



FCC PART 15.407


TEST REPORT

For

Vanstone Electronic (Beijing) Co., Ltd.

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China 100195

FCC ID: OWL-A90

Report Type: Original Report	Product Type: Smart POS Terminal
Report Number:	SZXX1210425-13732E-RF-00C
Report Date:	2021-08-11
Reviewed By:	Jacob Kong RF Engineer 
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Smart POS Terminal
Tested Model	A90
Frequency Range	5G Wi-Fi: 5150-5250MHz; 5250-5350MHz; 5470-5725MHz; 5725-5850MHz
Maximum Conducted Average Output Power	5150-5250 MHz: 14.26 dBm (802.11a), 14.24dBm(802.11n20), 13.71dBm(802.11n40) 5250-5350MHz: 14.93dBm (802.11a), 14.74dBm(802.11n20), 14.58dBm(802.11n40) 5470-5725MHz: 13.87dBm (802.11a), 13.46dBm(802.11n20), 13.38dBm(802.11n40) 5725-5850 MHz: 14.09dBm (802.11a), 13.61dBm(802.11n20), 13.64dBm(802.11n40)
Modulation Technique	OFDM
Antenna Specification*	1 dBi (provided by the applicant)
Voltage Range	DC3.6V from battery or DC 5.0V from adapter
Date of Test	2021-05-05 to 2021-08-08
Sample serial number	SZXX1210425-13732E-RF-S_3U8 for RF conducted SZXX1210425-13732E-SA-S_3UB for CE&RE (Assigned by BAACL, Shenzhen)
Received date	2021-04-25
Sample/EUT Status	Good condition
Adapter information	Model: TAP-46050200UU Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 2000mA

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices. And KDB789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Output Power with Power meter		±0.73dB
RF conducted test with spectrum		±1.6dB
AC Power Lines Conducted Emissions		±1.95dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1 °C
Humidity		±6%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode, which was provided by manufacturer.

The EUT can operate in 802.11 a/n20/n40 modes.

For 5150-5250MHz Band, 6 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240

For 5250-5350MHz Band, 6 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320

For 5470-5725MHz Band, 16 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	120	5600
102	5510	124	5620
104	5520	126	5630
108	5540	128	5640
110	5550	132	5660
112	5560	134	5670
116	5580	136	5680
118	5590	140	5700

For 5725-5850MHz Band, 7 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	157	5785
151	5755	159	5795
153	5765	161	5805
/	/	165	5825

EUT Exercise Software

“QRCT3.0”* exercise software was used.

Test frequencies and power level were configured as below:

U-NII	Mode	Frequency (MHz)	Rate (Mbps)	Power Level*
5150~5250MHz	802.11 a	5180	6	16
		5200	6	16
		5240	6	16
	802.11 n20	5180	MCS0	16
		5200	MCS0	16
		5240	MCS0	16
802.11 n40	5190	MCS0	13	
	5230	MCS0	16	
5250~5350MHz	802.11 a	5260	6	16
		5280	6	16
		5320	6	16
	802.11 n20	5260	MCS0	16
		5280	MCS0	16
		5320	MCS0	16
802.11 n40	5270	MCS0	16	
	5310	MCS0	16	
5470~5725MHz	802.11 a	5500	6	16
		5580	6	16
		5700	6	16
	802.11 n20	5500	MCS0	16
		5580	MCS0	16
		5700	MCS0	16
	802.11 n40	5510	MCS0	16
		5550	MCS0	16
		5670	MCS0	16

U-NII	Mode	Frequency (MHz)	Rate (Mbps)	Power Level*
5725~5850MHz	802.11 a	5745	6	16
		5785	6	16
		5825	6	16
	802.11 n20	5745	MCS0	16
		5785	MCS0	16
		5825	MCS0	16
	802.11 n40	5755	MCS0	16
		5795	MCS0	16

Note 1: The worse-case data rates are determined to be as follows for each mode based upon investigations by measuring the output power and PSD across all data rated bandwidths, and modulations.

Note 2: The power level was provided by the applicant.

Duty cycle

Test Result: Pass. Please refer to the Appendix.

Equipment Modifications

No modification was made to the EUT tested.

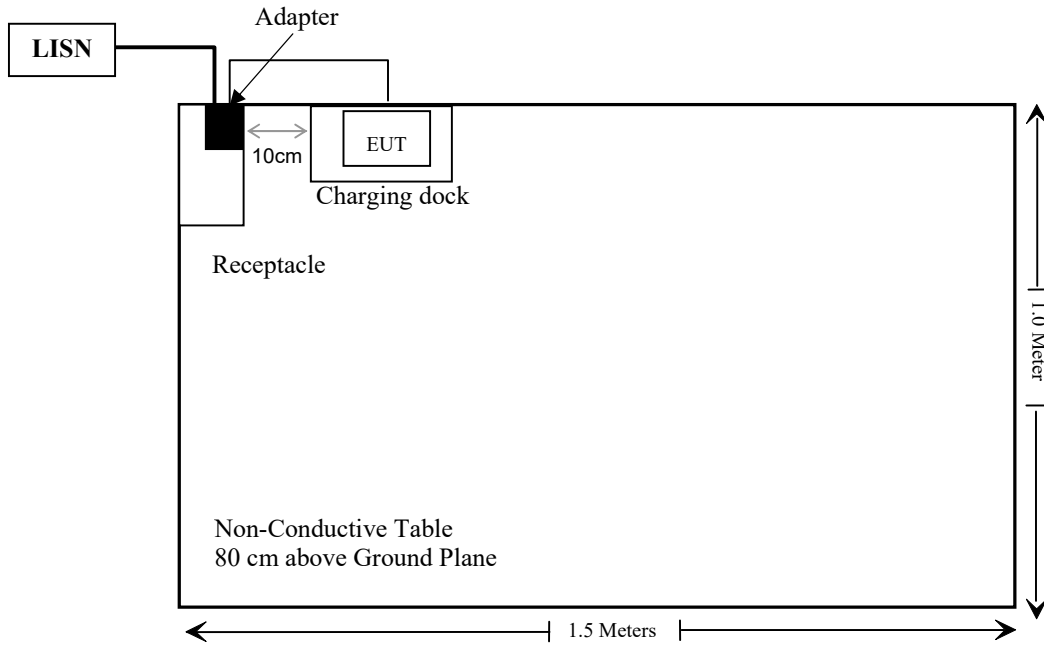
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Vanstone Electronic (Beijing) Co., Ltd.	Charging dock	Unknown	SZXX1210425-13732E-RF-S1

External I/O Cable

Cable Description	Length (m)	From Port	To
Un-Shielded Detachable DC Cable	1.0	Adapter	Charging Dock

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1093	RF Exposure	Compliant
§15.203	Antenna Requirement	Compliant
§15.407(b)(9)& §15.207(a)	Conducted Emissions	Compliant
§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliant
§15.407(a) (e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliant
§15.407(a)	Conducted Transmitter Output Power	Compliant
§15.407 (a)	Power Spectral Density	Compliant
§15.407 (h)	Transmit Power Control (TPC)	Not Applicable
§15.407 (h)	Dynamic Frequency Selection (DFS)	Compliant*

Not Applicable: the EUT has no TPC function which was declared by the applicant.

Compliant*: Please refer to the DFS report: SZXX1210425-13732E-RF-00D.

Note: EUT has two ways to charging, one is from USB port, another is from charging dock, the worst case from charging dock was tested.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
AC Line Conducted test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2020/08/04	2021/08/03
Rohde & Schwarz	LISN	ENV216	101613	2020/08/04	2021/08/03
Rohde & Schwarz	Transient Limitor	ESH3Z2	DE25985	2020/11/29	2021/11/28
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2020/11/29	2021/11/28
Rohde & Schwarz	CE Test software	EMC 32	V8.53.0	NCR	NCR
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
Unknown	Cable 2	RF Cable 2	F-03-EM197	2020/11/29	2021/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2020/11/29	2021/11/28
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2020/11/29	2021/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/29	2021/11/28
Sunol Sciences	Horn Antenna	3115	9107-3694	2021/01/15	2024/01/14
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2020/11/29	2021/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2020/11/29	2021/11/28
Unknown	Signal Cable	RG-214	2	2020/11/29	2021/11/28
SNSD	Band Reject filter	BSF5150-5850MN-0899-004	5G filter	2020/04/20	2021/04/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2020/12/06	2023/12/05
Ducommun Technologies	Horn antenna	ARH-2823-02	1007726-02 1302	2020/12/06	2023/12/05
RF Conducted Test					
Tonscend Corporation	RF control Unit	JS0806-2	19D8060154	2020/08/04	2021/08/03
Tonscend Corporation	RF control Unit	JS0806-2	19D8060154	2021/07/06	2022/07/05
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2020/08/04	2021/08/03
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2021/07/06	2022/07/05
Unknown	RF Cable	Unknown	2301 276	2020/11/29	2021/11/28

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZXX1210425-13732E-SA.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.407 (a), if the transmitting antennas of directional gain greater than 6dBi are used, the transmit power and power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one internal antennawhich was permanently attached for 5G Wi-Fi, the antenna gain is 1.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

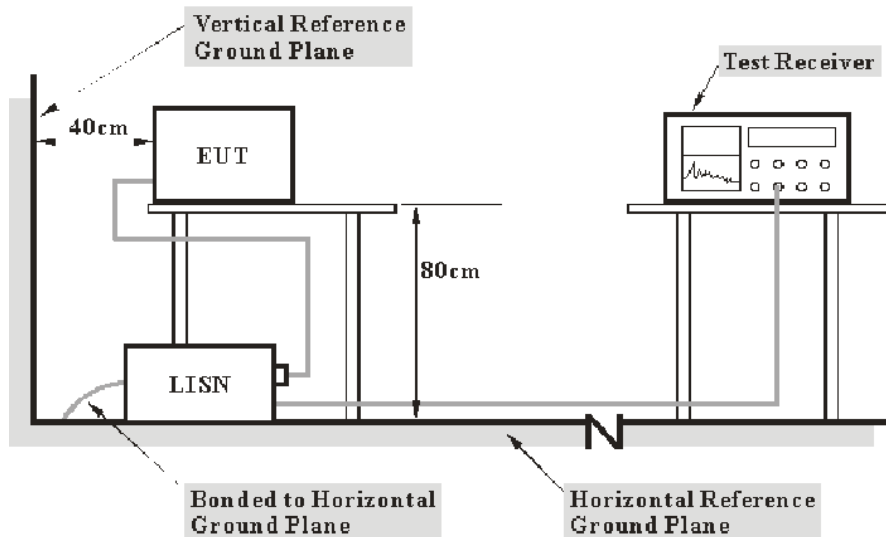
Result: Compliant.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and Average detection mode.

Test Data

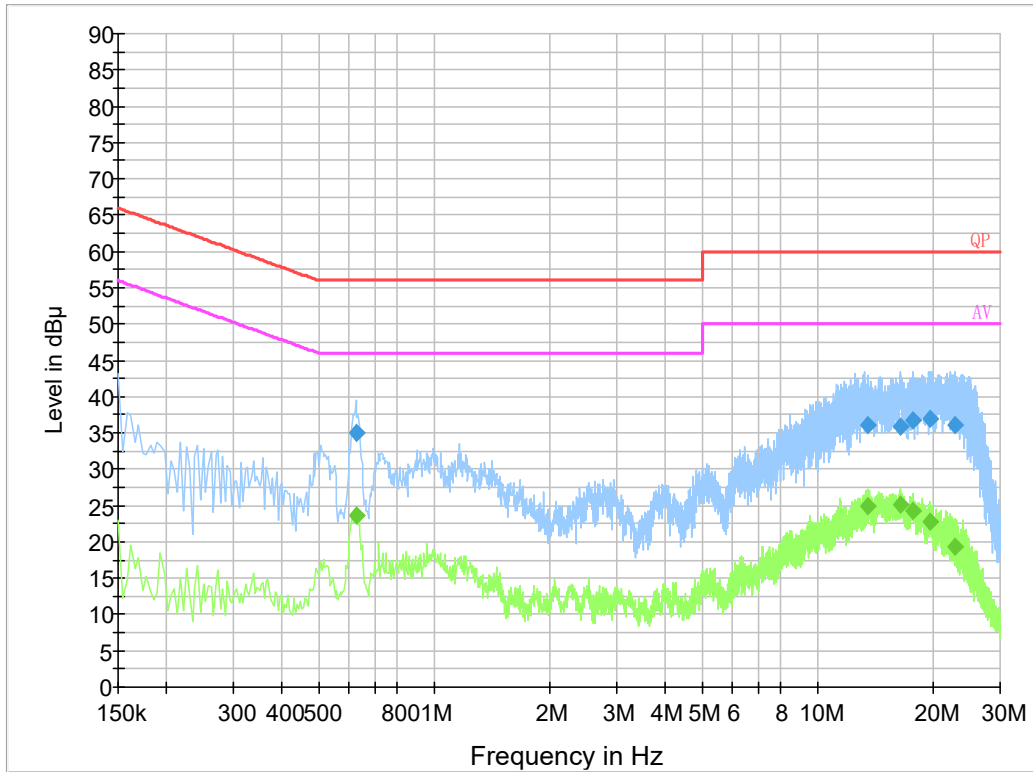
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	65 %
ATM Pressure:	101.0 kPa

The testing was performed by Haiguo Li on 2021-05-14.

EUT operation mode: Transmitting

AC 120V/60 Hz, Line:



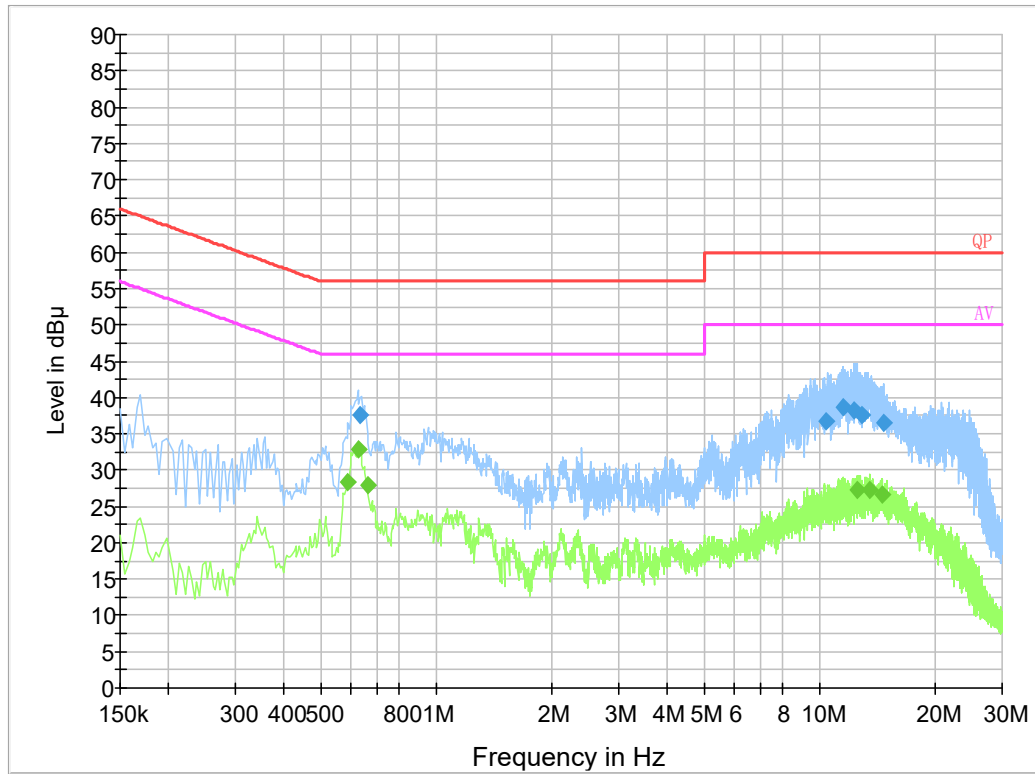
Final Result 1

Frequency (MHz)	QuasiPeak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.628610	35.0	9.000	L1	19.8	21.0	56.0
13.482230	36.1	9.000	L1	20.0	23.9	60.0
16.543010	35.9	9.000	L1	20.2	24.1	60.0
17.727750	36.7	9.000	L1	20.3	23.3	60.0
19.769090	36.9	9.000	L1	20.5	23.1	60.0
22.914470	36.1	9.000	L1	20.4	23.9	60.0

Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.628610	23.7	9.000	L1	19.8	22.3	46.0
13.482230	25.0	9.000	L1	20.0	25.0	50.0
16.543010	25.1	9.000	L1	20.2	24.9	50.0
17.727750	24.3	9.000	L1	20.3	25.7	50.0
19.769090	22.8	9.000	L1	20.5	27.2	50.0
22.914470	19.3	9.000	L1	20.4	30.7	50.0

AC 120V/60 Hz, Neutral:



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.635390	37.5	9.000	N	19.8	18.5	56.0
10.395590	36.8	9.000	N	20.0	23.2	60.0
11.554430	38.6	9.000	N	20.0	21.4	60.0
12.329290	38.1	9.000	N	20.0	21.9	60.0
12.944990	37.7	9.000	N	19.9	22.3	60.0
14.692990	36.5	9.000	N	19.9	23.5	60.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.590000	28.3	9.000	N	19.8	17.7	46.0
0.626000	32.9	9.000	N	19.8	13.1	46.0
0.662000	28.0	9.000	N	19.8	18.0	46.0
12.590000	27.3	9.000	N	20.0	22.7	50.0
13.550000	27.2	9.000	N	19.9	22.8	50.0
14.554000	26.7	9.000	N	19.9	23.3	50.0

§15.205 & §15.209 & §15.407(B)– UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b); §15.209; §15.205;

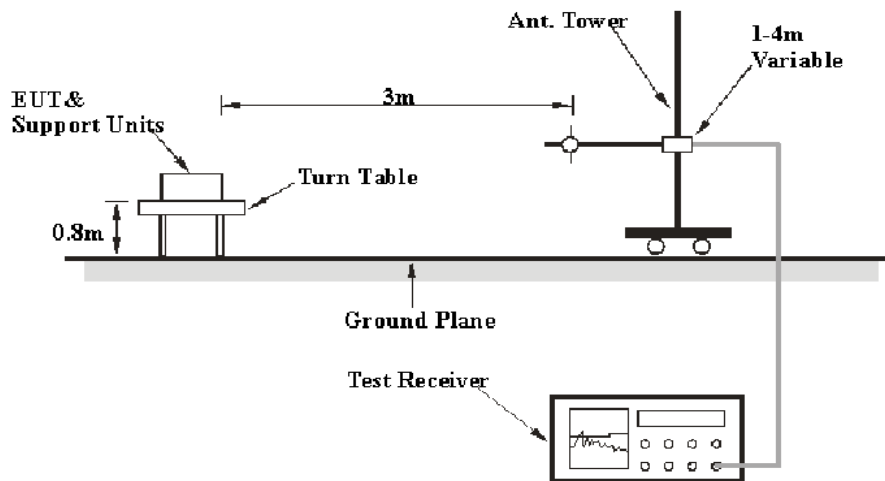
(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) 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.
- (2) For transmitters operating in the 5.25-5.35 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.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating in the 5.725-5.85 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

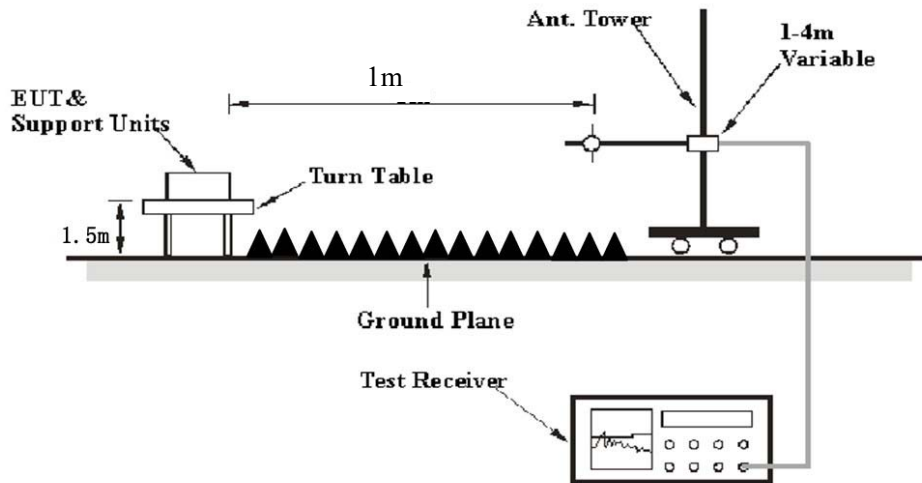
Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

EUT Setup

Below 1 GHz:



Above 1 GHz:



The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC 15.209 and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1MHz	10 Hz ^{Note 1}	/	Average
	1MHz	> 1/T ^{Note 2}	/	Average

Note 1: when duty cycle is no less than 98%

Note 2: when duty cycle is less than 98%

Test Procedure

Radiated Spurious Emission

During the radiated emission test, the adapter was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all the installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

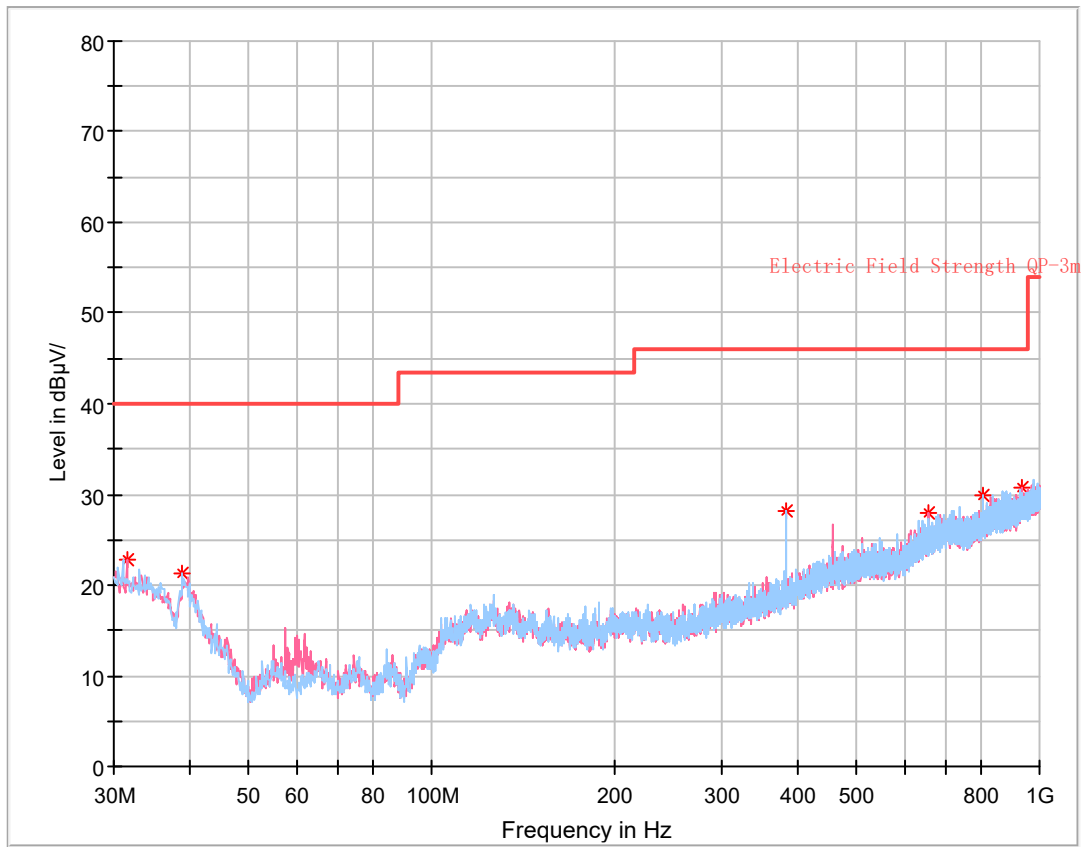
Environmental Conditions

Temperature:	28~32.1°C
Relative Humidity:	52~60 %
ATM Pressure:	101~101.1 kPa

The testing was performed by Zero Yan on 2021-05-22 for below 1GHz and by Alan He and Bruce Lin on 2021-05-05 for above 1GHz.

EUT operation mode: Transmitting

30 MHz – 1 GHz: (worst case is 802.11a mode 5320 MHz)



Critical_Freqs

Frequency (MHz)	MaxPeak (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
31.576250	22.77	40.00	17.23	100.0	V	198.0	-4.8
38.851250	21.19	40.00	18.81	100.0	H	312.0	-9.7
384.050000	28.15	46.00	17.85	100.0	H	260.0	-7.8
655.407500	27.87	46.00	18.13	200.0	V	56.0	-2.3
806.848750	29.99	46.00	16.01	300.0	H	244.0	-0.4
932.342500	30.83	46.00	15.17	200.0	V	291.0	1.4

1 ~ 40 GHz:

Note: The test distance is 1m, so the correct factor from 3m to 1m is $20\log(3/1)=9.5\text{dB}$ which was added into the final limit.

5150-5250 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a									
5180 MHz									
5149.07	33.46	PK	10	1.9	V	38.36	71.82	83.5	11.68
5149.07	19.64	Ave.	10	1.9	V	38.36	58.00	63.5	5.50
5350.53	32.17	PK	103	1.2	V	39.09	71.26	83.5	12.24
5350.53	17.64	Ave.	103	1.2	V	39.09	56.73	63.5	6.77
10360.00	43.28	PK	265	1.1	V	17.42	60.70	77.7	17.00
5200 MHz									
10400.00	43.66	PK	109	1.2	V	17.52	61.18	77.7	16.52
5240 MHz									
5148.58	33.18	PK	81	2.0	V	38.36	71.54	83.5	11.96
5148.58	17.67	Ave.	81	2.0	V	38.36	56.03	63.5	7.47
5351.09	33.27	PK	350	1.8	V	39.09	72.36	83.5	11.14
5351.09	17.84	Ave.	350	1.8	V	39.09	56.93	63.5	6.57
10480.00	43.76	PK	195	1.7	V	17.25	61.01	77.7	16.69
802.11n20									
5180 MHz									
5149.48	32.86	PK	247	2.4	V	38.36	71.22	83.5	12.28
5149.48	17.90	Ave.	247	2.4	V	38.36	56.26	63.5	7.24
5352.81	32.74	PK	265	2.1	V	39.09	71.83	83.5	11.67
5352.81	17.63	Ave.	265	2.1	V	39.09	56.72	63.5	6.78
10360.00	43.88	PK	235	2.3	V	17.42	61.30	77.7	16.40
5200 MHz									
10400.00	43.97	PK	131	2.0	V	17.52	61.49	77.7	16.21
5240 MHz									
5149.08	32.96	PK	255	2.0	V	38.36	71.32	83.5	12.18
5149.08	17.97	Ave.	255	2.0	V	38.36	56.33	63.5	7.17
5351.94	32.84	PK	271	1.1	V	39.09	71.93	83.5	11.57
5351.94	17.68	Ave.	271	1.1	V	39.09	56.77	63.5	6.73
10480.00	44.12	PK	309	1.5	V	17.25	61.37	77.7	16.33

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n40									
5190 MHz									
5148.78	36.89	PK	133	2.3	V	38.36	75.25	83.5	8.25
5148.78	23.86	Ave.	133	2.3	V	38.36	62.22	63.5	1.28
5350.84	32.43	PK	67	2.1	V	39.09	71.52	83.5	11.98
5350.84	17.77	Ave.	67	2.1	V	39.09	56.86	63.5	6.64
10380.00	42.37	PK	273	1.6	V	17.42	59.79	77.7	17.91
5230 MHz									
5149.56	32.15	PK	119	1.6	V	38.36	70.51	83.5	12.99
5149.56	17.59	Ave.	119	1.6	V	38.36	55.95	63.5	7.55
5352.21	32.55	PK	223	2.0	V	39.09	71.64	83.5	11.86
5352.21	17.69	Ave.	223	2.0	V	39.09	56.78	63.5	6.72
10460.00	42.76	PK	4	1.7	V	17.15	59.91	77.7	17.79

5250-5350 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a									
5260 MHz									
5148.73	32.14	PK	332	1.6	V	38.36	70.50	83.5	13.00
5148.73	17.75	Ave.	332	1.6	V	38.36	56.11	63.5	7.39
5351.76	32.43	PK	150	2.1	V	39.09	71.52	83.5	11.98
5351.76	17.50	Ave.	150	2.1	V	39.09	56.59	63.5	6.91
10520.00	43.10	PK	130	1.7	V	17.25	60.35	77.7	17.35
5280 MHz									
10560.00	43.27	PK	152	1.2	V	17.91	61.18	77.7	16.52
5320 MHz									
5148.78	32.09	PK	216	2.1	V	38.36	70.45	83.5	13.05
5148.78	17.61	Ave.	216	2.1	V	38.36	55.97	63.5	7.53
5350.68	32.22	PK	6	2.1	V	39.09	71.31	83.5	12.19
5350.68	17.68	Ave.	6	2.1	V	39.09	56.77	63.5	6.73
10640.00	43.80	PK	286	1.3	V	18.01	61.81	83.5	21.69
10640.00	32.88	Ave.	286	1.3	V	18.01	50.89	63.5	12.61
802.11n20									
5260 MHz									
5148.33	32.43	PK	264	1.7	V	38.36	70.79	83.5	12.71
5148.33	17.86	Ave.	264	1.7	V	38.36	56.22	63.5	7.28
5352.56	32.61	PK	211	2.4	V	39.09	71.70	83.5	11.80
5352.56	17.68	Ave.	211	2.4	V	39.09	56.77	63.5	6.73
10560.00	43.27	PK	334	1.4	V	17.91	61.18	77.7	16.52
5280 MHz									
10560.00	43.39	PK	358	2.3	V	17.91	61.30	77.7	16.40
5320 MHz									
5149.53	32.58	PK	152	1.5	V	38.36	70.94	83.5	12.56
5149.53	17.98	Ave.	152	1.5	V	38.36	56.34	63.5	7.16
5351.95	33.89	PK	262	2.0	V	39.09	72.98	83.5	10.52
5351.95	19.56	Ave.	262	2.0	V	39.09	58.65	63.5	4.85
10640.00	43.77	PK	252	1.5	V	18.01	61.78	83.5	21.72
10640.00	31.84	Ave.	252	1.5	V	18.01	49.85	63.5	13.65

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n40									
5270 MHz									
5148.11	32.45	PK	244	1.9	V	38.36	70.81	83.5	12.69
5148.11	17.73	Ave.	244	1.9	V	38.36	56.09	63.5	7.41
5350.70	32.63	PK	17	2.4	V	39.09	71.72	83.5	11.78
5350.70	17.75	Ave.	17	2.4	V	39.09	56.84	63.5	6.66
10540.00	43.10	PK	70	1.5	V	17.25	60.35	77.7	17.35
5310 MHz									
5148.24	31.96	PK	55	2.1	V	38.36	70.32	83.5	13.18
5148.24	17.75	Ave.	55	2.1	V	38.36	56.11	63.5	7.39
5350.82	32.17	PK	28	1.6	V	39.09	71.26	83.5	12.24
5350.82	18.60	Ave.	28	1.6	V	39.09	57.69	63.5	5.81
10620.00	43.55	PK	209	1.2	V	18.01	61.56	83.5	21.94
10620.00	31.92	Ave.	209	1.2	V	18.01	49.93	63.5	13.57

5470-5725MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a									
5500 MHz									
5467.66	32.01	PK	113	1.0	V	39.37	71.38	77.7	6.32
5754.99	33.99	PK	284	1.4	V	39.61	73.60	77.7	4.10
11000.00	42.64	PK	126	1.6	V	17.66	60.30	83.5	23.20
11000.00	30.06	Ave.	126	1.6	V	17.66	47.72	63.5	15.78
5580 MHz									
11160.00	42.69	PK	312	1.5	V	17.39	60.08	77.7	17.62
11160.00	32.50	Ave.	312	1.5	V	17.39	49.89	63.5	13.61
5700 MHz									
5462.31	32.17	PK	183	1.7	V	39.37	71.54	77.7	6.16
5742.41	32.67	PK	90	1.0	V	39.49	72.16	77.7	5.54
11400.00	42.75	PK	348	2.4	V	17.73	60.48	83.5	23.02
11400.00	32.66	Ave.	348	2.4	V	17.73	50.39	63.5	13.11
802.11n20									
5500 MHz									
5463.55	32.96	PK	209	2.5	V	39.37	72.33	77.7	5.37
5728.05	32.55	PK	173	1.1	V	39.49	72.04	77.7	5.66
11000.00	42.69	PK	129	1.5	V	17.66	60.35	83.5	23.15
11000.00	30.25	Ave.	185	2.3	V	17.66	47.91	63.5	15.59
5580 MHz									
11160.00	42.77	PK	166	1.1	V	17.39	60.16	83.5	23.34
11160.00	29.86	Ave.	17	2.1	V	17.39	47.25	63.5	16.25
5700 MHz									
5467.74	32.15	PK	100	2.5	V	39.37	71.52	77.7	6.18
5746.61	32.37	PK	153	1.4	V	39.49	71.86	77.7	5.84
11400.00	42.38	PK	108	2.0	V	17.73	60.11	83.5	23.39
11400.00	30.44	Ave.	182	2.4	V	17.73	48.17	63.5	15.33

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n40									
5510 MHz									
5469.09	35.56	PK	188	1.5	V	39.37	74.93	77.7	2.77
5738.99	33.57	PK	215	1.8	V	39.49	73.06	77.7	4.64
11020.00	42.74	PK	99	1.6	V	17.66	60.40	83.5	23.10
11020.00	29.19	Ave.	99	1.6	V	17.66	46.85	63.5	16.65
5550 MHz									
11100.00	42.81	PK	80	1.8	V	16.72	59.53	83.5	23.97
11100.00	29.34	Ave.	80	1.8	V	16.72	46.06	63.5	17.44
5670 MHz									
5466.14	32.68	PK	317	1.2	V	39.37	72.05	77.7	5.65
5735.94	33.97	PK	245	1.7	V	39.49	73.46	77.7	4.24
11340.00	42.83	PK	42	1.8	V	17.43	60.26	83.5	23.24
11340.00	29.41	Ave.	42	1.8	V	17.43	46.84	63.5	16.66

5725-5850 MHz:

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11a									
5745 MHz									
5649.93	32.58	PK	203	1.2	V	39.46	72.04	77.7	5.66
5696.04	39.23	PK	307	2.3	V	39.49	78.72	111.77	33.05
5702.19	54.17	PK	121	2.2	V	39.49	93.66	115.31	21.65
5722.21	61.72	PK	28	1.2	V	39.49	101.21	125.33	24.12
11490.00	42.43	PK	74	2.3	V	17.47	59.90	83.5	23.60
11490.00	28.22	Ave.	74	2.3	V	17.47	45.69	63.5	17.81
5785 MHz									
11570.00	42.37	PK	189	1.5	V	17.51	59.88	83.5	23.62
11570.00	28.15	Ave.	189	1.5	V	17.51	45.66	63.5	17.84
5825 MHz									
5854.17	47.14	PK	174	2.3	V	39.87	87.01	122.19	35.18
5856.74	43.27	PK	321	2.1	V	39.87	83.14	119.81	36.67
5877.33	34.12	PK	18	1.1	V	39.87	73.99	112.98	38.99
5930.84	33.59	PK	208	2.5	V	39.97	73.56	77.7	4.14
11650.00	42.57	PK	14	1.8	V	16.18	58.75	83.5	24.75
11650.00	28.31	Ave.	14	1.8	V	16.18	44.49	63.5	19.01
802.11N20									
5745 MHz									
5649.81	31.24	PK	338	2.3	V	39.46	70.70	77.7	7.00
5694.03	40.00	PK	73	2.5	V	39.49	79.49	110.29	30.80
5719.54	55.59	PK	81	2.3	V	39.49	95.08	120.17	25.09
5724.09	61.72	PK	121	1.7	V	39.49	101.21	129.63	28.42
11490.00	42.42	PK	172	1.8	V	17.47	59.89	83.5	23.61
11490.00	28.39	Ave.	172	1.8	V	17.47	45.86	63.5	17.64
5785 MHz									
11570.00	42.36	PK	126	2.2	V	17.51	59.87	83.5	23.63
11570.00	28.26	Ave.	126	2.2	V	17.51	45.77	63.5	17.73
5825 MHz									
5852.34	48.54	PK	234	1.8	V	39.87	88.41	126.37	37.96
5861.58	43.33	PK	101	2.1	V	39.87	83.20	118.46	35.26
5881.47	33.72	PK	205	2.2	V	39.87	73.59	109.92	36.33
5927.47	33.17	PK	161	2.1	V	39.97	73.14	77.7	4.56
11650.00	42.28	PK	63	1.2	V	16.18	58.46	83.5	25.04
11650.00	28.17	Ave.	63	1.2	V	16.18	44.35	63.5	19.15

Frequency (MHz)	Receiver		Turn-Table Angle Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBµV/m)	FCC Part15.407	
	Reading (dBµV)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dBµV/m)	Margin (dB)
802.11n40									
5755 MHz									
5644.76	32.57	PK	4	1.4	V	39.46	72.03	77.7	5.67
5696.53	35.18	PK	55	1.1	V	39.49	74.67	112.13	37.46
5715.03	49.43	PK	326	1.4	V	39.49	88.92	118.91	29.99
5724.73	51.60	PK	198	1.6	V	39.49	91.09	131.08	39.99
11510.00	42.59	PK	34	2.3	V	17.47	60.06	83.5	23.44
11510.00	28.19	Ave.	34	2.3	V	17.47	45.66	63.5	17.84
5795 MHz									
5853.18	36.14	PK	27	2.1	V	39.87	76.01	124.44	48.43
5864.93	34.36	PK	352	2.2	V	39.87	74.23	117.52	43.29
5882.92	34.59	PK	244	1.8	V	39.87	74.46	108.84	34.38
5931.71	33.82	PK	103	2.4	V	39.97	73.79	77.7	3.91
11590.00	42.81	PK	35	2.0	V	17.51	60.32	83.5	23.18
11590.00	28.25	Ave.	35	2.0	V	17.51	45.76	63.5	17.74

Note:

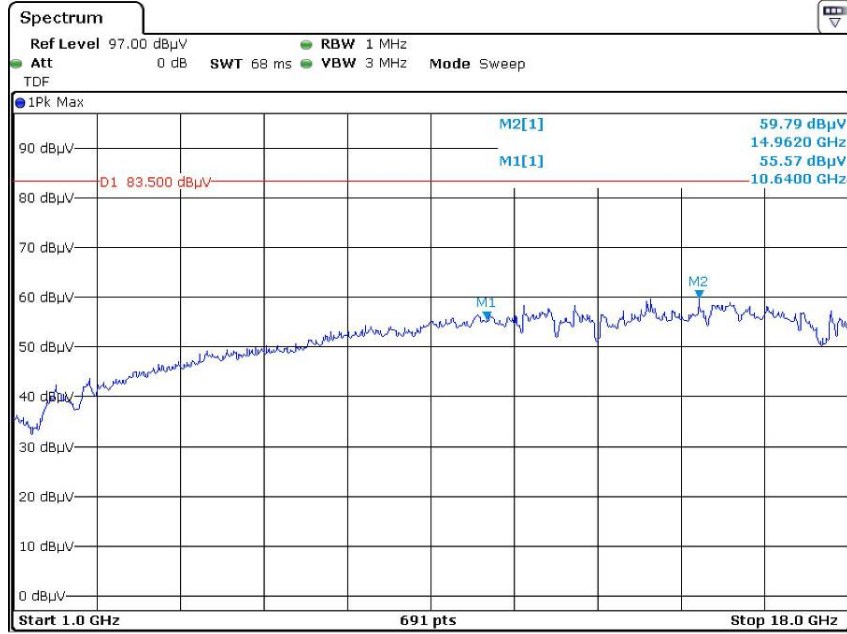
Corrected Amplitude = Corrected Factor + Reading

Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor

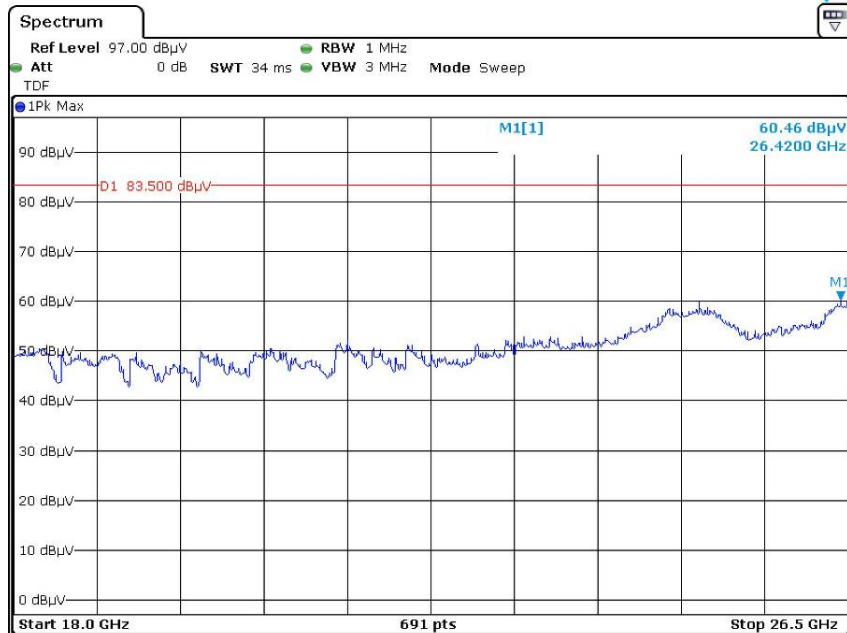
Margin = Limit- Corr. Amplitude

All other spurious emissions are 20 dB below the limit or are on the system noise floor level.

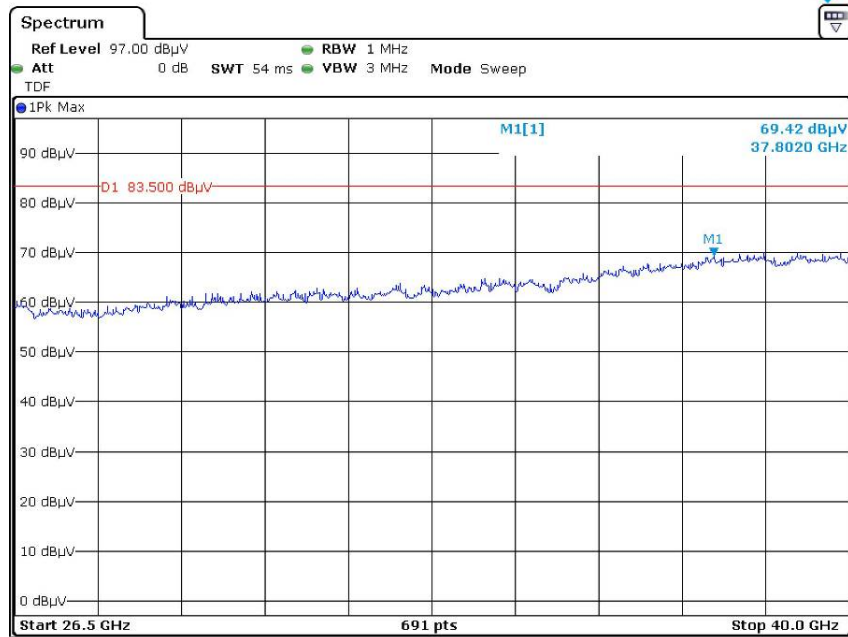
Peak Pre-scan with 802.11a 5320MHz Horizontal



Date: 5.MAY.2021 20:27:57

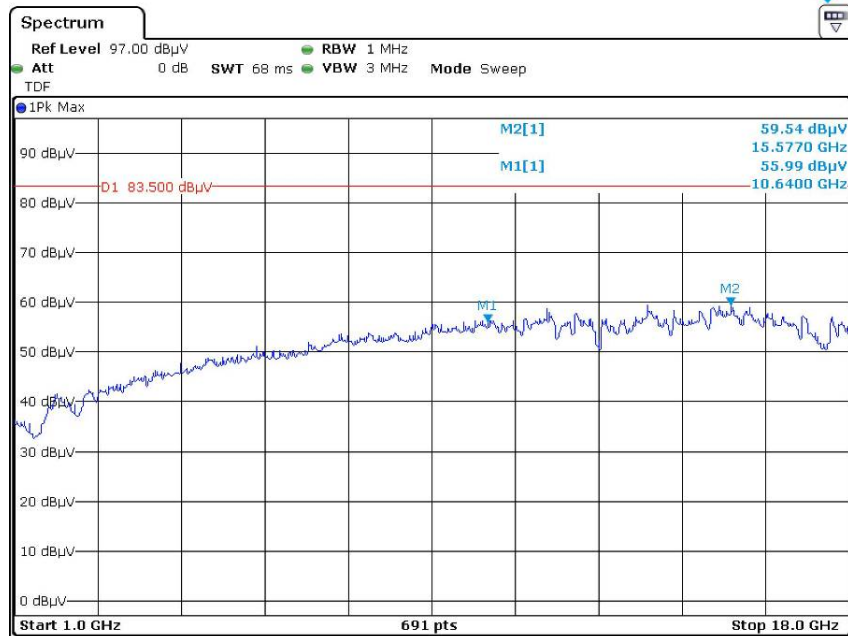


Date: 5.MAY.2021 21:10:40

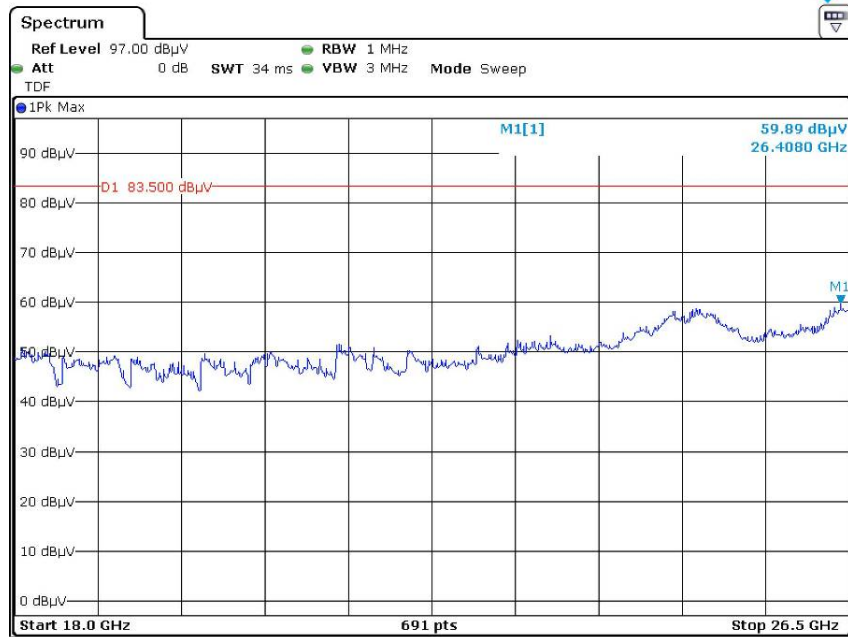


Date: 5.MAY.2021 21:30:46

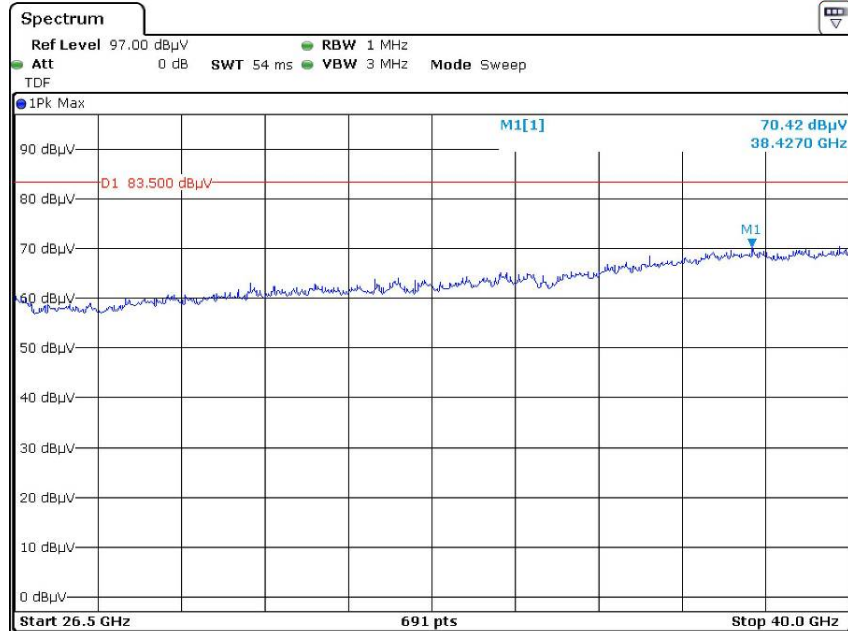
Vertical



Date: 5.MAY.2021 20:26:01

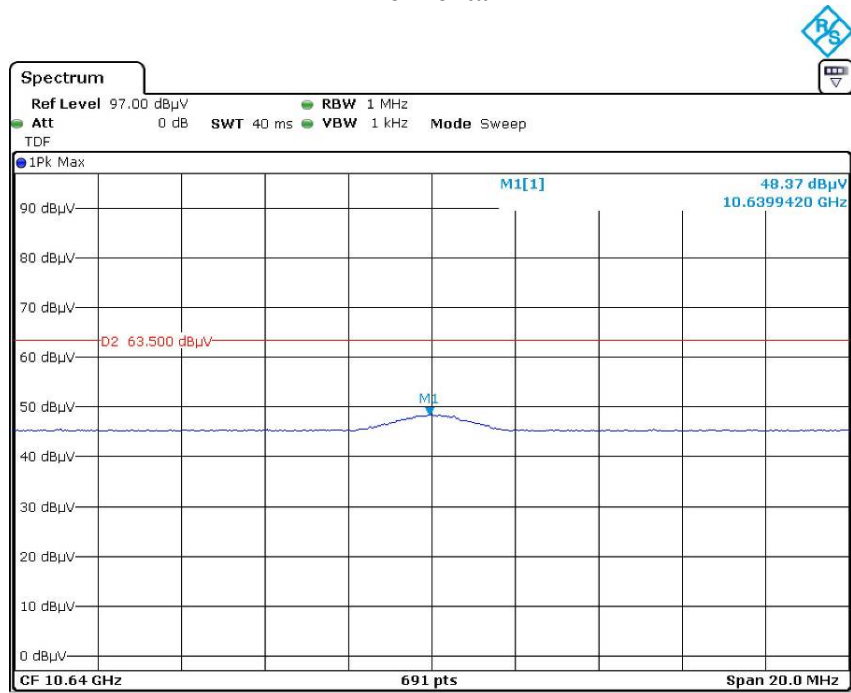


Date: 5.MAY.2021 21:20:03

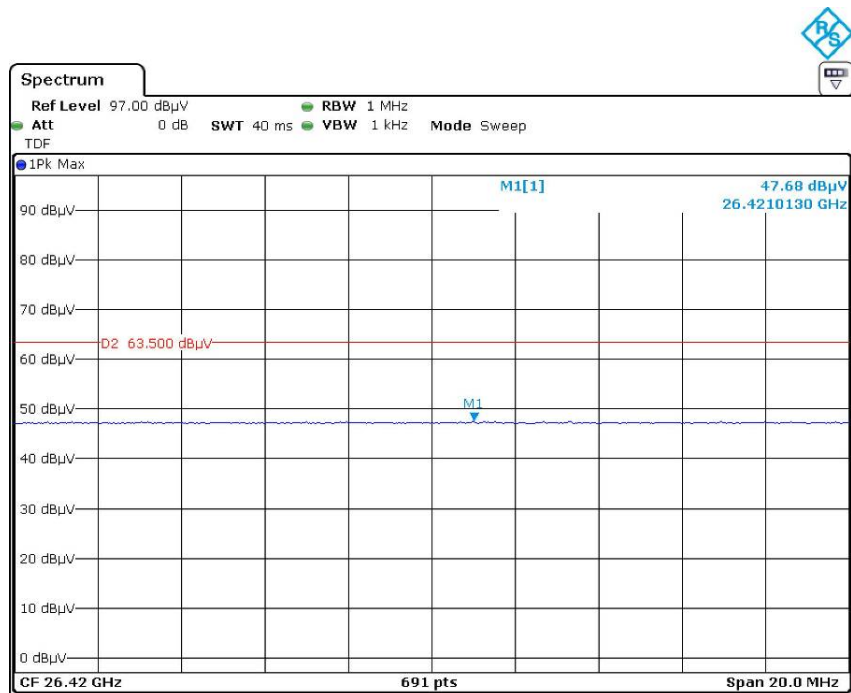


Date: 5.MAY.2021 21:40:58

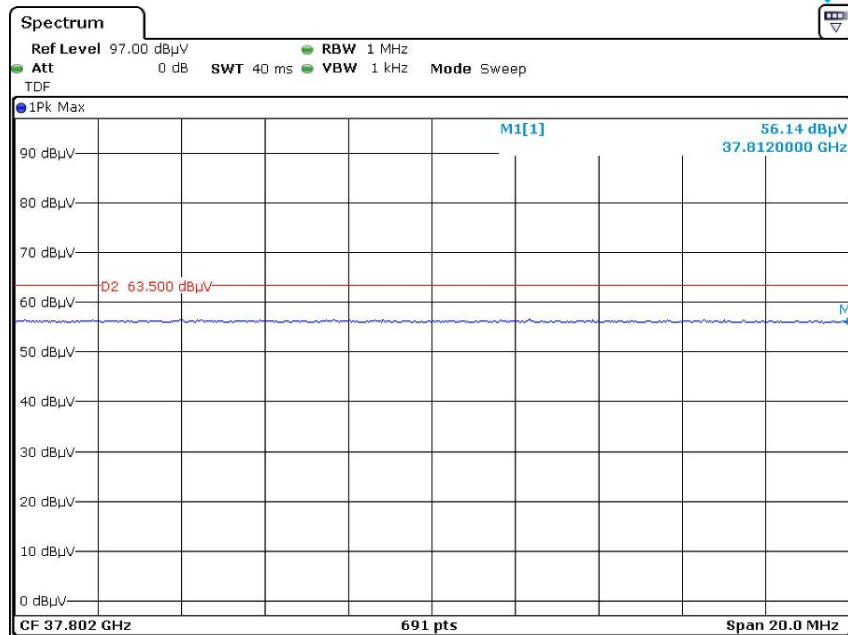
Average Horizontal



Date: 5.MAY.2021 20:40:44

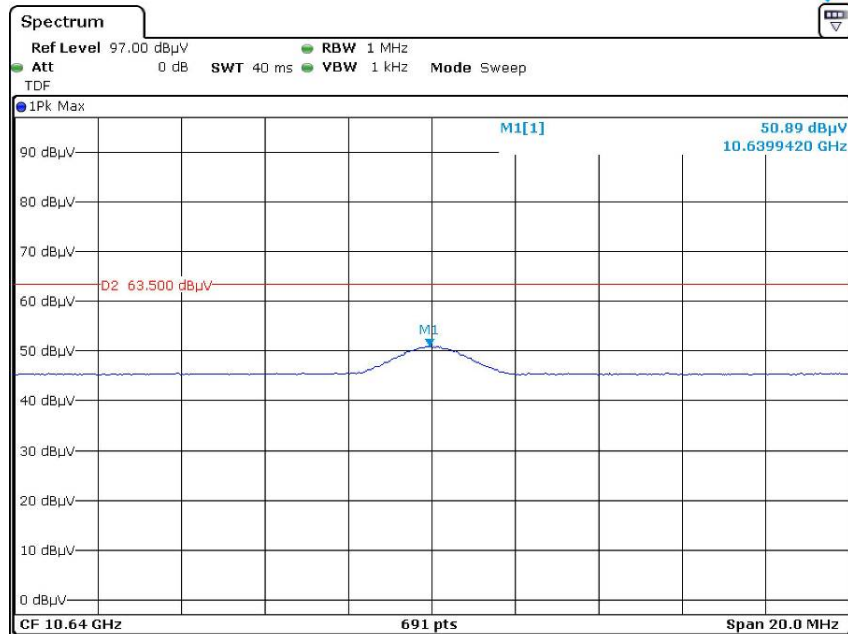


Date: 5.MAY.2021 21:15:33

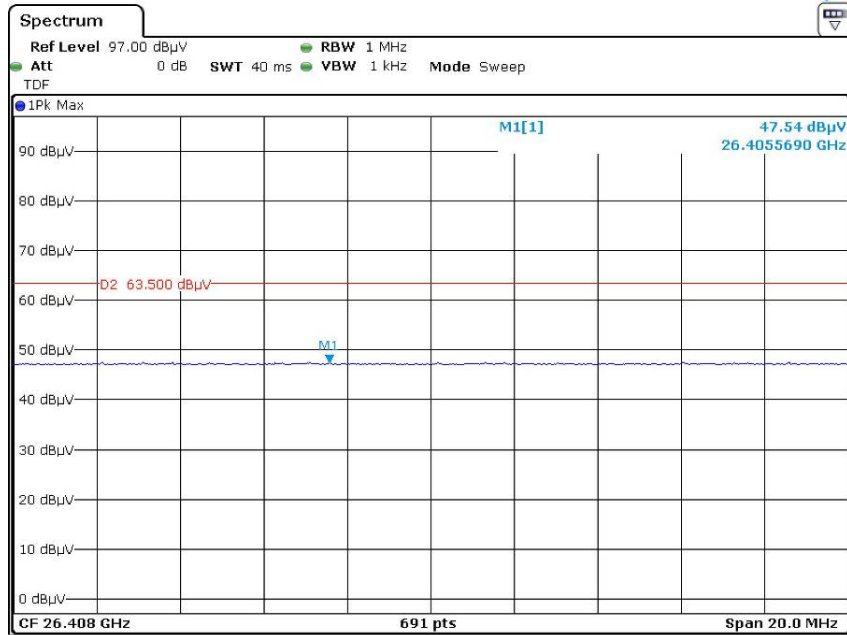


Date: 5.MAY.2021 21:35:14

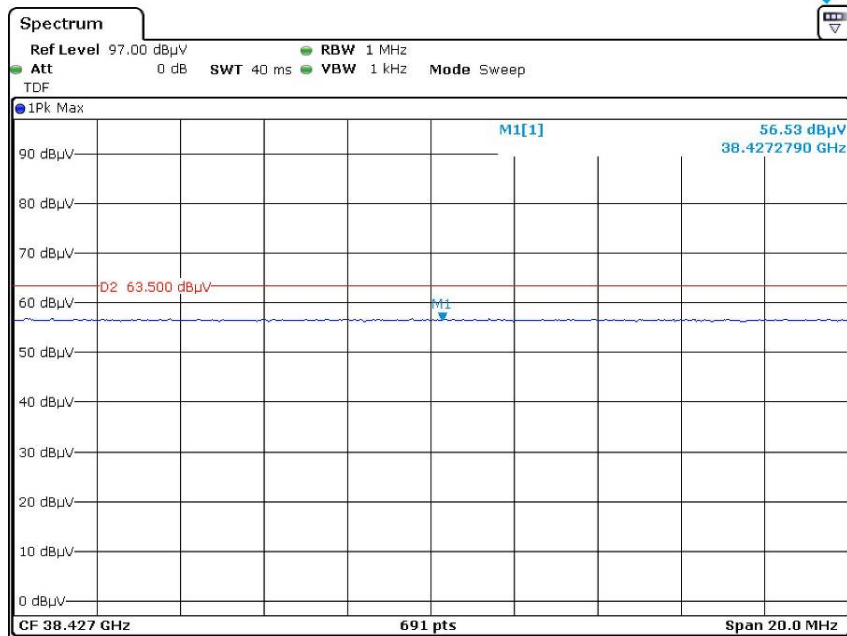
Vertical



Date: 5.MAY.2021 20:31:00



Date: 5.MAY.2021 21:25:54



Date: 5.MAY.2021 21:45:51

FCC §15.407(a),(e) – 26 dB & 6dB EMISSION BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure

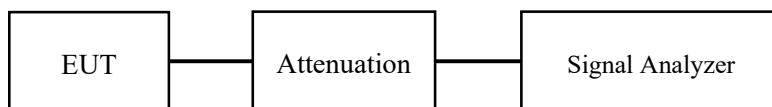
1. Emission Bandwidth (EBW)

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

2. Minimum Emission Bandwidth for the band 5.725-5.85 GHz

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 KHz for the band 5.725-5.85 GHz. The following procedure shall be used for measuring this bandwidth:

- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Allow the trace to stabilize.
- 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.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	63 %
ATM Pressure:	101.0 kPa

The testing was performed by Bravos Zhao from 2021-05-21 to 2021-08-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) – CONDUCTED TRANSMITTER OUTPUT POWER

Applicable Standard

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. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

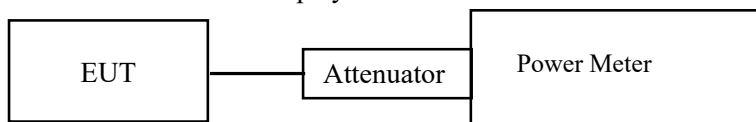
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	63 %
ATM Pressure:	101.0 kPa

The testing was performed by Bravos Zhao from 2021-05-21 to 2021-08-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

FCC §15.407(a) - POWER SPECTRAL DENSITY

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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $\text{RBW} \geq 1/T$, where T is defined in section II.B.1.a).
- b) Set $\text{VBW} \geq 3 \text{ RBW}$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500 \text{ kHz}/\text{RBW})$ to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10 \log (1\text{MHz}/\text{RBW})$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	63 %
ATM Pressure:	101.0 kPa

The testing was performed by Bravos Zhao from 2021-05-21 to 2021-08-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the Appendix.

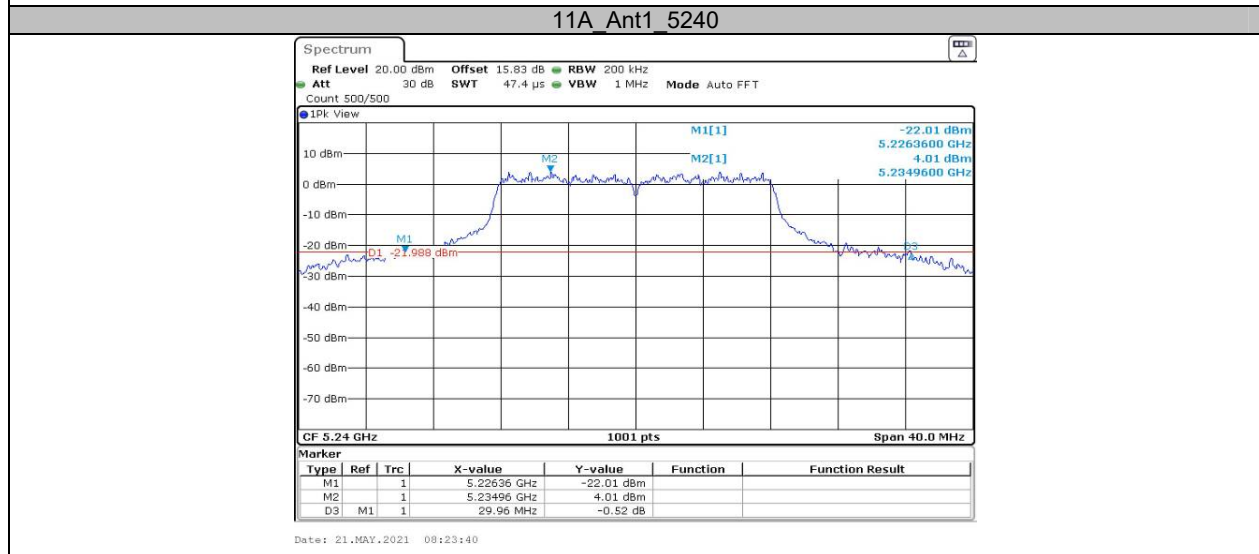
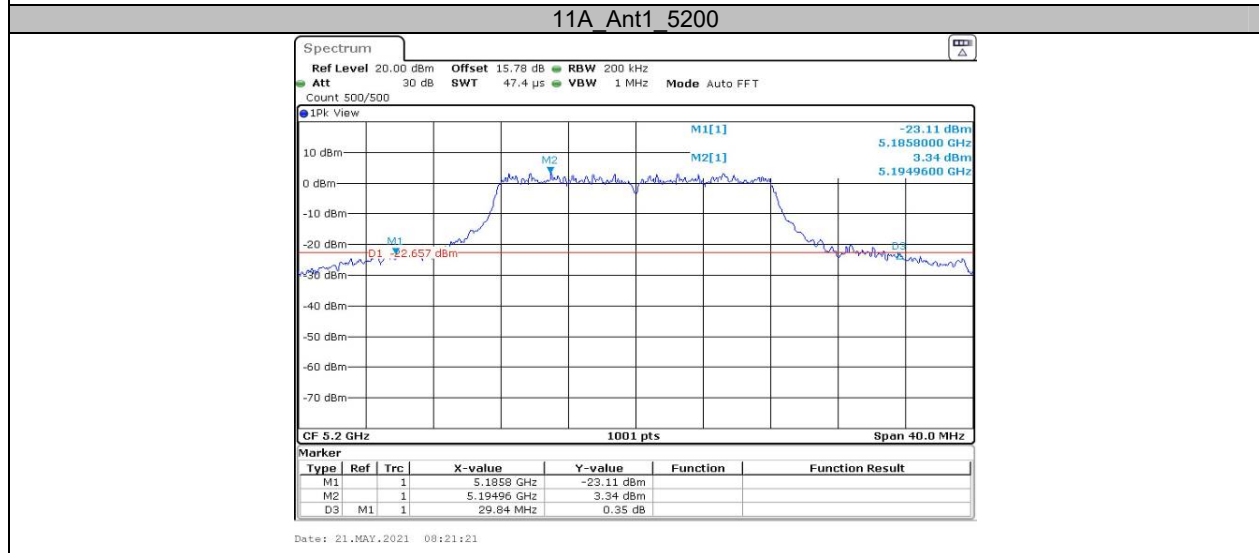
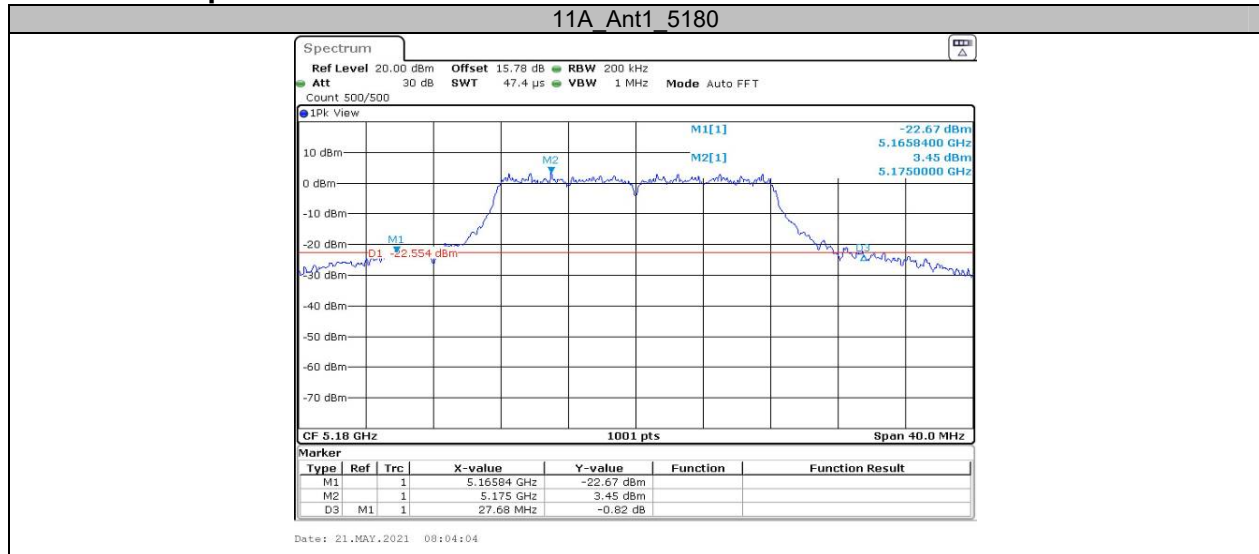
APPENDIX

Appendix A1: Emission Bandwidth

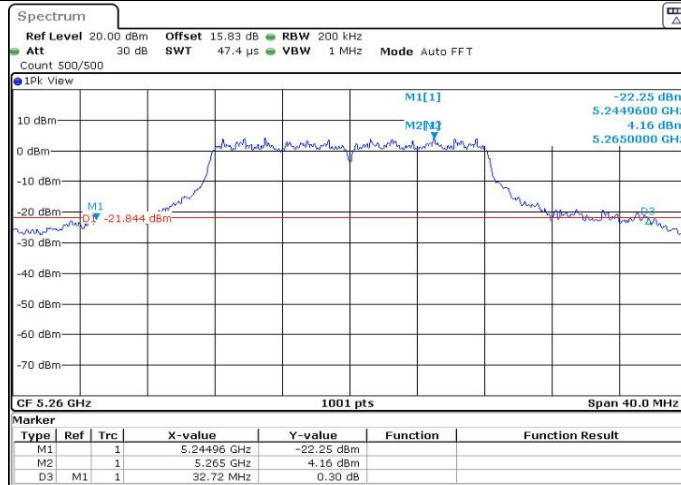
Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	Verdict
11A	Ant1	5180	27.680	PASS
		5200	29.840	PASS
		5240	29.960	PASS
		5260	32.720	PASS
		5280	32.240	PASS
		5320	35.120	PASS
		5500	31.520	PASS
		5580	33.640	PASS
11N20SISO	Ant1	5700	32.600	PASS
		5180	26.880	PASS
		5200	29.840	PASS
		5240	31.320	PASS
		5260	35.080	PASS
		5280	33.800	PASS
		5320	36.680	PASS
		5500	30.720	PASS
11N40SISO	Ant1	5580	31.200	PASS
		5700	31.040	PASS
		5190	46.080	PASS
		5230	65.440	PASS
		5270	46.320	PASS
		5310	78.900	PASS
		5510	73.920	PASS
5550	72.720	PASS		
		5670	69.600	PASS

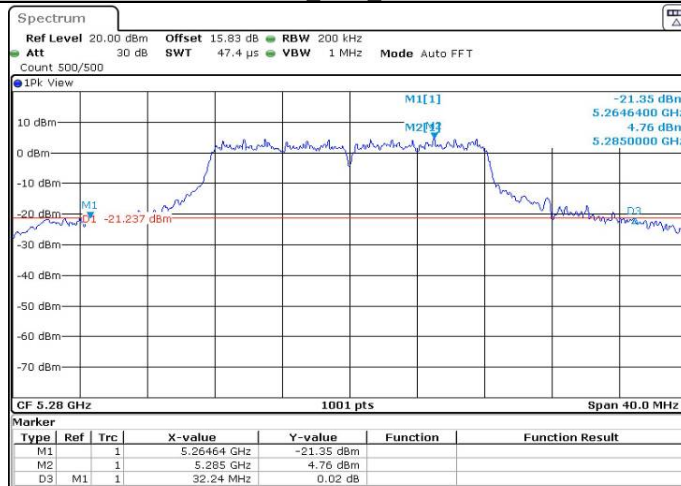
Test Graphs



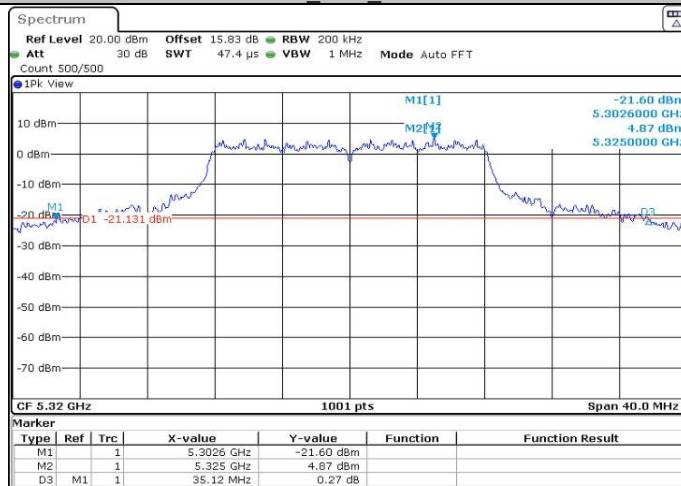
11A Ant1 5260

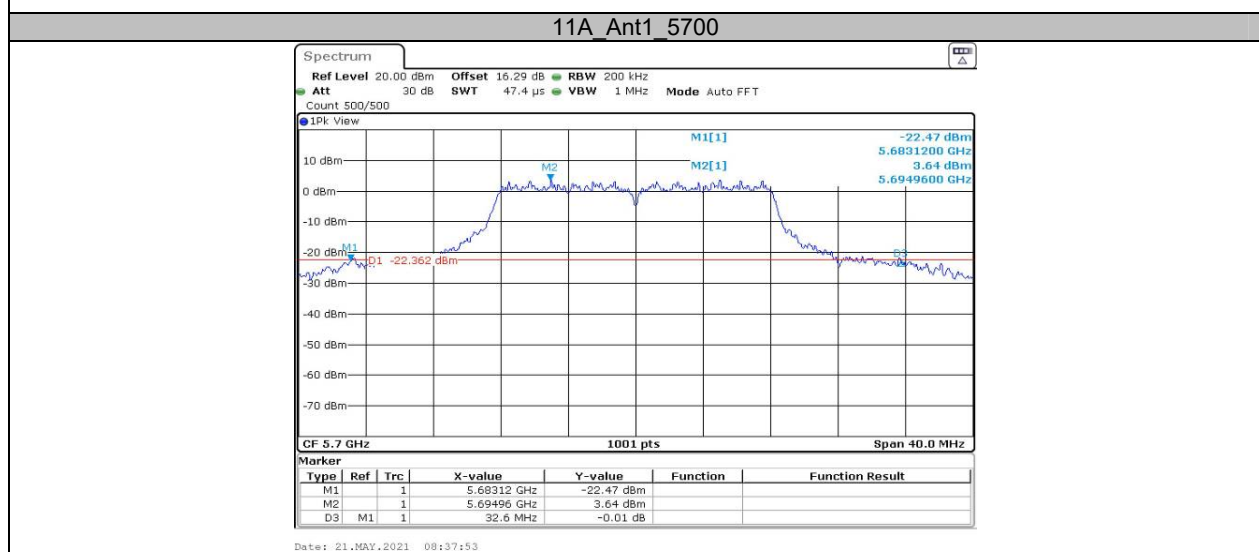
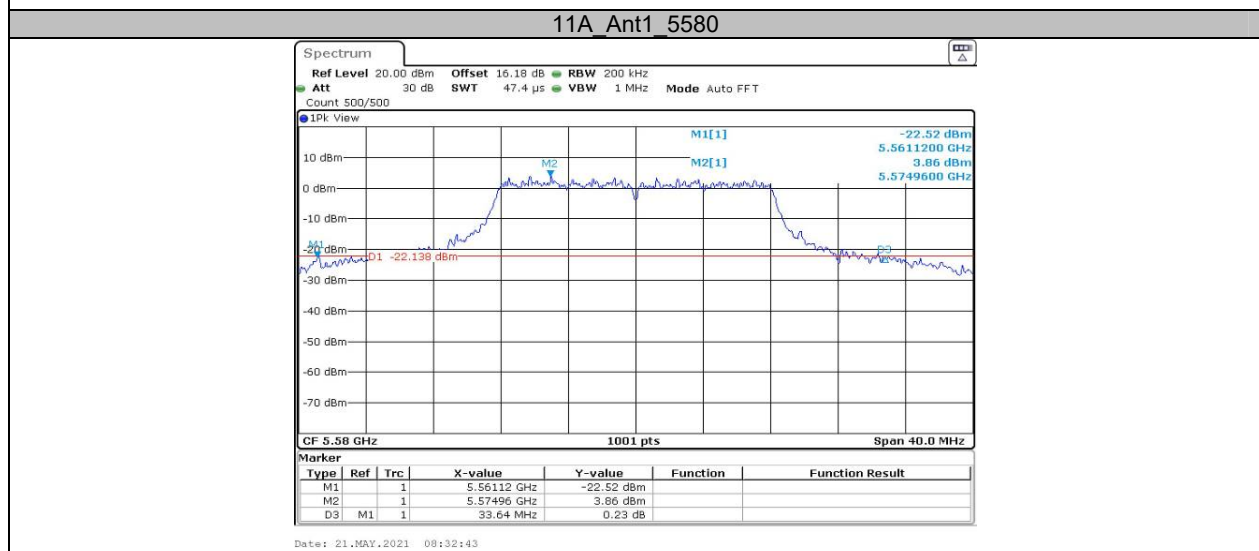
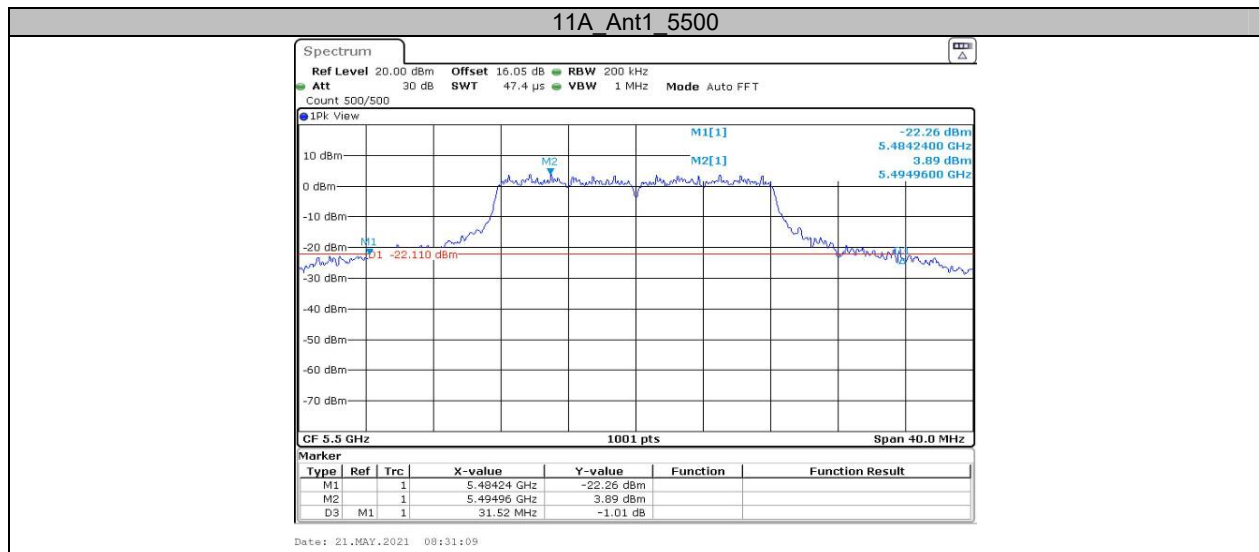


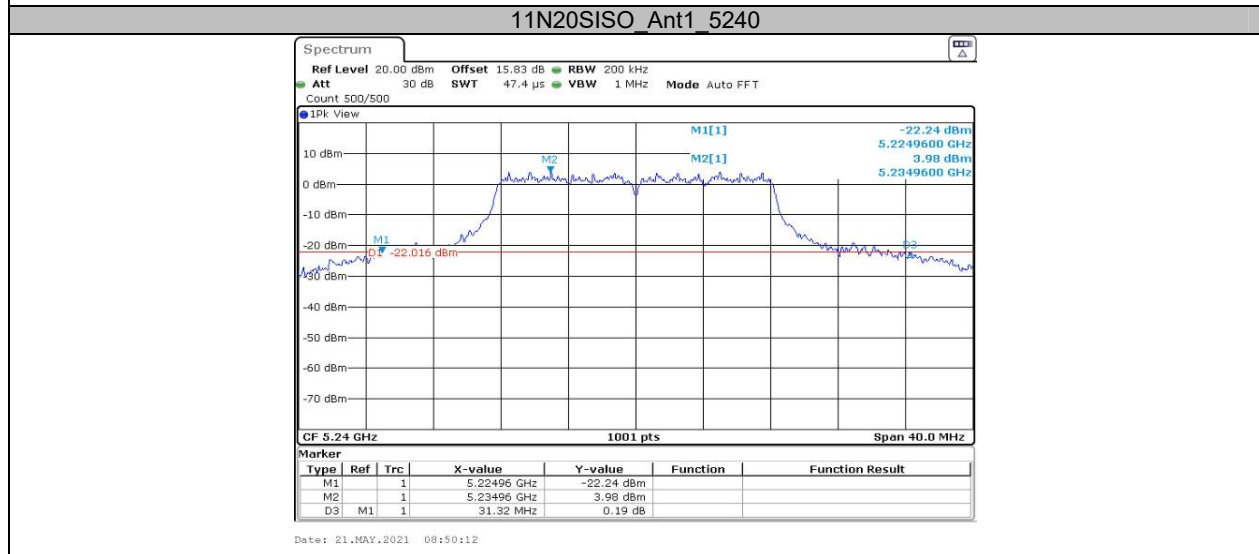
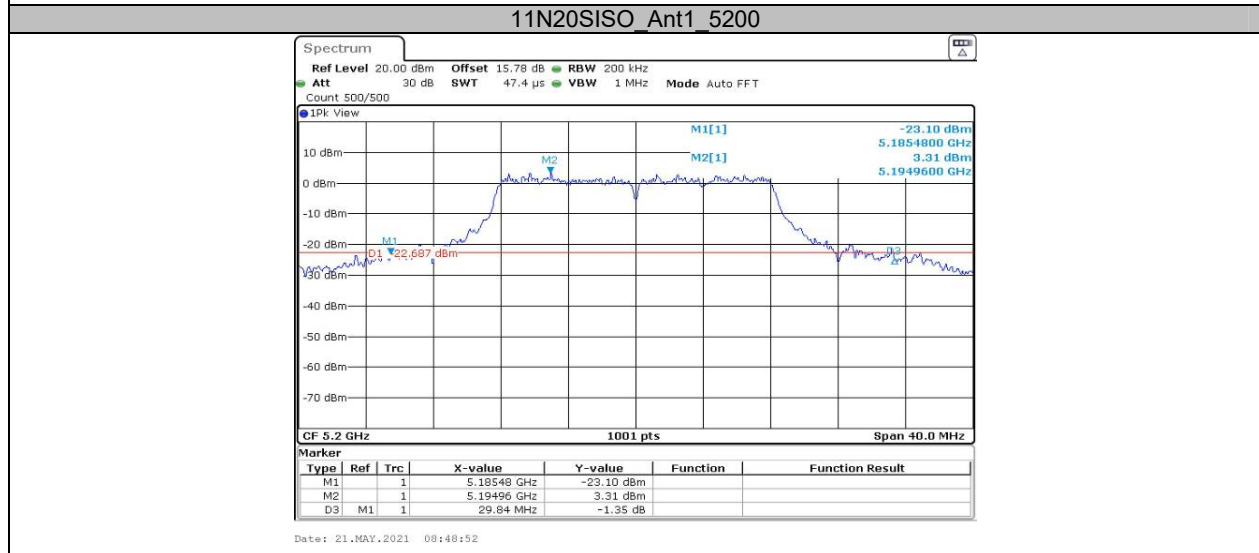
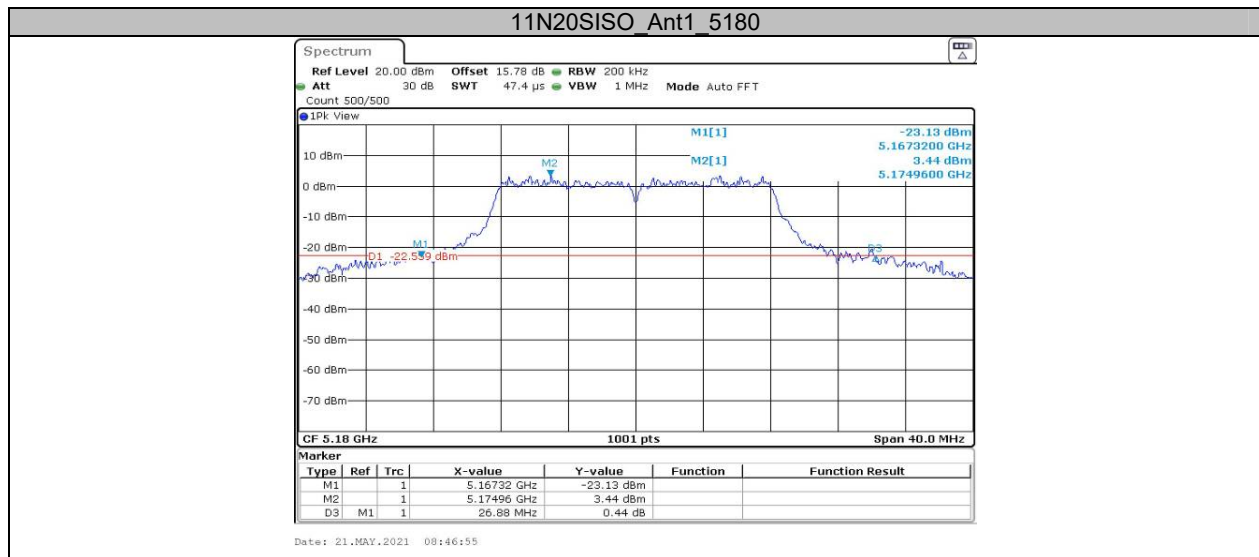
11A Ant1 5280

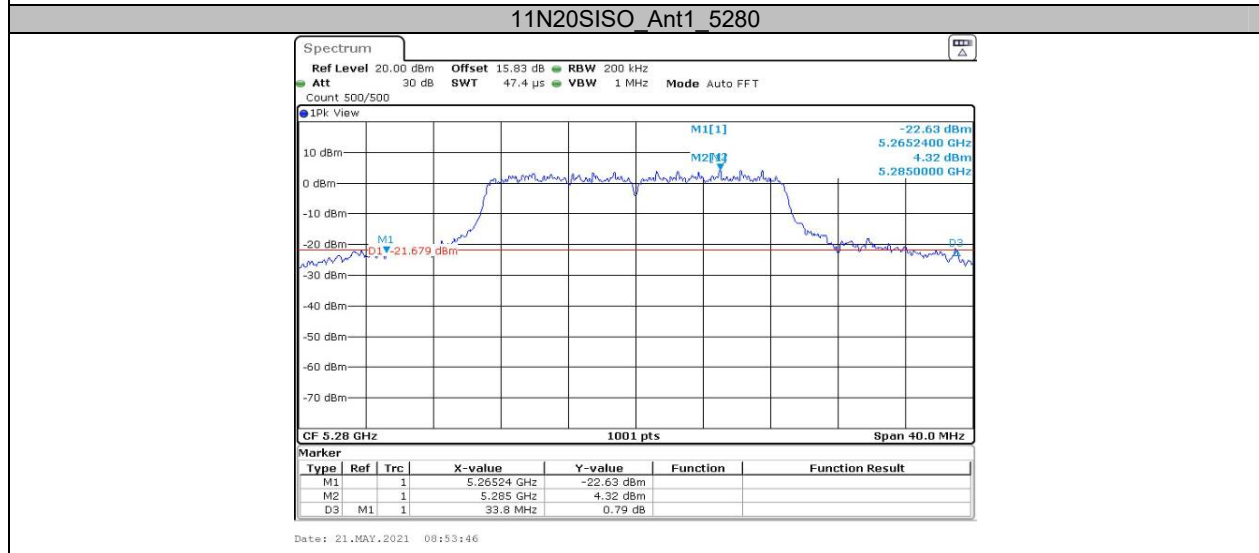
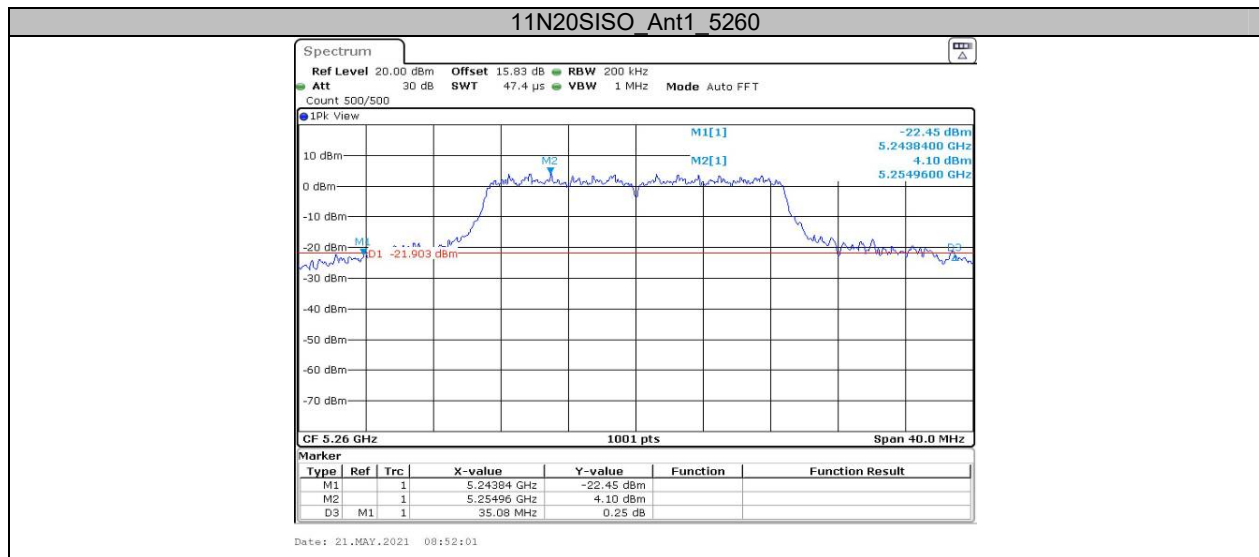


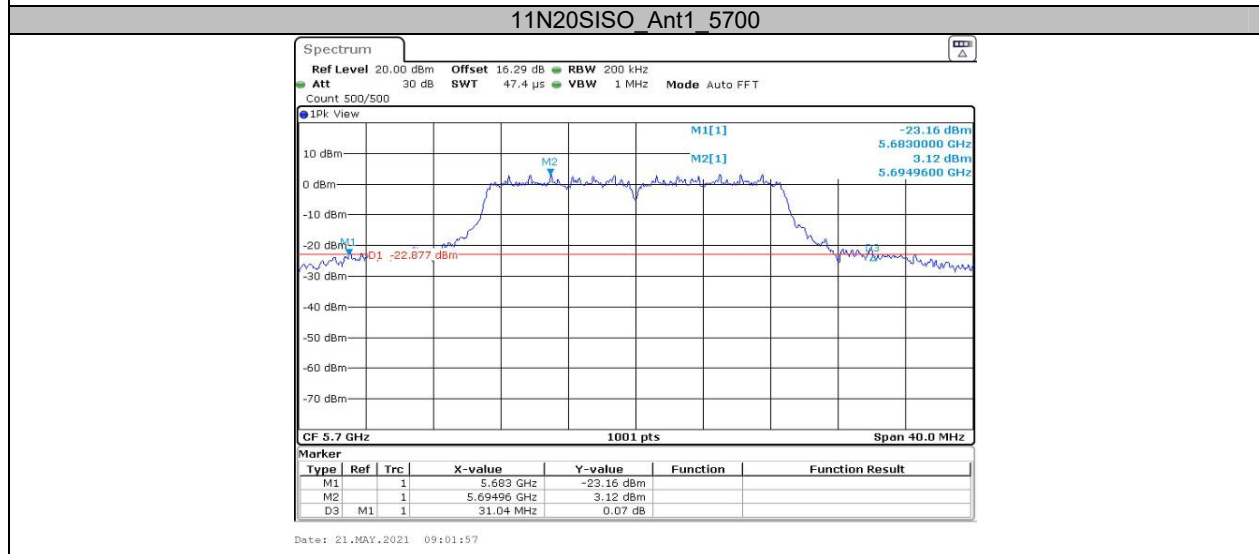
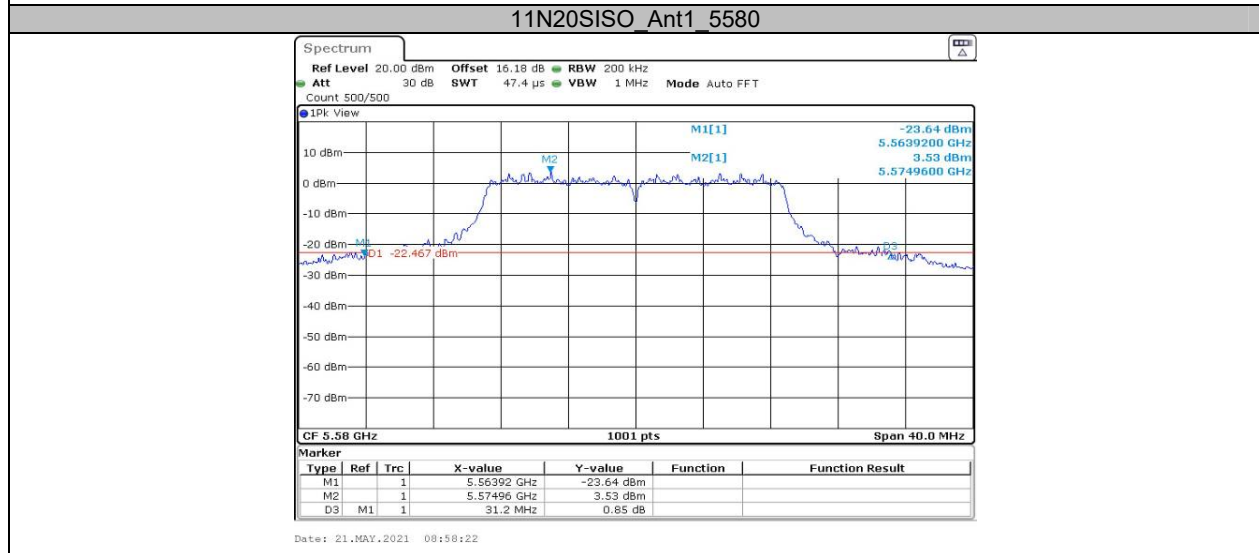
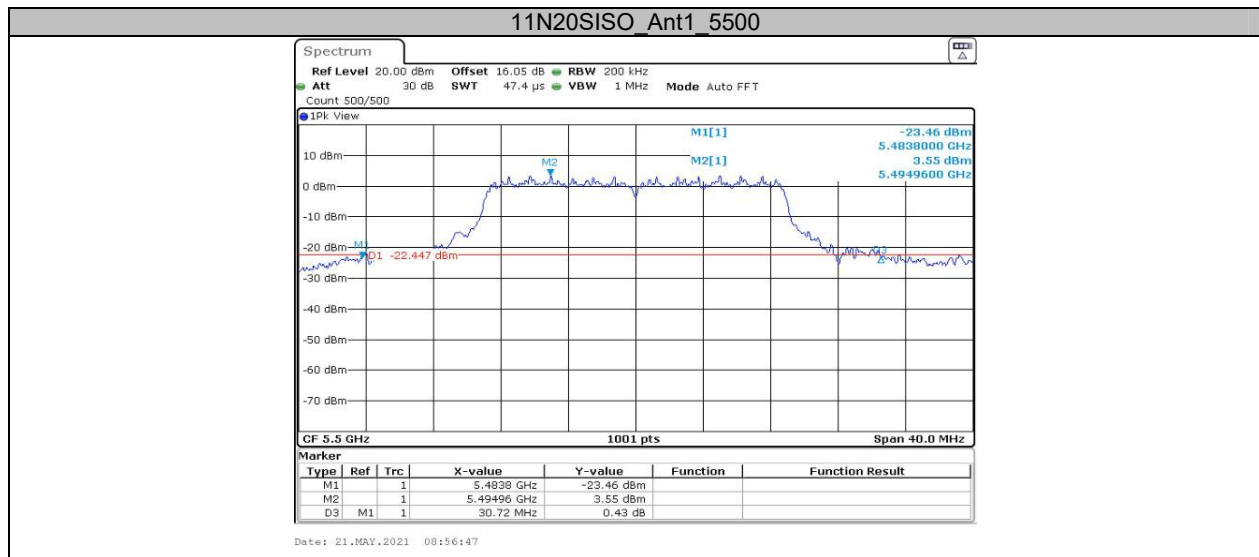
11A Ant1 5320

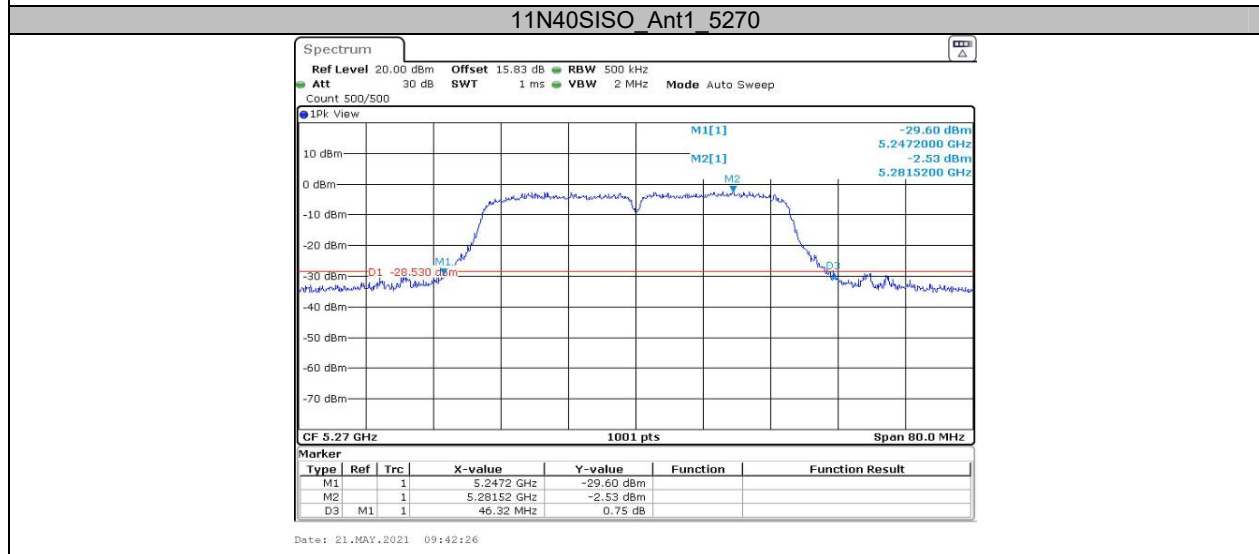
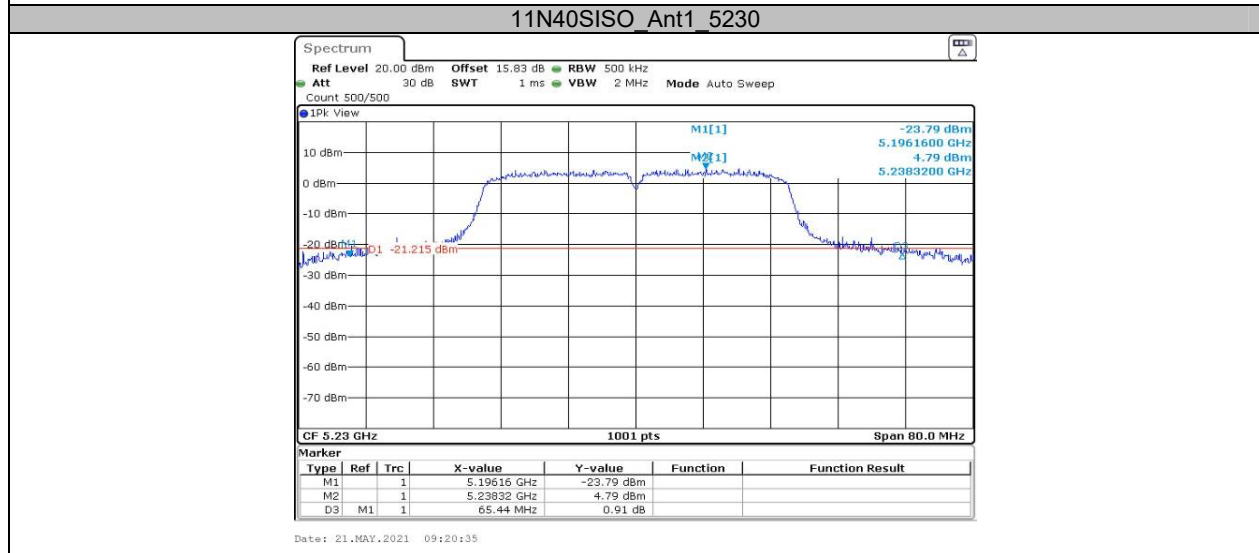
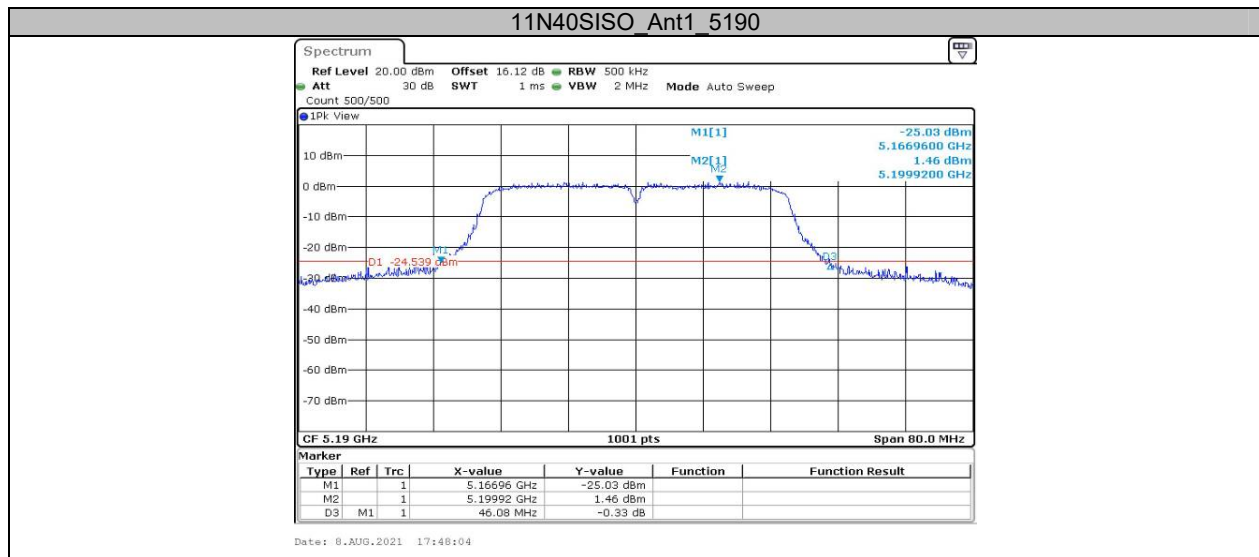


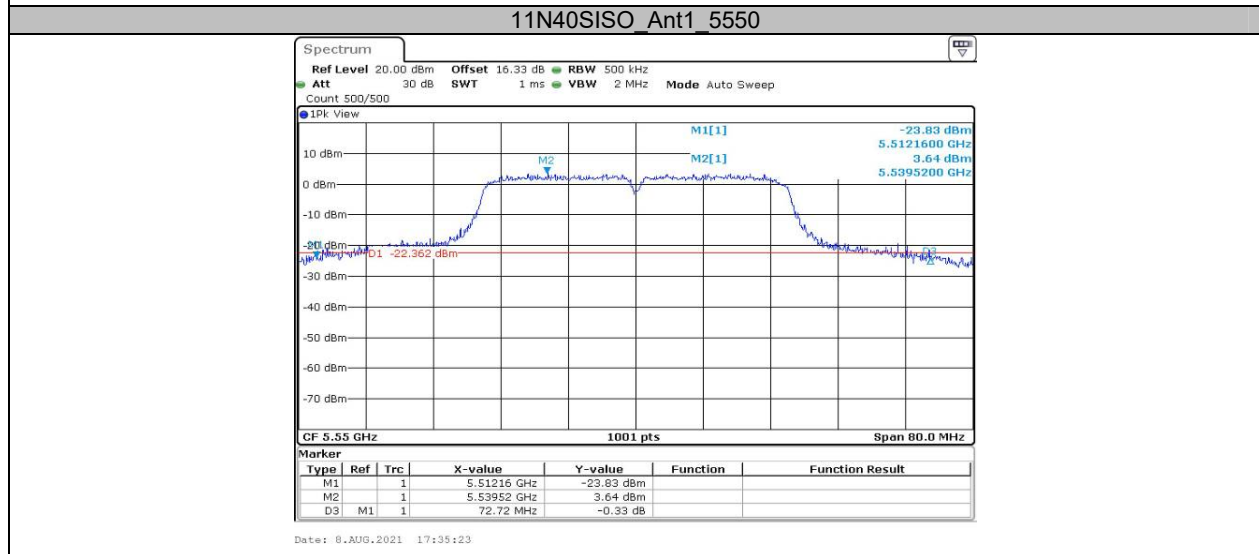
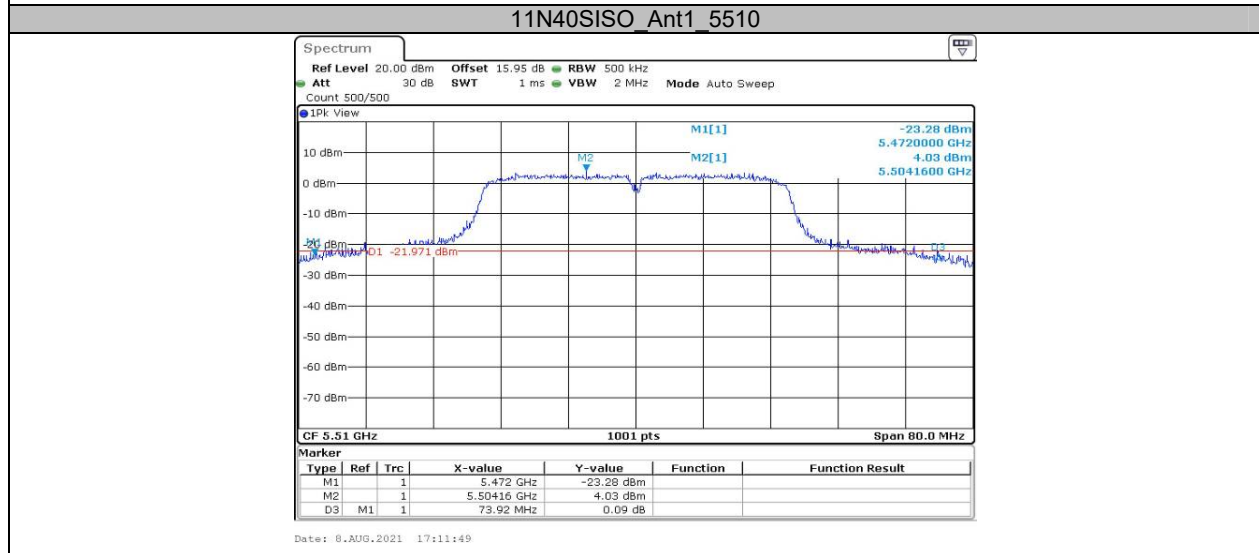
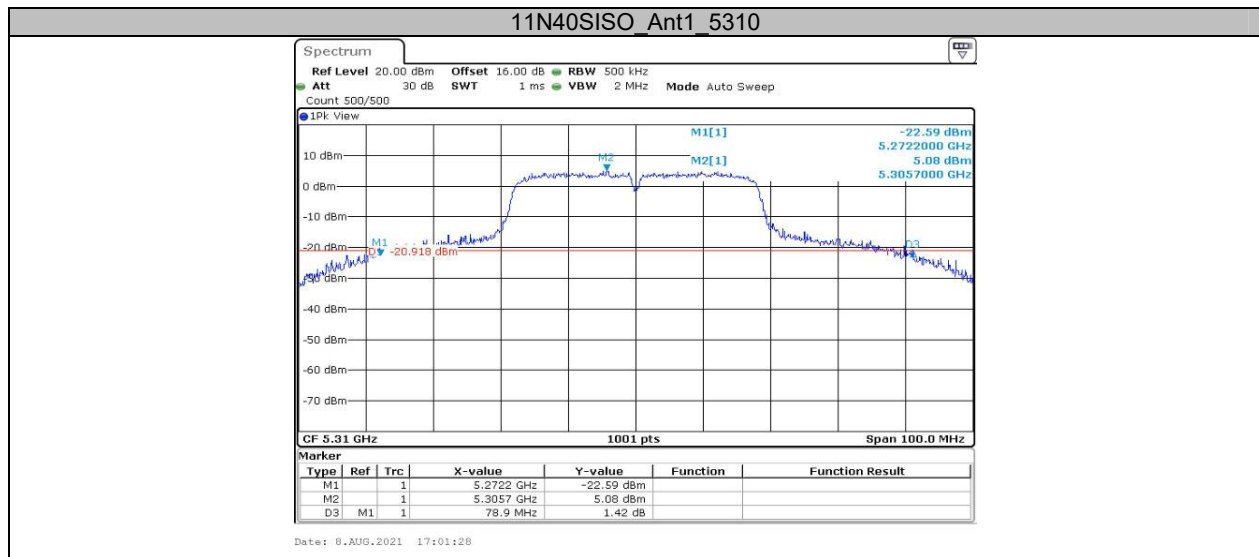


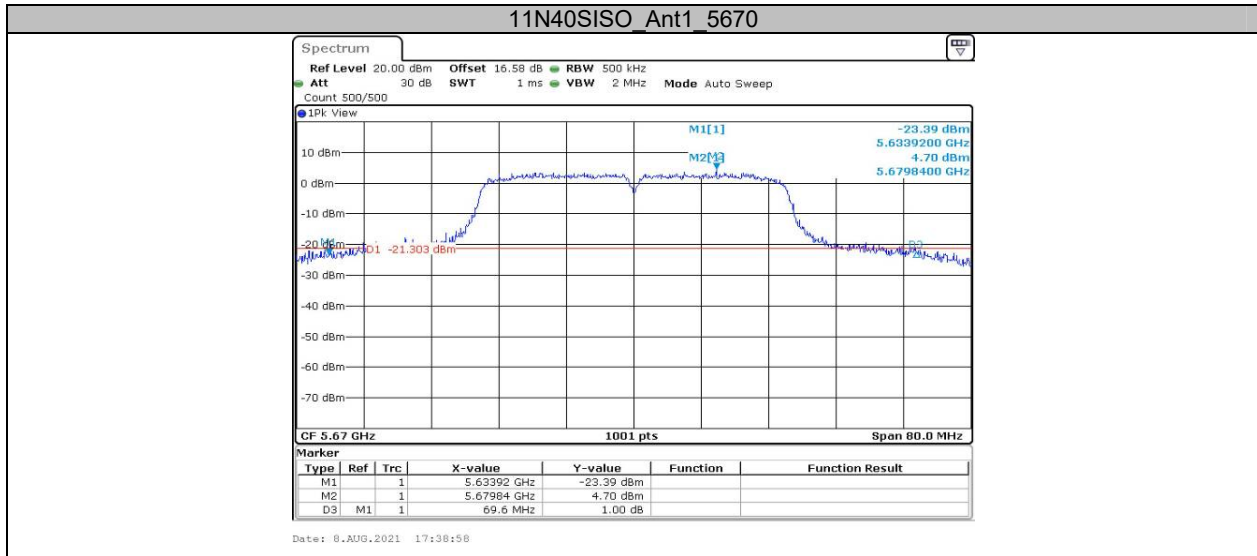










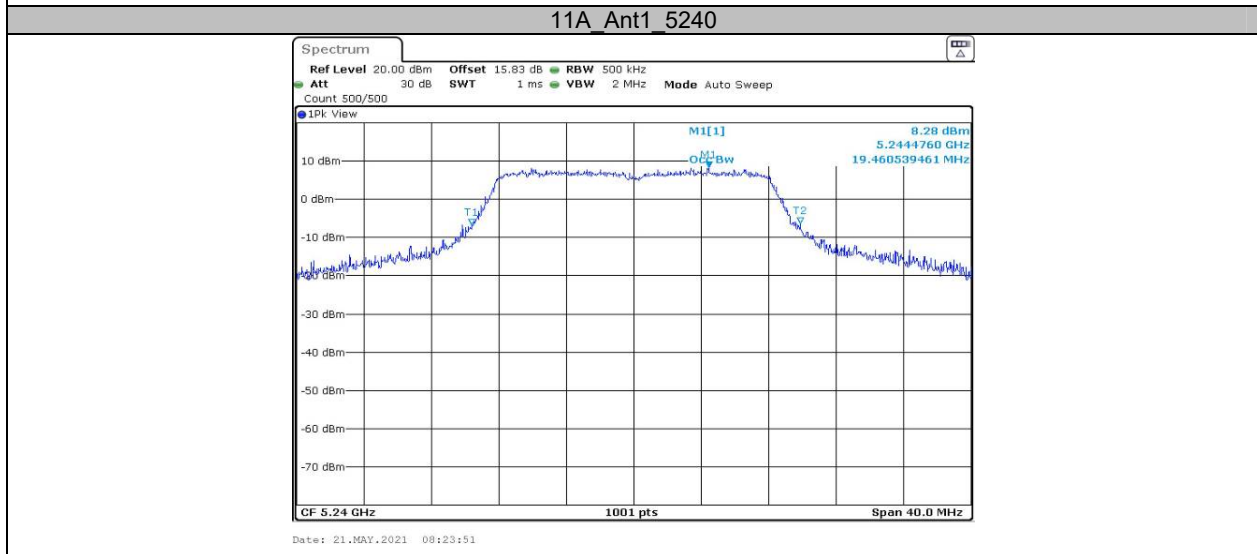
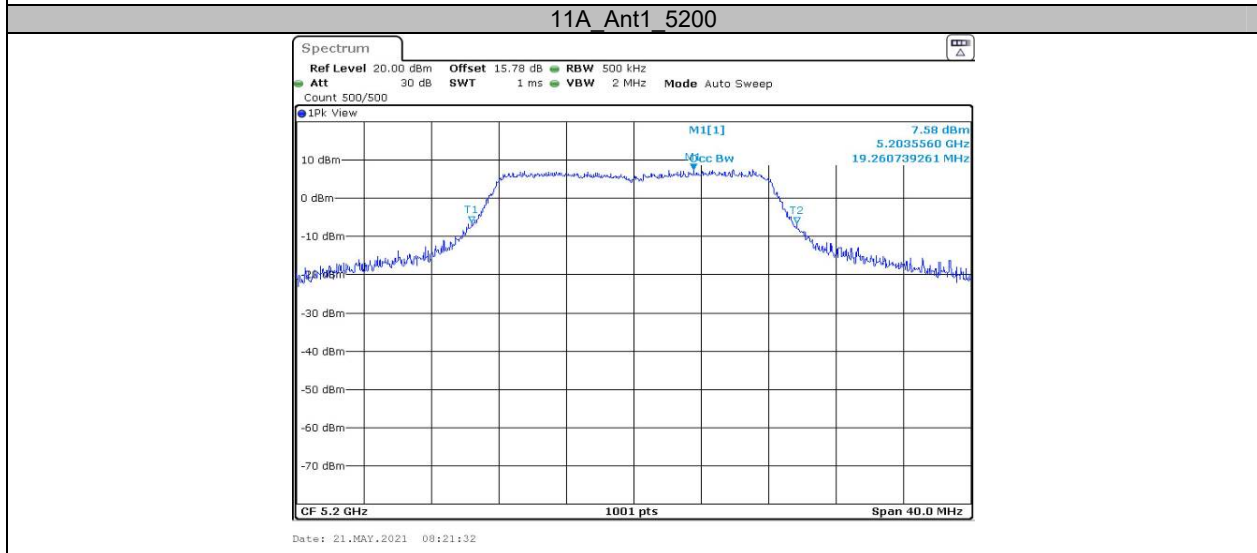
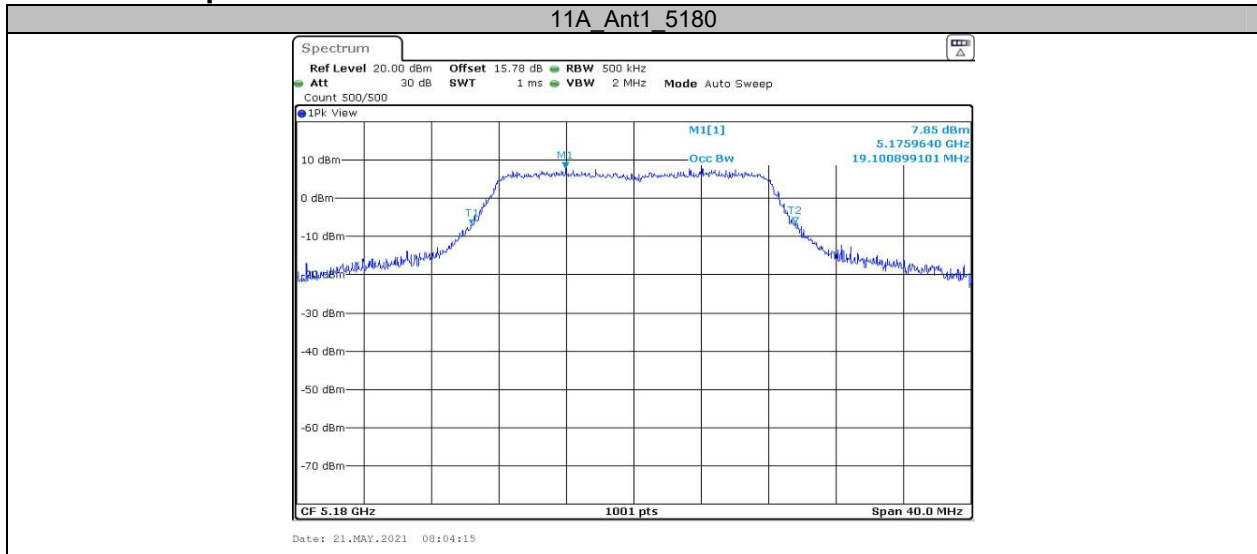


Appendix A2: Occupied channel bandwidth

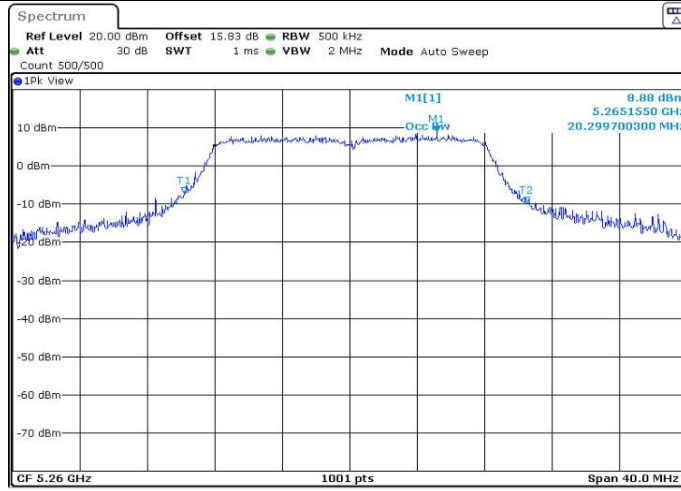
Test Result

TestMode	Antenna	Channel	OCB [MHz]	Verdict
11A	Ant1	5180	19.101	PASS
		5200	19.261	PASS
		5240	19.461	PASS
		5260	20.3	PASS
		5280	20.699	PASS
		5320	22.498	PASS
		5500	20.02	PASS
		5580	20.14	PASS
		5700	19.74	PASS
		5745	18.541	PASS
		5785	18.901	PASS
		5825	18.142	PASS
11N20SISO	Ant1	5180	19.101	PASS
		5200	19.341	PASS
		5240	19.62	PASS
		5260	20.899	PASS
		5280	20.46	PASS
		5320	22.178	PASS
		5500	20.14	PASS
		5580	20.14	PASS
		5700	19.94	PASS
		5745	19.141	PASS
		5785	19.341	PASS
		5825	18.861	PASS
11N40SISO	Ant1	5190	37.323	PASS
		5230	37.962	PASS
		5270	38.442	PASS
		5310	39.321	PASS
		5510	38.042	PASS
		5550	37.962	PASS
		5670	38.202	PASS
		5755	37.483	PASS
5795	37.642	PASS		

Test Graphs

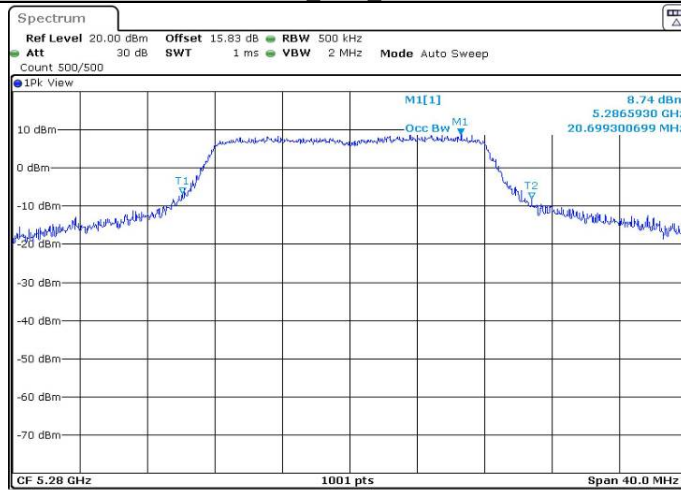


11A Ant1 5260



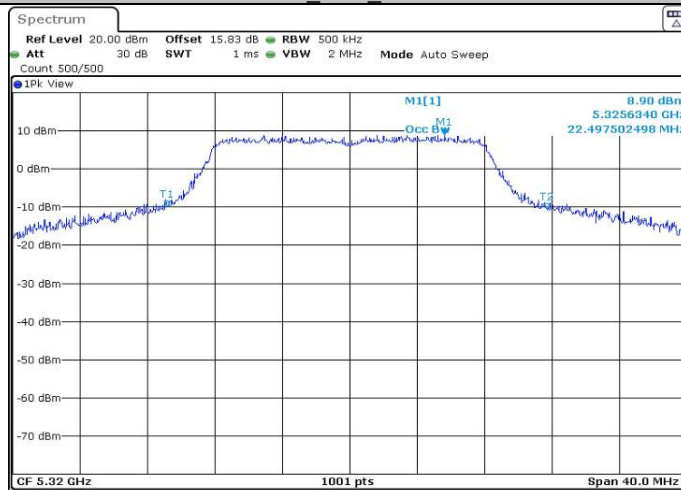
Date: 21.MAY.2021 08:25:34

11A Ant1 5280



Date: 21.MAY.2021 08:28:31

11A Ant1 5320



Date: 21.MAY.2021 08:29:58

