



## ELEMENT WASHINGTON DC LLC

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## PART 20 & 30 MEASUREMENT REPORT

**Applicant Name:**  
Pivotal Commware  
22215 26th Ave SE #100  
Bothell WA 98021  
UNITED STATES

**Date of Testing:**  
08/09 - 10/02/2023  
**Test Report Issue Date:**  
10/10/2023  
**Test Site/Location:**  
Element lab., Columbia, MD, USA  
**Test Report Serial No.:**  
1M2308080091-01-R1.2AUVU

<b>FCC ID:</b>	<b>2AUVU-5620-23-39</b>
<b>APPLICANT:</b>	<b>Pivotal Commware</b>

**Application Type:** Certification  
**Model:** 5620-23-39  
**EUT Type:** 5G mmWave Repeater  
**FCC Classification(s):** Part 20 Industrial Booster (CMRS) (B2I)  
**FCC Rule Part(s):** 2, 20, 30  
**Test Procedure(s):** ANSI C63.26-2015, KDB 842590 D01 v01r02,  
KDB 935210 D02 v04r02, KDB 935210 D05 v01r04

Note: This revised Test Report (S/N: 1M2308080091-01-R1.2AUVU) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

**RJ Ortiz**  
Executive Vice President



FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 1 of 147

## T A B L E   O F   C O N T E N T S

1.0	INTRODUCTION .....	4
1.1	Scope .....	4
1.2	Element Test Location.....	4
1.3	Test Facility / Accreditations.....	4
2.0	PRODUCT INFORMATION.....	5
2.1	Equipment Description .....	5
2.2	Device Capabilities.....	5
2.3	Test Configuration .....	5
2.4	Software and Firmware .....	6
2.5	EMI Suppression Device(s)/Modifications .....	6
3.0	DESCRIPTION OF TESTS .....	7
3.1	Measurement Procedure.....	7
3.2	Radiated Power and Radiated Spurious Emissions .....	7
3.3	Industrial Booster Test Cases .....	9
3.4	Environmental Conditions .....	9
4.0	MEASUREMENT UNCERTAINTY .....	10
5.0	TEST EQUIPMENT CALIBRATION DATA .....	11
6.0	SAMPLE CALCULATIONS .....	12
7.0	TEST RESULTS.....	13
7.1	Summary.....	13
7.2	Input-Versus-Output Signal Comparison .....	15
7.3	Out-of-band Rejection .....	26
7.4	Measuring AGC Threshold Level, Mean Output Power & Amplifier/Booster Gain .....	28
7.5	Occupied Bandwidth .....	37
7.6	Conducted Power & Equivalent Isotropic Radiated Power.....	52
7.7	Radiated Spurious and Harmonic Emissions .....	102
7.8	Band Edge / Out-of-Band Emissions.....	113
7.9	Frequency Stability / Temperature Variation .....	126
8.0	CONCLUSION.....	128
	APPENDIX A – VDI Mixer Verification Certificate .....	129
	APPENDIX B – Test Scope Accreditation .....	132
	APPENDIX C – Horn Antenna Gain Curves .....	144

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 2 of 147

## PART 20 & 30 MEASUREMENT REPORT

Band	Antenna	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Mode	Modulation	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
n260	V_DL	50	37025 - 39975	1	SISO	QPSK	4.426	36.46	45M9G7D
		100	37200 - 39800		SISO	16QAM	3.733	35.72	45M9W7D
	H_DL	50	37025 - 39975	1	SISO	QPSK	3.013	34.79	394MG7D
		100	37200 - 39800		SISO	16QAM	2.786	34.45	394MV7D
	MIMO	50	37025 - 39975	1	SISO	QPSK	4.426	36.46	45M9G7D
		100	37200 - 39800		SISO	16QAM	3.622	35.59	46M0W7D
		50	37025 - 39975	4	SISO	QPSK	2.891	34.61	394MG7D
		100	37200 - 39800		SISO	16QAM	2.838	34.53	393MV7D

**EUT Overview (Band n260)**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater			Page 3 of 147

## 1.0 INTRODUCTION

### 1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

### 1.2 Element Test Location

These measurement tests were conducted at the Element Laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

### 1.3 Test Facility / Accreditations

**Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A.**

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISED.
- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreement.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 4 of 147

## 2.0 PRODUCT INFORMATION

### 2.1 Equipment Description

The Equipment Under Test (EUT) is the **Pivotal Commware 5G mmWave Repeater** **FCC ID: 2AUVU-5620-23-39**. The test data contained in this report pertains only to the emissions due to the 5G mmWave operation of the Service Unit.

The EUT is part of a two-unit repeater system consisting of a Donor Unit (DU) and a Service Unit (SU). Each unit is mounted on a pole and aligned to properly receive and boost 5G signals from a gNodeB. Both units are required for operation as neither can be operated in a standalone mode.

Both units are capable of transmitting boosted 5G mmWave signals. For transmission of such signals, the DU is installed and configured to communicate with a gNodeB. The SU receives the signal from the DU via an RF cable and then re-transmits the signal to provide 5G coverage to a target area. For each unit, the antenna configuration is comprised of two separate linearly polarized antenna feeds: one for horizontally polarized transmission and one for vertically polarized transmission.

Both the DU and the SU were fitted with RF connectors to allow for conducted measurements to compare with the FCC Part 30 limits. Throughout this report, the output data for the SU are labelled as "V-DL" and "H-DL" to represent the vertical and horizontal transmission components of the output.

The EUT does not generate its own RF. The EUT supports any combination of bandwidths, number of carriers, and modulations as input signals from a signal generator connected to its input. The EUT will transmit all signals within the 5G NR n260 band that are received.

**Test Device Serial No.:** 89000330201233000011, 89000330201232700002

### 2.2 Device Capabilities

This device contains the following capabilities:

5G FR2 (NR Band 260)

### 2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 842590 D01 and KDB 935210 D05. See Section 7.0 of this test report for a description of the conducted and radiated tests.

All conducted testing was performed using a signal generator connected via coaxial cable to waveguide adapters on the input port of one unit of the EUT and measured via adapter connected to coaxial cable from the output port of the other unit. All radiated testing was performed by using a signal generator connected to a horn antenna to transmit to one unit of the EUT and then measuring the radiated output transmission from other unit.

For both conducted and radiated testing, the signal generator was set to transmit representative 5G mmWave NR signals in various sized bandwidths and modulations.

Although a DFT-s-OFDM waveform typically yields worst-case power, some test cases were also performed with CP-OFDM waveform due to downlink communications normally operating with CP-OFDM only

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater		Page 5 of 147

## 2.4 Software and Firmware

The test was conducted with firmware version 0.6.0 installed on the EUT.

## 2.5 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 6 of 147

## 3.0 DESCRIPTION OF TESTS

### 3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 v01r02 were used in the measurement of the EUT. KDB 935210 D05 v01r04 was referenced for testing the EUT as well.

### 3.2 Radiated Power and Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary for radiated emissions measurements in the spurious domain. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m for measurements above 1GHz.

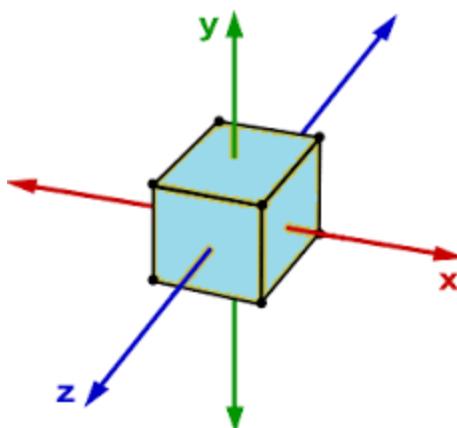


Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 7 of 147	

The equipment under test was transmitting while connected to its patch or HBF antenna and is placed on a positioner. The measurement antenna is in the far field of the EUT per formula  $2D^2/\lambda$  where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, for RSE measurements, "D" is the largest dimension of the EUT which was roughly 29cm x 29cm x 7cm. The measurement antenna and harmonic mixer were manipulated around all faces and edges of the EUT to determine location of worst-case emissions.

Frequency Range (GHz)	Wavelength (cm)	Far Field Distance (m)	Measurement Distance (m)
18 - 40	0.749	0.54	2
40 - 60	0.5	1.44	2
60 - 90	0.333	0.96	2
90 - 140	0.214	0.63	2
140 - 200	0.15	0.39	2

**Table 3-1. Far-Field Distance & Measurement Distance per Frequency Range**

### Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in ANSI C63.26-2015.

$$\begin{aligned}
 \text{Field Strength [dB}\mu\text{V/m]} &= \text{Measured Value [dBm]} + \text{AFCL [dB/m]} + 107 \\
 &= -32.74 \text{ dBm} + (40.7 \text{ dB/m} + 8.78 \text{ dB}) + 107 = 123.74 \text{ dBuV/m} \\
 &= 10^{(123.74/20)/1000000} = 1.54 \text{ V/m} \\
 \text{e.i.r.p. [dBm]} &= 10 * \log((\text{E-Field} * \text{D}_m)^{2/30}) + 30 \text{ dB} \\
 &= 10 * \log((1.54 \text{ V/m} * 1.00 \text{ m})^{2/30}) + 30 \text{ dB} \\
 &= 18.98 \text{ dBm e.i.r.p.}
 \end{aligned}$$

FCC ID: 2AUVU-5620-23-39	 <b>element</b>		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 8 of 147	

### 3.3 Industrial Booster Test Cases

Per the requirements of KDB 935210 D05 v01r04, the following test cases shall be investigated for Industrial Boosters under FCC Part 20.21:

1. AGC Threshold Level
2. Out-of-Band Rejection
3. Input-versus-Output Signal Comparison
4. Mean Output Power and Amplifier/Booster Gain
5. Out-of-Band/Out-of-Block Emissions and Spurious Emissions
6. Frequency Stability
7. Radiated Spurious Emissions

### 3.4 Environmental Conditions

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
FCC ID: 2AUVU-5620-23-39	Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater

## 4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of  $k = 2$  to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the  $U_{CISPR}$  measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty ( $\pm$ dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 10 of 147

## 5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	AP2-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP2-001
-	AP2-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	AP2-002
-	ETS-001	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-001
-	ETS-002	EMC Cable and Switch System	1/11/2023	Annual	1/11/2024	ETS-002
-	WL40-1	WLAN Cable Set (40GHz)	1/12/2023	Annual	1/12/2024	WL40-1
-	WL40-2	WLAN Cable Set (40GHz)	1/12/2023	Annual	1/12/2024	WL40-2
EMCO	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9203-2178
EMCO	3116	Horn Antenna (18-40GHz)	7/5/2023	Biennial	7/5/2025	9203-2178
ESPEC	SU-241	Temperature Chamber	11/10/2022	Annual	11/10/2023	93011064
Narda	180-422-KF	Horn (Small)	8/30/2022	Biennial	8/30/2024	170WX50922
OML, Inc.	M05RH	Horn Antenna, 140 to 220 GHz	9/27/2022	Biennial	9/27/2024	180914-1
OML, Inc.	M08RH	Horn Antenna, 90 to 140 GHz	9/28/2022	Biennial	9/28/2024	180914-1
OML, Inc.	M12RH	Horn Antenna, 60 to 90 GHz	10/4/2022	Biennial	10/4/2024	18073001
OML, Inc.	M19RH	Horn Antenna, 40 to 60 GHz	10/5/2022	Biennial	10/5/2024	190823-1
Rohde & Schwarz	ESW44	EMI Test Receiver 2Hz - 44GHz	3/6/2023	Annual	3/6/2024	101867
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	1/13/2023	Annual	1/13/2024	101639
Rohde & Schwarz	SMW200A	Vector Signal Generator	8/16/2022	Biennial	8/16/2024	102130
Sunol Sciences	JB5	Bi-Log Antenna (30M-5GHz)	8/30/2022	Biennial	8/30/2024	A102416-1
Virginia Diodes, Inc.	SAX679	SAX Module (40 - 60GHz)	11/21/2022	Biennial	11/21/2024	SAX679
Virginia Diodes, Inc.	SAX680	SAX Module (60 - 90GHz)	11/21/2022	Biennial	11/21/2024	SAX680
Virginia Diodes, Inc.	SAX681	SAX Module (90 - 140GHz)	1/5/2023	Biennial	1/5/2025	SAX681
Virginia Diodes, Inc.	SAX682	SAX Module (140 - 220GHz)	3/1/2023	Biennial	3/1/2025	SAX682

**Table 5-1. Test Equipment**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 11 of 147	

## 6.0 SAMPLE CALCULATIONS

### Emission Designator

#### $\pi/2$ BPSK/ QPSK Modulation

**Emission Designator = 800MG7D**

BW = 800 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

#### QAM Modulation

**Emission Designator = 802MW7D**

BW = 802 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 12 of 147

## 7.0 TEST RESULTS

### 7.1 Summary

Company Name: Pivotal Commware  
 FCC ID: 2AUVU-5620-23-39  
 FCC Classification(s): Part 20 Industrial Booster (CMRS) (B2I)  
 Mode(s): TDD

FCC Part Section(s)	KDB 935210 D05 Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049, 20.21	3.4	Input-Versus-Output Signal Comparison	N/A	CONDUCTED	PASS	Section 7.2
20.21	3.3	Out-of-band Rejection	N/A		PASS	Section 7.3
2.1046, 20.21	3.2, 3.5	Measuring AGC Threshold Level, Mean Output Power & Amplifier/Booster Gain	N/A		PASS	Section 7.4
2.1049	-	Occupied Bandwidth	N/A		PASS	Section 7.5
2.1046, 30.202(c)	-	Conducted Power & Equivalent Isotropic Radiated Power	≤ 55 dBm		PASS	Section 7.6
2.1051, 20.21, 30.203	3.6	Band Edge / Out-of-Band Emissions	≤ -5dBm/MHz from the band edge up to 10% of the channel BW ≤ -13dBm/MHz for all out-of-band emissions		PASS	Section 7.8
2.1055, 20.21	3.7	Frequency Stability	Fundamental emissions stay within authorized frequency block		PASS	Section 7.9
2.1051, 20.21, 30.203	3.8	Radiated Spurious Emissions	≤ -13 dBm/MHz for spurious emissions	RADIATED	PASS	Section 7.7

**Table 7-1. Summary of Radiated Test Results**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 13 of 147	

**Notes:**

1. Per 2.1057(a)(2), spurious emissions were investigated up to 200GHz.
2. Testing was completed with a signal generator creating a representative mmWave 5G NR signal, using DFT-s-OFDM and CP-OFDM schemes, various modulations including QPSK, and QAM, 120kHz subcarrier spacing, 50MHz-single carrier, 50MHz-dual carrier, and 100MHz-four carrier bandwidths, and full and single resource block allocations.
3. The input signal was fed from the signal generator to the EUT via a coaxial cable and it was set at a level so as to produce the maximum output power of the AGC range.
4. Based upon investigations of all possible modulations, testing was mainly performed with QPSK modulation.
5. Unless otherwise specified, triggering from the signal generator was used in order to more accurately gate on the TDD signal with the analyzer.
6. For conducted testing only, the EUT was fitted with waveguide-to-coax RF adapters that allowed for direct measurements. With the exception of radiated spurious emissions, all measurements were performed in a conducted test setup.
7. Some RSE measurements required use of TRP test methods in order to demonstrate compliance. The Two-Cut TRP method was applied as specified in Section 4.4.3.3 of KDB 842590 D01.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 14 of 147

## 7.2 Input-Versus-Output Signal Comparison

### Test Overview

The Input-versus-Output Signal Comparison checks for the change in occupied bandwidth of the output signal from the booster at 3dB above the AGC threshold level and just below the AGC threshold level while not more than 0.5dB below the threshold level. All modes of operation were investigated and the worst case configuration results are reported in this section. Per KDB 935210 D05 clause 3.4, this is to be measured on both the input signal and the output signal.

### Test Procedure Used

ANSI C63.26-2015 – Section 5.4.3  
KDB 935210 D05 – Section 3.4

### Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW  $\geq$  3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

### Test Notes

1. Per previous guidance from FCC specifically to Element lab, a 50MHz 5G NR mmWave signal was used as the input signal as opposed to the 4.1MHz AWGN required in KDB 935210 D05.

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 15 of 147

## Band n260 – SU

AGC Threshold Level	EUT Antenna Polarization	Channel	Bandwidth [MHz]	Transmission Scheme	Input OBW [MHz]	Output OBW [MHz]
0.5dB below Threshold	V-DL	Mid	50	DFT-s-OFDM	46.18	45.98
3dB above Threshold	V-DL	Mid	50	DFT-s-OFDM	46.03	45.96
0.5dB below Threshold	H-DL	Mid	50	DFT-s-OFDM	46.37	45.96
3dB above Threshold	H-DL	Mid	50	DFT-s-OFDM	46.14	45.91

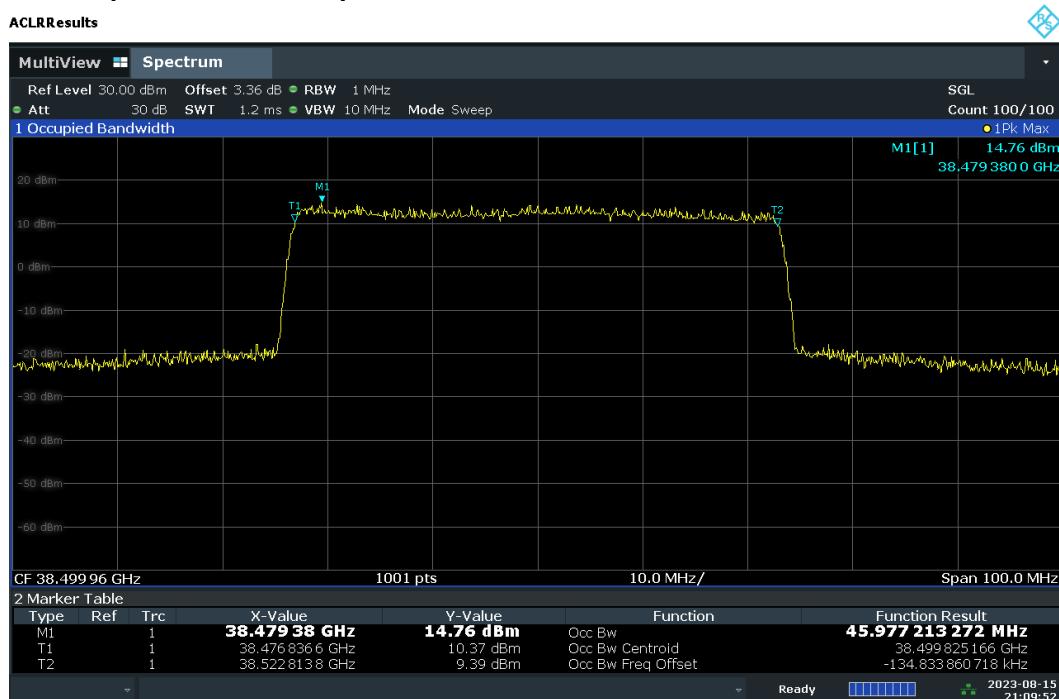
**Table 7-2. n260 Occupied Bandwidth by AGC Threshold Level – DFT-s-OFDM**

FCC ID: 2AUVU-5620-23-39	 <b>PART 20 &amp; 30 MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 16 of 147	



09:13:00 PM 08/15/2023

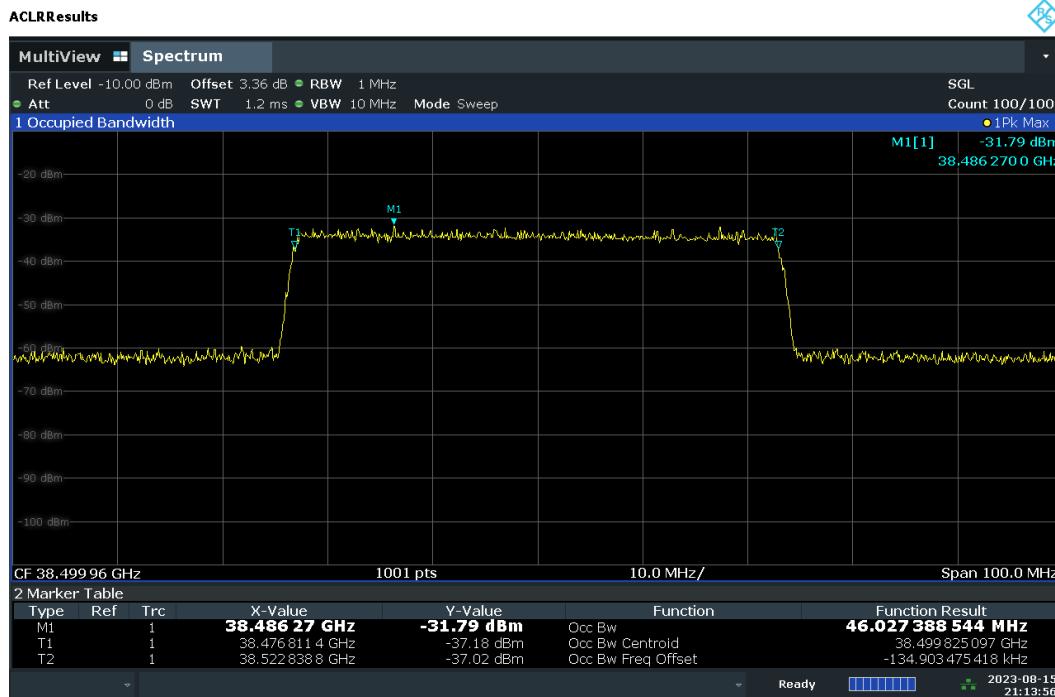
### Plot 7-1. Occupied Bandwidth Input at 0.5dB below AGC Threshold – DFT-s – V-DL Polarization.



09:09:53 PM 08/15/2023

### Plot 7-2. Occupied Bandwidth Output at 0.5dB below AGC Threshold – DFT-s – V-DL Polarization.

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 17 of 147



09:13:57 PM 08/15/2023

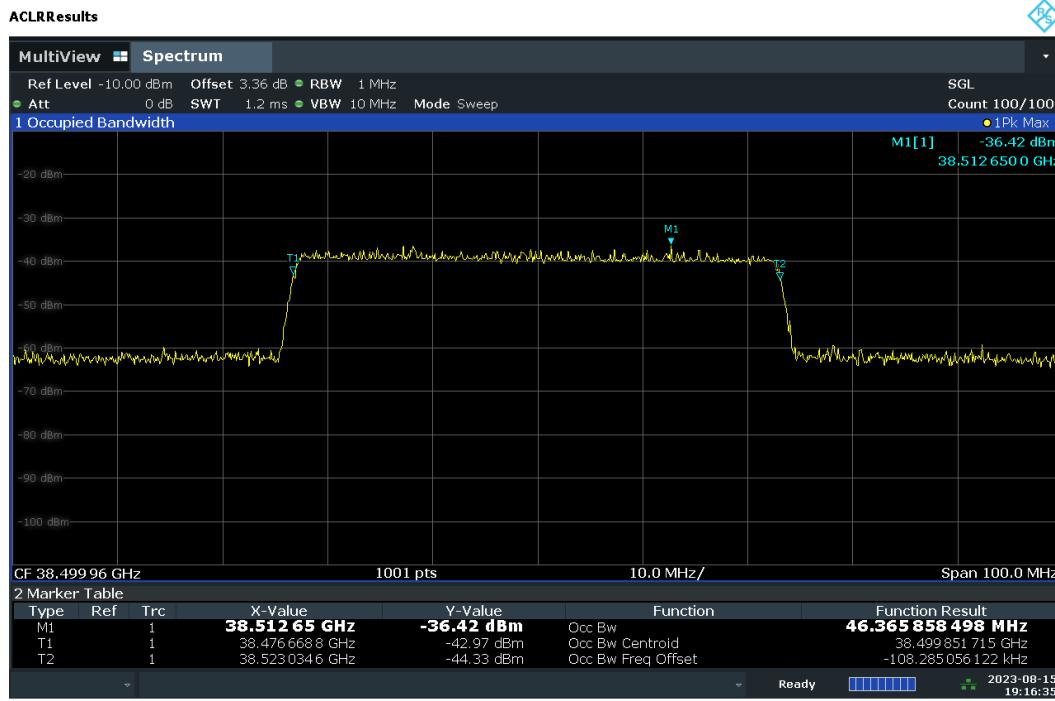
**Plot 7-3. Occupied Bandwidth Input at 3dB above AGC Threshold – DFT-s – V-DL Polarization.**



09:18:52 PM 08/15/2023

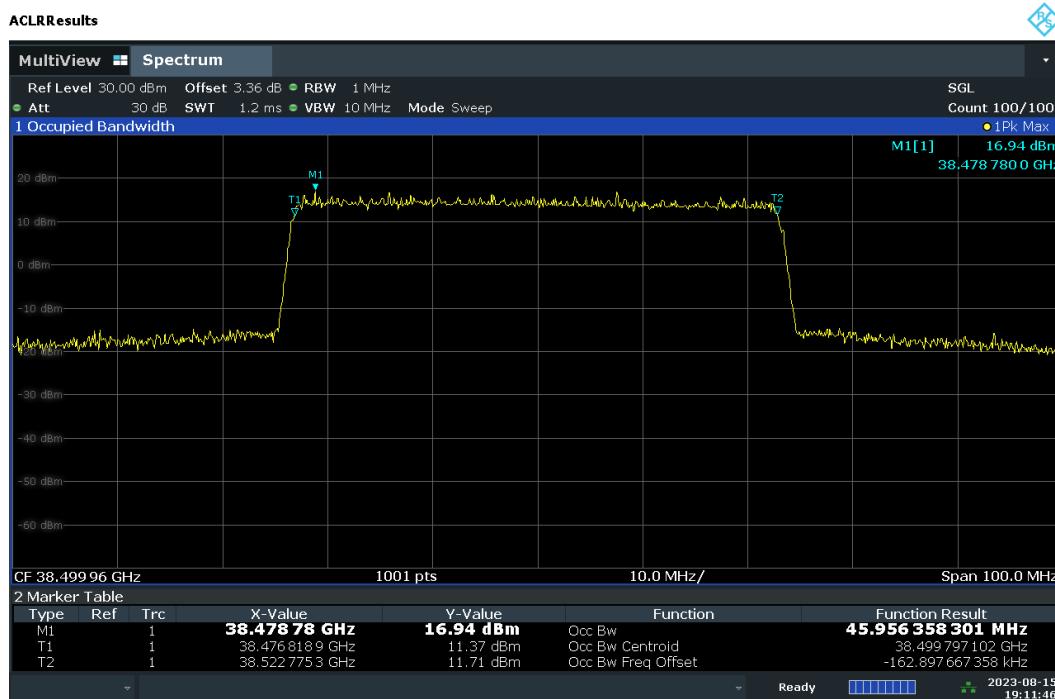
**Plot 7-4. Occupied Bandwidth Output at 3dB above AGC Threshold – DFT-s – V-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 18 of 147	



07:16:36 PM 08/15/2023

### Plot 7-5. Occupied Bandwidth Input at 0.5dB below AGC Threshold – DFT-s – H-DL Polarization.



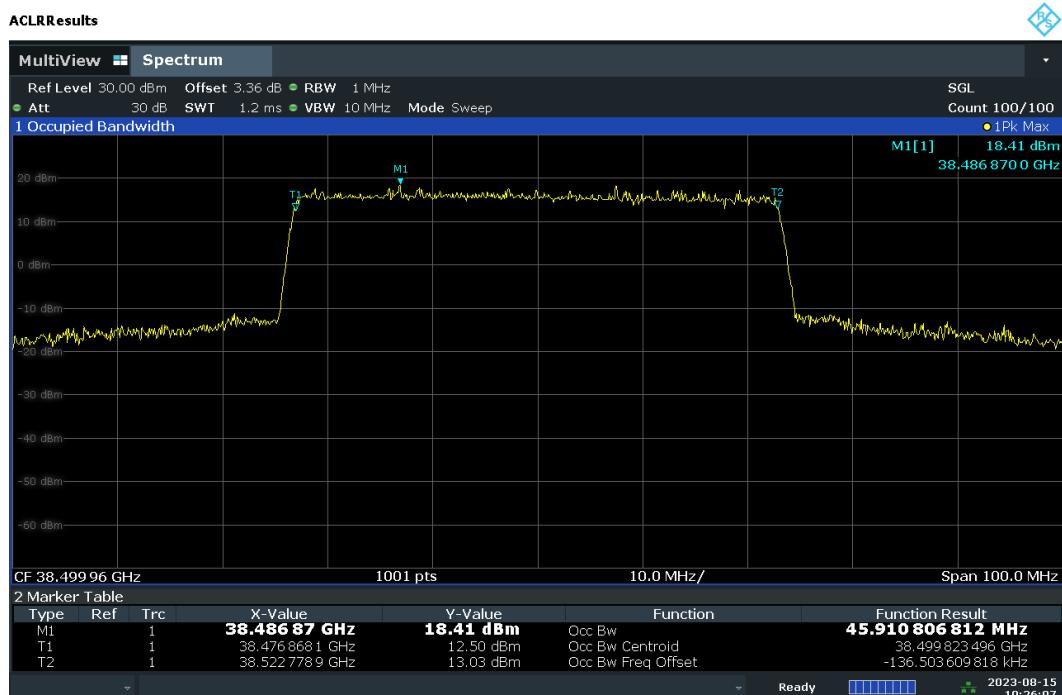
07:11:47 PM 08/15/2023

### Plot 7-6. Occupied Bandwidth Output at 0.5dB below AGC Threshold – DFT-s – H-DL Polarization.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 19 of 147

**ACLRResults**


07:24:01 PM 08/15/2023

**Plot 7-7. Occupied Bandwidth Input at 3dB above AGC Threshold – DFT-s – H-DL Polarization.**


07:26:07 PM 08/15/2023

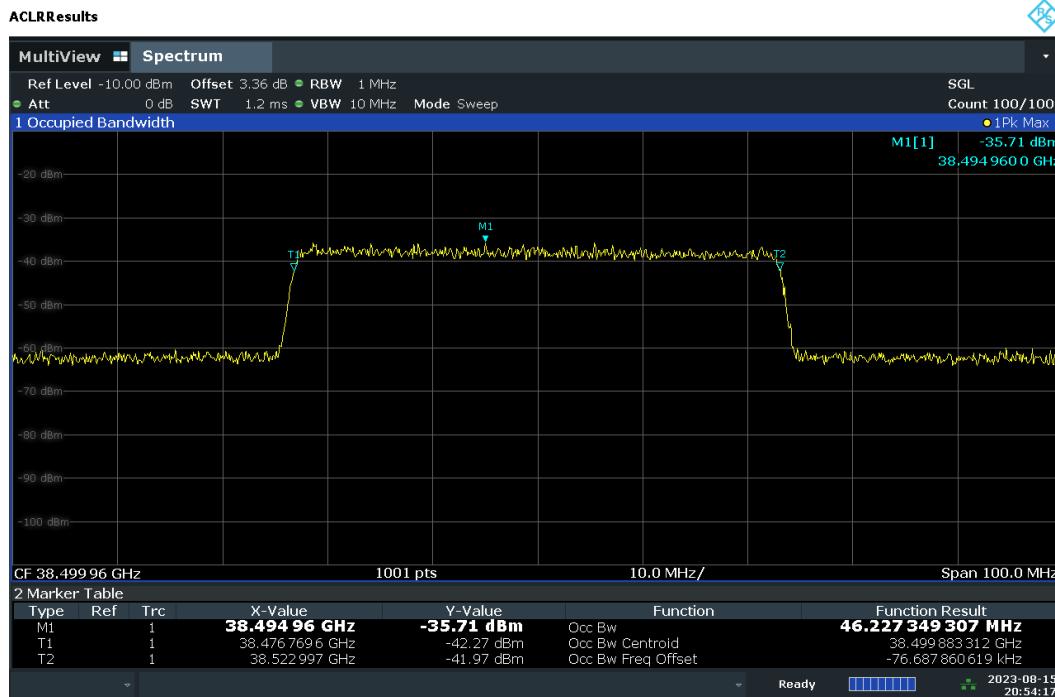
**Plot 7-8. Occupied Bandwidth Output at 3dB above AGC Threshold – DFT-s – H-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 20 of 147	

AGC Threshold Level	EUT Antenna Polarization	Channel	Bandwidth	Transmission Scheme	Input OBW [MHz]	Output OBW [MHz]
0.5dB below Threshold	V-DL	Mid	50	CP-OFDM	46.23	45.90
3dB above Threshold	V-DL	Mid	50	CP-OFDM	45.97	45.84
0.5dB below Threshold	H-DL	Mid	50	CP-OFDM	46.27	45.84
3dB above Threshold	H-DL	Mid	50	CP-OFDM	45.97	45.84

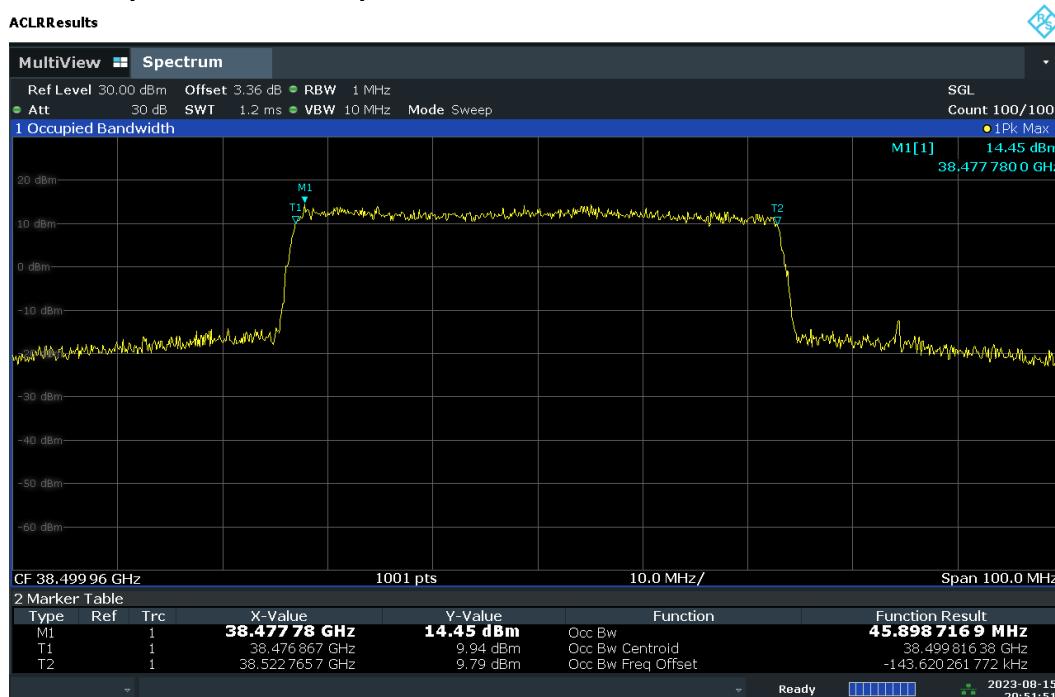
**Table 7-3. n260 Occupied Bandwidth by AGC Threshold Level – CP-OFDM**

FCC ID: 2AUVU-5620-23-39	 <b>PART 20 &amp; 30 MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 21 of 147	



08:54:17 PM 08/15/2023

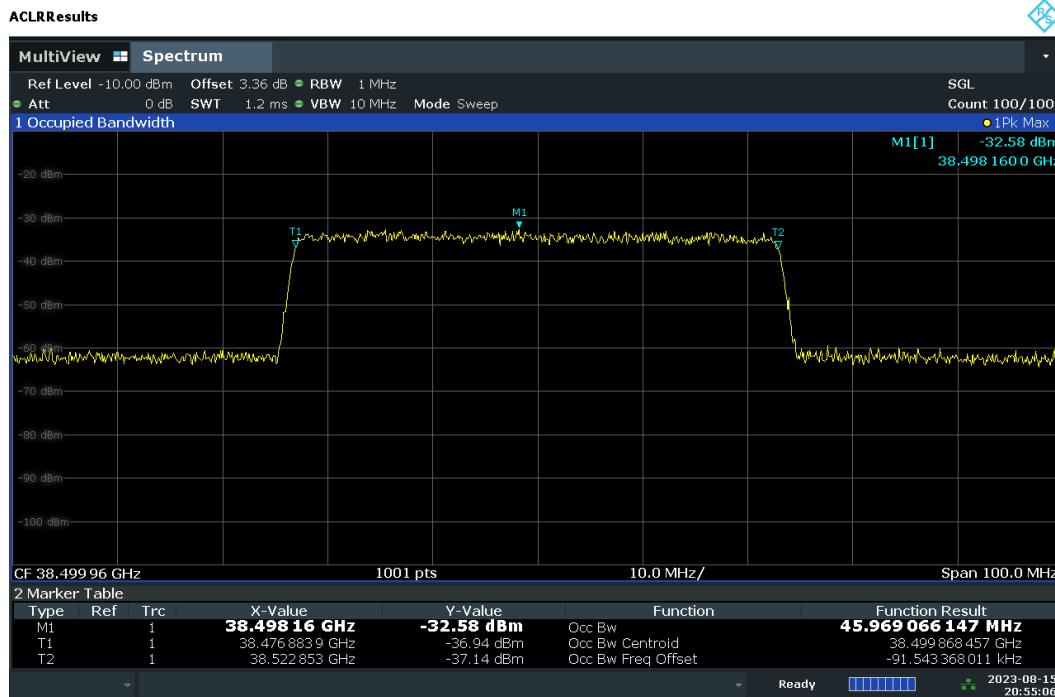
**Plot 7-9. Occupied Bandwidth Input at 0.5dB below AGC Threshold – CP – V-DL Polarization.**



08:51:52 PM 08/15/2023

**Plot 7-10. Occupied Bandwidth Output at 0.5dB below AGC Threshold – CP – V-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 22 of 147	



**Plot 7-11. Occupied Bandwidth Input at 3dB above AGC Threshold – CP – V-DL Polarization.**



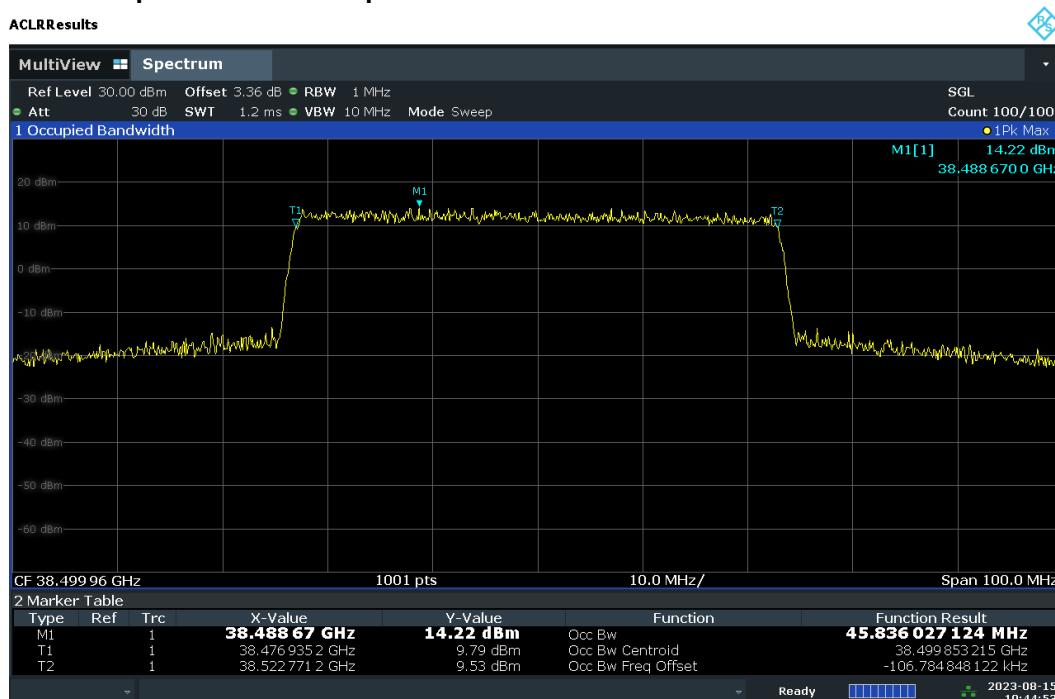
**Plot 7-12. Occupied Bandwidth Output at 3dB above AGC Threshold – CP – V-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 23 of 147	



07:36:41 PM 08/15/2023

**Plot 7-13. Occupied Bandwidth Input at 0.5dB below AGC Threshold – CP – H-DL Polarization.**



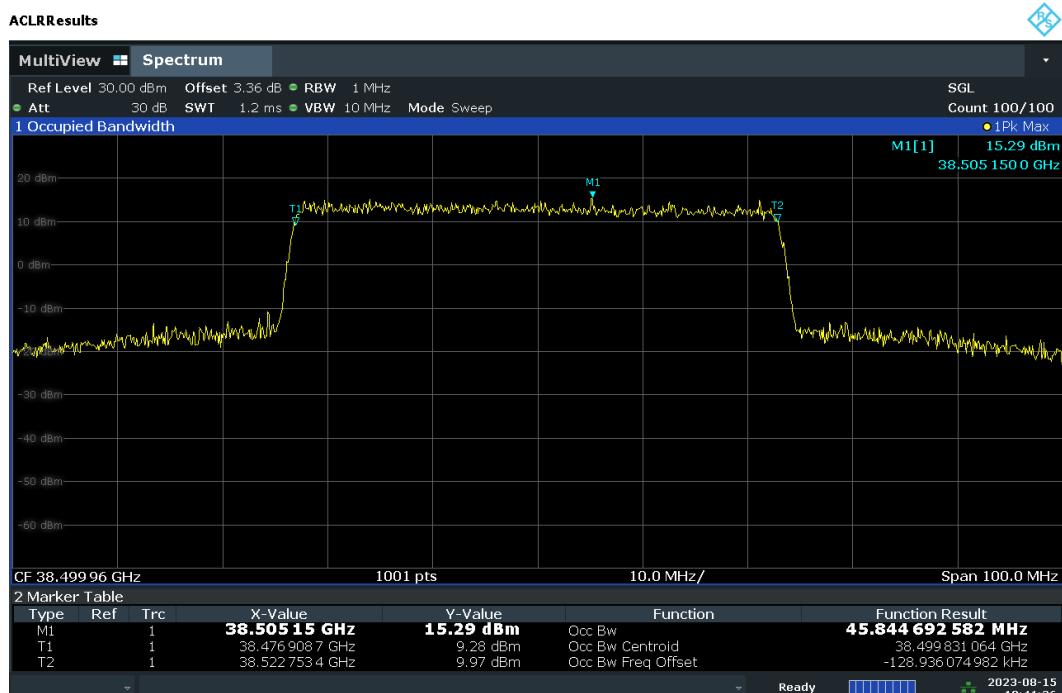
07:44:53 PM 08/15/2023

**Plot 7-14. Occupied Bandwidth Output at 0.5dB below AGC Threshold – CP – H-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 24 of 147	

**ACLRResults**


07:37:20 PM 08/15/2023

**Plot 7-15. Occupied Bandwidth Input at 3dB above AGC Threshold – CP – H-DL Polarization.**


07:41:36 PM 08/15/2023

**Plot 7-16. Occupied Bandwidth Output at 3dB above AGC Threshold – CP – H-DL Polarization.**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 25 of 147	

## 7.3 Out-of-band Rejection

### Test Overview

A signal generator is set to the input port of the EUT, and the output of the EUT shall be connected to a spectrum analyzer. Per KDB 935210 D05 Section 3.3, the signal generator will sweep a CW signal to  $\pm 250\%$  of the passband. Per FCC Part 20, an industrial booster shall have its 20dB bandwidth analyzed in order to assess the pass band of the booster.

### Test Procedure Used

KDB 935210 D05 v01r04 – Section 3.3

### Test Settings

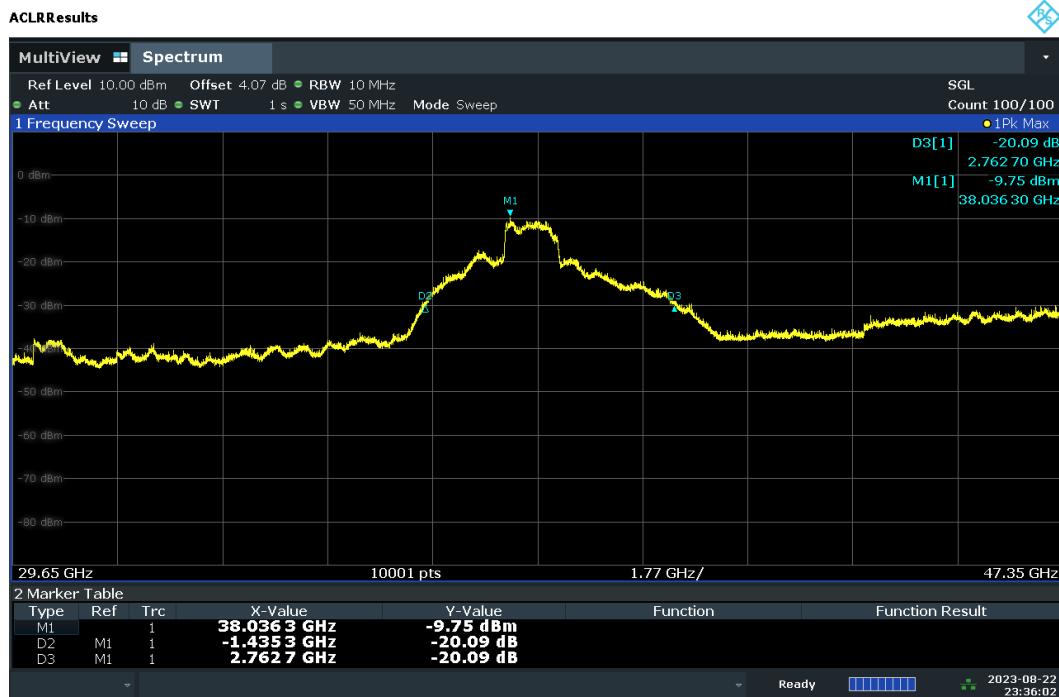
1. Start and stop frequency of the signal generator shall be  $\pm 250\%$  of the passband, for each applicable CMRS band
2. Span same as the frequency range of the signal generator
3. RBW  $\geq 1\%$  to 5 % of the EUT passband
4. VBW  $\geq 3 \times$  RBW
5. Detector = Peak/Max Hold
6. Number of sweep points  $\geq 2 \times$  Span/RBW
7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

### Test Notes

1. The spectrum plots in this section show a CW signal sweeping across each input feed of each unit of the EUT. Per the guidance from Section 3.3 of KDB 935210 D05, the frequency range of the sweep should be from 29.65GHz to 47.35GHz [ $250\% \times (39.975\text{GHz} - 37.025\text{GHz}) = 7.375\text{GHz}$  below and above lower and upper band edges, respectively].
2. In each plot, the marker “M1” is used to display the peak of the output frequency response. The “D1” and “D2” markers are provided to indicate the approximate lower and upper bounds of the 20dB bandwidth of the output frequency response.

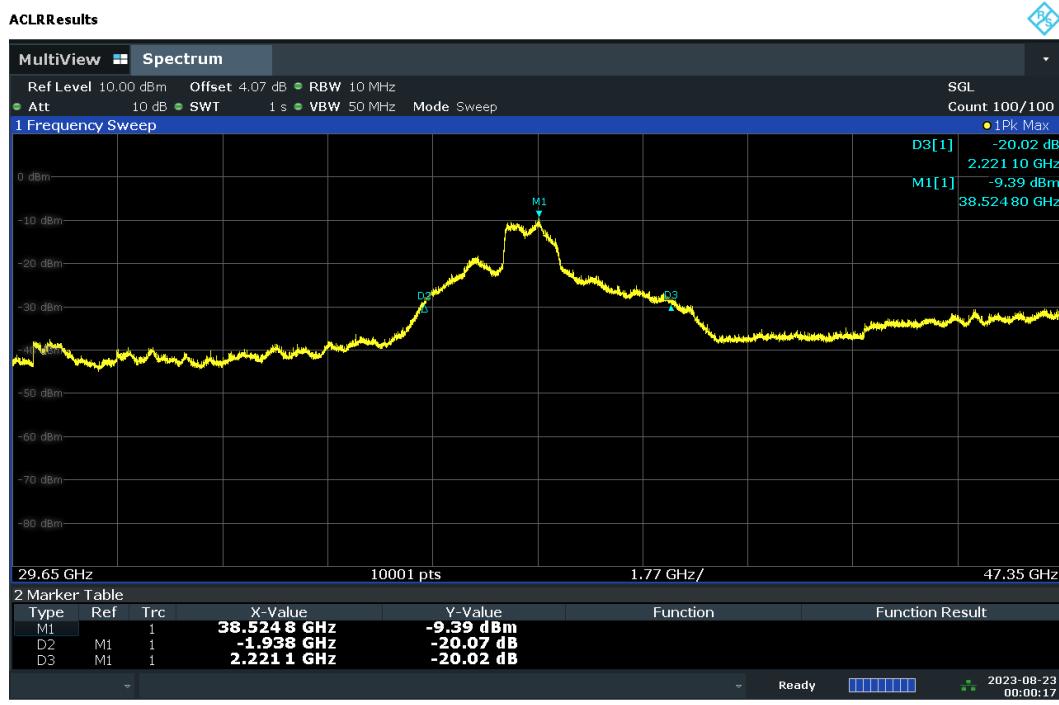
FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 26 of 147	

## Band n260 – SU



11:36:03 PM 08/22/2023

### Plot 7-17. Out-Of-Band Rejection – V-DL Polarization



12:00:18 AM 08/23/2023

### Plot 7-18. Out-Of-Band Rejection – H-DL Polarization

FCC ID: 2AUVU-5620-23-39	element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 27 of 147

## 7.4 Measuring AGC Threshold Level, Mean Output Power & Amplifier/Booster Gain

### Test Overview

A signal generator supplies a 5G NR mmWave signal directly into the input port of the device. The output port of the EUT is connected to the input of a signal analyzer. The AGC threshold level is measured by output power of the EUT until a 1dB increase in the input signal power no longer causes a 1dB increase in the output signal power. The Booster Gain is measured by calculating the gain between the input and the output power of the EUT at the signal generator level just below the AGC threshold level, but not more than 0.5dB below.

### Test Procedures Used

KDB 935210 D05 V01R04 – Section 3.2 - Measuring AGC threshold level

KDB 935210 D05 V01R04 – Section 3.5 - Mean output power and amplifier/booster gain

### Test Settings

1. Conducted power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW  $\geq$  3 x RBW
4. Span = 2x to 3x the OBW
5. No. of sweep points  $>$  2 x span / RBW
6. Detector = RMS
7. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
8. Trace mode = trace averaging (RMS) over 100 sweeps

### Test Notes

1. Per previous guidance from FCC specifically to Element lab, a 50MHz 5G NR mmWave signal was used as the input signal as opposed to the 4.1MHz AWGN required in KDB 935210 D05.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 28 of 147

## Band n260 – SU (DFT-s-OFDM)

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-48.51	6.71	-	55.22
50	38499.96	Mid	QPSK	Full RB	-47.51	7.69	0.98	55.20
50	38499.96	Mid	QPSK	Full RB	-46.51	8.68	0.99	55.19
50	38499.96	Mid	QPSK	Full RB	-45.51	9.64	0.96	55.15
50	38499.96	Mid	QPSK	Full RB	-44.51	10.58	0.94	55.09
50	38499.96	Mid	QPSK	Full RB	-43.51	11.62	1.04	55.13
50	38499.96	Mid	QPSK	Full RB	-42.51	12.61	0.99	55.12
50	38499.96	Mid	QPSK	Full RB	-41.51	13.58	0.97	55.09
50	38499.96	Mid	QPSK	Full RB	-40.51	14.56	0.98	55.07
50	38499.96	Mid	QPSK	Full RB	-39.51	15.51	0.95	55.02
50	38499.96	Mid	QPSK	Full RB	-38.51	16.53	1.02	55.04
50	38499.96	Mid	QPSK	Full RB	-37.51	17.51	0.98	55.02
50	38499.96	Mid	QPSK	Full RB	-36.51	18.48	0.97	54.99
50	38499.96	Mid	QPSK	Full RB	-35.51	19.45	0.97	54.96
50	38499.96	Mid	QPSK	Full RB	-34.51	20.44	0.99	54.95
50	38499.96	Mid	QPSK	Full RB	-33.51	21.47	1.03	54.98
50	38499.96	Mid	QPSK	Full RB	-32.51	22.50	1.03	55.01
50	38499.96	Mid	QPSK	Full RB	-31.51	23.00	0.50	54.51
50	38499.96	Mid	QPSK	Full RB	-30.51	22.98	-0.02	53.49
50	38499.96	Mid	QPSK	Full RB	-29.51	22.90	-0.08	52.41
50	38499.96	Mid	QPSK	Full RB	-28.51	22.87	-0.03	51.38
50	38499.96	Mid	QPSK	Full RB	-27.51	22.77	-0.10	50.28
50	38499.96	Mid	QPSK	Full RB	-26.51	23.20	0.43	49.71
50	38499.96	Mid	QPSK	Full RB	-25.51	23.23	0.03	48.74
50	38499.96	Mid	QPSK	Full RB	-24.51	23.09	-0.14	47.60

**Table 7-4. Full RB AGC Threshold and Booster Gain – 50MHz 1CC – DFT-s – V-DL Polarization**

**Note:** AGC Threshold is found at **-31.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater			Page 29 of 147

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-48.51	8.53	-	57.04
100	38499.96	Mid	QPSK	Full RB	-47.51	9.46	0.93	56.97
100	38499.96	Mid	QPSK	Full RB	-46.51	10.38	0.92	56.89
100	38499.96	Mid	QPSK	Full RB	-45.51	11.31	0.93	56.82
100	38499.96	Mid	QPSK	Full RB	-44.51	12.25	0.94	56.76
100	38499.96	Mid	QPSK	Full RB	-43.51	13.16	0.91	56.67
100	38499.96	Mid	QPSK	Full RB	-42.51	14.08	0.92	56.59
100	38499.96	Mid	QPSK	Full RB	-41.51	14.98	0.90	56.49
100	38499.96	Mid	QPSK	Full RB	-40.51	15.91	0.93	56.42
100	38499.96	Mid	QPSK	Full RB	-39.51	16.86	0.95	56.37
100	38499.96	Mid	QPSK	Full RB	-38.51	17.77	0.91	56.28
100	38499.96	Mid	QPSK	Full RB	-37.51	18.72	0.95	56.23
100	38499.96	Mid	QPSK	Full RB	-36.51	19.69	0.97	56.20
100	38499.96	Mid	QPSK	Full RB	-35.51	20.71	1.02	56.22
100	38499.96	Mid	QPSK	Full RB	-34.51	21.69	0.98	56.20
100	38499.96	Mid	QPSK	Full RB	-33.51	21.65	-0.04	55.16
100	38499.96	Mid	QPSK	Full RB	-32.51	21.61	-0.04	54.12
100	38499.96	Mid	QPSK	Full RB	-31.51	21.61	0.00	53.12
100	38499.96	Mid	QPSK	Full RB	-30.51	21.57	-0.04	52.08
100	38499.96	Mid	QPSK	Full RB	-29.51	21.42	-0.15	50.93
100	38499.96	Mid	QPSK	Full RB	-28.51	21.44	0.02	49.95
100	38499.96	Mid	QPSK	Full RB	-27.51	21.33	-0.11	48.84
100	38499.96	Mid	QPSK	Full RB	-26.51	21.71	0.38	48.22
100	38499.96	Mid	QPSK	Full RB	-25.51	21.69	-0.02	47.20
100	38499.96	Mid	QPSK	Full RB	-24.51	21.64	-0.05	46.15

**Table 7-5. Full RB AGC Threshold and Booster Gain – 100MHz 4CC – DFT-s – V-DL Polarization**

**Note:** AGC Threshold is found at **-33.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 30 of 147

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-48.51	6.86	-	55.37
50	38499.96	Mid	QPSK	Full RB	-47.51	7.87	1.01	55.38
50	38499.96	Mid	QPSK	Full RB	-46.51	8.85	0.98	55.36
50	38499.96	Mid	QPSK	Full RB	-45.51	9.81	0.96	55.32
50	38499.96	Mid	QPSK	Full RB	-44.51	10.77	0.96	55.28
50	38499.96	Mid	QPSK	Full RB	-43.51	11.78	1.01	55.29
50	38499.96	Mid	QPSK	Full RB	-42.51	12.77	0.99	55.28
50	38499.96	Mid	QPSK	Full RB	-41.51	13.75	0.98	55.26
50	38499.96	Mid	QPSK	Full RB	-40.51	14.74	0.99	55.25
50	38499.96	Mid	QPSK	Full RB	-39.51	15.67	0.93	55.18
50	38499.96	Mid	QPSK	Full RB	-38.51	16.70	1.03	55.21
50	38499.96	Mid	QPSK	Full RB	-37.51	17.68	0.98	55.19
50	38499.96	Mid	QPSK	Full RB	-36.51	18.64	0.96	55.15
50	38499.96	Mid	QPSK	Full RB	-35.51	19.63	0.99	55.14
50	38499.96	Mid	QPSK	Full RB	-34.51	20.61	0.98	55.12
50	38499.96	Mid	QPSK	Full RB	-33.51	21.64	1.03	55.15
50	38499.96	Mid	QPSK	Full RB	-32.51	22.63	0.99	55.14
50	38499.96	Mid	QPSK	Full RB	-31.51	23.15	0.52	54.66
50	38499.96	Mid	QPSK	Full RB	-30.51	23.14	-0.01	53.65
50	38499.96	Mid	QPSK	Full RB	-29.51	22.75	-0.39	52.26
50	38499.96	Mid	QPSK	Full RB	-28.51	23.21	0.46	51.72
50	38499.96	Mid	QPSK	Full RB	-27.51	23.16	-0.05	50.67
50	38499.96	Mid	QPSK	Full RB	-26.51	23.10	-0.06	49.61
50	38499.96	Mid	QPSK	Full RB	-25.51	23.04	-0.06	48.55
50	38499.96	Mid	QPSK	Full RB	-24.51	22.81	-0.23	47.32

**Table 7-6. Full RB AGC Threshold and Booster Gain – 50MHz 1CC– DFT-s – H-DL Polarization**

**Note:** AGC Threshold is found at **-31.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 31 of 147

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-48.51	7.30	-	55.81
100	38499.96	Mid	QPSK	Full RB	-47.51	8.22	0.92	55.73
100	38499.96	Mid	QPSK	Full RB	-46.51	9.12	0.90	55.63
100	38499.96	Mid	QPSK	Full RB	-45.51	10.04	0.92	55.55
100	38499.96	Mid	QPSK	Full RB	-44.51	10.95	0.91	55.46
100	38499.96	Mid	QPSK	Full RB	-43.51	11.85	0.90	55.36
100	38499.96	Mid	QPSK	Full RB	-42.51	12.81	0.96	55.32
100	38499.96	Mid	QPSK	Full RB	-41.51	13.72	0.91	55.23
100	38499.96	Mid	QPSK	Full RB	-40.51	14.70	0.98	55.21
100	38499.96	Mid	QPSK	Full RB	-39.51	15.66	0.96	55.17
100	38499.96	Mid	QPSK	Full RB	-38.51	17.60	1.94	56.11
100	38499.96	Mid	QPSK	Full RB	-37.51	18.57	0.97	56.08
100	38499.96	Mid	QPSK	Full RB	-36.51	19.53	0.96	56.04
100	38499.96	Mid	QPSK	Full RB	-35.51	20.50	0.97	56.01
100	38499.96	Mid	QPSK	Full RB	-34.51	21.48	0.98	55.99
100	38499.96	Mid	QPSK	Full RB	-33.51	21.51	0.03	55.02
100	38499.96	Mid	QPSK	Full RB	-32.51	21.36	-0.15	53.87
100	38499.96	Mid	QPSK	Full RB	-31.51	21.23	-0.13	52.74
100	38499.96	Mid	QPSK	Full RB	-30.51	21.33	0.10	51.84
100	38499.96	Mid	QPSK	Full RB	-29.51	21.69	0.36	51.20
100	38499.96	Mid	QPSK	Full RB	-28.51	21.60	-0.09	50.11
100	38499.96	Mid	QPSK	Full RB	-27.51	21.52	-0.08	49.03
100	38499.96	Mid	QPSK	Full RB	-26.51	21.43	-0.09	47.94
100	38499.96	Mid	QPSK	Full RB	-25.51	21.46	0.03	46.97
100	38499.96	Mid	QPSK	Full RB	-24.51	21.41	-0.05	45.92

**Table 7-7. Full RB AGC Threshold and Booster Gain – 100MHz 4CC – DFT-s – H-DL Polarization**

**Note:** AGC Threshold is found at **-33.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 32 of 147	

## Band n260 – SU (CP-OFDM)

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-48.51	6.80	-	55.31
50	38499.96	Mid	QPSK	Full RB	-47.51	7.79	0.99	55.30
50	38499.96	Mid	QPSK	Full RB	-46.51	8.76	0.97	55.27
50	38499.96	Mid	QPSK	Full RB	-45.51	9.71	0.95	55.22
50	38499.96	Mid	QPSK	Full RB	-44.51	10.70	0.99	55.21
50	38499.96	Mid	QPSK	Full RB	-43.51	11.67	0.97	55.18
50	38499.96	Mid	QPSK	Full RB	-42.51	12.62	0.95	55.13
50	38499.96	Mid	QPSK	Full RB	-41.51	13.60	0.98	55.11
50	38499.96	Mid	QPSK	Full RB	-40.51	14.55	0.95	55.06
50	38499.96	Mid	QPSK	Full RB	-39.51	16.51	1.96	56.02
50	38499.96	Mid	QPSK	Full RB	-38.51	17.51	1.00	56.02
50	38499.96	Mid	QPSK	Full RB	-37.51	18.46	0.95	55.97
50	38499.96	Mid	QPSK	Full RB	-36.51	19.49	1.03	56.00
50	38499.96	Mid	QPSK	Full RB	-35.51	20.51	1.02	56.02
50	38499.96	Mid	QPSK	Full RB	-34.51	20.99	0.48	55.50
50	38499.96	Mid	QPSK	Full RB	-33.51	20.79	-0.20	54.30
50	38499.96	Mid	QPSK	Full RB	-32.51	20.91	0.12	53.42
50	38499.96	Mid	QPSK	Full RB	-31.51	20.90	-0.01	52.41
50	38499.96	Mid	QPSK	Full RB	-30.51	20.80	-0.10	51.31
50	38499.96	Mid	QPSK	Full RB	-29.51	20.69	-0.11	50.20
50	38499.96	Mid	QPSK	Full RB	-28.51	20.72	0.03	49.23
50	38499.96	Mid	QPSK	Full RB	-27.51	20.69	-0.03	48.20
50	38499.96	Mid	QPSK	Full RB	-26.51	21.09	0.40	47.60
50	38499.96	Mid	QPSK	Full RB	-25.51	21.21	0.12	46.72
50	38499.96	Mid	QPSK	Full RB	-24.51	21.19	-0.02	45.70

**Table 7-8. Full RB AGC Threshold and Booster Gain – 50MHz 1CC – CP – V-DL Polarization**

**Note:** AGC Threshold is found at **-34.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 33 of 147	

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-48.51	8.24	-	56.75
100	38499.96	Mid	QPSK	Full RB	-47.51	9.16	0.92	56.67
100	38499.96	Mid	QPSK	Full RB	-46.51	10.06	0.90	56.57
100	38499.96	Mid	QPSK	Full RB	-45.51	10.97	0.91	56.48
100	38499.96	Mid	QPSK	Full RB	-44.51	11.87	0.90	56.38
100	38499.96	Mid	QPSK	Full RB	-43.51	12.79	0.92	56.30
100	38499.96	Mid	QPSK	Full RB	-42.51	13.73	0.94	56.24
100	38499.96	Mid	QPSK	Full RB	-41.51	14.68	0.95	56.19
100	38499.96	Mid	QPSK	Full RB	-40.51	15.61	0.93	56.12
100	38499.96	Mid	QPSK	Full RB	-39.51	16.58	0.97	56.09
100	38499.96	Mid	QPSK	Full RB	-38.51	17.51	0.93	56.02
100	38499.96	Mid	QPSK	Full RB	-37.51	18.51	1.00	56.02
100	38499.96	Mid	QPSK	Full RB	-36.51	19.51	1.00	56.02
100	38499.96	Mid	QPSK	Full RB	-35.51	20.46	0.95	55.97
100	38499.96	Mid	QPSK	Full RB	-34.51	21.38	0.92	55.89
100	38499.96	Mid	QPSK	Full RB	-33.51	21.54	0.16	55.05
100	38499.96	Mid	QPSK	Full RB	-32.51	21.41	-0.13	53.92
100	38499.96	Mid	QPSK	Full RB	-31.51	21.34	-0.07	52.85
100	38499.96	Mid	QPSK	Full RB	-30.51	21.33	-0.01	51.84
100	38499.96	Mid	QPSK	Full RB	-29.51	21.52	0.19	51.03
100	38499.96	Mid	QPSK	Full RB	-28.51	21.52	0.00	50.03
100	38499.96	Mid	QPSK	Full RB	-27.51	21.51	-0.01	49.02
100	38499.96	Mid	QPSK	Full RB	-26.51	21.40	-0.11	47.91
100	38499.96	Mid	QPSK	Full RB	-25.51	21.79	0.39	47.30
100	38499.96	Mid	QPSK	Full RB	-24.51	21.77	-0.02	46.28

**Table 7-9. Full RB AGC Threshold and Booster Gain – 100MHz 4CC – CP – V-DL Polarization**

**Note:** AGC Threshold is found at **-33.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 34 of 147	

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-48.51	7.39	-	55.90
50	38499.96	Mid	QPSK	Full RB	-47.51	8.39	1.00	55.90
50	38499.96	Mid	QPSK	Full RB	-46.51	9.35	0.96	55.86
50	38499.96	Mid	QPSK	Full RB	-45.51	10.31	0.96	55.82
50	38499.96	Mid	QPSK	Full RB	-44.51	11.30	0.99	55.81
50	38499.96	Mid	QPSK	Full RB	-43.51	12.28	0.98	55.79
50	38499.96	Mid	QPSK	Full RB	-42.51	13.21	0.93	55.72
50	38499.96	Mid	QPSK	Full RB	-41.51	14.21	1.00	55.72
50	38499.96	Mid	QPSK	Full RB	-40.51	15.16	0.95	55.67
50	38499.96	Mid	QPSK	Full RB	-39.51	17.17	2.01	56.68
50	38499.96	Mid	QPSK	Full RB	-38.51	18.14	0.97	56.65
50	38499.96	Mid	QPSK	Full RB	-37.51	19.09	0.95	56.60
50	38499.96	Mid	QPSK	Full RB	-36.51	20.11	1.02	56.62
50	38499.96	Mid	QPSK	Full RB	-35.51	21.03	0.92	56.54
50	38499.96	Mid	QPSK	Full RB	<b>-34.51</b>	<b>20.97</b>	<b>-0.06</b>	<b>55.48</b>
50	38499.96	Mid	QPSK	Full RB	-33.51	20.86	-0.11	54.37
50	38499.96	Mid	QPSK	Full RB	-32.51	20.73	-0.13	53.24
50	38499.96	Mid	QPSK	Full RB	-31.51	20.76	0.03	52.27
50	38499.96	Mid	QPSK	Full RB	-30.51	20.67	-0.09	51.18
50	38499.96	Mid	QPSK	Full RB	-29.51	20.64	-0.03	50.15
50	38499.96	Mid	QPSK	Full RB	-28.51	21.05	0.41	49.56
50	38499.96	Mid	QPSK	Full RB	-27.51	20.97	-0.08	48.48
50	38499.96	Mid	QPSK	Full RB	-26.51	20.98	0.01	47.49
50	38499.96	Mid	QPSK	Full RB	-25.51	20.68	-0.30	46.19
50	38499.96	Mid	QPSK	Full RB	-24.51	20.77	0.09	45.28

**Table 7-10. Full RB AGC Threshold and Booster Gain – 50MHz 1CC – CP – H-DL Polarization**

**Note:** AGC Threshold is found at **-34.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 35 of 147

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size / Offset	EUT Input Power Level [dBm]	Conducted Power [dBm]	Output Power Step [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-48.51	6.67	-	55.18
100	38499.96	Mid	QPSK	Full RB	-47.51	7.58	0.91	55.09
100	38499.96	Mid	QPSK	Full RB	-46.51	8.52	0.94	55.03
100	38499.96	Mid	QPSK	Full RB	-45.51	9.42	0.90	54.93
100	38499.96	Mid	QPSK	Full RB	-44.51	10.32	0.90	54.83
100	38499.96	Mid	QPSK	Full RB	-43.51	11.28	0.96	54.79
100	38499.96	Mid	QPSK	Full RB	-42.51	12.24	0.96	54.75
100	38499.96	Mid	QPSK	Full RB	-41.51	13.17	0.93	54.68
100	38499.96	Mid	QPSK	Full RB	-40.51	14.11	0.94	54.62
100	38499.96	Mid	QPSK	Full RB	-39.51	15.08	0.97	54.59
100	38499.96	Mid	QPSK	Full RB	-38.51	16.00	0.92	54.51
100	38499.96	Mid	QPSK	Full RB	-37.51	16.99	0.99	54.50
100	38499.96	Mid	QPSK	Full RB	-36.51	17.98	0.99	54.49
100	38499.96	Mid	QPSK	Full RB	-35.51	18.95	0.97	54.46
100	38499.96	Mid	QPSK	Full RB	-34.51	19.95	1.00	54.46
100	38499.96	Mid	QPSK	Full RB	-33.51	20.88	0.93	54.39
100	38499.96	Mid	QPSK	Full RB	-32.51	21.52	0.64	54.03
100	38499.96	Mid	QPSK	Full RB	-31.51	21.44	-0.08	52.95
100	38499.96	Mid	QPSK	Full RB	-30.51	21.30	-0.14	51.81
100	38499.96	Mid	QPSK	Full RB	-29.51	21.32	0.02	50.83
100	38499.96	Mid	QPSK	Full RB	-28.51	21.23	-0.09	49.74
100	38499.96	Mid	QPSK	Full RB	-27.51	21.19	-0.04	48.70
100	38499.96	Mid	QPSK	Full RB	-26.51	21.64	0.45	48.15
100	38499.96	Mid	QPSK	Full RB	-25.51	21.54	-0.10	47.05
100	38499.96	Mid	QPSK	Full RB	-24.51	21.52	-0.02	46.03

**Table 7-11. Full RB AGC Threshold and Booster Gain – 100MHz 4CC – CP – H-DL Polarization**

**Note:** AGC Threshold is found at **-32.51dBm** EUT Input Power Level.

FCC ID: 2AUVU-5620-23-39	element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 36 of 147

## 7.5 Occupied Bandwidth

### Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers measured are each equal to 0.5 percent of the total mean power measured for a given emission. All modes of operation were investigated and the worst case configuration results are reported in this section.

### Test Procedure Used

ANSI C63.26-2015 – Section 5.4.3

### Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW  $\geq$  3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

### Test Notes

1. The OBW was measured for multiple transmission schemes and modulations and the worst case results have been included in the report.
2. The plots shown in this section include the appropriate offsets to correct for the frequency-dependent cable loss of the coaxial cable that connects the output port of the EUT to the spectrum analyzer.

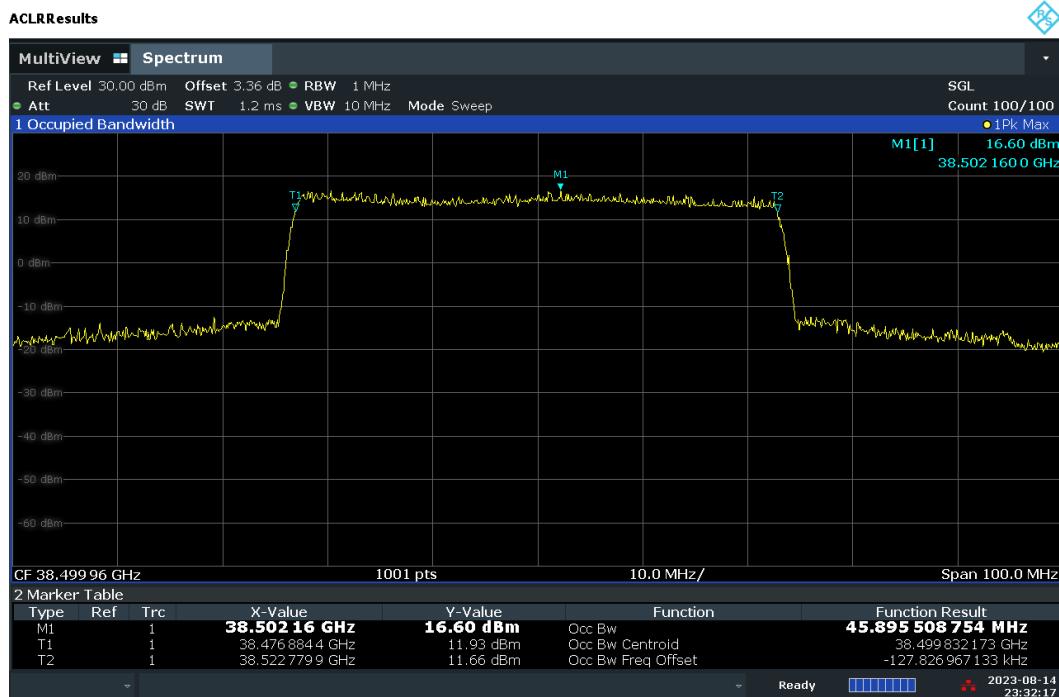
FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 37 of 147	

## Band n260 – SU (DFT-s-OFDM)

Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
V_DL	50	1	DFT-s-OFDM	QPSK	45.90
			DFT-s-OFDM	16QAM	45.88
		2	DFT-s-OFDM	QPSK	95.57
			DFT-s-OFDM	16QAM	95.53
	100	4	DFT-s-OFDM	QPSK	391.91
			DFT-s-OFDM	16QAM	391.92
H_DL	50	1	DFT-s-OFDM	QPSK	45.90
			DFT-s-OFDM	16QAM	45.85
		2	DFT-s-OFDM	QPSK	95.50
			DFT-s-OFDM	16QAM	95.41
	100	4	DFT-s-OFDM	QPSK	391.76
			DFT-s-OFDM	16QAM	391.83

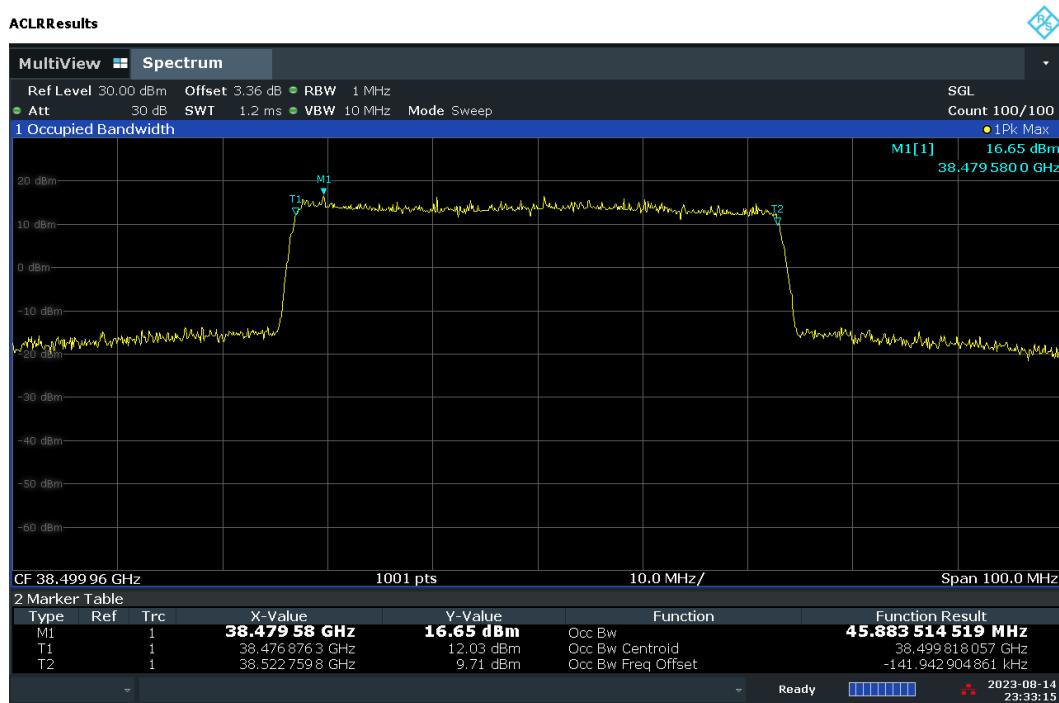
**Table 7-12. Summary of SU Occupied Bandwidths – DFT-s-OFDM**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater		Page 38 of 147



11:32:18 PM 08/14/2023

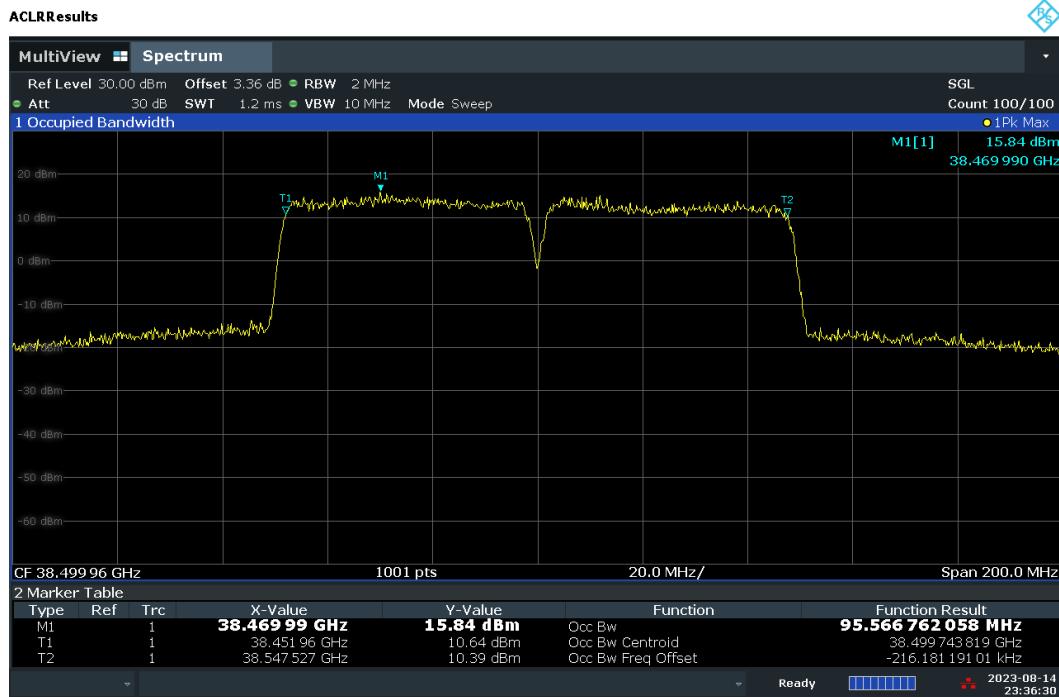
**Plot 7-19. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (50MHz-1CC – QPSK – Mid Channel)**



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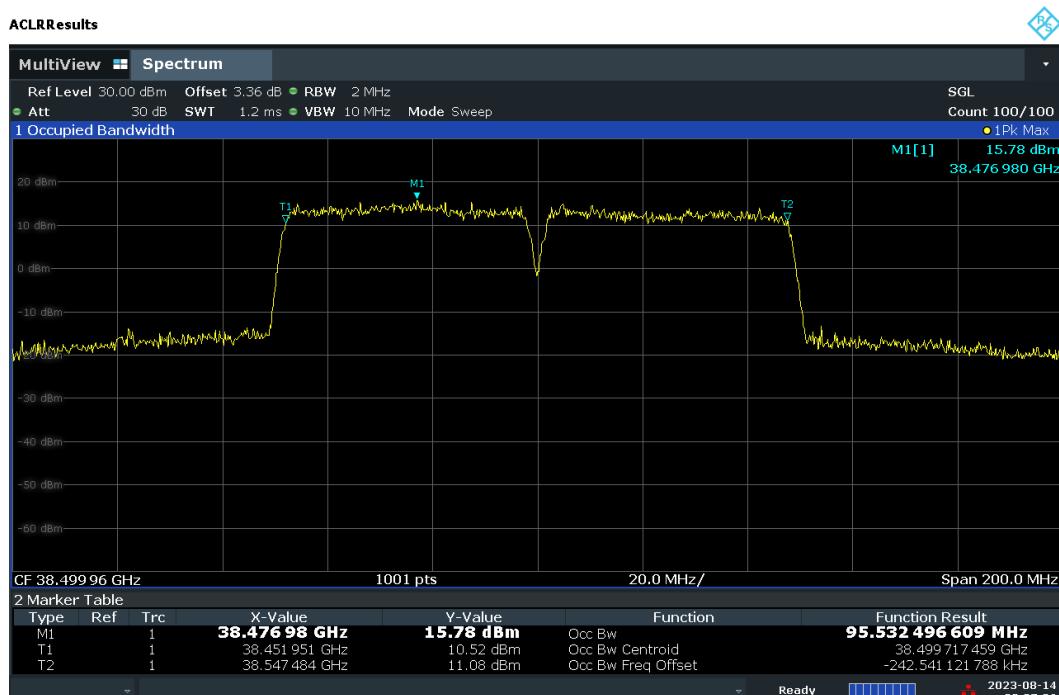
**Plot 7-20. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (50MHz-1CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 39 of 147	



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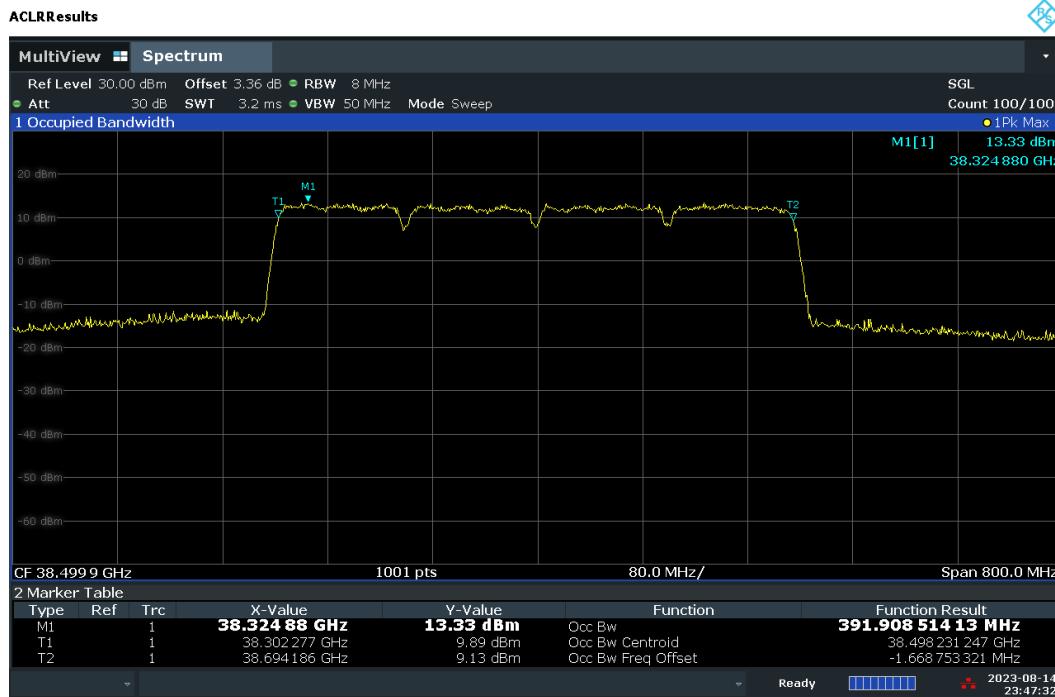
**Plot 7-21. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (50MHz-2CC – QPSK – Mid Channel)**



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**Plot 7-22. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (50MHz-2CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 40 of 147



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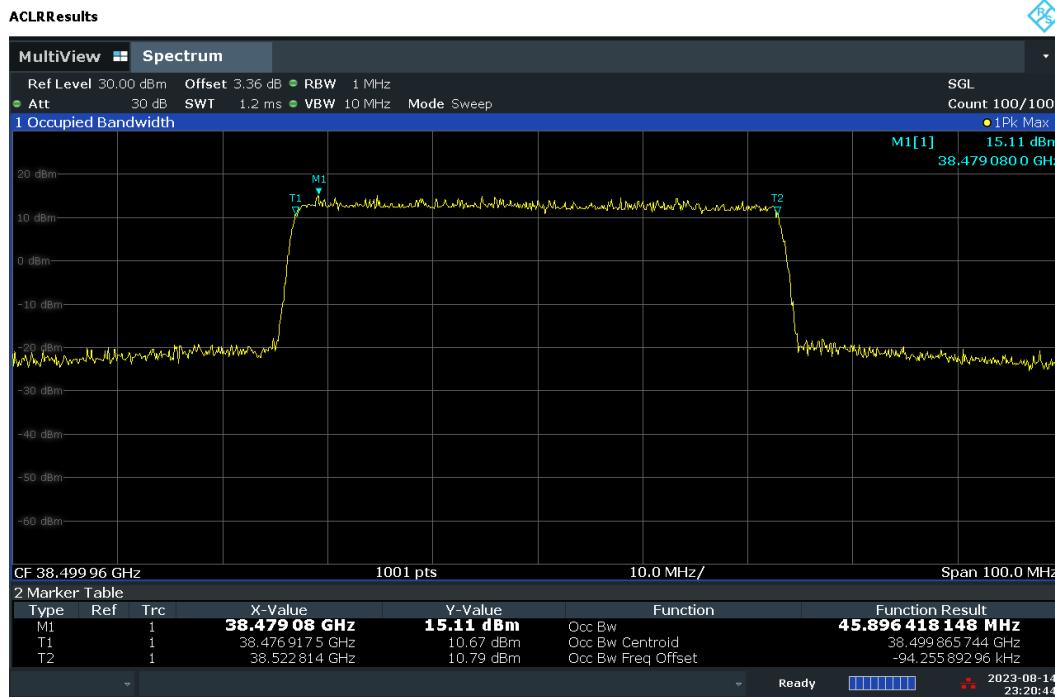
**Plot 7-23. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (100MHz-4CC – QPSK – Mid Channel)**



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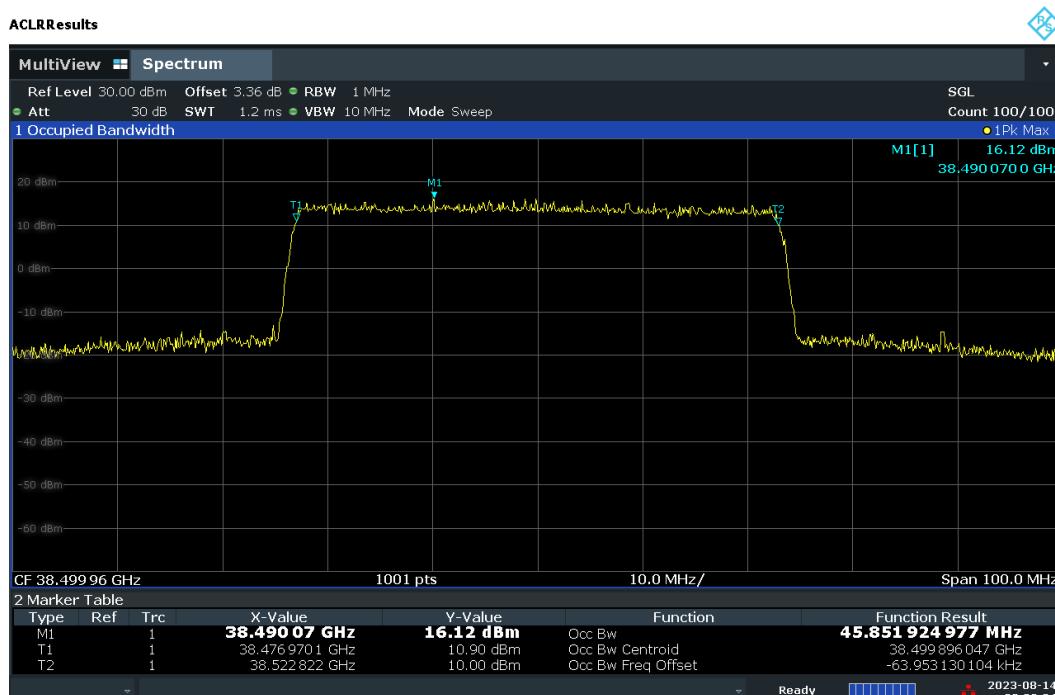
**Plot 7-24. Occupied Bandwidth Plot – DFT-s – V-DL Polarization (100MHz-4CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 41 of 147	



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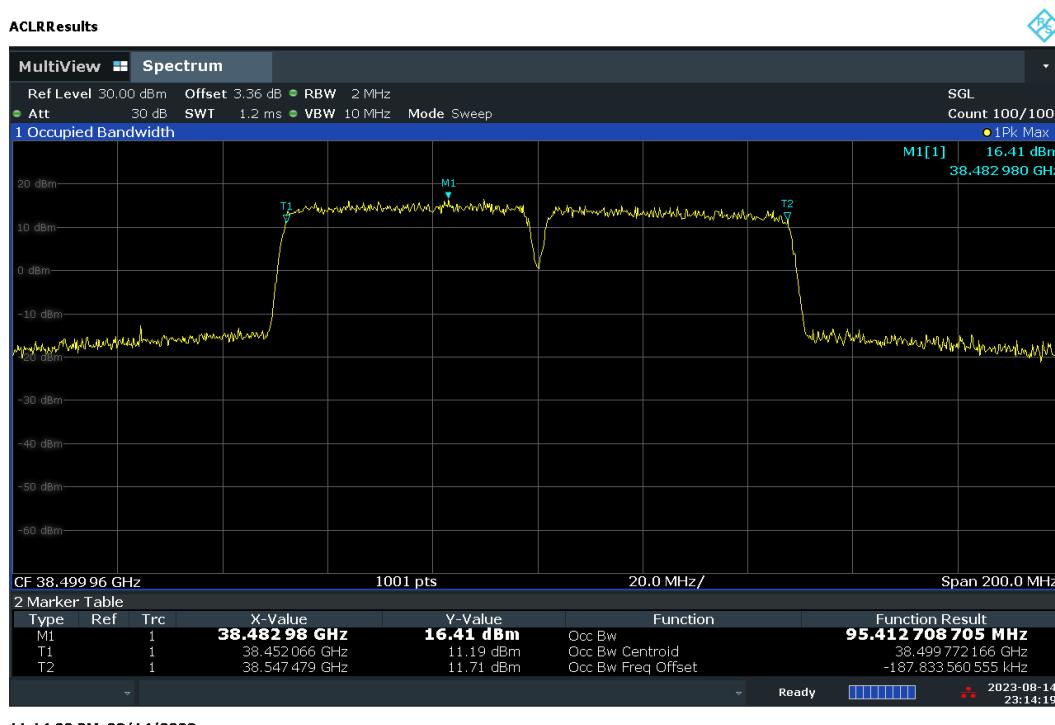
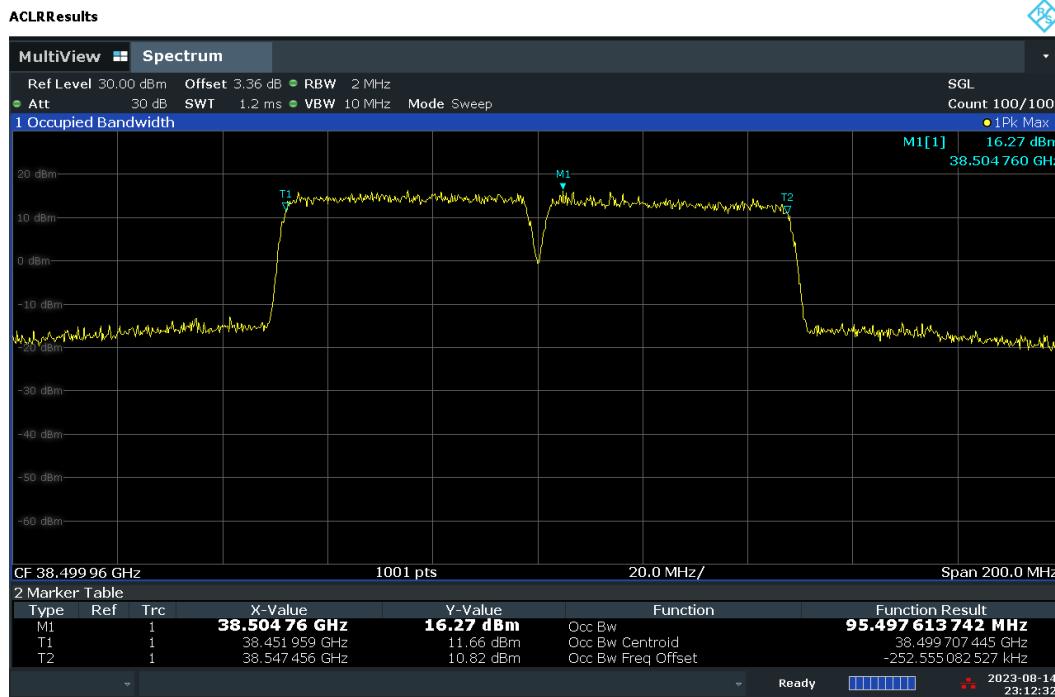
**Plot 7-25. Occupied Bandwidth Plot – DFT-s – H-DL Polarization (50MHz-1CC – QPSK – Mid Channel)**



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**Plot 7-26. Occupied Bandwidth Plot – DFT-s – H-DL Polarization (50MHz-1CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 42 of 147



FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 43 of 147



**Plot 7-29. Occupied Bandwidth Plot – DFT-s – H-DL Polarization (100MHz-4CC – QPSK – Mid Channel)**



**Plot 7-30. Occupied Bandwidth Plot – DFT-s – H-DL Polarization (100MHz-4CC – 16QAM – Mid Channel)**

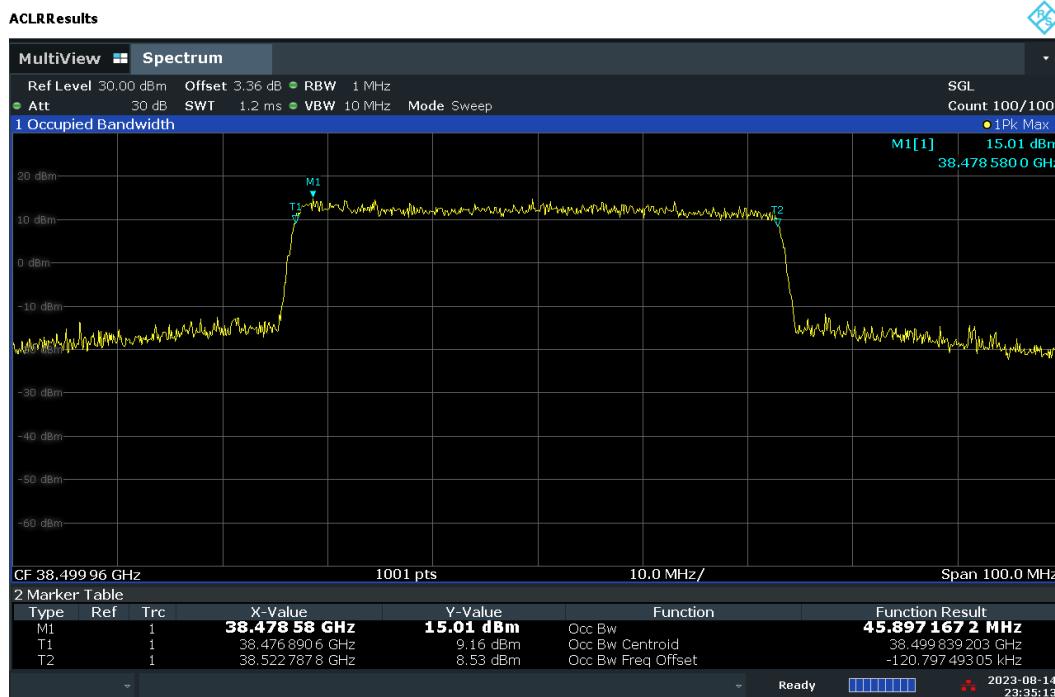
FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 44 of 147	

## Band n260 – SU (CP-OFDM)

Antenna	Bandwidth [MHz]	CCs Active	Transmission Scheme	Modulation	OBW [MHz]
V_DL	50	1	CP-OFDM	QPSK	45.90
			CP-OFDM	16QAM	45.93
		2	CP-OFDM	QPSK	95.61
			CP-OFDM	16QAM	95.58
	100	4	CP-OFDM	QPSK	393.53
			CP-OFDM	16QAM	393.50
		1	CP-OFDM	QPSK	45.91
			CP-OFDM	16QAM	45.96
H_DL	50	2	CP-OFDM	QPSK	95.57
			CP-OFDM	16QAM	95.56
	100	4	CP-OFDM	QPSK	393.52
			CP-OFDM	16QAM	393.42

**Table 7-13. Summary of SU Occupied Bandwidths – CP-OFDM**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater		Page 45 of 147



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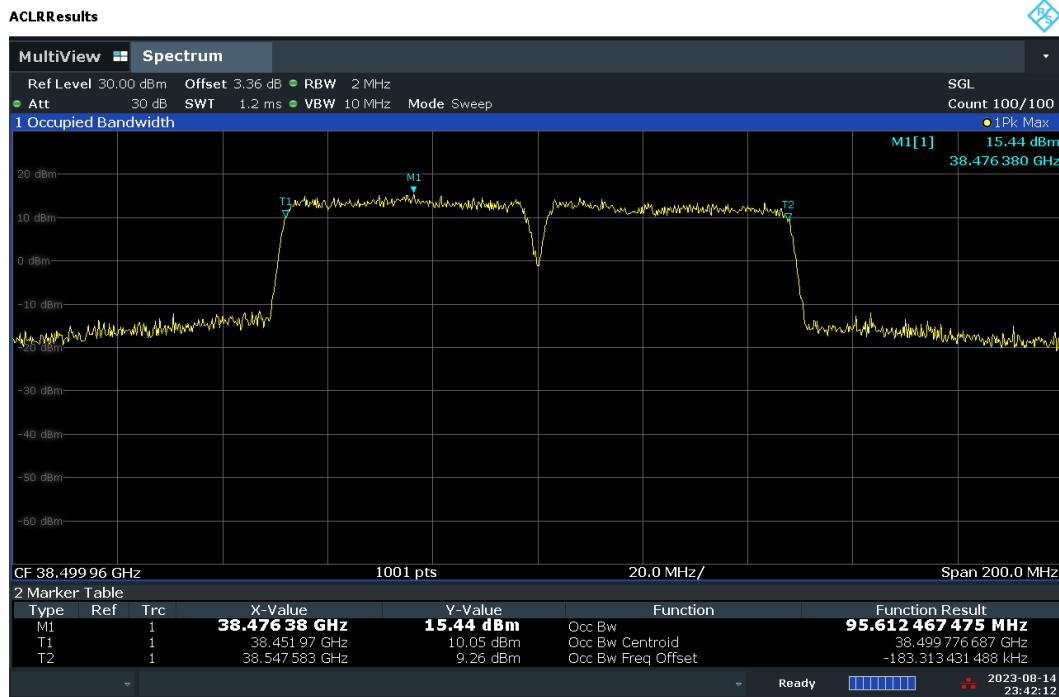
**Plot 7-31. Occupied Bandwidth Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – Mid Channel)**



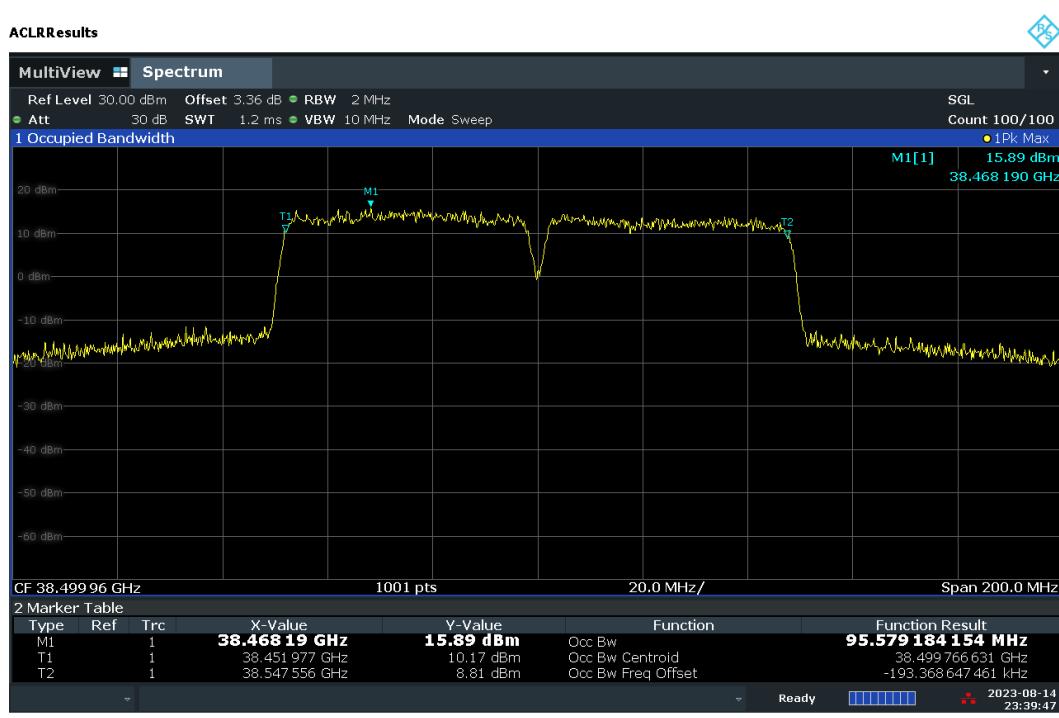
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**Plot 7-32. Occupied Bandwidth Plot – CP – V-DL Polarization (50MHz-1CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 46 of 147



**Plot 7-33. Occupied Bandwidth Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – Mid Channel)**



**Plot 7-34. Occupied Bandwidth Plot – CP – V-DL Polarization (50MHz-2CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 47 of 147

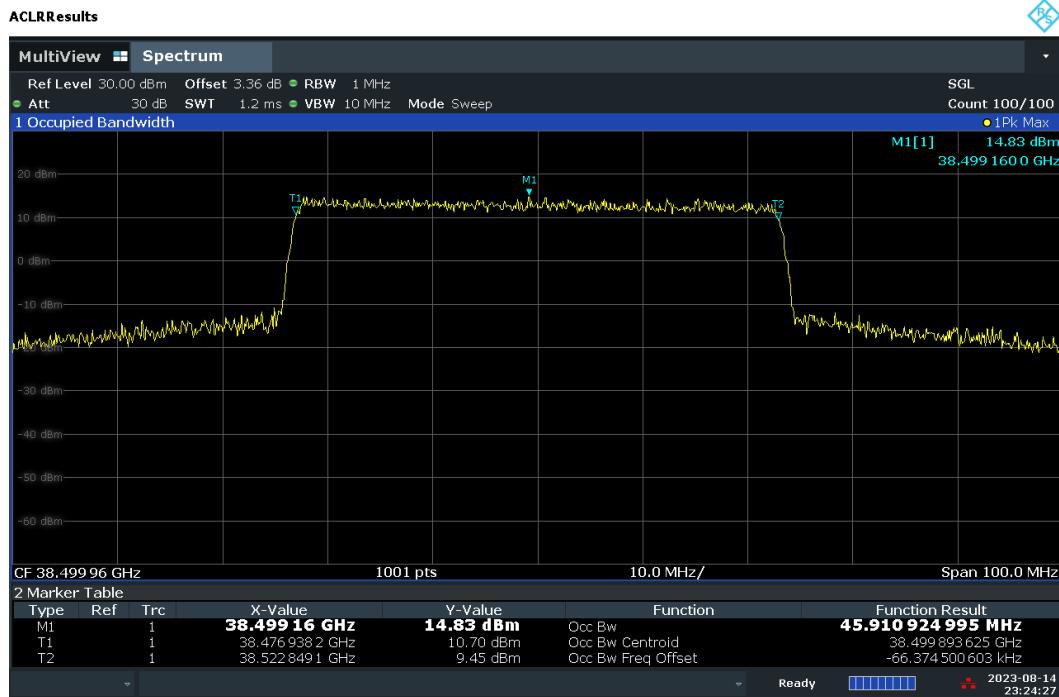


**Plot 7-35. Occupied Bandwidth Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – Mid Channel)**

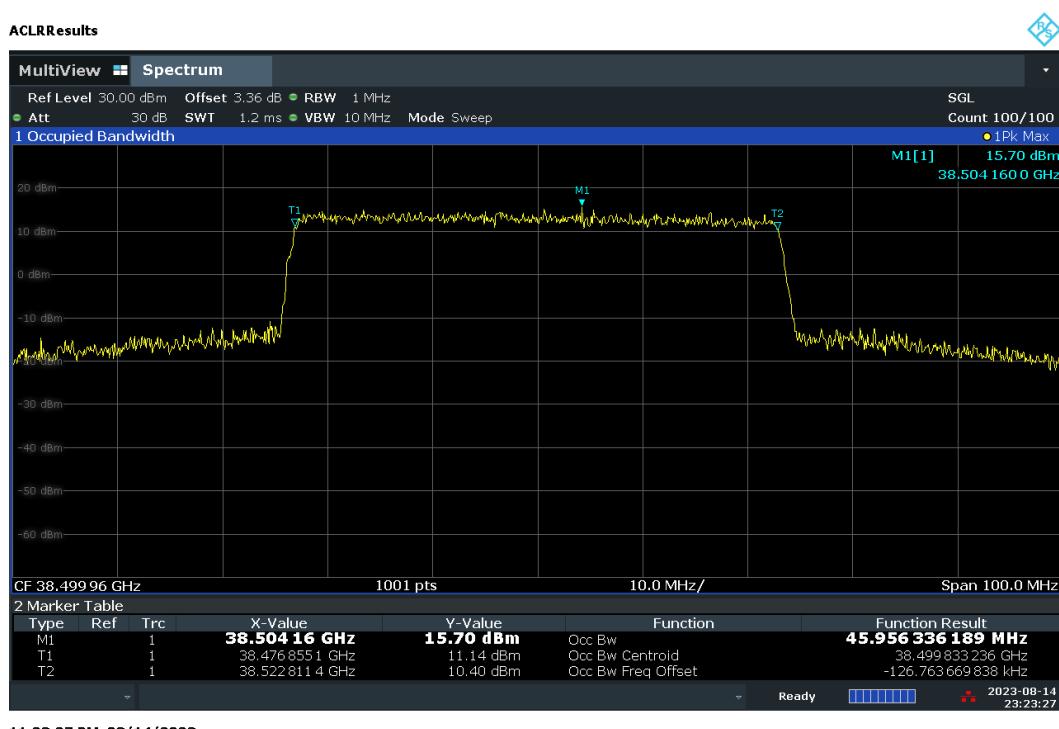


**Plot 7-36. Occupied Bandwidth Plot – CP – V-DL Polarization (100MHz-4CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 48 of 147

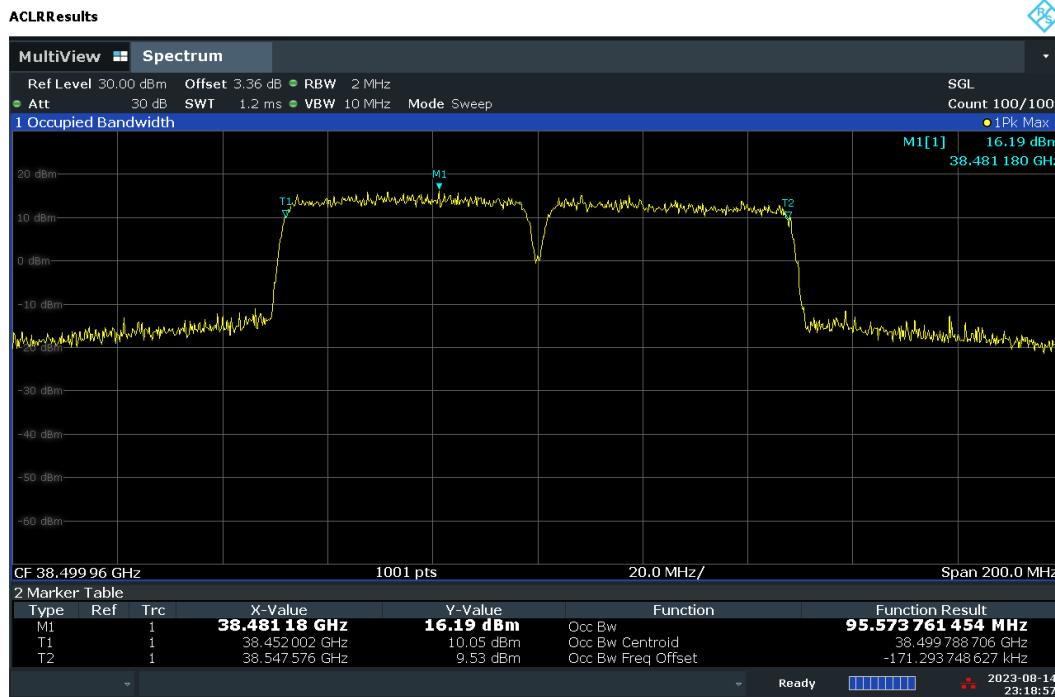


**Plot 7-37. Occupied Bandwidth Plot – CP – H-DL Polarization (50MHz-1CC – QPSK – Mid Channel)**



**Plot 7-38. Occupied Bandwidth Plot – CP – H-DL Polarization (50MHz-1CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 49 of 147	



**Plot 7-39. Occupied Bandwidth Plot – CP – H-DL Polarization (50MHz-2CC – QPSK – Mid Channel)**



**Plot 7-40. Occupied Bandwidth Plot – CP – H-DL Polarization (50MHz-2CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 50 of 147



**Plot 7-41. Occupied Bandwidth Plot – CP – H-DL Polarization (100MHz-4CC – QPSK – Mid Channel)**



**Plot 7-42. Occupied Bandwidth Plot – CP – H-DL Polarization (100MHz-4CC – 16QAM – Mid Channel)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 51 of 147

## 7.6 Conducted Power & Equivalent Isotropic Radiated Power

### Test Overview

A transmitter port of the EUT is connected to the input of a signal analyzer. A signal generator supplies a 5G NR signal directly into the input port of the device. All measurements are performed as RMS average measurements while the EUT is operating at the appropriate frequencies with the max power condition as specified by the AGC software of the EUT. The Equivalent Isotropic Radiated Power (EIRP) is then calculated using these conducted power measurements.

***The average power of the sum of all antenna elements is limited to a maximum EIRP of +55 dBm.***

### Test Procedures Used

ANSI C63.26-2015 Section 5.2.4.4.1

### Test Settings

1. Conducted power measurements are performed using the signal analyzer's "channel power" measurement capability.
2. For pulsed signals, triggering was set to enable measurements only during full power bursts, with the sweep time set less than or equal to the transmission burst duration. For continuously transmitted signals, triggering was set to Free Run.
3. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
4. VBW  $\geq$  3 x RBW
5. Span = 2x to 3x the OBW
6. No. of sweep points  $\geq$  2 x span / RBW
7. Detector = RMS
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize.

### Test Notes

- 1) The EUT was tested with all possible input signal configurations. The worst case emissions are reported with the regards to modulations, RB sizes and offsets, and channel bandwidth configurations as shown in the tables below. It was determined that full RB allocations provided the worst case results.
- 2) As the SU is only designed to boost 5G NR downlink signals, its power levels were only investigated with CP-OFDM transmission schemes. The power levels of the DU, which is designed to boost 5G NR uplink signals, were investigated with both CP-OFDM and DFT-s-OFDM transmission schemes.
- 3) The input signal to the EUT was set in order to produce the maximum power allowed by the AGC software of the EUT.
- 4) The MIMO Conducted Powers were calculated by using the "measure and sum the spectral maxima across the outputs" technique specified in Section 6.4.3.2.3 of ANSI C63.26-2015. The spectra were summed linearly and converted to dBm for comparison with the limit.

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 52 of 147

- 5) The MIMO Conducted Powers shown in the tables in this section are the mathematical summations (in linear units) of the measured conducted powers of the horizontally polarized and vertically polarized antenna feeds of an individual unit (i.e either the SU or DU).
- 6) The single-polarization EIRP levels shown in the tables in this section are the mathematical summations (in logarithmic units) of the corresponding single-polarization conducted powers and the gain of the transmit antenna for that polarization.
- 7) Per the guidance of ANSI C63.26-2015 Section 6.4.5.3.3(a) for cross-polarized antennas, the MIMO EIRP levels shown in the tables in this section are the mathematical summations (in logarithmic units) of the corresponding MIMO conducted powers and the gain of an individual transmit antenna.
- 8) The gain of the transmit antenna for each unit is provided by the manufacturer.
- 9) The conducted power plots shown in this section include the appropriate offsets to correct for the frequency-dependent cable loss of the coaxial cable that connects the output port of the EUT to the spectrum analyzer.

**Sample Conducted MIMO Calculation:**

Antenna 1 + Antenna 2 = MIMO

$$(23.35\text{dBm} + 23.35\text{dBm}) = (216.272\text{mW} + 216.272\text{mW}) = 432.544\text{mW} = 26.36\text{dBm}$$

**Sample EIRP Calculation:**

Conducted Power + Antenna Gain = EIRP

$$26.36\text{dBm} + 13.0\text{dBi} = 39.36\text{dBm}$$

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 53 of 147

## Band n260 – SU (DFT-s-OFDM)

Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	Conducted Power [dBm]	Tx Ant Gain [dBi]	EIRP [dBm]
Low	37025.04	V-DL	DFT-s-OFDM	QPSK	50	1	Full	23.35	13.00	36.35
Low	37025.04	V-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	19.42	13.00	32.42
Low	37025.04	V-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.39	13.00	35.39
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	50	1	Full	23.46	13.00	36.46
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	19.61	13.00	32.61
Mid	38499.96	V-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.72	13.00	35.72
High	39975.00	V-DL	DFT-s-OFDM	QPSK	50	1	Full	23.45	13.00	36.45
High	39975.00	V-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	19.88	13.00	32.88
High	39975.00	V-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.65	13.00	35.65
Low	37050.00	V-DL	DFT-s-OFDM	QPSK	50	2	Full	22.37	13.00	35.37
Low	37050.00	V-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	18.98	13.00	31.98
Low	37050.00	V-DL	DFT-s-OFDM	16-QAM	50	2	Full	21.66	13.00	34.66
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	50	2	Full	22.40	13.00	35.40
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	19.02	13.00	32.02
Mid	38499.96	V-DL	DFT-s-OFDM	16-QAM	50	2	Full	21.71	13.00	34.71
High	39949.98	V-DL	DFT-s-OFDM	QPSK	50	2	Full	22.53	13.00	35.53
High	39949.98	V-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	19.01	13.00	32.01
High	39949.98	V-DL	DFT-s-OFDM	16-QAM	50	2	Full	21.87	13.00	34.87
Low	37199.94	V-DL	DFT-s-OFDM	QPSK	100	4	Full	21.56	13.00	34.56
Low	37199.94	V-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	18.63	13.00	31.63
Low	37199.94	V-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.44	13.00	34.44
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	100	4	Full	21.66	13.00	34.66
Mid	38499.96	V-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	18.60	13.00	31.60
Mid	38499.96	V-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.36	13.00	34.36
High	39799.98	V-DL	DFT-s-OFDM	QPSK	100	4	Full	21.79	13.00	34.79
High	39799.98	V-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	18.65	13.00	31.65
High	39799.98	V-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.45	13.00	34.45

Table 7-14. NR Band n260 - Conducted Power and EIRP – DFT-s – V-DL Polarization

Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	Conducted Power [dBm]	Tx Ant Gain [dBi]	EIRP [dBm]
Low	37025.04	H-DL	DFT-s-OFDM	QPSK	50	1	Full	23.35	13.00	36.35
Low	37025.04	H-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	19.33	13.00	32.33
Low	37025.04	H-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.48	13.00	35.48
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	50	1	Full	23.08	13.00	36.08
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	18.91	13.00	31.91
Mid	38499.96	H-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.19	13.00	35.19
High	39975.00	H-DL	DFT-s-OFDM	QPSK	50	1	Full	23.46	13.00	36.46
High	39975.00	H-DL	DFT-s-OFDM	QPSK	50	1	1 / 16	19.37	13.00	32.37
High	39975.00	H-DL	DFT-s-OFDM	16-QAM	50	1	Full	22.59	13.00	35.59
Low	37050.00	H-DL	DFT-s-OFDM	QPSK	50	2	Full	22.81	13.00	35.81
Low	37050.00	H-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	19.39	13.00	32.39
Low	37050.00	H-DL	DFT-s-OFDM	16-QAM	50	2	Full	22.01	13.00	35.01
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	50	2	Full	22.52	13.00	35.52
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	19.30	13.00	32.30
Mid	38499.96	H-DL	DFT-s-OFDM	16-QAM	50	2	Full	21.72	13.00	34.72
High	39949.98	H-DL	DFT-s-OFDM	QPSK	50	2	Full	22.71	13.00	35.71
High	39949.98	H-DL	DFT-s-OFDM	QPSK	50	2	1 / 16	19.31	13.00	32.31
High	39949.98	H-DL	DFT-s-OFDM	16-QAM	50	2	Full	22.04	13.00	35.04
Low	37199.94	H-DL	DFT-s-OFDM	QPSK	100	4	Full	21.58	13.00	34.58
Low	37199.94	H-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	19.29	13.00	32.29
Low	37199.94	H-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.35	13.00	34.35
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	100	4	Full	21.55	13.00	34.55
Mid	38499.96	H-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	18.78	13.00	31.78
Mid	38499.96	H-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.34	13.00	34.34
High	39799.98	H-DL	DFT-s-OFDM	QPSK	100	4	Full	21.61	13.00	34.61
High	39799.98	H-DL	DFT-s-OFDM	QPSK	100	4	1 / 33	19.23	13.00	32.23
High	39799.98	H-DL	DFT-s-OFDM	16-QAM	100	4	Full	21.53	13.00	34.53

Table 7-15. NR Band n260 - Conducted Power and EIRP – DFT-s – H-DL Polarization

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)				Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater			Page 54 of 147
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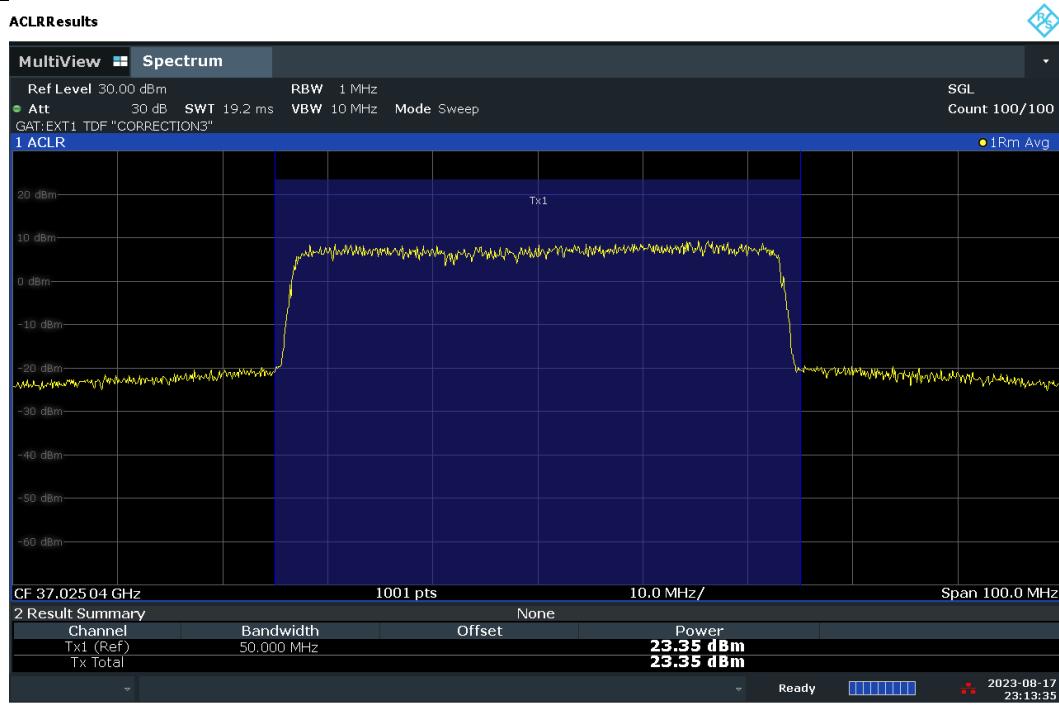
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Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	MIMO Conducted Power [dBm]	Tx Ant Gain [dBi]	MIMO EIRP [dBm]
Low	37025.04	MIMO	DFT-s-OFDM	QPSK	50	1	Full	26.36	13.00	39.36
Low	37025.04	MIMO	DFT-s-OFDM	QPSK	50	1	1 / 16	22.39	13.00	35.39
Low	37025.04	MIMO	DFT-s-OFDM	16-QAM	50	1	Full	25.45	13.00	38.45
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	50	1	Full	26.29	13.00	39.29
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	50	1	1 / 16	22.28	13.00	35.28
Mid	38499.96	MIMO	DFT-s-OFDM	16-QAM	50	1	Full	25.47	13.00	38.47
High	39975.00	MIMO	DFT-s-OFDM	QPSK	50	1	Full	26.46	13.00	39.46
High	39975.00	MIMO	DFT-s-OFDM	QPSK	50	1	1 / 16	22.64	13.00	35.64
High	39975.00	MIMO	DFT-s-OFDM	16-QAM	50	1	Full	25.63	13.00	38.63
Low	37050.00	MIMO	DFT-s-OFDM	QPSK	50	2	Full	25.61	13.00	38.61
Low	37050.00	MIMO	DFT-s-OFDM	QPSK	50	2	1 / 16	22.20	13.00	35.20
Low	37050.00	MIMO	DFT-s-OFDM	16-QAM	50	2	Full	24.85	13.00	37.85
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	50	2	Full	25.47	13.00	38.47
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	50	2	1 / 16	22.17	13.00	35.17
Mid	38499.96	MIMO	DFT-s-OFDM	16-QAM	50	2	Full	24.73	13.00	37.73
High	39949.98	MIMO	DFT-s-OFDM	QPSK	50	2	Full	25.63	13.00	38.63
High	39949.98	MIMO	DFT-s-OFDM	QPSK	50	2	1 / 16	22.17	13.00	35.17
High	39949.98	MIMO	DFT-s-OFDM	16-QAM	50	2	Full	24.96	13.00	37.96
Low	37199.94	MIMO	DFT-s-OFDM	QPSK	100	4	Full	24.58	13.00	37.58
Low	37199.94	MIMO	DFT-s-OFDM	QPSK	100	4	1 / 33	21.98	13.00	34.98
Low	37199.94	MIMO	DFT-s-OFDM	16-QAM	100	4	Full	24.40	13.00	37.40
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	100	4	Full	24.62	13.00	37.62
Mid	38499.96	MIMO	DFT-s-OFDM	QPSK	100	4	1 / 33	21.70	13.00	34.70
Mid	38499.96	MIMO	DFT-s-OFDM	16-QAM	100	4	Full	24.36	13.00	37.36
High	39799.98	MIMO	DFT-s-OFDM	QPSK	100	4	Full	24.71	13.00	37.71
High	39799.98	MIMO	DFT-s-OFDM	QPSK	100	4	1 / 33	21.96	13.00	34.96
High	39799.98	MIMO	DFT-s-OFDM	16-QAM	100	4	Full	24.50	13.00	37.50

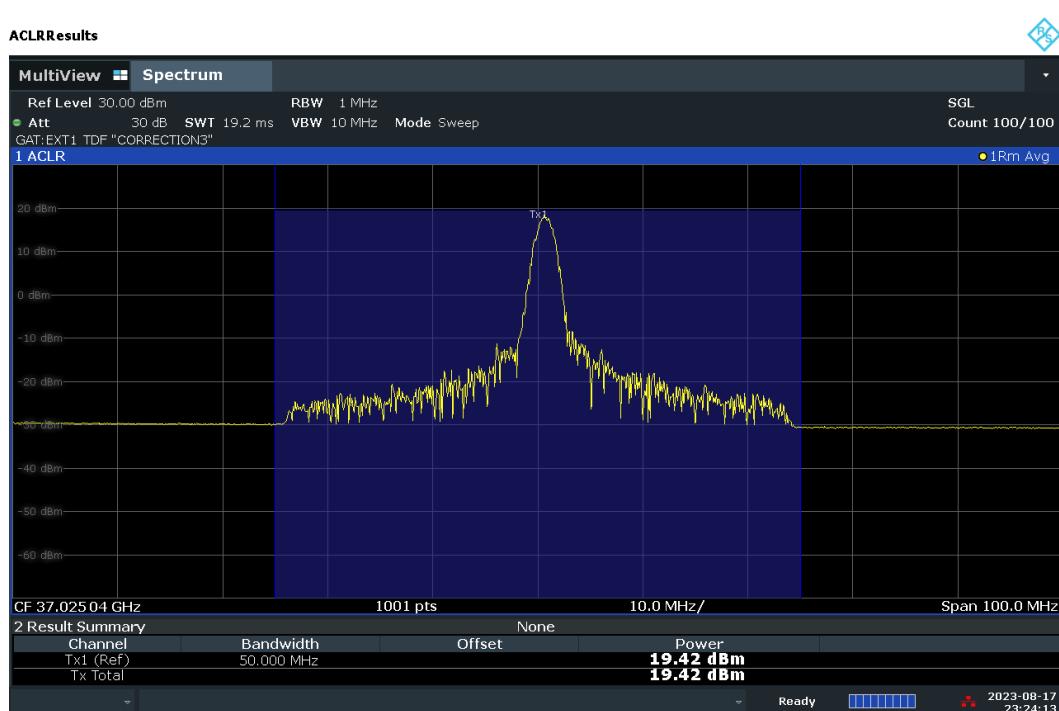
**Table 7-16. NR Band n260 - Conducted Power – DFT-s – MIMO**

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 55 of 147	

## V-DL Polarization

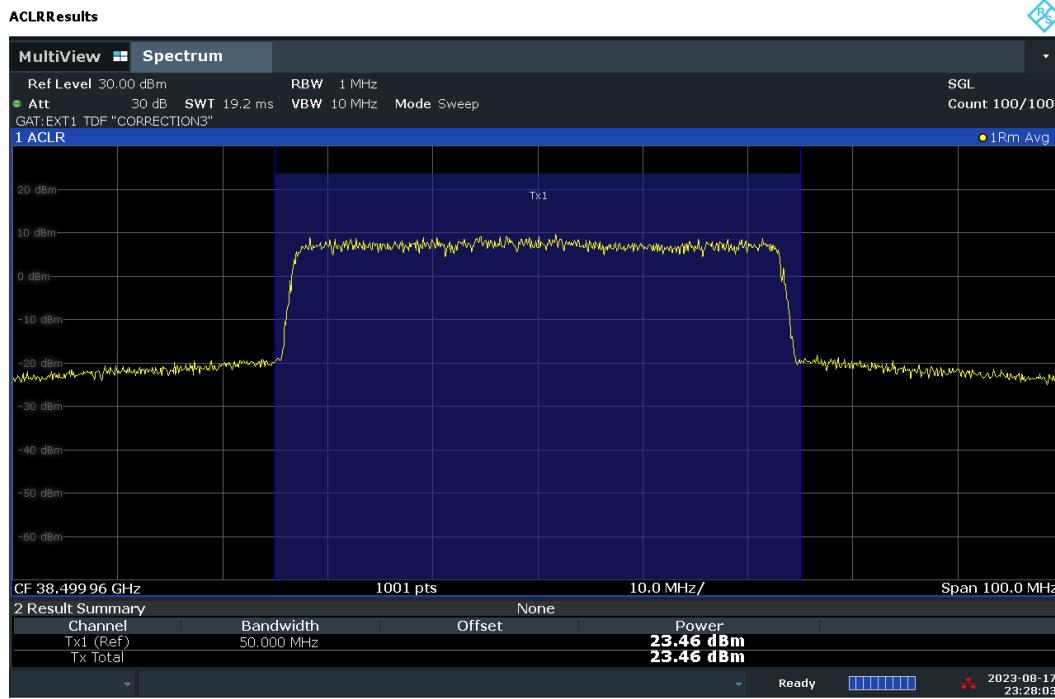


**Plot 7-43. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – Low Ch. – Full RB)**



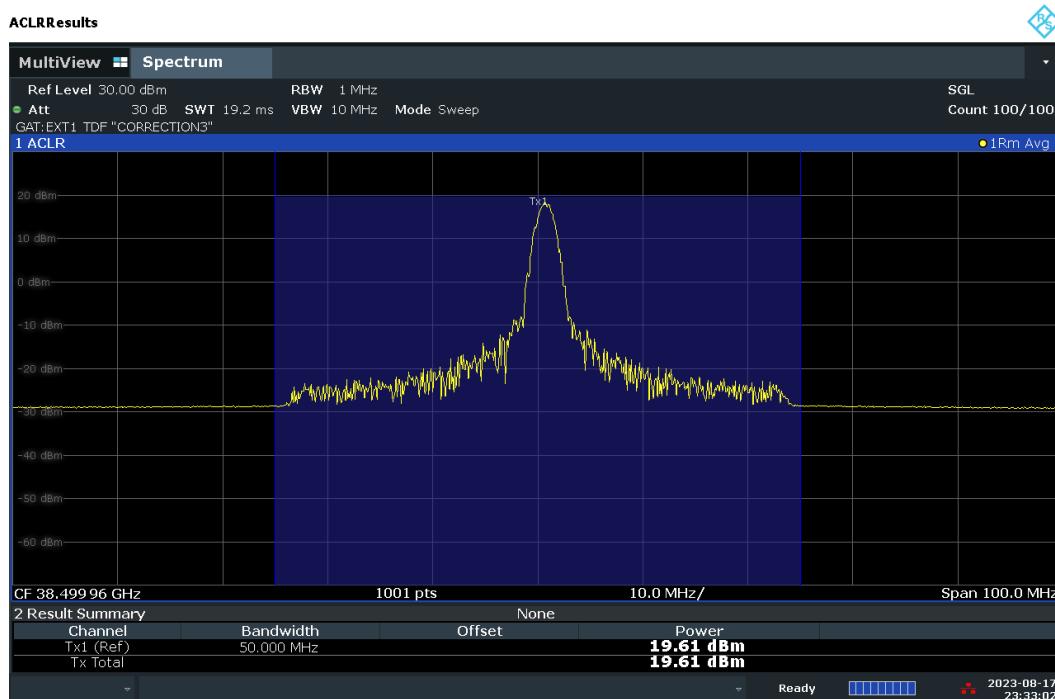
**Plot 7-44. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 56 of 147	



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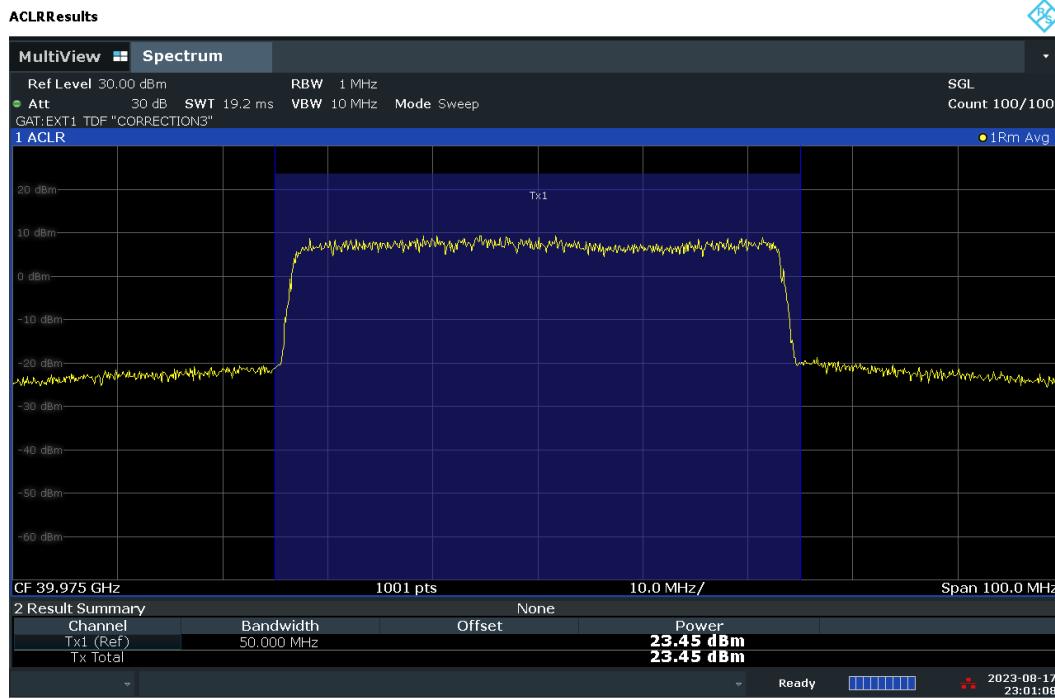
**Plot 7-45. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – Full RB)**



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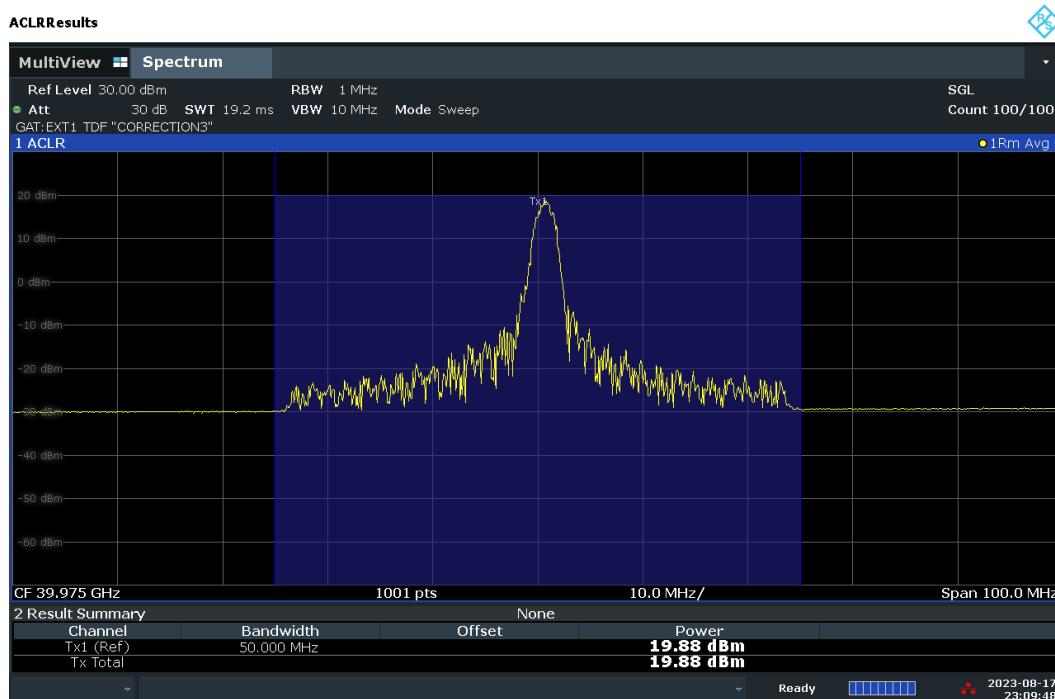
**Plot 7-46. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 57 of 147



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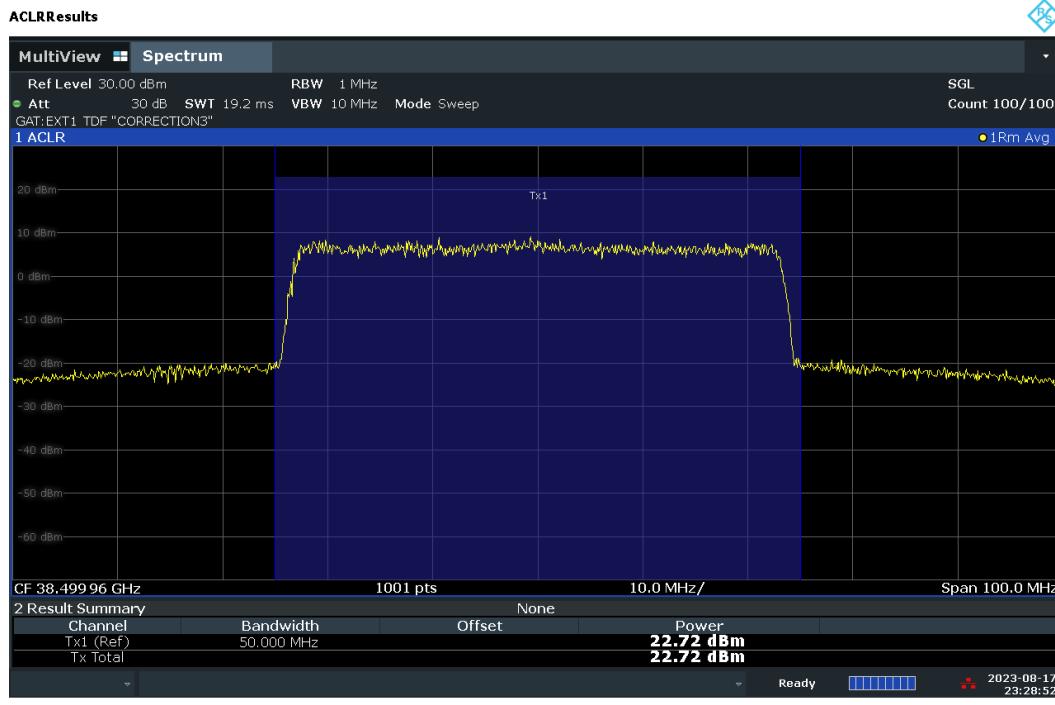
**Plot 7-47. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – High Ch. – Full RB)**



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**Plot 7-48. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – QPSK – High Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 58 of 147	



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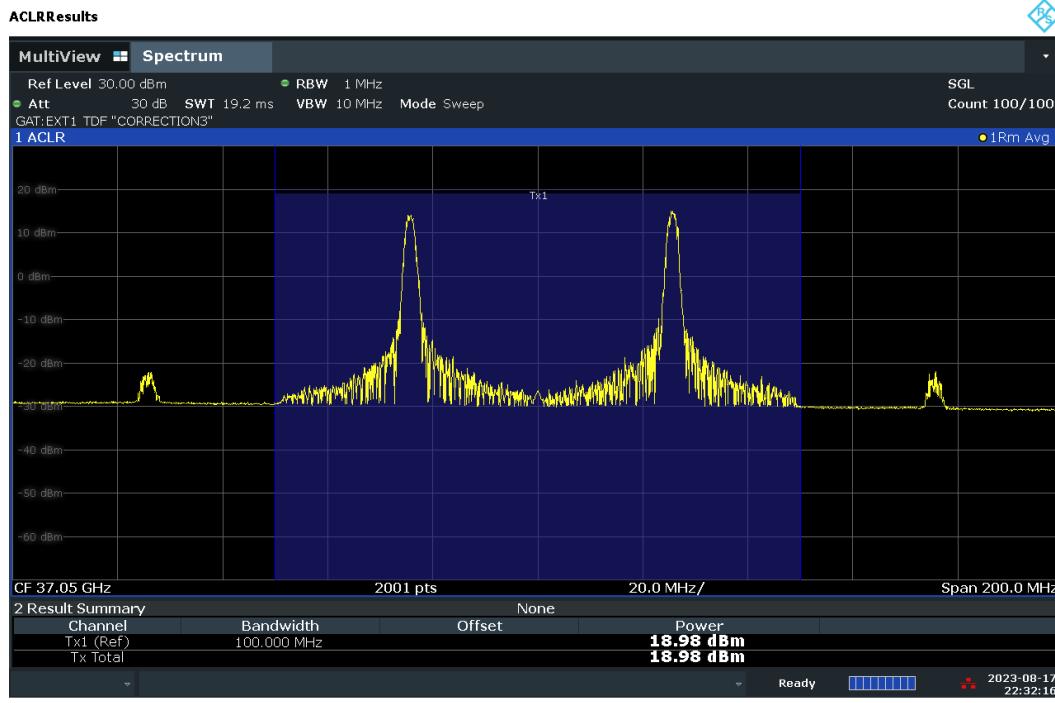
**Plot 7-49. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-1CC – 16QAM – Mid Ch. – Full RB)**



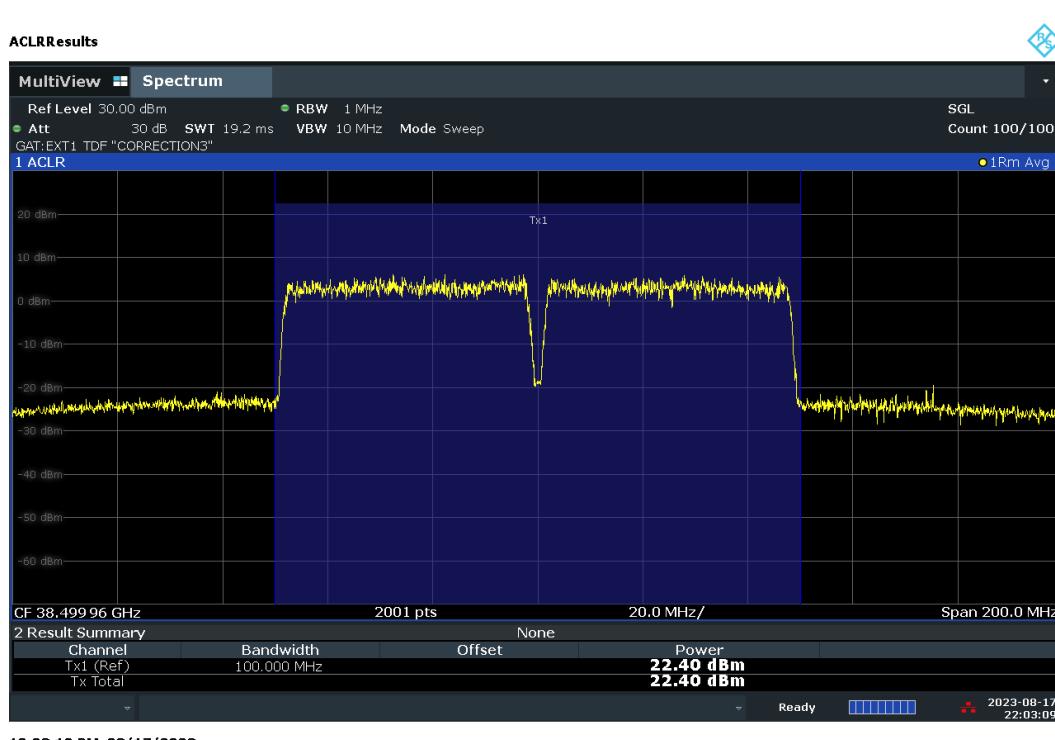
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**Plot 7-50. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – Low Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 59 of 147	

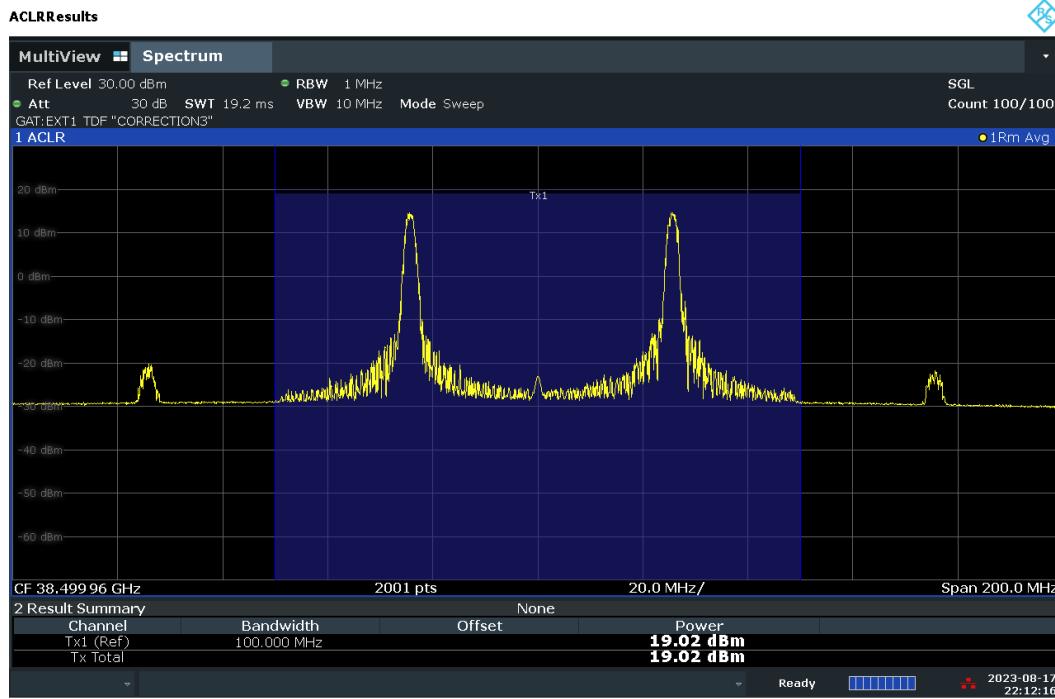


**Plot 7-51. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – Low Ch. – 1RB)**

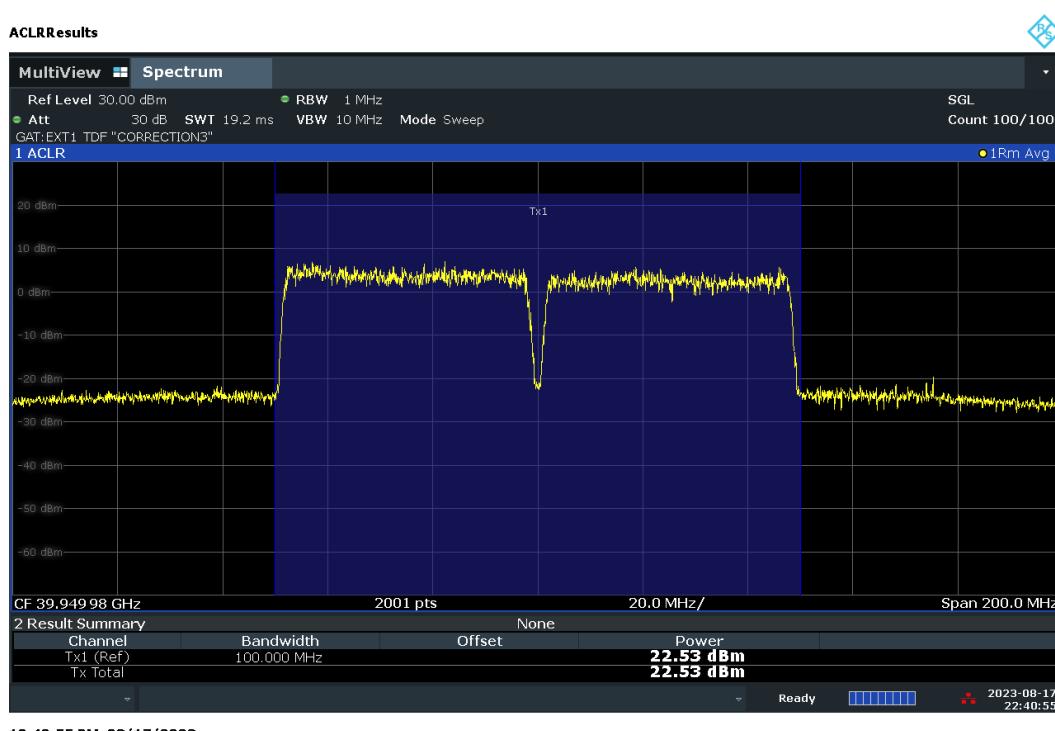


**Plot 7-52. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 60 of 147

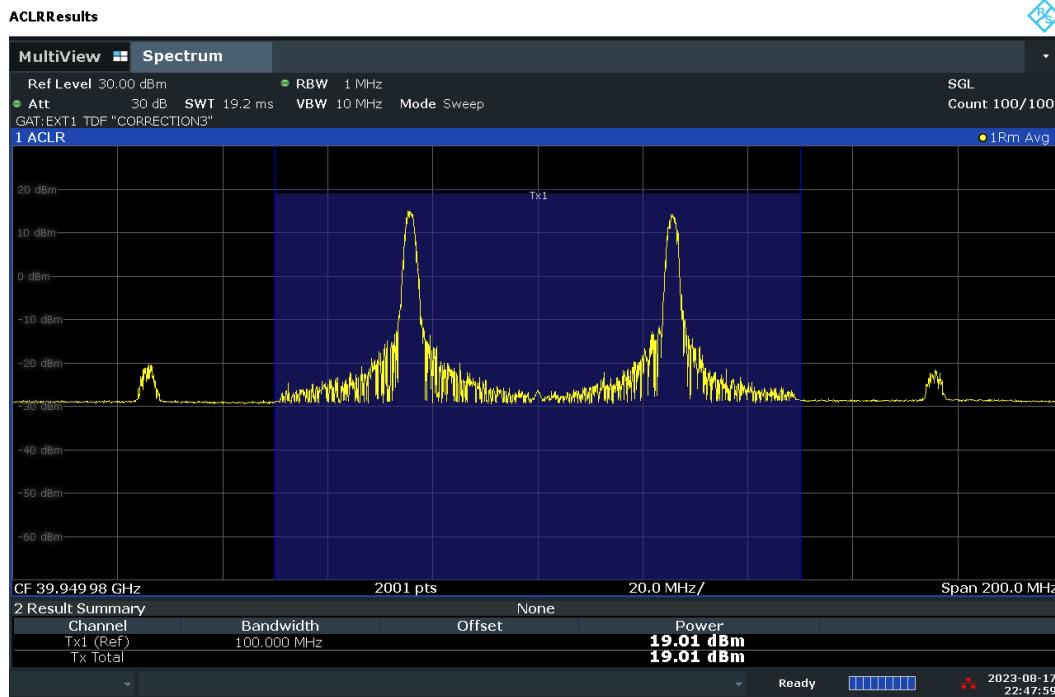


**Plot 7-53. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – 1 RB)**



**Plot 7-54. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 61 of 147	



10:48:00 PM 08/17/2023

**Plot 7-55. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – QPSK – High Ch. – 1 RB)**



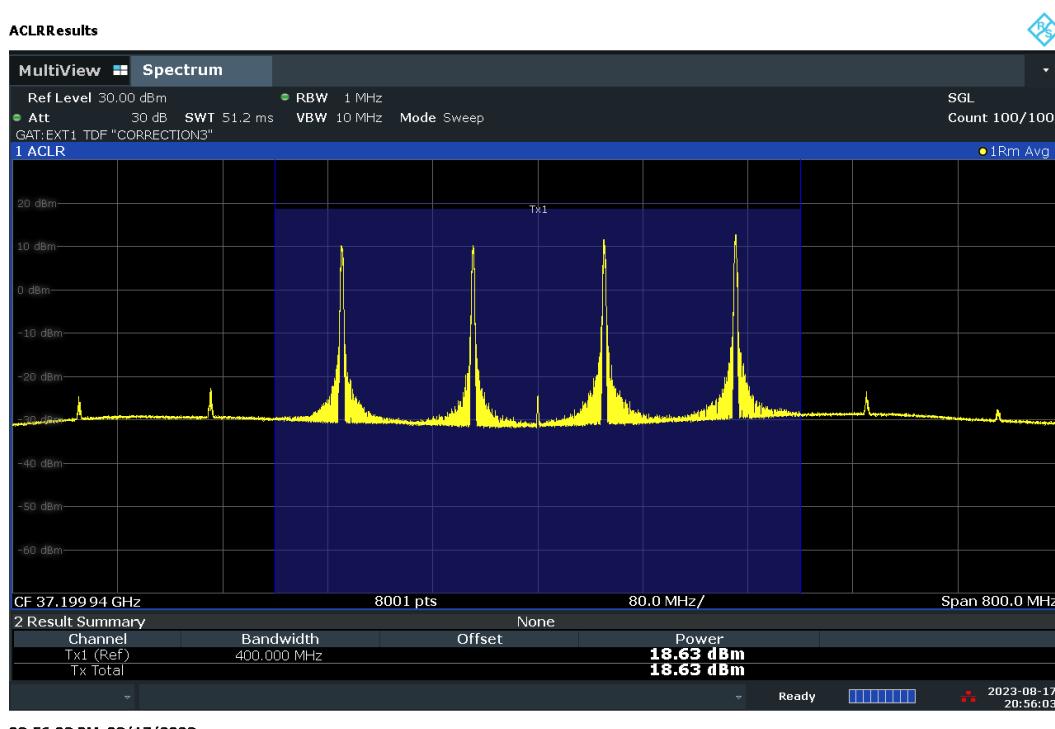
10:41:45 PM 08/17/2023

**Plot 7-56. Conducted Power Plot – DFT-S – V-DL Polarization (50MHz-2CC – 16QAM – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 62 of 147

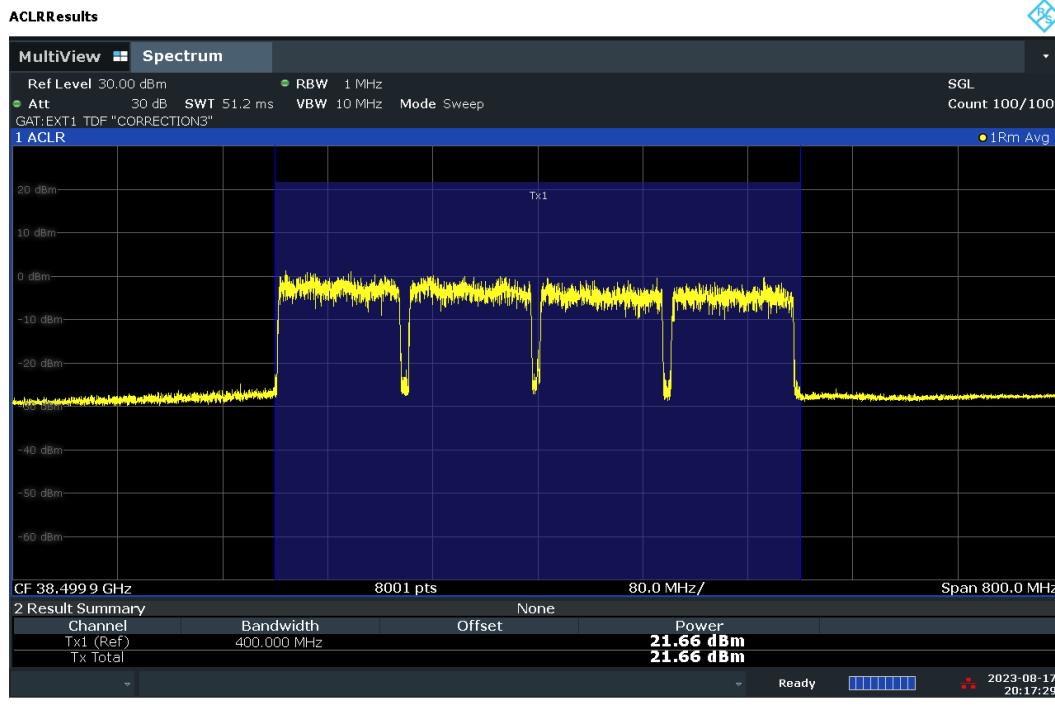


**Plot 7-57. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – Low Ch. – Full RB)**

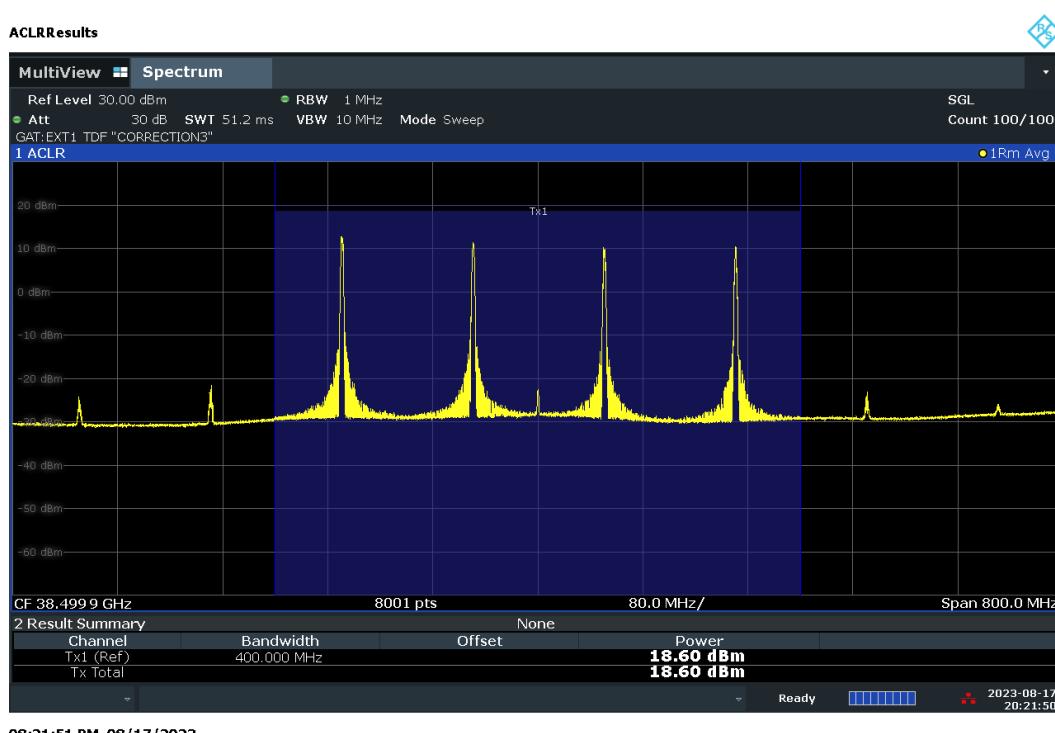


**Plot 7-58. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 63 of 147	

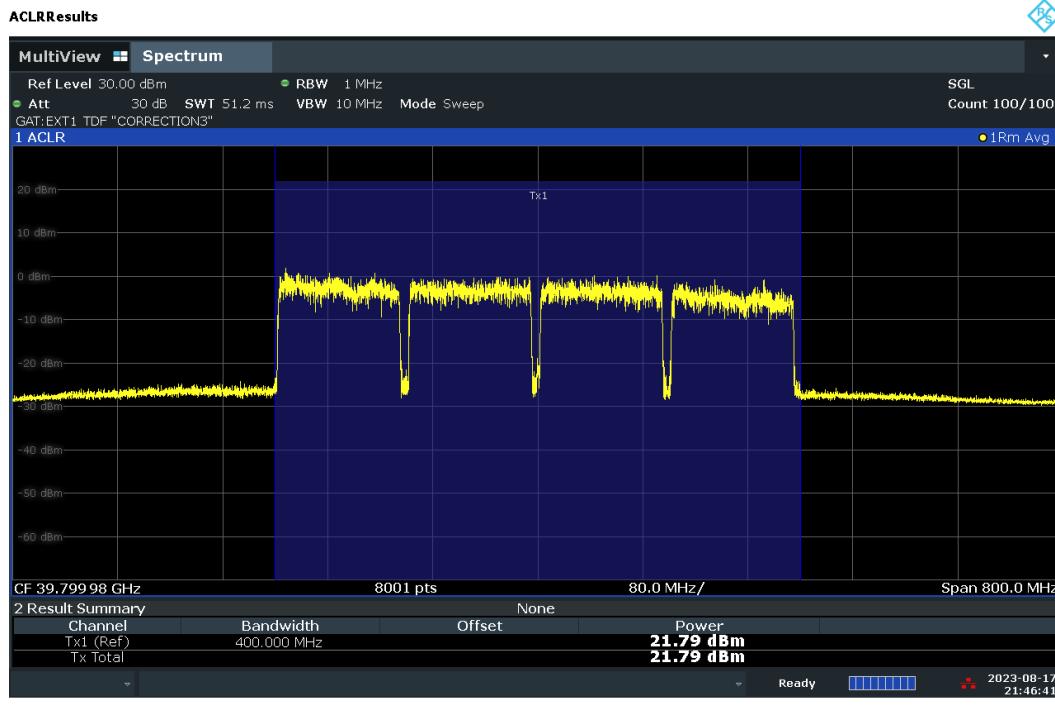


**Plot 7-59. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – Full RB)**

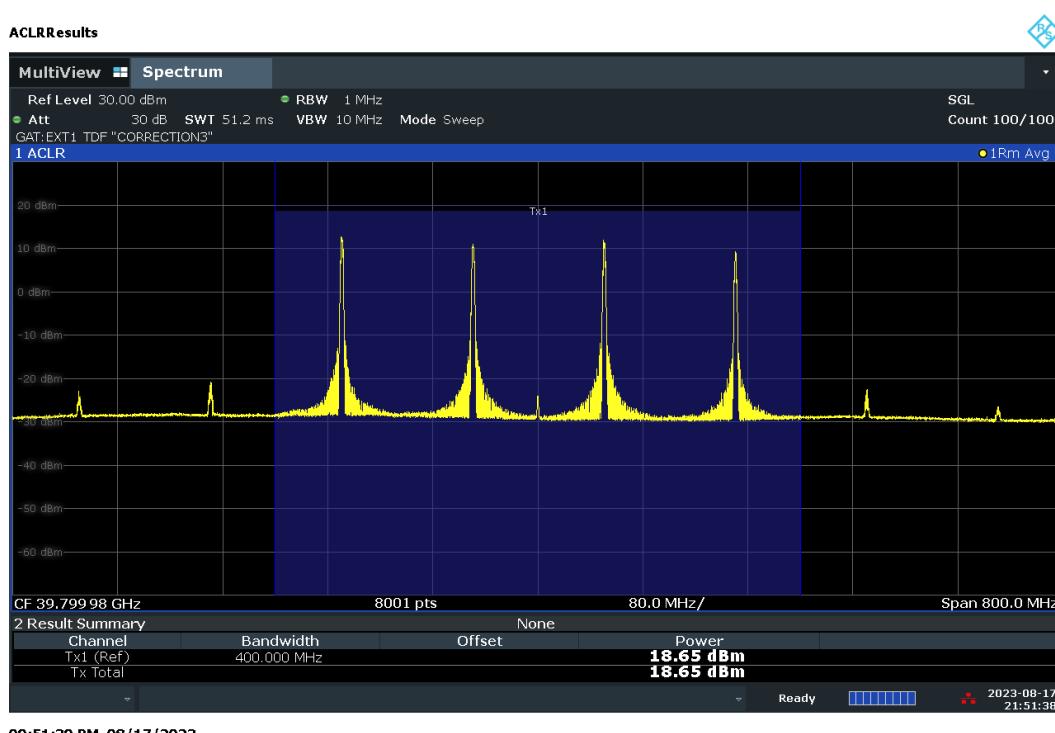


**Plot 7-60. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 64 of 147



**Plot 7-61. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – High Ch. – Full RB)**



**Plot 7-62. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – QPSK – High Ch. – 1 RB)**

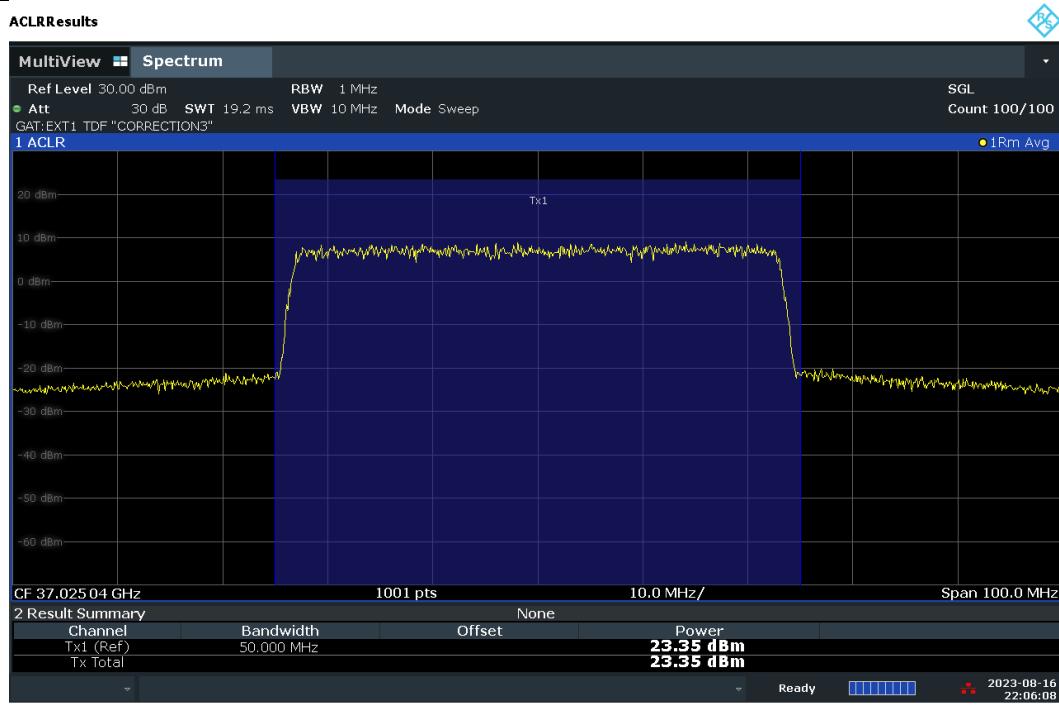
FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 65 of 147	



**Plot 7-63. Conducted Power Plot – DFT-S – V-DL Polarization (100MHz-4CC – 16QAM – High Ch. – Full RB)**

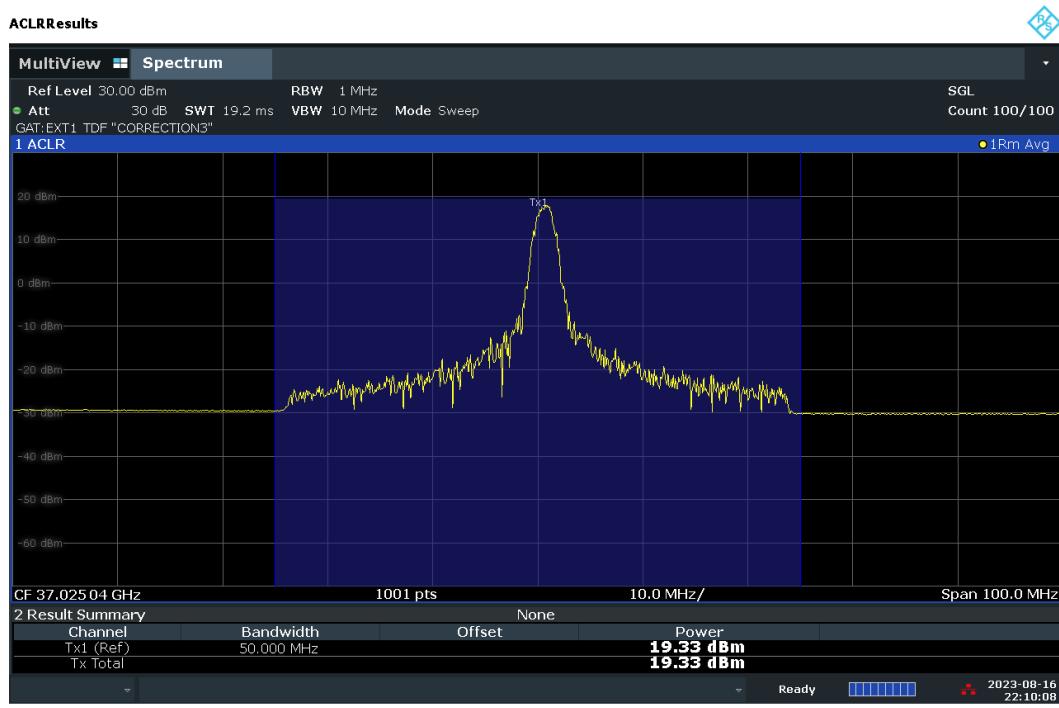
FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 66 of 147	

## H-DL Polarization



10:06:09 PM 08/16/2023

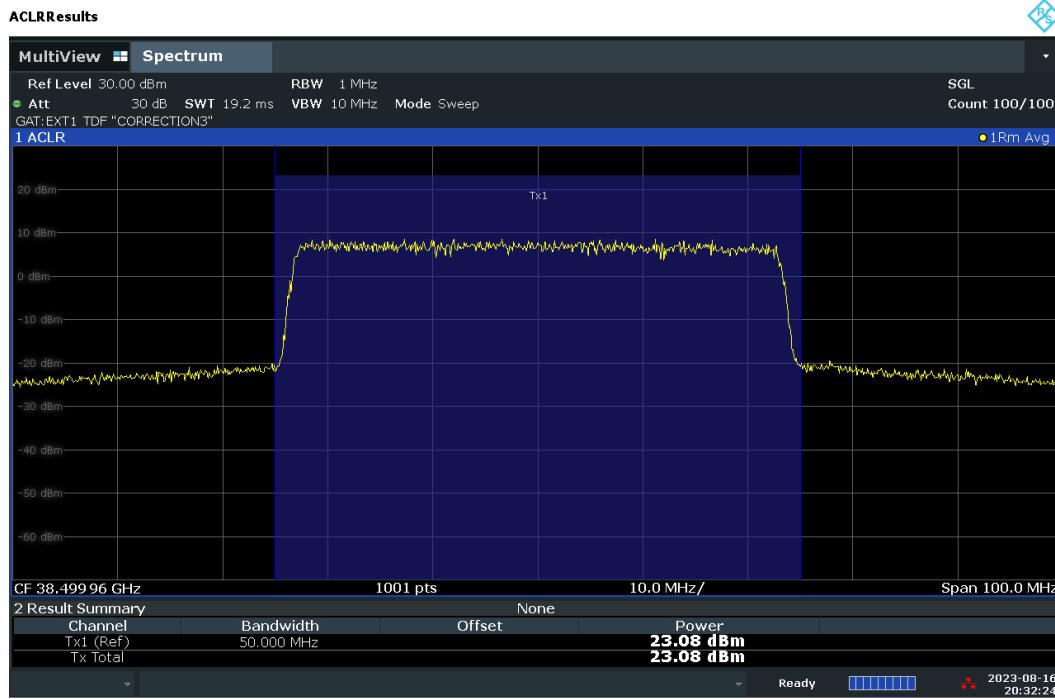
**Plot 7-64. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – Low Ch. – Full RB)**



10:10:09 PM 08/16/2023

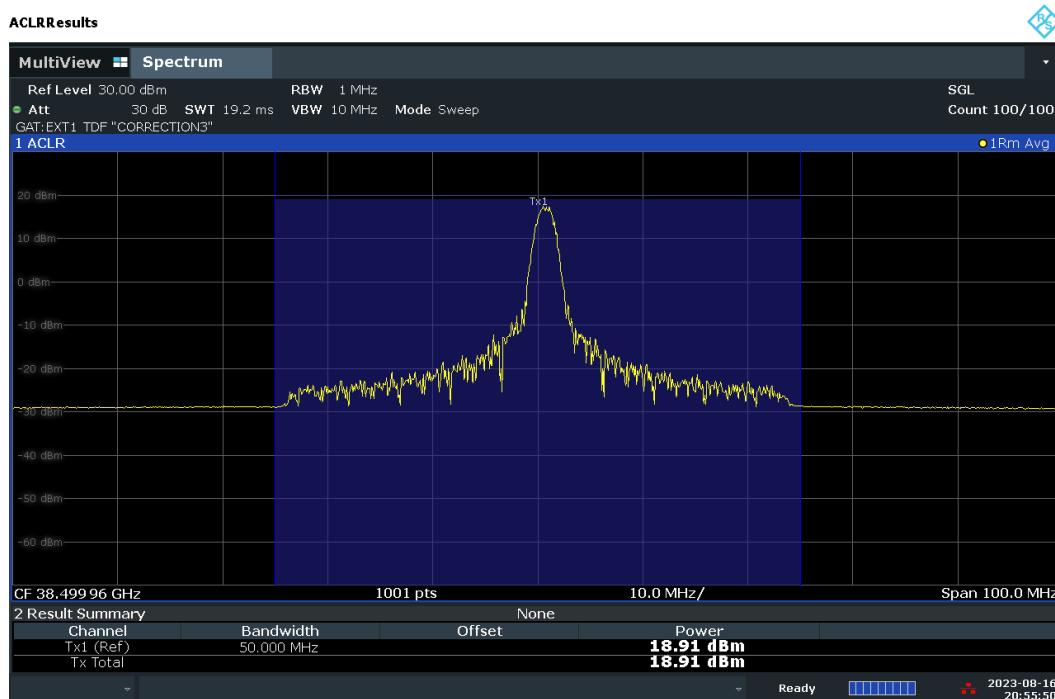
**Plot 7-65. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39	 <b>element</b>	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater		Page 67 of 147



08:32:25 PM 08/16/2023

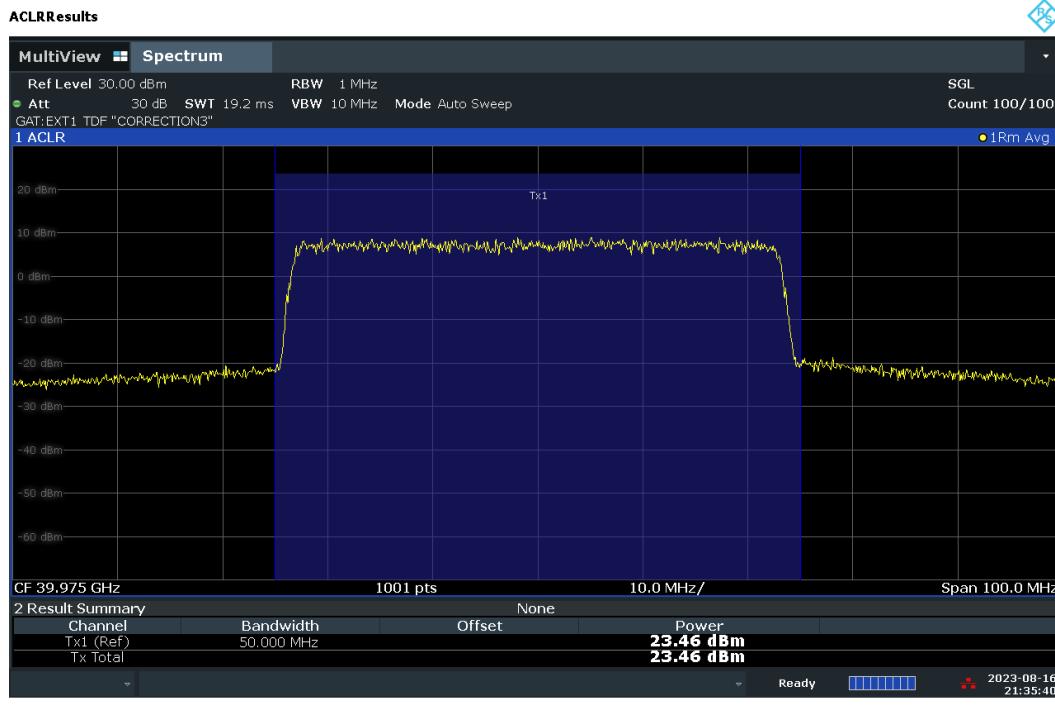
**Plot 7-66. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – Full RB)**



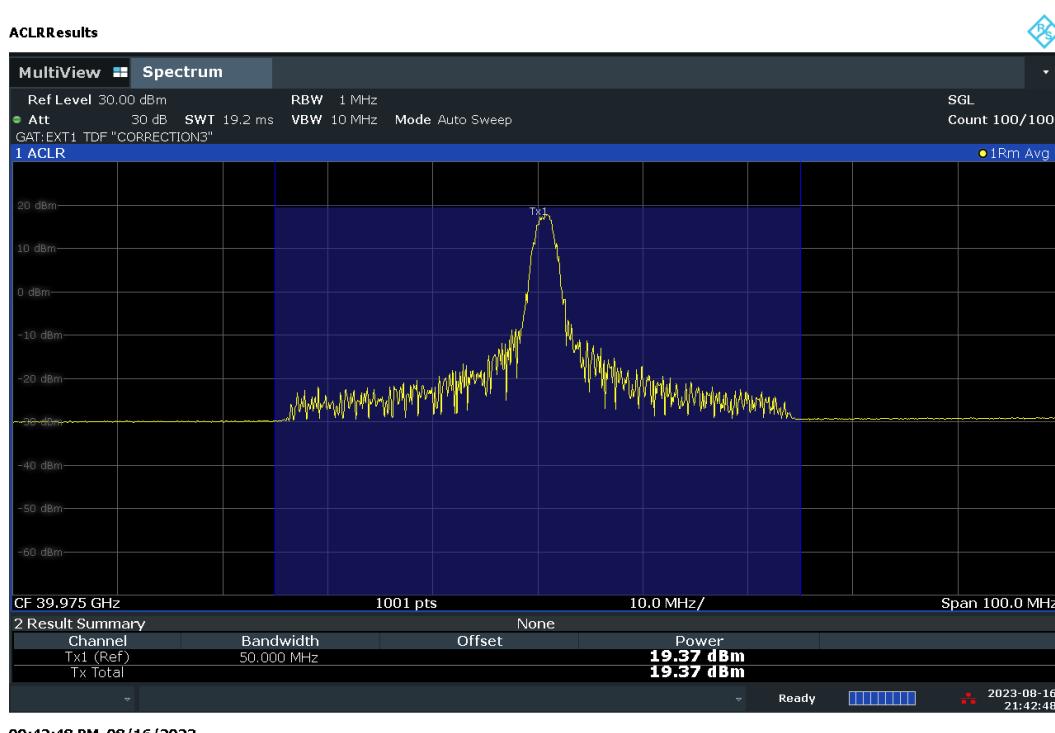
08:55:50 PM 08/16/2023

**Plot 7-67. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 68 of 147

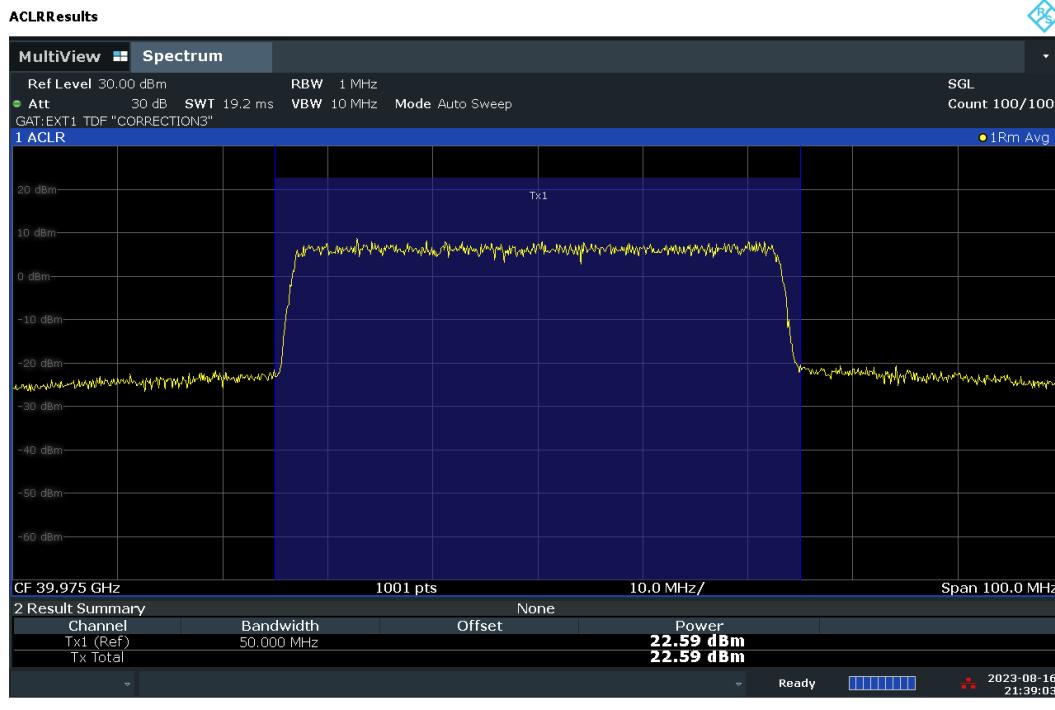


**Plot 7-68. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – High Ch. – Full RB)**



**Plot 7-69. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – QPSK – High Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 69 of 147	

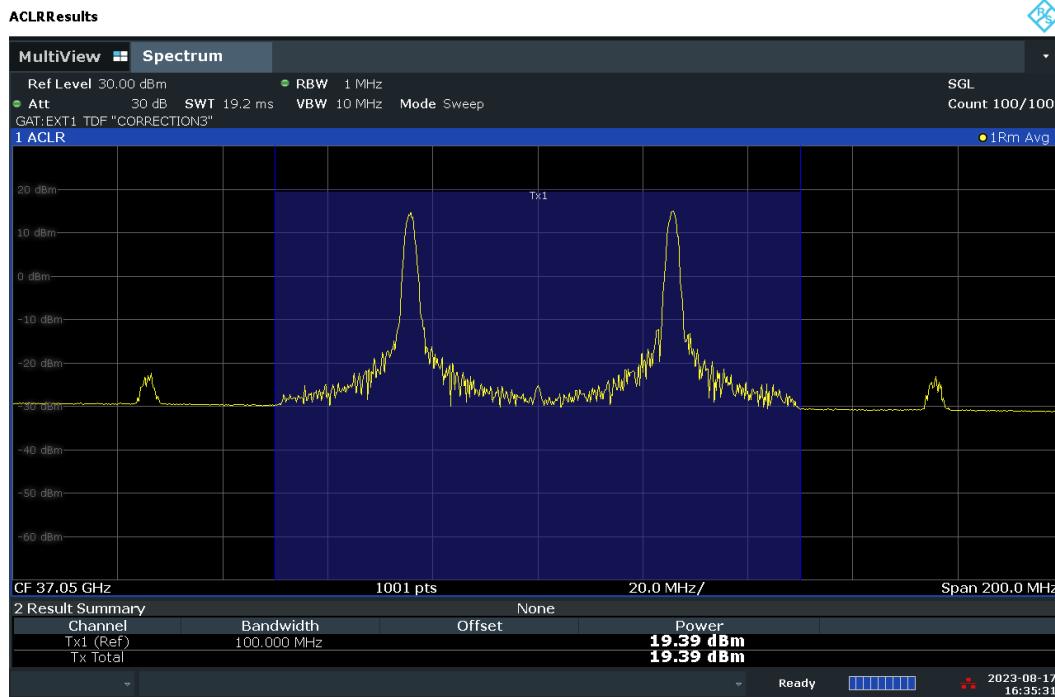


**Plot 7-70. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-1CC – 16QAM – High Ch. – Full RB)**



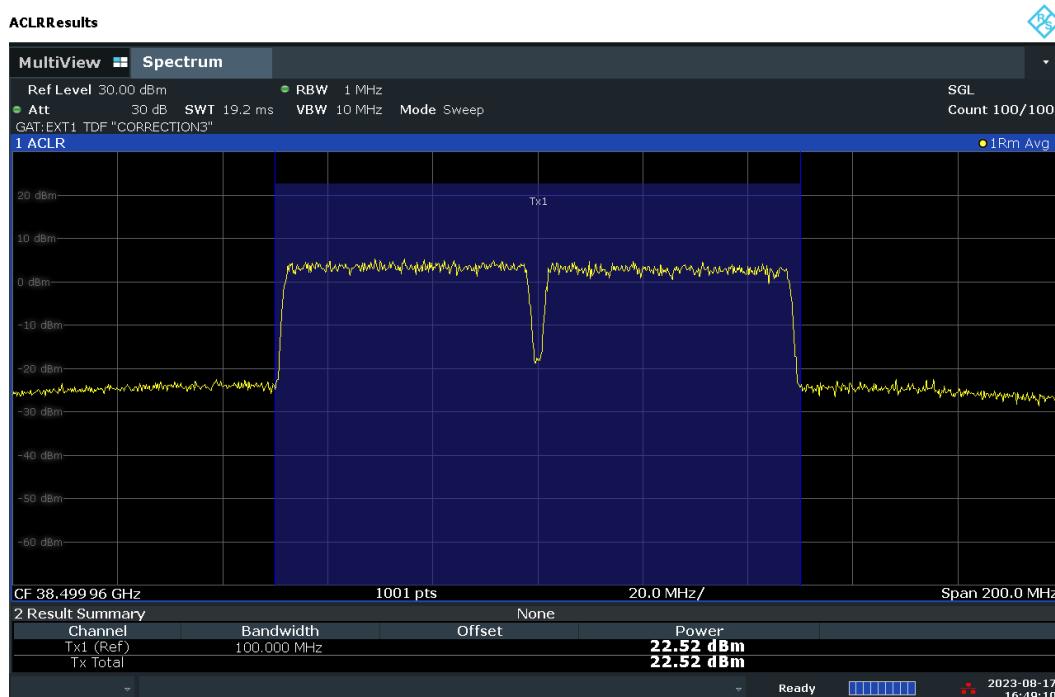
**Plot 7-71. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – Low Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 70 of 147	



04:35:31 PM 08/17/2023

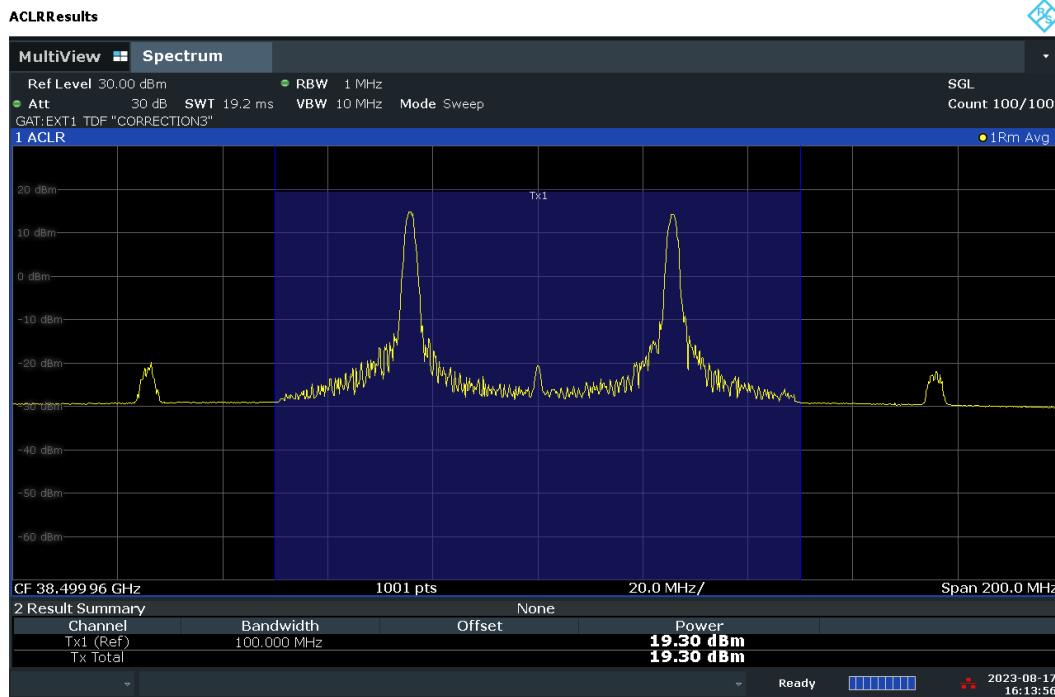
**Plot 7-72. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – Low Ch. – 1RB)**



04:49:11 PM 08/17/2023

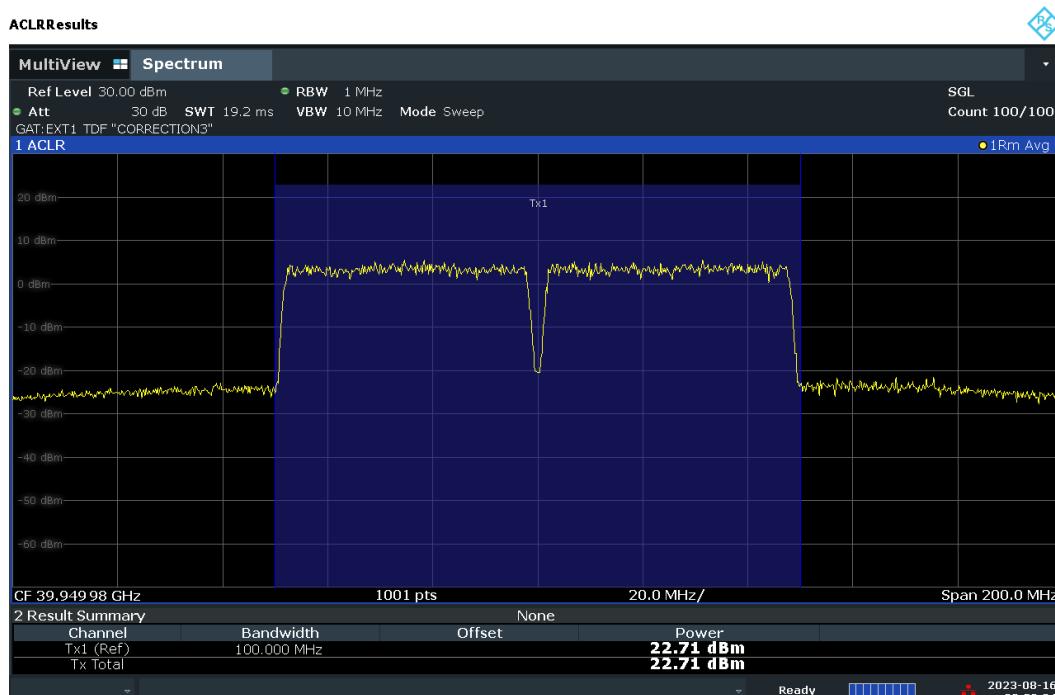
**Plot 7-73. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 71 of 147



04:13:57 PM 08/17/2023

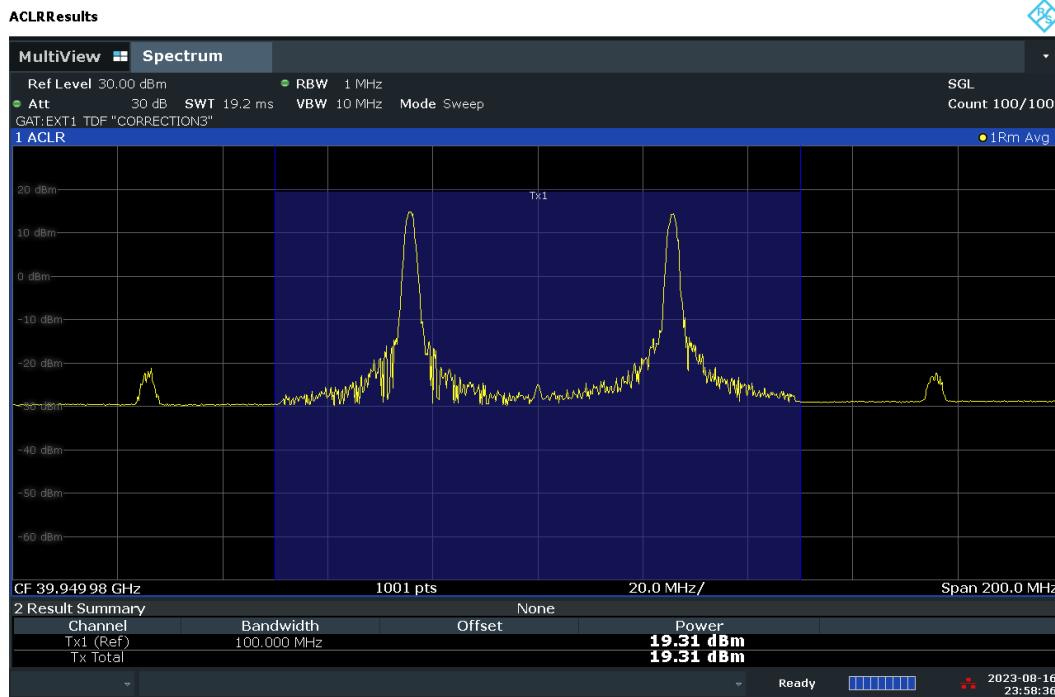
**Plot 7-74. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – 1 RB)**



11:52:05 PM 08/16/2023

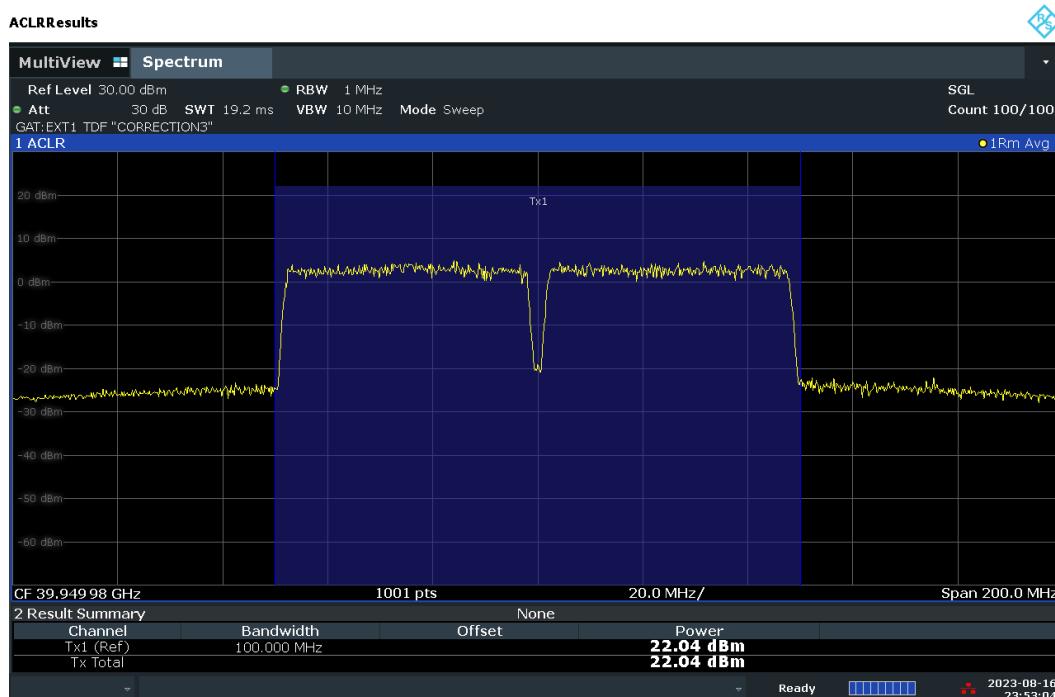
**Plot 7-75. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 72 of 147	



11:58:37 PM 08/16/2023

**Plot 7-76. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – QPSK – High Ch. – 1 RB)**



11:53:04 PM 08/16/2023

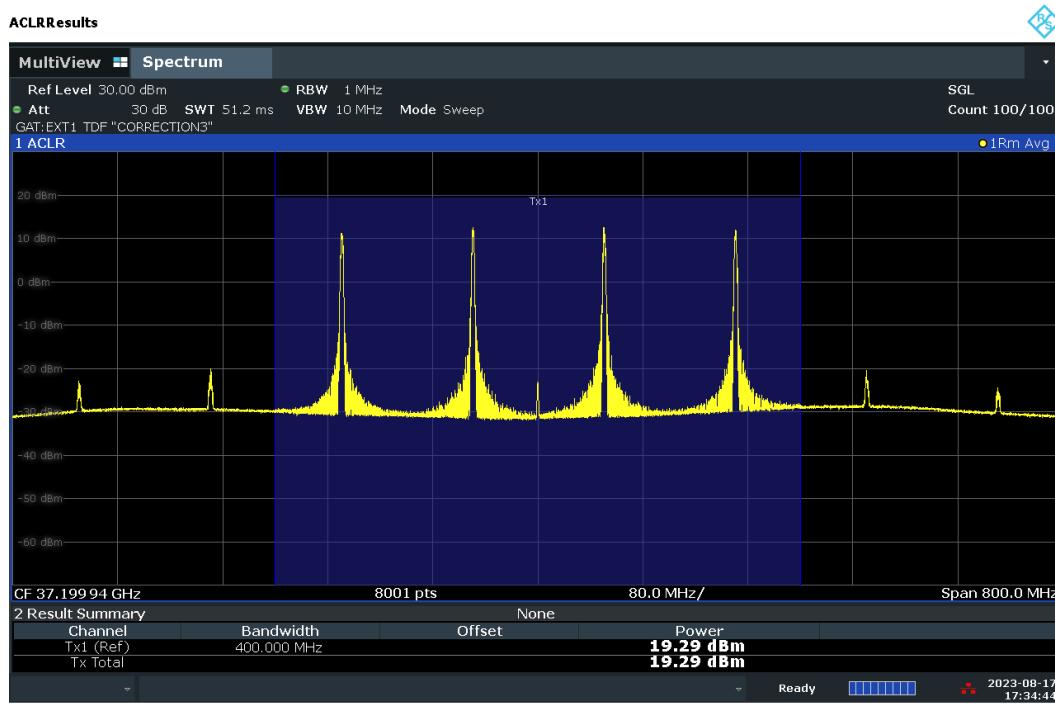
**Plot 7-77. Conducted Power Plot – DFT-S – H-DL Polarization (50MHz-2CC – 16QAM – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 73 of 147	



05:21:33 PM 08/17/2023

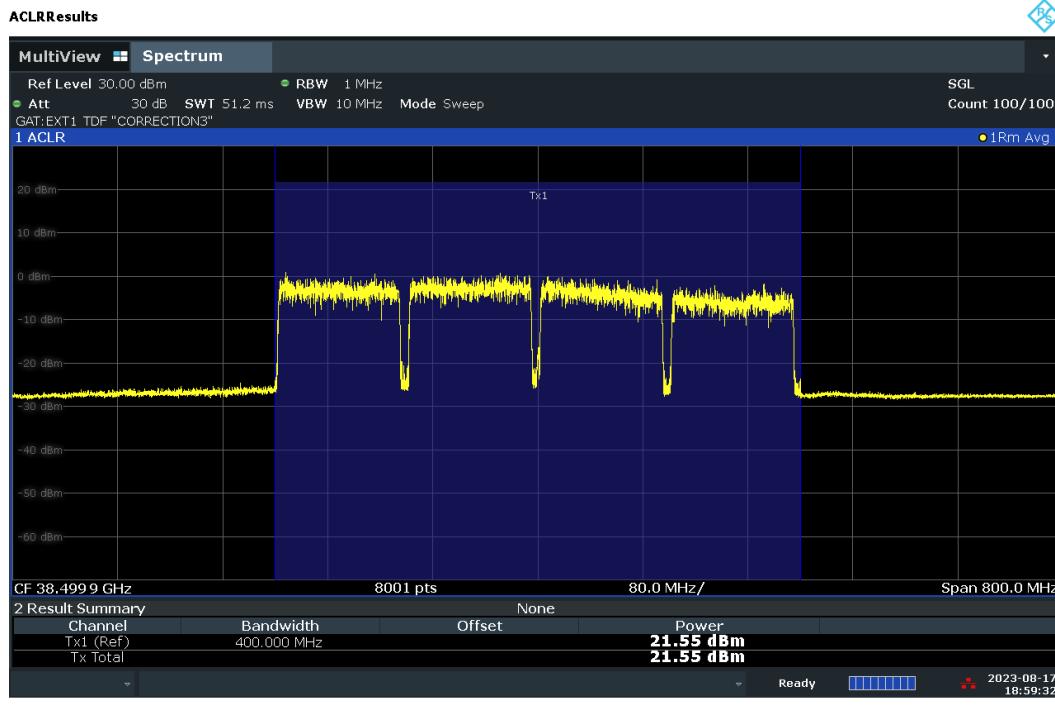
**Plot 7-78. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – Low Ch. – Full RB)**



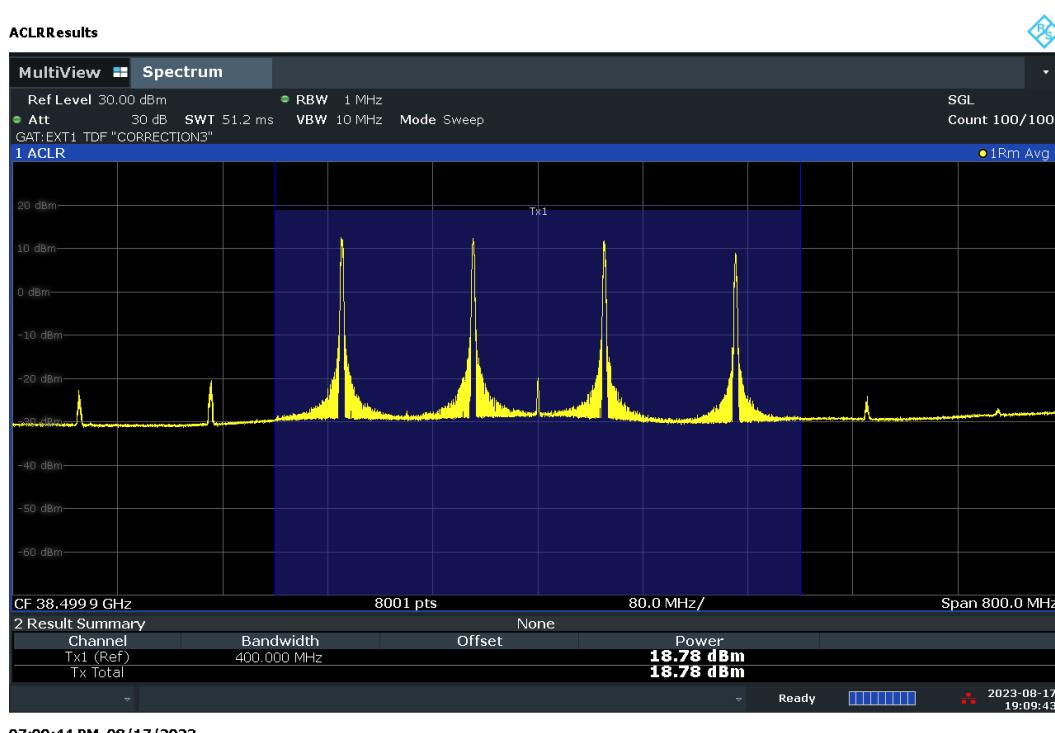
05:34:44 PM 08/17/2023

**Plot 7-79. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 74 of 147	

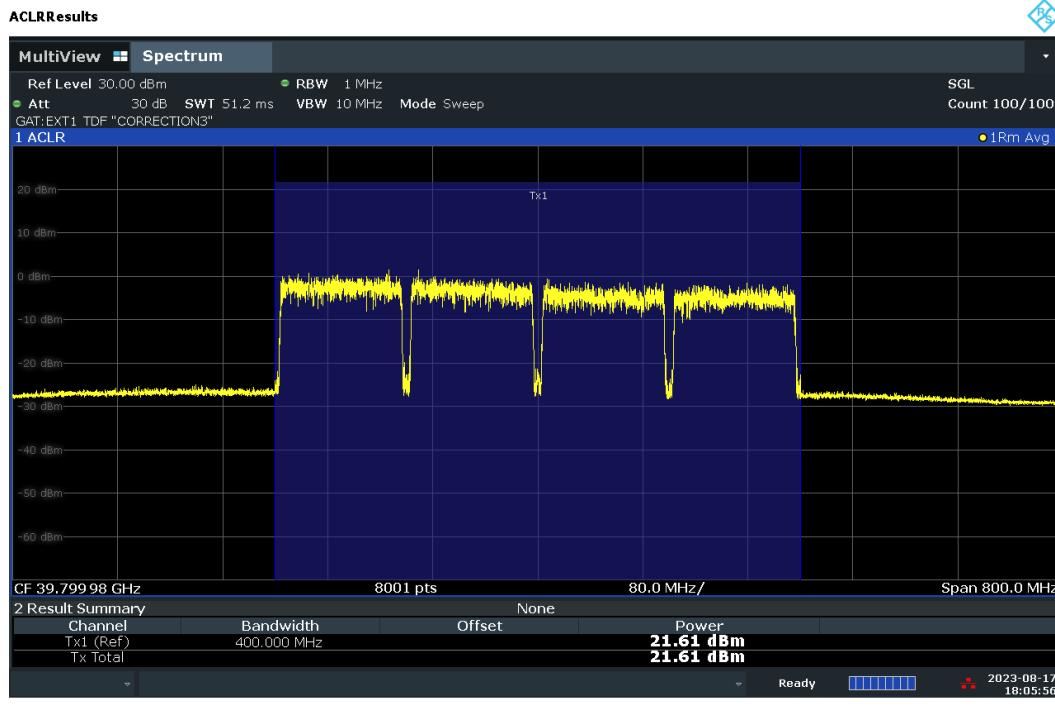


**Plot 7-80. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – Full RB)**

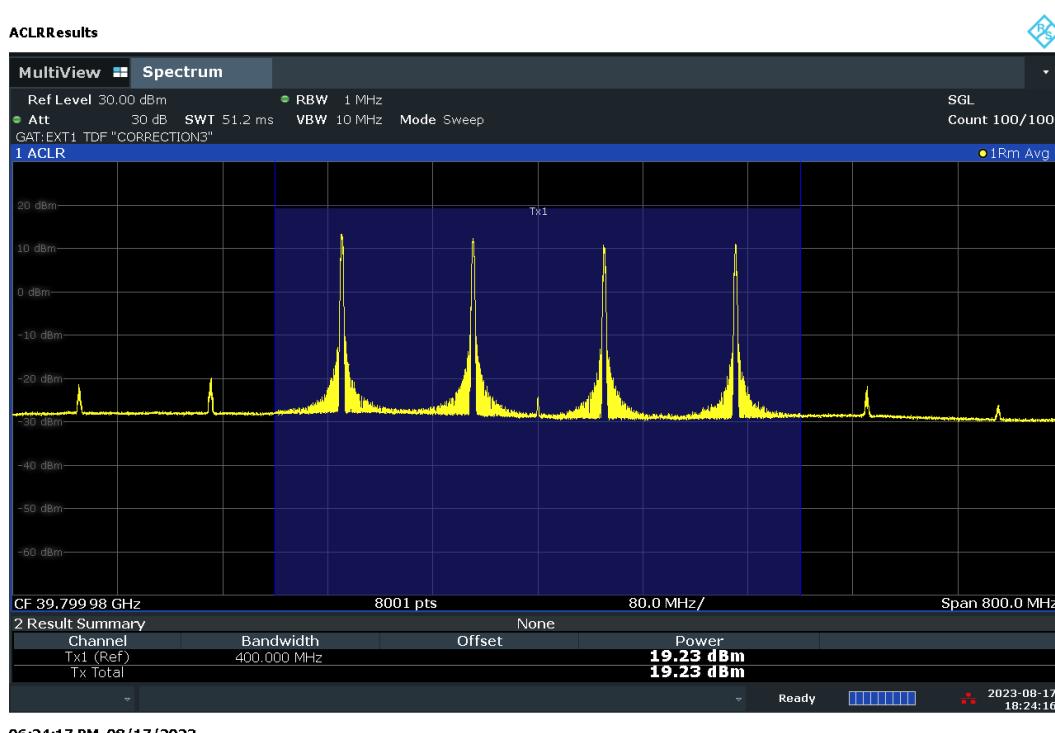


**Plot 7-81. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 75 of 147	

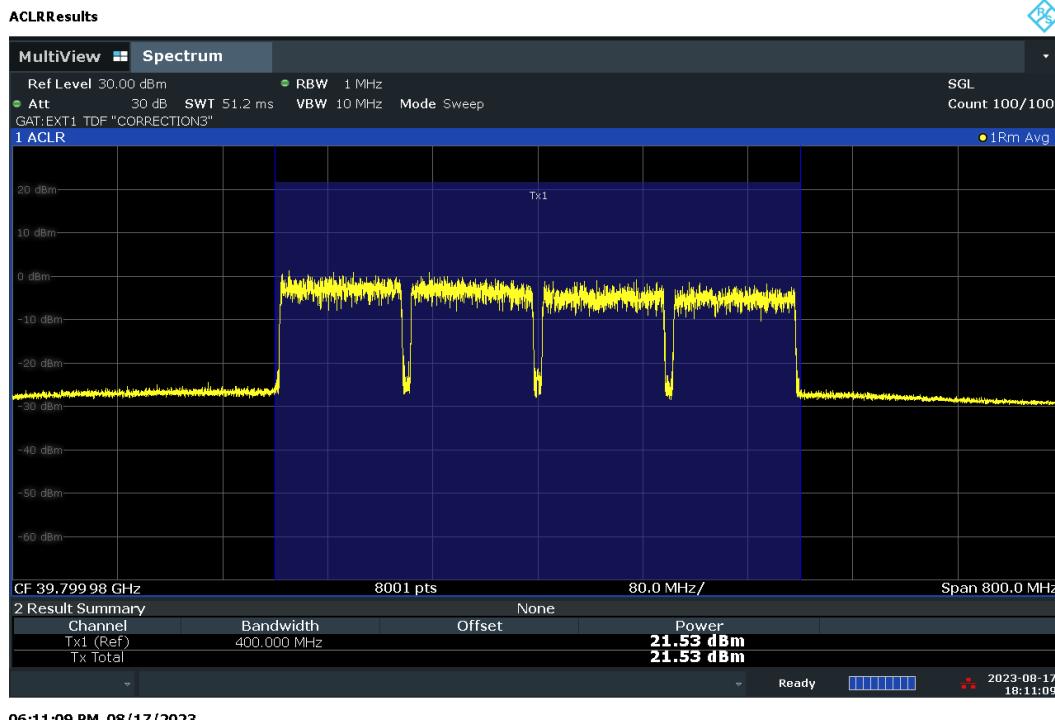


**Plot 7-82. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – High Ch. – Full RB)**



**Plot 7-83. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – QPSK – High Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 76 of 147



**Plot 7-84. Conducted Power Plot – DFT-S – H-DL Polarization (100MHz-4CC – 16QAM – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 77 of 147

## Band n260 – SU (CP-OFDM)

Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	Conducted Power [dBm]	Tx Ant Gain [dBi]	EIRP [dBm]
Low	37025.04	V-DL	CP-OFDM	QPSK	50	1	Full	21.04	13.00	34.04
Low	37025.04	V-DL	CP-OFDM	QPSK	50	1	1 / 16	16.80	13.00	29.80
Low	37025.04	V-DL	CP-OFDM	16-QAM	50	1	Full	20.44	13.00	33.44
Mid	38499.96	V-DL	CP-OFDM	QPSK	50	1	Full	21.39	13.00	34.39
Mid	38499.96	V-DL	CP-OFDM	QPSK	50	1	1 / 16	16.99	13.00	29.99
Mid	38499.96	V-DL	CP-OFDM	16-QAM	50	1	Full	20.83	13.00	33.83
High	39975.00	V-DL	CP-OFDM	QPSK	50	1	Full	21.38	13.00	34.38
High	39975.00	V-DL	CP-OFDM	QPSK	50	1	1 / 16	16.96	13.00	29.96
High	39975.00	V-DL	CP-OFDM	16-QAM	50	1	Full	20.76	13.00	33.76
Low	37050.00	V-DL	CP-OFDM	QPSK	50	2	Full	21.50	13.00	34.50
Low	37050.00	V-DL	CP-OFDM	QPSK	50	2	1 / 16	17.78	13.00	30.78
Low	37050.00	V-DL	CP-OFDM	16-QAM	50	2	Full	21.08	13.00	34.08
Mid	38499.96	V-DL	CP-OFDM	QPSK	50	2	Full	21.61	13.00	34.61
Mid	38499.96	V-DL	CP-OFDM	QPSK	50	2	1 / 16	17.94	13.00	30.94
Mid	38499.96	V-DL	CP-OFDM	16-QAM	50	2	Full	21.51	13.00	34.51
High	39949.98	V-DL	CP-OFDM	QPSK	50	2	Full	21.74	13.00	34.74
High	39949.98	V-DL	CP-OFDM	QPSK	50	2	1 / 16	17.93	13.00	30.93
High	39949.98	V-DL	CP-OFDM	16-QAM	50	2	Full	21.50	13.00	34.50
Low	37199.94	V-DL	CP-OFDM	QPSK	100	4	Full	21.52	13.00	34.52
Low	37199.94	V-DL	CP-OFDM	QPSK	100	4	1 / 33	17.78	13.00	30.78
Low	37199.94	V-DL	CP-OFDM	16-QAM	100	4	Full	21.38	13.00	34.38
Mid	38499.96	V-DL	CP-OFDM	QPSK	100	4	Full	21.51	13.00	34.51
Mid	38499.96	V-DL	CP-OFDM	QPSK	100	4	1 / 33	17.86	13.00	30.86
Mid	38499.96	V-DL	CP-OFDM	16-QAM	100	4	Full	21.33	13.00	34.33
High	39799.98	V-DL	CP-OFDM	QPSK	100	4	Full	21.60	13.00	34.60
High	39799.98	V-DL	CP-OFDM	QPSK	100	4	1 / 33	17.73	13.00	30.73
High	39799.98	V-DL	CP-OFDM	16-QAM	100	4	Full	21.43	13.00	34.43

Table 7-17. NR Band n260 - Conducted Power and EIRP – CP – V-DL Polarization

Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	Conducted Power [dBm]	Tx Ant Gain [dBi]	EIRP [dBm]
Low	37025.04	H-DL	CP-OFDM	QPSK	50	1	Full	21.17	13.00	34.17
Low	37025.04	H-DL	CP-OFDM	QPSK	50	1	1 / 16	16.82	13.00	29.82
Low	37025.04	H-DL	CP-OFDM	16-QAM	50	1	Full	20.96	13.00	33.96
Mid	38499.96	H-DL	CP-OFDM	QPSK	50	1	Full	21.03	13.00	34.03
Mid	38499.96	H-DL	CP-OFDM	QPSK	50	1	1 / 16	16.87	13.00	29.87
Mid	38499.96	H-DL	CP-OFDM	16-QAM	50	1	Full	20.69	13.00	33.69
High	39975.00	H-DL	CP-OFDM	QPSK	50	1	Full	21.64	13.00	34.64
High	39975.00	H-DL	CP-OFDM	QPSK	50	1	1 / 16	16.74	13.00	29.74
High	39975.00	H-DL	CP-OFDM	16-QAM	50	1	Full	21.31	13.00	34.31
Low	37050.00	H-DL	CP-OFDM	QPSK	50	2	Full	22.01	13.00	35.01
Low	37050.00	H-DL	CP-OFDM	QPSK	50	2	1 / 16	17.90	13.00	30.90
Low	37050.00	H-DL	CP-OFDM	16-QAM	50	2	Full	21.47	13.00	34.47
Mid	38499.96	H-DL	CP-OFDM	QPSK	50	2	Full	21.58	13.00	34.58
Mid	38499.96	H-DL	CP-OFDM	QPSK	50	2	1 / 16	17.87	13.00	30.87
Mid	38499.96	H-DL	CP-OFDM	16-QAM	50	2	Full	21.27	13.00	34.27
High	39949.98	H-DL	CP-OFDM	QPSK	50	2	Full	21.69	13.00	34.69
High	39949.98	H-DL	CP-OFDM	QPSK	50	2	1 / 16	17.89	13.00	30.89
High	39949.98	H-DL	CP-OFDM	16-QAM	50	2	Full	21.45	13.00	34.45
Low	37199.94	H-DL	CP-OFDM	QPSK	100	4	Full	21.52	13.00	34.52
Low	37199.94	H-DL	CP-OFDM	QPSK	100	4	1 / 33	17.89	13.00	30.89
Low	37199.94	H-DL	CP-OFDM	16-QAM	100	4	Full	21.36	13.00	34.36
Mid	38499.96	H-DL	CP-OFDM	QPSK	100	4	Full	21.51	13.00	34.51
Mid	38499.96	H-DL	CP-OFDM	QPSK	100	4	1 / 33	17.91	13.00	30.91
Mid	38499.96	H-DL	CP-OFDM	16-QAM	100	4	Full	21.45	13.00	34.45
High	39799.98	H-DL	CP-OFDM	QPSK	100	4	Full	21.54	13.00	34.54
High	39799.98	H-DL	CP-OFDM	QPSK	100	4	1 / 33	17.99	13.00	30.99
High	39799.98	H-DL	CP-OFDM	16-QAM	100	4	Full	21.45	13.00	34.45

Table 7-18. NR Band n260 - Conducted Power and EIRP – CP – H-DL Polarization

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)				Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater			Page 78 of 147
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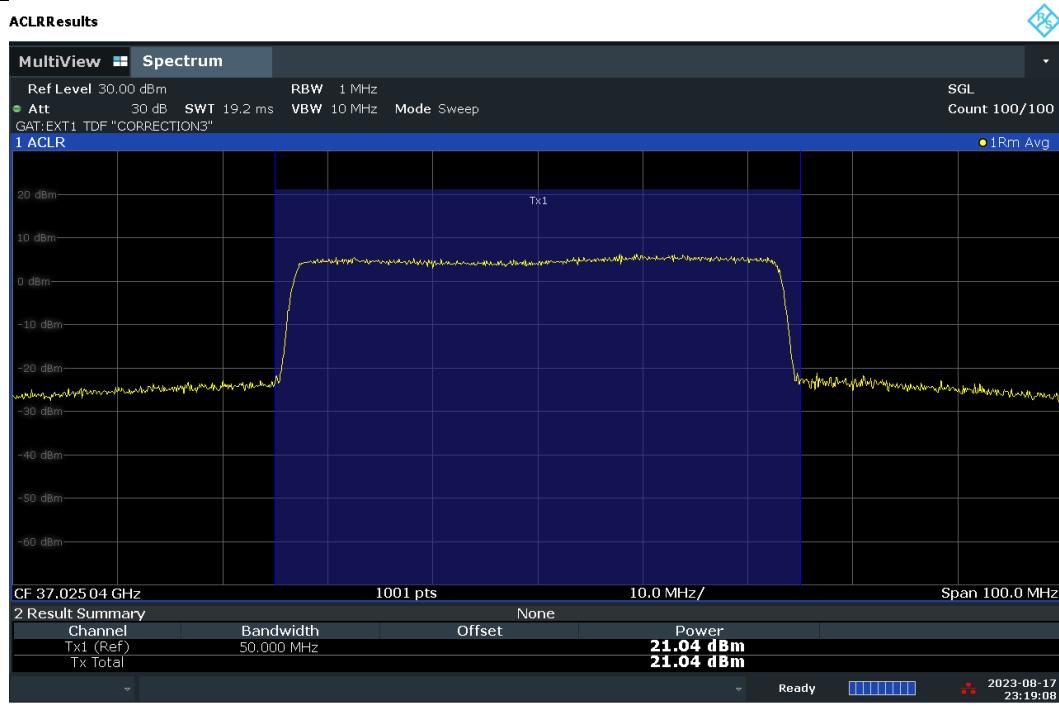
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Channel	Center Frequency [MHz]	Ant. Pol.	Transmission Scheme	Modulation	Bandwidth [MHz]	# of Carriers [CCs]	RB Size/Offset	MIMO Conducted Power [dBm]	Tx Ant Gain [dBi]	MIMO EIRP [dBm]
Low	37025.04	MIMO	CP-OFDM	QPSK	50	1	Full	24.11	13.00	37.11
Low	37025.04	MIMO	CP-OFDM	QPSK	50	1	1 / 16	19.82	13.00	32.82
Low	37025.04	MIMO	CP-OFDM	16-QAM	50	1	Full	23.72	13.00	36.72
Mid	38499.96	MIMO	CP-OFDM	QPSK	50	1	Full	24.22	13.00	37.22
Mid	38499.96	MIMO	CP-OFDM	QPSK	50	1	1 / 16	19.94	13.00	32.94
Mid	38499.96	MIMO	CP-OFDM	16-QAM	50	1	Full	23.77	13.00	36.77
High	39975.00	MIMO	CP-OFDM	QPSK	50	1	Full	24.52	13.00	37.52
High	39975.00	MIMO	CP-OFDM	QPSK	50	1	1 / 16	19.86	13.00	32.86
High	39975.00	MIMO	CP-OFDM	16-QAM	50	1	Full	24.06	13.00	37.06
Low	37050.00	MIMO	CP-OFDM	QPSK	50	2	Full	24.77	13.00	37.77
Low	37050.00	MIMO	CP-OFDM	QPSK	50	2	1 / 16	20.85	13.00	33.85
Low	37050.00	MIMO	CP-OFDM	16-QAM	50	2	Full	24.29	13.00	37.29
Mid	38499.96	MIMO	CP-OFDM	QPSK	50	2	Full	24.60	13.00	37.60
Mid	38499.96	MIMO	CP-OFDM	QPSK	50	2	1 / 16	20.92	13.00	33.92
Mid	38499.96	MIMO	CP-OFDM	16-QAM	50	2	Full	24.40	13.00	37.40
High	39949.98	MIMO	CP-OFDM	QPSK	50	2	Full	24.73	13.00	37.73
High	39949.98	MIMO	CP-OFDM	QPSK	50	2	1 / 16	20.92	13.00	33.92
High	39949.98	MIMO	CP-OFDM	16-QAM	50	2	Full	24.48	13.00	37.48
Low	37199.94	MIMO	CP-OFDM	QPSK	100	4	Full	24.53	13.00	37.53
Low	37199.94	MIMO	CP-OFDM	QPSK	100	4	1 / 33	20.85	13.00	33.85
Low	37199.94	MIMO	CP-OFDM	16-QAM	100	4	Full	24.38	13.00	37.38
Mid	38499.96	MIMO	CP-OFDM	QPSK	100	4	Full	24.52	13.00	37.52
Mid	38499.96	MIMO	CP-OFDM	QPSK	100	4	1 / 33	20.90	13.00	33.90
Mid	38499.96	MIMO	CP-OFDM	16-QAM	100	4	Full	24.40	13.00	37.40
High	39799.98	MIMO	CP-OFDM	QPSK	100	4	Full	24.58	13.00	37.58
High	39799.98	MIMO	CP-OFDM	QPSK	100	4	1 / 33	20.87	13.00	33.87
High	39799.98	MIMO	CP-OFDM	16-QAM	100	4	Full	24.45	13.00	37.45

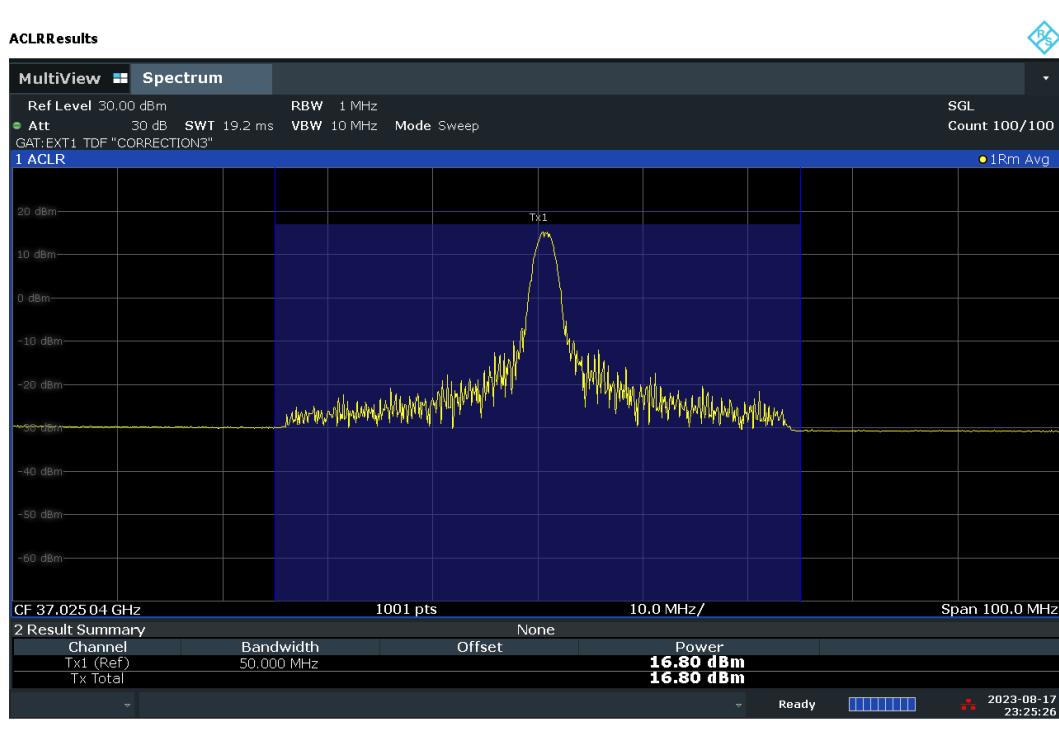
**Table 7-19. NR Band n260 - Conducted Power – CP – MIMO**

FCC ID: 2AUVU-5620-23-39	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 79 of 147	

## V-DL Polarization

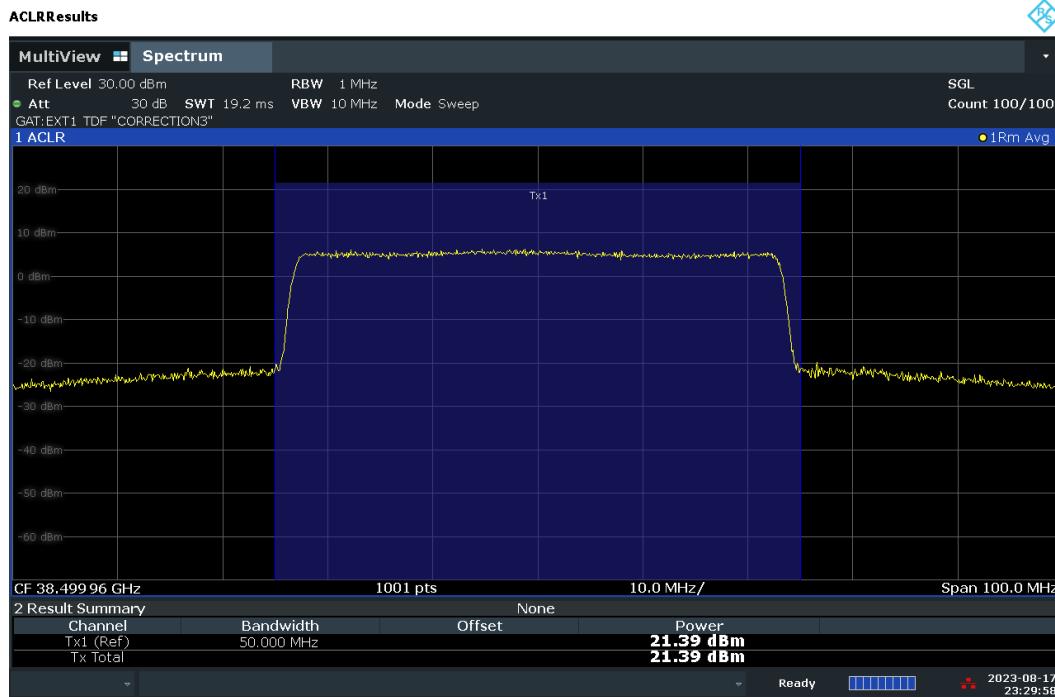


**Plot 7-85. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – Low Ch. – Full RB)**



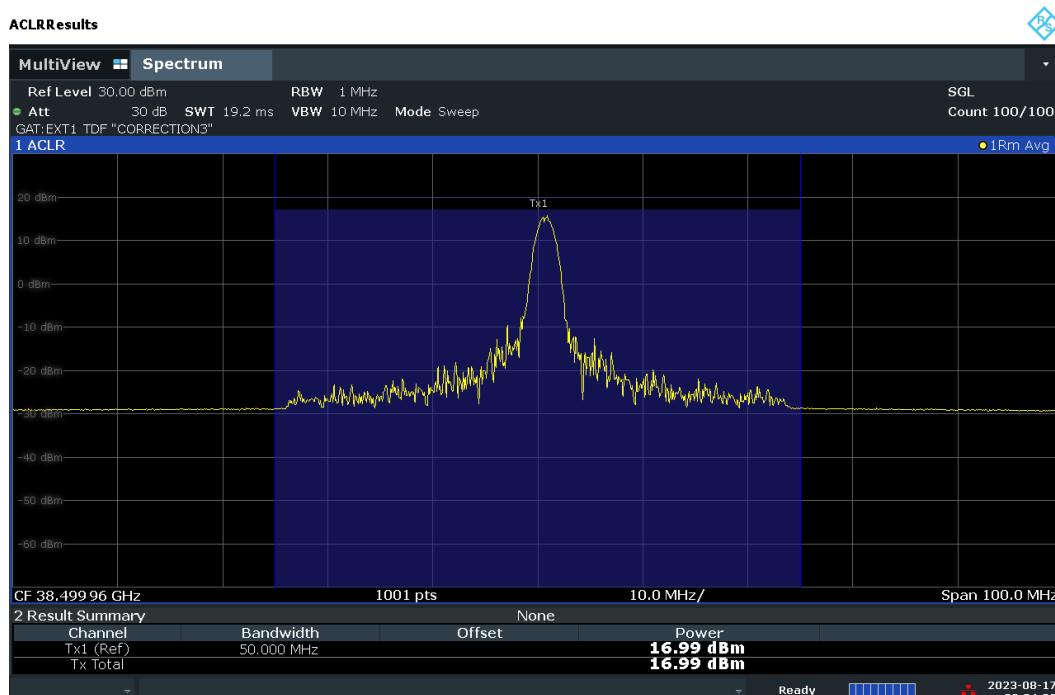
**Plot 7-86. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 80 of 147	



11:29:59 PM 08/17/2023

**Plot 7-87. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – Full RB)**



11:34:38 PM 08/17/2023

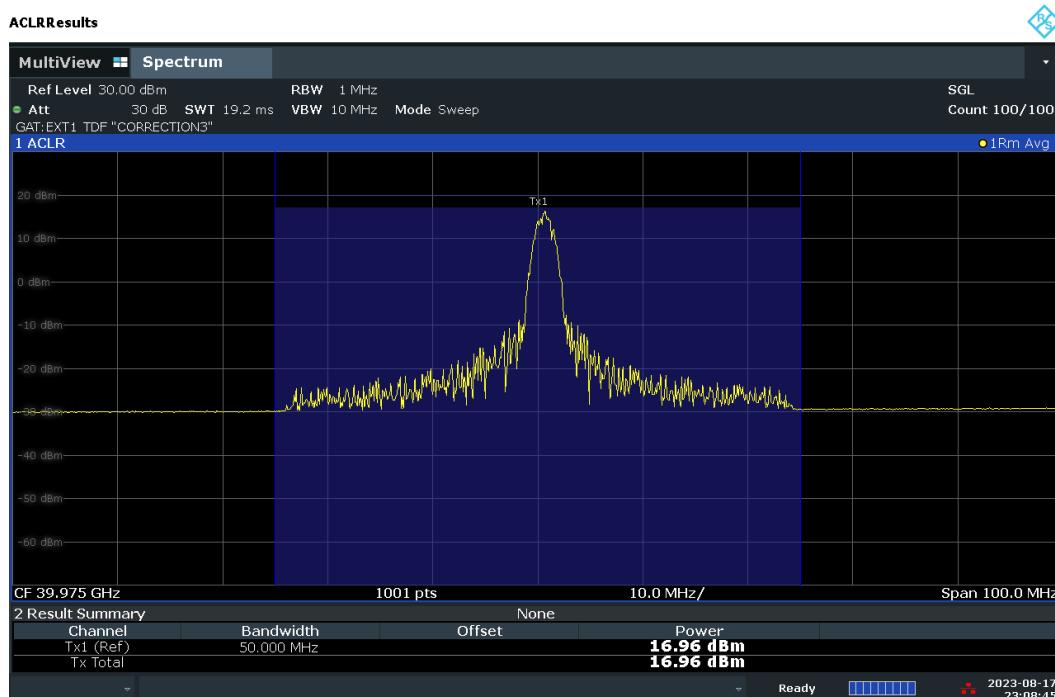
**Plot 7-88. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 81 of 147



11:05:48 PM 08/17/2023

**Plot 7-89. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – High Ch. – Full RB)**



11:08:46 PM 08/17/2023

**Plot 7-90. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – QPSK – High Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39	 element	PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 82 of 147	

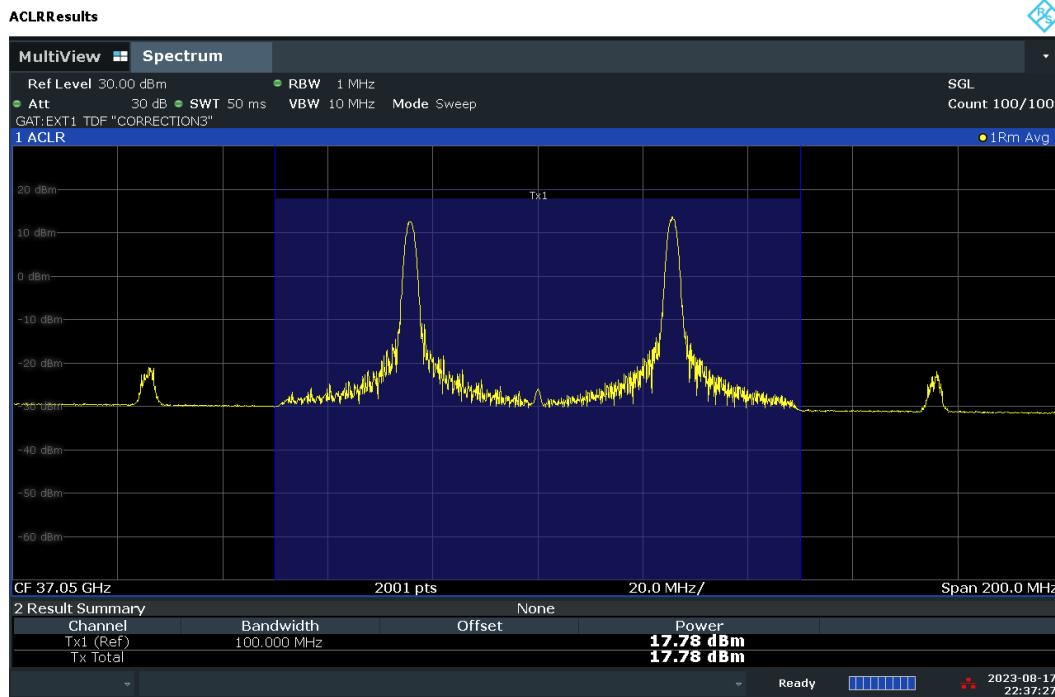


**Plot 7-91. Conducted Power Plot – CP – V-DL Polarization (50MHz-1CC – 16QAM – Mid Ch. – Full RB)**

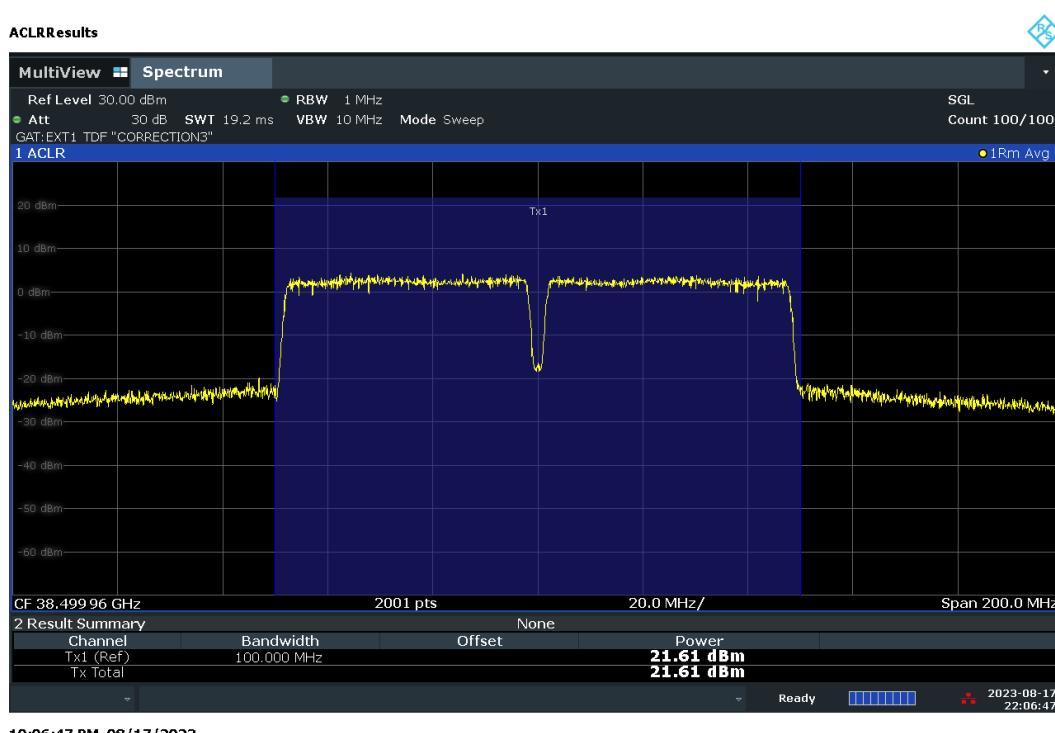


**Plot 7-92. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – Low Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 83 of 147	

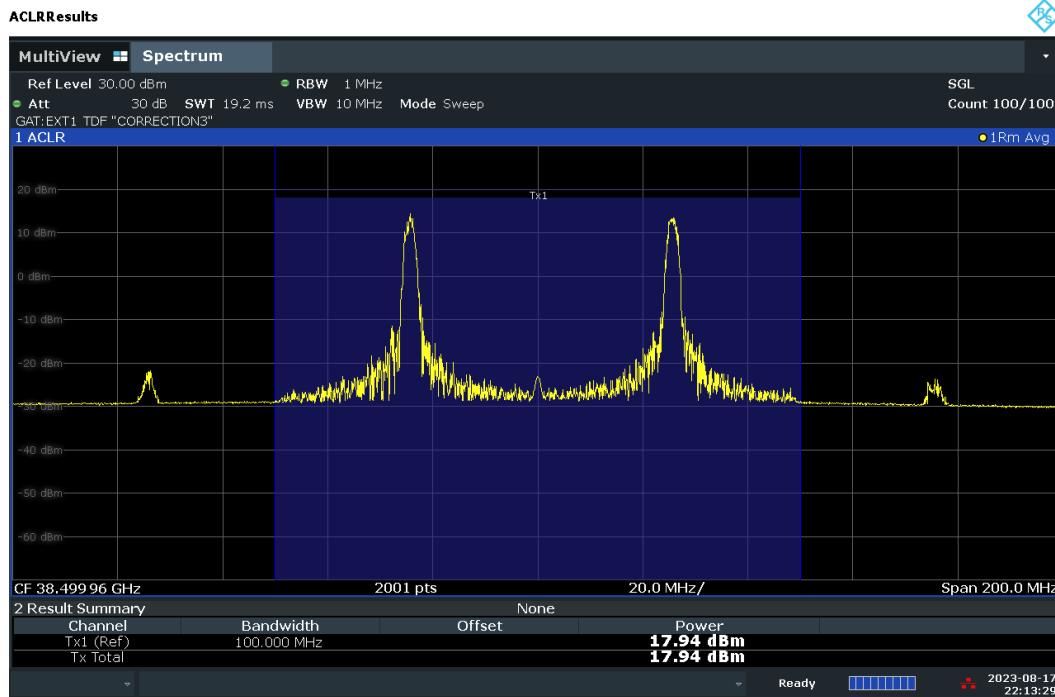


**Plot 7-93. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – Low Ch. – 1RB)**



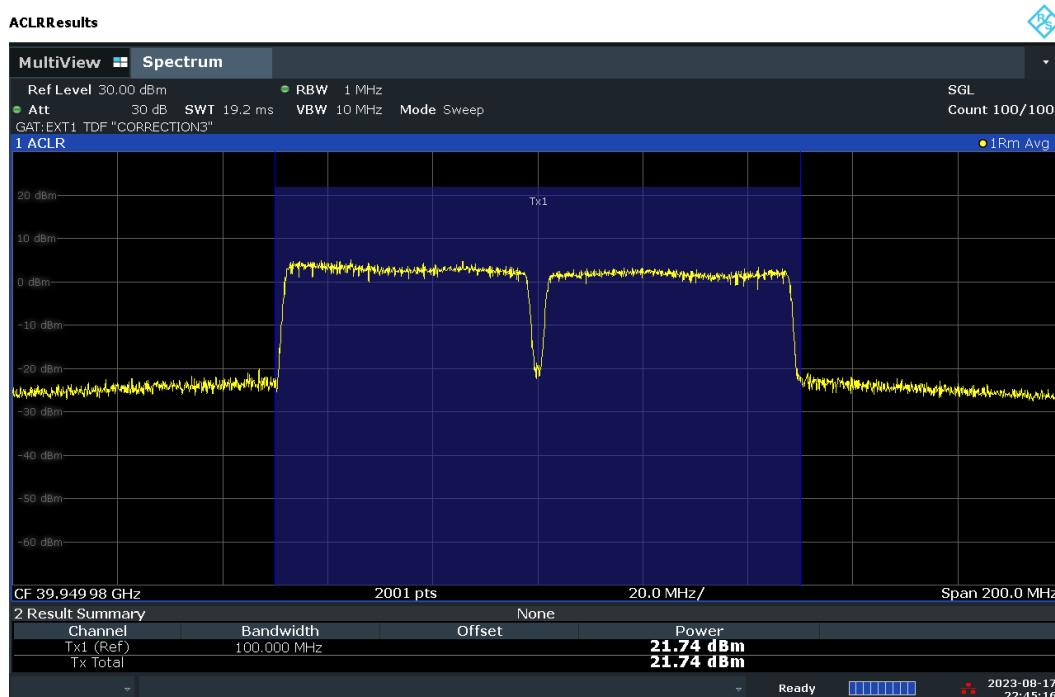
**Plot 7-94. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 84 of 147	



10:13:29 PM 08/17/2023

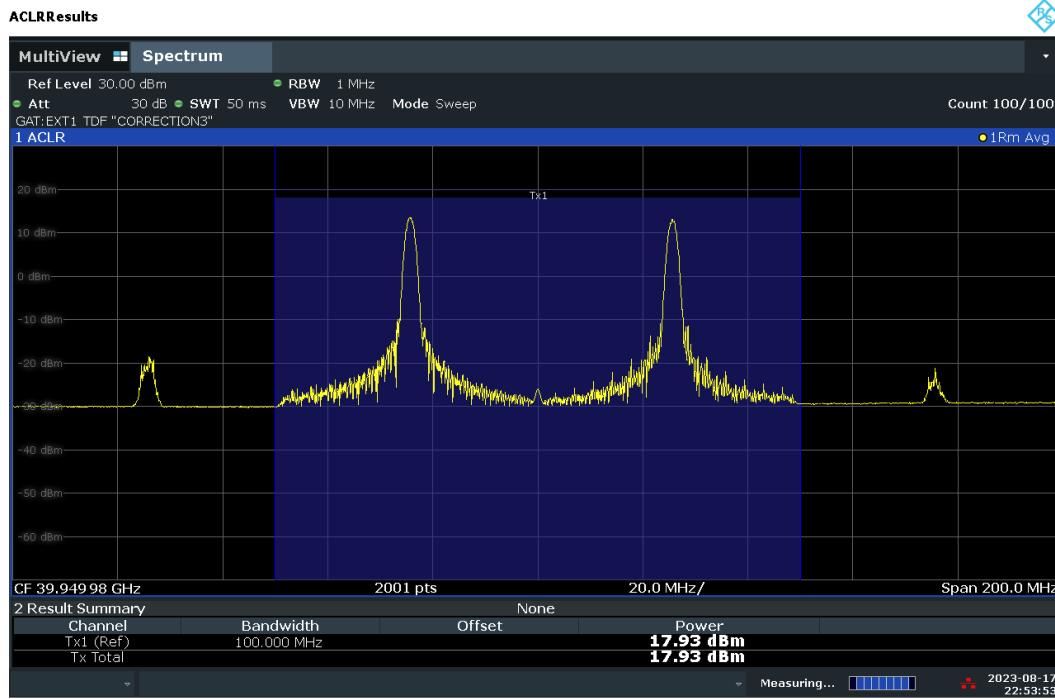
**Plot 7-95. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – Mid Ch. – 1 RB)**



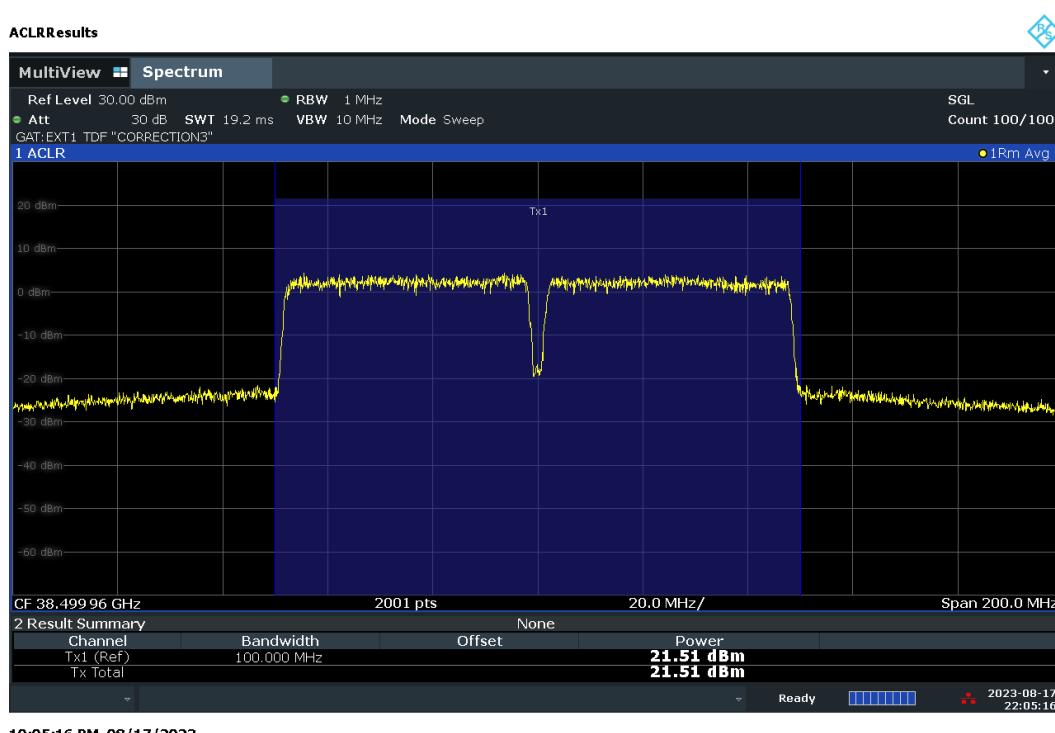
10:45:17 PM 08/17/2023

**Plot 7-96. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 85 of 147	



**Plot 7-97. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – QPSK – High Ch. – 1 RB)**



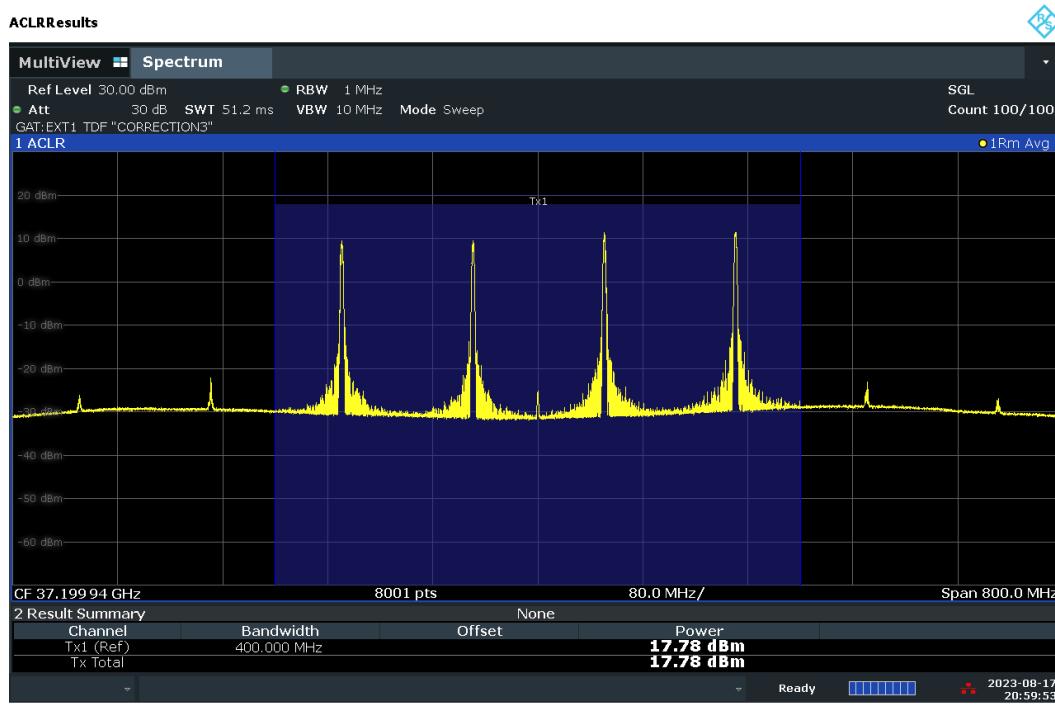
**Plot 7-98. Conducted Power Plot – CP – V-DL Polarization (50MHz-2CC – 16QAM – Mid Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 86 of 147	



09:04:09 PM 08/17/2023

**Plot 7-99. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – Low Ch. – Full RB)**



08:59:53 PM 08/17/2023

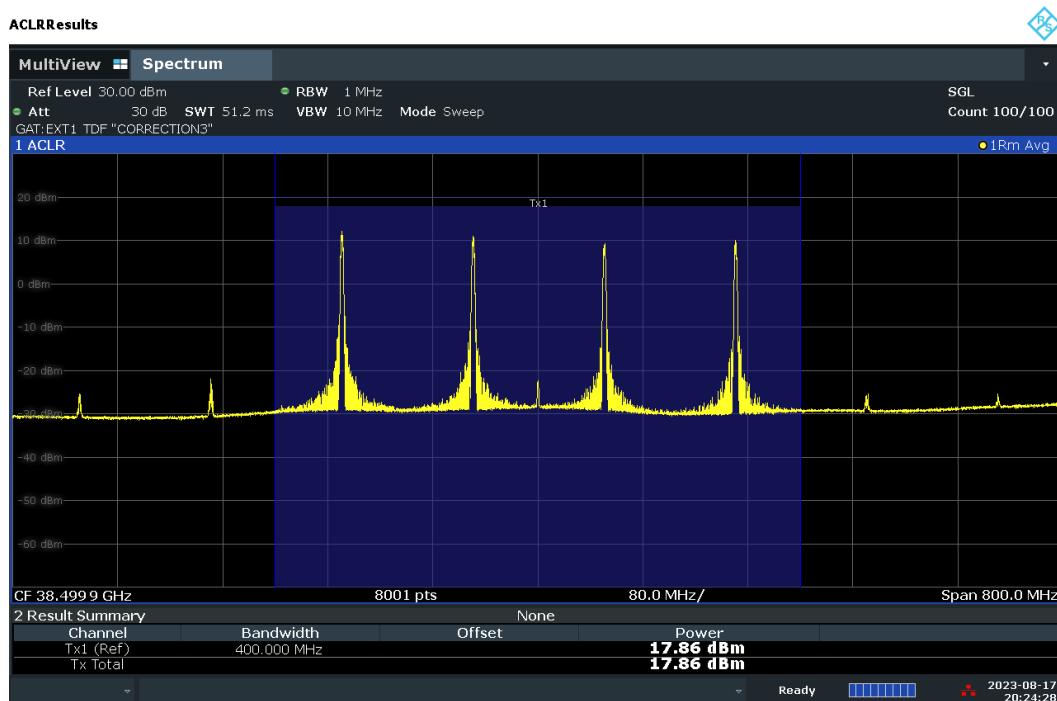
**Plot 7-100. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39	 <b>PART 20 &amp; 30 MEASUREMENT REPORT (CERTIFICATION)</b>			Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 87 of 147	



08:29:04 PM 08/17/2023

**Plot 7-101. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – Full RB)**



08:24:29 PM 08/17/2023

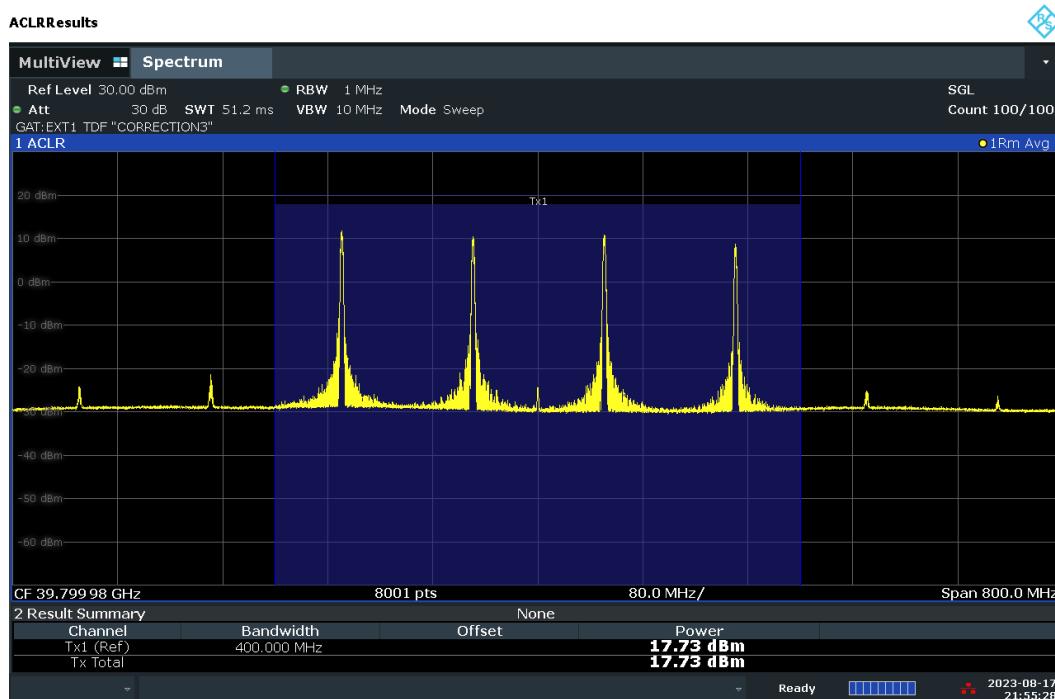
**Plot 7-102. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 88 of 147	



09:40:08 PM 08/17/2023

**Plot 7-103. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – High Ch. – Full RB)**



09:55:28 PM 08/17/2023

**Plot 7-104. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – QPSK – High Ch. – 1 RB)**

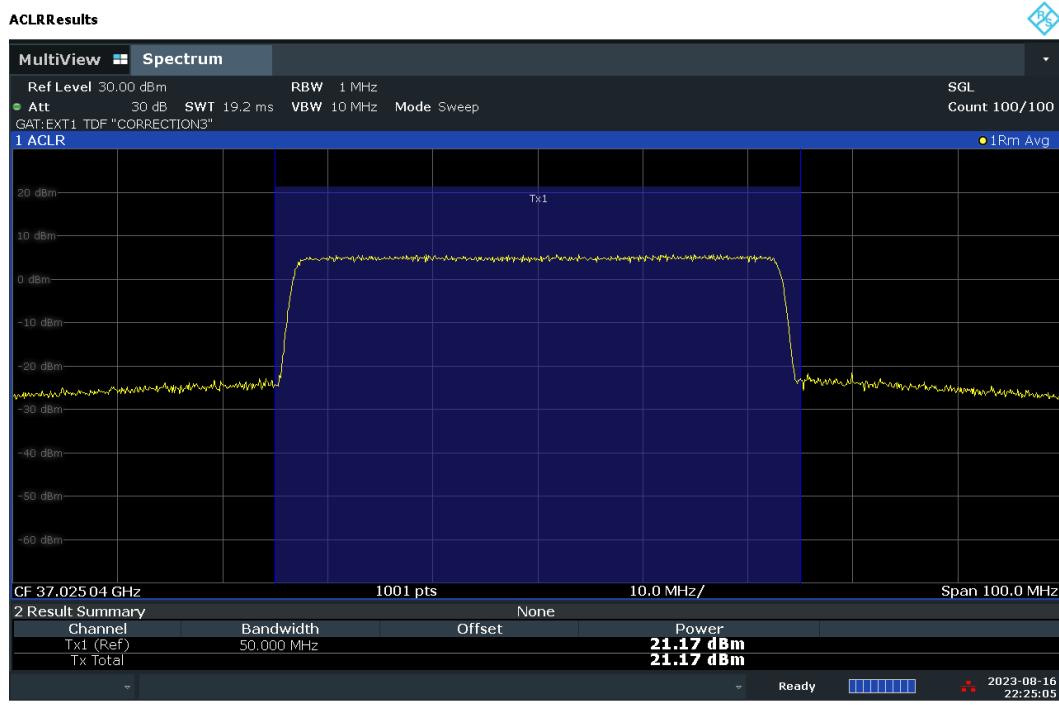
FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 89 of 147	



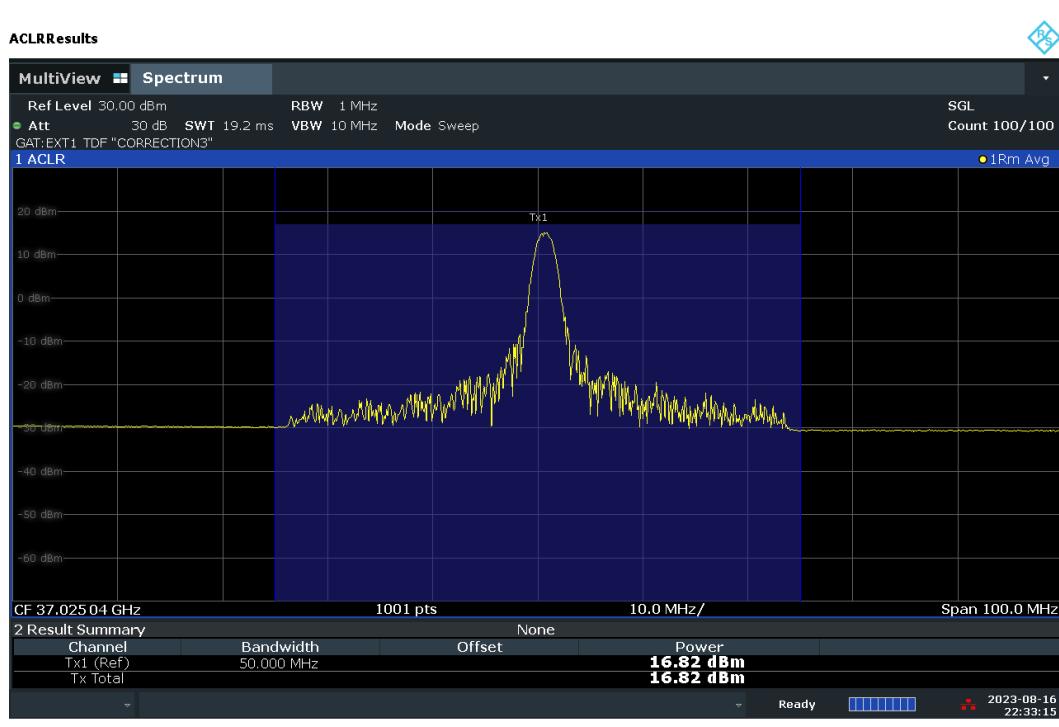
**Plot 7-105. Conducted Power Plot – CP – V-DL Polarization (100MHz-4CC – 16QAM – High Ch. – Full RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 90 of 147

## H-DL Polarization

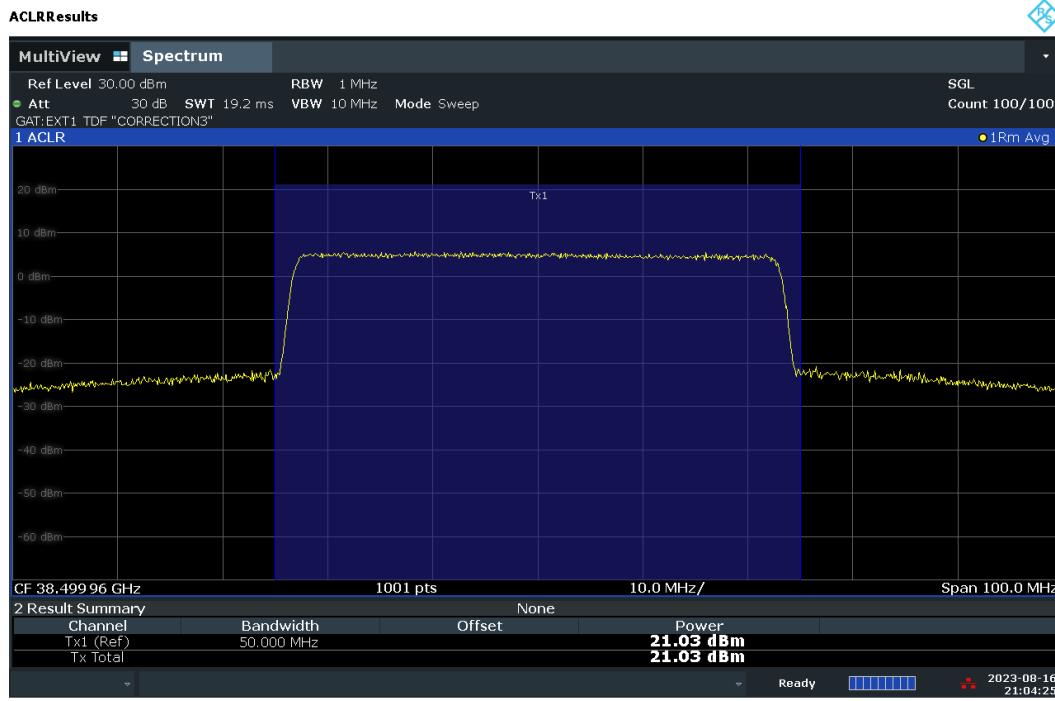


**Plot 7-106. Conducted Power Plot – CP – H-DL Polarization (50MHz-1CC – QPSK – Low Ch. – Full RB)**



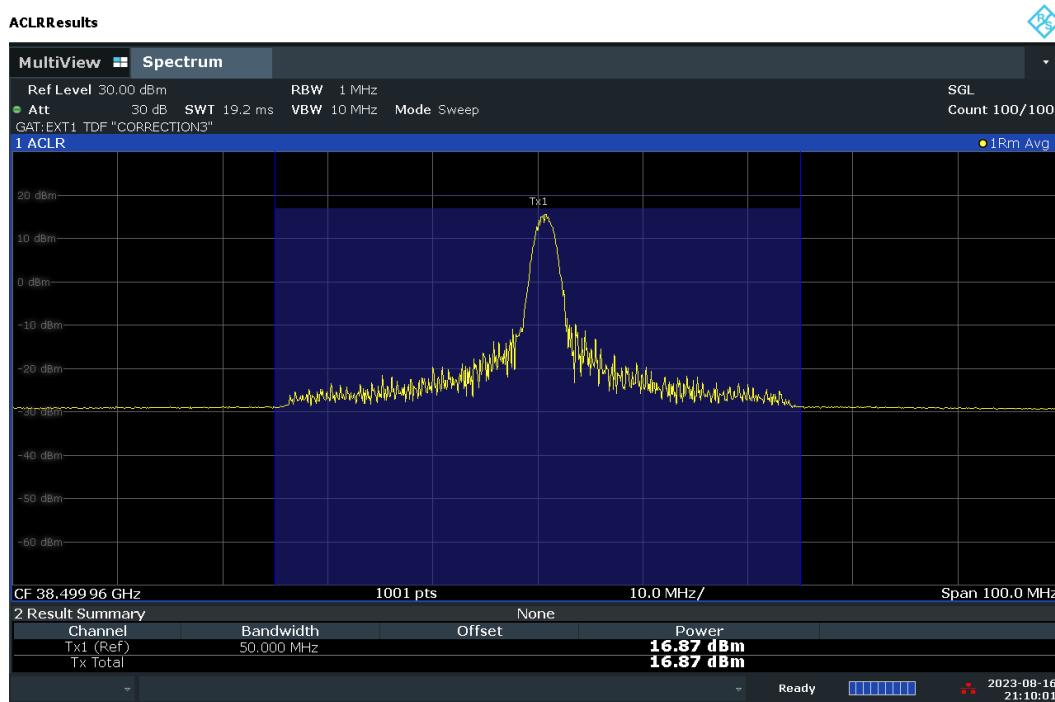
**Plot 7-107. Conducted Power Plot – CP – H-DL Polarization (50MHz-1CC – QPSK – Low Ch. – 1RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 91 of 147



09:04:26 PM 08/16/2023

**Plot 7-108. Conducted Power Plot – CP – H-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – Full RB)**



09:10:02 PM 08/16/2023

**Plot 7-109. Conducted Power Plot – CP – H-DL Polarization (50MHz-1CC – QPSK – Mid Ch. – 1 RB)**

FCC ID: 2AUVU-5620-23-39		PART 20 & 30 MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 1M2308080091-01-R1.2AUVU	Test Dates: 08/09 - 10/02/2023	EUT Type: 5G mmWave Repeater	Page 92 of 147	