

FCC PART 15.407

TEST REPORT

For

Nexvoo, Inc

1702 W Michigan St Indianapolis, IN 46222 USA

FCC ID:2AW2G-N380

Report Type: Original Report	Product Type: NexFone N380
Report Number: RXM200909058-00D	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	NexFone N380
Tested Model	NexFone N380
Transmit Power	5150-5250 MHz: 11.48dBm (802.11a), 11.65dBm(802.11n20),11.43dBm (802.11ac20) 5725-5850 MHz 10.26dBm (802.11a), 10.35dBm(802.11n20),10.24dBm (802.11ac20)
Modulation Technique	OFDM
Antenna Specification	FPC Antenna: 0dBi
Voltage Range	DC 5.0V from Adpter orDC48V from POE
Date of Test	2020-09-27 to 2010-10-28
Sample serial number	RXM200909058-RF-S1(Assigned by BACL, Shenzhen)
Received date	2020-09-09
Sample/EUT Status	Good condition
Adapter information	Model: MX15Z-0502000VX Input: AC 100-240V, 50/60Hz, 0.4A Output: DC 5.0V, 2.0A

Objective

This type approval report is prepared 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

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 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, 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 device support 802.11a/n20/ac20 modes.

For 5150-5250MHz Band, 4 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

For 5725-5850MHz Band, 5 channels are provided to testing:

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

EUT Exercise Software

“QRCT” software was used. Test frequencies and power level were configured as below:

U-NII	Mode	Channel Number	Frequency (MHz)	Rate (Mbps)	Power Level
5150 – 5250MHz	802.11 a	CH36	5180	6	10
		CH40	5200	6	10
		CH48	5240	6	10
	802.11 n20	CH36	5180	MCS0	10
		CH40	5200	MCS0	10
		CH48	5240	MCS0	10
	802.11 ac20	CH36	5180	MCS0	10
		CH40	5200	MCS0	10
		CH48	5240	MCS0	10
5725 – 5850MHz	802.11 a	CH149	5745	6	10
		CH157	5785	6	10
		CH165	5825	6	10
	802.11 n20	CH149	5745	MCS0	10
		CH157	5785	MCS0	10
		CH165	5825	MCS0	10
	802.11 ac20	CH149	5745	MCS0	10
		CH157	5785	MCS0	10
		CH165	5825	MCS0	10

Duty cycle

Please refer to Appendix

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	Latitude E5430	11429208685
Unknown	Earphone	Unknown	Earphone
Unknown	Headset	Unknown	Headset
SHENZHEN GOSPELL DIGITAL TECHNOLOGY CO.,LTD.	POE	G0720-480-050	N/A
Kingston	USB Disk	DTSE9G2 64G	DTSE9G2
HIKVISION	Router	DS-3WR03-E	10021642429

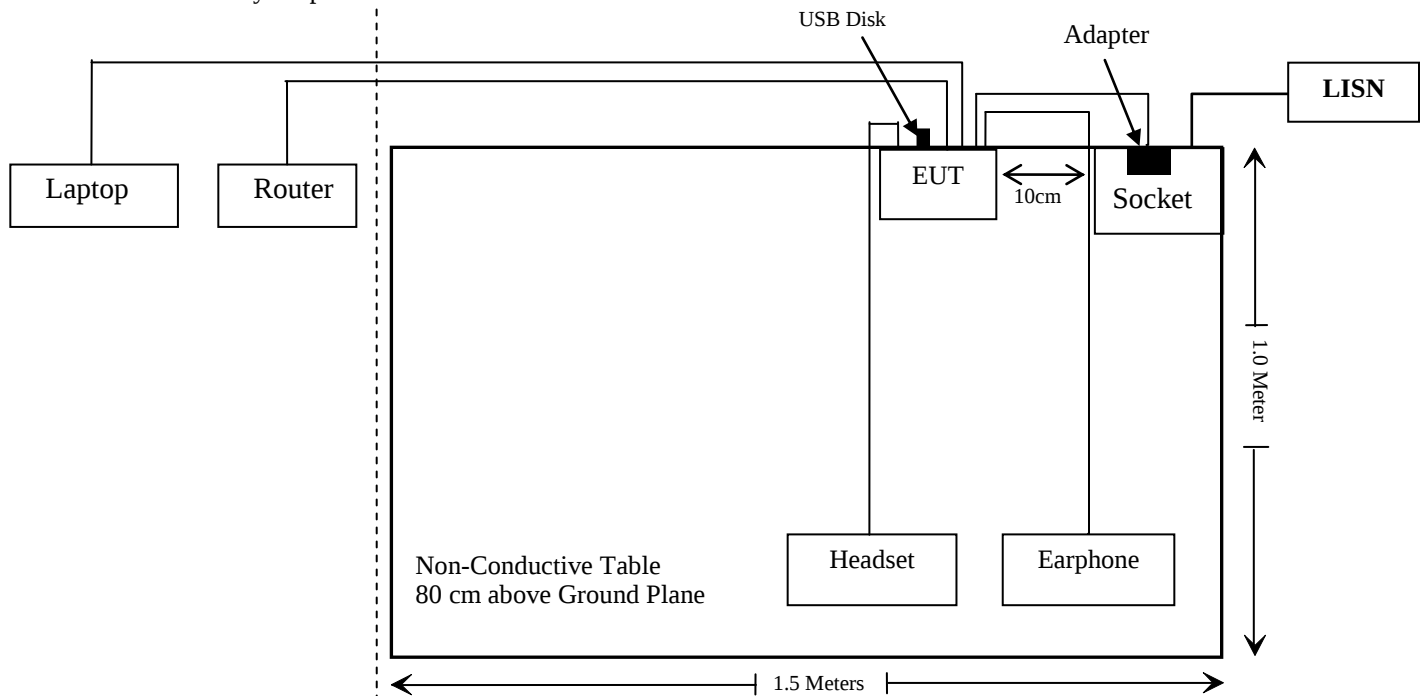
External I/O Cable

Cable Description	Length (m)	From/Port	To
Un-shielding Un-Detachable AC Cable	1.0	Socket	LISN
Un-shielding Un-Detachable DC Cable	2.5	Adapter	EUT
Un-Shielding Detachable RJ45 Cable	10.0	EUT	Laptop
Un-Shielding Detachable RJ45 Cable	10.0	EUT	Router
Un-Shielding Detachable RJ45 Cable	1.0	EUT	POE
Un-shielding Detachable AC Cable	1.2	POE	LISN

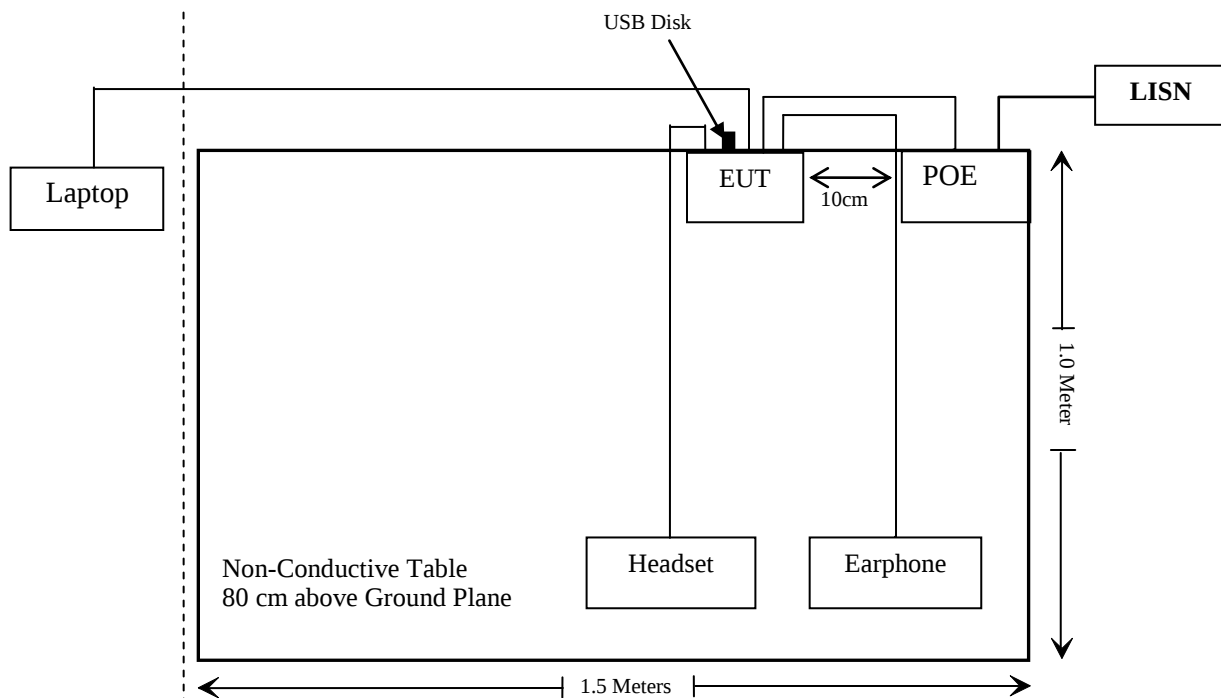
Block Diagram of Test Setup

For conducted emission:

1. Powered by adapter:



2. Powered by POE:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1091	Maximum Permissible exposure (MPE)	Compliance
§15.203	Antenna Requirement	Compliance
§15.407(b)(8)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 & §15.407(b) (1), (4),(9)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1),(4)	Out Of Band Emission	Compliance
§15.407(a) (1),(e)	26 dB Emission Bandwidth & 6dB Bandwidth	Compliance
§15.407(a)(1),(3)	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(3)	Power Spectral Density	Compliance

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	2019/11/29	2020/11/28
Unknow	CE Cable	CE Cable	UF A210B-1-0720-504504	2019/11/29	2020/11/28
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	A040904-1	2017/12/22	2020/12/21
Unknown	Cable 2	RF Cable 2	F-03-EM197	2019/11/29	2020/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2019/11/29	2020/11/28
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	2019/11/29	2020/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2019/11/29	2020/11/28
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017/12/22	2020/12/21
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2019/11/29	2020/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2019/11/29	2020/11/28
SNSD	Band Reject filter	BSF2402-2480MN-0898-001	2.4G filter	2020/04/20	2021/04/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2017/12/06	2020/12/05
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2017/12/06	2020/12/05

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Tonscend Corporation	RF control Unit	JS0806-2	19D8060154	2020/08/04	2021/08/03
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2020/08/04	2021/08/03
Ducommun technologies	RF Cable	RG-214	3	Each Time	Each Time

*** 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).

§1.1307 (b) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Frequency (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	(numeric)	(dBm)	(mW)			
2412-2472	0	1	13.0	19.95	20	0.004	1.0
5150-5250	0	1	12.0	15.85	20	0.003	1.0
5725-5850	0	1	10.5	11.22	20	0.002	1.0

Note:

- 1) To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.
- 2) 2.4GHz or 5GHz Wi-Fi can transmit simultaneously for this device, but the BT/BLE can't transmit with the 2.4G Wi-Fi /5G Wi-Fi at the same time.
- 3) Simultaneous transmitting consideration:

The ratio= $MPE_{DTS(2.4G\ Wi-Fi)}/limit + MPE_{NII}/limit = 0.004 + 0.003 = 0.007 < 1.0$, so simultaneous exposure is not required.

Result: Compliance

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 antenna arrangement, which was permanently attached and the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

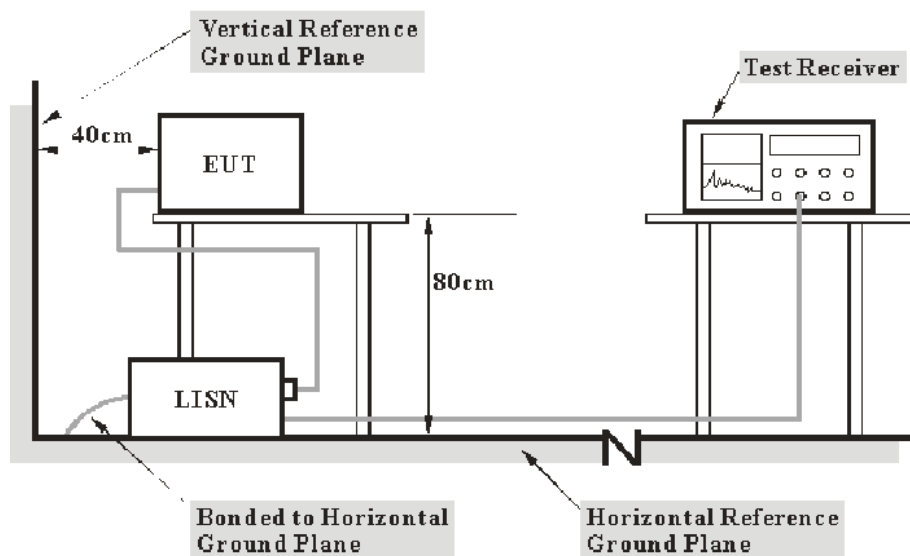
Result: Compliance.

FCC §15.407 (b) (8) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (8)

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.

The adapter was connected to a 120 VAC/60 Hz power source.

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 Results Summary

According to the EUT complied with the FCC Part 15.207.

Test Data

Environmental Conditions

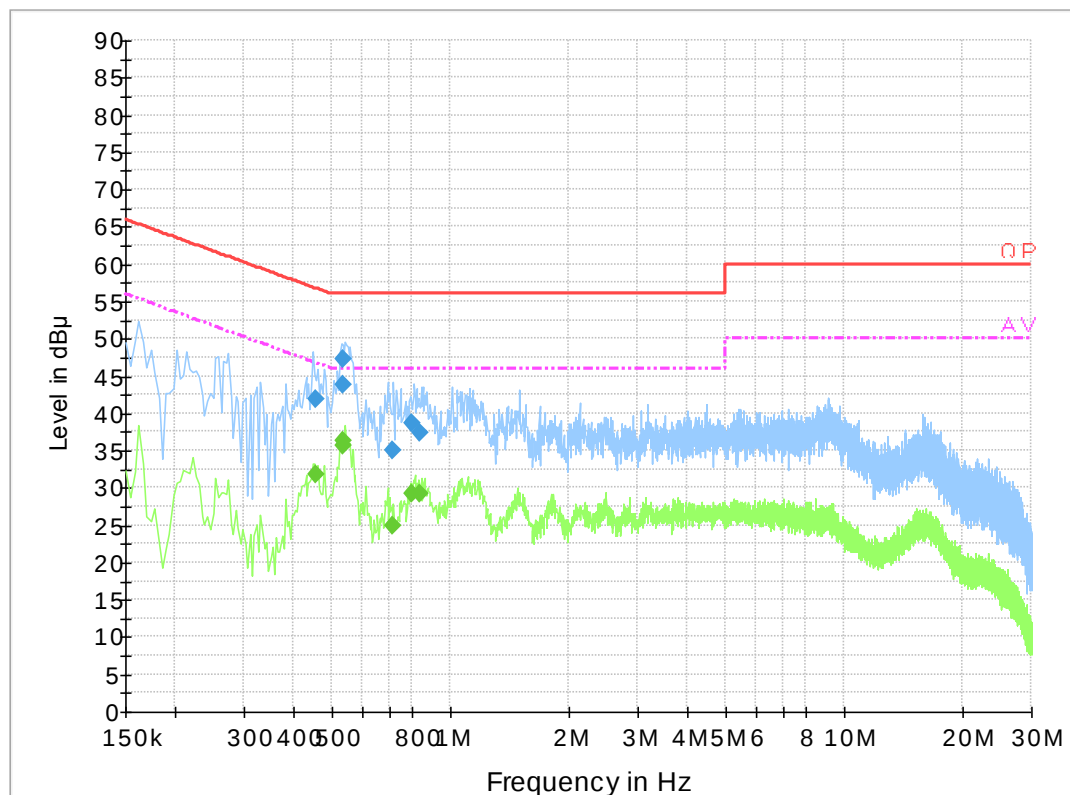
Temperature:	25 °C
Relative Humidity:	65 %
ATM Pressure:	101.0 kPa

The testing was performed by Haiguo Li on 2020-09-28.

EUT operation mode: Transmitting (worst case is 802.11a mode 5180 MHz)

Powered by adapter:

AC 120V/60 Hz, Line

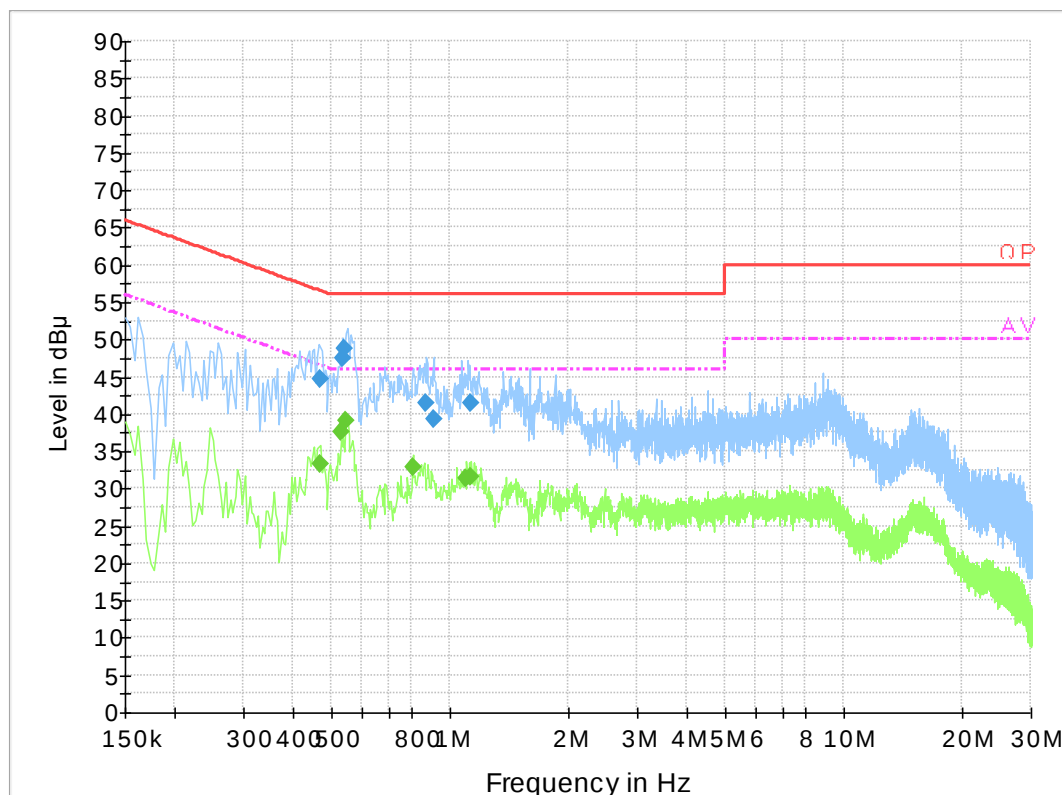


Final Result 1

Frequency (MHz)	QuasiPeak (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.455250	41.9	9.000	L1	19.8	14.9	56.8
0.533870	43.8	9.000	L1	19.8	12.2	56.0
0.537950	47.2	9.000	L1	19.8	8.8	56.0
0.715230	35.0	9.000	L1	19.8	21.0	56.0
0.801850	38.6	9.000	L1	19.8	17.4	56.0
0.841190	37.3	9.000	L1	19.8	18.7	56.0

Final Result 2

Frequency (MHz)	Average (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.455250	31.8	9.000	L1	19.8	15.0	46.8
0.533870	35.6	9.000	L1	19.8	10.4	46.0
0.537950	36.3	9.000	L1	19.8	9.7	46.0
0.715230	25.0	9.000	L1	19.8	21.0	46.0
0.801850	29.1	9.000	L1	19.8	16.9	46.0
0.841190	29.3	9.000	L1	19.8	16.7	46.0

AC 120V/60 Hz, Neutral:**Final Result 1**

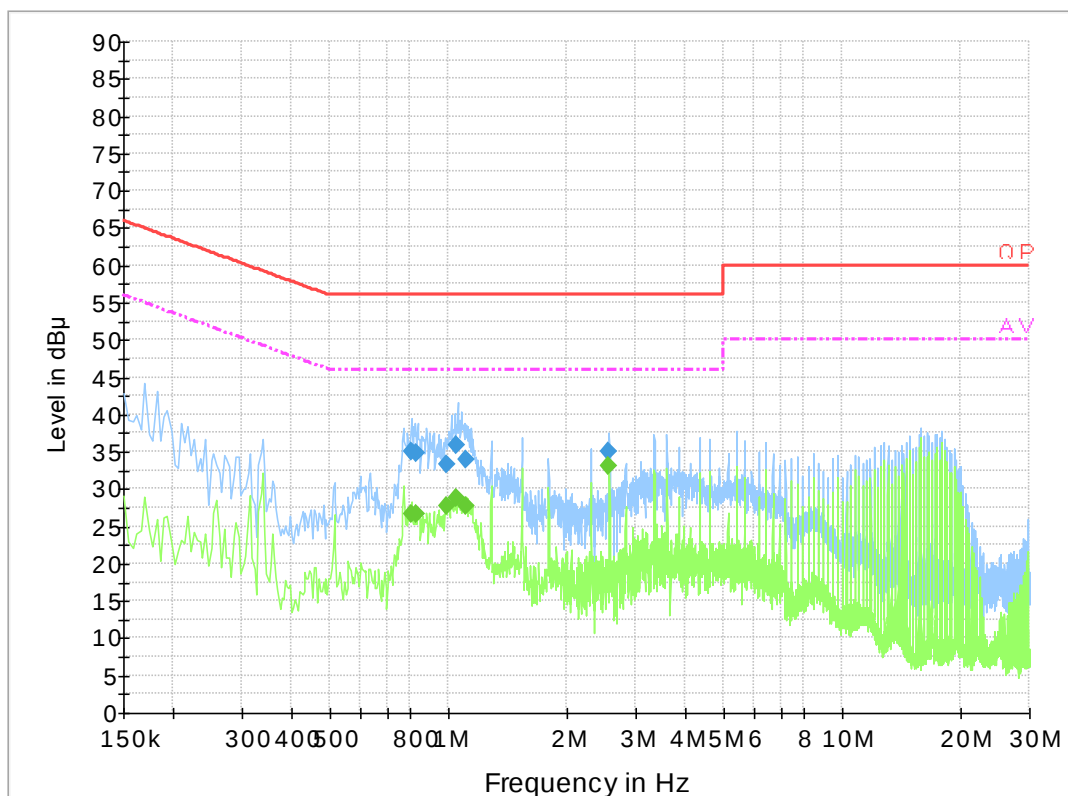
Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.471010	44.6	9.000	N	19.8	11.9	56.5
0.537950	47.5	9.000	N	19.8	8.5	56.0
0.541750	48.8	9.000	N	19.8	7.2	56.0
0.872890	41.4	9.000	N	19.7	14.6	56.0
0.916350	39.3	9.000	N	19.7	16.7	56.0
1.129290	41.4	9.000	N	19.8	14.6	56.0

Final Result 2

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.470000	33.2	9.000	N	19.8	13.3	46.5
0.530000	37.6	9.000	N	19.8	8.4	46.0
0.546000	39.0	9.000	N	19.8	7.0	46.0
0.806000	32.8	9.000	N	19.8	13.2	46.0
1.106000	31.3	9.000	N	19.8	14.7	46.0
1.138000	31.6	9.000	N	19.8	14.4	46.0

Powered by POE:

AC 120V/60 Hz, Line

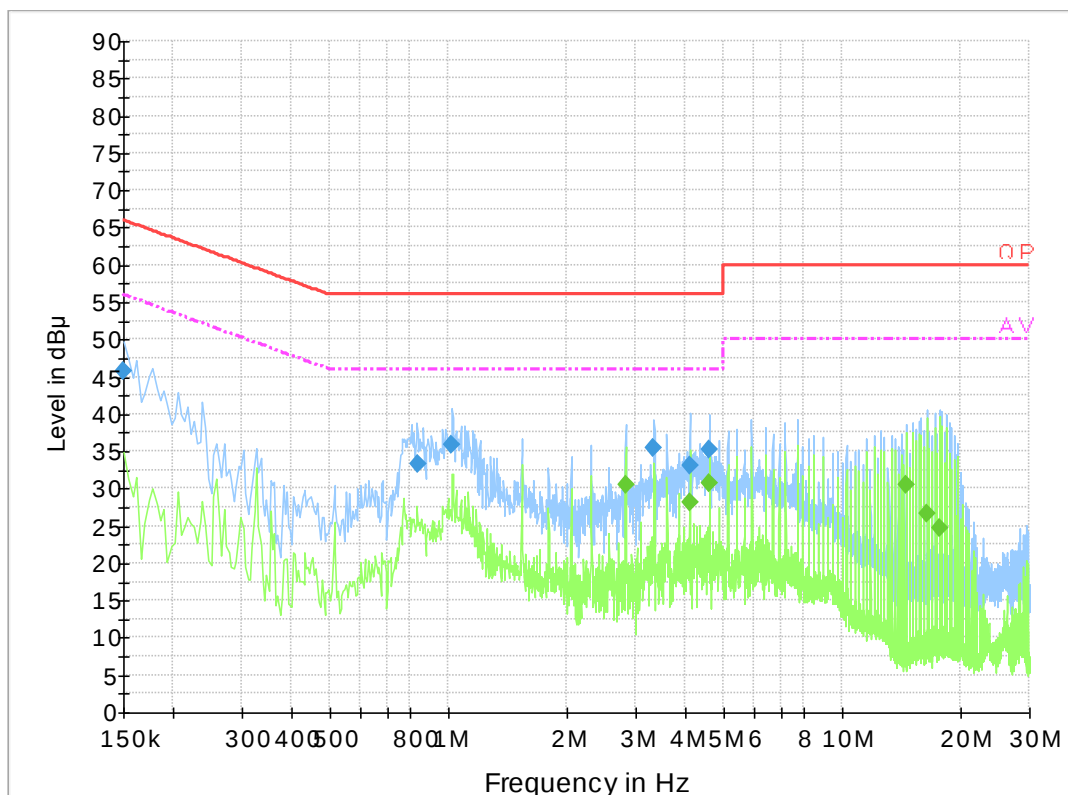


Final Result 1

Frequency (MHz)	QuasiPeak (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.805910	34.9	9.000	L1	19.8	21.1	56.0
0.833430	34.7	9.000	L1	19.8	21.3	56.0
0.994910	33.3	9.000	L1	19.9	22.7	56.0
1.050130	35.8	9.000	L1	19.9	20.2	56.0
1.113110	33.9	9.000	L1	19.8	22.1	56.0
2.567450	35.1	9.000	L1	19.8	20.9	56.0

Final Result 2

Frequency (MHz)	Average (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.805910	26.7	9.000	L1	19.8	19.3	46.0
0.833430	26.6	9.000	L1	19.8	19.4	46.0
0.994910	27.7	9.000	L1	19.9	18.3	46.0
1.050130	28.8	9.000	L1	19.9	17.2	46.0
1.113110	27.8	9.000	L1	19.8	18.2	46.0
2.567450	33.0	9.000	L1	19.8	13.0	46.0

AC 120V/60 Hz, Neutral:**Final Result 1**

Frequency (MHz)	QuasiPeak (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
0.150000	45.8	0.200	N	19.8	20.2	66.0
0.837490	33.3	9.000	N	19.8	22.7	56.0
1.022610	35.9	9.000	N	19.8	20.1	56.0
3.339930	35.4	9.000	N	19.9	20.6	56.0
4.112350	33.0	9.000	N	19.9	23.0	56.0
4.624670	35.2	9.000	N	19.9	20.8	56.0

Final Result 2

Frequency (MHz)	Average (dBμ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμ V)
2.826000	30.4	9.000	N	19.9	15.6	46.0
4.110000	28.2	9.000	N	19.9	17.8	46.0
4.622000	30.7	9.000	N	19.9	15.3	46.0
14.638000	30.4	9.000	N	19.9	19.6	50.0
16.434000	26.6	9.000	N	20.1	23.4	50.0
17.718000	24.6	9.000	N	20.2	25.4	50.0

§15.205 & §15.209 & §15.407(B) (1), (4), (9) – UNDESIRABLE EMISSION

Applicable Standard

FCC §15.407 (b) (1), (4), (9); §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.

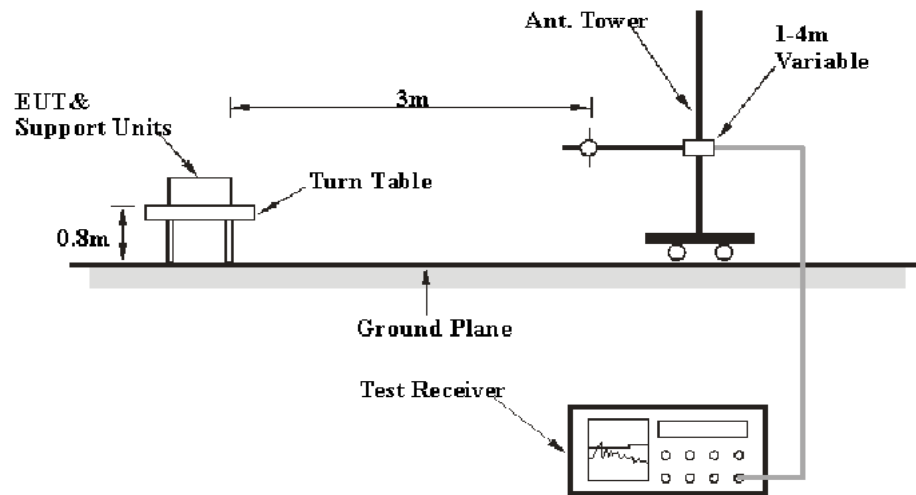
(4) For transmitters operating in the 5.725-5.85 GHz band:

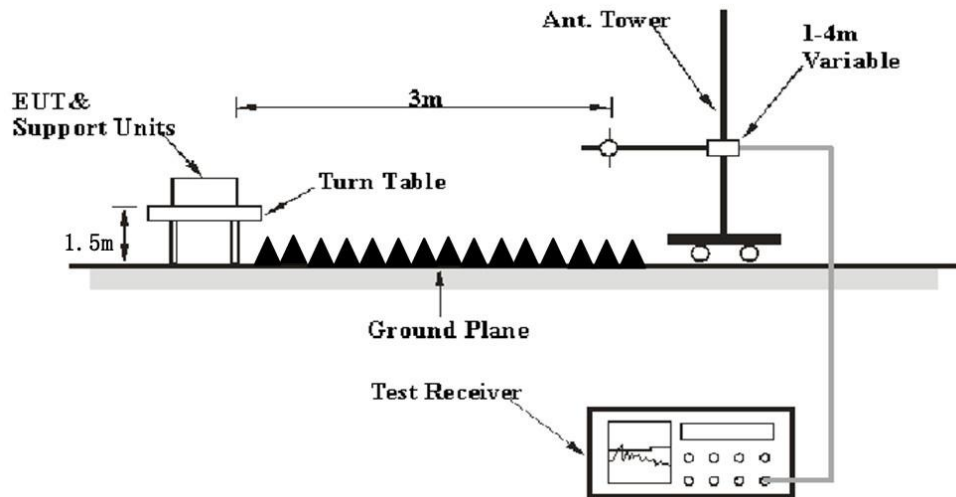
(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the 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.

(9) The provisions of §15.205 apply to intentional radiators operating under this section.

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

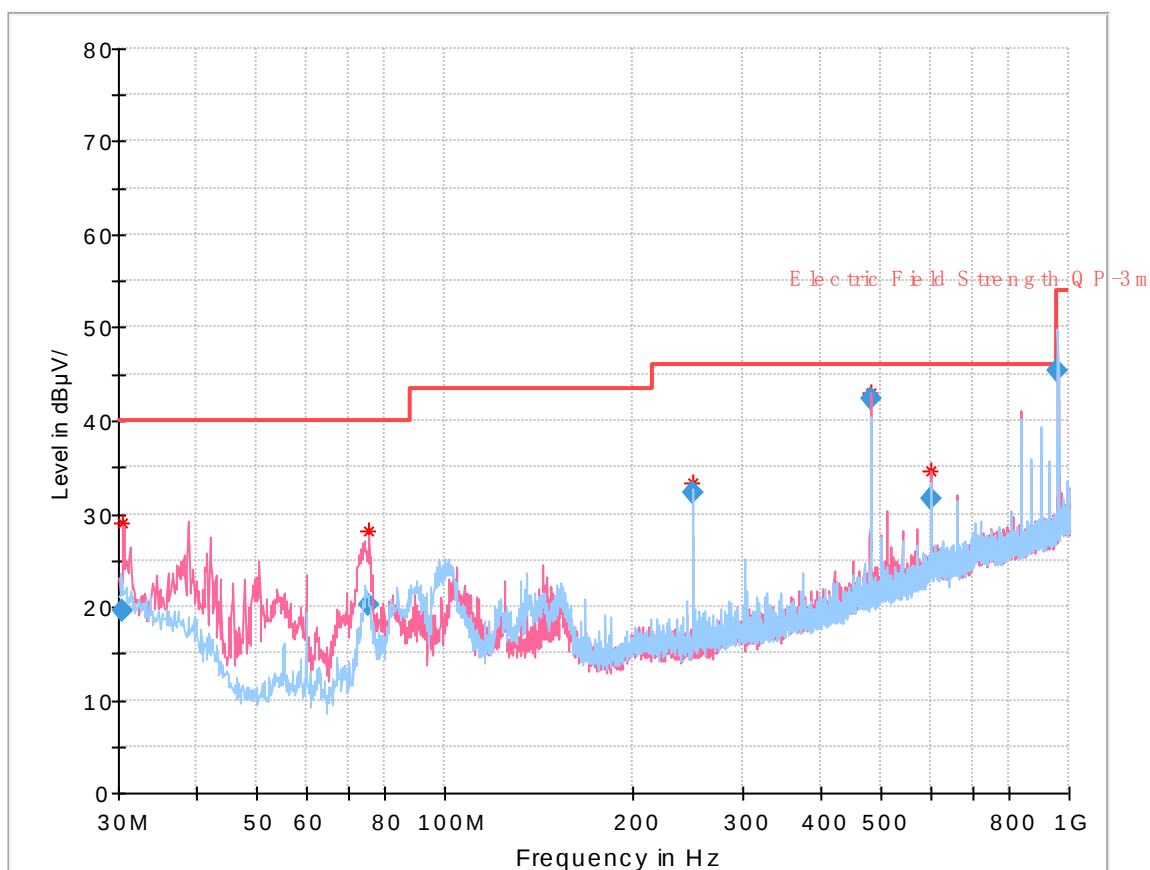
Temperature:	29 -32.1°C
Relative Humidity:	52~56 %
ATM Pressure:	101.0 kPa

The testing was performed by Holland Yang on 2010-10-10 for below 1G and Leven Gan on 2020-09-27~2020-09-28 for above 1G.

EUT operation mode: Transmitting

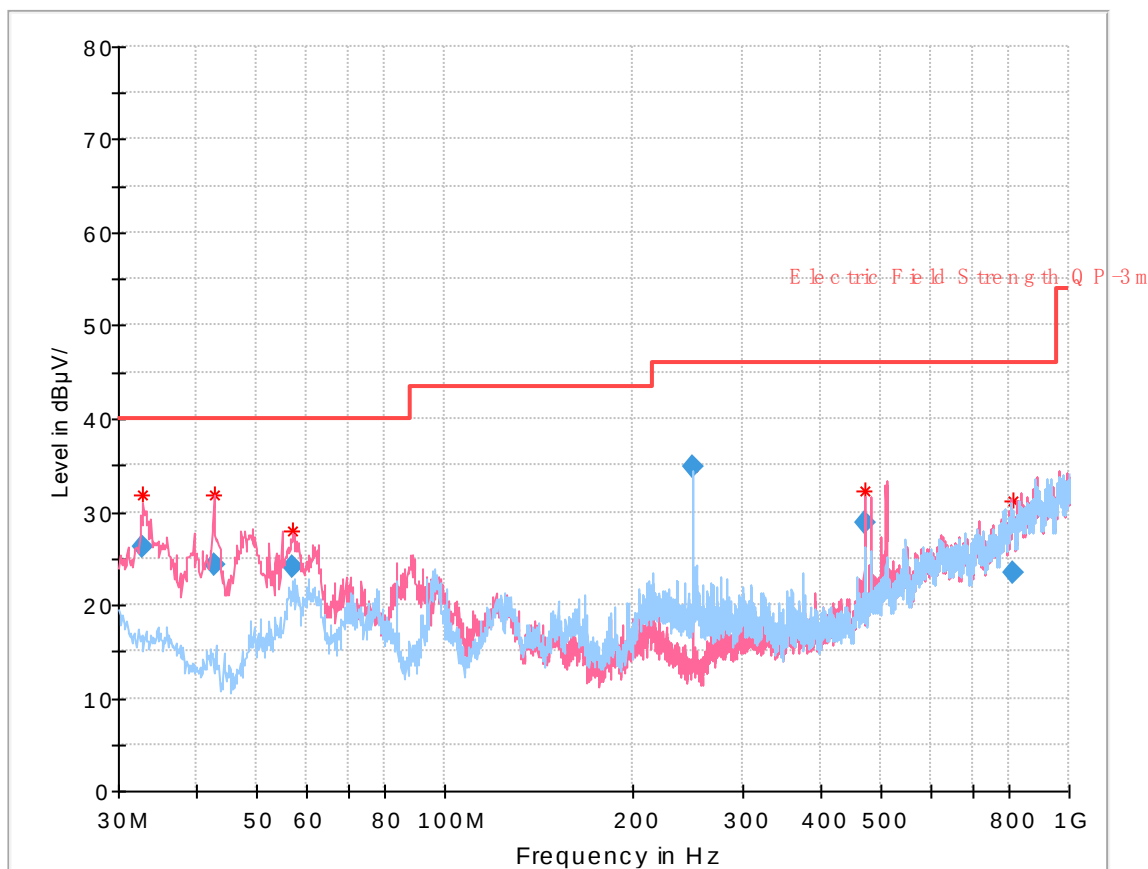
30 MHz – 1 GHz: (worst case is 802.11a mode 5180 MHz)

Powered by POE:

**Final_Result**

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.482648	19.06	40.00	20.94	198.0	V	266.0	-4.7
75.280125	19.07	40.00	20.93	152.0	V	343.0	-17.1
250.004875	32.44	46.00	13.56	113.0	H	260.0	-10.8
480.017000	43.00	46.00	3.00	108.0	V	45.0	-5.3
600.018000	34.61	46.00	11.39	107.0	V	102.0	-2.1
960.035000	45.66	53.50	7.84	206.0	H	105.0	2.4

Powered by Adapter:



Final_Result

Frequency (MHz)	QuasiPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.863500	26.33	40.00	13.67	101.0	V	77.0	-9.3
42.694250	24.27	40.00	15.73	102.0	V	84.0	-15.7
57.035125	24.08	40.00	15.92	102.0	V	0.0	-20.0
250.011250	34.82	46.00	11.18	119.0	H	118.0	-14.1
469.623625	28.91	46.00	17.09	117.0	V	225.0	-7.0
810.707375	23.44	46.00	22.56	282.0	V	20.0	2.1

1GHz ~ 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		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5180 MHz									
5149.32	43.21	PK	65	2.5	H	38.36	81.57	83.5	1.93
5149.32	22.89	Ave.	65	2.5	H	38.36	61.25	63.5	2.25
5352.23	31.78	PK	215	1.7	H	39.09	70.87	83.5	12.63
5352.23	16.97	Ave.	215	1.7	H	39.09	56.06	63.5	7.44
10360.00	44.23	PK	111	1.7	H	17.42	61.65	77.7	16.05
5200 MHz									
10400.00	44.14	PK	157	2.0	H	17.52	61.66	77.7	16.04
5240 MHz									
5149.68	32.04	PK	102	1.5	H	38.36	70.40	83.5	13.10
5149.68	17.17	Ave.	102	1.5	H	38.36	55.53	63.5	7.97
5351.44	31.96	PK	320	1.5	H	39.09	71.05	83.5	12.45
5351.44	17.30	Ave.	320	1.5	H	39.09	56.39	63.5	7.11
10480.00	44.12	PK	155	2.3	H	17.25	61.37	77.7	16.33
802.11n20									
5180 MHz									
5149.53	45.5	PK	222	1.1	H	38.36	83.86	83.5	0.63
5149.53	25.84	Ave.	222	1.1	H	38.36	64.20	63.5	0.67
5350.57	31.67	PK	303	1.7	H	39.09	70.76	83.5	12.74
5350.57	17.01	Ave.	303	1.7	H	39.09	56.10	63.5	7.40
10360.00	44.21	PK	147	1.7	H	17.42	61.63	77.7	16.07
5200 MHz									
10400.00	44.15	PK	43	2.0	H	17.52	61.67	77.7	16.03
5240 MHz									
5147.62	31.88	PK	83	2.4	H	38.36	70.24	83.5	13.26
5147.62	17.20	Ave.	83	2.4	H	38.36	55.56	63.5	7.94
5350.57	32.21	PK	29	1.7	H	39.09	71.30	83.5	12.20
5350.57	17.33	Ave.	29	1.7	H	39.09	56.42	63.5	7.08
10480.00	44.13	PK	264	2.4	H	17.25	61.38	77.7	16.32

Frequency (MHz)	Receiver		Turntable	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.	Degree	Height (m)	Polar (H / V)			Limit (dBμV/m)	Margin (dB)
802.11ac20									
5180 MHz									
5148.59	47.91	PK	304	1.5	H	38.36	86.27	83.5	0.55
5148.59	25.83	Ave.	304	1.5	H	38.36	64.19	63.5	0.43
5351.17	31.87	PK	147	2.2	H	39.09	70.96	83.5	12.54
5351.17	17.10	Ave.	147	2.2	H	39.09	56.19	63.5	7.31
10360.00	44.13	PK	312	1.5	H	17.42	61.55	77.7	16.15
5200 MHz									
10400.00	44.09	PK	169	1.1	H	17.52	61.61	77.7	16.09
5240 MHz									
5147.86	31.99	PK	15	2.3	H	38.36	70.35	83.5	13.15
5147.86	17.21	Ave.	15	2.3	H	38.36	55.57	63.5	7.93
5352.67	32.51	PK	321	1.8	H	39.09	71.60	83.5	11.90
5352.67	17.27	Ave.	321	1.8	H	39.09	56.36	63.5	7.14
10480.00	44.07	PK	321	2.3	H	17.25	61.32	77.7	16.38

5725-5850 MHz:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11a									
5745 MHz									
5628.62	31.72	PK	16	1.5	H	39.46	71.18	77.7	6.52
5690.99	32.94	PK	52	2.2	H	39.49	72.43	108.03	35.60
5711.82	31.81	PK	48	1.2	H	39.49	71.30	118.01	46.71
5721.17	32.64	PK	255	1.8	H	39.49	72.13	122.94	50.81
11490.00	41.28	PK	326	1.9	H	17.47	58.75	83.5	24.75
11490.00	29.73	Ave.	326	1.9	H	17.47	47.20	63.5	16.30
5785 MHz									
11570.00	41.28	PK	54	1.1	H	17.51	58.79	83.5	24.71
11570.00	29.08	Ave.	54	1.1	H	17.51	46.59	63.5	16.91
5825 MHz									
5854.29	33.42	PK	42	1.9	H	39.87	73.29	121.92	48.63
5873.80	33.43	PK	351	1.9	H	39.87	73.30	115.04	41.74
5903.18	33.23	PK	327	1.7	H	39.87	73.10	93.85	20.75
5954.12	33.45	PK	360	1.3	H	39.84	73.29	77.7	4.41
11650.00	42.02	PK	234	2.4	H	16.18	58.20	83.5	25.30
11650.00	29.36	Ave.	234	2.4	H	16.18	45.54	63.5	17.96
802.11n20									
5745 MHz									
5639.54	33.05	PK	239	2.0	H	39.46	72.51	77.7	5.19
5682.67	32.99	PK	331	2.4	H	39.49	72.48	101.88	29.40
5718.60	34.76	PK	143	1.7	H	39.49	74.25	119.91	45.66
5720.67	37.09	PK	264	1.1	H	39.49	76.58	121.83	45.25
11490.00	41.35	PK	111	1.5	H	17.47	58.82	83.5	24.68
11490.00	28.14	Ave.	111	1.5	H	17.47	45.61	63.5	17.89
5785 MHz									
11570.00	41.42	PK	17	1.5	H	17.51	58.93	83.5	24.57
11570.00	28.01	Ave.	17	1.5	H	17.51	45.52	63.5	17.98
5825 MHz									
5850.99	33.77	PK	337	2.4	H	39.87	73.64	129.44	55.80
5862.21	34.33	PK	136	2.2	H	39.87	74.20	118.28	44.08
5900.94	34.72	PK	250	1.3	H	39.87	74.59	95.5	20.91
5950.79	34.01	PK	62	1.9	H	39.84	73.85	77.7	3.85
11650.00	41.75	PK	126	1.9	H	16.18	57.93	83.5	25.57
11650.00	29.05	Ave.	126	1.9	H	16.18	45.23	63.5	18.27

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	FCC Part 15.407/205/209	
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
802.11ac20									
5745 MHz									
5630.86	31.14	PK	36	1.5	H	39.46	70.60	77.7	7.10
5651.63	33.09	PK	279	1.6	H	39.49	72.58	78.91	6.33
5717.29	31.97	PK	319	1.0	H	39.49	71.46	119.54	48.08
5724.80	37.48	PK	58	2.3	H	39.49	76.97	131.24	54.27
11490.00	41.35	PK	326	1.9	H	17.47	58.82	83.5	24.68
11490.00	28.22	Ave.	326	1.9	H	17.47	45.69	63.5	17.81
5785 MHz									
11570.00	41.37	PK	104	1.1	H	17.51	58.88	83.5	24.62
11570.00	27.88	Ave.	104	1.1	H	17.51	45.39	63.5	18.11
5825 MHz									
5850.69	36.46	PK	212	1.2	H	39.87	76.33	130.11	53.78
5864.91	34.90	PK	223	1.1	H	39.87	74.77	117.53	42.76
5897.03	33.01	PK	347	2.0	H	39.87	72.88	98.4	25.52
5925.18	34.33	PK	307	2.3	H	39.97	74.30	77.7	3.40
11650.00	41.67	PK	351	2.0	H	16.18	57.85	83.5	25.65
11650.00	29.10	Ave.	351	2.0	H	16.18	45.28	63.5	18.22

Simultaneous Transmission (worst case: 802.11b mode 2472MHz & 802.11a mode 5200MHz)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Test Distance
	Reading (dBμV)	PK/QP/Ave.		Height (m)	Polar (H/V)					(m)
480.02	47.02	QP	45	1.1	H	-5.3	41.72	46	4.28	3
480.02	48.13	QP	45	1.1	V	-5.3	42.83	46	3.17	3
4944.00	43.31	PK	15	2.2	H	6.76	50.07	74	23.93	3
4944.00	32.22	Ave.	15	2.2	H	6.76	38.98	54	15.02	3
10400.00	44.62	PK	146	2.0	H	17.52	62.14	77.7	15.56	1

Note:

Corrected Amplitude = Corrected Factor + Reading

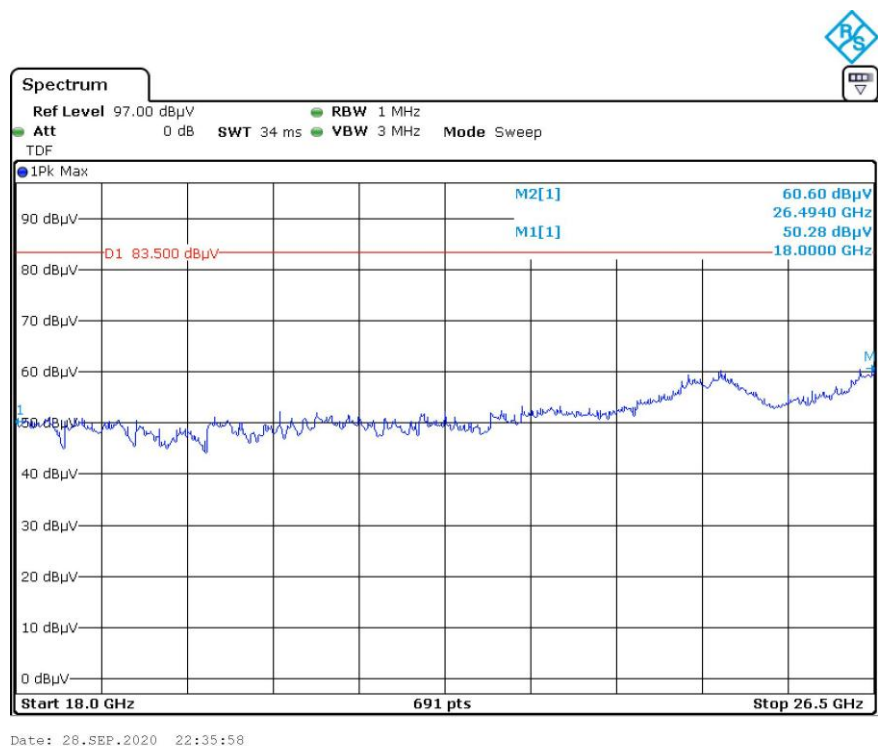
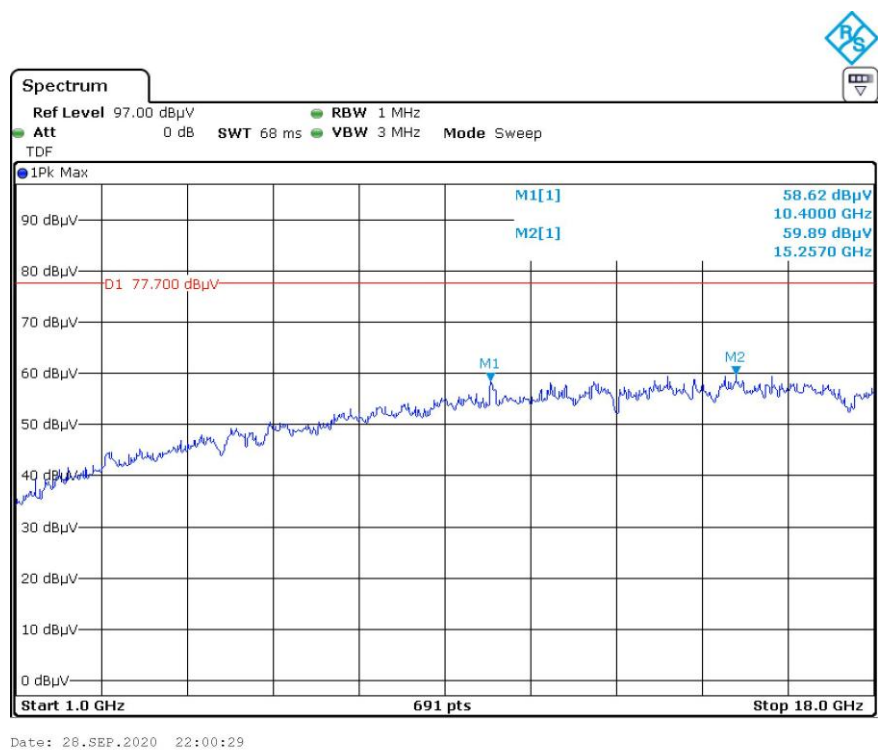
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor

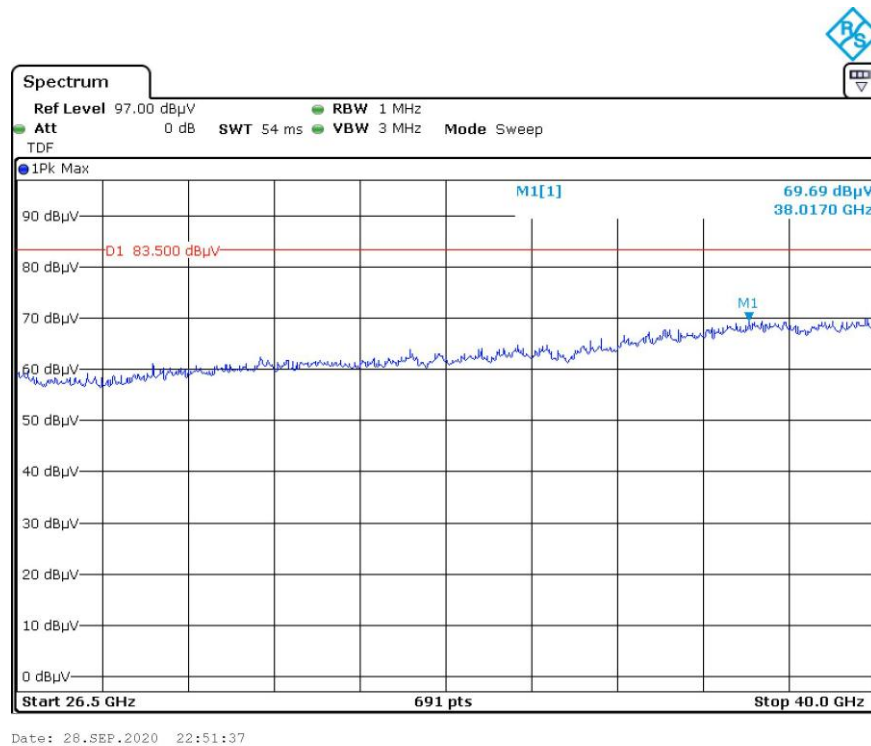
Margin = Limit- Corr. Amplitude

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

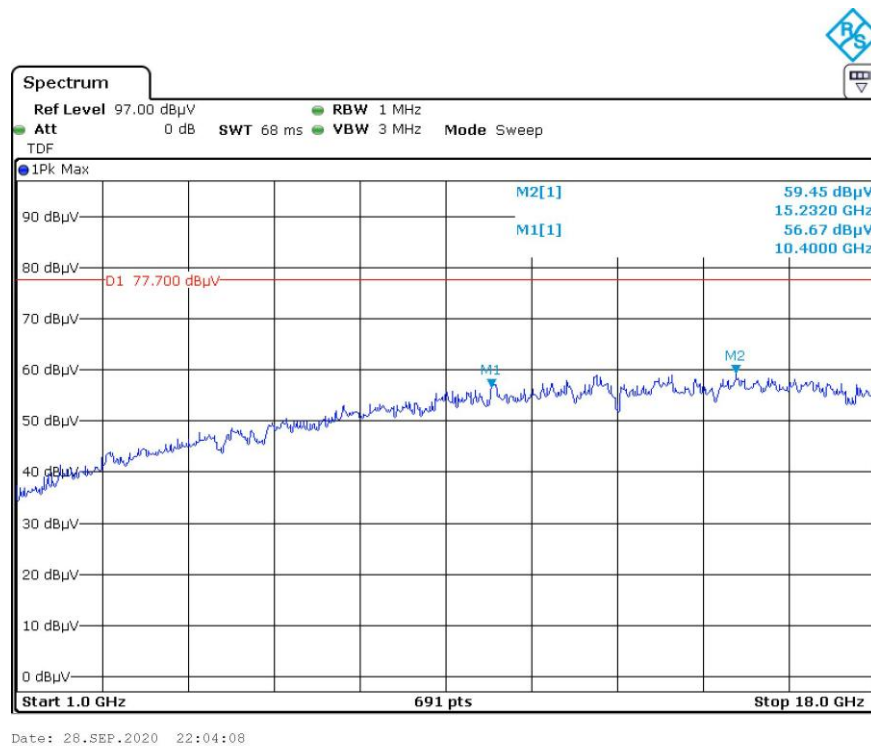
Peak

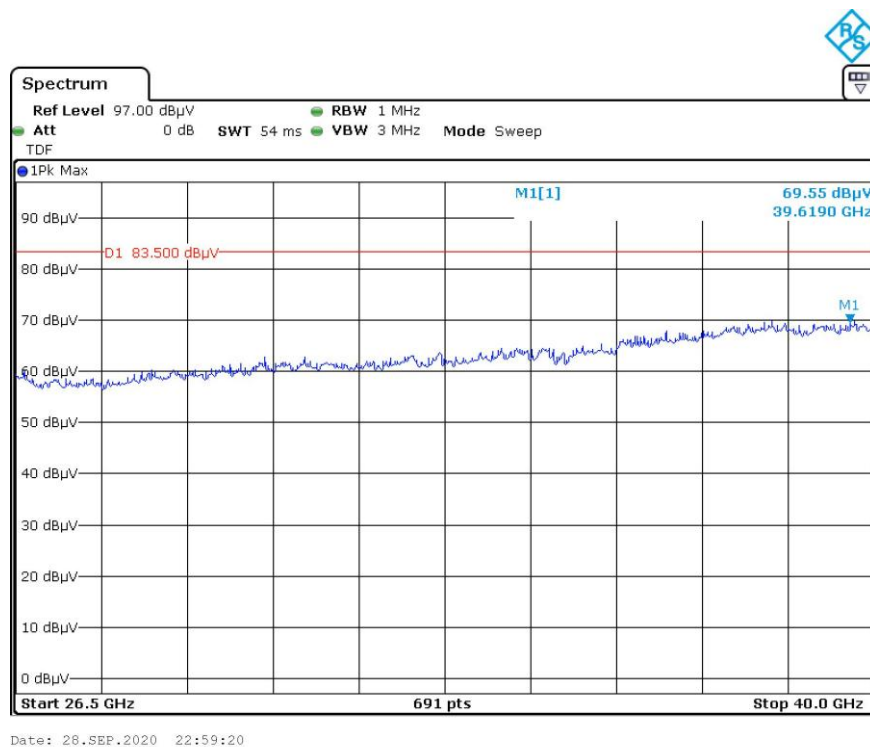
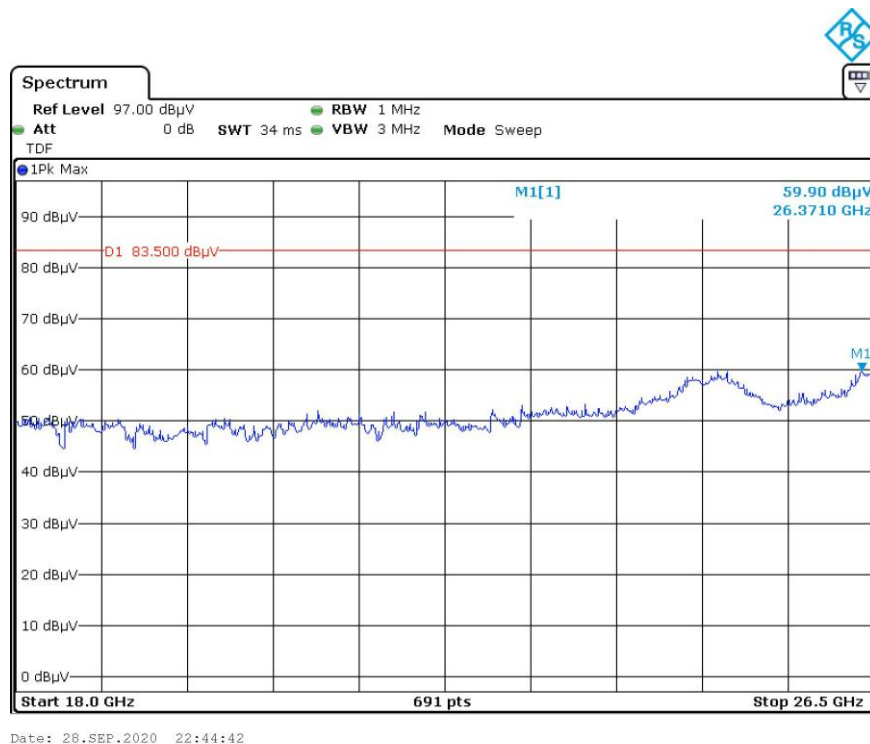
Pre-scan with 802.11a 5200MHz

Horizontal

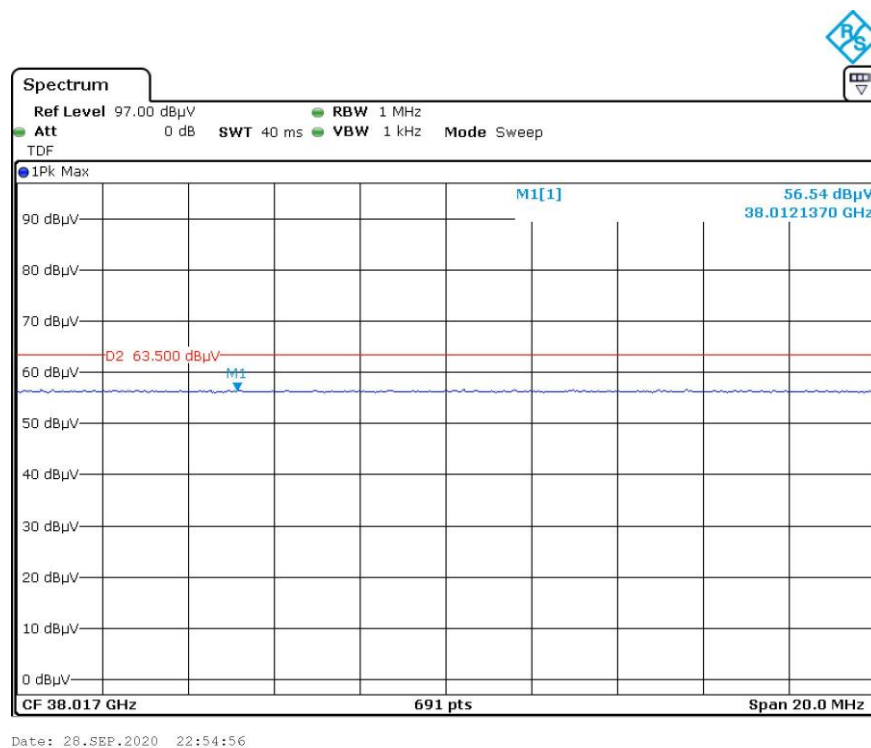
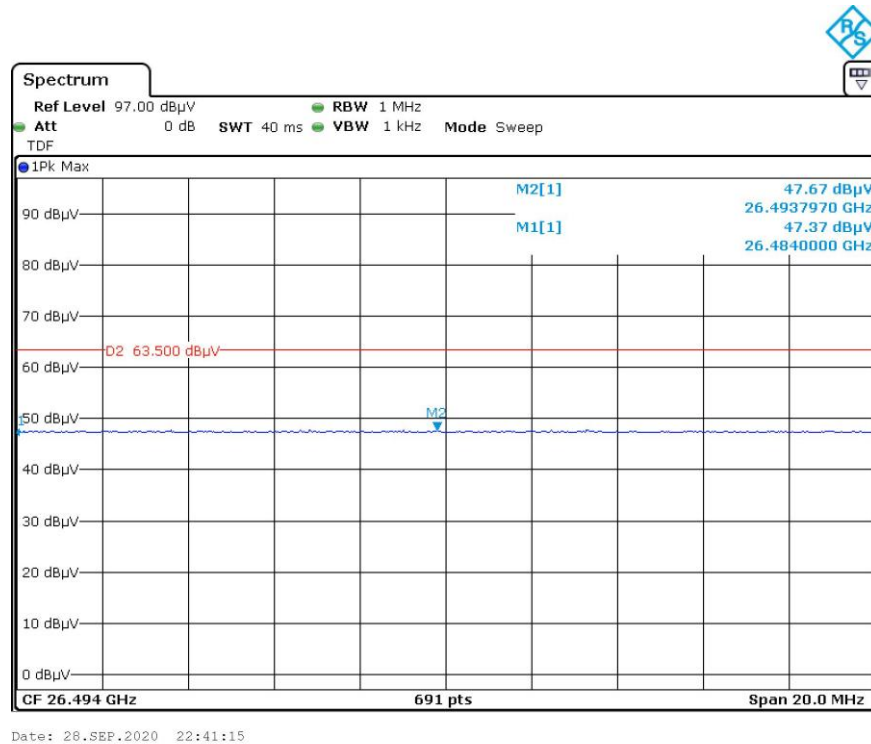


Vertical

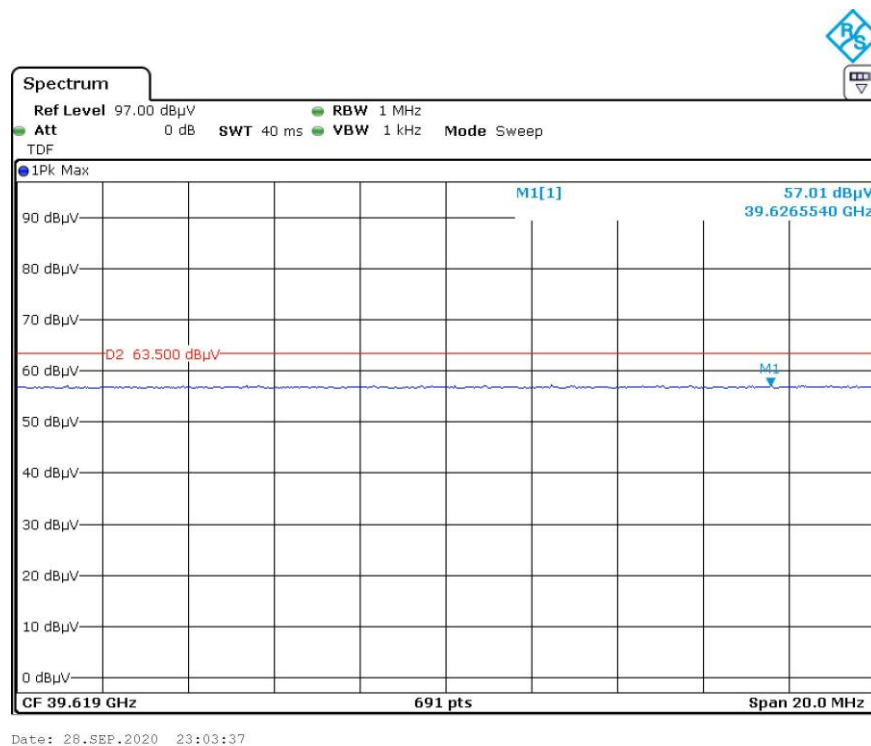
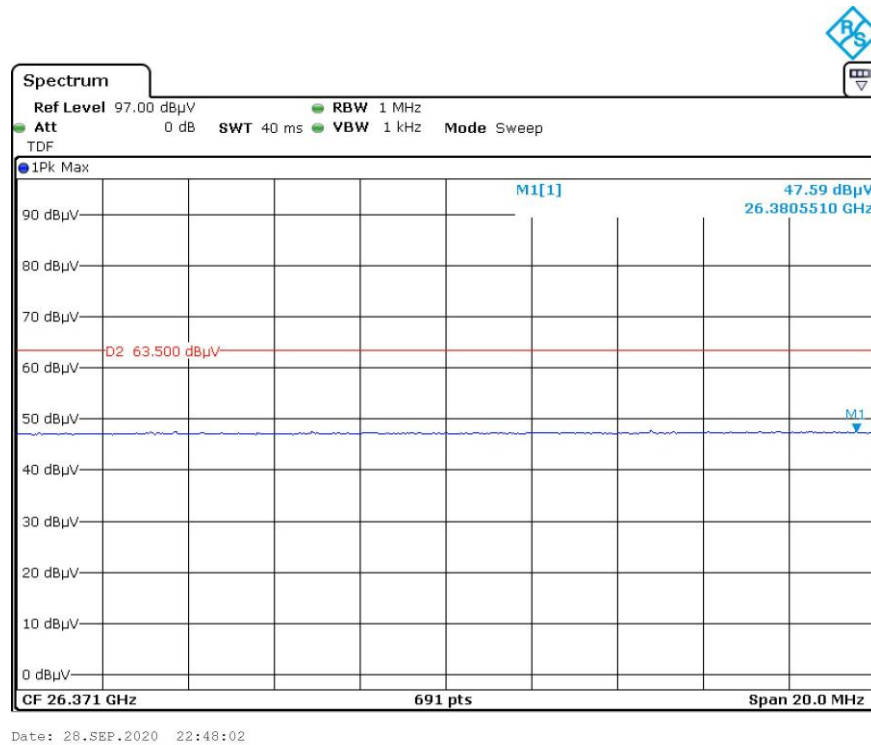




Average Horizontal



Vertical



§15.407(B) (1), (4) –OUT OF BAND EMISSION

Applicable Standard

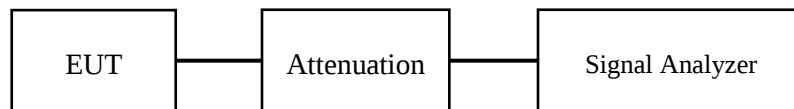
FCC §15.407 (b) (1), (4);

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 EIRP of –27dBm/MHz.

For transmitters operating in the 5.725–5.825 GHz band: All emissions shall be limited to a level of –27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The Resolution bandwidth is set to 1MHz, The Video bandwidth is set to ≥ 1 MHz, report the peak value out of the operating band.
3. Repeat above procedures until all frequencies measured were complete.
4. when necessary, provided the measured energy is integrated to show the total power over 1 MHz.



Test Data

Environmental Conditions

Temperature:	27°C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Hailey Yang on 2020-09-25.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.407(a) (1)(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

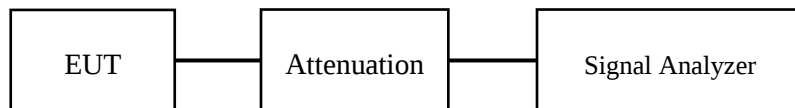
1. Emission Bandwidth (EBW)

- 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 5.715-5.85 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:	27°C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Hailey Yang from 2020-09-24 to 2020-10-28.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.407(a) (1) (3) – CONDUCTED TRANSMITTER OUTPUT POWER

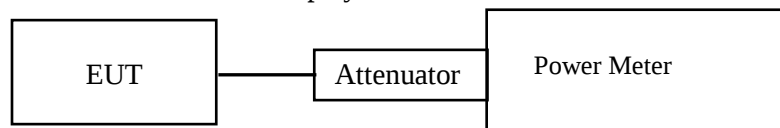
Applicable Standard

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 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 colocated 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:	27°C
Relative Humidity:	56%
ATM Pressure:	101.0 kPa

The testing was performed by Hailey Yang on 2020-09-24.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.407(a) (1) (3) - POWER SPECTRAL DENSITY

Applicable Standard

(ii) 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 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 $RBW \geq 1/T$, where T is defined in section II.B.1.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log(500 \text{ kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ 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 $10 \log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ 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:	27°C
Relative Humidity:	56%
ATM Pressure:	101 kPa

The testing was performed by Hailey Yang from 2020-09-24 to 2020-10-28.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

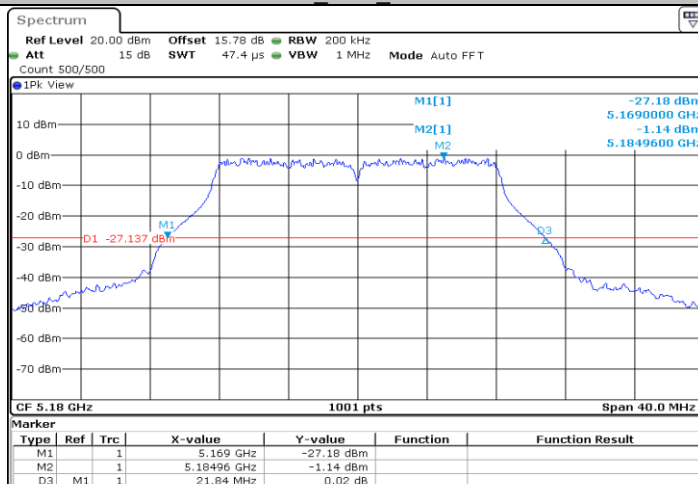
APPENDIX

AppendixA1:Emission Bandwidth Test Result

Test Mode	Antenna	Channel	26db EBW [MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	21.840	---	PASS
		5200	21.520	---	PASS
		5240	22.000	---	PASS
11N20SISO	Ant1	5180	21.560	---	PASS
		5200	21.360	---	PASS
		5240	21.400	---	PASS
11AC20SISO	Ant1	5180	21.720	---	PASS
		5200	21.840	---	PASS
		5240	21.720	---	PASS

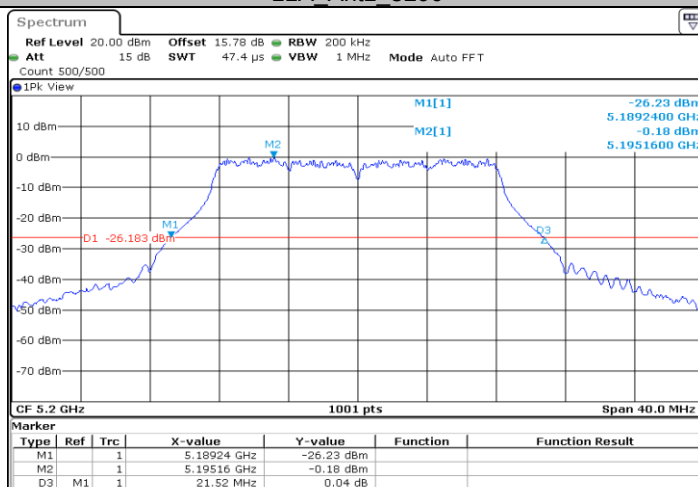
Test Graphs

11A_Ant1_5180



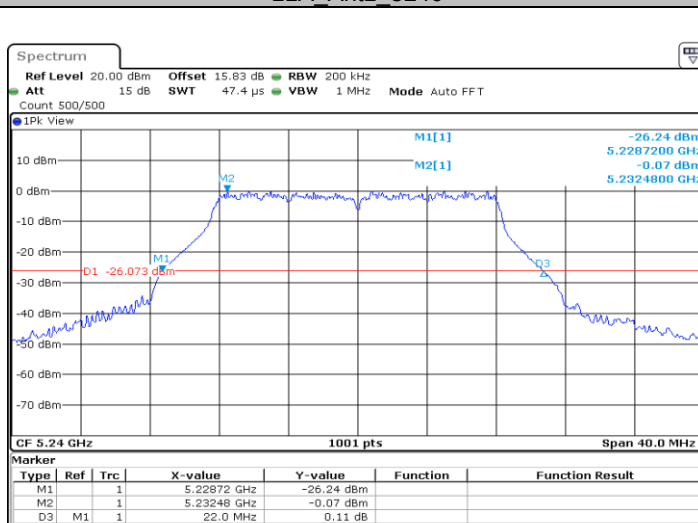
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11A_Ant1_5200



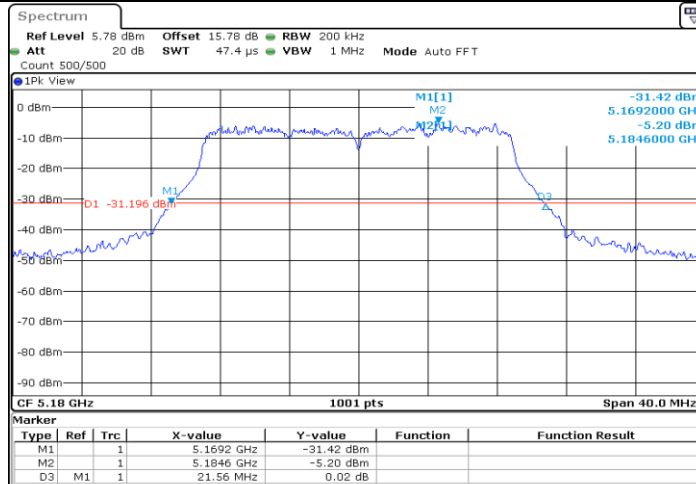
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11A_Ant1_5240



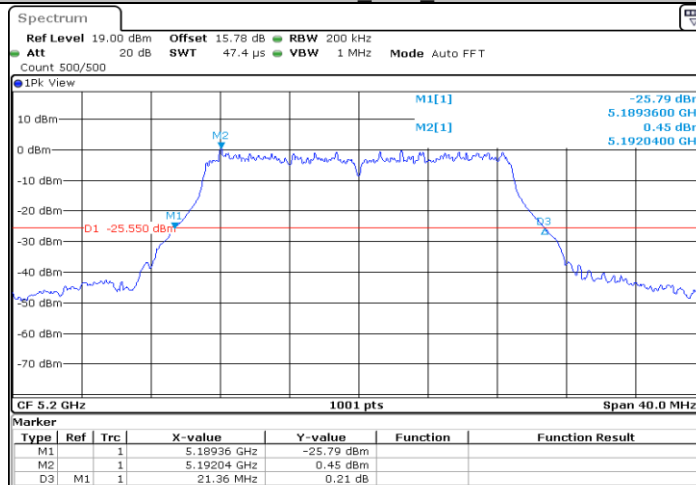
Date: 24.SEP.2020 20:06:53

11N20SISO Ant1 5180



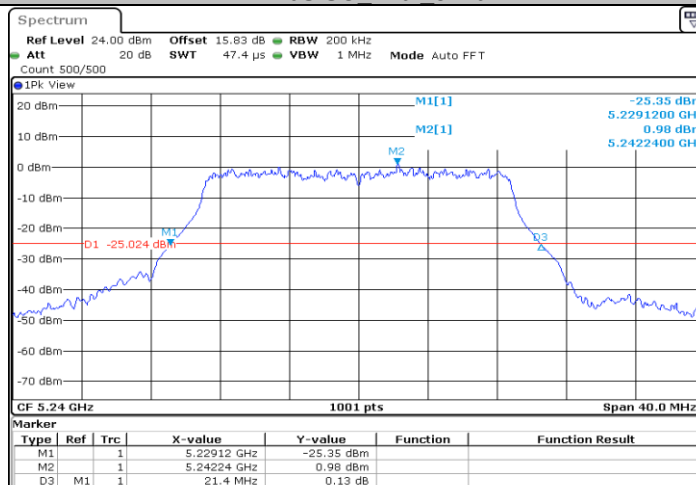
Date: 28.OCT.2020 15:54:40

11N20SISO Ant1 5200



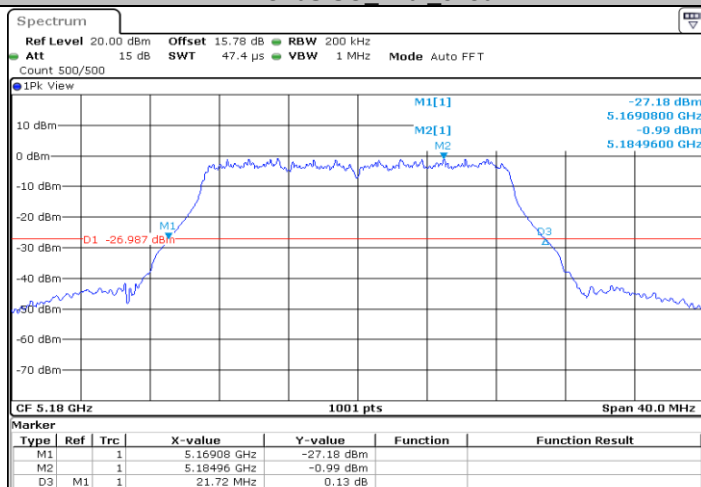
Date: 28.OCT.2020 16:00:48

11N20SISO Ant1 5240



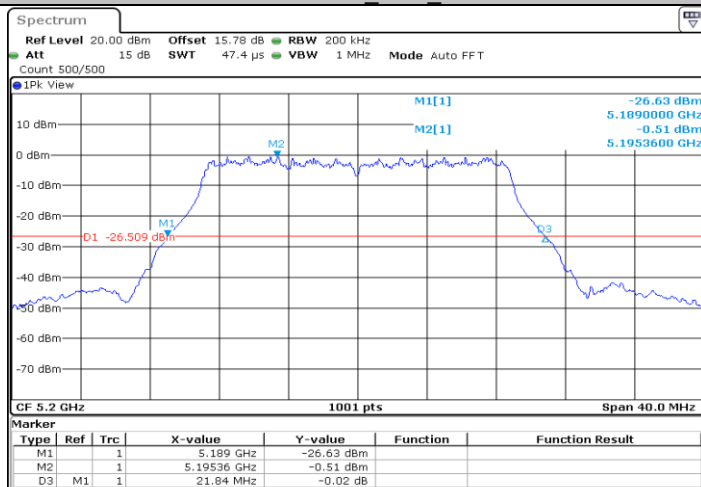
Date: 28.OCT.2020 16:02:42

11AC20SISO_Ant1_5180



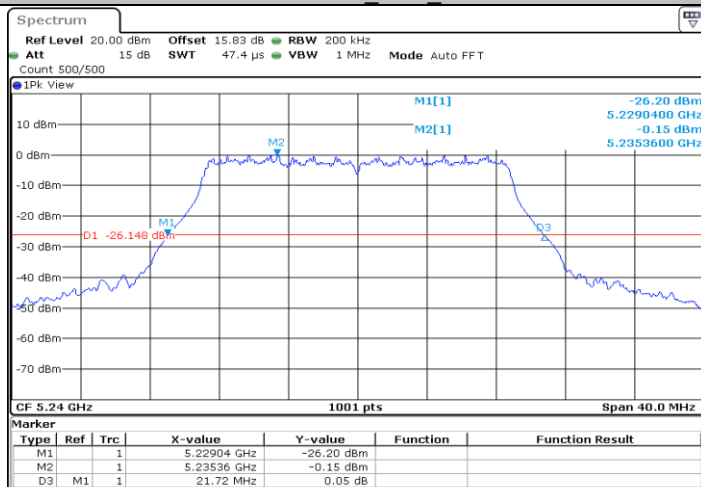
Date: 24.SEP.2020 20:28:26

11AC20SISO_Ant1_5200



Date: 24.SEP.2020 20:31:40

11AC20SISO_Ant1_5240

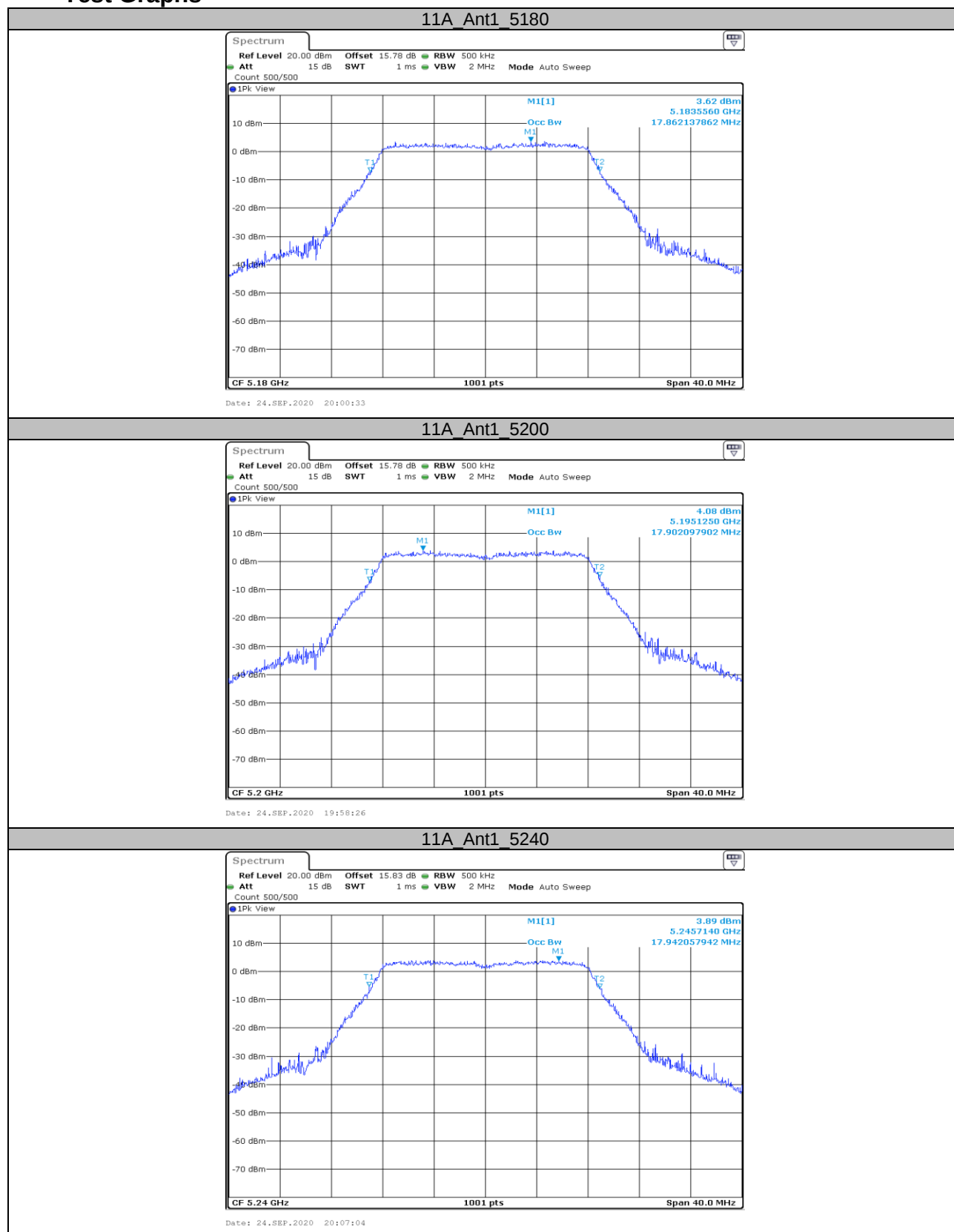


Date: 24.SEP.2020 20:38:06

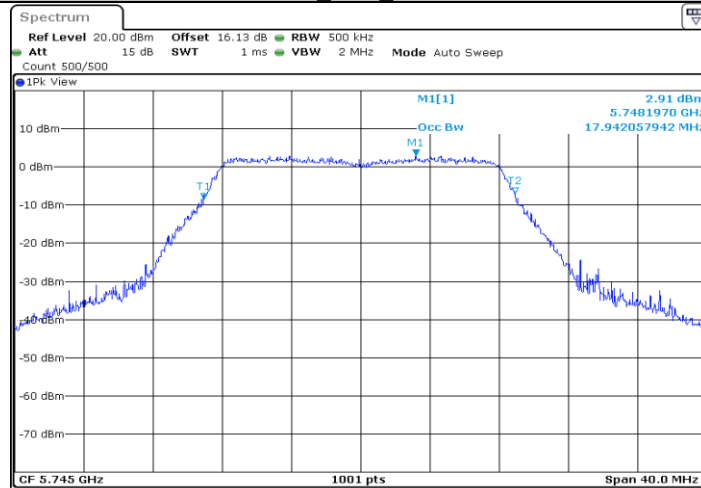
AppendixA2: Occupied channel bandwidth Test Result

Test Mode	Antenna	Channel	OCB [MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.862	---	PASS
		5200	17.902	---	PASS
		5240	17.942	---	PASS
		5745	17.942	---	PASS
		5785	17.902	---	PASS
		5825	17.982	---	PASS
11N20SISO	Ant1	5180	18.541	---	PASS
		5200	18.541	---	PASS
		5240	18.462	---	PASS
		5745	18.581	---	PASS
		5785	18.581	---	PASS
		5825	18.541	---	PASS
11AC20SISO	Ant1	5180	18.541	---	PASS
		5200	18.581	---	PASS
		5240	18.581	---	PASS
		5745	18.581	---	PASS
		5785	18.741	---	PASS
		5825	18.581	---	PASS

Test Graphs

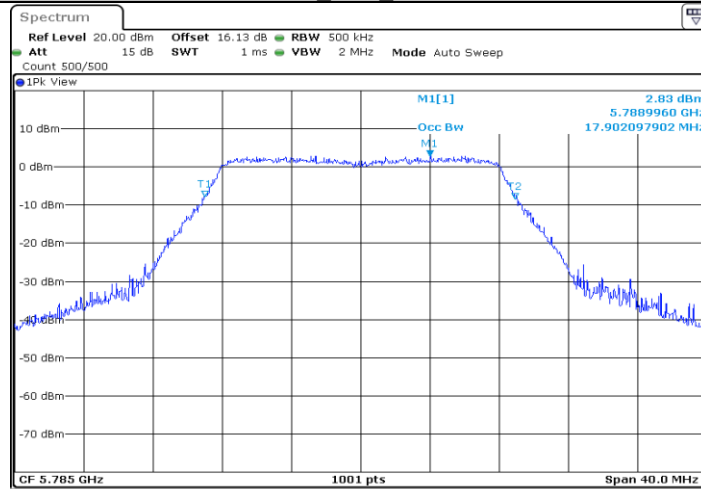


11A_Ant1_5745



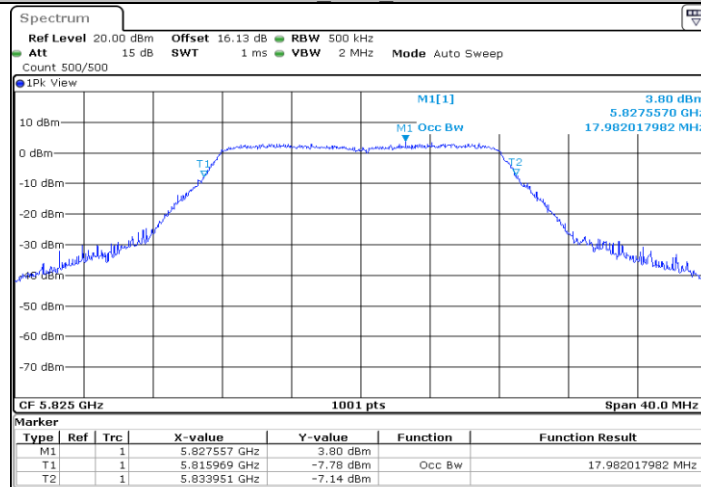
Date: 24.SEP.2020 20:13:54

11A_Ant1_5785



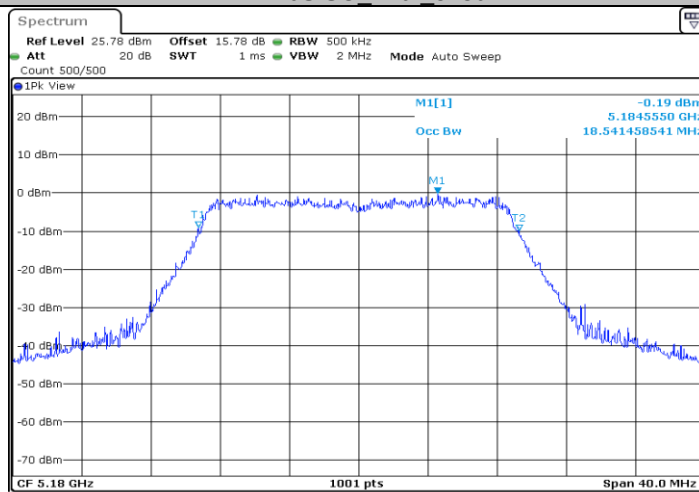
Date: 24.SEP.2020 20:18:02

11A_Ant1_5825



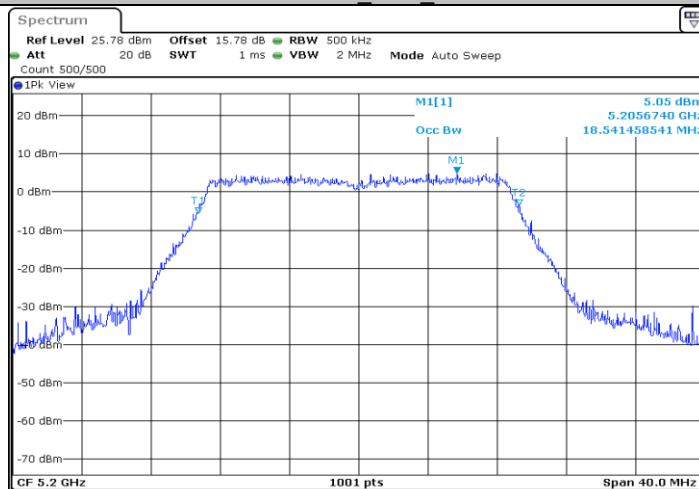
Date: 24.SEP.2020 20:24:18

11N20SISO_Ant1_5180



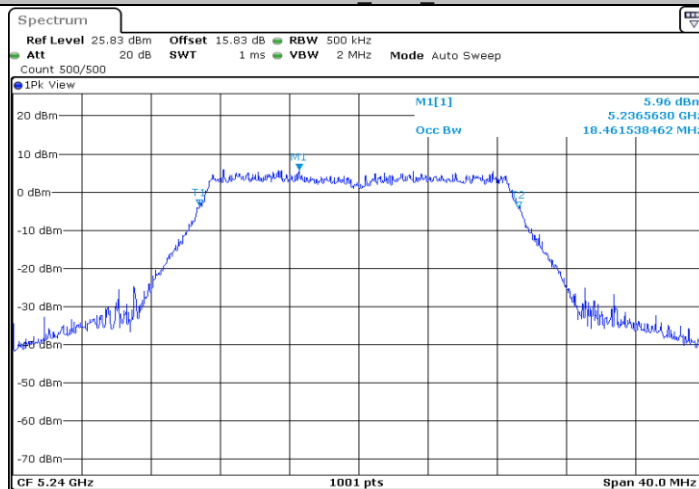
Date: 28.OCT.2020 15:54:51

11N20SISO_Ant1_5200



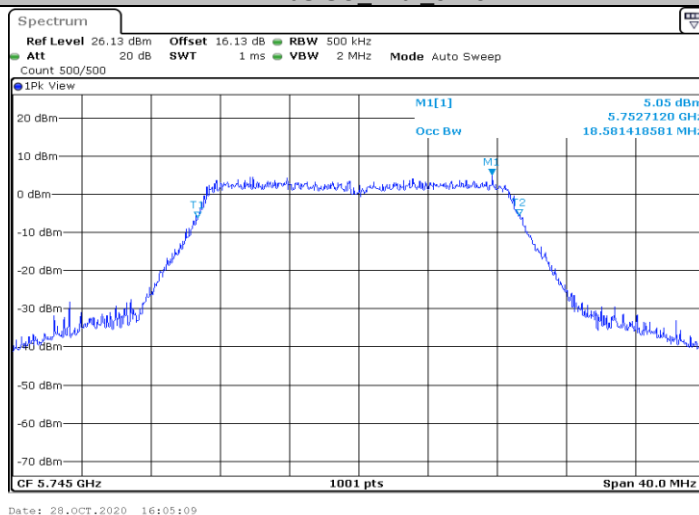
Date: 28.OCT.2020 16:01:00

11N20SISO_Ant1_5240

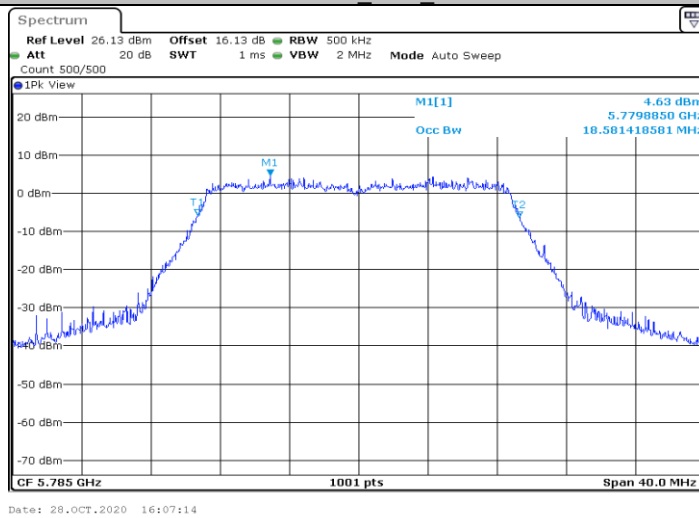


Date: 28.OCT.2020 16:02:53

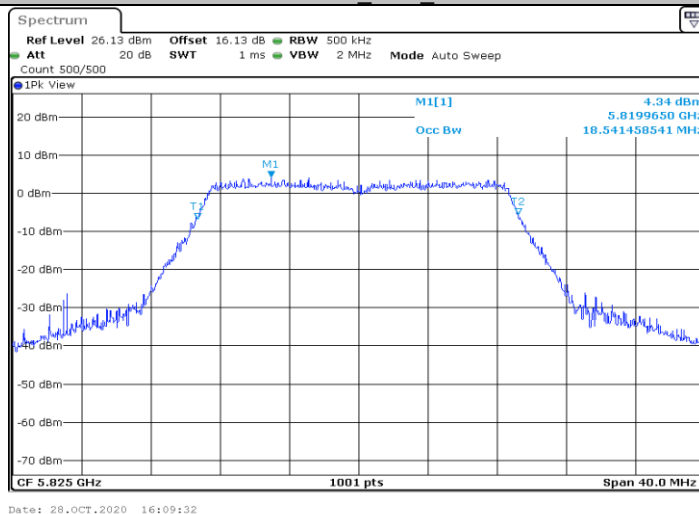
11N20SISO_Ant1_5745



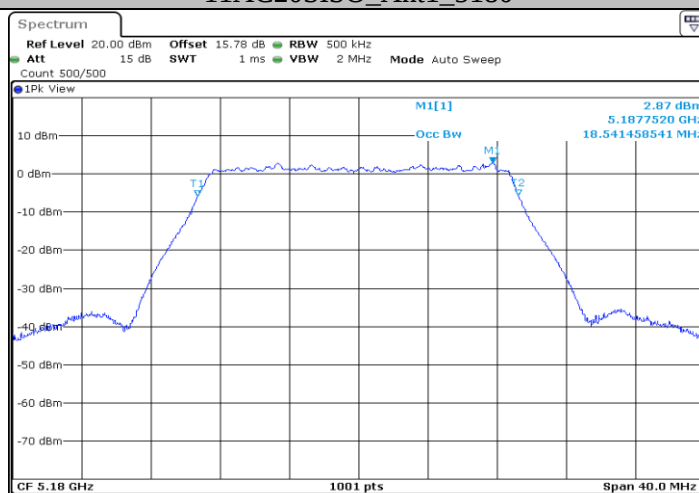
11N20SISO_Ant1_5785



11N20SISO_Ant1_5825

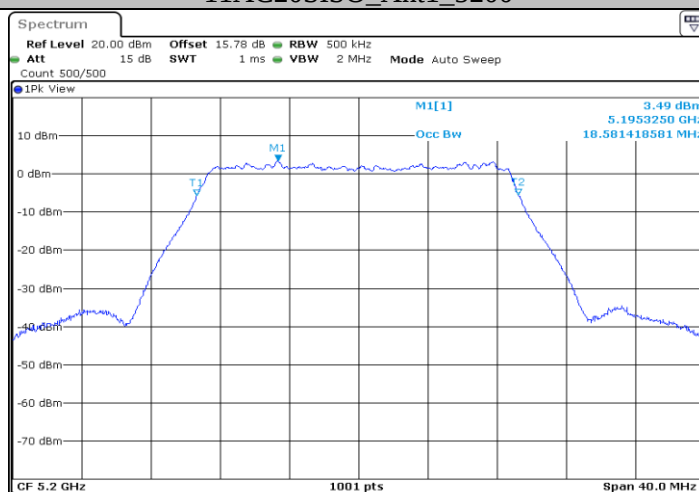


11AC20SISO_Ant1_5180



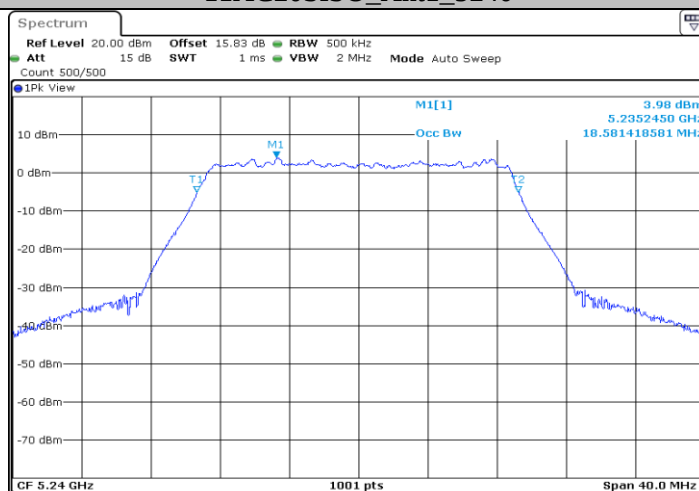
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11AC20SISO_Ant1_5200



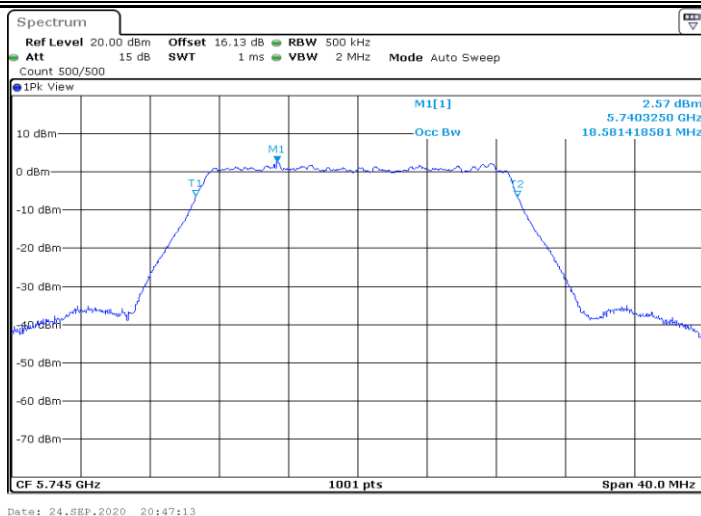
Date: 24.SEP.2020 20:31:51

11AC20SISO_Ant1_5240

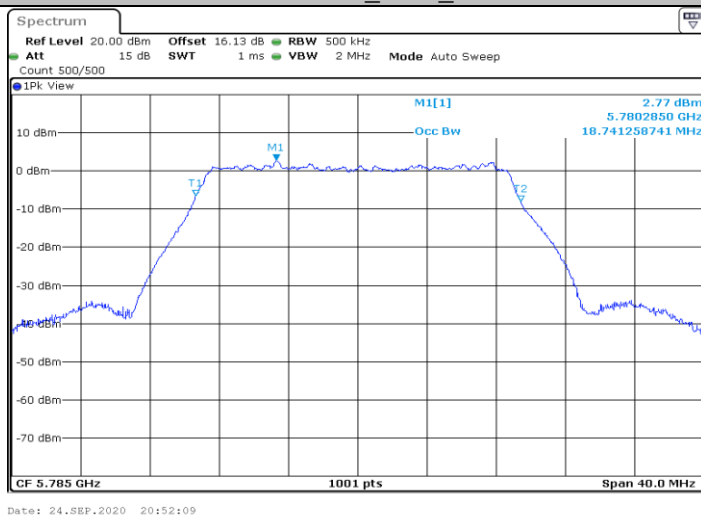


Date: 24.SEP.2020 20:38:17

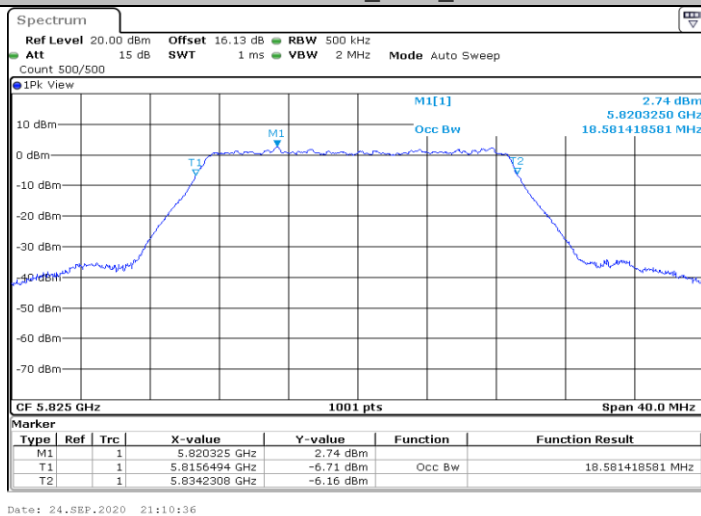
11AC20SISO_Ant1_5745



11AC20SISO_Ant1_5785



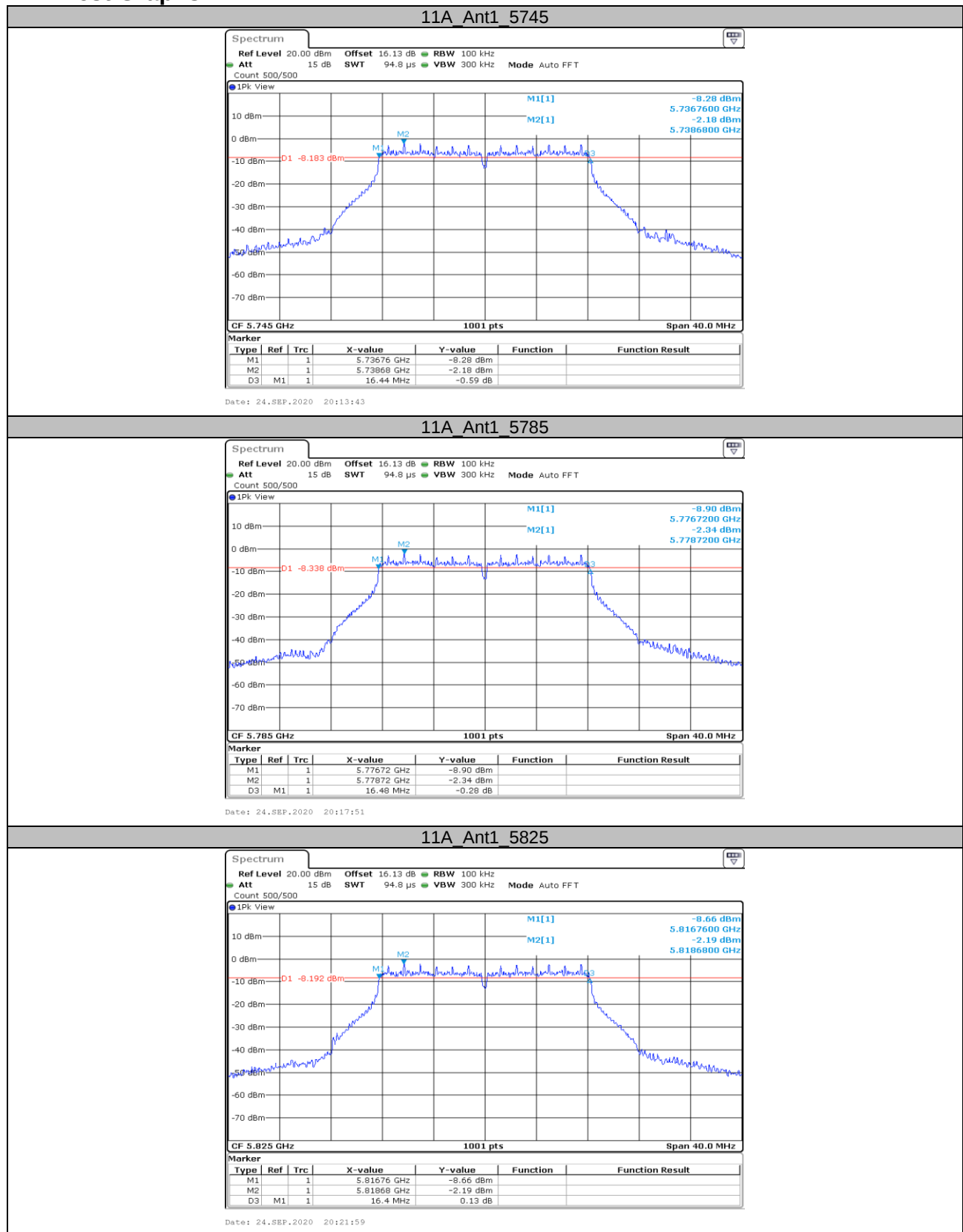
11AC20SISO_Ant1_5825



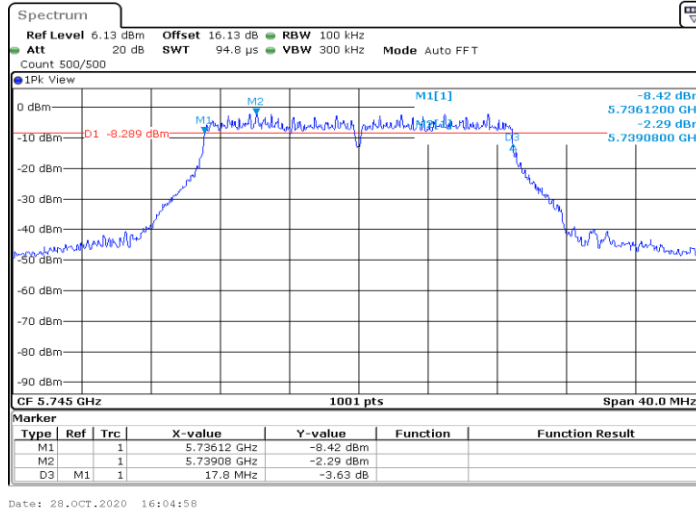
**AppendixA3: Min emission bandwidth
Test Result**

TestMode	Antenna	Channel	6db EBW [MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.440	0.5	PASS
		5785	16.480	0.5	PASS
		5825	16.400	0.5	PASS
11N20SISO	Ant1	5745	17.800	0.5	PASS
		5785	17.680	0.5	PASS
		5825	17.720	0.5	PASS
11AC20SISO	Ant1	5745	17.680	0.5	PASS
		5785	17.680	0.5	PASS
		5825	17.680	0.5	PASS

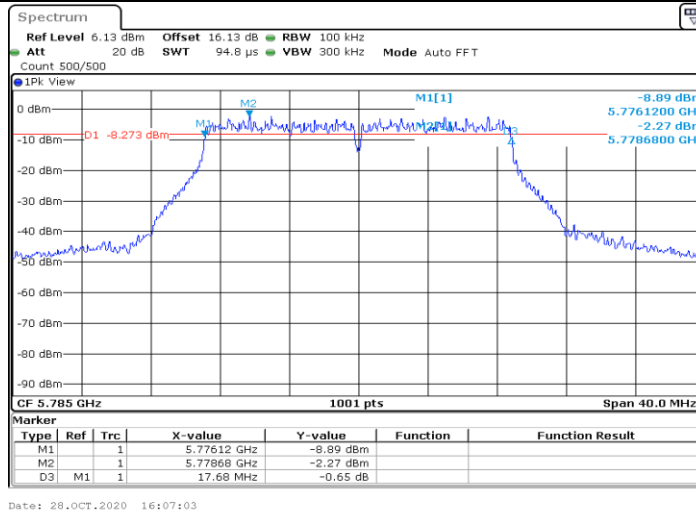
Test Graphs



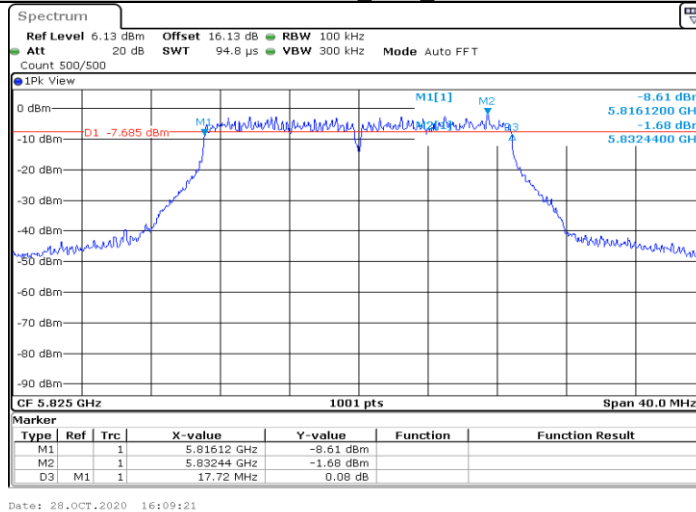
11N20SISO Ant1 5745



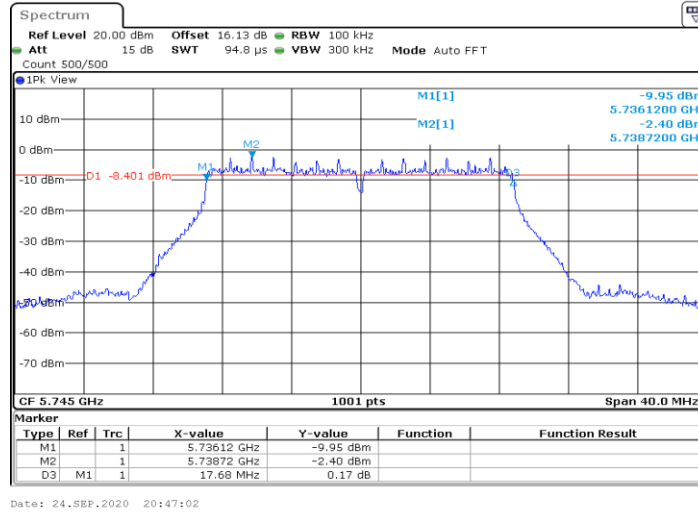
11N20SISO Ant1 5785



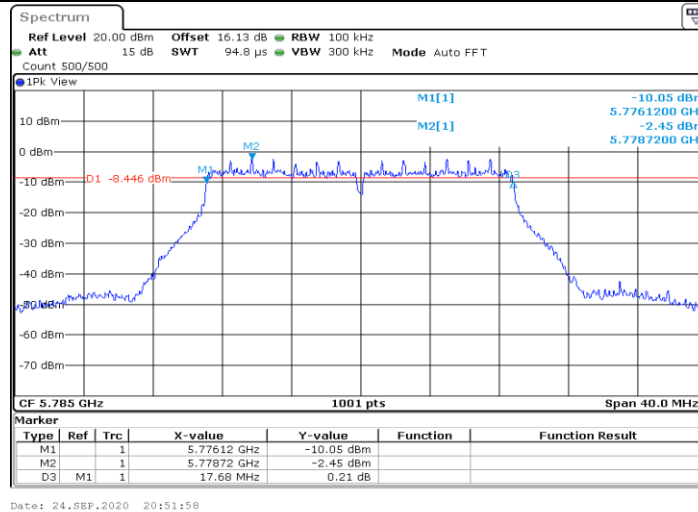
11N20SISO Ant1 5825



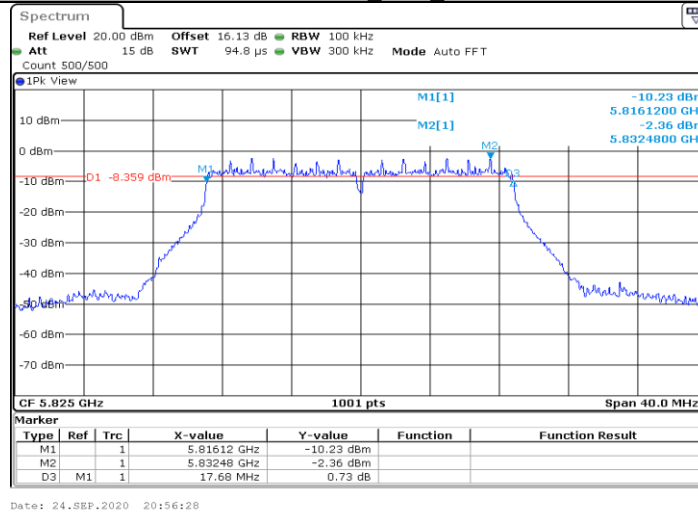
11AC20SISO Ant1 5745



11AC20SISO Ant1 5785



11AC20SISO Ant1 5825



AppendixB: Maximum conducted output power Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	10.76	<=23.98	PASS
		5200	11.22	<=23.98	PASS
		5240	11.48	<=23.98	PASS
		5745	10.26	<=30	PASS
		5785	10.07	<=30	PASS
		5825	9.98	<=30	PASS
11N20SISO	Ant1	5180	10.56	<=23.98	PASS
		5200	11.28	<=23.98	PASS
		5240	11.65	<=23.98	PASS
		5745	10.35	<=30	PASS
		5785	10.31	<=30	PASS
		5825	9.87	<=30	PASS
11AC20SISO	Ant1	5180	10.63	<=23.98	PASS
		5200	11.37	<=23.98	PASS
		5240	11.43	<=23.98	PASS
		5745	10.24	<=30	PASS
		5785	10.12	<=30	PASS
		5825	10.06	<=30	PASS

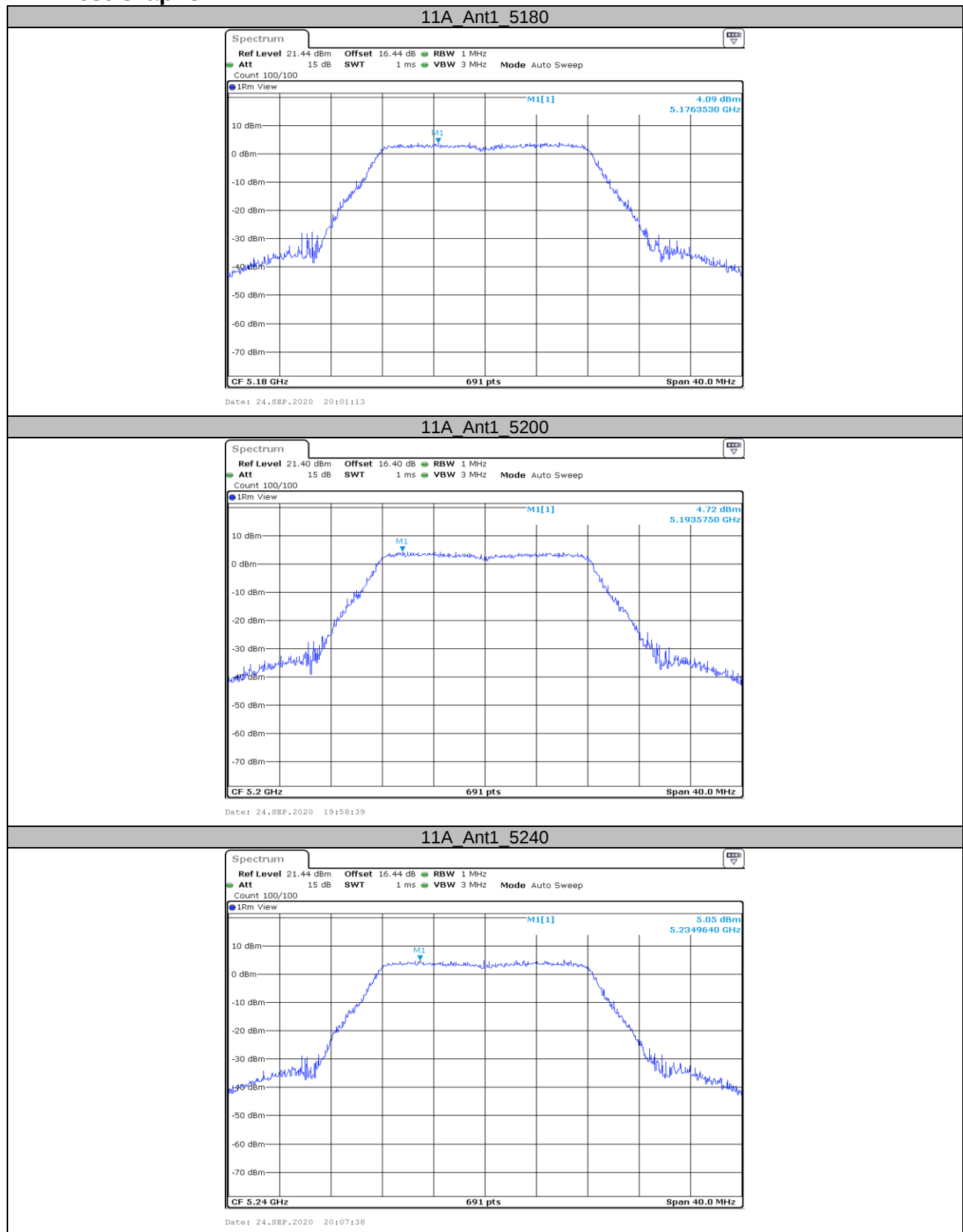
Note: The Duty Cycle Factor is compensated in the graph.
The product is a client device.

AppendixC: Maximum power spectral density Test Result

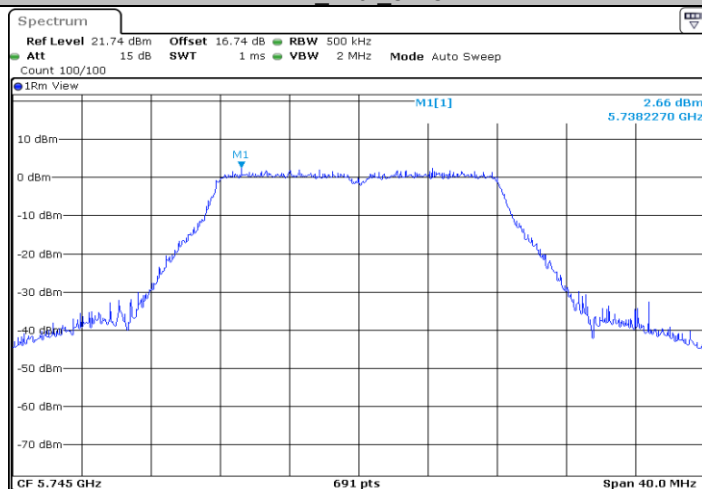
Test Mode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	4.09	<=11	PASS
		5200	4.72	<=11	PASS
		5240	5.05	<=11	PASS
		5745	2.66	<=30	PASS
		5785	2.27	<=30	PASS
		5825	2.09	<=30	PASS
11N20SISO	Ant1	5180	5.19	<=11	PASS
		5200	4.83	<=11	PASS
		5240	6.46	<=11	PASS
		5745	3.3	<=30	PASS
		5785	3.64	<=30	PASS
		5825	3.75	<=30	PASS
11AC20SISO	Ant1	5180	4.18	<=11	PASS
		5200	4.32	<=11	PASS
		5240	4.75	<=11	PASS
		5745	2.16	<=30	PASS
		5785	2.45	<=30	PASS
		5825	2.45	<=30	PASS

Note: 1.The Result and Limit Unit is dBm/500 kHz in the band 5.725–5.85 GHz.
 2. The Duty Cycle Factor and RBW Factor is compensated in the graph.
 3. The product is a client device.

Test Graphs

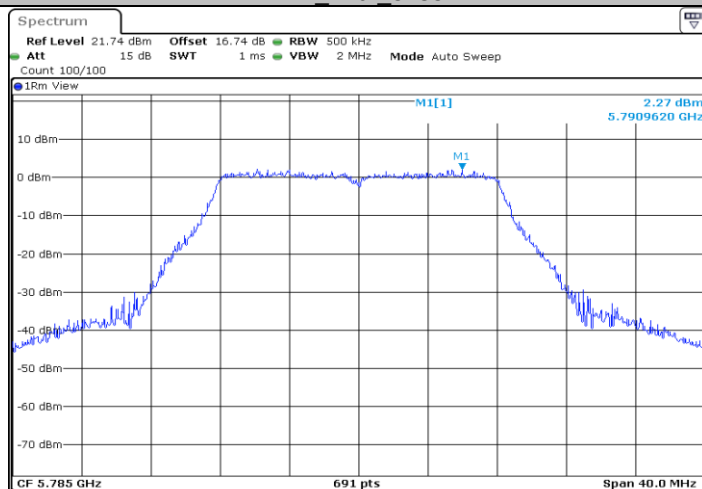


11A_Ant1_5745



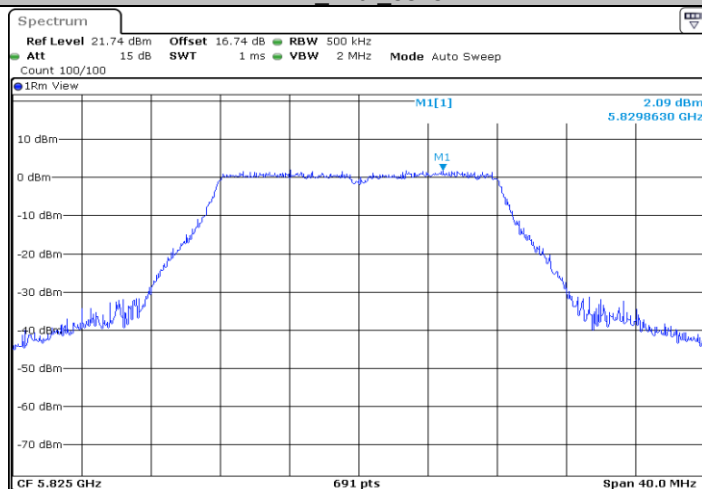
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11A_Ant1_5785



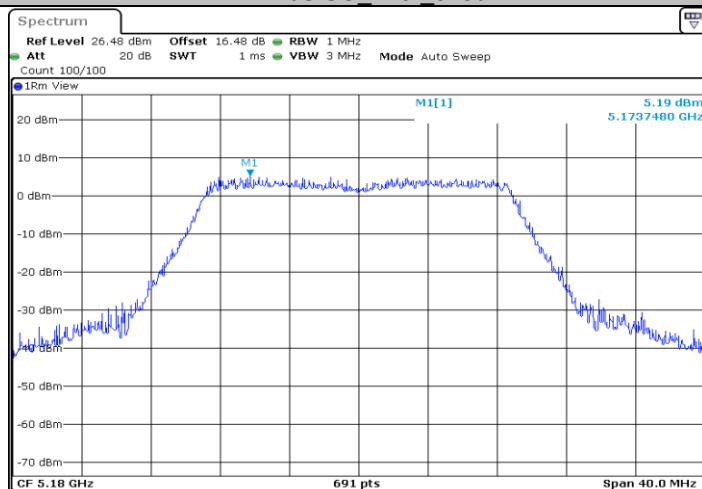
Date: 24.SEP.2020 20:18:36

11A_Ant1_5825

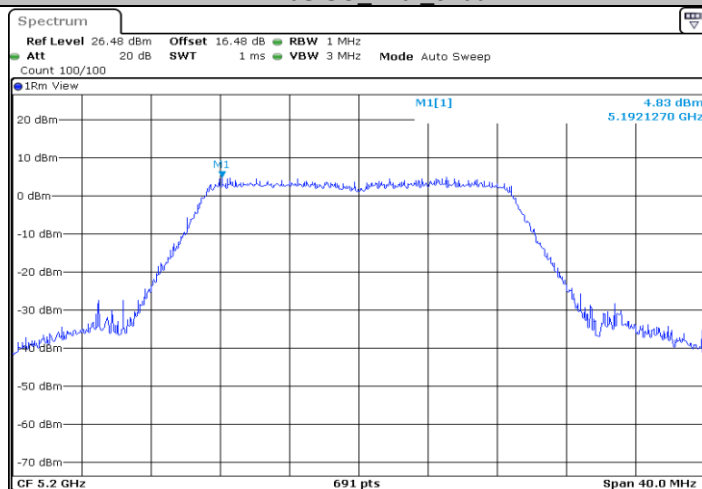


Date: 24.SEP.2020 20:22:33

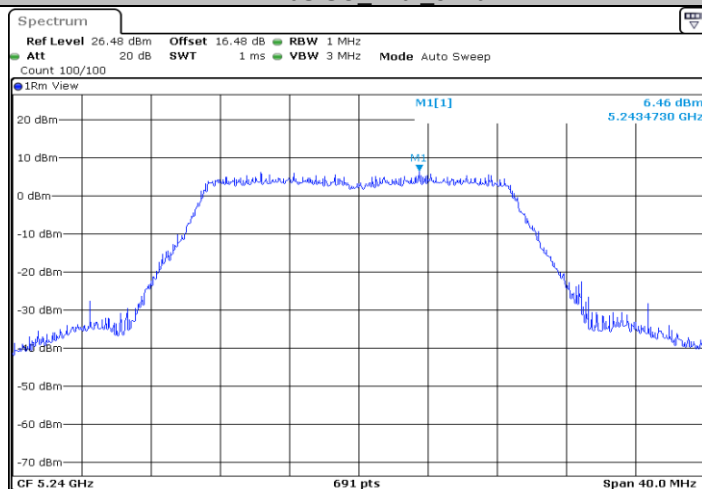
11N20SISO Ant1 5180



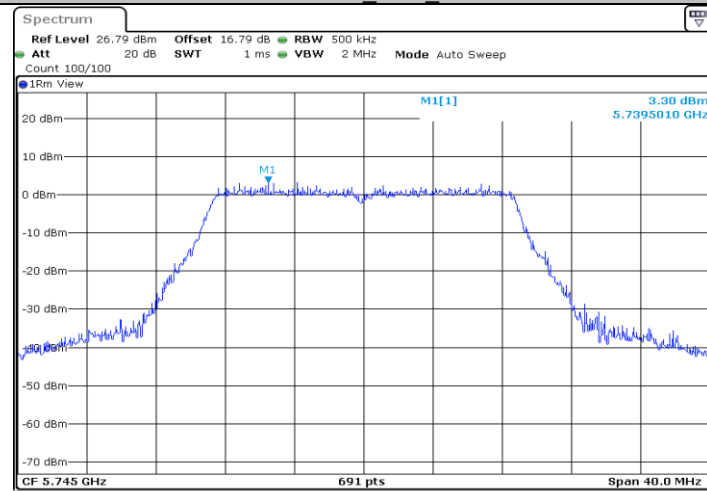
11N20SISO Ant1 5200



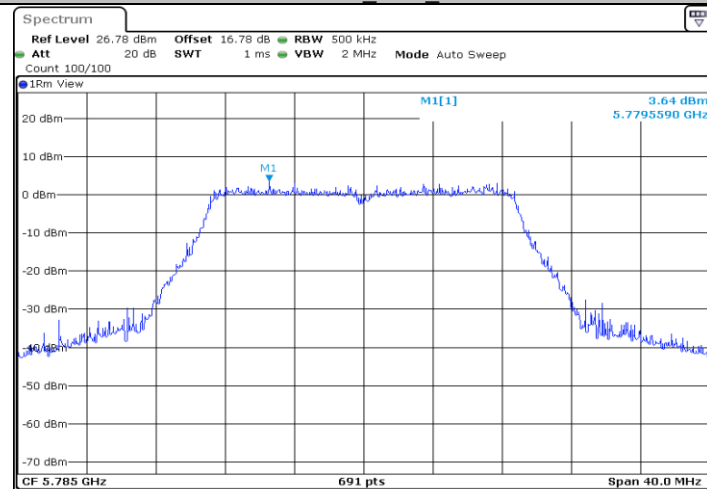
11N20SISO Ant1 5240



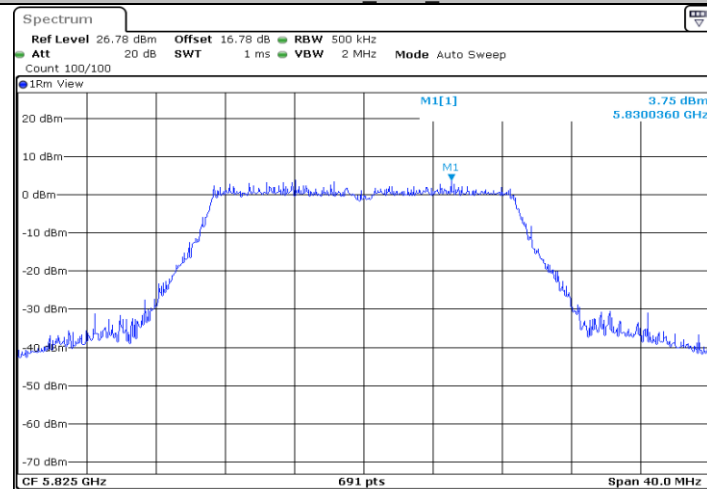
11N20SISO Ant1 5745



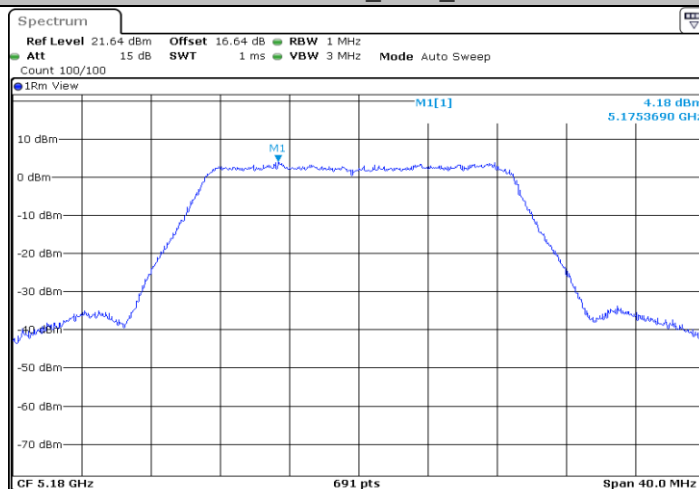
11N20SISO Ant1 5785



11N20SISO Ant1 5825

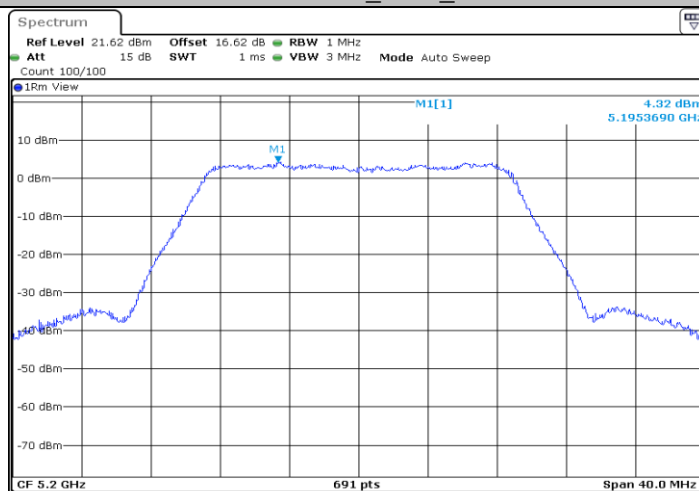


11AC20SISO_Ant1_5180



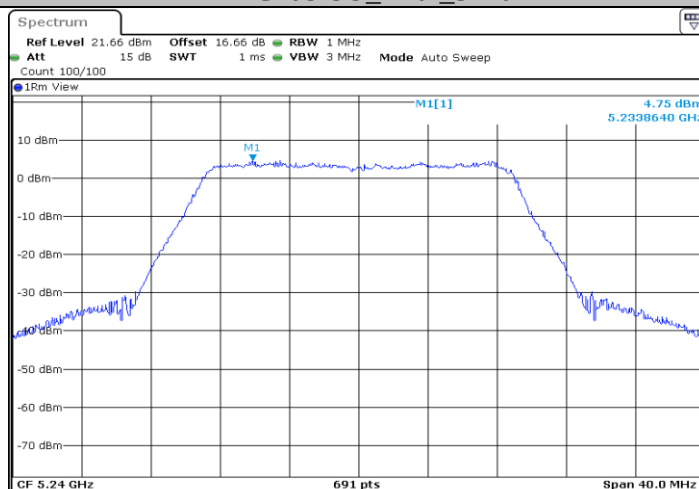
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11AC20SISO_Ant1_5200



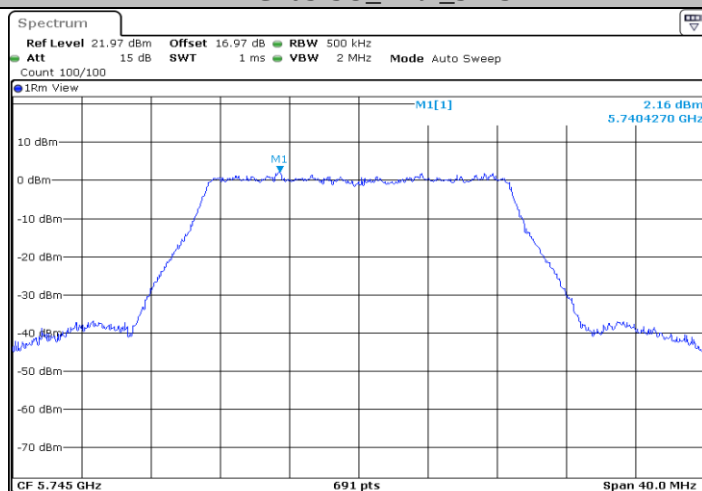
Date: 24.SEP.2020 20:32:24

11AC20SISO_Ant1_5240



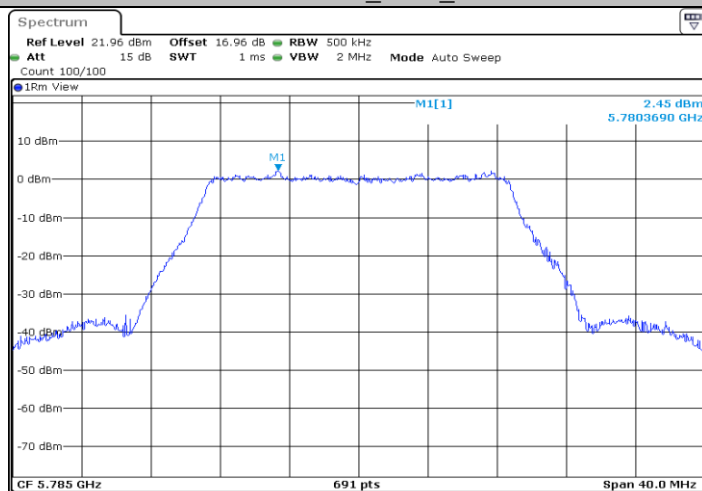
Date: 24.SEP.2020 20:38:51

11AC20SISO_Ant1_5745



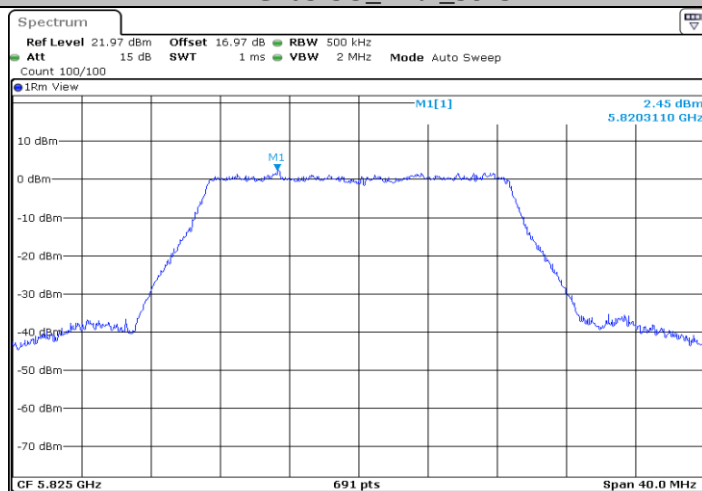
Date: 24.SEP.2020 20:47:46

11AC20SISO_Ant1_5785



Date: 24.SEP.2020 20:52:42

11AC20SISO_Ant1_5825



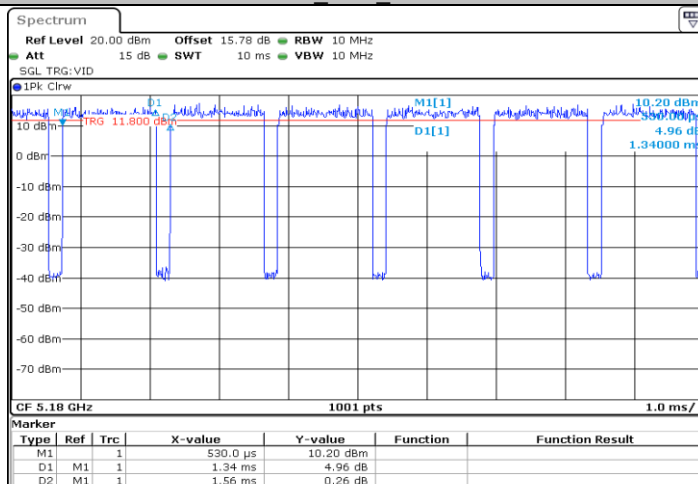
Date: 24.SEP.2020 20:57:13

AppendixH: DutyCycle**Test Result**

TestMode	Antenna	Channel	TransmissionDuration [ms]	Transmission Period [ms]	Duty Cycle [%]
11A	Ant1	5180	1.34	1.56	85.90
		5745	1.34	1.56	85.90
11N20SISO	Ant1	5180	1.26	1.48	85.14
		5745	0.96	1.17	82.05
11AC20SISO	Ant1	5180	0.96	1.17	82.05
		5745	0.95	1.17	81.20

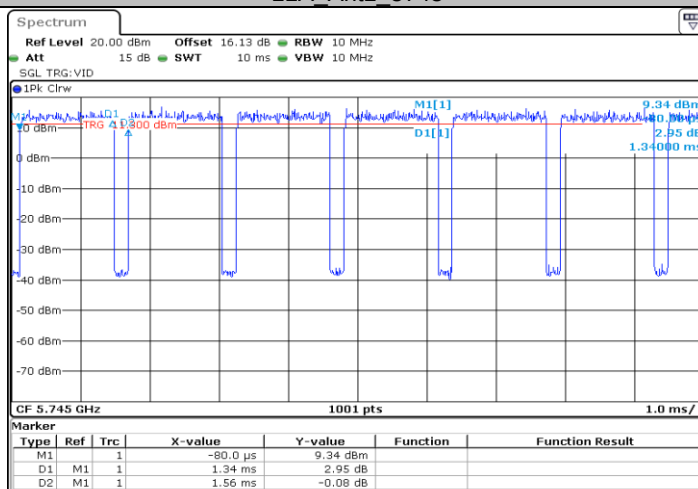
Test Graphs

11A_Ant1_5180



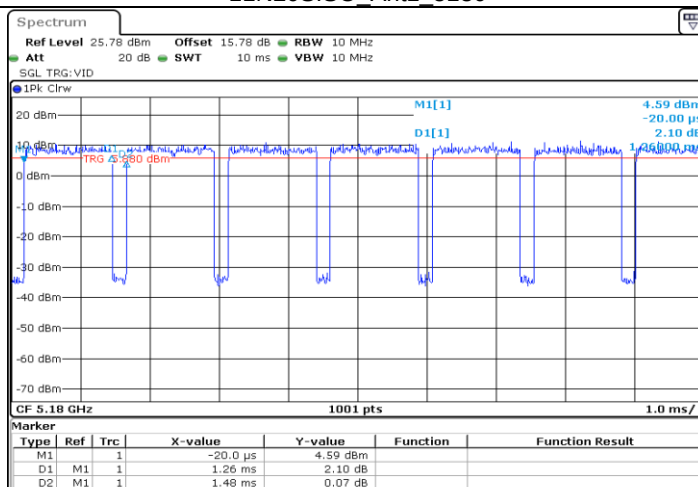
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11A_Ant1_5745



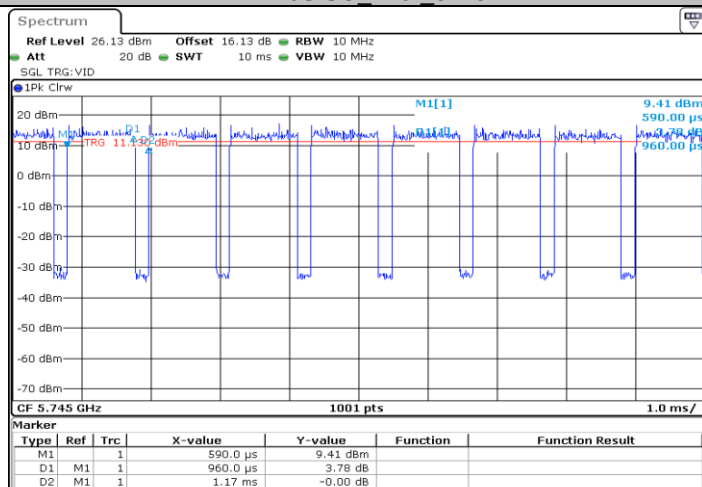
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11N20SISO Ant1_5180



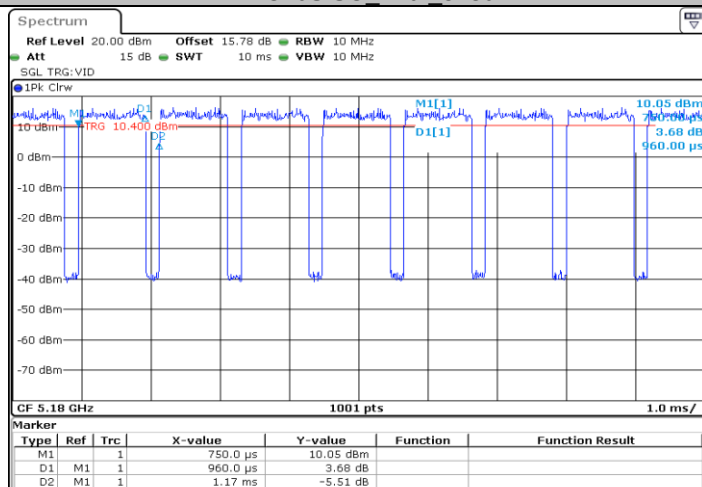
Date: 28.OCT.2020 15:55:02

11N20SISO_Ant1_5745



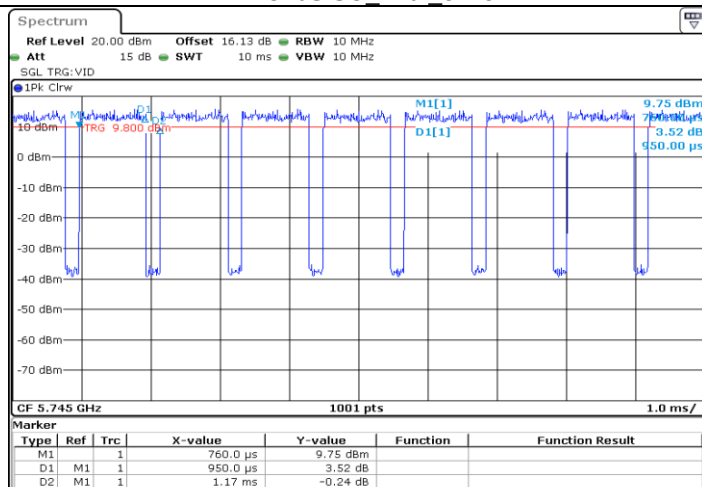
Date: 28.OCT.2020 20:51:48

11AC20SISO_Ant1_5180



Date: 24.SEP.2020 20:28:58

11AC20SISO_Ant1_5745



Date: 28.OCT.2020 20:50:33

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