TIMCO ENGINEERING, Inc.

An IIA Company

Test Report - FCC PART 97 Linear Amplifier (AMP)
Applicant: KM3KM Electronics LLC

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 7/21/2022

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1. Customer Information

Applicant: KM3KM Electronics LLC
Address: 5330 SW 3rd Street
Miami, Florida, 33134, United States

1.1 Test Result Summary

The following test procedure and guidance were used for measuring FCC PART 97 (AMATEUR RADIO SERVICE); ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters. 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 2		
FCC Part 2 Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
2.202	Bandwidth & Emission	Pass
2.1033 (c)(8)	Power at the Final Amplifier	Pass
2.1046 (a)	RF Output Power	Pass
2.1047	Modulation characteristics	n/a
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	n/a

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Applicable Clauses from PART 97		
FCC PART 97 Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
97.317(a)(1)	Transmitter Power	Pass
97.317(a)(1)	Spurious emissions during TX, Stand-By, and Off	Pass
97.317(a)(2)	Gain	Pass
97.317(a)(3)	Gain in 27 MHz band	Pass

KDB 935210 D05 v01r04		
FCC KDB 935210 D05 Clauses	Description of the requirements	Result: (Pass, Fail, N/A)
4.1	Test Signals for PLMRS (Input Signals)	Reported
4.2	AGC Threshold	n/a
4.3	Out-of-Band Rejection	Reported
4.4	Input-versus-Output Signal Comparison	Pass
4.5	Output Power	Pass
4.5	Amplifier/Booster Gain	Pass
4.6	Noise Figure	n/a
4.7.2	Out-of-band/Out-of-block Conducted Emissions (Intermodulation Products)	n/a
4.7.3	EUT Spurious Conducted Emissions	Pass
4.8	Frequency Stability	n/a
4.9	Spurious Radiated Emissions	Pass

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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 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: 6/21/2022- 6/23/2022

Sr. EMC Engineer
EMC-003838-NE

Signature: _____

Name & Title: Tim Royer, EMC Engineer

Date of Signature 7/21/2022

Signature: _____

Name & Title: Kristoffer Costa, EMC Technician

Date of Signature 7/21/2022

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

The test sample was received: 6/20/2022

3.1 Definitions

External RF power amplifier. A device capable of increasing power output when used in conjunction with, but not an integral part of, a transmitter.

3.2 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:	2A3P6MERCURYLUX
Brief Description	Linear Amplifier
Model(s) #	Mercury Lux
Firmware Version	4.3
Software version	1.0
Serial Number	N/A

Technical Characteristics	
Technology	Linear Amplifier
Frequency Range	1.8 - 54 MHz (split as appropriate to FCC Part 97)
RF O/P Power (Max.)	1500W SSB/CW, 700W DIGI
Bandwidth & Emission Class	A1A, A3A, A3E, F1D, F3E, J1D, J3C, J3E, J3F
Duty Cycle	100%
Antenna Connector	UHF
Voltage Rating (AC or Batt.)	120-240 V AC Autosensing

Antenna Characteristics				
Antenna Name	Frequency Range	Antenna Type	Dimensions	Antenna Gain
n/a	n/a	n/a	n/a	n/a

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

Note: This EUT does not include antenna(s).

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3.3 Configuration of EUT

Test Modes	
Band	Amateur Band
1.876120 MHz	160 m
3.620888 MHz	80 m
7.15 MHz	60-40 m
14.2209 MHz	30-20 m
18.1 MHz	17-15 m
28.64 MHz	12-10 m
50.184 MHz	6 m

Note: The EUT is used in conjunction with Part 97 Amateur Radio transmitter devices.

Operating conditions during Testing:

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 representative amateur radio transmitter was used to supply the amplifier with all appropriate input signals at ~100 W.

3.4 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 C63.26-2015
2) FCC KDB 935210 D05 v01r04 Industrial Signal Boosters (guidance only)

4.2 Applied Limits and Regulatory Limits:

1) FCC CFR 47 PART 97.3175, 97.317

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
Antenna	Biconical 1057	Eaton	94455-1	1057	10/16/20	10/16/2023
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	12/21/2023
Pre-amp	Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	2/27/19	8/26/2022
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
Antenna	Active Loop	ETS-Lindgren	6502	00062529	10/20/20	10/20/2023

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 Part 2.1033 (c)(8).

No method of measurement is specified. The result has been calculated based on all available information.

Test Results		
EUT Operating Voltage (V)	EUT Current (A)	Power at the Final Amplifier
240	5	1200
240	2.9	700

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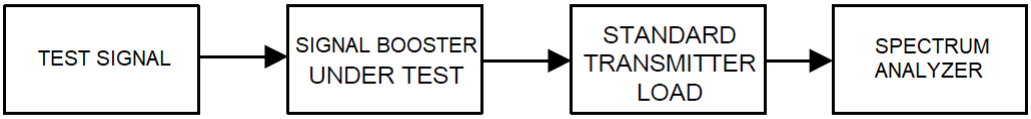
8.2 RF Output Power & Gain

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 Setup



Test Results, Power Output & Gain

Amateur Band	Power Input (dBm)	Max Power Output (dBm)	Gain (dB)
160 m	47.43	60.60	13.17
80 m	47.10	60.55	13.45
60-40 m	48.11	61.21	13.1
30-20 m	47.70	60.74	13.04
17-15 m	47.83	60.50	12.67
12-10 m	47.40	60.55	13.15
6 m	49.17	58.21	9.04

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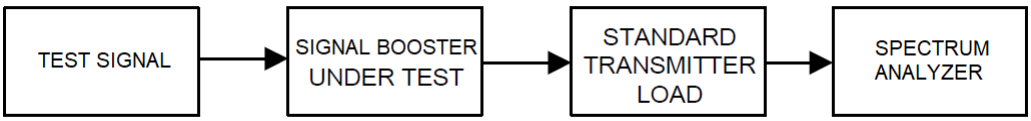
8.3 Out-of-band Rejection

Limits from FCC Part 97, test method from FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

Test Setup


Test Results, Out-of-band Rejection and Class of Operation		
Operating Band (MHz)	Passband (kHz)	Class of Operation
1.8 – 54	> 75	Class B

- Amplifier will not transmit out of ban. Amplifier shuts off when an out of band signal is detected.

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Out-of-band Rejection, Spectrum Plots

8.4 Bandwidth & Emission

Limits from FCC Parts 2.202, KDB 935210 D05 v01r04 Industrial Signal Boosters.

Frequency (MHz)	Occupied Bandwidth (kHz)
1.876120	5.188
3.620888	5.189
7.15	5.188
14.2209	5.184
18.1	5.184
28.64	5.185
50.184	5.184

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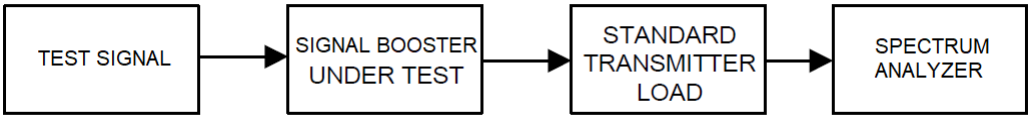
8.5 Input VS Output Signal Comparison

Limits from FCC Parts 97 and test procedure from ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

Test Setup


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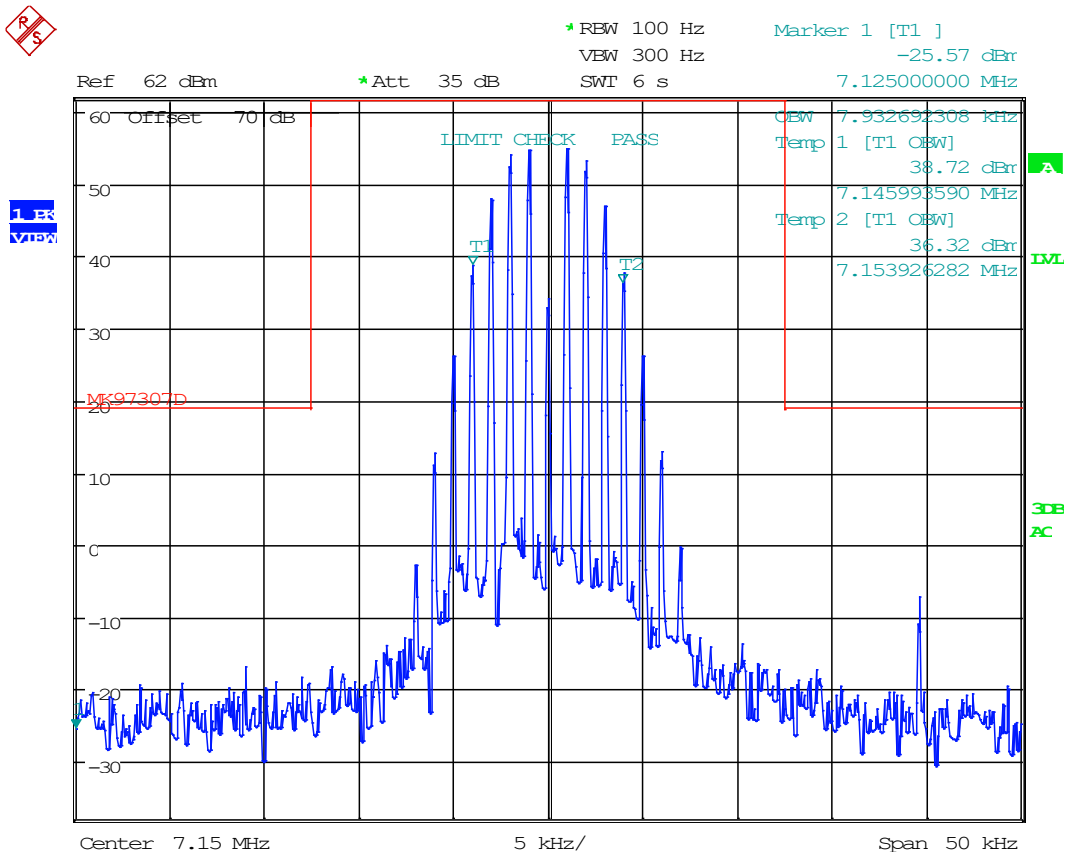
Input

8.5.1 FM Output, 7.15 MHz



Date: 21.JUN.2022 15:55:02

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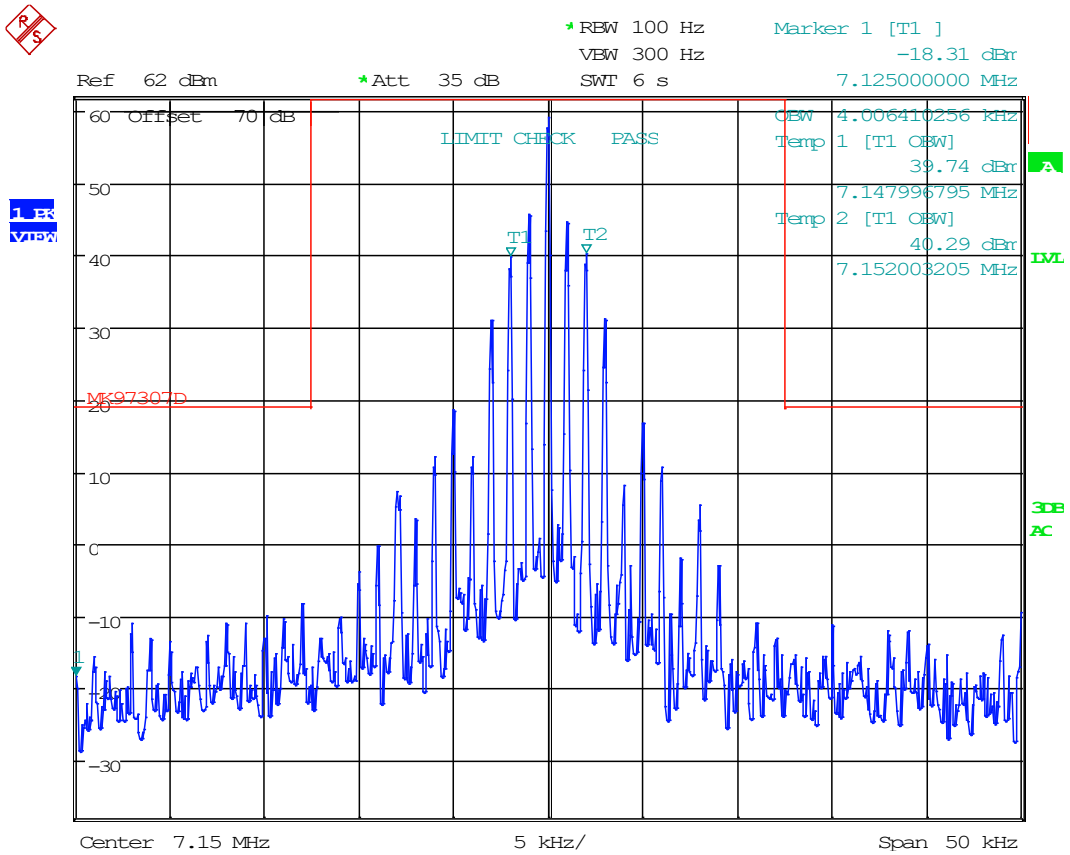
8.5.2 AM Output, 7.15 MHz



Date: 21.JUN.2022 15:54:06

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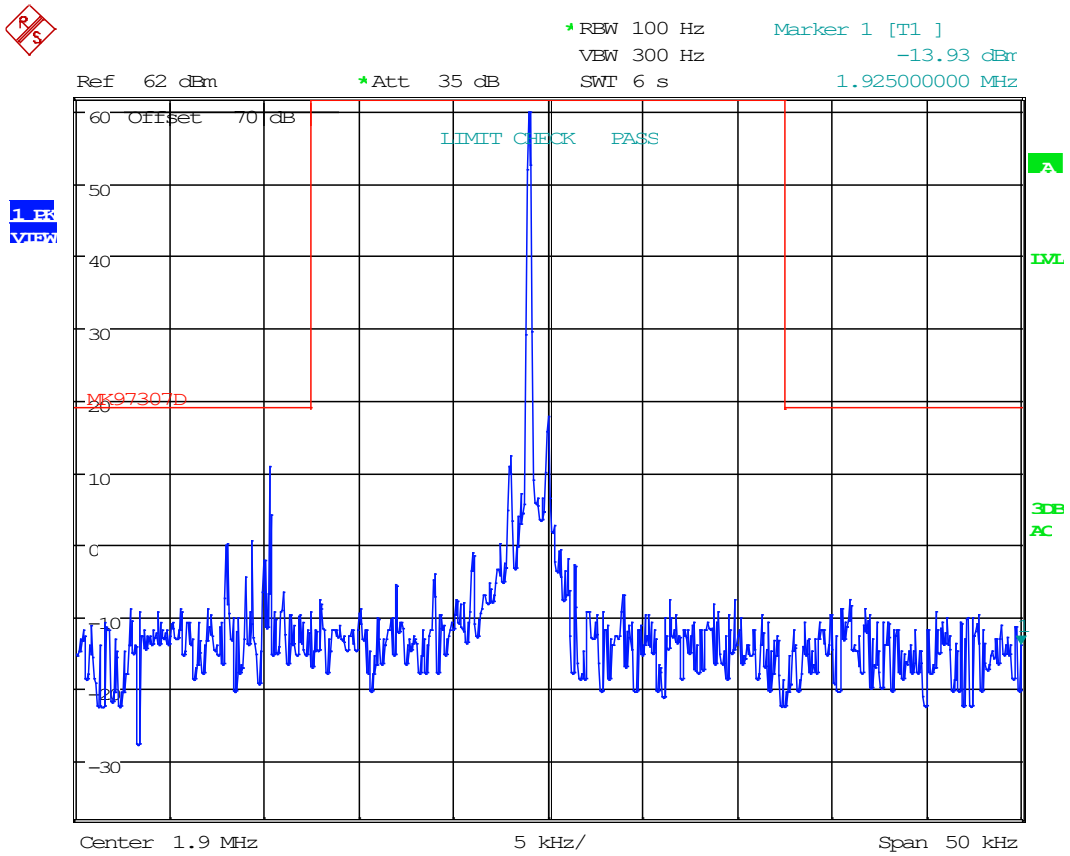
8.5.3 LSB Output, 1.9 MHz



Date: 21.JUN.2022 15:38:05

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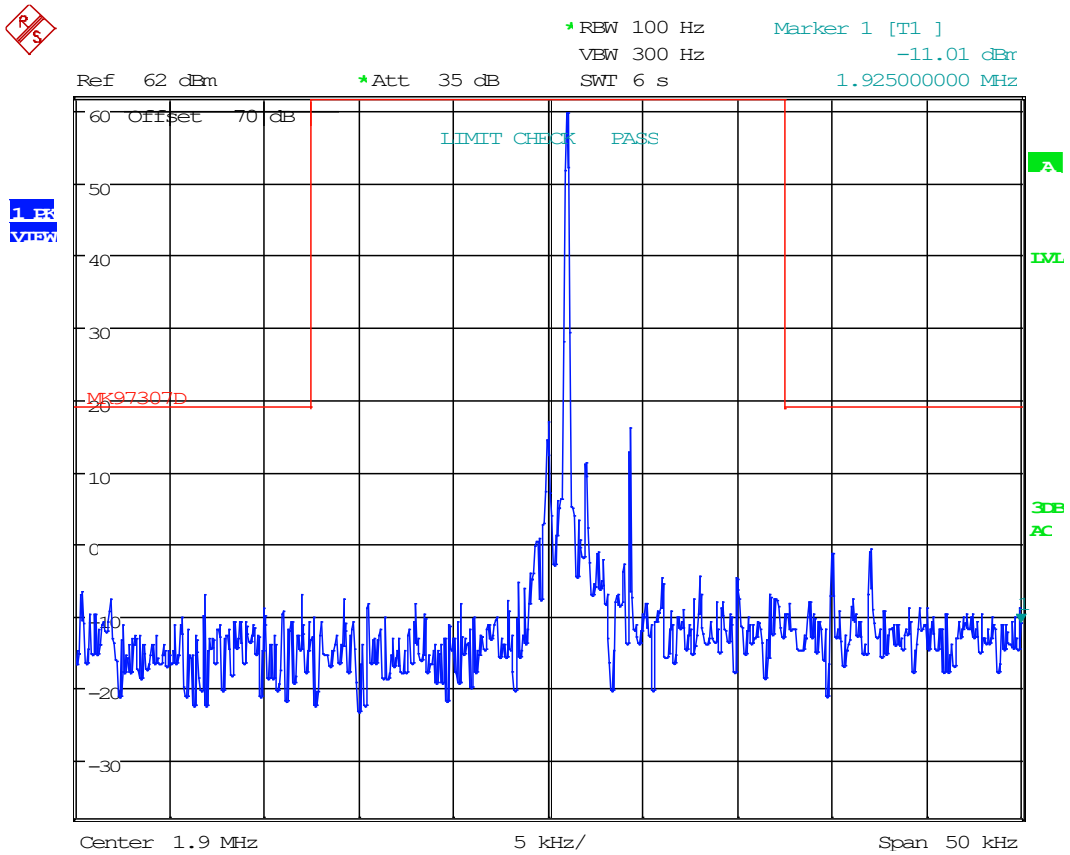
8.5.4 USB Output, 1.9 MHz



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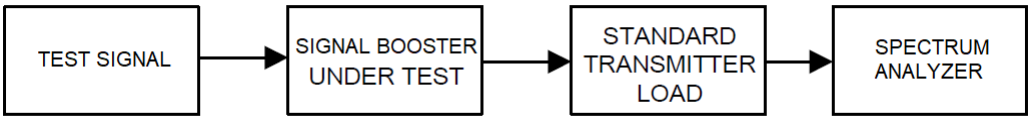
Output

8.6 Conducted Spurious Emissions

Limits from FCC Parts 2.1051, 97.307 and test procedure from ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

Test Setup


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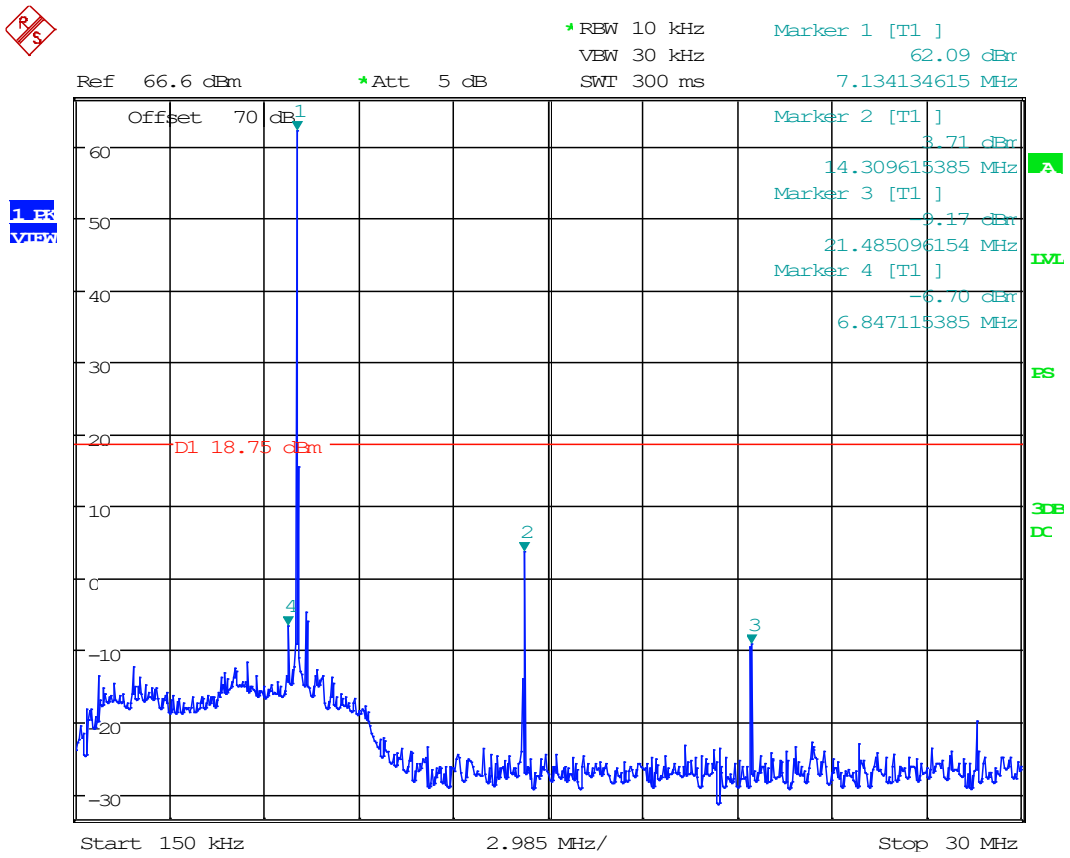
Conducted Spurious Emissions Spectrum Plots

8.6.1 FM, Scanned Below 30 MHz



Date: 21.JUN.2022 16:29:38

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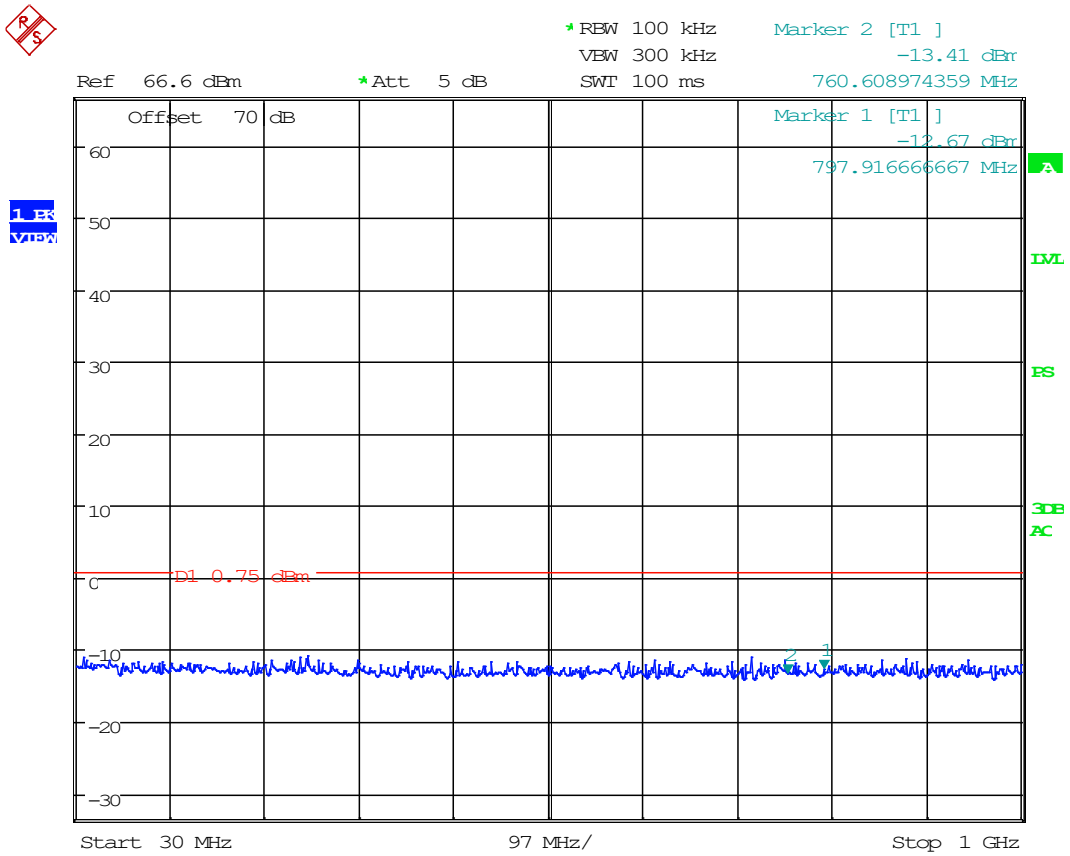
8.6.2 FM, Scanned Below 1 GHz



Date: 21.JUN.2022 16:01:54

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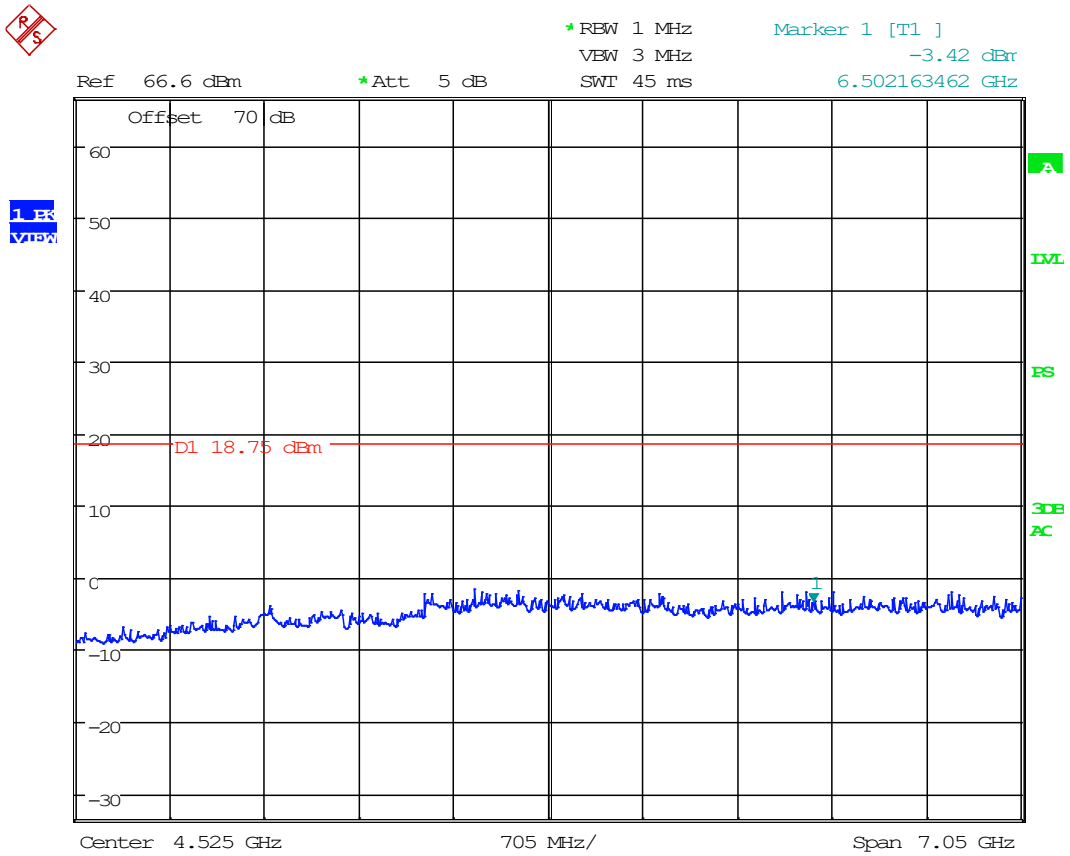
8.6.3 FM, Scanned Above 1 GHz



Date: 21.JUN.2022 16:06:36

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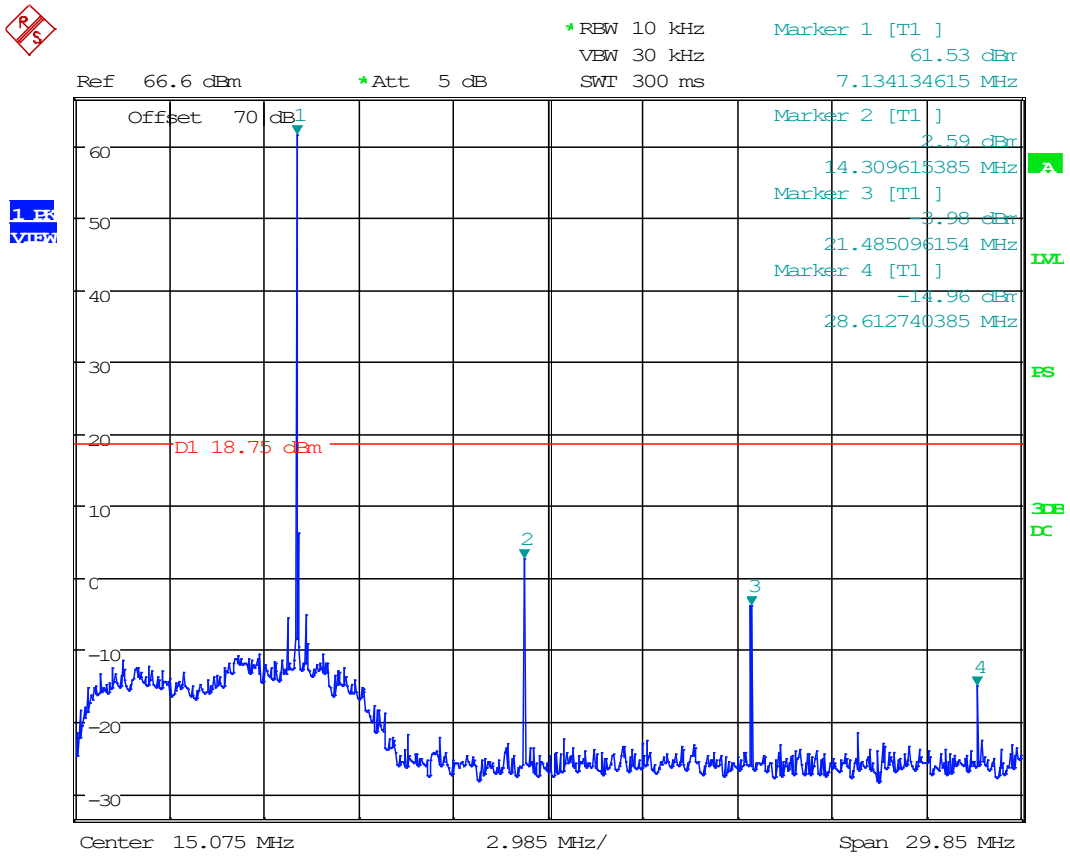
8.6.4 FM Data, Scanned Below 30 MHz



Date: 21.JUN.2022 16:31:33

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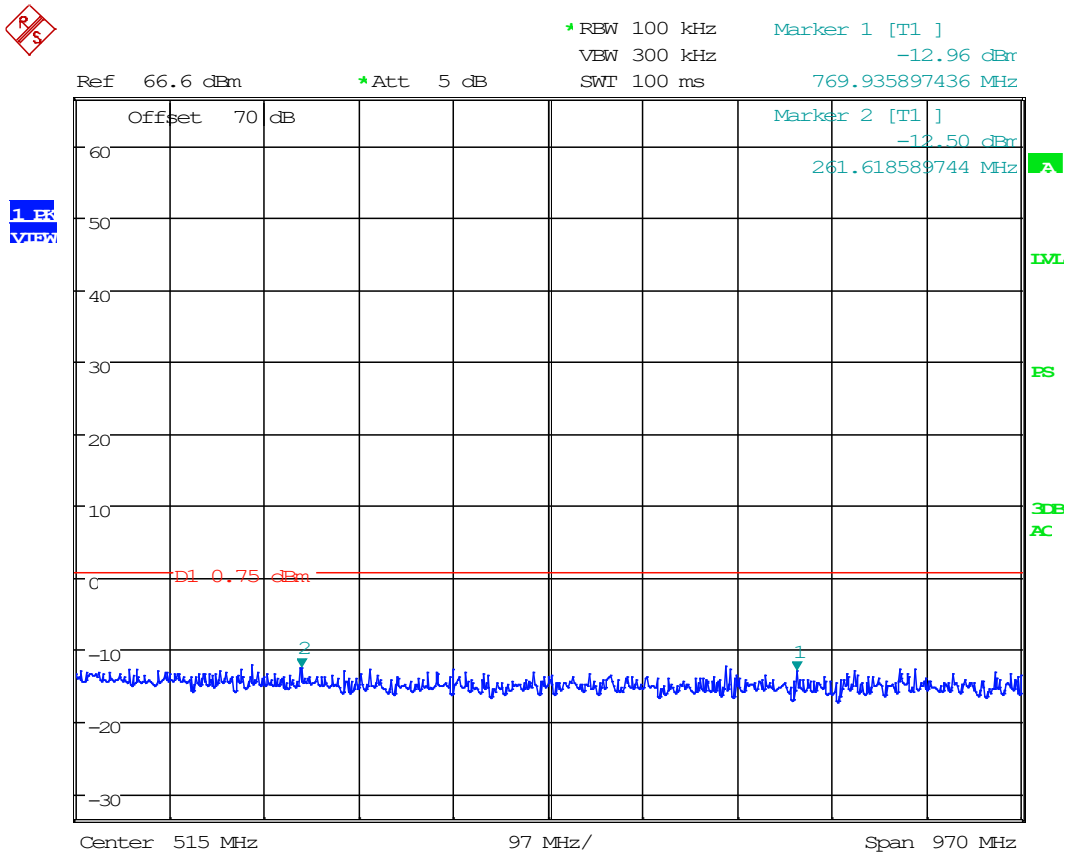
8.6.5 FM Data, Scanned Below 1 GHz



Date: 21.JUN.2022 16:04:19

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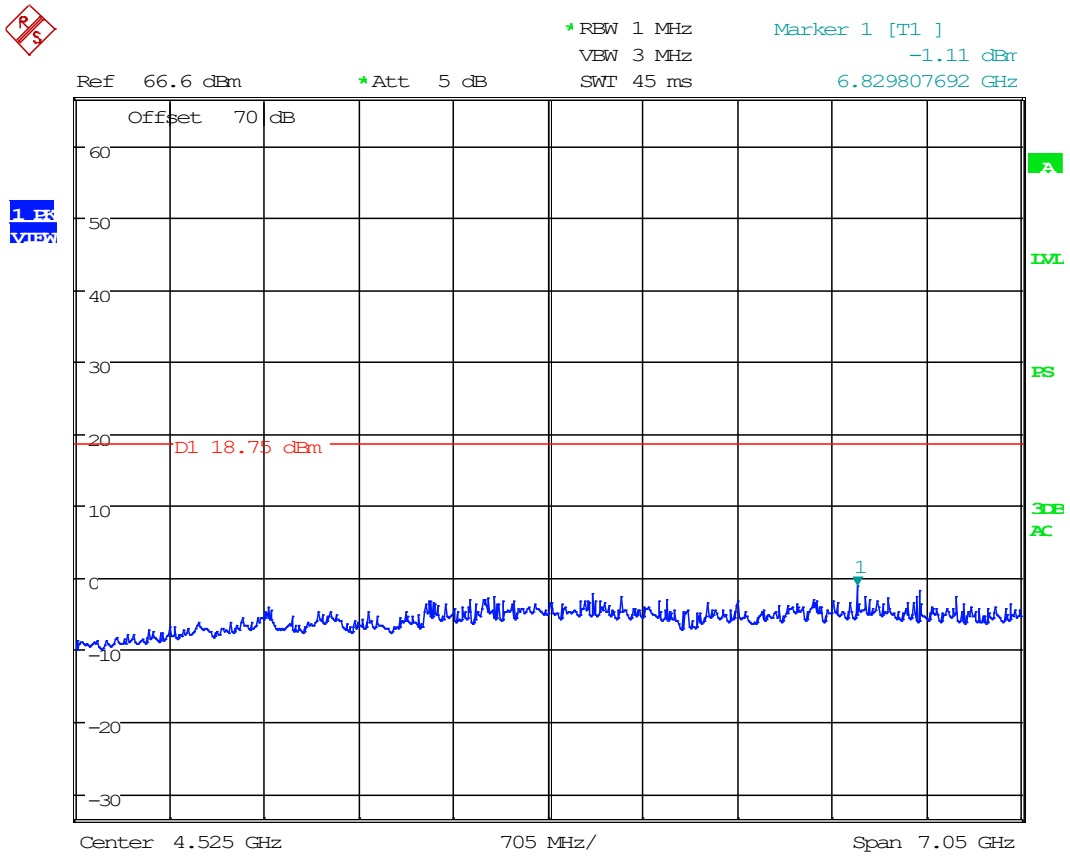
8.6.6 FM Data, Scanned Above 1 GHz



Date: 21.JUN.2022 16:07:31

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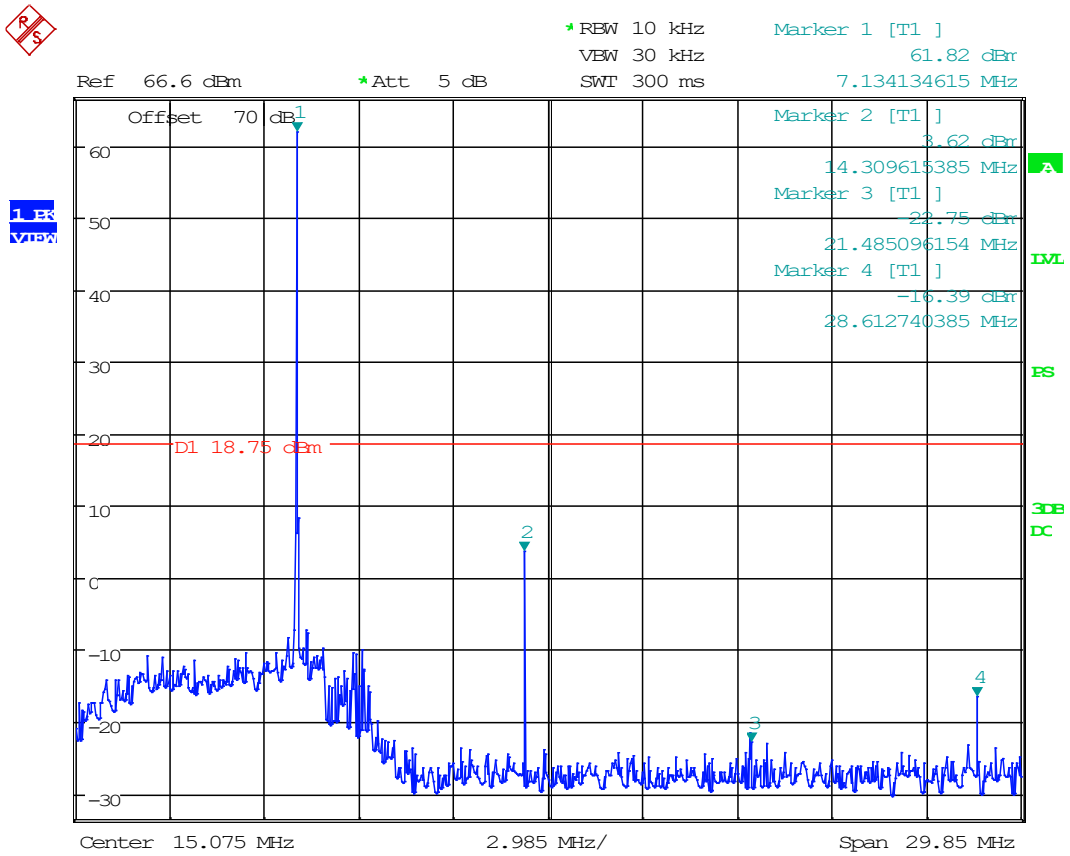
8.6.7 AM, Scanned Below 30 MHz



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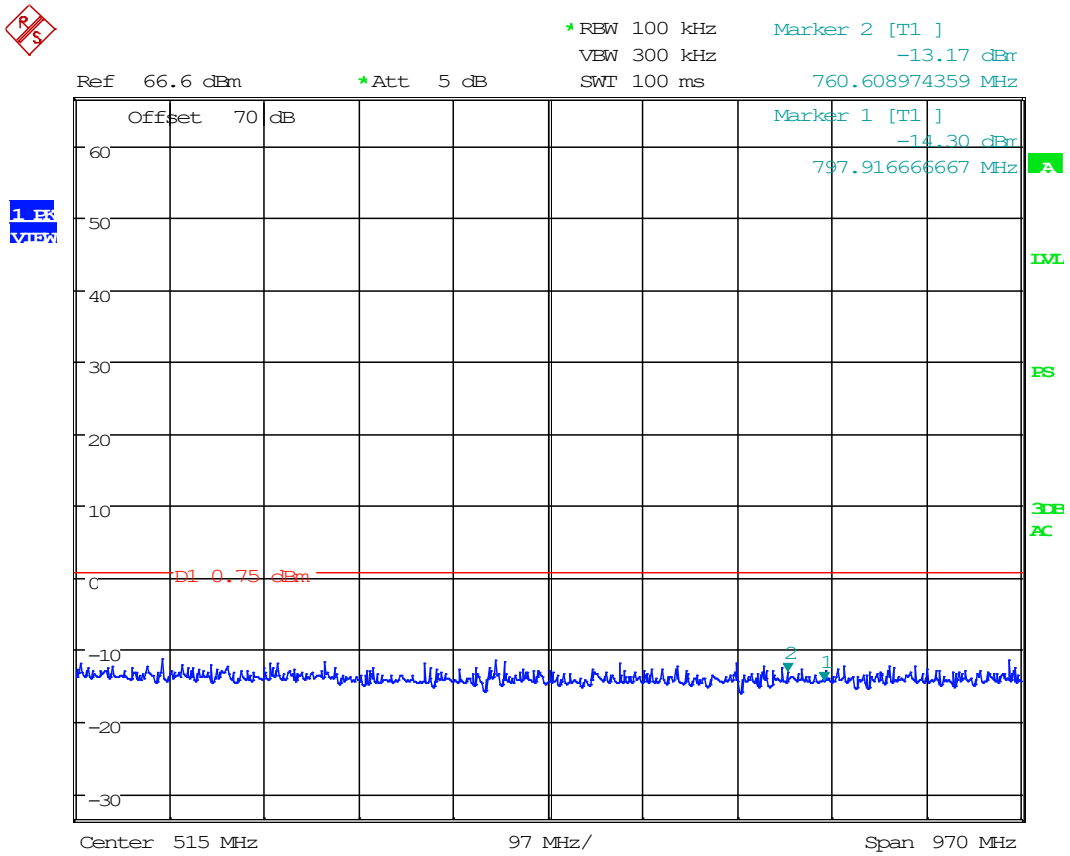
8.6.8 AM, Scanned Below 1 GHz



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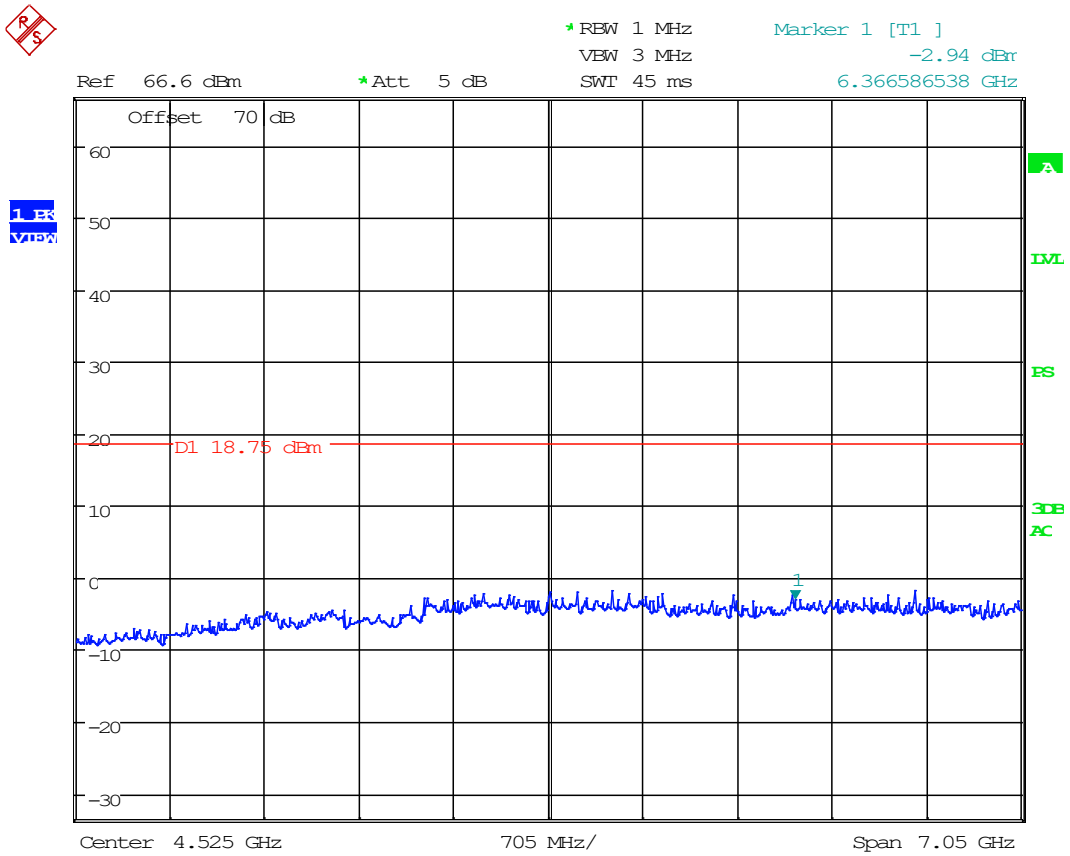
8.6.9 AM, Scanned Above 1 GHz



Date: 21.JUN.2022 16:07:06

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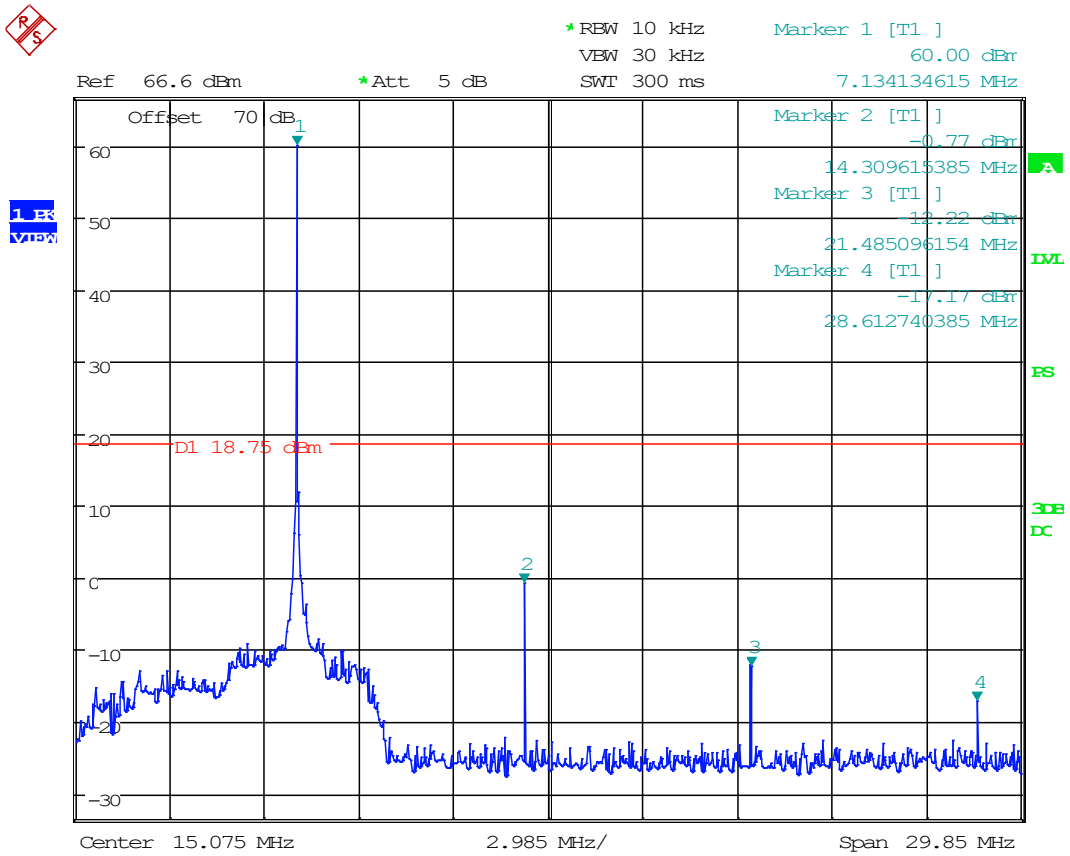
8.6.10 LSB, Scanned Below 30 MHz



Date: 21.JUN.2022 16:36:52

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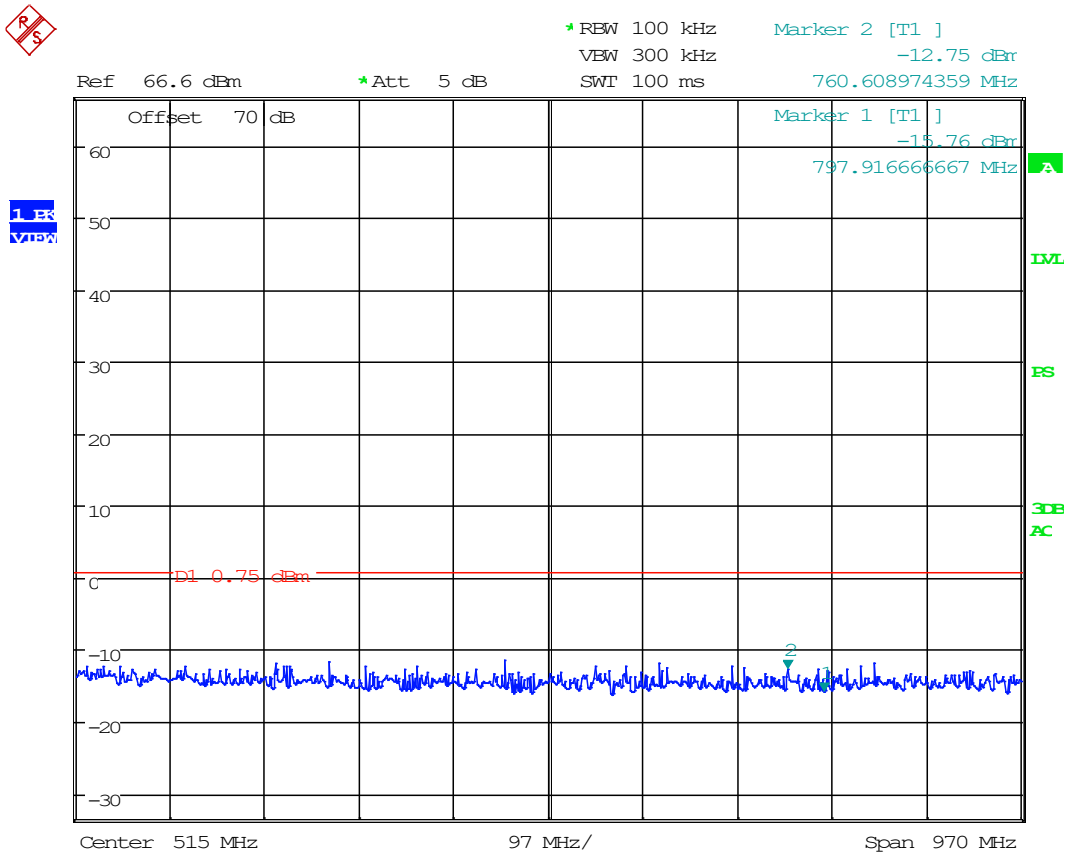
8.6.11 LSB, Scanned Below 1 GHz



Date: 21.JUN.2022 16:03:49

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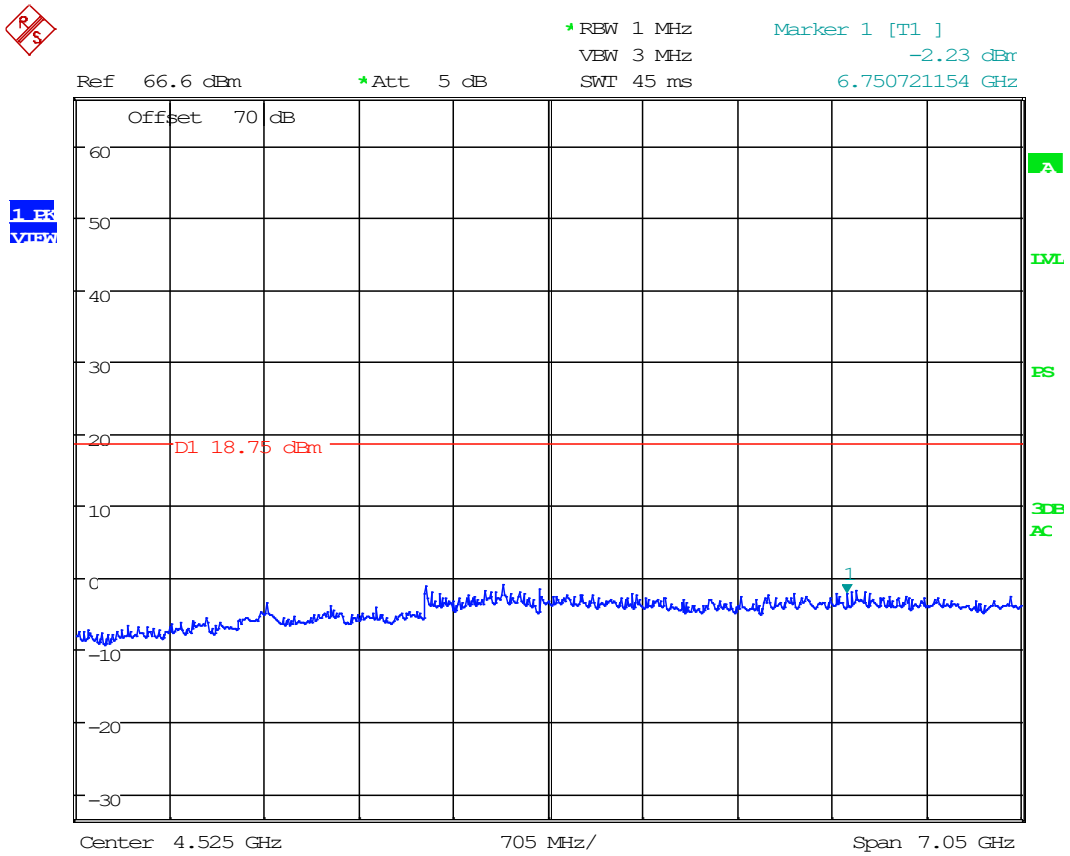
8.6.12 LSB, Scanned Above 1 GHz



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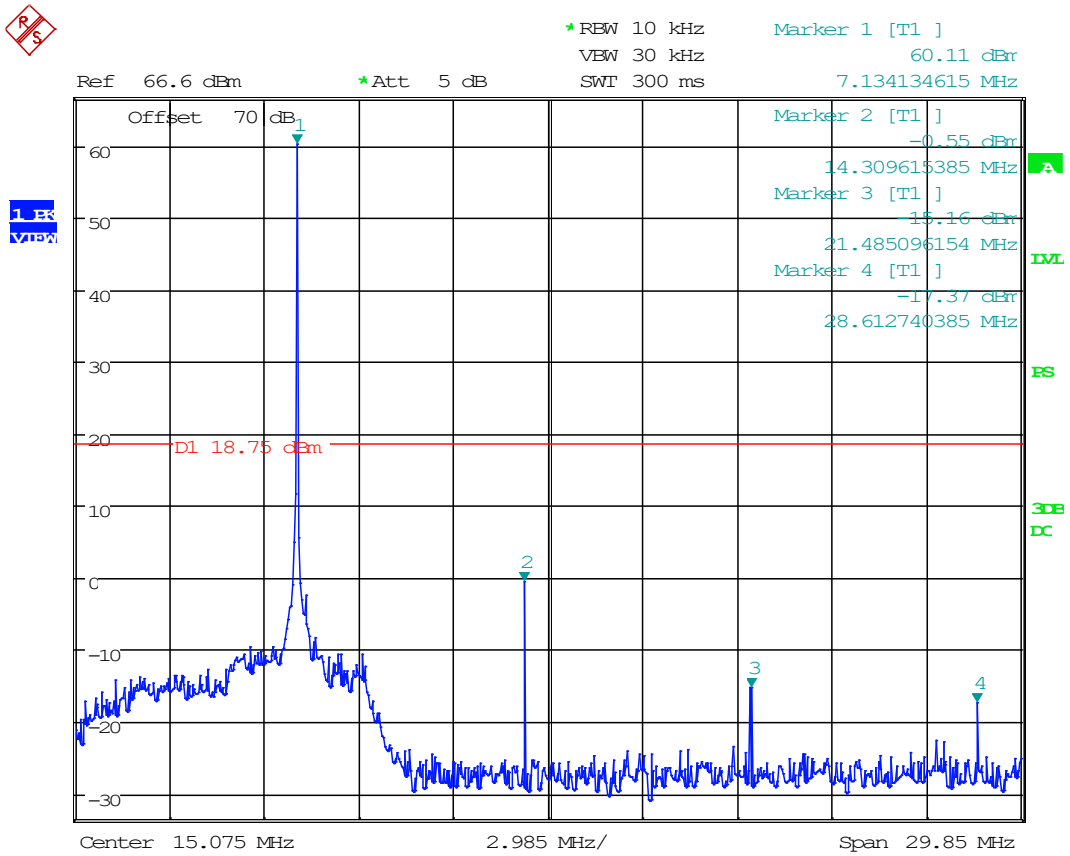
8.6.13 USB, Scanned Below 30 MHz



Date: 21.JUN.2022 16:36:03

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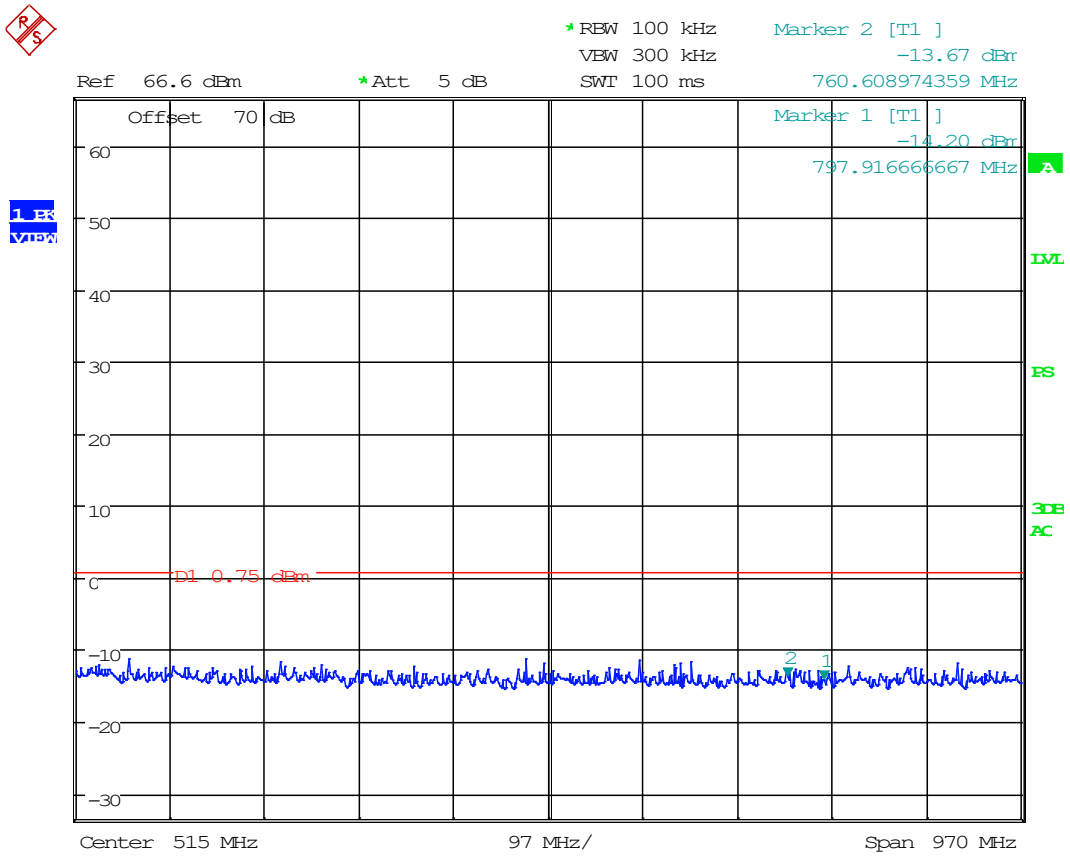
8.6.14 USB, Scanned Below 1 GHz



Date: 21.JUN.2022 16:03:12

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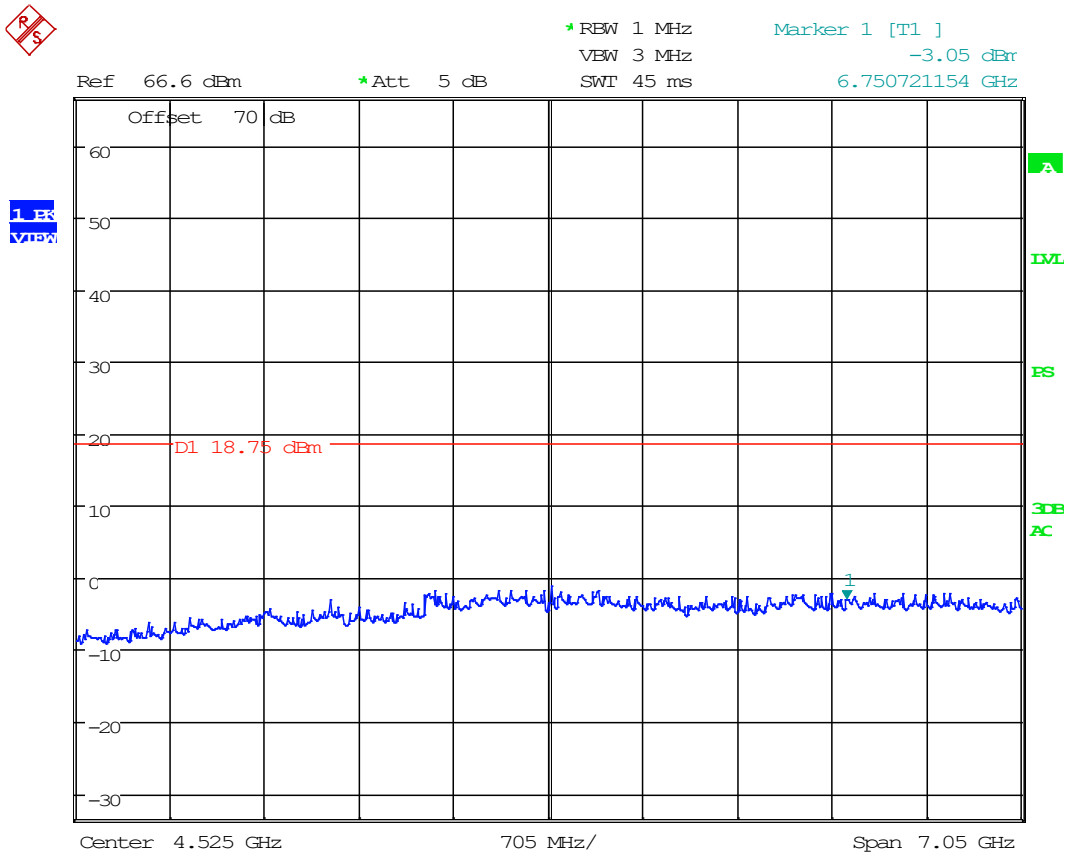
8.6.15 USB, Scanned Above 1 GHz



Date: 21.JUN.2022 16:06:04

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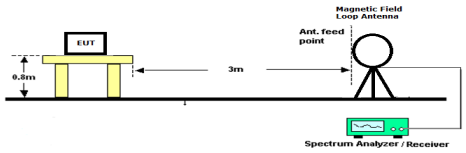
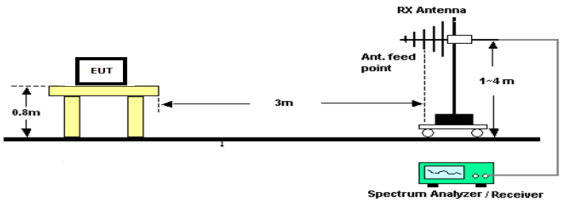
8.7 Spurious Radiated Emissions

Limits from FCC Parts 2.1053, 97.307 and test procedure from ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

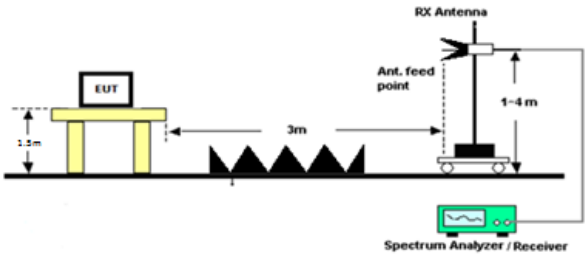
Radiated Test Setup, 9kHz – 30 MHz



Radiated Test Setup, 30MHz – 1000 MHz



Radiated Test Setup, Above 1000 MHz



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8.7.1 Radiated Emissions, 1.87 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)
1.87	3.74	PK	9.33	H	0.65	13.20	3.00	23.18	-74.20	18.21	92.41
1.87	5.61	PK	7.03	H	0.65	13.20	3.00	20.88	-76.50	18.21	94.71
1.87	7.48	PK	11.98	H	0.65	13.20	3.00	25.83	-71.55	18.21	89.76
1.87	9.35	PK	6.78	H	0.65	13.20	3.00	20.63	-76.75	18.21	94.96
1.87	11.22	PK	7.94	H	0.65	13.20	3.00	21.79	-75.59	18.21	93.80
1.87	13.09	PK	7.66	H	0.65	13.20	3.00	21.51	-75.87	18.21	94.08
1.87	14.96	PK	10.14	H	0.65	13.20	3.00	23.99	-73.39	18.21	91.60
1.87	16.83	PK	6.15	H	0.65	13.20	3.00	20.00	-77.38	18.21	95.59
1.87	18.70	PK	7.91	H	0.65	13.20	3.00	21.76	-75.62	18.21	93.83

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8.7.2 Radiated Emissions, 3.62 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)
3.62	7.24	PK	7.03	H	0.65	13.20	3.00	20.88	-76.50	18.21	94.71
3.62	10.86	PK	11.98	H	0.65	13.20	3.00	25.83	-71.55	18.21	89.76
3.62	14.48	PK	6.78	H	0.65	13.20	3.00	20.63	-76.75	18.21	94.96
3.62	18.10	PK	7.94	H	0.65	13.20	3.00	21.79	-75.59	18.21	93.80
3.62	21.73	PK	9.33	H	0.65	13.20	3.00	23.18	-74.20	18.21	92.41
3.62	21.73	PK	9.60	V	0.65	13.20	3.00	23.45	-73.93	18.21	92.14
3.62	25.35	PK	7.03	H	0.65	13.20	3.00	20.88	-76.50	18.21	94.71
3.62	25.35	PK	9.02	V	0.65	13.20	3.00	22.87	-74.51	18.21	92.72
3.62	28.97	PK	11.98	H	0.65	13.20	3.00	25.83	-71.55	18.21	89.76
3.62	28.97	PK	11.30	V	0.65	13.20	3.00	25.15	-72.23	18.21	90.44
3.62	32.59	PK	6.78	H	0.65	13.20	3.00	20.63	-76.75	18.21	94.96
3.62	32.59	PK	8.09	V	0.65	13.20	3.00	21.94	-75.44	18.21	93.65
3.62	36.21	PK	7.42	H	0.67	13.40	3.00	21.49	-75.88	18.21	94.09
3.62	36.21	PK	5.85	V	0.67	13.40	3.00	19.92	-77.45	18.21	95.66

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8.7.3 Radiated Emissions, 7.15 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)
7.15	14.30	PK	6.80	H	0.65	13.20	3.00	20.65	-76.73	18.21	94.94
7.15	21.45	PK	8.92	H	0.65	13.20	3.00	22.77	-74.61	18.21	92.82
7.15	21.45	PK	7.94	V	0.65	13.20	3.00	21.79	-75.59	18.21	93.80
7.15	28.60	PK	14.94	H	0.65	13.20	3.00	28.79	-68.59	18.21	86.80
7.15	28.60	PK	7.66	V	0.65	13.20	3.00	21.51	-75.87	18.21	94.08
7.15	35.75	PK	8.09	H	0.67	13.38	3.00	22.14	-75.24	18.21	93.45
7.15	35.75	PK	10.14	V	0.67	13.38	3.00	24.19	-73.19	18.21	91.40
7.15	42.90	PK	7.66	H	0.73	12.92	3.00	21.31	-76.06	18.21	94.27
7.15	42.90	PK	6.15	V	0.73	12.92	3.00	19.80	-77.57	18.21	95.78
7.15	50.05	PK	8.22	H	0.82	11.19	3.00	20.23	-77.15	1.21	78.36
7.15	50.05	PK	7.91	V	0.82	11.19	3.00	19.92	-77.46	1.21	78.67
7.15	57.20	PK	9.16	H	0.88	8.62	3.00	18.66	-78.71	1.21	79.92
7.15	57.20	PK	6.82	V	0.88	8.62	3.00	16.32	-81.05	1.21	82.26
7.15	64.35	PK	9.10	H	0.94	6.33	3.00	16.37	-81.00	1.21	82.21
7.15	64.35	PK	0.05	V	0.94	6.33	3.00	7.32	-90.05	1.21	91.26
7.15	71.50	PK	11.44	H	1.00	6.20	3.00	18.64	-78.73	1.21	79.94
7.15	71.50	PK	9.28	V	1.00	6.20	3.00	16.48	-80.89	1.21	82.10

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8.7.4 Radiated Emissions, 14.22 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)
14.22	28.44	PK	12.21	H	0.65	13.20	3.00	26.06	-71.32	18.21	89.53
14.22	28.44	PK	10.13	V	0.65	13.20	3.00	23.98	-73.40	18.21	91.61
14.22	42.66	PK	8.07	H	0.73	12.97	3.00	21.77	-75.61	18.21	93.82
14.22	42.66	PK	10.88	V	0.73	12.97	3.00	24.58	-72.80	18.21	91.01
14.22	56.88	PK	8.75	H	0.88	8.73	3.00	18.37	-79.01	1.21	80.22
14.22	56.88	PK	6.80	V	0.88	8.73	3.00	16.42	-80.96	1.21	82.17
14.22	71.10	PK	9.48	H	1.00	6.12	3.00	16.60	-80.78	1.21	81.99
14.22	71.10	PK	9.47	V	1.00	6.12	3.00	16.59	-80.79	1.21	82.00
14.22	85.33	PK	8.42	H	1.11	9.83	3.00	19.36	-78.01	1.21	79.22
14.22	85.33	PK	9.35	V	1.11	9.83	3.00	20.29	-77.08	1.21	78.29
14.22	99.55	PK	8.92	H	1.16	10.85	3.00	20.92	-76.45	1.21	77.66
14.22	99.55	PK	11.26	V	1.16	10.85	3.00	23.26	-74.11	1.21	75.32
14.22	113.77	PK	9.69	H	1.22	10.10	3.00	21.01	-76.37	1.21	77.58
14.22	113.77	PK	9.25	V	1.22	10.10	3.00	20.57	-76.81	1.21	78.02
14.22	127.99	PK	8.13	H	1.28	12.50	3.00	21.91	-75.47	1.21	76.68
14.22	127.99	PK	9.65	V	1.28	12.50	3.00	23.43	-73.95	1.21	75.16
14.22	142.21	PK	8.52	H	1.35	15.62	3.00	25.49	-71.88	1.21	73.09
14.22	142.21	PK	8.46	V	1.35	15.62	3.00	25.43	-71.94	1.21	73.15

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8.7.5 Radiated Emissions, 18.10 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)
18.10	36.20	PK	9.17	H	0.73	12.97	3.00	22.87	-74.51	18.21	92.72
18.10	36.20	PK	8.85	V	0.73	12.97	3.00	22.55	-74.83	18.21	93.04
18.10	54.30	PK	8.92	H	0.86	9.68	3.00	19.46	-77.92	1.21	79.13
18.10	54.30	PK	7.52	V	0.86	9.68	3.00	18.06	-79.32	1.21	80.53
18.10	72.40	PK	8.71	H	1.01	6.38	3.00	16.10	-81.28	1.21	82.49
18.10	72.40	PK	7.98	V	1.01	6.38	3.00	15.37	-82.01	1.21	83.22
18.10	90.50	PK	9.21	H	1.14	10.55	3.00	20.90	-76.48	1.21	77.69
18.10	90.50	PK	8.31	V	1.14	10.55	3.00	20.00	-77.38	1.21	78.59
18.10	108.60	PK	8.05	H	1.19	10.24	3.00	19.48	-77.89	1.21	79.10
18.10	108.60	PK	8.65	V	1.19	10.24	3.00	20.08	-77.29	1.21	78.50
18.10	126.70	PK	8.65	H	1.28	12.14	3.00	22.07	-75.31	1.21	76.52
18.10	126.70	PK	8.56	V	1.28	12.14	3.00	21.98	-75.40	1.21	76.61
18.10	144.80	PK	9.17	H	1.37	15.96	3.00	26.50	-70.88	1.21	72.09
18.10	144.80	PK	9.29	V	1.37	15.96	3.00	26.62	-70.76	1.21	71.97
18.10	162.90	PK	9.33	H	1.47	16.31	3.00	27.11	-70.27	1.21	71.48
18.10	162.90	PK	7.73	V	1.47	16.31	3.00	25.51	-71.87	1.21	73.08
18.10	181.00	PK	8.98	H	1.56	13.70	3.00	24.24	-73.13	1.21	74.34
18.10	181.00	PK	8.37	V	1.56	13.70	3.00	23.63	-73.74	1.21	74.95

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8.7.6 Radiated Emissions, 28.64 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)
28.64	57.28	PK	7.96	H	0.89	8.59	3.00	17.43	-79.94	1.21	81.15
28.64	57.28	PK	11.10	V	0.89	8.59	3.00	20.57	-76.80	1.21	78.01
28.64	85.92	PK	9.21	H	1.12	9.89	3.00	20.22	-77.16	1.21	78.37
28.64	85.92	PK	8.75	V	1.12	9.89	3.00	19.76	-77.62	1.21	78.83
28.64	114.56	PK	9.44	H	1.22	10.16	3.00	20.82	-76.56	1.21	77.77
28.64	114.56	PK	7.03	V	1.22	10.16	3.00	18.41	-78.97	1.21	80.18
28.64	143.20	PK	8.46	H	1.36	15.72	3.00	25.54	-71.84	1.21	73.05
28.64	143.20	PK	8.88	V	1.36	15.72	3.00	25.96	-71.42	1.21	72.63
28.64	171.84	PK	8.96	H	1.53	15.02	3.00	25.50	-71.87	1.21	73.08
28.64	171.84	PK	9.89	V	1.53	15.02	3.00	26.43	-70.94	1.21	72.15
28.64	200.48	PK	8.25	H	1.62	10.79	3.00	20.66	-76.72	1.21	77.93
28.64	200.48	PK	7.44	V	1.62	10.79	3.00	19.85	-77.53	1.21	78.74
28.64	229.12	PK	7.96	H	1.74	10.30	3.00	20.00	-77.38	1.21	78.59
28.64	229.12	PK	7.94	V	1.74	10.30	3.00	19.98	-77.40	1.21	78.61
28.64	257.76	PK	9.44	H	1.98	11.76	3.00	23.18	-74.20	1.21	75.41
28.64	257.76	PK	8.09	V	1.98	11.76	3.00	21.83	-75.55	1.21	76.76
28.64	286.40	PK	9.93	H	2.07	13.13	3.00	25.13	-72.25	1.21	73.46
28.64	286.40	PK	8.61	V	2.07	13.13	3.00	23.81	-73.57	1.21	74.78

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8.7.7 Radiated Emissions, 50.18 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)
50.18	100.35	PK	9.84	H	1.16	10.80	3.00	21.80	-75.58	1.21	76.79
50.18	100.35	PK	8.55	V	1.16	10.80	3.00	20.51	-76.87	1.21	78.08
50.18	150.53	PK	7.75	H	1.40	16.45	3.00	25.61	-71.77	1.21	72.98
50.18	150.53	PK	8.18	V	1.40	16.45	3.00	26.04	-71.34	1.21	72.55
50.18	200.70	PK	6.98	H	1.62	10.79	3.00	19.39	-77.99	1.21	79.20
50.18	200.70	PK	8.20	V	1.62	10.79	3.00	20.61	-76.77	1.21	77.98
50.18	250.88	PK	9.13	H	1.90	11.29	3.00	22.32	-75.06	1.21	76.27
50.18	250.88	PK	8.29	V	1.90	11.29	3.00	21.48	-75.90	1.21	77.11
50.18	301.05	PK	8.81	H	2.08	13.61	3.00	24.50	-72.88	1.21	74.09
50.18	301.05	PK	7.32	V	2.08	13.61	3.00	23.01	-74.37	1.21	75.58
50.18	351.23	PK	7.13	H	2.12	14.10	3.00	23.34	-74.03	1.21	75.24
50.18	351.23	PK	7.80	V	2.12	14.10	3.00	24.01	-73.36	1.21	74.57
50.18	401.40	PK	10.14	H	2.29	14.70	3.00	27.13	-70.24	1.21	71.45
50.18	401.40	PK	8.48	V	2.29	14.70	3.00	25.47	-71.90	1.21	73.11
50.18	451.58	PK	7.91	H	2.46	15.91	3.00	26.28	-71.10	1.21	72.31
50.18	451.58	PK	8.94	V	2.46	15.91	3.00	27.31	-70.07	1.21	71.28
50.18	501.75	PK	12.27	H	2.66	17.44	3.00	32.36	-65.02	1.21	66.23
50.18	501.75	PK	8.05	V	2.66	17.44	3.00	28.14	-69.24	1.21	70.45

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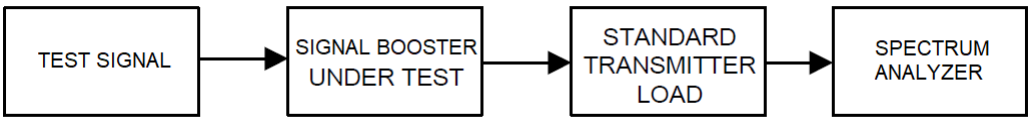
8.8 Modulation Characteristics

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

Test Setup


N/A. The EUT does not have any means to modulate the incoming signal.

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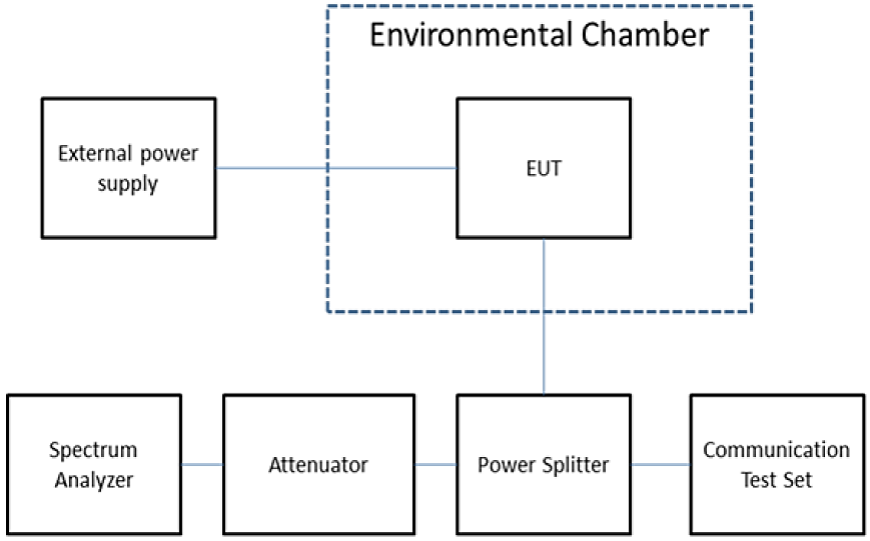
8.9 Frequency Stability

Limits from FCC Parts 2.1055, and test procedure from ANSI C63.26-2015 and FCC KDB 935210 D05 v01r04 Industrial Signal Boosters.

Test Setup



Test Results, Mode 1		
Tuned Frequency (MHz)	Max Deviation (ppm)	Limit (ppm)
n/a	n/a	n/a

N/A. The EUT is not subject to Frequency Stability per the rationale in KDB 935210

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9. 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. Test Setup Photographs

Test setup photographs are located in a separate supplementary document.

11. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_2831-22_FCC 97_	1	Initial release	7/1/2022
	2	Updated Pages 10, 13 &37	7/12/2022
	3	Updated Page 37	7/21/2022

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END OF TEST REPORT

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