



Test Report - FCC PART 90

Applicant: Ritron, Inc.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 9/22/2021

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

1. Customer Information

Customer: Ritron, Inc.
Address: 505 West Carmel Drive
P.O. Box 1998
Carmel, IN 46032, United States



1.1 Part 90 Test Result Summary

The following test procedure and guidance were used for measuring FCC PART 90 (PRIVATE LAND MOBILE RADIO SERVICES) known as Licensed Land Mobile; ANSI C63.26-2015. Full test results are available in this report.

The Following is for Test item FCC ID: AIERIT51-16530

Applicable Clauses from Part 2		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
2.202	Bandwidth & Emission	Pass
2.1033 (c)(8)	Power at the Final Amplifier	Reported
2.1046 (a)	RF Output Power	Pass
2.1047	Modulation characteristics	Pass
2.1049	Occupied Bandwidth	Pass
2.1051	Spurious emissions at antenna terminals	Pass
2.1053	Field strength of spurious radiation	Pass
2.1055	Frequency stability	Pass

Applicable Clauses from Part 90		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
90.205 (r)	Transmitter Power	Pass
90.207 (n)	Emission designator	Reported
90.209 (b) (5) footnote 2	Bandwidth limitations	Pass
90.210 (n)	Emission masks, In-band	Pass
90.210 (n)	Emission masks, Out-of-band	Pass
90.213 (a) footnote 10	Frequency stability	Pass
90.214	Transient Frequency Behavior	Pass
90.221	Adjacent channel power limits	n/a

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.



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(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

2.1 Testing was performed, reviewed by

Dates of Testing: 9/20/2021-9/21/2021

Signature:

Sr. EMC Engineer
EMC-003838-NE



Name & Title:

Tim Royer, EMC Engineer

Date of Signature

9/22/2021

Signature:

Name & Title:

Kristoffer Costa, EMC Technician

Date of Signature

9/22/2021



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

The test sample was received: 9/21/2021

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:	AIERIT51-16530
Brief Description	VHF Transceiver
Type of Modular	n/a
Model(s) #	DTXM-165-0BN30I-M-FIPS DTXM-165-0BN30I-NXDN
Firmware version	n/a
Software version	n/a
Serial Number	n/a

Technical Characteristics	
Technology	VHF Transceiver
Frequency Range	150-174 MHz
RF O/P Power (Max.)	30.4 Watts
Modulation	n/a
Bandwidth & Emission Class	10K0F3E, 8K30F1D, 8K30F1E, 8K30F7W, 4K00F1D, 4K00F1E, 4K00F7W
Duty Cycle	100%
Antenna Connector	BNC
Voltage Rating (AC or Batt.)	12.5VDC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	150.8-174 MHz	n/a	0 dBi



3.2 Configuration of EUT

Test Modes				
Mode (#)	Mode (Type)	Test Frequencies (MHz)	BW (nominal) (kHz)	Emission Designator
1	Transmit	151 MHz 161 MHz 173 MHz	5.1 kHz	10K0F3E, 8K30F1D, 8K30F1E, 8K30F7W, 4K00F1D, 4K00F1E, 4K00F7W

Operating conditions during Testing:

The device was operated without the provided antenna(s).

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

Peripherals used during Testing:

A laptop was used to program the EUT.

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:

Test procedures and guidance for measuring Licensed Part 90 Licensed device:

- 1) ANSI C63.26-2015

4.2 Applied Limits and Regulatory Limits:

- 1) FCC CFR 47 Part 90

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

6.1 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.

7.1 List of Test Equipment

Test Equipment						
Type	Device	Manufacturer	Model	SN#	Current Cal	Cal Due
Antenna, NSA	Log-Periodic 1243	Eaton	96005	1243	5/4/21	5/3/2024
Antenna	Double-Ridged Horn/ETS Horn 1	ETS-Lindgren	3117	00035923	2/25/20	2/24/2023
CHAMBER	CHAMBER	Panashield	3M	N/A	3/12/19	3/11/2022
Receiver	EMI Test Receiver R&S ESU 40	Rohde & Schwarz	ESU 40	100320	5/27/21	5/26/2024
Function Generator	Function Generator	Standford	DS340	25200	1/13/21	1/13/2024
Signal Generator	Signal Generator HP 8648C	HP	8648C	3847A04696	3/31/21	3/30/2024
Oscilloscope	Oscilloscope	LeCroy	LT364	00414	3/28/19	3/27/2022
Receiver	Communications Service Monitor FM/AM 1200S	IFR	FM/AM 1200S	6593	NCR	NCR

Software			
Software	Author	Version	Validation on
ESU Firmware	Rohde & Schwarz	4.43 SP3; BIOS v5.1-24-3	2018
RSCCommander	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).

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 dB μ V. 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 (dB μ V/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 dB μ V 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.



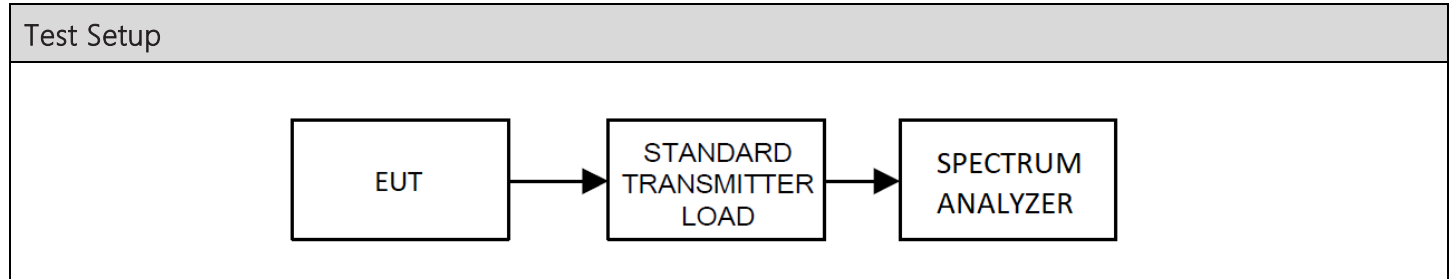
8.1 Power at the Final Amplifier

Limits from FCC Part 2.1033 (c)(8). No method of measurement is specified.

Test Results		
EUT Operating Voltage (V)	EUT Current (A)	Power at the Final Amplifier (W)
12	10	120

8.2 RF Output Power

Limits from FCC Parts 2.1046(a), and 90.205 (r); and test procedure from ANSI C63.26-2015.



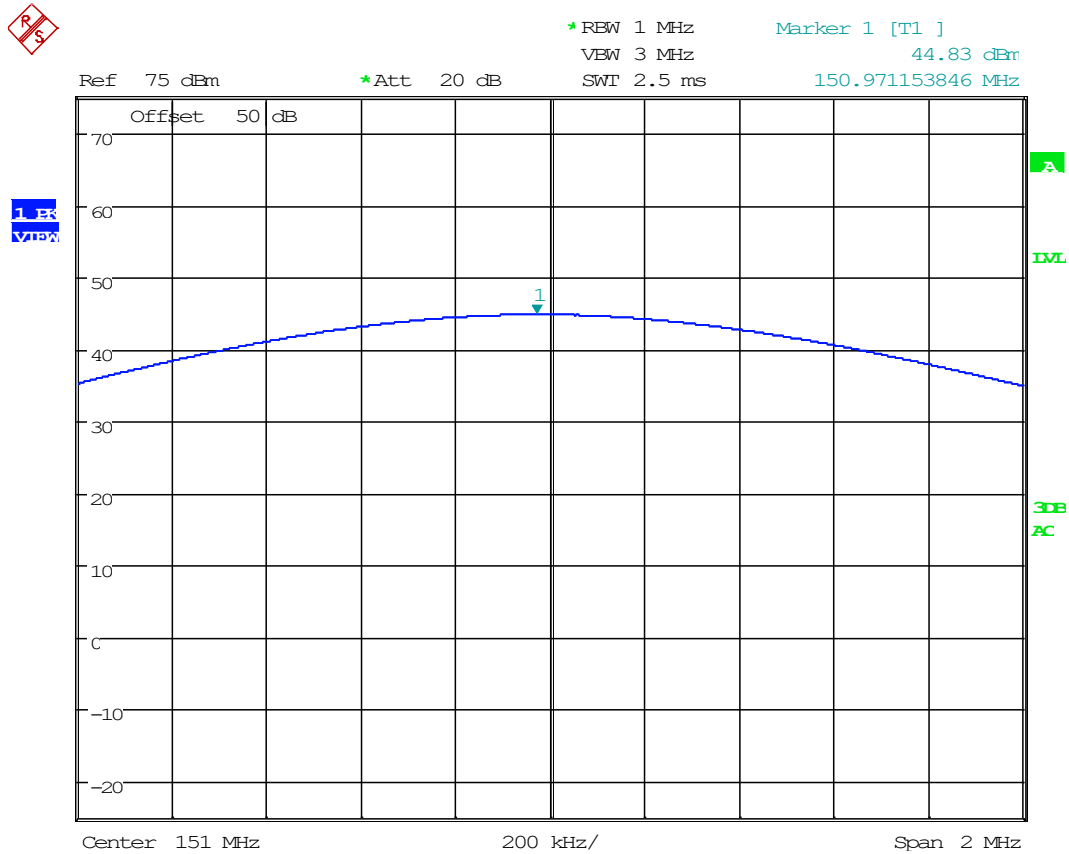
Test Results, Mode 1		
Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
151 MHz	44.83	30.40
161 MHz	44.58	28.71
173 MHz	43.77	23.82

Maximum Output Power: 30.40W



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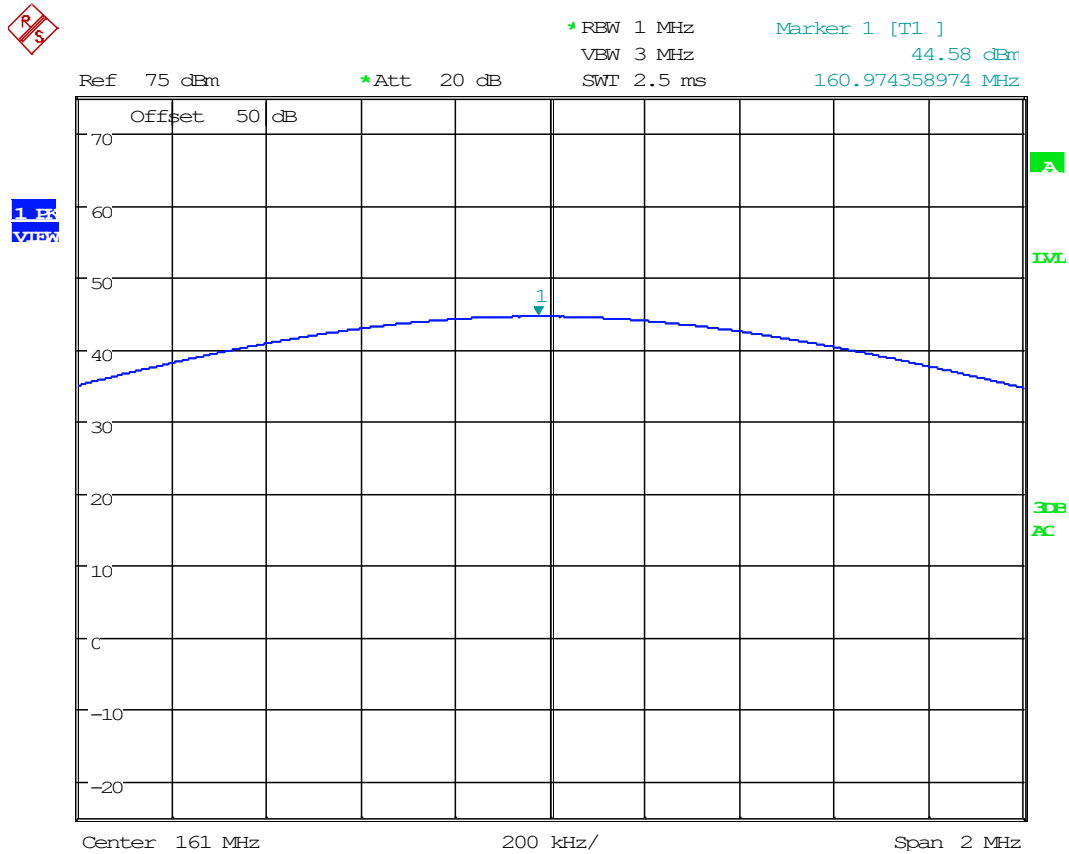
8.2.1 Test Plot, Power Output, 151 MHz



Date: 23.SEP.2021 08:51:10



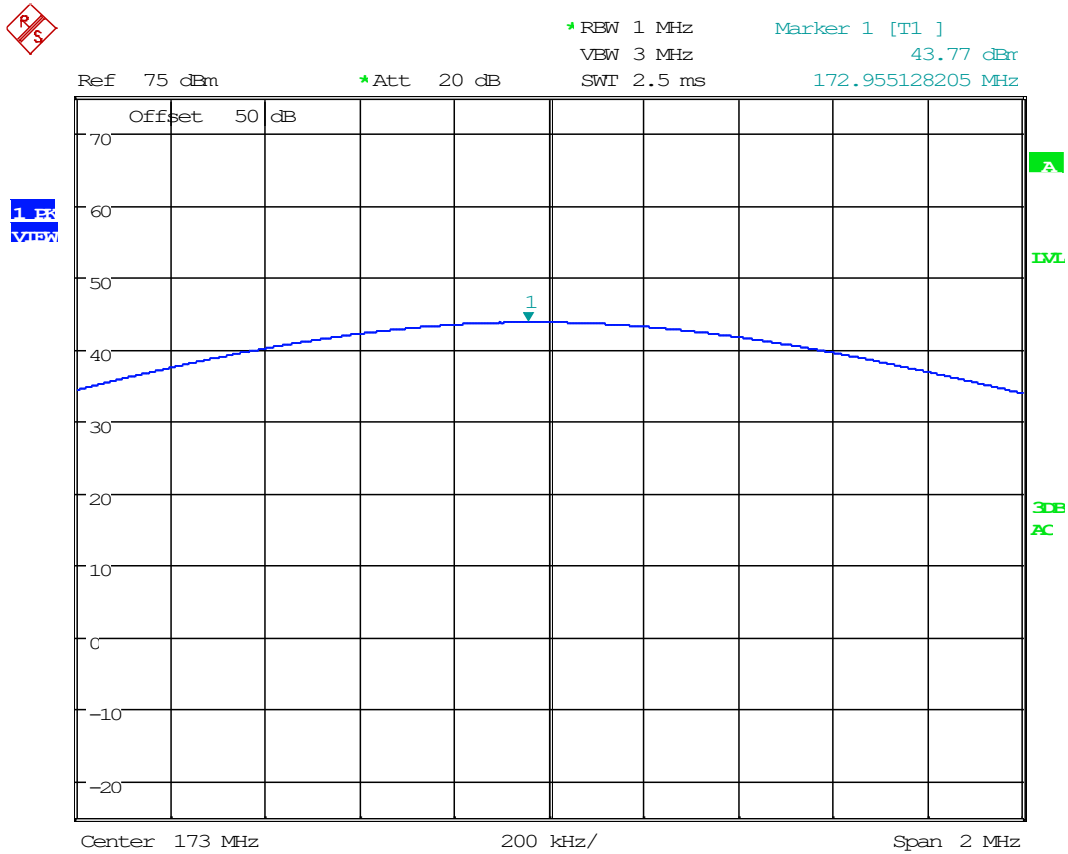
8.2.2 Test Plot, Power Output, 161 MHz



Date: 23.SEP.2021 08:56:15



8.2.3 Test Plot, Power Output, 173 MHz

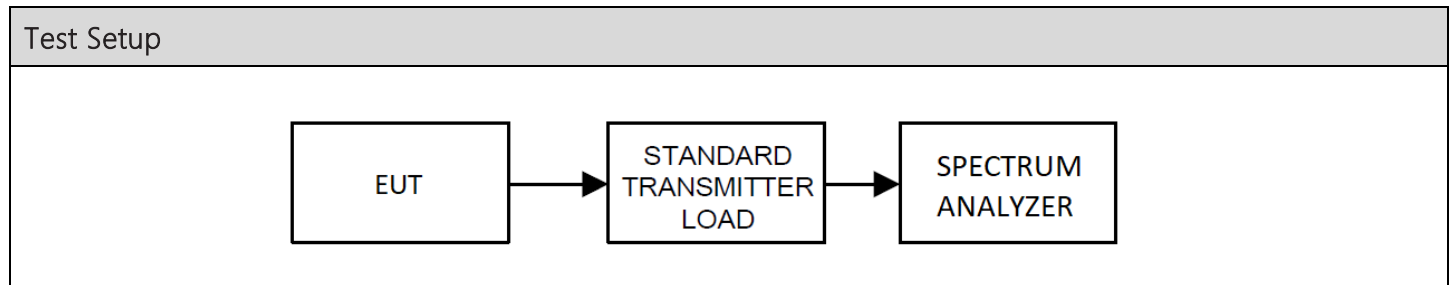


Date: 21.SEP.2021 08:24:15



8.3 Bandwidth & Emission

Limits from FCC Parts 2.1049, and 90.207 & 90.209, and test procedure from ANSI C63.26-2015.



Test Results, Authorized Bandwidth		
Rule Part	Operating Range (MHz)	Authorized Bandwidth (kHz)
Part 90	150.8-174 MHz	10K0F3E, 8K30F1D, 8K30F1E, 8K30F7W, 4K00F1D, 4K00F1E, 4K00F7W

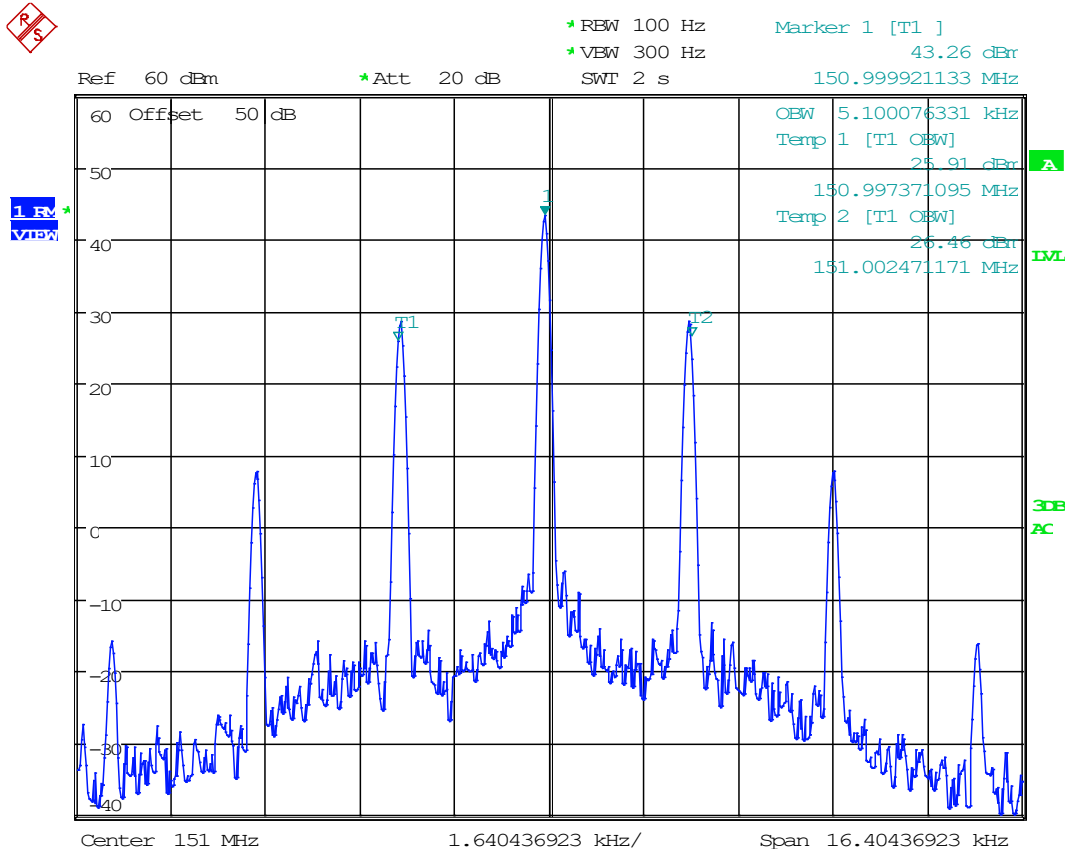


Test Results, Occupied Bandwidth			
Tuned Frequency (MHz)	Mode	Occupied Bandwidth (kHz)	Bandwidth Type
151 MHz	Analog	5.1 kHz	99%
161 MHz	Analog	5.1 kHz	99%
173 MHz	Analog	5.1 kHz	99%
151 MHz	NXDNSN	3.39	99%
161 MHz	NXDNSN	3.35	99%
173 MHz	NXDNSN	3.37	99%
151 MHz	NXDN	7.53	99%
161 MHz	NXDN	7.57	99%
173 MHz	NXDN	7.23	99%



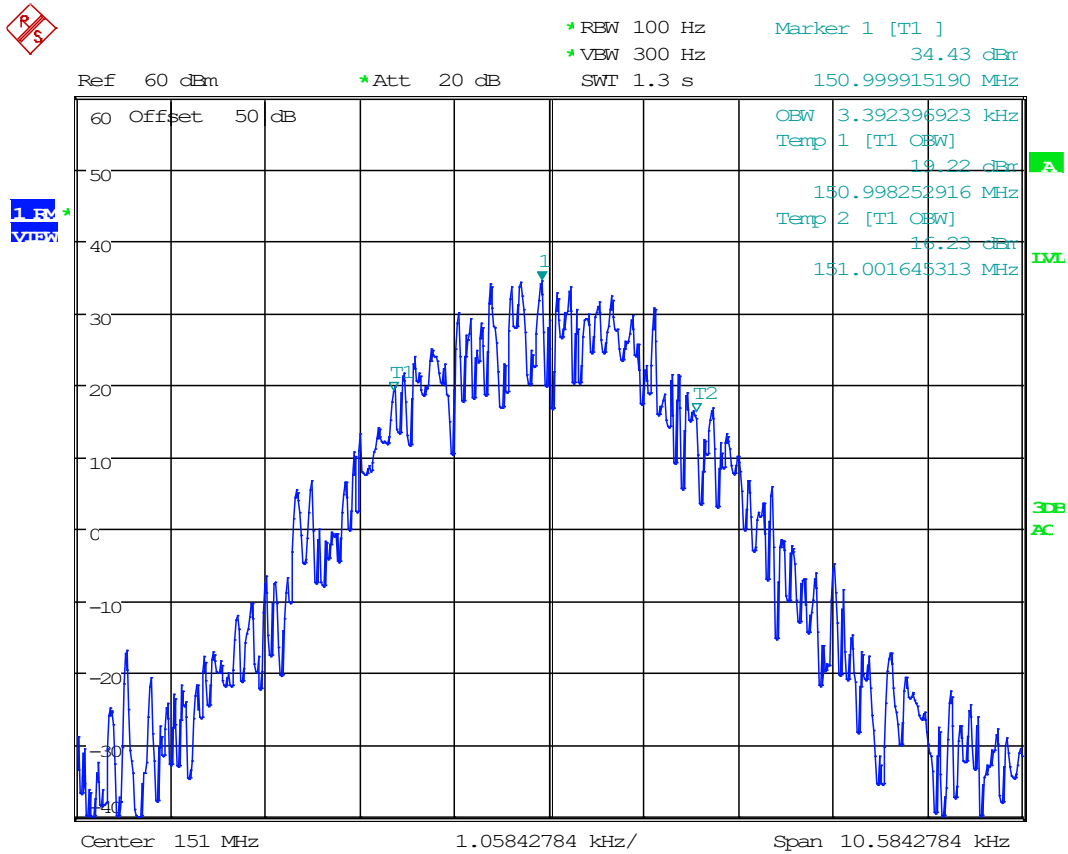
Occupied Bandwidth, Spectrum Plots

8.3.1 Bandwidth Plot, 99%, 151 MHz, Analog



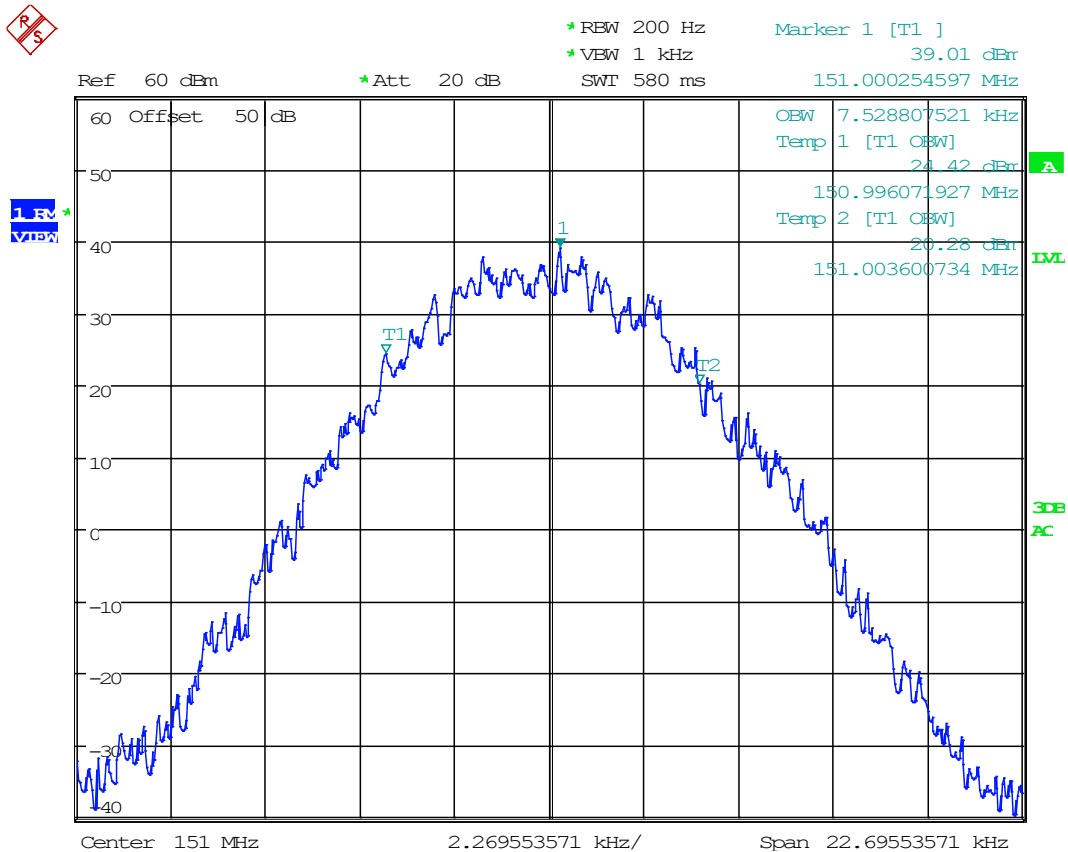
Date: 21.SEP.2021 08:40:52

8.3.2 Bandwidth Plot, 99%, 151 MHz, NXDNSN 6.25 kHz



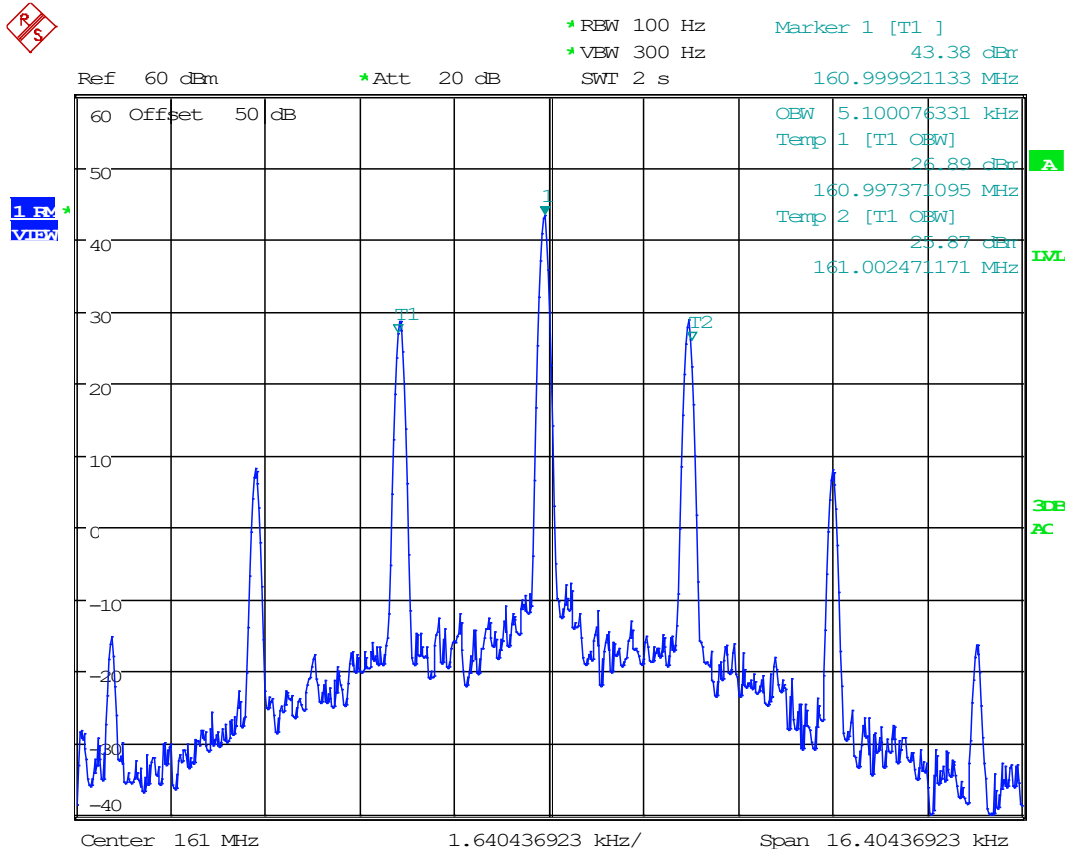
Date: 21.SEP.2021 08:47:56

8.3.3 Bandwidth Plot, 99%, 151 MHz, NXDN 12.5 kHz



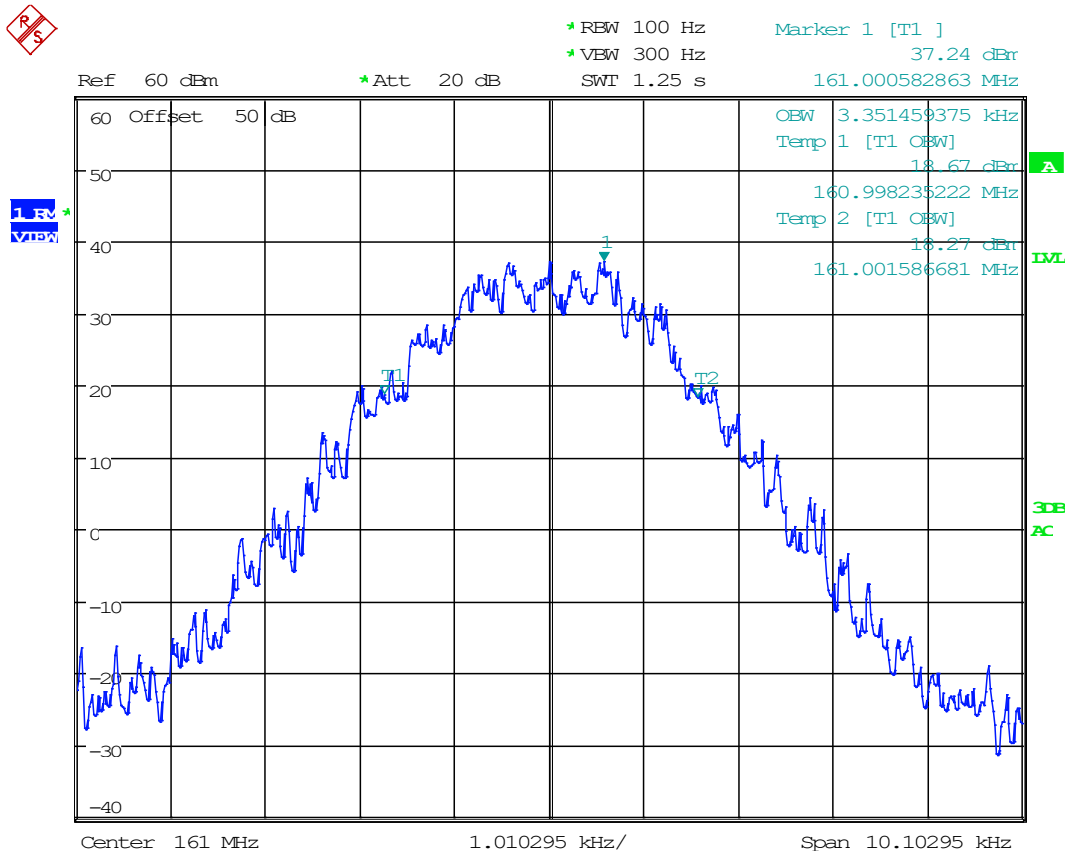
Date: 21.SEP.2021 08:53:31

8.3.4 Bandwidth Plot, 99%, 161 MHz, Analog



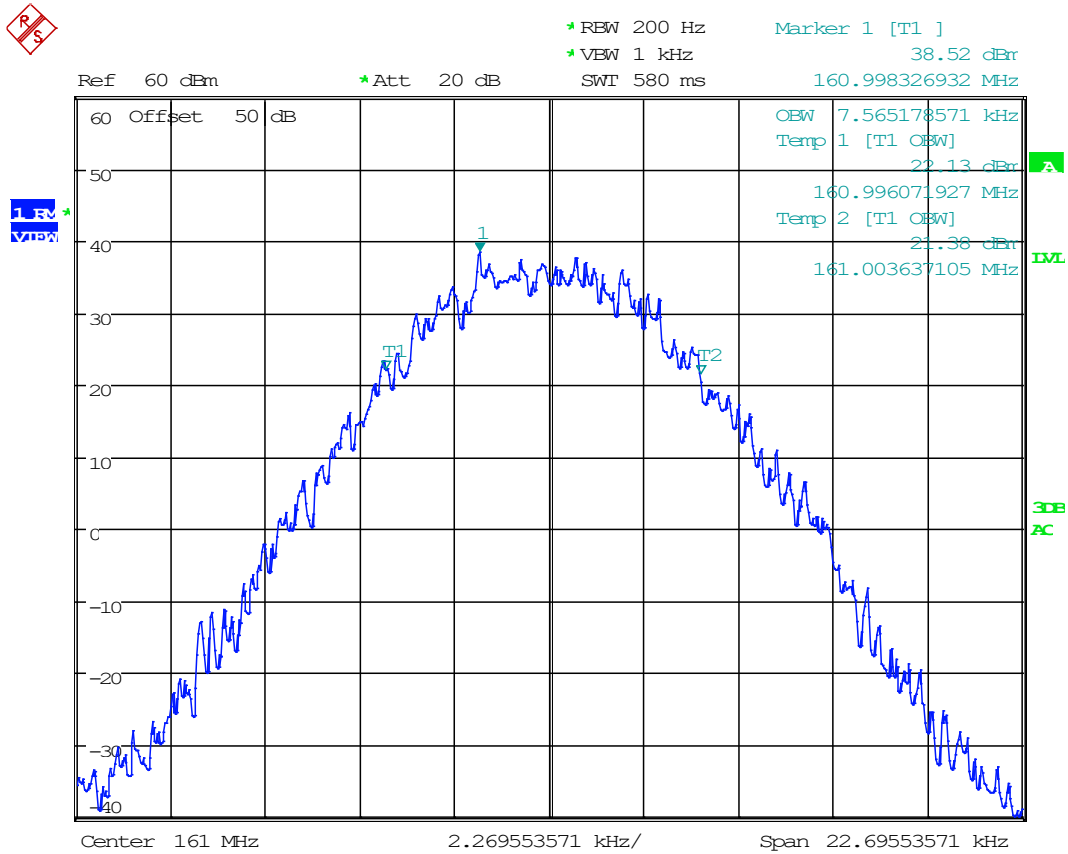
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8.3.5 Bandwidth Plot, 99%, 161 MHz, NXDNSN 6.25 kHz



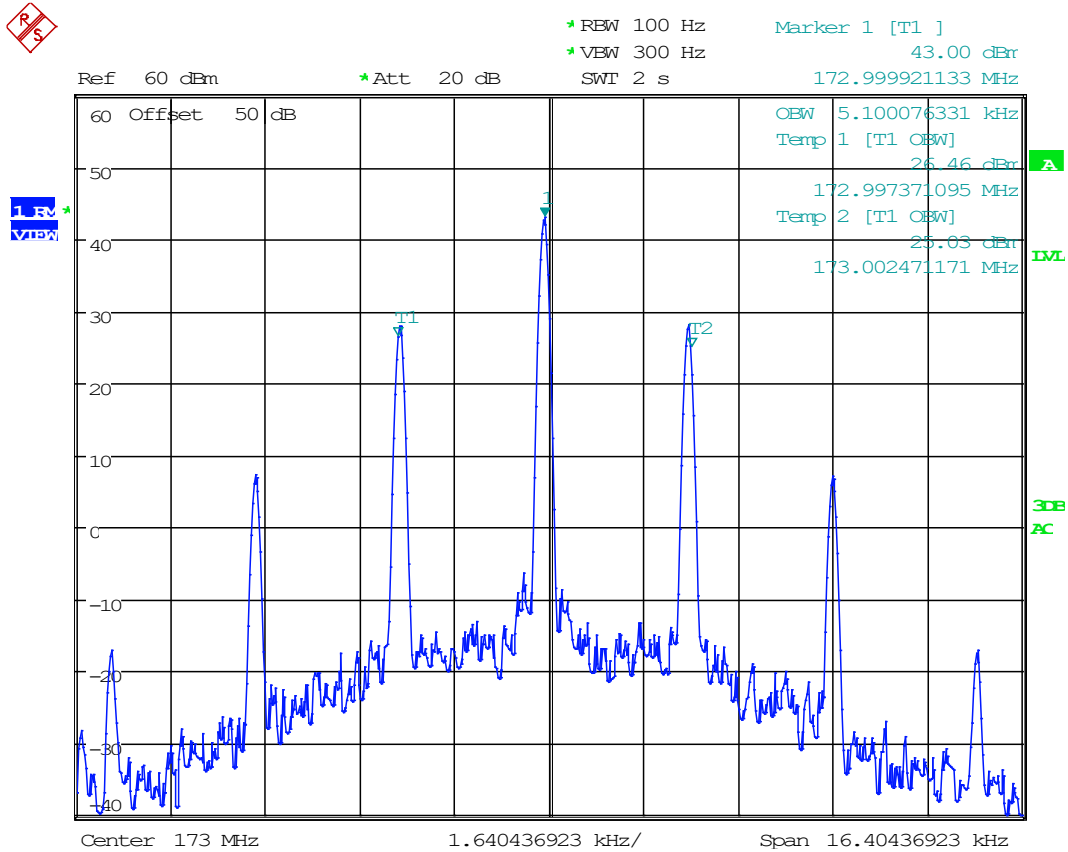
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8.3.6 Bandwidth Plot, 99%, 161 MHz, NXDN 12.5 kHz



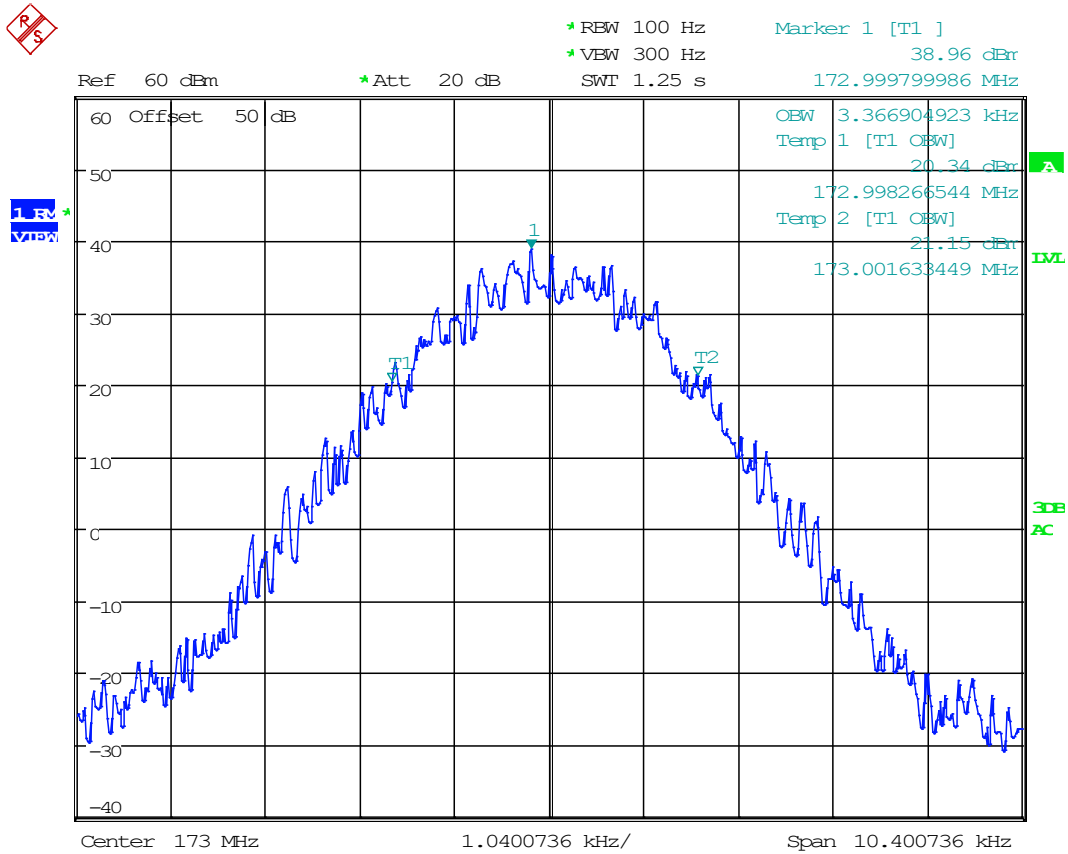
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8.3.7 Bandwidth Plot, 99%, 173 MHz, Analog



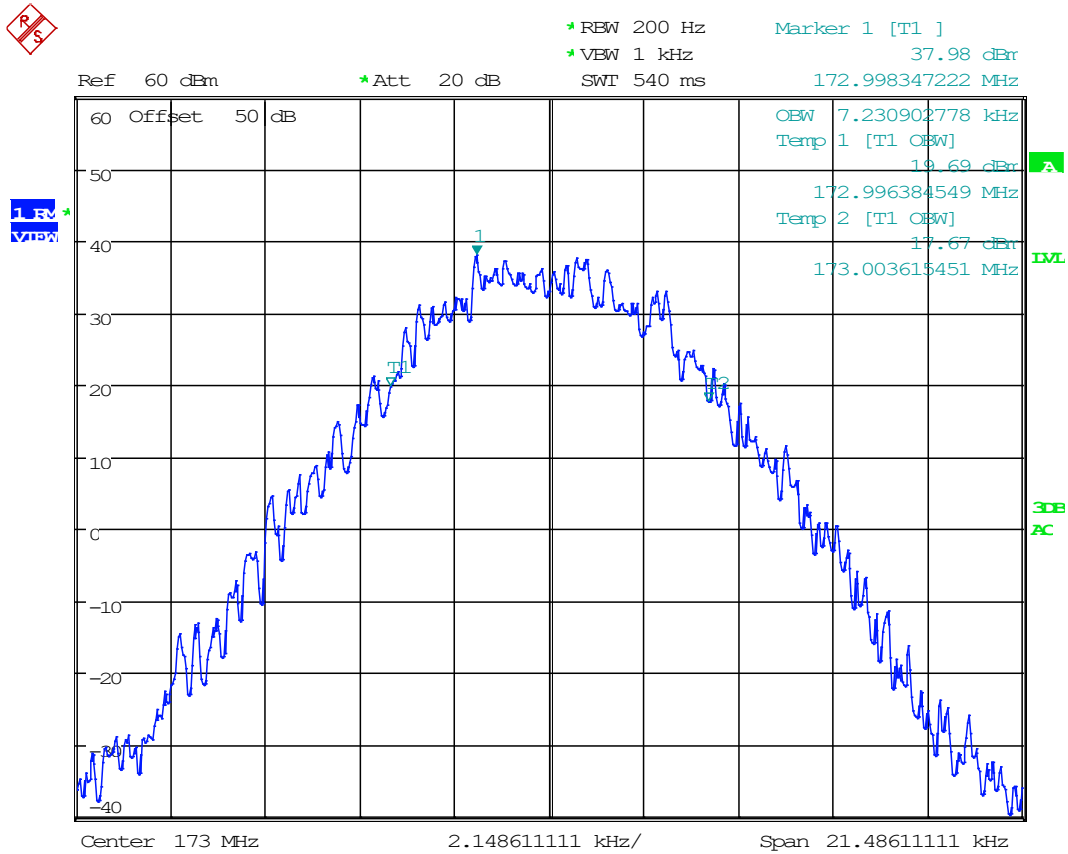
Date: 21.SEP.2021 08:42:17

8.3.8 Bandwidth Plot, 99%,173 MHz, NXDNSN 6.25 kHz



Date: 21.SEP.2021 08:50:39

8.3.9 Bandwidth Plot, 99%, 173 MHz, NXDN 12.5 kHz

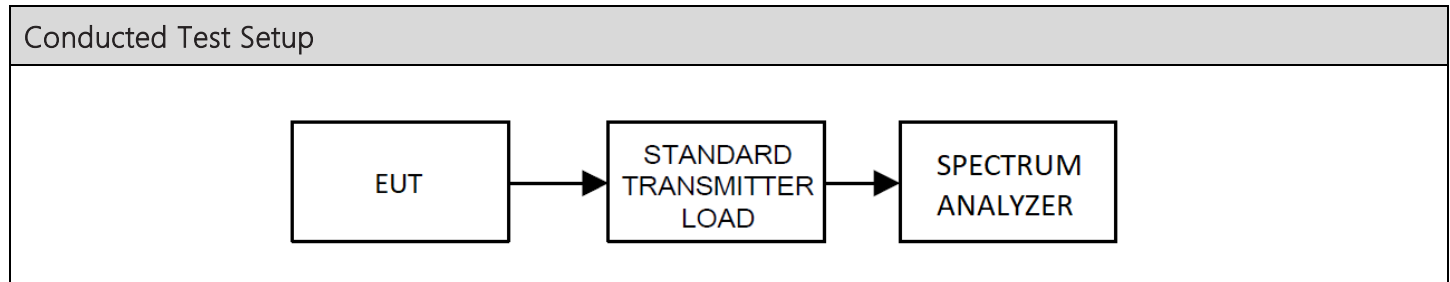


Date: 21.SEP.2021 08:56:00



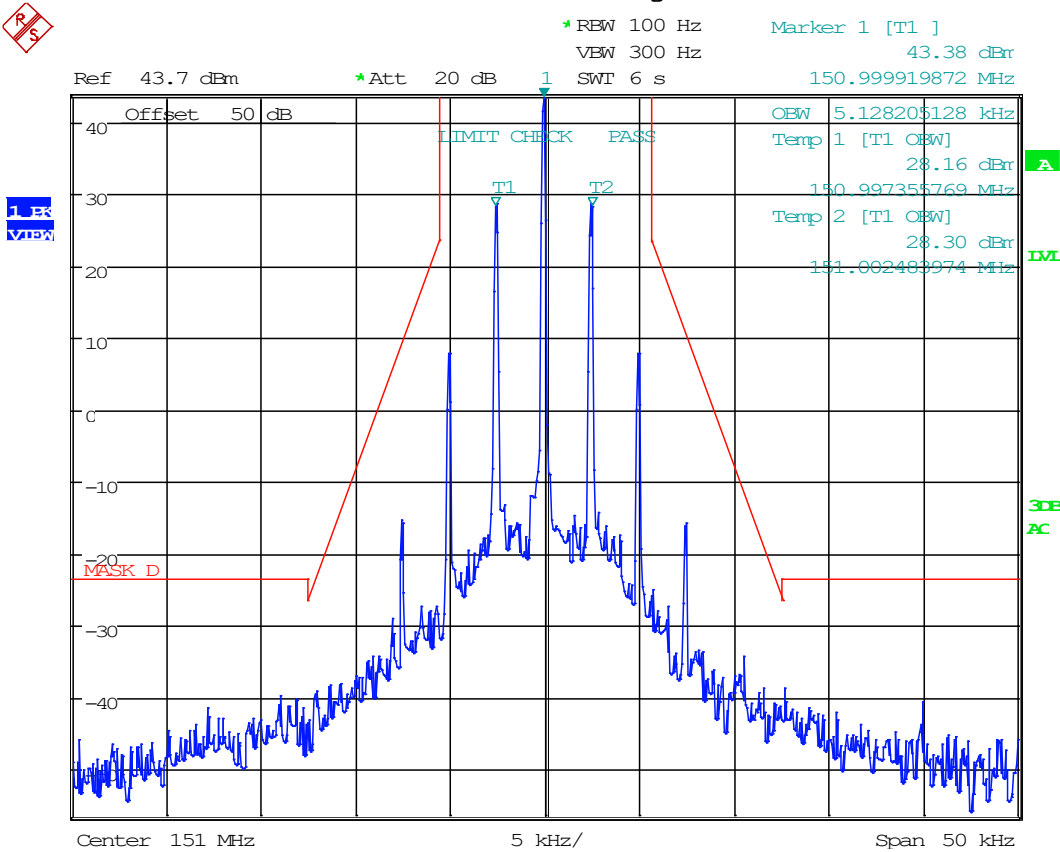
8.4 Emission Limitations, In-Band

Limits from FCC Part 90.210; and test procedure from ANSI C63.26-2015.



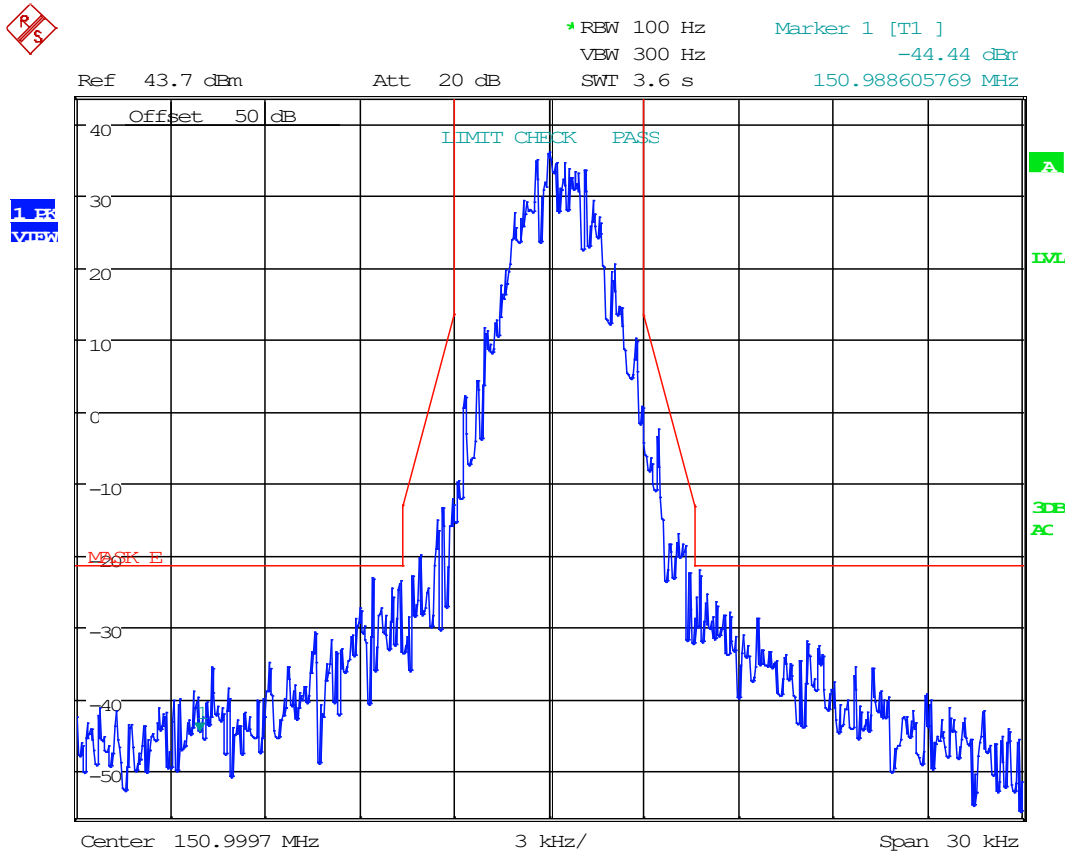
Conducted Emissions Mask, Spectrum Plots

8.4.1 Emission Mask D, 151 MHz, Analog



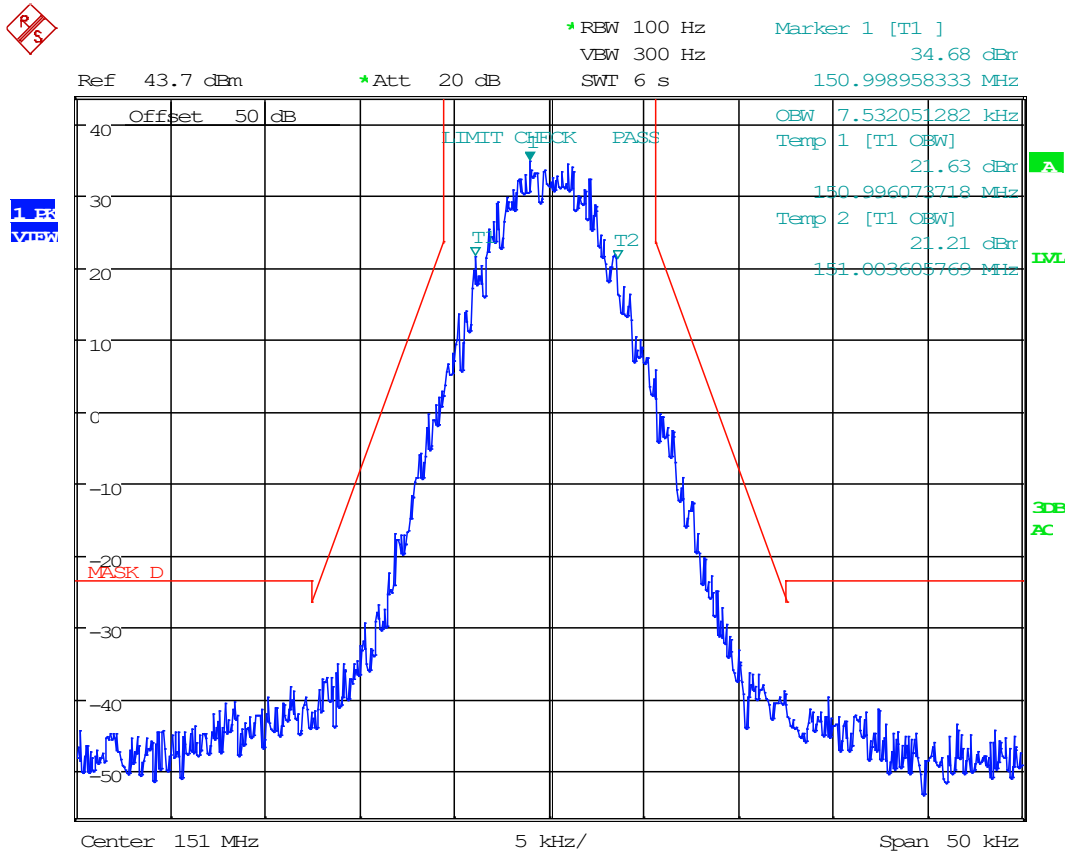
Date: 21.SEP.2021 09:56:08

8.4.2 Emission Mask E, 151 MHz, NDXNSN 6.25 kHz



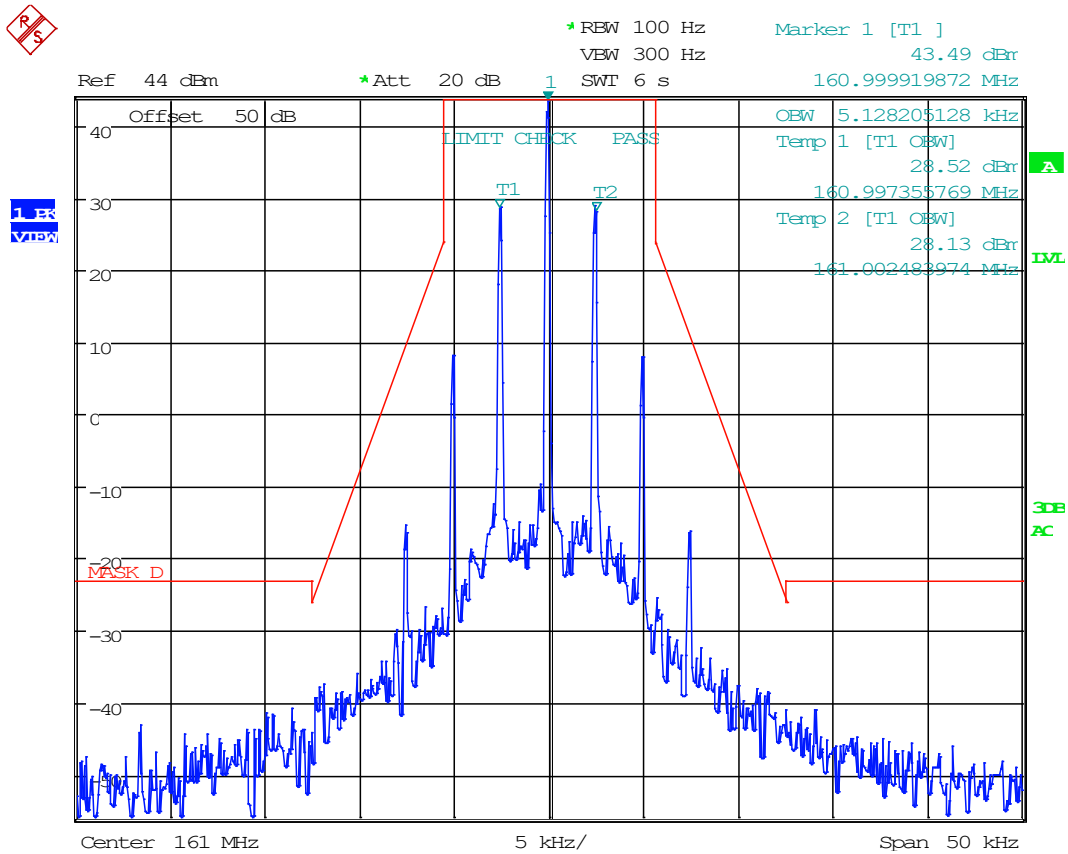
Date: 21.SEP.2021 10:31:57

8.4.3 Emission Mask D, 151 MHz, NDXN 12.5 kHz



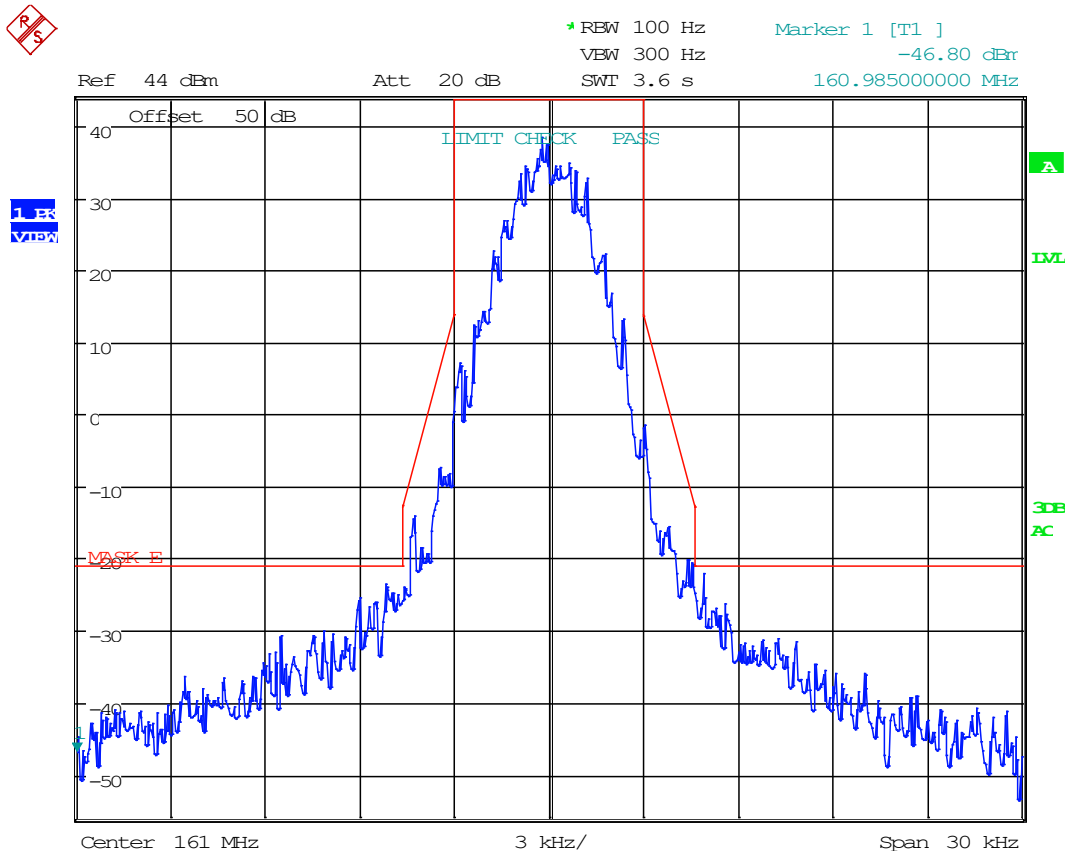
Date: 21.SEP.2021 09:45:08

8.4.4 Emission Mask D, 161 MHz, Analog



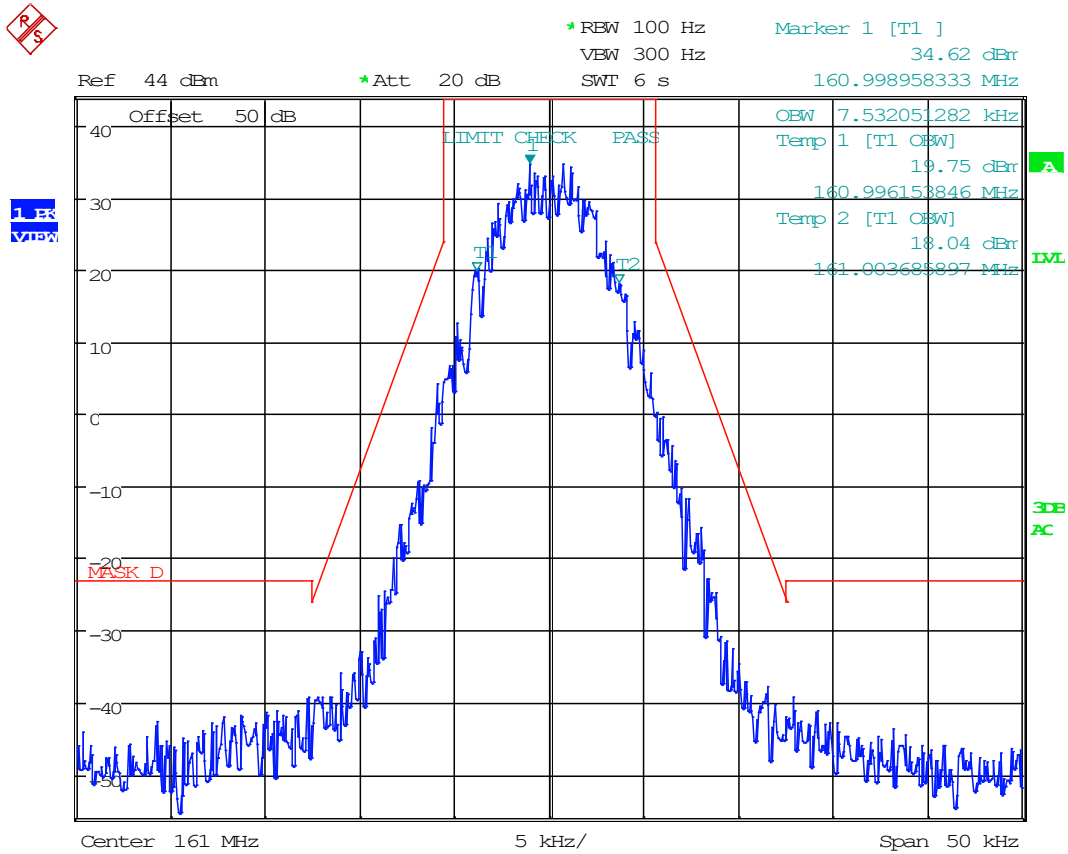
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8.4.5 Emission Mask E, 161 MHz, NXDNSN 6.25 kHz



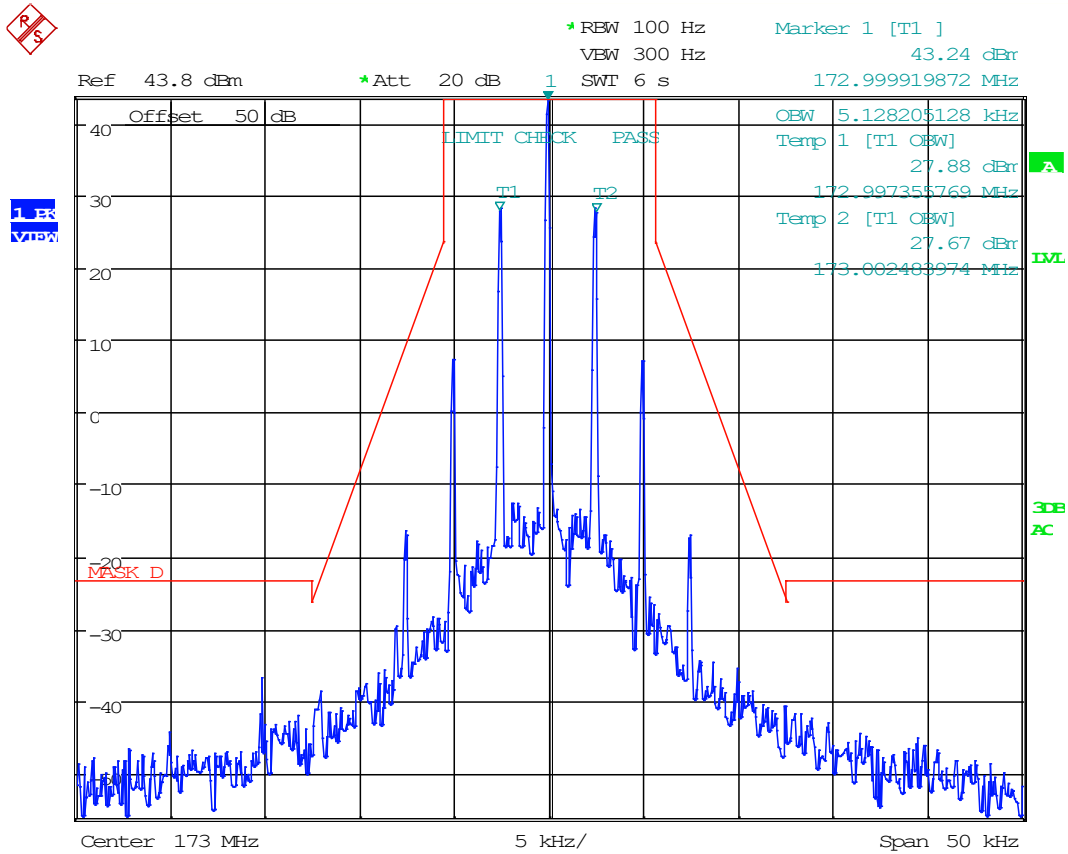
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8.4.6 Emission Mask D, 161 MHz, NXDN 12.5 kHz



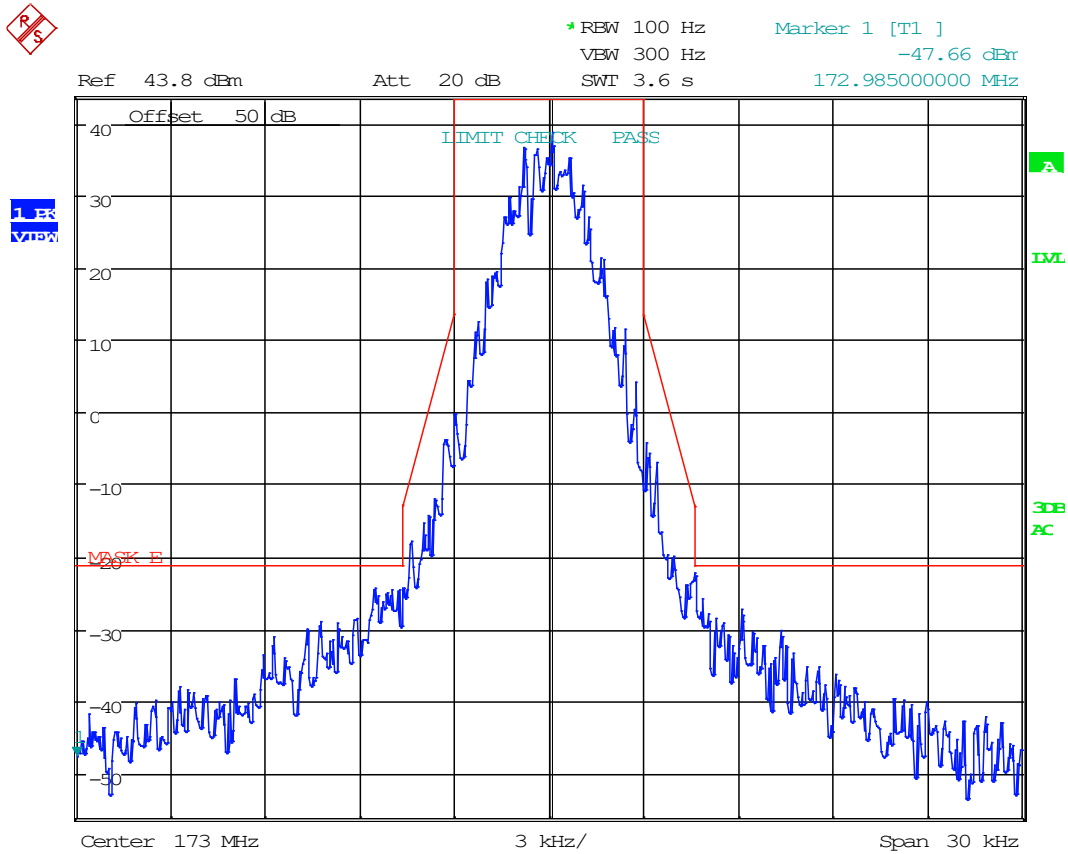
Date: 21.SEP.2021 09:50:13

8.4.7 Emission Mask D, 173 MHz, Analog



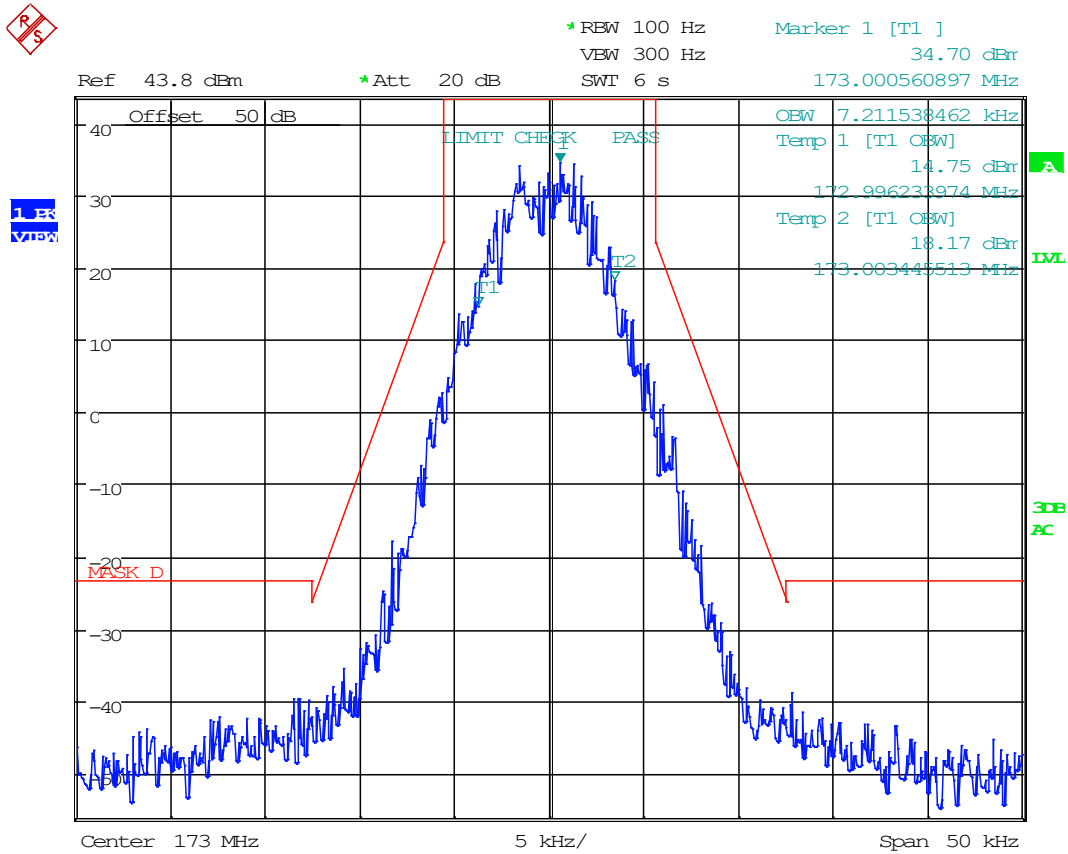
Date: 21.SEP.2021 09:53:34

8.4.8 Emission Mask E, 173 MHz, NXDNSN 6.25 kHz



Date: 21.SEP.2021 10:35:01

8.4.9 Emission Mask D, 173 MHz, NXDN 12.5 kHz



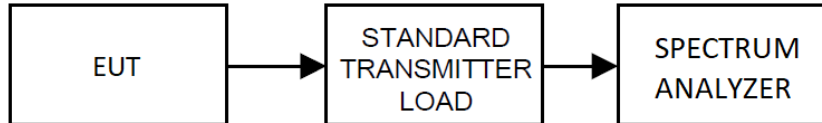
Date: 21.SEP.2021 09:52:30



8.5 Emission Limitations, Out-of-Band

Limits from FCC Parts 2.1051, and 90.210; and test procedure from ANSI C63.26-2015.

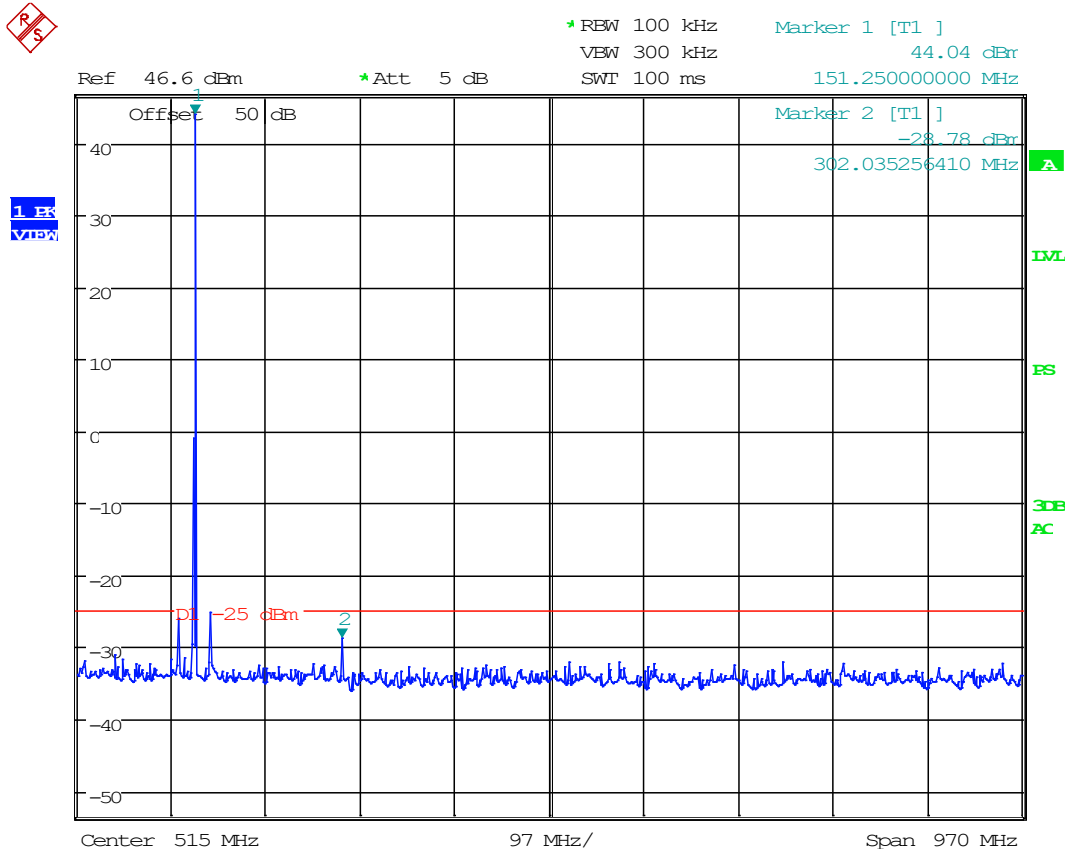
Conducted Test Setup





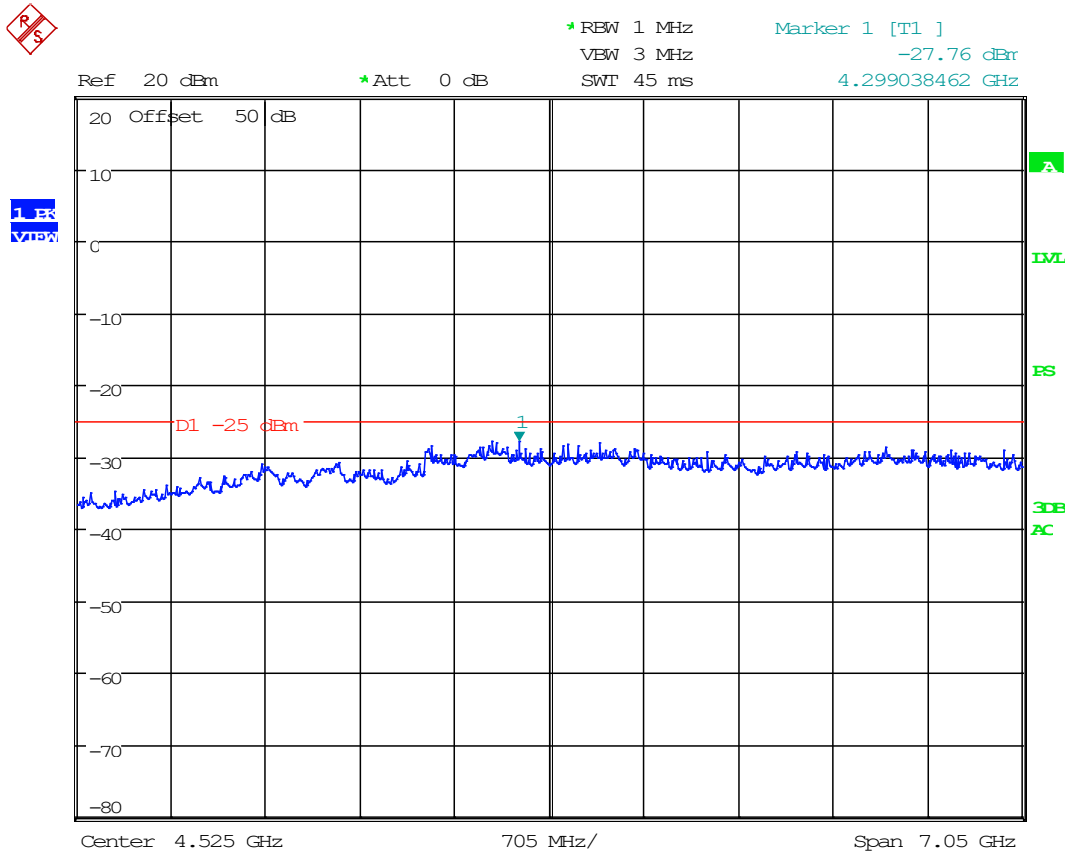
Conducted Emissions Spectrum Plots

8.5.1 Conducted Emissions, 151 MHz, Below 1GHz



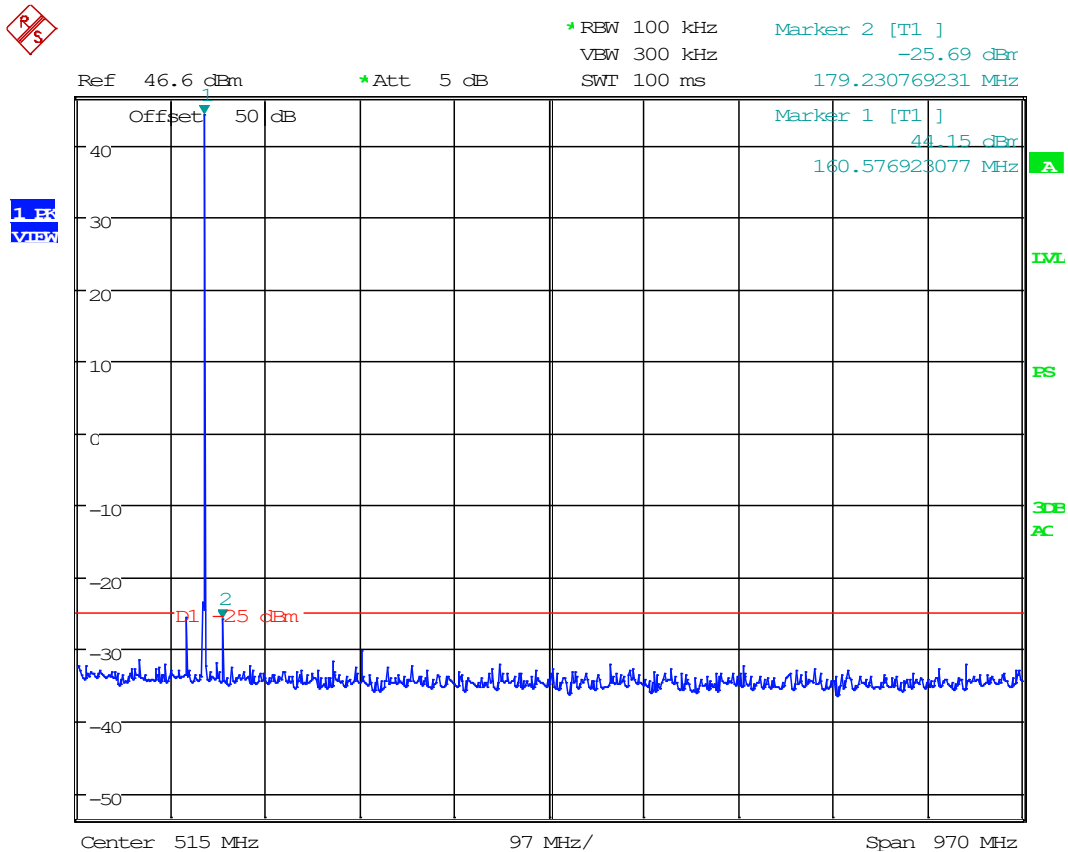
Date: 21.SEP.2021 10:16:56

8.5.2 Conducted Emissions, 151 MHz, Above 1GHz,



Date: 21.SEP.2021 10:23:49

8.5.3 Conducted Emissions, 161 MHz, Below 1GHz,

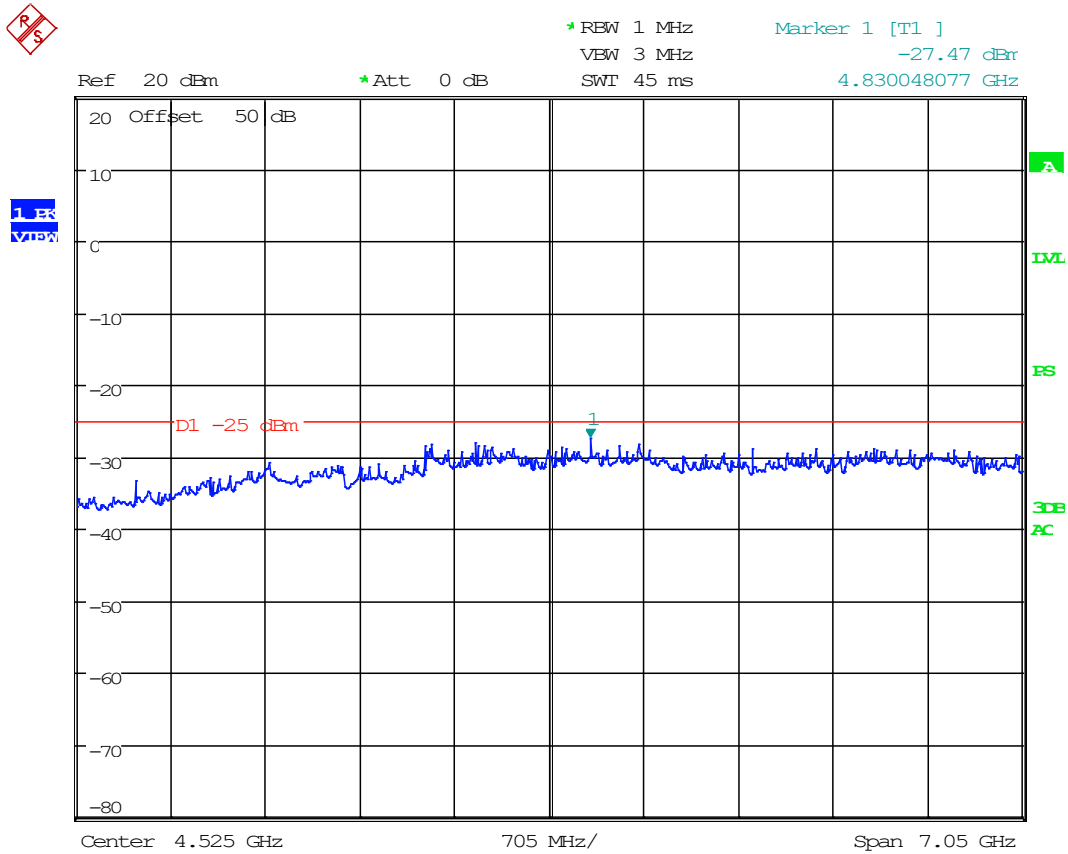


Date: 21.SEP.2021 10:17:32



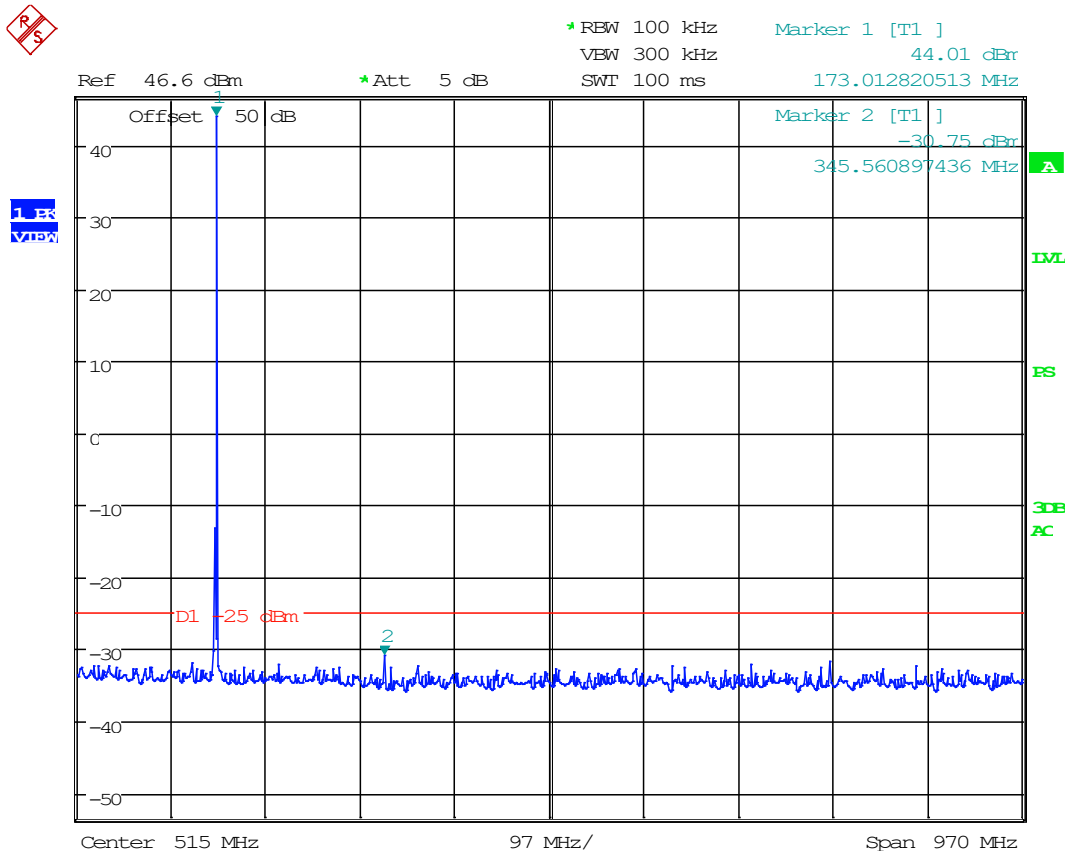
Timco Engineering, Inc., an IIA Company
849 NW State Road 45, Newberry, Florida 32669
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8.5.4 Conducted Emissions, 161 MHz, Above 1GHz,



Date: 21.SEP.2021 10:23:15

8.5.5 Conducted Emissions, 173 MHz, Below 1GHz,

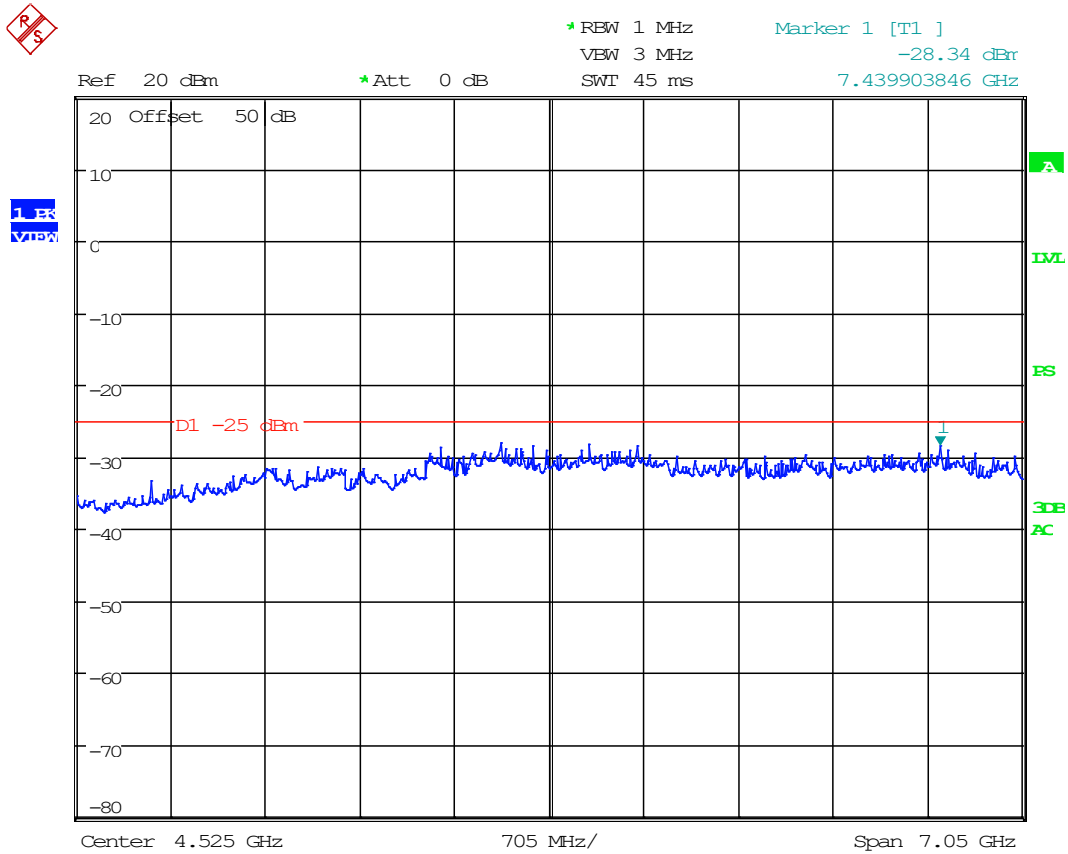


Date: 21.SEP.2021 10:18:13



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8.5.6 Conducted Emissions, 173 MHz, Above 1GHz,

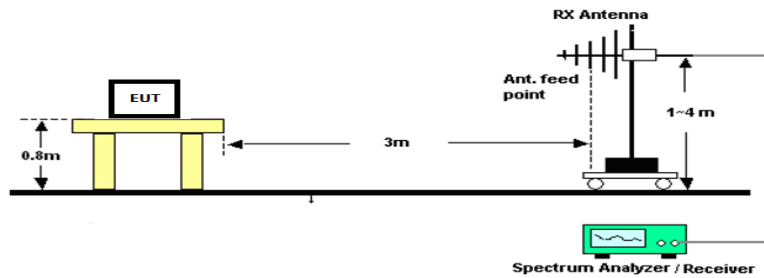


Date: 21.SEP.2021 10:22:18

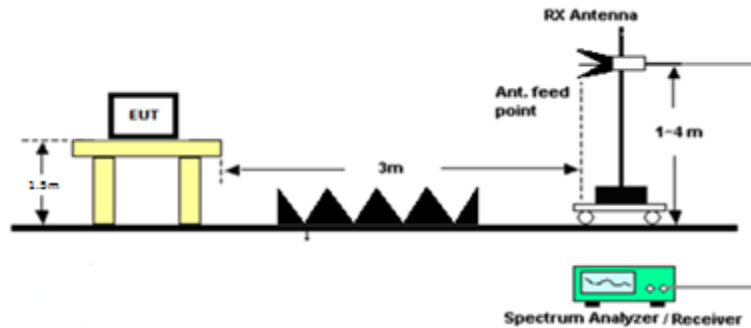
8.6 Radiated Emissions

Limits from FCC Parts 2.1053, 80.211 (f), 87.139 (a), and 90.210 (n); and test procedure from ANSI C63.26-2015.

Radiated Test Setup, 30 – 1000 MHz



Radiated Test Setup, Above 1000 MHz





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Radiated Emissions, Tabular Data

8.6.1 Radiated Emissions, 151 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)
151.00	302.00	PK	43.39	H	2.08	13.80	3.00	59.27	-38.11	-25.00	13.11
151.00	302.00	PK	41.89	V	2.08	13.80	3.00	57.77	-39.61	-25.00	14.61
151.00	453.00	PK	45.42	H	2.47	15.82	3.00	63.71	-33.67	-25.00	8.67
151.00	453.00	PK	43.13	V	2.47	15.82	3.00	61.42	-35.96	-25.00	10.96
151.00	604.00	PK	35.08	H	2.87	18.48	3.00	56.43	-40.95	-25.00	15.95
151.00	604.00	PK	37.75	V	2.87	18.48	3.00	59.10	-38.28	-25.00	13.28
151.00	755.00	PK	22.19	H	3.23	21.00	3.00	46.42	-50.96	-25.00	25.96
151.00	755.00	PK	20.99	V	3.23	21.00	3.00	45.22	-52.16	-25.00	27.16
151.00	906.00	PK	42.66	H	3.55	22.28	3.00	68.49	-28.89	-25.00	3.89
151.00	906.00	PK	34.69	V	3.55	22.28	3.00	60.52	-36.86	-25.00	11.86
151.00	1057.00	PK	31.29	H	3.79	26.81	3.00	61.89	-35.49	-25.00	10.49
151.00	1057.00	PK	33.82	V	3.79	26.81	3.00	64.42	-32.96	-25.00	7.96
151.00	1208.00	PK	26.41	H	4.02	28.11	3.00	58.53	-38.85	-25.00	13.85
151.00	1208.00	PK	27.39	V	4.02	28.11	3.00	59.51	-37.87	-25.00	12.87
151.00	1359.00	PK	28.21	H	4.28	28.70	3.00	61.19	-36.19	-25.00	11.19
151.00	1359.00	PK	27.91	V	4.28	28.70	3.00	60.89	-36.49	-25.00	11.49
151.00	1510.00	PK	29.96	H	4.51	27.76	3.00	62.23	-35.15	-25.00	10.15
151.00	1510.00	PK	30.21	V	4.51	27.76	3.00	62.48	-34.90	-25.00	9.90



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8.6.2 Radiated Emissions, 161 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)
161.00	322.00	PK	40.90	H	2.09	13.82	3.00	56.81	-40.57	-25.00	15.57
161.00	322.00	PK	37.14	V	2.09	13.82	3.00	53.05	-44.33	-25.00	19.33
161.00	483.00	PK	38.72	H	2.60	16.84	3.00	58.16	-39.22	-25.00	14.22
161.00	483.00	PK	41.28	V	2.60	16.84	3.00	60.72	-36.66	-25.00	11.66
161.00	644.00	PK	38.48	H	2.96	19.82	3.00	61.26	-36.12	-25.00	11.12
161.00	644.00	PK	35.14	V	2.96	19.82	3.00	57.92	-39.46	-25.00	14.46
161.00	805.00	PK	35.60	H	3.36	20.30	3.00	59.26	-38.12	-25.00	13.12
161.00	805.00	PK	30.91	V	3.36	20.30	3.00	54.57	-42.81	-25.00	17.81
161.00	966.00	PK	36.19	H	3.65	22.96	3.00	62.80	-34.58	-25.00	9.58
161.00	966.00	PK	33.94	V	3.65	22.96	3.00	60.55	-36.83	-25.00	11.83
161.00	1127.00	PK	30.50	H	3.88	27.26	3.00	61.64	-35.73	-25.00	10.73
161.00	1127.00	PK	29.09	V	3.88	27.26	3.00	60.23	-37.14	-25.00	12.14
161.00	1288.00	PK	26.78	H	4.15	28.61	3.00	59.55	-37.83	-25.00	12.83
161.00	1288.00	PK	27.37	V	4.15	28.61	3.00	60.14	-37.24	-25.00	12.24
161.00	1449.00	PK	27.81	H	4.35	28.09	3.00	60.25	-37.12	-25.00	12.12
161.00	1449.00	PK	29.19	V	4.35	28.09	3.00	61.63	-35.74	-25.00	10.74
161.00	1610.00	PK	27.94	H	4.67	28.18	3.00	60.79	-36.59	-25.00	11.59
161.00	1610.00	PK	27.55	V	4.67	28.18	3.00	60.40	-36.98	-25.00	11.98



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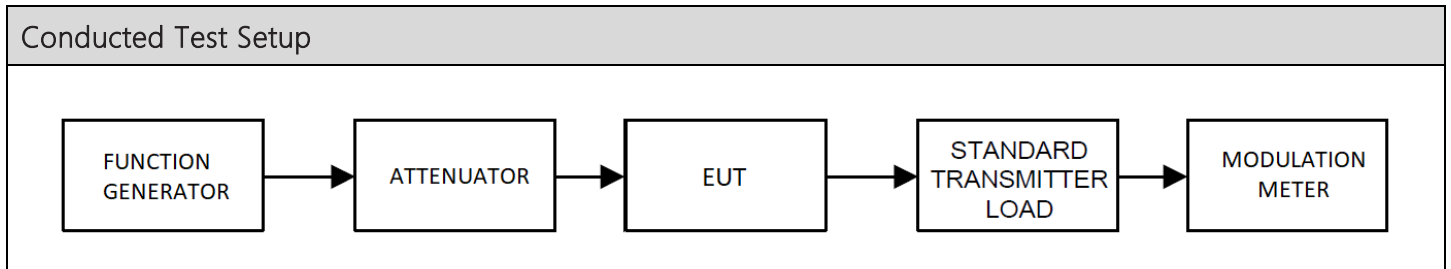
8.6.3 Radiated Emissions, 173 MHz

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)
173.00	346.00	PK	35.43	H	2.11	13.76	3.00	51.30	-46.07	-25.00	21.07
173.00	346.00	PK	33.95	V	2.11	13.76	3.00	49.82	-47.55	-25.00	22.55
173.00	519.00	PK	39.21	H	2.73	17.30	3.00	59.24	-38.14	-25.00	13.14
173.00	519.00	PK	41.71	V	2.73	17.30	3.00	61.74	-35.64	-25.00	10.64
173.00	692.00	PK	37.70	H	3.08	20.40	3.00	61.18	-36.20	-25.00	11.20
173.00	692.00	PK	29.86	V	3.08	20.40	3.00	53.34	-44.04	-25.00	19.04
173.00	865.00	PK	38.27	H	3.51	22.40	3.00	64.18	-33.20	-25.00	8.20
173.00	865.00	PK	29.99	V	3.51	22.40	3.00	55.90	-41.48	-25.00	16.48
173.00	1038.00	PK	31.75	H	3.76	26.84	3.00	62.35	-35.03	-25.00	10.03
173.00	1038.00	PK	30.18	V	3.76	26.84	3.00	60.78	-36.60	-25.00	11.60
173.00	1211.00	PK	26.69	H	4.02	28.13	3.00	58.84	-38.54	-25.00	13.54
173.00	1211.00	PK	27.31	V	4.02	28.13	3.00	59.46	-37.92	-25.00	12.92
173.00	1384.00	PK	28.20	H	4.30	28.56	3.00	61.06	-36.32	-25.00	11.32
173.00	1384.00	PK	29.32	V	4.30	28.56	3.00	62.18	-35.20	-25.00	10.20
173.00	1557.00	PK	28.68	H	4.58	27.80	3.00	61.06	-36.32	-25.00	11.32
173.00	1557.00	PK	29.06	V	4.58	27.80	3.00	61.44	-35.94	-25.00	10.94
173.00	1730.00	PK	29.74	H	4.82	29.46	3.00	64.03	-33.35	-25.00	8.35
173.00	1730.00	PK	28.16	V	4.82	29.46	3.00	62.45	-34.93	-25.00	9.93



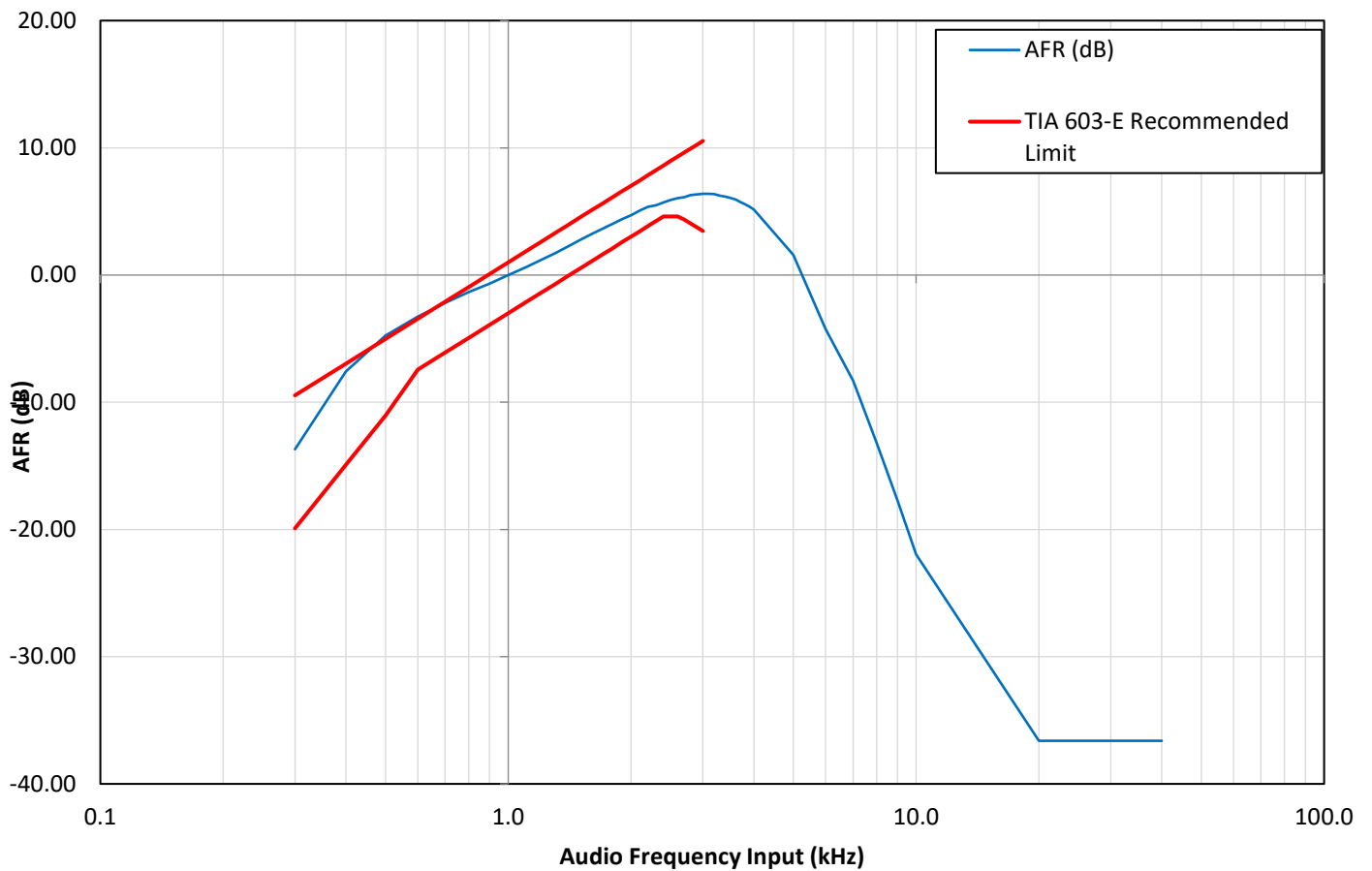
8.7 Modulation Characteristics

Limits from FCC Parts 2.1047 and test procedure from ANSI C63.26-2015



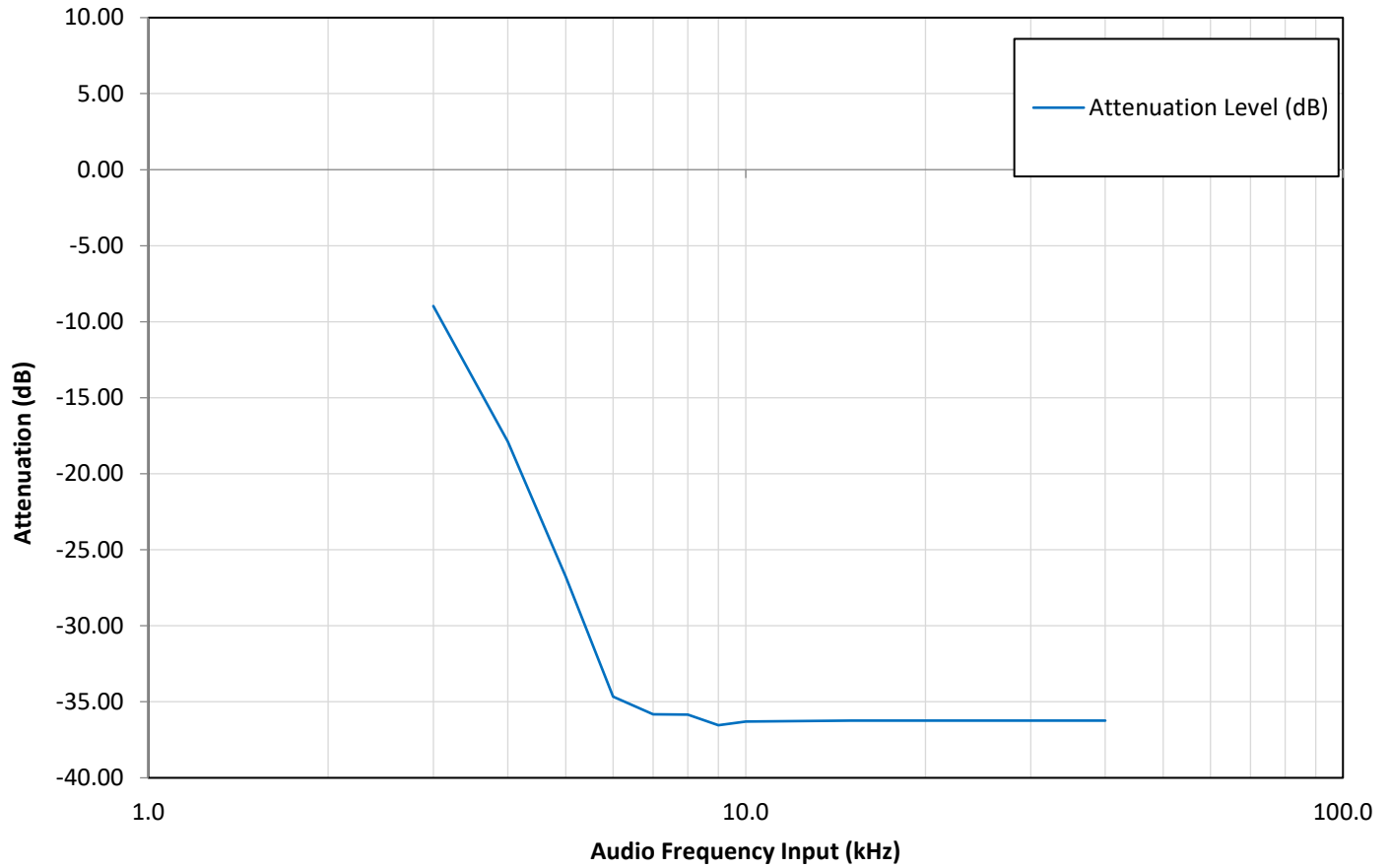


8.7.1 Audio Frequency Response

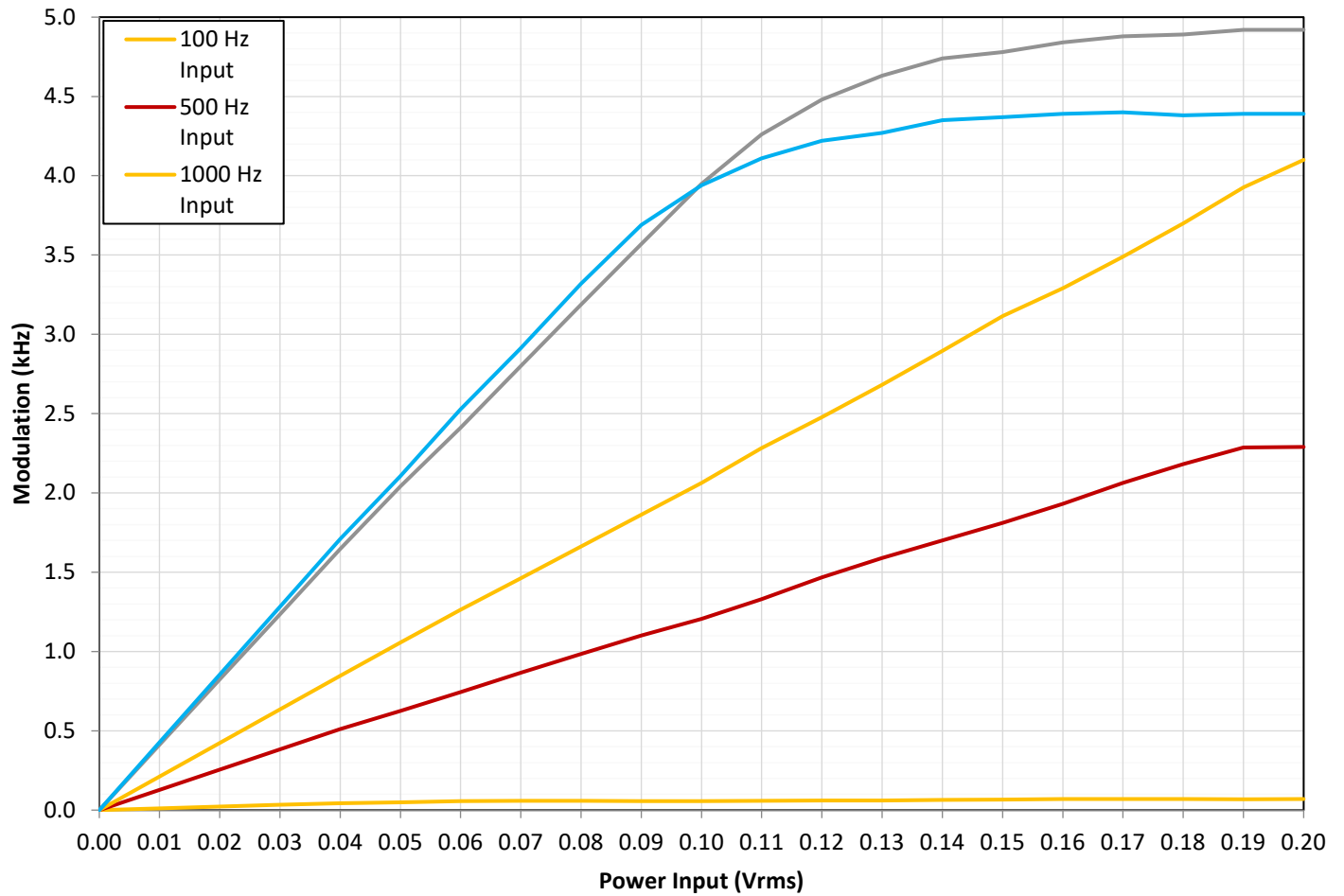




8.7.2 Low Pass Filter Response

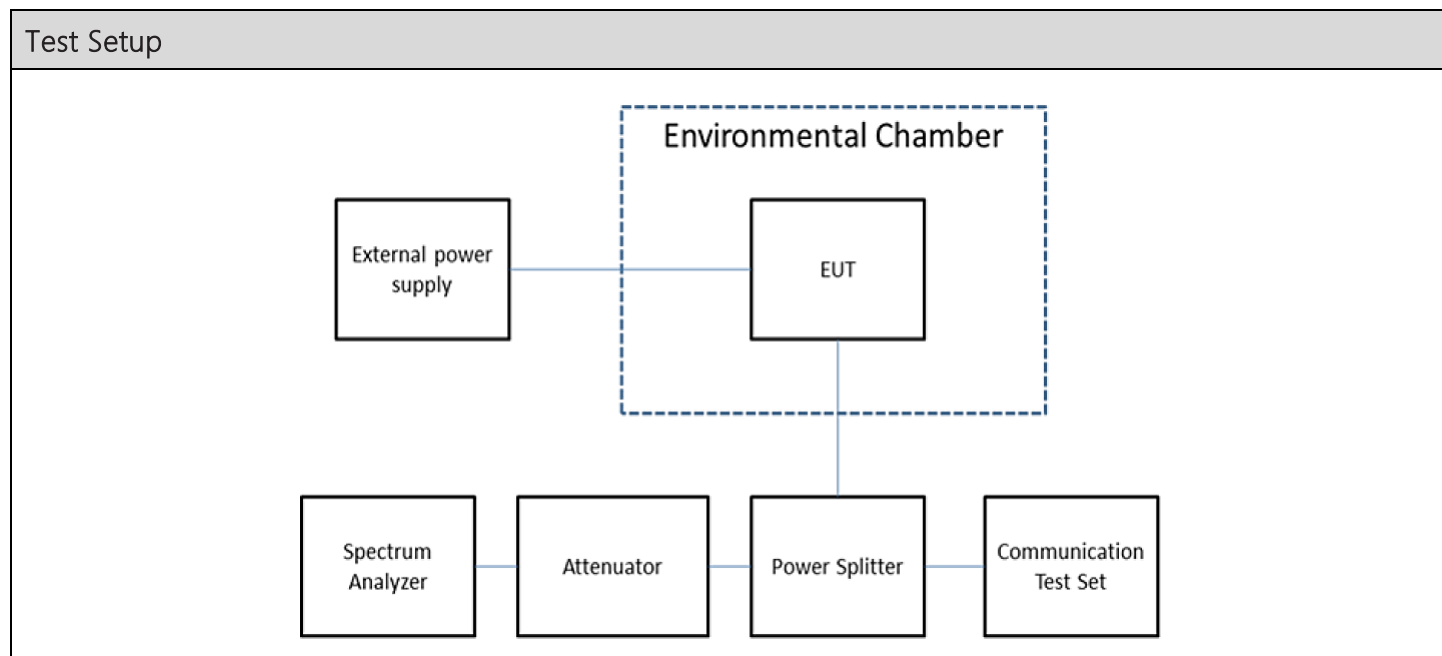


8.7.3 Modulation Limiting



8.8 Frequency Stability

Limits from FCC Parts 2.1055, and 90.213; and test procedure from ANSI C63.26-2015.



Test Results, Mode 1		
Tuned Frequency (MHz)	Max Deviation (kHz)	Limit (ppm)
161 MHz	.020 kHz	2.0 ppm

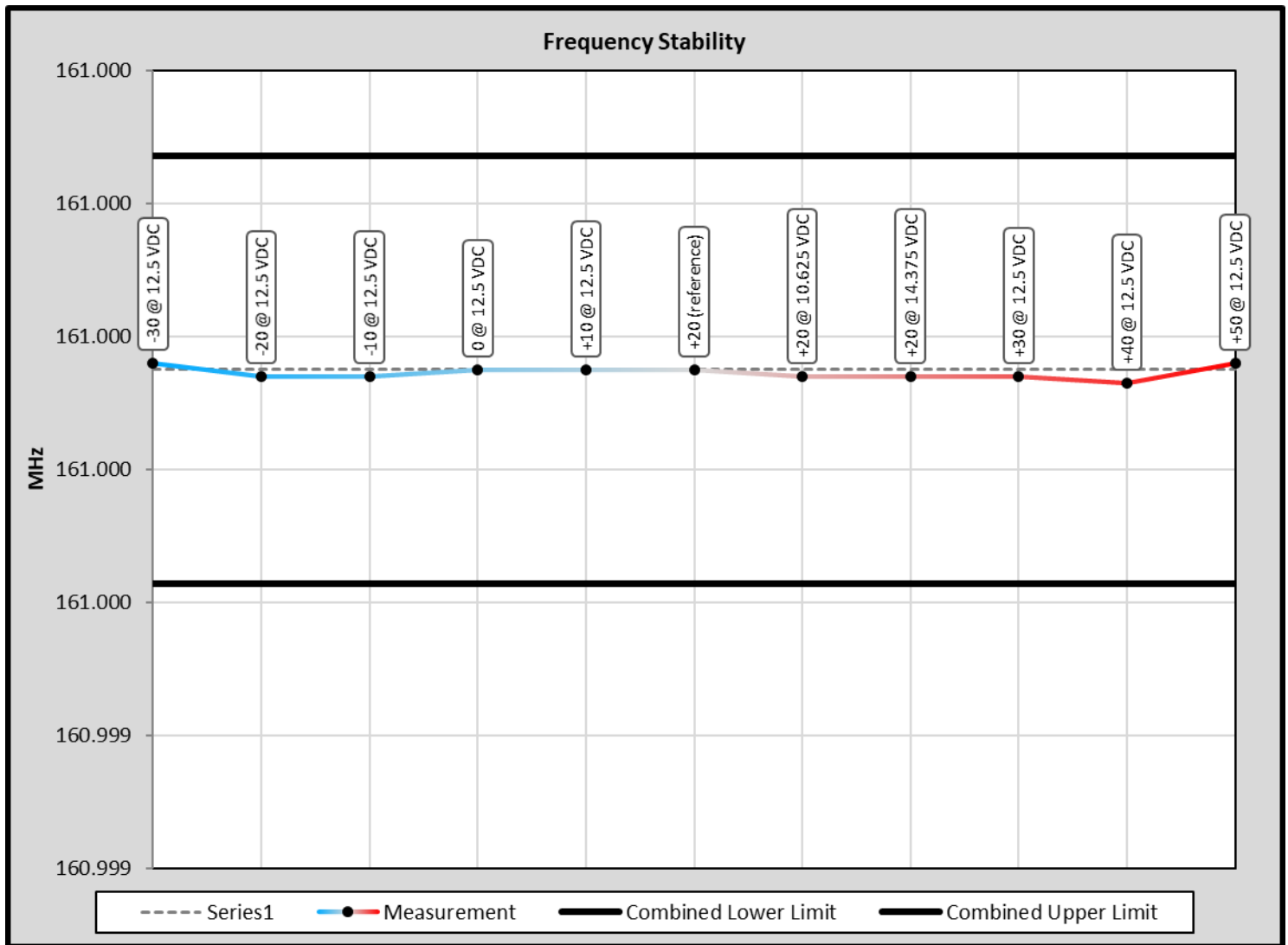


Frequency Stability, Tabular Data

8.8.1 Frequency Stability Data

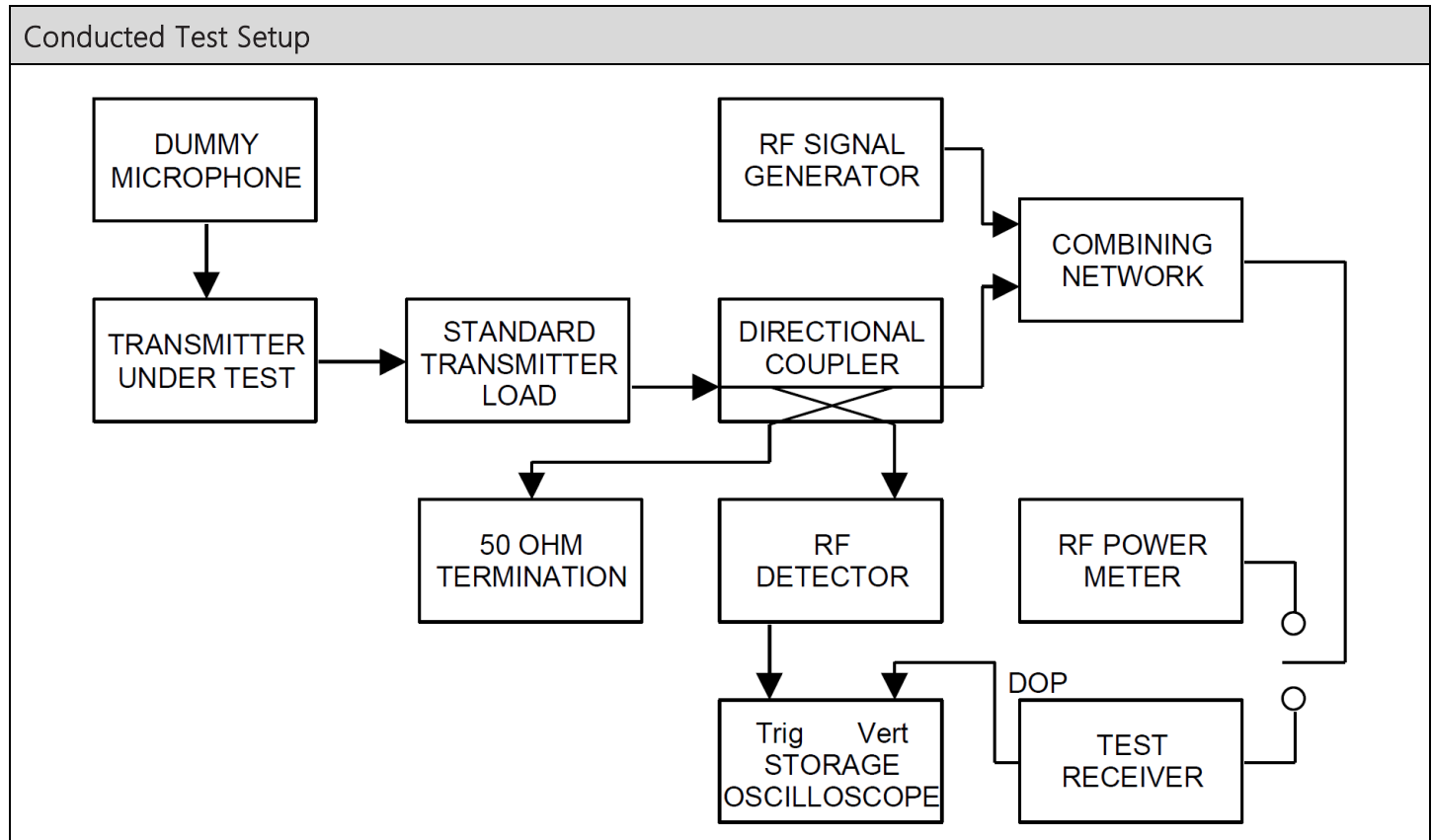
FCC Part 90 Limit	2.0	ppm	
FCC Part 90 Limit, as ppb	2000	ppb (Parts per Billion)	
FCC Part 90 Limit, as %	0.00020	%	
Strictest Combined Limit, as Hz	322.000	Hz	
Combined Lower Limit	160.999628	MHz	
Combined Upper Limit	161.000272	MHz	
Rated Supply Voltage	12.5	☐ AC ☒ DC	
Temperature / Voltage Variation			
Temperature (°C)	Supplied Voltage (V)	Frequency (MHz)	Deviation (kHz)
-30	12.5	160.999960	-0.010
-20	12.5	160.999940	0.010
-10	12.5	160.999940	0.010
0	12.5	160.999950	0.000
+10	12.5	160.999950	0.000
+20 (reference)	12.5	160.999950	0.000
+20	10.6	160.999940	0.010
+20	14.4	160.999940	0.010
+30	12.5	160.999940	0.010
+40	12.5	160.999930	0.020
+50	12.5	160.999960	-0.010

8.8.2 Frequency Stability Plot



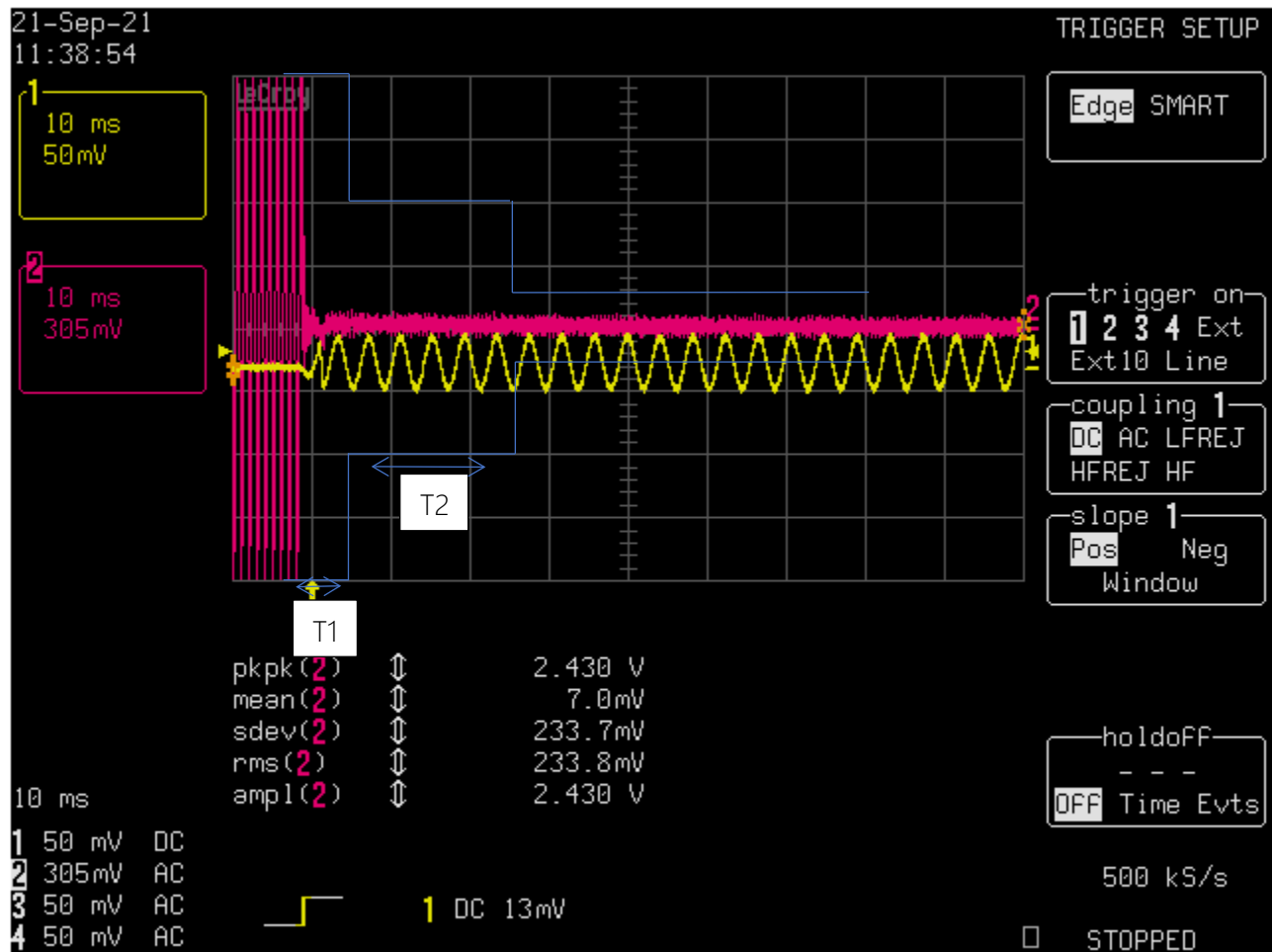
8.9 Transient Frequency Behavior

Limits from FCC Part 90.214; and test procedure from ANSI C63.26-2015.

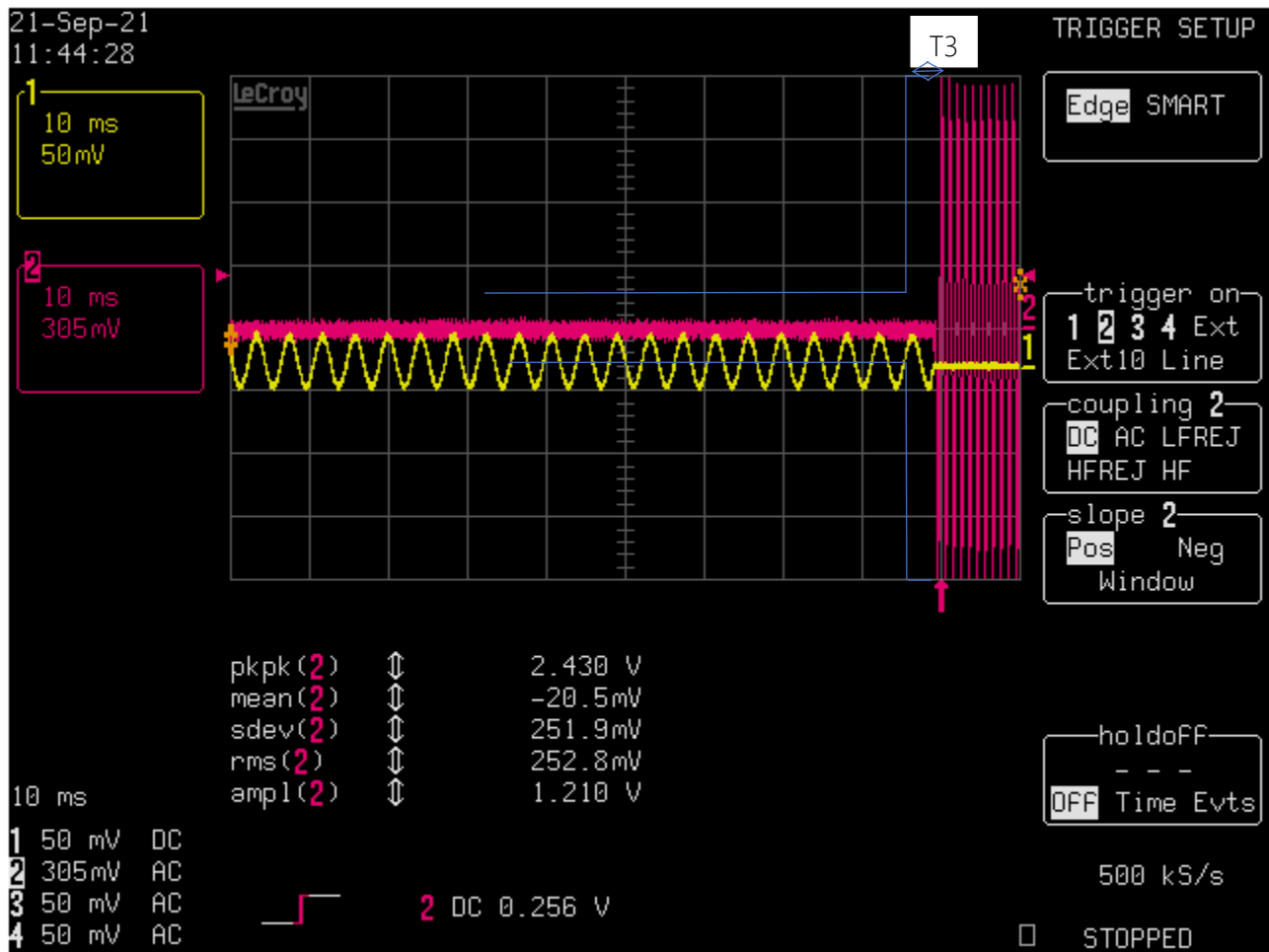


Results: Pass

8.9.1 Transient Frequency Behavior, Keyed-on



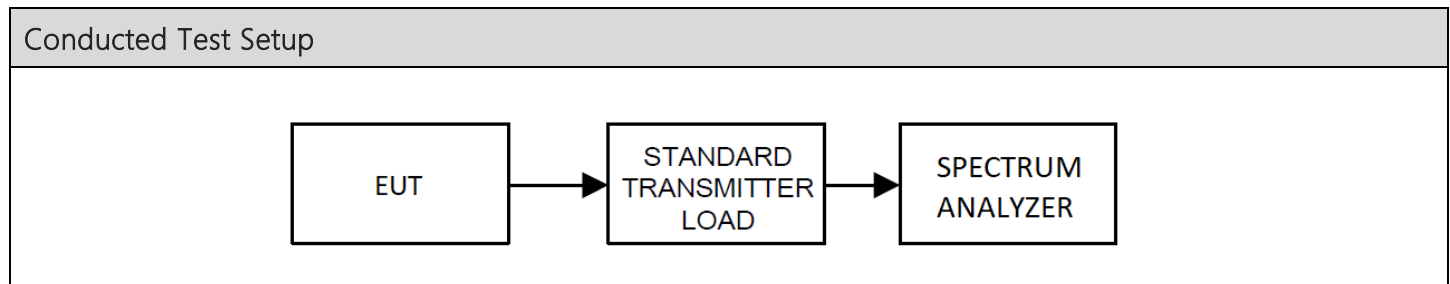
8.9.2 Transient Frequency Behavior, Keyed-off





8.10 Adjacent channel power limits

Limits from FCC Part 90.221, and test procedure from ANSI C63.26-2015.



n/a. The EUT does not operate in a band requiring ACP.



9. ANNEX-A - Photographs of the EUT

Photographs of the EUT and any manufacturer supplied accessories to be used with the EUT are in separate supplementary documents labelled EXTERNAL PHOTOS and INTERNAL PHOTOS.

10. ANNEX-B – Test Setup Photographs

Test setup photographs are located in a separate supplementary ANNEX-B document.

11. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_4759-21_FCC_PT90_	1	Initial release	9/22/2021
	2	Updated description and frequency range on Page 7	9/24/2021



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END OF TEST REPORT
