



Test Report - FCC Part 80
FCC ID: IPH-04932, IPH-A4932
Applicant: Garmin International Inc.

Signature:

A handwritten signature in black ink, appearing to read "Tim Royer".

Sr. EMC Engineer
EMC-003838-NE



Name & Title:

Tim Royer, EMC Engineer

Date of Signature

7/29/2025

Signature:

A handwritten signature in black ink, appearing to read "Kristoffer Costa".

Name & Title:

Kristoffer Costa, EMC Technician

Date of Signature

7/29/2025

Prepared By:

Mark Learner, Technical Writer

This test report relates only to the items tested as identified and is not valid for any subsequent changes or modifications made to the equipment under test.

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1. Applicant Information

Applicant: Garmin International Inc.
Address: 1200 East 151st Street
Olathe, Kansas, 66062, United States

1.1 Part 80 Test Result Summary

The following test procedure and guidance were used for measuring FCC PART 80 (Stations in the Maritime SERVICES), C63.26. Full test results are available in this report.

Applicable Clauses		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
2.1033(c)(8)	Power at the Final Amplifier	Reported
2.1046(a), 80.215(e)(1)	RF Power Output	Pass
2.1033(c)(4), 80.205(a), 80.207	Modulation Characteristics	Pass
2.1047(a)(b)	Audio Frequency Response and Low Filter	Pass
2.1047(b), 80.213 (a)(2) & (b)	Audio Input Vs Modulation	Pass
2.1049(c), 80.211 (f)(1)(2)	Occupied Bandwidth	Pass
2.1051(a), 80.211(f)(3)	Spurious Emissions at Antenna Terminals (Conducted)	Pass
2.1053, 80.211(f)(3)	Field Strength of Spurious Emissions	Pass
2.1055, 80.209(a)	Frequency Stability	Pass
80.211	Emission Limitations	Pass

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.

2. Location of Testing

2.1 Test Laboratory

Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at IIA's permanent laboratory located at 13146 NW 86th Drive, Suite 400, Alachua, Florida 32615.

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

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

The test sample was received: 6/17/2025

Dates of Testing: 6/19/2025 – 7/28/2025

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:	IPH-04932, IPH-A4932
Brief Description	Portable Digital Transceiver
Model(s) #	A04932
Firmware version	3.0.2139
Software version	0.03.1415
Serial Number	8EY000029

Both FCC ID numbers: IPH-04932 and IPH-A4932 are identical electrically and mechanically in design including Build of Materials between both products. No RF Characteristics is affected and the only difference between both products is the Software that is loaded. The Software loaded has no affect on the RF testing outcome on either products whether the product is with or without AIS. IPH-04932 (with AIS) was tested since it is the product that is going through USCG Certification

Technical Characteristics	
Frequency Range	156.025 MHz- 162.025 MHz
RF O/P Power (Max.)	Mode 1, Low Power: 30.32 dBm/ 1.076 W Mode 2, High Power: 43.77 dBm/ 23.823 W
Modulation	FM
Bandwidth & Emission Class	10K2F1D
Duty Cycle	100%
Antenna Connector	VHF
Voltage Rating (AC or Batt.)	12 VDC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	0 dBi

- Note: Information such as antenna gain, firmware/software numbers are provided by manufacturer and cannot be validated by the test lab.

3.2 Configuration of EUT

Test Modes				
Mode (#)	Mode (Type)	Test Frequencies (MHz)	BW (nominal) (kHz)	Emission Designator
1	Transmit	156.05 MHz 160.65 MHz 162.025 MHz	10.19	10K2F1D
2	Transmit	156.05 MHz 160.65 MHz 162.025 MHz	10.21	10K2F1D

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 80 Licensed device:

- 1) C63.26

4.2 Applied Limits and Regulatory Limits:

- 1) FCC CFR 47 Part 80 (2011)

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	Biconical 1096	Eaton	94455-1	1096	10/3/24	10/3/2027
Antenna, NSA	Log-Periodic 1243	Eaton	96005	1243	10/8/24	10/8/2027
Antenna	Double-Ridged Horn/ETS Horn 1	ETS-Lindgren	3117	00035923	5/31/23	5/30/2026
CHAMBER	CHAMBER	Panashield	3M	N/A	12/29/23	12/18/2025
Pre-amp	Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	8/27/22	8/26/2025
Receiver	EMI Test Receiver R&S ESU 40	Rohde & Schwarz	ESU 40	100320	9/18/24	9/18/2027
Receiver	EMI Test Receiver R&S ESW44	Rohde & Schwarz	ESW44	103049	1/20/25	1/20/2028
Signal Generator	Signal Generator HP 8648C	HP	8648C	35537A01679	8/4/22	8/03/2025

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).

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.

Example:

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

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

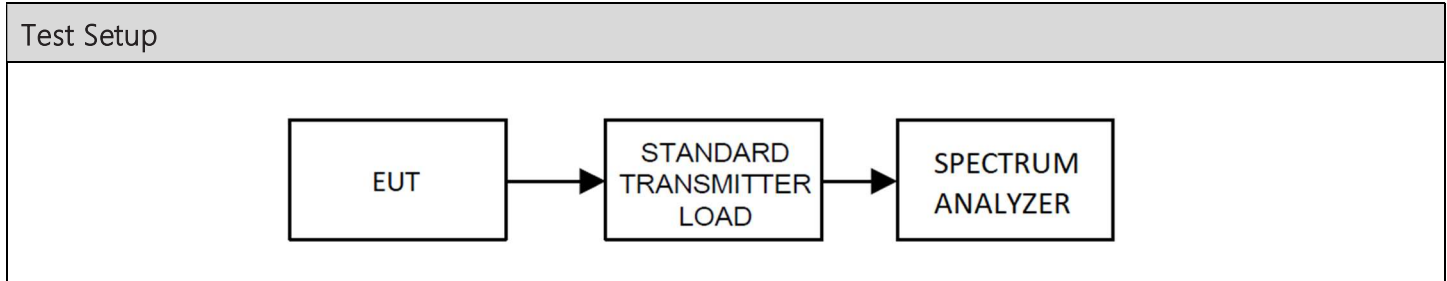
8.1 Power at the Final Amplifier

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

Test Results			
Power Setting (High, Low)	EUT Operating Voltage (V)	EUT Current (A)	Power at the Final Amplifier (W)
Low	5	1	5
High	5	3	15

8.2 RF Output Power

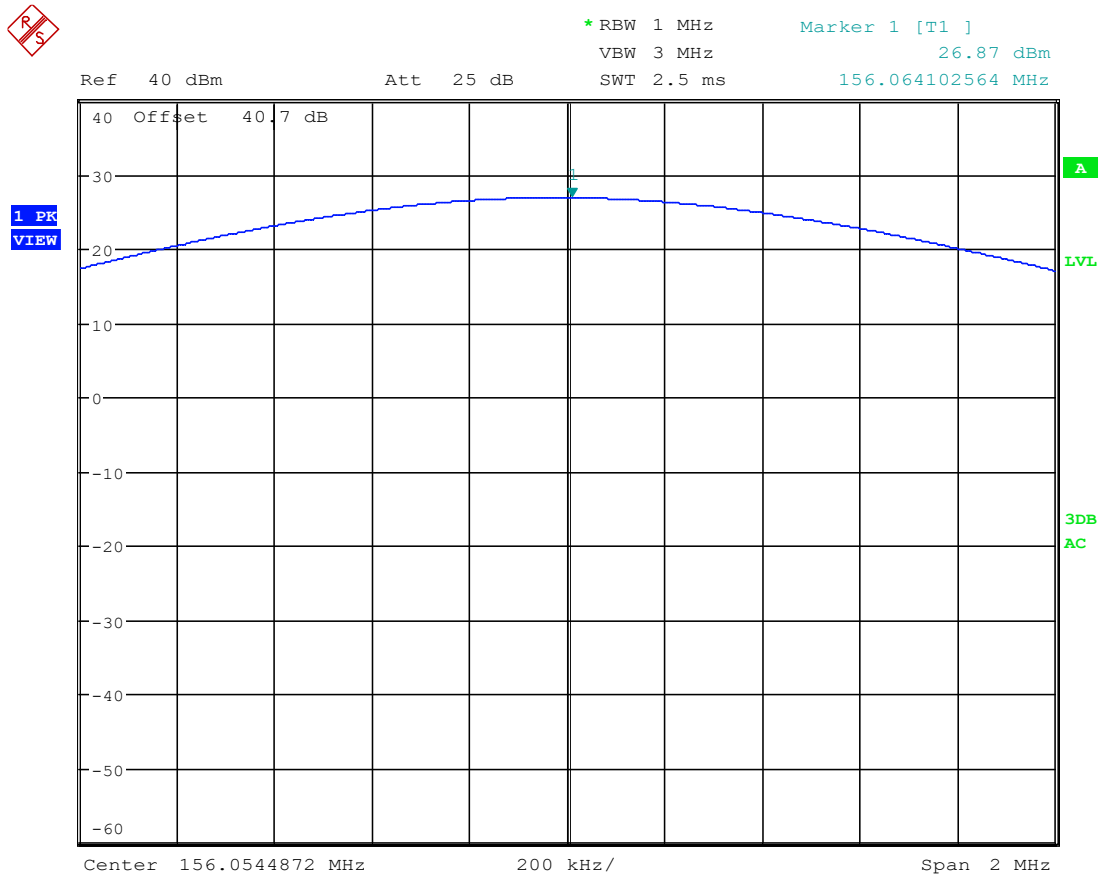
Limits from FCC Parts 2.1046(a), and 80.215(e)(1); and test procedure from C63.26.



Test Results, Mode 1- Low Power		
Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
156.05	26.87	0.486
160.65	25.13	0.326
162.025	30.32	1.076

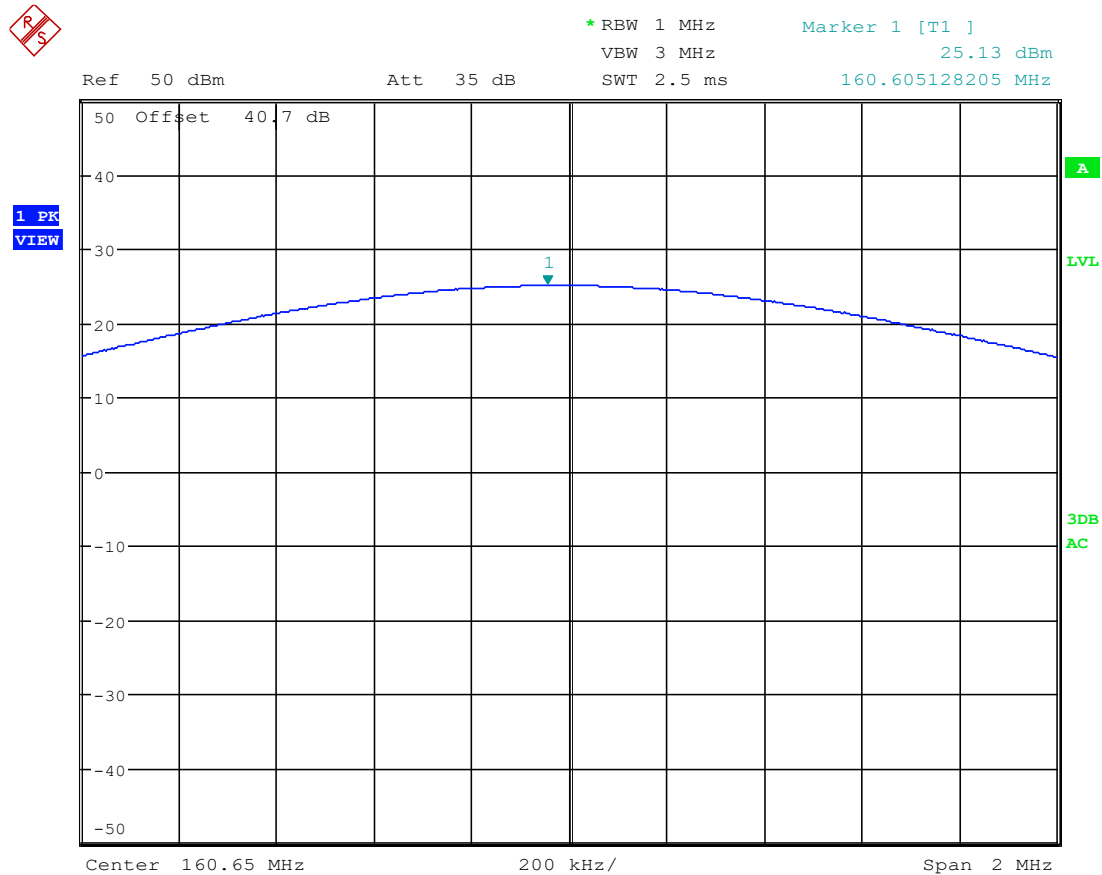
Test Results, Mode 2- High Power		
Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
156.05	43.38	21.78
160.65	42.35	17.18
162.025	43.77	23.82

8.2.1 RF Power Output Plot, Mode 1, 156.05 MHz



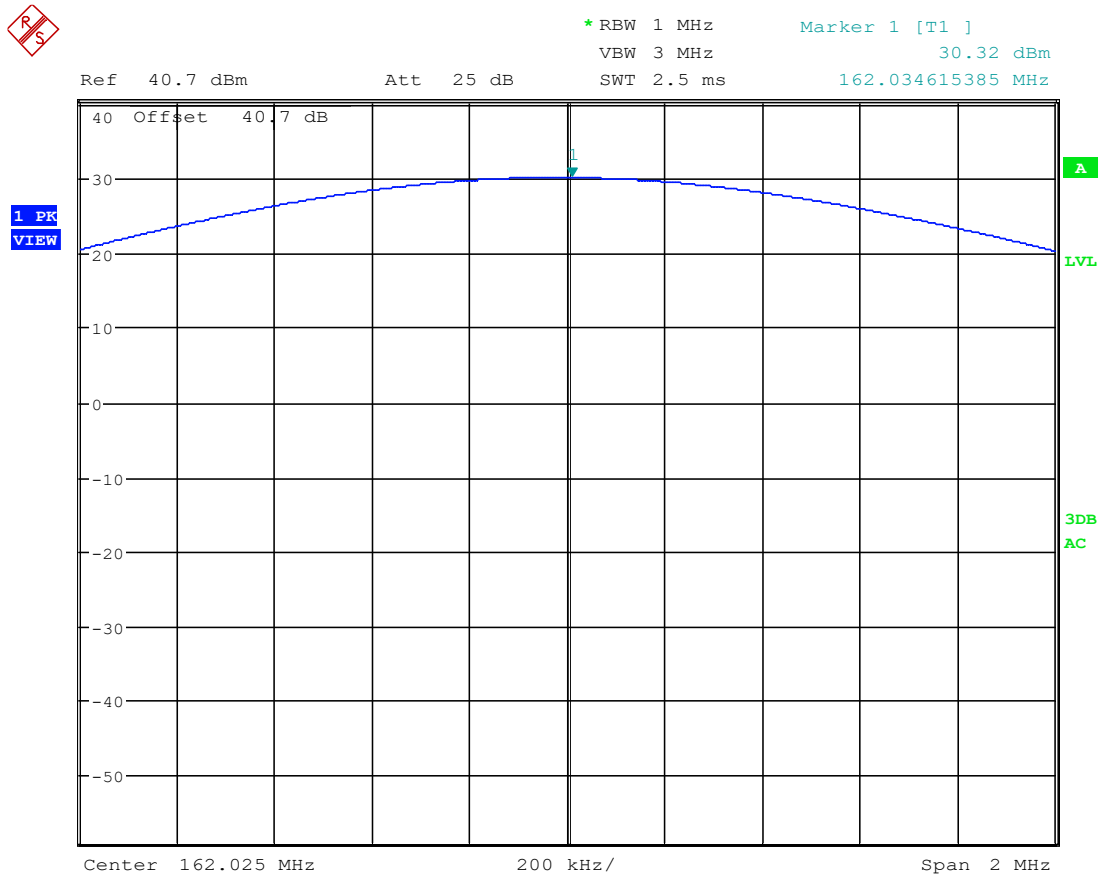
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8.2.2 RF Power Output Plot, Mode 1, 160.65 MHz



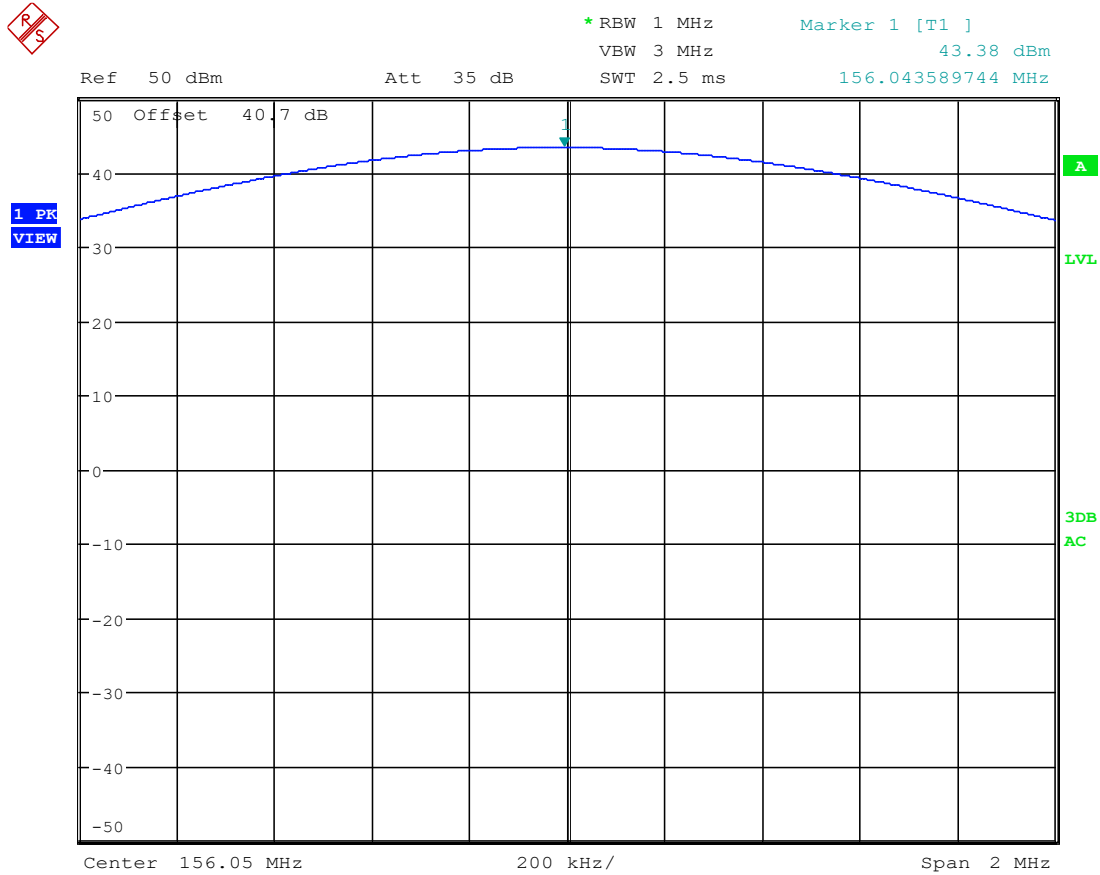
Date: 25.JUL.2025 13:49:14

8.2.3 RF Power Output Plot, Mode 1, 162.025 MHz



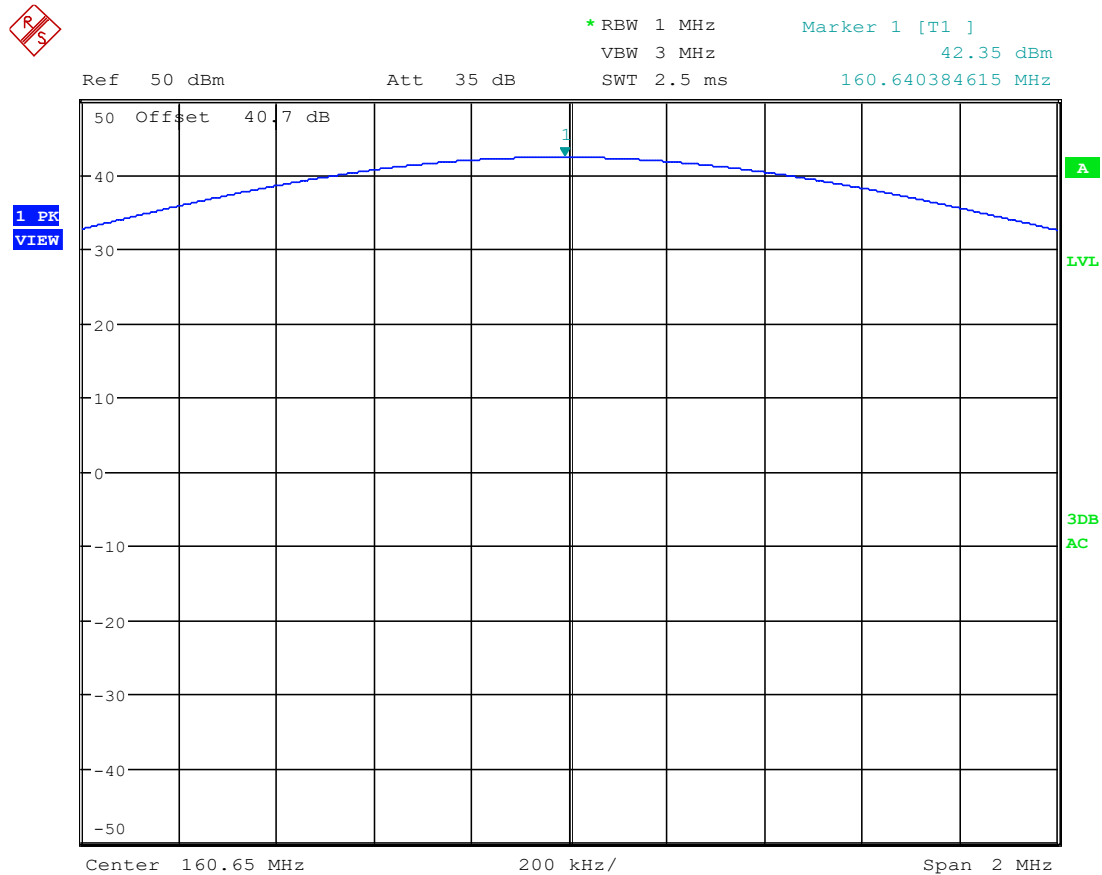
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8.2.4 RF Power Output Plot, Mode 2, 156.05 MHz



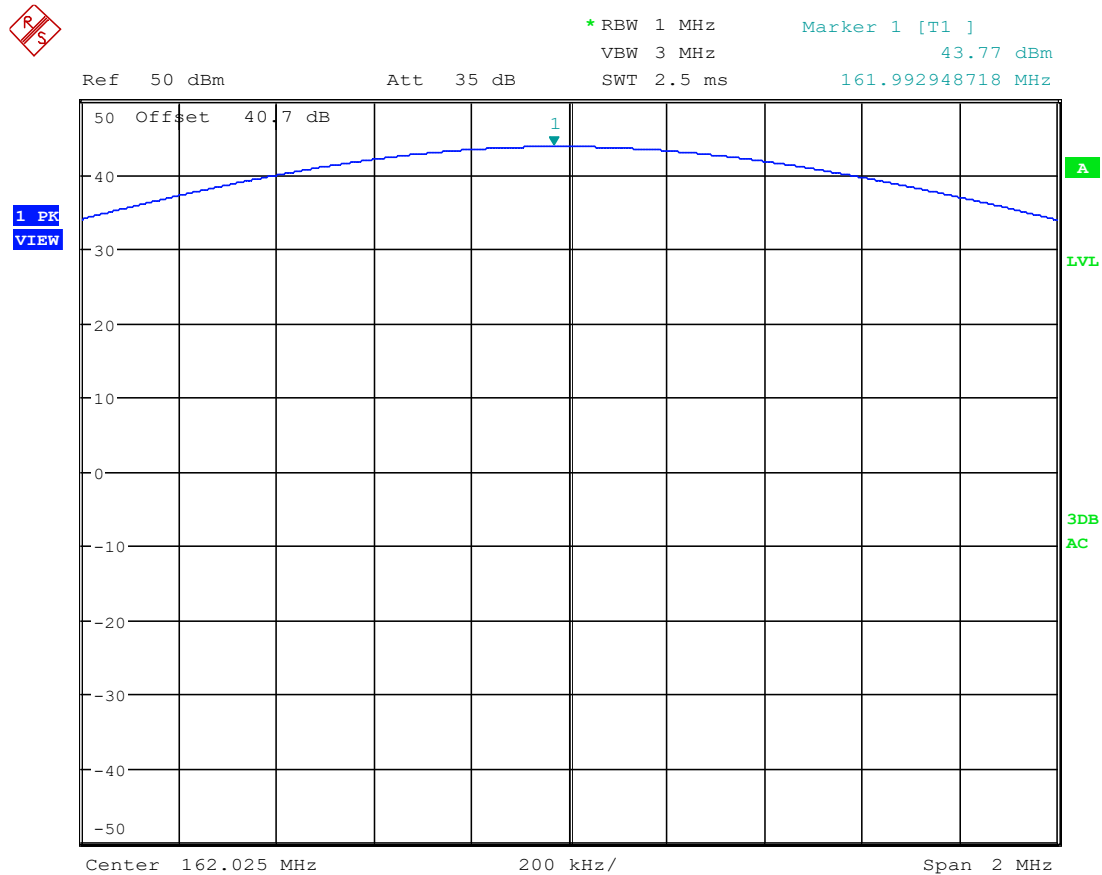
Date: 25.JUL.2025 13:36:01

8.2.5 RF Power Output Plot, Mode 2, 160.65 MHz



Date: 25.JUL.2025 13:49:57

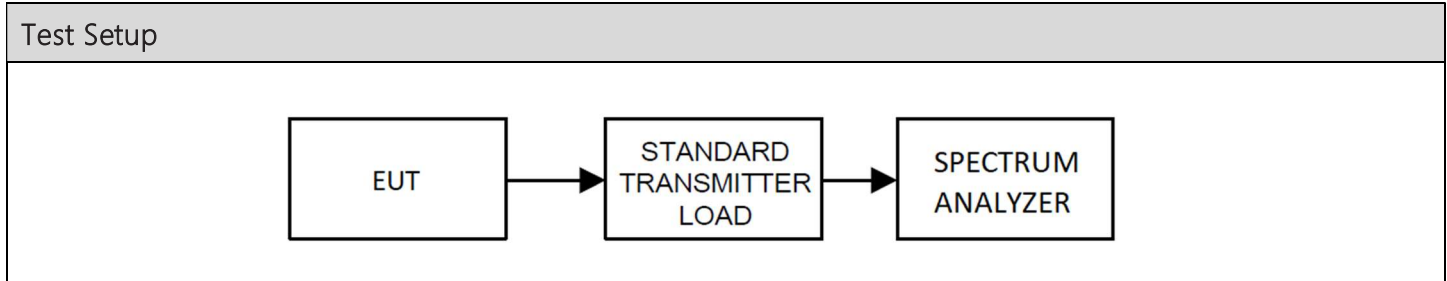
8.2.6 RF Power Output Plot, Mode 2, 162.025 MHz



Date: 25.JUL.2025 14:01:20

8.3 Occupied Bandwidth

Limits from FCC Parts 2.1049(c), and 80.211(f)(1)(2), and test procedure from C63.26.

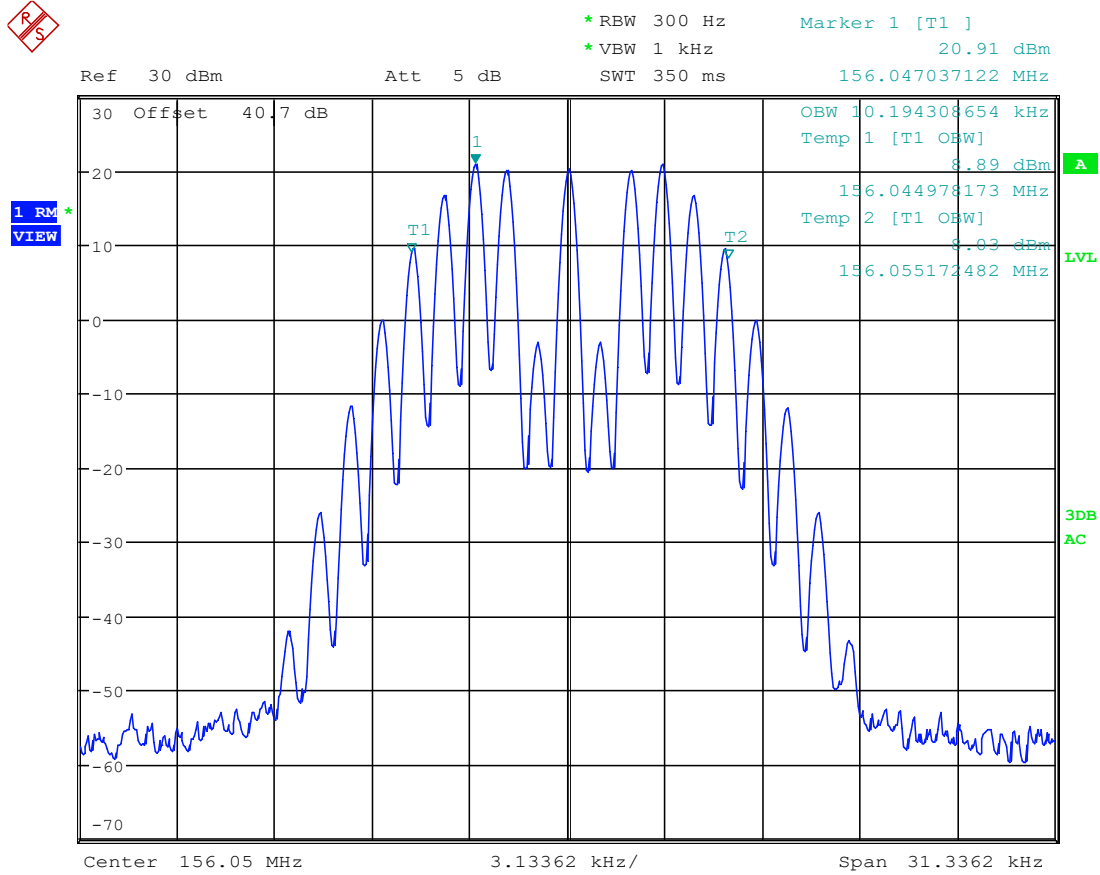


Test Results, Authorized Bandwidth		
Rule Part	Operating Range (MHz)	Authorized Bandwidth (kHz)
Part 80	156.025 MHz- 162.025 MHz	Low Power: 10.19 High Power: 10.21

Test Results, Occupied Bandwidth				
Tuned Frequency (MHz)	Mode	Emission Designator	Occupied Bandwidth (kHz)	Bandwidth Type
156.05	1		10.19	99%
	2		10.18	99%
160.65	1		10.19	99%
	2		10.21	99%
162.025	1		10.18	99%
	2		10.18	99%

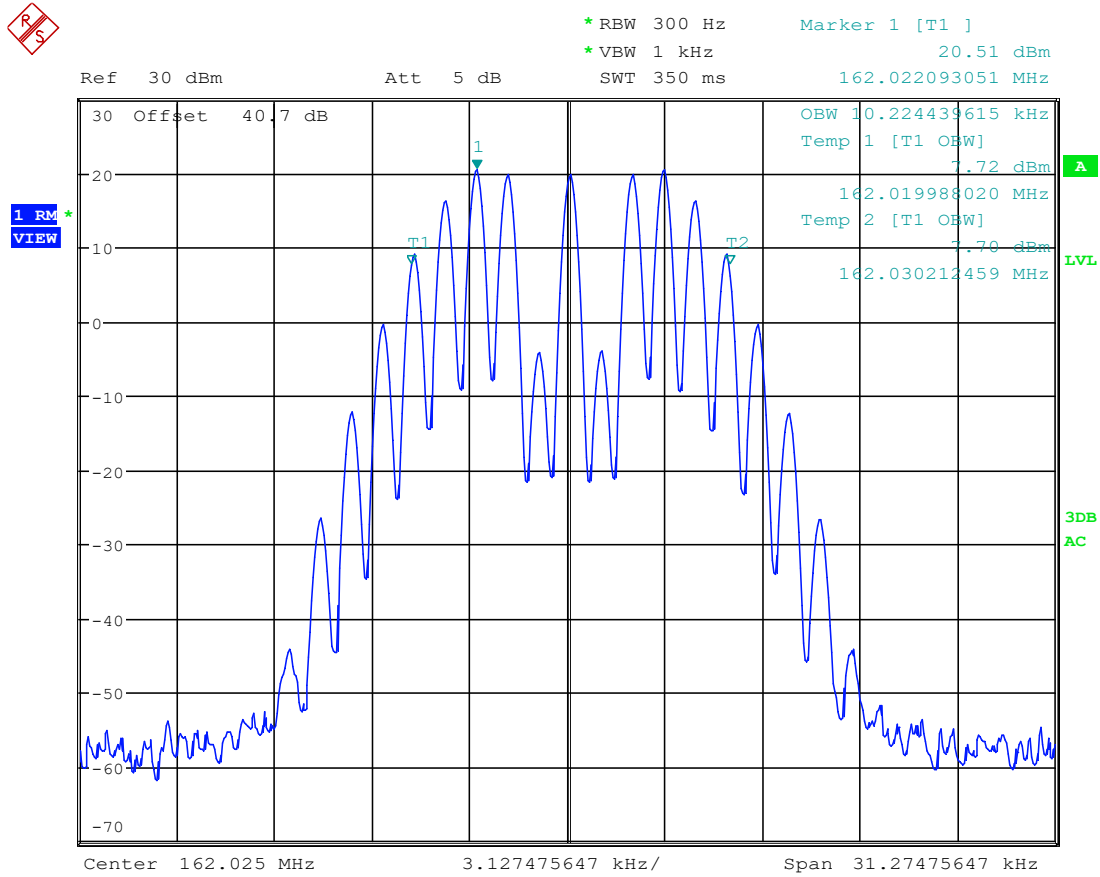
Occupied Bandwidth, Spectrum Plots

8.3.1 99% Bandwidth Plot, Mode 1, 156.05 MHz



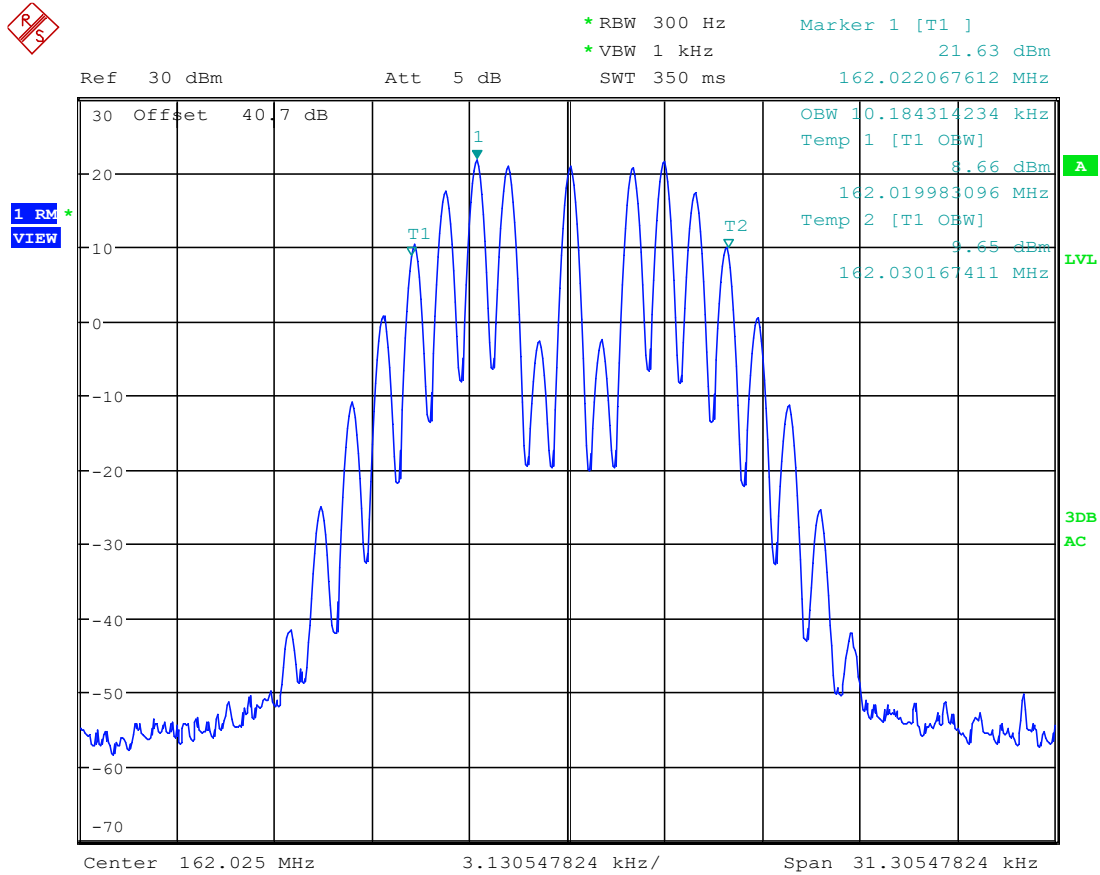
Date: 25.JUL.2025 13:32:43

8.3.2 99% Bandwidth Plot, Mode 1, 160.65 MHz



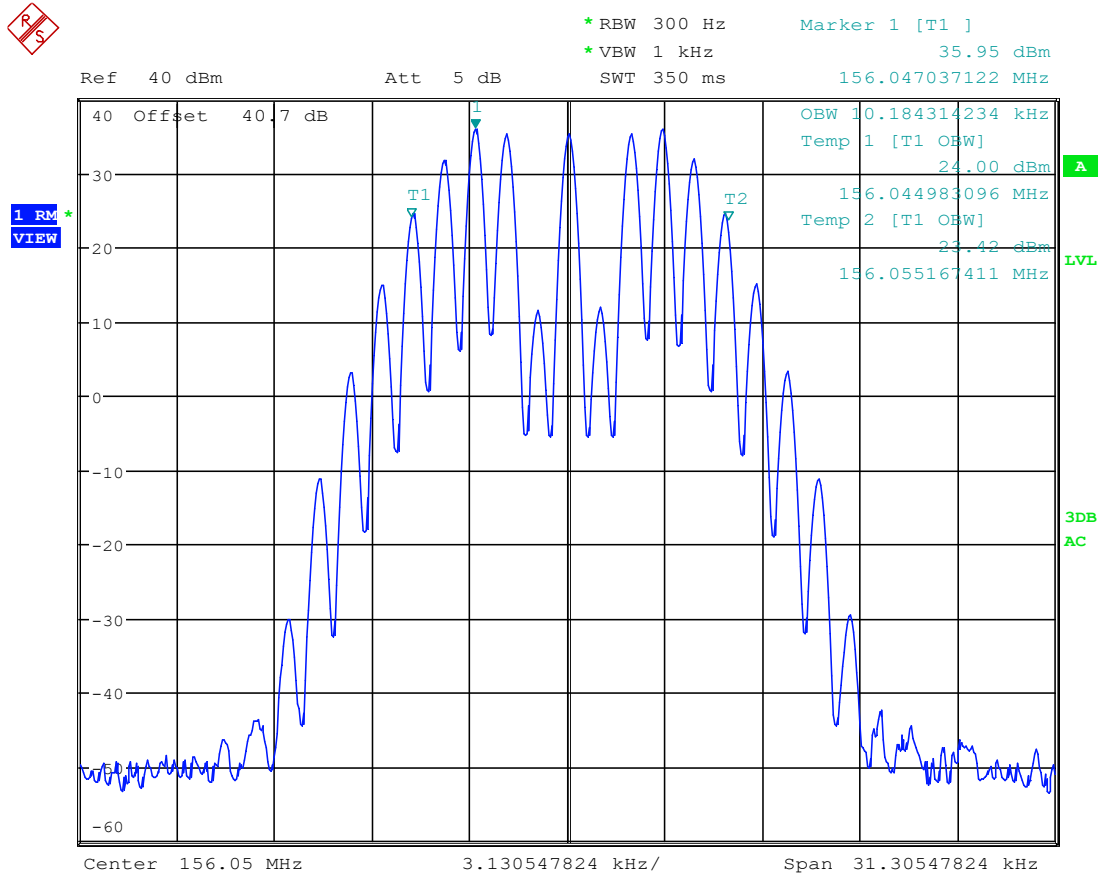
Date: 25.JUL.2025 14:04:07

8.3.3 99% Bandwidth Plot, Mode 1, 162.025 MHz



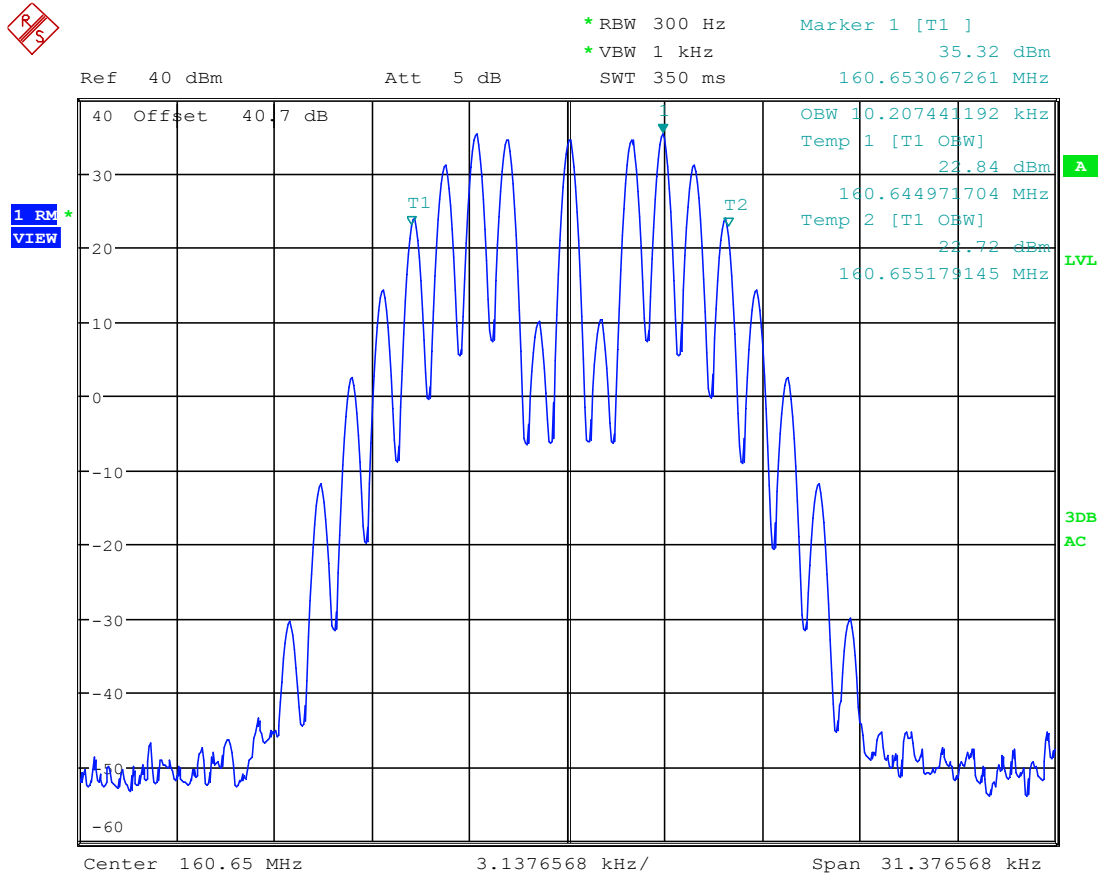
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8.3.4 99% Bandwidth Plot, Mode 2, 156.05 MHz



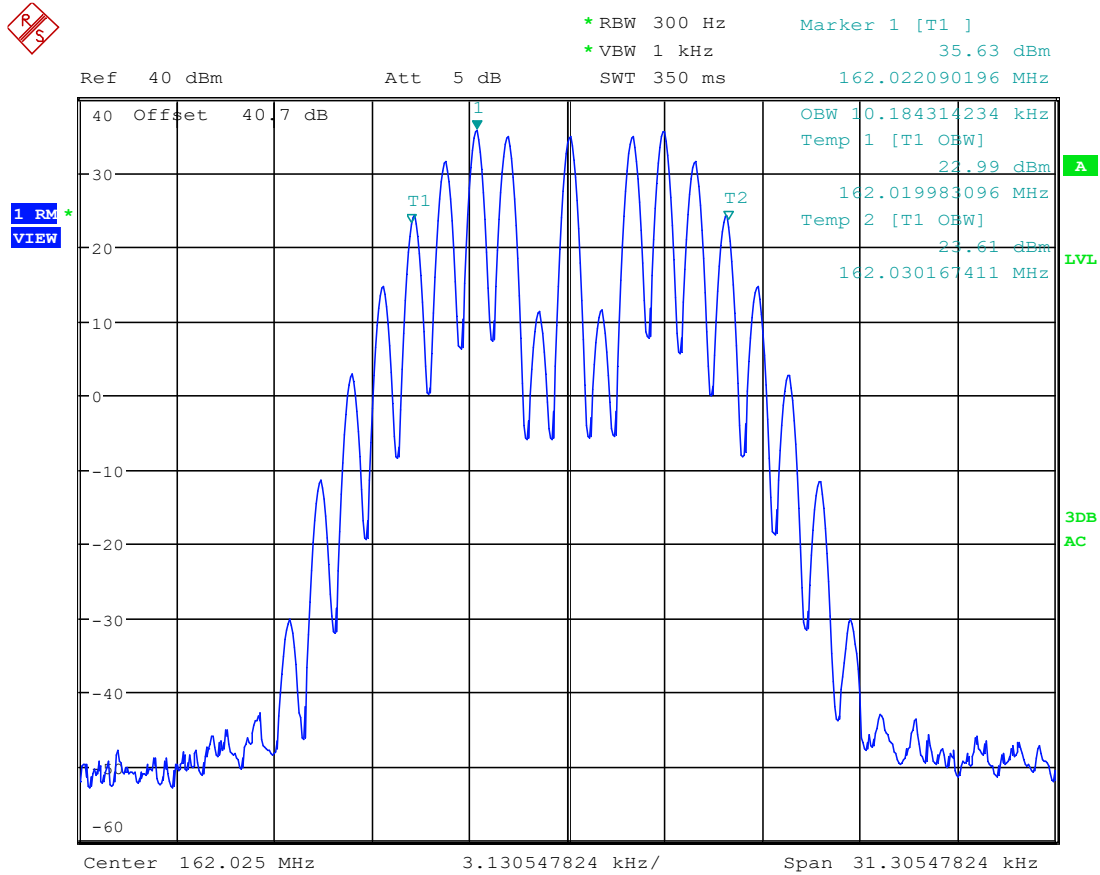
Date: 25.JUL.2025 13:34:20

8.3.5 99% Bandwidth Plot, Mode 2, 160.65 MHz



Date: 25.JUL.2025 13:51:50

8.3.6 99% Bandwidth Plot, Mode 2, 162.025 MHz

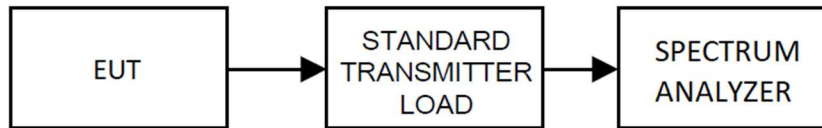


Date: 25.JUL.2025 14:03:11

8.4 Spurious Emissions At Antenna Terminals (Conducted)

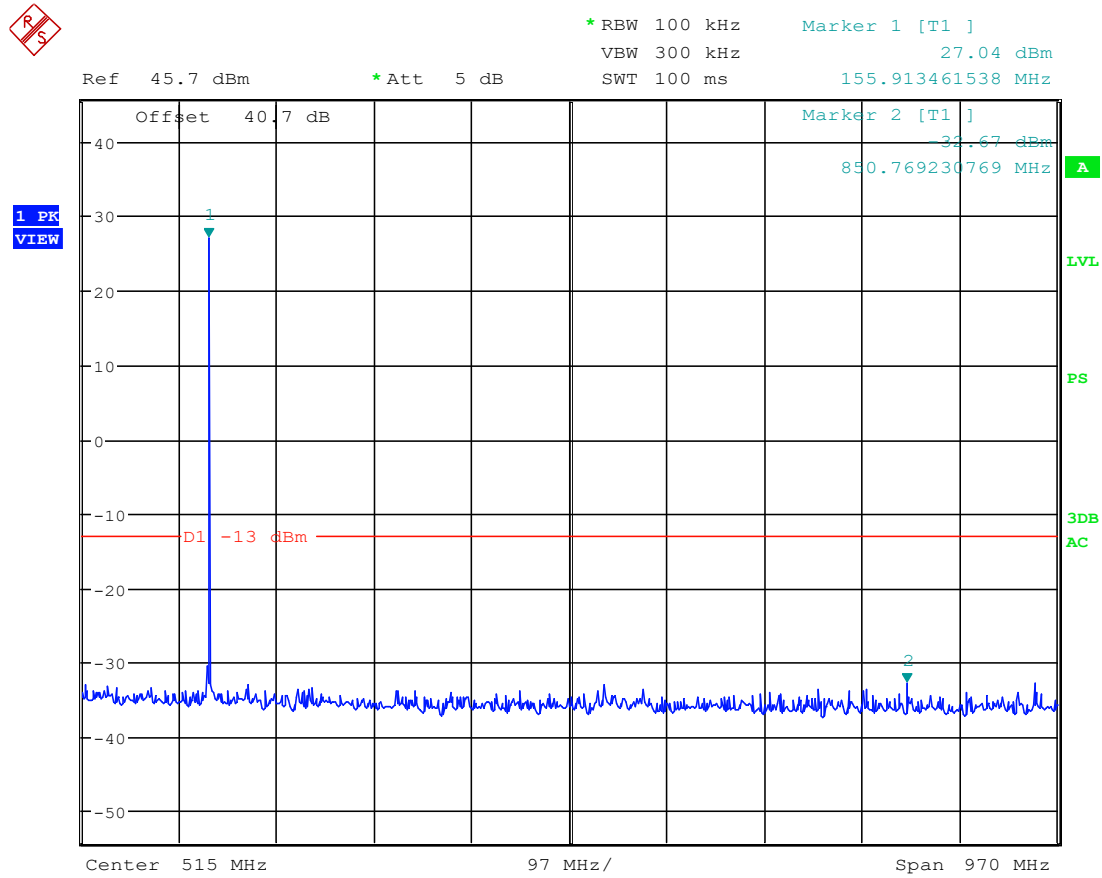
Limits from FCC Parts 2.1051(a), and 80.211(f)(3); and test procedure from C63.26.

Conducted Test Setup



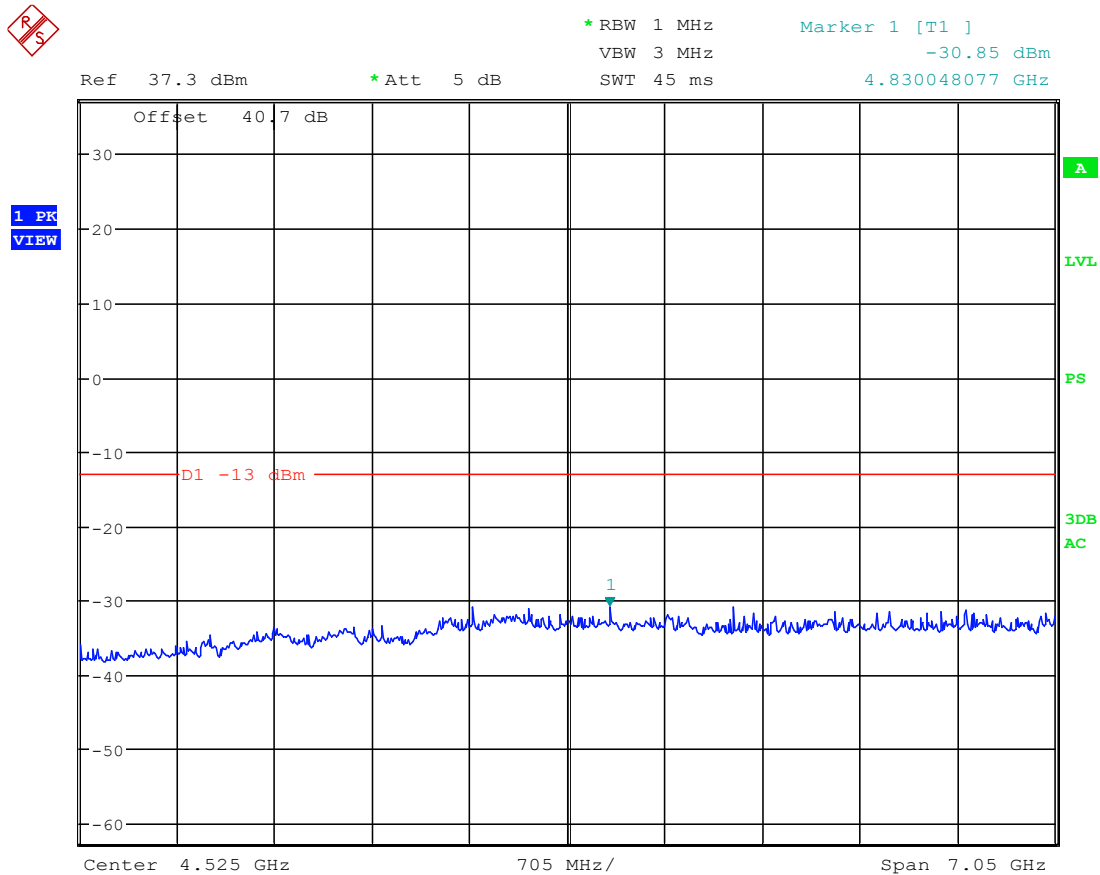
Spurious Emissions (Conducted) Spectrum Plots

8.4.1 Conducted Emissions, Below 1GHz, Mode 1, 156.05 MHz



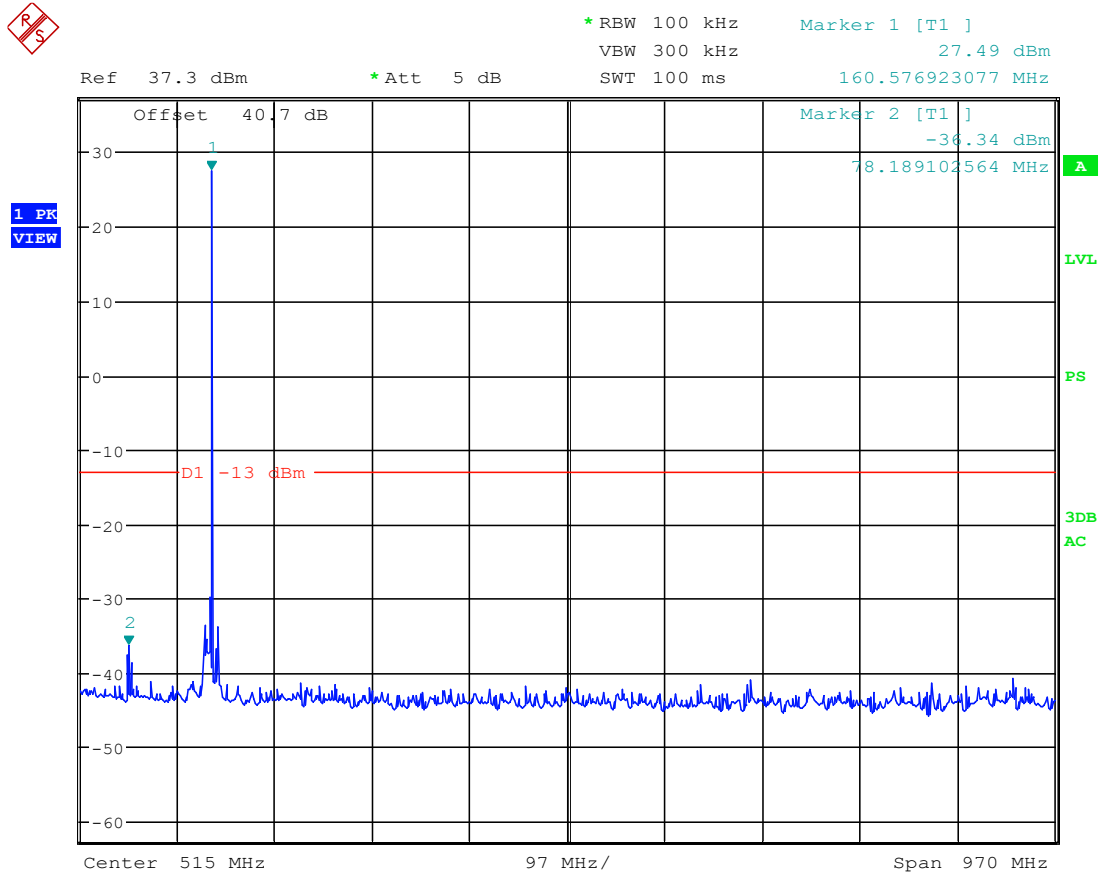
Date: 21.JUL.2025 08:54:41

8.4.2 Conducted Emissions Above 1GHz, Mode 1, 156.05 MHz



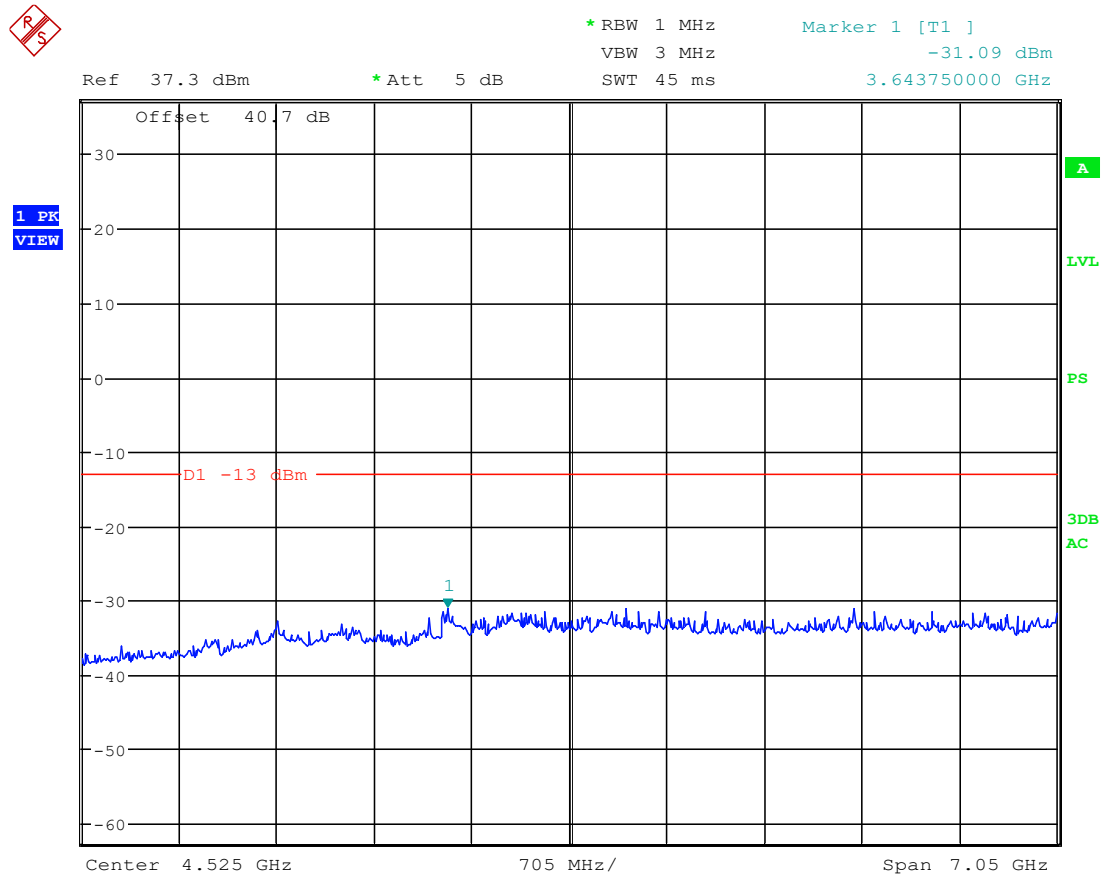
Date: 21.JUL.2025 08:55:58

8.4.3 Conducted Emissions Below 1GHz, Mode 1, 160.65 MHz



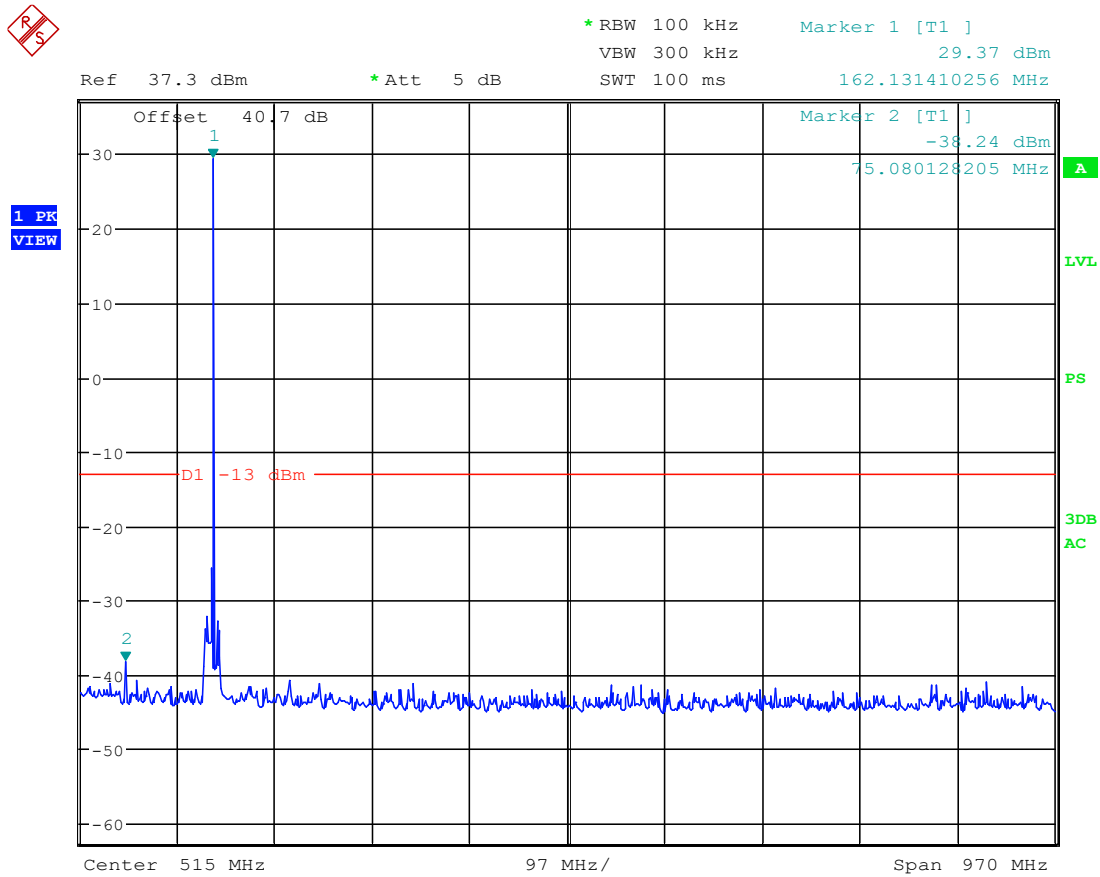
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8.4.4 Conducted Emissions Above 1GHz, Mode 1, 160.65 MHz



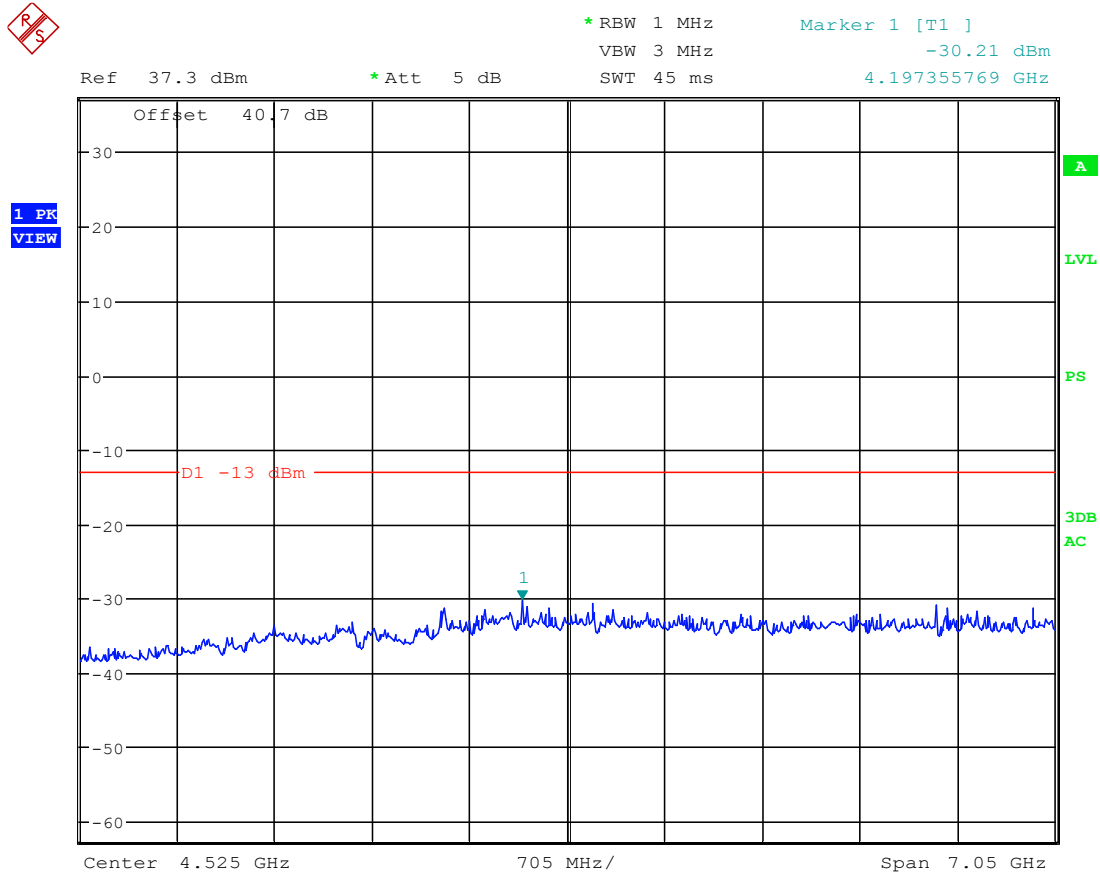
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8.4.5 Conducted Emissions Below 1GHz, Mode 1, 162.025 MHz



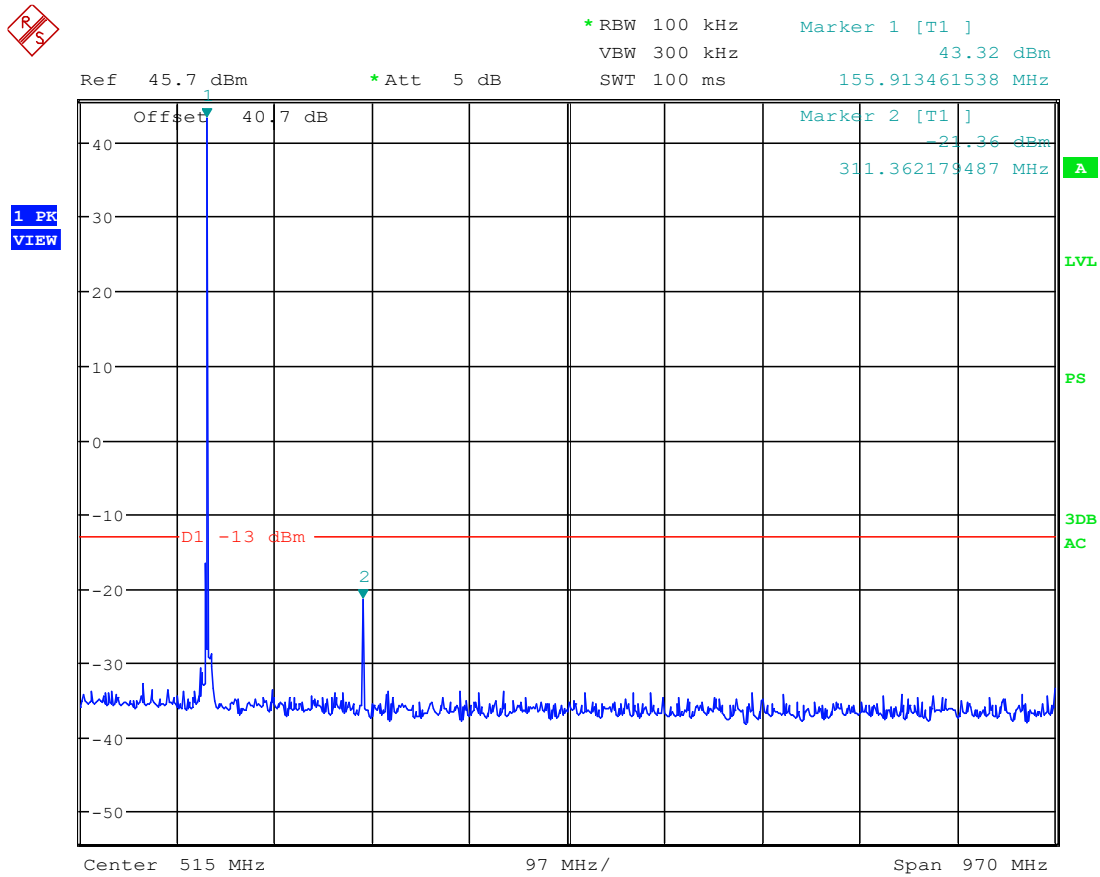
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8.4.6 Conducted Emissions Above 1GHz, Mode 1, 162.025 MHz



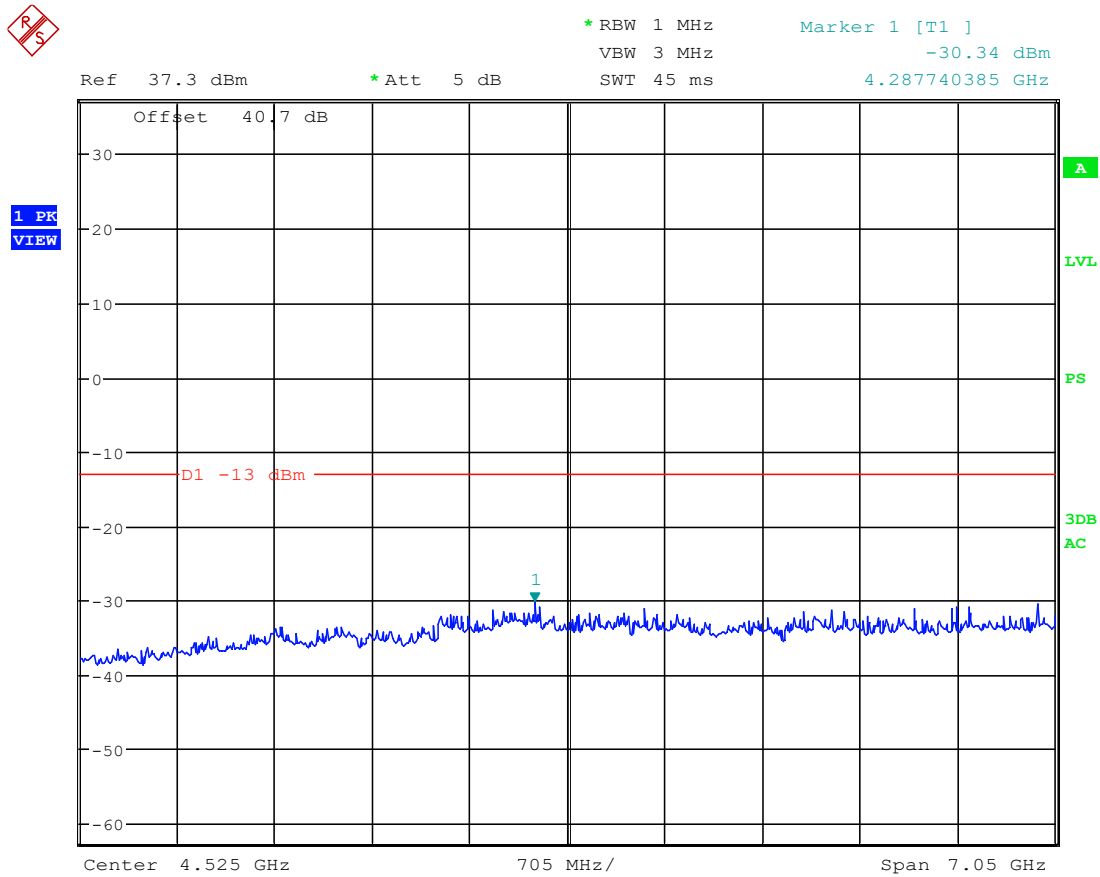
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8.4.7 Conducted Emissions, Below 1GHz, Mode 2, 156.05 MHz



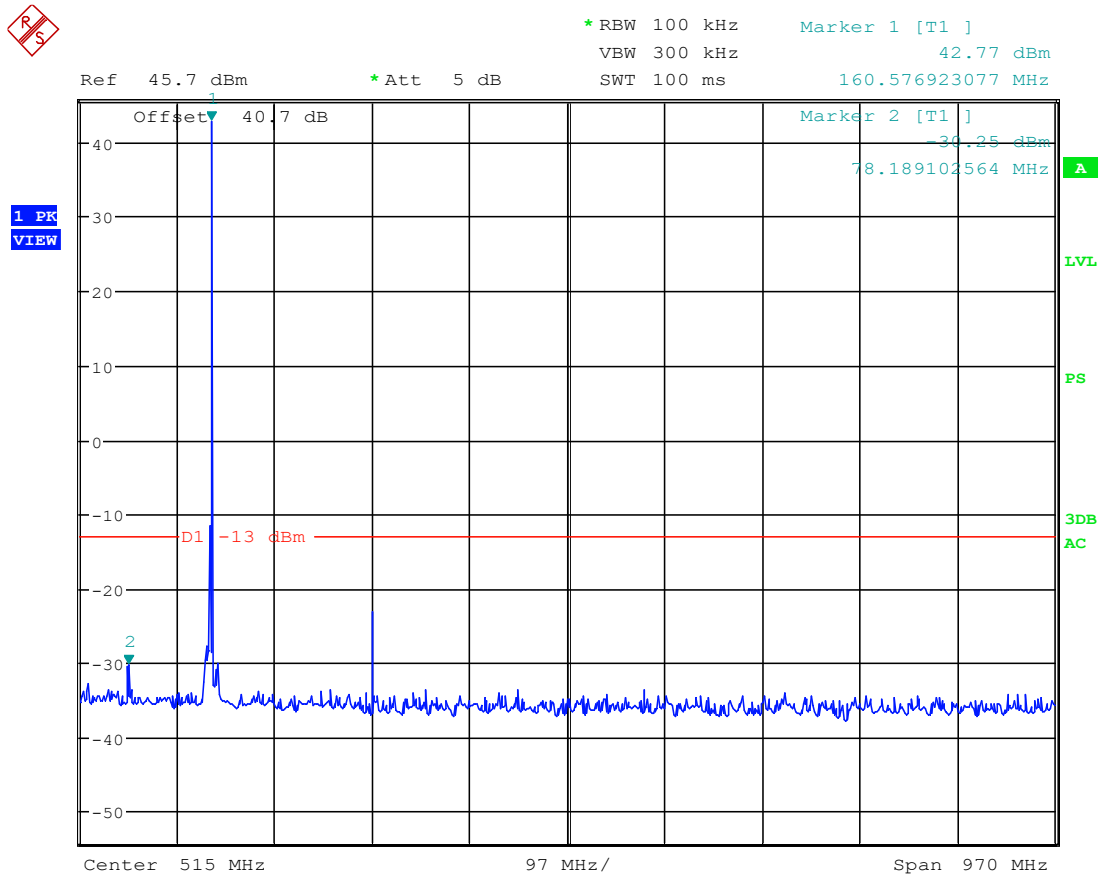
Date: 21.JUL.2025 08:52:41

8.4.8 Conducted Emissions Above 1GHz, Mode 2, 156.05 MHz



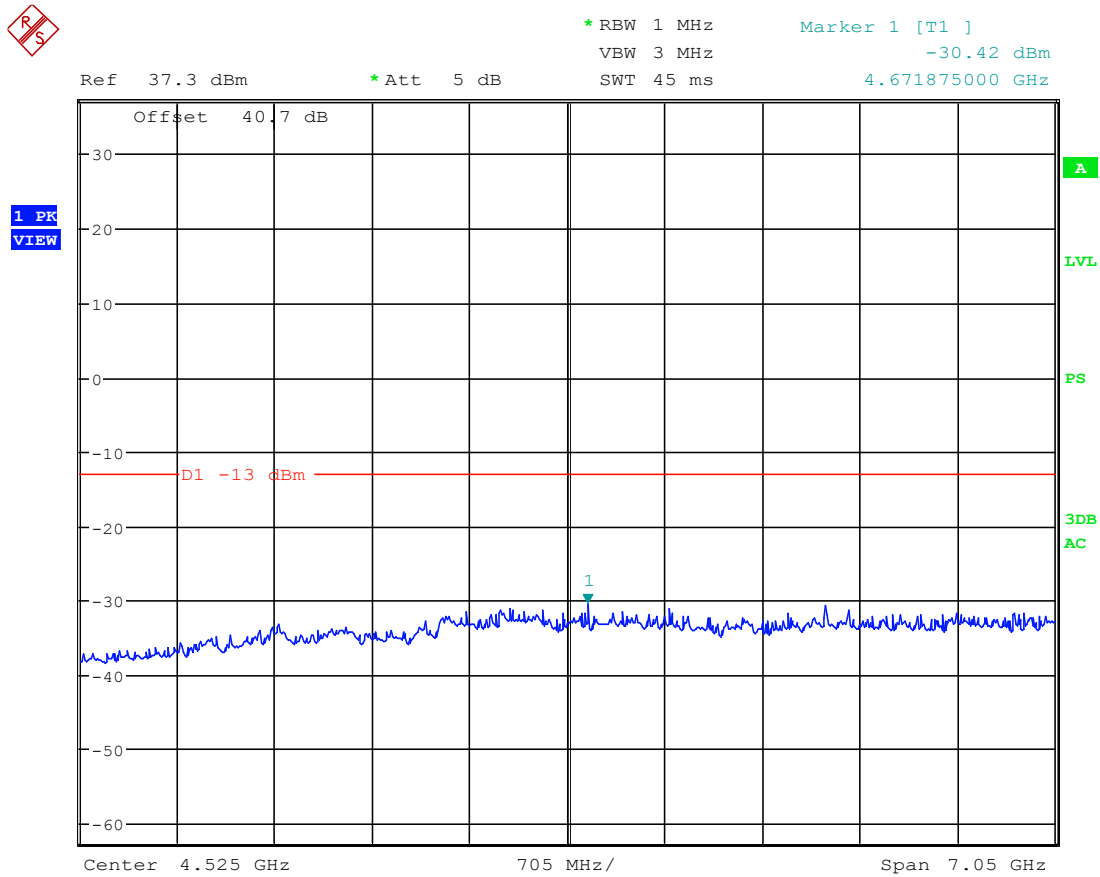
Date: 21.JUL.2025 08:56:25

8.4.9 Conducted Emissions Below 1GHz, Mode 2, 160.65 MHz



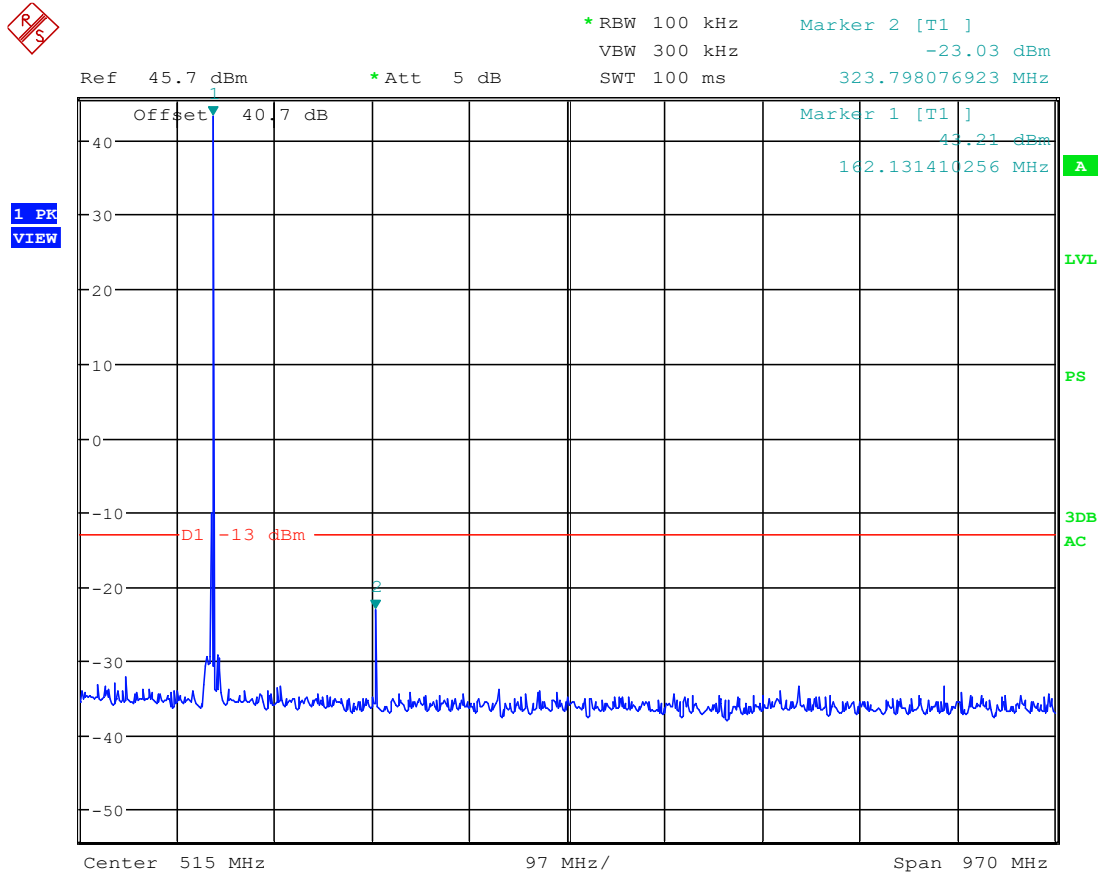
Date: 25.JUL.2025 14:17:04

8.4.10 Conducted Emissions Above 1GHz, Mode 2, 160.65 MHz



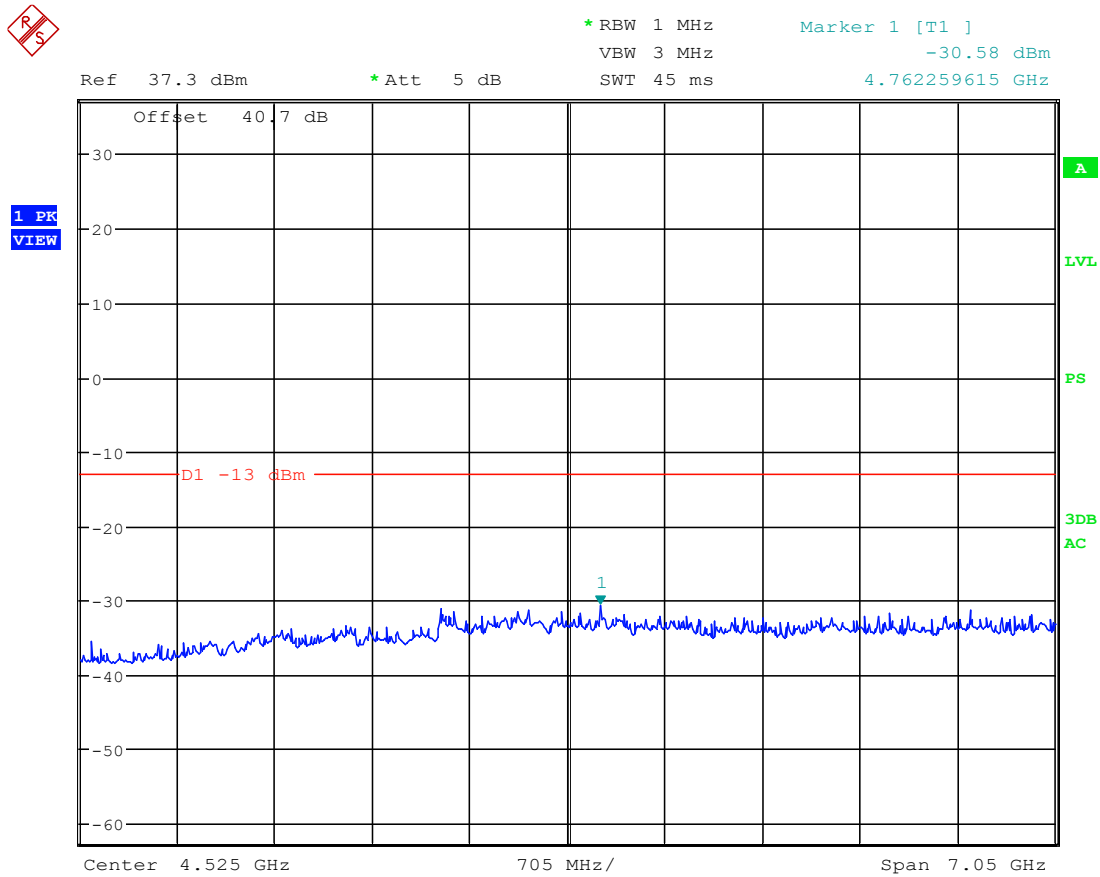
Date: 25.JUL.2025 14:20:05

8.4.11 Conducted Emissions Below 1GHz, Mode 2, 162.025 MHz



Date: 25.JUL.2025 14:06:56

8.4.12 Conducted Emissions Above 1GHz, Mode 2, 162.025 MHz

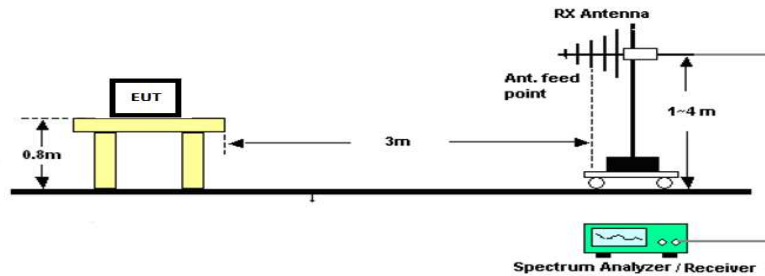


Date: 25.JUL.2025 14:09:17

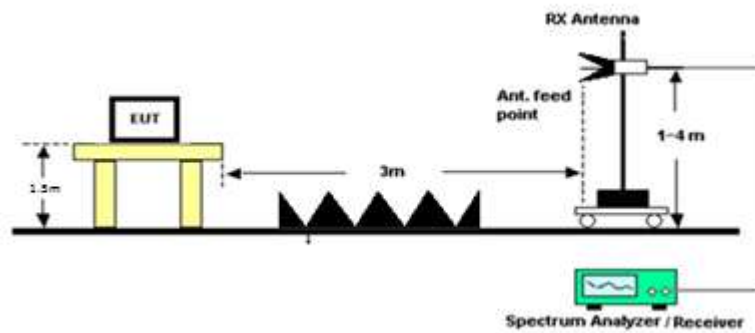
8.5 Field Strength of Spurious Emissions

Limits from FCC Parts 2.1053 and 80.211(f)(3); and test procedure from C63.26.

Radiated Test Setup, 30 – 1000 MHz



Radiated Test Setup, Above 1000 MHz



Radiated Emissions, Tabular Data

8.5.1 Radiated Emissions, 9 kHz – 156MHz

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)
1.63	PK	29.03	V	-0.77	11.64	3.00	39.90	-57.48	-13.00	44.48
20.25	PK	23.33	H	-0.77	10.05	3.00	32.62	-64.76	-13.00	51.76
45.62	PK	14.33	V	-0.77	12.21	3.00	25.78	-71.60	-13.00	58.60
78.32	PK	11.64	H	-1.06	7.80	3.00	18.37	-79.01	-13.00	66.01
130.10	PK	13.41	V	-1.29	13.03	3.00	25.15	-72.23	-13.00	59.23

8.5.2 Radiated Emissions, 156.05 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)
156.05	312.10	PK	30.50	H	-2.08	15.48	3.00	43.90	-53.48	-13.00	40.48
156.05	312.10	PK	12.80	V	-2.08	15.48	3.00	26.20	-71.18	-13.00	58.18
156.05	468.15	PK	13.90	H	-2.52	16.90	3.00	28.28	-69.10	-13.00	56.10
156.05	468.15	PK	14.40	V	-2.52	16.90	3.00	28.78	-68.60	-13.00	55.60
156.05	624.20	PK	24.70	H	-2.91	19.20	3.00	40.99	-56.39	-13.00	43.39
156.05	624.20	PK	12.80	V	-2.91	19.20	3.00	29.09	-68.29	-13.00	55.29
156.05	780.25	PK	11.30	H	-3.30	20.90	3.00	28.90	-68.48	-13.00	55.48
156.05	780.25	PK	11.30	V	-3.30	20.90	3.00	28.90	-68.48	-13.00	55.48
156.05	936.30	PK	11.90	H	-3.59	22.70	3.00	31.01	-66.36	-13.00	53.36
156.05	936.30	PK	11.80	V	-3.59	22.70	3.00	30.91	-66.46	-13.00	53.46
156.05	1092.35	PK	12.20	H	-3.93	27.27	3.00	35.55	-61.83	-13.00	48.83
156.05	1092.35	PK	12.90	V	-3.93	27.27	3.00	36.25	-61.13	-13.00	48.13
156.05	1248.40	PK	10.40	H	-4.14	28.61	3.00	34.87	-62.50	-13.00	49.50
156.05	1248.40	PK	11.40	V	-4.14	28.61	3.00	35.87	-61.50	-13.00	48.50
156.05	1404.45	PK	12.60	H	-4.37	27.99	3.00	36.22	-61.15	-13.00	48.15
156.05	1404.45	PK	12.80	V	-4.37	27.99	3.00	36.42	-60.95	-13.00	47.95
156.05	1560.50	PK	10.60	H	-4.67	27.73	3.00	33.66	-63.72	-13.00	50.72
156.05	1560.50	PK	11.20	V	-4.67	27.73	3.00	34.26	-63.12	-13.00	50.12

8.5.3 Radiated Emissions, 160.65 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)
160.650	321.300	PK	26.70	H	-2.09	14.60	3.00	39.21	-58.17	-13.00	45.17
160.650	321.300	PK	12.60	V	-2.09	14.60	3.00	25.11	-72.27	-13.00	59.27
160.650	481.950	PK	14.10	H	-2.60	17.10	3.00	28.60	-68.77	-13.00	55.77
160.650	481.950	PK	12.70	V	-2.60	17.10	3.00	27.20	-70.17	-13.00	57.17
160.650	642.600	PK	24.90	H	-2.96	19.60	3.00	41.54	-55.84	-13.00	42.84
160.650	642.600	PK	12.60	V	-2.96	19.60	3.00	29.24	-68.14	-13.00	55.14
160.650	803.250	PK	23.60	H	-3.35	21.10	3.00	41.35	-56.03	-13.00	43.03
160.650	803.250	PK	11.60	V	-3.35	21.10	3.00	29.35	-68.03	-13.00	55.03
160.650	963.900	PK	12.50	H	-3.64	22.90	3.00	31.76	-65.62	-13.00	52.62
160.650	963.900	PK	12.30	V	-3.64	22.90	3.00	31.56	-65.82	-13.00	52.82
160.650	1124.550	PK	11.00	H	-3.95	27.54	3.00	34.59	-62.79	-13.00	49.79
160.650	1124.550	PK	11.00	V	-3.95	27.54	3.00	34.59	-62.79	-13.00	49.79
160.650	1285.200	PK	10.90	H	-4.24	29.21	3.00	35.87	-61.50	-13.00	48.50
160.650	1285.200	PK	11.40	V	-4.24	29.21	3.00	36.37	-61.00	-13.00	48.00
160.650	1445.850	PK	12.30	H	-4.43	27.95	3.00	35.82	-61.56	-13.00	48.56
160.650	1445.850	PK	11.60	V	-4.43	27.95	3.00	35.12	-62.26	-13.00	49.26
160.650	1606.500	PK	12.60	H	-4.76	28.05	3.00	35.89	-61.48	-13.00	48.48
160.650	1606.500	PK	11.30	V	-4.76	28.05	3.00	34.59	-62.78	-13.00	49.78

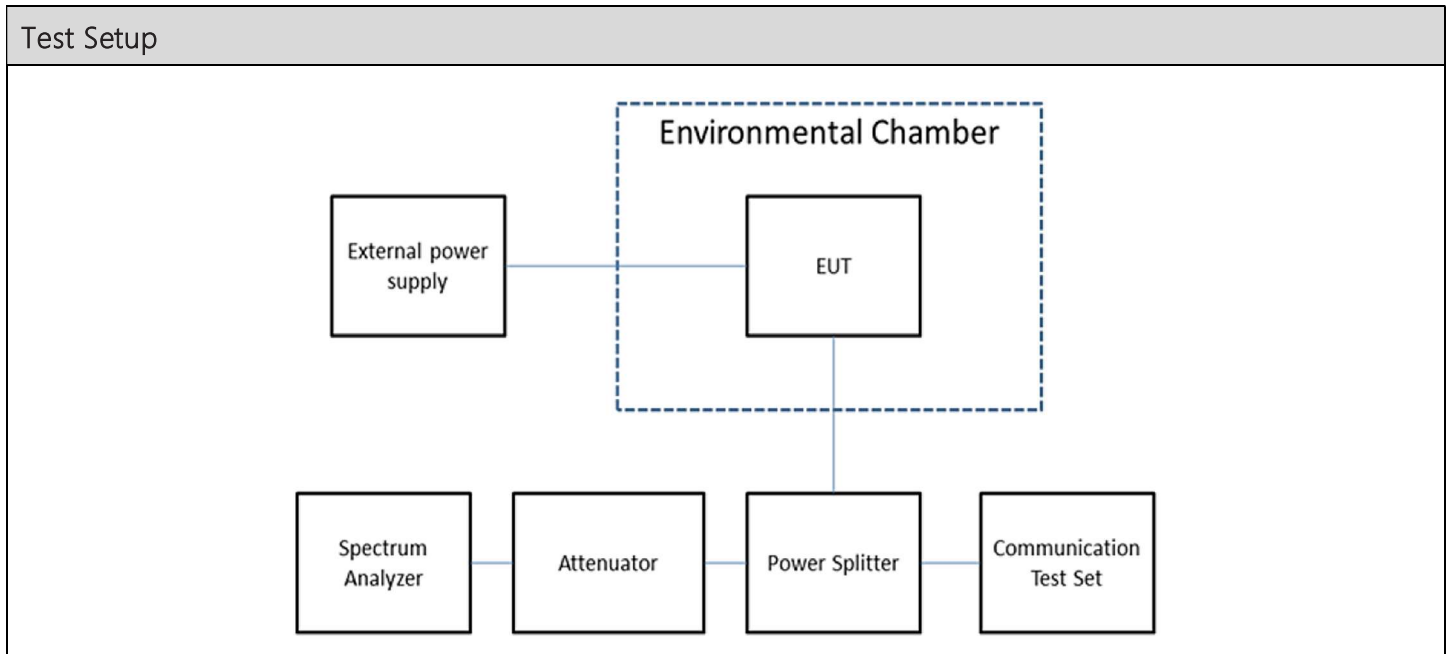
8.5.4 Radiated Emissions, 162.025 MHz

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)
162.025	324.050	PK	29.80	H	-2.09	14.50	3.00	42.21	-55.17	-13.00	42.17
162.025	324.050	PK	24.10	V	-2.09	14.50	3.00	36.51	-60.87	-13.00	47.87
162.025	486.075	PK	15.10	H	-2.61	17.30	3.00	29.79	-67.59	-13.00	54.59
162.025	486.075	PK	13.10	V	-2.61	17.30	3.00	27.79	-69.59	-13.00	56.59
162.025	648.100	PK	30.10	H	-2.96	19.71	3.00	46.85	-50.53	-13.00	37.53
162.025	648.100	PK	13.20	V	-2.96	19.71	3.00	29.95	-67.43	-13.00	54.43
162.025	810.125	PK	27.50	H	-3.38	21.11	3.00	45.23	-52.14	-13.00	39.14
162.025	810.125	PK	12.70	V	-3.38	21.11	3.00	30.43	-66.94	-13.00	53.94
162.025	972.150	PK	14.70	H	-3.66	23.00	3.00	34.04	-63.34	-13.00	50.34
162.025	972.150	PK	14.50	V	-3.66	23.00	3.00	33.84	-63.54	-13.00	50.54
162.025	1134.175	PK	10.70	H	-3.96	27.61	3.00	34.34	-63.03	-13.00	50.03
162.025	1134.175	PK	11.60	V	-3.96	27.61	3.00	35.24	-62.13	-13.00	49.13
162.025	1296.200	PK	12.20	H	-4.27	29.16	3.00	37.09	-60.29	-13.00	47.29
162.025	1296.200	PK	12.30	V	-4.27	29.16	3.00	37.19	-60.19	-13.00	47.19
162.025	1458.225	PK	12.40	H	-4.45	27.90	3.00	35.85	-61.53	-13.00	48.53
162.025	1458.225	PK	12.60	V	-4.45	27.90	3.00	36.05	-61.33	-13.00	48.33
162.025	1620.250	PK	11.40	H	-4.75	28.18	3.00	34.83	-62.55	-13.00	49.55
162.025	1620.250	PK	11.20	V	-4.75	28.18	3.00	34.63	-62.75	-13.00	49.75

8.6 Frequency Stability

Limits from FCC Parts 2.1055, and 80.209(a); and test procedure from C63.26.

Requirements: The frequency must remain within the .0010%, 10.0 ppm, specification limit, for 20 kHz spacing (Temp range is -20 to +50)

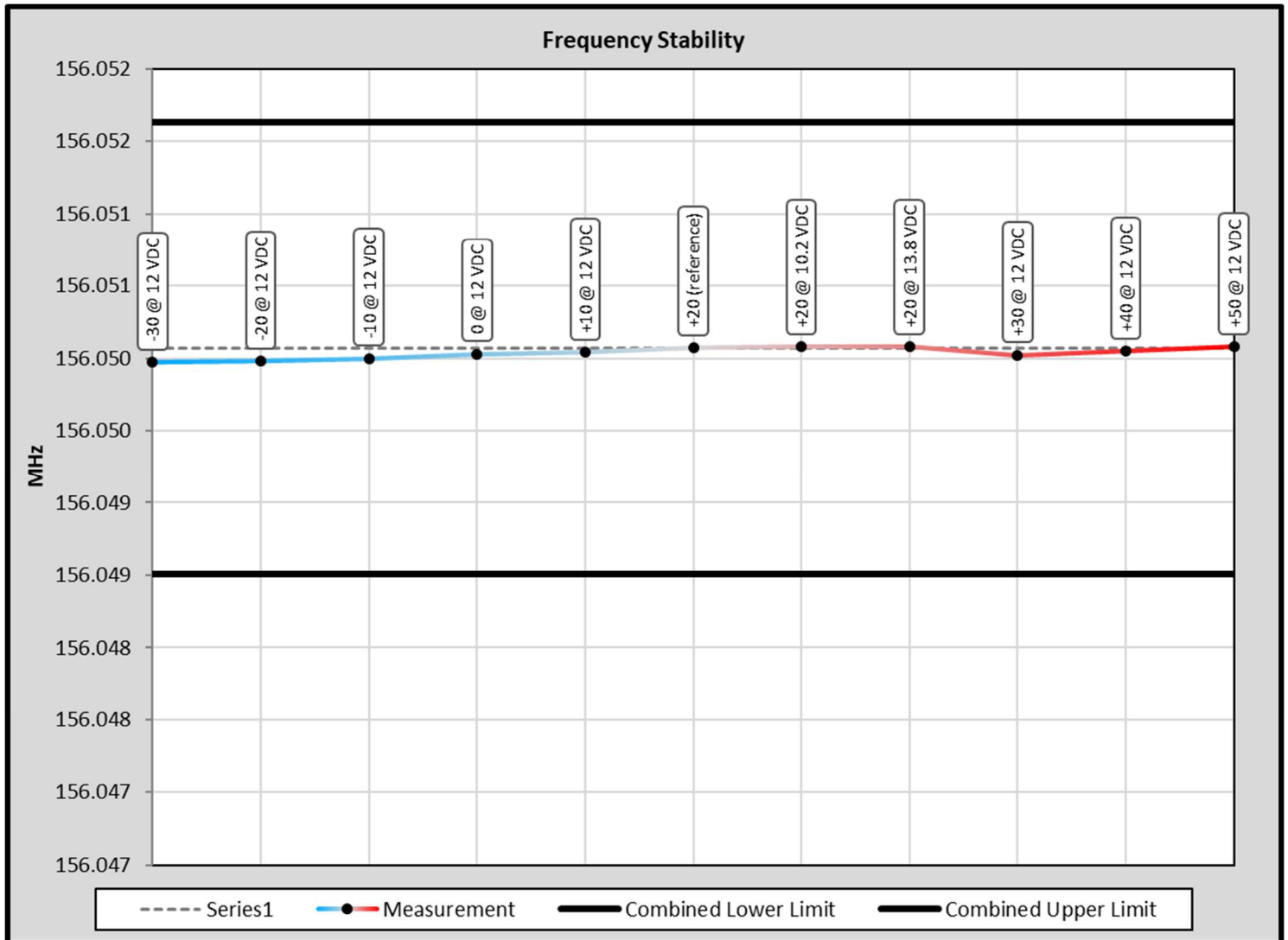


Test Results, Mode 1		
Tuned Frequency (MHz)	Max Deviation (kHz)	Limit (ppm)
156.05	0.090	10

8.6.1 Frequency Stability Data

FCC Part 80 Limit	10.0	ppm	
FCC Part 80 Limit, as ppb	10000	ppb (Parts per Billion)	
FCC Part 80 Limit, as %	0.00100	%	
Strictest Combined Limit, as Hz	1560.501	Hz	
Combined Lower Limit	156.048509	MHz	
Combined Upper Limit	156.051631	MHz	
Rated Supply Voltage	12.0	☐ AC ☒ DC	
Temperature / Voltage Variation			
Temperature (°C)	Supplied Voltage (V)	Frequency (MHz)	Deviation (kHz)
-30	12.0	156.049970	0.100
-20	12.0	156.049980	0.090
-10	12.0	156.050000	0.070
0	12.0	156.050030	0.040
+10	12.0	156.050040	0.030
+20 (reference)	12.0	156.050070	0.000
+20	10.2	156.050080	-0.010
+20	13.8	156.050080	-0.010
+30	12.0	156.050020	0.050
+40	12.0	156.050050	0.020
+50	12.0	156.050080	-0.010

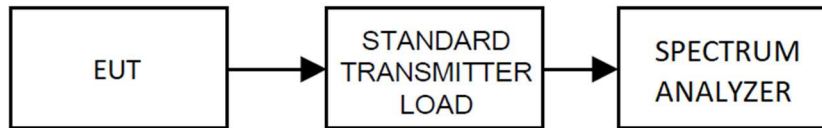
8.6.2 Frequency Stability Plot



8.7 Emission Limitations, In-Band

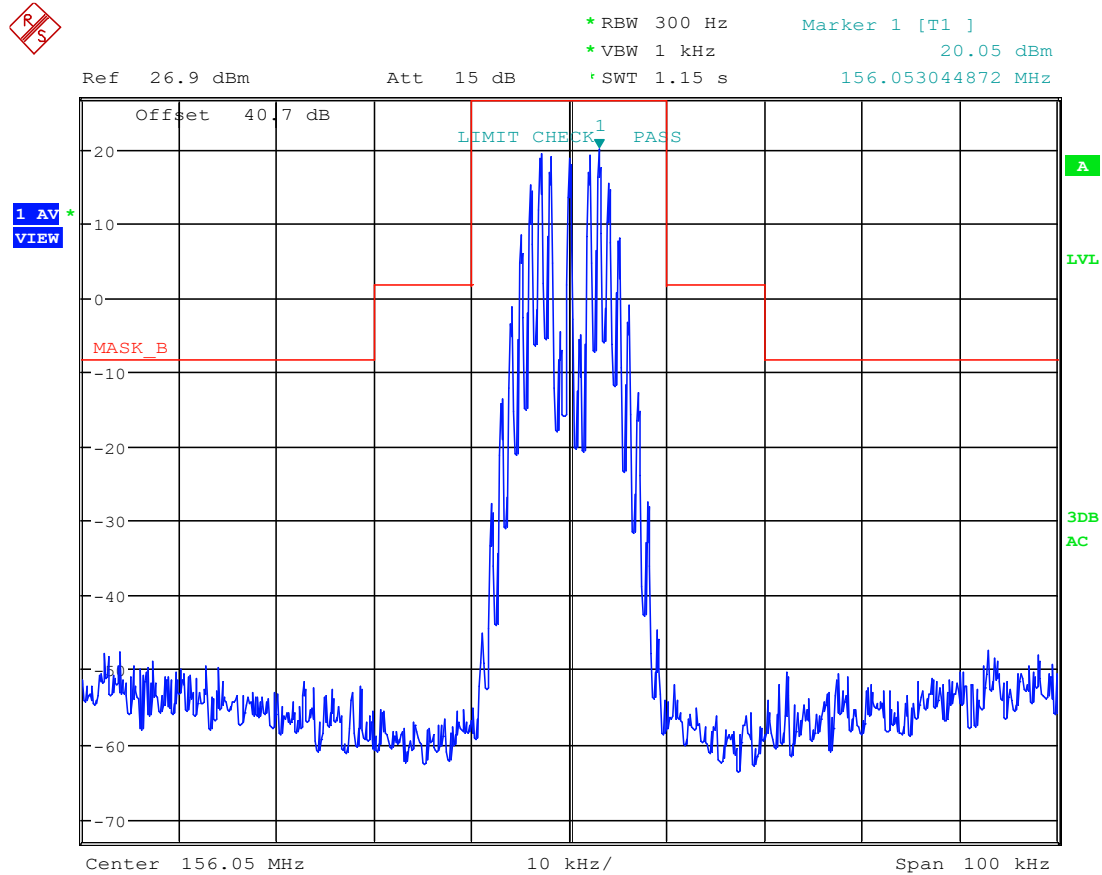
Limits from FCC Part 80.211; and test procedure from ANSI C63.26-2015.

Conducted Test Setup



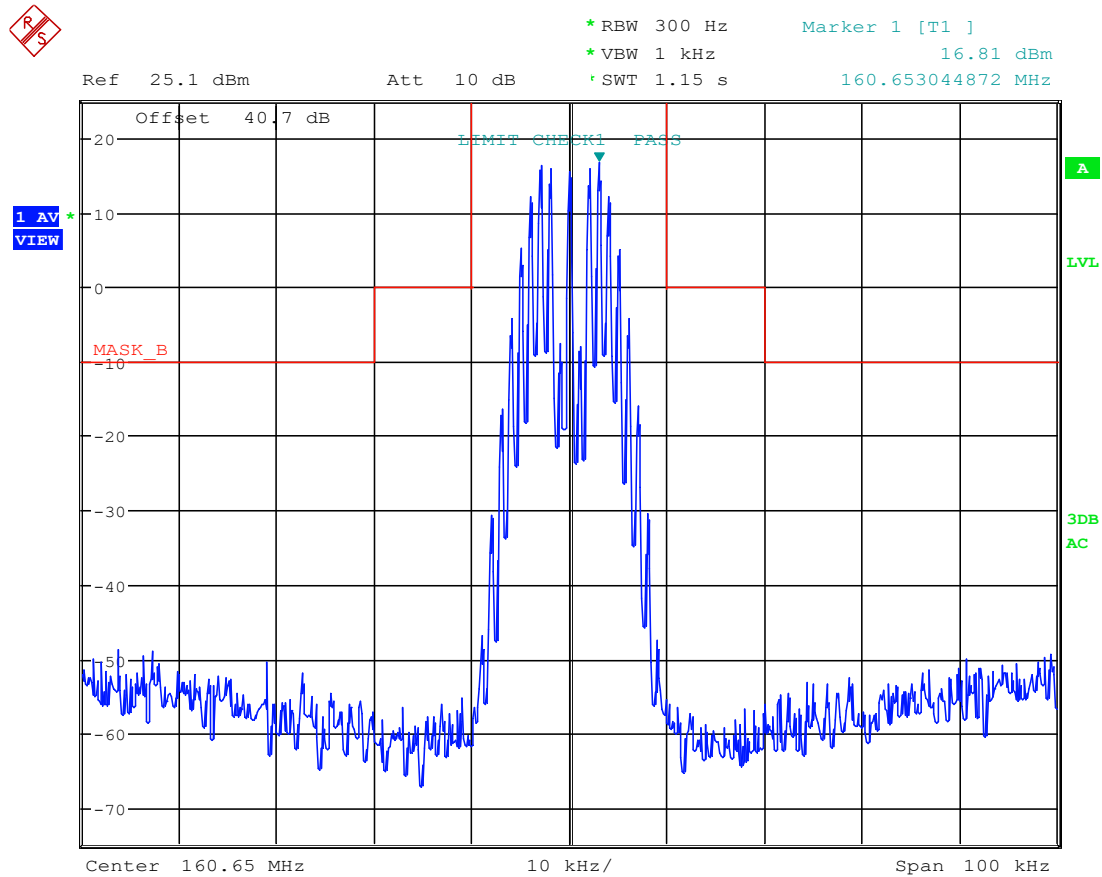
Conducted Emissions Mask, Spectrum Plots

8.7.1 Emission Mask B, Mode 1, 156.05 MHz



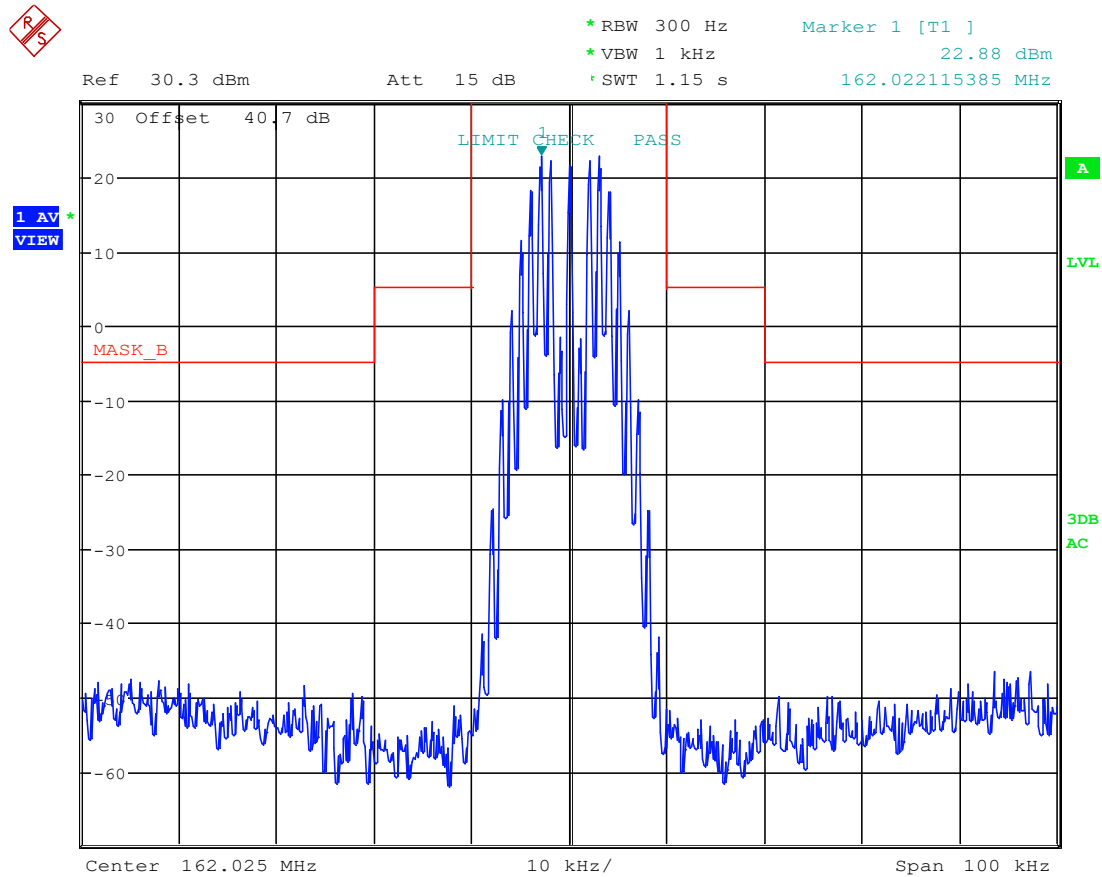
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8.7.2 Emission Mask B, Mode 1, 160.65 MHz



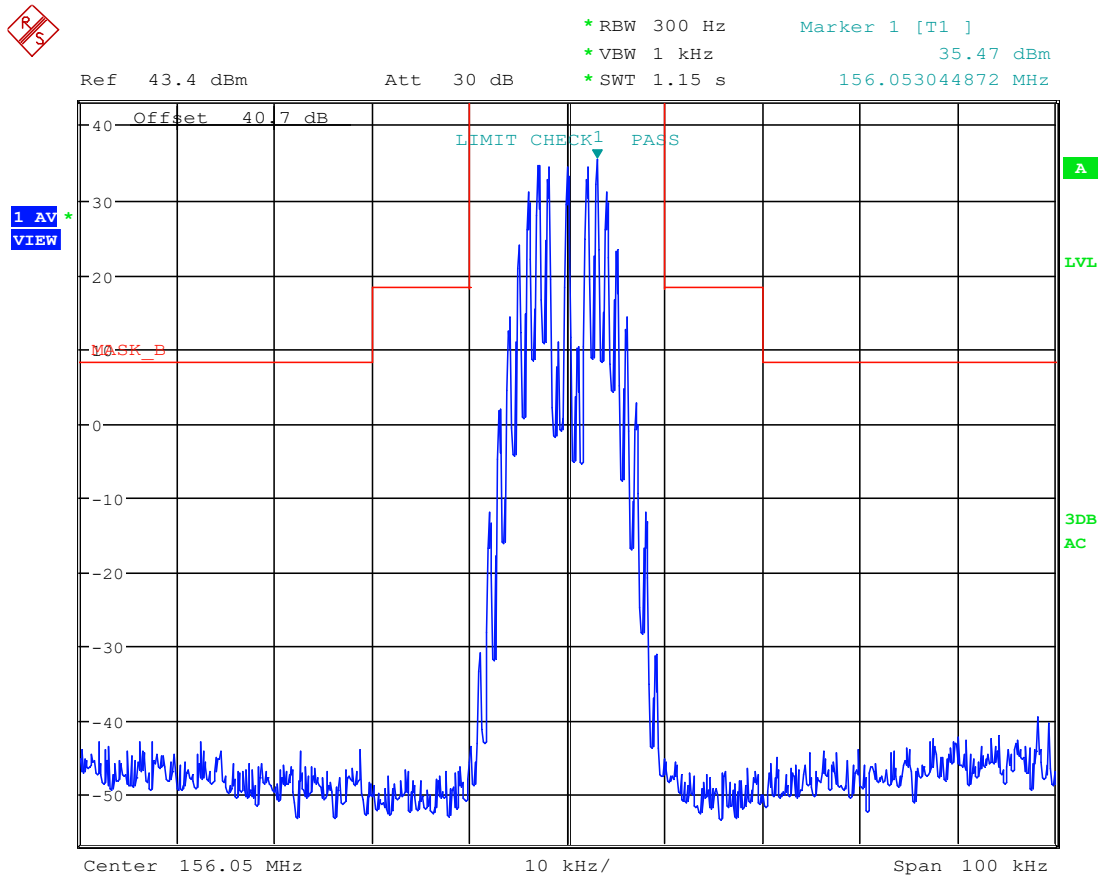
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8.7.3 Emission Mask B, Mode 1, 162.025 MHz



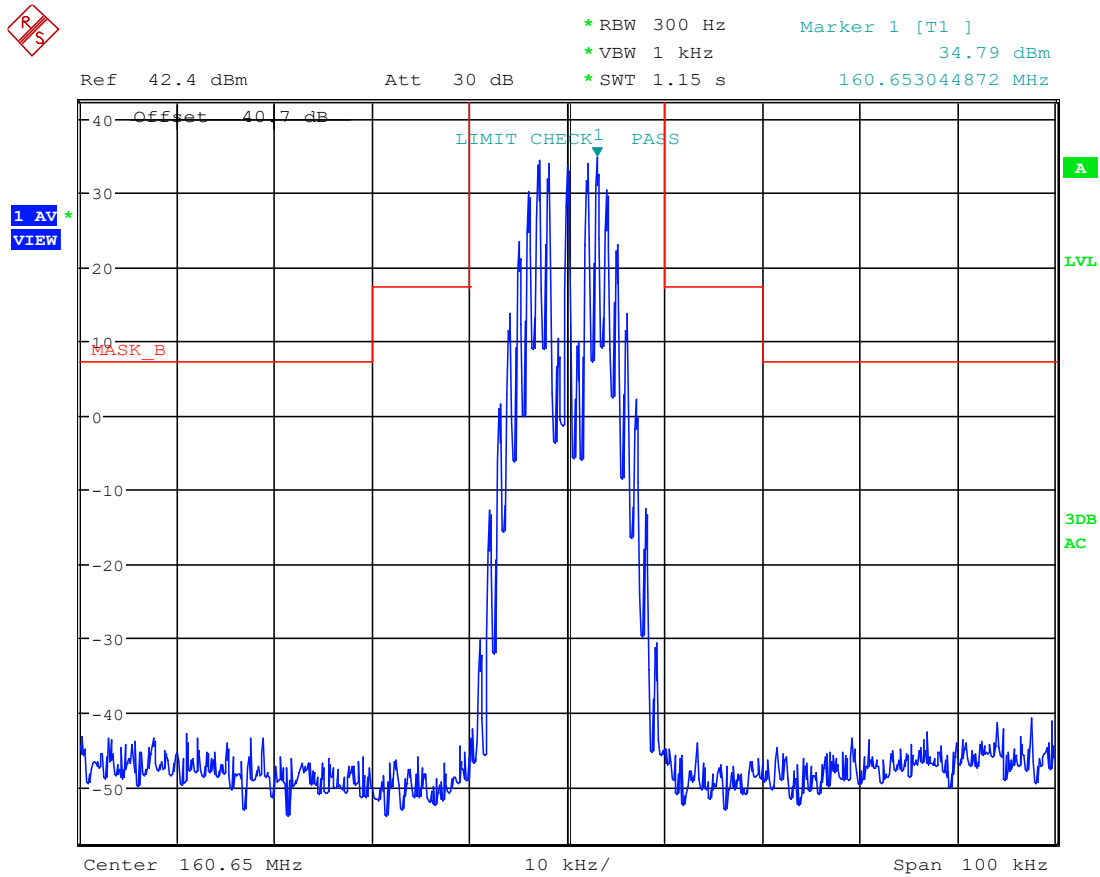
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8.7.4 Emission Mask B, Mode 2, 156.05 MHz



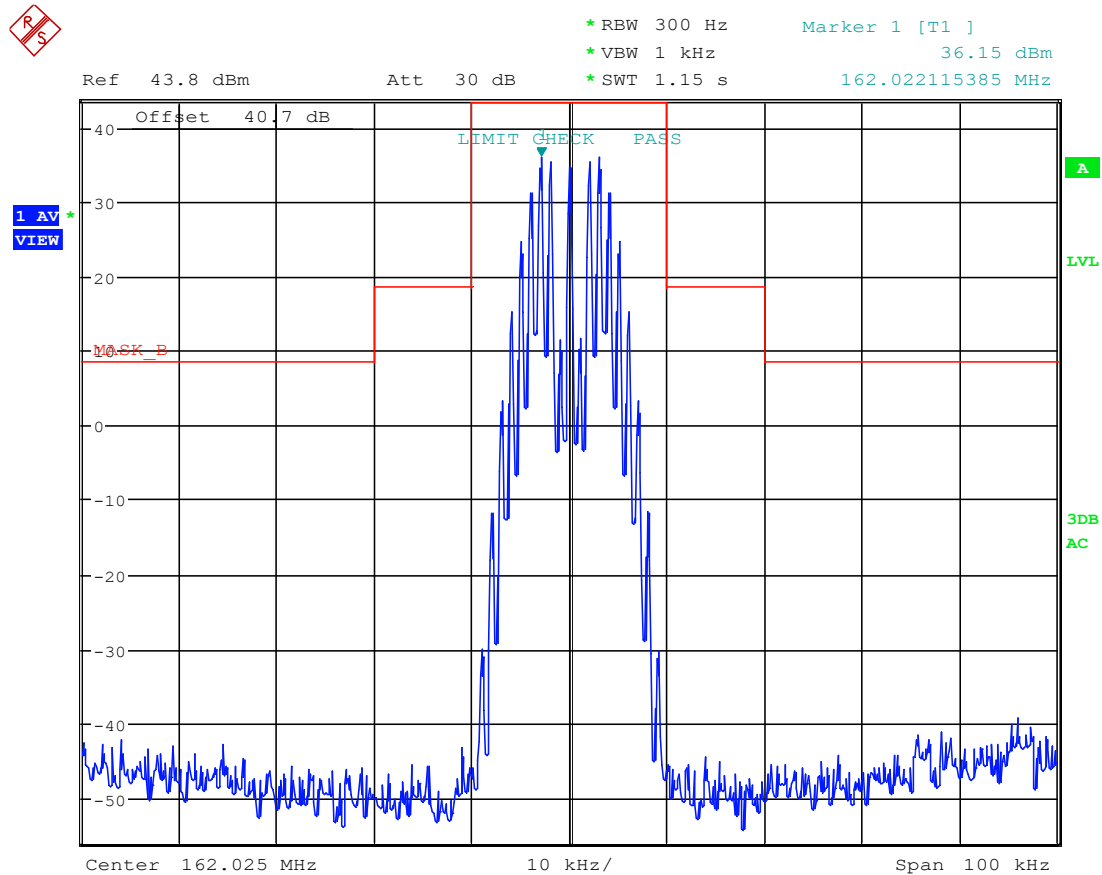
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8.7.5 Emission Mask B, Mode 2, 160.65 MHz



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8.7.6 Emission Mask B, Mode 2, 162.025 MHz



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9. ANNEX-B – Test Setup Photographs

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

10. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_21639-25_FCC 80_1	1	Initial release	7/29/2025
	2	Updated pages 1,6	4/13/2026
	3	Updated Section 3.1	4/14/2026
	4	Updated standards	04/27/2026

END OF TEST REPORT
