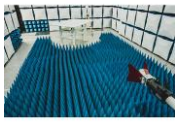
PCTEST
7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
http://www.pctest.com



MEASUREMENT REPORT
FCC Part 20 Industrial Signal Booster (CMRS)

Applicant Name:
Wistron Neweb Corporation
20 Park Avenue II, Hsinchu Science Park,
Hsinchu 308,
Taiwan

Date of Testing:
7/12/2021-08/16/2021
Test Site/Location:
PCTEST Lab. Columbia, MD, USA
Test Report Serial No.:
1M2106230069-01-R3.NKR

FCC ID:	**NKR-TR2V1-IDU**
APPLICANT:	**Wistron Neweb Corporation**

Application Type:	Certification
Model:	TR2V1
EUT Type:	5G Extender Gen 2
FCC Classification:	Part 20 Industrial Booster (CMRS) (B2I)
FCC Rule Part(s):	2, 20, 30
Test Procedure(s):	ANSI C63.26-2015, KDB 935210 D02 v04r02, KDB935210 D05 v01r04, KDB971168 D01 v03r01

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

This revised Test Report (S/N: 1M2106230069-01-R3.NKR) supersedes and replaces the previously issued test report (S/N: 1M2106230069-01-R2.NKR) 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.

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.

Randy Ortanez
President

ACCREDITED
CERT #2041.01

TABLE OF CONTENTS

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 and Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST facility 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 PCTEST located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO/IEC 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.

- PCTEST 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).

- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **5G Extender Gen 2 FCC ID: NKR-TR2V1-IDU**. The test data contained in this report covers the requirements for the operation of an industrial booster per FCC Part 20.21, KDB 935210 D02, and KDB 935210 D05.

The EUT contains two modules for mmWave: Donor and Relay modules. The EUT supports any combination of bandwidths, number of carriers, and modulations as input signals in the n261 (28GHz) band and n260 (39GHz) band.

Test Device Serial No.: 4711-2075, 4011-2078

2.2 Software and Firmware

The test was conducted with firmware version 1.0 installed on the EUT.

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015 and KDB 935210 D05 in a radiated setup. The EUT allowed direct injection of an input signal into the antennas for measurement. See Section 6.0 of this test report for a description of the tests.

All testing was performed using a signal generator connected to a horn antenna, the input signal sends to EUT via horn antenna. The signal generator was set to transmit a representative 5G mmWave NR signal in various sized bandwidths and modulations. All booster testing was performed on both the relay and the donor sides.

2.4 EMI Suppression Device(s)/Modifications

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

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 KDB 935210 D05 were used in the measurement of the EUT. KDB 842590 D01 v01 was referenced for testing the EUT as well.

3.2 Industrial Booster Test Cases

Per the requirements of KDB 935210 D05, 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

3.3 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).

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 (±dB)
Conducted Disturbance	3.09
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST). 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
Megaphase	FAC mmWave	AP FAC mmWave 10ft 40GHz	3/3/2021	Annual	3/3/2022	20033008-002
Megaphase	FAC mmWave	AP FAC mmWave 18ft 40GHz	3/3/2021	Annual	3/3/2022	20033003
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	9/14/2020	Annual	9/14/2021	2172481
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	11/5/2020	Biennial	11/5/2022	U157403-01
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/10/2020	Annual	9/10/2021	103200
Rohde & Schwarz	SMW200A	Signal Generator	N/A			190456

Table 5-1. Annual Test Equipment Calibration Schedule

Notes:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

2. The calibration due date for the FSW67 was extended by one month to accommodate the required testing. The equipment has since returned from calibration within specification.

6.0 TEST RESULTS

6.1 Summary

Company Name: Wistron Neweb Corporation

FCC ID: NKR-TR2V1-IDU

FCC Classification: Part 20 Industrial Booster (CMRS) (B2I)

FCC Part Section(s)	KDB 935210 D05 Section(s)	Test Description	Test Limit	Test Result	Reference
2.1049, 20.21	3.4	Occupied Bandwidth / Input-Versus-Output Signal Comparison	N/A	PASS	Section 6.2
2.1051, 30.203, 20.21	3.8	Radiated Spurious Emissions	-13dBm/MHz for all out-of-band emissions	PASS	See Part 30 Report
2.1051, 30.203, 20.21	3.6	Out-of-Band/Out of Block Emissions	-13dBm/MHz for all out-of-band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW	PASS	See Part 30 Report
2.1055, 20.21	3.7	Frequency Stability	Fundamental emissions stay within authorized frequency block	PASS	See part 30 Report
20.21	3.3	Out-of-Band Rejection	N/A	PASS	Section 6.3
2.1046, 30.202, 20.21	3.2, 3.5	Measuring AGC Threshold Level / Mean Output Power and Amplifier/Booster Gain	N/A	PASS	Section 6.4

Table 6-1. Summary of Radiated Test Results

Notes:

Since the EUT can only operate as a Booster, some of the test requirements specified in KDB 935210 D05 are already addressed in the Part 30 report in this filing.

6.2 Input-Versus-Output Signal Comparison

§2.1049, §20.21

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 ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize

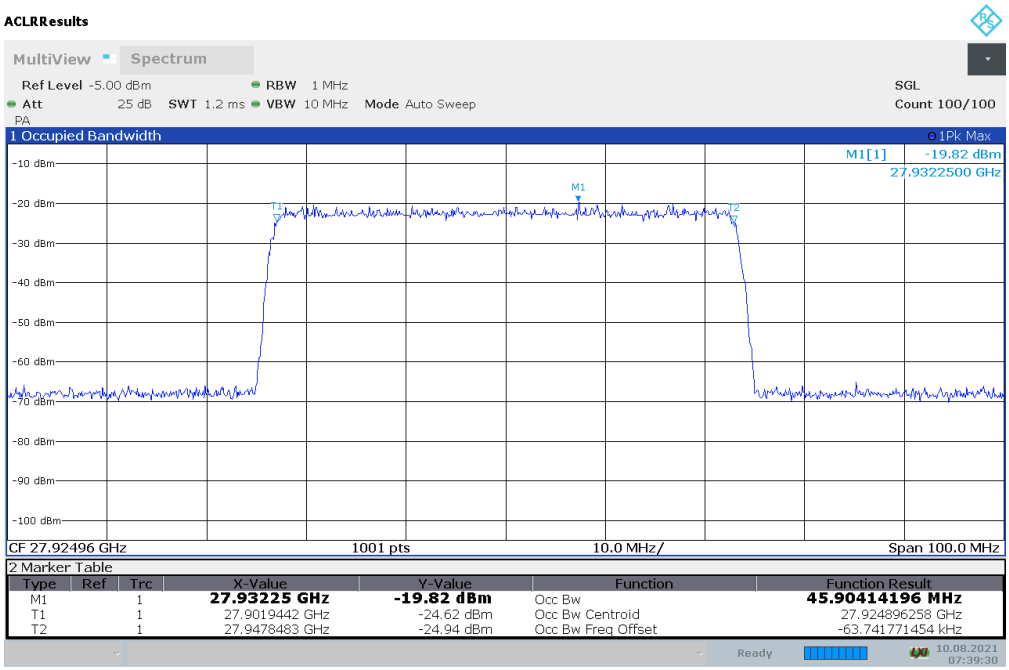
Test Notes

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

n261 – Donor Side

AGC Threshold Level	EUT Antenna Polarization	Channel	Bandwidth	Modulation	Input Signal OBW [MHz]	Output Signal OBW [MHz]
0.5dB below Threshold	H Beam	Mid	50	QPSK	45.90	45.81
3dB above Threshold	H Beam	Mid	50	QPSK	45.84	45.90
0.5dB below Threshold	V Beam	Mid	50	QPSK	45.75	45.91
3dB above Threshold	V Beam	Mid	50	QPSK	45.83	46.09

Table 6-2. n261 Occupied Bandwidth by AGC Threshold Level – Donor Side



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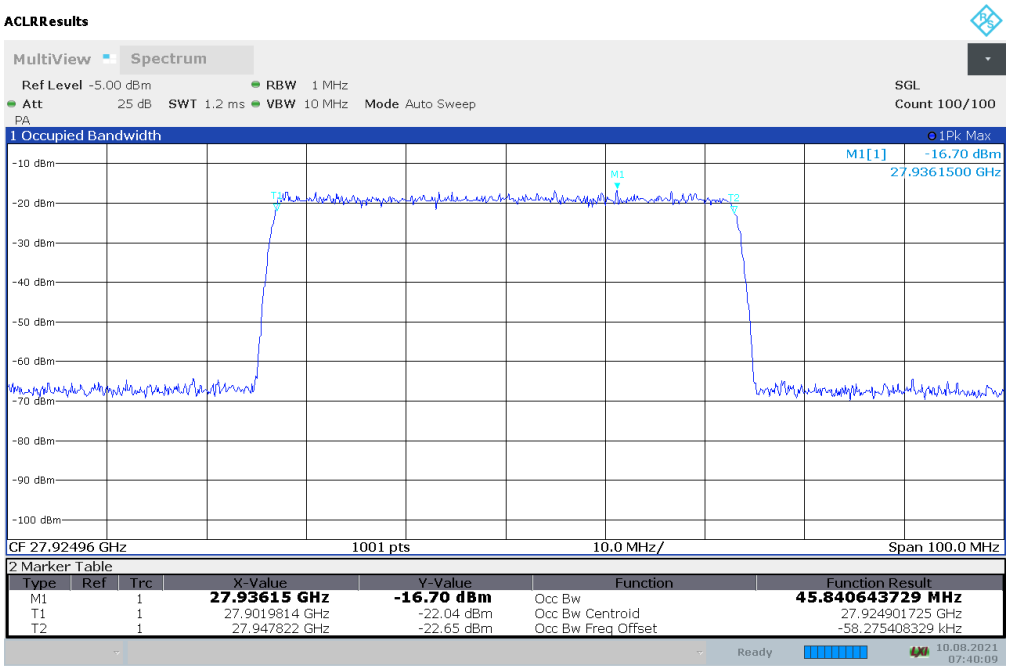
Plot 6-1. n261 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Donor Side – H Beam



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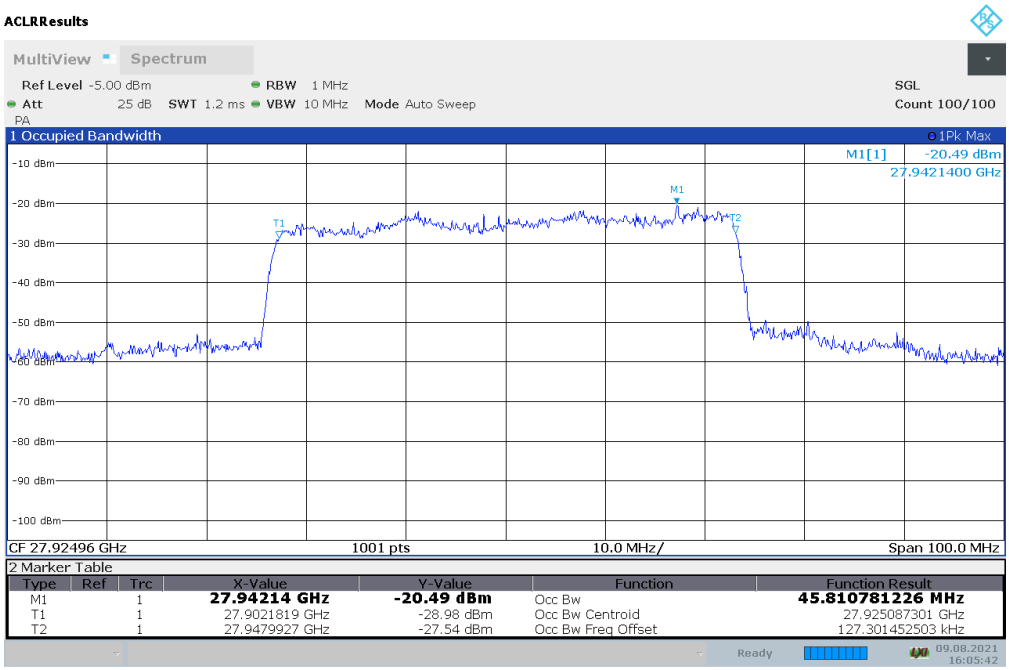
Plot 6-2. n261 Occupied Bandwidth Input at 3dB above AGC Threshold – Donor Side – H Beam



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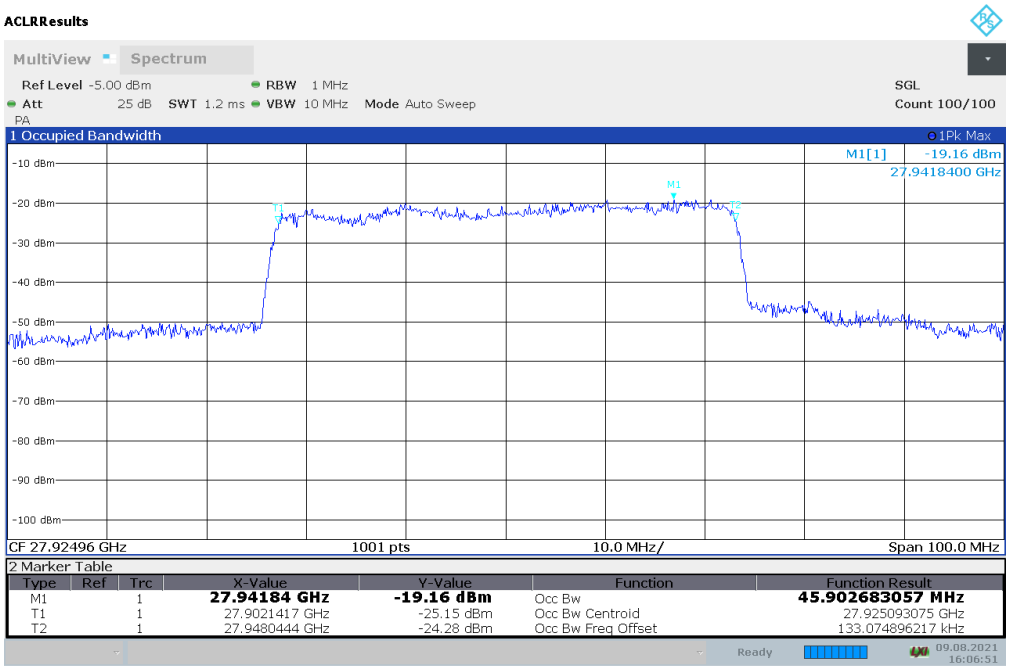
Plot 6-3. n261 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Donor Side – H Beam



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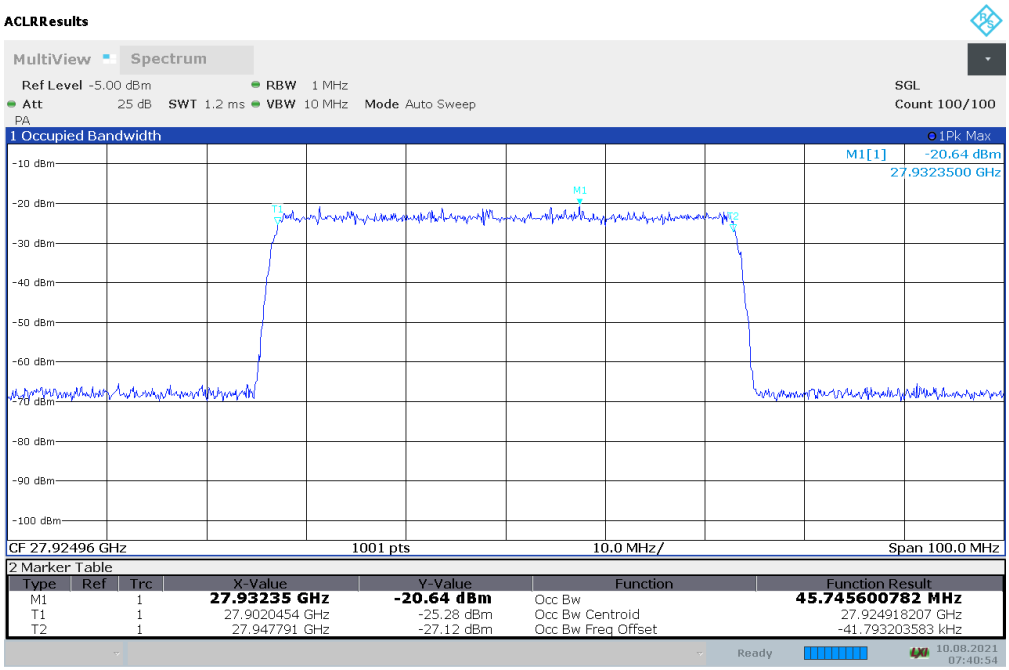
Plot 6-4. n261 Occupied Bandwidth Output at 3dB above AGC Threshold – Donor Side – H Beam



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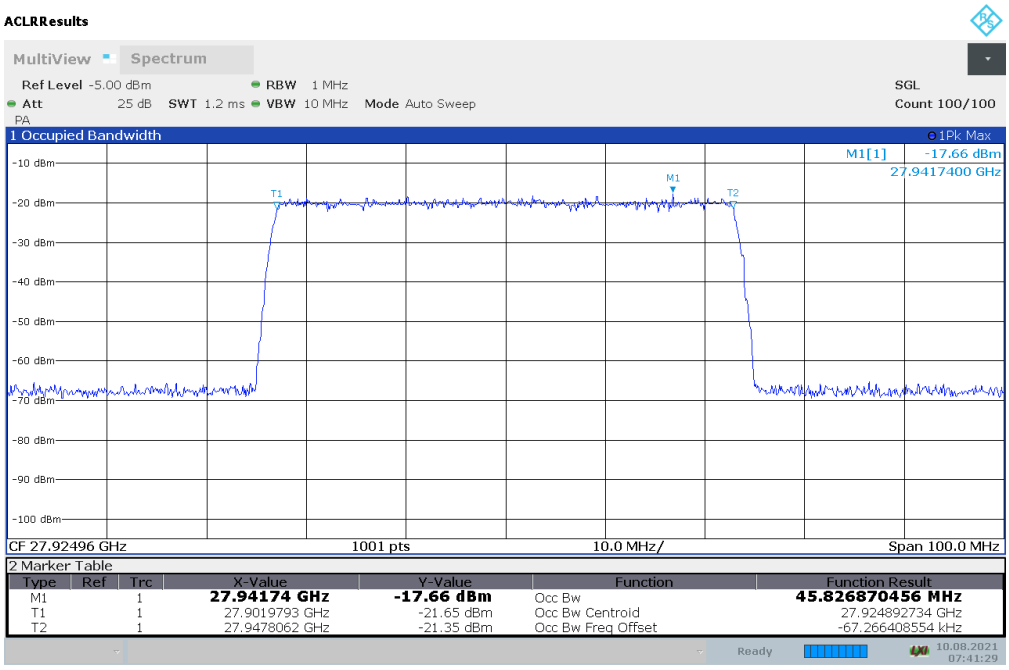
Plot 6-5. n261 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Donor Side – V Beam



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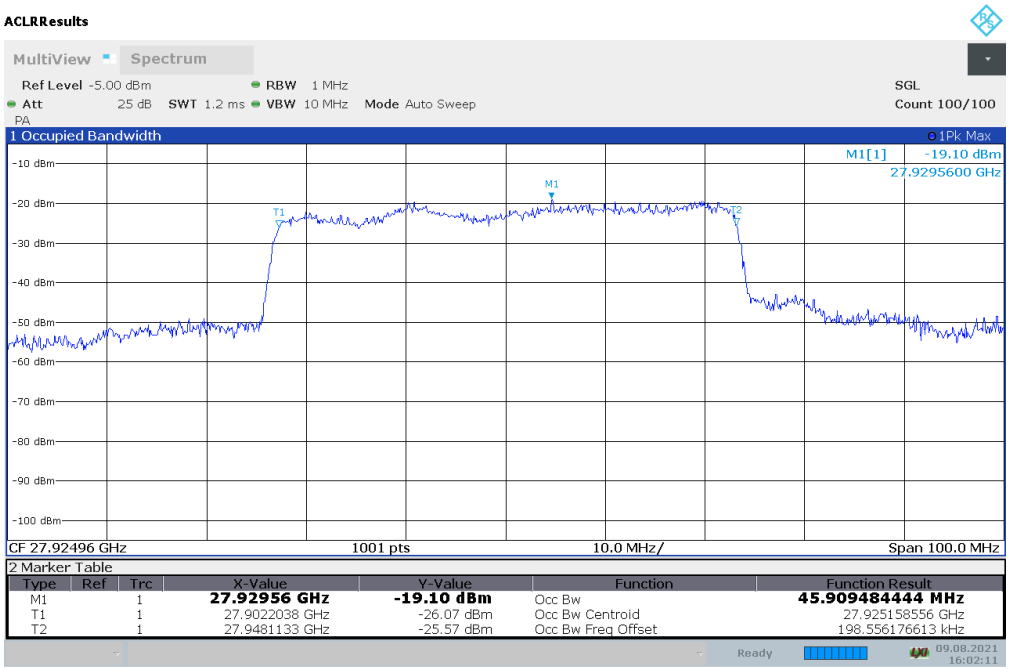
Plot 6-6. n261 Occupied Bandwidth Input at 3dB above AGC Threshold – Donor Side – V Beam



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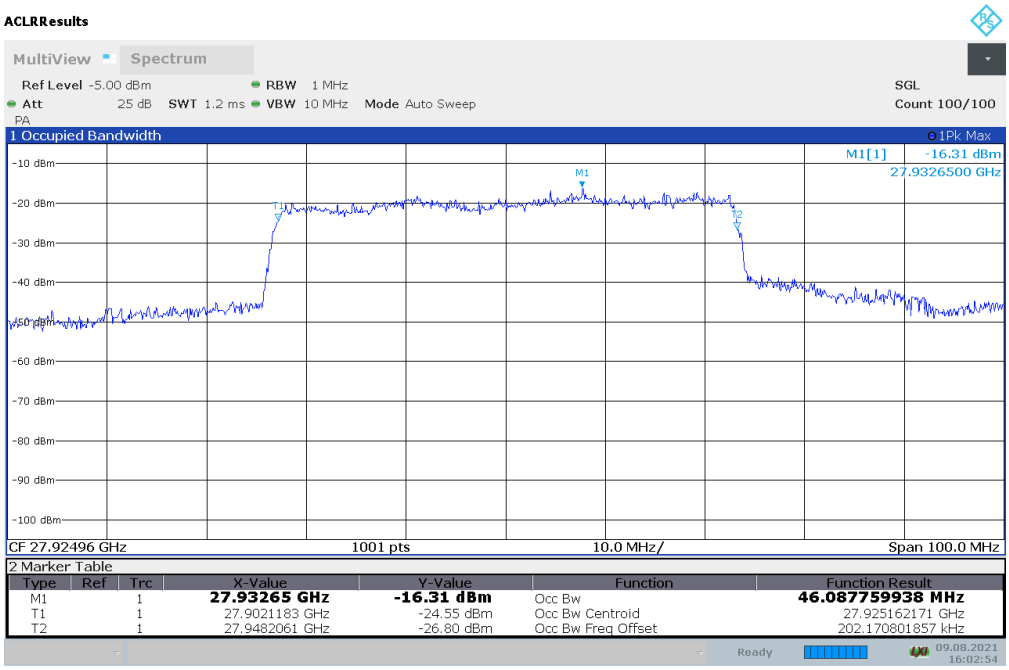
Plot 6-7. n261 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Donor Side – V Beam



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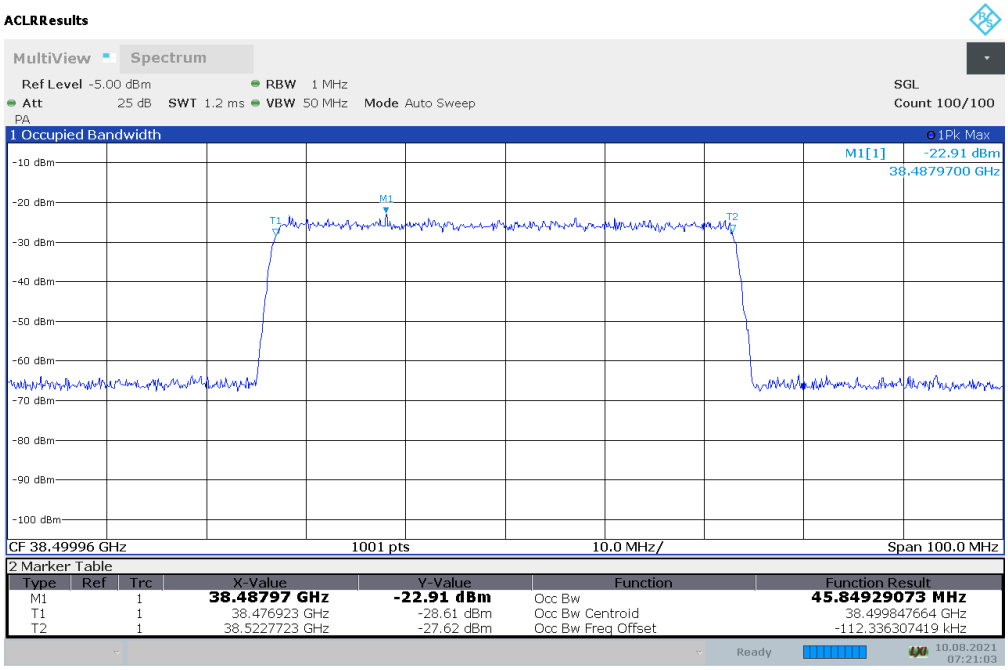
Plot 6-8. n261 Occupied Bandwidth Output at 3dB above AGC Threshold – Donor Side – V Beam

n260 – Donor Side

AGC Threshold Level	EUT Antenna Polarization	Channel	Bandwidth	Modulation	Input Signal OBW [MHz]	Output Signal OBW [MHz]
0.5dB below Threshold	H Beam	Mid	50	QPSK	45.85	46.27
3dB above Threshold	H Beam	Mid	50	QPSK	45.88	46.15
0.5dB below Threshold	V Beam	Mid	50	QPSK	45.83	46.14
3dB above Threshold	V Beam	Mid	50	QPSK	45.93	46.20

Table 6-3. n260 Occupied Bandwidth by AGC Threshold Level – Donor Side



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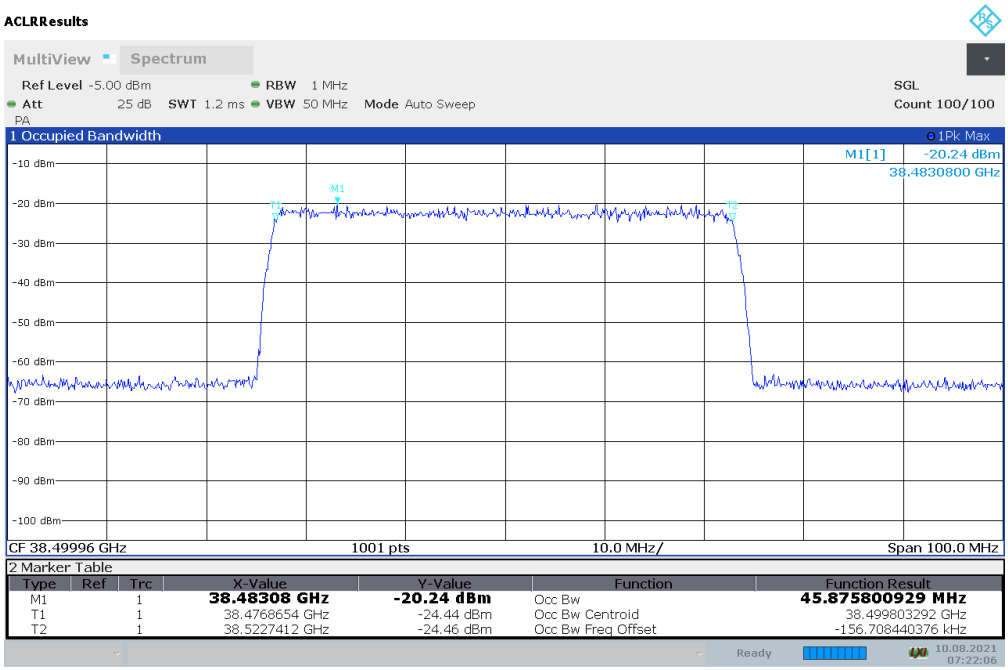
Plot 6-9. n260 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Donor Side – H Beam



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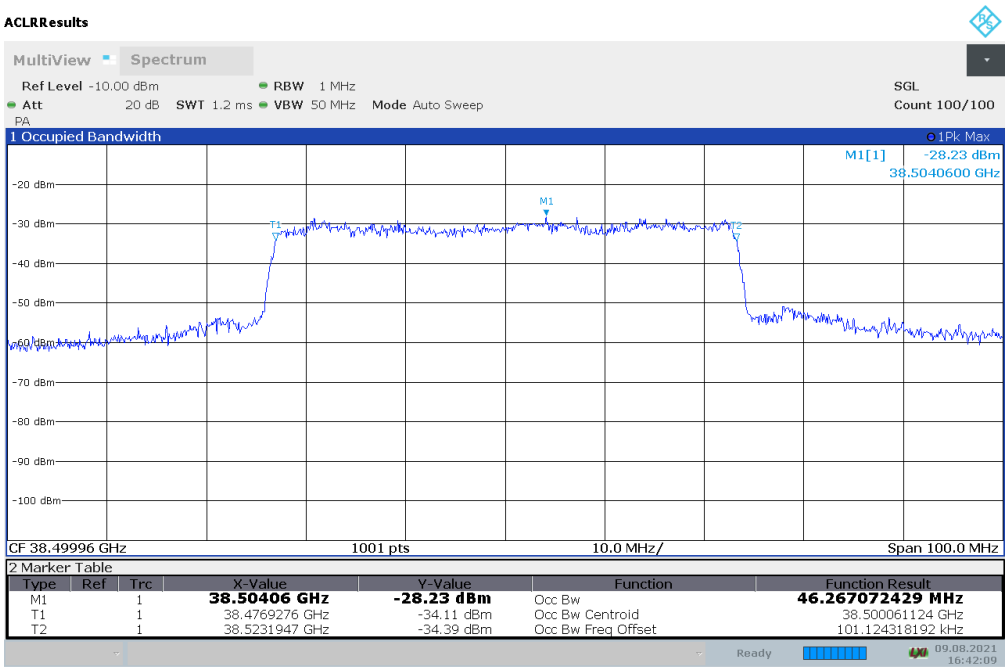
Plot 6-10. n260 Occupied Bandwidth Input at 3dB above AGC Threshold – Donor Side – H Beam



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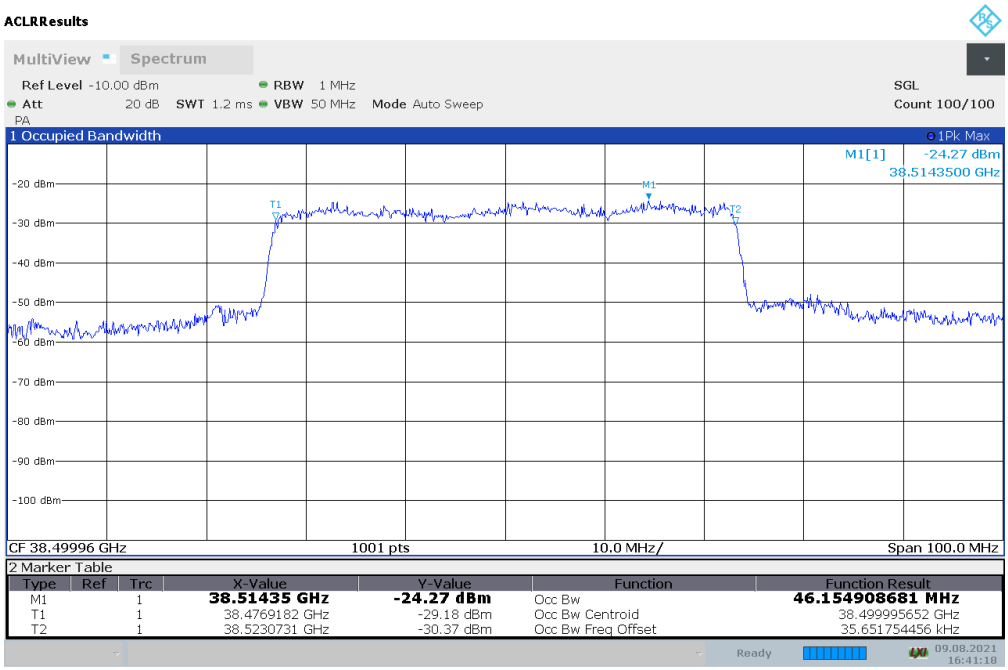
Plot 6-11. n260 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Donor Side – H Beam



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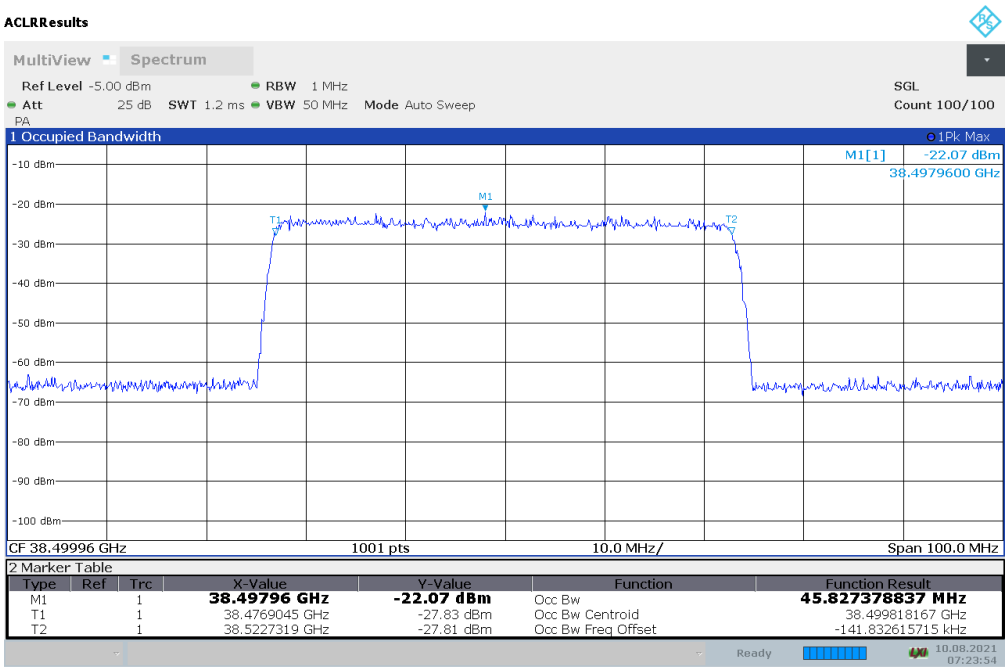
Plot 6-12. n260 Occupied Bandwidth Output at 3dB above AGC Threshold – Donor Side – H Beam



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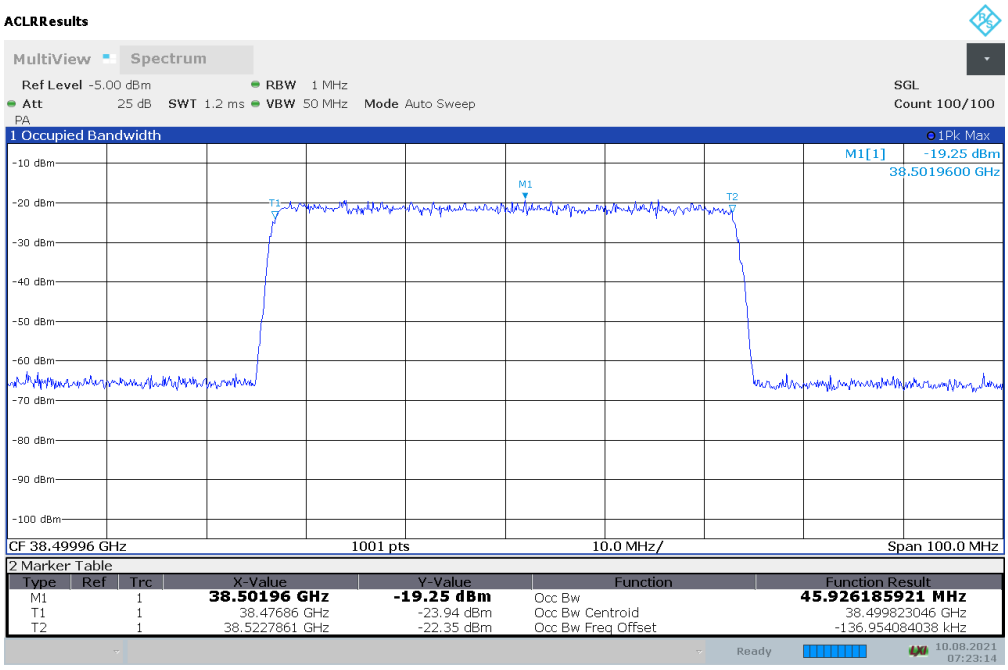
Plot 6-13. n260 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Donor Side – V Beam



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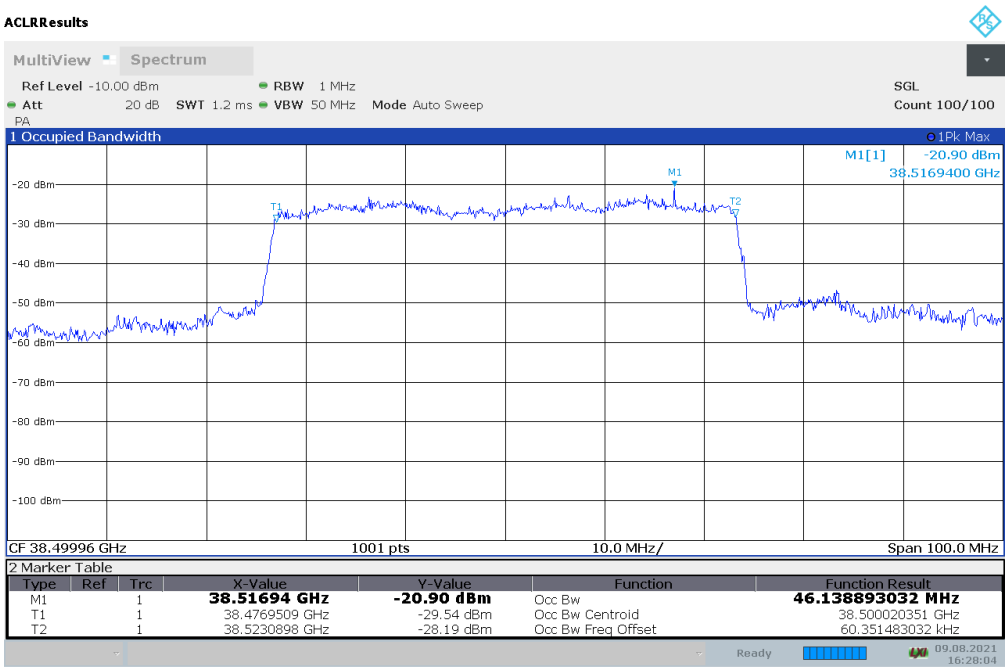
Plot 6-14. n260 Occupied Bandwidth Input at 3dB above AGC Threshold – Donor Side – V beam



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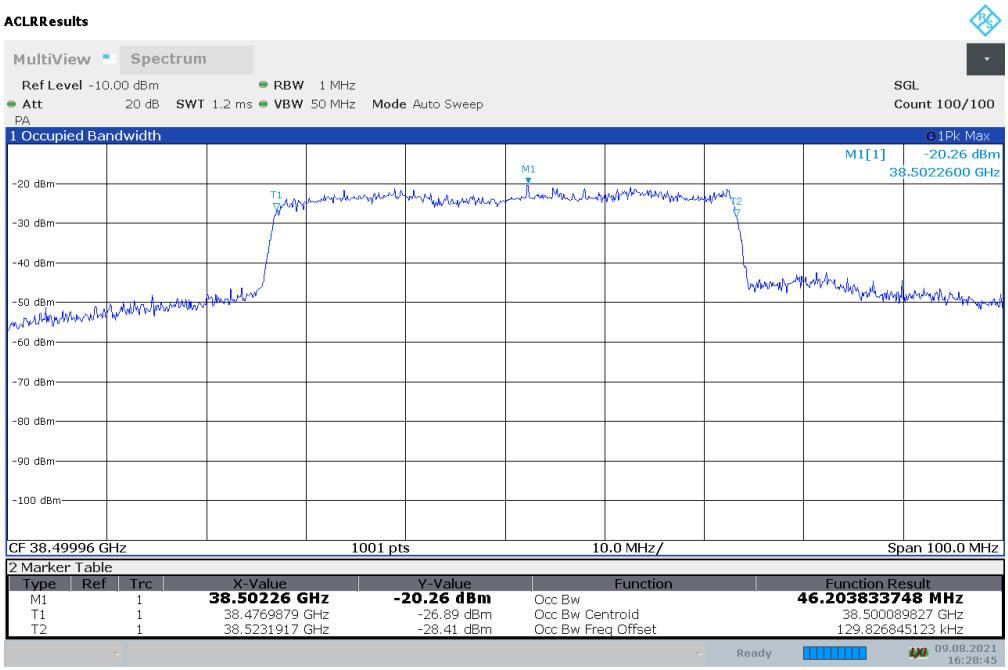
Plot 6-15. n260 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Donor Side – V Beam



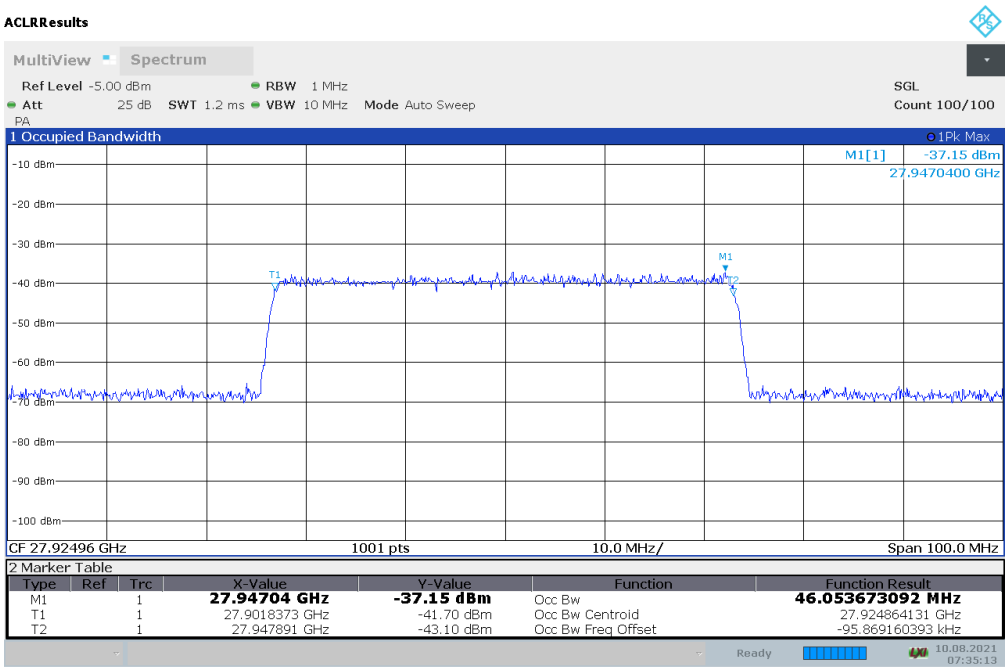
16:28:45 09.08.2021

Plot 6-16. n260 Occupied Bandwidth Output at 3dB above AGC Threshold – Donor Side – V Beam

n261 – Relay Side

AGC Threshold Level	EUT Antenna Polarization	Channel	Bandwidth	Modulation	Input Signal OBW [MHz]	Output Signal OBW [MHz]
0.5dB below Threshold	H Beam	Mid	50	QPSK	46.05	45.82
3dB above Threshold	H Beam	Mid	50	QPSK	45.94	46.20
0.5dB below Threshold	V Beam	Mid	50	QPSK	45.93	45.91
3dB above Threshold	V Beam	Mid	50	QPSK	45.97	46.25

Table 6-4. n261 Occupied Bandwidth by AGC Threshold Level – Relay Side



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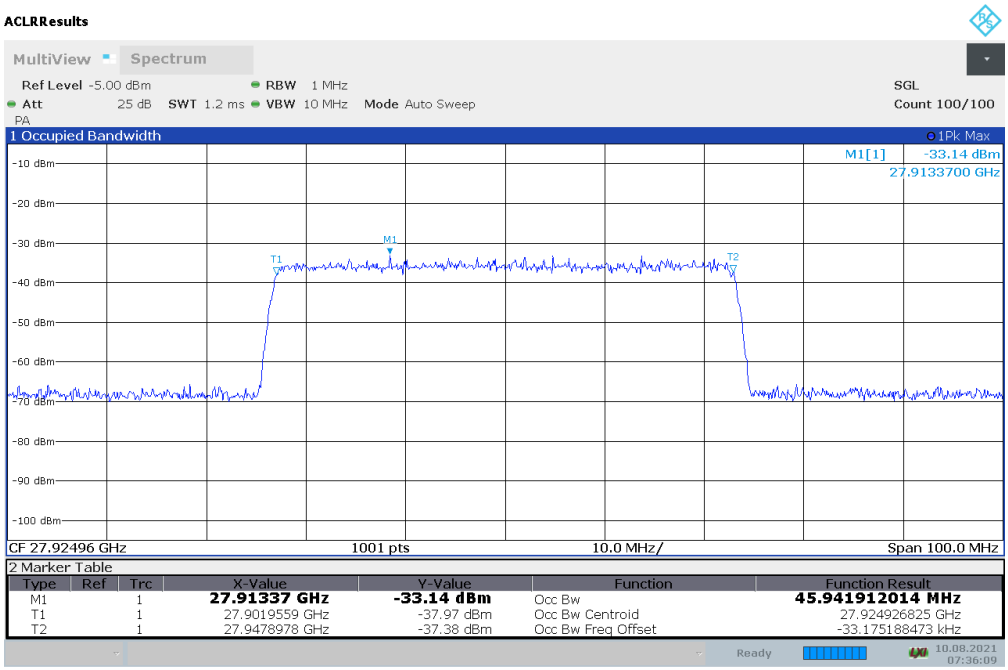
Plot 6-17. n261 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Relay Side – H Beam



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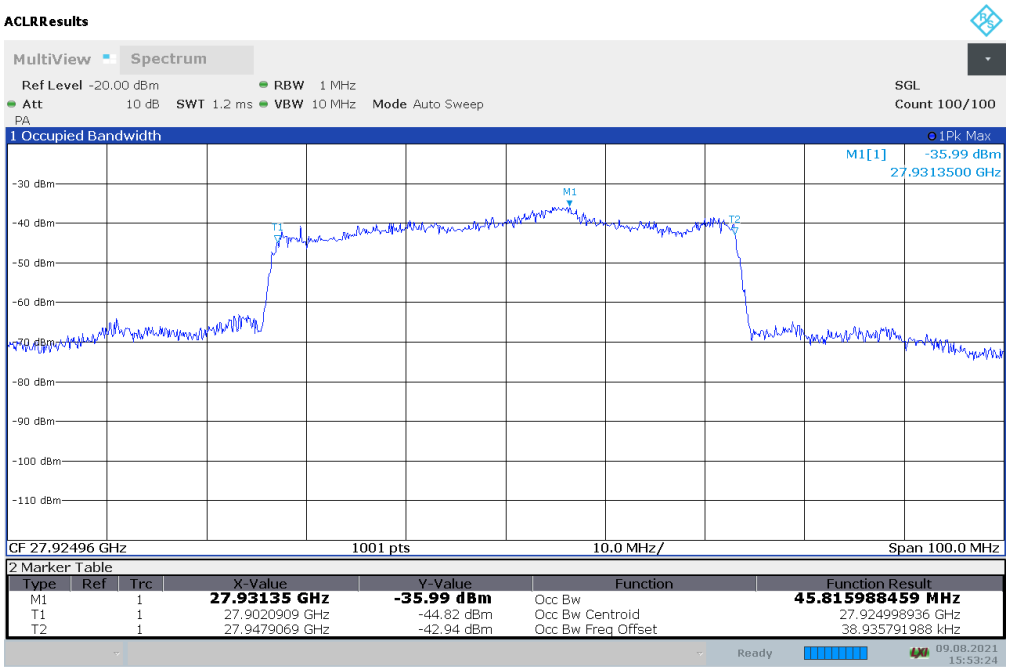
Plot 6-18. n261 Occupied Bandwidth Input at 3dB above AGC Threshold – Relay Side – H Beam



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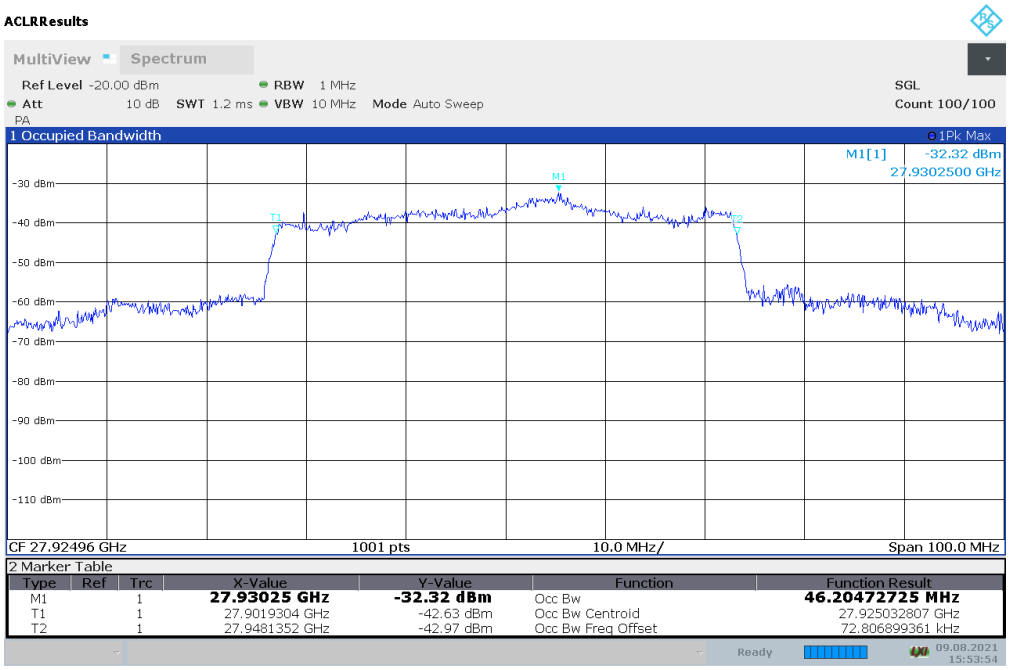
Plot 6-19. n261 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Relay Side – H Beam



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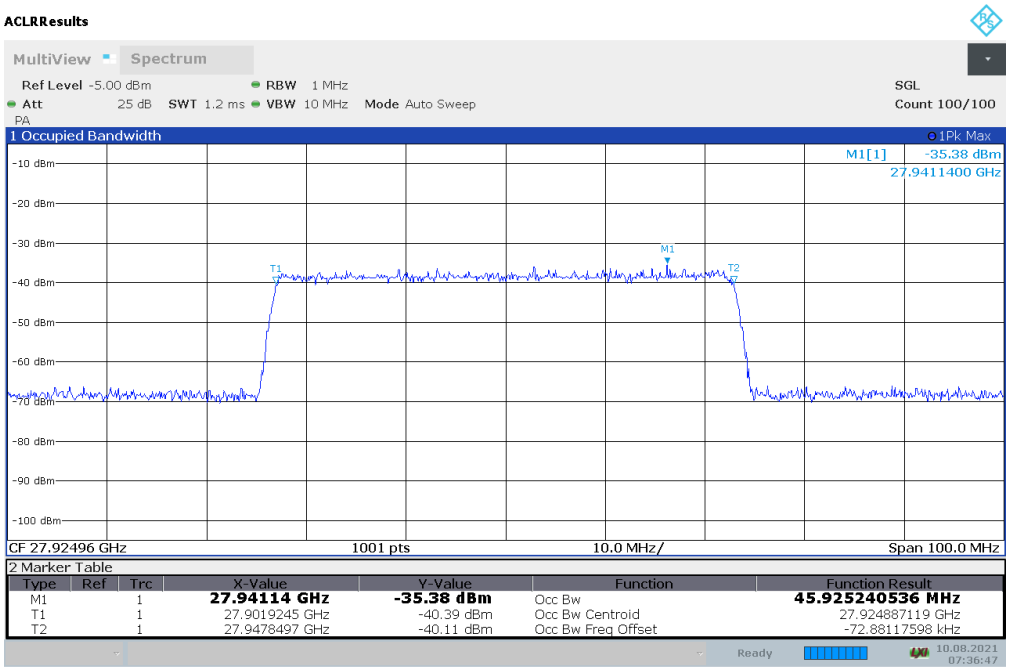
Plot 6-20. n261 Occupied Bandwidth Output at 3dB above AGC Threshold – Relay Side – H Beam



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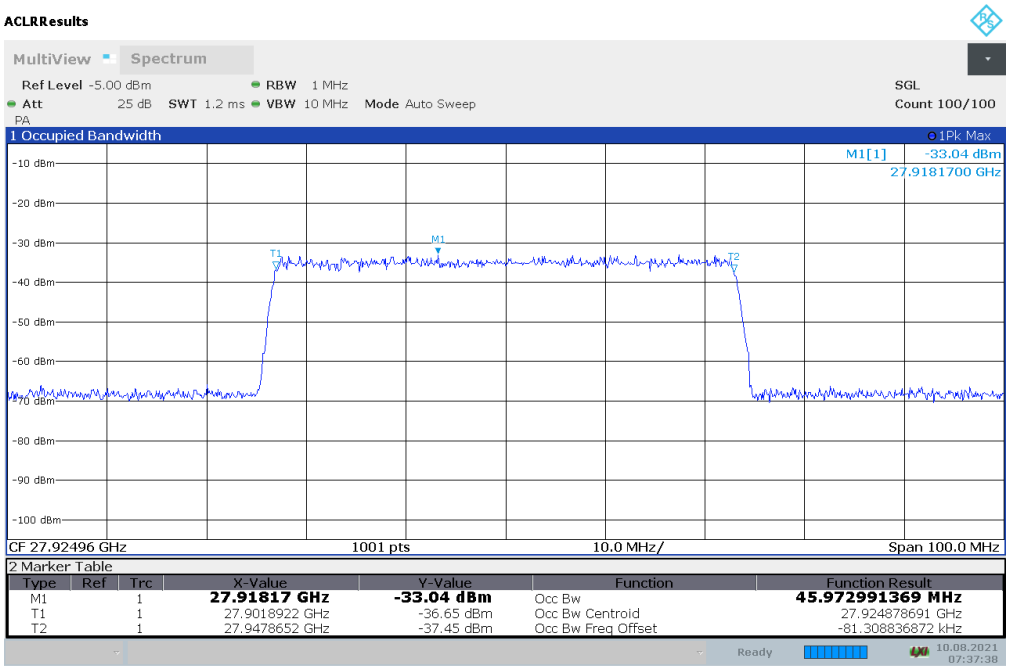
Plot 6-21. n261 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Relay Side – V Beam



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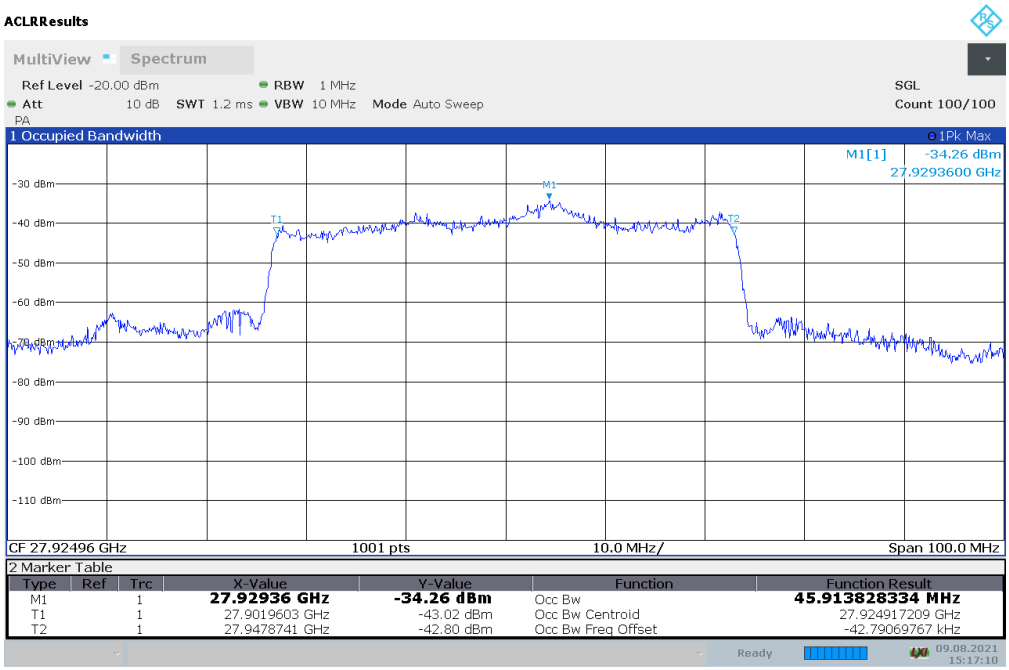
Plot 6-22. n261 Occupied Bandwidth Input at 3dB above AGC Threshold – Relay Side – V Beam



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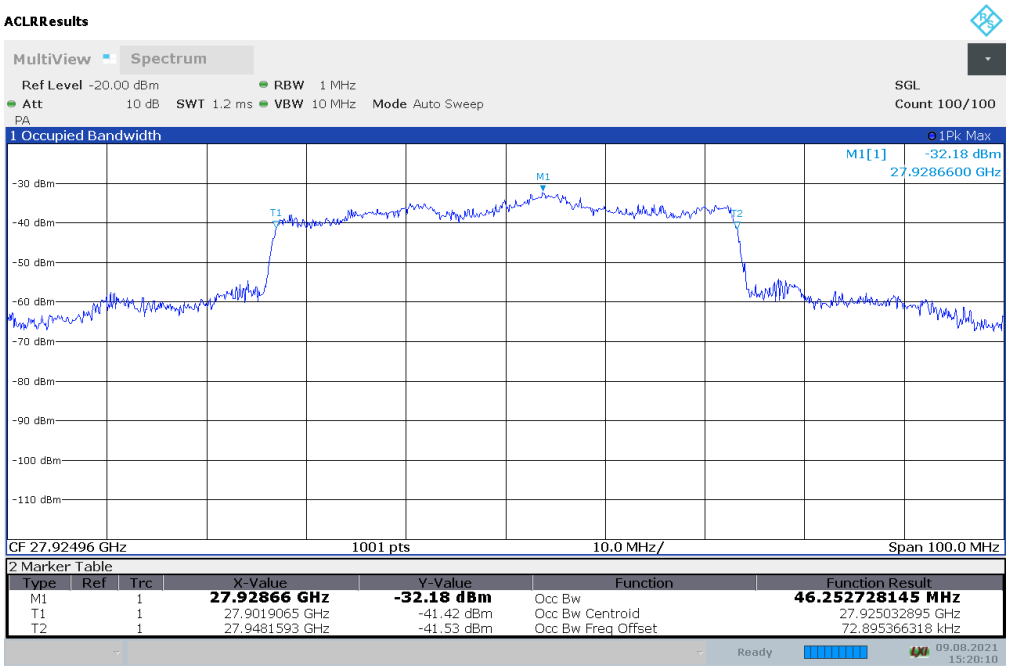
Plot 6-23. n261 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Relay Side – V Beam



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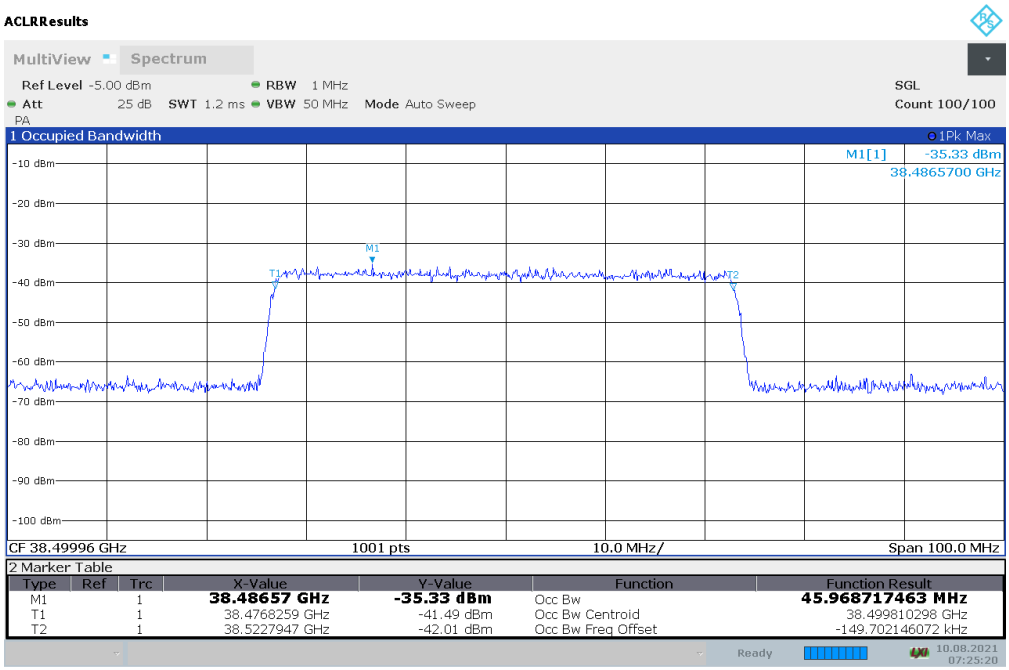
Plot 6-24. n261 Occupied Bandwidth Output at 3dB above AGC Threshold – Relay Side – V Beam

n260 – Relay Side

AGC Threshold Level	Antenna Polarization	Channel	Bandwidth	Modulation	Input Signal OBW [MHz]	Output Signal OBW [MHz]
0.5dB below Threshold	H	Mid	50	QPSK	45.97	45.99
3dB above Threshold	H	Mid	50	QPSK	45.95	45.91
0.5dB below Threshold	V	Mid	50	QPSK	46.02	45.90
3dB above Threshold	V	Mid	50	QPSK	45.88	45.90

Table 6-5. n260 Occupied Bandwidth by AGC Threshold Level – Relay Side



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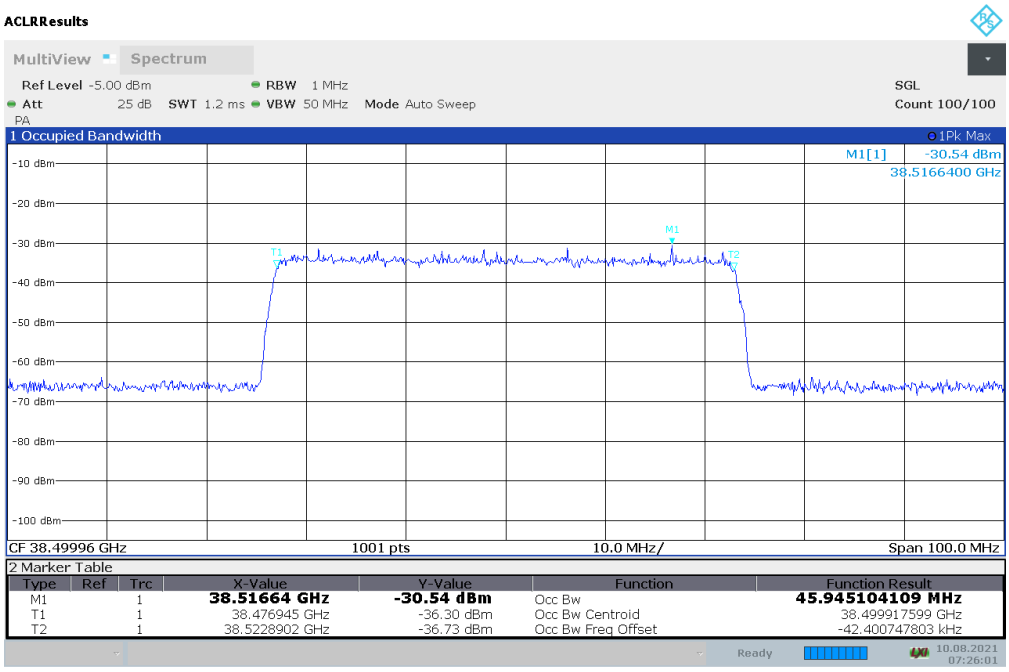
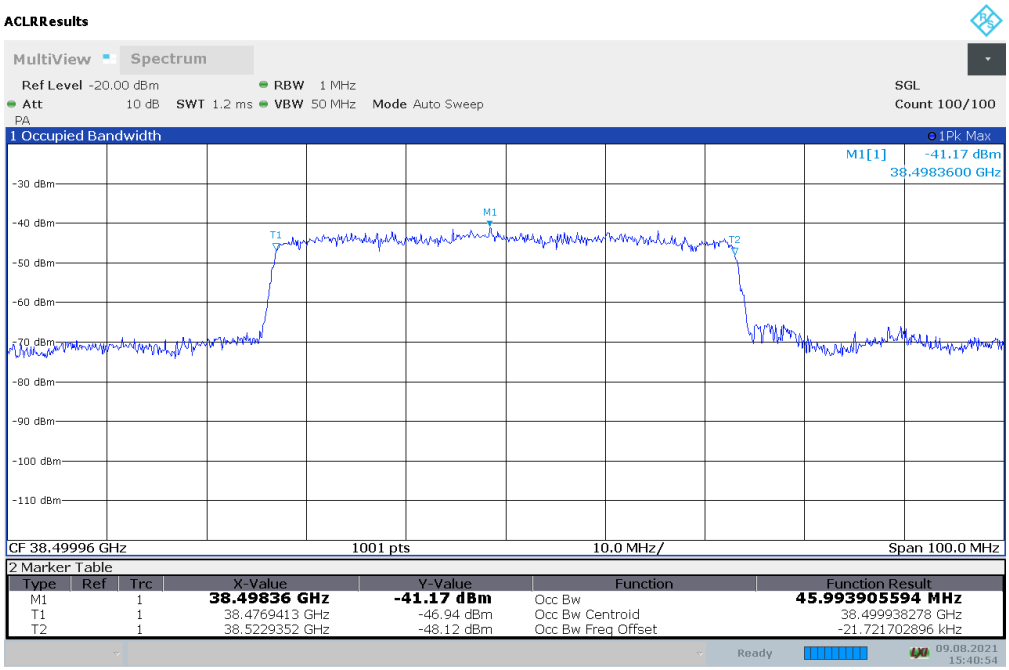
Plot 6-25. n260 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Relay Side – H Beam



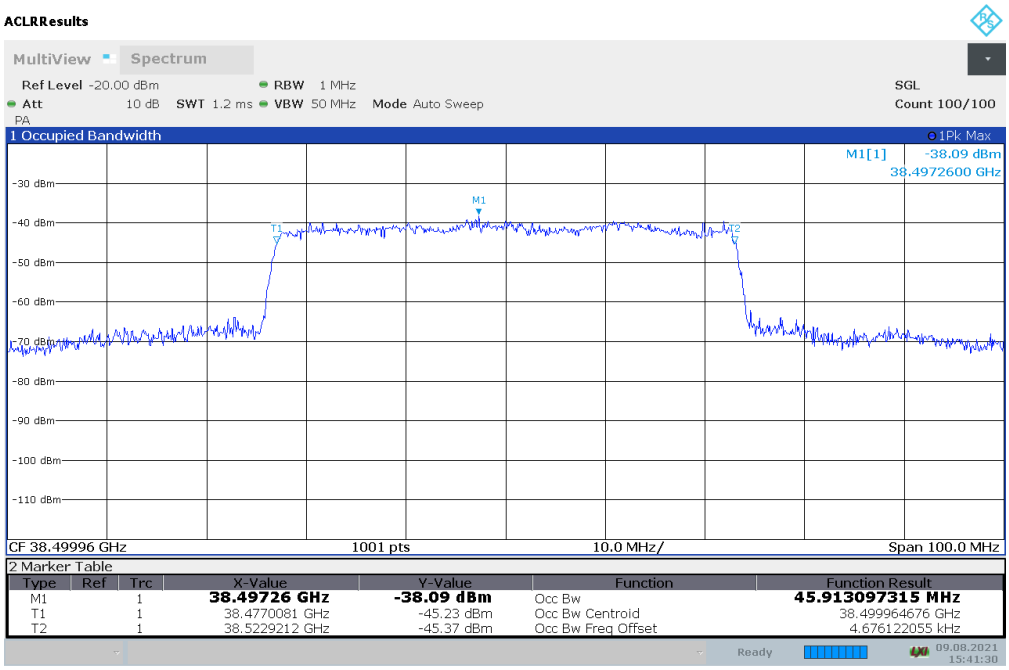
07:26:01 10.08.2021

Plot 6-26. n260 Occupied Bandwidth Input at 3dB above AGC Threshold – Relay Side – H Beam



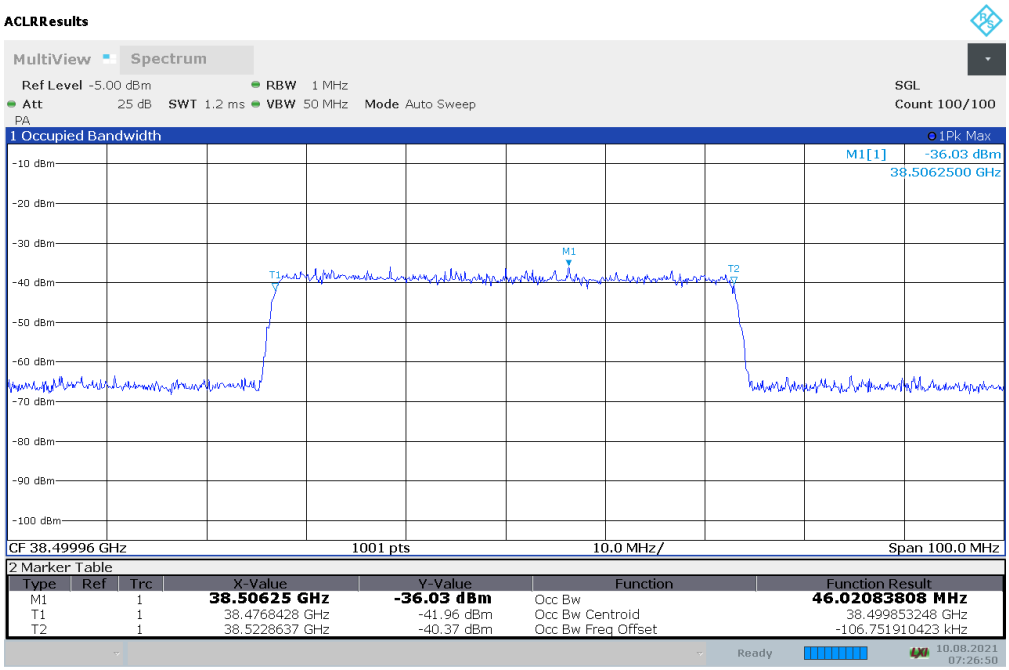
15:40:54 09.08.2021

Plot 6-27. n260 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Relay Side – H Beam



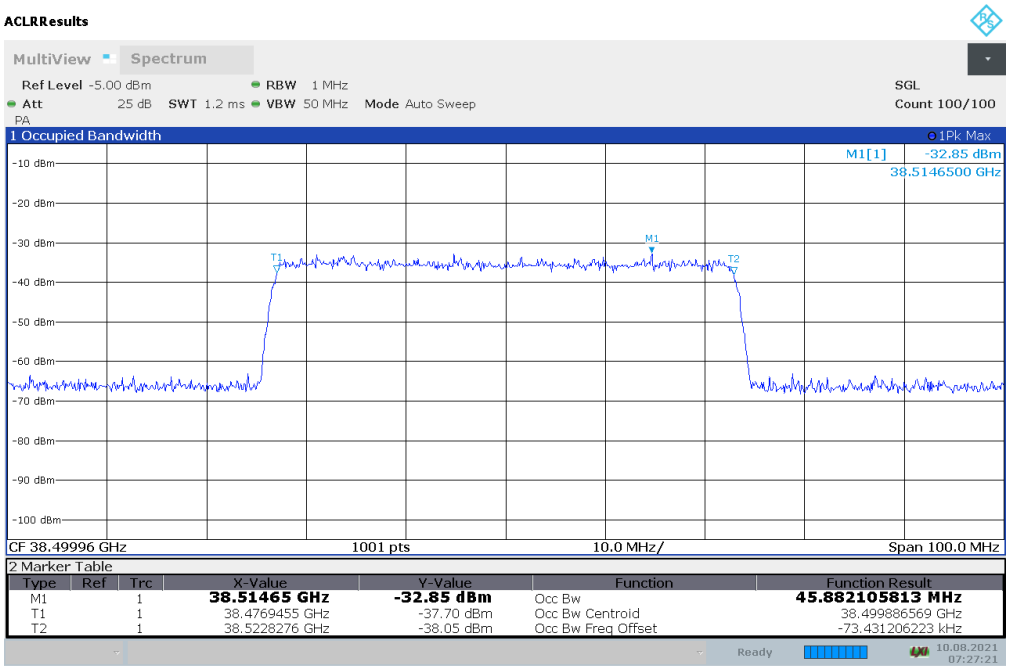
15:41:31 09.08.2021

Plot 6-28. n260 Occupied Bandwidth Output at 3dB above AGC Threshold – Relay Side – H Beam



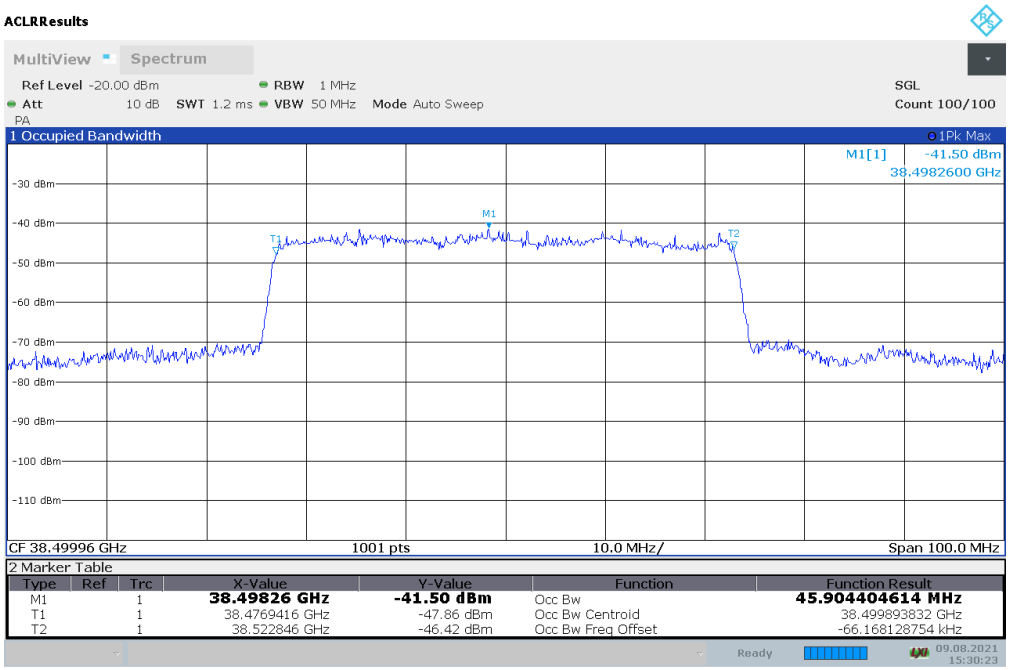
07:26:50 10.08.2021

Plot 6-29. n260 Occupied Bandwidth Input at 0.5dB below AGC Threshold – Relay Side – V Beam



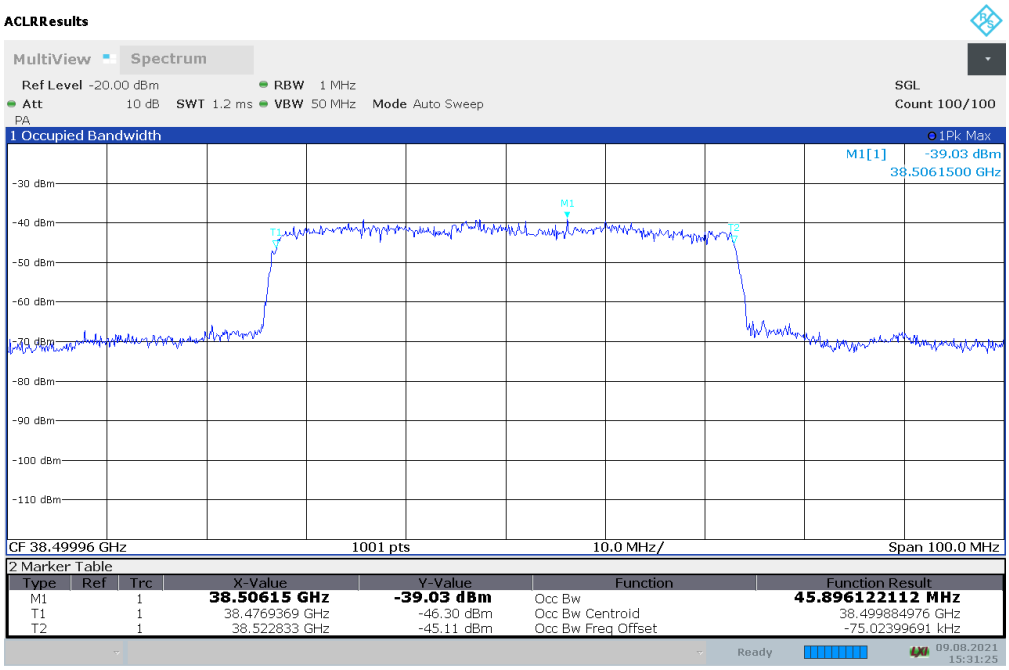
07:27:22 10.08.2021

Plot 6-30. n260 Occupied Bandwidth Input at 3dB above AGC Threshold – Relay Side – V Beam



15:30:24 09.08.2021

Plot 6-31. n260 Occupied Bandwidth Output at 0.5dB below AGC Threshold – Relay Side – V Beam



15:31:26 09.08.2021

Plot 6-32. n260 Occupied Bandwidth Output at 3dB above AGC Threshold – Relay Side – V Beam

6.3 Out-of-band Rejection

Test Overview

Per KDB 935210 D05 Section 3.3, the signal generator will sweep a CW signal to ± 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 ± 250 % of the passband, for each applicable CMRS band
2. Span same as the frequency range of the signal generator
3. RBW ≥ 1 % to 5 % of the EUT passband
4. VBW ≥ 3 x RBW
5. Detector = Peak/Max Hold
6. Number of sweep points ≥ 2 x 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 Setup

The EUT and measurement equipment were set up as shown in the diagram below.

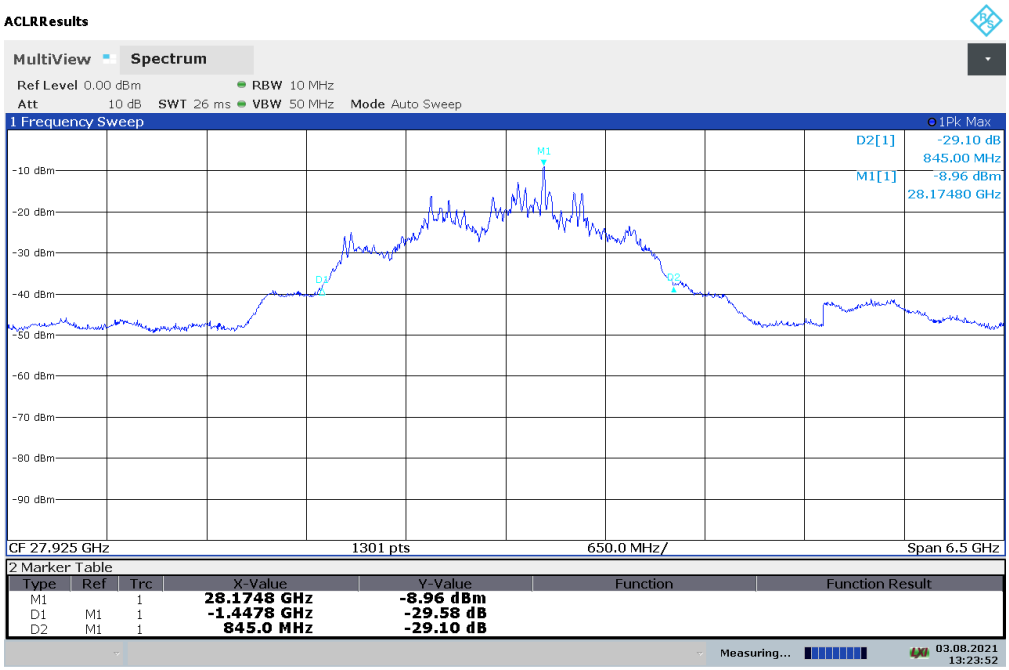
Figure 6-1. Test Instrument & Measurement Setup

Test Notes

In the plots on the following page, a spectrum plot is shown with a CW signal sweeping across the input of the EUT for both antennas. The sweep is set based on ±250% of the passband which is equal to ±2.5 x (28.35GHz – 27.5GHz) = ±2.125GHz. Therefore, the following plots demonstrate the frequency response of the EUT when a CW signal is sweeping from 25.375GHz to 30.475GHz.

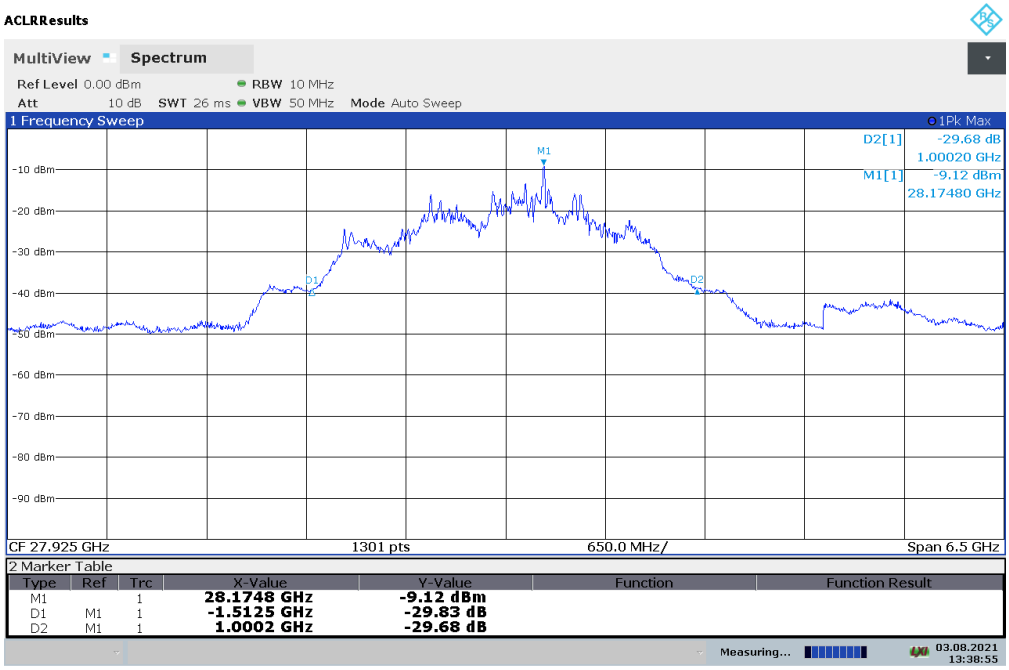
The “D1” and “D2” markers in the plots are provided to demonstrate the approximate OBW of the output frequency response.

Donor Side



13:23:53 03.08.2021

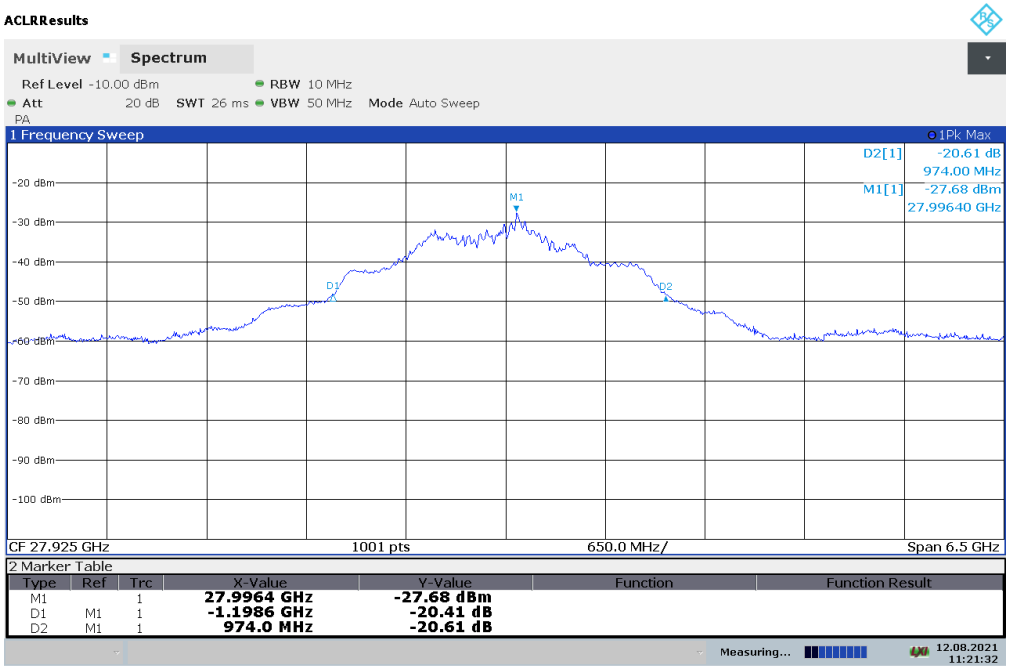
Plot 6-33. Out-Of-Band Rejection – Donor Side – H Beam



13:38:56 03.08.2021

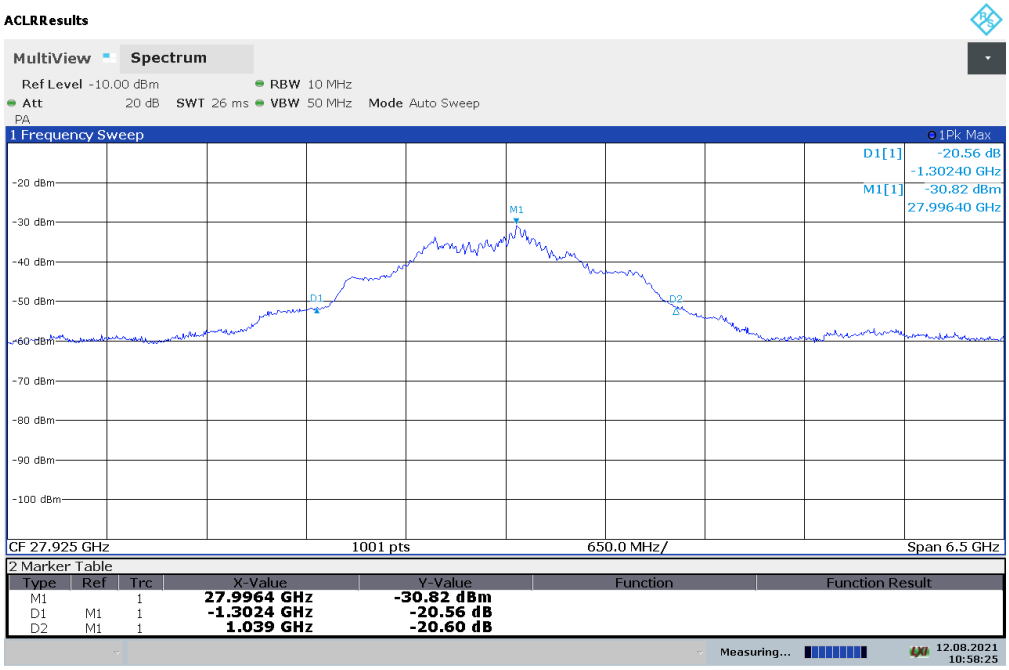
Plot 6-34. Out-Of-Band Rejection – Donor Side – V Beam

Relay Side



11:21:33 12.08.2021

Plot 6-35. Out-Of-Band Rejection – Relay Side – H Beam



10:58:25 12.08.2021

Plot 6-36. Out-Of-Band Rejection – Relay Side – V Beam

6.4 Measuring AGC Threshold Level, Mean Output Power and Amplifier/Booster Gain §2.1046, §30.202

Test Overview

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 ≥ 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
9. The trace was allowed to stabilize

Test Notes

Per FCC guidance, a 50MHz and a 100MHz NR mmWave signal was used as the input signal as opposed to the 4.1MHz AWGN required in KDB 935210 D05.

Sample Calculations

Input Power Level [dBm] = Signal Generator Level [dBm] + Cable Loss [dB] + Antenna Gain [dB] + Free Space Path Loss[dB]

Free Space Path Loss[dBm] = $20\log_{10}(d) + 20\log_{10}(f) + 20\log_{10}(4\pi/c) - G_{Tx} - G_{Rx}$

d = Distance between the antennas.

f = Frequency

G (Tx) = The Gain of the Transmitting Antenna.

G (Rx) = The Gain of the Receiving Antenna.

c = Speed of light in vacuum (Meters per Second)

Free Space Path Loss[dBm] = $20\log_{10}(0.5m) + 20\log_{10}(27924.96MHz) + 20\log_{10}(4\pi/c) - 0dB - 0dB = 55.34dB$

Input Power Level [dBm] = -26dBm + (-4.53)dB + 18.39dB + (-55.34)dB = -67.48 dBm

n261 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	27924.96	Mid	QPSK	Full RB	-60.48	29.67	-	90.15
50	27924.96	Mid	QPSK	Full RB	-59.48	30.71	1.04	90.19
50	27924.96	Mid	QPSK	Full RB	-58.48	31.78	1.07	90.26
50	27924.96	Mid	QPSK	Full RB	-57.48	32.85	1.07	90.33
50	27924.96	Mid	QPSK	Full RB	-56.48	33.85	1.00	90.33
50	27924.96	Mid	QPSK	Full RB	-55.48	34.86	1.01	90.34
50	27924.96	Mid	QPSK	Full RB	-54.48	35.88	1.02	90.36
50	27924.96	Mid	QPSK	Full RB	-53.48	36.82	0.94	90.30
50	27924.96	Mid	QPSK	Full RB	-52.48	37.79	0.97	90.27
50	27924.96	Mid	QPSK	Full RB	-51.48	38.72	0.93	90.20
50	27924.96	Mid	QPSK	Full RB	-50.48	39.64	0.92	90.12
50	27924.96	Mid	QPSK	Full RB	-49.48	40.36	0.72	89.84
50	27924.96	Mid	QPSK	Full RB	-48.48	41.09	0.73	89.57
50	27924.96	Mid	QPSK	Full RB	-47.48	41.85	0.76	89.33
50	27924.96	Mid	QPSK	Full RB	-46.48	42.49	0.64	88.97

Table 6-6. n261 50MHz 1CC Full RB AGC Threshold and Booster Gain – Donor Side – H Beam

Note: AGC Level is found at **-49.48dBm** EUT Input Power Level.

n261 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	27924.96	Mid	QPSK	Full RB	-60.48	28.98	-	89.46
100	27924.96	Mid	QPSK	Full RB	-59.48	29.99	1.01	89.47
100	27924.96	Mid	QPSK	Full RB	-58.48	30.99	1.00	89.47
100	27924.96	Mid	QPSK	Full RB	-57.48	32.06	1.07	89.54
100	27924.96	Mid	QPSK	Full RB	-56.48	33.07	1.01	89.55
100	27924.96	Mid	QPSK	Full RB	-55.48	34.10	1.03	89.58
100	27924.96	Mid	QPSK	Full RB	-54.48	35.10	1.00	89.58
100	27924.96	Mid	QPSK	Full RB	-53.48	36.02	0.92	89.50
100	27924.96	Mid	QPSK	Full RB	-52.48	37.01	0.99	89.49
100	27924.96	Mid	QPSK	Full RB	-51.48	37.97	0.96	89.45
100	27924.96	Mid	QPSK	Full RB	-50.48	38.93	0.96	89.41
100	27924.96	Mid	QPSK	Full RB	-49.48	39.65	0.72	89.13
100	27924.96	Mid	QPSK	Full RB	-48.48	40.28	0.63	88.76
100	27924.96	Mid	QPSK	Full RB	-47.48	41.05	0.77	88.53
100	27924.96	Mid	QPSK	Full RB	-46.48	41.74	0.69	88.22

Table 6-7. n261 100MHz 4CC Full RB AGC Threshold and Booster Gain – Donor Side – H Beam

Note: AGC Level is found at **-49.48dBm** EUT Input Power Level.

n261 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	27924.96	Mid	QPSK	Full RB	-63.48	29.04	-	92.52
50	27924.96	Mid	QPSK	Full RB	-62.48	30.11	1.07	92.59
50	27924.96	Mid	QPSK	Full RB	-61.48	31.20	1.09	92.68
50	27924.96	Mid	QPSK	Full RB	-60.48	32.24	1.04	92.72
50	27924.96	Mid	QPSK	Full RB	-59.48	33.28	1.04	92.76
50	27924.96	Mid	QPSK	Full RB	-58.48	34.31	1.03	92.79
50	27924.96	Mid	QPSK	Full RB	-57.48	35.31	1.00	92.79
50	27924.96	Mid	QPSK	Full RB	-56.48	36.26	0.95	92.74
50	27924.96	Mid	QPSK	Full RB	-55.48	37.26	1.00	92.74
50	27924.96	Mid	QPSK	Full RB	-54.48	38.23	0.97	92.71
50	27924.96	Mid	QPSK	Full RB	-53.48	39.21	0.98	92.69
50	27924.96	Mid	QPSK	Full RB	-52.48	40.06	0.85	92.54
50	27924.96	Mid	QPSK	Full RB	-51.48	40.88	0.82	92.36
50	27924.96	Mid	QPSK	Full RB	-50.48	41.64	0.76	92.12
50	27924.96	Mid	QPSK	Full RB	-49.48	42.40	0.76	91.88

Table 6-8. n261 50MHz 1CC Full RB AGC Threshold and Booster Gain – Donor Side – V Beam

Note: AGC Level is found at **-52.48dBm** EUT Input Power Level.

n261 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	27924.96	Mid	QPSK	Full RB	-63.48	29.18	-	92.66
100	27924.96	Mid	QPSK	Full RB	-62.48	30.24	1.06	92.72
100	27924.96	Mid	QPSK	Full RB	-61.48	31.27	1.03	92.75
100	27924.96	Mid	QPSK	Full RB	-60.48	32.33	1.06	92.81
100	27924.96	Mid	QPSK	Full RB	-59.48	33.36	1.03	92.84
100	27924.96	Mid	QPSK	Full RB	-58.48	34.37	1.01	92.85
100	27924.96	Mid	QPSK	Full RB	-57.48	35.38	1.01	92.86
100	27924.96	Mid	QPSK	Full RB	-56.48	36.40	1.02	92.88
100	27924.96	Mid	QPSK	Full RB	-55.48	37.34	0.94	92.82
100	27924.96	Mid	QPSK	Full RB	-54.48	38.26	0.92	92.74
100	27924.96	Mid	QPSK	Full RB	-53.48	39.18	0.92	92.66
100	27924.96	Mid	QPSK	Full RB	-52.48	39.90	0.72	92.38
100	27924.96	Mid	QPSK	Full RB	-51.48	40.67	0.77	92.15
100	27924.96	Mid	QPSK	Full RB	-50.48	41.40	0.73	91.88
100	27924.96	Mid	QPSK	Full RB	-49.48	42.06	0.66	91.54

Table 6-9. n261 100MHz 4CC Full RB AGC Threshold and Booster Gain – Donor Side – V Beam

Note: AGC Level is found at **-52.48dBm** EUT Input Power Level.

n260 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-62.53	28.78	-	91.31
50	38499.96	Mid	QPSK	Full RB	-61.53	29.86	1.08	91.39
50	38499.96	Mid	QPSK	Full RB	-60.53	30.99	1.13	91.52
50	38499.96	Mid	QPSK	Full RB	-59.53	32.20	1.21	91.73
50	38499.96	Mid	QPSK	Full RB	-58.53	33.39	1.19	91.92
50	38499.96	Mid	QPSK	Full RB	-57.53	34.60	1.21	92.13
50	38499.96	Mid	QPSK	Full RB	-56.53	35.76	1.16	92.29
50	38499.96	Mid	QPSK	Full RB	-55.53	37.02	1.26	92.55
50	38499.96	Mid	QPSK	Full RB	-54.53	38.19	1.17	92.72
50	38499.96	Mid	QPSK	Full RB	-53.53	39.32	1.13	92.85
50	38499.96	Mid	QPSK	Full RB	-52.53	40.16	0.84	92.69
50	38499.96	Mid	QPSK	Full RB	-51.53	41.01	0.85	92.54
50	38499.96	Mid	QPSK	Full RB	-50.53	41.88	0.87	92.41
50	38499.96	Mid	QPSK	Full RB	-49.53	42.68	0.80	92.21
50	38499.96	Mid	QPSK	Full RB	-48.53	43.25	0.57	91.78

Table 6-10. n260 50MHz 1CC Full RB AGC Threshold and Booster Gain – Donor Side – H Beam

Note: AGC Level is found at **-52.53dBm** EUT Input Power Level.

n260 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-62.53	28.59	-	91.12
100	38499.96	Mid	QPSK	Full RB	-61.53	29.70	1.11	91.23
100	38499.96	Mid	QPSK	Full RB	-60.53	30.85	1.15	91.38
100	38499.96	Mid	QPSK	Full RB	-59.53	32.13	1.28	91.66
100	38499.96	Mid	QPSK	Full RB	-58.53	33.31	1.18	91.84
100	38499.96	Mid	QPSK	Full RB	-57.53	34.59	1.28	92.12
100	38499.96	Mid	QPSK	Full RB	-56.53	35.78	1.19	92.31
100	38499.96	Mid	QPSK	Full RB	-55.53	36.96	1.18	92.49
100	38499.96	Mid	QPSK	Full RB	-54.53	38.04	1.08	92.57
100	38499.96	Mid	QPSK	Full RB	-53.53	39.07	1.03	92.60
100	38499.96	Mid	QPSK	Full RB	-52.53	40.10	1.03	92.63
100	38499.96	Mid	QPSK	Full RB	-51.53	40.93	0.83	92.46
100	38499.96	Mid	QPSK	Full RB	-50.53	41.81	0.88	92.34
100	38499.96	Mid	QPSK	Full RB	-49.53	42.61	0.80	92.14
100	38499.96	Mid	QPSK	Full RB	-48.53	43.19	0.58	91.72

Table 6-11. n260 100MHz 4CC Full RB AGC Threshold and Booster Gain – Donor Side – H Beam

Note: AGC Level is found at **-51.53dBm** EUT Input Power Level.

n260 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-62.53	29.01	-	91.54
50	38499.96	Mid	QPSK	Full RB	-61.53	30.15	1.14	91.68
50	38499.96	Mid	QPSK	Full RB	-60.53	31.30	1.15	91.83
50	38499.96	Mid	QPSK	Full RB	-59.53	32.46	1.16	91.99
50	38499.96	Mid	QPSK	Full RB	-58.53	33.74	1.28	92.27
50	38499.96	Mid	QPSK	Full RB	-57.53	34.95	1.21	92.48
50	38499.96	Mid	QPSK	Full RB	-56.53	36.17	1.22	92.70
50	38499.96	Mid	QPSK	Full RB	-55.53	37.24	1.07	92.77
50	38499.96	Mid	QPSK	Full RB	-54.53	38.28	1.04	92.81
50	38499.96	Mid	QPSK	Full RB	-53.53	39.33	1.05	92.86
50	38499.96	Mid	QPSK	Full RB	-52.53	40.23	0.90	92.76
50	38499.96	Mid	QPSK	Full RB	-51.53	40.83	0.60	92.36
50	38499.96	Mid	QPSK	Full RB	-50.53	41.51	0.68	92.04
50	38499.96	Mid	QPSK	Full RB	-49.53	42.12	0.61	91.65
50	38499.96	Mid	QPSK	Full RB	-48.53	42.76	0.64	91.29

Table 6-12. n260 50MHz 1CC Full RB AGC Threshold and Booster Gain – Donor Side – V Beam

Note: AGC Level is found at **-51.53dBm** EUT Input Power Level.

n260 – Donor Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-62.53	29.71	-	92.24
100	38499.96	Mid	QPSK	Full RB	-61.53	30.96	1.25	92.49
100	38499.96	Mid	QPSK	Full RB	-60.53	32.24	1.28	92.77
100	38499.96	Mid	QPSK	Full RB	-59.53	33.52	1.28	93.05
100	38499.96	Mid	QPSK	Full RB	-58.53	34.67	1.15	93.20
100	38499.96	Mid	QPSK	Full RB	-57.53	35.88	1.21	93.41
100	38499.96	Mid	QPSK	Full RB	-56.53	36.98	1.10	93.51
100	38499.96	Mid	QPSK	Full RB	-55.53	38.04	1.06	93.57
100	38499.96	Mid	QPSK	Full RB	-54.53	39.02	0.98	93.55
100	38499.96	Mid	QPSK	Full RB	-53.53	39.96	0.94	93.49
100	38499.96	Mid	QPSK	Full RB	-52.53	40.64	0.68	93.17
100	38499.96	Mid	QPSK	Full RB	-51.53	41.32	0.68	92.85
100	38499.96	Mid	QPSK	Full RB	-50.53	41.92	0.60	92.45
100	38499.96	Mid	QPSK	Full RB	-49.53	42.43	0.51	91.96
100	38499.96	Mid	QPSK	Full RB	-48.53	42.86	0.43	91.39

Table 6-13. n260 100MHz 4CC Full RB AGC Threshold and Booster Gain – Donor Side – V Beam

Note: AGC Level is found at **-52.53dBm** EUT Input Power Level.

n261 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	27924.96	Mid	QPSK	Full RB	-76.48	14.55	-	91.03
50	27924.96	Mid	QPSK	Full RB	-75.48	15.78	1.23	91.26
50	27924.96	Mid	QPSK	Full RB	-74.48	16.92	1.14	91.40
50	27924.96	Mid	QPSK	Full RB	-73.48	18.09	1.17	91.57
50	27924.96	Mid	QPSK	Full RB	-72.48	19.28	1.19	91.76
50	27924.96	Mid	QPSK	Full RB	-71.48	20.40	1.12	91.88
50	27924.96	Mid	QPSK	Full RB	-70.48	21.54	1.14	92.02
50	27924.96	Mid	QPSK	Full RB	-69.48	22.52	0.98	92.00
50	27924.96	Mid	QPSK	Full RB	-68.48	23.56	1.04	92.04
50	27924.96	Mid	QPSK	Full RB	-67.48	24.40	0.84	91.88
50	27924.96	Mid	QPSK	Full RB	-66.48	25.17	0.77	91.65
50	27924.96	Mid	QPSK	Full RB	-65.48	25.84	0.67	91.32
50	27924.96	Mid	QPSK	Full RB	-64.48	26.47	0.63	90.95

Table 6-14. n261 50MHz 1CC Full RB AGC Threshold and Booster Gain – Relay Side – H Beam

Note: AGC Level is found at **-67.48dBm** EUT Input Power Level.

n261 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	27924.96	Mid	QPSK	Full RB	-76.48	15.52	-	92.00
100	27924.96	Mid	QPSK	Full RB	-75.48	16.67	1.15	92.15
100	27924.96	Mid	QPSK	Full RB	-74.48	17.81	1.14	92.29
100	27924.96	Mid	QPSK	Full RB	-73.48	18.91	1.10	92.39
100	27924.96	Mid	QPSK	Full RB	-72.48	19.98	1.07	92.46
100	27924.96	Mid	QPSK	Full RB	-71.48	21.14	1.16	92.62
100	27924.96	Mid	QPSK	Full RB	-70.48	22.06	0.92	92.54
100	27924.96	Mid	QPSK	Full RB	-69.48	23.01	0.95	92.49
100	27924.96	Mid	QPSK	Full RB	-68.48	23.57	0.56	92.05
100	27924.96	Mid	QPSK	Full RB	-67.48	24.25	0.68	91.73
100	27924.96	Mid	QPSK	Full RB	-66.48	24.84	0.59	91.32
100	27924.96	Mid	QPSK	Full RB	-65.48	25.38	0.54	90.86
100	27924.96	Mid	QPSK	Full RB	-64.48	25.78	0.40	90.26

Table 6-15. n261 100MHz 4CC Full RB AGC Threshold and Booster Gain – Relay Side – H Beam

Note: AGC Level is found at **-68.48dBm** EUT Input Power Level.

n261 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	27924.96	Mid	QPSK	Full RB	-76.48	13.53	-	90.01
50	27924.96	Mid	QPSK	Full RB	-75.48	14.60	1.07	90.08
50	27924.96	Mid	QPSK	Full RB	-74.48	15.68	1.08	90.16
50	27924.96	Mid	QPSK	Full RB	-73.48	16.81	1.13	90.29
50	27924.96	Mid	QPSK	Full RB	-72.48	17.92	1.11	90.40
50	27924.96	Mid	QPSK	Full RB	-71.48	19.01	1.09	90.49
50	27924.96	Mid	QPSK	Full RB	-70.48	20.12	1.11	90.60
50	27924.96	Mid	QPSK	Full RB	-69.48	21.29	1.17	90.77
50	27924.96	Mid	QPSK	Full RB	-68.48	22.34	1.05	90.82
50	27924.96	Mid	QPSK	Full RB	-67.48	23.37	1.03	90.85
50	27924.96	Mid	QPSK	Full RB	-66.48	24.17	0.80	90.65
50	27924.96	Mid	QPSK	Full RB	-65.48	25.01	0.84	90.49
50	27924.96	Mid	QPSK	Full RB	-64.48	25.89	0.88	90.37

Table 6-16. n261 50MHz 1CC Full RB AGC Threshold and Booster Gain – Relay Side – V Beam

Note: AGC Level is found at **-66.48dBm** EUT Input Power Level.

n261 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	27924.96	Mid	QPSK	Full RB	-76.48	14.47	-	90.95
100	27924.96	Mid	QPSK	Full RB	-75.48	15.62	1.15	91.10
100	27924.96	Mid	QPSK	Full RB	-74.48	16.73	1.11	91.21
100	27924.96	Mid	QPSK	Full RB	-73.48	17.86	1.13	91.34
100	27924.96	Mid	QPSK	Full RB	-72.48	19.03	1.17	91.51
100	27924.96	Mid	QPSK	Full RB	-71.48	20.12	1.09	91.60
100	27924.96	Mid	QPSK	Full RB	-70.48	21.20	1.08	91.68
100	27924.96	Mid	QPSK	Full RB	-69.48	22.19	0.99	91.67
100	27924.96	Mid	QPSK	Full RB	-68.48	23.18	0.99	91.66
100	27924.96	Mid	QPSK	Full RB	-67.48	23.97	0.79	91.45
100	27924.96	Mid	QPSK	Full RB	-66.48	24.61	0.64	91.09
100	27924.96	Mid	QPSK	Full RB	-65.48	25.31	0.70	90.79
100	27924.96	Mid	QPSK	Full RB	-64.48	25.93	0.62	90.41

Table 6-17. n261 100MHz 4CC Full RB AGC Threshold and Booster Gain – Relay Side – V Beam

Note: AGC Level is found at **-67.48dBm** EUT Input Power Level.

n260 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-72.53	14.03	-	86.56
50	38499.96	Mid	QPSK	Full RB	-71.53	15.05	1.02	86.58
50	38499.96	Mid	QPSK	Full RB	-70.53	16.08	1.03	86.61
50	38499.96	Mid	QPSK	Full RB	-69.53	17.18	1.10	86.71
50	38499.96	Mid	QPSK	Full RB	-68.53	18.36	1.18	86.89
50	38499.96	Mid	QPSK	Full RB	-67.53	19.47	1.11	87.00
50	38499.96	Mid	QPSK	Full RB	-66.53	20.59	1.12	87.12
50	38499.96	Mid	QPSK	Full RB	-65.53	21.79	1.20	87.32
50	38499.96	Mid	QPSK	Full RB	-64.53	22.93	1.14	87.46
50	38499.96	Mid	QPSK	Full RB	-63.53	23.94	1.01	87.47
50	38499.96	Mid	QPSK	Full RB	-62.53	24.72	0.78	87.25
50	38499.96	Mid	QPSK	Full RB	-61.53	25.42	0.70	86.95
50	38499.96	Mid	QPSK	Full RB	-60.53	26.18	0.76	86.71

Table 6-18. n260 50MHz 1CC Full RB AGC Threshold and Booster Gain – Relay Side – H Beam

Note: AGC Level is found at **-62.53dBm** EUT Input Power Level.

n260 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-72.53	13.92	-	86.45
100	38499.96	Mid	QPSK	Full RB	-71.53	15.08	1.16	86.61
100	38499.96	Mid	QPSK	Full RB	-70.53	16.30	1.22	86.83
100	38499.96	Mid	QPSK	Full RB	-69.53	17.57	1.27	87.10
100	38499.96	Mid	QPSK	Full RB	-68.53	18.72	1.15	87.25
100	38499.96	Mid	QPSK	Full RB	-67.53	19.99	1.27	87.52
100	38499.96	Mid	QPSK	Full RB	-66.53	21.20	1.21	87.73
100	38499.96	Mid	QPSK	Full RB	-65.53	22.33	1.13	87.86
100	38499.96	Mid	QPSK	Full RB	-64.53	23.34	1.01	87.87
100	38499.96	Mid	QPSK	Full RB	-63.53	24.18	0.84	87.71
100	38499.96	Mid	QPSK	Full RB	-62.53	25.05	0.87	87.58
100	38499.96	Mid	QPSK	Full RB	-61.53	25.82	0.77	87.35
100	38499.96	Mid	QPSK	Full RB	-60.53	26.50	0.68	87.03

Table 6-19. n260 100MHz 4CC Full RB AGC Threshold and Booster Gain – Relay Side – H Beam

Note: AGC Level is found at **-63.53dBm** EUT Input Power Level.

n260 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
50	38499.96	Mid	QPSK	Full RB	-72.53	14.48	-	87.01
50	38499.96	Mid	QPSK	Full RB	-71.53	15.58	1.10	87.11
50	38499.96	Mid	QPSK	Full RB	-70.53	16.67	1.09	87.20
50	38499.96	Mid	QPSK	Full RB	-69.53	17.81	1.14	87.34
50	38499.96	Mid	QPSK	Full RB	-68.53	18.90	1.09	87.43
50	38499.96	Mid	QPSK	Full RB	-67.53	19.91	1.01	87.44
50	38499.96	Mid	QPSK	Full RB	-66.53	21.07	1.16	87.60
50	38499.96	Mid	QPSK	Full RB	-65.53	22.21	1.14	87.74
50	38499.96	Mid	QPSK	Full RB	-64.53	23.19	0.98	87.72
50	38499.96	Mid	QPSK	Full RB	-63.53	24.04	0.85	87.57
50	38499.96	Mid	QPSK	Full RB	-62.53	24.79	0.75	87.32
50	38499.96	Mid	QPSK	Full RB	-61.53	25.42	0.63	86.95
50	38499.96	Mid	QPSK	Full RB	-60.53	25.92	0.50	86.45

Table 6-20. n260 50MHz 1CC Full RB AGC Threshold and Booster Gain – Relay Side – V Beam

Note: AGC Level is found at **-63.53dBm** EUT Input Power Level.

n260 – Relay Side

Bandwidth [MHz]	Frequency [MHz]	Channel	Modulation	RB Size	EUT Input Power Level [dBm]	EIRP [dBm]	Calculated Change in Output Power [dB]	Calculated Gain [dB]
100	38499.96	Mid	QPSK	Full RB	-72.53	14.33	-	86.86
100	38499.96	Mid	QPSK	Full RB	-71.53	15.41	1.08	86.94
100	38499.96	Mid	QPSK	Full RB	-70.53	16.54	1.13	87.07
100	38499.96	Mid	QPSK	Full RB	-69.53	17.66	1.12	87.19
100	38499.96	Mid	QPSK	Full RB	-68.53	18.82	1.16	87.35
100	38499.96	Mid	QPSK	Full RB	-67.53	19.97	1.15	87.50
100	38499.96	Mid	QPSK	Full RB	-66.53	21.02	1.05	87.55
100	38499.96	Mid	QPSK	Full RB	-65.53	21.99	0.97	87.52
100	38499.96	Mid	QPSK	Full RB	-64.53	22.89	0.90	87.42
100	38499.96	Mid	QPSK	Full RB	-63.53	23.56	0.67	87.09
100	38499.96	Mid	QPSK	Full RB	-62.53	24.27	0.71	86.80
100	38499.96	Mid	QPSK	Full RB	-61.53	24.87	0.60	86.40
100	38499.96	Mid	QPSK	Full RB	-60.53	25.38	0.51	85.91

Table 6-21. n260 100MHz 4CC Full RB AGC Threshold and Booster Gain – Relay Side – V Beam

Note: AGC Level is found at **-63.53dBm** EUT Input Power Level.

7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **5G Extender Gen 2 FCC ID: NKR-TR2V1-IDU** has been tested to comply with the requirements specified in §20.21 and KDB 935210 D05 for Industrial Booster operation.