REGULATORY COMPLIANCE TEST REPORT

FCC CFR 47 15.407, RSS-247 Issue 2

Report No.: RDWN73–U6 Rev A

Company: Radwin

Model Name: NEO, NEO DUO

REGULATORY COMPLIANCE TEST REPORT

Company Name: Radwin

Model Name: NEO, NEO DUO

To: FCC CFR 47 Part 15 Subpart E 15.407, RSS-247 Issue 2

Test Report Serial No.: RDWN73-U6 Rev A

This report supersedes: NONE

Applicant:	Radwin 27 Habarzel Street Tel Aviv, 6971039 Israel
Issue Date:	19th April 2021

This Test Report is Issued Under the Authority of:

MiCOM Labs, Inc.
575 Boulder Court
Pleasanton California 94566
USA
Phone: +1 (925) 462-0304
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www.micomlabs.com

ACCREDITED
TESTING CERT #2381.01

MiCOM Labs is an ISO 17025 Accredited Testing Laboratory

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1. ACCREDITATION, LISTINGS & RECOGNITION

1.1. TESTING ACCREDITATION

MiCOM Labs, Inc. is an accredited Electrical testing laboratory per the international standard ISO/IEC 17025:2017. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.01. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-01.pdf

Accredited Laboratory

A2LA has accredited

MICOM LABS

Pleasanton, CA

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 24th day of February 2020.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.01
Valid to November 30, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

1.2. RECOGNITION

MiCOM Labs, Inc is widely recognized for its wireless testing and certification capabilities. In addition to being recognized for Testing and Certification under Phase 2 Mutual Recognition Agreements (MRA) with Canada, Europe, United Kingdom and Japan, our international recognition includes Conformity Assessment Body (CAB) designation status under agreements with Asia Pacific (APEC) MRA Phase 1 countries giving acceptance of MiCOM test reports. MiCOM Labs test reports are accepted globally.

Country	Recognition Body	Status	MRA Phase	Identification No.
USA	Federal Communications Commission (FCC)	TCB	-	US0159 Test Site Designation #: US1084
Canada	Industry Canada (ISED)	FCB	APEC MRA 2	US0159 Test Company #: 4143A
Japan	MIC (Ministry of Internal Affairs and Communication)	CAB	Japan MRA 2	RCB 210
	Japan Approvals Institute for Telecommunication Equipment (JATE)			
	VCCI	--	--	A-0012
Europe	European Commission	NB	EU MRA 2	NB 2280
United Kingdom	Department for Business, Energy & Industrial Strategy (BEIS)	AB	UK MRA 2	AB 2280
Mexico	Instituto Federal de Telecomunicaciones (IFT)	CAB	Mexico MRA 1	US0159
Australia	Australian Communications and Media Authority (ACMA)	CAB	APEC MRA 1	US0159
Hong Kong	Office of the Telecommunication Authority (OFTA)			
Korea	Ministry of Information and Communication Radio Research Laboratory (RRL)			
Singapore	Infocomm Development Authority (IDA)			
Taiwan	National Communications Commission (NCC) Bureau of Standards, Metrology and Inspection (BSMI)			
Vietnam	Ministry of Communication (MIC)			

TCB- Telecommunications Certification Bodies (TCB)
FCB – Foreign Certification Body
CAB – Conformity Assessment Body
NB – Notified Body;
AB – Approved Body
MRA – Mutual Recognition Agreement

MRA Phases
Phase I - recognition for product testing
Phase II – recognition for both product testing and certification

1.3. PRODUCT CERTIFICATION

MiCOM Labs, Inc. is an accredited Product Certification Body per the international standard ISO/IEC 17065:2012. The company is accredited by the American Association for Laboratory Accreditation (A2LA) www.a2la.org test laboratory number 2381.02. MiCOM Labs test schedule is available at the following URL; http://www.a2la.org/scopepdf/2381-02.pdf

Accredited Product Certification Body

A2LA has accredited

MiCOM LABS

Pleasanton, CA

This product certification body is accredited in accordance with the recognized International Standard ISO/IEC 17065:2012 *Requirements for bodies certifying products, processes and services*. This product certification body also meets the *A2LA R322 – Specific Requirements – Notified Body Accreditation Requirements* and *A2LA R308 - Specific Requirements - ISO-IEC 17065 - Telecommunication Certification Body Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a management system.

Presented this 24th day of February 2020

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2381.02
Valid to November 30, 2021

For the product certification schemes to which this accreditation applies, please refer to the organization's Product Certification Scope of Accreditation.

United States of America – Telecommunication Certification Body (TCB)
Industry Canada – Certification Body, CAB Identifier – US0159
Europe – Notified Body (NB), NB Identifier - 2280
UK – Approved Body (AB), AB Identifier - 2280
Japan – Recognized Certification Body (RCB), RCB Identifier - 210

2. DOCUMENT HISTORY

Document History		
Revision	Date	Comments
Draft	8th April 2021	Draft for comment
Draft	12th April 2021	Draft for comment
Rev A	19th April 2021	Initial Release

In the above table the latest report revision will replace all earlier versions.

3. TEST RESULT CERTIFICATE

Manufacturer:	Radwin 27 Habarzel Street Tel Aviv 6971039 Israel	**Tested By:**	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Model:	NEO, NEO DUO	**Telephone:**	+1 925 462 0304
Type Of Equipment:	5 GHz Single, Dual Carrier Beamforming Base Station	**Fax:**	+1 925 462 0306
S/N's:	Prototype #1		
Test Date(s):	17th – 31st March 2021	**Website:**	www.micomlabs.com

STANDARD(S)	TEST RESULTS
FCC CFR 47 Part 15 Subpart E 15.407 **ISED RSS-247 Issue 2**	**EQUIPMENT COMPLIES**

MiCOM Labs, Inc. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

Notes:

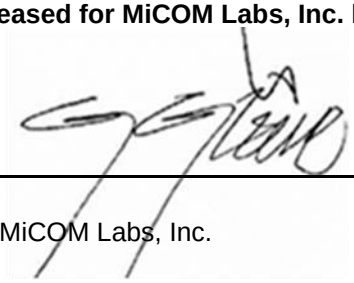
1. This document reports conditions under which testing was conducted and the results of testing performed.

2. Details of test methods used have been recorded and kept on file by the laboratory.

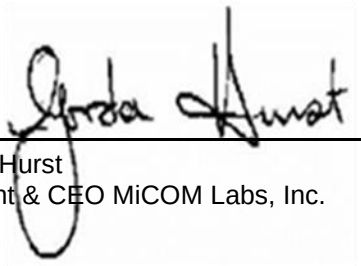
3. Test results apply only to the item(s) tested.

A2LA ACCREDITED
TESTING CERT #2381.01

Approved & Released for MiCOM Labs, Inc. by:



Graeme Grieve
Quality Manager MiCOM Labs, Inc.



Gordon Hurst
President & CEO MiCOM Labs, Inc.

4. REFERENCES AND MEASUREMENT UNCERTAINTY

4.1. Normative References

REF.	PUBLICATION	YEAR	TITLE
I	KDB 662911 D01 & D02	Oct 31 2013	Guidance for measurement of output emission of devices that employ single transmitter with multiple outputs or systems with multiple transmitters operating simultaneously in the same frequency band
II	KDB 905462 D07 v02	22nd August 2016	Test guidance to demonstrate compliance for U-NII devices subject to DFS requirements.
III	KDB 926956 D01 v02	22nd August 2016	U-NII Device Transition Plan
IV	A2LA	5th October 2020	R105 - Requirement's When Making Reference to A2LA Accreditation Status
V	ANSI C63.10	2013	American National Standard for Testing Unlicensed Wireless Devices
VI	ANSI C63.4	2014	American National Standards for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
VII	CISPR 32	2015	Electromagnetic compatibility of multimedia equipment - Emission requirements
VIII	ETSI TR 100 028	2001-12	Parts 1 and 2 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics
IX	FCC 06-96	Jun 30 2006	Memorandum Opinion and Order
X	FCC 47 CFR Part 15.407	2020	Radio Frequency Devices; Subpart E –Unlicensed National Information Infrastructure Devices
XI	ICES-003	Issue 7 ; October 15,2020	Information Technology Equipment (Including Digital Apparatus) – Limits and methods of measurement.
XII	M 3003	Edition 3 Nov.2012	Expression of Uncertainty and Confidence in Measurements
XIII	RSS-247 Issue 2	Feb 2017	Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and Licence-Exempt Local Area Network (LE-LEN) Devices
XIV	RSS-Gen Issue 5	March 2019 Amendment 1	General Requirements for Compliance of Radio Apparatus
XV	FCC 47 CFR Part 2.1033	2020	FCC requirements and rules regarding photographs and test setup diagrams.
XVI	KDB 905462 D02 v02	April 8 2016	Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection.
XVII	KDB 789033 D02 V02r01	14th December, 2017	Guidelines For Compliance Testing Of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E

4.2. Test and Uncertainty Procedure

Conducted and radiated emission measurements were conducted in accordance with American National Standards Institute ANSI C63.4, listed in the Normative References section of this report.

Measurement uncertainty figures are calculated in accordance with ETSI TR 100 028 Parts 1 and 2.

Measurement uncertainties stated are based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 % in accordance with UKAS document M 3003 listed in the Normative References section of this report.

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

5. PRODUCT DETAILS AND TEST CONFIGURATIONS

5.1. Technical Details

Details	Description
Purpose:	Test of the Radwin NEO, NEO DUO to FCC CFR 47 Part 15 Subpart E 15.407. Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection. Included in this test report is the testing for ISED RSS-247 Issue 2.
Applicant:	Radwin 27 Habarzel Street Tel Aviv 6971039 Israel
Manufacturer:	Radwin
Laboratory performing the tests:	MiCOM Labs, Inc. 575 Boulder Court Pleasanton California 94566 USA
Test report reference number:	RDWN73 - Jet Single/Dual FCC ISED
Date EUT received:	15 March 2021
Standard(s) applied:	FCC CFR 47 Part 15 Subpart E 15.407, ISED RSS-247 Issue 2.
Dates of test (from - to):	16 - 31 March 2021
No of Units Tested:	1
Product Family Name:	NEO
Model(s):	NEO, NEO DUO
Location for use:	Outdoors
Declared Frequency Range(s):	5250 - 5350 MHz; 5470 - 5725 MHz
Type of Modulation:	BPSK, QPSK, 16QAM, 64QAM, 256QAM
EUT Modes of Operation:	5250 - 5350 MHz; 5470 - 5725 MHz 20MHz; 40MHz; 80MHz;
Declared Nominal Output Power (dBm):	+20 dBm
Transmit/Receive Operation:	Transceiver
Rated Input Voltage and Current:	55V DC
Operating Temperature Range:	-35 to +60 ºC
ITU Emission Designator:	20M0W7W, 40M0W7W, 80M0W7W
Equipment Dimensions:	3.5 / 13.4 / 12.8 in
Weight:	7.74 lb
Hardware Rev:	Prototype
Software Rev:	Prototype

5.2. Scope Of Test Program

Radwin NEO, NEO DUO

The scope of the test program was to test the Radwin NEO DUO configurations in the frequency ranges; 5250 - 5350 MHz; 5470 - 5725 MHz; for compliance against the following specification:

FCC CFR 47 Part 15 Subpart E 15.407
Compliance Measurement Procedures for Unlicensed National Information Infrastructure devices operating in the 5250 to 5350 MHz and 5470 to 5725 MHz bands incorporating Dynamic Frequency Selection.

RSS-247 Issue 2
Digital Transmission Systems (DTSs), Frequency Hopping System (FHSs) and License-Exempt Local Area Network (LE-LEN) Devices.

As the RADWIN NEO DUO has integrated beamforming antenna this program was completed all radiatively.

System Test and Measurement Configurations
The RADWIN NEO DUO consists of 2 identical radios each with 2 ports driving one cross polarized antenna per radio. Each radio can transmit on all available frequencies, but both radios cannot transmit on the same frequency simultaneously.

The RADWIN NEO consists of 1 radio with 2 antenna ports which drive a cross polarized antenna.

As the unit's RF modules were identical only a single radio of the RADWIN NEO DUO was exercised, and results duplicated where necessary for the 2nd radio.

DFS test results will be presented in separate follow-up report RDWN73-U6 DFS.

5.3. Equipment Model(s) and Serial Number(s)

Type (EUT/ Support)	Equipment Description	Manufacturer	Model No.	Serial No.
EUT	Dual Carrier 5.x GHz Base Station with Beamforming Antenna	RADWIN	RADWIN NEO DUO	Prototype
Support	POE Power Supply	Sinpro	CPU55A-270-1	--
Support	Laptop	Dell	--	--

5.4. Antenna Details

Type	Manufacturer	Model	Family	Gain (dBi)	BF Gain	Dir BW	X-Pol	Frequency Band (MHz)
integral	RADWIN	MR0269440	Sector	10.0	-	90	Yes	5250 - 5725
integral	RADWIN	MR0269440BF	Directional	10.0	6.0	30	Yes	5250 - 5725

BF Gain - Beamforming Gain
Dir BW - Directional BeamWidth
X-Pol - Cross Polarization

5.5. Cabling and I/O Ports

Port Type	Max Cable Length	# of Ports	Screened	Conn Type	Data Type	Bit Rate	Environment	Config
Ethernet PoE IN	>30m	1			Packet Data	1000	End-User|	Without Primary Protection.|

5.6. Test Configurations

Results for the following configurations are provided in this report:

Operational Mode(s) (802.11a/b/g/n/ac)	Data Rate with Highest Power MBit/s	Channel Frequency (MHz)		
		Low	Mid	High
5250 - 5350 MHz				
20MHz	78.00	5,265.00	5300.00	5330.00
40MHz	180.00	5275.00	5300.00	5320.00
80MHz	390.00	5290.00	5295.00	5300.00
5470 - 5725 MHz				
20MHz	78.00	5490.00	5590.00	5705.00
40MHz	180.00	5500.00	5580.00	5695.00
80MHz	390.00	5525.00	5560.00	5675.00

5.7. Equipment Modifications

The following modifications were required to bring the equipment into compliance:
1. NONE

5.8. Deviations from the Test Standard

The following deviations from the test standard were required in order to complete the test program:
1. NONE

6. TEST SUMMARY

List of Measurements

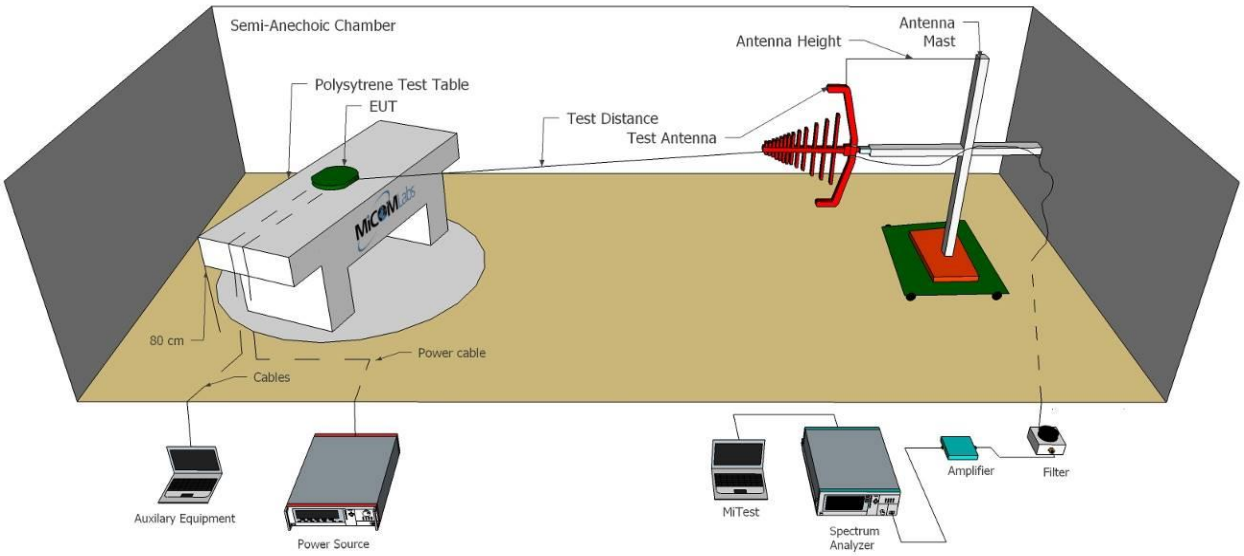
Test Header	Result	Data Link
Peak Transmit Power	Complies	View Data
26 dB & 99% Bandwidth	Complies	View Data
Power Spectral Density	Complies	View Data
Radiated	Complies	-
TX Spurious & Restricted Band Emissions	Complies	-
RADWIN MR0269440	Complies	View Data
RADWIN MR0269440BF	Complies	View Data
Restricted Edge & Band-Edge Emissions	Complies	-
RADWIN MR0269440	Complies	View Data
RADWIN MR0269440BF	Complies	View Data
Digital Emissions	Complies	See RDWN73-U4 Report
AC Wireline	Complies	See RDWN73-U4 Report
Dynamic Frequency Selection	Complies	See RDWN73-U10_ pca 2.3-DFS Report

7. TEST EQUIPMENT CONFIGURATION(S)

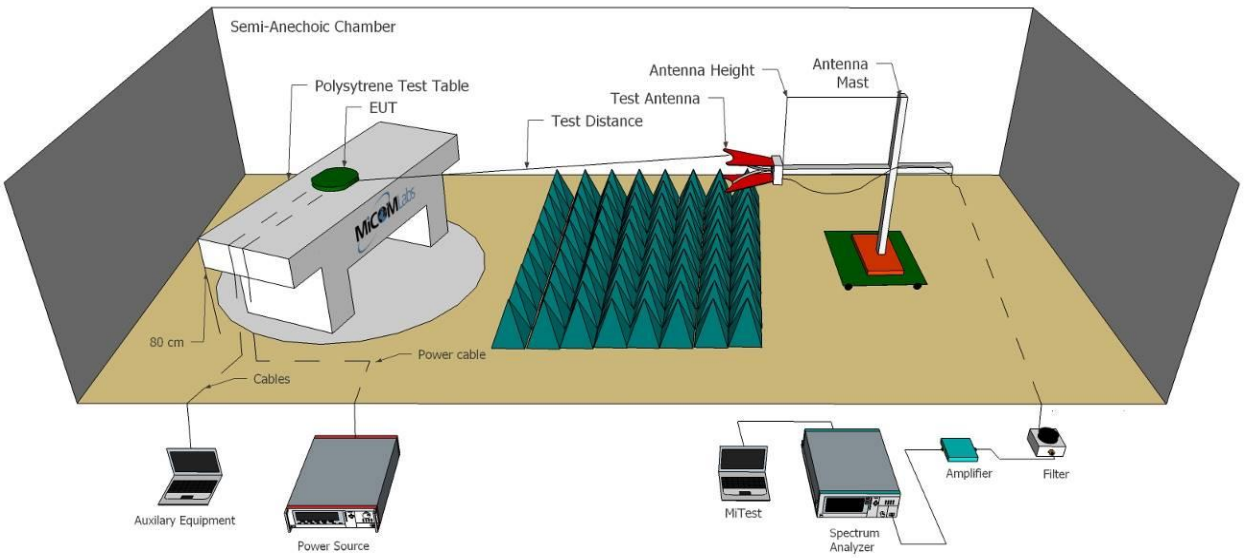
7.1. Radiated Emissions - 3m Chamber

Test Setup for Radiated Emissions for above and below 1 GHz

Radiated Emissions Below 1GHz Test Setup



Radiated Emissions Above 1GHz Test Setup



A full system calibration was performed on the test station and any resulting system losses (or gains) were taken into account in the production of all final measurement data.

Asset#	Description	Manufacturer	Model#	Serial#	Calibration Due Date
170	Video System Controller for Semi Anechoic Chamber	Panasonic	WV-CU101	04R08507	Not Required
298	3M Radiated Emissions Chamber Maintenance Check	MiCOM	3M Chamber	298	26 Apr 2021
338	Sunol 30 to 3000 MHz Antenna	Sunol	JB3	A052907	4 Apr 2021
377	Band Rejection Filter 5150 to 5880MHz	Microtronics	BRM50716	034	4 May 2021
378	Rohde & Schwarz 40 GHz Receiver	Rhode & Schwarz	ESIB40	100107/040	12 Jun 2021
397	Amp 10 - 2500MHz	MiCOM Labs	Amp 10 - 2500 MHz	NA	9 May 2021
399	ETS 1-18 GHz Horn Antenna	ETS	3117	00154575	12 May 2021
406	Amplifier for Radiated Emissions	MiCOM Labs	40dB 1 to 18GHz Amp	0406	9 May 2021
410	Desktop Computer	Dell	Inspiron 620	WS38	Not Required
411	Mast/Turntable Controller	Sunol Sciences	SC98V	060199-1D	Not Required
412	USB to GPIB Interface	National Instruments	GPIB-USB HS	11B8DC2	Not Required
413	Mast Controller	Sunol Science	TWR95-4	030801-3	Not Required
415	Turntable Controller	Sunol Sciences	Turntable Controller	None	Not Required
447	MiTest Rad Emissions Test Software	MiCOM	Rad Emissions Test Software Version 1.0	447	Not Required
462	Schwarzbeck cable from Antenna to Amplifier.	Schwarzbeck	AK 9513	462	4 May 2021
463	Schwarzbeck cable from Amplifier to Bulkhead.	Schwarzbeck	AK 9513	463	4 May 2021
464	Schwarzbeck cable from Bulkhead to Receiver	Schwarzbeck	AK 9513	464	4 May 2021
466	Low Pass Filter DC-1500 MHz	Mini-Circuits	NLP-1750+	VUU10401438	4 May 2021
480	Cable - Bulkhead to Amp	SRC Haverhill	157-3050360	480	4 May 2021
481	Cable - Bulkhead to Receiver	SRC Haverhill	151-3050787	481	4 May 2021
510	Barometer/Thermometer	Control Company	68000-49	170871375	20 Dec 2021
518	Cable - Amp to Antenna	SRC Haverhill	157-3051574	518	4 May 2021
87	Uninterruptible Power Supply	Falcon Electric	ED2000-1/2LC	F3471 02/01	Cal when used
CC05	Confidence Check	MiCOM	CC05	None	4 May 2021

8. MEASUREMENT AND PRESENTATION OF TEST DATA

The measurement and graphical data presented in this test report was generated automatically using state-of-the-art technology creating an easy to read report structure. Numerical measurement data is separated from supporting graphical data (plots) through hyperlinks. Numerical measurement data can be reviewed without scrolling through numerous graphical pages to arrive at the next data matrix.

Plots have been relegated into the Appendix 'Graphical Data'.

Test and report automation was performed by MiTest. MiTest is an automated test system developed by MiCOM Labs. MiTest is the first cloud based modular test system enabling end-to-end automation of regulatory compliance testing for conducted RF testing.

The MiCOM Labs "MiTest" Automated Test System" (Patent Pending)

9. TEST RESULTS

9.1. Peak Transmit Power

Conducted Test Conditions for Maximum Conducted Output Power			
Standard:	FCC CFR 47:15.407 RSS-247: 6.2.4.1	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Maximum Output Power	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.407 (a)(2)	**Pressure (mBars):**	999 - 1001
Reference Document(s):	KDB 789033 - D02 General UNII Test Procedures New Rules v01		

Test Procedure for Maximum Output Power Measurement
Spectrum Analyzer Method. KDB 789033 defines a methodology using spectrum analyzer. Where power shall be calculated by integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99% occupied bandwidth of the signal. However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with Section 15.407(a). Testing was performed under ambient conditions at nominal voltage.

Test configuration and setup used for the measurement was per the Radiated Test Set-up section specified in this document. Supporting KDB's referenced below.
KDB 662911 D01 & KDB 662911 D02

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Radiated measurements used for compliance with conducted limits, the following steps are required to ensure that the total emission power is determined for equipment driving cross polarized antennas:

(1) Measure radiated emissions with vertical and horizontal polarizations of the measurement antenna;
(2) Convert each radiated measurement to transmit power based on the antenna gain;

EIRP level to an equivalent electric field strength using the following relationship:
E = EIRP – 20*log (D) + 104.8

Where:
E = electric field strength in dBµV/m,
EIRP = equivalent isotropic radiated power in dBm
D = specified measurement distance in meters.

(3) Sum the powers across the two polarizations to compare the resultant electric field strength level to the applicable limit.

Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [10*Log10 ($10^{a/10}$ + $10^{b/10}$ + $10^{c/10}$ + $10^{d/10}$)]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

Limits Maximum Conducted Output Power

Operating Frequency Band 5250-5350 and 5470 – 5725 MHz

15. 407 (a)(2)
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Consolidated Power Results, EIRP Limits

The EUT was tested for Radiated Output Power and the following tables define the worst-case compliant results defined for each Antenna

Output Power Summary Table 5250-5350 MHz

Antenna Type – Integrated (outdoor use only)

Antenna	Gain	Channel Bandwidths	Channel	Combined Output Power (*H+V*)	Calc EIRP	Limit	Margin	Power Setting
Model Number	**dBi**	**MHz**	**MHz**	**dBm**	**dBm/EIRP**	**dBm/EIRP**	**dB**	
MR0269440	*10.0*	20	5265	19.91	29.91	30.00	-0.09	-5.5
			5300	19.57	29.57	30.00	-0.43	-6.0
			5330	19.60	29.60	30.00	-0.4	-6.0
		40	5275	19.81	29.81	30.00	-0.19	-5.5
			5300	19.46	29.46	30.00	-0.54	-6.0
			5320	19.96	29.96	30.00	-0.04	-5.5
		80	5290	19.74	29.74	30.00	-0.26	-6.0
			5295	19.65	29.65	30.00	-0.35	-6.0
			5300	19.66	29.66	30.00	-0.34	-6.0
MR0269440BF	*16.0*	20	5265	13.72	29.72	30.00	-0.28	-10.5
			5300	13.88	29.88	30.00	-0.12	-10.5
			5330	13.86	29.86	30.00	-0.14	-10.5
		40	5275	13.79	29.79	30.00	-0.21	-10.5
			5300	13.82	29.82	30.00	-0.18	-10.5
			5320	13.78	29.78	30.00	-0.22	-10.5
		80	5290	13.25	29.25	30.00	-0.75	-11.0
			5295	13.31	29.31	30.00	-0.69	-11.0
			5300	13.36	29.36	30.00	-0.64	-11.0

Output Power Summary Table 5470 – 5725 MHz

Antenna Type – Integrated (outdoor use only)

Antenna	Gain	Channel Bandwidths	Channel	Combined Output Power (*H+V*)	Calc EIRP	Limit	Margin	Power Setting
Model Number	**dBi**	**MHz**	**MHz**	**dBm**	**dBm/EIRP**	**dBm/EIRP**	**dB**	
MR0269440	*10.0*	20	5490	19.87	29.87	30.00	-0.13	-4.0
			5590	19.59	29.59	30.00	-0.41	-5.0
			5705	19.63	29.63	30.00	-0.37	-4.0
		40	5500	18.29	28.29	30.00	-1.71	-6.0*
			5580	19.71	29.71	30.00	-0.29	-5.0
			5695	19.81	29.81	30.00	-0.19	-4.5
		80	5525	15.69	25.69	30.00	-4.31	-10.0*
			5560	19.42	29.42	30.00	-0.58	-6.0
			5675	19.56	29.56	30.00	-0.44	-5.0
MR0269440BF	*16.0*	20	5490	13.54	29.54	30.00	-0.46	-9.0
			5590	13.38	29.38	30.00	-0.62	-10.0
			5705	13.71	29.71	30.00	-0.29	-9.5
		40	5500	13.57	29.57	30.00	-0.43	-9.5
			5580	13.93	29.93	30.00	-0.07	-9.5
			5695	13.83	29.83	30.00	-0.17	-9.5
		80	5525	11.75	27.75	30.00	-2.25	-12.0*
			5560	13.57	29.57	30.00	-0.43	-10.0
			5675	13.54	29.54	30.00	-0.46	-10.0

Note* = Power reduction due to Band Edge Testing

9.1.1. Non-Beamforming

5250-5350 MHz

The following table identifies the power referenced to the "antenna ports'

Equipment Configuration for RF Output Power			
Variant:	20MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5265	10.4	17.34	19.91	20.00	-0.09	-5.5
5300	10.72	16.85	19.57	20.00	-0.43	-6.0
5330	10.7	16.89	19.60	20.00	-0.40	-6.0

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	40MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5275	10.8	17.13	19.81	20.00	-0.19	-5.5
5300	10.87	16.68	19.46	20.00	-0.54	-6.0
5320	11.09	17.24	19.96	20.00	-0.04	-5.5

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	80MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5290	11.14	16.96	19.74	20.00	-0.26	-6.0
5295	10.98	16.89	19.65	20.00	-0.35	-6.0
5300	10.94	16.91	19.66	20.00	-0.34	-6.0

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

5470-5725 MHz

The following table identifies the power referenced to the “antenna ports’

Equipment Configuration for RF Output Power			
Variant:	20MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5490	12.23	16.79	19.87	20.00	-0.13	-4.0
5590	11.89	16.54	19.59	20.00	-0.41	-5.0
5705	13.09	16.09	19.63	20.00	-0.37	-4.0

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	40MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5500	10.26	15.34	18.29	20.00	-1.71	-6.0*
5580	11.88	16.7	19.71	20.00	-0.29	-5.0
5695	13.32	16.25	19.81	20.00	-0.19	-4.5

Note* = Power reduction due to Band Edge Testing

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	80MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5525	7.12	12.9	15.69	20.00	-4.31	-10.0*
5560	11.54	16.43	19.42	20.00	-0.58	-6.0
5675	13.14	15.96	19.56	20.00	-0.44	-5.0

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

9.1.2 Beamforming

5250-5350 MHz

The following table identifies the power referenced to the 'antenna ports'

Equipment Configuration for RF Output Power			
Variant:	20MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5265	11.66	16.78	13.72	14.00	-0.28	-10.5
5300	12.4	16.75	13.88	14.00	-0.12	-10.5
5330	12.02	16.86	13.86	14.00	-0.14	-10.5

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	40MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5275	12.14	16.72	13.79	14.00	-0.21	-10.5
5300	12.4	16.66	13.82	14.00	-0.18	-10.5
5320	12.14	16.7	13.78	14.00	-0.22	-10.5

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	80MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5290	11.39	16.25	13.25	14.00	-0.75	-11.0
5295	11.48	16.3	13.31	14.00	-0.69	-11.0
5300	11.59	16.33	13.36	14.00	-0.64	-11.0

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

5470-5725 MHz

The following table identifies the power referenced to the “antenna ports’

Equipment Configuration for RF Output Power			
Variant:	20MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5490	13.46	15.76	13.54	14.00	-0.46	-9.0
5590	13.25	15.63	13.38	14.00	-0.62	-10.0
5705	14.47	15.35	13.71	14.00	-0.29	-9.5

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	40MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5500	13.54	15.76	13.57	14.00	-0.43	-9.5
5580	14.02	16.04	13.93	14.00	-0.07	-9.5
5695	14.72	15.36	13.83	14.00	-0.17	-9.5

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

Equipment Configuration for RF Output Power			
Variant:	80MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256 QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency MHz	Measured Output Power		Calculated Total Power	Limit	Margin	EUT Power Setting
	H	V	dBm	dB	Numeric	Numeric
5525	10.87	14.37	11.75	14.00	-2.25	-12.0*
5560	13.56	15.74	13.57	14.00	-0.43	-10.0
5675	14.44	15.06	13.54	14.00	-0.46	-10.0

Note* = Power reduction due to Band Edge Testing

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-01 MEASURING RF OUTPUT POWER
Uncertainty:	±1.33 dB

NOTE: KDB 412172 D01 was used to determine the EIRP from the results of a power measurements performed under far-field conditions with respect to all transmit and receive (measurement) antennas.

9.2. 26 dB & 99% Bandwidth

Conducted Test Conditions for 26 dB and 99% Bandwidth			
Standards:	FCC CFR 47:15.407, RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	26 dB and 99 % Bandwidth	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.407 (a), RSS-247: 6.2.4.1	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for 26 dB and 99% Bandwidth Measurement
The bandwidth at 26 dB and 99 % is measured radiated, in a 3 meter chamber, while EUT is operating in transmission mode at the appropriate center frequency. The Resolution Bandwidth was set to approximately 1% of the emission bandwidth.
Testing was performed under ambient conditions at nominal voltage. Where the device operated with multiple antenna ports i.e. MIMO device, each port was measured and reported. In this case Vertical a (V) and Horizontal for port b (H).

Test configuration and setup used for the measurement was per the Radiated Test Set-up section specified in this document.

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5265	22.28	22.12	22.28	22.12		
5300	22.28	22.12	22.28	22.12		
5330	22.44	22.44	22.44	22.44		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5265	17.88	17.96	17.96	17.88		
5300	17.80	17.80	17.80	17.80		
5330	17.88	17.88	17.88	17.88		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5275	44.73	43.93	44.73	43.93		
5300	44.26	43.94	44.26	43.94		
5320	43.98	46.22	46.22	43.98		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5275	36.71	36.55	36.71	36.55		
5300	36.71	36.55	36.71	36.55		
5320	36.71	36.71	36.71	36.71		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5290	89.01	87.40	89.01	87.40		
5295	88.05	86.76	88.05	86.76		
5300	83.05	87.54	87.54	83.05		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5290	76.95	75.99	76.95	75.99		
5295	76.31	75.99	76.31	75.99		
5300	76.63	75.99	76.63	75.99		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5490	22.44	22.44	22.44	22.44		
5590	22.12	22.12	22.12	22.12		
5705	21.90	22.14	22.14	21.90		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5490	17.88	17.96	17.96	17.88		
5590	17.88	17.80	17.88	17.80		
5705	17.88	17.80	17.88	17.80		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5500	45.37	44.57	45.37	44.57		
5580	45.21	44.25	45.21	44.25		
5695	44.09	43.29	44.09	43.29		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5500	36.87	36.55	36.87	36.55		
5580	36.71	36.55	36.71	36.55		
5695	36.55	36.71	36.71	36.55		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

Equipment Configuration for 26 dB & 99% Occupied Bandwidth			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	Not Applicable
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Frequency	Measured 26 dB Bandwidth (MHz)		26 dB Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5525	89.01	87.16	89.01	87.16		
5560	88.50	86.57	88.50	86.57		
5675	87.54	86.57	87.54	86.57		

Test Frequency	Measured 99% Bandwidth (MHz)		99% Bandwidth (MHz)			
MHz	**H**	**V**	**Highest**	**Lowest**		
5525	76.95	76.31	76.95	76.31		
5560	76.31	76.31	76.31	76.31		
5675	76.31	76.31	76.31	76.31		

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

Note: click the links in the above matrix to view the graphical image (plot).

9.3. Power Spectral Density

Conducted Test Conditions for Power Spectral Density			
Standard:	FCC CFR 47:15.407, RSS-247	**Ambient Temp. (ºC):**	24.0 - 27.5
Test Heading:	Power Spectral Density	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	FCC CFR 47:15.407, RSS-247	**Pressure (mBars):**	999 - 1001
Reference Document(s):	KDB 789033 - D02 General UNII Test Procedures New Rules v01		

Test Procedure for Power Spectral Density

The In-Band power spectral density was measured using the measure and sum approach per FCC KDB 662911 (D01 Multiple Transmitter Output v02.)

Measure and sum the spectra across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The individual spectra are then summed mathematically in linear power units. Unlike in-band power measurements, in which the sum involves a single measured value (output power) from each output, measurements for compliance with PSD limits involve summing entire spectra across corresponding frequency bins on the various outputs. Consistency is maintained for any device with N transmitter outputs to be certain the individual outputs are all aligned with the same span and same number of points. In this instance, the linear power spectrum value within the first spectral bin of output 0 is summed with that in the first spectral bin of output 1, and the first spectral bin of output 2, and so on up to the Nth output to obtain the true value for the first frequency bin of the summed spectrum. The summed spectrum value for each frequency bin is computed in this fashion. These summed spectral values were calculated on a computer, and the results read back into the spectrum analyzer as a data file to produce a representative plot of total spectral power density.

Calculated Power = A + 10 log (1/x) dBm

A = Total Power Spectral Density [10 Log10 (10a/10 + 10 b/10 + 10c/10 + 10d/10)]

x = Duty Cycle

Test configuration and setup used for the measurement was per the Radiated Test Set-up section specified in this document. Supporting KDB's referenced below.

KDB 662911 D01 & KDB 662911 D02

Radiated measurements used for compliance with conducted limits, the following steps are required to ensure that the total emission power s determined for equipment driving cross polarized antennas:

(1) Measure radiated emissions with vertical and horizontal polarizations of the measurement antenna;
(2) Convert each radiated measurement to transmit power based on the antenna gain;

EIRP level to an equivalent electric field strength using the following relationship:
E = EIRP – 20*log (D) + 104.8

Where:
E = electric field strength in dBµV/m,
EIRP = equivalent isotropic radiated power in dBm
D = specified measurement distance in meters.

(3) Sum the powers or PSDs across the two polarizations to compare the resultant electric field strength level to the applicable limit.

Calculated Power = A + G + Y+ 10 log (1/x) dBm

A = Total Power [10*Log10 ($10^{a/10}$ + $10^{b/10}$ + $10^{c/10}$ + $10^{d/10}$)]
G = Antenna Gain
Y = Beamforming Gain
x = Duty Cycle (average power measurements only)

Limits Maximum Power Spectral Density

Operating Frequency Band 5250-5350 and 5470 – 5725 MHz

15. 407 (a)(3), RSS-247: 6.2.4.1
For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

9.3.1. Non-Beamforming

Equipment Configuration for Power Spectral Density

Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.0 dB)	Limit	Margin
MHz	H	V	dBm/MHz	dBm/MHz	dB
5265	98.72	104.29	0.13	7.00	-6.87
5300	98.28	102.31	-1.47	7.00	-8.47
5330	97.85	102.57	-1.40	7.00	-8.40

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.41 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5275	96.4	100.71	-2.74	7.00	-9.74
5300	96.06	100.34	-3.10	7.00	-10.10
5320	96.76	100.5	-3.06	7.00	-10.06

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.71 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5290	92.87	96.93	-6.15	7.00	-13.15
5295	93.14	96.75	-6.20	7.00	-13.20
5300	93.17	96.37	-6.45	7.00	-13.45

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.0 dB)	Limit	Margin
MHz	H	V	dBm/MHz	dBm/MHz	dB
5490	100.21	103.65	0.04	7.00	-6.96
5590	99.81	102.69	-0.73	7.00	-7.93
5705	101.12	102.06	-0.60	7.00	-7.60

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.41 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5500	95.73	96.96	-5.42	7.00	-12.42
5580	97.56	99.63	-3.09	7.00	-10.09
5695	98.60	99.25	-2.87	7.00	-9.87

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	Not Applicable
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.71 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5525	88.93	91.44	-11.15	7.00	-18.15
5560	93.74	96.2	-6.37	7.00	-13.37
5675	94.96	96.44	-5.75	7.00	-12.75

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

9.3.2. Beamforming

Equipment Configuration for Power Spectral Density

Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.0 dB)	Limit	Margin
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5265	100.64	106.84	-3.45	1.00	-4.45
5300	101.43	105.66	-4.18	1.00	-5.18
5330	100.32	105.04	-4.93	1.00	-5.93

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.41 dB)	Limit	Margin
MHz	H	V	dBm/MHz	dBm/MHz	dB
5275	98.26	101.78	-7.44	1.00	-8.44
5300	97.64	102.64	-7.15	1.00	-8.15
5320	97.62	102.55	-7.06	1.00	-8.06

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.71 dB)	Limit	Margin
MHz	H	V	dBm/MHz	dBm/MHz	dB
5290	92.84	98.14	-11.26	1.00	-12.26
5295	92.82	97.96	-11.40	1.00	-12.40
5300	93.81	97.65	-11.37	1.00	-12.37

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	20 MHz Bandwidth	**Duty Cycle (%):**	99
Data Rate:	78 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.0 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5490	101.21	102.76	-6.16	1.00	-7.16
5590	99.86	102.39	-6.91	1.00	-7.91
5705	100.95	102.19	-6.60	1.00	-7.60

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	2.81 dB

DCCF - Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	40 MHz Bandwidth	**Duty Cycle (%):**	91
Data Rate:	180 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results					
Test Frequency	**Measured Power Spectral Density (dBuV/MHz)**		**Summation Peak Marker + DCCF (+0.41 dB)**	**Limit**	**Margin**
MHz	**H**	**V**	**dBm/MHz**	**dBm/MHz**	**dB**
5500	98.08	99.81	-8.78	1.00	-9.78
5580	97.82	100.65	-8.35	1.00	-9.35
5695	98.61	99.53	-8.71	1.00	-9.71

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

Equipment Configuration for Power Spectral Density			
Variant:	80 MHz Bandwidth	**Duty Cycle (%):**	85
Data Rate:	390 MBit/s	**Antenna Gain (dBi):**	10.0
Modulation:	256QAM	**Beam Forming Gain (Y)(dB):**	6.0
TPC:	Not Applicable	**Tested By:**	JMH
Engineering Test Notes:			

Test Measurement Results

Test Frequency	Measured Power Spectral Density (dBuV/MHz)		Summation Peak Marker + DCCF (+0.71 dB)	Limit	Margin
MHz	H	V	dBm/MHz	dBm/MHz	dB
5525	91.48	95.35	-13.68	1.00	-14.68
5560	94.51	97.60	-11.19	1.00	-12.19
5675	95.68	96.52	-11.39	1.00	-12.39

Traceability to Industry Recognized Test Methodologies	
Work Instruction:	WI-03 MEASURING RF SPECTRUM MASK
Measurement Uncertainty:	±2.81 dB

DCCF – Duty Cycle Correction Factor

Note: click the links in the above matrix to view the graphical image (plot).

KDB 789033 - D02 General UNII Test Procedures New Rules v01 was used to calculate the above Power Spectral Density

9.4. Radiated

Radiated Test Conditions for Radiated Spurious and Band-Edge Emissions			
Standard:	FCC CFR 47:15.407	**Ambient Temp. (ºC):**	20.0 - 24.5
Test Heading:	Radiated Spurious and Band-Edge Emissions	**Rel. Humidity (%):**	32 - 45
Standard Section(s):	15.407 (b), 15.205, 15.209	**Pressure (mBars):**	999 - 1001
Reference Document(s):	See Normative References		

Test Procedure for Radiated Spurious and Band-Edge Emissions
Radiated emissions for restricted bands above 1 GHz are measured in the anechoic chamber at a 3-meter distance on every azimuth in both horizontal and vertical polarities. The emissions are recorded and maximized as a function of azimuth by rotation through 360° with a spectrum analyzer in peak hold mode. Depending on the frequency band spanned a notch filter was used to remove the fundamental frequency. The highest emissions relative to the limit are listed for each frequency spanned.
Measurements on any restricted band frequency or frequencies above 1 GHz are based on the use of measurement instrumentation employing peak and average detectors. All measurements were performed using a resolution bandwidth of 1 MHz.

Test configuration and setup for Undesirable Measurement were per the Radiated Test Set-up specified in this document.

15.407 (b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Limits for Restricted Bands (15.205, 15.209)
Peak emission: 74 dBuV/m
Average emission: 54 dBuV/m

Field Strength Calculation
The field strength is calculated by adding the Antenna Factor and Cable Loss, and subtracting Amplifier Gain from the measured reading. All factors are included in the reported data.
FS = R + AF + CORR - FO

where:
FS = Field Strength
R = Measured Spectrum analyzer Input Amplitude

AF = Antenna Factor
CORR = Correction Factor = CL – AG + NFL
CL = Cable Loss
AG = Amplifier Gain
FO = Distance Falloff Factor
NFL = Notch Filter Loss

Example:
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength (dBµV/m);

$$E = \frac{1000000 \times \sqrt{30P}}{3} \ \mu V/m$$

where P is the EIRP in Watts

Therefore: -27 dBm/MHz equates to 68.23 dBuV/m

Conversion between dBmV/m (or dBmV) and mV/m (or mV) are as follows:
Level (dBmV/m) = 20 * Log (level (mV/m))

40 dBmV/m = 100 mV/m
48 dBmV/m = 250 mV/m

Restricted Bands of Operation (15.205)
(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Frequency Band			
MHz	**MHz**	**MHz**	**GHz**
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

(b) Except as provided in paragraphs (d) and (e) of this section, the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

(c) Except as provided in paragraphs (d) and (e) of this section, regardless of the field strength limits specified elsewhere in this subpart, the provisions of this section apply to emissions from any intentional radiator.

(d) The following devices are exempt from the requirements of this section:

(1) Swept frequency field disturbance sensors operating between 1.705 and 37 MHz provided their emissions only sweep through the bands listed in paragraph (a) of this section, the sweep is never stopped with the fundamental emission within the bands listed in paragraph (a) of this section, and the fundamental emission is outside of the bands listed in paragraph (a) of this section more than 99% of the time the device is actively transmitting, without compensation for duty cycle.

(2) Transmitters used to detect buried electronic markers at 101.4 kHz which are employed by telephone companies.

(3) Cable locating equipment operated pursuant to §15.213.

(4) Any equipment operated under the provisions of §15.253, 15.255, and 15.256 in the frequency band 75-85 GHz, or §15.257 of this part.

(5) Biomedical telemetry devices operating under the provisions of §15.242 of this part are not subject to the restricted band 608-614 MHz but are subject to compliance within the other restricted bands.

(6) Transmitters operating under the provisions of subparts D or F of this part.

(7) Devices operated pursuant to §15.225 are exempt from complying with this section for the 13.36-13.41 MHz band only.

(8) Devices operated in the 24.075-24.175 GHz band under §15.245 are exempt from complying with the requirements of this section for the 48.15-48.35 GHz and 72.225-72.525 GHz bands only, and shall not exceed the limits specified in §15.245(b).

(9) Devices operated in the 24.0-24.25 GHz band under §15.249 are exempt from complying with the requirements of this section for the 48.0-48.5 GHz and 72.0-72.75 GHz bands only, and shall not exceed the limits specified in §15.249(a).

(e) Harmonic emissions appearing in the restricted bands above 17.7 GHz from field disturbance sensors operating under the provisions of §15.245 shall not exceed the limits specified in §15.245(b).

9.4.1. TX Spurious & Restricted Band Emissions

9.4.1.1. RADWIN MR0269440

Equipment Configuration for TX Spurious & Restricted Band Emissions			
Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5265.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4779.65	61.54	2.86	-12.45	51.95	Max Peak	Horizontal	188	320	68.2	-16.3	Pass
#2	4779.65	47.69	2.86	-12.45	38.10	Max Avg	Horizontal	188	320	54.0	-15.9	Pass
#3	4810.97	63.88	2.85	-12.42	54.31	Max Peak	Horizontal	187	352	68.2	-13.9	Pass
#4	4810.97	49.45	2.85	-12.42	39.88	Max Avg	Horizontal	187	352	54.0	-14.1	Pass
#5	5265.74	82.29	2.90	-12.22	72.97	Fundamental	Vertical	200	0	--	--	
#6	6326.92	54.19	3.30	-9.30	48.19	Peak (NRB)	Vertical	200	19	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5300.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4809.08	65.34	2.85	-12.42	55.77	Max Peak	Horizontal	178	354	68.2	-12.5	Pass
#2	4809.08	50.87	2.85	-12.42	41.30	Max Avg	Horizontal	178	354	54.0	-12.7	Pass
#3	4836.76	65.39	2.81	-12.54	55.66	Max Peak	Horizontal	180	355	68.2	-12.6	Pass
#4	4836.76	51.47	2.81	-12.54	41.74	Max Avg	Horizontal	180	355	54.0	-12.3	Pass
#5	5295.95	81.18	3.02	-12.01	72.19	Fundamental	Vertical	150	0	--	--	
#6	6073.01	52.72	3.24	-10.08	45.88	Peak (NRB)	Horizontal	150	63	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5330.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4810.72	62.55	2.85	-12.42	52.98	Max Peak	Horizontal	196	0	68.2	-15.3	Pass
#2	4810.72	48.42	2.85	-12.42	38.85	Max Avg	Horizontal	196	0	54.0	-15.2	Pass
#3	4837.13	63.15	2.81	-12.55	53.41	Max Peak	Horizontal	185	336	68.2	-14.8	Pass
#4	4837.13	49.36	2.81	-12.55	39.62	Max Avg	Horizontal	185	336	54.0	-14.4	Pass
#5	5324.72	77.90	2.96	-11.98	68.88	Fundamental	Vertical	150	0	--	--	
#6	6252.83	51.45	3.26	-9.48	45.23	Peak (NRB)	Vertical	150	74	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5490.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4809.00	64.30	2.85	-12.43	54.72	Max Peak	Horizontal	190	357	68.2	-13.5	Pass
#2	4809.00	50.33	2.85	-12.43	40.75	Max Avg	Horizontal	190	357	54.0	-13.3	Pass
#3	4843.34	64.45	2.85	-12.55	54.75	Max Peak	Horizontal	182	336	68.2	-13.5	Pass
#4	4843.34	50.32	2.85	-12.55	40.62	Max Avg	Horizontal	182	336	54.0	-13.4	Pass
#5	5496.06	67.75	3.06	-11.64	59.17	Fundamental	Vertical	150	0	--	--	
#6	6078.85	53.16	3.25	-10.04	46.37	Peak (NRB)	Horizontal	150	3	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5590.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4778.28	64.14	2.87	-12.45	54.56	Max Peak	Horizontal	193	333	68.2	-13.7	Pass
#2	4778.28	49.05	2.87	-12.45	39.47	Max Avg	Horizontal	193	333	54.0	-14.5	Pass
#3	4809.94	64.42	2.85	-12.42	54.85	Max Peak	Horizontal	186	350	68.2	-13.4	Pass
#4	4809.94	50.67	2.85	-12.42	41.10	Max Avg	Horizontal	186	350	54.0	-12.9	Pass
#5	5583.16	75.15	3.12	-11.56	66.71	Fundamental	Vertical	200	0	--	--	
#6	6253.54	52.44	3.26	-9.48	46.22	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5705.00	**Data Rate:**	78.00 MBit/s
Power Setting:	3.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4779.29	62.42	2.86	-12.45	52.83	Max Peak	Horizontal	190	323	68.2	-15.4	Pass
#2	4779.29	48.55	2.86	-12.45	38.96	Max Avg	Horizontal	190	323	54.0	-15.0	Pass
#3	4809.51	63.09	2.85	-12.42	53.52	Max Peak	Horizontal	189	326	68.2	-14.7	Pass
#4	4809.51	49.44	2.85	-12.42	39.87	Max Avg	Horizontal	189	326	54.0	-14.1	Pass
#5	4840.67	63.41	2.82	-12.55	53.68	Max Peak	Horizontal	181	326	68.2	-14.6	Pass
#6	4840.67	49.68	2.82	-12.55	39.95	Max Avg	Horizontal	181	326	54.0	-14.1	Pass
#7	5701.24	65.63	3.19	-11.35	57.47	Fundamental	Vertical	200	0	--	--	
#8	6351.84	53.24	3.31	-9.16	47.39	Peak (NRB)	Vertical	200	56	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

9.4.1.2. RADWIN MR0269440BF

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5265.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4777.05	64.54	2.88	-12.46	54.96	Max Peak	Horizontal	188	355	68.2	-13.3	Pass
#2	4777.05	49.92	2.88	-12.46	40.34	Max Avg	Horizontal	188	355	54.0	-13.7	Pass
#3	4809.55	65.08	2.85	-12.42	55.51	Max Peak	Horizontal	191	0	68.2	-12.7	Pass
#4	4809.55	50.64	2.85	-12.42	41.07	Max Avg	Horizontal	191	0	54.0	-12.9	Pass
#5	5269.48	78.90	2.91	-12.20	69.61	Fundamental	Vertical	200	0	--	--	
#6	6250.05	56.50	3.25	-9.49	50.26	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5300.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4778.07	65.08	2.87	-12.45	55.50	Max Peak	Horizontal	189	0	68.2	-12.7	Pass
#2	4778.07	50.12	2.87	-12.45	40.54	Max Avg	Horizontal	189	0	54.0	-13.5	Pass
#3	4810.93	64.15	2.85	-12.42	54.58	Max Peak	Horizontal	190	355	68.2	-13.7	Pass
#4	4810.93	50.13	2.85	-12.42	40.56	Max Avg	Horizontal	190	355	54.0	-13.4	Pass
#5	4838.54	64.61	2.81	-12.55	54.87	Max Peak	Horizontal	193	354	68.2	-13.4	Pass
#6	4838.54	50.49	2.81	-12.55	40.75	Max Avg	Horizontal	193	354	54.0	-13.3	Pass
#7	5303.99	74.70	3.06	-11.96	65.80	Fundamental	Vertical	200	0	--	--	
#8	6250.19	56.76	3.25	-9.49	50.52	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5330.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4808.91	64.70	2.85	-12.43	55.12	Max Peak	Horizontal	191	0	68.2	-13.1	Pass
#2	4808.91	50.55	2.85	-12.43	40.97	Max Avg	Horizontal	191	0	54.0	-13.0	Pass
#3	4839.56	65.01	2.82	-12.55	55.28	Max Peak	Horizontal	182	1	68.2	-13.0	Pass
#4	4839.56	50.76	2.82	-12.55	41.03	Max Avg	Horizontal	182	1	54.0	-13.0	Pass
#5	5329.35	72.21	2.98	-11.97	63.22	Fundamental	Vertical	200	0	--	--	
#6	6249.95	56.36	3.25	-9.50	50.11	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5490.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4774.78	63.71	2.92	-12.47	54.16	Max Peak	Horizontal	188	3	68.2	-14.1	Pass
#2	4774.78	49.67	2.92	-12.47	40.12	Max Avg	Horizontal	188	3	54.0	-13.9	Pass
#3	4808.52	64.71	2.85	-12.43	55.13	Max Peak	Horizontal	185	1	68.2	-13.1	Pass
#4	4808.52	50.57	2.85	-12.43	40.99	Max Avg	Horizontal	185	1	54.0	-13.0	Pass
#5	5491.32	61.68	3.13	-11.67	53.14	Fundamental	Vertical	200	0	--	--	
#6	6250.39	55.51	3.25	-9.49	49.27	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5590.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4809.44	65.34	2.85	-12.42	55.77	Max Peak	Horizontal	188	0	68.2	-12.5	Pass
#2	4809.44	50.56	2.85	-12.42	40.99	Max Avg	Horizontal	188	0	54.0	-13.0	Pass
#3	4839.15	64.47	2.82	-12.55	54.74	Max Peak	Horizontal	173	356	68.2	-13.5	Pass
#4	4839.15	50.42	2.82	-12.55	40.69	Max Avg	Horizontal	173	356	54.0	-13.3	Pass
#5	5589.55	67.93	3.15	-11.59	59.49	Fundamental	Vertical	200	0	--	--	
#6	6249.85	55.44	3.25	-9.50	49.19	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

Equipment Configuration for TX Spurious & Restricted Band Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5705.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	4808.85	64.44	2.85	-12.43	54.86	Max Peak	Horizontal	184	0	68.2	-13.4	Pass
#2	4808.85	50.42	2.85	-12.43	40.84	Max Avg	Horizontal	184	0	54.0	-13.2	Pass
#3	4837.83	64.88	2.81	-12.55	55.14	Max Peak	Horizontal	189	0	68.2	-13.1	Pass
#4	4837.83	50.69	2.81	-12.55	40.95	Max Avg	Horizontal	189	0	54.0	-13.1	Pass
#5	5701.40	60.35	3.19	-11.35	52.19	Fundamental	Vertical	200	0	--	--	
#6	6249.96	54.03	3.25	-9.50	47.78	Peak (NRB)	Vertical	200	0	--	--	Pass
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.												

9.4.2. Restricted Edge & Band-Edge Emissions

9.4.2.3. RADWIN MR0269440

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5250 - 5350 MHz

RADWIN MR0269440		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
20MHz	5330.00	5350.00	71.53	53.39	2.5
40MHz	5320.00	5350.00	72.00	52.50	-3.0
80MHz	5300.00	5350.00	73.62	52.48	1.5

5470 - 5725 MHz

RADWIN MR0269440		Restricted-Edge Freq	Limit 68.23dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
20MHz	5490.00	5460.00	67.50	46.97	-3.0
40MHz	5500.00	5460.00	68.03	46.73	-6.0
80MHz	5525.00	5460.00	67.56	47.04	-10.0

Click on the links to view the data.

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5330.00	**Data Rate:**	78.00 MBit/s
Power Setting:	2.5	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	15.87	3.06	34.46	53.39	Max Avg	Vertical	189	33	54.0	-0.6	Pass
#2	5350.00	34.01	3.06	34.46	71.53	Max Peak	Vertical	189	33	74.0	-2.5	Pass
#3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE, connected to laptop outside chamber.												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	40MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	90
Channel Frequency (MHz):	5320.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-3.0	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	14.98	3.06	34.46	52.50	Max Avg	Vertical	183	33	54.0	-1.5	Pass
#3	5351.28	34.48	3.06	34.46	72.00	Max Peak	Vertical	183	33	74.0	-2.0	Pass
#2	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	80MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	85
Channel Frequency (MHz):	5300.00	**Data Rate:**	78.00 MBit/s
Power Setting:	1.5	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	14.96	3.06	34.46	52.48	Max Avg	Vertical	189	33	54.0	-1.5	Pass
#2	5350.00	36.10	3.06	34.46	73.62	Max Peak	Vertical	189	33	74.0	-0.4	Pass
#3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE, connected to laptop outside chamber. 0.71 DCCF added to average measurement.												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5490.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-3.0	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	9.38	3.06	34.53	46.97	Max Avg	Vertical	183	33	54.0	-7.0	Pass
#3	5469.92	29.89	3.06	34.55	67.50	Max Peak	Vertical	183	33	68.2	-0.7	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber.												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	40MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	90
Channel Frequency (MHz):	5500.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-6.0	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	9.14	3.06	34.53	46.73	Max Avg	Vertical	183	33	54.0	-7.3	Pass
#3	5469.32	30.42	3.06	34.55	68.03	Max Peak	Vertical	183	33	68.2	-0.2	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440	**Variant:**	80MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	Not Applicable	**Duty Cycle (%):**	90
Channel Frequency (MHz):	5525.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-10.0	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	9.45	3.06	34.53	47.04	Max Avg	Vertical	183	33	54.0	-7.0	Pass
#3	5467.21	29.93	3.08	34.55	67.56	Max Peak	Vertical	183	33	68.2	-0.7	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement												

9.4.2.4. RADWIN MR0269440BF

RESULTS SUMMARY FOR RADIATED BAND-EDGE EMISSIONS

5250 - 5350 MHz

RADWIN MR0269440BF		Band-Edge Freq	Limit 74.0dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
20MHz	5330.00	5350.00	72.92	53.16	-4.0
40MHz	5320.00	5350.00	73.80	52.15	-7.0
80MHz	5300.00	5350.00	73.53	51.93	-10.0

5470 - 5725 MHz

RADWIN MR0269440BF		Restricted-Edge Freq	Limit 68.23dBµV/m	Limit 54.0dBµV/m	Power Setting
Operational Mode	Operating Frequency (MHz)	MHz	dBµV/m	dBµV/m	
20MHz	5490.00	5460.00	67.14	48.63	-5.0
40MHz	5500.00	5460.00	66.97	49.10	-8.5
80MHz	5525.00	5460.00	67.25	49.10	-12.0

Click on the links to view the data.

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5330.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-4.0	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	15.64	3.06	34.46	53.16	Max Avg	Vertical	185	0	54.0	-0.8	Pass
#2	5350.00	35.40	3.06	34.46	72.92	Max Peak	Vertical	185	0	74.0	-1.1	Pass
#3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber.												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	40MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	90
Channel Frequency (MHz):	5320.00	**Data Rate:**	180.00 MBit/s
Power Setting:	-7.0	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	14.63	3.06	34.46	52.15	Max Avg	Vertical	185	0	54.0	-1.9	Pass
#2	5350.00	36.28	3.06	34.46	73.80	Max Peak	Vertical	185	0	74.0	-0.2	Pass
#3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement												

Equipment Configuration for Restricted Upper Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	80MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	85
Channel Frequency (MHz):	5300.00	**Data Rate:**	390.00 MBit/s
Power Setting:	-10.0	**Tested By:**	JMH

Test Measurement Results

5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5350.00	13.70	3.06	34.46	51.93	Max Avg	Vertical	185	0	54.0	-2.1	Pass
#3	5350.96	36.01	3.06	34.46	73.53	Max Peak	Vertical	185	0	74.0	-0.5	Pass
#2	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement												

MiCOM Labs, 575 Boulder Court, Pleasanton, California 94566 USA, Phone: +1 (925) 462 0304, Fax: +1 (925) 462 0306, www.micomlabs.com

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	20MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	99
Channel Frequency (MHz):	5490.00	**Data Rate:**	78.00 MBit/s
Power Setting:	-5.0	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	11.04	3.06	34.53	48.63	Max Avg	Vertical	186	0	54.0	-5.4	Pass
#3	5469.70	29.53	3.06	34.55	67.14	Max Peak	Vertical	186	0	68.2	-1.1	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber.												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	40MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	90
Channel Frequency (MHz):	5500.00	**Data Rate:**	180.00 MBit/s
Power Setting:	-8.5	**Tested By:**	JMH

Test Measurement Results

5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	11.51	3.06	34.53	49.10	Max Avg	Vertical	186	0	54.0	-4.9	Pass
#3	5469.32	29.36	3.06	34.55	66.97	Max Peak	Vertical	186	0	68.2	-1.3	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement												

Equipment Configuration for Restricted Lower Band-Edge Emissions

Antenna:	RADWIN MR0269440BF	**Variant:**	80MHz
Antenna Gain (dBi):	10.00	**Modulation:**	256QAM
Beam Forming Gain (Y):	6.00	**Duty Cycle (%):**	85
Channel Frequency (MHz):	5525.00	**Data Rate:**	390.00 MBit/s
Power Setting:	-12.0	**Tested By:**	JMH

Test Measurement Results

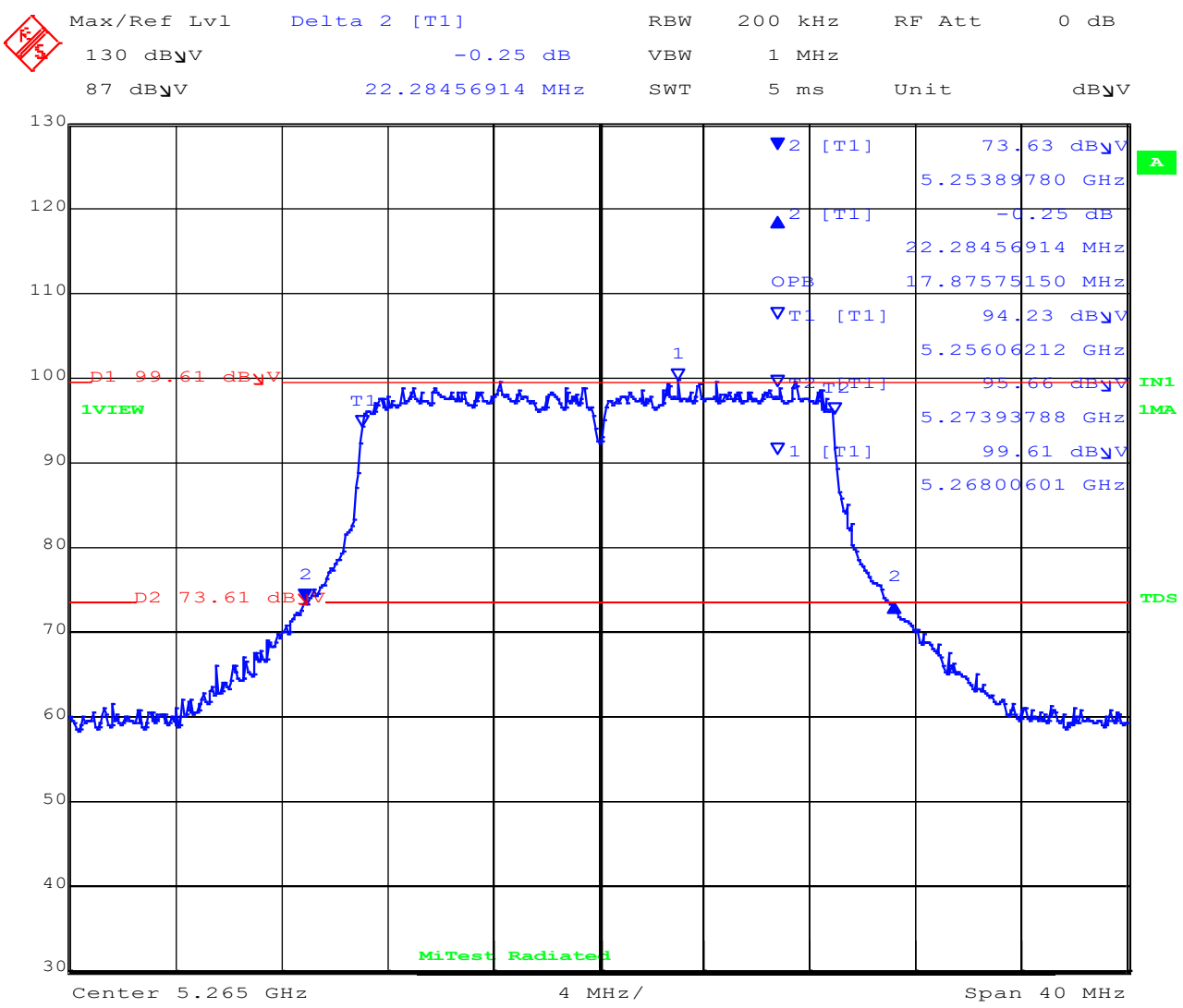
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
#1	5460.00	11.51	3.06	34.53	49.10	Max Avg	Vertical	186	0	54.0	-4.9	Pass
#3	5469.02	29.64	3.06	34.55	67.25	Max Peak	Vertical	186	0	68.2	-1.0	Pass
#2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
#4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement												

A. APPENDIX - GRAPHICAL IMAGES

A.1. 26 dB & 99% Bandwidth

26 dB & 99% BANDWIDTH

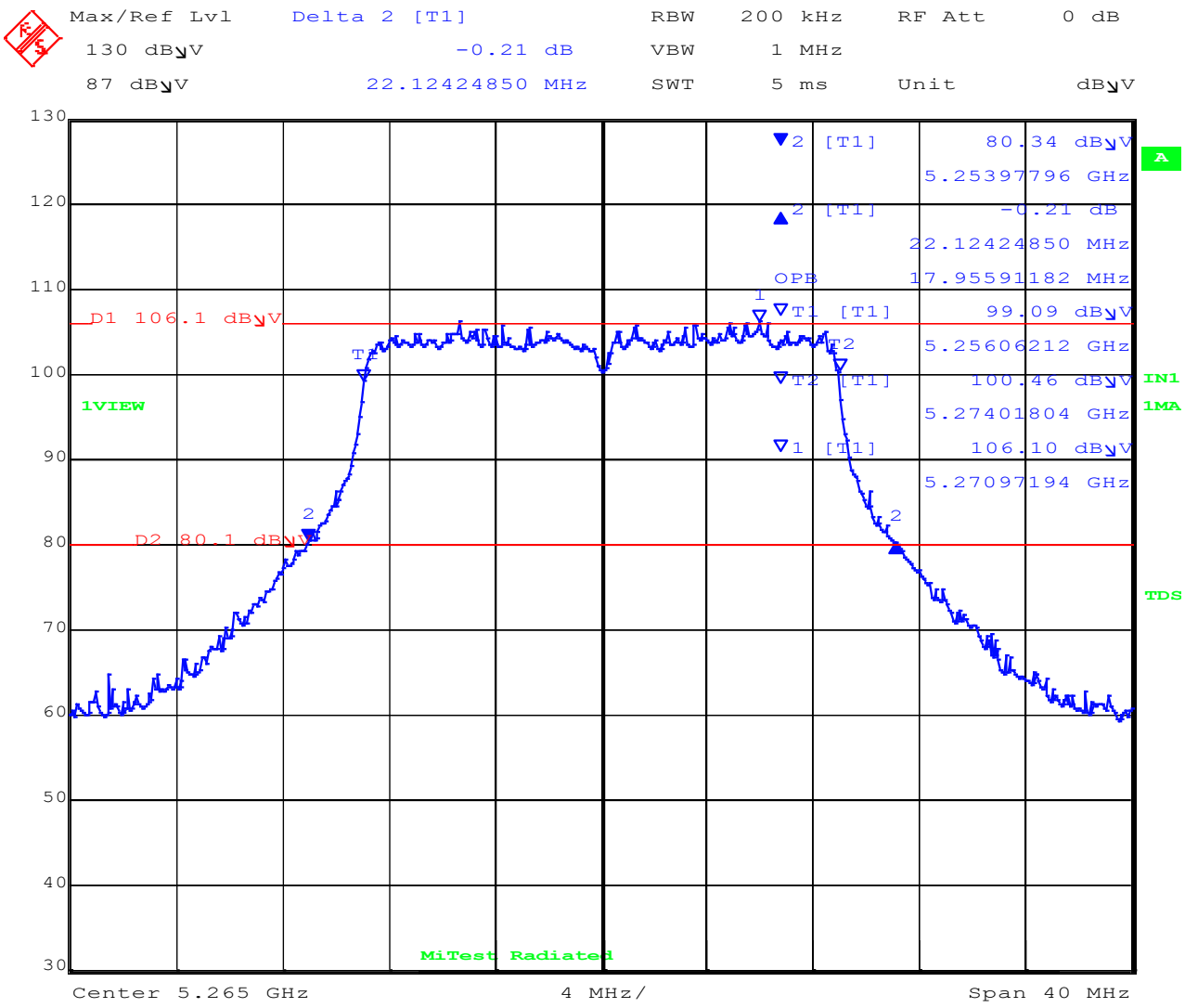
Variant: 802.11 20MHz, Channel: 5265.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

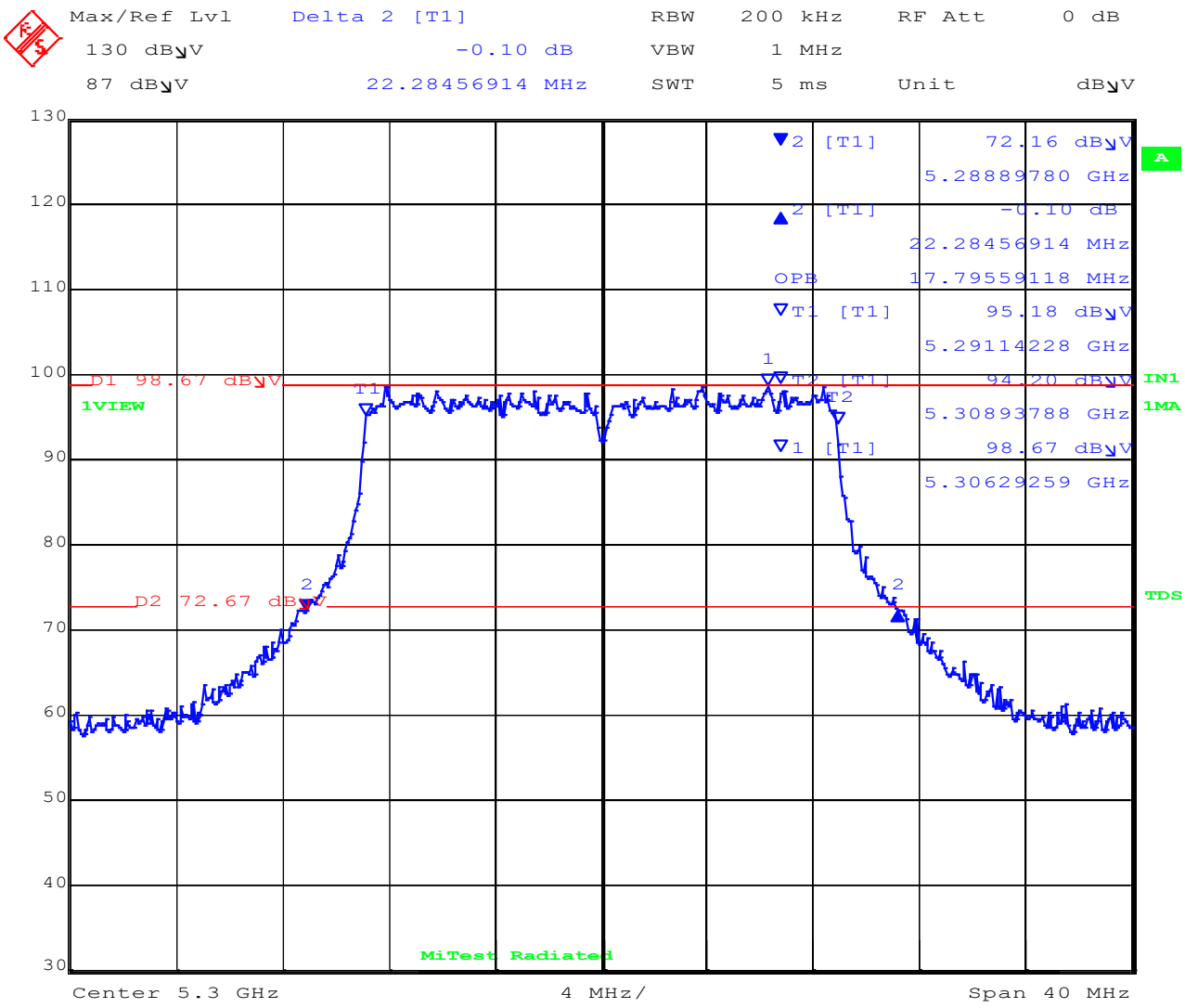
Variant: 802.11 20MHz, Channel: 5265.00 MHz, Polarity V, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5300.00 MHz, Polarity H, Temp: 20

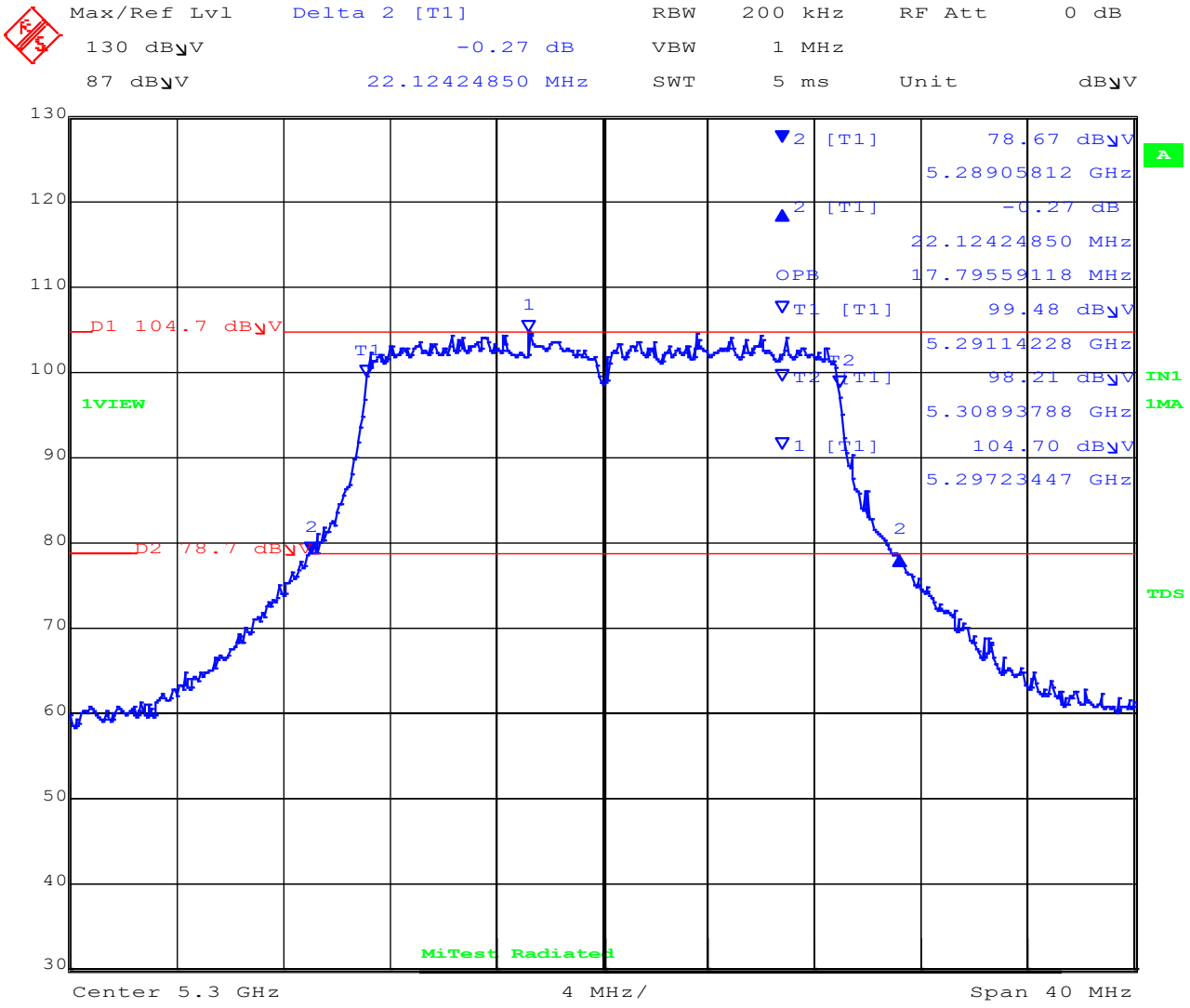


Date: 25.MAR.2021 17:22:44

back to matrix

26 dB & 99% BANDWIDTH

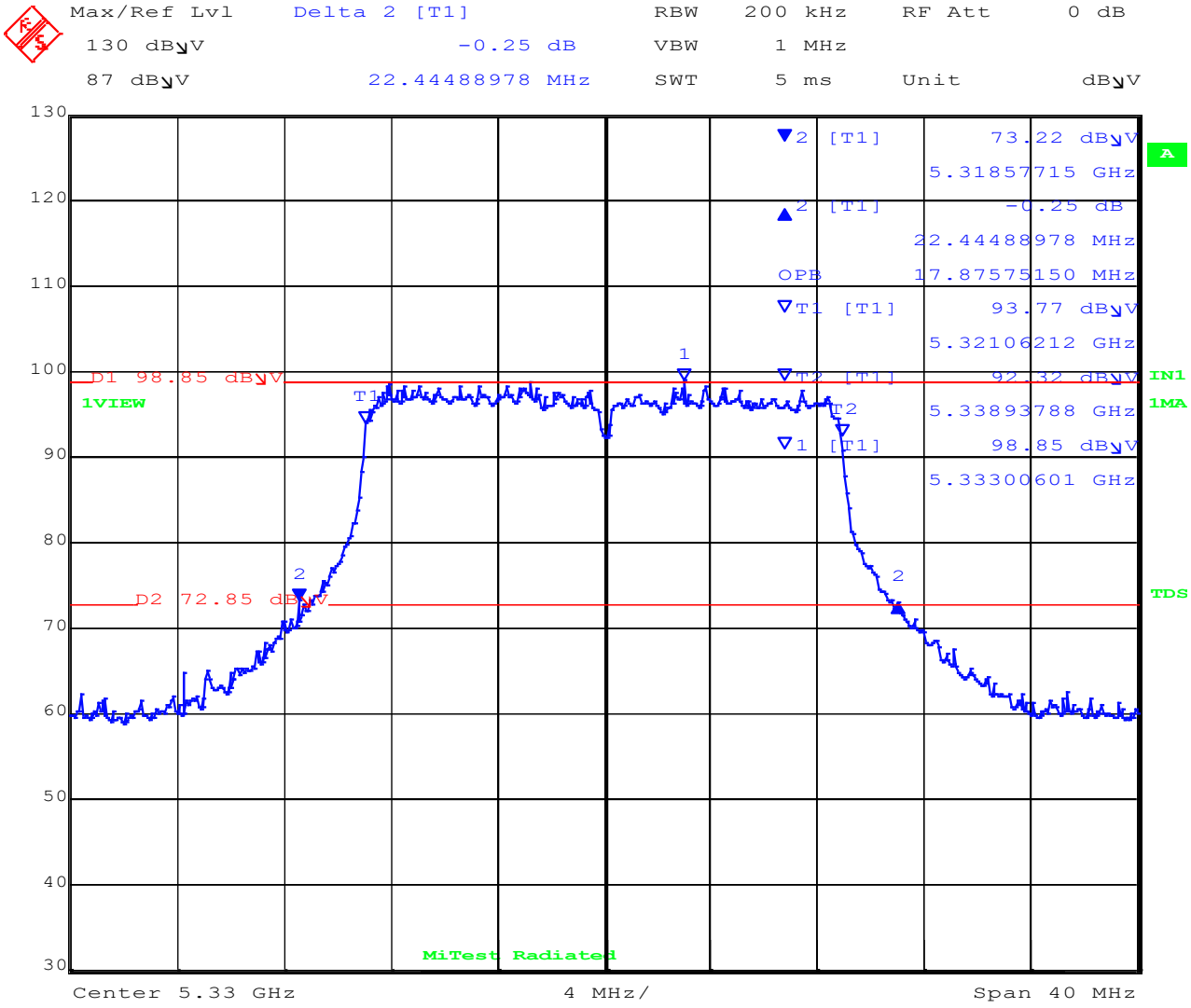
Variant: 802.11 20MHz, Channel: 5300.00 MHz, Polarity V, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5330.00 MHz, Polarity H, Temp: 20

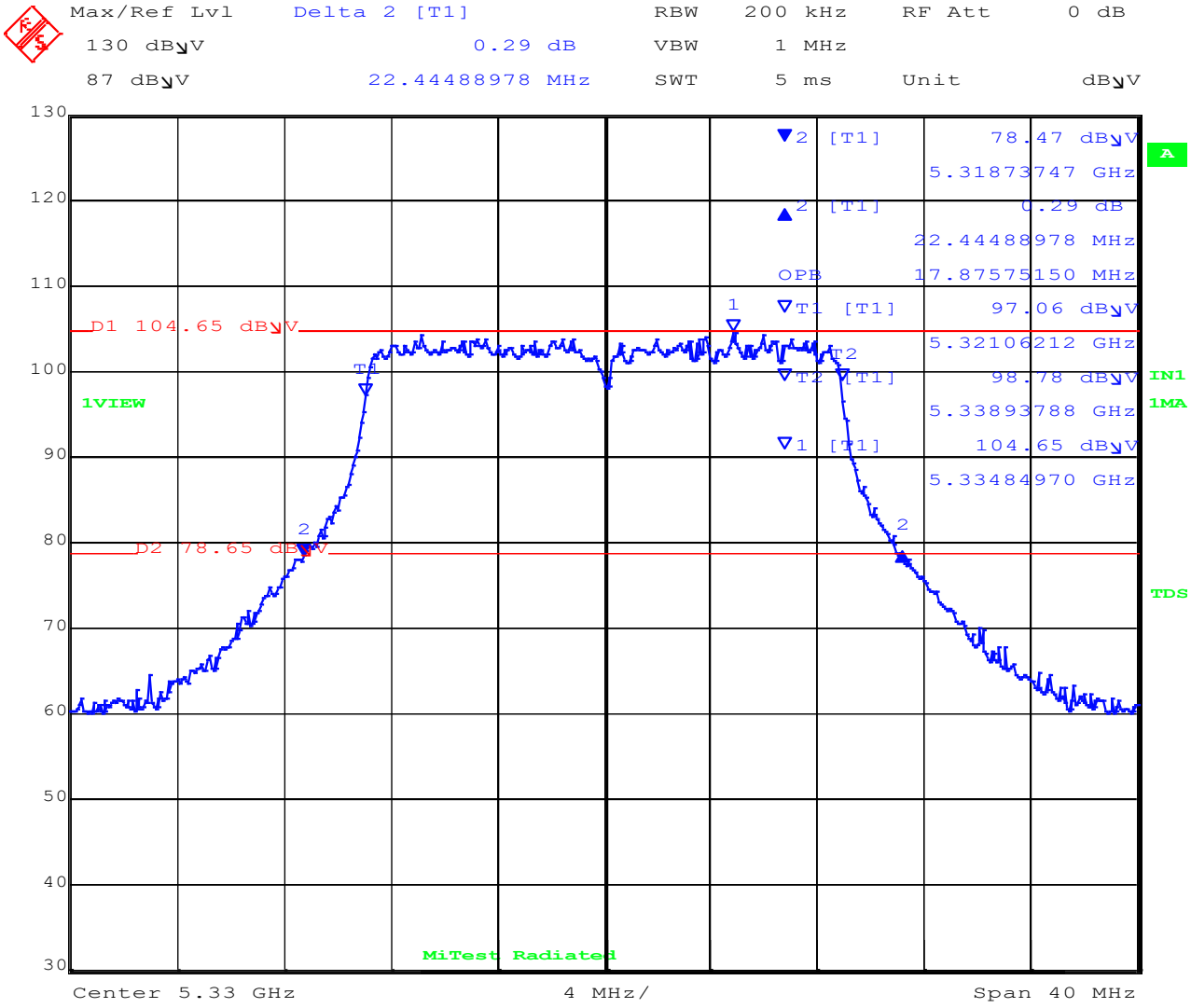


Date: 25.MAR.2021 17:11:13

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5330.00 MHz, Polarity V, Temp: 20

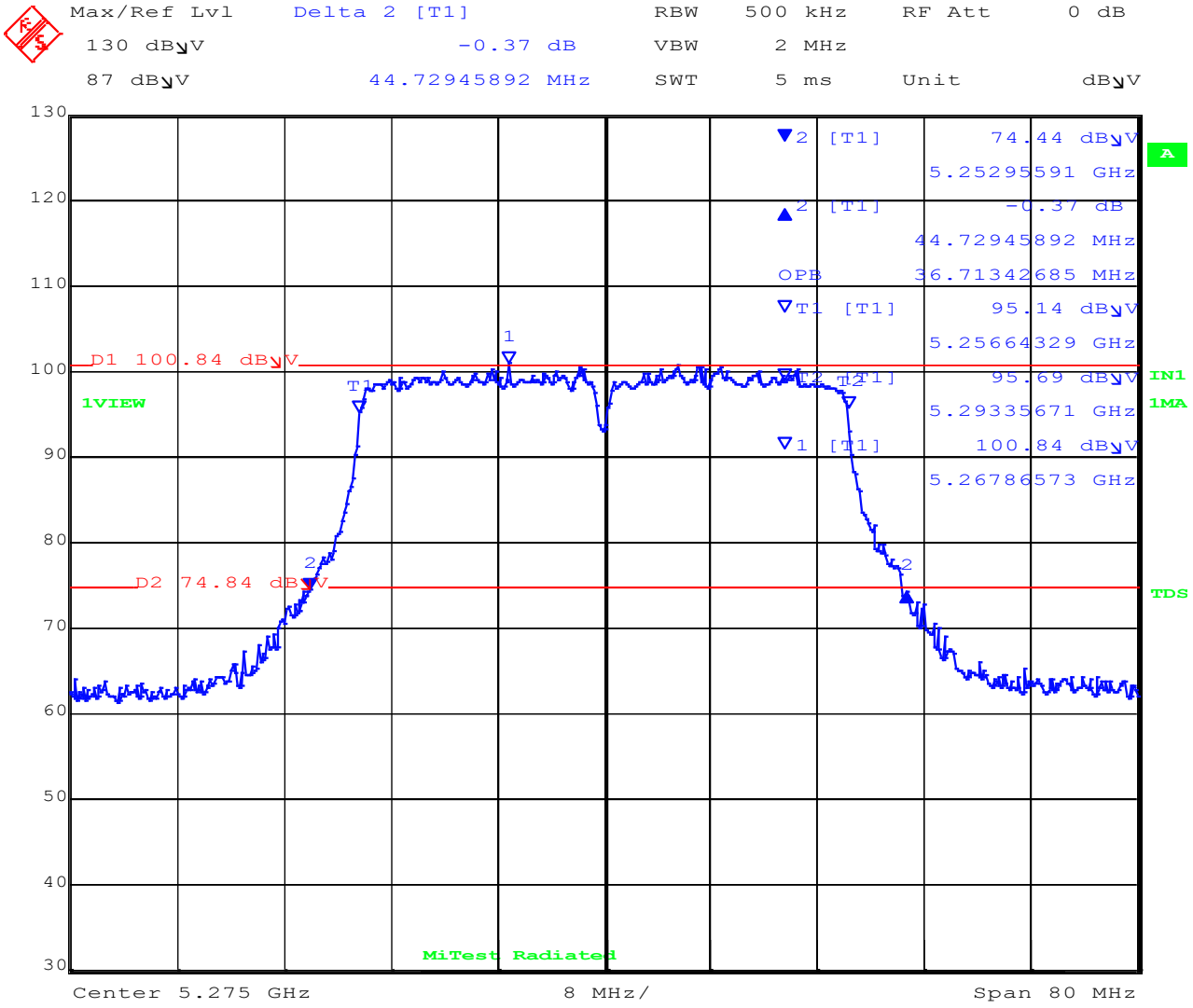


Date: 25.MAR.2021 17:16:45

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5275.00 MHz, Polarity H, Temp: 20

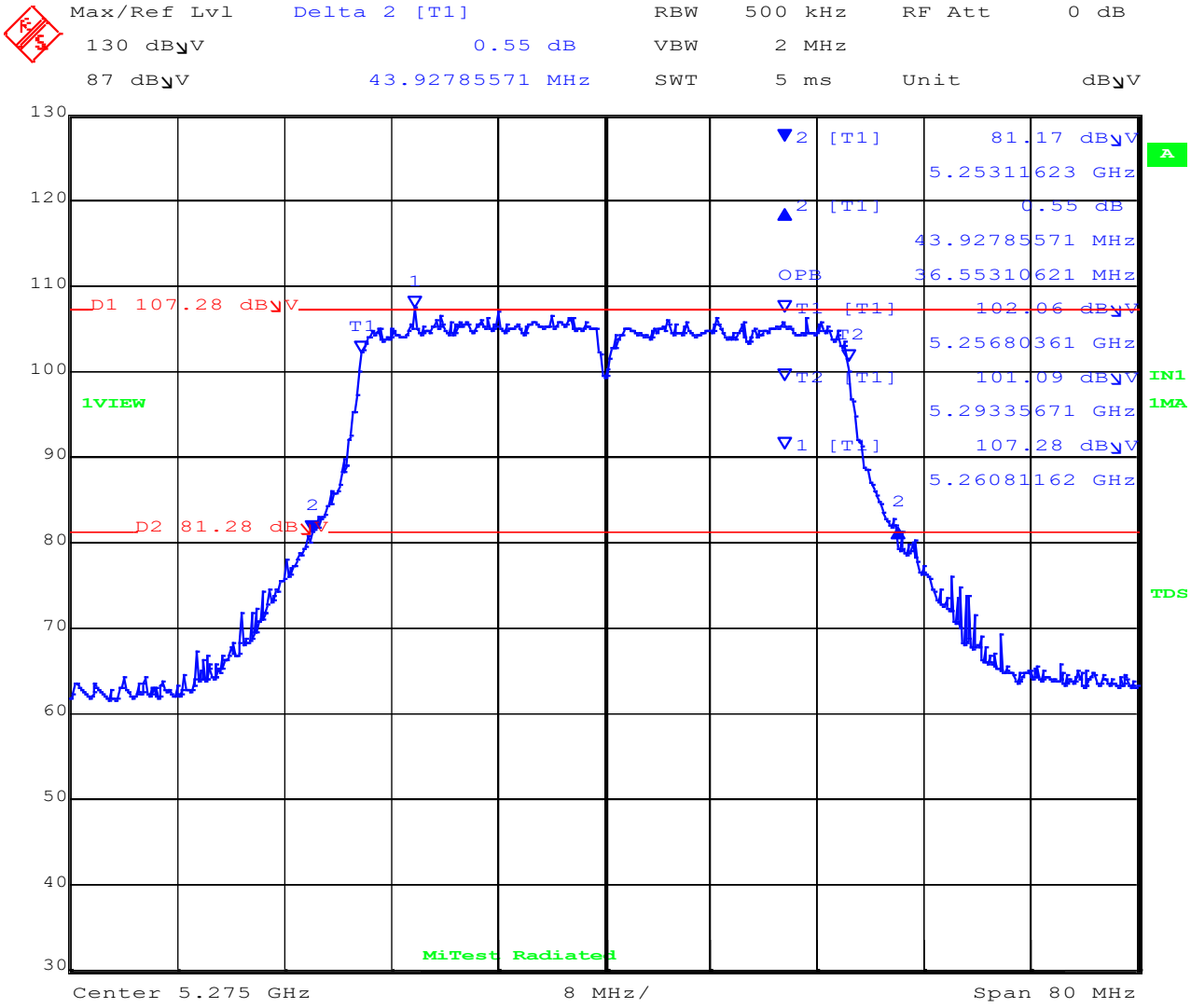


Date: 25.MAR.2021 16:09:10

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5275.00 MHz, Polarity V, Temp: 20

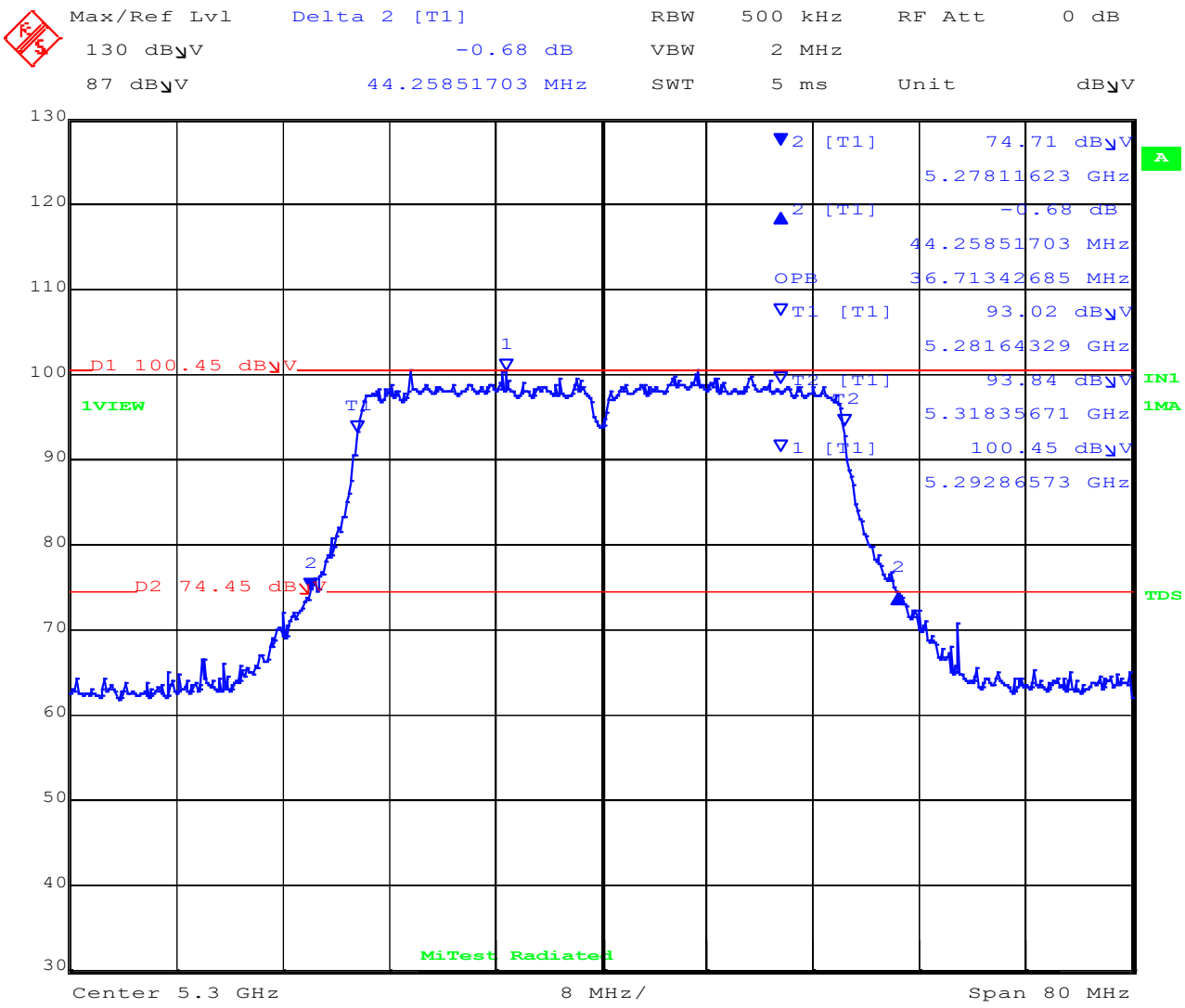


Date: 25.MAR.2021 16:06:36

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5300.00 MHz, Polarity H, Temp: 20

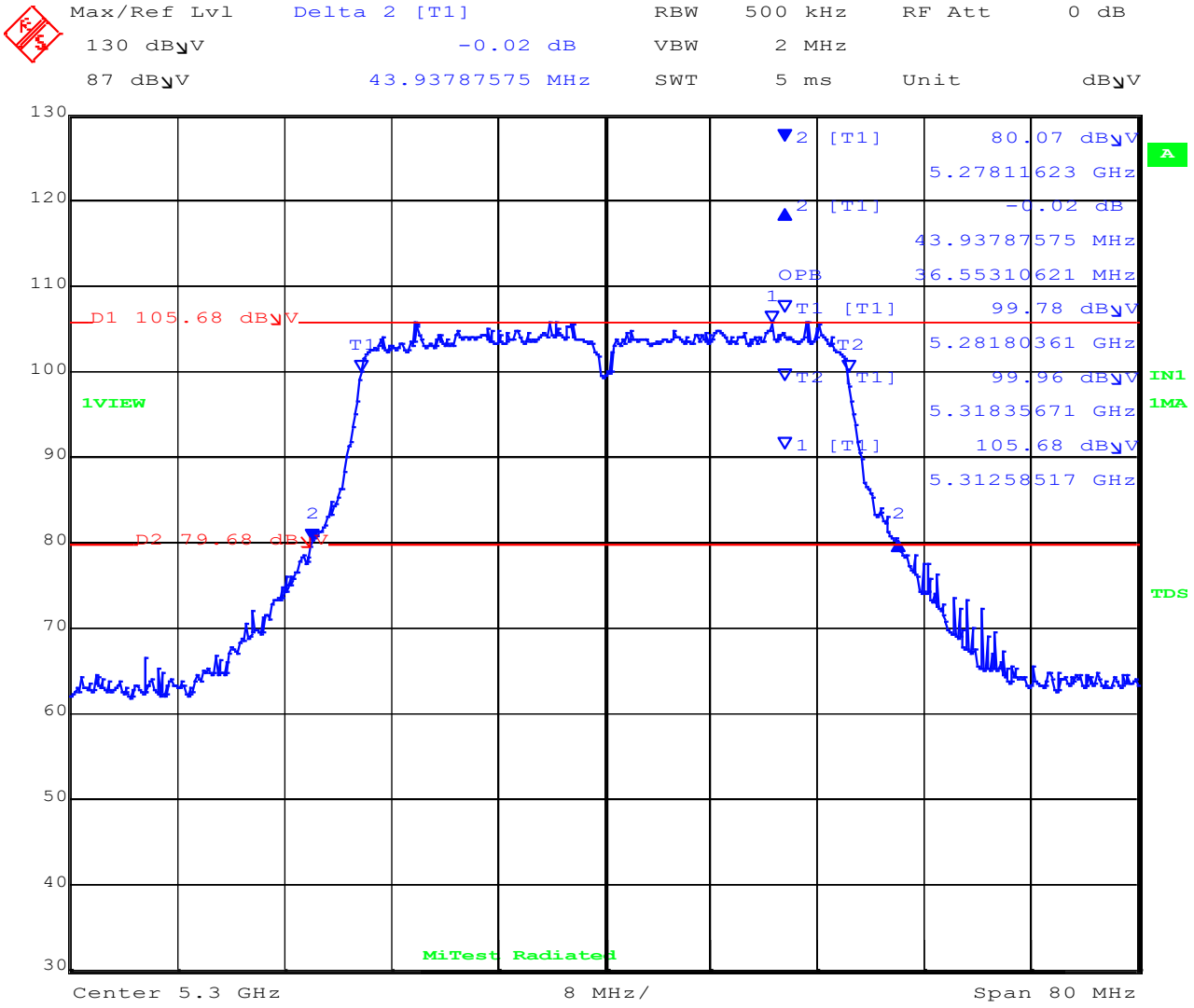


Date: 25.MAR.2021 16:11:39

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5300.00 MHz, Polarity V, Temp: 20

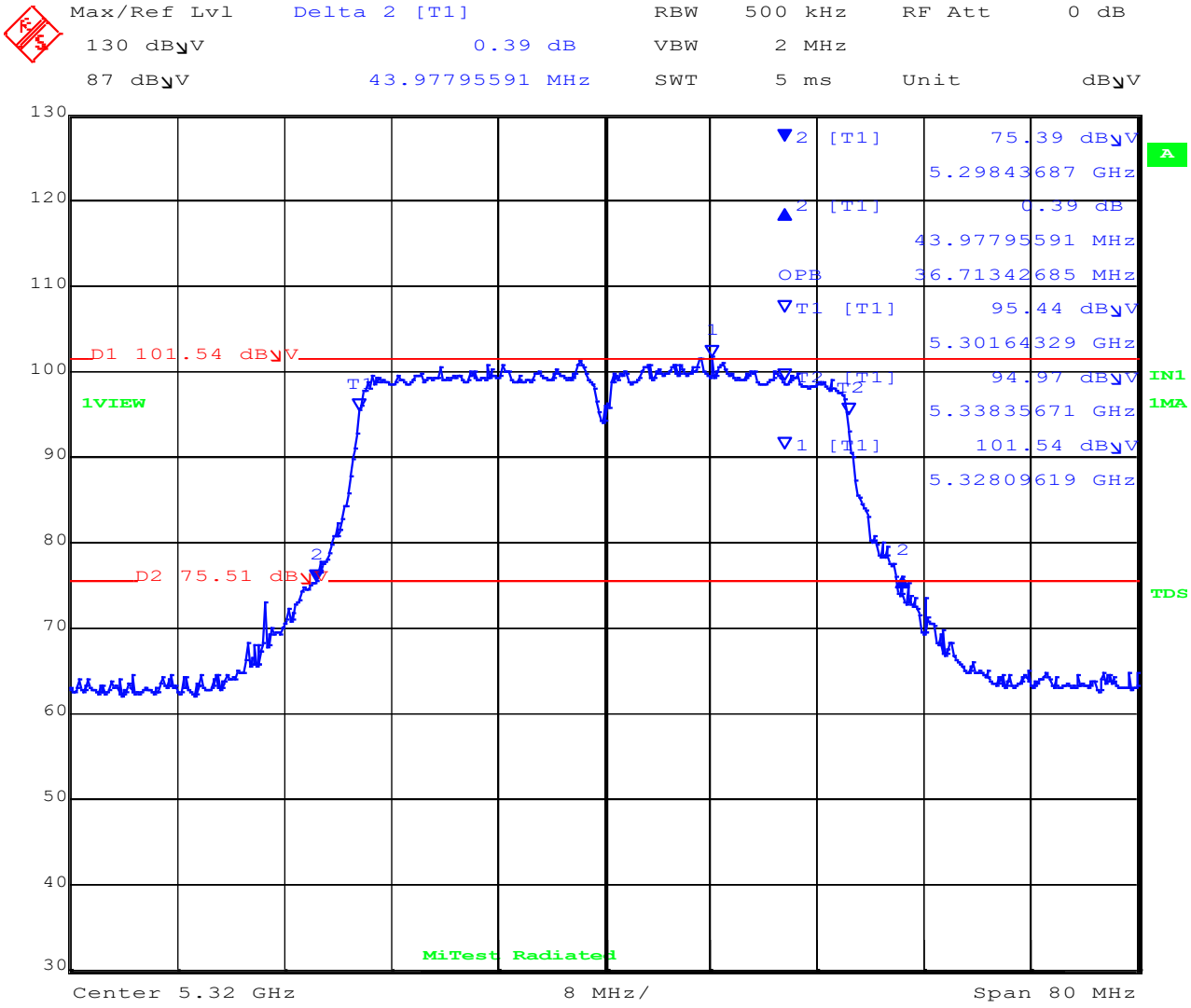


Date: 25.MAR.2021 16:13:45

back to matrix

26 dB & 99% BANDWIDTH

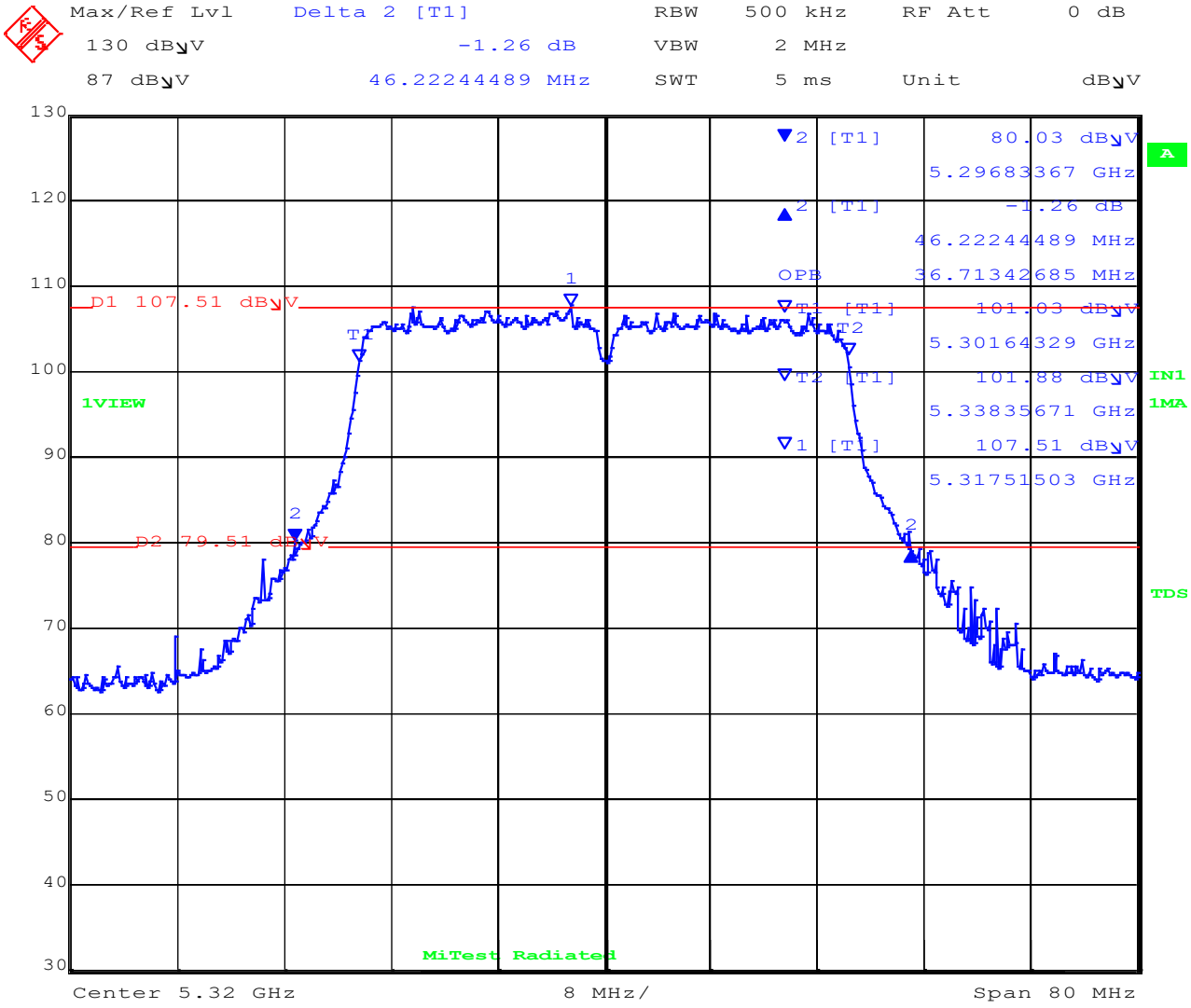
Variant: 802.11 40MHz, Channel: 5320.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5320.00 MHz, Polarity V, Temp: 20

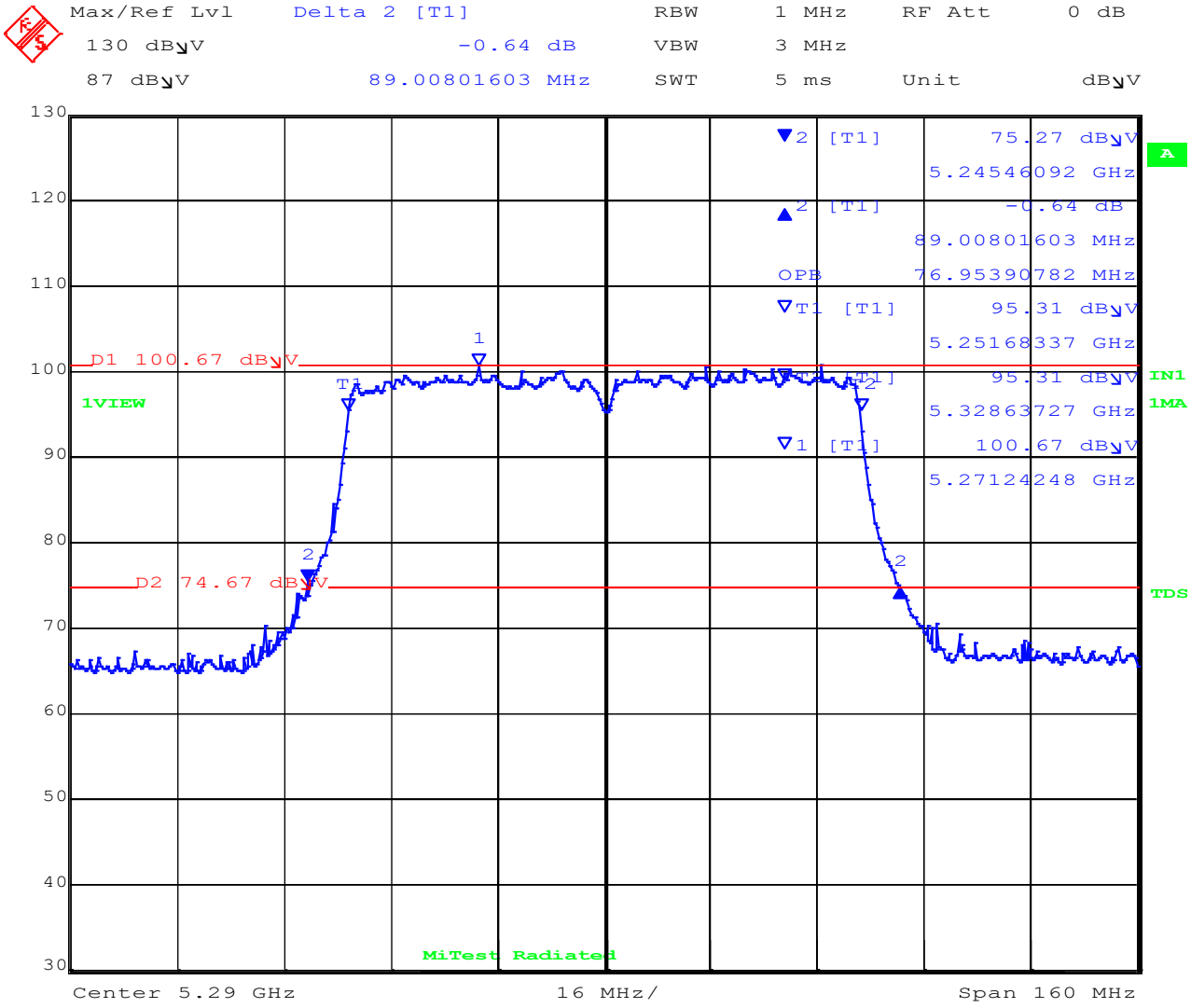


Date: 25.MAR.2021 16:19:05

back to matrix

26 dB & 99% BANDWIDTH

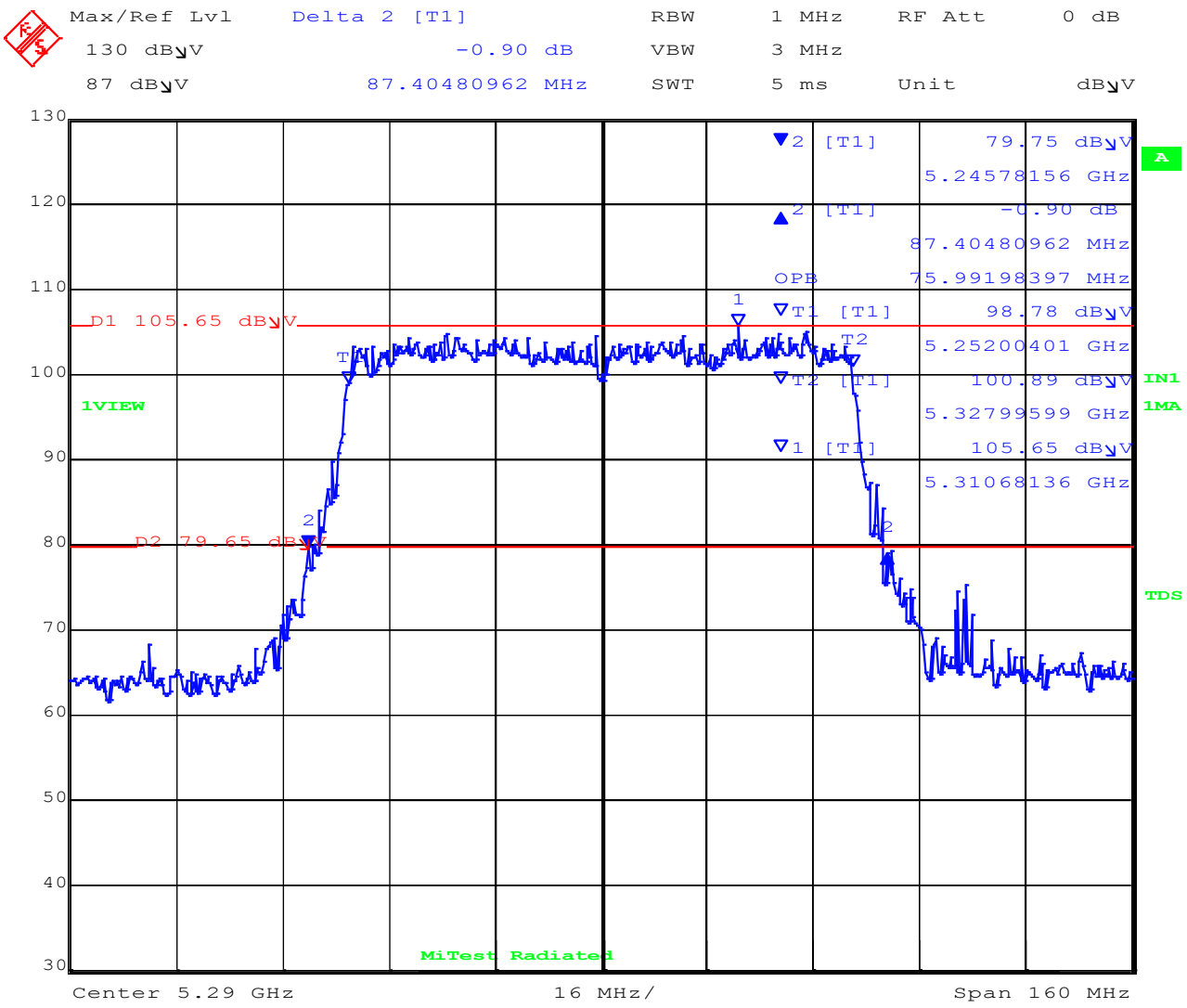
Variant: 802.11 80MHz, Channel: 5290.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5290.00 MHz, Polarity V, Temp: 20

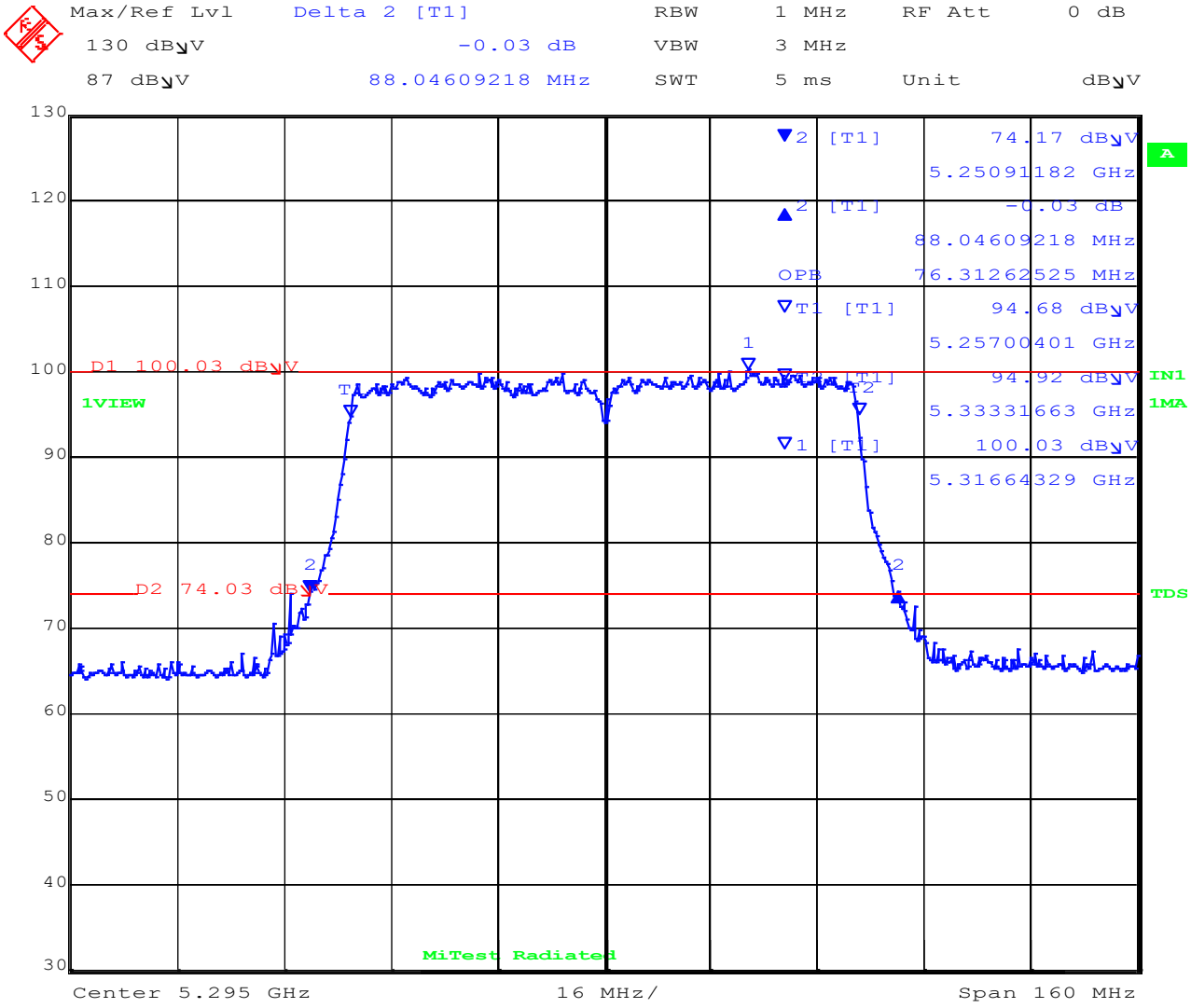


Date: 25.MAR.2021 15:20:31

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5295.00 MHz, Polarity H, Temp: 20

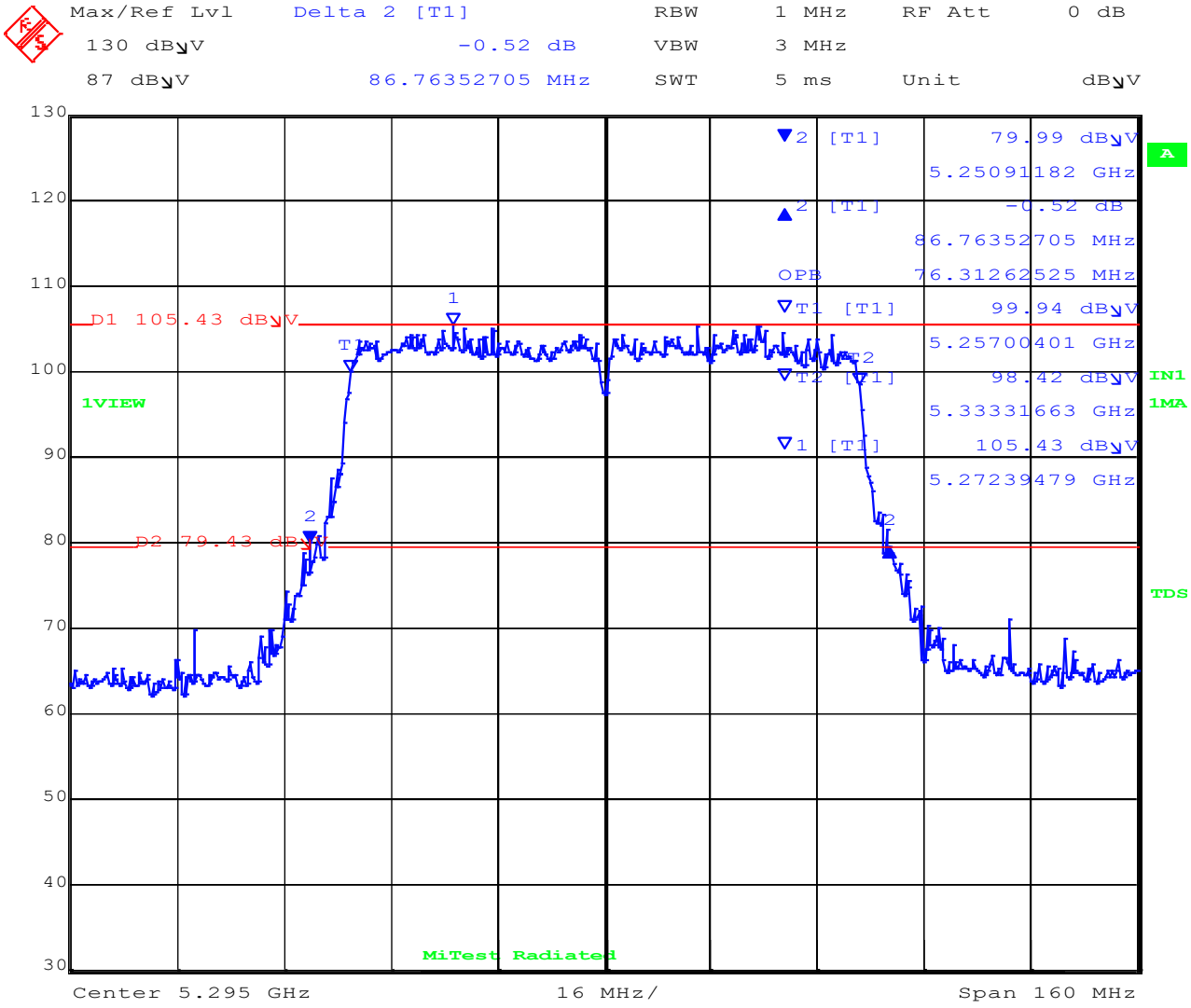


Date: 25.MAR.2021 15:06:06

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5295.00 MHz, Polarity V, Temp: 20

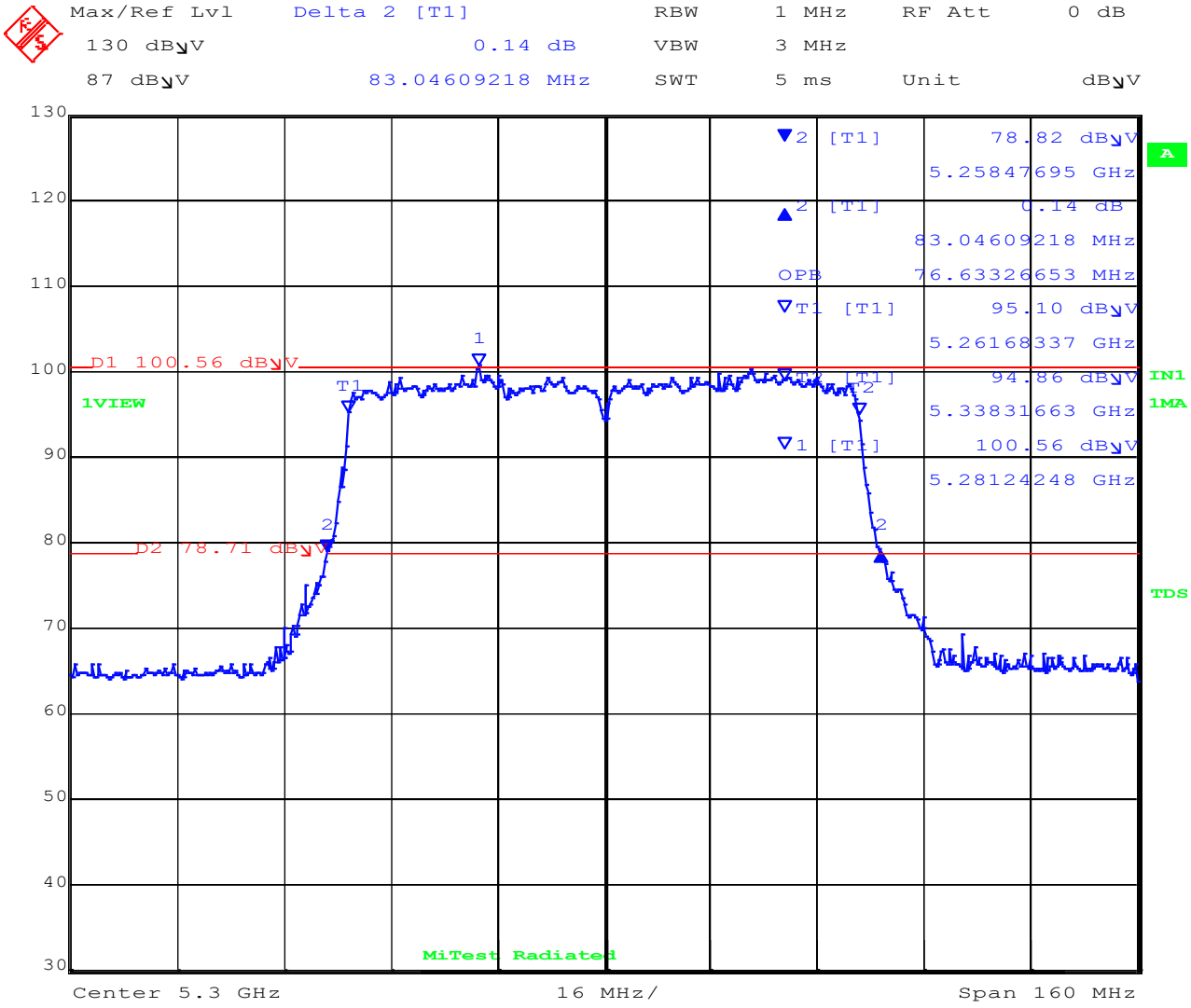


Date: 25.MAR.2021 15:23:00

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5300.00 MHz, Polarity H, Temp: 20

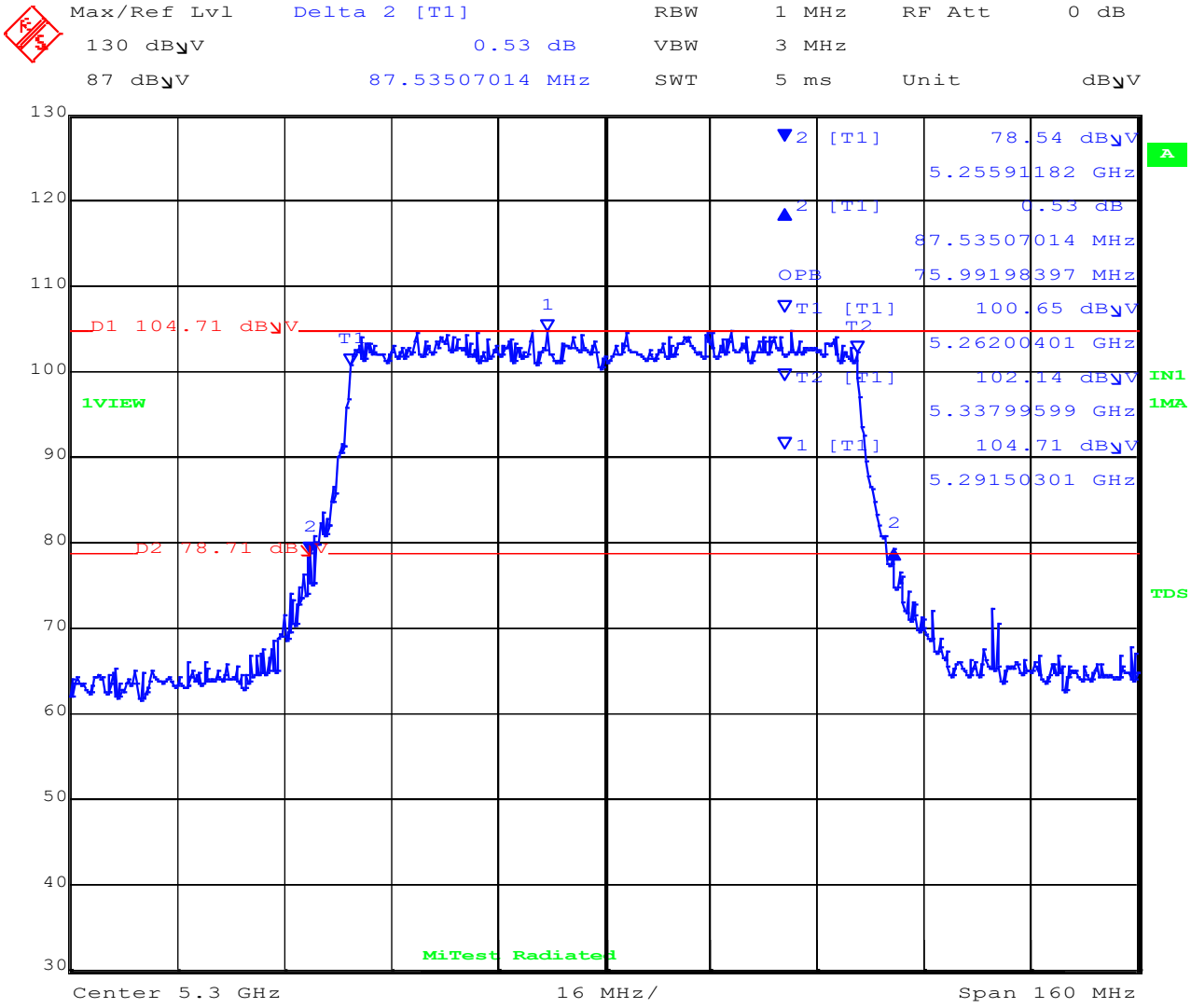


Date: 25.MAR.2021 15:03:35

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5300.00 MHz, Polarity V, Temp: 20

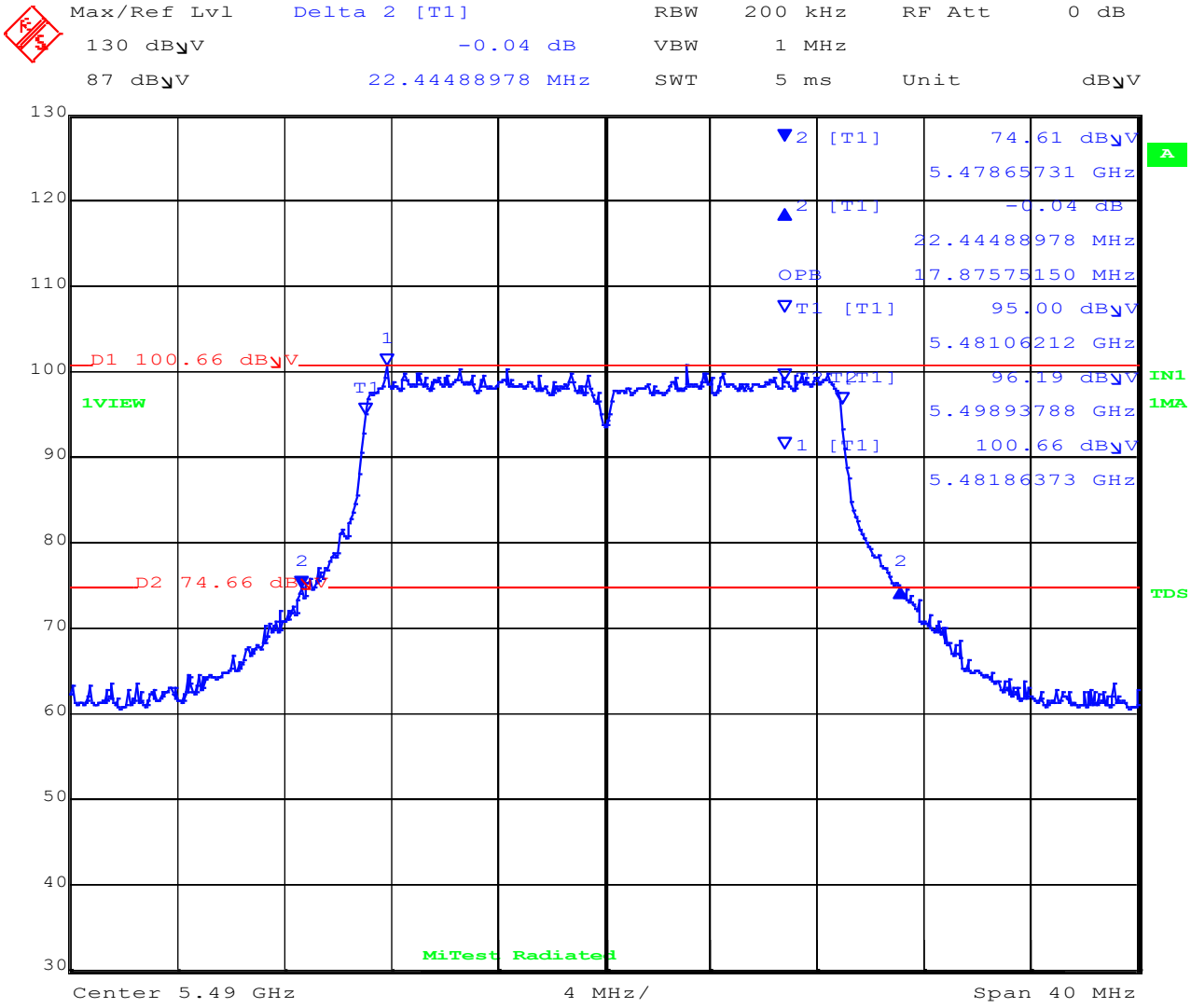


Date: 25.MAR.2021 15:01:20

back to matrix

26 dB & 99% BANDWIDTH

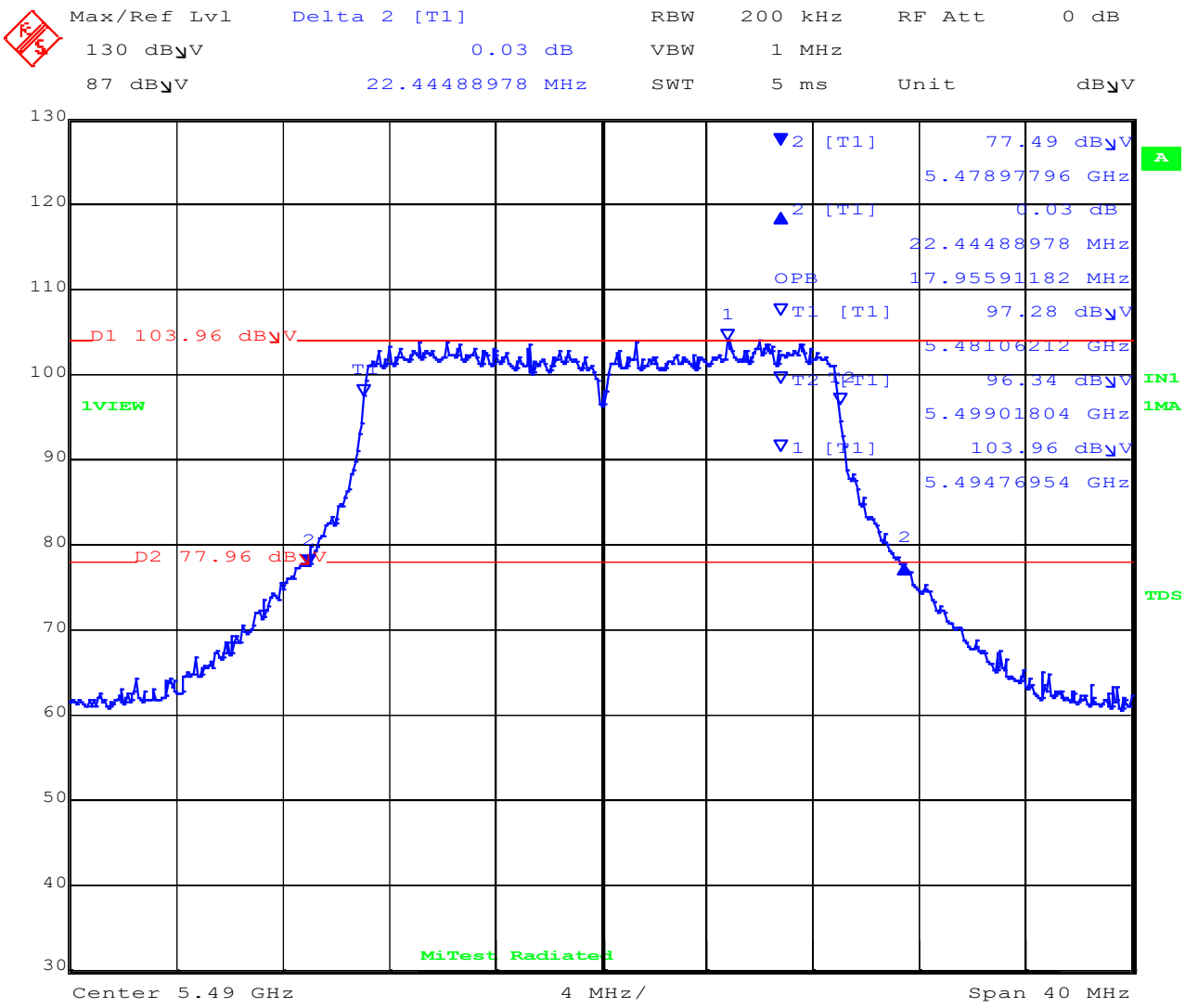
Variant: 802.11 20MHz, Channel: 5490.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5490.00 MHz, Polarity V, Temp: 20

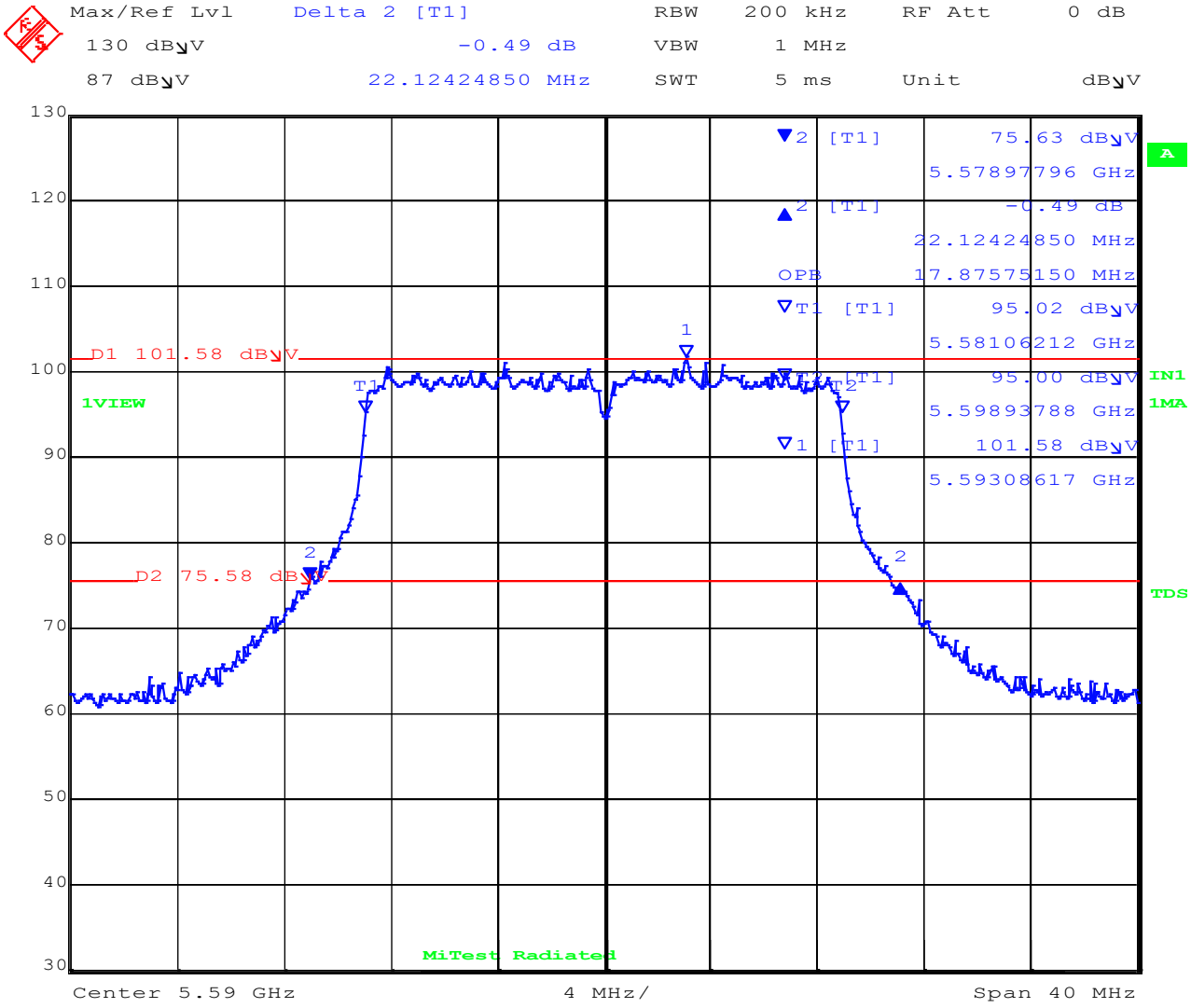


Date: 25.MAR.2021 17:03:48

back to matrix

26 dB & 99% BANDWIDTH

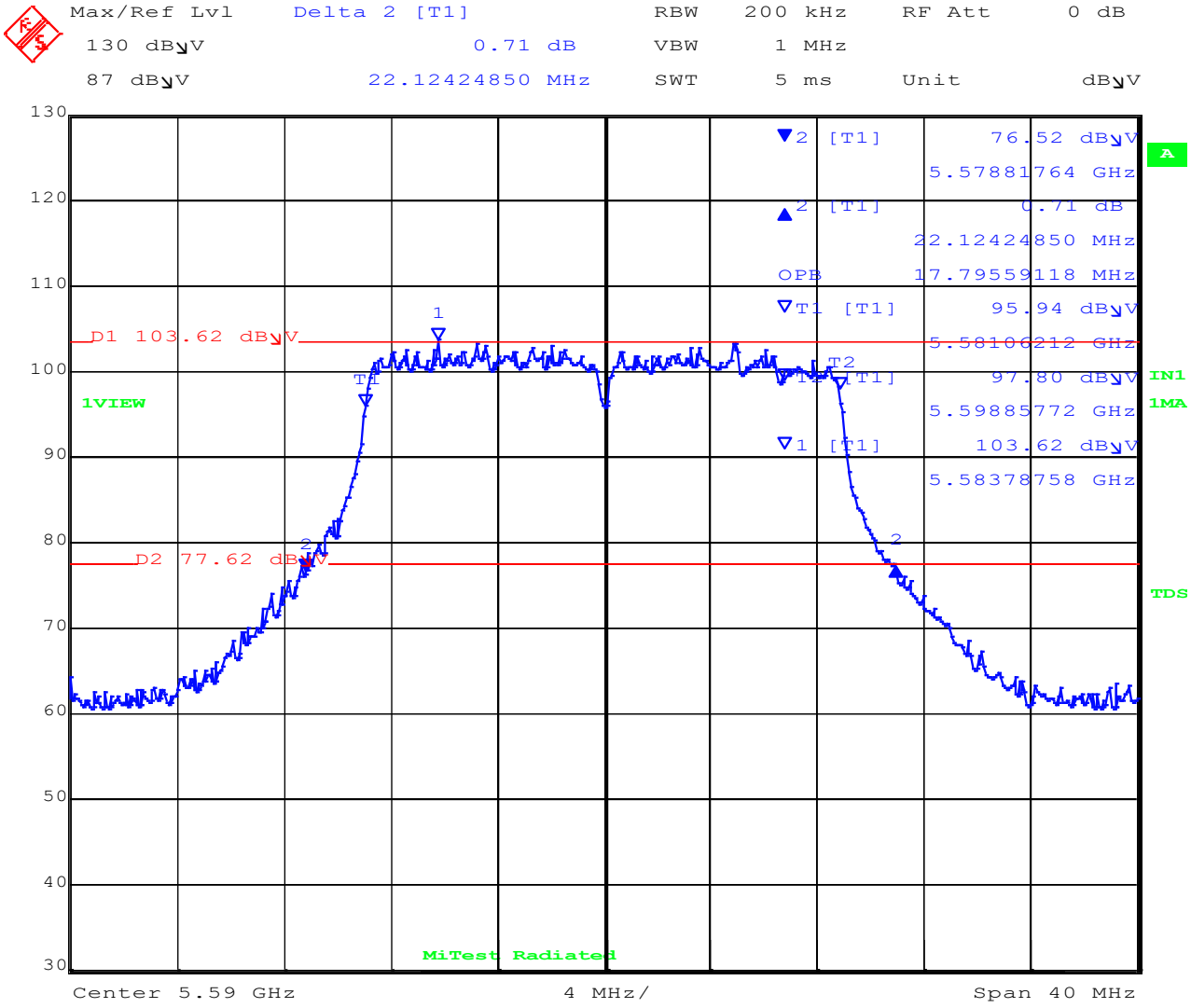
Variant: 802.11 20MHz, Channel: 5590.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5590.00 MHz, Polarity V, Temp: 20

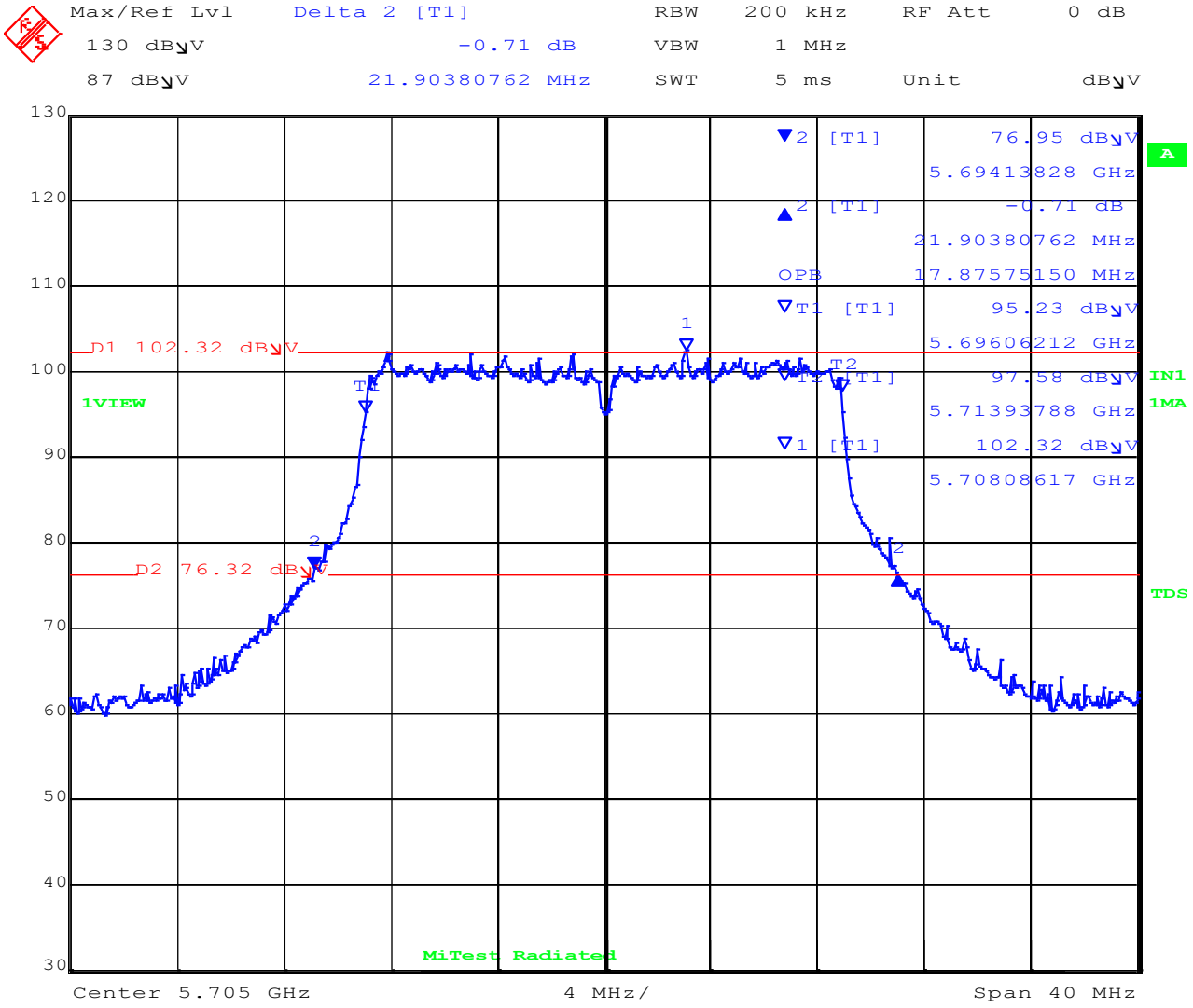


Date: 25.MAR.2021 17:00:31

back to matrix

26 dB & 99% BANDWIDTH

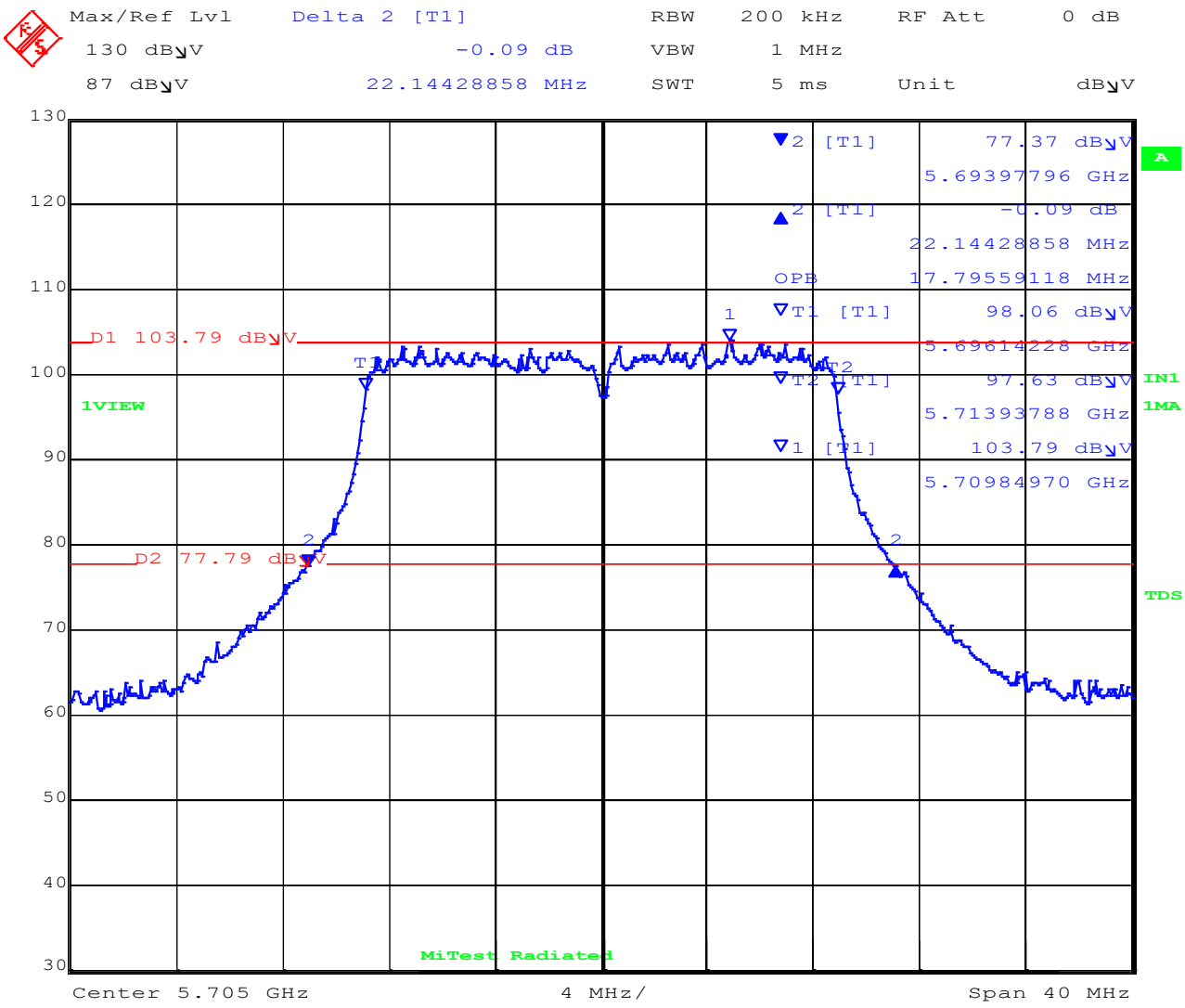
Variant: 802.11 20MHz, Channel: 5705.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 20MHz, Channel: 5705.00 MHz, Polarity V, Temp: 20

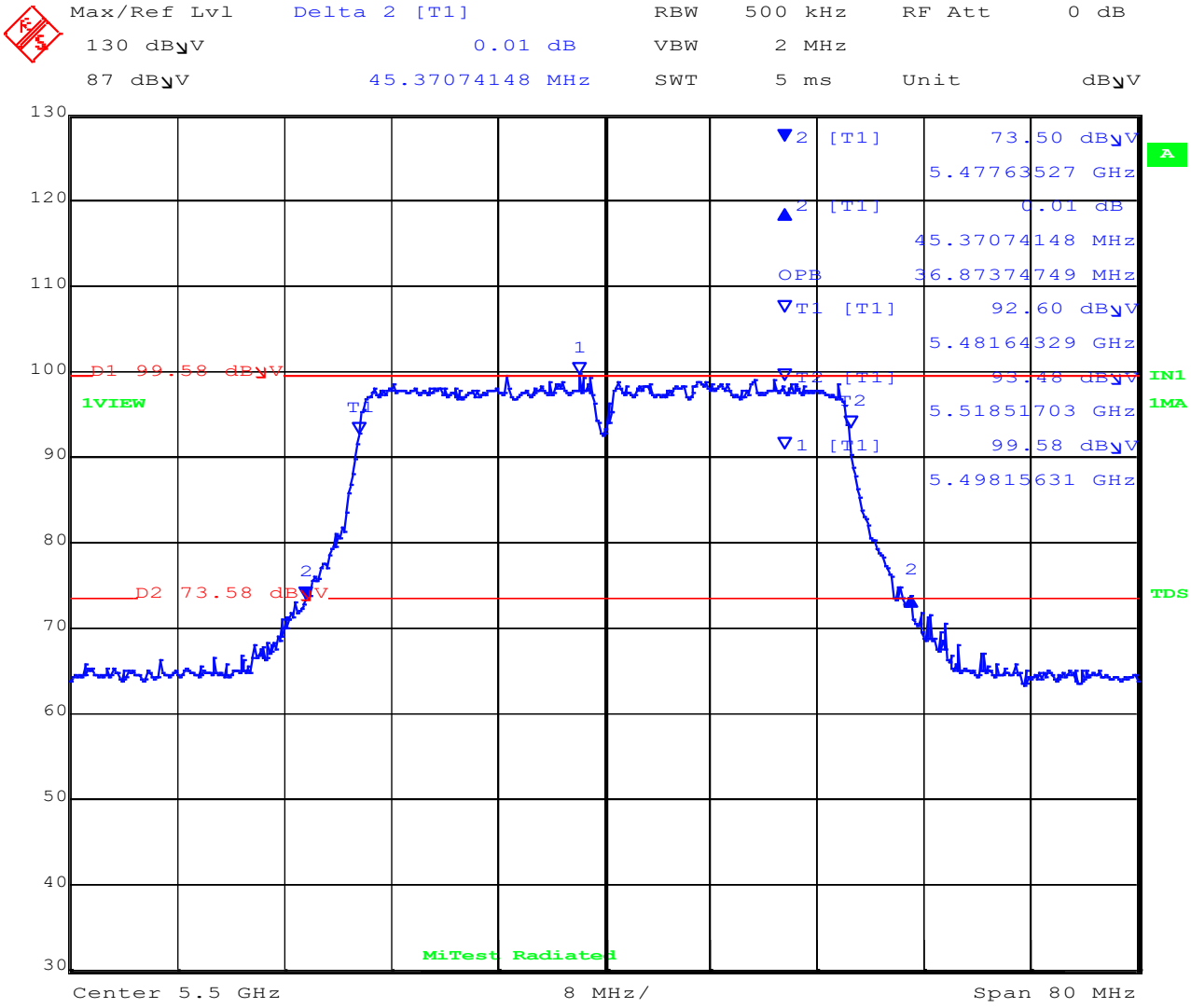


Date: 25.MAR.2021 16:52:25

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5500.00 MHz, Polarity H, Temp: 20

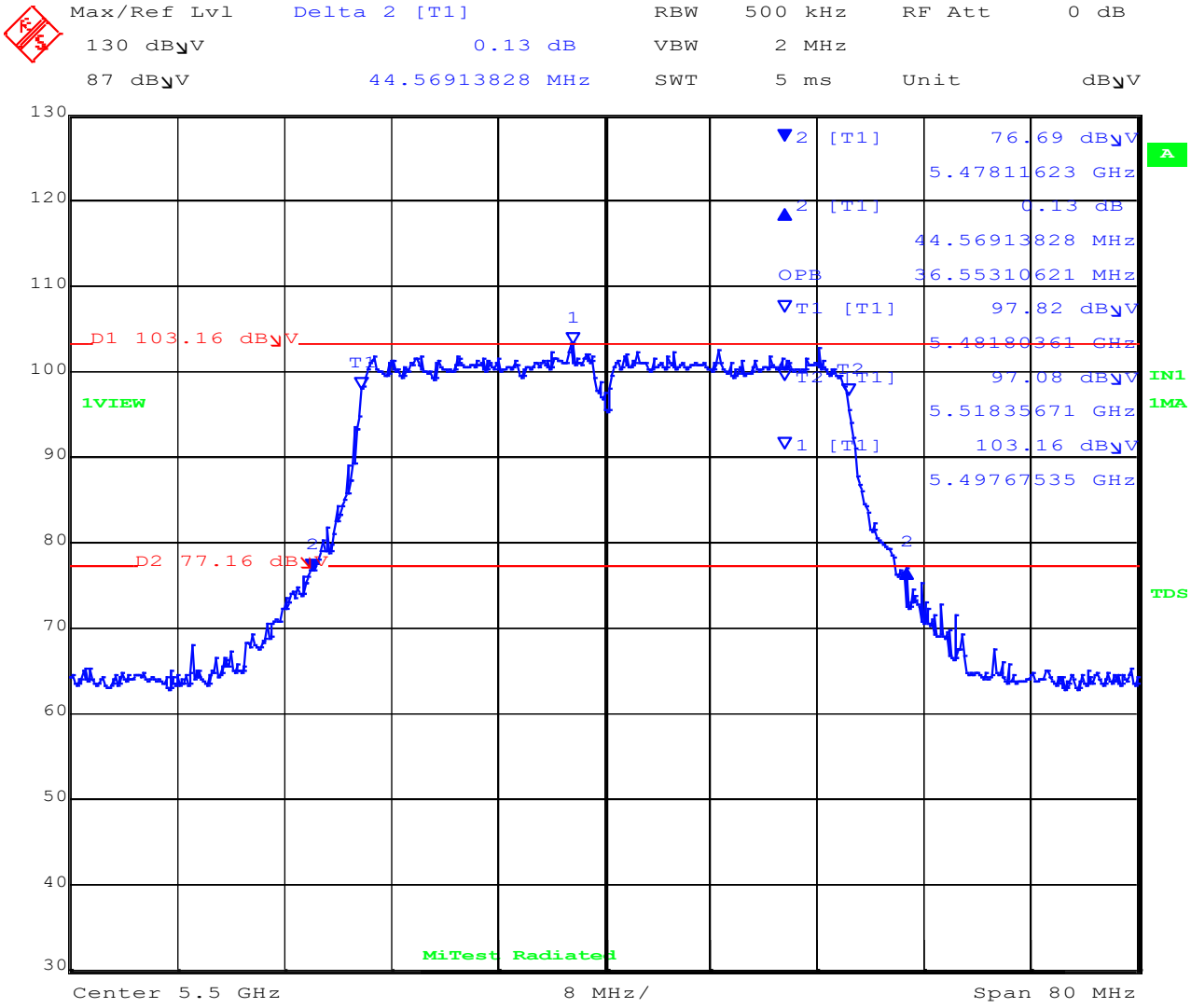


Date: 25.MAR.2021 16:25:57

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5500.00 MHz, Polarity V, Temp: 20

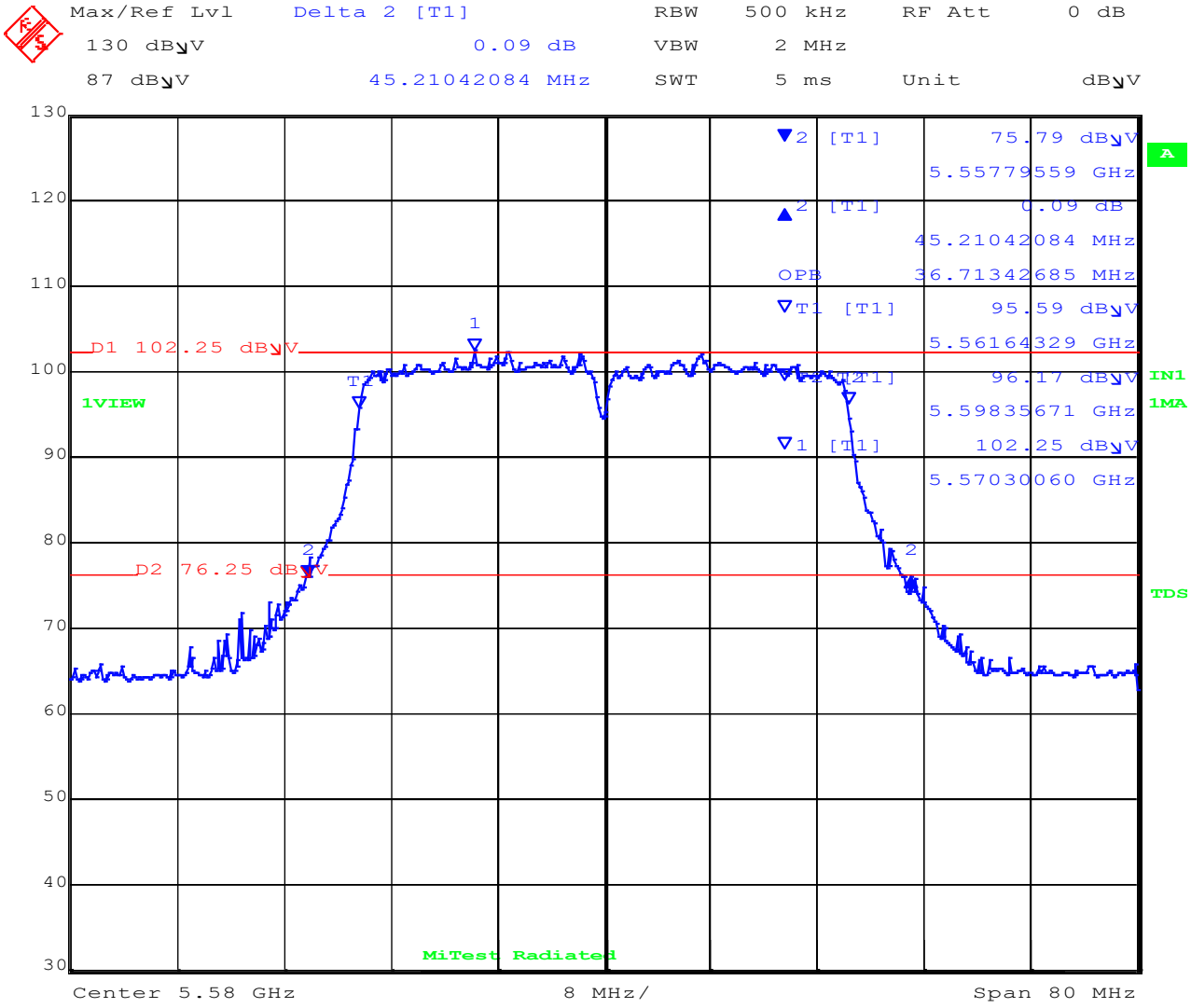


Date: 25.MAR.2021 16:28:59

back to matrix

26 dB & 99% BANDWIDTH

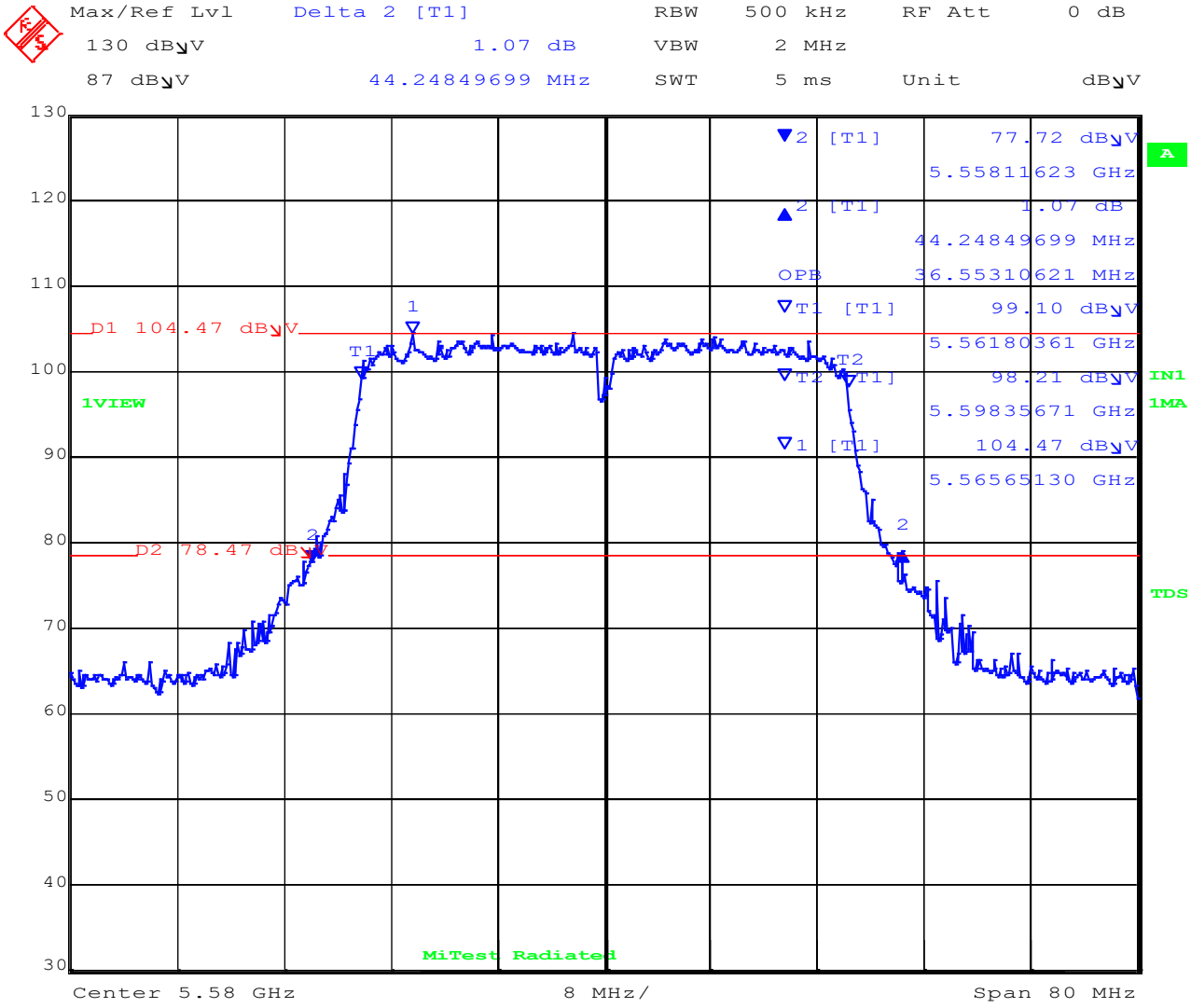
Variant: 802.11 40MHz, Channel: 5580.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5580.00 MHz, Polarity V, Temp: 20

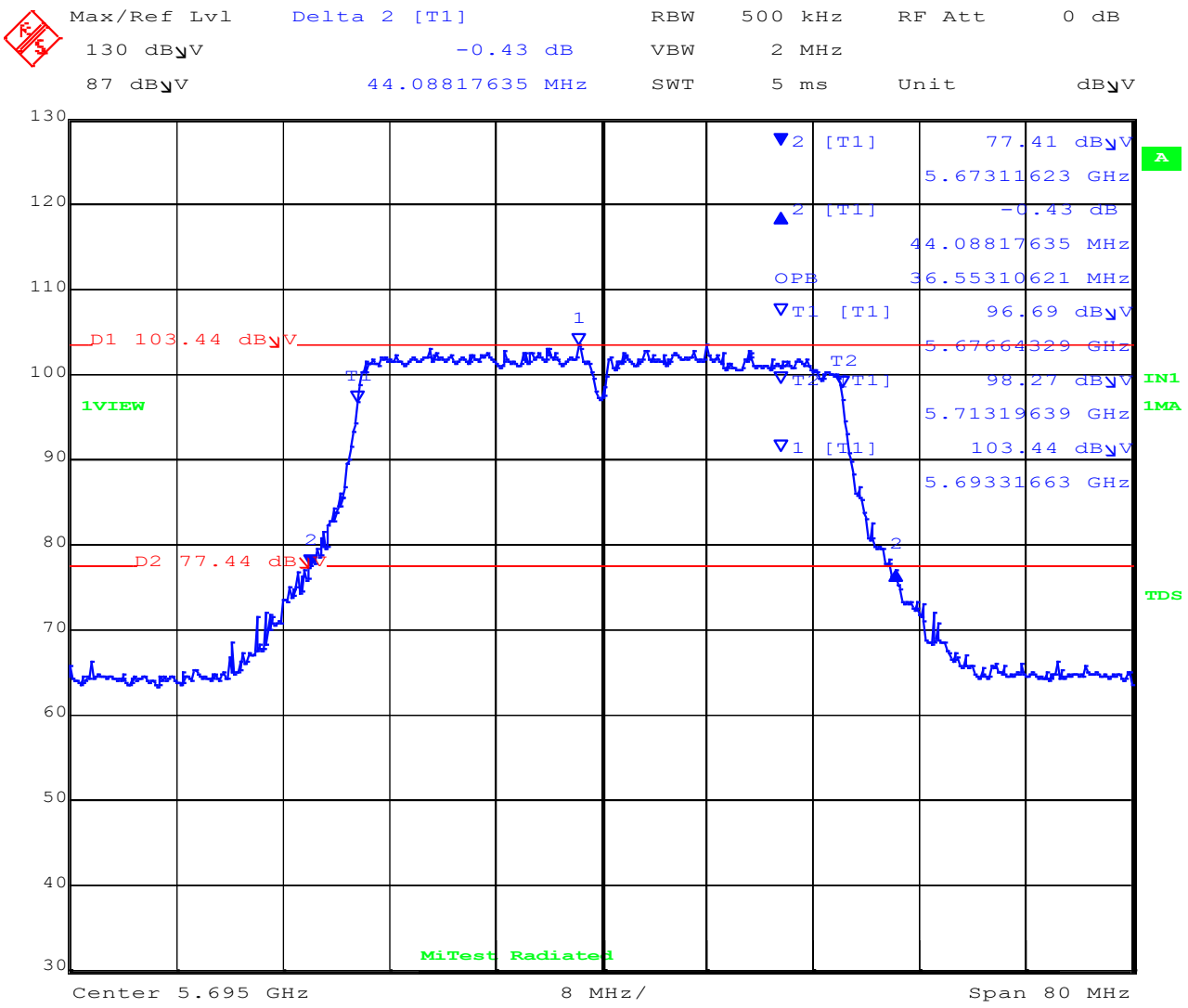


Date: 25.MAR.2021 16:32:24

back to matrix

26 dB & 99% BANDWIDTH

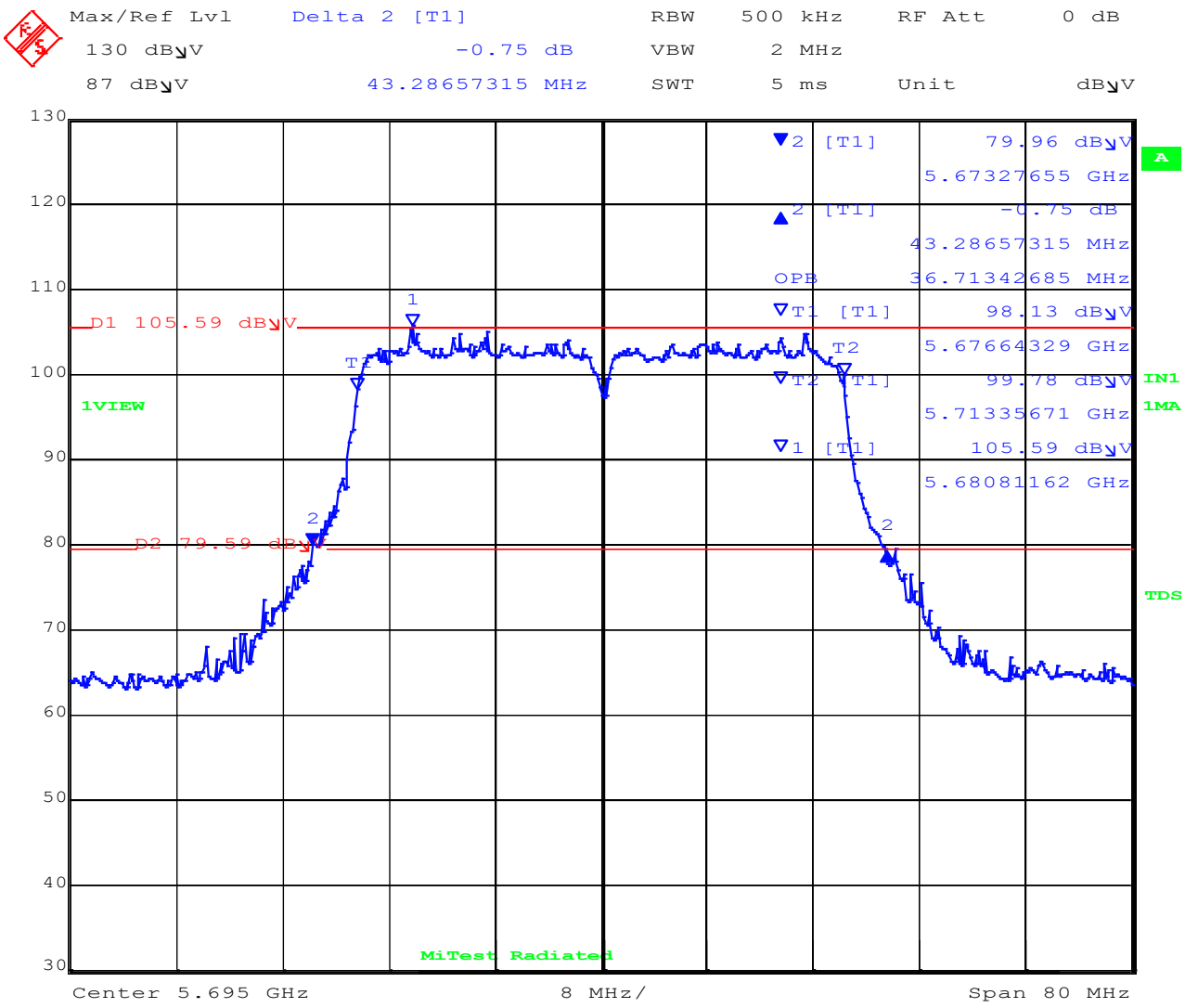
Variant: 802.11 40MHz, Channel: 5695.00 MHz, Polarity H, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 40MHz, Channel: 5695.00 MHz, Polarity V, Temp: 20

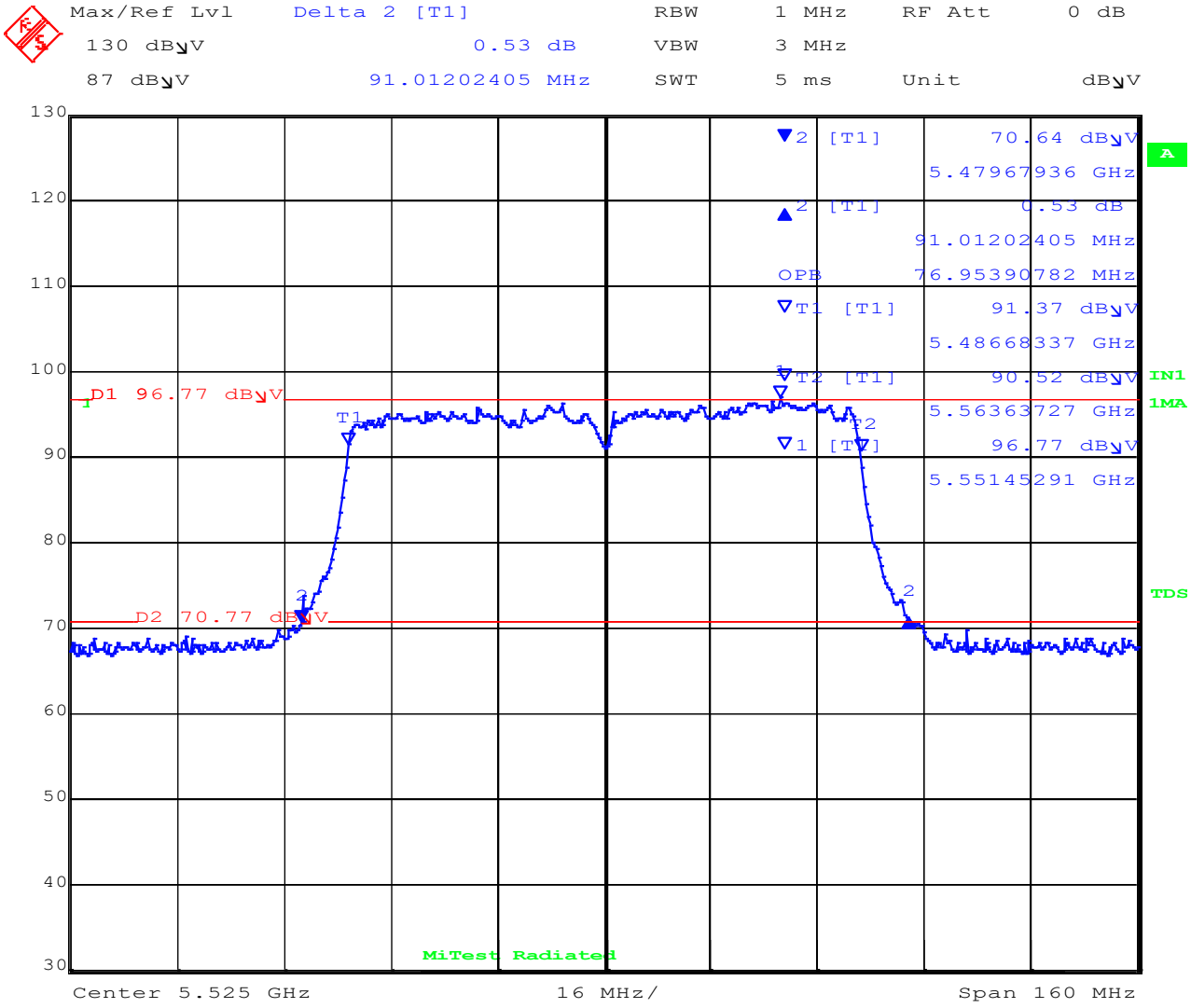


Date: 25.MAR.2021 16:41:23

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5525.00 MHz, Polarity H, Temp: 20

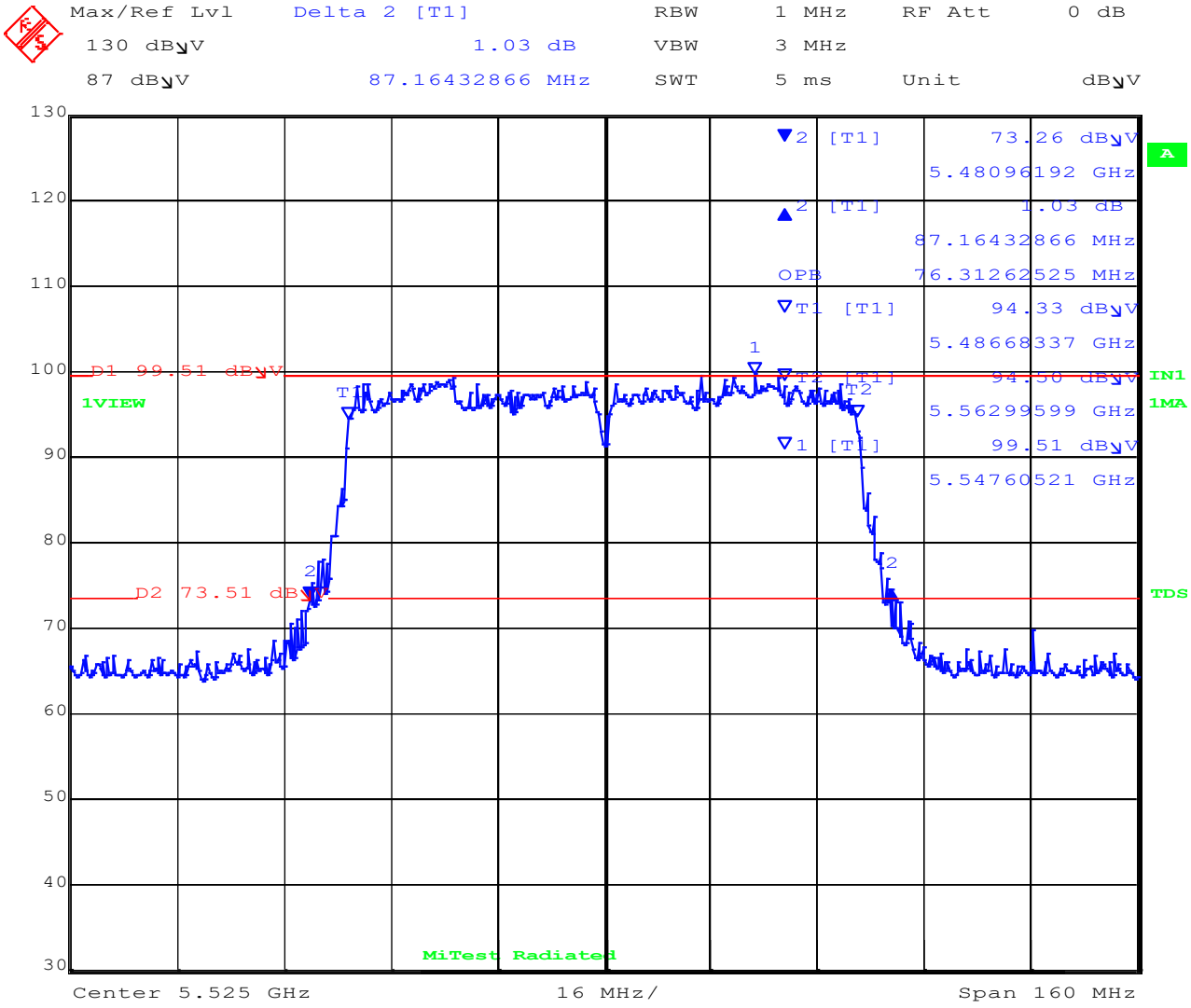


Date: 25.MAR.2021 14:54:51

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5525.00 MHz, Polarity V, Temp: 20

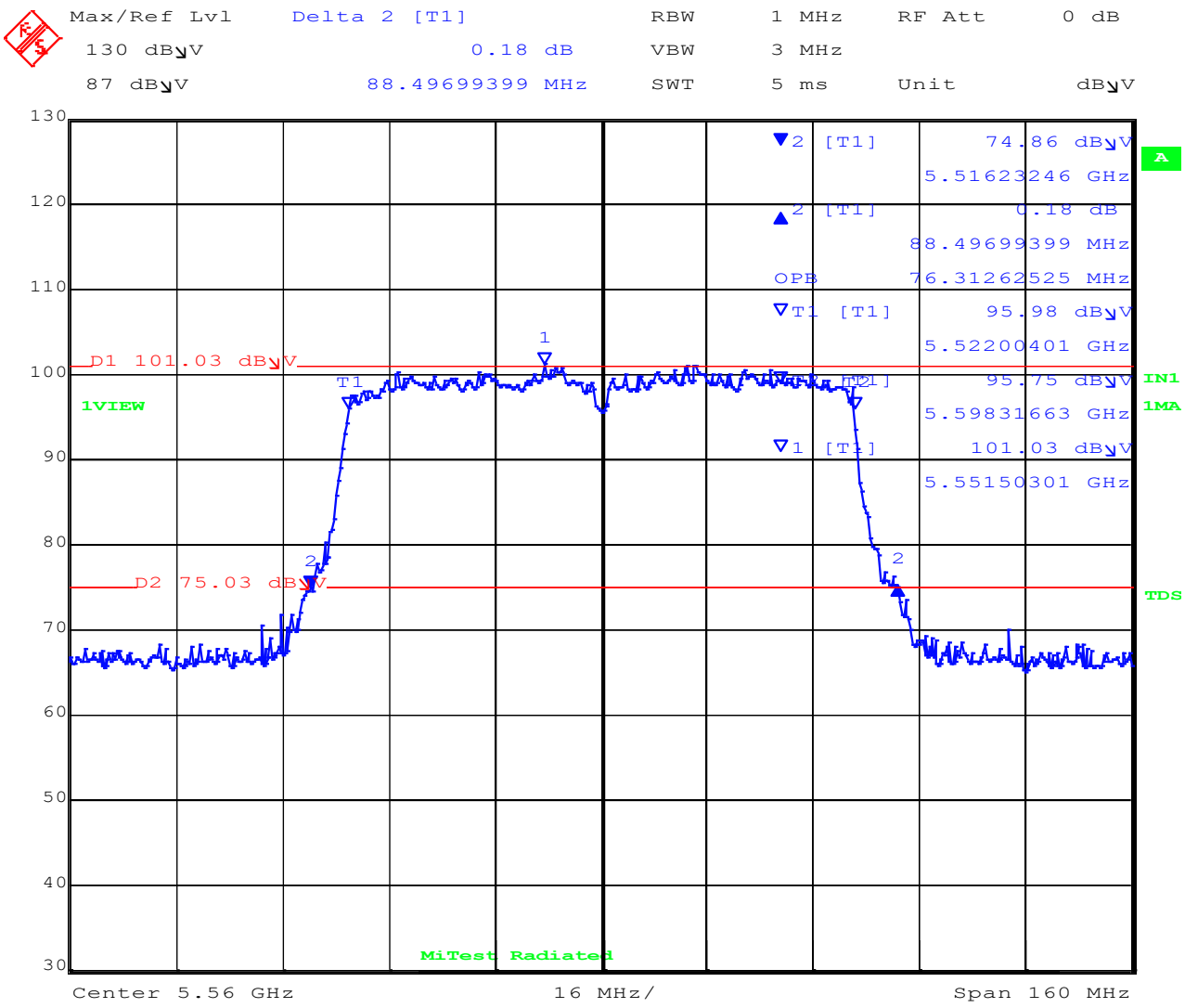


Date: 25.MAR.2021 14:57:31

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5560.00 MHz, Polarity H, Temp: 20

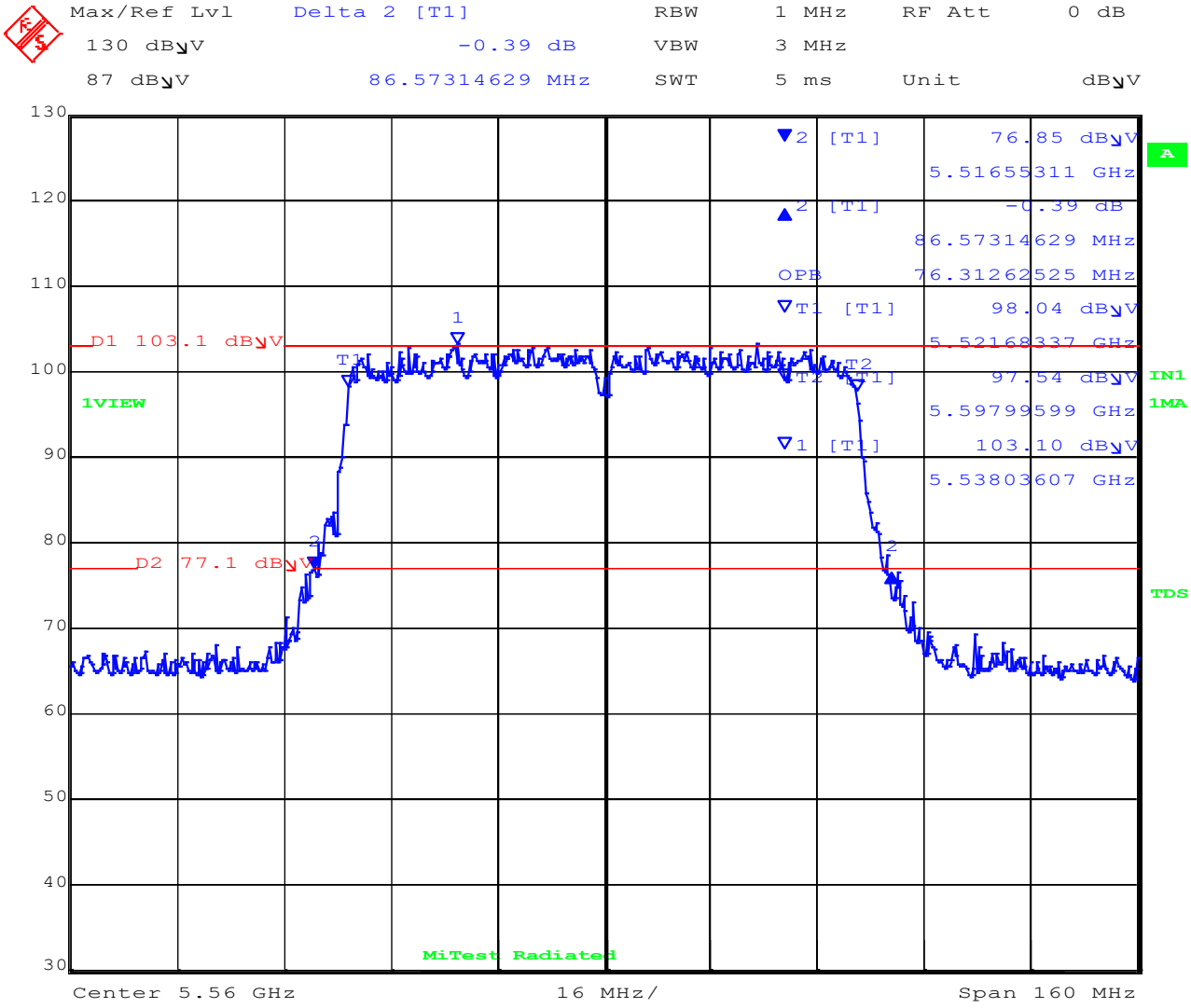


Date: 25.MAR.2021 14:48:43

back to matrix

26 dB & 99% BANDWIDTH

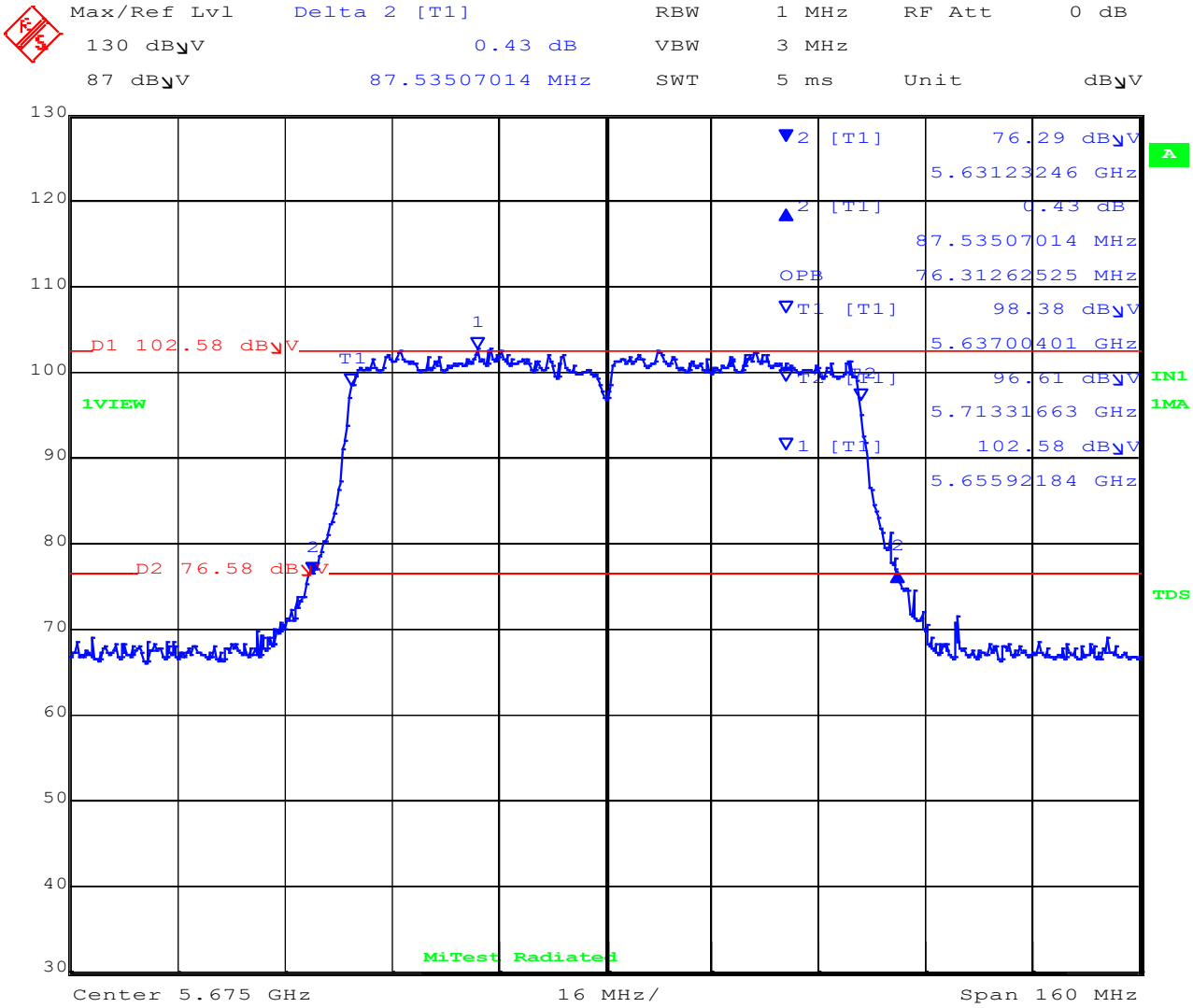
Variant: 802.11 80MHz, Channel: 5560.00 MHz, Polarity V, Temp: 20



back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5675.00 MHz, Polarity H, Temp: 20

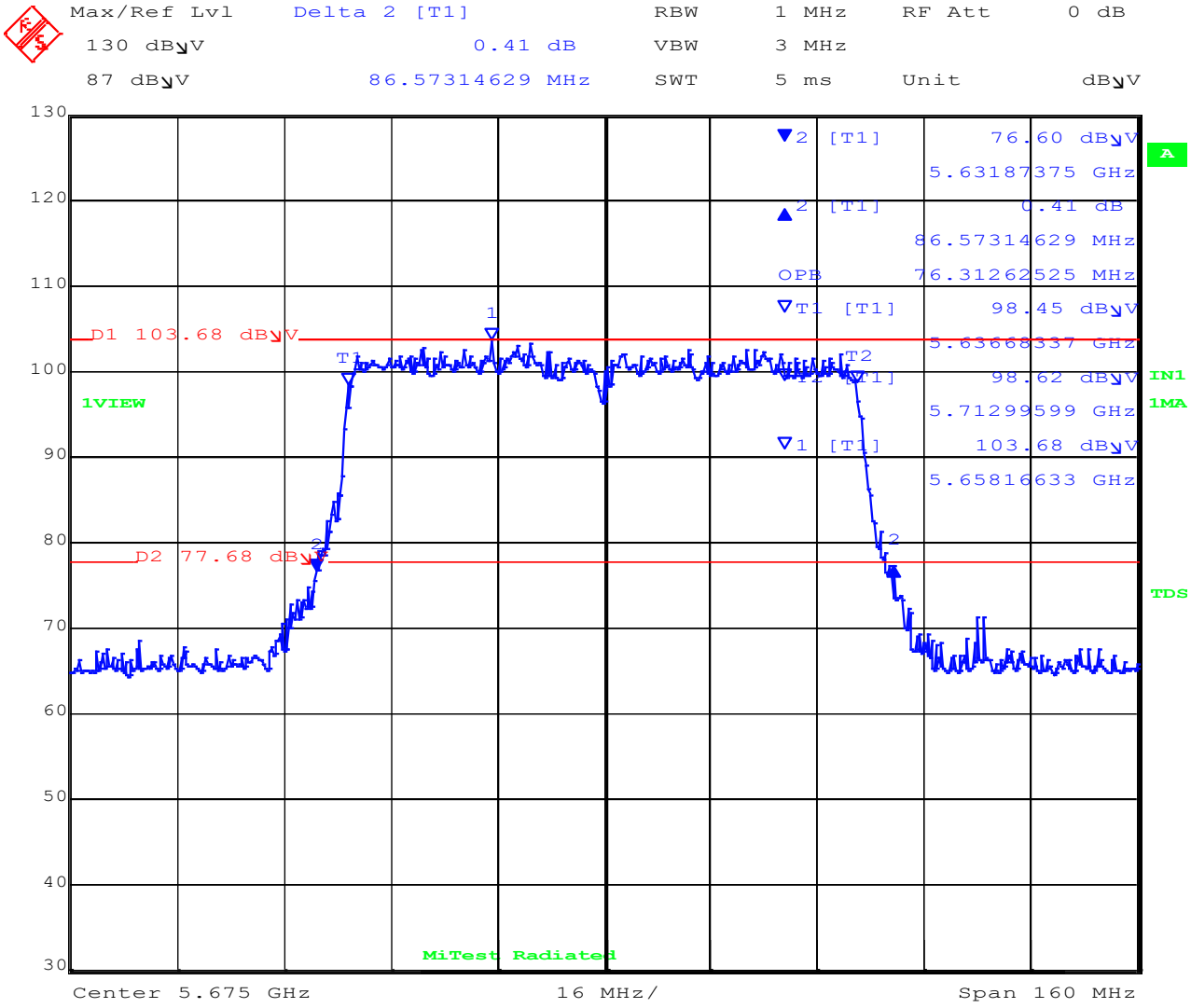


Date: 25.MAR.2021 14:41:05

back to matrix

26 dB & 99% BANDWIDTH

Variant: 802.11 80MHz, Channel: 5675.00 MHz, Polarity V, Temp: 20



Date: 25.MAR.2021 14:43:34

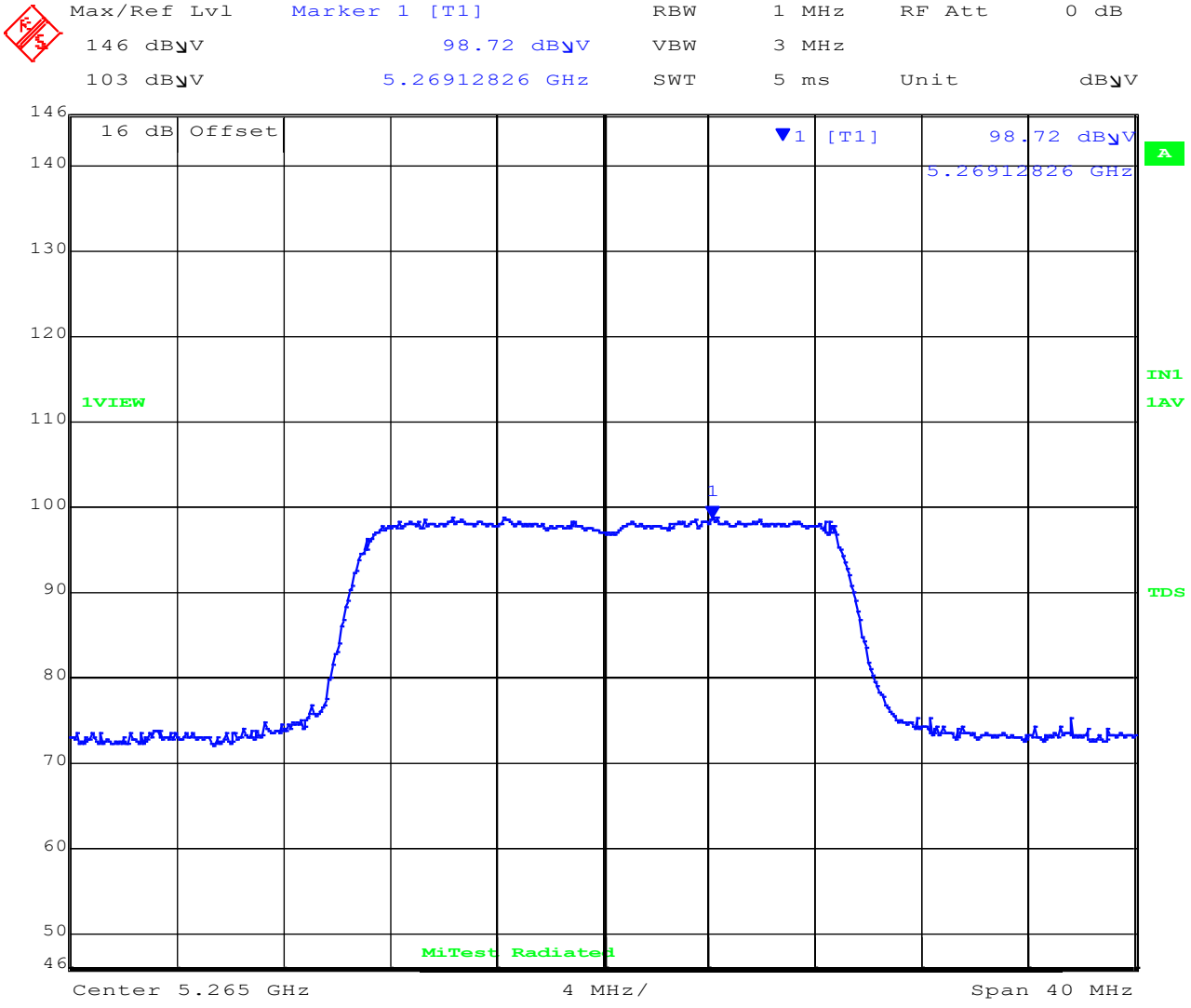
back to matrix

A.2. Power Spectral Density

A.2.1 Non-Beamforming

POWER SPECTRAL DENSITY

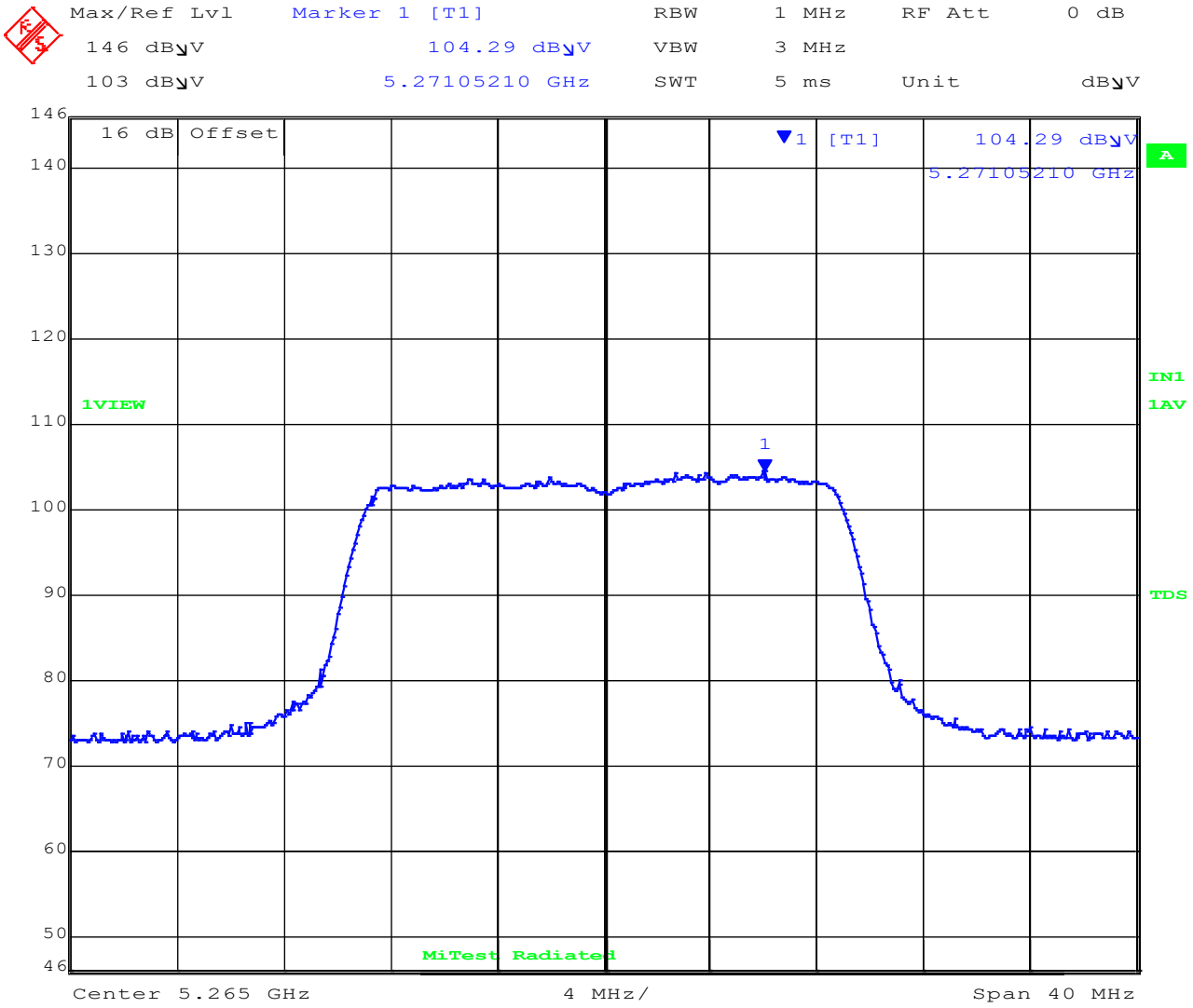
Variant: 20 MHz, Channel: 5265.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5265.00 MHz, Polarity V

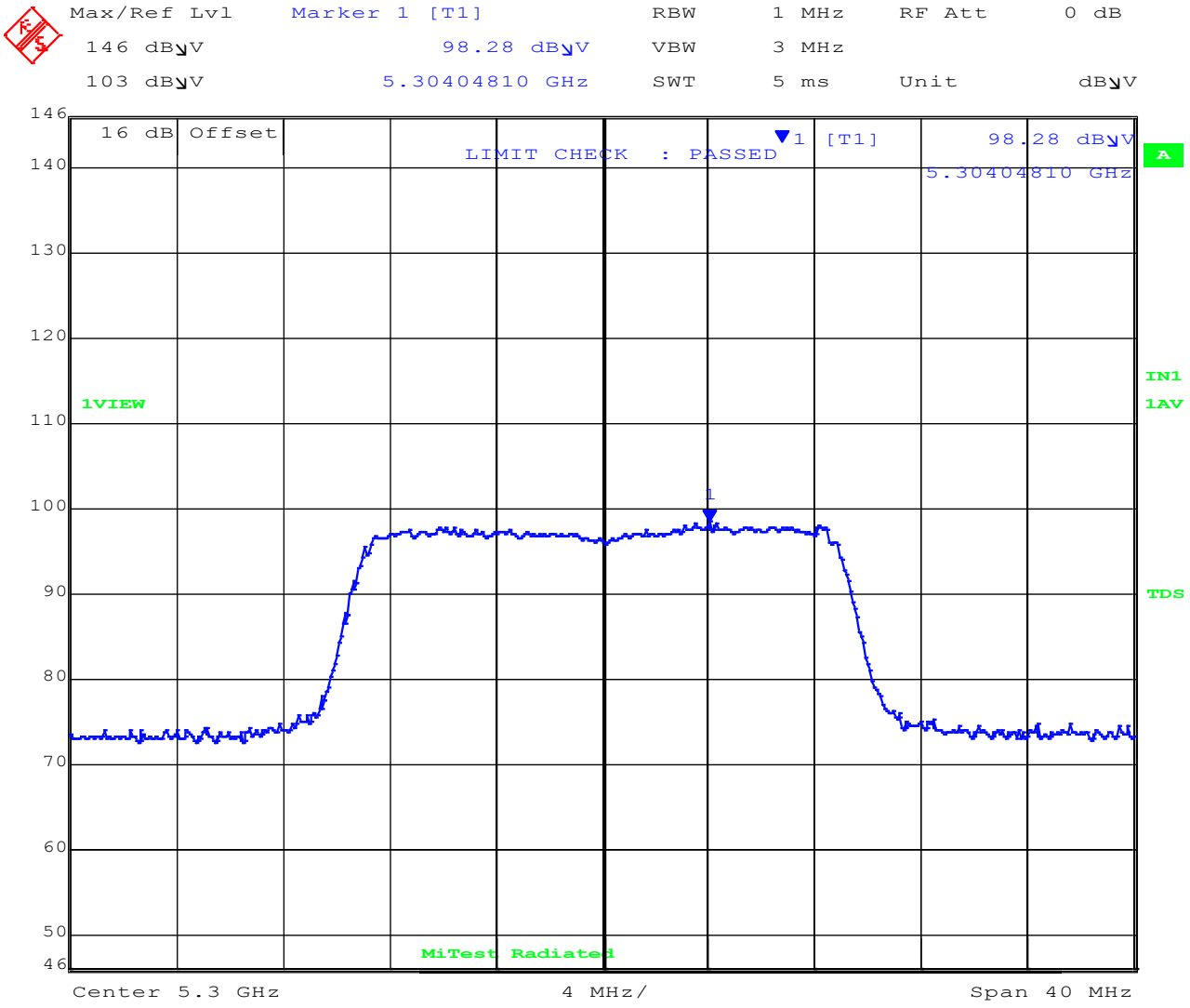


Date: 24.MAR.2021 10:37:17

back to matrix

POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5300.00 MHz, Polarity H

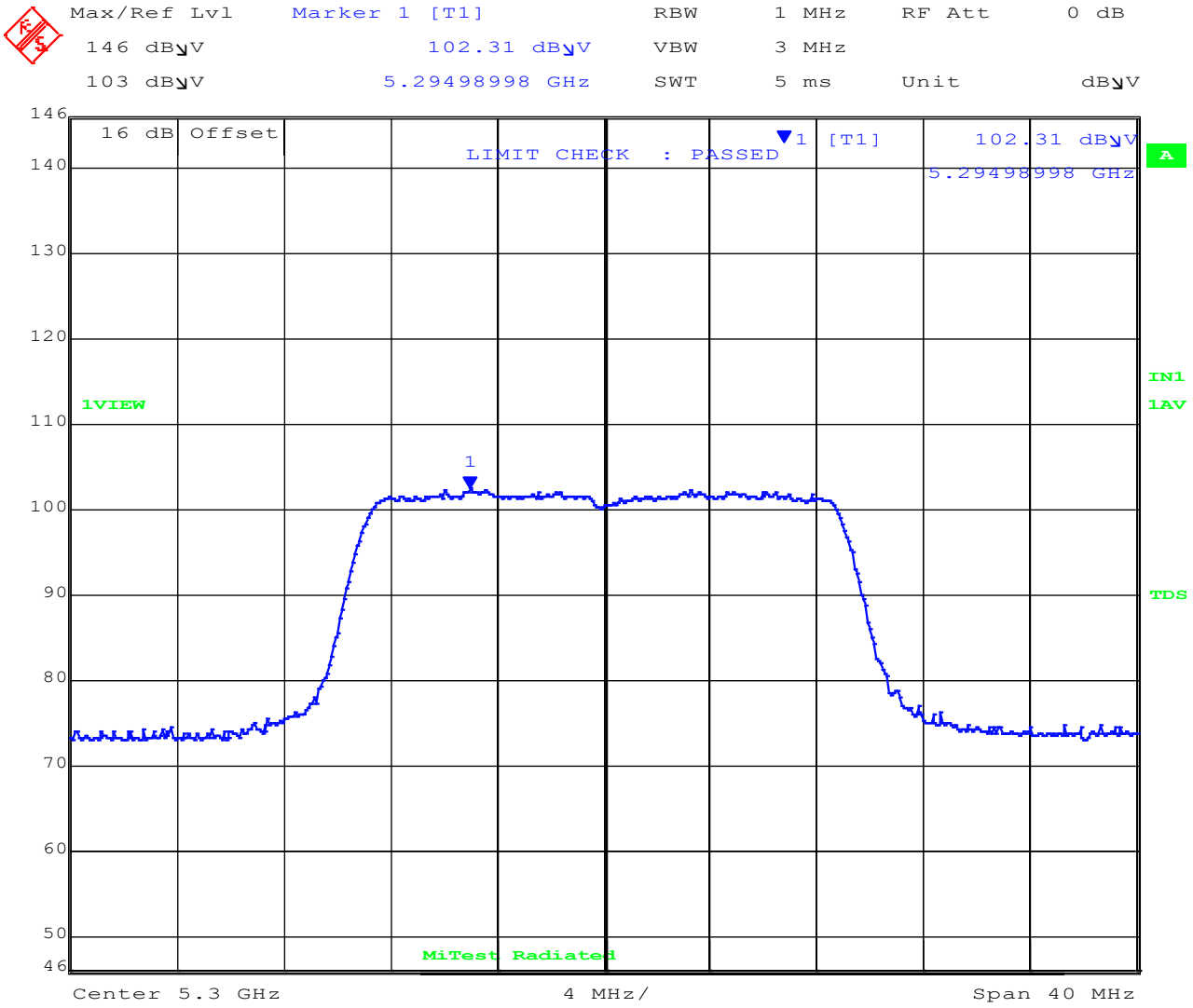


Date: 24.MAR.2021 10:40:37

back to matrix

POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5300.00 MHz, Polarity V

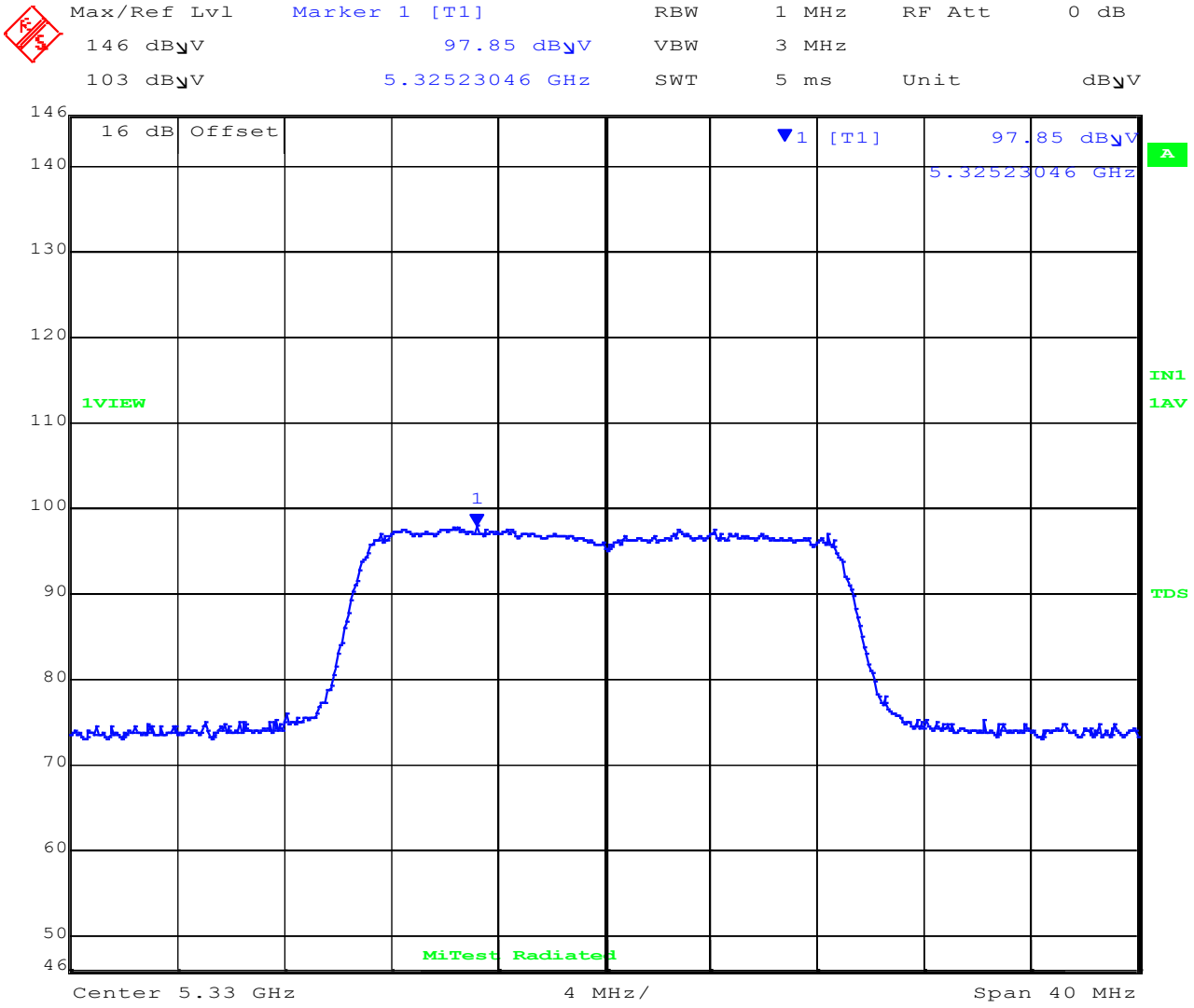


Date: 24.MAR.2021 10:42:34

back to matrix

POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5330.00 MHz, Polarity H

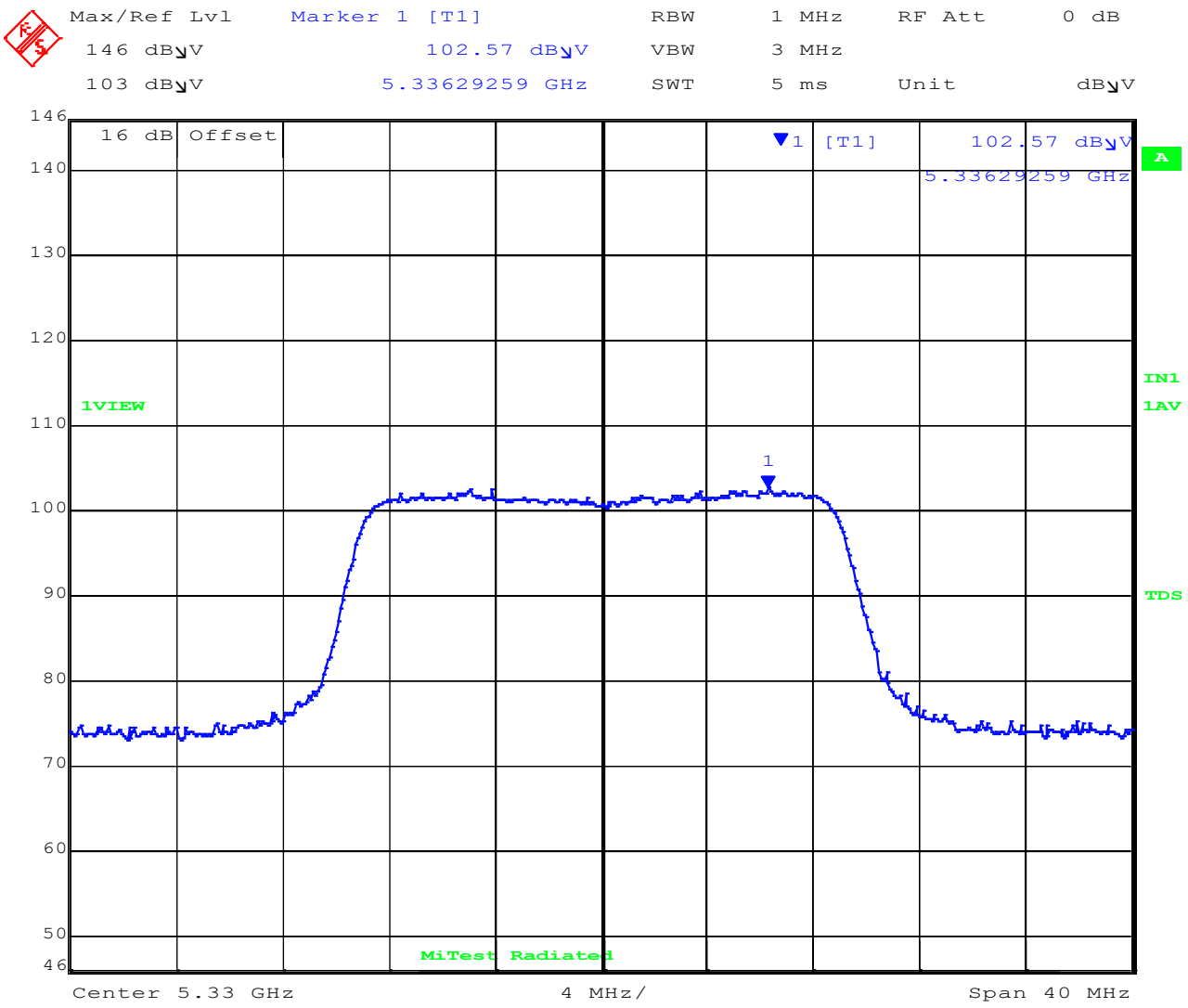


Date: 24.MAR.2021 10:44:54

back to matrix

POWER SPECTRAL DENSITY

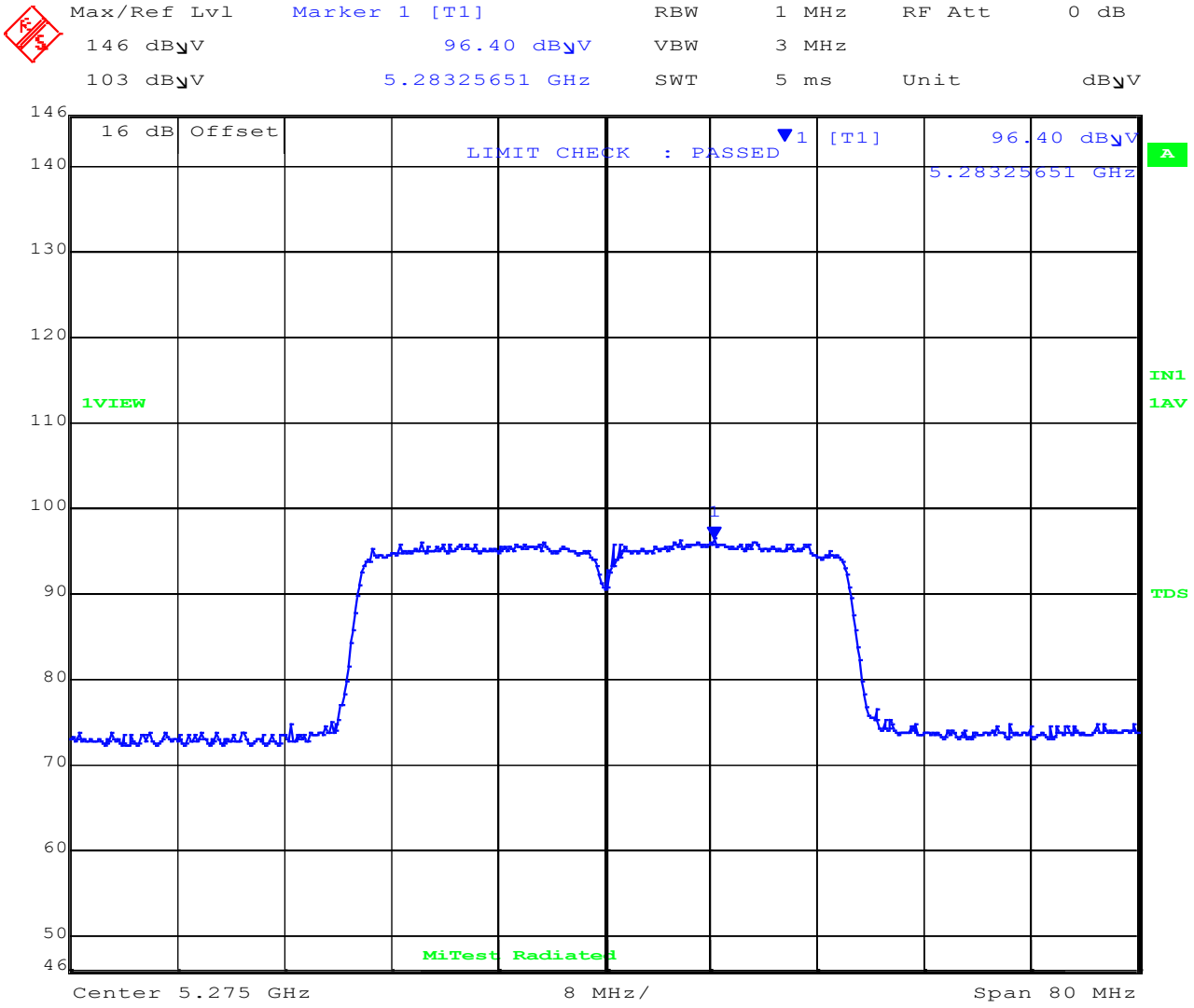
Variant: 20 MHz, Channel: 5330.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

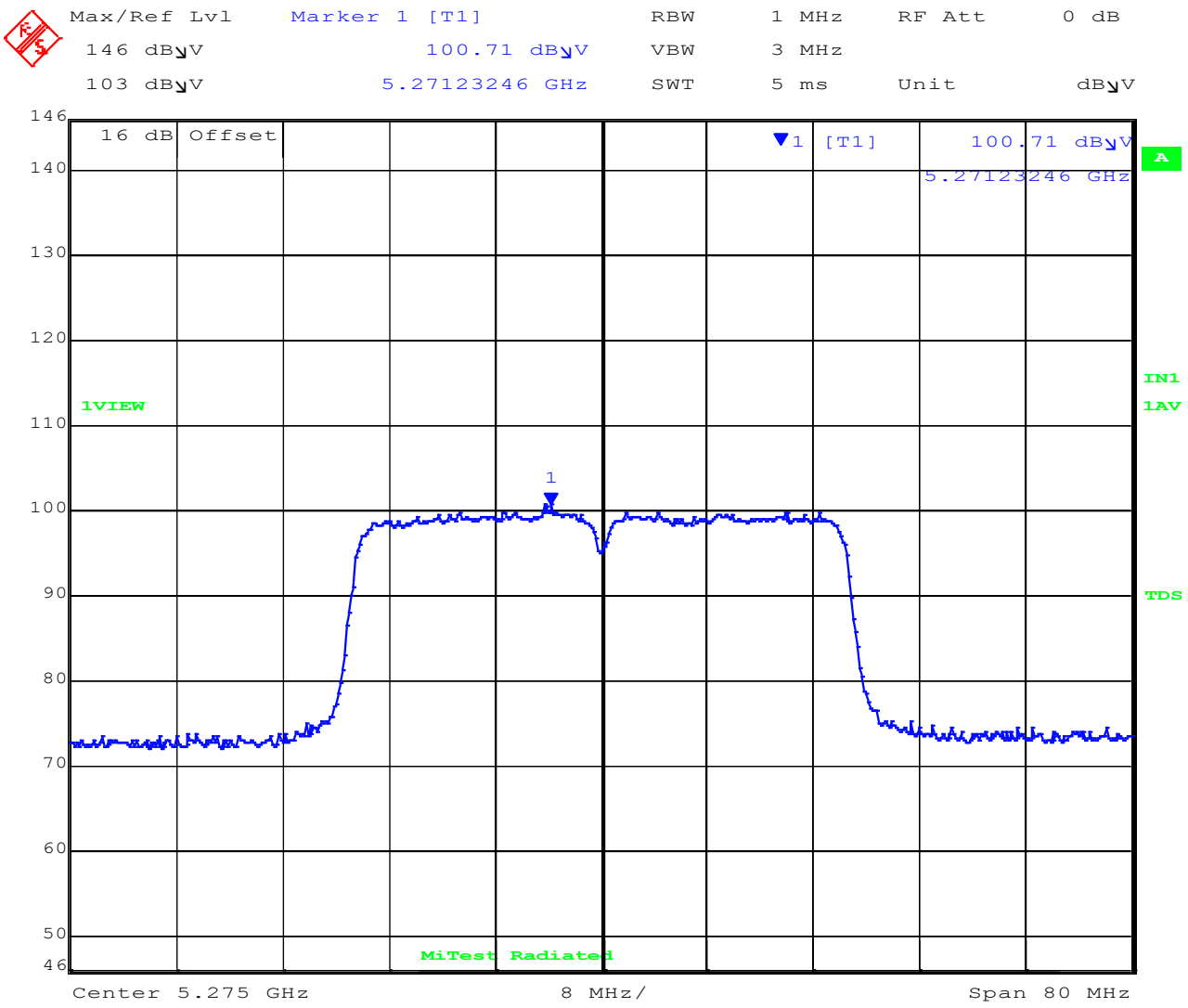
Variant: 40 MHz, Channel: 5275.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5275.00 MHz, Polarity V

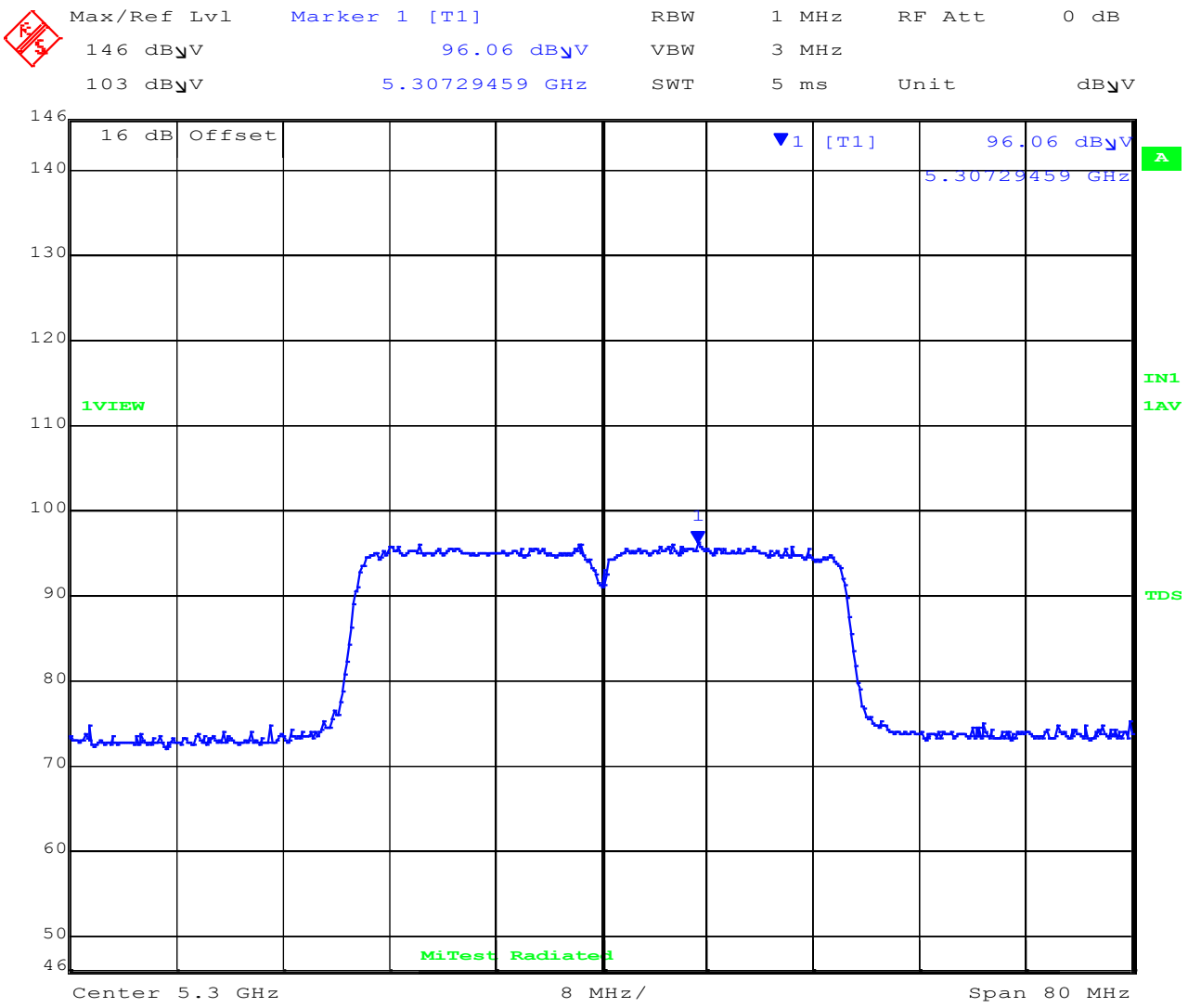


Date: 24.MAR.2021 10:58:38

back to matrix

POWER SPECTRAL DENSITY

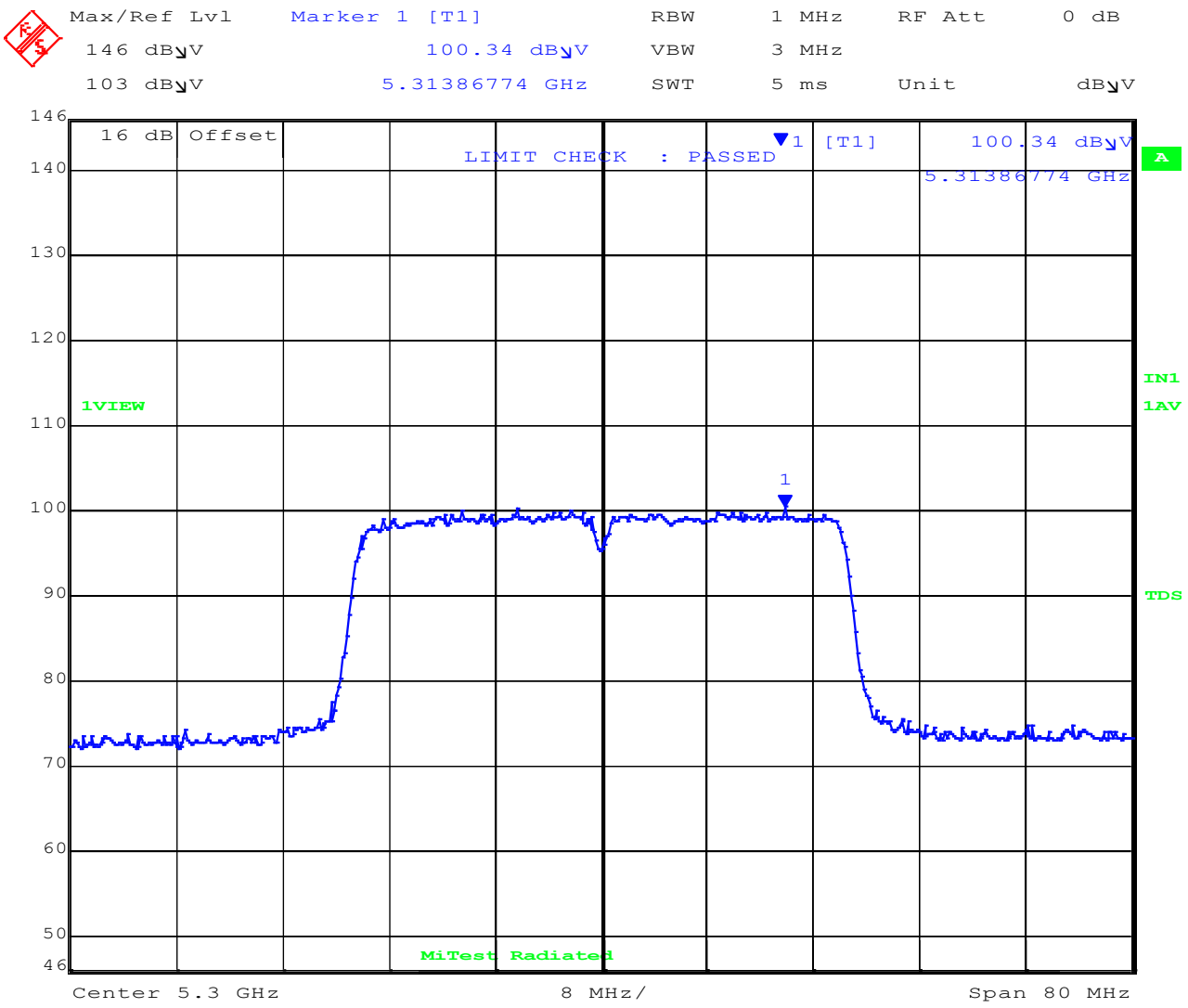
Variant: 40 MHz, Channel: 5300.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

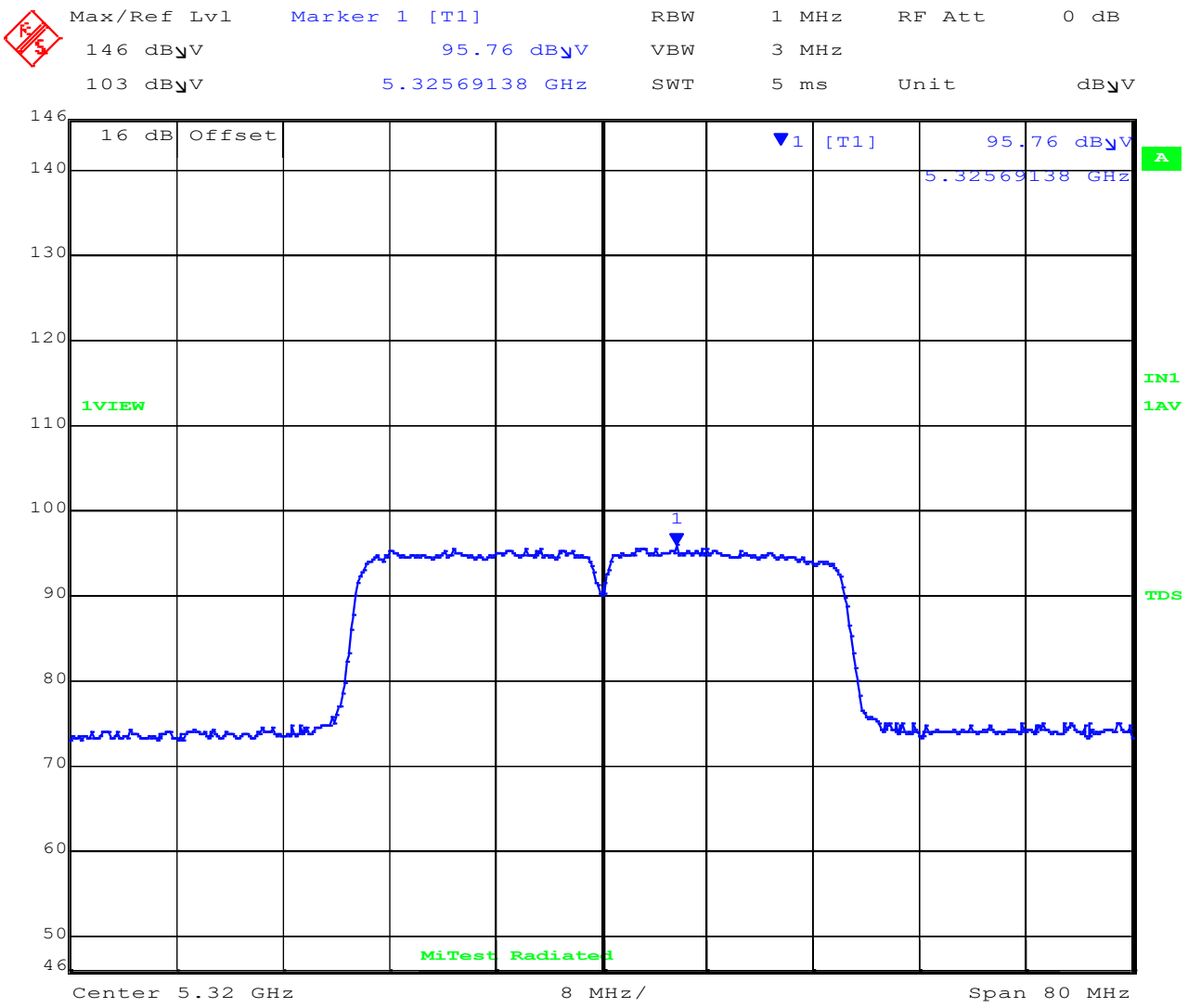
Variant: 40 MHz, Channel: 5300.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5320.00 MHz, Polarity H

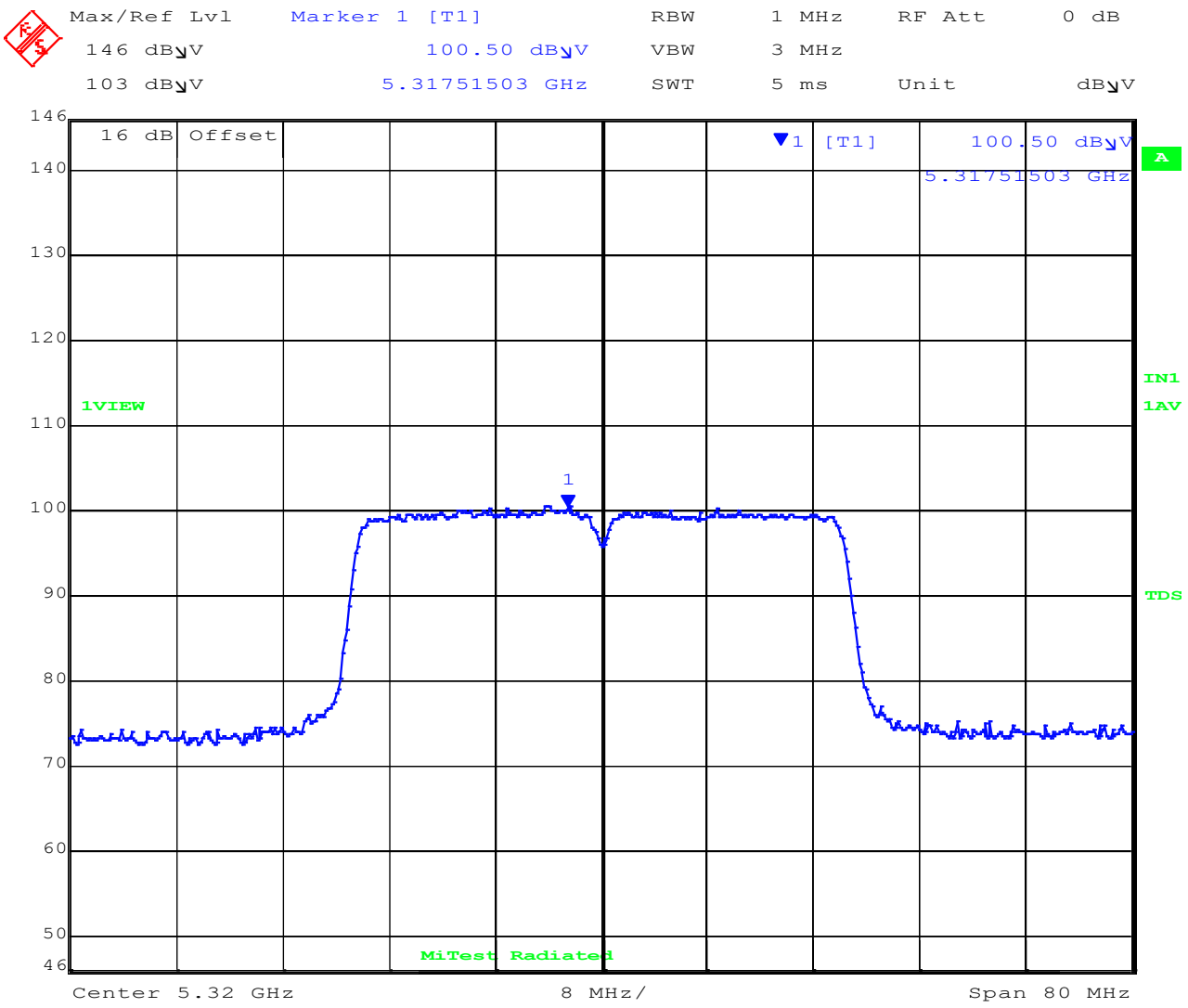


Date: 24.MAR.2021 10:47:41

back to matrix

POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5320.00 MHz, Polarity V

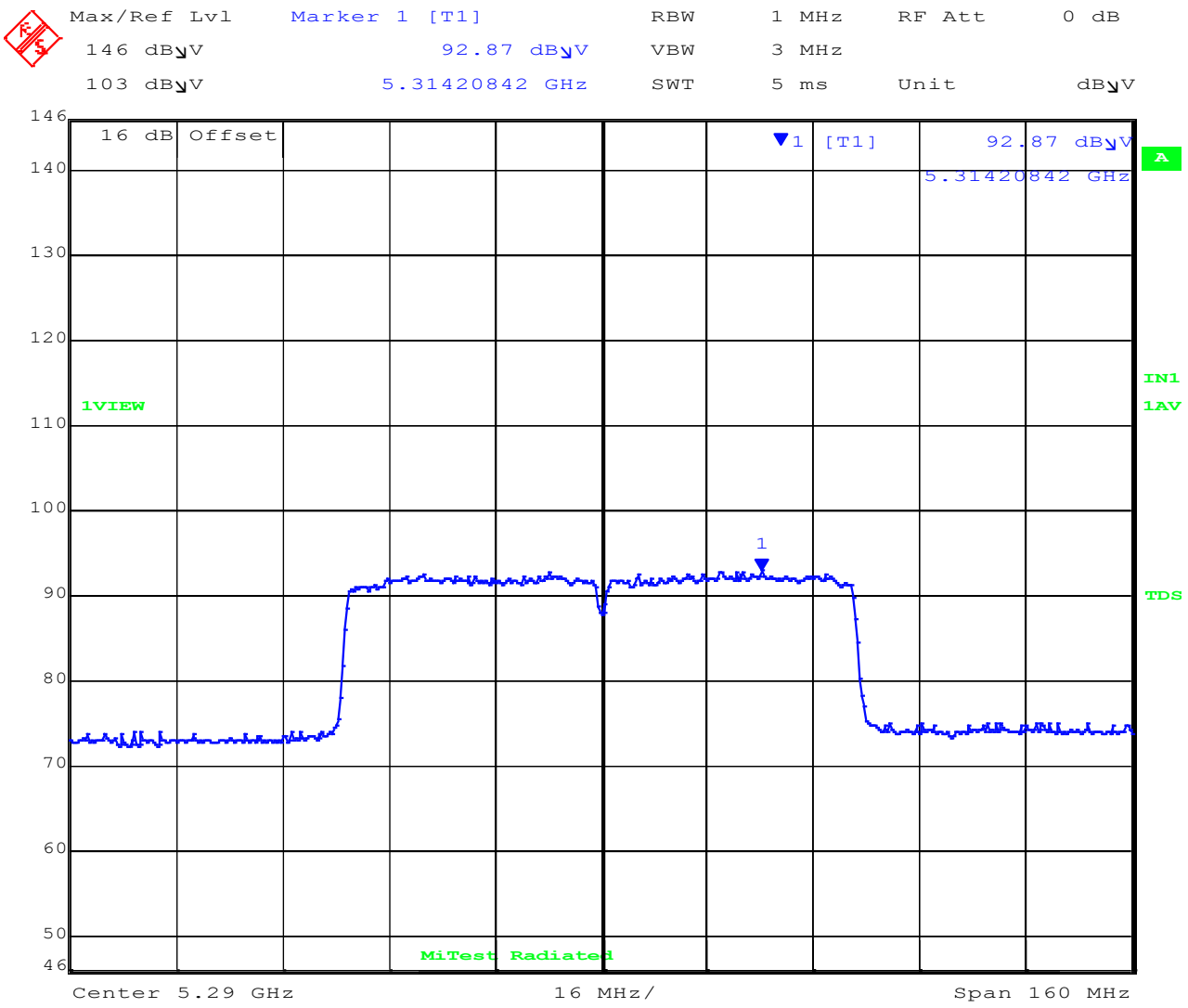


Date: 24.MAR.2021 10:48:44

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5290.00 MHz, Polarity H

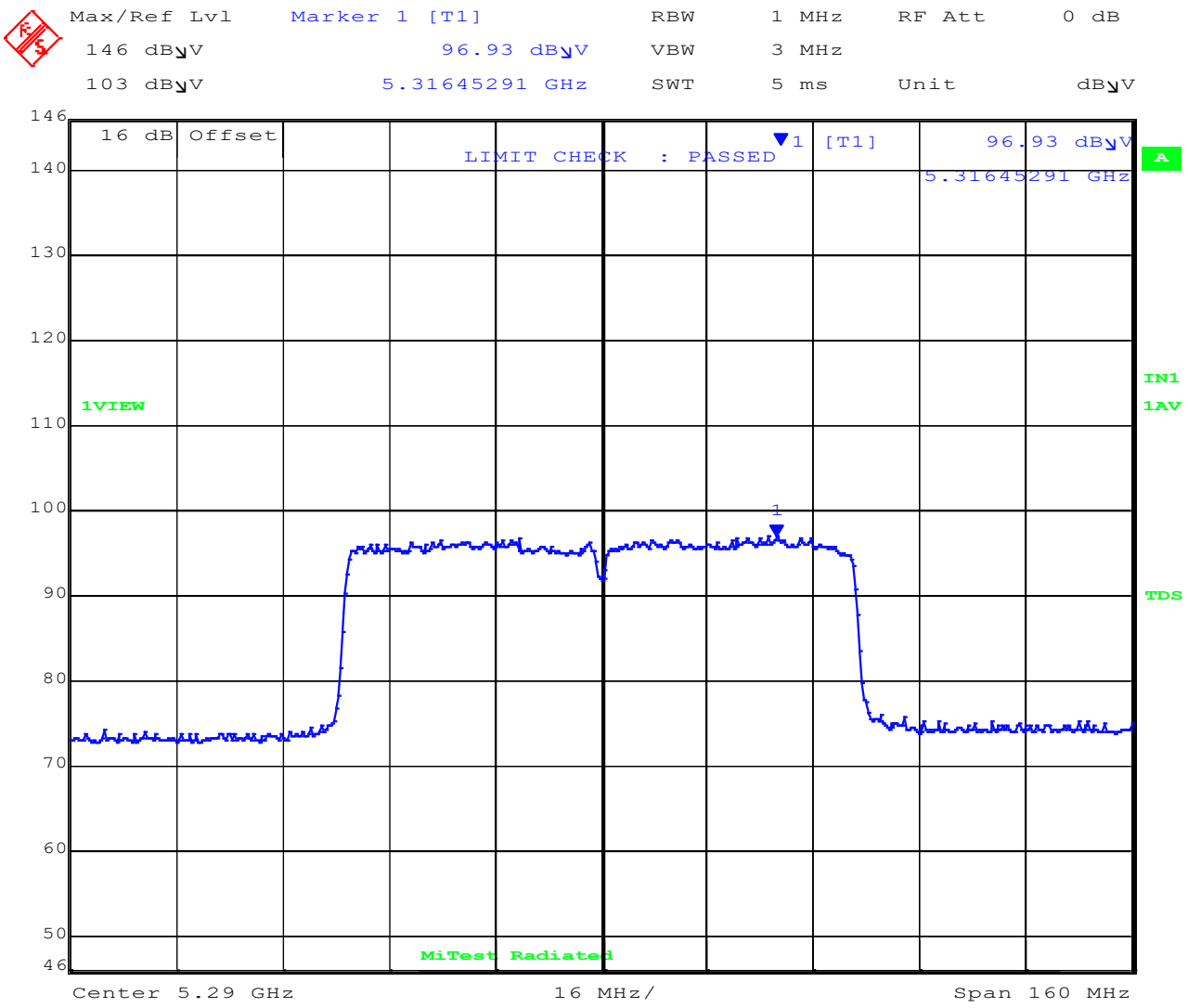


Date: 24.MAR.2021 11:02:59

back to matrix

POWER SPECTRAL DENSITY

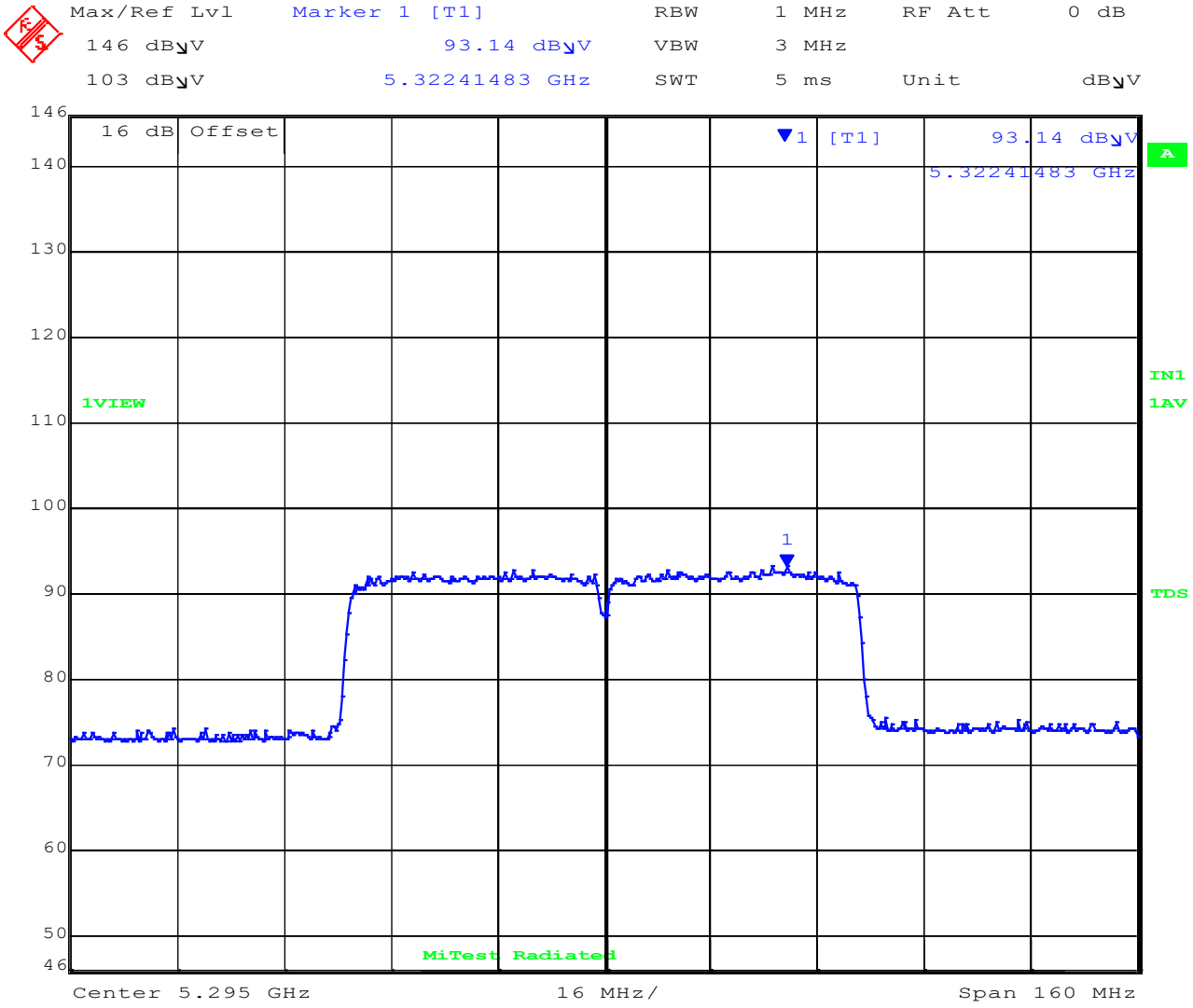
Variant: 80 MHz, Channel: 5290.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

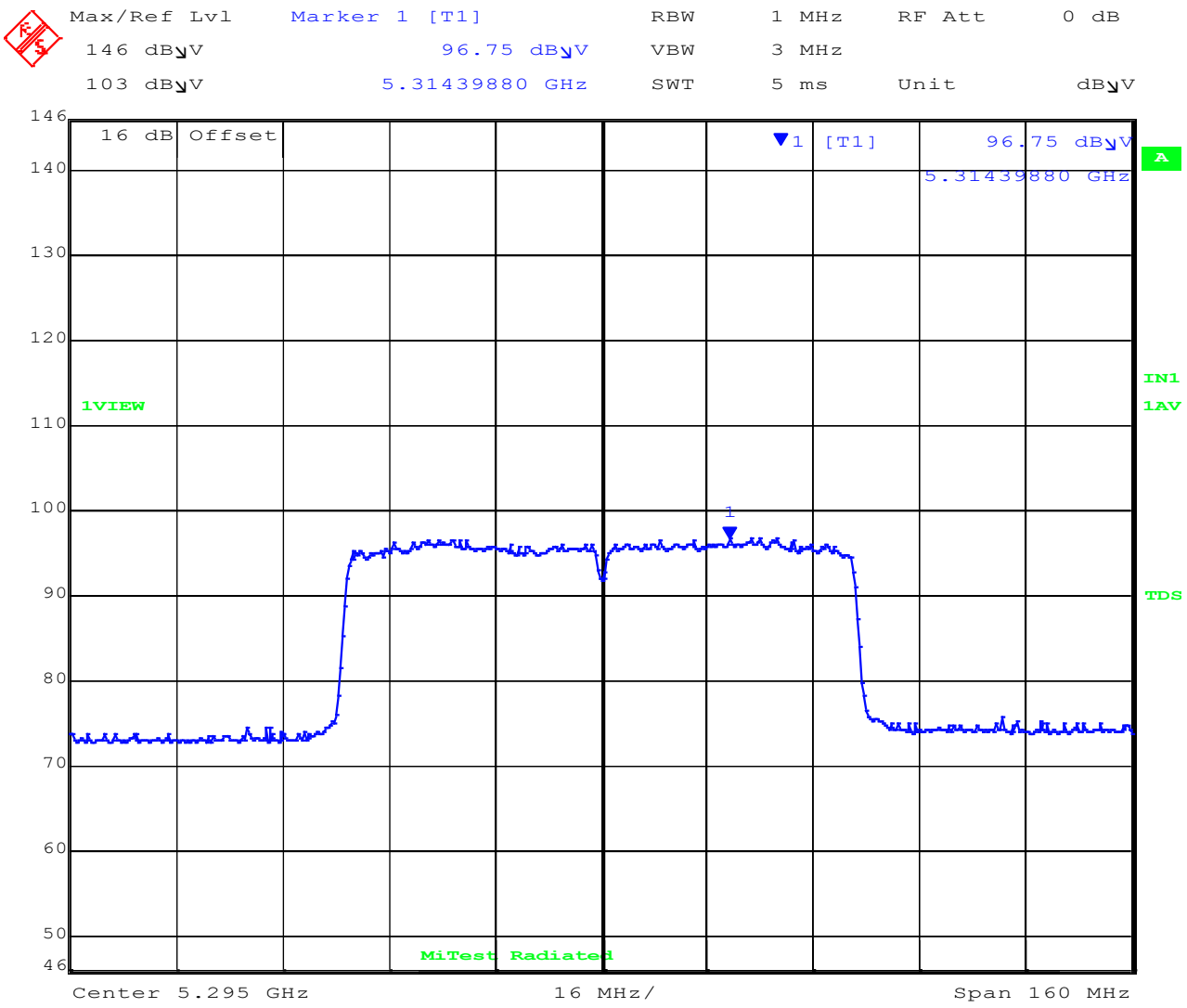
Variant: 80 MHz, Channel: 5295.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

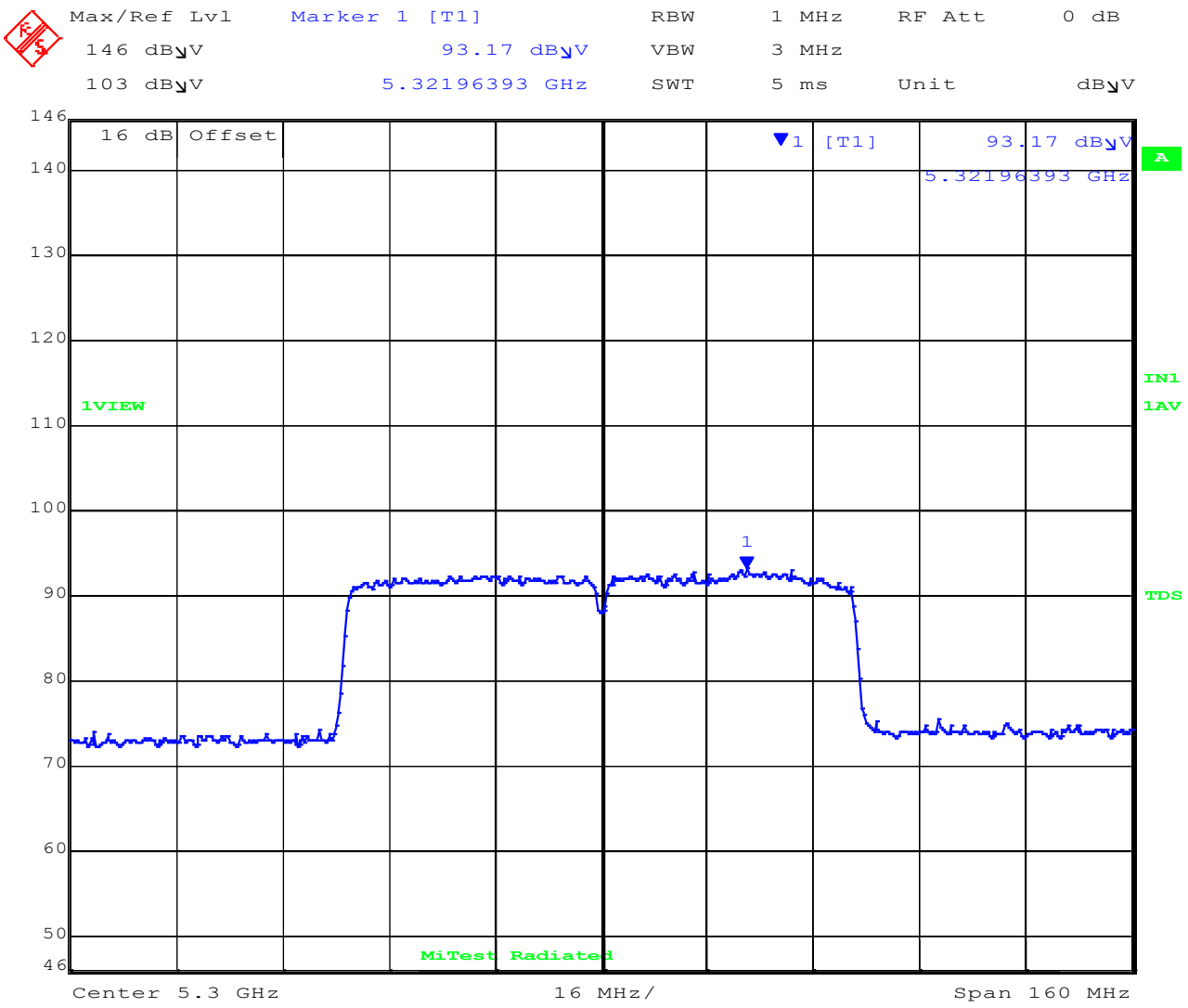
Variant: 80 MHz, Channel: 5295.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

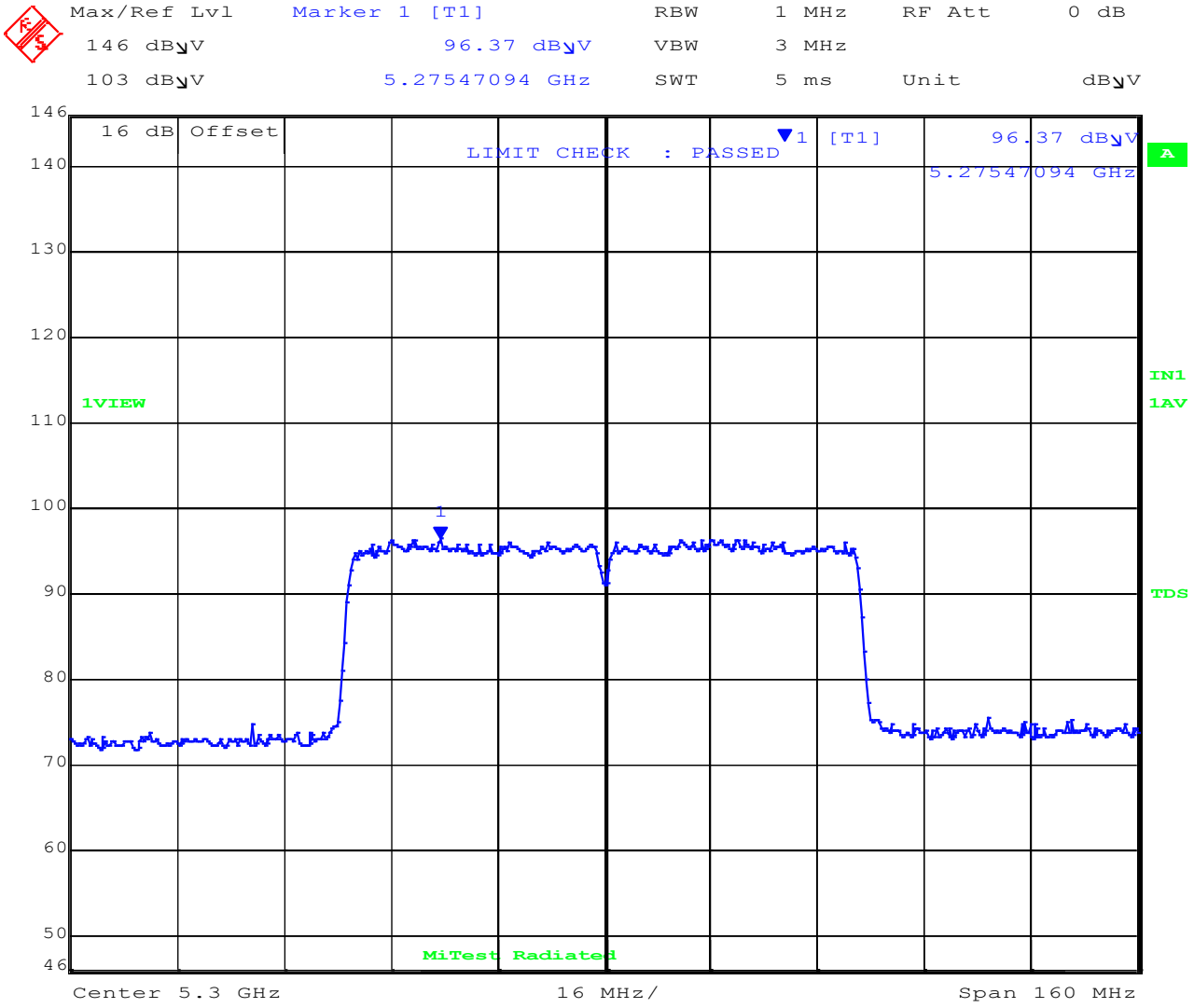
Variant: 80 MHz, Channel: 5300.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

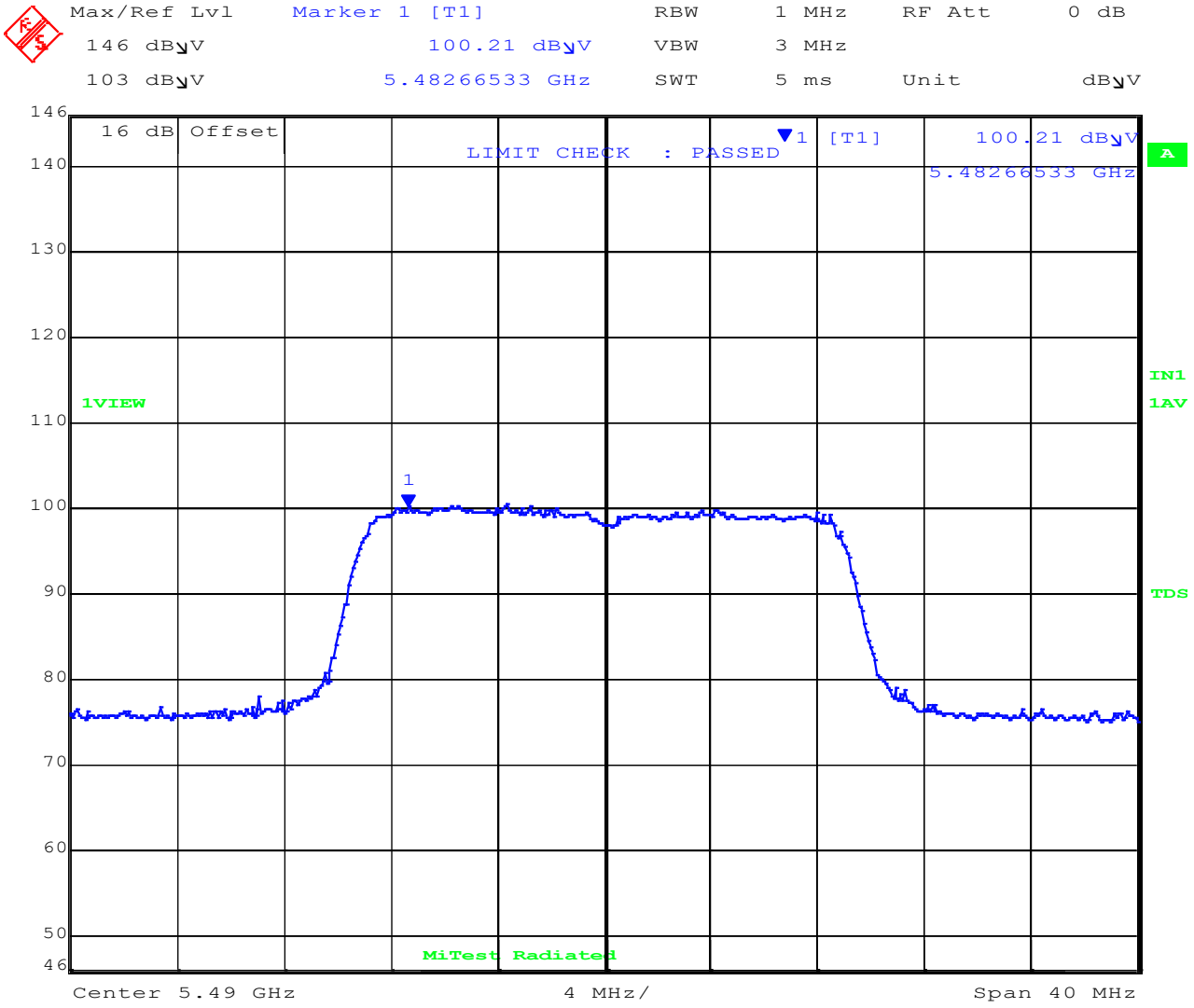
Variant: 80 MHz, Channel: 5300.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

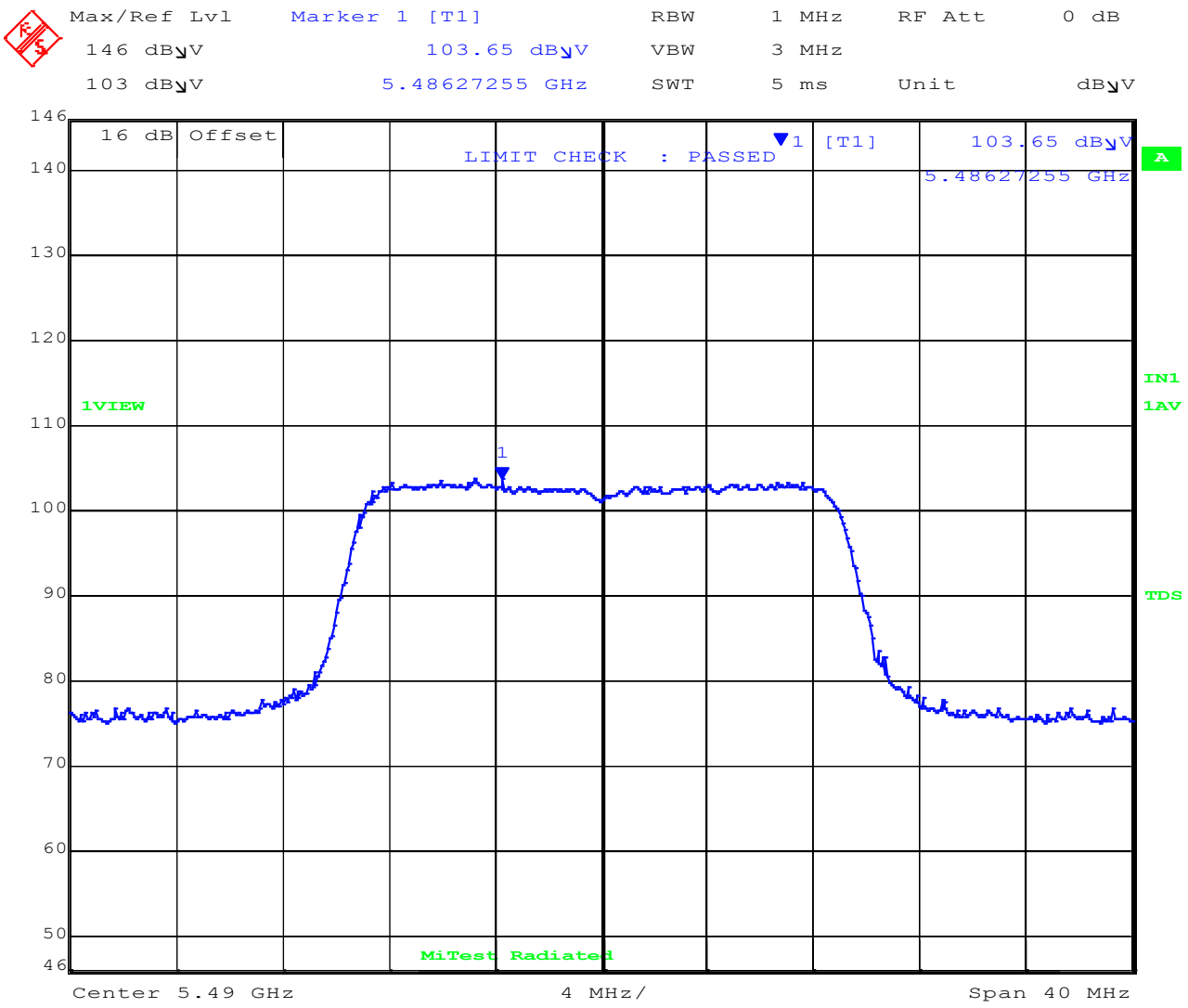
Variant: 20 MHz, Channel: 5490.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

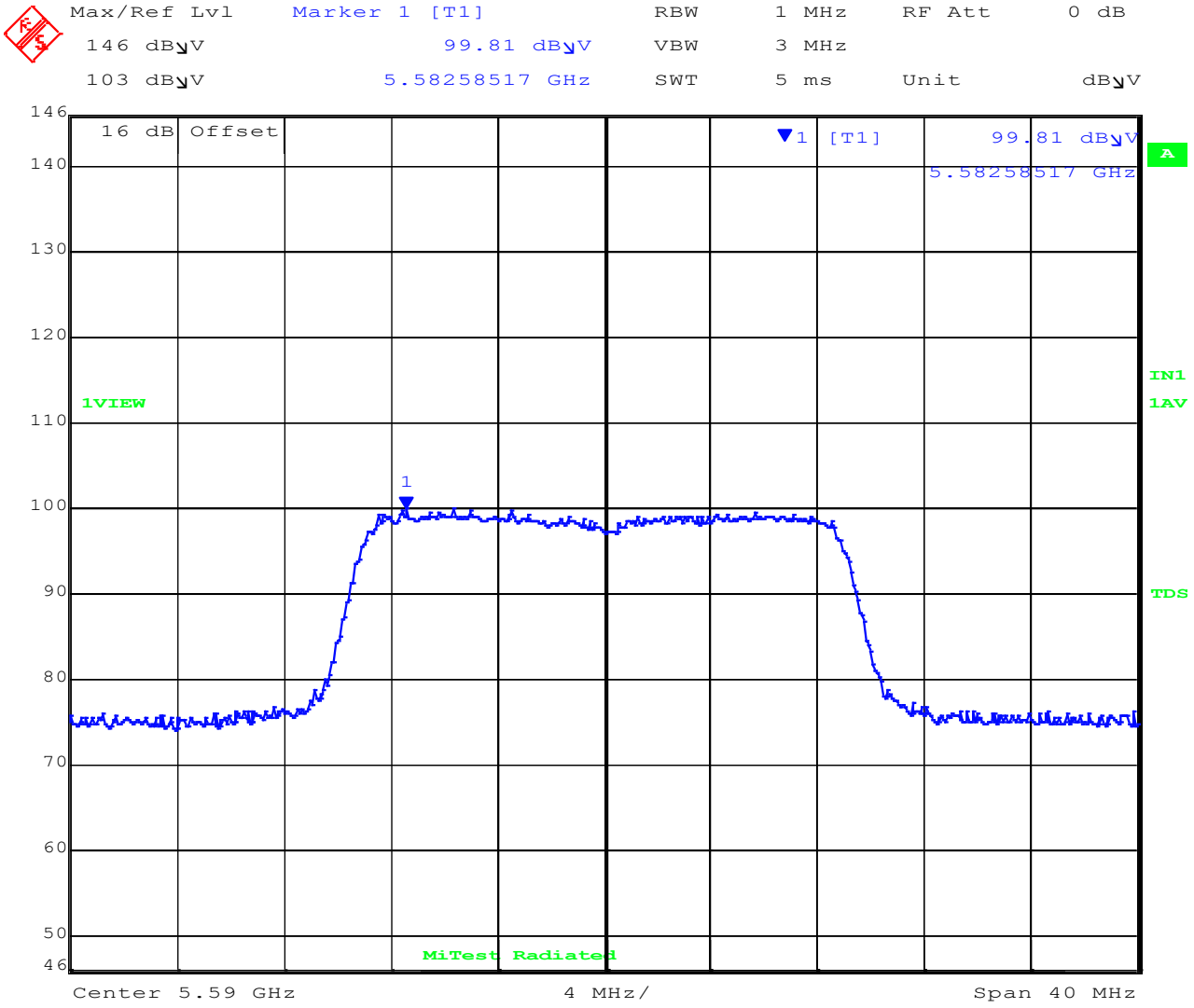
Variant: 20 MHz, Channel: 5490.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

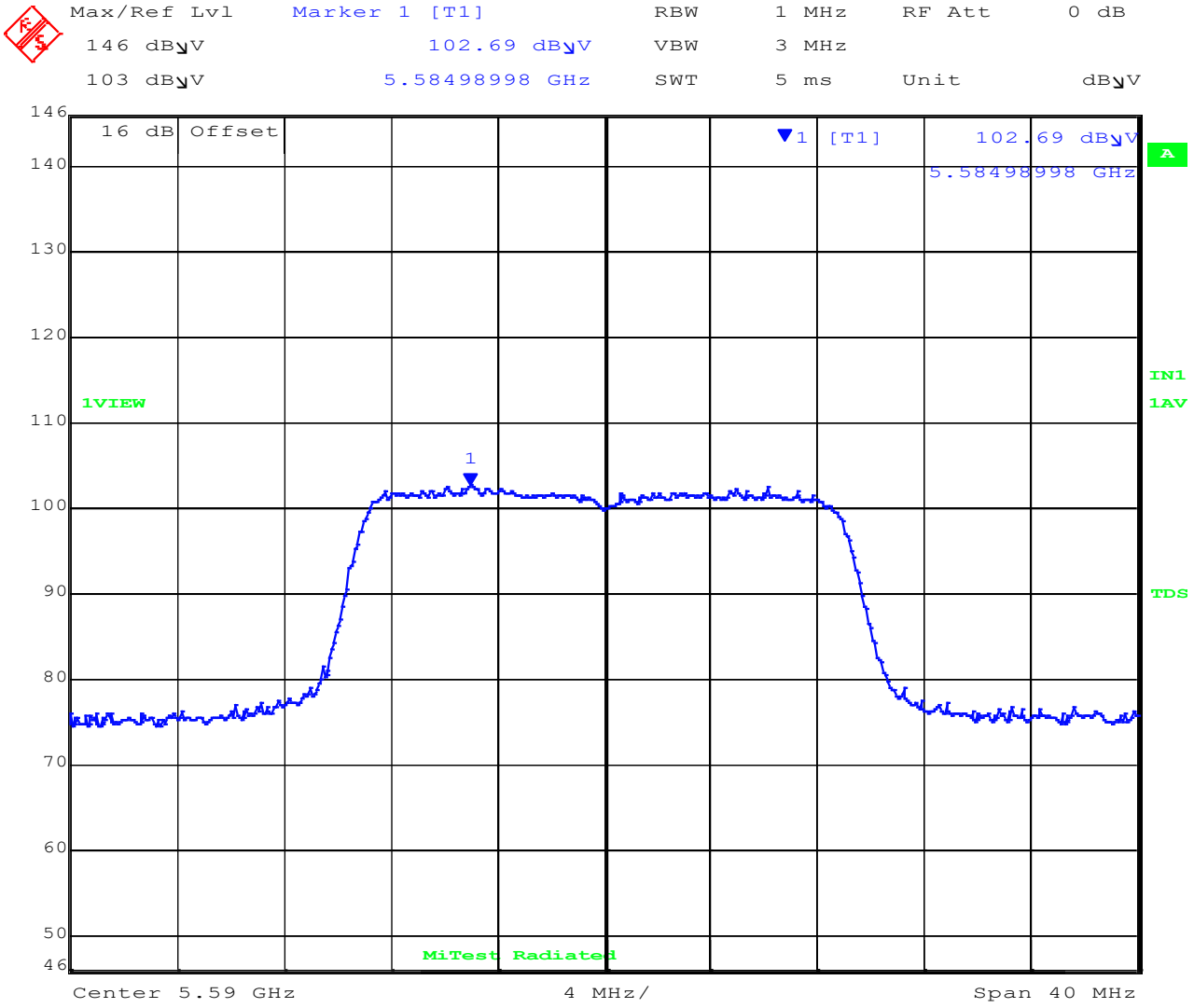
Variant: 20 MHz, Channel: 5590.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

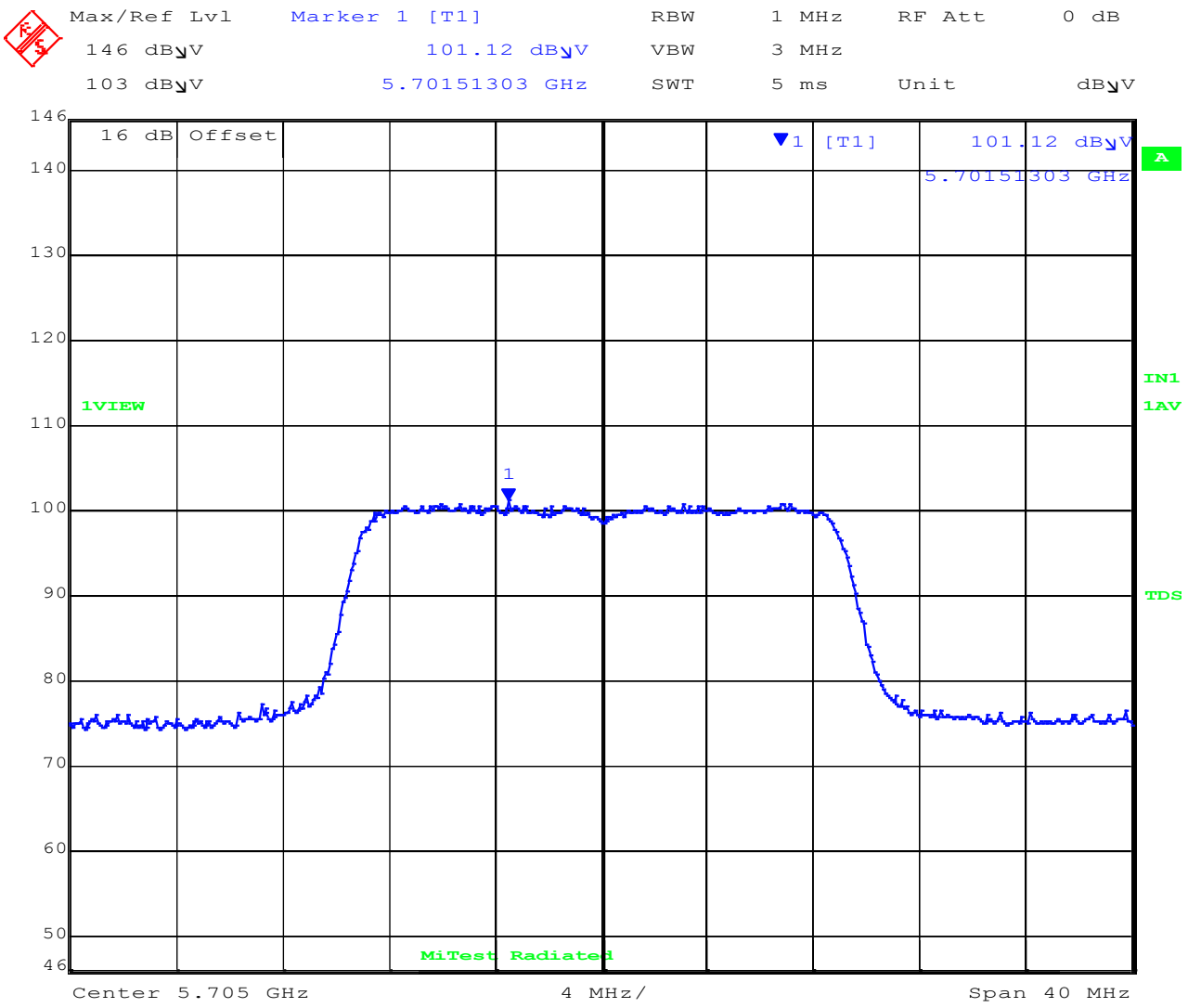
Variant: 20 MHz, Channel: 5590.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

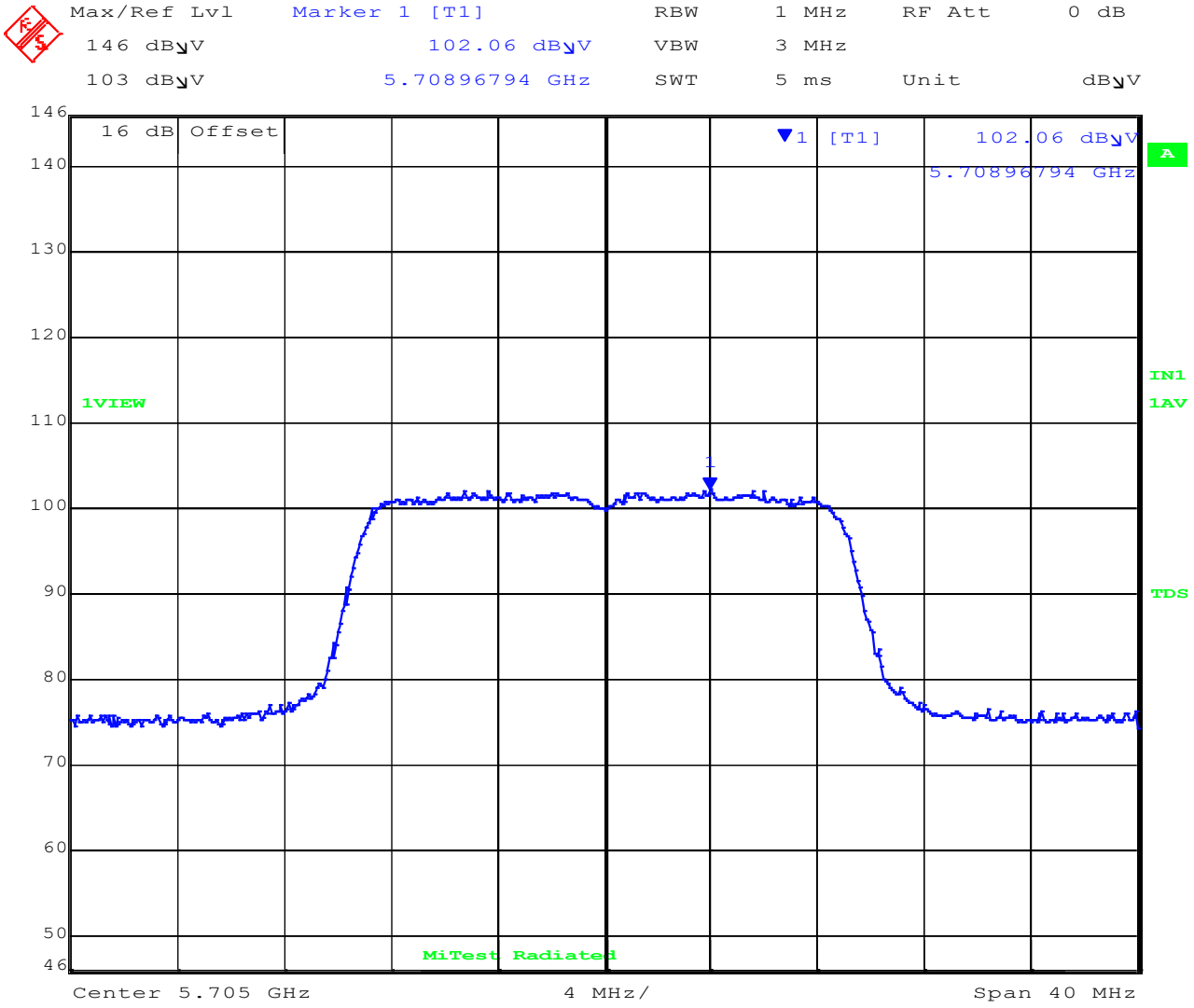
Variant: 20 MHz, Channel: 5705.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

Variant: 20 MHz, Channel: 5705.00 MHz, Polarity V

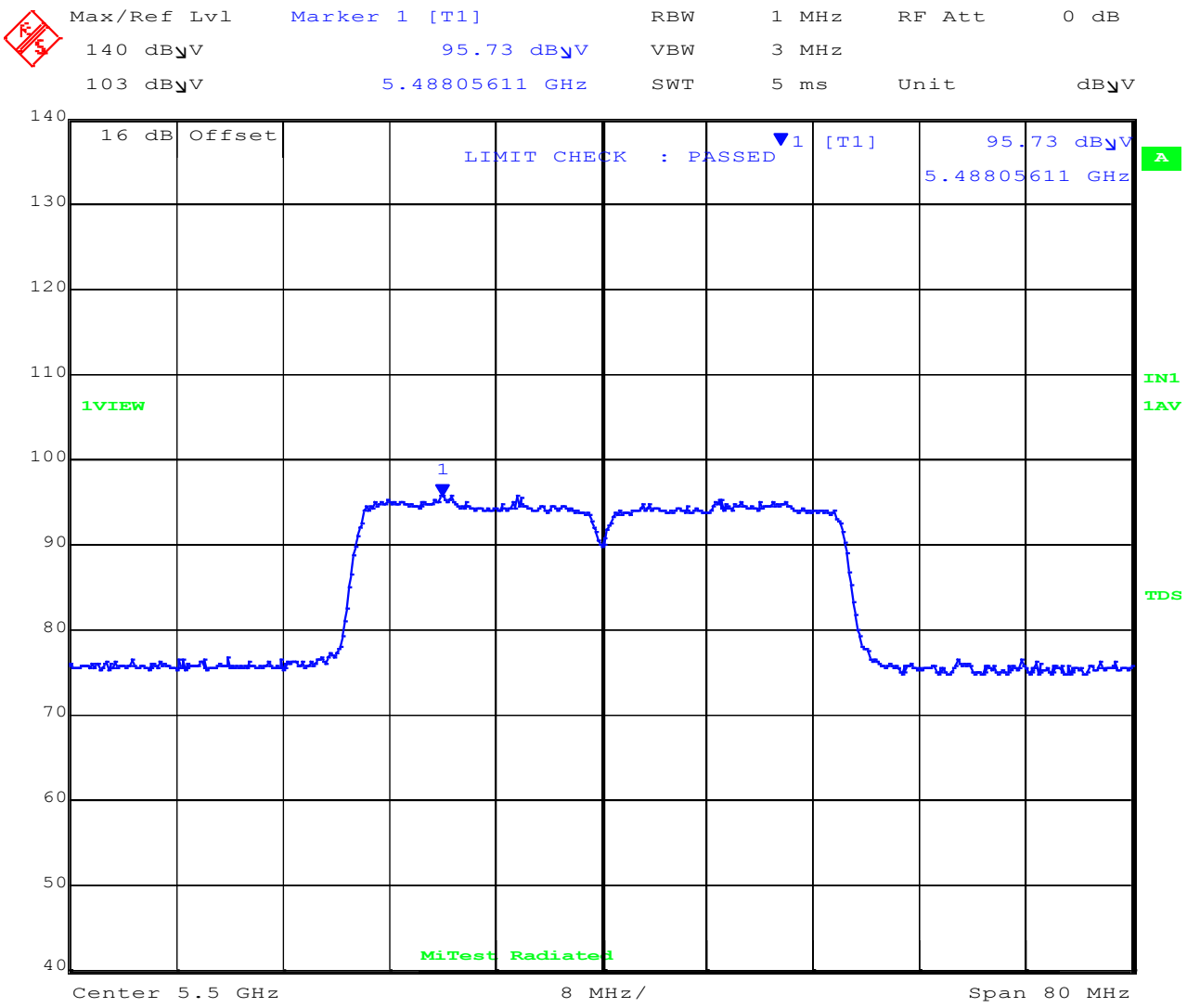


Date: 24.MAR.2021 09:42:35

back to matrix

POWER SPECTRAL DENSITY

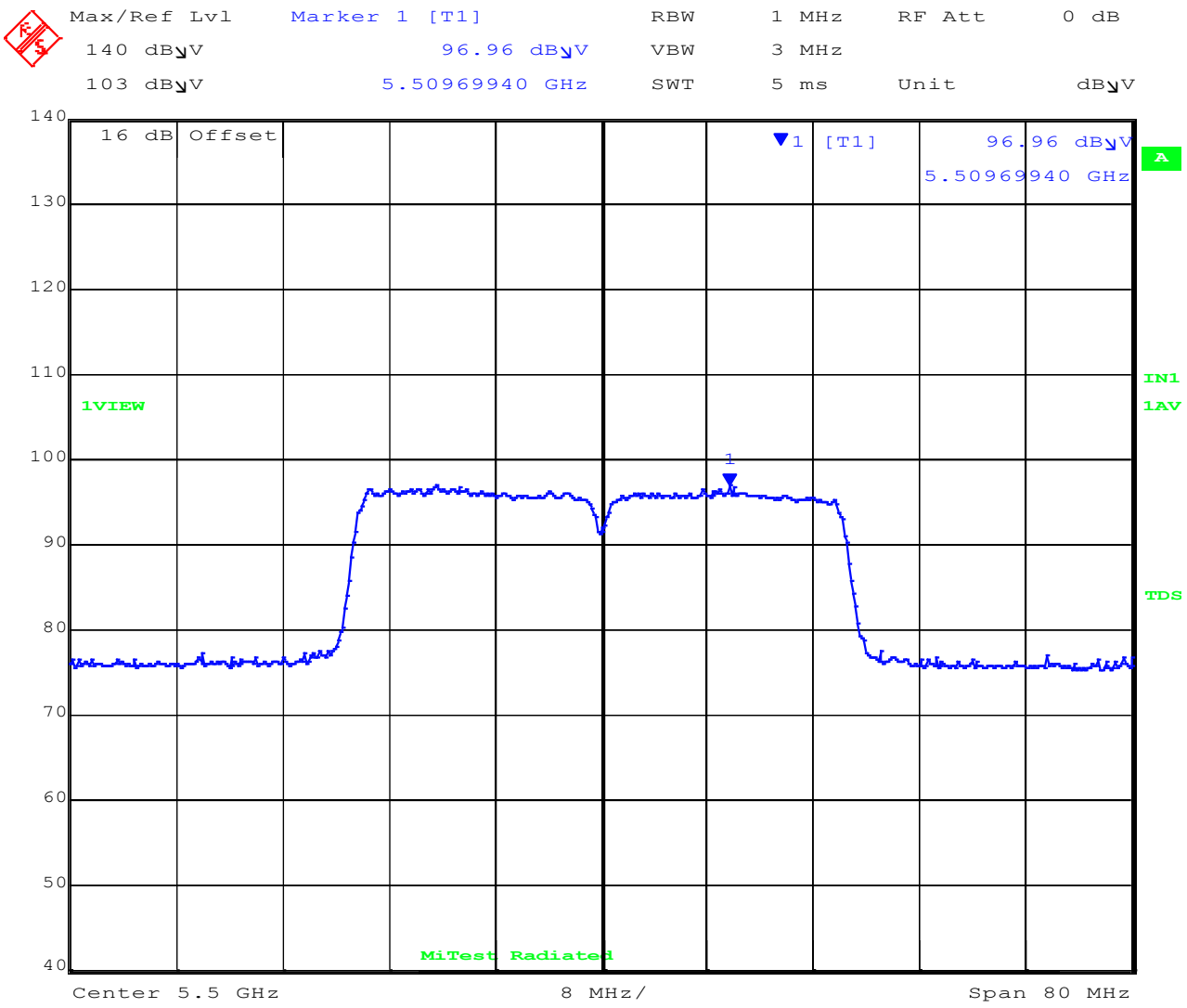
Variant: 40 MHz, Channel: 5500.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

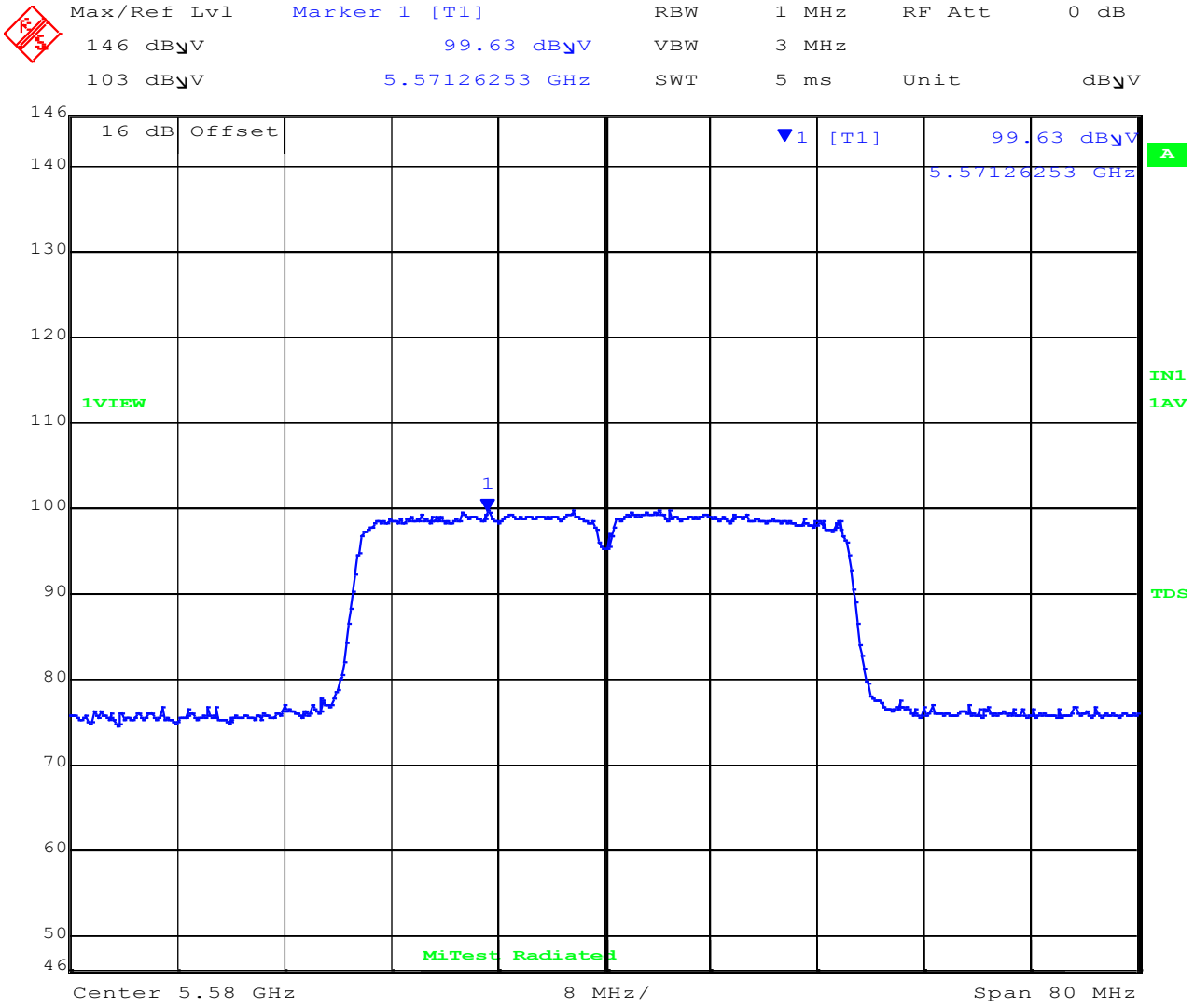
Variant: 40 MHz, Channel: 5500.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

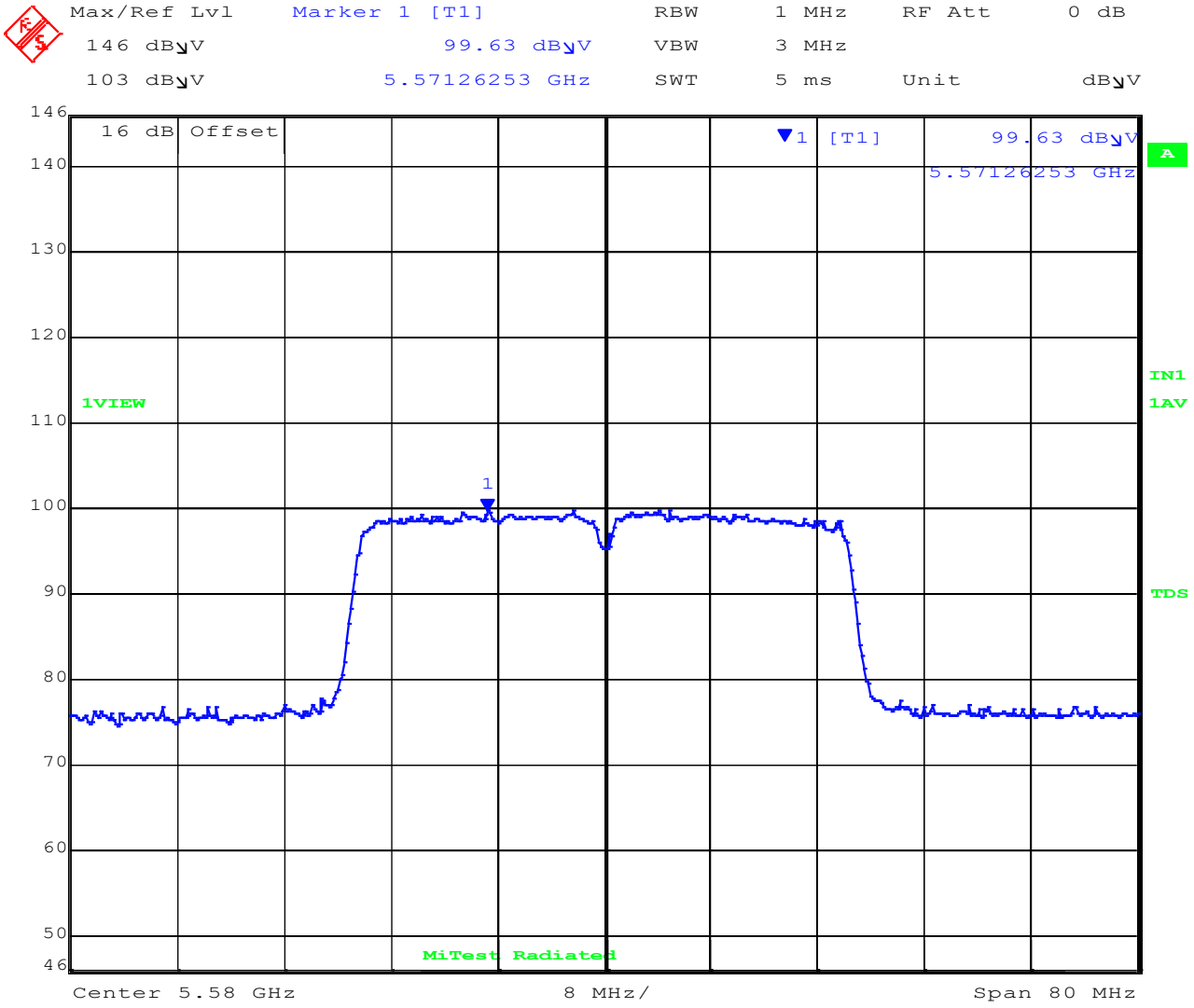
Variant: 40 MHz, Channel: 5580.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

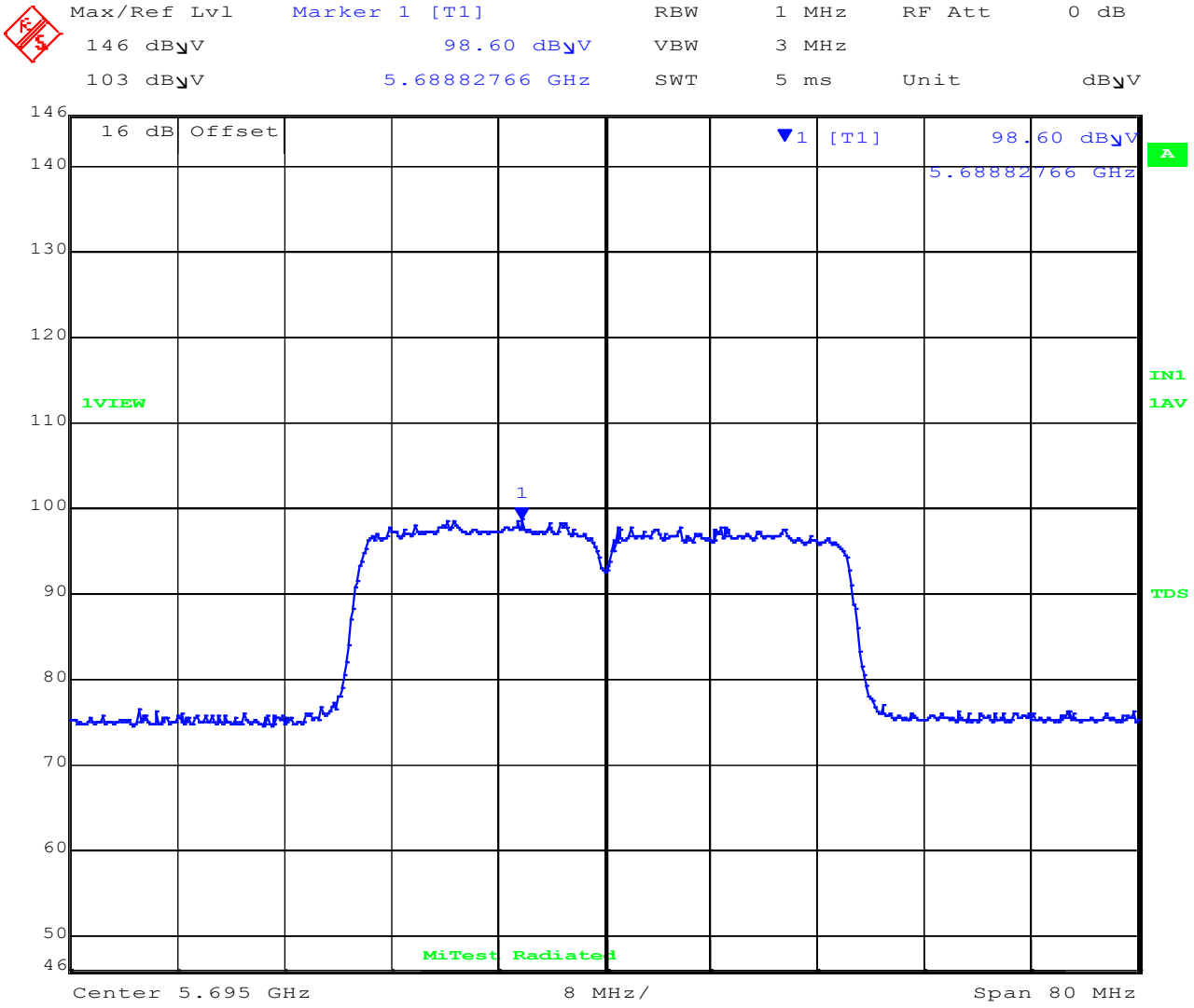
Variant: 40 MHz, Channel: 5580.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

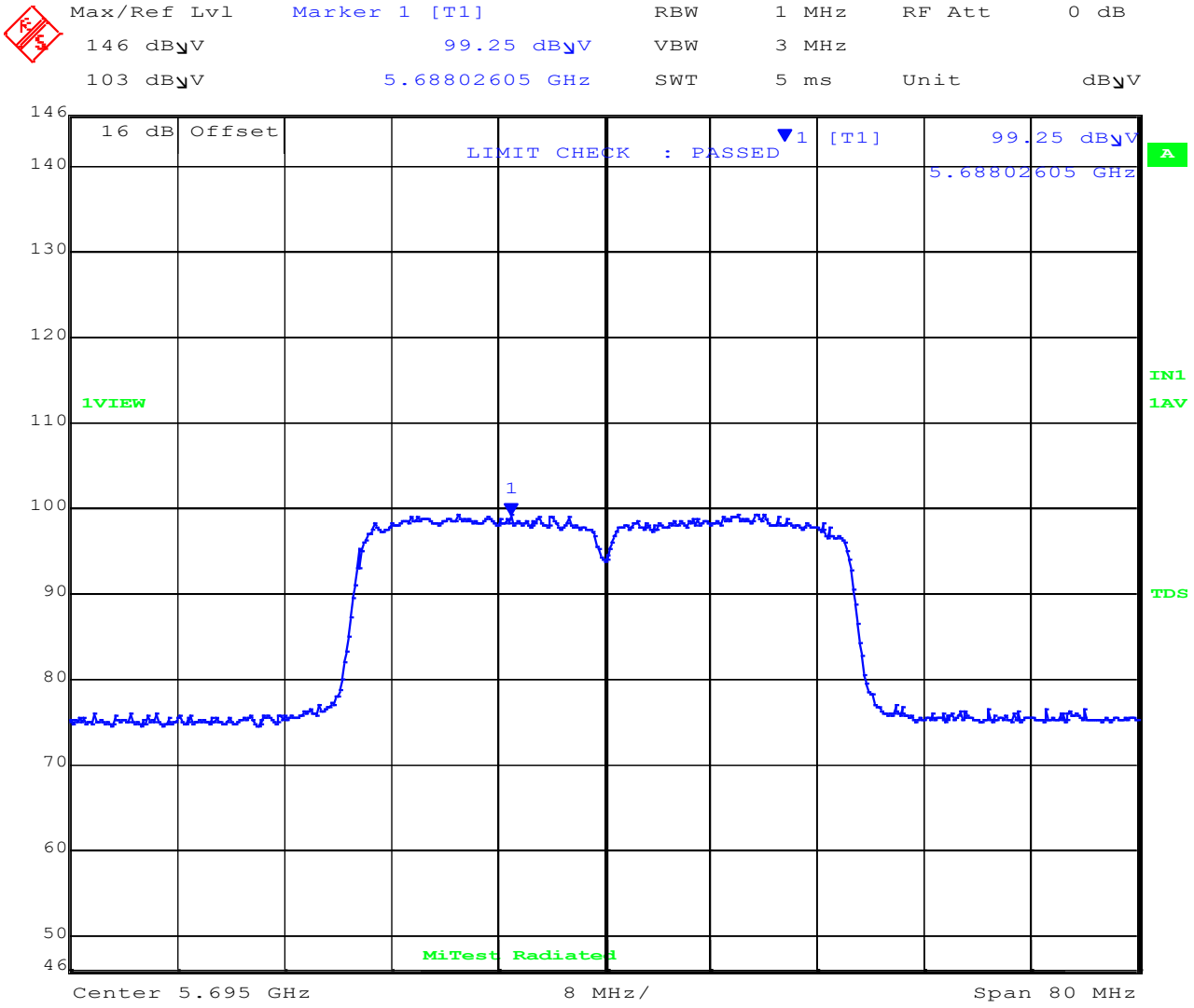
Variant: 40 MHz, Channel: 5695.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

Variant: 40 MHz, Channel: 5695.00 MHz, Polarity V

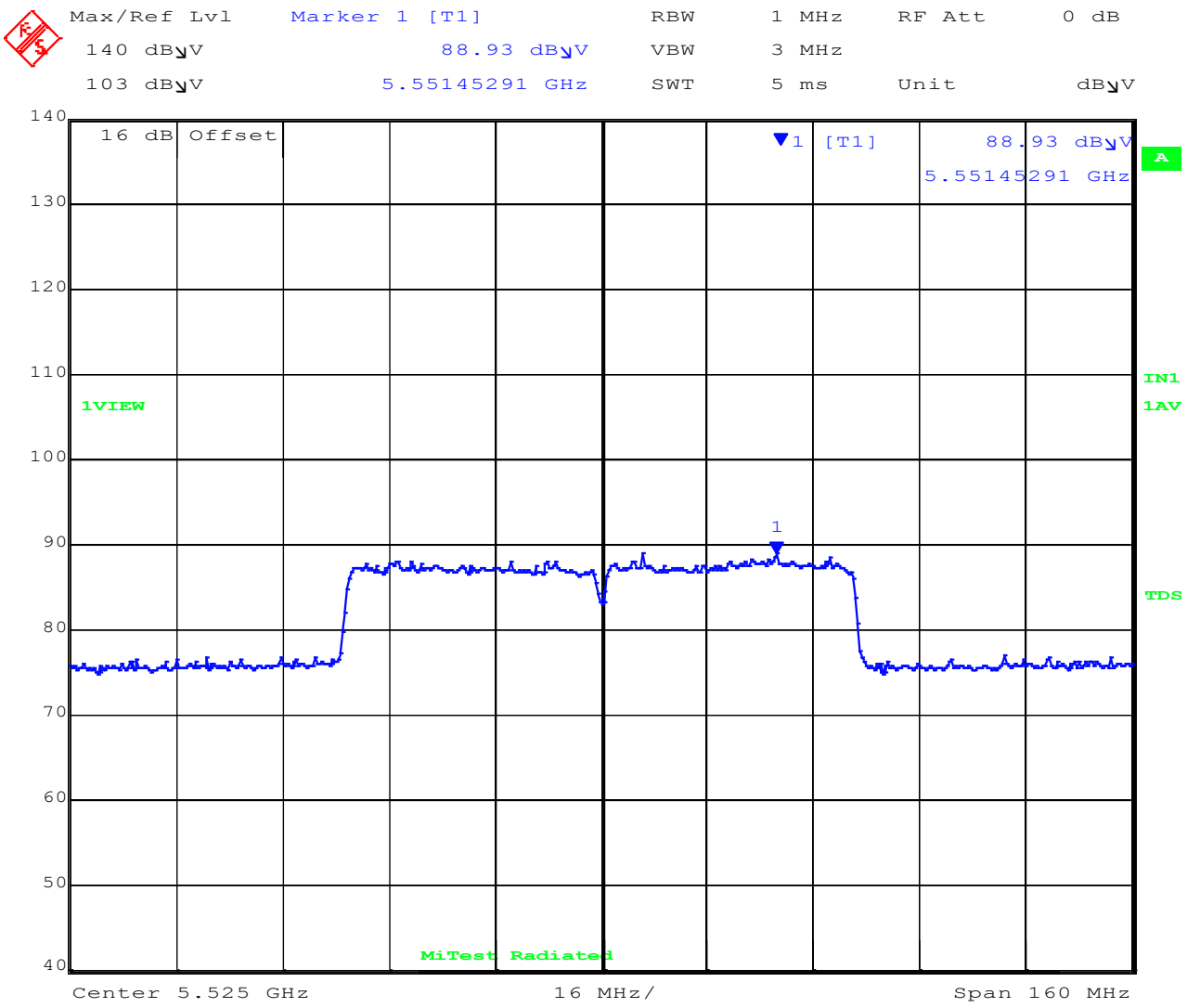


Date: 24.MAR.2021 10:04:04

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5525.00 MHz, Polarity H

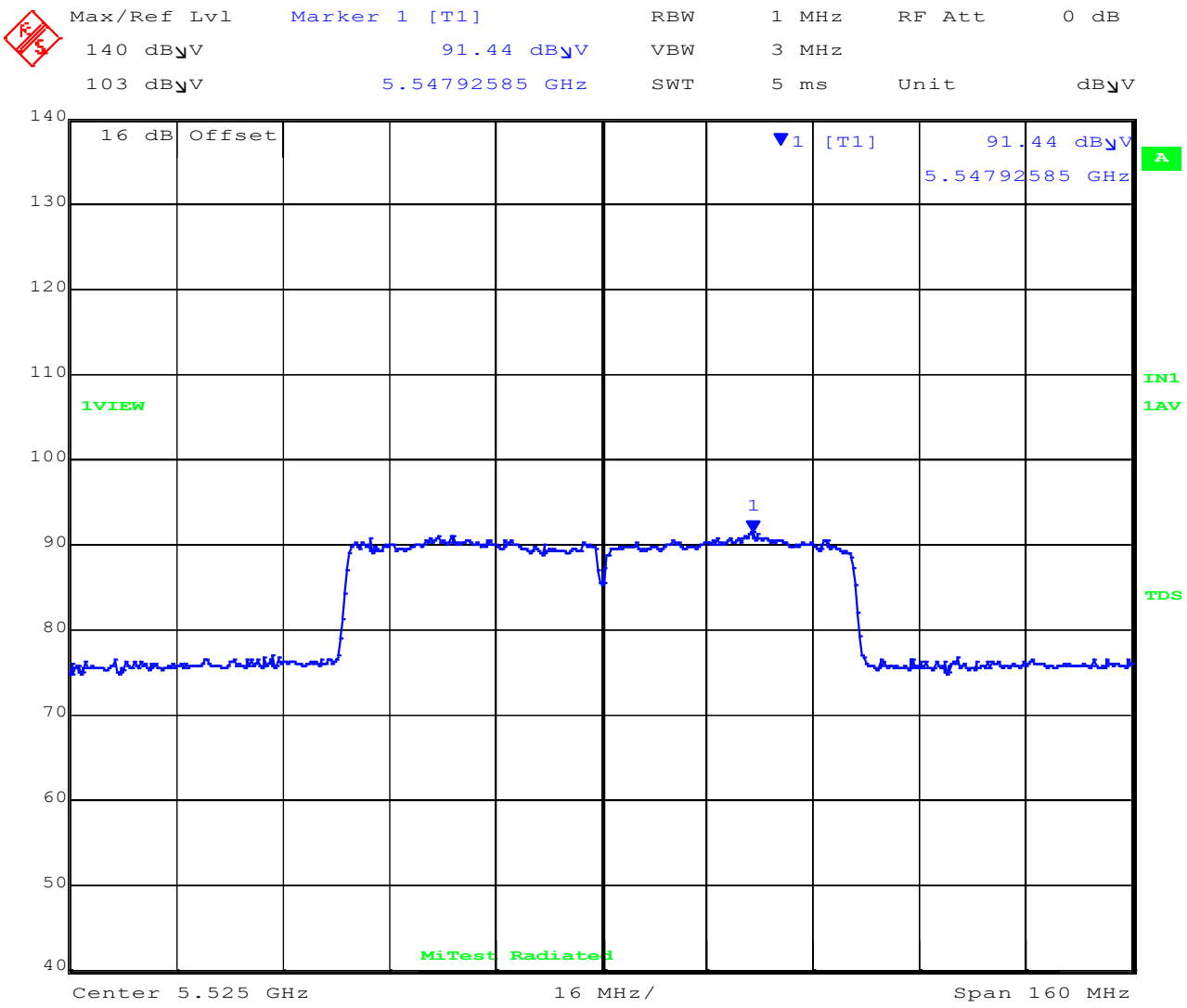


Date: 18.MAR.2021 15:10:01

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5525.00 MHz, Polarity V

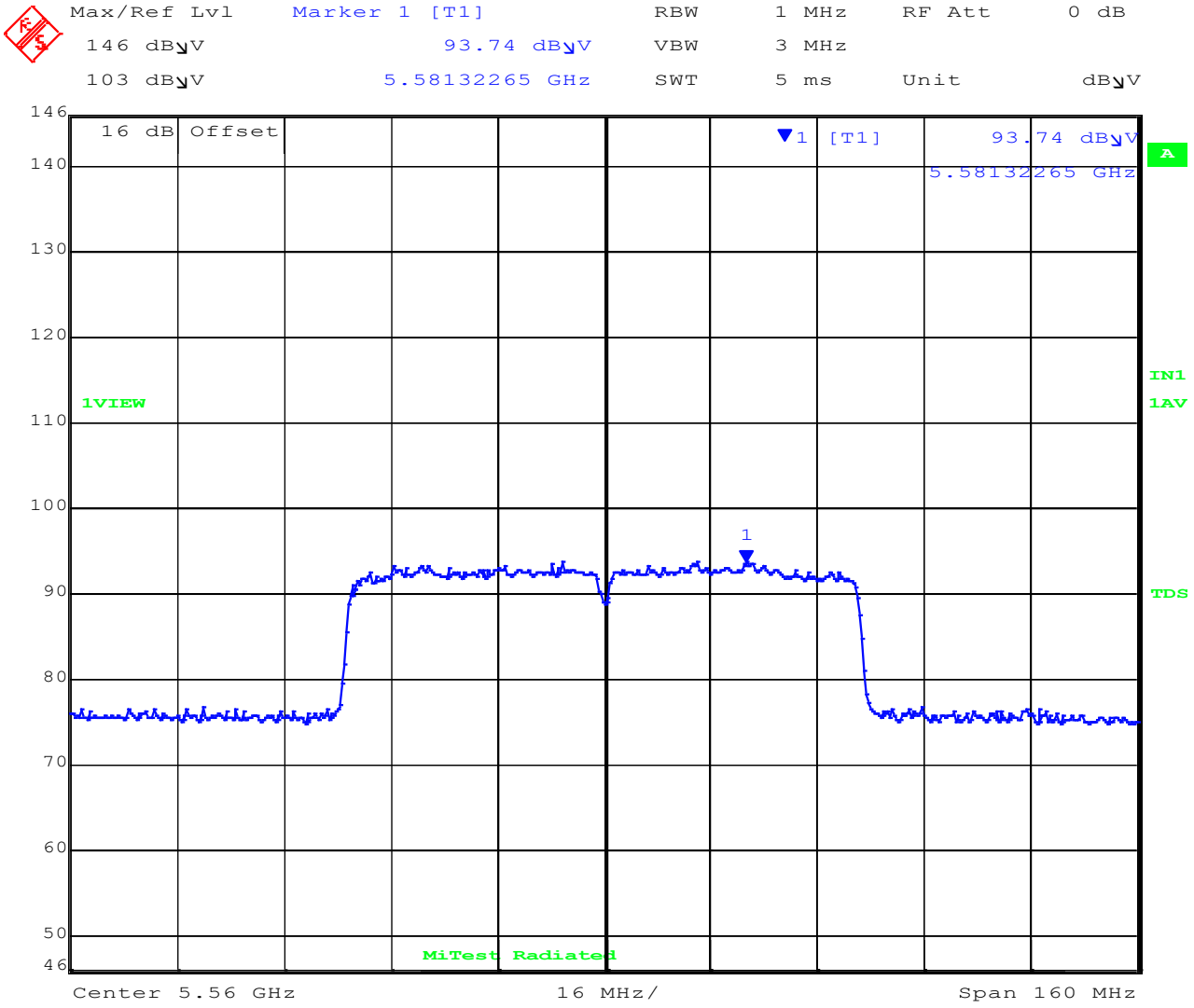


Date: 18.MAR.2021 15:12:07

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5560.00 MHz, Polarity H

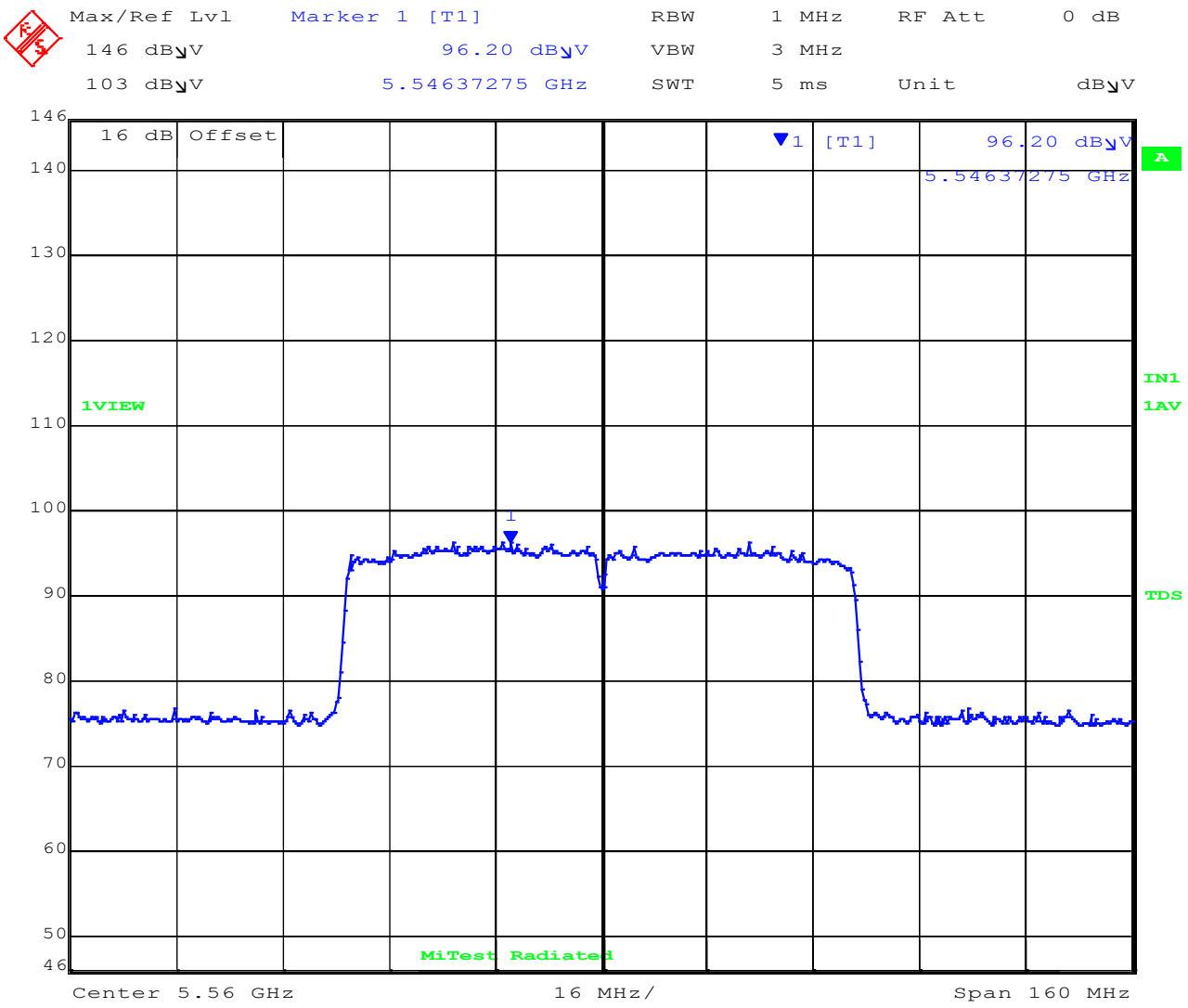


Date: 24.MAR.2021 10:11:51

back to matrix

POWER SPECTRAL DENSITY

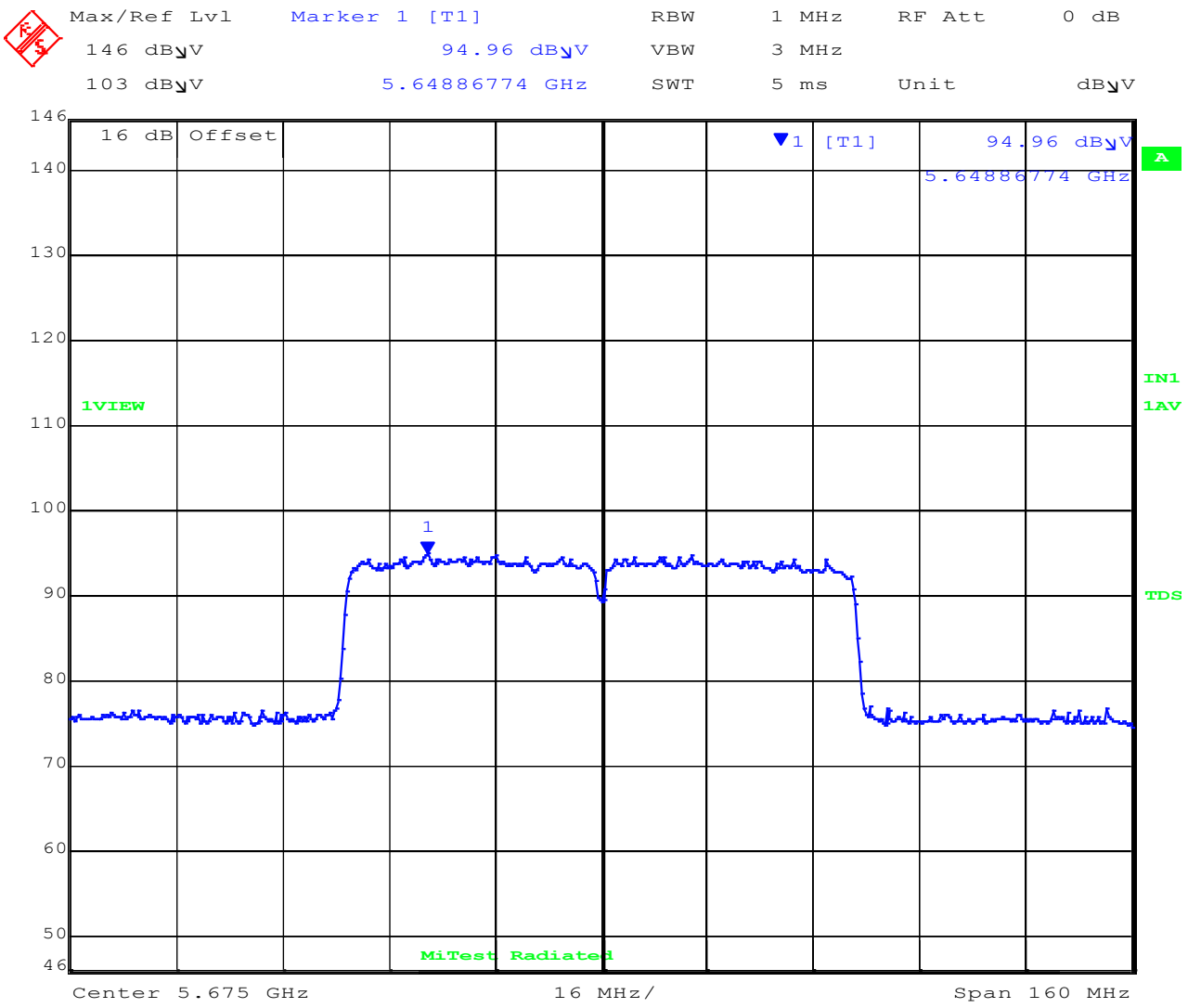
Variant: 80 MHz, Channel: 5560.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5675.00 MHz, Polarity H

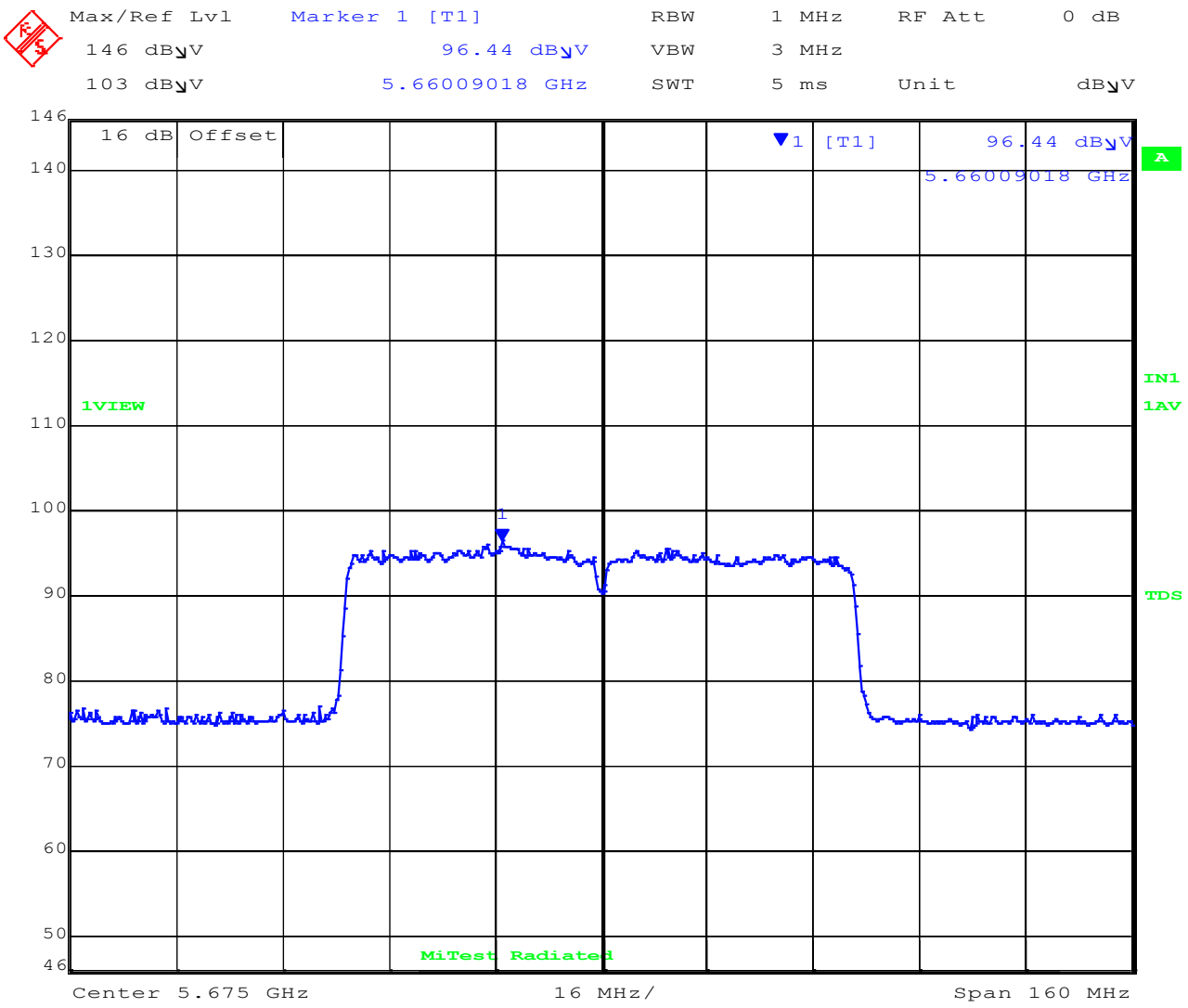


Date: 24.MAR.2021 10:10:03

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5675.00 MHz, Polarity V

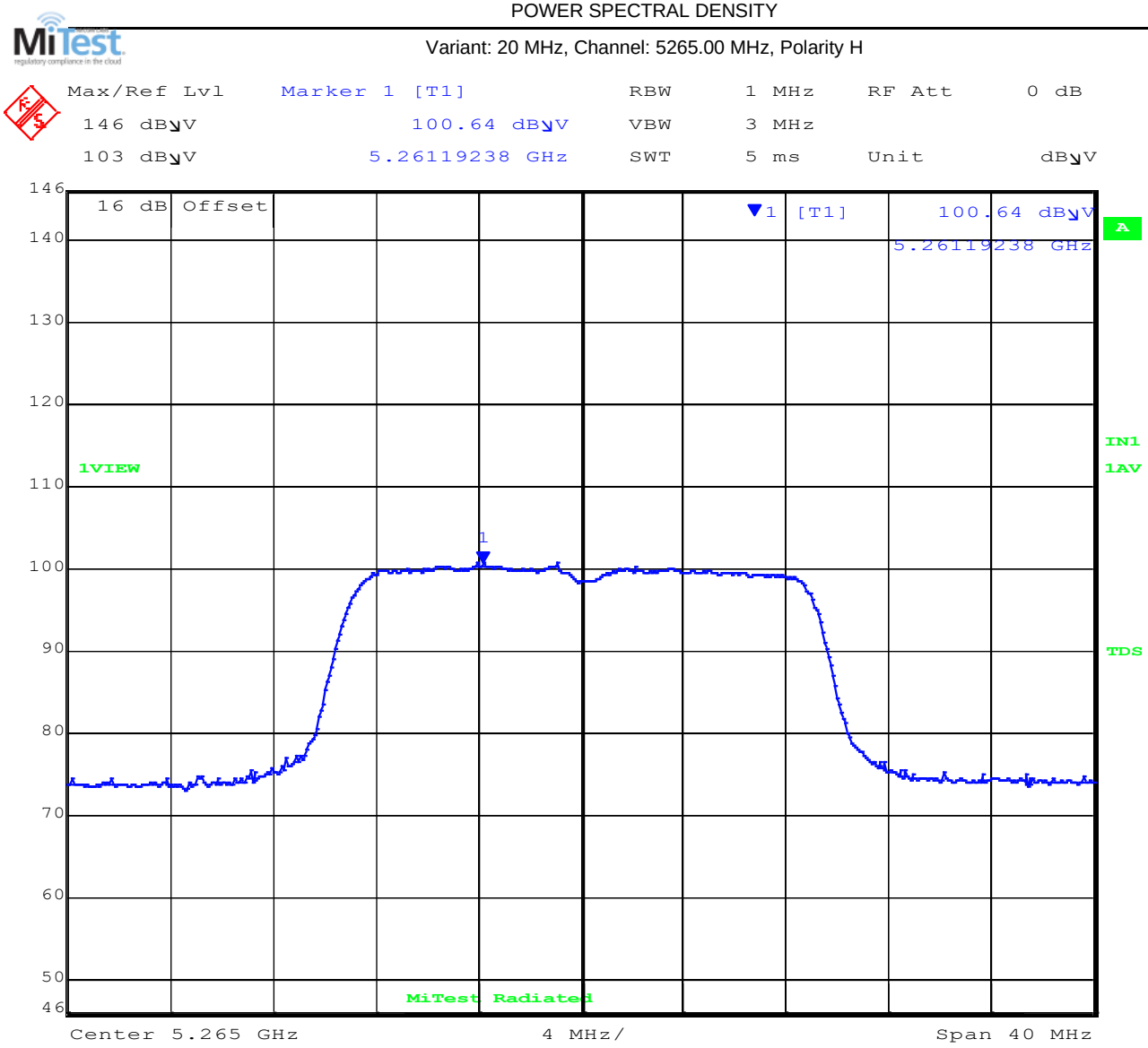


back to matrix

A.2.2 Beamforming

POWER SPECTRAL DENSITY

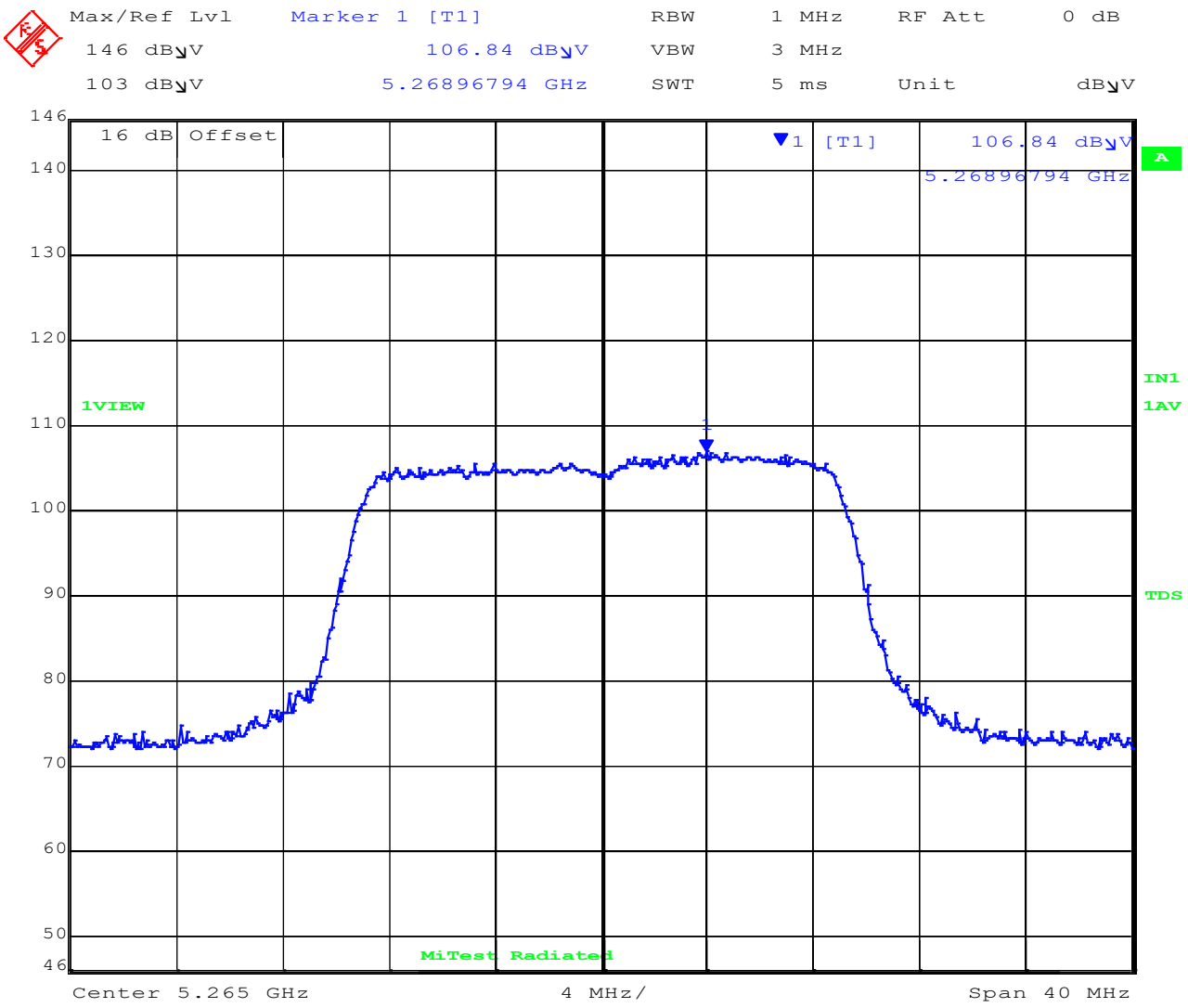
Variant: 20 MHz, Channel: 5265.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

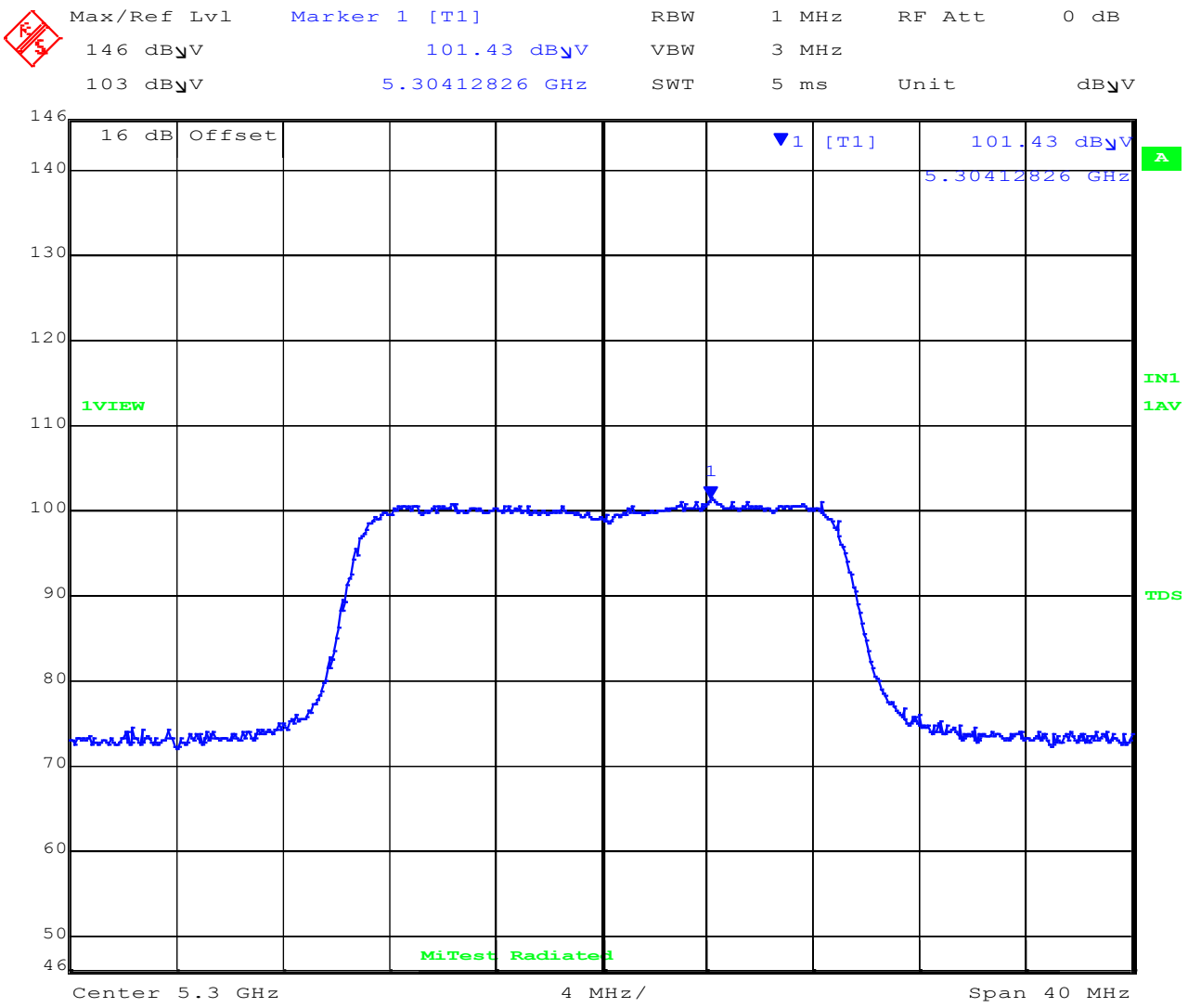
Variant: 20 MHz, Channel: 5265.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

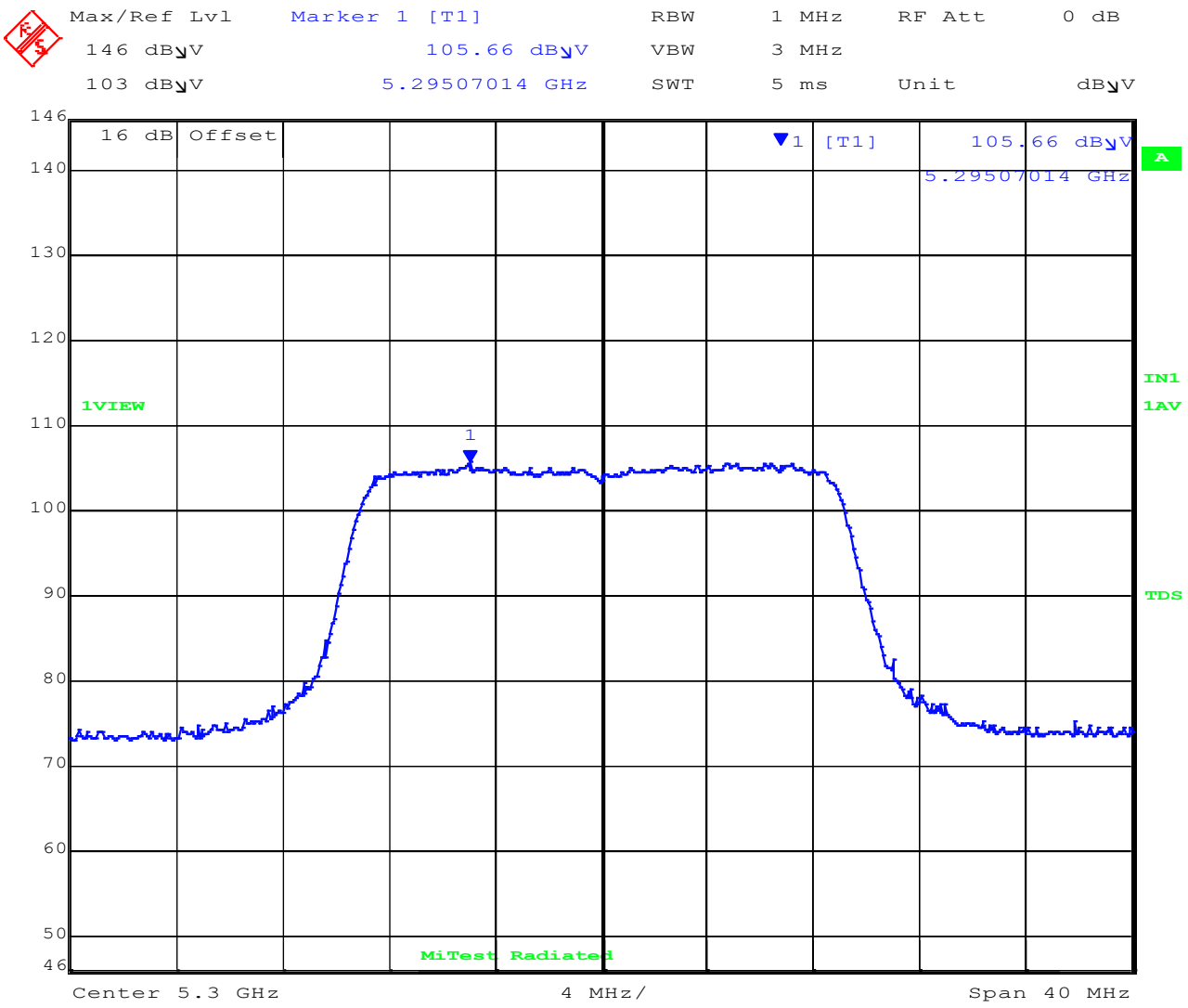
Variant: 20 MHz, Channel: 5300.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

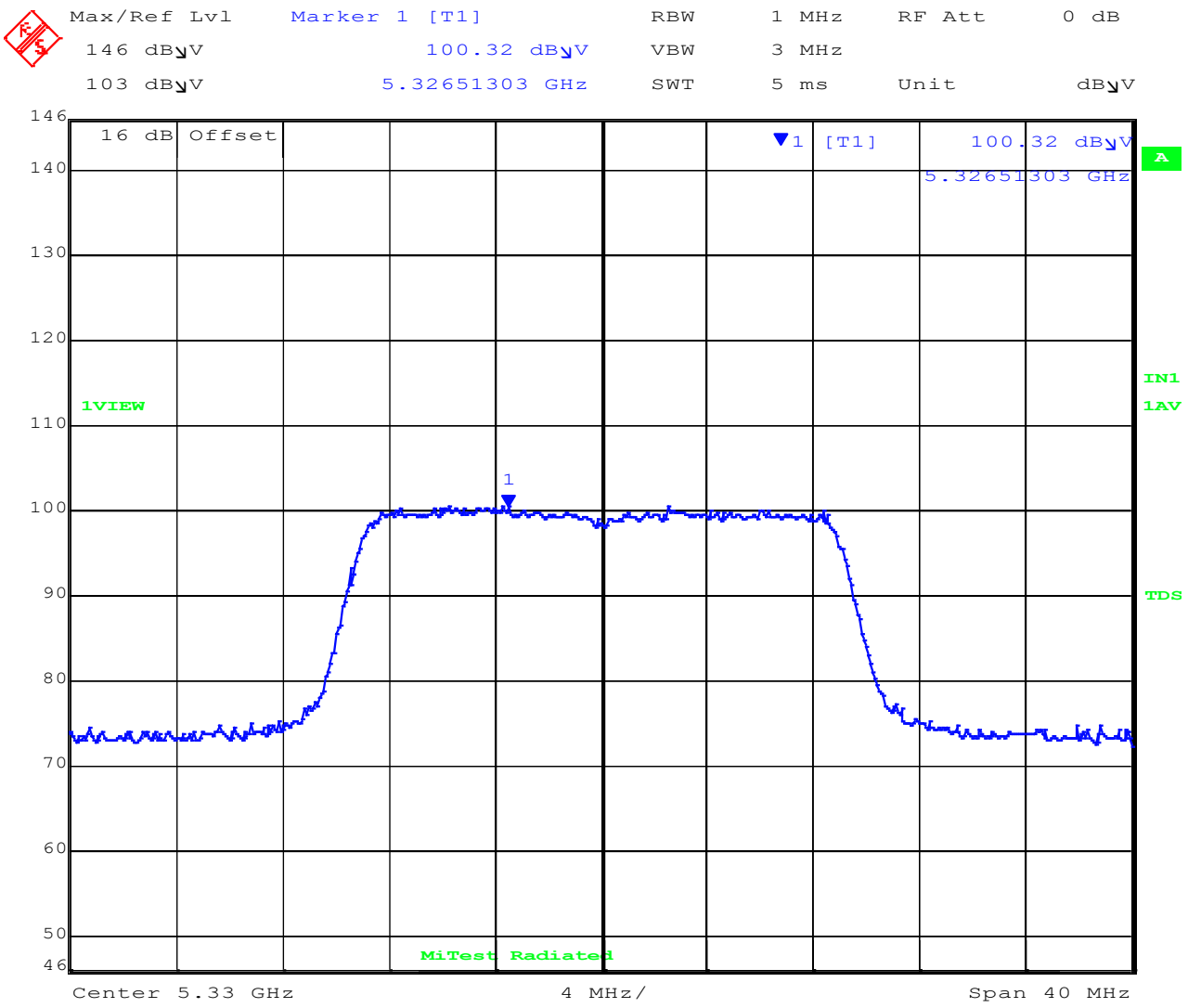
Variant: 20 MHz, Channel: 5300.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

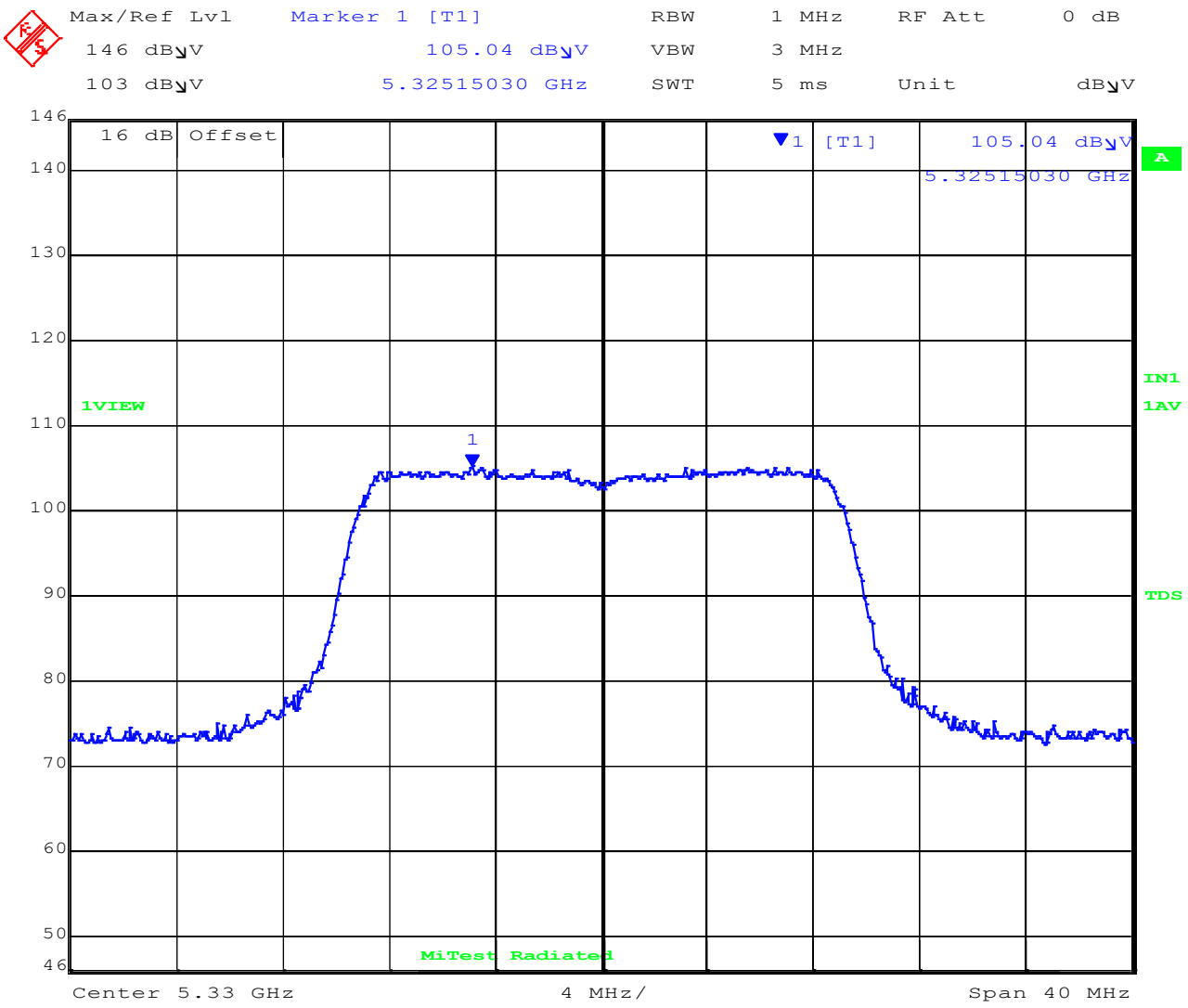
Variant: 20 MHz, Channel: 5330.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

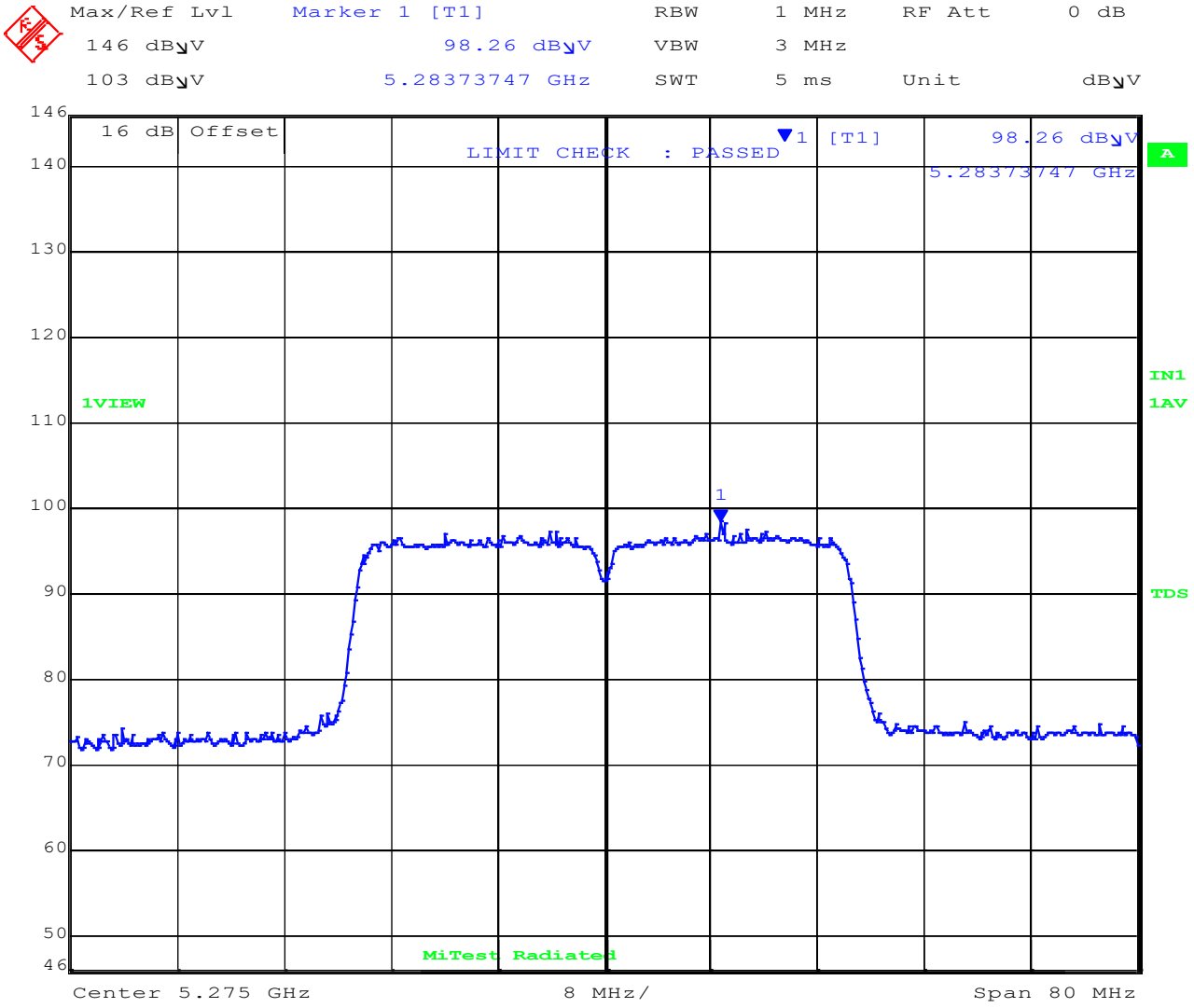
Variant: 20 MHz, Channel: 5330.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

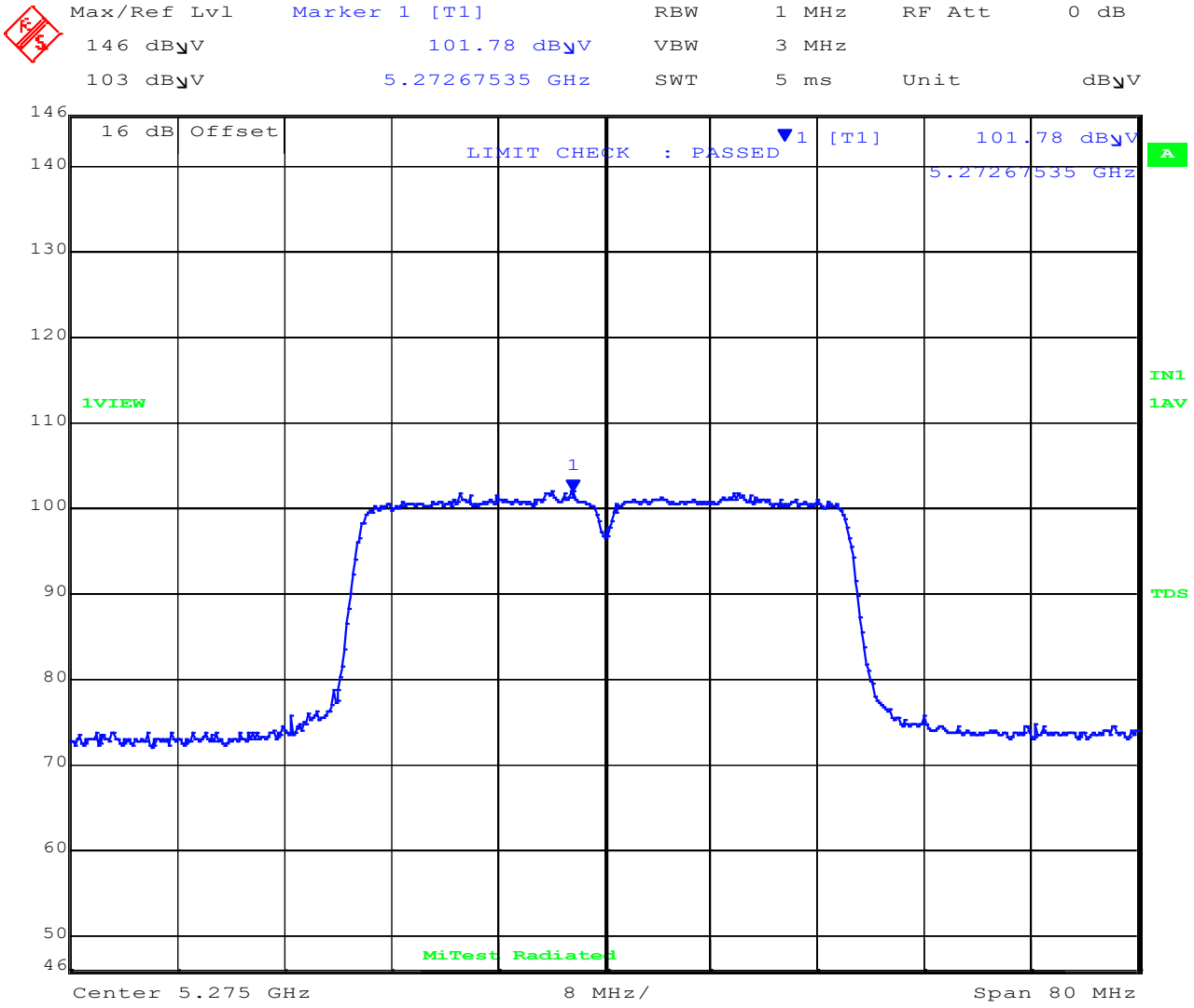
Variant: 40 MHz, Channel: 5275.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

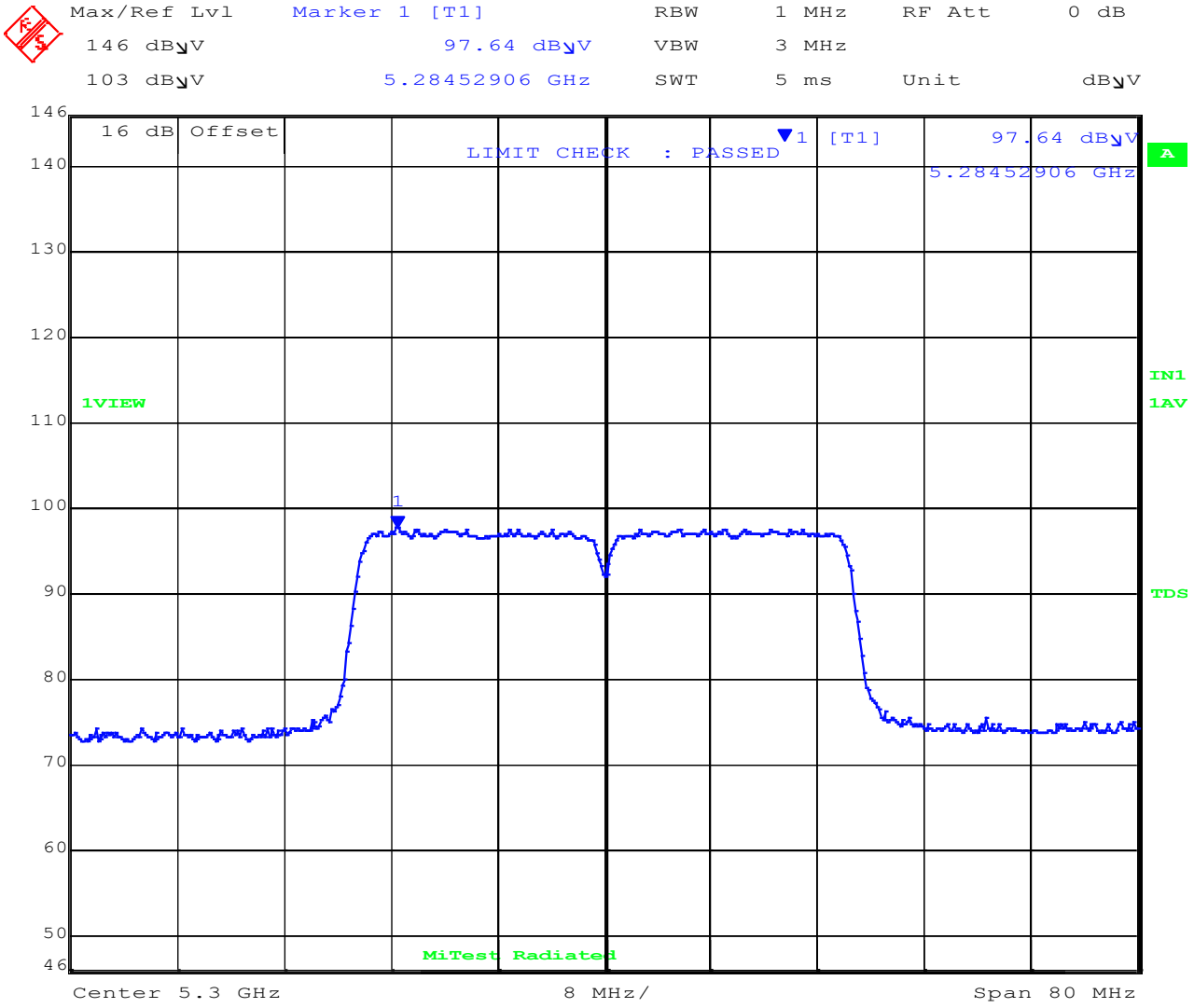
Variant: 40 MHz, Channel: 5275.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

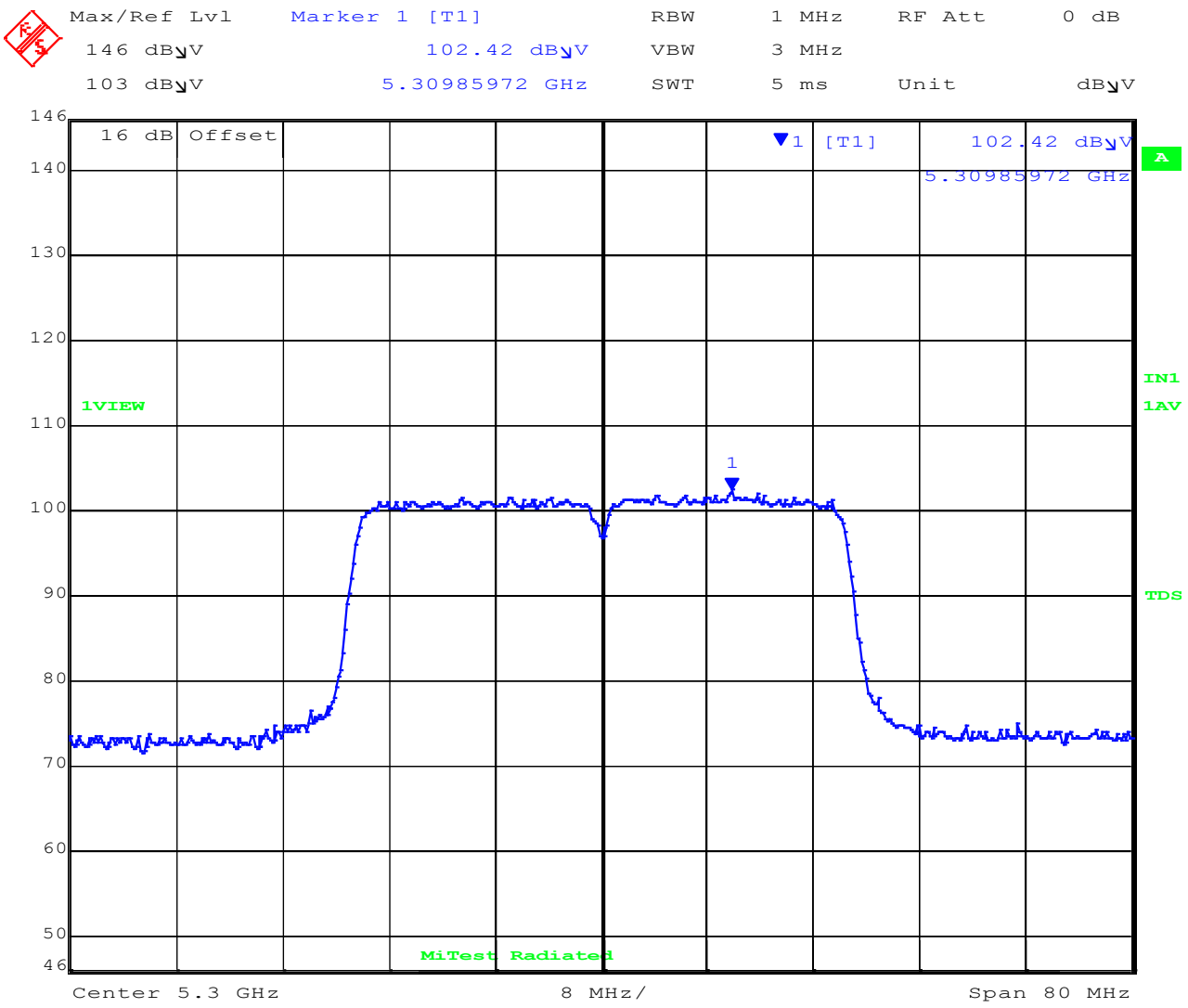
Variant: 40 MHz, Channel: 5300.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

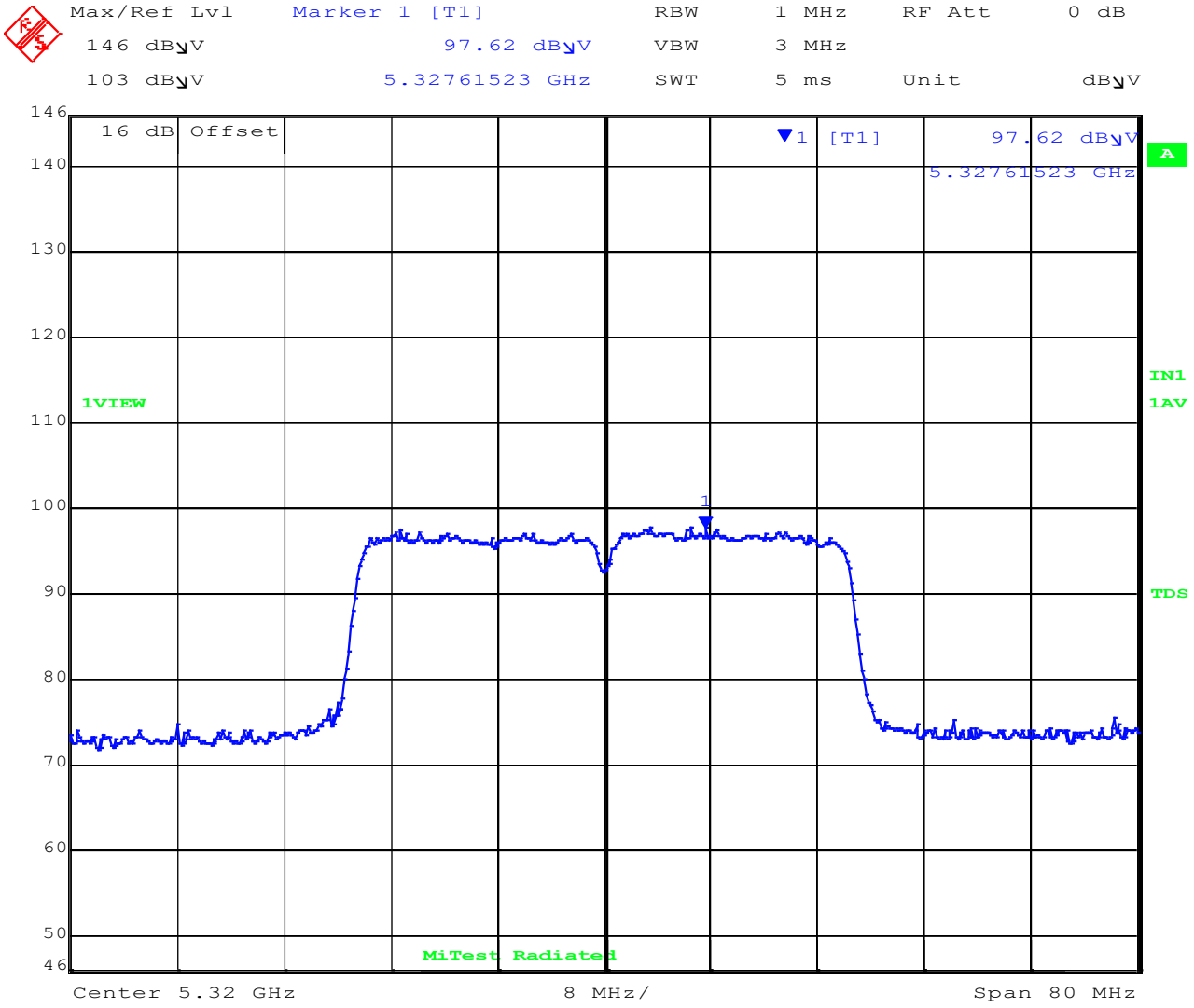
Variant: 40 MHz, Channel: 5300.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

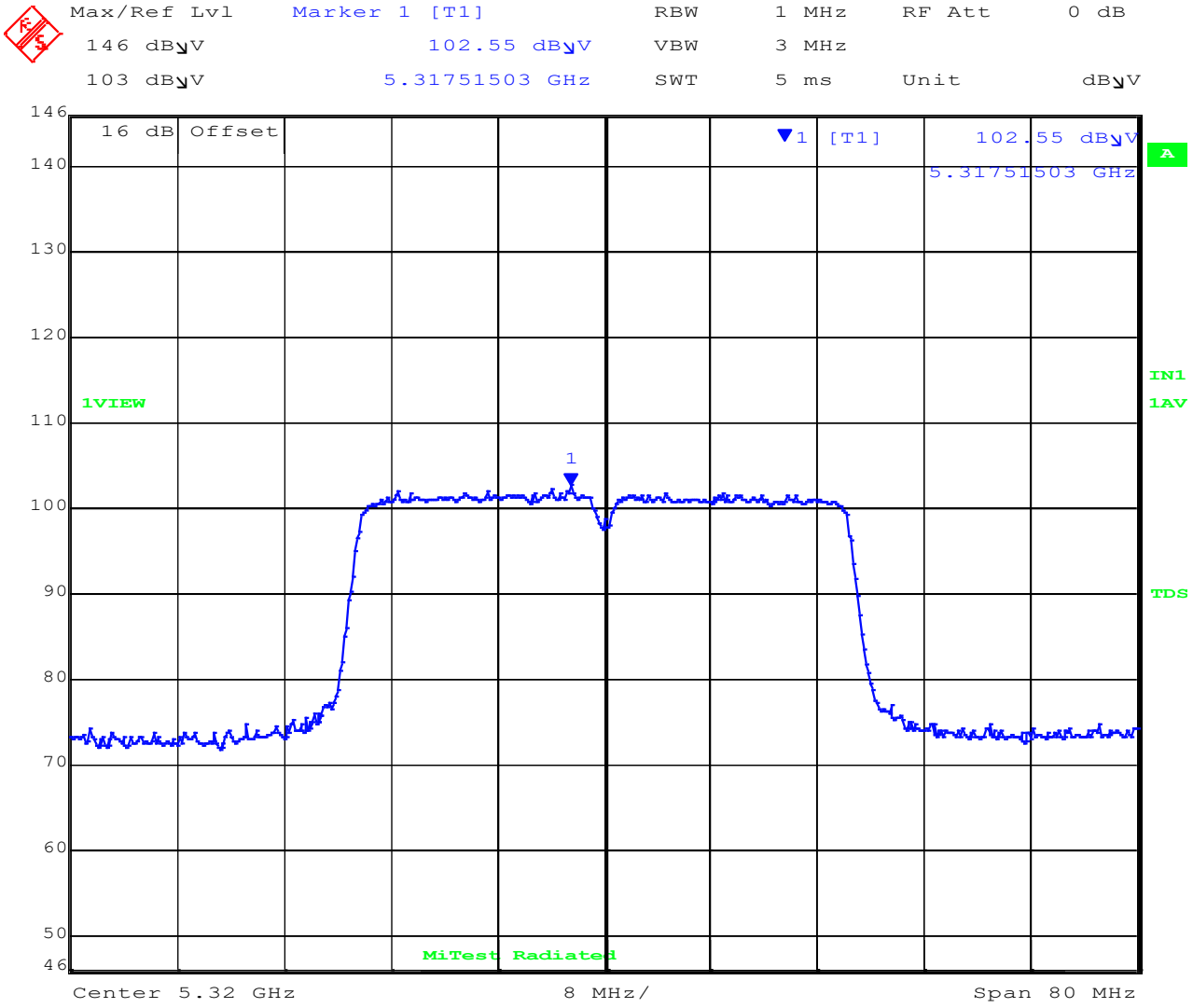
Variant: 40 MHz, Channel: 5320.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

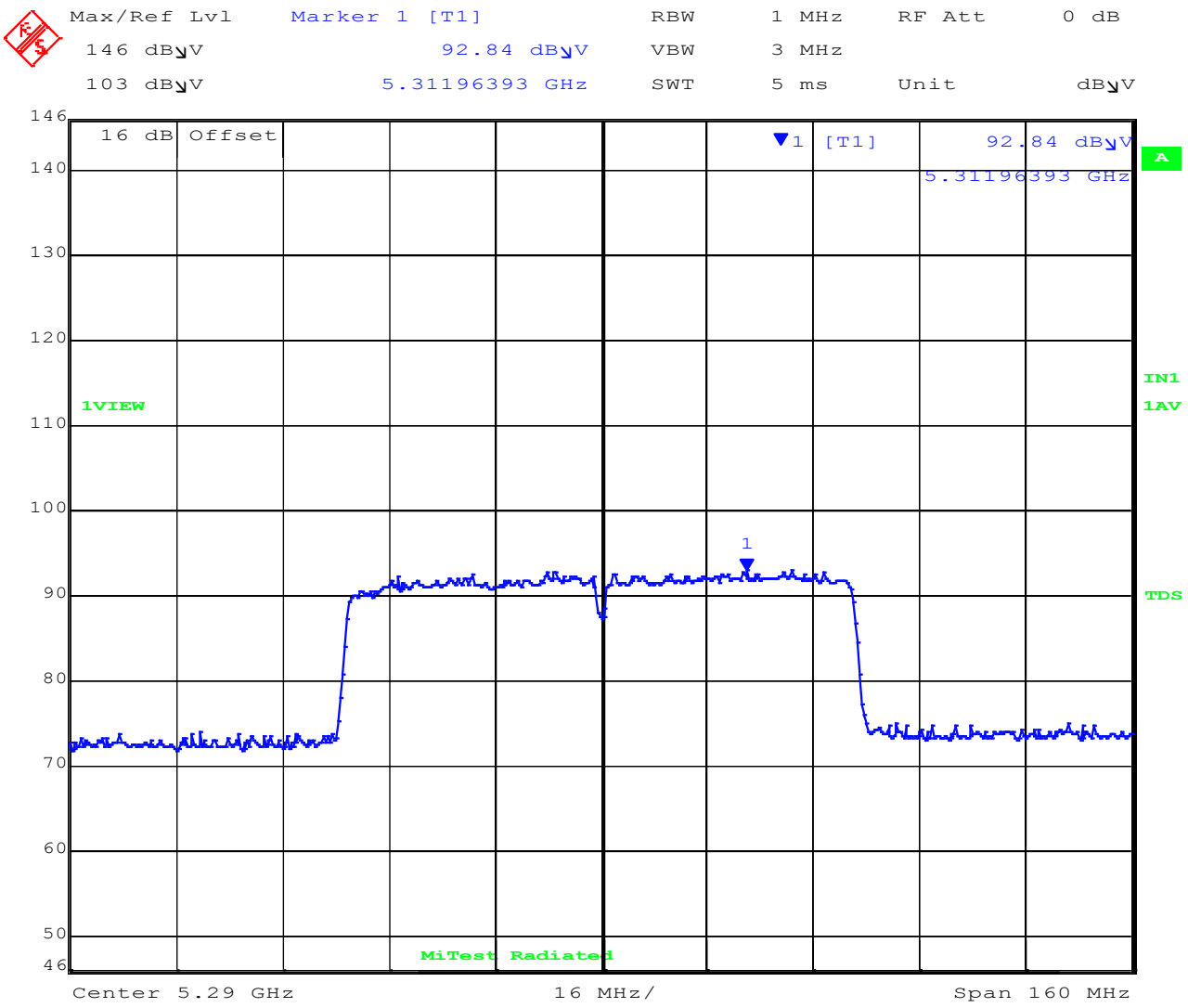
Variant: 40 MHz, Channel: 5320.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5290.00 MHz, Polarity H

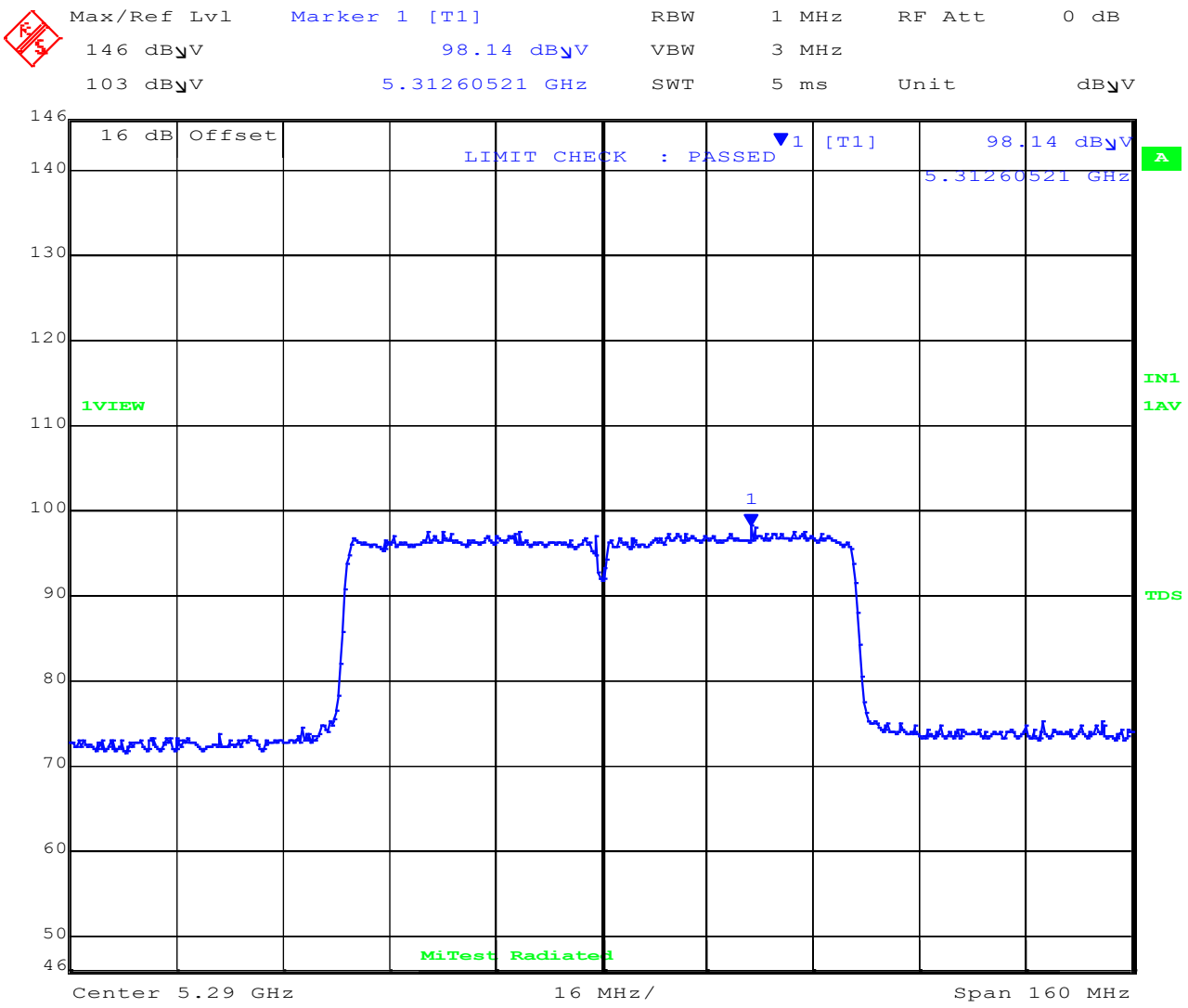


Date: 24.MAR.2021 08:43:48

back to matrix

POWER SPECTRAL DENSITY

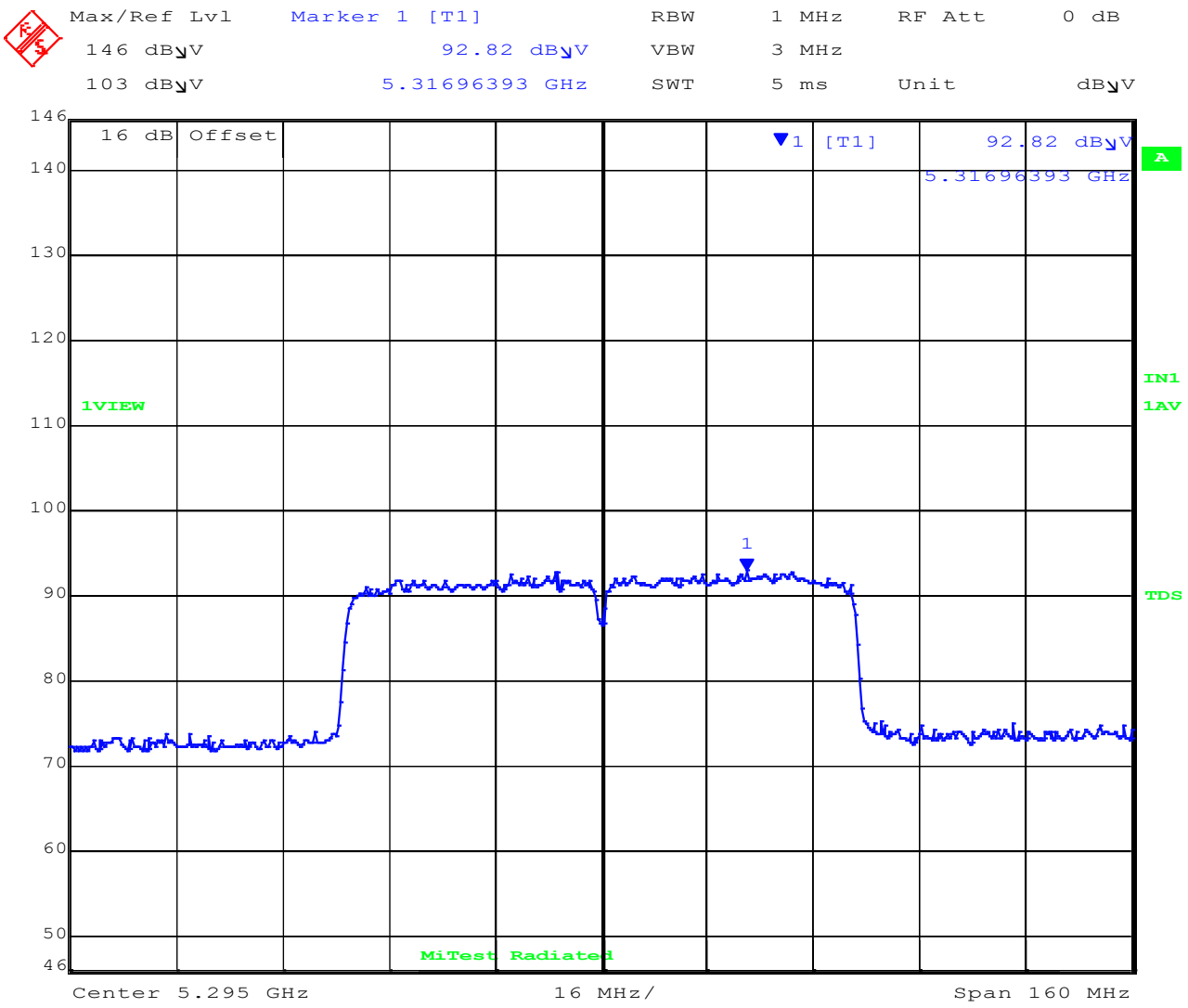
Variant: 80 MHz, Channel: 5290.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5295.00 MHz, Polarity H

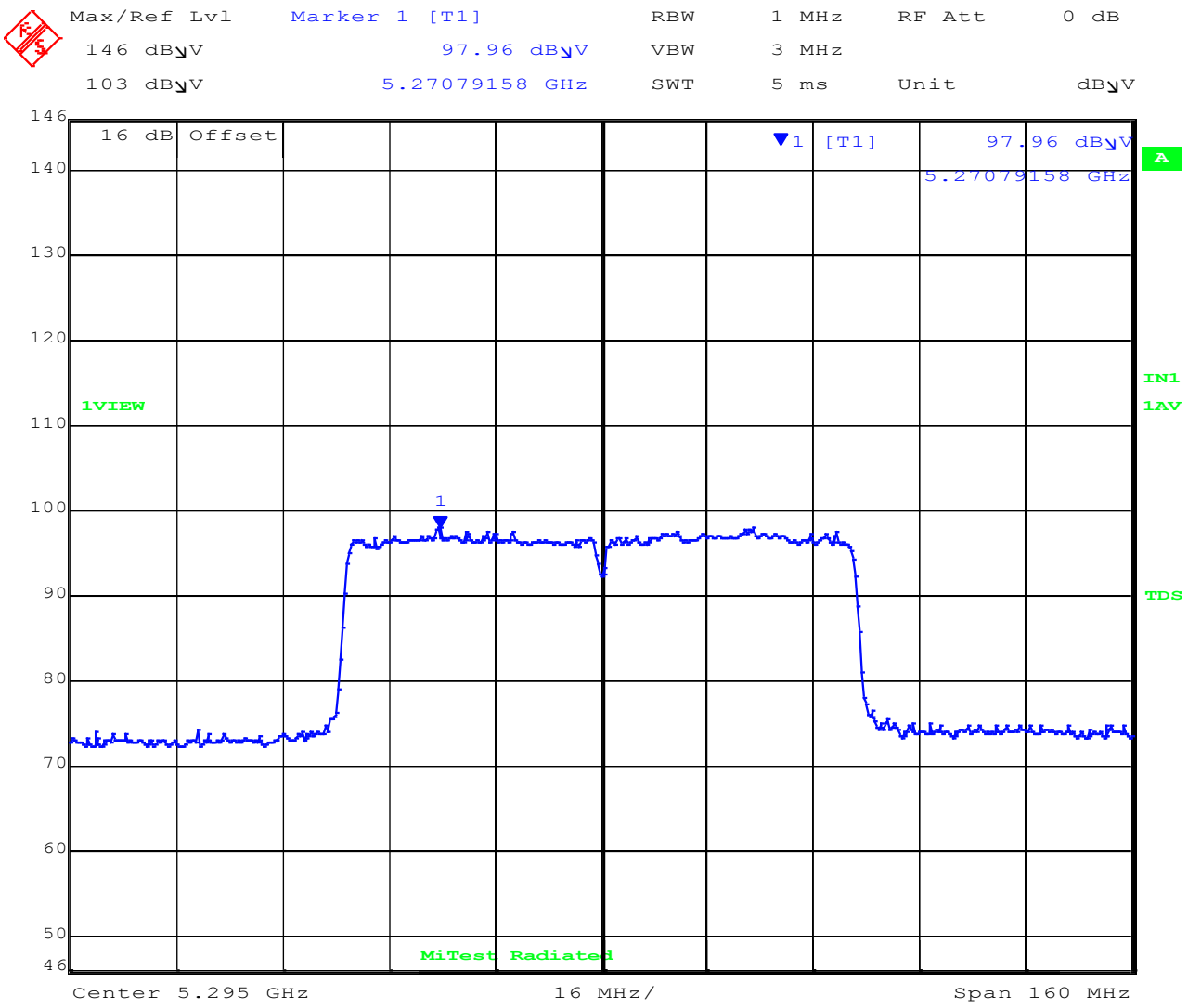


Date: 24.MAR.2021 08:46:03

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5295.00 MHz, Polarity V

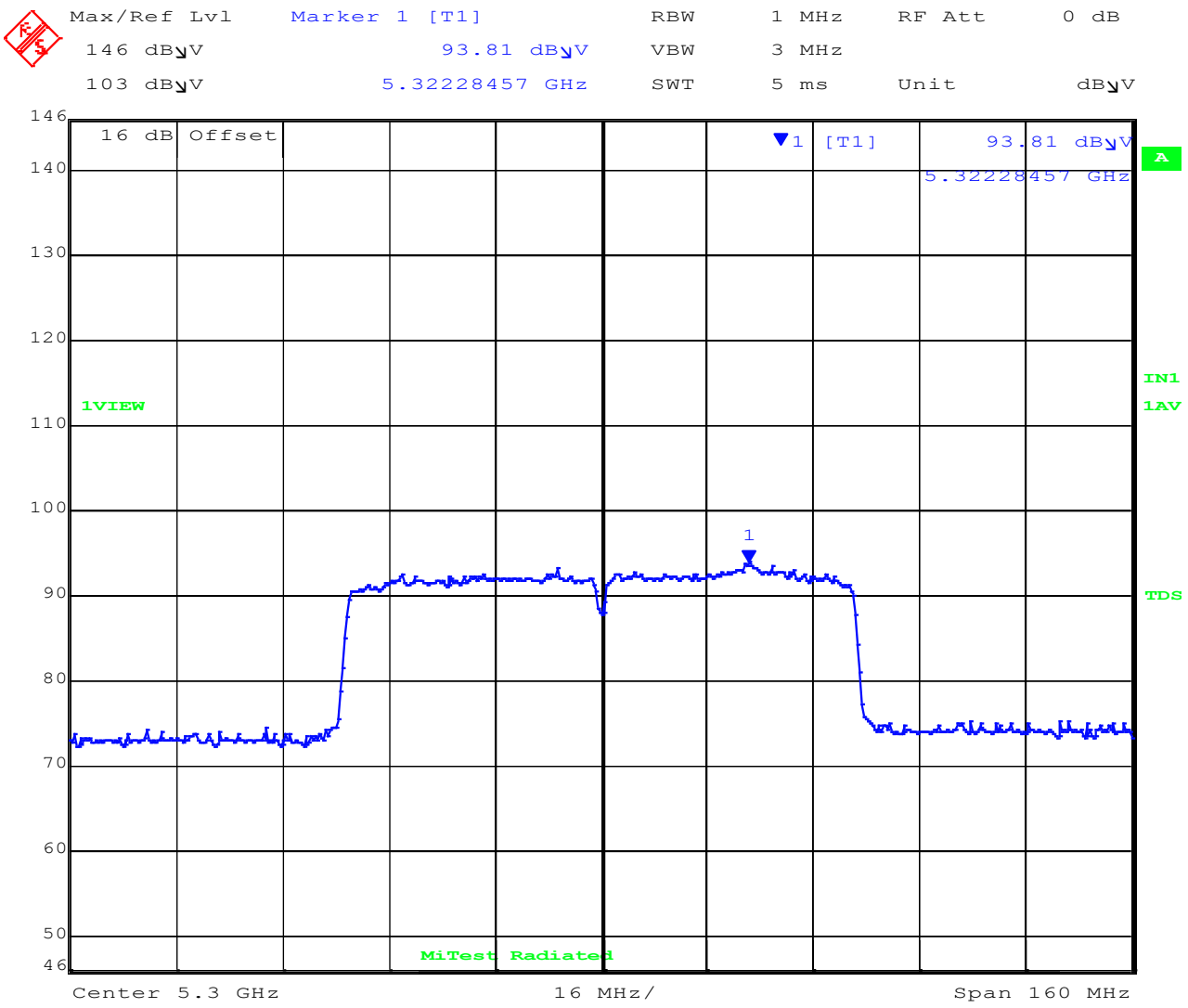


Date: 24.MAR.2021 08:45:37

back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5300.00 MHz, Polarity H

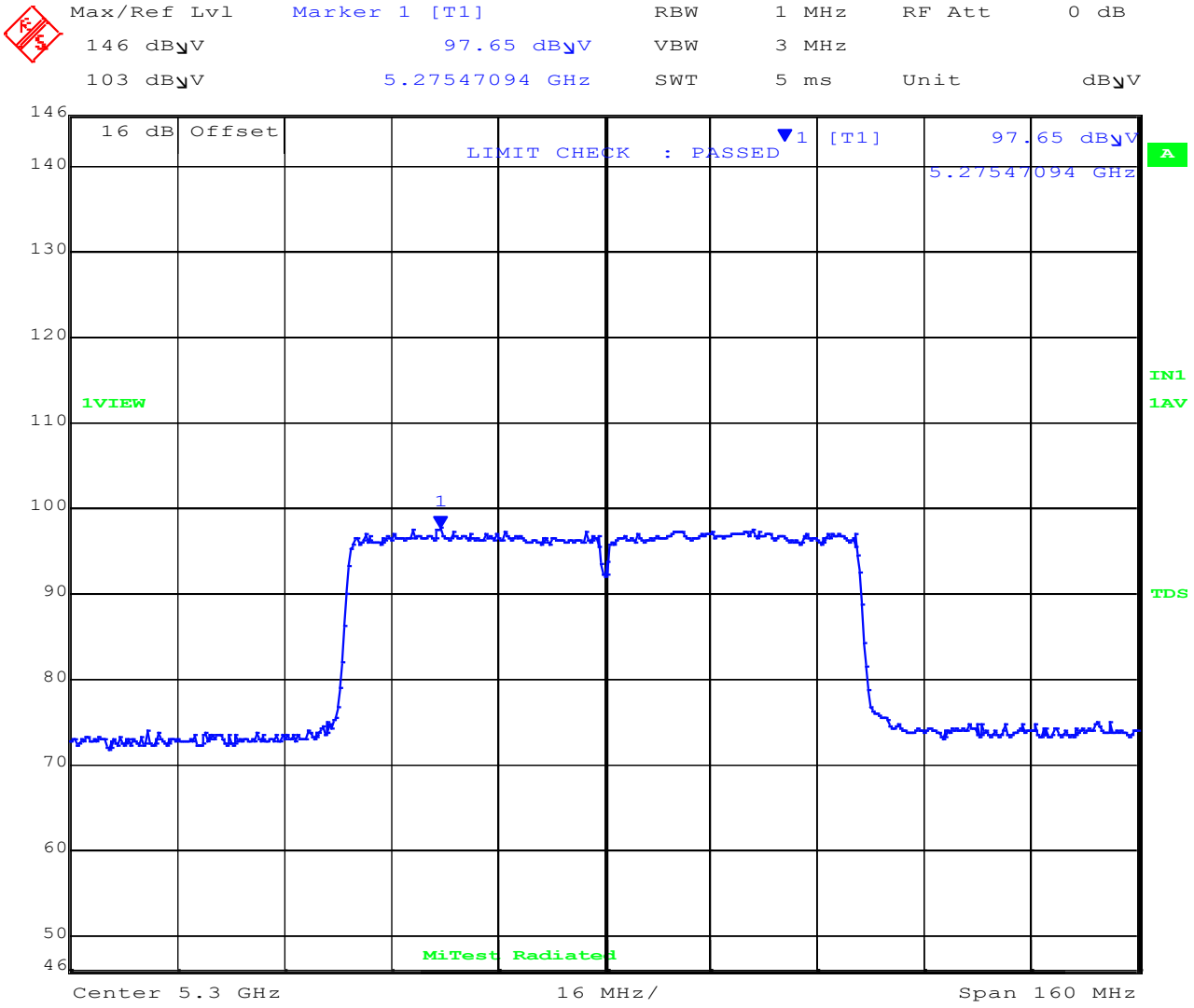


Date: 24.MAR.2021 08:47:24

back to matrix

POWER SPECTRAL DENSITY

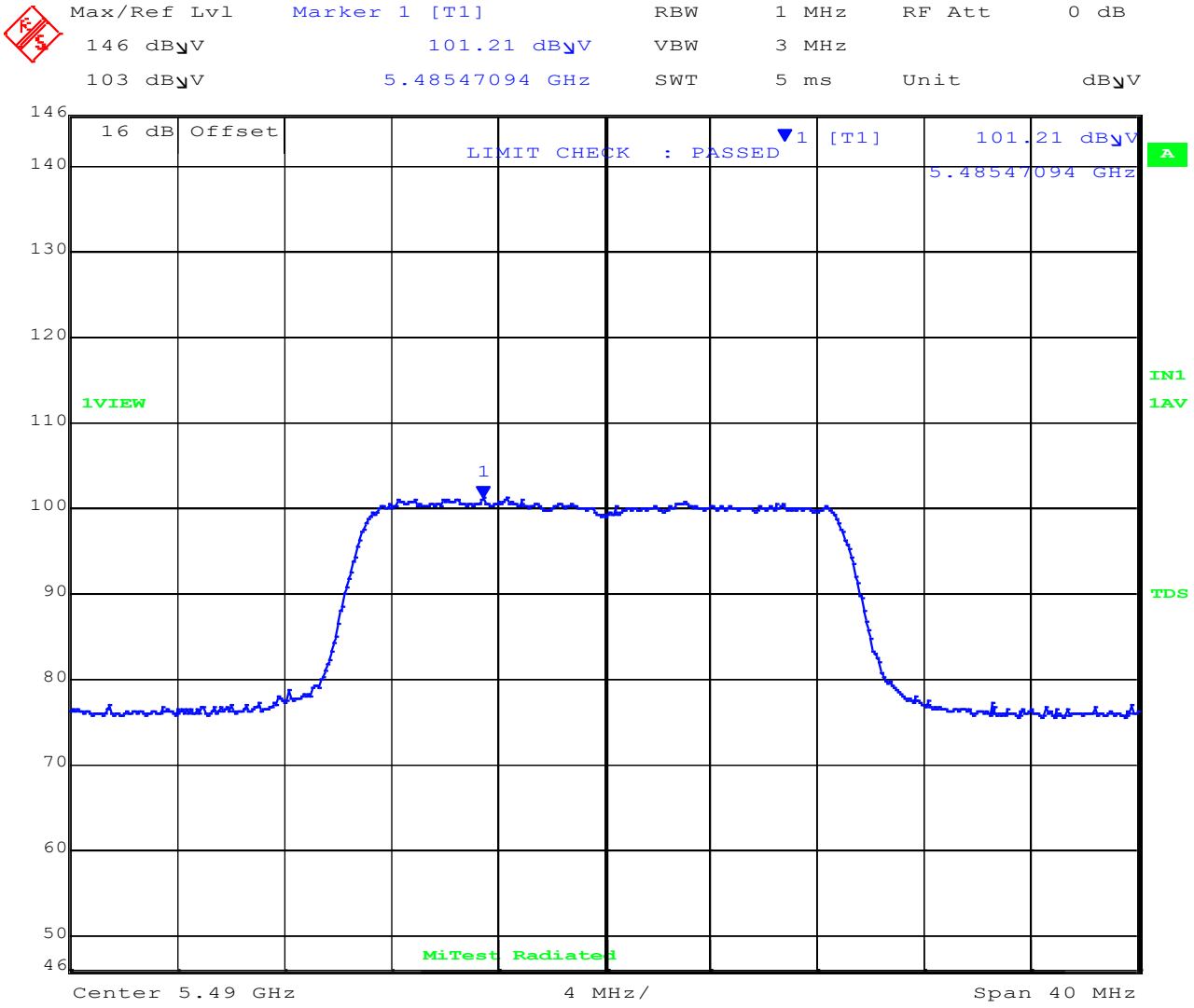
Variant: 80 MHz, Channel: 5300.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

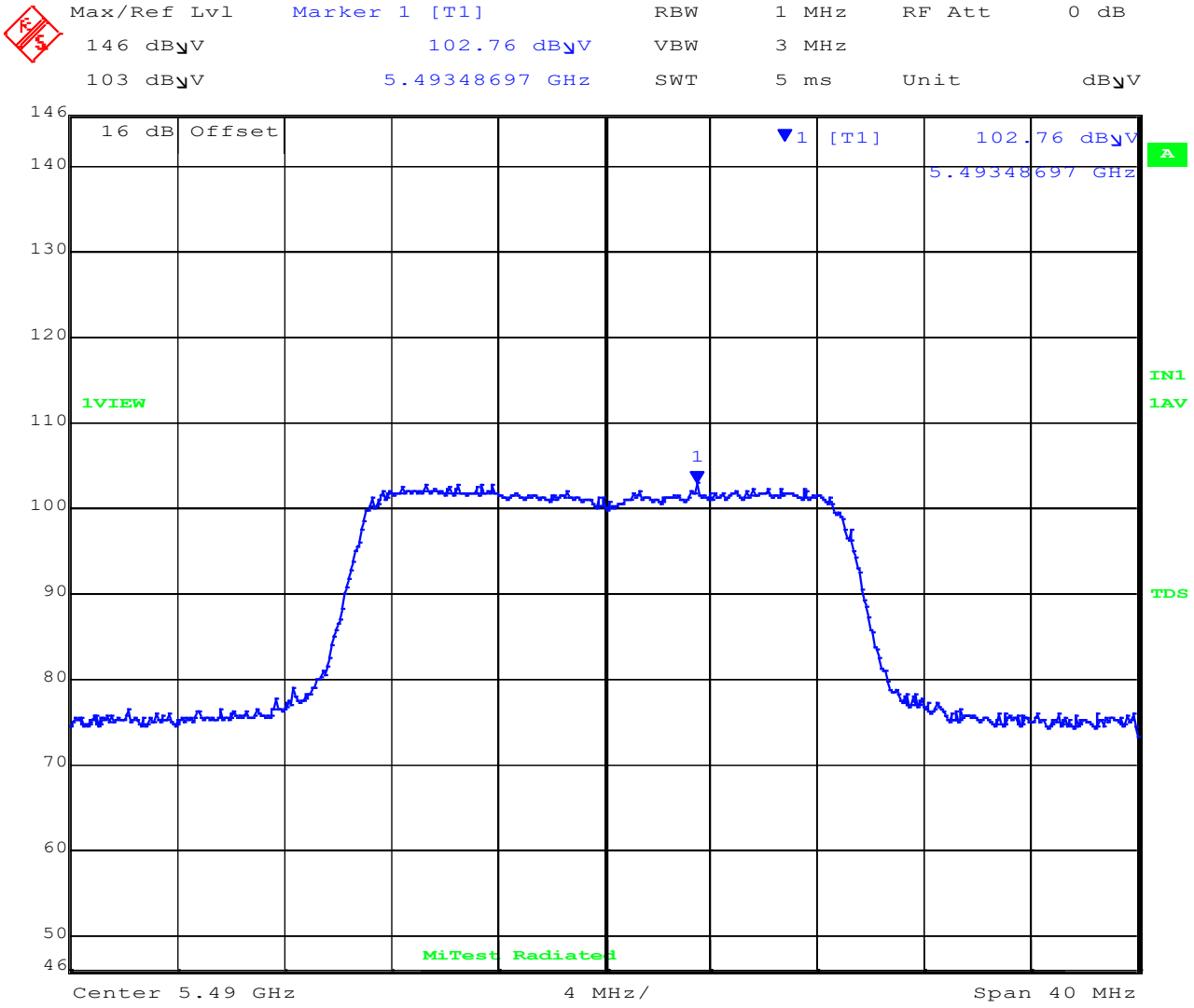
Variant: 20 MHz, Channel: 5490.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

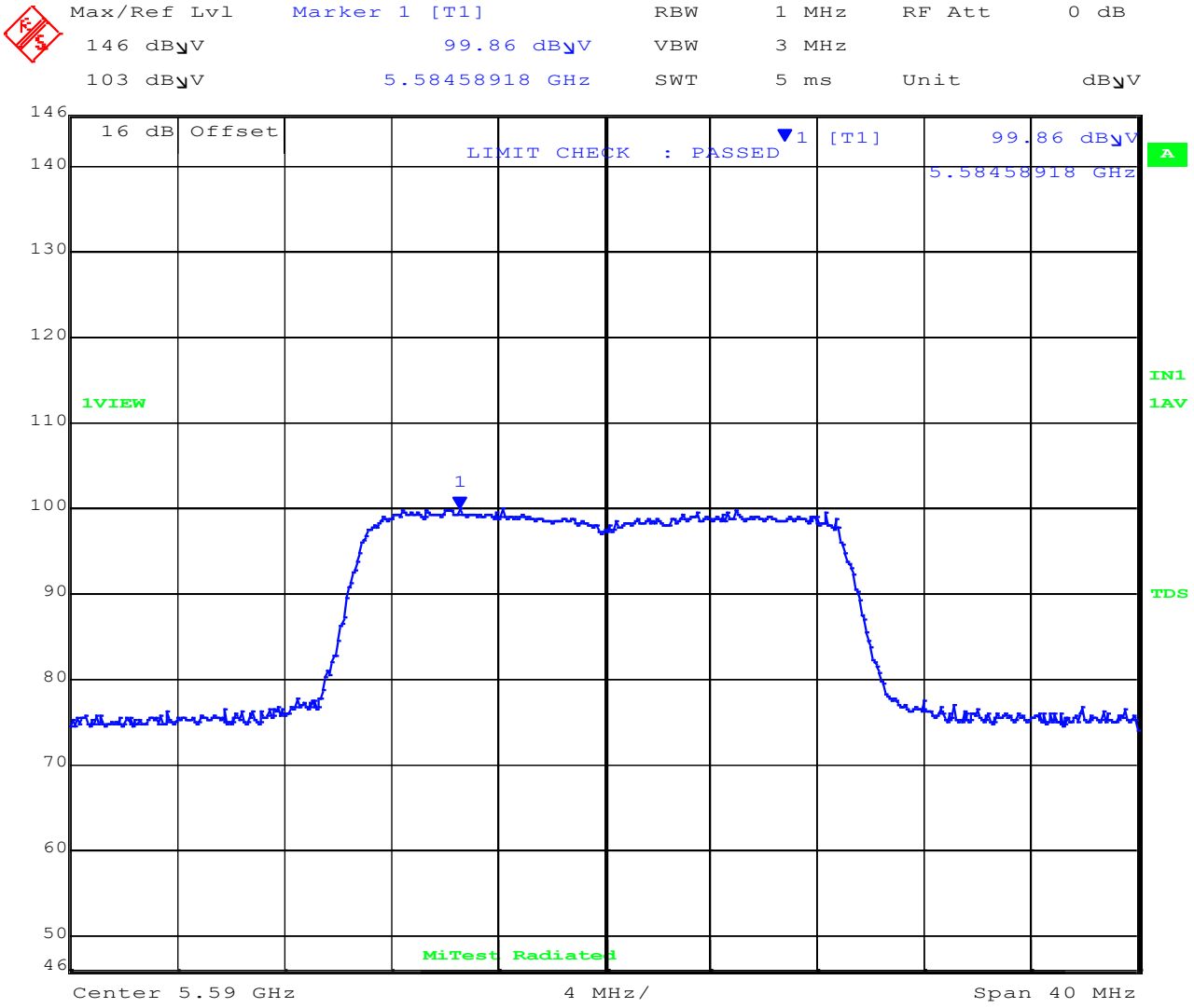
Variant: 20 MHz, Channel: 5490.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

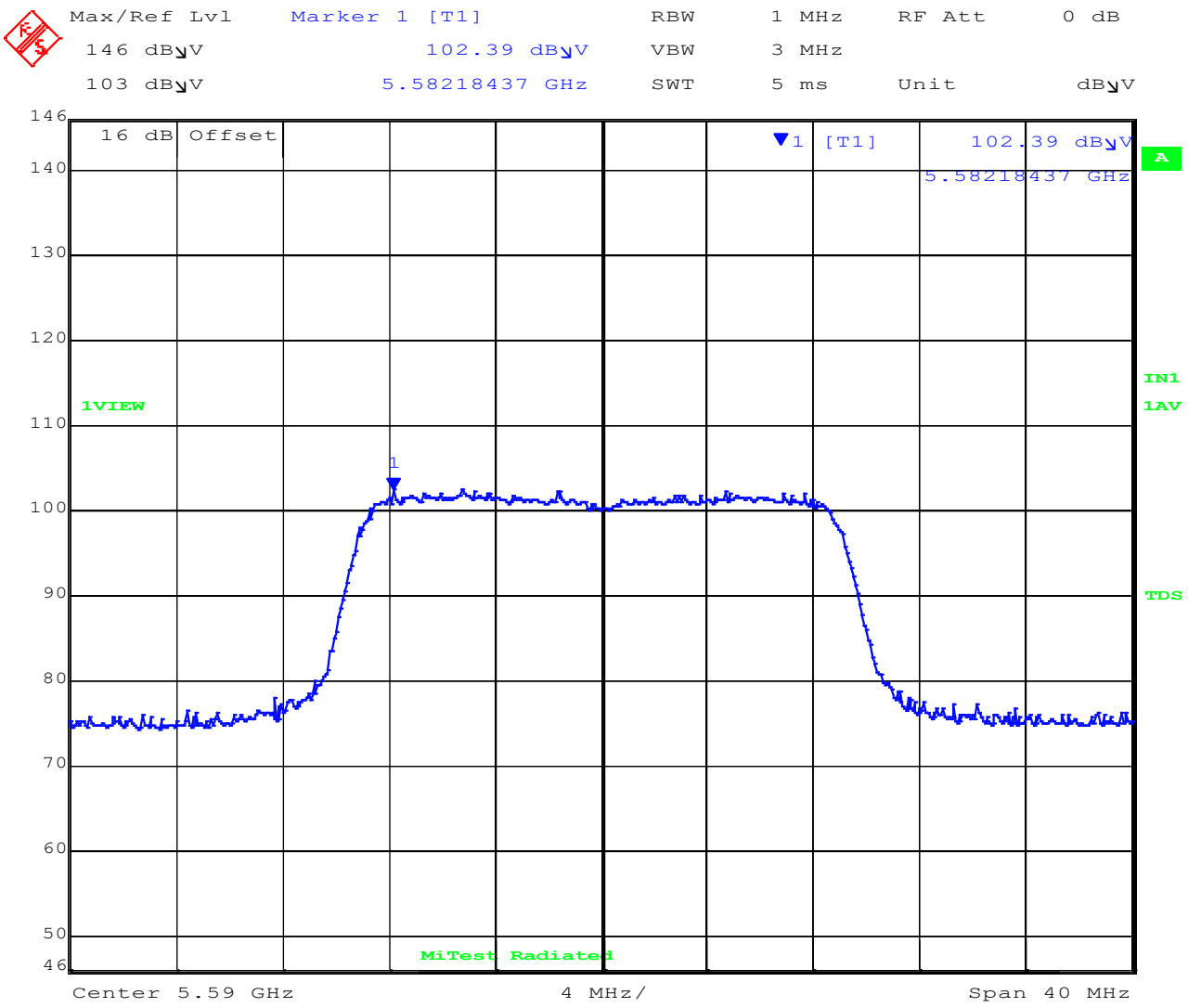
Variant: 20 MHz, Channel: 5590.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

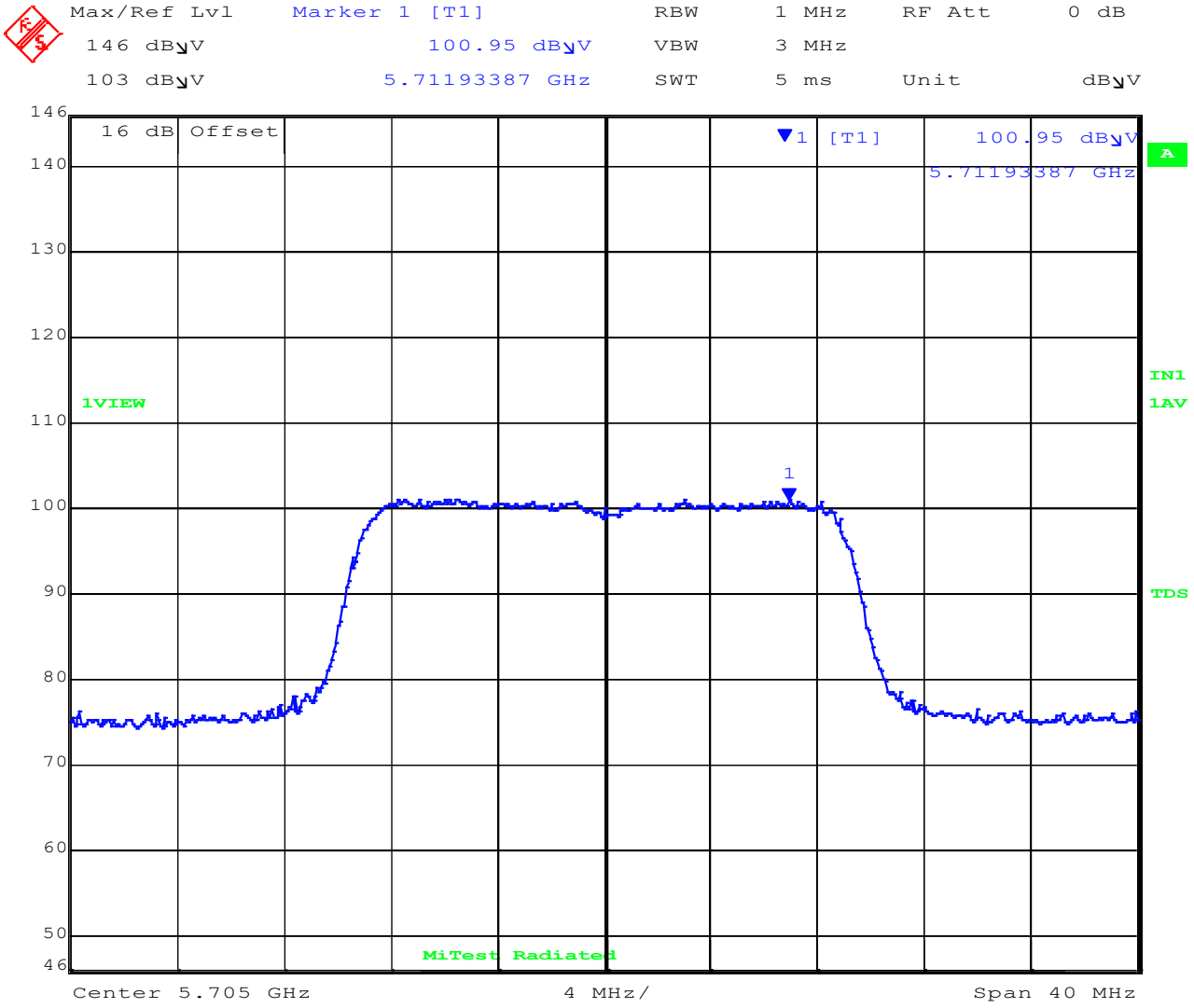
Variant: 20 MHz, Channel: 5590.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

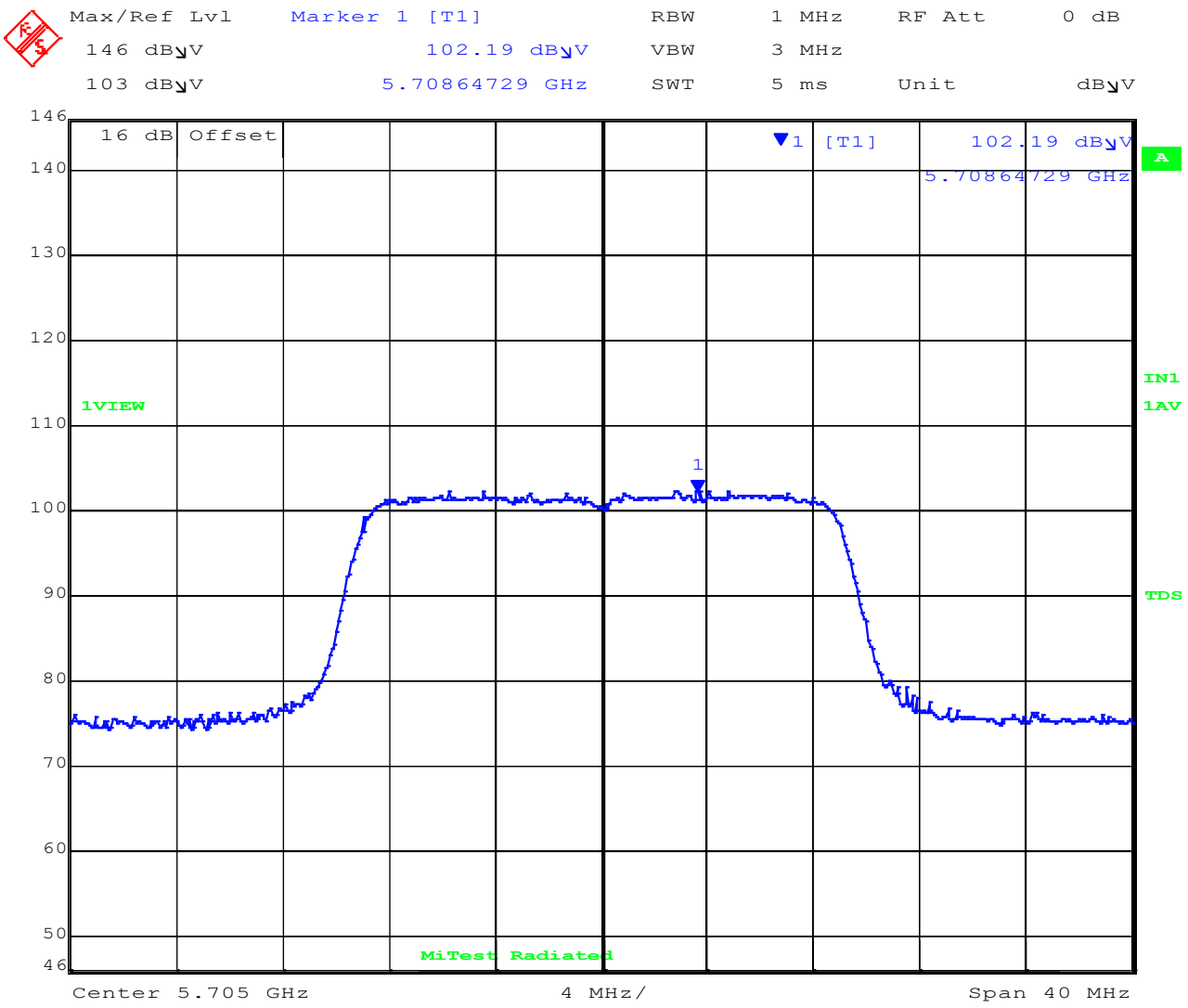
Variant: 20 MHz, Channel: 5705.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

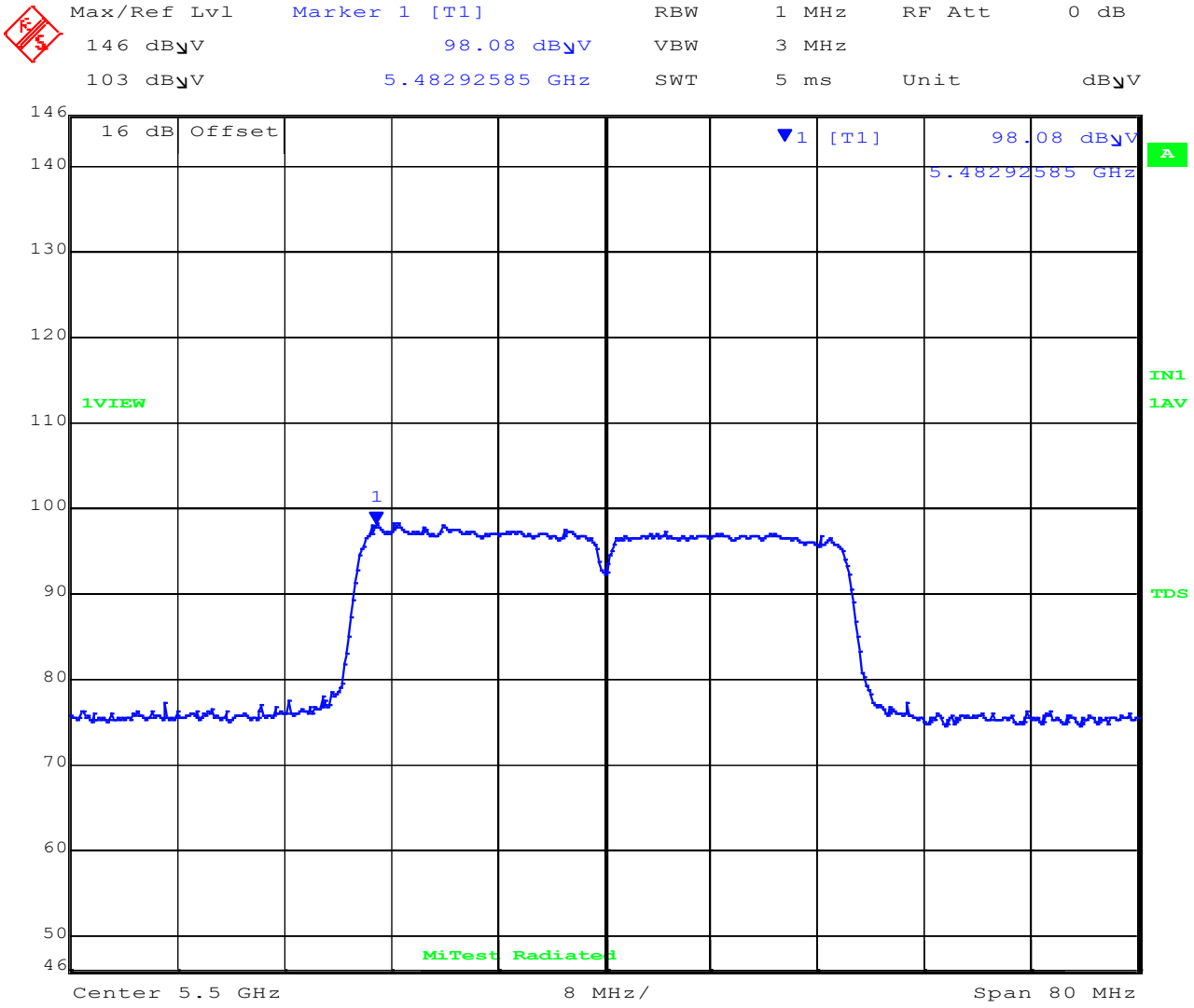
Variant: 20 MHz, Channel: 5705.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

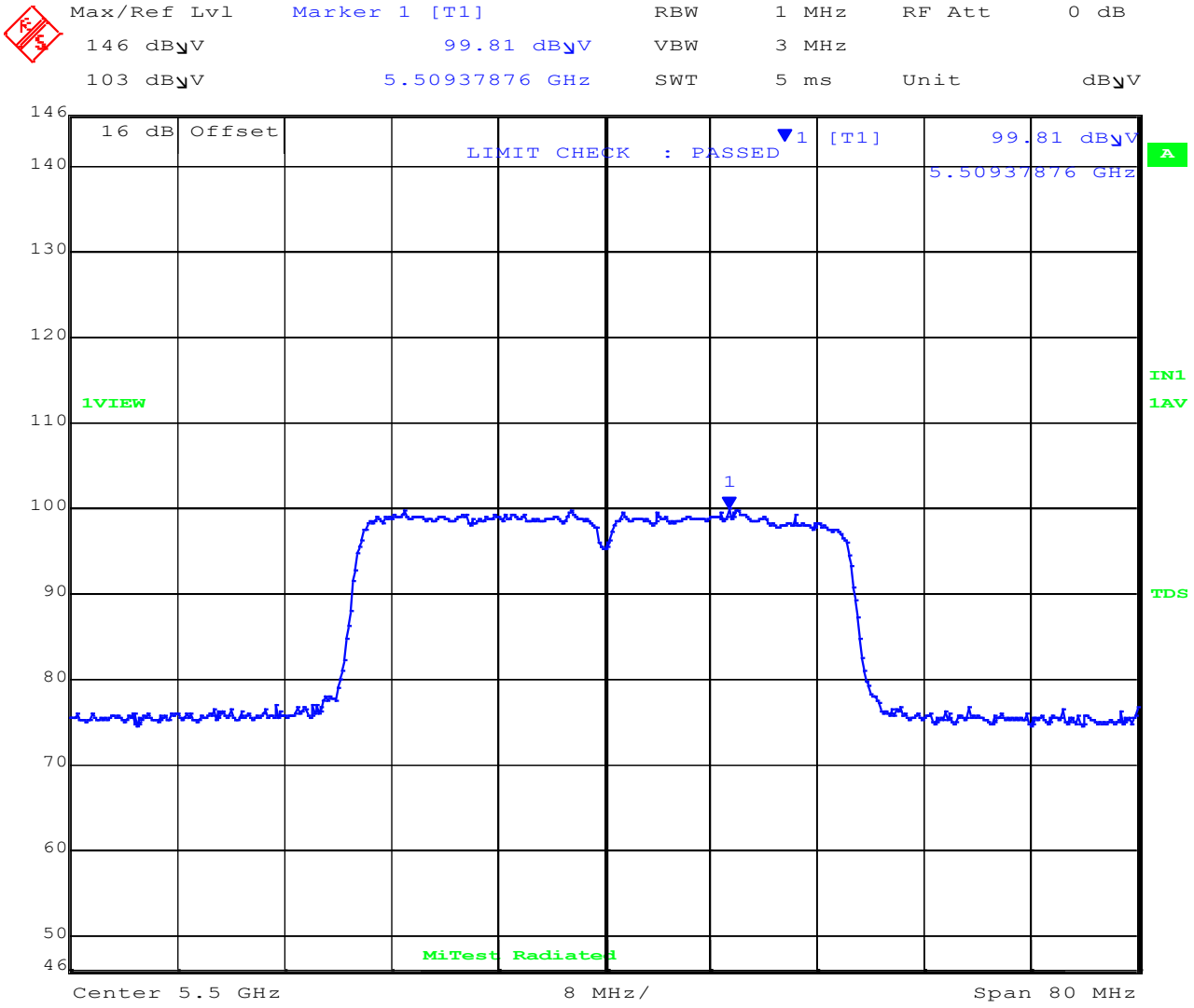
Variant: 40 MHz, Channel: 5500.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

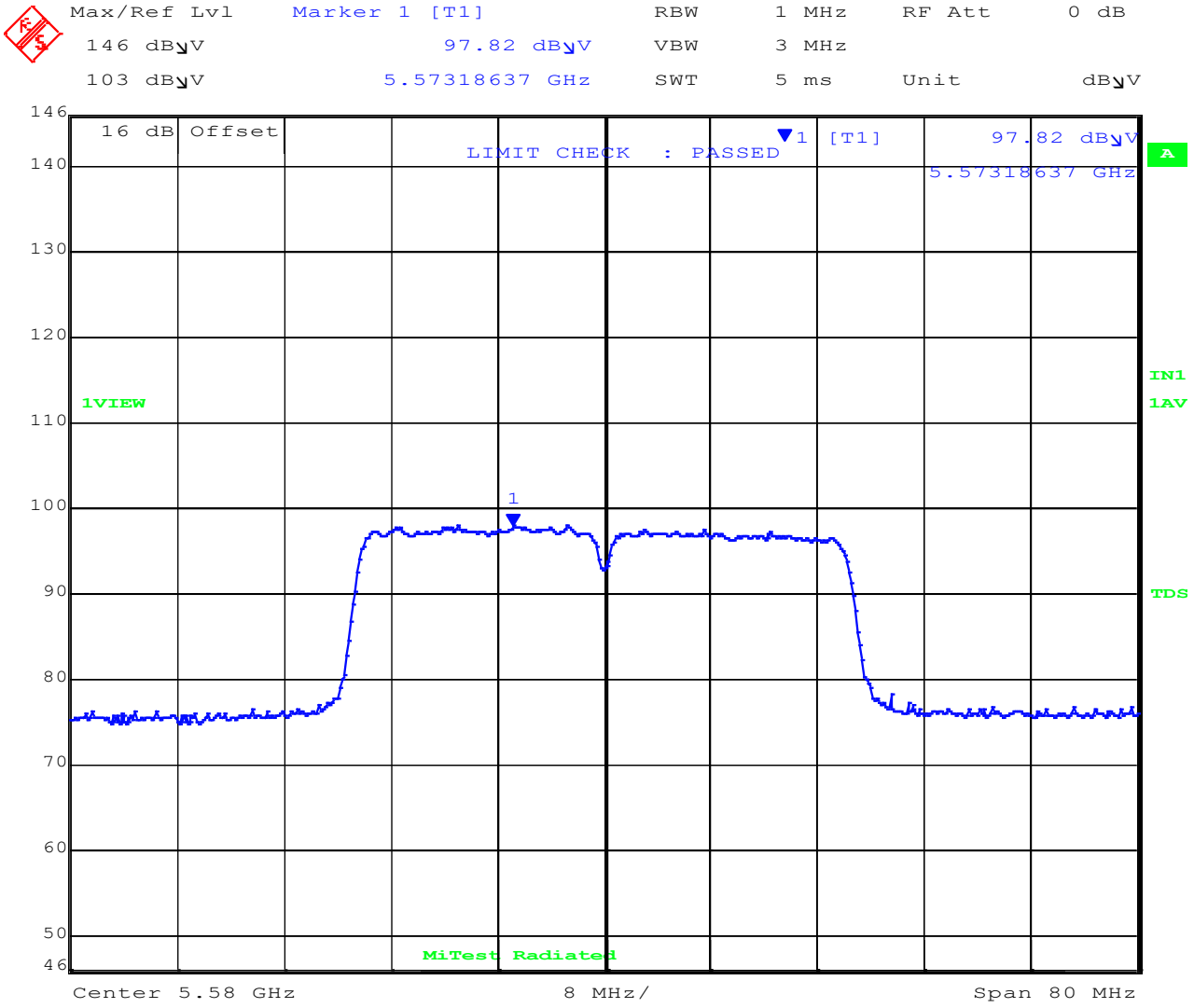
Variant: 40 MHz, Channel: 5500.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

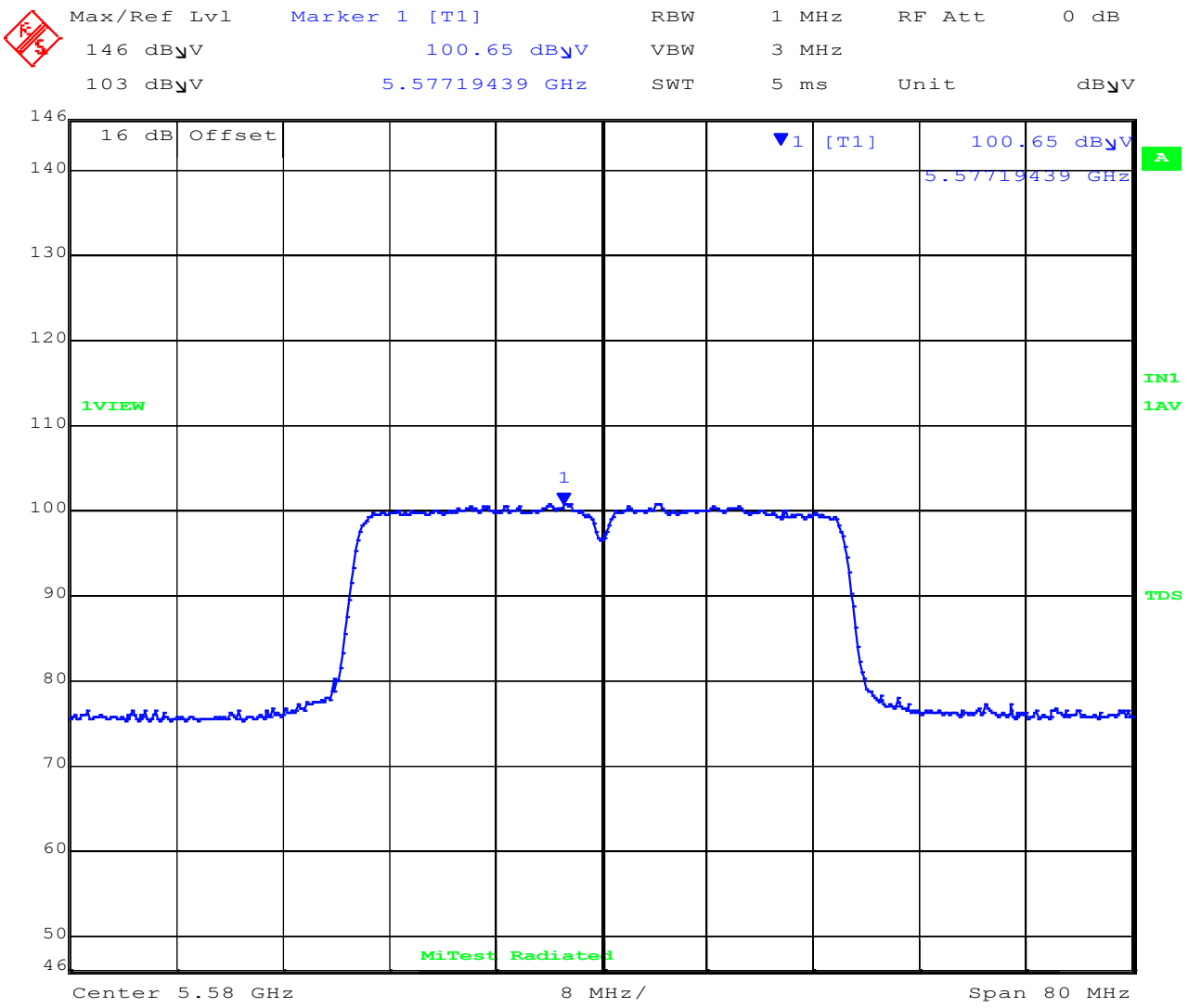
Variant: 40 MHz, Channel: 5580.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

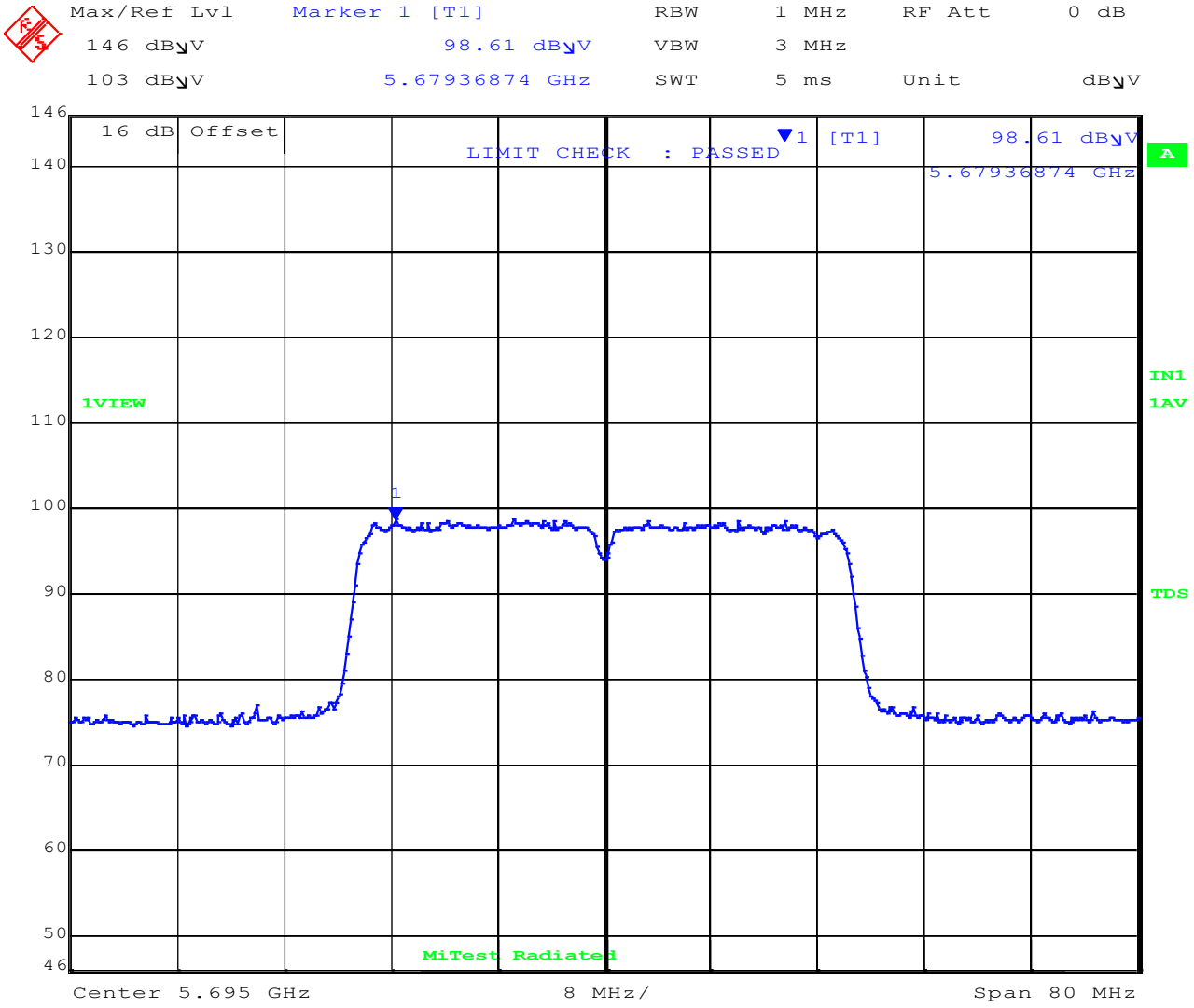
Variant: 40 MHz, Channel: 5580.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

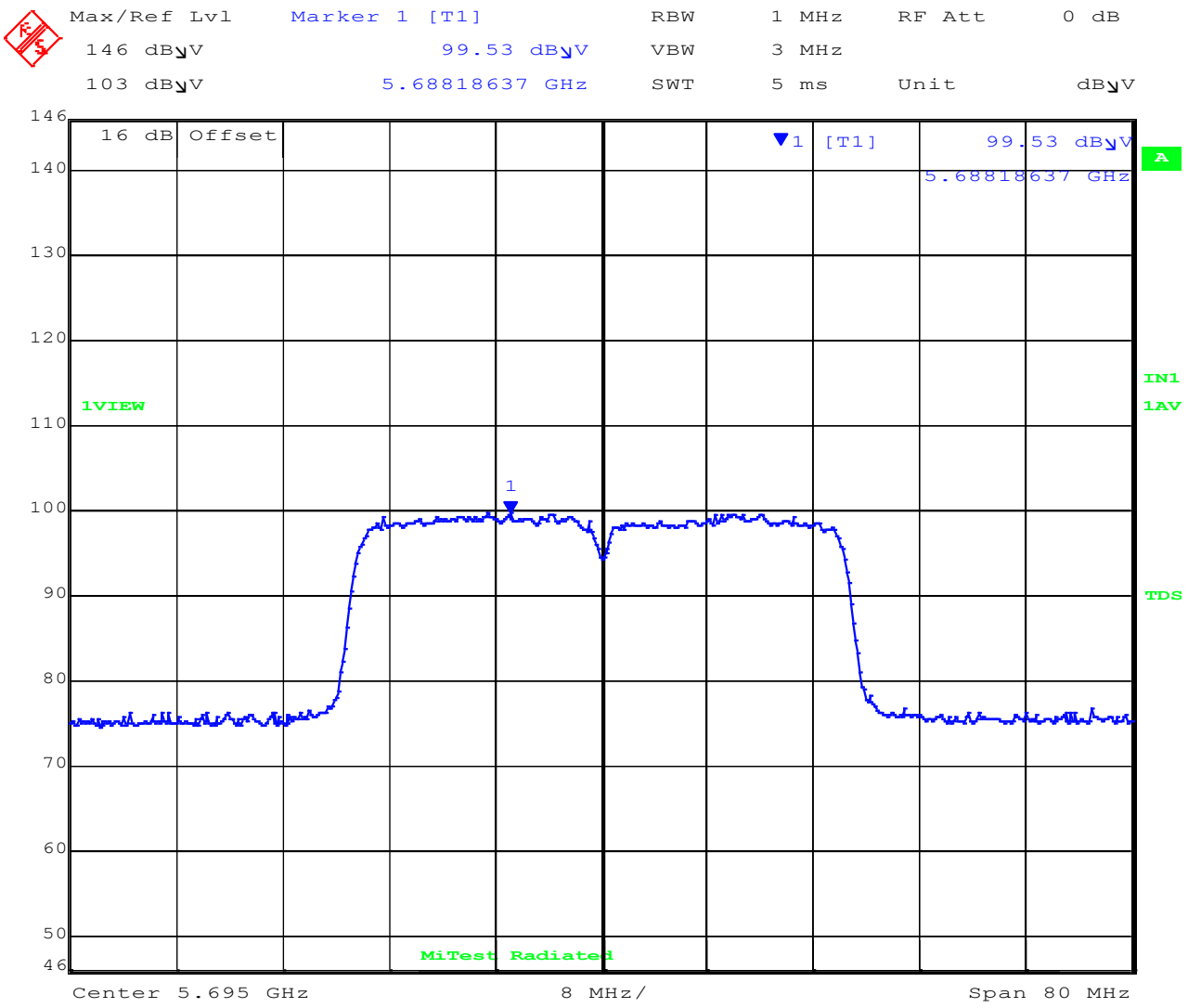
Variant: 40 MHz, Channel: 5695.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

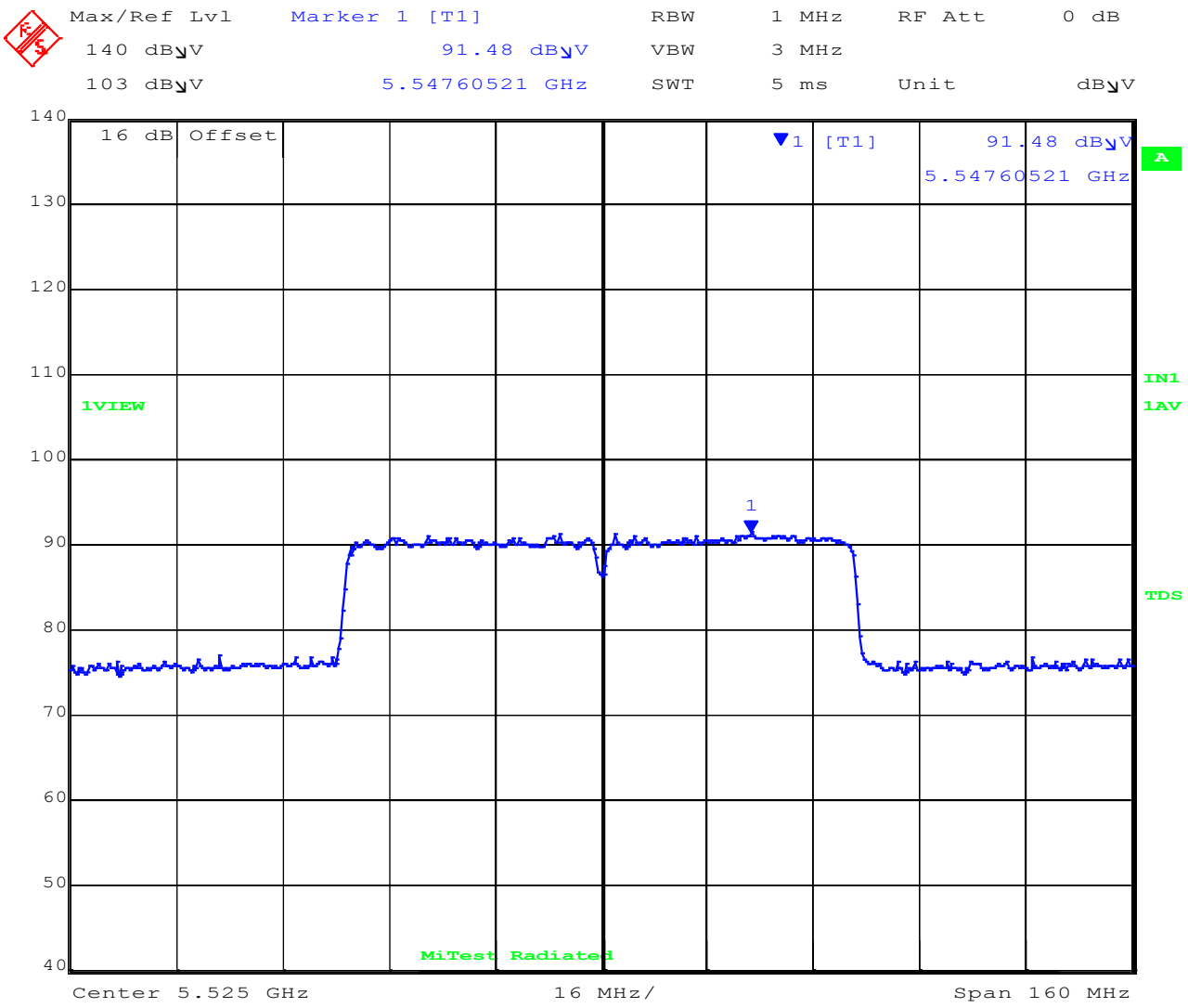
Variant: 40 MHz, Channel: 5695.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

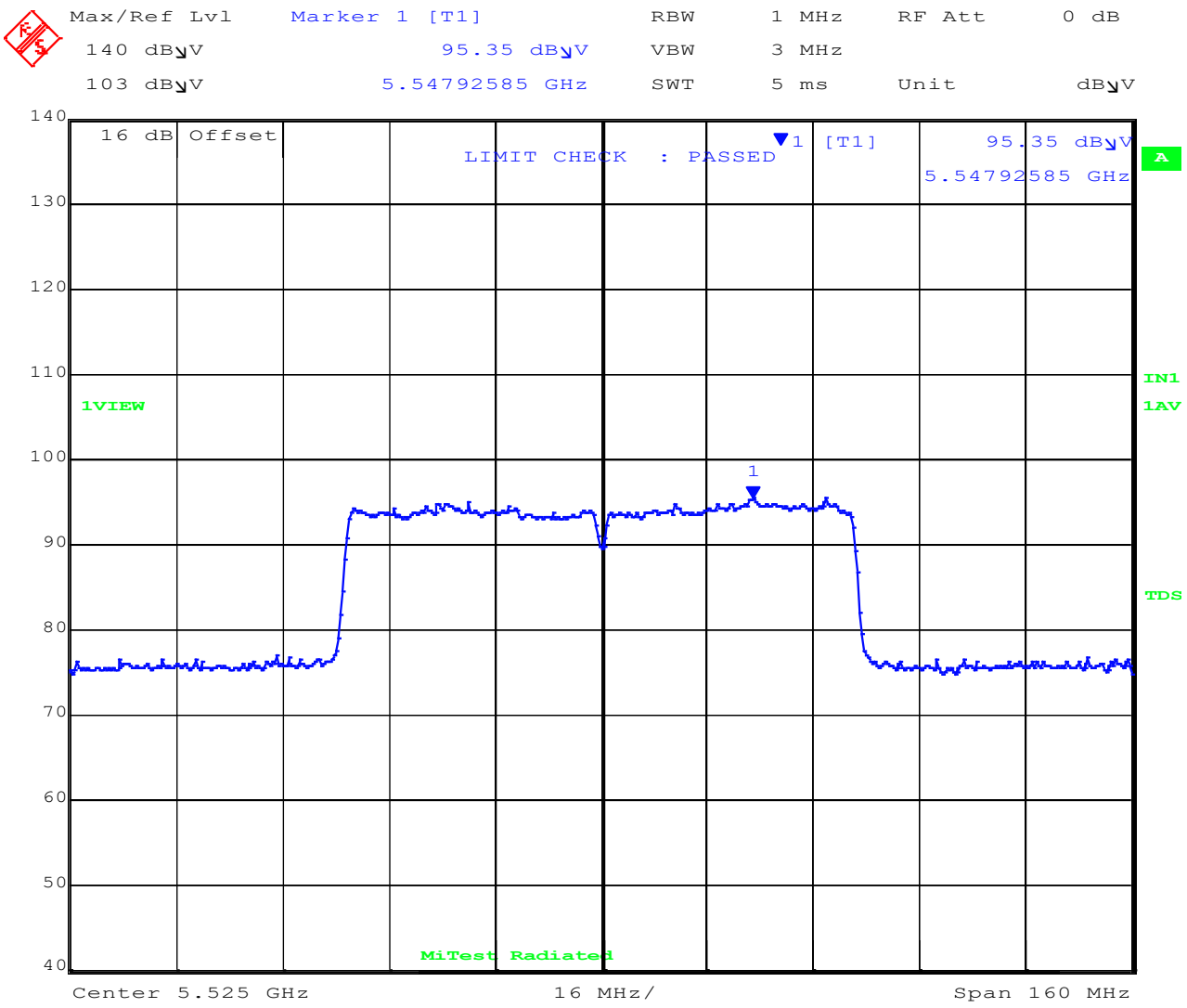
Variant: 80 MHz, Channel: 5525.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

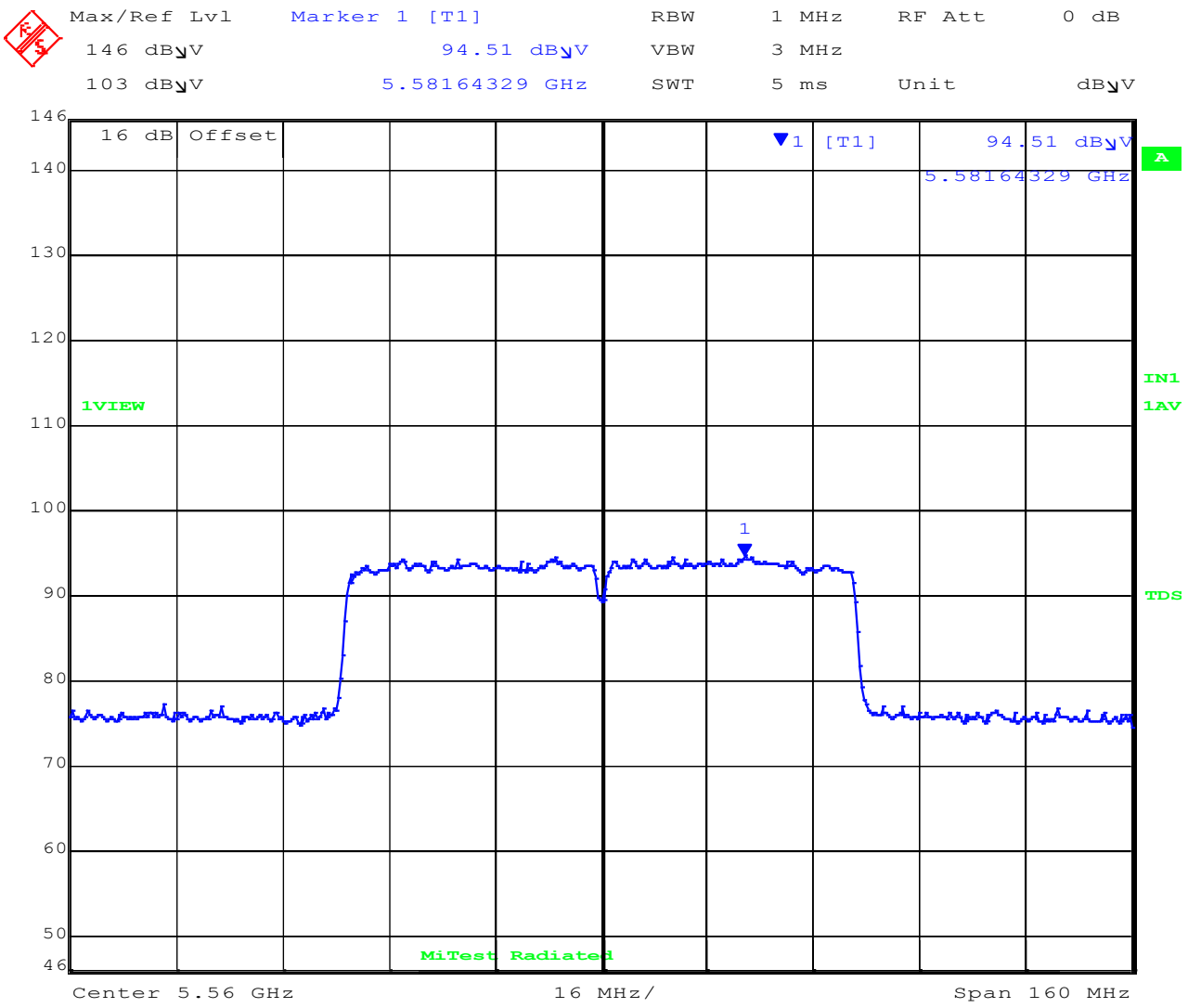
Variant: 80 MHz, Channel: 5525.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5560.00 MHz, Polarity H

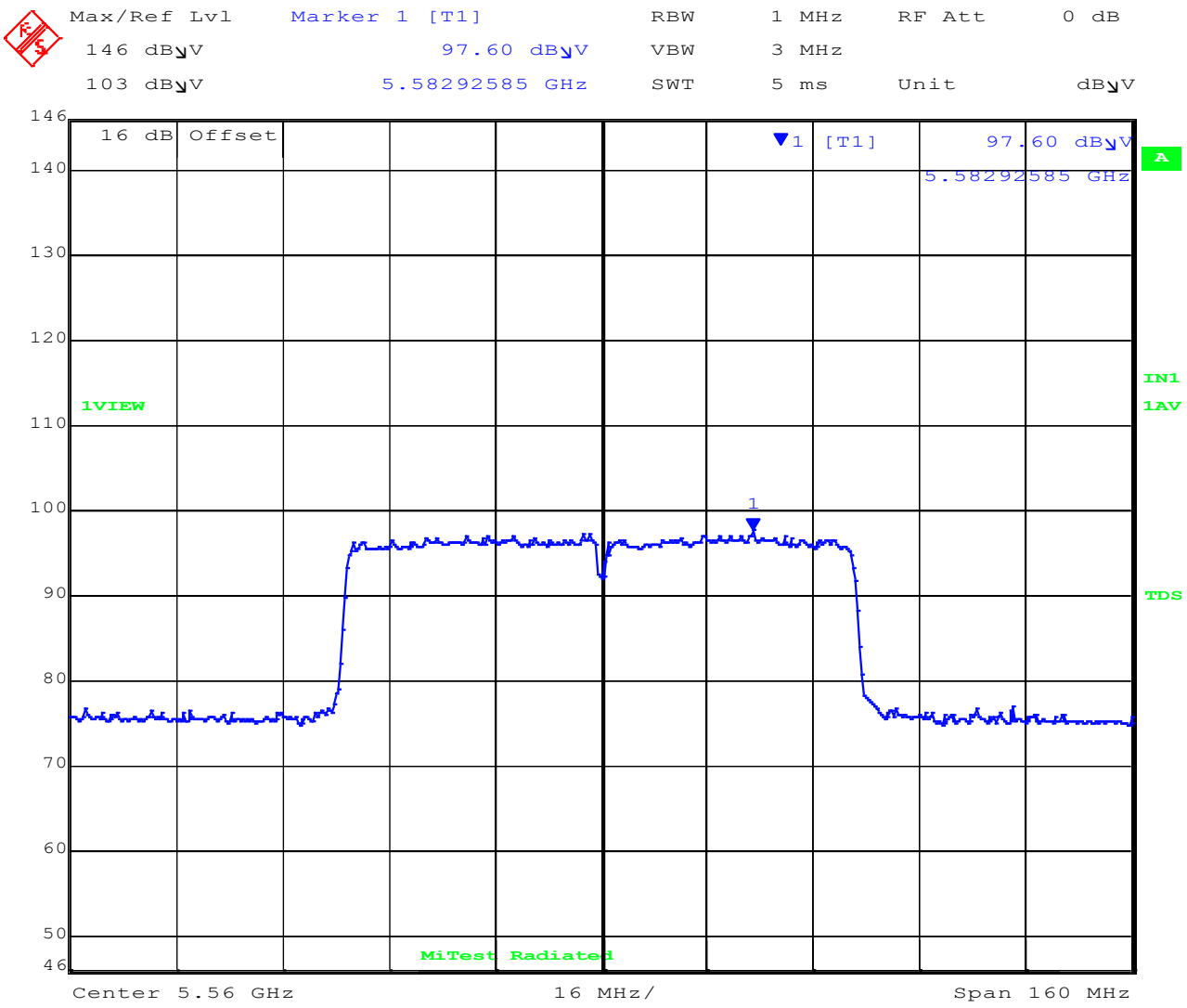


Date: 24.MAR.2021 08:57:46

back to matrix

POWER SPECTRAL DENSITY

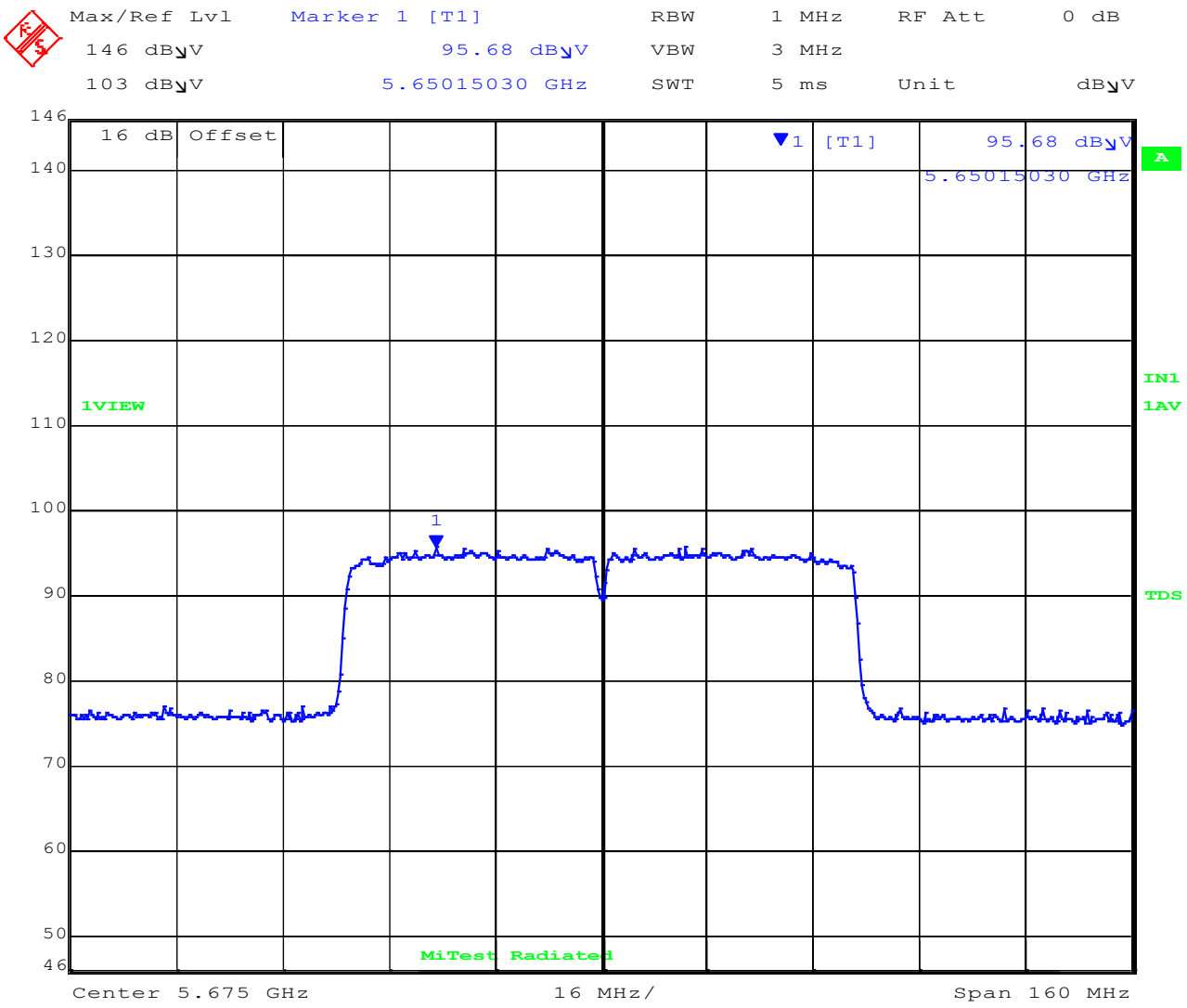
Variant: 80 MHz, Channel: 5560.00 MHz, Polarity V



back to matrix

POWER SPECTRAL DENSITY

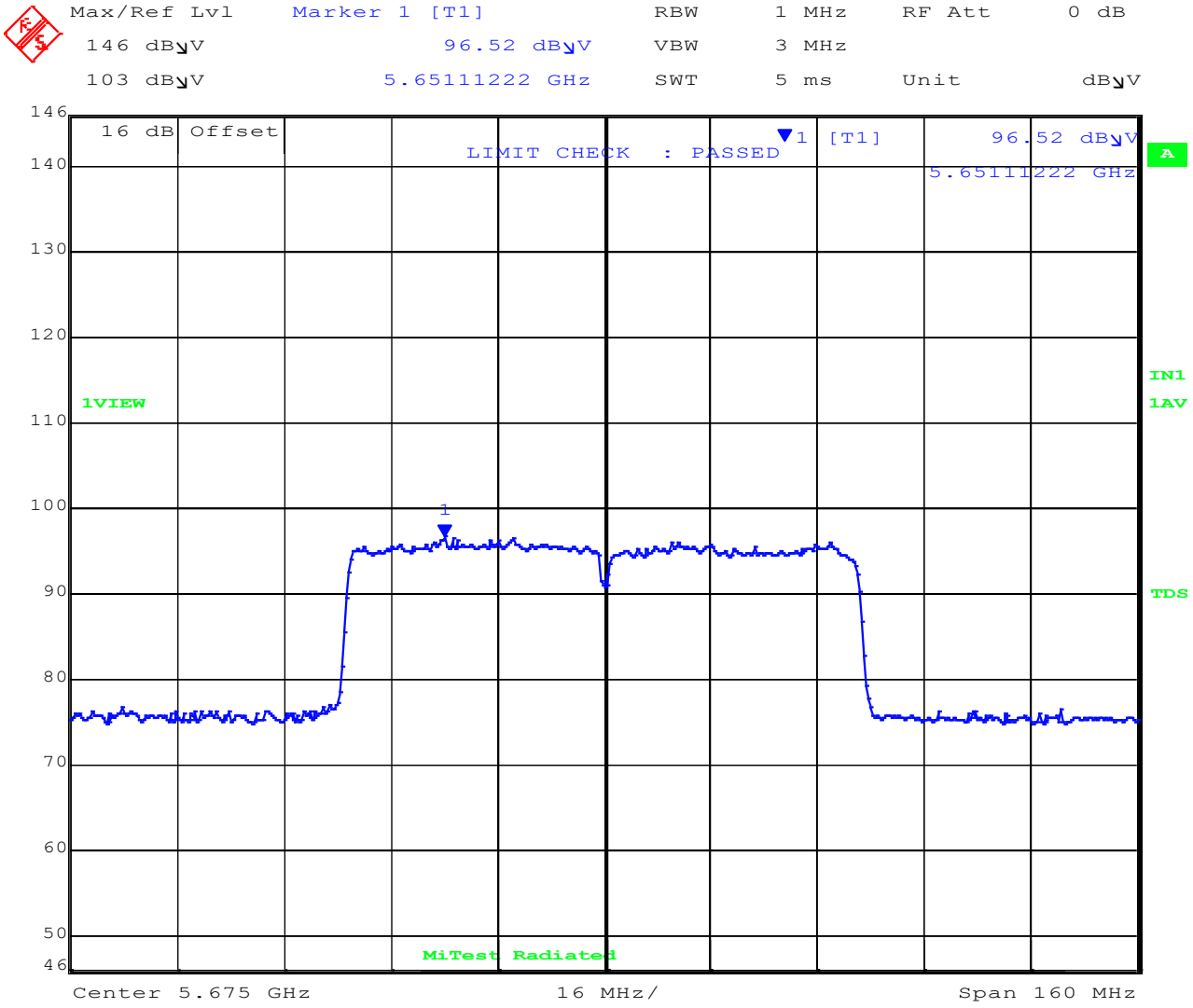
Variant: 80 MHz, Channel: 5675.00 MHz, Polarity H



back to matrix

POWER SPECTRAL DENSITY

Variant: 80 MHz, Channel: 5675.00 MHz, Polarity V

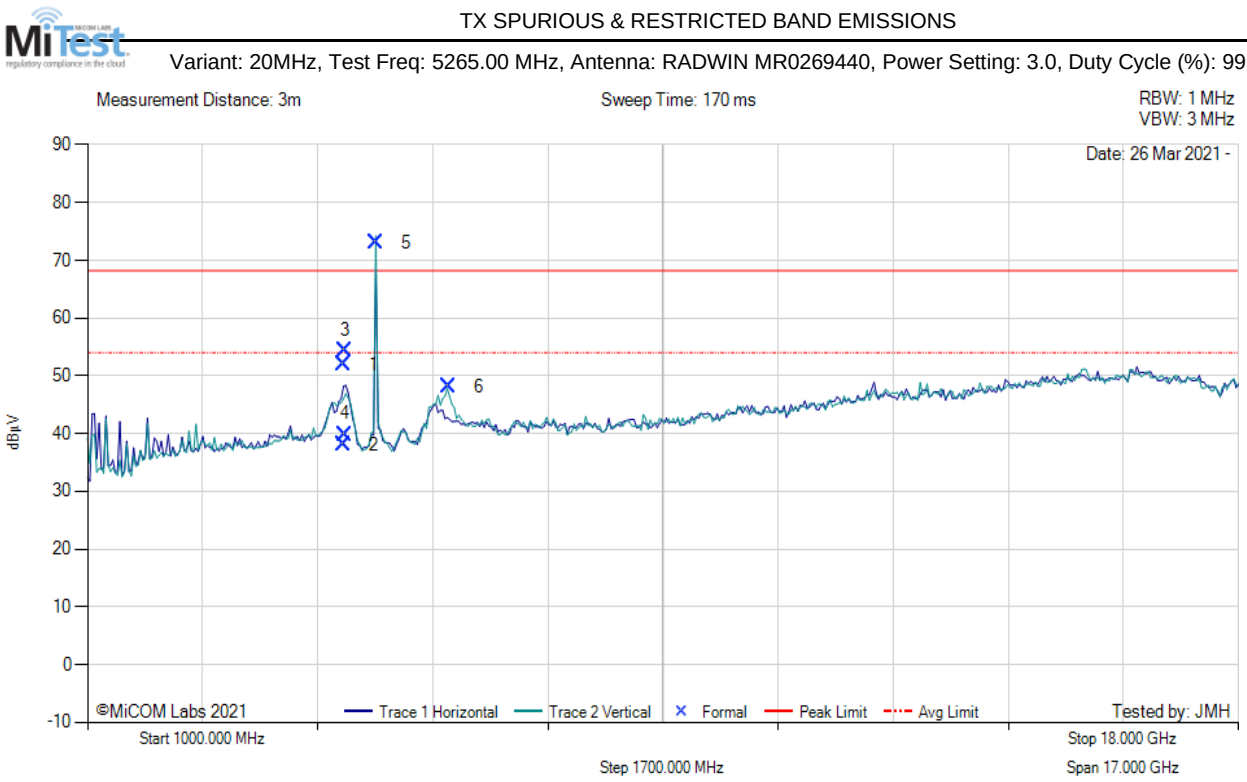


back to matrix

A.3. Radiated

A.3.1. TX Spurious & Restricted Band Emissions

A.3.1.1. RADWIN MR0269440



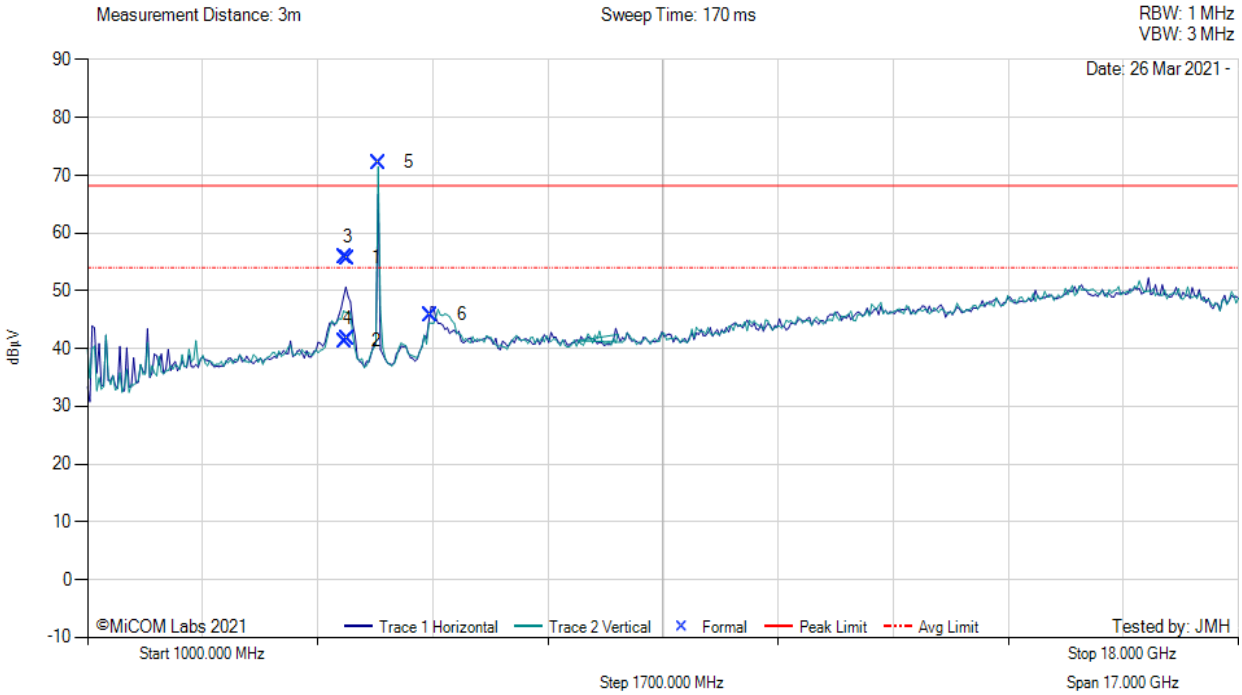
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	4779.65	61.54	2.86	-12.45	51.95	Max Peak	Horizontal	188	320	68.2	-16.3	Pass
2	4779.65	47.69	2.86	-12.45	38.10	Max Avg	Horizontal	188	320	54.0	-15.9	Pass
3	4810.97	63.88	2.85	-12.42	54.31	Max Peak	Horizontal	187	352	68.2	-13.9	Pass
4	4810.97	49.45	2.85	-12.42	39.88	Max Avg	Horizontal	187	352	54.0	-14.1	Pass
5	5265.74	82.29	2.90	-12.22	72.97	Fundamental	Vertical	200	0	--	--	
6	6326.92	54.19	3.30	-9.30	48.19	Peak (NRB)	Vertical	200	19	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5300.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 3.0, Duty Cycle (%): 99



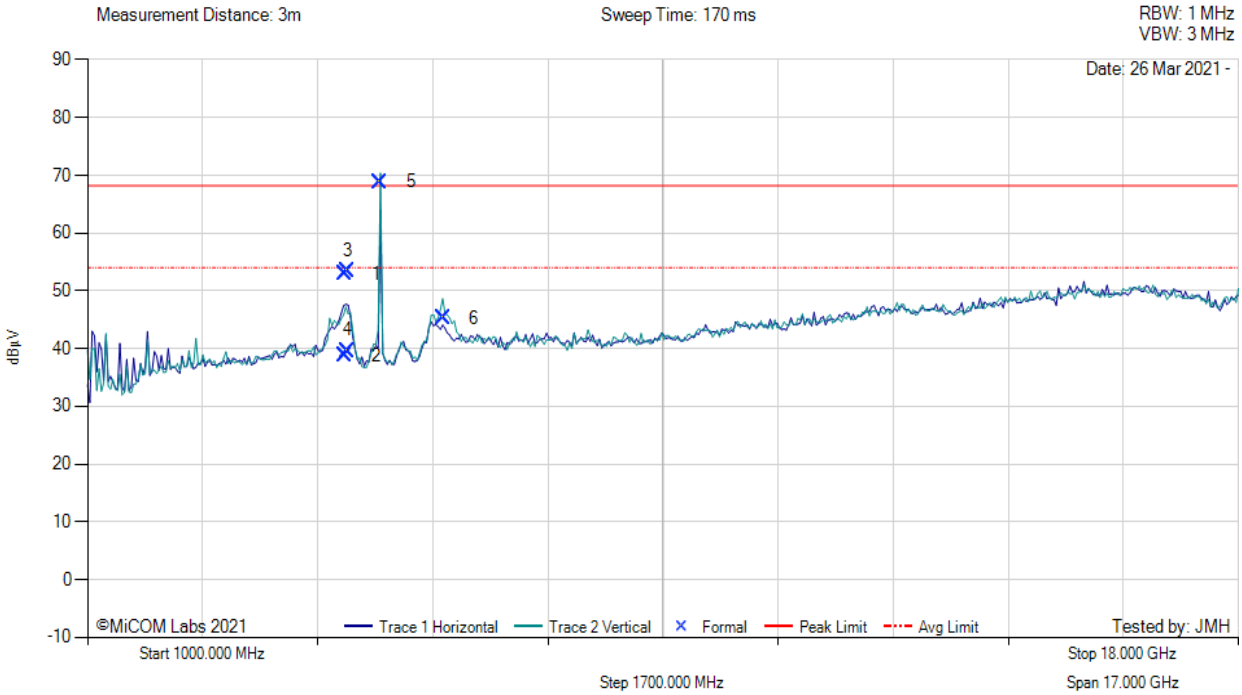
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4809.08	65.34	2.85	-12.42	55.77	Max Peak	Horizontal	178	354	68.2	-12.5	Pass
2	4809.08	50.87	2.85	-12.42	41.30	Max Avg	Horizontal	178	354	54.0	-12.7	Pass
3	4836.76	65.39	2.81	-12.54	55.66	Max Peak	Horizontal	180	355	68.2	-12.6	Pass
4	4836.76	51.47	2.81	-12.54	41.74	Max Avg	Horizontal	180	355	54.0	-12.3	Pass
5	5295.95	81.18	3.02	-12.01	72.19	Fundamental	Vertical	150	0	--	--	
6	6073.01	52.72	3.24	-10.08	45.88	Peak (NRB)	Horizontal	150	63	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5330.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 3.0, Duty Cycle (%): 99



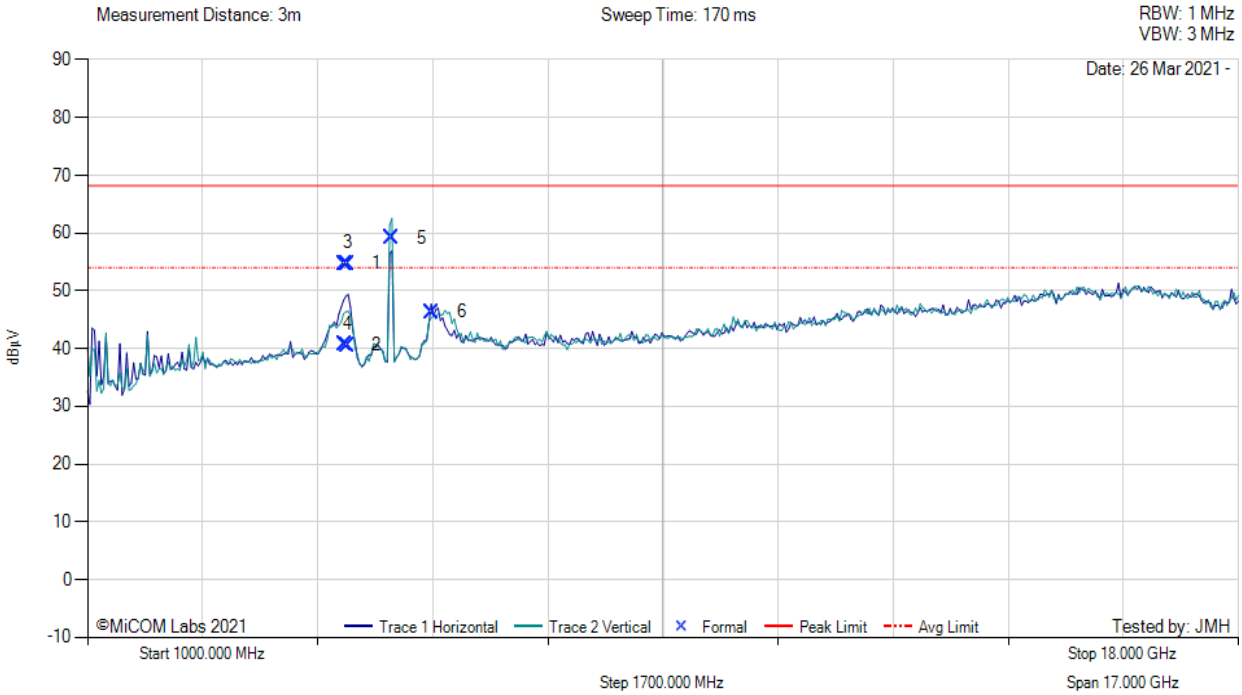
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4810.72	62.55	2.85	-12.42	52.98	Max Peak	Horizontal	196	0	68.2	-15.3	Pass
2	4810.72	48.42	2.85	-12.42	38.85	Max Avg	Horizontal	196	0	54.0	-15.2	Pass
3	4837.13	63.15	2.81	-12.55	53.41	Max Peak	Horizontal	185	336	68.2	-14.8	Pass
4	4837.13	49.36	2.81	-12.55	39.62	Max Avg	Horizontal	185	336	54.0	-14.4	Pass
5	5324.72	77.90	2.96	-11.98	68.88	Fundamental	Vertical	150	0	--	--	
6	6252.83	51.45	3.26	-9.48	45.23	Peak (NRB)	Vertical	150	74	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5490.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 3.0, Duty Cycle (%): 99



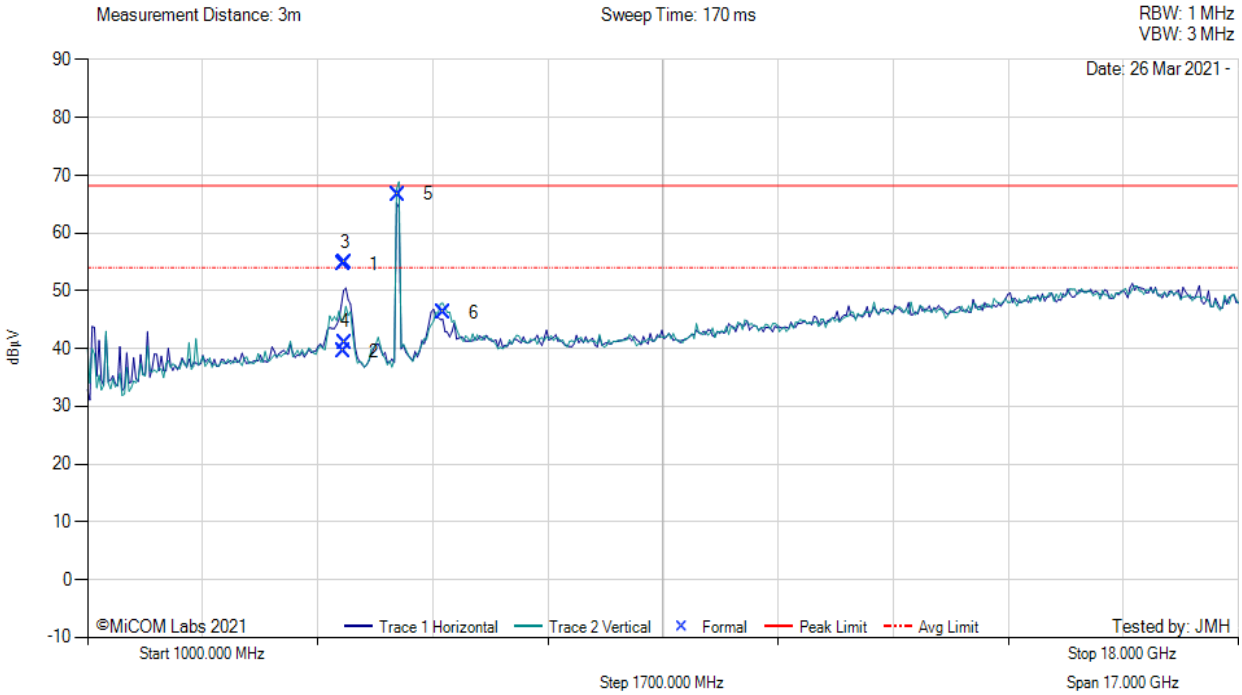
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	4809.00	64.30	2.85	-12.43	54.72	Max Peak	Horizontal	190	357	68.2	-13.5	Pass
2	4809.00	50.33	2.85	-12.43	40.75	Max Avg	Horizontal	190	357	54.0	-13.3	Pass
3	4843.34	64.45	2.85	-12.55	54.75	Max Peak	Horizontal	182	336	68.2	-13.5	Pass
4	4843.34	50.32	2.85	-12.55	40.62	Max Avg	Horizontal	182	336	54.0	-13.4	Pass
5	5496.06	67.75	3.06	-11.64	59.17	Fundamental	Vertical	150	0	--	--	
6	6078.85	53.16	3.25	-10.04	46.37	Peak (NRB)	Horizontal	150	3	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5590.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 3.0, Duty Cycle (%): 99



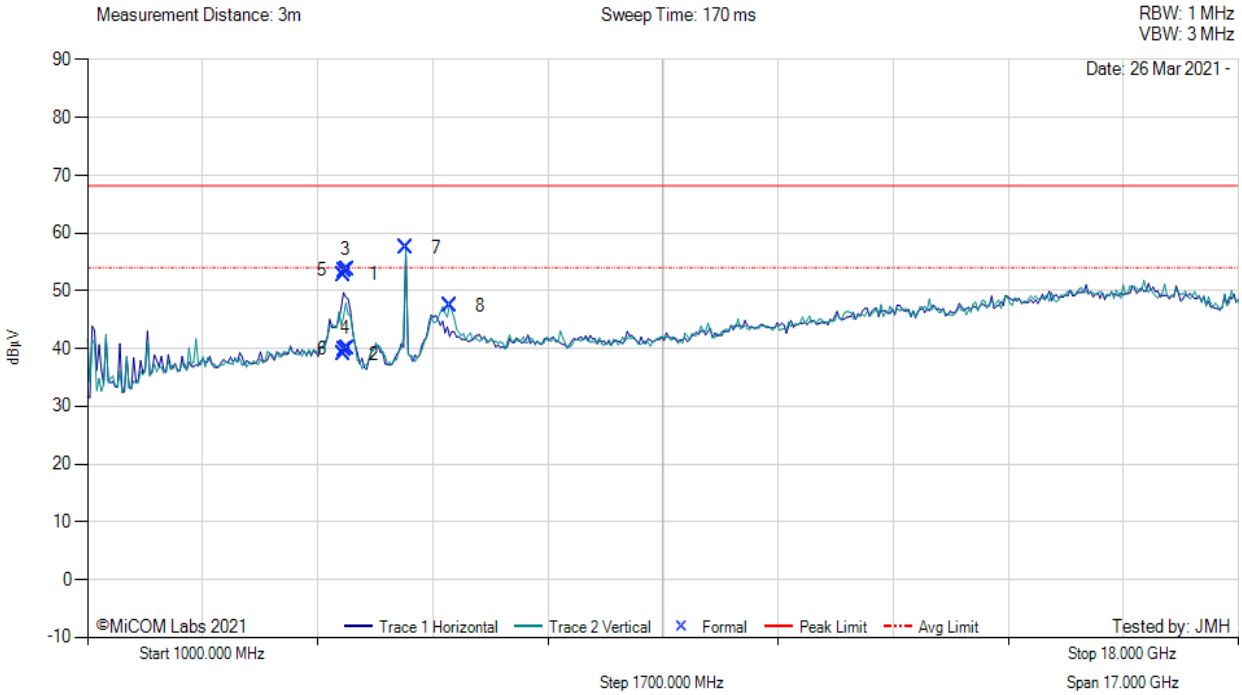
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4778.28	64.14	2.87	-12.45	54.56	Max Peak	Horizontal	193	333	68.2	-13.7	Pass
2	4778.28	49.05	2.87	-12.45	39.47	Max Avg	Horizontal	193	333	54.0	-14.5	Pass
3	4809.94	64.42	2.85	-12.42	54.85	Max Peak	Horizontal	186	350	68.2	-13.4	Pass
4	4809.94	50.67	2.85	-12.42	41.10	Max Avg	Horizontal	186	350	54.0	-12.9	Pass
5	5583.16	75.15	3.12	-11.56	66.71	Fundamental	Vertical	200	0	--	--	
6	6253.54	52.44	3.26	-9.48	46.22	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5705.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 3.0, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4779.29	62.42	2.86	-12.45	52.83	Max Peak	Horizontal	190	323	68.2	-15.4	Pass
2	4779.29	48.55	2.86	-12.45	38.96	Max Avg	Horizontal	190	323	54.0	-15.0	Pass
3	4809.51	63.09	2.85	-12.42	53.52	Max Peak	Horizontal	189	326	68.2	-14.7	Pass
4	4809.51	49.44	2.85	-12.42	39.87	Max Avg	Horizontal	189	326	54.0	-14.1	Pass
5	4840.67	63.41	2.82	-12.55	53.68	Max Peak	Horizontal	181	326	68.2	-14.6	Pass
6	4840.67	49.68	2.82	-12.55	39.95	Max Avg	Horizontal	181	326	54.0	-14.1	Pass
7	5701.24	65.63	3.19	-11.35	57.47	Fundamental	Vertical	200	0	--	--	
8	6351.84	53.24	3.31	-9.16	47.39	Peak (NRB)	Vertical	200	56	--	--	Pass

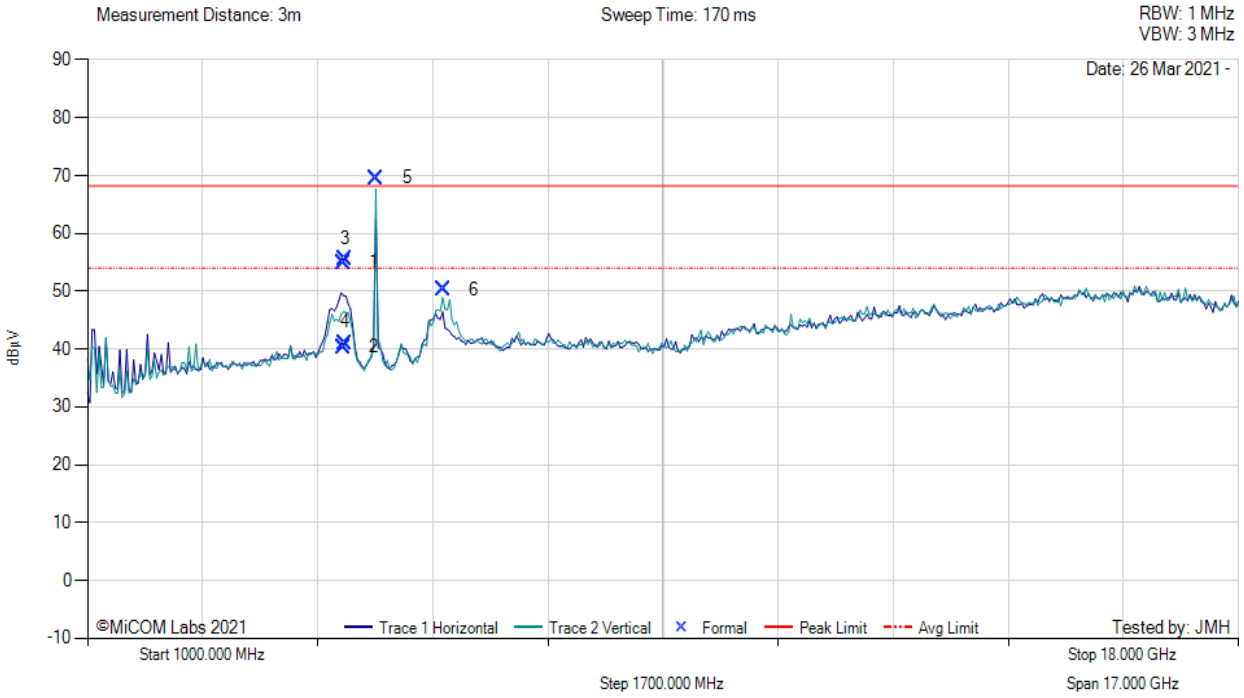
Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

A.3.1.2. RADWIN MR0269440BF

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5265.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



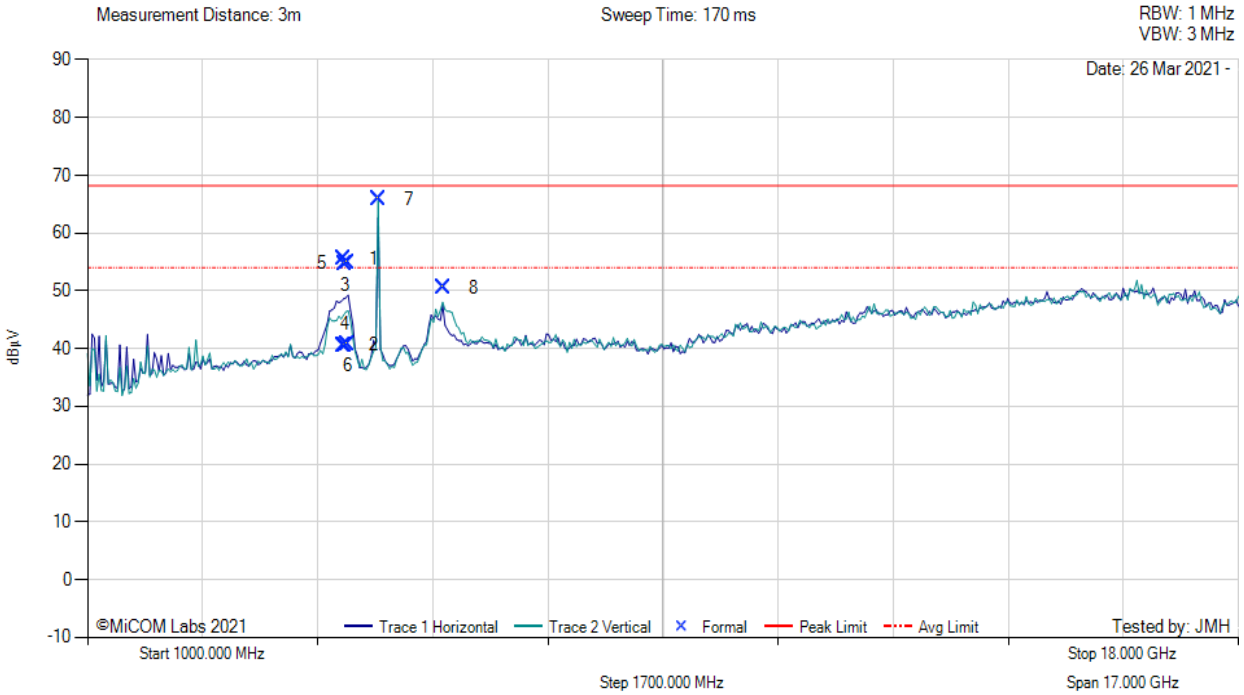
1000.00 - 18000.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	4777.05	64.54	2.88	-12.46	54.96	Max Peak	Horizontal	188	355	68.2	-13.3	Pass
2	4777.05	49.92	2.88	-12.46	40.34	Max Avg	Horizontal	188	355	54.0	-13.7	Pass
3	4809.55	65.08	2.85	-12.42	55.51	Max Peak	Horizontal	191	0	68.2	-12.7	Pass
4	4809.55	50.64	2.85	-12.42	41.07	Max Avg	Horizontal	191	0	54.0	-12.9	Pass
5	5269.48	78.90	2.91	-12.20	69.61	Fundamental	Vertical	200	0	--	--	
6	6250.05	56.50	3.25	-9.49	50.26	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5300.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



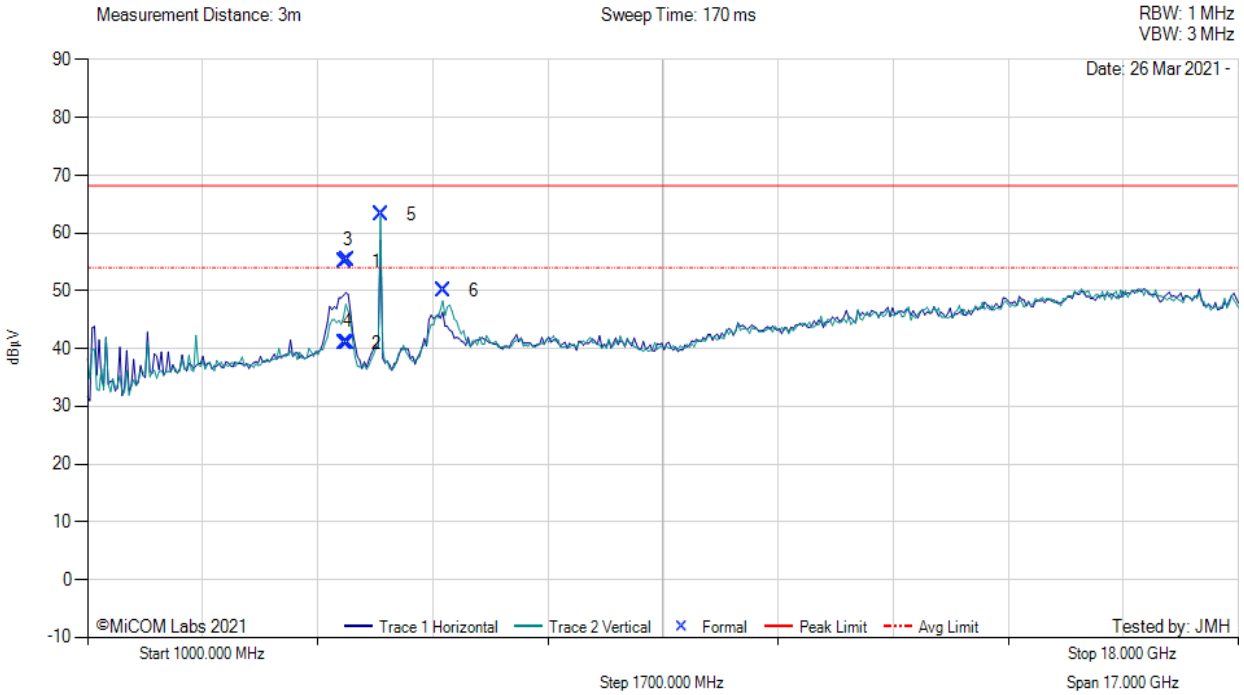
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4778.07	65.08	2.87	-12.45	55.50	Max Peak	Horizontal	189	0	68.2	-12.7	Pass
2	4778.07	50.12	2.87	-12.45	40.54	Max Avg	Horizontal	189	0	54.0	-13.5	Pass
3	4810.93	64.15	2.85	-12.42	54.58	Max Peak	Horizontal	190	355	68.2	-13.7	Pass
4	4810.93	50.13	2.85	-12.42	40.56	Max Avg	Horizontal	190	355	54.0	-13.4	Pass
5	4838.54	64.61	2.81	-12.55	54.87	Max Peak	Horizontal	193	354	68.2	-13.4	Pass
6	4838.54	50.49	2.81	-12.55	40.75	Max Avg	Horizontal	193	354	54.0	-13.3	Pass
7	5303.99	74.70	3.06	-11.96	65.80	Fundamental	Vertical	200	0	--	--	
8	6250.19	56.76	3.25	-9.49	50.52	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5330.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



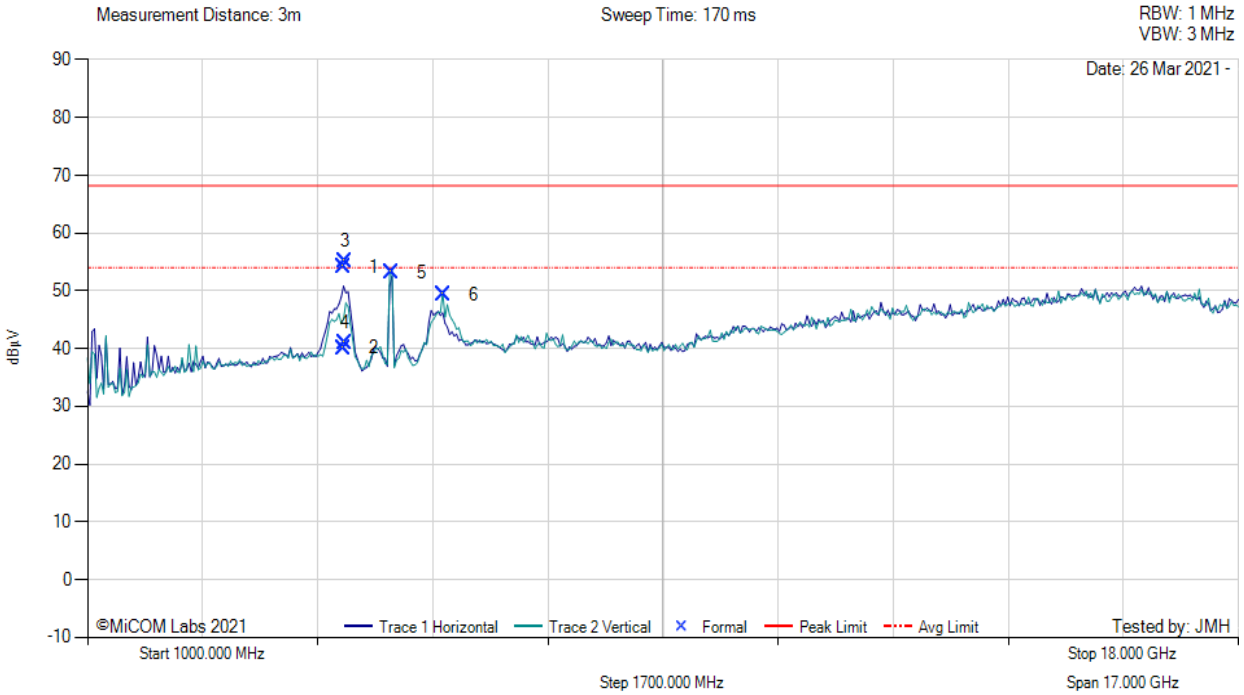
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4808.91	64.70	2.85	-12.43	55.12	Max Peak	Horizontal	191	0	68.2	-13.1	Pass
2	4808.91	50.55	2.85	-12.43	40.97	Max Avg	Horizontal	191	0	54.0	-13.0	Pass
3	4839.56	65.01	2.82	-12.55	55.28	Max Peak	Horizontal	182	1	68.2	-13.0	Pass
4	4839.56	50.76	2.82	-12.55	41.03	Max Avg	Horizontal	182	1	54.0	-13.0	Pass
5	5329.35	72.21	2.98	-11.97	63.22	Fundamental	Vertical	200	0	--	--	
6	6249.95	56.36	3.25	-9.50	50.11	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5490.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



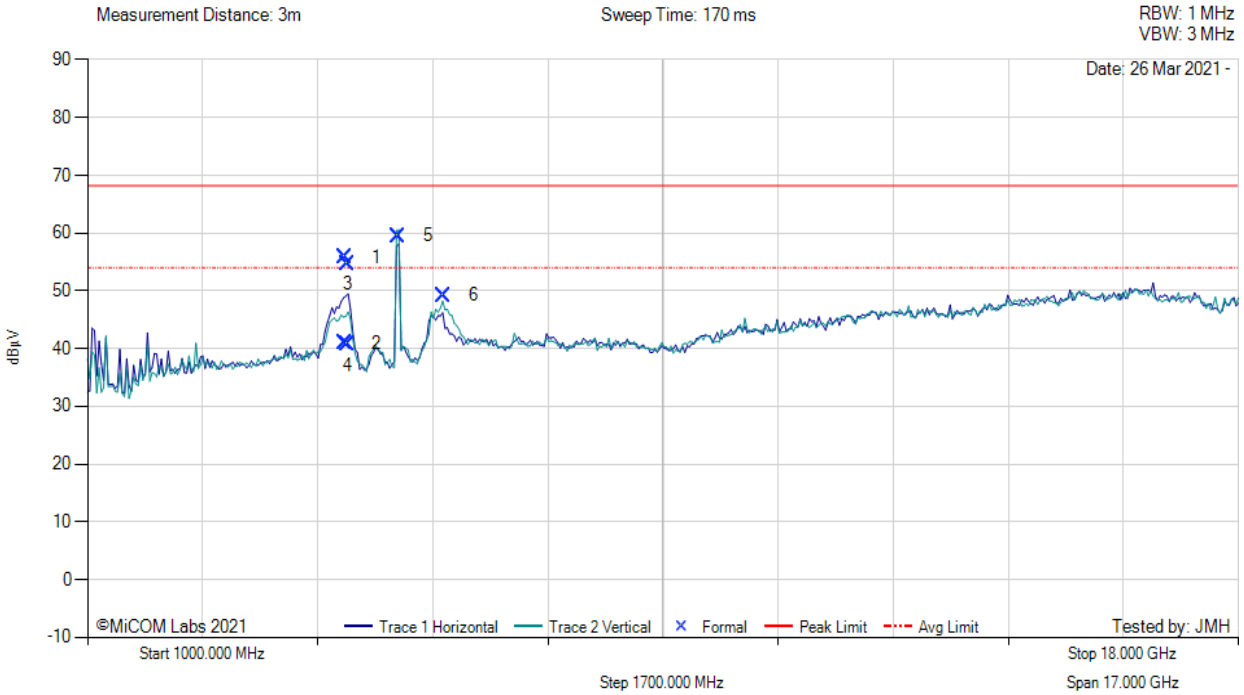
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4774.78	63.71	2.92	-12.47	54.16	Max Peak	Horizontal	188	3	68.2	-14.1	Pass
2	4774.78	49.67	2.92	-12.47	40.12	Max Avg	Horizontal	188	3	54.0	-13.9	Pass
3	4808.52	64.71	2.85	-12.43	55.13	Max Peak	Horizontal	185	1	68.2	-13.1	Pass
4	4808.52	50.57	2.85	-12.43	40.99	Max Avg	Horizontal	185	1	54.0	-13.0	Pass
5	5491.32	61.68	3.13	-11.67	53.14	Fundamental	Vertical	200	0	--	--	
6	6250.39	55.51	3.25	-9.49	49.27	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5590.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



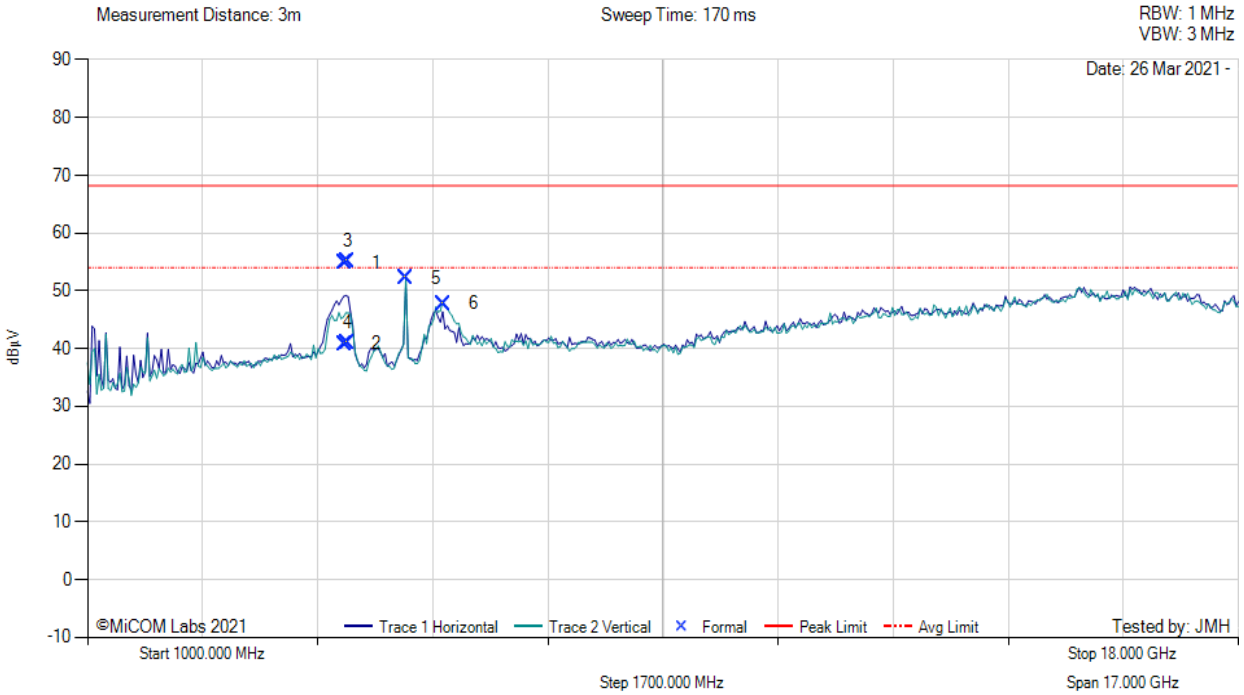
1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4809.44	65.34	2.85	-12.42	55.77	Max Peak	Horizontal	188	0	68.2	-12.5	Pass
2	4809.44	50.56	2.85	-12.42	40.99	Max Avg	Horizontal	188	0	54.0	-13.0	Pass
3	4839.15	64.47	2.82	-12.55	54.74	Max Peak	Horizontal	173	356	68.2	-13.5	Pass
4	4839.15	50.42	2.82	-12.55	40.69	Max Avg	Horizontal	173	356	54.0	-13.3	Pass
5	5589.55	67.93	3.15	-11.59	59.49	Fundamental	Vertical	200	0	--	--	
6	6249.85	55.44	3.25	-9.50	49.19	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

back to matrix

TX SPURIOUS & RESTRICTED BAND EMISSIONS

Variant: 20MHz, Test Freq: 5705.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 99



1000.00 - 18000.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	4808.85	64.44	2.85	-12.43	54.86	Max Peak	Horizontal	184	0	68.2	-13.4	Pass
2	4808.85	50.42	2.85	-12.43	40.84	Max Avg	Horizontal	184	0	54.0	-13.2	Pass
3	4837.83	64.88	2.81	-12.55	55.14	Max Peak	Horizontal	189	0	68.2	-13.1	Pass
4	4837.83	50.69	2.81	-12.55	40.95	Max Avg	Horizontal	189	0	54.0	-13.1	Pass
5	5701.40	60.35	3.19	-11.35	52.19	Fundamental	Vertical	200	0	--	--	
6	6249.96	54.03	3.25	-9.50	47.78	Peak (NRB)	Vertical	200	0	--	--	Pass

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 5G Notch in front of amp to prevent overload.

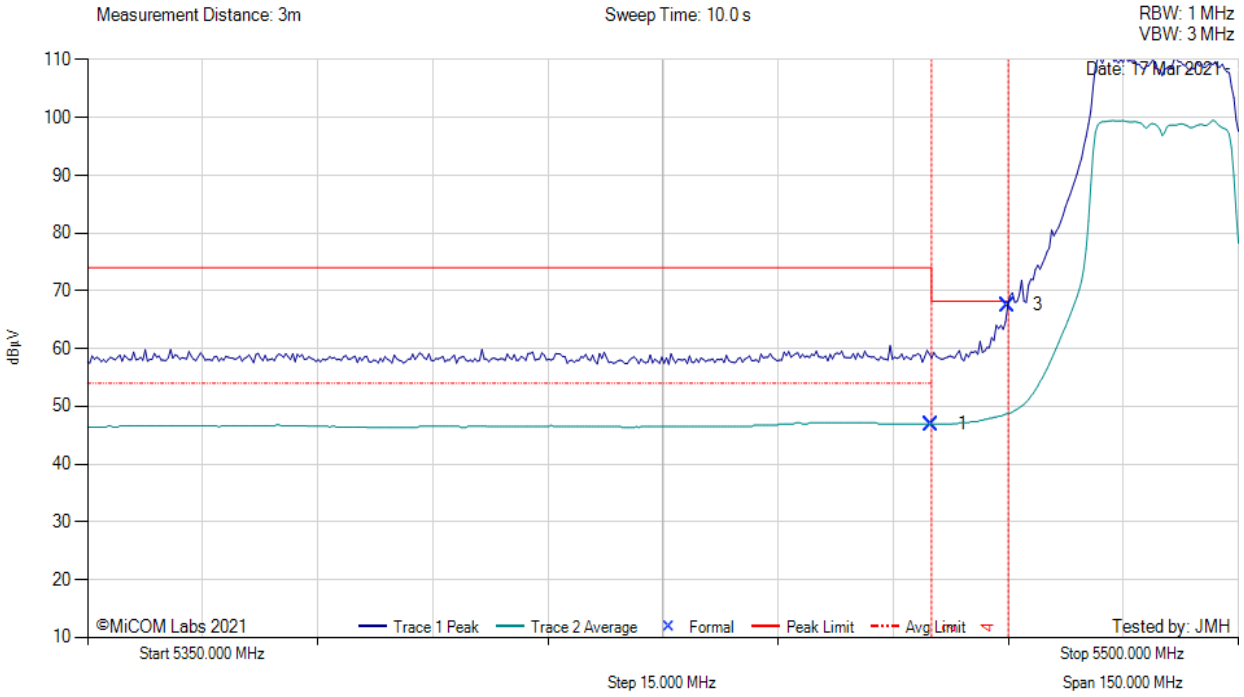
back to matrix

A.3.2. Restricted Edge & Band-Edge Emissions

A.3.2.3. RADWIN MR0269440

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 20MHz, Test Freq: 5490.00 MHz, Antenna: RADWIN MR0269440, Power Setting: -3.0, Duty Cycle (%): 99



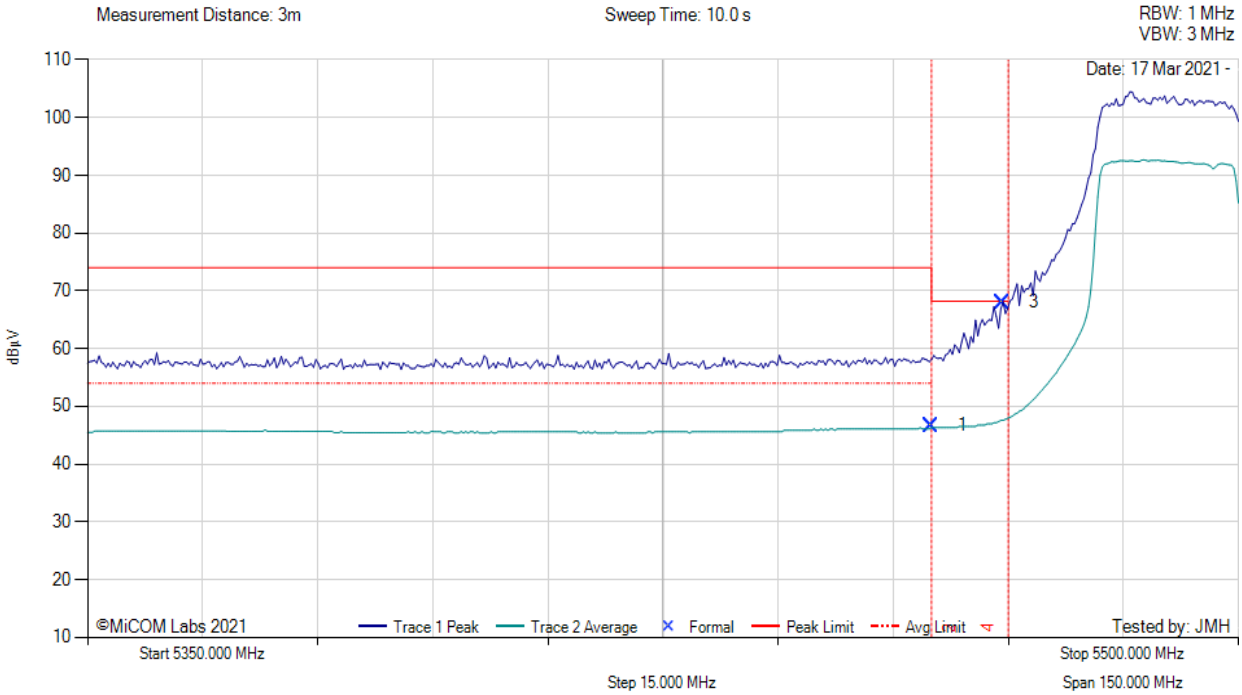
5350.00 - 5500.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5460.00	9.38	3.06	34.53	46.97	Max Avg	Vertical	183	33	54.0	-7.0	Pass
3	5469.92	29.89	3.06	34.55	67.50	Max Peak	Vertical	183	33	68.2	-0.7	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber.

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 40MHz, Test Freq: 5500.00 MHz, Antenna: RADWIN MR0269440, Power Setting: -6.0, Duty Cycle (%): 90



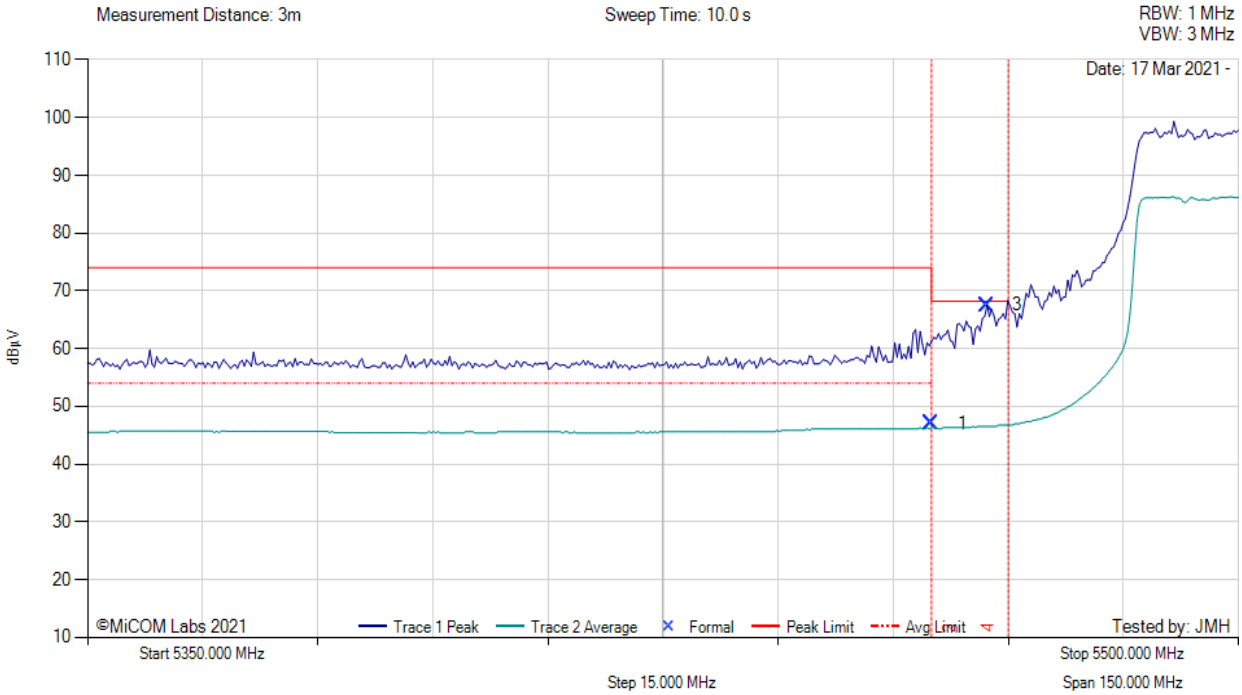
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5460.00	9.14	3.06	34.53	46.73	Max Avg	Vertical	183	33	54.0	-7.3	Pass
3	5469.32	30.42	3.06	34.55	68.03	Max Peak	Vertical	183	33	68.2	-0.2	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 80MHz, Test Freq: 5525.00 MHz, Antenna: RADWIN MR0269440, Power Setting: -10.0, Duty Cycle (%): 90



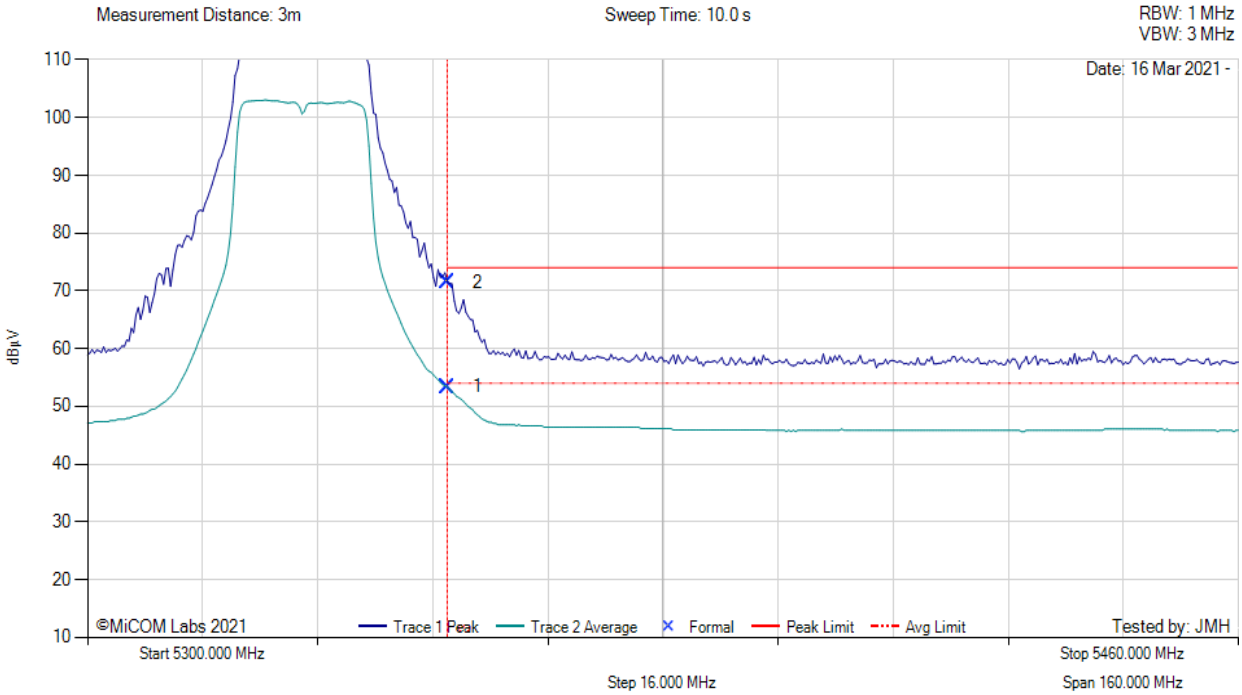
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5460.00	9.45	3.06	34.53	47.04	Max Avg	Vertical	183	33	54.0	-7.0	Pass
3	5467.21	29.93	3.08	34.55	67.56	Max Peak	Vertical	183	33	68.2	-0.7	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 20MHz, Test Freq: 5330.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 2.5, Duty Cycle (%): 99



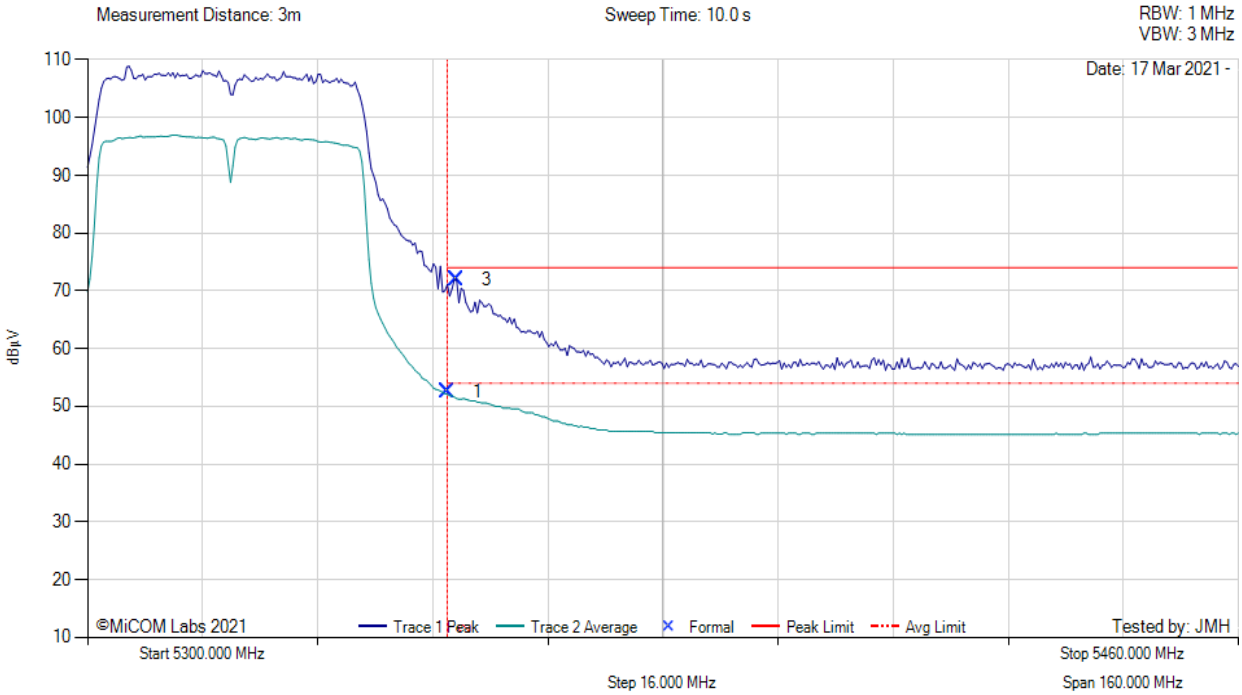
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	15.87	3.06	34.46	53.39	Max Avg	Vertical	189	33	54.0	-0.6	Pass
2	5350.00	34.01	3.06	34.46	71.53	Max Peak	Vertical	189	33	74.0	-2.5	Pass
3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by POE, connected to laptop outside chamber.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 40MHz, Test Freq: 5320.00 MHz, Antenna: RADWIN MR0269440, Power Setting: -3.0, Duty Cycle (%): 90



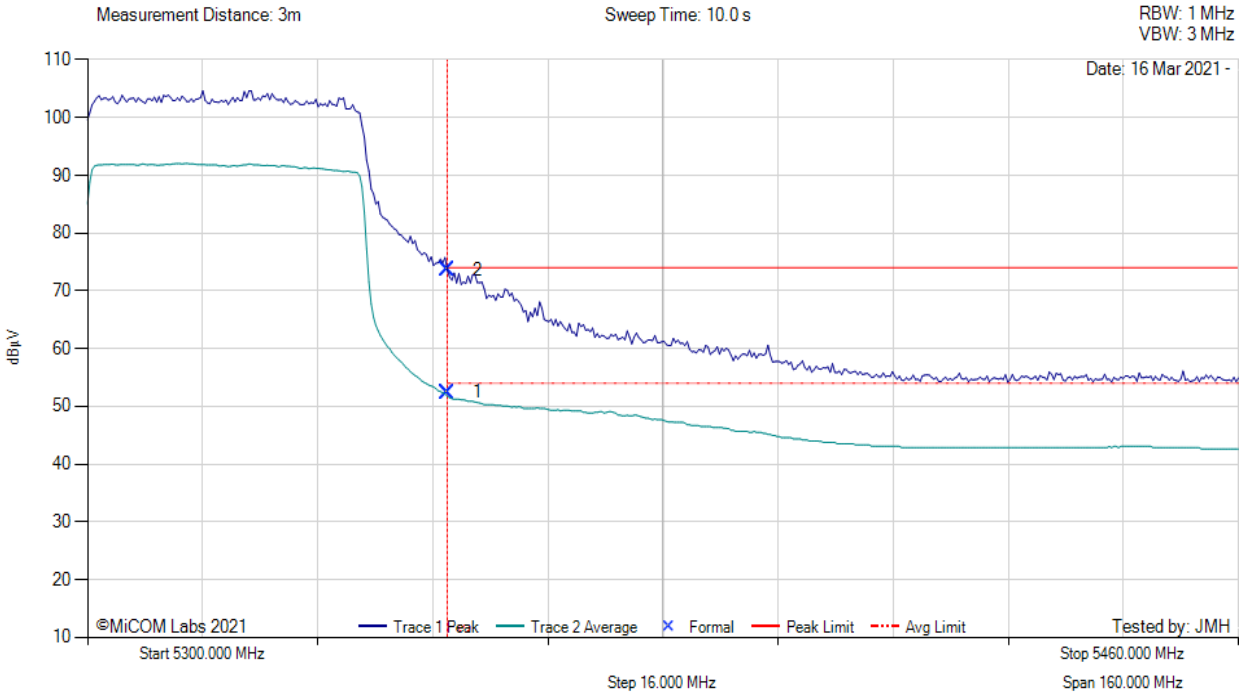
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	14.98	3.06	34.46	52.50	Max Avg	Vertical	183	33	54.0	-1.5	Pass
3	5351.28	34.48	3.06	34.46	72.00	Max Peak	Vertical	183	33	74.0	-2.0	Pass
2	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 80MHz, Test Freq: 5300.00 MHz, Antenna: RADWIN MR0269440, Power Setting: 1.5, Duty Cycle (%): 85



5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	14.96	3.06	34.46	52.48	Max Avg	Vertical	189	33	54.0	-1.5	Pass
2	5350.00	36.10	3.06	34.46	73.62	Max Peak	Vertical	189	33	74.0	-0.4	Pass
3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

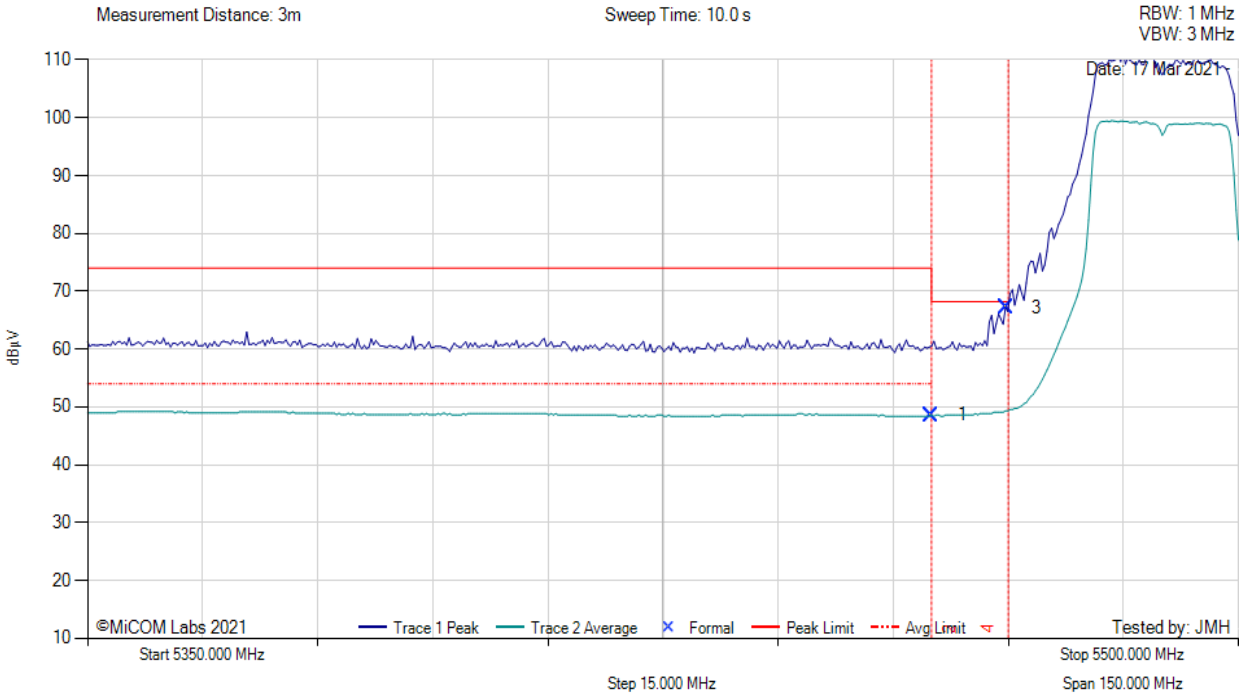
Test Notes: EUT powered by POE, connected to laptop outside chamber. 0.71 DCCF added to average measurement.

back to matrix

A.3.2.4. RADWIN MR0269440BF

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 20MHz, Test Freq: 5490.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -5.0, Duty Cycle (%): 99



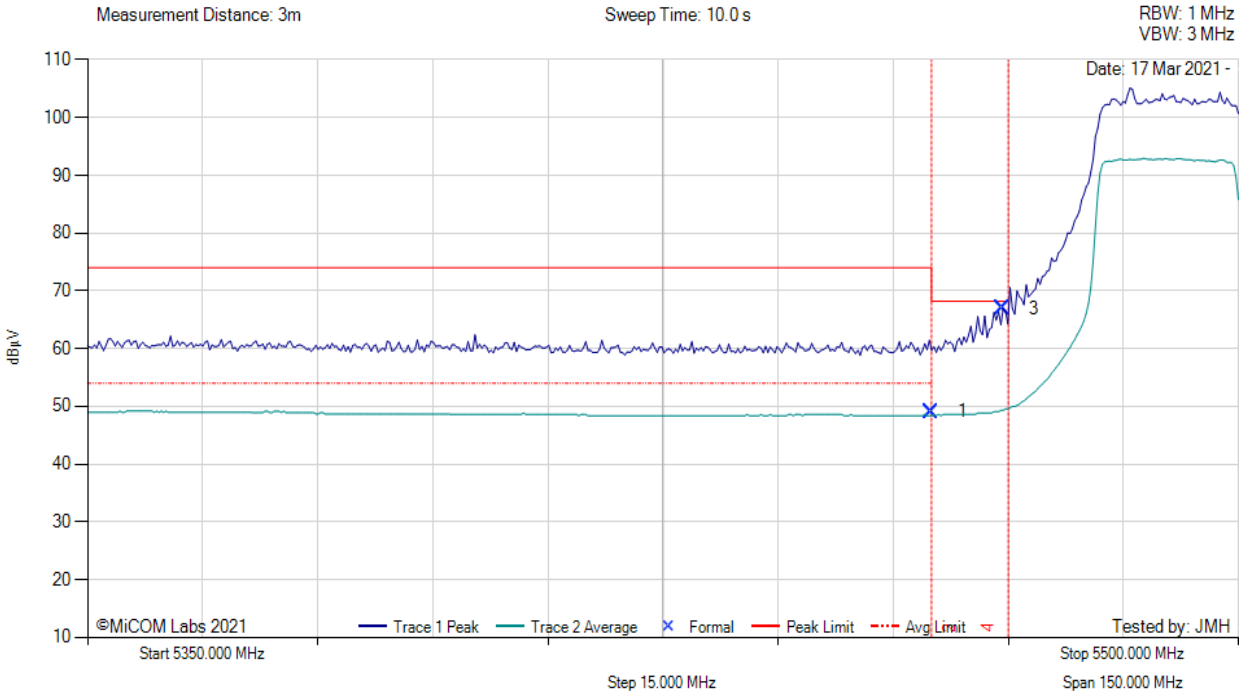
5350.00 - 5500.00 MHz												
Num	Frequency MHz	Raw dBµV	Cable Loss dB	AF dB/m	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
1	5460.00	11.04	3.06	34.53	48.63	Max Avg	Vertical	186	0	54.0	-5.4	Pass
3	5469.70	29.53	3.06	34.55	67.14	Max Peak	Vertical	186	0	68.2	-1.1	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber.

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 40MHz, Test Freq: 5500.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -8.5, Duty Cycle (%): 90



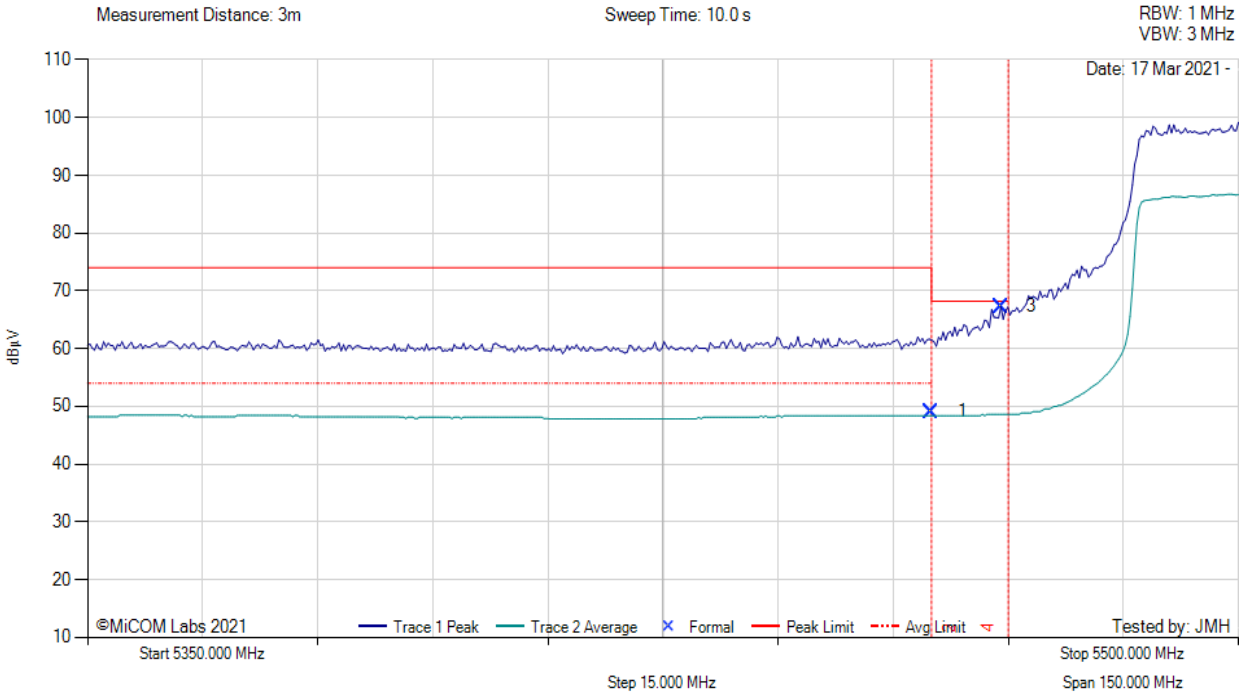
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5460.00	11.51	3.06	34.53	49.10	Max Avg	Vertical	186	0	54.0	-4.9	Pass
3	5469.32	29.36	3.06	34.55	66.97	Max Peak	Vertical	186	0	68.2	-1.3	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement

back to matrix

RESTRICTED LOWER BAND-EDGE EMISSIONS

Variant: 80MHz, Test Freq: 5525.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -12.0, Duty Cycle (%): 85



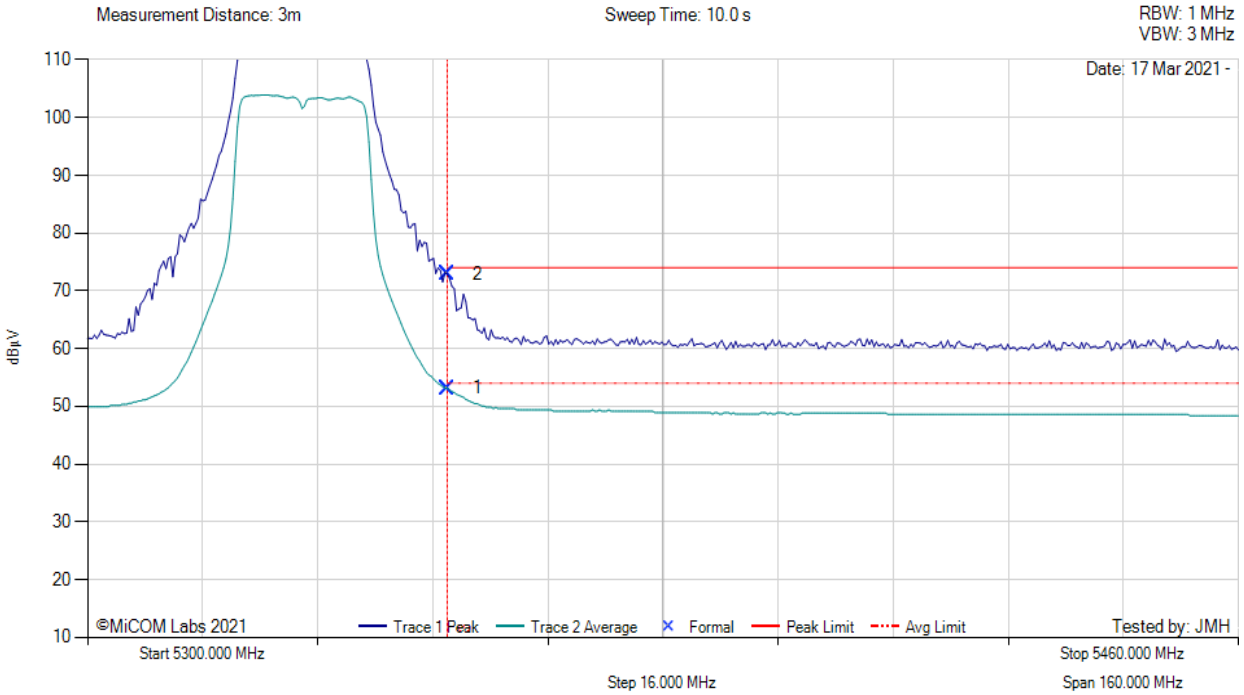
5350.00 - 5500.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5460.00	11.51	3.06	34.53	49.10	Max Avg	Vertical	186	0	54.0	-4.9	Pass
3	5469.02	29.64	3.06	34.55	67.25	Max Peak	Vertical	186	0	68.2	-1.0	Pass
2	5460.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--
4	5470.00	--	--	--	--	Band-Edge	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 20MHz, Test Freq: 5330.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -4.0, Duty Cycle (%): 99



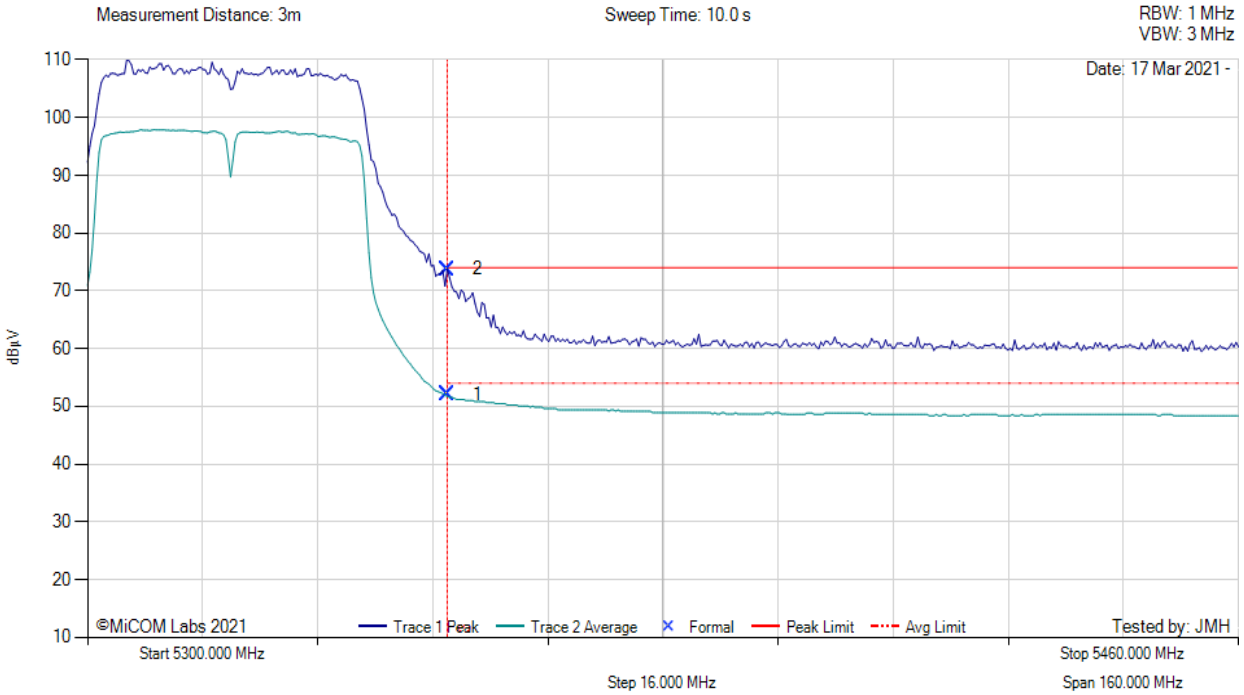
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	15.64	3.06	34.46	53.16	Max Avg	Vertical	185	0	54.0	-0.8	Pass
2	5350.00	35.40	3.06	34.46	72.92	Max Peak	Vertical	185	0	74.0	-1.1	Pass
3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber.

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 40MHz, Test Freq: 5320.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -7.0, Duty Cycle (%): 90



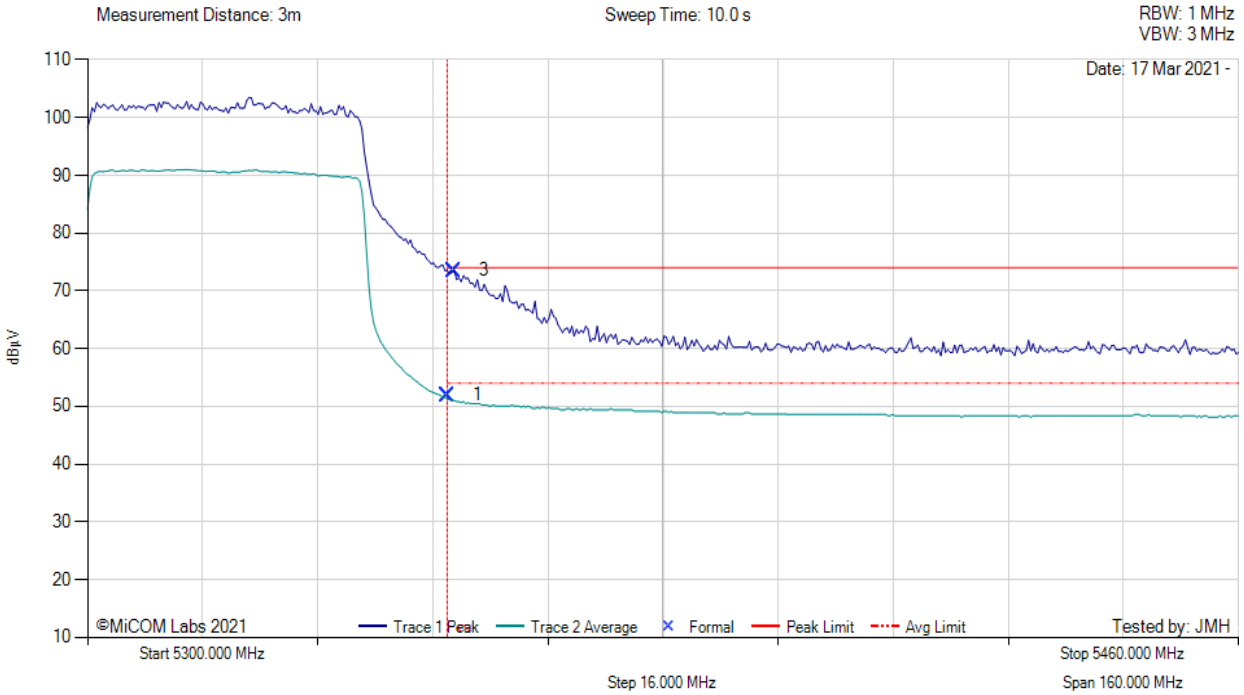
5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	14.63	3.06	34.46	52.15	Max Avg	Vertical	185	0	54.0	-1.9	Pass
2	5350.00	36.28	3.06	34.46	73.80	Max Peak	Vertical	185	0	74.0	-0.2	Pass
3	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.4 DCCF added to average measurement

back to matrix

RESTRICTED UPPER BAND-EDGE EMISSIONS

Variant: 80MHz, Test Freq: 5300.00 MHz, Antenna: RADWIN MR0269440BF, Power Setting: -10.0, Duty Cycle (%): 85



5300.00 - 5460.00 MHz												
Num	**Frequency MHz**	**Raw dBµV**	**Cable Loss dB**	**AF dB/m**	**Level dBµV/m**	**Measurement Type**	**Pol**	**Hgt cm**	**Azt Deg**	**Limit dBµV/m**	**Margin dB**	**Pass /Fail**
1	5350.00	13.70	3.06	34.46	51.93	Max Avg	Vertical	185	0	54.0	-2.1	Pass
3	5350.96	36.01	3.06	34.46	73.53	Max Peak	Vertical	185	0	74.0	-0.5	Pass
2	5350.00	--	--	--	--	Restricted-Band	--	--	--	--	--	--

Test Notes: EUT powered by POE. Connected to laptop outside chamber. 0.71 DCCF added to average measurement

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