



11 CONDUCTED SPURIOUS EMISSIONS

The following tests were performed to demonstrate compliance.

RF Antenna Conducted Test

The EUT antenna port was fitted with an SMA connector and directly connected to the input of the spectrum analyzer.

11.1 Requirements:

All Spurious Emissions must be at least 20dB down from the highest emission level measured within the authorized band up through the tenth harmonic.

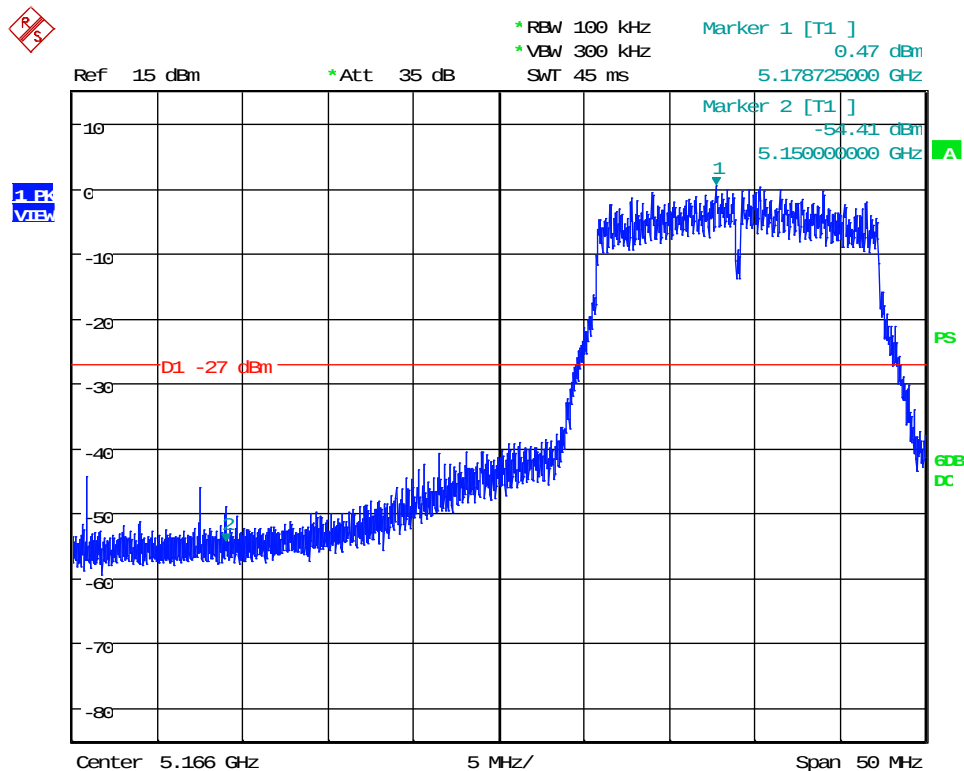
Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the low and high channels to verify band edge compliance.



11.2 Conducted Spurious Emissions Test Data

Test Date:	2021-02-08	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.407(b)(1,4)	Air Temperature:	17.5°C
		Relative Humidity:	23%

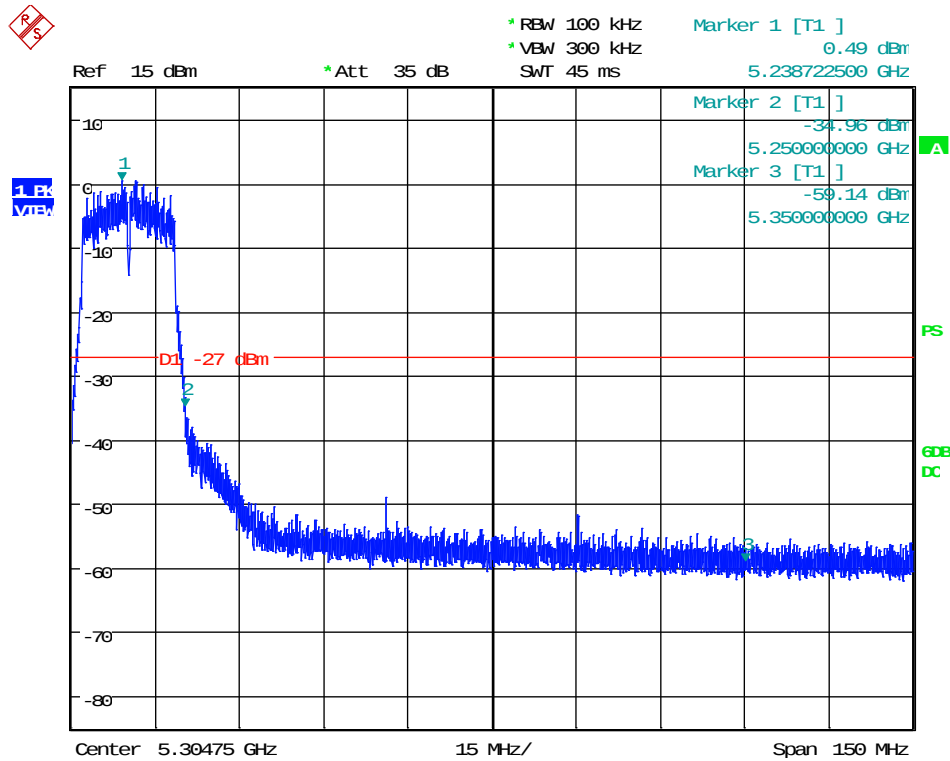
Lower Band Edge, UNII 1, OFDM54 20M



Date: 8.FEB.2021 10:16:05



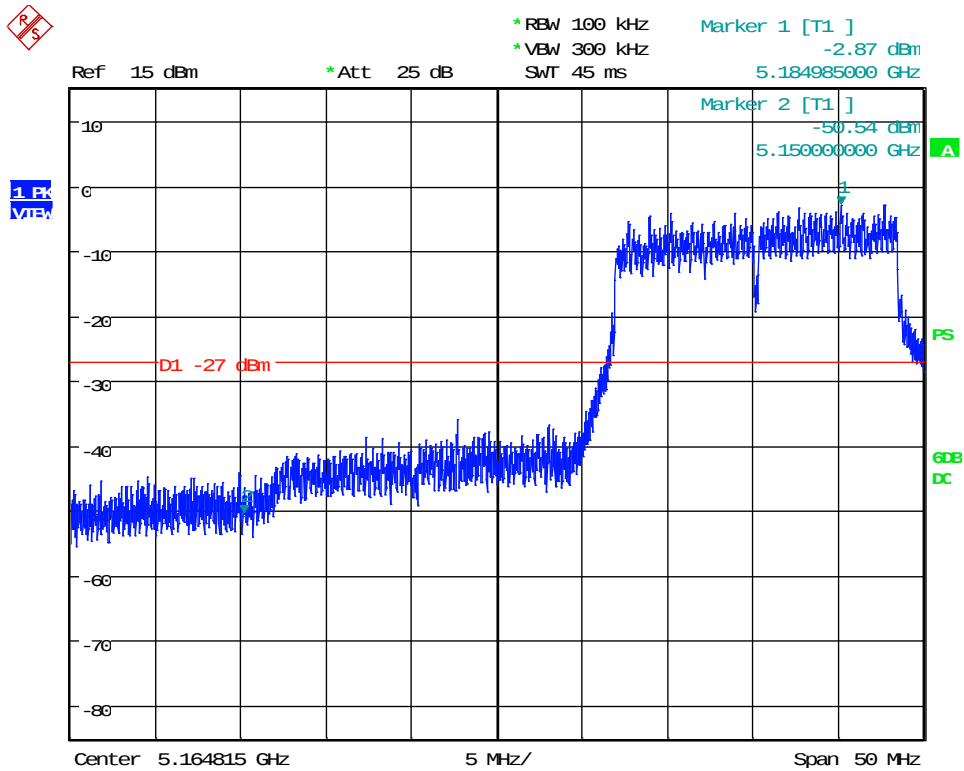
Upper Band Edge, UNII 1, OFDM54 20M



Date: 8.FEB.2021 10:35:56



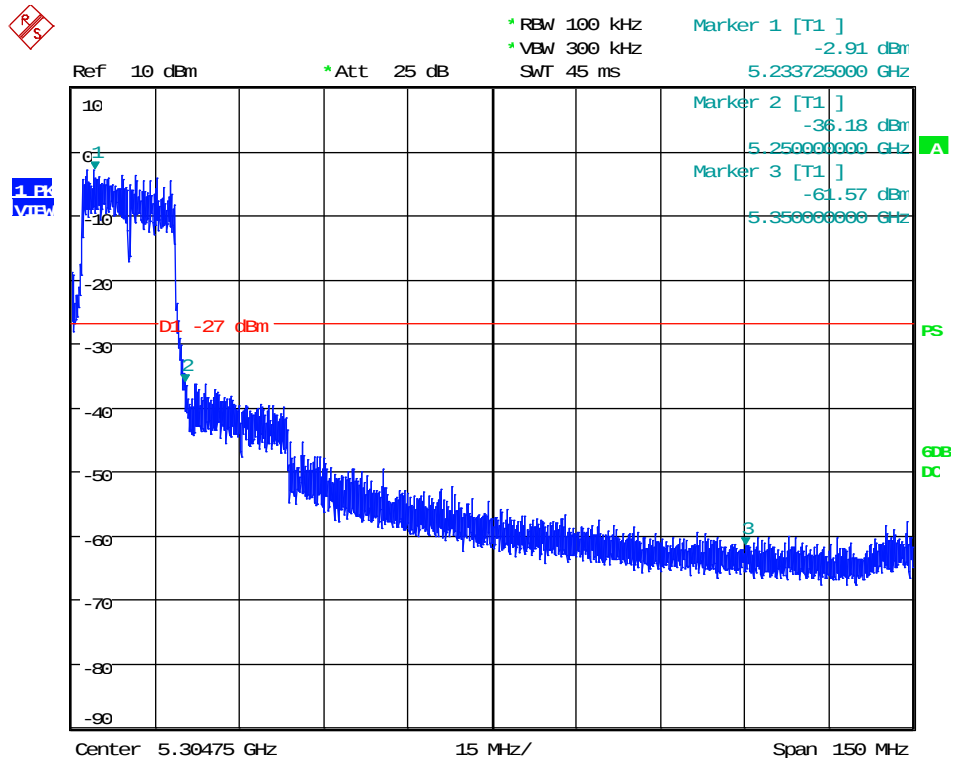
Lower Band Edge, UNII 1, OFDM54 40M



Date: 8.FEB.2021 10:57:31



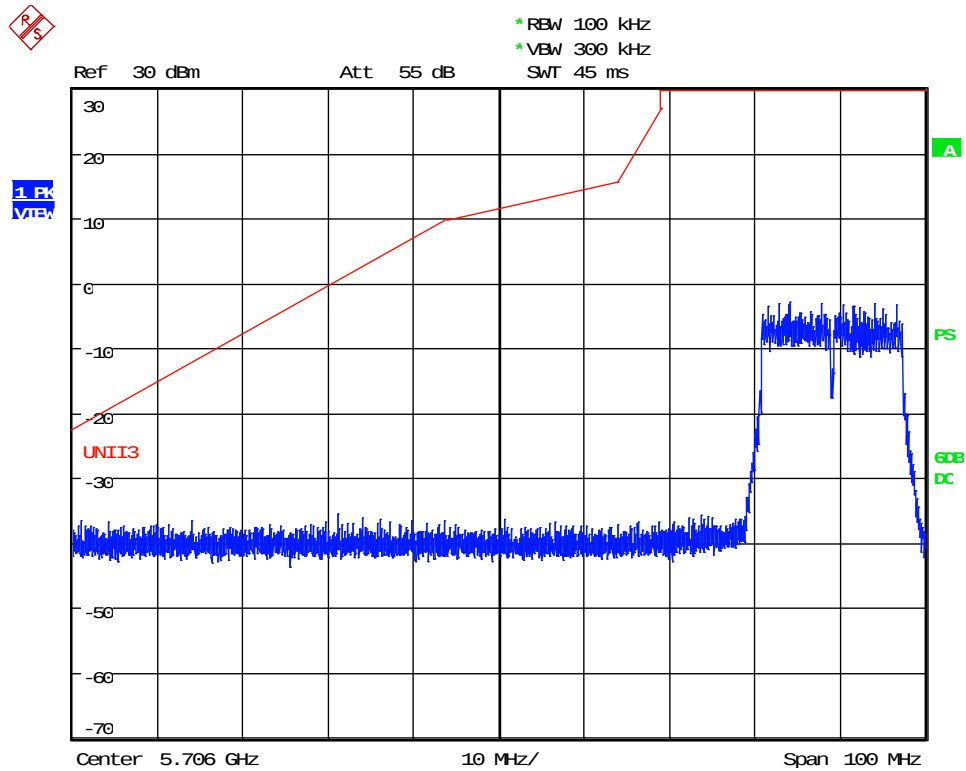
Upper Band Edge, UNII 1, OFDM54 40M



Date: 8.FEB.2021 10:40:06



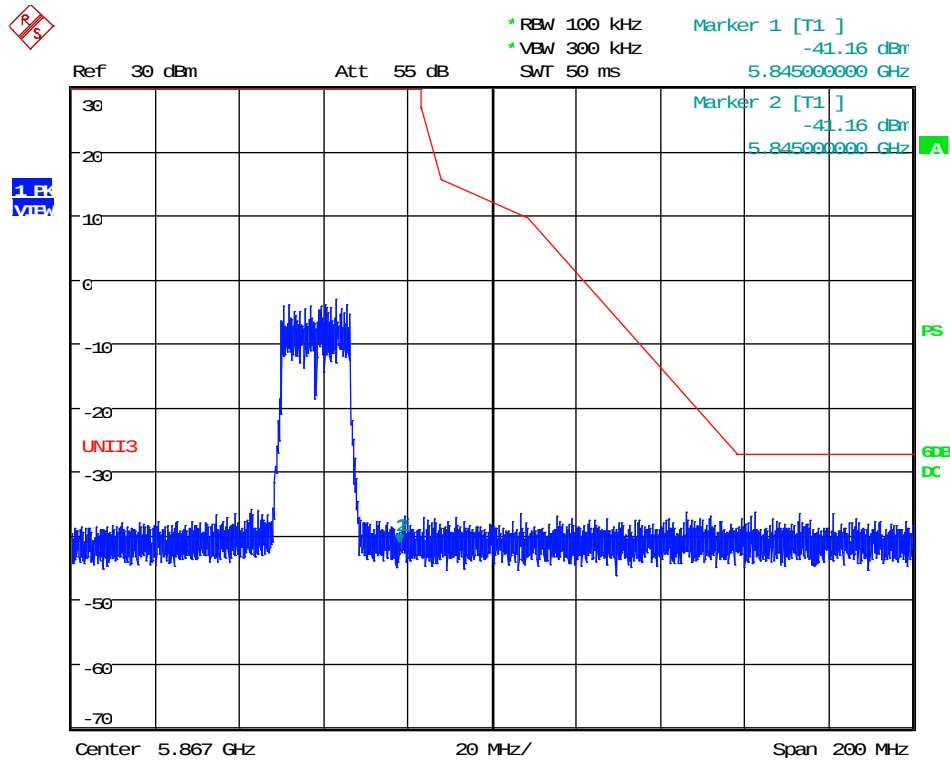
Lower Band Edge, UNII 3, OFDM54 20M



Date: 8.FEB.2021 11:32:18



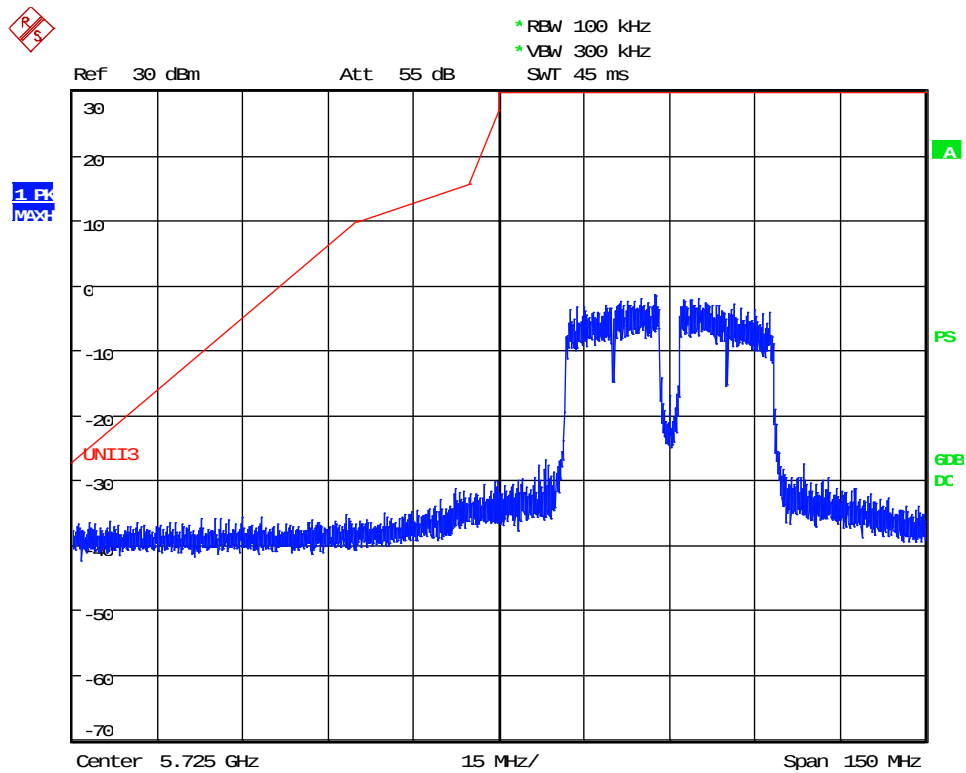
Upper Band Edge, UNII 3, OFDM54 20M



Date: 8.FEB.2021 12:31:43



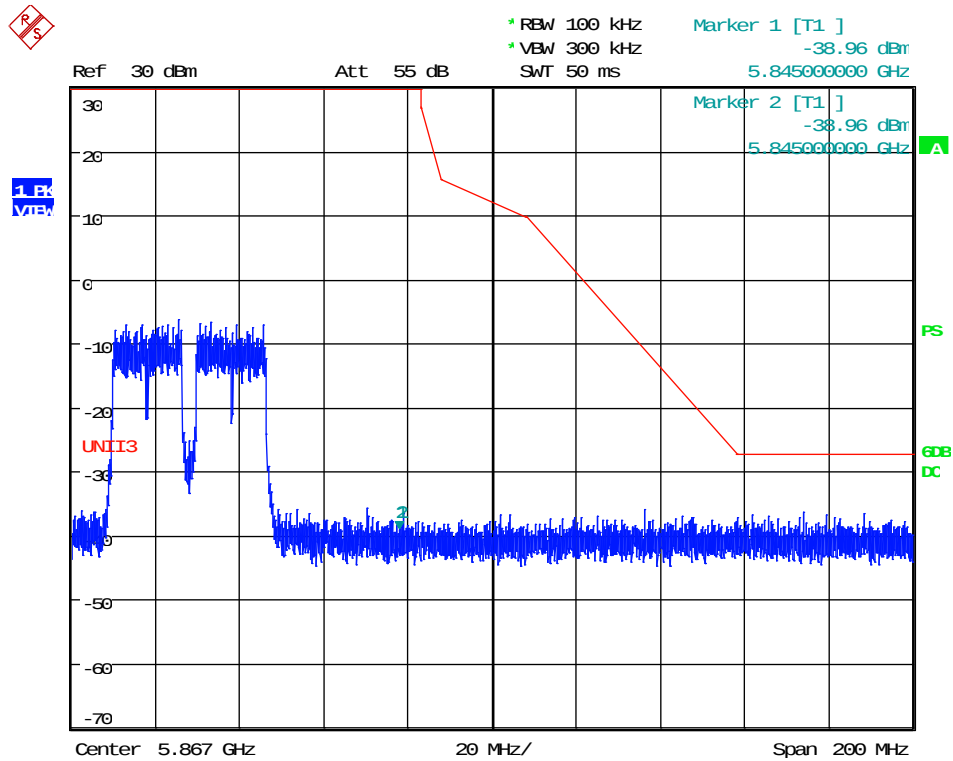
Lower Band Edge, UNII 3, OFDM54 40M



Date: 8.FEB.2021 11:44:17



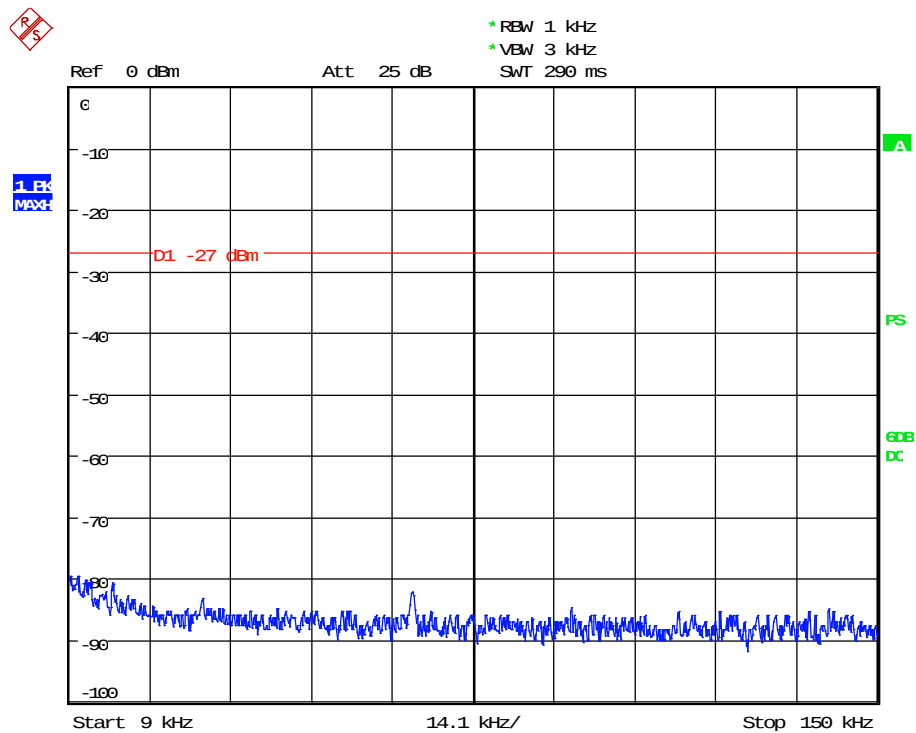
Upper Band Edge, UNII 3, OFDM54 40M



Date: 8.FEB.2021 12:30:52



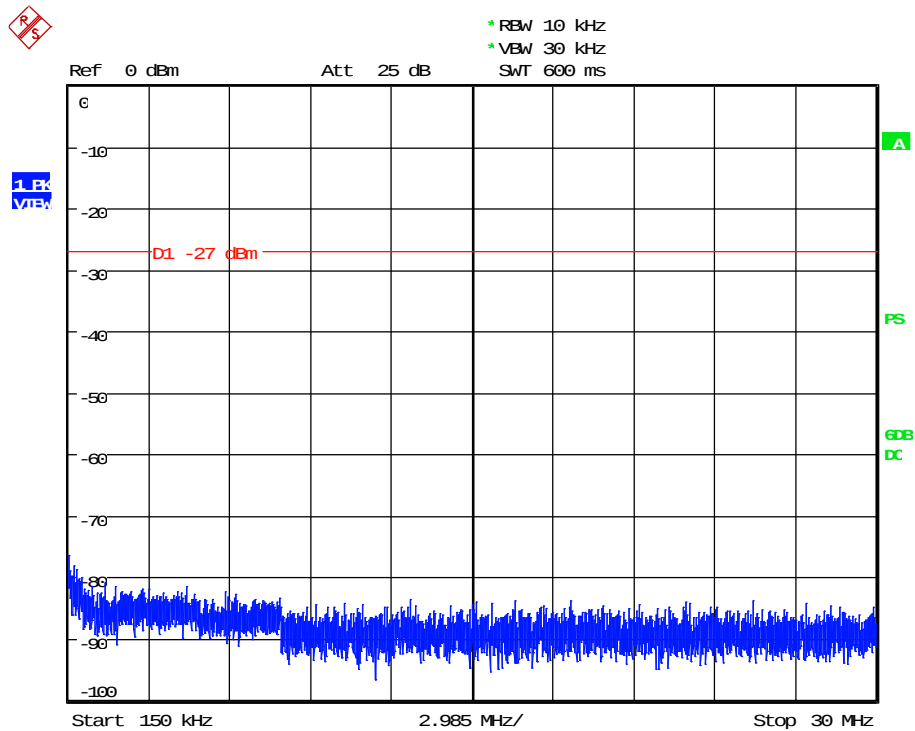
UNII 1, OFDM54 20M: Low Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 10:07:13



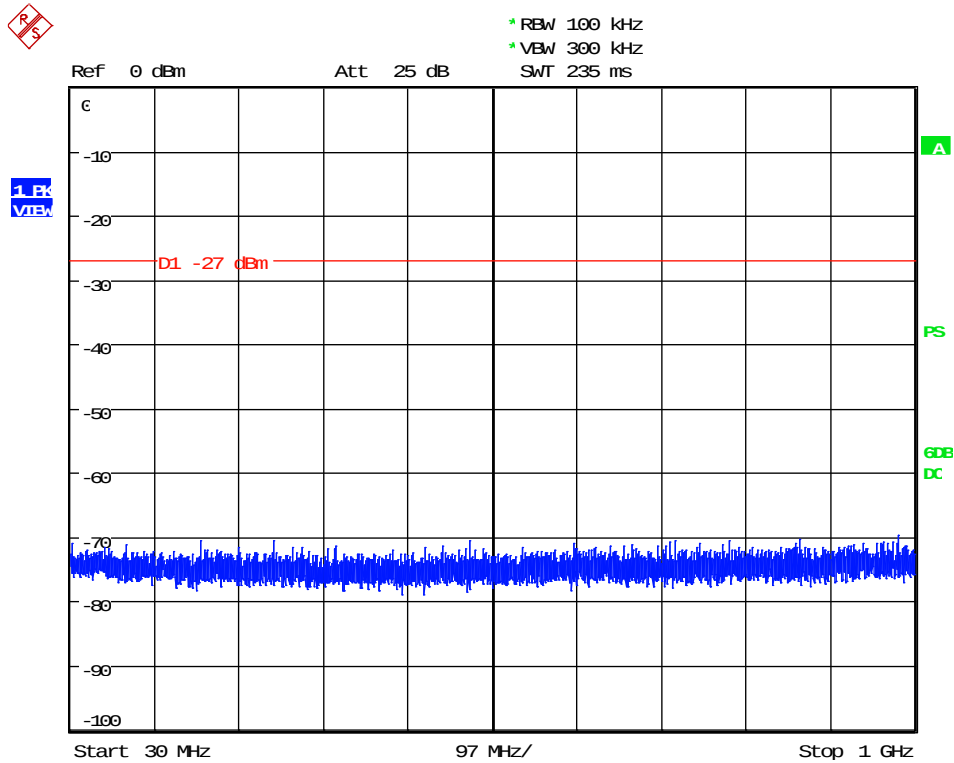
UNII 1, OFDM54 20M: Low Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 10:08:15



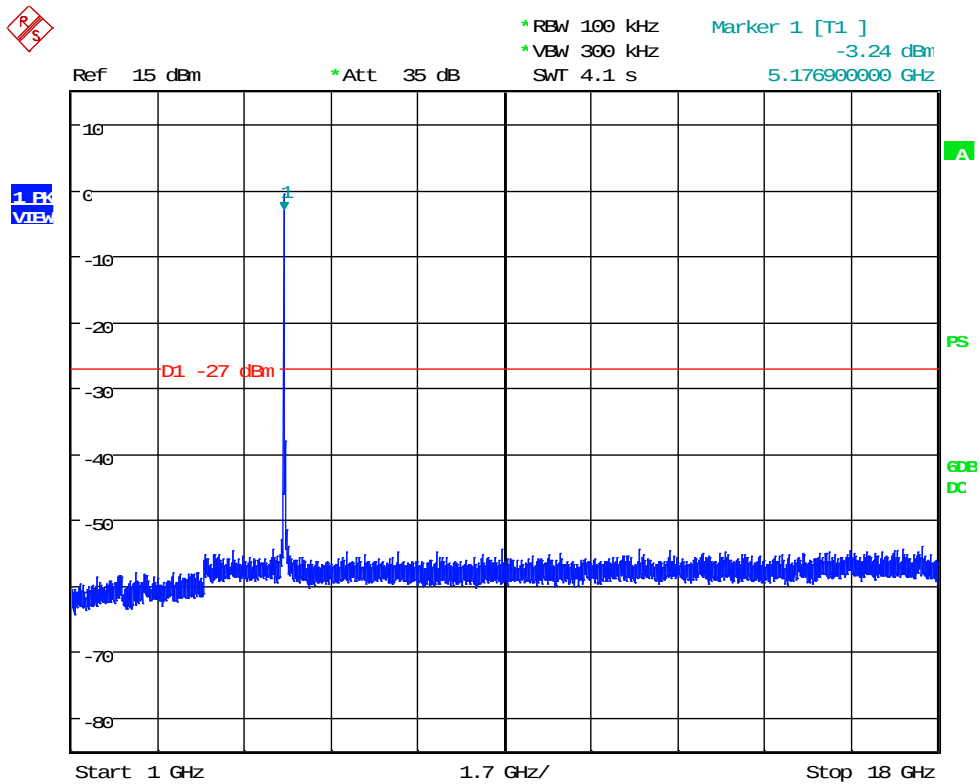
UNII 1, OFDM54 20M: Low Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 10:09:10



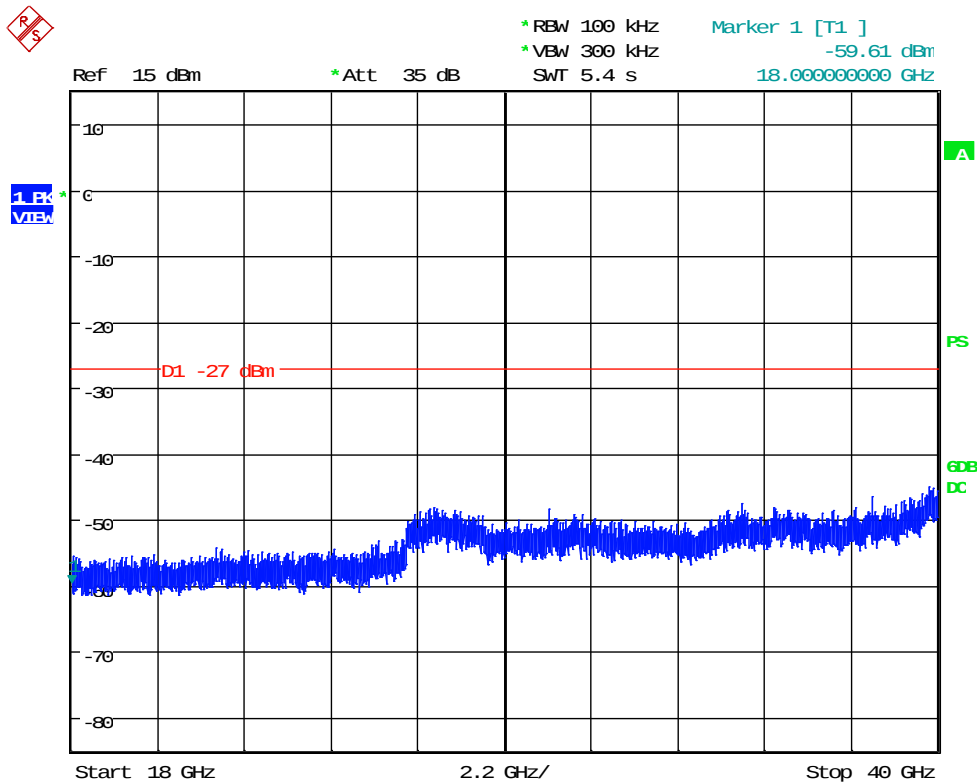
UNII 1, OFDM54 20M: Low Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 10:12:47



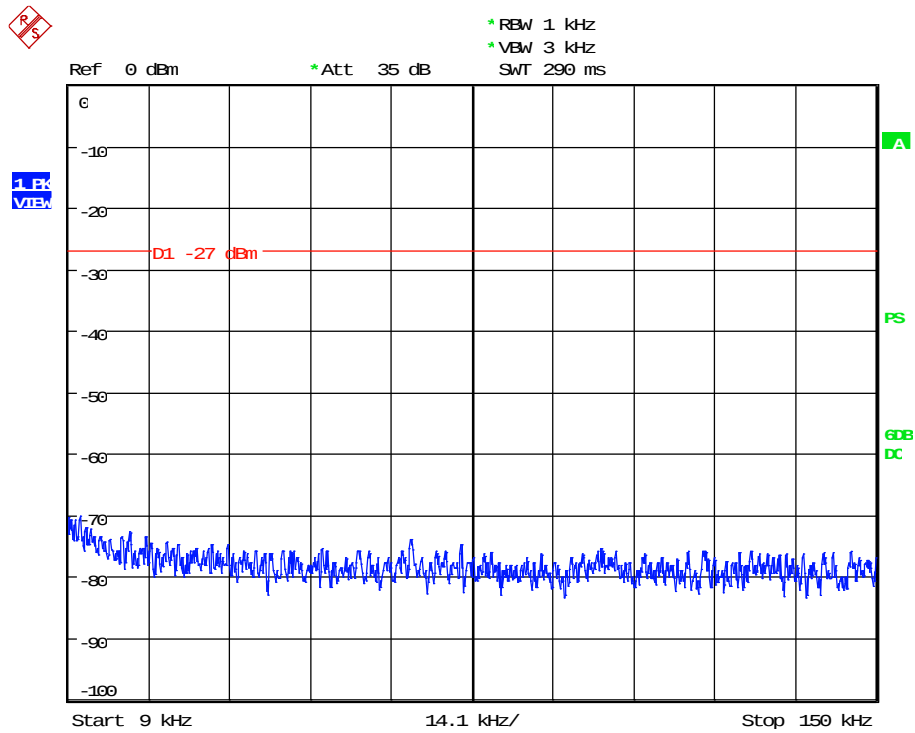
UNII 1, OFDM54 20M: Low Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 10:13:40



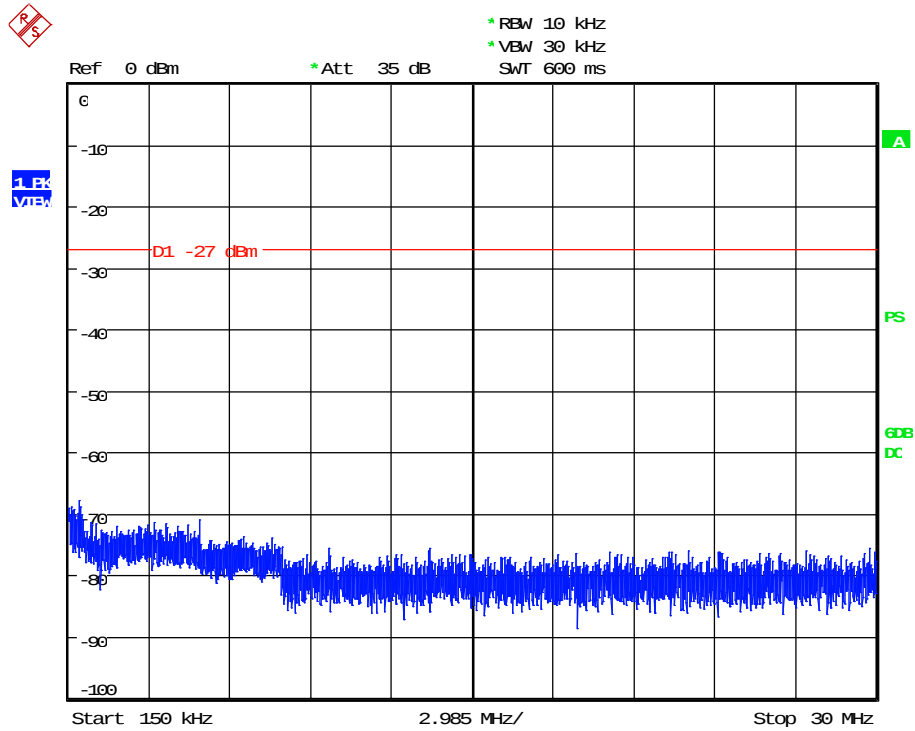
UNII 1, OFDM54 20M: Mid Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 10:24:41



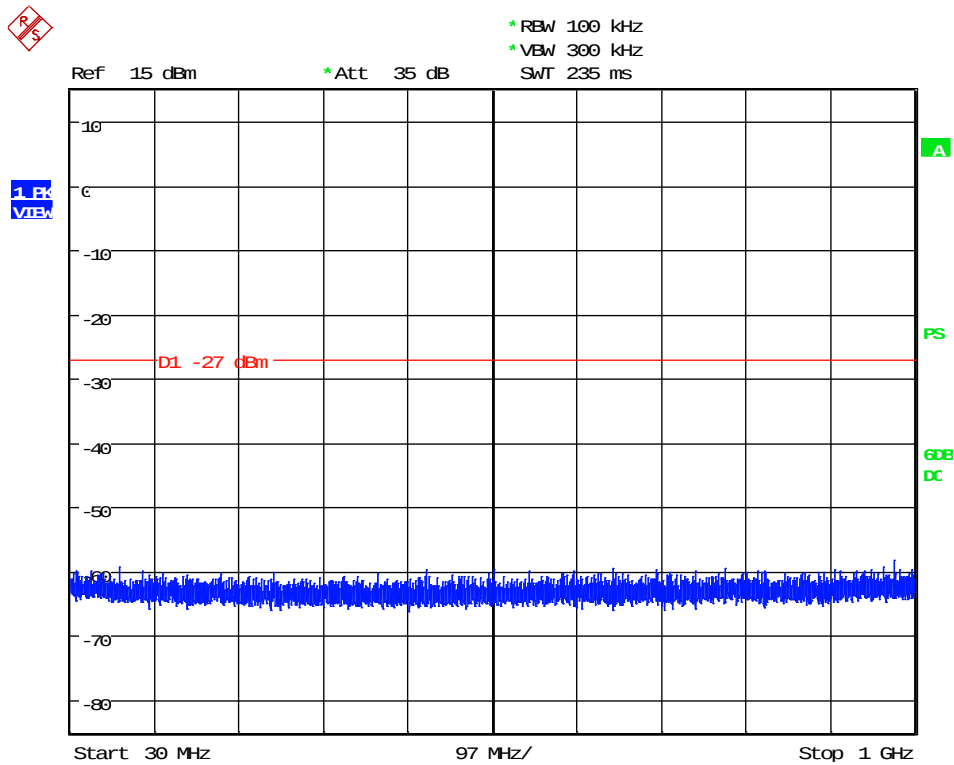
UNII 1, OFDM54 20M: Mid Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 10:23:41



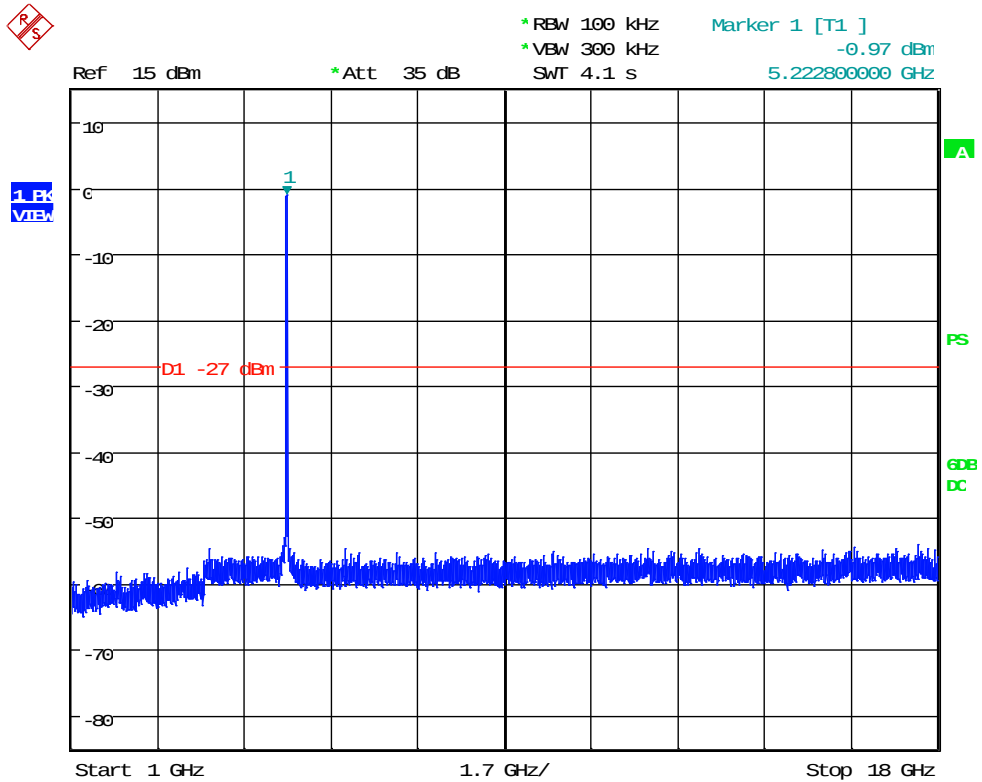
UNII 1, OFDM54 20M: Mid Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 10:22:16



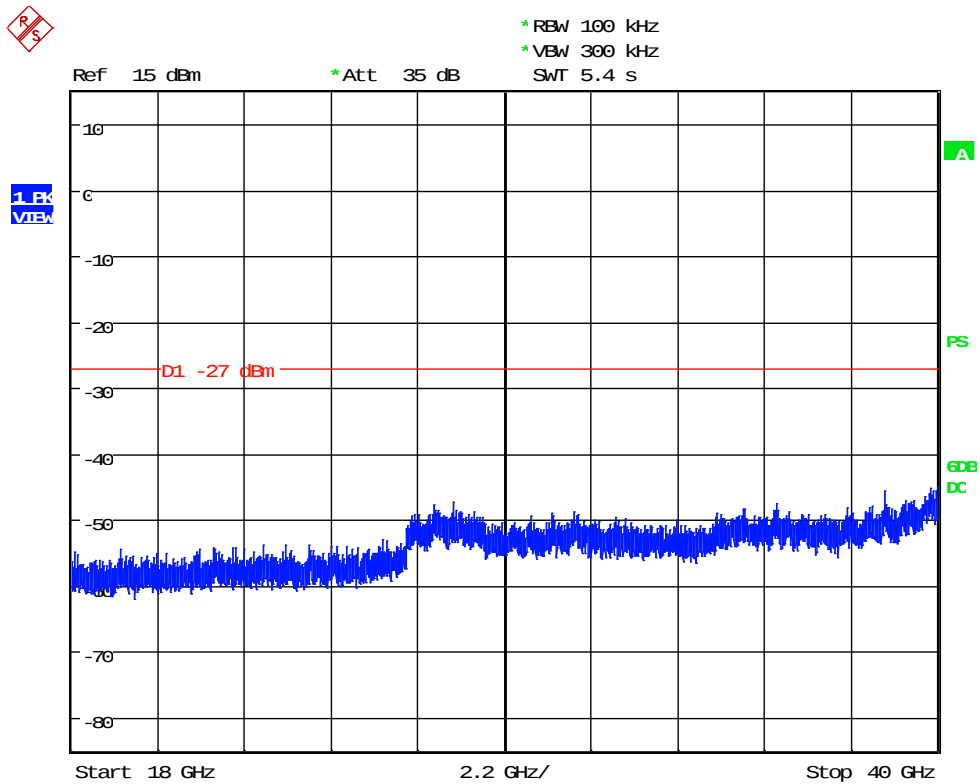
UNII 1, OFDM54 20M: Mid Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 10:21:22



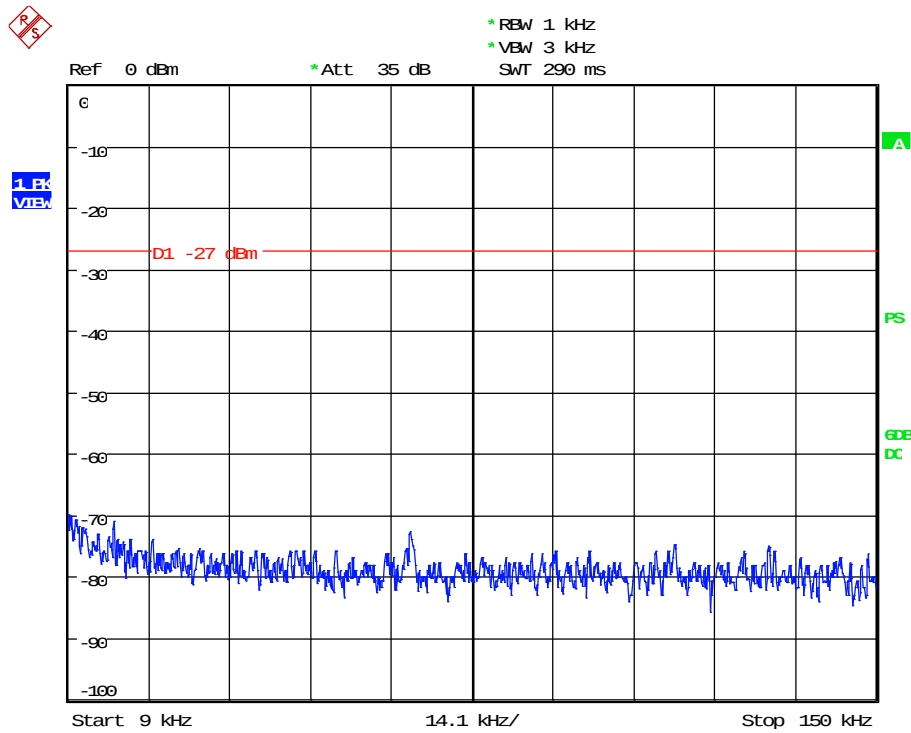
UNII 1, OFDM54 20M: Mid Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 10:19:52



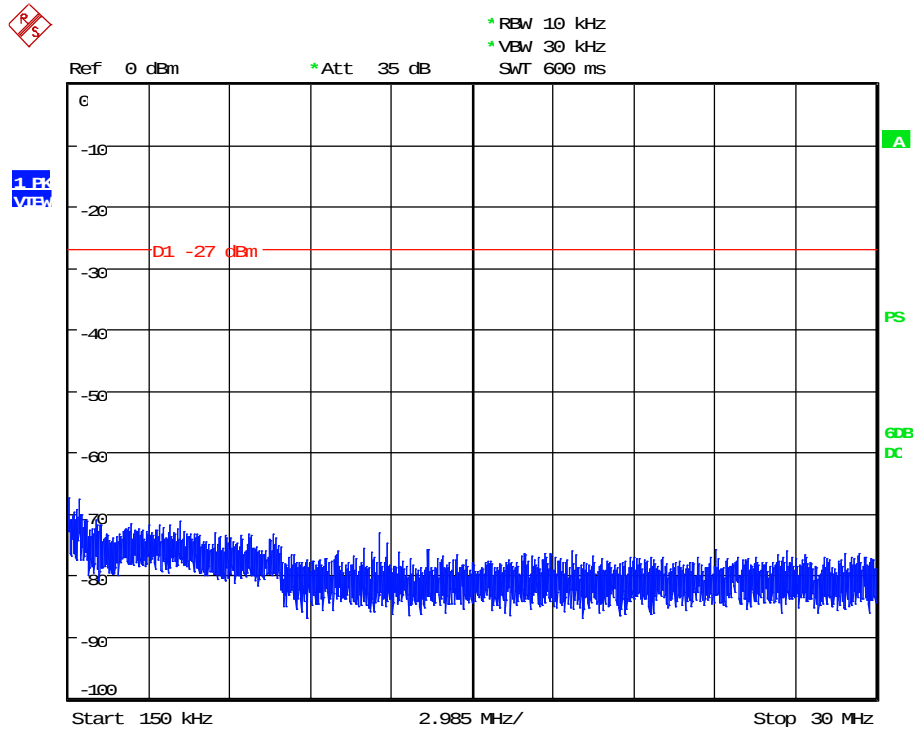
UNII 1, OFDM54 20M: High Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 10:25:36



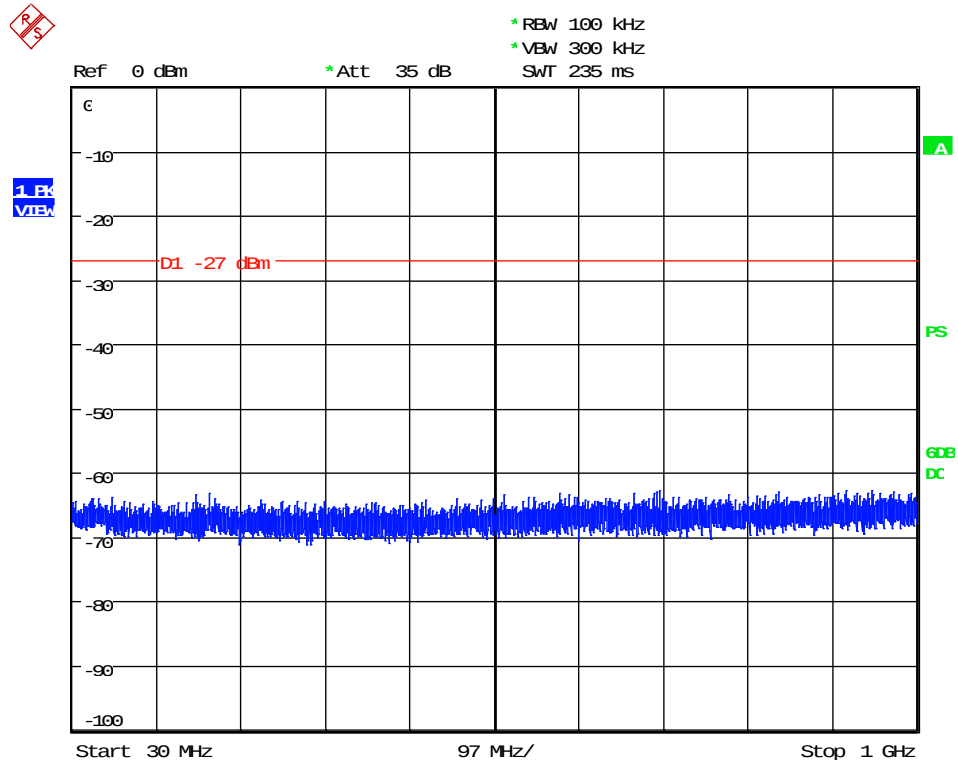
UNII 1, OFDM54 20M: High Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 10:26:47



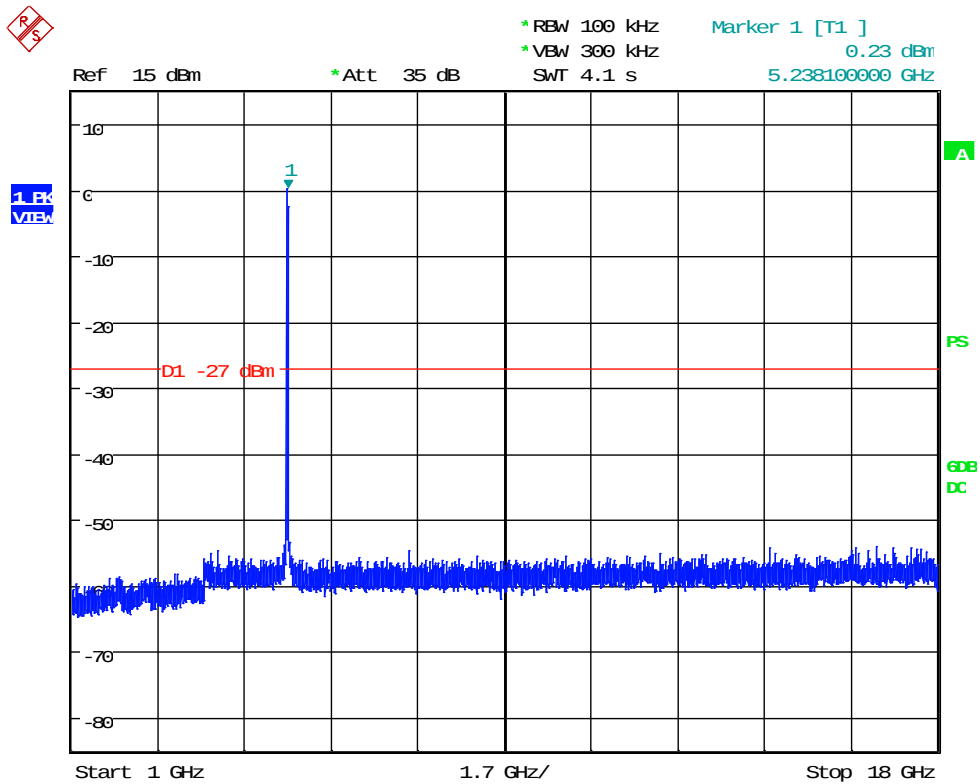
UNII 1, OFDM54 20M: High Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 10:27:51



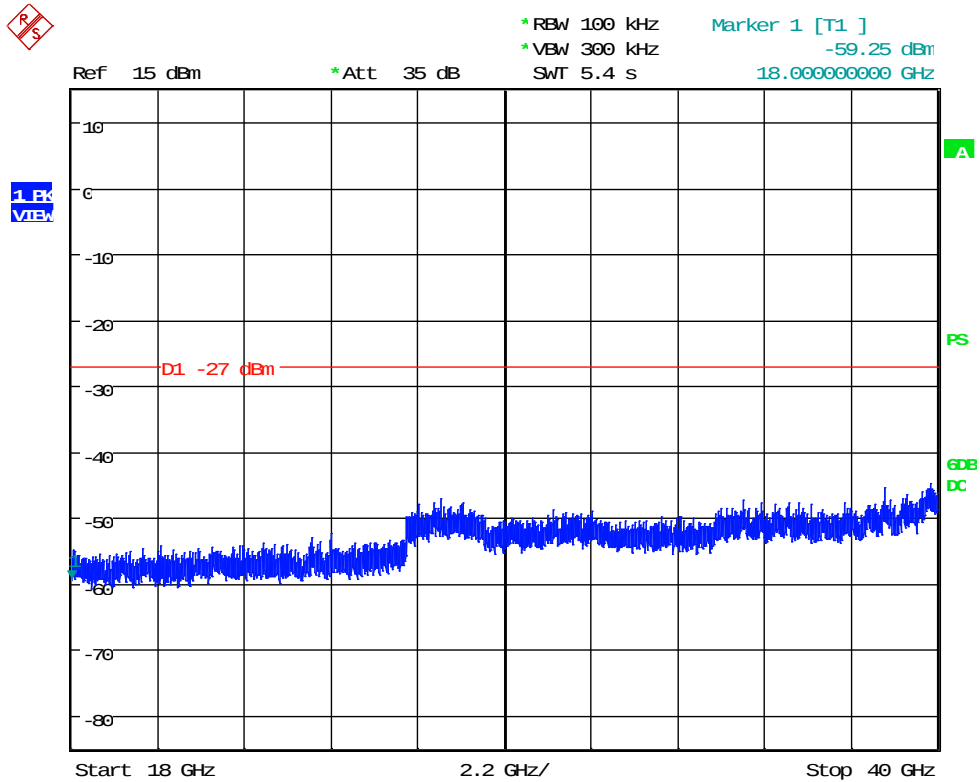
UNII 1, OFDM54 20M: High Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 10:28:55



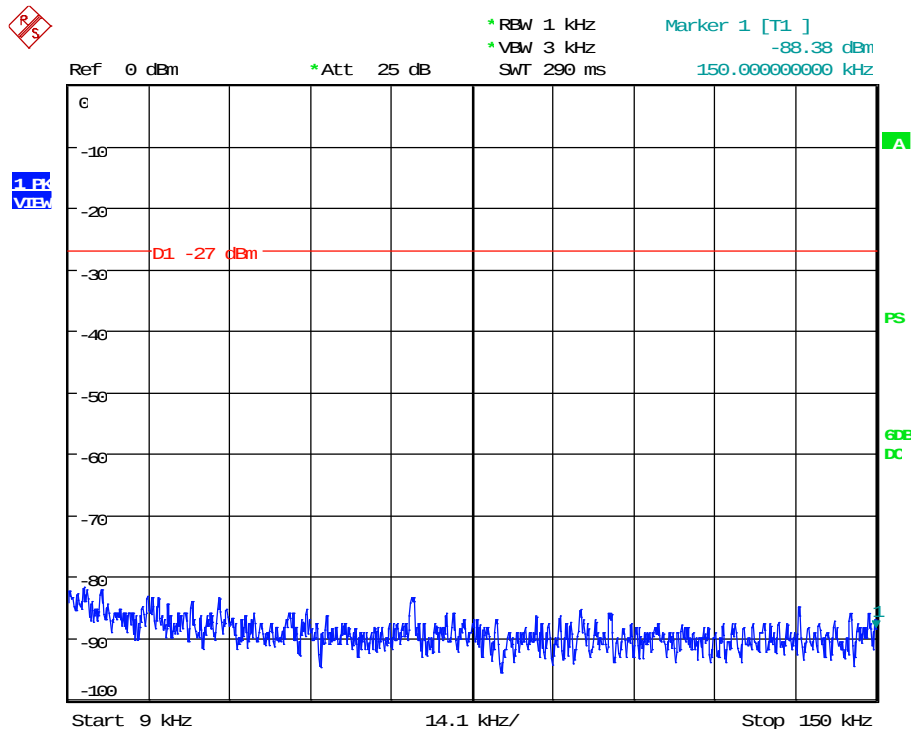
UNII 1, OFDM54 20M: High Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 10:30:05



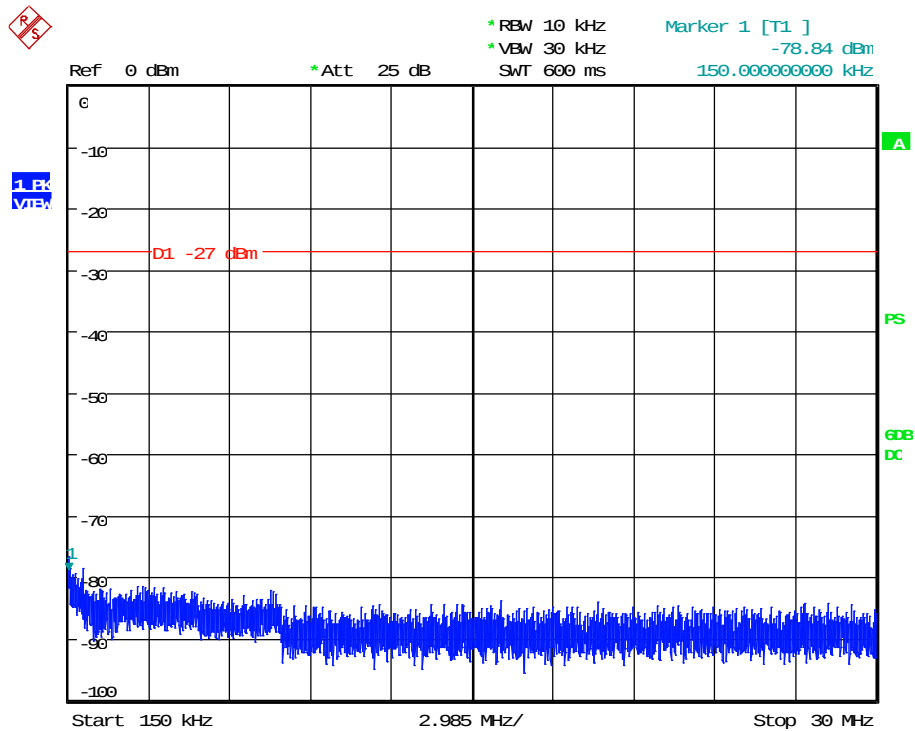
UNII 1, OFDM54 40M: Low Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 10:50:02



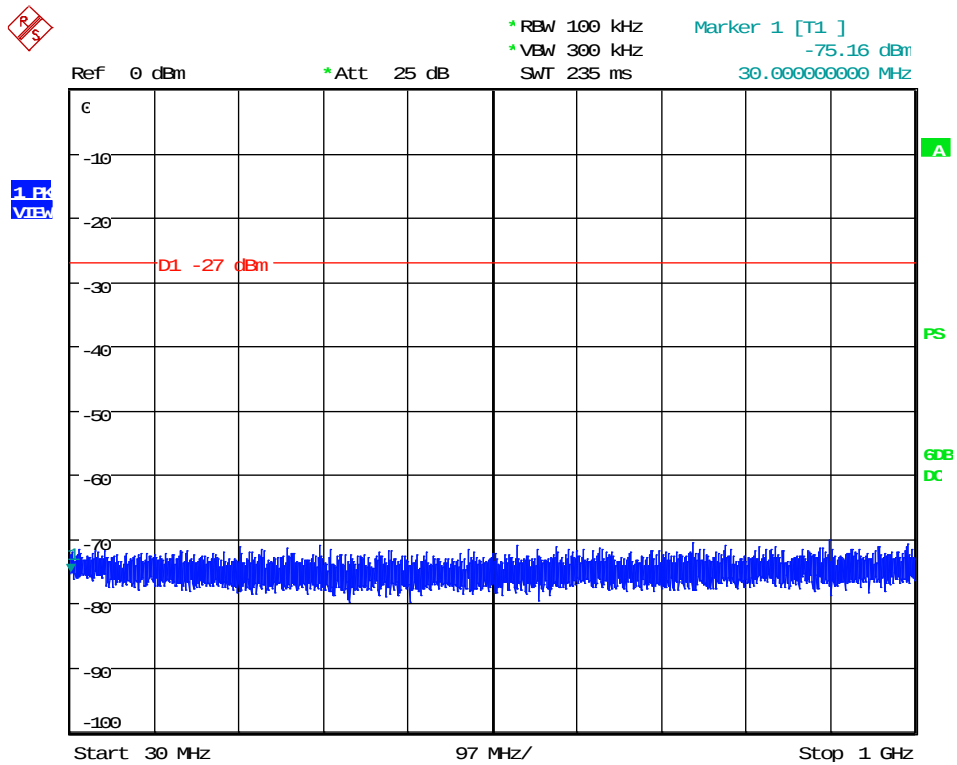
UNII 1, OFDM54 40M: Low Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 10:51:07



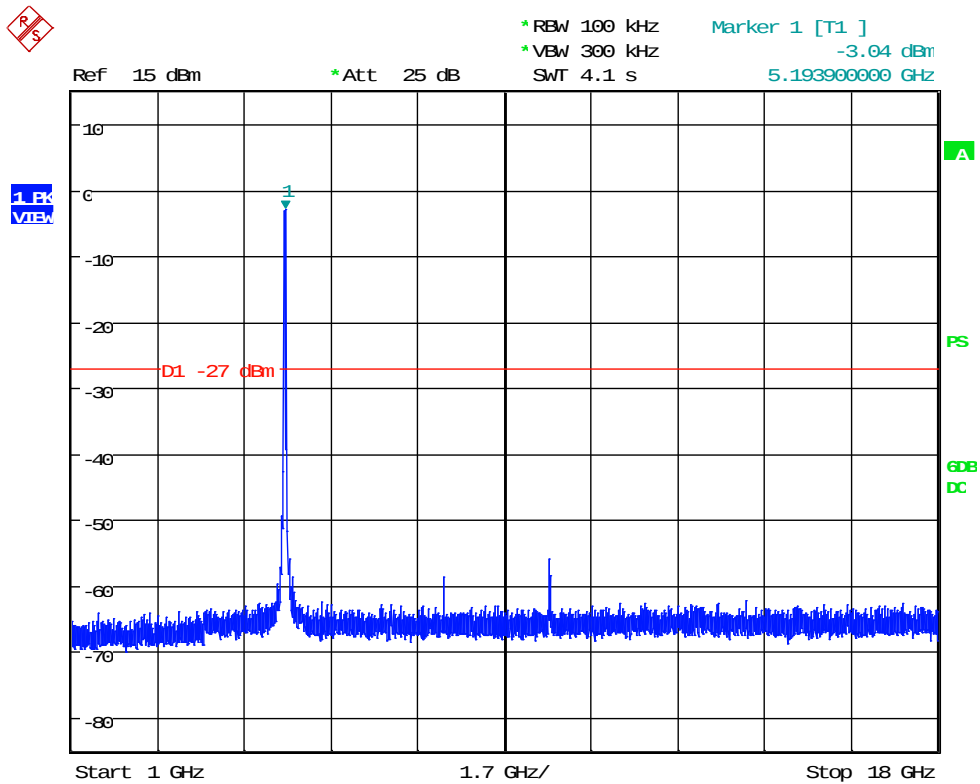
UNII 1, OFDM54 40M: Low Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 10:52:04



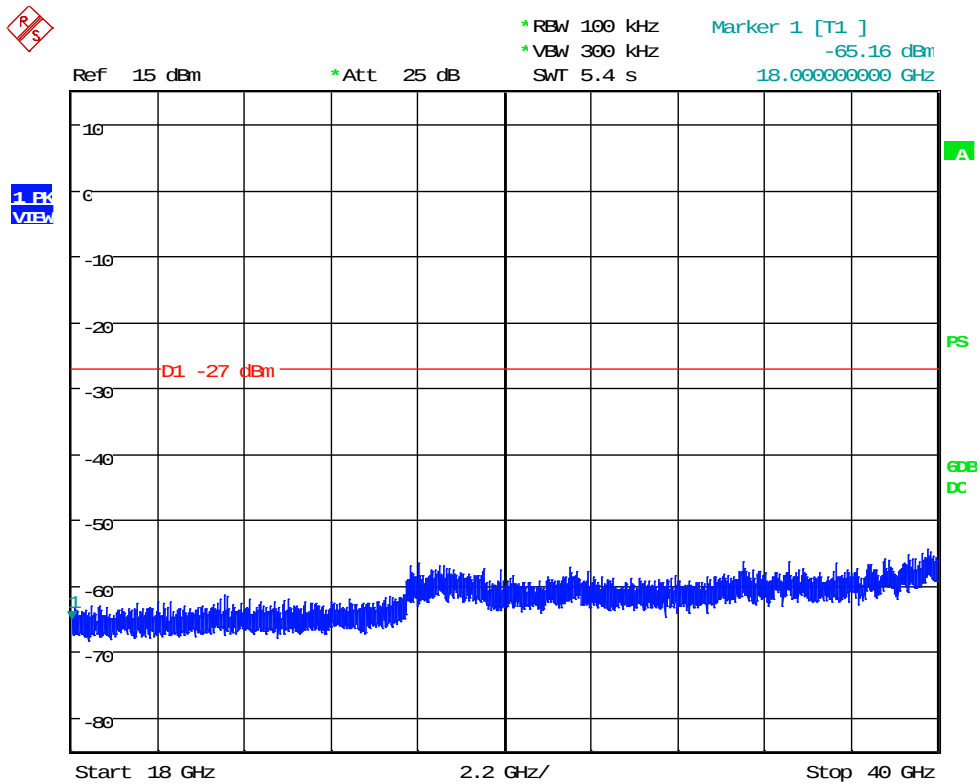
UNII 1, OFDM54 40M: Low Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 10:53:15



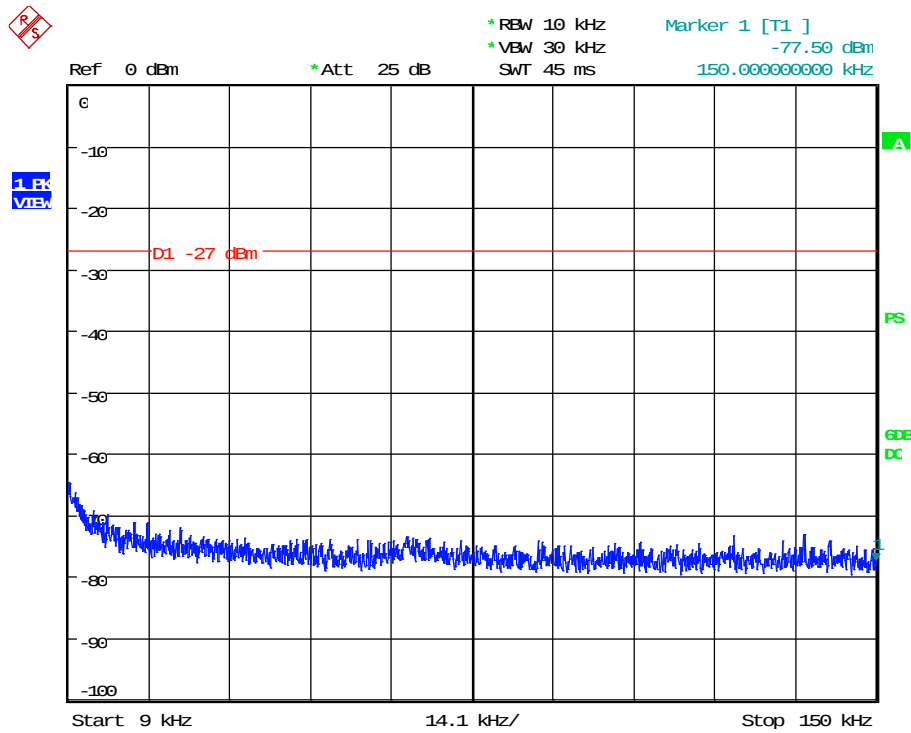
UNII 1, OFDM54 40M: Low Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 10:54:09



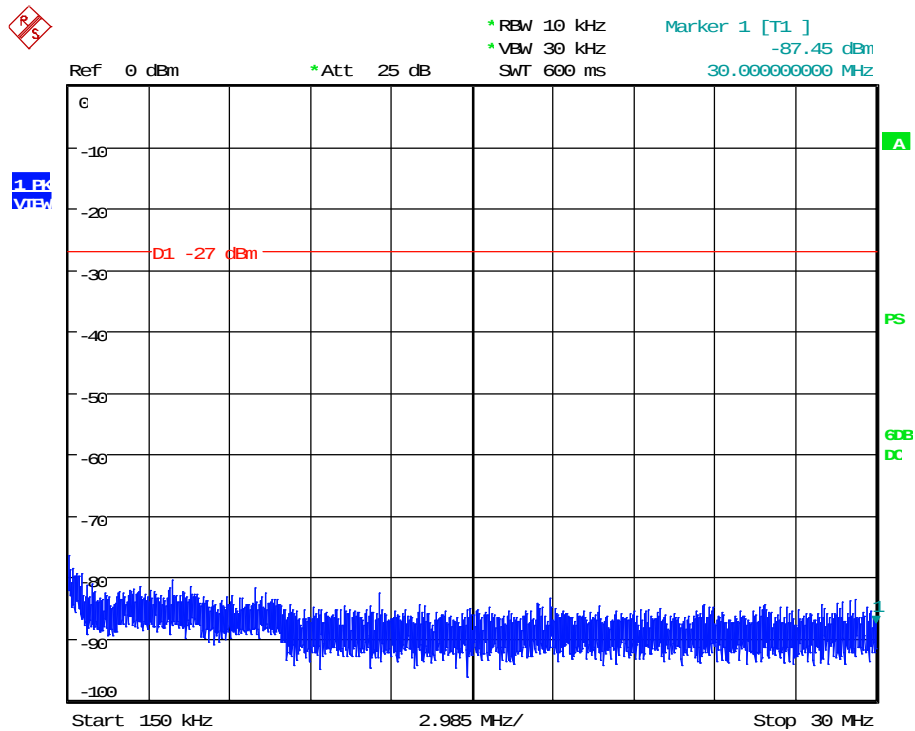
UNII 1, OFDM54 40M: High Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 10:48:15



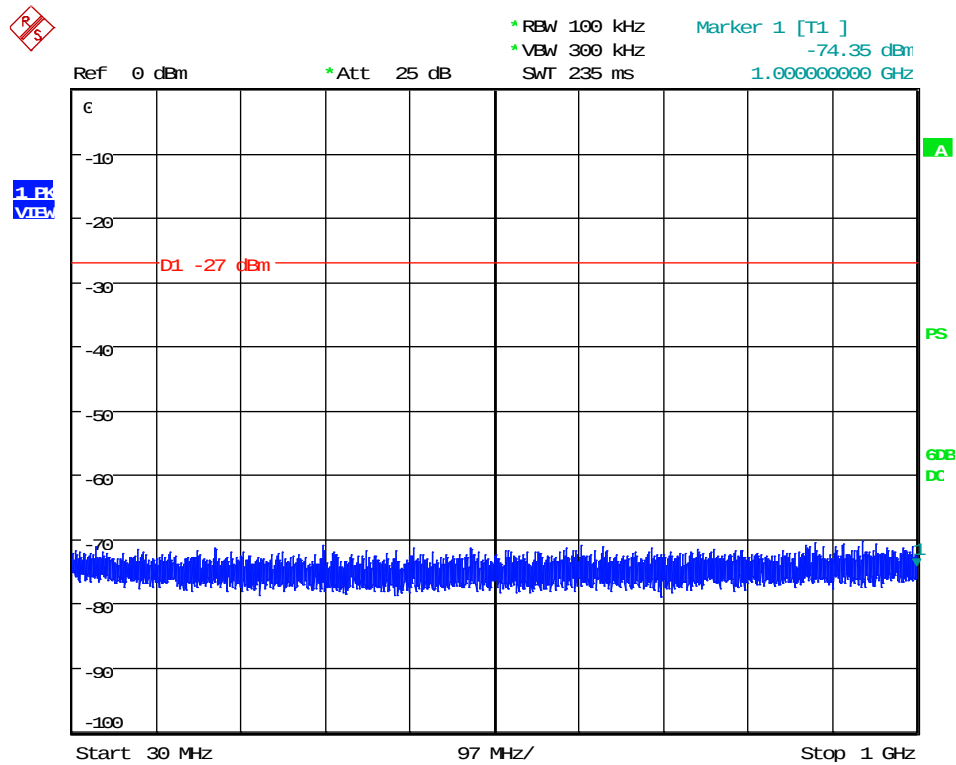
UNII 1, OFDM54 40M: High Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 10:47:20



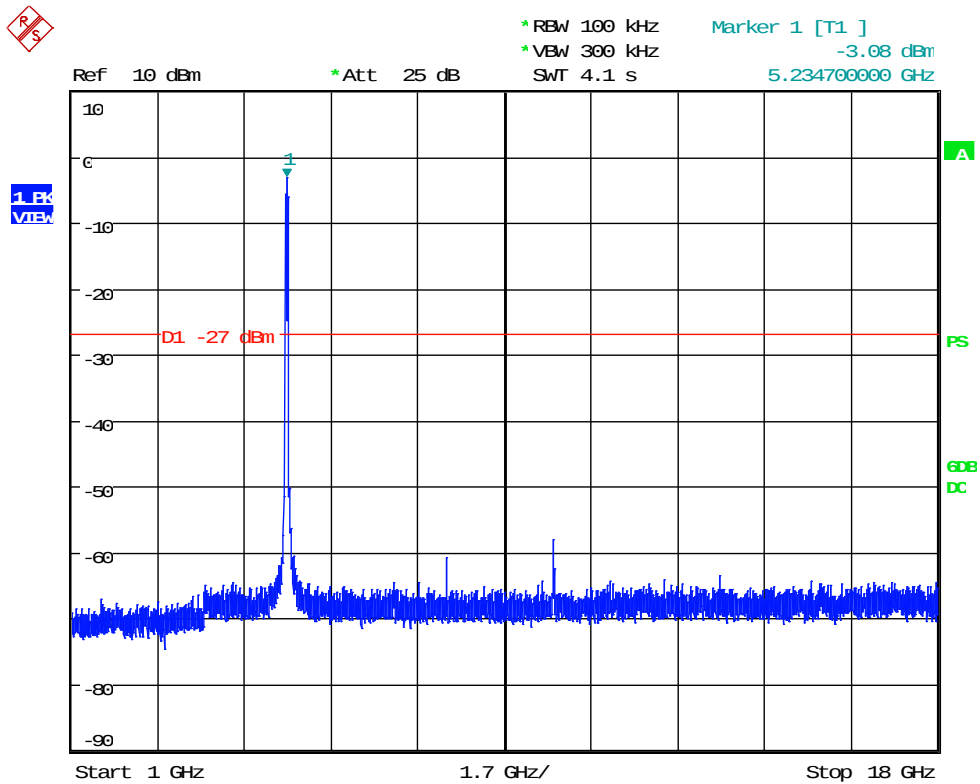
UNII 1, OFDM54 40M: High Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 10:46:11



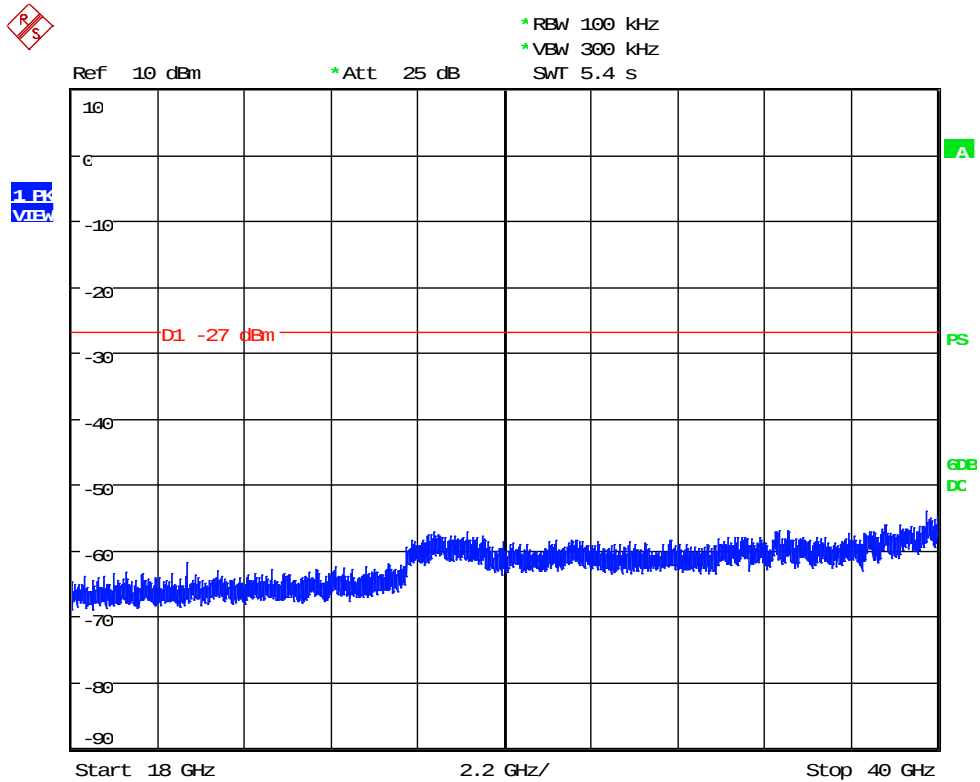
UNII 1, OFDM54 40M: High Channel, 1 GHz to 18 GHz



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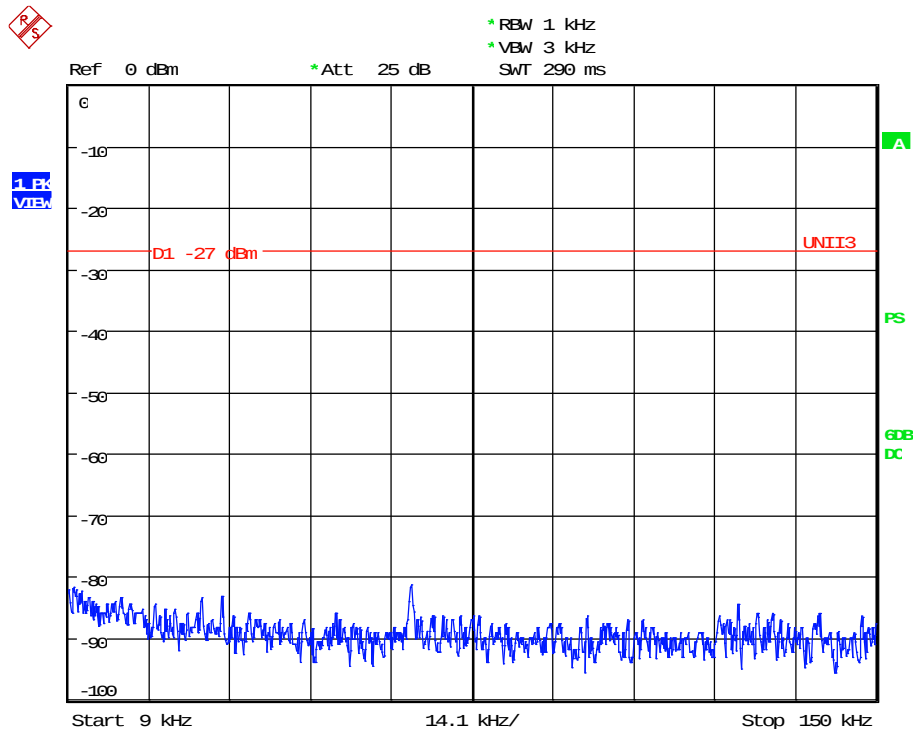
UNII 1, OFDM54 40M: High Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 10:41:30



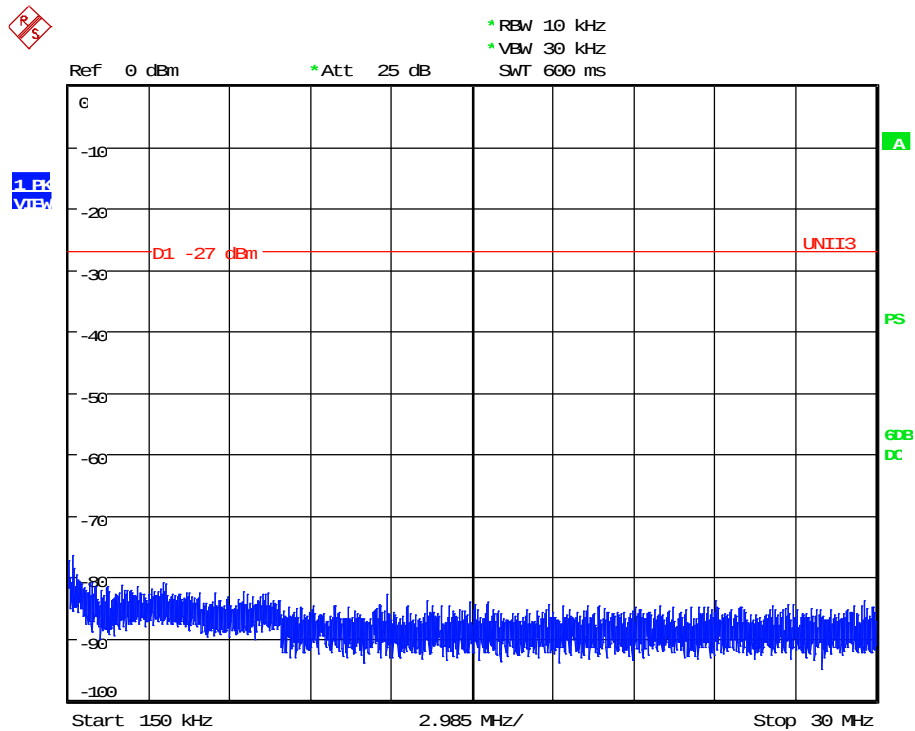
UNII 3, OFDM54 20M: Low Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 11:29:03



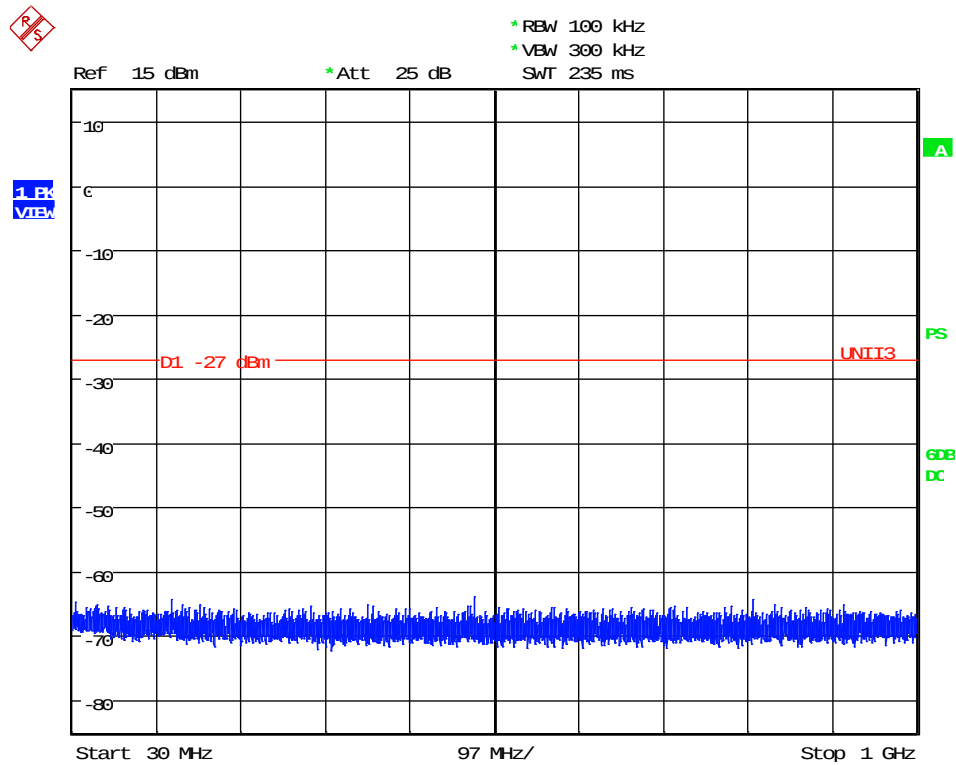
UNII 3, OFDM54 20M: Low Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 11:28:08



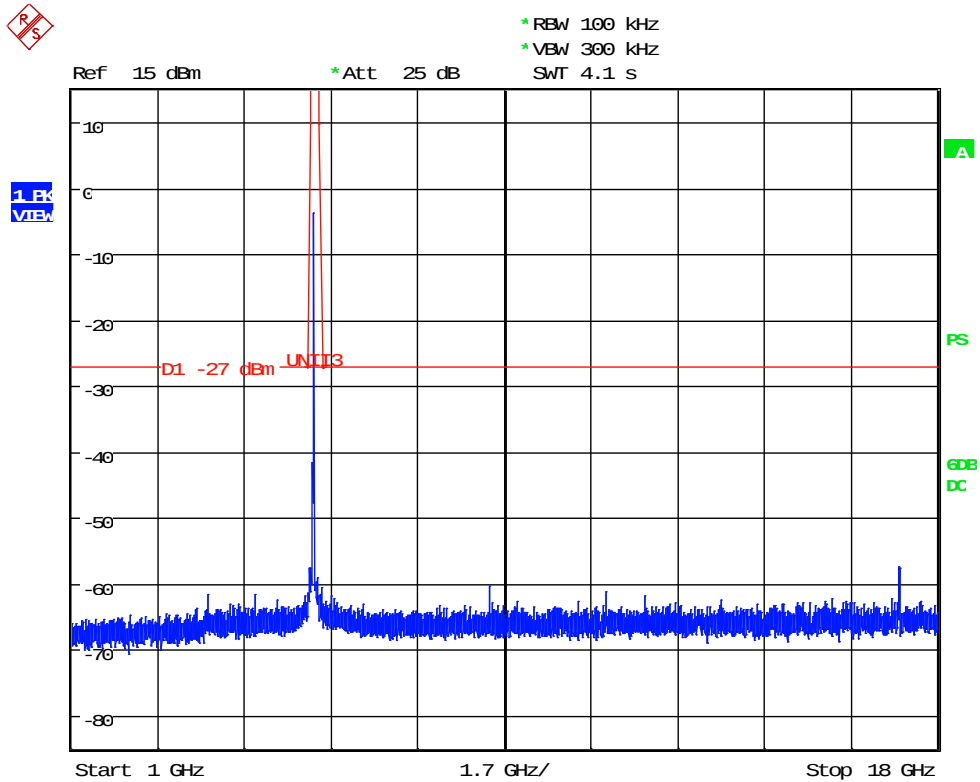
UNII 3, OFDM54 20M: Low Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 11:26:51



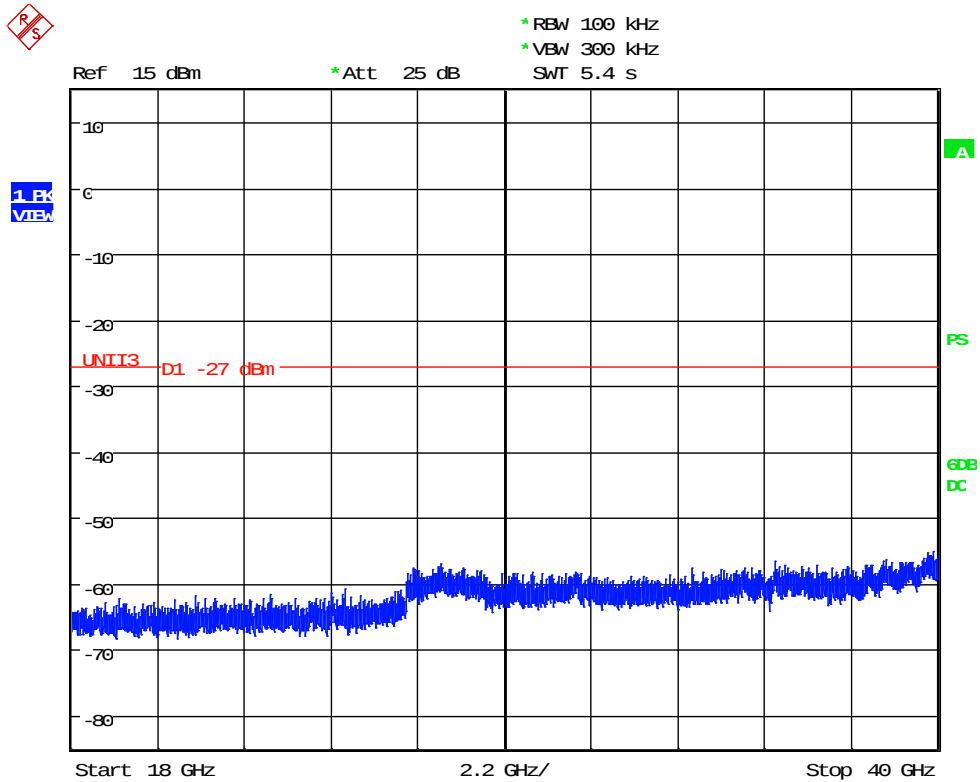
UNII 3, OFDM54 20M: Low Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 11:24:56



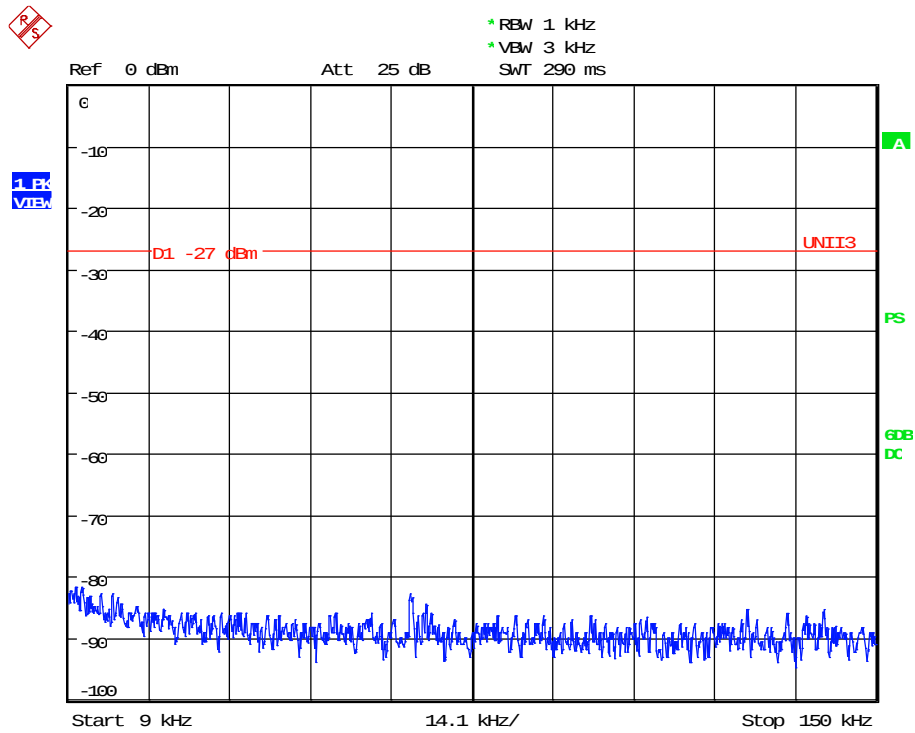
UNII 3, OFDM54 20M: Low Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 11:25:53



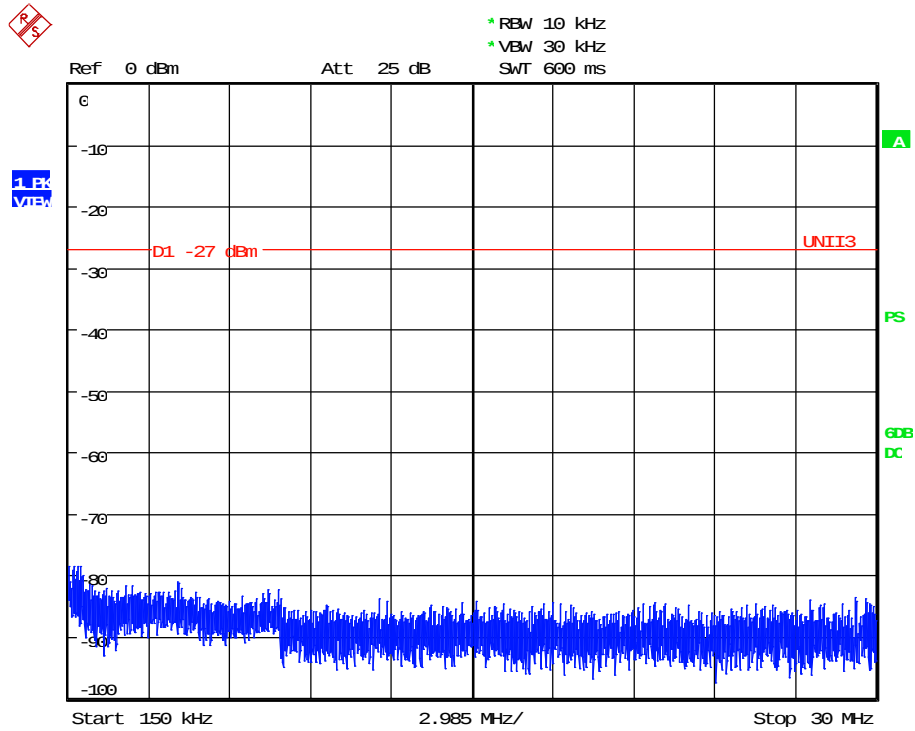
UNII 3, OFDM54 20M: Mid Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 11:50:16



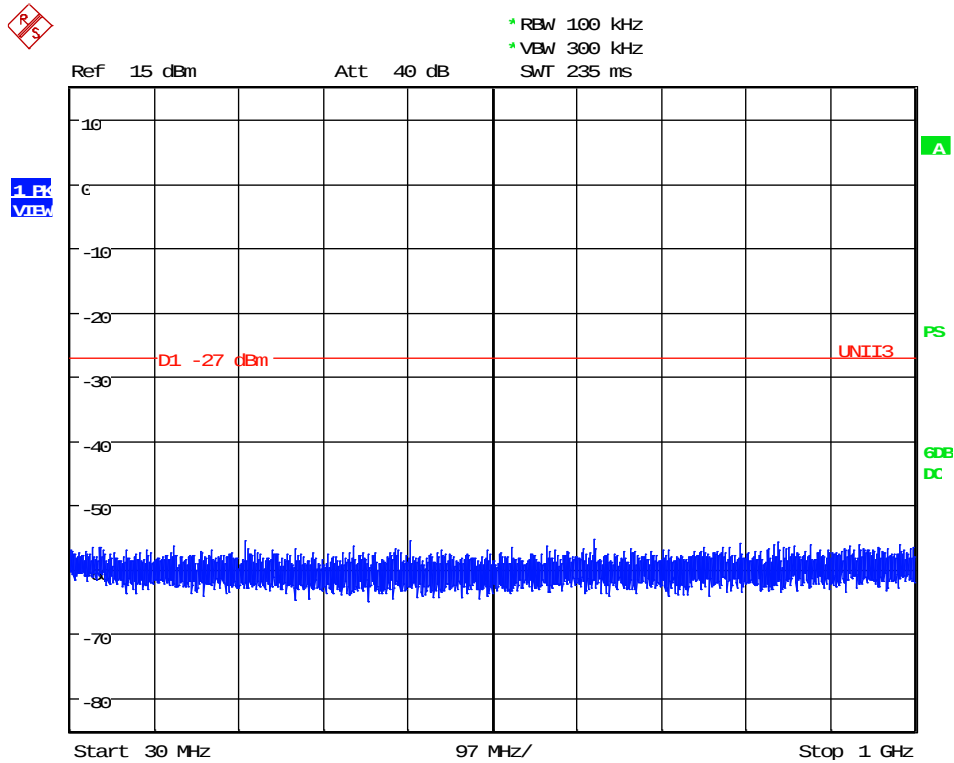
UNII 3, OFDM54 20M: Mid Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 11:49:29



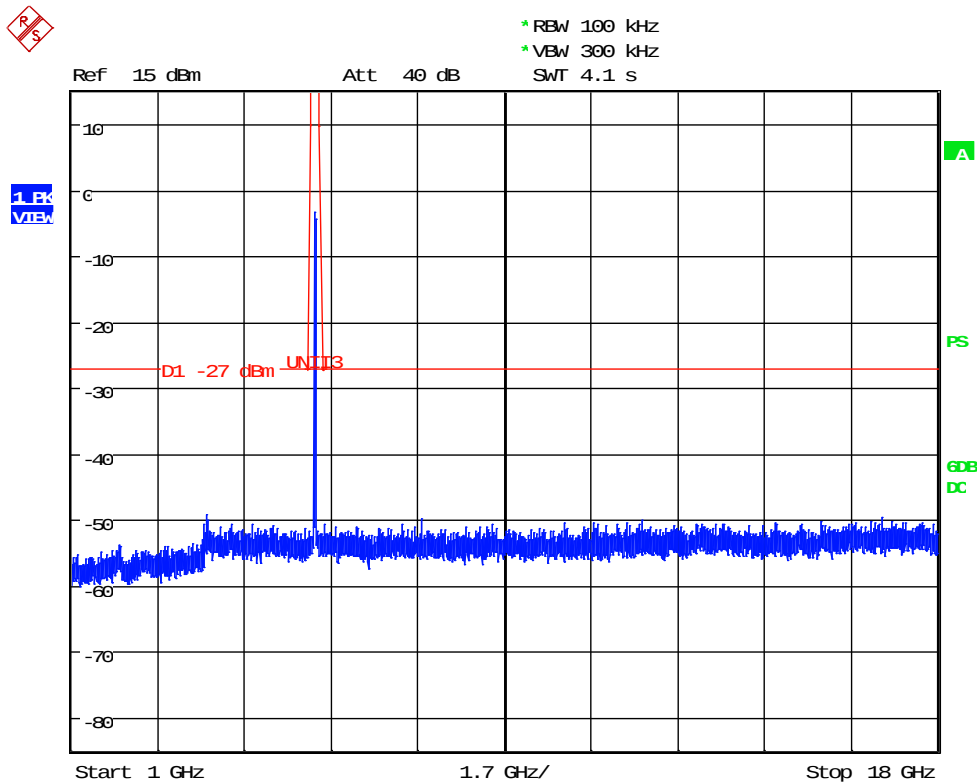
UNII 3, OFDM54 20M: Mid Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 11:48:24



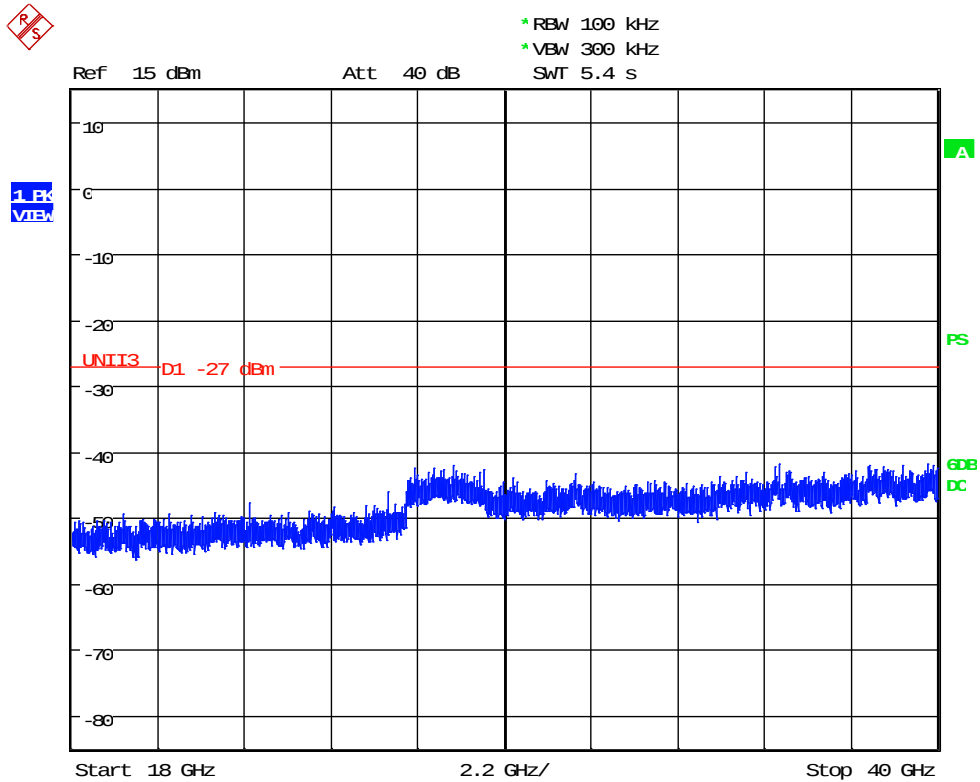
UNII 3, OFDM54 20M: Mid Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 11:47:41



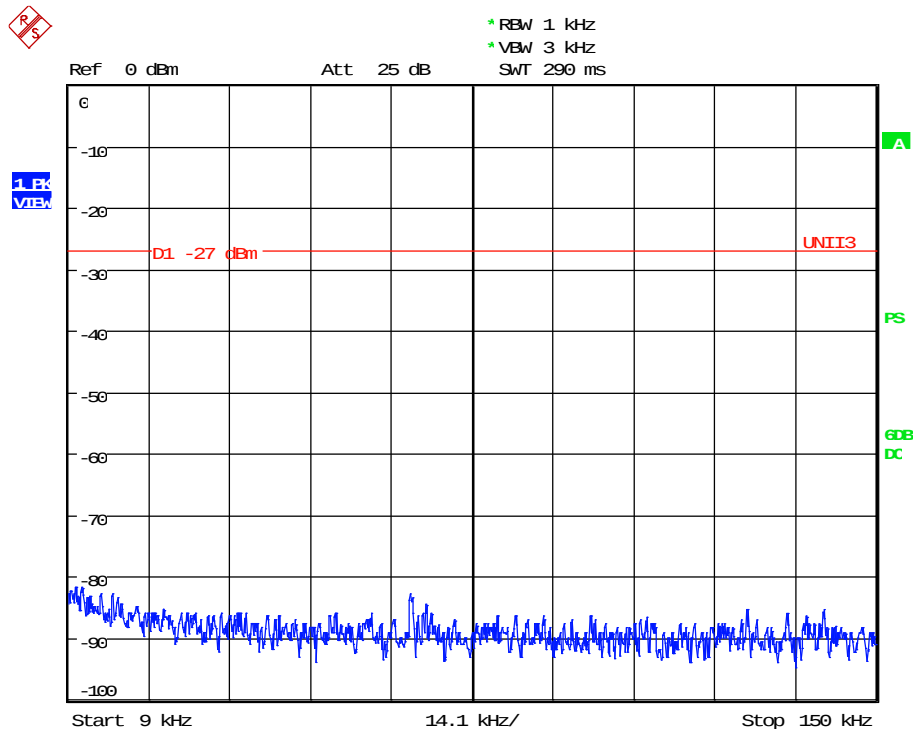
UNII 3, OFDM54 20M: Mid Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 11:46:43



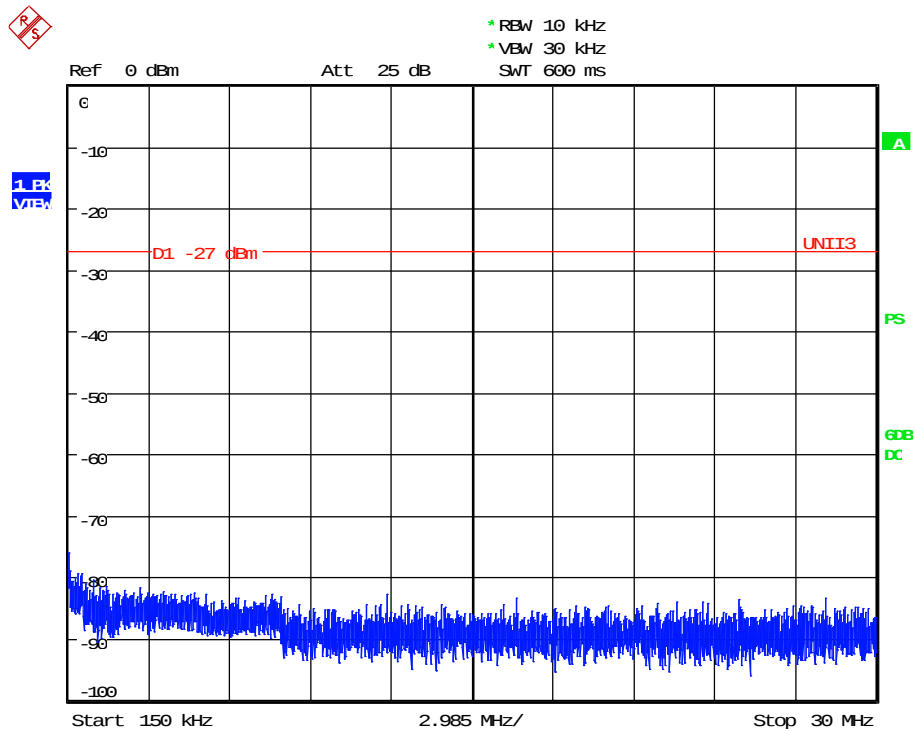
UNII 3, OFDM54 20M: High Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 11:51:03



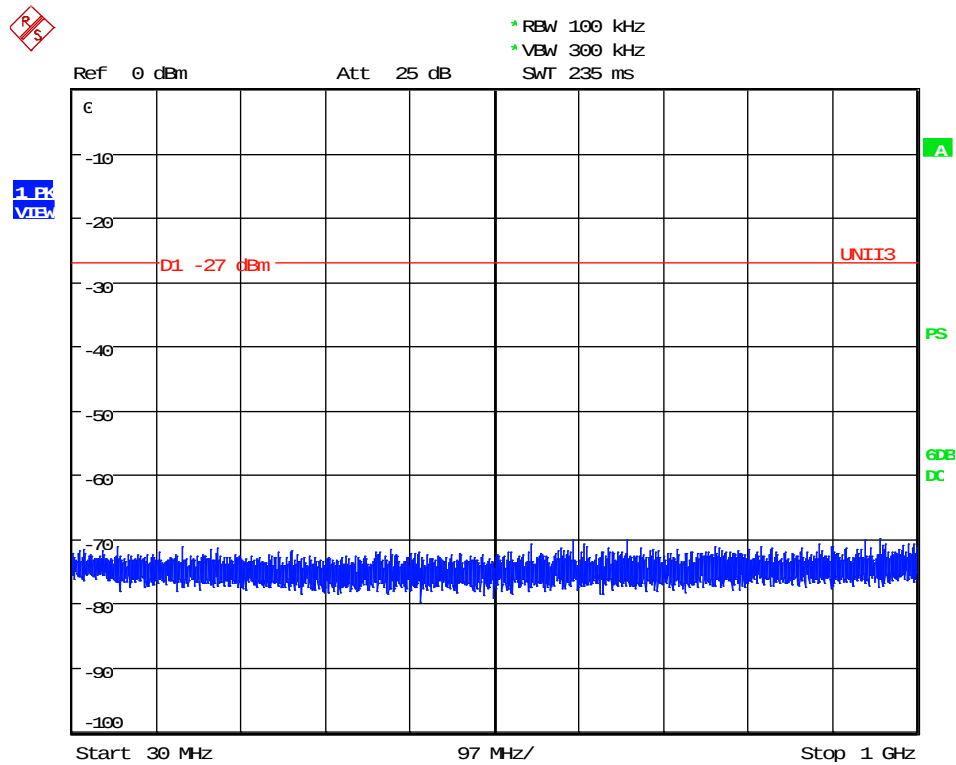
UNII 3, OFDM54 20M: High Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 11:52:04



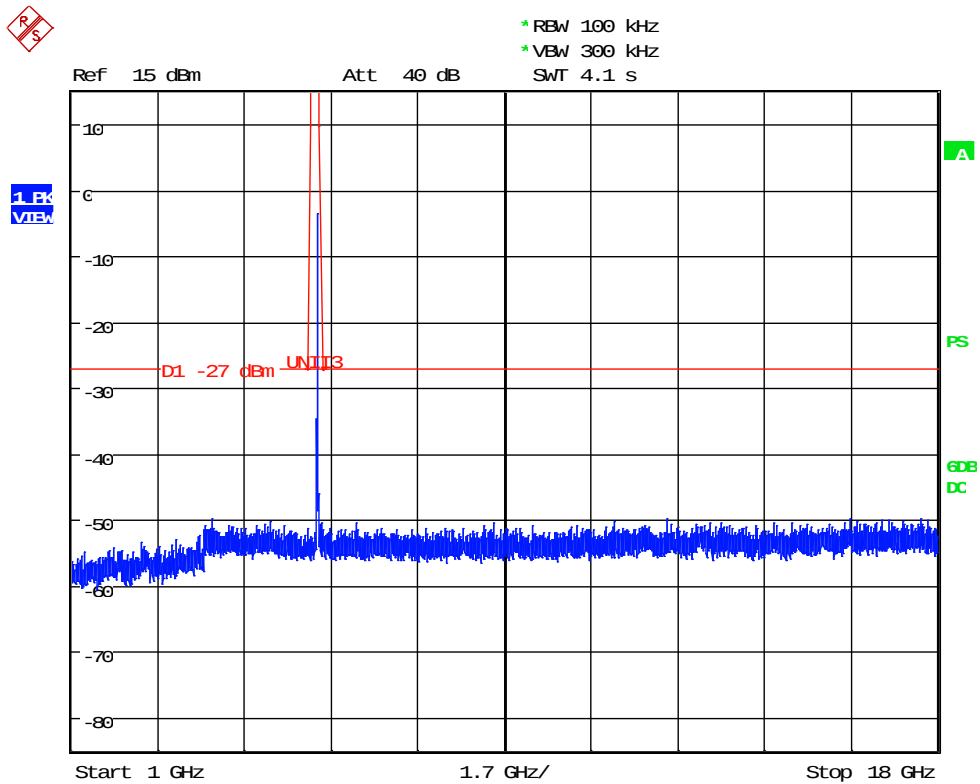
UNII 3, OFDM54 20M: High Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 11:52:52



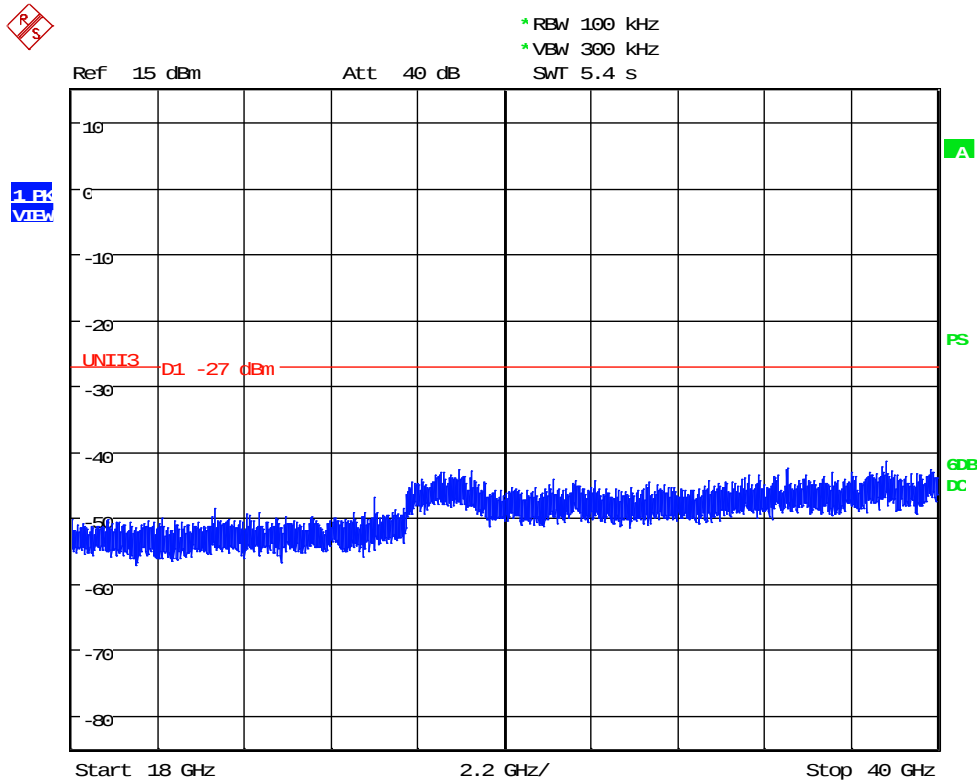
UNII 3, OFDM54 20M: High Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 11:54:12



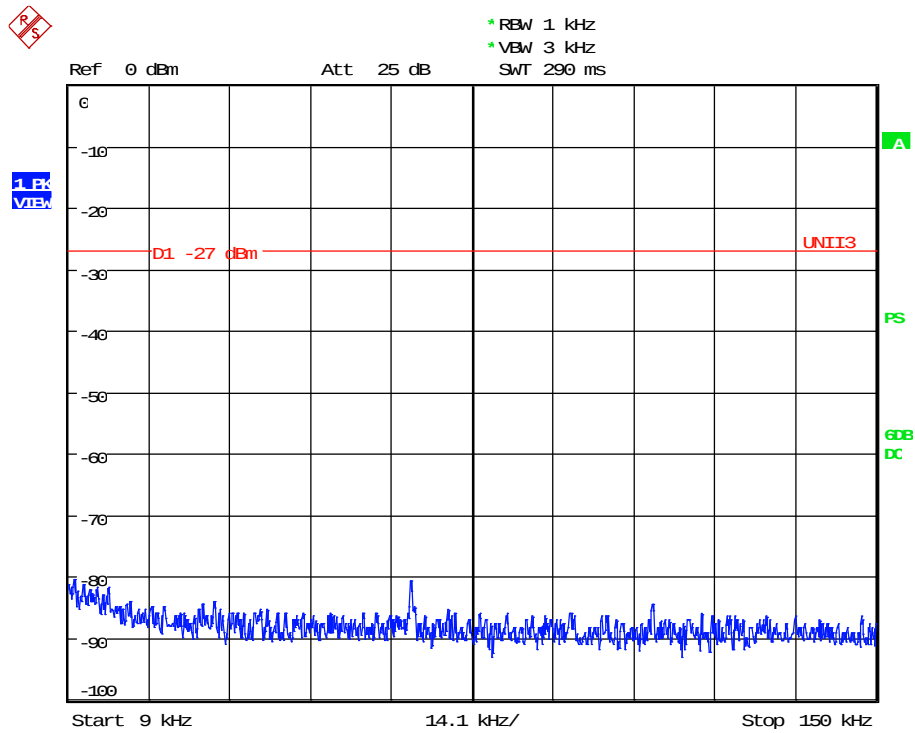
UNII 3, OFDM54 20M: High Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 11:54:55



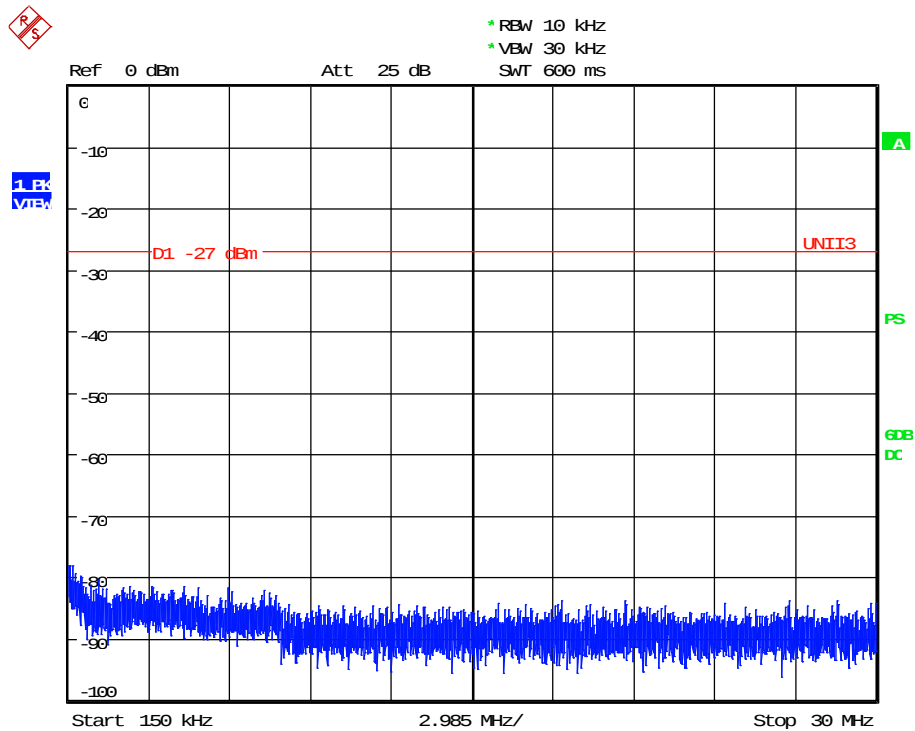
UNII 3, OFDM54 40M: Low Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 12:18:18



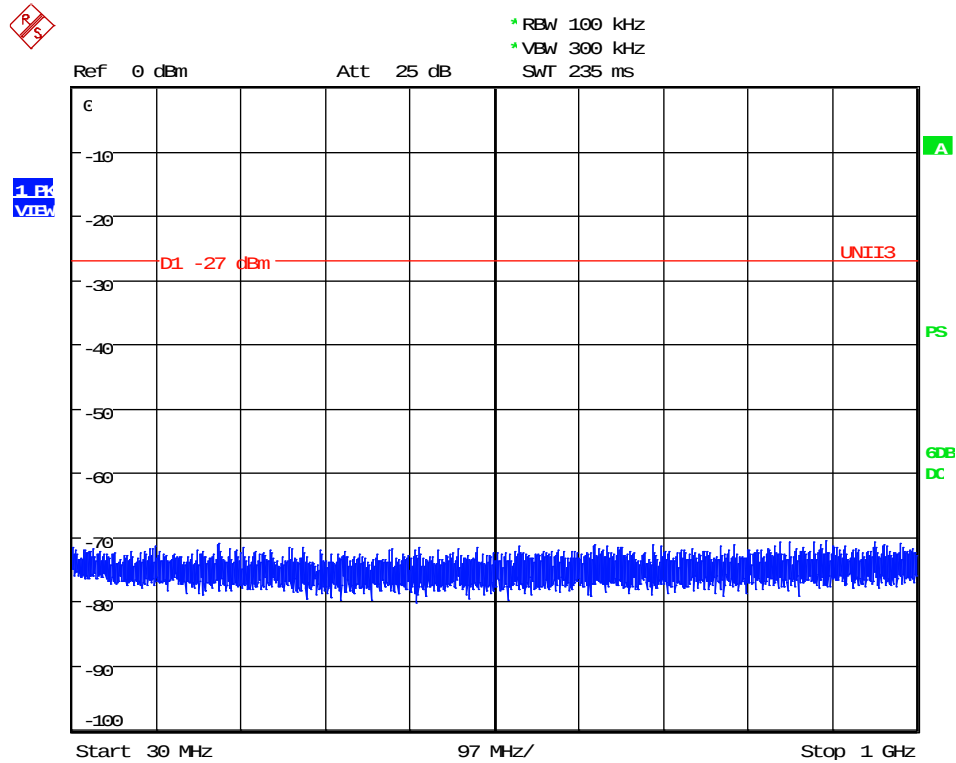
UNII 3, OFDM54 40M: Low Channel, 0.15 MHz to 30 MHz



Date: 8.FEB.2021 12:17:21



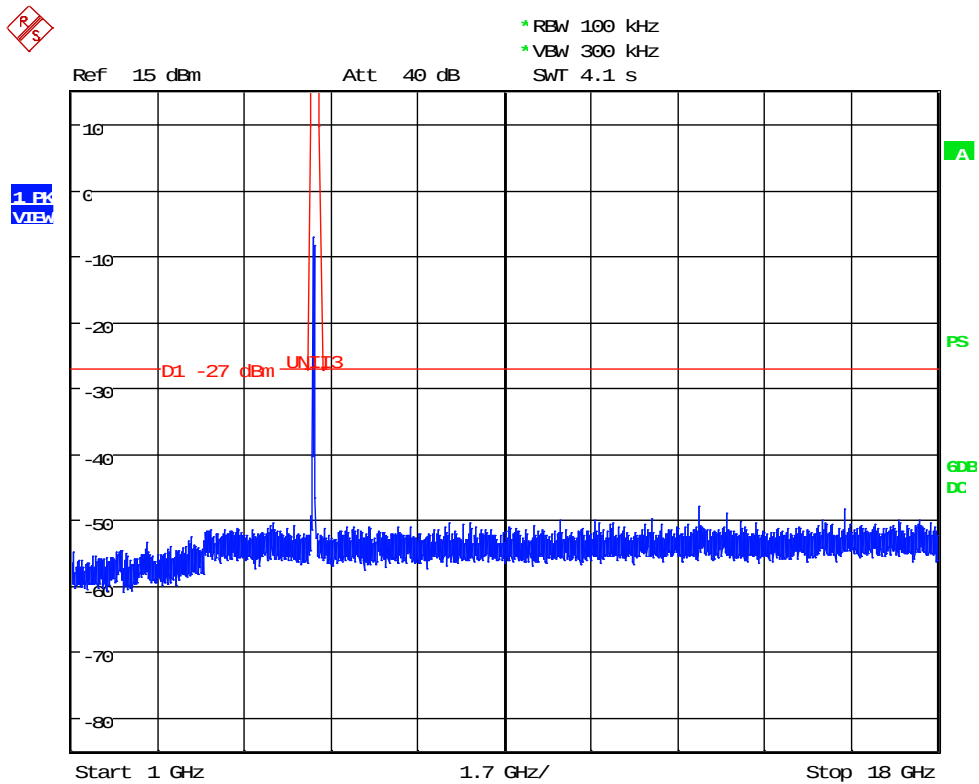
UNII 3, OFDM54 40M: Low Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 12:16:18



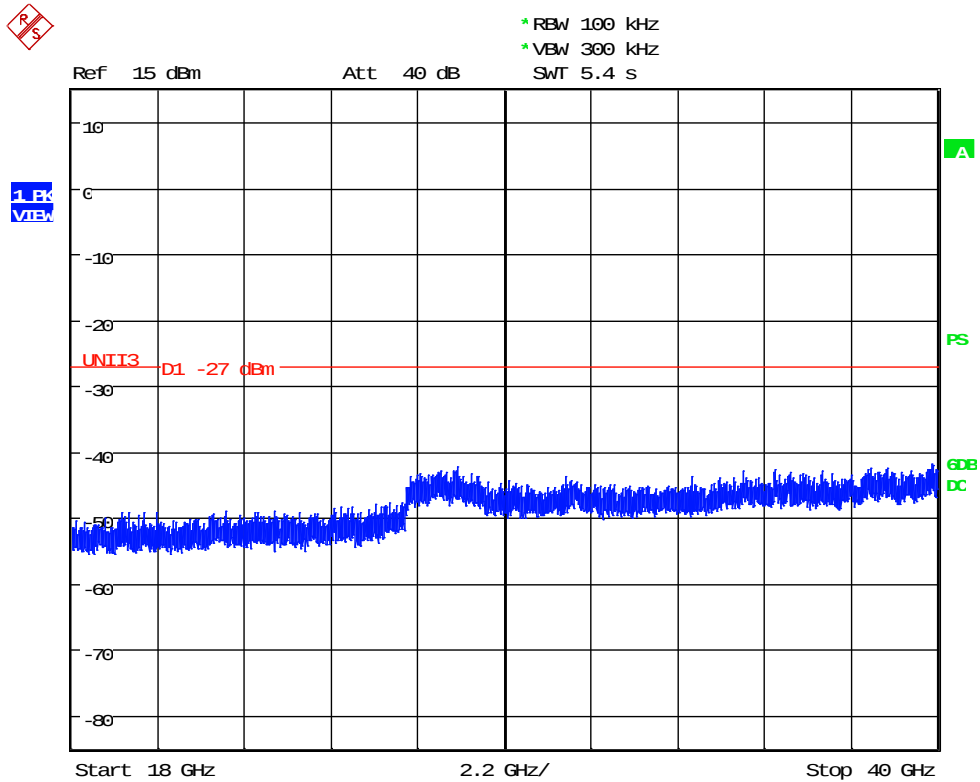
UNII 3, OFDM54 40M: Low Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 12:15:22



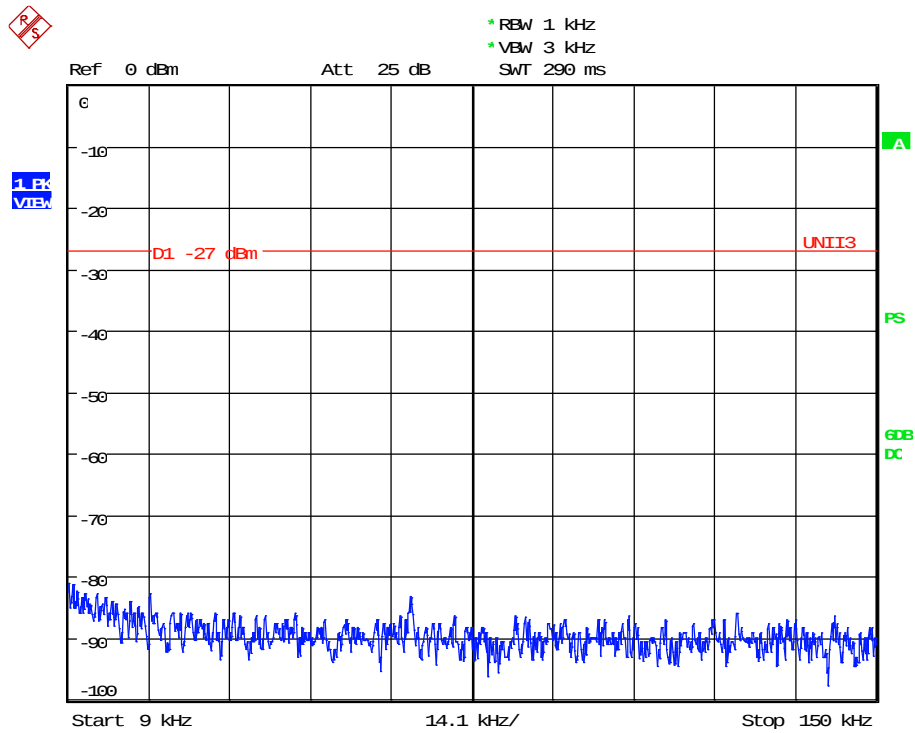
UNII 3, OFDM54 40M: Low Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 12:14:15



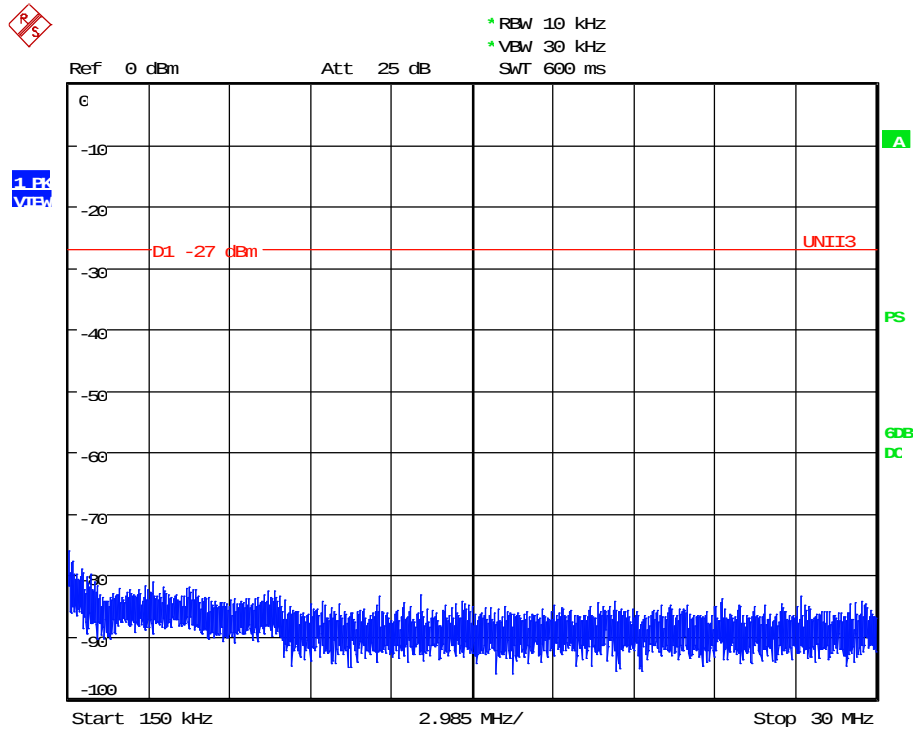
UNII 3, OFDM54 40M: High Channel, 0.009 MHz to 0.15 MHz



Date: 8.FEB.2021 12:24:22



UNII 3, OFDM54 40M: High Channel, 0.15 MHz to 30 MHz

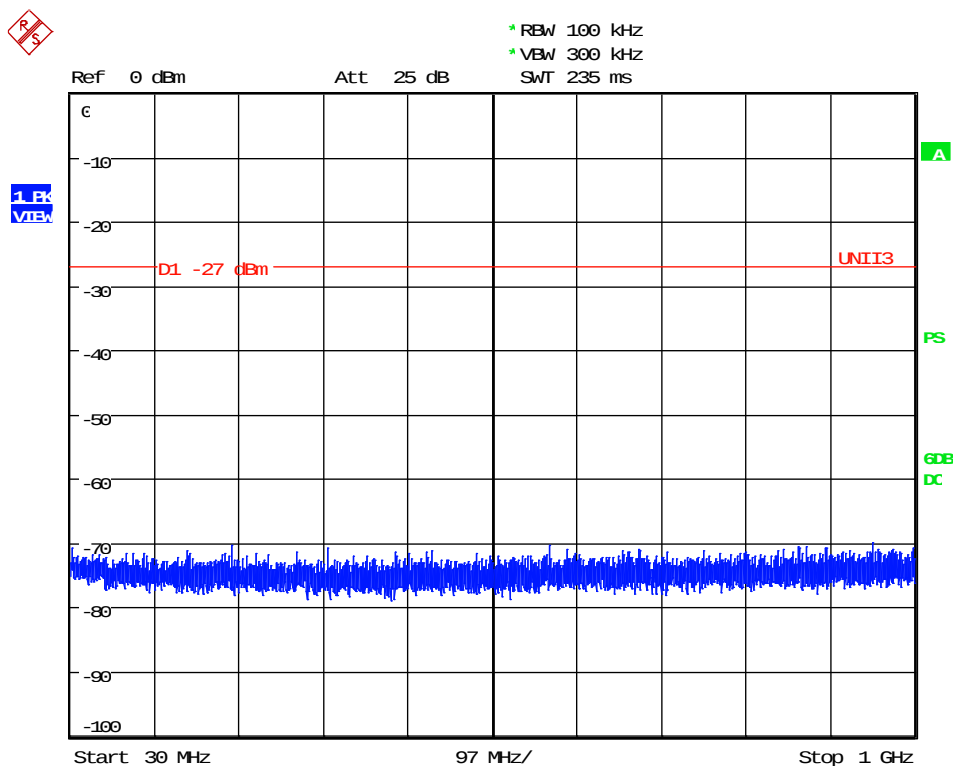


Date: 8.FEB.2021 12:25:26



Applicant: Securus Technologies
Model: JP6S

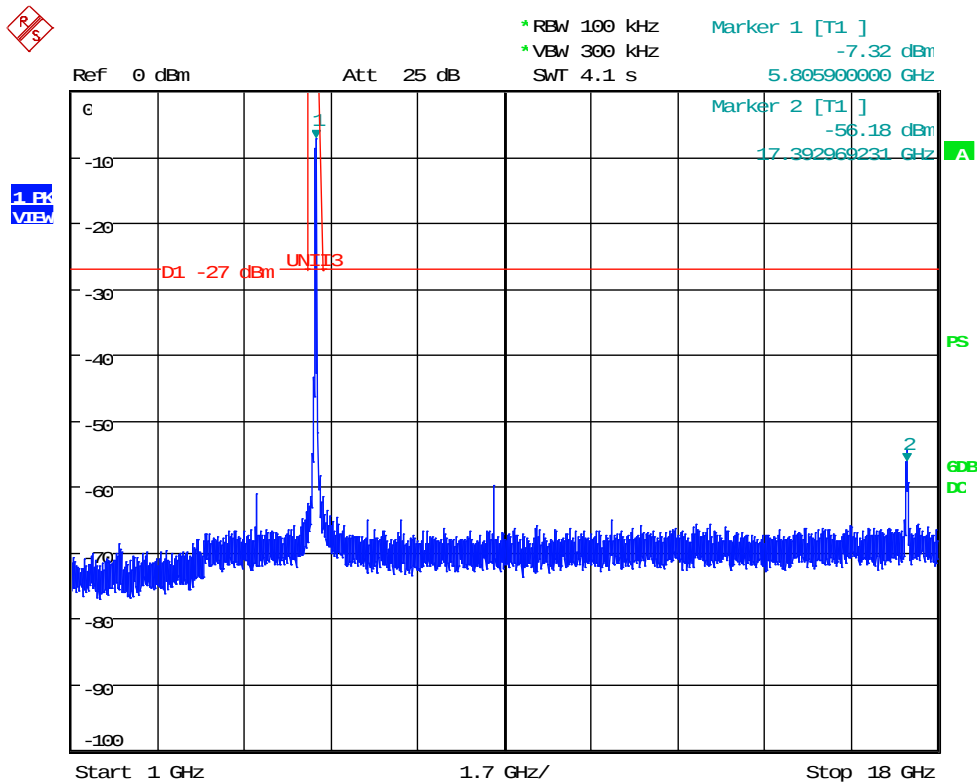
UNII 3, OFDM54 40M: High Channel, 30 MHz to 1000 MHz



Date: 8.FEB.2021 12:26:15



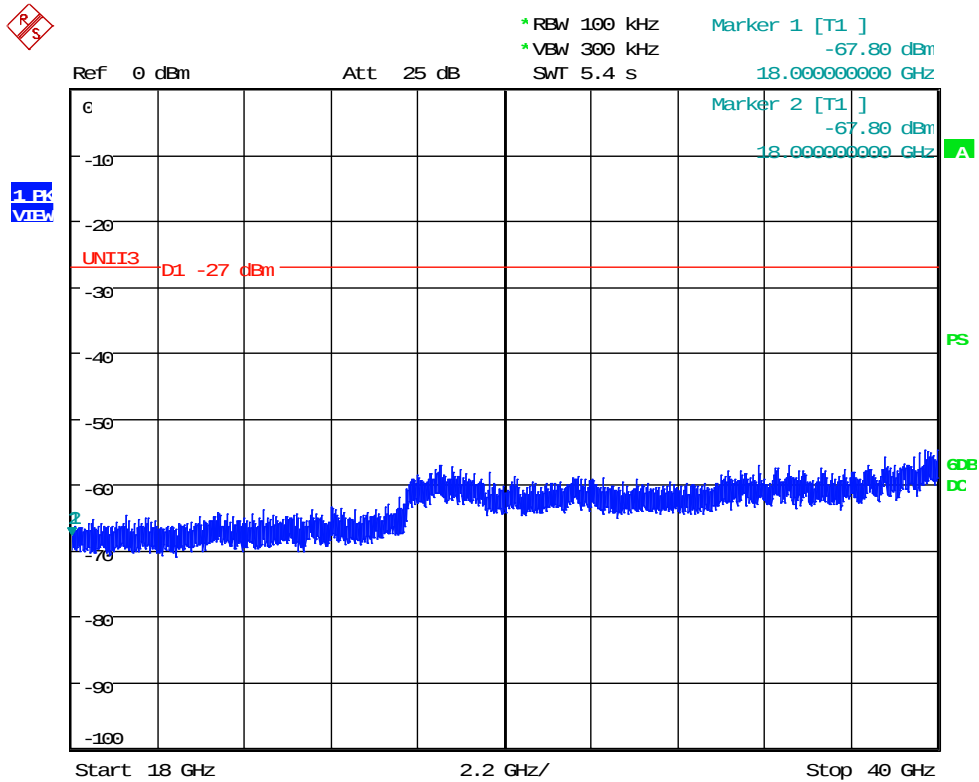
UNII 3, OFDM54 40M: High Channel, 1 GHz to 18 GHz



Date: 8.FEB.2021 12:27:54



UNII 3, OFDM54 40M: High Channel, 18 GHz to 40 GHz



Date: 8.FEB.2021 12:28:38



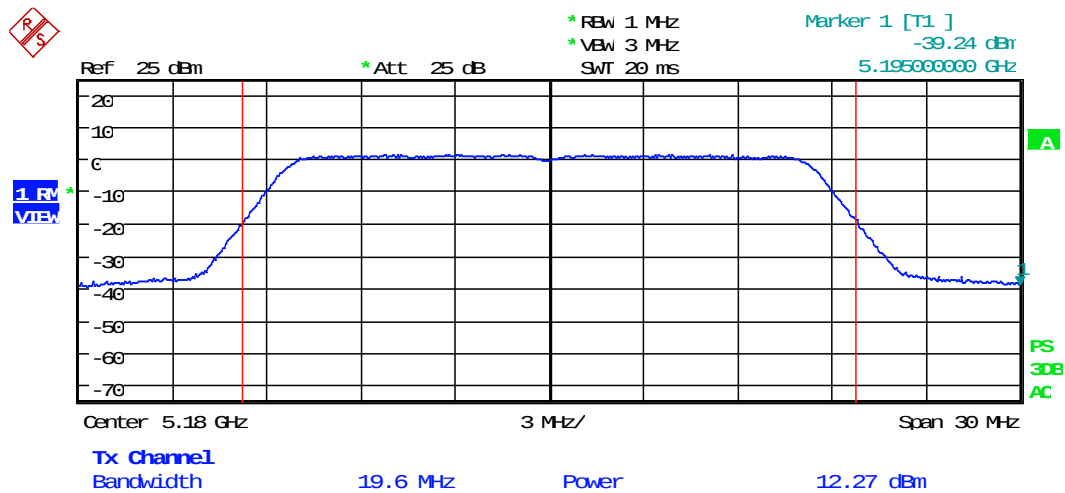
12 VOLTAGE VARIATIONS

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery

RESULTS: The results showed that the fundamental frequency did not move outside the frequency band and the output power did not increase above the limit during the variations.



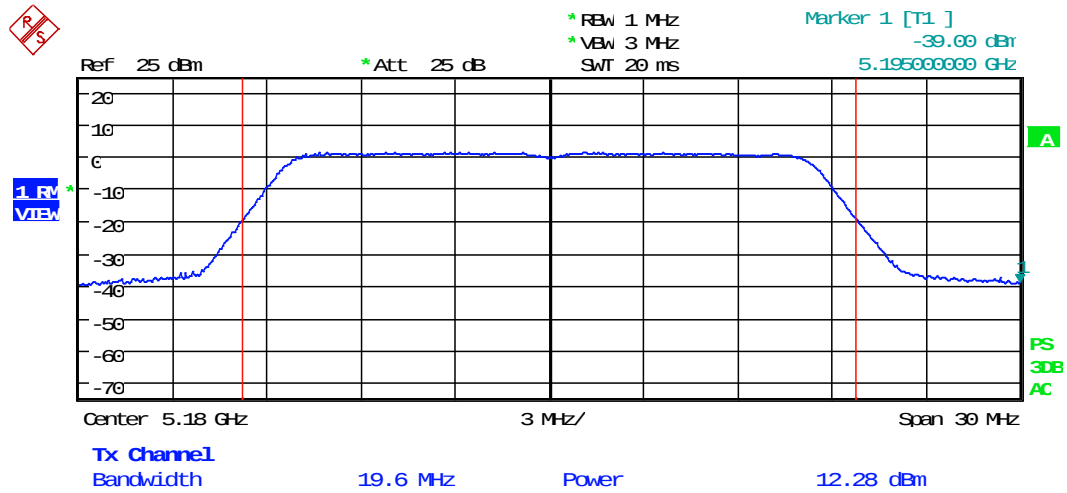
Test Date:	2021-02-03	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.31(e)	Air Temperature:	20.4°C
Test Results:	Complies	Humidity:	27%

UNII 1, OFDM 20M, Low Channel @ 85%

Date: 3.FEB.2021 14:19:21



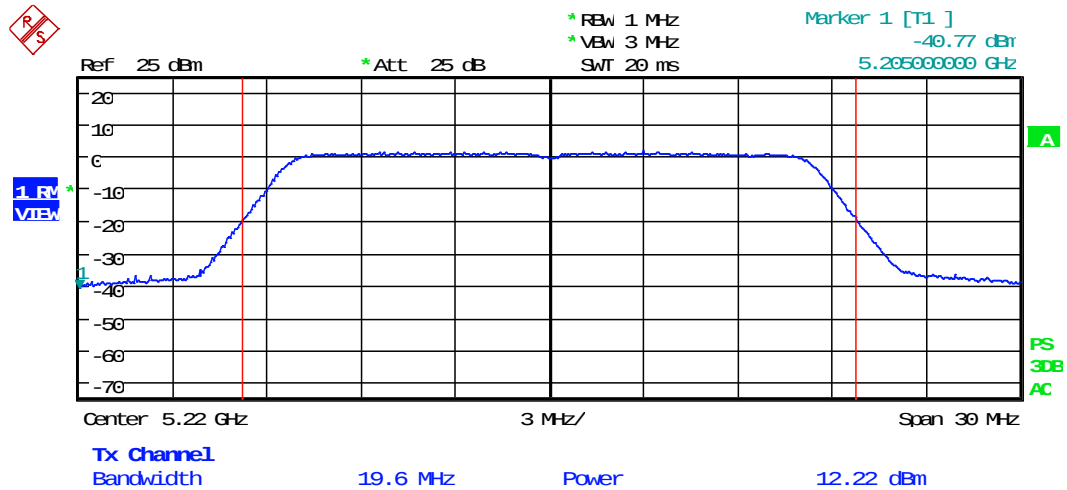
UNII 1, OFDM 20M, Low Channel @ 115%



Date: 3.FEB.2021 14:20:18



UNII 1, OFDM 20M, Mid Channel @ 85%



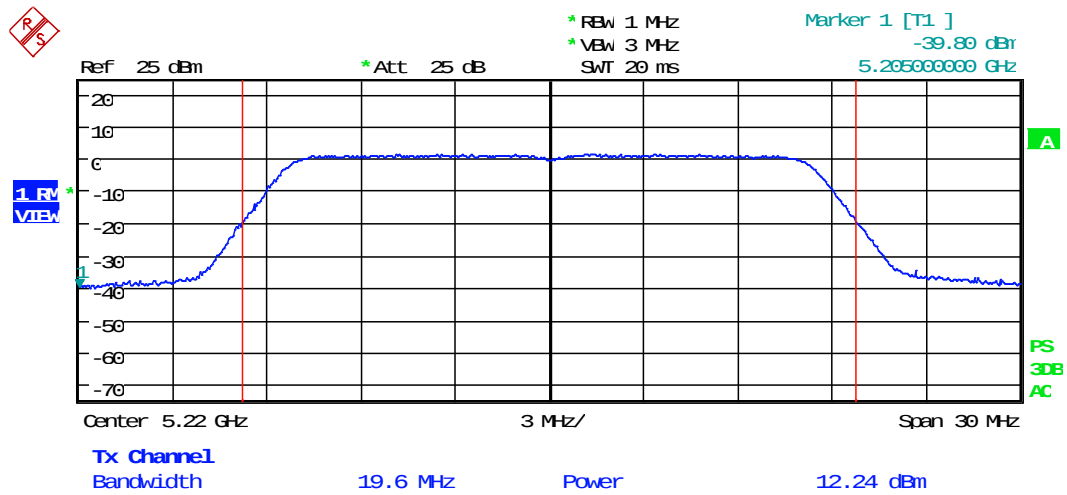
Date: 3.FEB.2021 14:22:04



Order Number: F2P24999

Applicant: Securus Technologies
Model: JP6S

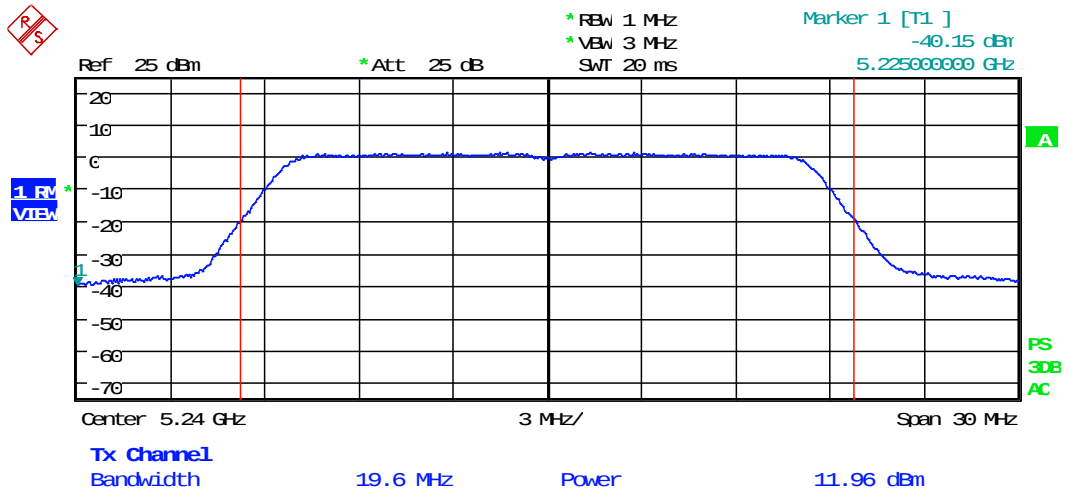
UNII 1, OFDM 20M, Mid Channel @ 115%



Date: 3.FEB.2021 14:21:24



UNII 1, OFDM 20M, High Channel @ 85%



Date: 3.FEB.2021 14:23:13

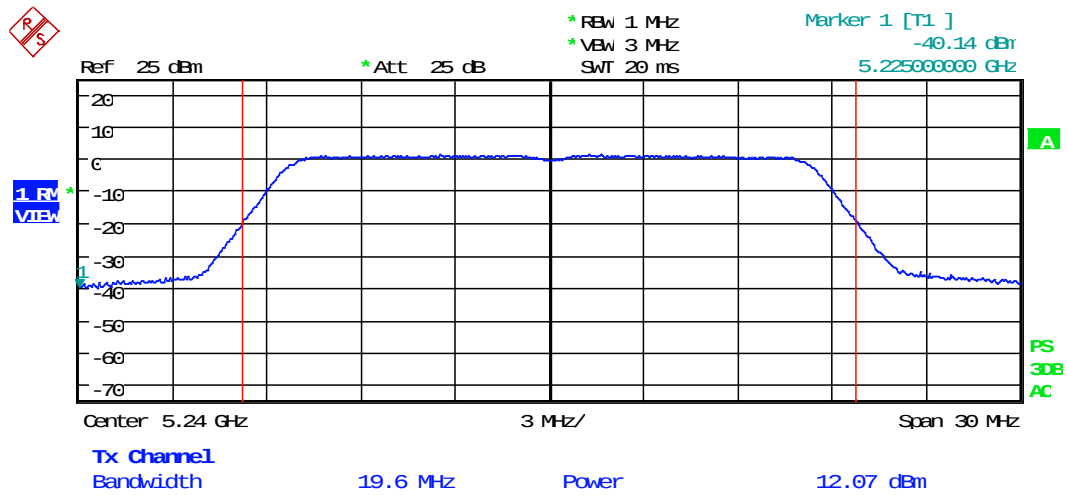


Order Number: F2P24999

Applicant: Securus Technologies

Model: JP6S

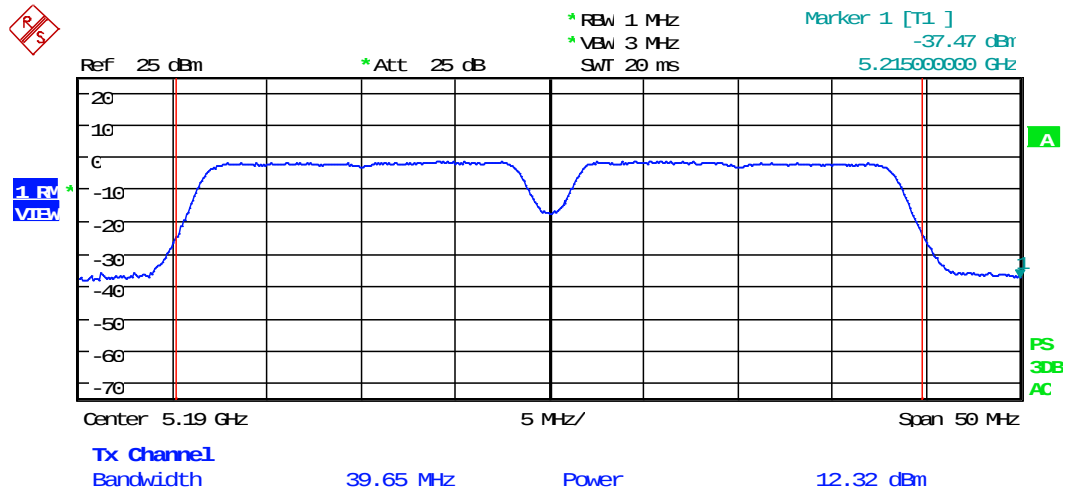
UNII 1, OFDM 20M, High Channel @ 115%



Date: 3.FEB.2021 14:23:57



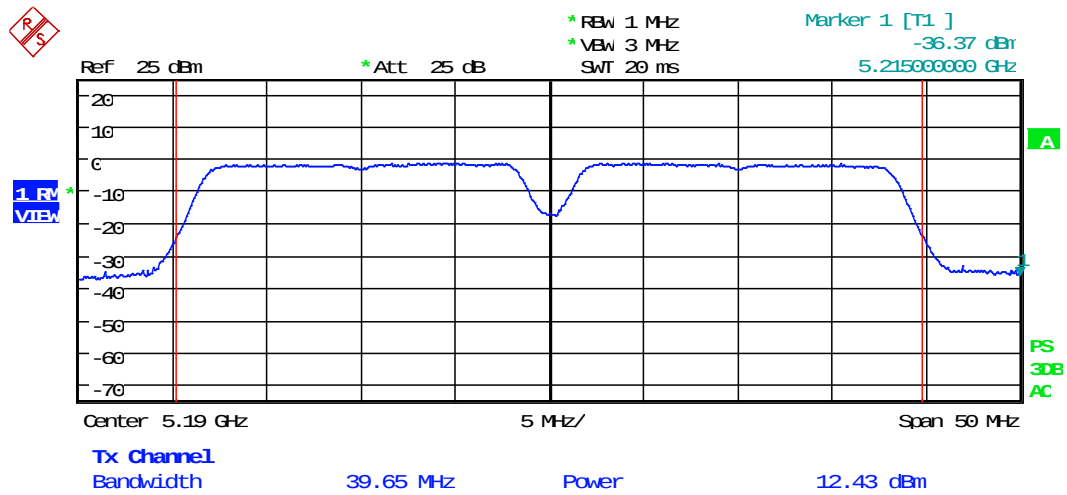
UNII 1, OFDM 40M, Low Channel @ 85%



Date: 3.FEB.2021 14:29:08



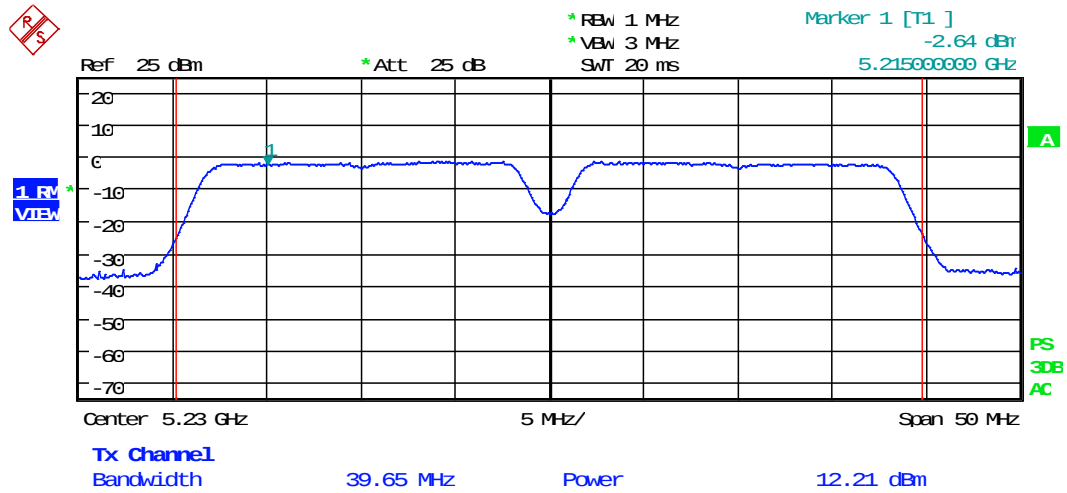
UNII 1, OFDM 40M, Low Channel @115%



Date: 3.FEB.2021 14:28:20



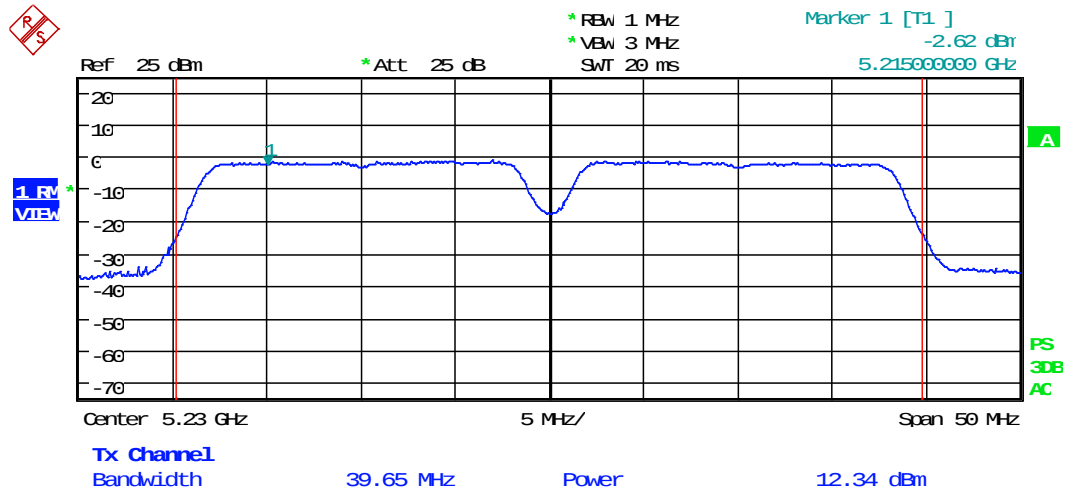
UNII 1, OFDM 40M, High Channel @ 85%



Date: 3.FEB.2021 14:30:37



UNII 1, OFDM 40M, High Channel @115%

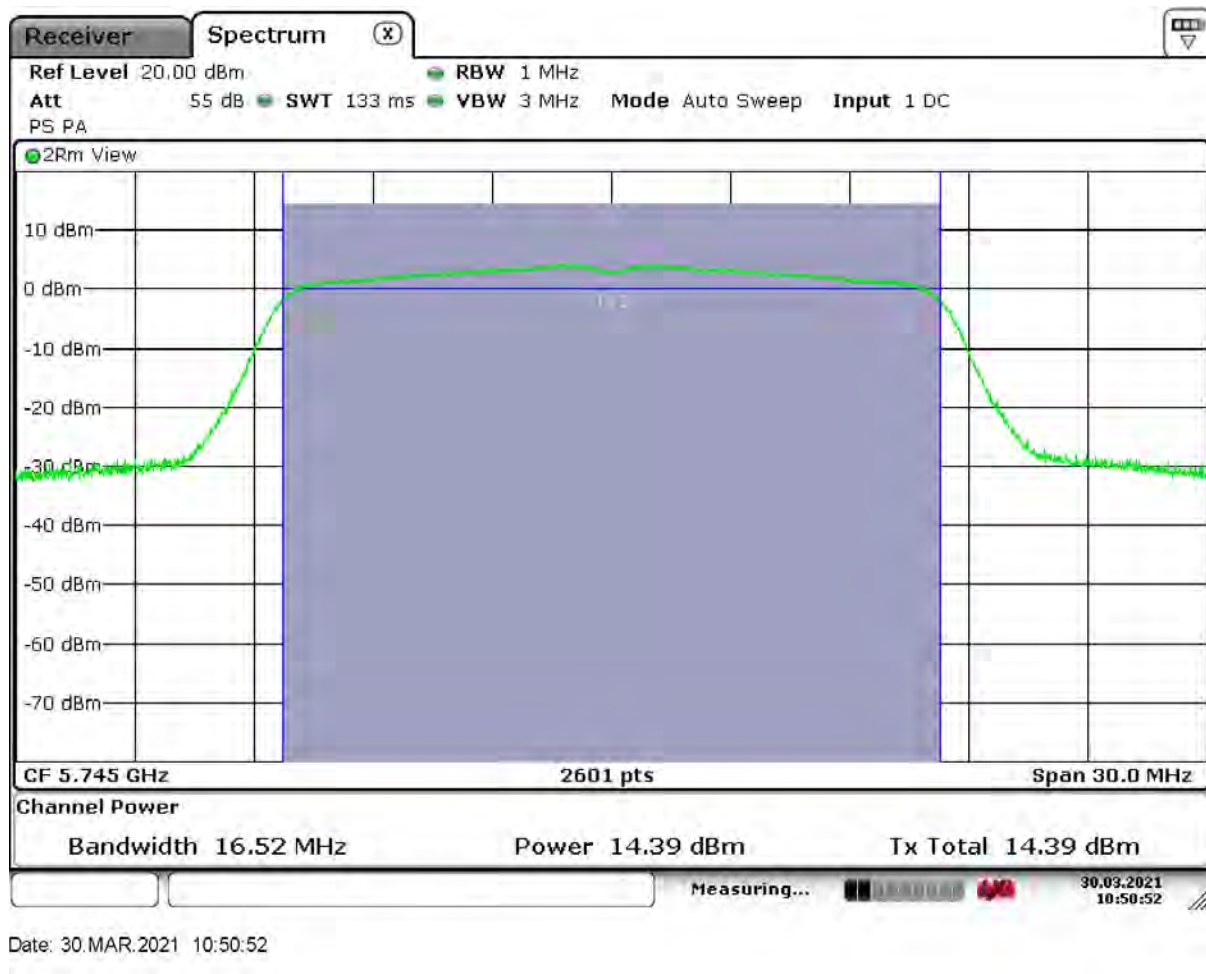


Date: 3.FEB.2021 14:31:48



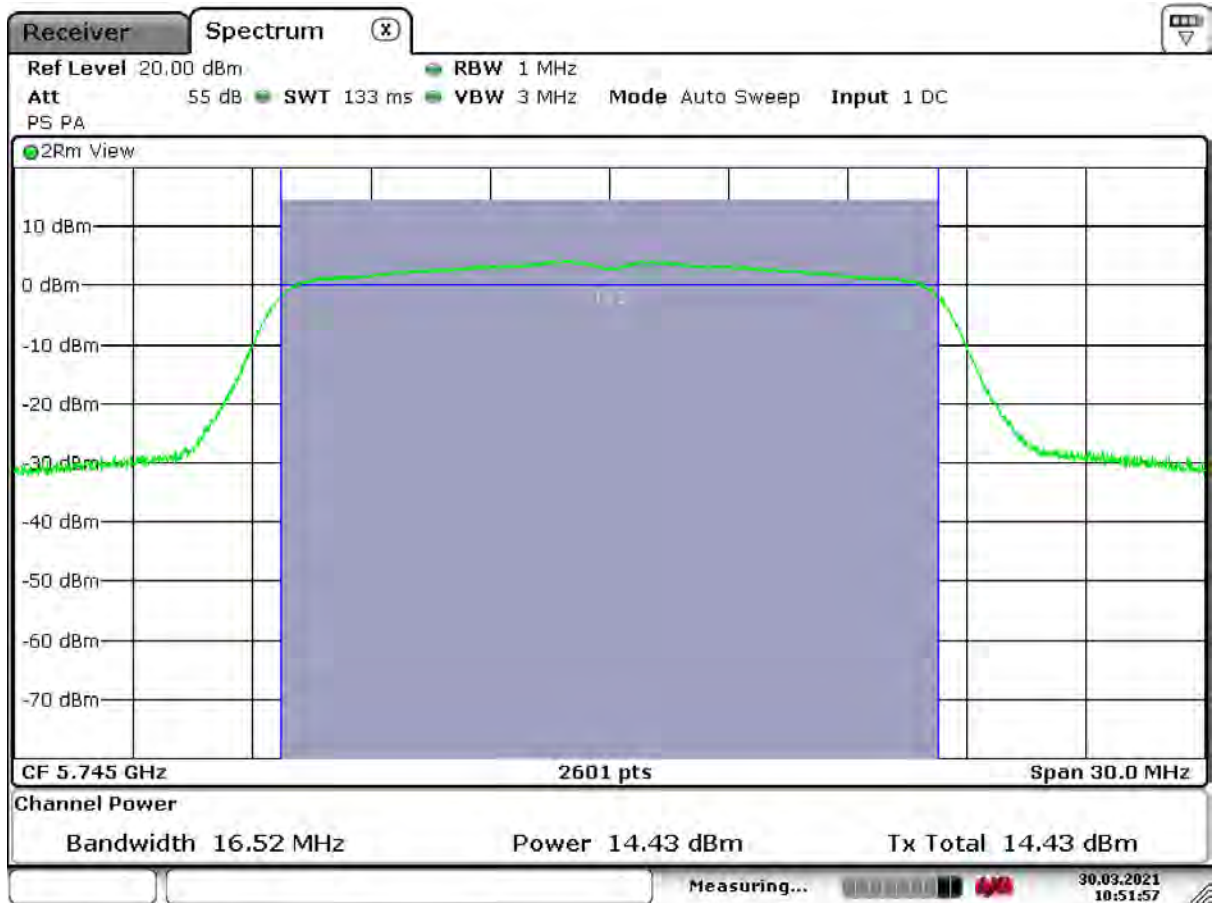
Test Date:	2021-03-30	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.31(e)	Air Temperature:	20.4°C
Test Results:	Complies	Humidity:	27%

UNII 3, OFDM 20M, Low Channel @ 85%





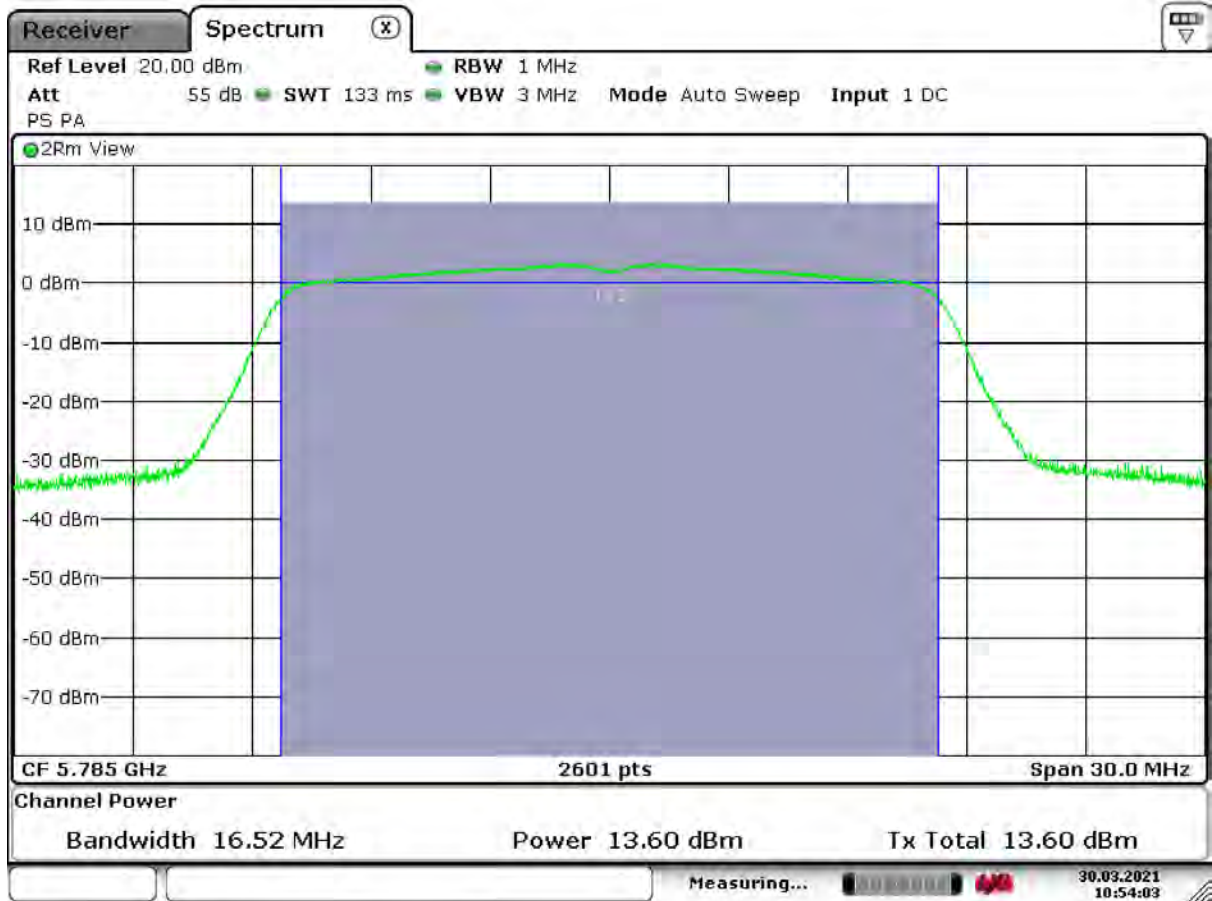
UNII 3, OFDM 20M, Low Channel @ 115%



Date: 30.MAR.2021 10:51:56



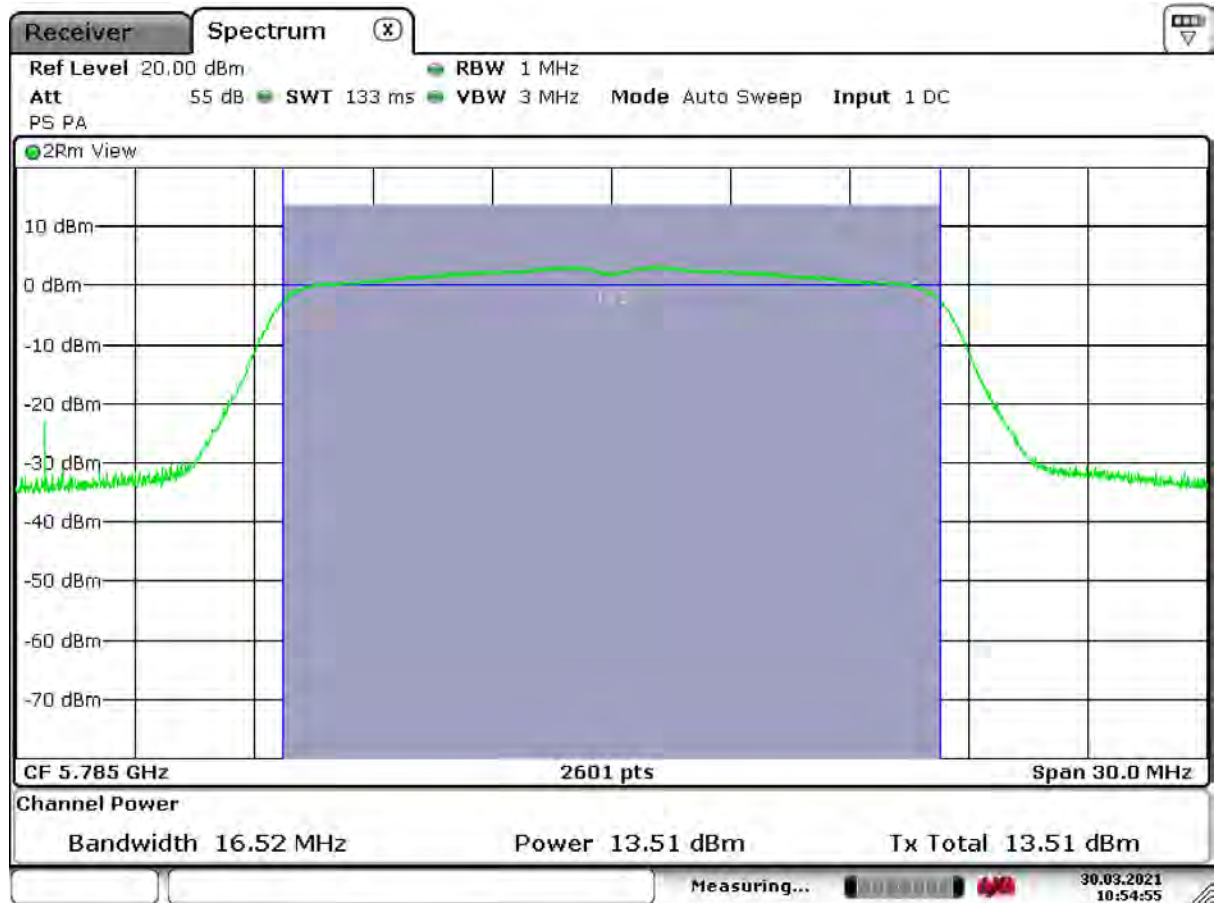
UNII 3, OFDM 20M, Mid Channel @ 85%



Date: 30.MAR.2021 10:54:04



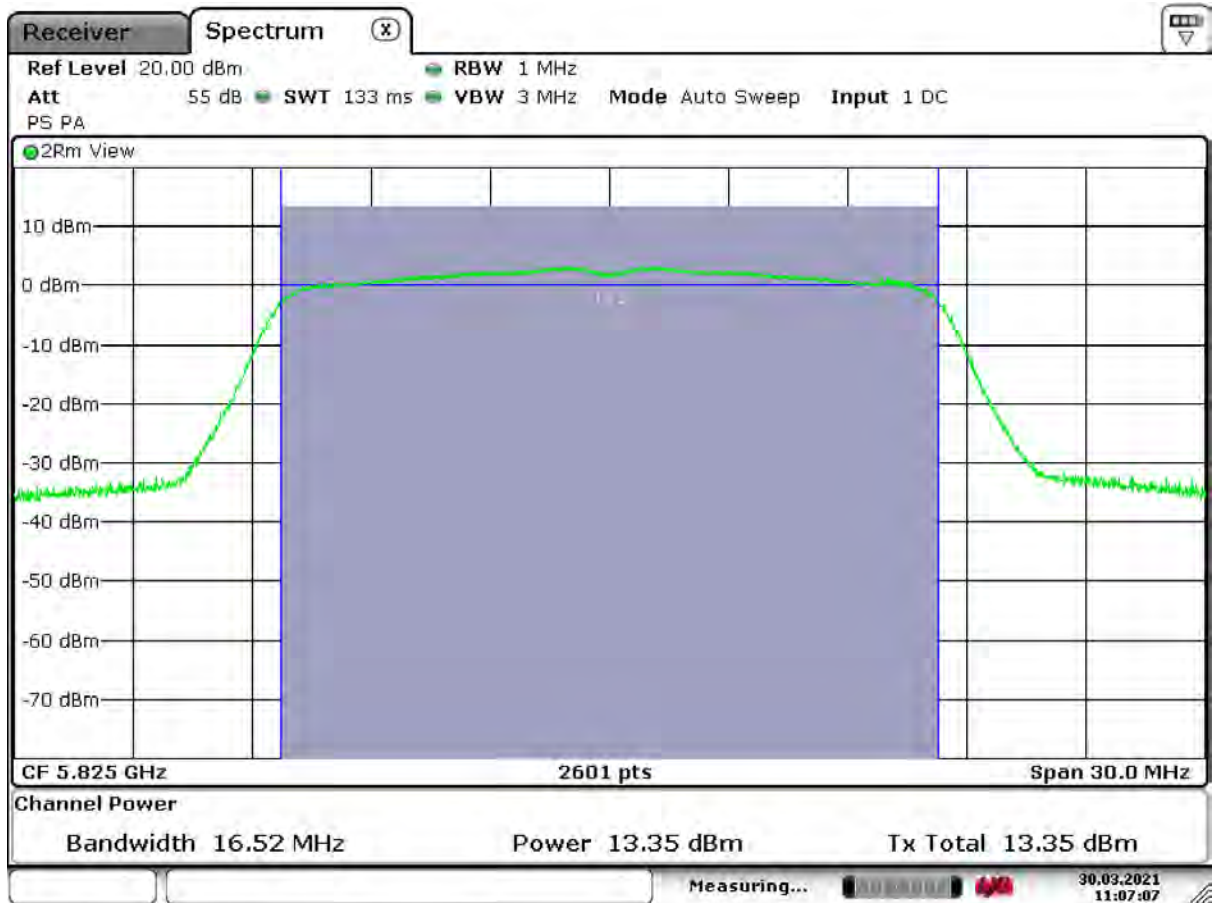
UNII 3, OFDM 20M, Mid Channel @ 115%



Date: 30.MAR.2021 10:54:55



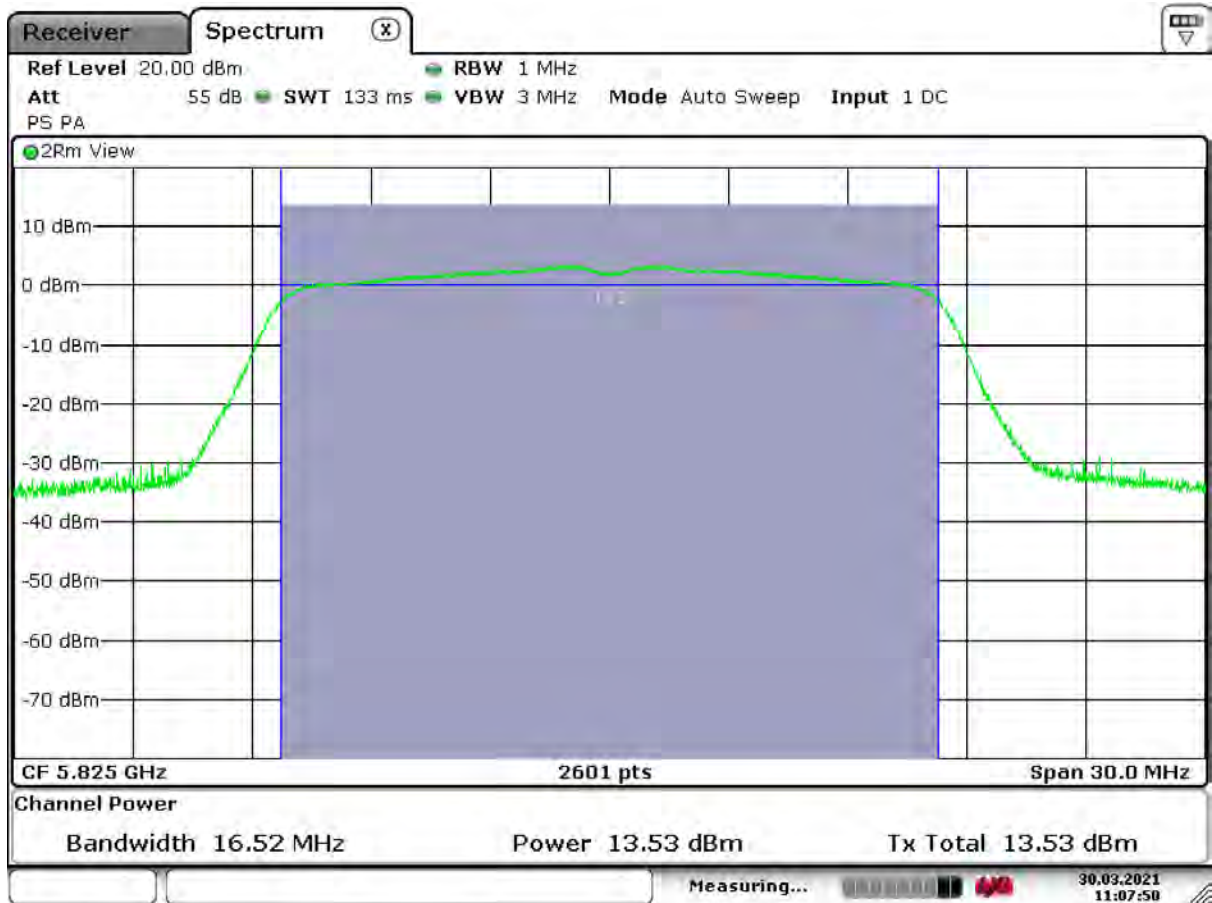
UNII 3, OFDM 20M, High Channel @ 85%



Date: 30.MAR.2021 11:07:07



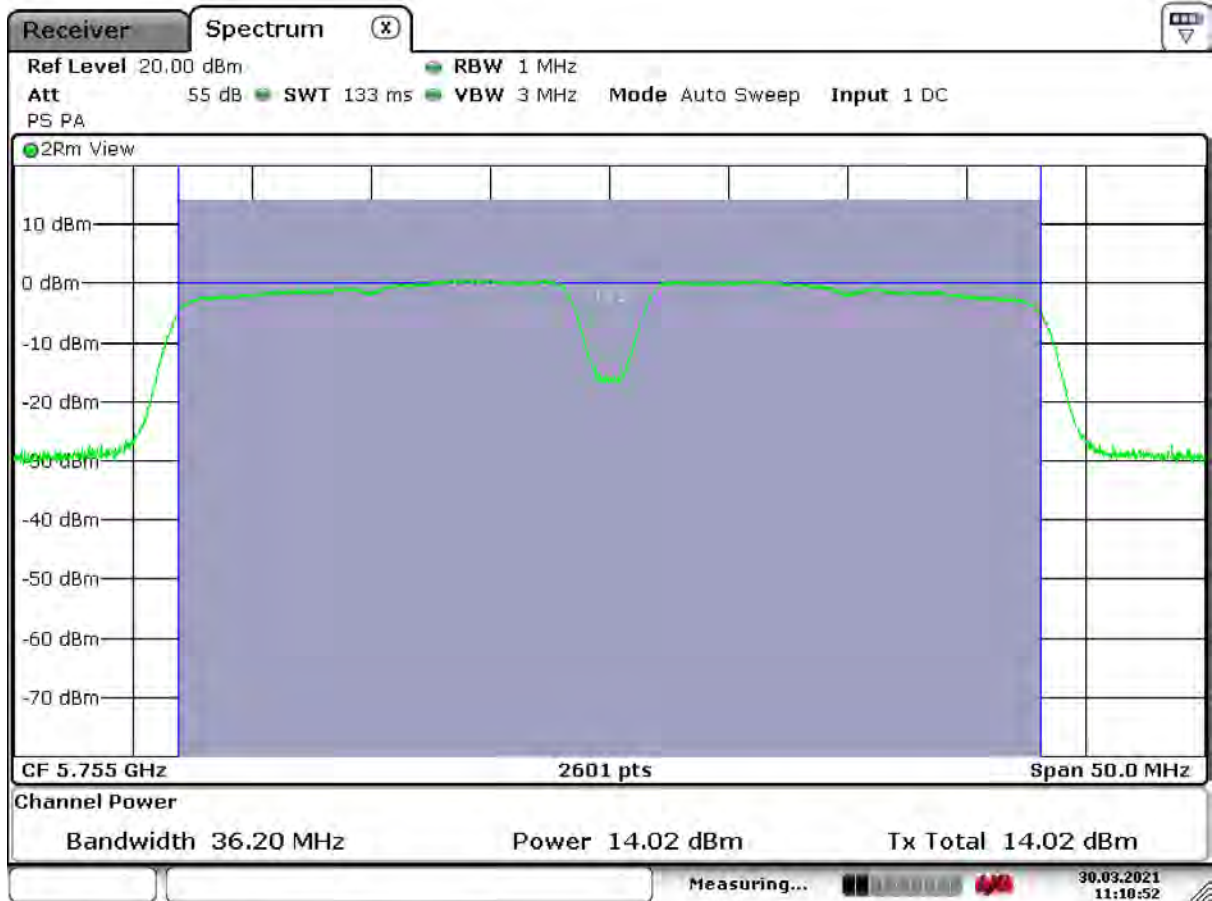
UNII 3, OFDM 20M, High Channel @ 115%



Date: 30.MAR.2021 11:07:50



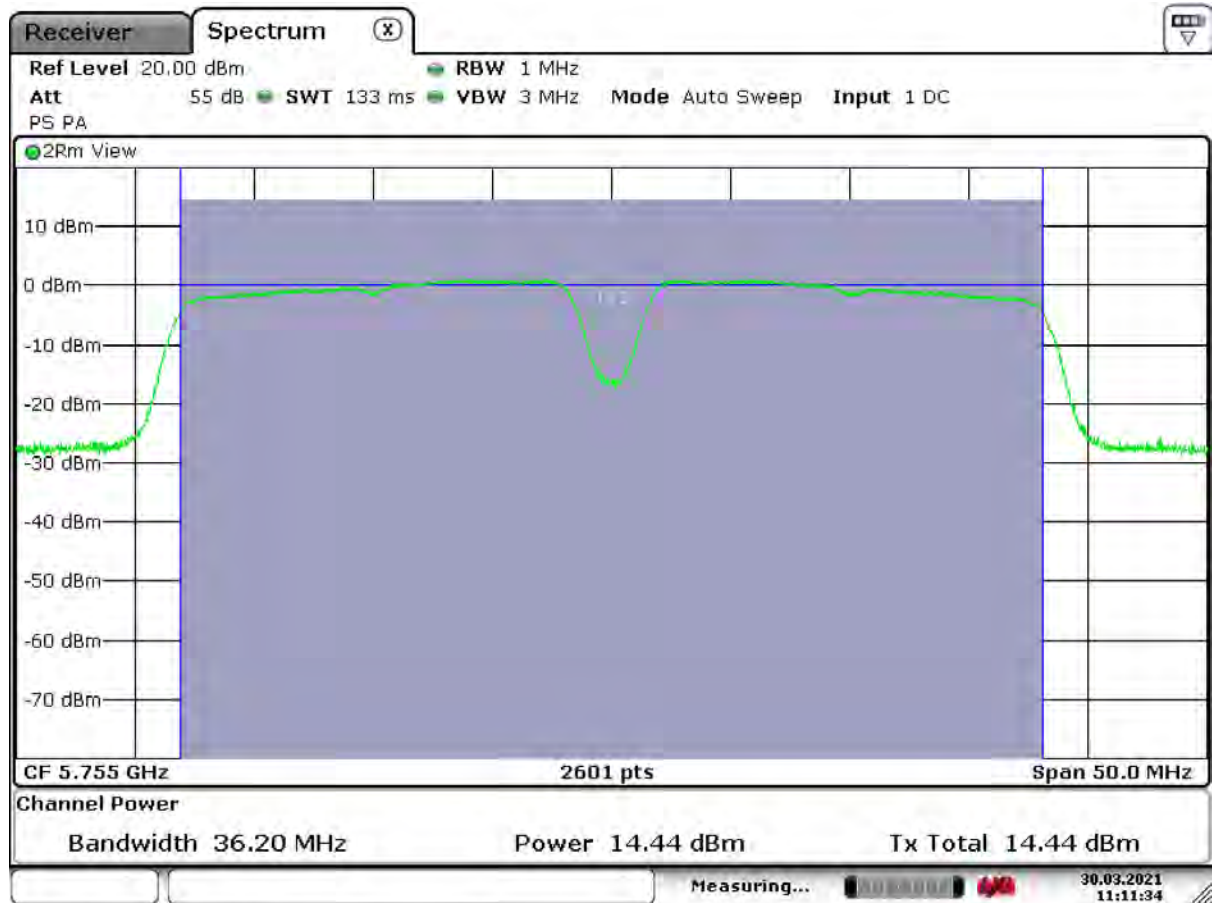
UNII 3, OFDM 40M, Low Channel @ 85%



Date: 30.MAR.2021 11:10:52



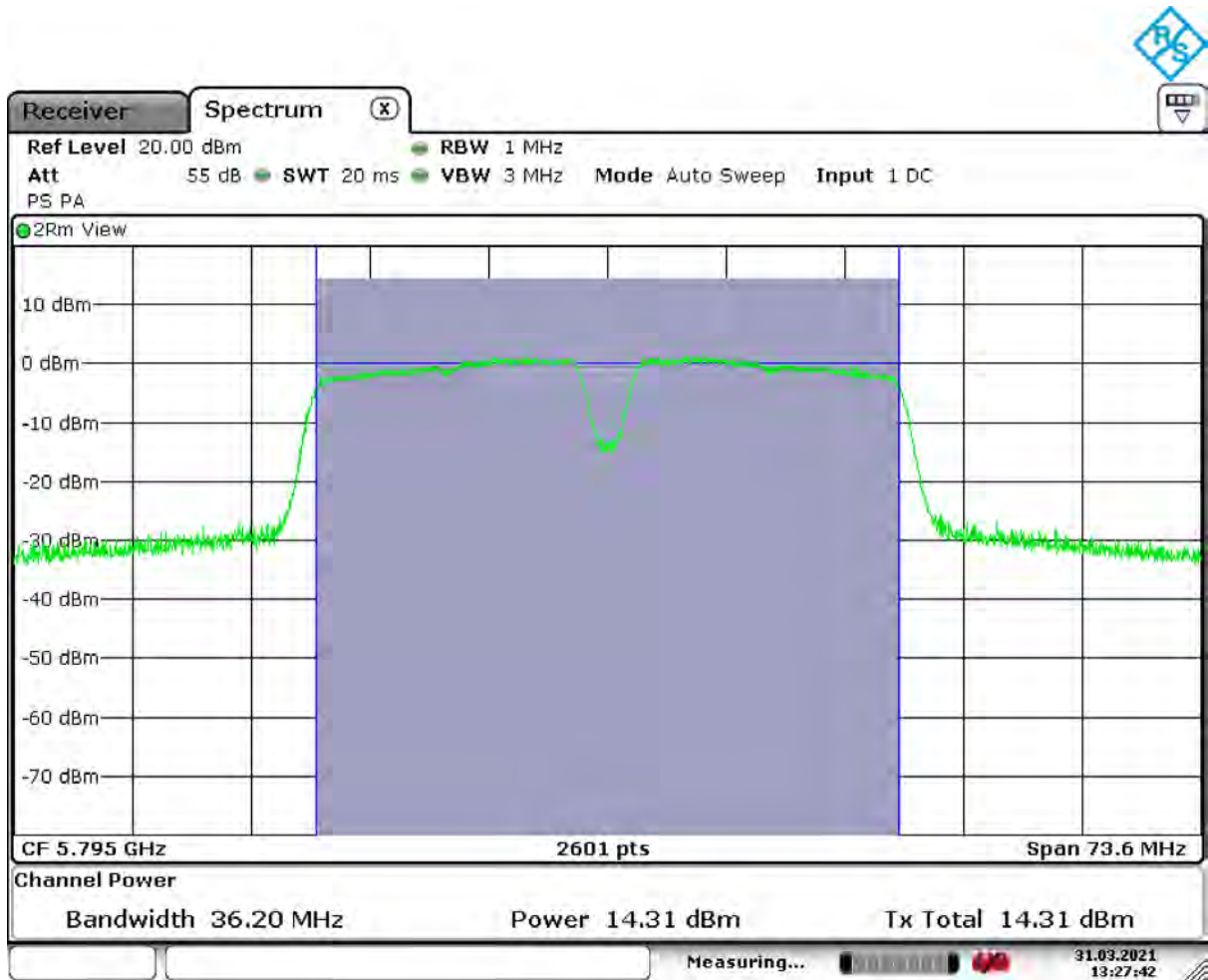
UNII 3, OFDM 40M, Low Channel @115%



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



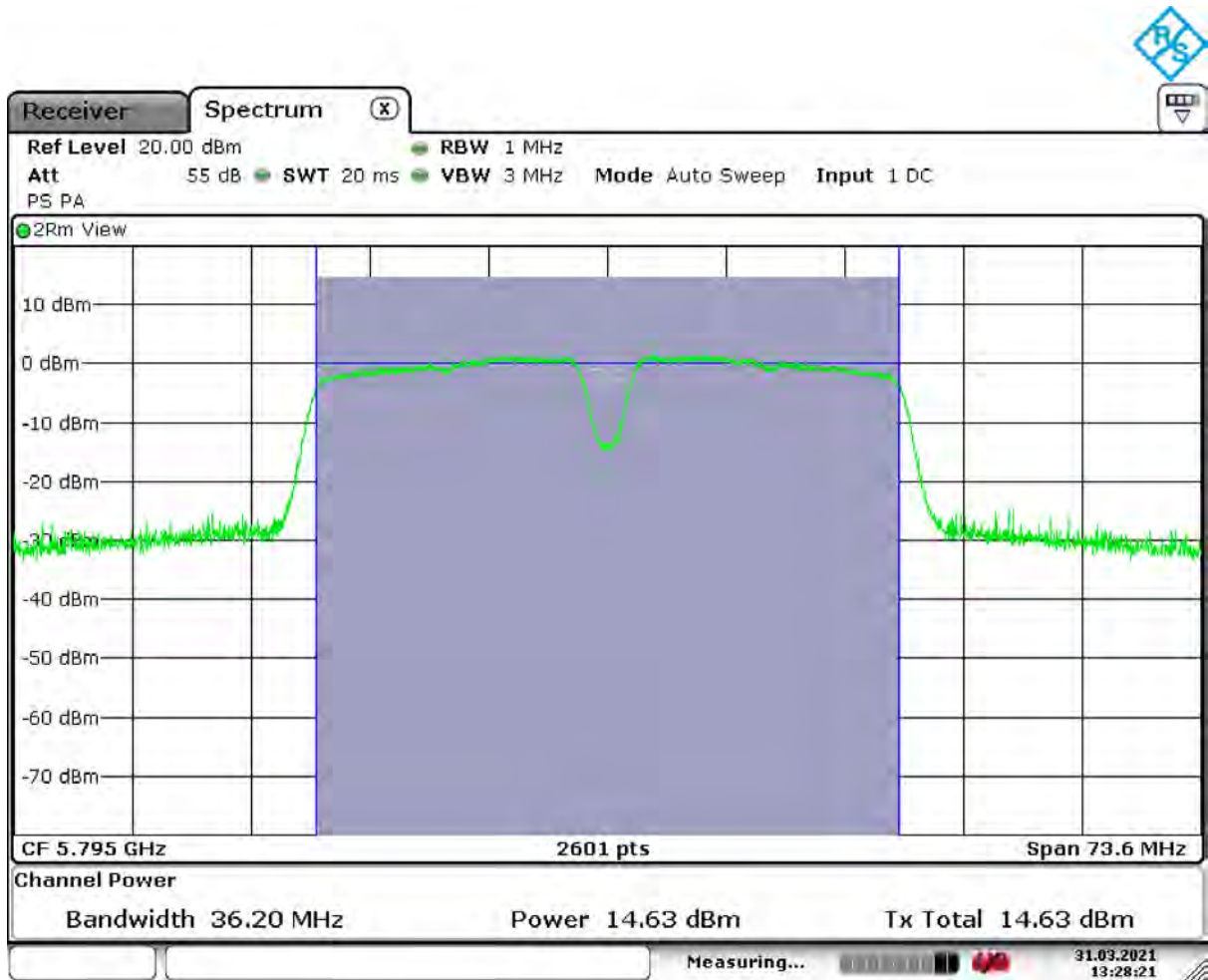
UNII 3, OFDM 40M, High Channel @ 85%



Date: 31.MAR.2021 13:27:42



UNII 3, OFDM 40M, High Channel @115%



Date: 31.MAR.2021 13:28:21



13 CONDUCTED EMISSIONS

13.1 Requirements

In accordance with FCC CFR 47 Part 15.207(a), "Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

13.2 Procedure

The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver via a transient limiter, and emissions in the range 150 kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak and average detectors as directed by the standard, and the resolution bandwidth during testing was 9 kHz. The raw measurements were corrected to allow for attenuation from the LISN, transient limiter and cables.

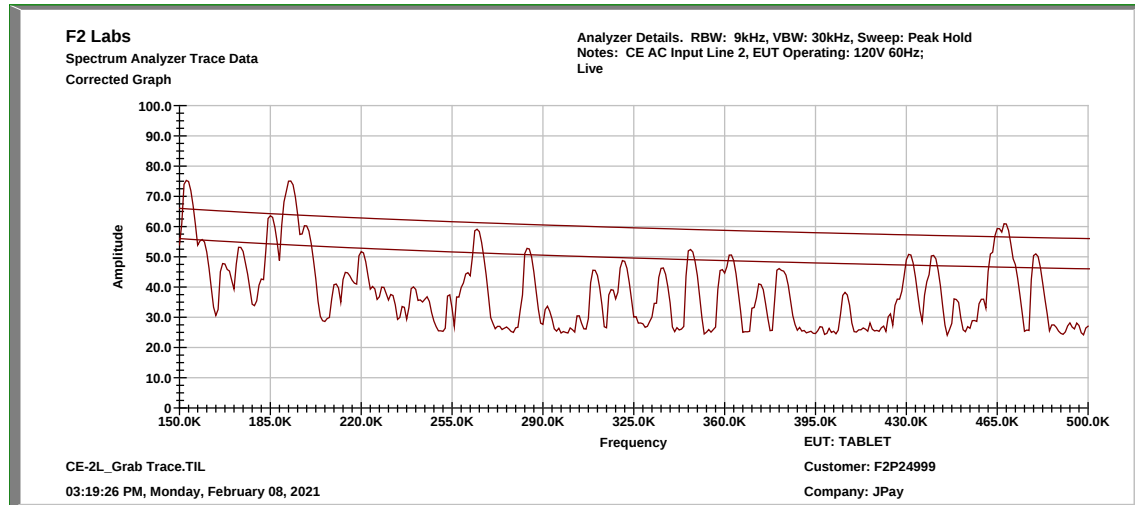
The following results are from the worse-case channel of the worse-case protocol, which was the high channel of OFDM 40M



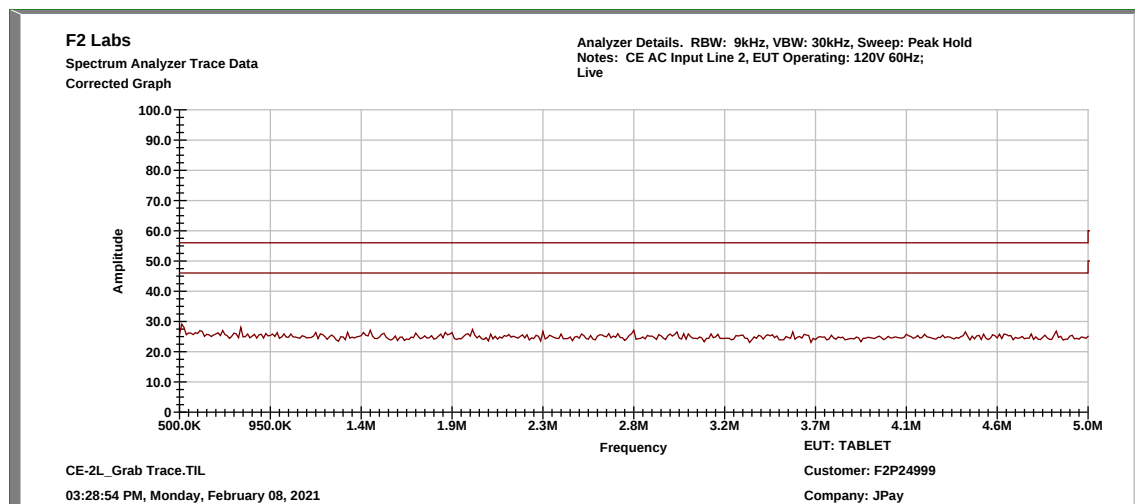
13.3 Conducted Emissions Test Data

Test Date:	2021-02-08	Test Engineer:	J. Chiller
Rule:	15.207	Air Temperature:	20.4° C
Test Results:	Pass	Relative Humidity:	33%

Conducted Test – Live: 0.15 MHz to 0.5 MHz

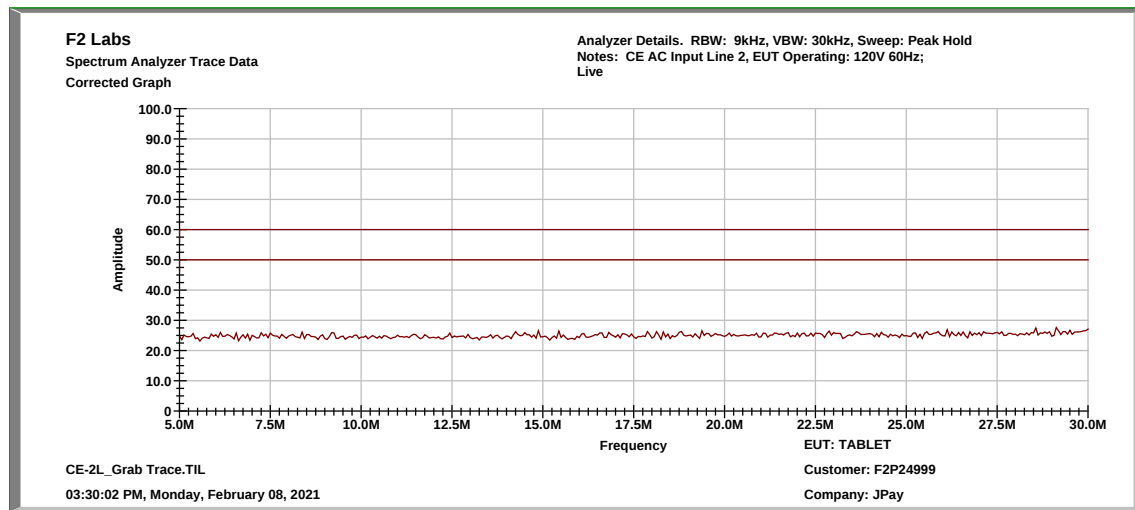


Conducted Test – Live: 0.5 MHz to 5.0 MHz





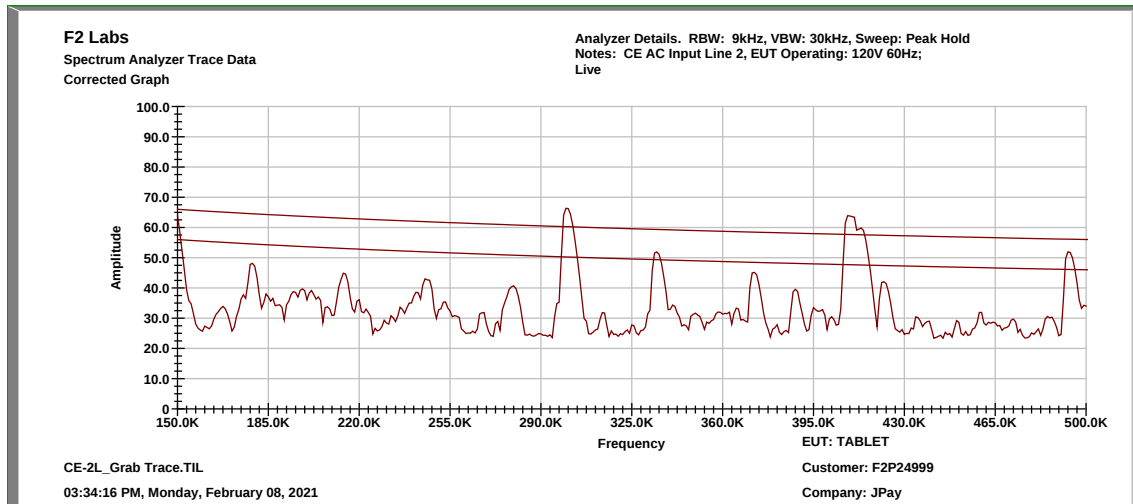
Conducted Test – Live: 5.0 MHz to 30.0 MHz



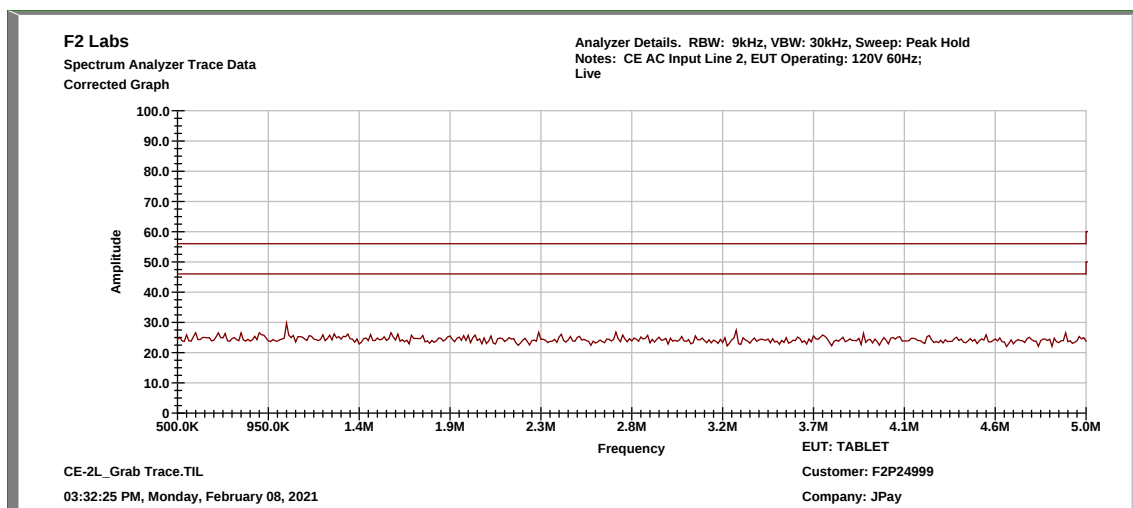
Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Live	0.1535	Quasi-Peak	40.11	11.024	51.13	65.81	-14.7
			Average	6.03	11.024	17.05	55.81	-38.8
2	Live	0.192875	Quasi-Peak	39.33	10.614	49.94	63.913	-14.0
			Average	5.2	10.614	15.81	53.913	-38.1
3	Live	0.2655	Quasi-Peak	34.25	10.618	44.87	61.257	-16.4
			Average	13.87	10.618	24.49	51.257	-26.8
4	Live	0.346875	Quasi-Peak	37.75	10.087	47.84	59.037	-11.2
			Average	12.6	10.087	22.69	49.037	-26.4
5	Live	0.4685	Quasi-Peak	14.72	10.029	24.75	56.541	-31.8
			Average	2.4	10.029	12.43	46.541	-34.1

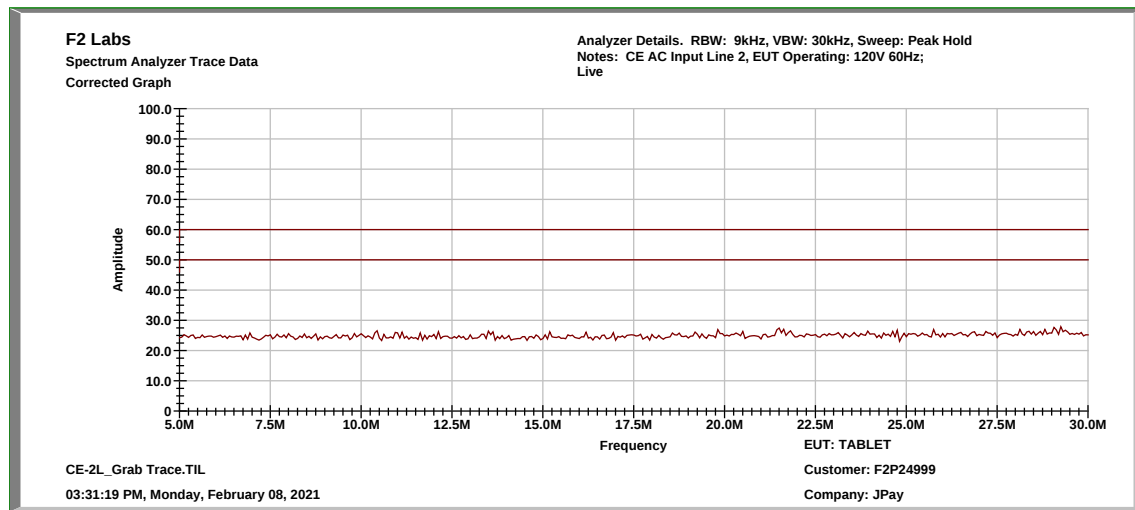


Conducted Test – Neutral: 0.15 MHz to 0.5 MHz



Conducted Test – Neutral: 0.5 MHz to 5.0 MHz



**Conducted Test – Neutral: 5.0 MHz to 30.0 MHz**

Top Discrete Measurements								
No.	Conductor	Frequency (MHz)	Detector	Level (dBμV)	Adjustment (dB)	Results (dBμV)	Limit (dBμV)	Margin (dB)
1	Neutral	0.150	Quasi-Peak	39.56	11.001	50.56	66.0	-15.4
			Average	3.62	11.001	14.62	56.0	-41.4
2	Neutral	0.3005	Quasi-Peak	26.21	10.09	36.30	60.229	-23.9
			Average	3.38	10.09	13.47	50.229	-36.8
3	Neutral	0.3355	Quasi-Peak	21.83	10.069	31.90	59.314	-27.4
			Average	3.41	10.069	13.48	49.314	-35.8
4	Neutral	0.409	Quasi-Peak	21.73	10.072	31.80	57.668	-25.9
			Average	3.02	10.072	13.09	47.668	-34.6
5	Neutral	0.493	Quasi-Peak	21.76	10.002	31.76	56.118	-24.4
			Average	3.1	10.002	13.10	46.118	-33.0



14 PHOTOGRAPHS

**Occupied Bandwidth, RF Output Power, Power Spectral Density,
Conducted Spurious Emissions, Voltage Variations**



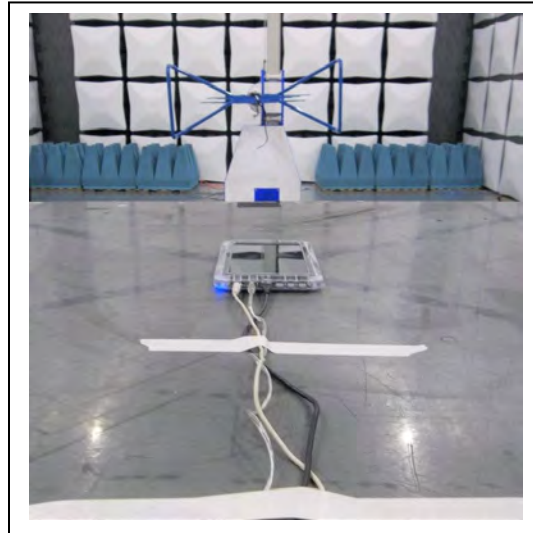


Radiated Spurious Emissions, Less Than 30 MHz





Radiated Spurious Emissions, 30 MHz to 1000 MHz



Radiated Spurious Emissions, above 1 GHz





Conducted Emissions

