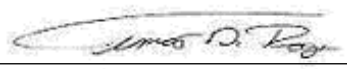
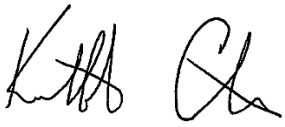
Test Report - FCC Part 97
Applicant: Icom Incorporated

Signature:  Sr. EMC Engineer EMC-003838-NE

Name & Title: Tim Royer, EMC Engineer

Date of Signature 6/5/2024

Signature: 

Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 6/5/2024

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: Icom Incorporated
Address: 1-1-32 Kamininami
Hirano-Ku
Osaka, 547-0003, Japan

1.1 Part 97 Test Result Summary

The following test procedure and guidance were used for measuring FCC PART 97 (Amateur Radio Service); ANSI/ TIA 603-C:2004 & ANSI C63.4-2004. Full test results are available in this report.

Applicable Clauses from Part 2		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
2.1033 (c)(8)	Power at the Final Amplifier	Reported
2.1046 (a)	RF Output Power	Pass
2.1051	Spurious emissions at antenna terminals	Pass
2.1053	Field strength of spurious radiation	Pass

Applicable Clauses from Part 90		
FCC Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
97.313	Transmitter Power	Pass
97.307(d)(e)	Emission Standards	Reported

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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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: 5/20/2024

Dates of Testing: 5/23/2024 – 5/31/2024

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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:	AFJ410900
Brief Description	Linear Amplifier
Model(s) #	IC-PW2
Firmware version	N/A
Software version	N/A
Serial Number	N/A

Technical Characteristics	
Frequency Range	1.8 MHz- 54 MHz
RF O/P Power (Max.)	1000W
Modulation	FM
Number of Channels	N/A
Duty Cycle	100%
Antenna Connector	N Type
Voltage Rating (AC or Batt.)	90-132 VAC/ 500W

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.

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3.2 Configuration of EUT

Mode (#)	Mode (Type)	Test Frequencies (MHz)	Emission Designators
1	Transmit	1.915 MHz 3.5 MHz 7 MHz 10.120MHz 14 MHz 18.130 MHz 21.200 MHz 24.950 MHz 28.500 MHz 53.999 MHz	A1A A3A A3E F1D F3E J1D J3C J3E J3F

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:

No peripherals used.

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.

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4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance:

Test procedures and guidance for measuring Licensed Part 97 Licensed device:

1) ANSI/ TIA 603-C:2004
2) ANSI C63.4-2003

4.2 Applied Limits and Regulatory Limits:

1) FCC CFR 47 Part 97 (2017)

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.	

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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
Magnetic Field Immunity Loop	Magnetic Field Immunity Loop	Fischer Custom Communications	F-1000-4-8/9/10-L-1M	9859	NCR	NCR
Antenna	Biconical 1057	Eaton	94455-1	1057	11/19/21	11/18/2024
Antenna, NSA	Log-Periodic 1243	Eaton	96005	1243	5/4/21	11/18/2024
CHAMBER	CHAMBER	Panashield	3M	N/A	12/29/23	12/18/2025
Receiver	EMI Test Receiver R&S ESU 40	Rohde & Schwarz	ESU 40	100320	5/27/21	11/18/2024
Receiver	EMI Test Receiver R&S ESW44	Rohde & Schwarz	ESW44	103049	10/13/21	10/12/2024

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

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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 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

EIRP = Pcond (dBm) + dBi

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8.1 Power at the Final Amplifier

Limits from FCC Parts 2.1033(c)(8), and 97.313; and test procedure from ANSI/ TIA 603-C:2004 & ANSI C63.4-2003

TEST PROCEDURES: Radiation Interference: The test procedure used was ANSI/TIA 603-C: 2004 using a Agilent spectrum analyzer with a preselector. In the frequency range 10 kHz to 30 MHz the RBW was 10 kHz and from 30-1000 MHz the RBW of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

Formula of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example: Freq (MHz) Meter Reading + ACF + CL = FS 33 20 dBuV + 10.36 dB/m +0.4 dB = 30.76 dBuV/m @ 3m

Test Results		
EUT Operating Voltage (V)	EUT Current (A)	Power at the Final Amplifier (W)
200	3.79	758

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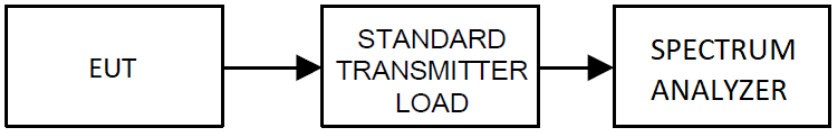
8.2 RF Output Power

Limits from FCC Parts 97.313(b) & 97.317(a)(2)and test procedure from ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

Test Procedure: RF power is measured by connecting a 50-ohm, resistive wattmeter to the RF output connector with a nominal input voltage of 240 AC Volts.

Test Setup



Test Results, Mode 1		
Tuned Frequency (MHz)	Power Output (dBm)	Power Output (W)
1.915	59.64	920.45
3.5	59.71	935.41
7	59.84	963.83
10.12	59.94	986.28
14	59.96	990.83
18.13	59.98	995.41
21.2	59.83	961.61
24.95	59.72	937.56
28.5	59.82	959.40
53.999	59.69	931.11

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Test Results, Mode 1			
Tuned Frequency (MHz)	Power Input (dBm)	Power Output (dBm)	Gain (dBm)
1.915	47.43	59.64	12.21
3.5	47.10	59.71	12.61
7	48.11	59.84	11.73
10.12	47.70	59.94	12.24
14	47.83	59.96	12.13
18.13	47.40	59.98	12.58
21.2	49.17	59.83	10.66
24.95	48.11	59.72	11.61
28.5	47.70	59.82	12.12
53.999	47.83	59.69	11.86

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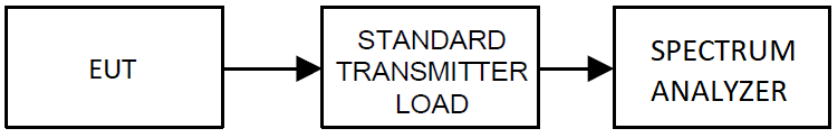
8.3 Emission Limitations, Out-of-Band

Limits from FCC Parts 2.1053, and 97.307(d)(e); and test procedure from ANSI/ TIA 603-C:2004 & ANSI C63.4-2003

Requirements: The FCC Limits for spurious emissions of a transmitting operating on a frequency below 30 MHz must be at least 43dB below the mean power. For the transmitter frequency operating at 50 MHz, the RF spurious emissions must be at least 60 dB below the mean power of the fundamental.

Conducted Test Setup


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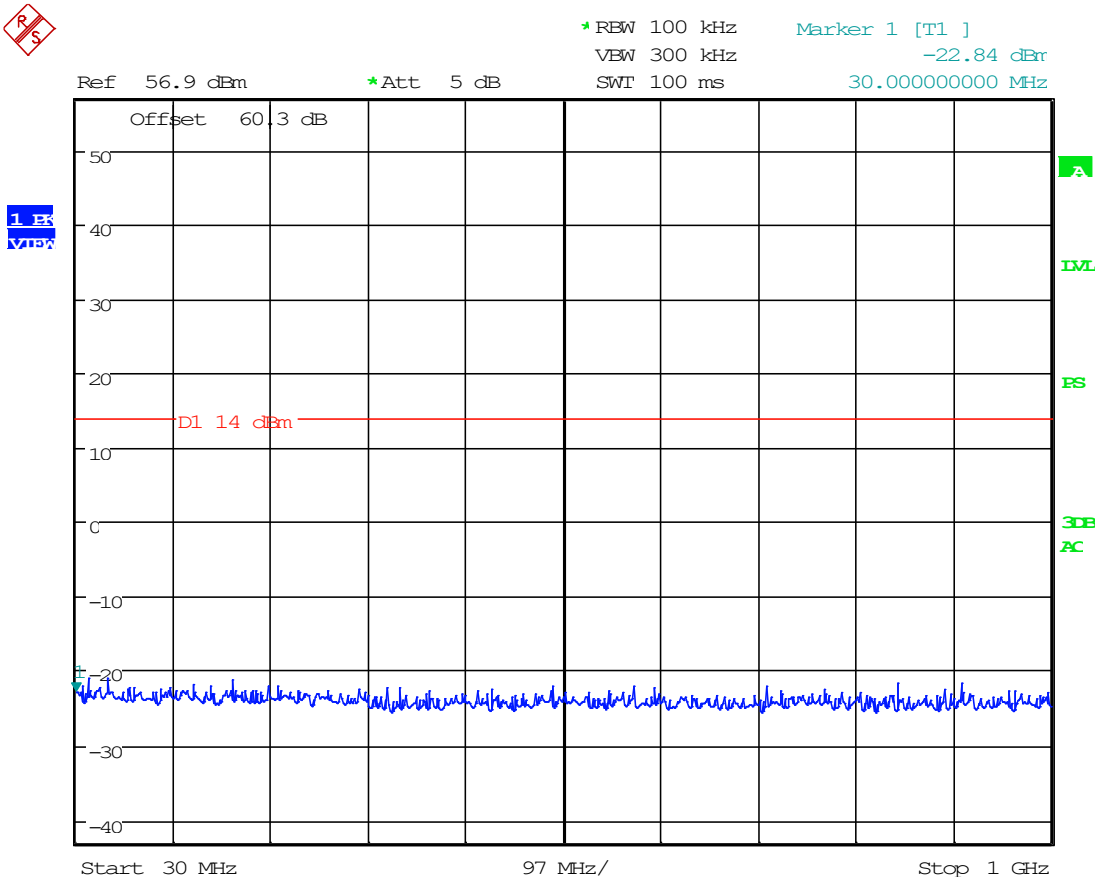
Conducted Emissions Spectrum Plots

8.3.1 Conducted Emissions, Below 1GHz, 1.915 MHz



Date: 23.MAY.2024 09:07:28

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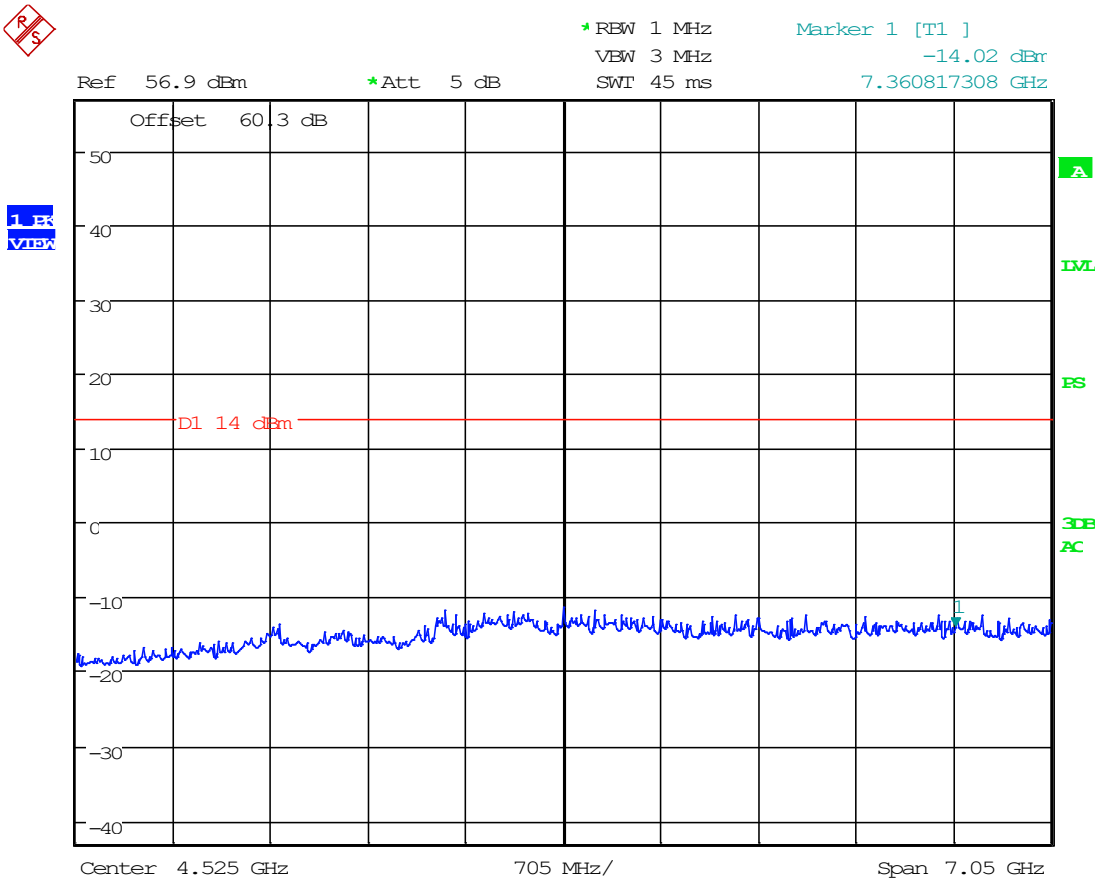
8.3.2 Conducted Emissions Above 1GHz, 1.915 MHz



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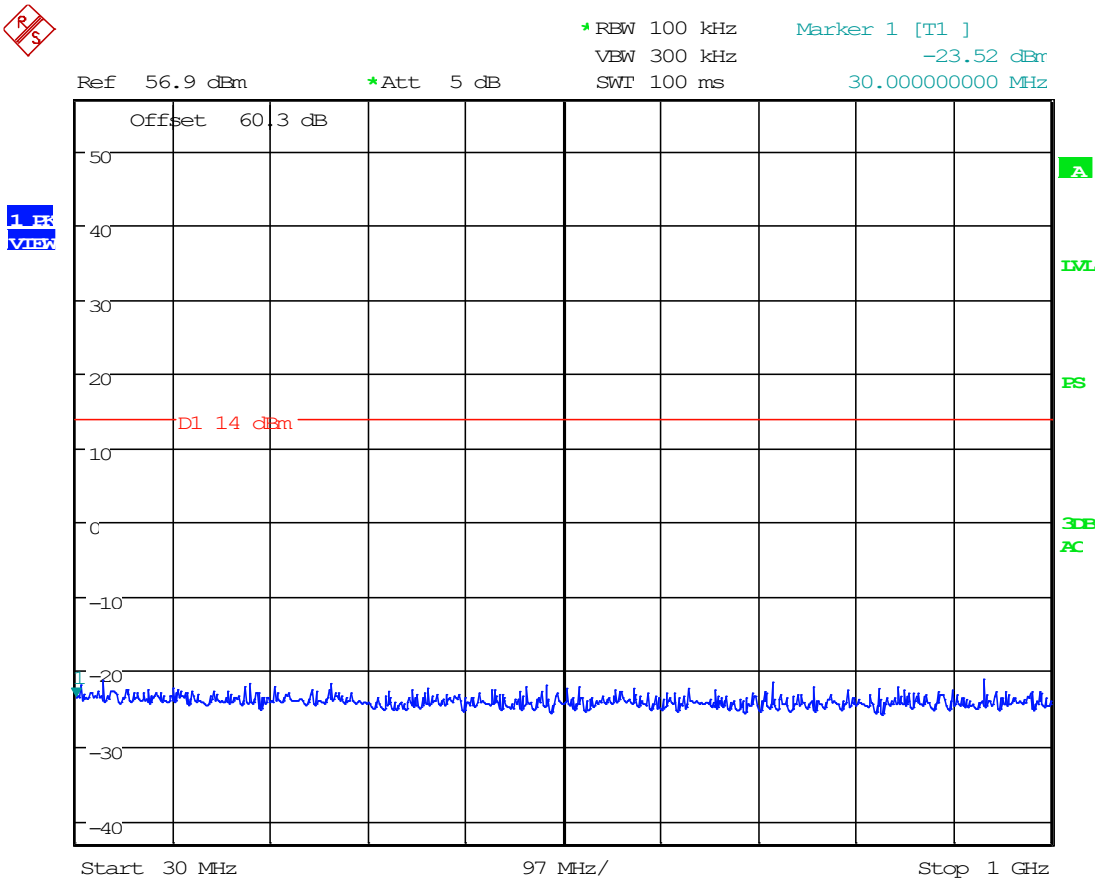
8.3.3 Conducted Emissions Below 1GHz, 3.5 MHz



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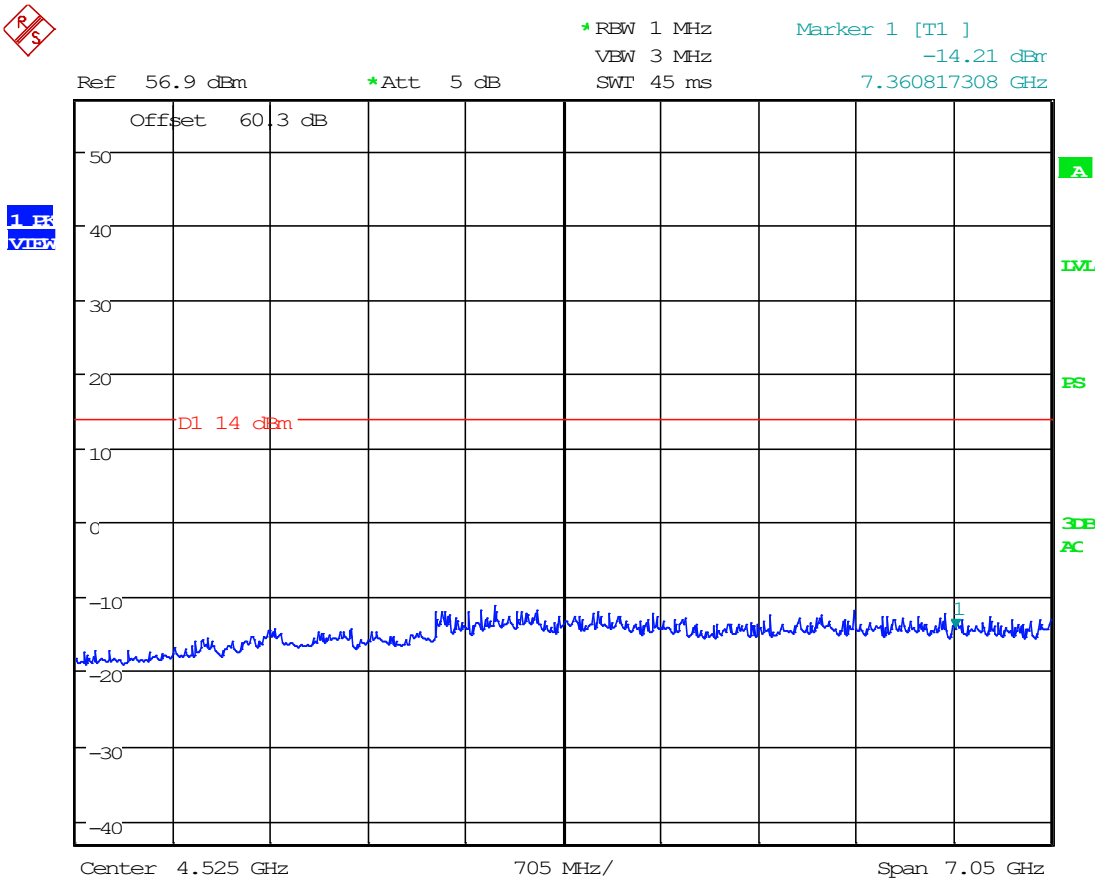
8.3.4 Conducted Emissions Above 1GHz, 3.5 MHz



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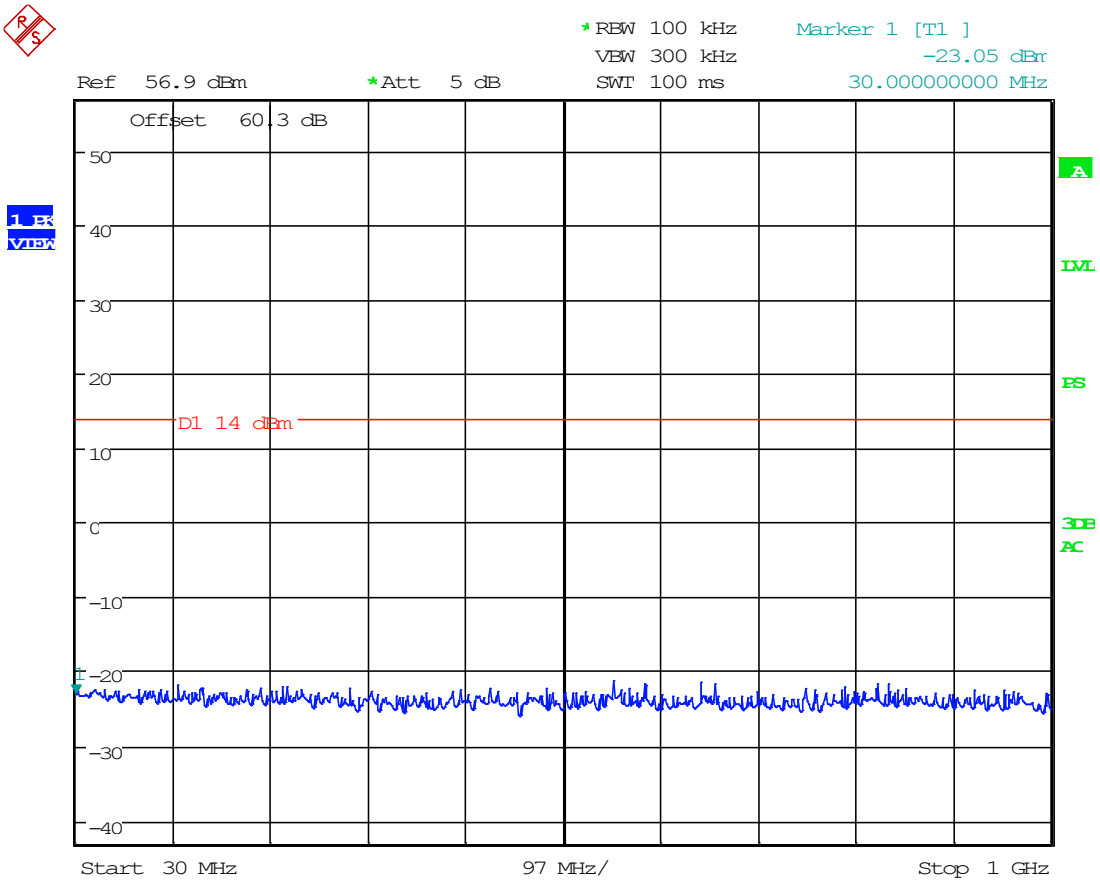
8.3.5 Conducted Emissions Below 1GHz, 7 MHz



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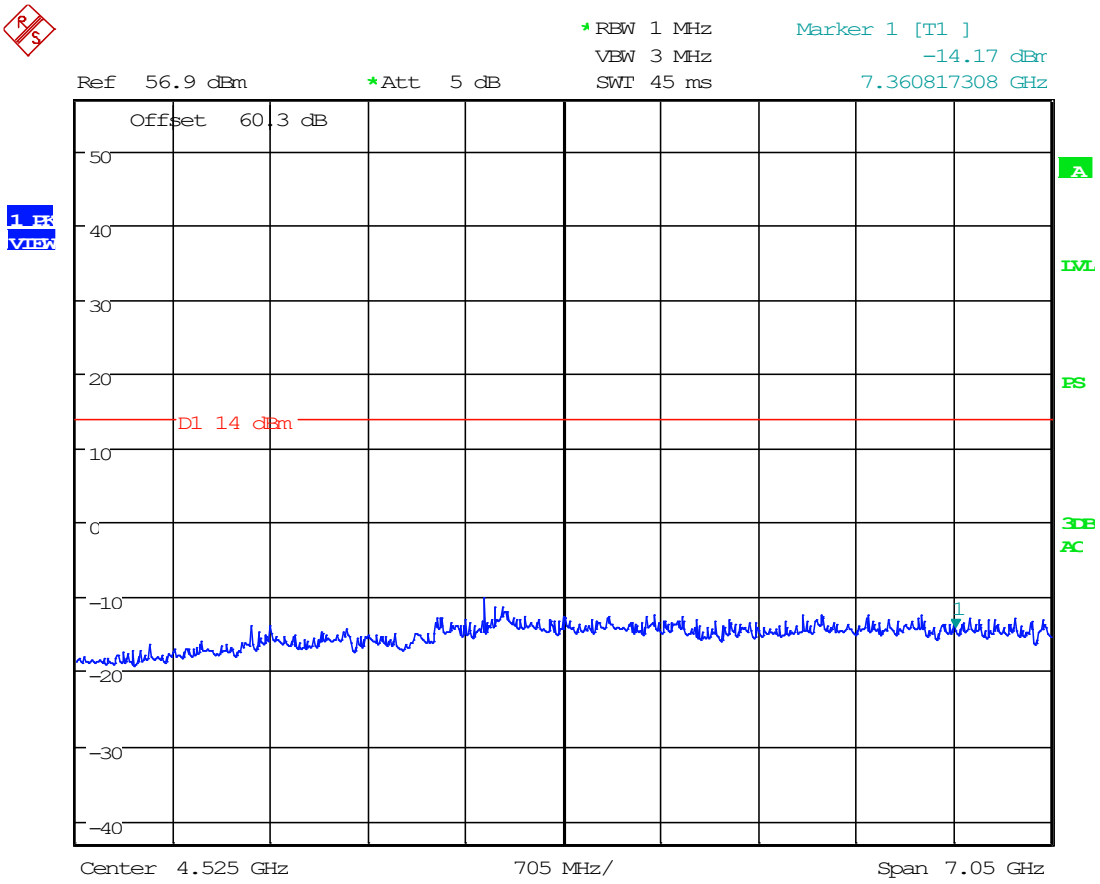
8.3.6 Conducted Emissions Above 1GHz, 7 MHz



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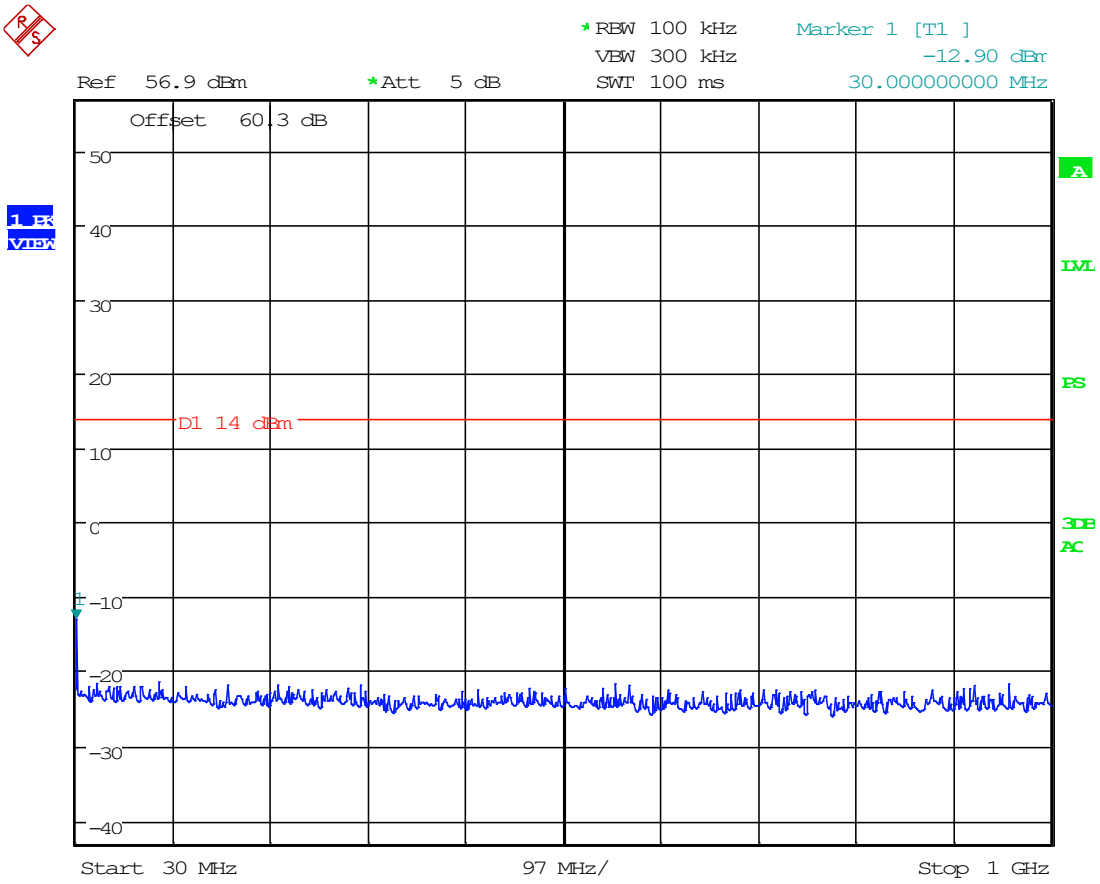
8.3.7 Conducted Emissions, Below 1GHz, 10.12 MHz



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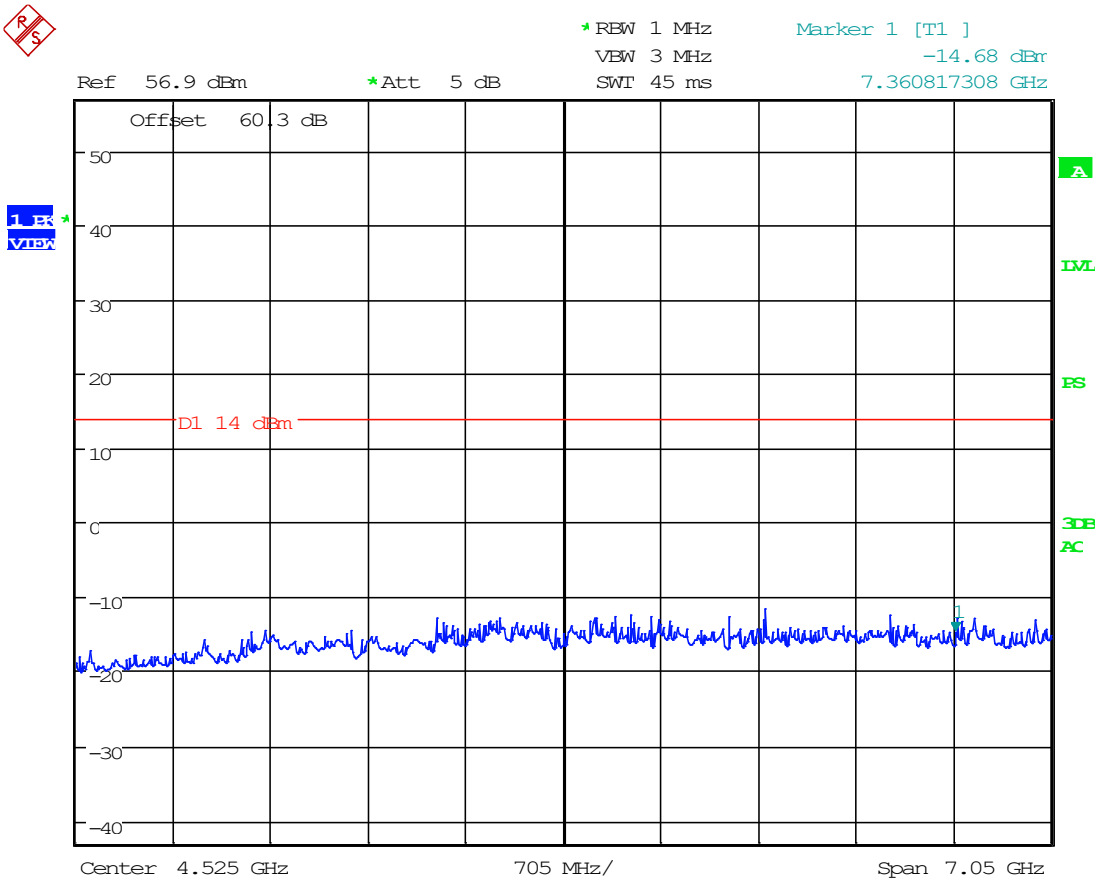
8.3.8 Conducted Emissions Above 1GHz, 10.12 MHz



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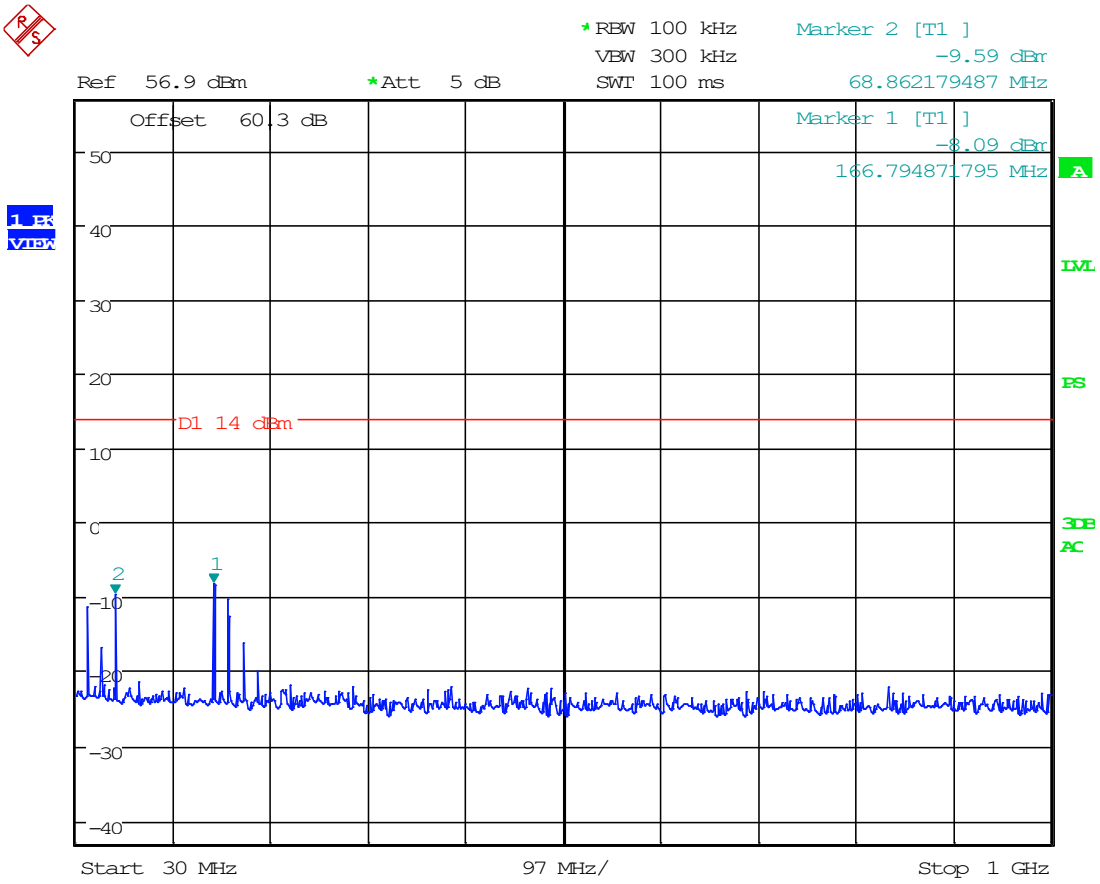
8.3.9 Conducted Emissions Below 1GHz, 14 MHz



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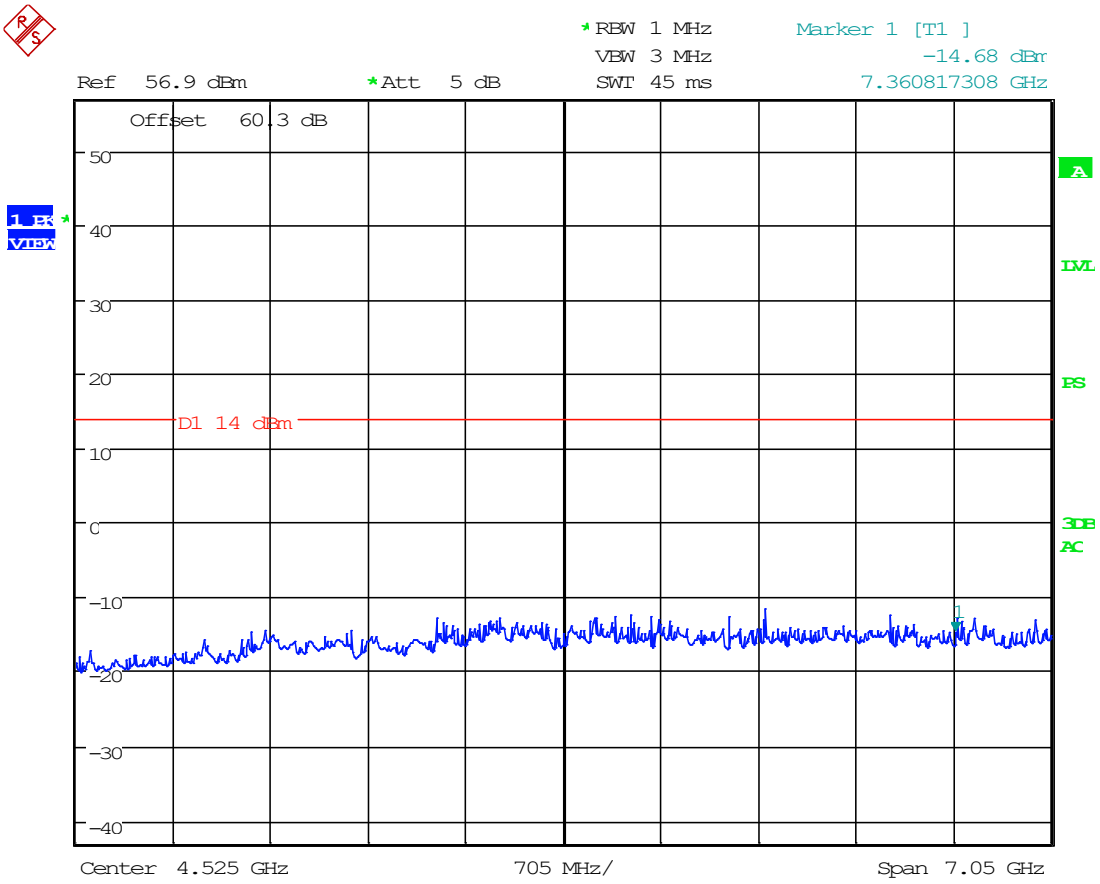
8.3.10 Conducted Emissions Above 1GHz, 14 MHz



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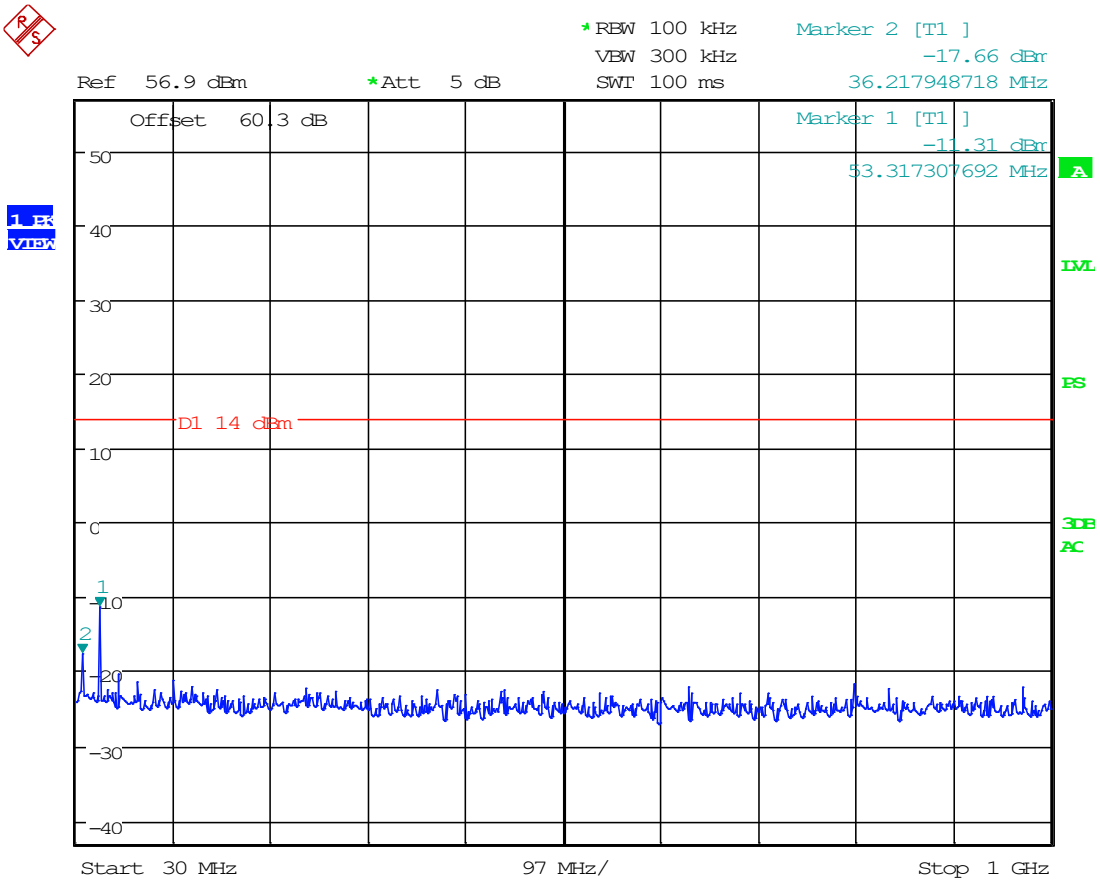
8.3.11 Conducted Emissions Below 1GHz, 18.3 MHz



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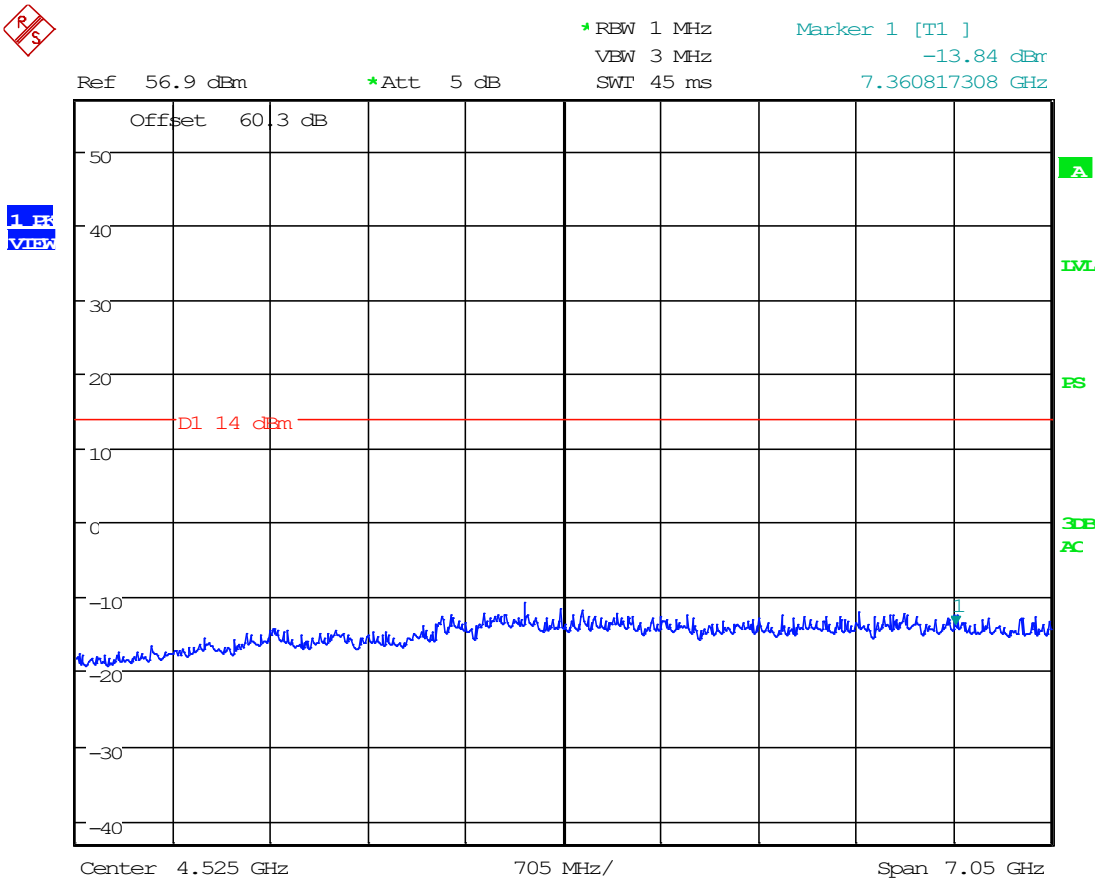
8.3.12 Conducted Emissions Above 1GHz, 18.13 MHz



Date: 23.MAY.2024 09:13:09

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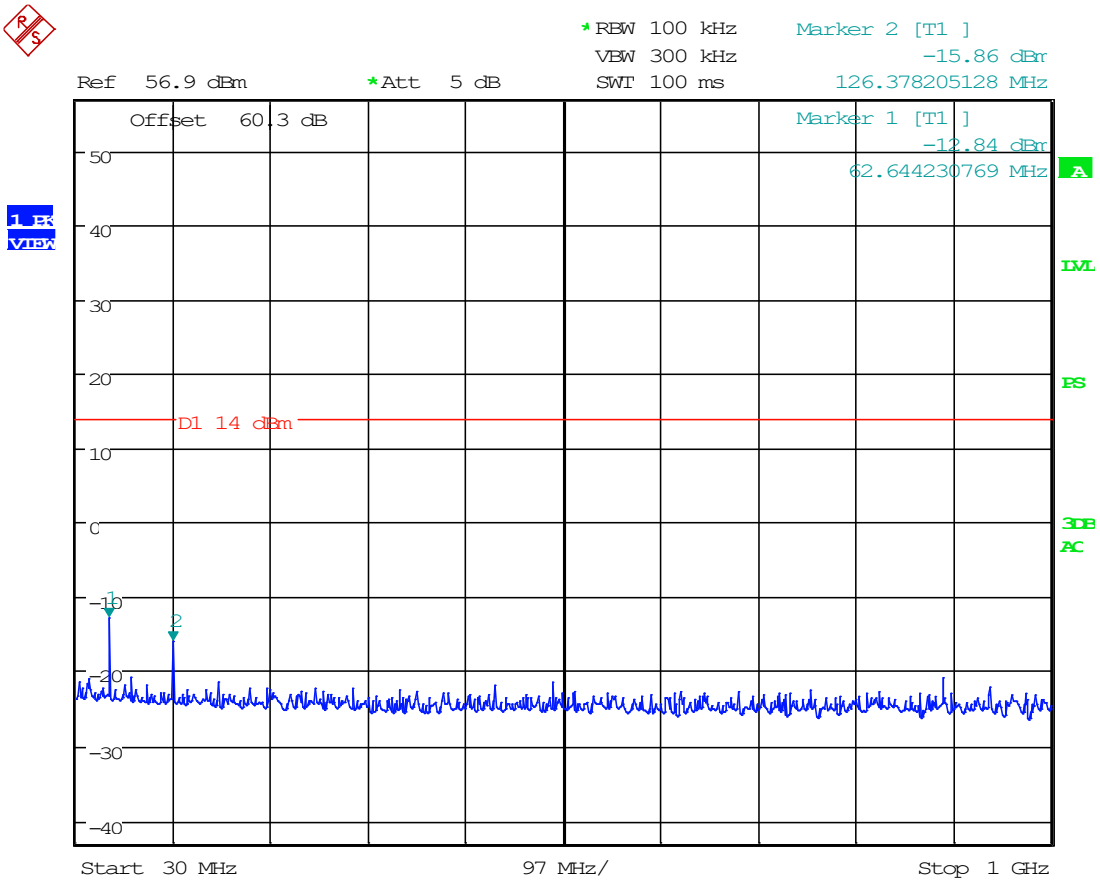
8.3.13 Conducted Emissions Below 1GHz, 21.2 MHz



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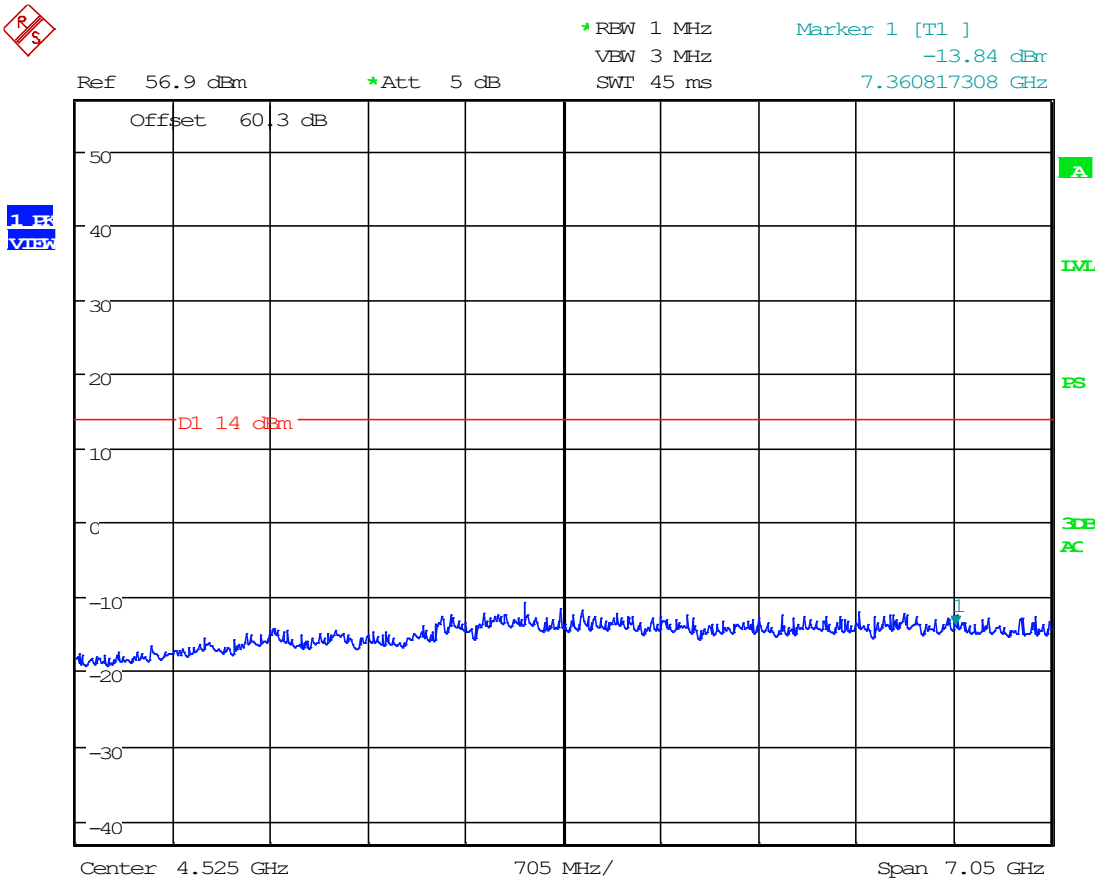
8.3.14 Conducted Emissions Above 1GHz, 21.2 MHz



Date: 23.MAY.2024 09:13:09

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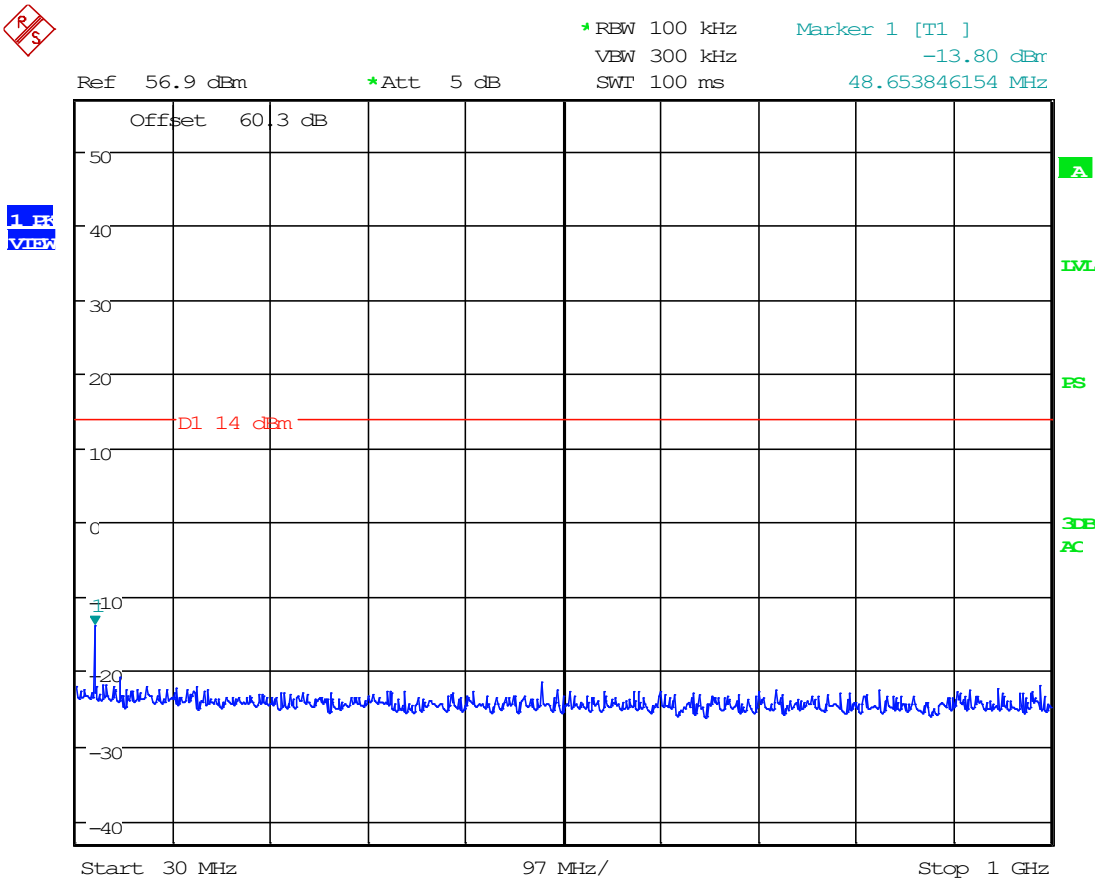
8.3.15 Conducted Emissions, Below 1GHz, 24.95 MHz



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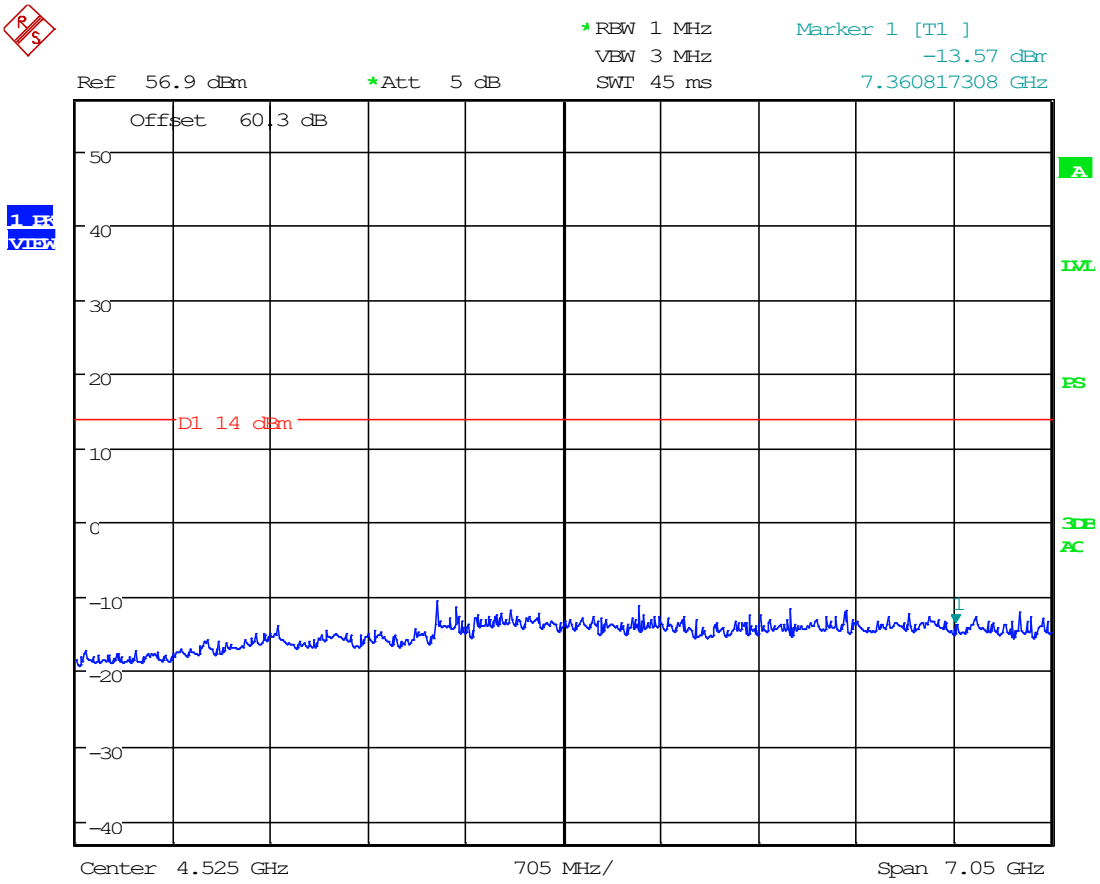
8.3.16 Conducted Emissions Above 1GHz, 24.95 MHz



Date: 23.MAY.2024 09:12:45

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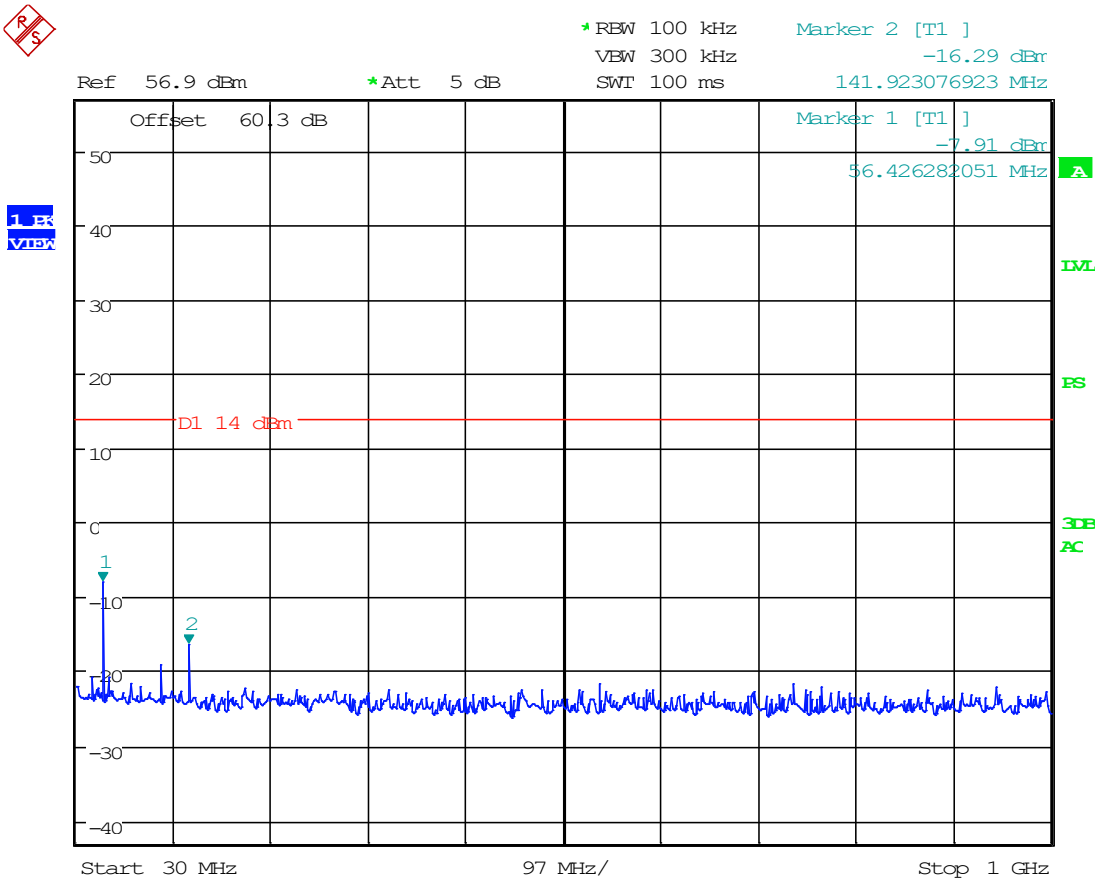
8.3.17 Conducted Emissions Below 1GHz, 28.5 MHz



Date: 23.MAY.2024 09:10:21

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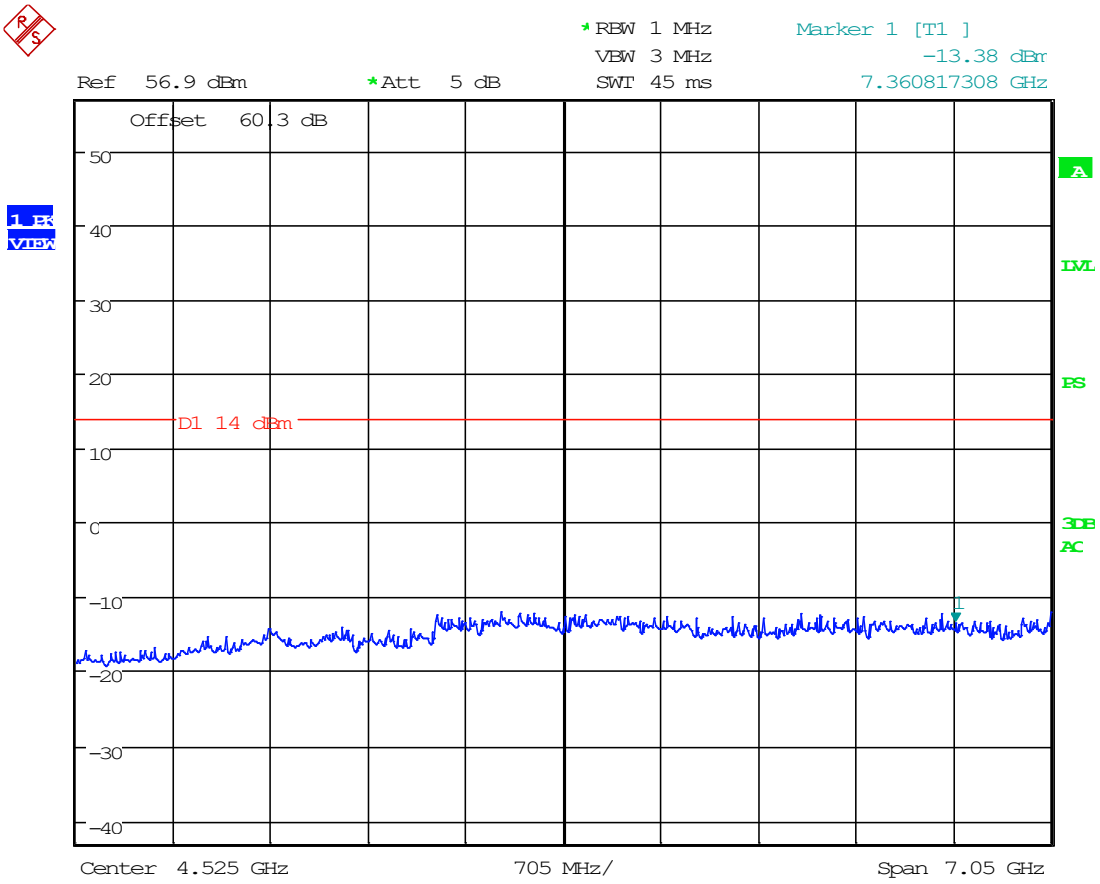
8.3.18 Conducted Emissions Above 1GHz, 28.5 MHz



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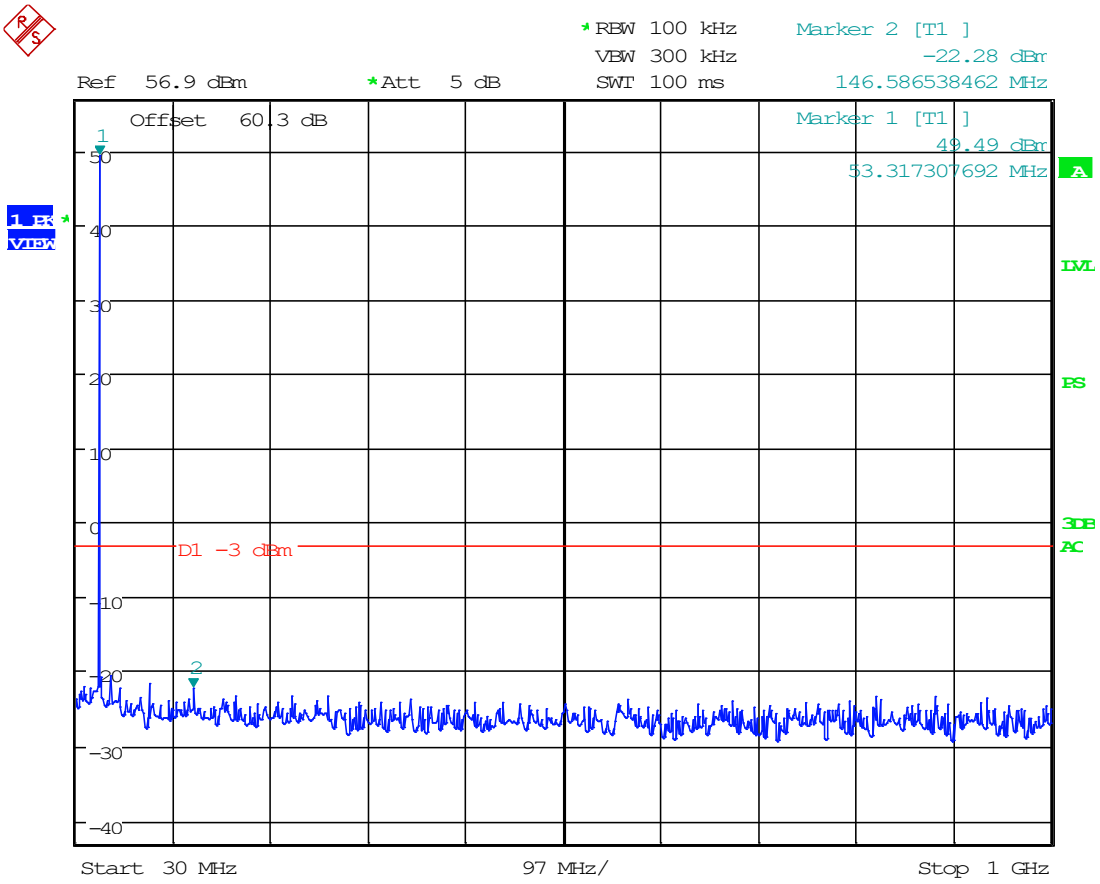
8.3.19 Conducted Emissions Below 1GHz, 53.999 MHz



Date: 23.MAY.2024 09:11:05

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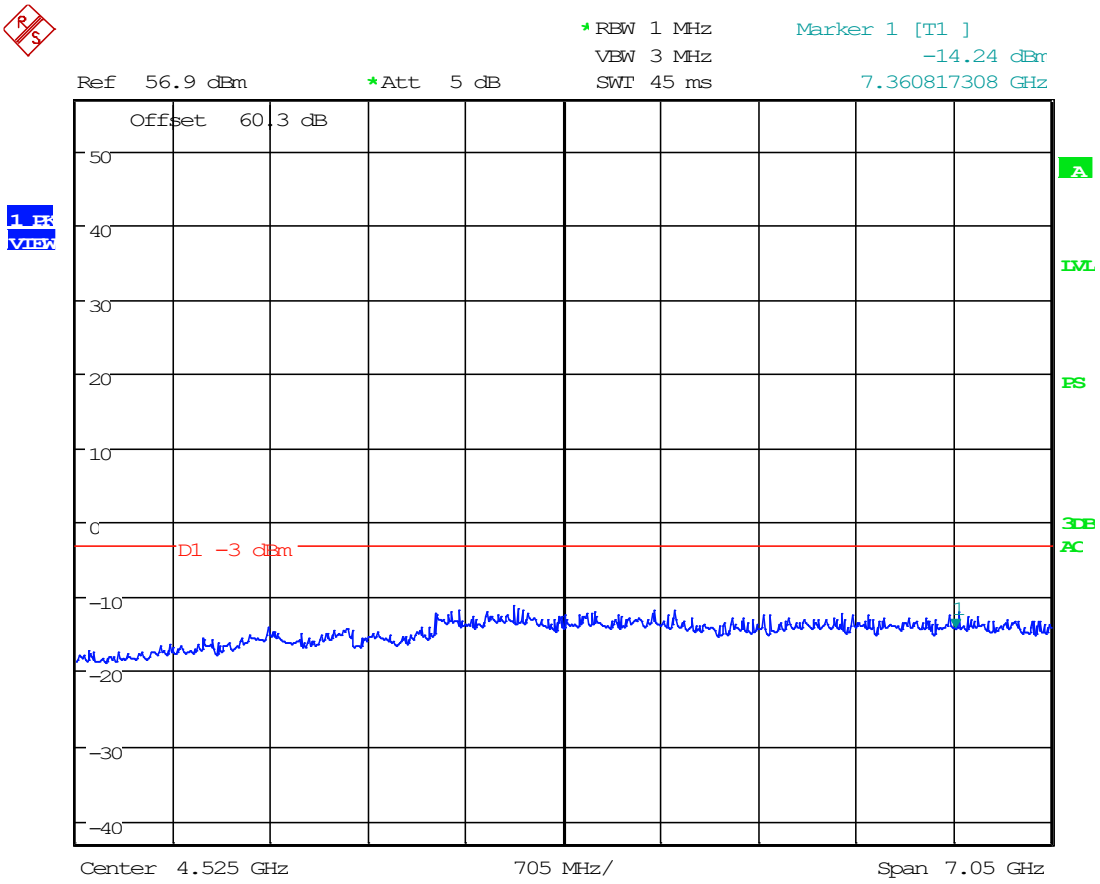
8.3.20 Conducted Emissions Above 1GHz, 53.999 MHz



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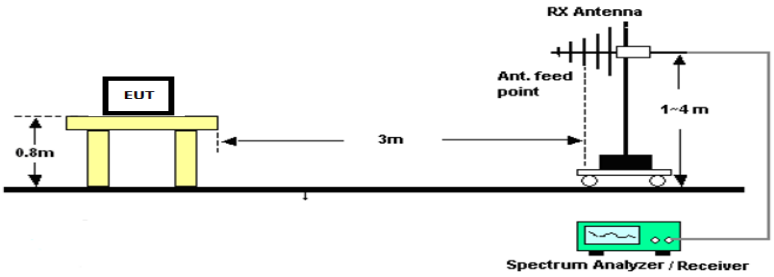
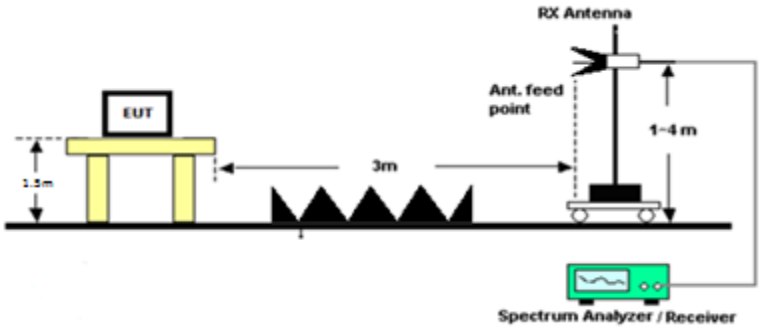
8.4 Strength of Radiated Spurious Emissions

Limits from FCC Parts 2.1053, and 97.307(d)(e); and test procedure from ANSI/ TIA 603-C:2004 & ANSI C63.4-2003

Requirements: The FCC Limits for spurious emissions of a transmitting operating on and above 50 MHz, the RF spurious emissions must be at least 60 dB below the mean power of the fundamental.

Radiated Test Setup, 30 – 1000 MHz


Radiated Test Setup, Above 1000 MHz


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Radiated Emissions, Tabular Data

8.4.1 Radiated Emissions, 1.915 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)
1.915	3.830	PK	32.40	V	-0.06	11.30	3.00	43.64	-53.74	-14.00	39.74
1.915	5.745	PK	26.20	V	-0.06	11.03	3.00	37.17	-60.21	-14.00	46.21
1.915	7.660	PK	23.30	V	-0.06	10.77	3.00	34.01	-63.37	-14.00	49.37
1.915	9.575	PK	22.70	V	-0.06	10.66	3.00	33.30	-64.08	-14.00	50.08
1.915	11.490	PK	24.20	V	-0.06	10.60	3.00	34.74	-62.64	-14.00	48.64
1.915	13.405	PK	20.40	V	-0.06	10.60	3.00	30.94	-66.44	-14.00	52.44
1.915	15.320	PK	19.20	V	-0.06	10.47	3.00	29.61	-67.77	-14.00	53.77
1.915	17.235	PK	19.90	V	-0.06	10.28	3.00	30.12	-67.26	-14.00	53.26
1.915	19.150	PK	19.60	V	-0.06	10.19	3.00	29.73	-67.65	-14.00	53.65

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8.4.2 Radiated Emissions, 3.5 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)
3.50	7.00	PK	27.50	V	-0.06	10.90	3.00	38.34	-59.04	-14.00	45.04
3.50	10.50	PK	37.20	V	-0.06	10.65	3.00	47.79	-49.59	-14.00	35.59
3.50	14.00	PK	20.30	V	-0.06	10.60	3.00	30.84	-66.54	-14.00	52.54
3.50	17.50	PK	21.70	V	-0.06	10.25	3.00	31.89	-65.49	-14.00	51.49
3.50	21.00	PK	19.20	V	-0.06	9.90	3.00	29.04	-68.34	-14.00	54.34
3.50	24.50	PK	19.60	V	-0.06	9.35	3.00	28.89	-68.49	-14.00	54.49
3.50	28.00	PK	20.00	V	-0.06	8.70	3.00	28.64	-68.74	-14.00	54.74
3.50	31.50	PK	11.60	H	-0.64	13.25	3.00	24.21	-73.17	-14.00	59.17
3.50	31.50	PK	19.10	V	-0.64	13.25	3.00	31.71	-65.67	-14.00	51.67
3.50	35.00	PK	11.00	H	-0.67	13.40	3.00	23.74	-73.64	-14.00	59.64
3.50	35.00	PK	23.30	V	-0.67	13.40	3.00	36.04	-61.34	-14.00	47.34

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8.4.3 Radiated Emissions, 7 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)
7.00	14.00	PK	20.20	V	-0.06	10.60	3.00	30.74	-66.64	-14.00	52.64
7.00	21.00	PK	26.50	V	-0.06	9.90	3.00	36.34	-61.04	-14.00	47.04
7.00	28.00	PK	21.00	V	-0.06	8.70	3.00	29.64	-67.74	-14.00	53.74
7.00	35.00	PK	12.10	H	-0.67	13.40	3.00	24.84	-72.54	-14.00	58.54
7.00	35.00	PK	21.30	V	-0.67	13.40	3.00	34.04	-63.34	-14.00	49.34
7.00	42.00	PK	11.10	H	-0.72	13.00	3.00	23.38	-74.00	-14.00	60.00
7.00	42.00	PK	24.20	V	-0.72	13.00	3.00	36.48	-60.90	-14.00	46.90
7.00	49.00	PK	16.80	H	-0.81	11.30	3.00	27.29	-70.09	-14.00	56.09
7.00	49.00	PK	25.90	V	-0.81	11.30	3.00	36.39	-60.99	-14.00	46.99
7.00	56.00	PK	15.90	H	-0.87	8.90	3.00	23.93	-73.45	-14.00	59.45
7.00	56.00	PK	24.70	V	-0.87	8.90	3.00	32.73	-64.65	-14.00	50.65
7.00	63.00	PK	18.20	H	-0.93	6.60	3.00	23.87	-73.51	-14.00	59.51
7.00	63.00	PK	20.90	V	-0.93	6.60	3.00	26.57	-70.81	-14.00	56.81
7.00	70.00	PK	16.90	H	-0.99	6.00	3.00	21.91	-75.47	-14.00	61.47
7.00	70.00	PK	17.00	V	-0.99	6.00	3.00	22.01	-75.37	-14.00	61.37

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8.4.4 Radiated Emissions, 10.12 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)
10.12	20.24	PK	29.60	V	-0.06	10.05	3.00	39.59	-57.79	-14.00	43.79
10.12	30.36	PK	29.40	H	-0.63	13.20	3.00	41.97	-55.41	-14.00	41.41
10.12	30.36	PK	42.90	V	-0.63	13.20	3.00	55.47	-41.91	-14.00	27.91
10.12	40.48	PK	25.20	H	-0.71	13.10	3.00	37.59	-59.78	-14.00	45.78
10.12	40.48	PK	38.50	V	-0.71	13.10	3.00	50.89	-46.48	-14.00	32.48
10.12	50.60	PK	32.80	H	-0.83	10.82	3.00	42.79	-54.58	-14.00	40.58
10.12	50.60	PK	45.60	V	-0.83	10.82	3.00	55.59	-41.78	-14.00	27.78
10.12	60.72	PK	36.60	H	-0.92	7.18	3.00	42.87	-54.51	-14.00	40.51
10.12	60.72	PK	47.30	V	-0.92	7.18	3.00	53.57	-43.81	-14.00	29.81
10.12	70.84	PK	40.40	H	-1.00	6.08	3.00	45.49	-51.89	-14.00	37.89
10.12	70.84	PK	42.80	V	-1.00	6.08	3.00	47.89	-49.49	-14.00	35.49
10.12	80.96	PK	34.30	H	-1.09	8.59	3.00	41.80	-55.57	-14.00	41.57
10.12	80.96	PK	41.70	V	-1.09	8.59	3.00	49.20	-48.17	-14.00	34.17
10.12	91.08	PK	20.50	H	-1.14	10.51	3.00	29.87	-67.51	-14.00	53.51
10.12	91.08	PK	25.60	V	-1.14	10.51	3.00	34.97	-62.41	-14.00	48.41
10.12	101.20	PK	31.20	H	-1.16	10.80	3.00	40.84	-56.54	-14.00	42.54
10.12	101.20	PK	36.80	V	-1.16	10.80	3.00	46.44	-50.94	-14.00	36.94

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8.4.5 Radiated Emissions, 14 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)
14.00	28.00	PK	23.60	V	-0.06	8.70	3.00	32.24	-65.14	-14.00	51.14
14.00	42.00	PK	15.30	H	-0.72	13.00	3.00	27.58	-69.80	-14.00	55.80
14.00	42.00	PK	30.70	V	-0.72	13.00	3.00	42.98	-54.40	-14.00	40.40
14.00	56.00	PK	27.70	H	-0.87	8.90	3.00	35.73	-61.65	-14.00	47.65
14.00	56.00	PK	41.70	V	-0.87	8.90	3.00	49.73	-47.65	-14.00	33.65
14.00	70.00	PK	42.30	H	-0.99	6.00	3.00	47.31	-50.07	-14.00	36.07
14.00	70.00	PK	46.10	V	-0.99	6.00	3.00	51.11	-46.27	-14.00	32.27
14.00	84.00	PK	13.30	H	-1.10	9.40	3.00	21.60	-75.78	-14.00	61.78
14.00	84.00	PK	17.70	V	-1.10	9.40	3.00	26.00	-71.38	-14.00	57.38
14.00	98.00	PK	23.20	H	-1.16	10.90	3.00	32.94	-64.43	-14.00	50.43
14.00	98.00	PK	30.00	V	-1.16	10.90	3.00	39.74	-57.63	-14.00	43.63
14.00	112.00	PK	29.20	H	-1.21	10.30	3.00	38.29	-59.09	-14.00	45.09
14.00	112.00	PK	28.80	V	-1.21	10.30	3.00	37.89	-59.49	-14.00	45.49
14.00	126.00	PK	19.70	H	-1.27	12.00	3.00	30.43	-66.95	-14.00	52.95
14.00	126.00	PK	16.40	V	-1.27	12.00	3.00	27.13	-70.25	-14.00	56.25
14.00	140.00	PK	20.80	H	-1.34	15.50	3.00	34.96	-62.42	-14.00	48.42
14.00	140.00	PK	22.10	V	-1.34	15.50	3.00	36.26	-61.12	-14.00	47.12

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8.4.6 Radiated Emissions, 18.13 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)
18.13	36.26	PK	11.40	H	-0.67	13.40	3.00	24.13	-73.25	-14.00	59.25
18.13	36.26	PK	19.20	V	-0.67	13.40	3.00	31.93	-65.45	-14.00	51.45
18.13	54.39	PK	43.20	H	-0.86	9.44	3.00	51.78	-45.59	-14.00	31.59
18.13	54.39	PK	58.20	V	-0.86	9.44	3.00	66.78	-30.59	-14.00	16.59
18.13	72.52	PK	40.30	H	-1.01	6.36	3.00	45.64	-51.73	-14.00	37.73
18.13	72.52	PK	43.90	V	-1.01	6.36	3.00	49.24	-48.13	-14.00	34.13
18.13	90.65	PK	34.10	H	-1.14	10.47	3.00	43.42	-53.95	-14.00	39.95
18.13	90.65	PK	42.20	V	-1.14	10.47	3.00	51.52	-45.85	-14.00	31.85
18.13	108.78	PK	31.10	H	-1.20	10.42	3.00	40.33	-57.05	-14.00	43.05
18.13	108.78	PK	30.70	V	-1.20	10.42	3.00	39.93	-57.45	-14.00	43.45
18.13	126.91	PK	29.30	H	-1.28	12.27	3.00	40.30	-57.08	-14.00	43.08
18.13	126.91	PK	30.10	V	-1.28	12.27	3.00	41.10	-56.28	-14.00	42.28
18.13	145.04	PK	27.20	H	-1.37	16.30	3.00	42.13	-55.24	-14.00	41.24
18.13	145.04	PK	25.60	V	-1.37	16.30	3.00	40.53	-56.84	-14.00	42.84
18.13	163.17	PK	25.00	H	-1.47	16.68	3.00	40.21	-57.17	-14.00	43.17
18.13	163.17	PK	16.20	V	-1.47	16.68	3.00	31.41	-65.97	-14.00	51.97
18.13	181.30	PK	17.70	H	-1.56	13.54	3.00	29.68	-67.70	-14.00	53.70
18.13	181.30	PK	13.90	V	-1.56	13.54	3.00	25.88	-71.50	-14.00	57.50

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8.4.7 Radiated Emissions, 21.2 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)
21.20	42.40	PK	28.90	H	-0.73	12.88	3.00	41.05	-56.33	-14.00	42.33
21.20	42.40	PK	47.60	V	-0.73	12.88	3.00	59.75	-37.63	-14.00	23.63
21.20	63.60	PK	45.70	H	-0.94	6.42	3.00	51.18	-46.20	-14.00	32.20
21.20	63.60	PK	48.80	V	-0.94	6.42	3.00	54.28	-43.10	-14.00	29.10
21.20	84.80	PK	35.50	H	-1.11	9.64	3.00	44.03	-53.35	-14.00	39.35
21.20	84.80	PK	42.50	V	-1.11	9.64	3.00	51.03	-46.35	-14.00	32.35
21.20	106.00	PK	41.70	H	-1.18	10.60	3.00	51.12	-46.26	-14.00	32.26
21.20	106.00	PK	47.60	V	-1.18	10.60	3.00	57.02	-40.36	-14.00	26.36
21.20	127.20	PK	41.50	H	-1.28	12.34	3.00	52.56	-44.82	-14.00	30.82
21.20	127.20	PK	51.10	V	-1.28	12.34	3.00	62.16	-35.22	-14.00	21.22
21.20	148.40	PK	40.00	H	-1.39	16.70	3.00	55.31	-42.07	-14.00	28.07
21.20	148.40	PK	39.60	V	-1.39	16.70	3.00	54.91	-42.47	-14.00	28.47
21.20	169.60	PK	51.50	H	-1.52	15.78	3.00	65.76	-31.61	-14.00	17.61
21.20	169.60	PK	47.80	V	-1.52	15.78	3.00	62.06	-35.31	-14.00	21.31
21.20	190.80	PK	50.80	H	-1.59	14.16	3.00	63.37	-34.01	-14.00	20.01
21.20	190.80	PK	41.70	V	-1.59	14.16	3.00	54.27	-43.11	-14.00	29.11
21.20	212.00	PK	35.00	H	-1.64	11.35	3.00	44.70	-52.67	-14.00	38.67
21.20	212.00	PK	33.80	V	-1.64	11.35	3.00	43.50	-53.87	-14.00	39.87

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8.4.8 Radiated Emissions, 24.95 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)
24.95	49.90	PK	33.20	H	-0.82	11.03	3.00	43.41	-53.97	-14.00	39.97
24.95	49.90	PK	40.50	V	-0.82	11.03	3.00	50.71	-46.67	-14.00	32.67
24.95	74.85	PK	60.00	H	-1.03	6.87	3.00	65.84	-31.54	-14.00	17.54
24.95	74.85	PK	53.00	V	-1.03	6.87	3.00	58.84	-38.54	-14.00	24.54
24.95	99.80	PK	53.40	H	-1.16	10.90	3.00	63.14	-34.24	-14.00	20.24
24.95	99.80	PK	45.30	V	-1.16	10.90	3.00	55.04	-42.34	-14.00	28.34
24.95	124.75	PK	53.10	H	-1.27	11.65	3.00	63.48	-33.90	-14.00	19.90
24.95	124.75	PK	56.00	V	-1.27	11.65	3.00	66.38	-31.00	-14.00	17.00
24.95	149.70	PK	49.70	H	-1.40	16.77	3.00	65.07	-32.31	-14.00	18.31
24.95	149.70	PK	50.80	V	-1.40	16.77	3.00	66.17	-31.21	-14.00	17.21
24.95	174.65	PK	59.50	H	-1.54	14.77	3.00	72.73	-24.65	-14.00	10.65
24.95	174.65	PK	56.30	V	-1.54	14.77	3.00	69.53	-27.85	-14.00	13.85
24.95	199.60	PK	56.70	H	-1.62	17.24	3.00	72.32	-25.06	-14.00	11.06
24.95	199.60	PK	54.60	V	-1.62	17.24	3.00	70.22	-27.16	-14.00	13.16
24.95	224.55	PK	53.00	H	-1.72	11.11	3.00	62.39	-34.99	-14.00	20.99
24.95	224.55	PK	46.80	V	-1.72	11.11	3.00	56.19	-41.19	-14.00	27.19
24.95	249.50	PK	66.40	H	-1.88	12.25	3.00	76.77	-20.61	-14.00	6.61
24.95	249.50	PK	63.20	V	-1.88	12.25	3.00	73.57	-23.81	-14.00	9.81

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8.4.9 Radiated Emissions, 28.5 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)
28.50	57.00	PK	43.90	H	-0.88	8.50	3.00	51.52	-45.86	-14.00	31.86
28.50	57.00	PK	57.50	V	-0.88	8.50	3.00	65.12	-32.26	-14.00	18.26
28.50	85.50	PK	34.90	H	-1.11	9.75	3.00	43.54	-53.84	-14.00	39.84
28.50	85.50	PK	39.80	V	-1.11	9.75	3.00	48.44	-48.94	-14.00	34.94
28.50	114.00	PK	59.80	H	-1.22	10.30	3.00	68.88	-28.50	-14.00	14.50
28.50	114.00	PK	58.40	V	-1.22	10.30	3.00	67.48	-29.90	-14.00	15.90
28.50	142.50	PK	55.00	H	-1.36	15.90	3.00	69.55	-27.83	-14.00	13.83
28.50	142.50	PK	54.20	V	-1.36	15.90	3.00	68.75	-28.63	-14.00	14.63
28.50	171.00	PK	67.90	H	-1.52	15.60	3.00	81.98	-15.40	-14.00	1.40
28.50	171.00	PK	63.90	V	-1.52	15.60	3.00	77.98	-19.40	-14.00	5.40
28.50	199.50	PK	50.60	H	-1.62	17.20	3.00	66.18	-31.20	-14.00	17.20
28.50	199.50	PK	41.50	V	-1.62	17.20	3.00	57.08	-40.30	-14.00	26.30
28.50	228.00	PK	44.80	H	-1.73	11.13	3.00	54.20	-43.18	-14.00	29.18
28.50	228.00	PK	45.70	V	-1.73	11.13	3.00	55.10	-42.28	-14.00	28.28
28.50	256.50	PK	52.00	H	-1.97	12.40	3.00	62.44	-34.94	-14.00	20.94
28.50	256.50	PK	47.80	V	-1.97	12.40	3.00	58.24	-39.14	-14.00	25.14
28.50	285.00	PK	56.80	H	-2.07	13.53	3.00	68.26	-29.12	-14.00	15.12
28.50	285.00	PK	46.80	V	-2.07	13.53	3.00	58.26	-39.12	-14.00	25.12

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8.4.10 Radiated Emissions, 53.999 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)
53.999	107.998	PK	52.60	H	-1.19	10.50	3.00	61.91	-35.47	-3.00	32.47
53.999	107.998	PK	55.20	V	-1.19	10.50	3.00	64.51	-32.87	-3.00	29.87
53.999	161.997	PK	53.40	H	-1.46	16.80	3.00	68.74	-28.64	-3.00	25.64
53.999	161.997	PK	50.50	V	-1.46	16.80	3.00	65.84	-31.54	-3.00	28.54
53.999	215.996	PK	57.50	H	-1.67	11.25	3.00	67.07	-30.30	-3.00	27.30
53.999	215.996	PK	52.80	V	-1.67	11.25	3.00	62.37	-35.00	-3.00	32.00
53.999	269.995	PK	65.40	H	-2.07	12.94	3.00	76.27	-21.11	-3.00	18.11
53.999	269.995	PK	57.50	V	-2.07	12.94	3.00	68.37	-29.01	-3.00	26.01
53.999	323.994	PK	57.70	H	-2.09	14.31	3.00	69.92	-27.46	-3.00	24.46
53.999	323.994	PK	52.10	V	-2.09	14.31	3.00	64.32	-33.06	-3.00	30.06
53.999	377.993	PK	38.40	H	-2.23	15.42	3.00	51.59	-45.79	-3.00	42.79
53.999	377.993	PK	36.50	V	-2.23	15.42	3.00	49.69	-47.69	-3.00	44.69
53.999	431.992	PK	41.40	H	-2.38	16.28	3.00	55.29	-42.08	-3.00	39.08
53.999	431.992	PK	45.30	V	-2.38	16.28	3.00	59.19	-38.18	-3.00	35.18
53.999	485.991	PK	37.30	H	-2.61	17.48	3.00	52.17	-45.21	-3.00	42.21
53.999	485.991	PK	40.20	V	-2.61	17.48	3.00	55.07	-42.31	-3.00	39.31
53.999	539.990	PK	35.00	H	-2.78	18.08	3.00	50.30	-47.08	-3.00	44.08
53.999	539.990	PK	38.60	V	-2.78	18.08	3.00	53.90	-43.48	-3.00	40.48

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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_13789-24_FCC 97_	1	Initial release	6/5/2024
	2	Updated page 7,13	7/9/2024

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END OF TEST REPORT

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