

SKYBELL TECHNOLOGIES INC

TEST REPORT

SCOPE OF WORK

FCC TESTING—TRIM2 S, TRIM2 B

REPORT NUMBER

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RF TEST REPORT

Report No.: 200603023SZN-002

Product: TRIM II PRO

Model No.: TRIM2 S, TRIM2 B

FCC ID: 2ADX1-SBHD20

Applicant: SKYBELL TECHNOLOGIES INC

**Test Method/
Standard:** FCC Part 15 Subpart E;
KDB 789033 D02 v02r01;
KDB 662911 D01 v02r01;
KDB 905462 D02 v02;
ANSI C63.10-2013

Test By: Intertek Testing Services Shenzhen Ltd. Longhua Branch
101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community,
GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China.

Prepared and Checked by:

Approved by:

Steven Zhou
Engineer

Kidd Yang
Technical Supervisor
Date: 30 September 2020

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Intertek Testing Service Shenzhen Ltd. Longhua Branch

101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, Shenzhen.

Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751

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Summary of Tests

FCC Parts	Test	Section	Results
15.203	Antenna Requirement	1.3	Pass
15.407 a (1)/(3)	Maximum output power test	3	Pass
15.407 a (1)/(3)	Power Spectrum Density test	4	Pass
15.407 e	6dB Bandwidth	5	Pass
15.407 b, 15.205, 15.209	Radiated spurious emission test	6	Pass
15.207	AC line conducted emission test	7	Pass
15.407 g	Frequency Stability	8	Pass

1. General information

1.1 Identification of the EUT

Product:	TRIM II PRO
Model No.:	TRIM2 S, TRIM2 B
Type of Device:	Client device
Nominal Channel Bandwidth:	802.11a/n-HT20 (20 MHz), 802.11n-HT40 (40MHz), 802.11ac (20/40/80MHz)
Operating Frequency:	5725MHz~5850MHz
Channel Number:	5 channels for 5745 MHz ~ 5825 MHz (802.11a/n/ac-HT20); 2 channels for 5755 MHz ~ 5795 MHz (802.11n/ac-HT40); 1 channels for 5775 MHz (802.11ac-HT80);
Modulation:	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Rated Power:	10-30VAC 50/60Hz, 0.5A Max or 12VDC, 0.5-1.0A
Test Date(s):	20 September 2020 to 29 September 2020

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Note 2: When determining the test conclusion, the Measurement Uncertainty of test has been considered.

1.2 Additional information about the EUT

The EUT is a TRIM II PRO with 2.4G/5G WIFI technology. The EUT is powered by 10-30VAC 50/60Hz, 0.5A Max or 12VDC, 0.5-1.0A. The EUT is equipped with two antennas, they can't transmit at the same time. The 2.4G transmitter and 5G transmitter can't transmit at the same time. For more detail features, please refer to User's description as file name "descri.pdf".

The Model: TRIM2 B is the same as the Model: TRIM2 S in hardware aspect (circuitry and electrical, mechanical and physical construction), the only differences is the model number and appearance for trading purpose.

Related Submittal(s) Grants

1. For the 2.4GHz WIFI function was tested and demonstrated in report 200603023SZN-001.
2. Other Digital Function: Subject to FCC Part 15B SDOC.

1.3 Antenna description (15.203)

The EUT uses Integral Antenna which in accordance to Section 15.203 is considered sufficient to comply with the provisions of this section.

Antenna Gain:

Antenna 1: 1.0dBi

Antenna 2: 0.2dBi

1.4 Peripherals equipment

Refer List:

Description	Manufacturer	Model No.
Adapter	FEIHE	TY1200200E1mn
USB cable	/	Unshielded 20cm Length
SD card	Kingston	U3 V30 A2
AC cable	/	Unshielded 90cm Length

2. Test specifications

2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 E, Section 15.203, 15.207, 15.209, 15.407 and ANSI C63.10/2013, method of measurement: KDB 789033.

The test of radiated measurements according to FCC Part 15 Section 15.33(a) had been conducted and the field strength of this frequency band was all meet limit requirement, thus we evaluate the EUT pass the specified test.

The AC power conducted emissions was investigated over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz (15.207 paragraph).

Radiated emissions were investigated cover the frequency range from 9KHz to 30MHz using a receiver RBW of 9kHz, from 30 MHz to 1000 MHz using a receiver RBW of 120 kHz record QP reading, and the frequency over 1 GHz using a spectrum analyzer RBW of 1 MHz, VBW of 3MHz, Detector=Peak record for Peak reading, RBW of 1 MHz, VBW of 3MHz, Detector=RMS record for Average reading recorded on the report.

The EUT setup configurations please refer to the photo of radiated setup photos.pdf & conducted setup photos.pdf.

2.2 Operation mode

The EUT was supplied by and it was run in TX mode that was controlled by client provided RF testing program.

The EUT was transmitted continuously during the test. The worst case test result was showed in the report.

With individual verifying, the maximum output power was found at 6 Mbps data rate for 802.11a mode, 6.5 Mbps data rate for 802.11n-HT20 mode, 13.5 Mbps data rate for 802.11n-HT40 mode, 29.3Mbps data rate for 802.11ac. The final tests were executed under these conditions and recorded in this report individually.

Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software: Trim 2 V8072

3. Maximum Output Power test (FCC 15.407)

3.1 Operating environment

Temperature: 25 °C
 Relative Humidity: 55 %
 Atmospheric Pressure: 1011 hPa

3.2 Test setup & procedure

The power output per FCC §15.407(a) was measured on the EUT using a 50 ohm SMA cable connected to Power Meter and the measurement method refer to 789033 D02. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

3.3 Limit

Operating Frequency (MHz)	Max Conducted TX Power	Max EIRP
5725~5850	30dBm (1W)	4W (36dBm) with 6dBi antenna

Remark: 1) The device was declared as client device.

2) Tx Power Reduction (dBm-by-dBi) required when antenna exceeds 6dBi.

3) Max antenna gain< 6 dBi.

3.4 Measured data of Maximum Output Power test results

5725 MHz ~ 5850 MHz

Max Conducted TX Power

Test Mode	Antenna	Channel	Result	Limit	Verdict
11A	Ant1	5745	19.27	<=30	PASS
	Ant2	5745	17.94	<=30	PASS
	Ant1	5785	20.65	<=30	PASS
	Ant2	5785	16.45	<=30	PASS
	Ant1	5825	17.46	<=30	PASS
	Ant2	5825	18.00	<=30	PASS
11N20SISO	Ant1	5745	18.46	<=30	PASS
	Ant2	5745	16.94	<=30	PASS
	Ant1	5785	15.34	<=30	PASS
	Ant2	5785	15.30	<=30	PASS
	Ant1	5825	15.97	<=30	PASS
	Ant2	5825	16.13	<=30	PASS
11N40SISO	Ant1	5755	19.02	<=30	PASS
	Ant2	5755	18.05	<=30	PASS
	Ant1	5795	15.55	<=30	PASS
	Ant2	5795	16.02	<=30	PASS
11AC20SISO	Ant1	5745	18.22	<=30	PASS
	Ant2	5745	17.20	<=30	PASS
	Ant1	5785	15.75	<=30	PASS
	Ant2	5785	15.23	<=30	PASS
	Ant1	5825	15.69	<=30	PASS
	Ant2	5825	16.17	<=30	PASS
11AC40SISO	Ant1	5755	18.67	<=30	PASS
	Ant2	5755	17.83	<=30	PASS
	Ant1	5795	16.01	<=30	PASS
	Ant2	5795	16.37	<=30	PASS
11AC80SISO	Ant1	5775	17.57	<=30	PASS
	Ant2	5775	18.13	<=30	PASS

MAX EIRP

Test Mode	Antenna	Channel	Output Power (dBm)	ANT. Gain (dBi)	E.I.R.P (dBm)	Limit	Verdict
11A	Ant1	5745	19.27	1.0	20.27	<=36	PASS
	Ant2	5745	17.94	0.2	18.14	<=36	PASS
	Ant1	5785	20.65	1.0	21.65	<=36	PASS
	Ant2	5785	16.45	0.2	16.65	<=36	PASS
	Ant1	5825	17.46	1.0	18.46	<=36	PASS
	Ant2	5825	18.00	0.2	18.2	<=36	PASS
11N20SISO	Ant1	5745	18.46	1.0	19.46	<=36	PASS
	Ant2	5745	16.94	0.2	17.14	<=36	PASS
	Ant1	5785	15.34	1.0	16.34	<=36	PASS
	Ant2	5785	15.30	0.2	15.50	<=36	PASS
	Ant1	5825	15.97	1.0	16.97	<=36	PASS
	Ant2	5825	16.13	0.2	16.33	<=36	PASS
11N40SISO	Ant1	5755	19.02	1.0	20.02	<=36	PASS
	Ant2	5755	18.05	0.2	18.25	<=36	PASS
	Ant1	5795	15.55	1.0	16.55	<=36	PASS
	Ant2	5795	16.02	0.2	16.22	<=36	PASS
11AC20SISO	Ant1	5745	18.22	1.0	19.22	<=36	PASS
	Ant2	5745	17.20	0.2	17.40	<=36	PASS
	Ant1	5785	15.75	1.0	16.75	<=36	PASS
	Ant2	5785	15.23	0.2	15.43	<=36	PASS
	Ant1	5825	15.69	1.0	16.69	<=36	PASS
	Ant2	5825	16.17	0.2	16.37	<=36	PASS
11AC40SISO	Ant1	5755	18.67	1.0	19.67	<=36	PASS
	Ant2	5755	17.83	0.2	18.03	<=36	PASS
	Ant1	5795	16.01	1.0	17.01	<=36	PASS
	Ant2	5795	16.37	0.2	16.57	<=36	PASS
11AC80SISO	Ant1	5775	17.57	1.0	18.57	<=36	PASS
	Ant2	5775	18.13	0.2	18.33	<=36	PASS

4. Power Spectrum Density test (FCC 15.407)

4.1 Operating environment

Temperature: 25 °C
Relative Humidity: 50 %
Atmospheric Pressure: 1011 hPa

4.2 Test setup & procedure

Method of Measurement:

The power spectrum density per FCC §15.407(a) was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set at 500KHz, the video bandwidth set at 2MHz (measurement method refer to KDB 789033 D02). Power spectrum density was read directly and cable loss reading to obtain power at the EUT antenna terminals.

4.3 Limit

Operating Frequency (MHz)	Max Conducted Power Spectral Density
5725~5850	30dBm/500KHz

Remark: 1) *The device was declared as Slave device.

2) Tx Power Reduction (dBm-by-dBi) required when antenna exceeds 6dBi.

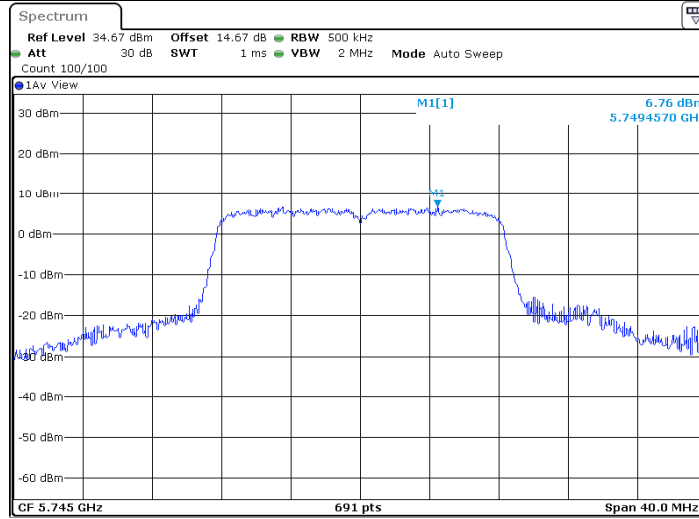
3) Max. Antenna gain < 6 dBi.

4.4 Measured data of Power Spectrum Density test results

5725 MHz ~ 5850 MHz

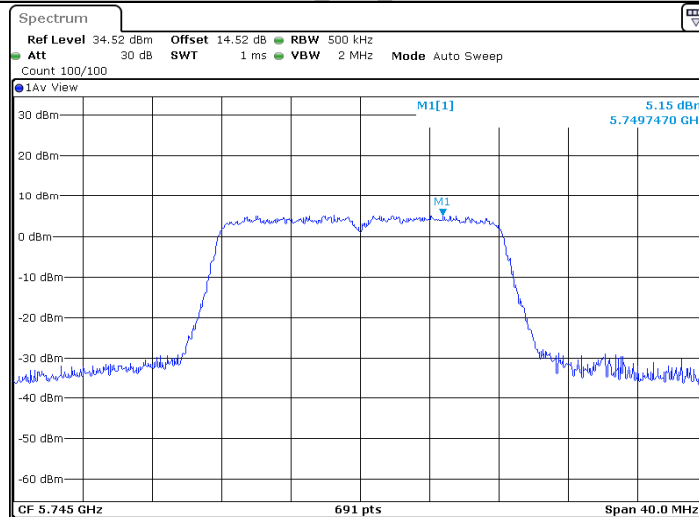
Test Mode	Antenna	Channel	Result	Limit	Verdict
11A	Ant1	5745	6.76	<=30	PASS
	Ant2	5745	5.15	<=30	PASS
	Ant1	5785	8.44	<=30	PASS
	Ant2	5785	4.24	<=30	PASS
	Ant1	5825	5.77	<=30	PASS
	Ant2	5825	5.19	<=30	PASS
11N20SISO	Ant1	5745	6.13	<=30	PASS
	Ant2	5745	4.01	<=30	PASS
	Ant1	5785	3.11	<=30	PASS
	Ant2	5785	2.3	<=30	PASS
	Ant1	5825	3.47	<=30	PASS
	Ant2	5825	3.31	<=30	PASS
11N40SISO	Ant1	5755	3.57	<=30	PASS
	Ant2	5755	2.96	<=30	PASS
	Ant1	5795	-0.08	<=30	PASS
	Ant2	5795	1.06	<=30	PASS
11AC20SISO	Ant1	5745	5.94	<=30	PASS
	Ant2	5745	4.5	<=30	PASS
	Ant1	5785	3.28	<=30	PASS
	Ant2	5785	2.5	<=30	PASS
	Ant1	5825	3.26	<=30	PASS
	Ant2	5825	5.13	<=30	PASS
11AC40SISO	Ant1	5755	4.04	<=30	PASS
	Ant2	5755	2.67	<=30	PASS
	Ant1	5795	1.48	<=30	PASS
	Ant2	5795	0.95	<=30	PASS
11AC80SISO	Ant1	5775	-1.05	<=30	PASS
	Ant2	5775	-0.02	<=30	PASS

11A_Ant1_5745



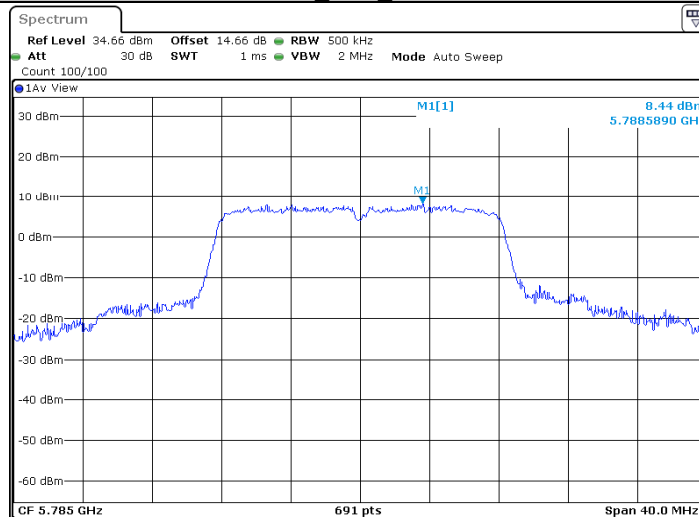
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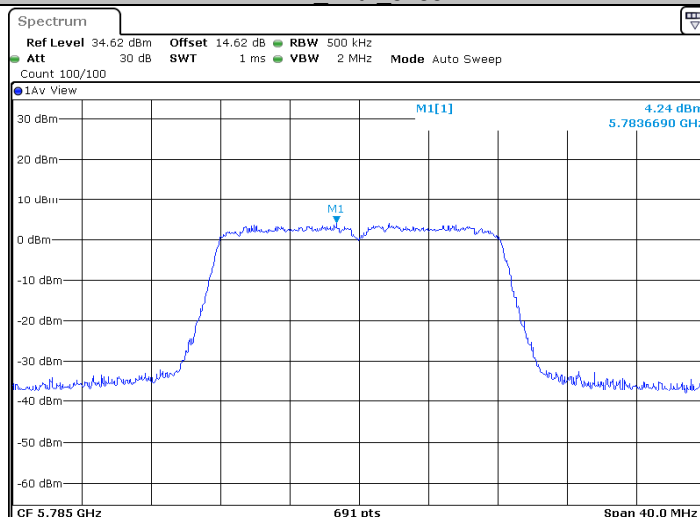
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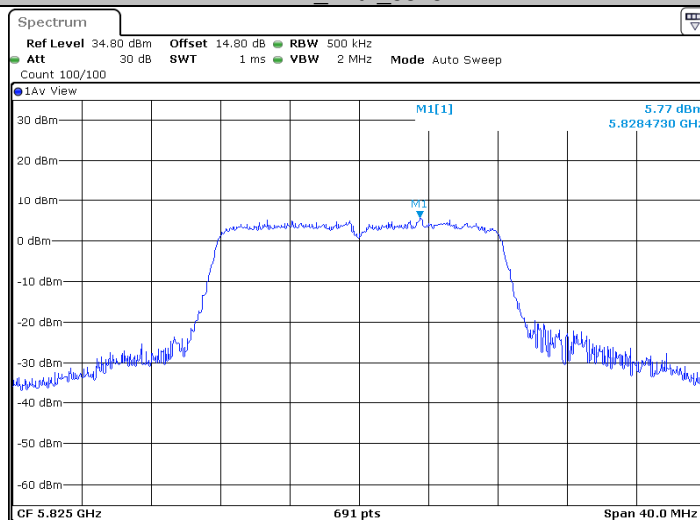
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11A Ant2 5785



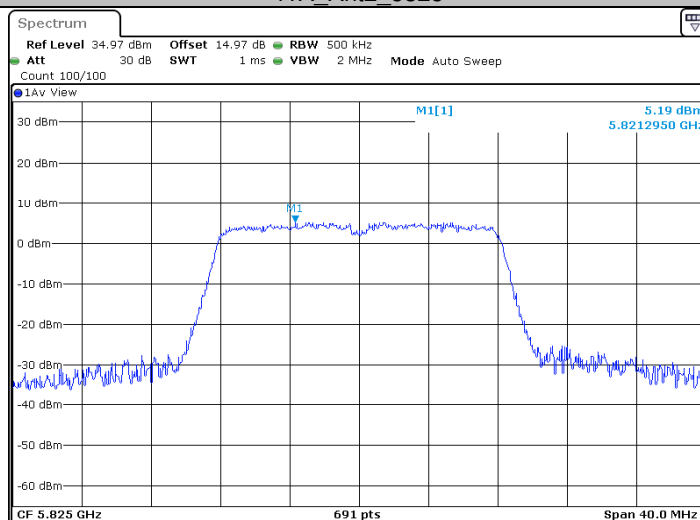
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11A Ant1 5825



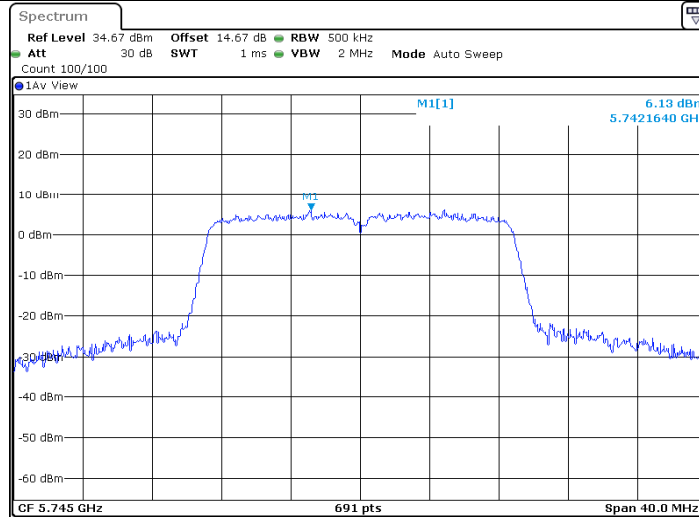
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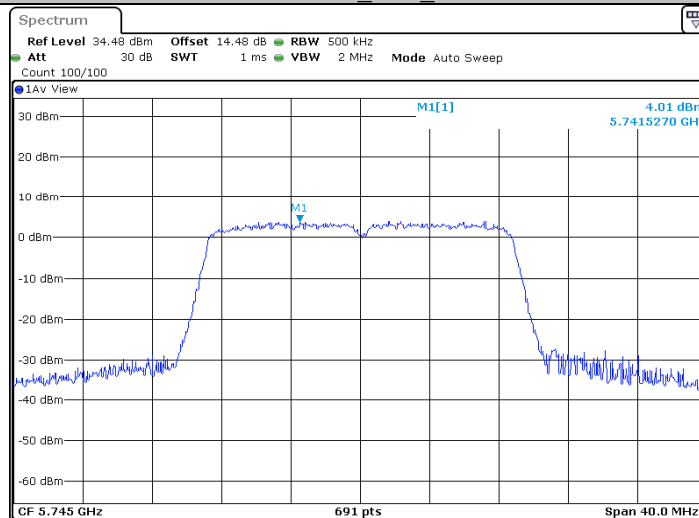
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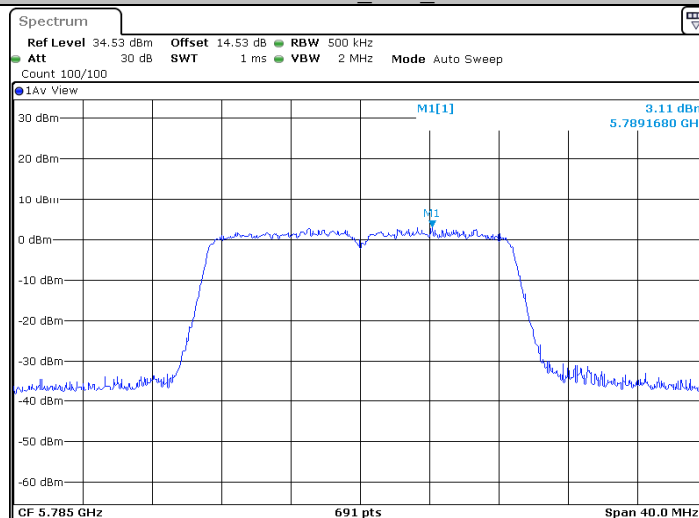
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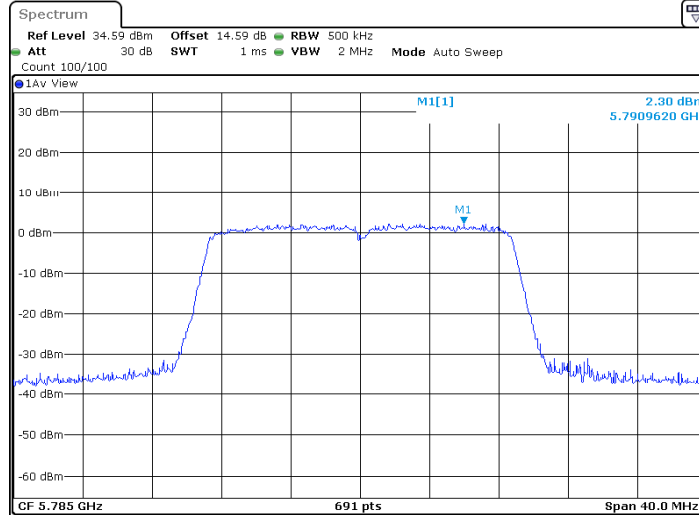
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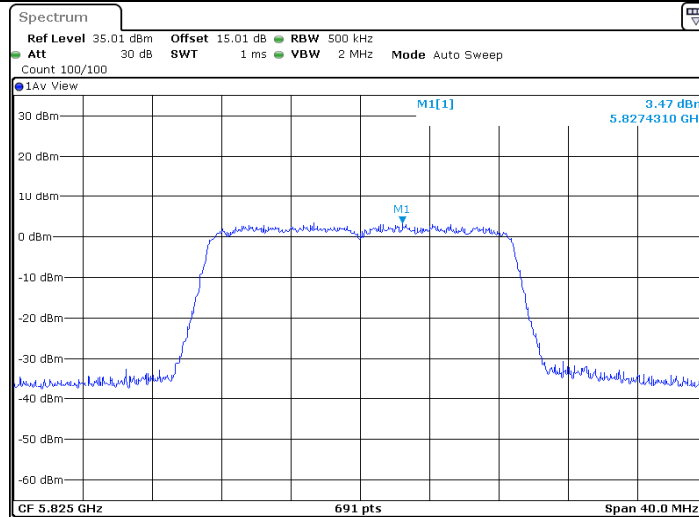
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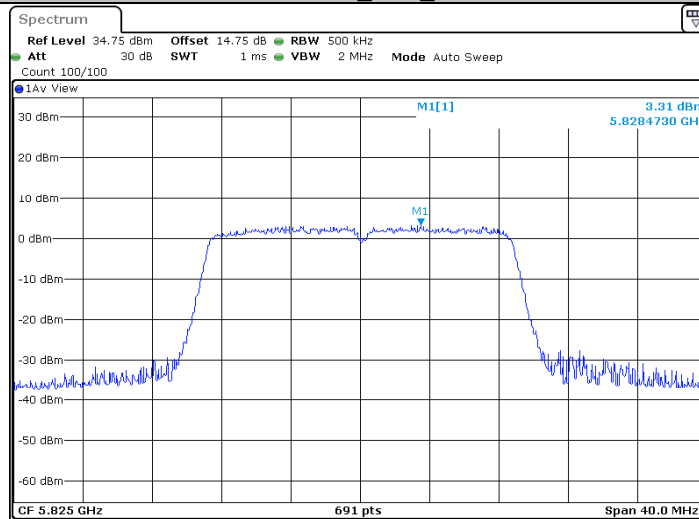
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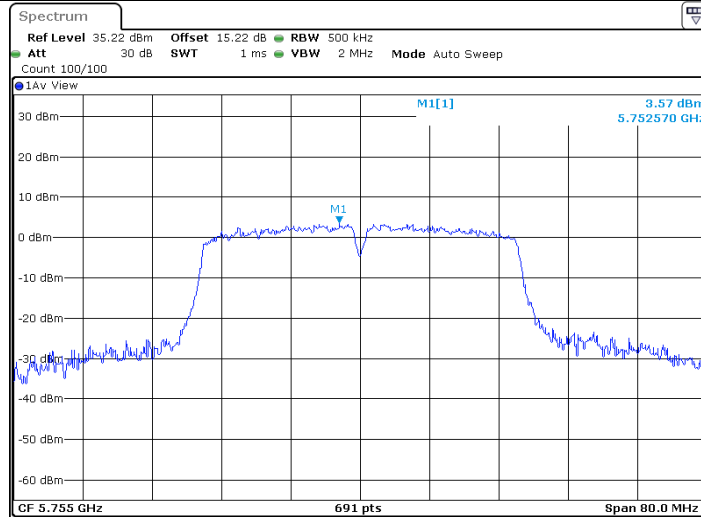
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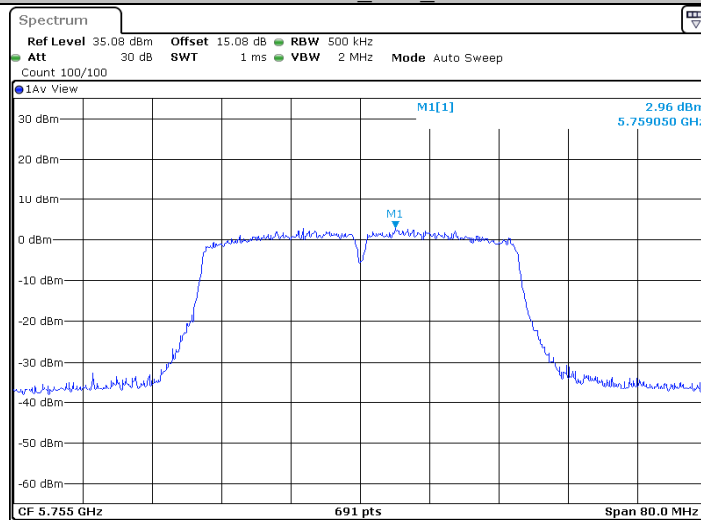
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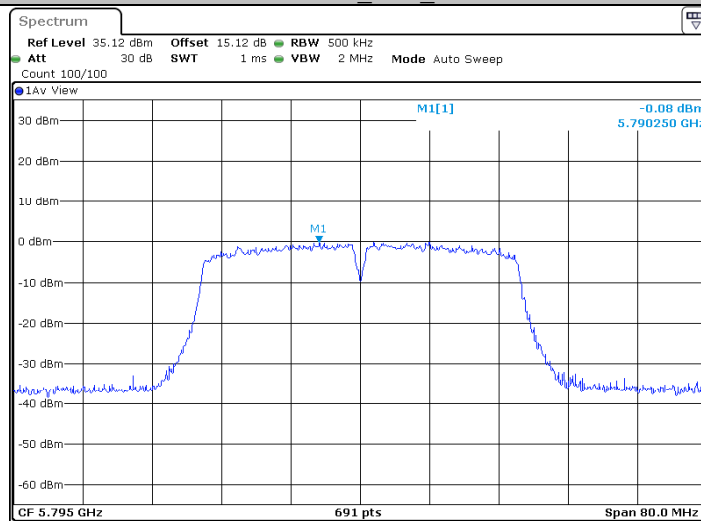
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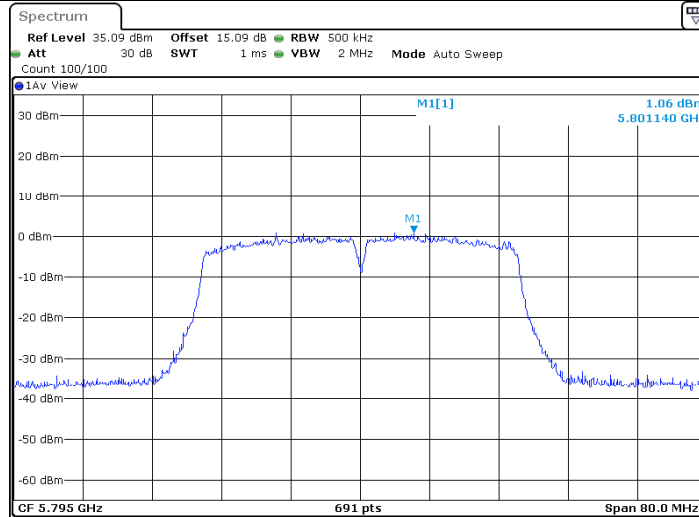
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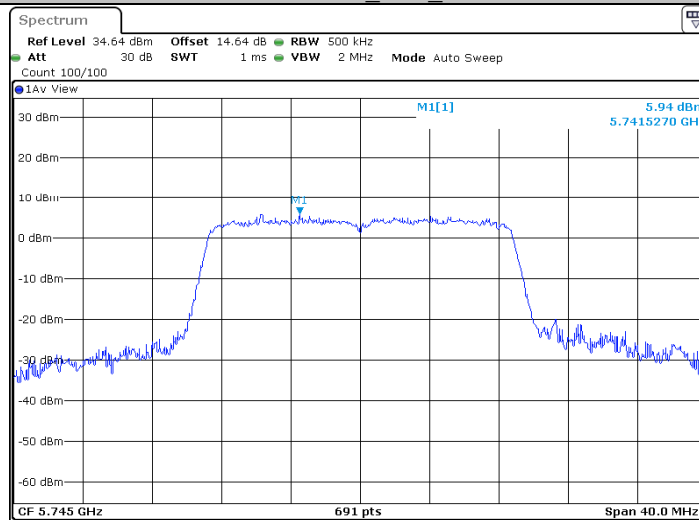
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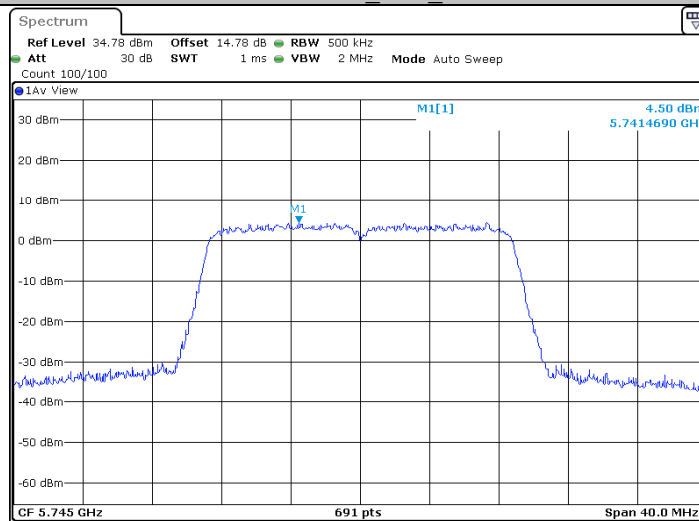
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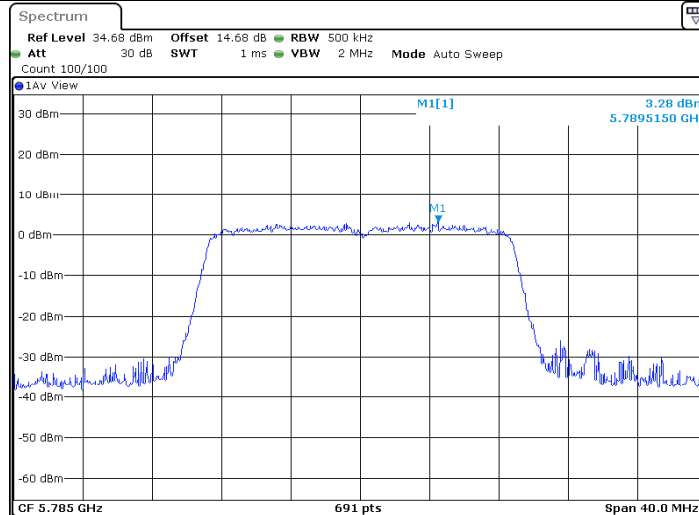
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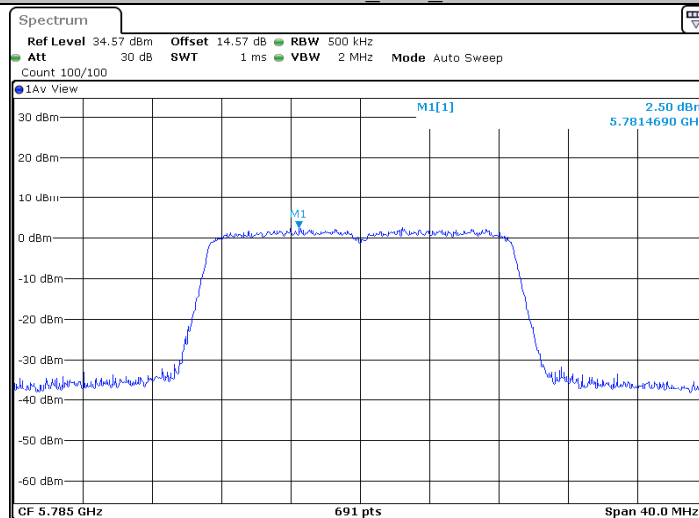
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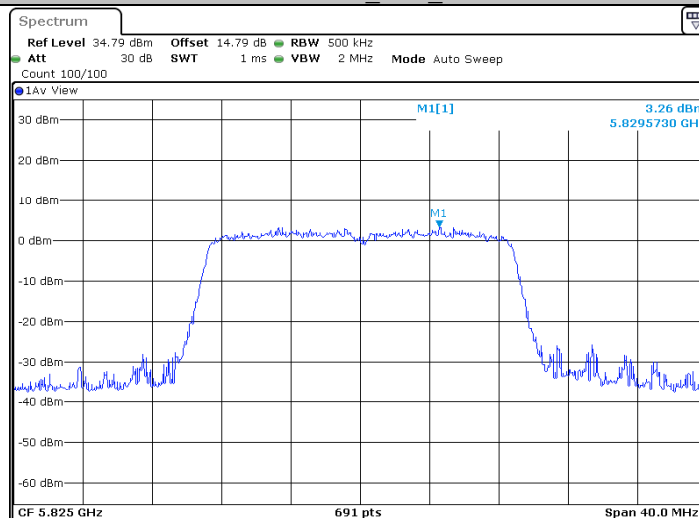
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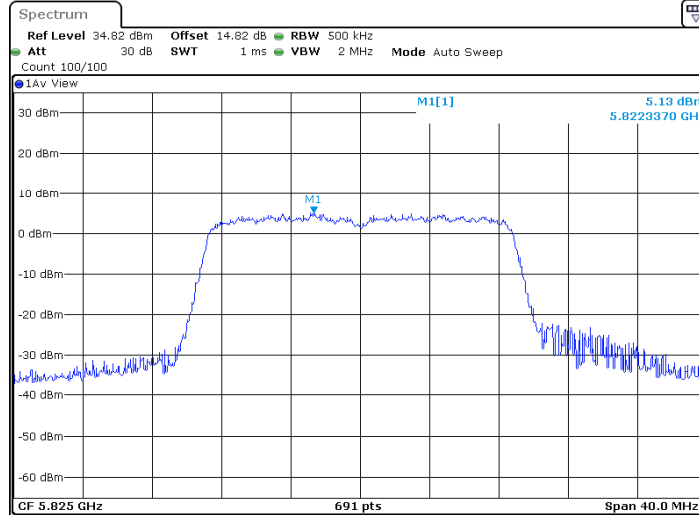
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11AC20SISO_Ant1_5825



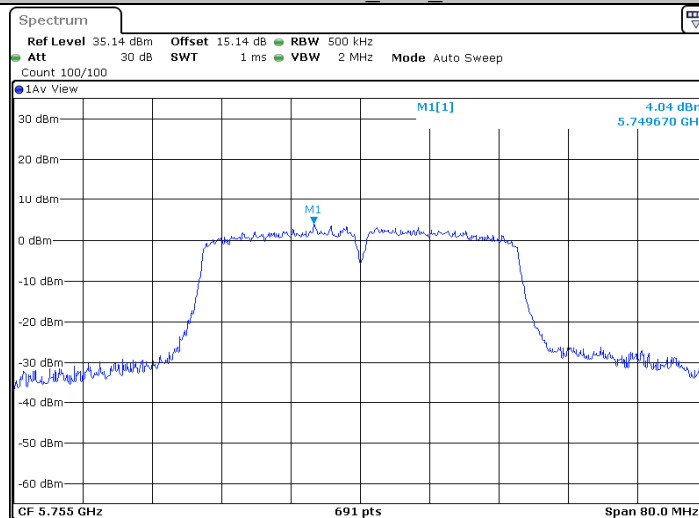
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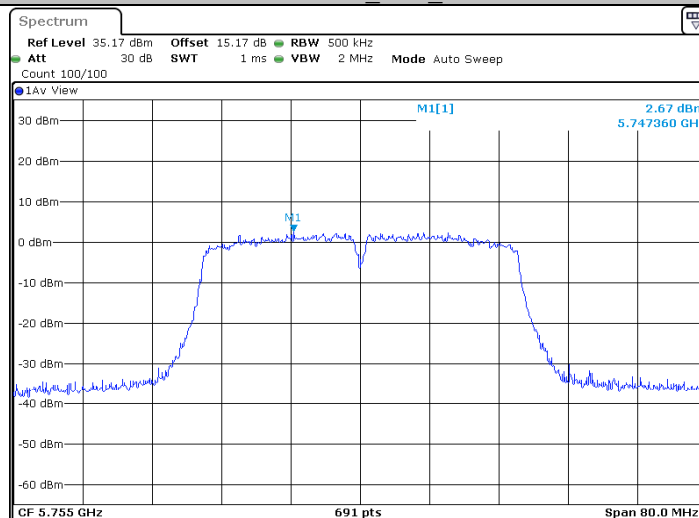
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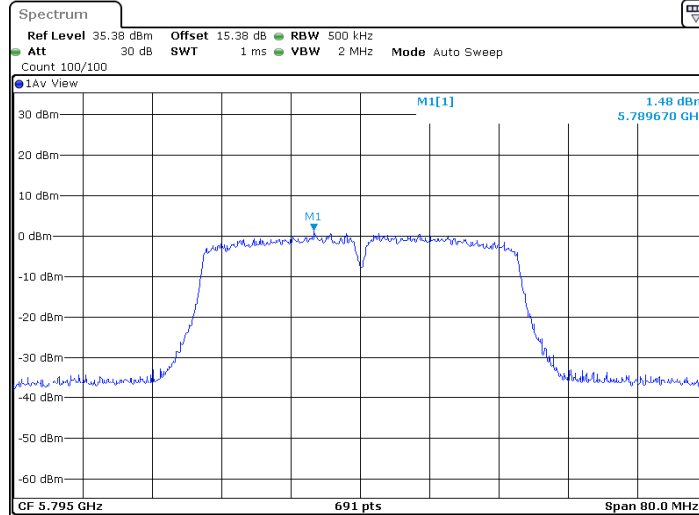
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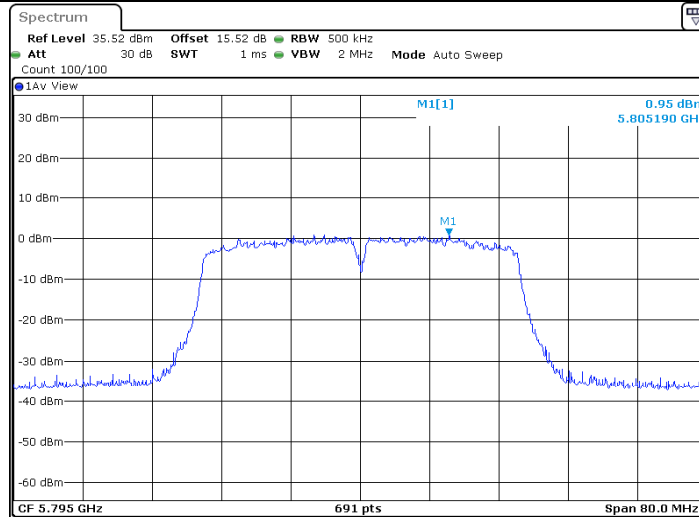
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11AC40SISO_Ant1_5795



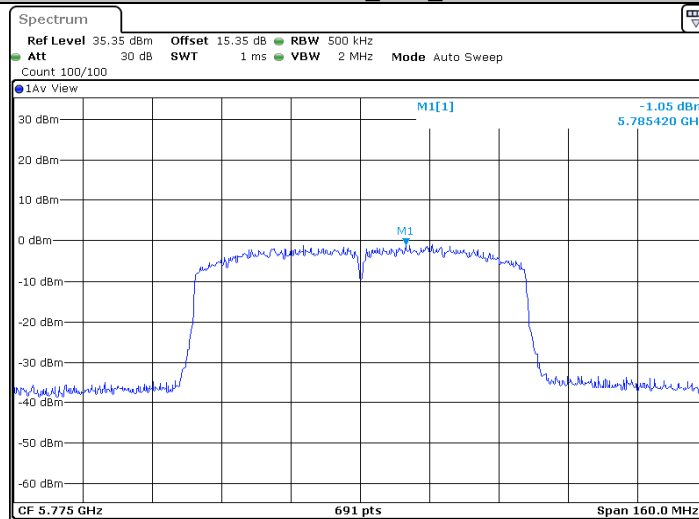
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Date: 28.SEP.2020 15:12:45

11AC40SISO_Ant2_5795

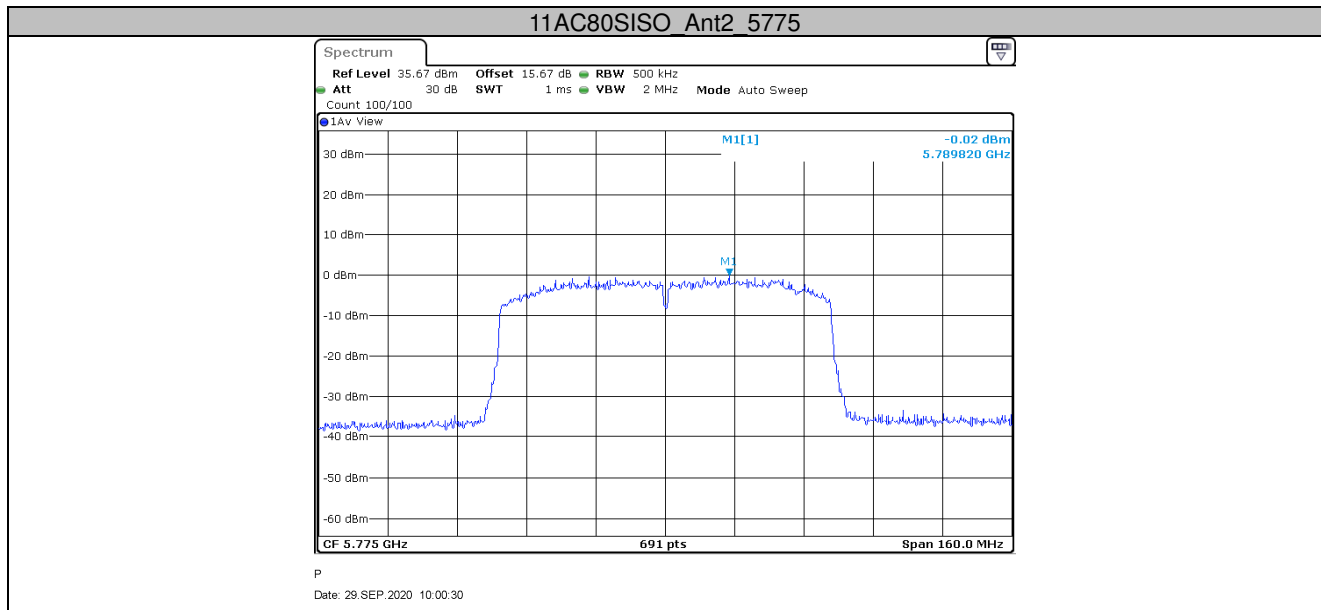


P
Date: 28.SEP.2020 18:03:25

11AC80SISO_Ant1_5775



P
Date: 28.SEP.2020 15:18:46



5. Minimum 6 dB RF Bandwidth (FCC 15.407)

5.1 Operating environment

Temperature: 25 °C
Relative Humidity: 50 %
Atmospheric Pressure: 1011 hPa

5.2 Test setup & procedure

The Minimum 6 dB RF Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set at 100KHz, and set the video bandwidth (VBW) $\geq 3 \times$ RBW. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 6 dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

For 26dB down Emission Bandwidth

The 26dB down Emission Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth 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%).

For 99% Occupied Bandwidth

The 99% Occupied Bandwidth per 789033 D02 was measured from the antenna port of the EUT using a 50 ohm spectrum analyzer with the resolution bandwidth set center frequency to the nominal EUT channel center frequency, set span = 1.5 times to 5.0 times the OBW, set RBW = 1 % to 5 % of the OBW, set VBW $\geq 3 \times$ RBW, The 99% occupied bandwidth was determined from where the channel output spectrum intersected the display line.

5.3 Limit

Operating Frequency (MHz)	Minimum 6 dB RF Bandwidth Limit
5725~ 5850	$\geq 500\text{KHz}$

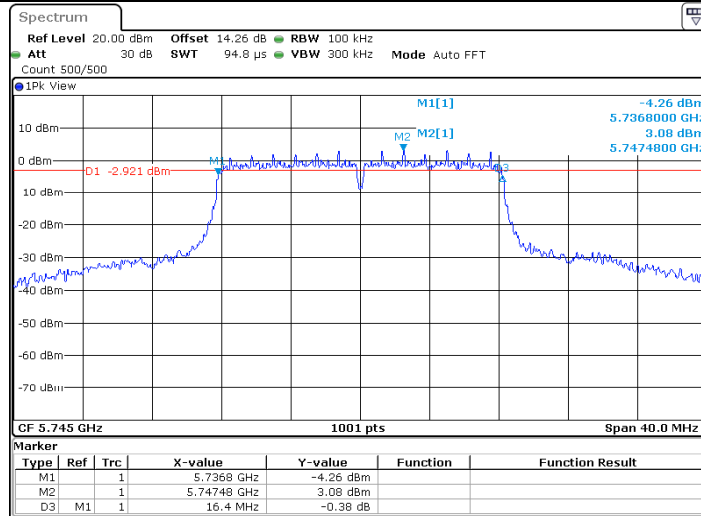
Note: 99% Occupied Bandwidth within the U-NII-1 band and 26dB Emission Bandwidth for reference. The plots are attached as below: "26dB OBW" and "99% OBW"

5.4 Measured data of 6dB down Emission Bandwidth test results

Test Mode	Antenna	Channel	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	16.400	5736.800	5753.200	0.5	PASS
	Ant2	5745	16.400	5736.800	5753.200	0.5	PASS
	Ant1	5785	16.400	5776.800	5793.200	0.5	PASS
	Ant2	5785	16.400	5776.800	5793.200	0.5	PASS
	Ant1	5825	16.400	5816.800	5833.200	0.5	PASS
	Ant2	5825	16.400	5816.800	5833.200	0.5	PASS
11N20SISO	Ant1	5745	17.600	5736.200	5753.800	0.5	PASS
	Ant2	5745	17.600	5736.200	5753.800	0.5	PASS
	Ant1	5785	17.600	5776.200	5793.800	0.5	PASS
	Ant2	5785	17.360	5776.440	5793.800	0.5	PASS
	Ant1	5825	17.600	5816.200	5833.800	0.5	PASS
	Ant2	5825	17.600	5816.200	5833.800	0.5	PASS
11N40SISO	Ant1	5755	35.280	5737.400	5772.680	0.5	PASS
	Ant2	5755	35.280	5737.400	5772.680	0.5	PASS
	Ant1	5795	35.280	5777.400	5812.680	0.5	PASS
	Ant2	5795	35.280	5777.400	5812.680	0.5	PASS
11AC20SISO	Ant1	5745	17.600	5736.200	5753.800	0.5	PASS
	Ant2	5745	17.600	5736.200	5753.800	0.5	PASS
	Ant1	5785	17.600	5776.200	5793.800	0.5	PASS
	Ant2	5785	17.600	5776.200	5793.800	0.5	PASS
	Ant1	5825	17.640	5816.200	5833.840	0.5	PASS
	Ant2	5825	17.600	5816.200	5833.800	0.5	PASS
11AC40SISO	Ant1	5755	35.280	5737.400	5772.680	0.5	PASS
	Ant2	5755	35.280	5737.400	5772.680	0.5	PASS
	Ant1	5795	35.280	5777.400	5812.680	0.5	PASS
	Ant2	5795	35.280	5777.400	5812.680	0.5	PASS
11AC80SISO	Ant1	5775	75.520	5737.240	5812.760	0.5	PASS
	Ant2	5775	72.960	5737.240	5810.200	0.5	PASS

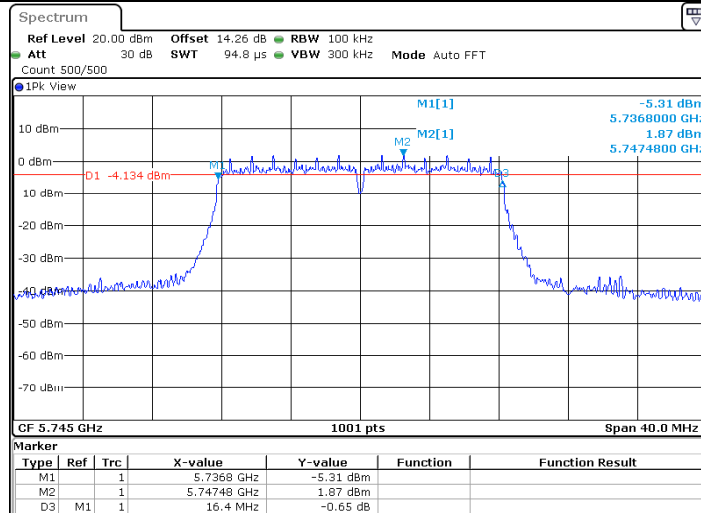
The test plots are attached as below.

11A_Ant1_5745



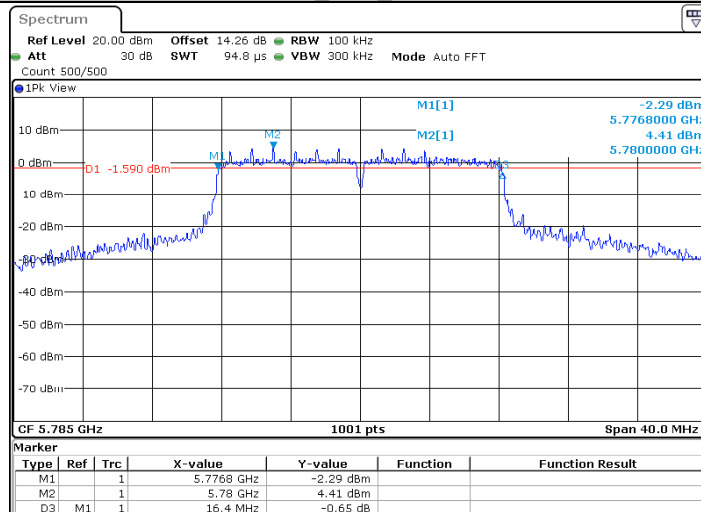
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11A_Ant2_5745



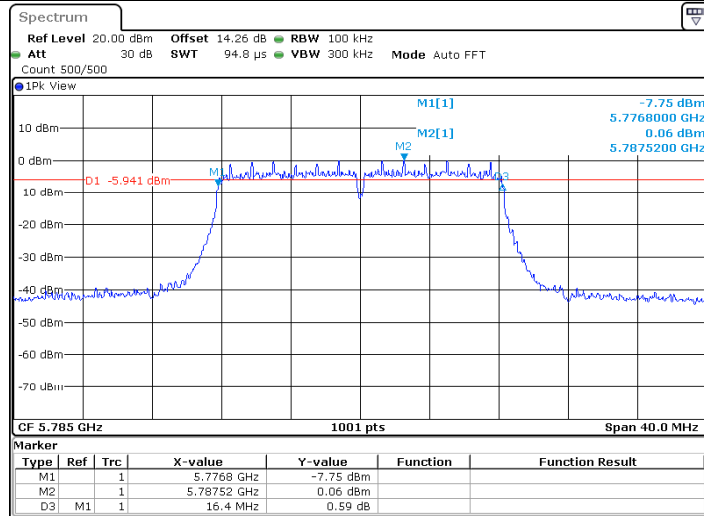
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11A_Ant1_5785



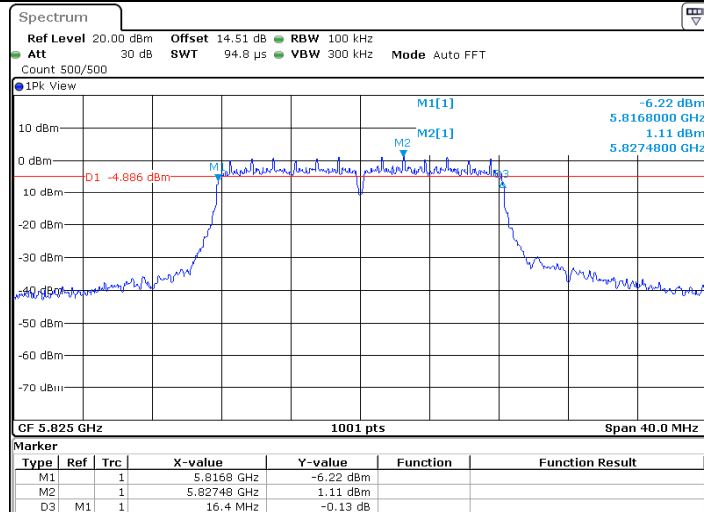
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11A_Ant2_5785



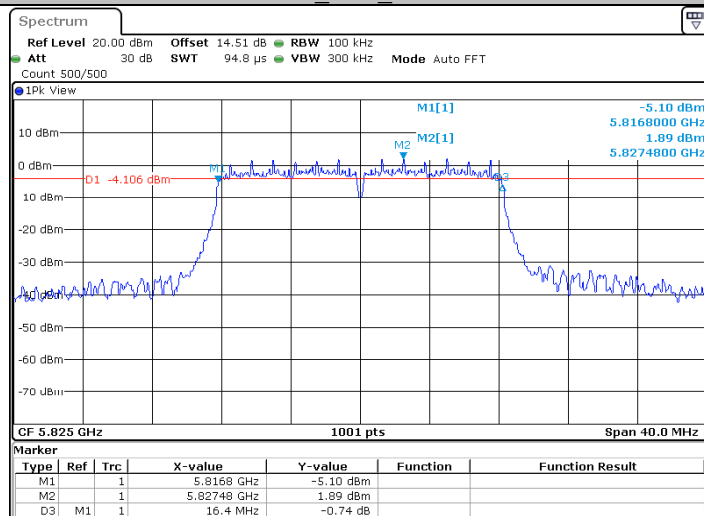
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11A_Ant1_5825



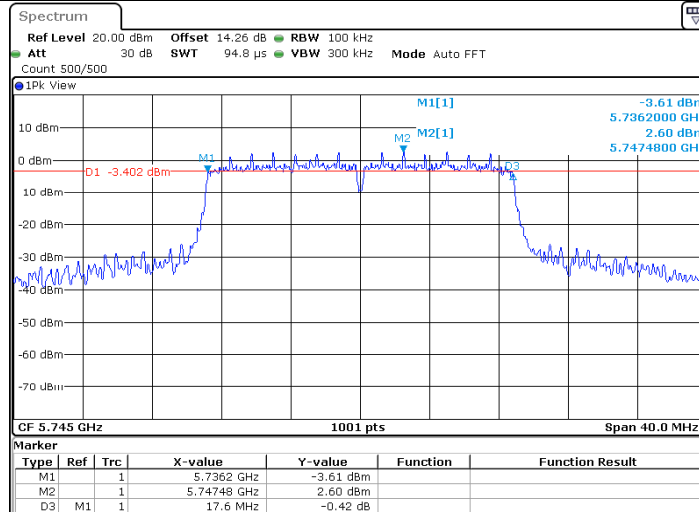
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11A_Ant2_5825



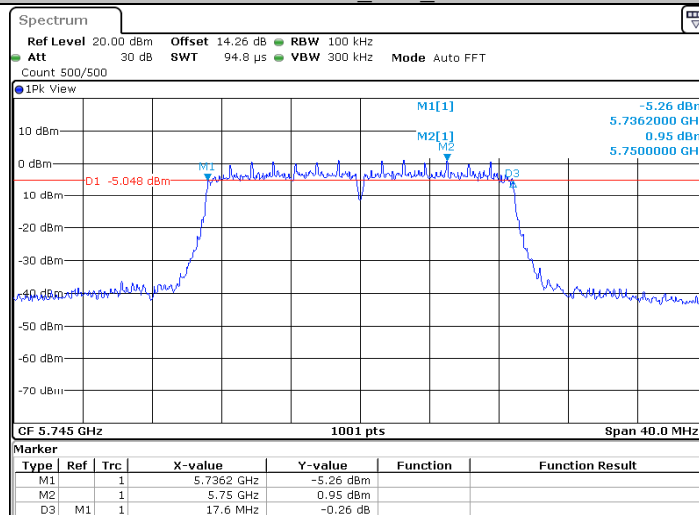
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11N20SISO Ant1_5745



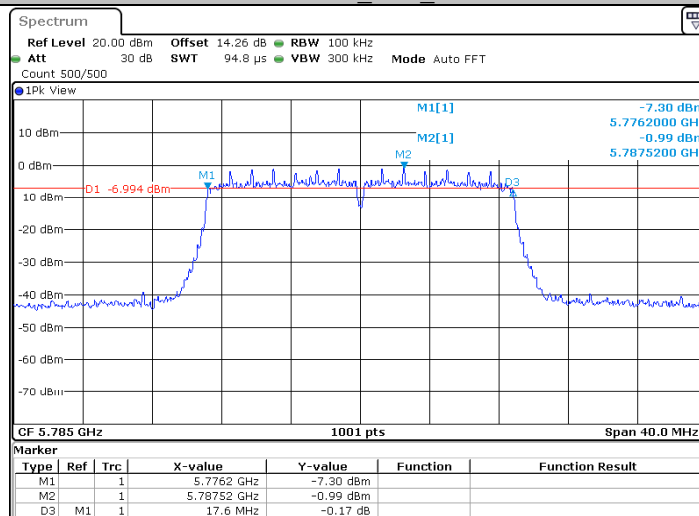
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11N20SISO Ant2_5745



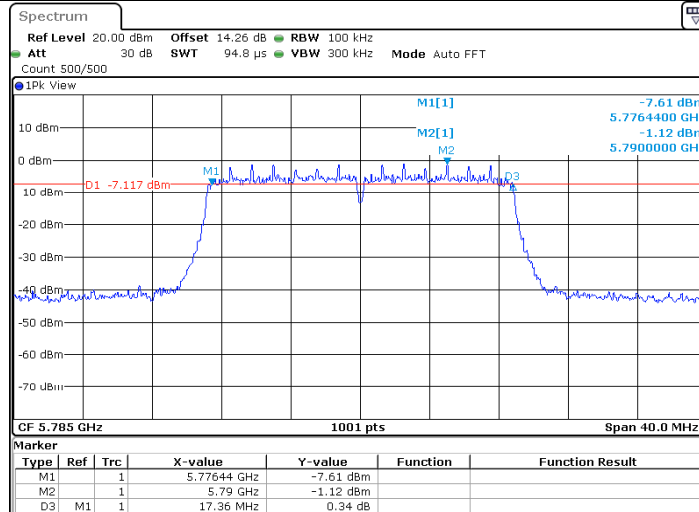
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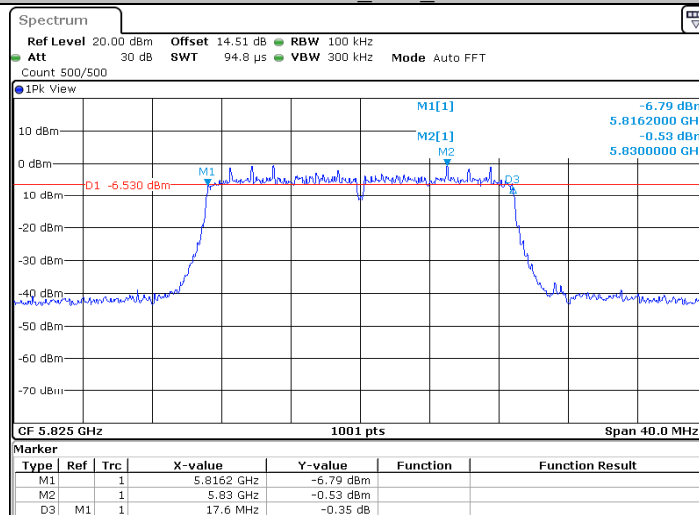
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11N20SISO Ant2 5785



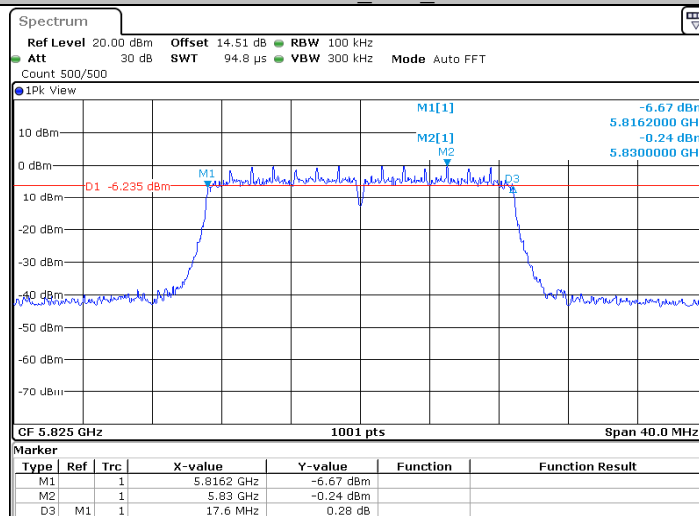
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11N20SISO Ant1 5825



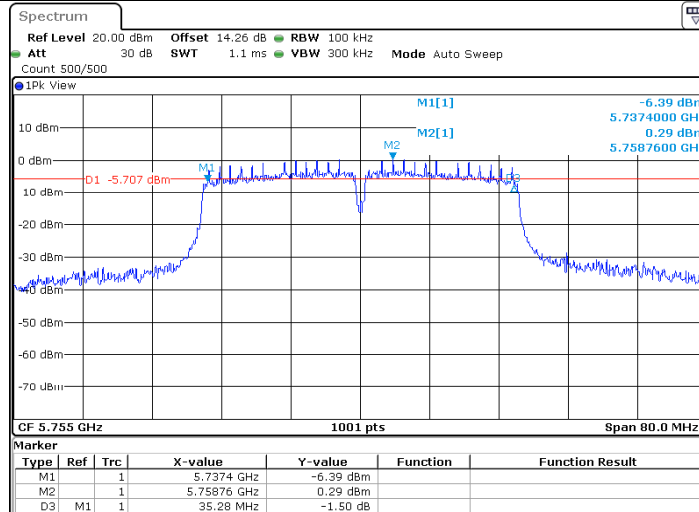
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11N20SISO Ant2 5825



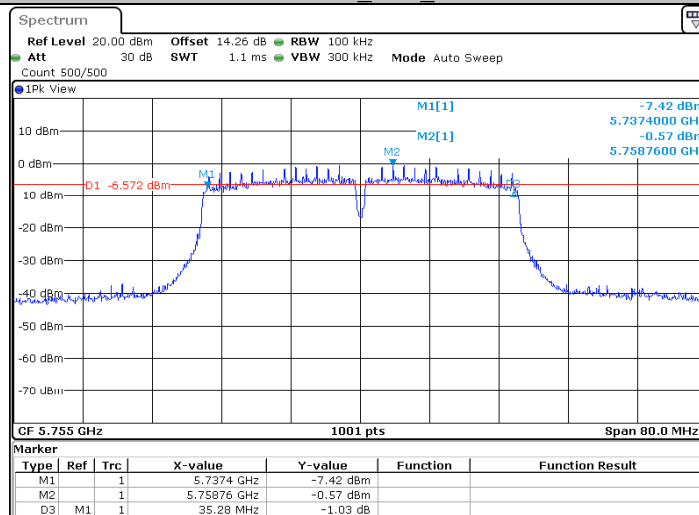
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11N40SISO Ant1_5755



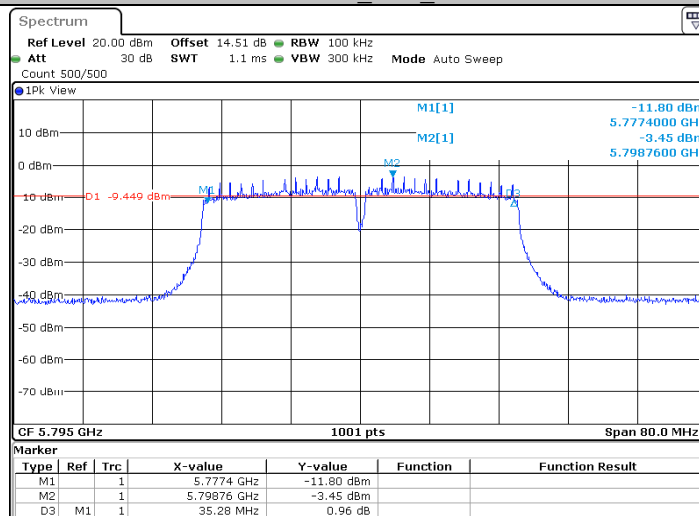
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11N40SISO Ant2_5755



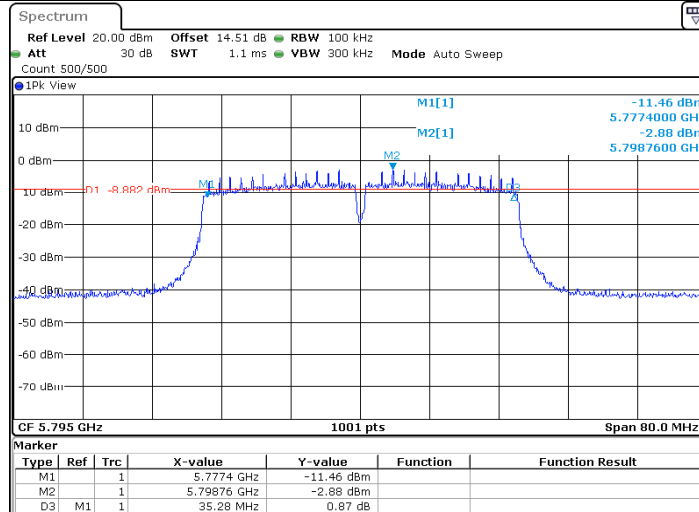
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11N40SISO Ant1_5795



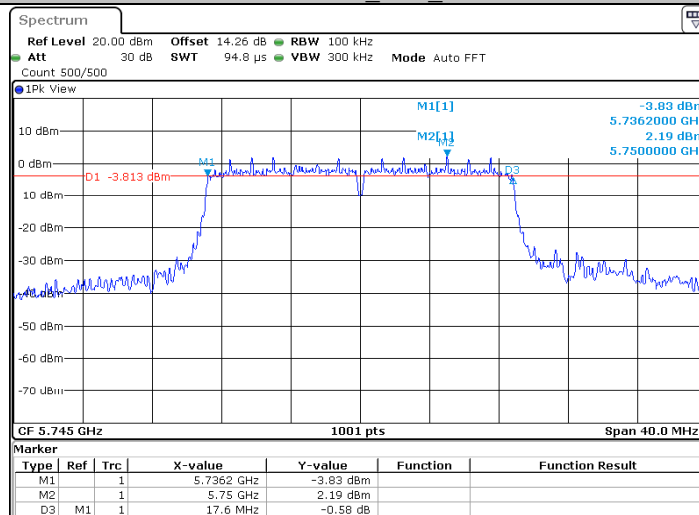
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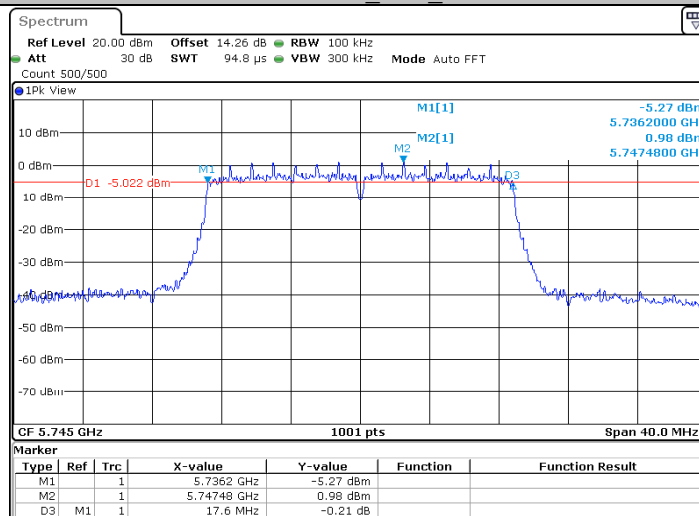
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11AC20SISO Ant1_5745



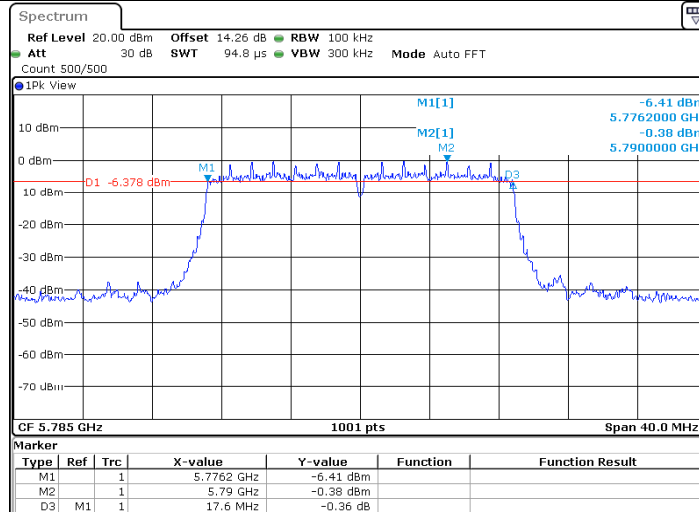
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11AC20SISO Ant2_5745



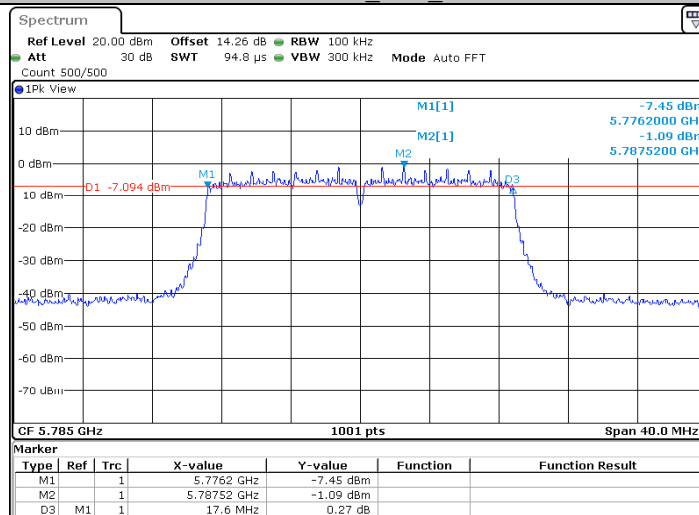
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11AC20SISO_Ant1_5785



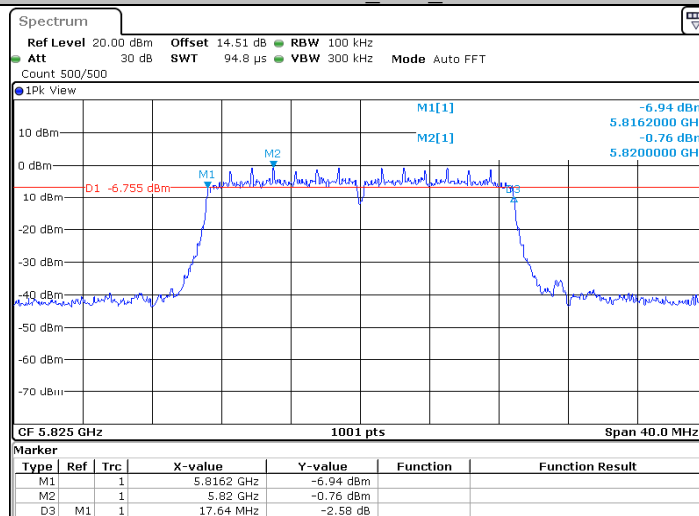
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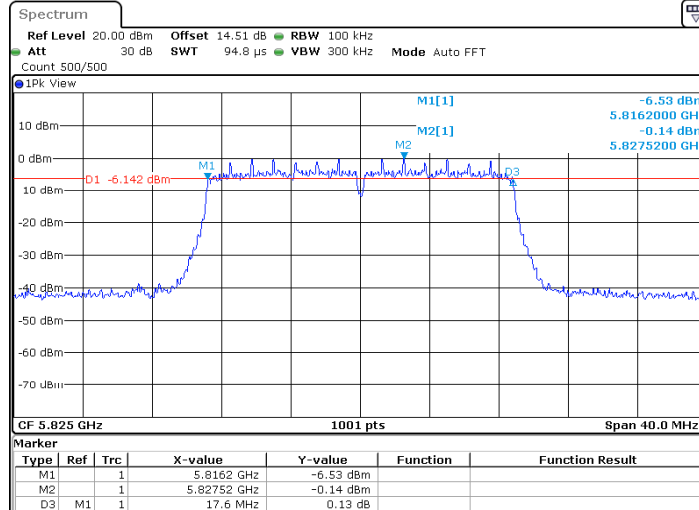
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11AC20SISO_Ant1_5825



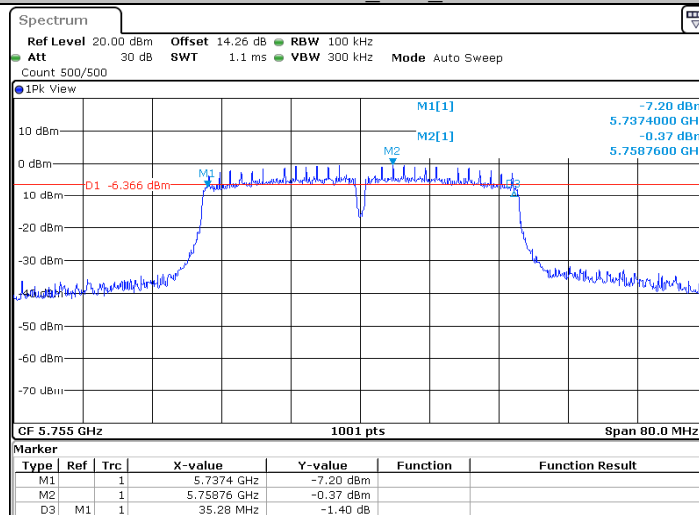
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11AC20SISO_Ant2_5825



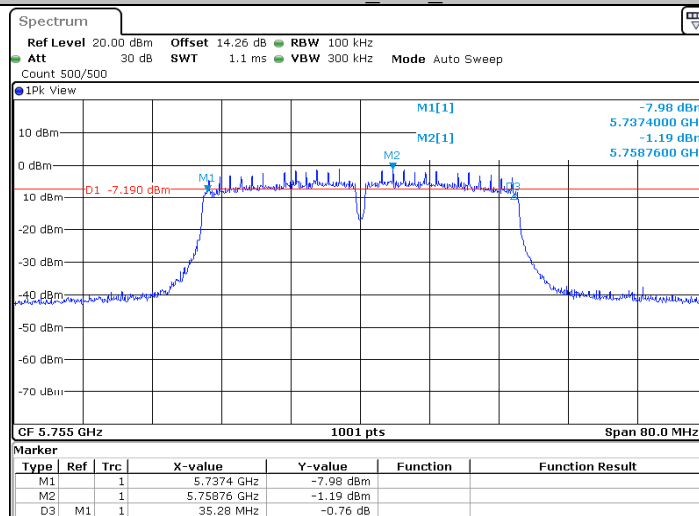
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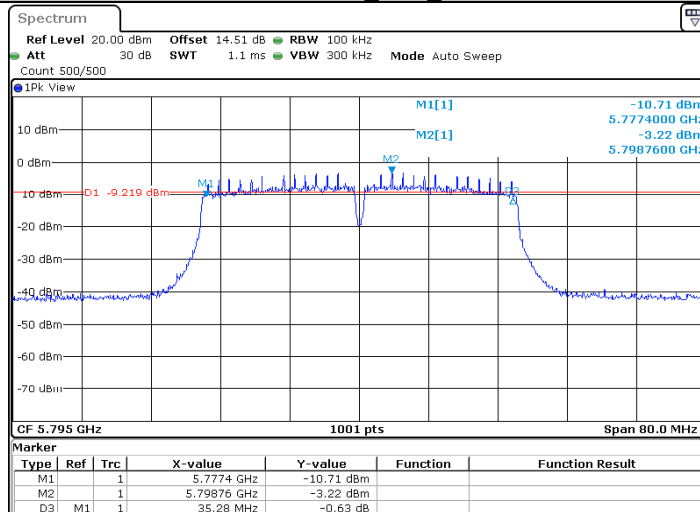
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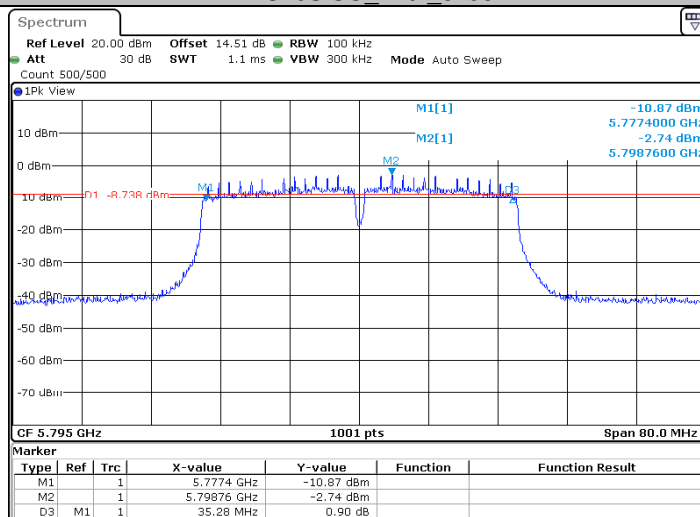
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11AC40SISO_Ant1_5795



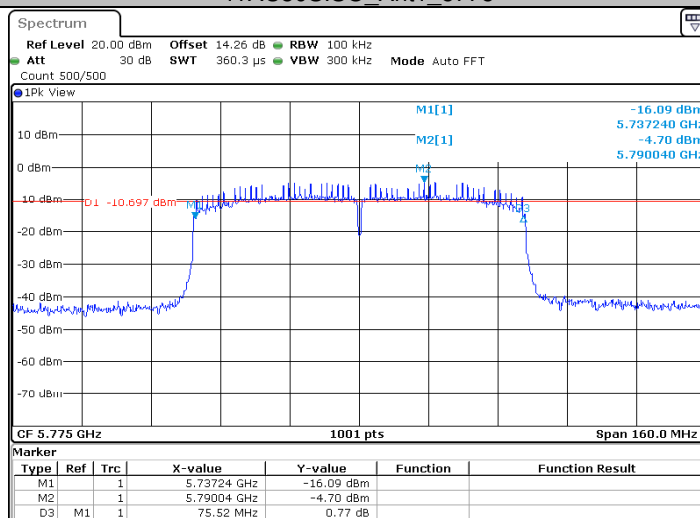
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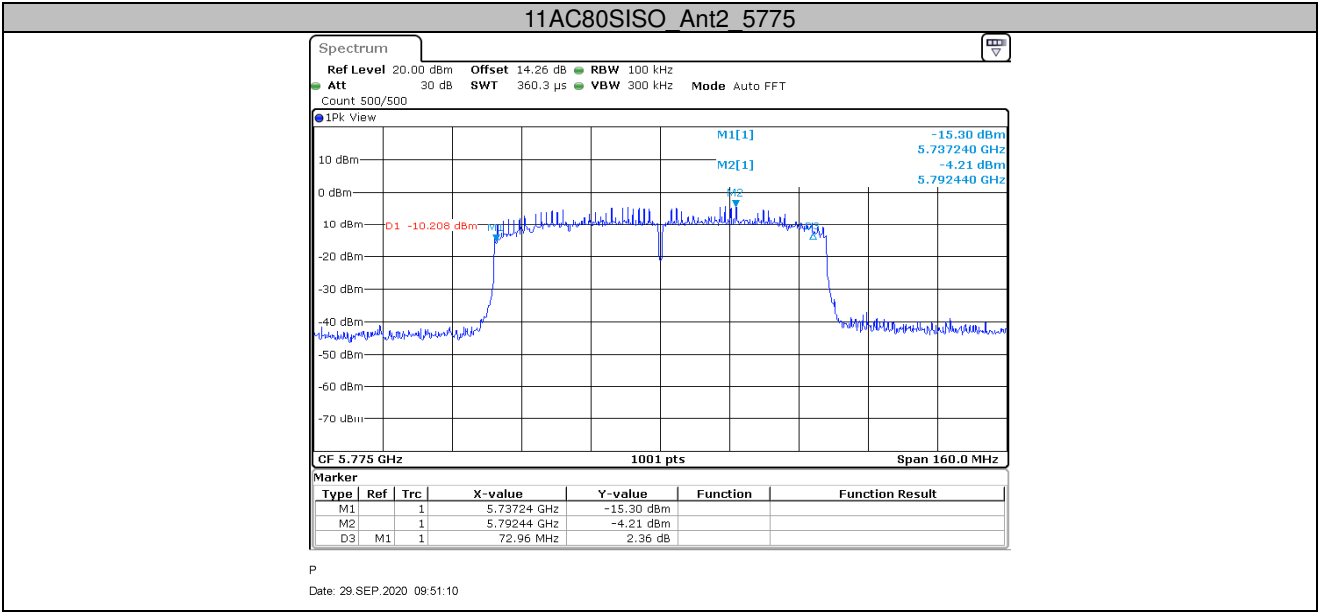


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11AC80SISO_Ant1_5775



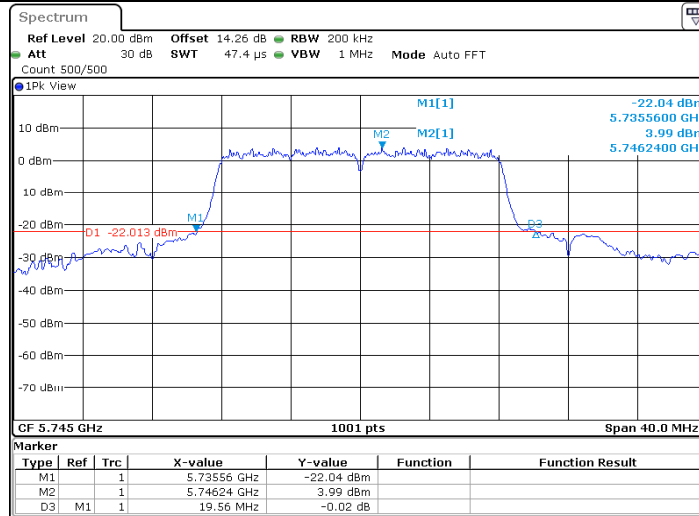
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Date: 28.SEP.2020 15:17:41



26dB OBW

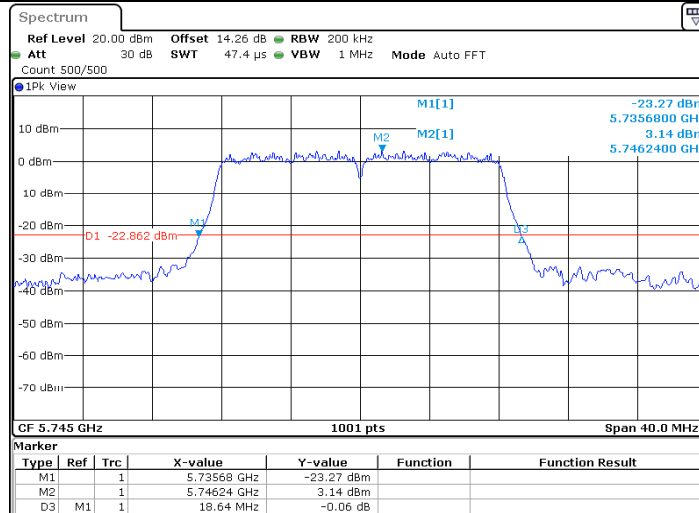
Test Mode	Antenna	Channel	26dB EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5745	19.560	5735.560	5755.120	---	PASS
	Ant2	5745	18.640	5735.680	5754.320	---	PASS
	Ant1	5785	28.680	5771.440	5800.120	---	PASS
	Ant2	5785	18.480	5775.800	5794.280	---	PASS
	Ant1	5825	18.920	5815.560	5834.480	---	PASS
	Ant2	5825	18.600	5815.680	5834.280	---	PASS
11N20SISO	Ant1	5745	21.240	5735.360	5756.600	---	PASS
	Ant2	5745	19.480	5735.280	5754.760	---	PASS
	Ant1	5785	19.480	5775.320	5794.800	---	PASS
	Ant2	5785	19.440	5775.280	5794.720	---	PASS
	Ant1	5825	19.480	5815.240	5834.720	---	PASS
	Ant2	5825	19.440	5815.280	5834.720	---	PASS
11N40SISO	Ant1	5755	51.840	5732.360	5784.200	---	PASS
	Ant2	5755	41.840	5734.120	5775.960	---	PASS
	Ant1	5795	42.240	5774.120	5816.360	---	PASS
	Ant2	5795	42.160	5774.120	5816.280	---	PASS
11AC20SISO	Ant1	5745	19.520	5735.240	5754.760	---	PASS
	Ant2	5745	19.520	5735.240	5754.760	---	PASS
	Ant1	5785	19.480	5775.280	5794.760	---	PASS
	Ant2	5785	19.400	5775.360	5794.760	---	PASS
	Ant1	5825	19.440	5815.280	5834.720	---	PASS
	Ant2	5825	19.480	5815.240	5834.720	---	PASS
11AC40SISO	Ant1	5755	41.600	5734.520	5776.120	---	PASS
	Ant2	5755	41.680	5734.440	5776.120	---	PASS
	Ant1	5795	41.920	5774.200	5816.120	---	PASS
	Ant2	5795	42.240	5774.200	5816.440	---	PASS
11AC80SISO	Ant1	5775	82.400	5734.040	5816.440	---	PASS
	Ant2	5775	82.720	5734.040	5816.760	---	PASS

11A_Ant1_5745



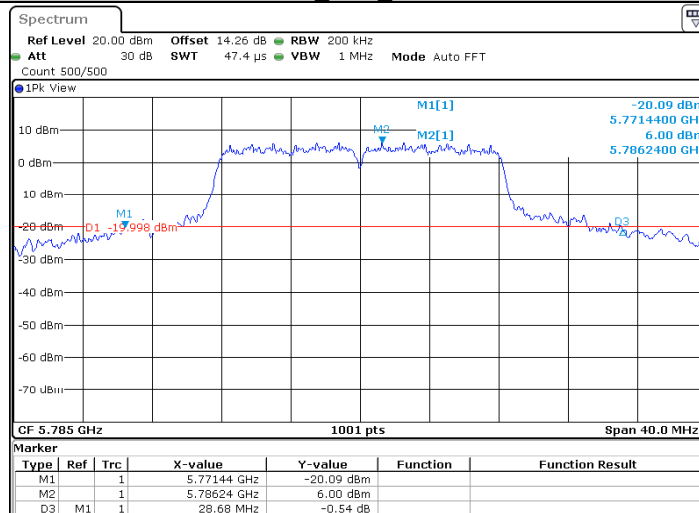
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Date: 25.SEP.2020 16:46:29

11A_Ant2_5745



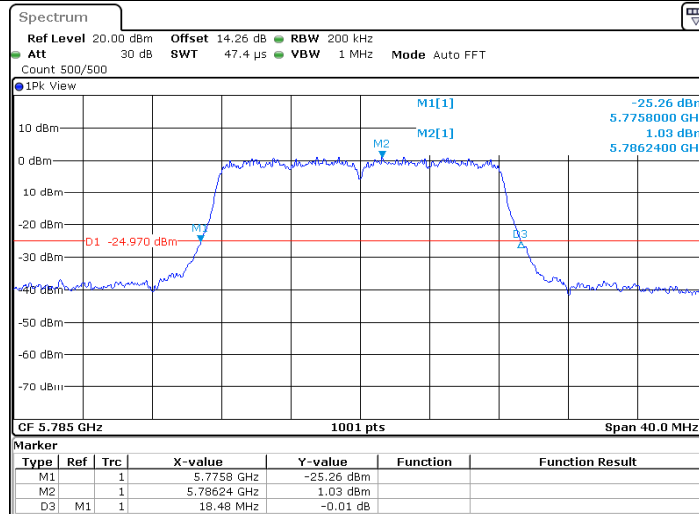
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Date: 28.SEP.2020 15:26:42

11A_Ant1_5785



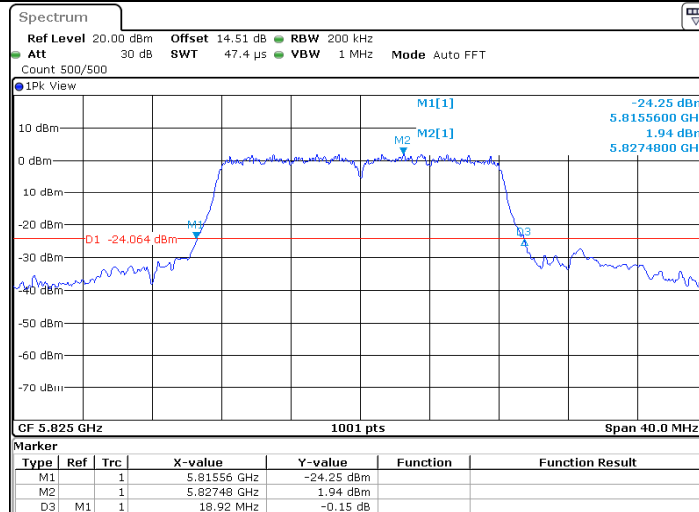
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Date: 25.SEP.2020 16:55:59

11A_Ant2_5785



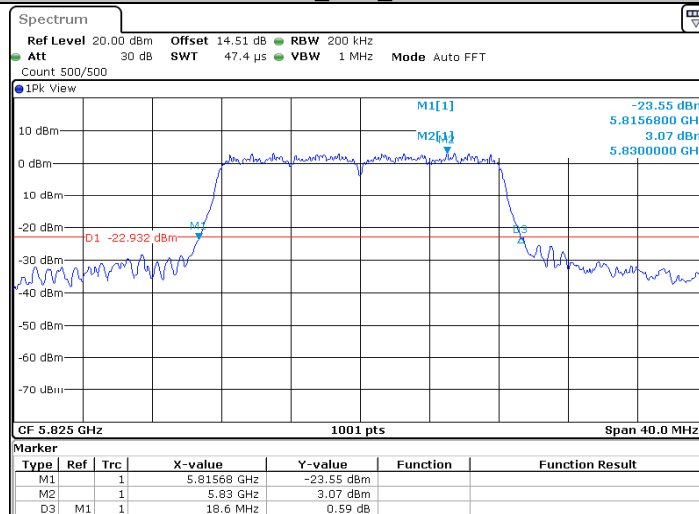
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11A_Ant1_5825



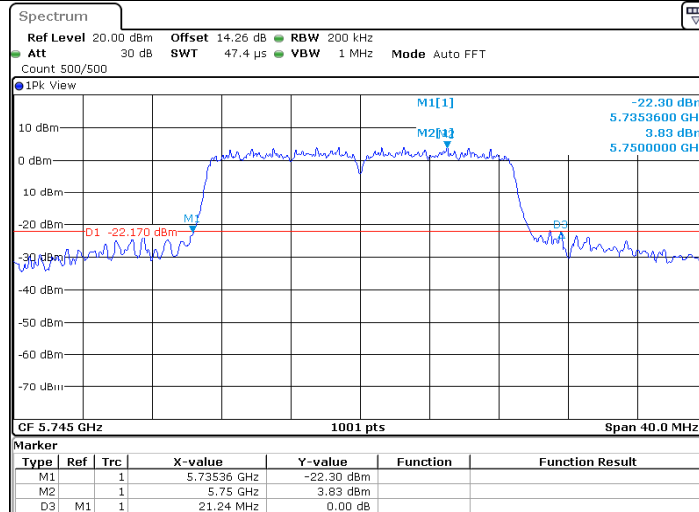
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11A_Ant2_5825



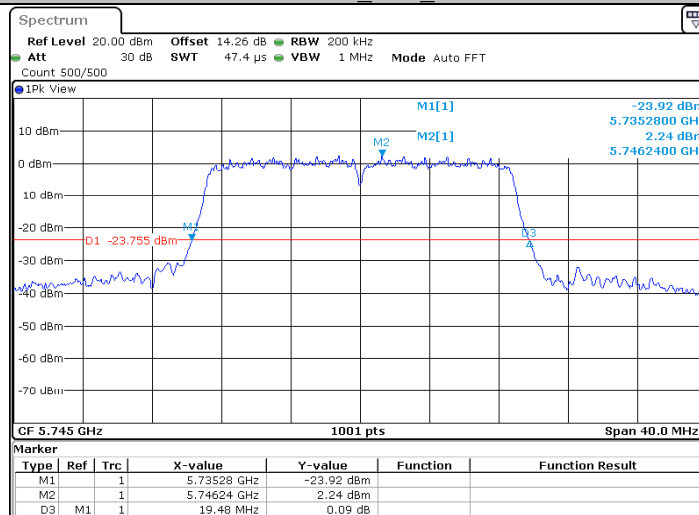
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Date: 28.SEP.2020 15:56:52

11N20SISO Ant1_5745



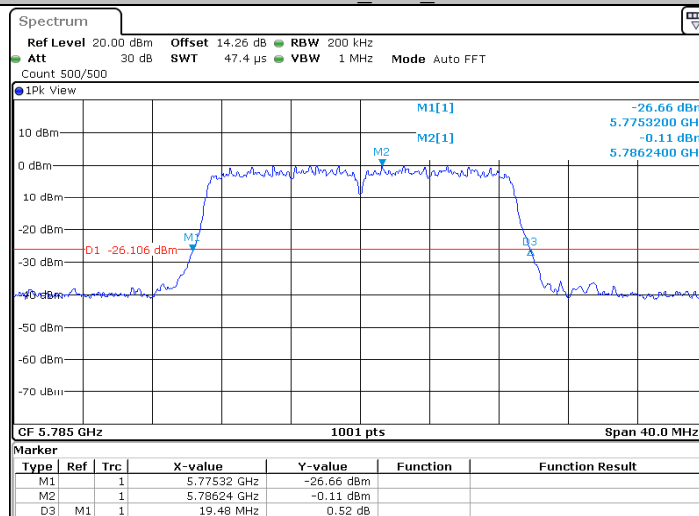
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11N20SISO Ant2_5745



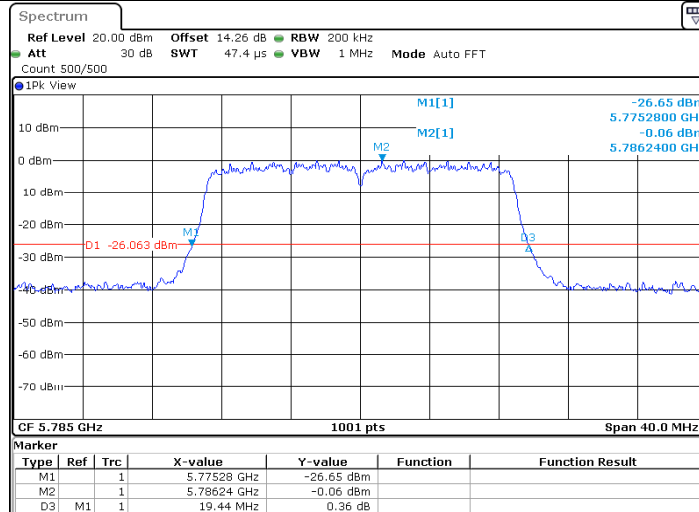
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11N20SISO Ant1_5785



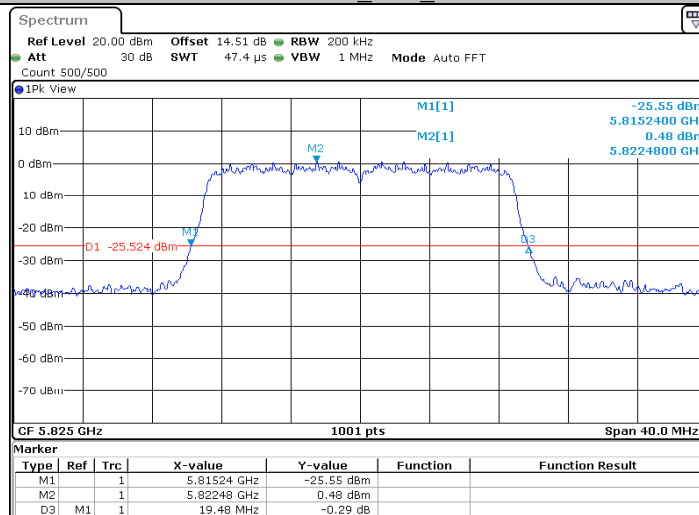
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Date: 28.SEP.2020 12:23:24

11N20SISO Ant2 5785



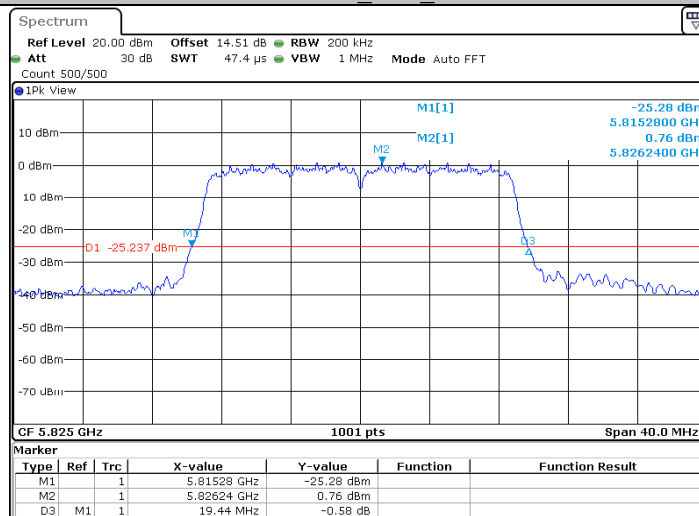
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Date: 28.SEP.2020 16:11:04

11N20SISO Ant1 5825



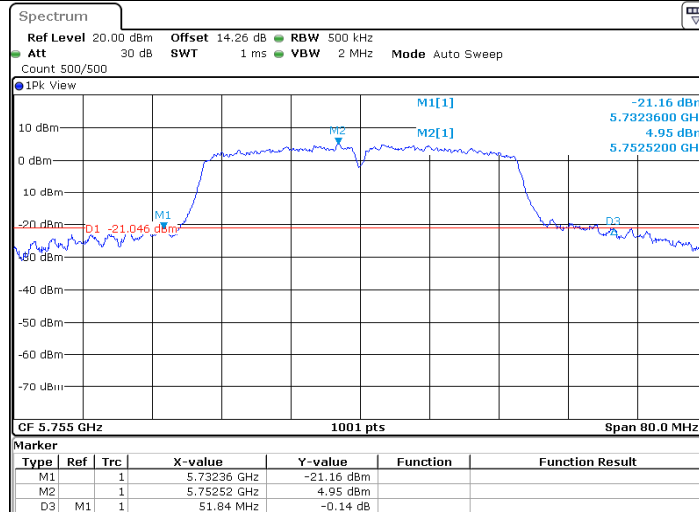
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Date: 28.SEP.2020 13:49:03

11N20SISO Ant2 5825



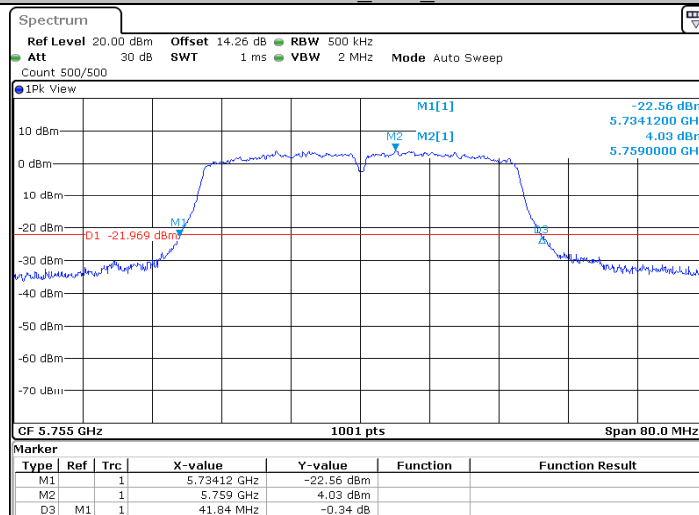
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Date: 28.SEP.2020 16:17:07

11N40SISO Ant1_5755



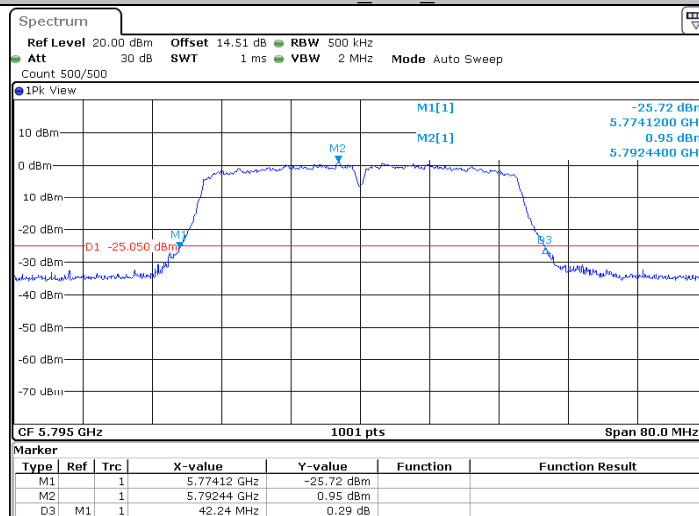
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Date: 28.SEP.2020 14:09:20

11N40SISO Ant2_5755



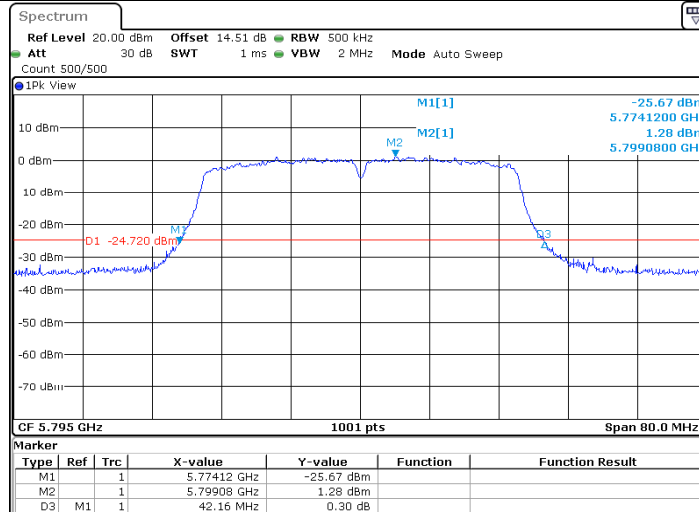
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Date: 28.SEP.2020 16:38:55

11N40SISO Ant1_5795



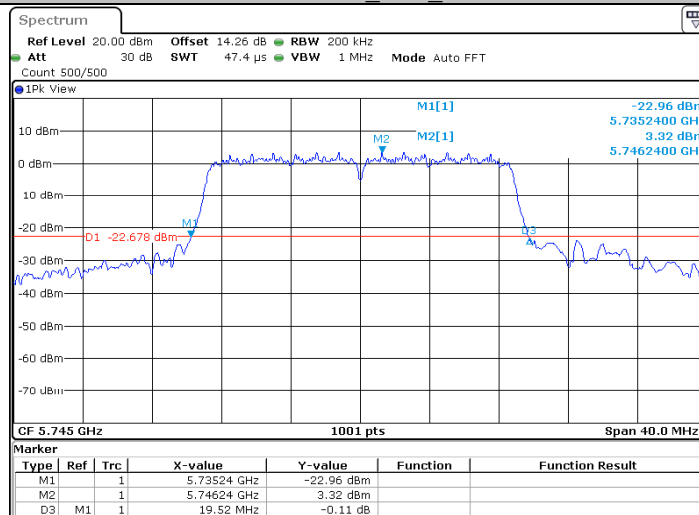
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Date: 28.SEP.2020 14:20:35

11N40SISO Ant2_5795



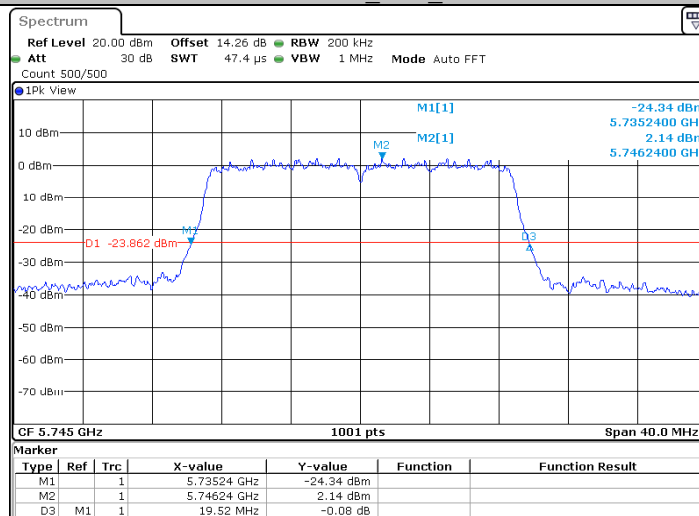
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Date: 28.SEP.2020 16:45:47

11AC20SISO Ant1_5745



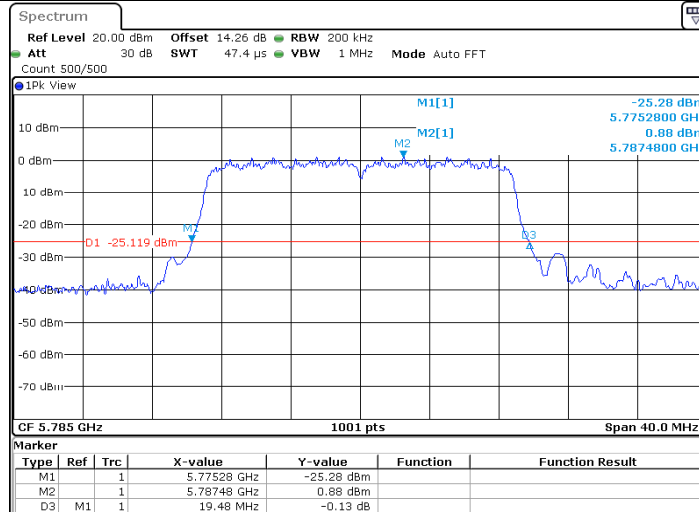
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Date: 28.SEP.2020 14:41:59

11AC20SISO Ant2_5745



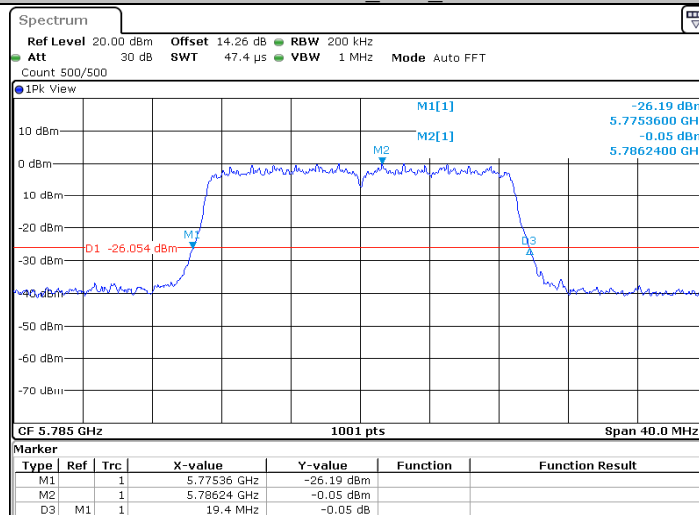
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Date: 28.SEP.2020 17:24:46

11AC20SISO_Ant1_5785



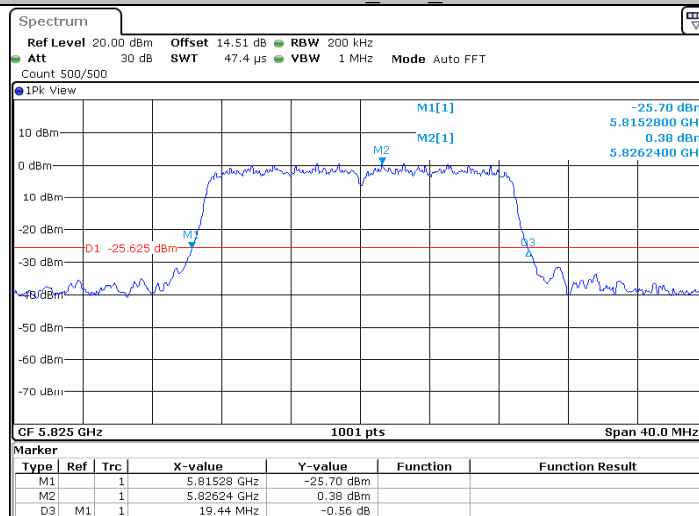
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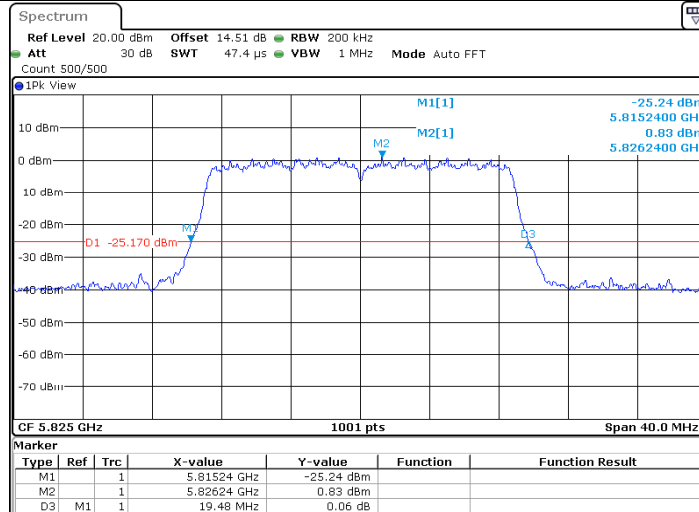
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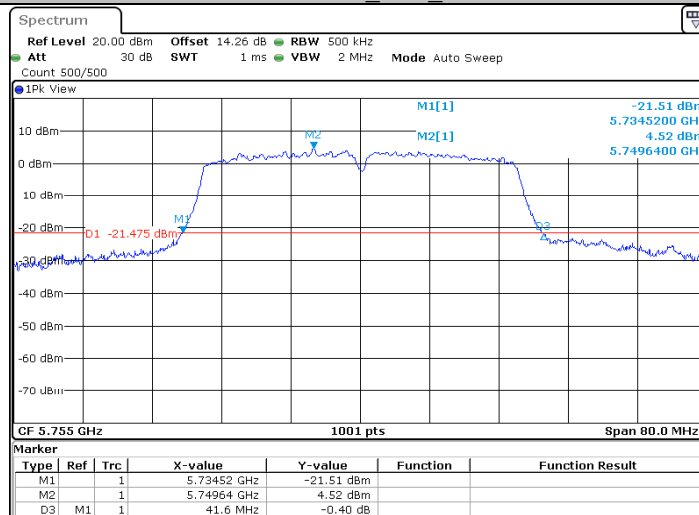
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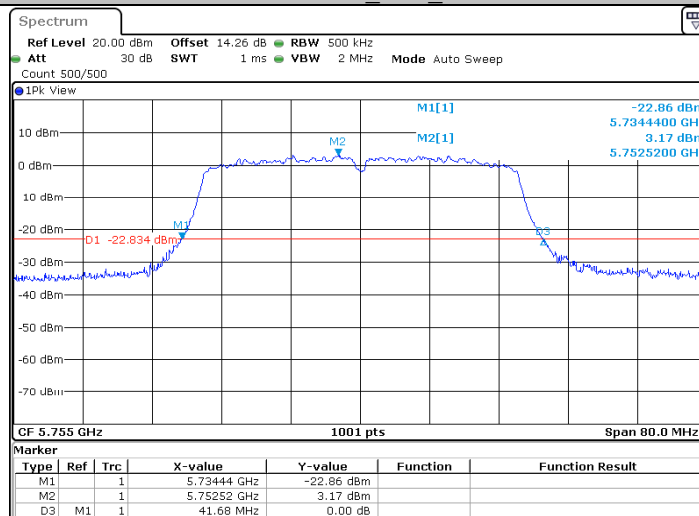
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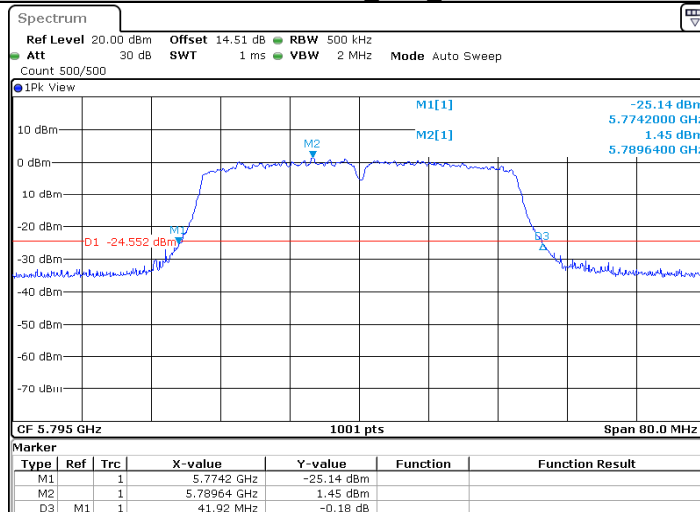
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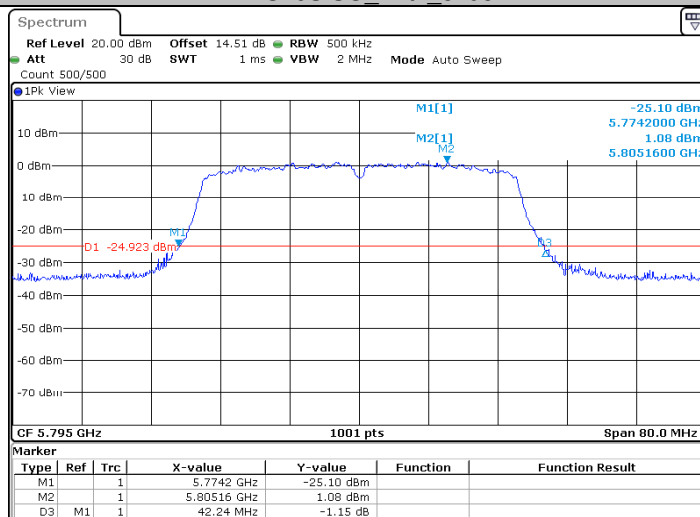
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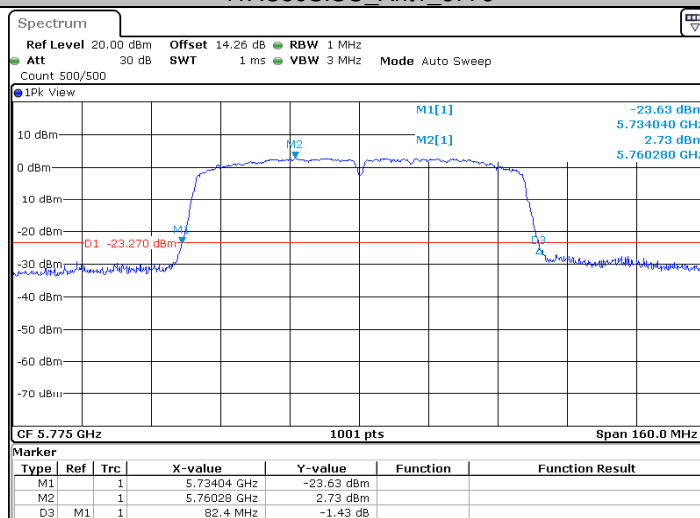
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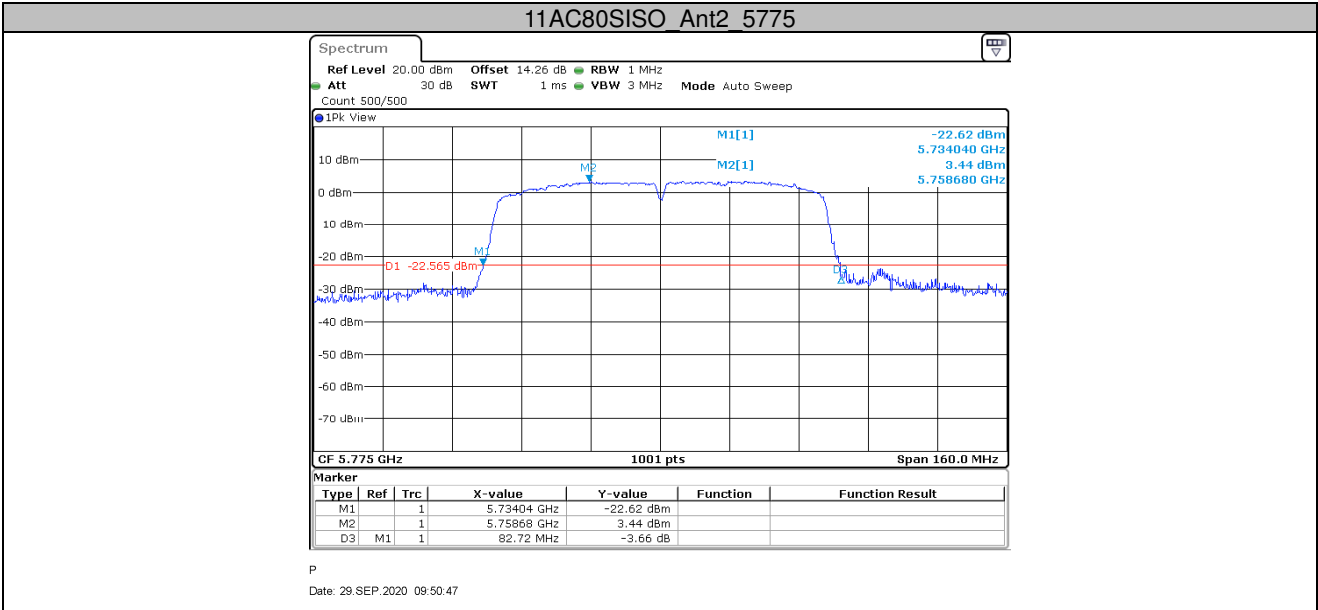


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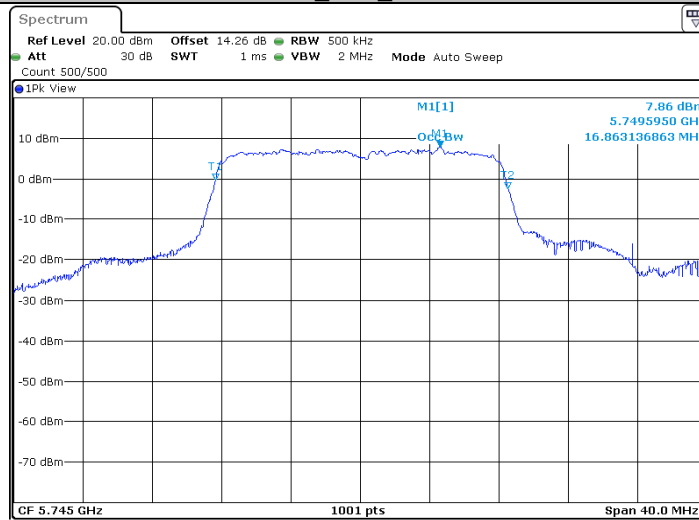
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99% OBW

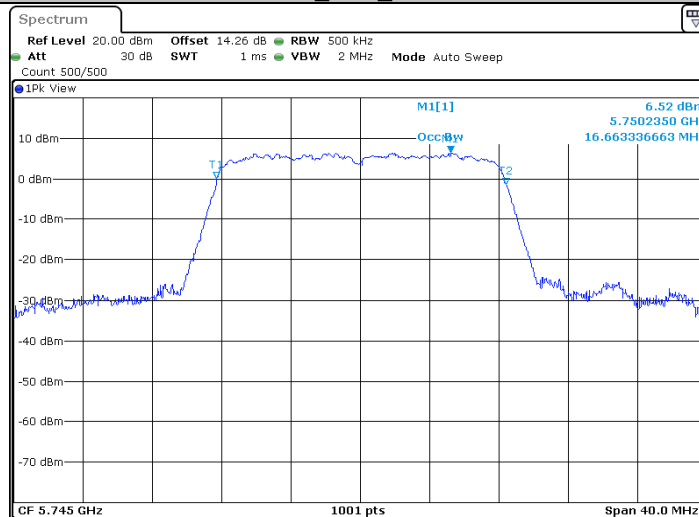
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11A	Ant1	5745	16.863	5736.648	5753.511	---	PASS
	Ant2	5745	16.663	5736.728	5753.392	---	PASS
	Ant1	5785	17.542	5776.409	5793.951	---	PASS
	Ant2	5785	16.663	5776.728	5793.392	---	PASS
	Ant1	5825	16.743	5816.648	5833.392	---	PASS
	Ant2	5825	16.703	5816.648	5833.352	---	PASS
11N20SISO	Ant1	5745	17.782	5736.169	5753.951	---	PASS
	Ant2	5745	17.782	5736.129	5753.911	---	PASS
	Ant1	5785	17.742	5776.169	5793.911	---	PASS
	Ant2	5785	17.742	5776.169	5793.911	---	PASS
	Ant1	5825	17.702	5816.169	5833.871	---	PASS
	Ant2	5825	17.742	5816.169	5833.911	---	PASS
11N40SISO	Ant1	5755	36.843	5736.778	5773.621	---	PASS
	Ant2	5755	36.364	5736.858	5773.222	---	PASS
	Ant1	5795	36.603	5776.858	5813.462	---	PASS
	Ant2	5795	36.364	5776.858	5813.222	---	PASS
11AC20SISO	Ant1	5745	17.822	5736.129	5753.951	---	PASS
	Ant2	5745	17.742	5736.169	5753.911	---	PASS
	Ant1	5785	17.702	5776.169	5793.871	---	PASS
	Ant2	5785	17.742	5776.169	5793.911	---	PASS
	Ant1	5825	17.702	5816.169	5833.871	---	PASS
	Ant2	5825	17.742	5816.169	5833.911	---	PASS
11AC40SISO	Ant1	5755	36.683	5736.778	5773.462	---	PASS
	Ant2	5755	36.523	5736.858	5773.382	---	PASS
	Ant1	5795	36.603	5776.778	5813.382	---	PASS
	Ant2	5795	36.523	5776.858	5813.382	---	PASS
11AC80SISO	Ant1	5775	74.965	5737.597	5812.562	---	PASS
	Ant2	5775	74.965	5737.757	5812.722	---	PASS

11A_Ant1_5745



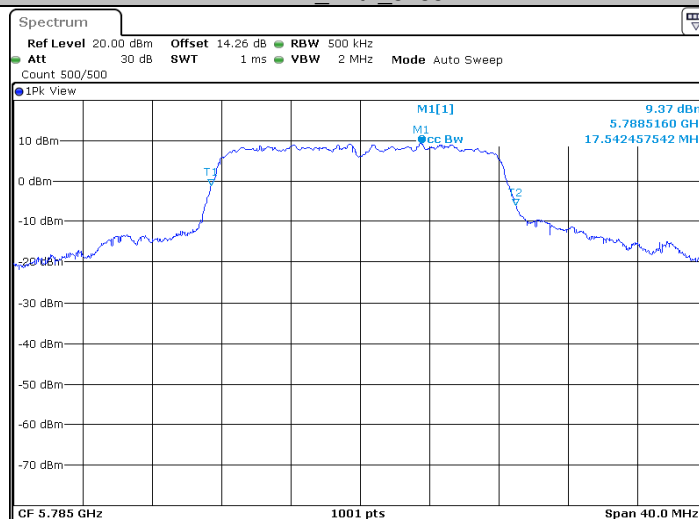
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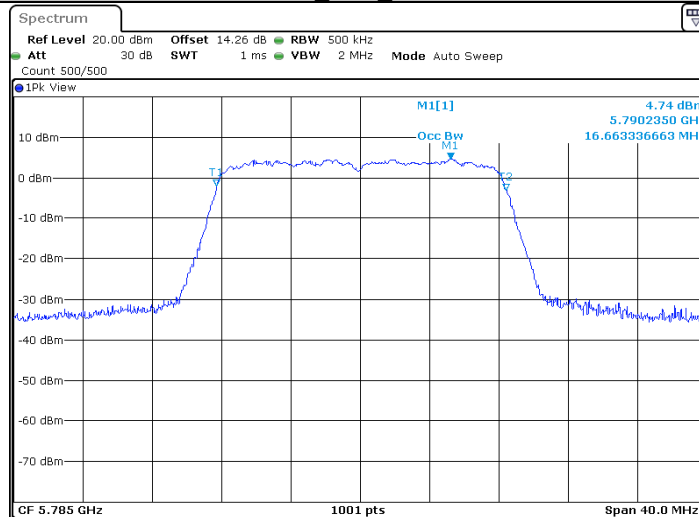
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11A_Ant1_5785



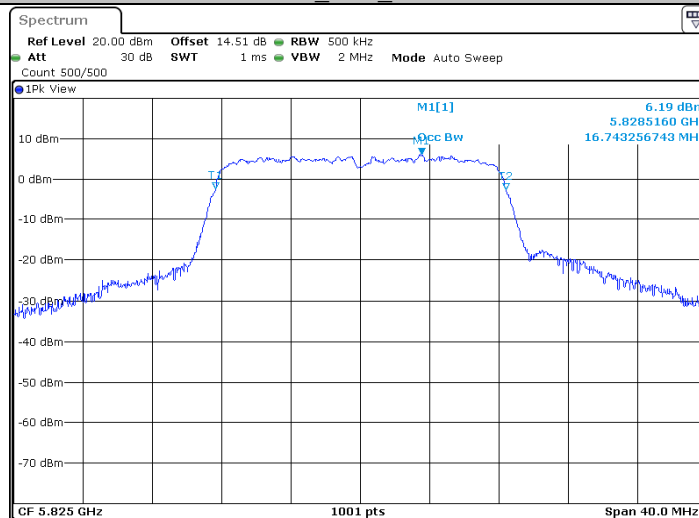
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11A Ant2 5785



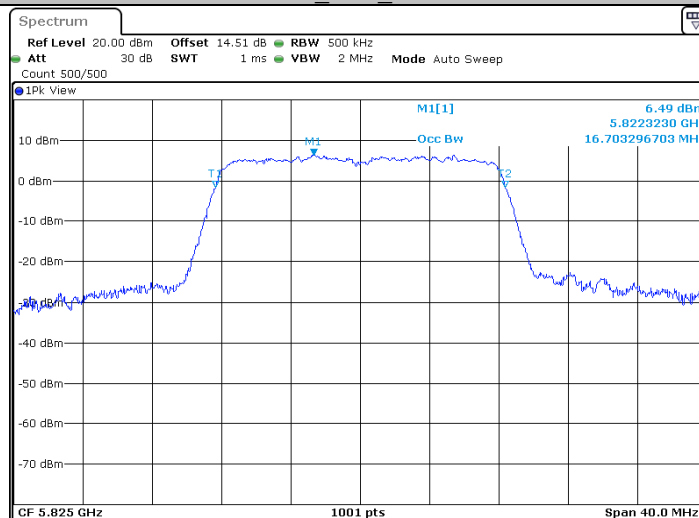
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11A Ant1 5825



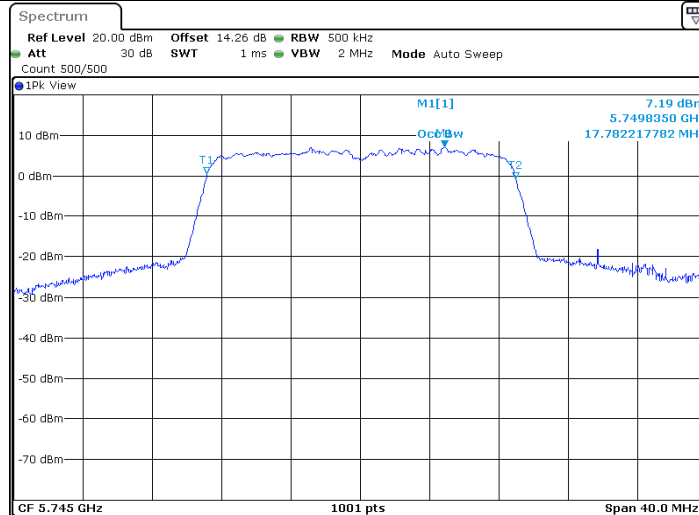
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11A Ant2 5825



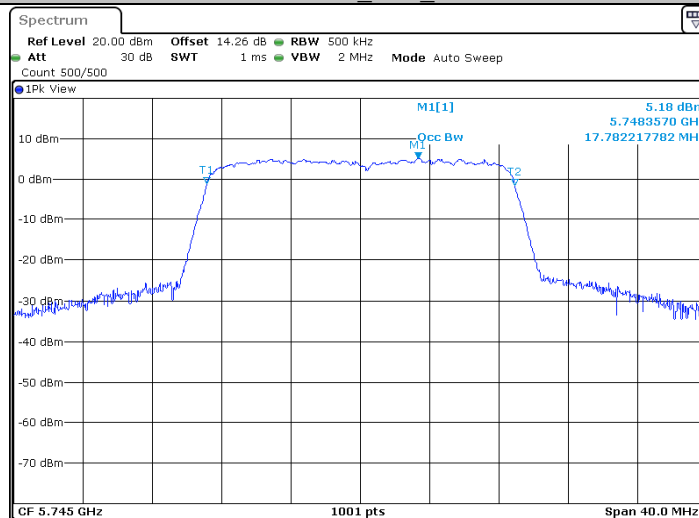
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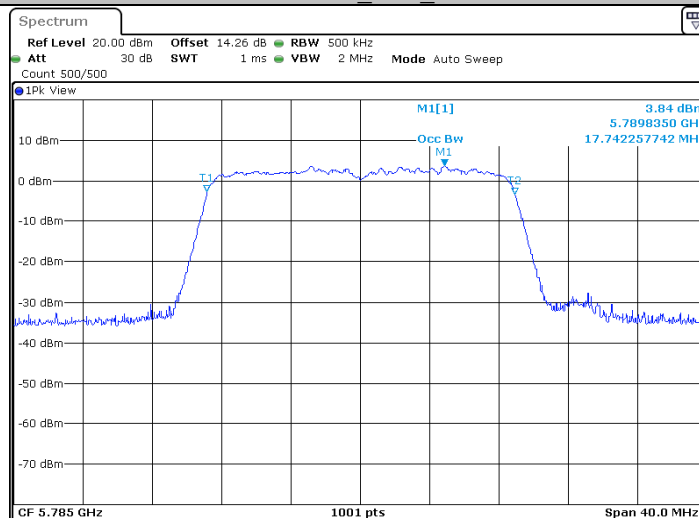
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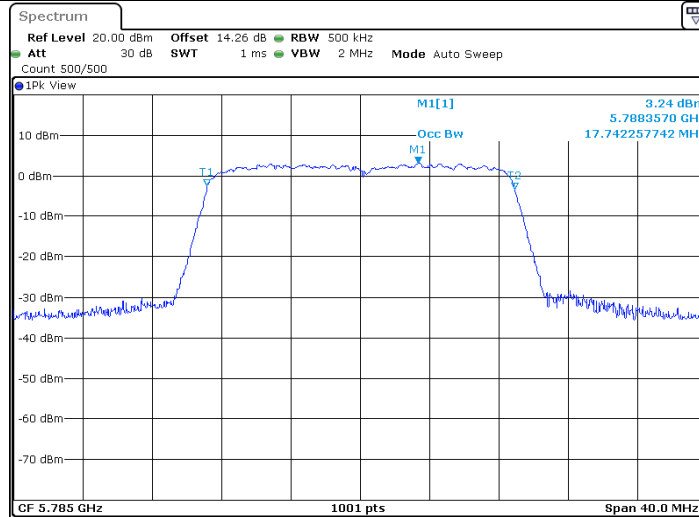
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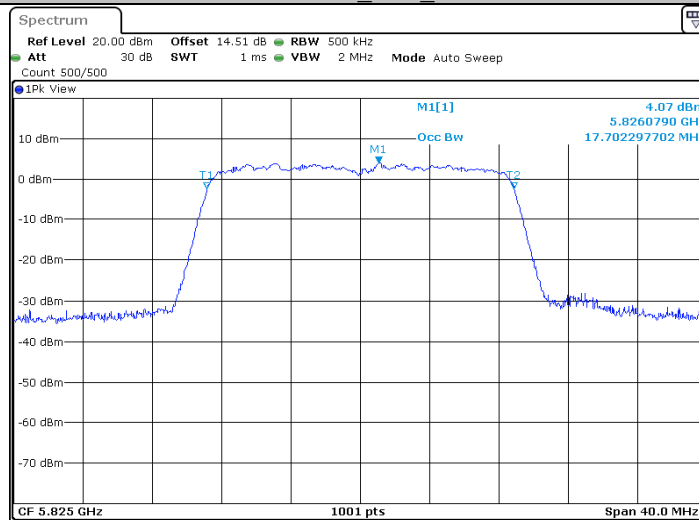
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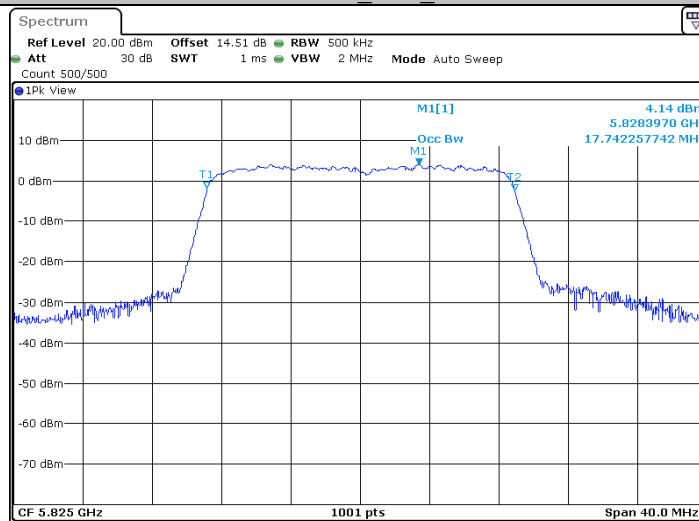
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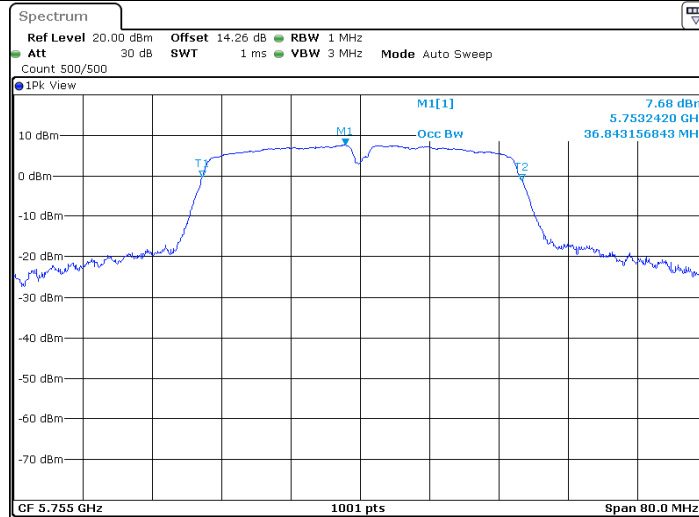
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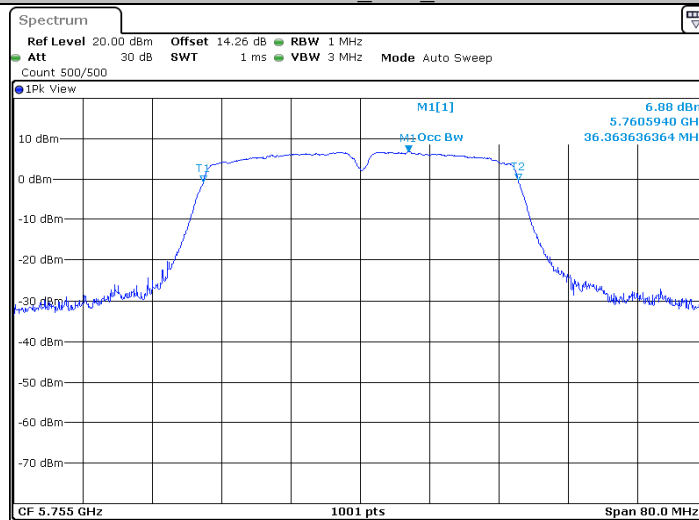
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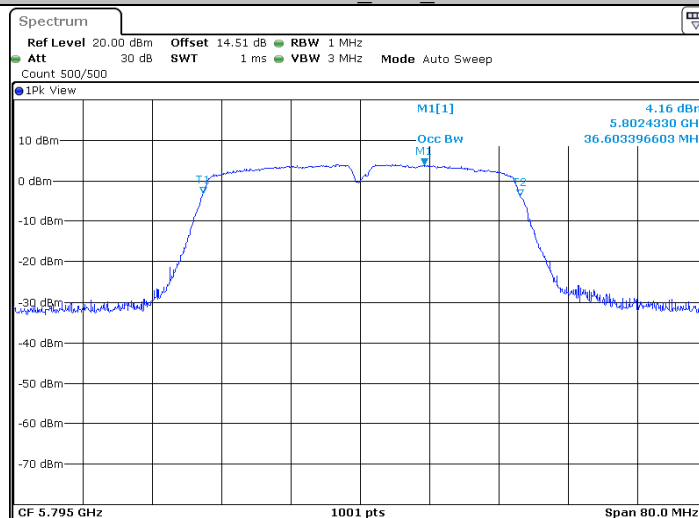
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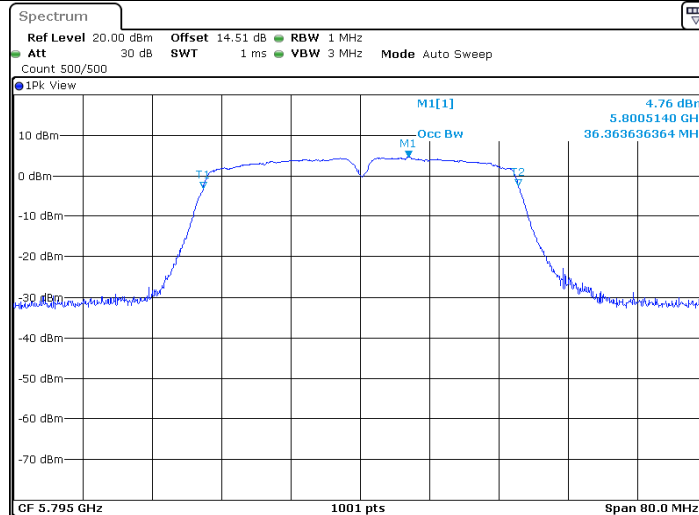
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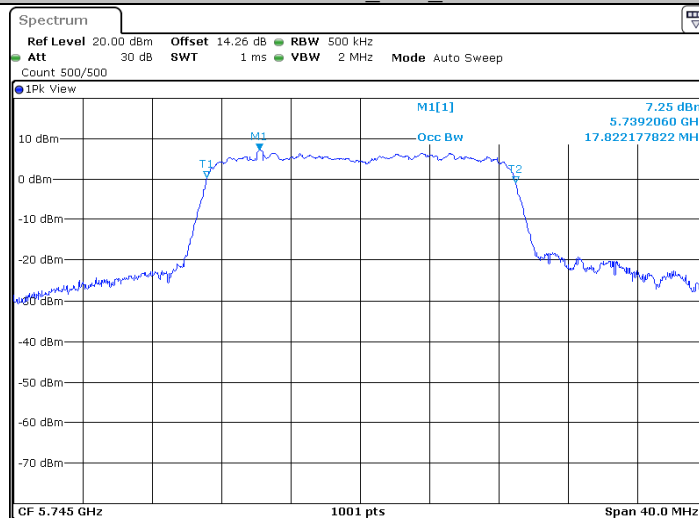
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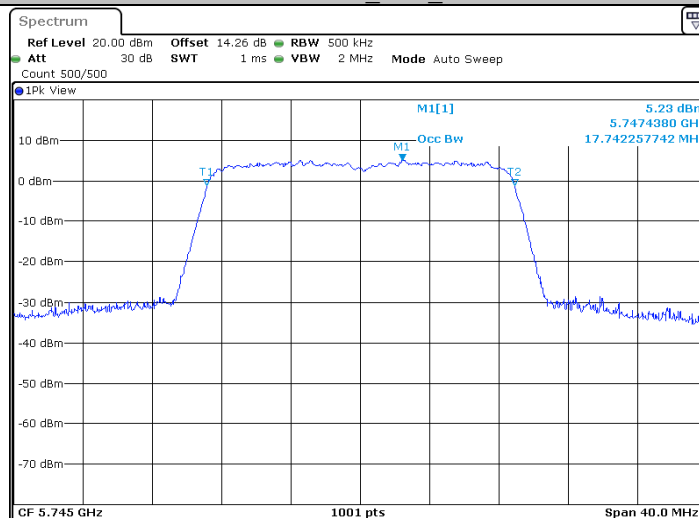
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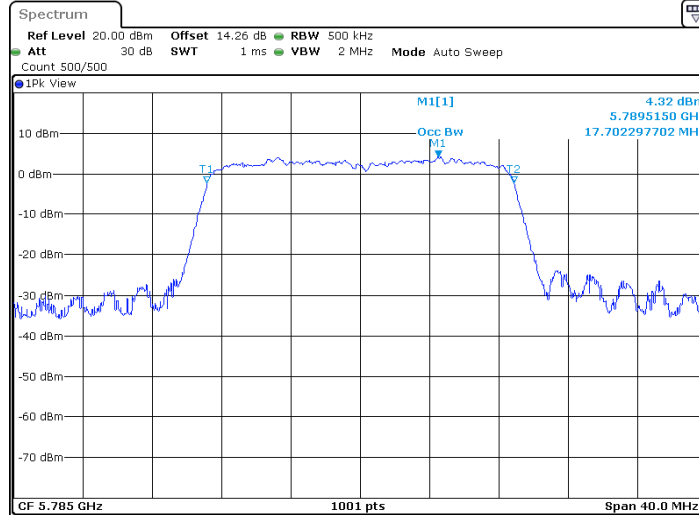
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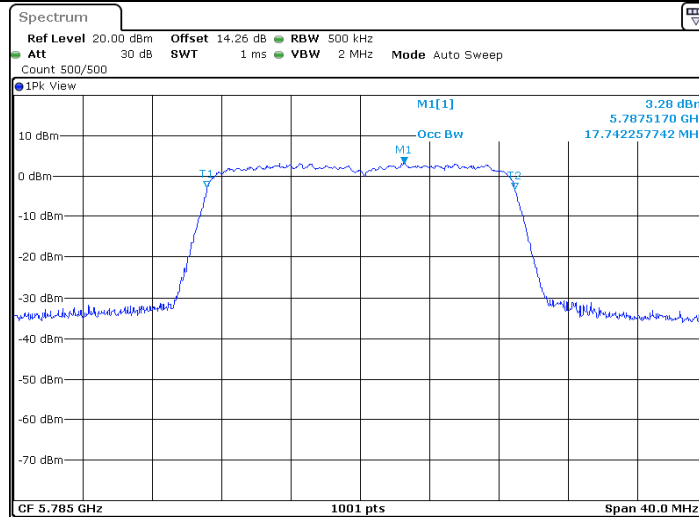
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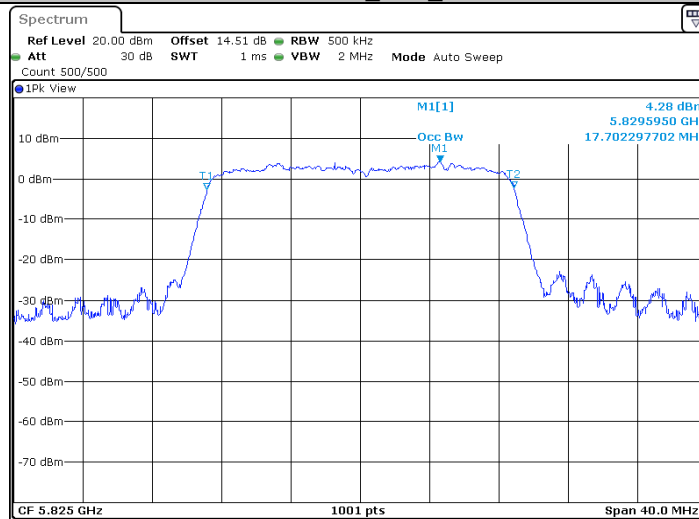
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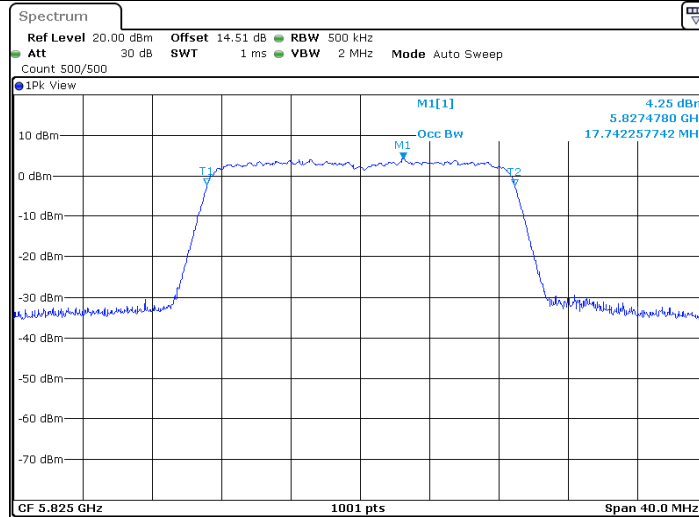
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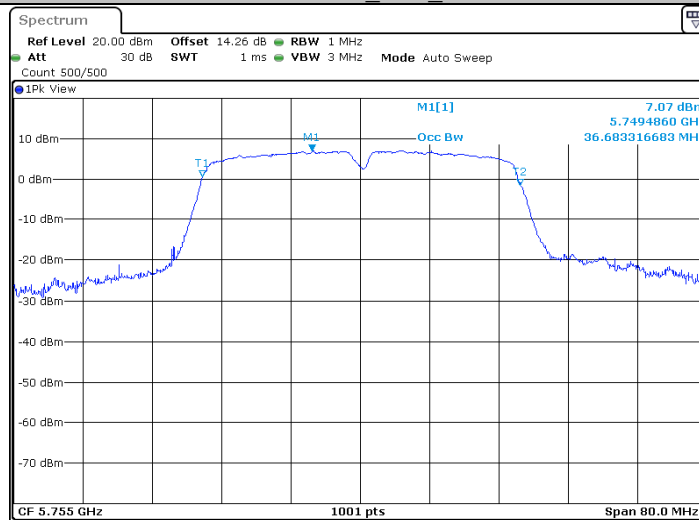
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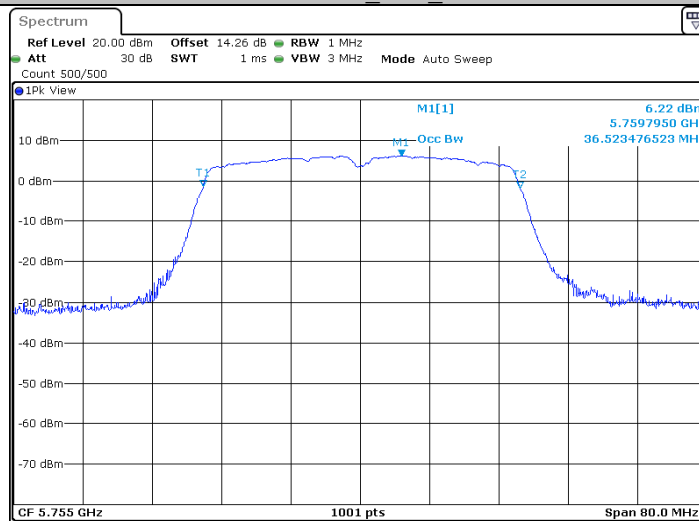
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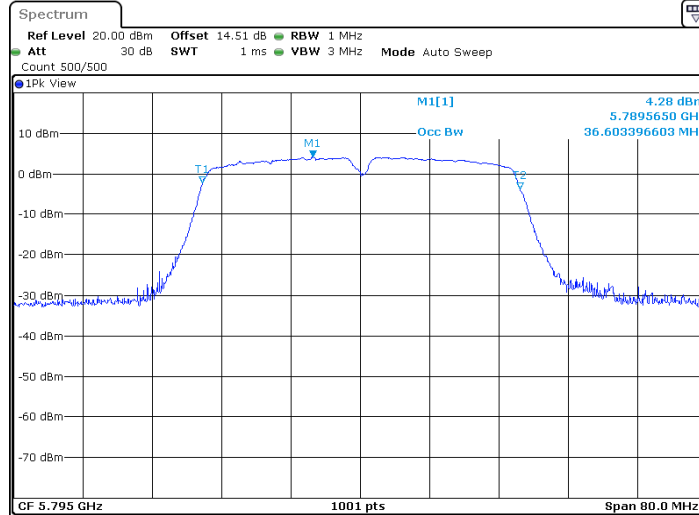
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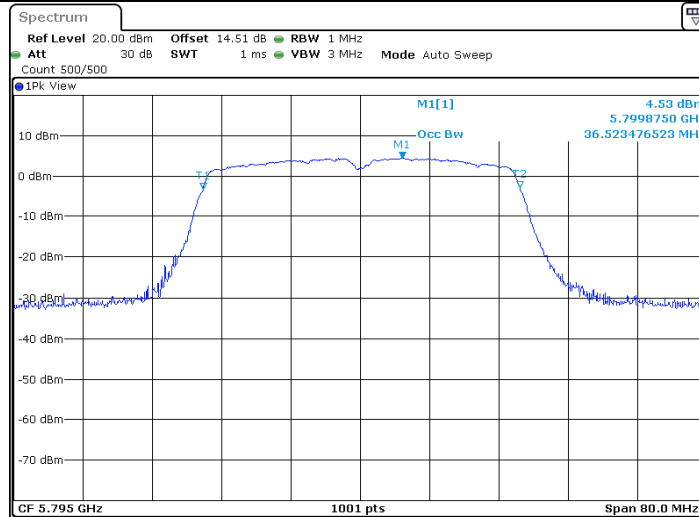
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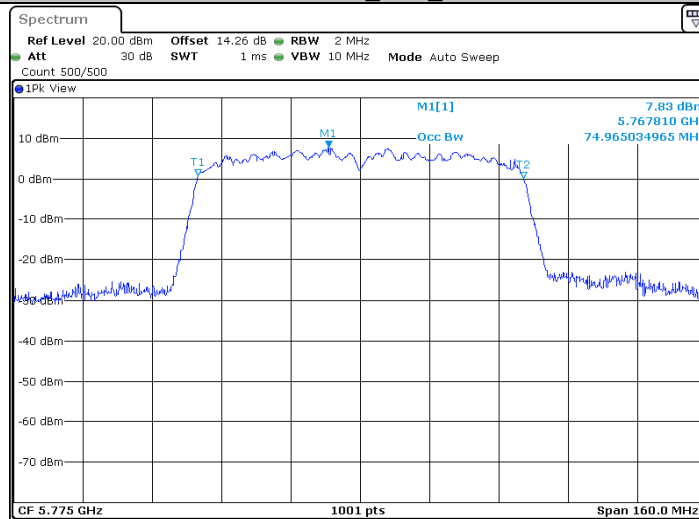
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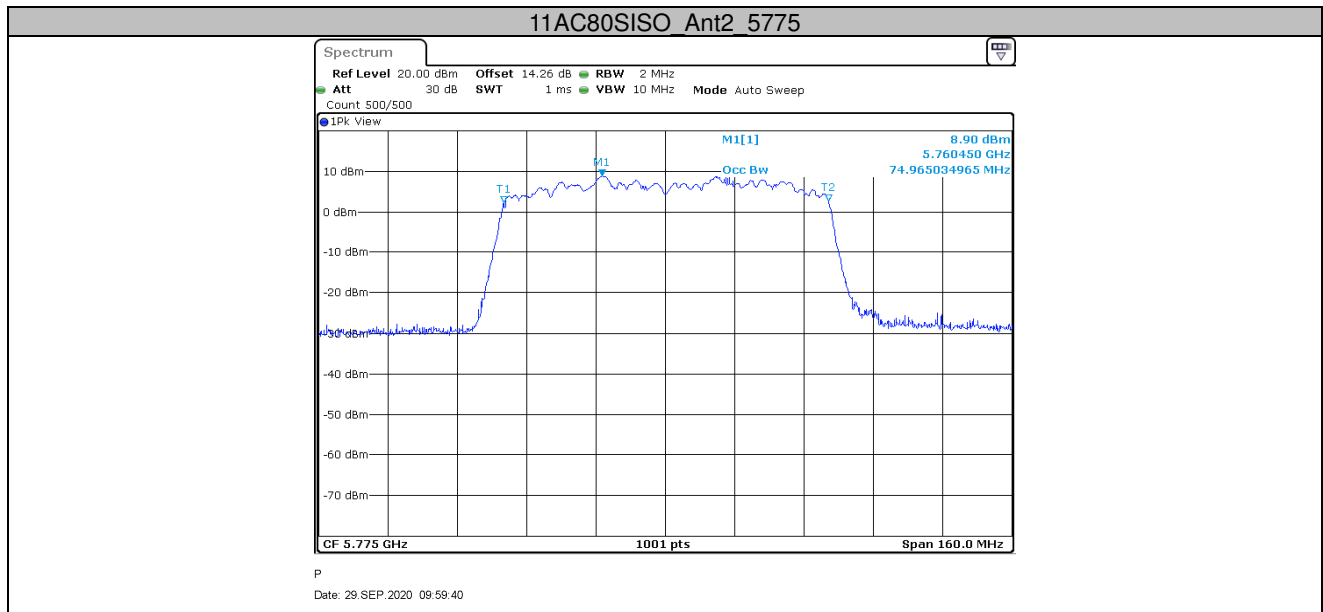


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11AC80SISO_Ant1_5775



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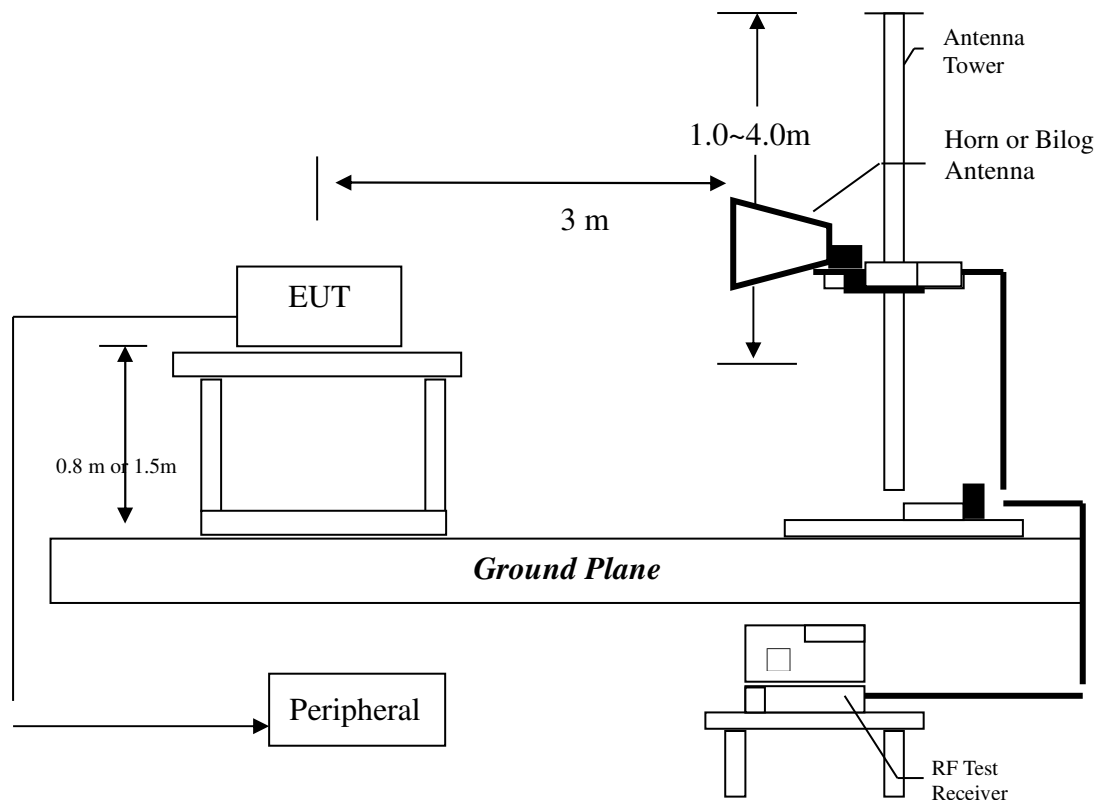
6. Radiated Emission test (FCC 15.205 & 15.209 & 15.407)

6.1 Operating environment

Temperature:	22	°C
Relative Humidity:	55	%
Atmospheric Pressure	1010	hPa

6.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emission measurements were performed from 9KHz to tenth harmonic or 40GHz. The EUT for testing is arranged on a styrene turntable with the height of 0.8m up to 1GHz and 1.5m above 1GHz. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

Testing settings (refer to KDB 789033 D02)

Peak Measurements below 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=120KHz
- 4, Detector=Quasi-Peak
- 5, Trace was allowed to stabilize

Peak Measurements above 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=1MHz
- 4, VBW=3MHz
- 4, Detector= Peak (Max-hold)
- 5, Trace was allowed to stabilize

Average Measurements above 1GHz

- 1, Analyzer center frequency was set to the frequency of the radiated spurious emission.
- 2, Span=encompass the entire emission
- 3, RBW=1MHz
- 4, VBW=3MHz
- 4, Detector= RMS (Max-hold)
- 5, Trace was allowed to stabilize

6.3 Limit

The spurious Emission shall test through the 10th harmonic or 40GHz (whichever is lower). In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Notes:

- 1, For the band 5.725-5.85GHz, 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.
- 2, The spectrum is measured from 9KHz to the 10th harmonic of the fundamental frequency of the transmitter using QP detector below 1GHz, above 1GHz, average & peak measurements were taken using for test. The worst-case emission are reported however emission whose levels were not within 20dB of the respective limited were not reported.
- 3, The test was performed on EUT under 802.11a/n-HT20/40/ac-HT20/40/80 continuously transmitting mode. All mode had been tested, but only the worst-case is recorded in the following graph and table.

Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD$$

Where FS = Field Strength in dB μ V/m
 RA = Receiver Amplitude (including preamplifier) in dB μ V
 CF = Cable Attenuation Factor in dB
 AF = Antenna Factor in dB
 AG = Amplifier Gain in dB
 PD = Pulse Desensitization in dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD$$

Example

Assume a receiver reading of 62.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB. The net field strength for comparison to the appropriate emission limit is 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$\begin{aligned} RA &= 62.0 \text{ dB}\mu\text{V} \\ AF &= 7.4 \text{ dB} \\ CF &= 1.6 \text{ dB} \\ AG &= 29.0 \text{ dB} \\ PD &= 0 \text{ dB} \\ FS &= 62 + 7.4 + 1.6 - 29 + 0 = 42 \text{ dB}\mu\text{V/m} \end{aligned}$$

$$\text{Level in mV/m} = \text{Common Antilogarithm } [(42 \text{ dB}\mu\text{V/m})/20] = 125.9 \mu\text{V/m}$$

6.4 Radiated spurious emission test data

6.4.1 Measurement results: frequencies equal to or less than 1 GHz

Applicant: SKYBELL TECHNOLOGIES INC

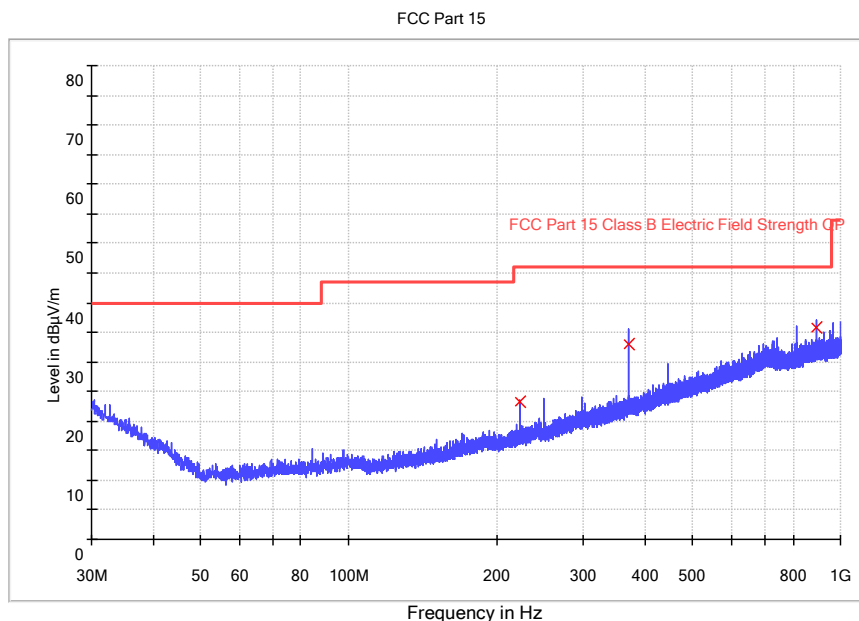
Date of Test: September 21, 2020

Worst Case Operating Mode:

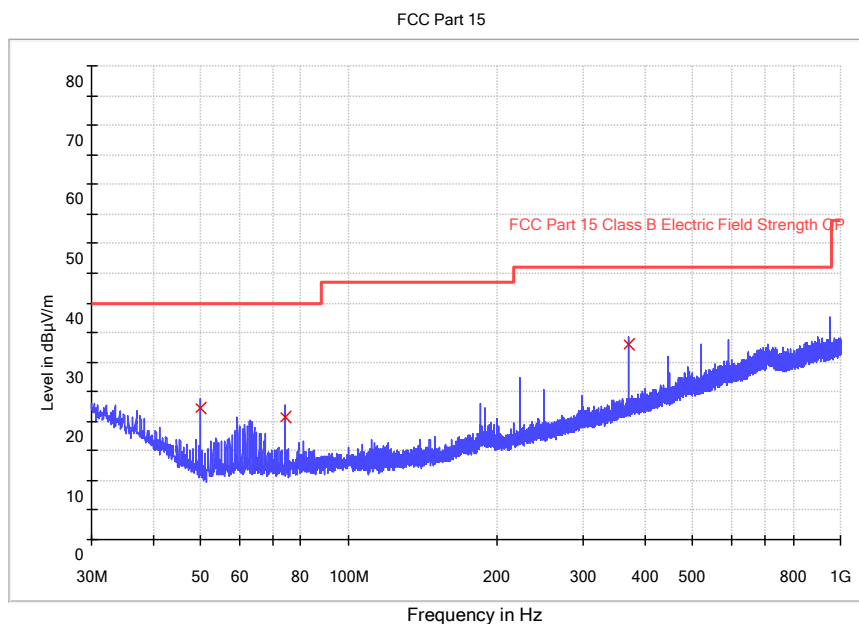
Model: TRIM2 S

Transmitting (Antenna 1, 802.11ac-HT40)

ANT Polarity: Horizontal



ANT Polarity: Vertical



Applicant: SKYBELL TECHNOLOGIES INC

Date of Test: September 21, 2020

Worst Case Operating Mode:

Model: TRIM2 S

Transmitting (Antenna 1, 802.11ac-HT40)

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	222.739000	29.7	20.0	13.6	23.3	46.0	-22.7
Horizontal	371.240000	34.5	20.0	18.6	33.1	46.0	-12.9
Horizontal	891.004333	28.4	20.0	27.4	35.8	46.0	-10.2
Vertical	49.982000	34.0	20.0	8.2	22.2	40.0	-17.8
Vertical	74.232000	31.7	20.0	9.0	20.7	40.0	-19.3
Vertical	371.240000	34.3	20.0	18.6	32.9	46.0	-13.1

- NOTES:
1. Quasi-Peak detector is used for frequency below 1GHz.
 2. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 3. Negative value in the margin column shows emission below limit.
 4. All emissions are below the QP limit.

6.4.2 Measurement results: frequency above 1GHz

Antenna 1:

The worst case occurred at 802.11ac-VHT40

Channel 151/27Mbps

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11510.000	47.9	36.3	39.0	50.6	68.2	-17.6
Horizontal	17265.000	44.3	34.7	41.2	50.8	68.2	-17.4

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11510.000	37.5	36.3	39.0	40.2	54.0	-13.8
Horizontal	17265.000	34.9	34.7	41.2	41.4	54.0	-12.6

Channel 159/27Mbps

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11590.000	48.5	36.3	39.0	51.2	68.2	-17.0
Horizontal	17385.000	45.1	34.7	41.2	51.6	68.2	-16.6

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11590.000	38.5	36.3	39.0	41.2	54.0	-12.8
Horizontal	17385.000	33.6	34.7	41.2	40.1	54.0	-13.9

Antenna 2:

The worst case occurred at 802.11ac-VHT40

Channel 151/27Mbps

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11510.000	47.4	36.3	39.0	50.1	68.2	-18.1
Horizontal	17265.000	45.0	34.7	41.2	51.5	68.2	-16.7

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11510.000	38.2	36.3	39.0	40.9	54.0	-13.1
Horizontal	17265.000	34.8	34.7	41.2	41.3	54.0	-12.7

Channel 159/27Mbps

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Peak Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11590.000	49.5	36.3	39.0	52.2	68.2	-16.0
Horizontal	17385.000	44.9	34.7	41.2	51.4	68.2	-16.8

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Average Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	11590.000	38.8	36.3	39.0	41.5	54.0	-12.5
Horizontal	17385.000	34.7	34.7	41.2	41.2	54.0	-12.8

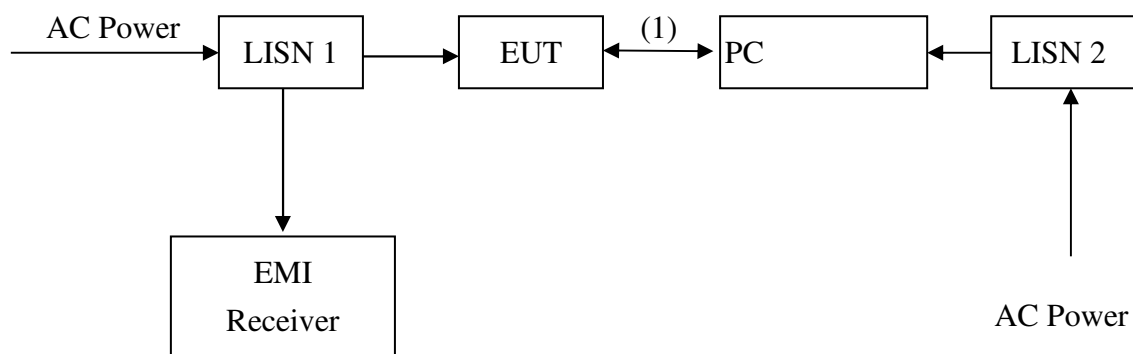
- * Emission within the restricted band meets the requirement of section 15.205. The corresponding limit as per 15.209 is based on Quasi peak limit for frequencies below 1000 MHz and average limit for frequencies over 1000 MHz. The radio frequency emissions above 1GHz also meet corresponding 20dB permitted peak limit with a peak detector function. All unwanted emissions outside of the 5725-5850 MHz band are complied with the limit.

7. Power Line Conducted Emission test

7.1 Operating environment

Temperature: 23 °C
Relative Humidity: 55 %
Atmospheric Pressure 1011 hPa

7.2 Test setup & procedure



The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 ohm/50 uH coupling impedance with 50 ohm termination.

Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10/2013 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCI 30) is set at 9 kHz.

7.3 Limit

Freq. (MHz)	Conducted Limit (dBuV)	
	Q.P.	Ave.
0.15~0.50	66 – 56*	56 – 46*
0.50~5.00	56	46
5.00~30.0	60	50

*Decreases with the logarithm of the frequency.

7.4 Power Line Conducted Emission test data

Applicant: SKYBELL TECHNOLOGIES INC

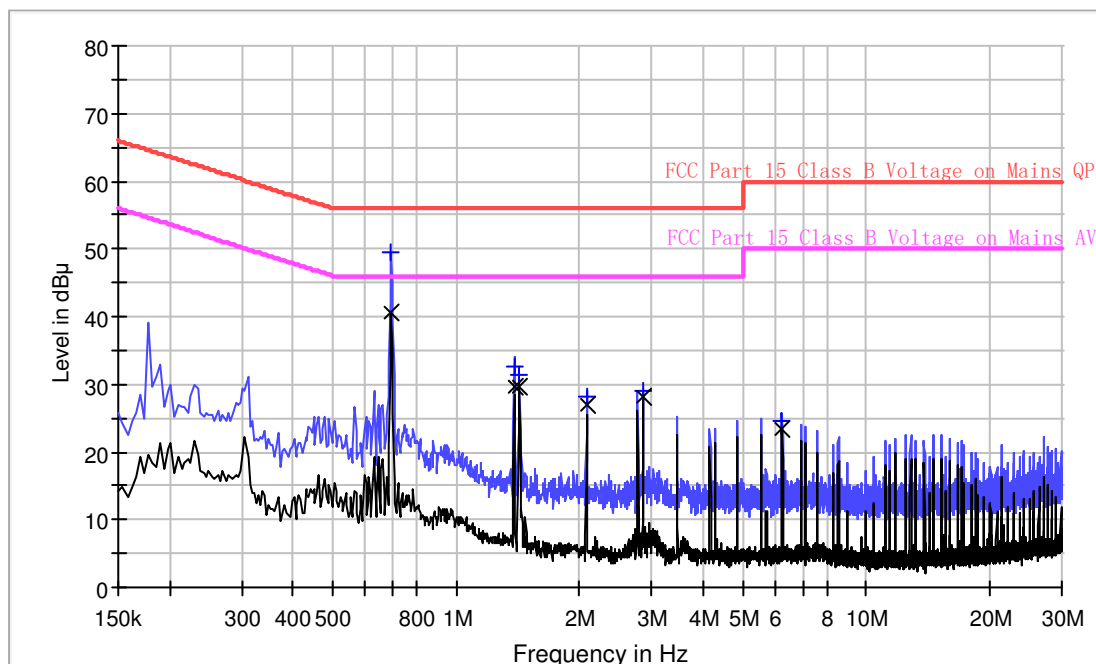
Date of Test: 21 September 2020

Worst Case Operating Mode:

Phase: Live

Model: TRIM2 S

Antenna 1, 802.11ac-VHT40



Result Table QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.694000	49.4	9.000	L1	9.7	6.6	56.0
1.386000	32.5	9.000	L1	9.7	23.5	56.0
1.426000	31.3	9.000	L1	9.7	24.7	56.0
2.082000	28.1	9.000	L1	9.7	27.9	56.0
2.854000	29.0	9.000	L1	9.8	27.0	56.0
6.246000	24.6	9.000	L1	9.8	35.4	60.0

Result Table AV

Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.694000	40.6	9.000	L1	9.7	5.4	46.0
1.386000	29.7	9.000	L1	9.7	16.3	46.0
1.426000	29.5	9.000	L1	9.7	16.5	46.0
2.082000	26.9	9.000	L1	9.7	19.1	46.0
2.854000	28.2	9.000	L1	9.8	17.8	46.0
6.246000	23.4	9.000	L1	9.8	26.6	50.0

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

Applicant: SKYBELL TECHNOLOGIES INC

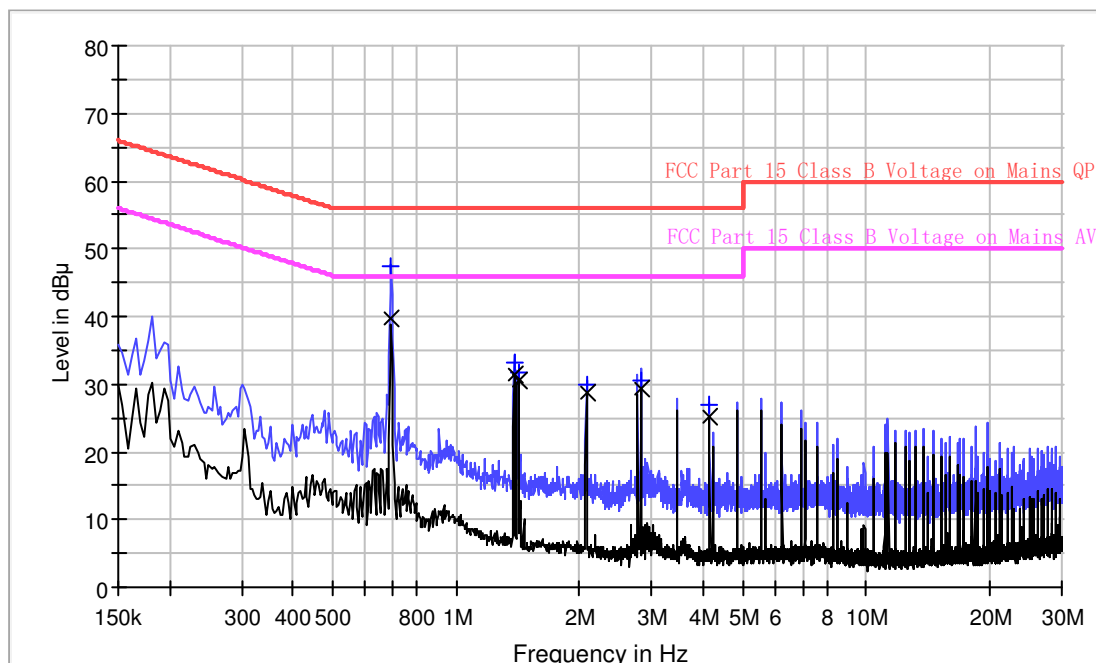
Date of Test: 21 September 2020

Worst Case Operating Mode:

Phase: Neutral

Model: TRIM2 S

Antenna 1, 802.11ac-VHT40



Result Table QP

Frequency (MHz)	QuasiPeak (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.694000	47.3	9.000	N	9.7	8.7	56.0
1.386000	33.1	9.000	N	9.7	22.9	56.0
1.416000	31.6	9.000	N	9.7	24.4	56.0
2.078000	30.0	9.000	N	9.8	26.0	56.0
2.830000	30.4	9.000	N	9.8	25.6	56.0
4.162000	26.9	9.000	N	9.8	29.1	56.0

Result Table AV

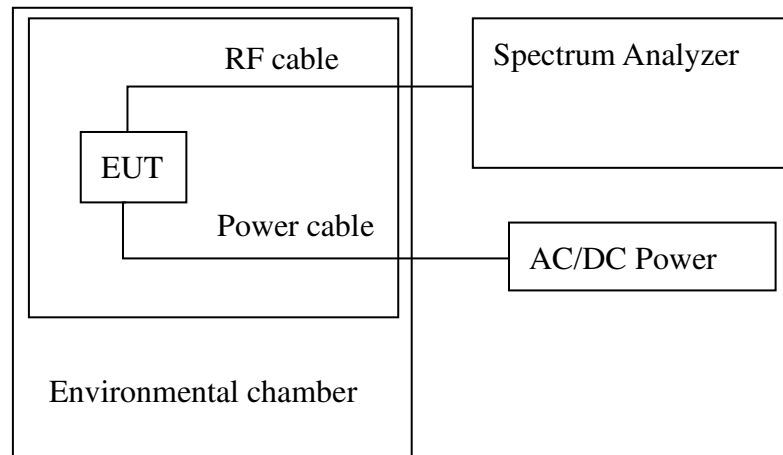
Frequency (MHz)	Average (dBuV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.694000	39.7	9.000	N	9.7	6.3	46.0
1.386000	31.5	9.000	N	9.7	14.5	46.0
1.416000	30.5	9.000	N	9.7	15.5	46.0
2.078000	28.8	9.000	N	9.8	17.2	46.0
2.830000	29.3	9.000	N	9.8	16.7	46.0
4.162000	25.1	9.000	N	9.8	20.9	46.0

Remark:

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)
2. Margin (dB) = Limit (dBuV) – Level (dBuV)

8. Frequency Stability Test

8.1 Test setup & procedure



Note1: The frequency stability is measured with the temperature variation range of -40°C to +45°C (10°C increment), and voltage supply variation range of 85% to 115% of nominal AC supply voltage.

2: To ensure emission at the band-edge is maintained within the authorized band, the frequency 802.11a/n-HT20/40/ac-HT20/40/80 channel 149, 157, 165, 151, 159, 155 are selected to test and the worst case was reported.

8.2 Frequency Stability Test Data

20°C is taken as temperature in normal condition.

NV: AC 30V LV: AC 25.5V HV: AC 34.5V

Voltage								
Test Mode	Antenna	Channel	Voltage [VAc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5745	NV	20	-15000	-2.610966	20	PASS
			LV	20	-15000	-2.610966	20	PASS
			HV	20	-15000	-2.610966	20	PASS
	Ant2	5745	NV	20	-15000	-2.610966	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5785	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5785	NV	20	-15000	-2.592913	20	PASS
			LV	20	15000	2.592913	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5825	NV	20	-15000	-2.575107	20	PASS
			LV	20	-15000	-2.575107	20	PASS
			HV	20	-15000	-2.575107	20	PASS
	Ant2	5825	NV	20	-15000	-2.575107	20	PASS
			LV	20	-15000	-2.575107	20	PASS
			HV	20	-15000	-2.575107	20	PASS
11N20SISO	Ant1	5745	NV	20	-15000	-2.610966	20	PASS
			LV	20	-15000	-2.610966	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5745	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5785	NV	20	-15000	-2.592913	20	PASS
			LV	20	-15000	-2.592913	20	PASS
			HV	20	-15000	-2.592913	20	PASS
	Ant2	5785	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	15000	2.592913	20	PASS
	Ant1	5825	NV	20	-15000	-2.575107	20	PASS
			LV	20	-15000	-2.575107	20	PASS
			HV	20	-15000	-2.575107	20	PASS
	Ant2	5825	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
11N40SISO	Ant1	5755	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	30000	5.212858	20	PASS
	Ant2	5755	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5795	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5795	NV	20	30000	5.176877	20	PASS
			LV	20	-30000	-5.176877	20	PASS
			HV	20	-30000	-5.176877	20	PASS
11AC20SISO	Ant1	5745	NV	20	0	0	20	PASS
			LV	20	-15000	-2.610966	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5745	NV	20	15000	2.610966	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5785	NV	20	-15000	-2.592913	20	PASS
			LV	20	15000	2.592913	20	PASS
			HV	20	15000	2.592913	20	PASS

	Ant2	5785	NV	20	0	0	20	PASS
			LV	20	15000	2.592913	20	PASS
			HV	20	0	0	20	PASS
	Ant1	5825	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	15000	2.575107	20	PASS
	Ant2	5825	NV	20	15000	2.575107	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
11AC40SISO	Ant1	5755	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5755	NV	20	0	0	20	PASS
			LV	20	-30000	-5.212858	20	PASS
			HV	20	-30000	-5.212858	20	PASS
	Ant1	5795	NV	20	0	0	20	PASS
			LV	20	30000	5.176877	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5795	NV	20	-30000	-5.176877	20	PASS
			LV	20	-30000	-5.176877	20	PASS
			HV	20	-30000	-5.176877	20	PASS
11AC80SISO	Ant1	5775	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS
	Ant2	5775	NV	20	0	0	20	PASS
			LV	20	0	0	20	PASS
			HV	20	0	0	20	PASS

Temperature								
Test Mode	Antenna	Channel	Voltage [VAc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
11A	Ant1	5745	NV	-40	-15000	-2.610966	20	PASS
			NV	-30	-15000	-2.610966	20	PASS
			NV	-20	-15000	-2.610966	20	PASS
			NV	-10	-15000	-2.610966	20	PASS
			NV	0	-15000	-2.610966	20	PASS
			NV	10	-15000	-2.610966	20	PASS
			NV	20	-15000	-2.610966	20	PASS
			NV	30	-15000	-2.610966	20	PASS
			NV	40	-15000	-2.610966	20	PASS
	Ant2	5745	NV	45	-15000	-2.610966	20	PASS
			NV	-40	-15000	-2.610966	20	PASS
			NV	-30	-15000	-2.610966	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	15000	2.610966	20	PASS
			NV	0	0	0	20	PASS
			NV	10	15000	2.610966	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
	Ant1	5785	NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	15000	2.592913	20	PASS
	Ant2	5785	NV	30	0	0	20	PASS
			NV	40	15000	2.592913	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	15000	2.592913	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	15000	2.592913	20	PASS
			NV	10	-15000	-2.592913	20	PASS
	Ant1	5825	NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	15000	2.592913	20	PASS
			NV	45	15000	2.592913	20	PASS
			NV	-40	-15000	-2.575107	20	PASS
			NV	-30	-15000	-2.575107	20	PASS
			NV	-20	-15000	-2.575107	20	PASS
			NV	-10	-15000	-2.575107	20	PASS
			NV	0	-15000	-2.575107	20	PASS
	Ant2	5825	NV	10	-15000	-2.575107	20	PASS
			NV	20	-15000	-2.575107	20	PASS
			NV	30	-15000	-2.575107	20	PASS
			NV	40	-15000	-2.575107	20	PASS
			NV	45	-15000	-2.575107	20	PASS
			NV	-40	-15000	-2.575107	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	-15000	-2.575107	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS

11N20SISO			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
	Ant1	5745	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	-15000	-2.610966	20	PASS
			NV	0	0	0	20	PASS
			NV	10	-15000	-2.610966	20	PASS
			NV	20	-15000	-2.610966	20	PASS
			NV	30	0	0	20	PASS
			NV	40	-15000	-2.610966	20	PASS
			NV	45	0	0	20	PASS
	Ant2	5745	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	15000	2.610966	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	15000	2.610966	20	PASS
			NV	30	0	0	20	PASS
			NV	40	15000	2.610966	20	PASS
			NV	45	0	0	20	PASS
	Ant1	5785	NV	-40	0	0	20	PASS
			NV	-30	-15000	-2.592913	20	PASS
			NV	-20	-15000	-2.592913	20	PASS
			NV	-10	-15000	-2.592913	20	PASS
			NV	0	-15000	-2.592913	20	PASS
			NV	10	-15000	-2.592913	20	PASS
			NV	20	-15000	-2.592913	20	PASS
			NV	30	-15000	-2.592913	20	PASS
			NV	40	-15000	-2.592913	20	PASS
			NV	45	-15000	-2.592913	20	PASS
	Ant2	5785	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	15000	2.592913	20	PASS
			NV	45	0	0	20	PASS
	Ant1	5825	NV	-40	15000	2.575107	20	PASS
			NV	-30	15000	2.575107	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	-15000	-2.575107	20	PASS
			NV	10	-15000	-2.575107	20	PASS
			NV	20	0	0	20	PASS
			NV	30	-15000	-2.575107	20	PASS
			NV	40	-15000	-2.575107	20	PASS
			NV	45	0	0	20	PASS
	Ant2	5825	NV	-40	15000	2.575107	20	PASS
			NV	-30	15000	2.575107	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS

11N40SISO	Ant1	5755	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	-30000	-5.212858	20	PASS
			NV	20	30000	5.212858	20	PASS
			NV	30	0	0	20	PASS
			NV	40	30000	5.212858	20	PASS
			NV	45	30000	5.212858	20	PASS
	Ant2	5755	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	30000	5.212858	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
	Ant1	5795	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	-30000	-5.176877	20	PASS
			NV	45	-30000	-5.176877	20	PASS
	Ant2	5795	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	-30000	-5.176877	20	PASS
			NV	-10	-30000	-5.176877	20	PASS
			NV	0	0	0	20	PASS
			NV	10	-60000	-10.353753	20	PASS
			NV	20	0	0	20	PASS
			NV	30	-30000	-5.176877	20	PASS
			NV	40	-30000	-5.176877	20	PASS
			NV	45	0	0	20	PASS
11AC20SISO	Ant1	5745	NV	-40	-15000	-2.610966	20	PASS
			NV	-30	-15000	-2.610966	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	-15000	-2.610966	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	-15000	-2.610966	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
	Ant2	5745	NV	-40	15000	2.610966	20	PASS
			NV	-30	15000	2.610966	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	15000	2.610966	20	PASS
			NV	20	0	0	20	PASS
			NV	30	15000	2.610966	20	PASS
			NV	40	15000	2.610966	20	PASS
			NV	45	15000	2.610966	20	PASS
	Ant1	5785	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	15000	2.592913	20	PASS

			NV	-10	0	0	20	PASS
			NV	0	15000	2.592913	20	PASS
			NV	10	15000	2.592913	20	PASS
			NV	20	15000	2.592913	20	PASS
			NV	30	15000	2.592913	20	PASS
			NV	40	0	0	20	PASS
			NV	45	15000	2.592913	20	PASS
	Ant2	5785	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	15000	2.592913	20	PASS
			NV	20	15000	2.592913	20	PASS
	Ant1	5825	NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	15000	2.592913	20	PASS
			NV	-40	15000	2.575107	20	PASS
			NV	-30	15000	2.575107	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	15000	2.575107	20	PASS
	Ant2	5825	NV	0	0	0	20	PASS
			NV	10	15000	2.575107	20	PASS
			NV	20	15000	2.575107	20	PASS
			NV	30	0	0	20	PASS
			NV	40	15000	2.575107	20	PASS
			NV	45	15000	2.575107	20	PASS
			NV	-40	0	0	20	PASS
11AC40SISO	Ant1	5755	NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	-30000	-5.212858	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	30000	5.212858	20	PASS
			NV	30	0	0	20	PASS
	Ant2	5755	NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	-30000	-5.212858	20	PASS
			NV	-30	-30000	-5.212858	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	-30000	-5.212858	20	PASS
	Ant1	5795	NV	10	-30000	-5.212858	20	PASS
			NV	20	0	0	20	PASS
			NV	30	-30000	-5.212858	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	30000	5.176877	20	PASS
			NV	-10	30000	5.176877	20	PASS
			NV	0	30000	5.176877	20	PASS
			NV	10	0	0	20	PASS
			NV	10	0	0	20	PASS

			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
	Ant2	5795	NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	-30000	-5.176877	20	PASS
			NV	20	0	0	20	PASS
			NV	30	-30000	-5.176877	20	PASS
			NV	40	-30000	-5.176877	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
			NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
11AC80SISO	Ant1	5775	NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS
			NV	-40	0	0	20	PASS
			NV	-30	0	0	20	PASS
	Ant2	5775	NV	-20	0	0	20	PASS
			NV	-10	0	0	20	PASS
			NV	0	0	0	20	PASS
			NV	10	0	0	20	PASS
			NV	20	0	0	20	PASS
			NV	30	0	0	20	PASS
			NV	40	0	0	20	PASS
			NV	45	0	0	20	PASS

Note: All emissions are maintained within the band of operation under all conditions of normal operation as specified in the user manual. It fulfills the requirement of 15.407(g).

Appendix A: Test equipment list

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	2020-05-27	2021-05-27
SZ182-02-01	Power Sensor	Anritsu	MA2411B	1207429	2020-05-27	2021-05-27
SZ061-03	BiConilog Antenna	ETS	3142C	00166158	2020-05-24	2021-05-24
SZ185-01	EMI Receiver	R&S	ESCI	100547	2020-05-27	2021-05-27
SZ061-08	Horn Antenna	ETS	3115	00092346	2019-09-07	2021-09-07
SZ061-06	Active Loop Antenna	Electro-Metrics	EM-6876	217	2019-05-24	2021-05-24
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	2020-05-27	2021-05-27
SZ056-06	Signal Analyzer	R&S	FSV 40	101101	2020-05-27	2021-05-27
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	2020-05-27	2021-05-27
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	2018-12-15	2021-12-15
SZ062-02	RF Cable	RADIAL	RG 213U	--	2020-06-12	2020-12-12
SZ062-05	RF Cable	RADIAL	0.04-26.5GHz	--	2020-08-24	2021-02-24
SZ062-12	RF Cable	RADIAL	0.04-26.5GHz	--	2020-08-24	2021-02-24
SZ067-04	Notch Filter	Micro-Tronics	BRM50702-02	--	2020-05-27	2021-05-27
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	2019-10-29	2020-10-29
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	2019-10-29	2020-10-29
SZ188-03	Shielding Room	ETS	RFD-100	4100	2020-01-07	2023-01-07

Expanded uncertainty of radiated emission measurement is ± 4.9 dB.

Expanded uncertainty of conducted emission measurement is ± 3.6 dB.

***** End of Report *****