

Intertek

Report Number: 104567487BOX-001

Issued: 02/03/2021

Band 4, Bandwidth: 5 MHz, Modulation: TM1.1-QPSK

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2152.5	ANT0	-29.94
		ANT1	-28.40

Band 4, Bandwidth: 10 MHz, Modulation: TM1.1-QPSK

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2150.00	ANT0	-32.42
		ANT1	-31.04

Band 4, Bandwidth: 15 MHz, Modulation: TM1.1-QPSK

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2147.50	ANT0	-33.84
		ANT1	-32.41

Band 4, Bandwidth: 20 MHz, Modulation: TM1.1-QPSK

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2145.00	ANT0	-35.02
		ANT1	-33.73

Band 4, Bandwidth: 5 MHz, Modulation: TM3.2-16QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2152.5	ANT0	-30.11
		ANT1	-28.82

Band 4, Bandwidth: 10 MHz, Modulation: TM3.2-16QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2150.00	ANT0	-32.24
		ANT1	-30.99

Band 4, Bandwidth: 15 MHz, Modulation: TM3.2-16QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2147.50	ANT0	-33.89
		ANT1	-32.68

Band 4, Bandwidth: 20 MHz, Modulation: TM3.2-16QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2145.00	ANT0	-34.64
		ANT1	-34.47

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Band 4, Bandwidth: 5 MHz, Modulation: TM3.1-64QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2152.5	ANT0	-29.90
		ANT1	-28.80

Band 4, Bandwidth: 10 MHz, Modulation: TM3.1-64QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2150.00	ANT0	-31.40
		ANT1	-32.32

Band 4, Bandwidth: 15 MHz, Modulation: TM3.1-64QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2147.50	ANT0	-34.06
		ANT1	-32.66

Band 4, Bandwidth: 20 MHz, Modulation: TM3.1-64QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2145.00	ANT0	-35.01
		ANT1	-33.68

Band 4, Bandwidth: 5 MHz, Modulation: TM3.1a-256QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2152.5	ANT0	-29.99
		ANT1	-28.55

Band 4, Bandwidth: 10 MHz, Modulation: TM3.1a-256QAM

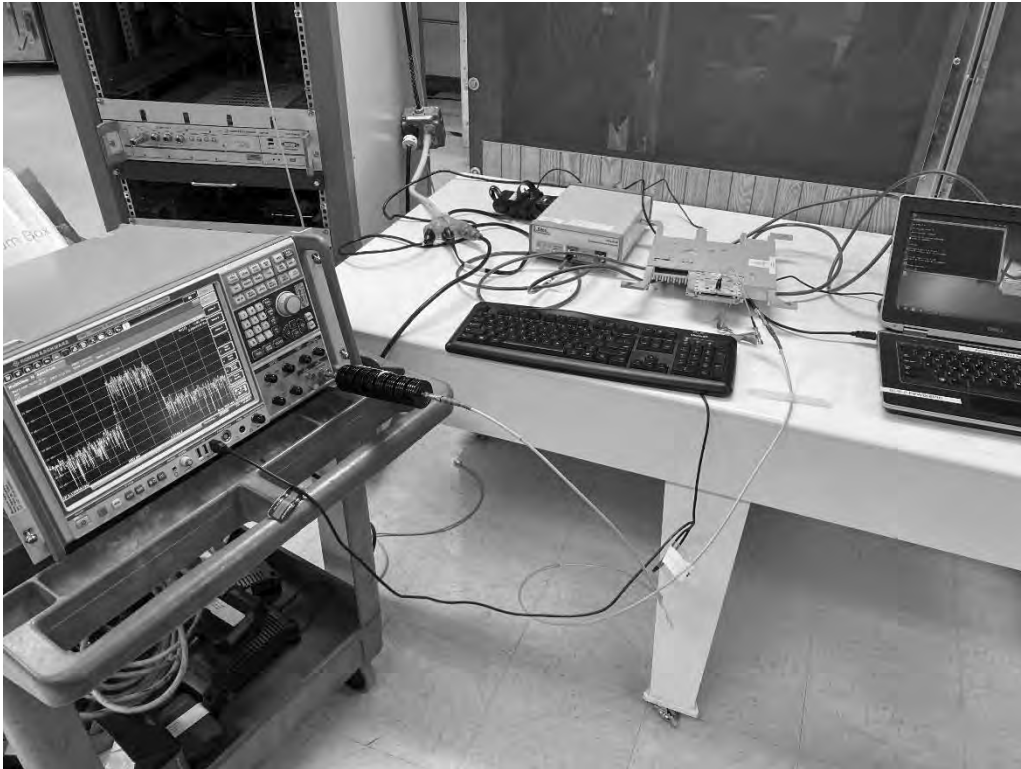
Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2150.00	ANT0	-32.47
		ANT1	-31.27

Band 4, Bandwidth: 15 MHz, Modulation: TM3.1a-256QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2147.50	ANT0	-34.43
		ANT1	-32.62

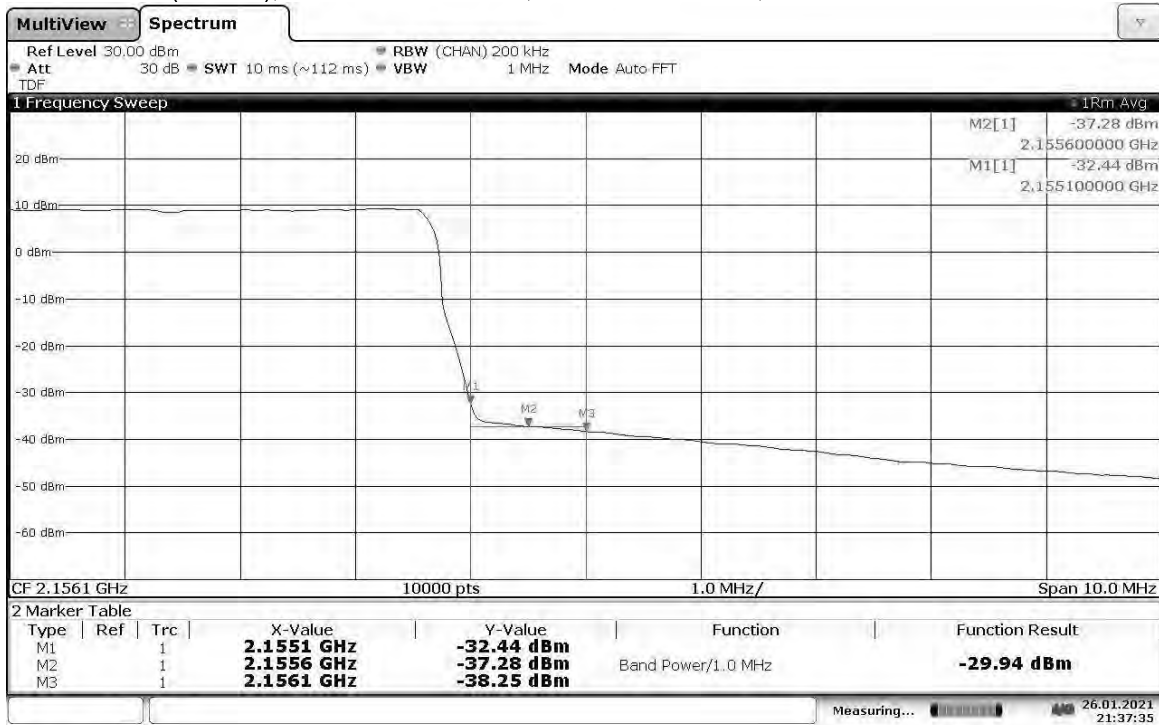
Band 4, Bandwidth: 20 MHz, Modulation: TM3.1a-256QAM

Band Edge	Frequency (MHz)	Antenna Port	Reading (dBm)
High	2145.00	ANT0	-34.82
		ANT1	-33.42

9.4 Setup Photograph:

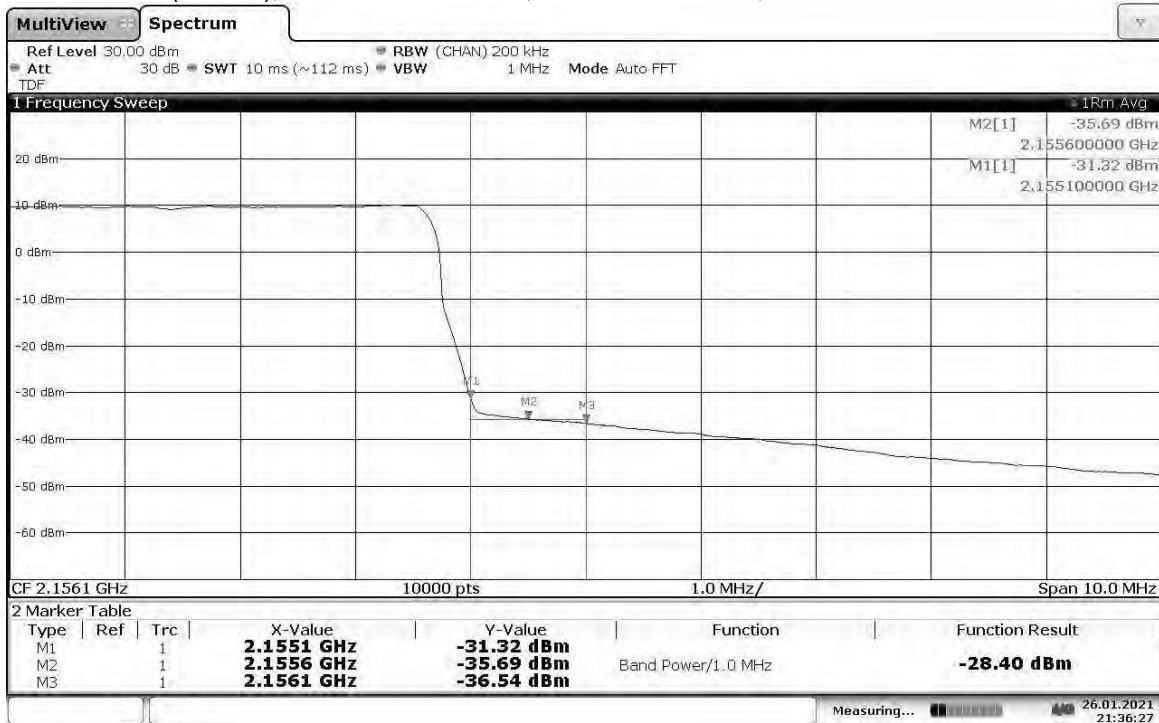
9.5 Plots/Data:

Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 5 MHz, Modulation: TM1.1-QPSK



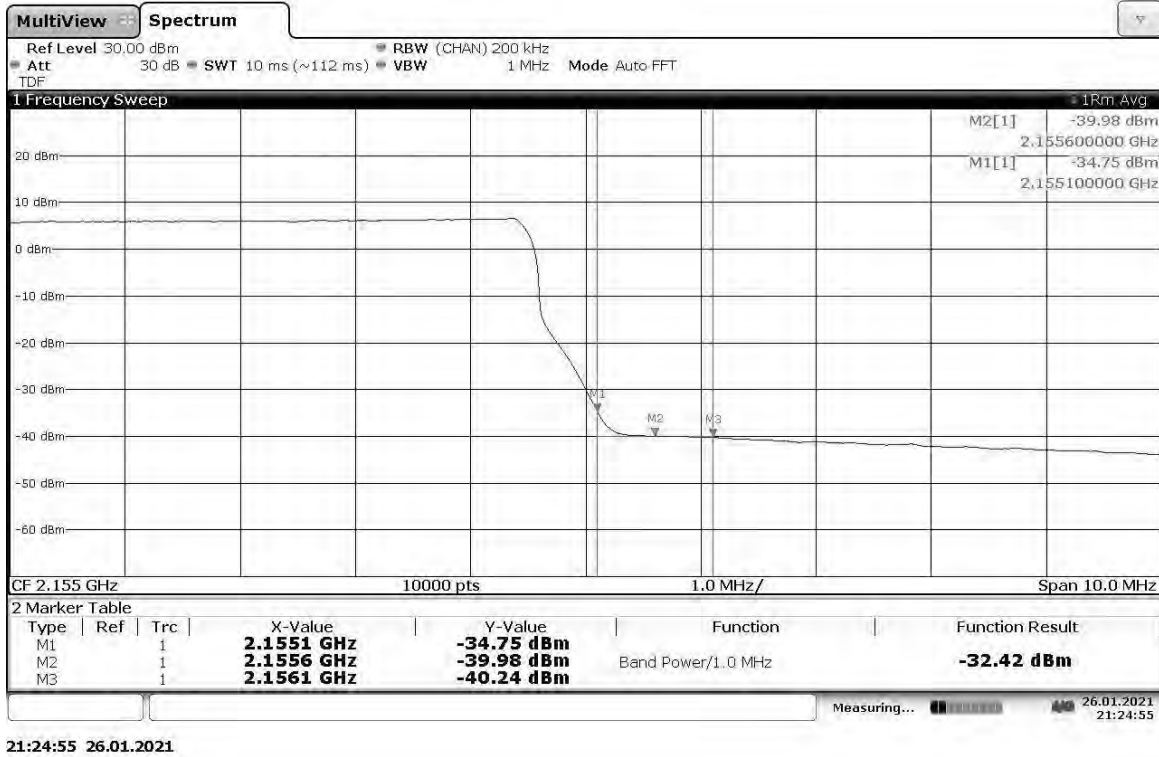
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Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 5 MHz, Modulation: TM1.1-QPSK

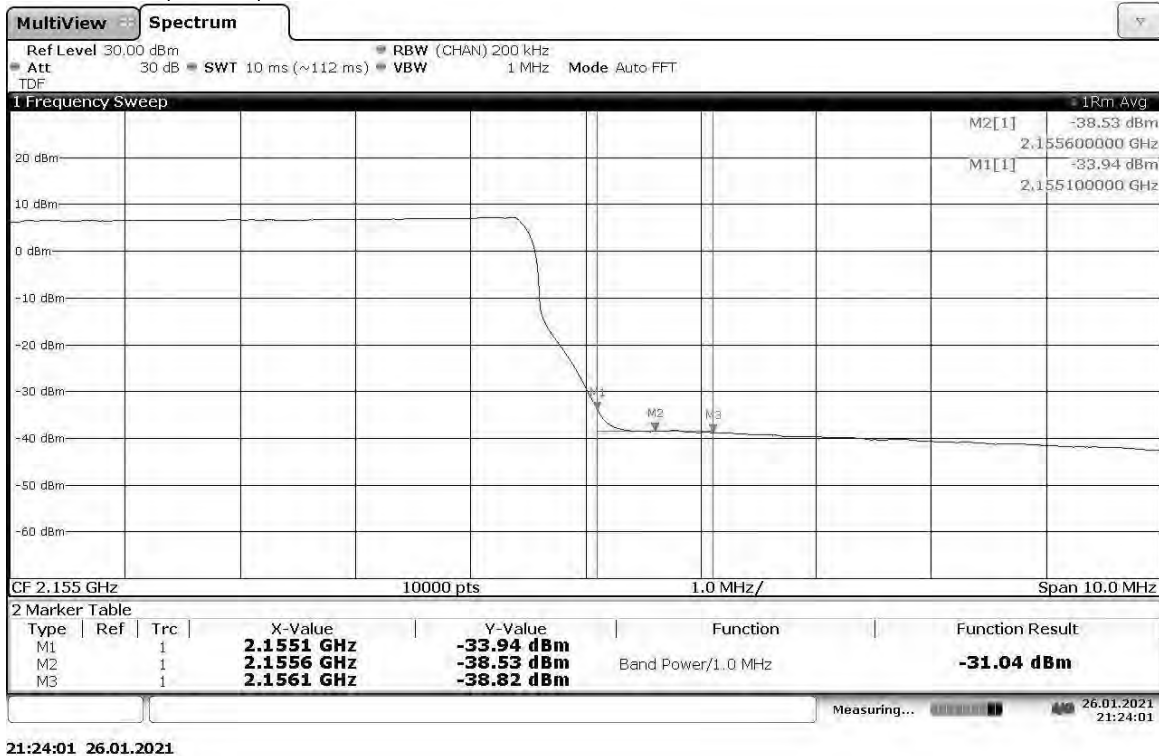


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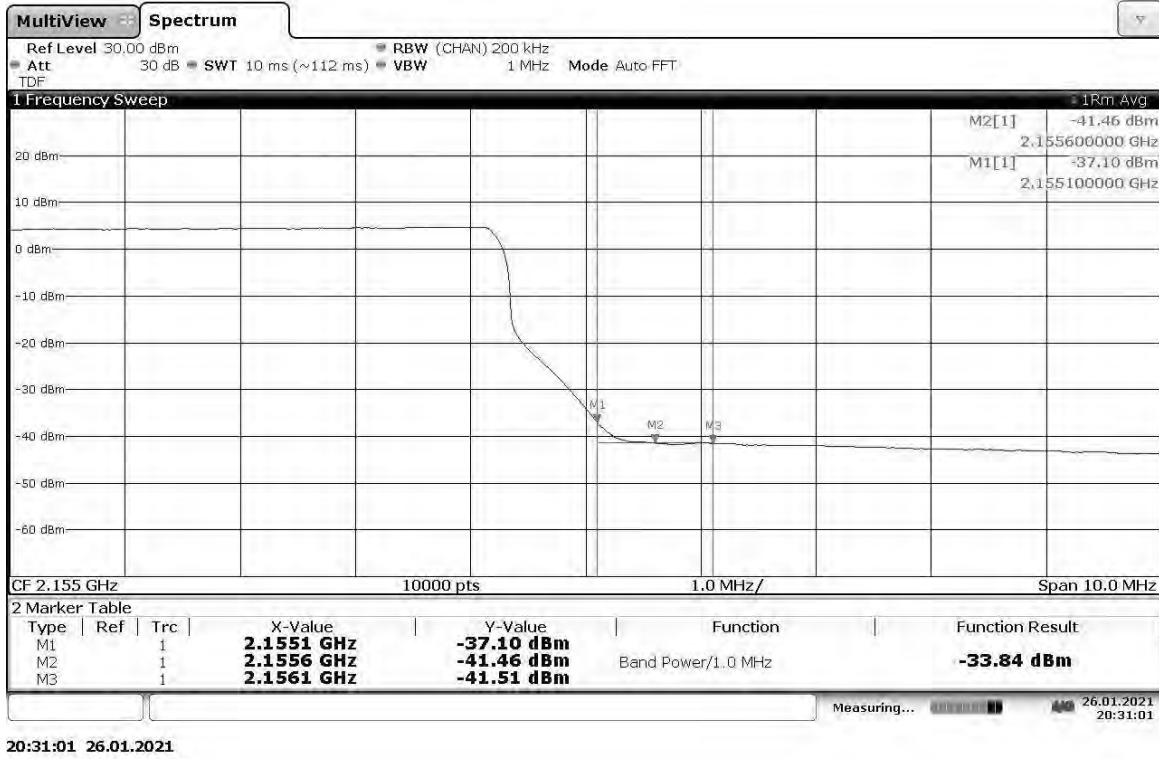
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Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 10 MHz, Modulation: TM1.1-QPSK



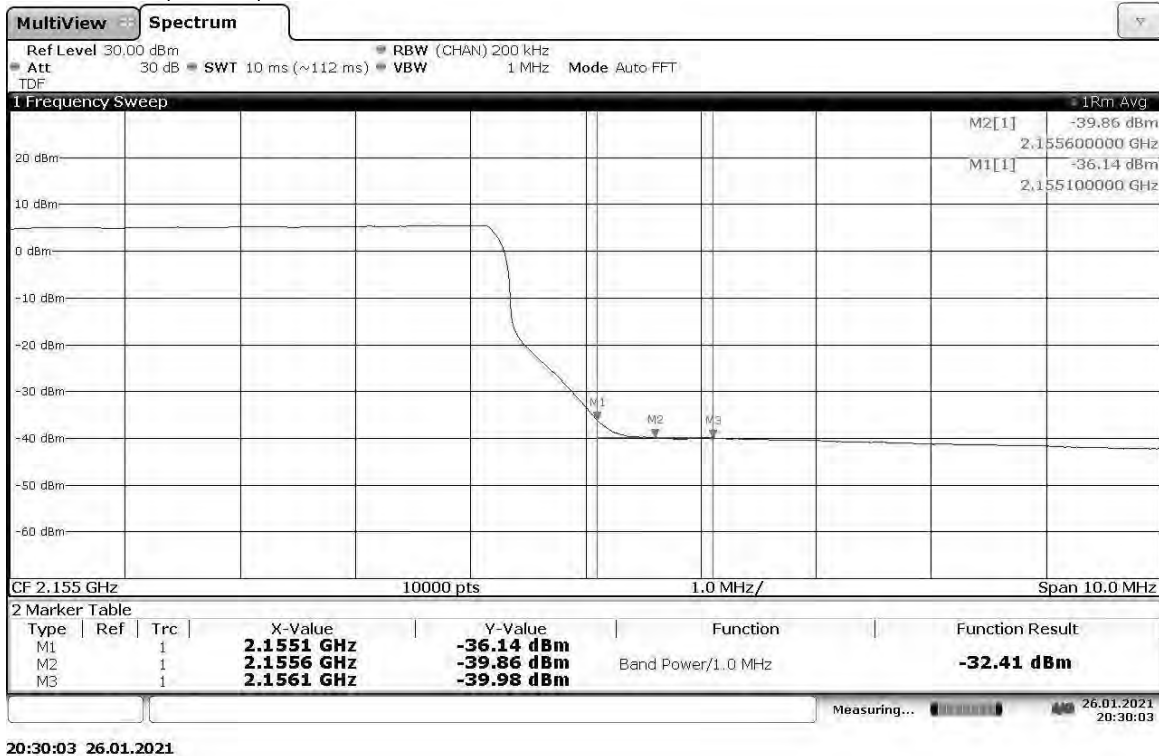
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 10 MHz, Modulation: TM1.1-QPSK



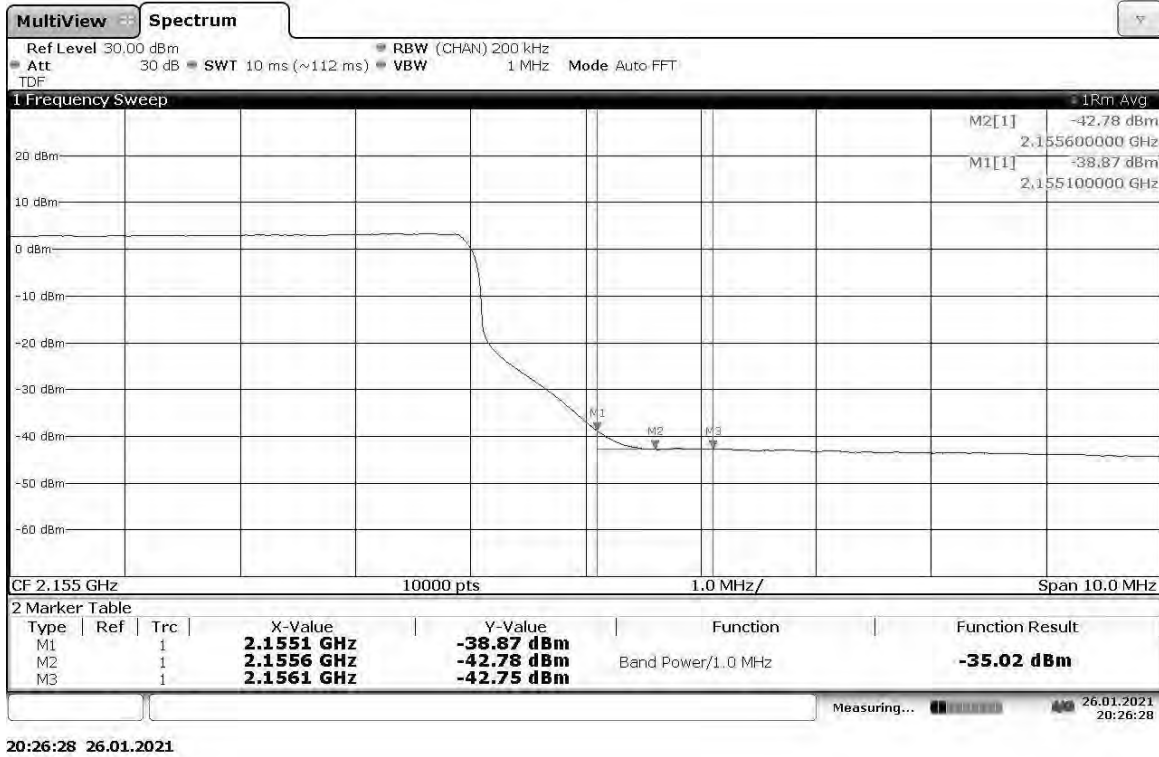
Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 15 MHz, Modulation: TM1.1-QPSK



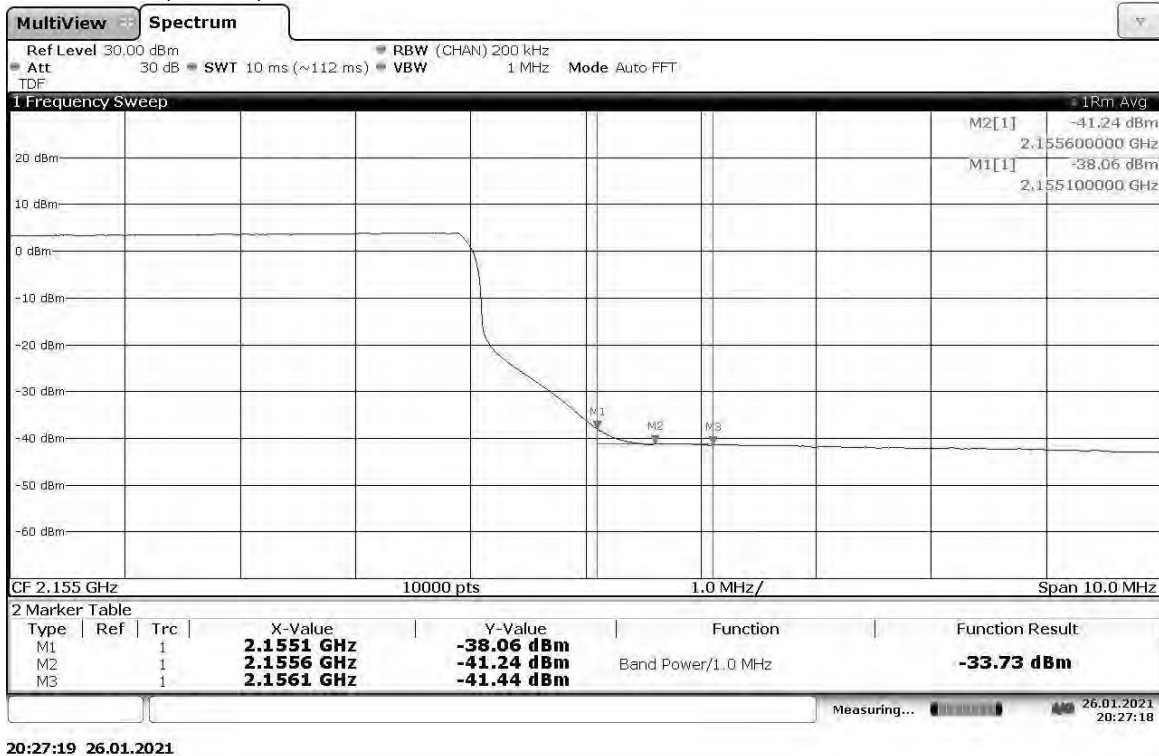
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Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 15 MHz, Modulation: TM1.1-QPSK



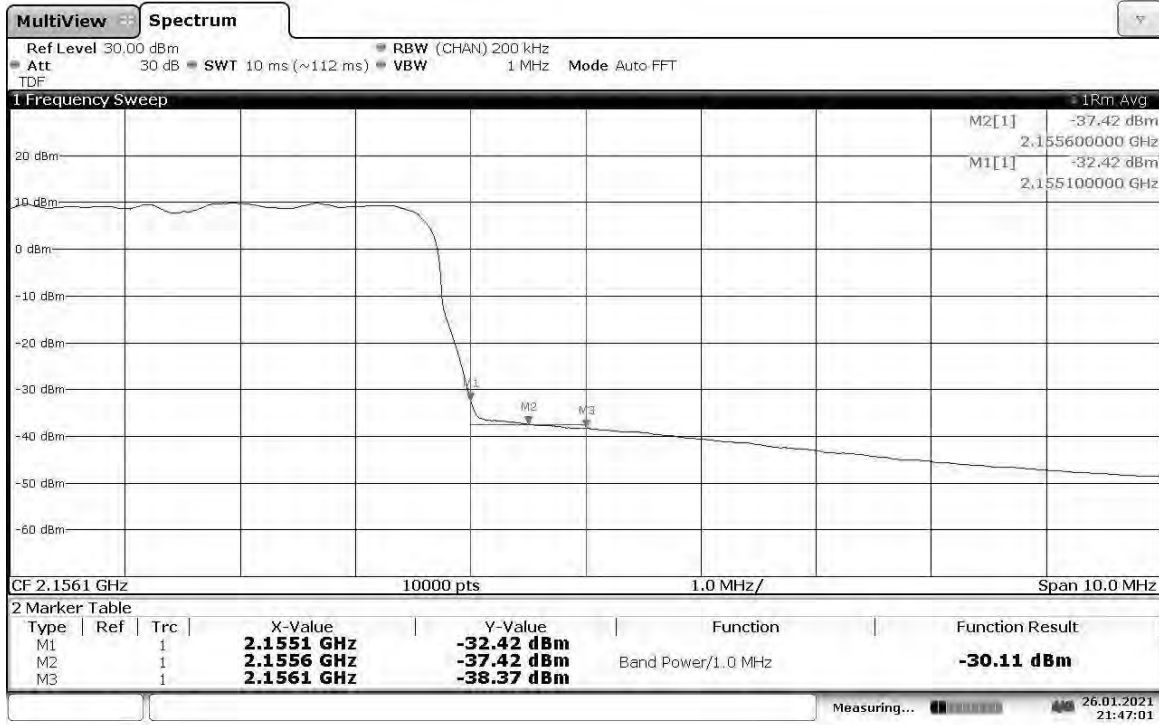
Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 20 MHz, Modulation: TM1.1-QPSK



Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 20 MHz, Modulation: TM1.1-QPSK

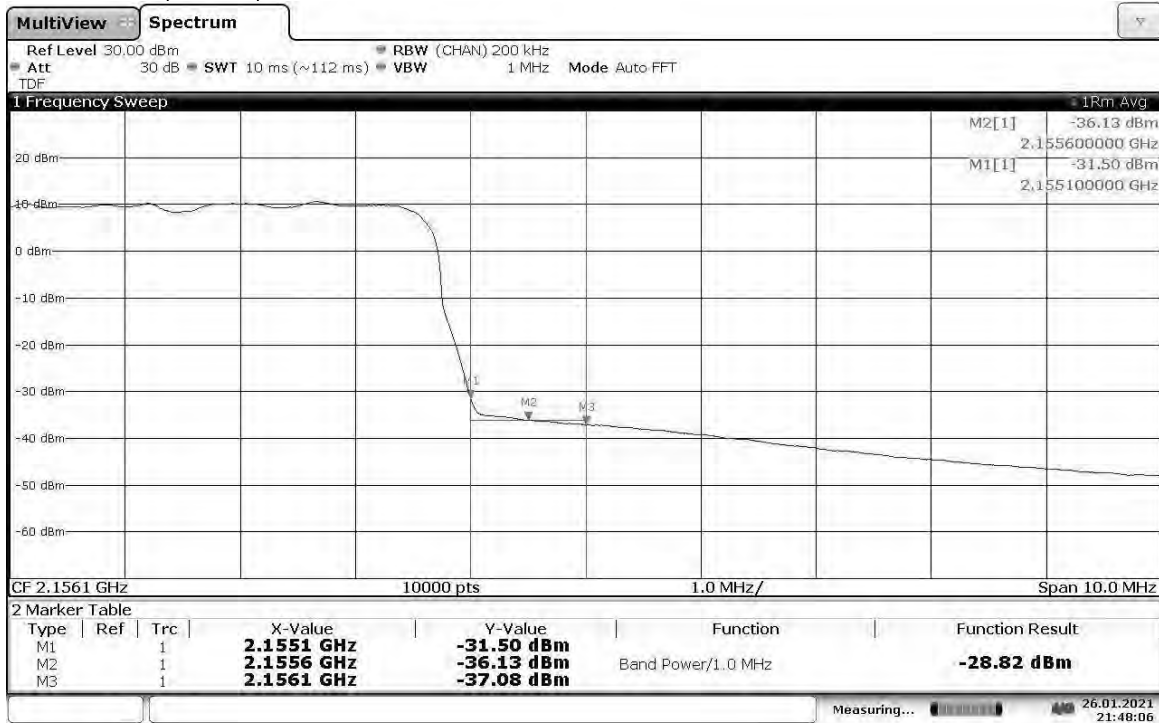


Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 5 MHz, Modulation: TM3.2-16QAM



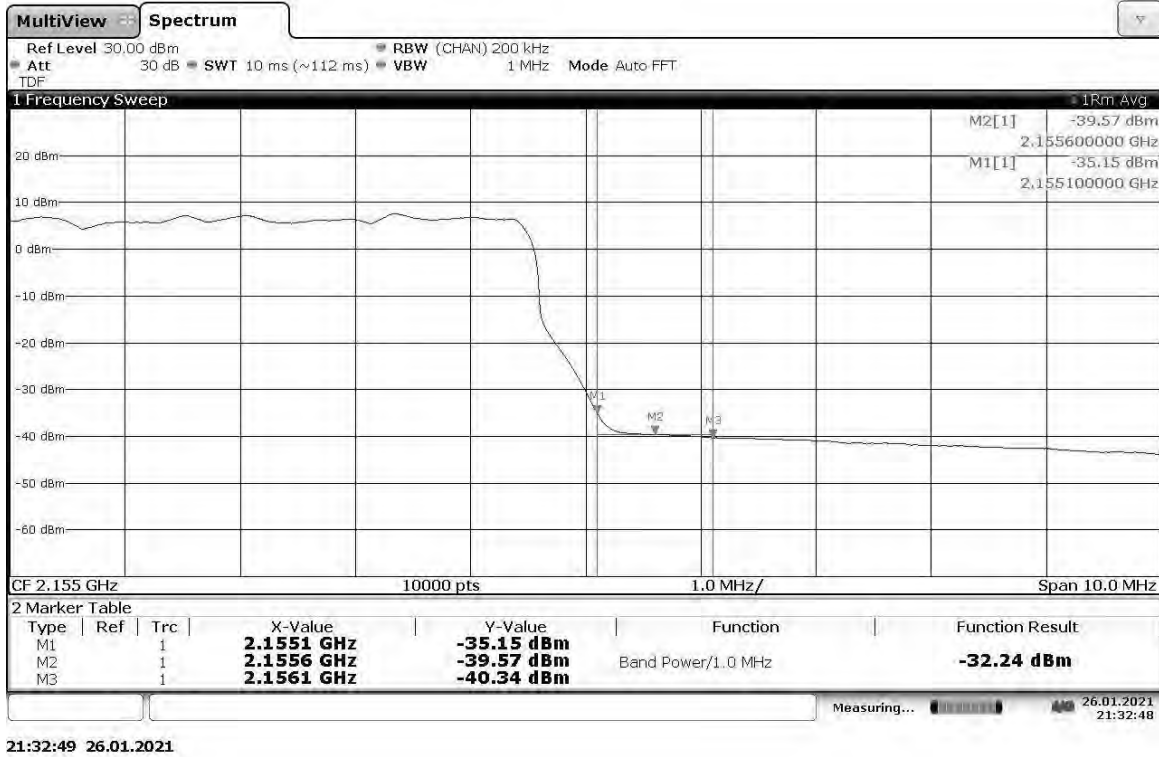
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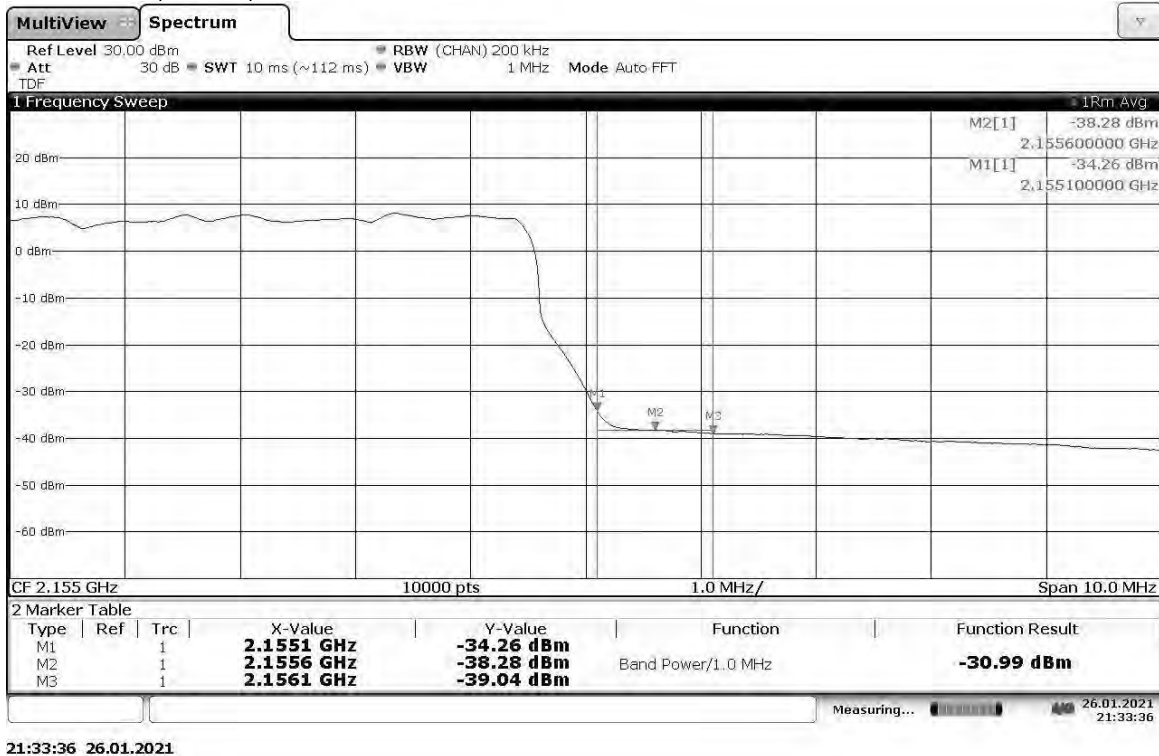


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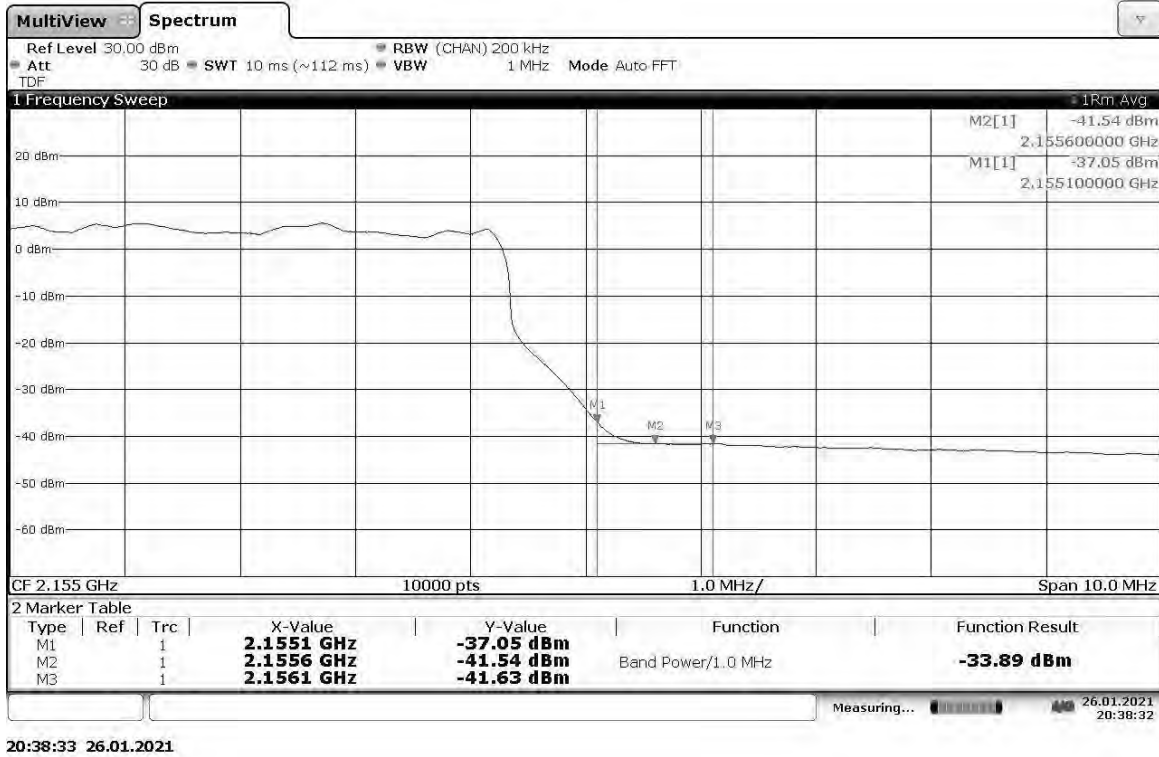
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 10 MHz, Modulation: TM3.2-16QAM



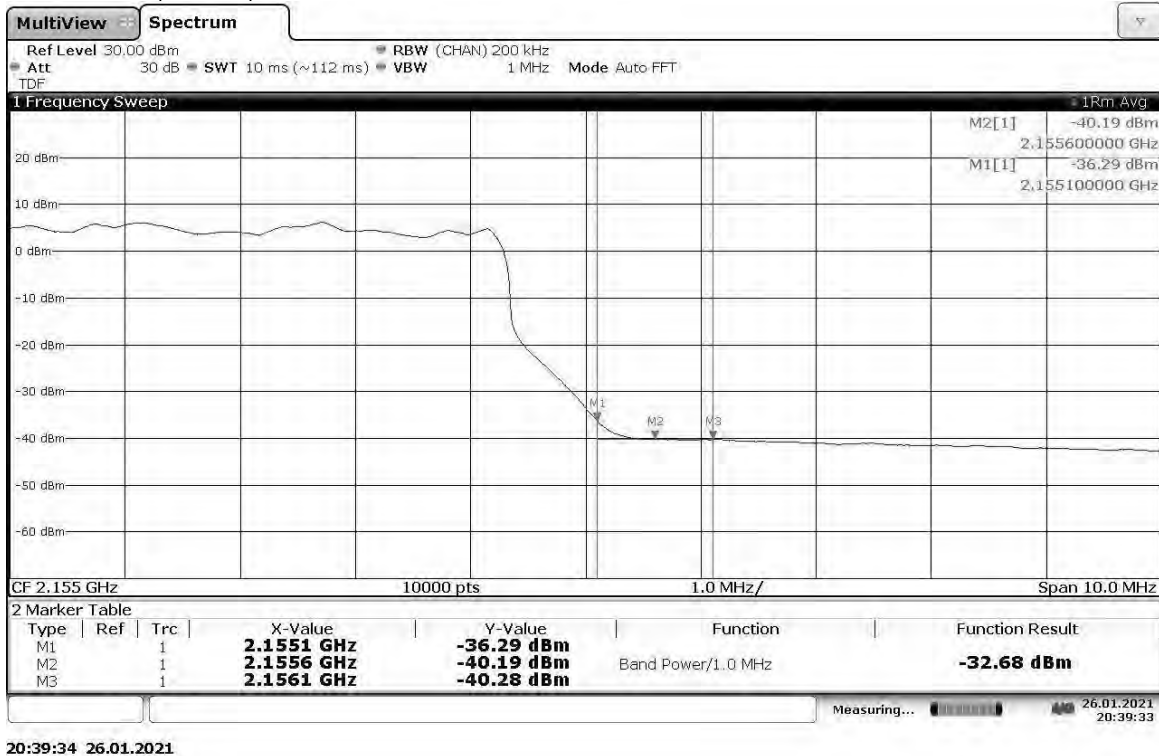
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 10 MHz, Modulation: TM3.2-16QAM



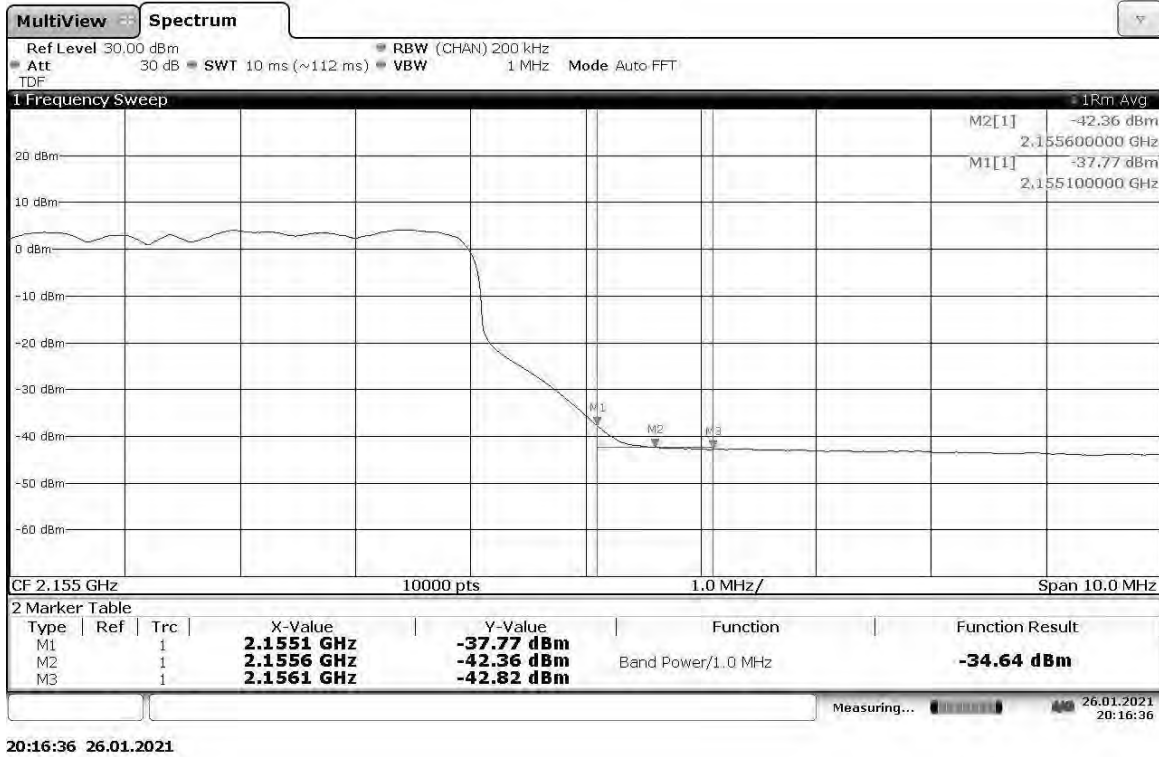
Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 15 MHz, Modulation: TM3.2-16QAM



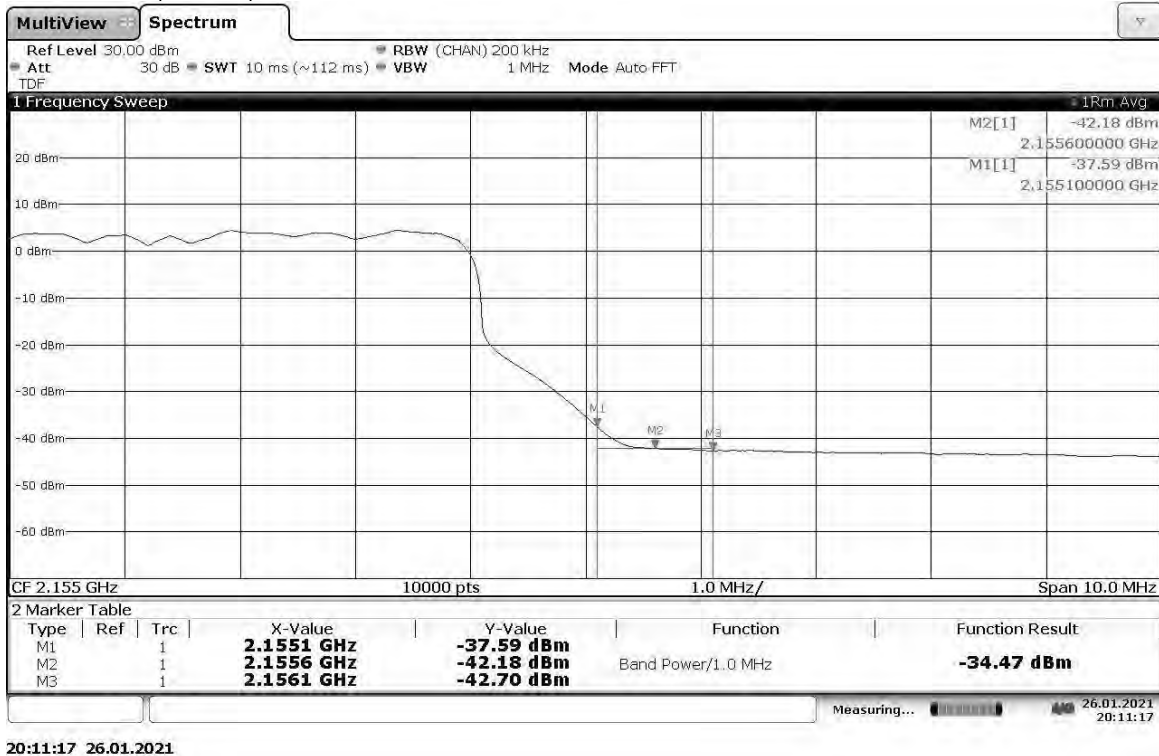
Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 15 MHz, Modulation: TM3.2-16QAM



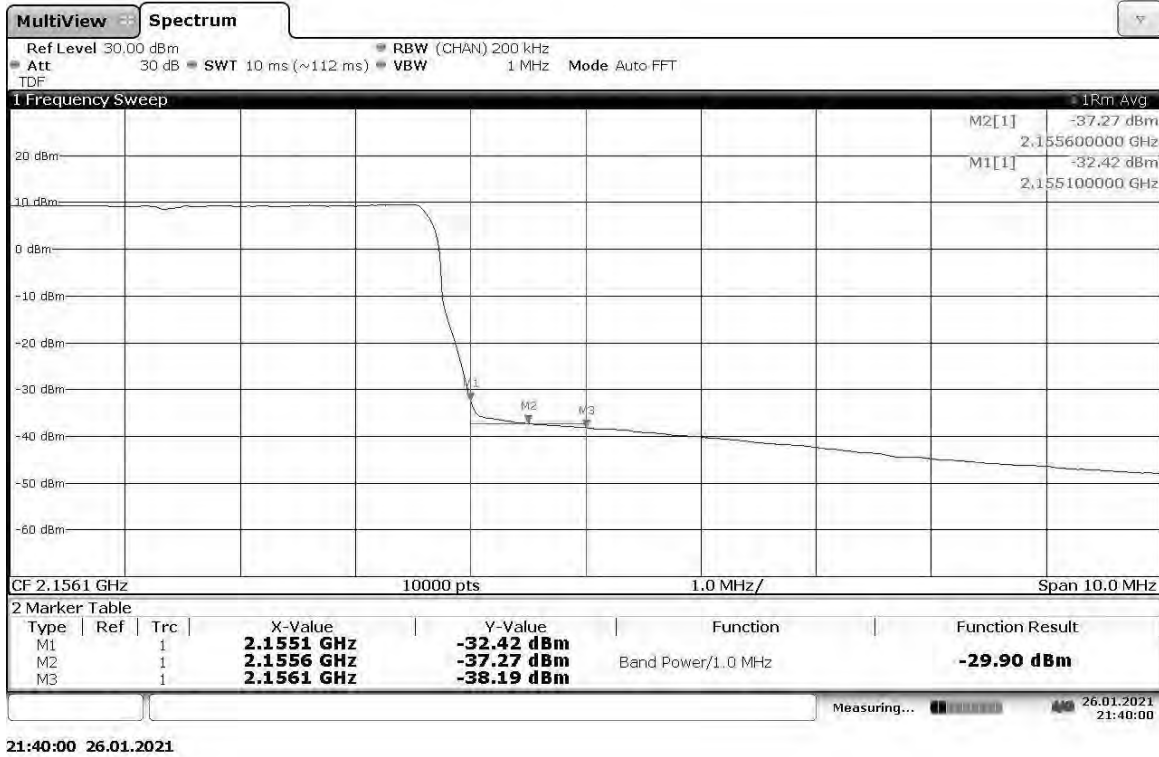
Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 20 MHz, Modulation: TM3.2-16QAM



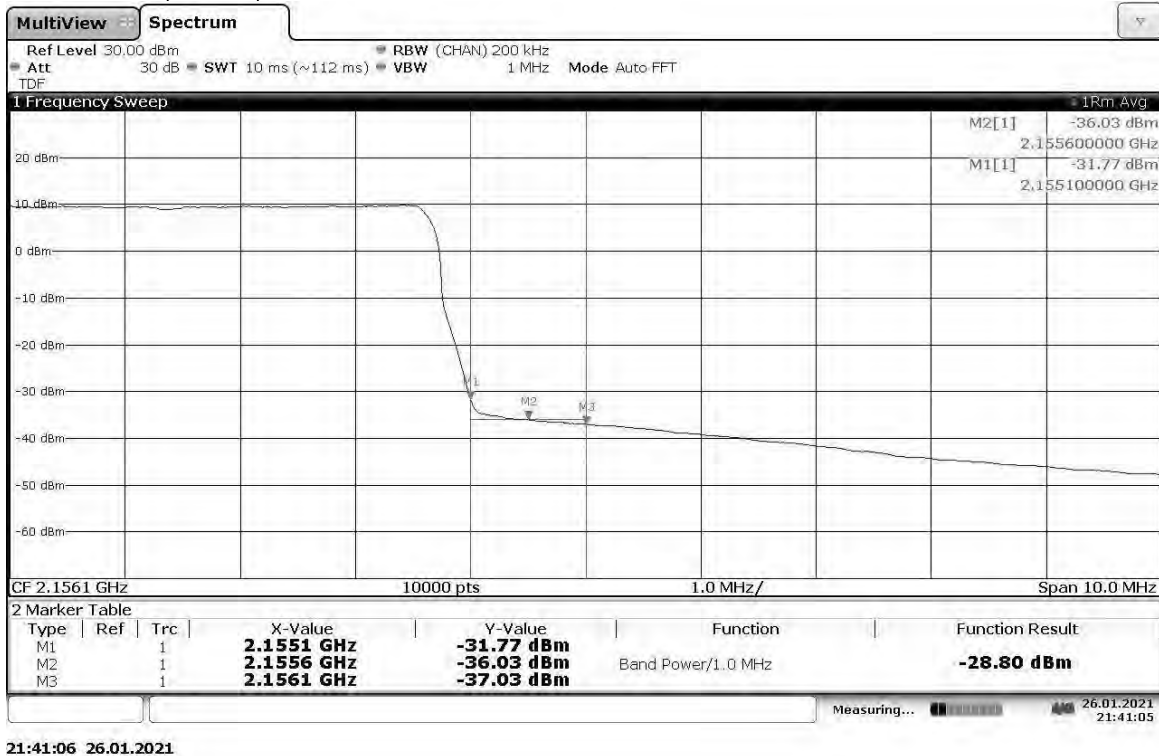
Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 20 MHz, Modulation: TM3.2-16QAM



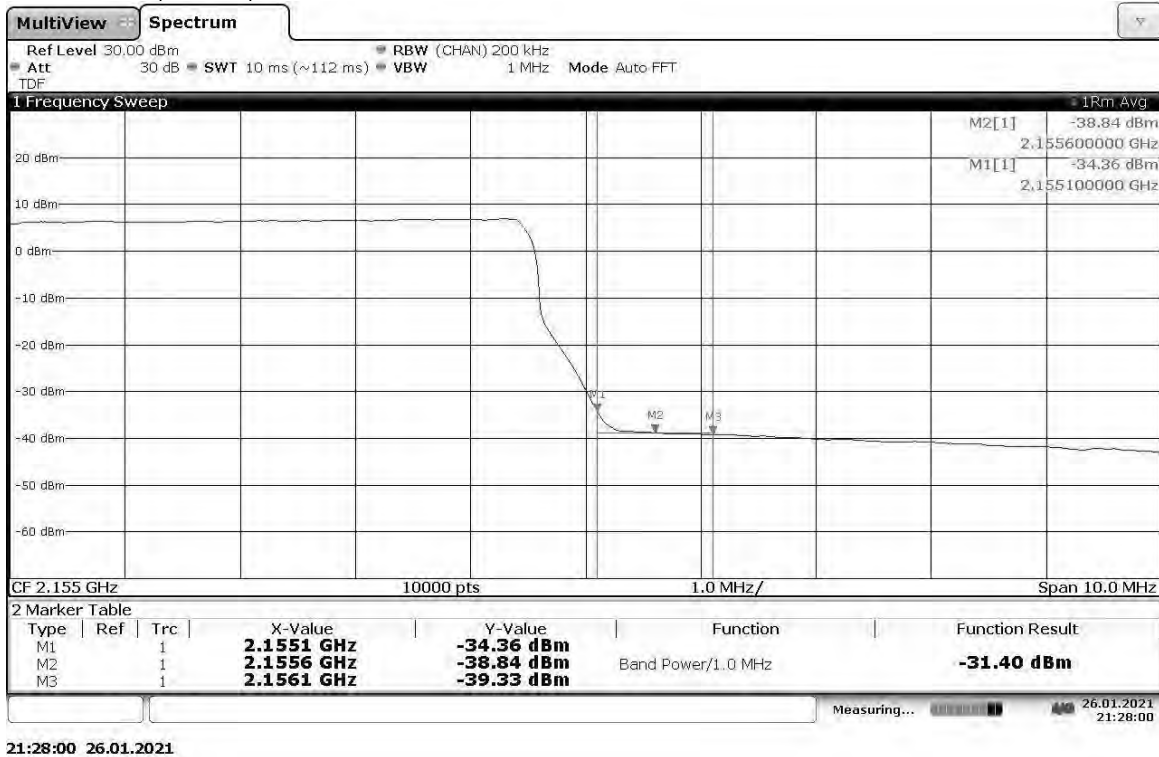
Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 5 MHz, Modulation: TM3.1-64QAM



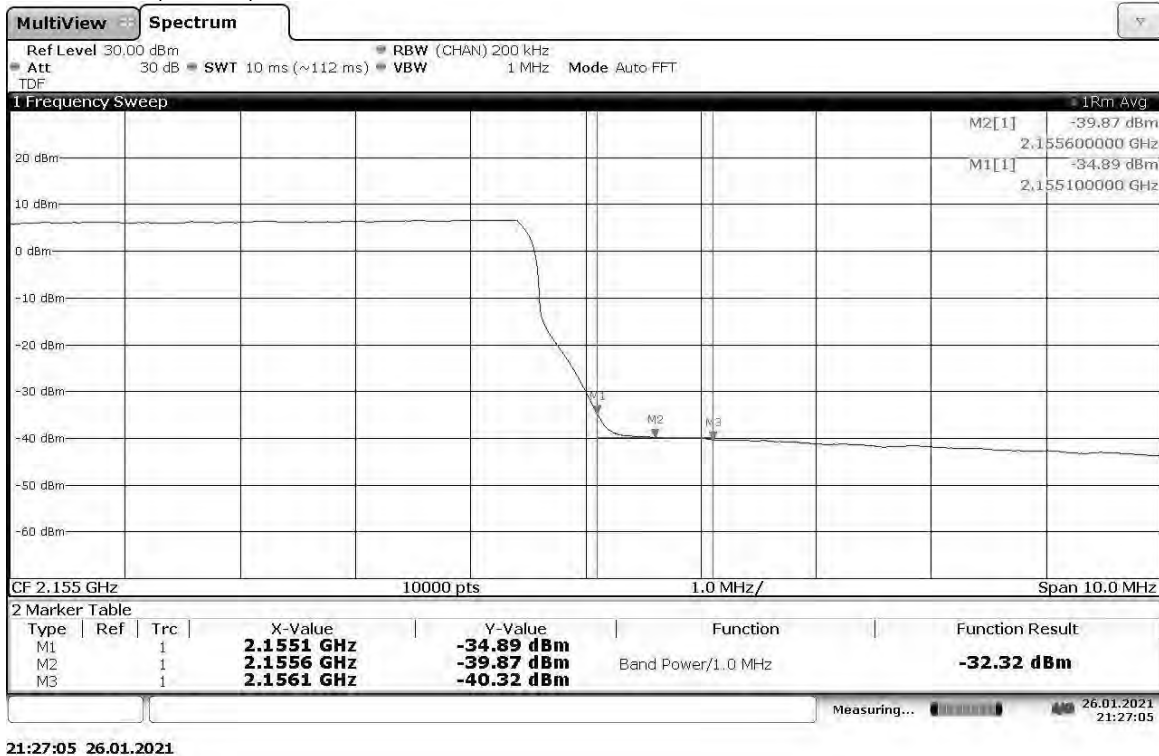
Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 5 MHz, Modulation: TM3.1-64QAM



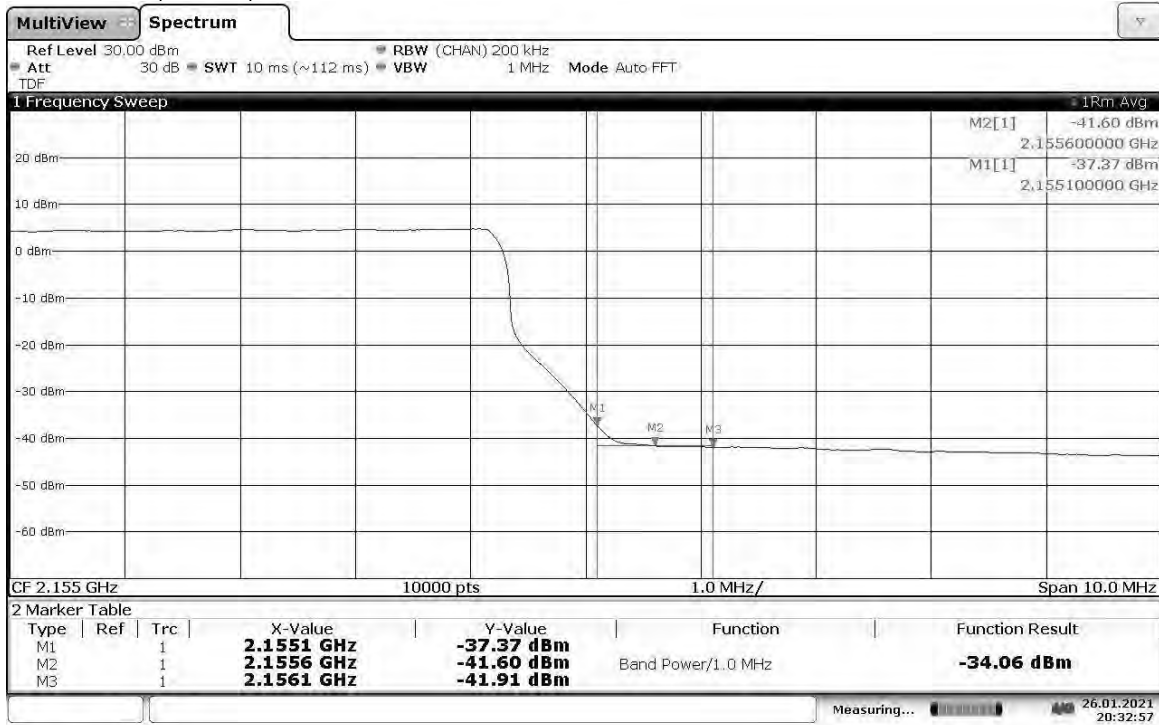
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 10 MHz, Modulation: TM3.1-64QAM



Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 10 MHz, Modulation: TM3.1-64QAM

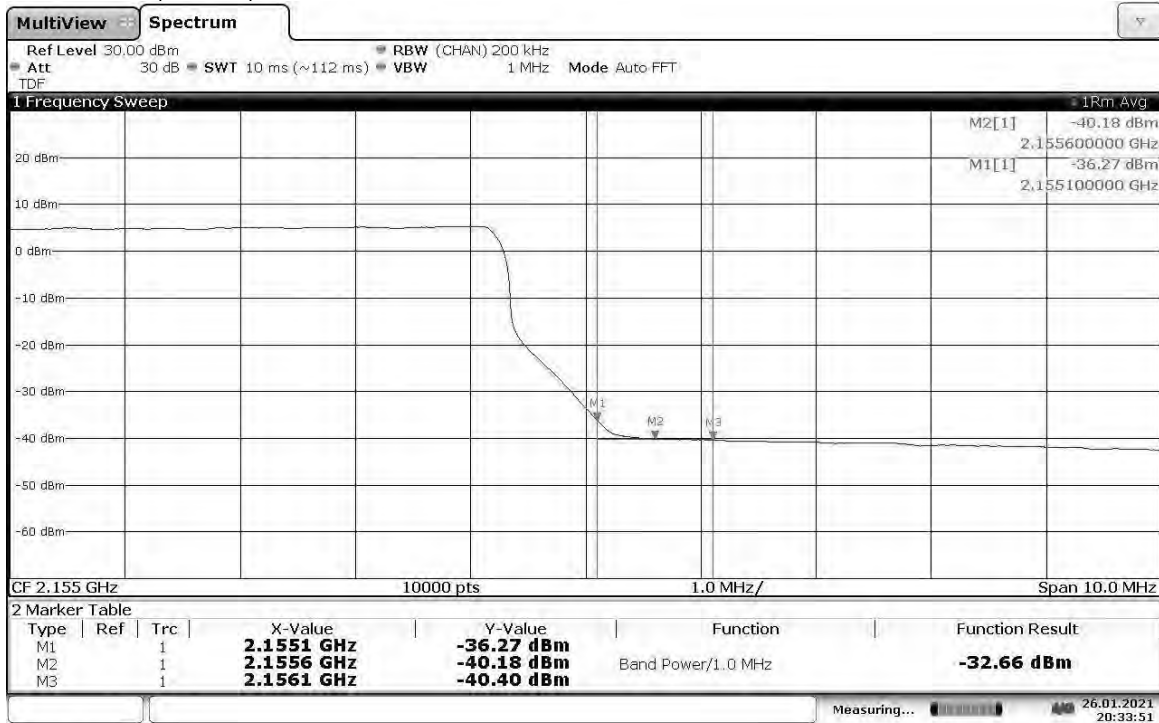


Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 15 MHz, Modulation: TM3.1-64QAM



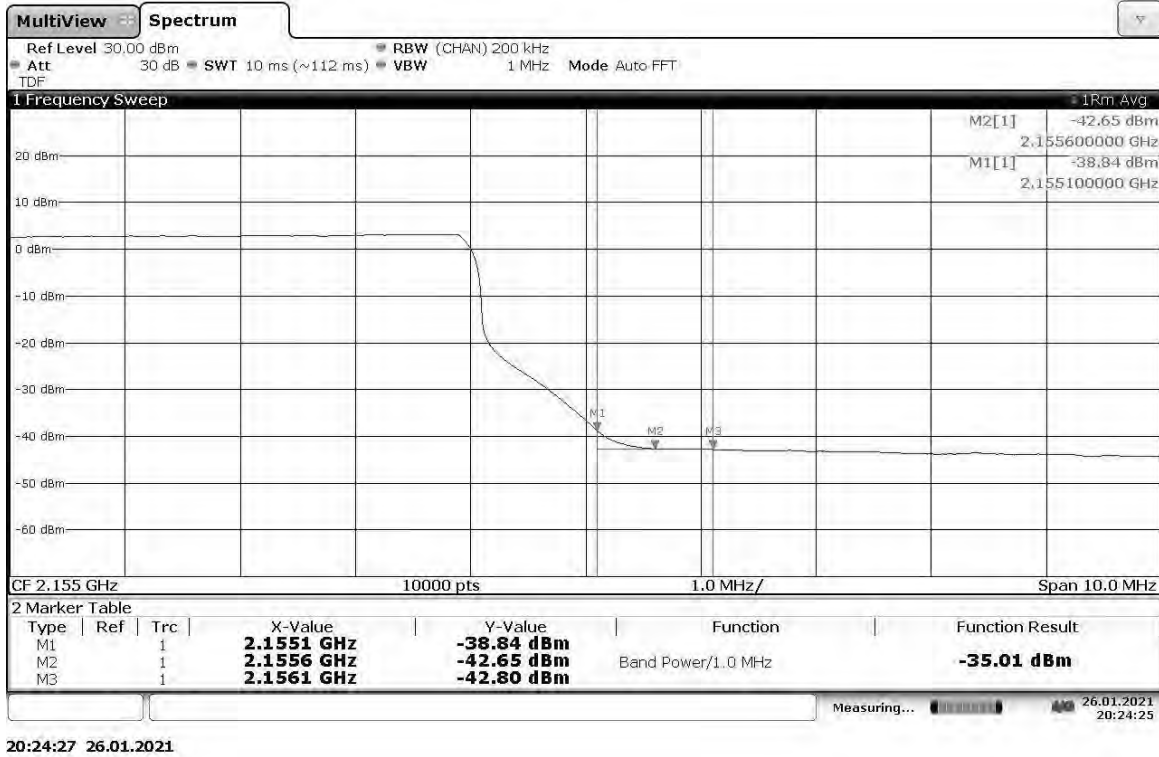
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Band Edge Compliant, Upper Band Edge, 2147.5 MHz
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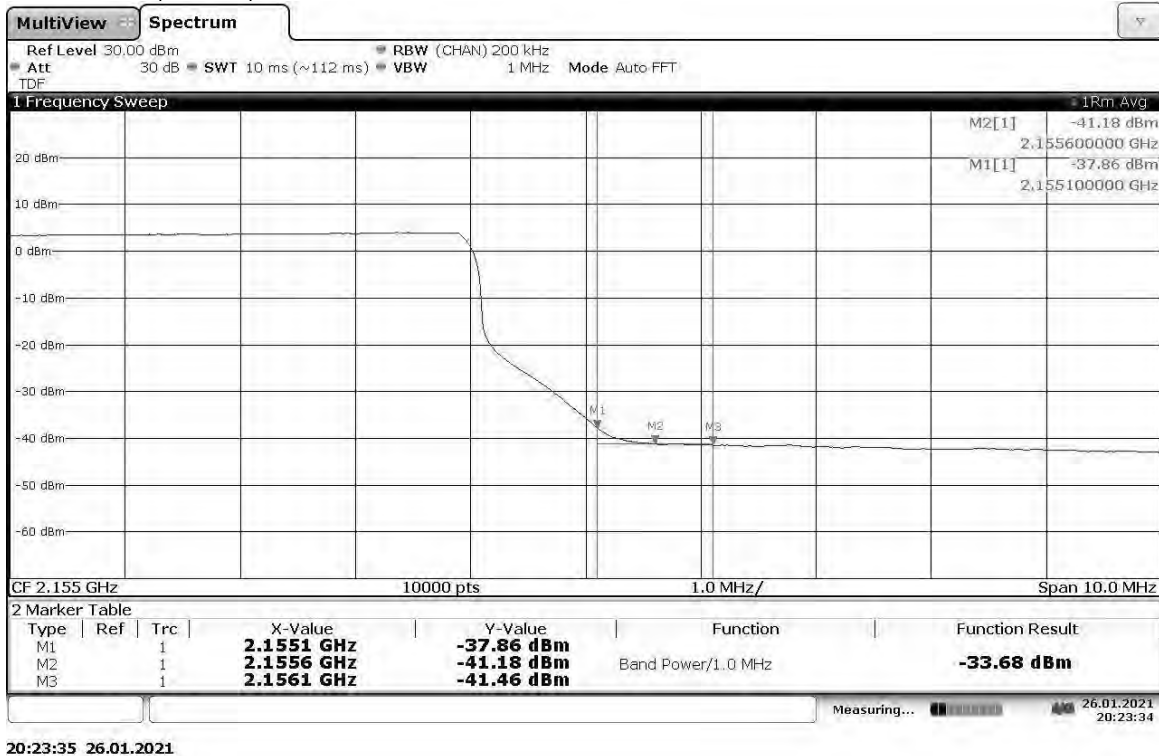


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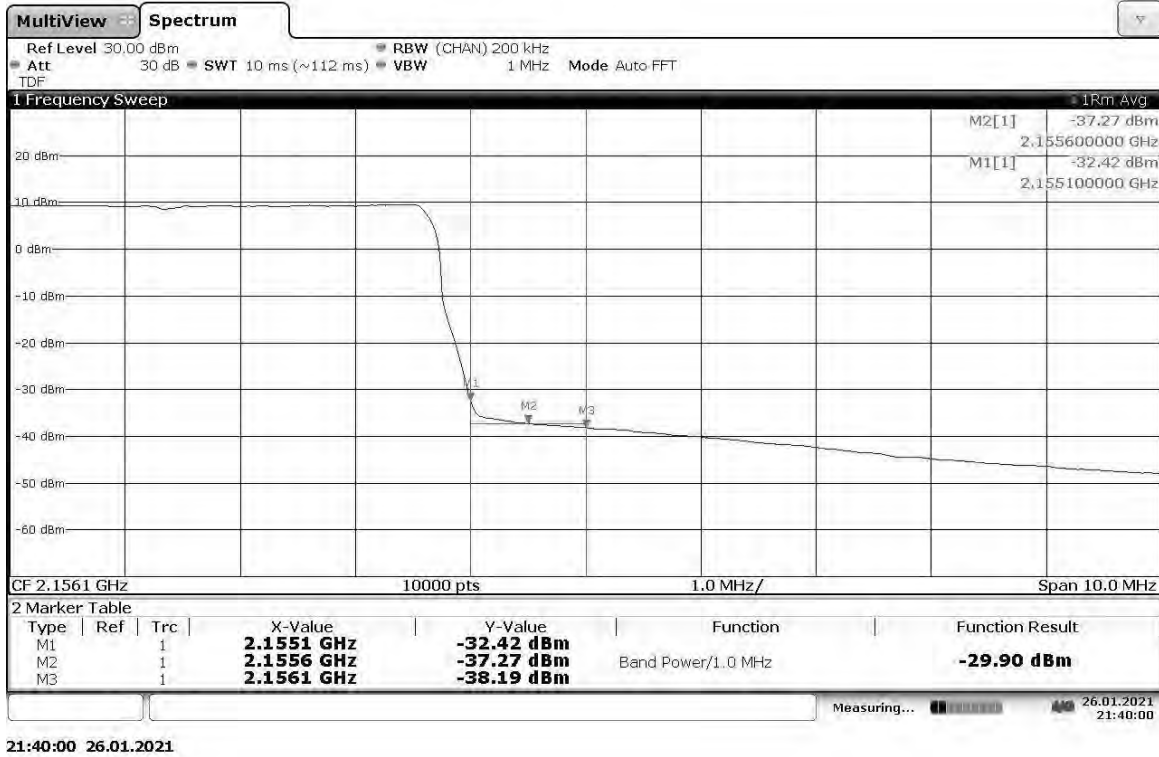
Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 20 MHz, Modulation: TM3.1-64QAM



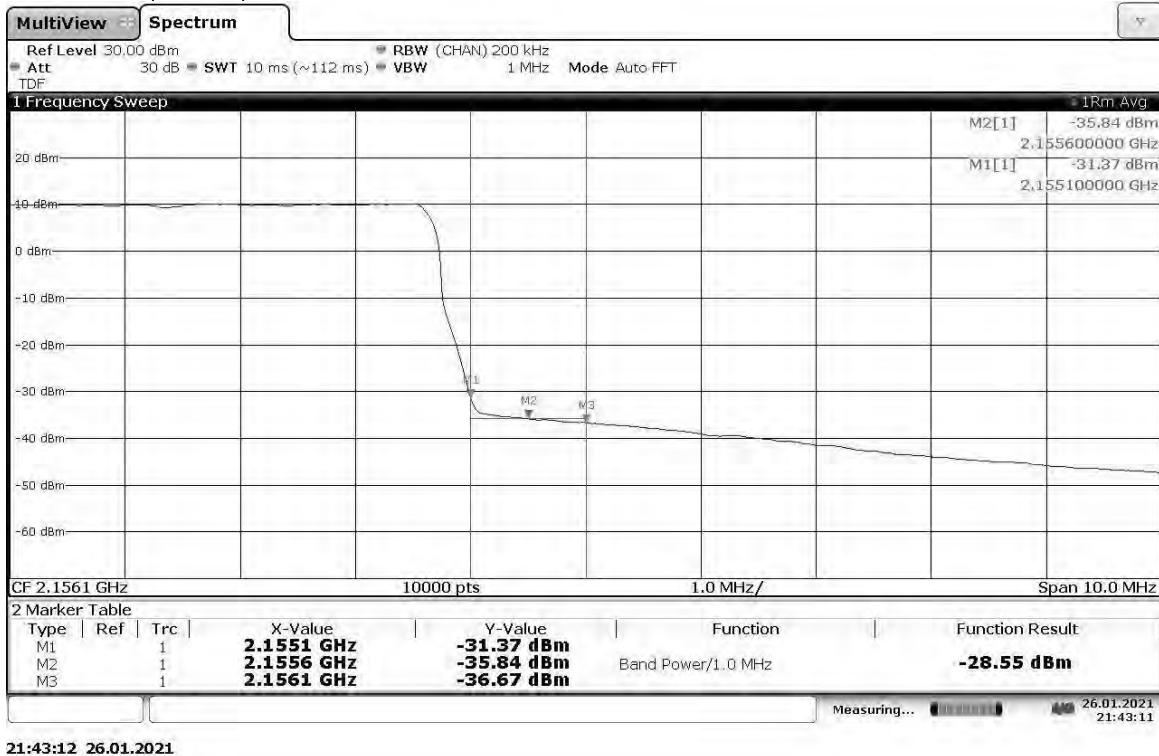
Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 20 MHz, Modulation: TM3.1-64QAM



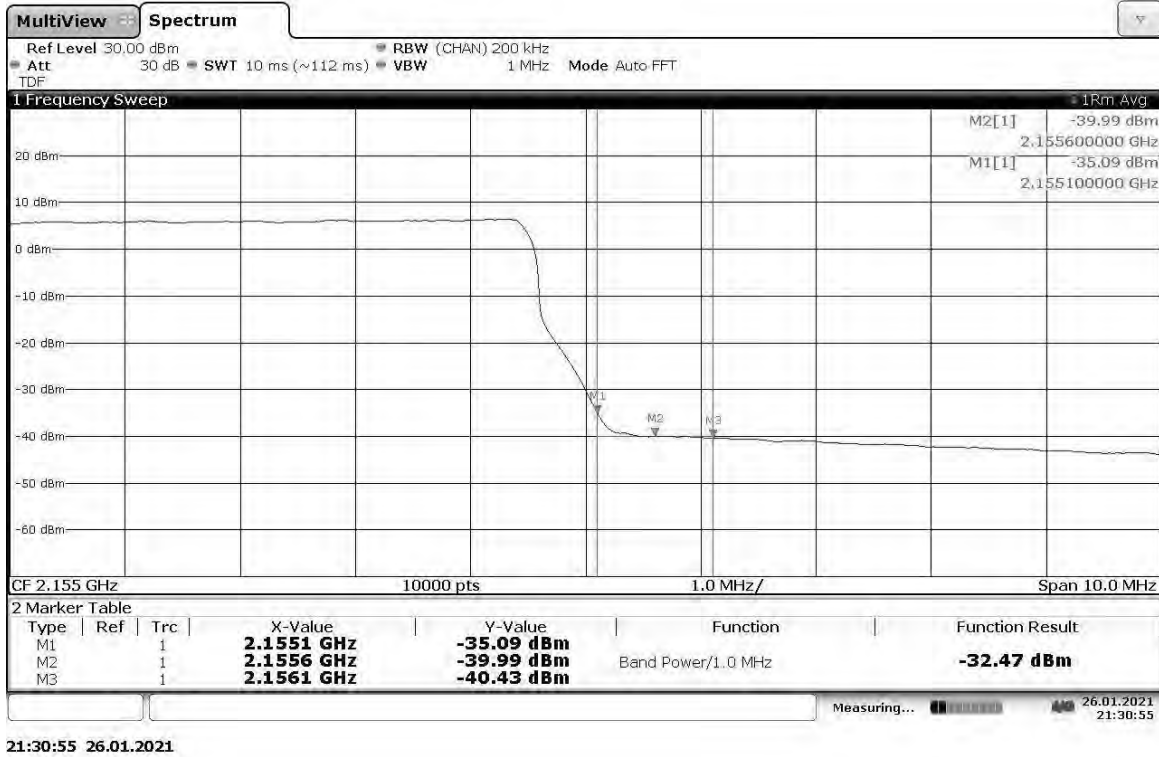
Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 5 MHz, Modulation: TM3.1a-256QAM



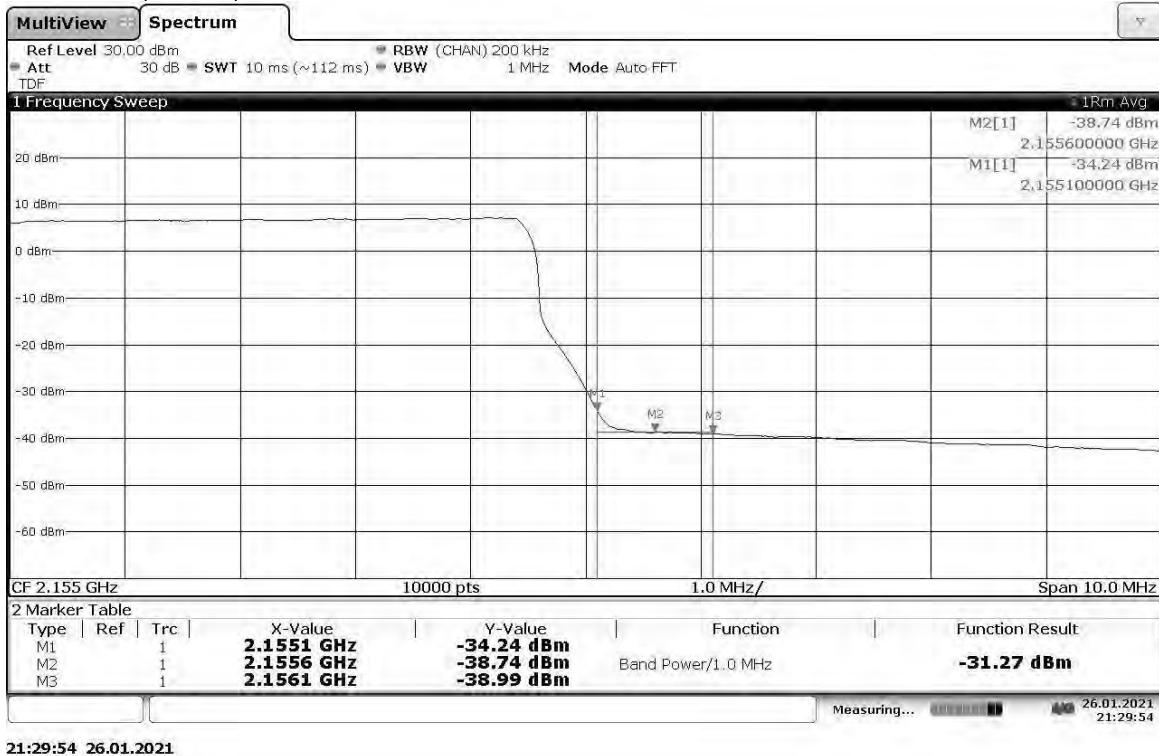
Band Edge Compliant, Upper Band Edge, 2152.5 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 5 MHz, Modulation: TM3.1a-256QAM



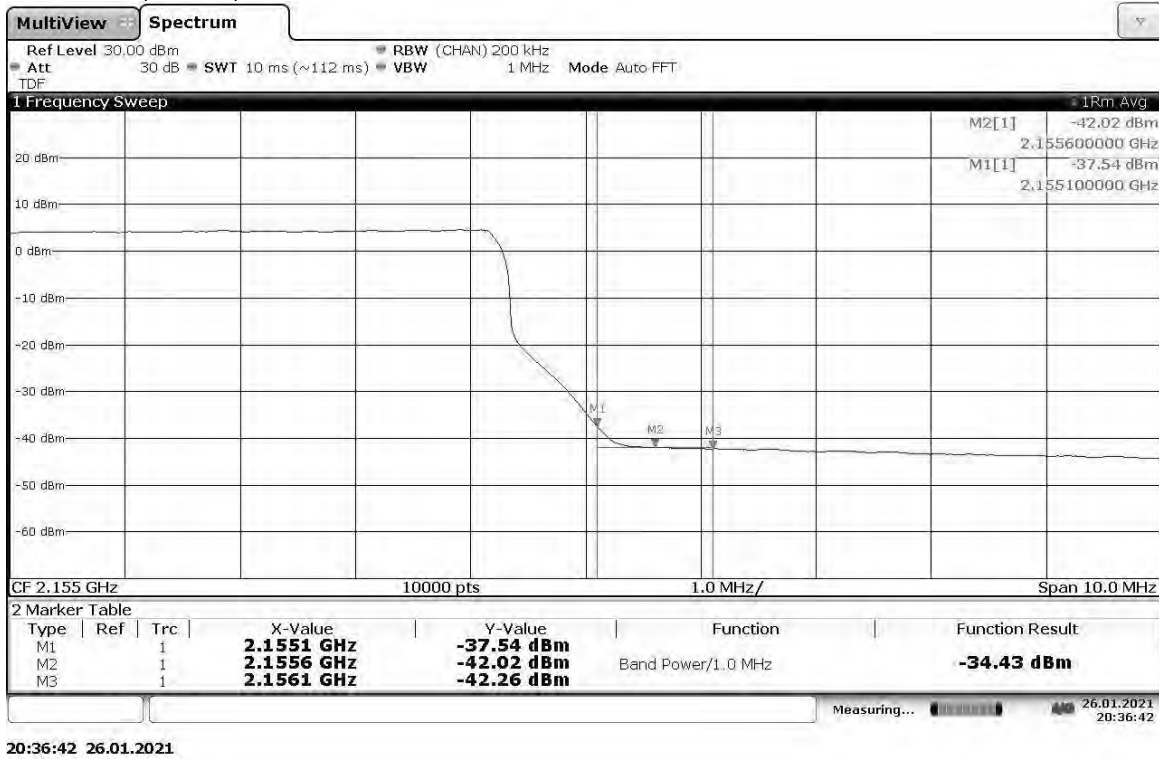
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 10 MHz, Modulation: TM3.1a-256QAM



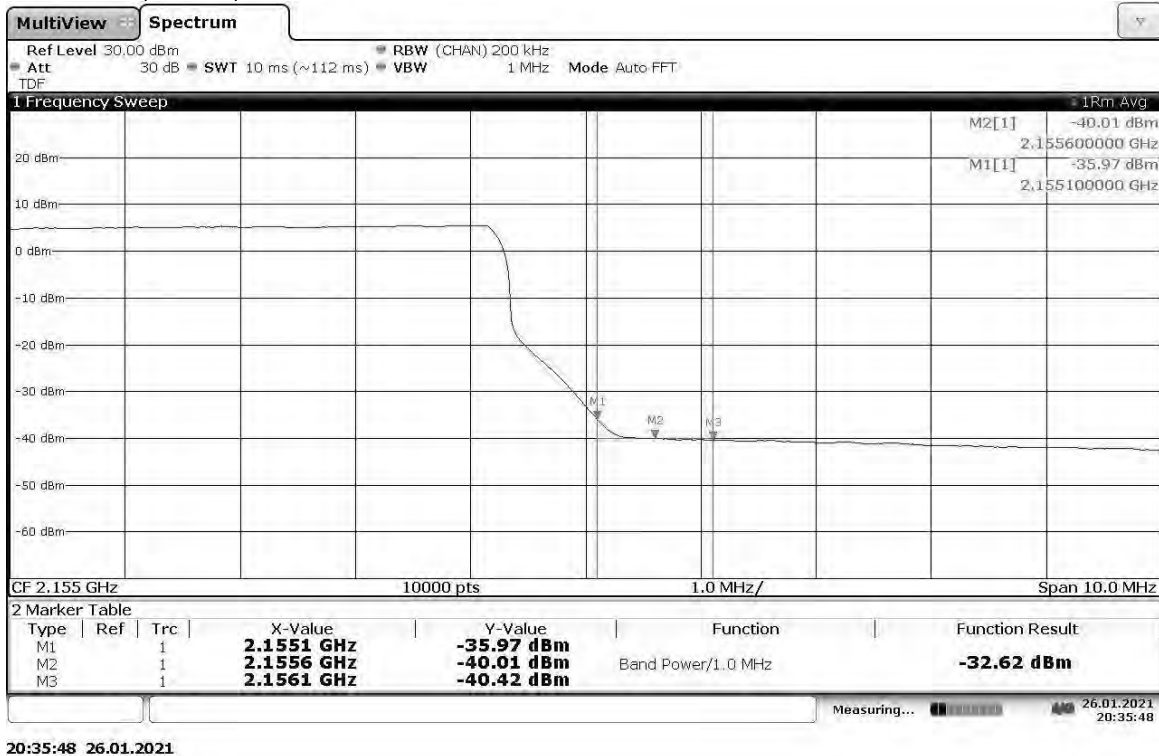
Band Edge Compliant, Upper Band Edge, 2150 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 10 MHz, Modulation: TM3.1a-256QAM



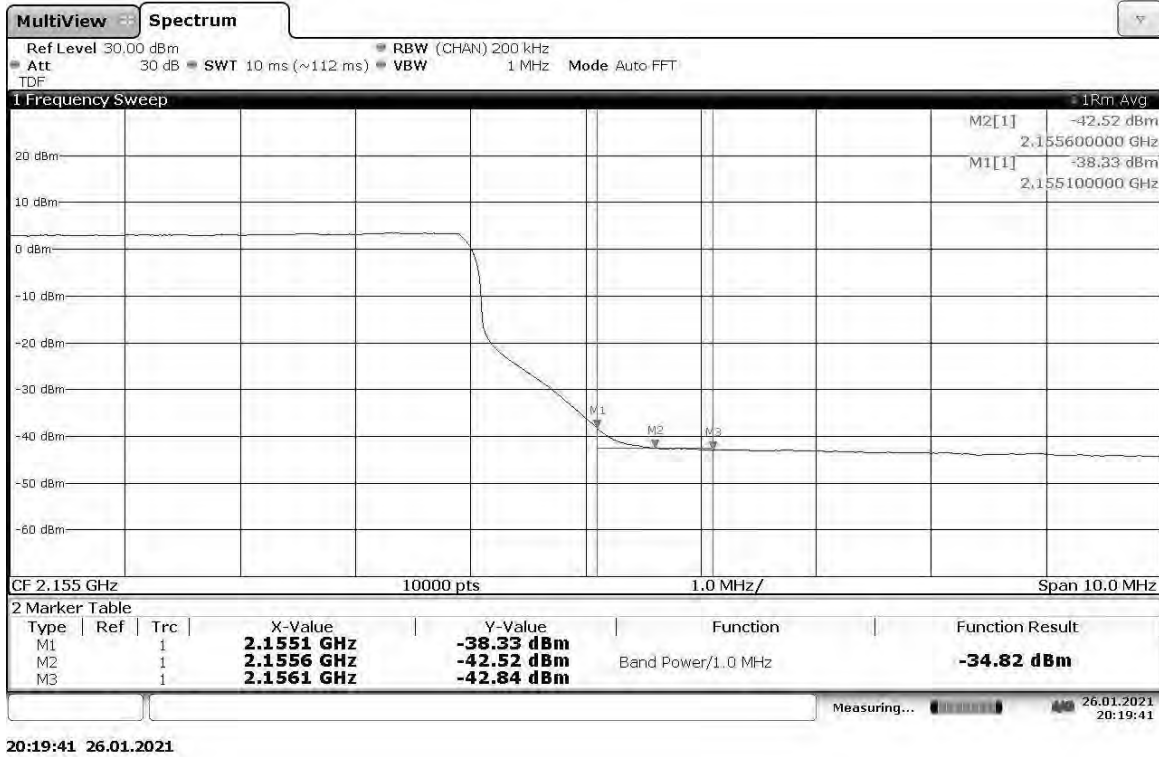
Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 15 MHz, Modulation: TM3.1a-256QAM



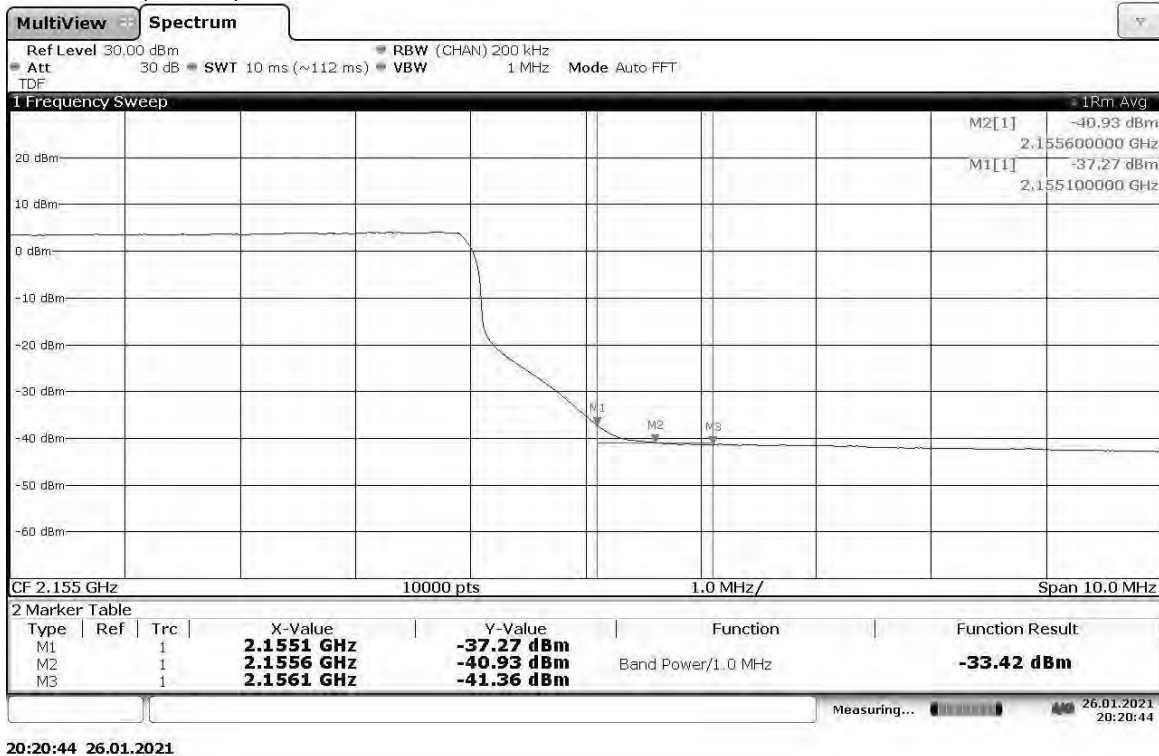
Band Edge Compliant, Upper Band Edge, 2147.5 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 15 MHz, Modulation: TM3.1a-256QAM



Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT0, Bandwidth: 20 MHz, Modulation: TM3.1a-256QAM



Band Edge Compliant, Upper Band Edge, 2145 MHz
Slot 3 (Band 4), Antenna Port: ANT1, Bandwidth: 20 MHz, Modulation: TM3.1a-256QAM



Test Personnel: Vathana Ven *VSV*
 Supervising/Reviewing
 Engineer:
 (Where Applicable) N/A

Test Date: 01/19/2021
01/26/2021

Product Standard: FCC Part 27
 Input Voltage: 48 VDC (POE)

Limit Applied: See report section 9.3

Pretest Verification w/
 Ambient Signals or
 BB Source: N/A

Ambient Temperature: 22, 23°C

Relative Humidity: 21, 15%

Atmospheric Pressure: 1004, 1013mbars

Deviations, Additions, or Exclusions: None

10 Transmitter spurious emissions

10.1 Method

Tests are performed in accordance with ANSI C63.26, CFR47 FCC Parts 2.1051, 2.1053, 2.1057, and 27.

TEST SITE: EMC Lab & 10m ALSE

The EMC Lab has one Semi-anechoic Chamber and one Shielded Chamber. AC Mains Power is available at 120, 230, and 277 Single Phase; 208, 400, and 480 3-Phase. Large reference ground-planes are installed in the general lab area to facilitate EMC work not requiring a shielded environment.

The 10m ALSE is 13m (Length) x 21m (Depth) x 10m (Height) with the effective size in terms of space from the tips of the absorber is 12m (Length) x 20m (Depth) x 8.5m (Height). This chamber achieves broadband performance using a unique arrangement of hybrid and ferrite tile absorber. This chamber has a built in 3m diameter turntable (Embedded type). The metal structure of the table makes electrical connection around the entire circumference of the turntable to the ground plane with a metal brush type connection. The turntable is located on one end of the chamber and the antennas are mounted 3 and 10 meters away at the other end of the chamber on the adjustable an Antenna Mast. The antenna mast is a non-conductive bore sighted type with remote control of antenna height and polarization. The Antenna Mast and the turntable can be remotely controlled through the controller located in the adjacent Control room. A Styrofoam table 80 cm high is used for table-top equipment.

Measurement Uncertainty

Measurement	Frequency Range	Expanded Uncertainty (k=2)	U _{cispr}
Radiated Emissions, 10m	30-1000 MHz	4.6dB	6.3 dB
Radiated Emissions, 3m	30-1000 MHz	5.3 dB	6.3 dB
Radiated Emissions, 3m	1-6 GHz	4.5 dB	5.2 dB
Radiated Emissions, 3m	6-15 GHz	5.2 dB	5.5 dB
Radiated Emissions, 3m	15-18 GHz	5.0 dB	5.5 dB
Radiated Emissions, 3m	18-40 GHz	5.0 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

Sample Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

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

Where

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

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

Assume a receiver reading of 52.0 dB μ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

RA = 52.0 dB μ V
AF = 7.4 dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dB μ V/m

To convert from dB μ V to μ V or mV the following was used:

$UF = 10^{(NF / 20)}$ where UF = Net Reading in μ V
NF = Net Reading in dB μ V

Example:

$FS = RA + AF + CF - AG = 52.0 + 7.4 + 1.6 - 29.0 = 32.0$
 $UF = 10^{(32 \text{ dB}\mu\text{V} / 20)} = 39.8 \mu\text{V/m}$

Alternately, when BAT-EMC Emission Software is used, the "Level" includes all losses and gains and is compared directly in the "Margin" column to the "Limit". The "Correction" includes Antenna Factor, Preamp, and Cable Loss. These are already accounted for in the "Level" column.

10.2 Test Equipment Used:

Test equipment used for antenna port conducted test

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
CEN001'	DC-40GHz attenuator 20dB	Centric RF	C411-20	CEN001	01/22/2021	01/22/2022
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Huber & Suhner	SF102	252675001	02/17/2020	02/17/2021
ROS005-1'	Signal and Spectrum Analyzer	Rohde and Schwartz	FSW43	100646	10/27/2020	10/27/2021
DAV005'	Weather Station	Davis	6250	MS19121808 3	02/05/2020	02/05/2021

Software Utilized:

Name	Manufacturer	Version
None	--	--

Test equipment used for Radiated emissions

Asset	Description	Manufacturer	Model	Serial	Cal Date	Cal Due
DAV007'	Weather Station Vantage Vue	Davis	6250	MS19121200 3	03/12/2020	03/12/2021
145145'	Broadband Hybrid Antenna 30 MHz - 3 GHz	Sunol Sciences Corp.	JB3	A122313	05/07/2020	05/07/2021
PRE11'	50dB gain pre-amp	Pasternack	PRE11	PRE11	09/21/2020	09/21/2021
ETS002'	1-18GHz DRG Horn Antenna	ETS Lindgren	3117	00143260	01/21/2020	01/21/2021
CBLHF2012-2M-1'	2m 9kHz-40GHz Coaxial Cable - SET1	Sucoflex (Huber Suhner)	SF102	252675001	02/17/2020	02/17/2021
PRE9'	PREAMPLIFIER 1- 40 GHz	MITEQ	NSP4000-NFG	1260417	09/22/2020	09/22/2021
145-420'	Receiver to floor cable	Utiflex	UFB311A-2-0591- 70070	145-420	02/17/2020	02/17/2021
145108'	Receiver	Rhode & Schwarz	ESIB40	100209	06/08/2020	06/08/2021
Pre10'	Pre-amplifier	ITS	Pre10	Pre10	02/28/2020	02/28/2021
145-422'	10Amp Pre-amp to under floor	Utiflex	UFB311A-0-2756- 70070	145-422	02/17/2020	02/17/2021
HS002'	DC-18GHz cable 1.5M long	Huber & Suhner	SucoFlex 106A	HS002	11/19/2020	11/19/2021
145-423'	Pre-amp to under floor	Huber and Suhner	SF106A/11N/11N/1.5 m	145-423	03/27/2020	03/27/2021
145-424'	9kHz to 40GHz Cable	Huber and Suhner	Sucoflex	145-424	03/27/2020	03/27/2021
145-414'	3m Track A cables	Huber + Suhner	3m Track A cables	multiple	06/25/2020	06/25/2021
BONN001'	1-18GHz low noise pre-amp	Bonn	BLMA 0118-M	1811749	07/11/2020	07/11/2021
ETS004'	18-40GHz horn antenna	ets004	3116C	00218579	01/28/2020	01/28/2021

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	Nexio	3.18.0.16

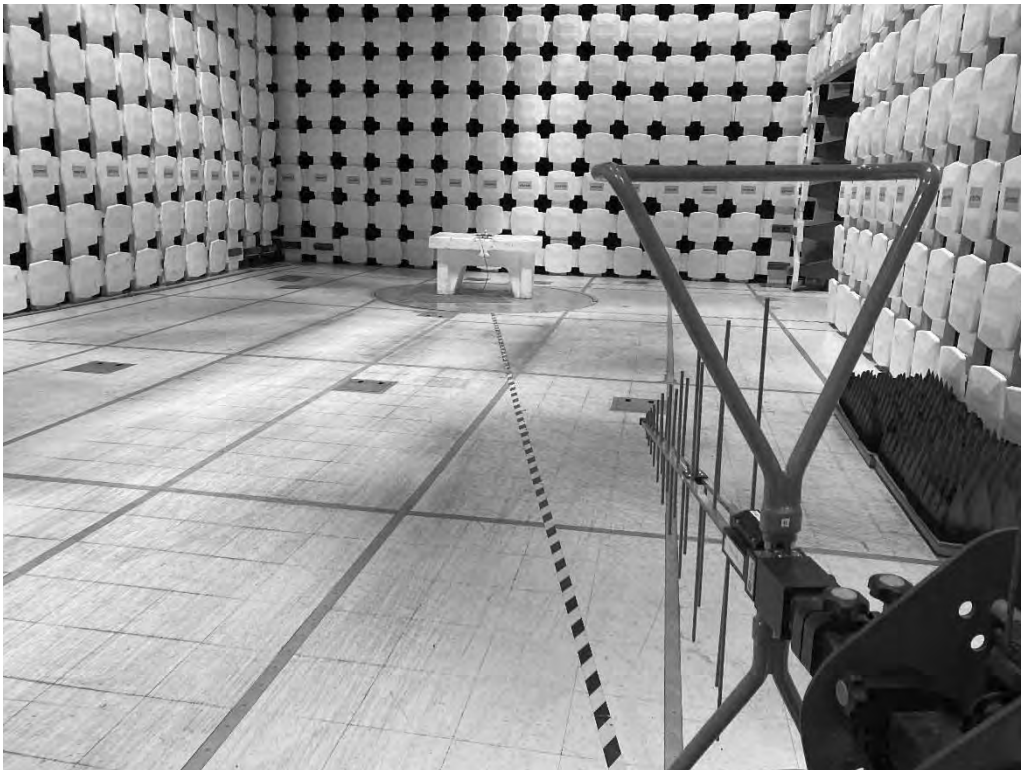
10.3 Results:

The sample tested was found to Comply. Where a resolution bandwidth of less than 1 MHz was used (in some cases, 120 kHz or 100 kHz), more than 10 dB margin to the limit is shown. Since the two antenna ports transmit uncorrelated data streams and use cross polarized antennas, no adjustments to the test results were applied due to MIMO operation, per KDB 662911.

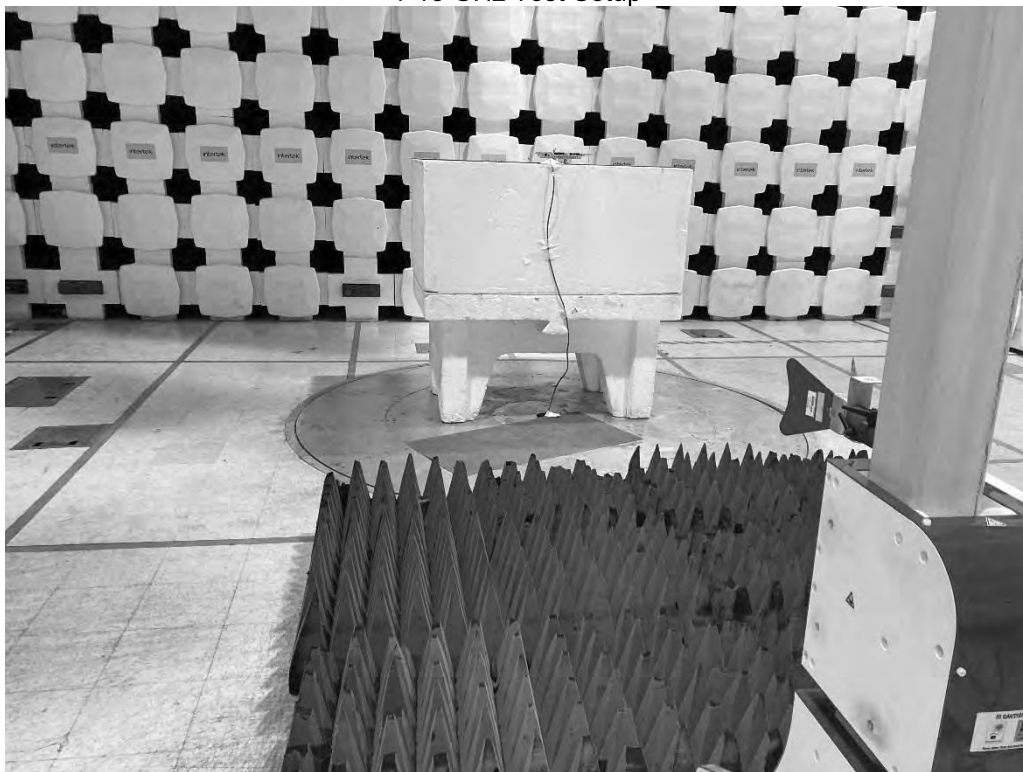
§27.53(h): The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

10.4 Setup Photographs:

30-1000 MHz Test Setup



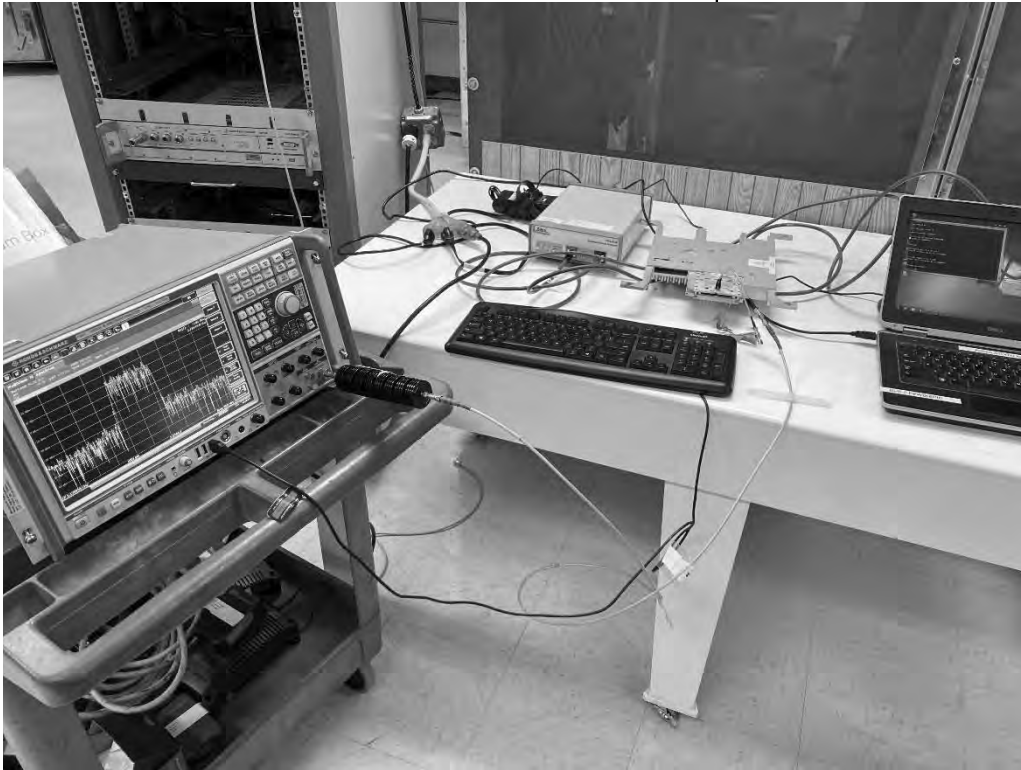
1-18 GHz Test Setup



18-22 GHz

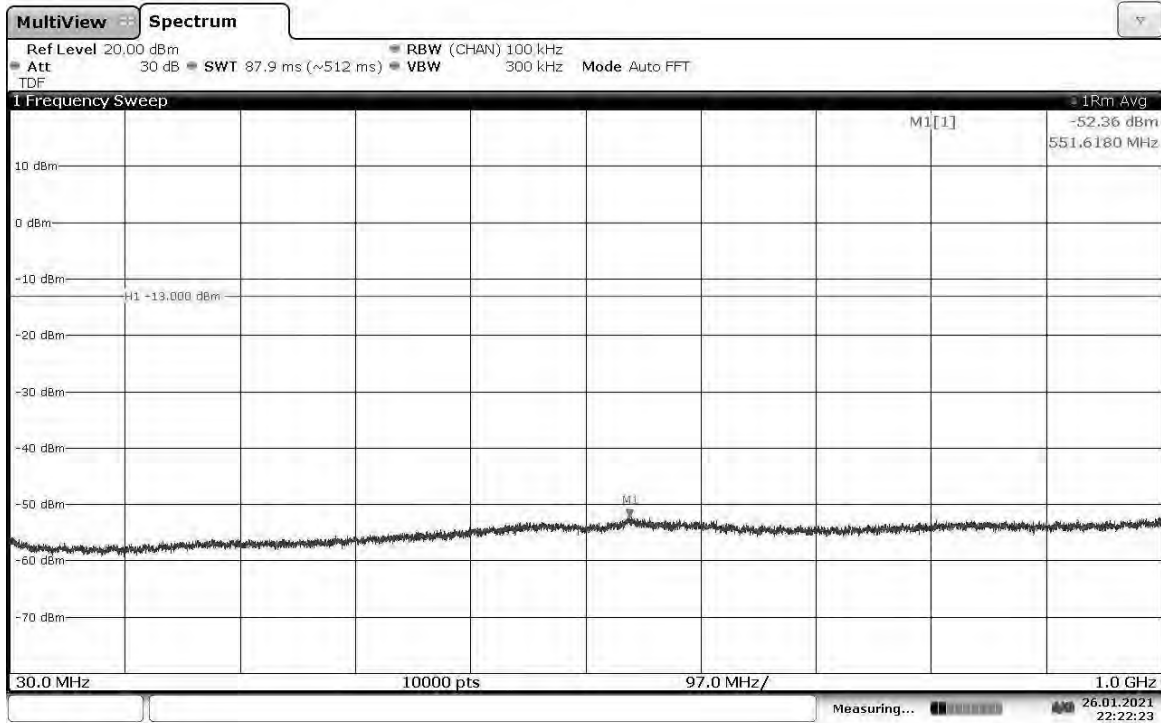


Antenna Port Conducted Test Setup



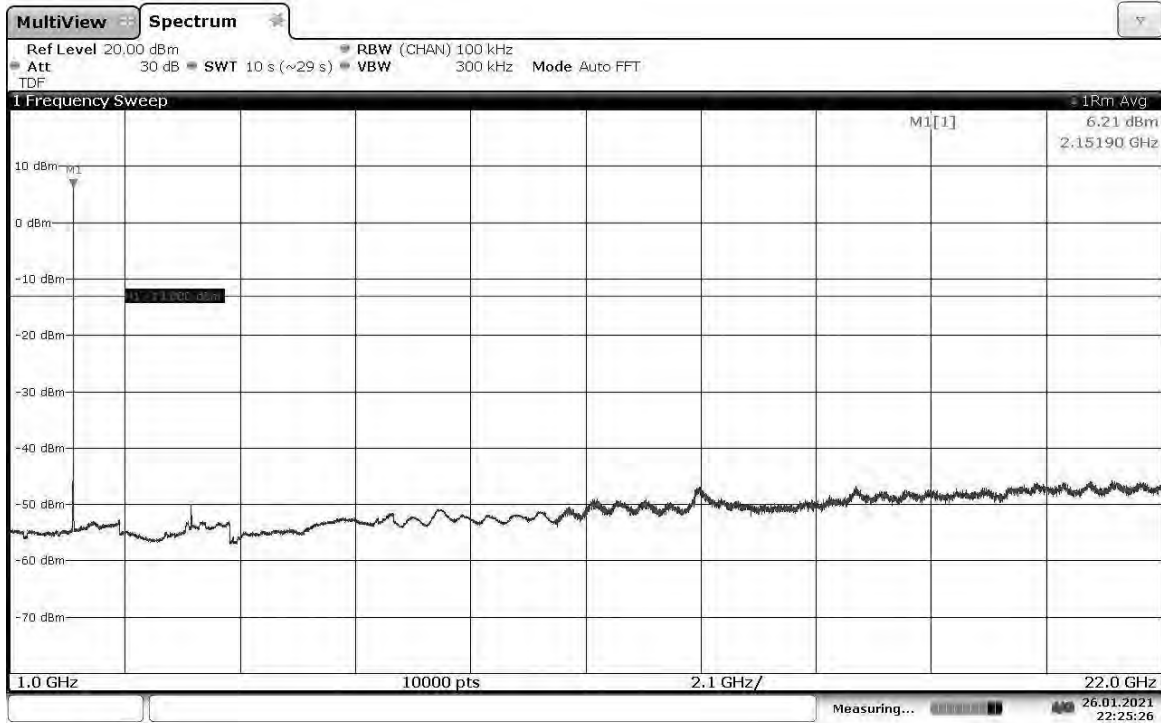
10.5 Plots/Data:

Slot 3 (Band 4), ANT0, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, Mid Channel
30MHz-1GHz



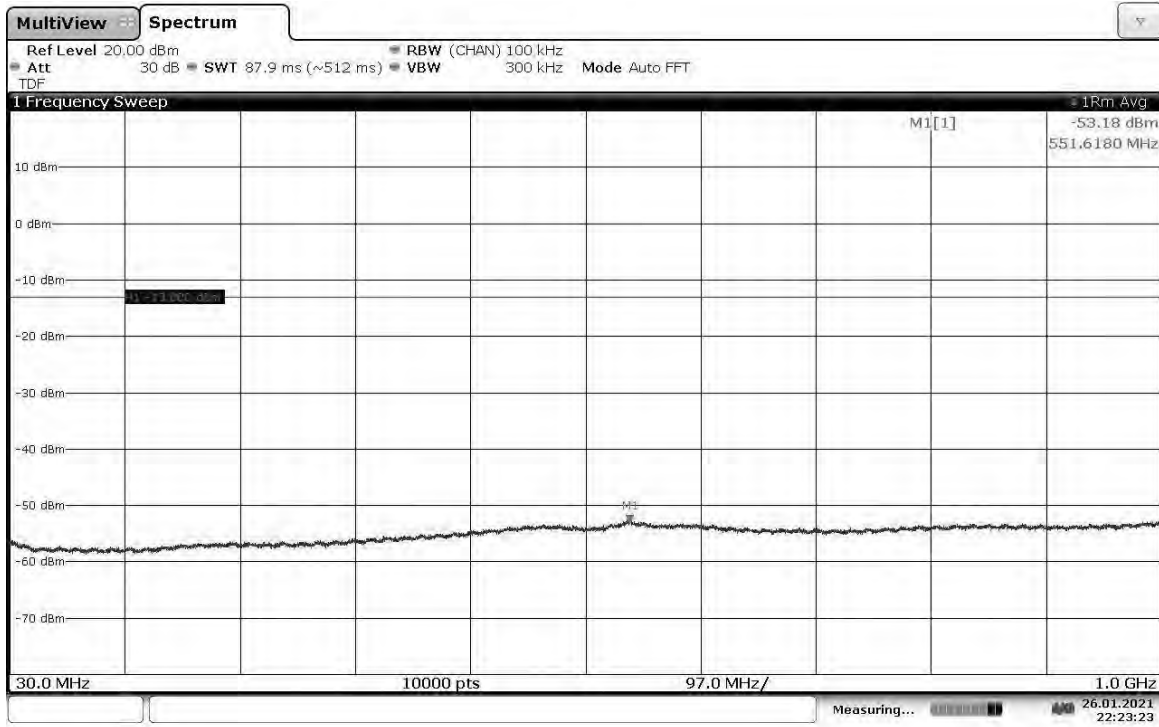
22:22:23 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, Mid Channel
1-22GHz



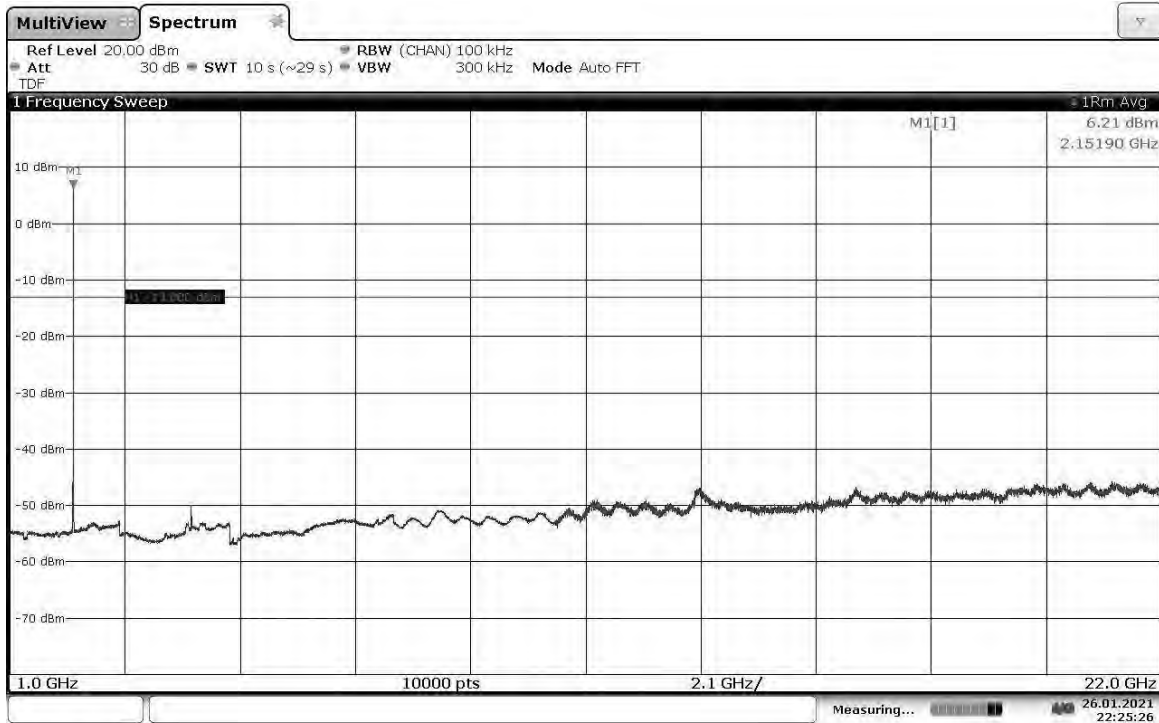
22:25:26 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



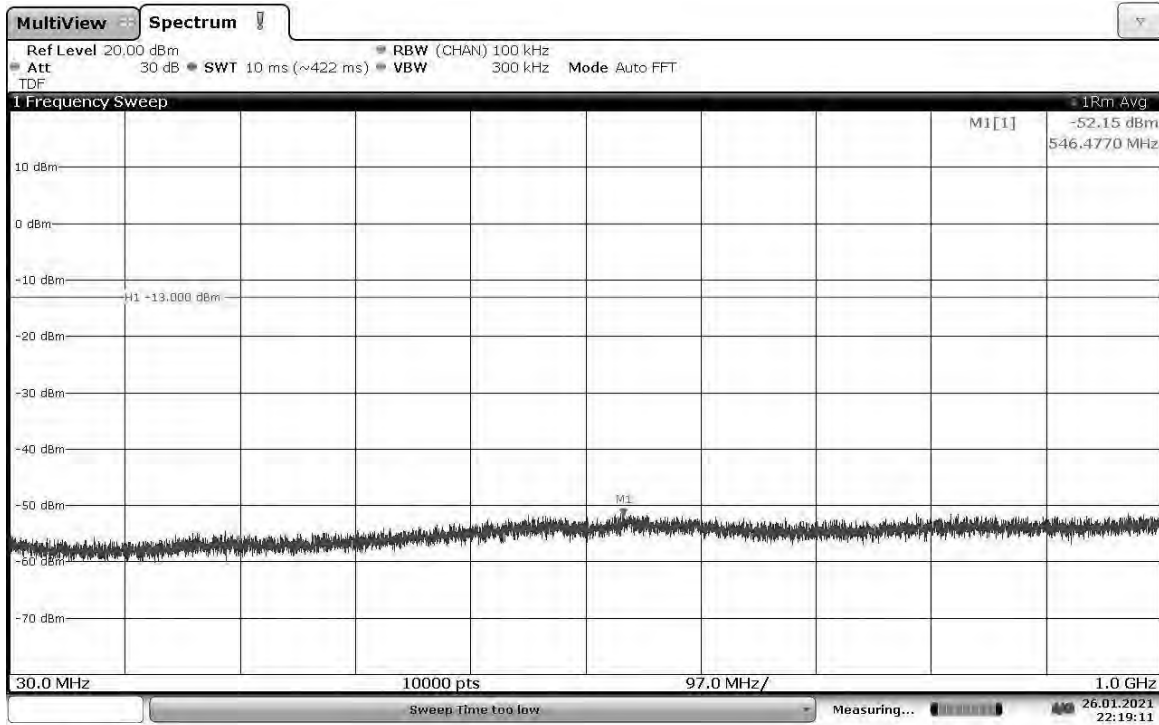
22:23:24 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, High Channel
1-22GHz



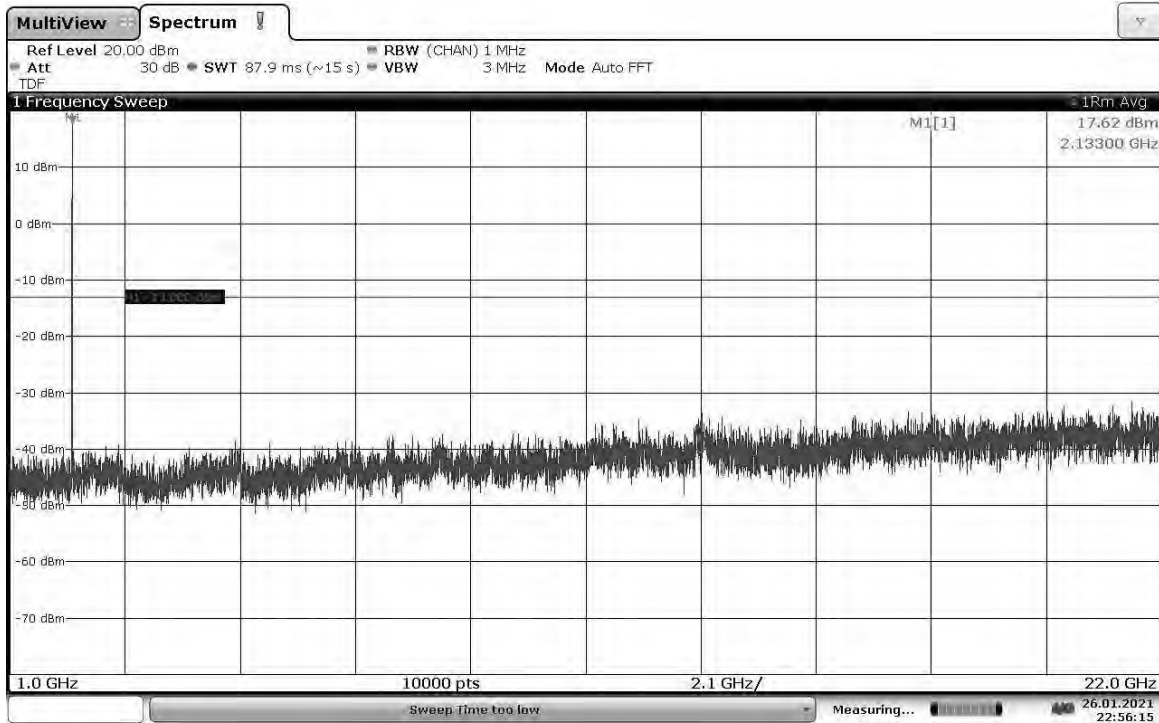
22:25:26 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, Mid Channel
30MHz-1GHz



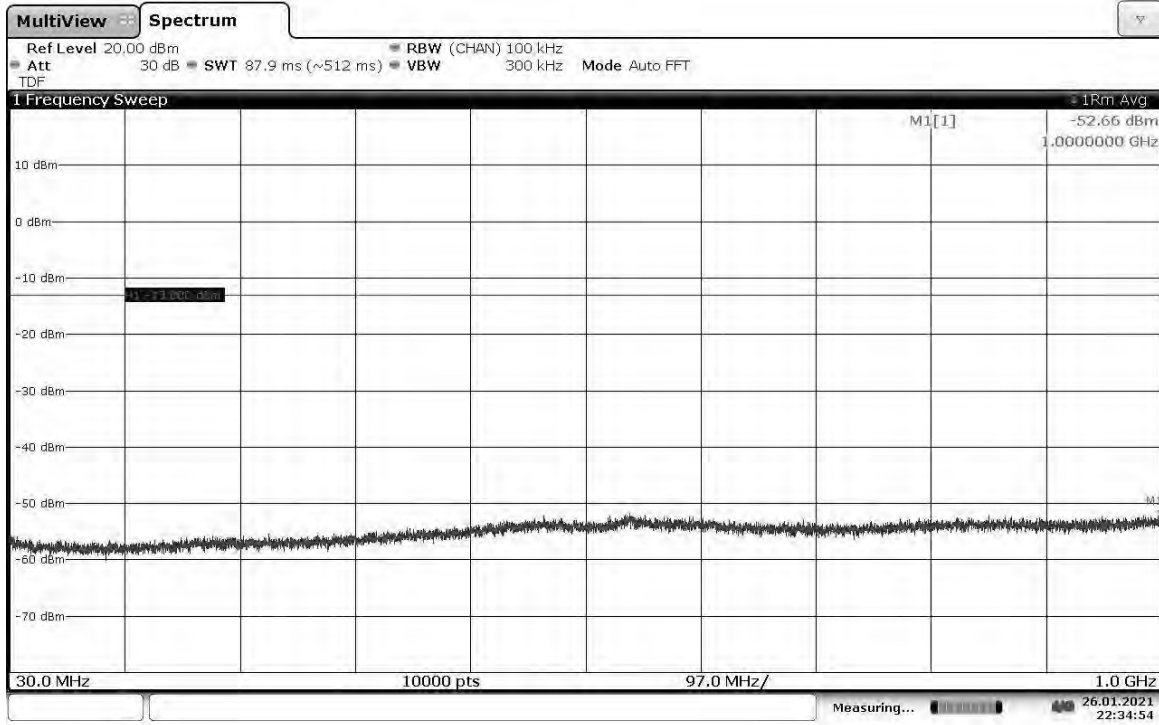
22:19:11 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, Mid Channel
1-22GHz



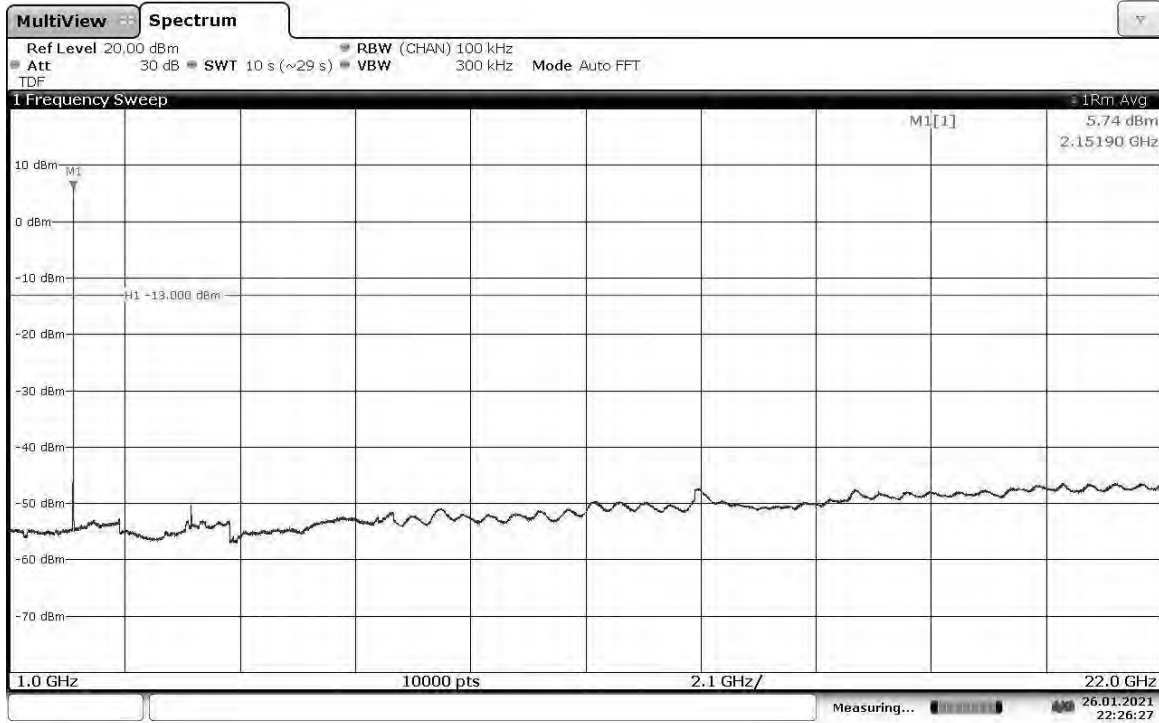
22:56:15 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, High Channel 30MHz-1GHz



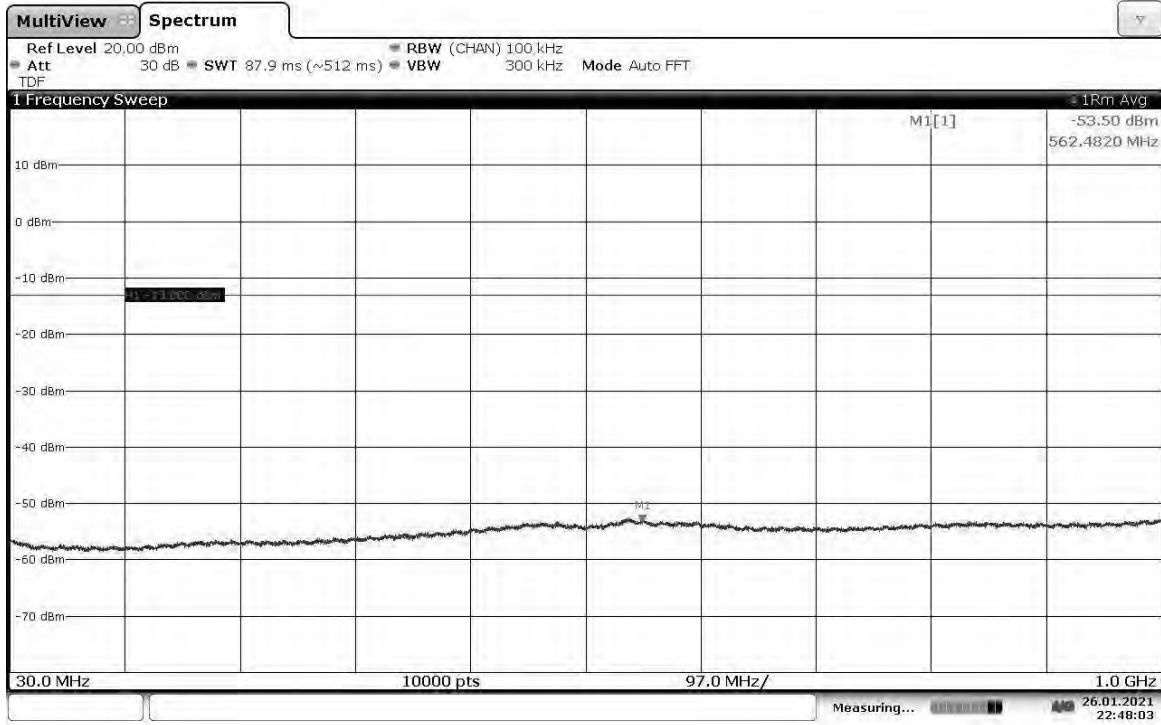
22:34:54 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM1.1-QPSK, Bandwidth: 5 MHz, High Channel 1-22GHz



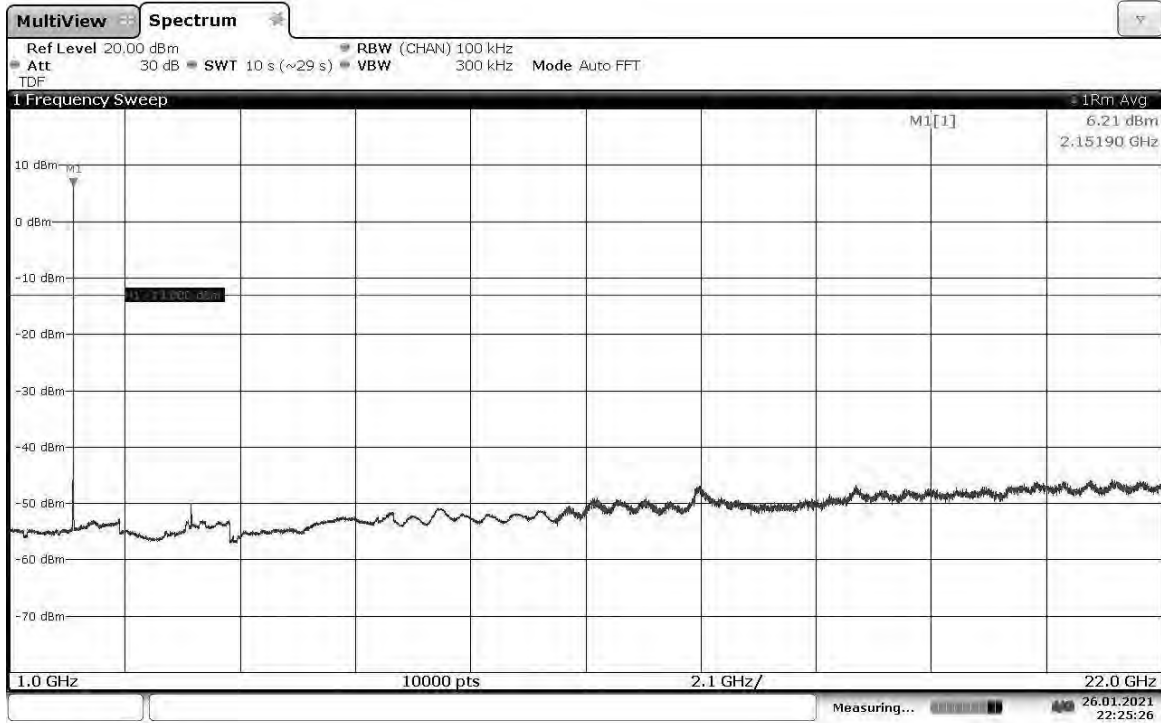
22:26:28 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, Mid Channel
30MHz-1GHz



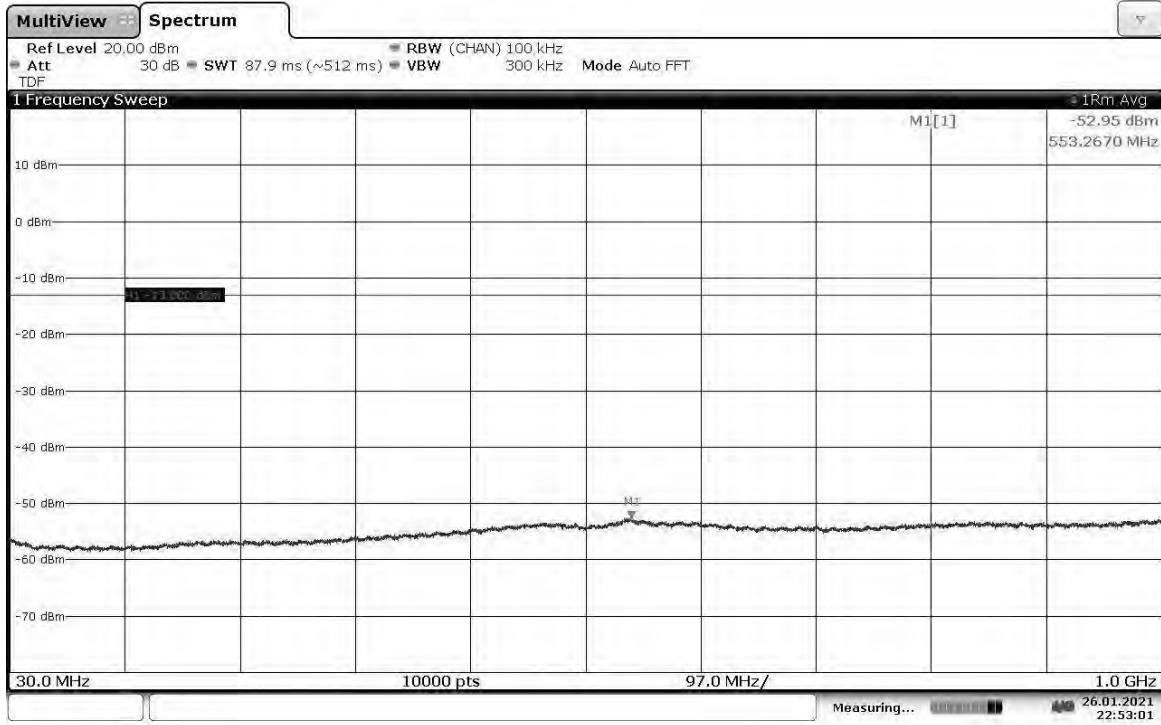
22:48:03 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, Mid Channel
1-22GHz



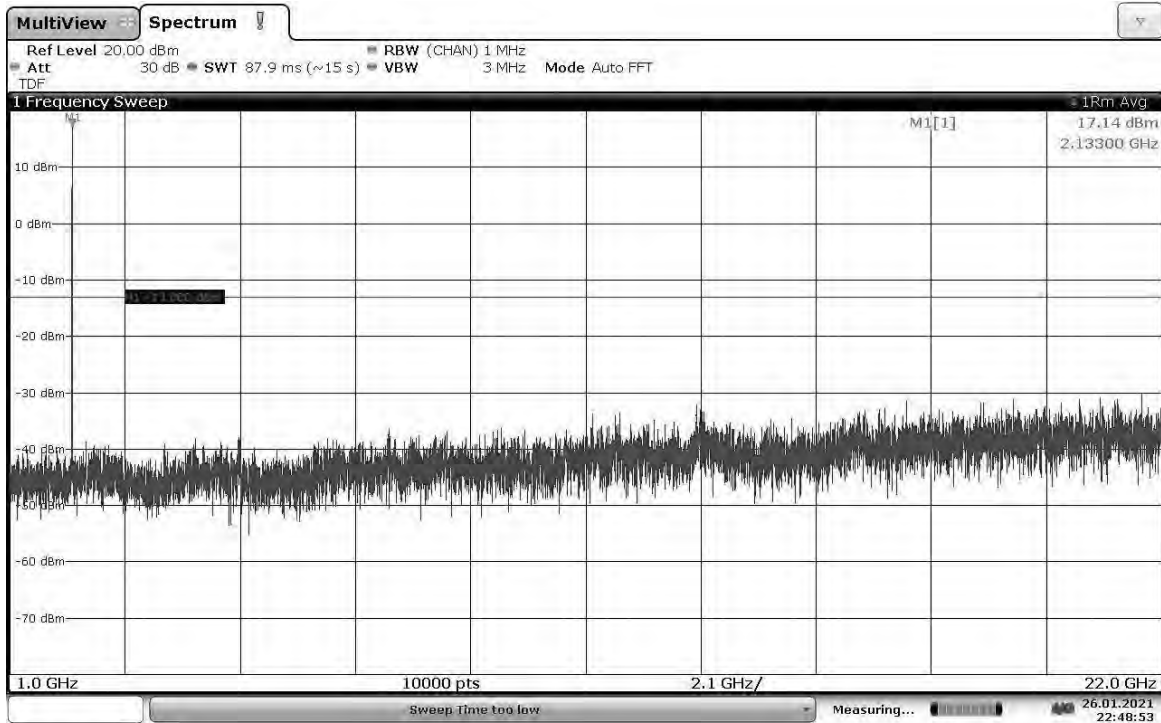
22:25:26 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



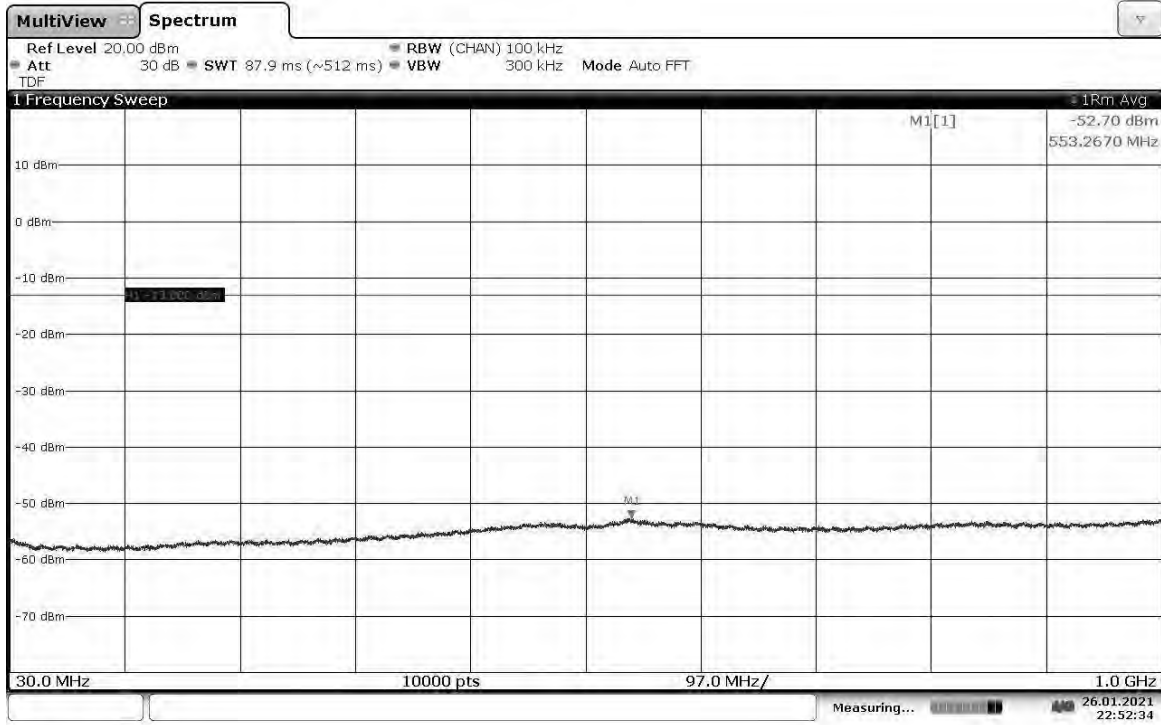
22:53:01 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, High Channel
1-22GHz



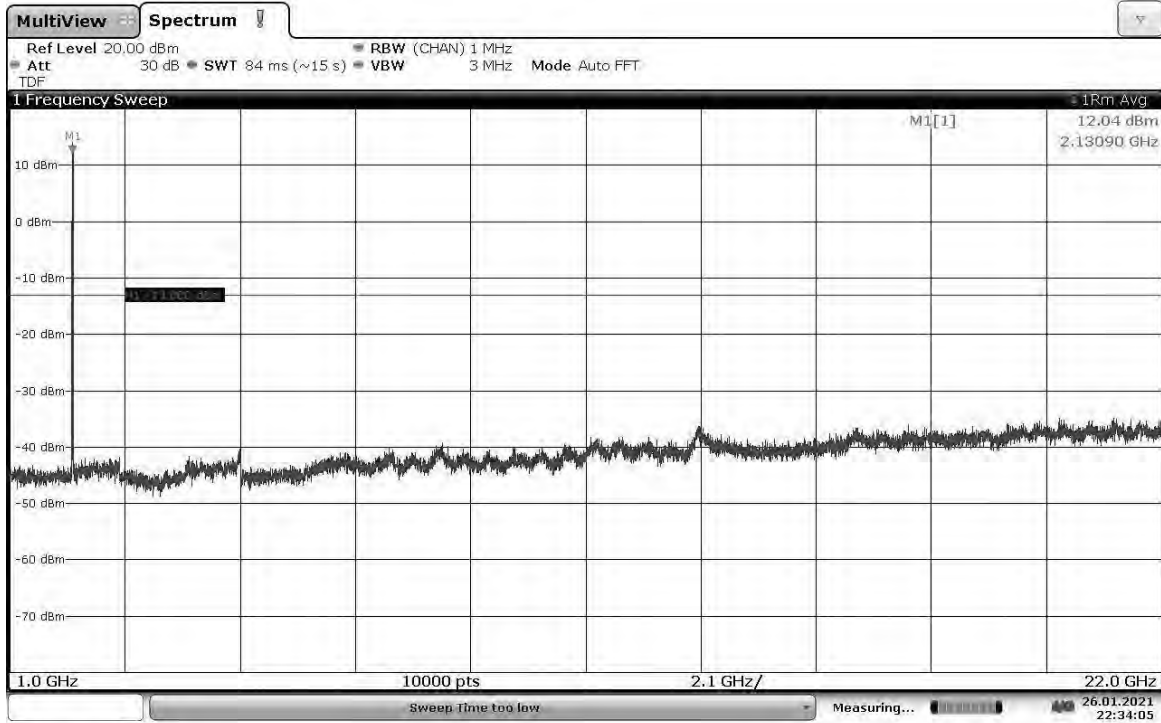
22:48:53 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, Mid Channel
30MHz-1GHz



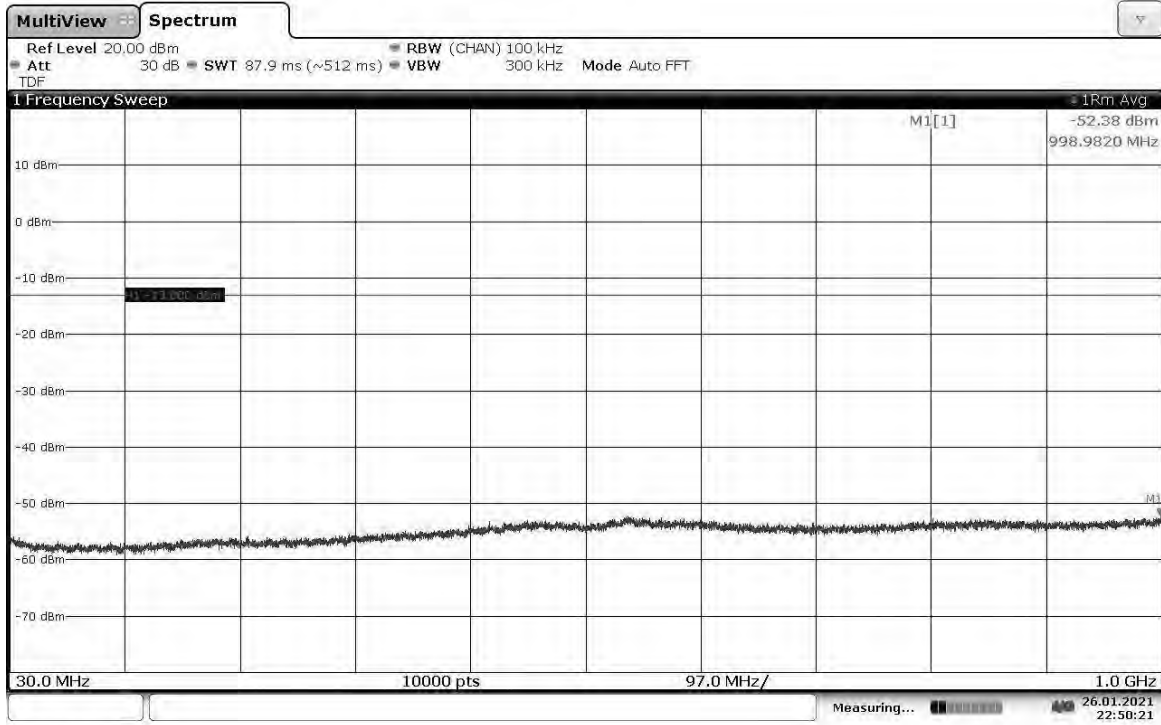
22:52:34 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, Mid Channel
1-22GHz



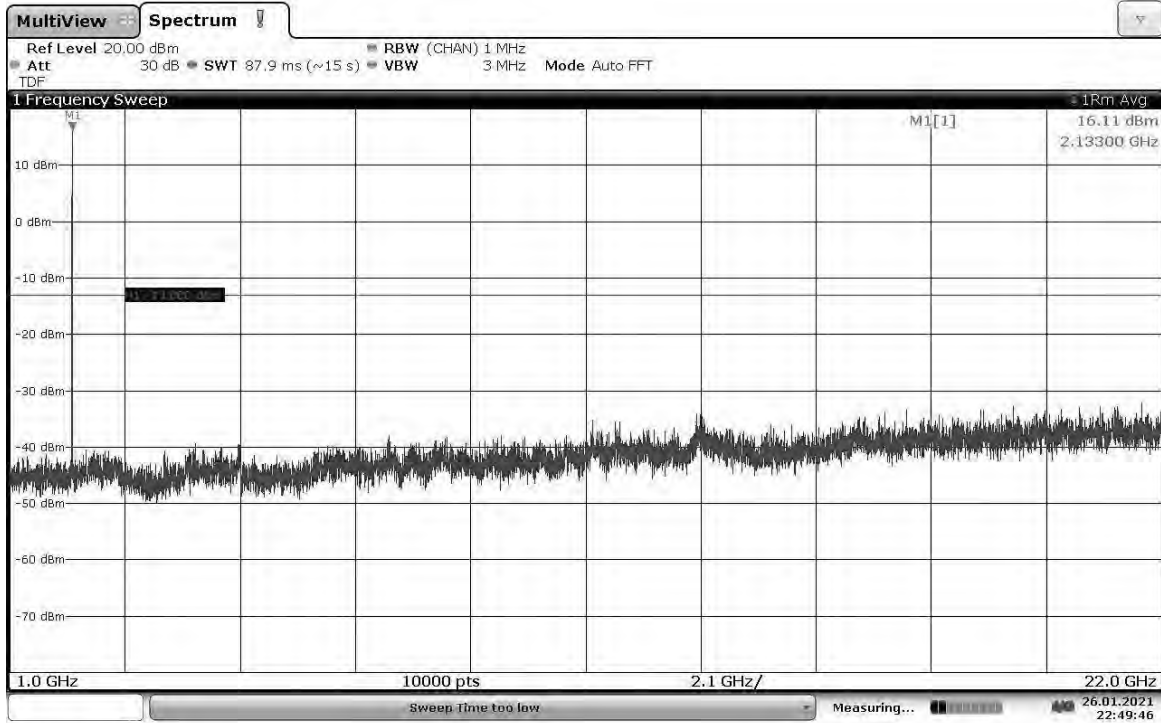
22:34:05 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



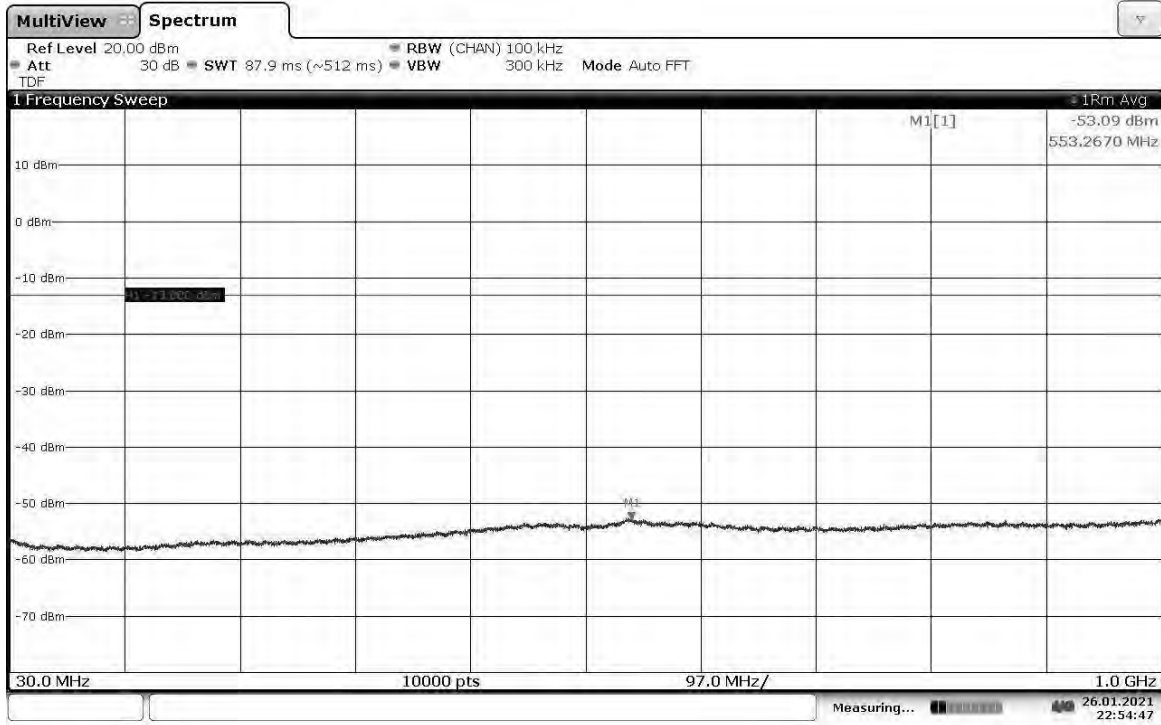
22:50:22 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.2-16QAM, Bandwidth: 5 MHz, High Channel
1-22GHz



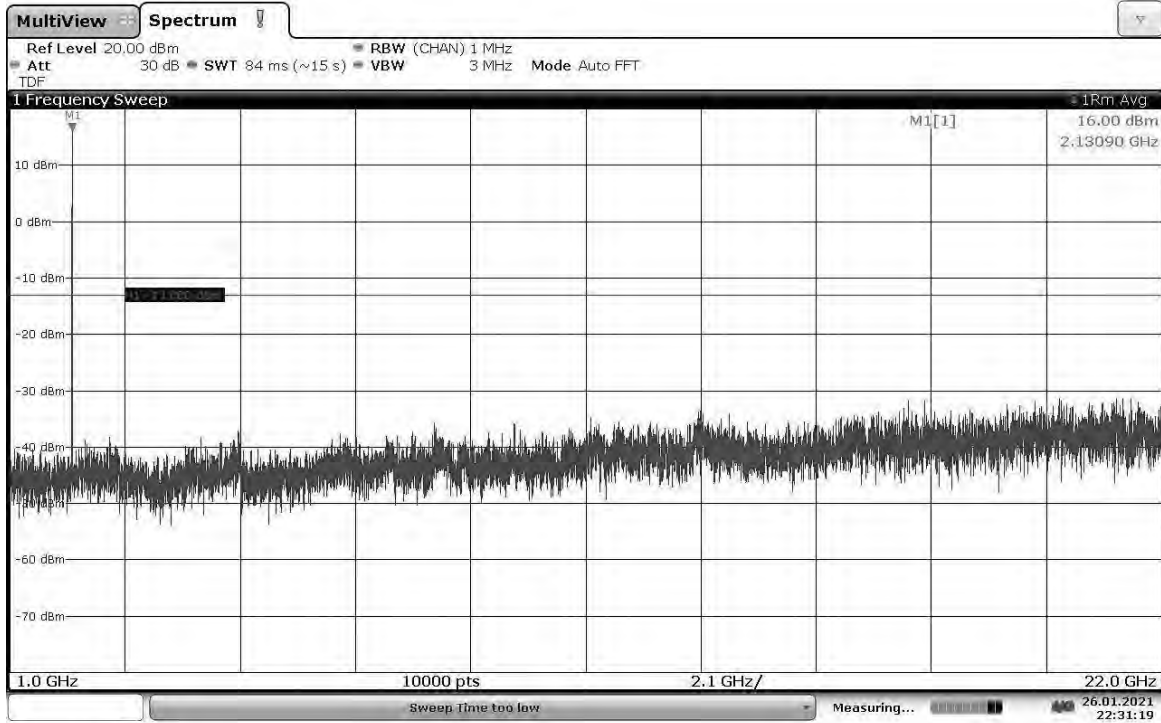
22:49:46 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, Mid Channel
30MHz-1GHz



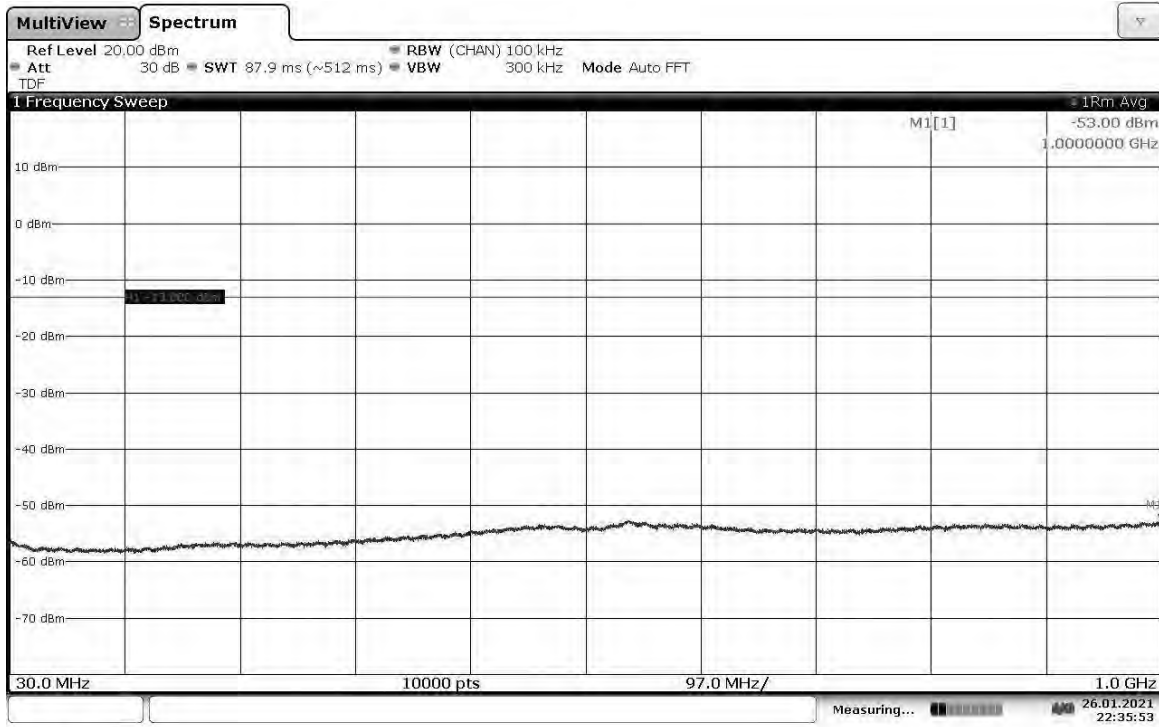
22:54:47 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, Mid Channel
1-22GHz



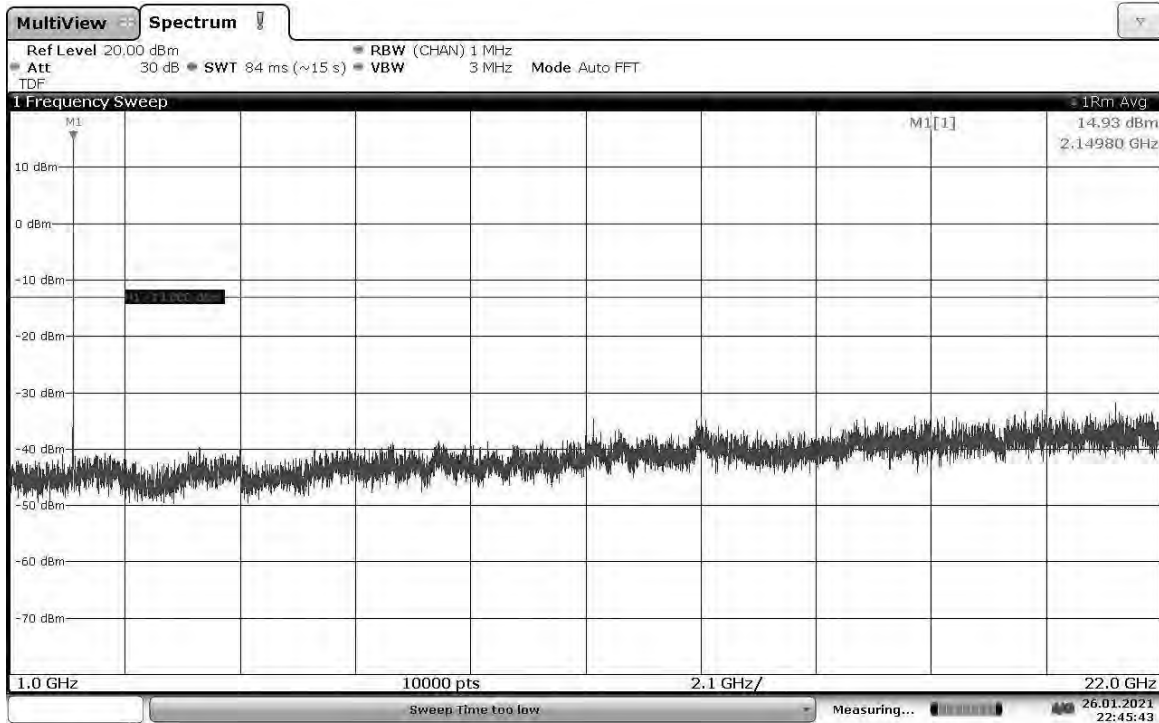
22:31:19 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



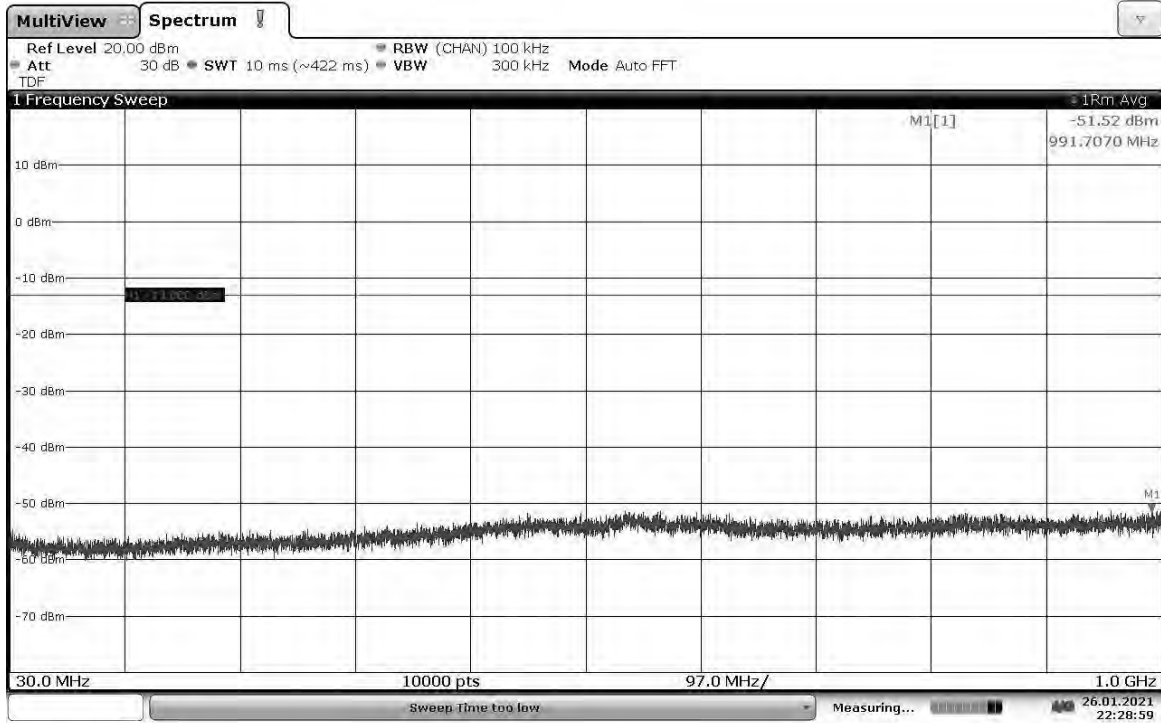
22:35:53 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, High Channel
1-22GHz



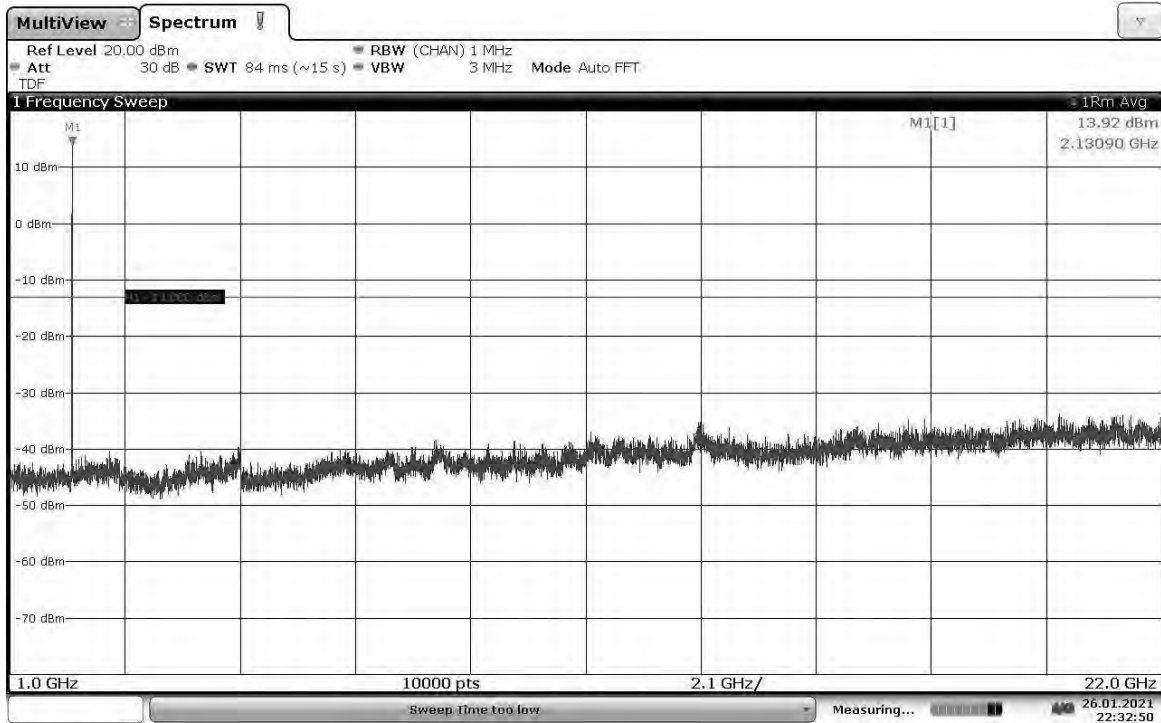
22:45:43 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, Mid Channel 30MHz-1GHz



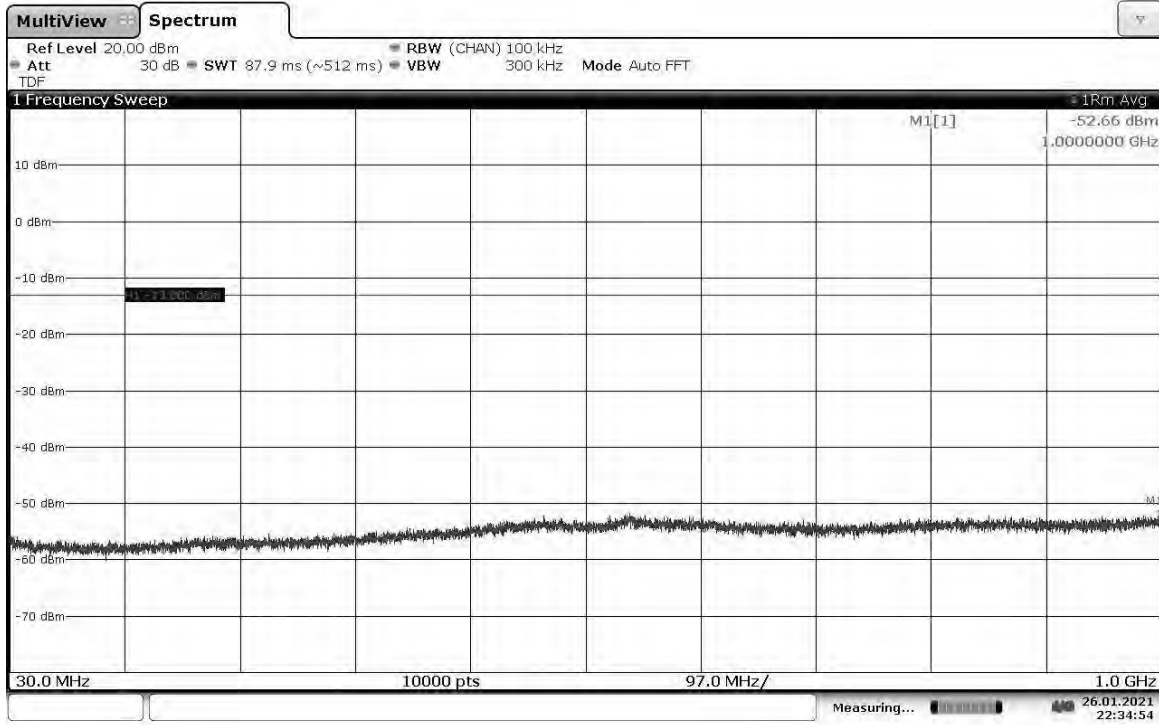
22:28:59 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, Mid Channel 1-22GHz



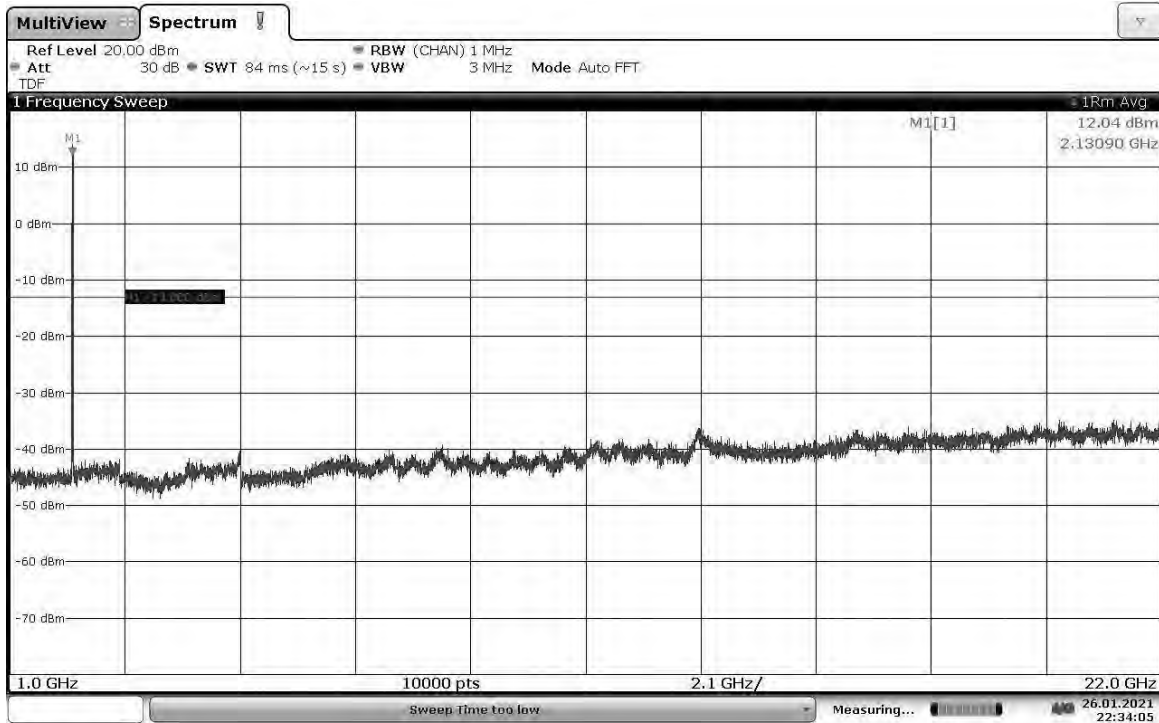
22:32:51 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



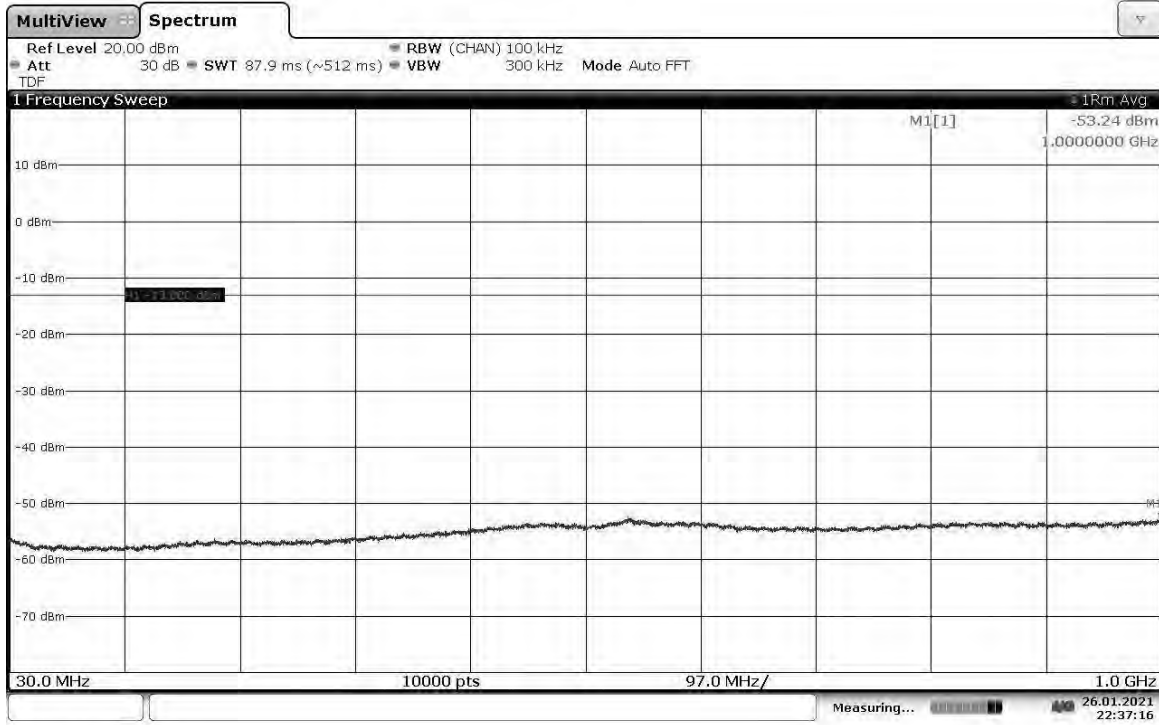
22:34:54 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1-64QAM, Bandwidth: 5 MHz, High Channel
1-22GHz



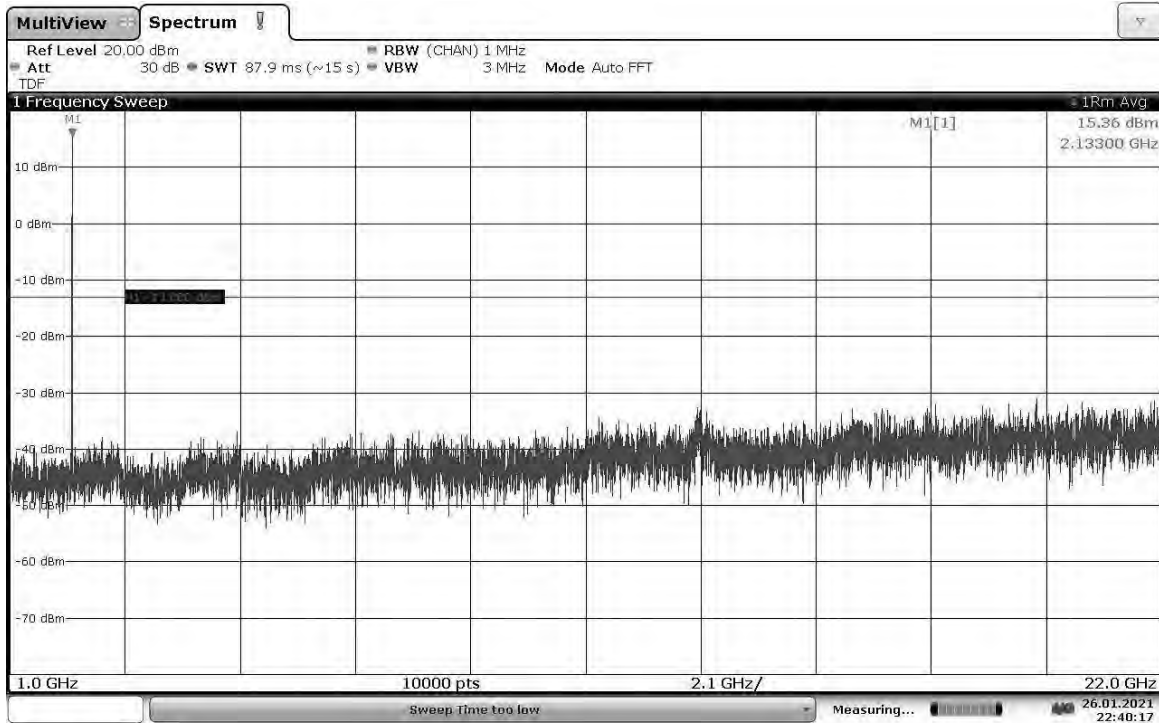
22:34:05 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, Mid Channel 30MHz-1GHz



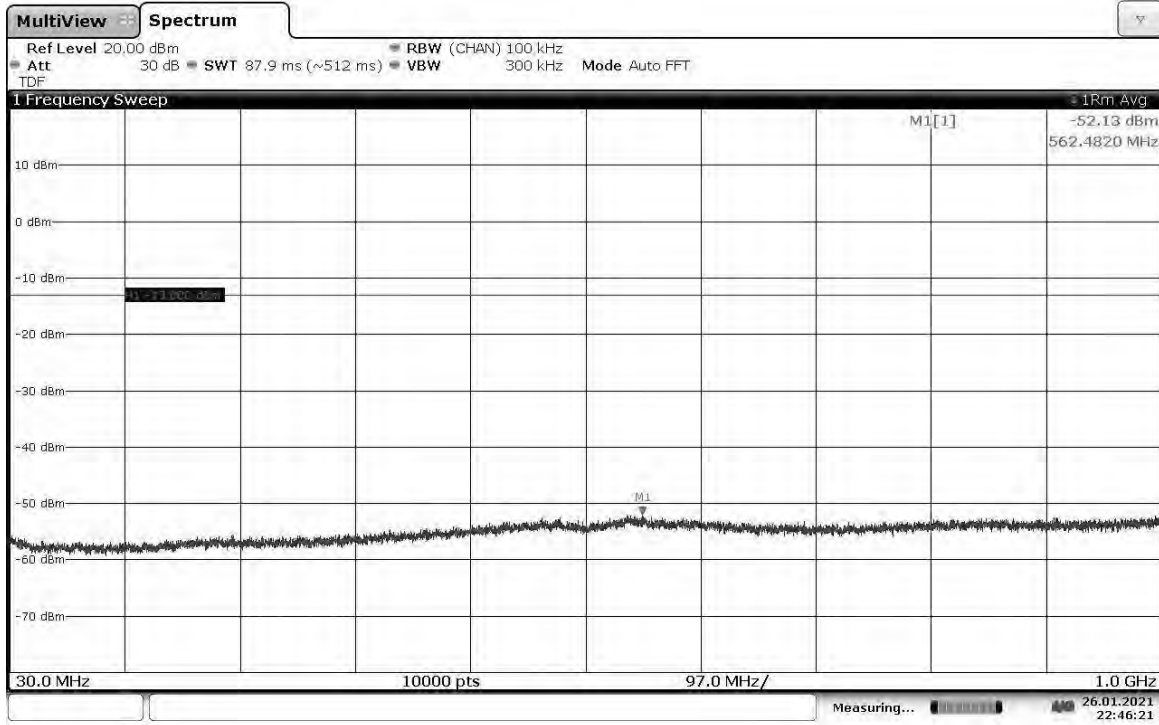
22:37:16 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, Mid Channel 1-22GHz



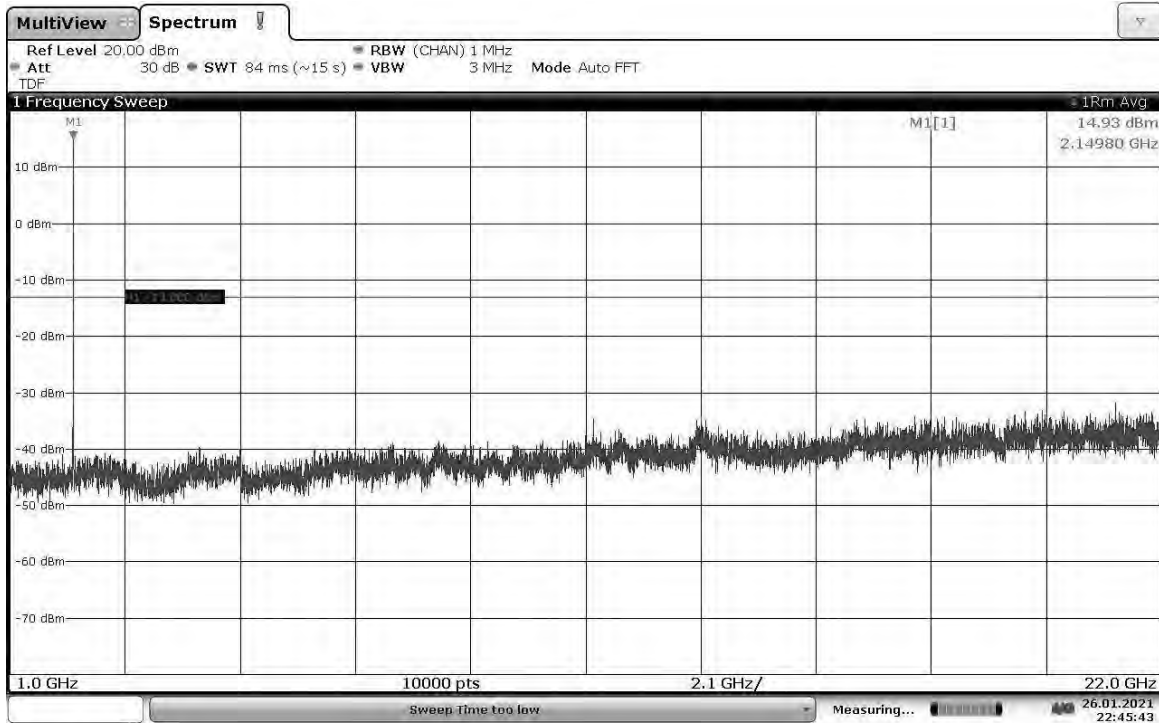
22:40:17 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, High Channel 30MHz-1GHz



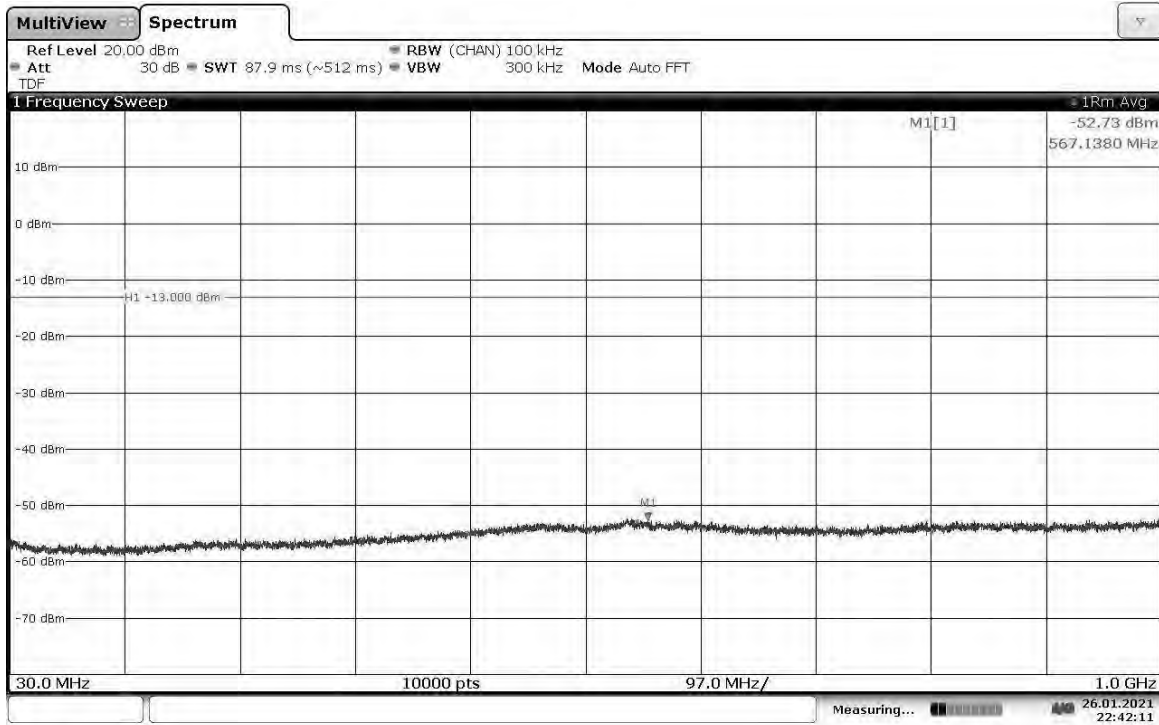
22:46:21 26.01.2021

Slot 3 (Band 4), ANT0, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, High Channel 1-22GHz



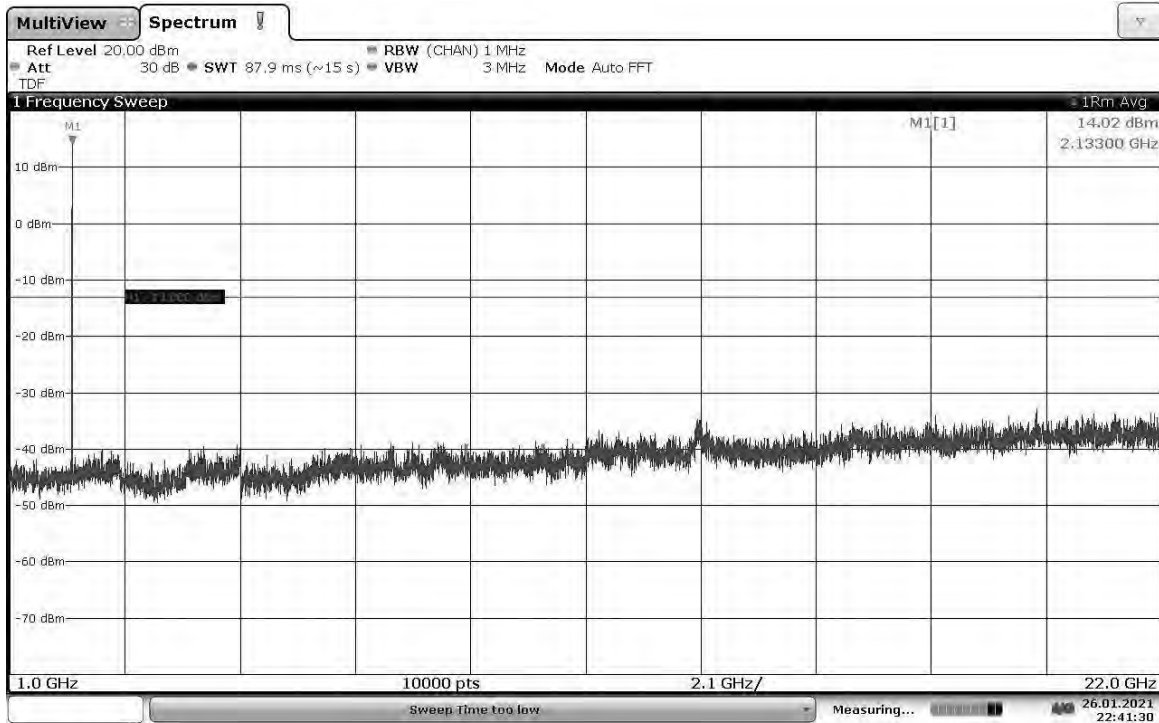
22:45:43 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, Mid Channel 30MHz-1GHz



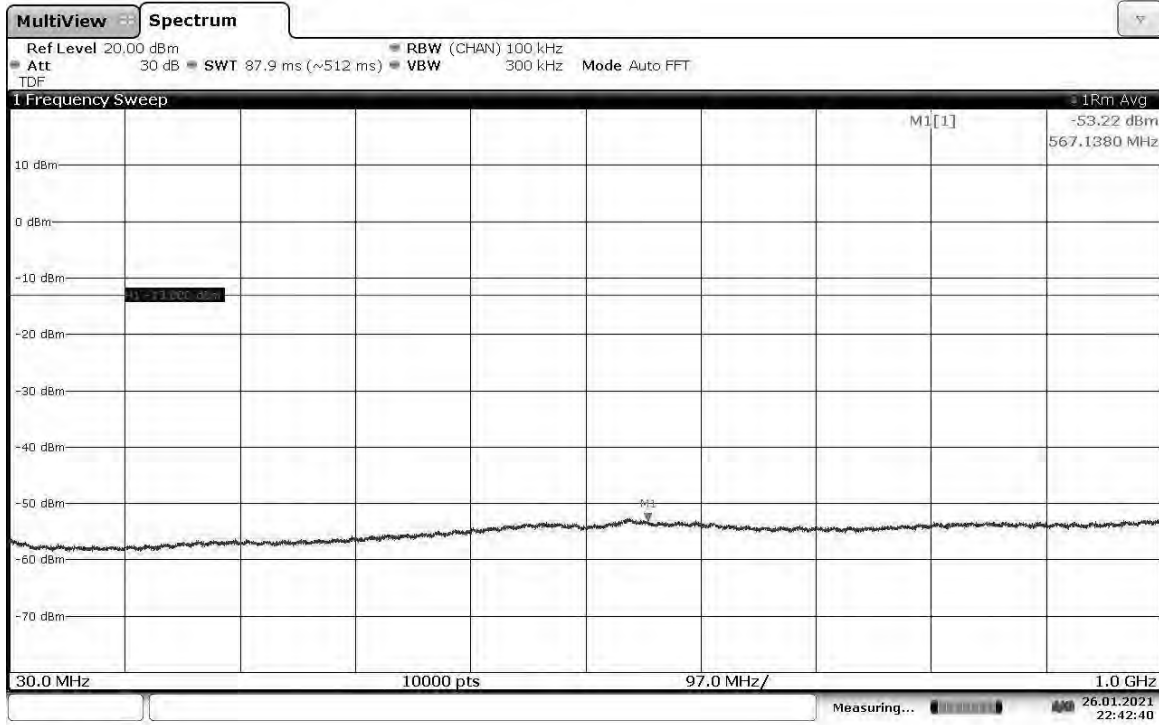
22:42:11 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, Mid Channel 1-22GHz



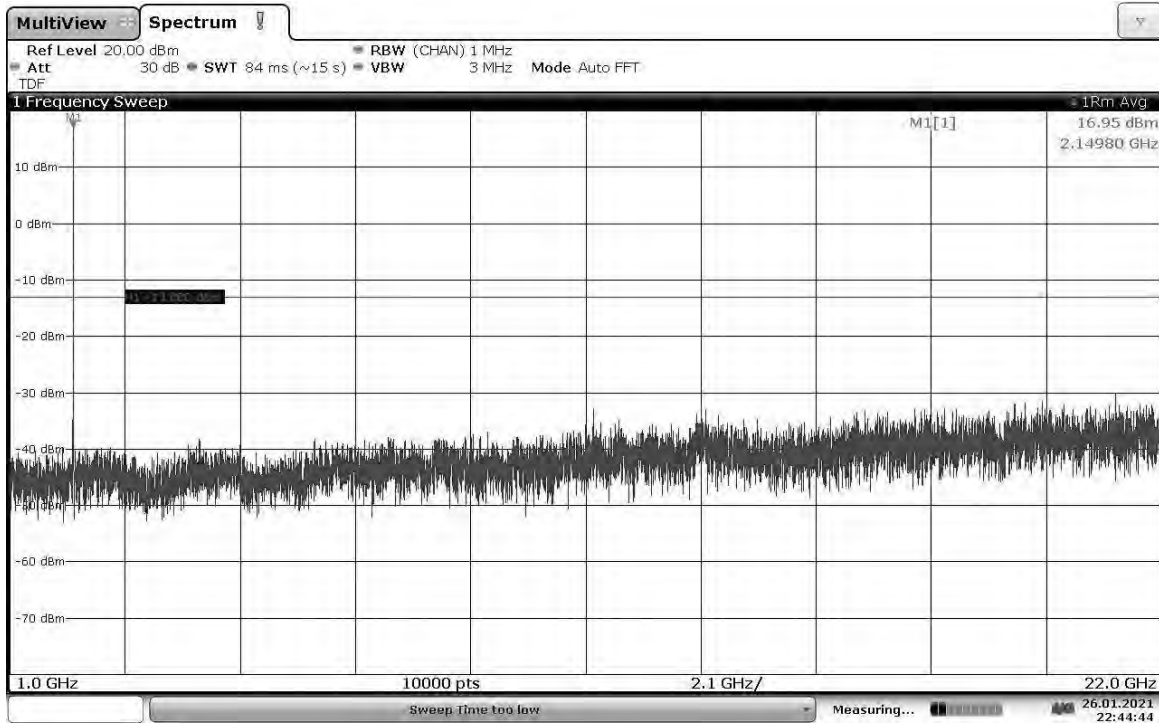
22:41:30 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, High Channel
30MHz-1GHz



22:42:40 26.01.2021

Slot 3 (Band 4), ANT1, Modulation: TM3.1a-256QAM, Bandwidth: 5 MHz, High Channel
1-22GHz



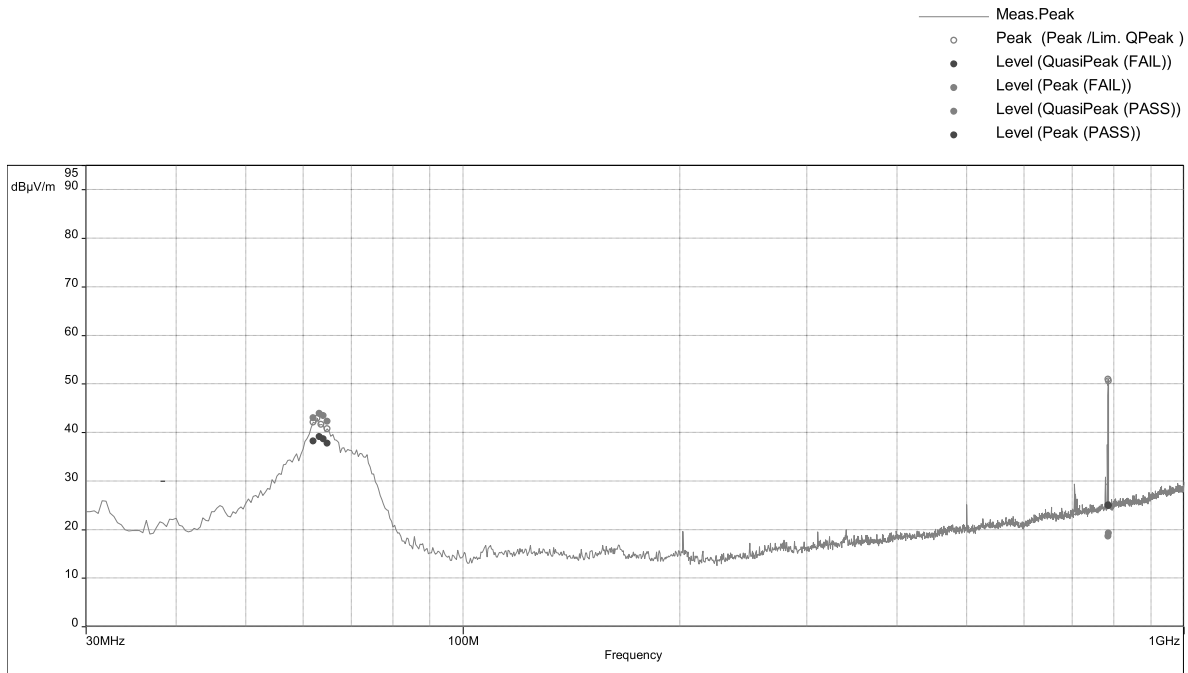
22:44:45 26.01.2021

**Radiated Emissions: 30-1000 MHz, Transmit @ Mid Channel 2132.5 MHz
Slot 3 (Band 4), Modulation: TM1.1-QPSK, Bandwidth 5 MHz**

Test Information:

Date and Time	1/20/2021 6:44:50 PM
Client and Project Number	Commscope_G104567487
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	16%
Atmospheric Pressure	1002 mB
Comments	RE 30-1000MHz_POE_BAND 4_Tx mode_Mid CH_Worst-case TM3.1a 5MHz BW

Graph:



Results:

Peak

Frequency (MHz)	Level Peak (dBuV/m)	Level EIRP (dBm)	Limit (dBm)	Margin (dB)	Azimuth (°) (dB)	Height (m) (dB)	Pol. (dB)	RBW (dB)	Correction (dB)
61.93684211	42.98	-41.82	-13.00	-28.82	292.00	2.48	Vertical	120000.00	-25.13
63.02105263	43.92	-40.88	-13.00	-27.88	0.00	1.44	Vertical	120000.00	-25.00
63.97894737	43.45	-41.35	-13.00	-28.35	99.00	2.10	Vertical	120000.00	-24.99
64.95789474	42.23	-42.57	-13.00	-29.57	129.00	2.84	Vertical	120000.00	-24.89
785.0421053	25.02	-59.78	-13.00	-46.78	186.00	2.45	Vertical	120000.00	-7.51
785.8105263	24.93	-59.87	-13.00	-46.87	255.00	1.67	Vertical	120000.00	-7.50

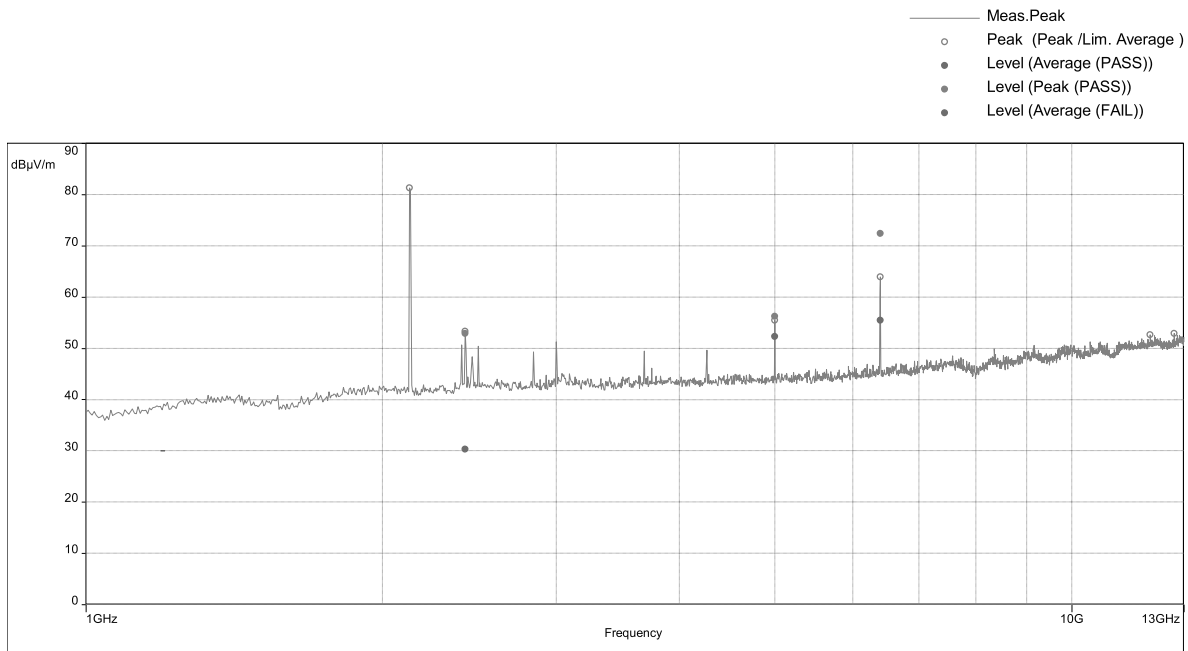
Level EIRP (dBm) = Level Peak (dBuV/m) - 84.8

**Radiated Emissions: 1-22 GHz, Transmit @ Mid Channel 2132.5 MHz
Slot 3 (Band 4), Modulation: TM1.1-QPSK, Bandwidth 5 MHz**

Test Information:

Date and Time	1/20/2021 8:49:02 PM
Client and Project Number	Commscope_G104567487
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	16%
Atmospheric Pressure	1002 mB
Comments	RE 1 to 13 POE BAND 4 Tx mode Mid CH Worst-case TM3.1a 5MHz BW

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level Peak (dBμV/m)	Level EIRP (dBm)	Limit (dBm)	Margin (dB)	Azimuth (°) (dB)	Height (m) (dB)	Pol. (dB)	RBW (dB)	Correction (dB)
2425.789474	52.86	-42.40	-13.00	-29.40	62.00	2.75	Vertical	1000000.00	-15.01
5000.263158	56.20	-39.06	-13.00	-26.06	9.00	3.44	Vertical	1000000.00	-9.72
6396.315789	72.42	-22.84	-13.00	-9.84	143.00	1.75	Vertical	1000000.00	-6.95

Level EIRP (dBm) = Level Peak (dBuV/m) – 95.26

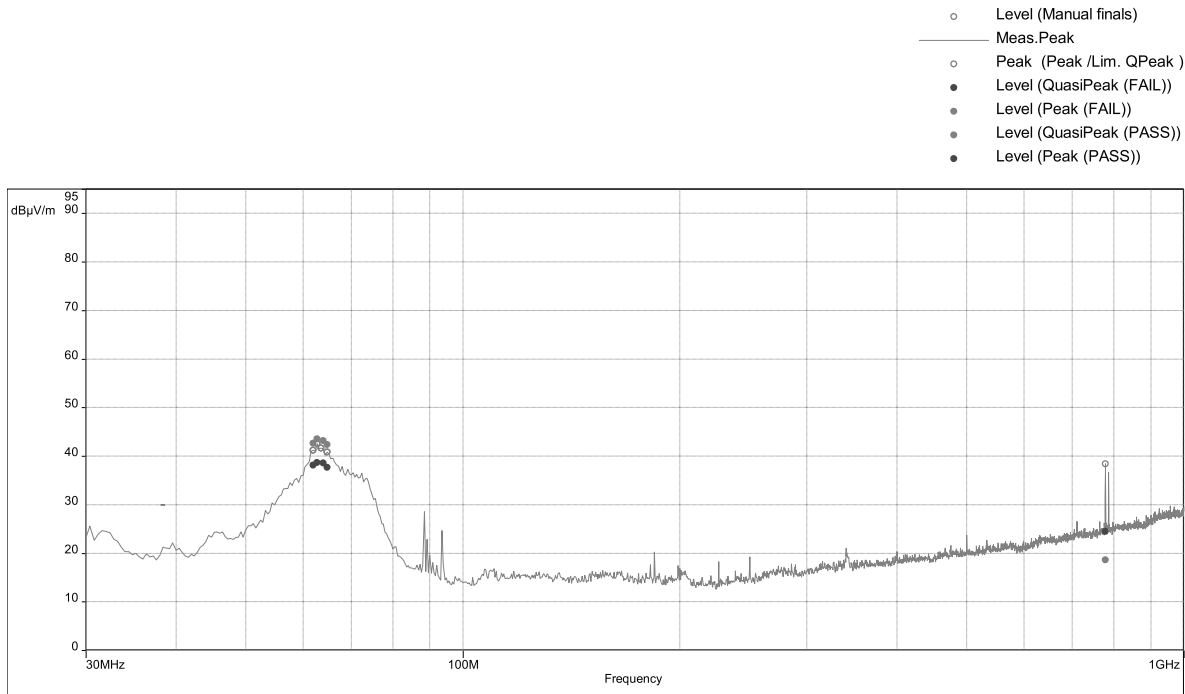
Big peak was a fundamental frequency. Testing from 13-22GHz was performed manually at a close distance. No emissions were detected above the measuring equipment noise floor.

**Radiated Emissions: 30-1000 MHz, Transmit @ High Channel 2152.5 MHz
Slot 3 (Band 4), Modulation: TM3.1a-QPSK, Bandwidth 5 MHz**

Test Information:

Date and Time	1/20/2021 7:28:47 PM
Client and Project Number	Commscope_G104567487
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	16%
Atmospheric Pressure	1002 mB
Comments	RE 30-1000MHz_POE_BAND 4_Tx mode_Hight CH_Worst-case TM3.1a 5MHz BW

Graph:



Results:

Peak

Frequency (MHz)	Level Peak (dBμV/m)	Level EIRP (dBm)	Limit (dBm)	Margin (dB)	Azimuth (°) (dB)	Height (m) (dB)	Pol. (dB)	RBW (dB)	Correction (dB)
61.93684211	42.59	-41.21	-13.00	-29.21	298.00	1.86	Vertical	120000.00	-25.13
62.70526316	43.54	-41.26	-13.00	-28.26	336.00	2.60	Vertical	120000.00	-25.04
63.91578947	43.16	-41.64	-13.00	-28.64	335.00	2.44	Vertical	120000.00	-24.99
64.89473684	42.35	-42.45	-13.00	-29.45	173.00	2.58	Vertical	120000.00	-24.90
778.2736842	24.49	-60.31	-13.00	-47.31	32.00	1.59	Horizontal	120000.00	-7.58

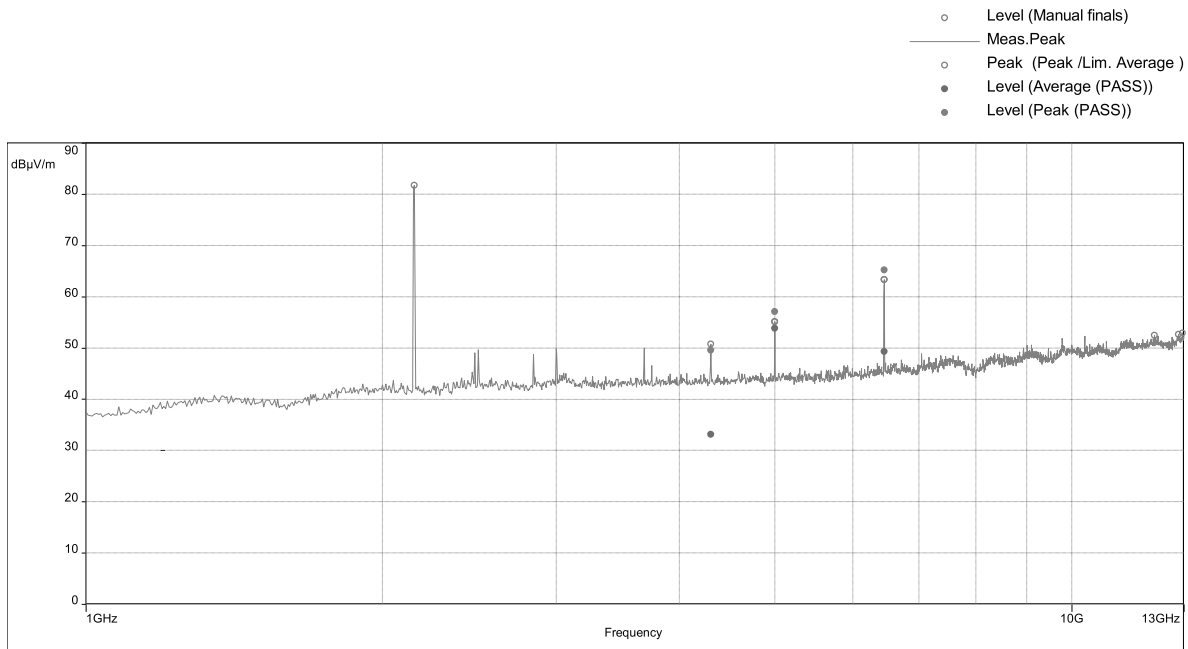
Level EIRP (dBm) = Level Peak (dBuV/m) - 84.8

**Radiated Emissions: 1-22 GHz, Transmit @ High Channel 2152.5 MHz
Slot 3 (Band 4), Modulation: TM3.1a-QPSK, Bandwidth 5 MHz**

Test Information:

Date and Time	1/20/2021 8:29:19 PM
Client and Project Number	Commscope_G104567487
Engineer	Vathana Ven
Temperature	24 deg C
Humidity	16%
Atmospheric Pressure	1002 mB
Comments	RE 1 to 13 POE_BAND 4_Tx mode_High CH_Worst-case TM3.1a 5MHz BW

Graph:



Results:

Peak (PASS) (3)

Frequency (MHz)	Level Peak (dBμV/m)	Level EIRP (dBm)	Limit (dBm)	Margin (dB)	Azimuth (°) (dB)	Height (m) (dB)	Pol. (dB)	RBW (dB)	Correction (dB)
4305	49.56	-45.70	-13.00	-32.70	306.00	1.25	Vertical	1000000.00	-11.21
5000	57.11	-38.15	-13.00	-25.15	11.00	2.95	Vertical	1000000.00	-9.72
6456.052632	65.17	-30.09	-13.00	-17.09	321.00	1.00	Vertical	1000000.00	-6.84

Level EIRP (dBm) = Level Peak (dBμV/m) – 95.26

Big peak was a fundamental frequency. Testing from 13-22GHz was performed manually at a close distance. No emissions were detected above the measuring equipment noise floor.

Test Personnel: Vathana Ven *VSV*
Supervising/Reviewing
Engineer:
(Where Applicable) N/A

Test Date: 01/20/2021
01/26/2021

Product Standard: FCC Part 27
Input Voltage: 48 VDC (POE)

Limit Applied: See report section 10.3

Pretest Verification w/
Ambient Signals or
BB Source: N/A

Ambient Temperature: 24, 23°C

Relative Humidity: 16, 15%

Atmospheric Pressure: 1002, 1013mbars

Deviations, Additions, or Exclusions: None

11 Revision History

Revision Level	Date	Report Number	Prepared By	Reviewed By	Notes
0	02/03/2021	104567487BOX-001	VFV 	MFM 	Original Issue