



Test Report – FCC PART 15.236 Dual Transmitter with Combiner/ Splitter Prepared For: Wisycom s.r.l.

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 8/02/2021

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1. Customer Information

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

1.1 Test Result Summary

The following test procedure was used ANSI C63.10. 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.

Cluses	Description of the Requirements	Result (Pass, Fail or N/A)
PART 2.1046(a), FCC Part 15.236	Conducted Power	PASS
FCC Part 15.236	Operating Bandwidth Emission mask	PASS
FCC Part 15.236	Radiated Emissions	PASS

Introduction

This device was originally approved under FCC Part 15 with a 20 mW Output Power. The applicant wishes to obtain a grant of certification for Part 15 for the original frequency bands of 615.075-615.925 MHz and 657.075-662.925 MHz with an output power of 20 mW and 470.075-607.925 MHz at 50 mW. As changing output power cannot be done by a C2PC, this is being submitted as an original Part 15 filing with all 3 frequency bands listed.



Explain the differences

FCC ID: POUMTK952N-2W0U15 is electronically identical to FCC ID: POUMTK952N-2W0. The output power of the FCC ID: POUMTK952N-2W0U15 is selectable from 20mW to 50mW but the maximum power is limited by software according to the following table:

Frequency Range (MHz)	Max Power selectable by menu
470.075-607.925	50mW EIRP
614.075-615.925	20mW EIRP
657.075-662.925	20mW EIRP

Maximum power and allowed frequency ranges are preconfigured in the factory and cannot be modified by the user. The firmware reads this configuration and allows the user to set the permitted frequency belonging to the allowed frequency ranges at the maximum power according to the above table. All testing is considered to be identical and based on the KDB 484596 guidelines, I would like to reference the previous test report for all data in the 614.075-615.925 MHz and 657.075-662.925 MHz bands – please see the report mentioned in the Reference Section below. All test data for the 470.075-607.925 MHz band is included in this current test report.

Spot-Check Verification Data

Please see the Spot-check test report that is submitted with this filing for the spot check of RF Power Output and Spurious Radiated emissions in the 614.075-615.925 MHz and 657.075-662.925 MHz bands.

The name of this report is TR_3423-21_15.236_Spot check_1.pdf

Reference Section

All original test data is from FCC ID: POUMTK952N-2W0, test report –1511AUT18_PT 15236_TestReport_Rev 2.pdf of which we are submitting with this application.



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

2. Location of Testing

2.1 Test Laboratory

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

FCC test firm # 578780

FCC Designation # US1070

FCC site registration is under A2LA certificate # 0955.01

ISED Canada test site registration # 2056A

EU Notified Body # 1177

For all designations see A2LA scope # 0955.01



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

2.2 Testing was performed, reviewed by

Dates of Testing: 7/15/2021 – 8/02/2021

Signature:

Sr. EMC Engineer
EMC-003838-NE



Name & Title:

Tim Royer, EMC Engineer

Date of Signature

8/02/2021

Signature:

Name & Title:

Kristoffer Costa, EMC Technician

Date of Signature

8/02/2021



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

The test sample was received: 7/6/2021

3.1 Description of the EUT

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

Identification	
FCC ID:	POUMTK952N-2W0U15
Brief Description	Dual Transmitter with Combiner/ Splitter
Model(s) #	MTK952N-2W0U15
Firmware version	n/a
Software version	n/a
Model/ Serial Number	MTK952-2W0U15/ X6900015
Model/ Serial Number	MTK952-0W2U15/ U0549037
Model/ Serial Number	CSI16T/ V0700003
Model/ Serial Number	CSA121T/ T4046177

Technical Characteristics	
Technology	Dual Transmitter with Combiner/ Splitter
Frequency Range	470.075-607.925 MHz
Modes	4x4-1, 16-1, 2x8-1, CSA121T
Number of Channels	4
Duty Cycle	100%
Antenna Connector	BNC
Voltage Rating (AC or Batt.)	AC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
1	n/a	n/a	0 dBi
2			



3.2 Configuration of EUT

Band	Mode	Number of Ant.
470.075-607.925 MHz	Transmit	4

Operating conditions during Testing:

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

Peripherals used during Testing:

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.



4. Test methods & Applicable Regulatory Limits

4.1 Test methods/Standards/Guidance

The measurement was performed as per ANSI C63.10. Full test results are available in this report.

Limits and Regulatory Limits:

- 1) FCC Part 15.236

5. Measurement Uncertainty

Parameter	Uncertainty (dB)
Conducted Emissions	1.42
Radiated Emissions (30 – 200 MHz)	5.49
Radiated Emissions (200 – 1000 MHz)	5.79
Radiated Emissions (1 GHz – 18 GHz)	4.37
The uncertainties provided in this table represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of K=2.	

6. Environmental Conditions

Temperature & Humidity

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

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

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



7. List of Test Equipment and Test Facility

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

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

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

List of Test Equipment

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
Antenna	Double-Ridged Horn 18-40 GHz	EMCO	3116	9011-2145	10/19/20	10/19/2023
CHAMBER	CHAMBER	Panashield	3M	N/A	3/12/19	3/11/2022
Pre-amp	Pre-amp	RF-LAMBDA	RLNA00M45GA	NA	2/27/19	2/26/2022
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	3537A01679	3/29/19	3/28/2022



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(352) 472-5500 / testing@timcoengr.com

8. Test Results

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

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

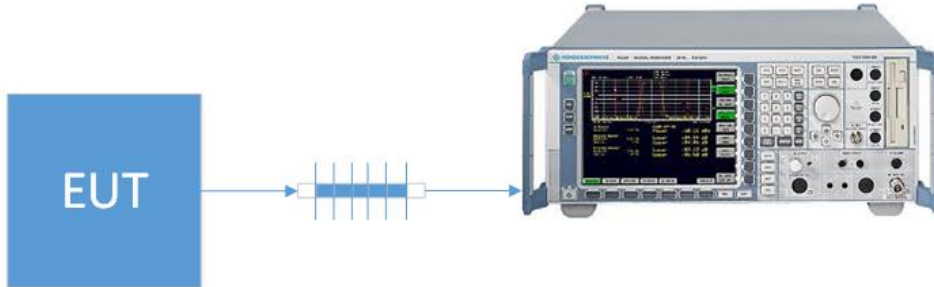
The measurement results, along with the appropriate limits for comparison, may be presented in tabular or graphical form. In addition, any variation in the measurement environment may be reported if applicable (e.g., a significant change of temperature that could affect the cable loss and amplifier response).

Units of measurement

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

8.1 RF POWER OUTPUT

Limits from Part 2.1046 ,15.236 (d) (1) and test procedure from ANSI C63.10.

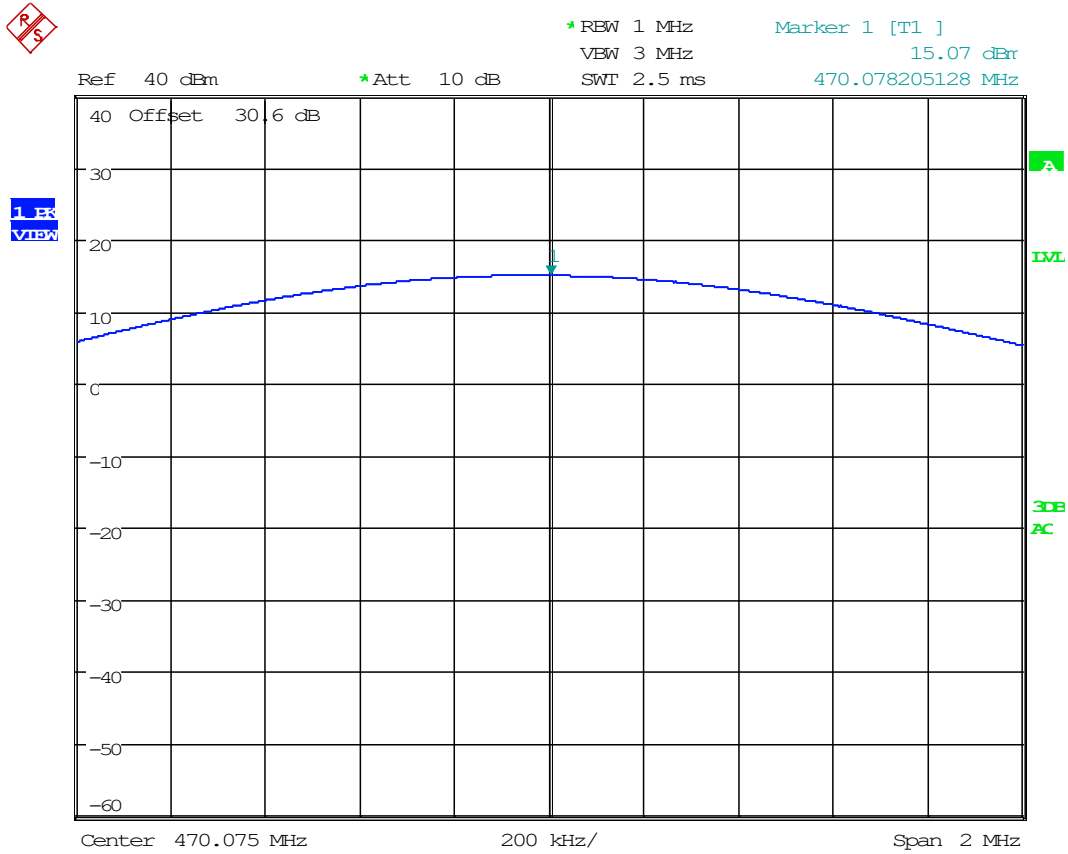


Test Data: RF Power Output Measurement Table

	Tuned Frequency (MHz)	Power Output		
		Power Output (dBm)	Level (mW)	Limit (mW)
4-1	470.075	15.07	32.14	50
	555	15.50	35.48	50
	607.925	14.72	29.65	50
8-1	470.075	14.67	29.31	50
	555	14.32	27.04	50
	607.925	14.76	29.92	50
16-1	470.075	14.54	28.44	50
	555	14.44	27.80	50
	607.925	13.43	22.03	50
CSA121T	470.075	16.05	40.27	50
	555	15.97	39.54	50
	607.925	15.38	34.51	50

- 4-1: Maximum Output Power = 35.48 mW
- 8-1: Maximum Output Power = 29.92 mW
- 16-1: Maximum Output Power = 28.44 mW
- CSA121T: Maximum Output Power = 40.27 mW

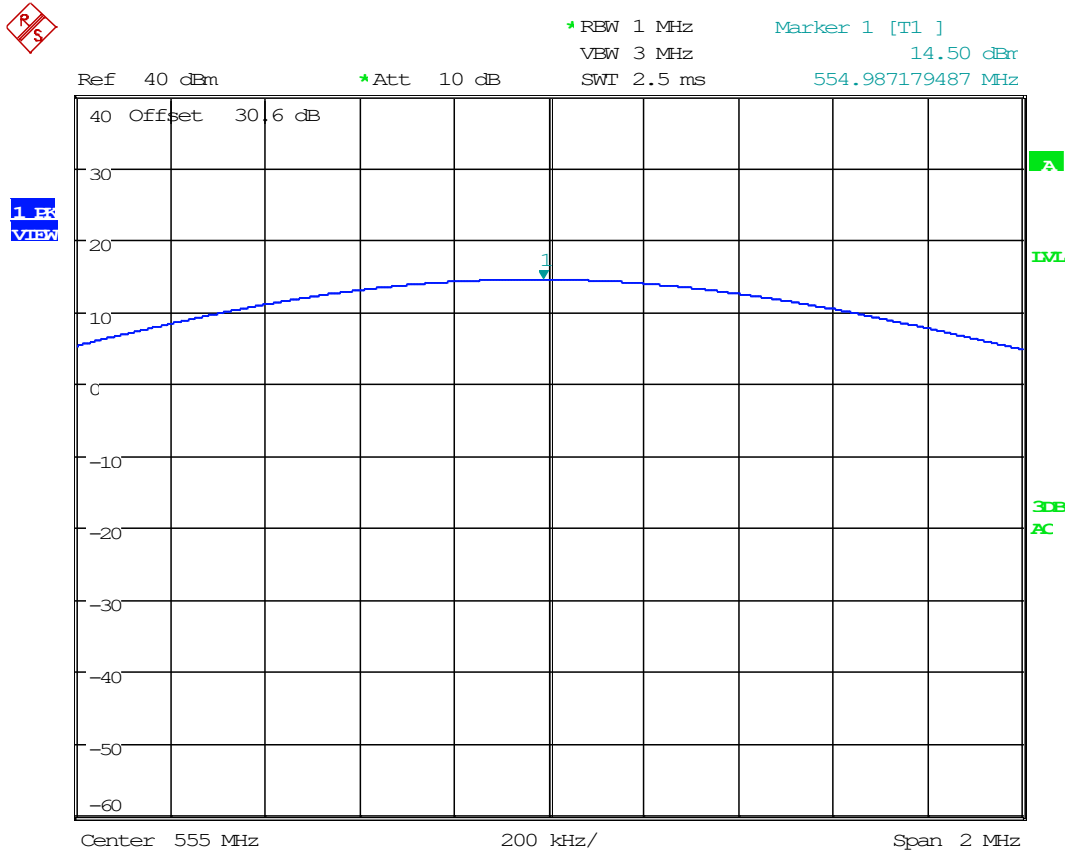
8.1.1 4-1: Test Data: RF Power Output Measurement Table, 470.075 MHz



Date: 2.AUG.2021 09:45:56

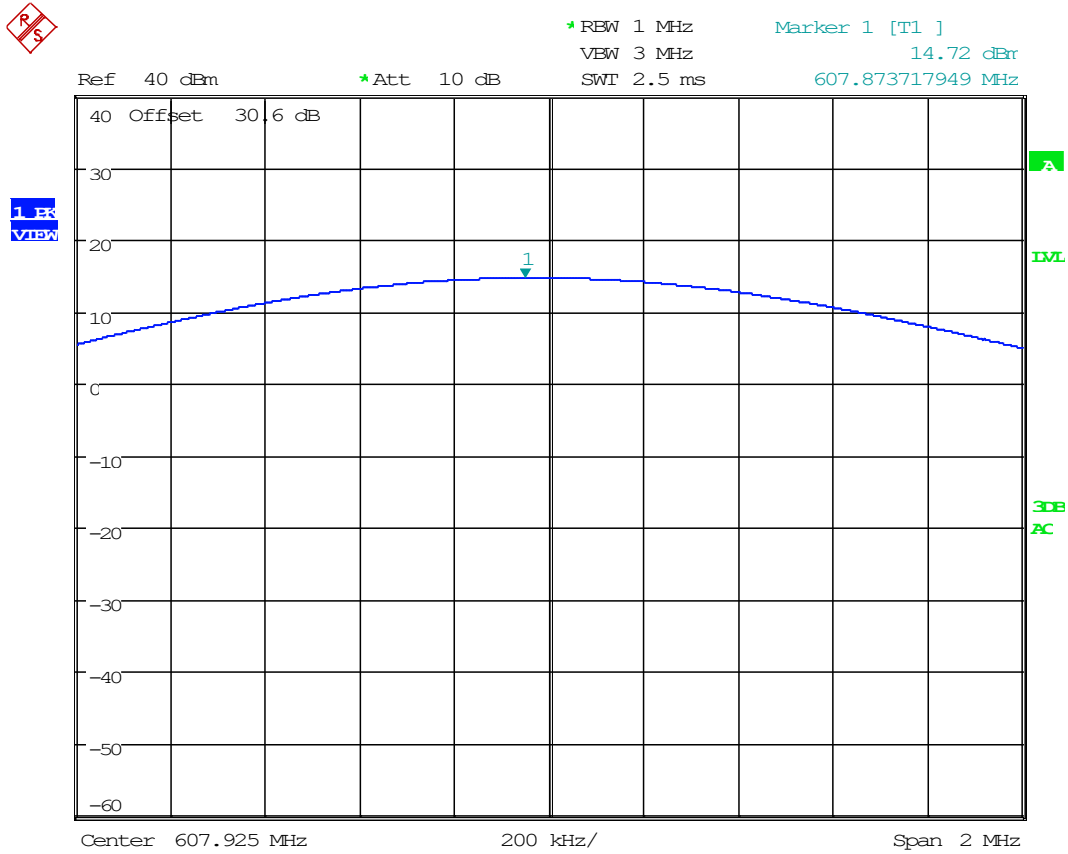


8.1.2 4-1: Test Data: RF Power Output Measurement Table, 555 MHz



Date: 2.AUG.2021 09:48:21

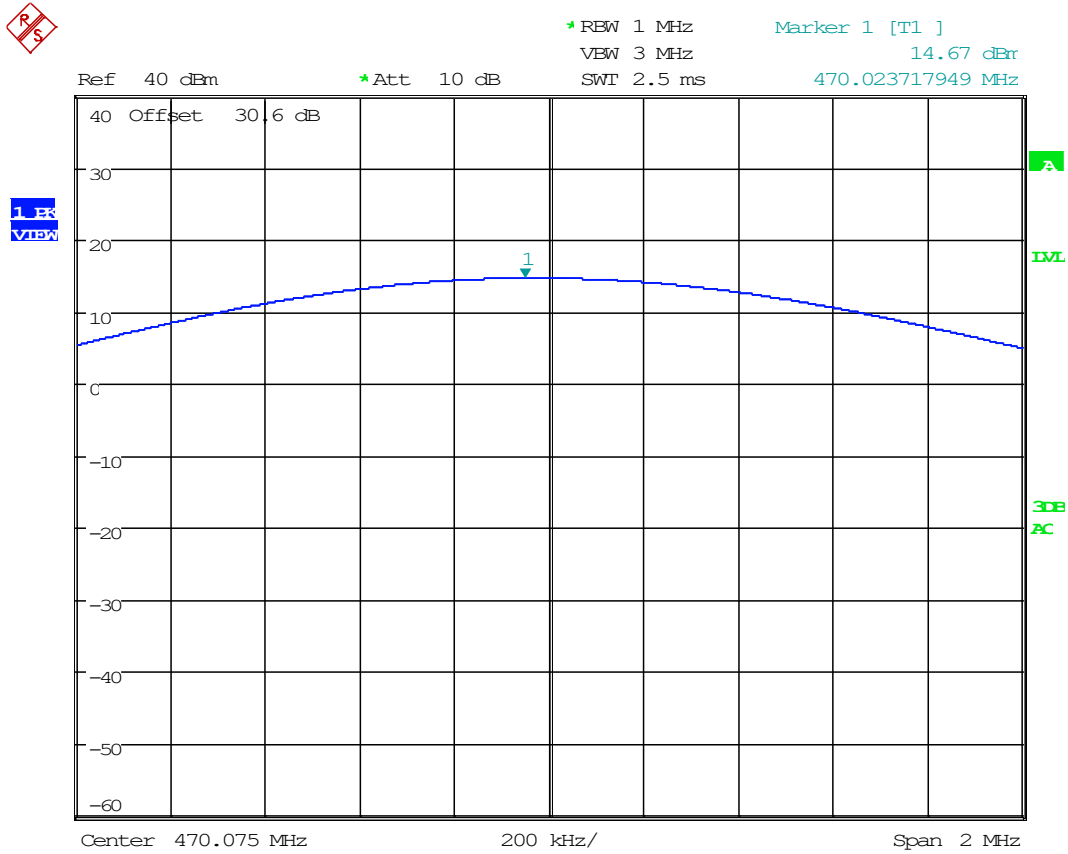
8.1.3 4-1: Test Data: RF Power Output Measurement Table, 607.925 MHz



Date: 2.AUG.2021 09:49:37

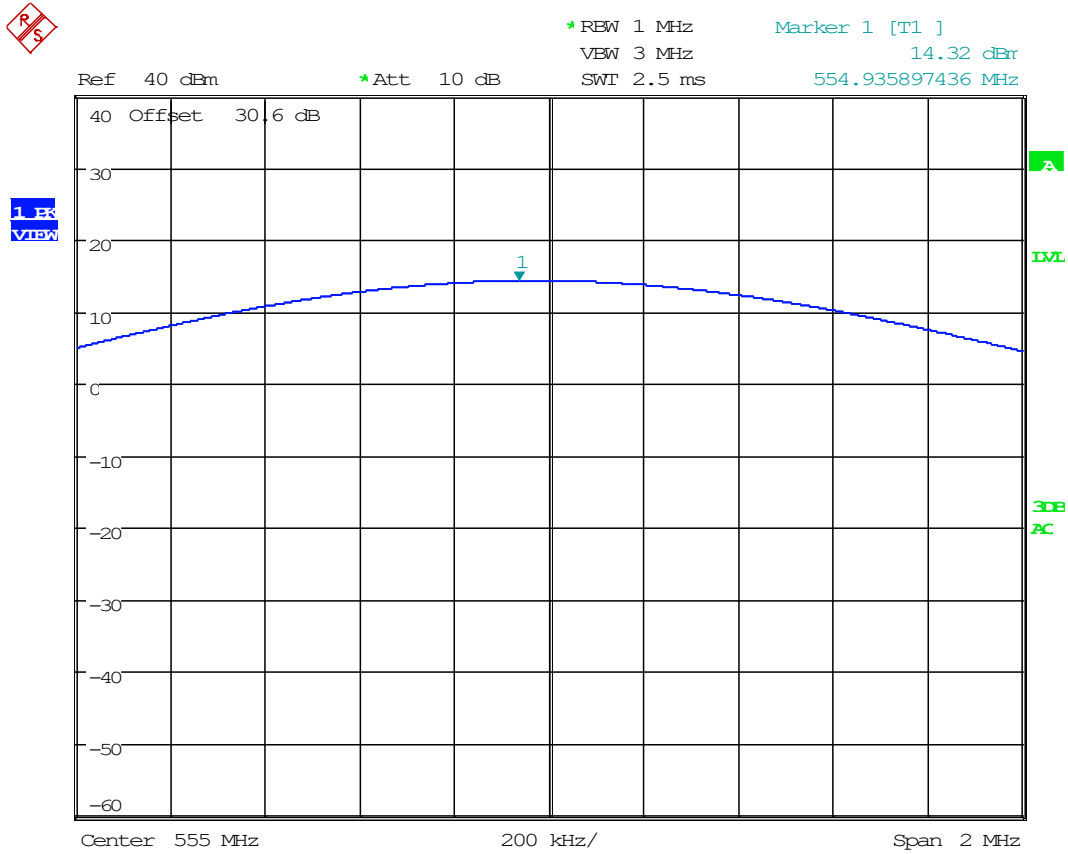


8.1.4 8-1: Test Data: RF Power Output Measurement Table, 470.075 MHz



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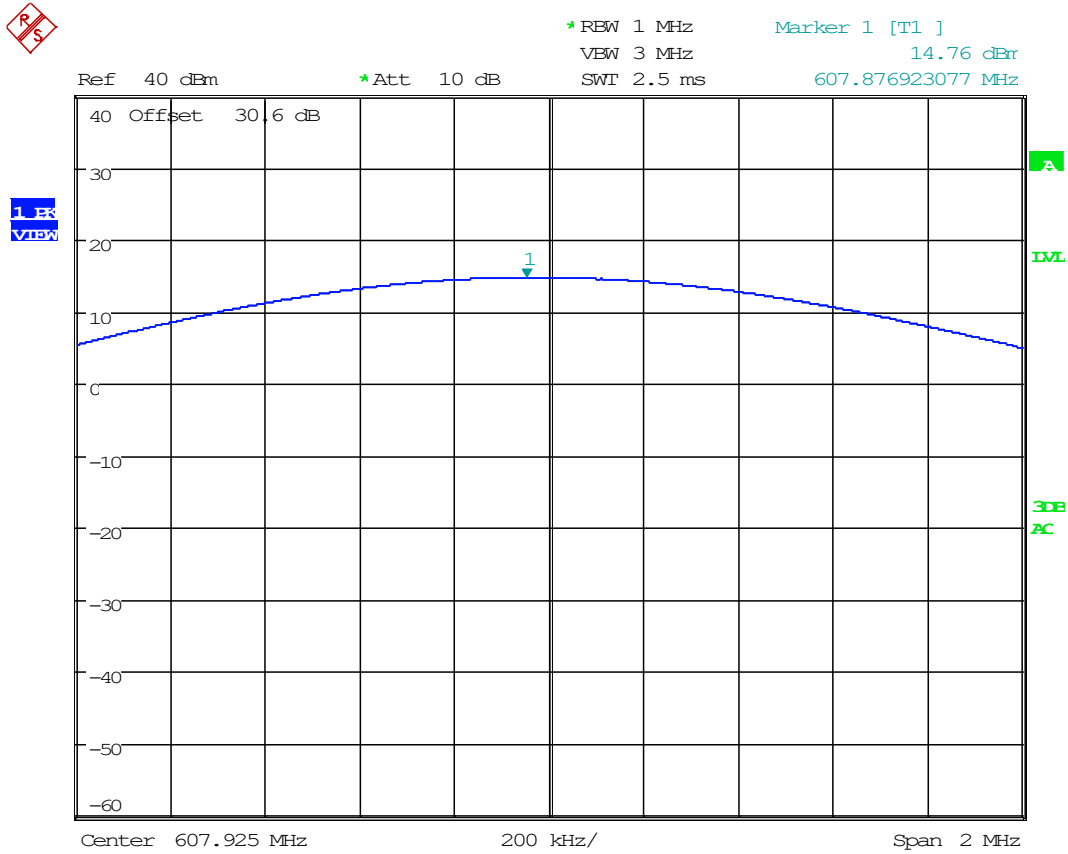
8.1.5 8-1: Test Data: RF Power Output Measurement Table, 555 MHz



Date: 2.AUG.2021 10:35:33



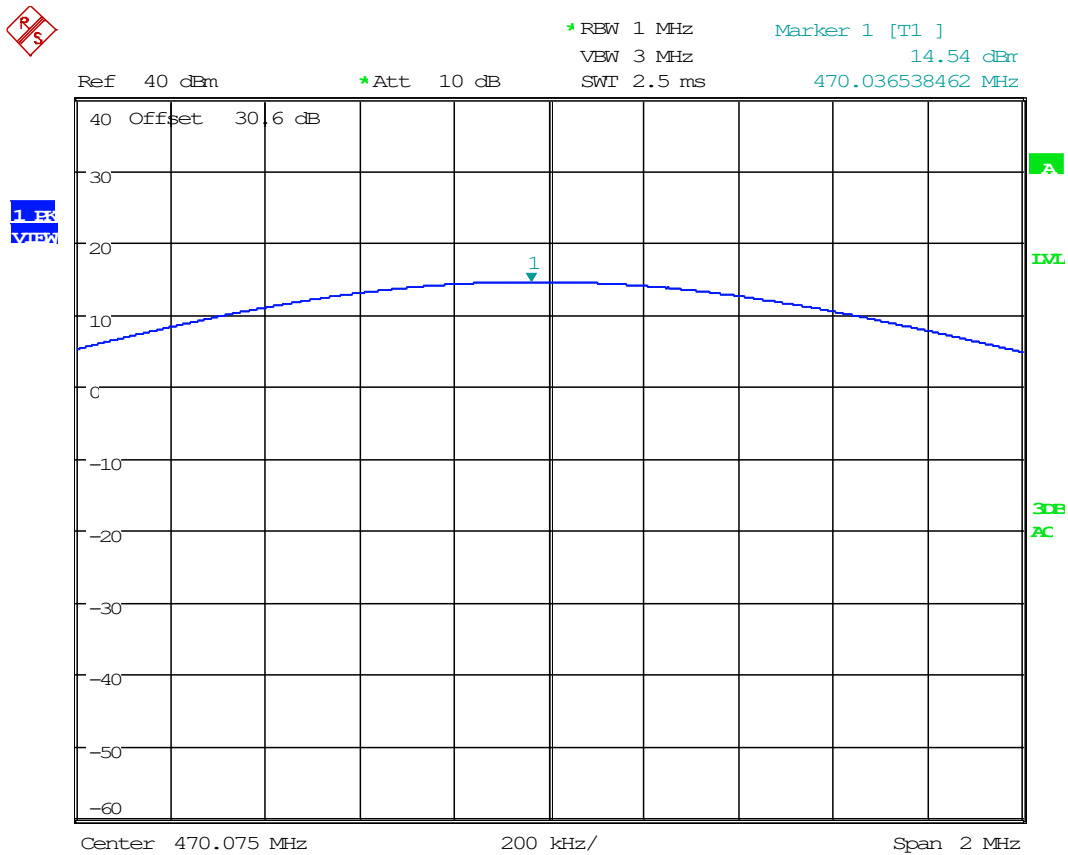
8.1.6 8-1: Test Data: RF Power Output Measurement Table, 607.925 MHz



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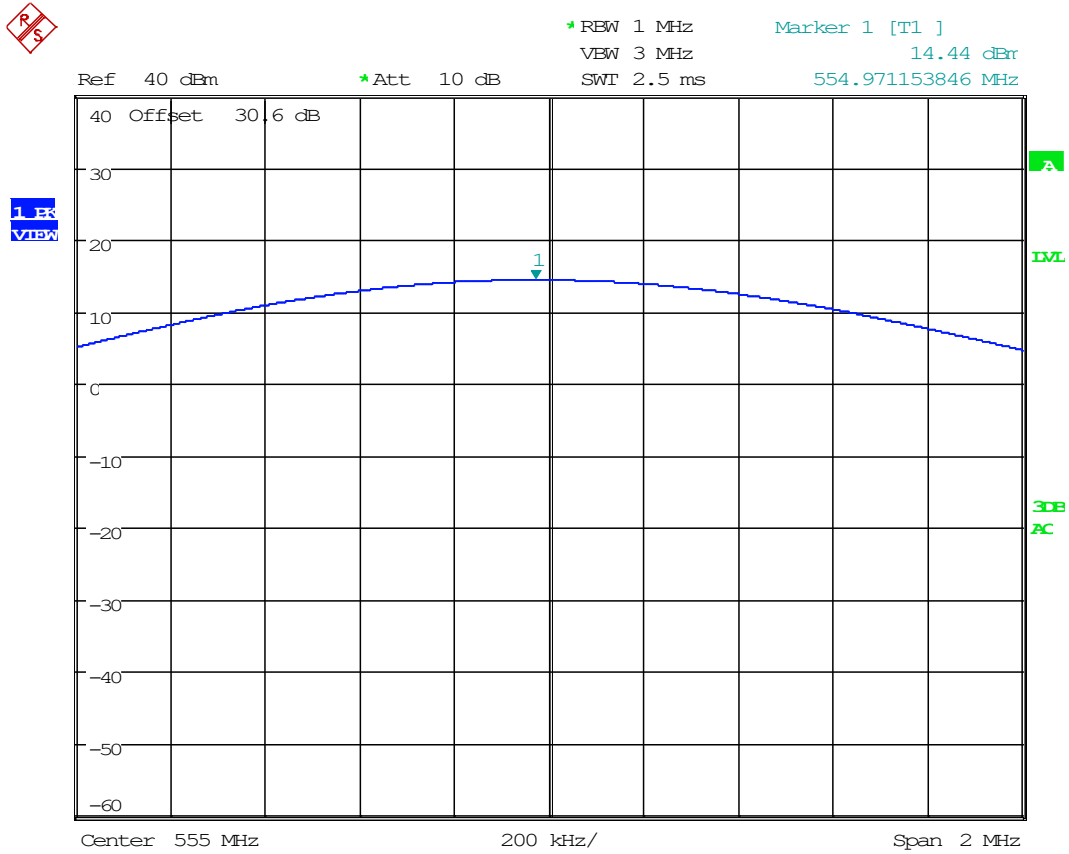


8.1.7 16-1: Test Data: RF Power Output Measurement Table, 470.075 MHz



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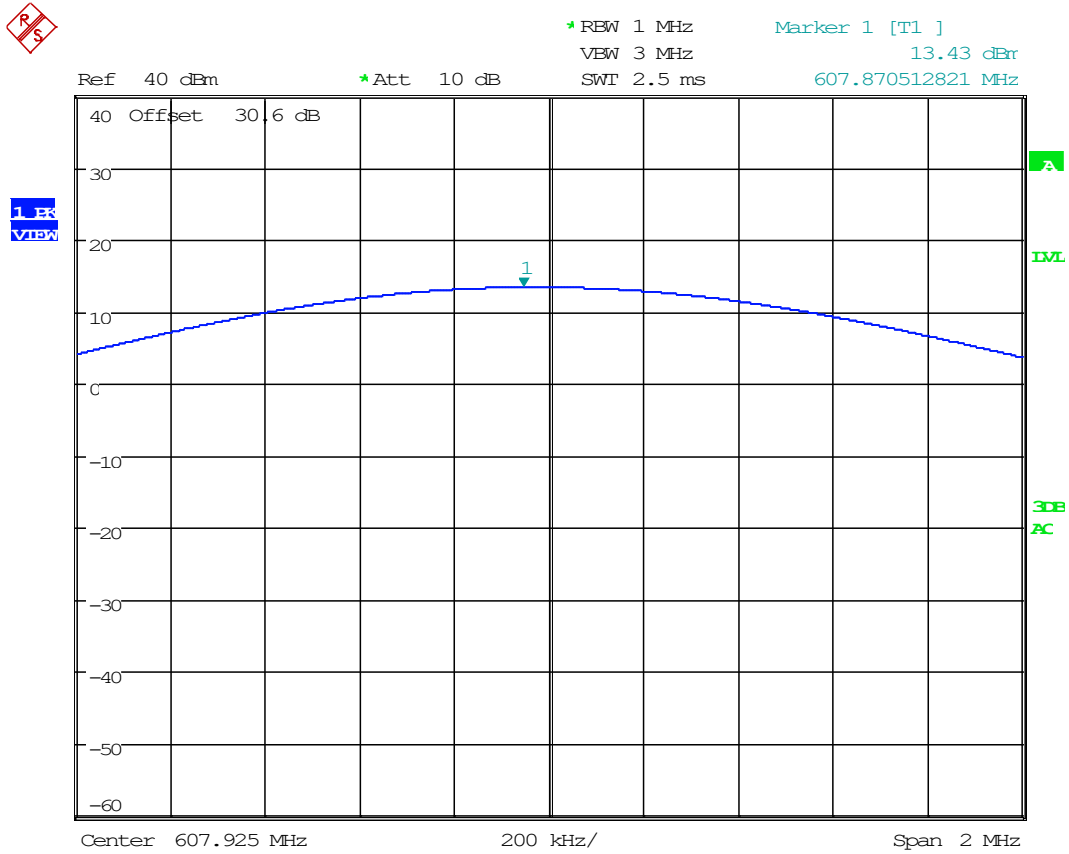
8.1.8 16-1: Test Data: RF Power Output Measurement Table, 555 MHz



Date: 2.AUG.2021 10:55:46



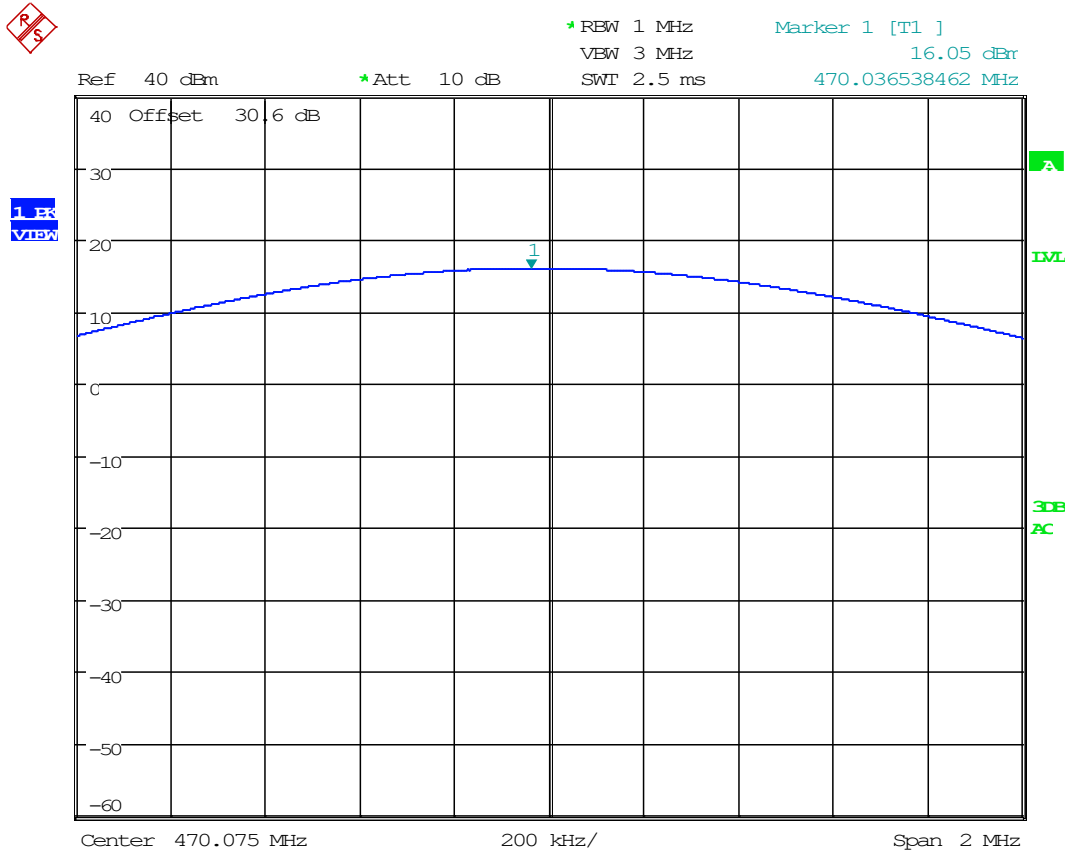
8.1.9 16-1: Test Data: RF Power Output Measurement Table, 607.925 MHz



Date: 2.AUG.2021 10:56:48



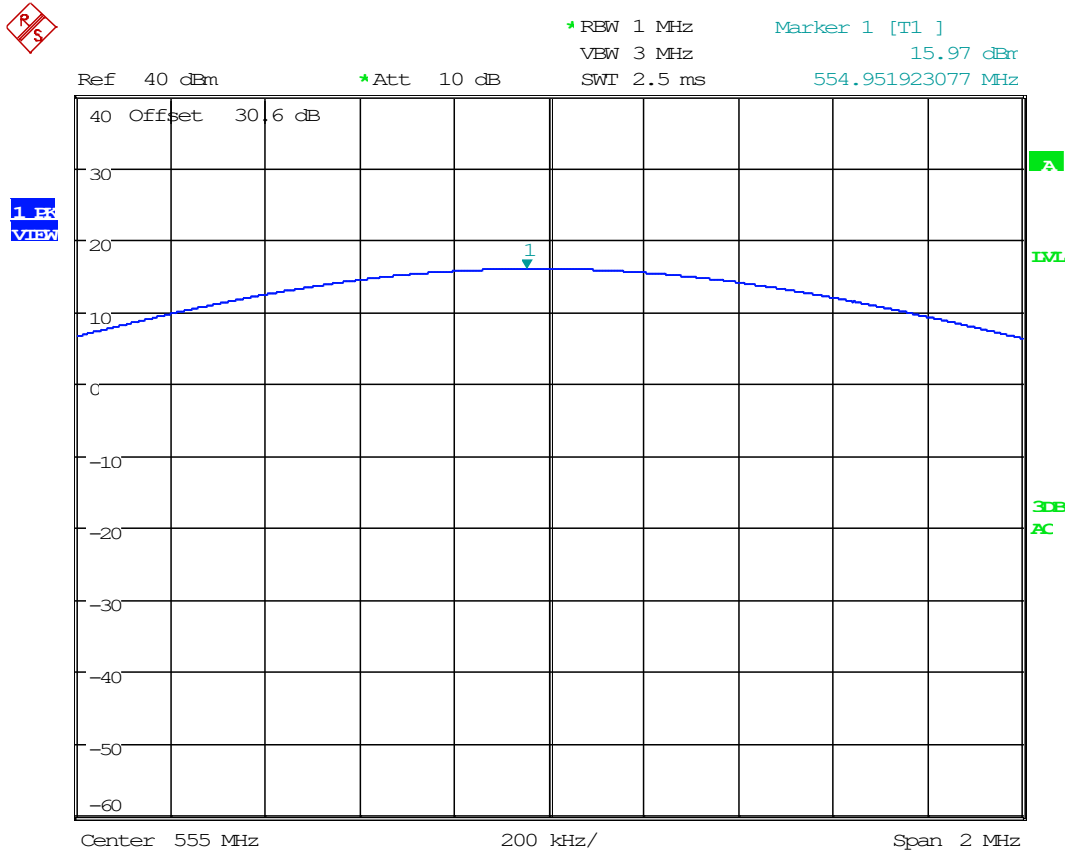
8.1.10 CSA121T: Test Data: RF Power Output Measurement Table, 470.075 MHz



Date: 2.AUG.2021 13:16:46



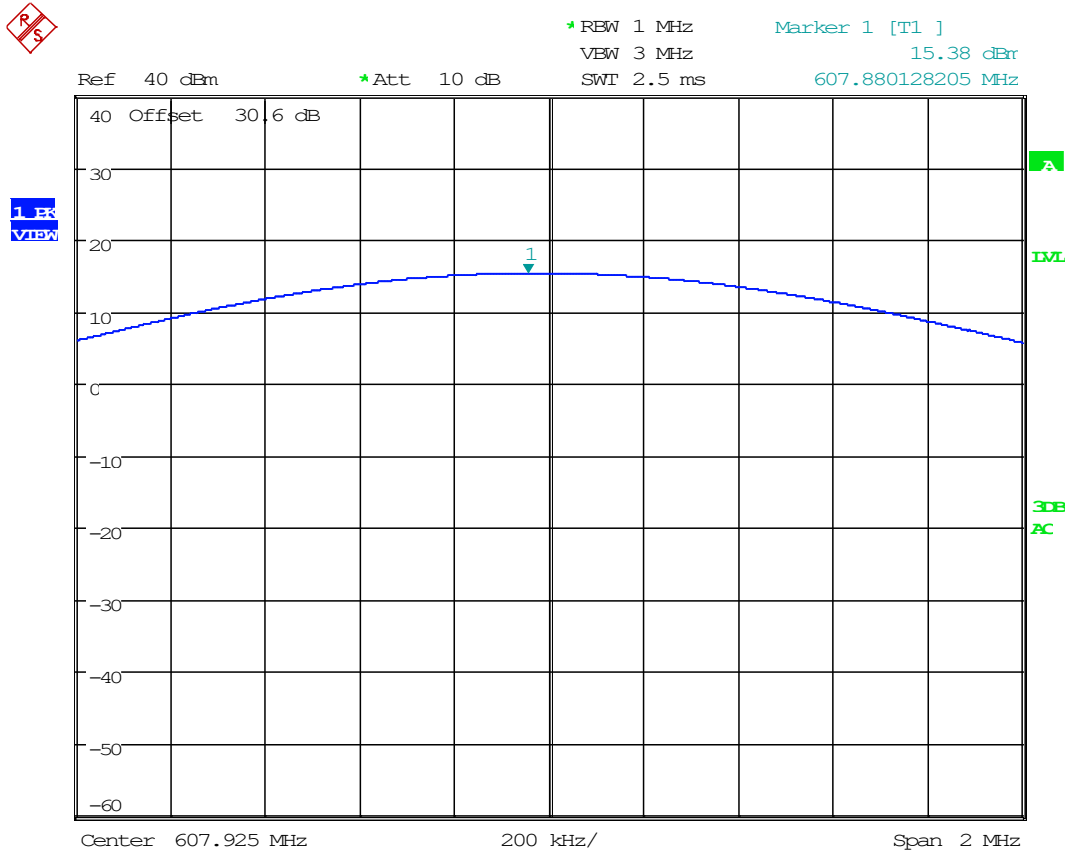
8.1.11 CSA121T: Test Data: RF Power Output Measurement Table, 555 MHz



Date: 2.AUG.2021 13:17:32



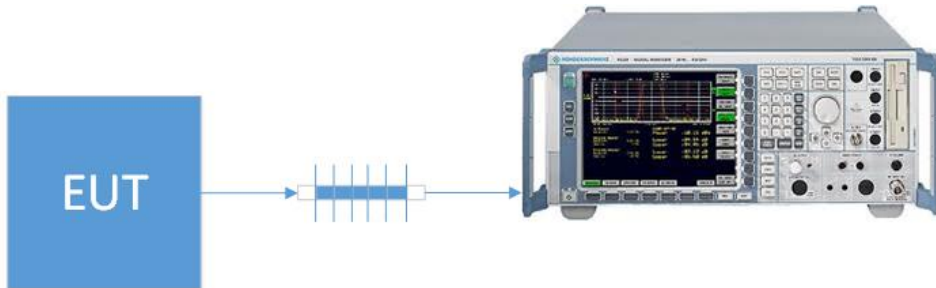
8.1.12 CSA121T: Test Data: RF Power Output Measurement Table, 607.925 MHz



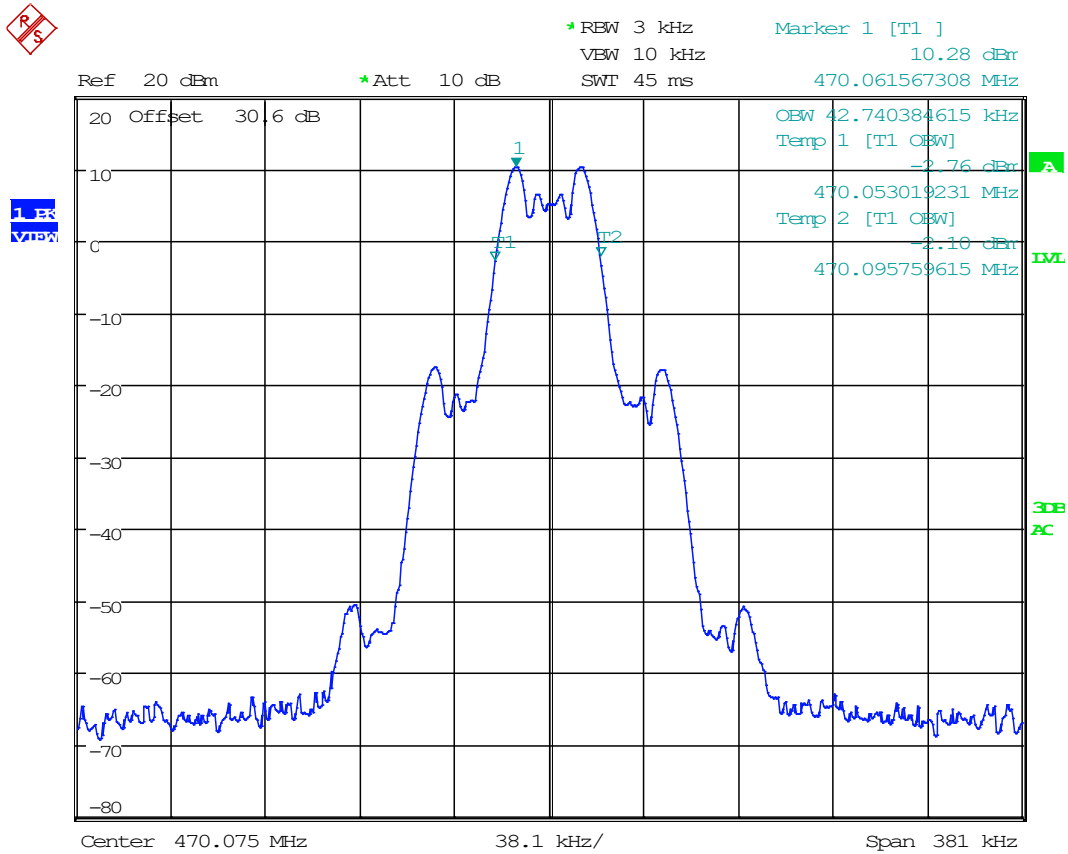
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8.2 OCCUPIED BANDWIDTH

Limits from Part 2.1046 ,15.236 and test procedure from ANSI C63.10.

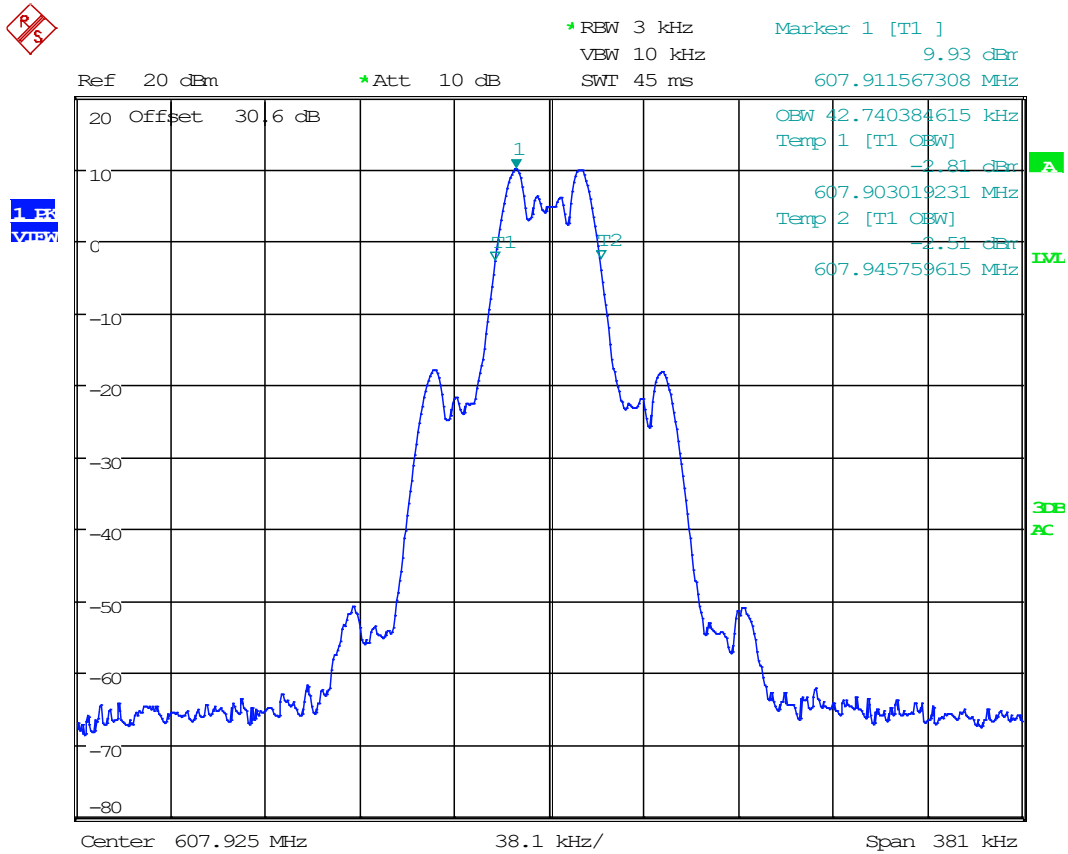


8.2.1 4-1 Test Data: 99% Occupied Bandwidth Plot, 470.075 MHz



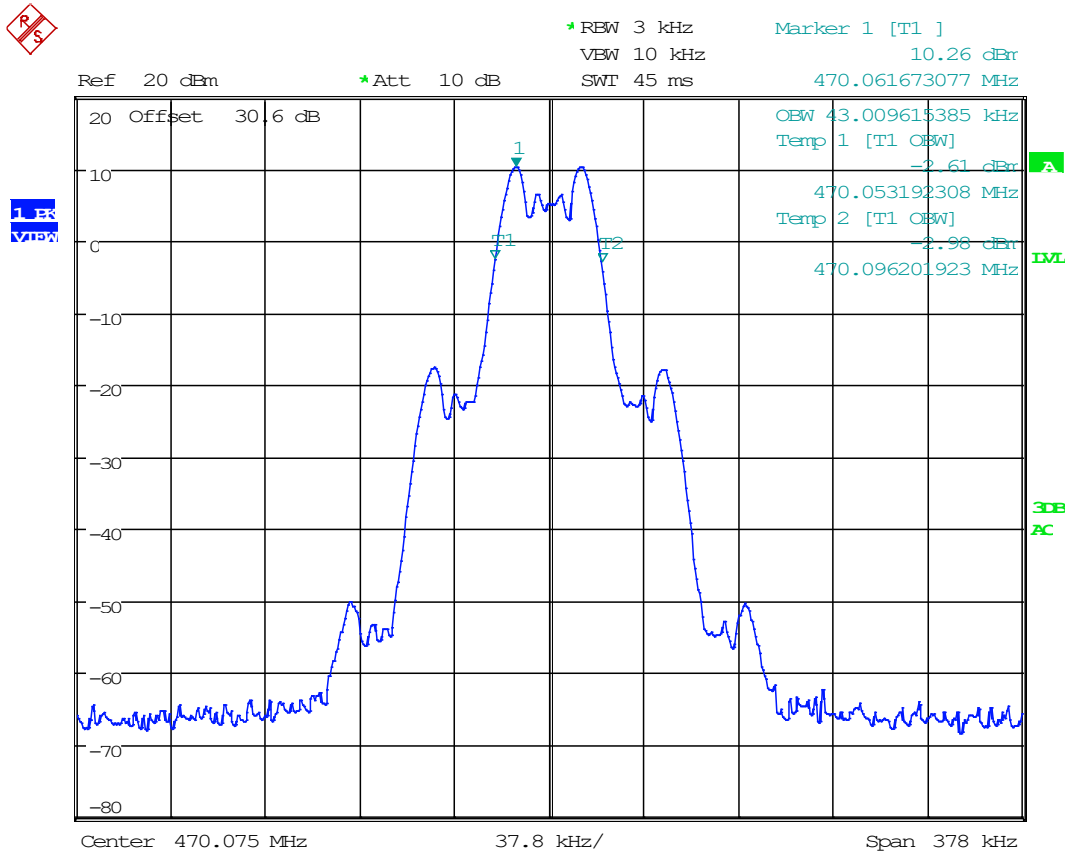
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8.2.3 4-1 Test Data: 99% Occupied Bandwidth Plot, 607.925 MHz



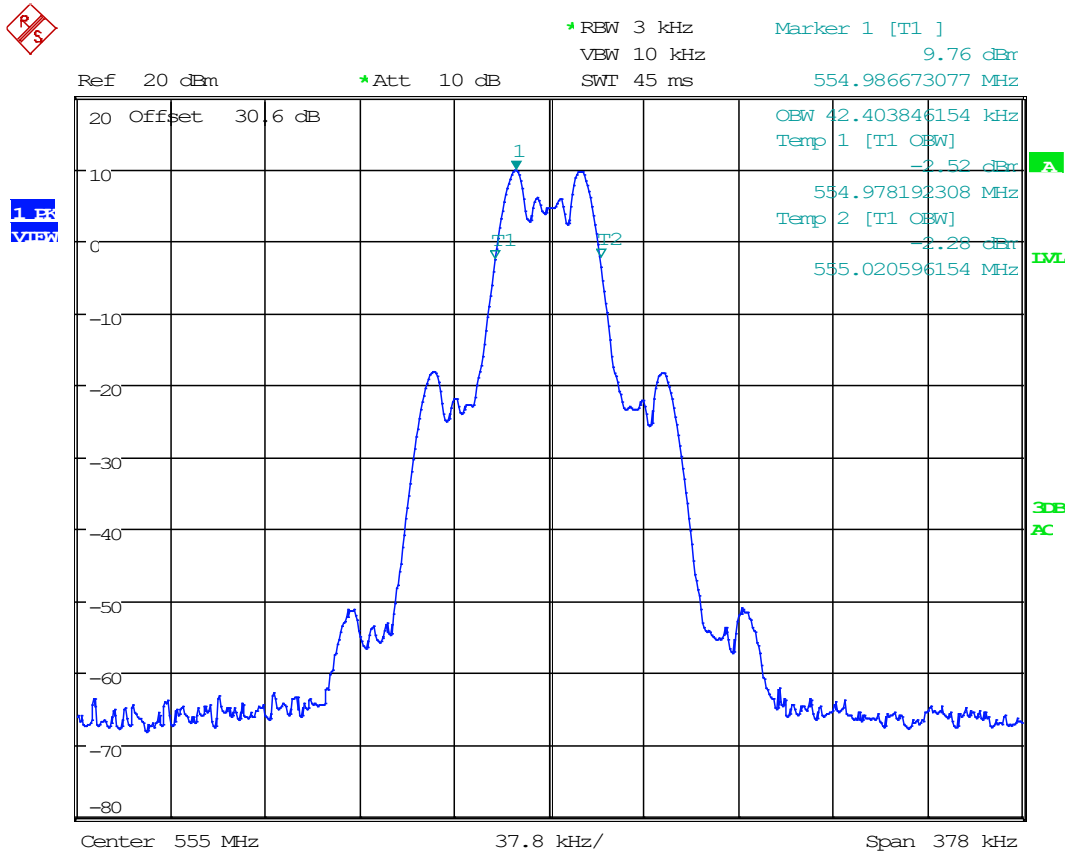
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8.2.4 8-1 Test Data: 99% Occupied Bandwidth Plot, 470.075 MHz



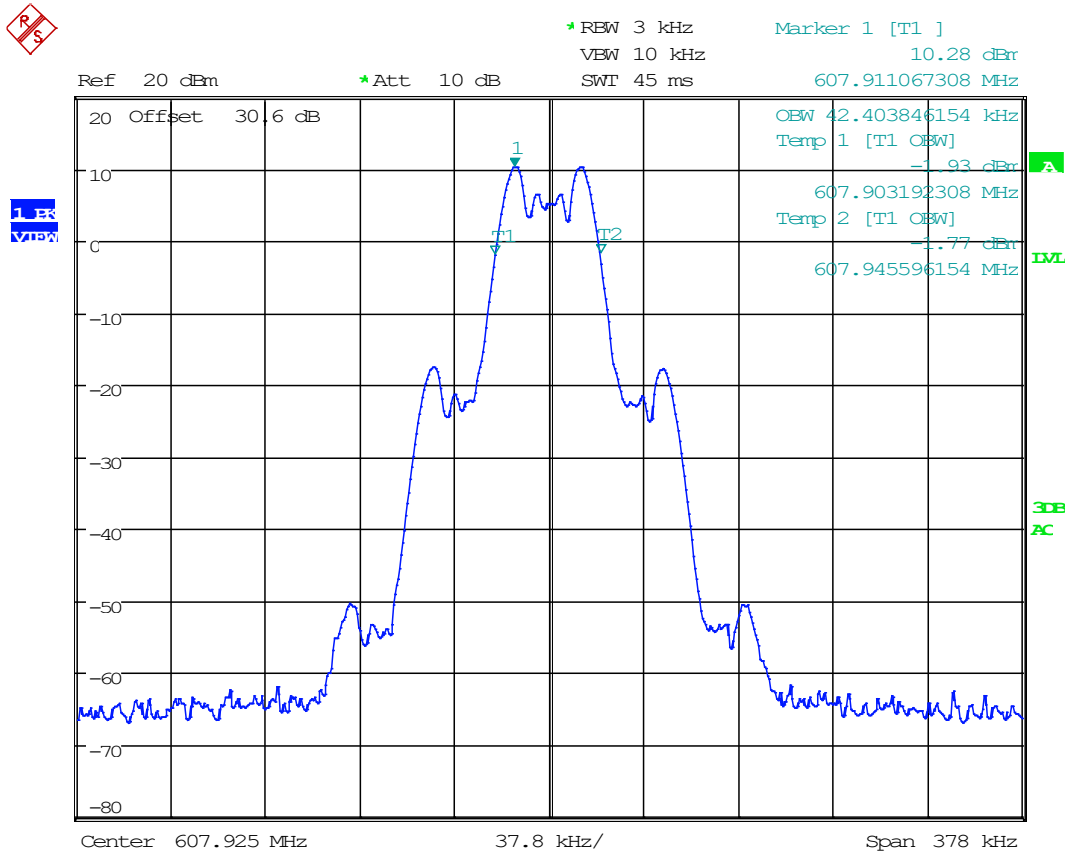
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8.2.5 8-1 Test Data: 99% Occupied Bandwidth Plot, 555 MHz



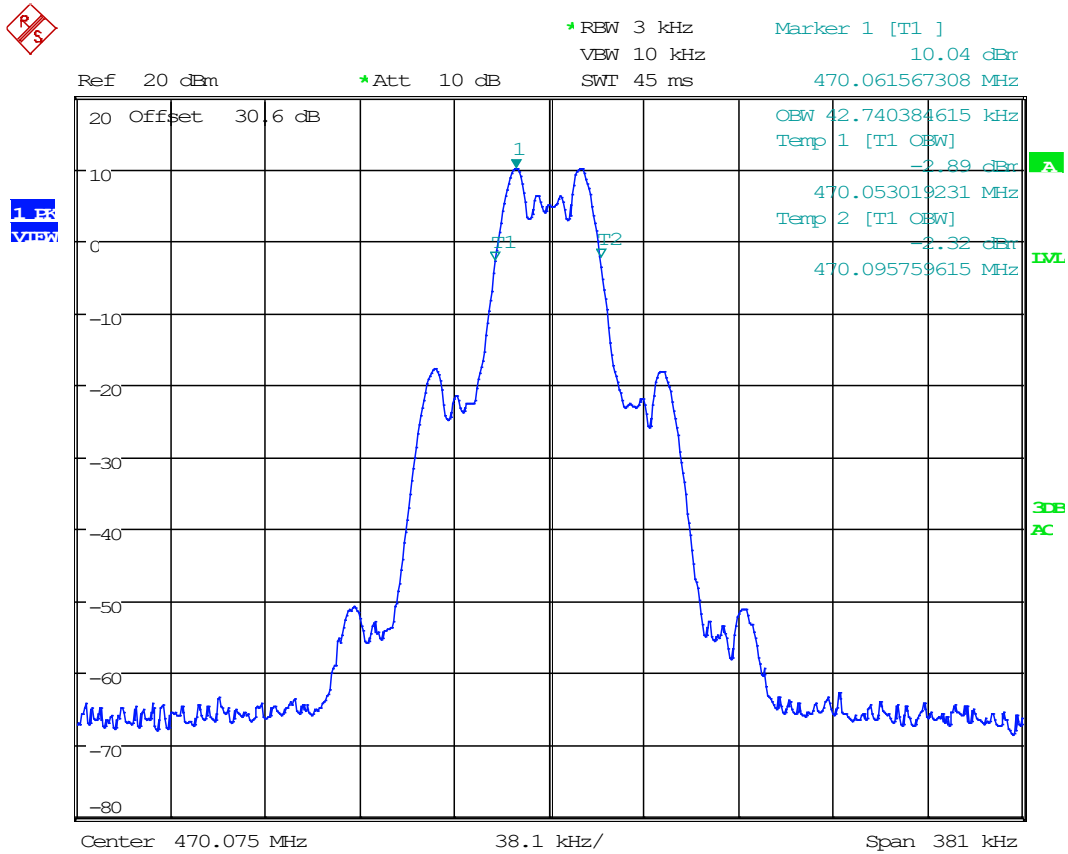
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8.2.6 8-1 Test Data: 99% Occupied Bandwidth Plot, 607.925 MHz



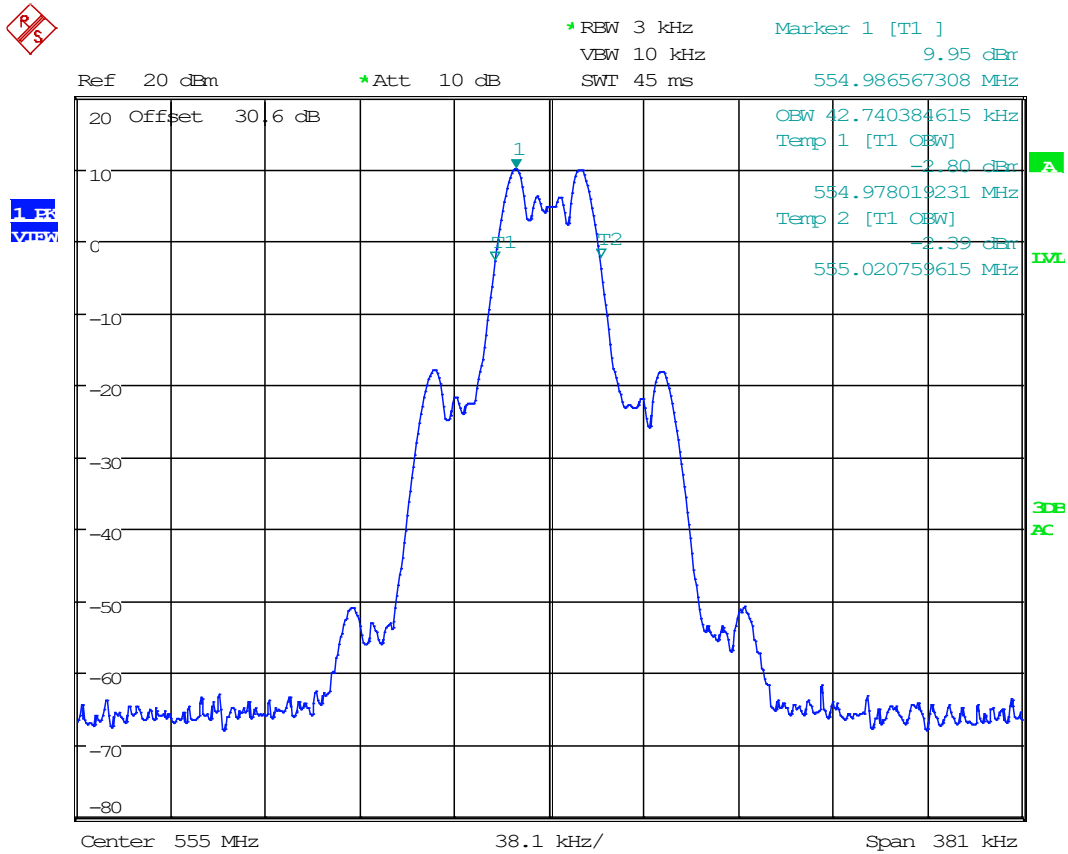
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8.2.7 16-1 Test Data: 99% Occupied Bandwidth Plot, 470.075 MHz



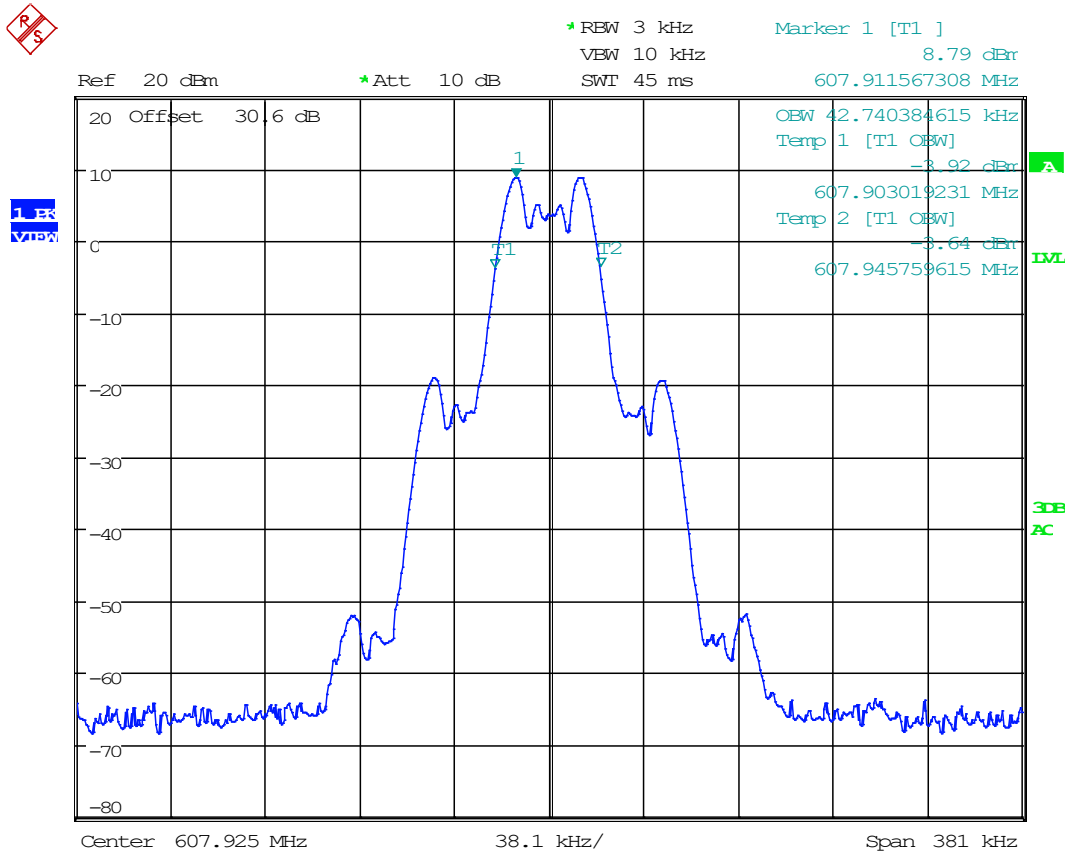
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8.2.8 16-1 Test Data: 99% Occupied Bandwidth Plot, 555 MHz



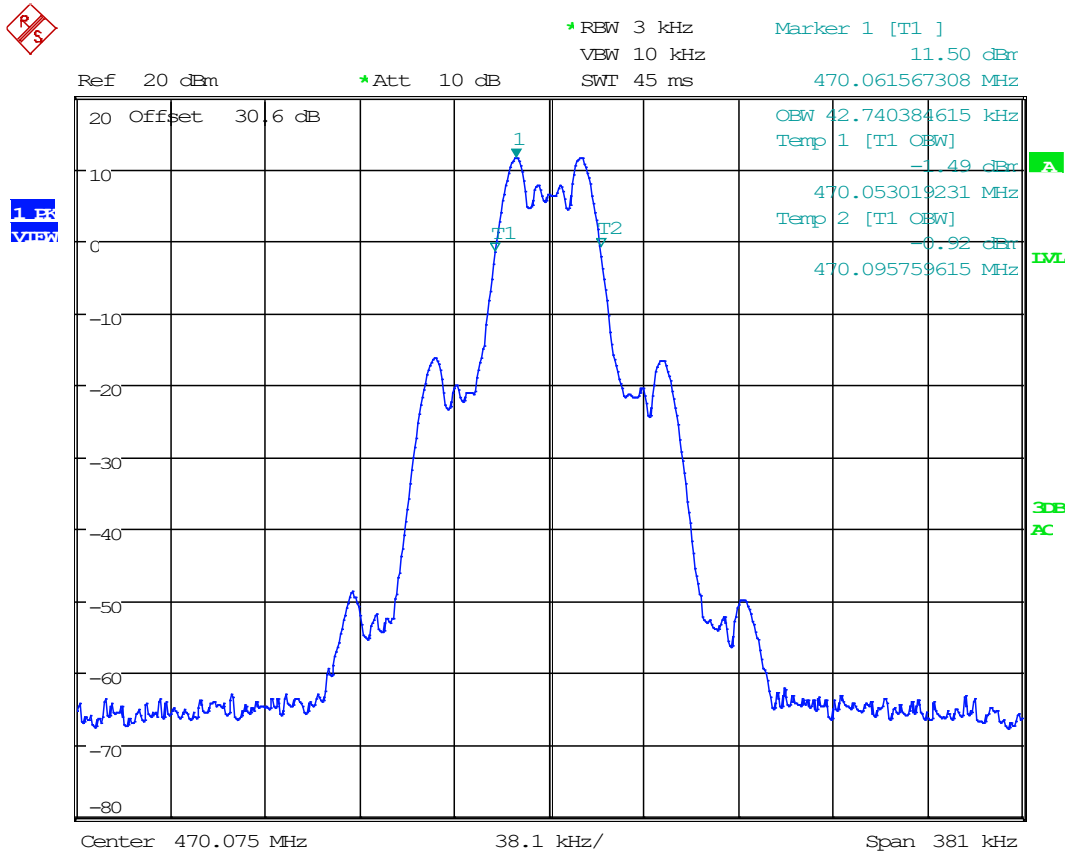
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8.2.9 16-1 Test Data: 99% Occupied Bandwidth Plot, 607.925 MHz



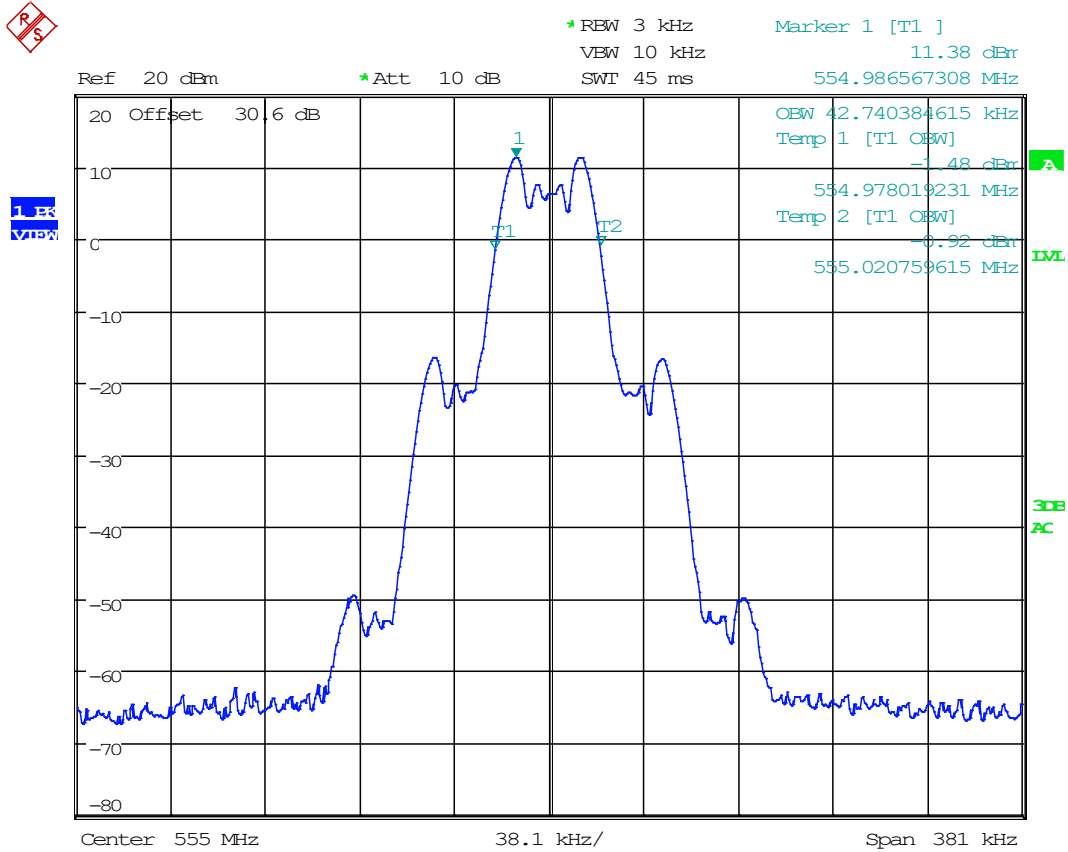
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8.2.10 CSA121T Test Data: 99% Occupied Bandwidth Plot, 470.075 MHz



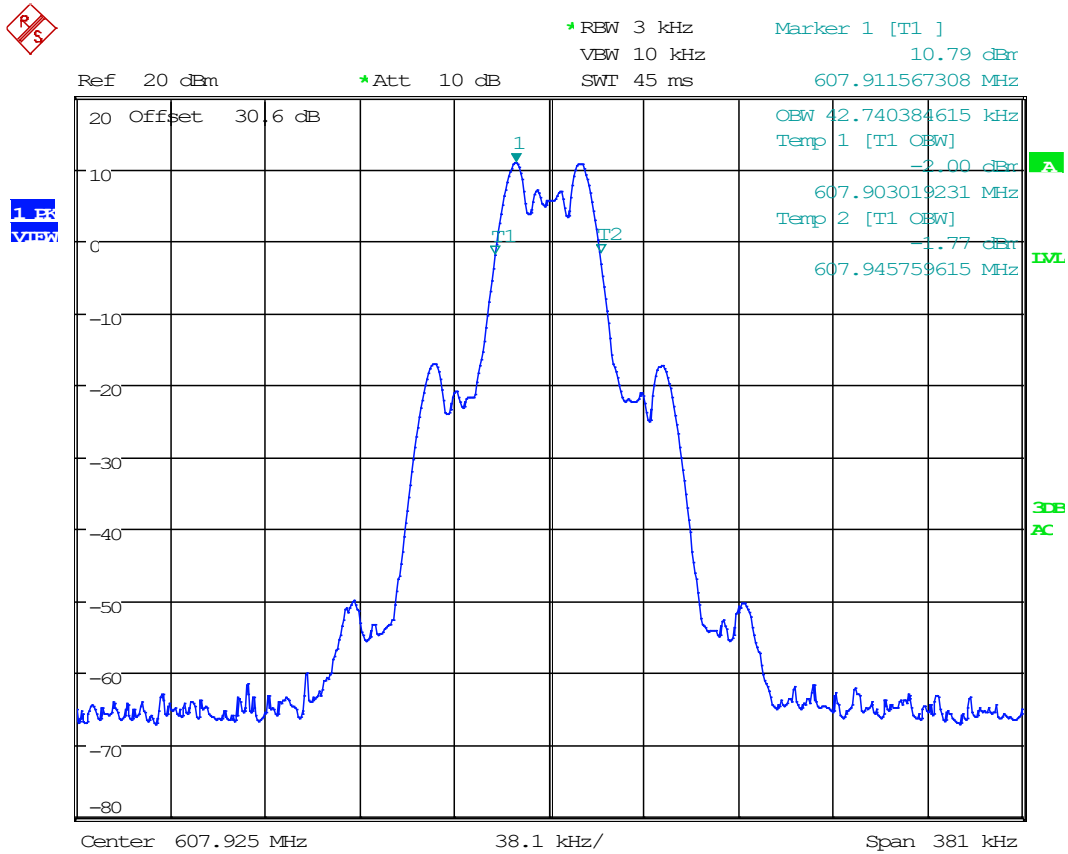
Date: 2.AUG.2021 13:21:23

8.2.11 CSA121T Test Data: 99% Occupied Bandwidth Plot, 555 MHz



Date: 2.AUG.2021 13:21:56

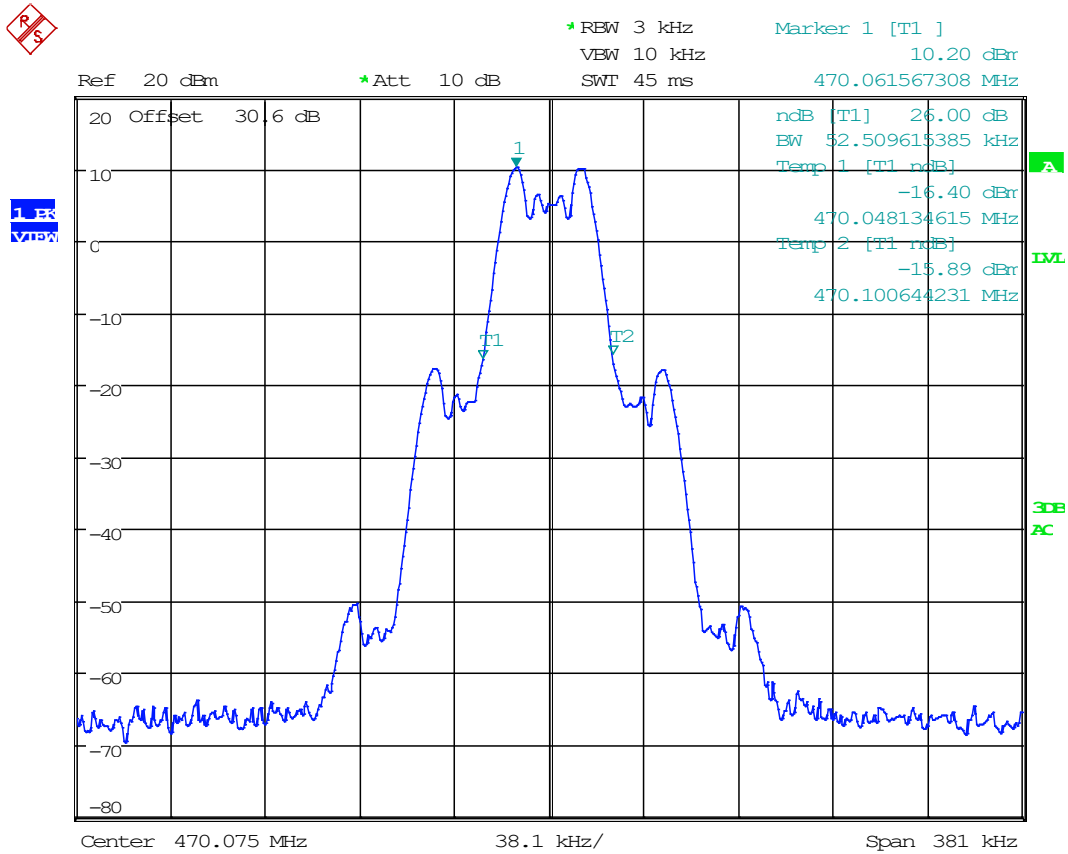
8.2.12 CSA121T Test Data: 99% Occupied Bandwidth Plot, 607.925 MHz



Date: 2.AUG.2021 13:22:30

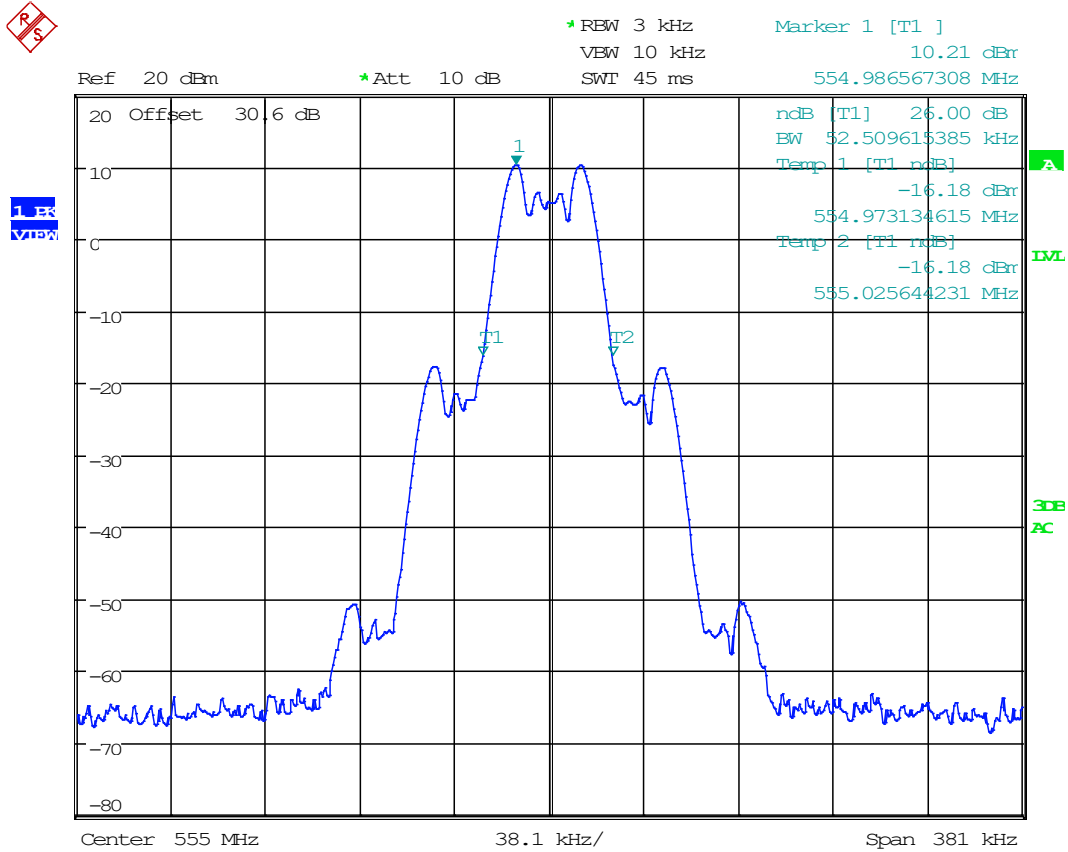


8.2.13 4-1 Test Data: 26dB Occupied Bandwidth Plot, 470.075 MHz



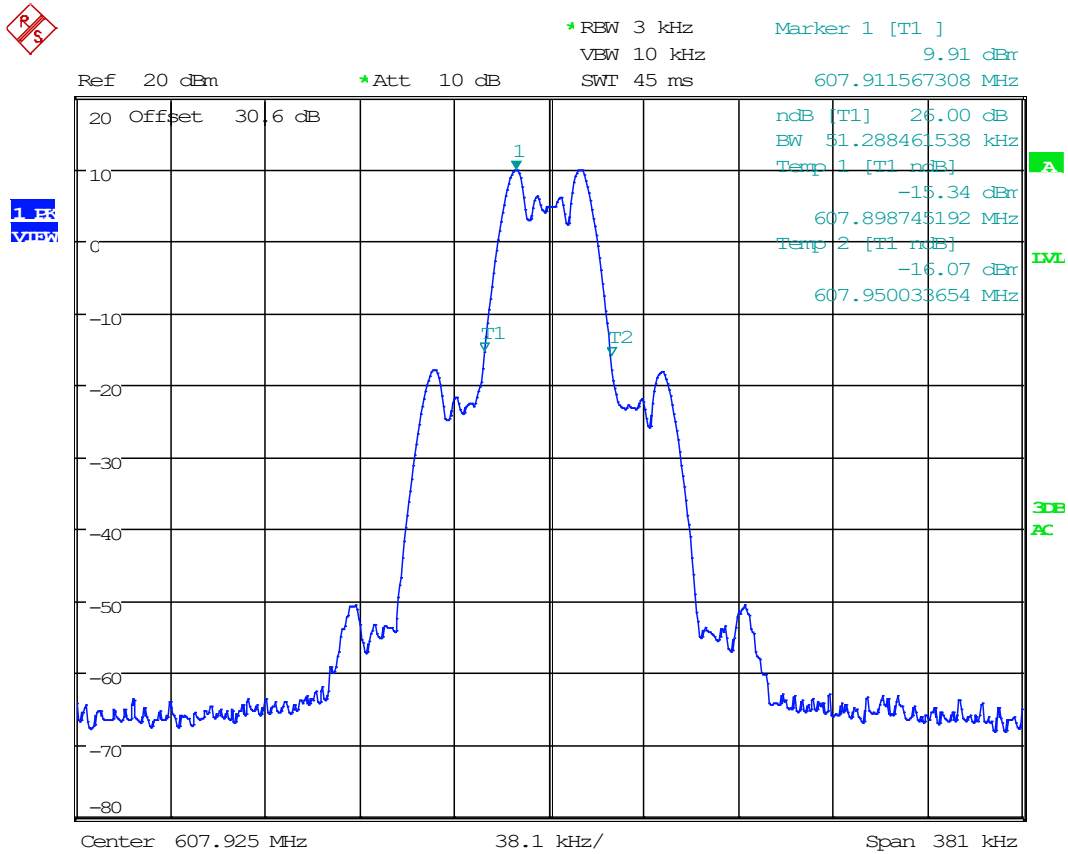
Date: 2.AUG.2021 10:16:26

8.2.14 4-1 Test Data: 26dB Occupied Bandwidth Plot, 555 MHz



Date: 2.AUG.2021 10:17:18

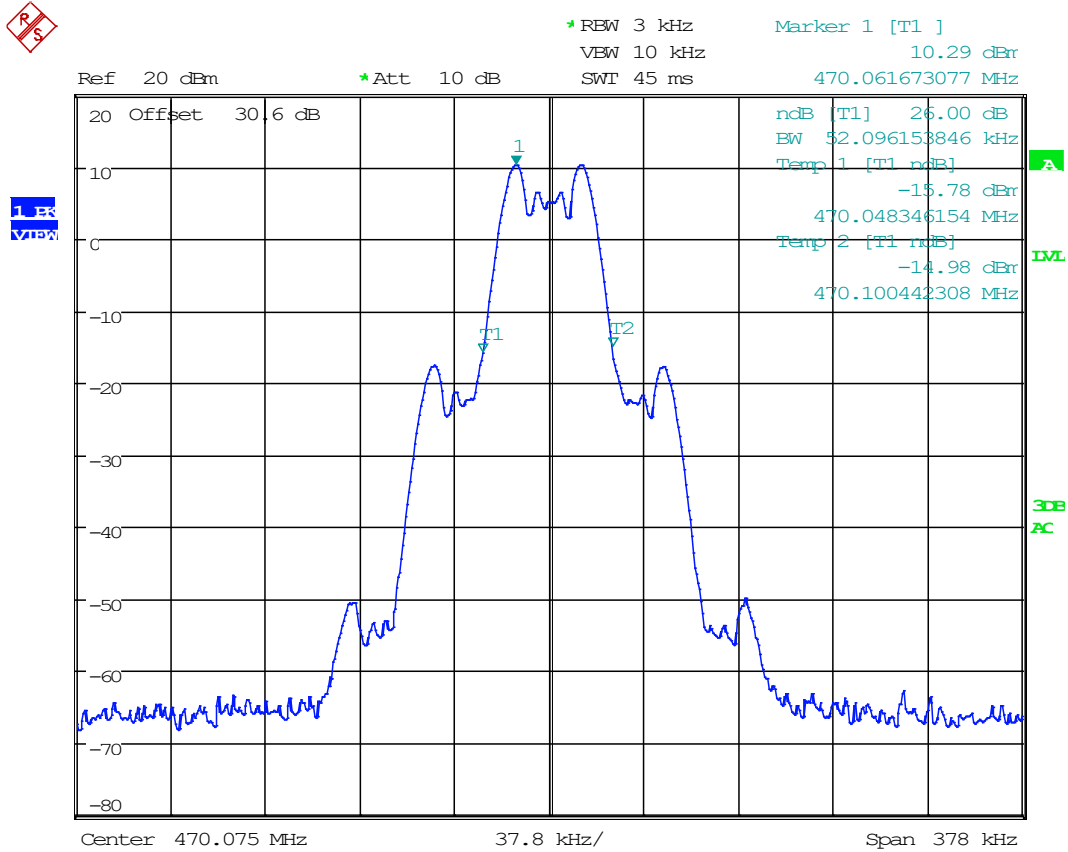
8.2.15 4-1 Test Data: 26dB Occupied Bandwidth Plot, 607.925 MHz



Date: 2.AUG.2021 10:18:07

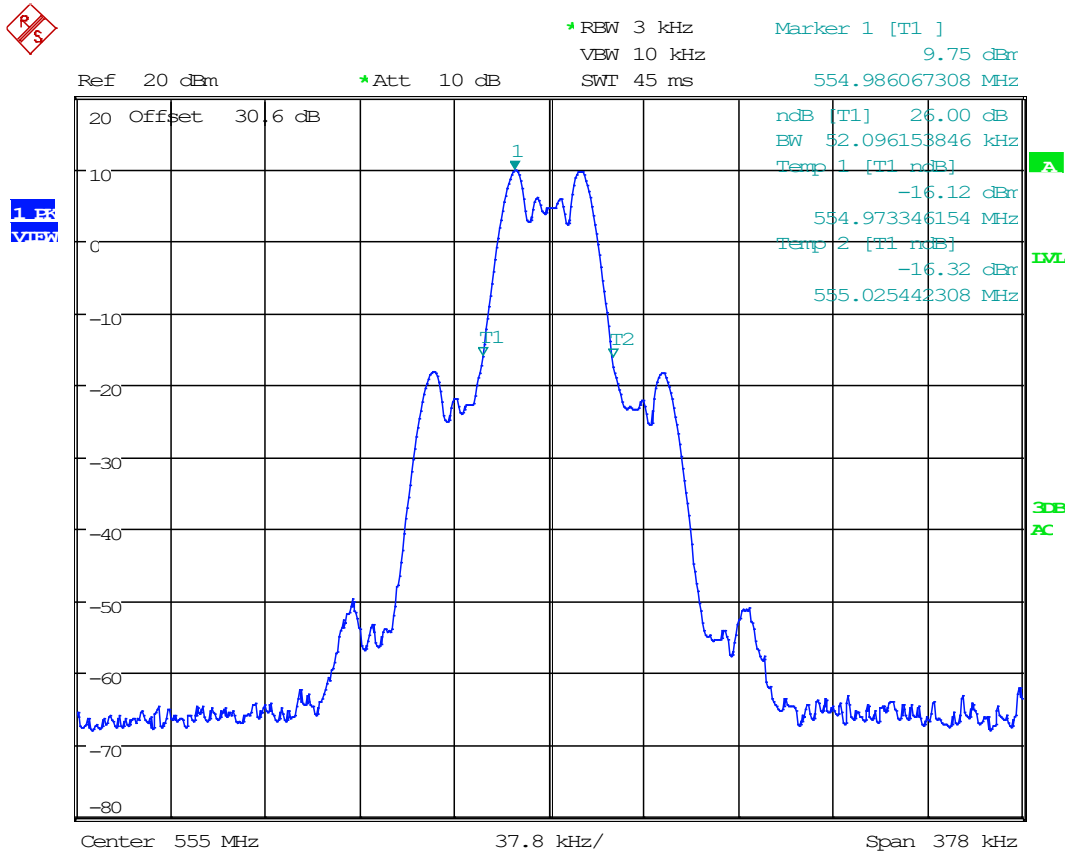


8.2.16 8-1 Test Data: 26dB Occupied Bandwidth Plot, 470.075 MHz



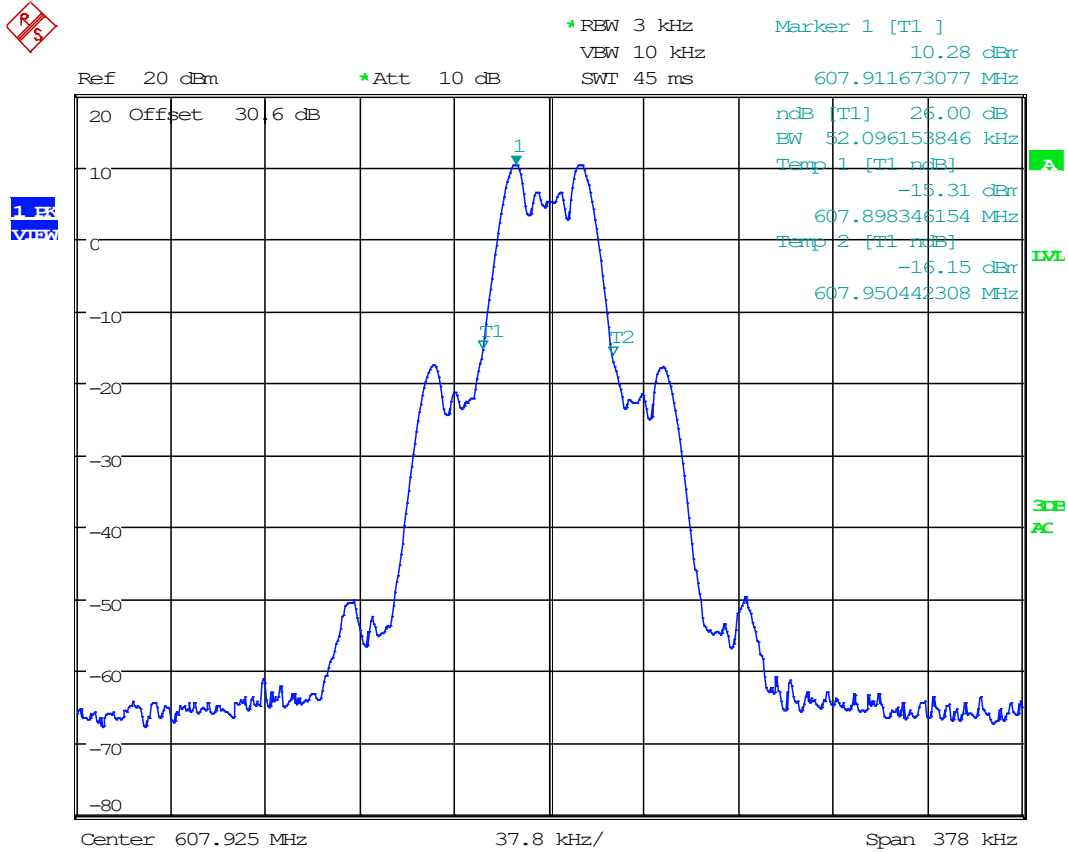
Date: 2.AUG.2021 10:46:12

8.2.17 8-1 Test Data: 26dB Occupied Bandwidth Plot, 555 MHz



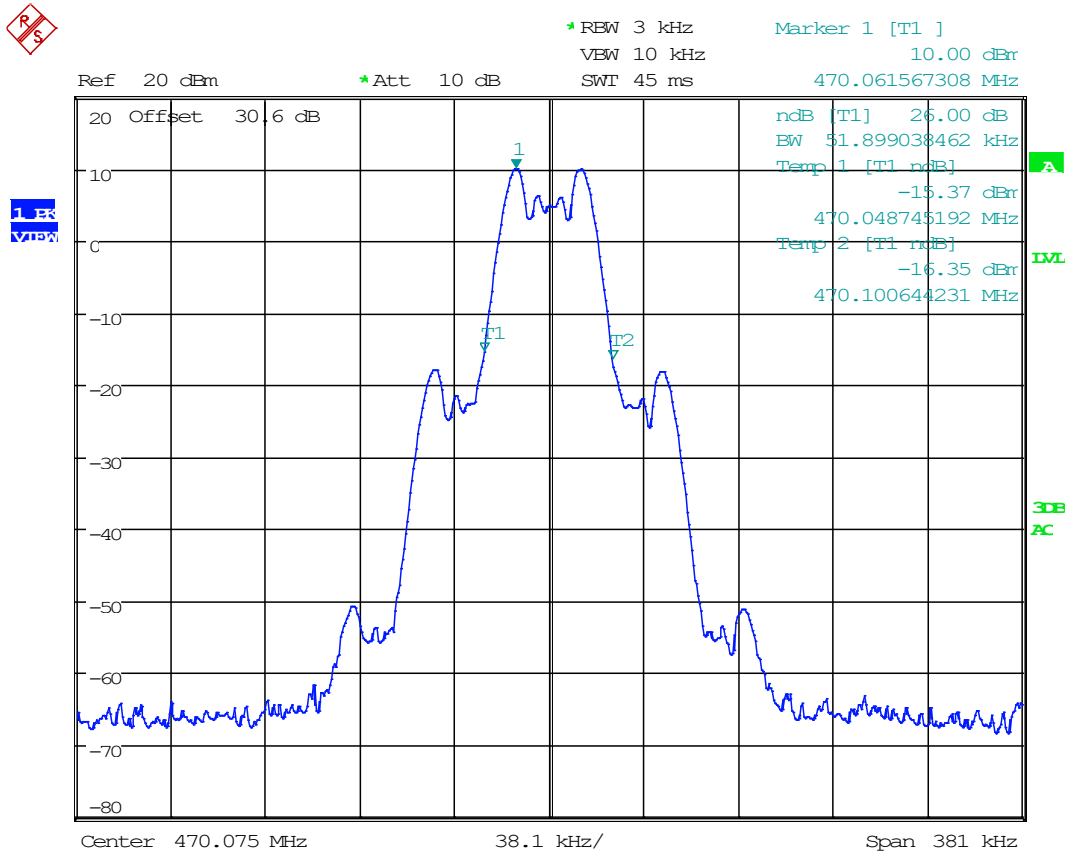
Date: 2.AUG.2021 10:46:58

8.2.18 8-1 Test Data: 26dB Occupied Bandwidth Plot, 607.925 MHz



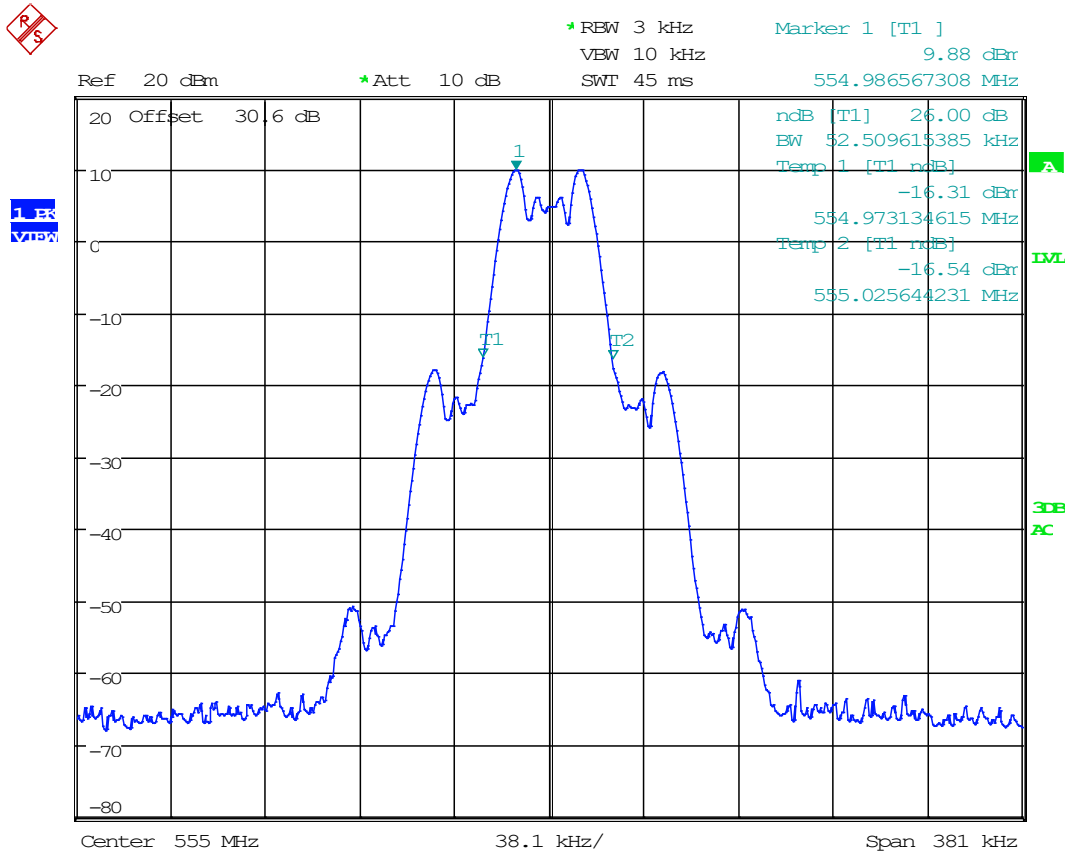
Date: 2.AUG.2021 10:47:44

8.2.19 16-1 Test Data: 26dB Occupied Bandwidth Plot, 470.075 MHz



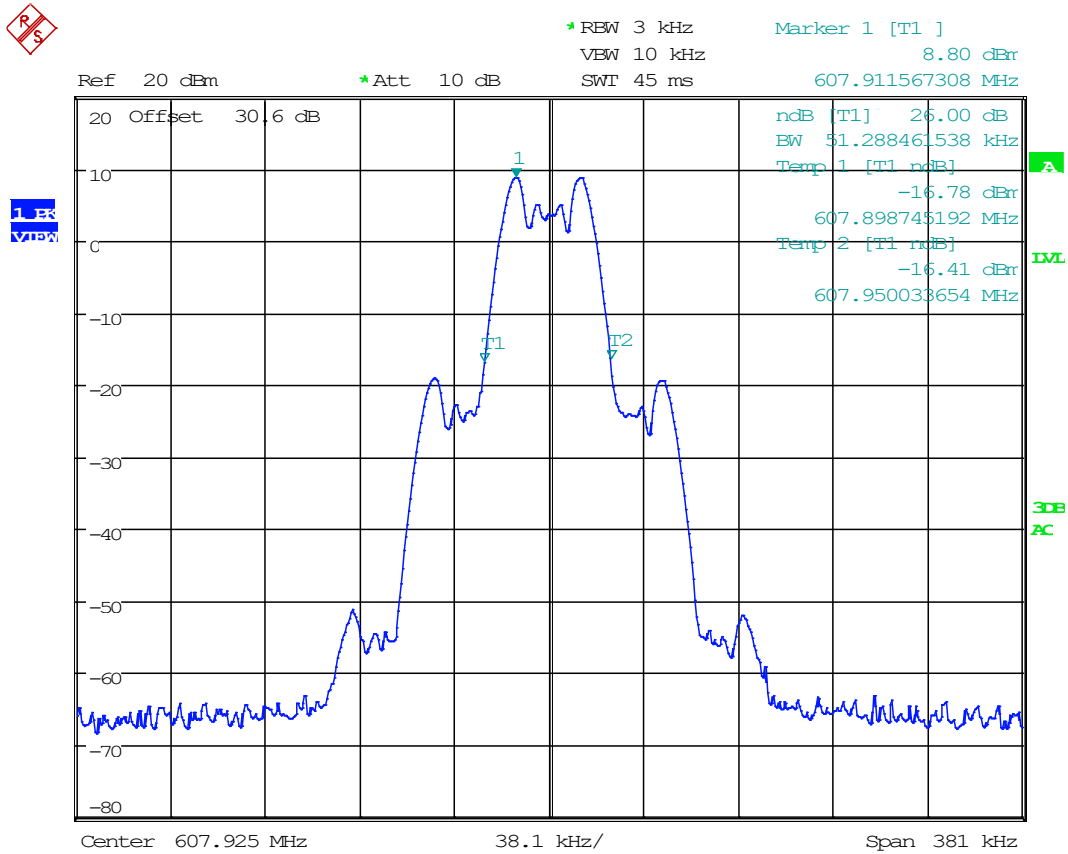
Date: 2.AUG.2021 13:05:14

8.2.20 16-1 Test Data: 26dB Occupied Bandwidth Plot, 555 MHz



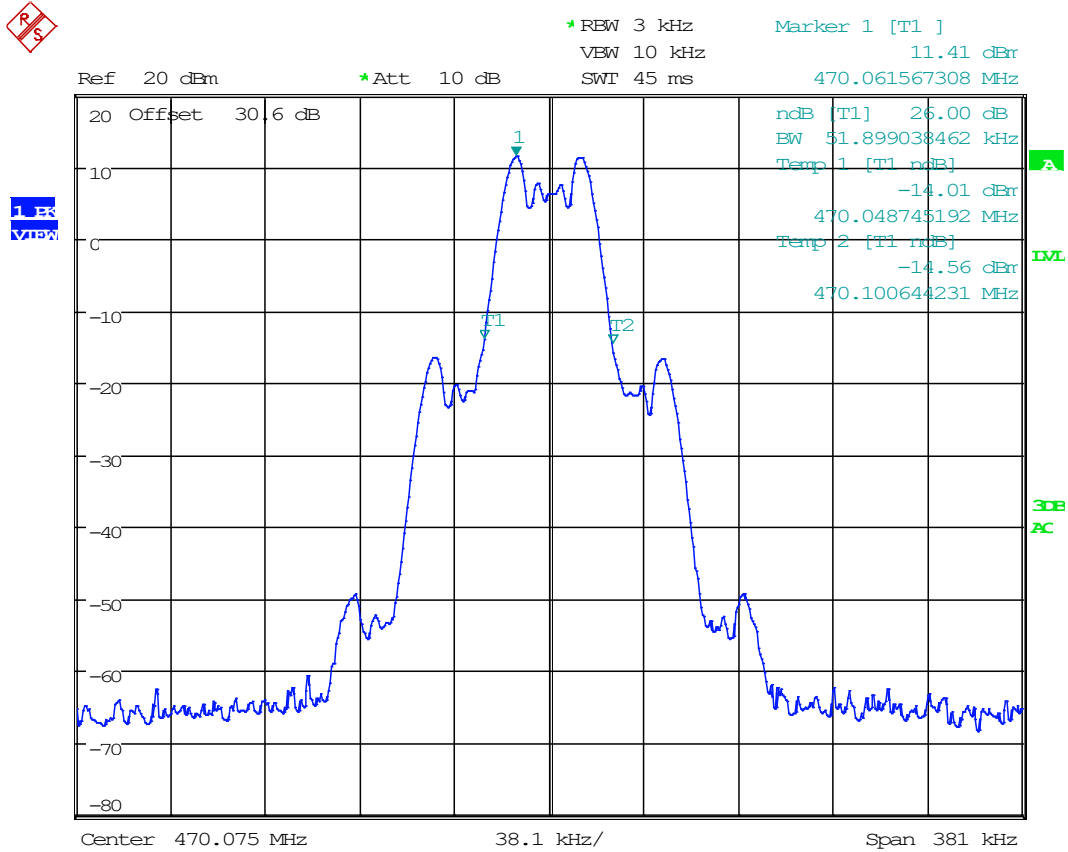
Date: 2.AUG.2021 13:06:02

8.2.21 16-1 Test Data: 26dB Occupied Bandwidth Plot, 607.925 MHz



Date: 2.AUG.2021 13:06:41

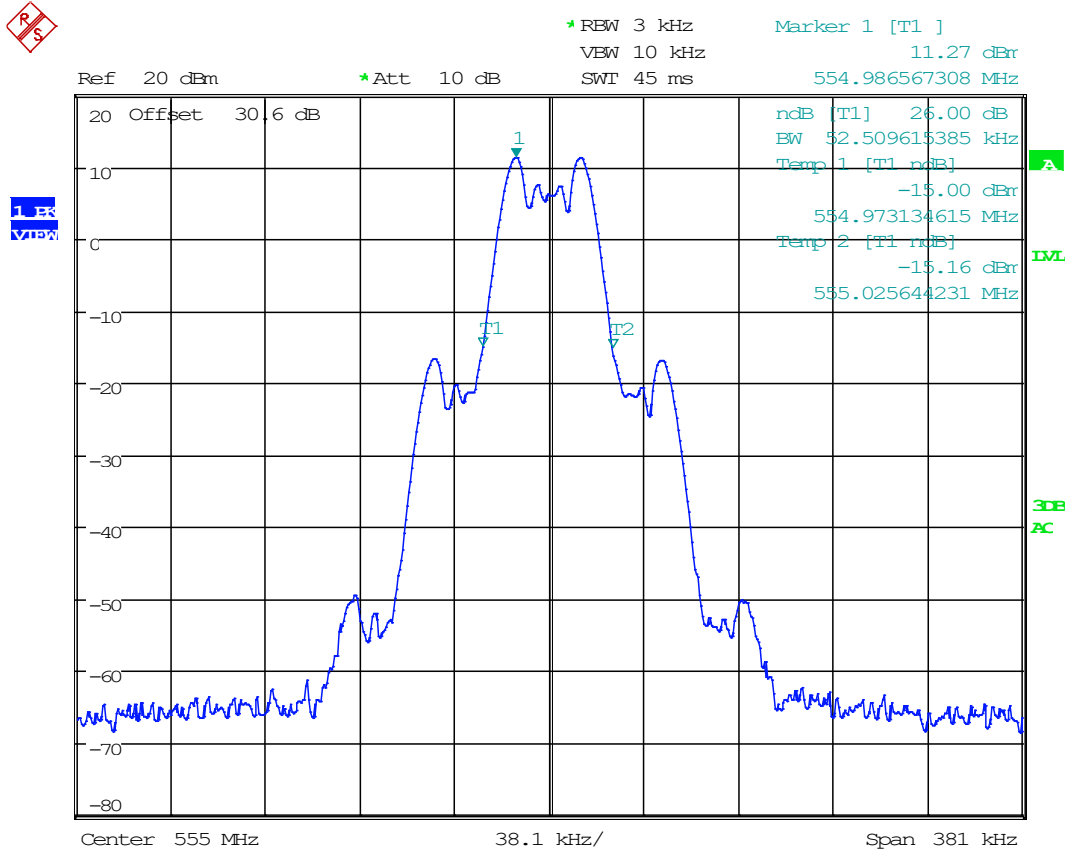
8.2.22 CSA121T Test Data: 26dB Occupied Bandwidth Plot, 470.075 MHz



Date: 2.AUG.2021 13:23:45



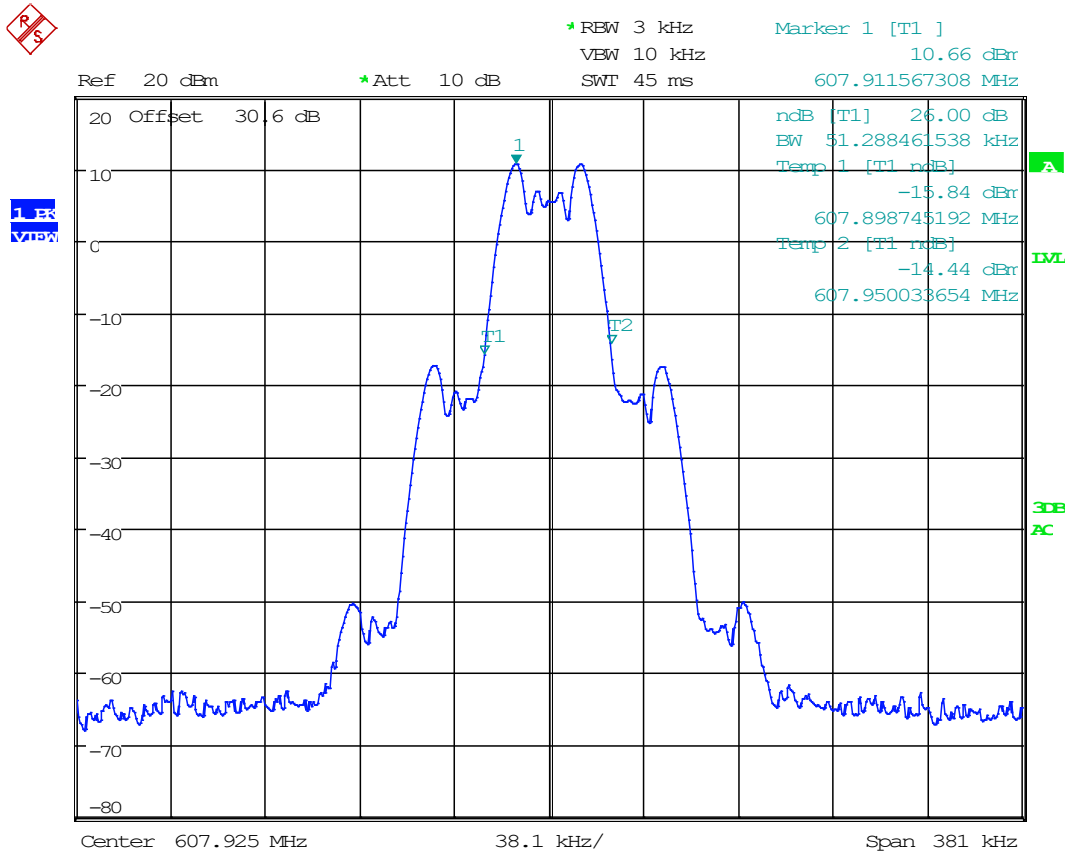
8.2.23 CSA121T Test Data: 26dB Occupied Bandwidth Plot, 555 MHz



Date: 2.AUG.2021 13:24:28



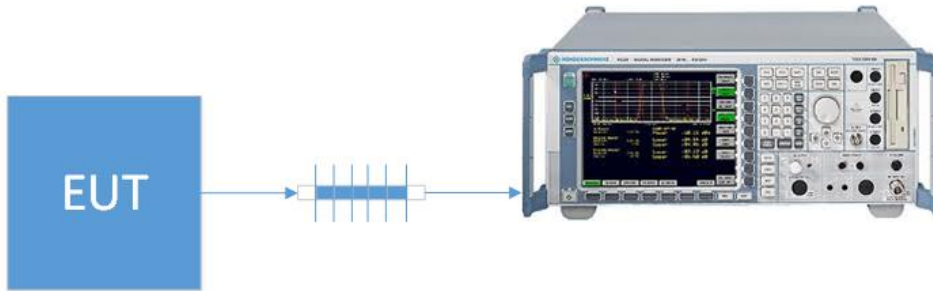
8.2.24 CSA121T Test Data: 26dB Occupied Bandwidth Plot, 607.925 MHz



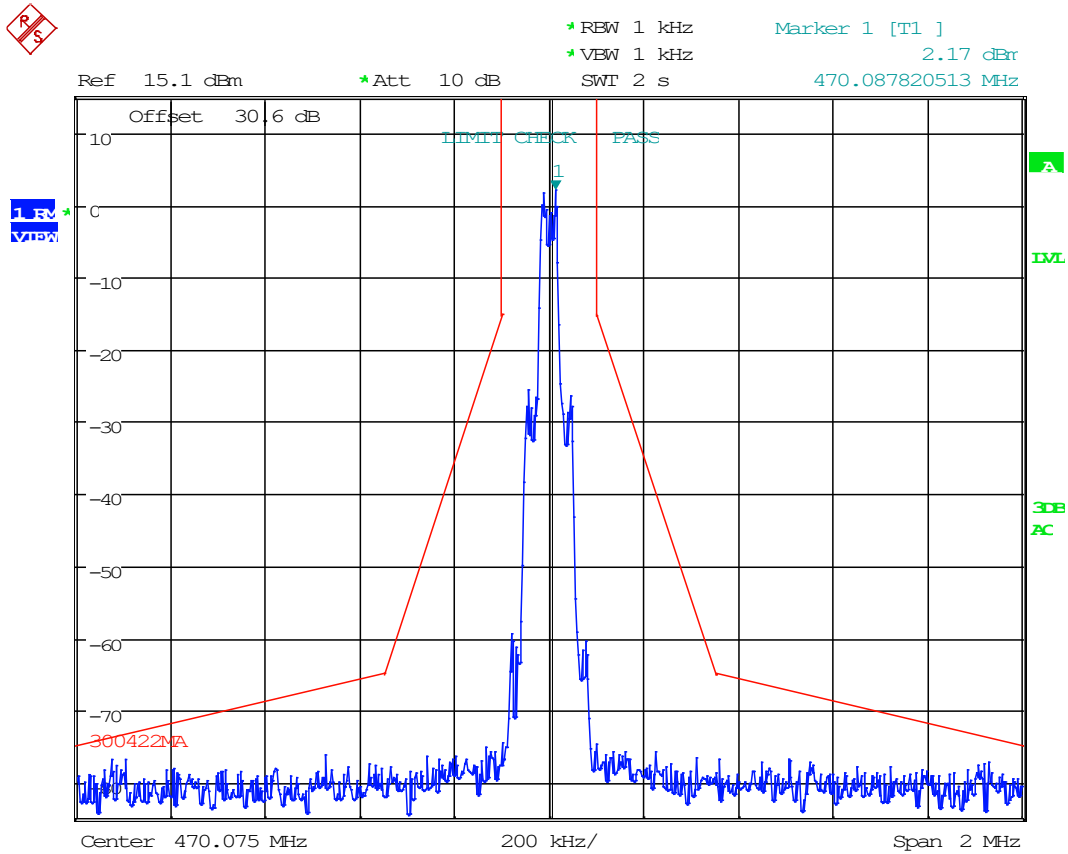
Date: 2.AUG.2021 13:25:07

8.3 OCCUPIED BANDWIDTH (Mask)

Limits from Part FCC Part 15.236 (g) and test procedure from ANSI C63.10.

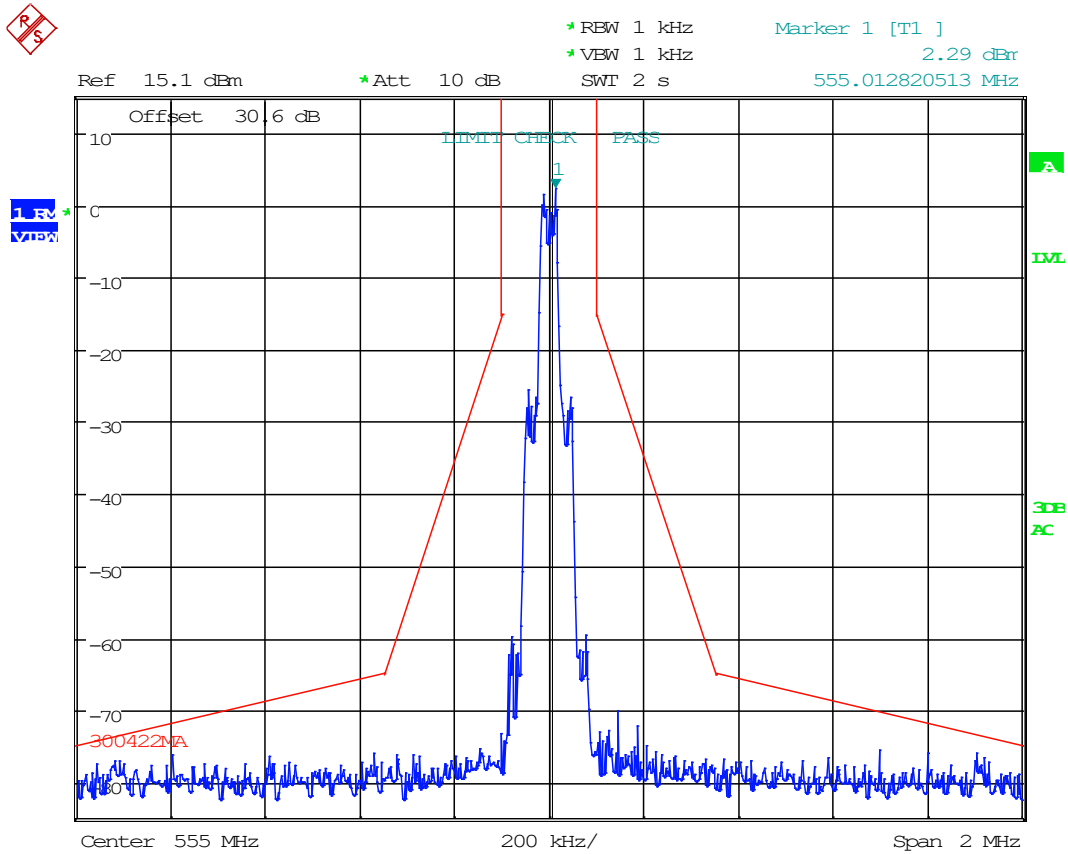


8.3.1 4-1: Test Data: Emission Mask Plot, 470.075 MHz



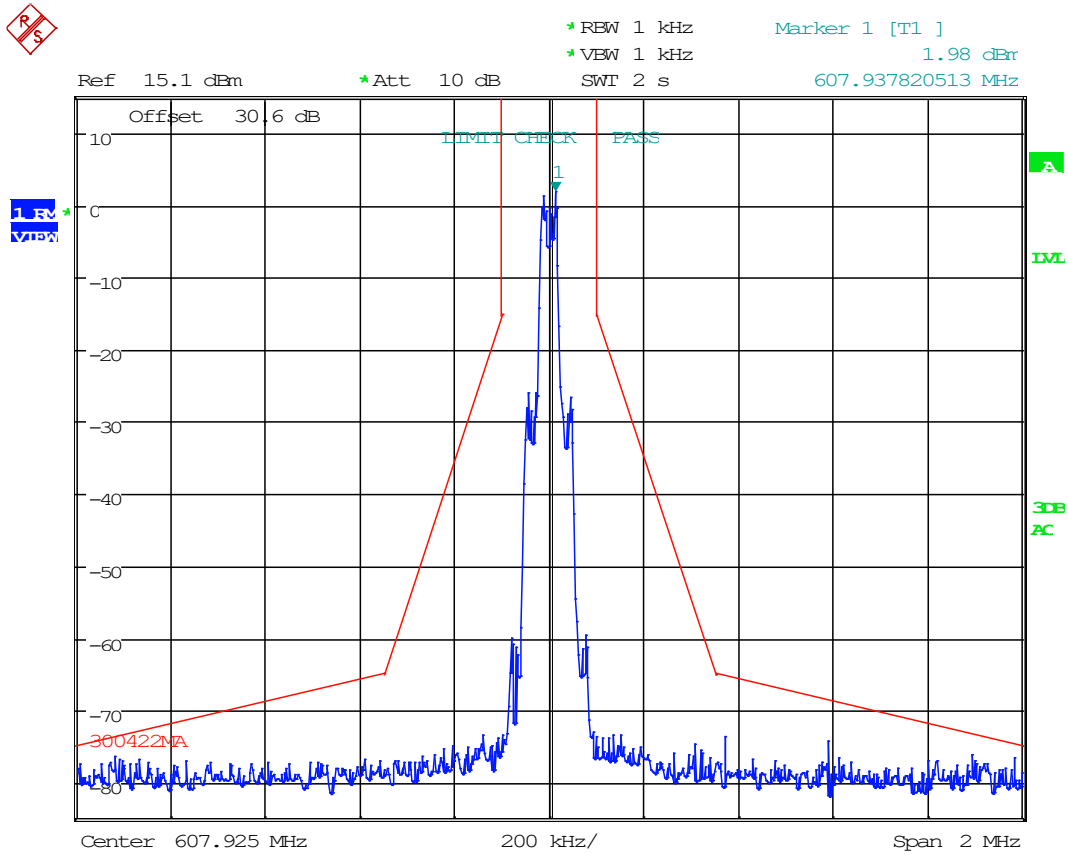
Date: 2.AUG.2021 10:23:01

8.3.2 4-1: Test Data: Emission Mask Plot, 555 MHz



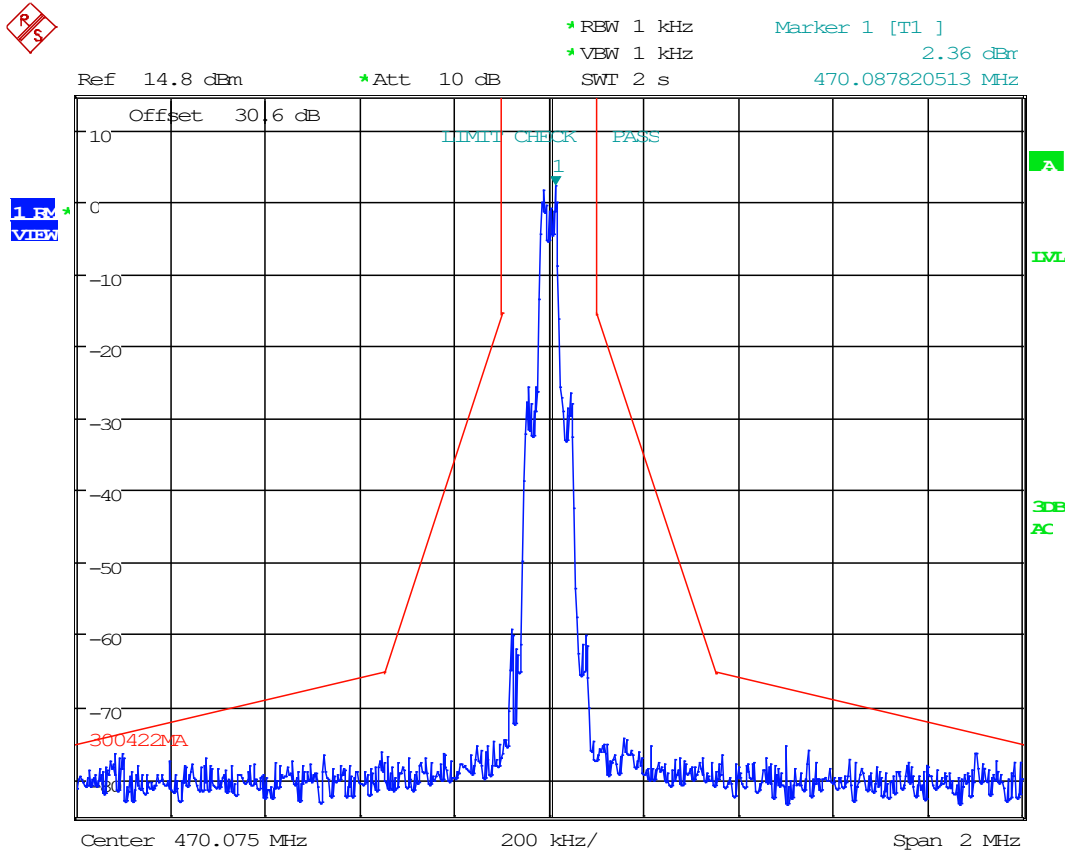
Date: 2.AUG.2021 10:23:48

8.3.3 4-1: Test Data: Emission Mask Plot, 607.925 MHz



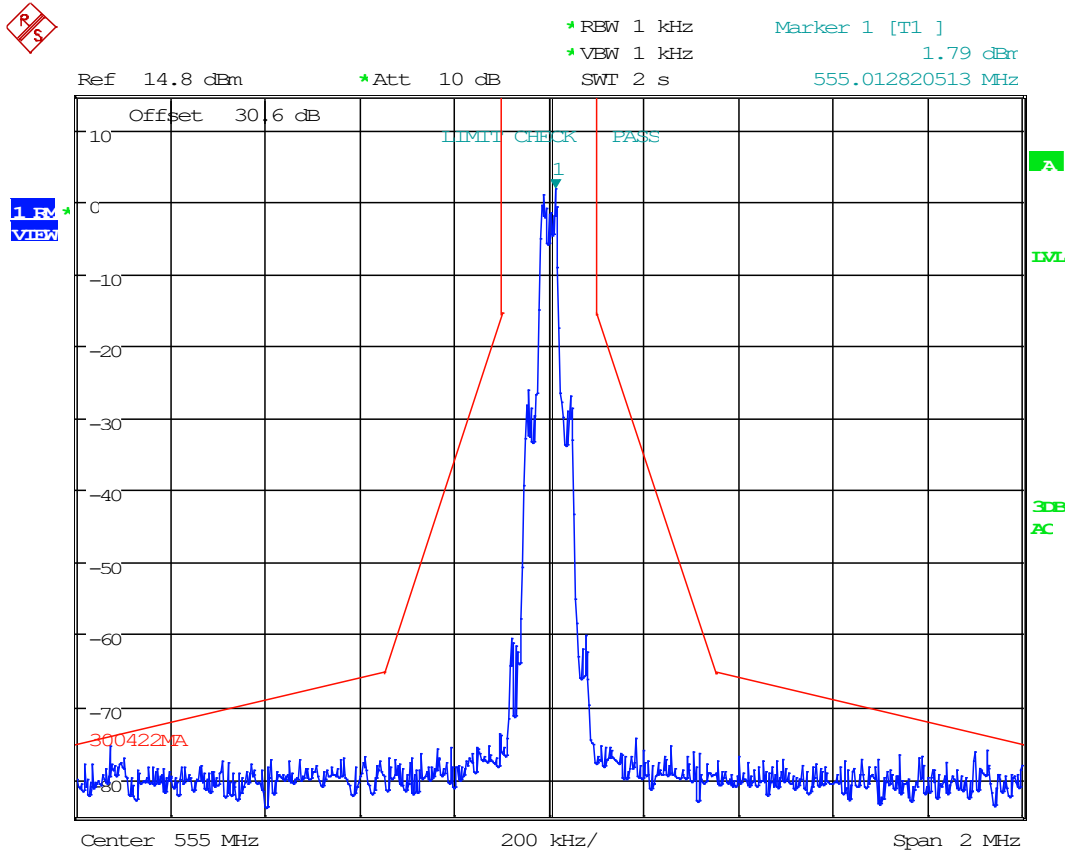
Date: 2.AUG.2021 10:24:40

8.3.4 8-1: Test Data: Emission Mask Plot, 470.075 MHz



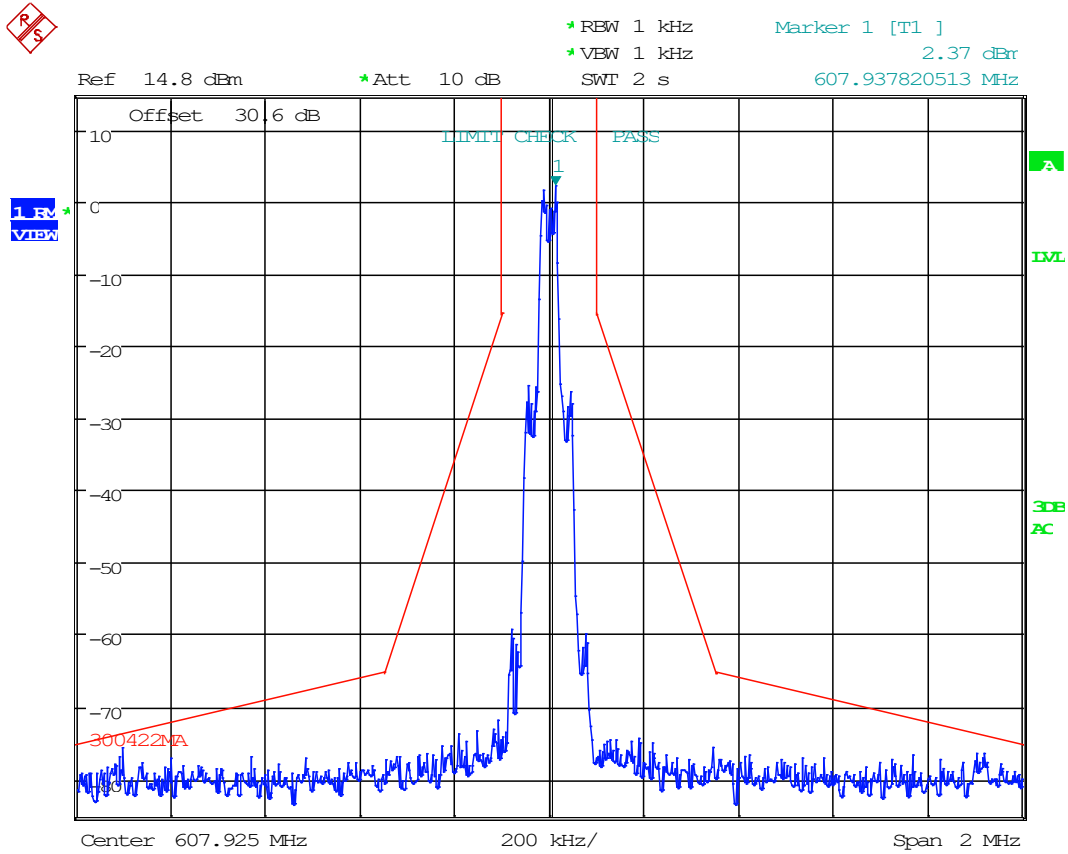
Date: 2.AUG.2021 10:50:10

8.3.5 8-1: Test Data: Emission Mask Plot, 555 MHz



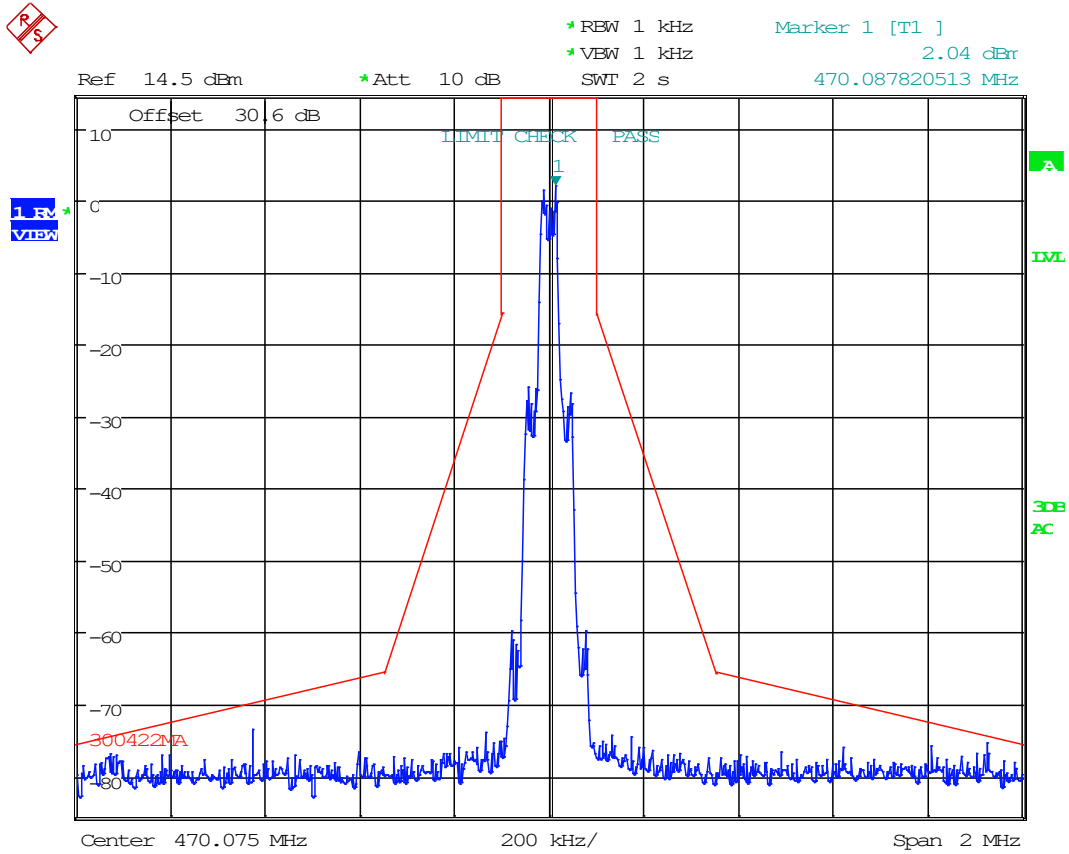
Date: 2.AUG.2021 10:51:03

8.3.6 8-1: Test Data: Emission Mask Plot, 607.925 MHz



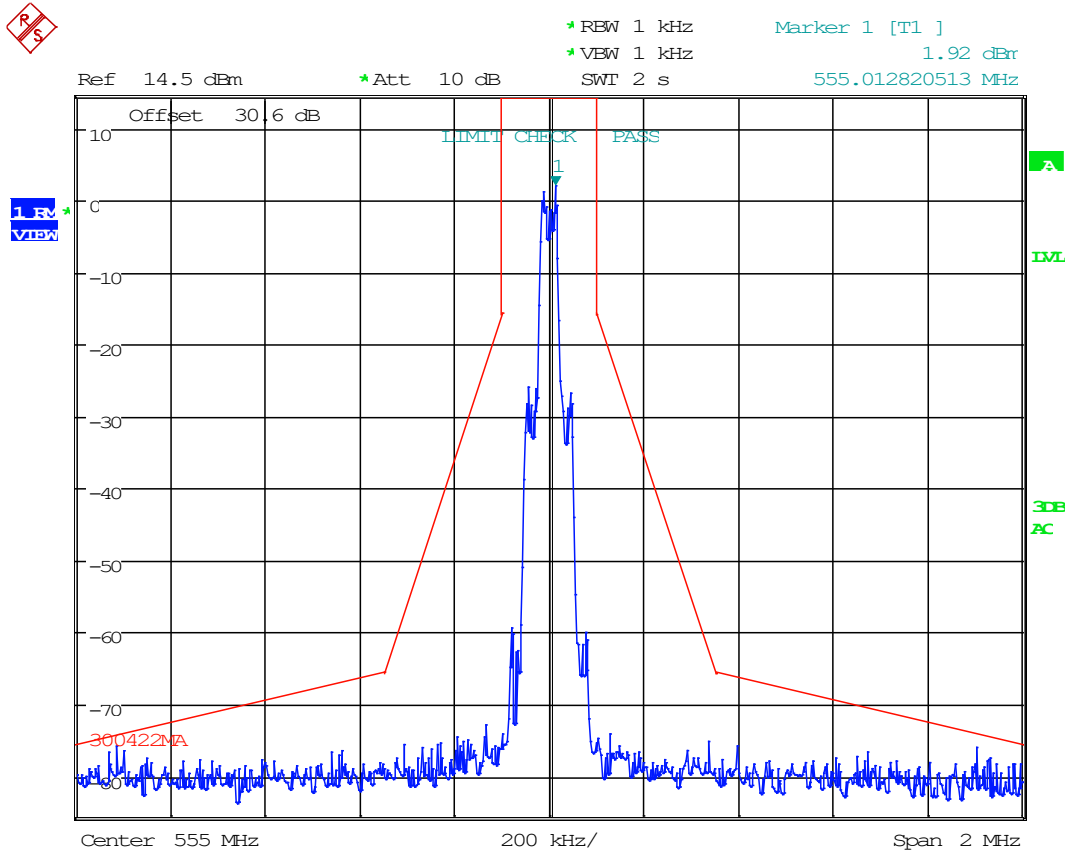
Date: 2.AUG.2021 10:51:38

8.3.7 16-1: Test Data: Emission Mask Plot, 470.075 MHz



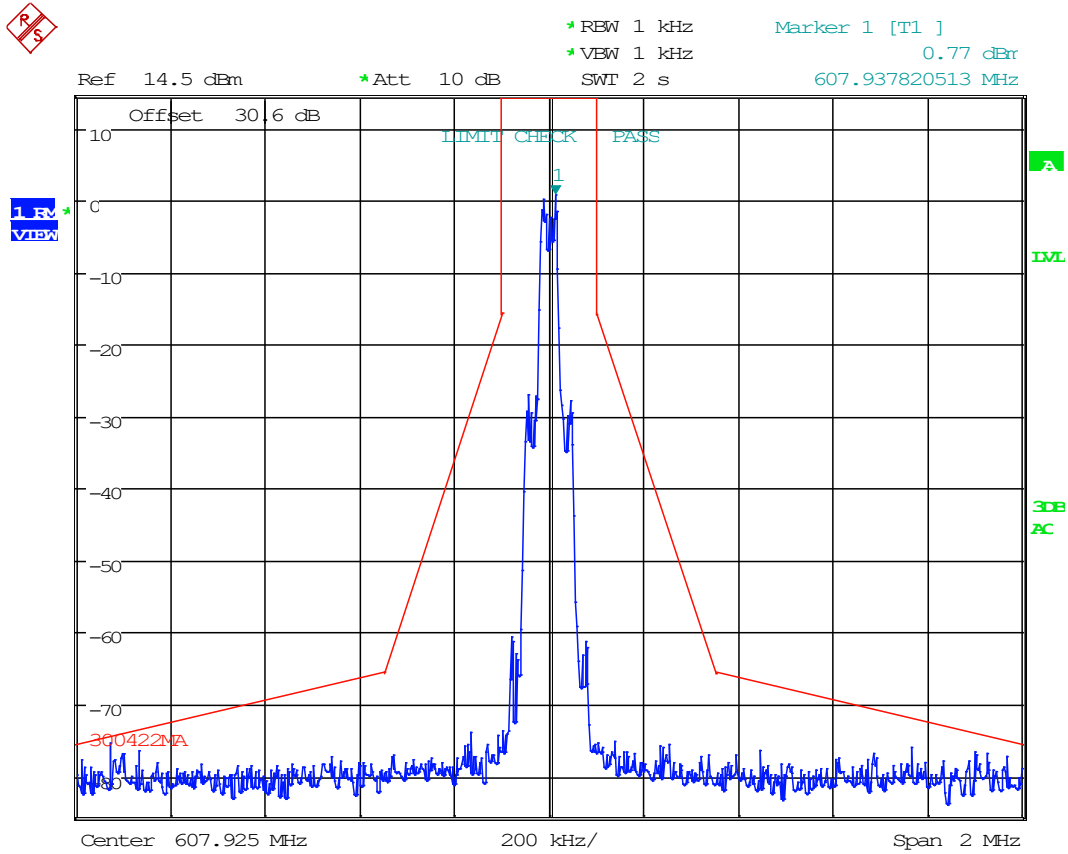
Date: 2.AUG.2021 13:09:04

8.3.8 16-1: Test Data: Emission Mask Plot, 555 MHz



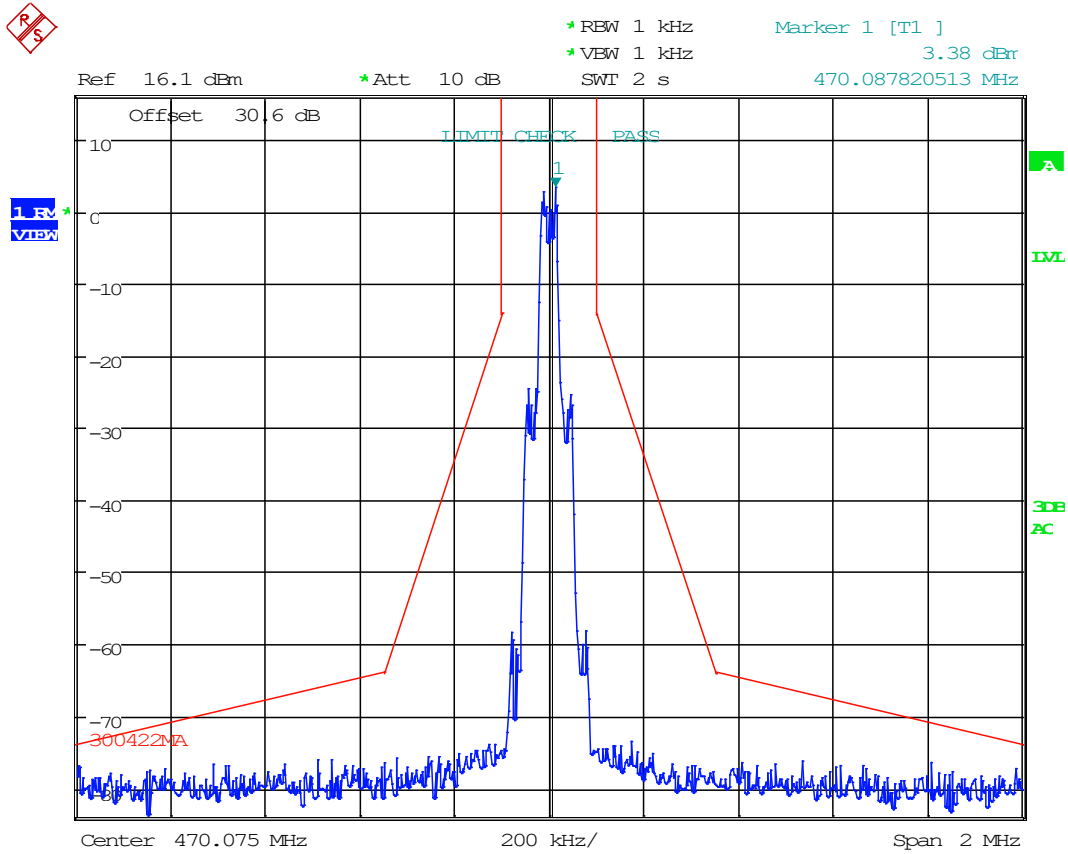
Date: 2.AUG.2021 13:09:40

8.3.9 16-1: Test Data: Emission Mask Plot, 607.925 MHz



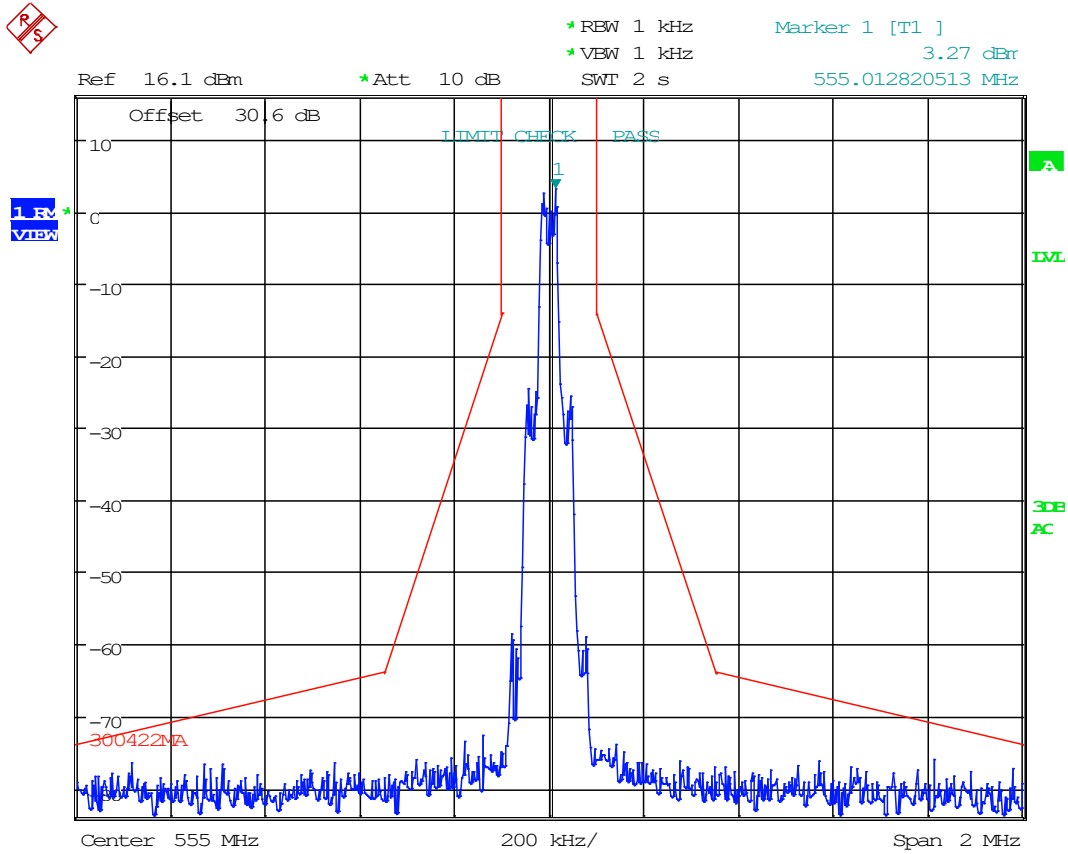
Date: 2.AUG.2021 13:10:20

8.3.10 CSA121T: Test Data: Emission Mask Plot, 470.075 MHz



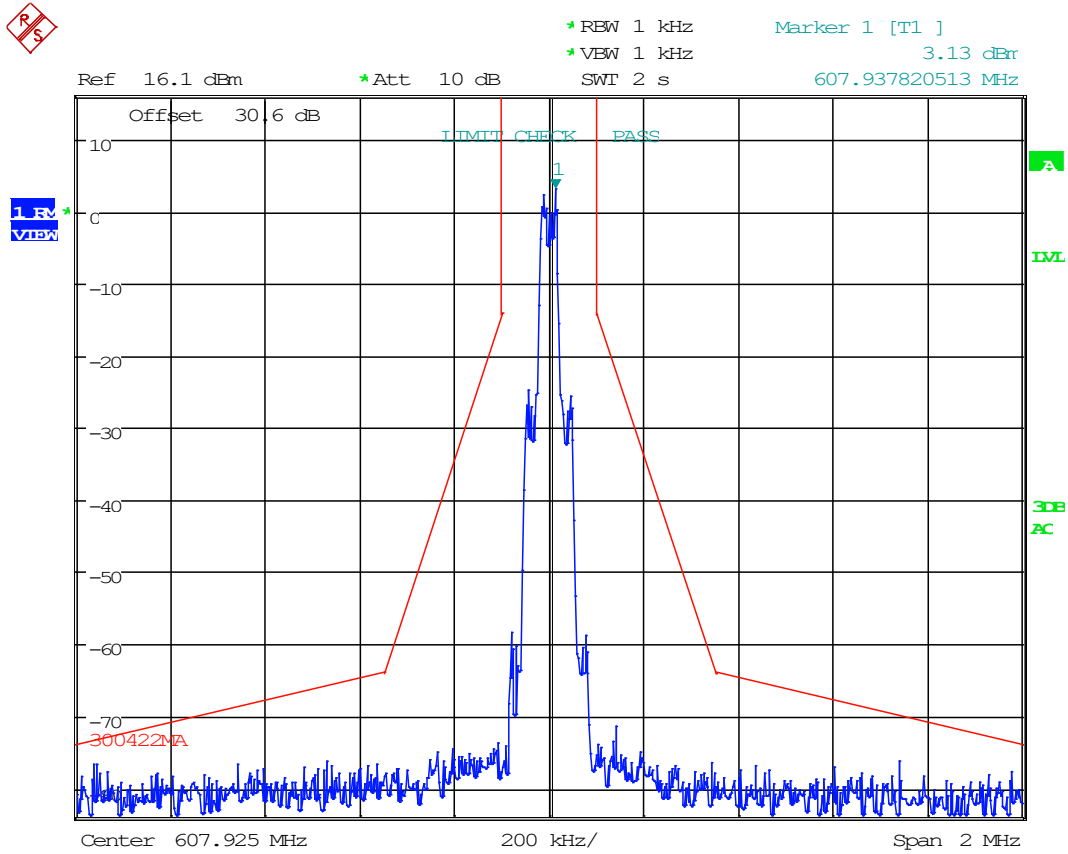
Date: 2.AUG.2021 13:27:06

8.3.11 CSA121T: Test Data: Emission Mask Plot, 555 MHz



Date: 2.AUG.2021 13:27:50

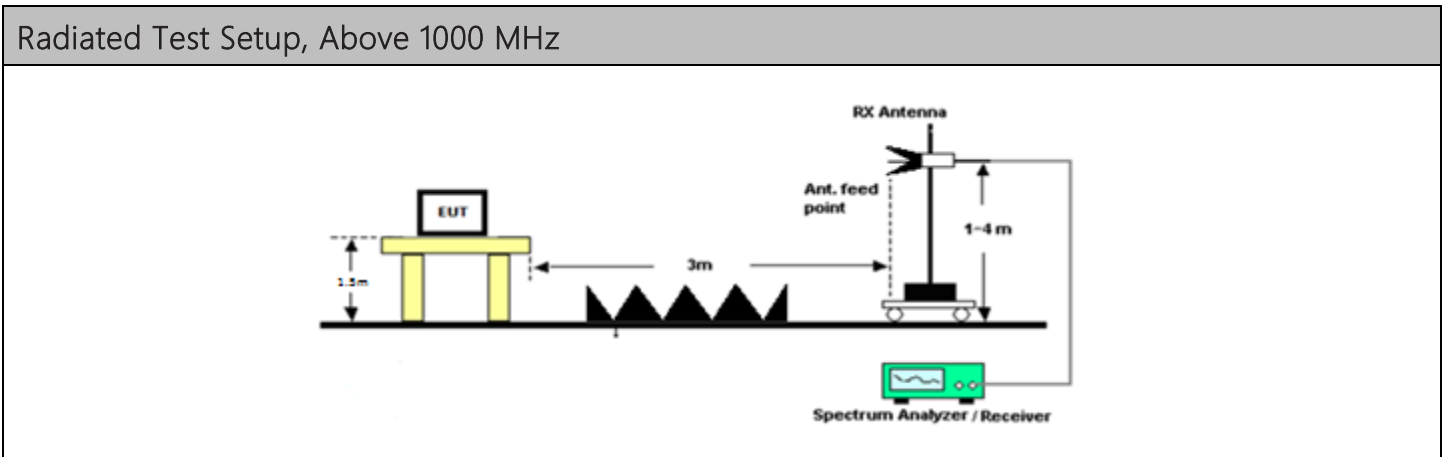
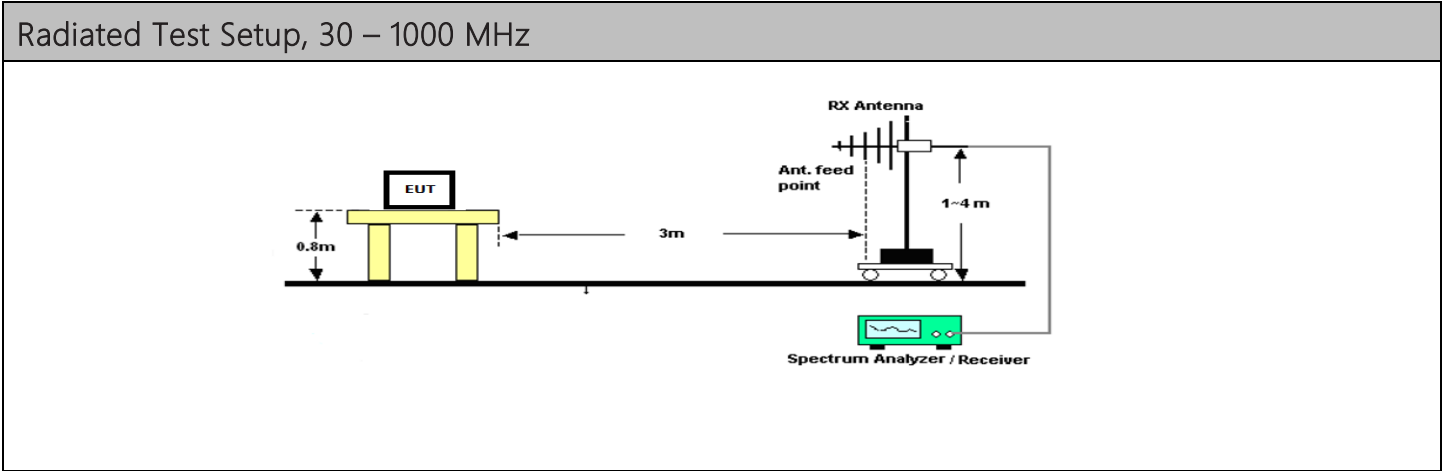
8.3.12 CSA121T: Test Data: Emission Mask Plot, 607.925 MHz



Date: 2.AUG.2021 13:28:28

8.4 Radiated Emissions

Limits from FCC Part 15.236 (g) and test procedure from ANSI C63.10.





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

8.4.1 4-1: Radiated Emissions Table, 470.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBμV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
470.08	940.15	PK	14.12	H	3.59	22.60	3.00	40.31	-57.07	-36.00	21.07
470.08	940.15	PK	15.78	V	3.59	22.60	3.00	41.97	-55.41	-36.00	19.41
470.08	1410.23	PK	26.11	H	4.31	28.39	3.00	58.81	-38.57	-30.00	8.57
470.08	1410.23	PK	34.26	V	4.31	28.39	3.00	66.96	-30.42	-30.00	0.42
470.08	1880.30	PK	21.31	H	5.03	30.94	3.00	57.29	-40.09	-30.00	10.09
470.08	1880.30	PK	21.98	V	5.03	30.94	3.00	57.96	-39.42	-30.00	9.42
470.08	2350.38	PK	21.88	H	5.58	31.93	3.00	59.38	-37.99	-30.00	7.99
470.08	2350.38	PK	22.06	V	5.58	31.93	3.00	59.56	-37.81	-30.00	7.81
470.08	2820.45	PK	21.37	H	6.21	32.43	3.00	60.01	-37.37	-30.00	7.37
470.08	2820.45	PK	21.93	V	6.21	32.43	3.00	60.57	-36.81	-30.00	6.81
470.08	3290.53	PK	24.00	H	6.70	32.63	3.00	63.33	-34.05	-30.00	4.05
470.08	3290.53	PK	22.36	V	6.70	32.63	3.00	61.69	-35.69	-30.00	5.69
470.08	3760.60	PK	22.05	H	6.45	33.13	3.00	61.62	-35.75	-30.00	5.75
470.08	3760.60	PK	21.17	V	6.45	33.13	3.00	60.74	-36.63	-30.00	6.63
470.08	4230.68	PK	21.66	H	7.11	33.33	3.00	62.09	-35.28	-30.00	5.28
470.08	4230.68	PK	21.27	V	7.11	33.33	3.00	61.70	-35.67	-30.00	5.67
470.08	4700.75	PK	21.42	H	7.20	33.88	3.00	62.49	-34.88	-30.00	4.88
470.08	4700.75	PK	22.04	V	7.20	33.88	3.00	63.11	-34.26	-30.00	4.26



8.4.2 4-1: Radiated Emissions Table, 555 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)
555.00	1110.00	PK	22.17	H	3.86	27.20	3.00	53.23	-44.14	-30.00	14.14
555.00	1110.00	PK	29.80	V	3.86	27.20	3.00	60.86	-36.51	-30.00	6.51
555.00	1665.00	PK	23.23	H	4.74	28.75	3.00	56.72	-40.66	-30.00	10.66
555.00	1665.00	PK	28.41	V	4.74	28.75	3.00	61.90	-35.48	-30.00	5.48
555.00	2220.00	PK	22.62	H	5.39	31.28	3.00	59.29	-38.08	-30.00	8.08
555.00	2220.00	PK	22.17	V	5.39	31.28	3.00	58.84	-38.53	-30.00	8.53
555.00	2775.00	PK	22.92	H	6.14	32.45	3.00	61.51	-35.87	-30.00	5.87
555.00	2775.00	PK	21.67	V	6.14	32.45	3.00	60.26	-37.12	-30.00	7.12
555.00	3330.00	PK	21.80	H	6.72	32.63	3.00	61.16	-36.22	-30.00	6.22
555.00	3330.00	PK	22.55	V	6.72	32.63	3.00	61.91	-35.47	-30.00	5.47
555.00	3885.00	PK	21.18	H	6.82	33.22	3.00	61.22	-36.16	-30.00	6.16
555.00	3885.00	PK	21.13	V	6.82	33.22	3.00	61.17	-36.21	-30.00	6.21
555.00	4440.00	PK	21.59	H	7.28	33.76	3.00	62.63	-34.75	-30.00	4.75
555.00	4440.00	PK	20.36	V	7.28	33.76	3.00	61.40	-35.98	-30.00	5.98
555.00	4995.00	PK	20.57	H	7.61	34.01	3.00	62.19	-35.19	-30.00	5.19
555.00	4995.00	PK	21.03	V	7.61	34.01	3.00	62.65	-34.73	-30.00	4.73
555.00	5550.00	PK	21.65	H	8.06	34.40	3.00	64.11	-33.27	-30.00	3.27
555.00	5550.00	PK	21.12	V	8.06	34.40	3.00	63.58	-33.80	-30.00	3.80



8.4.3 4-1: Radiated Emissions Table, 607.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
607.93	1215.85	PK	20.86	H	4.03	28.16	3.00	53.05	-44.33	-30.00	14.33
607.93	1215.85	PK	26.96	V	4.03	28.16	3.00	59.15	-38.23	-30.00	8.23
607.93	1823.78	PK	21.07	H	4.93	30.57	3.00	56.57	-40.81	-30.00	10.81
607.93	1823.78	PK	25.57	V	4.93	30.57	3.00	61.07	-36.31	-30.00	6.31
607.93	2431.70	PK	21.63	H	5.61	31.85	3.00	59.09	-38.28	-30.00	8.28
607.93	2431.70	PK	22.93	V	5.61	31.85	3.00	60.39	-36.98	-30.00	6.98
607.93	3039.63	PK	23.01	H	6.39	32.61	3.00	62.01	-35.37	-30.00	5.37
607.93	3039.63	PK	26.58	V	6.39	32.61	3.00	65.58	-31.80	-30.00	1.80
607.93	3647.55	PK	21.16	H	6.62	33.19	3.00	60.97	-36.41	-30.00	6.41
607.93	3647.55	PK	21.01	V	6.62	33.19	3.00	60.82	-36.56	-30.00	6.56
607.93	4255.48	PK	22.62	H	7.22	33.35	3.00	63.19	-34.18	-30.00	4.18
607.93	4255.48	PK	21.71	V	7.22	33.35	3.00	62.28	-35.09	-30.00	5.09
607.93	4863.40	PK	21.58	H	7.26	33.94	3.00	62.77	-34.60	-30.00	4.60
607.93	4863.40	PK	21.54	V	7.26	33.94	3.00	62.73	-34.64	-30.00	4.64
607.93	5471.33	PK	21.17	H	8.10	34.47	3.00	63.74	-33.64	-30.00	3.64
607.93	5471.33	PK	22.68	V	8.10	34.47	3.00	65.25	-32.13	-30.00	2.13
607.93	6079.25	PK	20.66	H	8.63	35.21	3.00	64.50	-32.87	-30.00	2.87
607.93	6079.25	PK	21.65	V	8.63	35.21	3.00	65.49	-31.88	-30.00	1.88



8.4.4 8-1: Radiated Emissions Table, 470.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
470.08	940.15	PK	15.90	H	3.59	22.60	3.00	42.09	-55.29	-36.00	19.29
470.08	940.15	PK	18.30	V	3.59	22.60	3.00	44.49	-52.89	-36.00	16.89
470.08	1410.23	PK	25.48	H	4.31	28.39	3.00	58.18	-39.20	-30.00	9.20
470.08	1410.23	PK	34.50	V	4.31	28.39	3.00	67.20	-30.18	-30.00	0.18
470.08	1880.30	PK	21.38	H	5.03	30.94	3.00	57.36	-40.02	-30.00	10.02
470.08	1880.30	PK	22.39	V	5.03	30.94	3.00	58.37	-39.01	-30.00	9.01
470.08	2350.38	PK	22.40	H	5.58	31.93	3.00	59.90	-37.47	-30.00	7.47
470.08	2350.38	PK	23.83	V	5.58	31.93	3.00	61.33	-36.04	-30.00	6.04
470.08	2820.45	PK	21.44	H	6.21	32.43	3.00	60.08	-37.30	-30.00	7.30
470.08	2820.45	PK	23.10	V	6.21	32.43	3.00	61.74	-35.64	-30.00	5.64
470.08	3290.53	PK	23.53	H	6.70	32.63	3.00	62.86	-34.52	-30.00	4.52
470.08	3290.53	PK	22.43	V	6.70	32.63	3.00	61.76	-35.62	-30.00	5.62
470.08	3760.60	PK	21.44	H	6.45	33.13	3.00	61.01	-36.36	-30.00	6.36
470.08	3760.60	PK	21.53	V	6.45	33.13	3.00	61.10	-36.27	-30.00	6.27
470.08	4230.68	PK	21.96	H	7.11	33.33	3.00	62.39	-34.98	-30.00	4.98
470.08	4230.68	PK	21.22	V	7.11	33.33	3.00	61.65	-35.72	-30.00	5.72
470.08	4700.75	PK	21.30	H	7.20	33.88	3.00	62.37	-35.00	-30.00	5.00
470.08	4700.75	PK	21.92	V	7.20	33.88	3.00	62.99	-34.38	-30.00	4.38



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

8.4.5 8-1: Radiated Emissions Table, 555 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)
555.00	1110.00	PK	20.95	H	3.86	27.20	3.00	52.01	-45.36	-30.00	15.36
555.00	1110.00	PK	26.23	V	3.86	27.20	3.00	57.29	-40.08	-30.00	10.08
555.00	1665.00	PK	21.85	H	4.74	28.75	3.00	55.34	-42.04	-30.00	12.04
555.00	1665.00	PK	28.65	V	4.74	28.75	3.00	62.14	-35.24	-30.00	5.24
555.00	2220.00	PK	22.23	H	5.39	31.28	3.00	58.90	-38.47	-30.00	8.47
555.00	2220.00	PK	24.86	V	5.39	31.28	3.00	61.53	-35.84	-30.00	5.84
555.00	2775.00	PK	24.17	H	6.14	32.45	3.00	62.76	-34.62	-30.00	4.62
555.00	2775.00	PK	21.99	V	6.14	32.45	3.00	60.58	-36.80	-30.00	6.80
555.00	3330.00	PK	23.29	H	6.72	32.63	3.00	62.65	-34.73	-30.00	4.73
555.00	3330.00	PK	23.08	V	6.72	32.63	3.00	62.44	-34.94	-30.00	4.94
555.00	3885.00	PK	22.96	H	6.82	33.22	3.00	63.00	-34.38	-30.00	4.38
555.00	3885.00	PK	21.71	V	6.82	33.22	3.00	61.75	-35.63	-30.00	5.63
555.00	4440.00	PK	20.93	H	7.28	33.76	3.00	61.97	-35.41	-30.00	5.41
555.00	4440.00	PK	21.89	V	7.28	33.76	3.00	62.93	-34.45	-30.00	4.45
555.00	4995.00	PK	20.90	H	7.61	34.01	3.00	62.52	-34.86	-30.00	4.86
555.00	4995.00	PK	20.67	V	7.61	34.01	3.00	62.29	-35.09	-30.00	5.09
555.00	5550.00	PK	21.15	H	8.06	34.40	3.00	63.61	-33.77	-30.00	3.77
555.00	5550.00	PK	21.11	V	8.06	34.40	3.00	63.57	-33.81	-30.00	3.81



8.4.6 8-1: Radiated Emissions Table, 607.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
607.93	1215.85	PK	21.43	H	4.03	28.16	3.00	53.62	-43.76	-30.00	13.76
607.93	1215.85	PK	25.19	V	4.03	28.16	3.00	57.38	-40.00	-30.00	10.00
607.93	1823.78	PK	22.07	H	4.93	30.57	3.00	57.57	-39.81	-30.00	9.81
607.93	1823.78	PK	26.07	V	4.93	30.57	3.00	61.57	-35.81	-30.00	5.81
607.93	2431.70	PK	21.77	H	5.61	31.85	3.00	59.23	-38.14	-30.00	8.14
607.93	2431.70	PK	22.49	V	5.61	31.85	3.00	59.95	-37.42	-30.00	7.42
607.93	3039.63	PK	22.15	H	6.39	32.61	3.00	61.15	-36.23	-30.00	6.23
607.93	3039.63	PK	22.89	V	6.39	32.61	3.00	61.89	-35.49	-30.00	5.49
607.93	3647.55	PK	21.07	H	6.62	33.19	3.00	60.88	-36.50	-30.00	6.50
607.93	3647.55	PK	21.86	V	6.62	33.19	3.00	61.67	-35.71	-30.00	5.71
607.93	4255.48	PK	22.39	H	7.22	33.35	3.00	62.96	-34.41	-30.00	4.41
607.93	4255.48	PK	21.94	V	7.22	33.35	3.00	62.51	-34.86	-30.00	4.86
607.93	4863.40	PK	21.79	H	7.26	33.94	3.00	62.98	-34.39	-30.00	4.39
607.93	4863.40	PK	21.50	V	7.26	33.94	3.00	62.69	-34.68	-30.00	4.68
607.93	5471.33	PK	20.41	H	8.10	34.47	3.00	62.98	-34.40	-30.00	4.40
607.93	5471.33	PK	21.32	V	8.10	34.47	3.00	63.89	-33.49	-30.00	3.49
607.93	6079.25	PK	20.76	H	8.63	35.21	3.00	64.60	-32.77	-30.00	2.77
607.93	6079.25	PK	20.38	V	8.63	35.21	3.00	64.22	-33.15	-30.00	3.15



8.4.7 16-1: Radiated Emissions Table, 470.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
470.08	940.15	PK	14.60	H	3.59	22.60	3.00	40.79	-56.59	-36.00	20.59
470.08	940.15	PK	14.14	V	3.59	22.60	3.00	40.33	-57.05	-36.00	21.05
470.08	1410.23	PK	25.11	H	4.31	28.39	3.00	57.81	-39.57	-30.00	9.57
470.08	1410.23	PK	33.93	V	4.31	28.39	3.00	66.63	-30.75	-30.00	0.75
470.08	1880.30	PK	21.46	H	5.03	30.94	3.00	57.44	-39.94	-30.00	9.94
470.08	1880.30	PK	22.46	V	5.03	30.94	3.00	58.44	-38.94	-30.00	8.94
470.08	2350.38	PK	22.56	H	5.58	31.93	3.00	60.06	-37.31	-30.00	7.31
470.08	2350.38	PK	22.86	V	5.58	31.93	3.00	60.36	-37.01	-30.00	7.01
470.08	2820.45	PK	21.86	H	6.21	32.43	3.00	60.50	-36.88	-30.00	6.88
470.08	2820.45	PK	22.47	V	6.21	32.43	3.00	61.11	-36.27	-30.00	6.27
470.08	3290.53	PK	21.88	H	6.70	32.63	3.00	61.21	-36.17	-30.00	6.17
470.08	3290.53	PK	22.25	V	6.70	32.63	3.00	61.58	-35.80	-30.00	5.80
470.08	3760.60	PK	20.65	H	6.45	33.13	3.00	60.22	-37.15	-30.00	7.15
470.08	3760.60	PK	22.79	V	6.45	33.13	3.00	62.36	-35.01	-30.00	5.01
470.08	4230.68	PK	21.69	H	7.11	33.33	3.00	62.12	-35.25	-30.00	5.25
470.08	4230.68	PK	21.79	V	7.11	33.33	3.00	62.22	-35.15	-30.00	5.15
470.08	4700.75	PK	21.94	H	7.20	33.88	3.00	63.01	-34.36	-30.00	4.36
470.08	4700.75	PK	21.80	V	7.20	33.88	3.00	62.87	-34.50	-30.00	4.50



8.4.8 16-1: Radiated Emissions Table, 555 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)
555.00	1110.00	PK	20.82	H	3.86	27.20	3.00	51.88	-45.49	-30.00	15.49
555.00	1110.00	PK	29.26	V	3.86	27.20	3.00	60.32	-37.05	-30.00	7.05
555.00	1665.00	PK	22.19	H	4.74	28.75	3.00	55.68	-41.70	-30.00	11.70
555.00	1665.00	PK	27.72	V	4.74	28.75	3.00	61.21	-36.17	-30.00	6.17
555.00	2220.00	PK	22.80	H	5.39	31.28	3.00	59.47	-37.90	-30.00	7.90
555.00	2220.00	PK	21.32	V	5.39	31.28	3.00	57.99	-39.38	-30.00	9.38
555.00	2775.00	PK	22.22	H	6.14	32.45	3.00	60.81	-36.57	-30.00	6.57
555.00	2775.00	PK	21.09	V	6.14	32.45	3.00	59.68	-37.70	-30.00	7.70
555.00	3330.00	PK	22.55	H	6.72	32.63	3.00	61.91	-35.47	-30.00	5.47
555.00	3330.00	PK	23.78	V	6.72	32.63	3.00	63.14	-34.24	-30.00	4.24
555.00	3885.00	PK	23.64	H	6.82	33.22	3.00	63.68	-33.70	-30.00	3.70
555.00	3885.00	PK	21.61	V	6.82	33.22	3.00	61.65	-35.73	-30.00	5.73
555.00	4440.00	PK	21.06	H	7.28	33.76	3.00	62.10	-35.28	-30.00	5.28
555.00	4440.00	PK	20.87	V	7.28	33.76	3.00	61.91	-35.47	-30.00	5.47
555.00	4995.00	PK	21.07	H	7.61	34.01	3.00	62.69	-34.69	-30.00	4.69
555.00	4995.00	PK	20.73	V	7.61	34.01	3.00	62.35	-35.03	-30.00	5.03
555.00	5550.00	PK	21.37	H	8.06	34.40	3.00	63.83	-33.55	-30.00	3.55
555.00	5550.00	PK	21.69	V	8.06	34.40	3.00	64.15	-33.23	-30.00	3.23



8.4.9 16-1: Radiated Emissions Table, 607.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
607.93	1215.85	PK	21.25	H	4.03	28.16	3.00	53.44	-43.94	-30.00	13.94
607.93	1215.85	PK	25.25	V	4.03	28.16	3.00	57.44	-39.94	-30.00	9.94
607.93	1823.78	PK	22.30	H	4.93	30.57	3.00	57.80	-39.58	-30.00	9.58
607.93	1823.78	PK	26.39	V	4.93	30.57	3.00	61.89	-35.49	-30.00	5.49
607.93	2431.70	PK	21.18	H	5.61	31.85	3.00	58.64	-38.73	-30.00	8.73
607.93	2431.70	PK	22.28	V	5.61	31.85	3.00	59.74	-37.63	-30.00	7.63
607.93	3039.63	PK	23.76	H	6.39	32.61	3.00	62.76	-34.62	-30.00	4.62
607.93	3039.63	PK	22.15	V	6.39	32.61	3.00	61.15	-36.23	-30.00	6.23
607.93	3647.55	PK	21.63	H	6.62	33.19	3.00	61.44	-35.94	-30.00	5.94
607.93	3647.55	PK	21.32	V	6.62	33.19	3.00	61.13	-36.25	-30.00	6.25
607.93	4255.48	PK	22.67	H	7.22	33.35	3.00	63.24	-34.13	-30.00	4.13
607.93	4255.48	PK	22.22	V	7.22	33.35	3.00	62.79	-34.58	-30.00	4.58
607.93	4863.40	PK	20.96	H	7.26	33.94	3.00	62.15	-35.22	-30.00	5.22
607.93	4863.40	PK	21.96	V	7.26	33.94	3.00	63.15	-34.22	-30.00	4.22
607.93	5471.33	PK	20.77	H	8.10	34.47	3.00	63.34	-34.04	-30.00	4.04
607.93	5471.33	PK	21.59	V	8.10	34.47	3.00	64.16	-33.22	-30.00	3.22
607.93	6079.25	PK	20.46	H	8.63	35.21	3.00	64.30	-33.07	-30.00	3.07
607.93	6079.25	PK	21.02	V	8.63	35.21	3.00	64.86	-32.51	-30.00	2.51



8.4.10 CSA121T: Radiated Emissions Table, 470.075 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBµV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
470.08	940.15	PK	13.63	H	3.59	22.60	3.00	39.82	-57.56	-36.00	21.56
470.08	940.15	PK	20.88	V	3.59	22.60	3.00	47.07	-50.31	-36.00	14.31
470.08	1410.23	PK	24.59	H	4.31	28.39	3.00	57.29	-40.09	-30.00	10.09
470.08	1410.23	PK	34.16	V	4.31	28.39	3.00	66.86	-30.52	-30.00	0.52
470.08	1880.30	PK	21.52	H	5.03	30.94	3.00	57.50	-39.88	-30.00	9.88
470.08	1880.30	PK	23.25	V	5.03	30.94	3.00	59.23	-38.15	-30.00	8.15
470.08	2350.38	PK	21.47	H	5.58	31.93	3.00	58.97	-38.40	-30.00	8.40
470.08	2350.38	PK	23.84	V	5.58	31.93	3.00	61.34	-36.03	-30.00	6.03
470.08	2820.45	PK	22.58	H	6.21	32.43	3.00	61.22	-36.16	-30.00	6.16
470.08	2820.45	PK	23.40	V	6.21	32.43	3.00	62.04	-35.34	-30.00	5.34
470.08	3290.53	PK	22.99	H	6.70	32.63	3.00	62.32	-35.06	-30.00	5.06
470.08	3290.53	PK	23.47	V	6.70	32.63	3.00	62.80	-34.58	-30.00	4.58
470.08	3760.60	PK	21.29	H	6.45	33.13	3.00	60.86	-36.51	-30.00	6.51
470.08	3760.60	PK	22.34	V	6.45	33.13	3.00	61.91	-35.46	-30.00	5.46
470.08	4230.68	PK	22.38	H	7.11	33.33	3.00	62.81	-34.56	-30.00	4.56
470.08	4230.68	PK	20.80	V	7.11	33.33	3.00	61.23	-36.14	-30.00	6.14
470.08	4700.75	PK	21.39	H	7.20	33.88	3.00	62.46	-34.91	-30.00	4.91
470.08	4700.75	PK	21.87	V	7.20	33.88	3.00	62.94	-34.43	-30.00	4.43



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

8.4.11 CSA121T: Radiated Emissions Table, 555 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)
555.00	1110.00	PK	20.75	H	3.86	27.20	3.00	51.81	-45.56	-30.00	15.56
555.00	1110.00	PK	28.45	V	3.86	27.20	3.00	59.51	-37.86	-30.00	7.86
555.00	1665.00	PK	25.13	H	4.74	28.75	3.00	58.62	-38.76	-30.00	8.76
555.00	1665.00	PK	28.43	V	4.74	28.75	3.00	61.92	-35.46	-30.00	5.46
555.00	2220.00	PK	22.50	H	5.39	31.28	3.00	59.17	-38.20	-30.00	8.20
555.00	2220.00	PK	26.36	V	5.39	31.28	3.00	63.03	-34.34	-30.00	4.34
555.00	2775.00	PK	22.30	H	6.14	32.45	3.00	60.89	-36.49	-30.00	6.49
555.00	2775.00	PK	22.89	V	6.14	32.45	3.00	61.48	-35.90	-30.00	5.90
555.00	3330.00	PK	21.79	H	6.72	32.63	3.00	61.15	-36.23	-30.00	6.23
555.00	3330.00	PK	23.14	V	6.72	32.63	3.00	62.50	-34.88	-30.00	4.88
555.00	3885.00	PK	22.60	H	6.82	33.22	3.00	62.64	-34.74	-30.00	4.74
555.00	3885.00	PK	21.19	V	6.82	33.22	3.00	61.23	-36.15	-30.00	6.15
555.00	4440.00	PK	21.36	H	7.28	33.76	3.00	62.40	-34.98	-30.00	4.98
555.00	4440.00	PK	21.29	V	7.28	33.76	3.00	62.33	-35.05	-30.00	5.05
555.00	4995.00	PK	21.25	H	7.61	34.01	3.00	62.87	-34.51	-30.00	4.51
555.00	4995.00	PK	20.52	V	7.61	34.01	3.00	62.14	-35.24	-30.00	5.24
555.00	5550.00	PK	21.48	H	8.06	34.40	3.00	63.94	-33.44	-30.00	3.44
555.00	5550.00	PK	21.14	V	8.06	34.40	3.00	63.60	-33.78	-30.00	3.78



8.4.12 CSA121T: Radiated Emissions Table, 607.925 MHz

Tuned Frequency (MHz)	Emission Frequency (MHz)	Detector	Meter Reading (dBuV)	Antenna Polarity	Coax Loss (dB)	Antenna Correction Factor (dB/m)	Distance (m)	Field Strength (dBuV/m)	ERP (dBm)	Spurious Limit (dBm)	Margin (dB)
607.93	1215.85	PK	21.36	H	4.03	28.16	3.00	53.55	-43.83	-30.00	13.83
607.93	1215.85	PK	28.90	V	4.03	28.16	3.00	61.09	-36.29	-30.00	6.29
607.93	1823.78	PK	21.06	H	4.93	30.57	3.00	56.56	-40.82	-30.00	10.82
607.93	1823.78	PK	21.76	V	4.93	30.57	3.00	57.26	-40.12	-30.00	10.12
607.93	2431.70	PK	21.86	H	5.61	31.85	3.00	59.32	-38.05	-30.00	8.05
607.93	2431.70	PK	21.08	V	5.61	31.85	3.00	58.54	-38.83	-30.00	8.83
607.93	3039.63	PK	23.60	H	6.39	32.61	3.00	62.60	-34.78	-30.00	4.78
607.93	3039.63	PK	23.29	V	6.39	32.61	3.00	62.29	-35.09	-30.00	5.09
607.93	3647.55	PK	20.69	H	6.62	33.19	3.00	60.50	-36.88	-30.00	6.88
607.93	3647.55	PK	22.04	V	6.62	33.19	3.00	61.85	-35.53	-30.00	5.53
607.93	4255.48	PK	22.13	H	7.22	33.35	3.00	62.70	-34.67	-30.00	4.67
607.93	4255.48	PK	21.27	V	7.22	33.35	3.00	61.84	-35.53	-30.00	5.53
607.93	4863.40	PK	20.91	H	7.26	33.94	3.00	62.10	-35.27	-30.00	5.27
607.93	4863.40	PK	20.93	V	7.26	33.94	3.00	62.12	-35.25	-30.00	5.25
607.93	5471.33	PK	21.08	H	8.10	34.47	3.00	63.65	-33.73	-30.00	3.73
607.93	5471.33	PK	20.89	V	8.10	34.47	3.00	63.46	-33.92	-30.00	3.92
607.93	6079.25	PK	21.15	H	8.63	35.21	3.00	64.99	-32.38	-30.00	2.38
607.93	6079.25	PK	21.88	V	8.63	35.21	3.00	65.72	-31.65	-30.00	1.65



9. ANNEX-A - Photographs of the EUT

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

10. ANNEX-B – Test Setup Photographs

Test setup photographs are located in a separate document.

11. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_3423-21_PT 15.236_1	1	Initial release	8/02/2021



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

END OF TEST REPORT
