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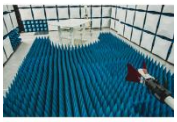


Part 96 MEASUREMENT REPORT

Applicant Name:
Skylark Wireless, LLC
4011 Garrott St.
Houston, TX 77006
USA

Date of Testing:
11/29/2023-12/19/2024
Test Report Issue Date:
2/12/2025
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M2401230005-01.2AS22

FCC ID:	**2AS22-FLCOCH2**
APPLICANT:	**Skylark Wireless, LLC**

Application Type:	Certification
Model:	FLCOCH2
EUT Type:	CBRS CPE
FCC Classification:	Category B Citizens Band Radio Service Devices (CBSD)
FCC Rule Part(s):	96
Test Procedure(s):	ANSI C63.26-2015, KDB 940660 D01 v03

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 Ortanez
Executive Vice President

ACCREDITED
CERT #2041.01

TABLE OF CONTENTS

MIMO					
Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
			Max. Power [W]	Max. Power [dBm]	
40 MHz	QPSK	3570.0 - 3680.0	11.567	40.63	36M6G7D
	16QAM	3570.0 - 3680.0	11.451	40.59	36M6W7D
	64QAM	3570.0 - 3680.0	11.661	40.67	36M2W7D
	256QAM	3570.0 - 3680.0	11.522	40.62	36M2W7D
30 MHz	QPSK	3565.0 - 3685.0	10.880	40.37	29M4G7D
	16QAM	3565.0 - 3685.0	10.902	40.37	29M1W7D
	64QAM	3565.0 - 3685.0	10.867	40.36	29M3W7D
	256QAM	3565.0 - 3685.0	10.917	40.38	29M2W7D
20 MHz	QPSK	3560.0 - 3690.0	10.776	40.32	19M6G7D
	16QAM	3560.0 - 3690.0	10.538	40.23	19M7W7D
	64QAM	3560.0 - 3690.0	10.694	40.29	19M7W7D
	256QAM	3560.0 - 3690.0	10.655	40.28	19M6W7D
10 MHz	QPSK	3555.0 - 3695.0	4.290	36.32	9M08G7D
	16QAM	3555.0 - 3695.0	4.195	36.23	8M99W7D
	64QAM	3555.0 - 3695.0	4.258	36.29	9M07W7D
	256QAM	3555.0 - 3695.0	4.242	36.28	9M07W7D

EUT Overview

Note: EIRP levels shown in the table above are measured over the full channel bandwidth. These values will appear on the Grant of Authorization.

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 a OnGo Alliance Approved Test Lab (ATL)
- Element Washington DC LLC is a WInnForum Approved Test Lab
- 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.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Skylark Wireless, LLC CBRS CPE FCC ID: 2AS22-FLCOCH2**. The test data contained in this report pertains only to the emissions due to the EUT's Band 48 operation in the CBRS band. Per FCC Part 96, this device is evaluated as a Category B CBSD (CBD).

Test Device Serial No.: FL2B000061, FL2B000036

2.2 Device Capabilities

This device contains the following capabilities:

Band 48

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated and antenna port conducted emissions tests.

This device operates with two antenna ports which produce two simultaneous, orthogonally polarized transmissions. The device utilizes a high power, narrow bandwidth pilot pulse. Under normal operation, this pilot pulse will operate on either antenna, but cannot operate on both antennas at the same time. To simplify conducted emission measurement, pilot operation was limited to a single antenna. Both antenna ports were investigated, and it was which antenna had the pilot pulse was found to have no effect on test results. For conducted emission measurements in this report, the pilot is operating on antenna 1.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 2023.07.01 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.

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) were used in the measurement of the EUT.

Deviation from Measurement Procedure……None

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. 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.

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

For radiated power measurements, substitution method is used per the guidance of ANSI C63.26-2015. For emissions below 1GHz, a half-wave dipole is substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\,[dBm]} = P_{g\,[dBm]} - \text{cable loss}_{\,[dB]} + \text{antenna gain}_{\,[dBd/dBi]};$$

where P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $P_{g\,[dBm]}$ – cable loss $_{[dB]}$.

For radiated spurious emissions measurements, the field strength conversion method is used per the formulas in Section 5.2.7 of ANSI C63.26-2015. Field Strength (EIRP) is calculated using the following formulas:

$$E_{[dB\mu V/m]} = \text{Measured amplitude level}_{[dBm]} + 107 + \text{Cable Loss}_{[dB]} + \text{Antenna Factor}_{[dB/m]}$$

And

$$EIRP_{[dBm]} = E_{[dB\mu V/m]} + 20\log D - 104.8;$$ where D is the measurement distance in meters.

All radiated measurements are performed in a chamber that meets the site requirements per ANSI C63.4-2014. Additionally, radiated emissions below 30MHz are also validated on an Open Area Test Site to assert correlation with the chamber measurements per the requirements of KDB 414788 D01 v01r01.

Radiated power and radiated spurious emission levels are investigated with the receive antenna horizontally and vertically polarized per ANSI C63.26-2015.

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 Bench Top Measurements	1.13
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
-	MVG	EMC Cable and Switch System	4/14/2024	Annual	4/14/2025	MVG-001
-	ETS	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	ETS-001
-	WL40-1	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	WL40-1
Agilent	N9030A	50GHz PXA Signal Analyzer	4/23/2024	Annual	4/23/2025	US51350301
Emco	3115	Horn Antenna (1-18GHz)	6/7/2024	Biennial	6/7/2026	9704-5182
Emco	3116	Horn Antenna (18-40GHz)	7/5/2023	Triennial	7/5/2025	9203-2178
Keysight Technologies	N9020A	MXA Signal Analyzer	4/11/2024	Annual	4/11/2025	MY54500644
Keysight Technologies	N9030A	PXA Signal Analyzer (44GHz)	8/26/2024	Annual	8/26/2025	MY54490576
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	9/25/2023	Annual	9/25/2024	100342
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/11/2023	Annual	9/11/2024	100348
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	2/15/2024	Annual	2/15/2025	103200
Sunol	JB5	Bi-Log Antenna (30MHz - 5GHz)	8/30/2022	Biennial	8/30/2024	A051107
Sunol	JB6	Bi-Log Antenna (30MHz - 6GHz)	3/2/2023	Biennial	3/2/2025	A082816
Sunol	DRH-118	Horn Antenna (1-18GHz)	2/13/2024	Biennial	2/13/2026	A042511

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. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

BW = 8.62 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

BW = 8.45 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

Spurious Radiated Emission – Band 48

Example: Middle Channel 2nd Harmonic (7250 MHz)

The average spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0 dBm on the spectrum analzyer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 1564 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80).

7.0 TEST RESULTS

7.1 Summary

Company Name:	Skylark Wireless, LLC
FCC ID:	2AS22-FLCOCH2
FCC Classification:	Category B Citizens Band Radio Service Devices (CBSD)
Mode(s):	Band 48

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
Conducted	Conducted Power	2.1046(a), 2.1046(c)	N/A	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
	Peak-Average Ratio	96.41(g)	≤ 13dB	PASS	Section 7.6
	Conducted Band Edge / Spurious Emissions (CBSD)	2.1051, 96.41(e)(1)(i)	-13 dBm/MHz at frequencies within 0-10 MHz above the upper SAS-assigned channel edge and within 0-10MHz below the lower SAS-assigned channel edge -25 dBm/MHz at frequencies greater than 10 MHz above and below channel edge -emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz	PASS	Sections 7.7, 7.8
	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	PASS	Section 7.10
	Category B CBSD Device Additional Requirements (CBSD Protocol)	96.45	Category B CBSDs must be professionally installed. In the 3550-3650MHz band, Category B CBSDs must be authorized consistent with information received from an ESC, as described in 96.15. Category B CBSDs are limited to outdoor operations. When registering with a SAS, Category B CBSDs must tranmist all information required under 96.39 plus the following additional information: antenna gain, beamwidth, azimuth, downtilt angle, and antenna height above ground level.	PASS	SAS Protocol Report
	Equivalent Isotropic Radiated Power (EIRP) (Catogory B CBSD)	96.41(b)	47 dBm/10MHz	PASS	Section 7.4
	Power Spectral Density (PSD) (Category B CBSD)	96.41(b)	37 dBm/MHz	PASS	Section 7.5
Radiated	Radiated Spurious Emissions	96.41(e)	-40 dBm/MHz	PASS	Section 7.9

Table 7-1 Summary of Test Results

Notes:

1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.

2) The analyzer plots were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
3) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.
4) For conducted spurious emissions, automated test software was used to measure emissions and capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool 1.1 and Chamber Control 1.6.4.

7.2 Conducted Output Power/EIRP Data

Test Overview

The EUT is set up to transmit at maximum power for Band 48. All power levels are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

Measurement equipment was set up with triggering/gating on the spectrum analyzer such that powers were measured only during the on-time of the signal.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4.1
ANSI C63.26-2015 – Section 6.4.3.2.3

Test Settings

1. Span = 2 x OBW to 3 x OBW
2. RBW ≥ OBW
3. Number of measurement points in sweep ≥ 2 x span / RBW
4. Sweep = auto-couple (less than transmission burst duration)
5. Detector = RMS (power)
6. Trigger was set to enable power measurements only on full power bursts
7. Trace was allowed to stabilize

Test Setup

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

Figure 7-1. Test Instrument & Measurement Setup

Test Notes

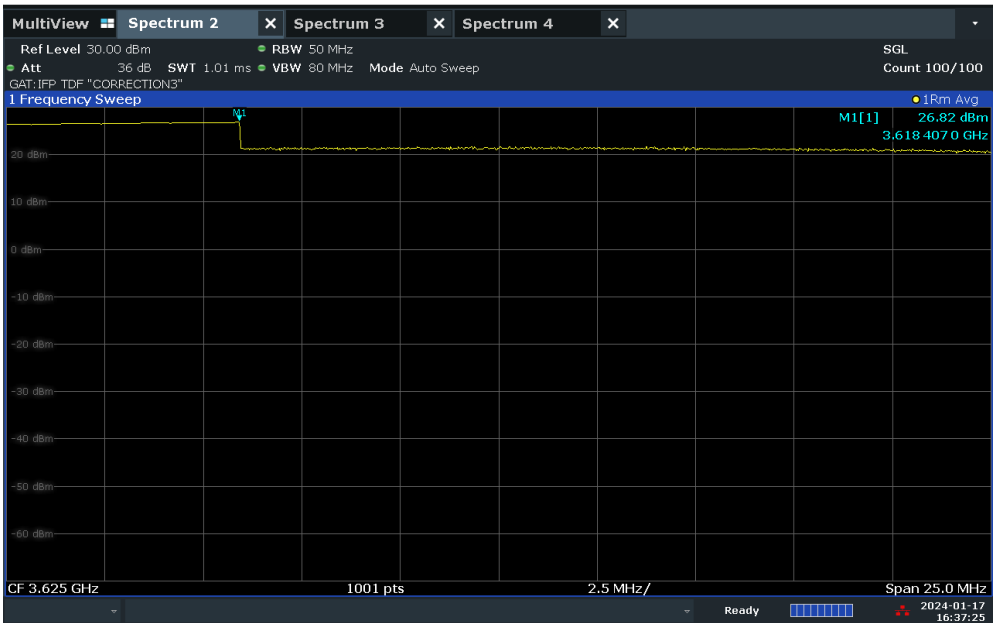
1. Conducted power measurements were evaluated using various combinations of modulation and channel bandwidth. Channel bandwidth data is shown in the tables below based only on the channel bandwidths that were supported in this device.
2. Per the guidance of KDB 662911 D02, only the maximum antenna gain from one antenna is applied to determine the MIMO EIRP due to the two antennas being cross-polarized

Bandwidth	Modulation	Frequency [MHz]	Ch. A Conducted Power [dBm]	Ch. B Conducted Power [dBm]	Summed MIMO Conducted Power [dBm]	Ant Gain [dBi]	MIMO EIRP [dBm]	EIRP [Watts]
40 MHz	QPSK	3570.0	26.62	20.81	27.63	13.00	40.63	11.567
		3625.0	26.38	21.13	27.51	13.00	40.51	11.258
		3680.0	25.84	20.85	27.04	13.00	40.04	10.083
	16-QAM	3570.0	26.51	21.01	27.59	13.00	40.59	11.451
		3625.0	26.47	21.13	27.58	13.00	40.58	11.439
		3680.0	25.83	20.87	27.03	13.00	40.03	10.076
	64-QAM	3570.0	26.56	21.19	27.67	13.00	40.67	11.661
		3625.0	26.40	20.55	27.40	13.00	40.40	10.974
		3680.0	25.63	20.44	26.78	13.00	39.78	9.503
	256-QAM	3570.0	26.55	20.99	27.62	13.00	40.62	11.522
		3625.0	26.42	21.4	27.61	13.00	40.61	11.504
		3680.0	25.88	20.59	27.01	13.00	40.01	10.012
30 MHz	QPSK	3565.0	26.18	21.15	27.37	13.00	40.37	10.880
		3625.0	26.09	21.15	27.30	13.00	40.30	10.710
		3685.0	25.25	20.97	26.63	13.00	39.63	9.178
	16-QAM	3565.0	25.93	20.95	27.13	13.00	40.13	10.299
		3625.0	26.15	21.28	27.37	13.00	40.37	10.902
		3685.0	25.28	20.84	26.61	13.00	39.61	9.151
	64-QAM	3565.0	25.98	20.99	27.18	13.00	40.18	10.413
		3625.0	26.17	21.16	27.36	13.00	40.36	10.867
		3685.0	25.26	20.92	26.62	13.00	39.62	9.165
	256-QAM	3565.0	26.05	20.98	27.23	13.00	40.23	10.536
		3625.0	26.19	21.18	27.38	13.00	40.38	10.917
		3685.0	25.43	20.91	26.74	13.00	39.74	9.427
20 MHz	QPSK	3560.0	26.19	20.94	27.32	13.00	40.32	10.776
		3625.0	26.07	21.07	27.26	13.00	40.26	10.625
		3690.0	25.15	20.8	26.51	13.00	39.51	8.930
	16-QAM	3560.0	26.09	20.73	27.20	13.00	40.20	10.470
		3625.0	26.01	21.11	27.23	13.00	40.23	10.538
		3690.0	25.30	20.89	26.64	13.00	39.64	9.210
	64-QAM	3560.0	26.20	20.76	27.29	13.00	40.29	10.694
		3625.0	25.94	21.04	27.16	13.00	40.16	10.369
		3690.0	25.24	20.78	26.57	13.00	39.57	9.056
	256-QAM	3560.0	26.03	20.96	27.21	13.00	40.21	10.487
		3625.0	26.07	21.12	27.28	13.00	40.28	10.655
		3690.0	25.10	20.79	26.47	13.00	39.47	8.850
10 MHz	QPSK	3555.0	26.72	21.18	27.79	13.00	36.32	4.290
		3625.0	26.77	23.65	28.49	13.00	36.26	4.230
		3695.0	25.55	20.91	26.83	13.00	35.51	3.555
	16-QAM	3555.0	26.74	21.14	27.80	13.00	36.20	4.168
		3625.0	26.82	21.76	28.00	13.00	36.23	4.195
		3695.0	25.57	20.83	26.83	13.00	35.64	3.667
	64-QAM	3555.0	26.63	21.13	27.71	13.00	36.29	4.258
		3625.0	26.90	21.63	28.03	13.00	36.16	4.128
		3695.0	25.36	20.64	26.62	13.00	35.57	3.605
	256-QAM	3555.0	26.69	21.21	27.77	13.00	36.21	4.175
		3625.0	26.80	22.05	28.05	13.00	36.28	4.242
		3695.0	25.36	20.87	26.68	13.00	35.47	3.523

Table 7-2 Conducted Power / EIRP Measurements

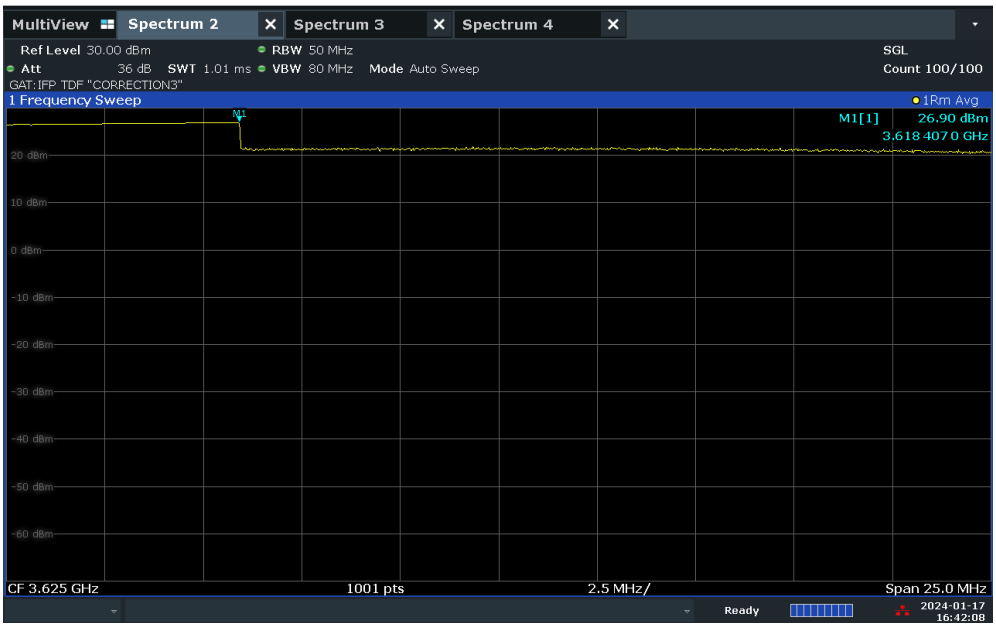
Antenna 1 Conducted Power Measurements

Plot 7.1 – Conducted Power Measurement – 10MHz BW, Mid Channel, QPSK – ANT1



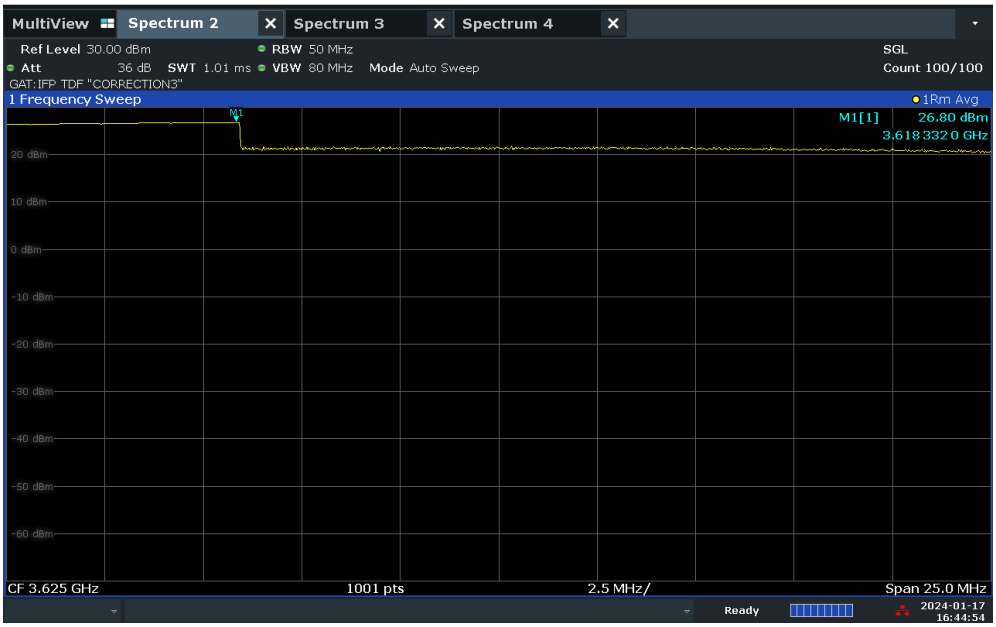
Plot 7.2 – Conducted Power Measurement – 10MHz BW, Mid Channel, 16QAM – ANT1

ACLRResults

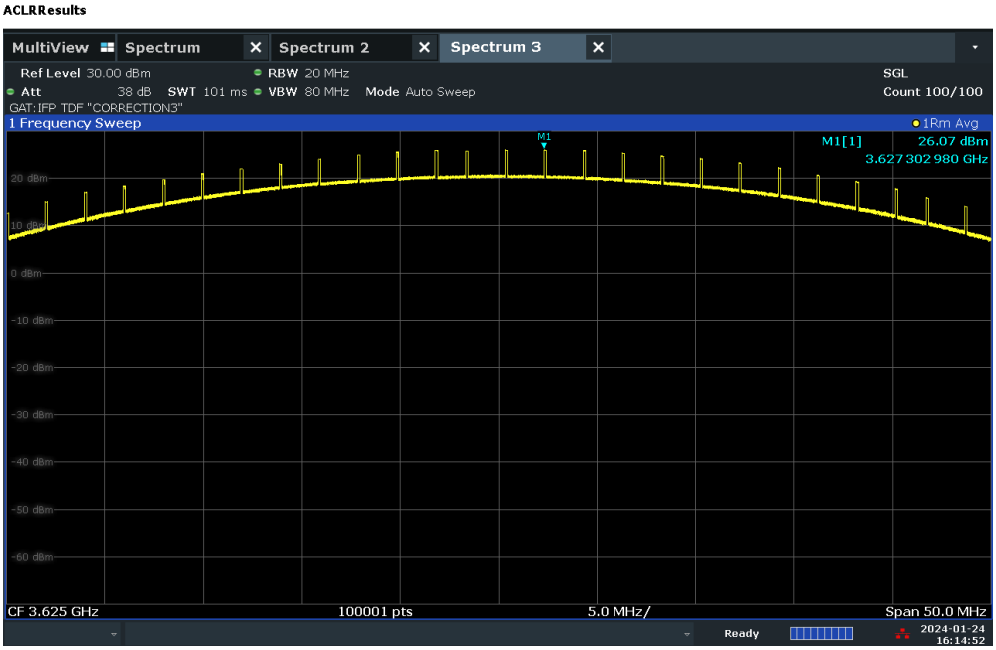


Plot 7.3 – Conducted Power Measurement – 10MHz BW, Mid Channel, 64QAM – ANT1

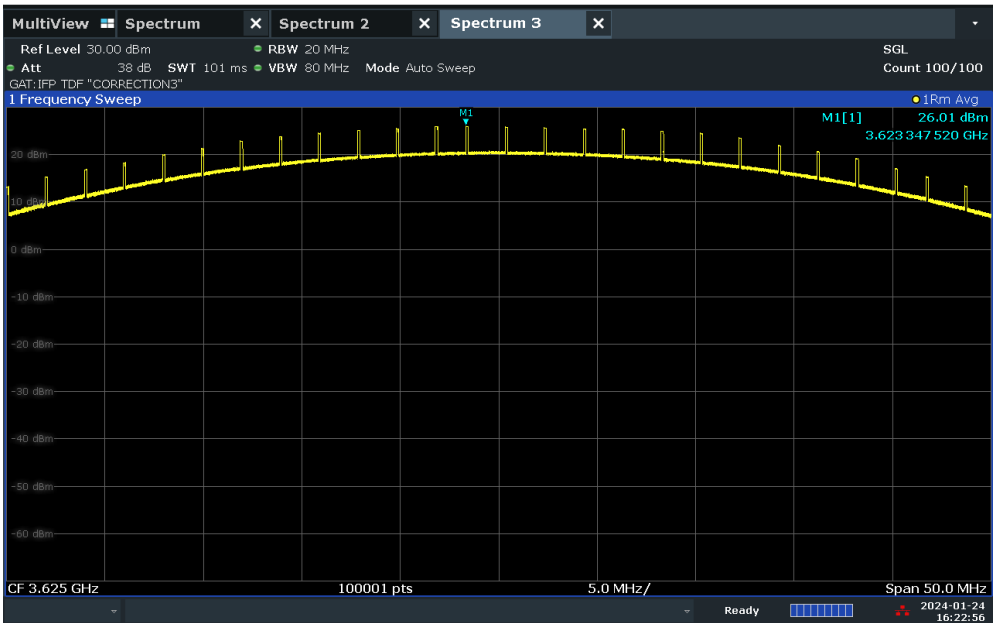
ACLRResults



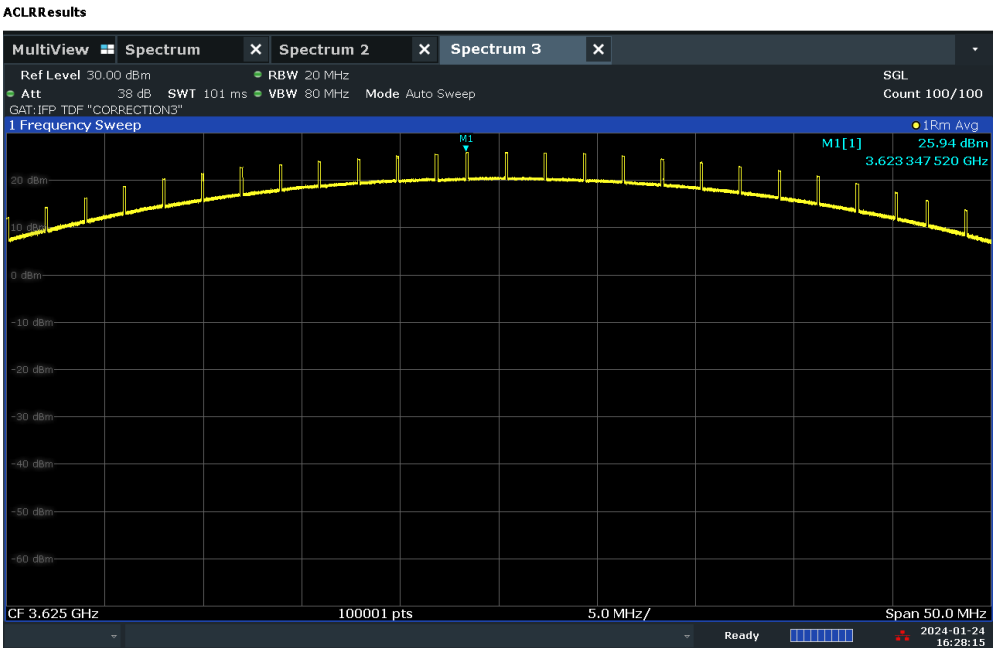
Plot 7.4 – Conducted Power Measurement – 10MHz BW, Mid Channel, 256QAM – ANT1



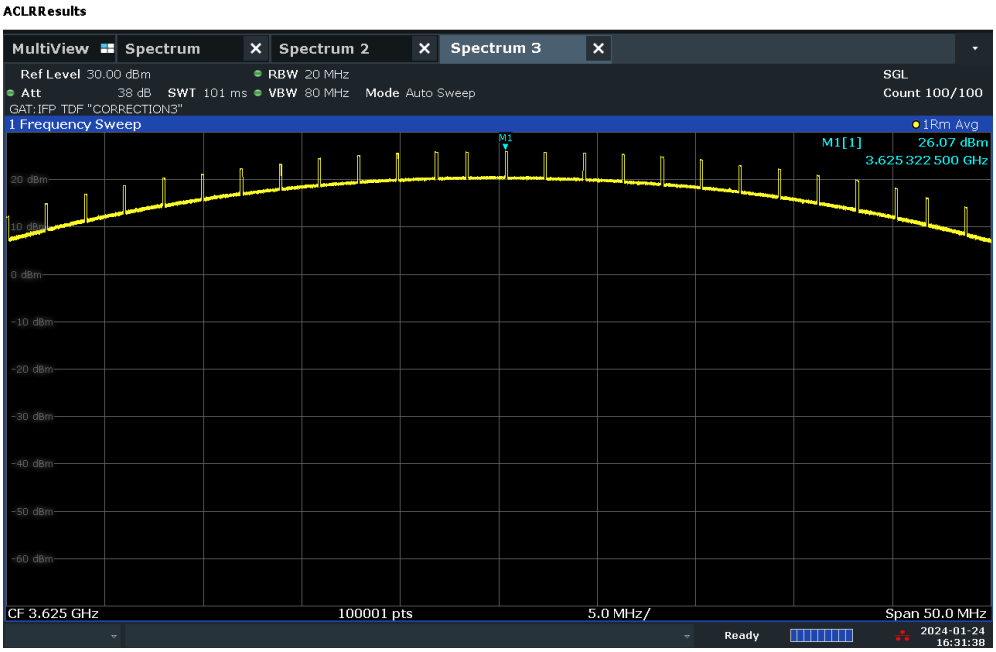
Plot 7.5 – Conducted Power Measurement – 20MHz BW, Mid Channel, QPSK – ANT1



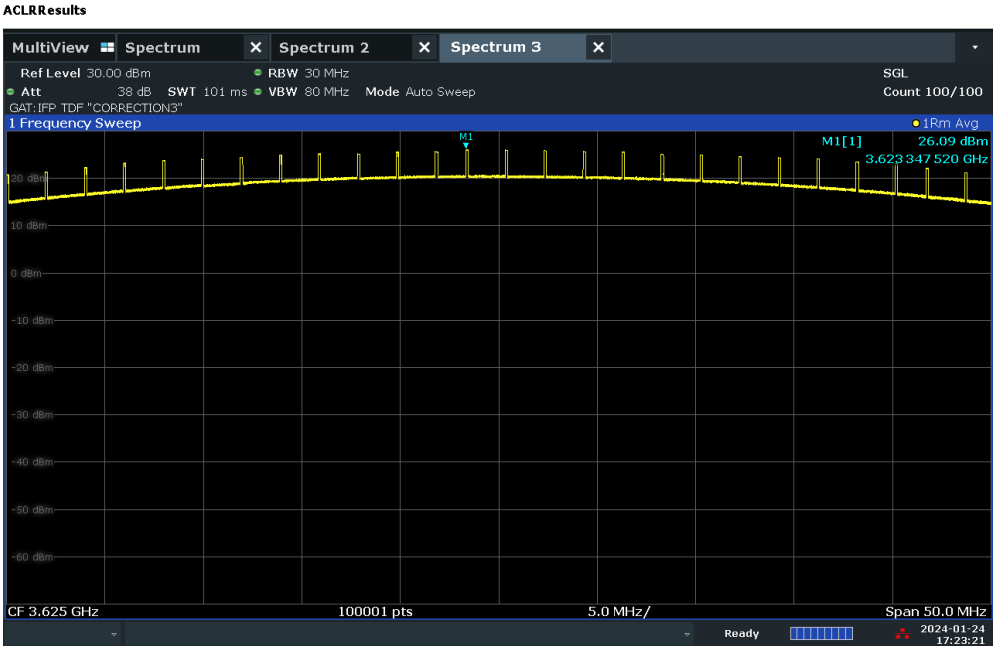
Plot 7.6 – Conducted Power Measurement – 20MHz BW, Mid Channel, 16QAM – ANT1



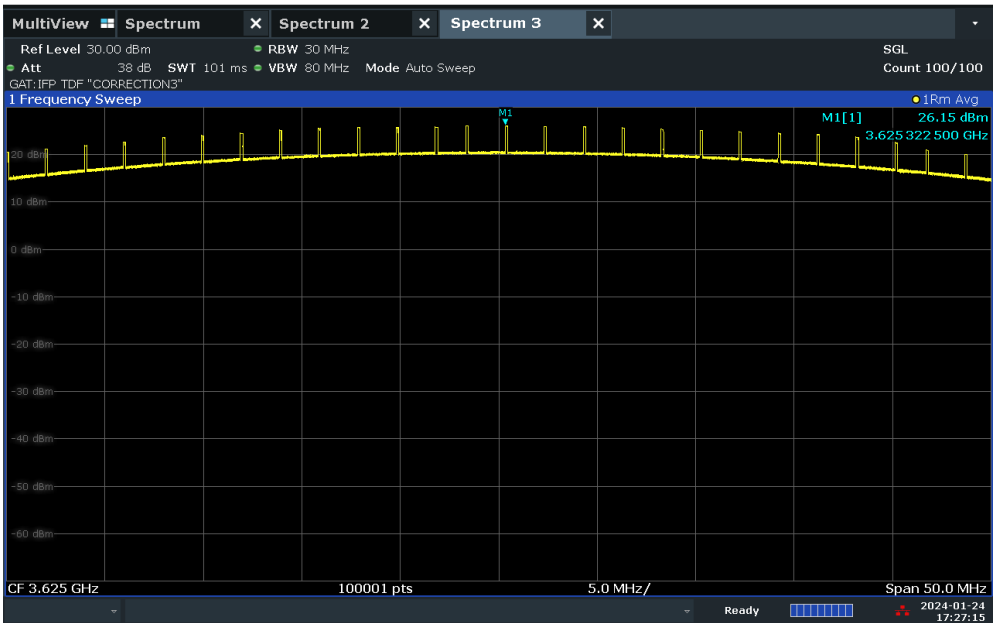
Plot 7.7 – Conducted Power Measurement – 20MHz BW, Mid Channel, 64QAM – ANT1



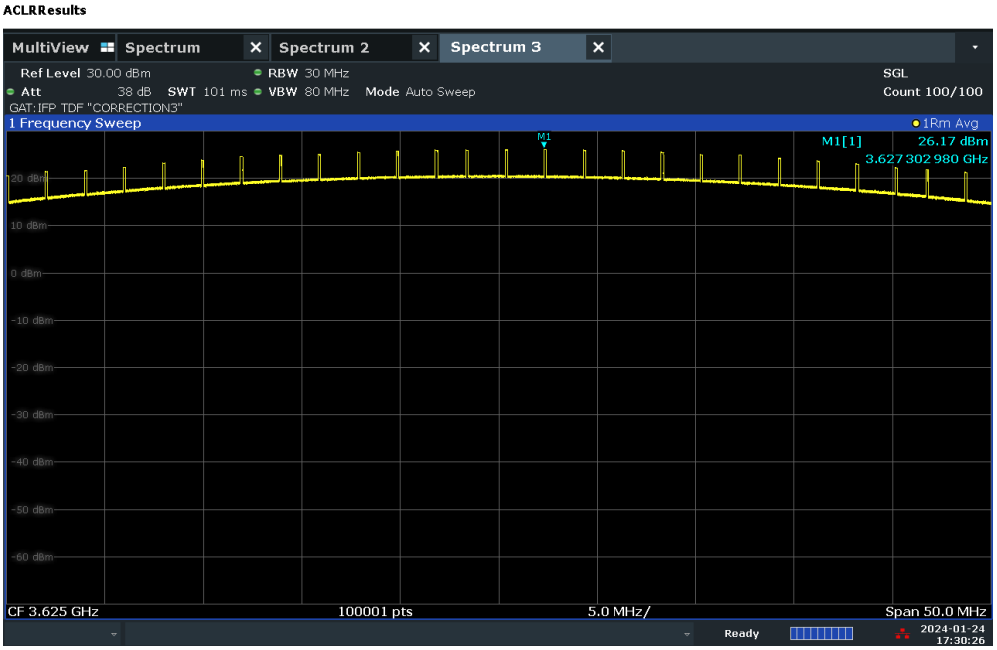
Plot 7.8 – Conducted Power Measurement – 20MHz BW, Mid Channel, 256QAM – ANT1



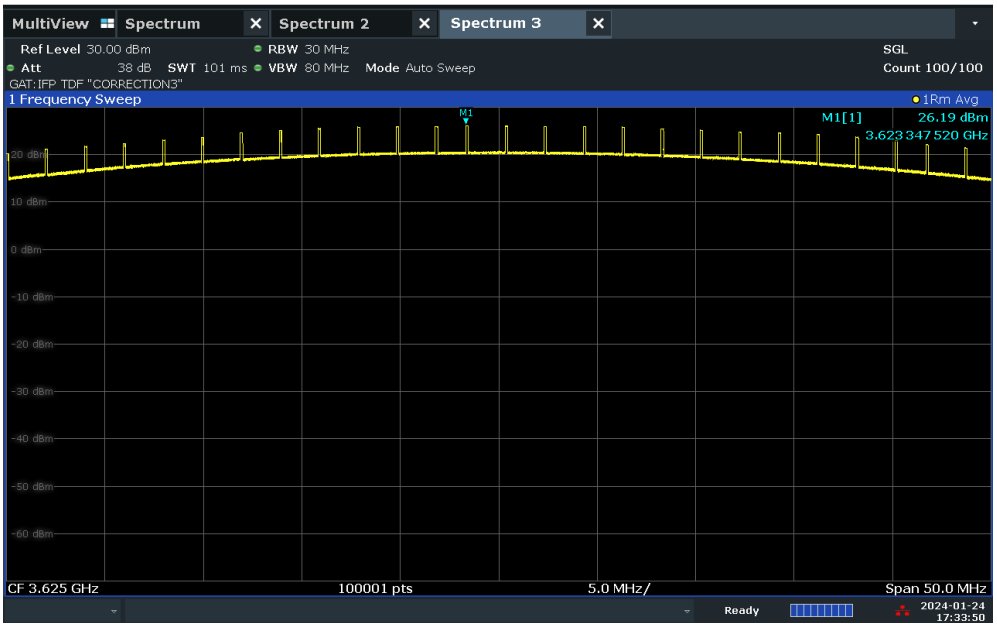
Plot 7.9 – Conducted Power Measurement – 30MHz BW, Mid Channel, QPSK – ANT1



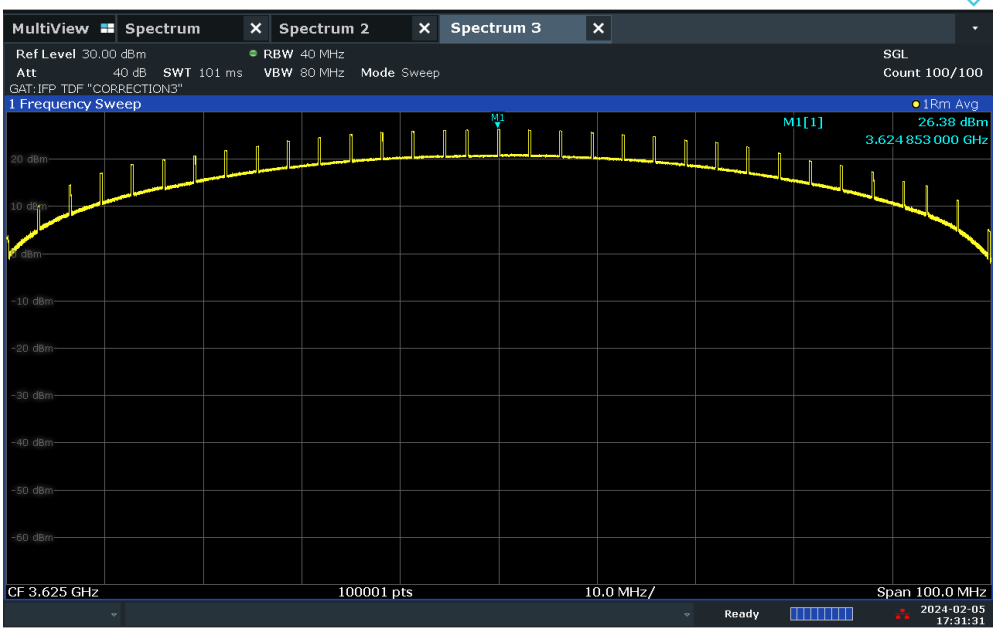
Plot 7.10 – Conducted Power Measurement – 30MHz BW, Mid Channel, 16QAM – ANT1



Plot 7.11 – Conducted Power Measurement – 30MHz BW, Mid Channel, 64QAM – ANT1

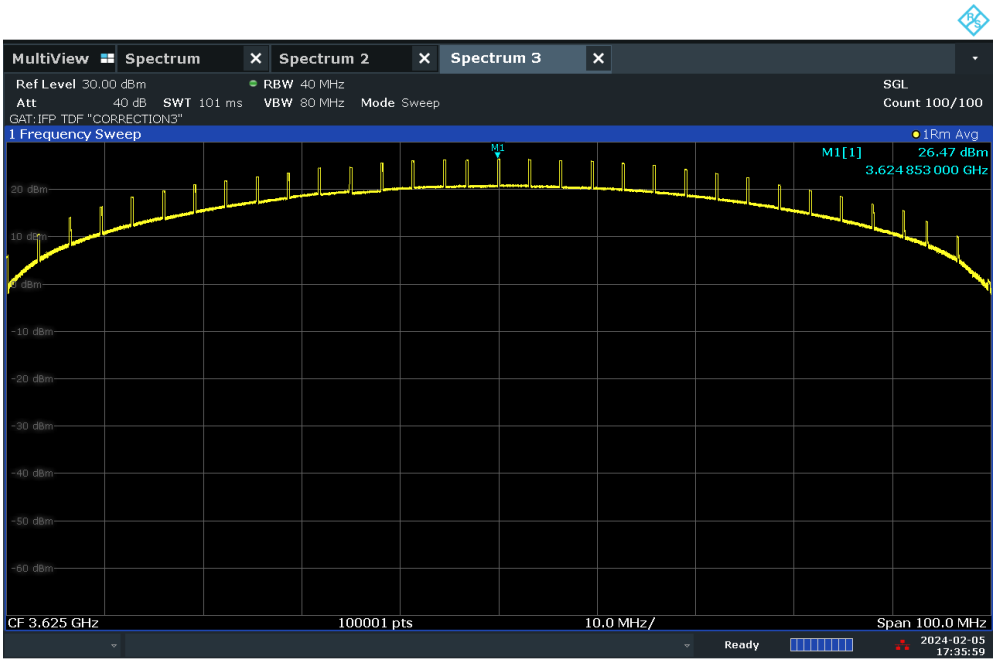


Plot 7.12 – Conducted Power Measurement – 30MHz BW, Mid Channel, 256QAM – ANT1



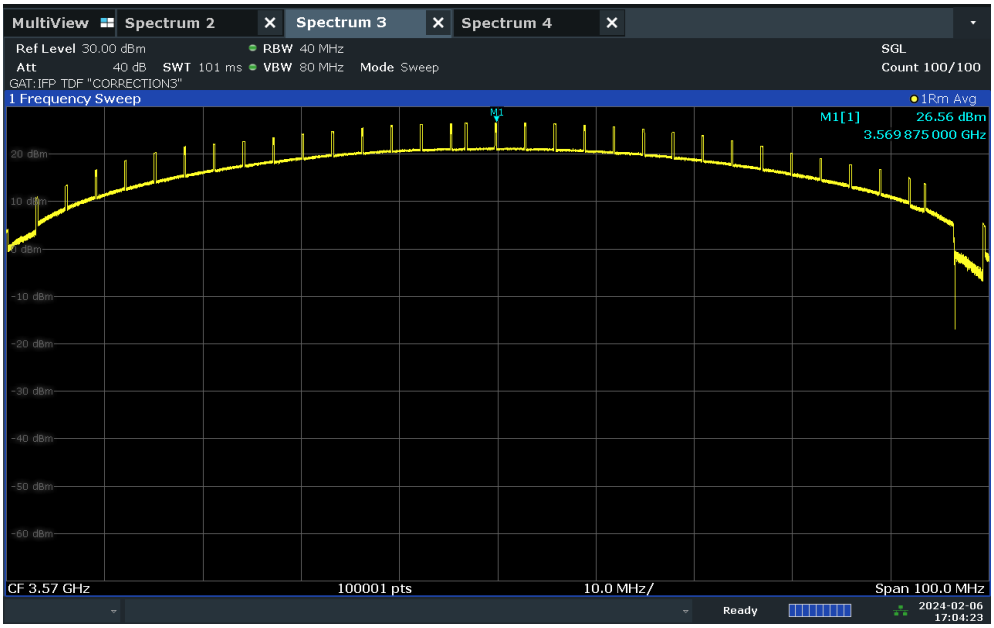
05:31:31 PM 02/05/2024

Plot 7.13 – Conducted Power Measurement – 40MHz BW, Mid Channel, QPSK – ANT1

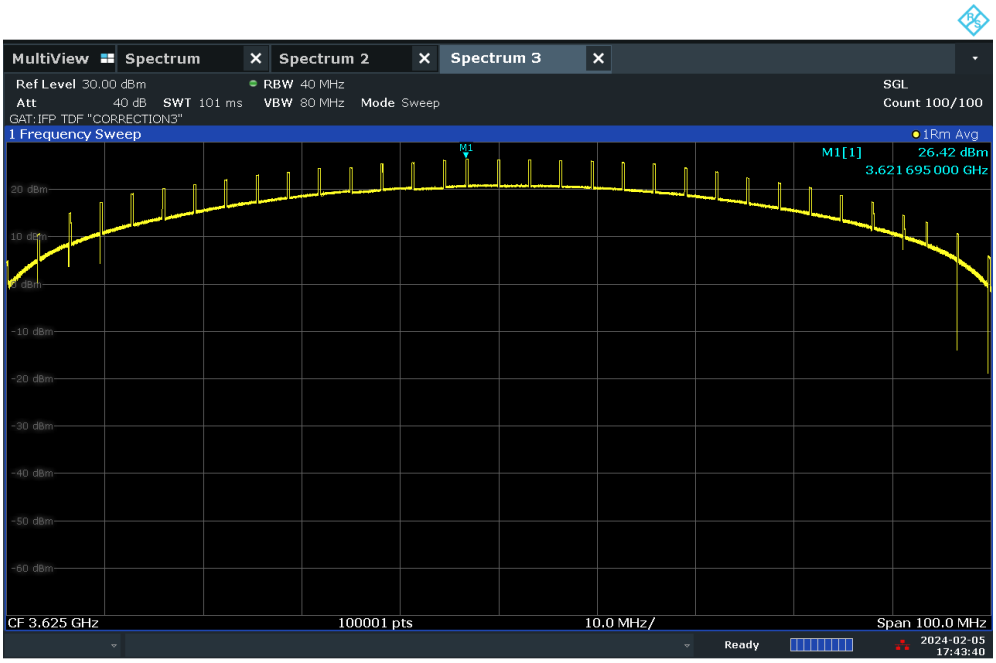


05:36:00 PM 02/05/2024

Plot 7.14 – Conducted Power Measurement – 40MHz BW, Mid Channel, 16QAM – ANT1



Plot 7.15 – Conducted Power Measurement – 40MHz BW, Low Channel, 64QAM – ANT1



05:43:40 PM 02/05/2024

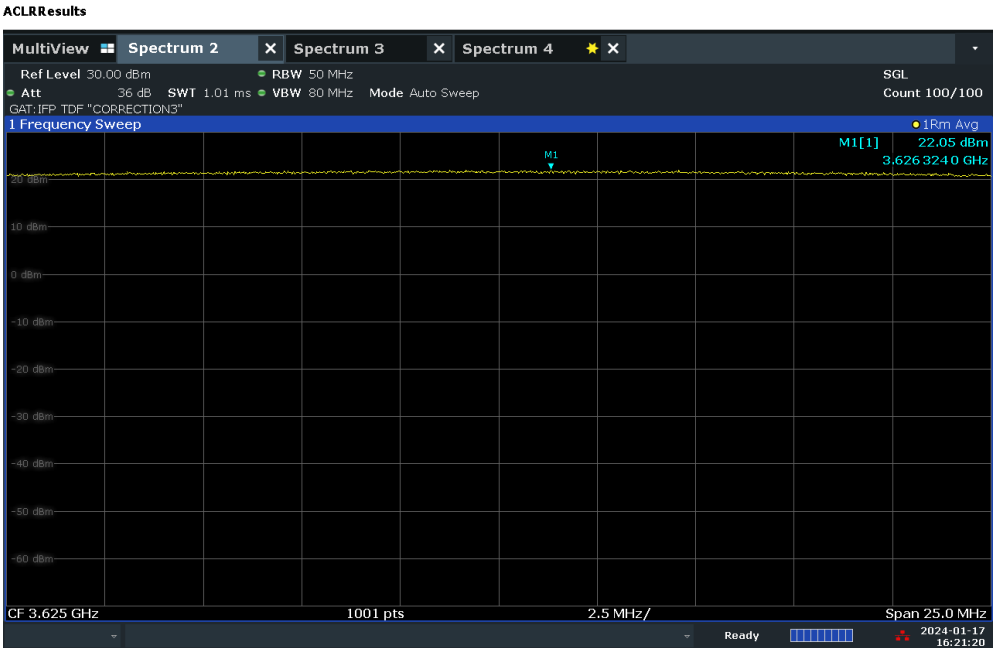
Plot 7.16 – Conducted Power Measurement – 40MHz BW, Mid Channel, 256QAM – ANT1

Antenna 2 Conducted Power Measurements

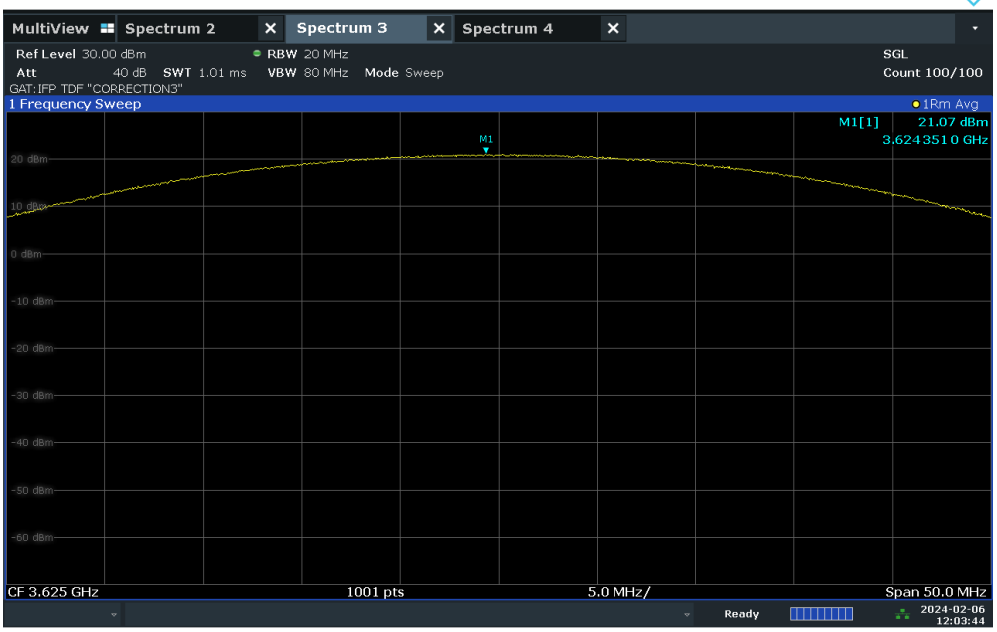
Plot 7.17 – Conducted Power Measurement – 10MHz BW, Mid Channel, QPSK – ANT2

Plot 7.18 – Conducted Power Measurement – 10MHz BW, Mid Channel, 16QAM – ANT2

Plot 7.19 – Conducted Power Measurement – 10MHz BW, Mid Channel, 64QAM – ANT2

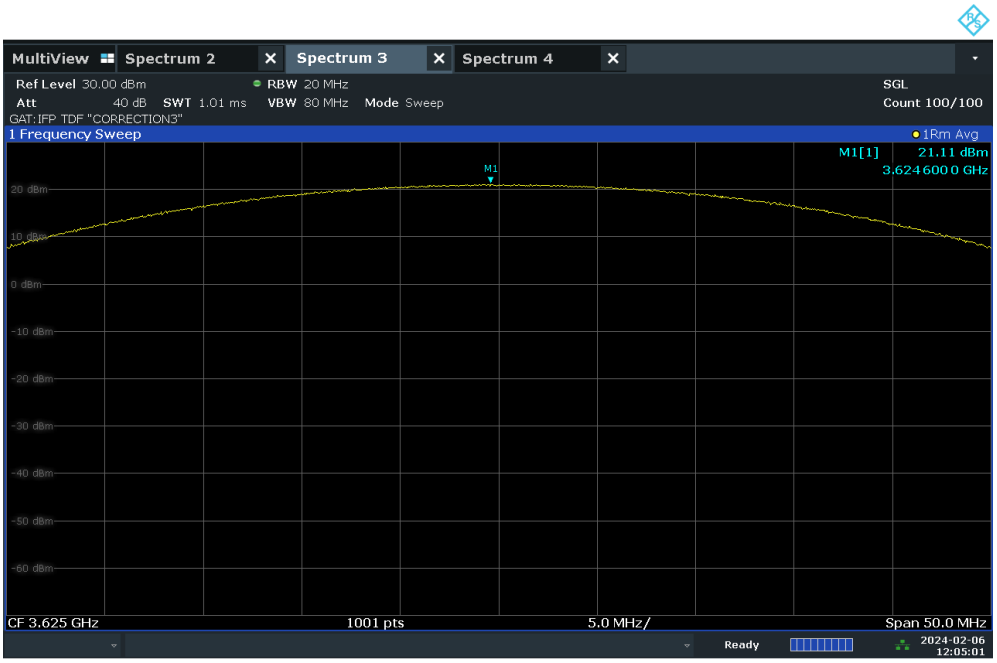


Plot 7.20 – Conducted Power Measurement – 10MHz BW, Mid Channel, 256QAM – ANT2



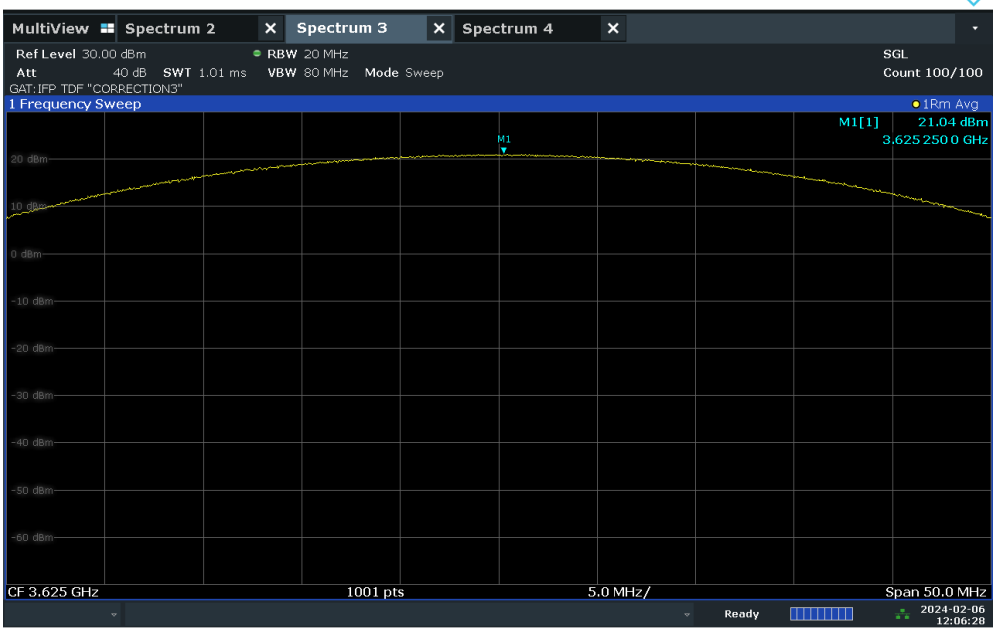
12:03:45 PM 02/06/2024

Plot 7.21 – Conducted Power Measurement – 20MHz BW, Mid Channel, QPSK – ANT2



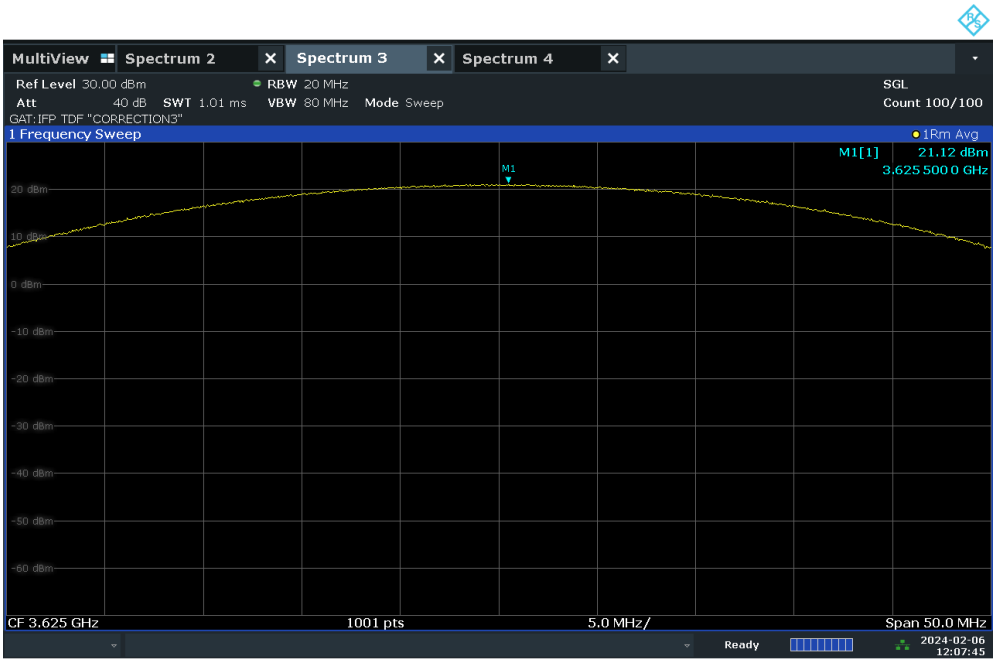
12:05:02 PM 02/06/2024

Plot 7.22 – Conducted Power Measurement – 20MHz BW, Mid Channel, 16QAM – ANT2



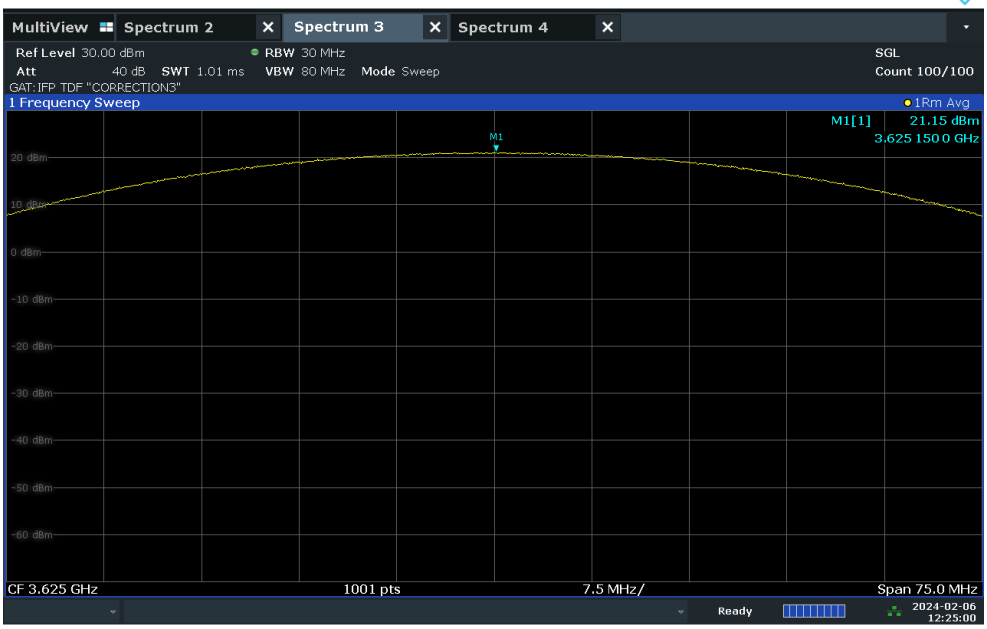
12:06:29 PM 02/06/2024

Plot 7.23 – Conducted Power Measurement – 20MHz BW, Mid Channel, 64QAM – ANT2



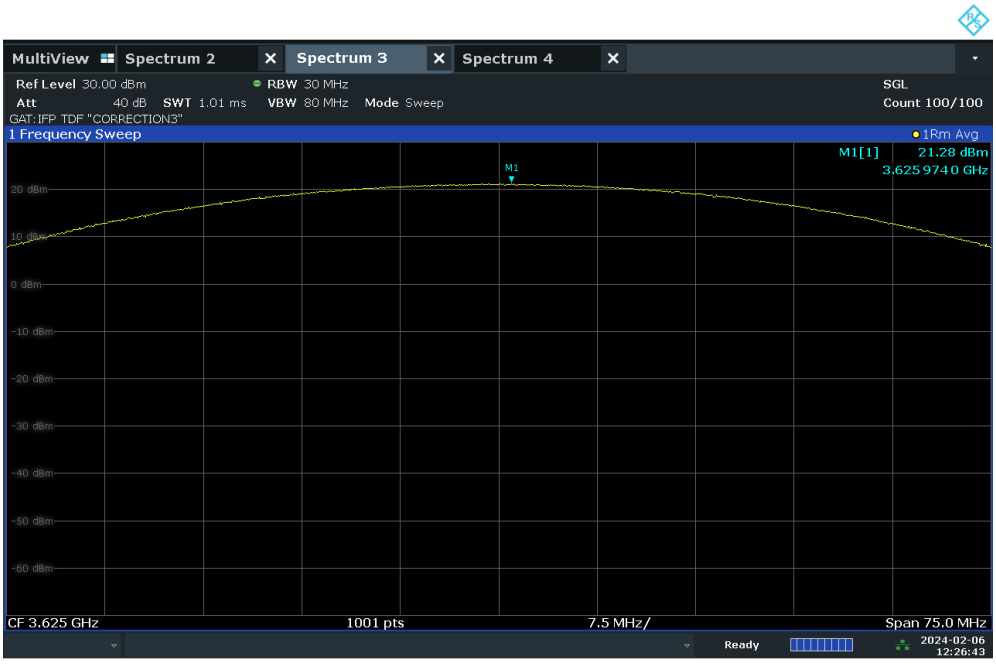
12:07:46 PM 02/06/2024

Plot 7.24 – Conducted Power Measurement – 20MHz BW, Mid Channel, 256QAM – ANT2



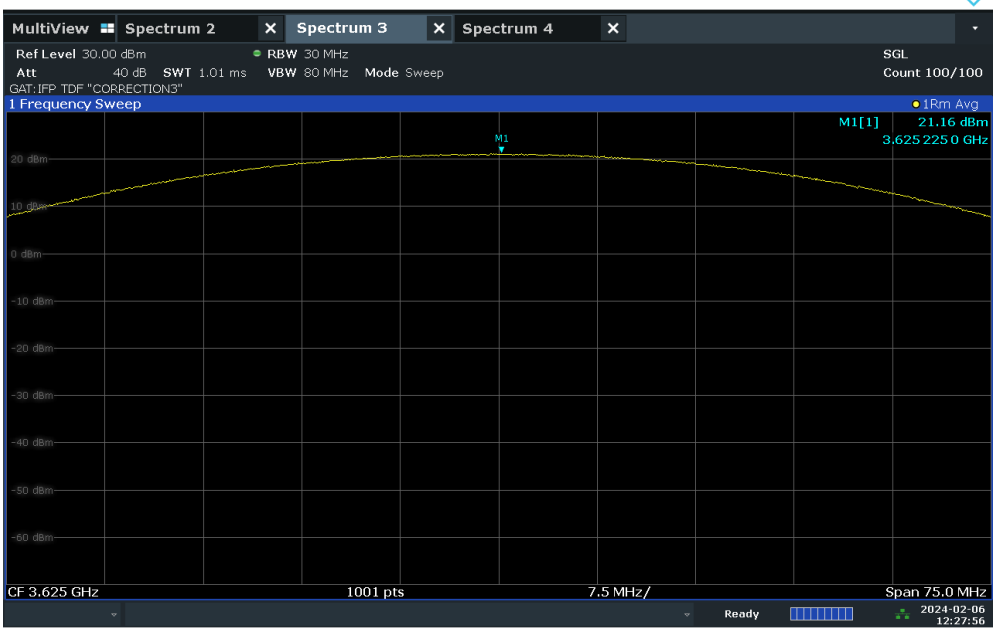
12:25:00 PM 02/06/2024

Plot 7.25 – Conducted Power Measurement – 30MHz BW, Mid Channel, QPSK – ANT2



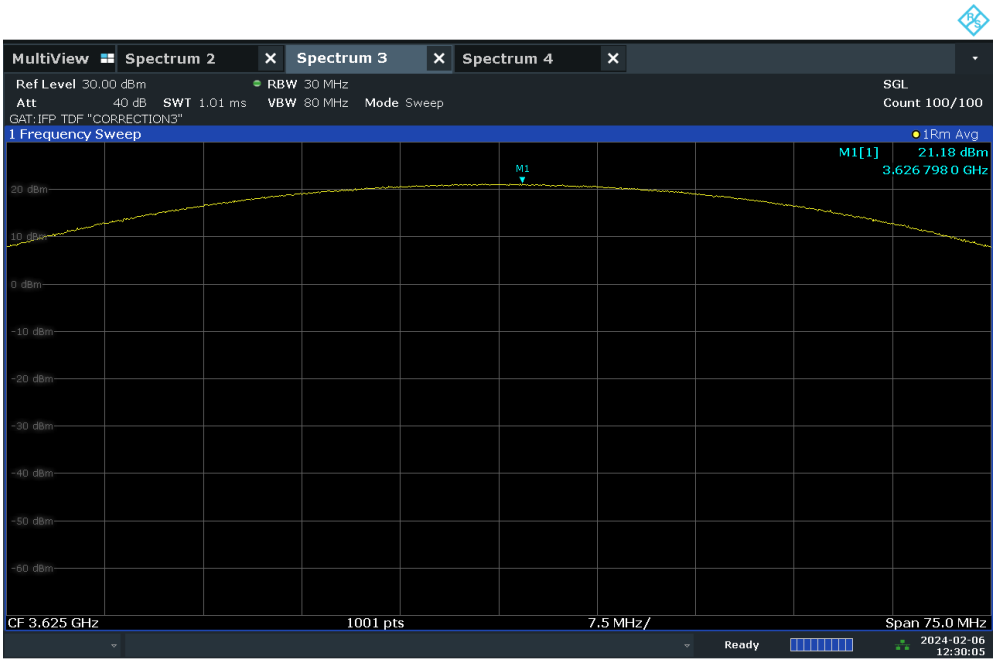
12:26:43 PM 02/06/2024

Plot 7.26 – Conducted Power Measurement – 30MHz BW, Mid Channel, 16QAM – ANT2



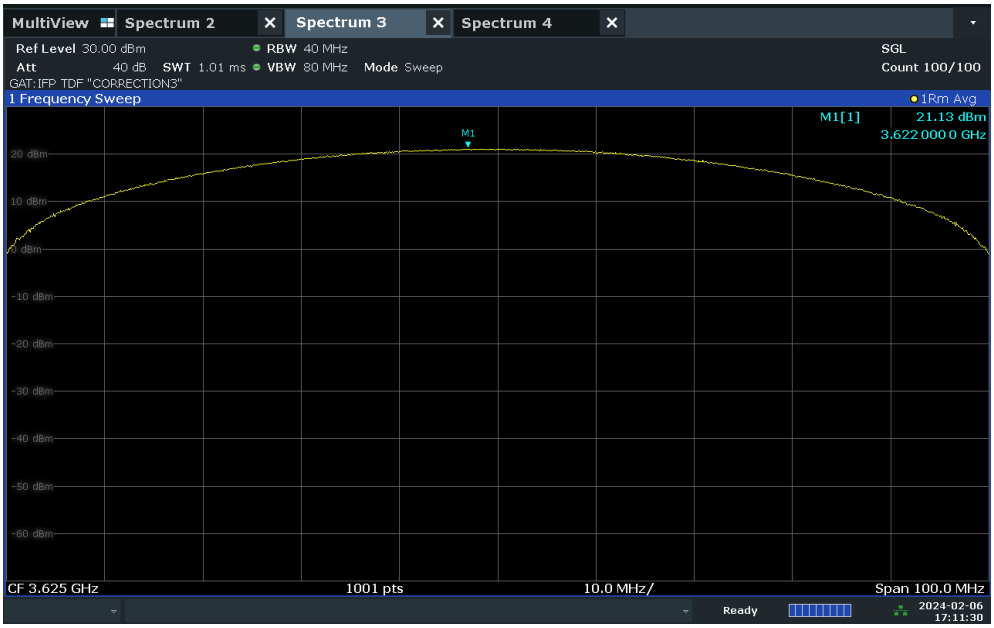
12:27:57 PM 02/06/2024

Plot 7.27 – Conducted Power Measurement – 30MHz BW, Mid Channel, 64QAM – ANT2

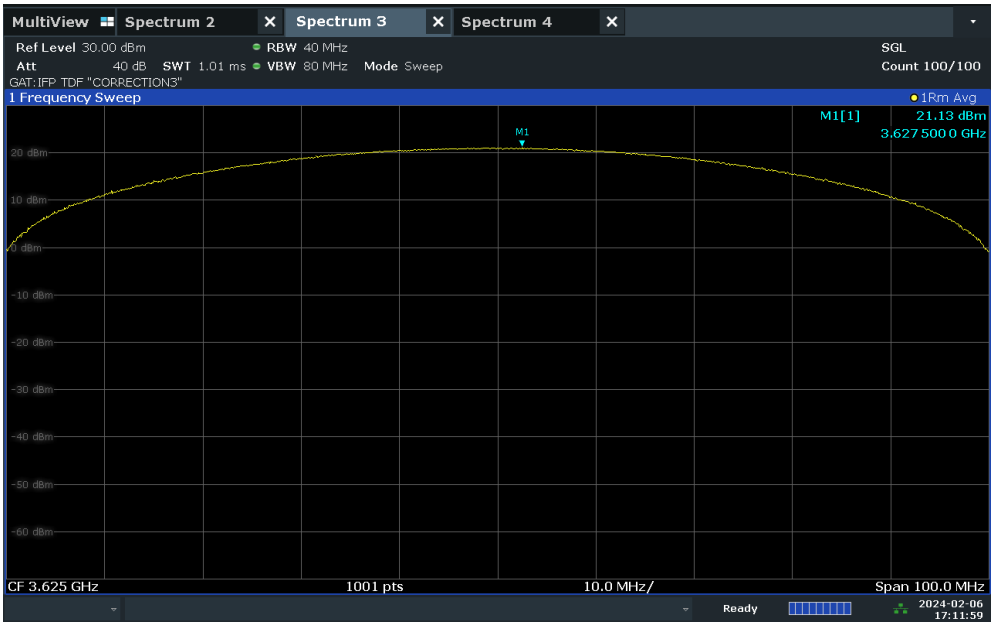


12:30:06 PM 02/06/2024

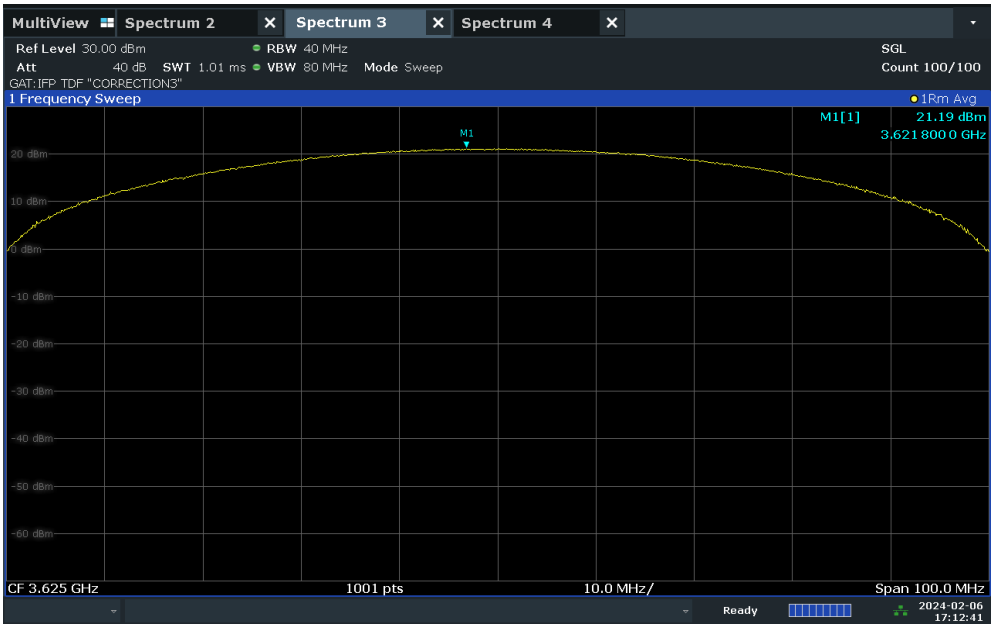
Plot 7.28 – Conducted Power Measurement – 30MHz BW, Mid Channel, 256QAM – ANT2



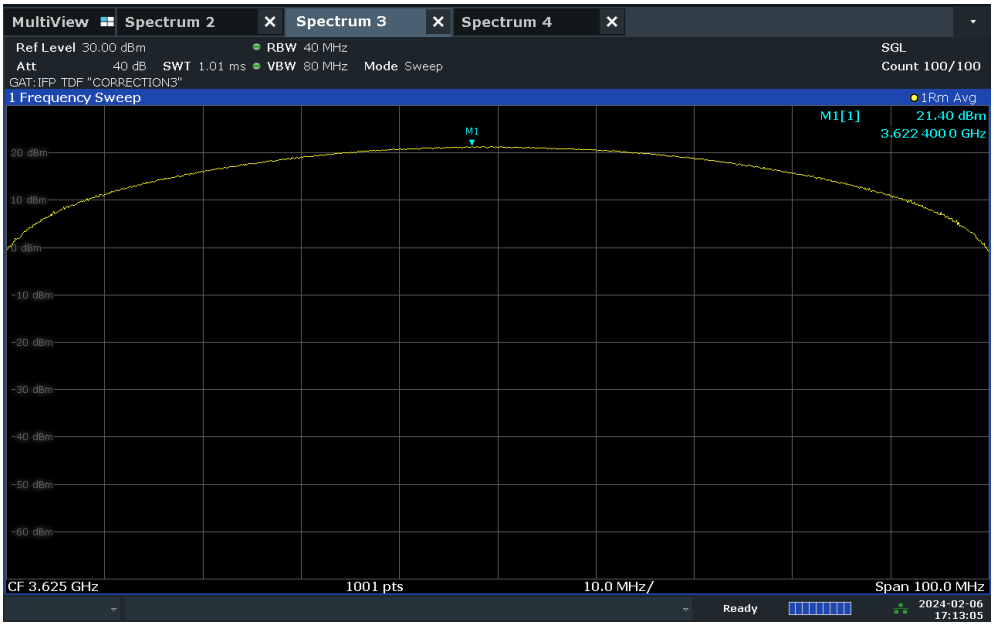
Plot 7.29 – Conducted Power Measurement – 40MHz BW, Mid Channel, QPSK – ANT2



Plot 7.30 – Conducted Power Measurement – 40MHz BW, Mid Channel, 16QAM – ANT2



Plot 7.31 – Conducted Power Measurement – 40MHz BW, Low Channel, 64QAM – ANT2



Plot 7.32 – Conducted Power Measurement – 40MHz BW, Mid Channel, 256QAM – ANT2

7.3 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 radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. 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 5.4.4

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB 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
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 Setup

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

Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None

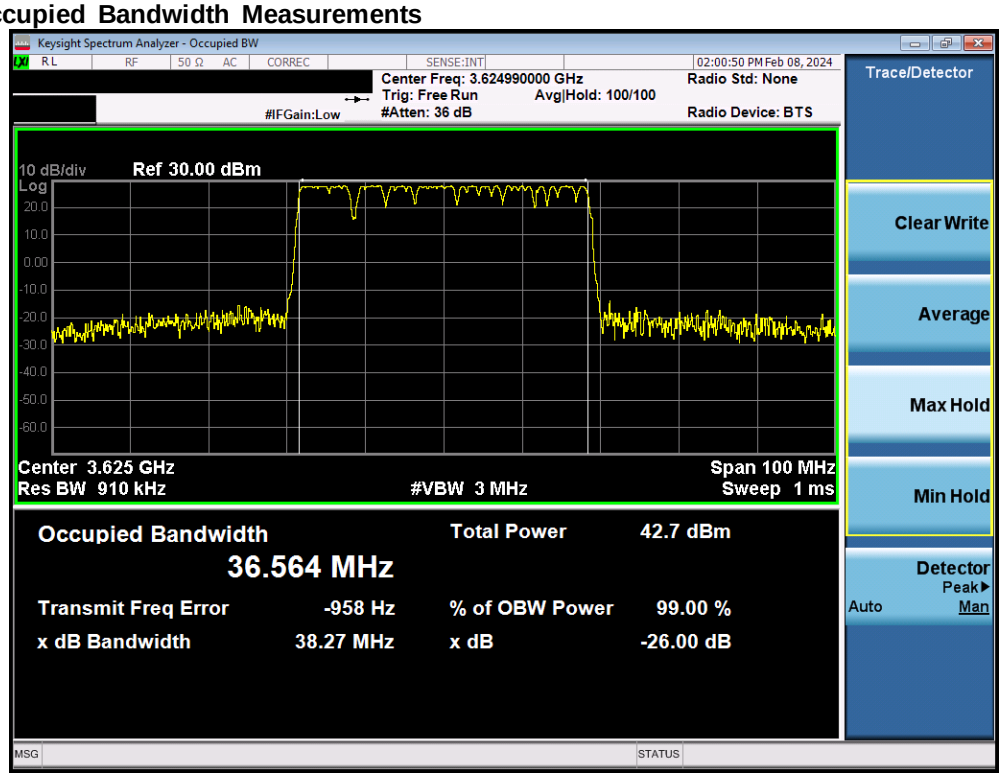
Bandwidth	Modulation	26dB BW [MHz]	OBW [MHz]
40 MHz	QPSK	38.27	36.56
	16QAM	38.42	36.56
	64QAM	38.22	36.16
	256QAM	38.54	36.18
30 MHz	QPSK	30.95	29.42
	16QAM	30.70	29.04
	64QAM	30.80	29.34
	256QAM	30.82	29.17
20 MHz	QPSK	20.76	19.63
	16QAM	20.88	19.68
	64QAM	20.83	19.66
	256QAM	20.72	19.60
10 MHz	QPSK	10.32	9.08
	16QAM	9.48	8.96
	64QAM	10.27	9.07
	256QAM	9.58	9.07

Table 7-3 Occupied Bandwidth Measurements – ANT1

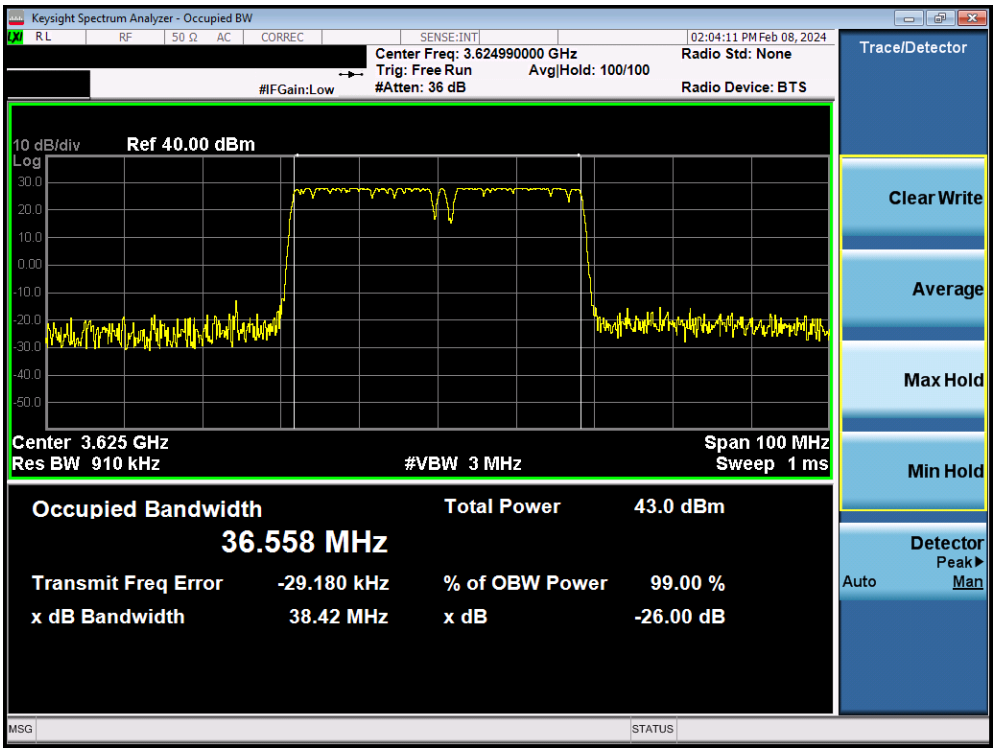
Bandwidth	Modulation	26dB BW [MHz]	OBW [MHz]
40 MHz	QPSK	38.15	35.91
	16QAM	38.62	35.89
	64QAM	38.38	35.97
	256QAM	38.83	35.93
30 MHz	QPSK	30.86	29.18
	16QAM	30.95	29.12
	64QAM	31.09	29.14
	256QAM	30.83	29.16
20 MHz	QPSK	20.72	19.40
	16QAM	20.69	19.41
	64QAM	20.86	19.44
	256QAM	20.75	19.45
10 MHz	QPSK	14.32	9.01
	16QAM	10.30	8.99
	64QAM	10.04	8.98
	256QAM	9.95	9.01

Table 7-4 Occupied Bandwidth Measurements – ANT2

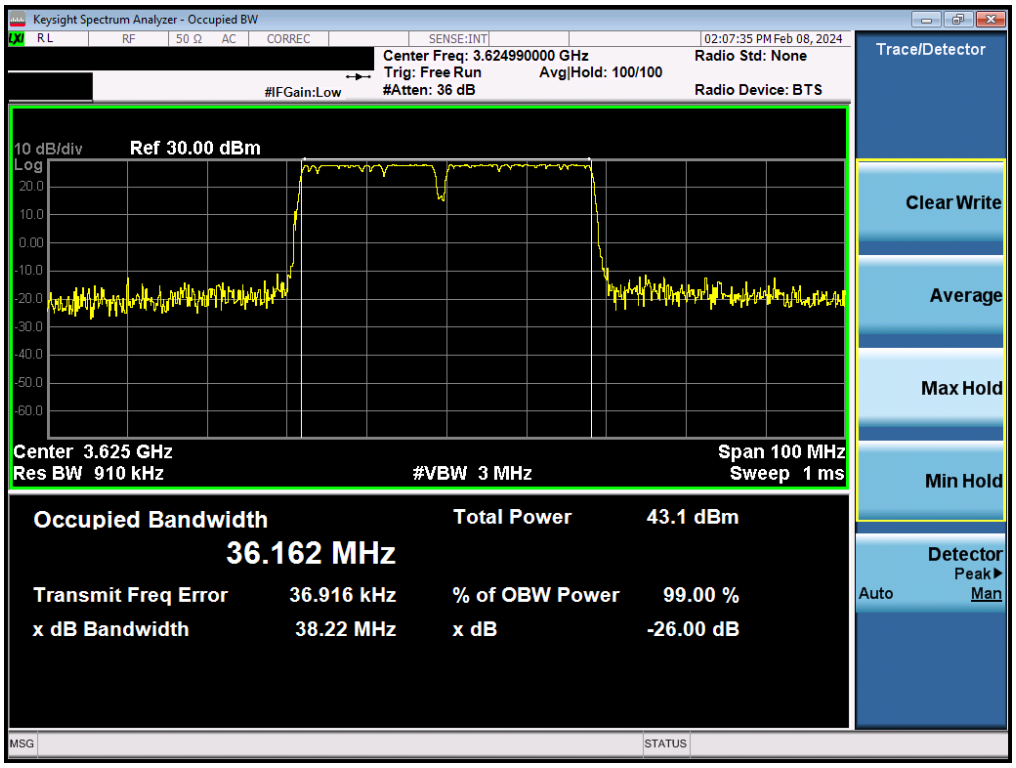
Antenna 1 Occupied Bandwidth Measurements



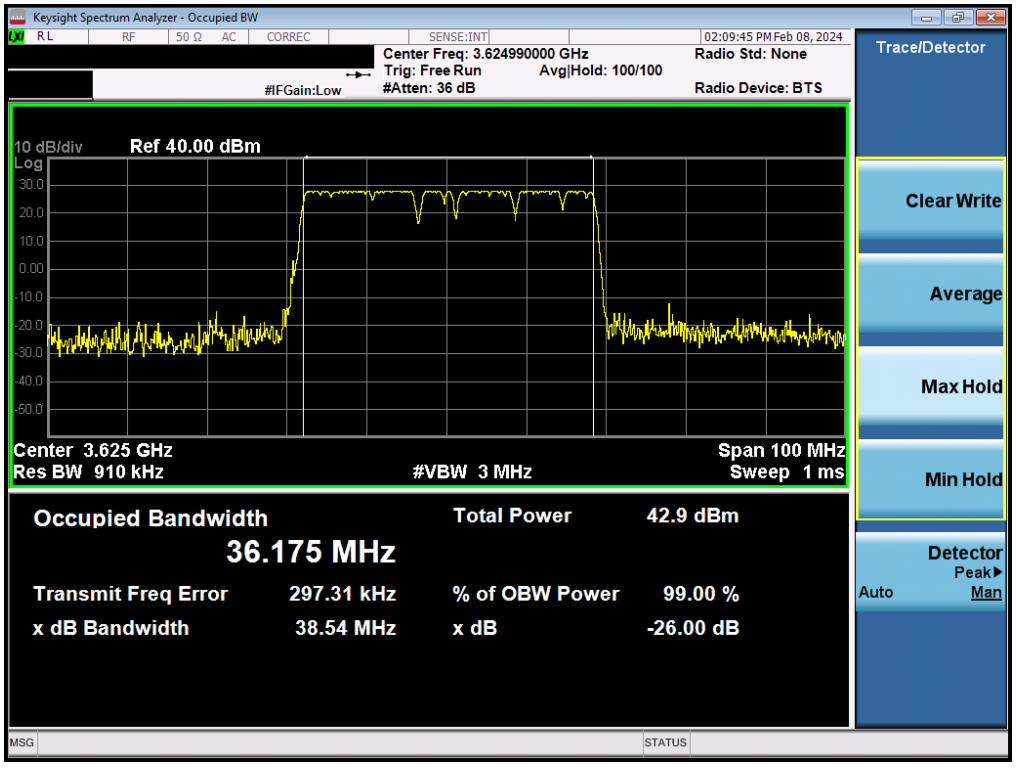
Plot 7.33. Occupied Bandwidth Plot (40MHz QPSK – ANT1)



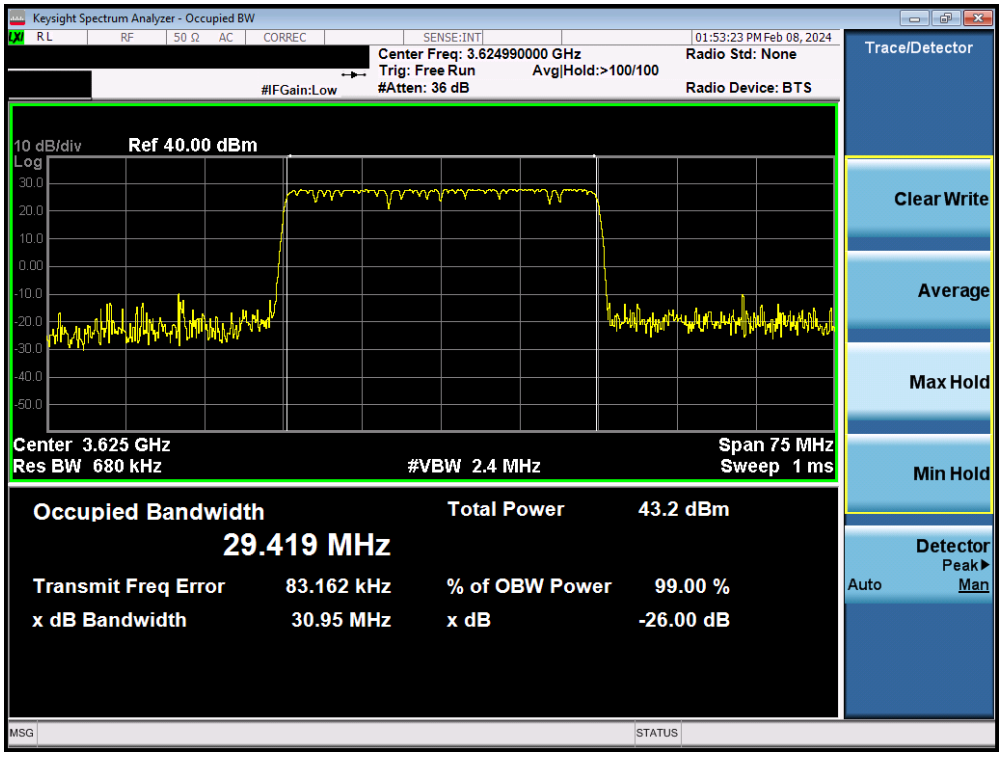
Plot 7.34. Occupied Bandwidth Plot (40MHz 16-QAM – ANT1)



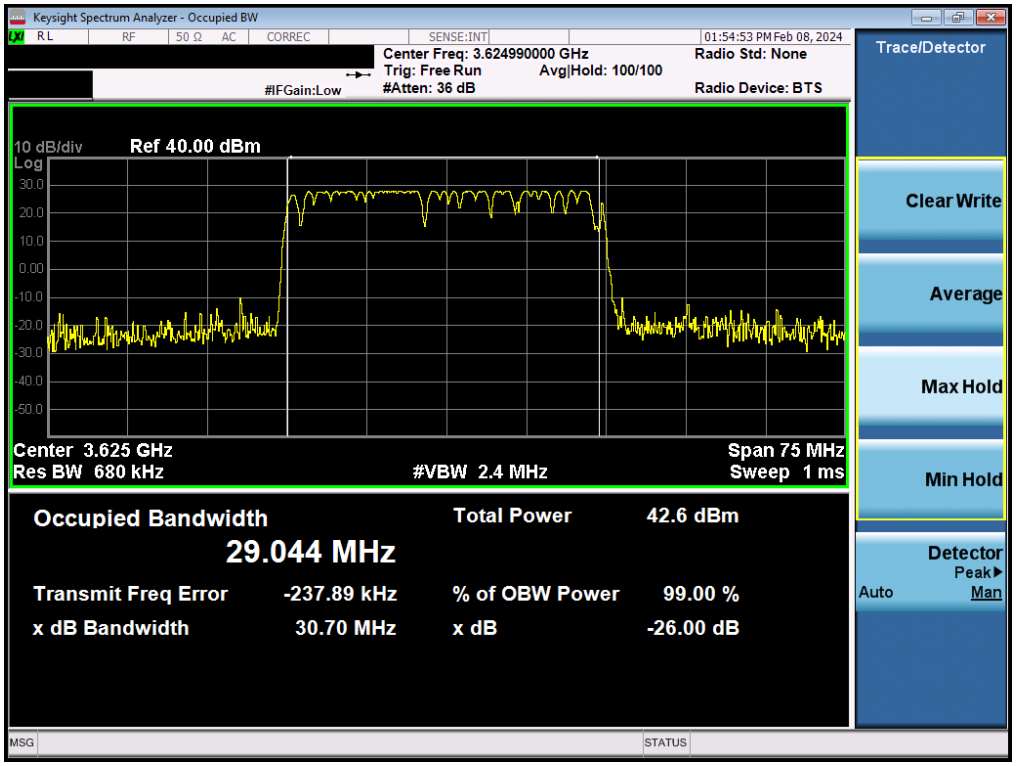
Plot 7.35. Occupied Bandwidth Plot (40MHz 64-QAM – ANT1)



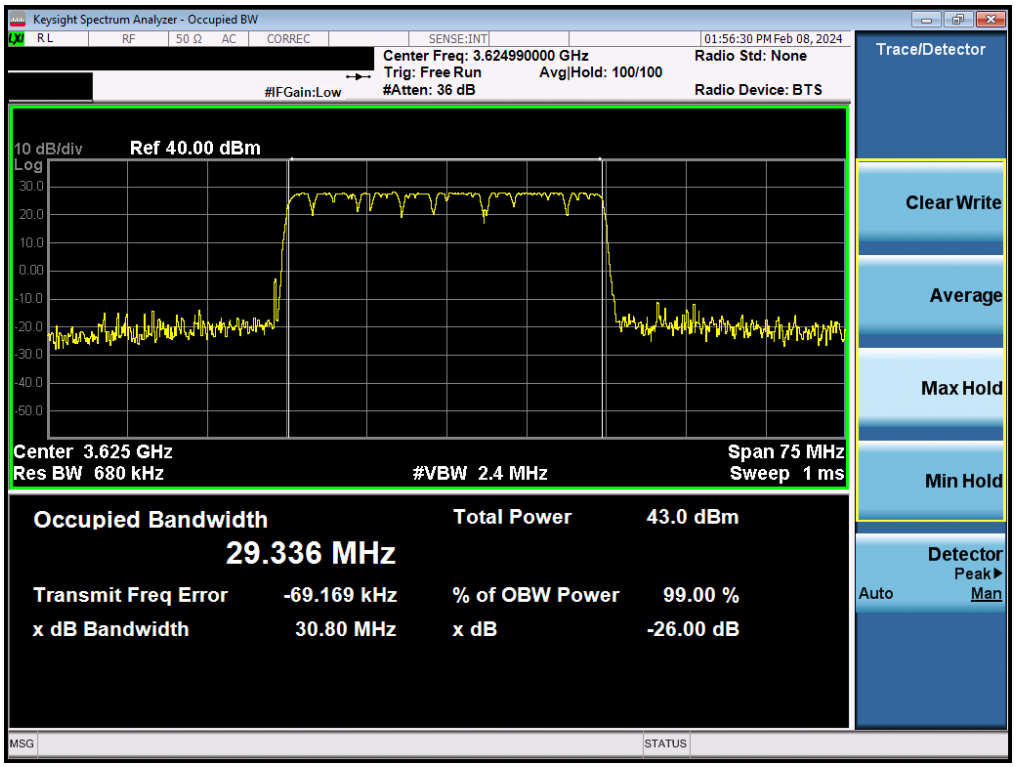
Plot 7.36. Occupied Bandwidth Plot (40MHz 256-QAM – ANT1)



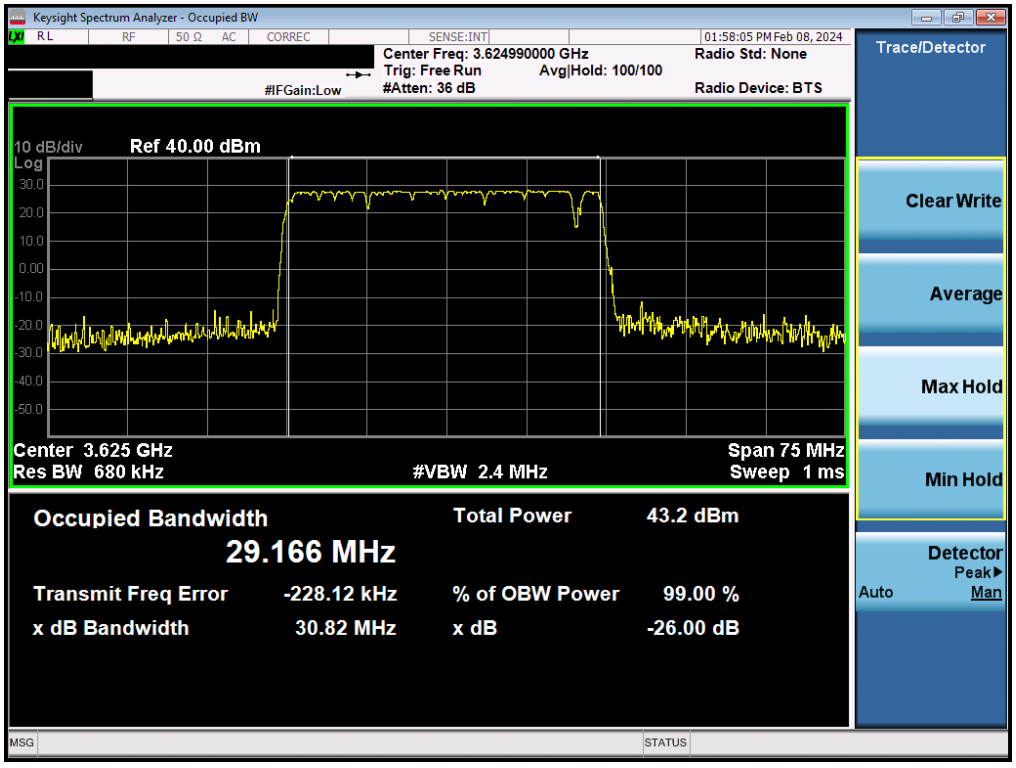
Plot 7.37. Occupied Bandwidth Plot (30MHz QPSK – ANT1)



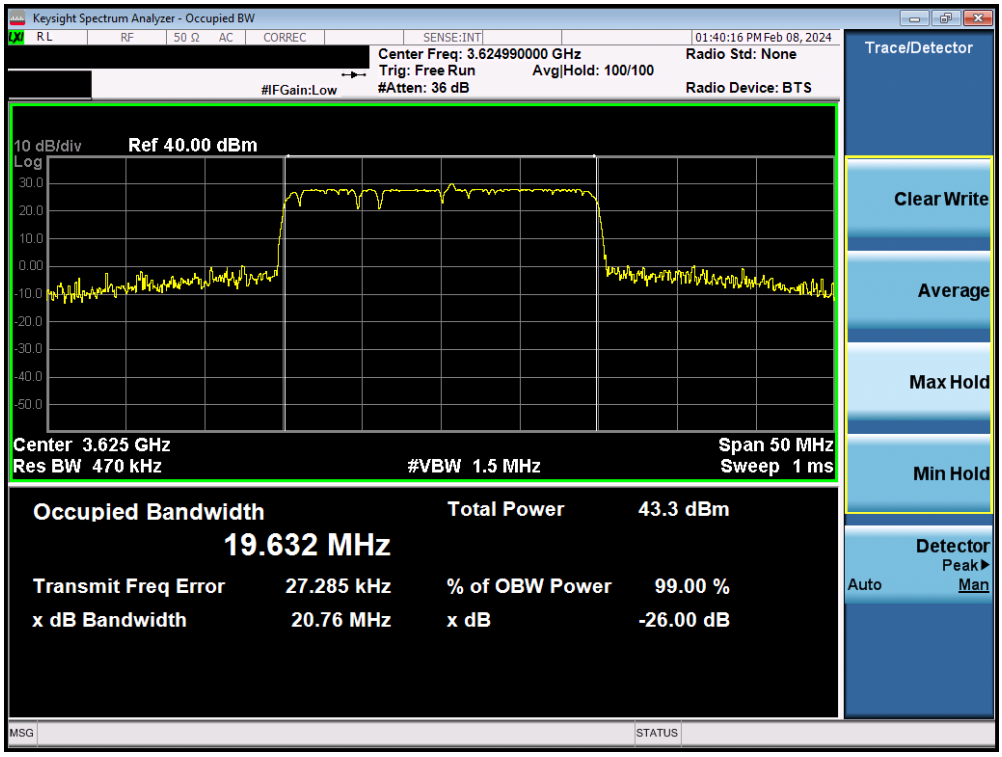
Plot 7.38. Occupied Bandwidth Plot (30MHz 16-QAM – ANT1)



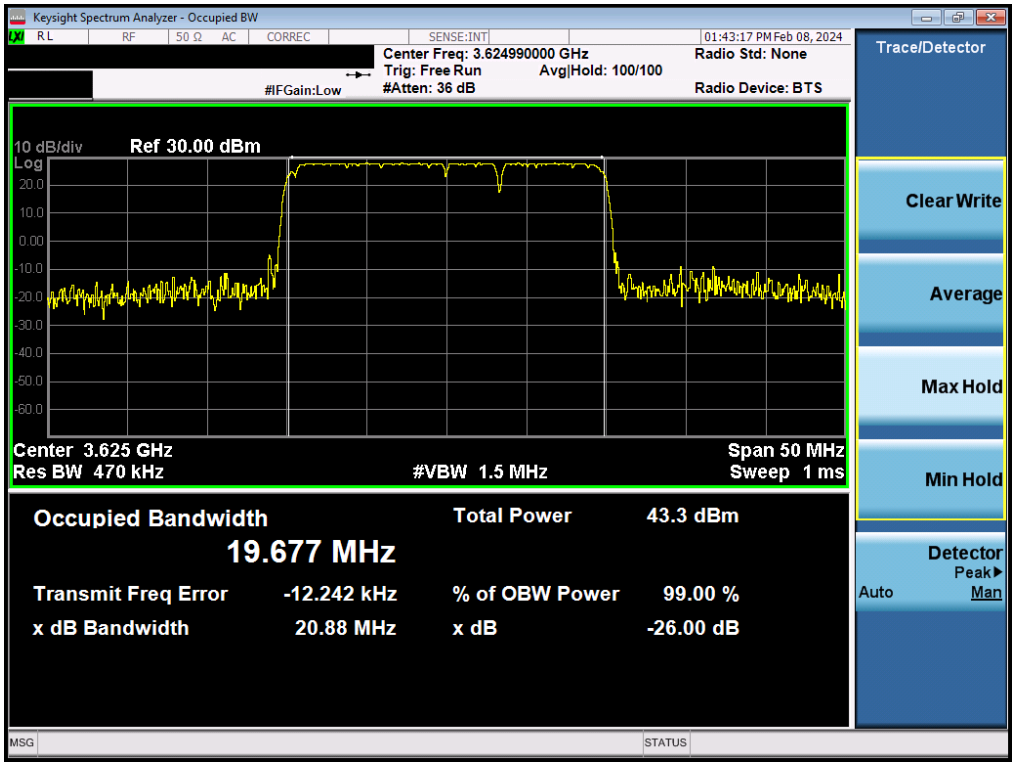
Plot 7.39. Occupied Bandwidth Plot (30MHz 64-QAM – ANT1)



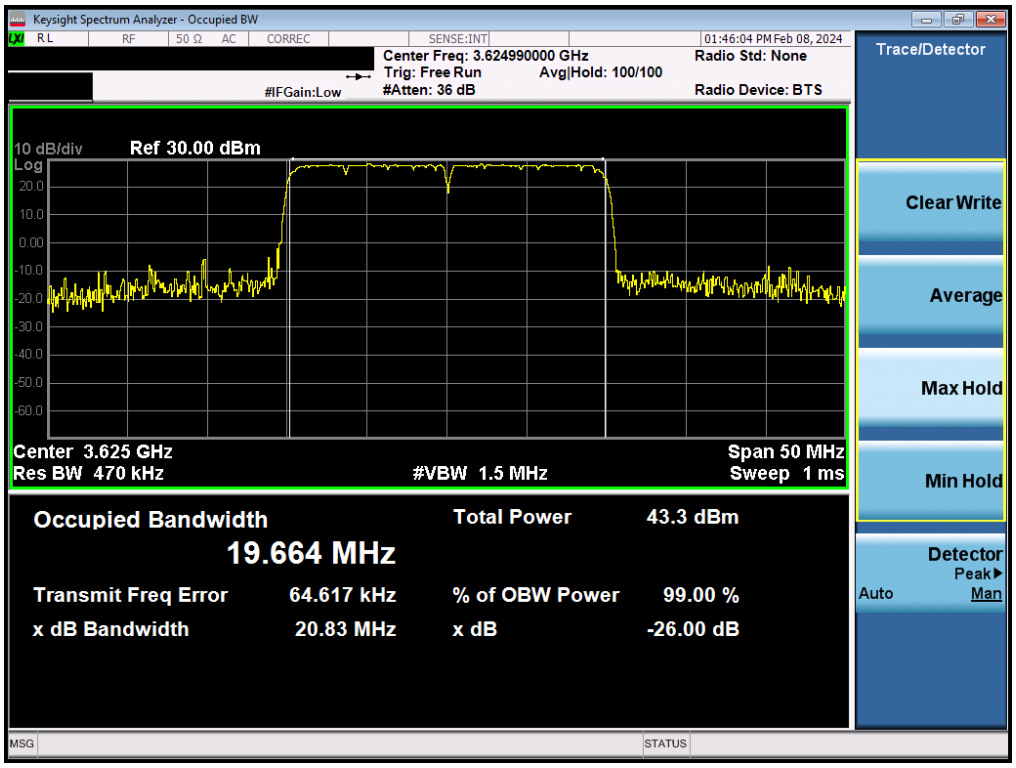
Plot 7.40. Occupied Bandwidth Plot (30MHz 256-QAM – ANT1)



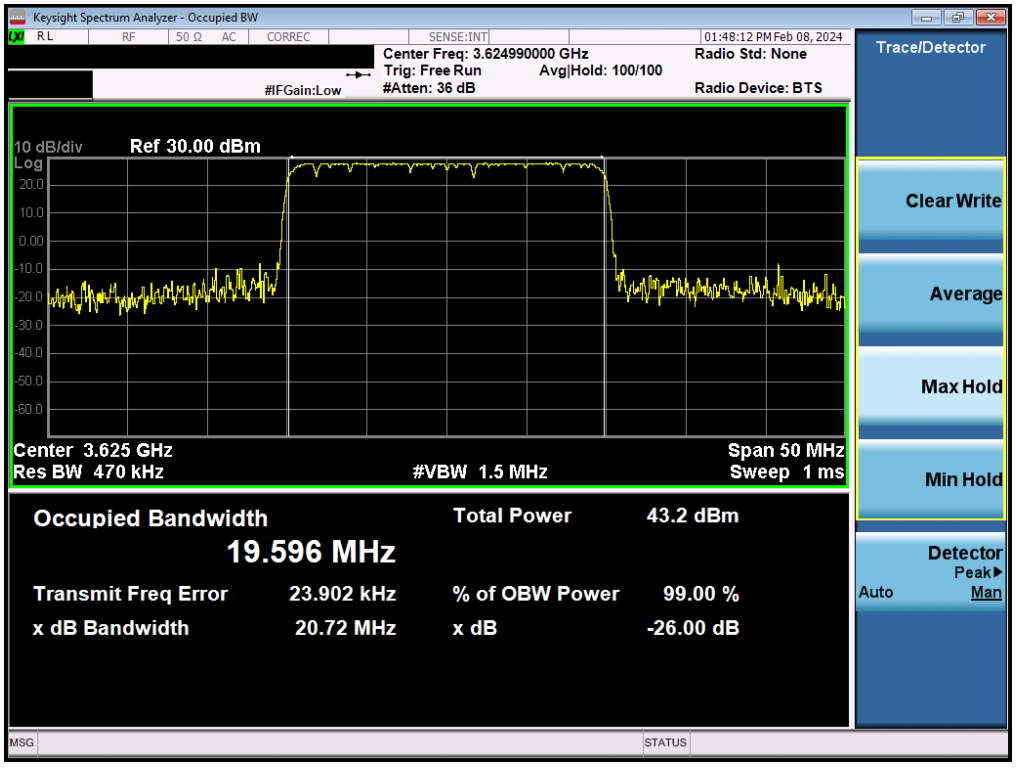
Plot 7.41. Occupied Bandwidth Plot (20MHz QPSK – ANT1)



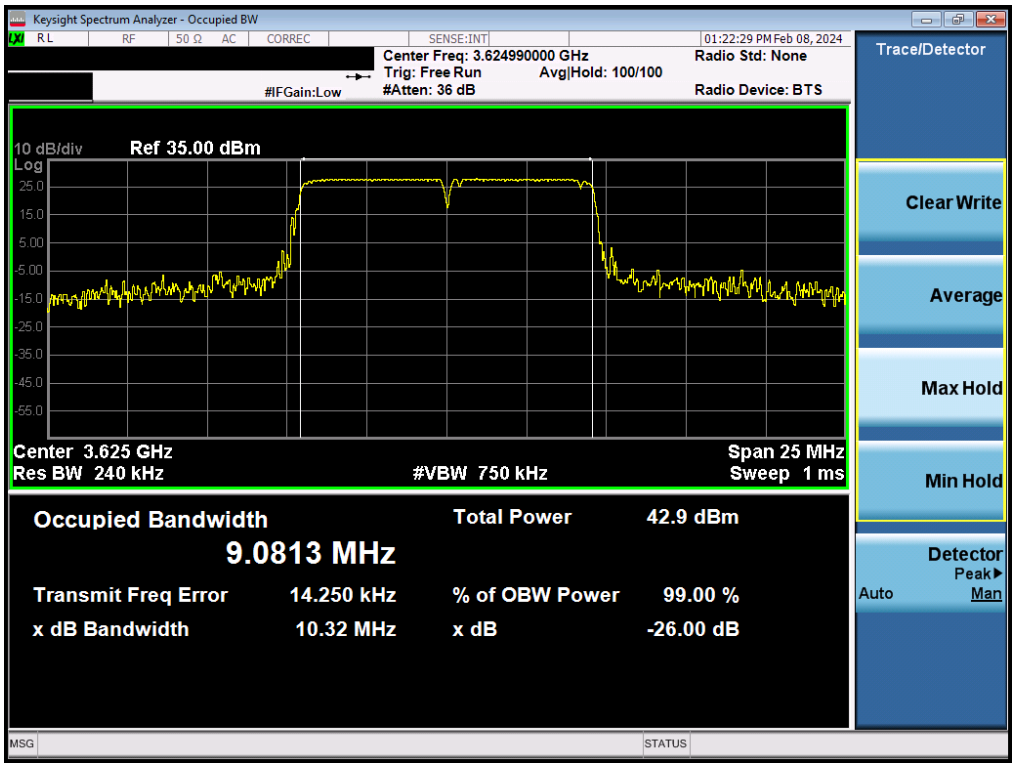
Plot 7.42. Occupied Bandwidth Plot (20MHz 16-QAM – ANT1)



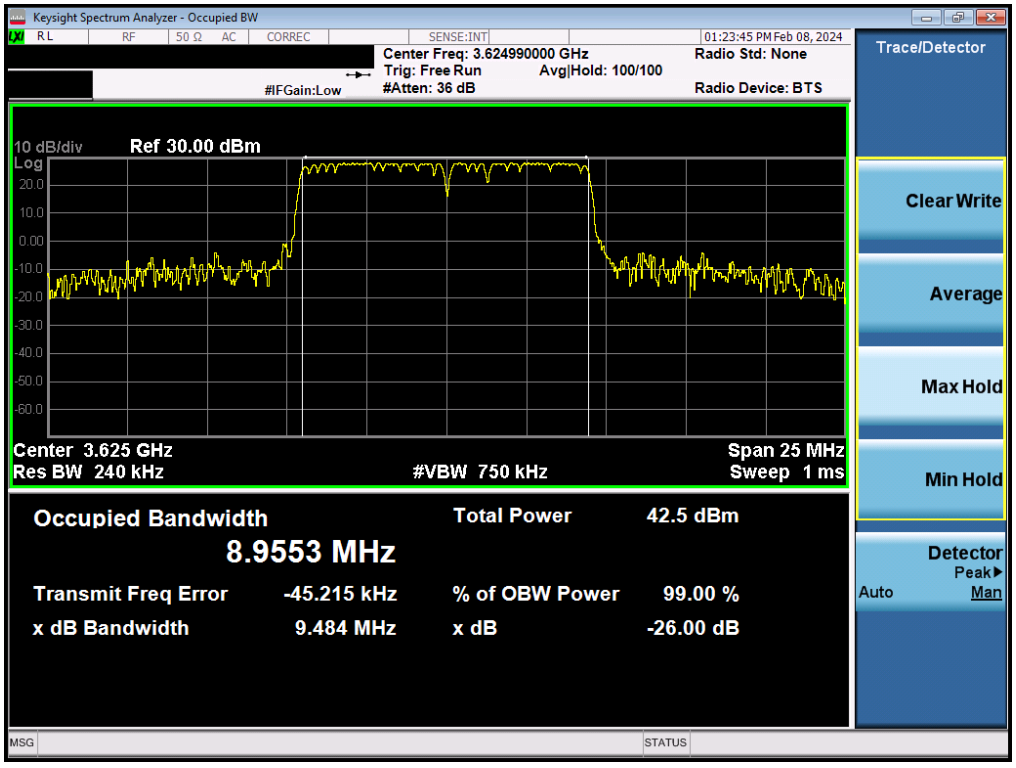
Plot 7.43. Occupied Bandwidth Plot (20MHz 64-QAM – ANT1)



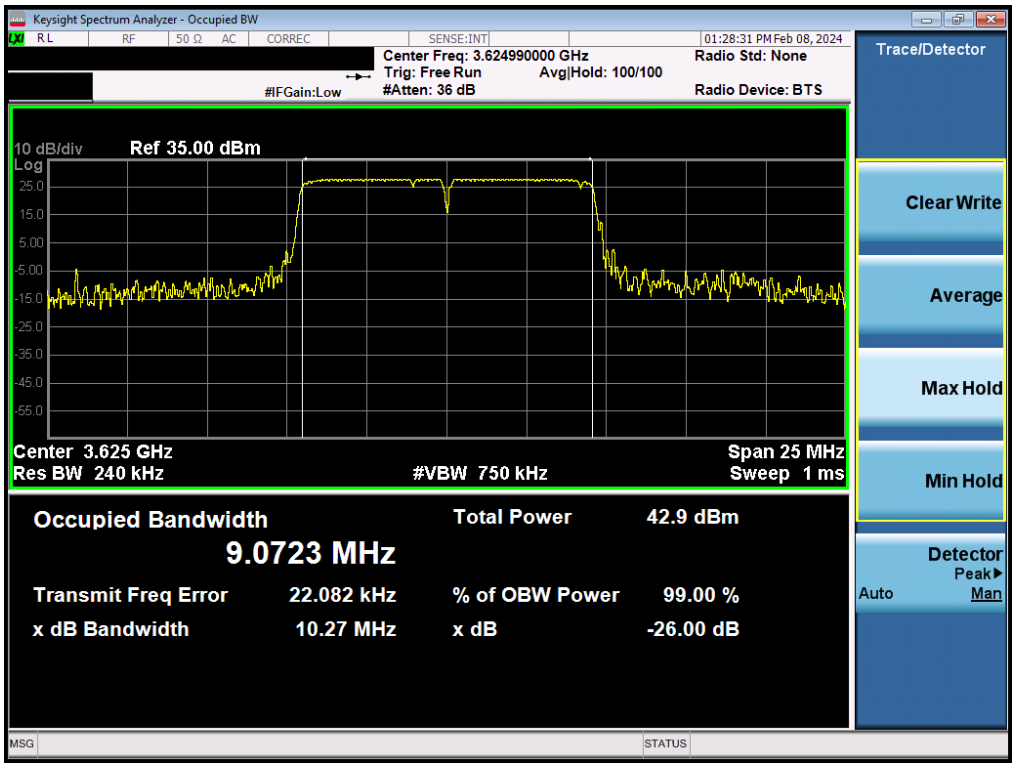
Plot 7.44. Occupied Bandwidth Plot (20MHz 256-QAM – ANT1)



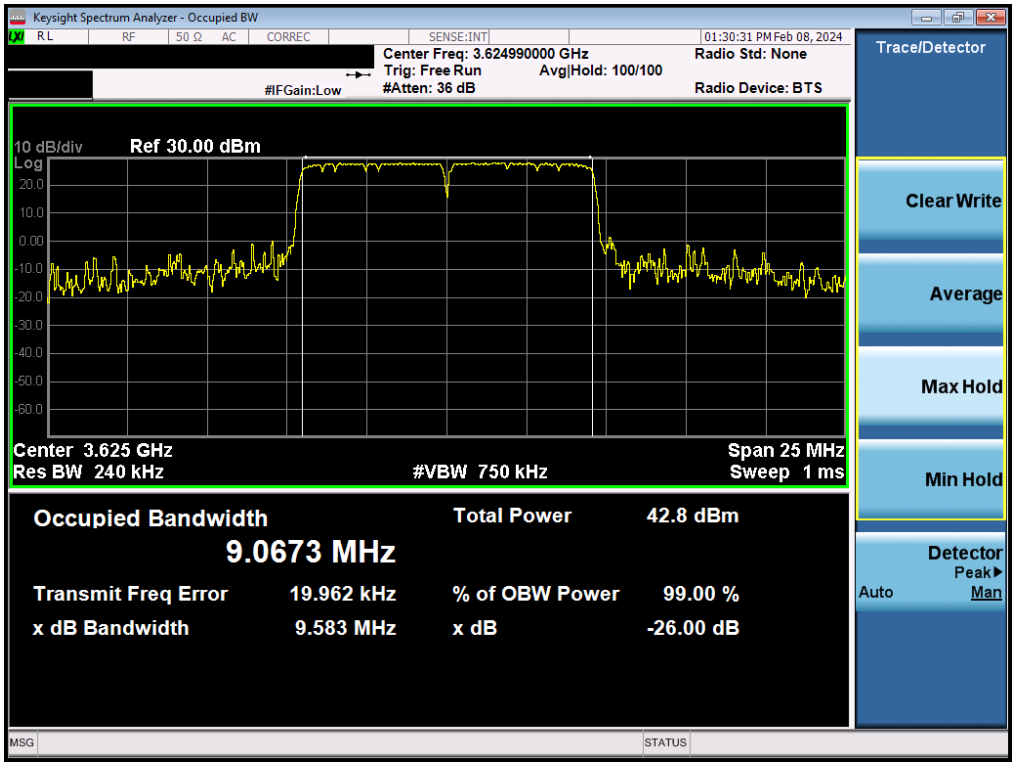
Plot 7.45. Occupied Bandwidth Plot (10MHz QPSK – ANT1)



Plot 7.46. Occupied Bandwidth Plot (10MHz 16-QAM – ANT1)

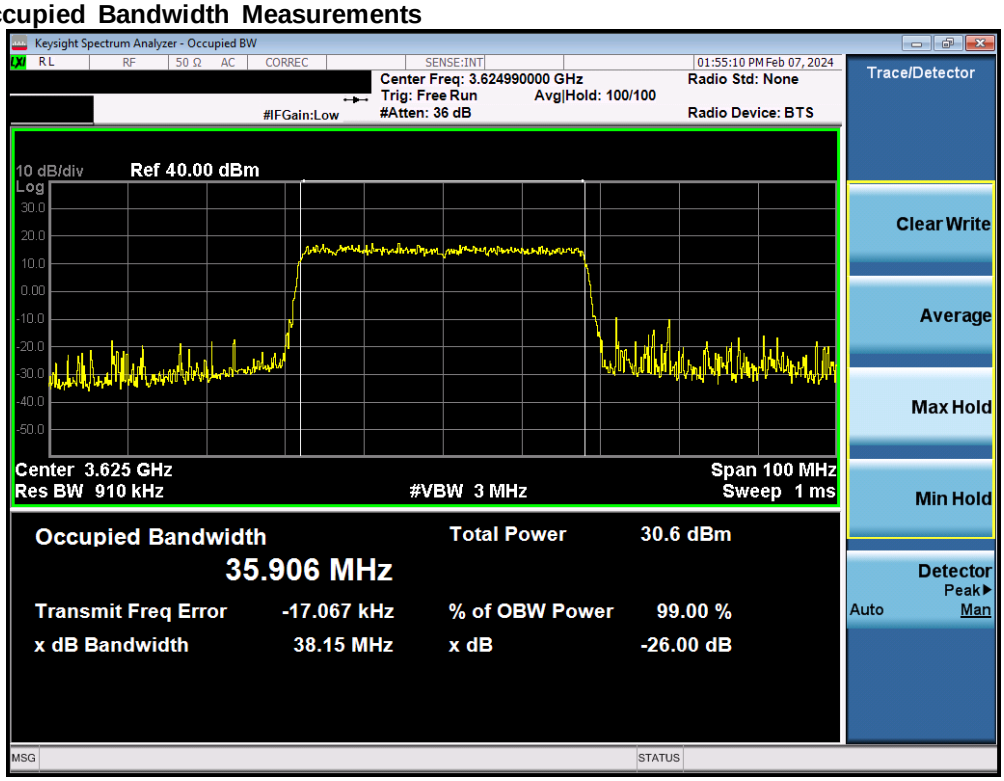


Plot 7.47. Occupied Bandwidth Plot (10MHz 64-QAM – ANT1)

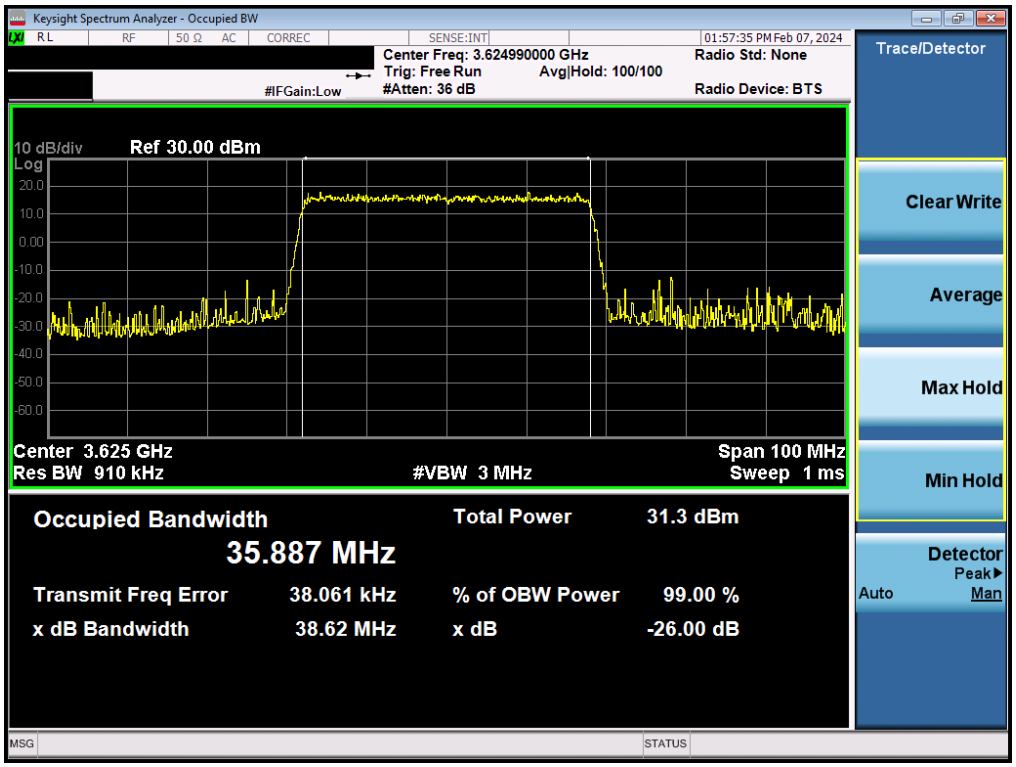


Plot 7.48. Occupied Bandwidth Plot (10MHz 256-QAM – ANT1)

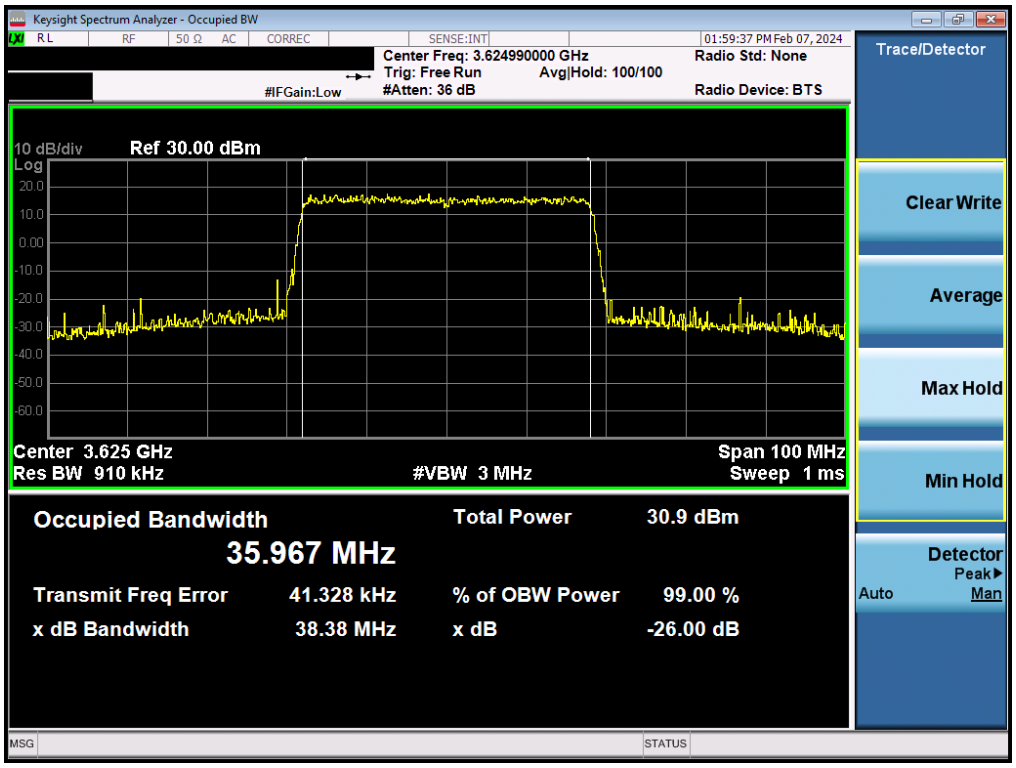
Antenna 2 Occupied Bandwidth Measurements



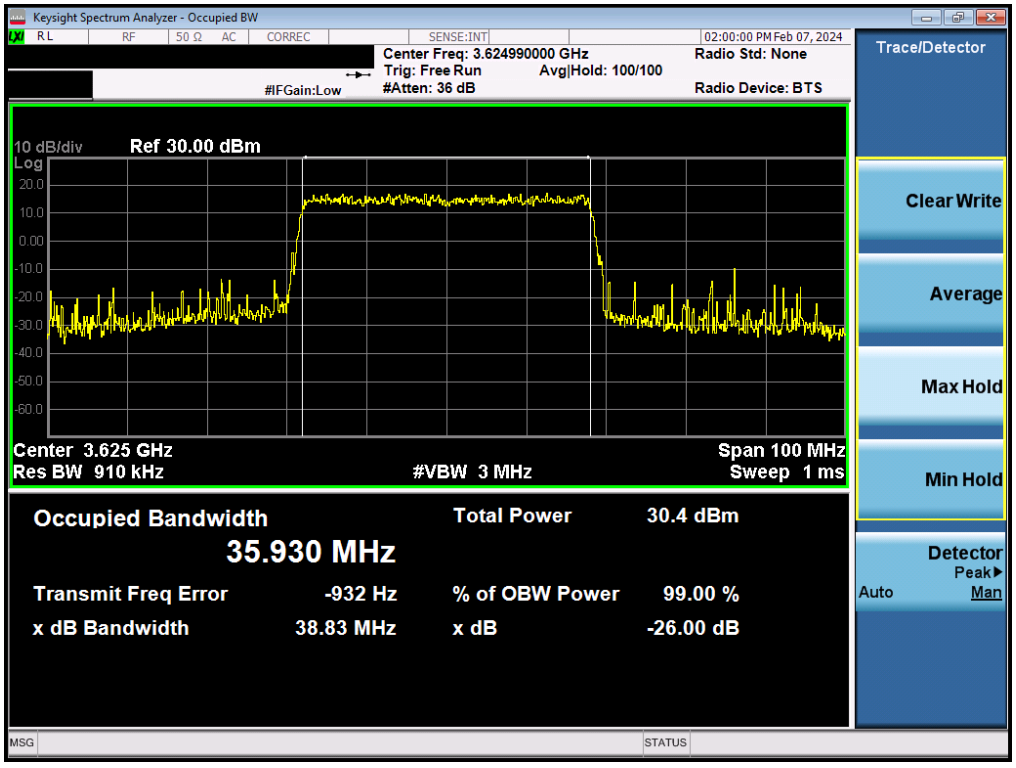
Plot 7.49. Occupied Bandwidth Plot (40MHz QPSK – ANT2)



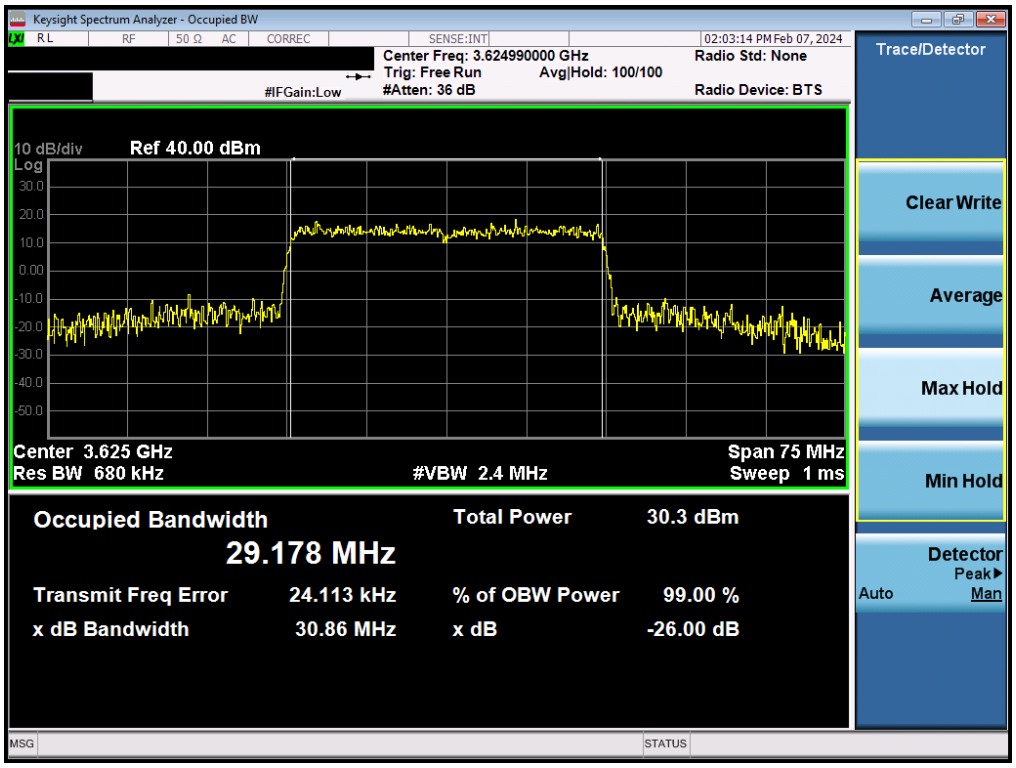
Plot 7.50. Occupied Bandwidth Plot (40MHz 16-QAM – ANT2)



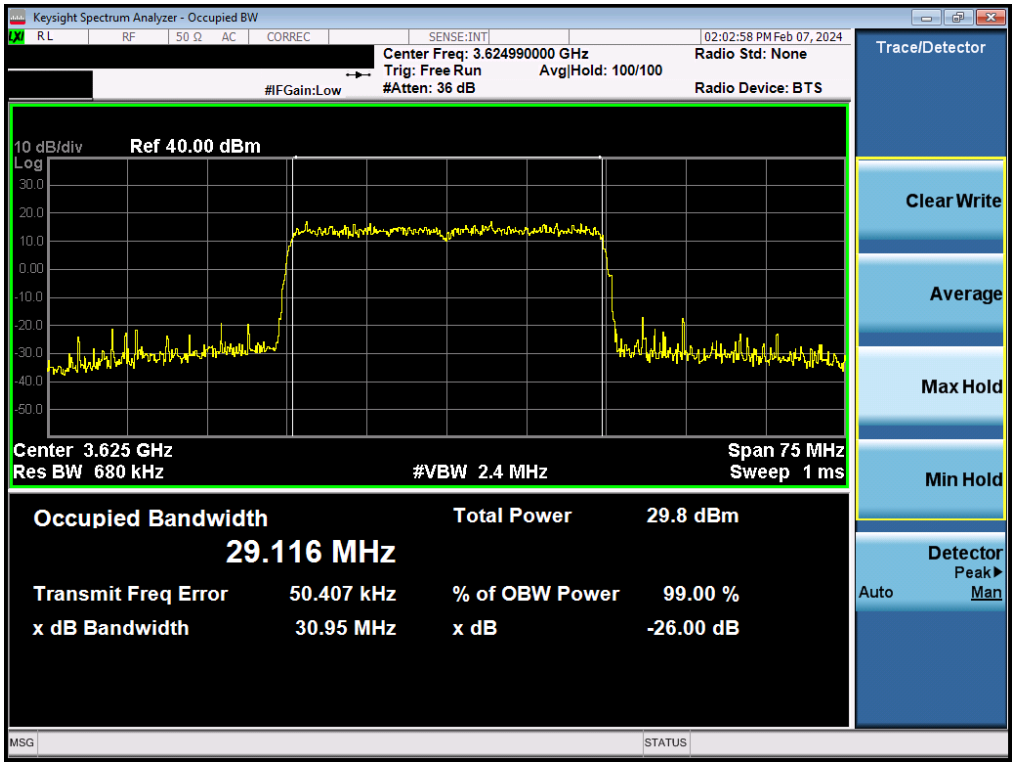
Plot 7.51. Occupied Bandwidth Plot (40MHz 64-QAM – ANT2)



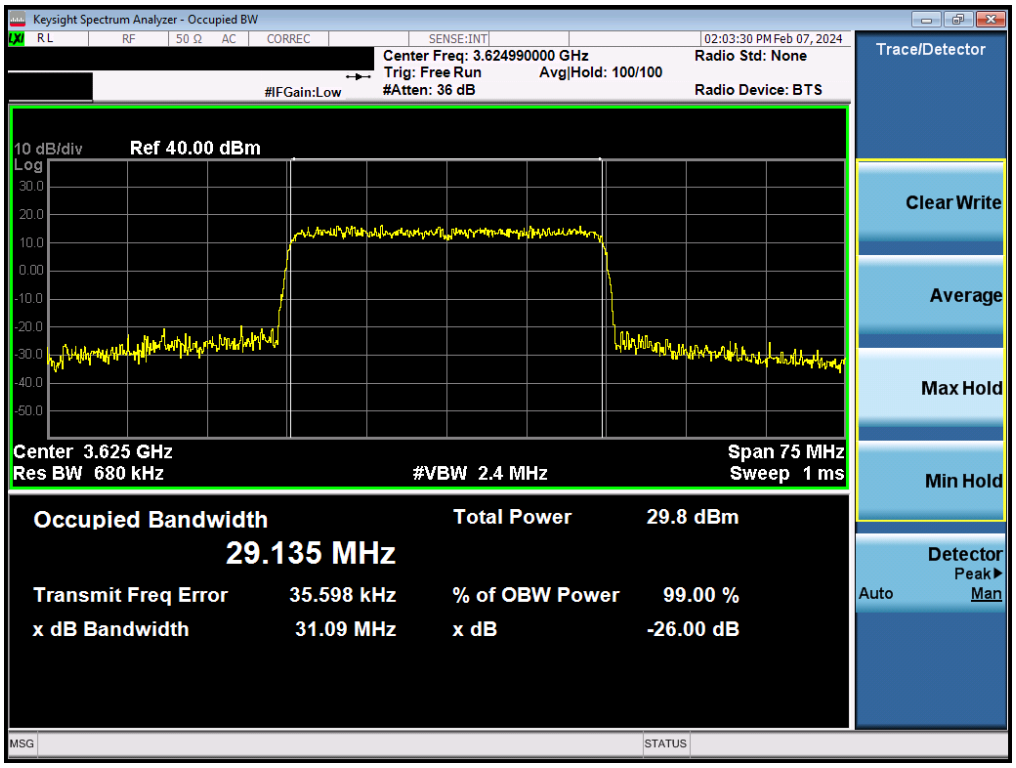
Plot 7.52. Occupied Bandwidth Plot (40MHz 256-QAM – ANT2)



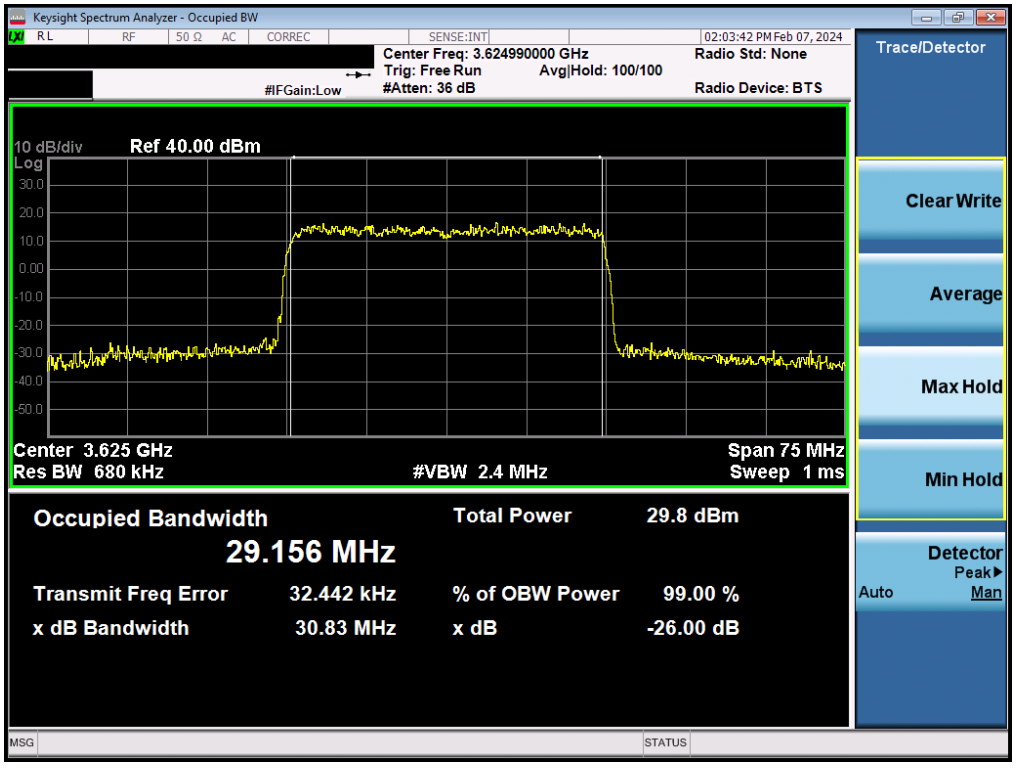
Plot 7.53. Occupied Bandwidth Plot (30MHz QPSK – ANT2)



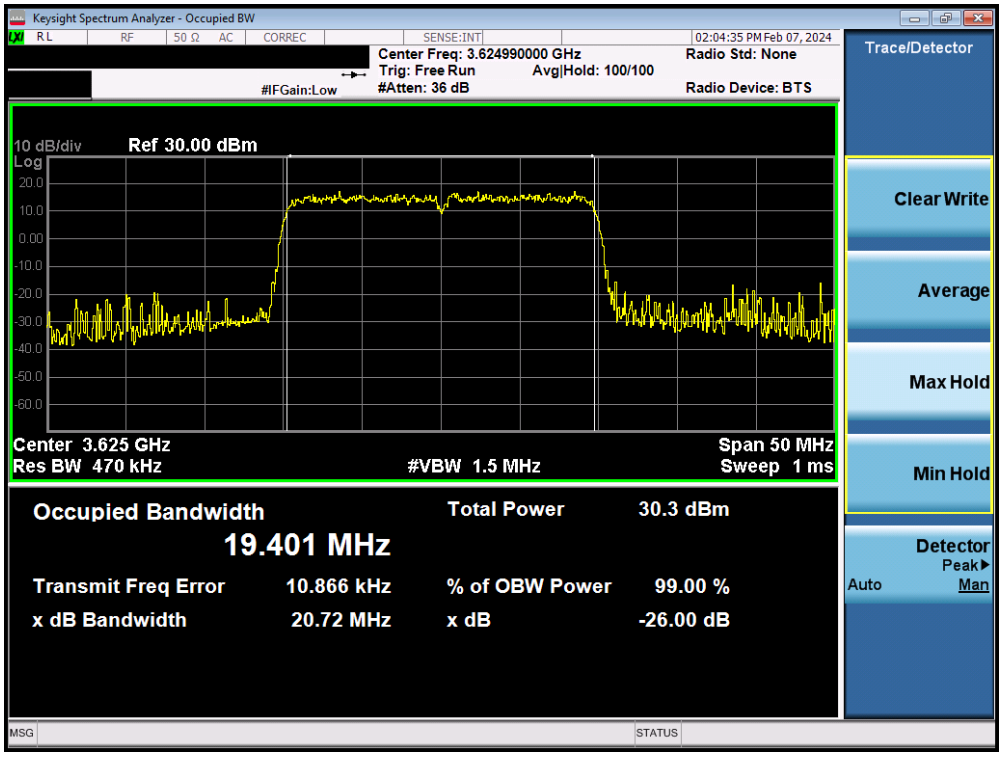
Plot 7.54. Occupied Bandwidth Plot (30MHz 16-QAM – ANT2)



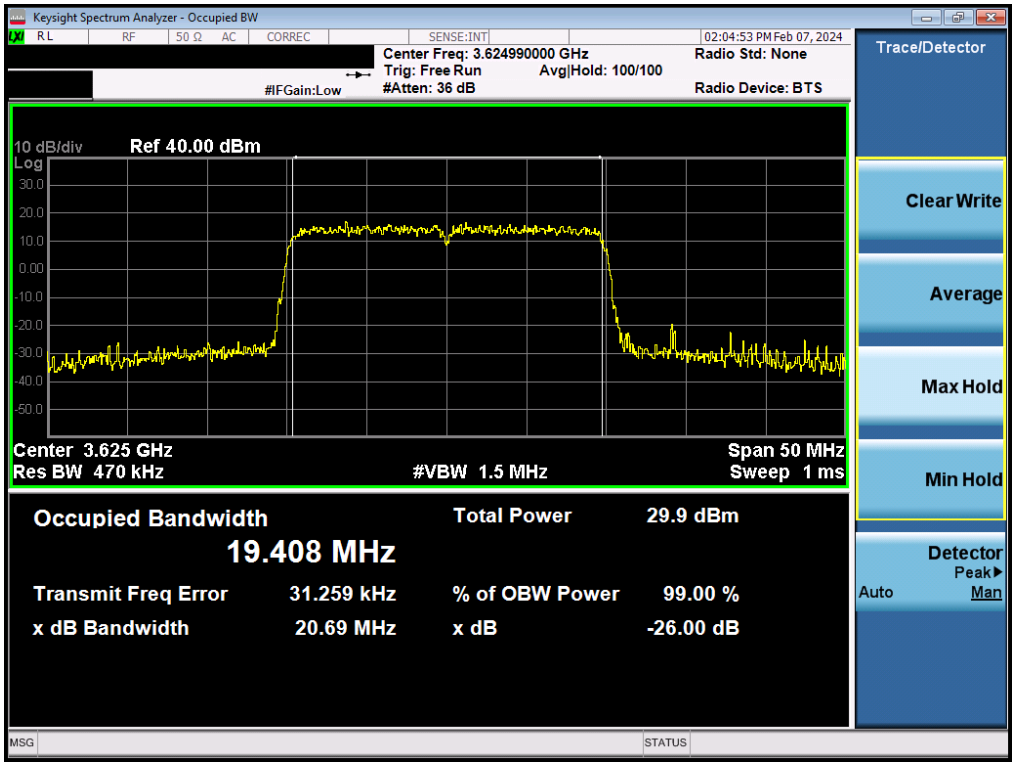
Plot 7.55. Occupied Bandwidth Plot (30MHz 64-QAM – ANT2)



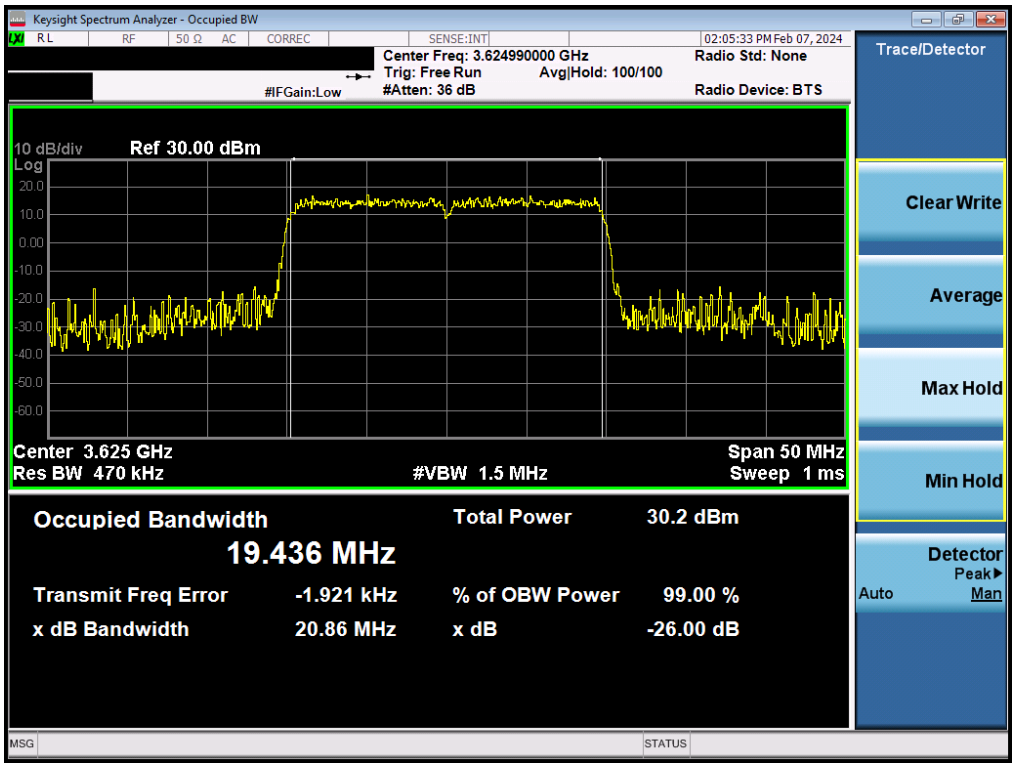
Plot 7.56. Occupied Bandwidth Plot (30MHz 256-QAM – ANT2)



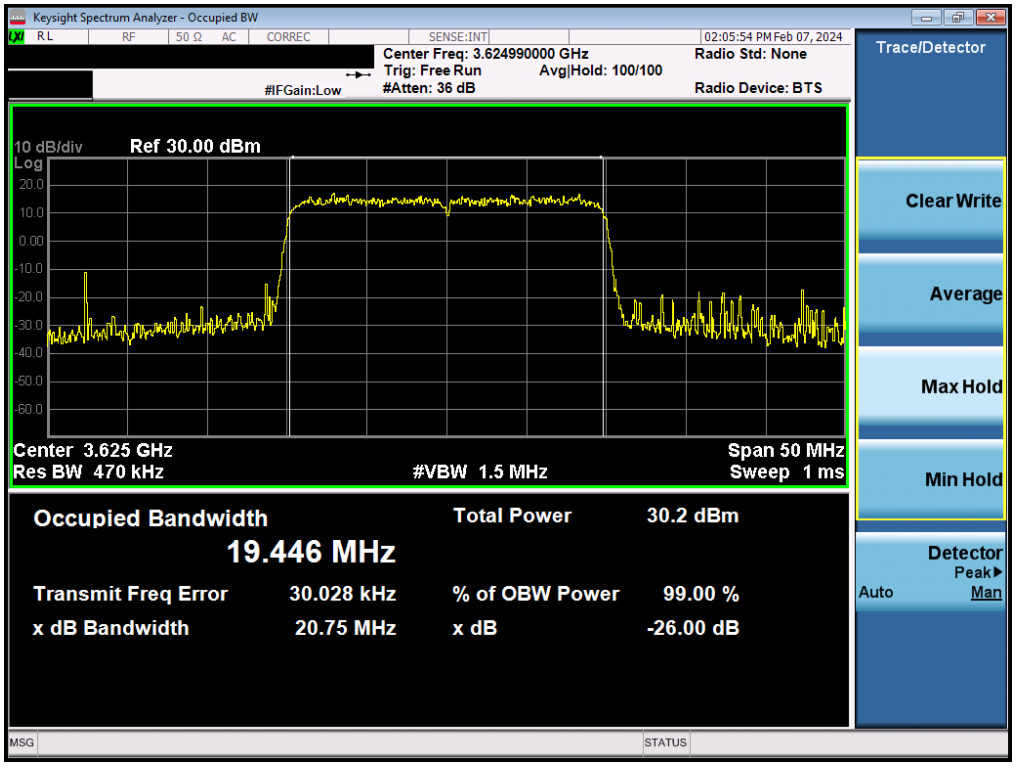
Plot 7.57. Occupied Bandwidth Plot (20MHz QPSK – ANT2)



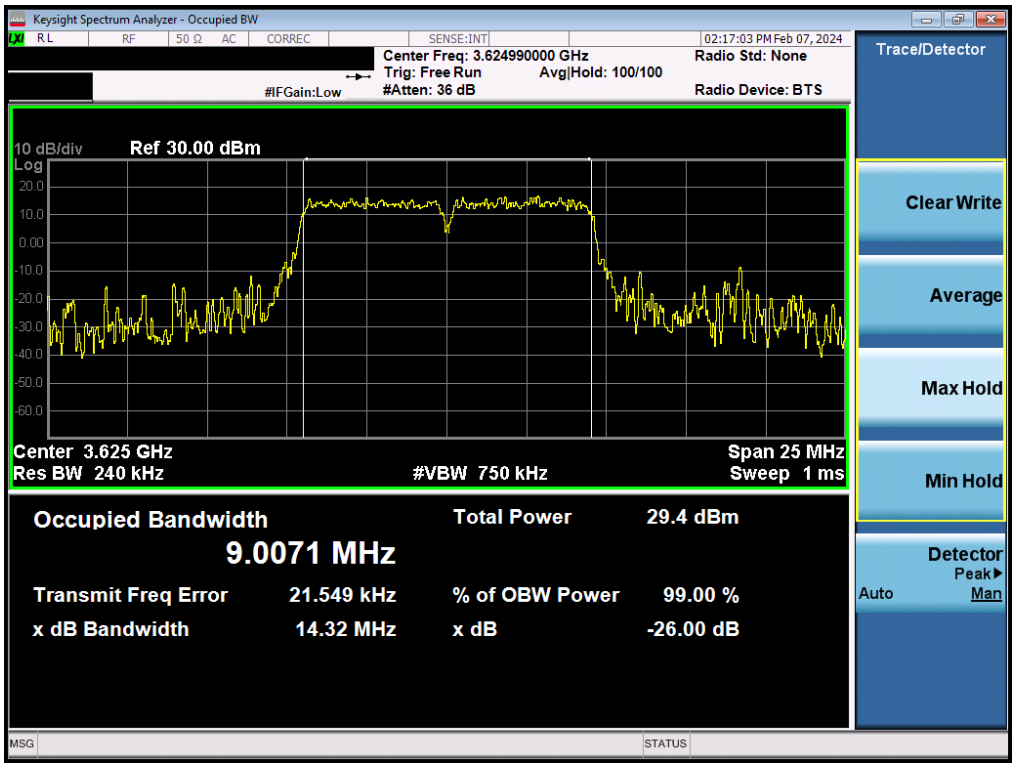
Plot 7.58. Occupied Bandwidth Plot (20MHz 16-QAM – ANT2)



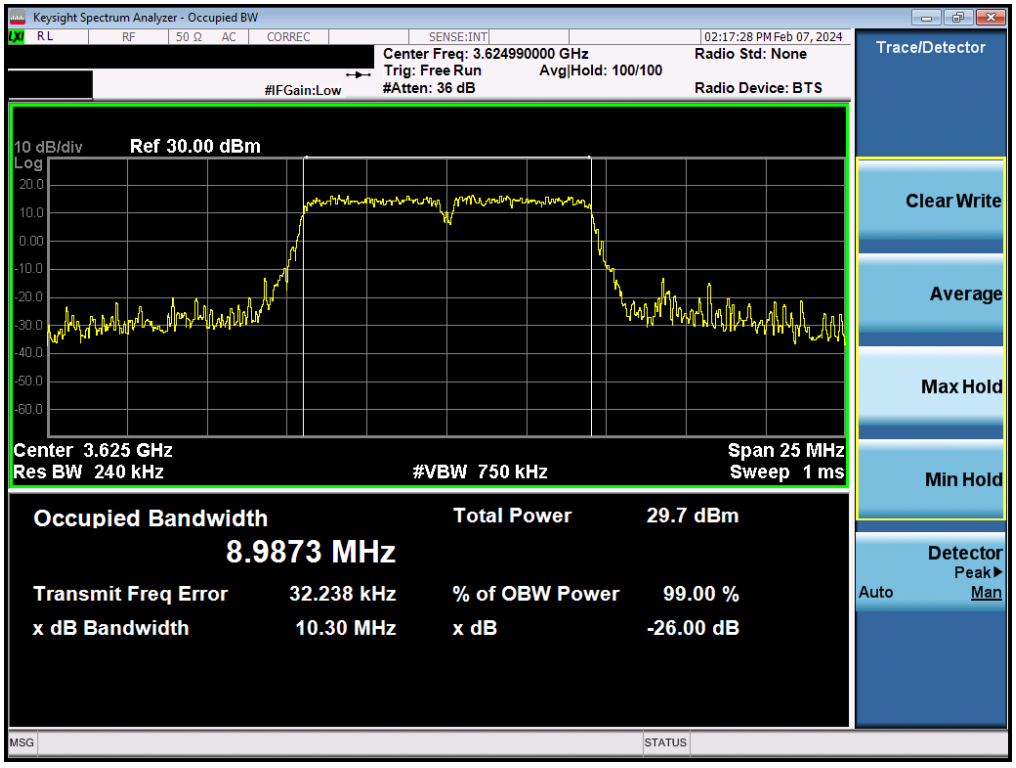
Plot 7.59. Occupied Bandwidth Plot (20MHz 64-QAM – ANT2)



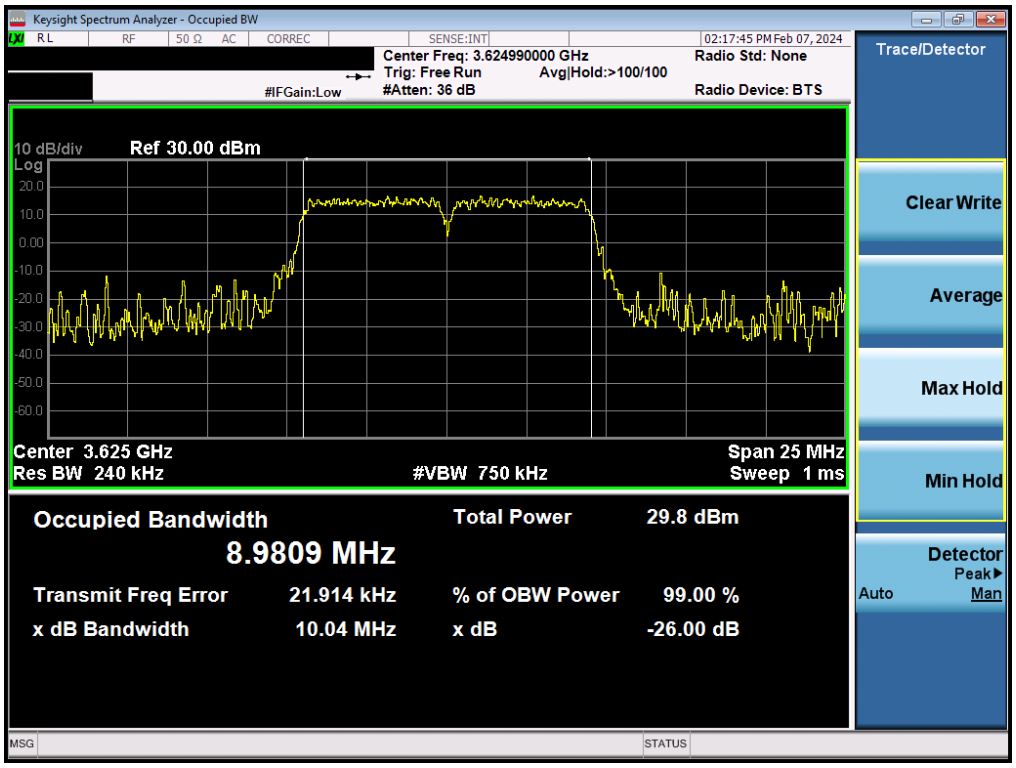
Plot 7.60. Occupied Bandwidth Plot (20MHz 256-QAM – ANT2)



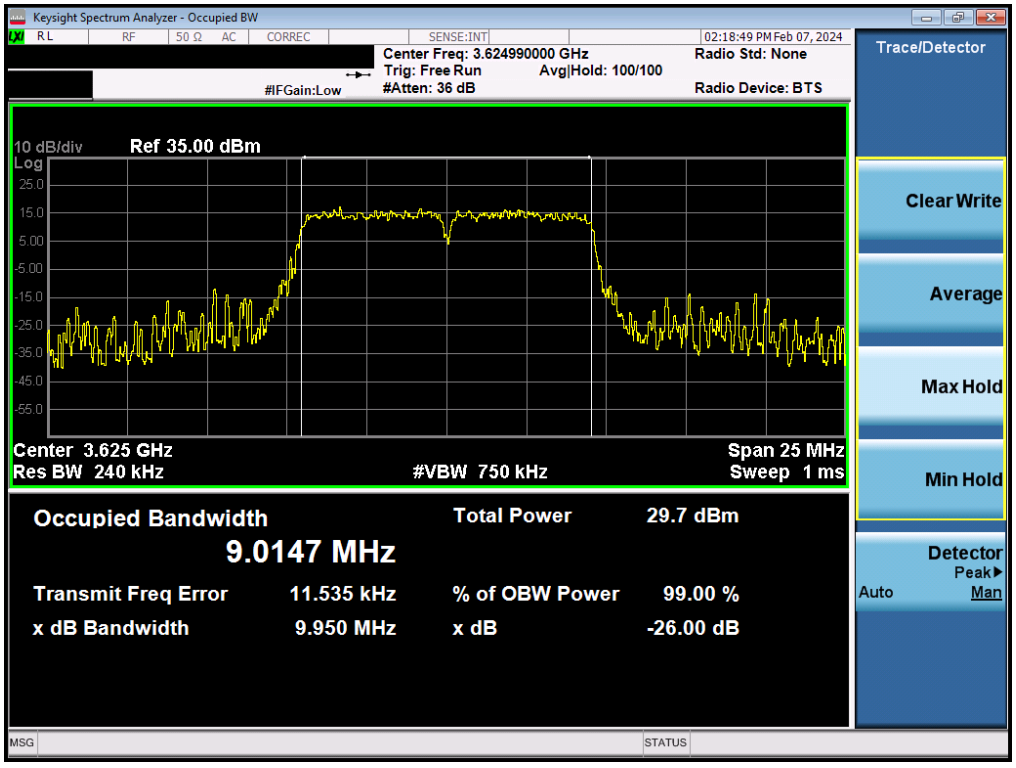
Plot 7.61. Occupied Bandwidth Plot (10MHz QPSK – ANT2)



Plot 7.62. Occupied Bandwidth Plot (10MHz 16-QAM – ANT2)



Plot 7.63. Occupied Bandwidth Plot (10MHz 64-QAM – ANT2)



Plot 7.64. Occupied Bandwidth Plot (10MHz 256-QAM – ANT2)

7.4 Conducted Power / EIRP Per 10MHz

Test Overview

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum power control level, as defined in ANSI C63.26-2015,and at the appropriate frequencies. The EUT transmits with a duty cycle of approximately 71.95%; the spectrum analyzer was gate as to only measure during on periods.

The e.i.r.p./10MHz for a Category B CBSD must be less than 47dBm/10MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4.1
ANSI C63.26-2015 – Section 5.2.4.5
ANSI C63.26-2015 – Section 6.4.3.2.3

Test Settings

1. Span = 2x to 3X the OBW
2. RBW = 10MHz
3. VBW ≥ 3 x RBW
4. Set number of sweep points ≥ 2 x span / RBW
5. Sweep Time = auto couple
6. Detector = RMS
7. Trace mode = average
8. Trigger = Level

Test Setup

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

Figure 7-3. Test Instrument & Measurement Setup

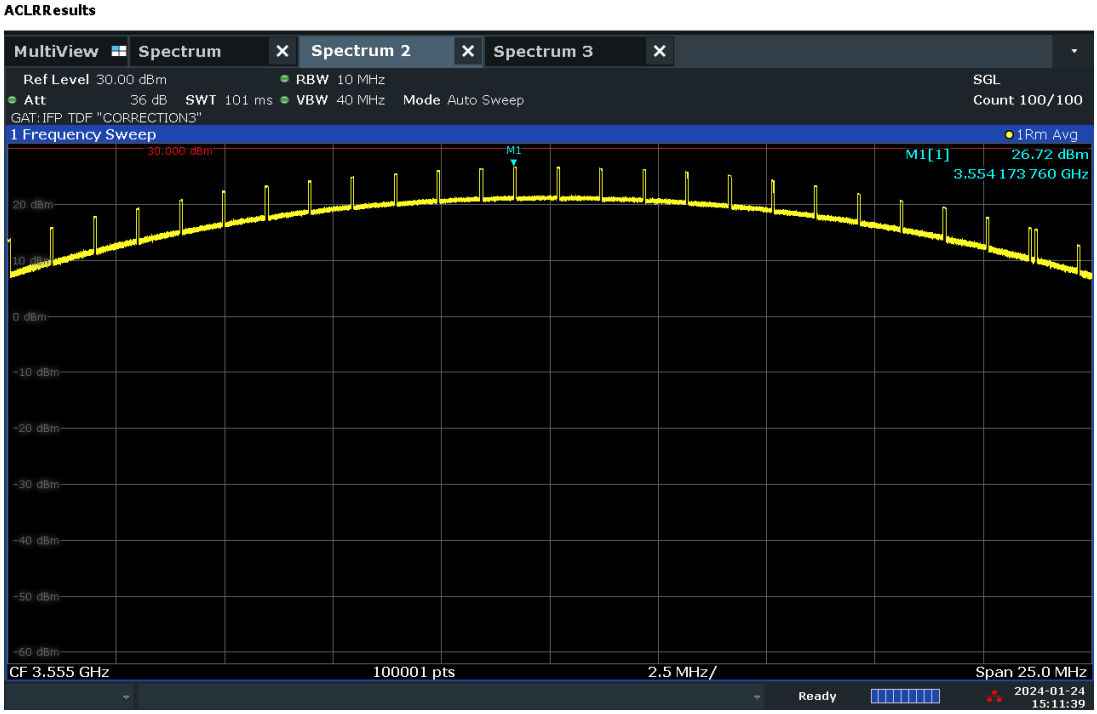
Test Notes

None

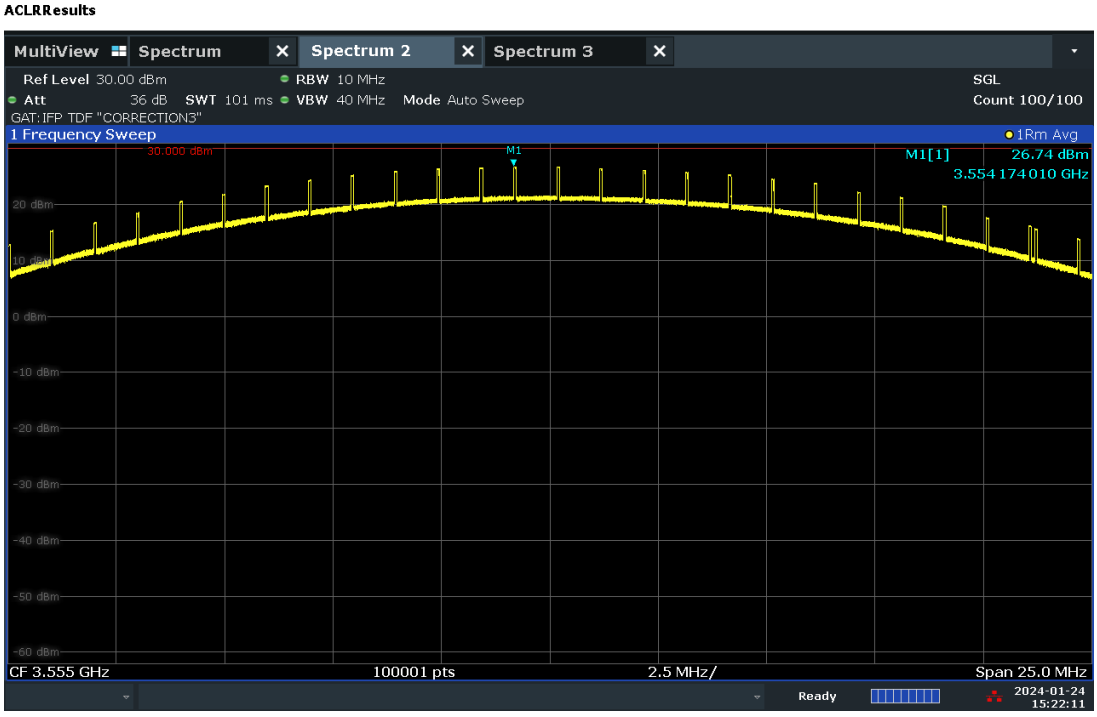
Bandwidth	Modulation	Frequency [MHz]	Ch. A Conducted Power [dBm/10MHz]	Ch. B Conducted Power [dBm/10MHz]	Summed MIMO Conducted Power [dBm/10MHz]	Ant Gain [dBi]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
40 MHz	QPSK	3570.0	22.34	16.65	23.38	13.00	36.38	4.34	47.00	-10.62
		3625.0	22.43	16.62	23.44	13.00	36.44	4.41	47.00	-10.56
		3680.0	21.13	15.99	22.29	13.00	35.29	3.38	47.00	-11.71
	16-QAM	3570.0	22.27	16.51	23.29	13.00	36.29	4.26	47.00	-10.71
		3625.0	21.98	16.74	23.12	13.00	36.12	4.09	47.00	-10.88
		3680.0	21.85	16.29	22.92	13.00	35.92	3.90	47.00	-11.08
	64-QAM	3570.0	23.04	16.74	23.95	13.00	36.95	4.96	47.00	-10.05
		3625.0	22.01	16.52	23.09	13.00	36.09	4.06	47.00	-10.91
		3680.0	21.59	16.69	22.81	13.00	35.81	3.81	47.00	-11.19
	256-QAM	3570.0	22.17	16.58	23.23	13.00	36.23	4.20	47.00	-10.77
		3625.0	22.96	16.95	23.93	13.00	36.93	4.93	47.00	-10.07
		3680.0	21.89	16.05	22.90	13.00	35.90	3.89	47.00	-11.10
30 MHz	QPSK	3565.0	22.63	17.60	23.82	13.00	36.82	4.80	47.00	-10.18
		3625.0	22.42	17.56	23.65	13.00	36.65	4.62	47.00	-10.35
		3685.0	22.46	17.39	23.64	13.00	36.64	4.61	47.00	-10.36
	16-QAM	3565.0	23.12	17.59	24.19	13.00	37.19	5.24	47.00	-9.81
		3625.0	22.64	17.74	23.86	13.00	36.86	4.85	47.00	-10.14
		3685.0	21.84	17.44	23.19	13.00	36.19	4.15	47.00	-10.81
	64-QAM	3565.0	22.35	17.50	23.58	13.00	36.58	4.55	47.00	-10.42
		3625.0	23.26	17.62	24.31	13.00	37.31	5.38	47.00	-9.69
		3685.0	21.63	17.40	23.02	13.00	36.02	4.00	47.00	-10.98
	256-QAM	3565.0	23.29	17.60	24.33	13.00	37.33	5.40	47.00	-9.67
		3625.0	23.13	17.64	24.21	13.00	37.21	5.26	47.00	-9.79
		3685.0	22.20	17.40	23.44	13.00	36.44	4.41	47.00	-10.56
20 MHz	QPSK	3560.0	25.02	18.92	25.97	13.00	38.97	7.89	47.00	-8.03
		3625.0	24.23	19.29	25.44	13.00	38.44	6.98	47.00	-8.56
		3690.0	23.47	18.91	24.77	13.00	37.77	5.99	47.00	-9.23
	16-QAM	3560.0	24.68	18.87	25.69	13.00	38.69	7.40	47.00	-8.31
		3625.0	24.07	19.23	25.30	13.00	38.30	6.76	47.00	-8.70
		3690.0	23.49	19.01	24.81	13.00	37.81	6.05	47.00	-9.19
	64-QAM	3560.0	24.15	19.02	25.31	13.00	38.31	6.78	47.00	-8.69
		3625.0	24.69	18.92	25.71	13.00	38.71	7.43	47.00	-8.29
		3690.0	23.55	18.94	24.84	13.00	37.84	6.08	47.00	-9.16
	256-QAM	3560.0	24.20	18.75	25.29	13.00	38.29	6.74	47.00	-8.71
		3625.0	24.19	19.30	25.41	13.00	38.41	6.93	47.00	-8.59
		3690.0	23.53	18.78	24.78	13.00	37.78	6.00	47.00	-9.22
10 MHz	QPSK	3555.0	26.72	21.18	27.79	13.00	40.79	11.99	47.00	-6.21
		3625.0	26.53	21.28	27.66	13.00	40.66	11.65	47.00	-6.34
		3695.0	25.55	20.91	26.83	13.00	39.83	9.62	47.00	-7.17
	16-QAM	3555.0	26.74	21.14	27.80	13.00	40.80	12.01	47.00	-6.20
		3625.0	26.47	21.28	27.62	13.00	40.62	11.53	47.00	-6.38
		3695.0	25.57	20.83	26.83	13.00	39.83	9.61	47.00	-7.17
	64-QAM	3555.0	26.63	21.13	27.71	13.00	40.71	11.77	47.00	-6.29
		3625.0	26.58	21.09	27.66	13.00	40.66	11.64	47.00	-6.34
		3695.0	25.36	20.64	26.62	13.00	39.62	9.17	47.00	-7.38
	256-QAM	3555.0	26.69	21.21	27.77	13.00	40.77	11.95	47.00	-6.23
		3625.0	26.45	21.40	27.63	13.00	40.63	11.56	47.00	-6.37
		3695.0	25.36	20.87	26.68	13.00	39.68	9.29	47.00	-7.32

Table 7-5 E.I.R.P. / 10MHz Measurements

Antenna 1 Conducted Power / 10MHz

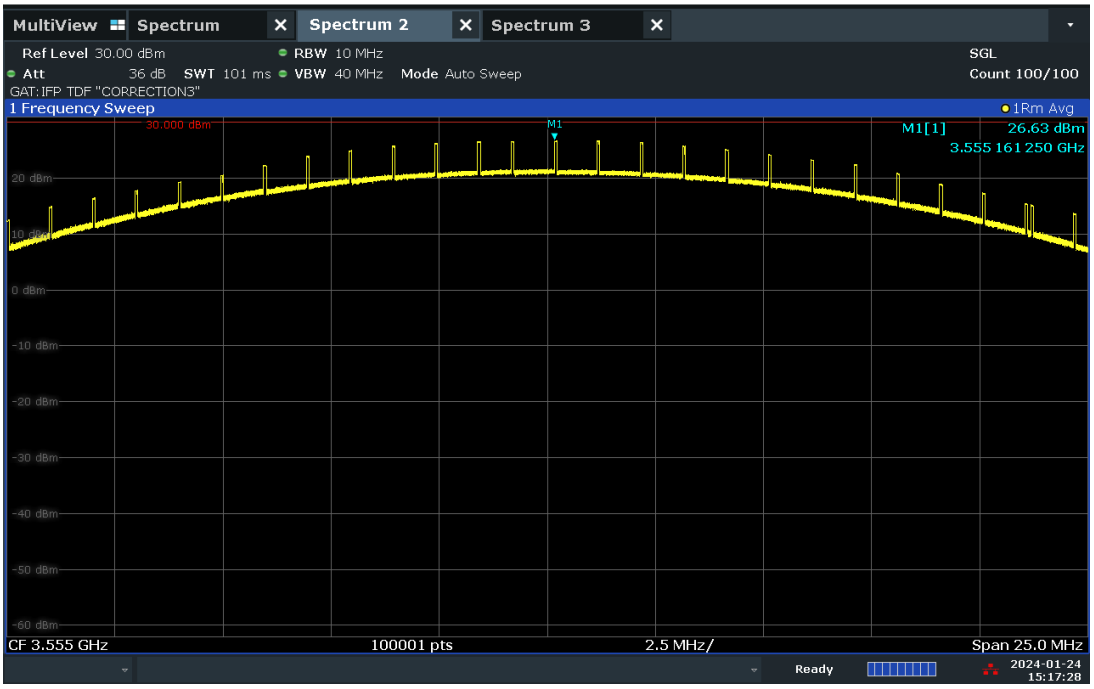


Plot 7.65. Conducted Power / 10MHz (10MHz QPSK, Low Channel – ANT1)



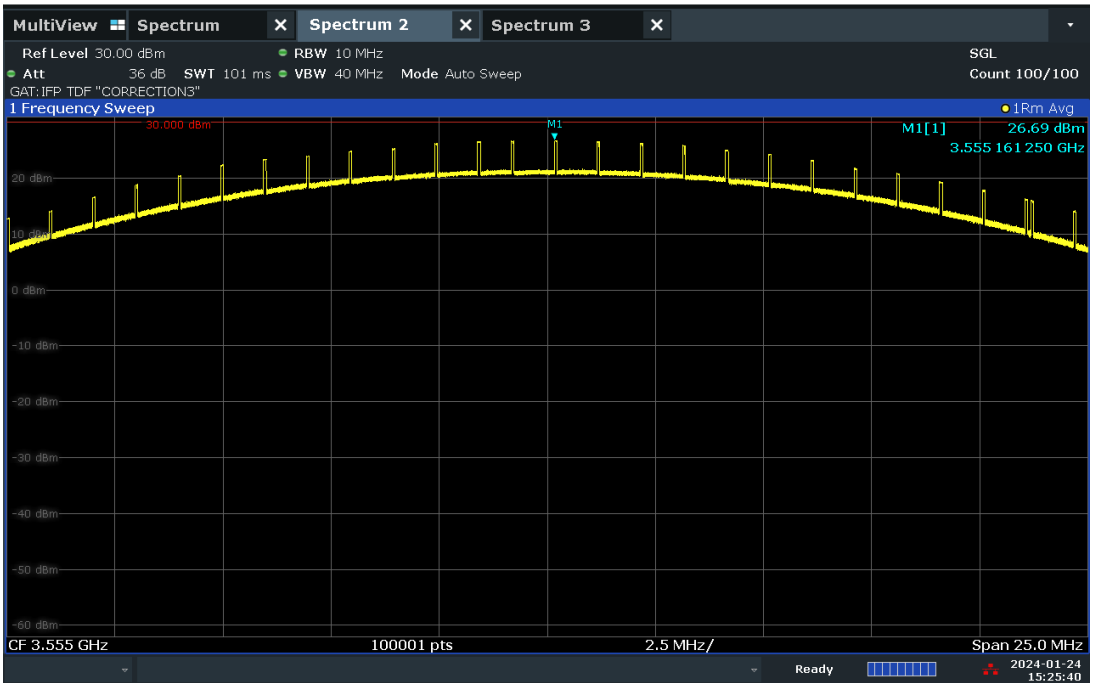
Plot 7.66. Conducted Power / 10MHz (10MHz 16QAM, Low Channel – ANT1)

ACLRResults



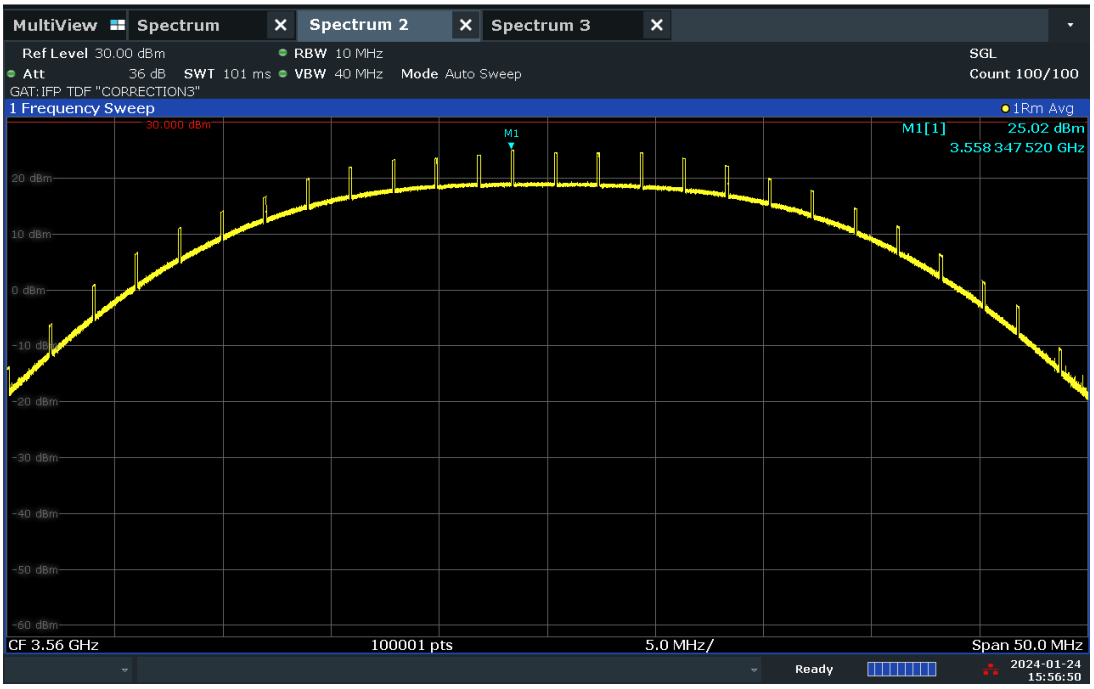
Plot 7.67. Conducted Power / 10MHz (10MHz 64QAM, Low Channel – ANT1)

ACLRResults



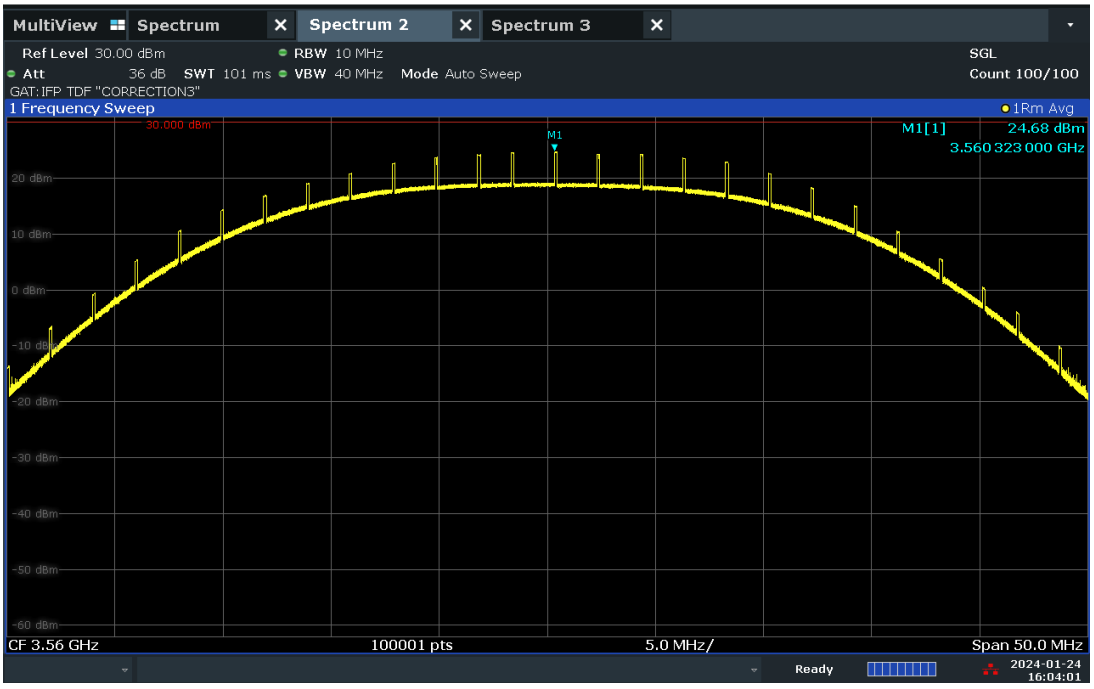
Plot 7.68. Conducted Power / 10MHz (10MHz 256QAM, Low Channel – ANT1)

ACLRResults



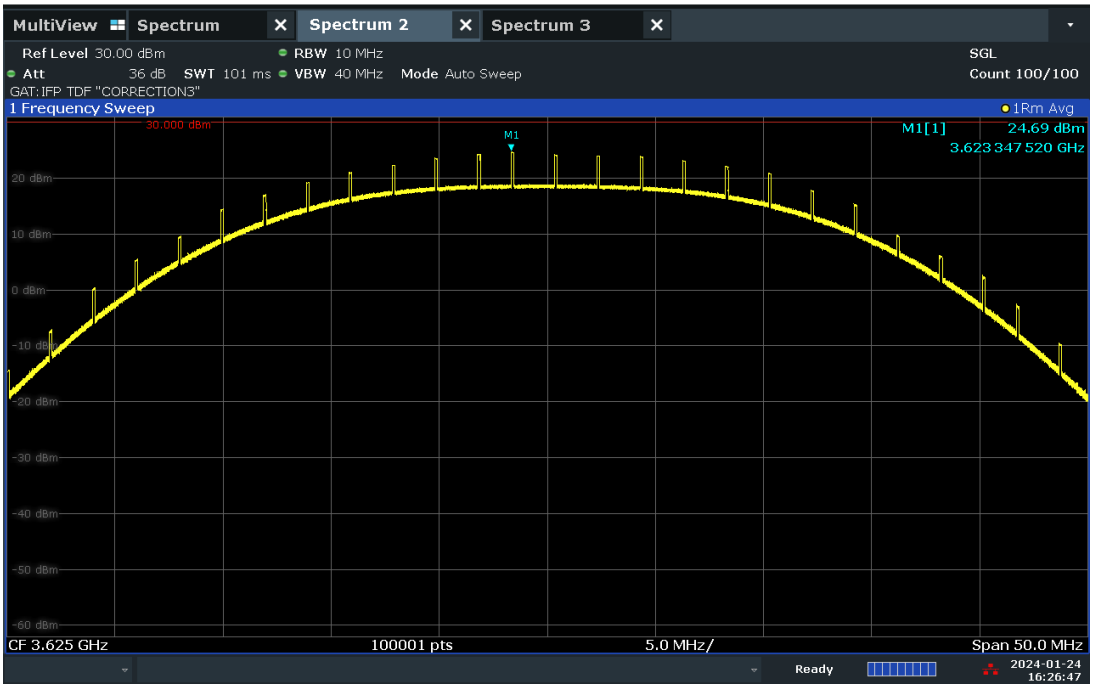
Plot 7.69. Conducted Power / 10MHz (20MHz QPSK, Low Channel – ANT1)

ACLRResults



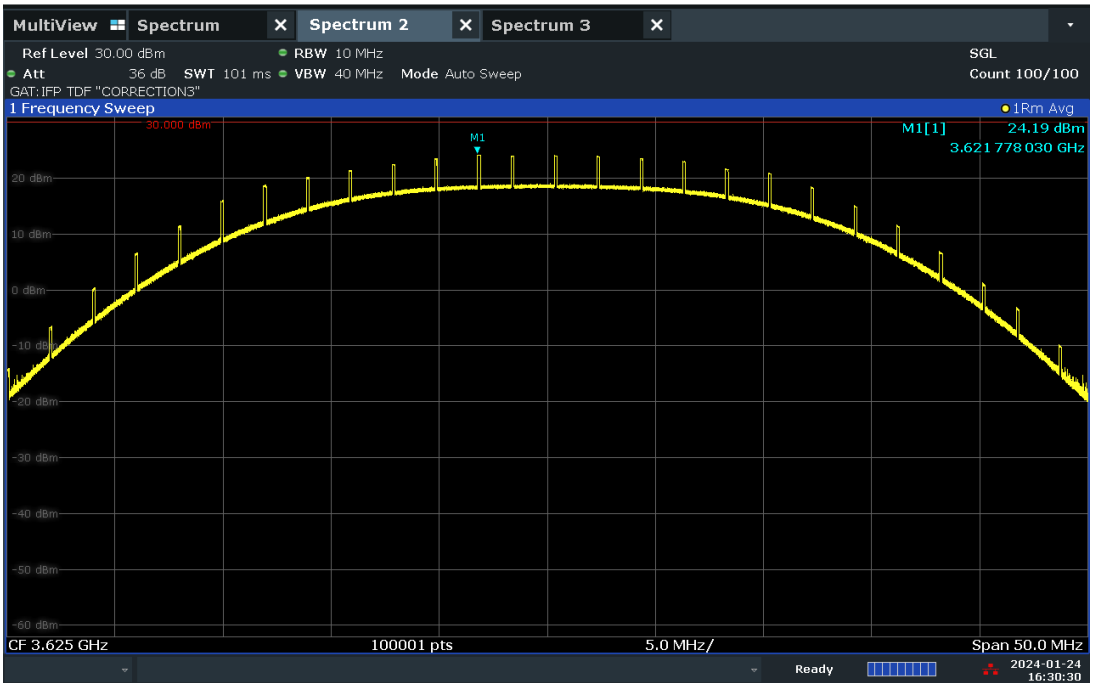
Plot 7.70. Conducted Power / 10MHz (20MHz 16QAM, Mid Channel – ANT1)

ACLRResults



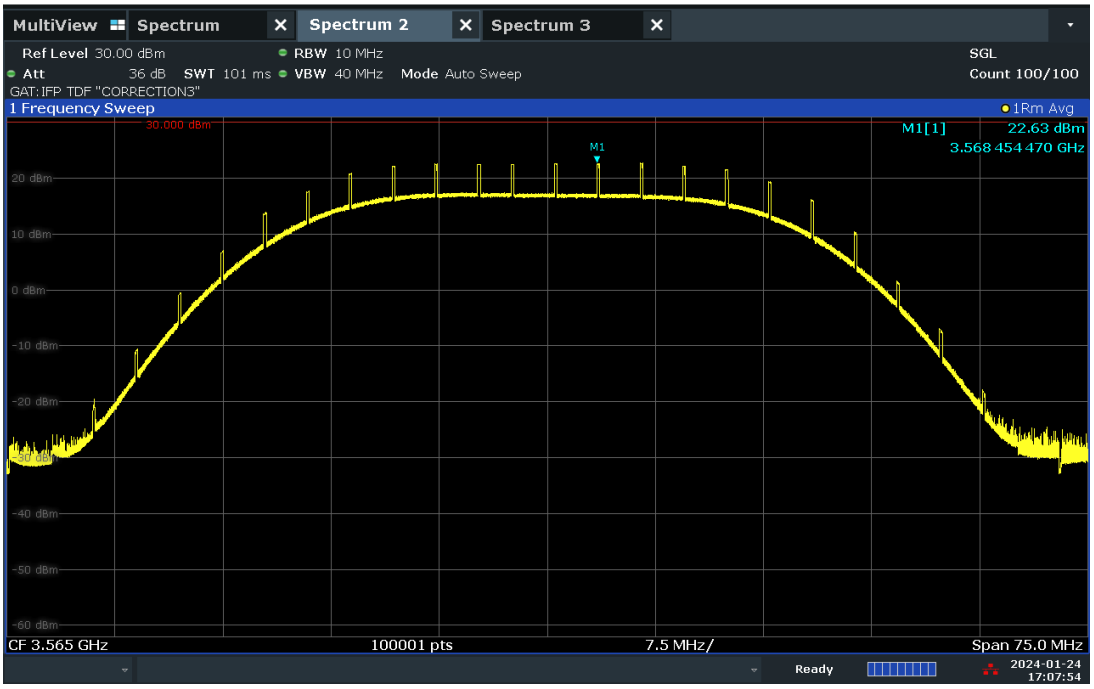
Plot 7.71. Conducted Power / 10MHz (20MHz 64QAM, Mid Channel – ANT1)

ACLRResults



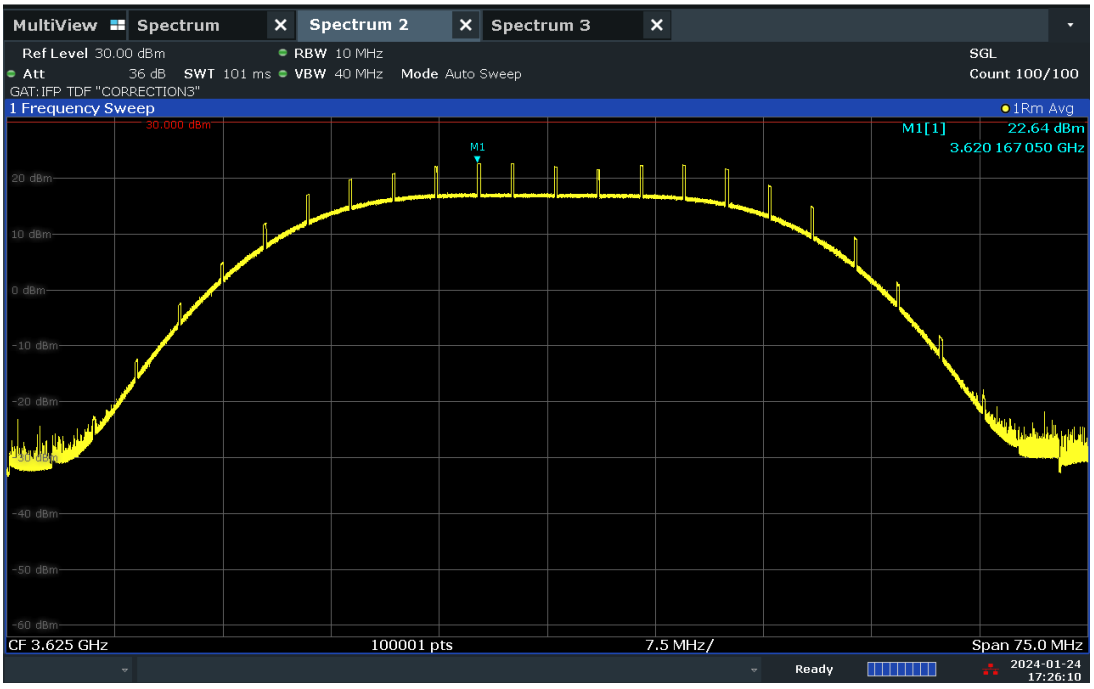
Plot 7.72. Conducted Power / 10MHz (20MHz 256QAM, Mid Channel – ANT1)

ACLRResults



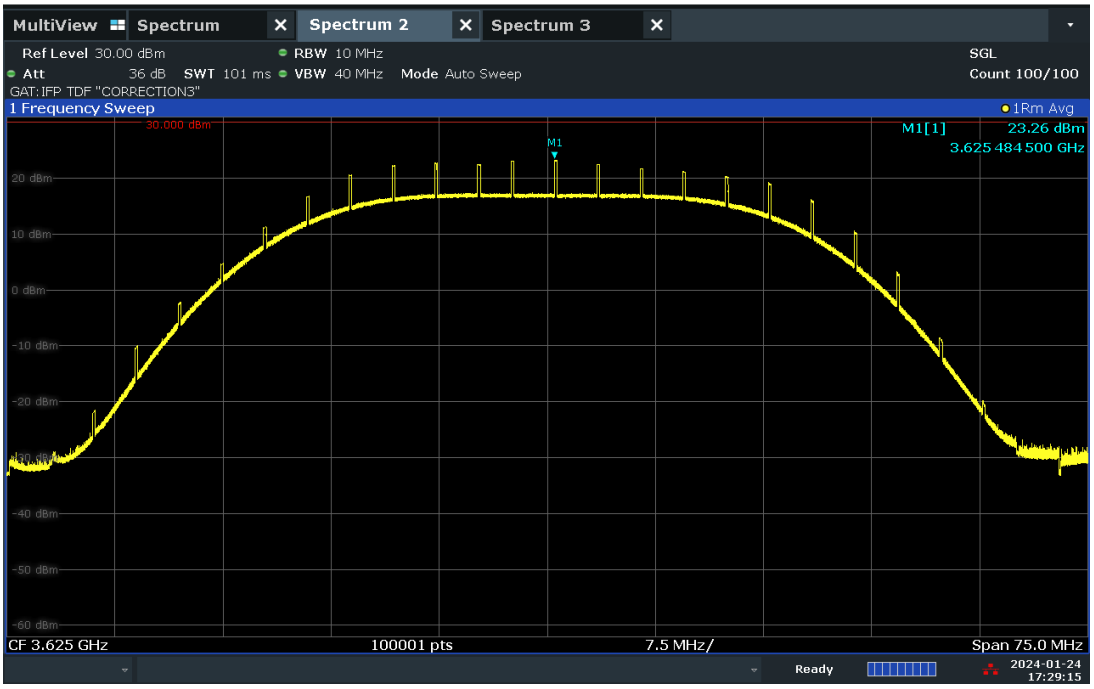
Plot 7.73. Conducted Power / 10MHz (30MHz QPSK, Low Channel – ANT1)

ACLRResults



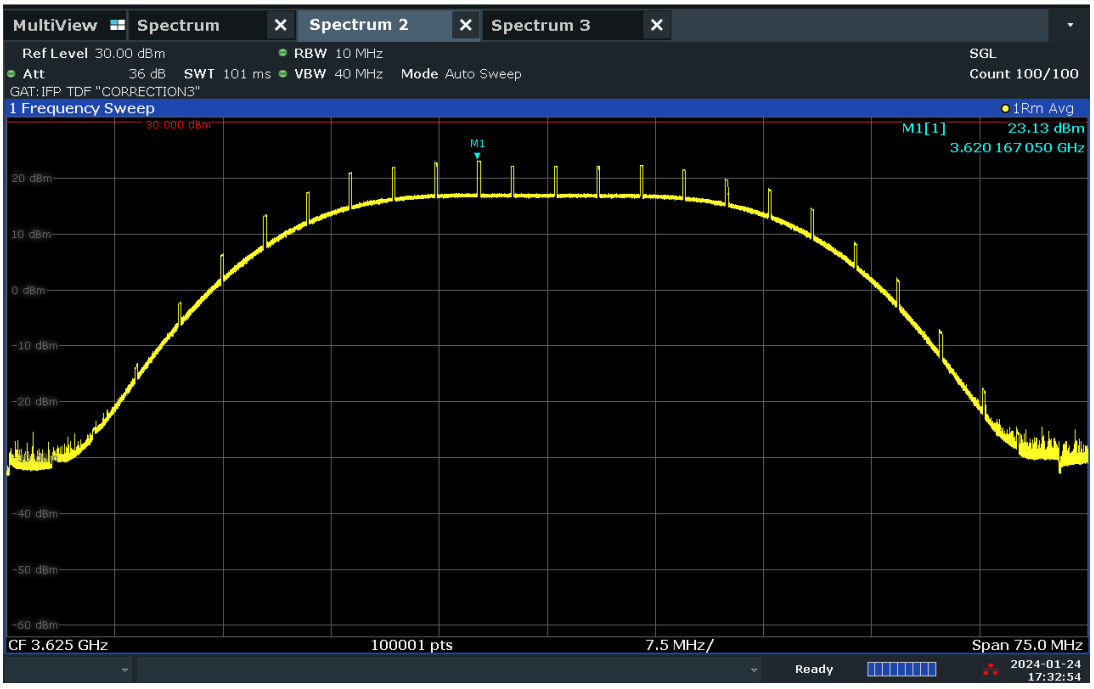
Plot 7.74. Conducted Power / 10MHz (30MHz 16QAM, Mid Channel – ANT1)

ACLRResults

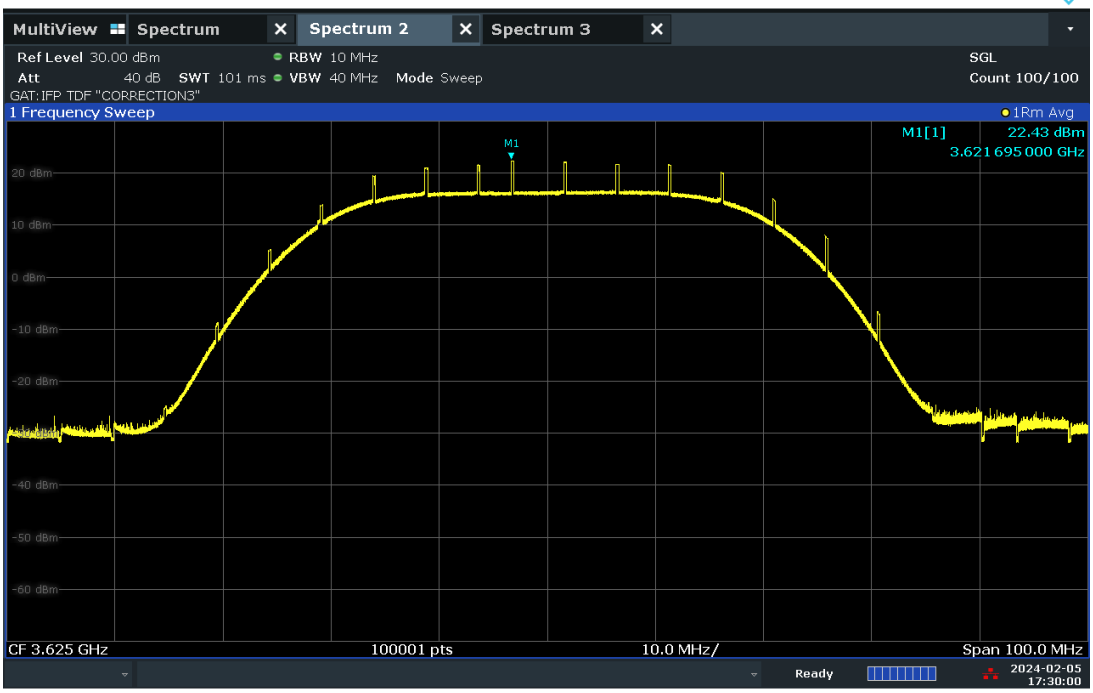


Plot 7.75. Conducted Power / 10MHz (30MHz 64QAM, Mid Channel – ANT1)

ACLRResults



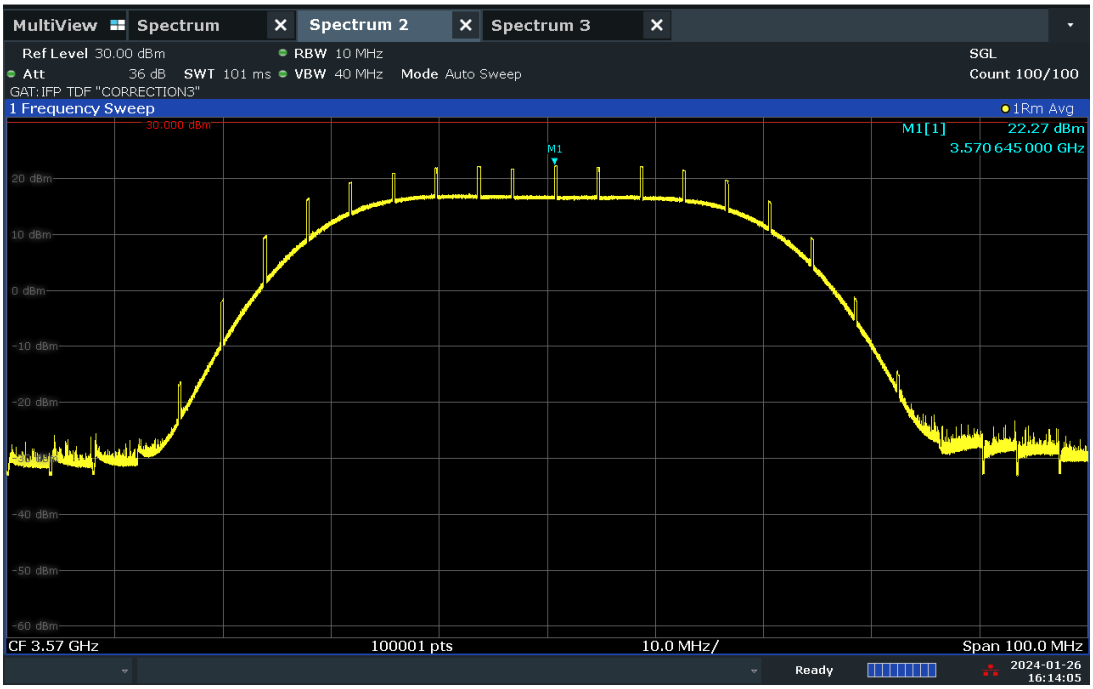
Plot 7.76. Conducted Power / 10MHz (30MHz 256QAM, Low Channel – ANT1)



05:30:01 PM 02/05/2024

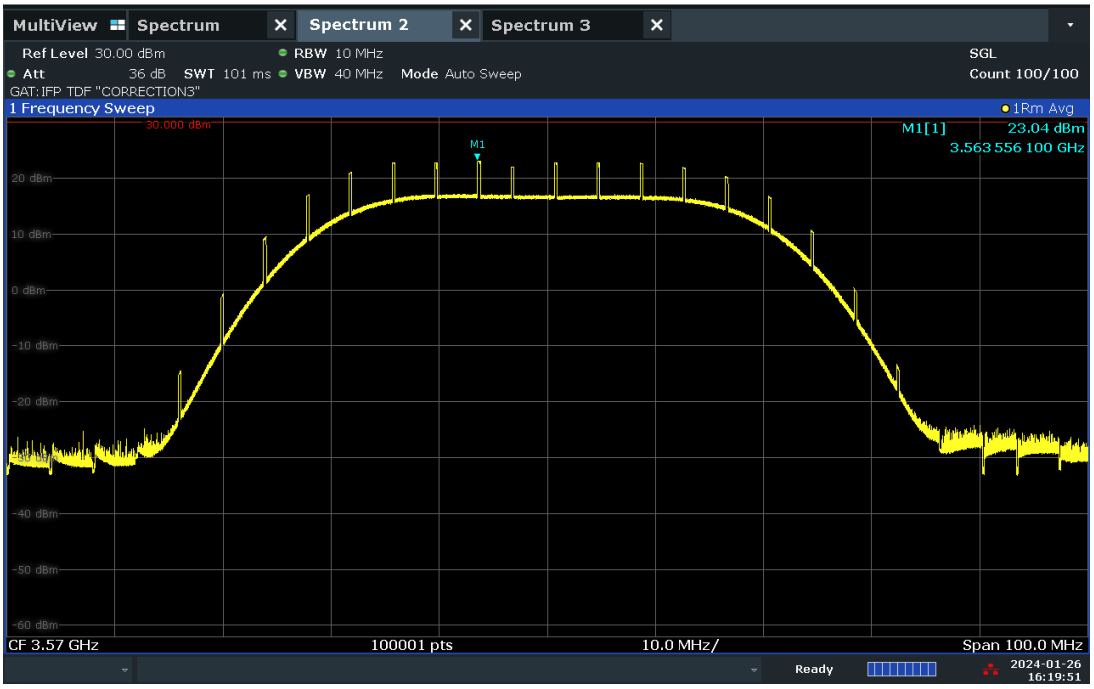
Plot 7.77. Conducted Power / 10MHz (40MHz QPSK, Mid Channel – ANT1)

ACLRResults

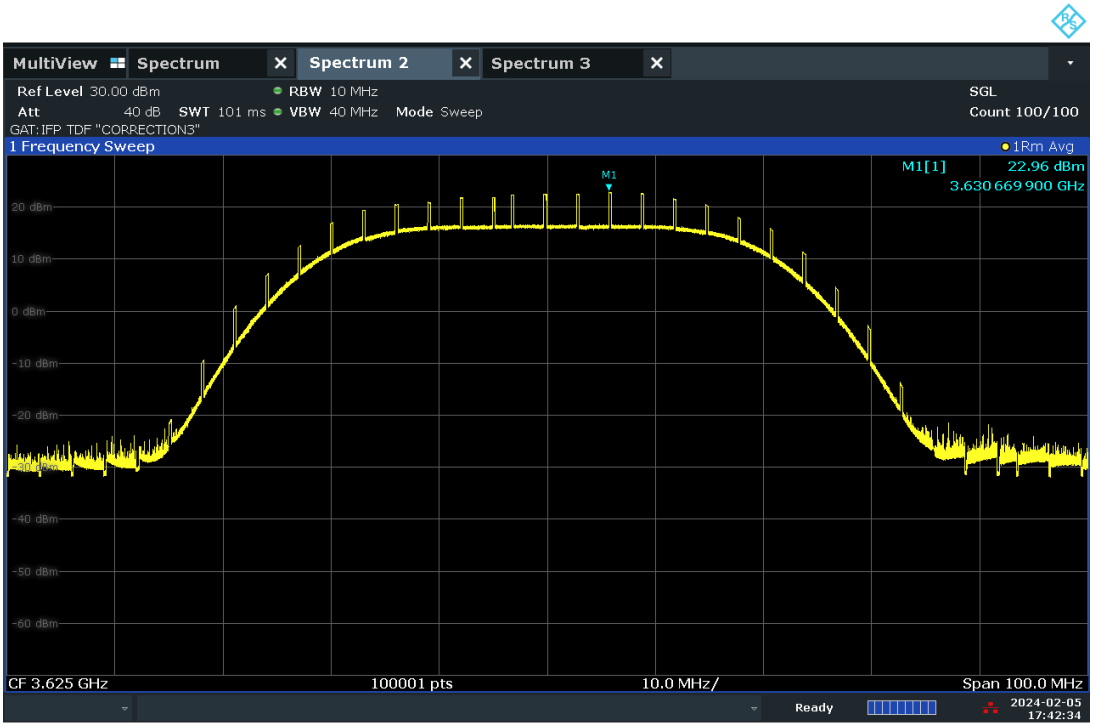


Plot 7.78. Conducted Power / 10MHz (40MHz 16QAM, Low Channel – ANT1)

ACLRResults



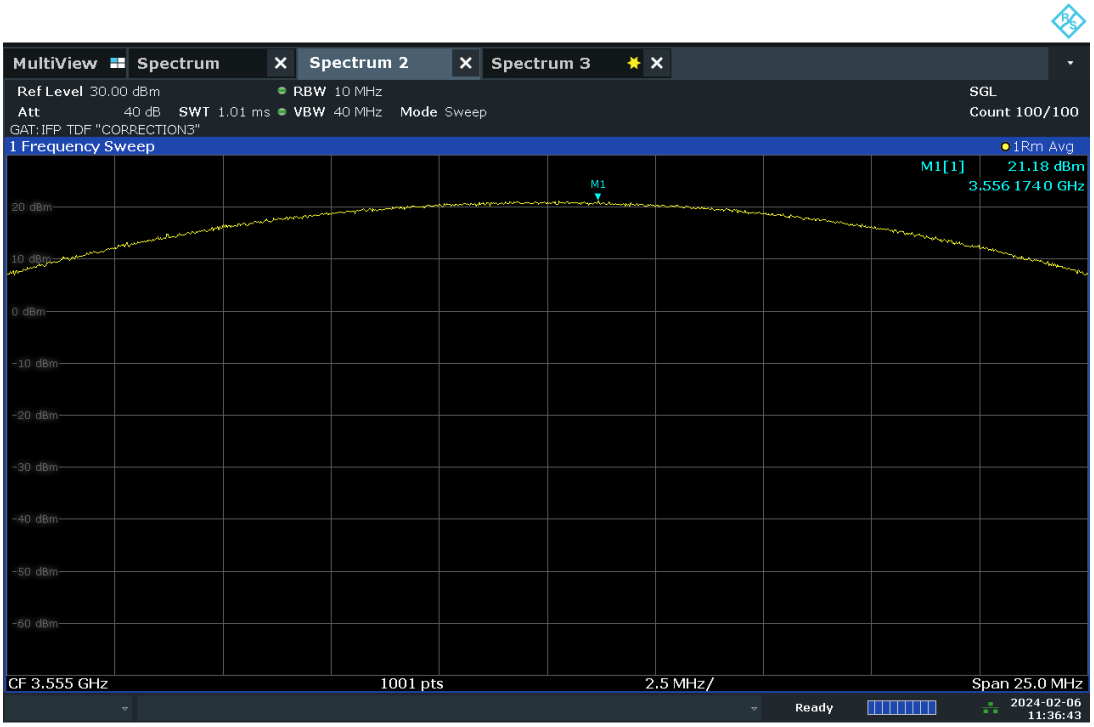
Plot 7.79. Conducted Power / 10MHz (40MHz 64QAM, Low Channel – ANT1)



05:42:35 PM 02/05/2024

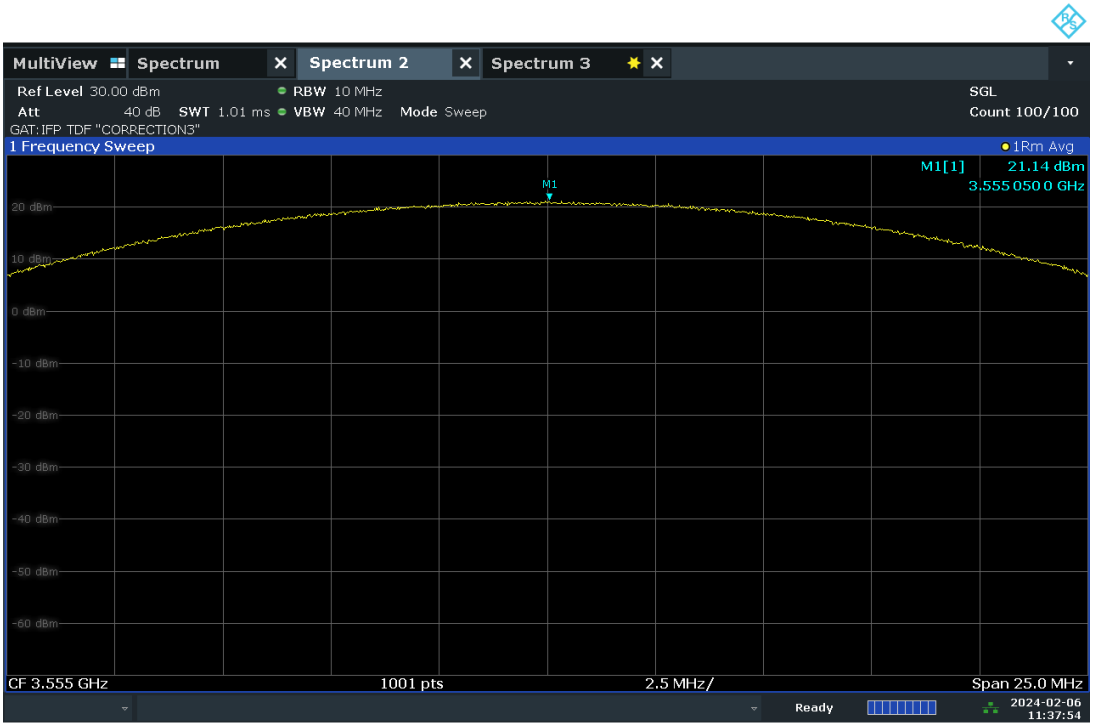
Plot 7.80. Conducted Power / 10MHz (40MHz 256QAM, Mid Channel – ANT1)

Antenna 2 Conducted Power / 10MHz



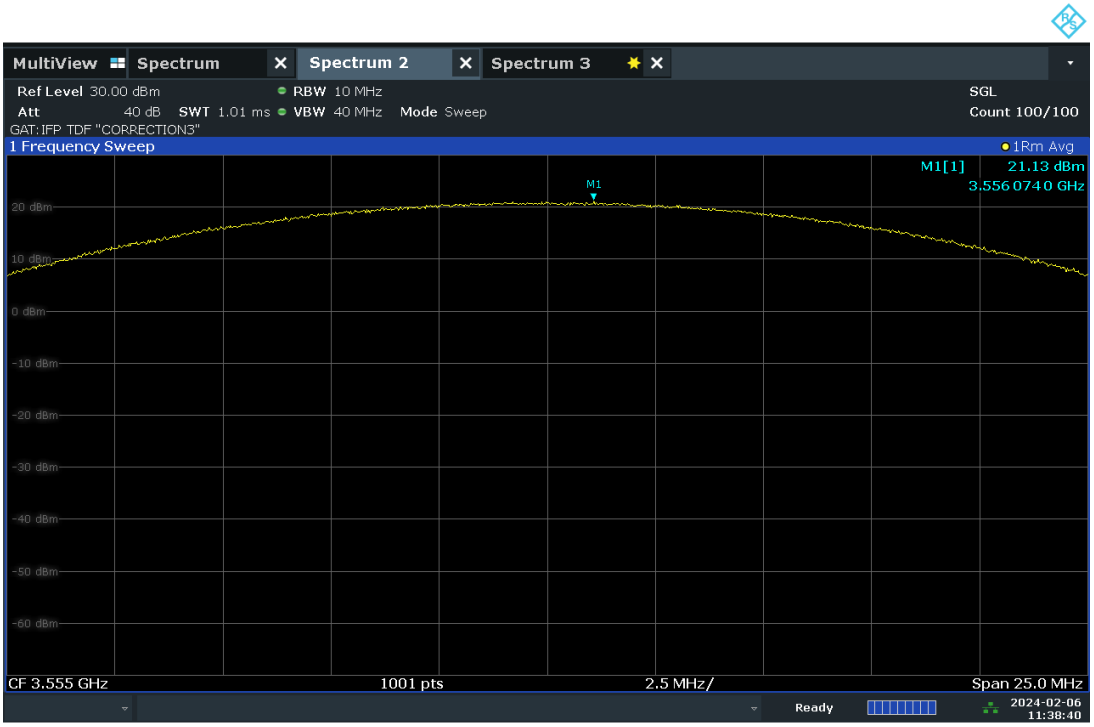
11:36:43 AM 02/06/2024

Plot 7.81. Conducted Power / 10MHz (10MHz QPSK, Low Channel – ANT2)



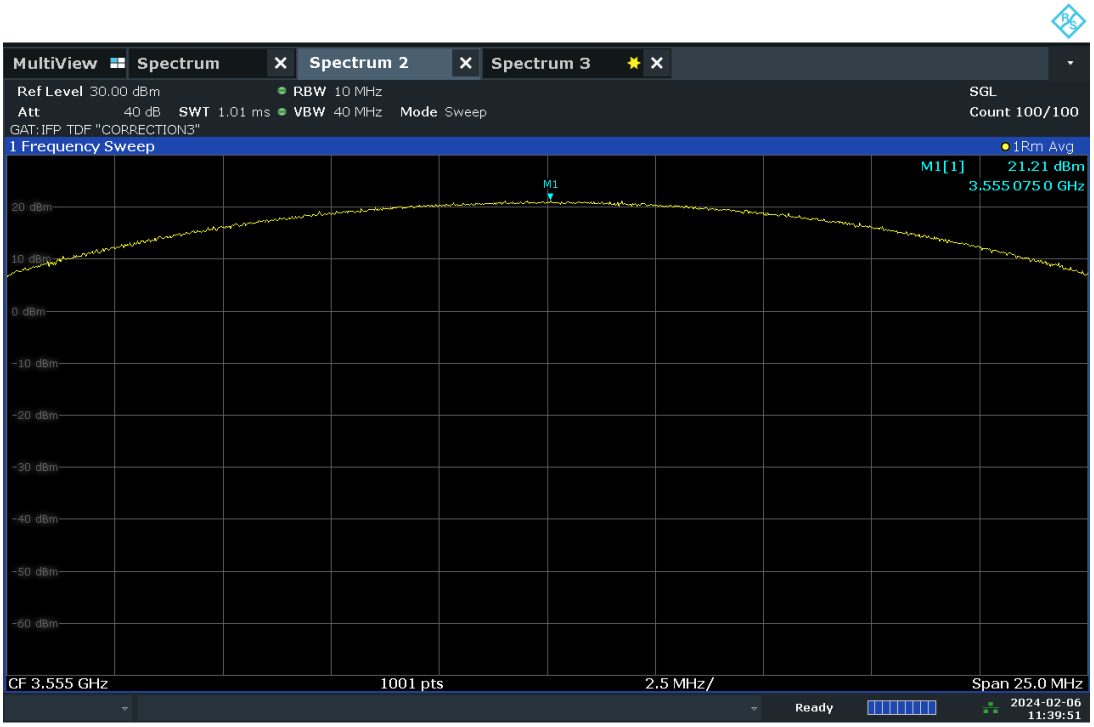
11:37:54 AM 02/06/2024

Plot 7.82. Conducted Power / 10MHz (10MHz 16QAM, Low Channel – ANT2)



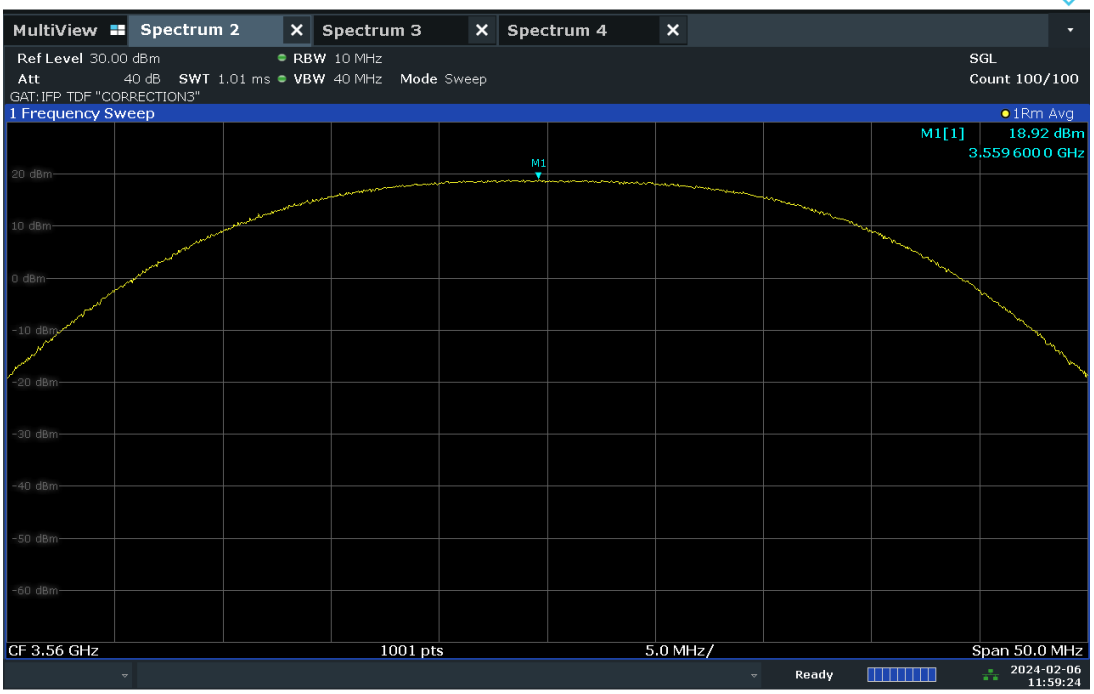
11:38:41 AM 02/06/2024

Plot 7.83. Conducted Power / 10MHz (10MHz 64QAM, Low Channel – ANT2)



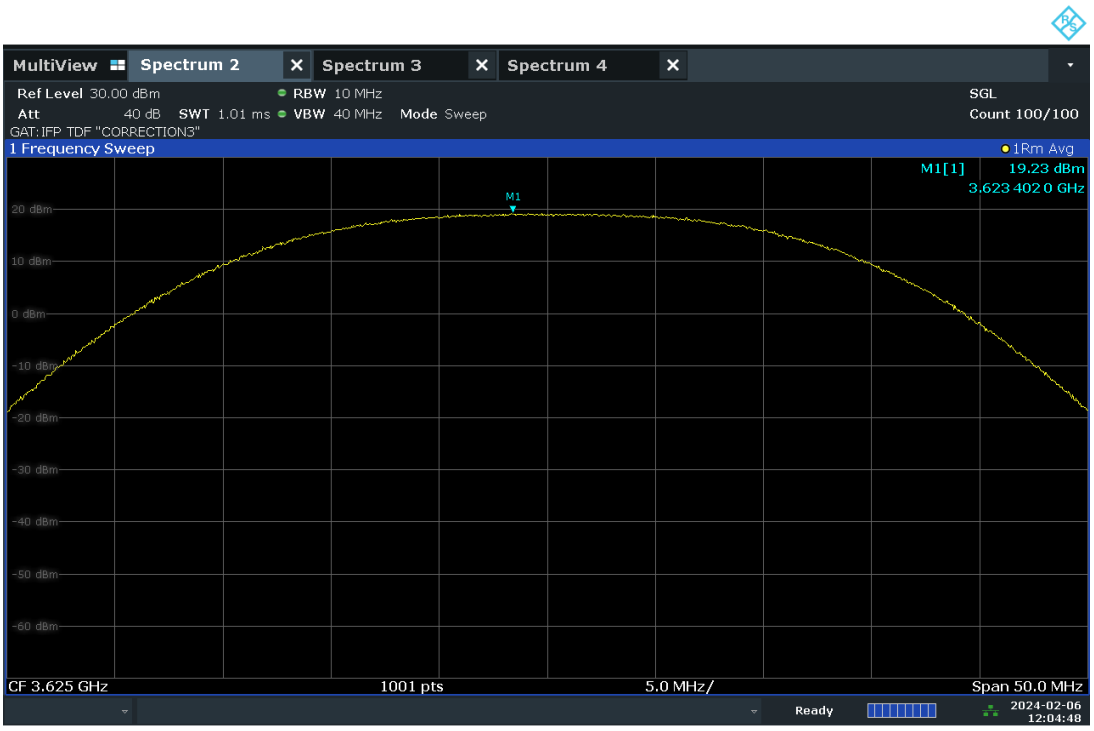
11:39:52 AM 02/06/2024

Plot 7.84. Conducted Power / 10MHz (10MHz 256QAM, Low Channel – ANT2)



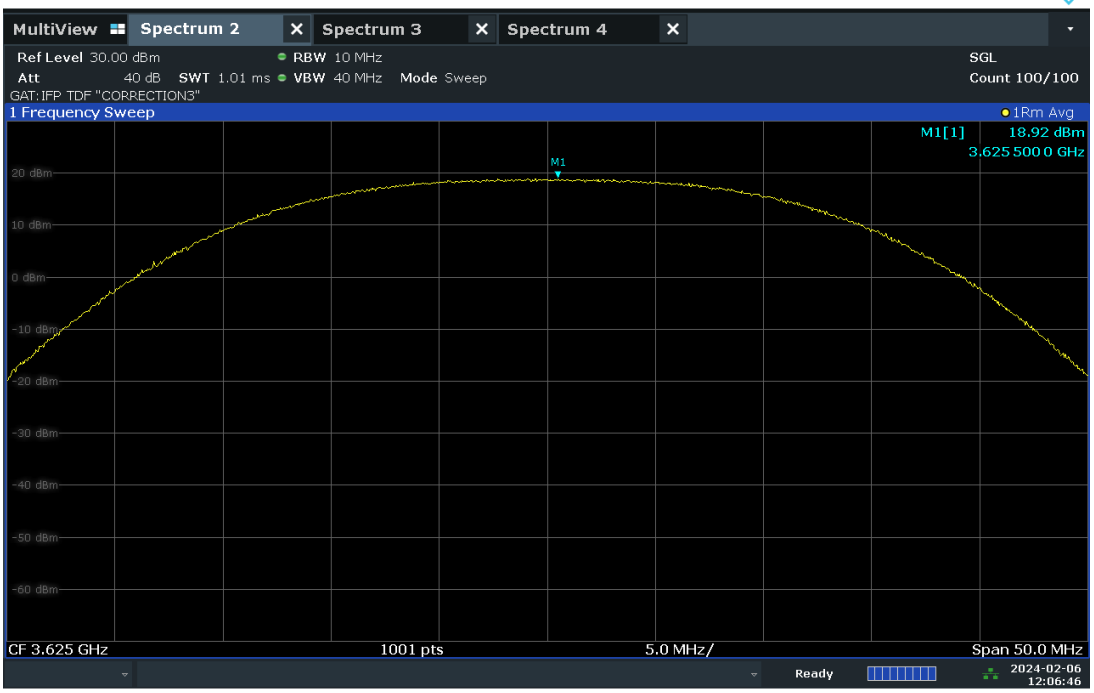
11:59:24 AM 02/06/2024

Plot 7.85. Conducted Power / 10MHz (20MHz QPSK, Low Channel – ANT2)



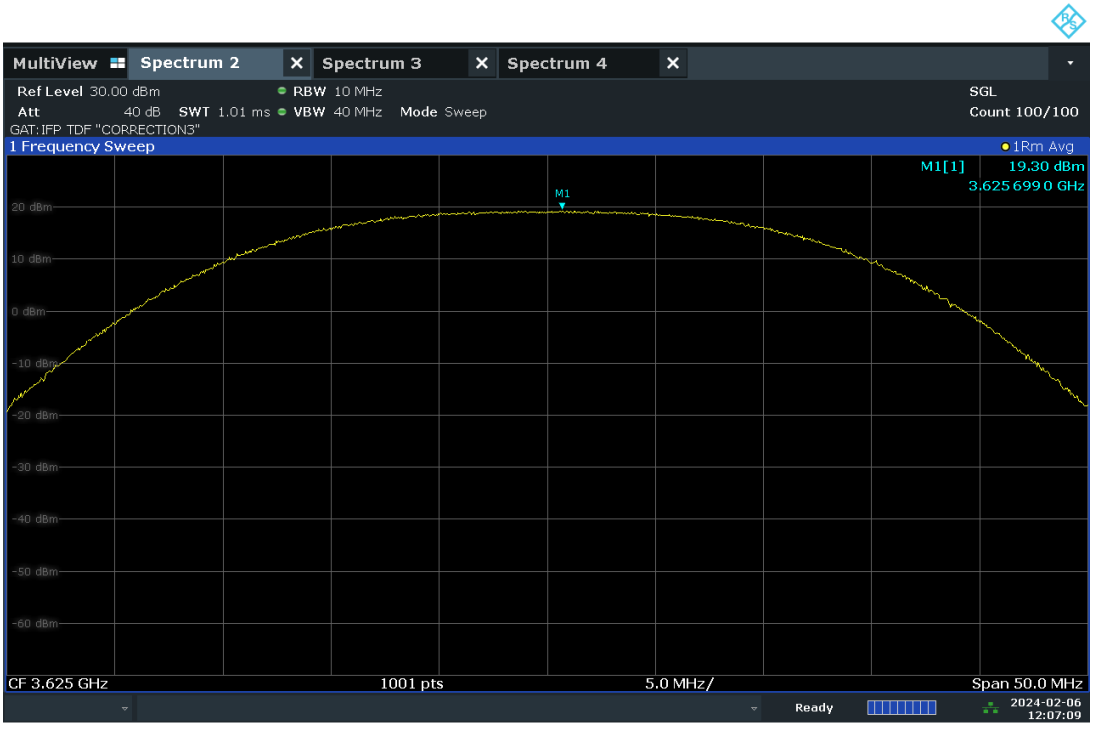
12:04:49 PM 02/06/2024

Plot 7.86. Conducted Power / 10MHz (20MHz 16QAM, Mid Channel – ANT2)



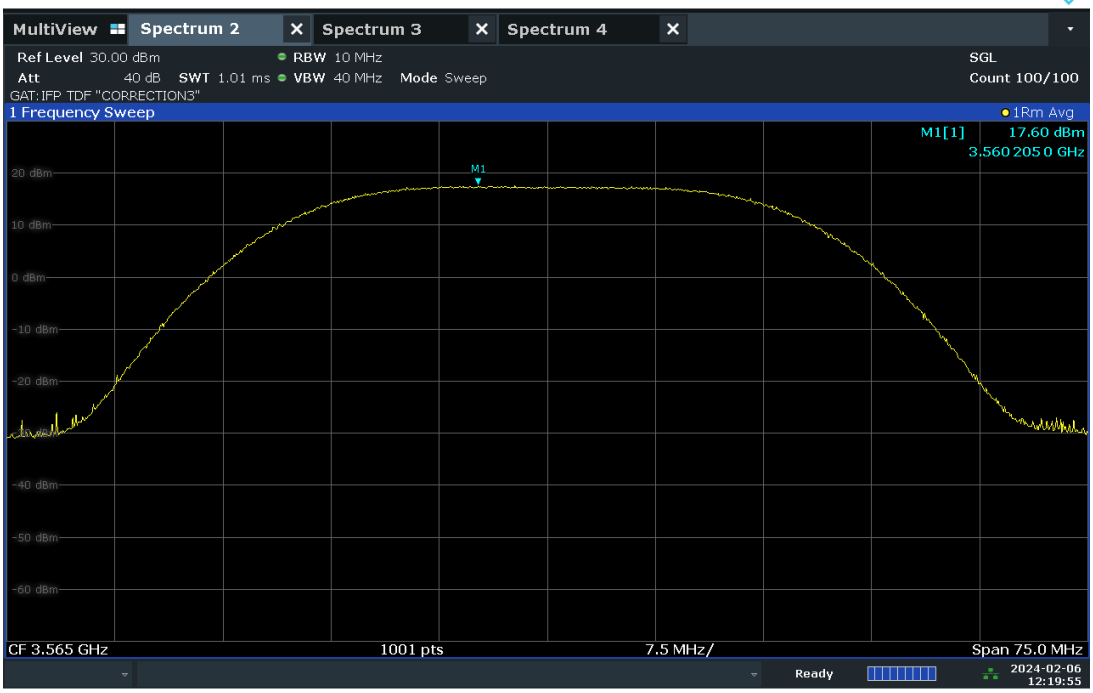
12:06:46 PM 02/06/2024

Plot 7.87. Conducted Power / 10MHz (20MHz 64QAM, Mid Channel – ANT2)



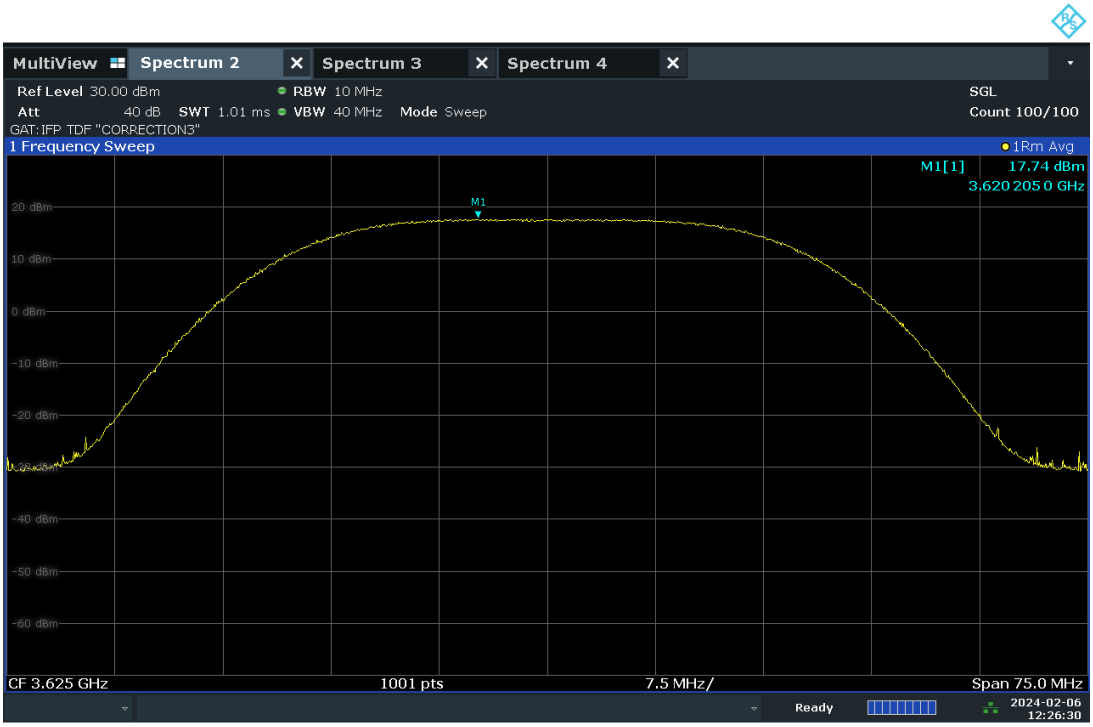
12:07:09 PM 02/06/2024

Plot 7.88. Conducted Power / 10MHz (20MHz 256QAM, Mid Channel – ANT2)



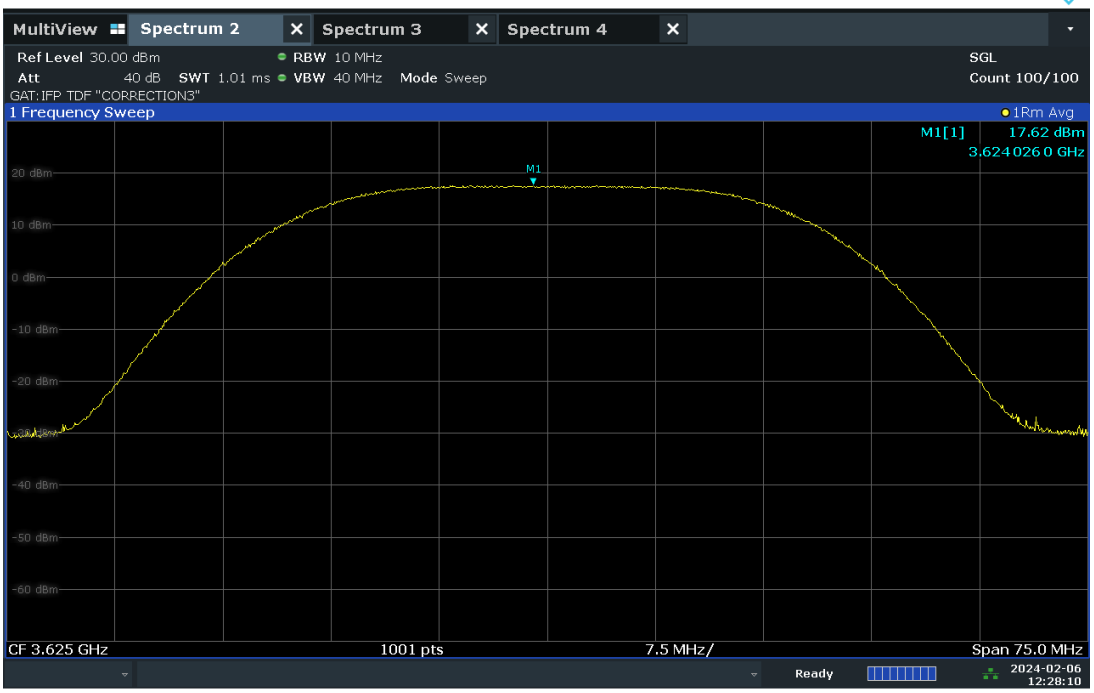
12:19:55 PM 02/06/2024

Plot 7.89. Conducted Power / 10MHz (30MHz QPSK, Low Channel – ANT2)



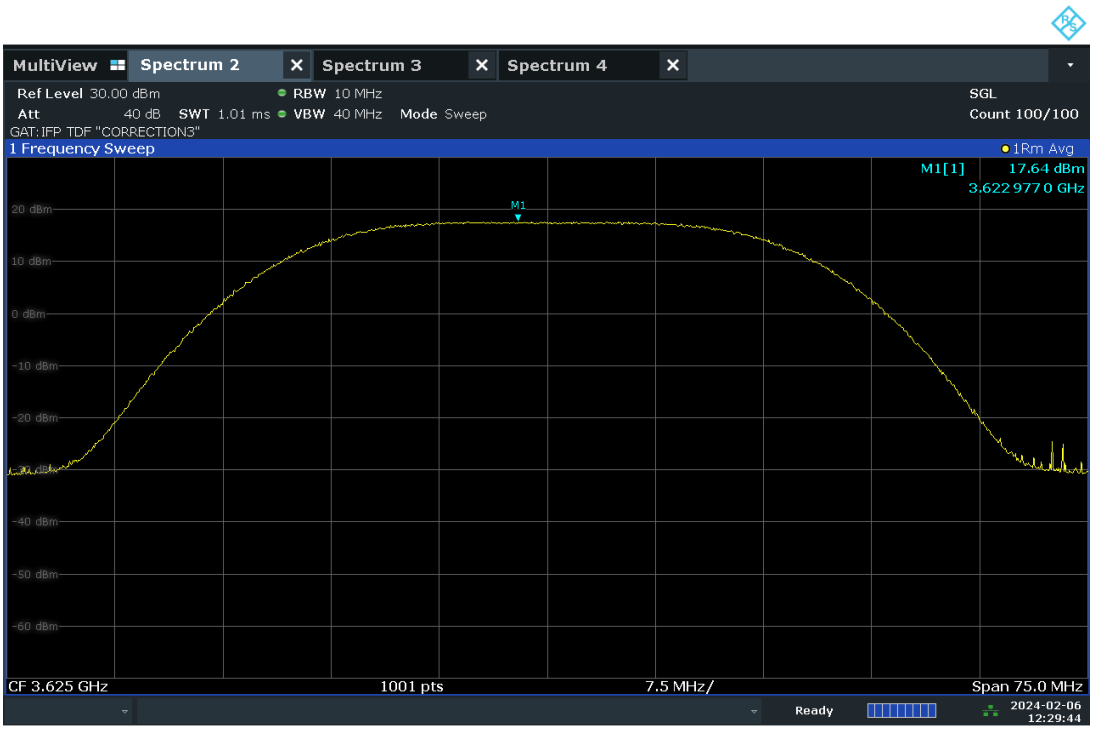
12:26:31 PM 02/06/2024

Plot 7.90. Conducted Power / 10MHz (30MHz 16QAM, Mid Channel – ANT2)



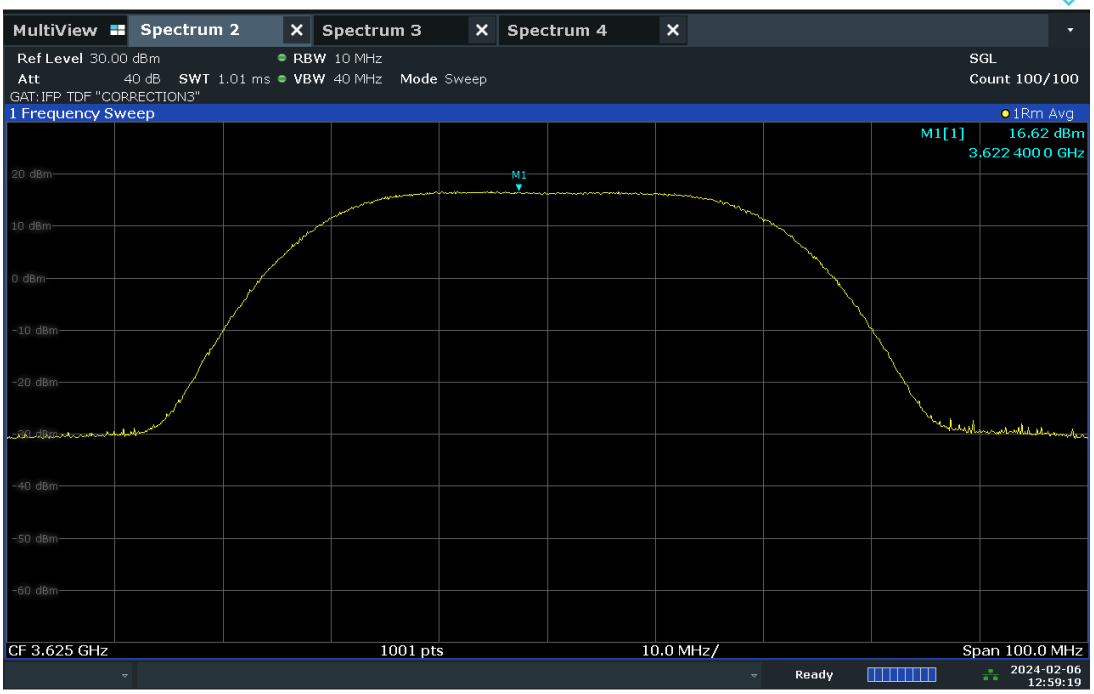
12:28:11 PM 02/06/2024

Plot 7.91. Conducted Power / 10MHz (30MHz 64QAM, Mid Channel – ANT2)



12:29:44 PM 02/06/2024

Plot 7.92. Conducted Power / 10MHz (30MHz 256QAM, Low Channel – ANT2)

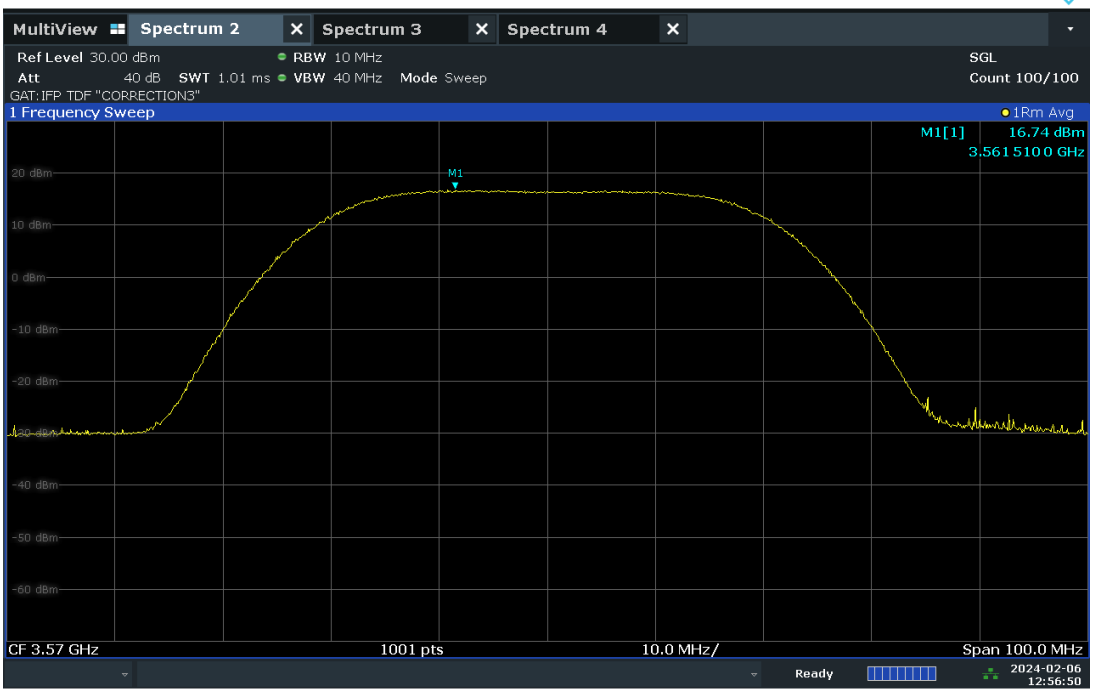


12:59:20 PM 02/06/2024

Plot 7.93. Conducted Power / 10MHz (40MHz QPSK, Mid Channel – ANT2)

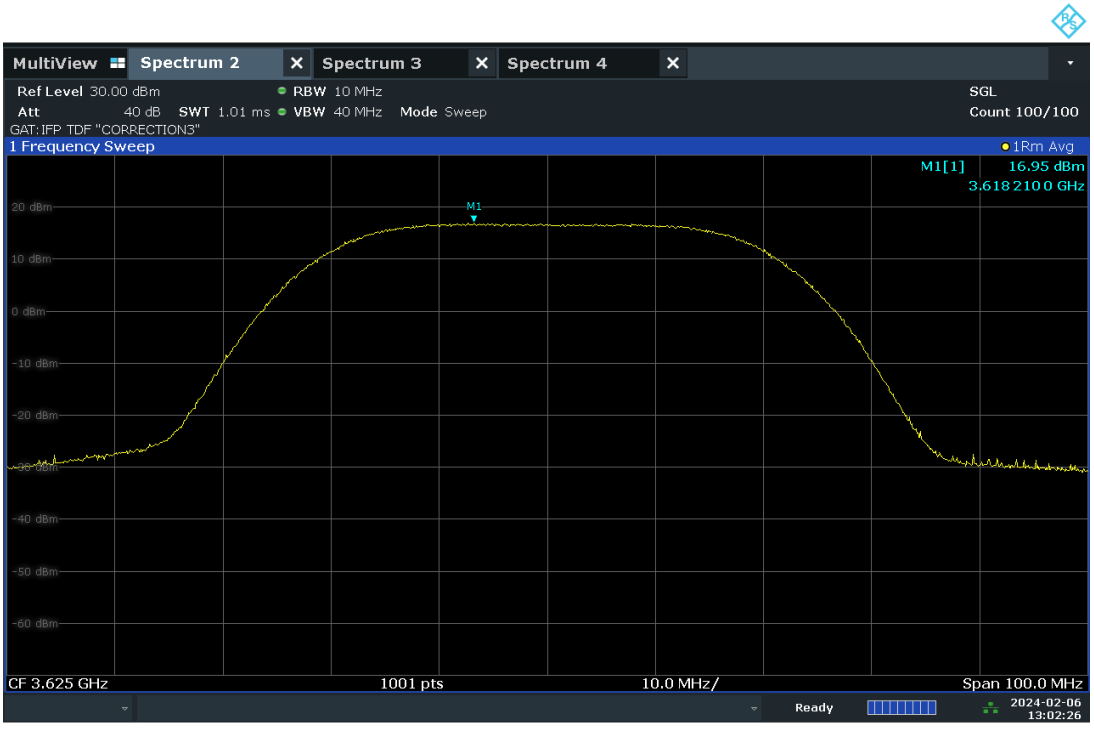
12:54:57 PM 02/06/2024

Plot 7.94. Conducted Power / 10MHz (40MHz 16QAM, Low Channel – ANT2)



12:56:51 PM 02/06/2024

Plot 7.95. Conducted Power / 10MHz (40MHz 64QAM, Low Channel – ANT2)



01:02:26 PM 02/06/2024

Plot 7.96. Conducted Power / 10MHz (40MHz 256QAM, Mid Channel – ANT2)

Note:

Per ANSI C63.26-2015 Section 5.2.5.3 and KDB 662911 v02r01 Section E)2), the power spectral density at Channel A and Channel B were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per ANSI C63.26-2015 Section 6.4.6 and KDB 662911 v02r01 Section F.2.c, since the transmissions are orthogonally polarized, the directional gain is equal to the single transmission gain of 9.00 dBi

Sample MIMO Calculation:

At 3625 MHz in QPSK, 20MHz BW mode, the average conducted power per 10MHz was measured to be 25.02 dBm/10MHz for Ant1 and 18.92 dBm/10MHz for Ant2.

Ant1 + Ant2 = MIMO

(25.02 dBm/10MHz + 18.92 dBm/10MHz) = (317.687 mW/10MHz + 77.983 mW/10MHz) = 395.67 mW/10MHz = 25.97 dBm/10MHz

Sample e.i.r.p / 10MHz Calculation:

At 3625 MHz in QPSK, 20MHz BW mode, the average MIMO power density was calculated to be 25.97 dBm with directional gain of 13 dBi.

e.i.r.p. Power Spectral Density(dBm) = Power Spectral Density (dBm) + Ant gain (dBi)

25.07 dBm/10MHz + 13.00 dBi = 38.97 dBm/10MHz

7.5 Power Spectral Density

Test Overview

The spectrum analyzer was connected to the antenna terminal while the EUT was operating at its maximum power control level, as defined in ANSI C63.26-2015,and at the appropriate frequencies. The EUT transmits with a duty cycle of approximately 71.95%; the spectrum analyzer was gate as to only measure during on periods.

The power spectral density for a Category B CBSD must be less than 37dBm/1MHz e.i.r.p.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2.4.4.1
ANSI C63.26-2015 – Section 5.2.4.5
ANSI C63.26-2015 – Section 6.4.3.2.3

Test Settings

1. Span = 2x to 3X the OBW
2. RBW = 1MHz
3. VBW ≥ 3 x RBW
4. Set number of sweep points ≥ 2 x span / RBW
5. Sweep Time = auto couple
6. Detector = RMS
7. Trace mode = average
8. Trigger = Level

Test Setup

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

Figure 7-4. Test Instrument & Measurement Setup

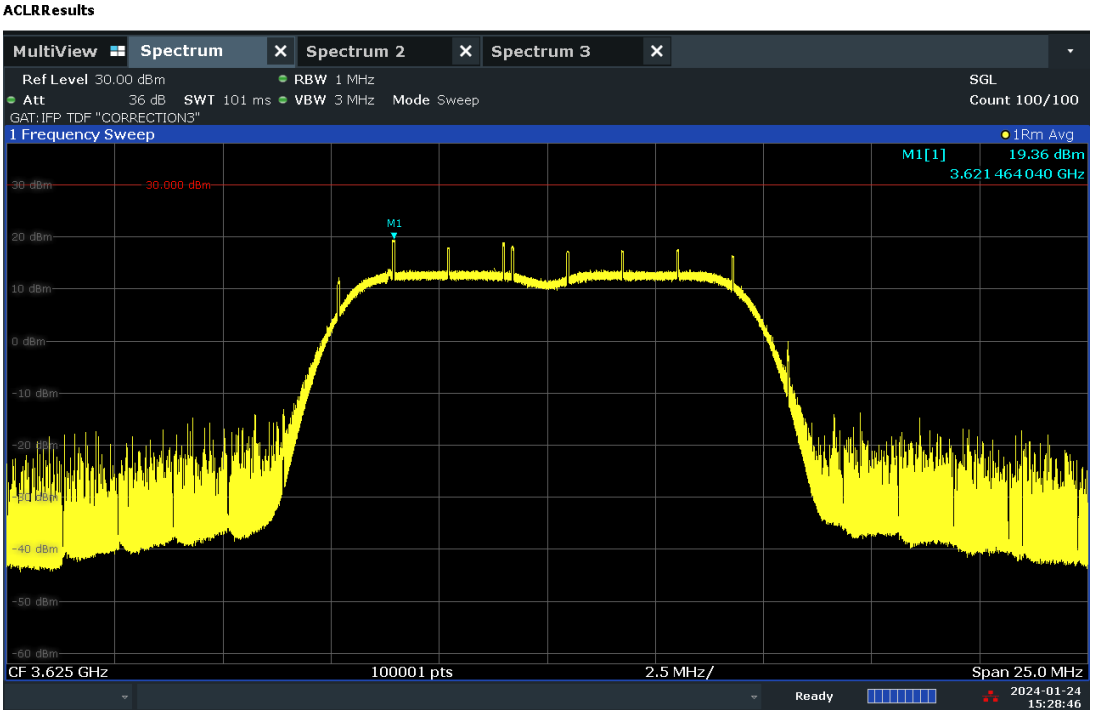
Test Notes

None

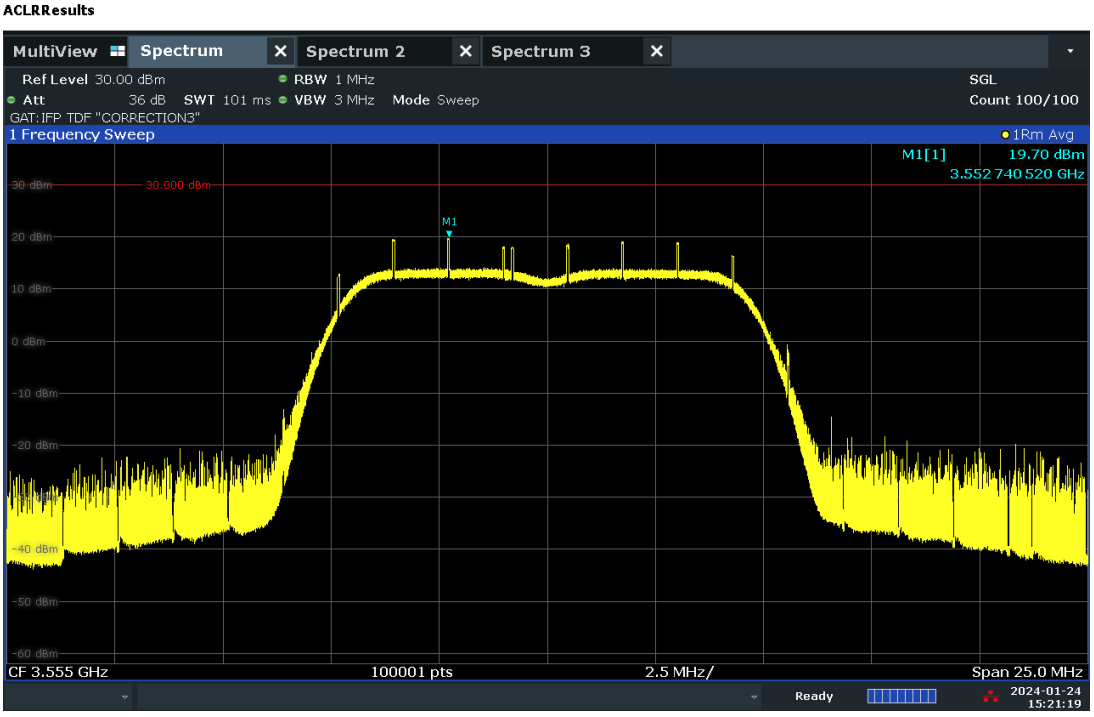
Bandwidth	Modulation	Frequency [MHz]	Ch. A Conducted PSD [dBm/MHz]	Ch. B Conducted PSD [dBm/MHz]	Summed MIMO Conducted PSD [dBm/MHz]	Ant Gain [dBi]	EIRP PSD [dBm/MHz]	EIRP PSD [Watts/MHz]	EIRP PSD Limit [dBm/MHz]	Margin [dB]
40 MHz	QPSK	3570.0	14.31	6.84	15.03	13.00	28.03	0.635	37.00	-8.97
		3625.0	14.59	5.27	15.07	13.00	28.07	0.641	37.00	-8.93
		3680.0	14.94	6.01	15.46	13.00	28.46	0.702	37.00	-8.54
	16-QAM	3570.0	15.22	6.63	15.78	13.00	28.78	0.756	37.00	-8.22
		3625.0	14.11	5.12	14.63	13.00	27.63	0.579	37.00	-9.37
		3680.0	14.72	4.88	15.15	13.00	28.15	0.653	37.00	-8.85
	64-QAM	3570.0	15.68	6.52	16.18	13.00	29.18	0.827	37.00	-7.82
		3625.0	14.36	5.90	14.94	13.00	27.94	0.622	37.00	-9.06
		3680.0	14.84	5.11	15.28	13.00	28.28	0.673	37.00	-8.72
	256-QAM	3570.0	14.18	5.37	14.72	13.00	27.72	0.591	37.00	-9.28
		3625.0	15.48	5.67	15.91	13.00	28.91	0.778	37.00	-8.09
		3680.0	14.71	6.56	15.33	13.00	28.33	0.681	37.00	-8.67
30 MHz	QPSK	3565.0	15.30	7.57	15.98	13.00	28.98	0.790	37.00	-8.02
		3625.0	15.56	7.60	16.20	13.00	29.20	0.833	37.00	-7.80
		3685.0	13.89	7.45	14.78	13.00	27.78	0.600	37.00	-9.22
	16-QAM	3565.0	15.68	7.82	16.34	13.00	29.34	0.859	37.00	-7.66
		3625.0	15.55	7.55	16.19	13.00	29.19	0.830	37.00	-7.81
		3685.0	14.84	7.53	15.58	13.00	28.58	0.721	37.00	-8.42
	64-QAM	3565.0	14.56	7.77	15.39	13.00	28.39	0.690	37.00	-8.61
		3625.0	16.21	7.79	16.79	13.00	29.79	0.954	37.00	-7.21
		3685.0	14.04	7.61	14.93	13.00	27.93	0.621	37.00	-9.07
	256-QAM	3565.0	14.03	8.26	15.05	13.00	28.05	0.638	37.00	-8.95
		3625.0	13.49	7.55	14.48	13.00	27.48	0.559	37.00	-9.52
		3685.0	14.64	7.50	15.41	13.00	28.41	0.693	37.00	-8.59
20 MHz	QPSK	3560.0	15.78	9.33	16.67	13.00	29.67	0.926	37.00	-7.33
		3625.0	16.53	9.50	17.32	13.00	30.32	1.075	37.00	-6.68
		3690.0	16.32	9.01	17.06	13.00	30.06	1.014	37.00	-6.94
	16-QAM	3560.0	15.37	9.13	16.30	13.00	29.30	0.850	37.00	-7.70
		3625.0	16.91	9.73	17.67	13.00	30.67	1.167	37.00	-6.33
		3690.0	14.19	9.04	15.35	13.00	28.35	0.684	37.00	-8.65
	64-QAM	3560.0	16.06	9.49	16.92	13.00	29.92	0.983	37.00	-7.08
		3625.0	16.79	9.53	17.54	13.00	30.54	1.132	37.00	-6.46
		3690.0	15.03	9.50	16.10	13.00	29.10	0.813	37.00	-7.90
	256-QAM	3560.0	16.59	9.42	17.35	13.00	30.35	1.084	37.00	-6.65
		3625.0	15.63	9.59	16.60	13.00	29.60	0.911	37.00	-7.40
		3690.0	16.12	9.29	16.94	13.00	29.94	0.986	37.00	-7.06
10 MHz	QPSK	3555.0	19.13	13.04	20.09	13.00	33.09	2.035	37.00	-3.91
		3625.0	19.36	13.34	20.33	13.00	33.33	2.152	37.00	-3.67
		3695.0	18.34	12.32	19.31	13.00	32.31	1.702	37.00	-4.69
	16-QAM	3555.0	19.70	13.15	20.57	13.00	33.57	2.274	37.00	-3.43
		3625.0	19.65	13.02	20.50	13.00	33.50	2.241	37.00	-3.50
		3695.0	17.48	12.36	18.64	13.00	31.64	1.460	37.00	-5.36
	64-QAM	3555.0	19.36	12.82	20.23	13.00	33.23	2.104	37.00	-3.77
		3625.0	19.66	13.16	20.54	13.00	33.54	2.258	37.00	-3.46
		3695.0	19.21	12.19	20.00	13.00	33.00	1.994	37.00	-4.00
	256-QAM	3555.0	19.96	13.32	20.81	13.00	33.81	2.406	37.00	-3.19
		3625.0	19.53	13.02	20.41	13.00	33.41	2.191	37.00	-3.59
		3695.0	18.53	12.44	19.49	13.00	32.49	1.772	37.00	-4.51

Table 7-6 Power Spectral Density Measurements

Antenna 1 Power Spectral Density

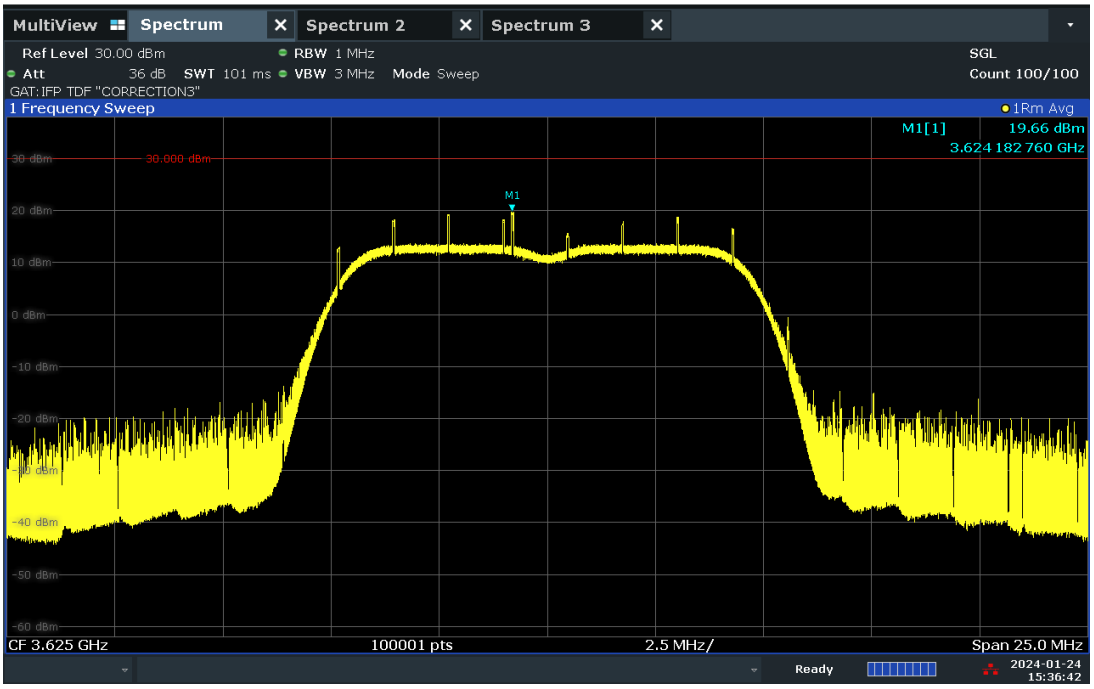


Plot 7.97. Power Spectral Density (10MHz QPSK, Mid Channel – ANT1)



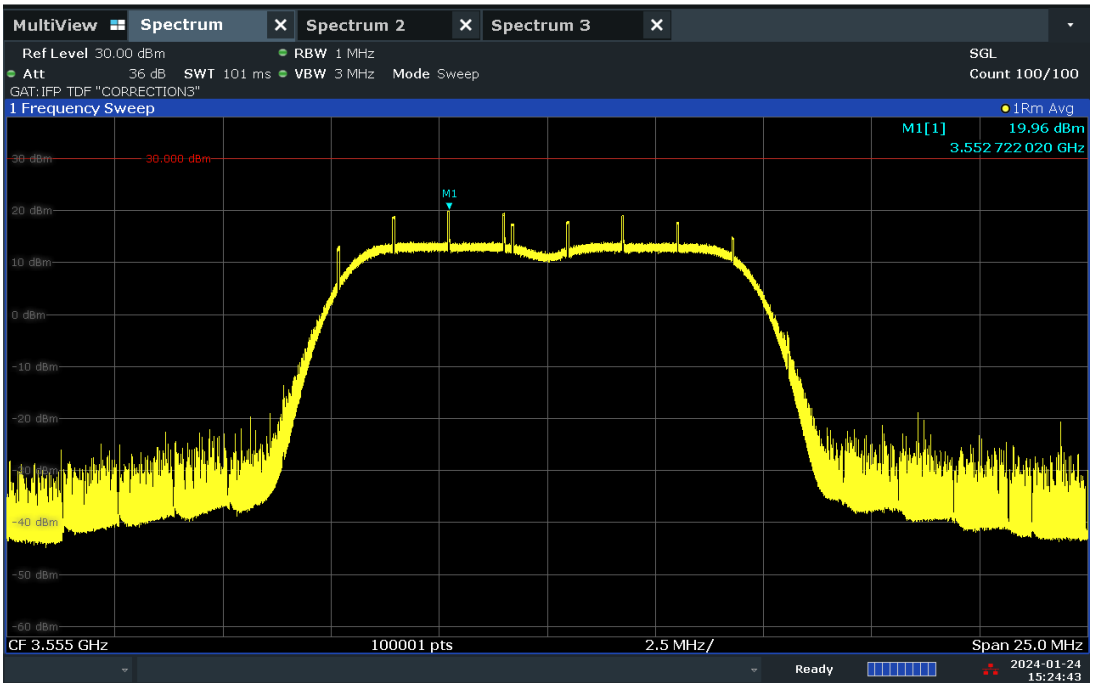
Plot 7.98. Power Spectral Density (10MHz 16QAM, Low Channel – ANT1)

ACLRResults



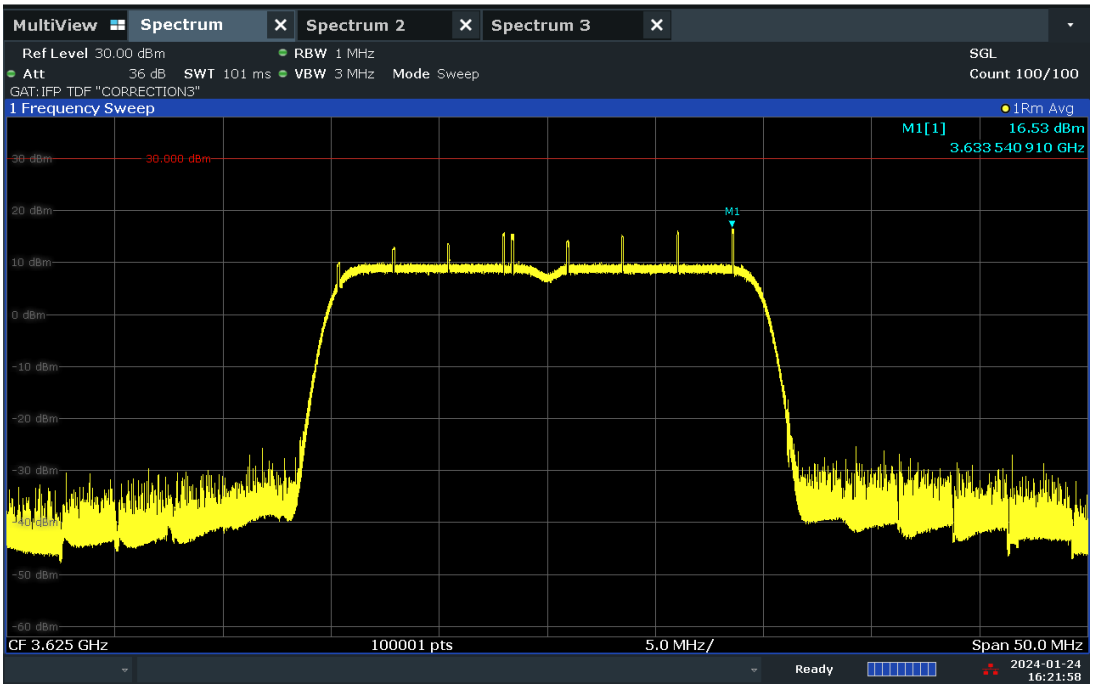
Plot 7.99. Power Spectral Density (10MHz 64QAM, Mid Channel – ANT1)

ACLRResults



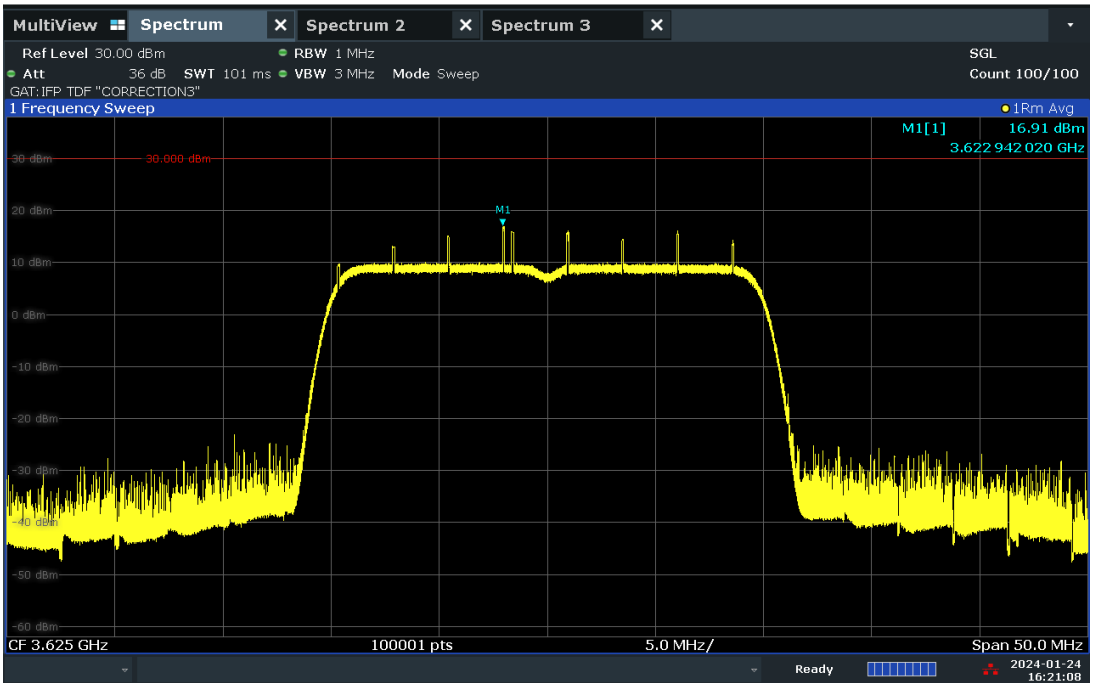
Plot 7.100. Power Spectral Density (10MHz 256QAM, Low Channel – ANT1)

ACLRResults



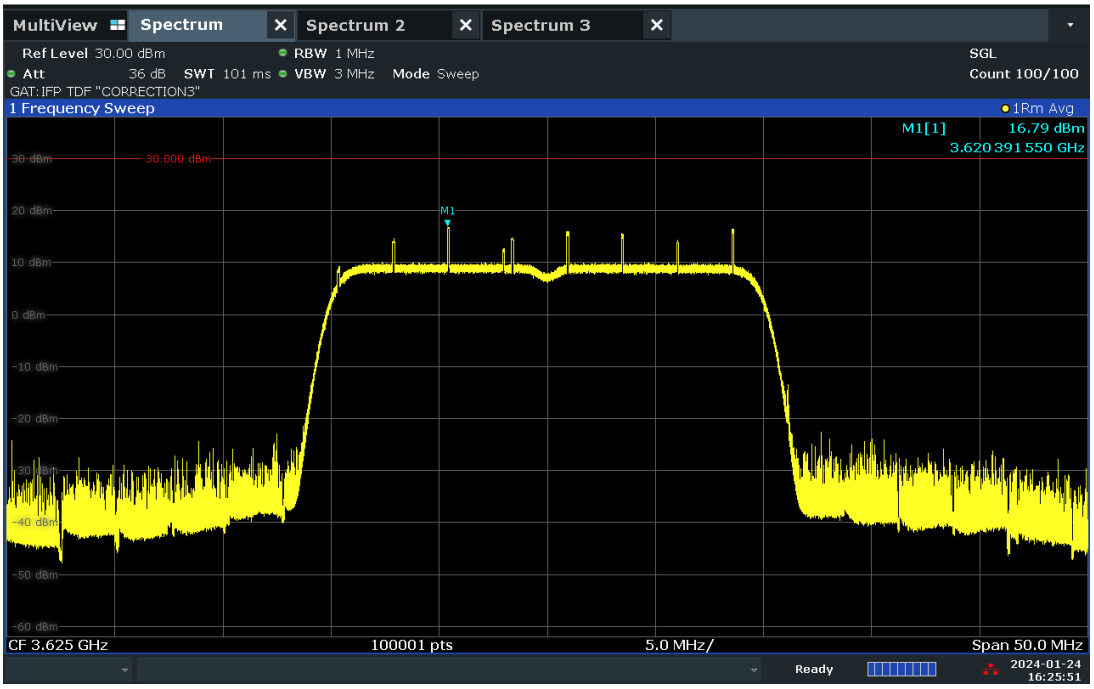
Plot 7.101. Power Spectral Density (20MHz QPSK, Mid Channel – ANT1)

ACLRResults



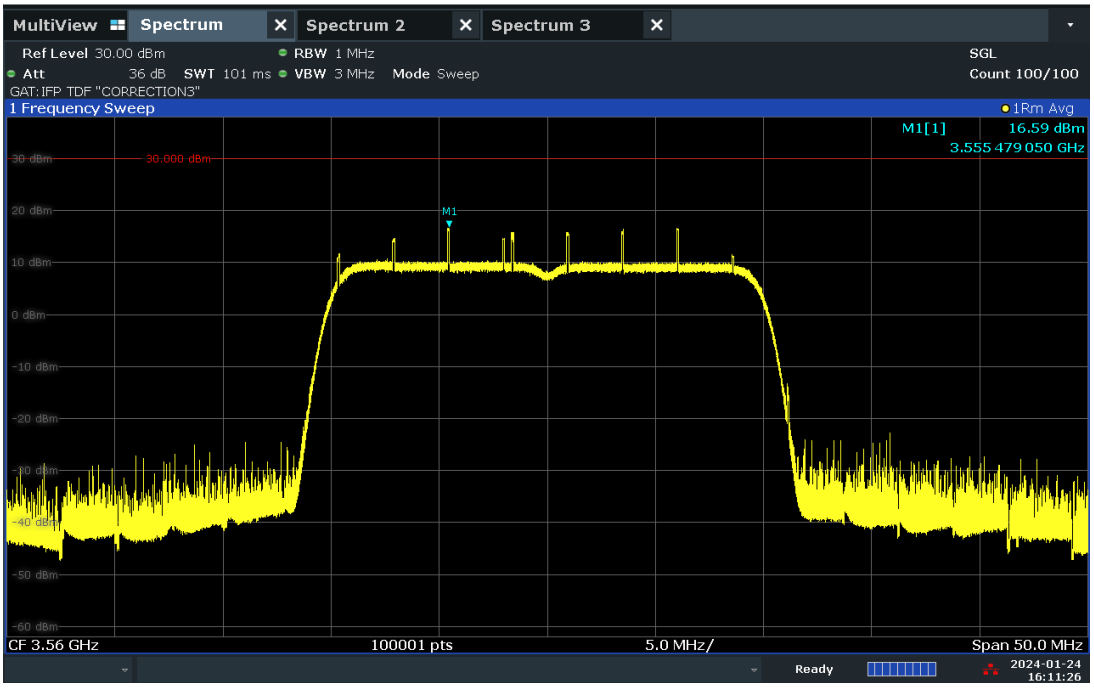
Plot 7.102. Power Spectral Density (20MHz 16QAM, Mid Channel – ANT1)

ACLRResults



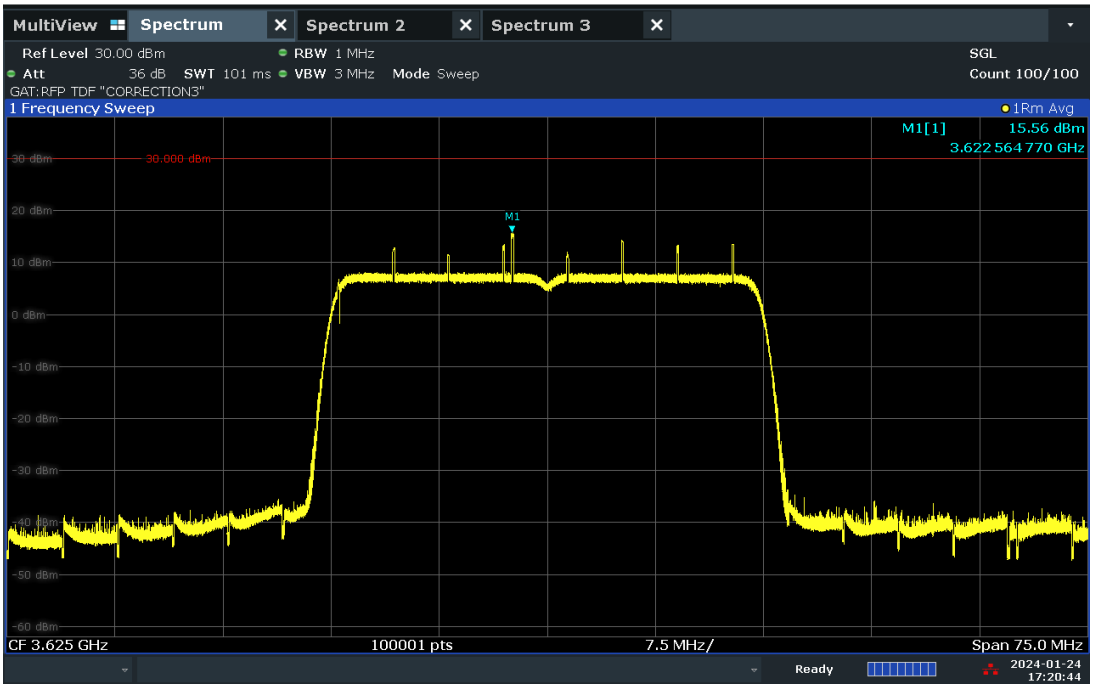
Plot 7.103. Power Spectral Density (20MHz 64QAM, Mid Channel – ANT1)

ACLRResults



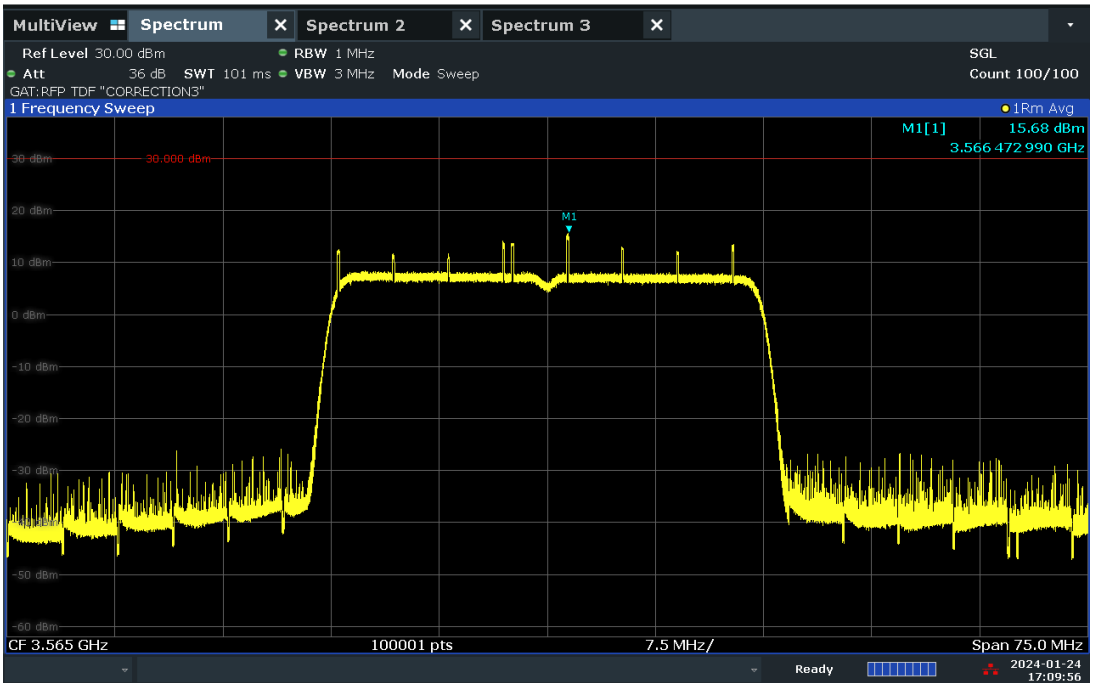
Plot 7.104. Power Spectral Density (20MHz 256QAM, Low Channel – ANT1)

ACLRResults



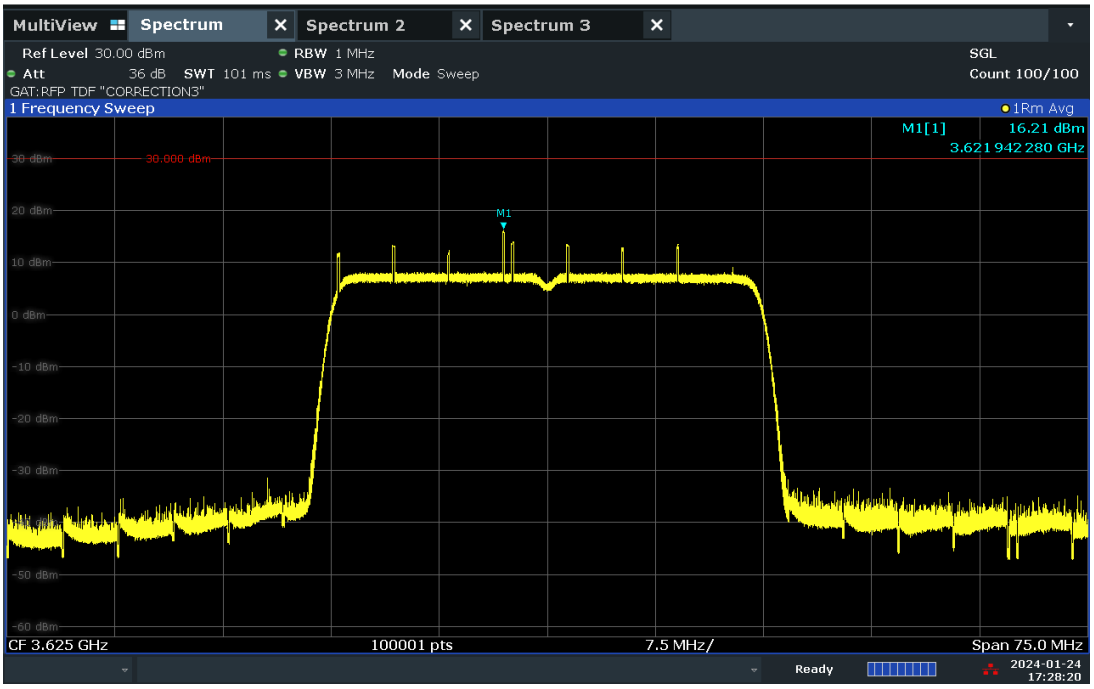
Plot 7.105. Power Spectral Density (30MHz QPSK, Mid Channel – ANT1)

ACLRResults



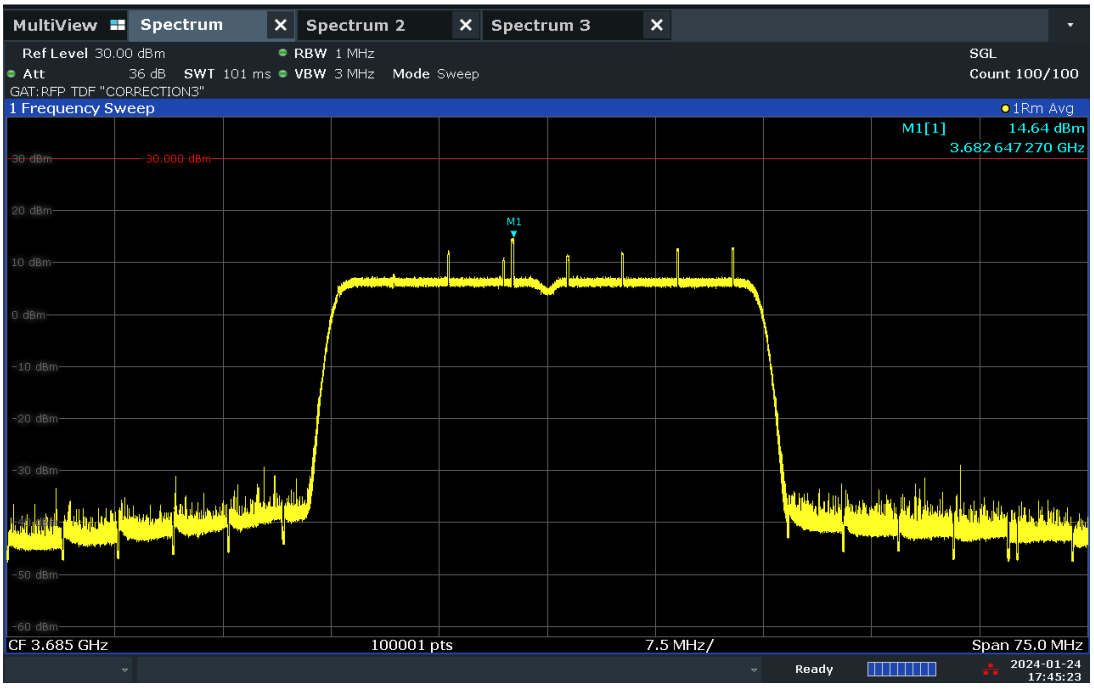
Plot 7.106. Power Spectral Density (30MHz 16QAM, Low Channel – ANT1)

ACLRResults

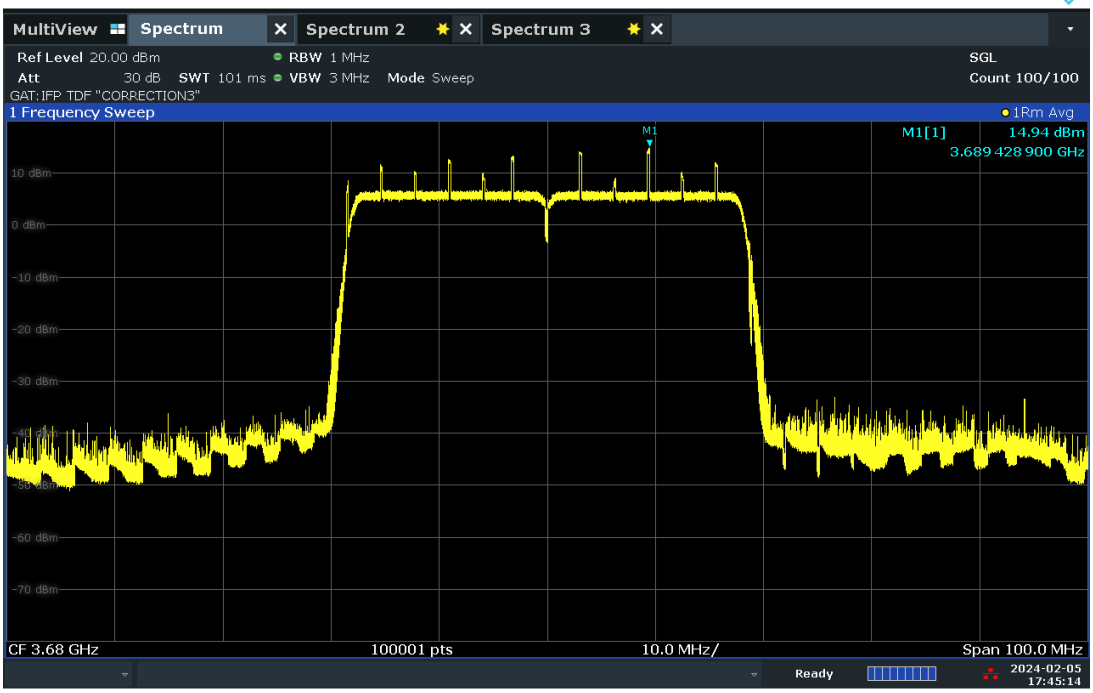


Plot 7.107. Power Spectral Density (30MHz 64QAM, Mid Channel – ANT1)

ACLRResults



Plot 7.108. Power Spectral Density (30MHz 256QAM, High Channel – ANT1)



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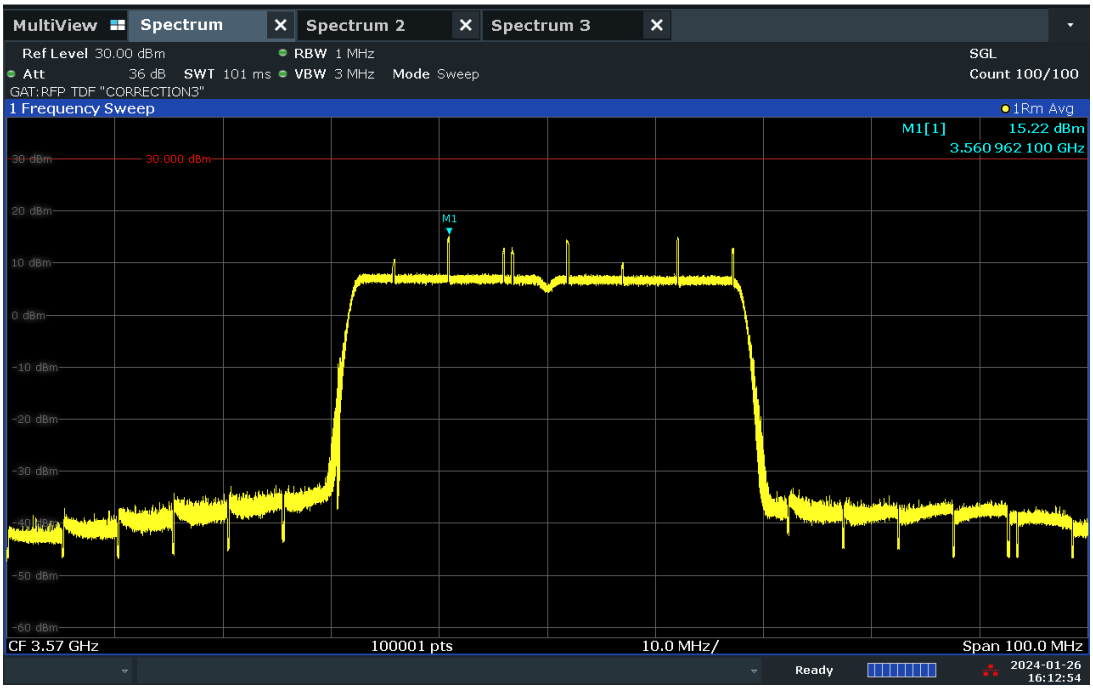
Plot 7.109. Power Spectral Density (40MHz QPSK, High Channel – ANT1)

ACLRResults



Plot 7.110. Power Spectral Density (40MHz 16QAM, Low Channel – ANT1)