



Test Report – FCC Part 15.236 Low Power Licensed Wireless Microphone Applicant: Wisycom s.r.l.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 7/21/2023

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1. Applicant Information

Applicant: Wisycom s.r.l.
 Address: Via Tiepolo, 7/E
 Tombolo, 35019, Italy

1.1 Test Result Summary

The following test procedure was used ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification. Full test results are available in this report.

No additions to the test methods were needed. There were no deviations, or exclusions from the test methods. No test results are from external providers or from the customer. The test results relate only to the items tested. Timco does not offer opinions and interpretations, only a pass/fail statement.

Applicable Clauses from Part 15.236		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
15.236 (c) (1) – (6)	Permissible Frequency Bands	Pass
15.236 (d) (1) – (2)	Maximum Radiated Power	Pass
15.236 (f) (1) – (2)	Channel Aggregation & Bandwidth	Pass
15.236 (f) (3)	Frequency Tolerance	Pass
15.236 (g)	Radiated Emissions, In-band	Pass

Other Applicable Clauses from Part 2 and Part 15 Subpart C		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
15.203	Antenna requirements	Pass
15.205	Restricted bands of operation	Pass
15.207	AC Power Conducted Emissions	n/a
15.209	Radiated Emissions, Out-of-band	Pass
15.211	Tunnel Radio Systems	n/a
15.212 (a)	Single Modular Transmitter	n/a
15.212 (b)	Limited Modular Transmitter	n/a
15.213	Cable Locating Equipment	n/a
15.214	Cordless Telephones	n/a



Timco Engineering, Inc., an IIA Company
 849 NW State Road 45, Newberry, Florida 32669
 (352) 472-5500 / testing@timcoengr.com

2. Location of Testing

2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at Timco's permanent laboratory located at 849 NW State Road 45, Newberry, Florida 32669

FCC test firm # 578780

FCC Designation # US1070

FCC site registration is under A2LA certificate # 0955.01

ISED Canada test site registration # 2056A

EU Notified Body # 1177

For all designations see A2LA scope # 0955.01

2.2 Testing was performed, reviewed by

Dates of Testing: 5/29/2023– 6/6/2023

Signature:

Sr. EMC Engineer
 EMC-003838-NE



Name & Title:

Tim Royer, EMC Engineer

Date of Signature

7/21/2023

Signature:

Name & Title:

Kristoffer Costa, EMC Technician

Date of Signature

7/21/2023



3. Test Sample(s) (EUT/DUT)

The test sample was received: 5/25/2023

3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

Identification	
FCC ID:	POUMTK982
Brief Description	Dual UHF Transmitter
Model(s) #	MTK982
Firmware version	N/A
Software version	N/A
Serial Number	29900009, 2300003

Technical Characteristics	
Frequency Range	470 MHz- 608 MHz, 614 MHz- 616 MHz, 657 MHz- 663 MHz
RF O/P Power (Max.)	50mW Max
Modulation	FM
Bandwidth & Emission Class	F3E, F8E
Number of Channels	N/A
Duty Cycle	100%
Antenna Connector	BNC
Voltage Rating (AC or Batt.)	90 - 264 V AC, 47/63 Hz; 10-28 Vdc



3.2 Configuration of EUT

Mode (#)	Band (MHz)	Mode	Number of Ant.
1 (4:1)	470 MHz- 608 MHz 614 MHz- 616 MHz 657 MHz- 663 MHz	Operational	1
2 (8:1)	470 MHz- 608 MHz 614 MHz- 616 MHz 657 MHz- 663 MHz	Operational	1
3 (16:1)	470 MHz- 608 MHz 614 MHz- 616 MHz 657 MHz- 663 MHz	Operational	1

Operating conditions during Testing:

No modifications of the device under test (including firmware, specific software settings, and input/output signal levels to the EUT).

Peripherals used during Testing:

CSI16T Passive Combiner

3.3 Test Setup of EUT

Equipment, antenna, and cable arrangement. The setup of the equipment and cable or wire placement on the test site that produces the highest radiated and the highest ac power-line conducted emissions shall be shown clearly and described. Information on the orientation of portable equipment during testing shall be included. Drawings or photographs may be used for this purpose.

Test Setups are included in the test report.



4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance

The measurement was performed as per ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification. Full test results are available in this report.

Limits and Regulatory Limits:

- 1) FCC Part 15.236

5. Measurement Uncertainty

Parameter	Uncertainty (dB)
Conducted Emissions	± 3.14 dB
Radiated Emissions (9kHz – 30 MHz)	± 3.08 dB
Radiated Emissions (30 – 200 MHz)	± 2.16 dB
Radiated Emissions (200 – 1000 MHz)	± 2.15 dB
Radiated Emissions (1 GHz – 18 GHz)	± 2.14 dB
Radiated Emissions (18 GHz – 40 GHz)	± 2.31 dB

Note: The uncertainties provided in this table represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of K=2.

6. Environmental Conditions

Temperature & Humidity

Measurements performed at the test site did not exceed the following:

Parameter	Measurement
Temperature	23 C +/- 5%
Humidity	55% +/- 5%
Barometric Pressure	30.05 in Hg

Note: Specific environmental conditions that are applicable to a specific test are available in the test result section.



7. List of Test Equipment and Test Facility

The test equipment used identified by type, manufacturer, serial number, or other identification and the date on which the next calibration or service check is due.

Description of the firmware or software used to operate EUT for testing purposes.

A complete list of all test equipment used shall be included with the test report. The manufacturer’s model and serial numbers, and date of last calibration, and calibration interval shall be included. Measurement cable loss, measuring instrument bandwidth and detector function, video bandwidth, if appropriate, and antenna factors shall also be included where applicable.

List of Test Equipment

Test Equipment						
Type	Device	Manufacturer	Model	SN#	Current Cal	Cal Due
Antenna	Double-Ridged Horn/ETS Horn 2	ETS-Lindgren	3117	00041534	10/14/20	10/14/2023
CHAMBER	CHAMBER	Panashield	3M	N/A	3/12/19	12/21/2023
Pre-amp	Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	2/27/19	7/26/2025
Receiver	EMI Test Receiver R&S ESU 40	Rohde & Schwarz	ESU 40	100320	5/27/21	5/26/2024
Receiver	EMI Test Receiver R&S ESW44	Rohde & Schwarz	ESW44	103049	10/13/21	10/12/2024
Function Generator	Function Generator	Standford	DS340	25200	1/13/21	1/13/2024
Signal Generator	Signal Generator HP 8648C	HP	8648C	35537A01679	3/29/19	8/03/2025
Thermometer	Type K J Thermometer	Martel	303	080504494	1/18/20	1/16/2026
Antenna, NSA	Log-Periodic 1243	Eaton	96005	1243	5/4/21	5/3/2024

Software			
Software	Author	Version	Validation on
ESU Firmware	Rohde & Schwarz	4.43 SP3; BIOS v5.1-24-3	2018
RSCommander	Rohde & Schwarz	1.6.4	2014
ScopeExplorer	LeCroy	v2.25.0.0	2009
Field Strength	Timco	v4.10.7.0	2016



8. Test Results

The results of the test are usually indicated in the form of tables, spectrum analyzer plots, charts, sample calculations, as appropriate for each test procedure.

A description and/or a block diagram of the test setup is usually provided.

The measurement results, along with the appropriate limits for comparison, may be presented in tabular or graphical form. In addition, any variation in the measurement environment may be reported if applicable (e.g., a significant change of temperature that could affect the cable loss and amplifier response).

Units of measurement

Unless noted otherwise in the referenced standard, the measurements of ac power-line conducted emissions and conducted power output will be reported in units of dBµV. Unless noted otherwise in the referenced standard, the measurements of radiated emissions will be reported in units of decibels, referenced to one microvolt per meter (dBµV/m) for electric fields, or to one ampere per meter (dBA/m) for magnetic fields, at the distance specified in the appropriate standards or requirements. The measurements of antenna-conducted power for receivers may be reported in units of dBµV if the impedance of the measuring instrument is also reported. Otherwise, antenna-conducted power will be reported in units of decibels referenced to one milliwatt (dBm). All formulas for data conversions and conversion factors, if used, will be included in this measurement report.

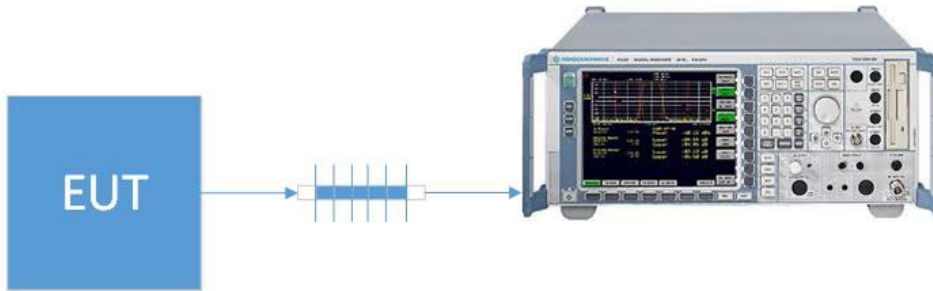
Example:

Freq (MHz)	Meter Reading	+ ACF	+CL	= FS
33	20 dBµV	+ 10.36 dB/m	+0.40 dB	=30.36 dBµV/m @ 3m

$$\text{EIRP} = \text{Pcond (dBm)} + \text{dBi}$$

8.1 RF POWER OUTPUT

Limits from Part 2.1046 ,15.236 (d) (1) and test procedure from ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification.



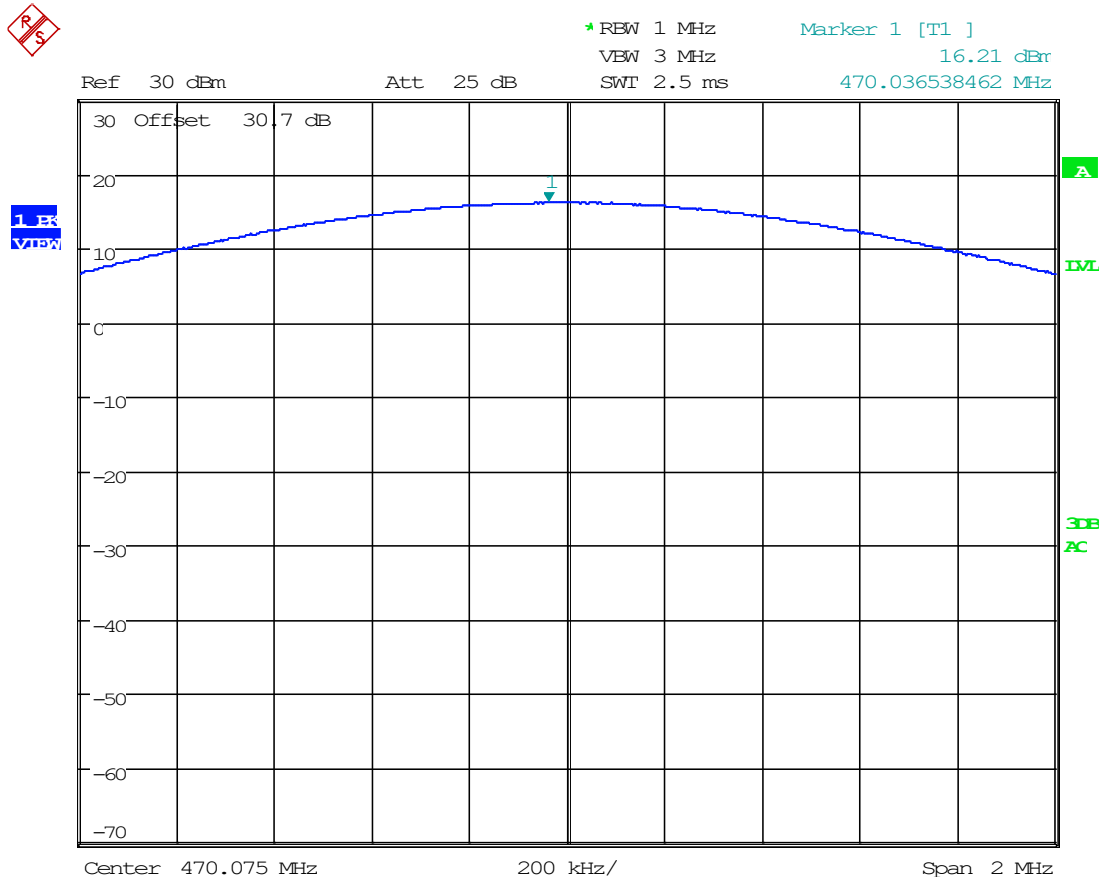


Test Results, Mode 1, 4:1			
Mode	Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
1	470.075	16.21	0.042
1	539	16.05	0.04
1	607.925	16.12	0.041
1	614.075	11.54	0.014
1	615.925	11.49	0.014
1	662.925	12.53	0.018

Test Results, Mode 2, 8:1			
Mode	Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
2	470.075	16.59	0.46
2	539	16.17	0.041
2	607.925	16.58	0.045
2	614.075	12.22	0.017
2	615.925	12.80	0.019
2	662.925	11.21	0.013

Test Results, Mode 3, 16:1			
Mode	Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
3	470.075	16.35	0.043
3	539	15.63	0.037
3	607.925	15.22	0.033
3	614.075	11.12	0.013
3	615.925	11.78	0.015
3	662.925	11.34	0.014

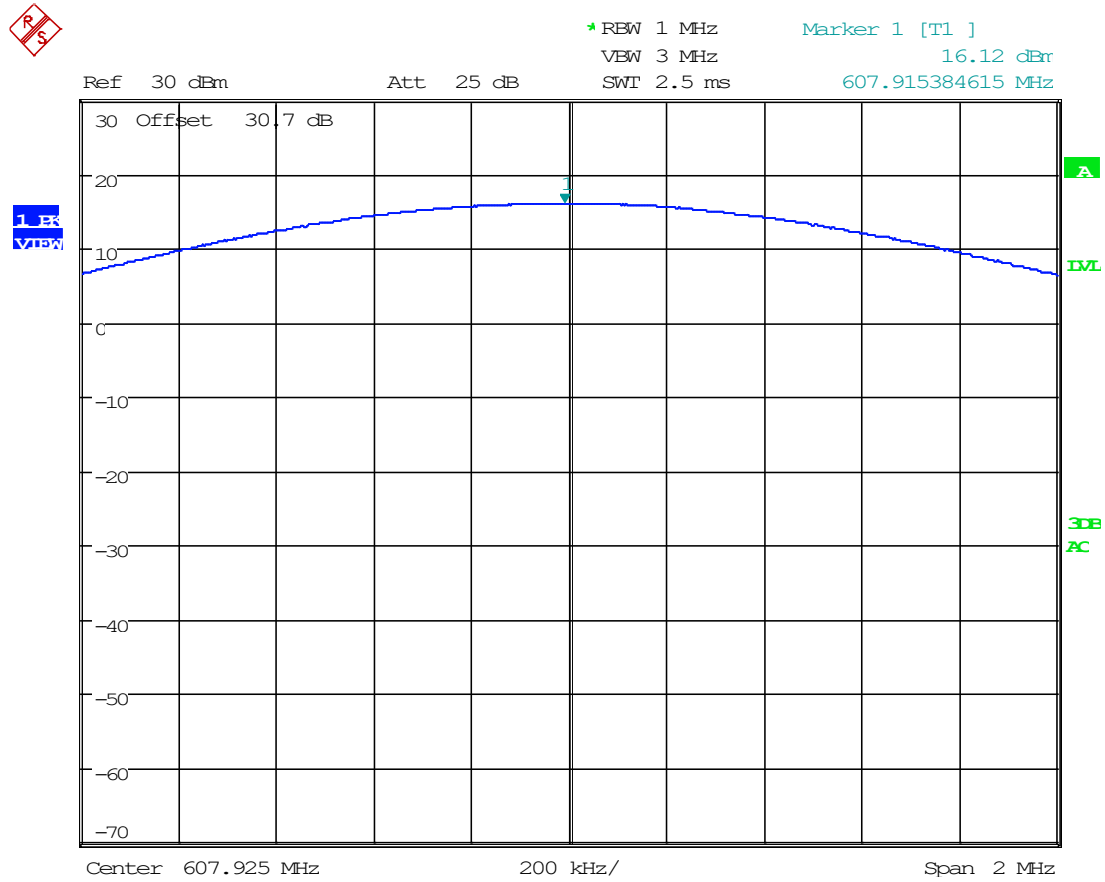
8.1.1 Power Output Plot, Mode 1, 470.075 MHz



Date: 1.JUN.2023 10:01:58



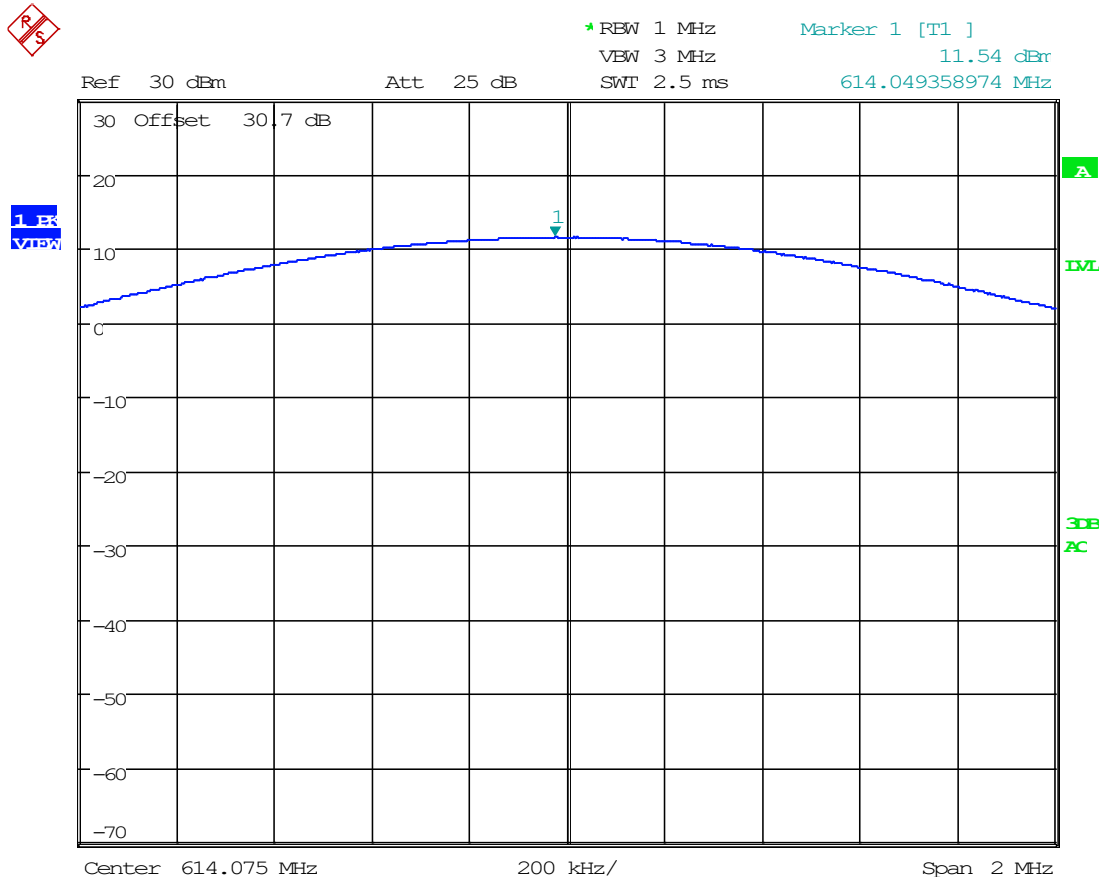
8.1.3 Power Output Plot, Mode 1, 607.925 MHz



Date: 1.JUN.2023 10:05:35



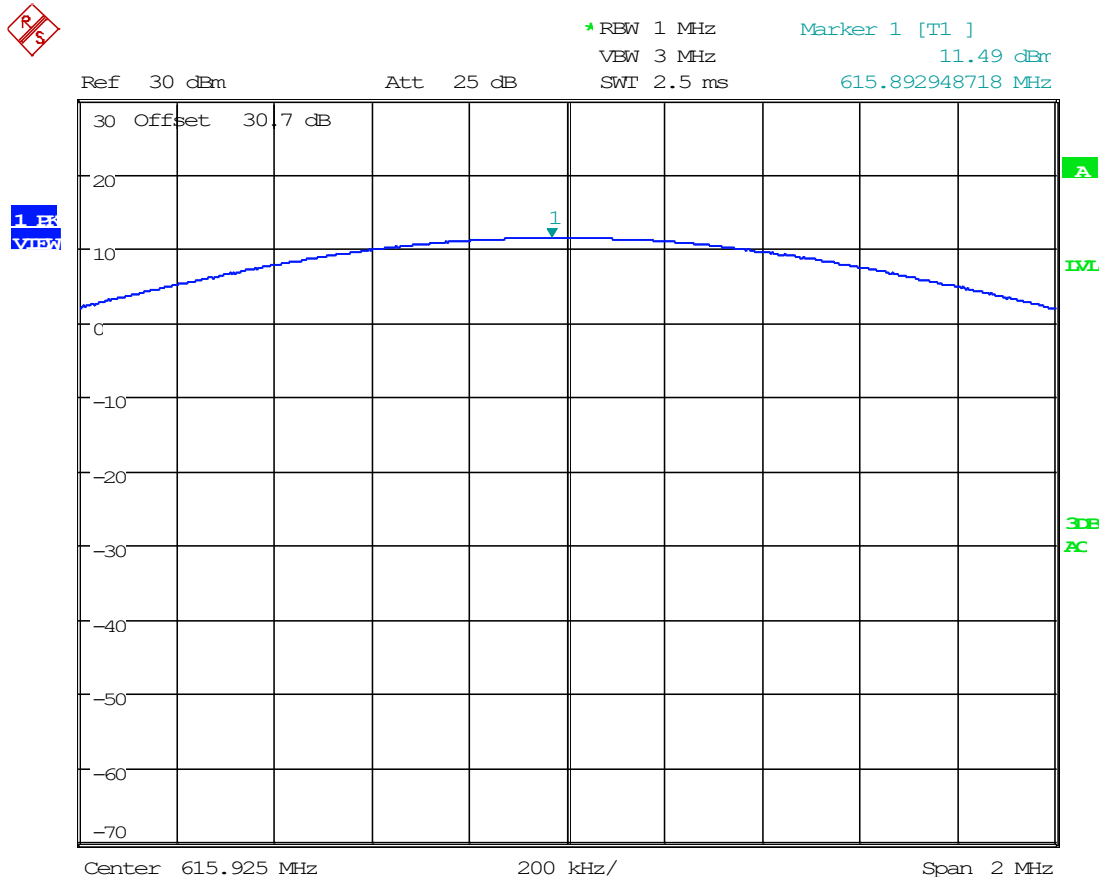
8.1.4 Power Output Plot, Mode 1, 614.075 MHz



Date: 1.JUN.2023 10:09:57



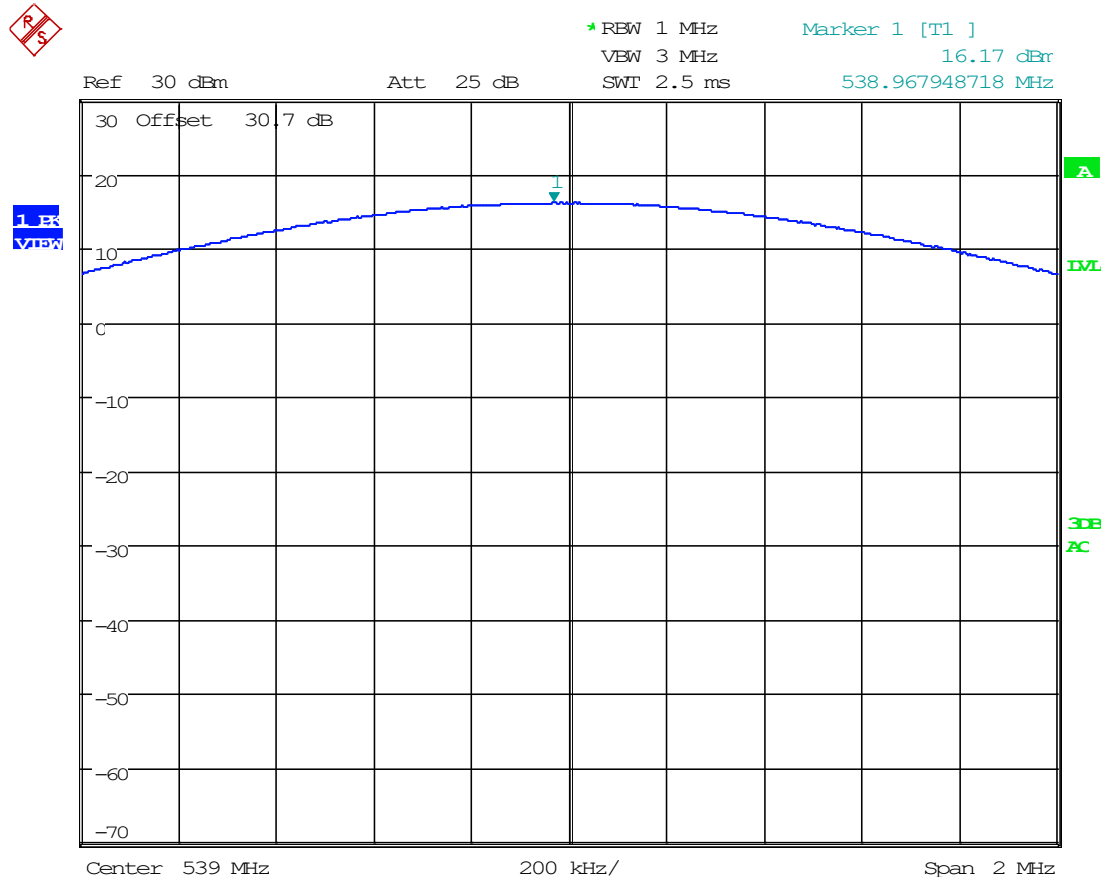
8.1.5 Power Output Plot, Mode 1, 615.925 MHz



Date: 1.JUN.2023 10:10:36



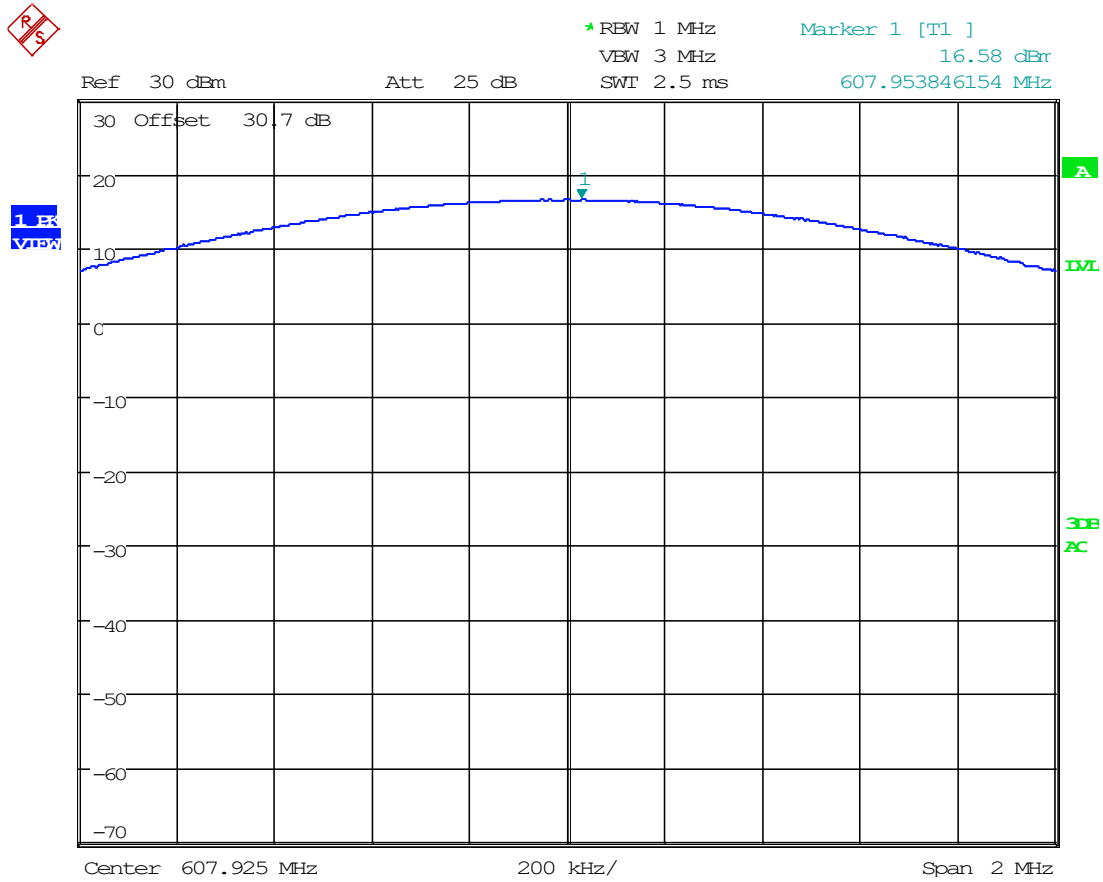
8.1.8 Power Output Plot, Mode 2, 539 MHz



Date: 1.JUN.2023 12:24:22



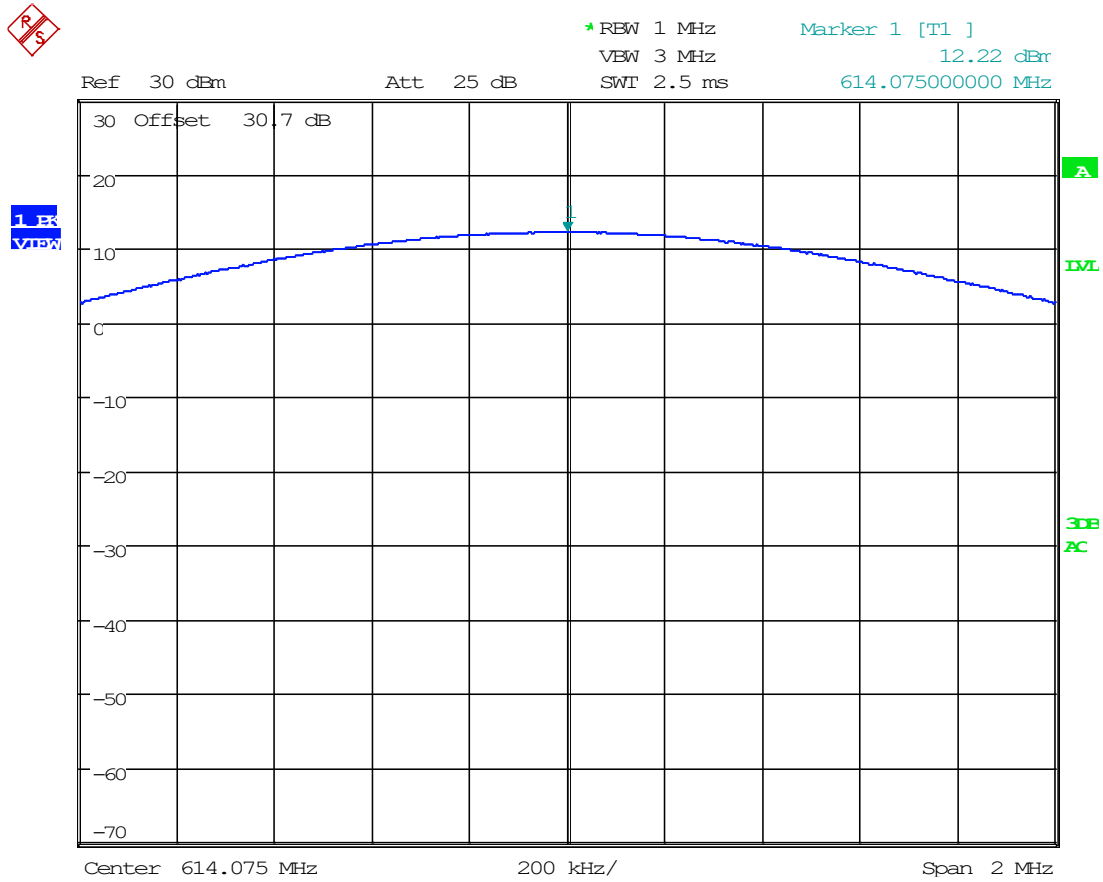
8.1.9 Power Output Plot, Mode 2, 607.925 MHz



Date: 1.JUN.2023 12:25:17



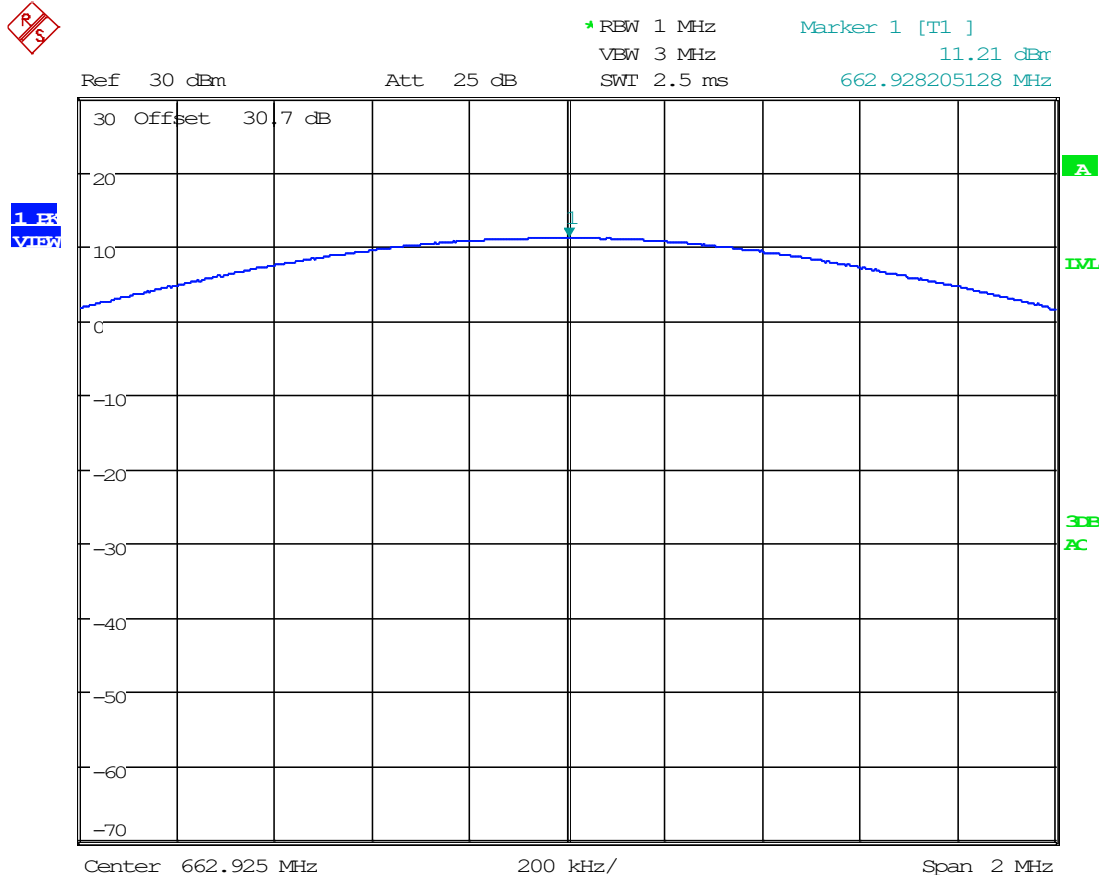
8.1.10 Power Output Plot, Mode 2, 614.075 MHz



Date: 1.JUN.2023 12:16:19



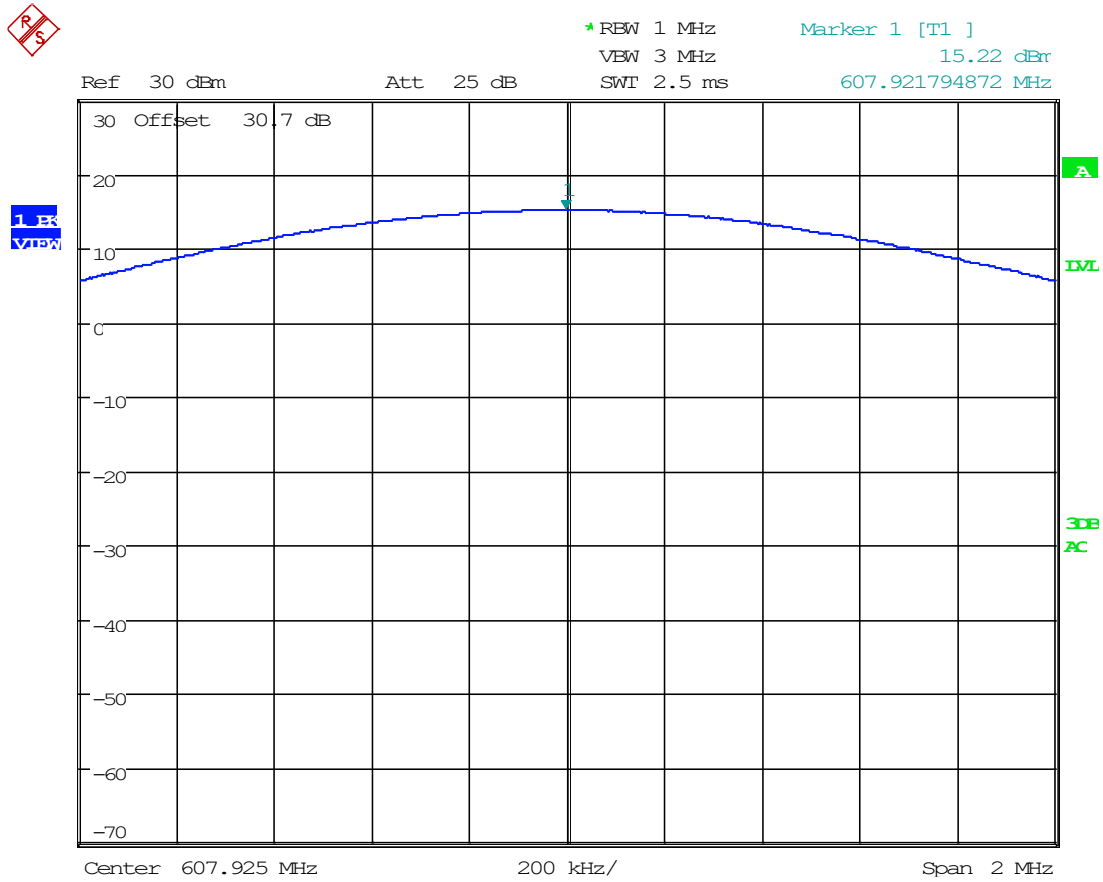
8.1.12 Power Output Plot, Mode 2, 662.925 MHz



Date: 1.JUN.2023 12:21:57



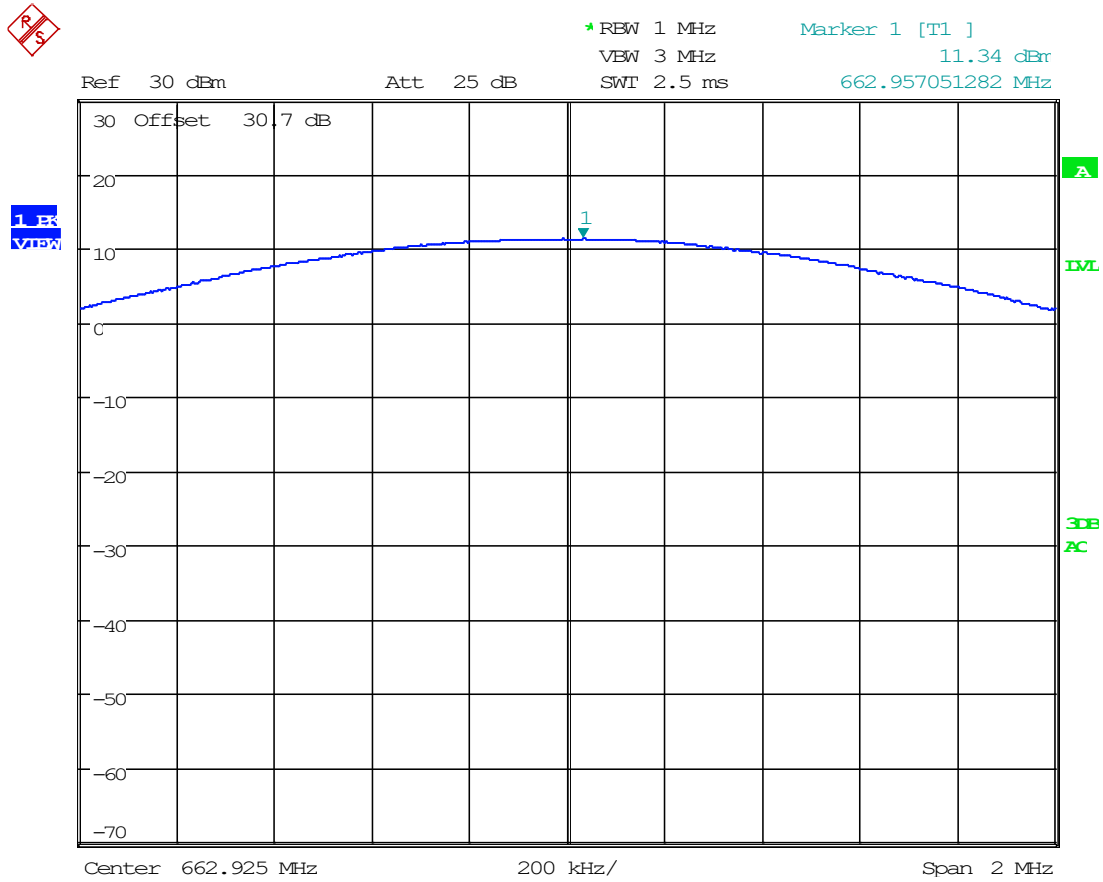
8.1.15 Power Output Plot, Mode 3, 607.925 MHz



Date: 1.JUN.2023 14:57:10



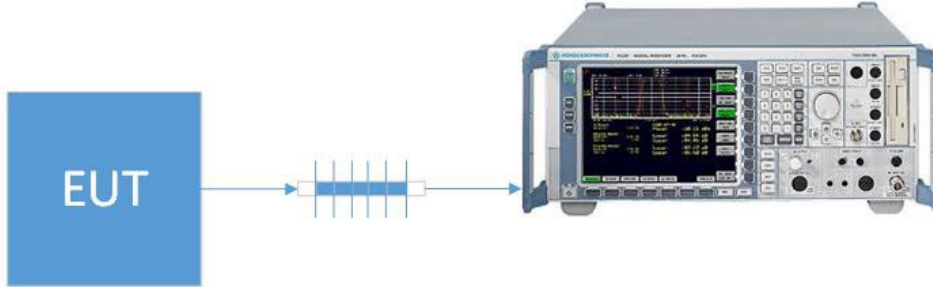
8.1.18 Power Output Plot, Mode 3, 662.925 MHz



Date: 1.JUN.2023 14:53:49

8.2 OCCUPIED BANDWIDTH

Limits from Part 2.1046 ,15.236 and test procedure from ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification.



Tuned Frequency (MHz), Mode 1 (4:1)	99% BW (kHz)
470.075	74.141
539	67.164
607.925	67.064
614.075	67.896
615.925	69.233
662.925	68.407

Tuned Frequency (MHz), Mode 2 (8:1)	99% BW (kHz)
470.075	71.545
539	66.6
607.925	73.743
614.075	70.211
615.925	68.91
662.925	72.14

Tuned Frequency (MHz), Mode 3 (16:1)	99% BW (kHz)
470.075	66.529
539	66.963
607.925	66.691
614.075	68.578
615.925	69.055
662.925	68.026

8.2.1 99% Bandwidth Plot, Mode 1, 470.075 MHz



*RBW 2 kHz Marker 1 [T1]
 *VBW 10 kHz 16.81 dBm
 470.067758319 MHz

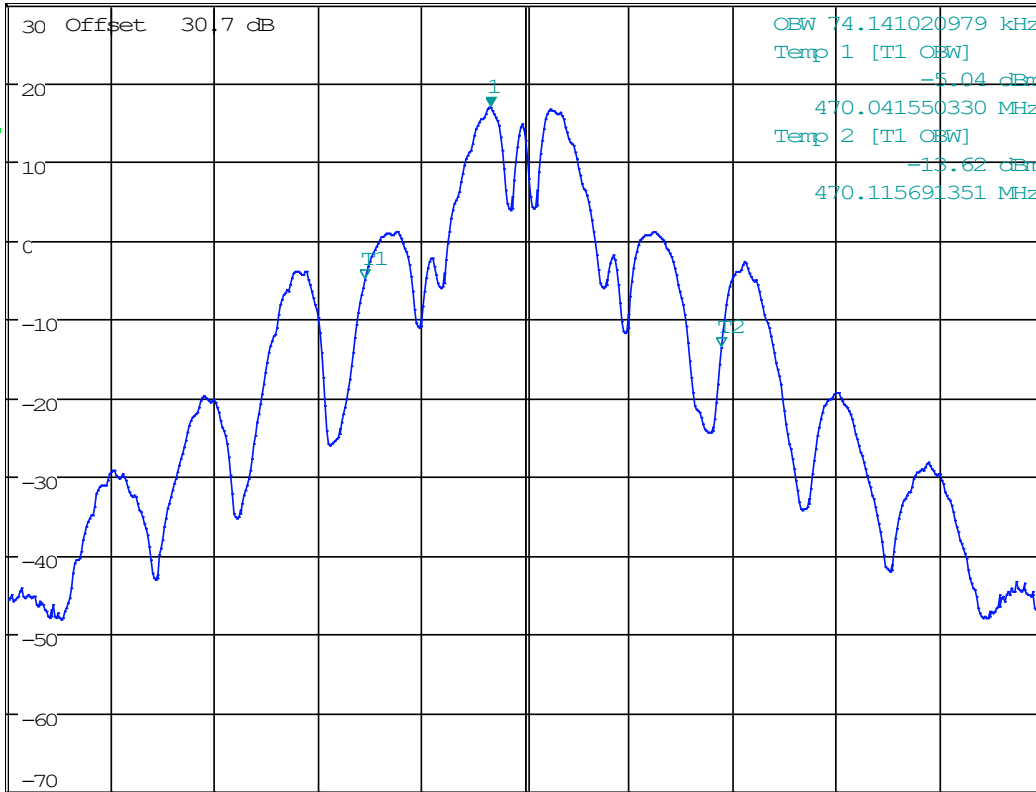
Ref 30 dBm

*Att 5 dB

SWT 55 ms

470.067758319 MHz

1 RM
 V10W



OBW 74.141020979 kHz
 Temp 1 [T1 OBW] -5.04 dBm
 470.041550330 MHz
 Temp 2 [T1 OBW] -13.62 dBm
 470.115691351 MHz

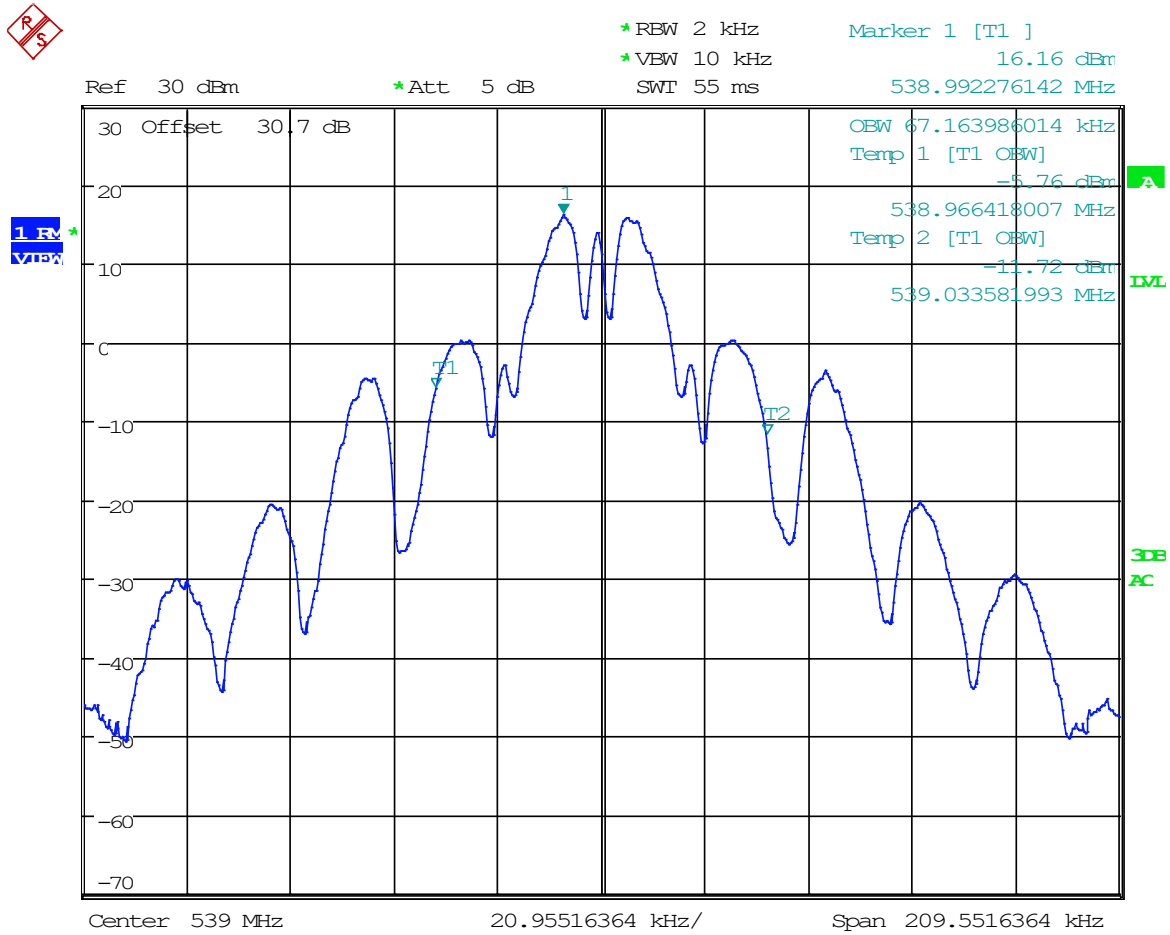
Center 470.075 MHz

21.51813818 kHz/

Span 215.1813818 kHz

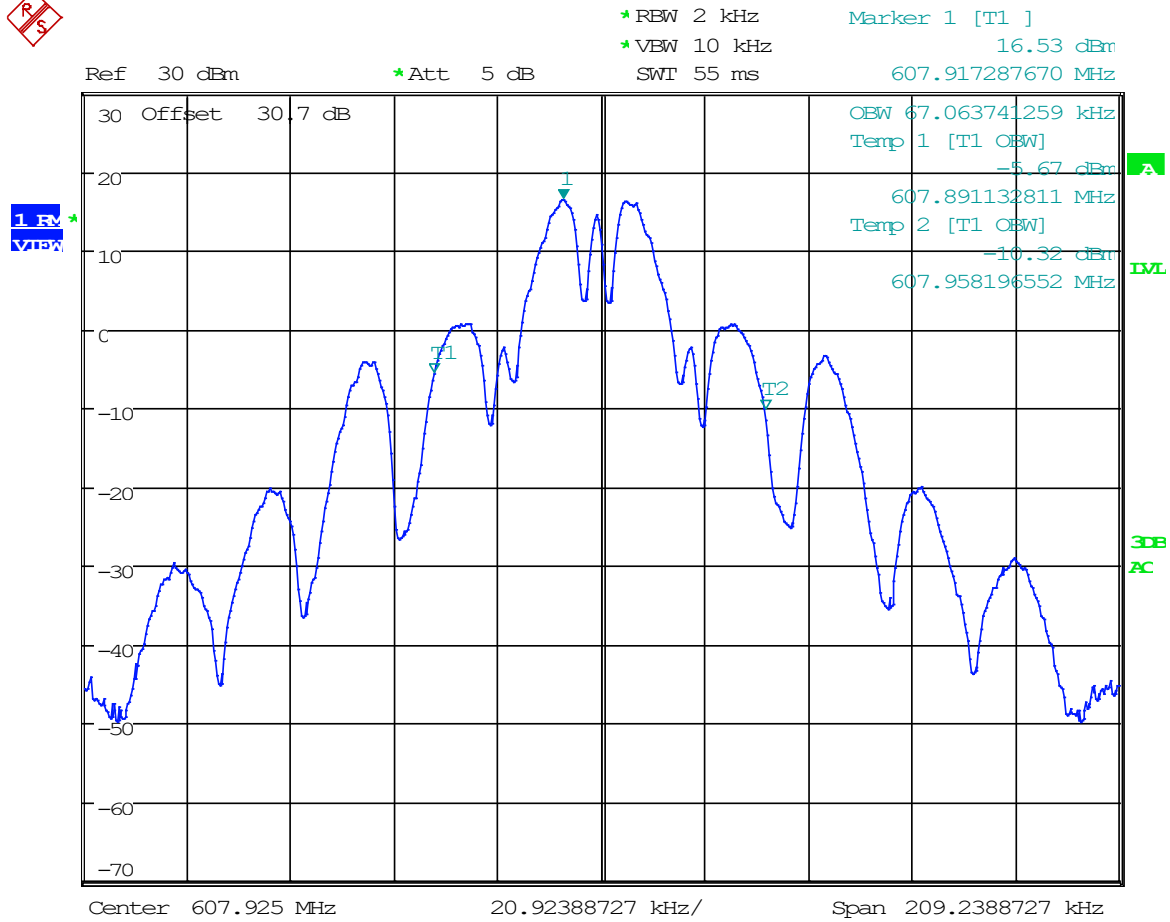
Date: 1.JUN.2023 11:47:08

8.2.2 99% Bandwidth Plot, Mode 1, 539 MHz



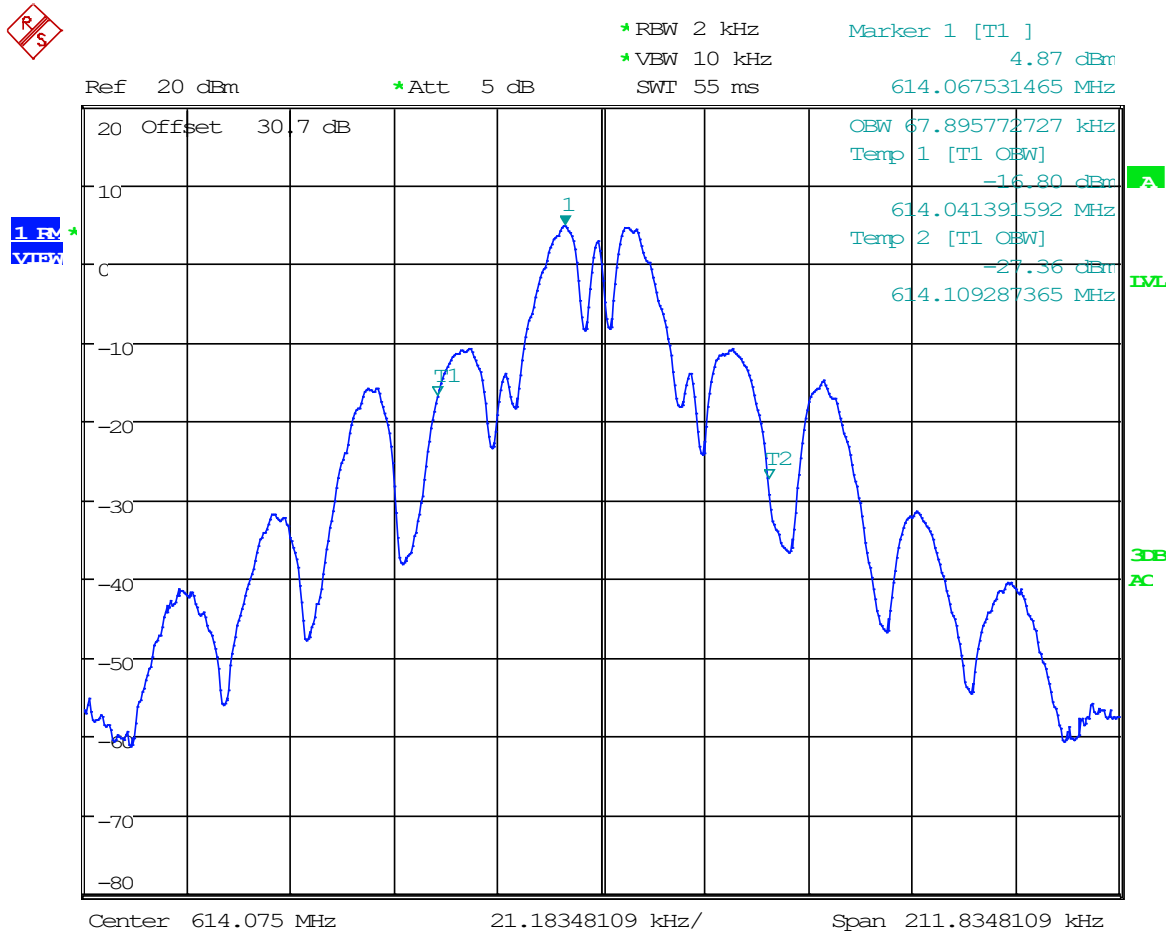
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8.2.3 99% Bandwidth Plot, Mode 1, 607.925 MHz



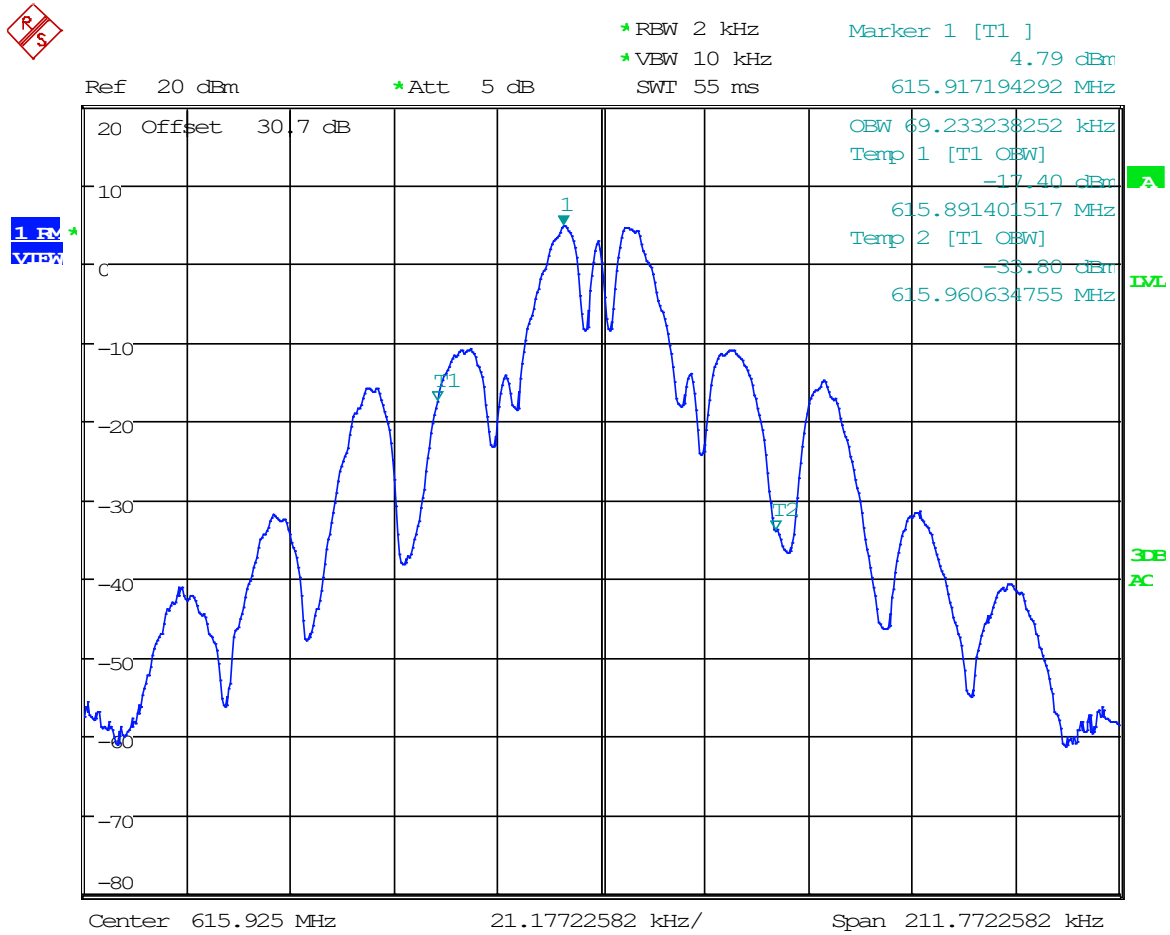
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8.2.4 99% Bandwidth Plot, Mode 1, 614.075 MHz



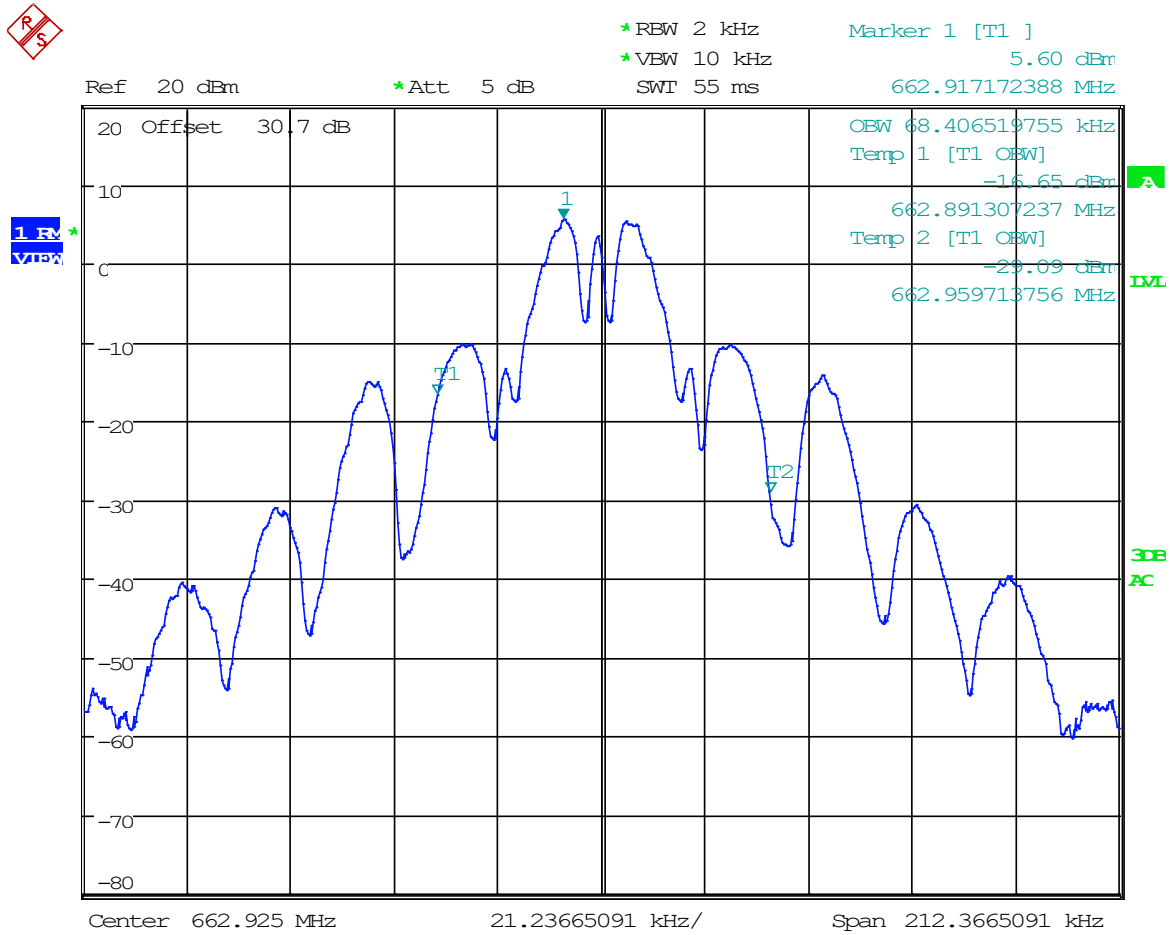
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8.2.5 99% Bandwidth Plot, Mode 1, 615.925 MHz



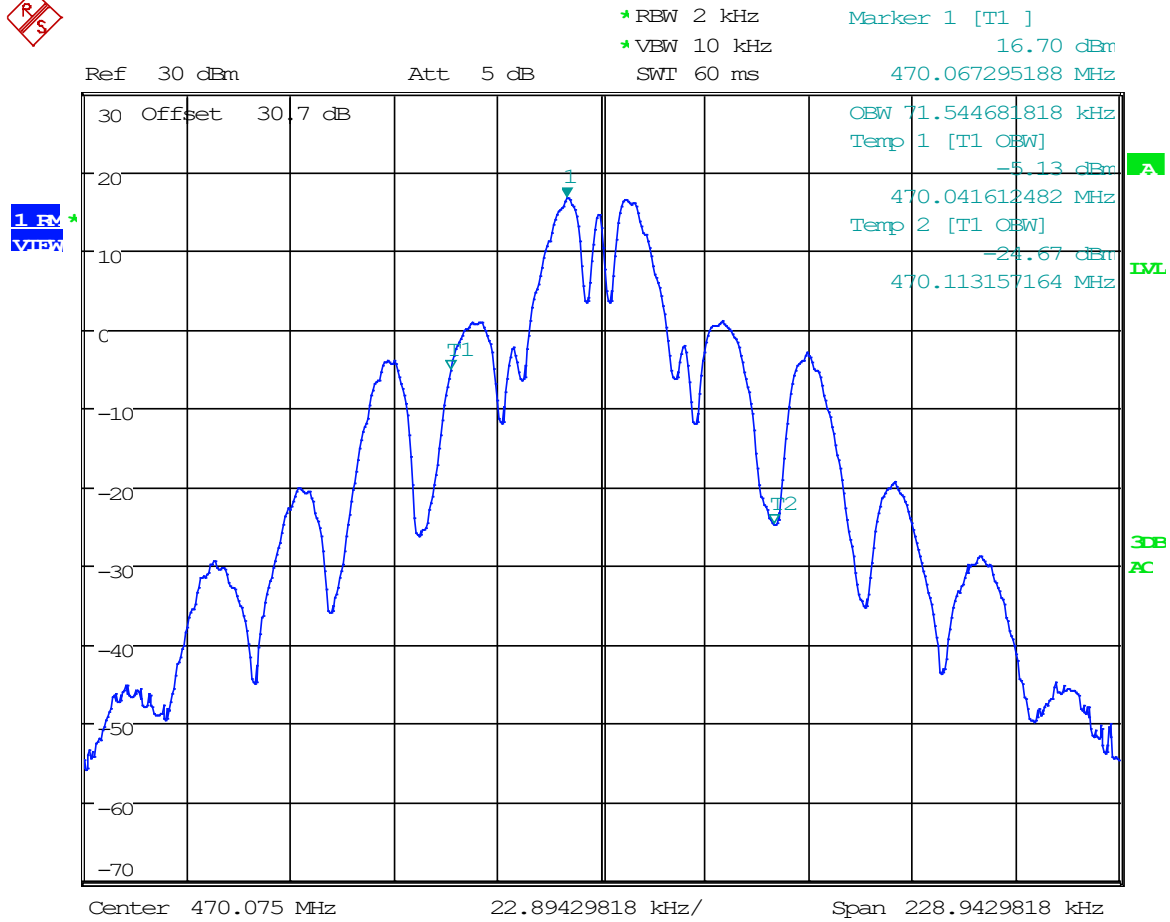
Date: 1.JUN.2023 11:57:16

8.2.6 99% Bandwidth Plot, Mode 1, 662.925 MHz



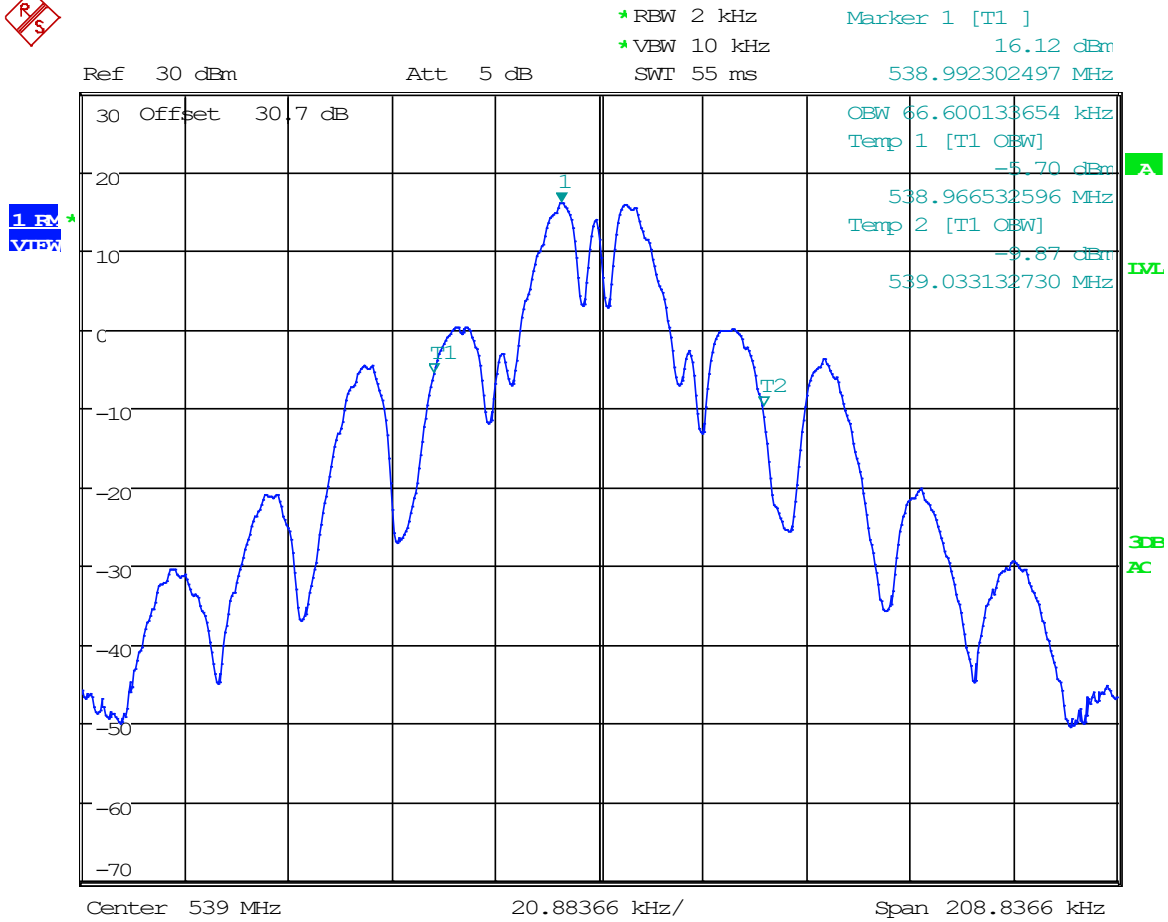
Date: 1.JUN.2023 12:01:10

8.2.7 99% Bandwidth Plot, Mode 2, 470.075 MHz



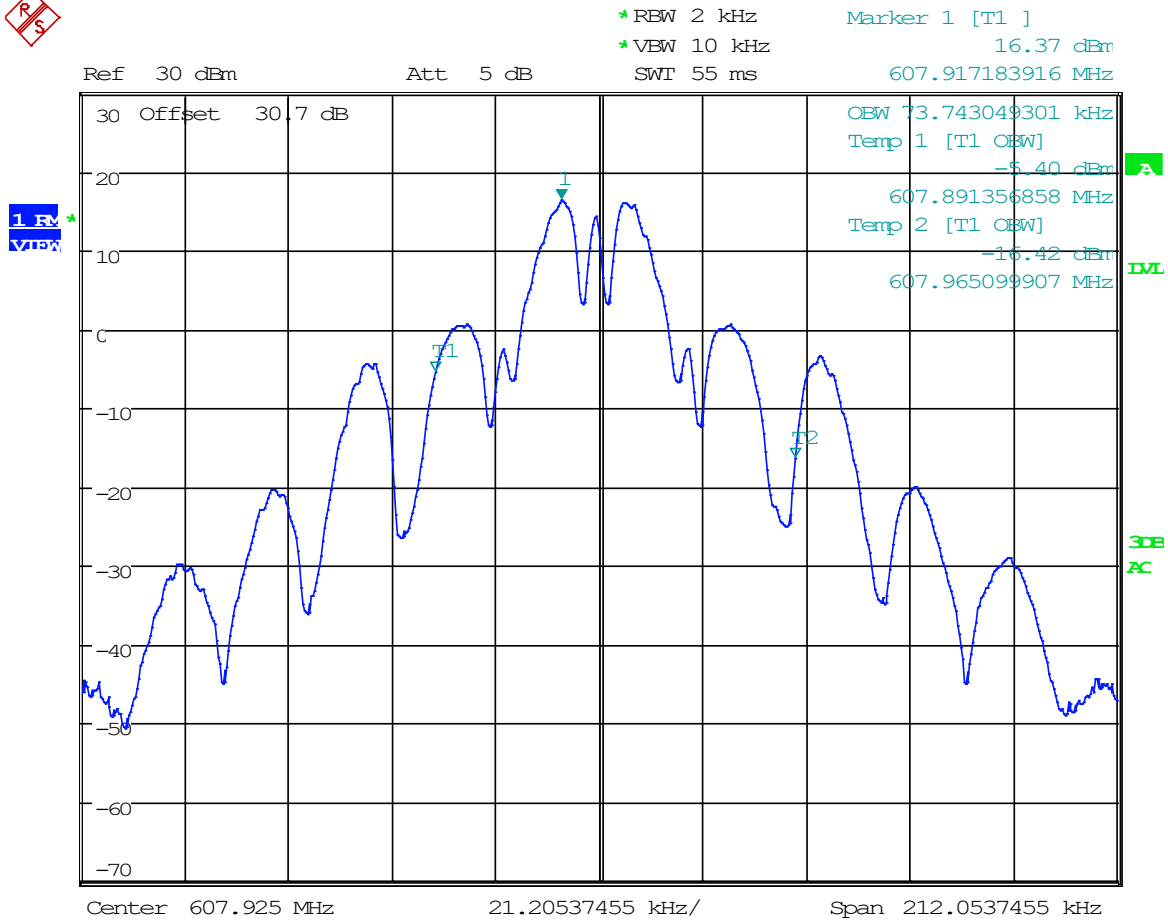
Date: 1.JUN.2023 13:37:07

8.2.8 99% Bandwidth Plot, Mode 2, 539 MHz



Date: 1.JUN.2023 13:41:33

8.2.9 99% Bandwidth Plot, Mode 2, 607.925 MHz

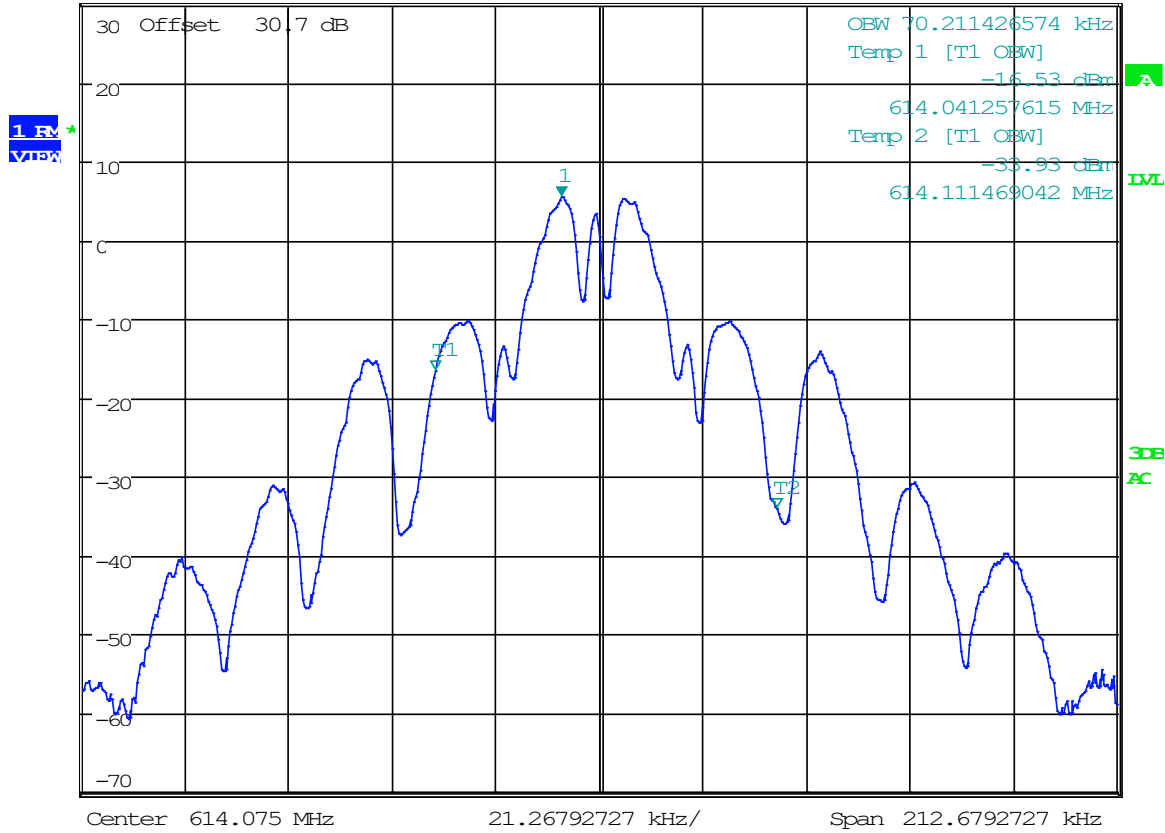


Date: 1.JUN.2023 13:49:45

8.2.10 99% Bandwidth Plot, Mode 2, 614.075 MHz



*RBW 2 kHz Marker 1 [T1]
 *VBW 10 kHz 5.53 dBm
 Ref 30 dBm Att 5 dB SWT 55 ms 614.067160860 MHz



Date: 1.JUN.2023 13:47:09

8.2.11 99% Bandwidth Plot, Mode 2, 615.925 MHz



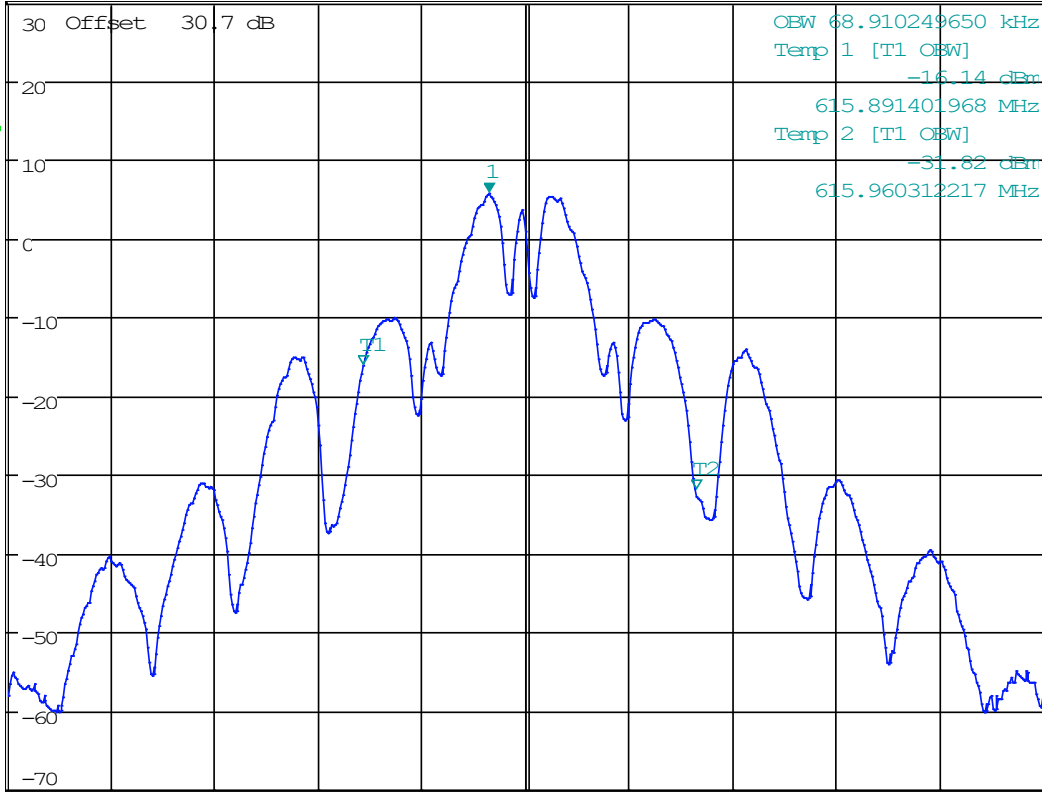
*RBW 2 kHz
 *VBW 10 kHz
 Marker 1 [T1]
 5.66 dBm
 615.917457585 MHz

Ref 30 dBm

Att 5 dB

SWT 55 ms

615.917457585 MHz



Center 615.925 MHz

21.39303273 kHz/

Span 213.9303273 kHz

Date: 1.JUN.2023 13:51:50

8.2.12 99% Bandwidth Plot, Mode 2, 662.925 MHz



*RBW 2 kHz
 *VBW 10 kHz
 Marker 1 [T1]
 4.69 dBm
 662.917181912 MHz

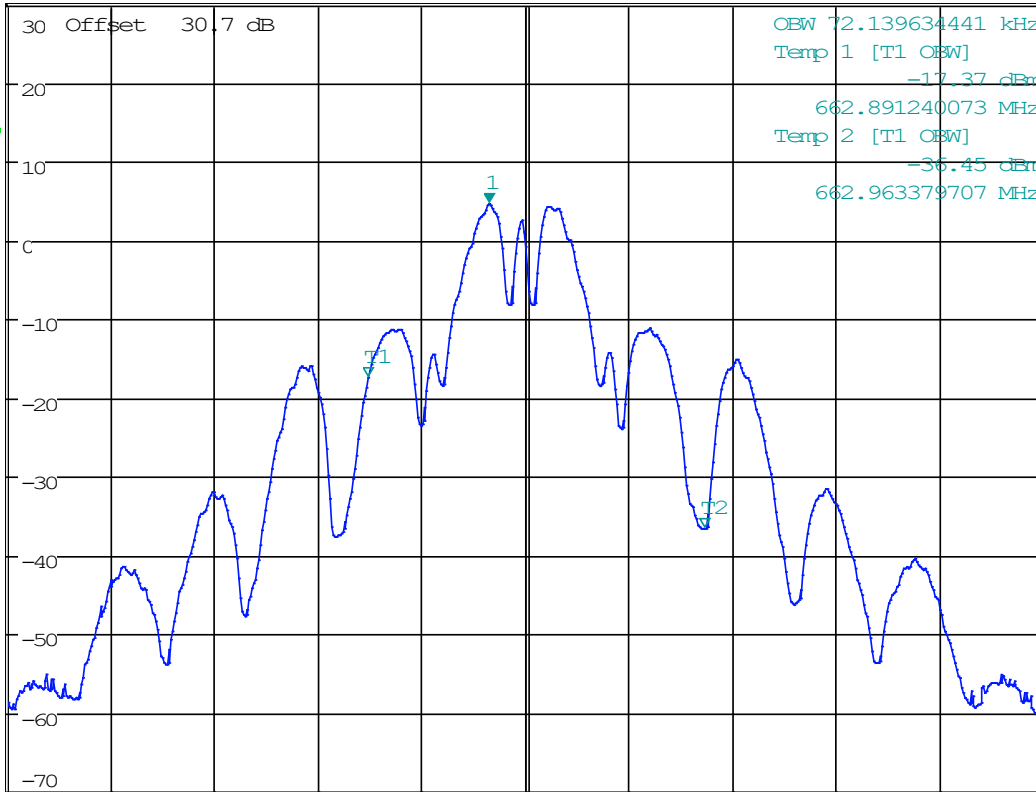
Ref 30 dBm

Att 5 dB

SWT 60 ms

OBW 72.139634441 kHz

1 RM
 VPM



Center 662.925 MHz

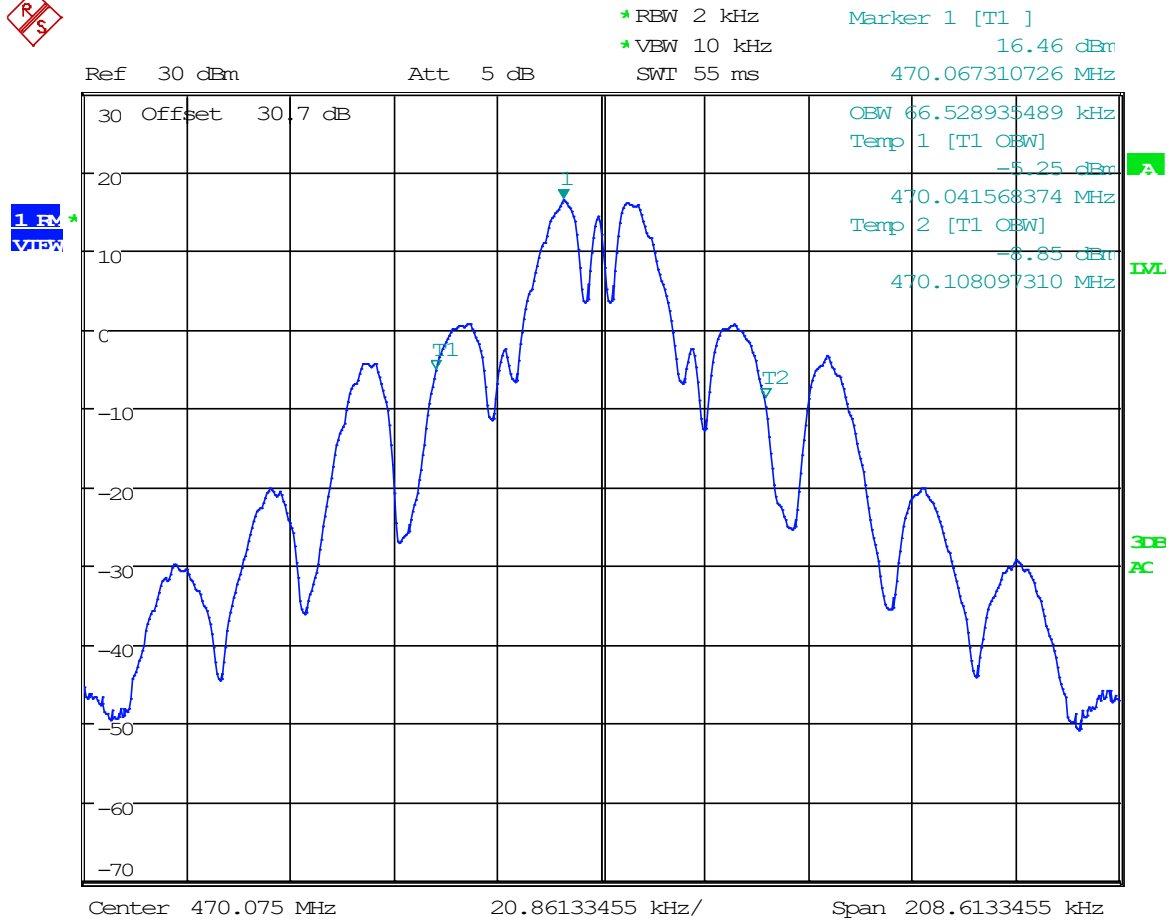
22.17494182 kHz/

Span 221.7494182 kHz

Date: 1.JUN.2023 13:56:26

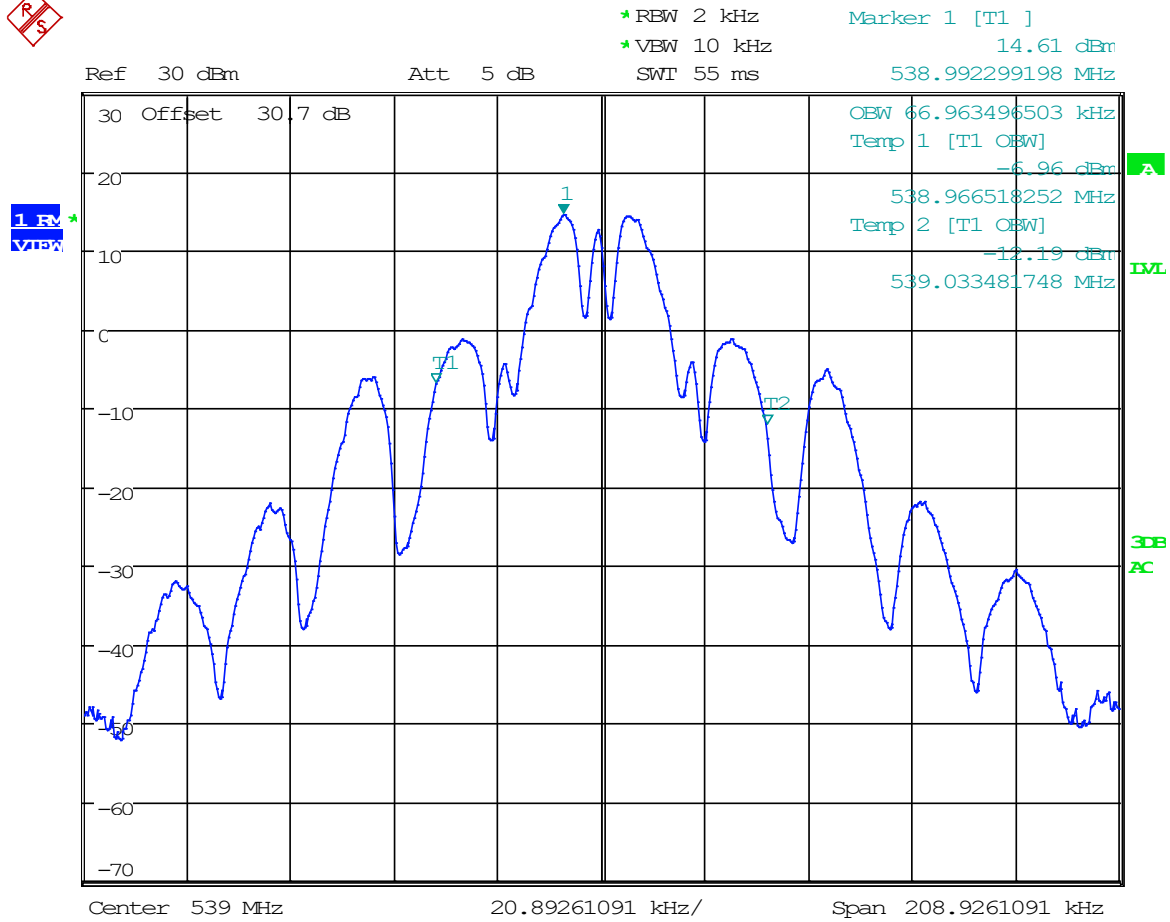


8.2.13 99% Bandwidth Plot, Mode 3, 470.075 MHz



Date: 1.JUN.2023 15:00:41

8.2.14 99% Bandwidth Plot, Mode 3, 539 MHz



Date: 1.JUN.2023 15:02:55

8.2.15 99% Bandwidth Plot, Mode 3, 607.925 MHz



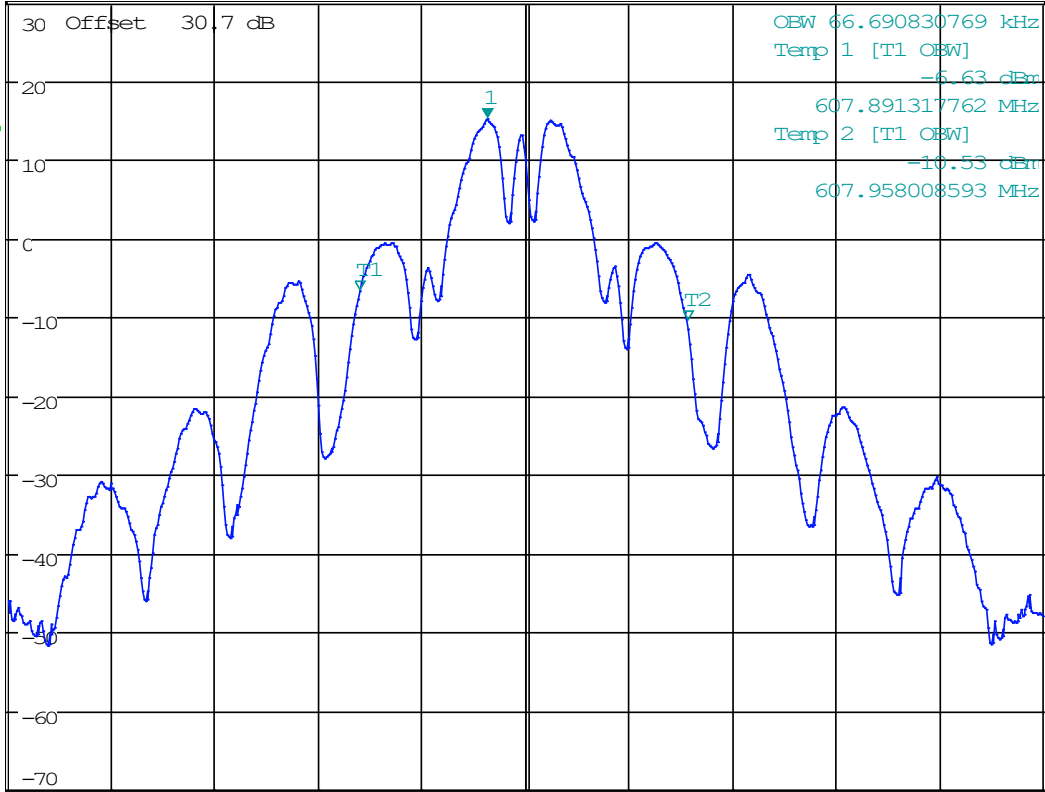
*RBW 2 kHz
 *VBW 10 kHz
 Marker 1 [T1]
 15.25 dBm
 607.917253085 MHz

Ref 30 dBm

Att 5 dB

SWT 55 ms

607.917253085 MHz



Center 607.925 MHz

21.01771636 kHz/

Span 210.1771636 kHz

Date: 1.JUN.2023 15:07:21

8.2.16 99% Bandwidth Plot, Mode 3, 614.075 MHz



*RBW 2 kHz
 *VBW 10 kHz
 Marker 1 [T1]
 4.53 dBm
 614.067567854 MHz

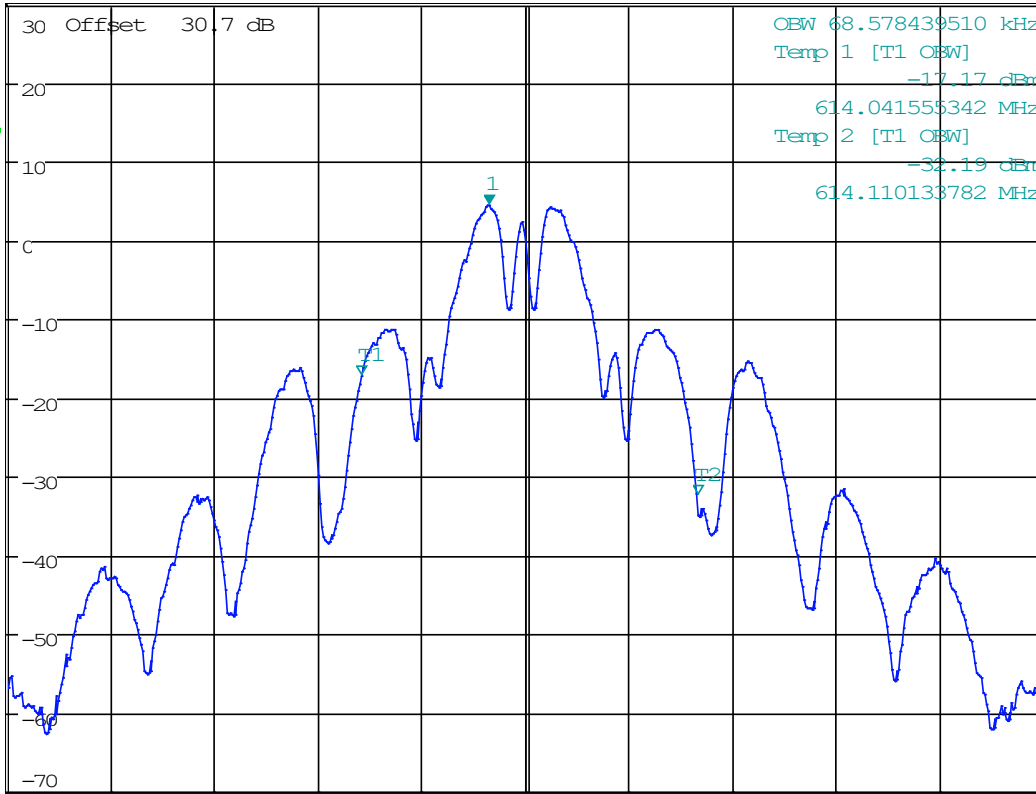
Ref 30 dBm

Att 5 dB

SWT 55 ms

614.067567854 MHz

1 RM
 VPM



Center 614.075 MHz

21.08026909 kHz/

Span 210.8026909 kHz

Date: 1.JUN.2023 15:09:43

8.2.17 99% Bandwidth Plot, Mode 3, 615.925 MHz



*RBW 2 kHz
 *VBW 10 kHz
 Marker 1 [T1]
 4.76 dBm
 615.917625194 MHz

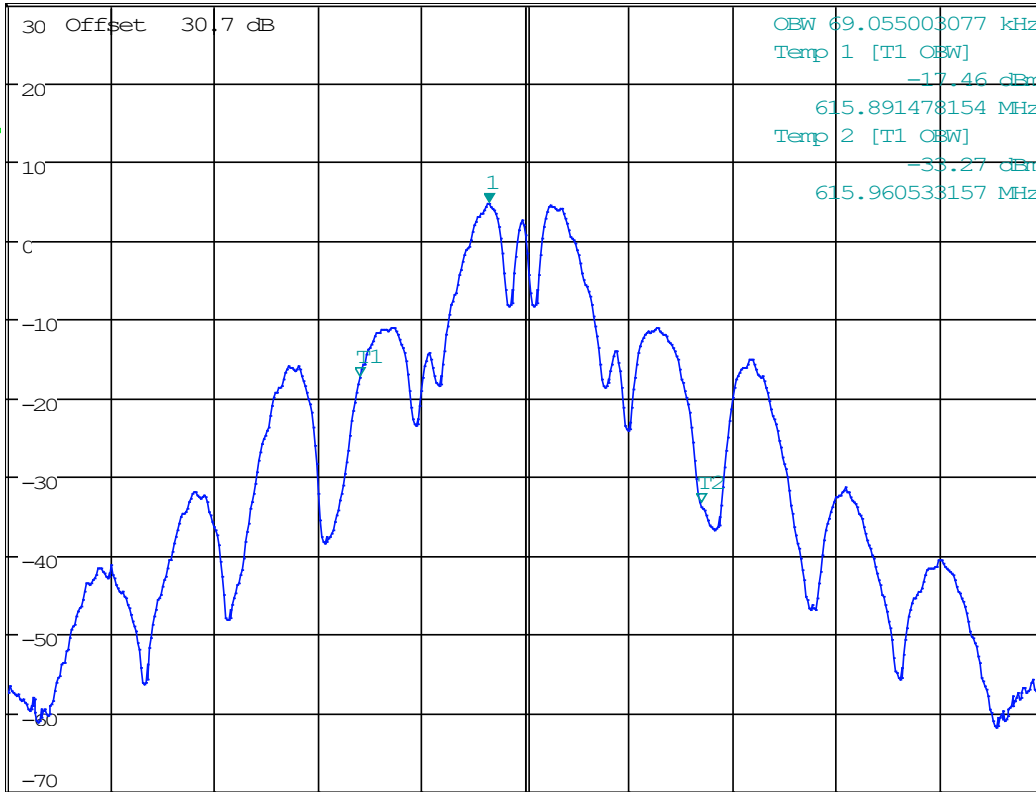
Ref 30 dBm

Att 5 dB

SWT 55 ms

OBW 69.055003077 kHz

1 RM
 VPM



Center 615.925 MHz

20.917632 kHz/

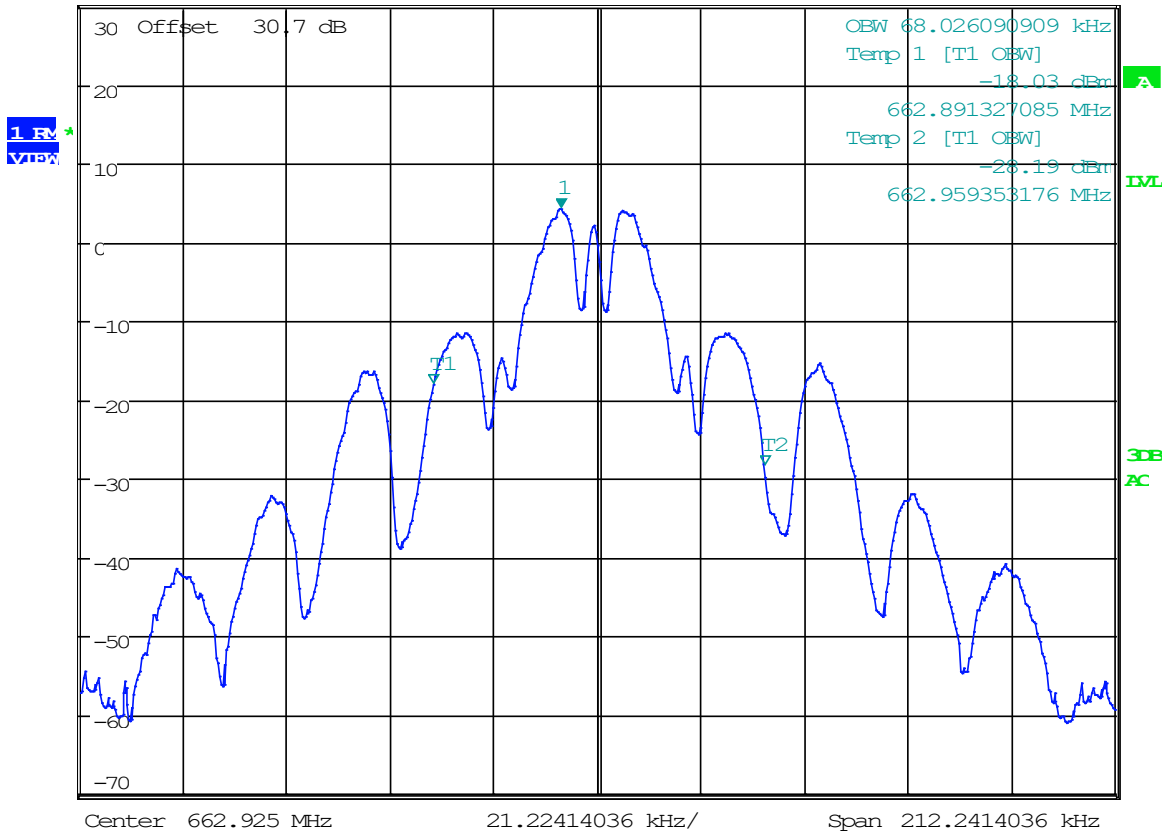
Span 209.17632 kHz

Date: 1.JUN.2023 15:11:36

8.2.18 99% Bandwidth Plot, Mode 3, 662.925 MHz

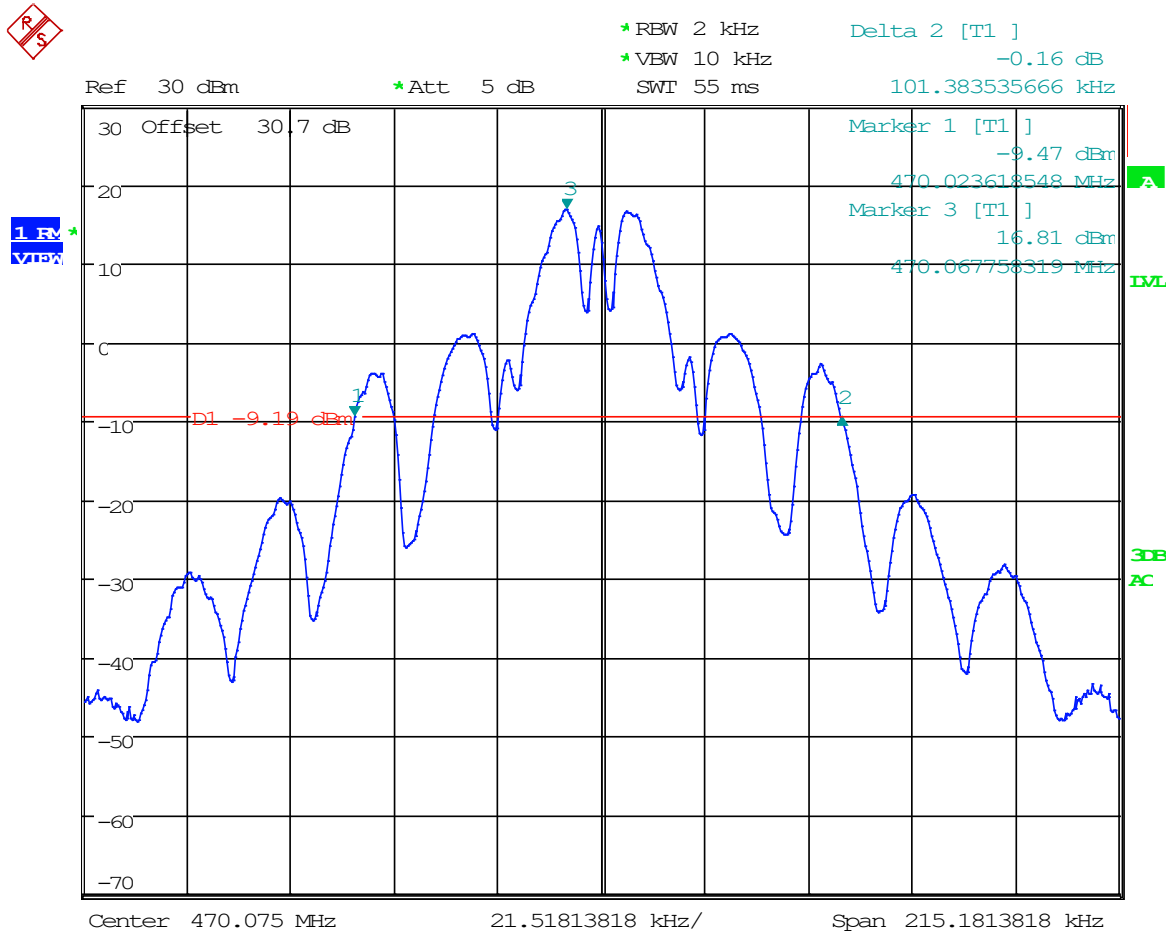


*RBW 2 kHz Marker 1 [T1]
 *VBW 10 kHz 4.37 dBm
 Ref 30 dBm Att 5 dB SWT 55 ms 662.917517130 MHz



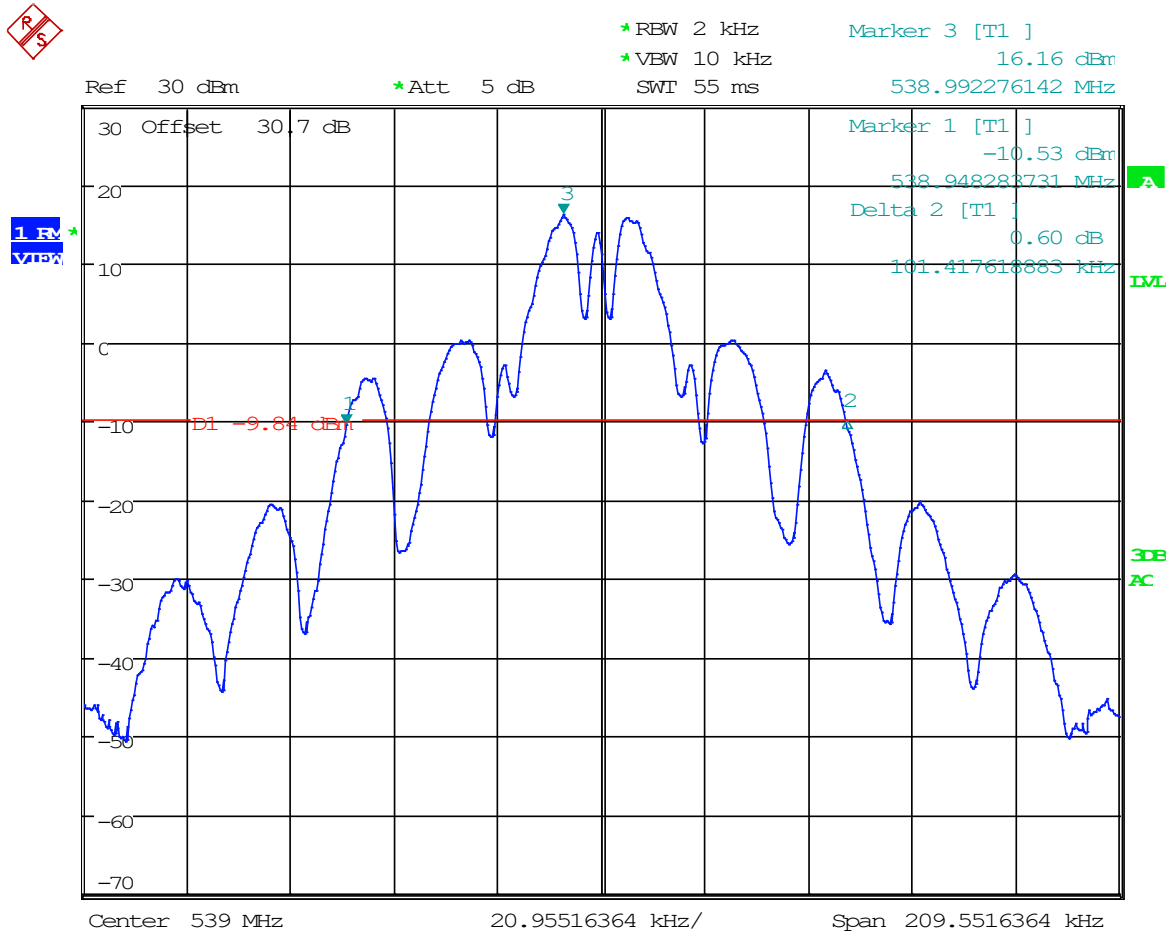
Date: 1.JUN.2023 15:15:48

8.2.19 26dB Bandwidth Plot, Mode 1, 470.075 MHz



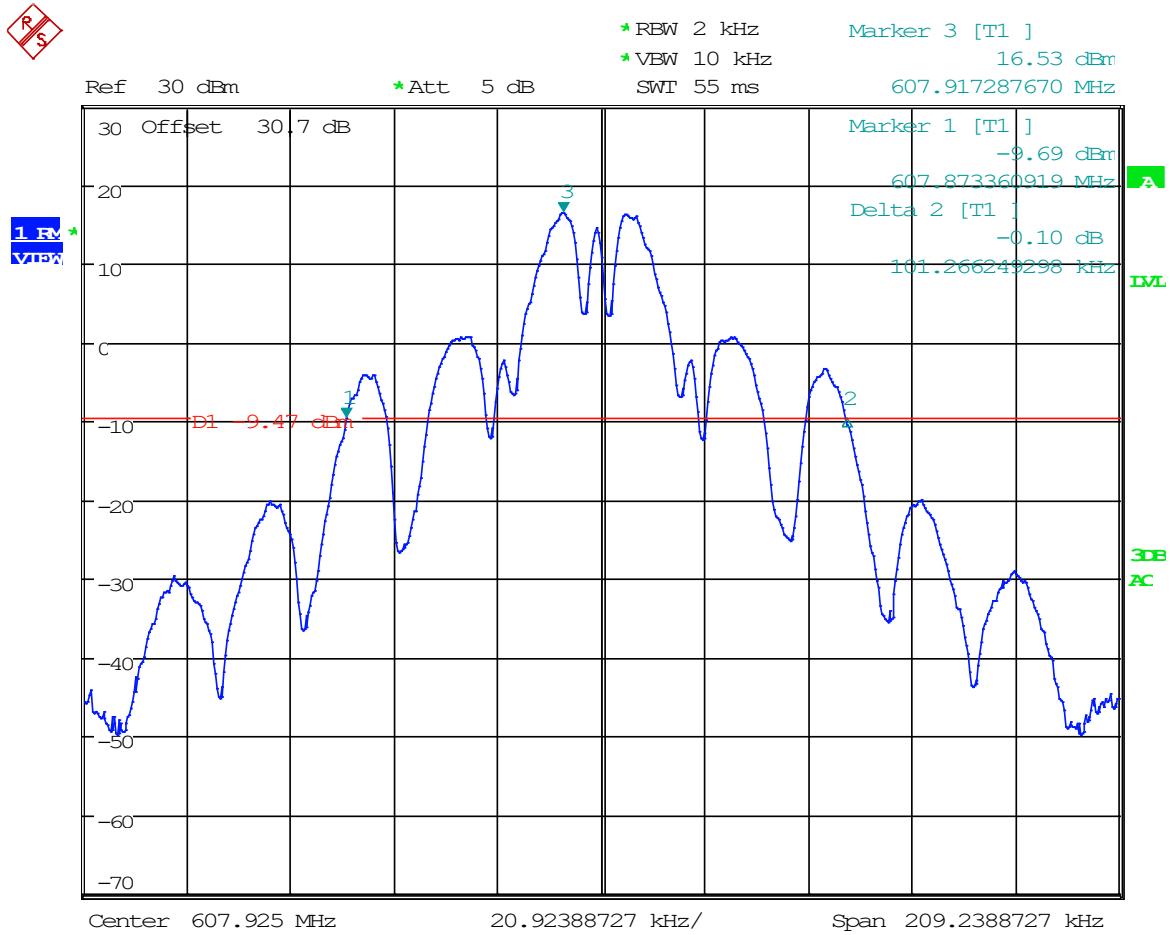
Date: 1.JUN.2023 11:48:09

8.2.20 26dB Bandwidth Plot, Mode 1, 539 MHz



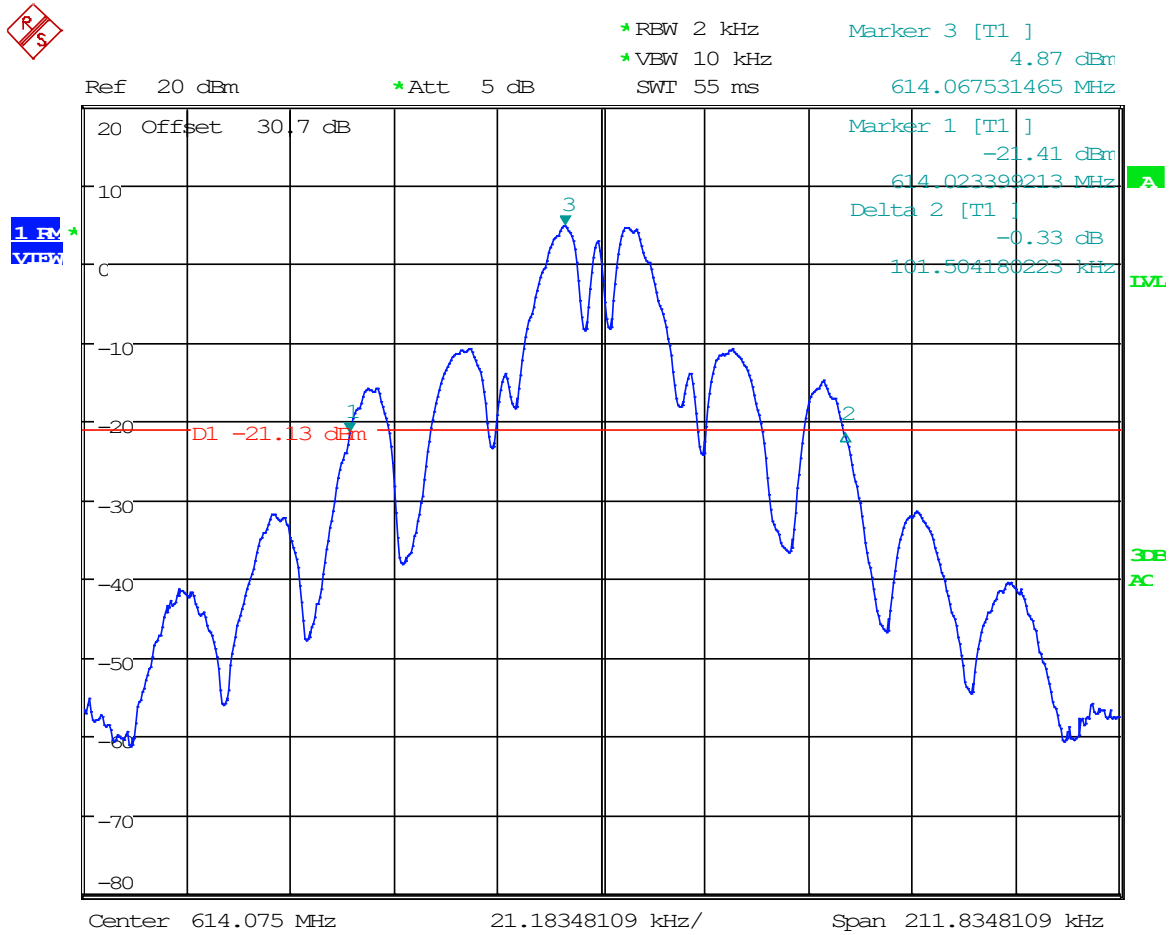
Date: 1.JUN.2023 11:51:33

8.2.21 26dB Bandwidth Plot, Mode 1, 607.925 MHz



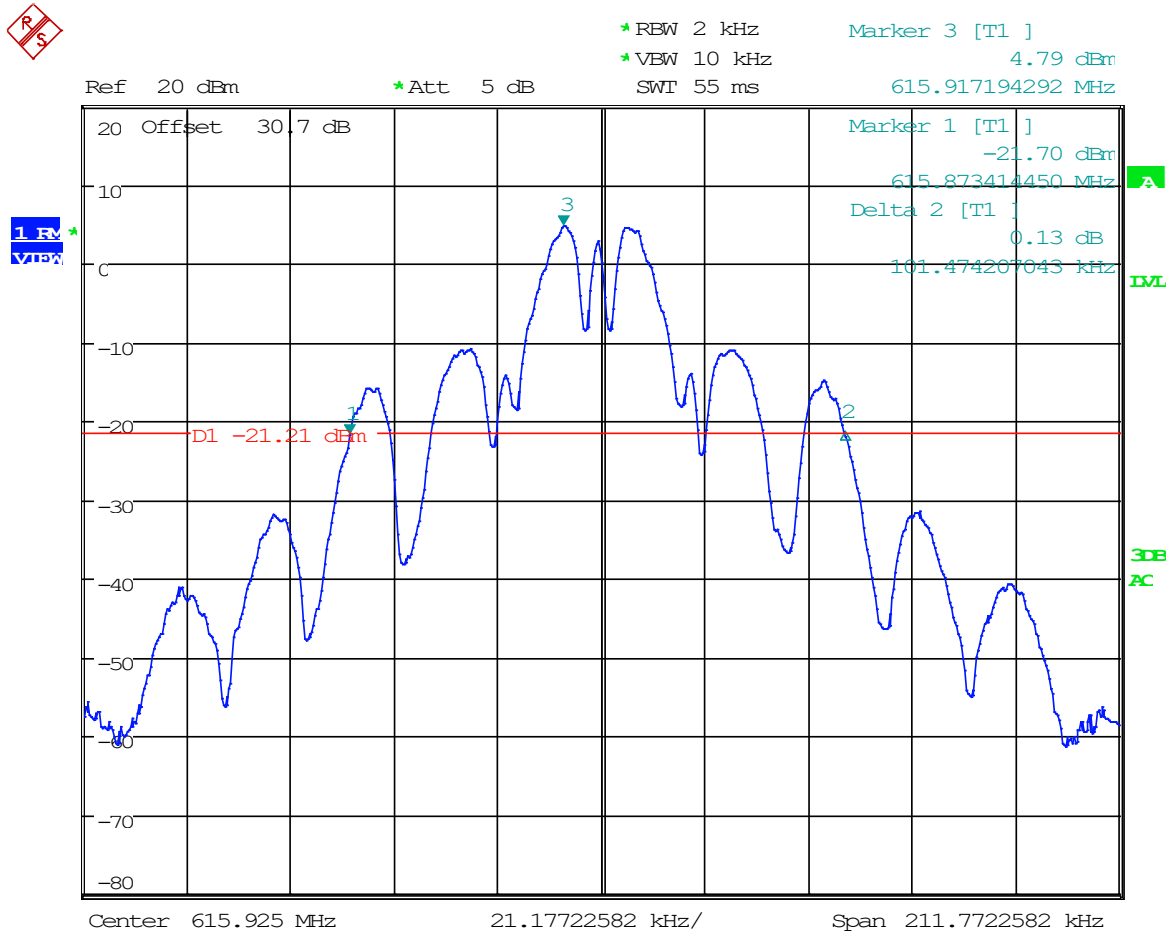
Date: 1.JUN.2023 11:53:38

8.2.22 26dB Bandwidth Plot, Mode 1, 614.075 MHz



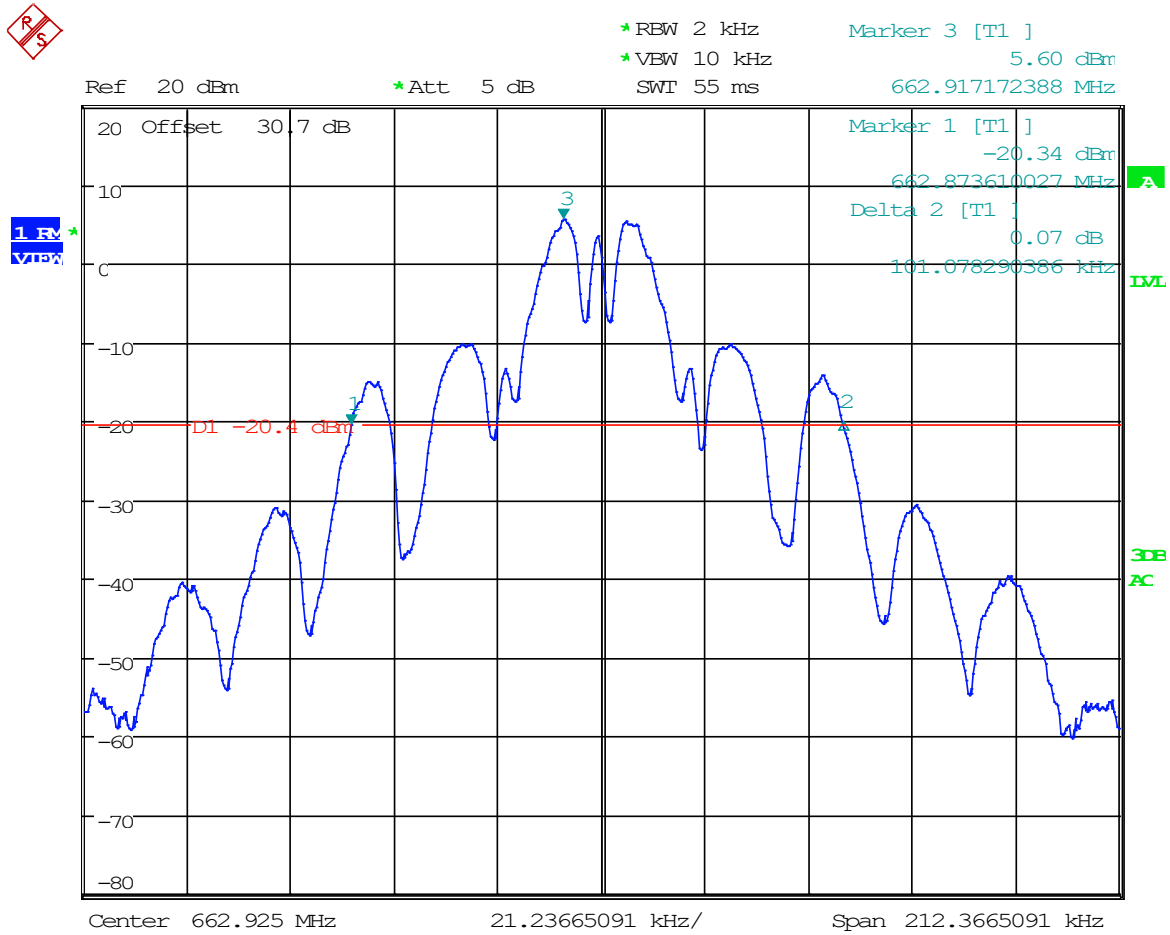
Date: 1.JUN.2023 11:55:52

8.2.23 26dB Bandwidth Plot, Mode 1, 615.925 MHz



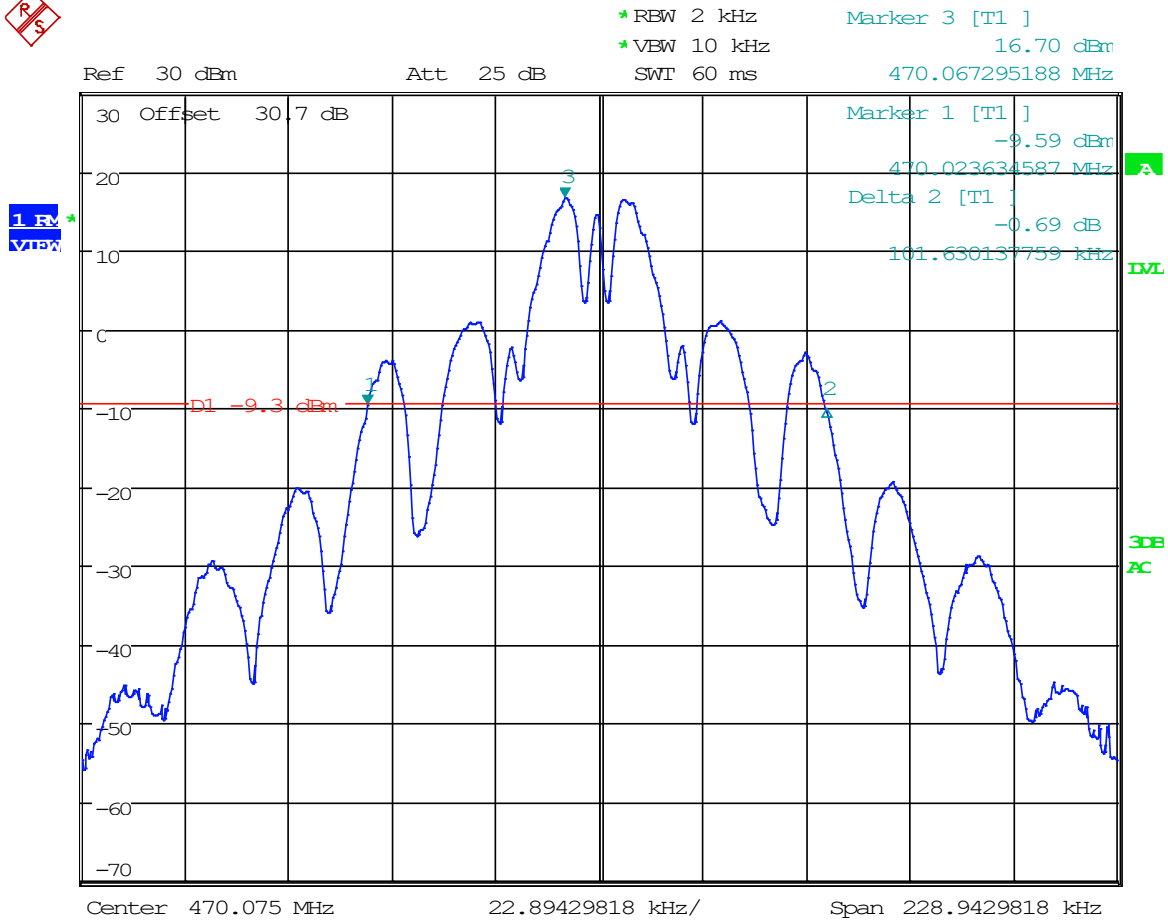
Date: 1.JUN.2023 11:58:10

8.2.24 26dB Bandwidth Plot, Mode 1, 662.925 MHz



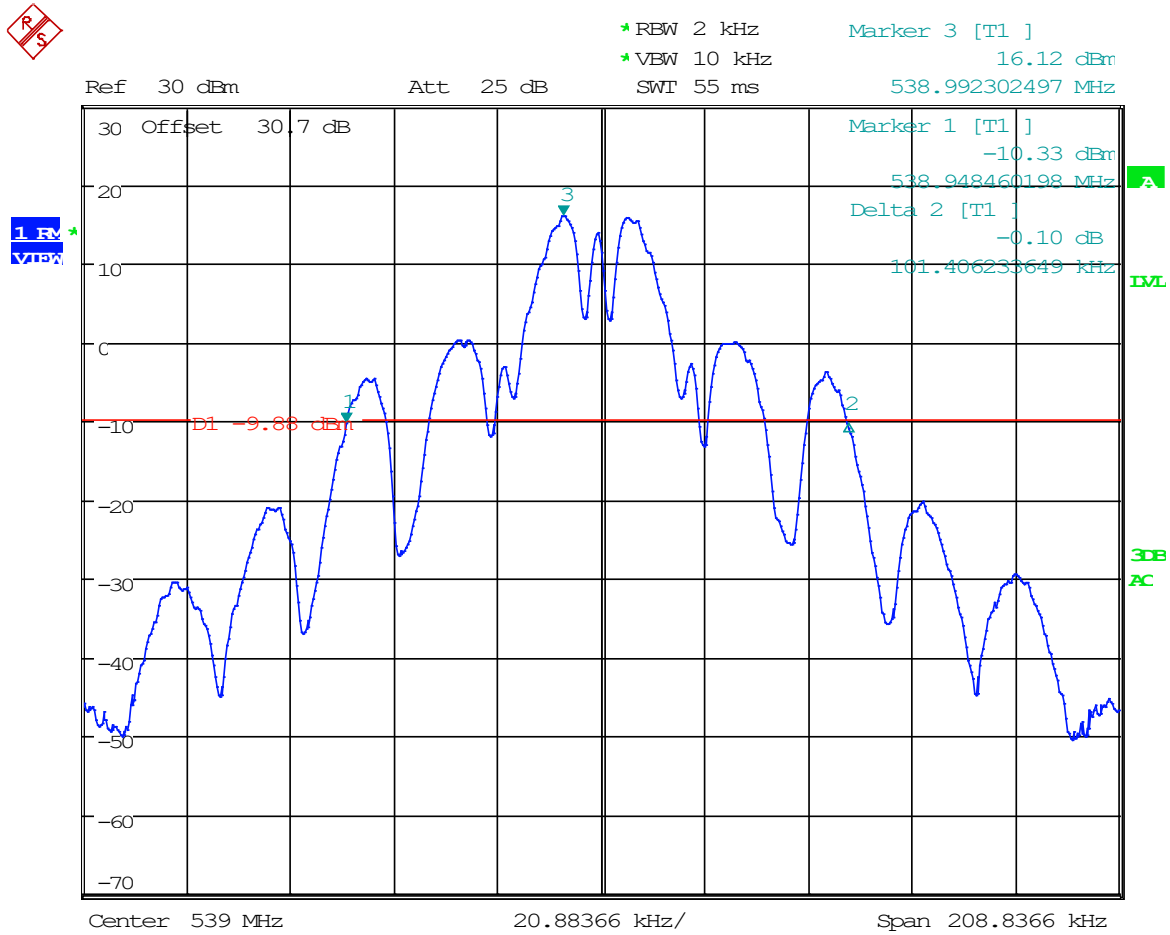
Date: 1.JUN.2023 12:01:58

8.2.25 26dB Bandwidth Plot, Mode 2, 470.075 MHz



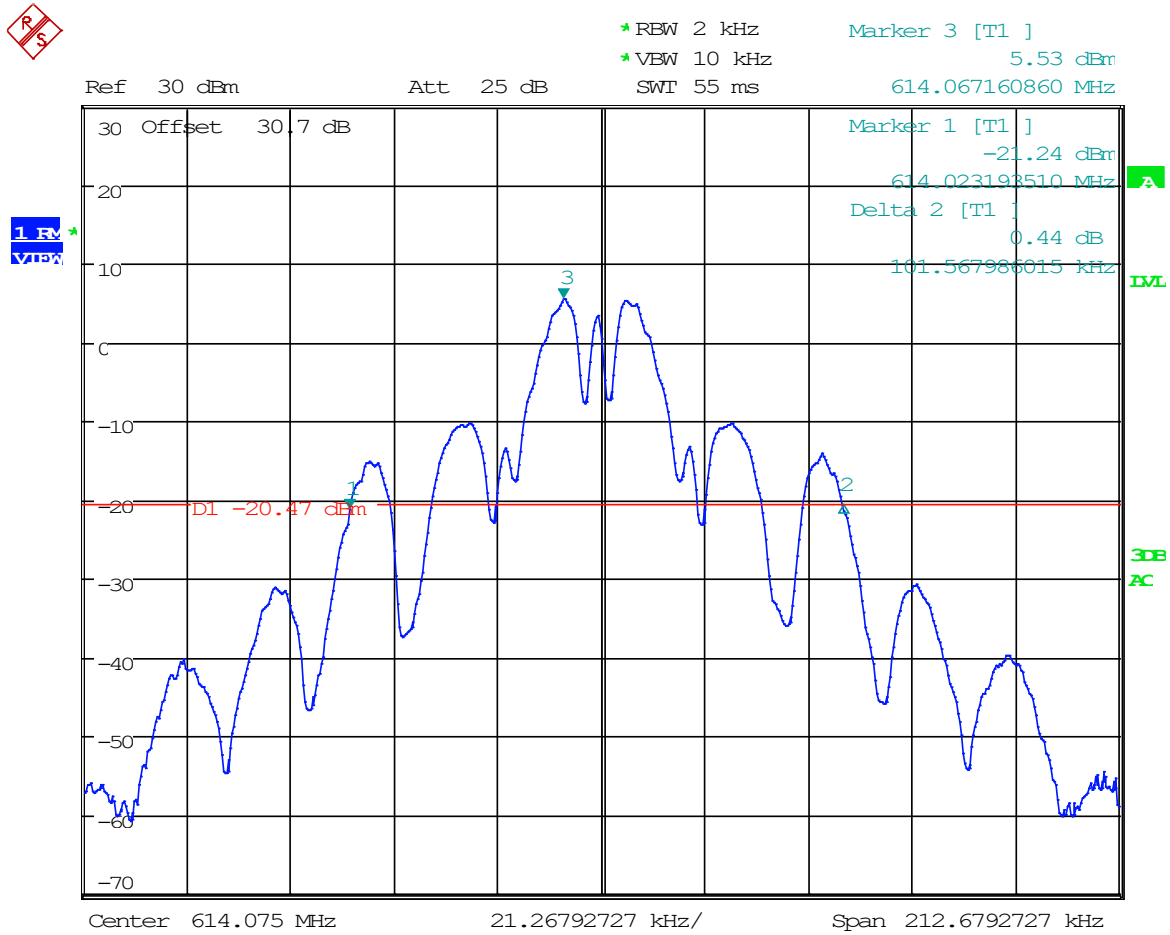
Date: 1.JUN.2023 13:39:54

8.2.26 26dB Bandwidth Plot, Mode 2, 539 MHz



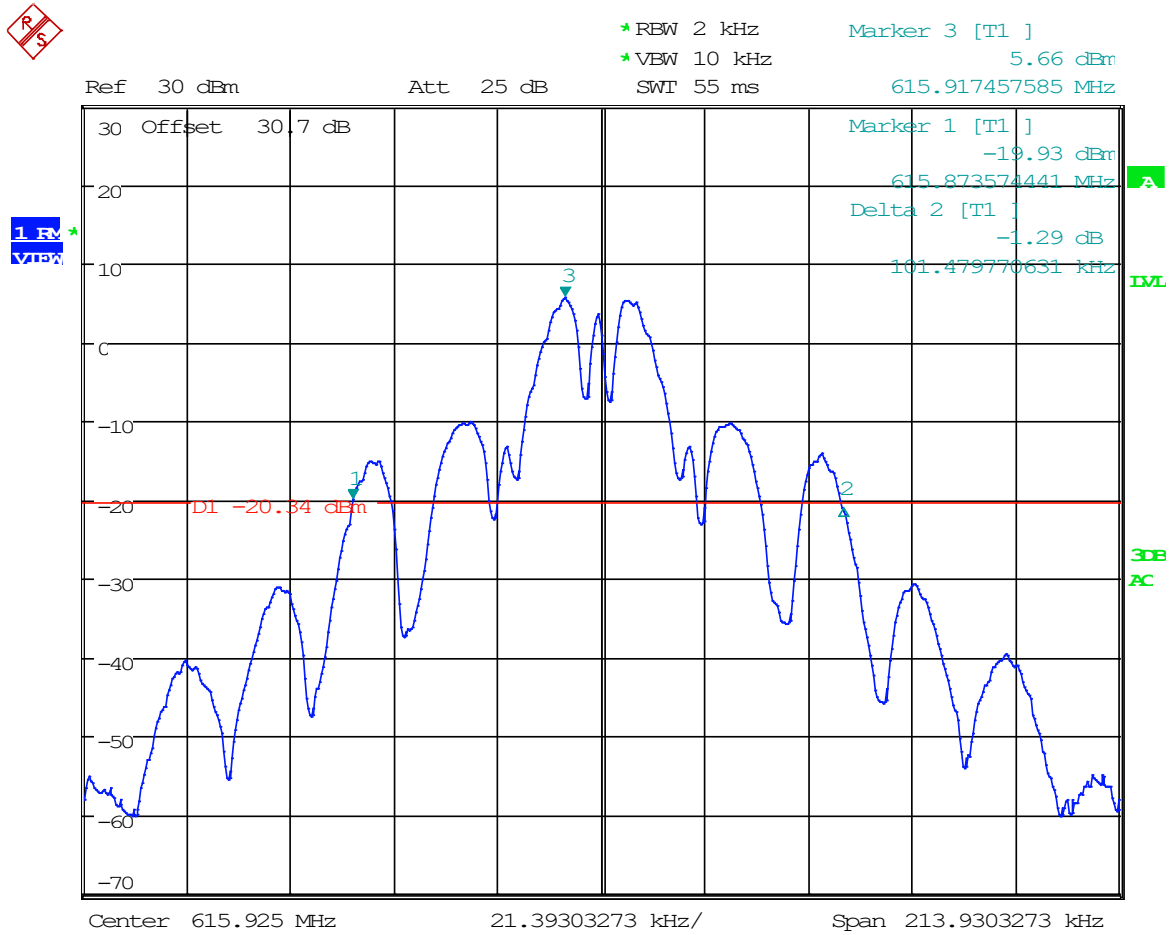
Date: 1.JUN.2023 13:42:49

8.2.28 26dB Bandwidth Plot, Mode 2, 614.075 MHz



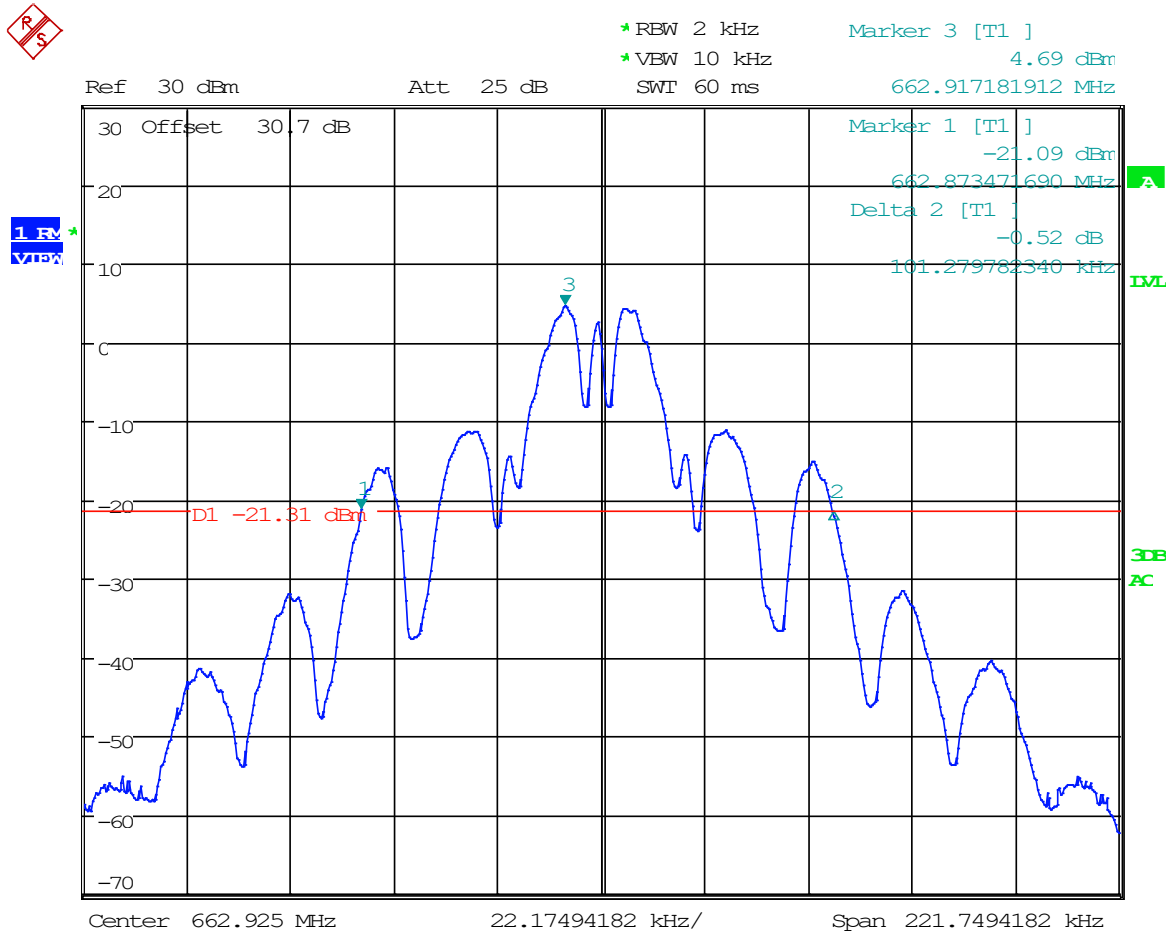
Date: 1.JUN.2023 13:48:38

8.2.29 26dB Bandwidth Plot, Mode 2, 615.925 MHz



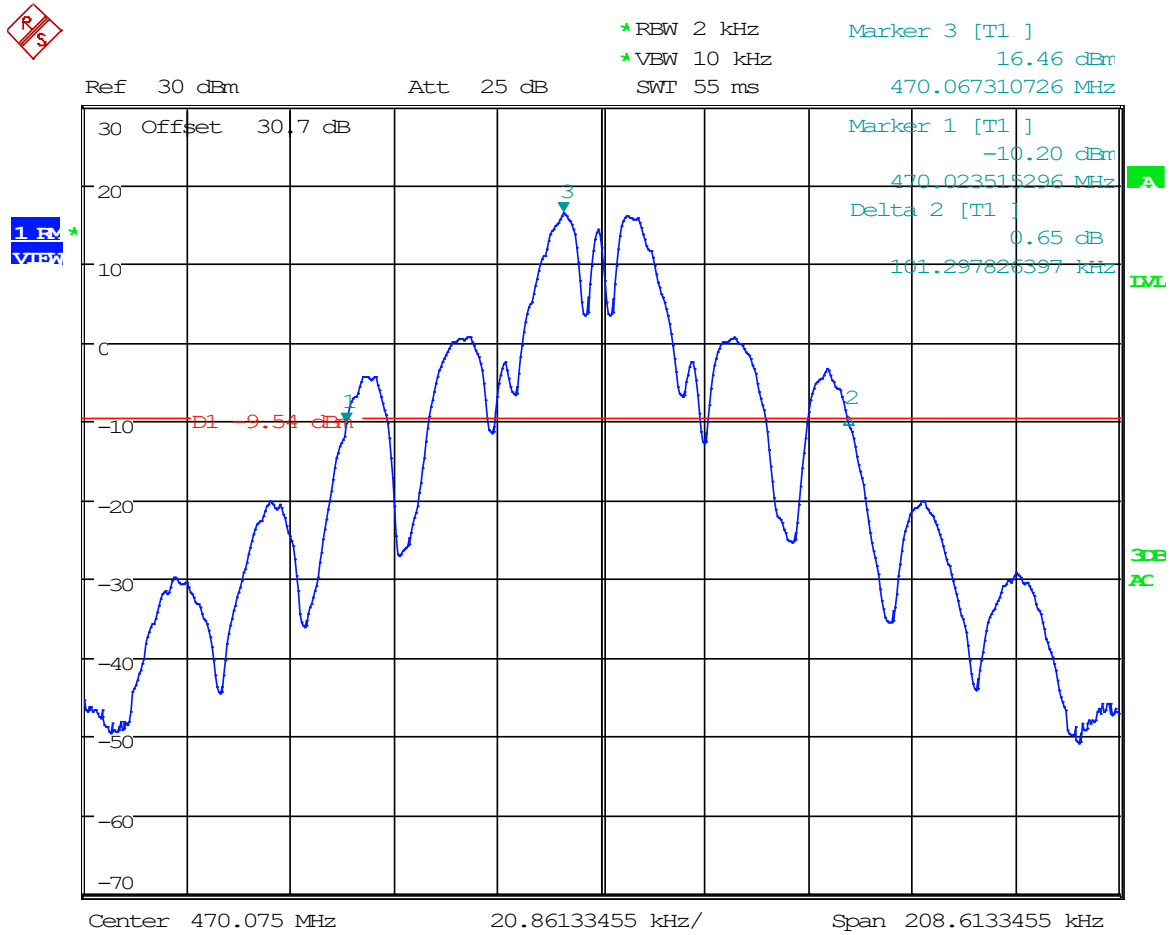
Date: 1.JUN.2023 13:52:39

8.2.30 26dB Bandwidth Plot, Mode 2, 662.925 MHz



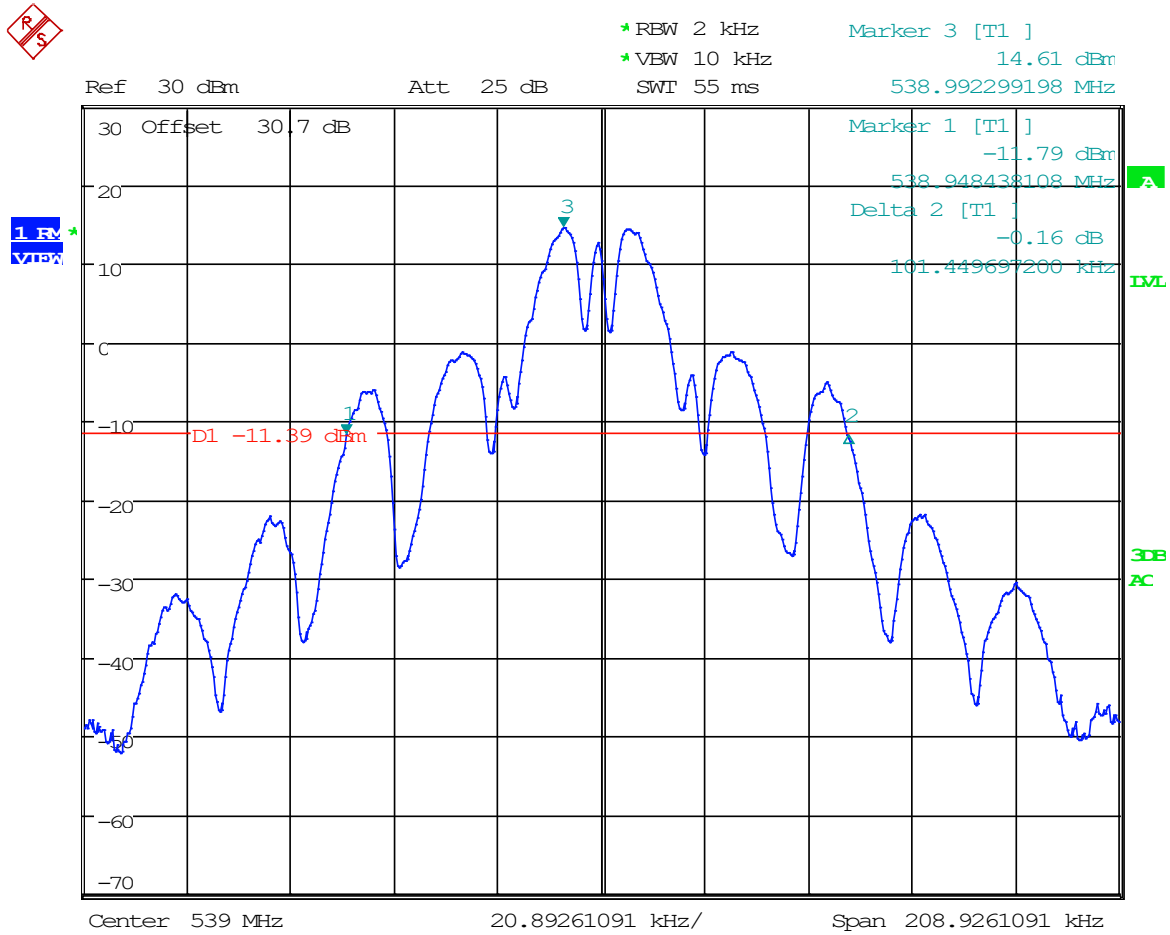
Date: 1.JUN.2023 13:57:10

8.2.31 26dB Bandwidth Plot, Mode 3, 470.075 MHz



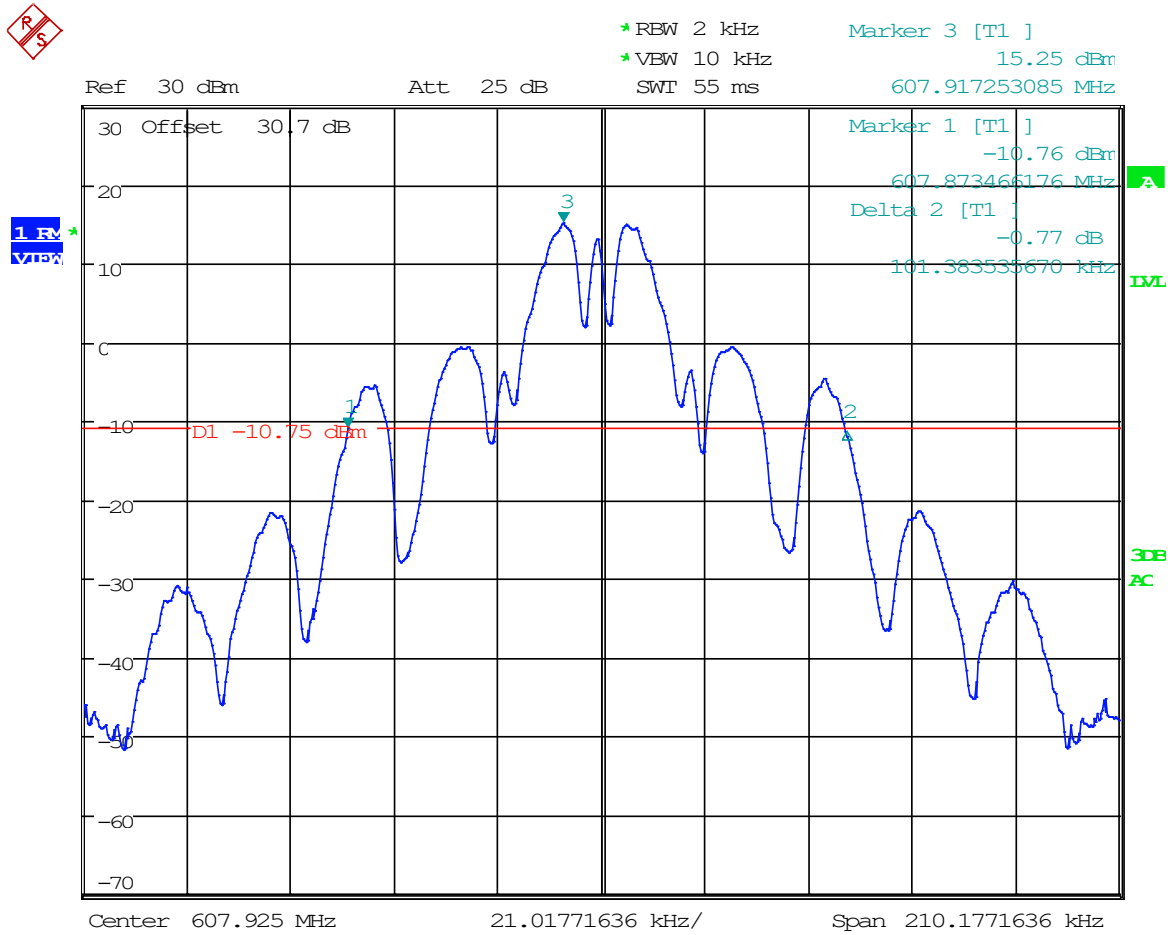
Date: 1.JUN.2023 15:01:46

8.2.32 26dB Bandwidth Plot, Mode 3, 539 MHz



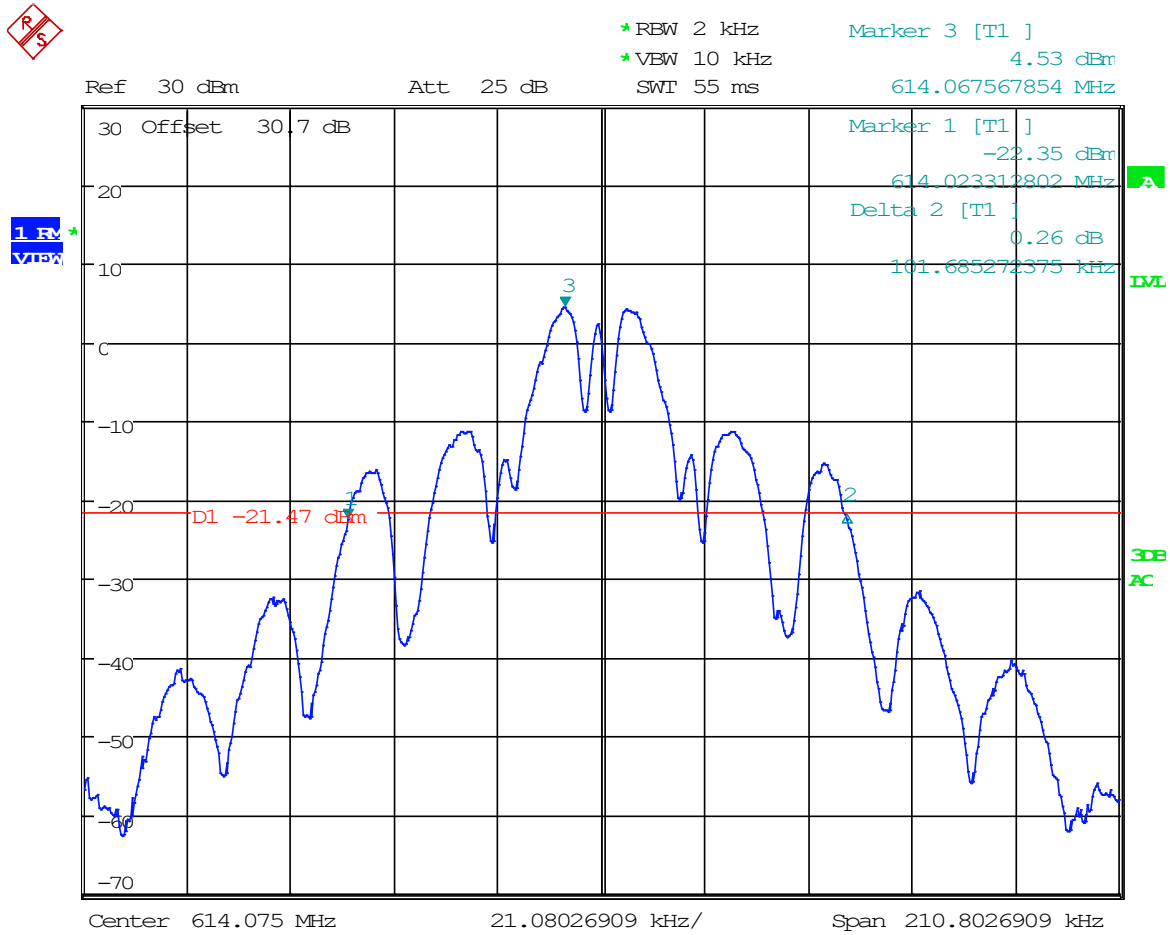
Date: 1.JUN.2023 15:04:01

8.2.33 26dB Bandwidth Plot, Mode 3, 607.925 MHz



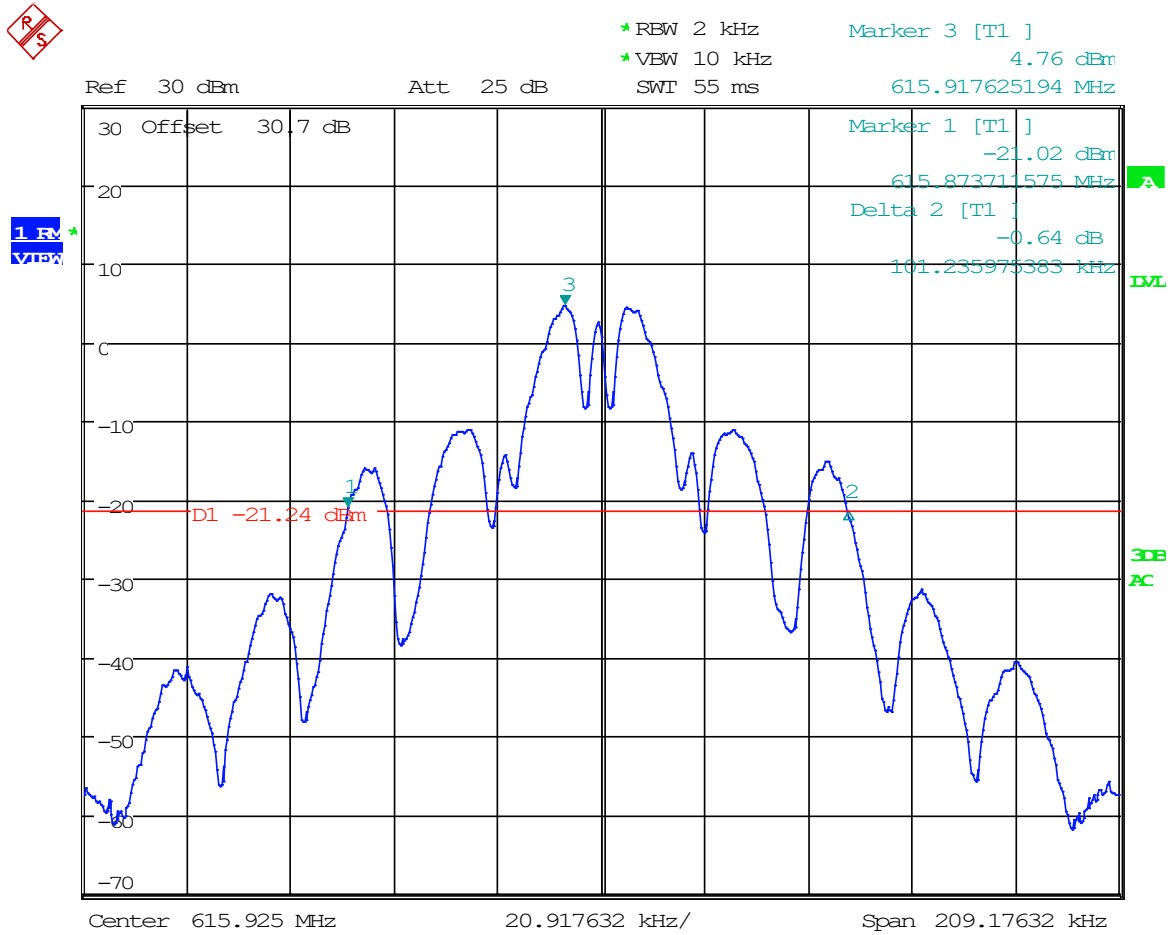
Date: 1.JUN.2023 15:08:12

8.2.34 26dB Bandwidth Plot, Mode 3, 614.075 MHz



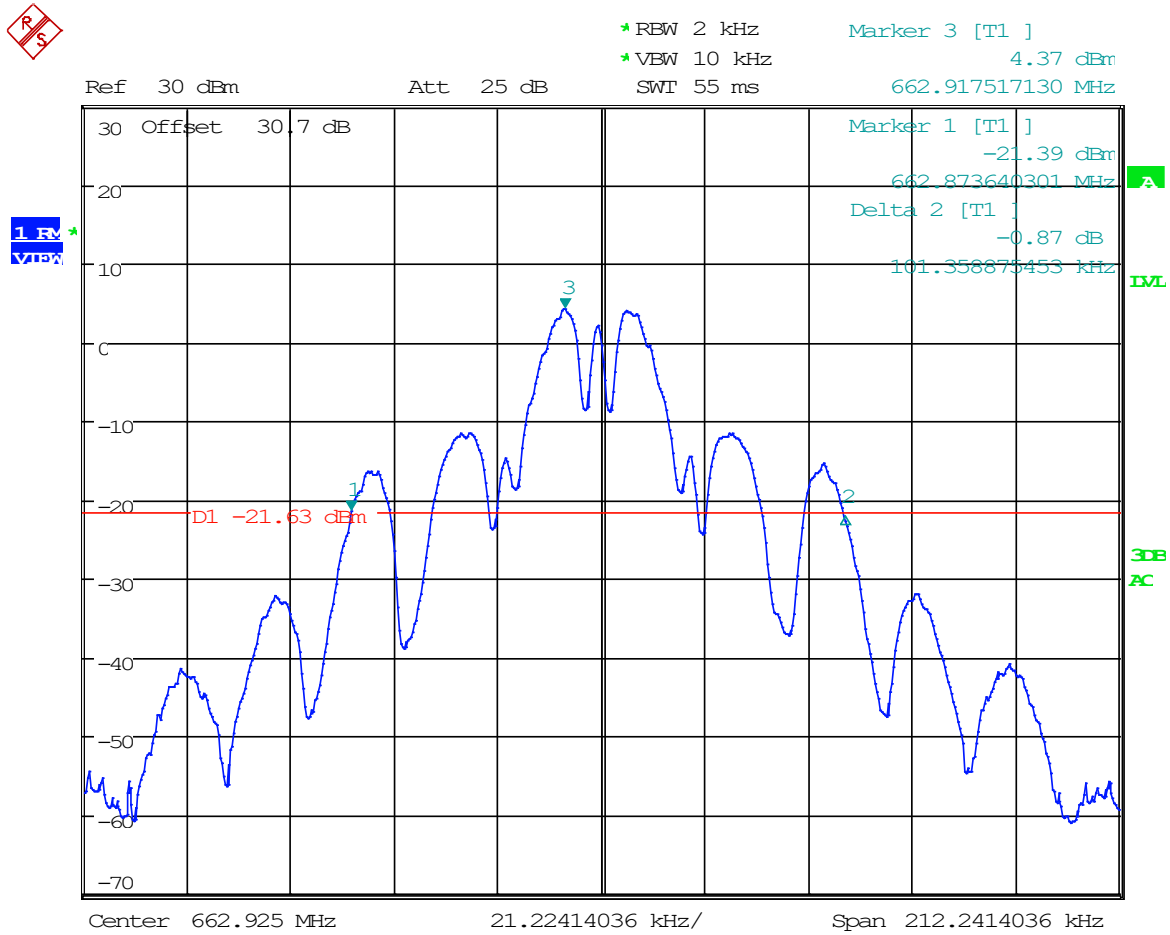
Date: 1.JUN.2023 15:10:32

8.2.35 26dB Bandwidth Plot, Mode 3, 615.925 MHz



Date: 1.JUN.2023 15:12:27

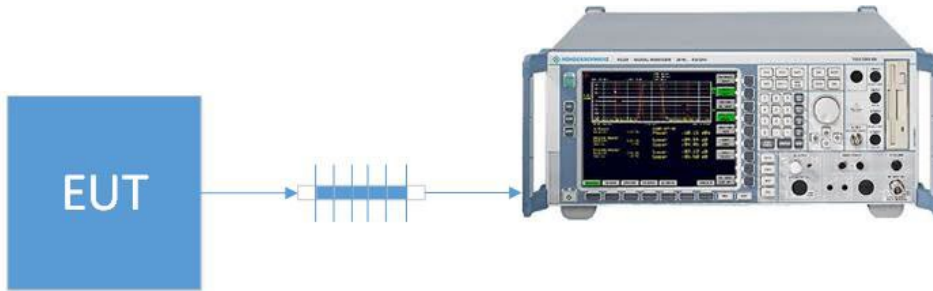
8.2.36 26dB Bandwidth Plot, Mode 3, 662.925 MHz



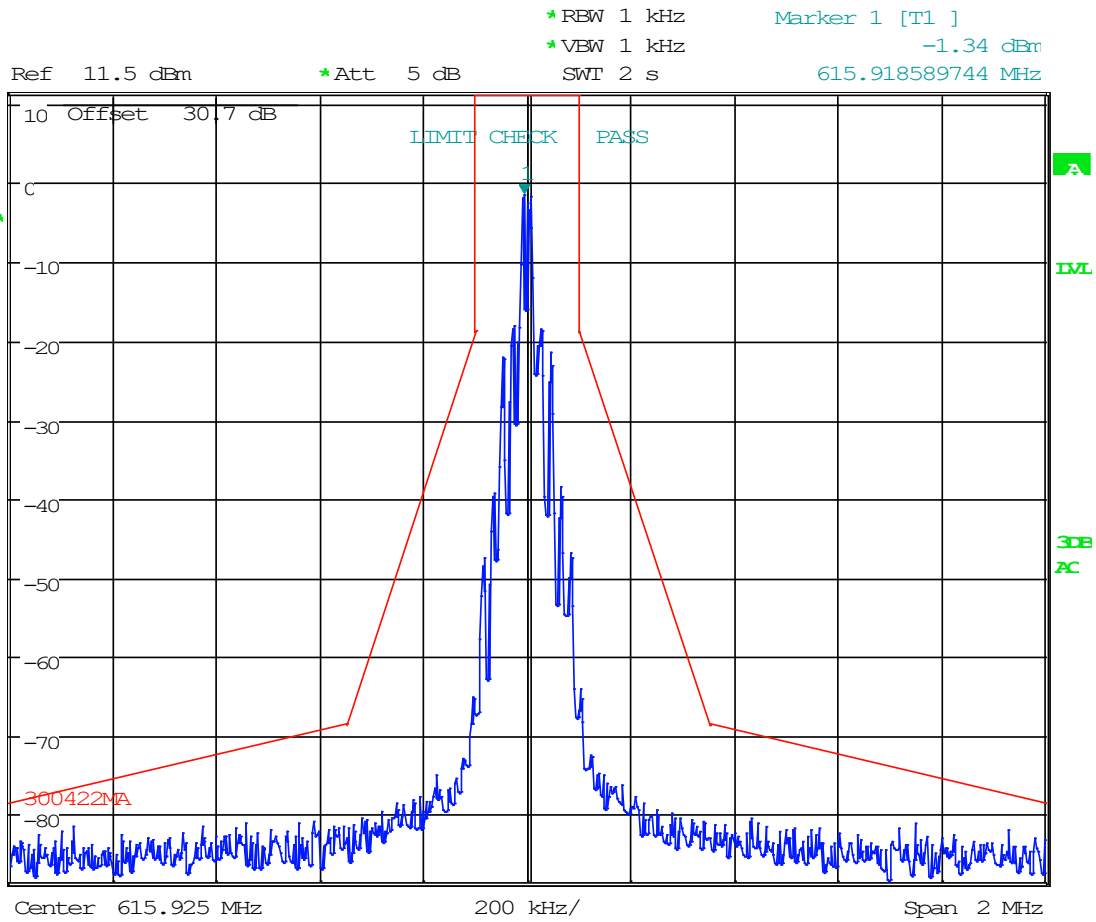
Date: 1.JUN.2023 15:16:32

8.3 OCCUPIED BANDWIDTH (Mask)

Limits from Part FCC Part 15.236 (g) and test procedure from ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification.

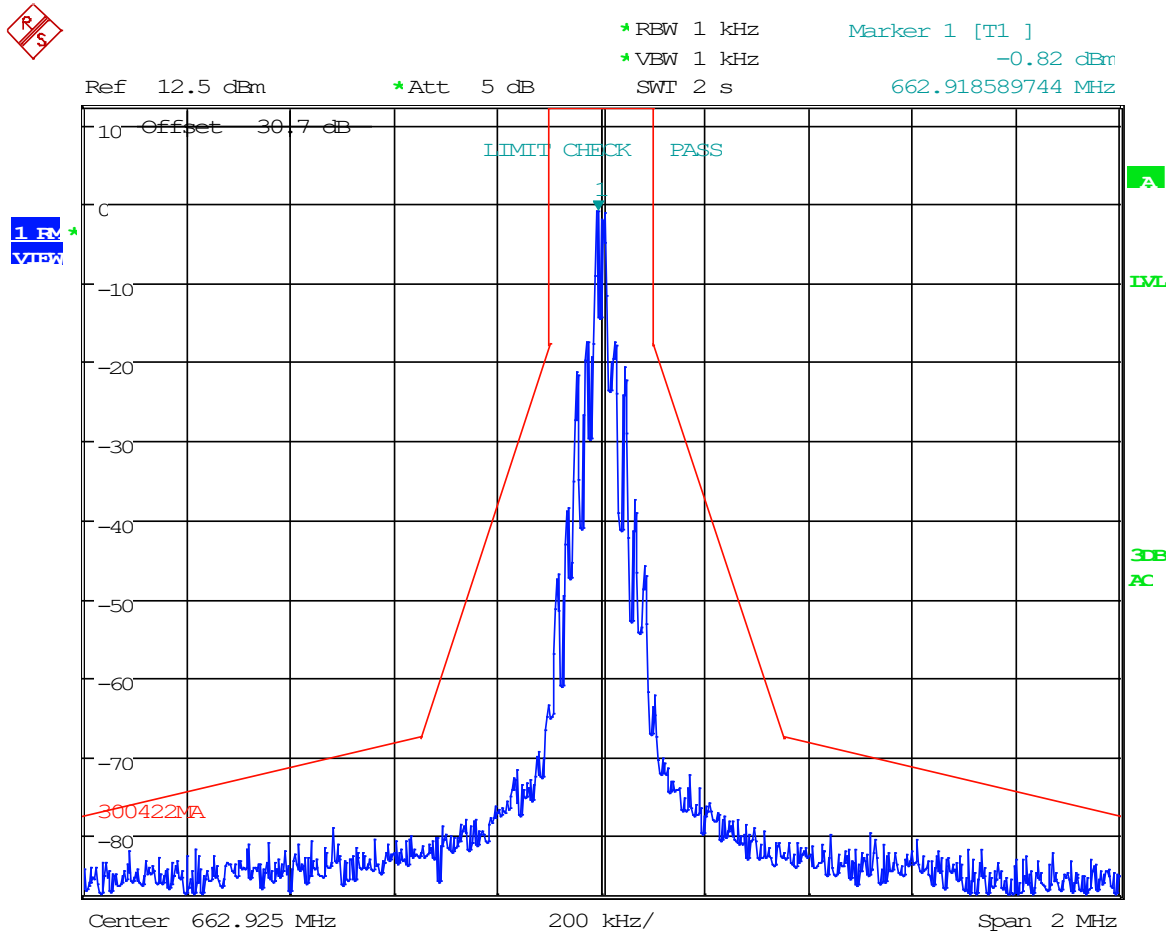


8.3.5 Emission Mask Plot, 300 422, Mode 1, 615.925 MHz



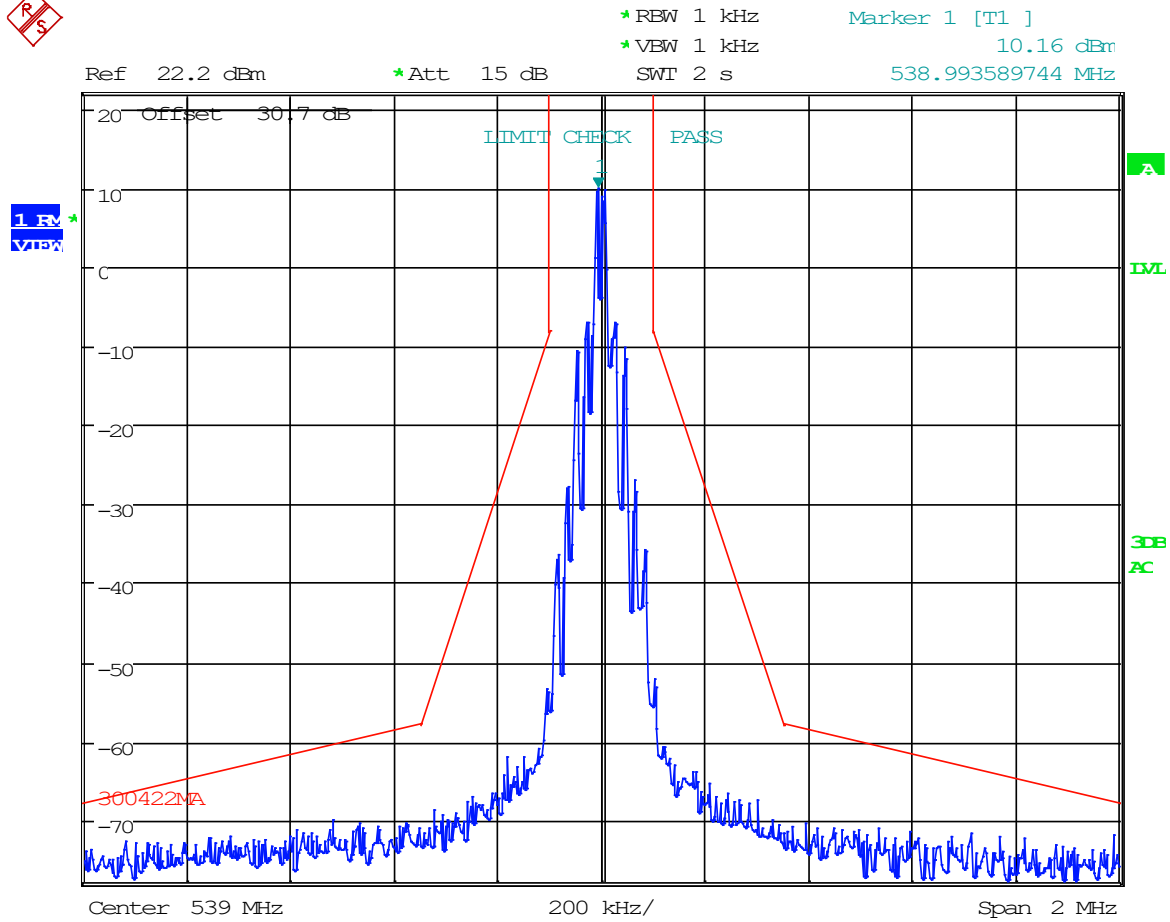
Date: 1.JUN.2023 11:21:31

8.3.6 Emission Mask Plot, 300 422, Mode 1, 662.925 MHz



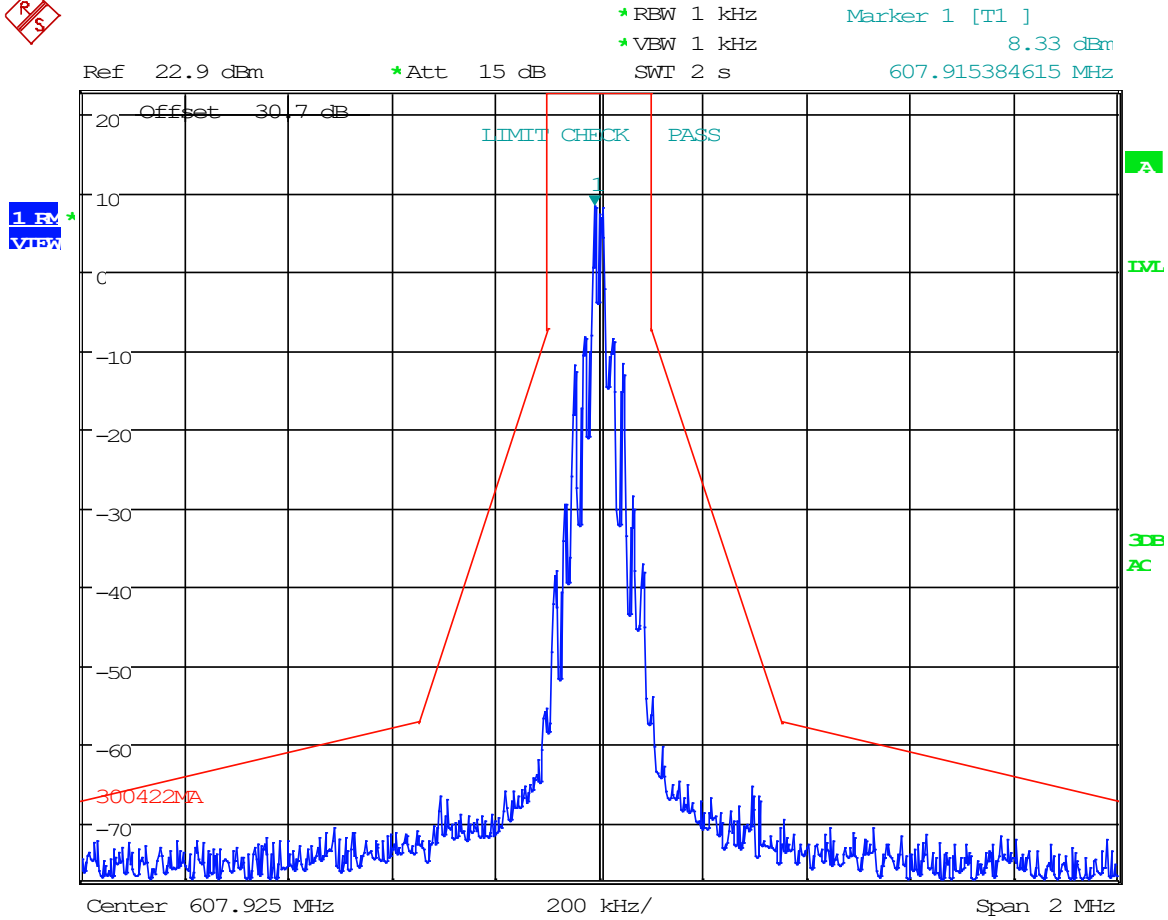
Date: 1.JUN.2023 11:23:43

8.3.8 Emission Mask Plot, 300 422, Mode 2, 539 MHz



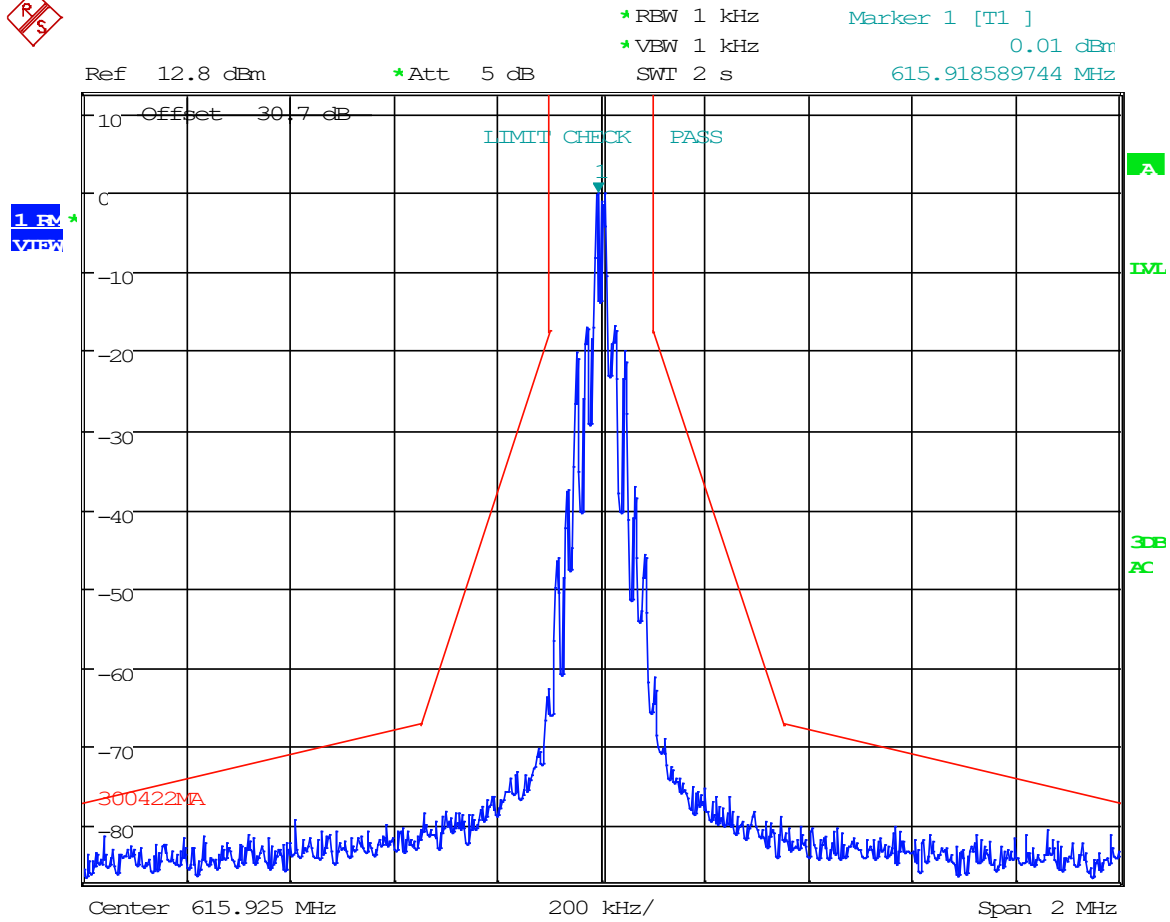
Date: 1.JUN.2023 14:04:26

8.3.9 Emission Mask Plot, 300 422, Mode 2, 607.925 MHz



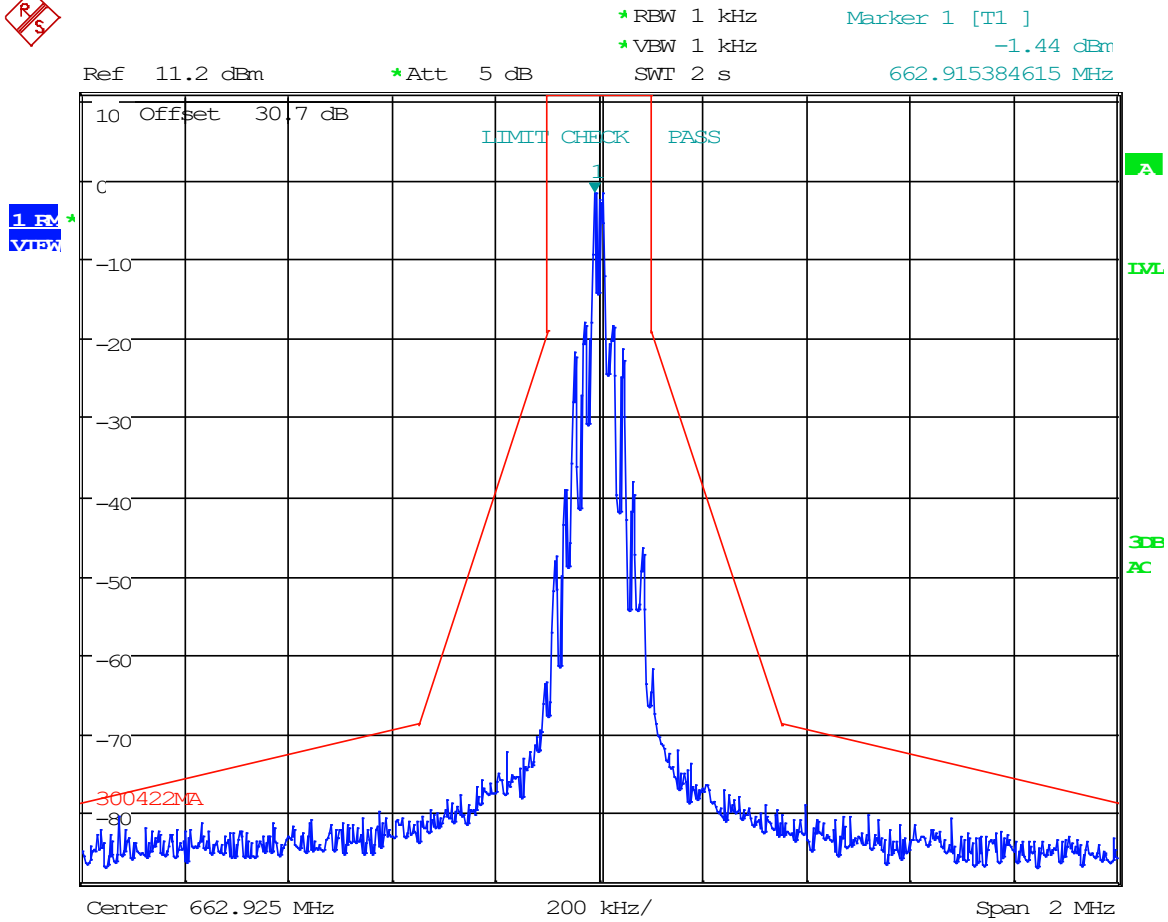
Date: 1.JUN.2023 14:06:09

8.3.11 Emission Mask Plot, 300 422, Mode 2, 615.925 MHz



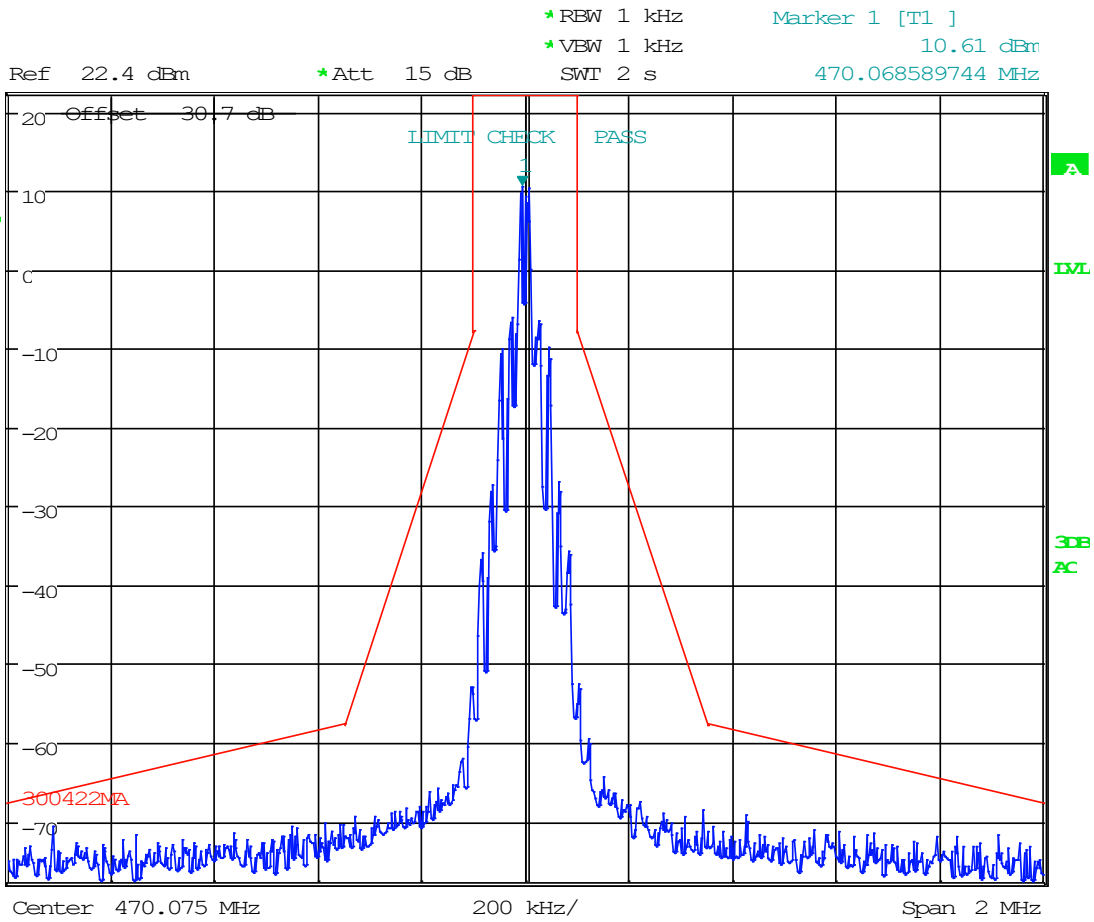
Date: 1.JUN.2023 14:08:15

8.3.12 Emission Mask Plot, 300 422, Mode 2, 662.925 MHz



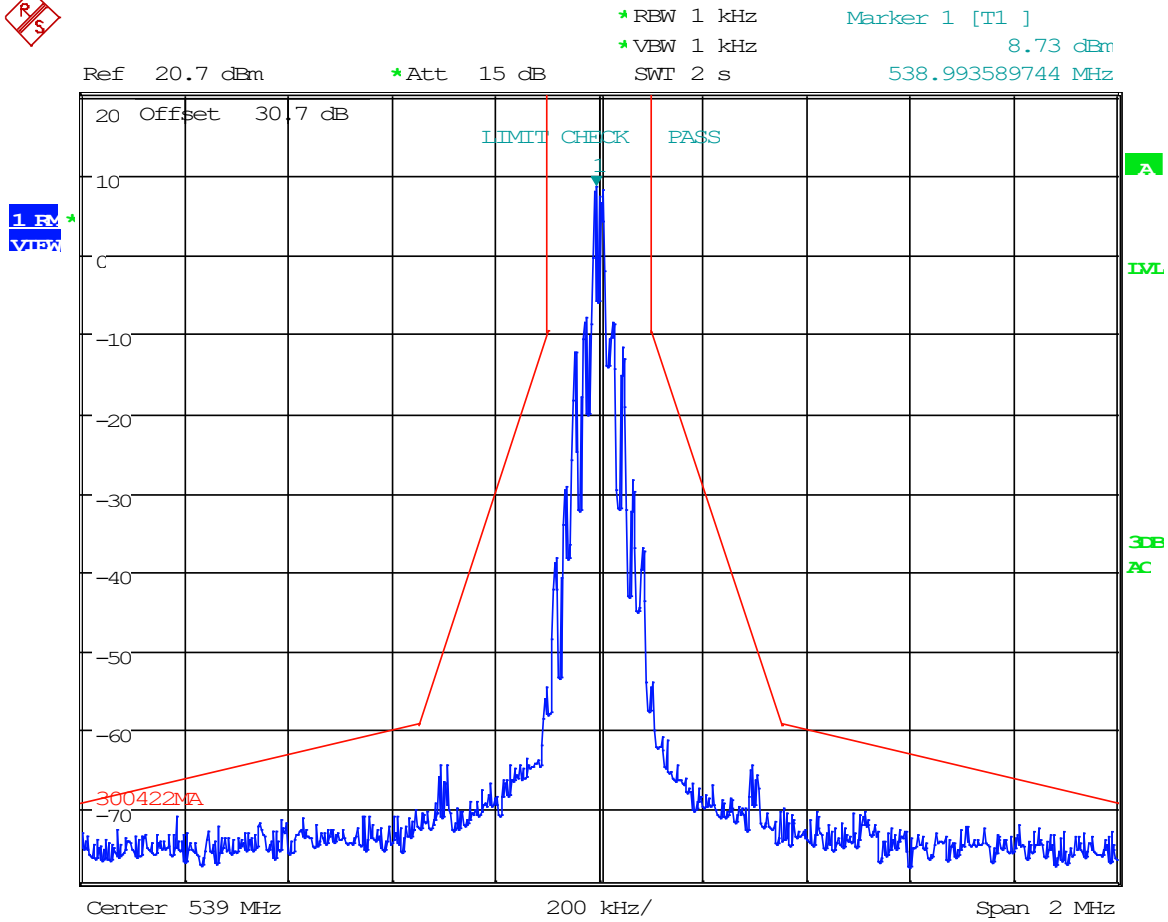
Date: 1.JUN.2023 14:09:47

8.3.13 Emission Mask Plot, 300 422, Mode 3, 470.075 MHz



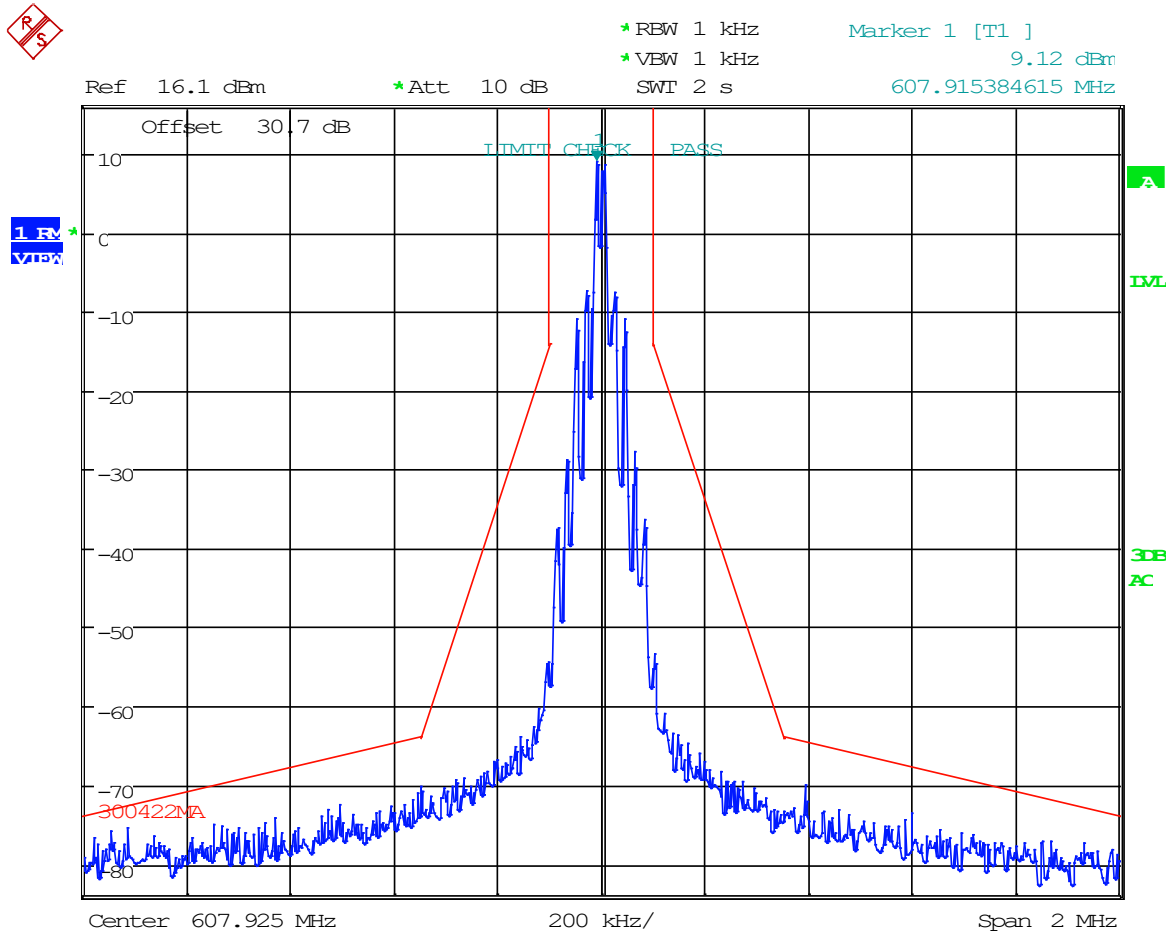
Date: 1.JUN.2023 15:21:09

8.3.14 Emission Mask Plot, 300 422, Mode 3, 539 MHz



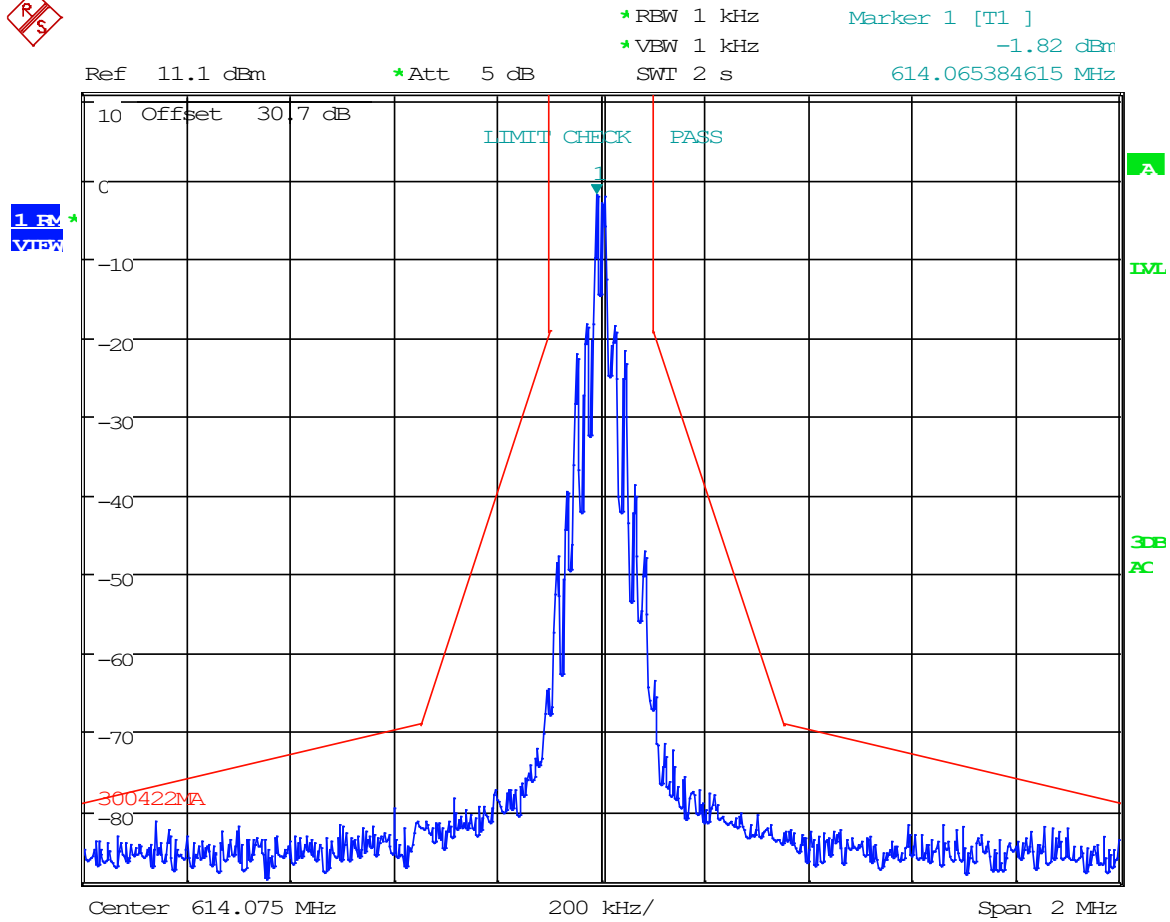
Date: 1.JUN.2023 15:23:58

8.3.15 Emission Mask Plot, 300 422, Mode 3, 607.925 MHz



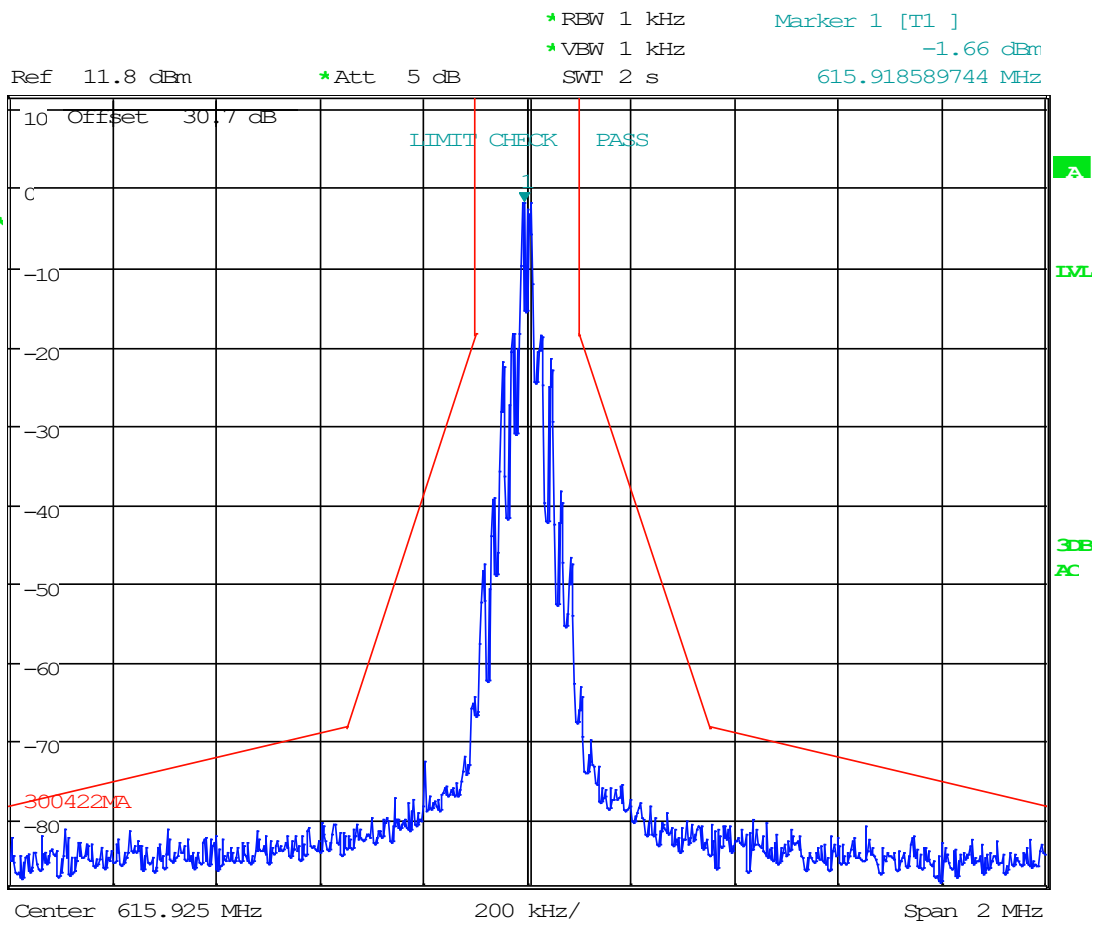
Date: 1.JUN.2023 15:31:13

8.3.16 Emission Mask Plot, 300 422, Mode 3, 614.075 MHz



Date: 1.JUN.2023 15:34:03

8.3.17 Emission Mask Plot, 300 422, Mode 3, 615.925 MHz

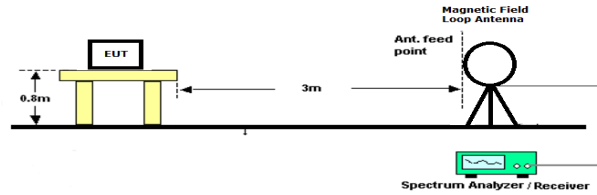


Date: 1.JUN.2023 15:35:15

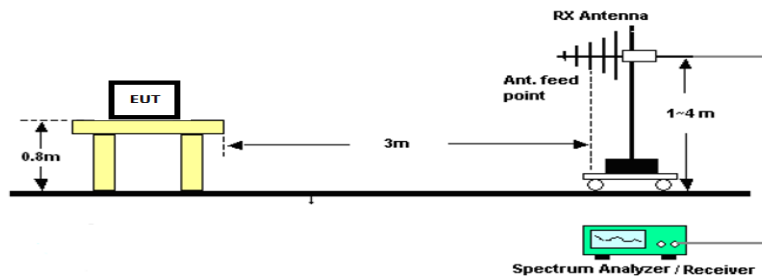
8.4 Radiated Emissions

Limits from FCC Part 15.236 (g) and test procedure from ANSI C63.10 and KDB 206256 D01 Wireless Microphone Certification.

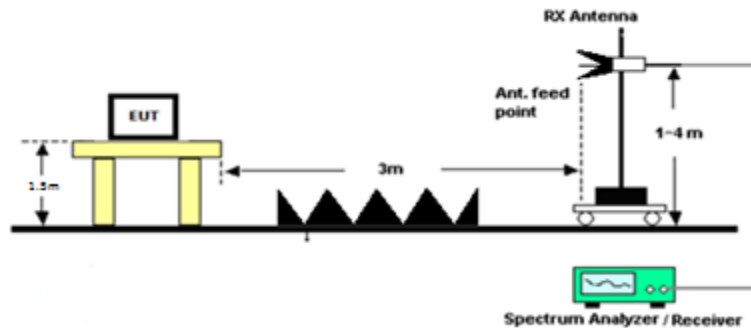
Radiated Test Setup, Below 30 MHz



Radiated Test Setup, 30 – 1000 MHz



Radiated Test Setup, Above 1000 MHz





Radiated Emissions Tabular Data

8.4.1 Radiated Emissions, 470.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
470.08	940.15	PK	25.60	H	-3.59	22.60	3.00	44.61	-52.77	-36.00	16.77
470.08	940.15	PK	27.20	V	-3.59	22.60	3.00	46.21	-51.17	-36.00	15.17
470.08	1410.23	PK	12.70	H	-4.38	21.28	3.00	29.60	-67.78	-30.00	37.78
470.08	1410.23	PK	16.30	V	-4.38	21.28	3.00	33.20	-64.18	-30.00	34.18
470.08	1880.30	PK	11.20	H	-5.11	23.96	3.00	30.05	-67.32	-30.00	37.32
470.08	1880.30	PK	12.10	V	-5.11	23.96	3.00	30.95	-66.42	-30.00	36.42
470.08	2350.38	PK	12.70	H	-5.81	26.65	3.00	33.54	-63.83	-30.00	33.83
470.08	2350.38	PK	14.10	V	-5.81	26.65	3.00	34.94	-62.43	-30.00	32.43
470.08	2820.45	PK	12.20	H	-6.33	29.34	3.00	35.21	-62.17	-30.00	32.17
470.08	2820.45	PK	12.90	V	-6.33	29.34	3.00	35.91	-61.47	-30.00	31.47
470.08	3290.53	PK	14.30	H	-6.83	32.03	3.00	39.49	-57.89	-30.00	27.89
470.08	3290.53	PK	14.10	V	-6.83	32.03	3.00	39.29	-58.09	-30.00	28.09
470.08	3760.60	PK	15.10	H	-7.29	33.13	3.00	40.93	-56.44	-30.00	26.44
470.08	3760.60	PK	15.00	V	-7.29	33.13	3.00	40.83	-56.54	-30.00	26.54
470.08	4230.68	PK	13.90	H	-7.77	33.33	3.00	39.46	-57.92	-30.00	27.92
470.08	4230.68	PK	13.50	V	-7.77	33.33	3.00	39.06	-58.32	-30.00	28.32
470.08	4700.75	PK	14.10	H	-8.19	33.88	3.00	39.78	-57.59	-30.00	27.59
470.08	4700.75	PK	14.60	V	-8.19	33.88	3.00	40.28	-57.09	-30.00	27.09



8.4.2 Radiated Emissions, 539 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
539.00	1078.00	PK	40.60	H	-3.90	19.38	3.00	56.08	-41.30	-30.00	11.30
539.00	1078.00	PK	45.60	V	-3.90	19.38	3.00	61.08	-36.30	-30.00	6.30
539.00	1617.00	PK	20.90	H	-4.75	22.46	3.00	38.61	-58.77	-30.00	28.77
539.00	1617.00	PK	25.90	V	-4.75	22.46	3.00	43.61	-53.77	-30.00	23.77
539.00	2156.00	PK	16.80	H	-5.58	25.54	3.00	36.76	-60.62	-30.00	30.62
539.00	2156.00	PK	19.30	V	-5.58	25.54	3.00	39.26	-58.12	-30.00	28.12
539.00	2695.00	PK	16.70	H	-6.19	28.62	3.00	39.14	-58.24	-30.00	28.24
539.00	2695.00	PK	21.90	V	-6.19	28.62	3.00	44.34	-53.04	-30.00	23.04
539.00	3234.00	PK	14.50	H	-6.80	31.70	3.00	39.40	-57.98	-30.00	27.98
539.00	3234.00	PK	17.40	V	-6.80	31.70	3.00	42.30	-55.08	-30.00	25.08
539.00	3773.00	PK	16.00	H	-7.31	33.13	3.00	41.83	-55.55	-30.00	25.55
539.00	3773.00	PK	16.80	V	-7.31	33.13	3.00	42.63	-54.75	-30.00	24.75
539.00	4312.00	PK	20.30	H	-7.84	33.49	3.00	45.94	-51.43	-30.00	21.43
539.00	4312.00	PK	20.90	V	-7.84	33.49	3.00	46.54	-50.83	-30.00	20.83
539.00	4851.00	PK	14.40	H	-8.30	33.94	3.00	40.04	-57.33	-30.00	27.33
539.00	4851.00	PK	14.90	V	-8.30	33.94	3.00	40.54	-56.83	-30.00	26.83
539.00	5390.00	PK	18.70	H	-8.78	34.34	3.00	44.25	-53.12	-30.00	23.12
539.00	5390.00	PK	19.10	V	-8.78	34.34	3.00	44.65	-52.72	-30.00	22.72



8.4.3 Radiated Emissions, 607.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
607.93	1215.85	PK	12.20	H	-4.04	20.16	3.00	28.32	-69.06	-30.00	39.06
607.93	1215.85	PK	17.70	V	-4.04	20.16	3.00	33.82	-63.56	-30.00	33.56
607.93	1823.78	PK	17.80	H	-5.11	23.64	3.00	36.33	-61.05	-30.00	31.05
607.93	1823.78	PK	25.70	V	-5.11	23.64	3.00	44.23	-53.15	-30.00	23.15
607.93	2431.70	PK	16.90	H	-5.90	27.12	3.00	38.11	-59.26	-30.00	29.26
607.93	2431.70	PK	18.00	V	-5.90	27.12	3.00	39.21	-58.16	-30.00	28.16
607.93	3039.63	PK	13.30	H	-6.57	30.59	3.00	37.32	-60.06	-30.00	30.06
607.93	3039.63	PK	13.70	V	-6.57	30.59	3.00	37.72	-59.66	-30.00	29.66
607.93	3647.55	PK	15.50	H	-7.18	33.19	3.00	41.51	-55.86	-30.00	25.86
607.93	3647.55	PK	18.00	V	-7.18	33.19	3.00	44.01	-53.36	-30.00	23.36
607.93	4255.48	PK	15.50	H	-7.79	33.35	3.00	41.06	-56.32	-30.00	26.32
607.93	4255.48	PK	17.40	V	-7.79	33.35	3.00	42.96	-54.42	-30.00	24.42
607.93	4863.40	PK	18.40	H	-8.31	33.94	3.00	44.03	-53.35	-30.00	23.35
607.93	4863.40	PK	19.50	V	-8.31	33.94	3.00	45.13	-52.25	-30.00	22.25
607.93	5471.33	PK	15.70	H	-8.89	34.47	3.00	41.28	-56.09	-30.00	26.09
607.93	5471.33	PK	15.90	V	-8.89	34.47	3.00	41.48	-55.89	-30.00	25.89
607.93	6079.25	PK	15.30	H	-9.40	35.21	3.00	41.11	-56.27	-30.00	26.27
607.93	6079.25	PK	15.60	V	-9.40	35.21	3.00	41.41	-55.97	-30.00	25.97



8.4.4 Radiated Emissions, 614.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
614.08	1228.15	PK	10.40	H	-4.08	20.23	3.00	26.56	-70.82	-30.00	40.82
614.08	1228.15	PK	11.90	V	-4.08	20.23	3.00	28.06	-69.32	-30.00	39.32
614.08	1842.23	PK	11.20	H	-5.11	23.75	3.00	29.84	-67.54	-30.00	37.54
614.08	1842.23	PK	12.60	V	-5.11	23.75	3.00	31.24	-66.14	-30.00	36.14
614.08	2456.30	PK	12.40	H	-5.93	27.26	3.00	33.73	-63.65	-30.00	33.65
614.08	2456.30	PK	12.00	V	-5.93	27.26	3.00	33.33	-64.05	-30.00	34.05
614.08	3070.38	PK	13.40	H	-6.61	30.77	3.00	37.56	-59.82	-30.00	29.82
614.08	3070.38	PK	13.20	V	-6.61	30.77	3.00	37.36	-60.02	-30.00	30.02
614.08	3684.45	PK	14.20	H	-7.21	33.19	3.00	40.19	-57.19	-30.00	27.19
614.08	3684.45	PK	14.30	V	-7.21	33.19	3.00	40.29	-57.09	-30.00	27.09
614.08	4298.53	PK	14.00	H	-7.83	33.46	3.00	39.63	-57.75	-30.00	27.75
614.08	4298.53	PK	14.60	V	-7.83	33.46	3.00	40.23	-57.15	-30.00	27.15
614.08	4912.60	PK	14.30	H	-8.35	33.92	3.00	39.87	-57.51	-30.00	27.51
614.08	4912.60	PK	14.50	V	-8.35	33.92	3.00	40.07	-57.31	-30.00	27.31
614.08	5526.68	PK	14.50	H	-8.95	34.43	3.00	39.98	-57.40	-30.00	27.40
614.08	5526.68	PK	14.90	V	-8.95	34.43	3.00	40.38	-57.00	-30.00	27.00
614.08	6140.75	PK	15.10	H	-9.47	35.32	3.00	40.95	-56.43	-30.00	26.43
614.08	6140.75	PK	14.50	V	-9.47	35.32	3.00	40.35	-57.03	-30.00	27.03



8.4.5 Radiated Emissions, 615.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
615.93	1231.85	PK	10.30	H	-4.09	20.26	3.00	26.47	-70.91	-30.00	40.91
615.93	1231.85	PK	12.20	V	-4.09	20.26	3.00	28.37	-69.01	-30.00	39.01
615.93	1847.78	PK	11.20	H	-5.11	23.78	3.00	29.87	-67.51	-30.00	37.51
615.93	1847.78	PK	15.50	V	-5.11	23.78	3.00	34.17	-63.21	-30.00	33.21
615.93	2463.70	PK	12.20	H	-5.93	27.30	3.00	33.56	-63.81	-30.00	33.81
615.93	2463.70	PK	12.50	V	-5.93	27.30	3.00	33.86	-63.51	-30.00	33.51
615.93	3079.63	PK	13.30	H	-6.62	30.82	3.00	37.50	-59.88	-30.00	29.88
615.93	3079.63	PK	13.80	V	-6.62	30.82	3.00	38.00	-59.38	-30.00	29.38
615.93	3695.55	PK	14.50	H	-7.22	33.19	3.00	40.48	-56.90	-30.00	26.90
615.93	3695.55	PK	14.00	V	-7.22	33.19	3.00	39.98	-57.40	-30.00	27.40
615.93	4311.48	PK	13.50	H	-7.84	33.49	3.00	39.14	-58.24	-30.00	28.24
615.93	4311.48	PK	14.20	V	-7.84	33.49	3.00	39.84	-57.54	-30.00	27.54
615.93	4927.40	PK	14.10	H	-8.37	33.93	3.00	39.66	-57.71	-30.00	27.71
615.93	4927.40	PK	13.90	V	-8.37	33.93	3.00	39.46	-57.91	-30.00	27.91
615.93	5543.33	PK	14.60	H	-8.96	34.41	3.00	40.05	-57.33	-30.00	27.33
615.93	5543.33	PK	15.50	V	-8.96	34.41	3.00	40.95	-56.43	-30.00	26.43
615.93	6159.25	PK	14.90	H	-9.50	35.34	3.00	40.74	-56.64	-30.00	26.64
615.93	6159.25	PK	14.60	V	-9.50	35.34	3.00	40.44	-56.94	-30.00	26.94



8.4.6 Radiated Emissions, 662.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
662.93	1325.85	PK	14.00	H	-4.30	20.79	3.00	30.49	-66.88	-30.00	36.88
662.93	1325.85	PK	19.30	V	-4.30	20.79	3.00	35.79	-61.58	-30.00	31.58
662.93	1988.78	PK	13.50	H	-5.37	24.58	3.00	32.72	-64.66	-30.00	34.66
662.93	1988.78	PK	18.30	V	-5.37	24.58	3.00	37.52	-59.86	-30.00	29.86
662.93	2651.70	PK	11.90	H	-6.14	28.37	3.00	34.13	-63.25	-30.00	33.25
662.93	2651.70	PK	11.70	V	-6.14	28.37	3.00	33.93	-63.45	-30.00	33.45
662.93	3314.63	PK	13.50	H	-6.86	32.16	3.00	38.81	-58.57	-30.00	28.57
662.93	3314.63	PK	13.40	V	-6.86	32.16	3.00	38.71	-58.67	-30.00	28.67
662.93	3977.55	PK	17.30	H	-7.54	33.39	3.00	43.14	-54.23	-30.00	24.23
662.93	3977.55	PK	17.10	V	-7.54	33.39	3.00	42.94	-54.43	-30.00	24.43
662.93	4640.48	PK	14.90	H	-8.15	33.93	3.00	40.68	-56.69	-30.00	26.69
662.93	4640.48	PK	15.60	V	-8.15	33.93	3.00	41.38	-55.99	-30.00	25.99
662.93	5303.40	PK	15.40	H	-8.73	34.28	3.00	40.95	-56.43	-30.00	26.43
662.93	5303.40	PK	15.50	V	-8.73	34.28	3.00	41.05	-56.33	-30.00	26.33
662.93	5966.33	PK	13.90	H	-9.27	35.07	3.00	39.70	-57.68	-30.00	27.68
662.93	5966.33	PK	14.90	V	-9.27	35.07	3.00	40.70	-56.68	-30.00	26.68
662.93	6629.25	PK	14.40	H	-9.81	35.65	3.00	40.24	-57.13	-30.00	27.13
662.93	6629.25	PK	14.20	V	-9.81	35.65	3.00	40.04	-57.33	-30.00	27.33



9. ANNEX-A - Photographs of the EUT

Photographs of the EUT and any manufacturer supplied accessories to be used with the EUT are in a separate document.

10. ANNEX-B – Test Setup Photographs

Test setup photographs are located in a separate document.

11. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_8114-23_FCC 15.236_	1	Initial release	7/17/2023



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END OF TEST REPORT
