F2 Labs
16740 Peters Road
Middlefield, Ohio 44062
United States of America
www.f2labs.com

CERTIFICATION TEST REPORT

Manufacturer:	**Securus Technologies** **4000 International Parkway** **Carrollton, Texas 75007 USA**
Applicant:	Same as Above
Product Name:	**JP6S**
Product Description:	**7" Lithium Capacitive Touch Tablet for the correctional environment**
Operating Voltage/Freq. of EUT During Testing:	**5V @ 2.5A Adaptor/Battery**
Model:	**JP6S**
FCC ID:	**2AUJ4JP6S2**
Testing Commenced:	2021-02-03
Testing Ended:	2021-02-12
Summary of Test Results:	**In Compliance, with modifications** The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Rule(s):

- **FCC Part 15 Subpart E – Unlicensed National Information Infrastructure Devices, Section 15.407 General technical requirements**
- **FCC15.207 - Conducted Limits**

Evaluation Conducted by:

Julius Chiller, EMC/Wireless Engineer

Report Reviewed by:

Ken Littell, Vice President of EMC

F2 Labs
26501 Ridge Road
Damascus, MD 20872
Ph 301.253.4500

F2 Labs
16740 Peters Road
Middlefield, OH 44062
Ph 440.632.5541

F2 Labs
8583 Zionsville Road
Indianapolis, IN 46268
Ph 317.610.0611

This test report may be reproduced in full; partial reproduction only may be made with the written consent of F2 Labs. The results in this report apply only to the equipment tested.

TABLE OF CONTENTS

Section	Title	Page
1	ADMINISTRATIVE INFORMATION	4
2	SUMMARY OF TEST RESULTS/MODIFICATIONS	7
3	TABLE OF MEASURED RESULTS	8
4	ENGINEERING STATEMENT	10
5	EUT INFORMATION AND DATA	11
6	LIST OF MEASUREMENT INSTRUMENTATION	12
7	OCCUPIED BANDWIDTH	13
8	OUTPUT POWER	34
9	POWER SPECTRAL DENSITY	45
10	RADIATED SPURIOUS EMISSIONS	56
11	CONDUCTED SPURIOUS EMISSIONS	83
12	VOLTAGE VARIATIONS	142
13	CONDUCTED EMISSIONS	163
14	PHOTOGRAPHS	168

1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD**.**

1.2 Measurement Procedure:

All measurements were performed according to ANSI C63.10:2013 and recommended FCC procedure of measurement of NII operating under Section 15.407 and in KDB789033. A list of the measurement equipment can be found in Section 6.

1.3 Uncertainty Budget:

The uncertainty in EMC measurements arises from several factors which affect the results, some associated with environmental conditions in the measurement room, the test equipment being used, and the measurement techniques adopted.

The measurement uncertainty budgets detailed below are calculated from the test and calibration data and are expressed with a 95% confidence factor using a coverage factor of k=2. The Uncertainty for a laboratory are referred to as *U*lab. For Radiated and Conducted Emissions, the Expanded Uncertainty is compared to the *U*cispr values to determine if a specific margin is required to deem compliance.

*U*lab

Measurement Range	Combined Uncertainty	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	2.54	5.07dB
Radiated Emissions <1 GHz @ 10m	2.55	5.09dB
Radiated Emissions 1 GHz to 2.7 GHz	1.81	3.62dB
Radiated Emissions 2.7 GHz to 18 GHz	1.55	3.10dB
AC Power Line Conducted Emissions, 150kHz to 30 MHz	1.38	2.76dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	1.66	3.32dB

*U*cispr

Measurement Range	Expanded Uncertainty
Radiated Emissions <1 GHz @ 3m	5.2dB
Radiated Emissions <1 GHz @ 10m	5.2dB
Radiated Emissions 1 GHz to 2.7 GHz	Under Consideration
Radiated Emissions 2.7 GHz to 18 GHz	Under Consideration
AC Power Line Conducted Emissions, 150kHz to 30 MHz	3.6dB
AC Power Line Conducted Emissions, 9kHz to 150kHz	4.0dB

If *U*lab is less than or equal to *U*cispr, then:
- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If *U*lab is greater than *U*cispr in table 1, then:
- compliance is deemed to occur if no measured disturbance, increased by (*U*lab – *U*cispr), exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance, increased by (*U*lab – *U*cispr), exceeds the disturbance limit.

Note: Only measurements listed in the tables above that relate to tests included in this Test Report are applicable.

1.4 Document History

Document Number	Description	Issue Date	Approved By
F2P24999-02E	First Issue	2021-03-09	K. Littell

2 SUMMARY OF TEST RESULTS

Test Name	Standard(s)	Results
Radiated Spurious Emissions	CFR 47 Part 15.205 / KDB789033	Complies
Occupied Bandwidth	CFR 47 Part 15.407(e) / Part 15.209 / KDB789033	Complies
Output Power	CFR 47 Part 15.407(a)(1)(iv) / Part 15.407(a)(3) / KDB789033	Complies
Power Spectral Density	CFR 47 Part 15.407(a)(1)(iv) / Part 15.407(a)(3) / KDB789033	Complies
Conducted Spurious Emissions	CFR 47 Part 15.407(b)(1,4)	Complies
Voltage Variations	CFR 47 Part 15.31(e)	Complies
Conducted Emissions	CFR 47 Part 15.207(a)	Complies

Modifications Made to the Equipment
UNII 1 failed PSD limit at default power setting. Setting was reduced to 13.

3 TABLE OF MEASURED RESULTS

Test			Low Channel	Mid Channel	High Channel
		OFDM54 20M:	**5180 MHz**	**5220 MHz**	**5240 MHz**
		OFDM54 40M:	**5190 MHz**	**--**	**5230 MHz**
RF Output Power	UNII 1	OFDM54 20M	17.02mW, 12.31dBm	16.71mW, 12.23dBm	16.07mW, 12.06dBm
		OFDM54 40M	17.46mW, 12.42dBm	--	16.98mW, 12.30dBm
	Output Power Limits		250mW, 24dBm	250mW, 24dBm	250mW, 24dBm
E.I.R.P.*	UNII 1	OFDM54 20M	26.97mW, 14.31dBm	26.48mW, 14.23dBm	25.46mW, 14.06dBm
		OFDM54 40M	27.67mW, 14.42dBm	--	26.91mW, 14.30dBm
	E.I.R.P. Limits		1000mW, 30dBm	1000mW, 30dBm	1000mW, 30dBm
Peak Power Spectral Density*	UNII 1	OFDM54 20M	10.56dBm	10.40dBm	10.10dBm
		OFDM54 40M	6.94dBm	--	6.53dBm
	Limit:		11dBm/1 MHz	11dBm/1 MHz	11dBm/1 MHz
-26dB Occupied Bandwidth (MHz)	UNII 1	OFDM54 20M	19.490	19.548	19.432
		OFDM54 40M	39.650	--	39.153
99% Occupied Bandwidth (MHz)	UNII 1	OFDM54 20M	16.538	16.490	16.500
		OFDM54 40M	35.977	--	36.057
Voltage Variations	UNII 1, OFDM54 20M	@ 85%	12.27dBm	12.22dBm	11.96dBm
		@ 115%	12.28dBm	12.24dBm	12.07Bm
	UNII 1, OFDM54 40M	@ 85%	12.32dBm	--	12.21dBm
		@ 115%	12.43dBm	--	12.34dBm

**RF power setting = 13*

Test			Low Channel	Mid Channel	High Channel
		OFDM54 20M:	**5745 MHz**	**5785 MHz**	**5825 MHz**
		OFDM54 40M:	**5755 MHz**	**--**	**5795 MHz**
RF Output Power	UNII 3	OFDM54 20M	27.04mW, 14.32dBm	22.13mW, 13.45dBm	25.47mW, 14.06dBm
		OFDM54 40M	26.54mW, 14.24dBm	--	29.24mW, 14.66dBm
	Output Power Limits		1W, 30dBm	1W, 30dBm	1W, 30dBm
E.I.R.P.*	UNII 3	OFDM54 20M	42.85mW, 16.32dBm	35.07mW, 15.45dBm	40.36mW, 16.06dBm
		OFDM54 40M	42.07mW, 16.24dBm	--	46.34mW, 16.66dBm
	E.I.R.P. Limits		4000mW, 36dBm	4000mW, 36dBm	4000mW, 36dBm
Peak Power Spectral Density*	UNII 3	OFDM54 20M	2.35dBm	1.72dBm	2.08dBm
		OFDM54 40M	-1.12dBm	--	-0.84dBm
	Limit:		30dBm/500kHz	30dBm/500kHz	30dBm/500kHz
-6dB Occupied Bandwidth (MHz)	UNII 3	OFDM54 20M	16.518	16.412	16.412
		OFDM54 40M	36.041	--	36.281
99% Occupied Bandwidth (MHz)	UNII 3	OFDM54 20M	16.394	16.442	16.394
		OFDM54 40M	35.977	--	36.057
Voltage Variations	UNII 3, OFDM54 20M	@ 85%	14.39dBm	13.60dBm	13.35dBm
		@ 115%	14.43dBm	13.51dBm	13.53dBm
	UNII 3, OFDM54 40M	@ 85%	14.02dBm	--	14.31dBm
		@ 115%	14.44dBm	--	14.63dBm

**RF power setting = 17*

4 ENGINEERING STATEMENT

This report has been prepared on behalf of Securus Technologies to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.407 of the FCC Rules using ANSI C63.4 and KDB789033 standards. The test results found in this test report relate only to the items tested.

4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

Product: Tablet
Model: JP6S
Serial No.: 0123456789ABCDEF
FCC ID: 2AUJ4JP6S2

4.2 Trade Name:

Securus Technologies

4.3 Power Supply:

Securus AC Adapter, model MX15X1-0502500UX X

4.4 Applicable Rules:

CFR 47, Part 15.407, subpart E

4.5 Equipment Category:

Radio Transmitter-NII

4.6 Antenna:

Integral, 2.0dBi Gain

4.7 Accessories:

N/A

4.8 Test Item Condition:

The equipment to be tested was received in good condition.

4.9 Testing Algorithm:

The EUT was set up to provide continuous modulated transmission in the 5 GHz UNII 1 and UNII 3 Wi-Fi band. Measurements were taken on the low, mid and high channels of each band. OFDM at 54 Mbps was used at 20 MHz and 40 MHz bandwidths.

5 LIST OF MEASUREMENT INSTRUMENTATION

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	AlbatrossProjects	B83117-DF435-T261	US140023	2021-02-28
Temp/Hum. Recorder	CL263	Extech	445814	06	2021-03-31
Temp/Hum. Recorder	CL261	Extech	445814	04	2021-03-31
Receiver	CL151	Rohde & Schwarz	ESU40	100319	2021-10-06
Receiver	CL204	Rohde & Schwarz	ESR7	101714	2021-10-08
Horn Antenna	CL098	Emco	3115	9809-5580	2022-01-08
Pre-Amplifier	0197	Hewlett Packard	8447D	1726A01006	2021-02-17
Pre-Amplifier	CL153	Agilent	83006-69007	MY39500791	2022-02-12
Amplifier w/Monopole & 18” Loop	CL163-Loop	A.H. Systems, Inc.	EHA-52B	100	2021-10-15
Software:	Tile Version 3.4.B.3		Software Verified: 2021-02-03 to 2021-02-12		
Software:	EMC 32, Version 8.53.0		Software Verified: 2021-02-03 to 2021-02-12		
Antenna, JB3 Combination	CL175	Sunol Sciences	JB3	A030315	2021-11-05
Antenna, Horn	CL114	A. H. Systems, Inc.	SAS-572	237	2021-05-04
Spectrum Analyzer	CL147	Agilent	E7402A	MY45101241	2021-03-31
Transient Limiter	0202	Hewlett Packard	11947A	3107A00729	2022-02-04
LISN	CL184	Com-Power	LI-125A	191213	2023-11-02
LISN	CL185	Com-Power	LI-125A	191214	2023-11-02
Horn Antenna (26.5-40 GHz)	CL188	Com-Power	AH-640	091065	2021-07-23
Pre-Amplifier (18 GHz-40 GHz)	CL189	Com-Power	PAM-840A	461303	2021-07-31
Low Loss Cable Set	--	Pasternack	PE3C0666-252 / PE3C066-50CM	None Spec.	2023-10-12

7 OCCUPIED BANDWIDTH

7.1 Requirements:

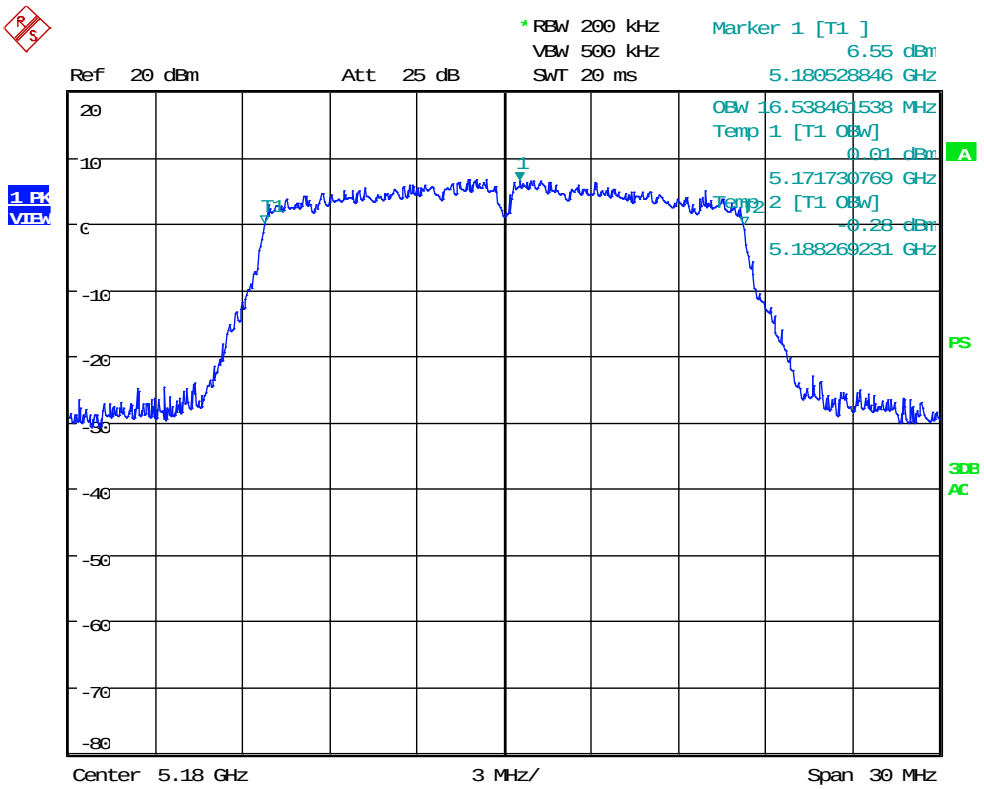
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the -26dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage.

Bandwidth measurements were made at the low, mid and high frequencies. The -26dB bandwidth was measured using the marker delta method. The 99% bandwidth is included and was measured using the receiver's OBW function set for 99%.

7.2 Occupied Bandwidth Test Data

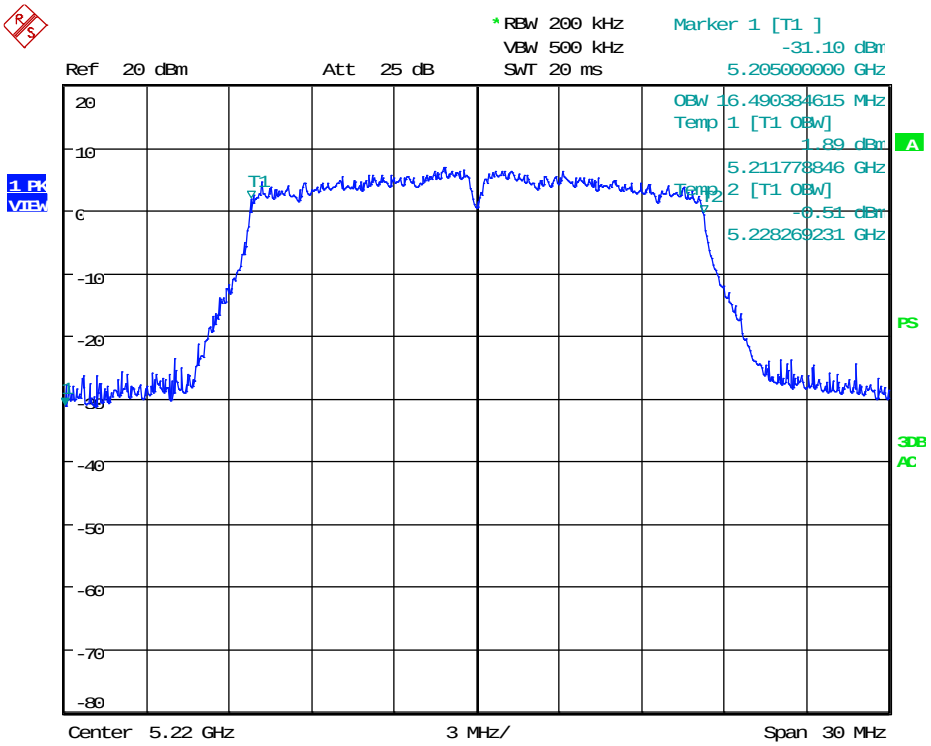
Test Date(s):	2021-02-03	**Test Engineer(s):**	J. Chiller
Standards:	CFR 47 Part 15.215(c)	**Air Temperature:**	20.1ºC
		Relative Humidity:	36%

UNII 1, OFDM54 20M: 99% OBW, Low Channel



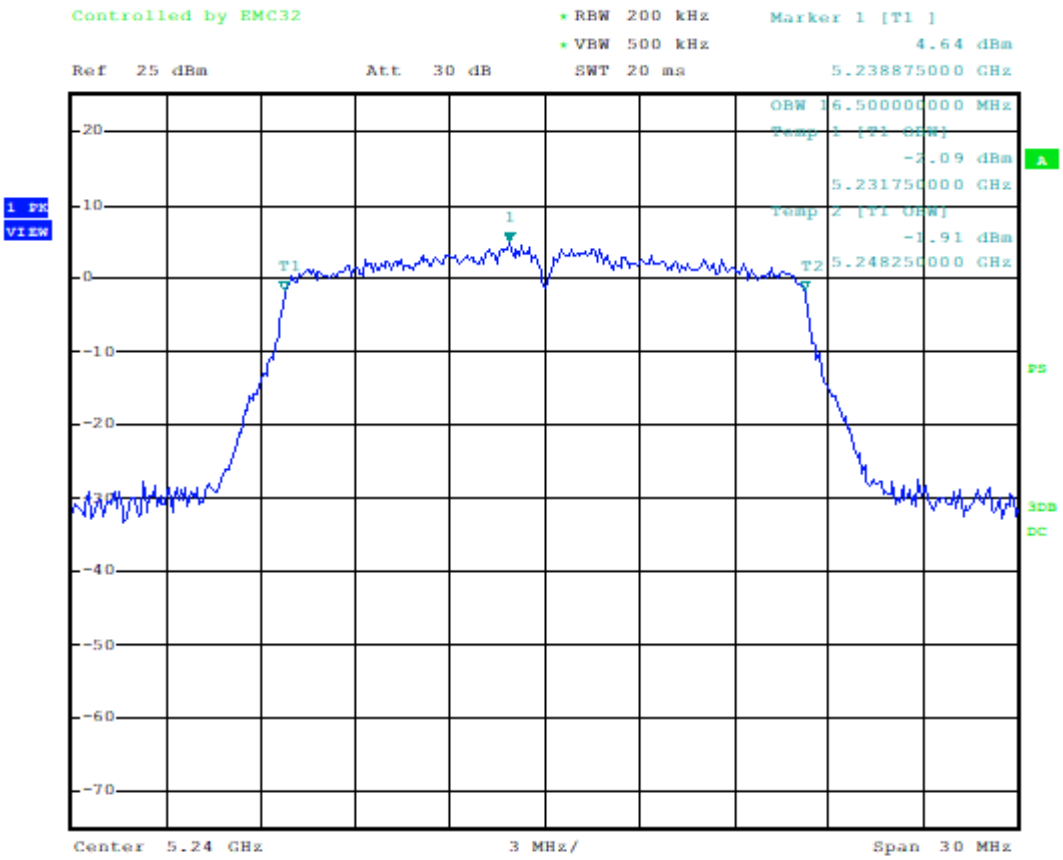
Date: 3.FEB.2021 10:31:10

UNII 1, OFDM54 20M: 99% OBW, Mid Channel

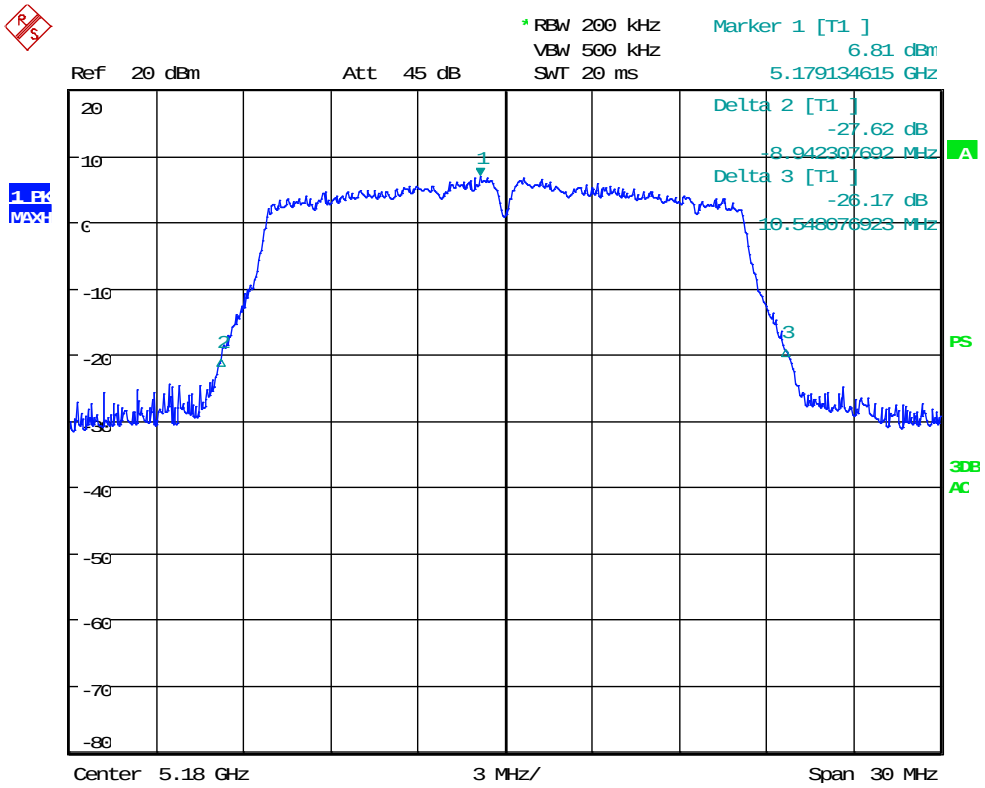


Date: 3.FEB.2021 10:32:18

UNII 1, OFDM54 20M: 99% OBW, High Channel

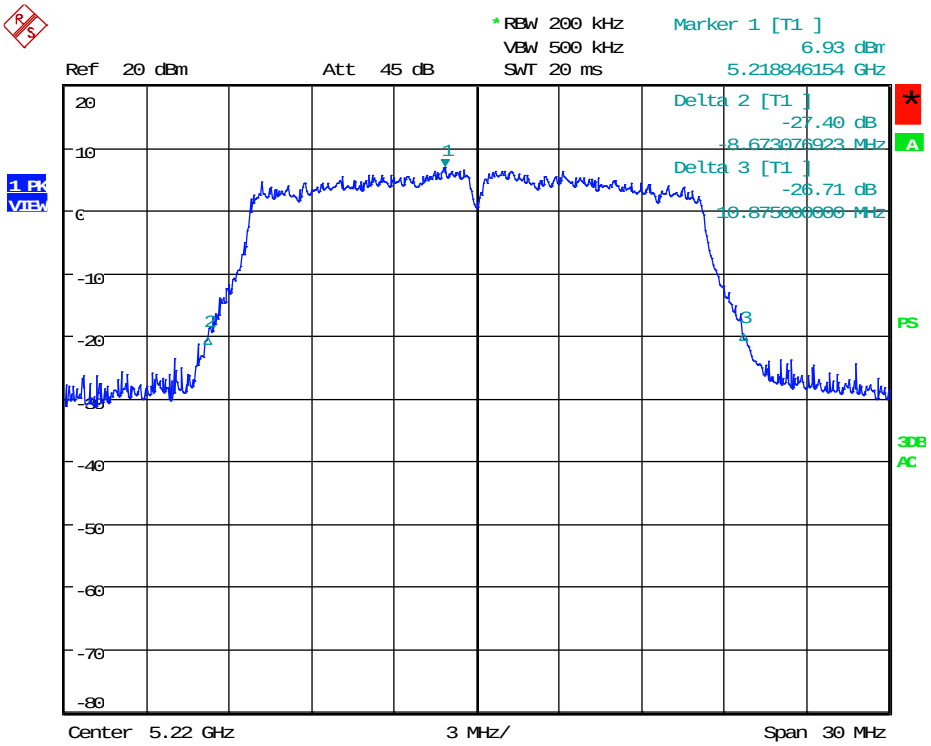


UNII 1, OFDM54 20M: -26dB OBW, Low Channel



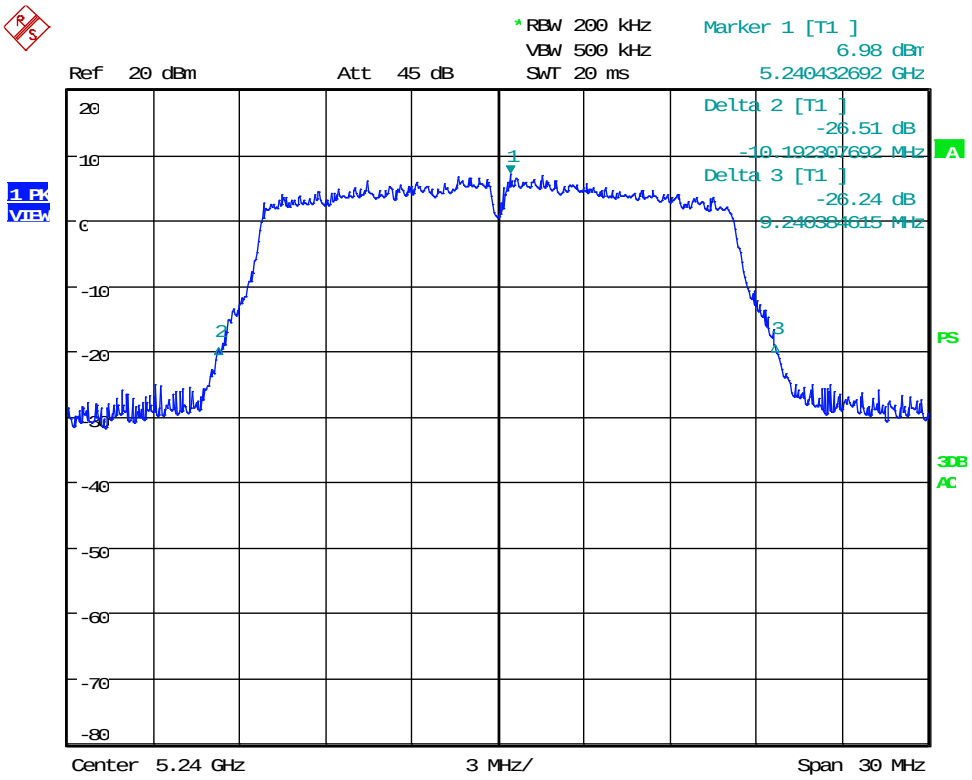
Date: 3.FEB.2021 10:30:01

UNII 1, OFDM54 20M: -26dB OBW, Mid Channel



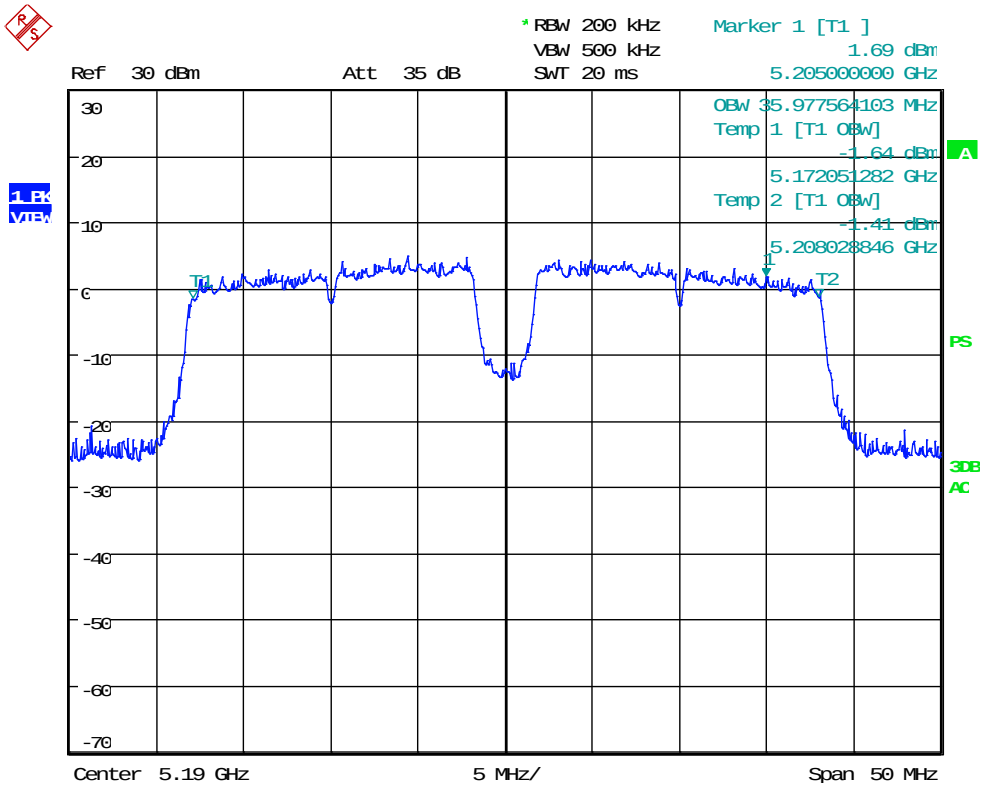
Date: 3.FEB.2021 10:33:55

UNII 1, OFDM54 20M: -26dB OBW, High Channel



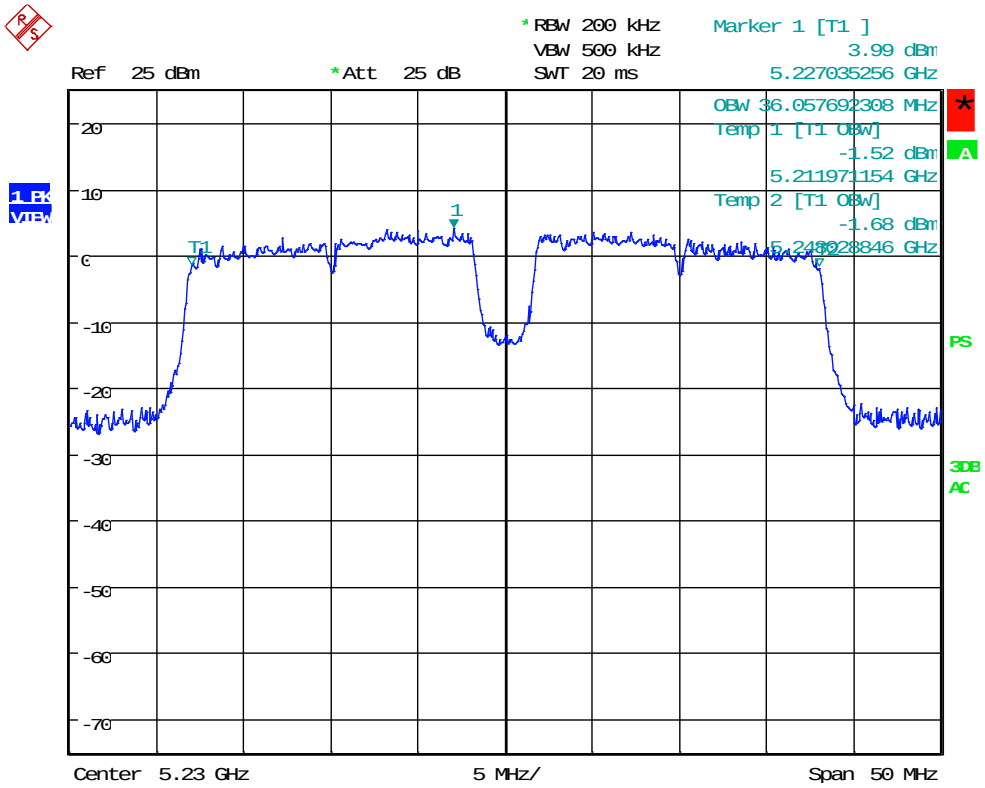
Date: 3.FEB.2021 10:36:16

UNII 1, OFDM54 40M: 99% OBW, Low Channel



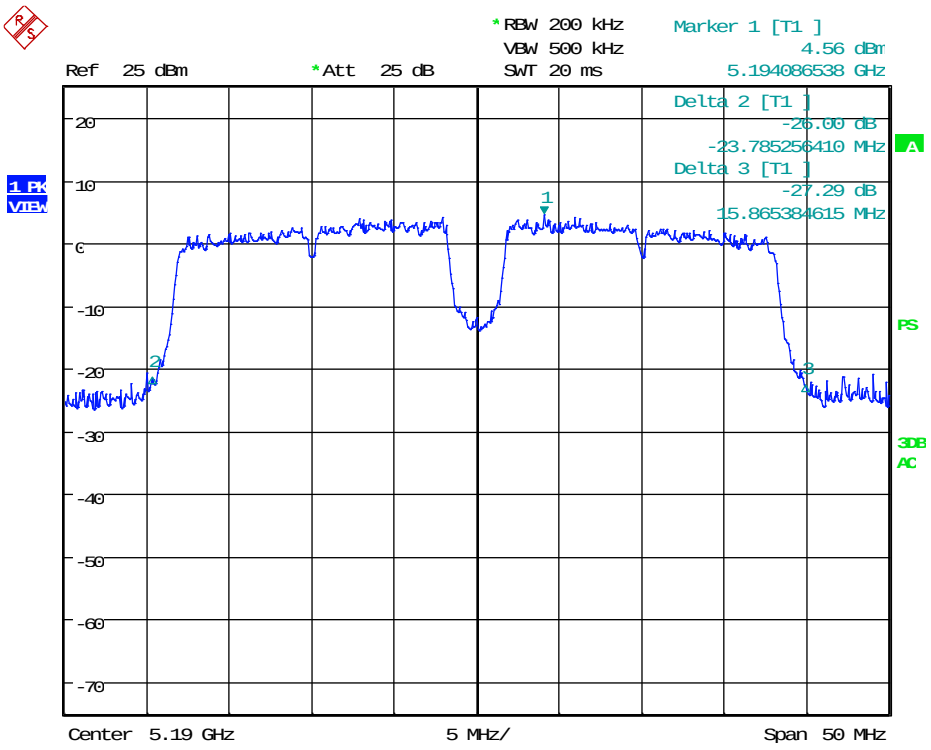
Date: 3.FEB.2021 10:39:00

UNII 1, OFDM54 40M: 99% OBW, High Channel



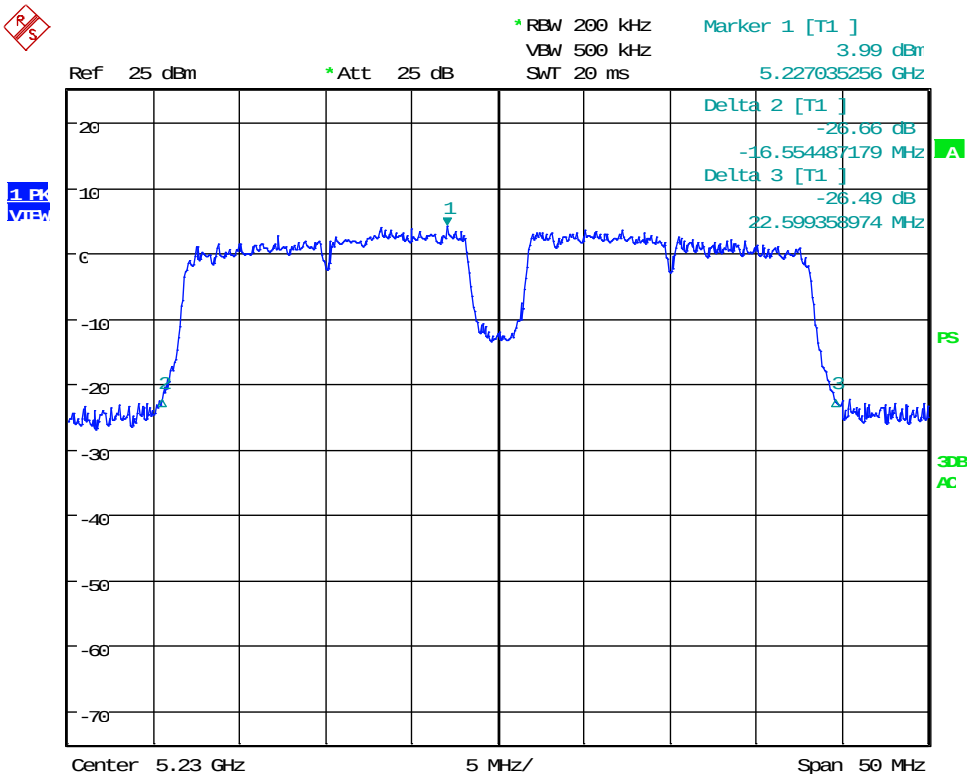
Date: 3.FEB.2021 10:46:53

UNII 1, OFDM54 40M: -26dB OBW, Low Channel



Date: 3.FEB.2021 10:42:18

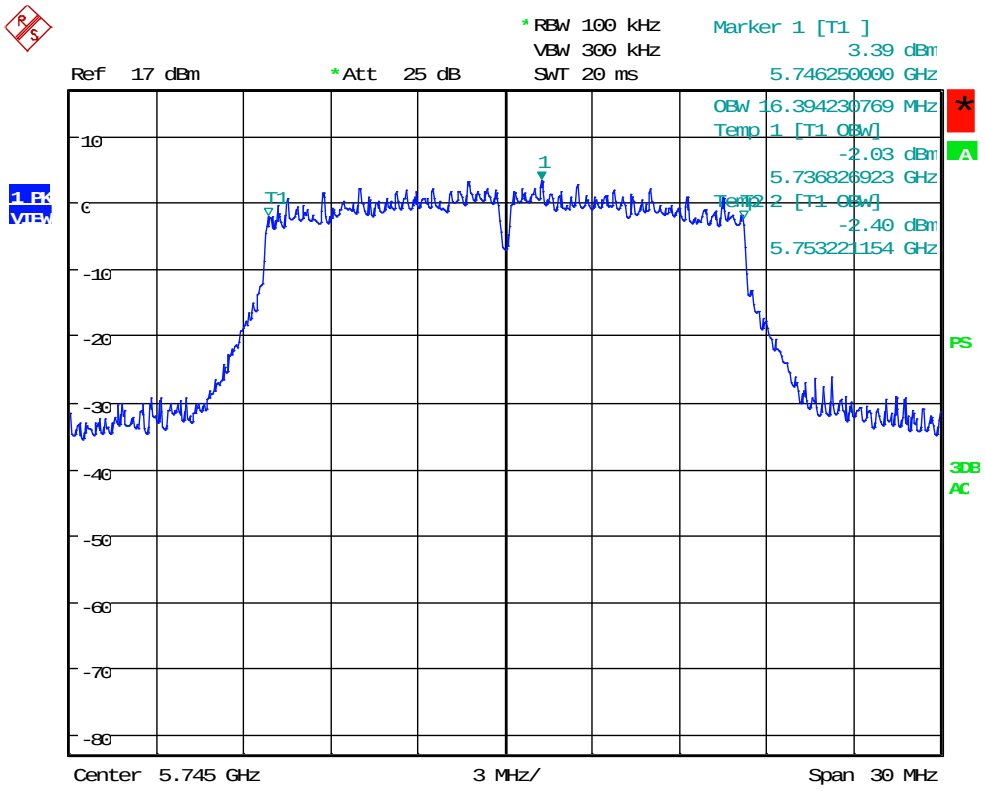
UNII 1, OFDM54 40M: -26dB OBW, High Channel



Date: 3.FEB.2021 10:45:01

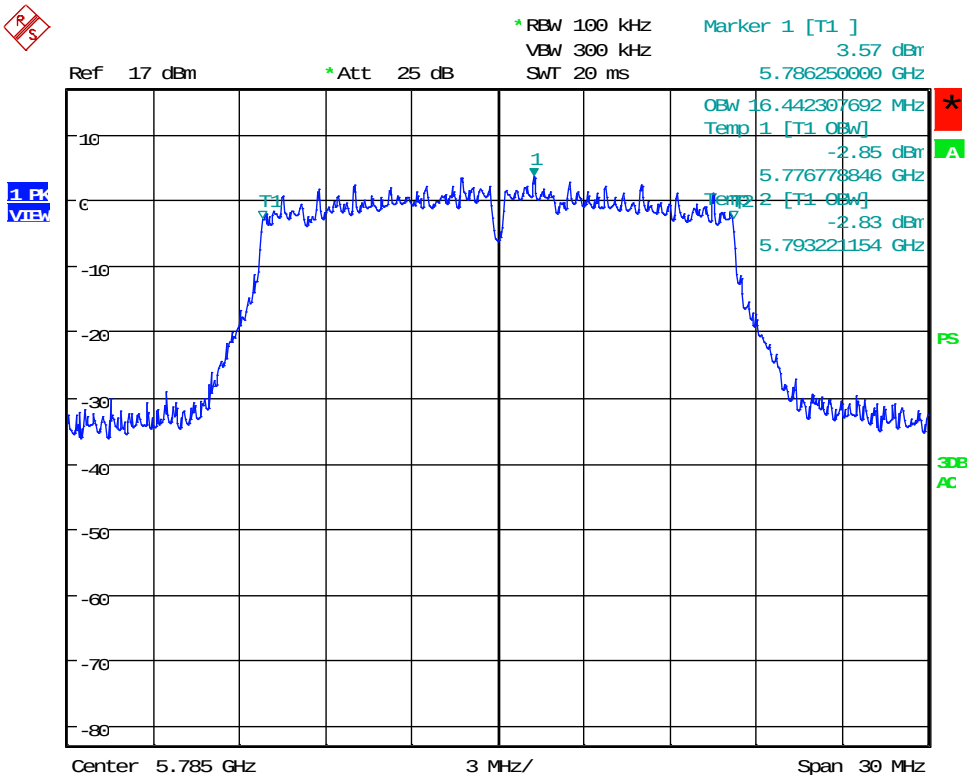
Test Date(s):	2021-02-03	**Test Engineer(s):**	J. Chiller
Standards:	CFR 47 Part 15.215(c)	**Air Temperature:**	19.8ºC
		Relative Humidity:	25%

UNII 3, OFDM54 20M: 99% OBW, Low Channel



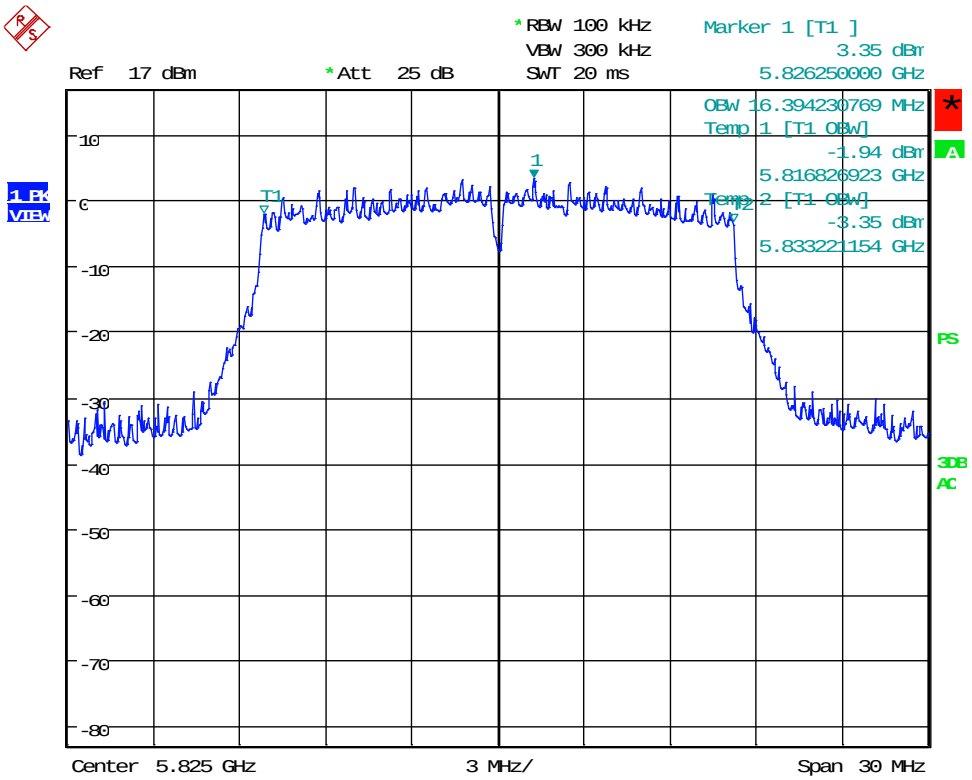
Date: 3.FEB.2021 10:56:41

UNII 3, OFDM54 20M: 99% OBW, Mid Channel



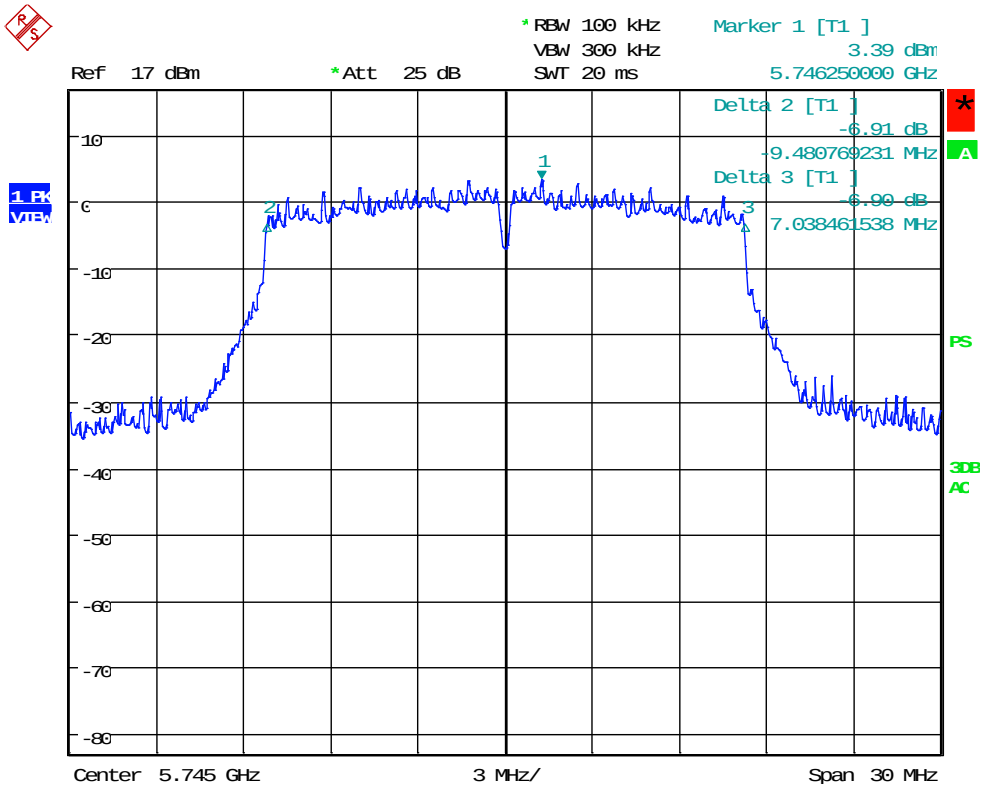
Date: 3.FEB.2021 11:00:48

UNII 3, OFDM54 20M: 99% OBW, High Channel



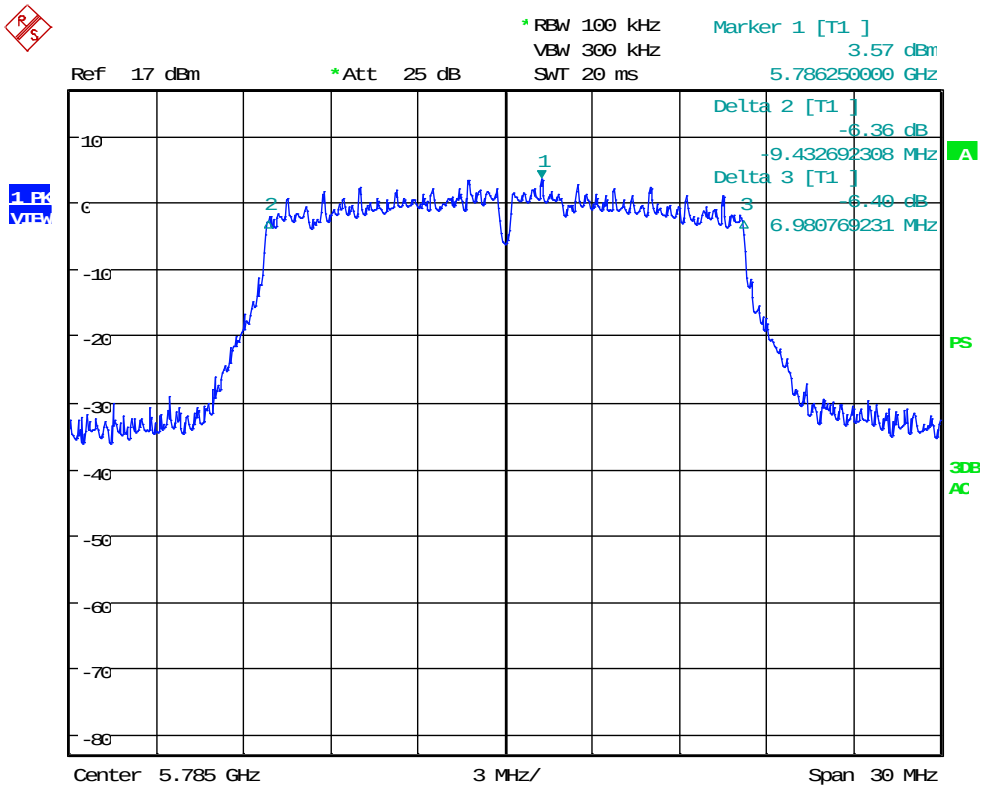
Date: 3.FEB.2021 11:02:15

UNII 3, OFDM54 20M: -6dB OBW, Low Channel



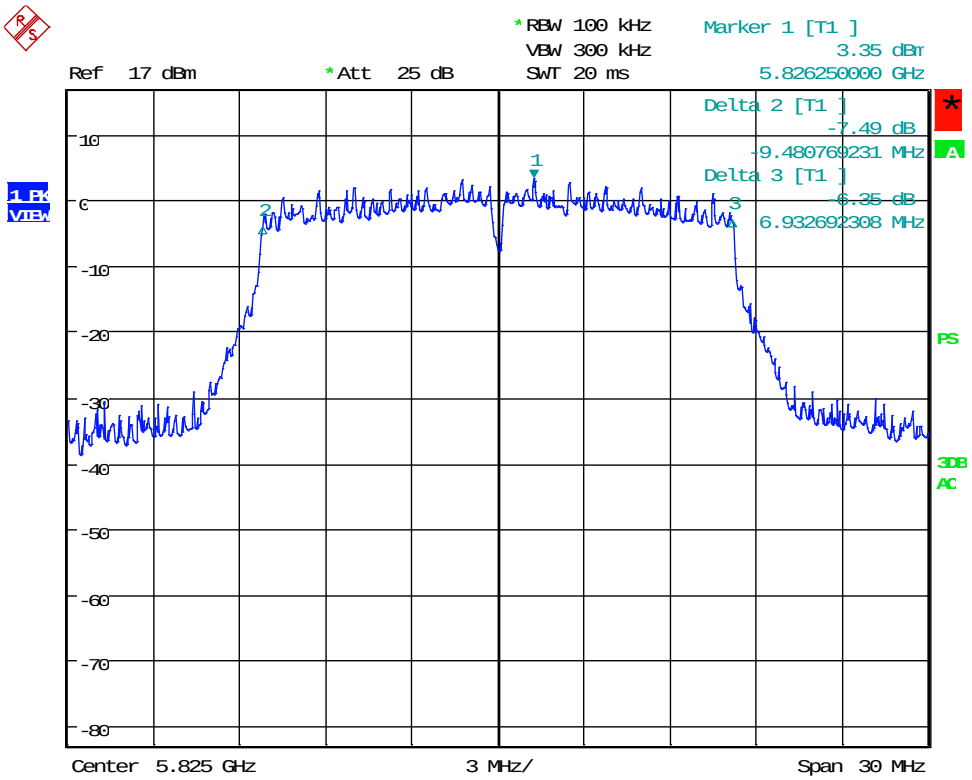
Date: 3.FEB.2021 10:58:06

UNII 3, OFDM54 20M: -6dB OBW, Mid Channel



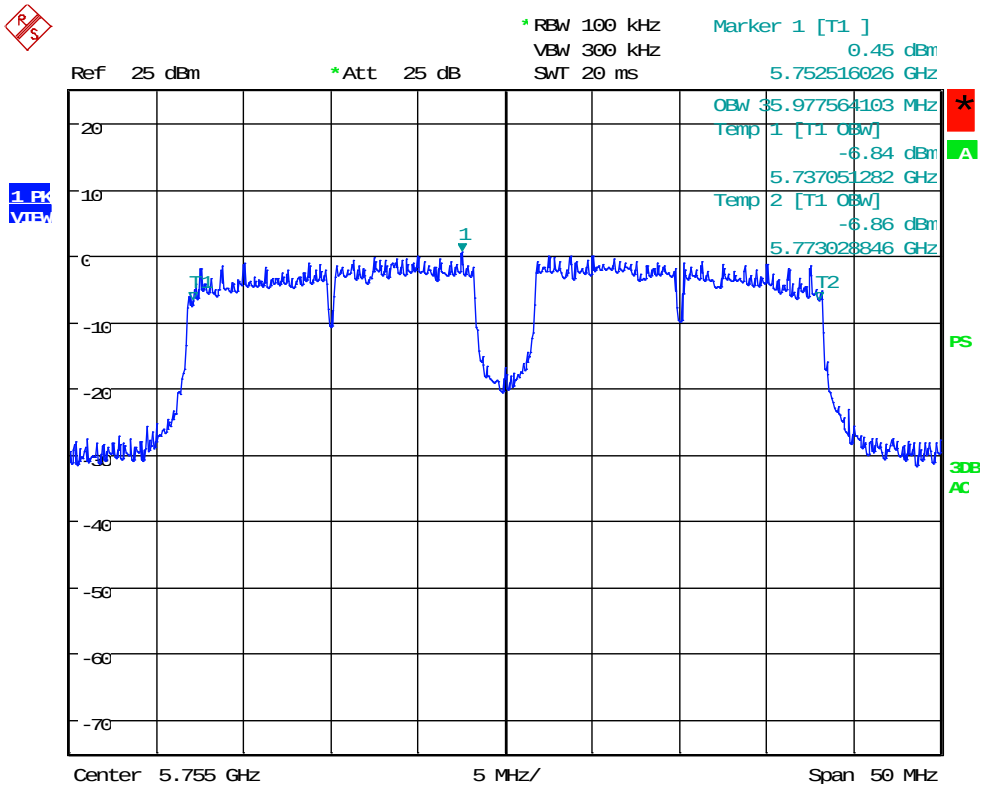
Date: 3.FEB.2021 10:59:43

UNII 3, OFDM54 20M: -6dB OBW, High Channel



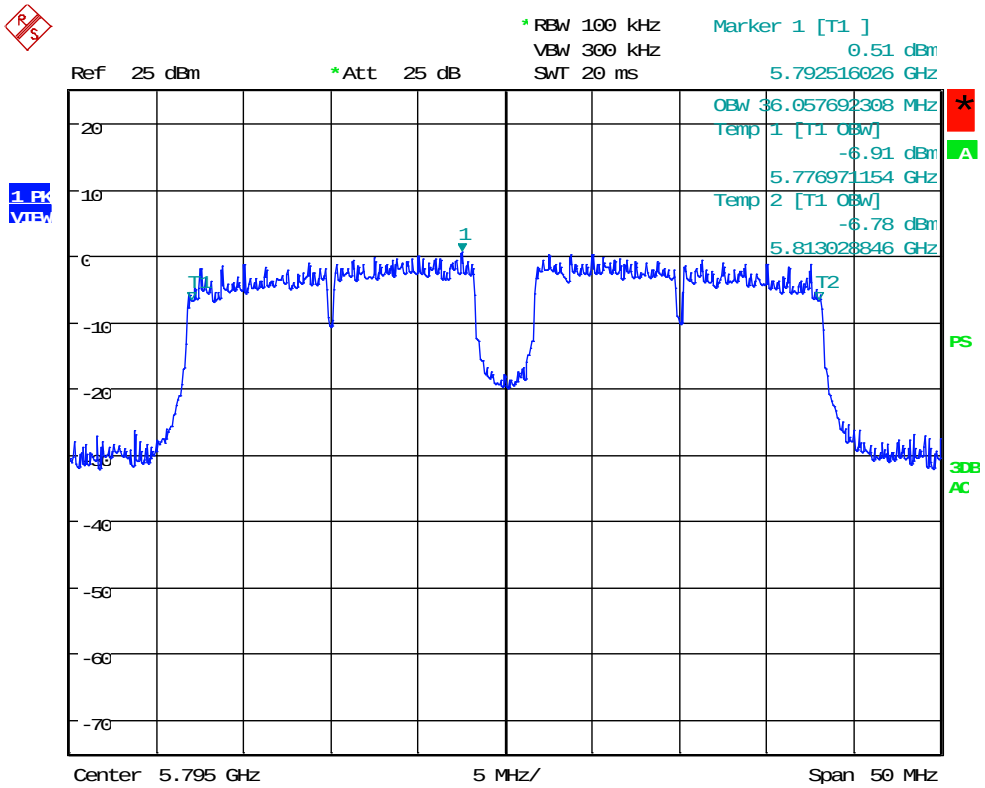
Date: 3.FEB.2021 11:03:07

UNII 3, OFDM54 40M: 99% OBW, Low Channel



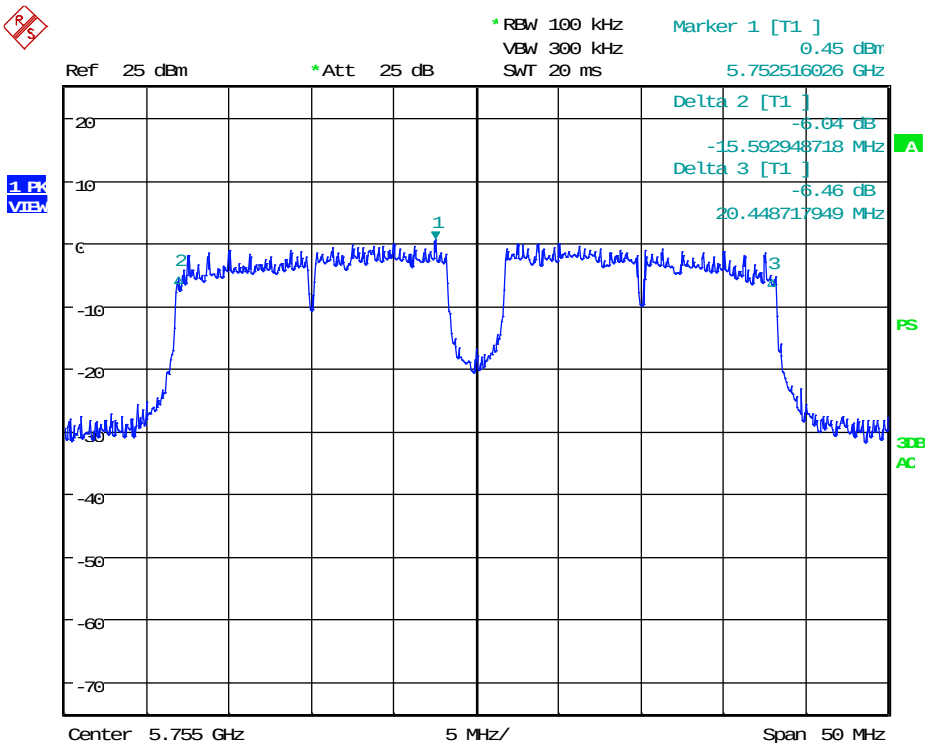
Date: 3.FEB.2021 11:07:24

UNII 3, OFDM54 40M: 99% OBW, High Channel



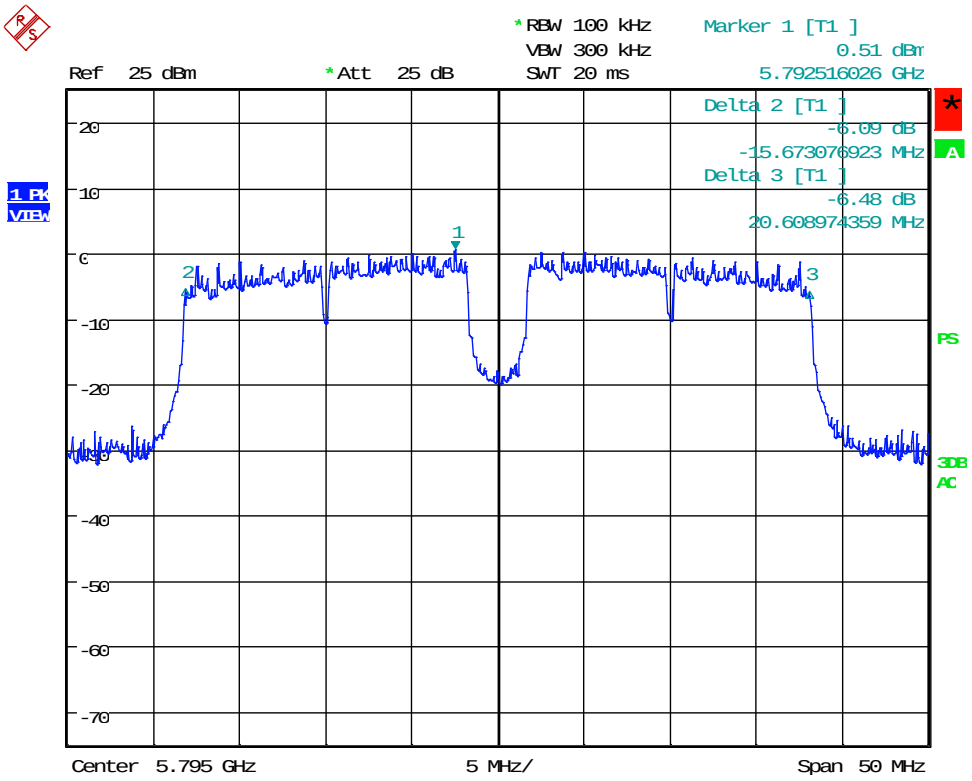
Date: 3.FEB.2021 11:08:35

UNII 3, OFDM54 40M: -6dB OBW, Low Channel



Date: 3.FEB.2021 11:06:20

UNII 3, OFDM54 40M: -6dB OBW, High Channel



Date: 3.FEB.2021 11:09:32

8 OUTPUT POWER

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the receiver. The peak power output was measured.

8.1 Requirements:

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 (24 dBm) provided the maximum antenna gain does not exceed 6 dBi.

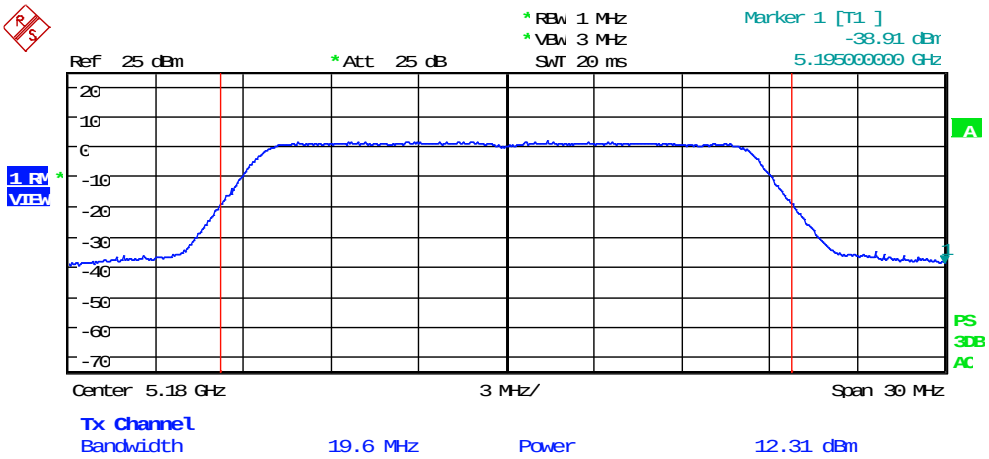
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna gain is 2.0dBi.

8.2 Output Power Test Data

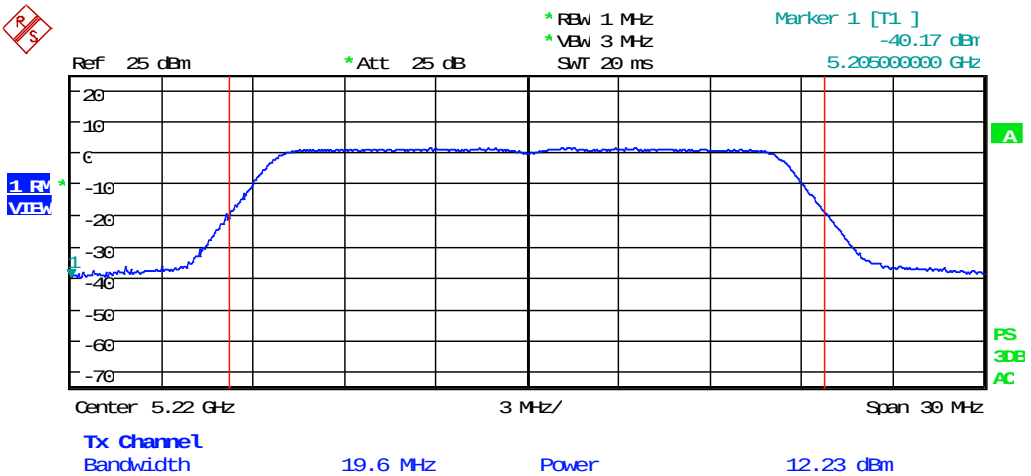
Test Date:	2021-02-03	**Test Engineer:**	J. Chiller
Standards:	CFR 47 Part 15.407(a)(1,3); KDB789033	**Air Temperature:**	20.5ºC
		Relative Humidity:	27%

UNII 1, OFDM54 20M, Low Channel



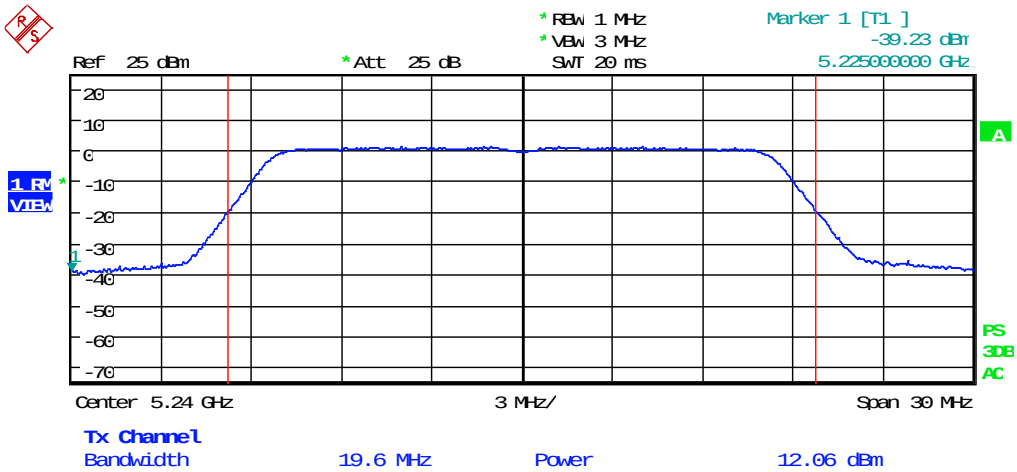
Date: 3.FEB.2021 13:38:36

UNII 1, OFDM54 20M, Mid Channel



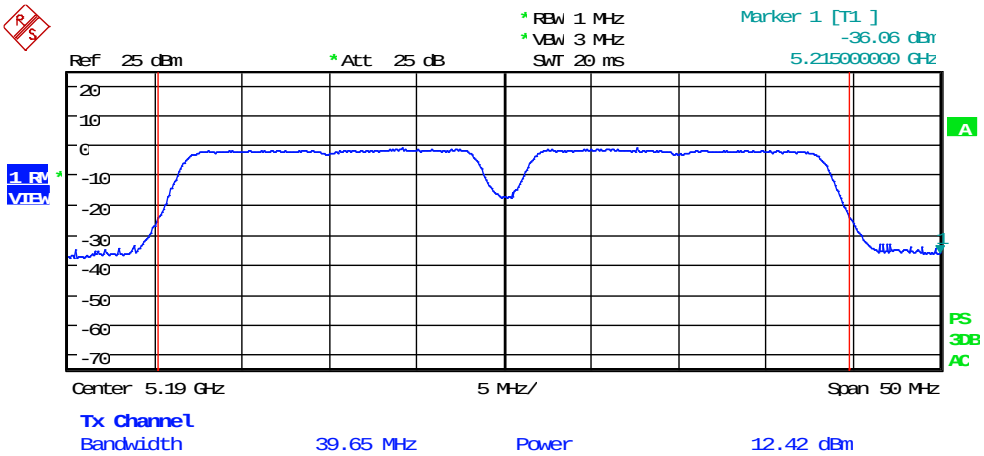
Date: 3.FEB.2021 13:39:39

UNII 1, OFDM54 20M, High Channel



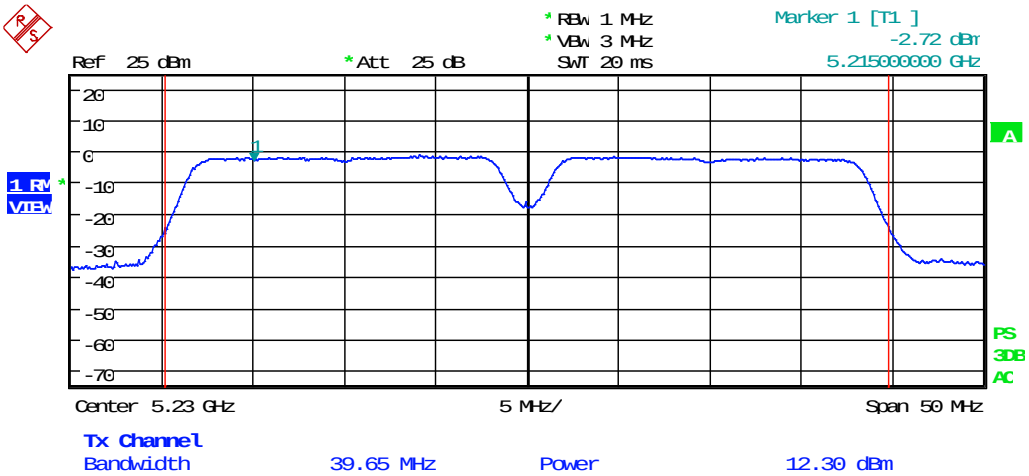
Date: 3.FEB.2021 13:40:44

UNII 1, OFDM54 40M, Low Channel



Date: 3.FEB.2021 13:42:38

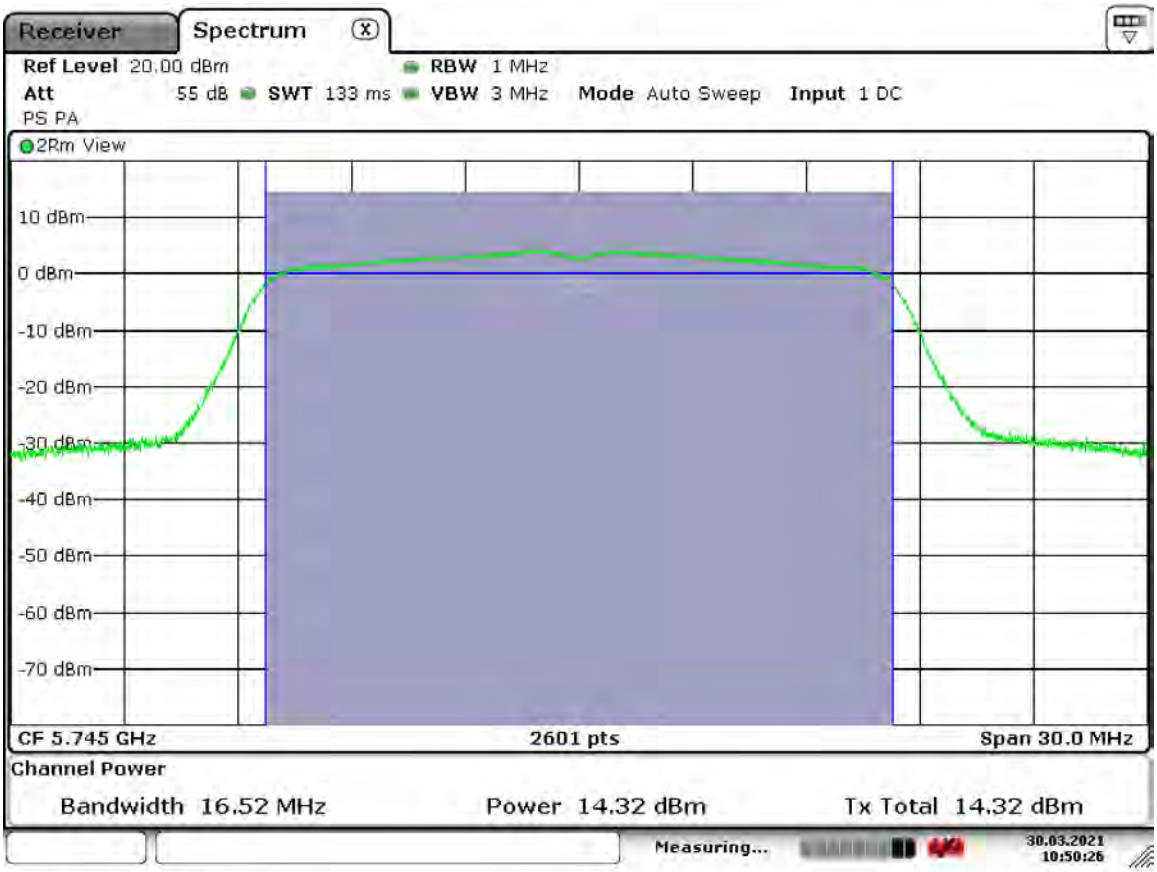
UNII 1, OFDM54 40M, High Channel



Date: 3.FEB.2021 13:43:56

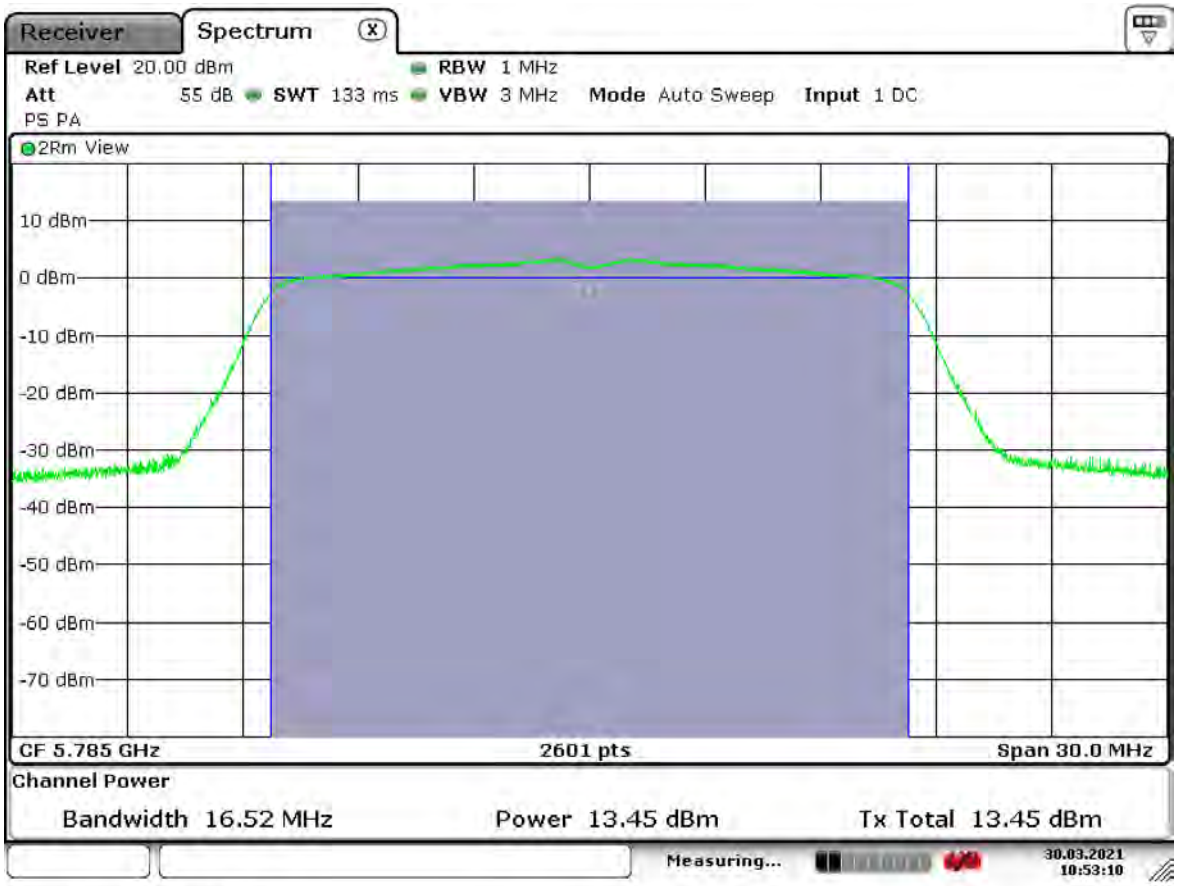
Test Date:	2021-03-30 to 2021-03-31	**Test Engineer:**	J. Chiller
Standards:	CFR 47 Part 15.407(a)(1,3); KDB789033	**Air Temperature:**	20.5ºC
		Relative Humidity:	27%

UNII 3, OFDM54 20M, Low Channel



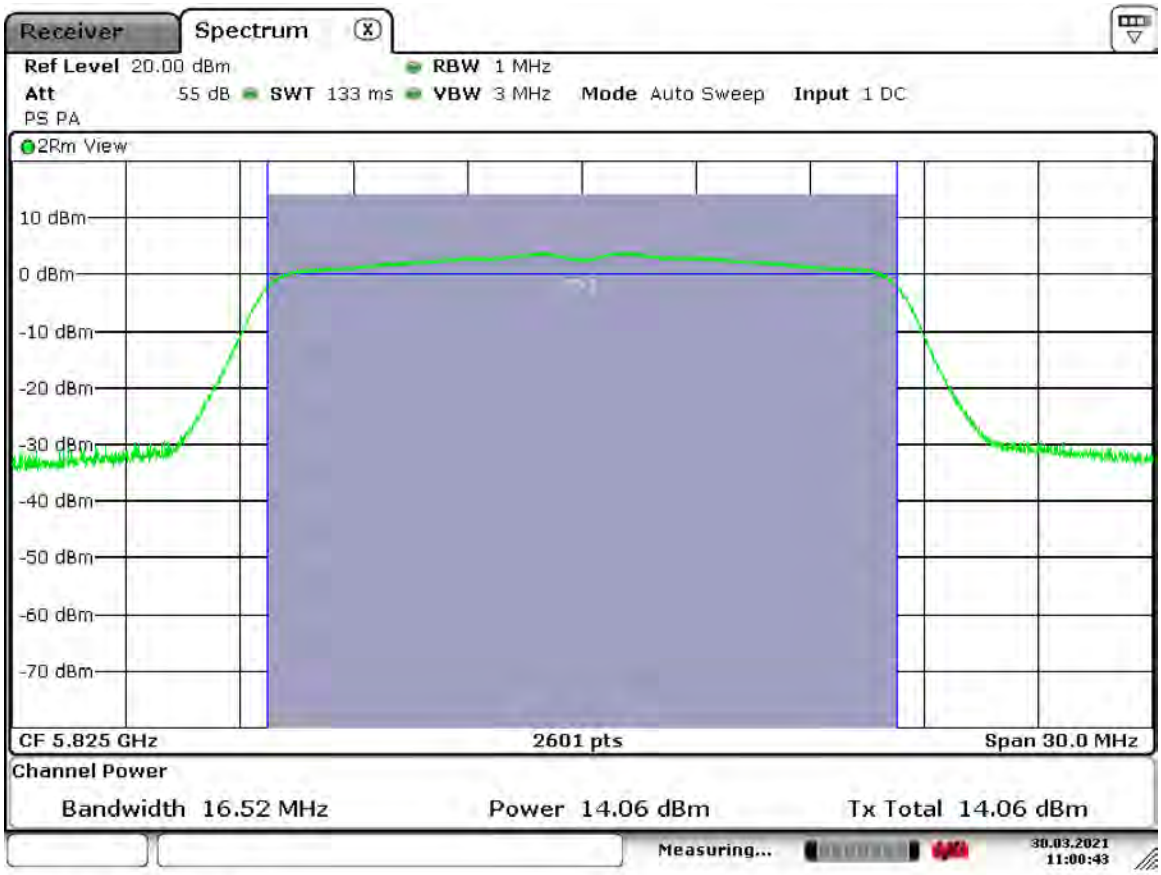
Date: 30.MAR.2021 10:50:26

UNII 3, OFDM54 20M, Mid Channel



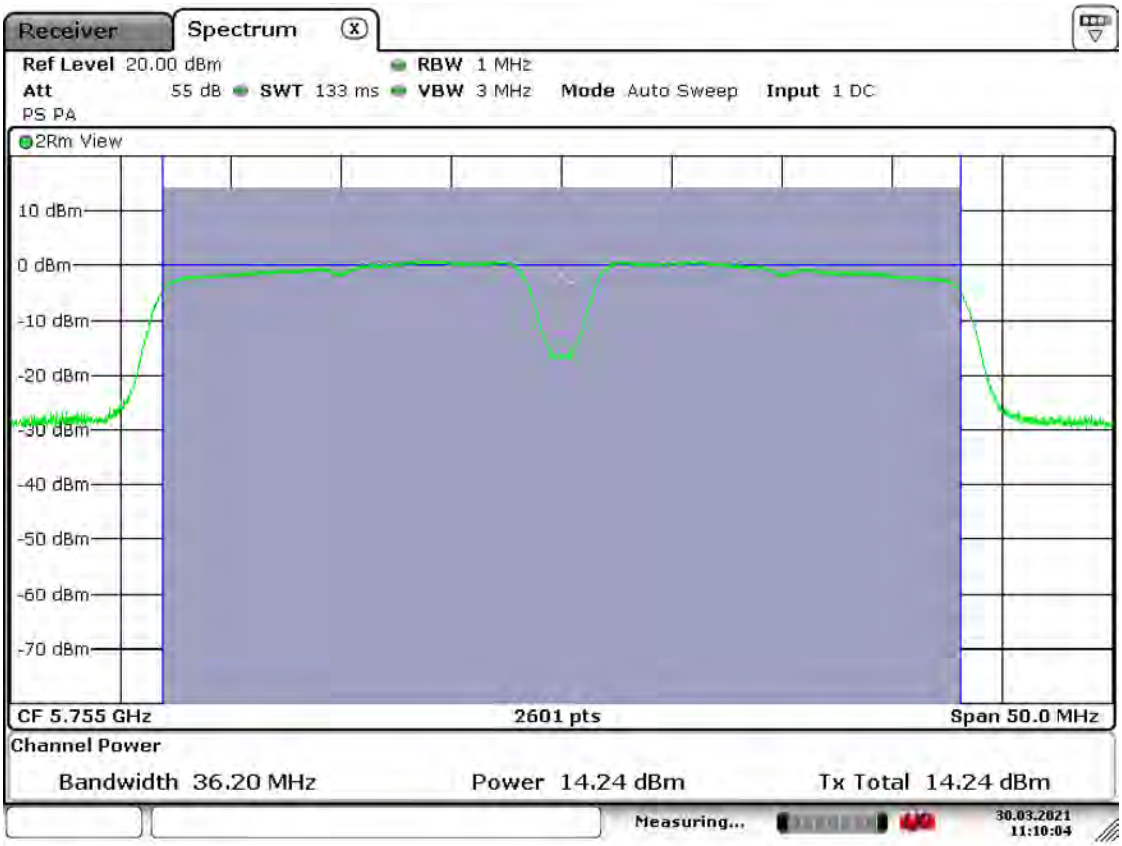
Date: 30.MAR.2021 10:53:10

UNII 3, OFDM54 20M, High Channel



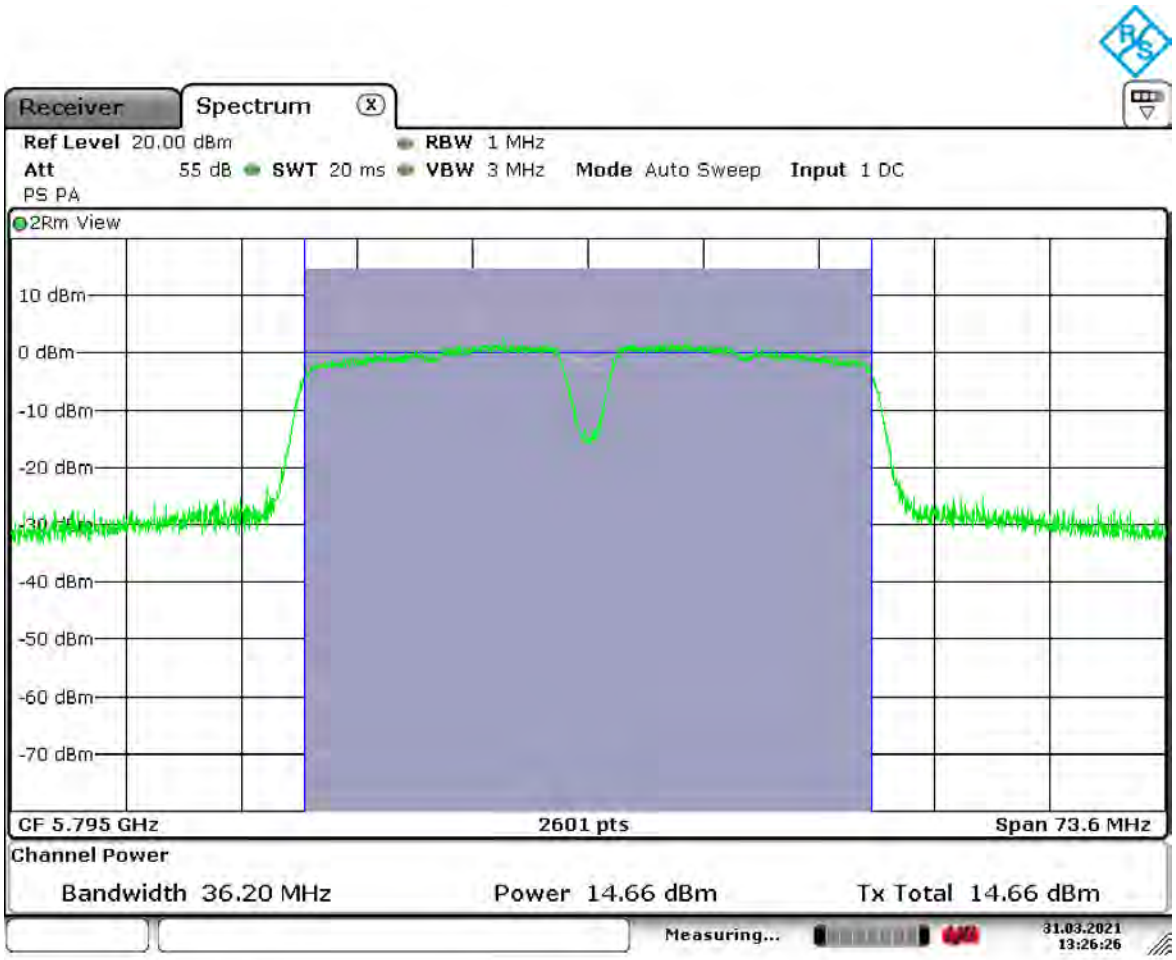
Date: 30.MAR.2021 11:00:43

UNII 3, OFDM54 40M, Low Channel



Date: 30.MAR.2021 11:10:03

UNII 3, OFDM54 40M, High Channel



Date: 31.MAR.2021 13:26:26

9 PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

9.1 Requirements:

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 6dBi. In addition, the maximum power spectral density shall not exceed 11dBm in any 1 MHz band.

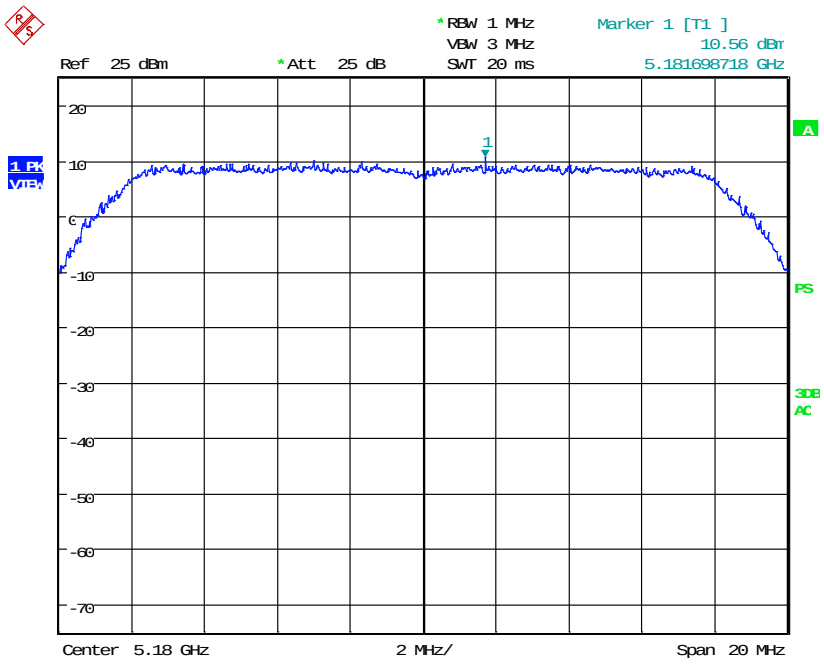
For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum 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.

9.2 Peak Power Spectral Density Test Data

Test Date(s):	2021-02-03	**Test Engineer:**	J. Chiller
Standards:	CFR 47 Part 15.407(a)(1,3); KDB789033	**Air Temperature:**	20.0ºC
		Relative Humidity:	28%

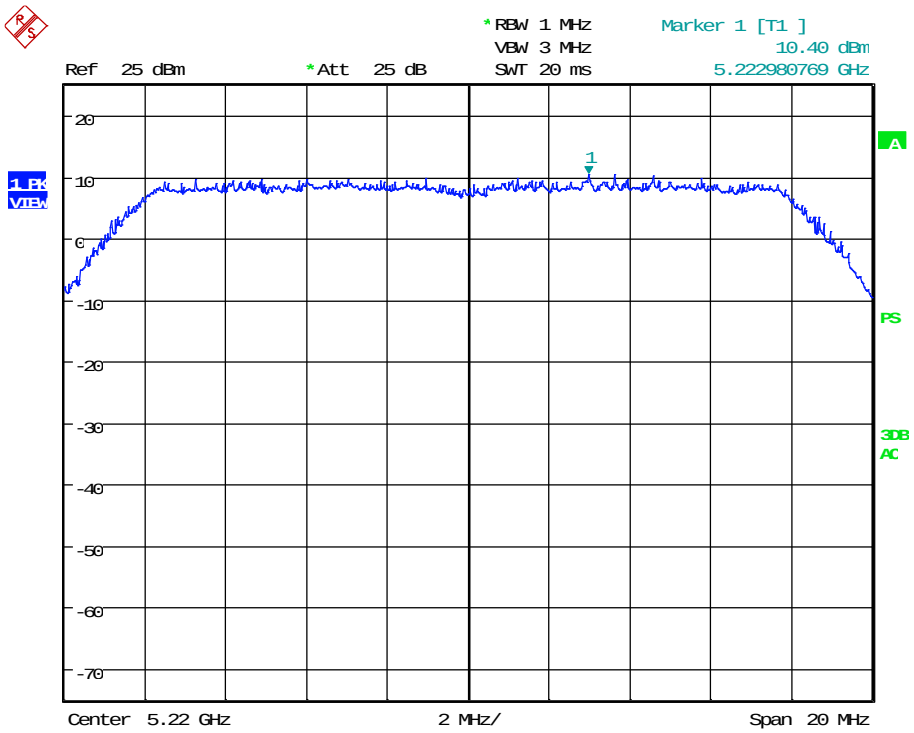
Note: RF Power was reduced to 13dBm setting to reduce Power Spectral Density to passing level.

UNII 1, OFDM54 20M: Low Channel



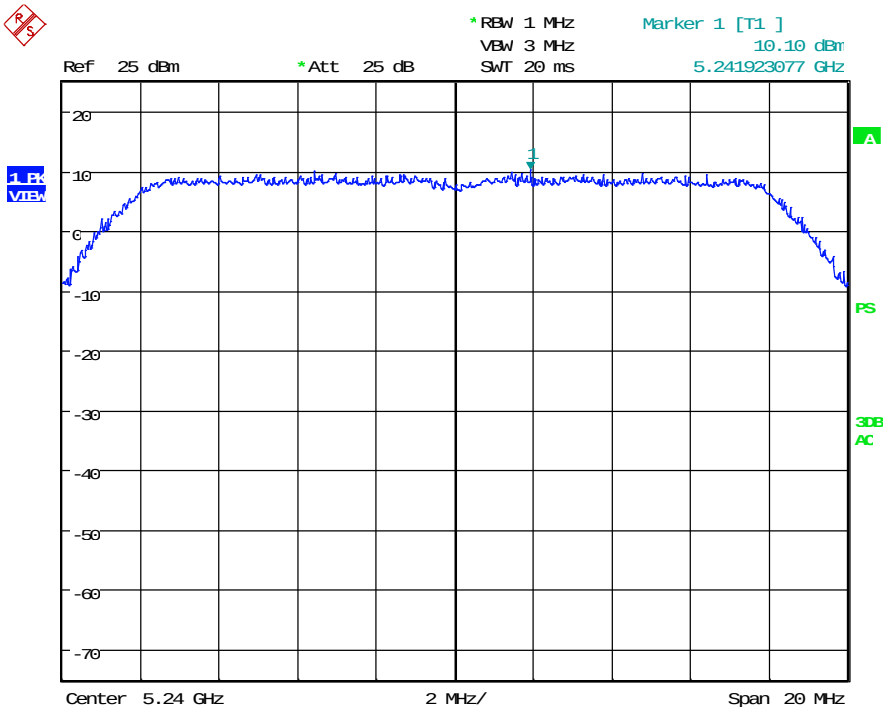
Date: 3.FEB.2021 11:40:41

UNII 1, OFDM54 20M: Mid Channel



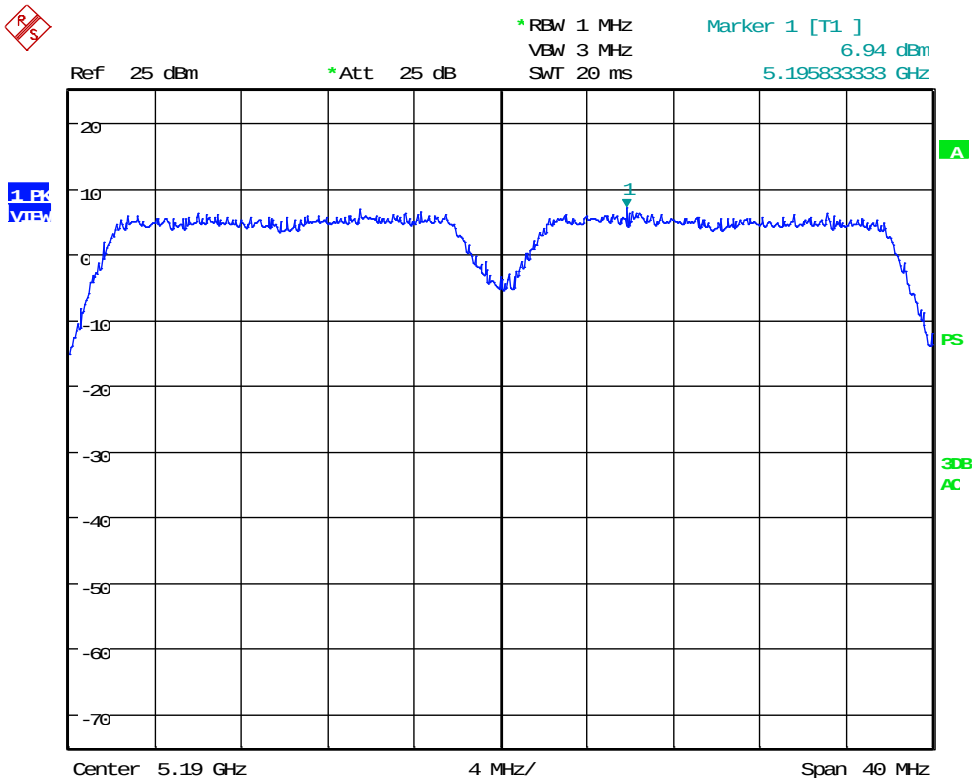
Date: 3.FEB.2021 11:41:46

UNII 1, OFDM54 20M: High Channel



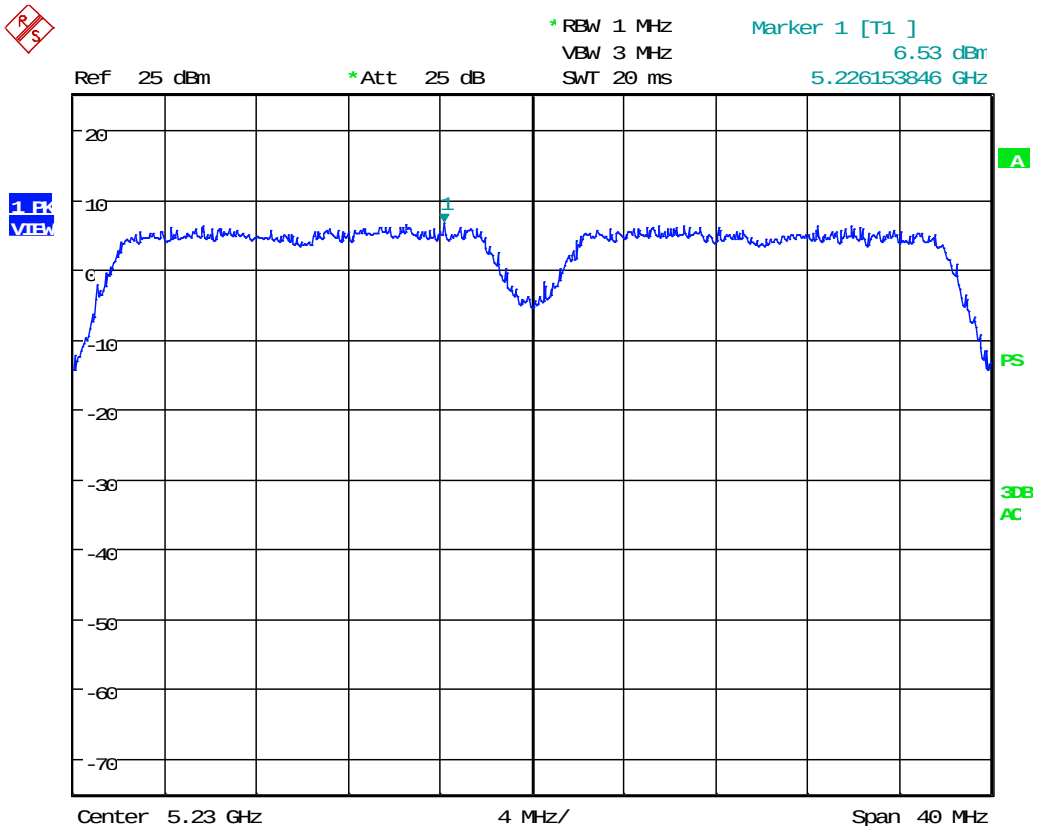
Date: 3.FEB.2021 11:42:54

UNII 1, OFDM54 40M: Low Channel



Date: 3.FEB.2021 11:36:52

UNII 1, OFDM54 40M: High Channel

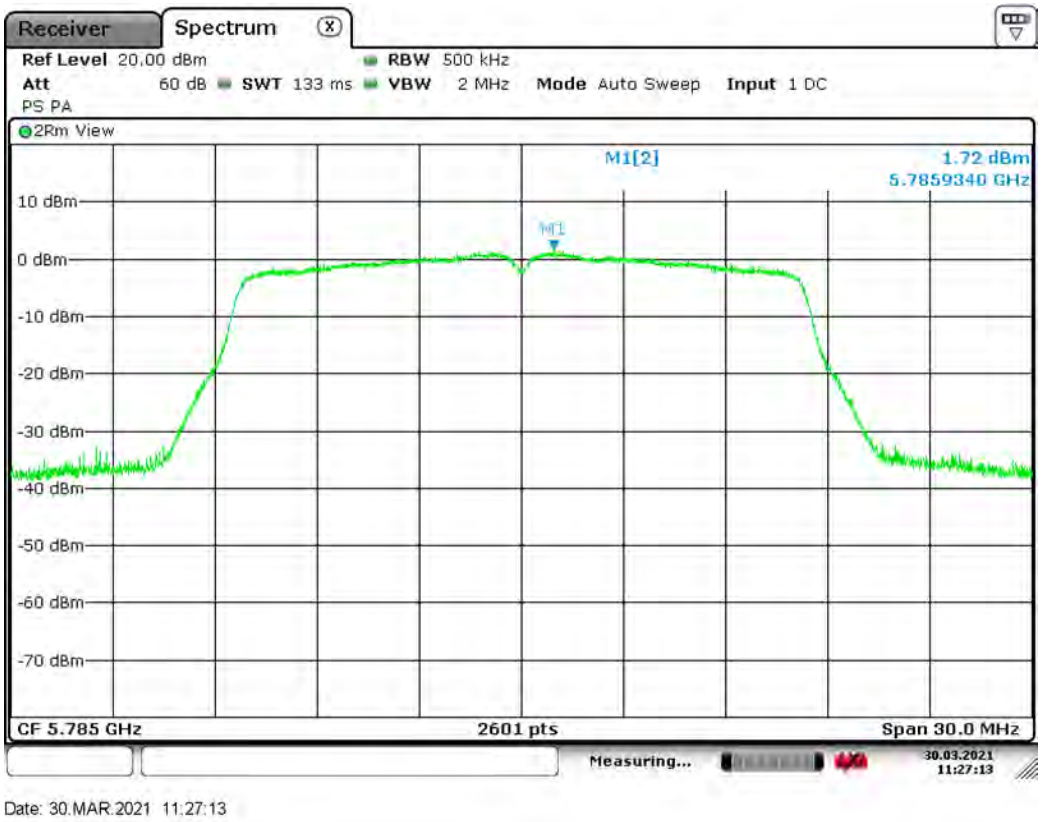


Date: 3.FEB.2021 11:39:22

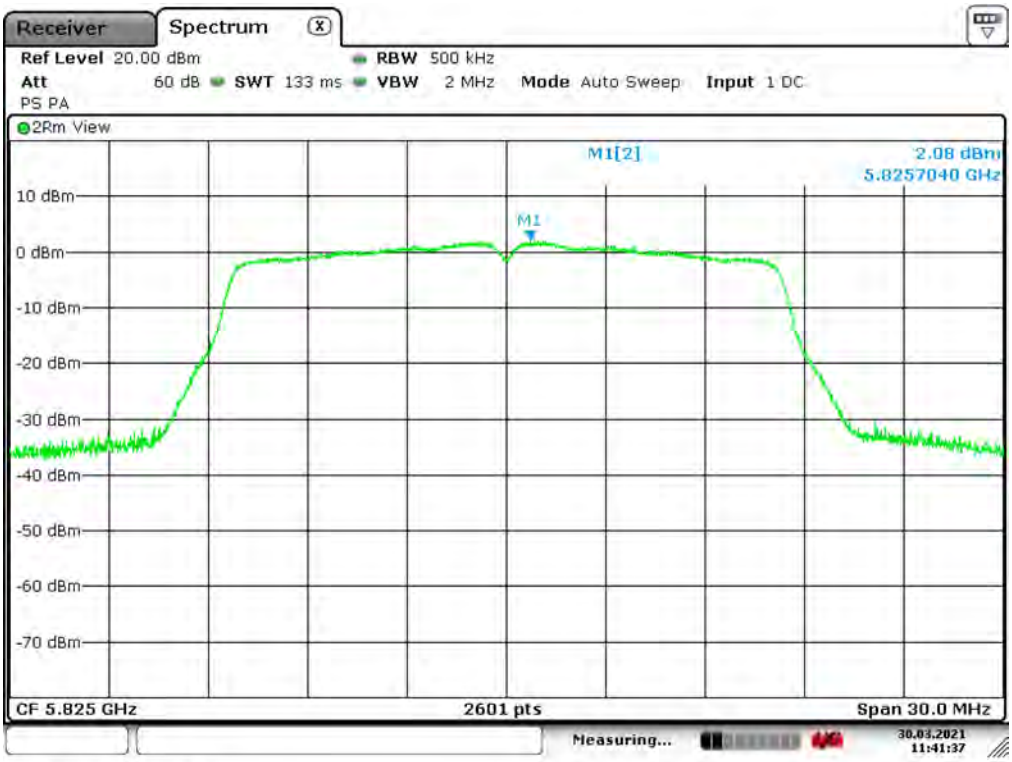
Test Date(s):	2021-03-30	**Test Engineer:**	J. Chiller
Standards:	CFR 47 Part 15.407(a)(1,3); KDB789033	**Air Temperature:**	20.8ºC
		Relative Humidity:	26%

UNII 3, OFDM54 20M: Low Channel

UNII 3, OFDM54 20M: Mid Channel

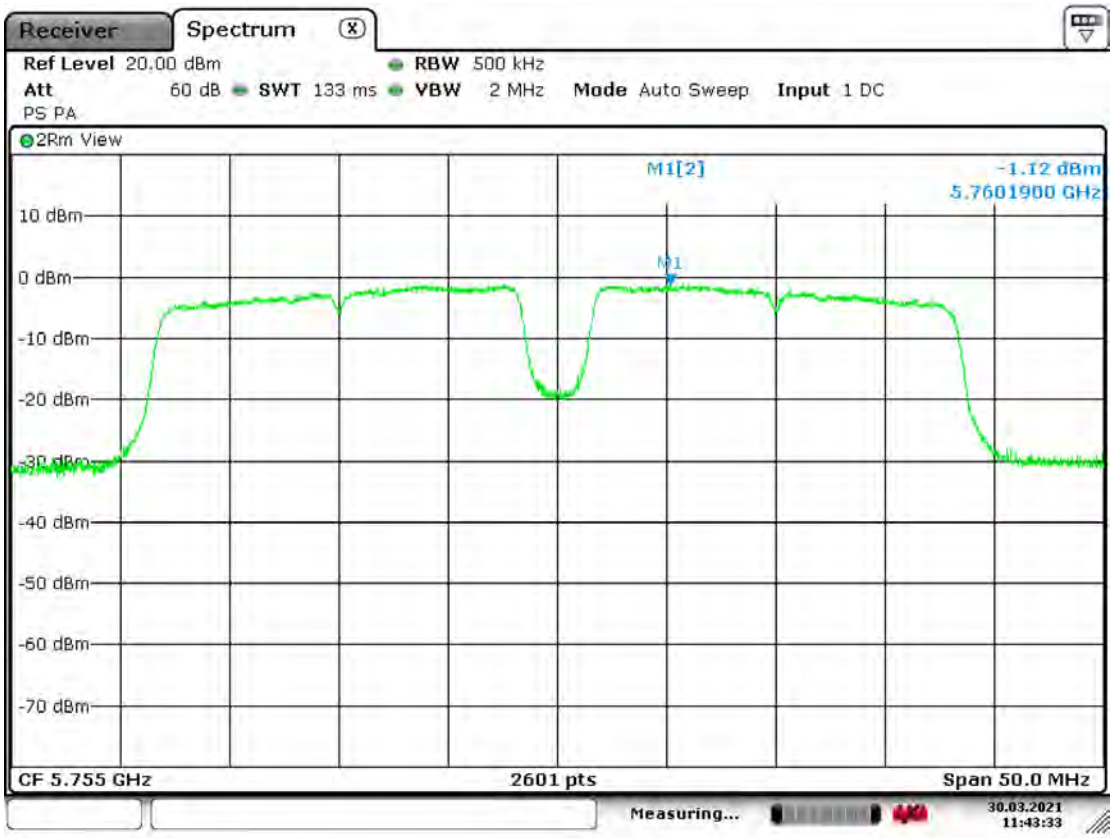


UNII 3, OFDM54 20M: High Channel



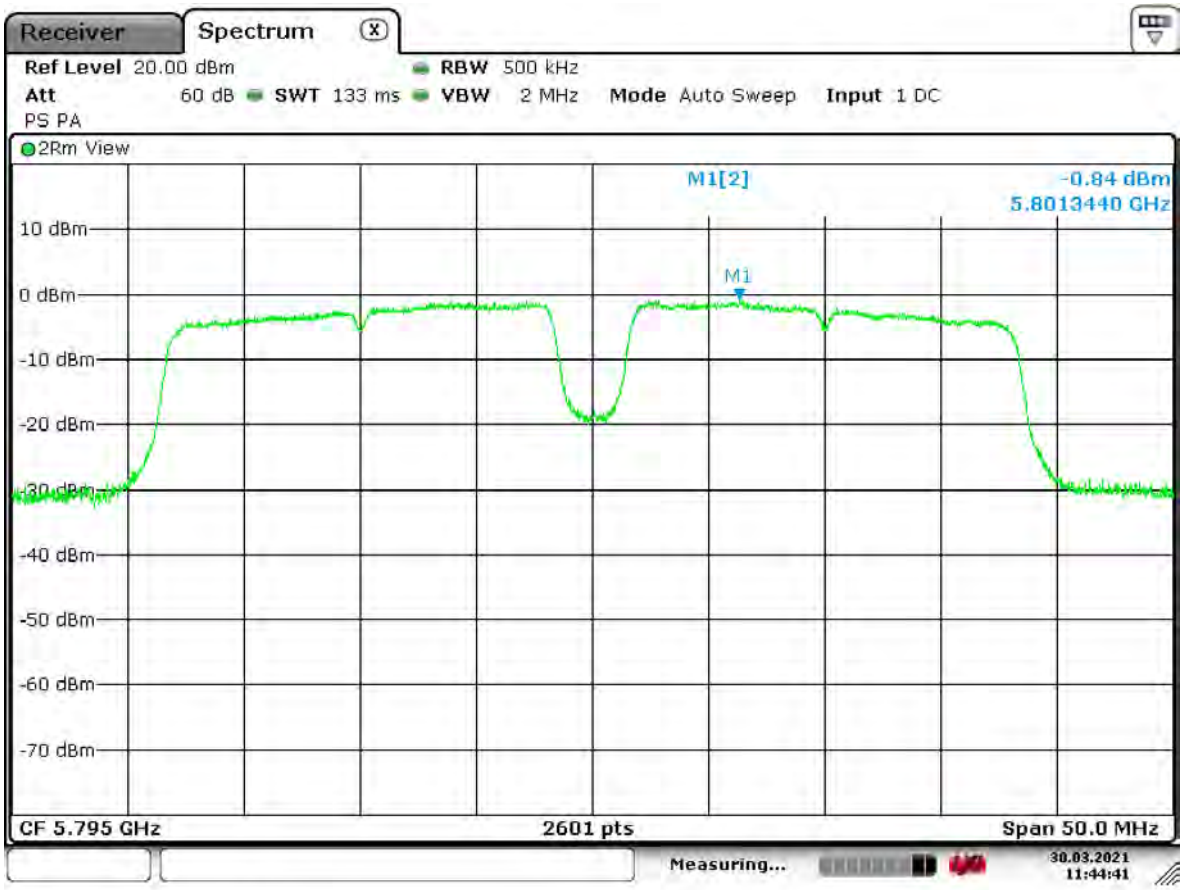
Date: 30.MAR.2021 11:41:37

UNII 3, OFDM54 40M: Low Channel



Date: 30.MAR.2021 11:43:34

UNII 3, OFDM54 40M: High Channel



Date: 30.MAR.2021 11:44:42

10 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its integral/internal antenna. Radiated emissions were measured in a Semi-Anechoic Chamber. All emissions generated that fall in the restricted bands per FCC Part 15.205 were examined.

10.1 Requirements:

All emissions that fall in the restricted bands defined in FCC Part 15.205 shall not exceed the maximum field strength listed in FCC Part 15.209(a).

All other undesirable emission that do not fall under the provisions of Part 15.205, shall meet 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

10.2 Radiated Spurious Emission Test Data

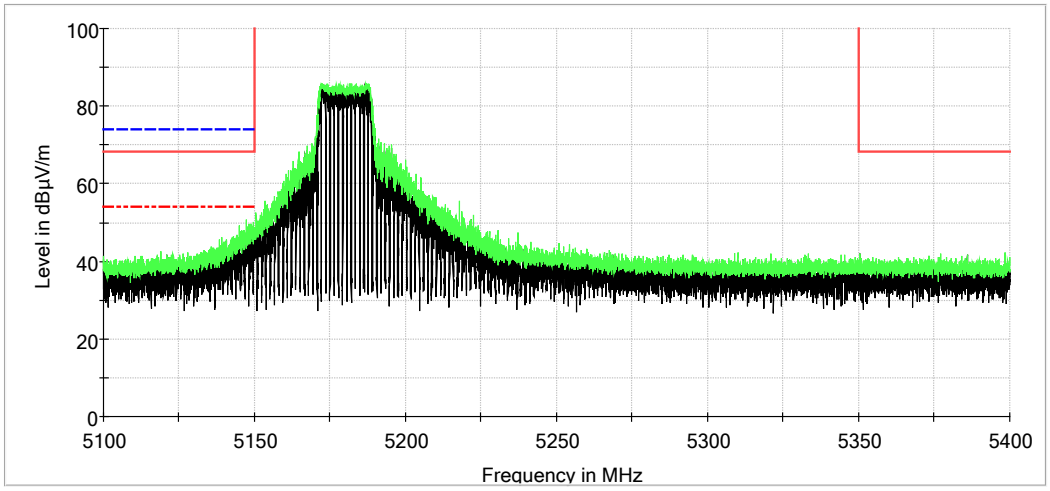
Test Date(s):	2021-02-05	**Test Engineer:**	J. Chiller
Standards:	CFR 47 Part 15.407; Part 15.209 / KDB789033	**Air Temperature:**	19.6ºC
		Relative Humidity:	25%

Notes: Plots are peak, max hold prescan data included only to determine what frequencies to investigate and measure. The EUT was initially placed in a semi-anechoic chamber, and rotated in all three orthogonal positions to maximize the emissions. The orthogonal position that showed the highest emissions was used. Characterization measurements were then performed to determine at which frequencies significant emissions occurred. These graphs are shown below.

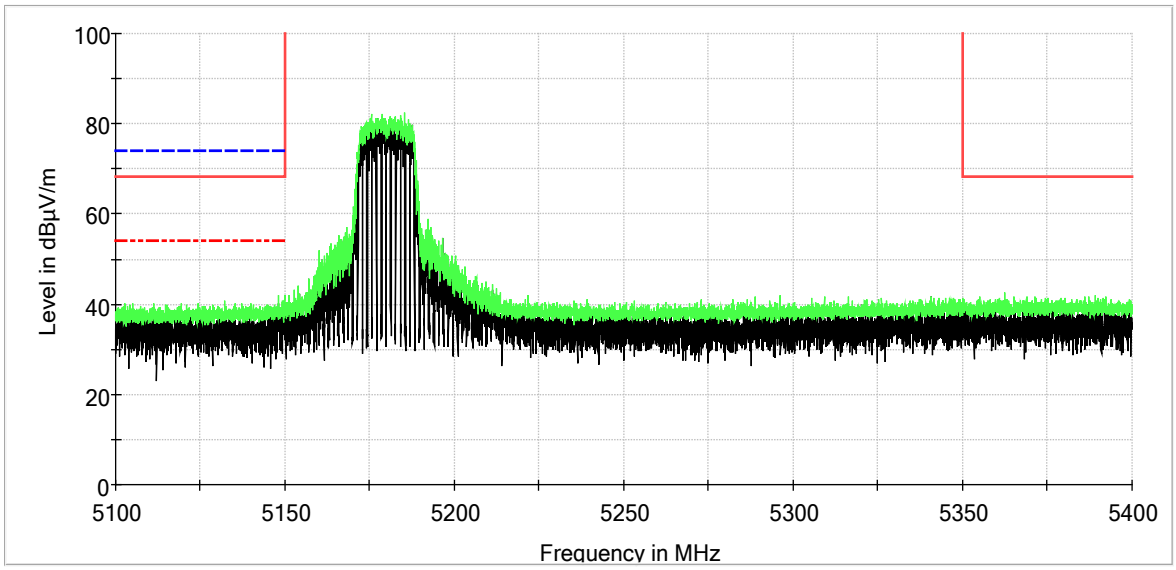
The equipment was fully exercised with all cabling attached to the EUT and was positioned in a semi-anechoic chamber for maximum emissions. While the equipment was energized, the receiving antenna was scanned from 1.0 meter to 4.0 meters in both vertical and horizontal polarities while the turntable was adjusted 360 degrees to determine the maximum field strength. The tables of measured results can be found below.

In the following plots, emissions to be found by the EUT were measured and listed in tables. The black lines are active scans while the green lines are the max peak levels of the unit during rotations. The plots for below 1 GHz are for the mid channel 20M bandwidth and the plots for greater than 1 GHz are for the high channel 40M Bandwidth which were determined worse-case. The table of results includes results for all channels.

Radiated Band Edge, UNII 1, OFDM54 20M - Vertical, Lower Channel

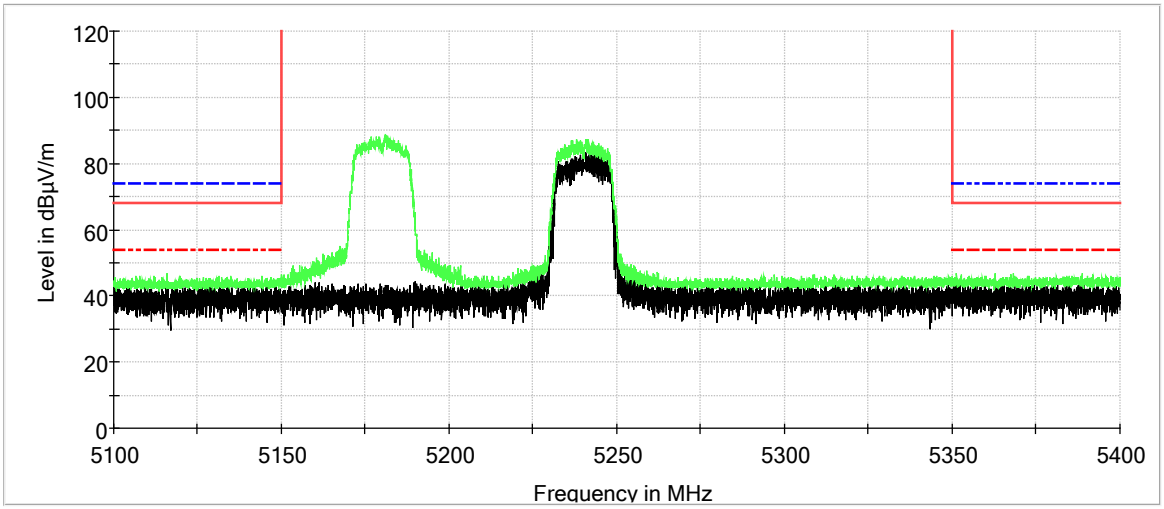


Radiated Band Edge, UNII 1, OFDM54 20M – Horizontal, Lower Channel

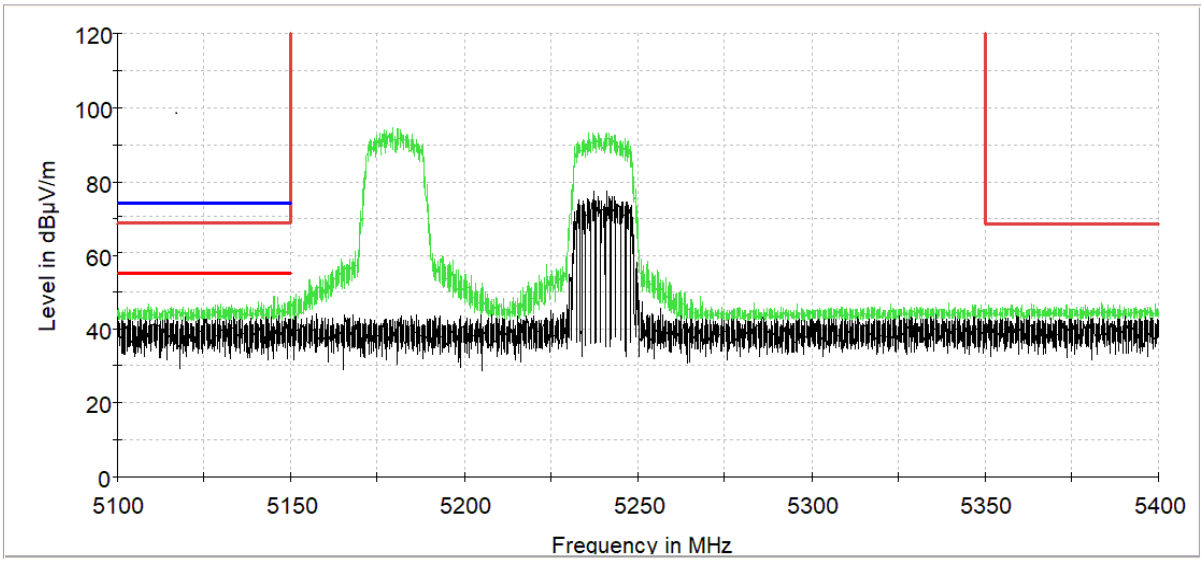


Note: Green trace indicates the MaxPeak level reached during rotation.

Radiated Band Edge, UNII 1, OFDM54 20M - Vertical, Upper Channel



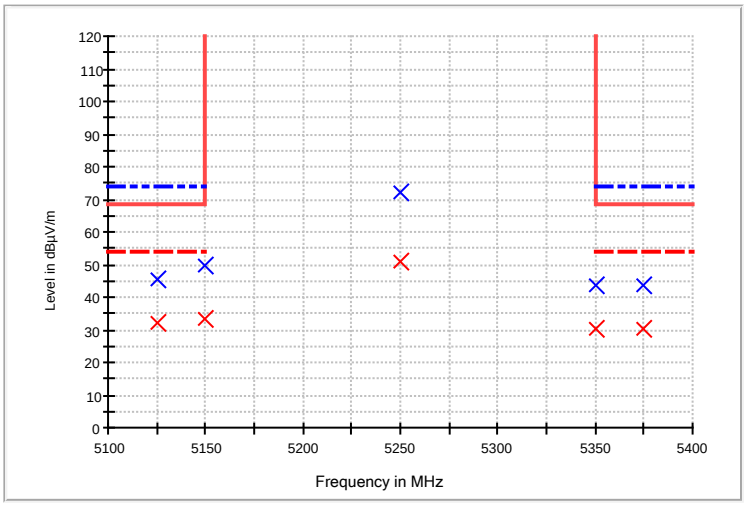
Radiated Band Edge, UNII 1, OFDM54 20M – Horizontal, Upper Channel



Note: Green trace indicates the MaxPeak level reached during rotation for both channels. The black trace is irrelevant and is just where the signal was when the last plot was viewed.

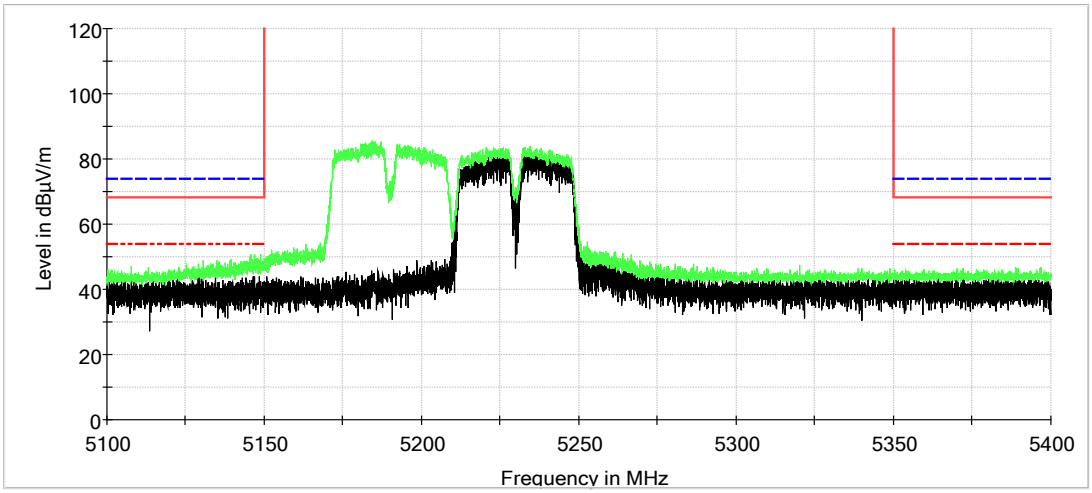
Radiated Band Edge, UNII 1, OFDM54 20M – Final Measurements

Freq (MHz)	Peak (dBµV/m)	Avg (dBµV/m)	BW (MHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)	Limit PK (dBµV/m)	Margin - PK (dB)
5125.00	45.2	32.1	1.000	150.0	H	246.0	-2.2	21.9	54.0	68.2	23.0
5150.00	50.0	33.6	1.000	150.0	H	246.0	-2.1	20.4	54.0	68.2	18.2
5250.00	72.0	----	1.000	150.0	H	247.0	-2.0	-----	----	----	----
5350.00	43.7	30.5	1.000	150.0	H	247.0	-1.5	23.5	54.0	68.2	24.5
5375.00	43.4	30.3	1.000	150.0	H	247.0	-1.4	23.7	54.0	68.2	24.8

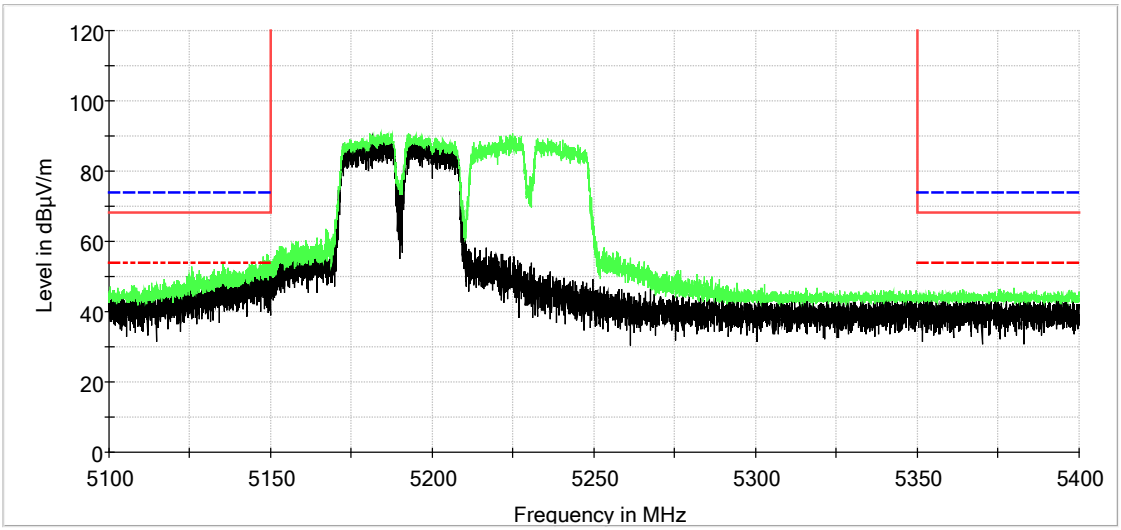


Peak and Average Measurements within the restricted bands.

Radiated Band Edge, UNII 1, OFDM54 40M - Vertical



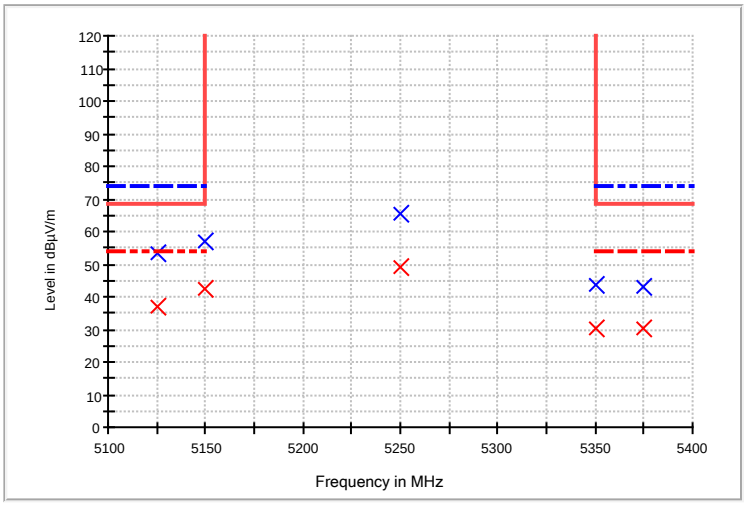
Radiated Band Edge, UNII 1, OFDM54 40M - Horizontal



Note: Green trace indicates the MaxPeak level reached during rotation for both channels. The black trace is irrelevant and is just where the signal was when the last plot was viewed.

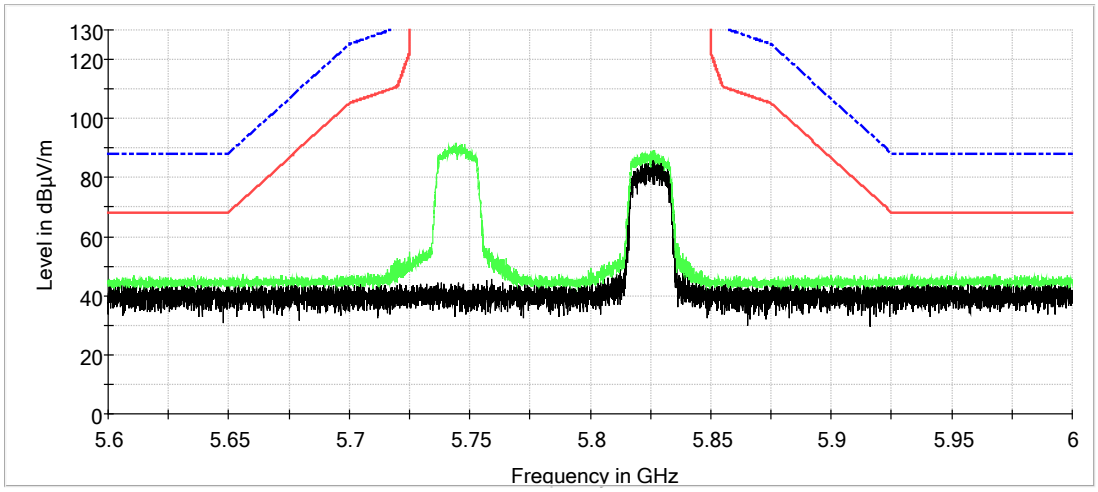
Radiated Band Edge, UNII 1, OFDM54 40M – Measurements

Freq (MHz)	Peak (dBµV/m)	Avg (dBµV/m)	BW (MHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)	Limit - PK (dBµV/m)	Margin - PK (dB)
5125.00	53.3	37.1	1.000	150.0	H	316.0	-2.2	26.9	54.0	68.2	14.9
5150.00	57.2	42.6	1.000	150.0	H	316.0	-2.1	11.4	54.0	68.2	11.0
5250.00	65.2	----	1.000	150.0	H	316.0	-2.0	----	----	----	----
5350.00	43.5	30.3	1.000	150.0	H	316.0	-1.5	23.7	54.0	68.2	14.7
5375.00	43.2	30.4	1.000	150.0	H	316.0	-1.4	23.6	54.0	68.2	15.0

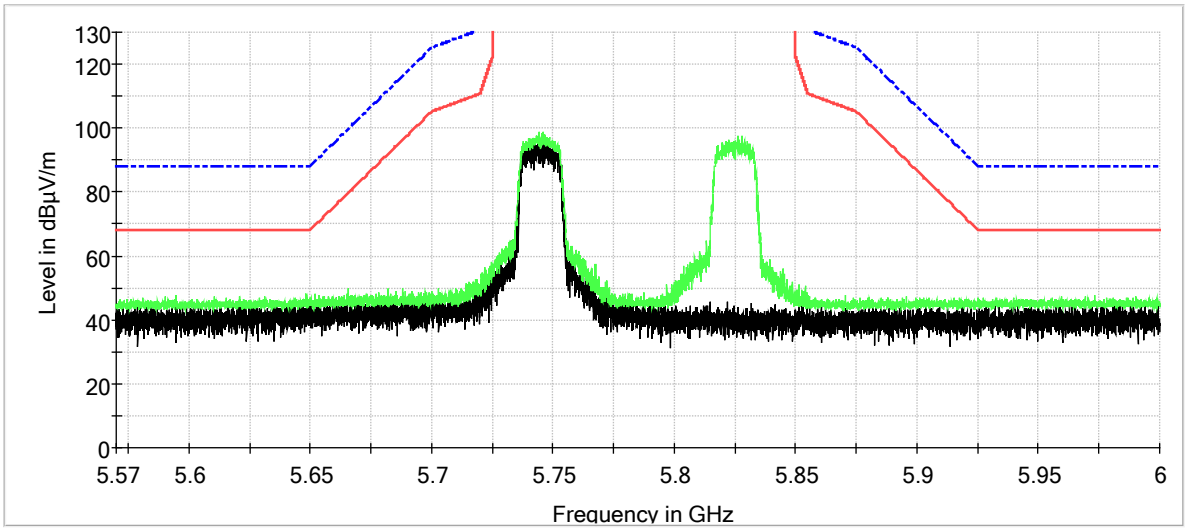


Peak and Average Measurements within the restricted bands.

Radiated Band Edge, UNII 3, OFDM54 20M - Vertical



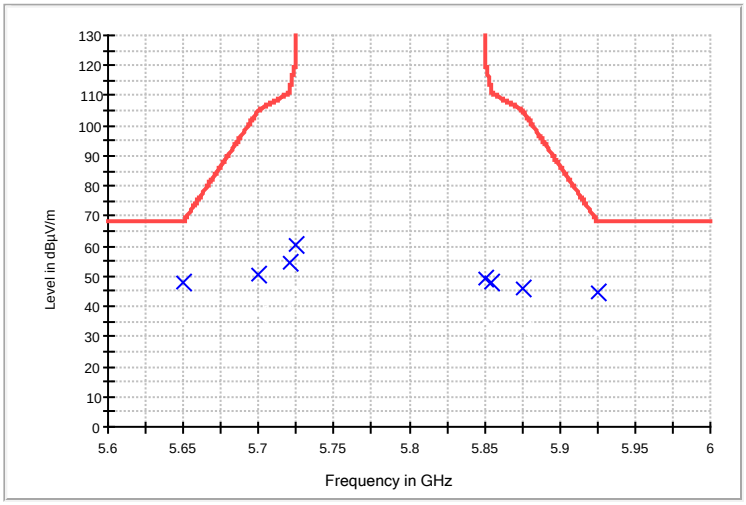
Radiated Band Edge, UNII 3, OFDM54 20M - Horizontal



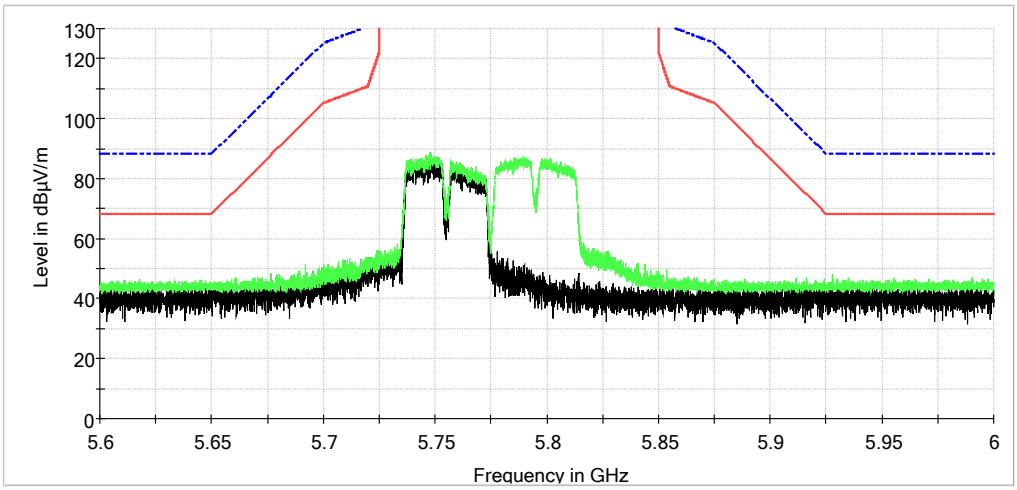
Note: Green trace indicates the MaxPeak level reached during rotation for both channels. The black trace is irrelevant and is just where the signal was when the last plot was viewed.

Radiated Band Edge, UNII 3, OFDM54 20M – Final Measurements

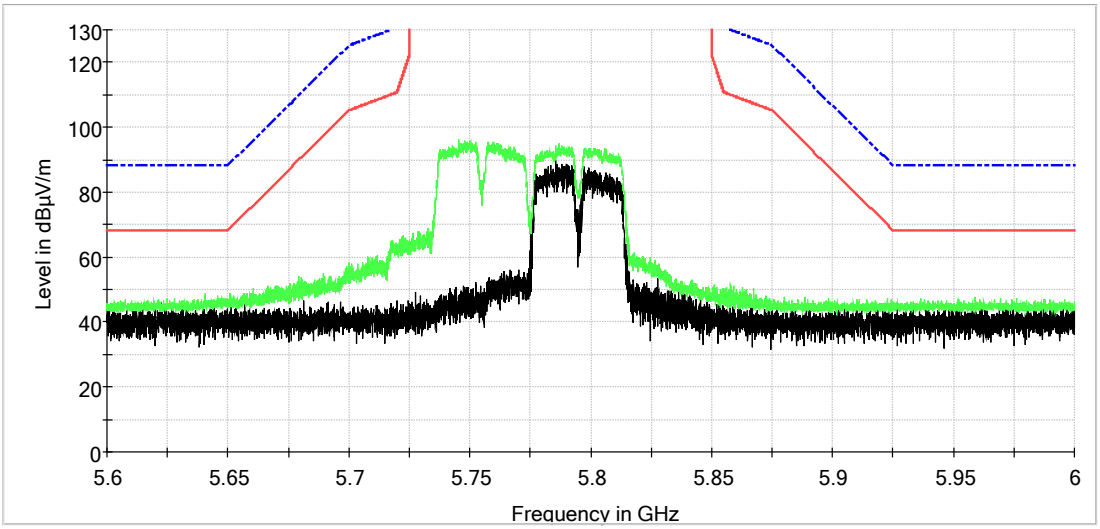
Frequency (MHz)	MaxPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin	Limit - PK+ (dBµV/m)
5650.000000	48.0	1000.000	150.0	H	254.0	-1.2	20.2	68.2
5700.000000	50.3	1000.000	150.0	H	254.0	-1.2	54.9	105.2
5720.000000	54.7	1000.000	150.0	H	254.0	-1.1	56.1	110.8
5725.000000	60.3	1000.000	150.0	H	254.0	-1.1	61.9	122.2
5850.000000	49.5	1000.000	150.0	H	308.0	-1.1	72.7	122.2
5855.000000	48.2	1000.000	150.0	H	308.0	-1.1	62.6	110.8
5875.000000	46.1	1000.000	150.0	H	308.0	-1.0	59.1	105.2
5925.000000	44.4	1000.000	150.0	H	308.0	-0.8	23.8	68.2



Radiated Band Edge, UNII 3, OFDM54 40M - Vertical



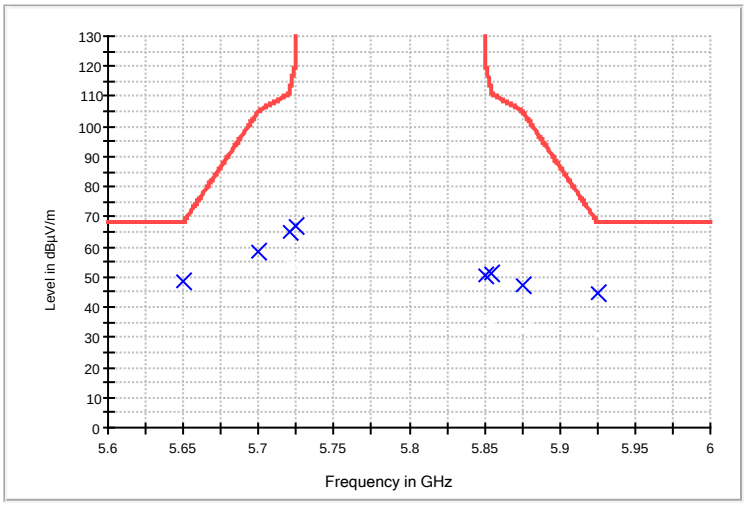
Radiated Band Edge, UNII 3, OFDM54 40M - Horizontal



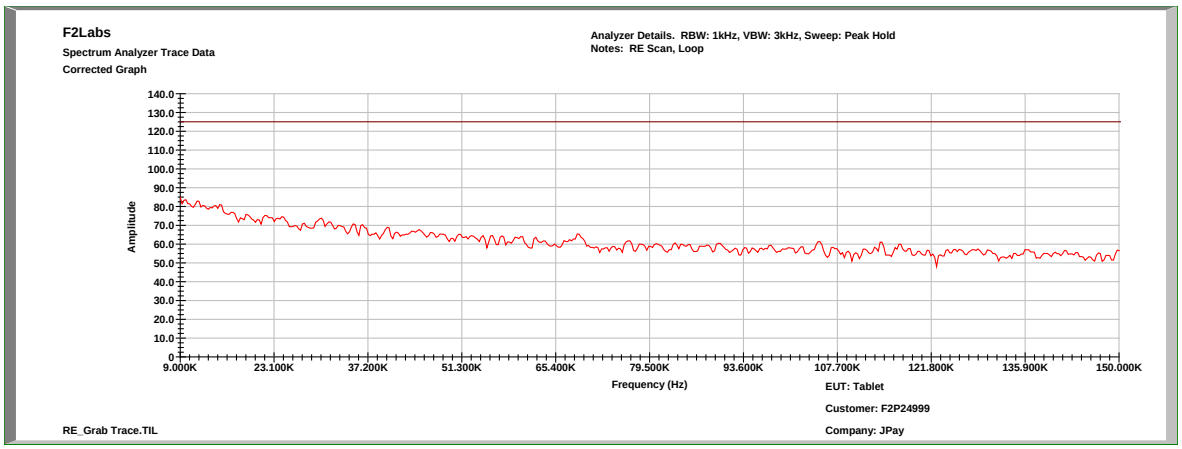
Note: Green trace indicates the MaxPeak level reached during rotation for both channels. The black trace is irrelevant and is just where the signal was when the last plot was viewed.

Radiated Band Edge, UNII 3, OFDM54 40M – Final Measurements

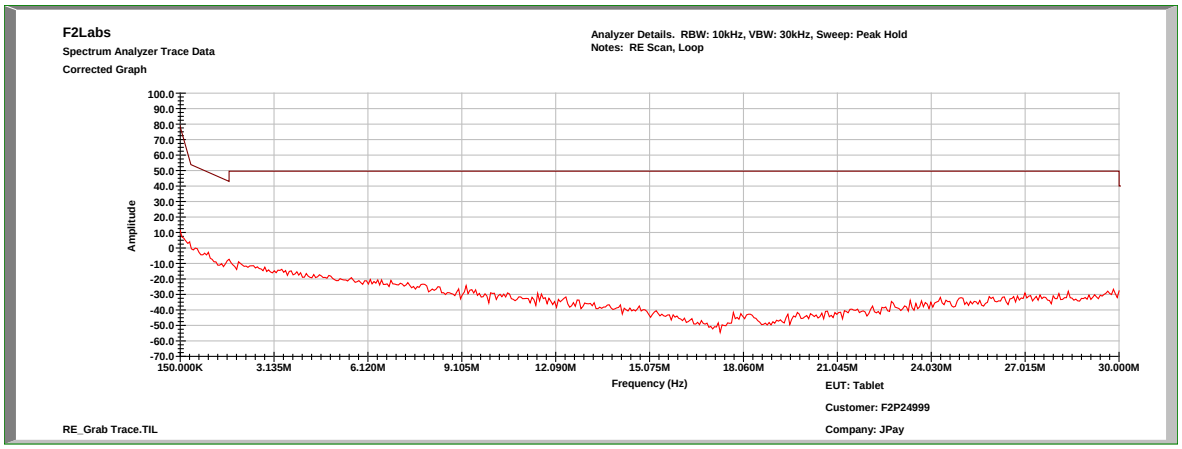
Frequency (MHz)	MaxPeak (dBµV/m)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin	Limit - PK+ (dBµV/m)
5650.000000	48.7	1000.000	150.0	H	248.0	-1.2	19.5	68.2
5700.000000	58.1	1000.000	150.0	H	248.0	-1.2	47.1	105.2
5720.000000	65.2	1000.000	150.0	H	248.0	-1.1	45.6	110.8
5725.000000	67.1	1000.000	150.0	H	248.0	-1.1	55.1	122.2
5850.000000	50.5	1000.000	150.0	H	301.0	-1.1	71.7	122.2
5855.000000	51.2	1000.000	150.0	H	301.0	-1.1	59.6	110.8
5875.000000	47.0	1000.000	150.0	H	301.0	-1.0	58.2	105.2
5925.000000	44.3	1000.000	150.0	H	301.0	-0.8	23.9	68.2



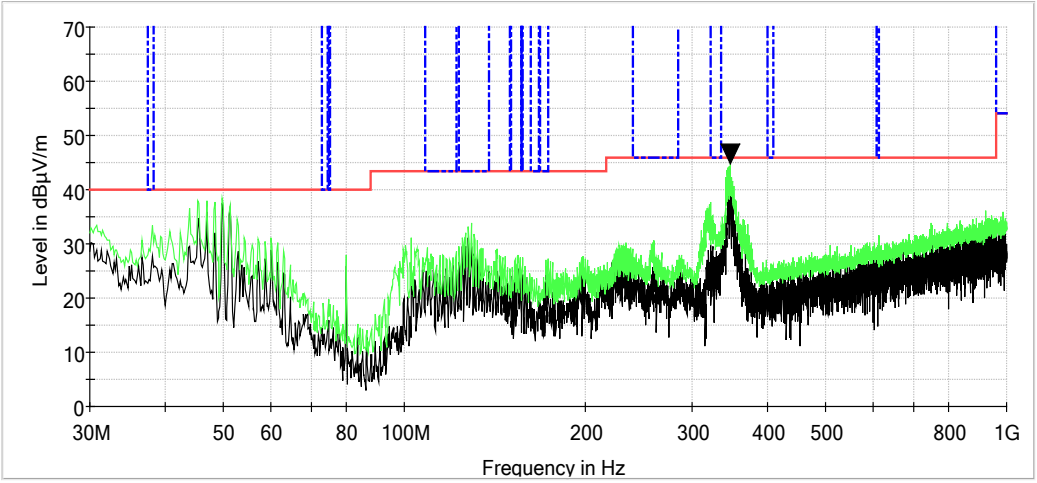
5.1 GHz, OFDM54 20M Radiated Spurious Emissions: Mid Channel, 0.009 MHz to 0.15 MHz



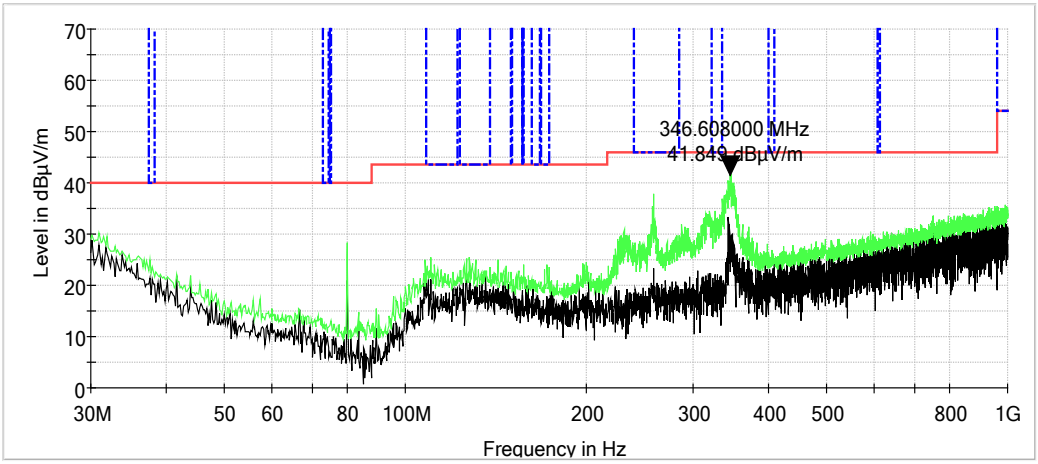
5.1 GHz, OFDM54 20M Radiated Spurious Emissions: Mid Channel, 0.15 MHz to 30.0 MHz



5.1 GHz, OFDM54 20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1000 MHz, Vertical

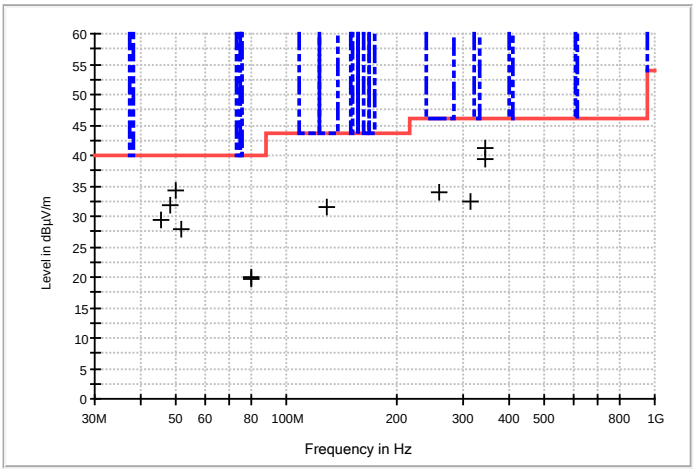


5.1 GHz, OFDM54 20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1000 MHz, Horizontal

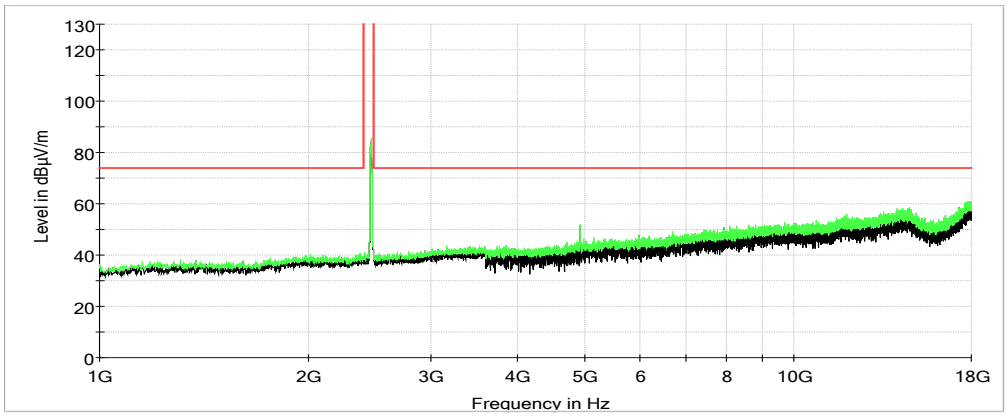


UNII 1, OFDM54 20M, 30 MHz to 1000 MHz: Data from all channels

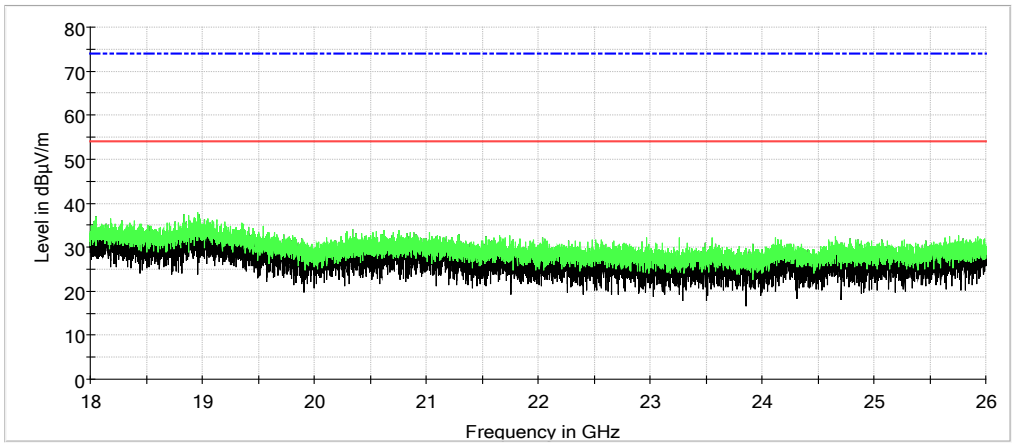
Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dBµV)	Correction Factors (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
45.400000	V	100.00	18.00	41.7	-12.3	29.4	40.0	-10.6
48.400000	V	100.00	323.00	45.6	-13.7	31.9	40.0	-8.1
49.920000	V	100.00	14.00	48.3	-14.2	34.1	40.0	-5.9
51.320000	V	100.00	337.00	42.3	-14.5	27.8	40.0	-12.2
80.000000	H	100.00	348.00	34.5	-14.8	19.7	40.0	-20.3
80.000000	V	100.00	0.00	34.8	-14.8	20.0	40.0	-20.0
127.880000	V	100.00	306.00	40.0	-8.3	31.7	40.0	-8.3
258.338000	H	125.00	76.00	43.0	-9.0	34.0	47.0	-13.0
315.680000	V	100.00	214.00	39.1	-6.7	32.4	47.0	-14.6
346.320000	V	100.00	148.00	47.2	-6.1	41.1	47.0	-5.9
346.608000	H	125.00	225.00	45.4	-6.1	39.3	47.0	-7.7



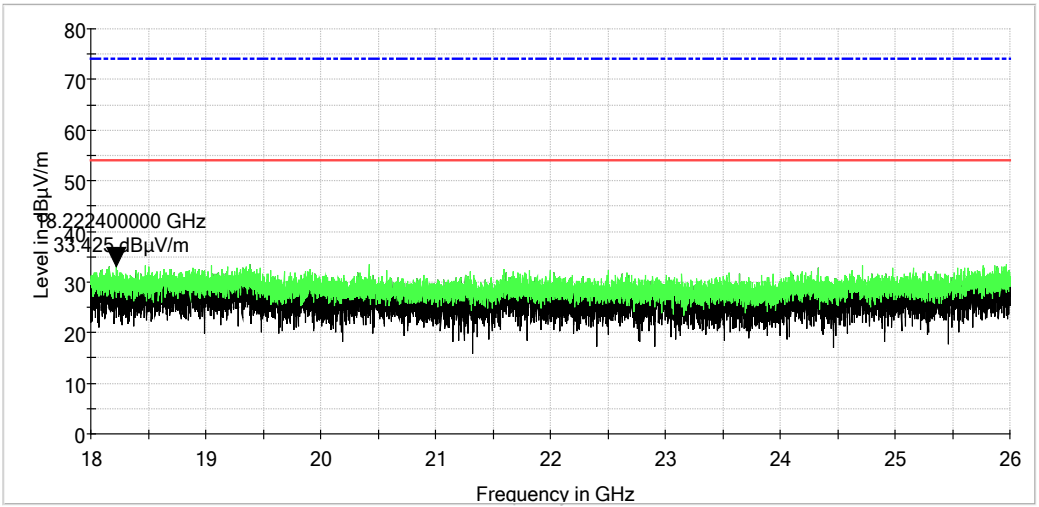
UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 1 GHz to 18 GHz, Vertical



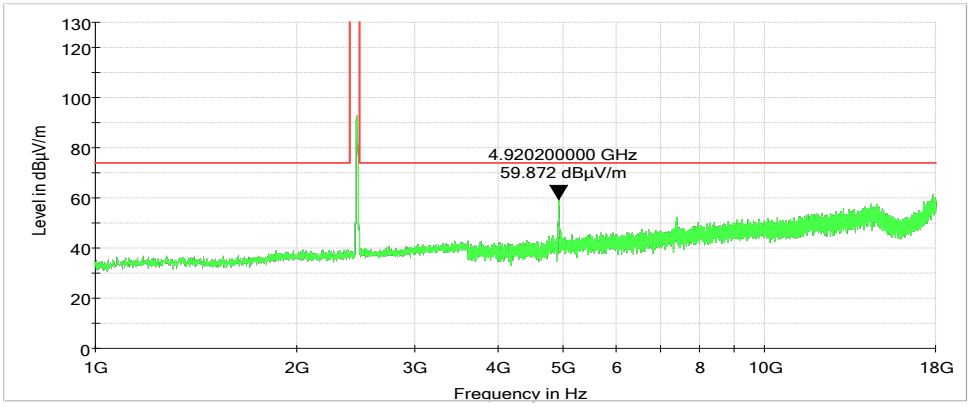
UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Vertical



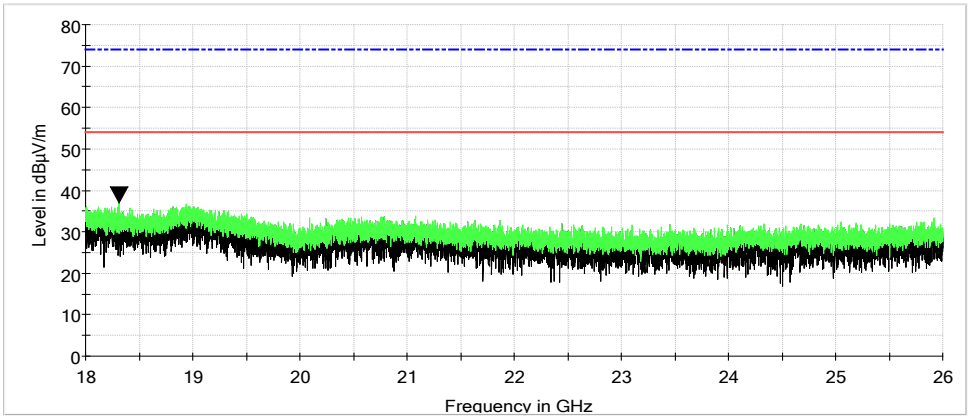
UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 26 GHz to 40 GHz, Vertical



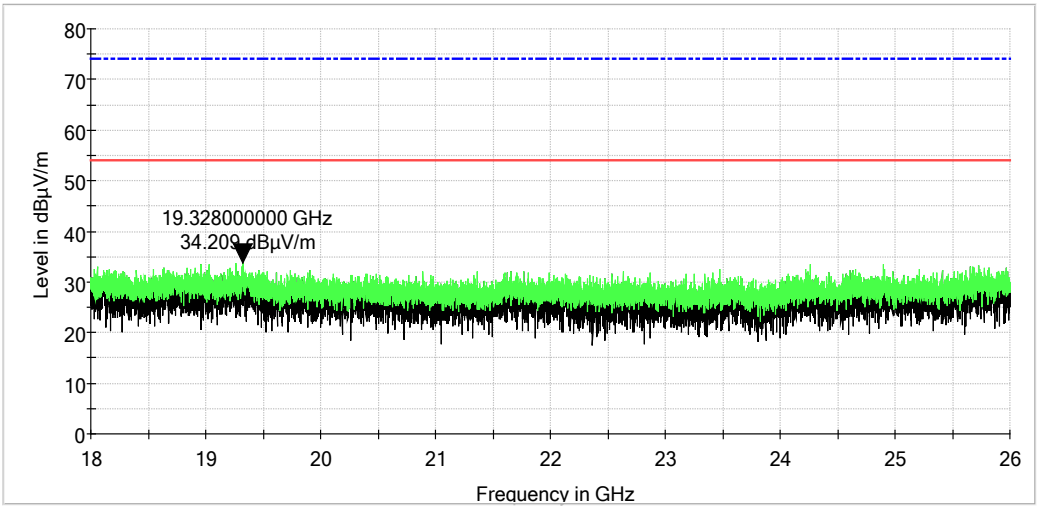
UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 1 GHz to 18 GHz, Horizontal



UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Horizontal

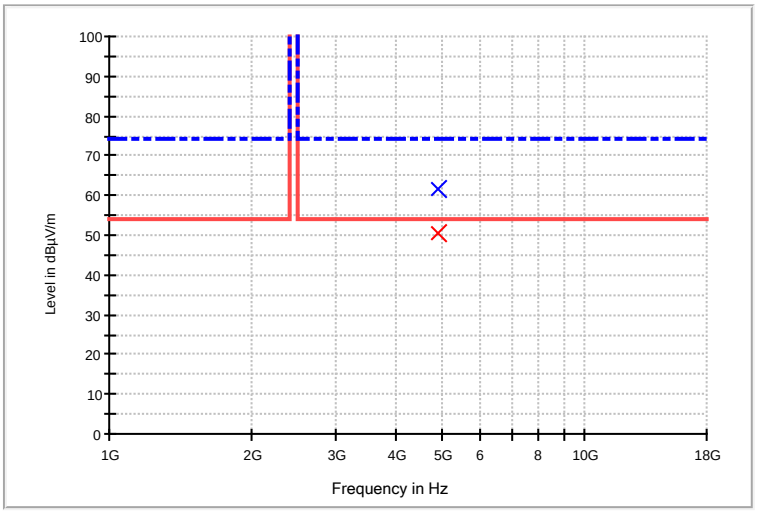


UNII 1, OFDM54 20M, Radiated Spurious Emissions: High Channel, 26 GHz to 40 GHz, Horizontal

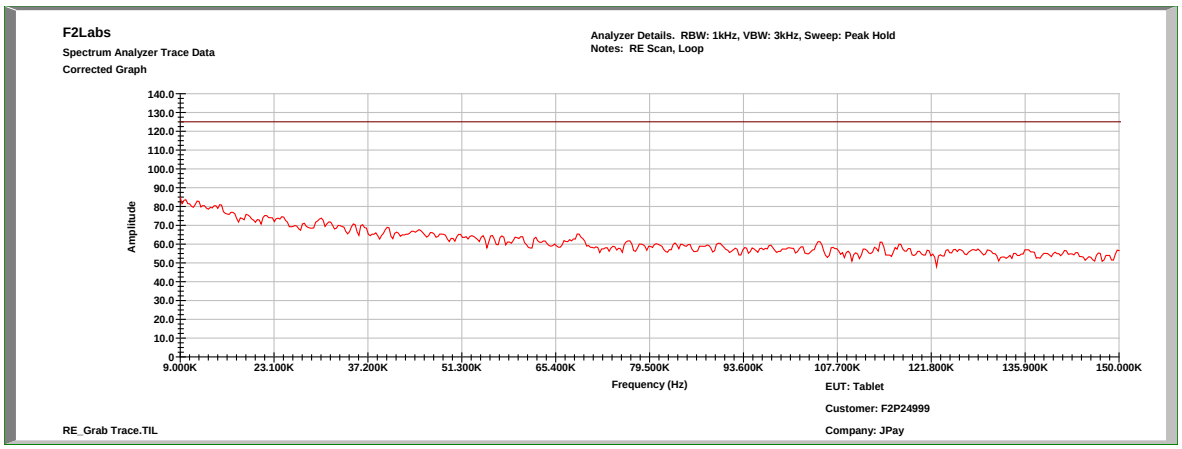


UNII 1, OFDM54 20M, Radiated Spurious Emissions – Measurements

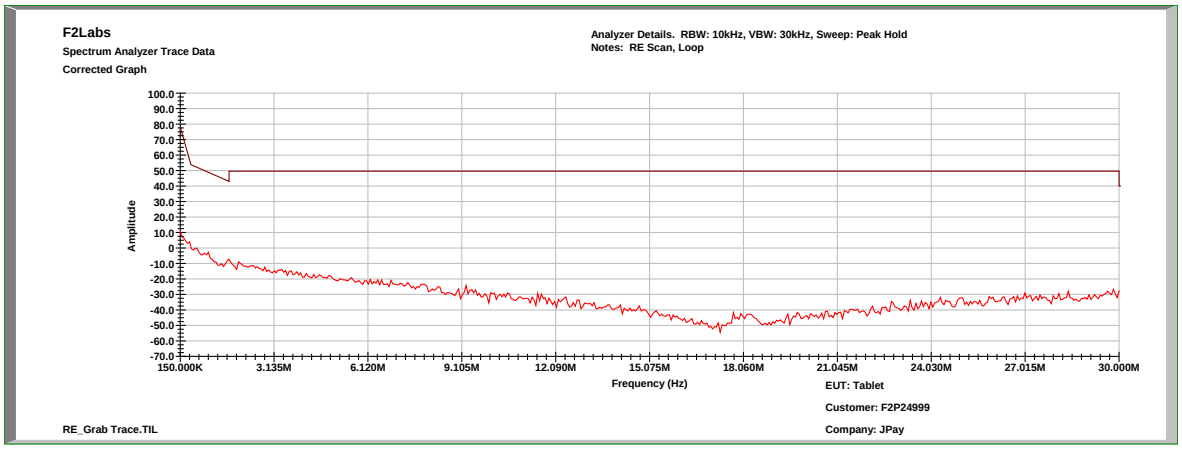
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
4922.000000	61.6	50.6	1000.000	150.0	H	180.0	-2.8	3.4	54.0



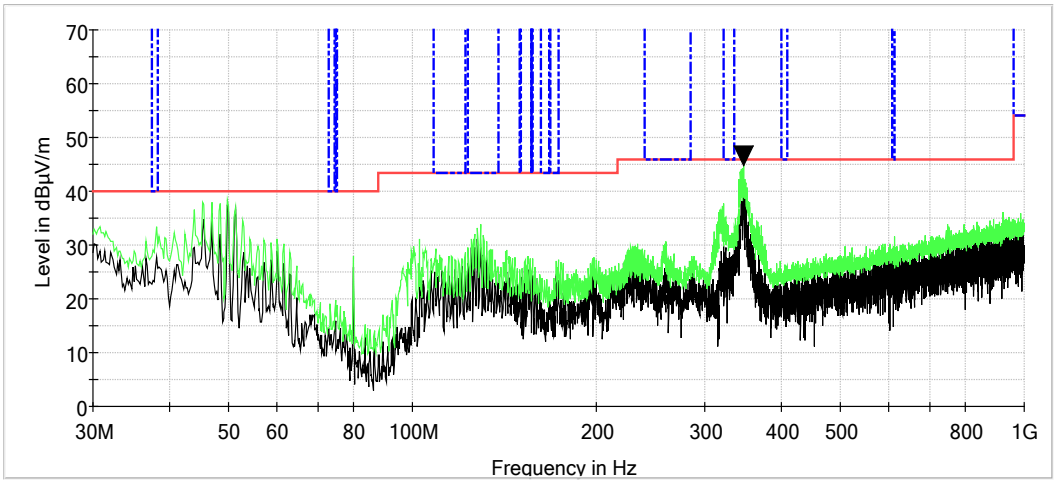
UNII 3, OFDM54 20M Radiated Spurious Emissions: Mid Channel, 0.009 MHz to 0.15 MHz



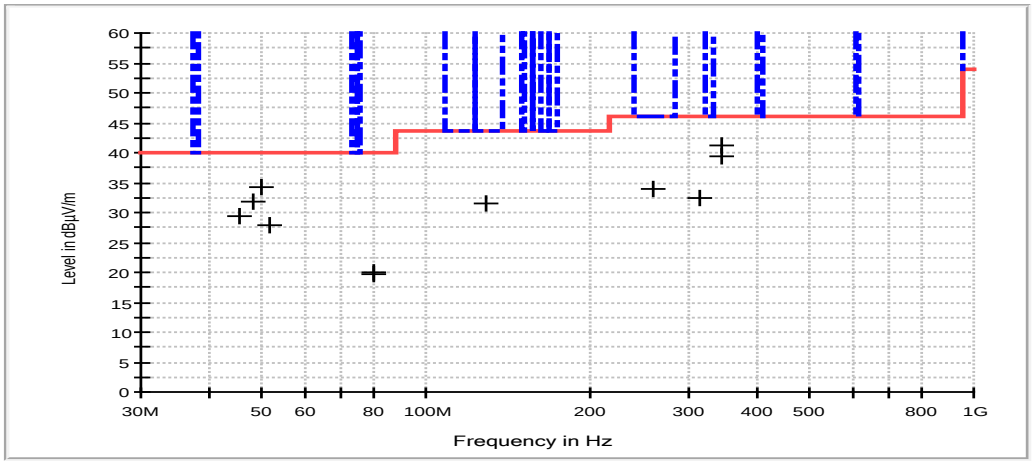
UNII 3, OFDM54 20M Radiated Spurious Emissions: Mid Channel, 0.15 MHz to 30.0 MHz



UNII 3, OFDM54 20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1000 MHz, Vertical

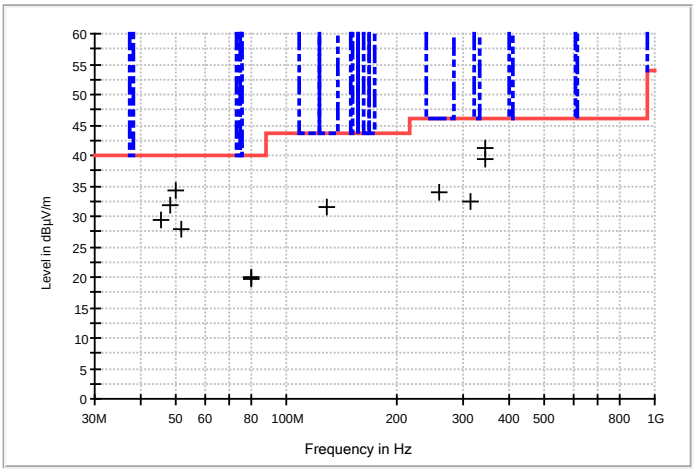


UNII 3, OFDM54 20M, Radiated Spurious Emissions: Mid Channel, 30 MHz to 1000 MHz, Horizontal

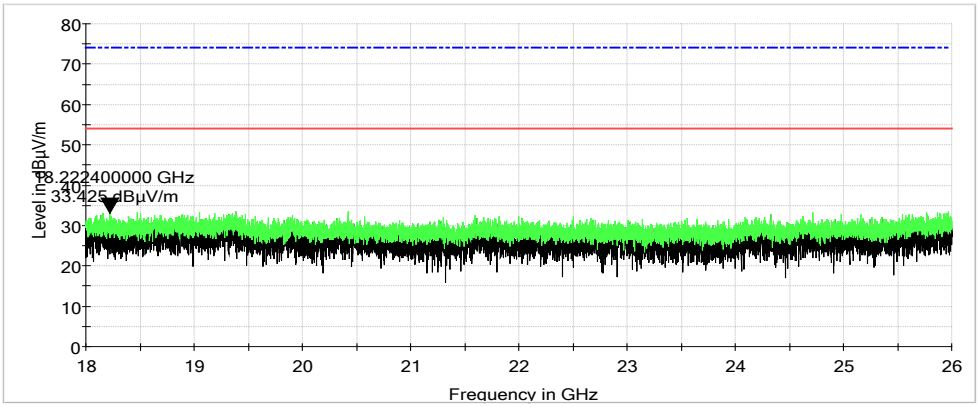


UNII 3, OFDM54 20M, 30 MHz to 1000 MHz: Data from all channels

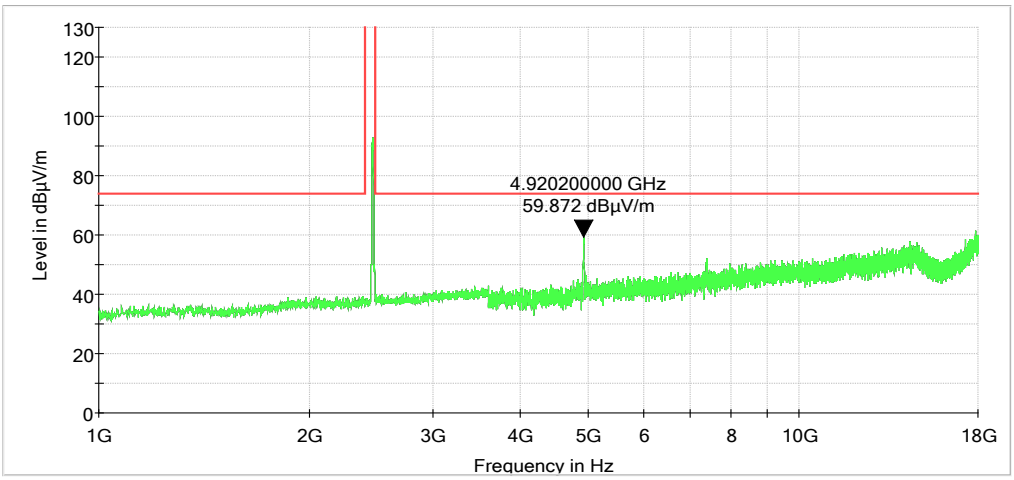
Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dBµV)	Correction Factors (dB)	Emission (dBµV/m)	Limit (dBµV/m)	Margin (dB)
45.400000	V	100.00	18.00	41.7	-12.3	29.4	40.0	-10.6
48.400000	V	100.00	323.00	45.6	-13.7	31.9	40.0	-8.1
49.920000	V	100.00	14.00	48.3	-14.2	34.1	40.0	-5.9
51.320000	V	100.00	337.00	42.3	-14.5	27.8	40.0	-12.2
80.000000	H	100.00	348.00	34.5	-14.8	19.7	40.0	-20.3
80.000000	V	100.00	0.00	34.8	-14.8	20.0	40.0	-20.0
127.880000	V	100.00	306.00	40.0	-8.3	31.7	40.0	-8.3
258.338000	H	125.00	76.00	43.0	-9.0	34.0	47.0	-13.0
315.680000	V	100.00	214.00	39.1	-6.7	32.4	47.0	-14.6
346.320000	V	100.00	148.00	47.2	-6.1	41.1	47.0	-5.9
346.608000	H	125.00	225.00	45.4	-6.1	39.3	47.0	-7.7



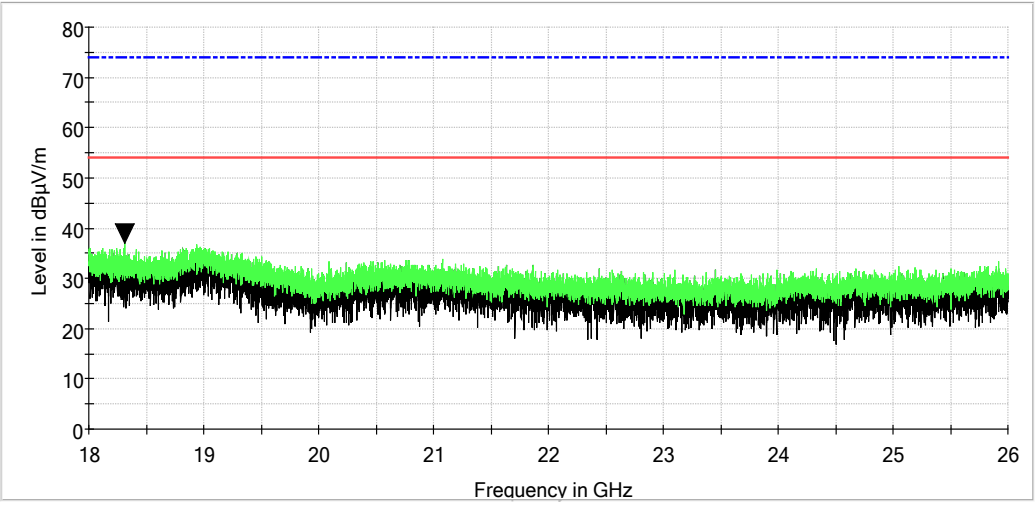
UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 1 GHz to 18 GHz, Vertical



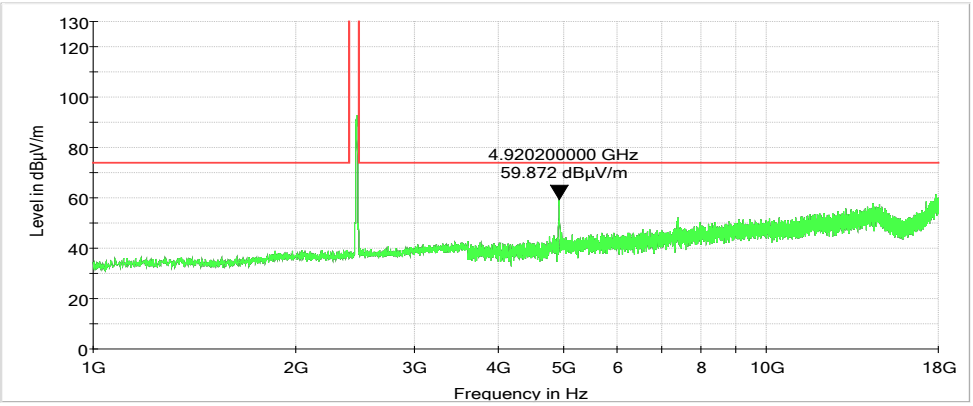
UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Vertical



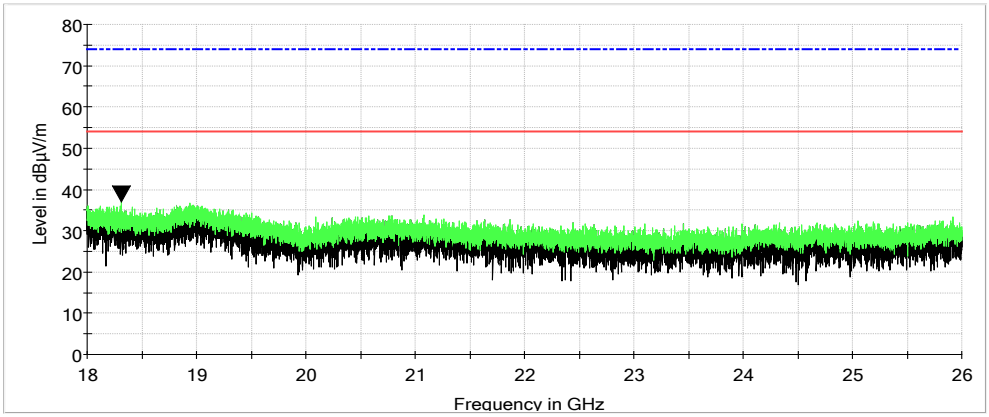
UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 26 GHz to 40 GHz, Vertical



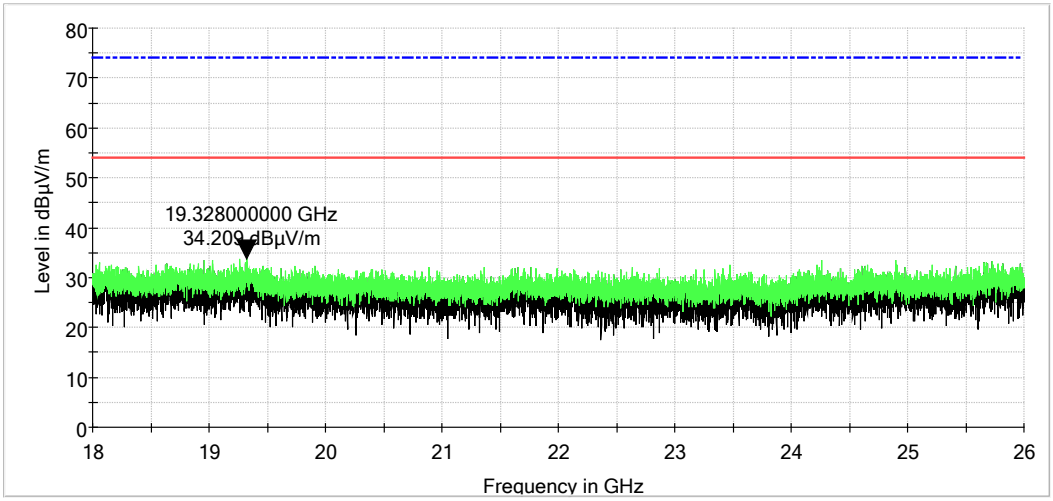
UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 1 GHz to 18 GHz, Horizontal



UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 18 GHz to 26 GHz, Horizontal

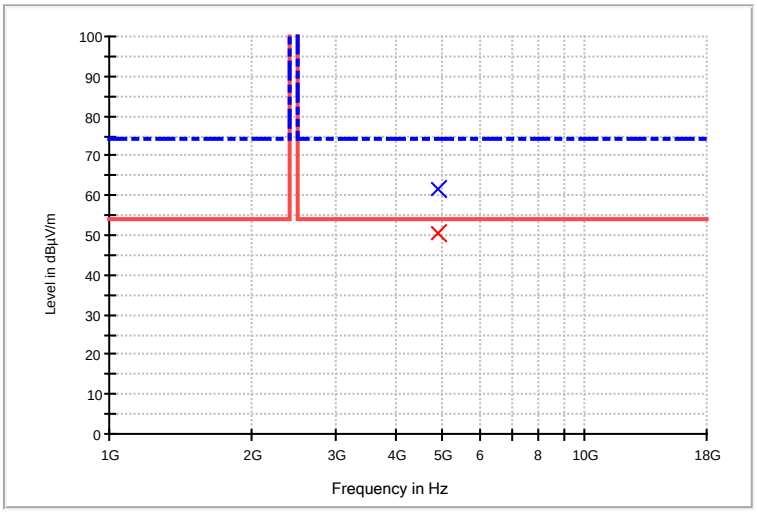


UNII 3, OFDM54 20M, Radiated Spurious Emissions: High Channel, 26 GHz to 40 GHz, Horizontal



UNII 3, OFDM54 20M, Radiated Spurious Emissions – Measurements

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin - AVG (dB)	Limit - AVG (dBµV/m)
4922.000000	61.6	50.6	1000.000	150.0	H	180.0	-2.8	3.4	54.0



Peak and Average Measurements within the restricted bands.