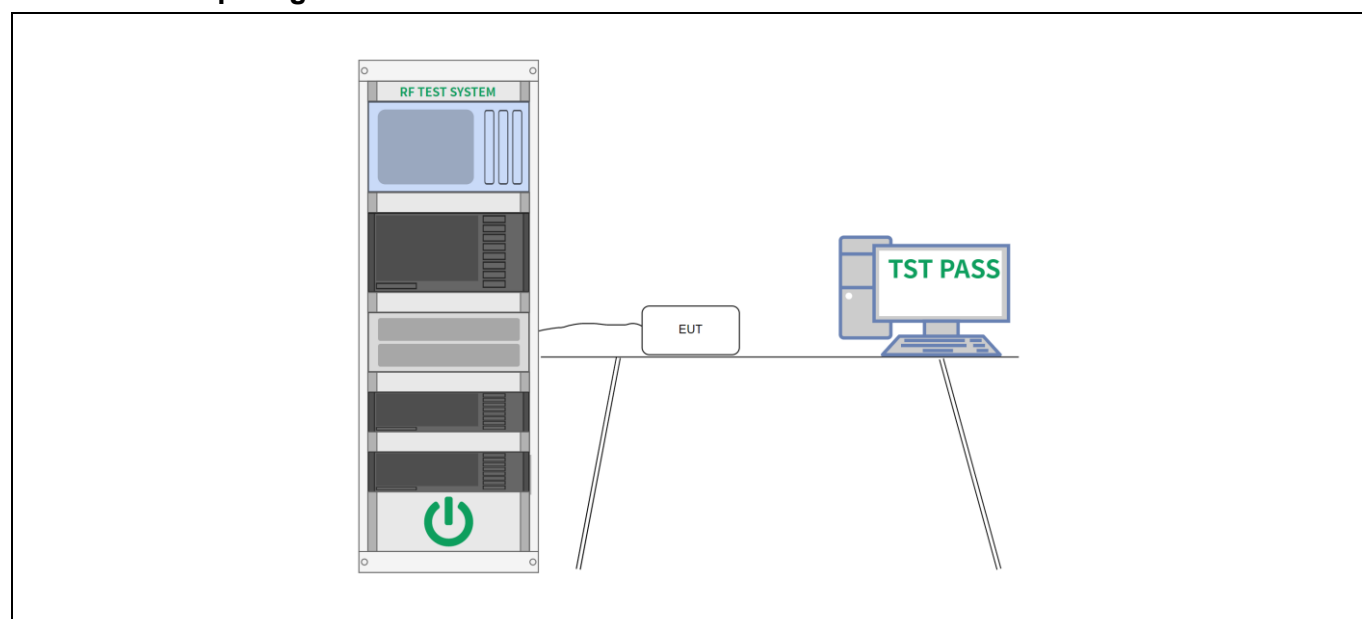
6.4 Power Spectral Density

Test Requirement:	47 CFR 15.247(e)
Test Limit:	Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.
Test Method:	ANSI C63.10-2013, section 11.10 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013, section 11.10, Maximum power spectral density level in the fundamental emission

6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	57 %	Atmospheric Pressure:	101 kPa
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.

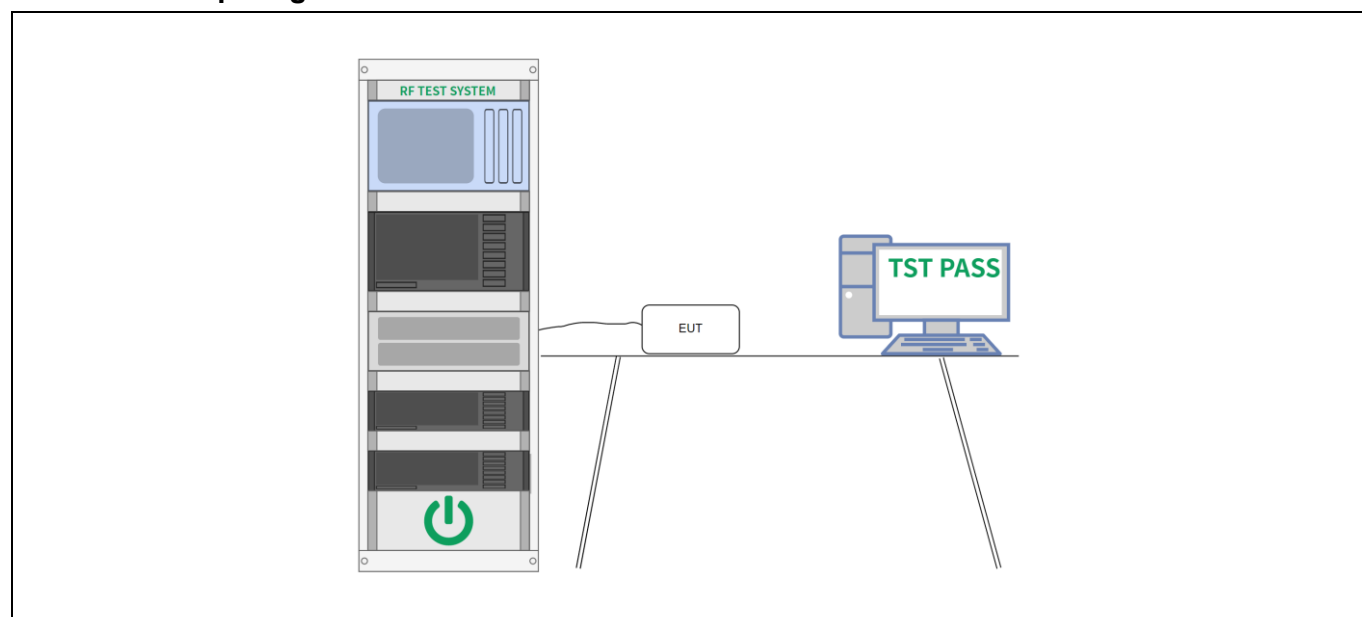
6.5 RF conducted spurious emissions and band edge measurement

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2013 section 11.11 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	ANSI C63.10-2013 Section 11.11.1, Section 11.11.2, Section 11.11.3

6.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	24.6 °C	Humidity:	57 %	Atmospheric Pressure:	101 kPa
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Please Refer to Appendix for Details.

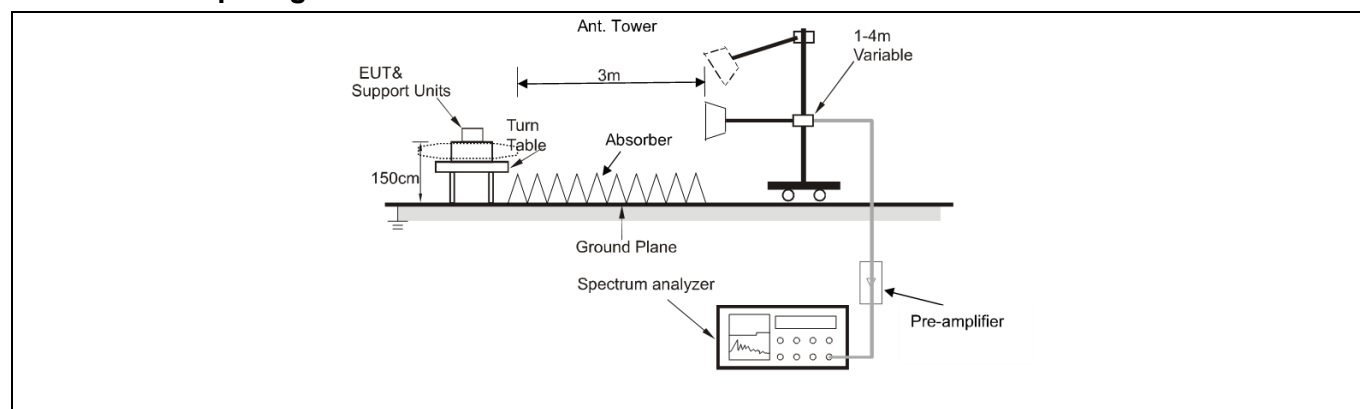
6.6 Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.		
Test Method:	ANSI C63.10-2013 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2013 section 6.10.5.2		

6.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	16.3 °C	Humidity:	62.3 %	Atmospheric Pressure:	99 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.					

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	51.19	-2.66	48.53	74.00	-25.47	peak
2	*	2310.000	43.47	-2.66	40.81	54.00	-13.19	AVG
3		2390.000	49.87	-2.03	47.84	74.00	-26.16	peak
4		2390.000	41.45	-2.03	39.42	54.00	-14.58	AVG

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	44.36	-2.66	41.70	74.00	-32.30	peak
2	*	2310.000	35.11	-2.66	32.45	54.00	-21.55	AVG
3		2390.000	42.41	-2.03	40.38	74.00	-33.62	peak
4		2390.000	33.63	-2.03	31.60	54.00	-22.40	AVG

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	48.15	-1.91	46.24	74.00	-27.76	peak
2	*	2483.500	40.19	-1.91	38.28	54.00	-15.72	AVG
3		2500.000	47.40	-1.80	45.60	74.00	-28.40	peak
4		2500.000	37.85	-1.80	36.05	54.00	-17.95	AVG

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	51.34	-1.91	49.43	74.00	-24.57	peak
2	*	2483.500	41.53	-1.91	39.62	54.00	-14.38	AVG
3		2500.000	49.41	-1.80	47.61	74.00	-26.39	peak
4		2500.000	40.03	-1.80	38.23	54.00	-15.77	AVG

Mode2 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	52.18	-2.66	49.52	74.00	-24.48	peak
2		2310.000	40.91	-2.66	38.25	54.00	-15.75	AVG
3	*	2390.000	64.50	-2.03	62.47	74.00	-11.53	peak
4		2390.000	41.64	-2.03	39.61	54.00	-14.39	AVG

Mode2 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	44.79	-2.66	42.13	74.00	-31.87	peak
2		2310.000	34.13	-2.66	31.47	54.00	-22.53	AVG
3		2390.000	53.88	-2.03	51.85	74.00	-22.15	peak
4	*	2390.000	34.40	-2.03	32.37	54.00	-21.63	AVG

Mode2 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	59.16	-1.91	57.25	74.00	-16.75	peak
2	*	2483.500	41.27	-1.91	39.36	54.00	-14.64	AVG
3		2500.000	49.08	-1.80	47.28	74.00	-26.72	peak
4		2500.000	37.98	-1.80	36.18	54.00	-17.82	AVG

Mode2 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2483.500	68.24	-1.91	66.33	74.00	-7.67	peak
2		2483.500	45.57	-1.91	43.66	54.00	-10.34	AVG
3		2500.000	59.66	-1.80	57.86	74.00	-16.14	peak
4		2500.000	39.22	-1.80	37.42	54.00	-16.58	AVG

Mode3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	52.54	-2.66	49.88	74.00	-24.12	peak
2		2310.000	40.93	-2.66	38.27	54.00	-15.73	AVG
3	*	2390.000	63.45	-2.03	61.42	74.00	-12.58	peak
4		2390.000	40.61	-2.03	38.58	54.00	-15.42	AVG

Mode3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	43.83	-2.66	41.17	74.00	-32.83	peak
2		2310.000	33.99	-2.66	31.33	54.00	-22.67	AVG
3		2390.000	53.37	-2.03	51.34	74.00	-22.66	peak
4	*	2390.000	34.03	-2.03	32.00	54.00	-22.00	AVG

Mode3 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	58.71	-1.91	56.80	74.00	-17.20	peak
2	*	2483.500	40.38	-1.91	38.47	54.00	-15.53	AVG
3		2500.000	49.92	-1.80	48.12	74.00	-25.88	peak
4		2500.000	37.89	-1.80	36.09	54.00	-17.91	AVG

Mode3 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2483.500	68.09	-1.91	66.18	74.00	-7.82	peak
2		2483.500	45.00	-1.91	43.09	54.00	-10.91	AVG
3		2500.000	59.03	-1.80	57.23	74.00	-16.77	peak
4		2500.000	39.15	-1.80	37.35	54.00	-16.65	AVG

Mode4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: 03

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	49.41	-2.66	46.75	74.00	-27.25	peak
2		2310.000	39.50	-2.66	36.84	54.00	-17.16	AVG
3		2390.000	62.86	-2.03	60.83	74.00	-13.17	peak
4	*	2390.000	47.67	-2.03	45.64	54.00	-8.36	AVG

Mode4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: 03

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	49.06	-2.66	46.40	74.00	-27.60	peak
2		2310.000	39.35	-2.66	36.69	54.00	-17.31	AVG
3	*	2390.000	63.10	-2.03	61.07	74.00	-12.93	peak
4		2390.000	39.90	-2.03	37.87	54.00	-16.13	AVG

Mode4 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: 09

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2483.500	64.38	-1.91	62.47	74.00	-11.53	peak
2 *	2483.500	49.21	-1.91	47.30	54.00	-6.70	AVG
3	2500.000	57.23	-1.80	55.43	74.00	-18.57	peak
4	2500.000	40.83	-1.80	39.03	54.00	-14.97	AVG

Mode4 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: 09

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2483.500	54.70	-1.91	52.79	74.00	-21.21	peak
2 *	2483.500	42.22	-1.91	40.31	54.00	-13.69	AVG
3	2500.000	48.40	-1.80	46.60	74.00	-27.40	peak
4	2500.000	37.88	-1.80	36.08	54.00	-17.92	AVG

Mode5 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	42.93	-2.66	40.27	74.00	-33.73	peak
2	*	2310.000	34.18	-2.66	31.52	54.00	-22.48	AVG
3		2390.000	50.14	-2.03	48.11	74.00	-25.89	peak
4		2390.000	33.05	-2.03	31.02	54.00	-22.98	AVG

Mode5 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2310.000	48.65	-2.66	45.99	74.00	-28.01	peak
2		2310.000	38.87	-2.66	36.21	54.00	-17.79	AVG
3		2390.000	58.76	-2.03	56.73	74.00	-17.27	peak
4	*	2390.000	41.98	-2.03	39.95	54.00	-14.05	AVG

Mode5 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	2483.500	65.76	-1.91	63.85	74.00	-10.15	peak
2		2483.500	43.57	-1.91	41.66	54.00	-12.34	AVG
3		2500.000	57.02	-1.80	55.22	74.00	-18.78	peak
4		2500.000	39.06	-1.80	37.26	54.00	-16.74	AVG

Mode5 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	56.24	-1.91	54.33	74.00	-19.67	peak
2	*	2483.500	40.49	-1.91	38.58	54.00	-15.42	AVG
3		2500.000	51.34	-1.80	49.54	74.00	-24.46	peak
4		2500.000	37.86	-1.80	36.06	54.00	-17.94	AVG

Mode6 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: 03

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2310.000	41.95	-2.66	39.29	74.00	-34.71	peak
2	2310.000	33.15	-2.66	30.49	54.00	-23.51	AVG
3	2390.000	46.14	-2.03	44.11	74.00	-29.89	peak
4 *	2390.000	33.62	-2.03	31.59	54.00	-22.41	AVG

Mode6 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: 03

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	2310.000	41.95	-2.66	39.29	74.00	-34.71	peak
2	2310.000	33.15	-2.66	30.49	54.00	-23.51	AVG
3	2390.000	46.14	-2.03	44.11	74.00	-29.89	peak
4 *	2390.000	33.62	-2.03	31.59	54.00	-22.41	AVG

Mode6 / Polarization: Horizontal / Band: 2.4G / BW: 40 / CH: 09

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	49.39	-1.91	47.48	74.00	-26.52	peak
2	*	2483.500	40.71	-1.91	38.80	54.00	-15.20	AVG
3		2500.000	46.40	-1.80	44.60	74.00	-29.40	peak
4		2500.000	37.81	-1.80	36.01	54.00	-17.99	AVG

Mode6 / Polarization: Vertical / Band: 2.4G / BW: 40 / CH: 09

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		2483.500	60.00	-1.91	58.09	74.00	-15.91	peak
2	*	2483.500	45.22	-1.91	43.31	54.00	-10.69	AVG
3		2500.000	49.58	-1.80	47.78	74.00	-26.22	peak
4		2500.000	39.74	-1.80	37.94	54.00	-16.06	AVG

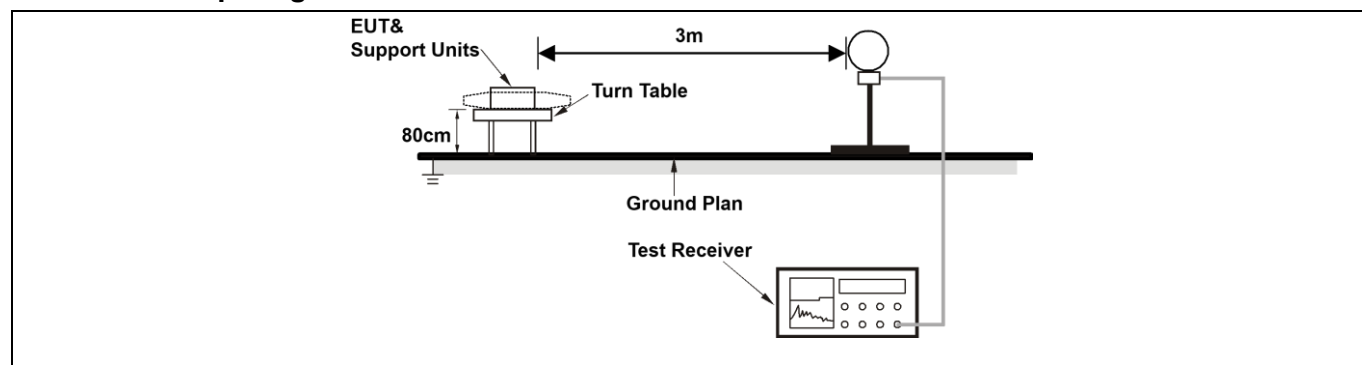
6.7 Radiated emissions (below 1GHz)

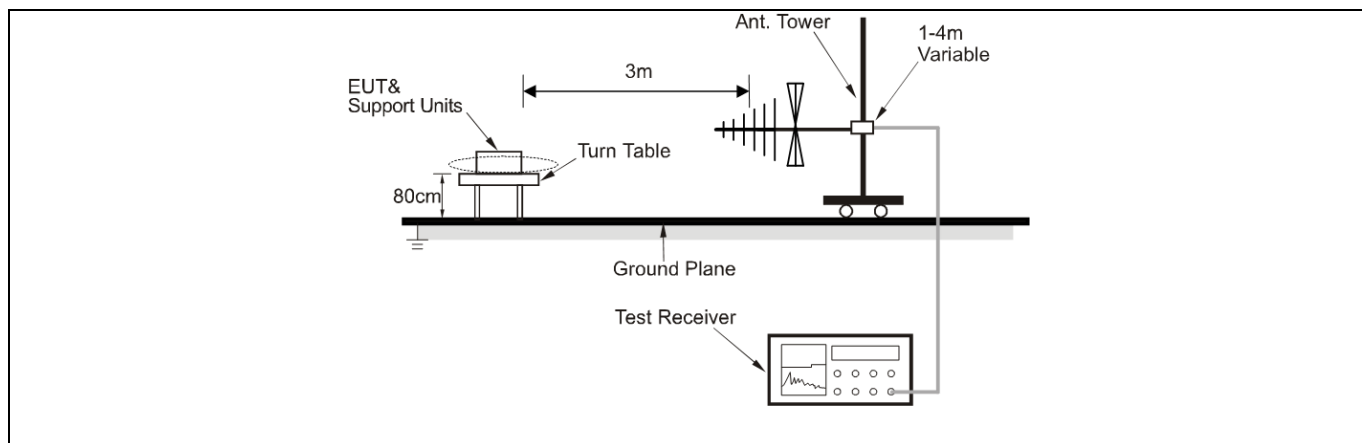
Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.		
Test Method:	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2013 section 6.6.4		

6.7.1 E.U.T. Operation:

Operating Environment:					
Temperature:	16.3 °C	Humidity:	62.3 %	Atmospheric Pressure:	99 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. There were no emissions found below 30MHz within 20dB of the limit.					

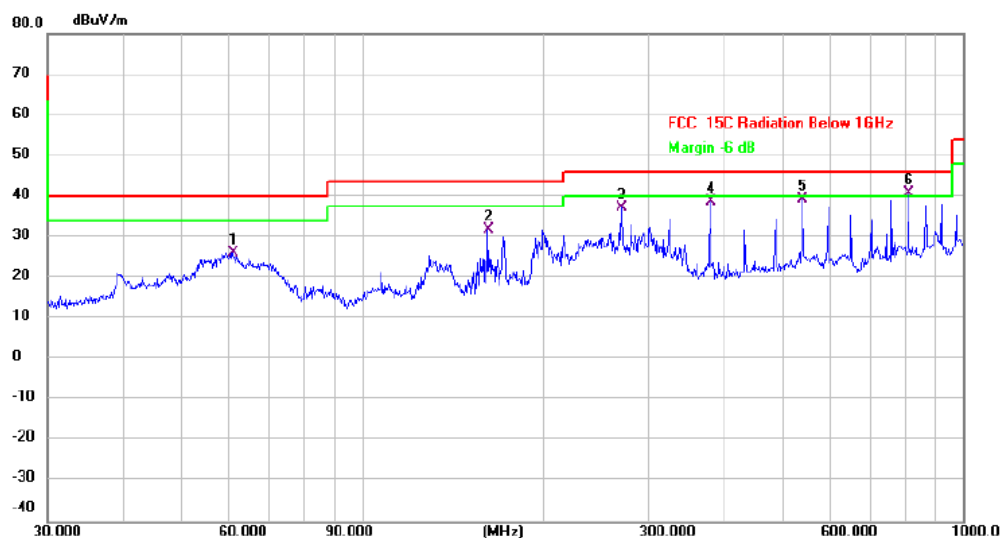
6.7.2 Test Setup Diagram:





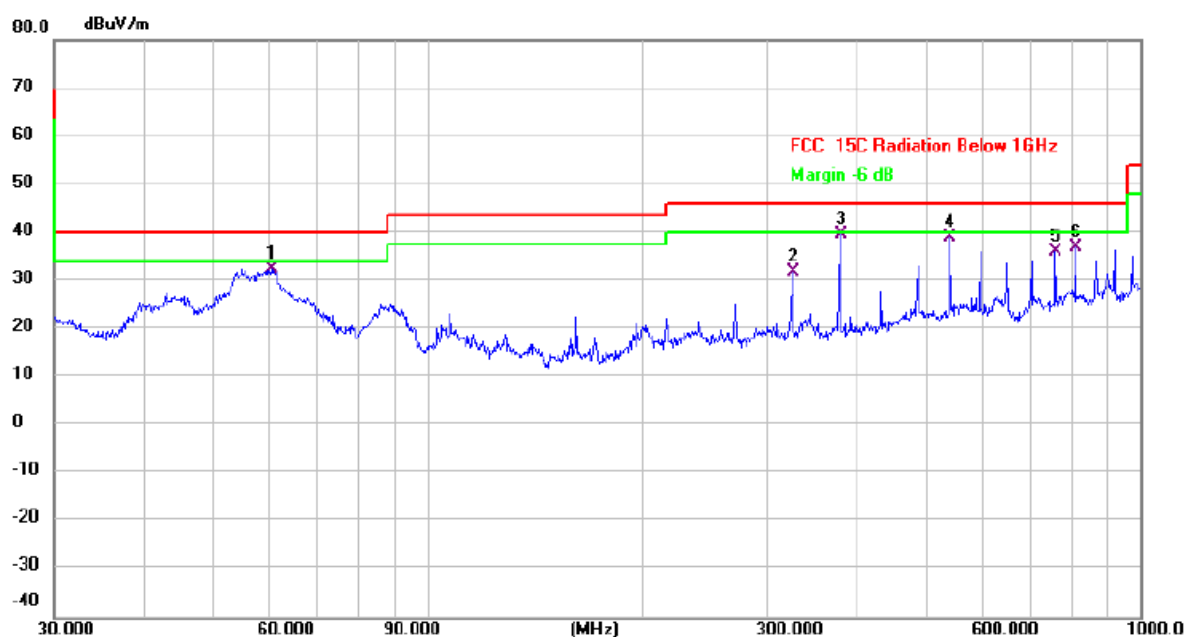
6.7.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH: 11



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		60.9176	35.24	-9.09	26.15	40.00	-13.85	QP	
2		162.0414	42.90	-11.14	31.76	43.50	-11.74	QP	
3		270.3748	44.46	-7.28	37.18	46.00	-8.82	QP	
4		378.5843	43.48	-4.69	38.79	46.00	-7.21	QP	
5		541.3725	42.49	-3.17	39.32	46.00	-6.68	QP	
6	*	810.2654	40.97	-0.02	40.95	46.00	-5.05	QP	

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH: 11



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		60.4919	41.95	-9.43	32.52	40.00	-7.48	QP	
2		324.4561	38.22	-6.43	31.79	46.00	-14.21	QP	
3	*	378.5843	44.46	-4.69	39.77	46.00	-6.23	QP	
4		541.3725	42.17	-3.17	39.00	46.00	-7.00	QP	
5		758.0408	36.79	-0.65	36.14	46.00	-9.86	QP	
6		810.2654	36.86	-0.02	36.84	46.00	-9.16	QP	

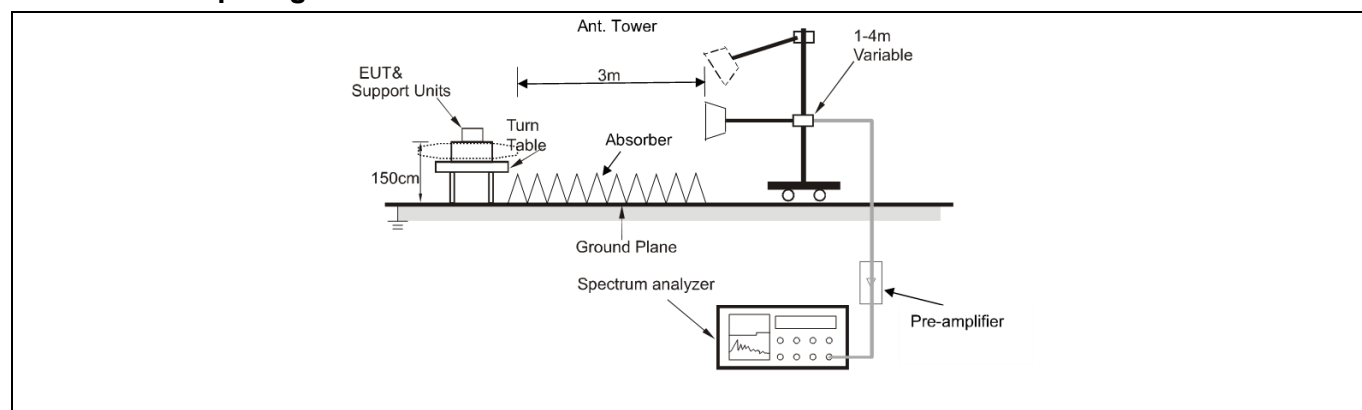
6.8 Radiated emissions (above 1GHz)

Test Requirement:	In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).`		
Test Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
	** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.		
Test Method:	ANSI C63.10-2013 section 6.6.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2013 section 6.6.4		

6.8.1 E.U.T. Operation:

Operating Environment:					
Temperature:	16.3 °C	Humidity:	62.3 %	Atmospheric Pressure:	99 kPa
Test mode:	Mode1, Mode2, Mode3, Mode4, Mode5, Mode6				
Note: Test frequency are from 1GHz to 25GHz, 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.					

6.8.2 Test Setup Diagram:



6.8.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4824.000	46.68	2.81	49.49	74.00	-24.51	peak
2		4824.000	43.52	2.81	46.33	54.00	-7.67	AVG
3		7236.000	40.57	9.10	49.67	74.00	-24.33	peak
4		7236.000	36.15	9.10	45.25	54.00	-8.75	AVG
5		9648.000	41.08	10.98	52.06	74.00	-21.94	peak
6	*	9648.000	37.77	10.98	48.75	54.00	-5.25	AVG

Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: 01

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4824.000	42.19	2.81	45.00	74.00	-29.00	peak
2		4824.000	38.68	2.81	41.49	54.00	-12.51	AVG
3		7236.000	41.39	9.10	50.49	74.00	-23.51	peak
4		7236.000	36.17	9.10	45.27	54.00	-8.73	AVG
5		9648.000	41.72	10.98	52.70	74.00	-21.30	peak
6	*	9648.000	36.27	10.98	47.25	54.00	-6.75	AVG

Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: 06

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4874.000	45.30	3.02	48.32	74.00	-25.68	peak
2		4874.000	41.57	3.02	44.59	54.00	-9.41	AVG
3		7311.000	40.65	8.97	49.62	74.00	-24.38	peak
4		7311.000	36.68	8.97	45.65	54.00	-8.35	AVG
5		9748.000	40.68	11.95	52.63	74.00	-21.37	peak
6	*	9748.000	36.76	11.95	48.71	54.00	-5.29	AVG

Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: 06

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4874.000	42.35	3.02	45.37	74.00	-28.63	peak
2		4874.000	36.83	3.02	39.85	54.00	-14.15	AVG
3		7311.000	39.82	8.97	48.79	74.00	-25.21	peak
4		7311.000	33.38	8.97	42.35	54.00	-11.65	AVG
5		9748.000	40.58	11.95	52.53	74.00	-21.47	peak
6	*	9748.000	35.54	11.95	47.49	54.00	-6.51	AVG

Mode1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4924.000	44.43	3.27	47.70	74.00	-26.30	peak
2		4924.000	40.25	3.27	43.52	54.00	-10.48	AVG
3		7386.000	40.08	9.16	49.24	74.00	-24.76	peak
4		7386.000	36.23	9.16	45.39	54.00	-8.61	AVG
5		9848.000	41.76	11.50	53.26	74.00	-20.74	peak
6	*	9848.000	36.43	11.50	47.93	54.00	-6.07	AVG

Mode1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 20 / CH: 11

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		4924.000	42.86	3.27	46.13	74.00	-27.87	peak
2		4924.000	38.92	3.27	42.19	54.00	-11.81	AVG
3		7386.000	40.80	9.16	49.96	74.00	-24.04	peak
4		7386.000	37.55	9.16	46.71	54.00	-7.29	AVG
5		9848.000	41.46	11.50	52.96	74.00	-21.04	peak
6	*	9848.000	36.18	11.50	47.68	54.00	-6.32	AVG

Photographs of the test setup

Refer to Appendix - Test Setup Photos.

Photographs of the EUT

Refer to Appendix – EUT Photos.

Appendix

Appendix A: DTS Bandwidth

Test Result

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	7.560	0.5	PASS
		2437	7.560	0.5	PASS
		2462	7.040	0.5	PASS
11G	Ant1	2412	16.320	0.5	PASS
		2437	16.360	0.5	PASS
		2462	16.360	0.5	PASS
11N20SISO	Ant1	2412	17.560	0.5	PASS
		2437	17.560	0.5	PASS
		2462	17.560	0.5	PASS
11N40SISO	Ant1	2422	36.240	0.5	PASS
		2437	36.320	0.5	PASS
		2452	36.320	0.5	PASS
11AX20SISO	Ant1	2412	18.760	0.5	PASS
		2437	18.200	0.5	PASS
		2462	18.920	0.5	PASS
11AX40SISO	Ant1	2422	37.520	0.5	PASS
		2437	38.000	0.5	PASS
		2452	37.680	0.5	PASS

Test Graphs





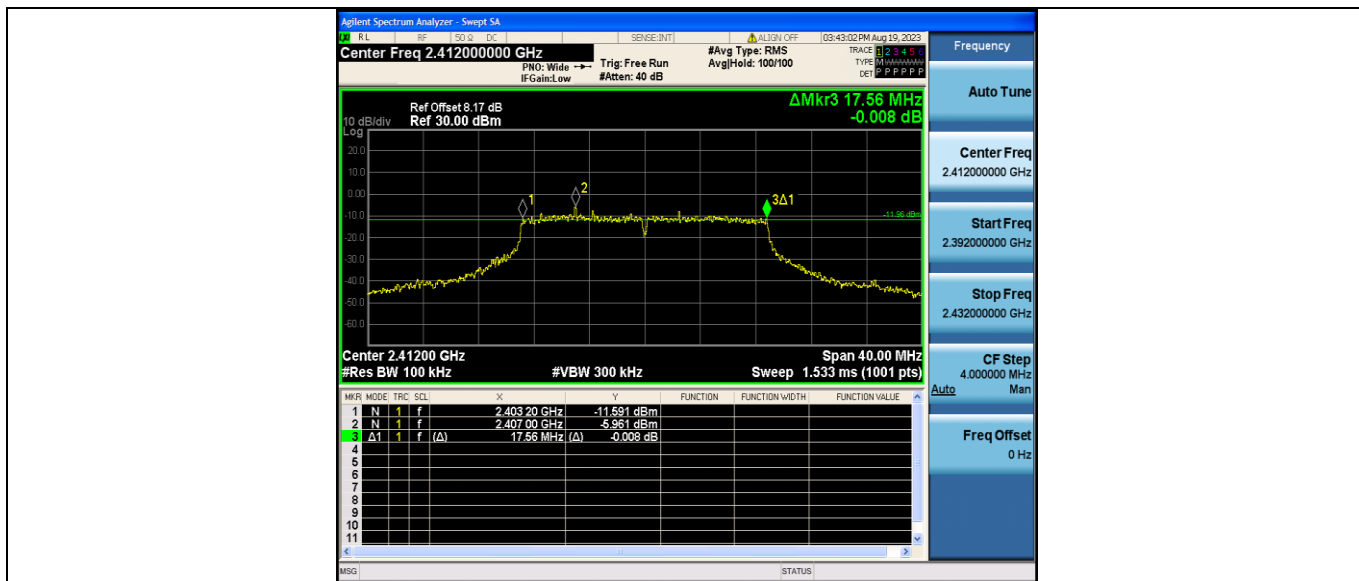
11G Ant1 2437



11G Ant1 2462



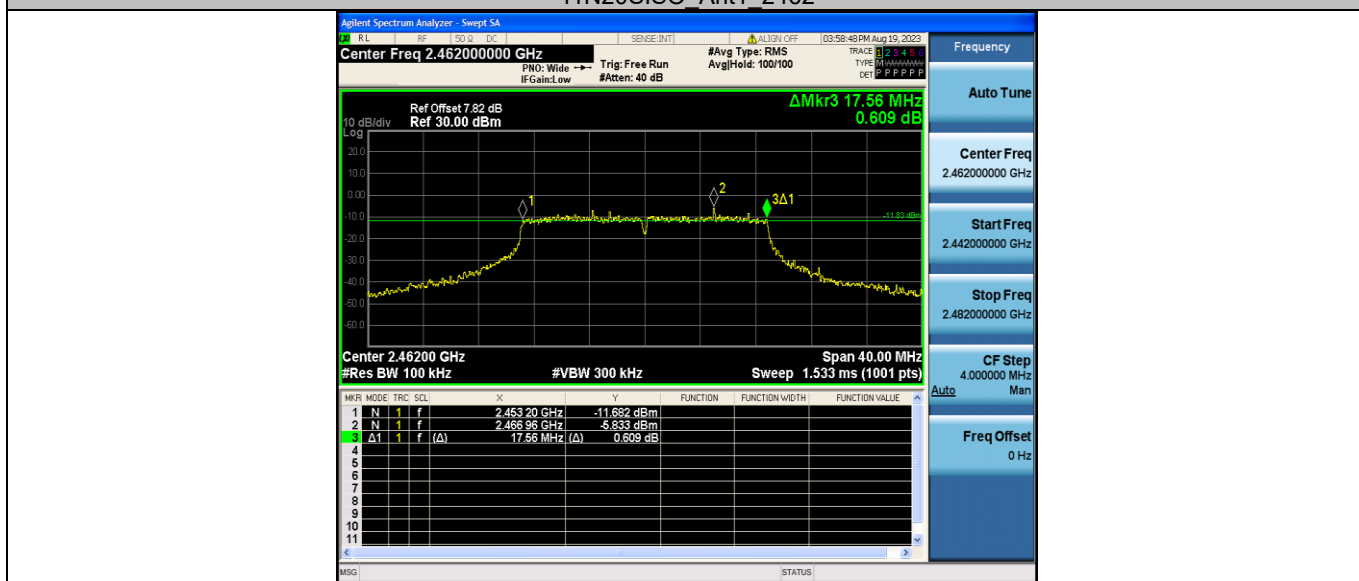
11N20SISO Ant1 2412



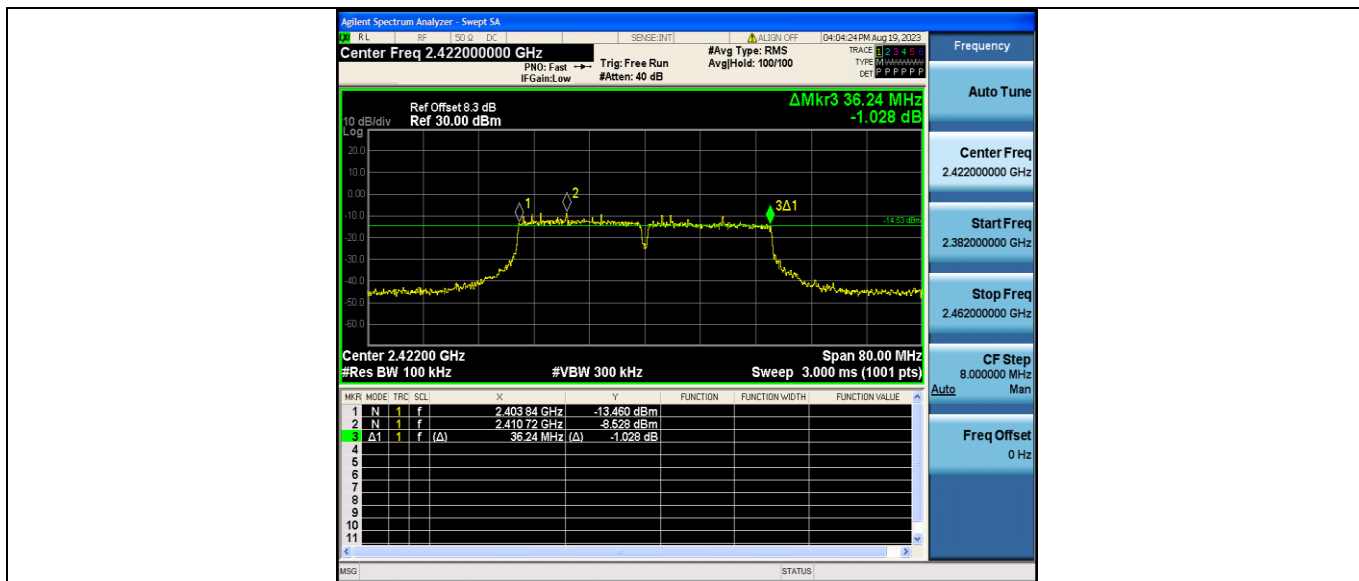
11N20SISO_Ant1_2437



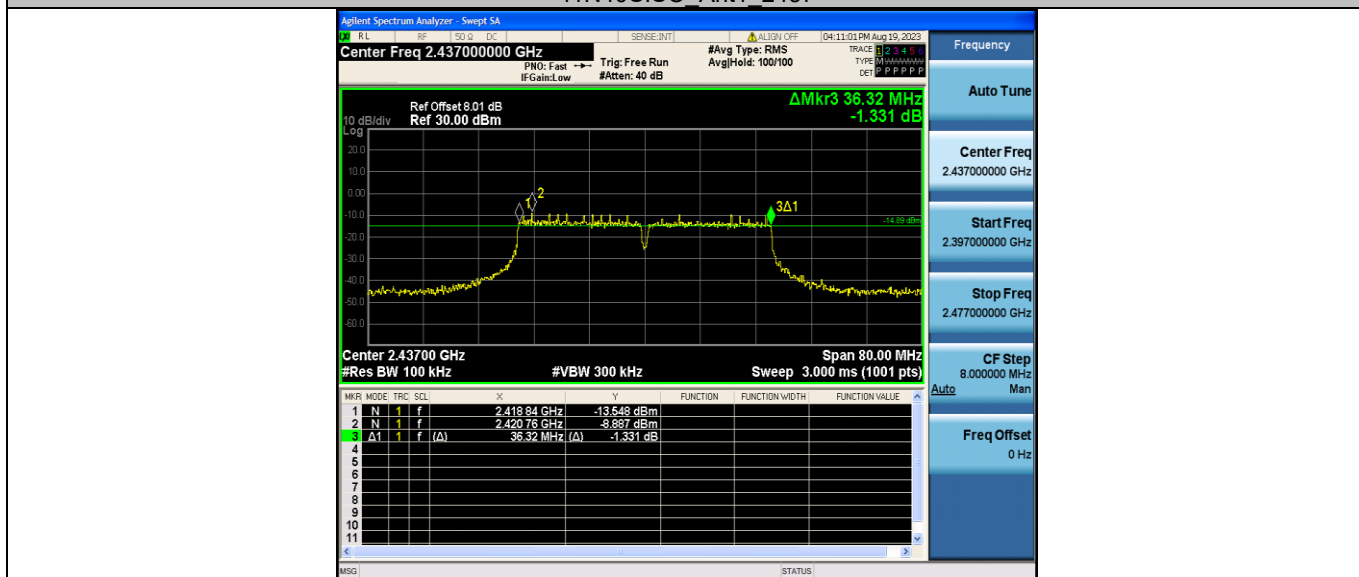
11N20SISO_Ant1_2462



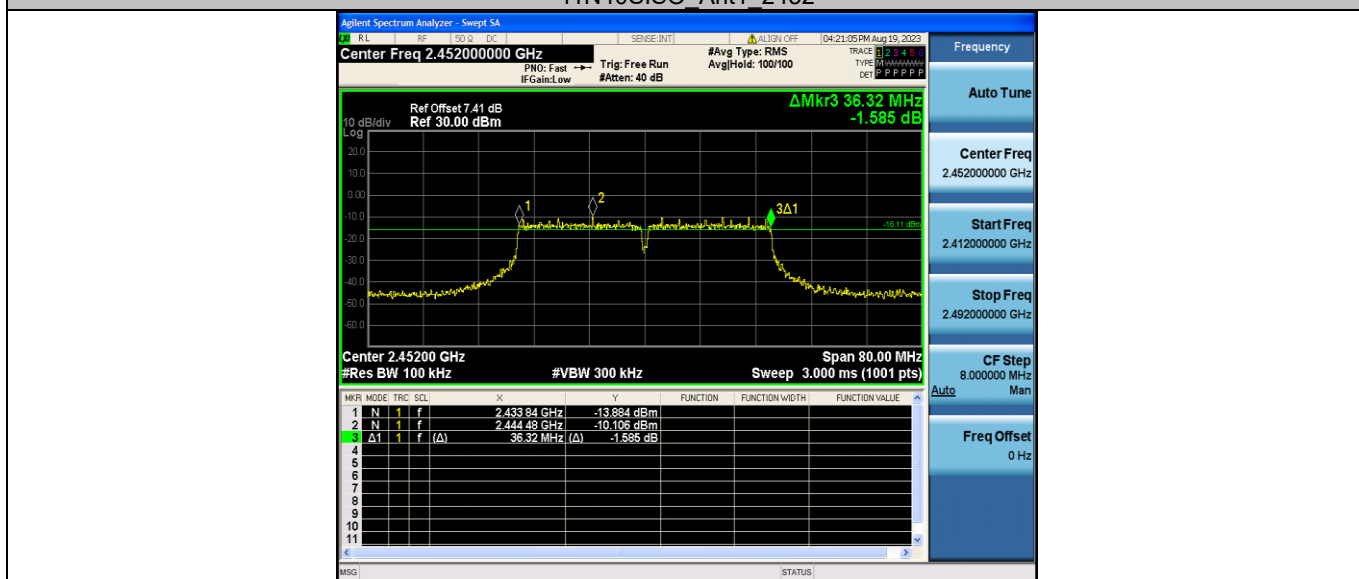
11N40SISO_Ant1_2422



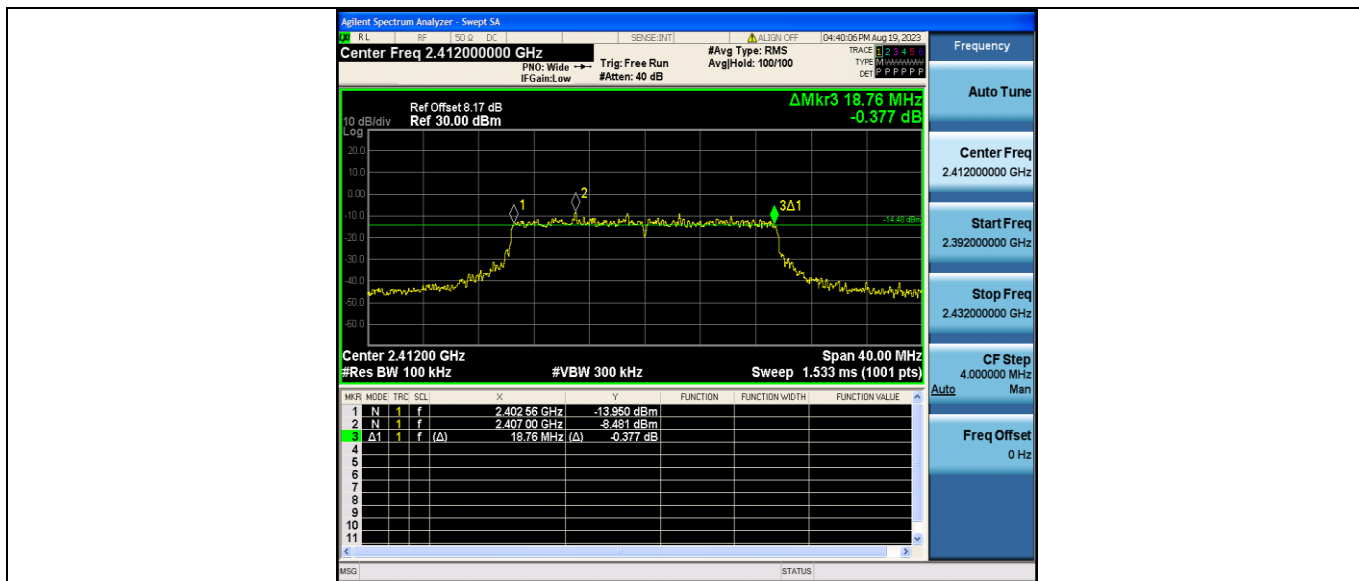
11N40SISO_Ant1_2437



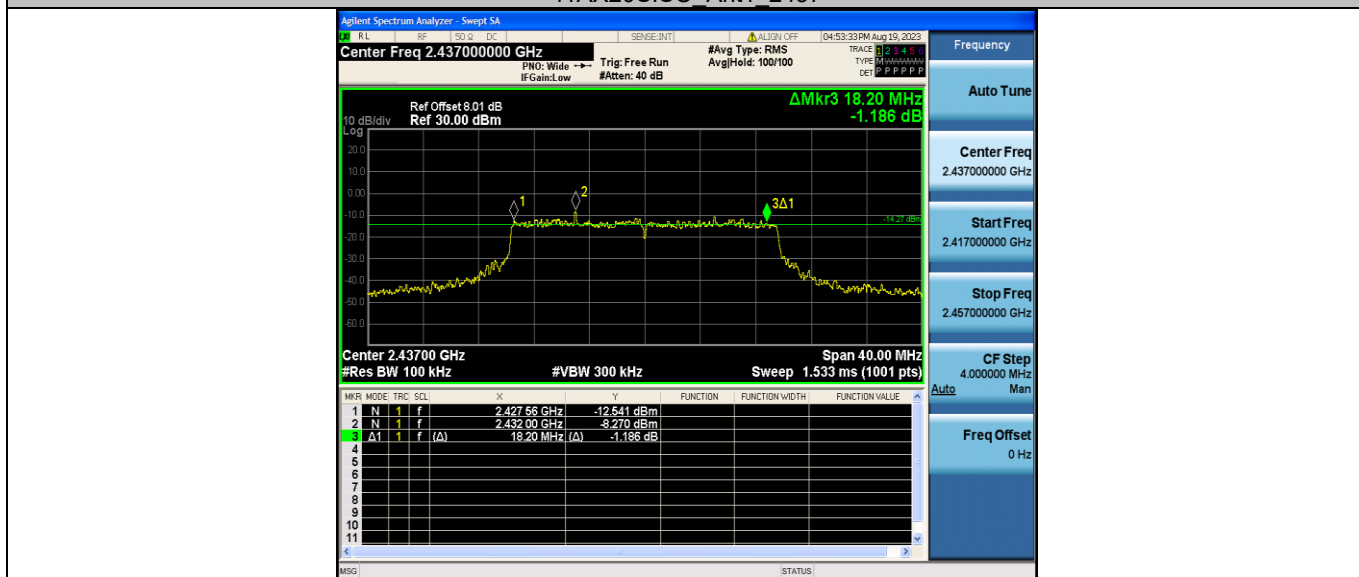
11N40SISO_Ant1_2452



11AX20SISO_Ant1_2412



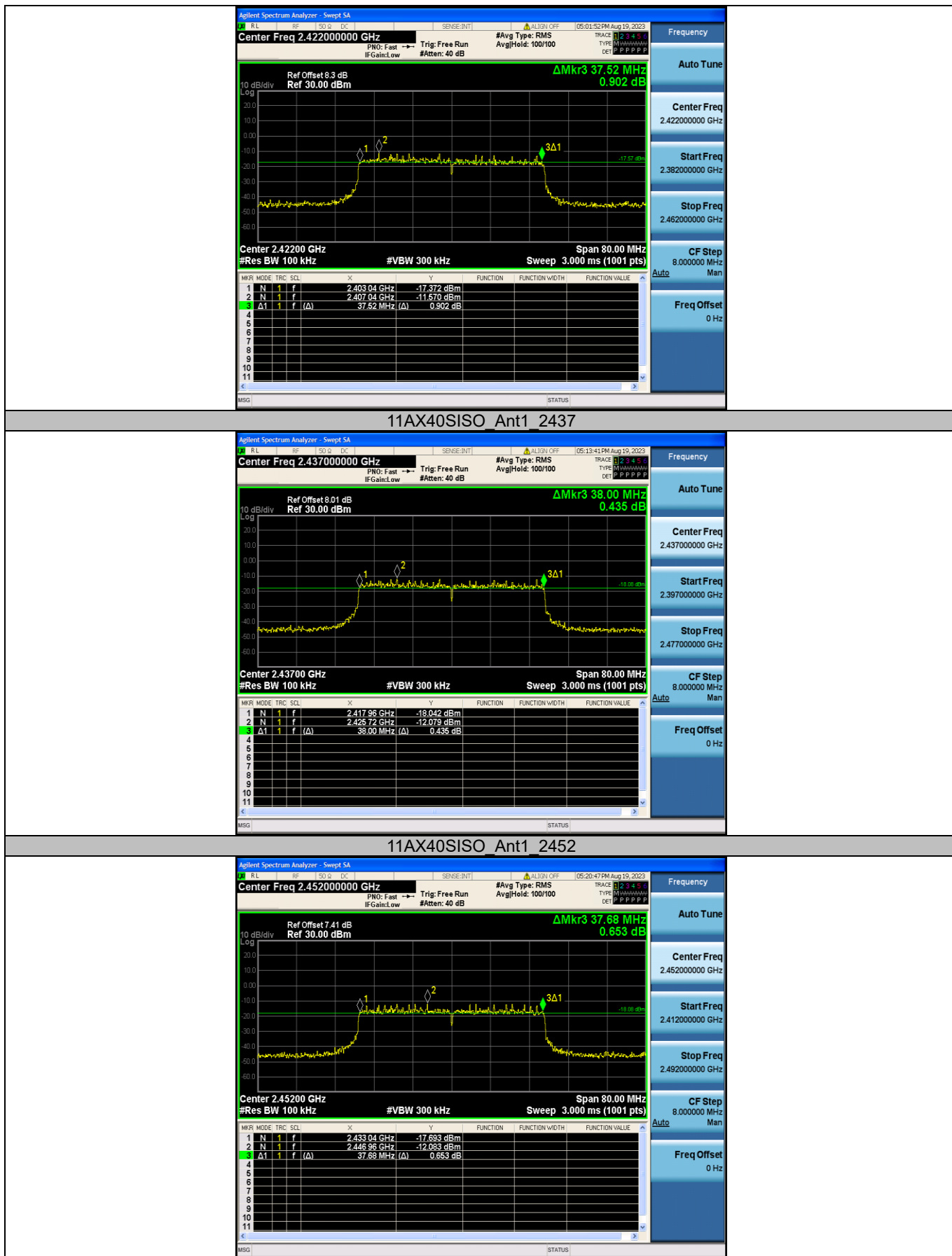
11AX20SISO Ant1 2437



11AX20SISO Ant1 2462



11AX40SISO Ant1 2422



Appendix B: Maximum conducted output power

Test Result Peak

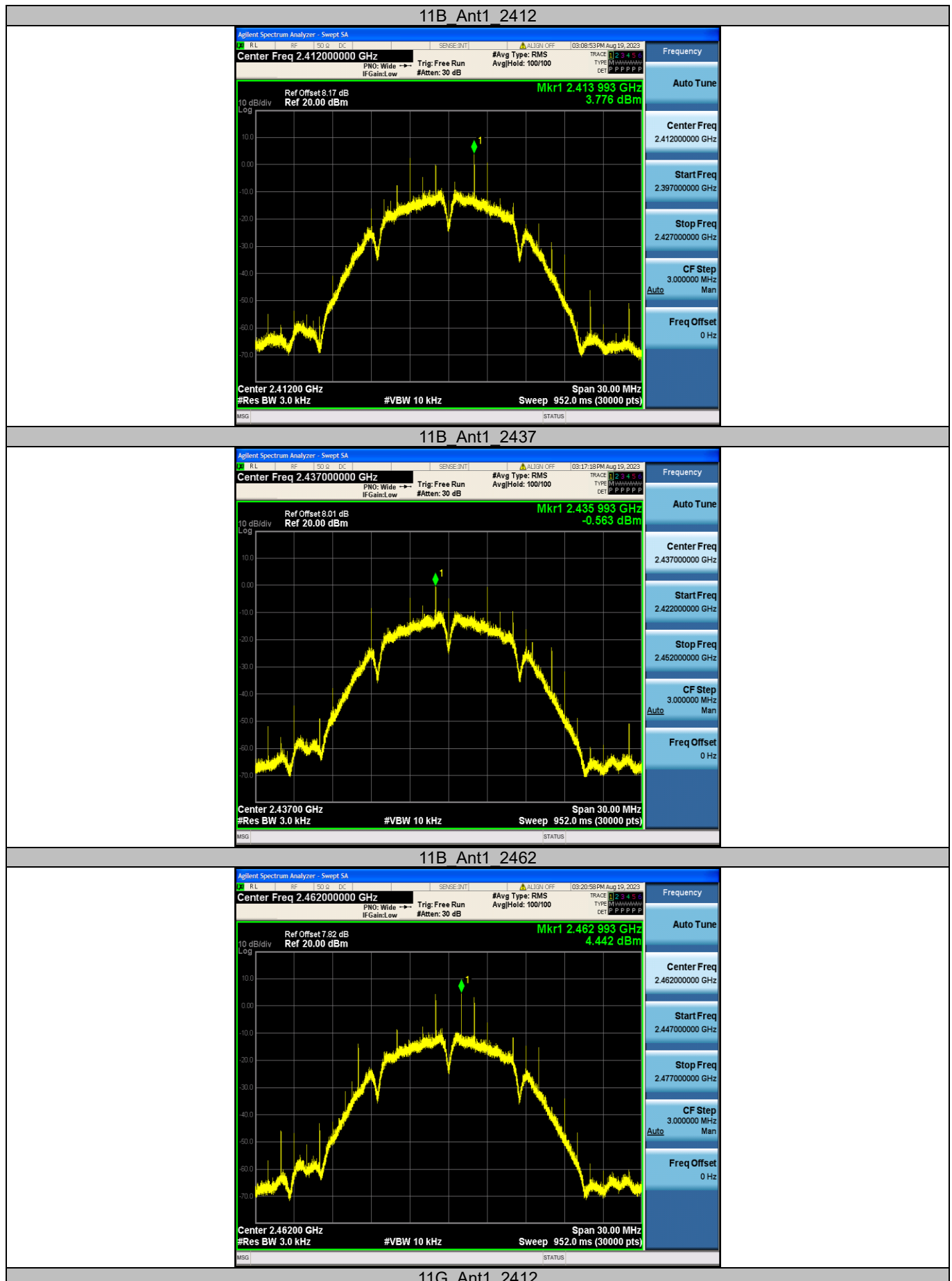
Test Mode	Antenna	Frequency [MHz]	Peak Power [dBm]	Conducted Limit [dBm]	Verdict
11B	Ant1	2412	15.54	≤30.00	PASS
		2437	15.24	≤30.00	PASS
		2462	15.26	≤30.00	PASS
11G	Ant1	2412	13.29	≤30.00	PASS
		2437	13.27	≤30.00	PASS
		2462	13.29	≤30.00	PASS
11N20SISO	Ant1	2412	12.29	≤30.00	PASS
		2437	12.46	≤30.00	PASS
		2462	12.58	≤30.00	PASS
11N40SISO	Ant1	2422	12.76	≤30.00	PASS
		2437	12.53	≤30.00	PASS
		2452	12.21	≤30.00	PASS
11AX20SISO	Ant1	2412	11.19	≤30.00	PASS
		2437	10.55	≤30.00	PASS
		2462	10.67	≤30.00	PASS
11AX40SISO	Ant1	2422	10.60	≤30.00	PASS
		2437	10.63	≤30.00	PASS
		2452	10.27	≤30.00	PASS

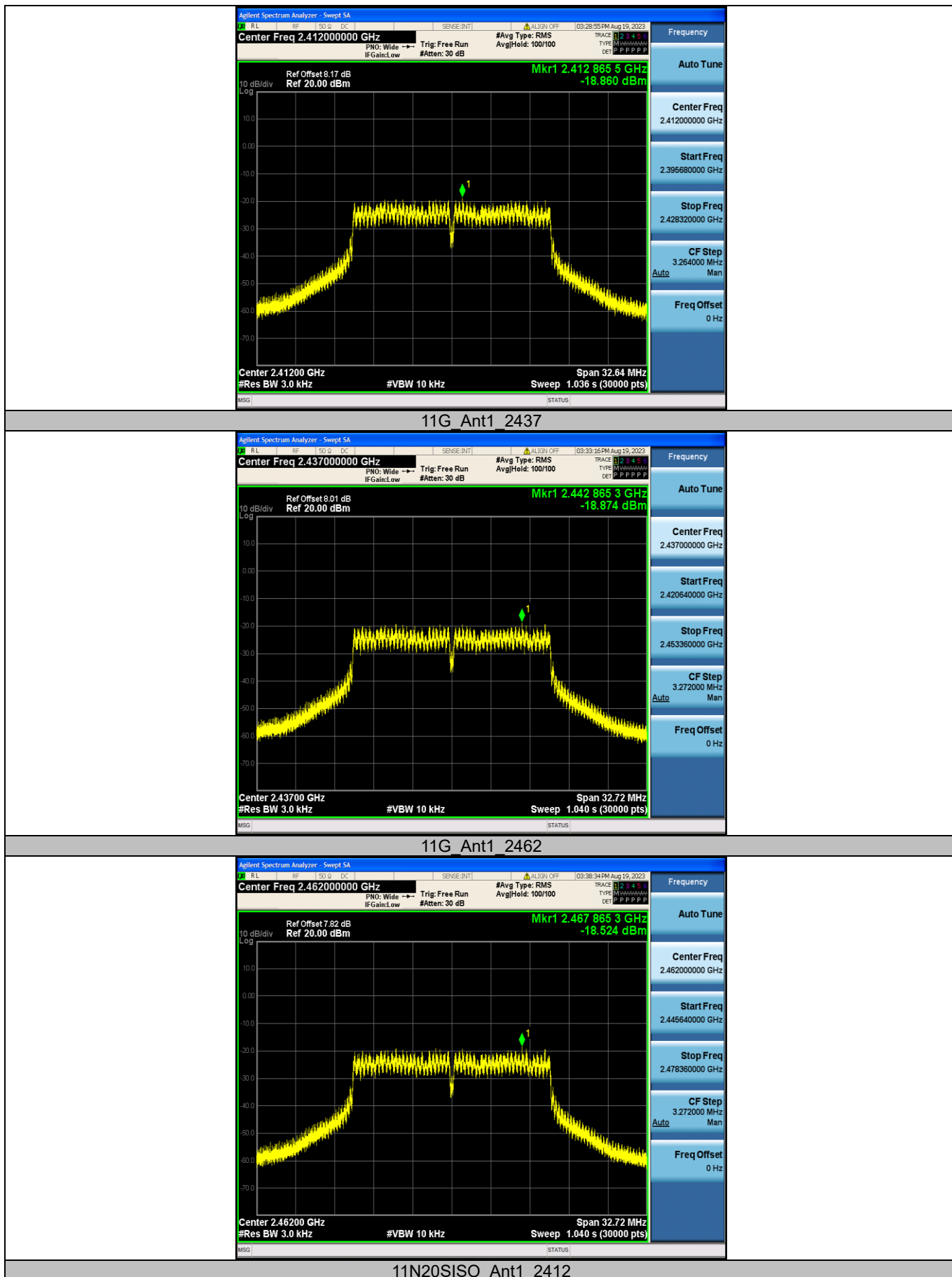
Appendix C: Maximum power spectral density

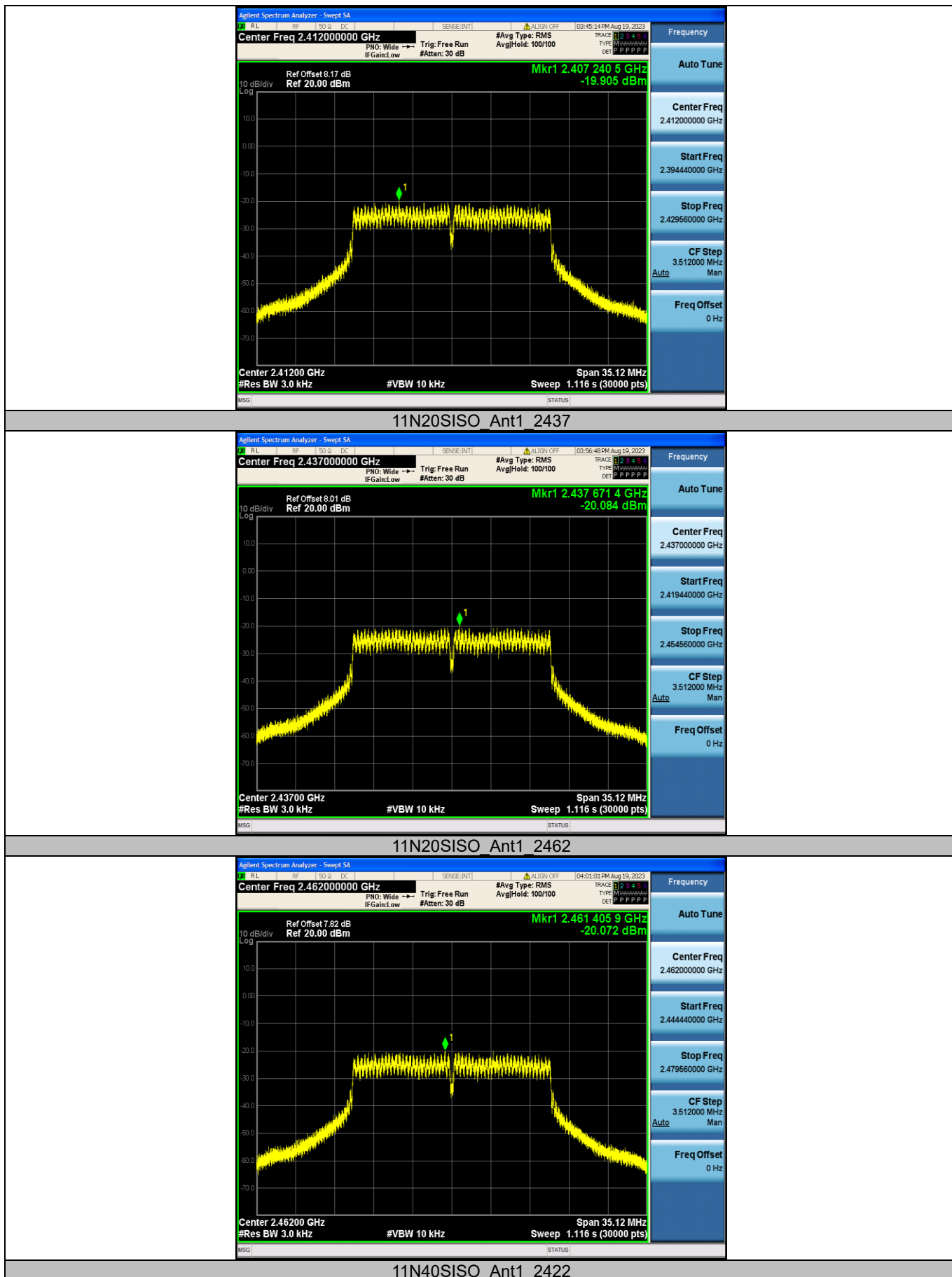
Test Result

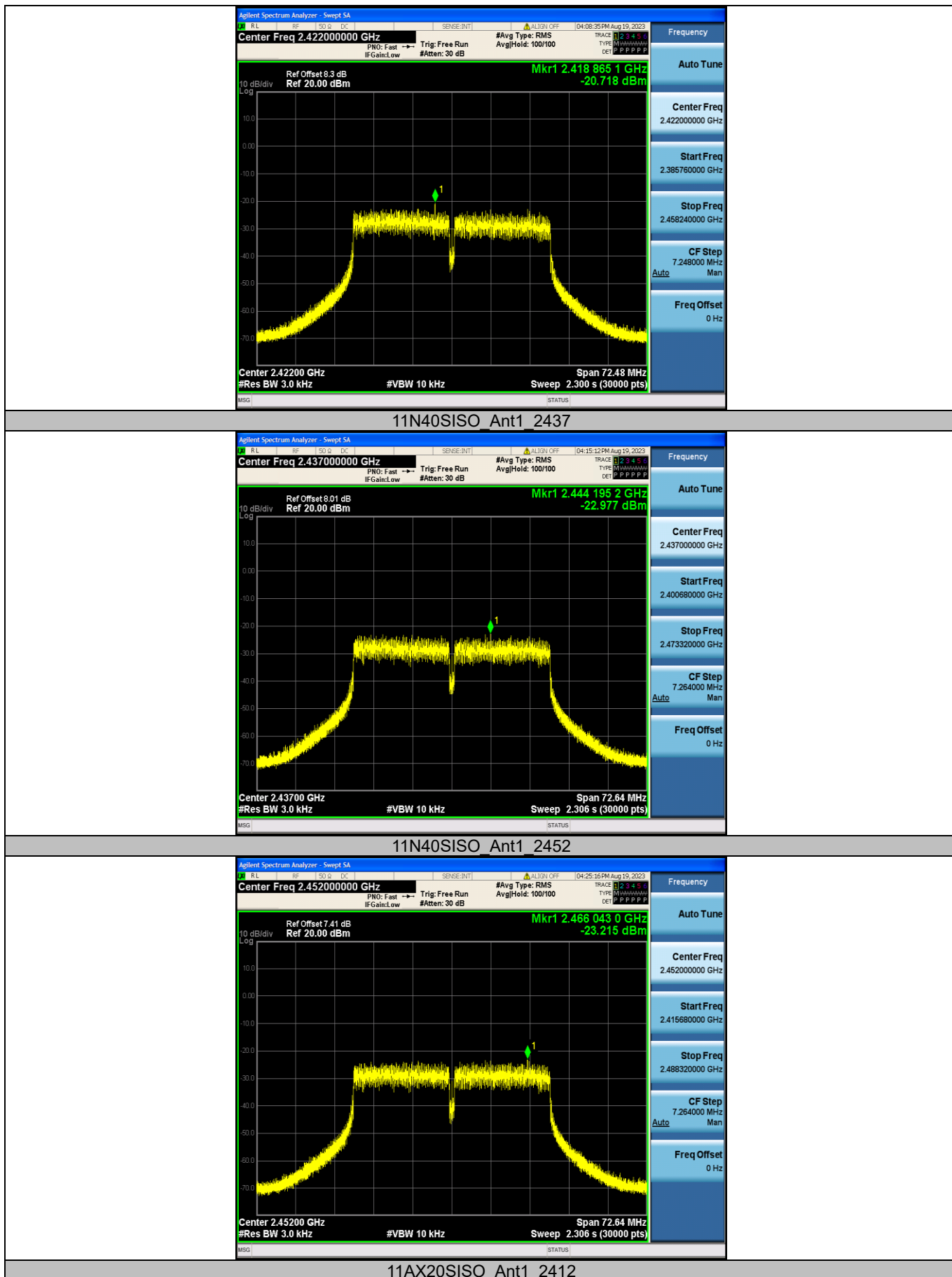
Test Mode	Antenna	Frequency [MHz]	Result [dBm/3-100kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	2412	3.78	≤8.00	PASS
		2437	-0.56	≤8.00	PASS
		2462	4.44	≤8.00	PASS
11G	Ant1	2412	-18.86	≤8.00	PASS
		2437	-18.87	≤8.00	PASS
		2462	-18.52	≤8.00	PASS
11N20SISO	Ant1	2412	-19.91	≤8.00	PASS
		2437	-20.08	≤8.00	PASS
		2462	-20.07	≤8.00	PASS
11N40SISO	Ant1	2422	-20.72	≤8.00	PASS
		2437	-22.98	≤8.00	PASS
		2452	-23.22	≤8.00	PASS
11AX20SISO	Ant1	2412	-22.21	≤8.00	PASS
		2437	-22.7	≤8.00	PASS
		2462	-22.87	≤8.00	PASS
11AX40SISO	Ant1	2422	-25.87	≤8.00	PASS
		2437	-26.06	≤8.00	PASS
		2452	-26.55	≤8.00	PASS

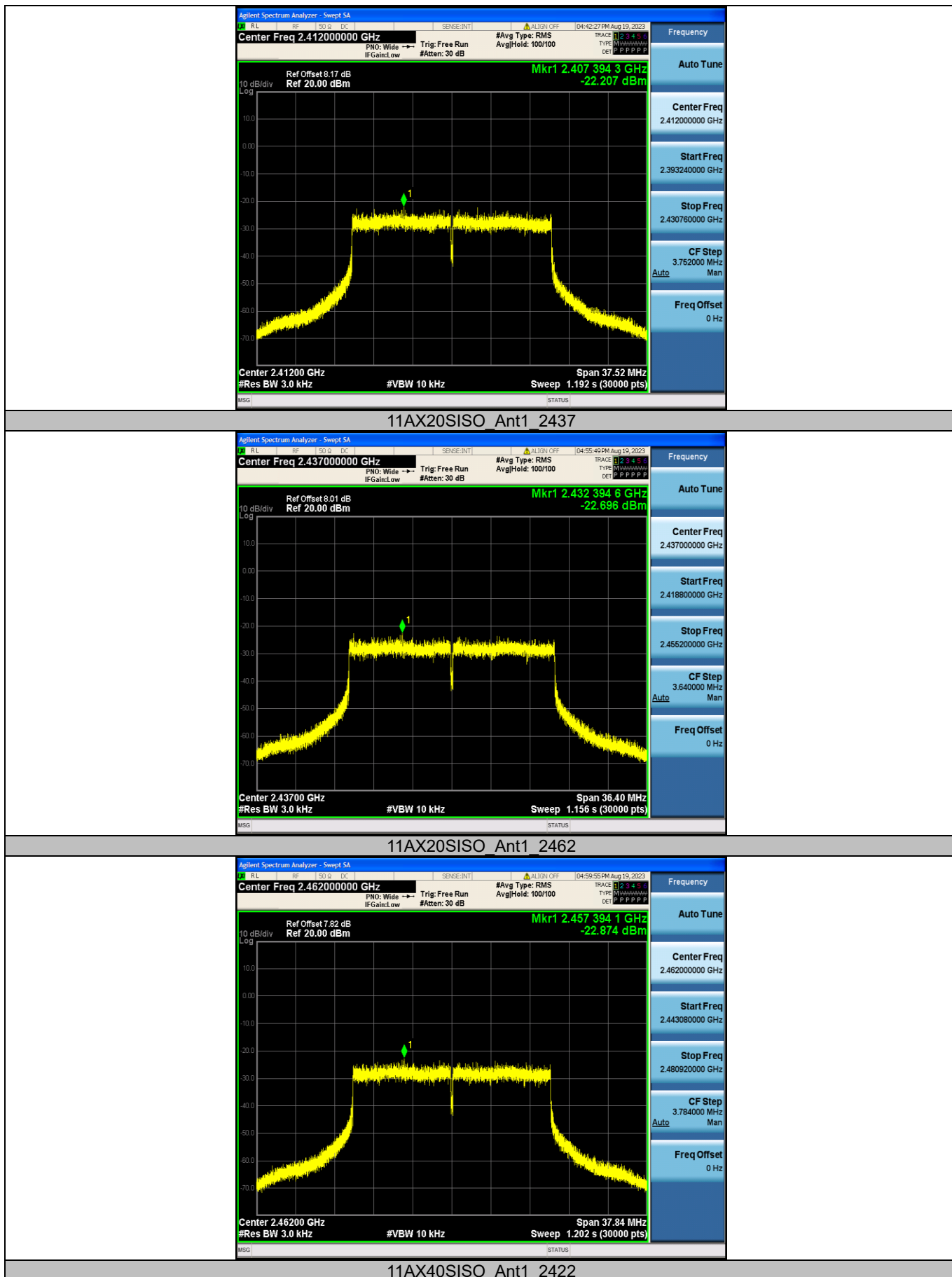
Test Graphs

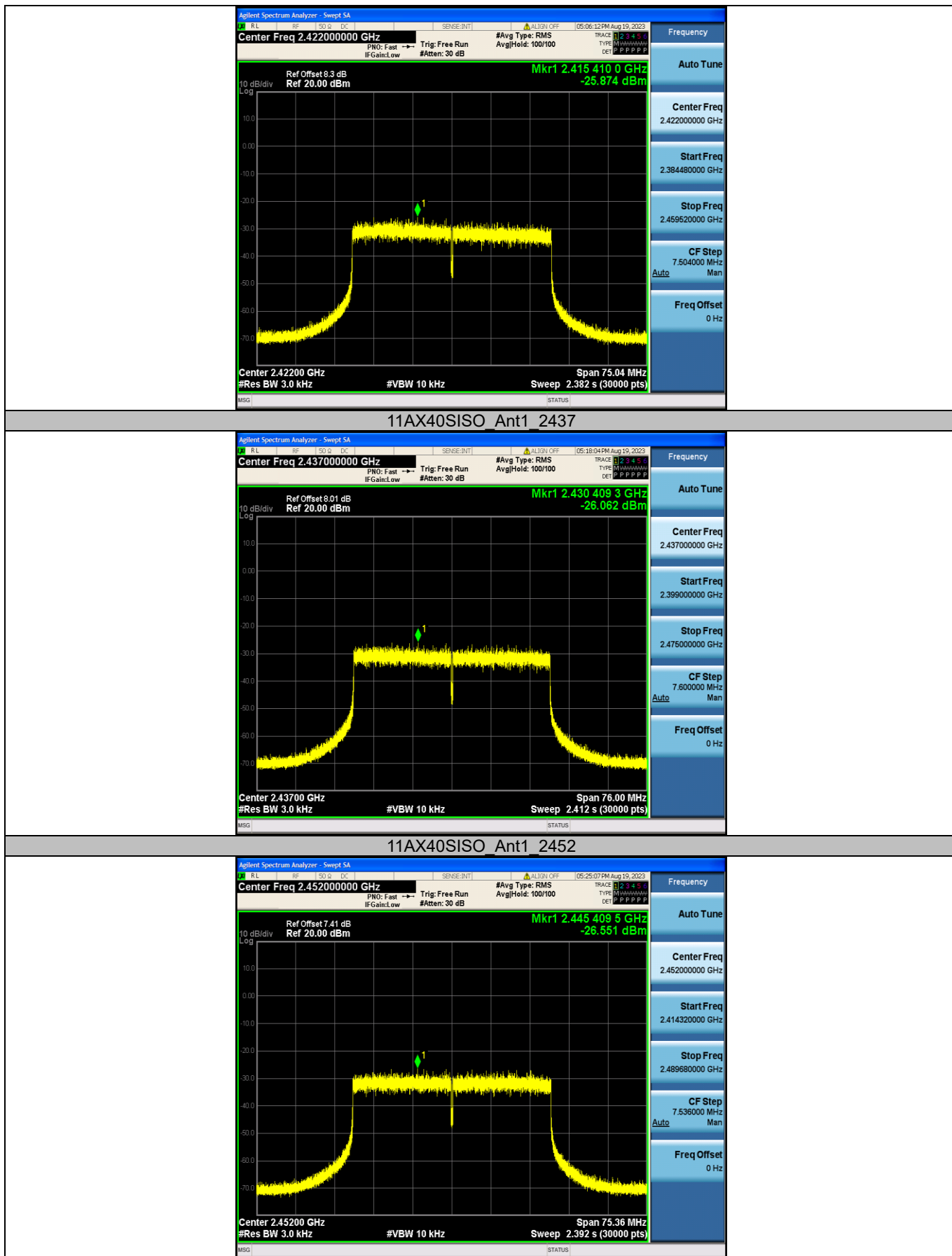






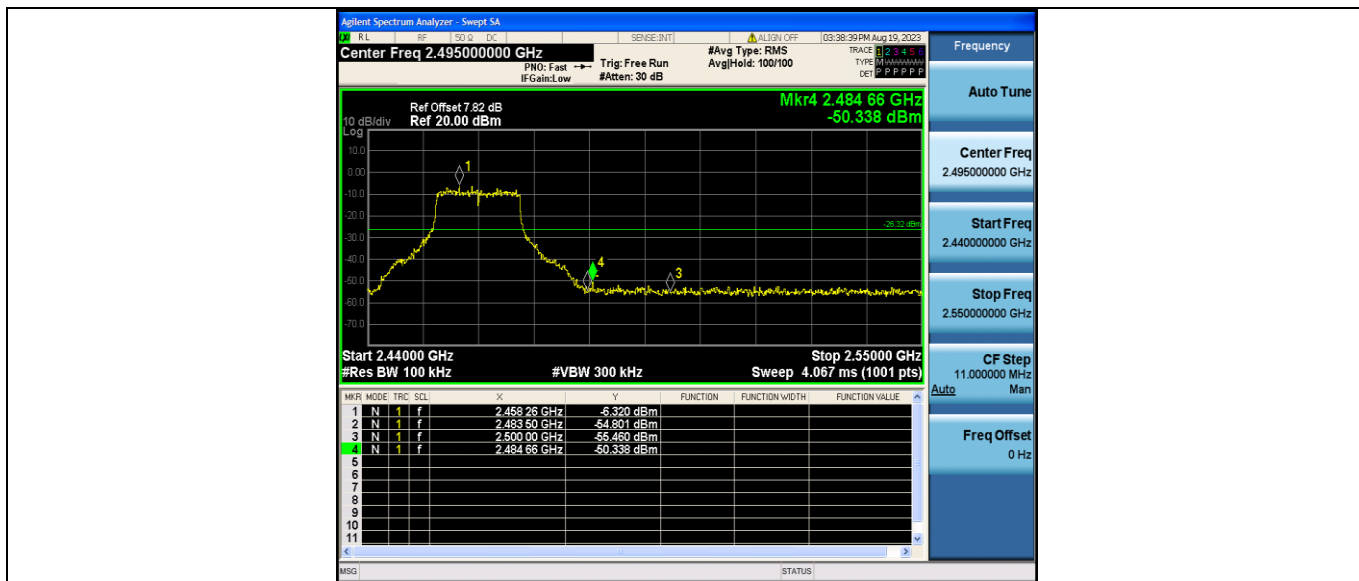




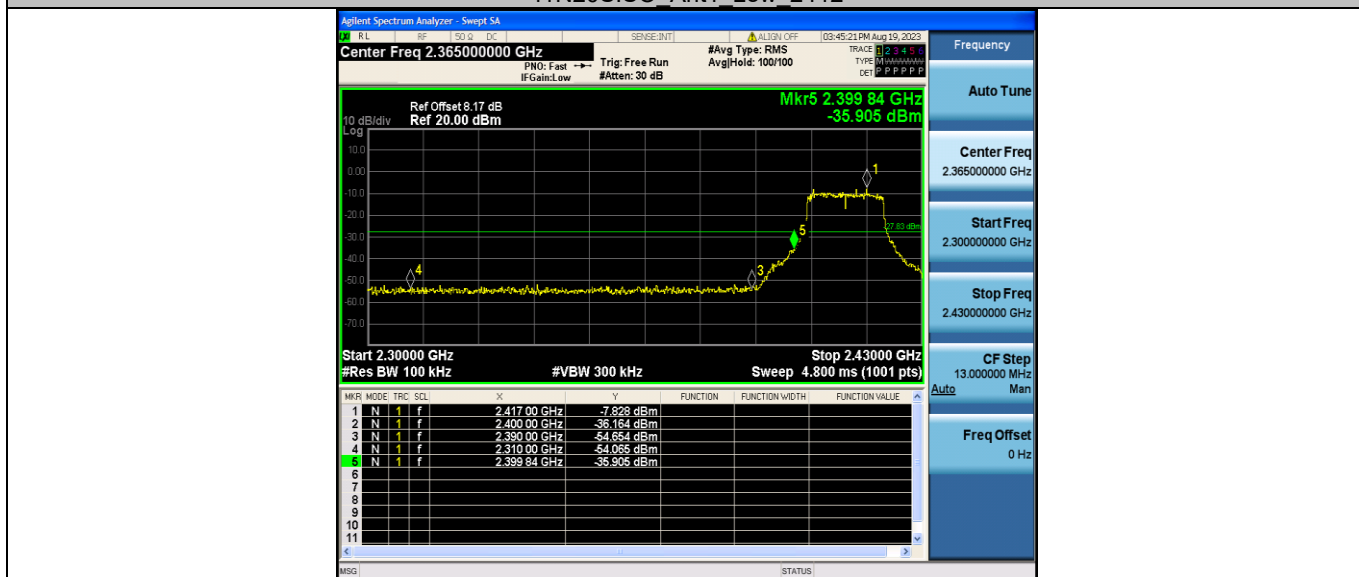


Appendix D: Band edge measurements

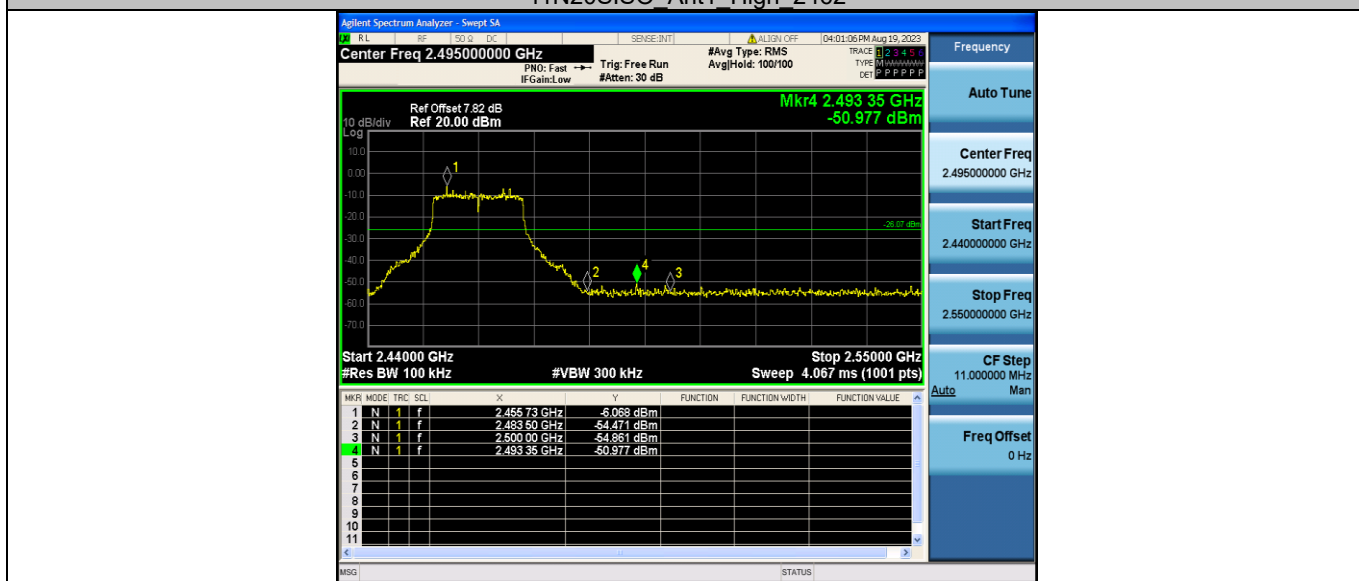




11N20SISO Ant1 Low 2412



11N20SISO Ant1 High 2462



11N40SISO Ant1 Low 2422