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CERTIFICATION TEST REPORT

Manufacturer: Mischief Gadgets LLC
548 Market Street #61961
San Francisco, California 94104 USA

Applicant: Same As Above

Product Name: O.MG Core

Product Description: USB Cable with Embedded Wi-Fi Interface

**Operating Voltage/Freq.
of EUT During Testing:** 5V from USB

Model: O.MG Core

FCC ID: 2A4H3-OMG01

Testing Commenced: 2021-10-29

Testing Ended: 2022-04-22

Summary of Test Results: In Compliance

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications and/or manufacturer's statement. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Standards:

- **FCC Part 15 Subpart C, Section 15.247**
- **FCC15.207 - Conducted Limits**
- **FCC Part 15.31(e)**
- **ANSI C63.10:2013**



Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

Evaluation Conducted by:

Julius Chiller, EMC/Wireless Engineer

Report Reviewed by:

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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 the 2013 version of ANSI C63.10 and recommended FCC procedure of measurement of DTS operating under Section 15.247 and in KDB558074. 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. Note: Only measurements listed below which relate to tests included in this Test Report are applicable to it.

Measurement Range	Expanded Uncertainty	Combined Uncertainty
Radiated Emissions <1 GHz @ 3m	$\pm 5.07\text{dB}$	± 2.54
Radiated Emissions <1 GHz @10m	$\pm 5.09\text{dB}$	± 2.55
Radiated Emissions 1 GHz to 2.7 GHz	$\pm 3.62\text{dB}$	± 1.81
Radiated Emissions 2.7 GHz to 18 GHz	$\pm 3.10\text{dB}$	± 1.55
AC Power Line Conducted Emissions, 150kHz to 30 MHz	$\pm 2.76\text{dB}$	± 1.38

This Uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

1.4 Document History

Document Number	Description	Issue Date	Approved By
F2P26156A-01E	First Issue	2022-04-27	K. Littell

**2 SUMMARY OF TEST RESULTS**

Test Name	Standard(s)	Results
Occupied Bandwidth	CFR 47 Part 15.247(a)(2) / KDB558074	Complies
Conducted Output Power	CFR 47 Part 15.247(b)(3) / KDB558074	Complies
Voltage Variations	CFR 47 Part 15.31(e)	Complies
Conducted Spurious Emissions	CFR 47 Part 15.247(d) / Part 15.207 / KDB558074	Complies
Radiated Spurious Emission with 2dBi Chip Antenna	CFR 47 Part 15.247(d) / Part 15.209 / KDB558074	Complies
Peak Power Spectral Density	CFR 47 Part 15.247(e) / KDB558074	Complies
Frequency Separation	ANSI 63.10 2013 (7.8.2)	N/A
Number of Hopping Frequencies	ANSI 63.10 2013 (7.8.3)	N/A
Dwell Time	ANSI 63.10 2013 (7.8.4)	N/A
Conducted Emissions	CFR 47 Part 15.207(a)	Complies

Modifications Made to the Equipment
None



3 TABLE OF MEASURED RESULTS

Test		Low Channel 2.412 GHz	Mid Channel 2.437 GHz	High Channel 2.462 GHz
Conducted Output Power, Peak	OFDM	126.47mW / 21.02dBm	122.18mW / 20.87dBm	103.99mW / 20.17dBm
	MCS0	190.99mW / 22.81dBm	209.41mW / 23.21dBm	201.37mW / 23.04dBm
	MCS7	101.86mW / 20.08dBm	93.54mW / 19.71dBm	95.50mW / 19.80dBm
	CCK 11	119.67mW / 20.78dBm	102.8mW / 20.12dBm	103.4mW / 20.13dBm
Conducted Output Power Limit		1 Watt, (30dBm)	1 Watt, (30dBm)	1 Watt, (30dBm)
E.I.R.P. with 2dBi Chip Antenna	OFDM	200.45mW / 23.02dBm	193.64mW / 22.87dBm)	164.82mW / 22.17dBm
	MCS0	302.69mW / 24.81dBm	331.89mW / 25.21dBm	319.15mW / 25.04dBm
	MCS7	161.44mW / 22.08dBm	148.25mW / 21.71dBm	151.36mW / 21.80dBm
	CCK 11	189.6mW / 22.78dBm	162.93mW / 22.12dBm	163.3mW / 22.13dBm
E.I.R.P. Limit		4 Watts / 36.02dBm	4 Watts / 36.02dBm	4 Watts / 36.02dBm
Peak Power Spectral Density	OFDM	-12.66dBm	-14.12 dBm	-13.21 dBm
	MCS0	-7.94dBm	-8.23dBm	-7.77dBm
	MCS7	-12.73dBm	-13.30dBm	-12.96dBm
	CCK 11	-7.19dBm	-6.38dBm	-6.35dBm
Peak Power Spectral Density Limit	8dBm	8dBm	8dBm	Peak Power Spectral Density Limit



Test		Low Channel 2.412 GHz	Mid Channel 2.437 GHz	High Channel 2.462 GHz
-6dB Occupied Bandwidth	OFDM	16.566 MHz	16.538 MHz	16.49 MHz
	MCS0	16.999 MHz	16.797 MHz	16.874 MHz
	MCS7	17.752 MHz	17.742 MHz	17.759 MHz
	CCK 11	10.223 MHz	10.159 MHz	9.903 MHz
-6dB Occupied Bandwidth Limit		≥ 500 kHz	≥ 500 kHz	≥ 500 kHz
99% Occupied Bandwidth	OFDM	17.325	17.325	17.325
	MCS7	18.900	18.900	18.825
	CCK 11	13.200 MHz	13.240 MHz	13.240 MHz
99% Occupied Bandwidth Limit		>500kHz	>500kHz	>500kHz
Voltage Variations, OFDM	-15%	19.21dBm	18.99dBm	19.43dBm
	-15%	83.37mW	79.25mW	87.7mW
	+15%	20.04dBm	19.98dBm	20.68dBm
	+15%	100.9mW	99.54mW	116.9mW
Limit		1W 30dBm	1W 30dBm	1W 30dBm

**To meet the requirements of 15.31, voltage was varied by ±15% of the nominal voltage. All tests were then performed at the highest output power voltage setting.*



4 ENGINEERING STATEMENT

This report has been prepared on behalf of Mischief Gadgets LLC to provide documentation for the testing described herein. This equipment has been tested and found to comply with Part 15.247 of the FCC Rules using ANSI C63.10:2013 and KDB558074 standards. The test results found in this test report relate only to the items tested.

**5 EUT INFORMATION AND DATA****5.1 Equipment Under Test:**Product: **O.MG Core**Model: **O.MG Core**

Serial No.: None Specified

FCC ID: **2A4H3-OMG01****5.2 Trade Name:**

Mischief Gadgets LLC

**5.3 Power Supply:
USB Interface****5.4 Applicable Rules:**

CFR 47, Part 15.247, subpart C

5.5 Equipment Category:

Radio Transmitter-DTS

5.6 Antenna:

2dBi Chip

5.7 Accessories:

Device	Manufacturer	Model Number	Serial Number
Laptop	Dell	7490	10075
USB Interface	Mischief Gadgets LLC	None Specified	None Specified

5.8 Test Item Condition:

The equipment to be tested was received in good condition.

5.9 Testing Algorithm:

The EUT was set to transmit on low, mid and high channels in the 2.4 GHz Wi-Fi band, OFDM54, MCS7 20 MHz and CCK 11 modulations. EUT was controlled with ESP RF Test Tool Software v2.8. The highest emissions were recorded in the data tables.

**6 LIST OF MEASUREMENT INSTRUMENTATION**

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	Albatross Projects	B83117-DF435-T261	US140023	2022-03-09
Temp/Hum. Recorder	CL232	Extech	445814	01	2022-03-04
Temp/Hum. Recorder	CL234	Extech	445814	03	2022-03-08
Receiver	CL151	Rohde & Schwarz	ESU40	100319	2022-07-08
Receiver	CL204	Rohde & Schwarz	ESR7	101714	2023-03-30
Low Loss Cable Set	--	Pasternack	PE3C0666-252 / PE3C066-50CM	None Spec.	2023-10-12
Amplifier w/Monopole & 18"	CL163-Loop	A.H. Systems, Inc.	EHA-52B	100	2022-09-14
Antenna, Horn	CL114	A. H. Systems, Inc.	SAS-572	237	2023-07-30
Pre-Amplifier	CL153	Keysight Tech.	83006A	MY39500791	2022-02-12
Pre-Amplifier	CL285	Com-Power	PAM-0207	322	2022-07-08
Antenna, JB3 Combination	CL175	Sunol Sciences	JB3	A030315	2022-09-14
Horn Antenna	CL098	Emco	3115	9809-5580	2022-01-08
Software:	Tile Version 3.4.B.3		Software Verified: 2021-10-29 to 2021-11-23, 2021-12-03		
Software:	EMC 32, Version 8.53.0		Software Verified: 2021-10-29 to 2021-11-23; 2022-04-20		
Temp/Hum. Recorder	CL234	Extech	445814	03	2022-03-08
Transient Limiter	0202	Hewlett Packard	11947A	3107A00729	2022-02-04
Spectrum Analyzer	CL147	Agilent	E7402A	MY45101241	2022-03-25
LISN	CL181	Com-Power	LI-125A	191226	2023-12-01
LISN	CL182	Com-Power	LI-125A	191225	2023-12-01



7.0 FCC PART 15.247(a)(2) – OCCUPIED BANDWIDTH

7.1 Requirements:

The 6dB bandwidth shall be greater than 500 kHz.

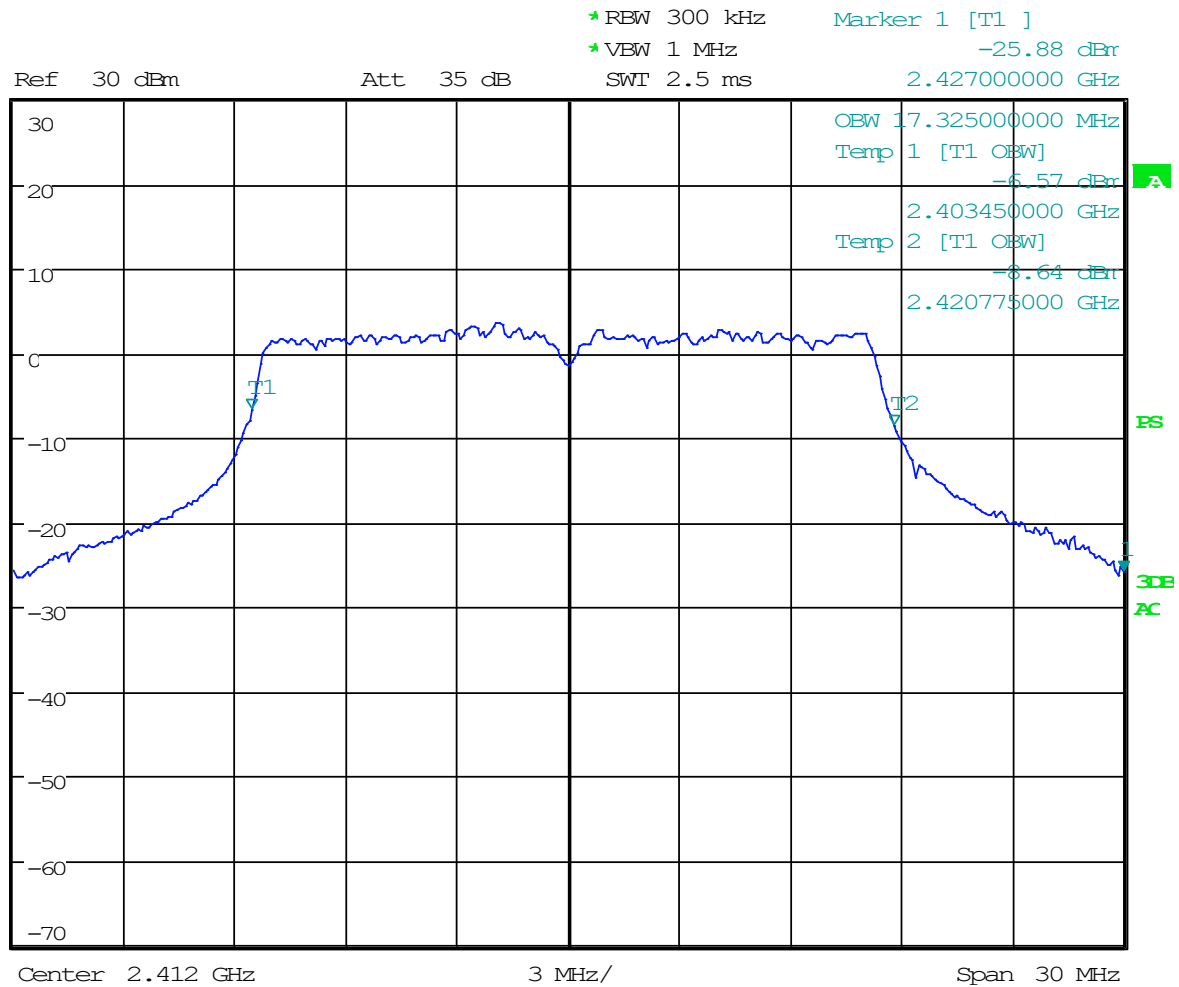
Bandwidth measurements were made at the low (2.412 GHz), mid (2.437 GHz) and upper (2.462 GHz) frequencies with the resolution Bandwidth set at 100 kHz (video bandwidth set at 300 kHz) while the span was set at 3MHz. The bandwidth was measured using the analyzer's marker function.



7.2 Occupied Bandwidth Test Data

Test Date:	2021-11-17	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	20.9°C
		Relative Humidity:	34%

99%, OFDM, Low Channel



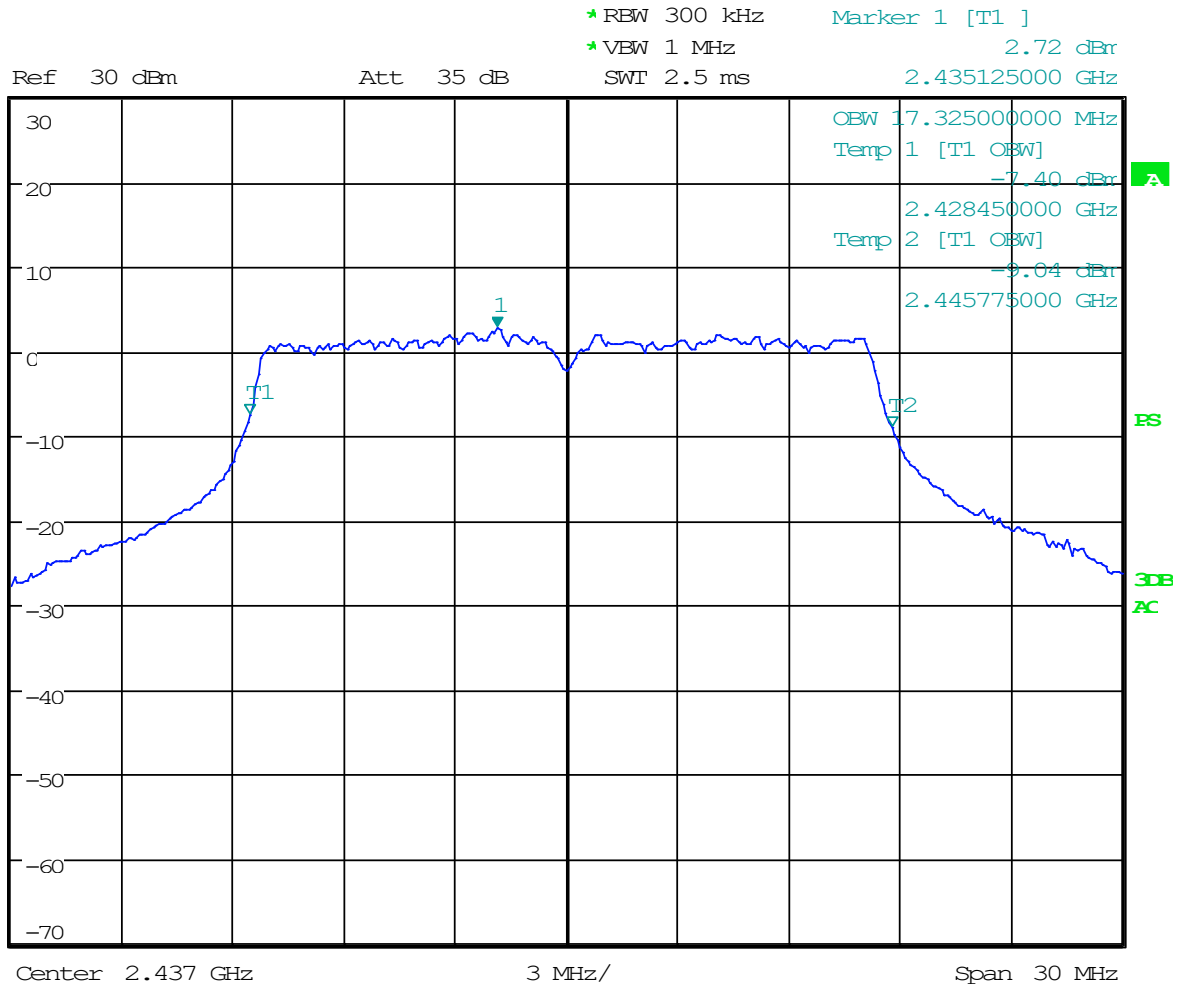
F2P26156A-01E



99%, OFDM, Mid Channel



1. E3
V120



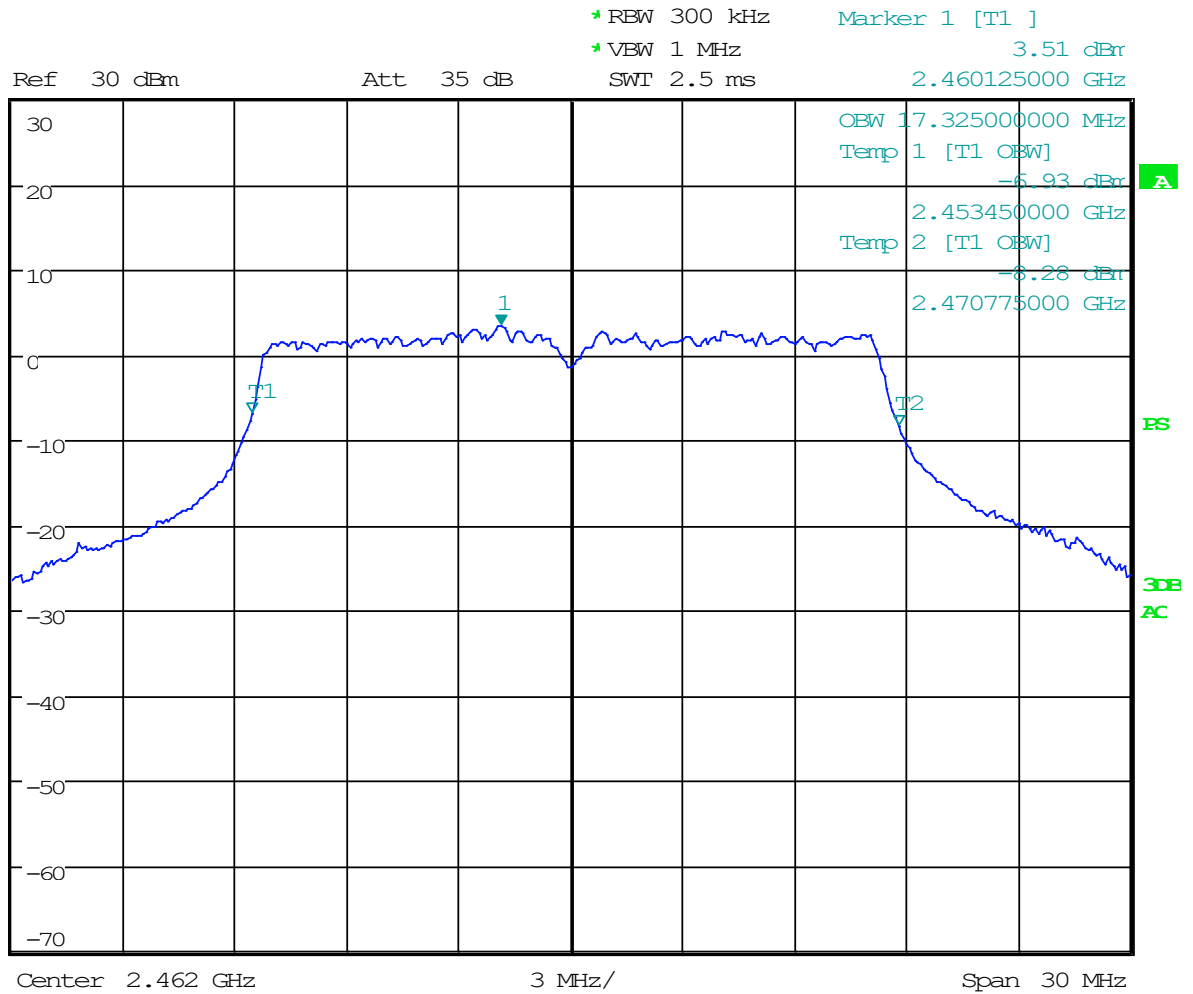
17 NOV 2021 14:33:27



99%, OFDM, High Channel

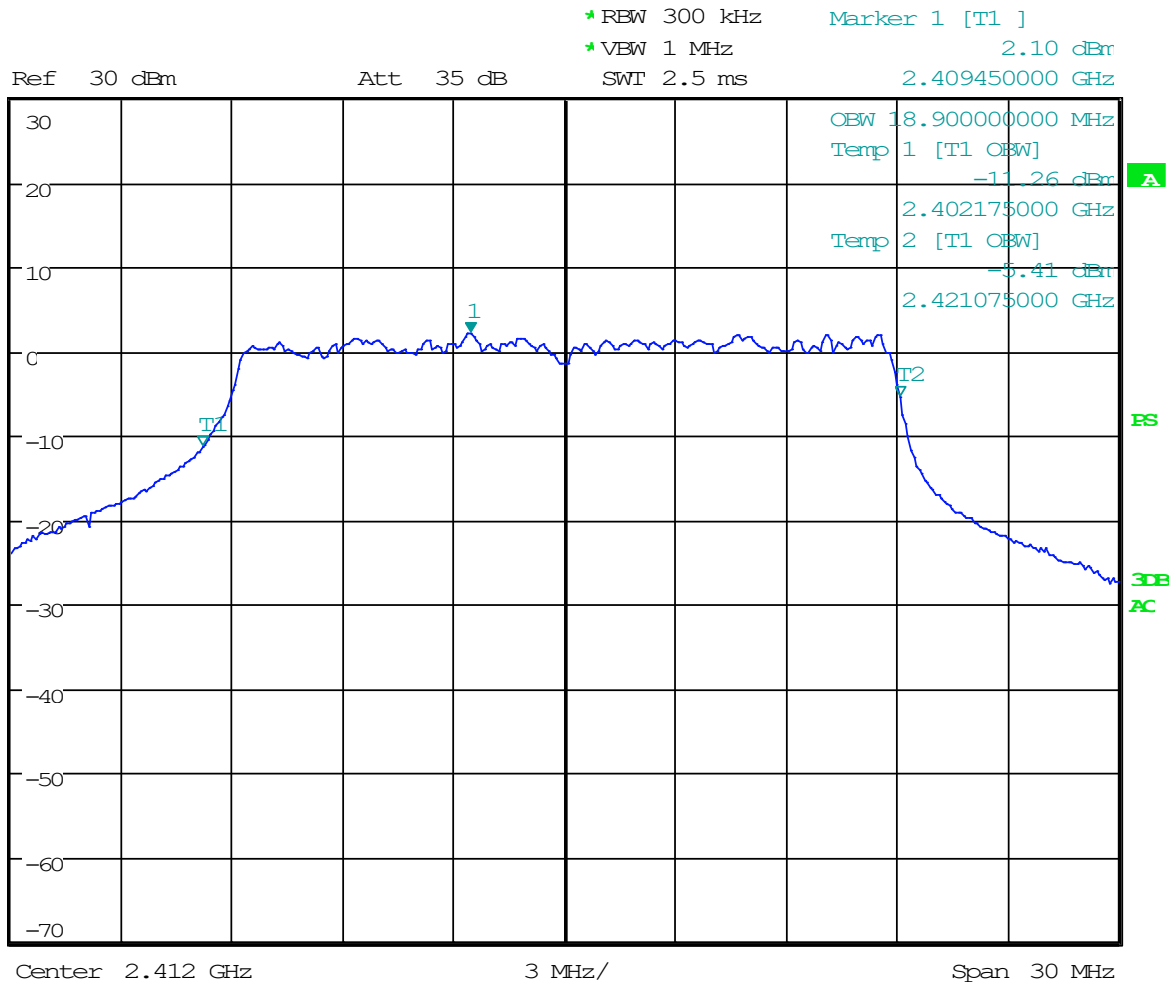


1.8K
V18A





99%, MCS7, Low Channel



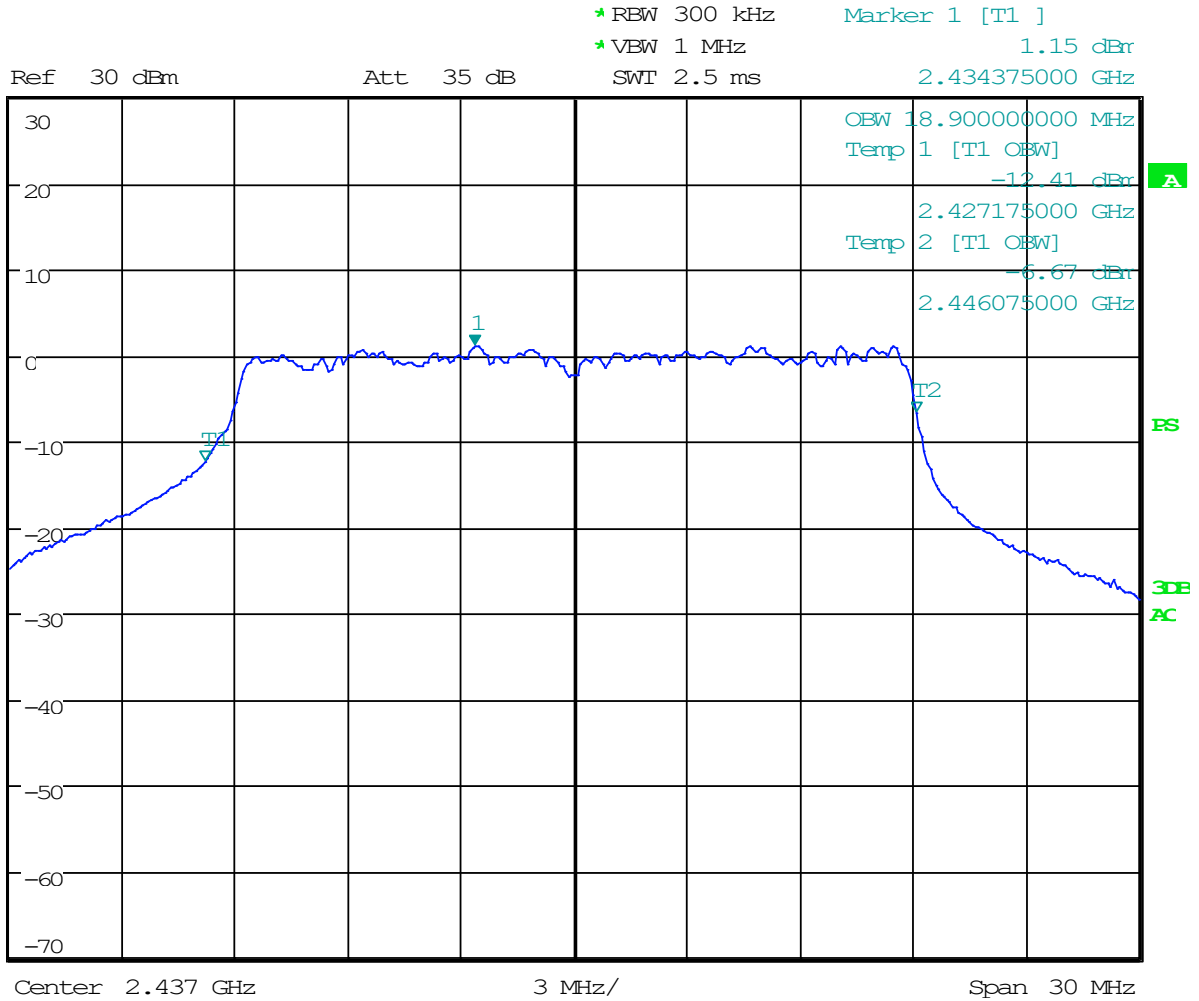
Date: 17 NOV 2021 14:39:52



99%, MCS7, Mid Channel



1 PK
VIEW

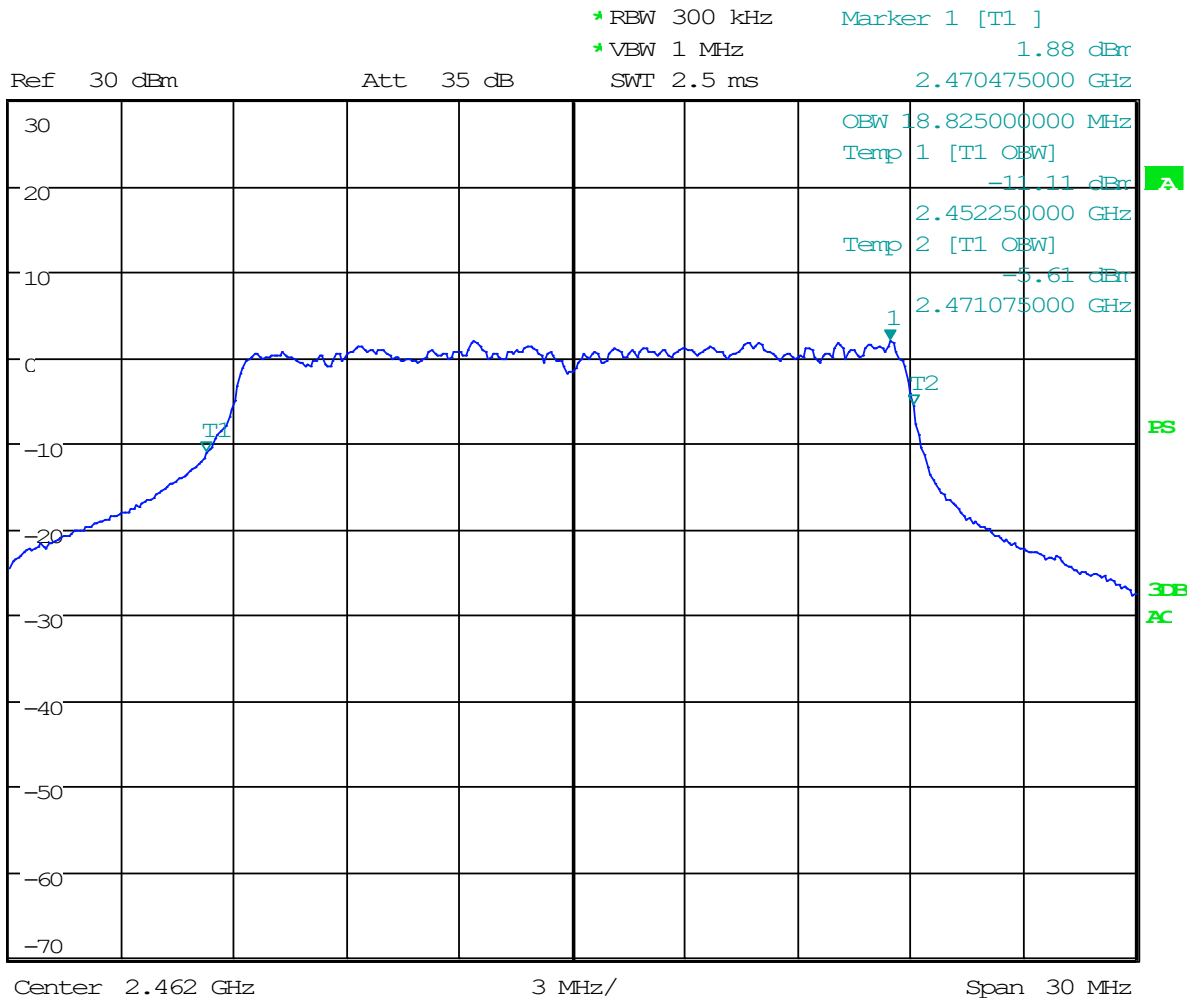




99%, MCS7, High Channel

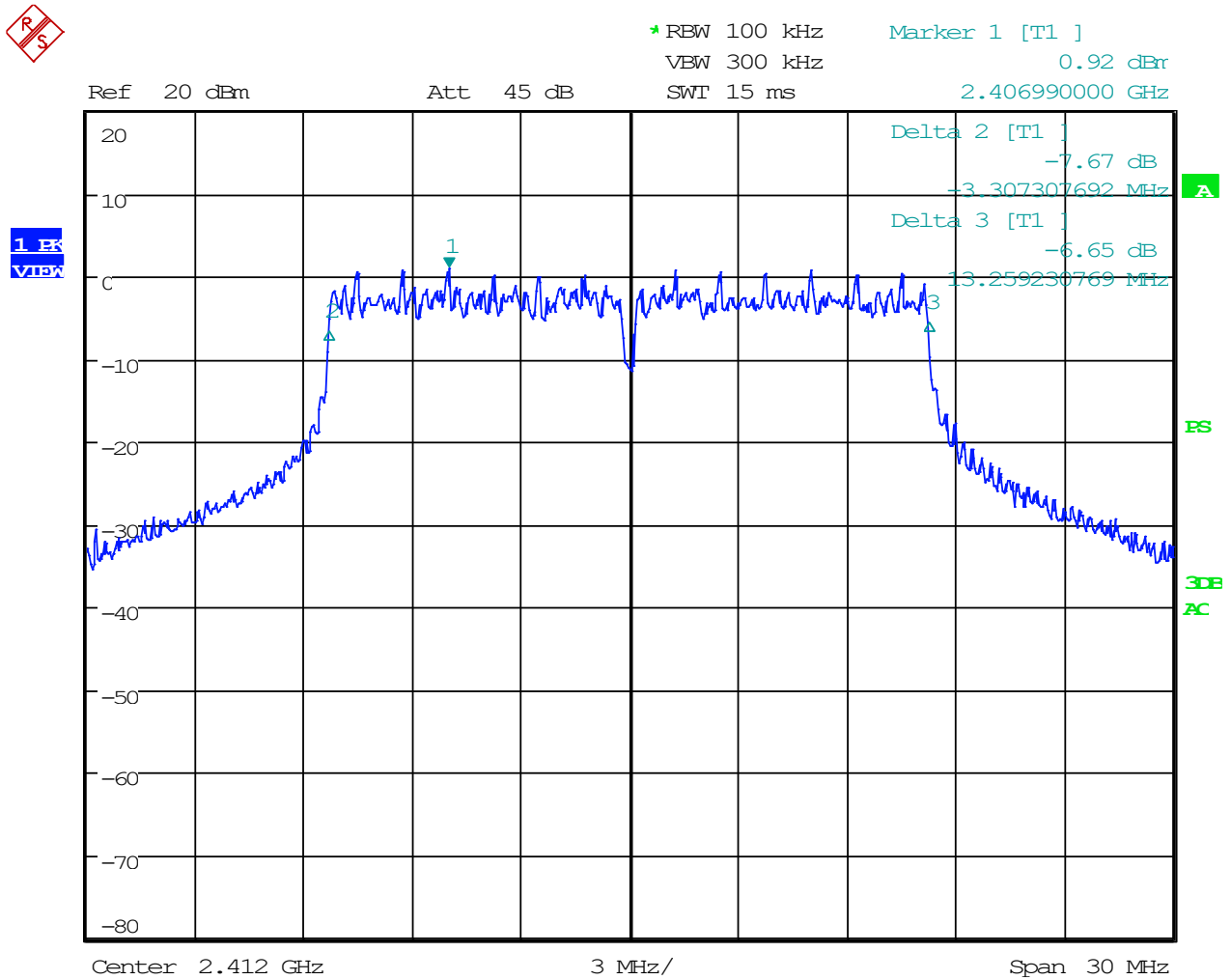


1.83
V180





-6dB, OFDM, Low Channel

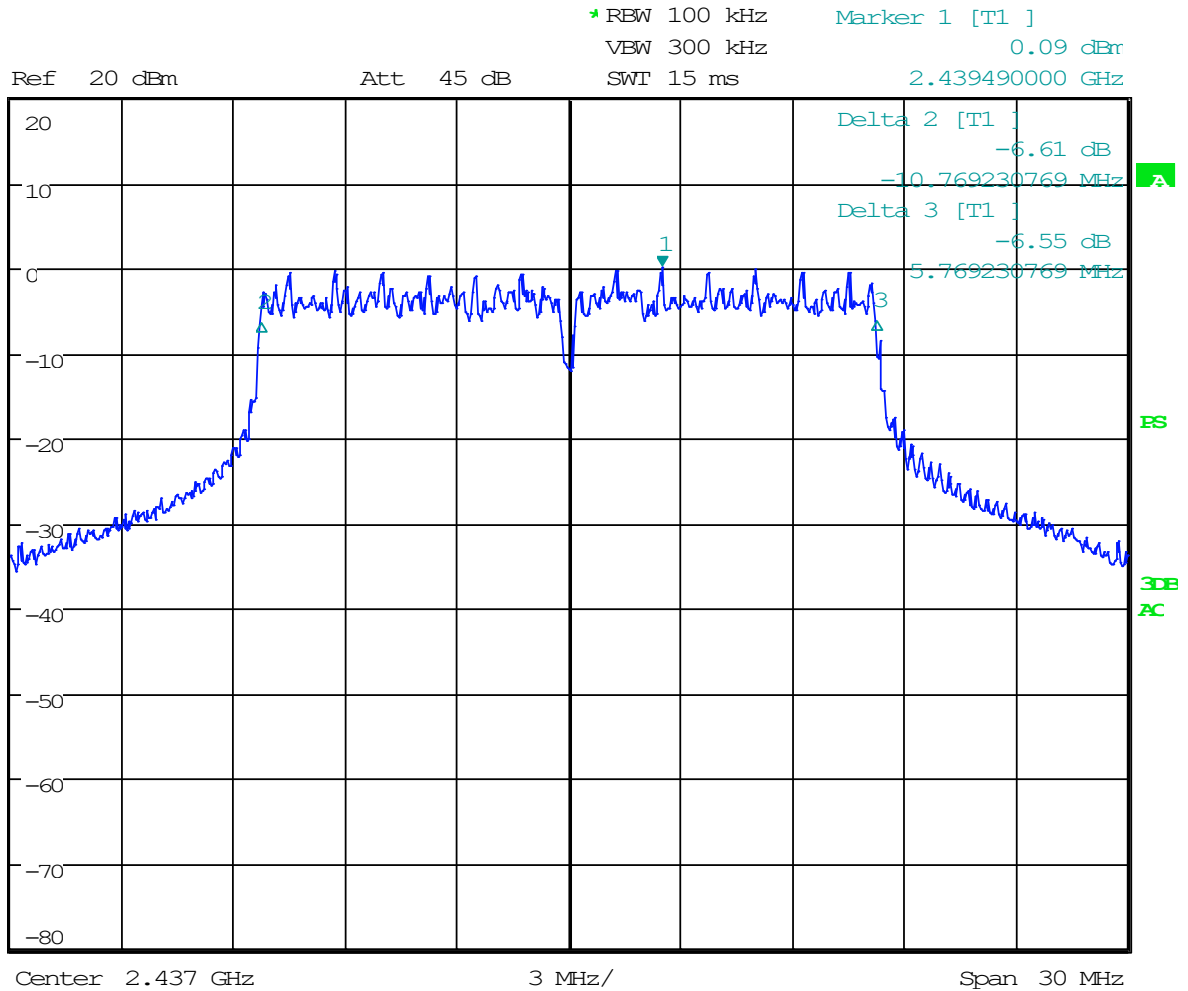




-6dB, OFDM, Mid Channel

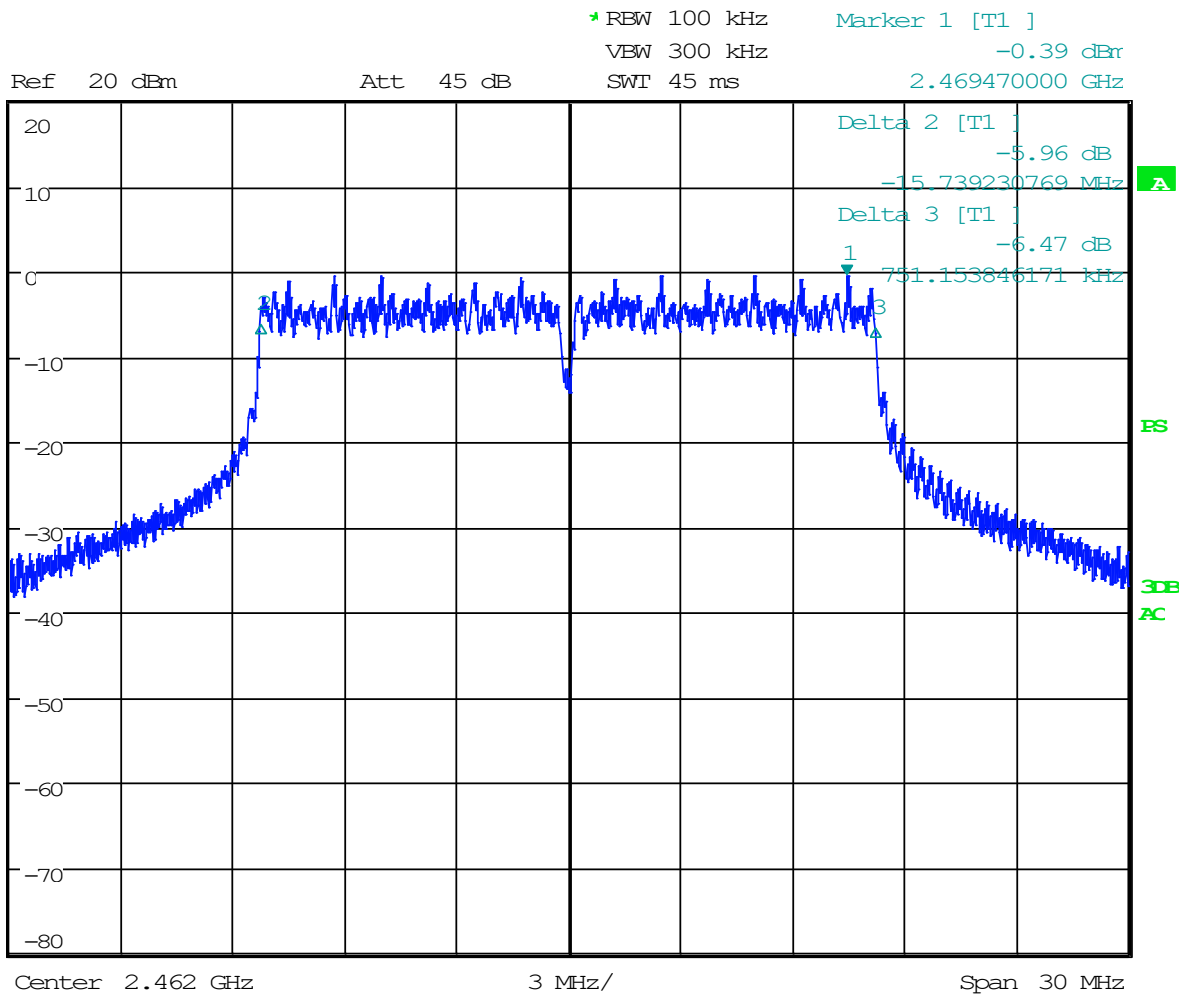


1 PK
MAX



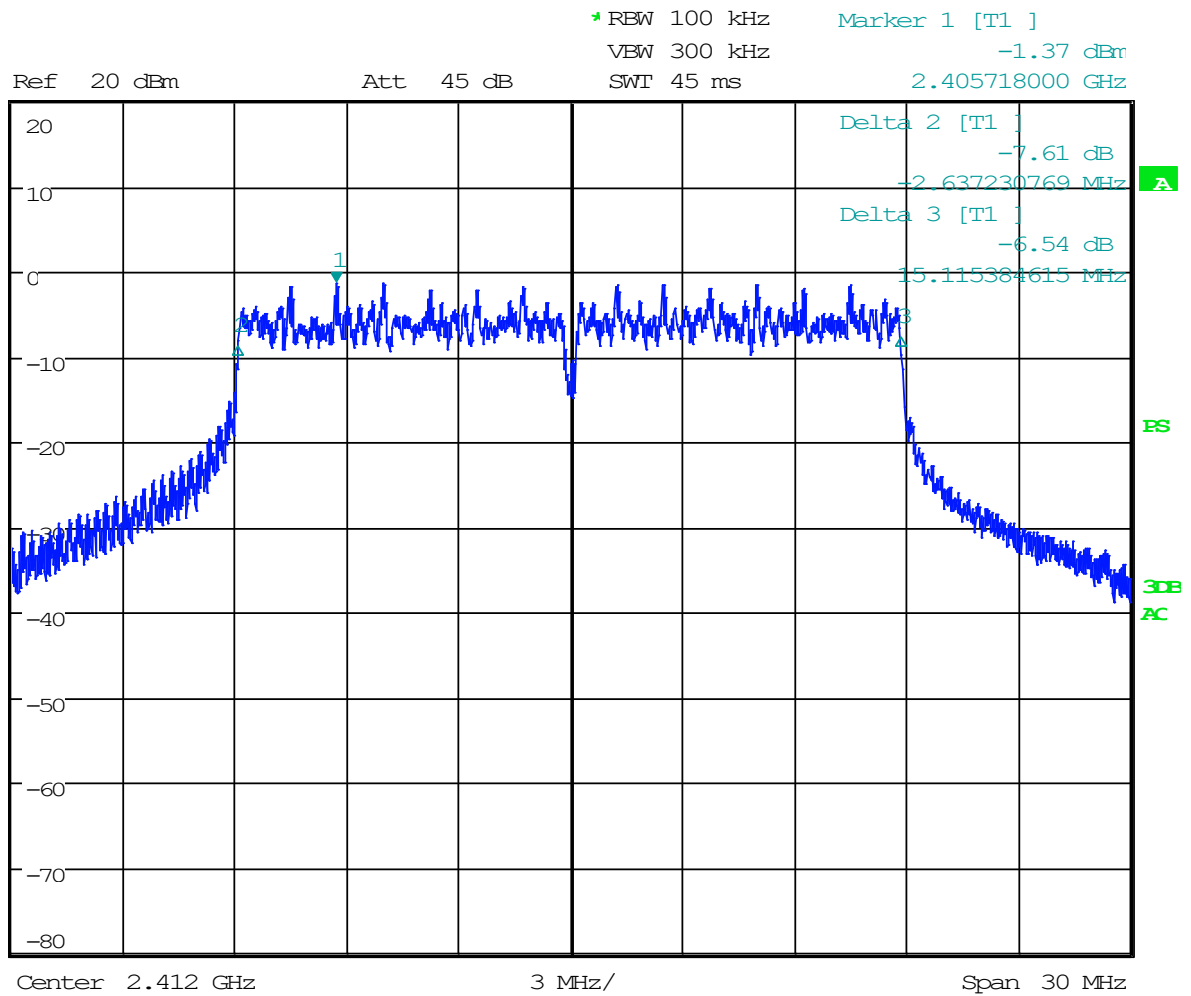


-6dB, OFDM, High Channel





-6dB, MCS7, Low Channel

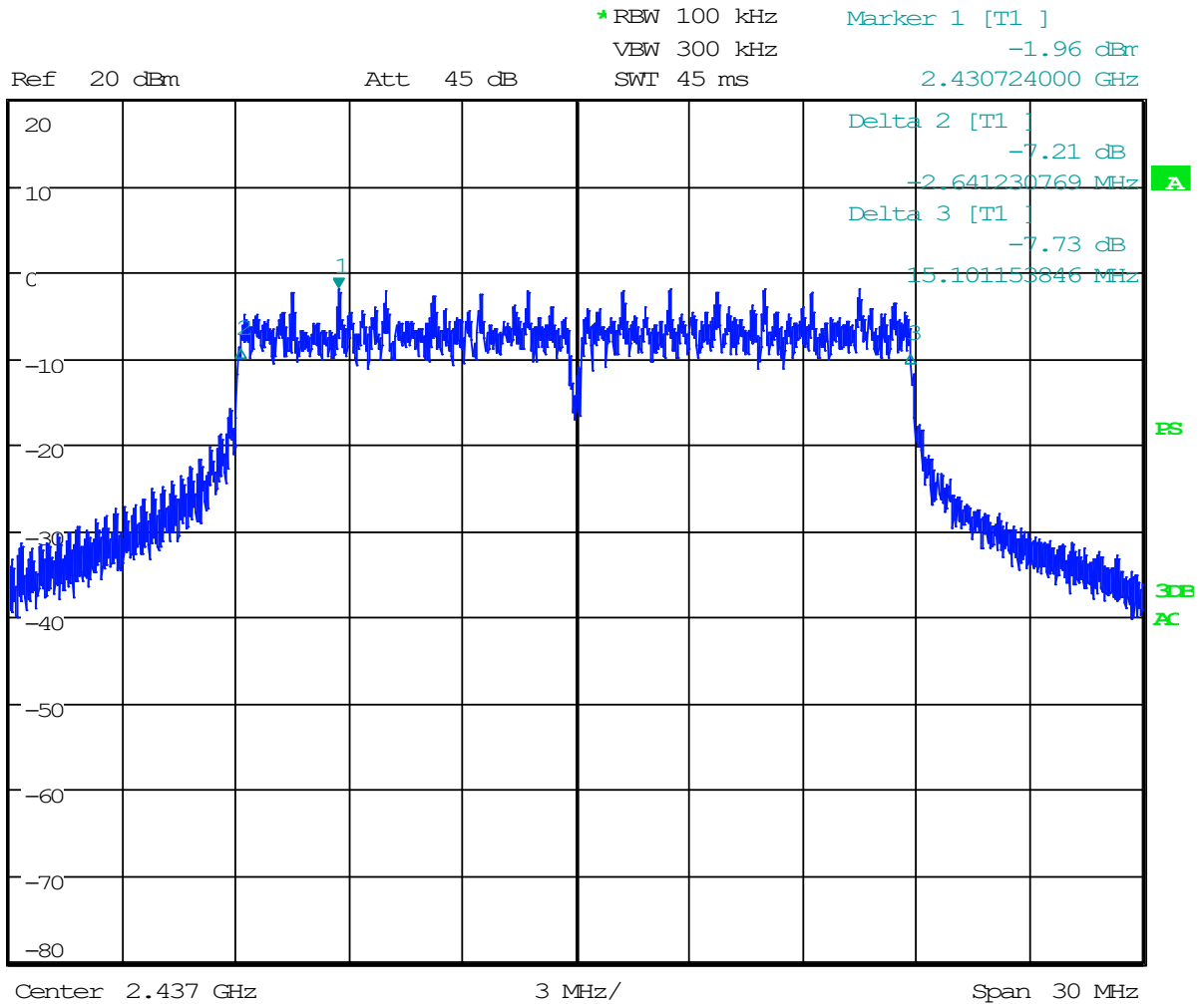




-6dB, MCS7, Mid Channel

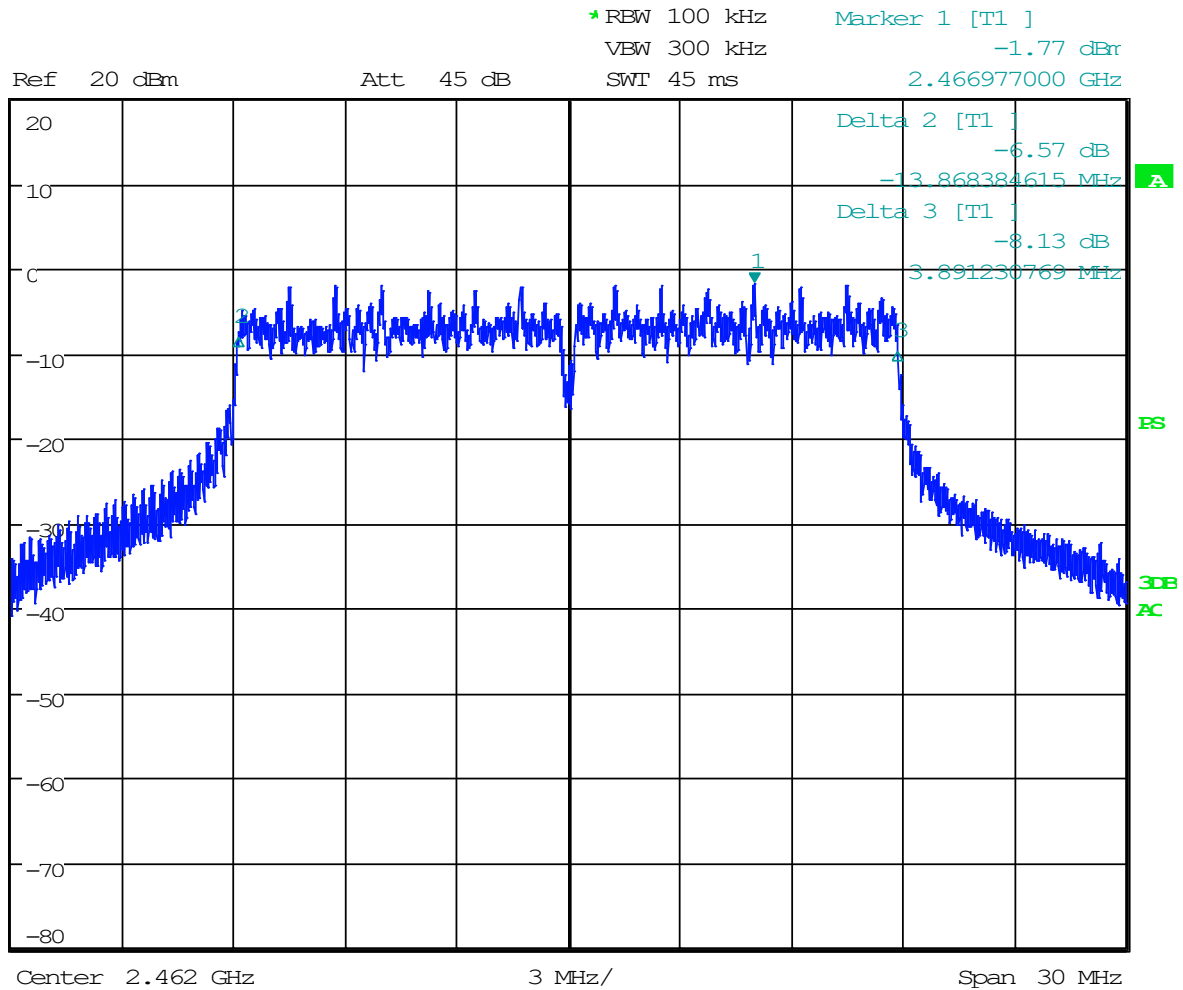


1.6K
VIEW





-6dB, MCS7, High Channel





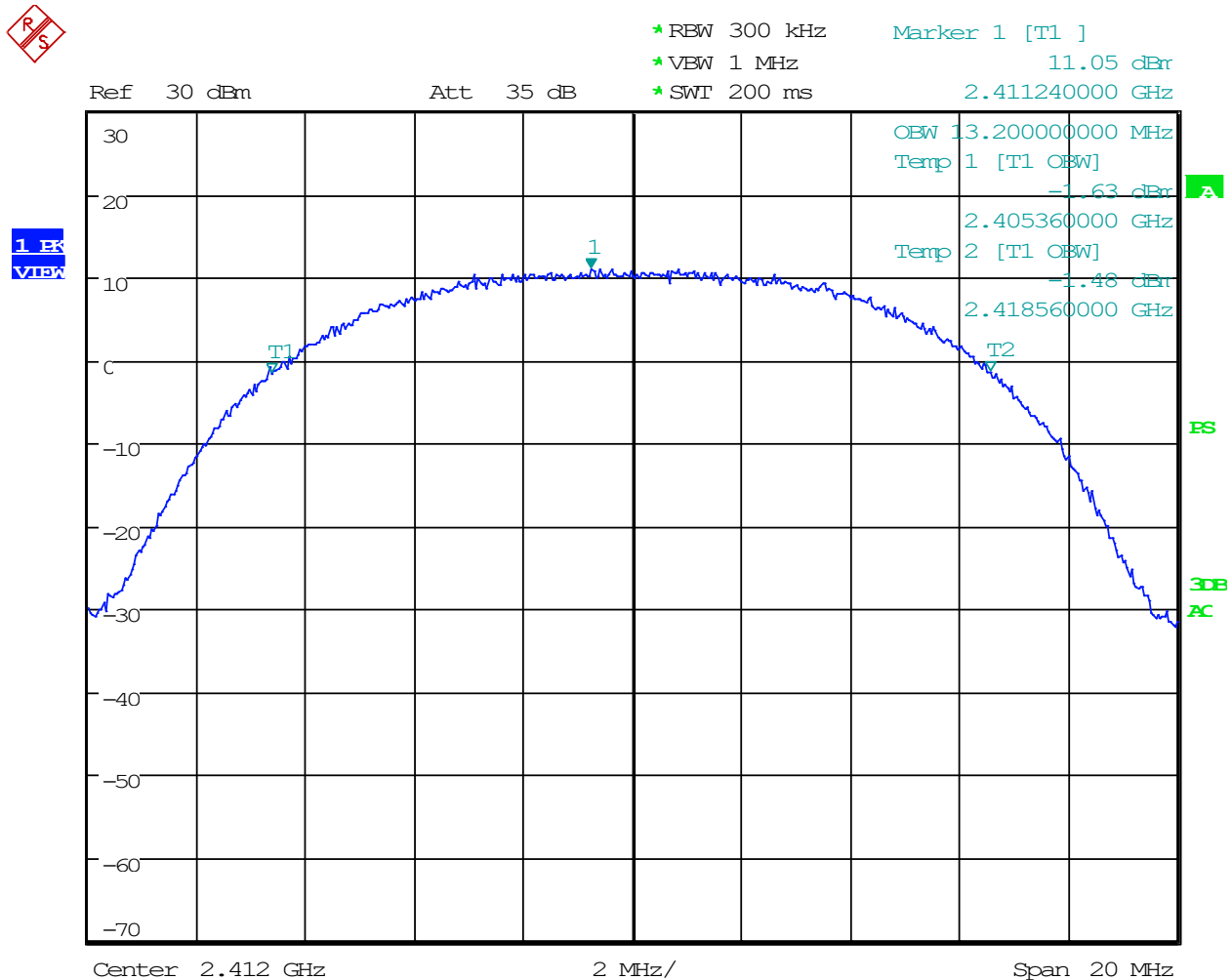
Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

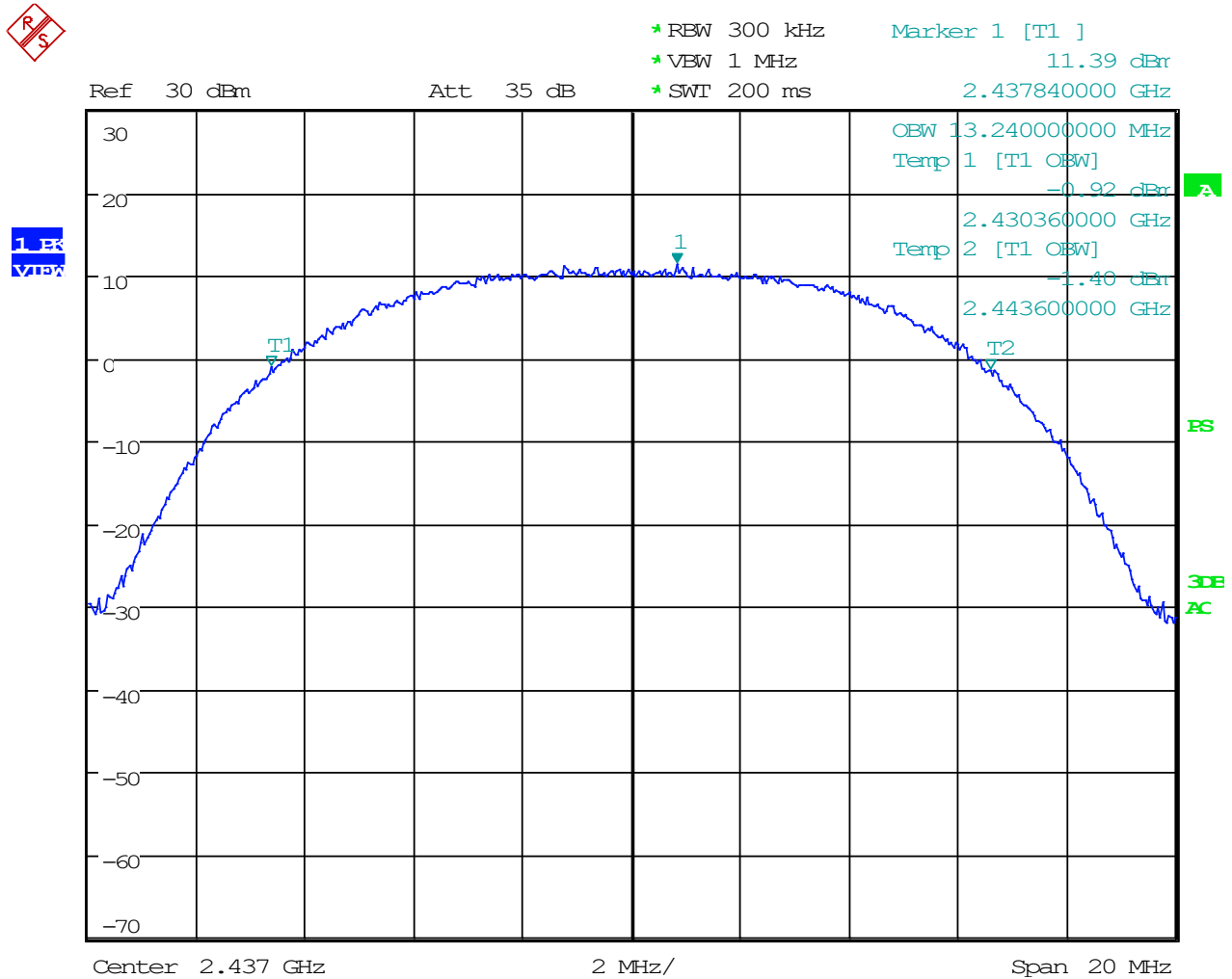
Model: O.MG Core

Test Date:	2022-04-22	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(a)(2); KDB558074	Air Temperature:	21.9°C
		Relative Humidity:	31%

99%, CCK 11, Low Channel



99%, CCK 11, Mid Channel

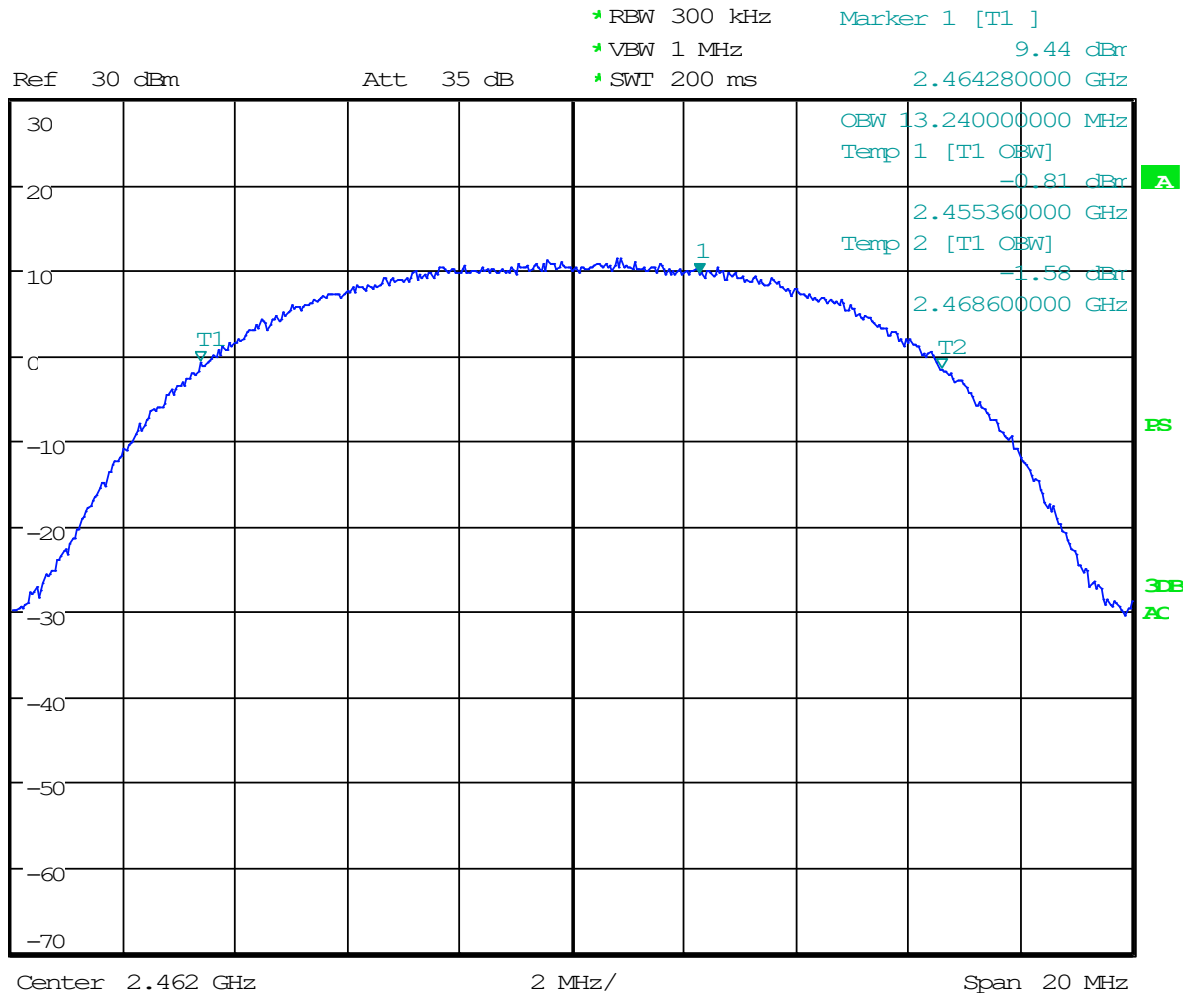




99%, CCK 11, High Channel

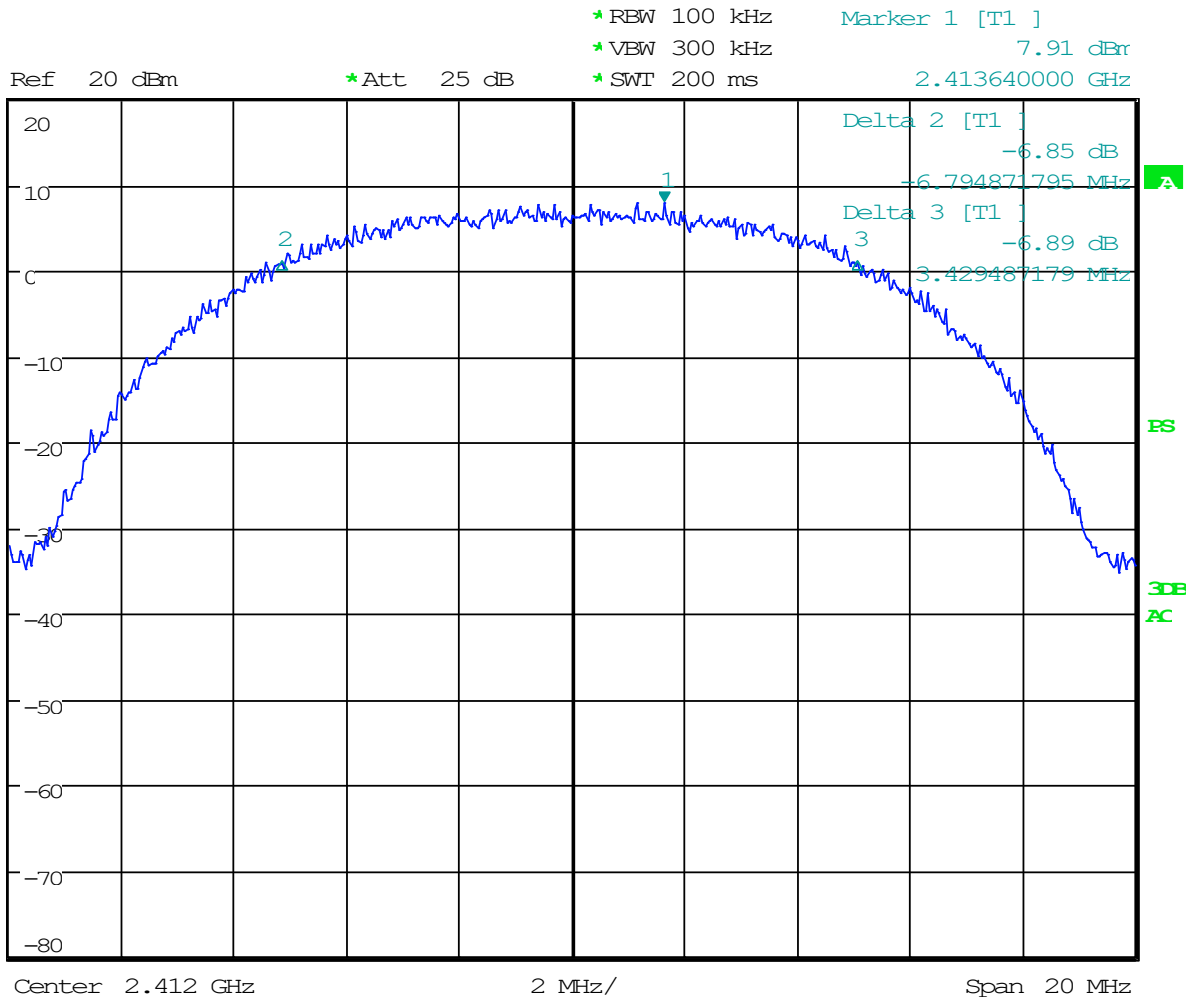


1 F2
VIEW





-6dB, CCK 11, Low Channel

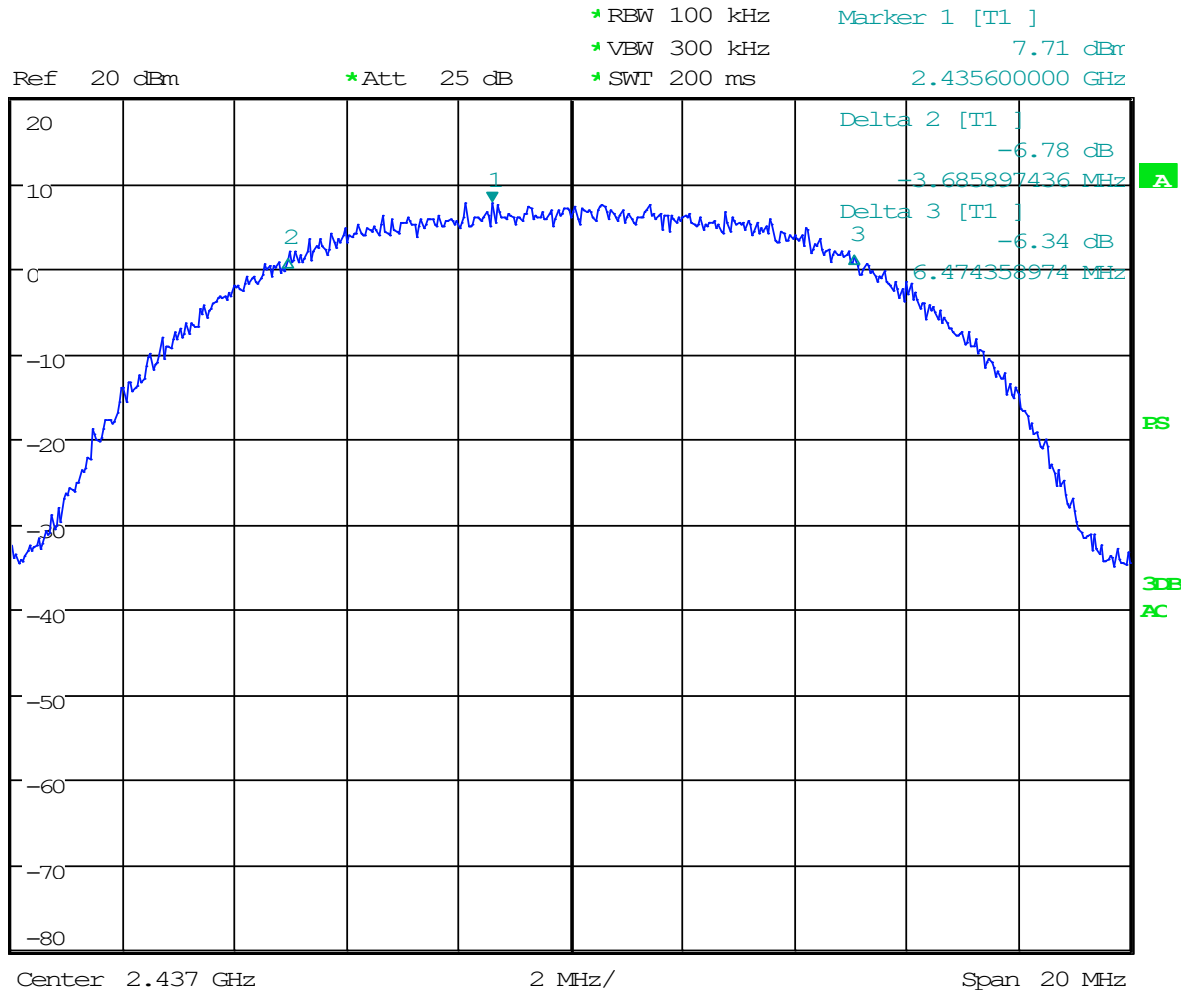




-6dB, CCK 11, Mid Channel

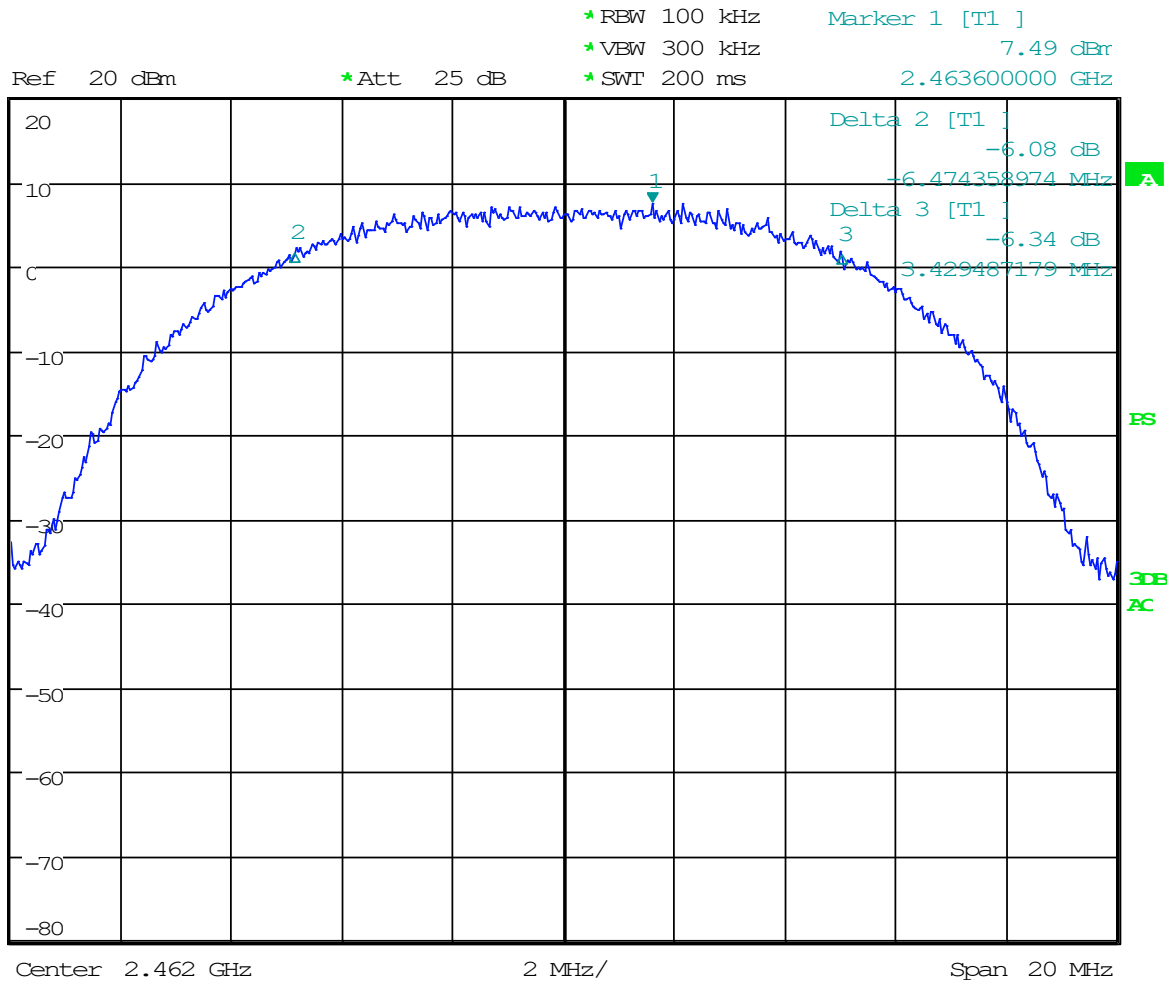


1 BK
VIB





-6dB, CCK 11, High Channel



Date: 22 APR 2022 12:21:20



8 FCC PART 15.247(b)(3) – CONDUCTED 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.

Requirements:

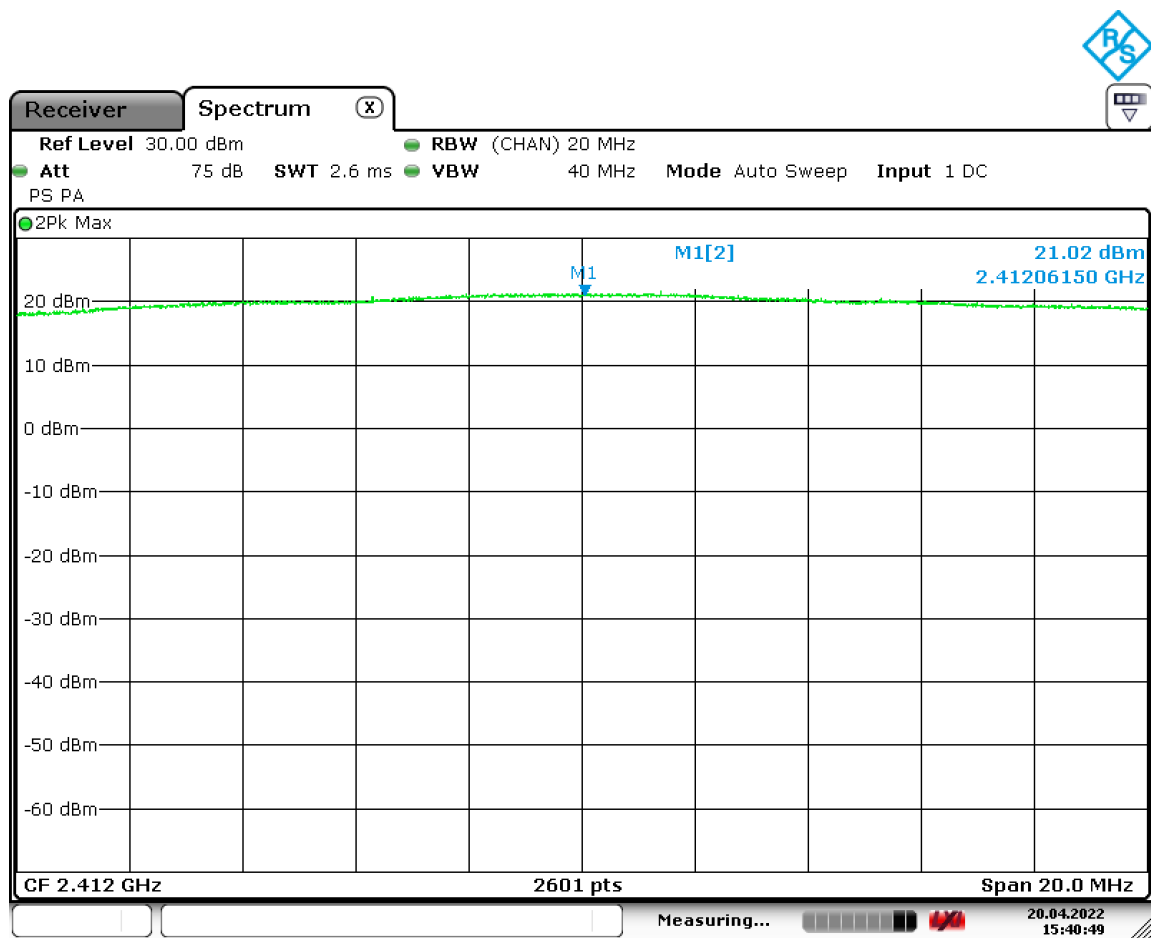
The peak power output shall be 1 watt (30dBm) or less when using an antenna with a gain of less than 6dBi. For antennas having a gain of more than 6dBi, the limit shall be reduced by 1dB for every dB the antenna gain is over 6dBi.



8.1 Conducted Output Power Test Data

Test Date:	2022-04-20	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	23.3°C
		Relative Humidity:	25%

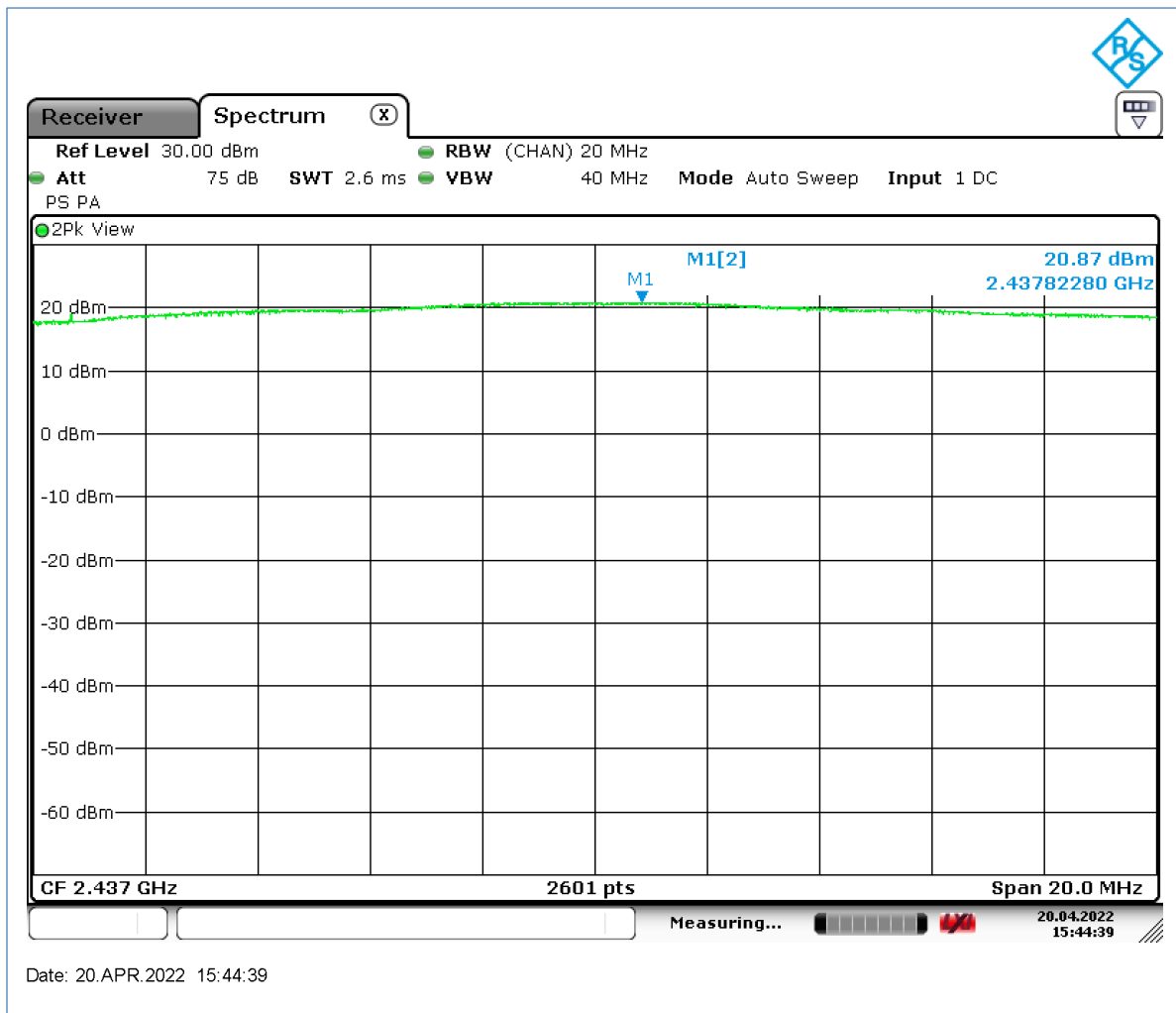
OFDM, Low Channel



Date: 20.APR.2022 15:40:49

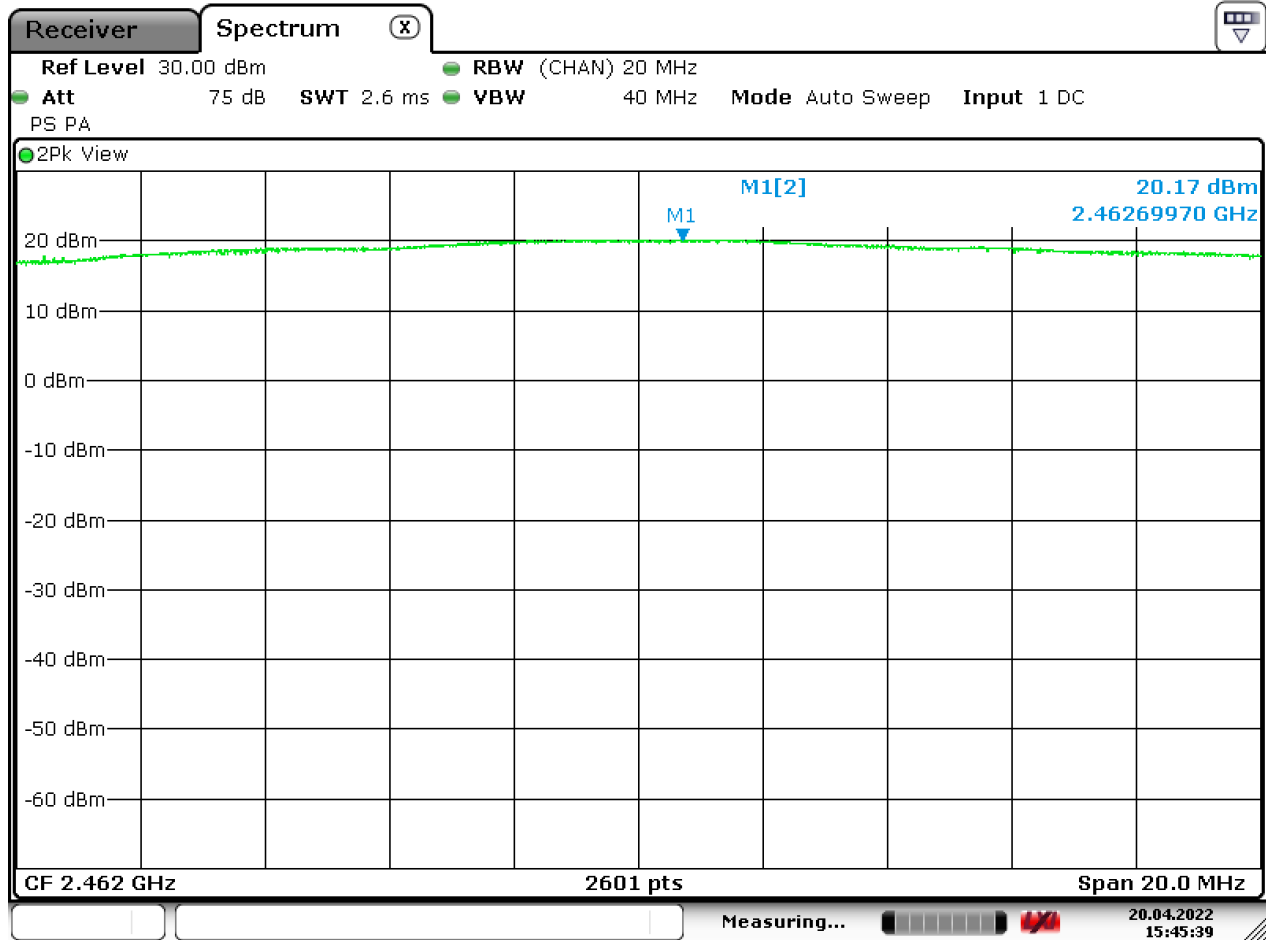


OFDM, Mid Channel





OFDM, High Channel



Date: 20.APR.2022 15:45:39

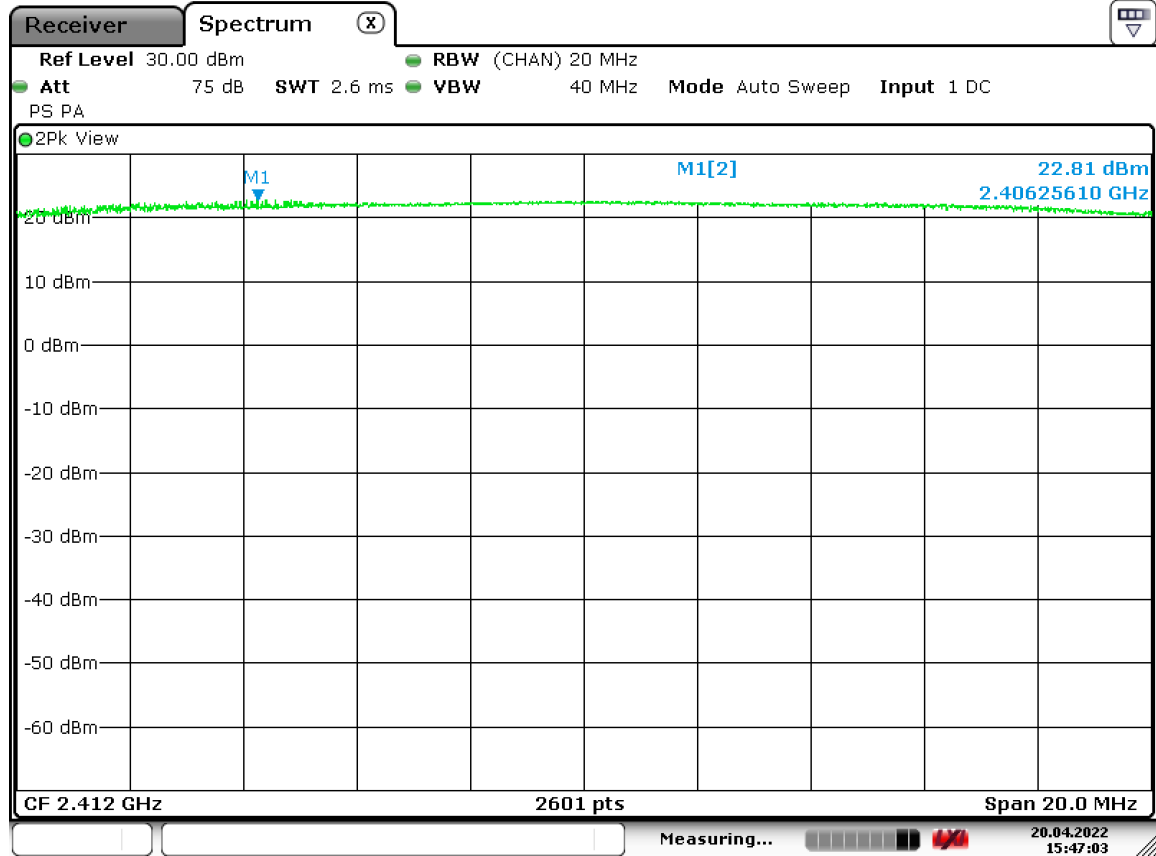


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS0, Low Channel



Date: 20.APR.2022 15:47:03

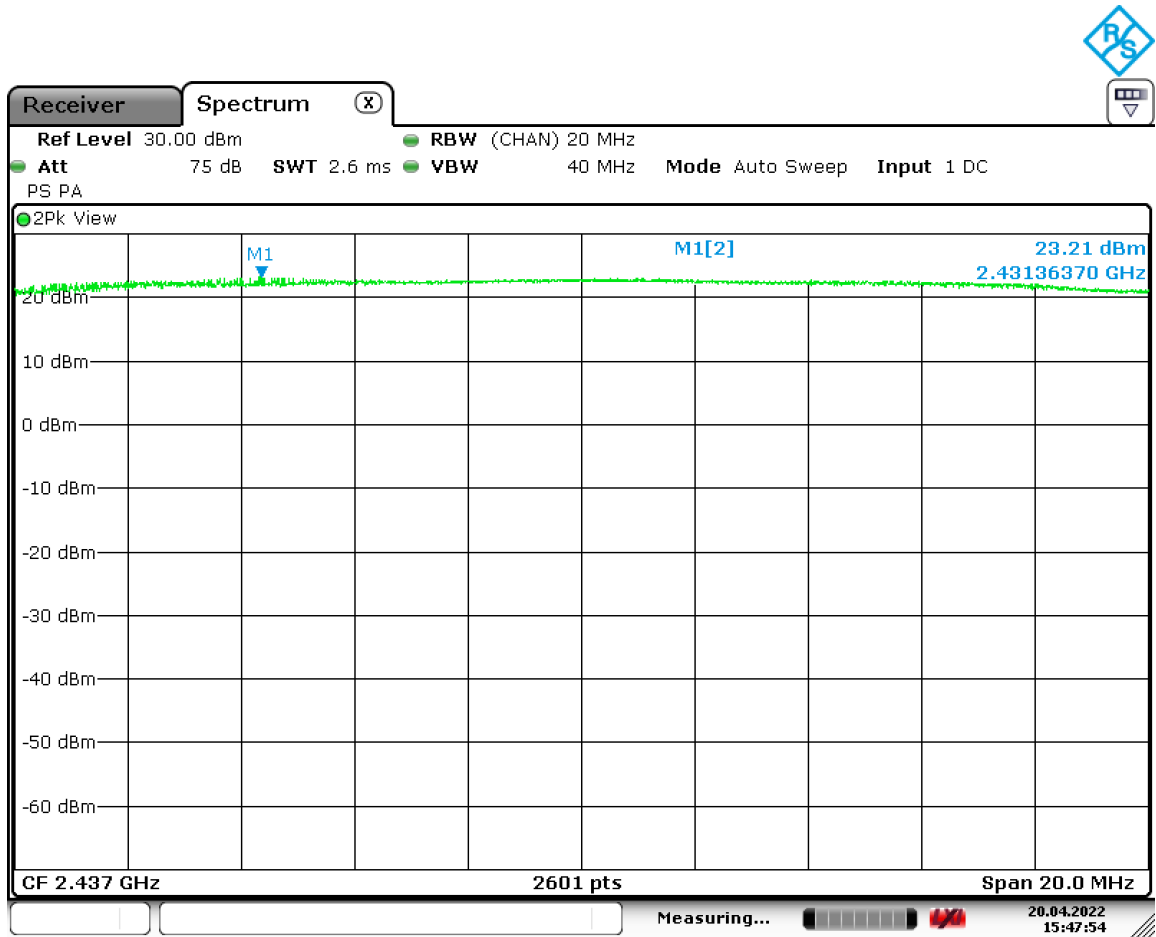


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS0, Mid Channel



Date: 20.APR.2022 15:47:54

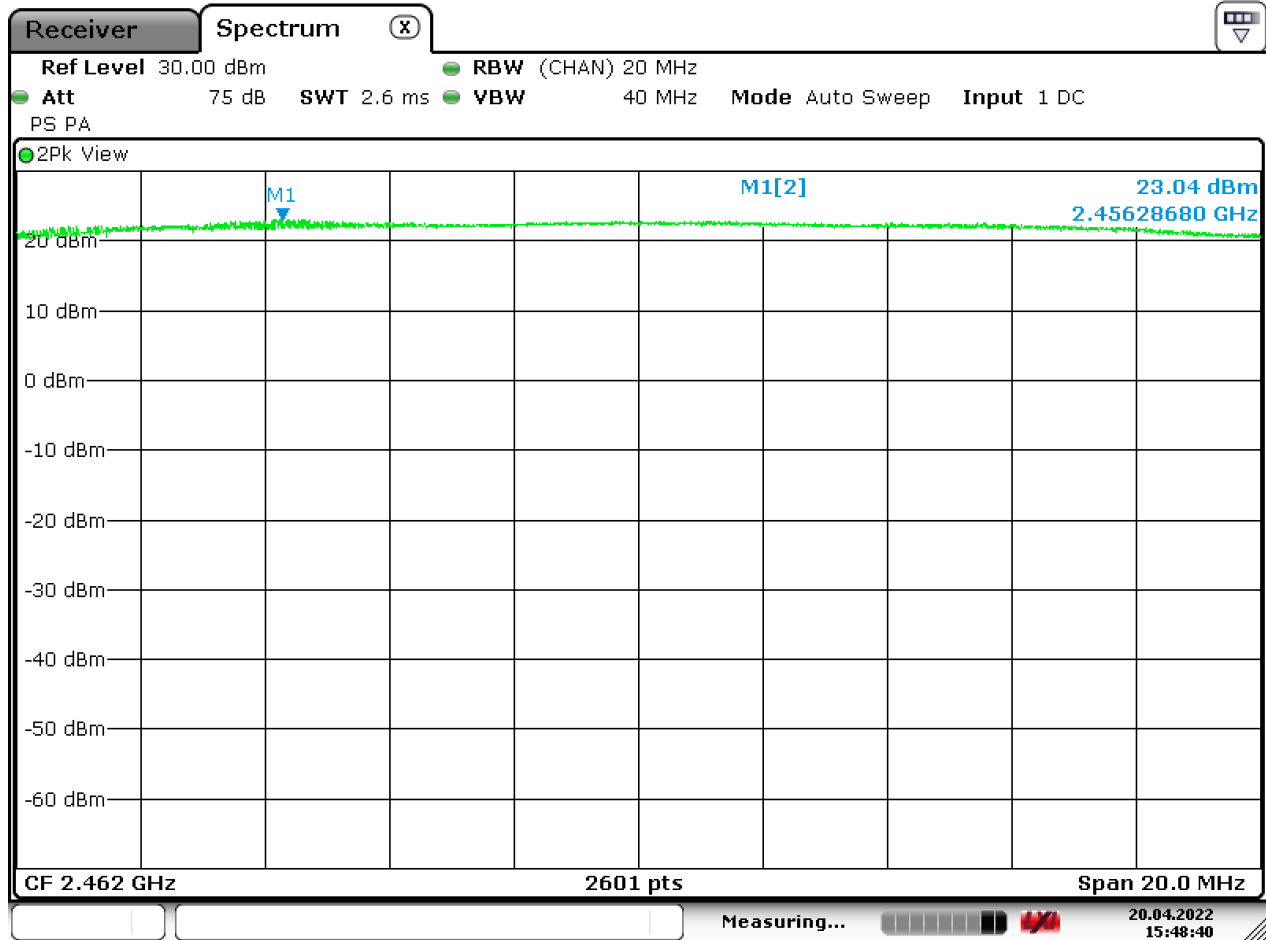


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS0, High Channel



Date: 20.APR.2022 15:48:39

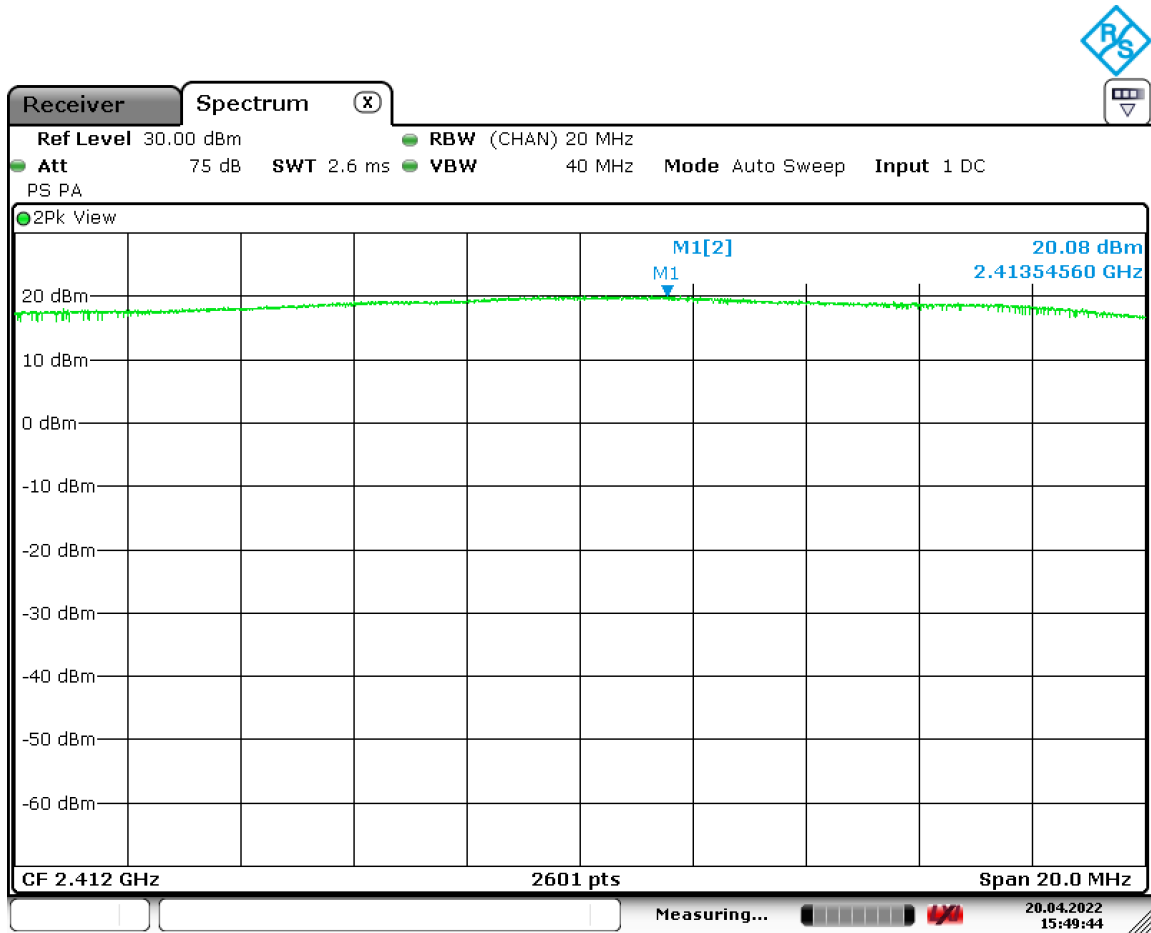


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

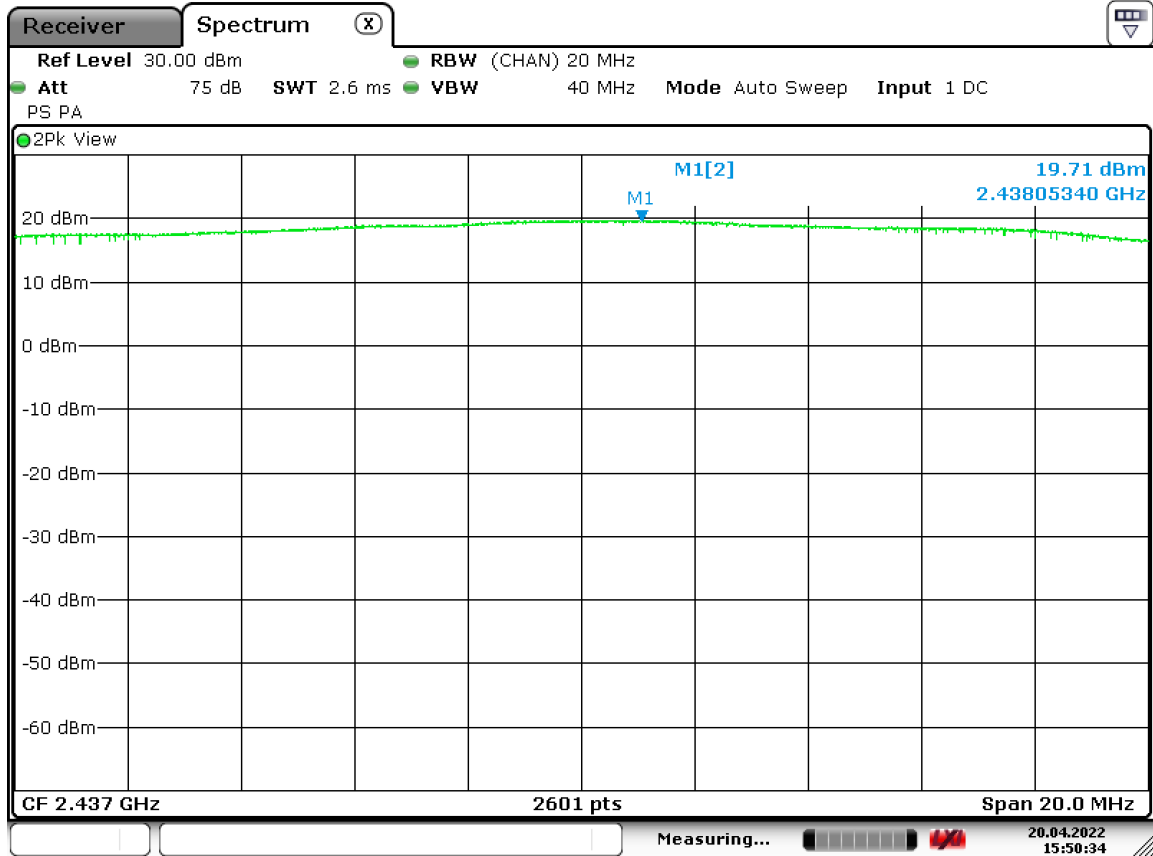
MCS7, Low Channel



Date: 20.APR.2022 15:49:45



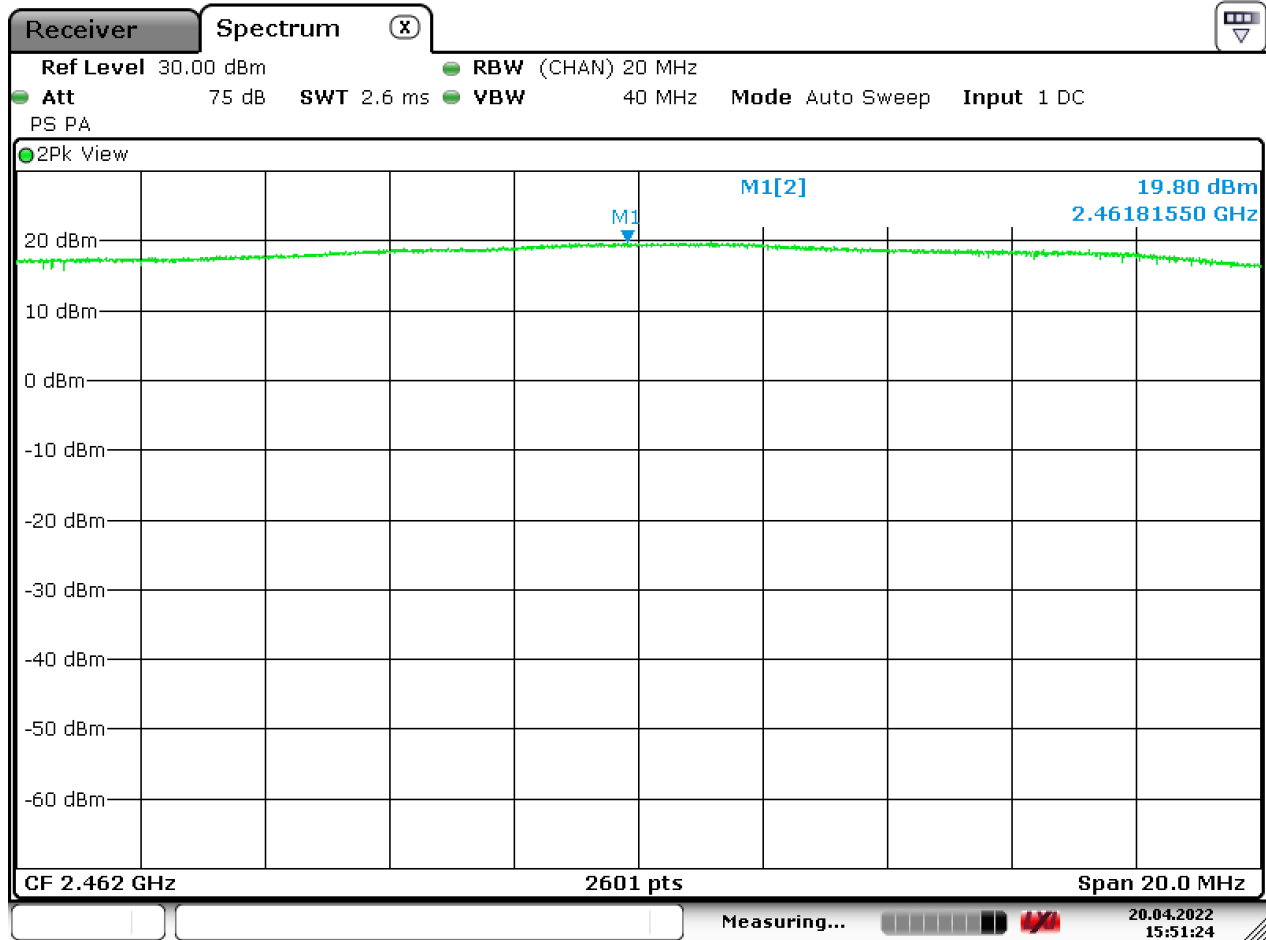
MCS7, Mid Channel



Date: 20.APR.2022 15:50:34



MCS7, High Channel



Date: 20.APR.2022 15:51:24



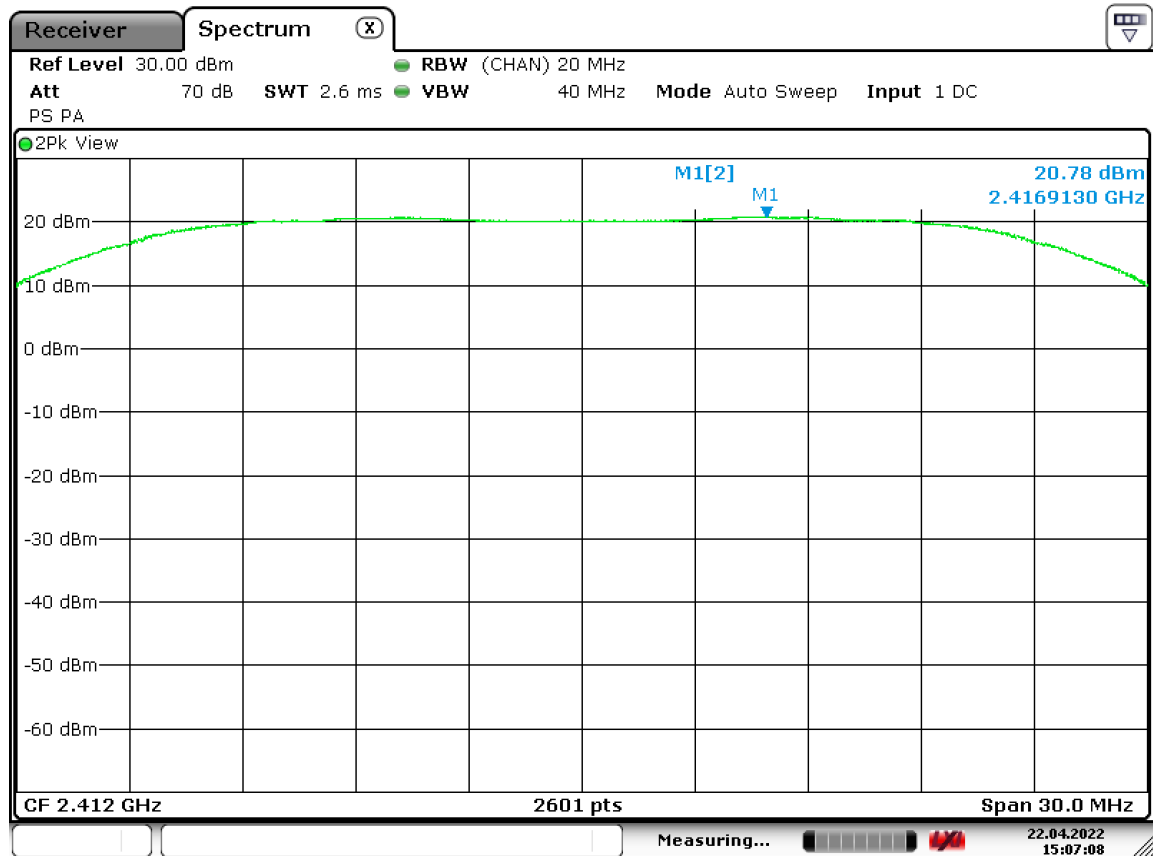
Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

Test Date:	2022-04-22	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(b)(3); KDB558074	Air Temperature:	21.3°C
		Relative Humidity:	31%

CCK 11, Low Channel



Date: 22.APR.2022 15:07:08

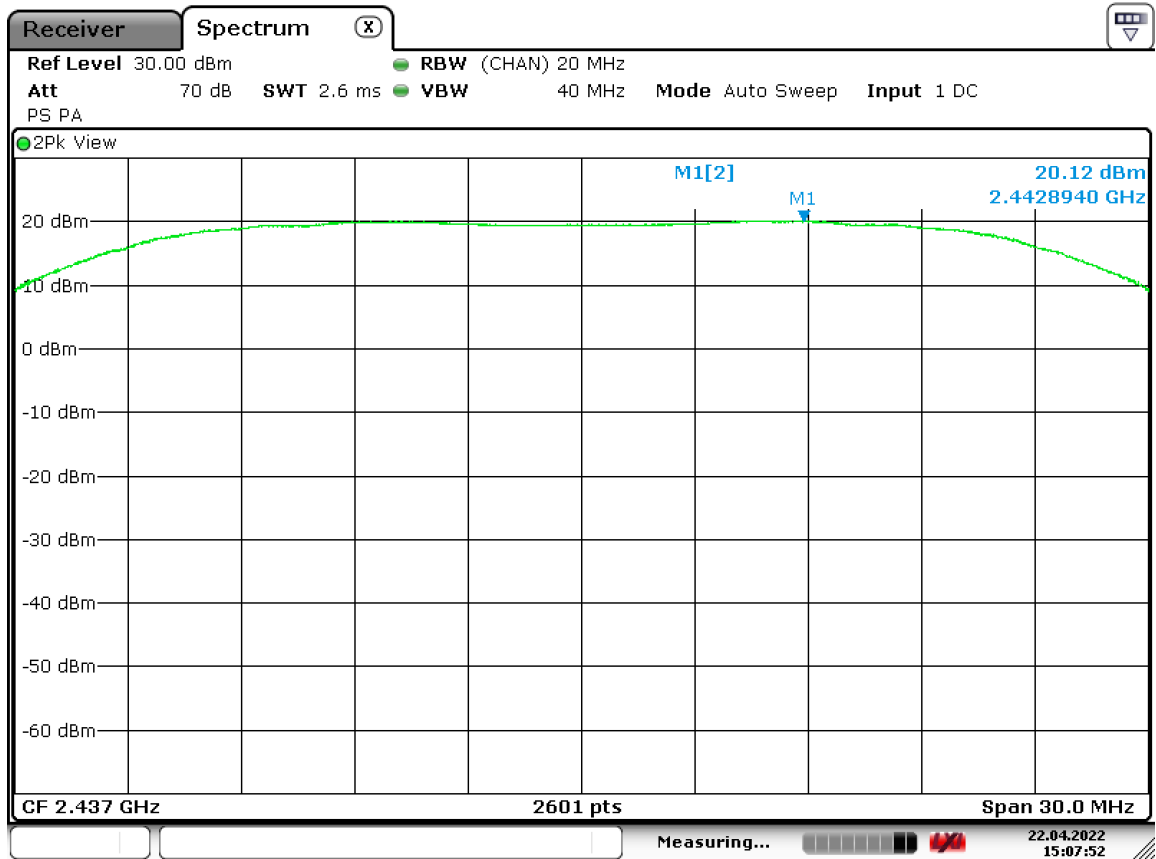


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11, Mid Channel



Date: 22.APR.2022 15:07:53

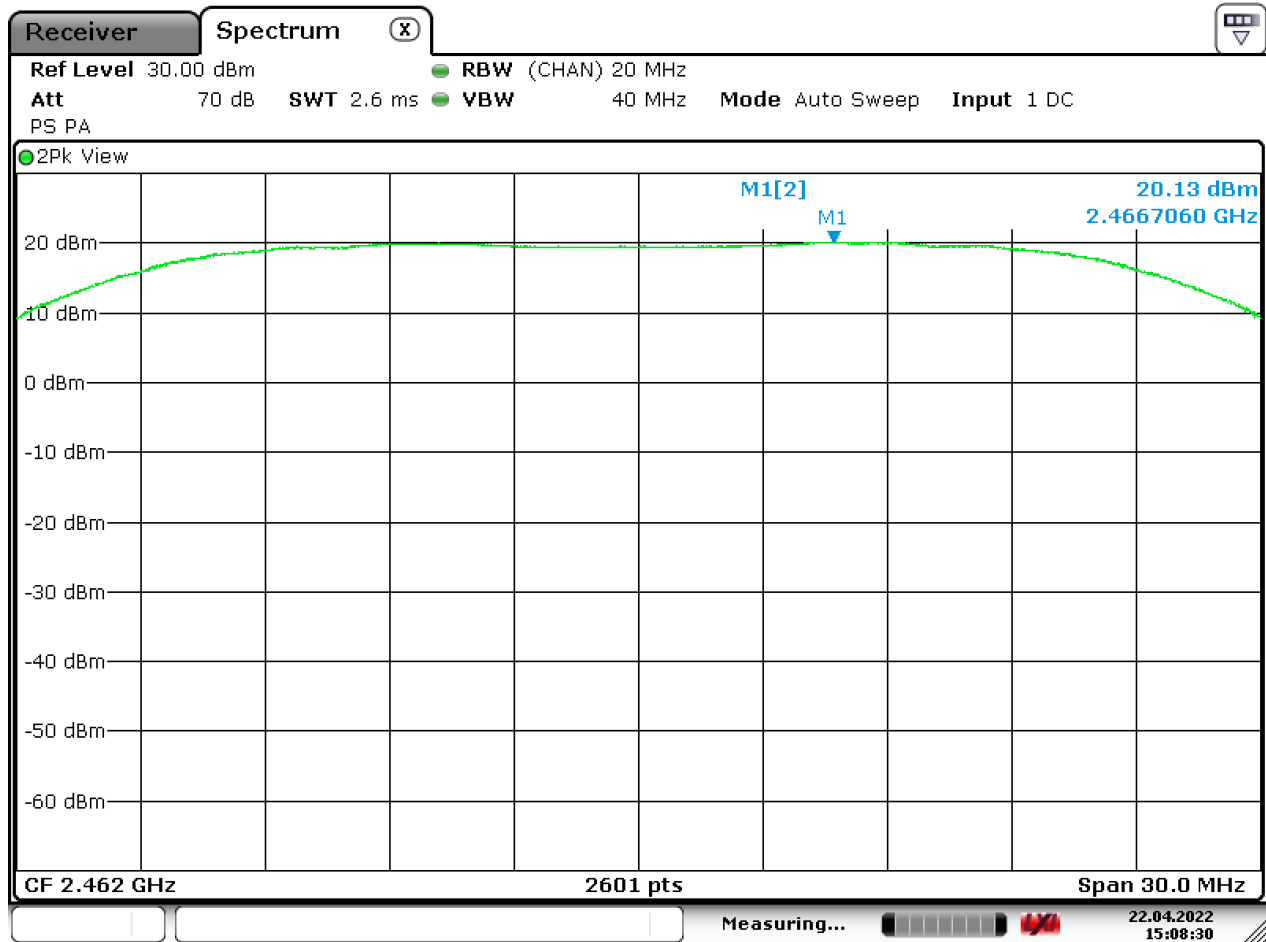


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11, High Channel



Date: 22.APR.2022 15:08:30



9 FCC PART 15.31E – VOLTAGE VARIATIONS

Requirements

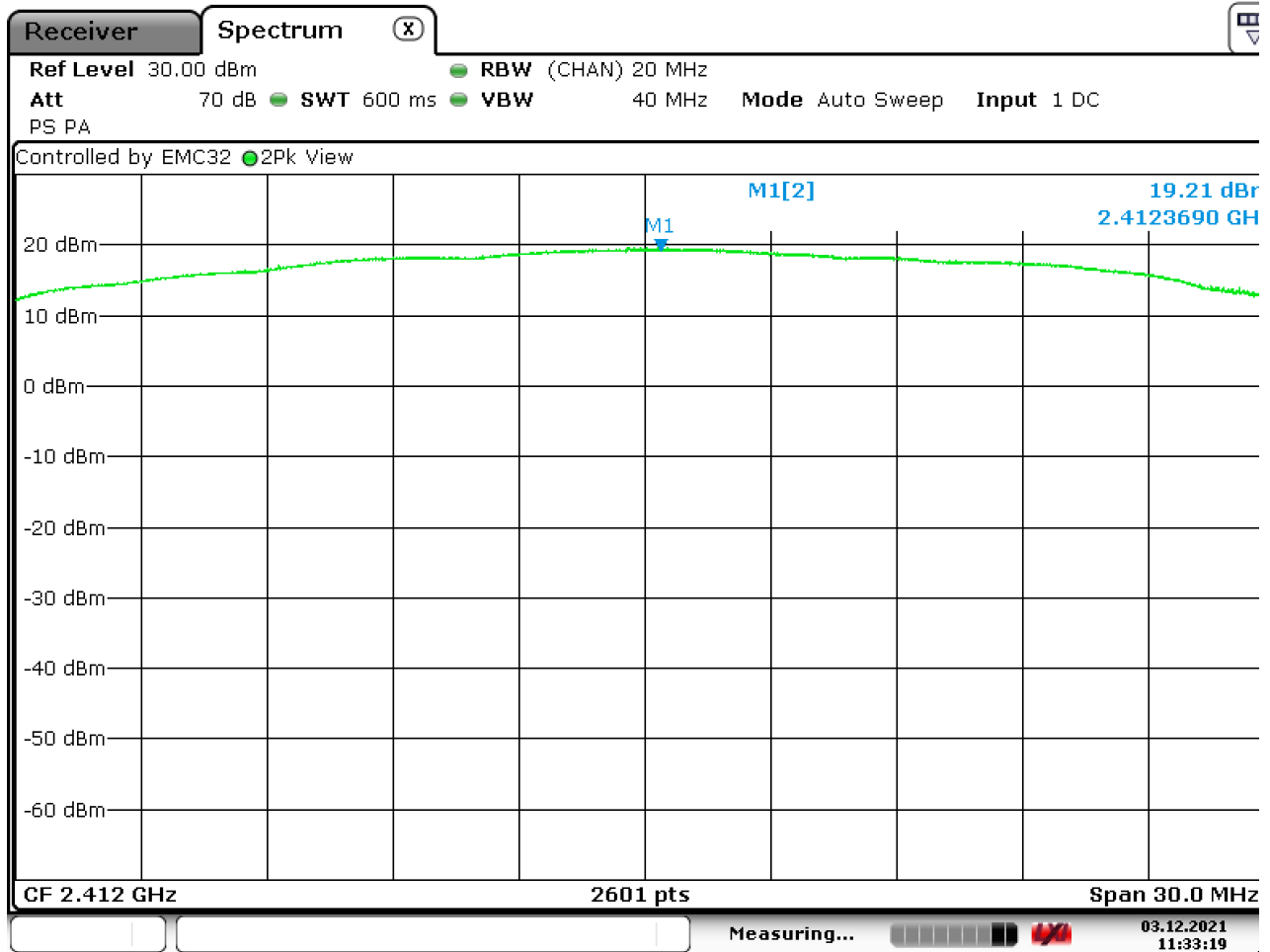
For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated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



9.1 Voltage Variations Test Data

Test Date(s):	2021-12-03	Test Engineer:	J. Chiller
Rule:	15.31€	Air Temperature:	20.3° C
Test Results:	Complies	Relative Humidity:	30%

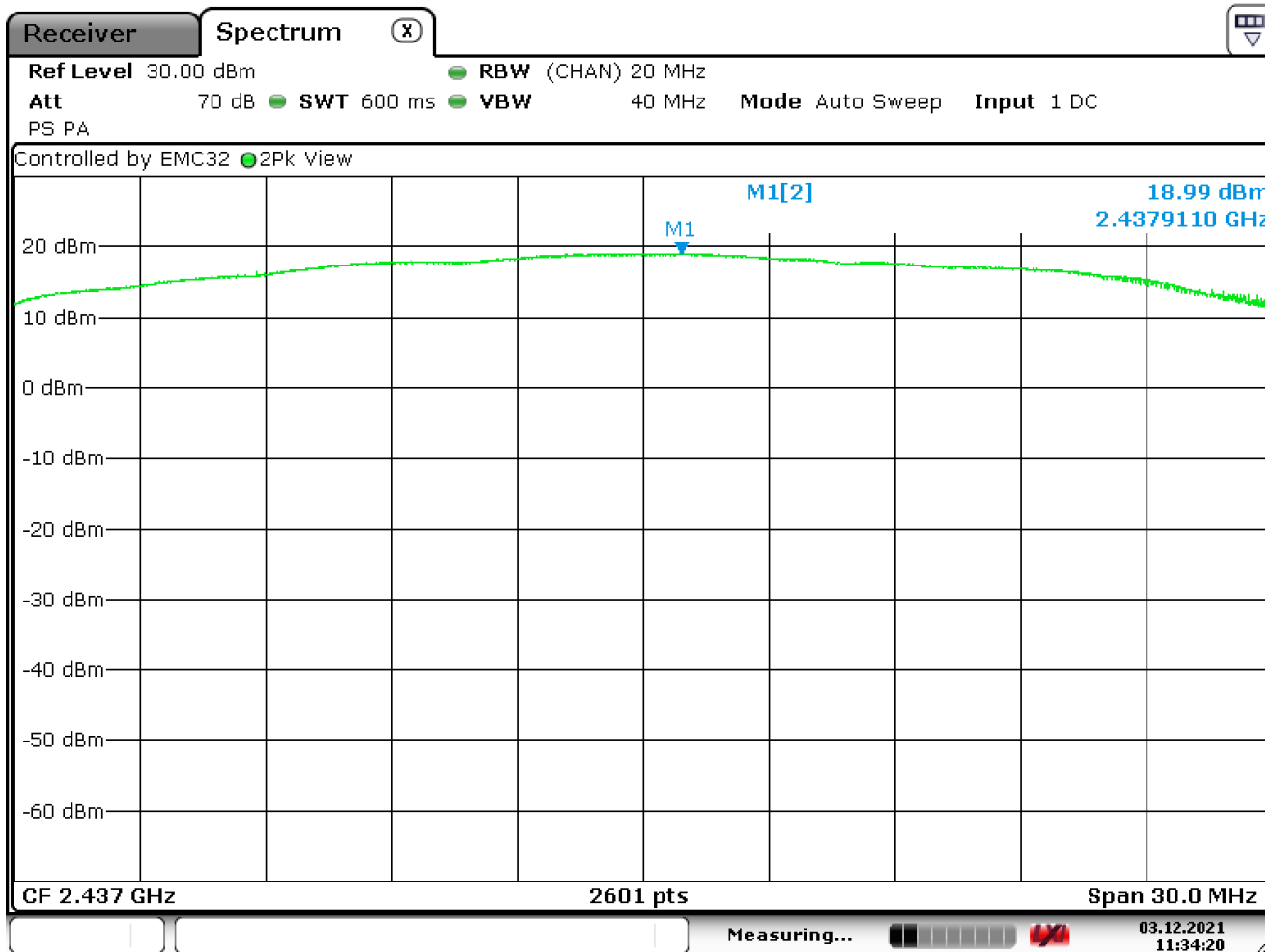
Low Channel, -15%



Date: 3.DEC.2021 11:33:19



Mid Channel, -15%



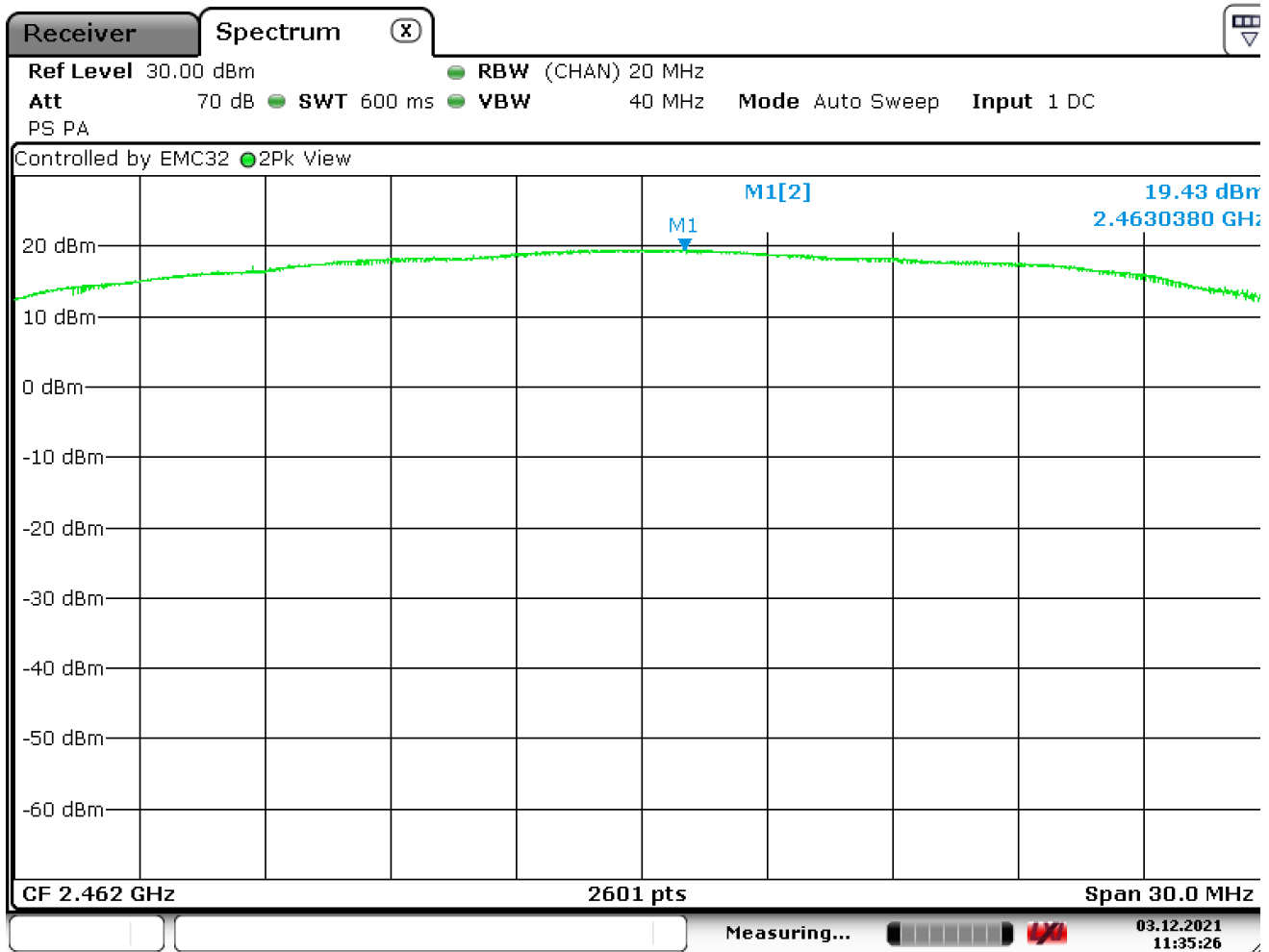


Order Number: F2P26156A

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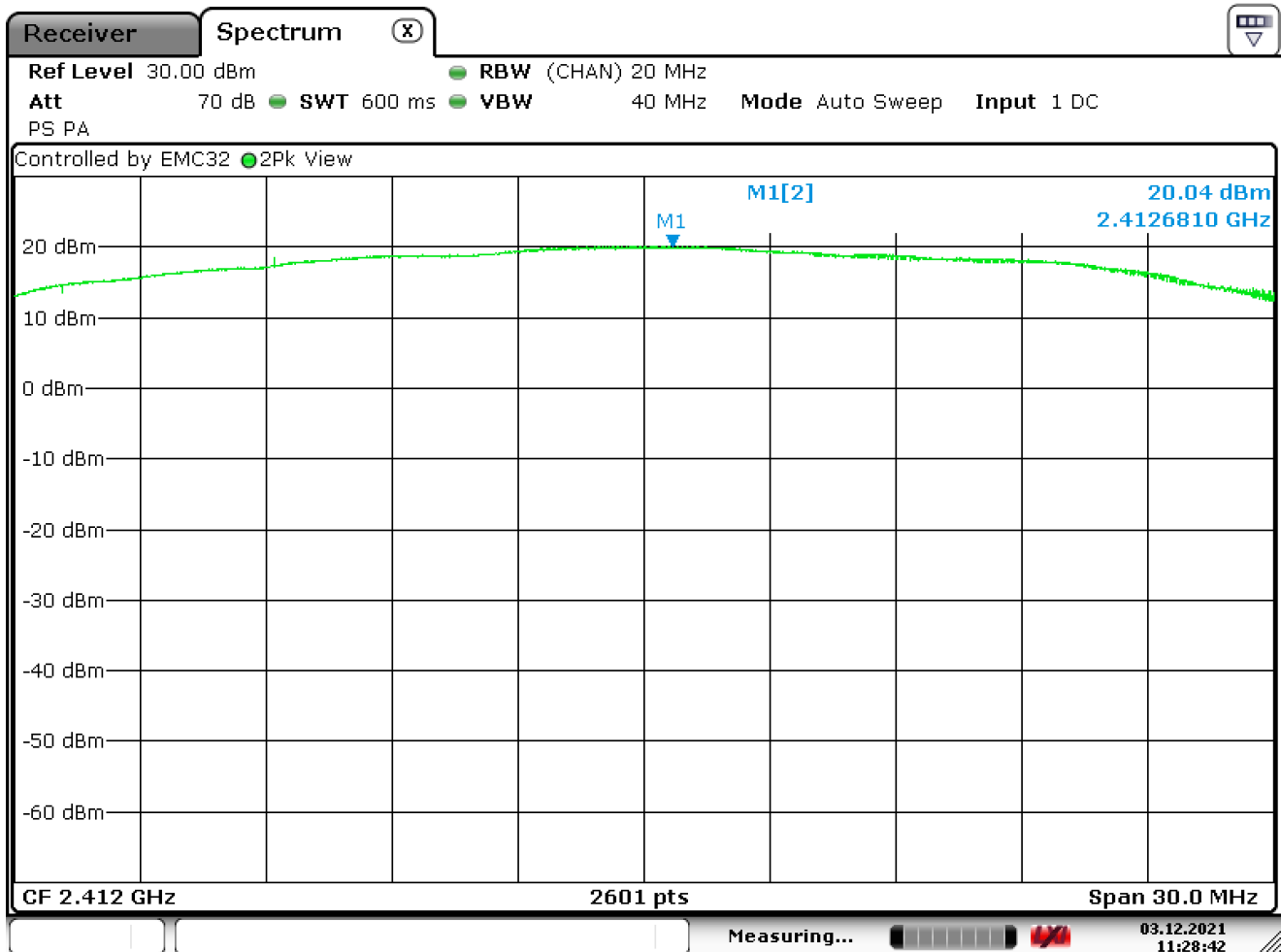
High Channel, -15%



Date: 3.DEC.2021 11:35:25



Low Channel, +15%



Date: 3.DEC.2021 11:28:42

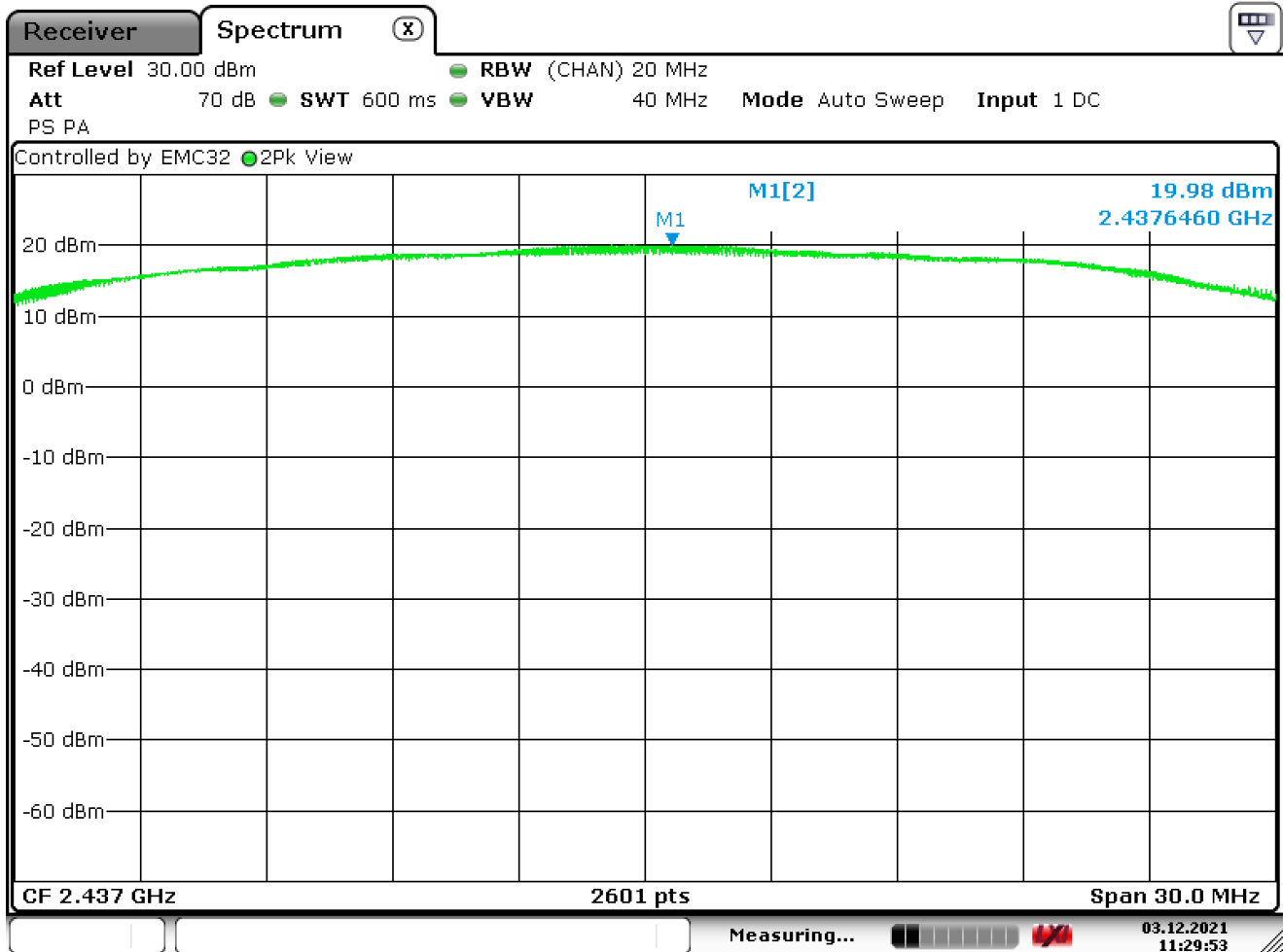


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

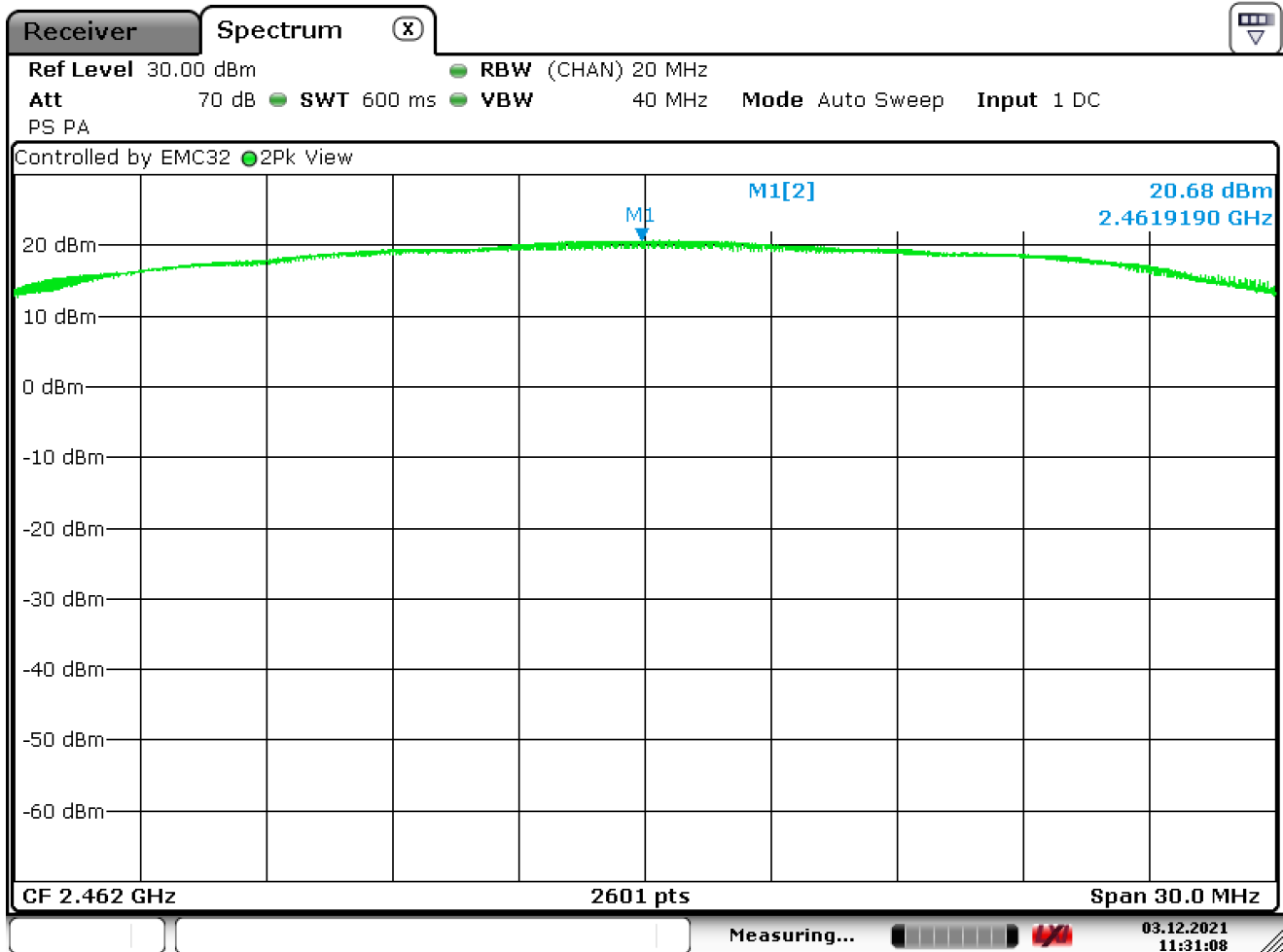
Mid Channel, +15%



Date: 3.DEC.2021 11:29:53



High Channel, +15%



Date: 3.DEC.2021 11:31:09



10.0 FCC Part 15.247(d) – 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.

10.1 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.

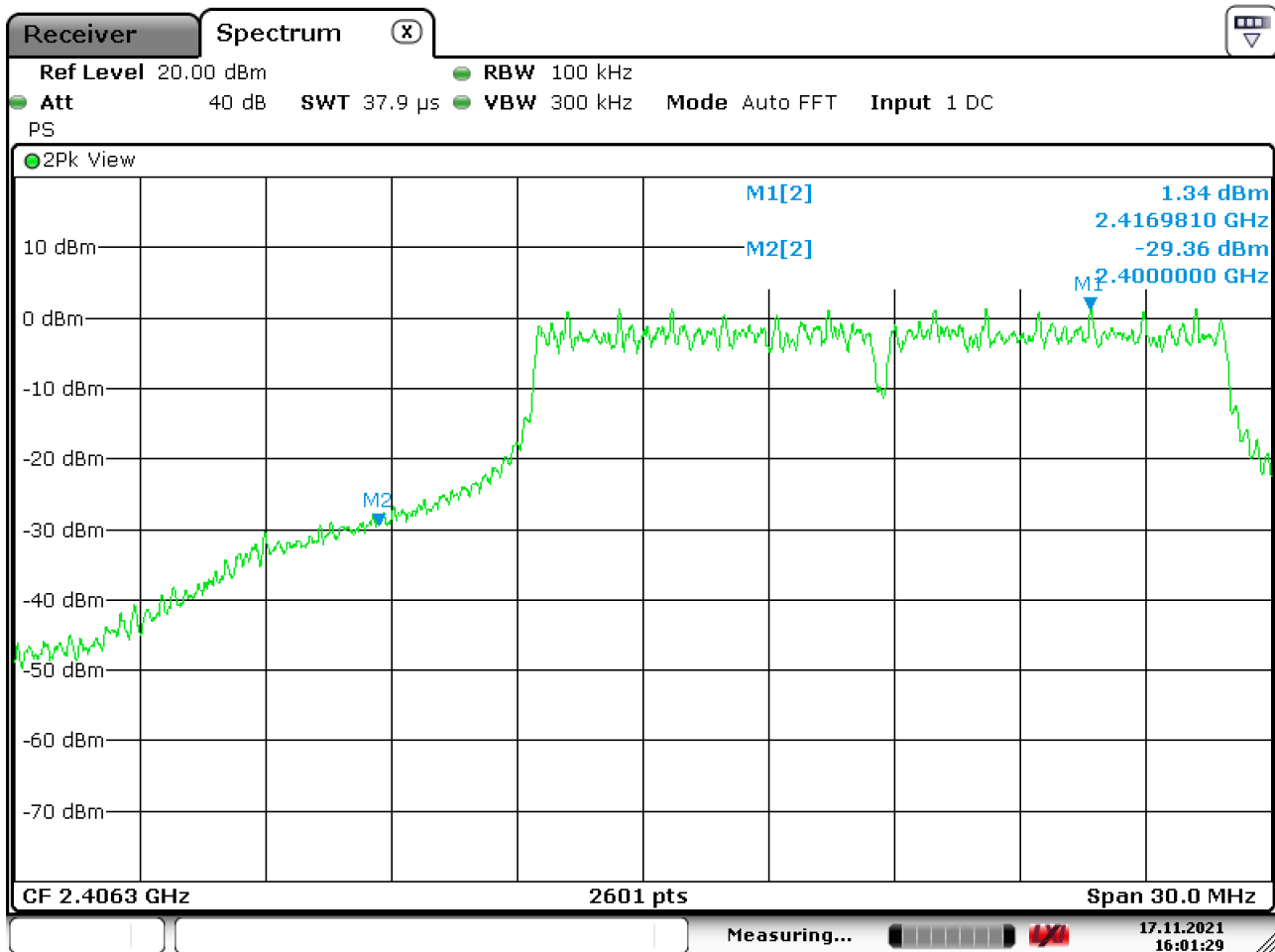
Spurious emissions measurements were made at the low, mid, and upper channels with the appropriate spectrum analyzer impulse bandwidth. Additionally, 20dB down points were measured for the low and high channels to verify band edge compliance.



10.2 Conducted Spurious Emissions Test Data

Test Date:	2021-11-17; 2021-11-23; 2022-04-22	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(d) / Part 15.207 KDB558074	Air Temperature:	20.9°C
		Relative Humidity:	35%

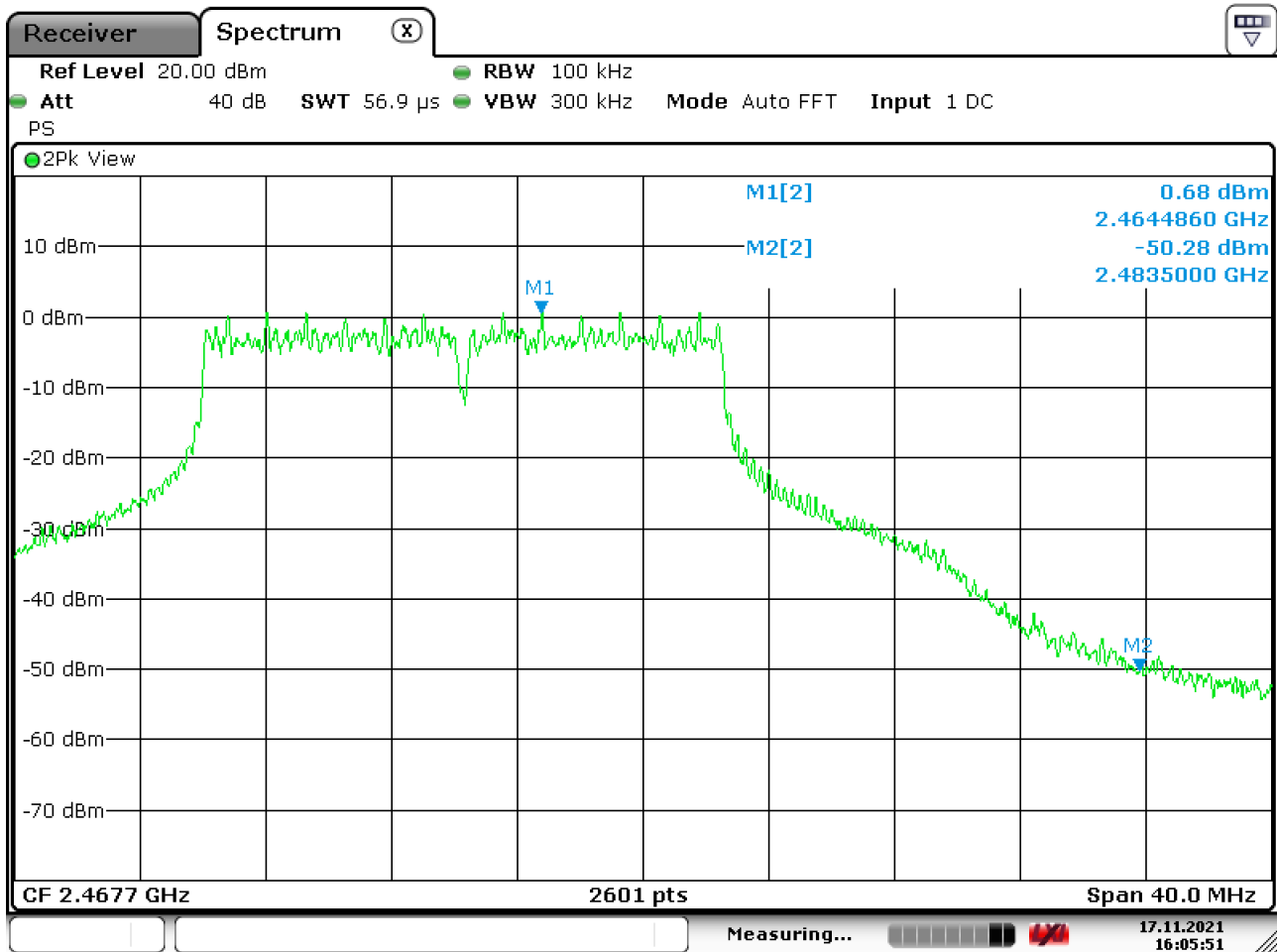
Band Edge, OFDM, Low



Date: 17.NOV.2021 16:01:29



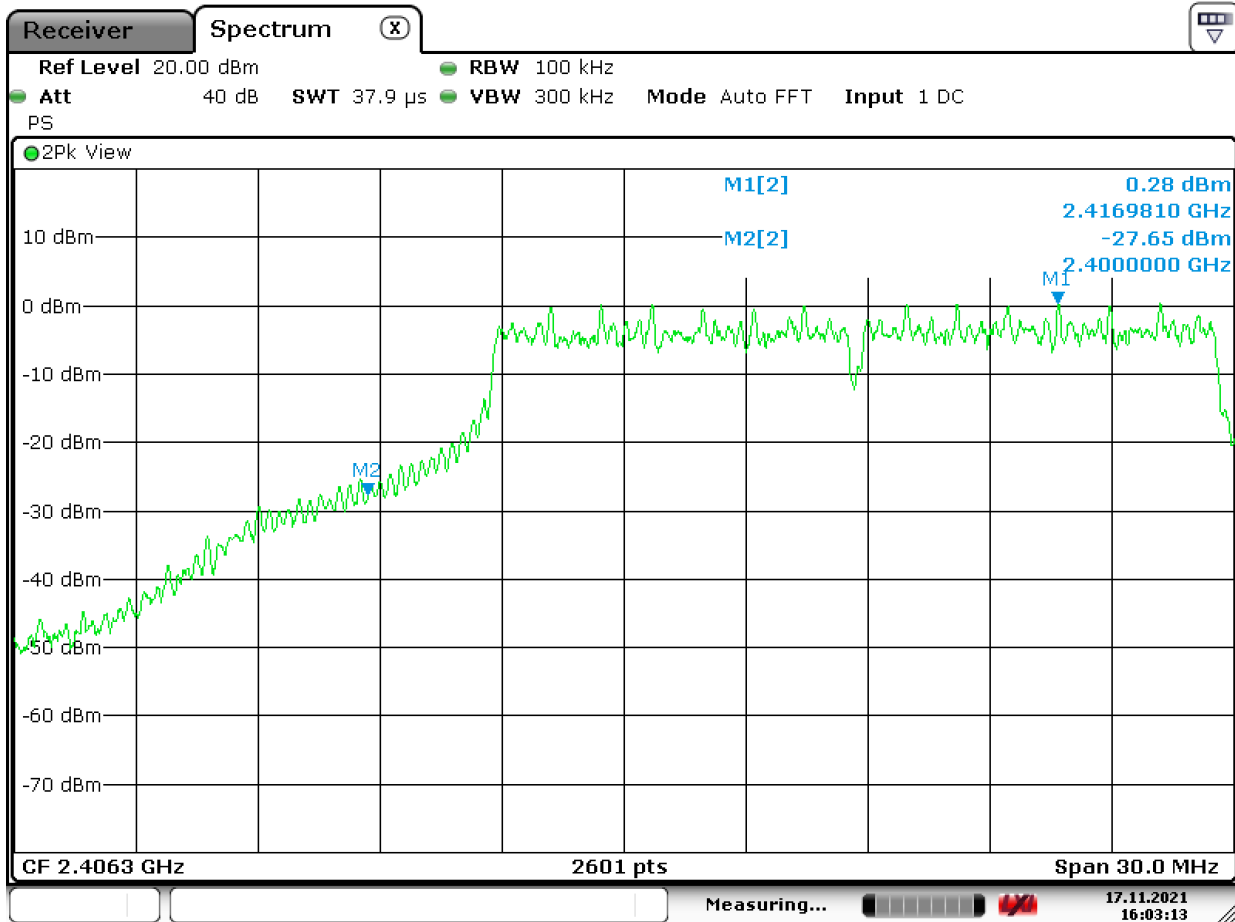
Band Edge, OFDM, High



Date: 17.NOV.2021 16:05:51



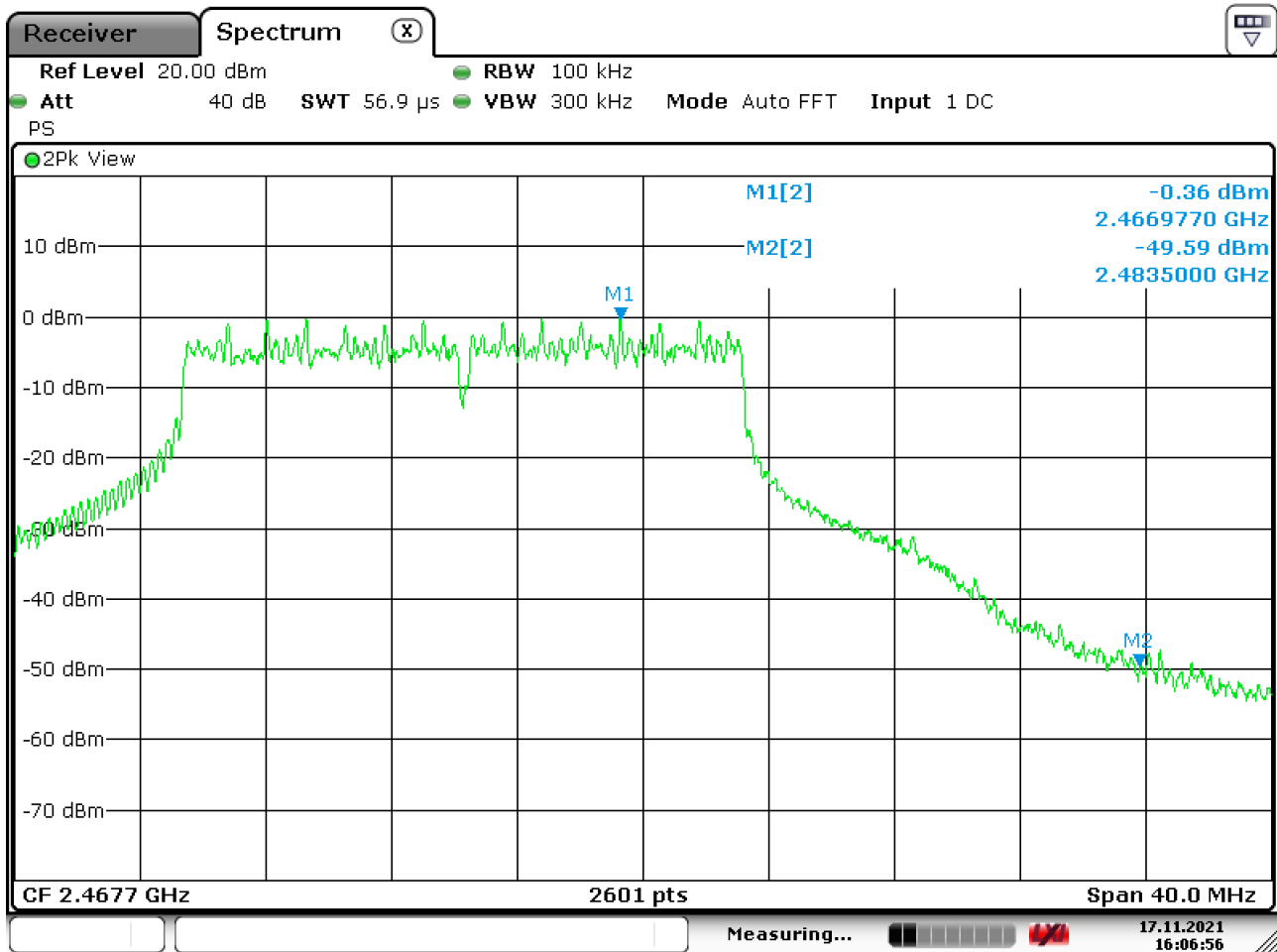
Band Edge, MCS7, Low



Date: 17.NOV.2021 16:03:13



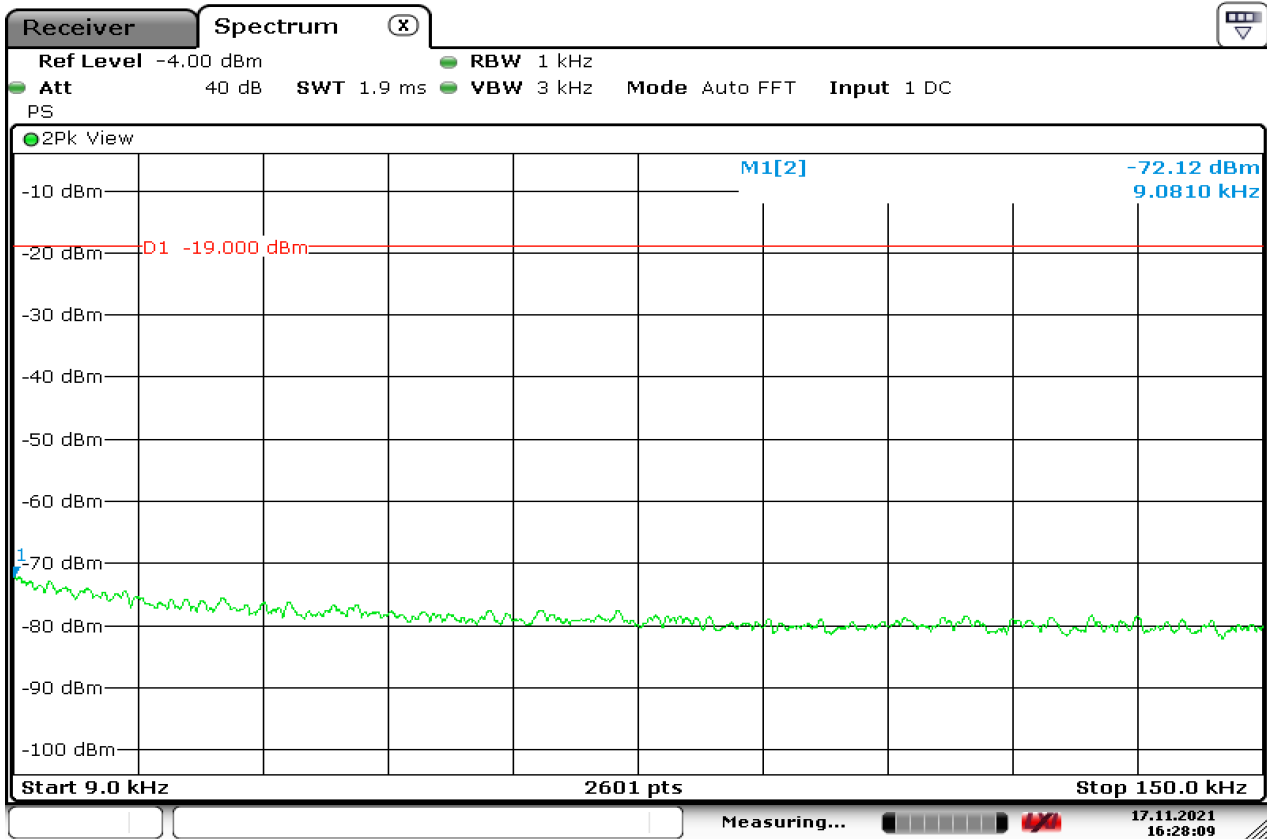
Band Edge, MCS7, High



Date: 17.NOV.2021 16:06:56



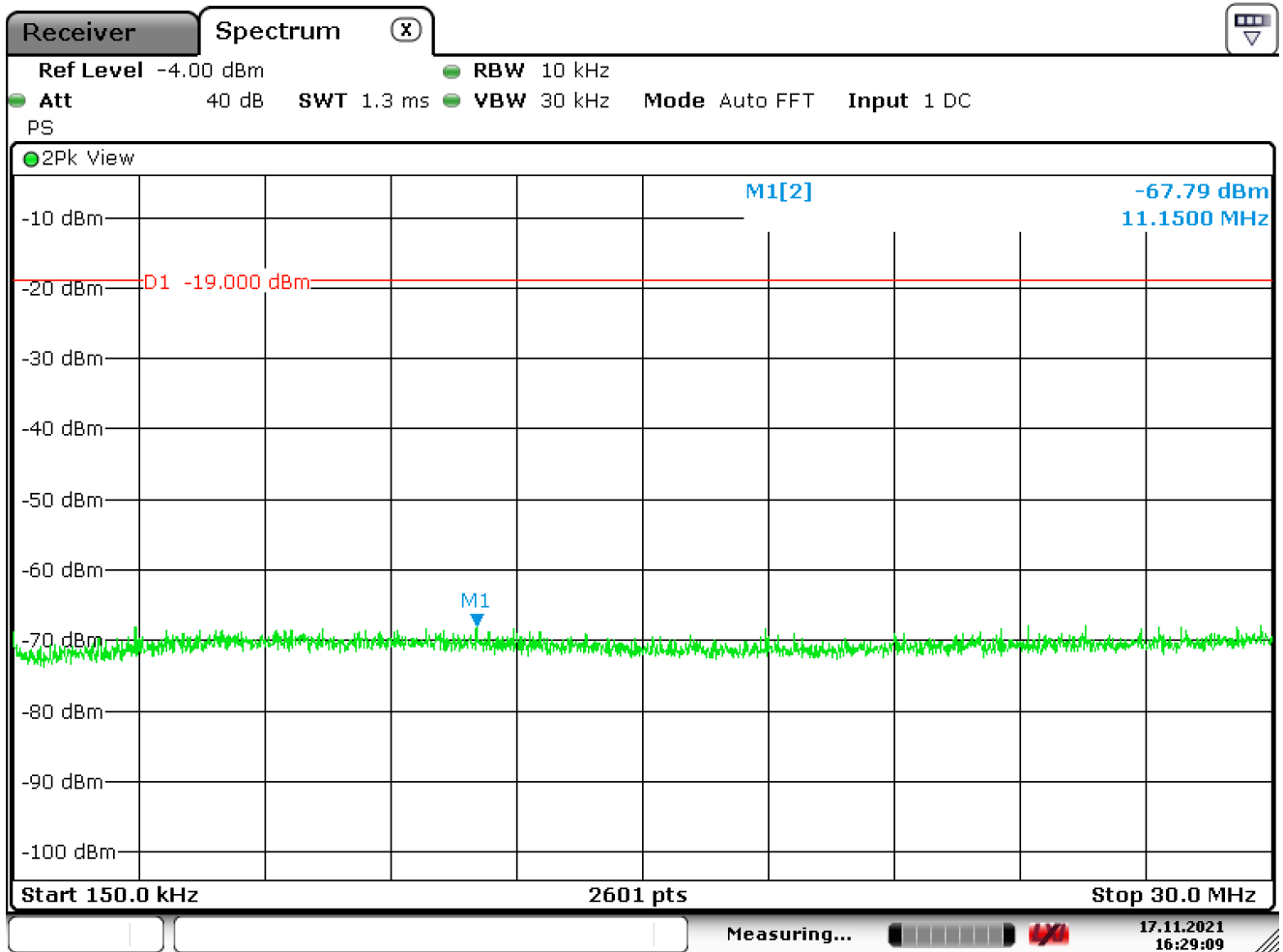
OFDM, Low Channel



Date: 17.NOV.2021 16:28:09



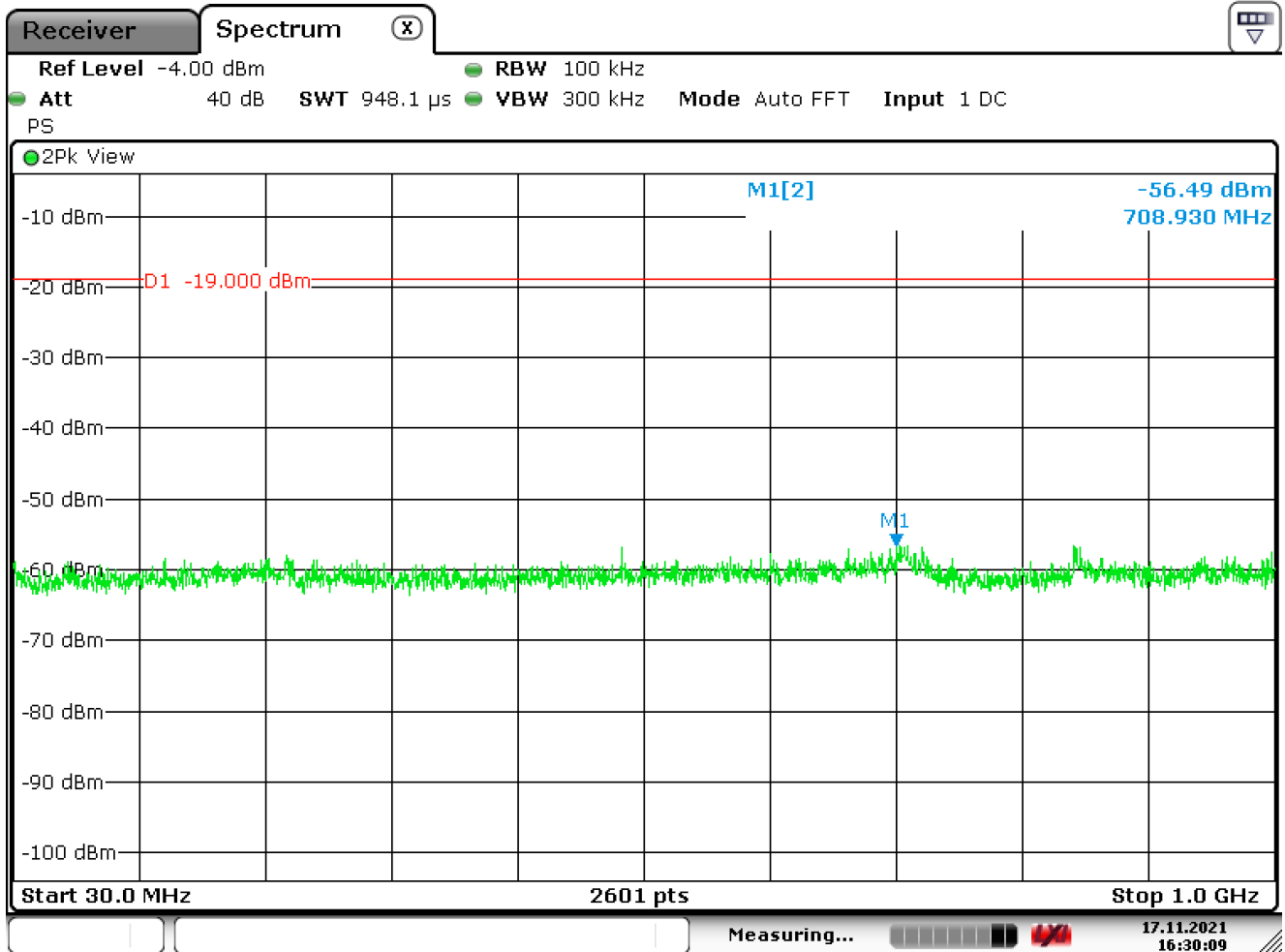
OFDM, Low Channel, cont'd



Date: 17.NOV.2021 16:29:10



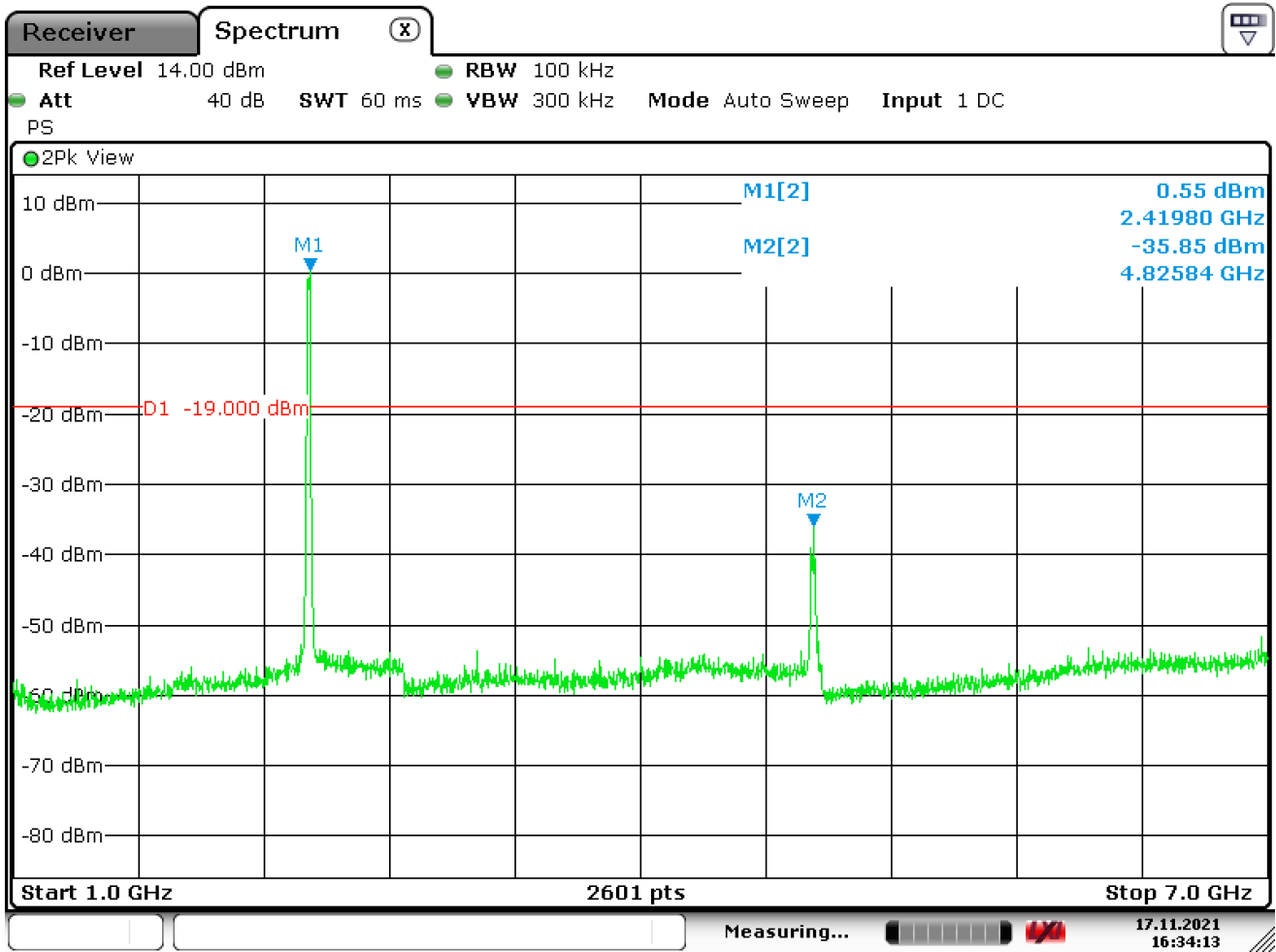
OFDM, Low Channel, cont'd



Date: 17.NOV.2021 16:30:10



OFDM, Low Channel, cont'd



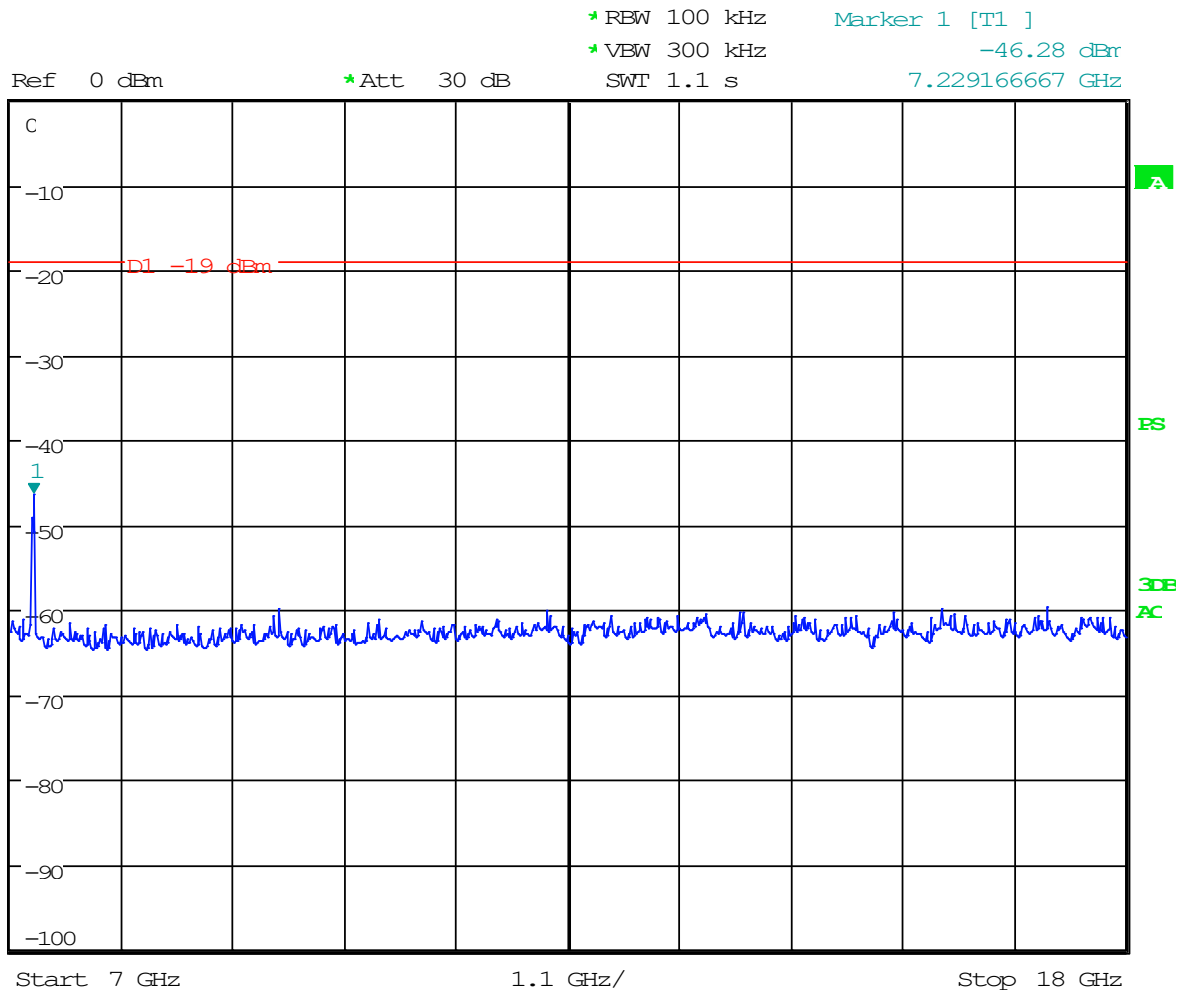
Date: 17.NOV.2021 16:34:13



OFDM, Low Channel, cont'd



1 PK
VIEW



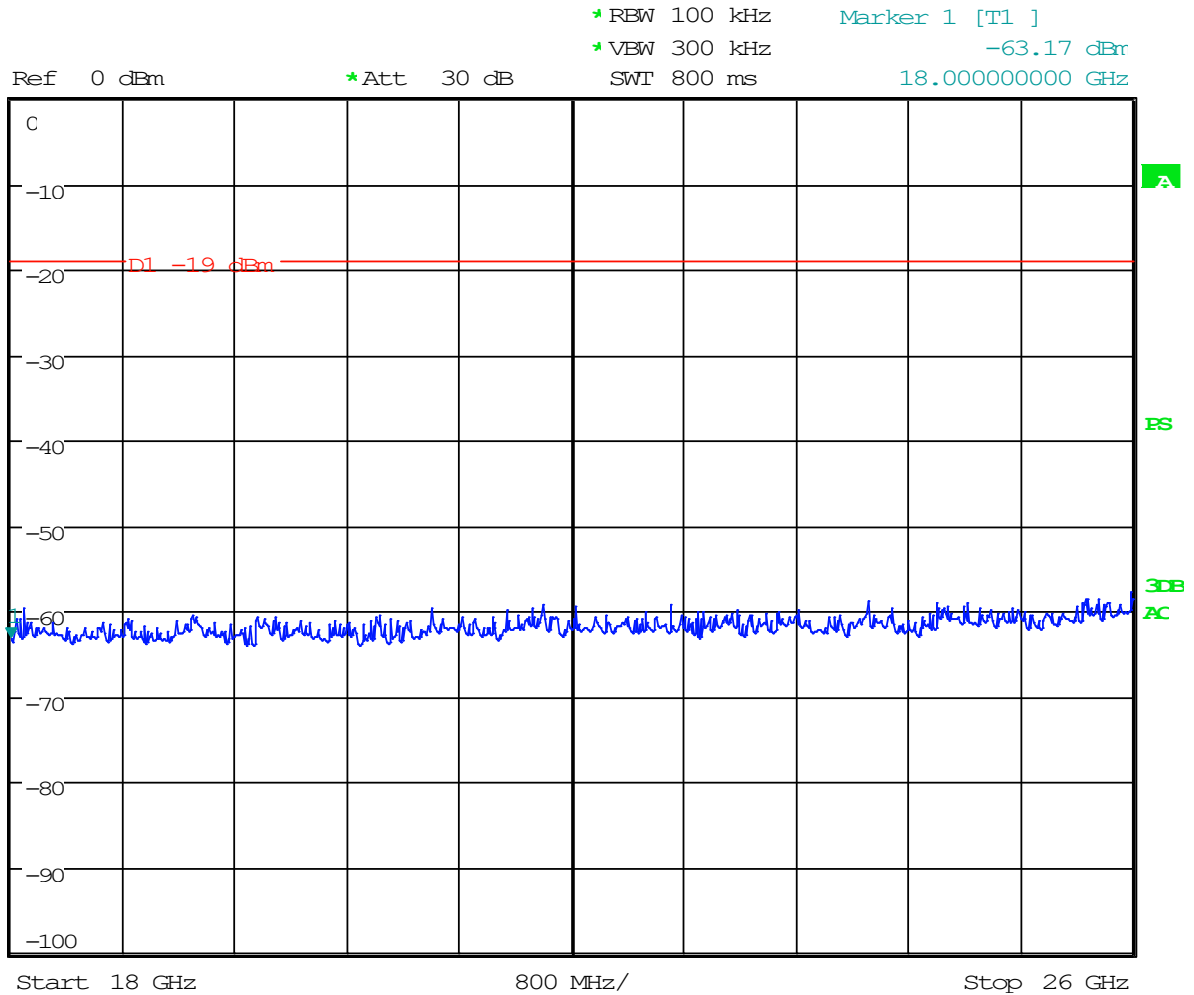
Date: 23.NOV.2021 13:12:34



OFDM, Low Channel, cont'd

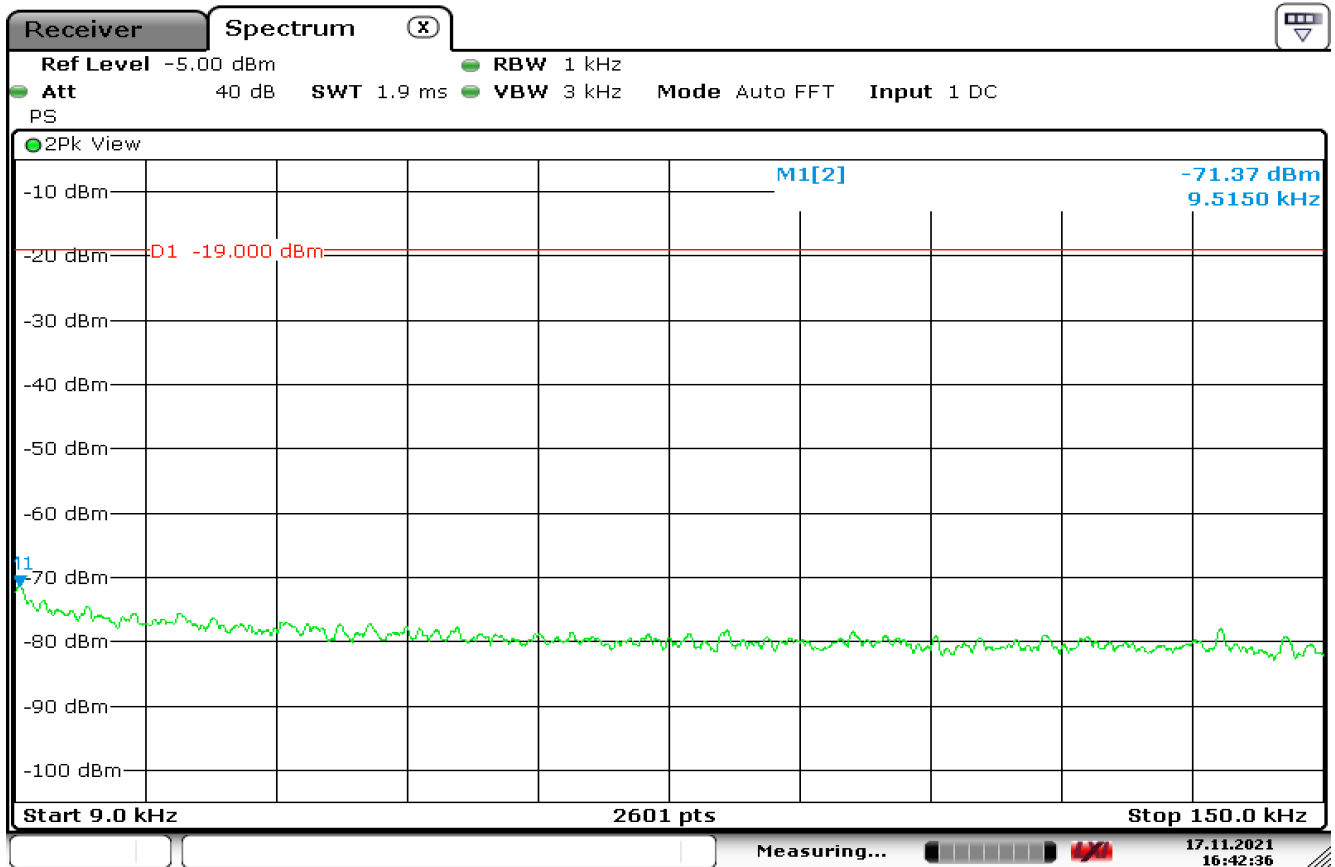


1 PK
VIEW





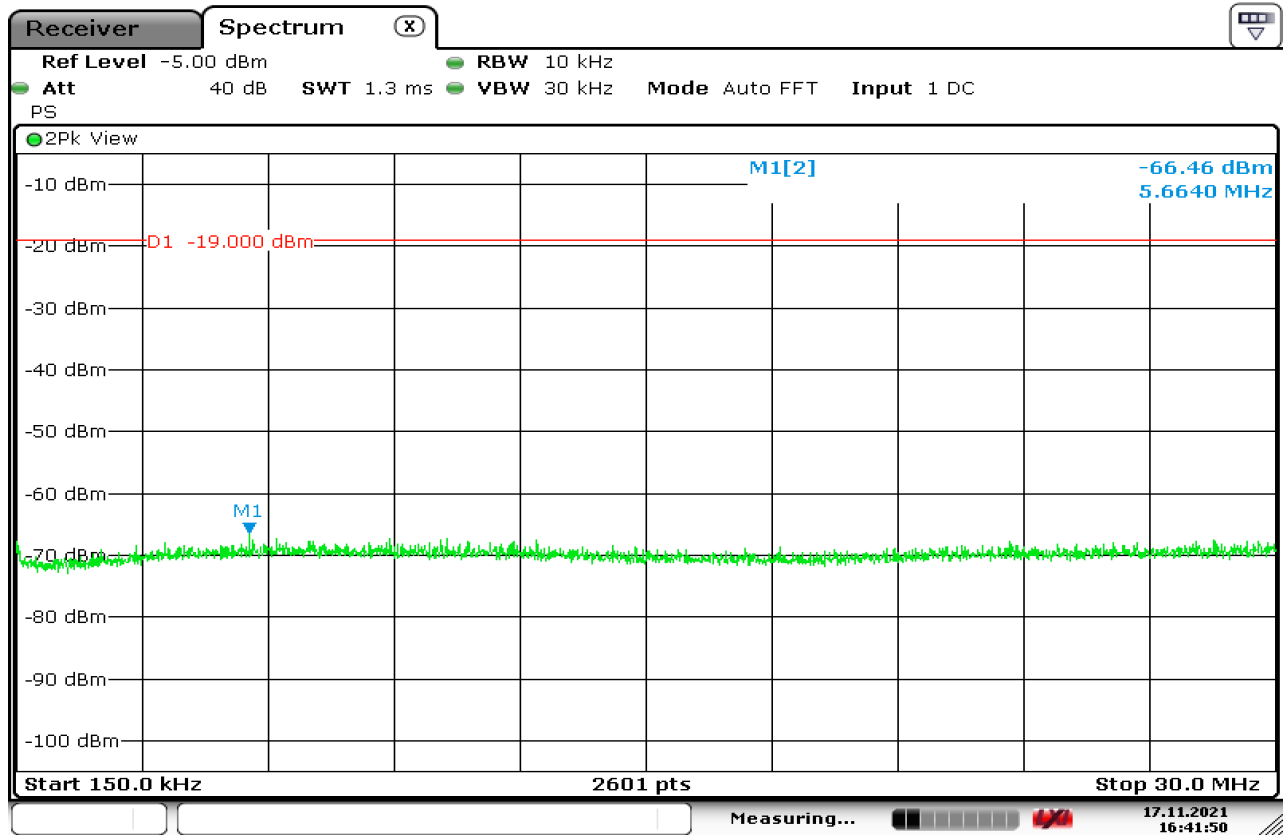
OFDM, Mid Channel



Date: 17.NOV.2021 16:42:35



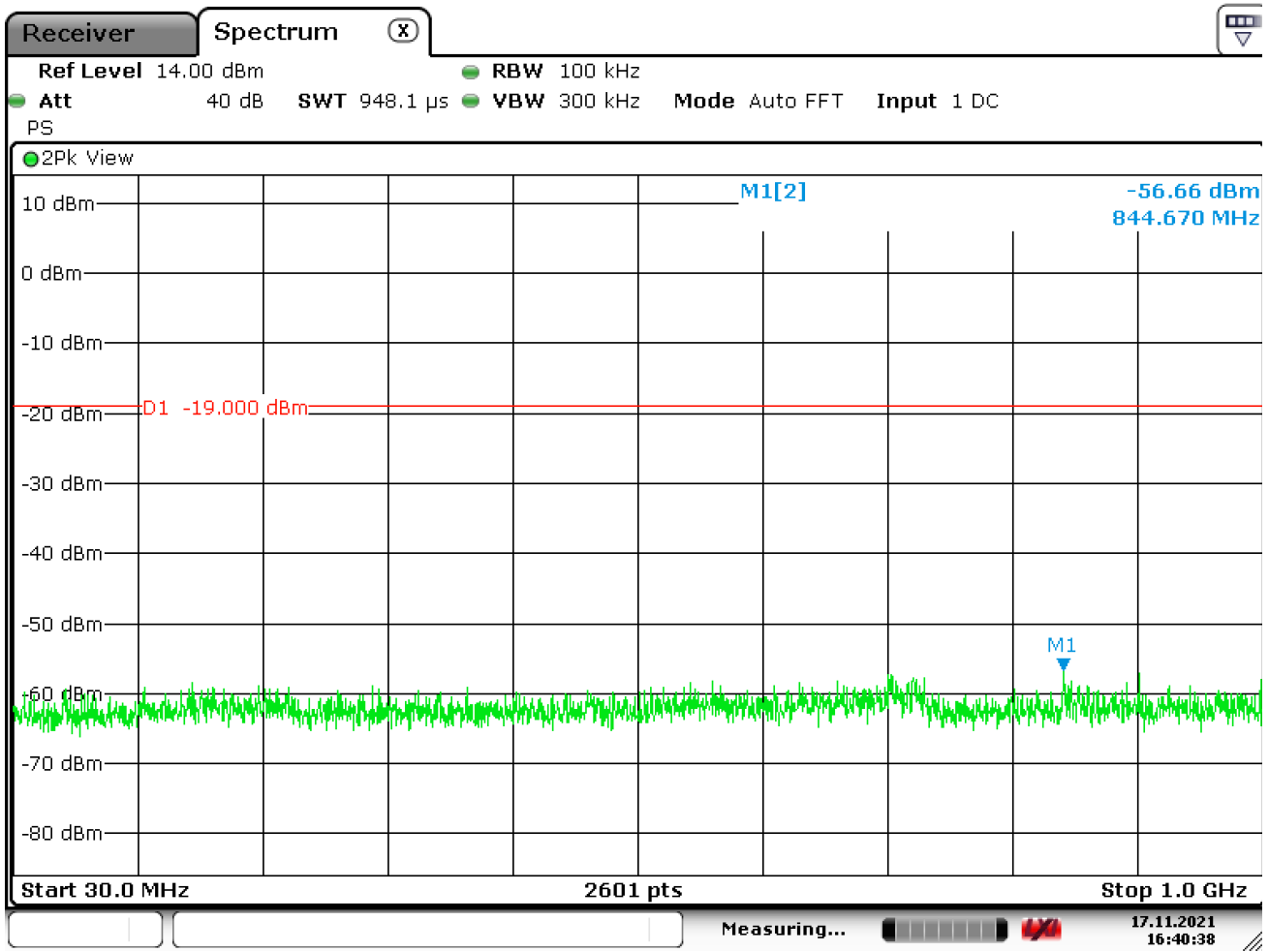
OFDM, Mid Channel, cont'd



Date: 17.NOV.2021 16:41:50



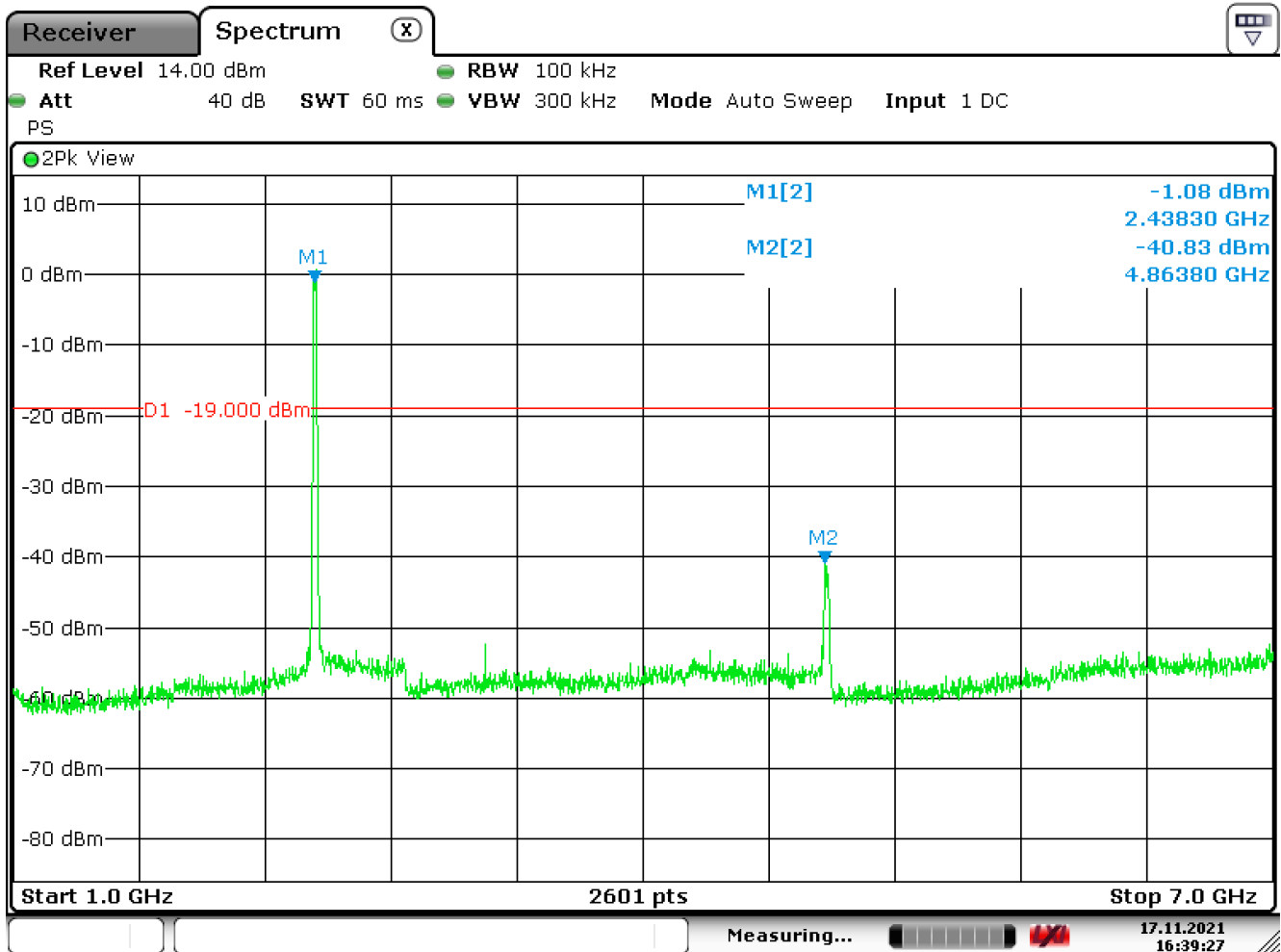
OFDM, Mid Channel, cont'd



Date: 17.NOV.2021 16:40:38



OFDM, Mid Channel, cont'd



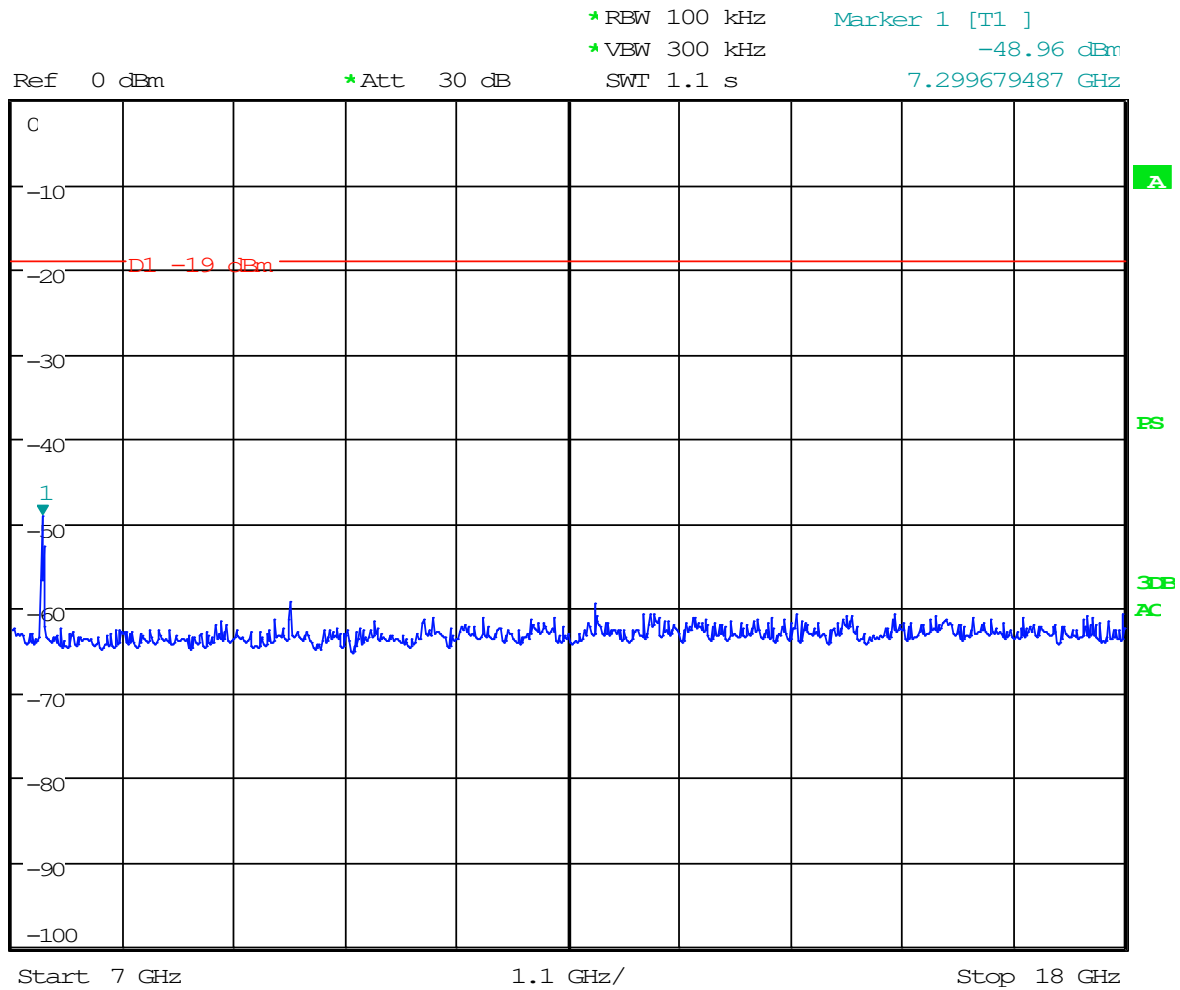
Date: 17.NOV.2021 16:39:27



OFDM, Mid Channel, cont'd



1 PK
VIEW



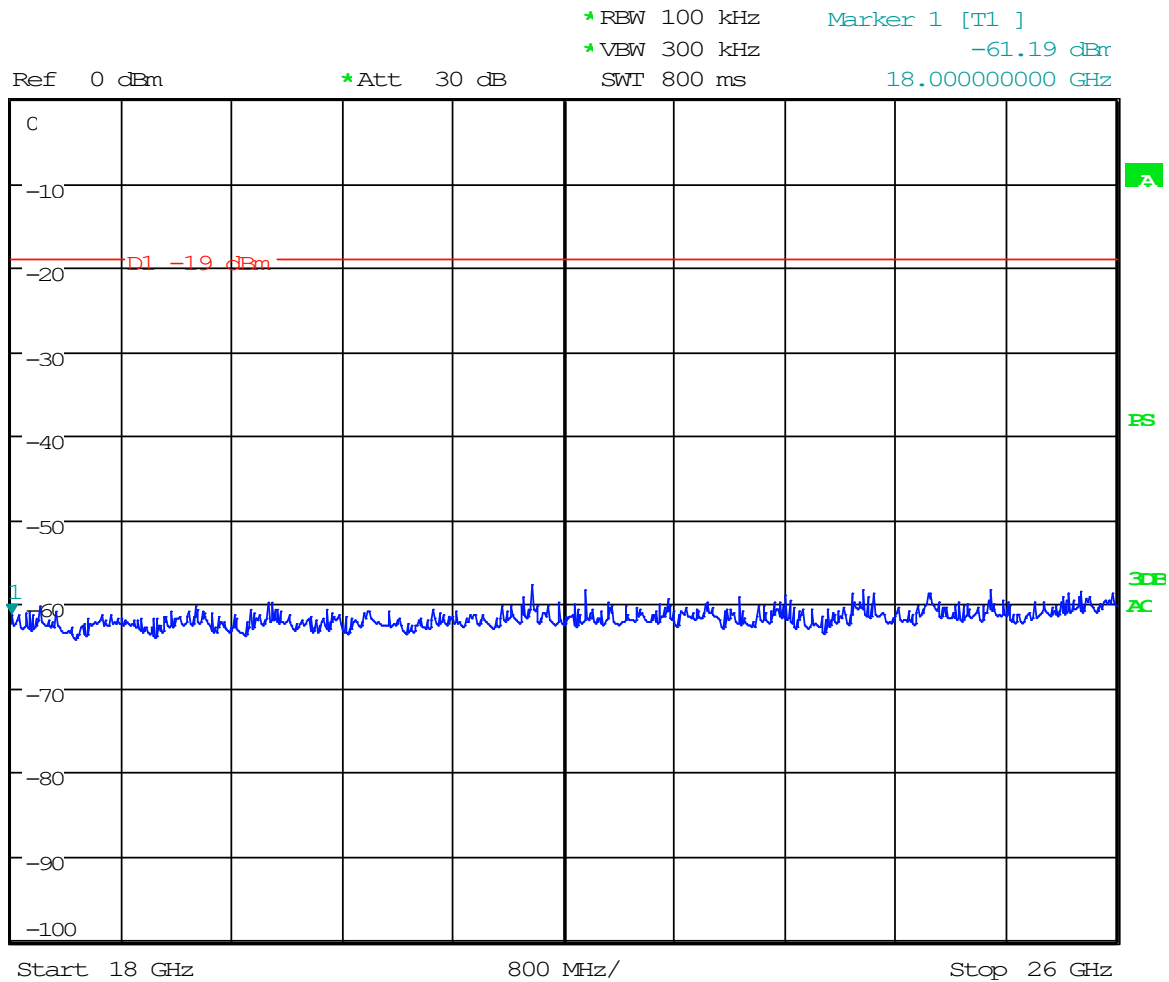
Date: 23.NOV.2021 13:14:46



OFDM, Mid Channel



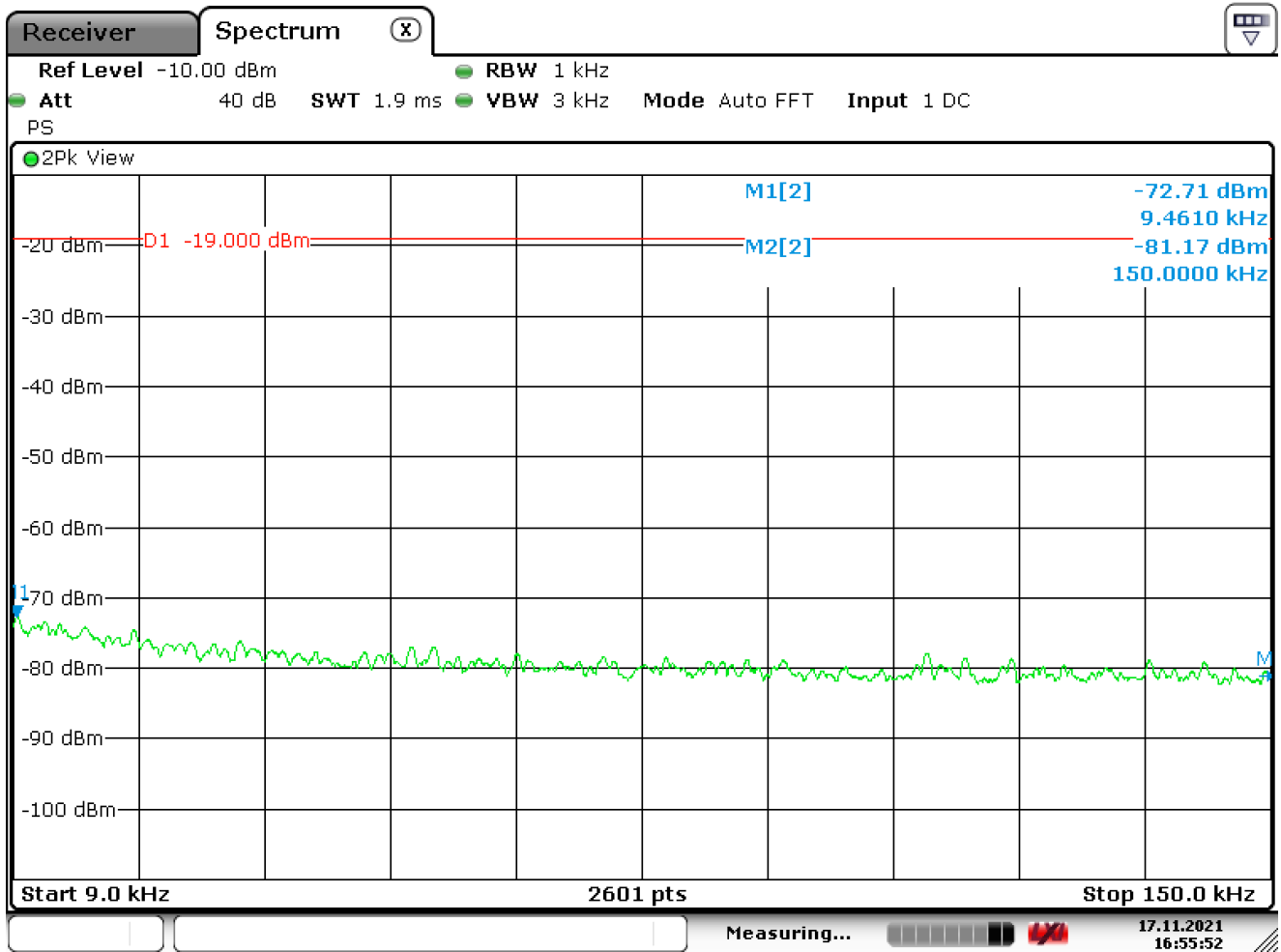
1.8K
VIEW



Date: 23.NOV.2021 13:13:30



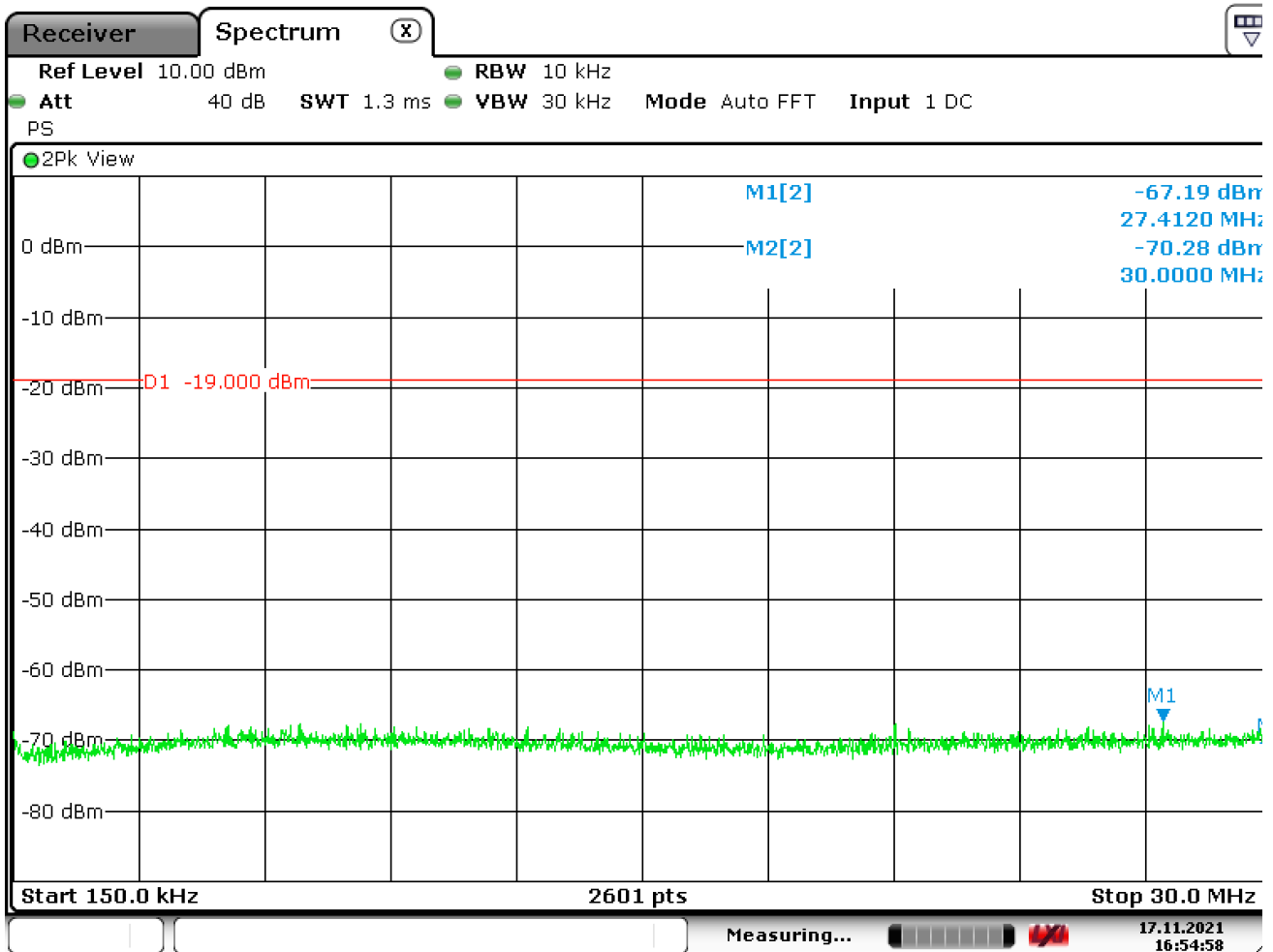
OFDM, High Channel



Date: 17.NOV.2021 16:55:52



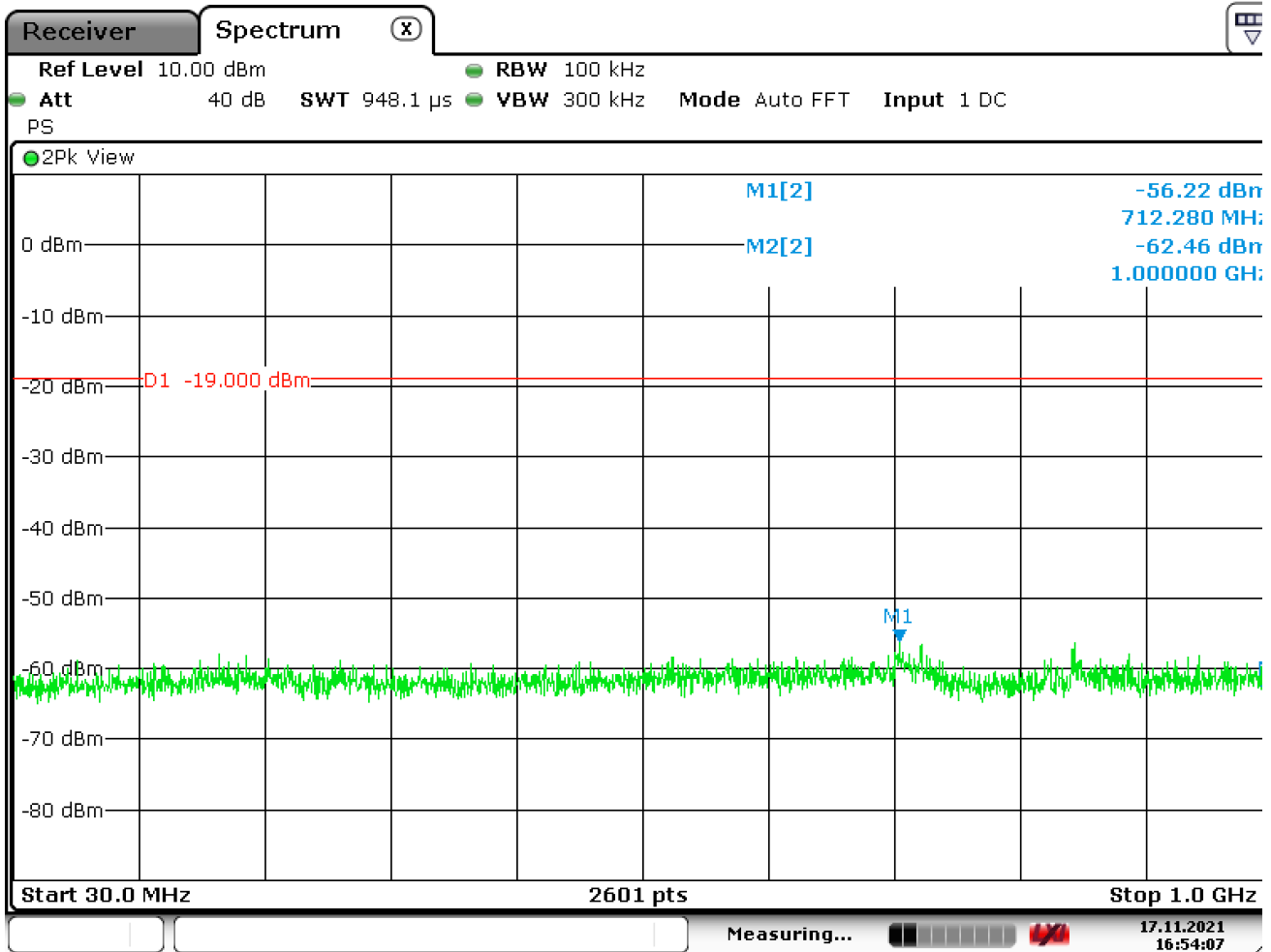
OFDM, High Channel, cont'd



Date: 17.NOV.2021 16:54:58



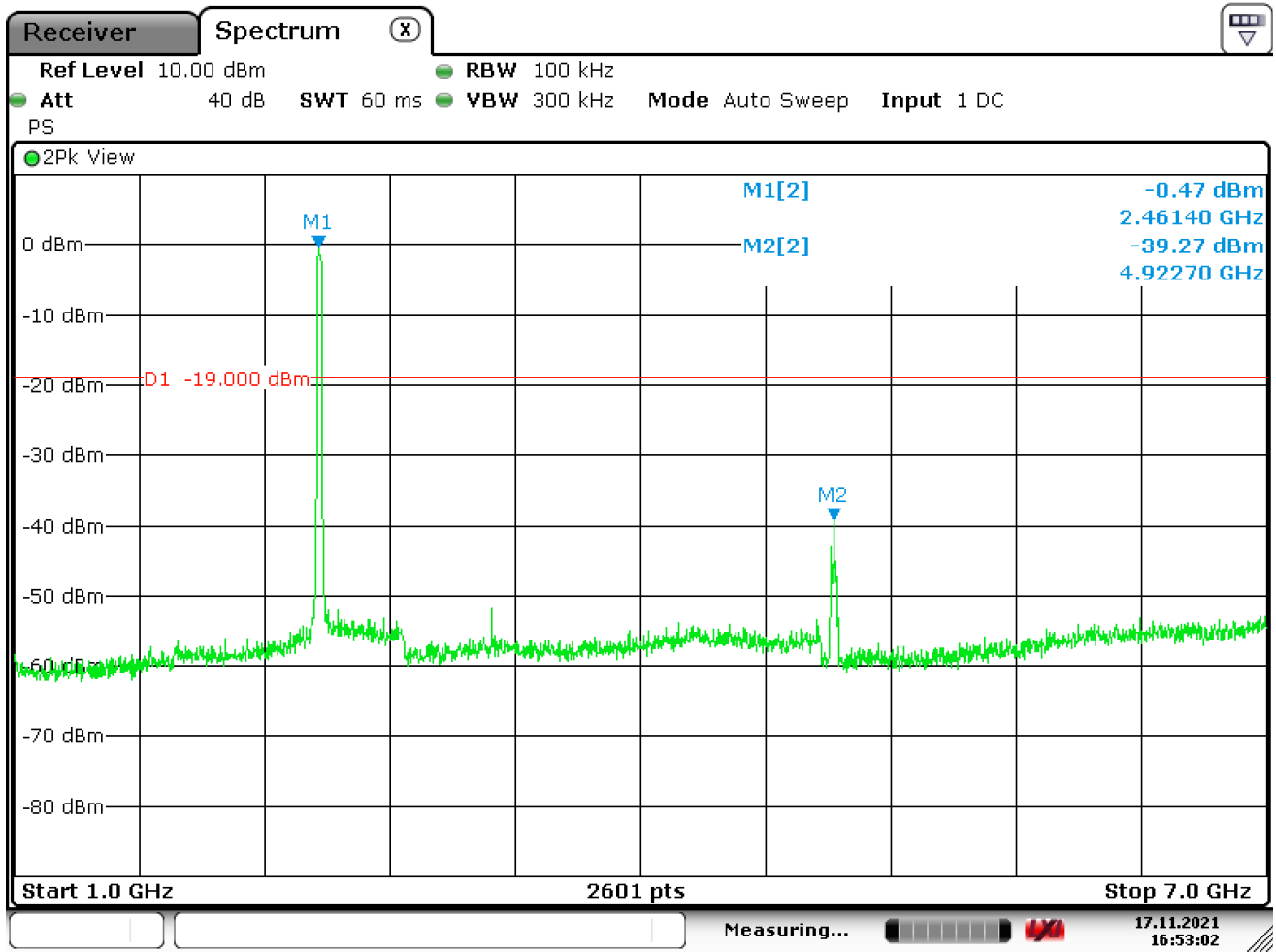
OFDM, High Channel, cont'd



Date: 17.NOV.2021 16:54:08



OFDM, High Channel, cont'd



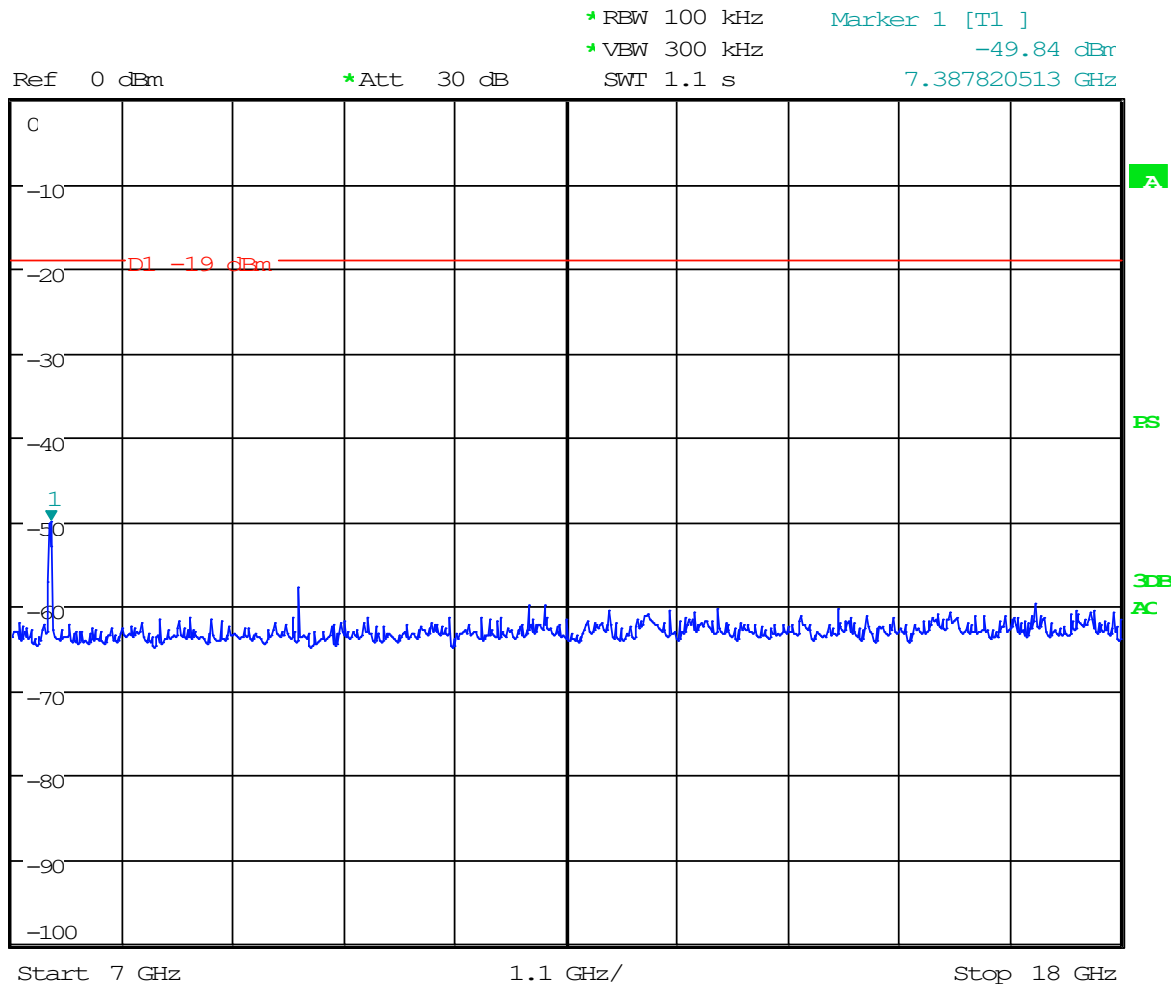
Date: 17.NOV.2021 16:53:03



OFDM, High Channel, cont'd



1 PK
VIEW



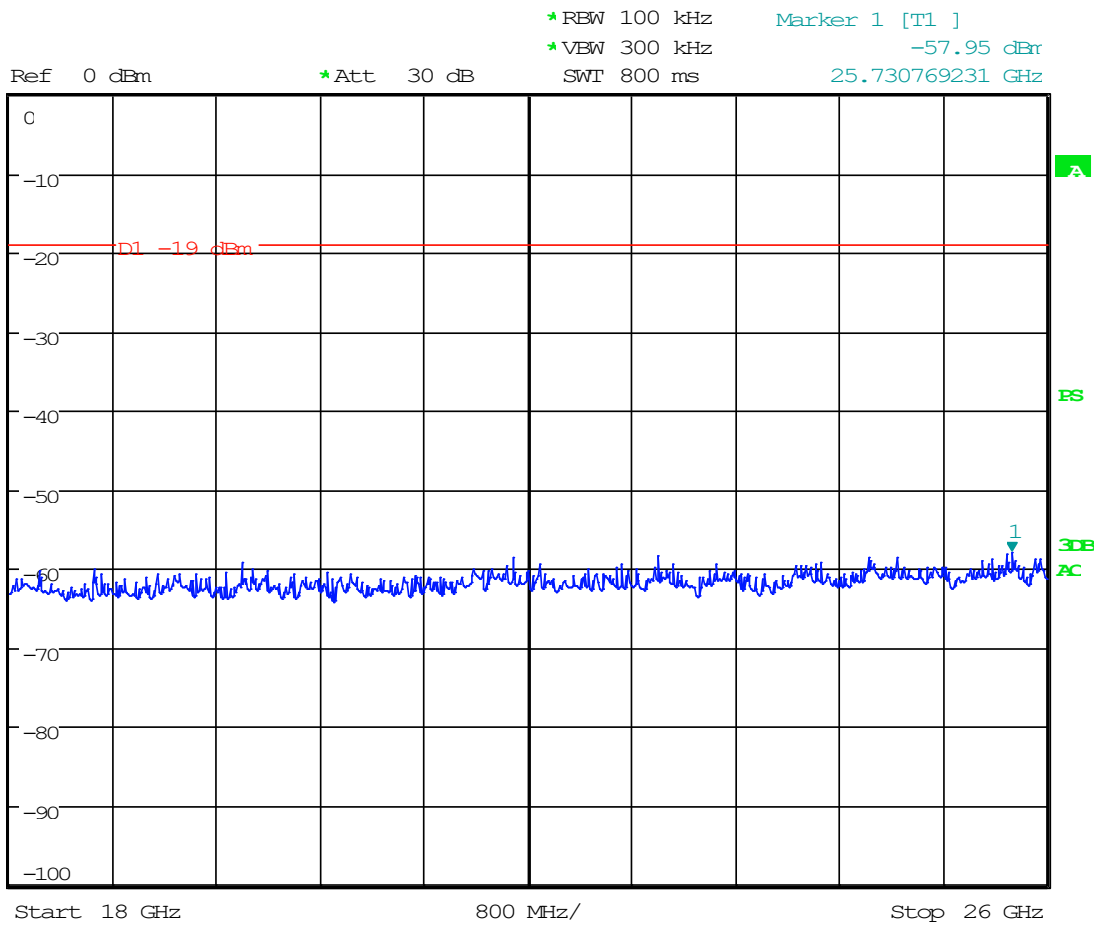
Date: 23.NOV.2021 13:15:26



OFDM, High Channel, cont'd



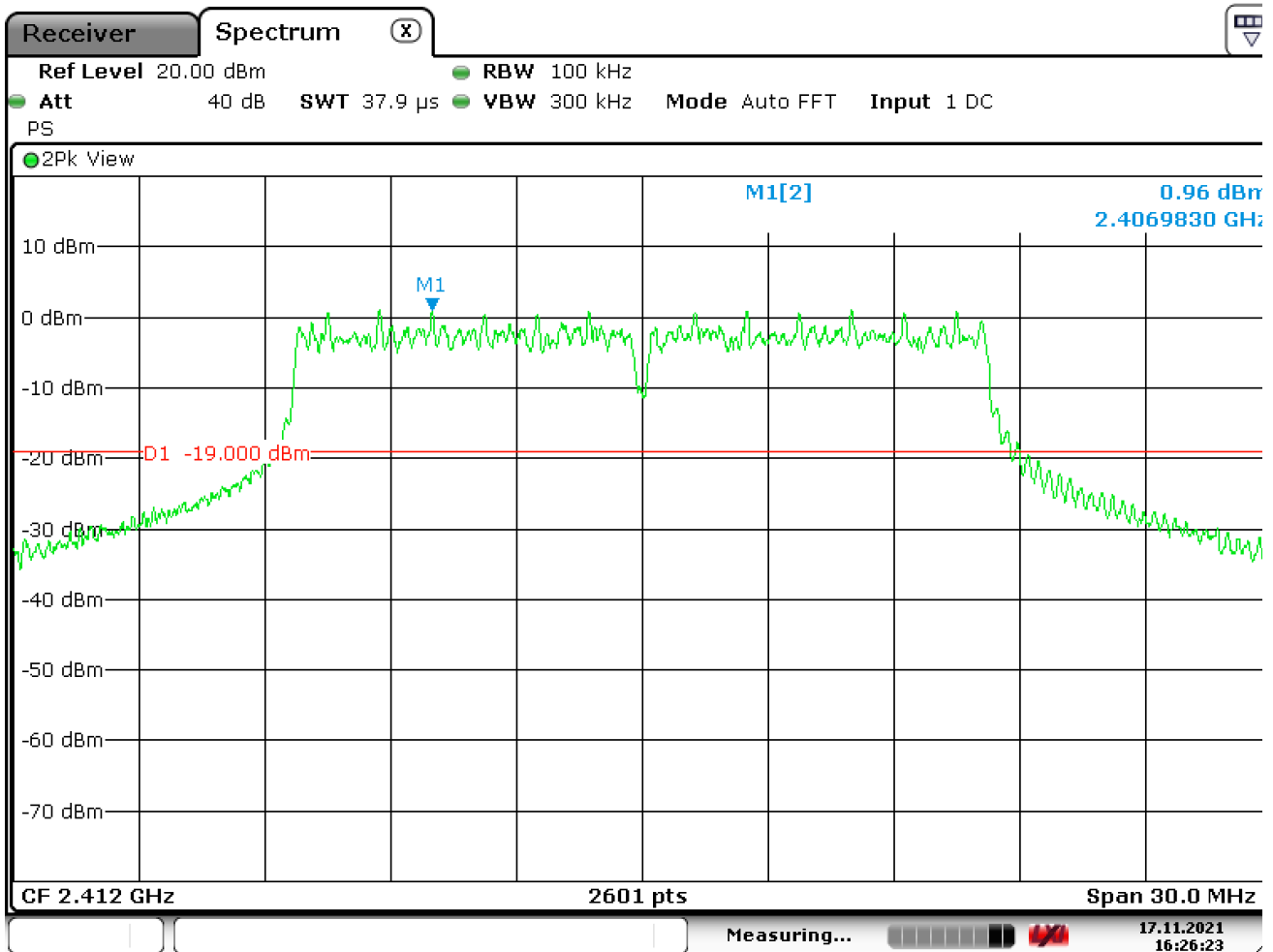
1 PK
VIEW



Date: 23.NOV.2021 13:13:44



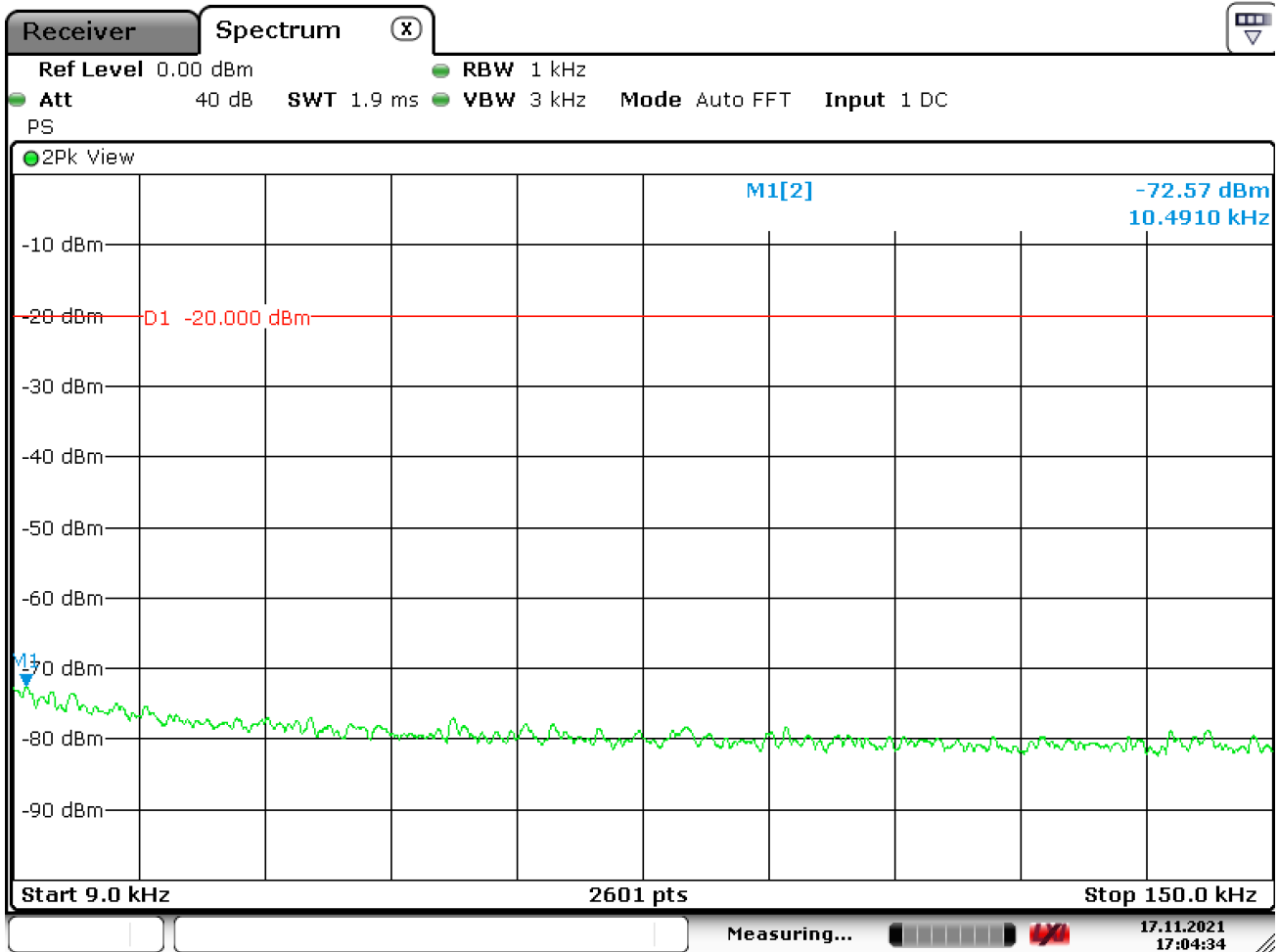
OFDM Reference



Date: 17.NOV.2021 16:26:23



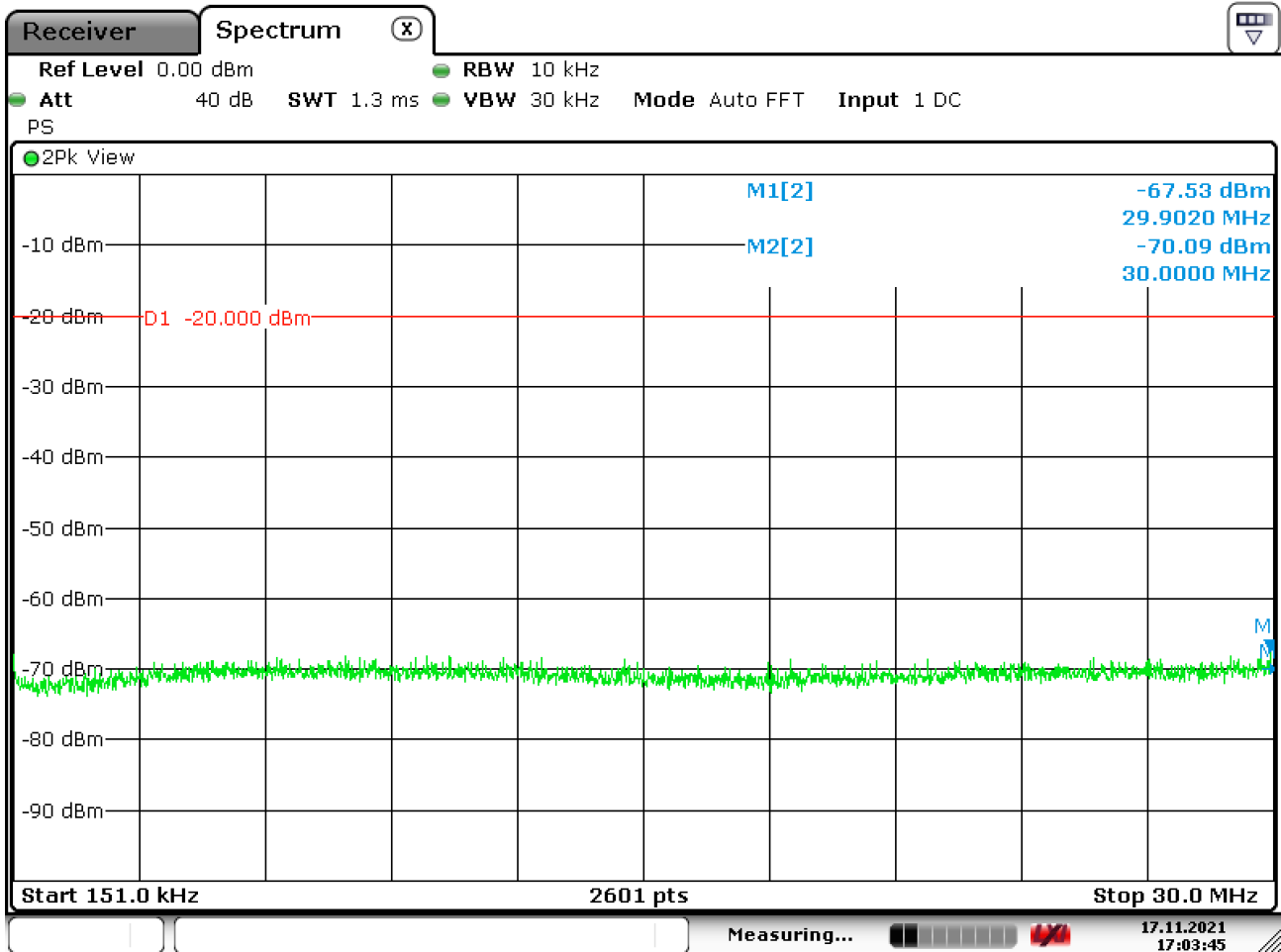
MCS7, Low Channel



Date: 17.NOV.2021 17:04:34



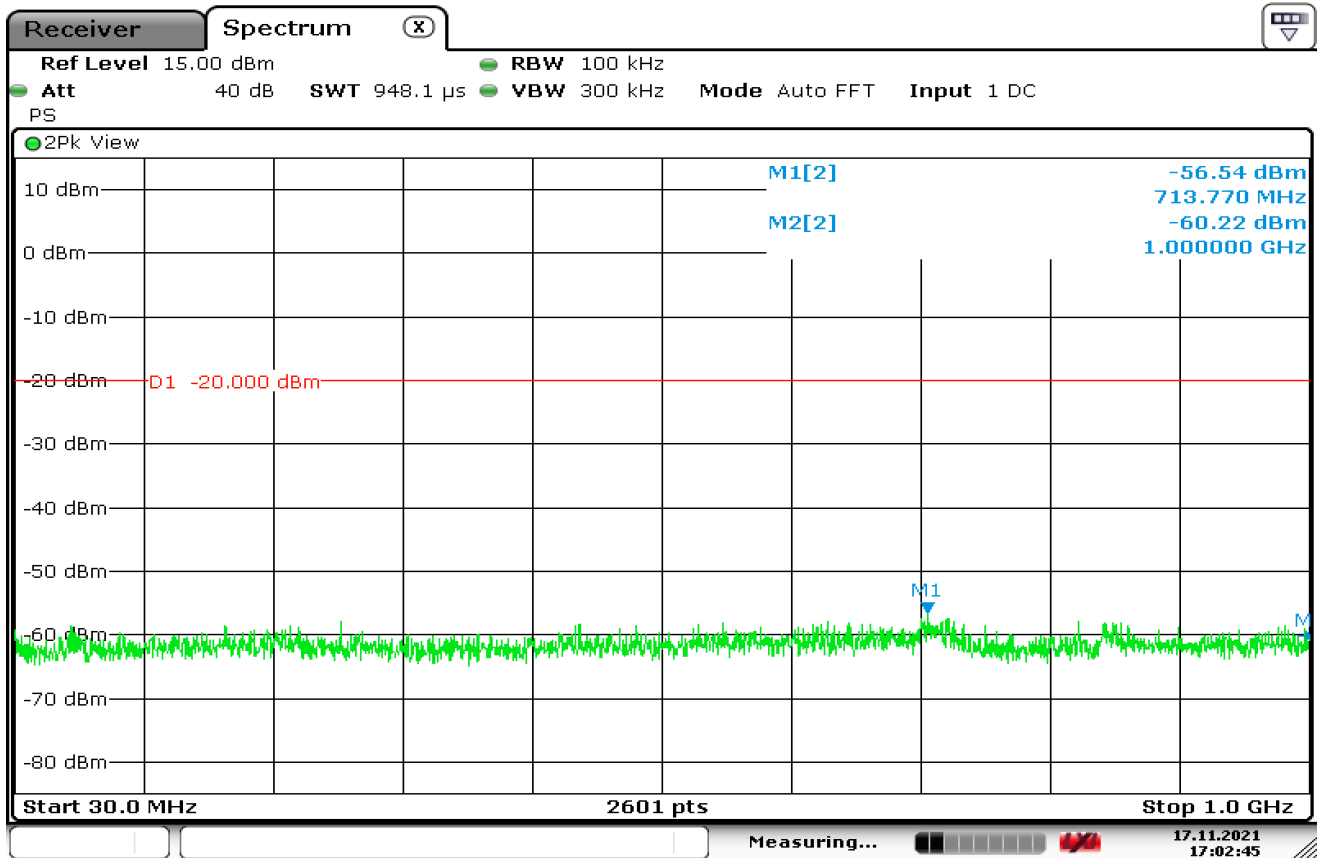
MCS7, Low Channel, cont'd



Date: 17.NOV.2021 17:03:45



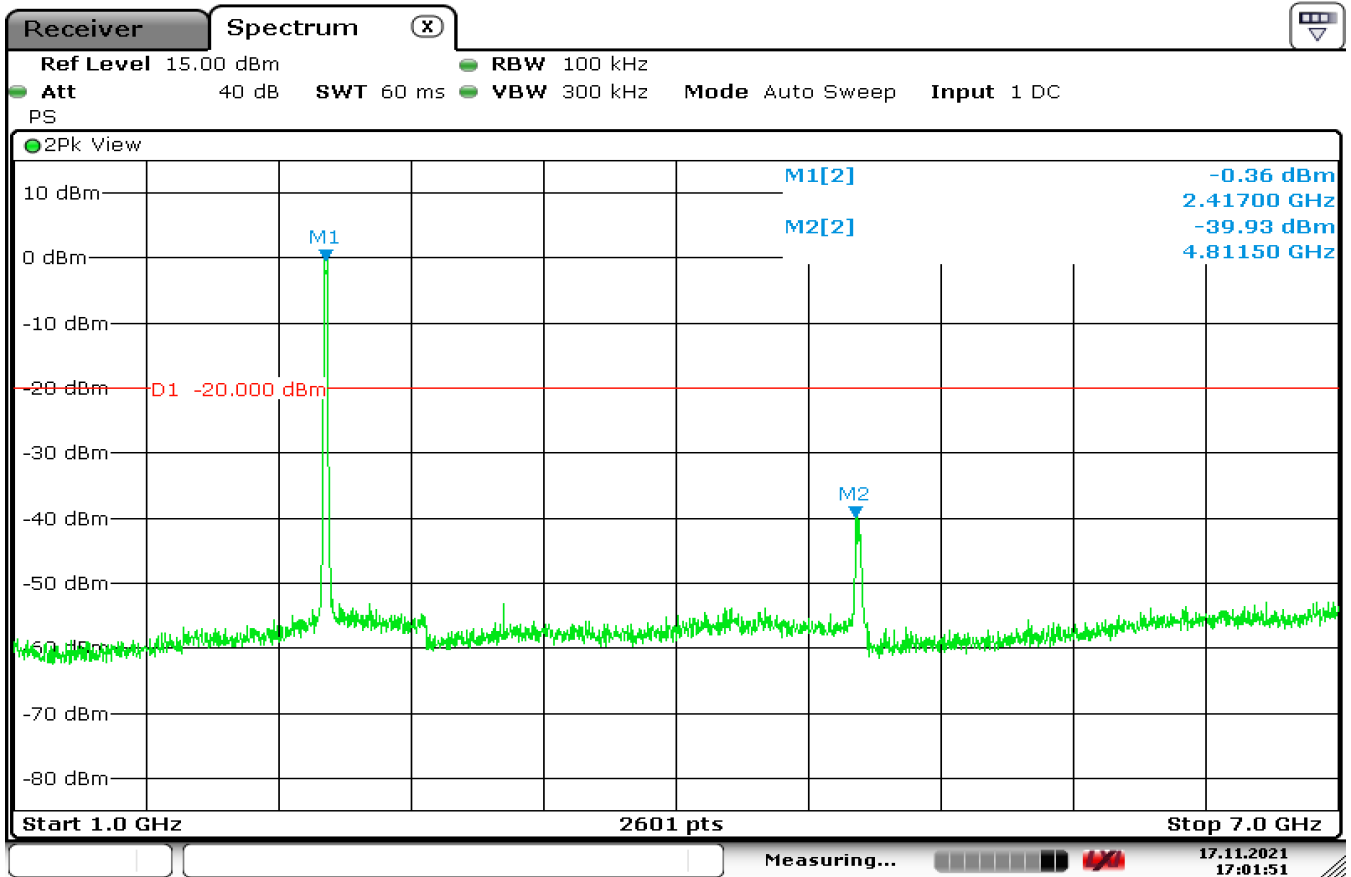
MCS7, Low Channel, cont'd



Date: 17.NOV.2021 17:02:45



MCS7, Low Channel, cont'd



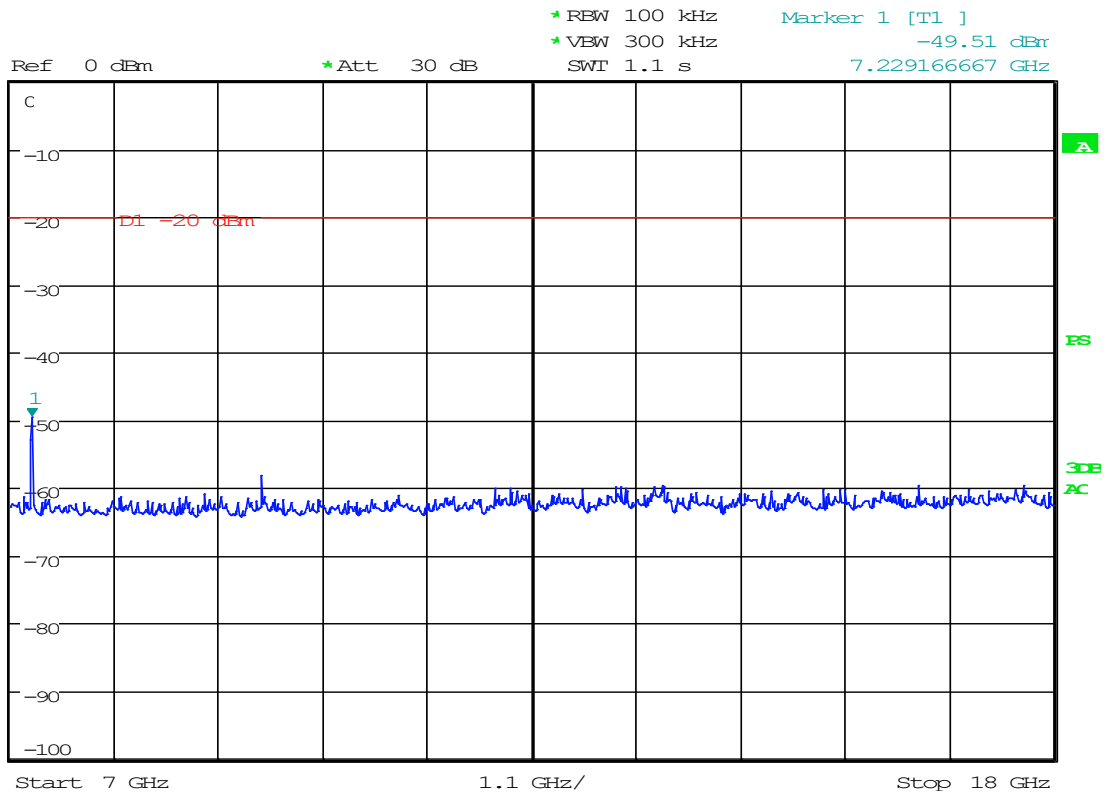
Date: 17.NOV.2021 17:01:50



MCS7, Low Channel, cont'd



1. PR
VIBR



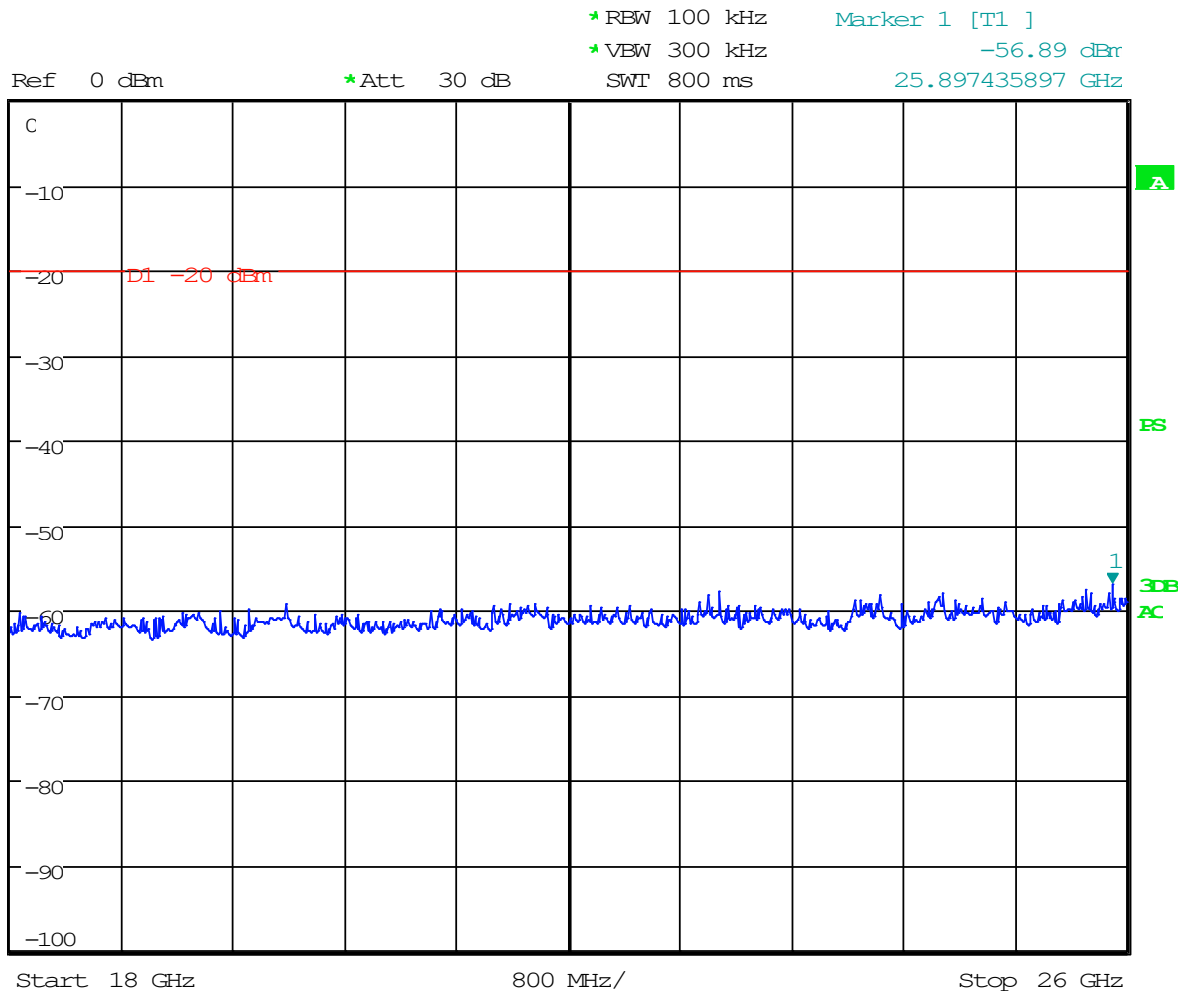
Date: 23.NOV.2021 13:24:46



MCS7, Low Channel, cont'd



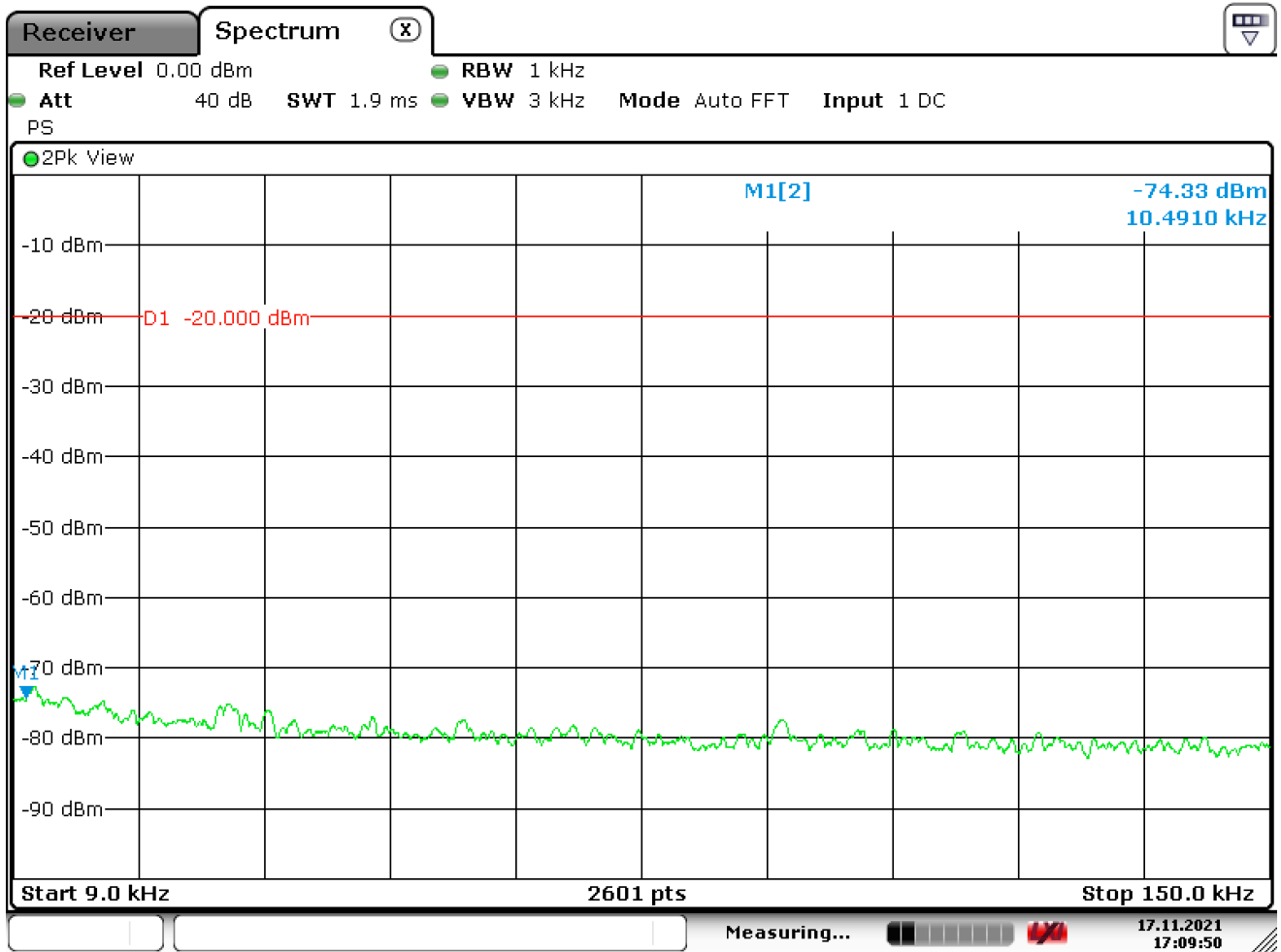
1 PK
VIEW



Date: 23.NOV.2021 13:27:16



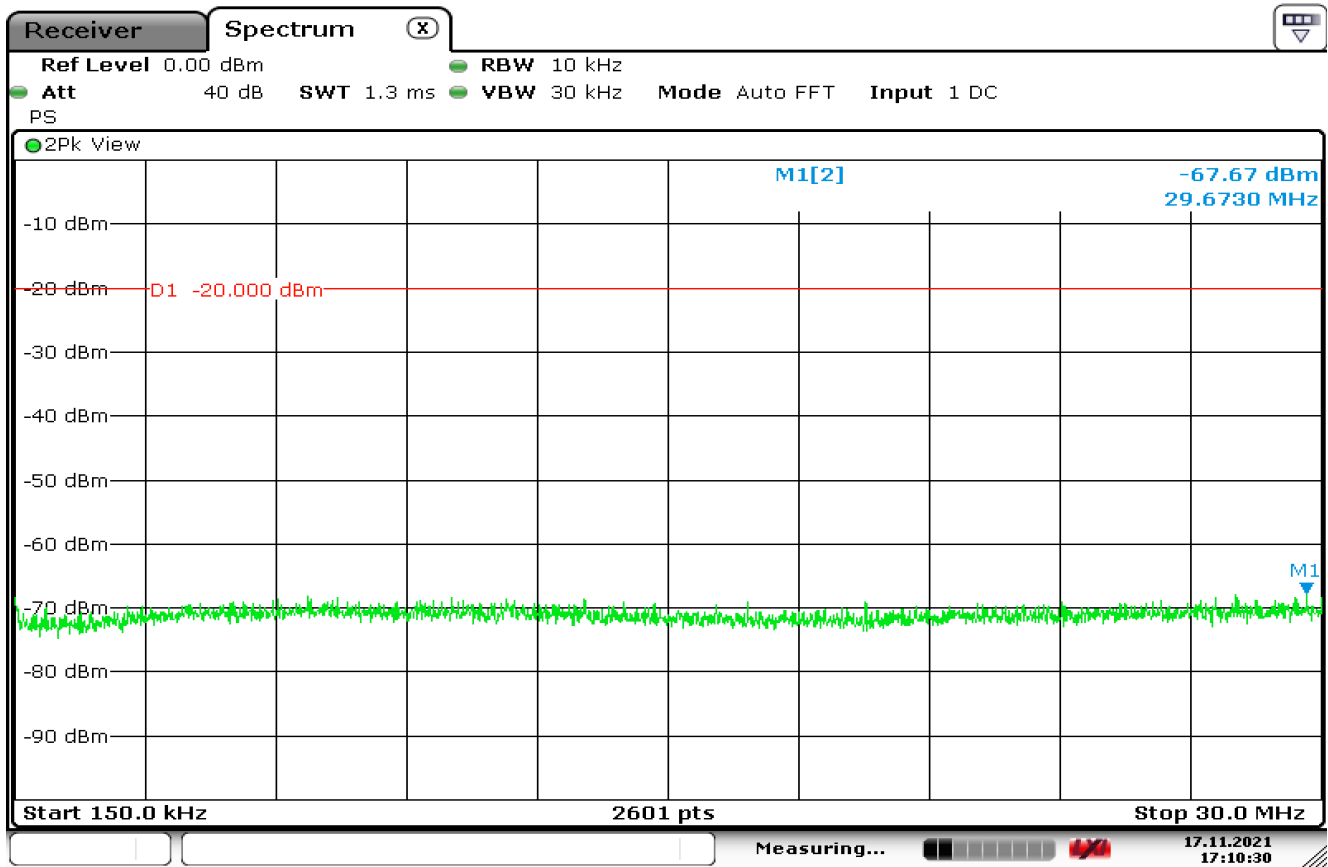
MCS7, Mid Channel



Date: 17.NOV.2021 17:09:50



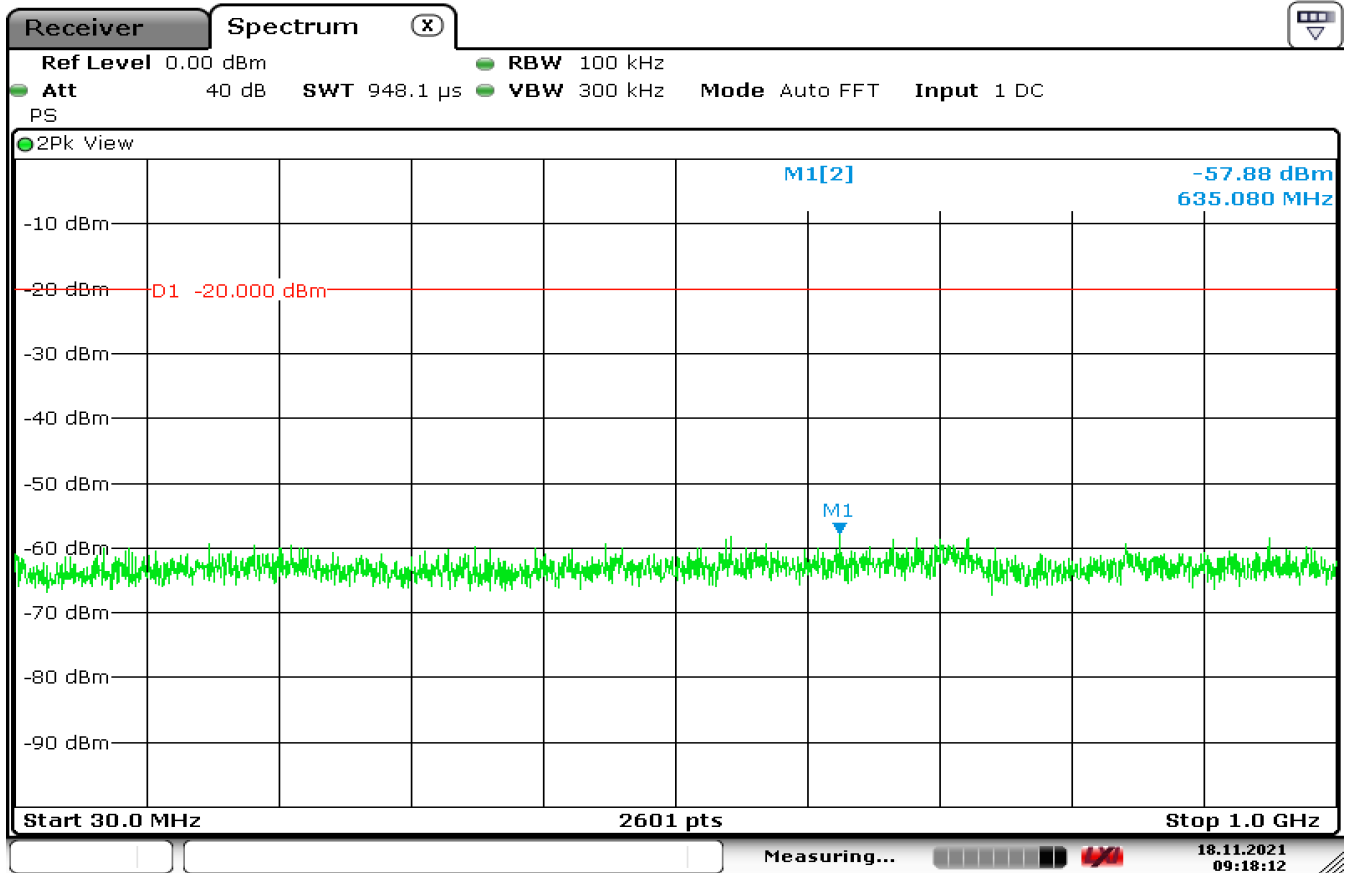
MCS7, Mid Channel, cont'd



Date: 17.NOV.2021 17:10:30



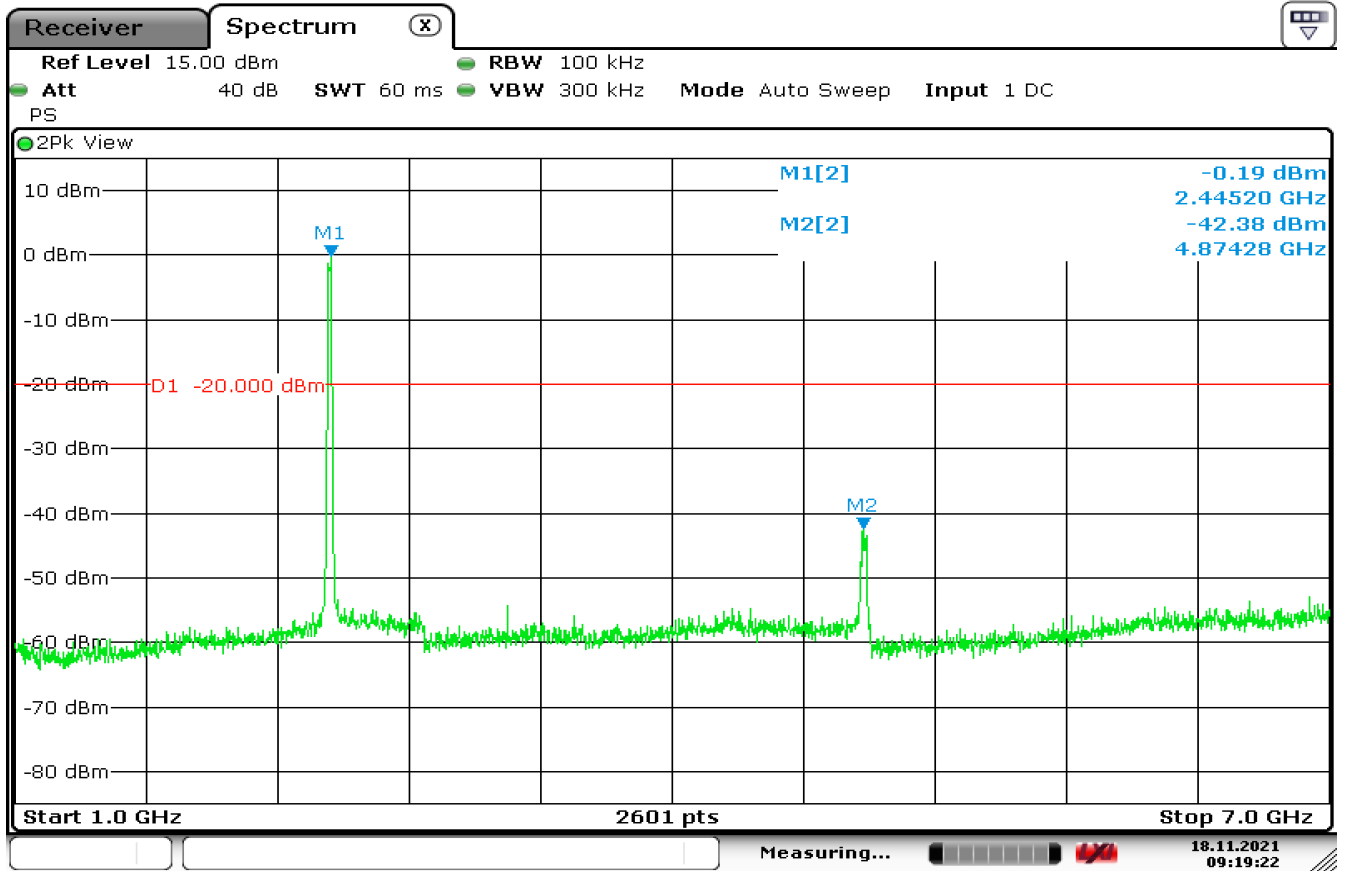
MCS7, Mid Channel, cont'd



Date: 18.NOV.2021 09:18:12



MCS7, Mid Channel, cont'd



Date: 18.NOV.2021 09:19:22



Order Number: F2P26156A

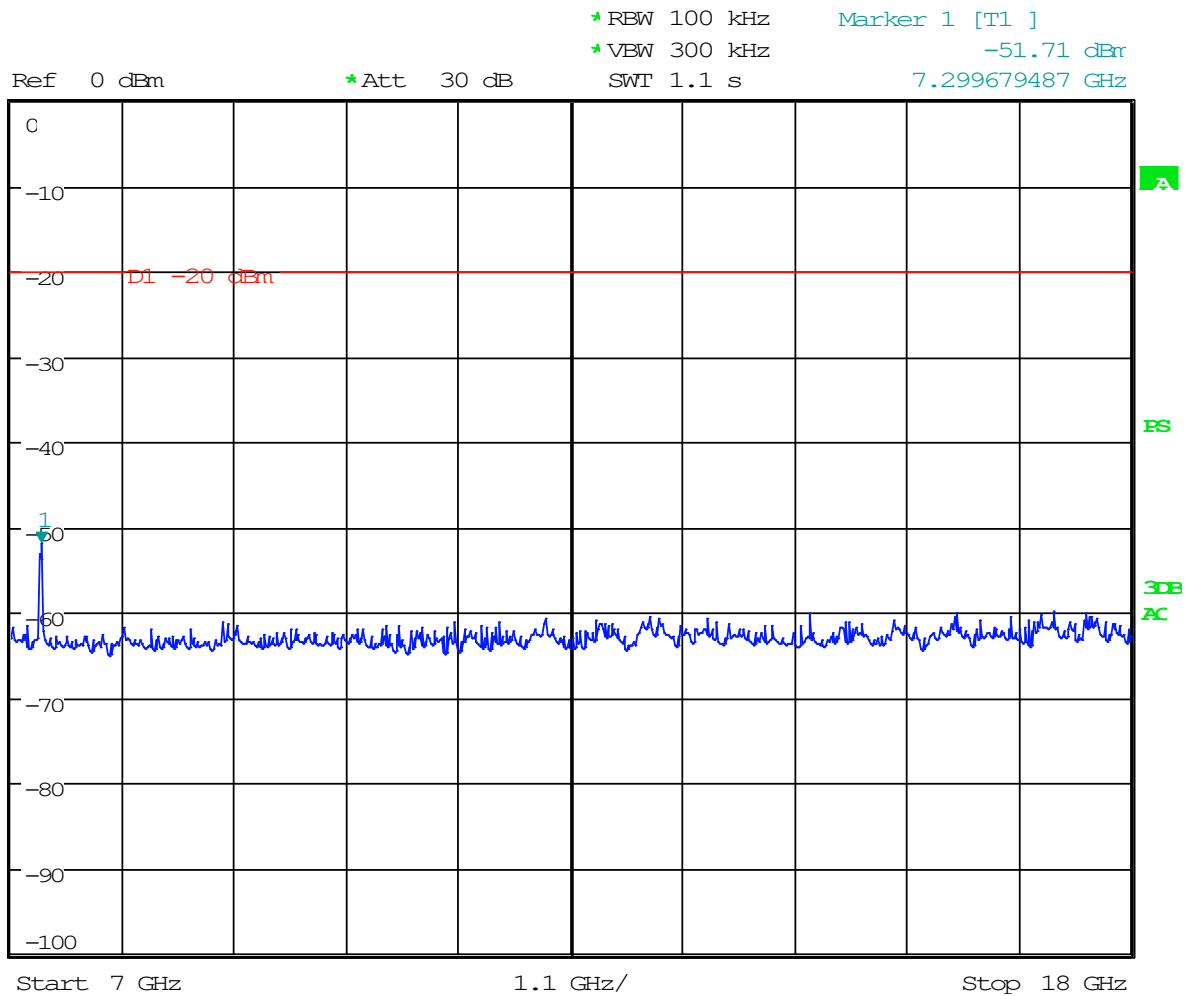
Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS7, Mid Channel, cont'd



1 PK
VIEW



Date: 23.NOV.2021 13:25:39



Order Number: F2P26156A

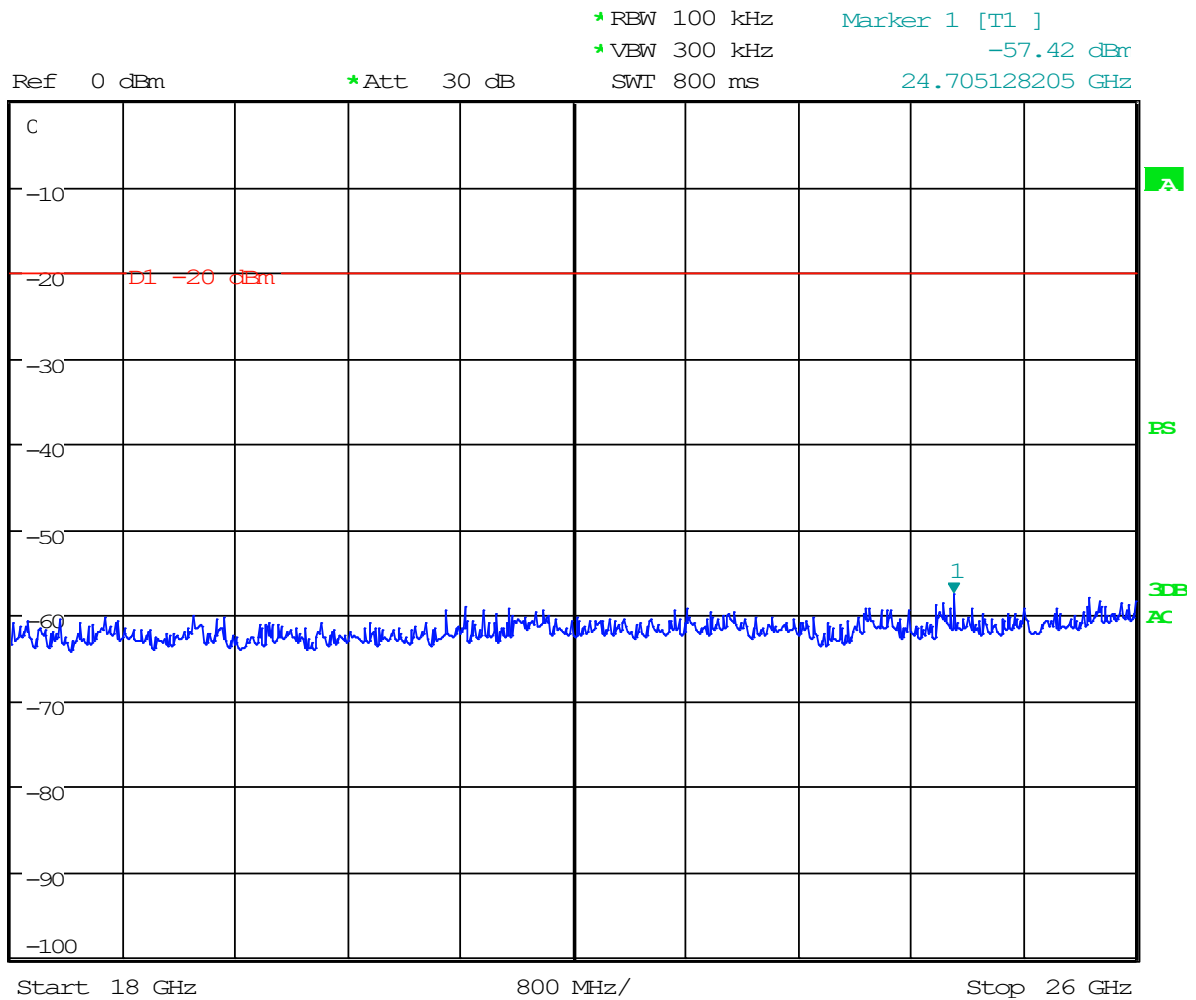
Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS7, Mid Channel

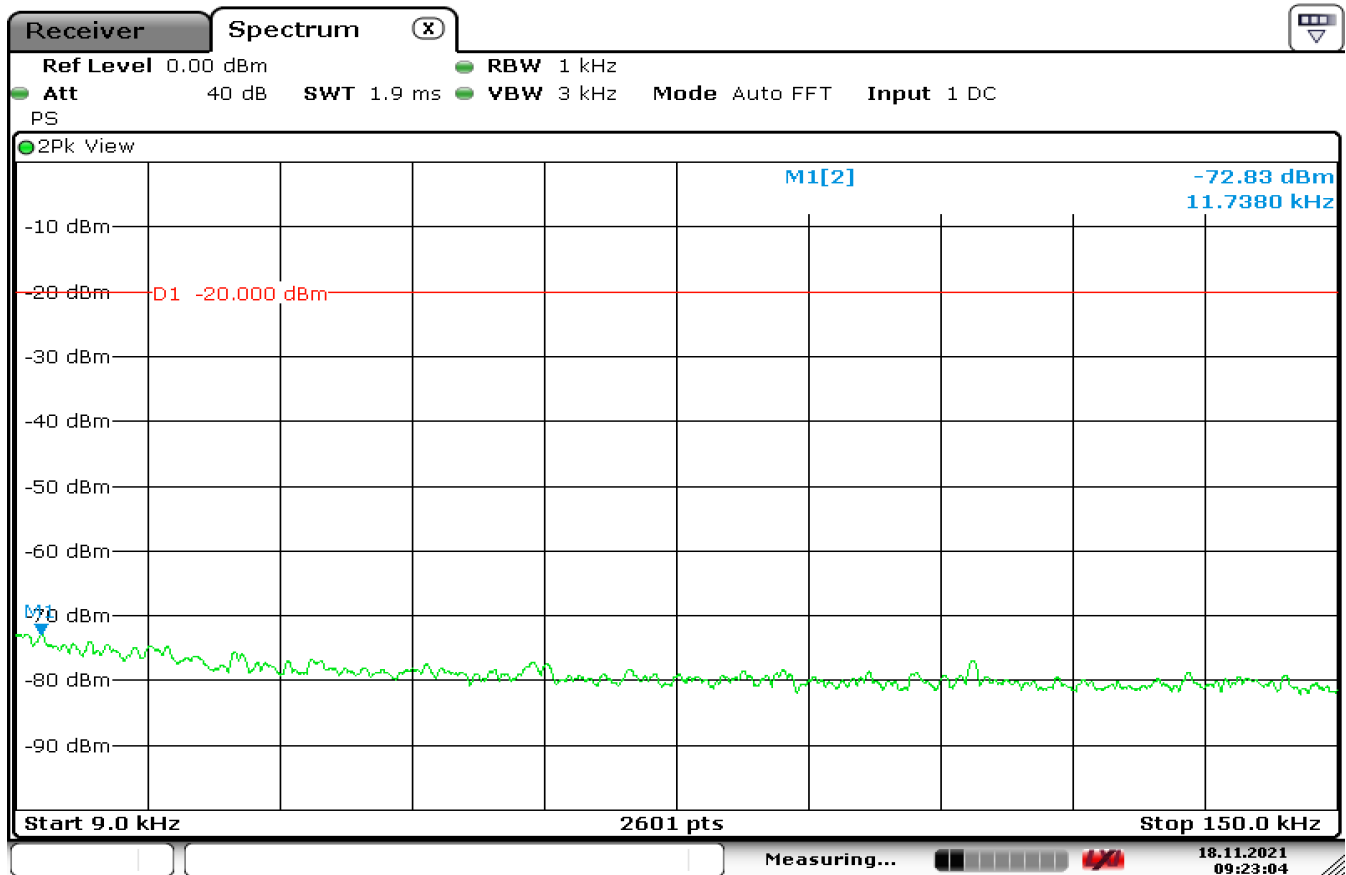


1 PK
VIEW





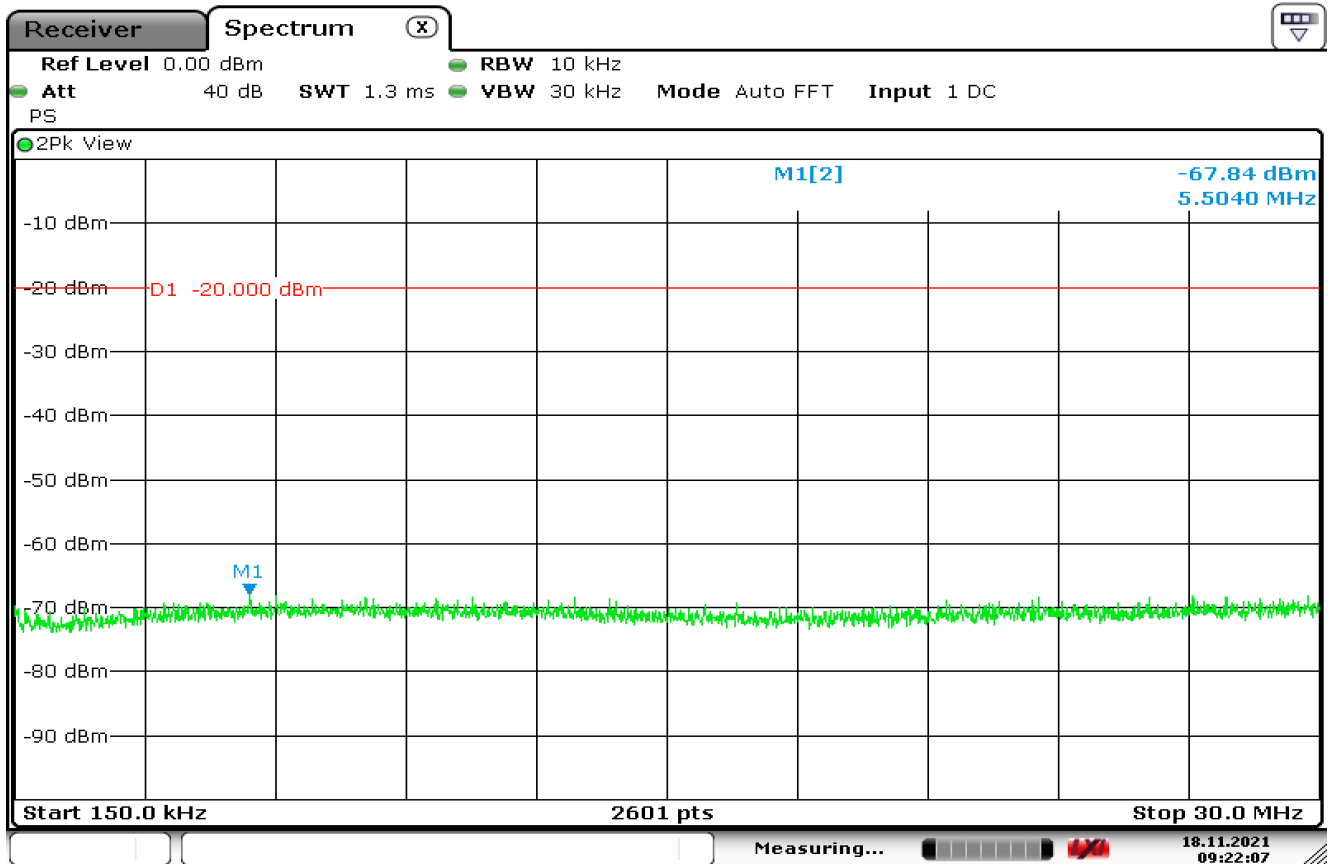
MCS7, High Channel



Date: 18.NOV.2021 09:23:04



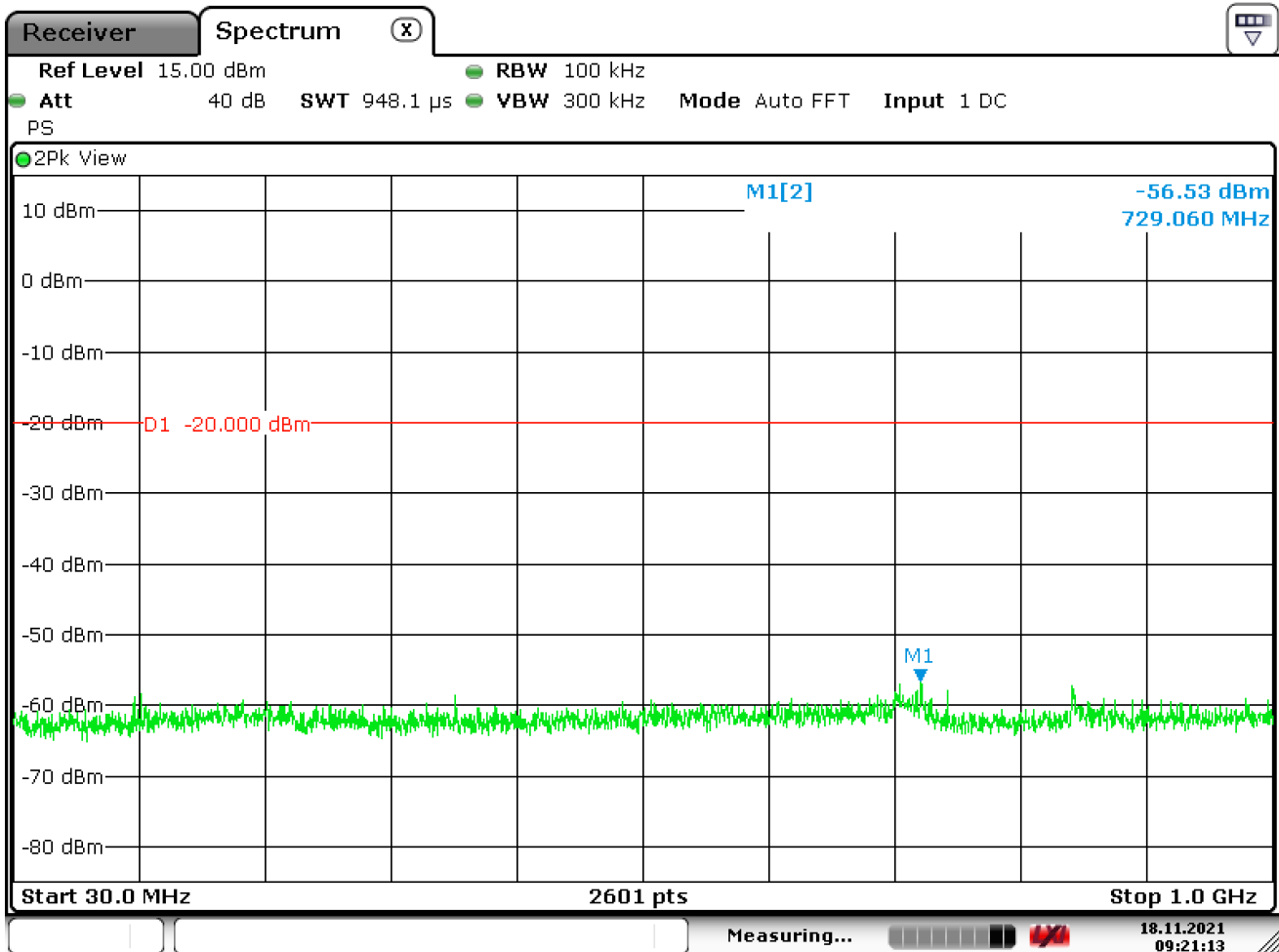
MCS7, High Channel, cont'd



Date: 18.NOV.2021 09:22:07



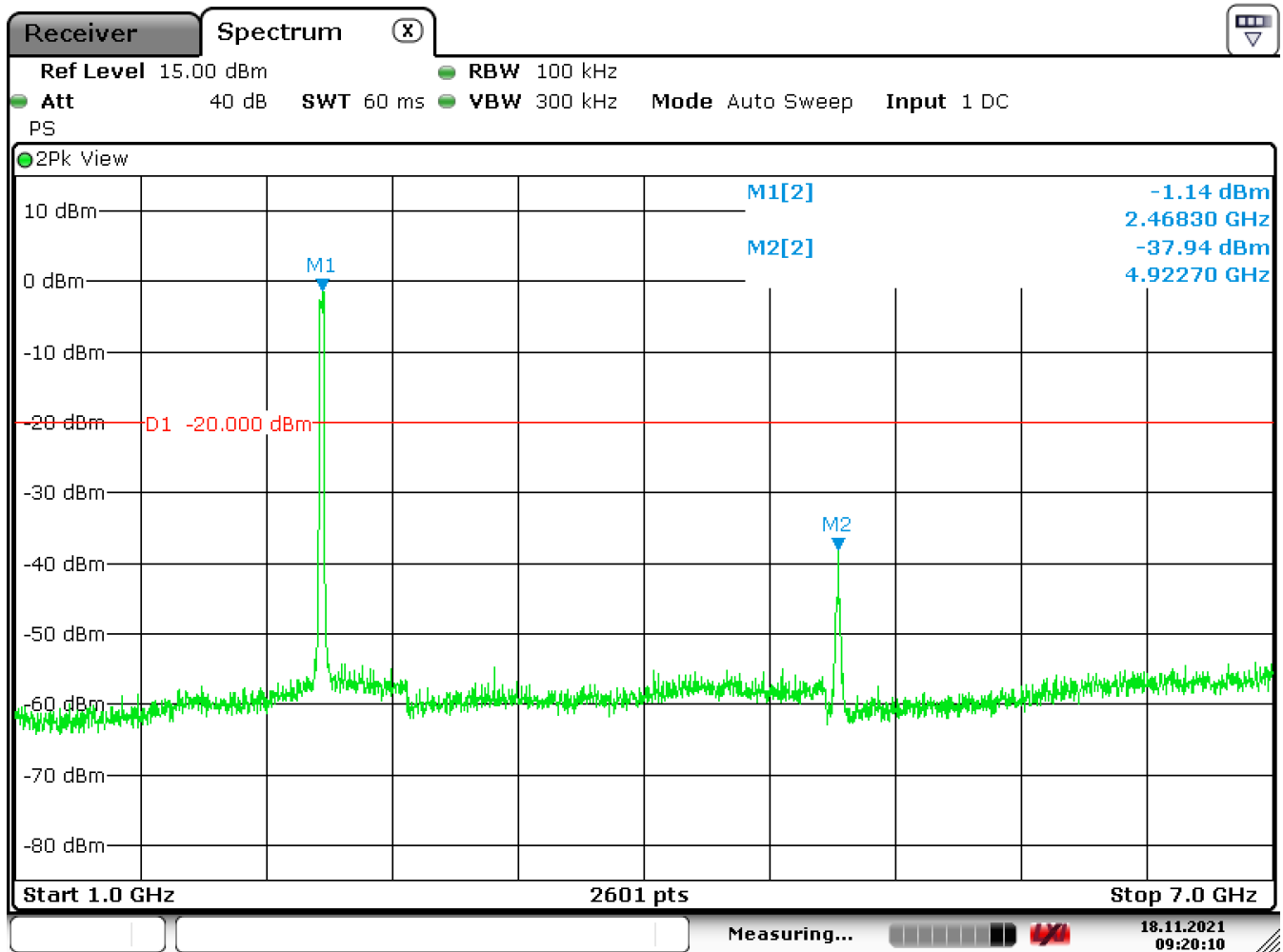
MCS7, High Channel, cont'd



Date: 18.NOV.2021 09:21:14



MCS7, High Channel, cont'd



Date: 18.NOV.2021 09:20:11



Order Number: F2P26156A

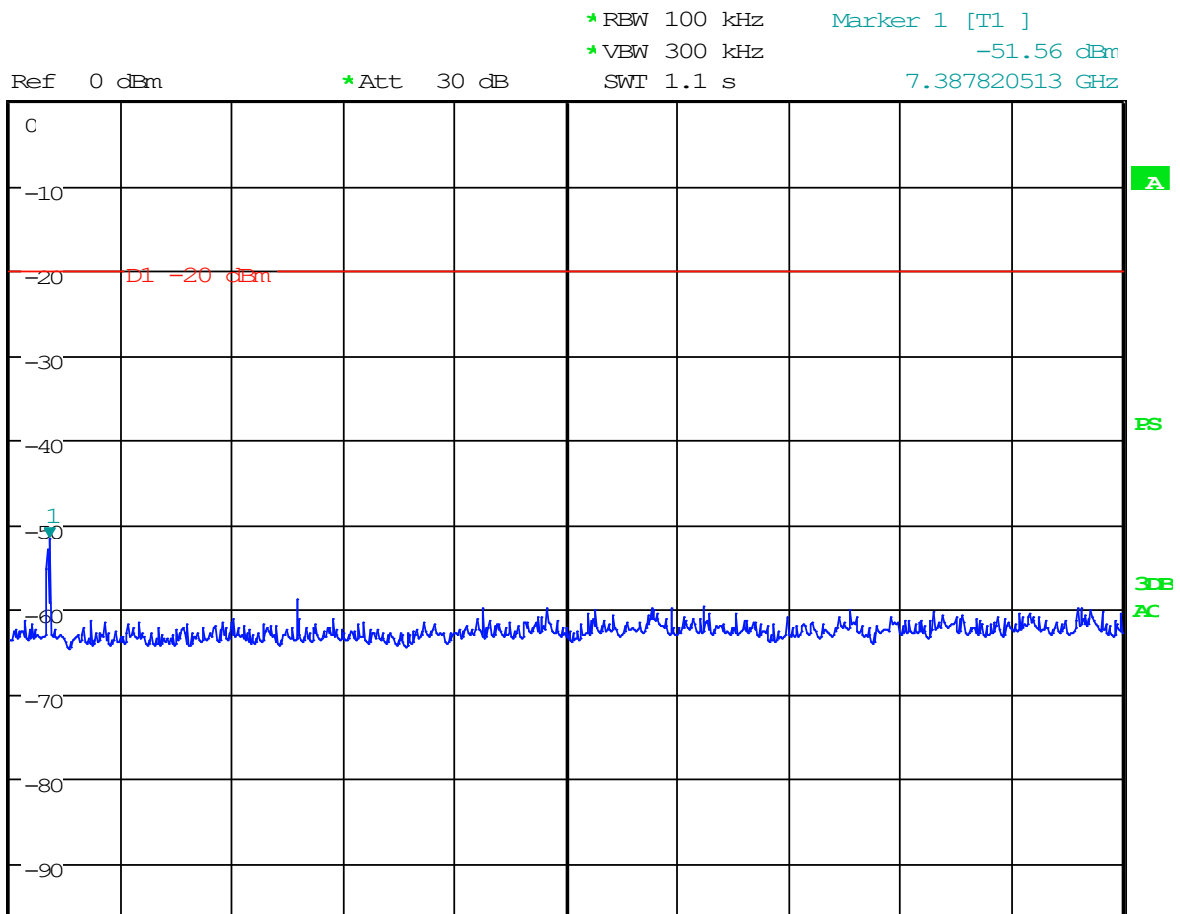
Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS7, High Channel, cont'd



1.8K
VIEW

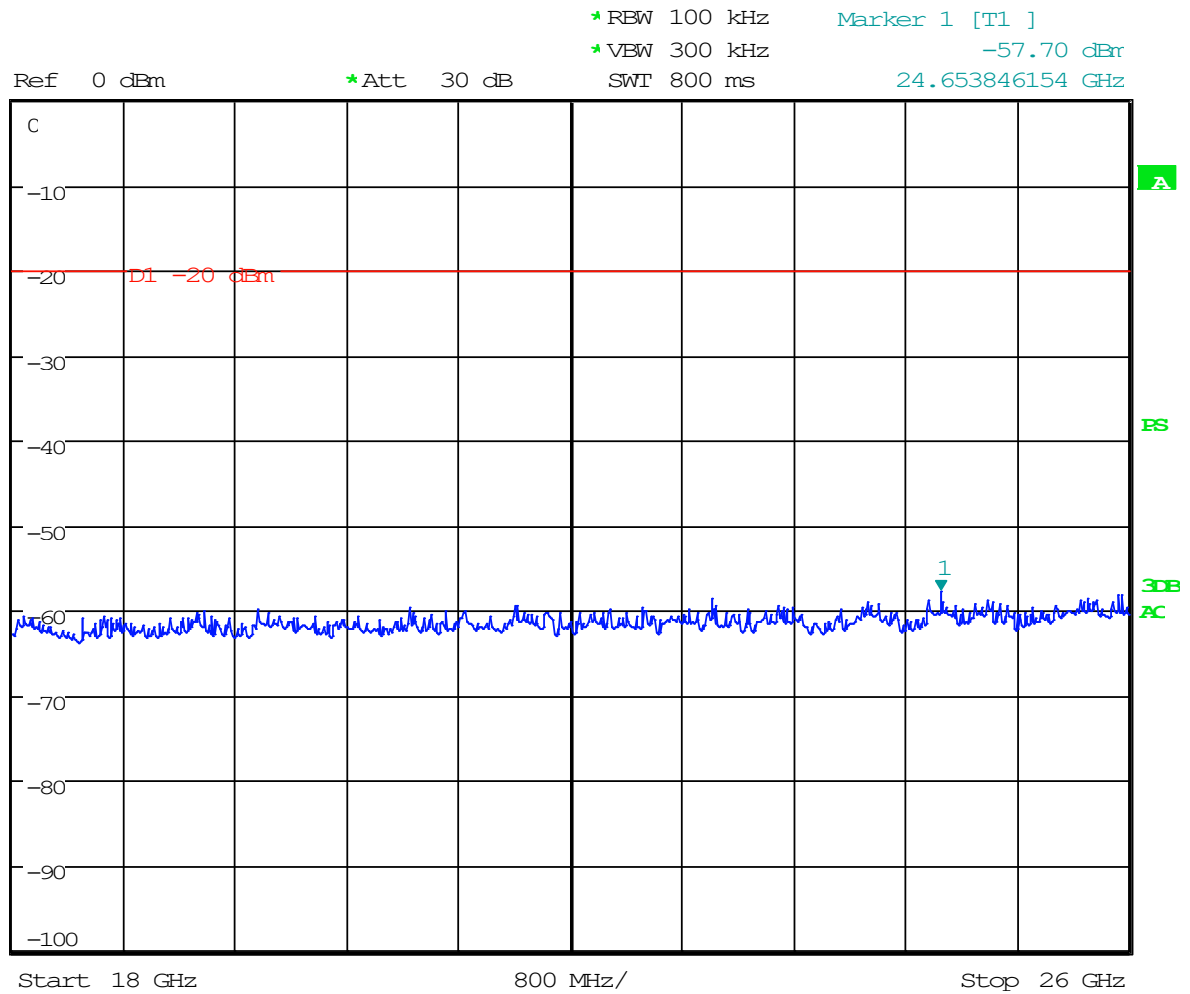




MCS7, High Channel, cont'd

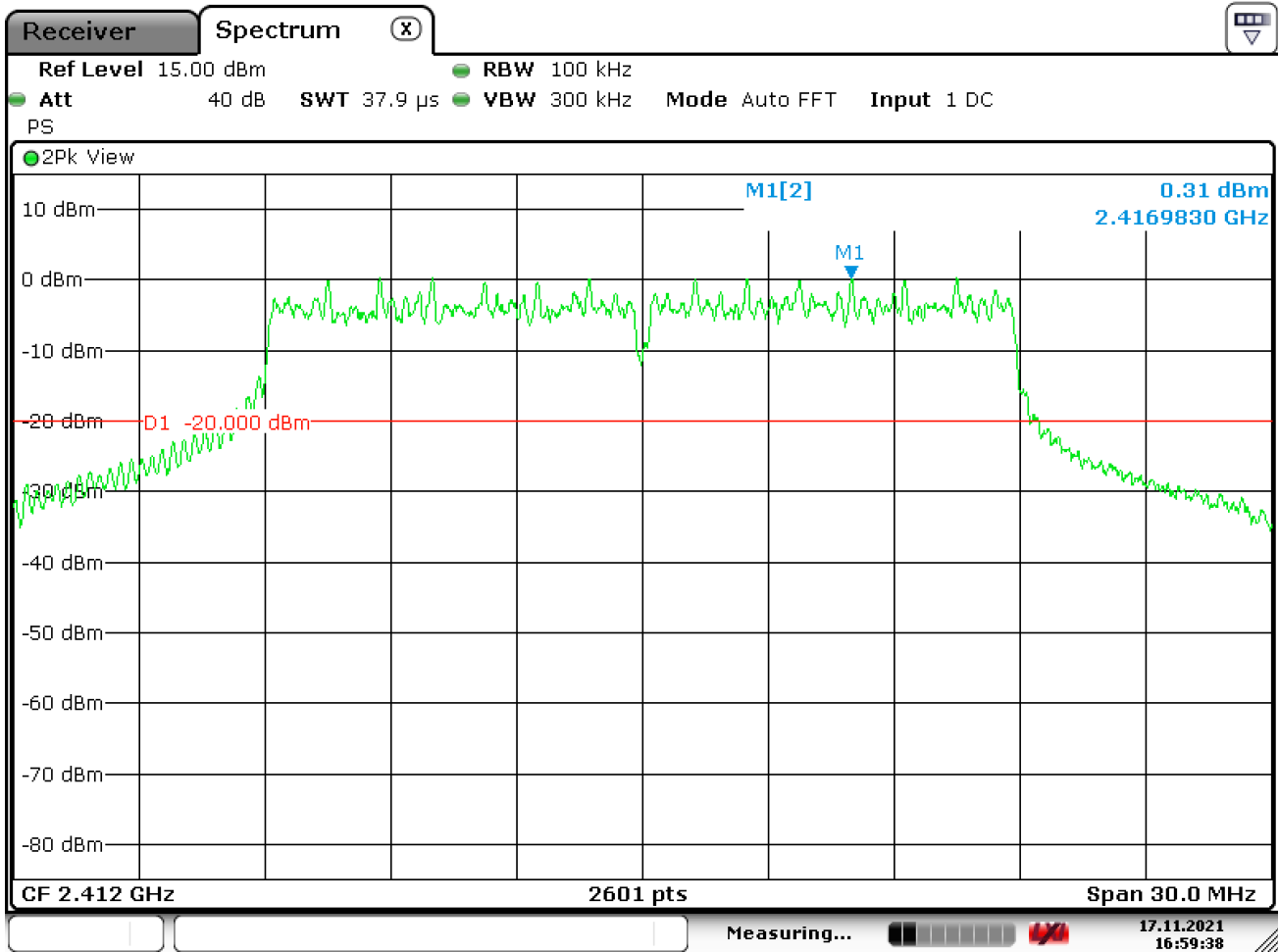


1 PK
VIEW





MCS7, Reference



Date: 17.NOV.2021 16:59:38



Order Number: F2P26156A

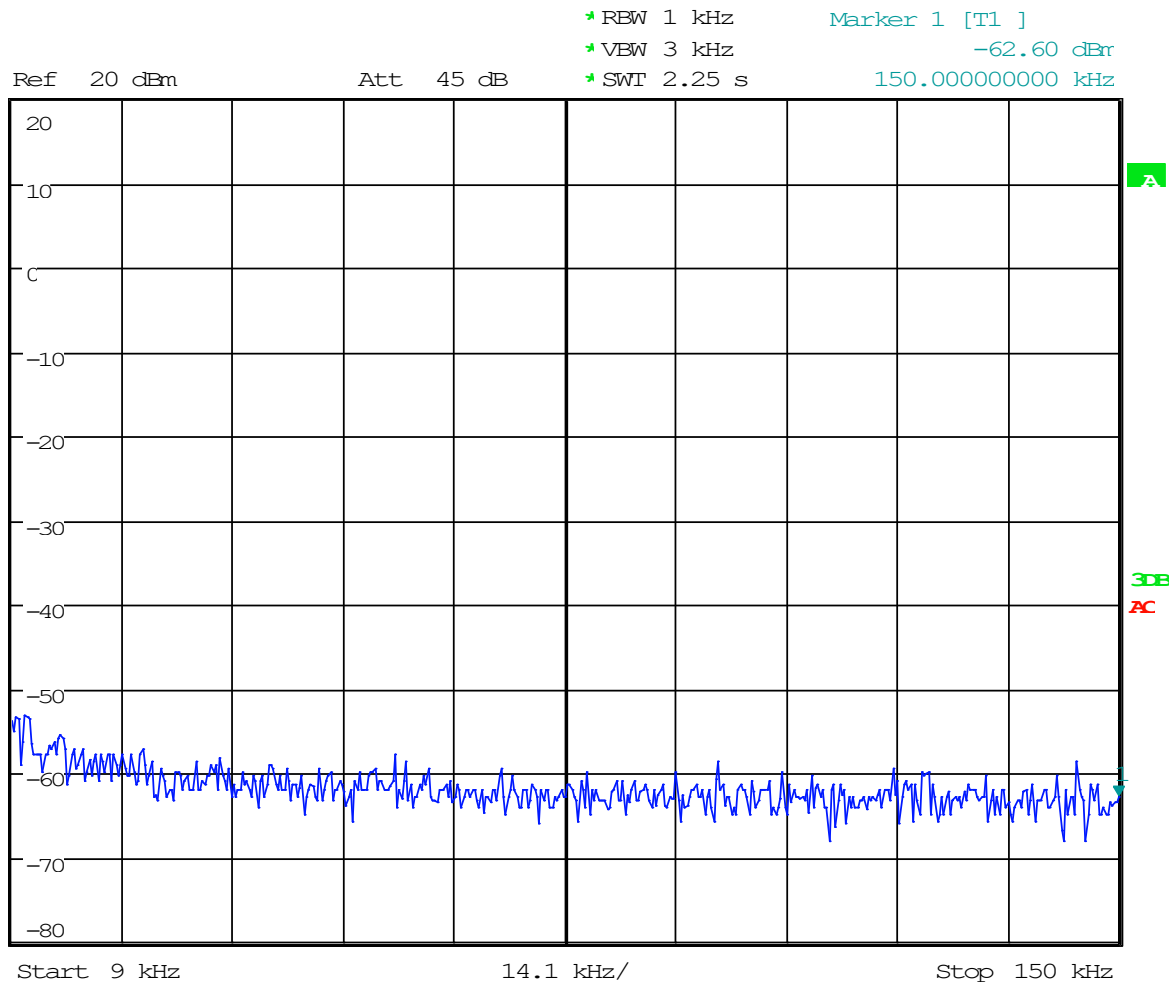
Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11



AC IN
1.0K
VIEW



Date: 22.APR.2022 12:48:17

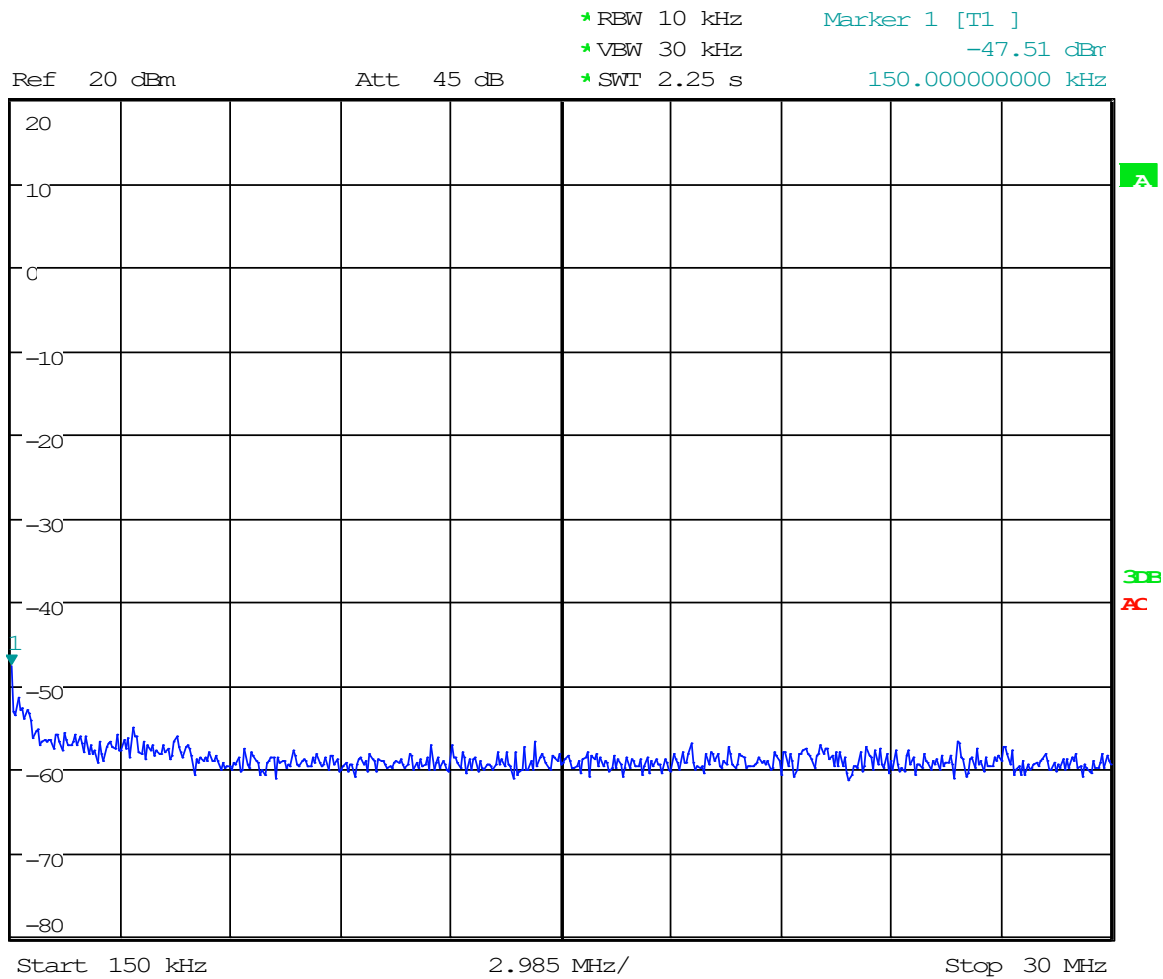


CCK 11, cont'd



AC IN

1 PK
VIEW



Date: 22.APR.2022 12:48:51



Order Number: F2P26156A

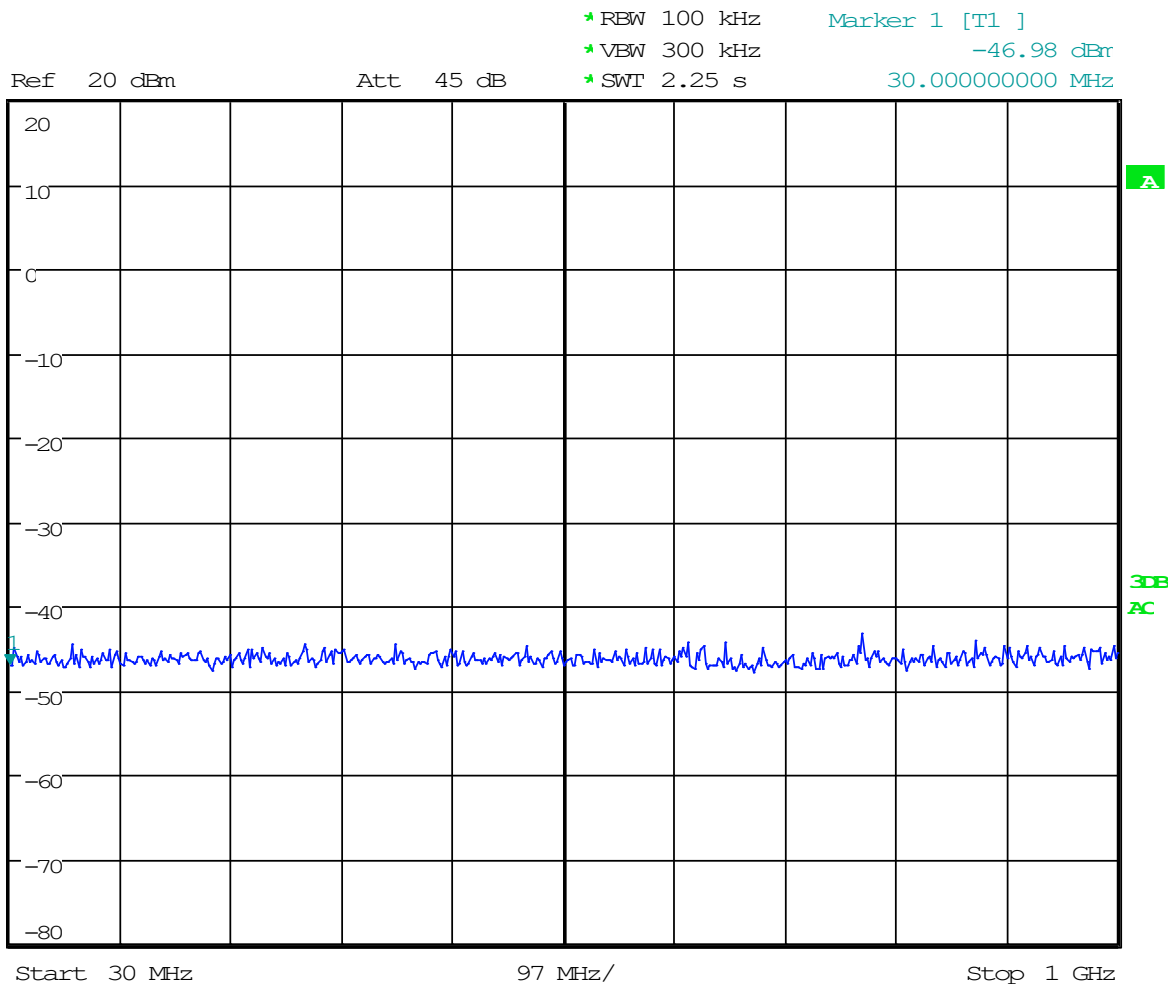
Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11, cont'd



1 EK
VARI



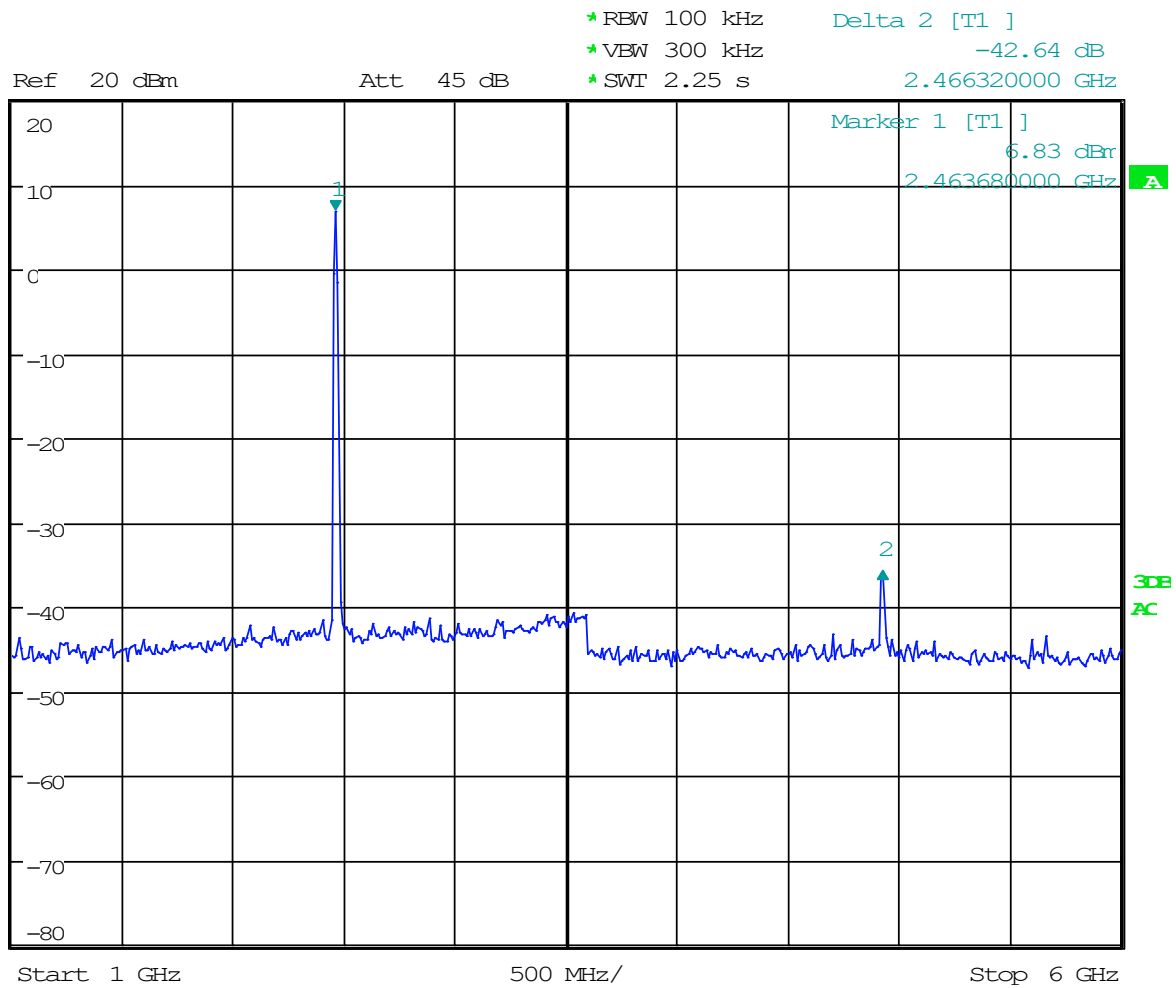
Date: 22.APR.2022 12:49:39



CCK 11, cont'd



1 PK
VIEW

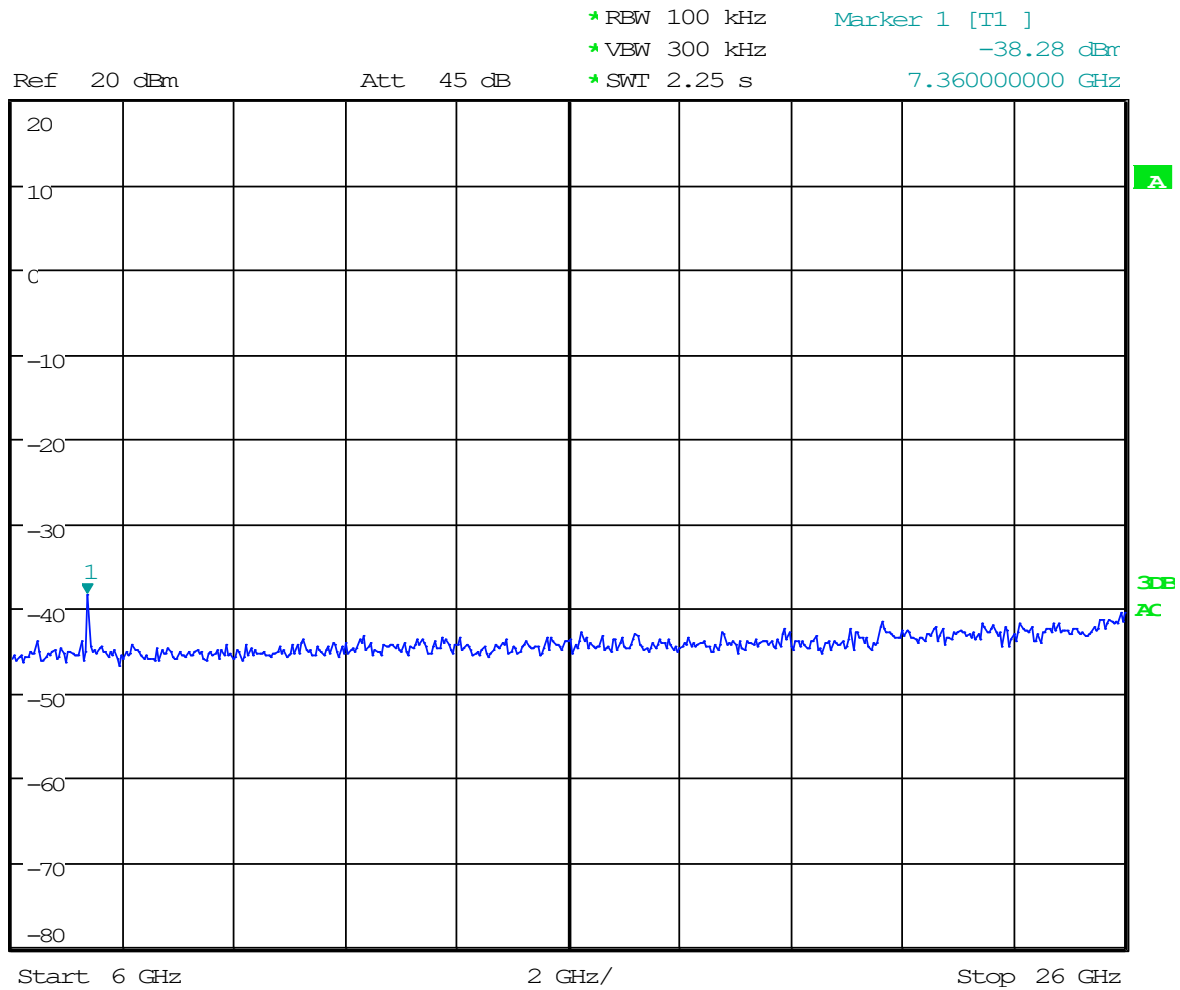




CCK 11, cont'd



1 PK
VIEW



Date: 22.APR.2022 12:47:21



11 RADIATED SPURIOUS EMISSION

The EUT antenna port was fitted with its integral/internal chip 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.

11.1 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).



11.2 Radiated Spurious Emission Test Data

Test Date(s):	2021-11-23	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(d); Part 15.209 / KDB558074	Air Temperature:	20.9°C
		Relative Humidity:	29%

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. 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 on the OATS 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.

Some of the frequencies did not change with the EUT on or off. At those frequencies, the test distance was shortened to 1 meter and still no emissions from the EUT were visible or over the ambient or limit.

In the following plots, the black line indicates ambient noise and the red line indicates the measurement with the EUT on. Emissions to be found by the EUT were measured and listed in tables. The plots are for reference only and the limit lines are not actual limit lines but merely a guide.

Low Channel was found to be the worst case emissions and represents the data that is presented.



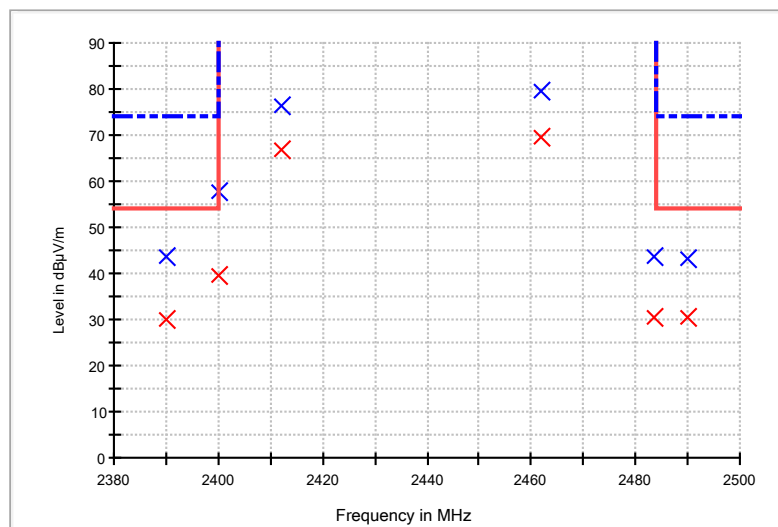
OFDM, Band Edges

MaxPeak

Frequency (MHz)	Antenna Polarization	Azimuth (deg)	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	124.00	37.5	5.9	43.40	74.0	-30.6
2400.000000	H	124.00	52.0	5.8	57.80	74.0	-16.2
2483.500000	H	82.00	37.7	5.8	43.50	74.0	-30.5
2490.000000	H	82.00	37.5	5.8	43.30	74.0	-30.7

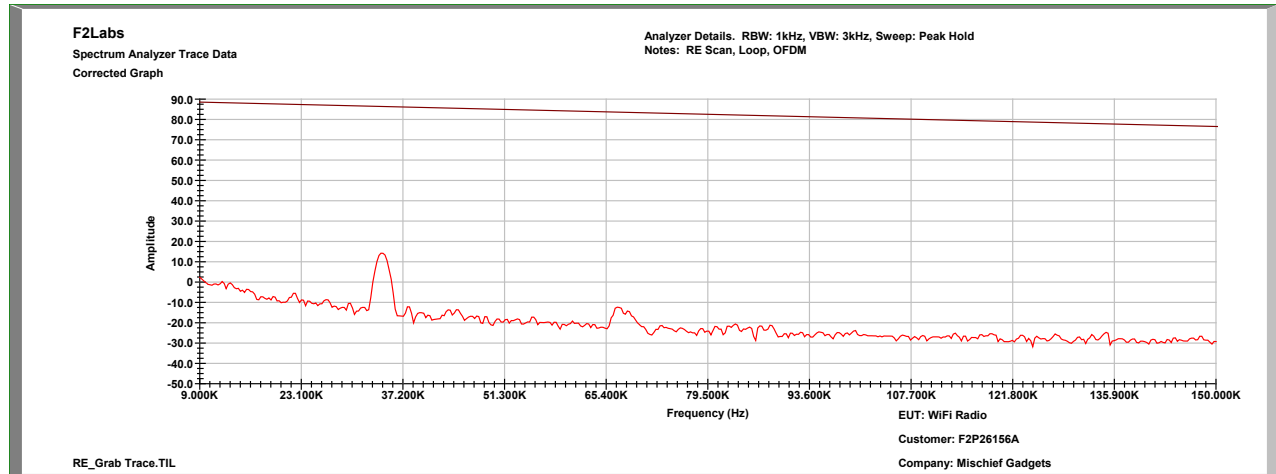
Average

Frequency (MHz)	Antenna Polarization	Azimuth (deg)	Reading (dBμV)	Cable Loss & Antenna Factor (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
2390.000000	H	124.00	24.2	5.9	30.10	54.0	-23.9
2400.000000	H	124.00	33.7	5.8	39.50	54.0	-14.5
2483.500000	H	82.00	24.7	5.8	30.50	54.0	-23.5
2490.000000	H	82.00	24.5	5.8	30.30	54.0	-23.7

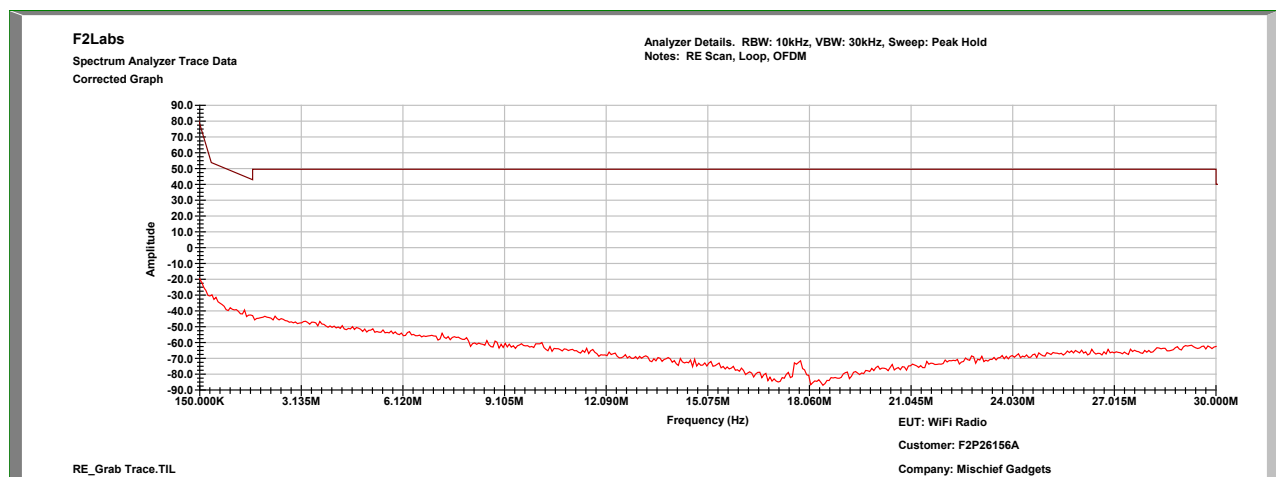




OFDM, Characterization Scan, 0.009 MHz to 0.15 MHz

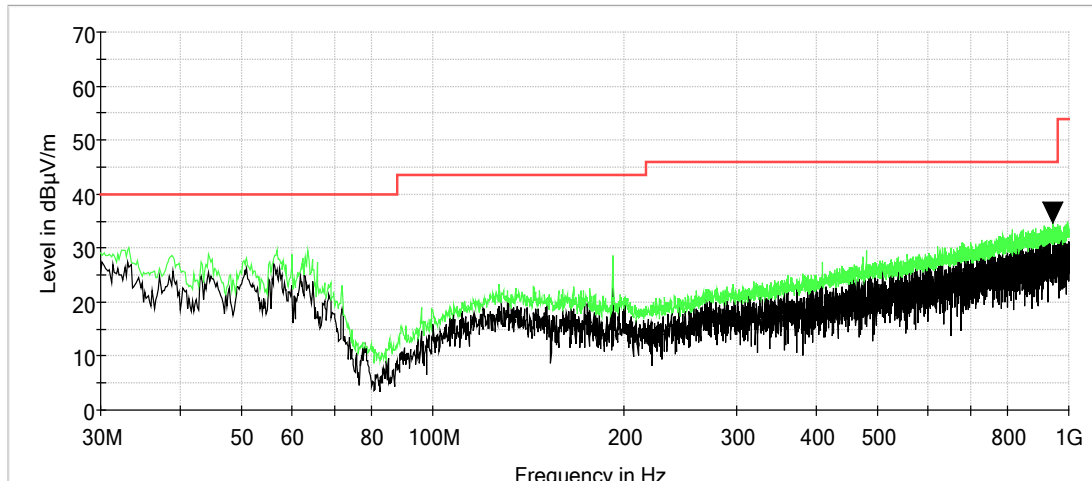


OFDM, Characterization Scan, 0.15 MHz to 30.0 MHz

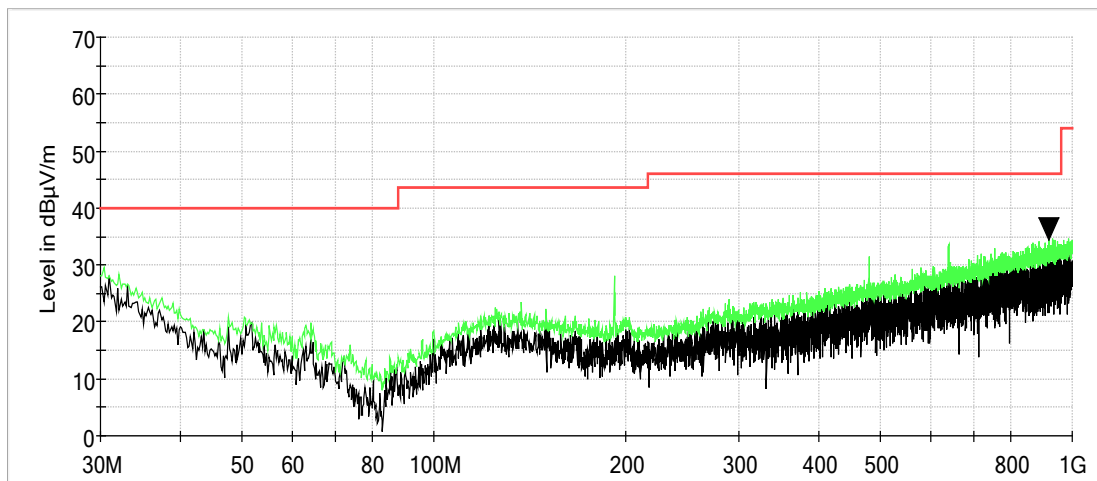




OFDM, Characterization Scan, 30 MHz to 1000 MHz – Vertical



OFDM, Characterization Scan, 30 MHz to 1000 MHz – Horizontal

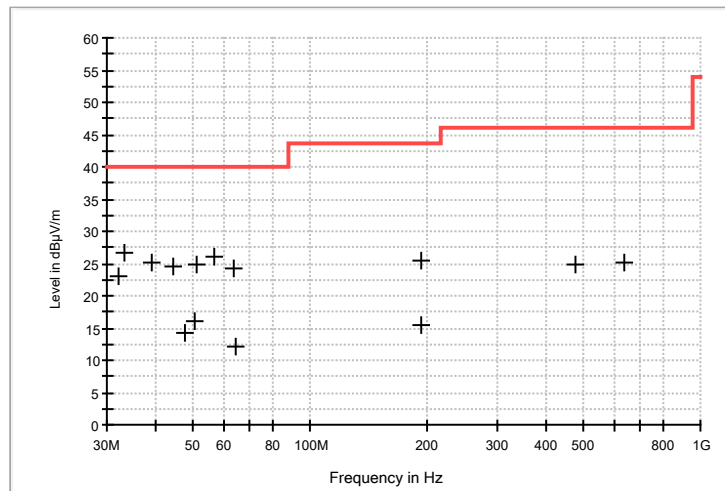




Note: Includes data from all 3 channels.

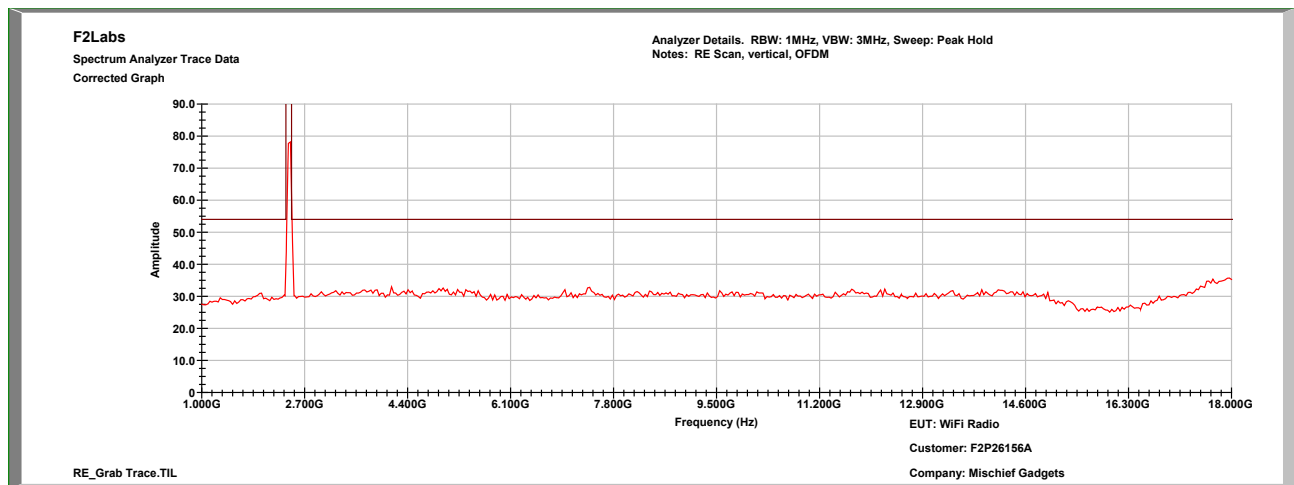
OFDM, Measurements, 30 MHz to 1000 MHz

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dB μ V)	Correction Factors (dB)	Emission (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
32.130000	H	100.00	0.00	25.7	-2.7	23.00	40.0	-17.0
33.300000	V	100.00	121.00	30.2	-3.6	26.60	40.0	-13.4
39.120000	V	100.00	108.00	33.1	-8.0	25.10	40.0	-14.9
44.550000	V	100.00	104.00	36.4	-11.8	24.60	40.0	-15.4
47.650000	H	100.00	0.00	27.6	-13.4	14.20	40.0	-25.8
50.560000	H	100.00	0.00	30.4	-14.3	16.10	40.0	-23.9
50.950000	V	100.00	103.00	39.3	-14.4	24.90	40.0	-15.1
56.770000	V	100.00	70.00	41.2	-15.0	26.20	40.0	-13.8
63.560000	V	100.00	121.00	38.9	-14.8	24.10	40.0	-15.9
64.140000	H	100.00	0.00	26.9	-14.8	12.10	40.0	-27.9
191.410000	H	100.00	0.00	25.6	-10.0	15.60	43.5	-27.9
191.990000	V	100.00	349.00	35.3	-10.0	25.30	43.5	-18.2
480.080000	H	100.00	0.00	27.0	-2.2	24.80	46.0	-21.2
640.130000	H	100.00	0.00	24.2	1.0	25.20	46.0	-20.8

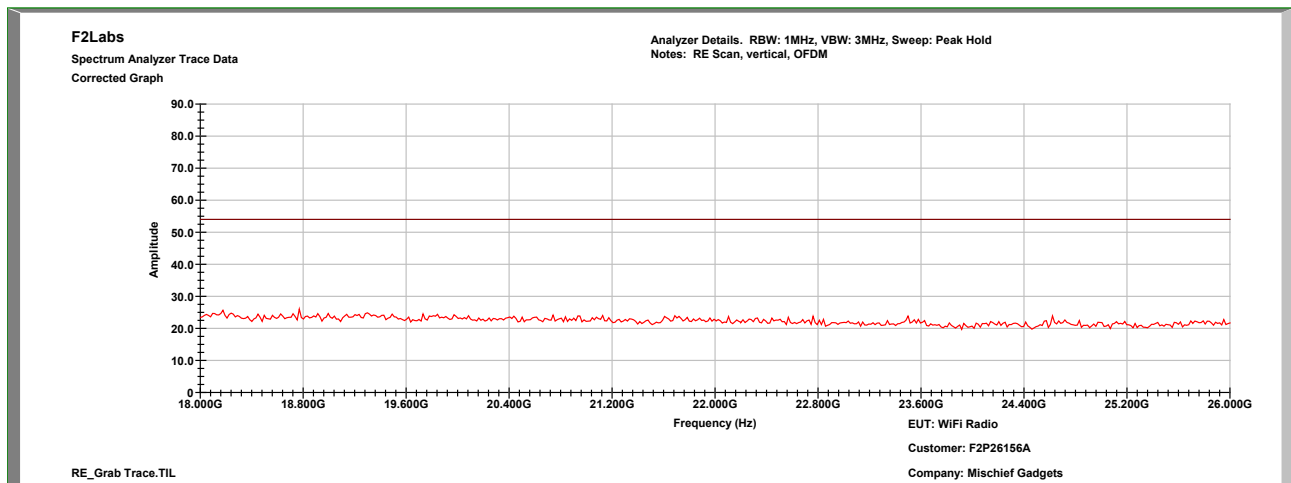




OFDM, Characterization Scan, 1 GHz to 18 GHz, Vertical

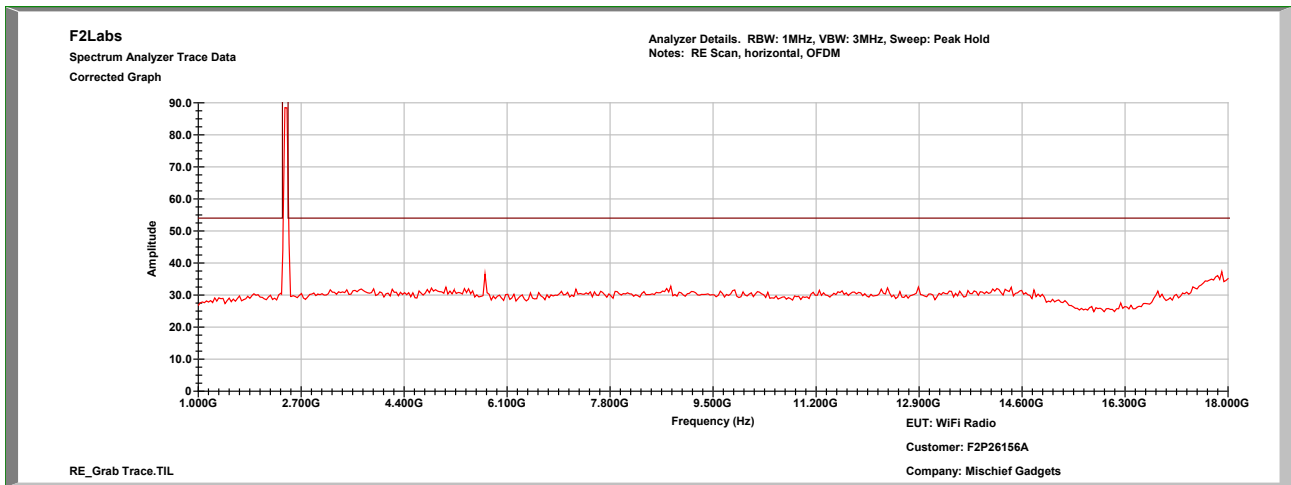


OFDM, Characterization Scan, 18 GHz to 26 GHz, Vertical

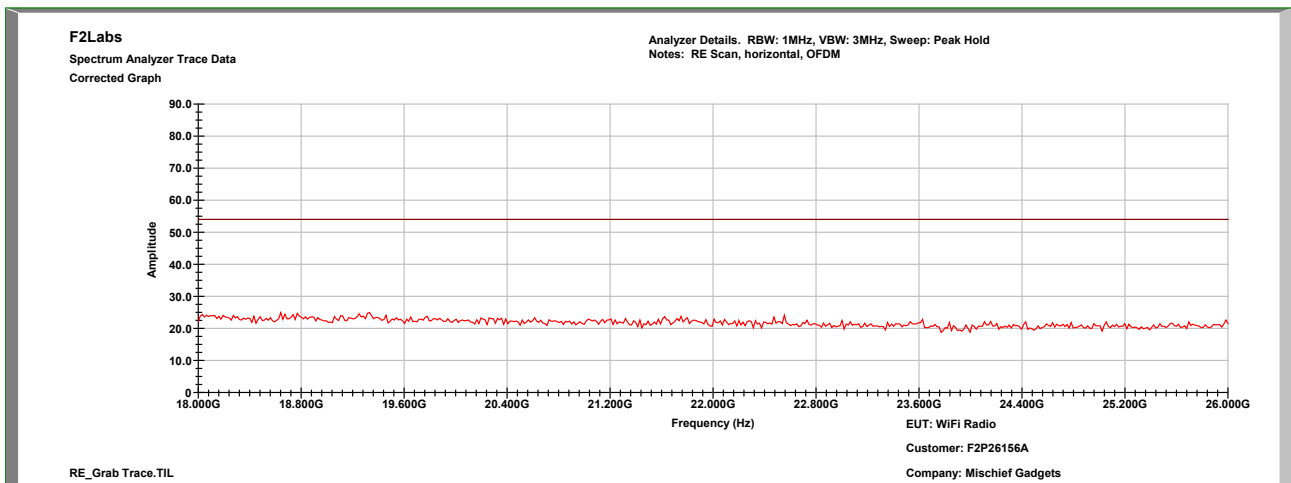




OFDM, Characterization Scan, 1 GHz to 18 GHz, Horizontal



OFDM, Characterization Scan, 18 GHz to 26 GHz, Horizontal





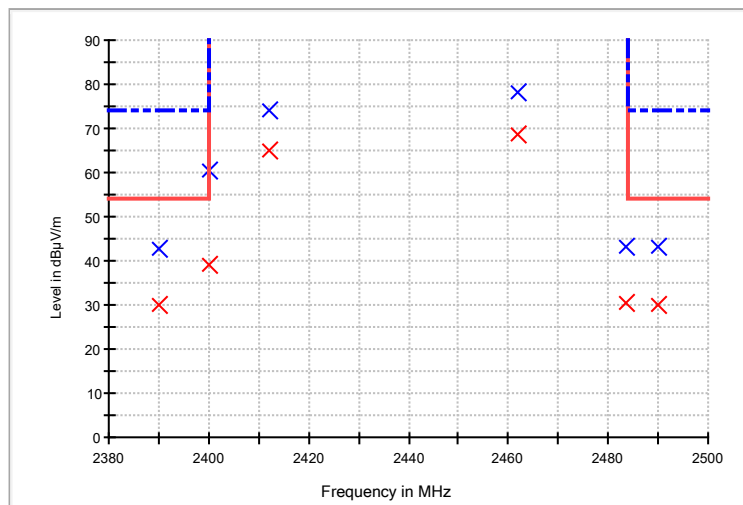
MCS7, Band Edges

MaxPeak

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dB μ V)	Cable Loss & Antenna Factor (dB)	Emission (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2390.000000	H	150.00	123.00	36.9	5.9	42.80	74.0	-31.2
2400.000000	H	150.00	123.00	54.8	5.8	60.60	74.0	-13.4
2483.500000	H	150.00	123.00	37.4	5.8	43.20	74.0	-30.8
2490.000000	H	150.00	123.00	37.6	5.8	43.40	74.0	-30.6

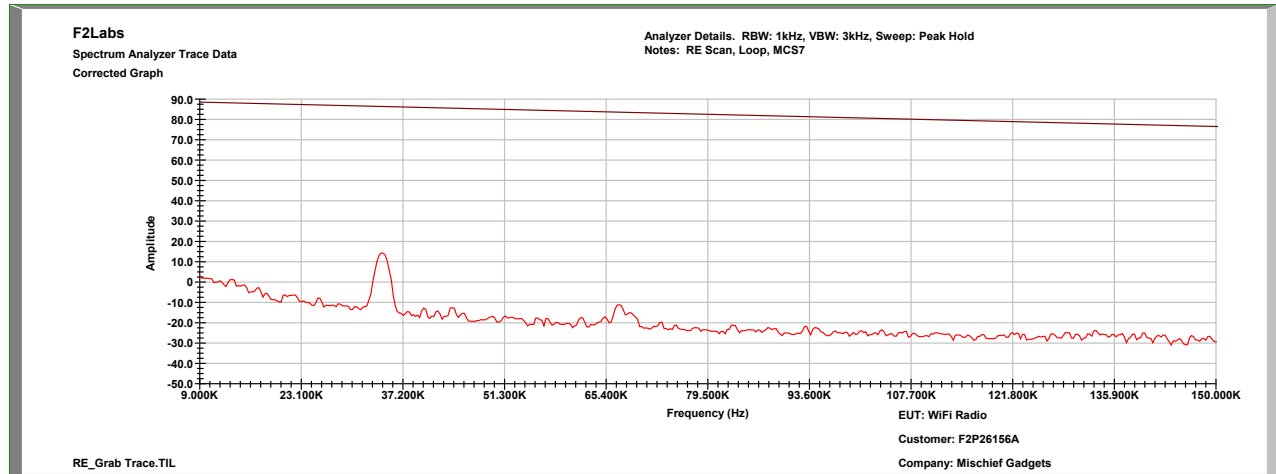
Average

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (deg)	Reading (dB μ V)	Cable Loss & Antenna Factor (dB)	Emission (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
2390.000000	H	150.00	123.00	24.1	5.9	30.00	54.0	-24.0
2400.000000	H	150.00	123.00	33.5	5.8	39.30	54.0	-14.7
2483.500000	H	150.00	123.00	24.5	5.8	30.30	54.0	-23.7
2490.000000	H	150.00	123.00	24.3	5.8	30.10	54.0	-23.9

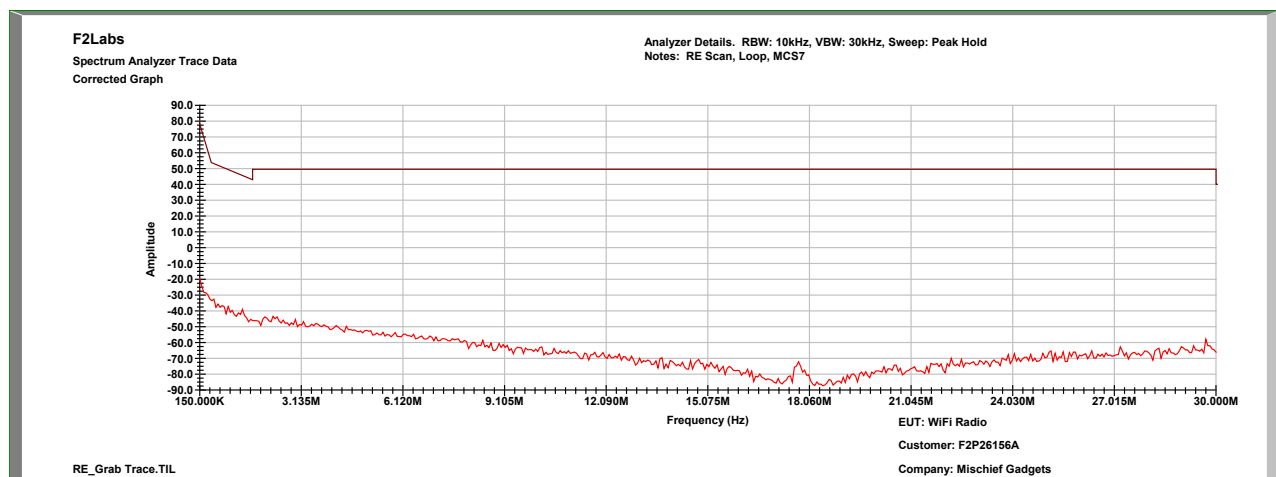




MCS7, Characterization Scan, 0.009 MHz to 0.15 MHz

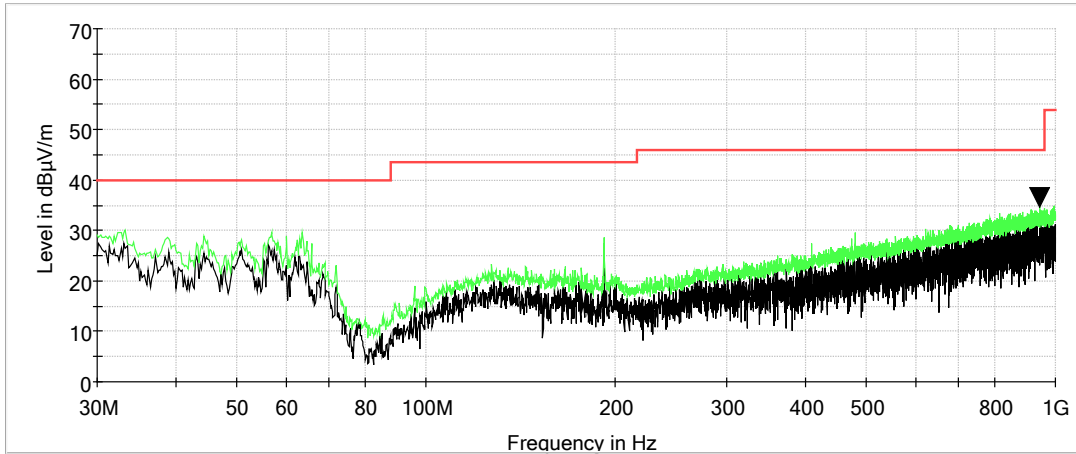


MCS7, Characterization Scan, 0.15 MHz to 30.0 MHz

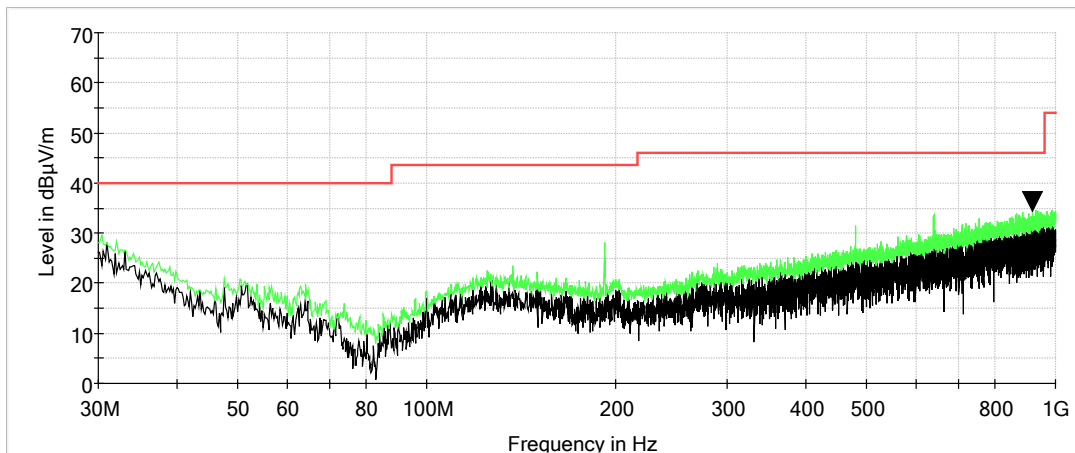




MCS7, Characterization Scan, 30 MHz to 1000 MHz – Vertical



MCS7, Characterization Scan, 30 MHz to 1000 MHz – Horizontal

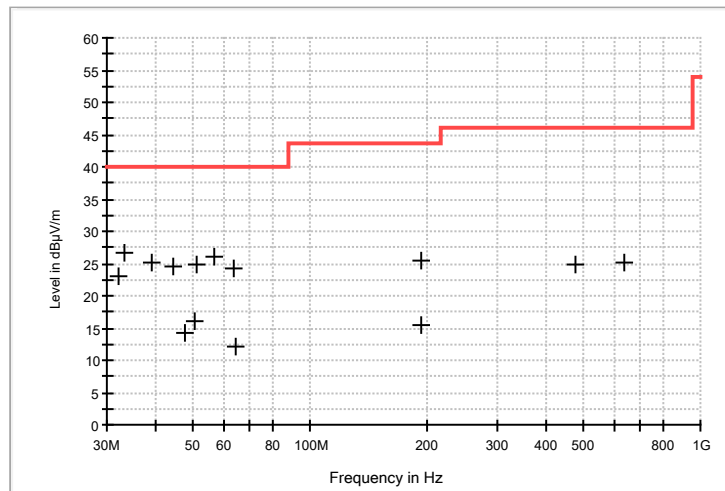




Note: Includes data from all 3 channels.

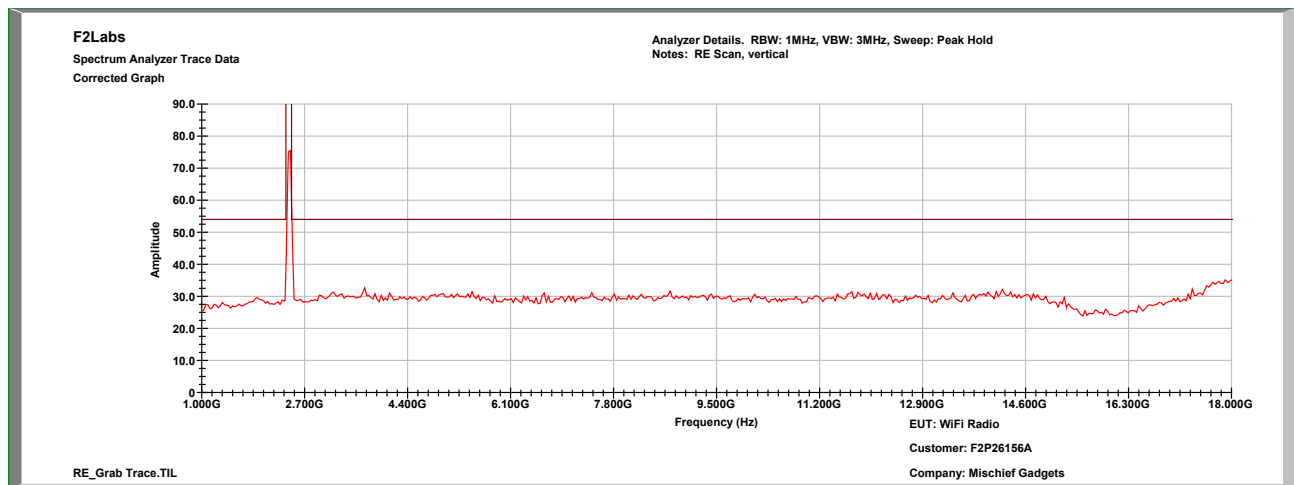
MCS7, Measurements, 30 MHz to 1000 MHz

Frequency (MHz)	Antenna Polarization	Antenna Height (cm)	Azimuth (degrees)	Reading (dBμV)	Correction Factors (dB)	Emission (dBμV/m)	Limit (dBμV/m)	Margin (dB)
32.130000	H	100.00	0.00	25.7	-2.7	23.00	40.0	-17.0
33.300000	V	100.00	121.00	30.2	-3.6	26.60	40.0	-13.4
39.120000	V	100.00	108.00	33.1	-8.0	25.10	40.0	-14.9
44.550000	V	100.00	104.00	36.4	-11.8	24.60	40.0	-15.4
47.650000	H	100.00	0.00	27.6	-13.4	14.20	40.0	-25.8
50.560000	H	100.00	0.00	30.4	-14.3	16.10	40.0	-23.9
50.950000	V	100.00	103.00	39.3	-14.4	24.90	40.0	-15.1
56.770000	V	100.00	70.00	41.2	-15.0	26.20	40.0	-13.8
63.560000	V	100.00	121.00	38.9	-14.8	24.10	40.0	-15.9
64.140000	H	100.00	0.00	26.9	-14.8	12.10	40.0	-27.9
191.410000	H	100.00	0.00	25.6	-10.0	15.60	43.5	-27.9
191.990000	V	100.00	349.00	35.3	-10.0	25.30	43.5	-18.2
480.080000	H	100.00	0.00	27.0	-2.2	24.80	46.0	-21.2
640.130000	H	100.00	0.00	24.2	1.0	25.20	46.0	-20.8

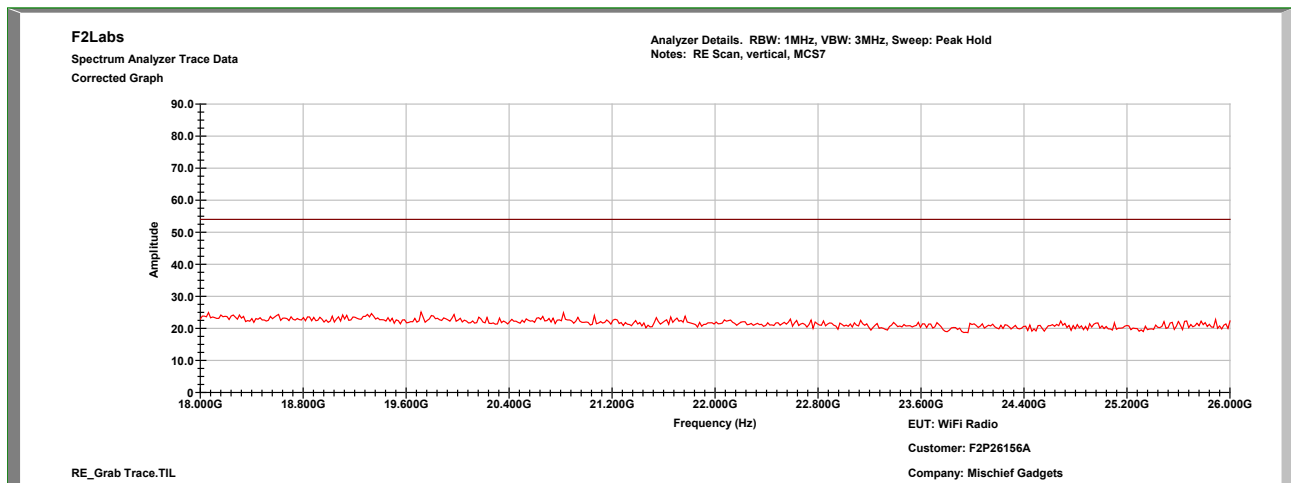




MCS7, Characterization Scan, 1 GHz to 18 GHz, Vertical

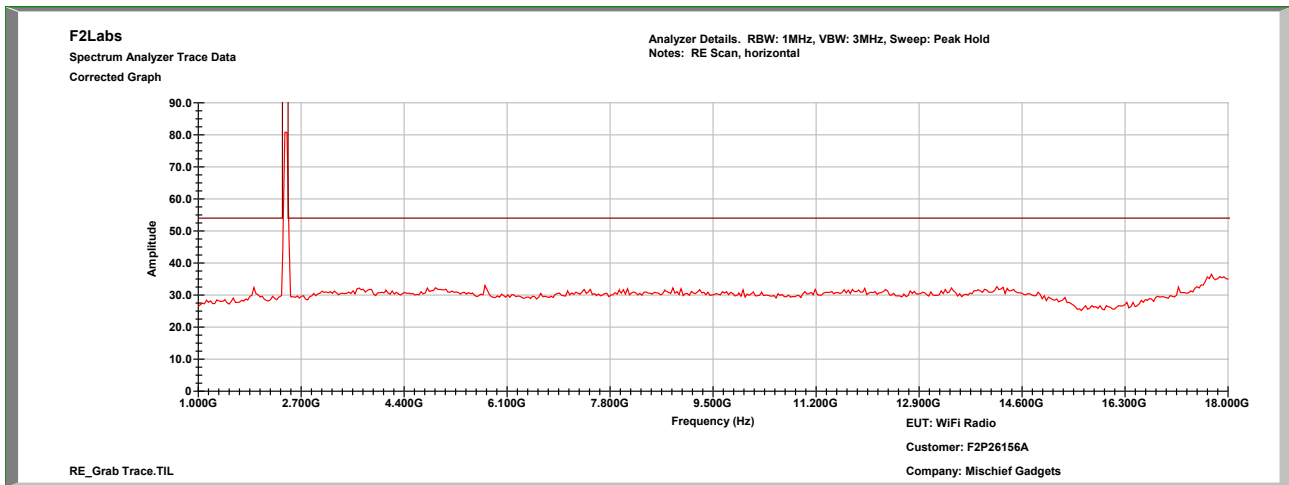


MCS7, Characterization Scan, 18 GHz to 26 GHz, Vertical

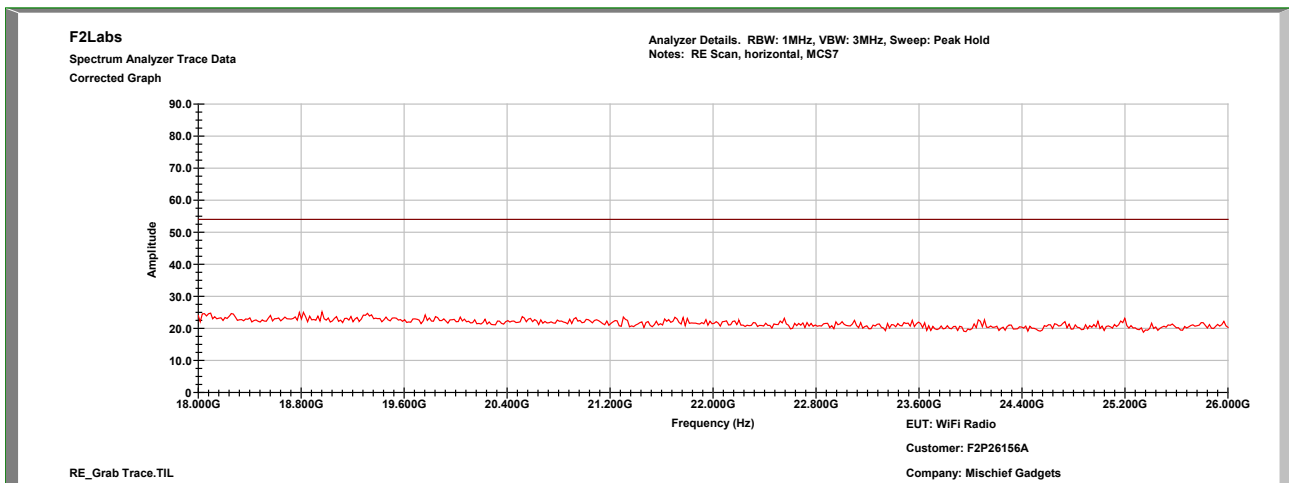




MCS7, Characterization Scan, 1 GHz to 18 GHz, Horizontal



MCS7, Characterization Scan, 18 GHz to 26 GHz, Horizontal





120 FCC PART 15.247(e) – PEAK POWER SPECTRAL DENSITY (PSD)

Peak power spectral density measurements were performed.

12.1 Requirements:

The peak power spectral density shall not exceed +8dBm in any 3 kHz band during any time interval of continuous transmission.

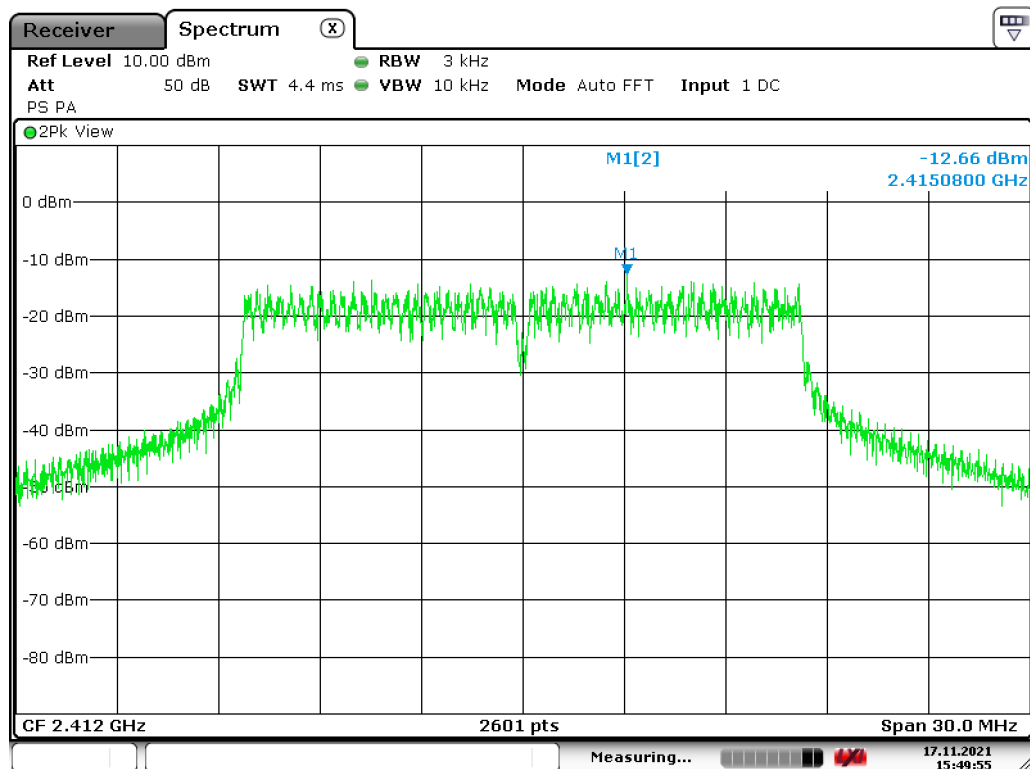
Power spectral density measurements were performed at a resolution bandwidth of 3 kHz (video bandwidth set at 10 kHz). The peak spectral densities were measured at the low, mid, and upper channels.



12.2 Peak Power Spectral Density Test Data

Test Date(s):	2021-11-17	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(e); KDB558074	Air Temperature:	21.1°C
		Relative Humidity:	36%

OFDM, Low Channel



Date: 17.NOV.2021 15:49:55

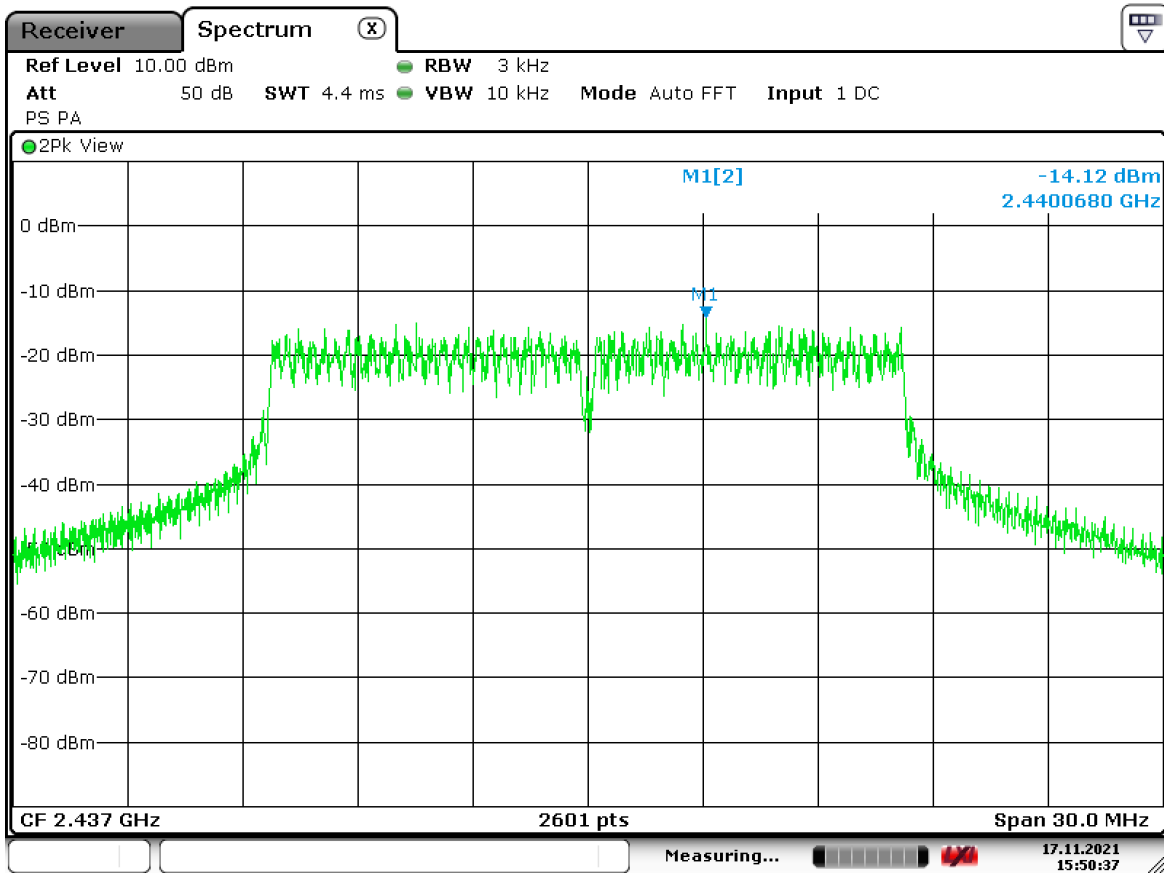


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

OFDM, Mid Channel



Date: 17.NOV.2021 15:50:38

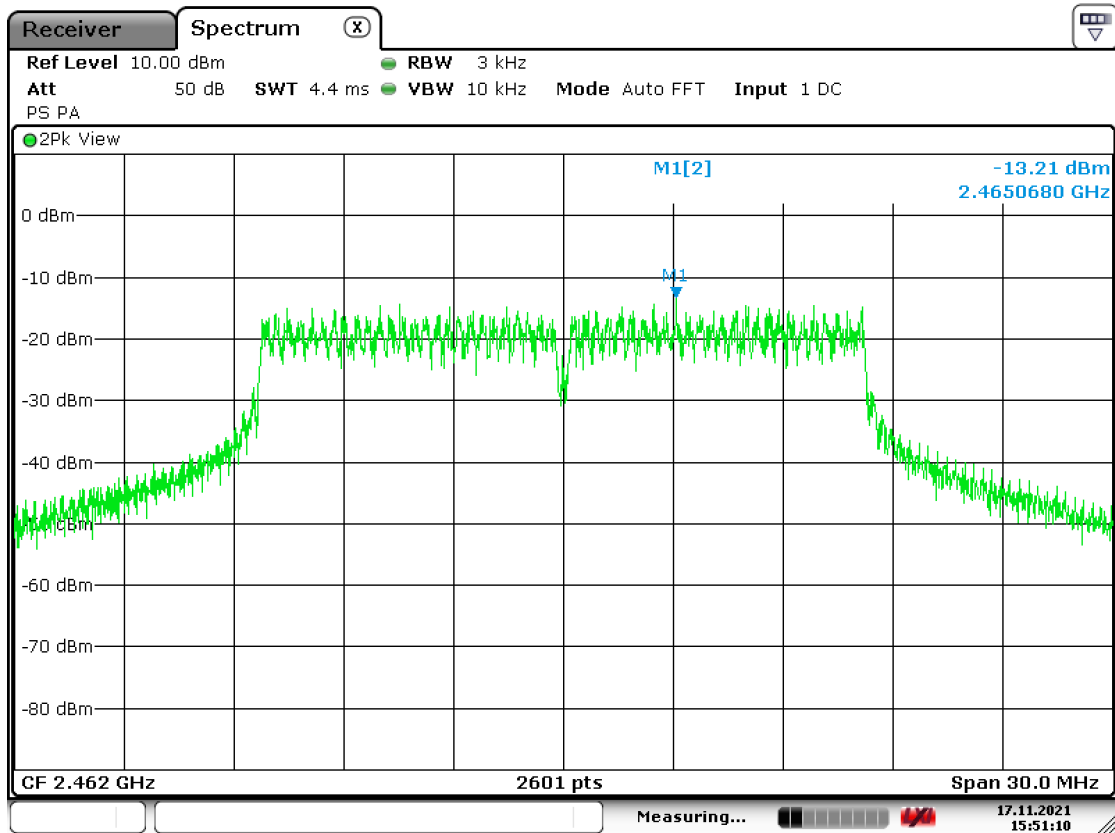


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

OFDM, High Channel



Date: 17.NOV.2021 15:51:10

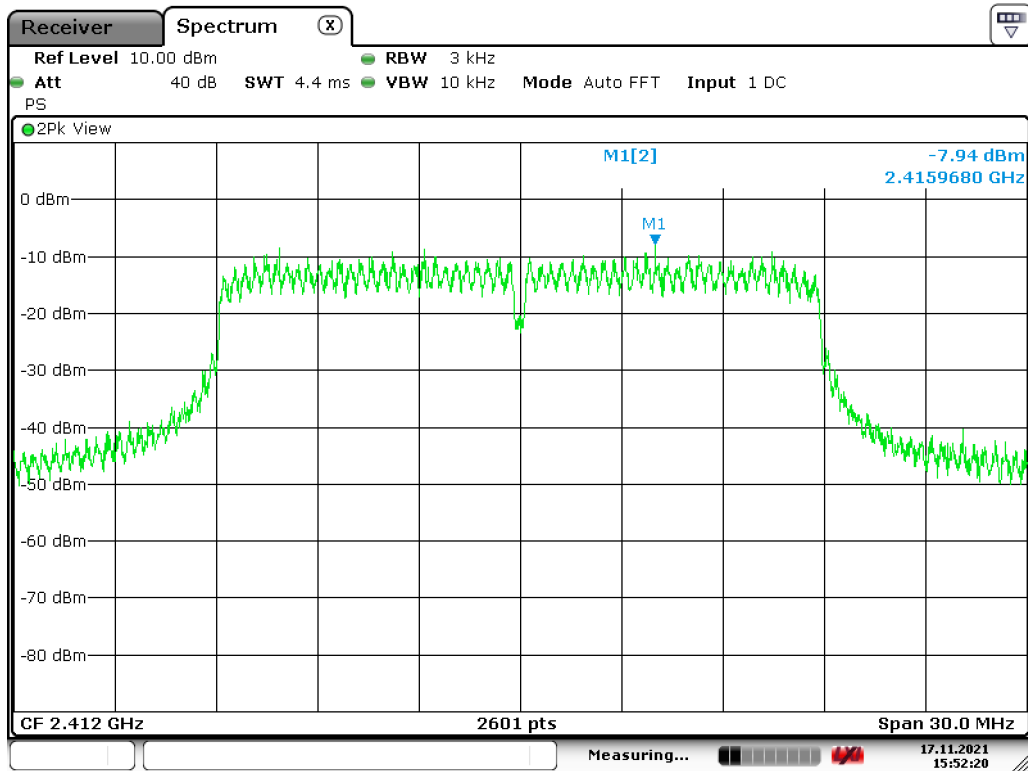


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

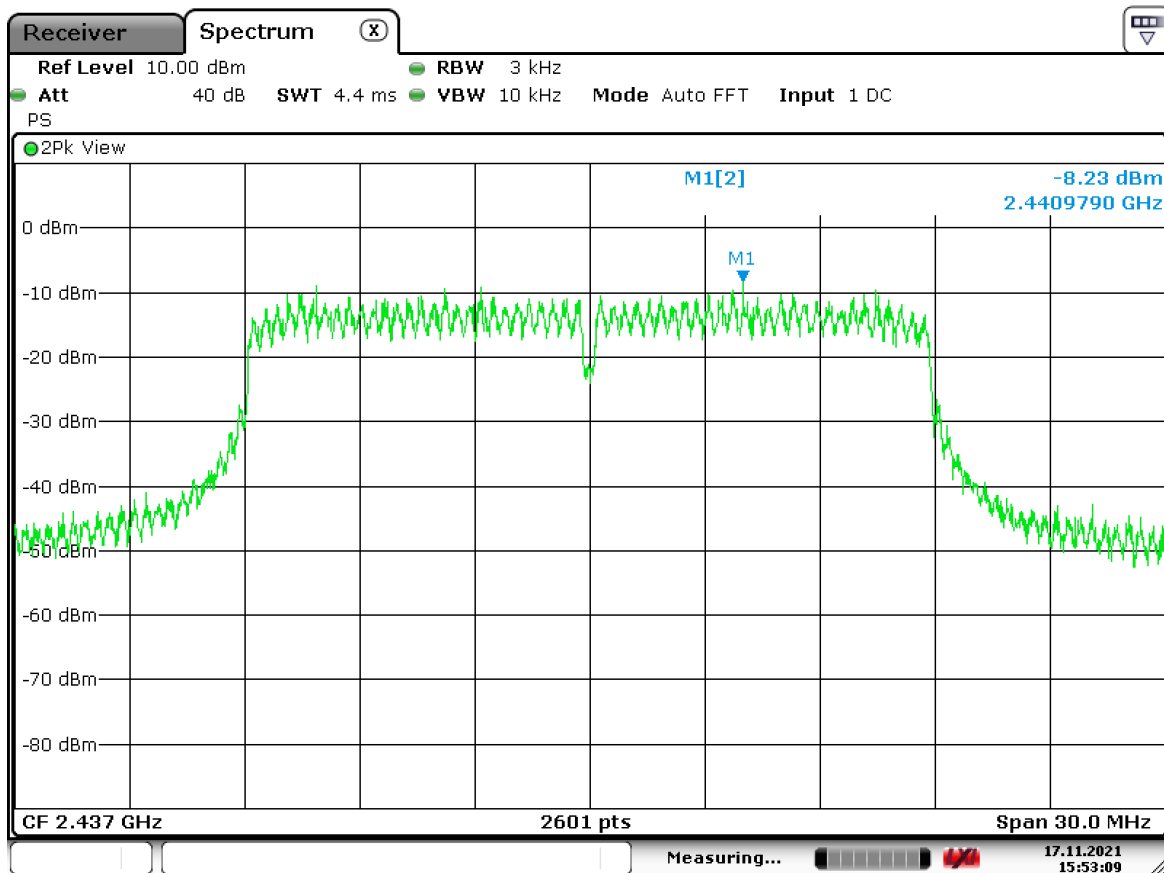
MCS0, Low Channel



Date: 17.NOV.2021 15:52:20



MCS0, Mid Channel



Date: 17.NOV.2021 15:53:09

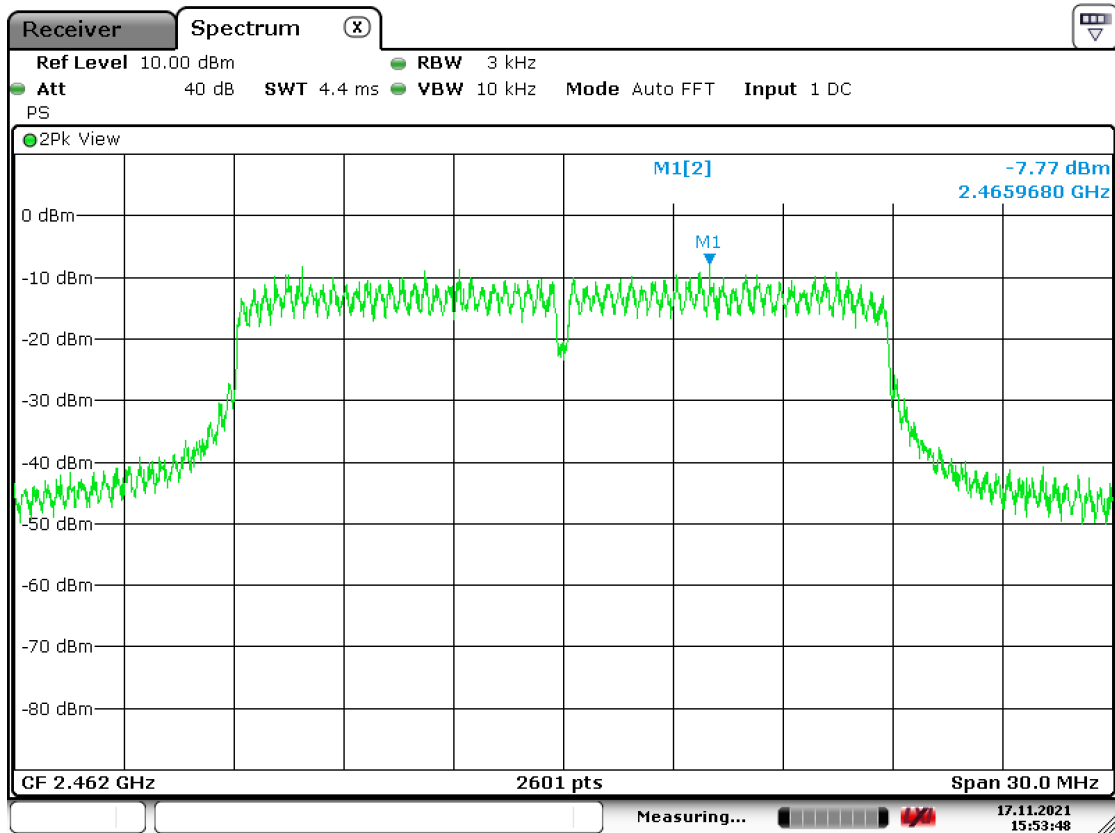


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

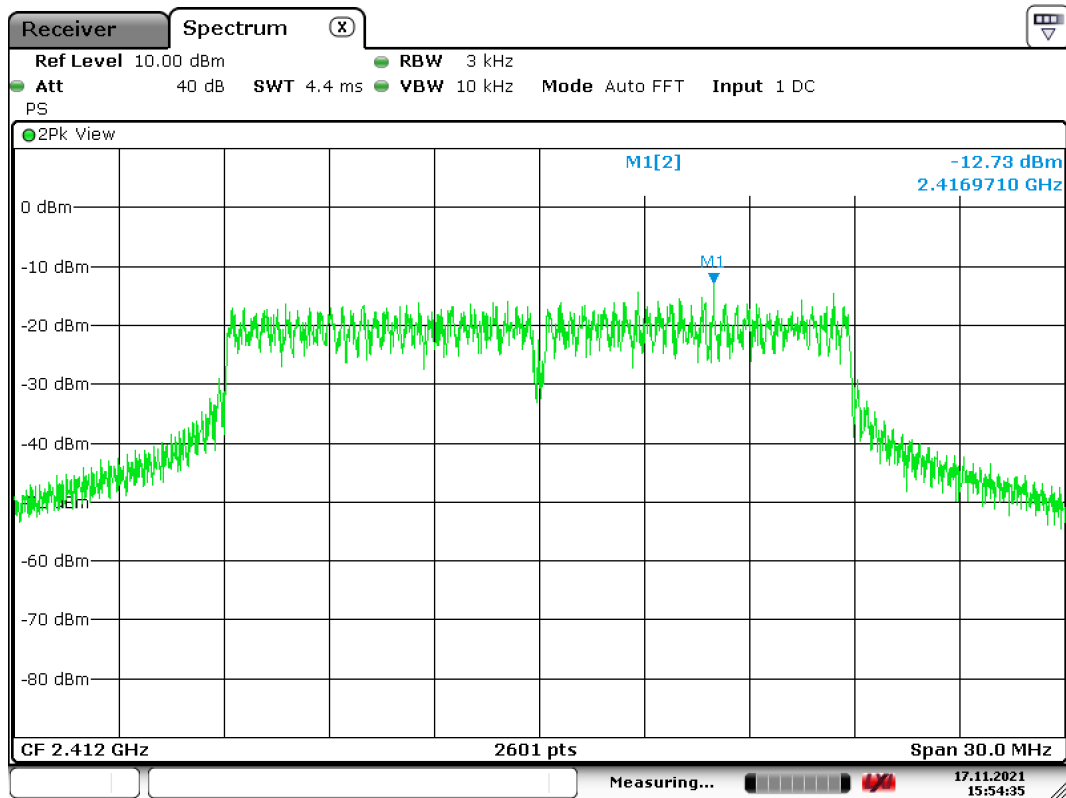
MCS0, High Channel



Date: 17.NOV.2021 15:53:48



MCS7, Low Channel



Date: 17.NOV.2021 15:54:34

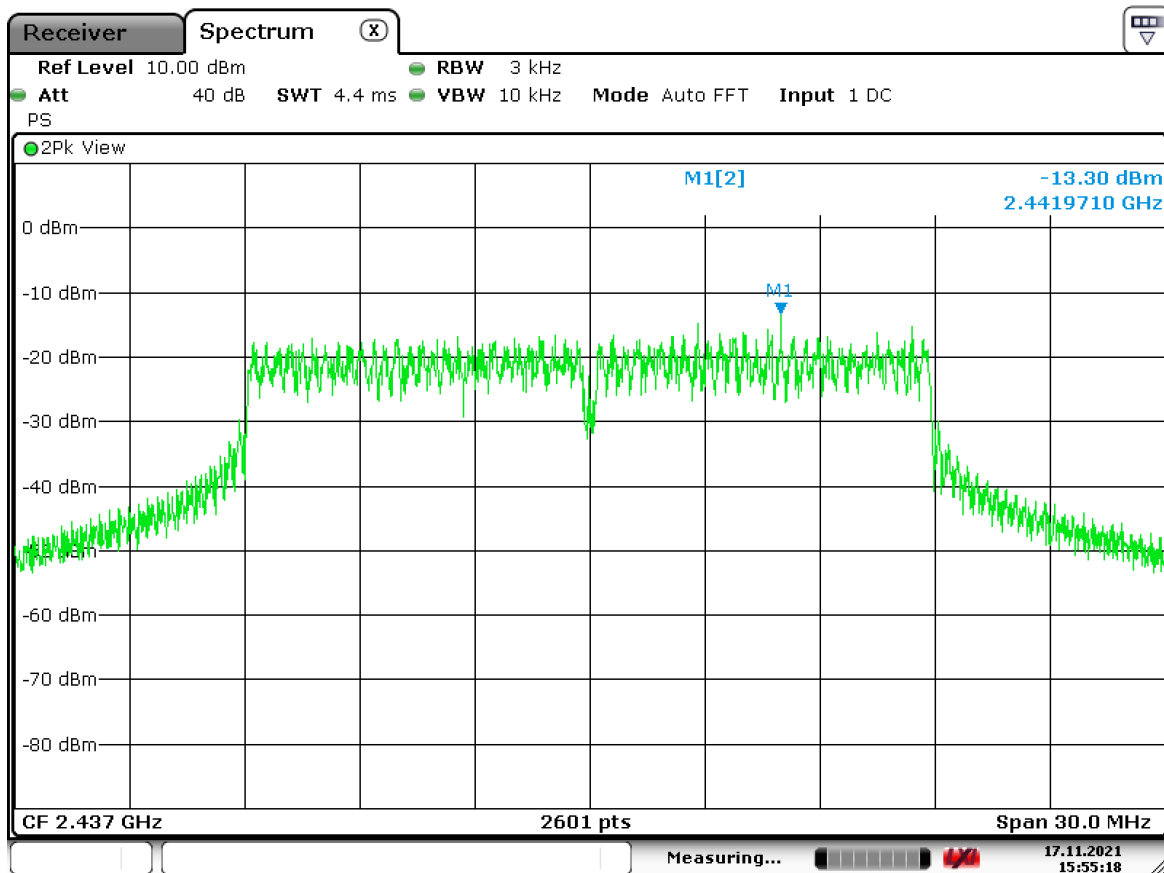


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS7, Mid Channel



Date: 17.NOV.2021 15:55:19

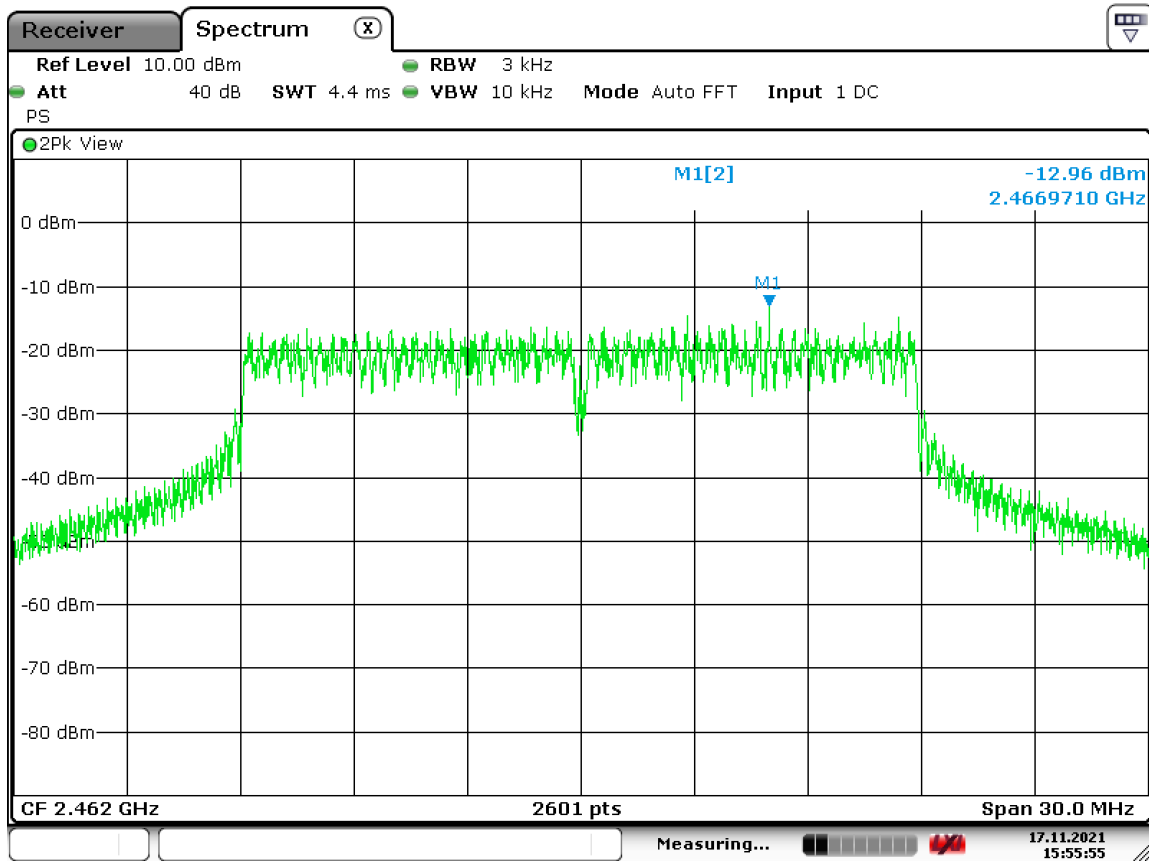


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

MCS7, High Channel



Date: 17.NOV.2021 15:55:55



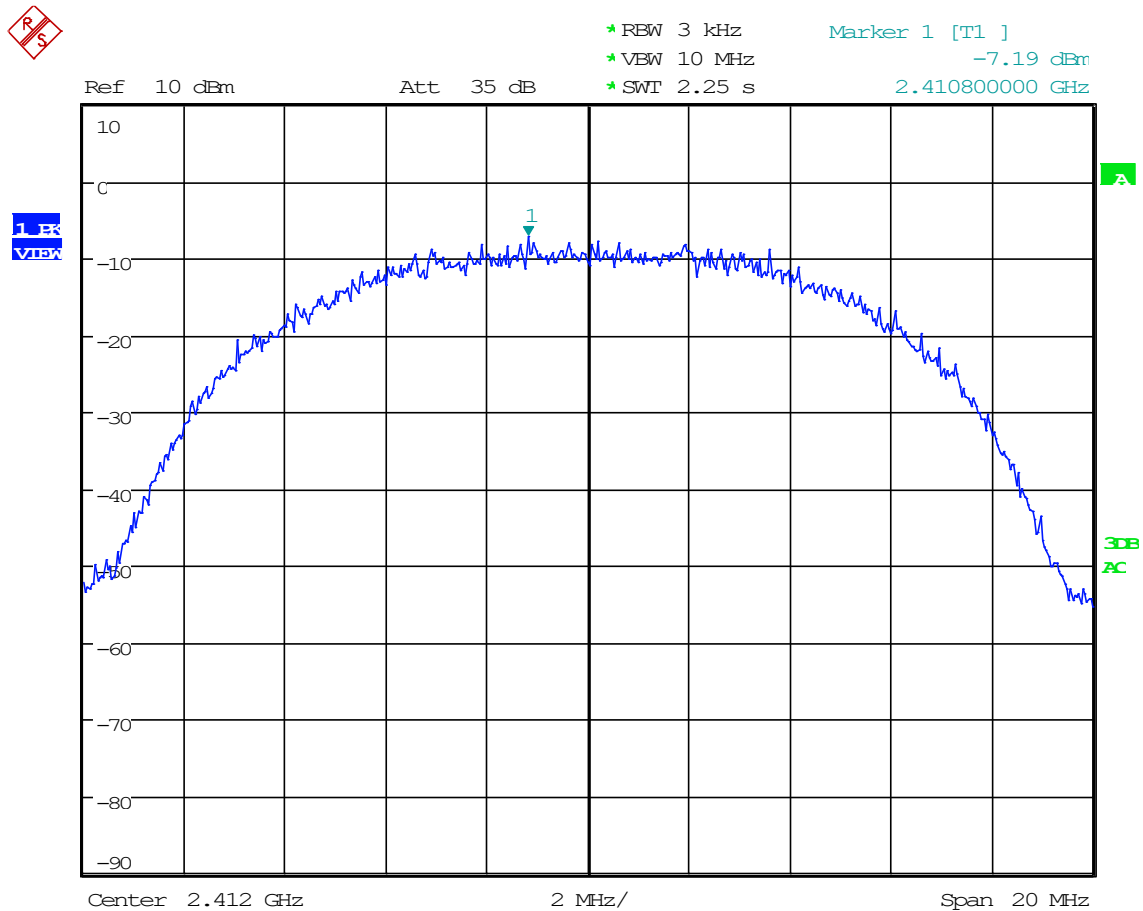
Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

Test Date(s):	2022-04-22	Test Engineer:	J. Chiller
Standards:	CFR 47 Part 15.247(e); KDB558074	Air Temperature:	21.8°C
		Relative Humidity:	31%

CCK 11, Low Channel



Date: 22.APR.2022 12:34:09

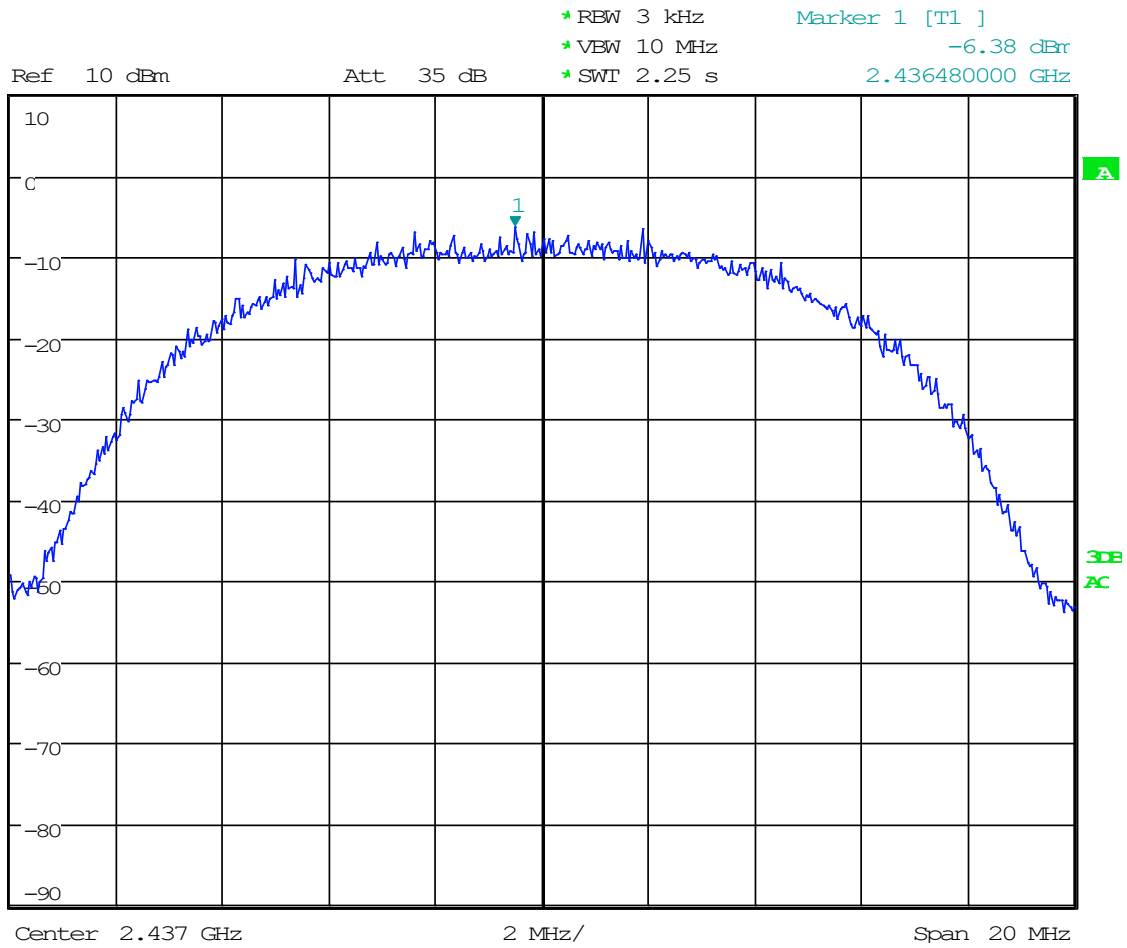


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11, Mid Channel



Date: 22.APR.2022 12:38:25

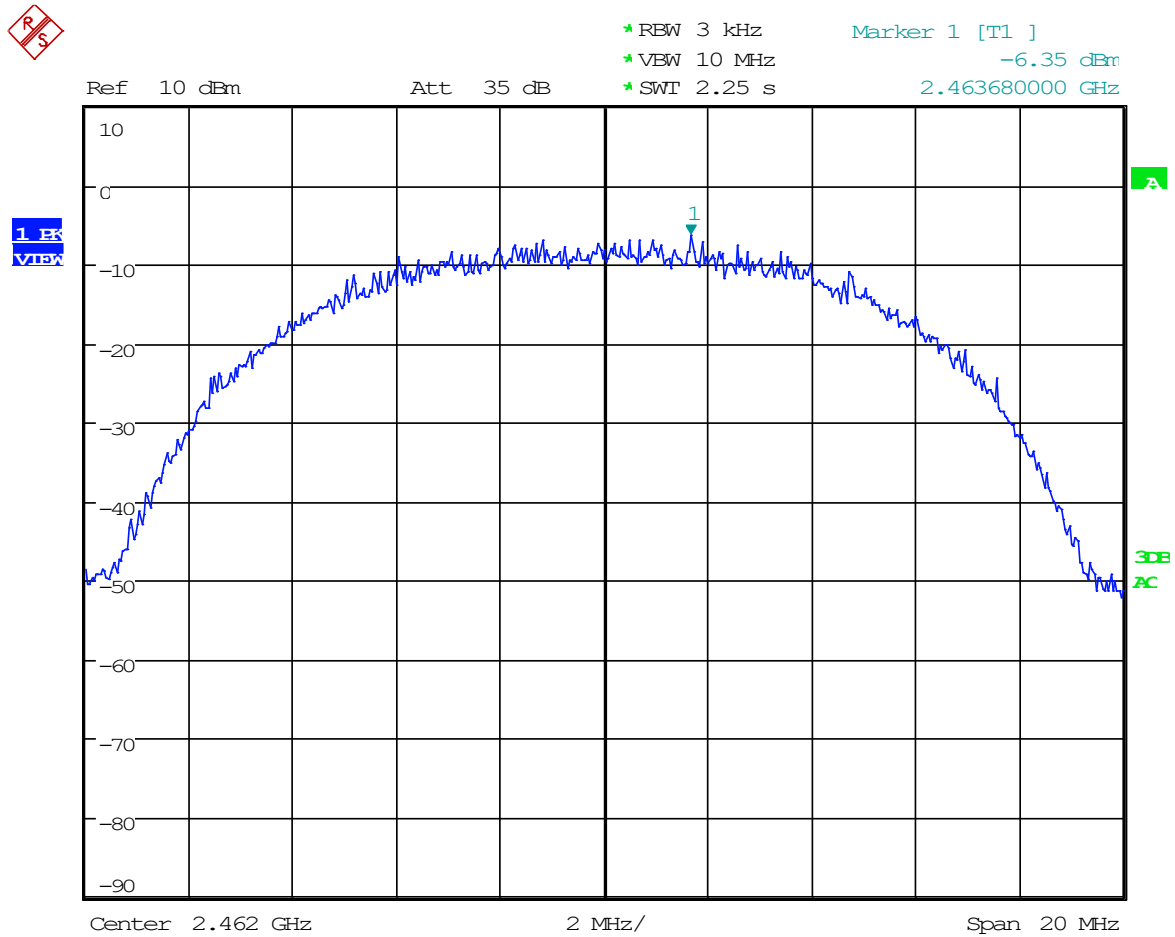


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

CCK 11, High Channel



Date: 22.APR.2022 12:39:23



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

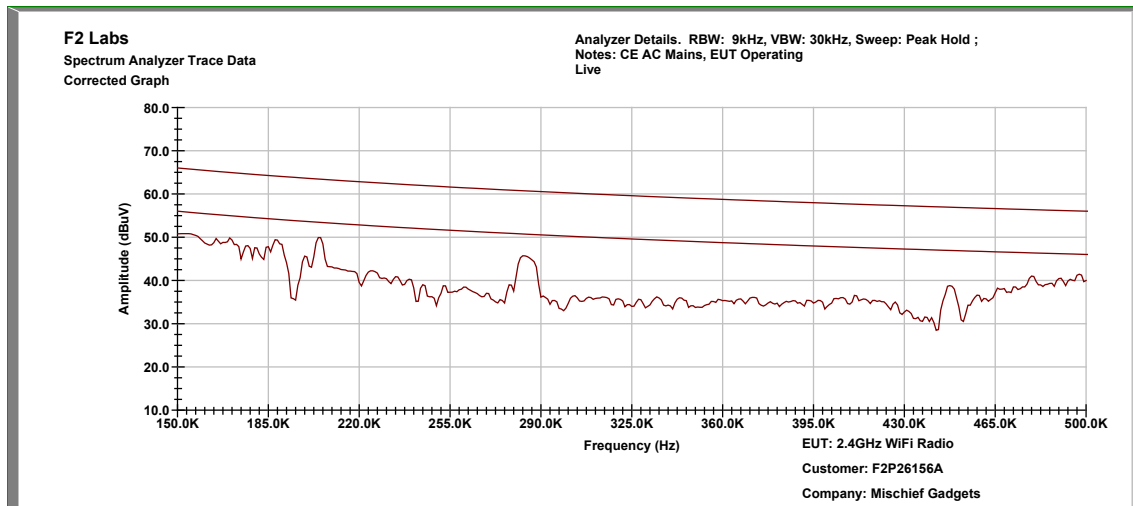
The EUT was placed on a 1.0 x 1.5 meter non-conductive table, 0.8 meter above a horizontal ground plane and 0.4 meter from a vertical ground plane. Power was provided to the EUT through a LISN bonded to a 3 x 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power 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.



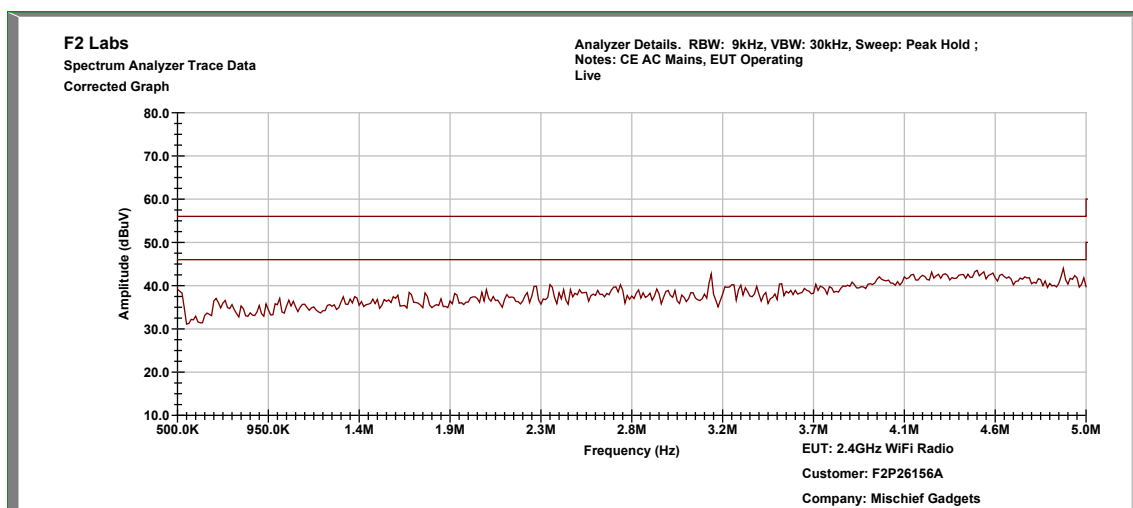
13.3 Conducted Emissions Test Data

Test Date:	2021-12-03	Test Engineer:	J. Chiller
Rule:	15.207	Air Temperature:	22.6° C
Test Results:	Pass	Relative Humidity:	34%

Conducted Test – Live: 0.15 MHz to 0.5 MHz



Conducted Test – Live: 0.5 MHz to 5.0 MHz



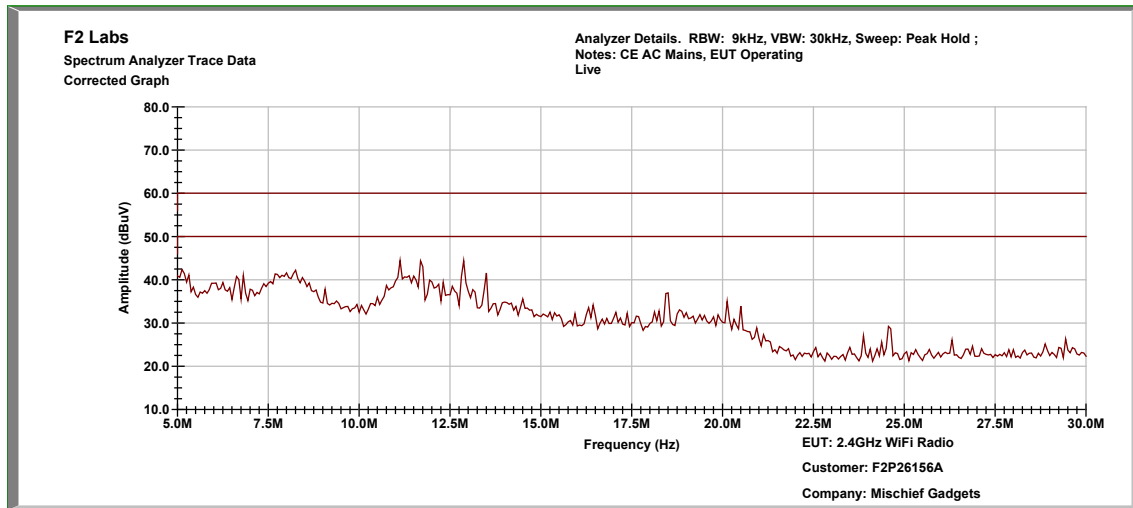


Order Number: F2P26156A

Applicant: Mischief Gadgets LLC

Model: O.MG Core

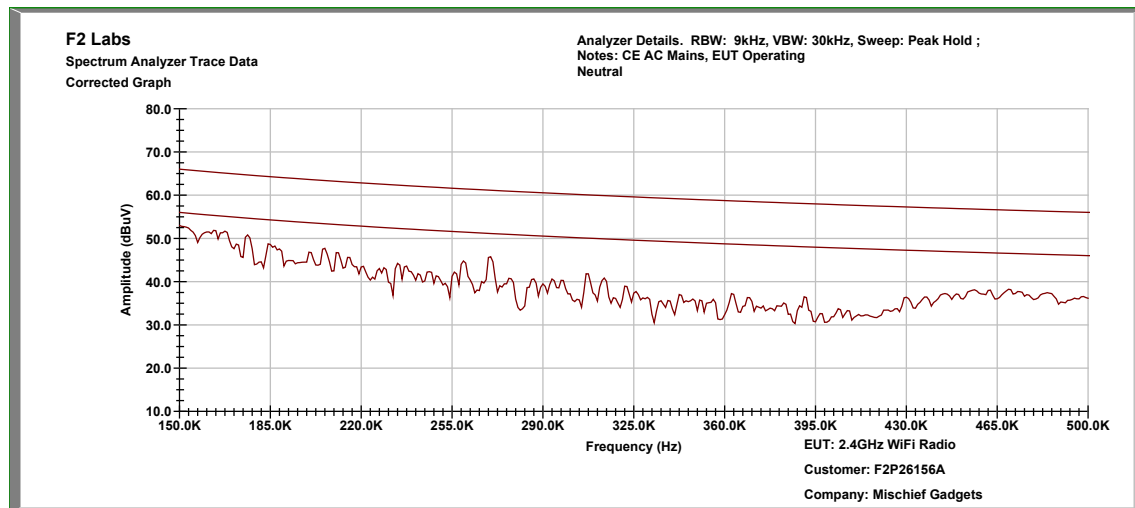
Conducted Test – Live: 5.0 MHz to 30.0 MHz



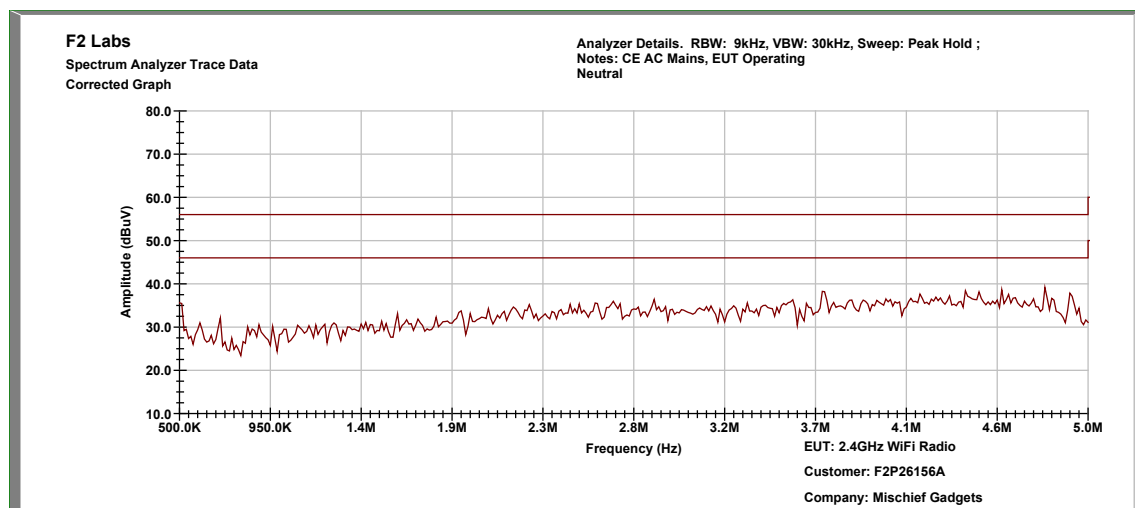
Note: Peak scans below Average limit.



Conducted Test – Neutral: 0.15 MHz to 0.5 MHz



Conducted Test –Neutral: 0.5 MHz to 5.0 MHz



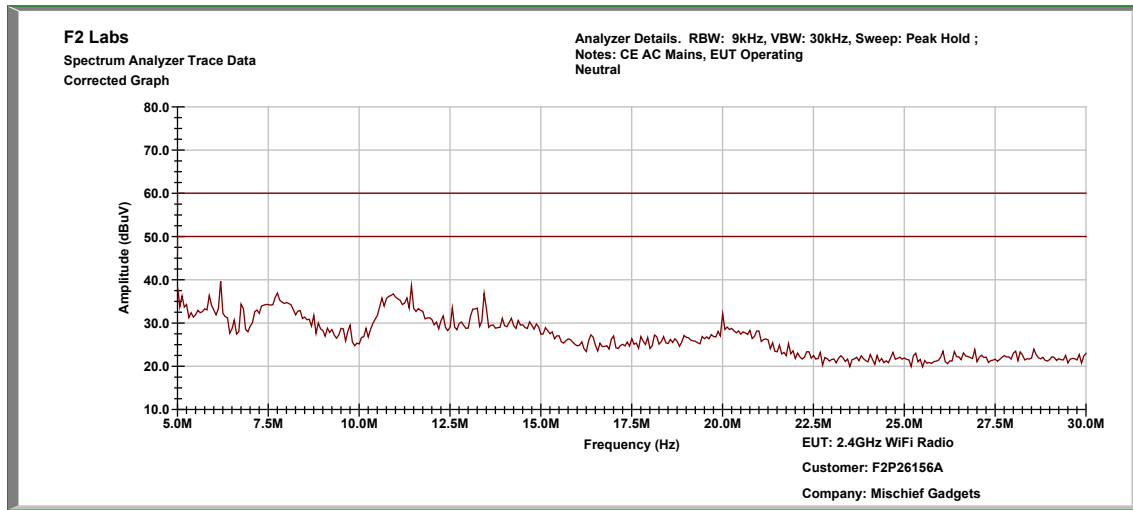


Order Number: F2P26156A

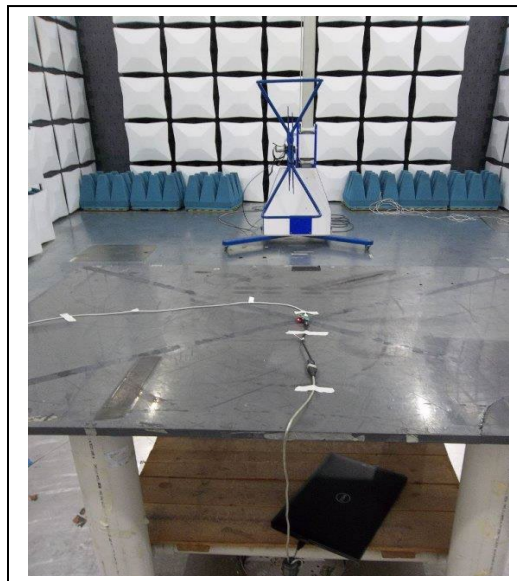
Applicant: Mischief Gadgets LLC

Model: O.MG Core

Conducted Test – Neutral: 5.0 MHz to 30.0 MHz

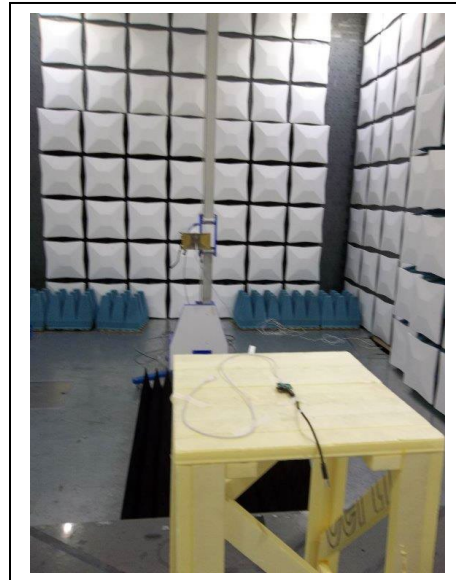


Note: Peak scans below Average limit.

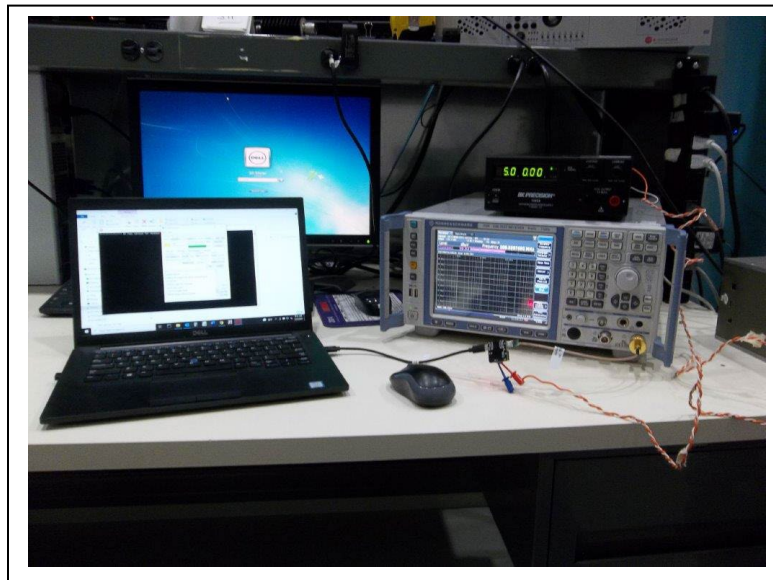
14 TEST SETUP PHOTOGRAPH(S)**Radiated Spurious Emission: 0.009 MHz to 30.0 MHz****Radiated Spurious Emission: 30 MHz to 1000 MHz**



Radiated Spurious Emission: 1 GHz to 26 GHz

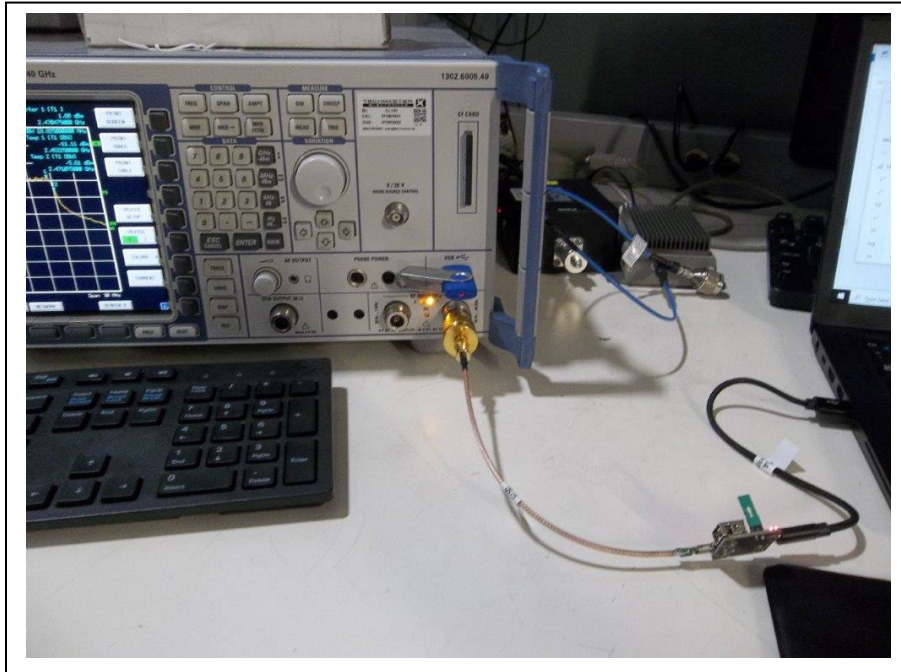


Voltage Variations





**Conducted Output Power, Peak Power Spectral Density,
Occupied Bandwidth, and Conducted Spurious Emissions**



Conducted Emissions

