



ELEMENT WASHINGTON DC LLC

7185 Oakland Mills Road, Columbia, MD 21046 USA
Tel. 410.290.6652 / Fax 410.290.6654
<http://www.element.com>

Part 96 MEASUREMENT REPORT

Applicant Name:

Microsoft Corporation
One Microsoft Way
Redmond, WA 98052
United States

Date of Testing:

12/3/2024 – 4/29/2025

Test Report Issue Date:

4/29/2025

Test Site/Location:

Element Lab., Columbia, MD, USA

Test Report Serial No.:

1M2411190103-07-R3.C3K

FCC ID:

C3K2114

APPLICANT:

Microsoft Corporation

Application Type:

Certification

Model:

2114

EUT Type:

Full Modular

FCC Classification:

Citizens Band End User Devices (CBE)

FCC Rule Part(s):

96

Test Procedure(s):

ANSI C63.26-2015, KDB 940660 D01 v03,
WINNF-TS-0122 v1.0.2

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.

This revised Test Report (S/N: 1M2411190103-07-R3.C3K) supersedes and replaces the previously issued test report (S/N: 1M2411190103-07-R2.C3K) 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.

RJ Ortanez
Executive Vice President



FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 1 of 146

TABLE OF CONTENTS

1.0	INTRODUCTION	6
1.1	Scope	6
1.2	Element Test Location.....	6
1.3	Test Facility / Accreditations.....	6
2.0	PRODUCT INFORMATION.....	7
2.1	Equipment Description	7
2.2	Device Capabilities.....	7
2.3	Test Configuration	7
2.4	Software and Firmware	7
2.5	EMI Suppression Device(s)/Modifications	7
3.0	DESCRIPTION OF TESTS	8
3.1	Measurement Procedure.....	8
3.2	Radiated Power and Radiated Spurious Emissions	8
4.0	MEASUREMENT UNCERTAINTY	9
5.0	TEST EQUIPMENT CALIBRATION DATA	10
6.0	SAMPLE EMISSION DESIGNATORS	11
7.0	TEST RESULTS	12
7.1	Summary.....	12
7.2	Conducted Output Power Data and ERIP	13
7.3	Occupied Bandwidth	19
7.4	Spurious and Harmonic Emissions at Antenna Terminal	59
7.5	Band Edge Emissions at Antenna Terminal	83
7.6	Radiated Spurious Emissions Measurements	106
7.7	Frequency Stability / Temperature Variation	134
7.8	End User Device Additional Requirement (CBSD Protocol).....	137
8.0	CONCLUSION.....	146

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 2 of 146

MEASUREMENT REPORT

FCC Part 96

Antenna-6						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
ULCA LTE Band 48	40 MHz	QPSK	3570.0 - 3680.0	0.166	22.19	37M7G7D
		16QAM	3570.0 - 3680.0	0.131	21.18	37M6W7D
	35 MHz	QPSK	3567.5 - 3682.5	0.163	22.12	32M8G7D
		16QAM	3567.5 - 3682.5	0.131	21.16	32M9W7D
	30 MHz	QPSK	3565.0 - 3685.0	0.165	22.17	27M8G7D
		16QAM	3565.0 - 3685.0	0.164	22.14	27M9W7D
	25 MHz	QPSK	3562.5 - 3687.5	0.166	22.20	22M9G7D
		16QAM	3562.5 - 3687.5	0.131	21.16	22M9W7D
LTE Band 48	20 MHz	QPSK	3560.0 - 3690.0	0.140	21.47	18M0G7D
		16QAM	3560.0 - 3690.0	0.113	20.53	18M1W7D
	15 MHz	QPSK	3557.5 - 3692.5	0.142	21.52	13M5G7D
		16QAM	3557.5 - 3692.5	0.117	20.67	13M5W7D
	10 MHz	QPSK	3555.0 - 3695.0	0.148	21.70	8M99G7D
		16QAM	3555.0 - 3695.0	0.120	20.80	9M01W7D
	5 MHz	QPSK	3552.5 - 3697.5	0.149	21.74	4M51G7D
		16QAM	3552.5 - 3697.5	0.122	20.86	4M49W7D
NR Band n48	40 MHz	$\pi/2$ BPSK	3570.0 - 3680.0	0.198	22.98	35M9G7D
		QPSK	3570.0 - 3680.0	0.198	22.97	38M1G7D
		16QAM	3570.0 - 3680.0	0.165	22.18	38M0W7D
	30 MHz	$\pi/2$ BPSK	3565.0 - 3685.0	0.196	22.93	26M9G7D
		QPSK	3565.0 - 3685.0	0.198	22.96	28M0G7D
		16QAM	3565.0 - 3685.0	0.165	22.17	28M0W7D
	20 MHz	$\pi/2$ BPSK	3560.0 - 3690.0	0.199	22.99	18M1G7D
		QPSK	3560.0 - 3690.0	0.198	22.97	18M3G7D
		16QAM	3560.0 - 3690.0	0.165	22.18	18M4W7D
	15 MHz	$\pi/2$ BPSK	3557.5 - 3692.5	0.199	22.99	13M0G7D
		QPSK	3557.5 - 3692.5	0.199	22.98	13M7G7D
		16QAM	3557.5 - 3692.5	0.168	22.24	13M8W7D
	10 MHz	$\pi/2$ BPSK	3555.0 - 3695.0	0.195	22.90	8M73G7D
		QPSK	3555.0 - 3695.0	0.196	22.93	8M69G7D
		16QAM	3555.0 - 3695.0	0.165	22.17	8M66W7D

EUT Overview

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 3 of 146

Antenna-1						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 48	20 MHz	QPSK	3560.0 - 3690.0	0.195	22.90	18M0G7D
		16QAM	3560.0 - 3690.0	0.162	22.08	18M0W7D
	15 MHz	QPSK	3557.5 - 3692.5	0.196	22.91	13M5G7D
		16QAM	3557.5 - 3692.5	0.160	22.04	13M5W7D
	10 MHz	QPSK	3555.0 - 3695.0	0.199	22.98	9M01G7D
		16QAM	3555.0 - 3695.0	0.168	22.26	9M02W7D
	5 MHz	QPSK	3552.5 - 3697.5	0.198	22.97	4M49G7D
		16QAM	3552.5 - 3697.5	0.155	21.91	4M52W7D
NR Band n48	40 MHz	$\pi/2$ BPSK	3570.0 - 3680.0	0.195	22.90	35M8G7D
		QPSK	3570.0 - 3680.0	0.198	22.96	38M0G7D
		16QAM	3570.0 - 3680.0	0.162	22.10	38M1W7D
	30 MHz	$\pi/2$ BPSK	3565.0 - 3685.0	0.196	22.93	27M0G7D
		QPSK	3565.0 - 3685.0	0.195	22.91	28M0G7D
		16QAM	3565.0 - 3685.0	0.156	21.92	28M1W7D
	20 MHz	$\pi/2$ BPSK	3560.0 - 3690.0	0.197	22.95	18M0G7D
		QPSK	3560.0 - 3690.0	0.198	22.96	18M3G7D
		16QAM	3560.0 - 3690.0	0.165	22.18	18M3W7D
	15 MHz	$\pi/2$ BPSK	3557.5 - 3692.5	0.195	22.91	13M0G7D
		QPSK	3557.5 - 3692.5	0.193	22.86	13M7G7D
		16QAM	3557.5 - 3692.5	0.163	22.12	13M7W7D
	10 MHz	$\pi/2$ BPSK	3555.0 - 3695.0	0.199	22.98	8M69G7D
		QPSK	3555.0 - 3695.0	0.199	22.99	8M69G7D
		16QAM	3555.0 - 3695.0	0.156	21.93	8M70W7D

EUT Overview

SRS Antenna-3						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
NR Band n48	40 MHz	$\pi/2$ BPSK	3570.0 - 3680.0	0.182	22.61	36M0G7D
		QPSK	3570.0 - 3680.0	0.176	22.47	38M1G7D
		16QAM	3570.0 - 3680.0	0.150	21.77	38M0W7D

EUT Overview

SRS Antenna-4					
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP	
				Max. Power [W]	Max. Power [dBm]
NR Band n48	40 MHz	$\pi/2$ BPSK	3570.0 - 3680.0	0.198	22.97
		QPSK	3570.0 - 3680.0	0.199	22.98
		16QAM	3570.0 - 3680.0	0.181	22.58

EUT Overview

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular		Page 4 of 146

Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	EIRP	
				Max. Power [W]	Max. Power [dBm]
NR Band n48 UL MIMO Ant6 + 1	40 MHz	$\pi/2$ BPSK	3570.0 - 3680.0	0.154	21.87
		QPSK	3570.0 - 3680.0	0.147	21.66
		16QAM	3565.0 - 3685.0	0.117	20.69
	30 MHz	$\pi/2$ BPSK	3565.0 - 3685.0	0.156	21.93
		QPSK	3565.0 - 3685.0	0.147	21.66
		16QAM	3565.0 - 3685.0	0.117	20.70
	20 MHz	$\pi/2$ BPSK	3560.0 - 3690.0	0.156	21.93
		QPSK	3560.0 - 3690.0	0.164	22.14
		16QAM	3560.0 - 3690.0	0.123	20.89
	15 MHz	$\pi/2$ BPSK	3557.5 - 3692.5	0.156	21.92
		QPSK	3557.5 - 3692.5	0.157	21.96
		16QAM	3557.5 - 3692.5	0.114	20.56
	10 MHz	$\pi/2$ BPSK	3555.0 - 3695.0	0.158	21.98
		QPSK	3555.0 - 3695.0	0.151	21.79
		16QAM	3555.0 - 3695.0	0.124	20.95

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

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 5 of 146

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

Measurements were conducted at the Element laboratory(ies) indicated in Section 1.3 below. All measurement facilities are compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

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

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

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 6 of 146

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Microsoft Corporation Full Modular FCC ID: C3K2114**. The test data contained in this report pertains only to the emissions due to the EUT's LTE Band 48 and NR Band n48 operation in the CBRS band. Per FCC Part 96, this device is evaluated as a Citizens Band End User Devices (CBE).

Test Device Serial No.: (004400152020002) EV2#48, EV2#37, EV2#47, EV2#49

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (FR1)

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.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 250129-XXX-de2e260-00452-1 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

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

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 7 of 146

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:

$$P_d \text{ [dBm]} = P_g \text{ [dBm]} - \text{cable loss [dB]} + \text{antenna gain [dBd/dBi]};$$

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 $P_g \text{ [dBm]} - \text{cable loss [dB]}$.

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:

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

And

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

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.

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 8 of 146

4.0 MEASUREMENT UNCERTAINTY

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

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

Table 4-1. Measurement Uncertainty Budget

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 9 of 146

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
-	LTx1	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx1
-	LTx2	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx2
-	LTx3	Licensed Transmitter Cable Set	4/2/2024	Annual	4/2/2025	LTx3
-	WL25-1	Conducted Cable Set (25GHz)	4/2/2024	Annual	4/2/2025	WL25-1
-	WL40-1	Conducted Cable Set (40GHz)	4/2/2024	Annual	4/2/2025	WL40-1
Agilent	N9020A	MXA Signal Analyzer	3/22/2024	Annual	3/22/2025	US46470561
Agilent	N9038A	MXE EMI Receiver	9/16/2024	Annual	9/16/2025	MY51210133
Agilent	N9030A	PXA Signal Analyzer (44GHz)	4/9/2024	Annual	4/9/2025	MY52350166
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6201381794
Anritsu	MT8821C	Radio Communication Analyzer	N/A			6200901190
Emco	3115	Horn Antenna (1-18GHz)	6/7/2024	Biennial	6/7/2026	150693
Espec	ESX-2CA	Environmental Chamber	7/5/2023	Annual	7/5/2025	17620
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	3/29/2023	Biennial	3/29/2025	128337
Keysight Technologies	N9030A	PXA Signal Analyzer (3Hz-26.5GHz)	8/26/2024	Annual	8/26/2025	MY54490576
Keysight Technologies	N9020A	MXA Signal Analyzer	4/11/2024	Annual	4/11/2025	MY54500644
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			100976
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			112347
Rohde & Schwarz	CMW500	Radio Communication Tester	N/A			102060
Rohde & Schwarz	ESU26	EMI Test Receiver (26.5GHz)	10/16/2024	Annual	10/16/2025	100342
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	2/15/2024	Annual	2/15/2025	103200
Sunol	DRH-118	Horn Antenna (1-18GHz)	2/21/2024	Biennial	2/21/2026	A050307
Sunol	DRH-118	Horn Antenna (1-18 GHz)	2/13/2024	Biennial	2/13/2026	A042511
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	9/11/2024	Biennial	9/11/2026	A051107

Table 5-1. Test Equipment Calibration Table

Notes:

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

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 10 of 146

6.0 SAMPLE EMISSION DESIGNATORS

Emission Designator

QPSK Modulation

Emission Designator = 8M62G7D

LTE BW = 8.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 8M45W7D

LTE BW = 8.45 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission, telemetry, telecommand

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 11 of 146

7.0 TEST RESULTS

7.1 Summary

Company Name: Microsoft Corporation
 FCC ID: C3K2114
 FCC Classification: Citizens Band End User Devices (CBE)
 Mode(s): 2114

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Conducted Power	2.1046(a), 2.1046(c)	NA	PASS	Section 7.2
	Uplink Carrier Aggregation	96.41(e)	> 43 + 10log(P[Watts]) at Band Edge and for all out-of-band emissions	PASS	Section 7.2
	Equivalent Isotropic Radiated Power (EIRP) (EUD)	96.41(b)	23 dBm/10MHz	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	NA	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions (CBSD)	2.1051, 96.41(e)(i)	-13 dBm/MHz at frequencies within 0-10 MHz of 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 7.4, 7.5
	Additional Maximum Power Reduction (A-MPR)	2.1046	NA	PASS	Section 7.2
	Frequency Stability	2.1055	Fundamental emissions stay within authorized frequency block	PASS	Section 7.7
	End User Device Additional Requirements (CBSD Protocol)	96.47	End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.	PASS	Section 7.8
RADIATED	Radiated Spurious Emissions	2.1053, 96.41(e)	-40 dBm/MHz	PASS	Section 7.6

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 v2.3.0.

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 12 of 146

7.2 Conducted Output Power Data and ERIP

Test Overview

The EUT is set up to transmit at maximum power for LTE. All power levels are measured with a callbox 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.

A-MPR is implemented in this device per the A-MPR specification in 3GPP TS 36.101. The conducted powers are shown herein to cover the different A-MPR levels specified in the standard. 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 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. A-MPR was only applied for test purposes to the 2CC case since the 1CC case was compliant for all testing at max power.
2. A-MPR was verified to comply with the "CA_NS_10" specification in the 3GPP TS 36.101 standard by setting the MCC to a U.S. code and the MNC to a U.S. carrier supporting LTE B48 operation.
3. 256QAM operations does not employ A-MPR.
4. ERP is calculated using conducted power and antenna gain.
5. This unit was tested using a power supply.
6. Conducted power measurements were evaluated using various combinations of RB size, RB offset, 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.
7. Conducted power was found to reduce for the higher order QAM modulations when compared to 16QAM. Due to this trend, only the worst-case QAM (16QAM) powers are included in this section.
8. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 13 of 146

Bandwidth	Modulation	PCC			SCC			Conducted Power [dBm]	Ant. Gain [dBi]	EIRP [dBm/10MHz]	EIRP [Watts/10MHz]	EIRP Limit [dBm/10MHz]	Margin [dB]
		Bandwidth [MHz]	Frequency [MHz]	RB / Offset	Bandwidth [MHz]	Frequency [MHz]	RB / Offset						
40 MHz	QPSK	20	3560.0	1 / 99	20	3579.8	1 / 0	21.14	1.00	22.14	0.164	23.00	-0.86
		20	3625.0	1 / 99	20	3644.8	1 / 0	21.17	1.00	22.17	0.165	23.00	-0.83
		20	3690.0	1 / 0	20	3670.2	1 / 99	21.19	1.00	22.19	0.166	23.00	-0.81
	16-QAM	20	3625.0	1 / 99	20	3644.8	1 / 0	20.18	1.00	21.18	0.131	23.00	-1.82
35 MHz	QPSK	20	3557.5	1 / 99	15	3577.1	1 / 0	21.11	1.00	22.11	0.163	23.00	-0.89
		20	3625.0	1 / 99	15	3642.1	1 / 0	21.12	1.00	22.12	0.163	23.00	-0.88
		20	3692.5	1 / 0	15	3672.9	1 / 74	21.10	1.00	22.10	0.162	23.00	-0.90
	16-QAM	20	3557.5	1 / 99	15	3577.1	1 / 0	20.16	1.00	21.16	0.131	23.00	-1.84
30 MHz	QPSK	20	3555.0	1 / 99	10	3574.4	1 / 0	21.17	1.00	22.17	0.165	23.00	-0.83
		20	3625.0	1 / 99	10	3639.4	1 / 0	21.11	1.00	22.11	0.163	23.00	-0.89
		20	3695.0	1 / 0	10	3678.3	1 / 49	21.15	1.00	22.15	0.164	23.00	-0.85
	16-QAM	20	3695.0	1 / 0	10	3678.3	1 / 49	21.14	1.00	22.14	0.164	23.00	-0.86
25 MHz	QPSK	20	3552.5	1 / 99	5	3571.7	1 / 0	21.20	1.00	22.20	0.166	23.00	-0.80
		20	3625.0	1 / 99	5	3636.7	1 / 0	21.18	1.00	22.18	0.165	23.00	-0.82
		20	3697.5	1 / 0	5	3678.3	1 / 24	21.14	1.00	22.14	0.164	23.00	-0.86
	16-QAM	20	3697.5	1 / 0	5	3678.3	1 / 24	20.16	1.00	21.16	0.131	23.00	-1.84

Table 7-2. Conducted Power Output Data and EIRP data (ULCA LB48 – Ant6)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	55340	3560.0	1 / 25	20.47	1.00	21.47	0.140	23.00	-1.53
		55990	3625.0	1 / 49	20.38	1.00	21.38	0.137	23.00	-1.62
		56640	3690.0	1 / 49	20.41	1.00	21.41	0.138	23.00	-1.59
	16-QAM	55340	3560.0	1 / 25	19.53	1.00	20.53	0.113	23.00	-2.47
15 MHz	QPSK	55315	3557.5	1 / 19	20.52	1.00	21.52	0.142	23.00	-1.48
		55990	3625.0	1 / 36	20.34	1.00	21.34	0.136	23.00	-1.66
		56665	3692.5	1 / 36	20.39	1.00	21.39	0.138	23.00	-1.61
	16-QAM	55315	3557.5	1 / 19	19.67	1.00	20.67	0.117	23.00	-2.33
10 MHz	QPSK	55290	3555.0	1 / 12	20.70	1.00	21.70	0.148	23.00	-1.30
		55990	3625.0	1 / 22	20.53	1.00	21.53	0.142	23.00	-1.47
		56690	3695.0	1 / 22	20.58	1.00	21.58	0.144	23.00	-1.42
	16-QAM	55290	3555.0	1 / 12	19.80	1.00	20.80	0.120	23.00	-2.20
5 MHz	QPSK	55265	3552.5	1 / 5	20.74	1.00	21.74	0.149	23.00	-1.26
		55990	3625.0	1 / 5	20.52	1.00	21.52	0.142	23.00	-1.48
		56715	3697.5	1 / 5	20.64	1.00	21.64	0.146	23.00	-1.36
	16-QAM	55265	3552.5	1 / 5	19.86	1.00	20.86	0.122	23.00	-2.14

Table 7-3. Conducted Power Output and EIRP Data (LTE Band 48 – Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 14 of 146

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	638000	3570.0	1 / 1	21.93	1.00	22.93	0.196	23.00	-0.07
		641666	3625.0	1 / 104	21.83	1.00	22.83	0.192	23.00	-0.17
		645332	3680.0	1 / 104	21.98	1.00	22.98	0.198	23.00	-0.02
	QPSK	638000	3570.0	1 / 1	21.88	1.00	22.88	0.194	23.00	-0.12
		641666	3625.0	1 / 104	21.97	1.00	22.97	0.198	23.00	-0.03
		645332	3680.0	1 / 104	21.93	1.00	22.93	0.196	23.00	-0.07
	16-QAM	645332	3680.0	1 / 104	21.18	1.00	22.18	0.165	23.00	-0.82
30 MHz	π/2 BPSK	637666	3565.0	1 / 1	21.91	1.00	22.91	0.195	23.00	-0.09
		641666	3625.0	1 / 1	21.93	1.00	22.93	0.196	23.00	-0.07
		645666	3685.0	1 / 76	21.92	1.00	22.92	0.196	23.00	-0.08
	QPSK	637666	3565.0	1 / 1	21.96	1.00	22.96	0.198	23.00	-0.04
		641666	3625.0	1 / 76	21.91	1.00	22.91	0.195	23.00	-0.09
		645666	3685.0	1 / 39	21.95	1.00	22.95	0.197	23.00	-0.05
	16-QAM	645666	3685.0	1 / 39	21.17	1.00	22.17	0.165	23.00	-0.83
20 MHz	π/2 BPSK	637334	3560.0	50 / 0	21.99	1.00	22.99	0.199	23.00	-0.01
		641666	3625.0	1 / 49	21.88	1.00	22.88	0.194	23.00	-0.12
		646000	3690.0	1 / 1	21.96	1.00	22.96	0.198	23.00	-0.04
	QPSK	637334	3560.0	1 / 25	21.97	1.00	22.97	0.198	23.00	-0.03
		641666	3625.0	1 / 1	21.87	1.00	22.87	0.194	23.00	-0.13
		646000	3690.0	1 / 49	21.96	1.00	22.96	0.198	23.00	-0.04
	16-QAM	641666	3625.0	1 / 49	21.18	1.00	22.18	0.165	23.00	-0.82
15 MHz	π/2 BPSK	637166	3557.5	36 / 0	21.98	1.00	22.98	0.199	23.00	-0.02
		641666	3625.0	1 / 36	21.99	1.00	22.99	0.199	23.00	-0.01
		646166	3692.5	1 / 1	21.99	1.00	22.99	0.199	23.00	-0.01
	QPSK	637166	3557.5	36 / 0	21.98	1.00	22.98	0.199	23.00	-0.02
		641666	3625.0	1 / 19	21.98	1.00	22.98	0.199	23.00	-0.02
		646166	3692.5	1 / 36	21.92	1.00	22.92	0.196	23.00	-0.08
	16-QAM	641666	3625.0	1 / 36	21.24	1.00	22.24	0.168	23.00	-0.76
10 MHz	π/2 BPSK	637000	3555.0	24 / 0	21.90	1.00	22.90	0.195	23.00	-0.10
		641666	3625.0	1 / 12	21.75	1.00	22.75	0.189	23.00	-0.25
		646332	3695.0	1 / 22	21.81	1.00	22.81	0.191	23.00	-0.19
	QPSK	637000	3555.0	1 / 22	21.93	1.00	22.93	0.196	23.00	-0.07
		641666	3625.0	1 / 1	21.79	1.00	22.79	0.190	23.00	-0.21
		646332	3695.0	1 / 1	21.82	1.00	22.82	0.192	23.00	-0.18
	16-QAM	637000	3555.0	1 / 22	21.17	1.00	22.17	0.165	23.00	-0.83

Table 7-4. Conducted Power Output and EIRP Data (NR Band n48 – Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 15 of 146

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	QPSK	55340	3560.0	1 / 49	21.62	1.00	22.62	0.183	23.00	-0.38
		55990	3625.0	1 / 49	21.42	1.00	22.42	0.174	23.00	-0.58
		56640	3690.0	1 / 25	21.90	1.00	22.90	0.195	23.00	-0.10
	16-QAM	56640	3690.0	1 / 25	21.08	1.00	22.08	0.162	23.00	-0.92
15 MHz	QPSK	55315	3557.5	1 / 36	21.60	1.00	22.60	0.182	23.00	-0.40
		55990	3625.0	1 / 19	21.20	1.00	22.20	0.166	23.00	-0.80
		56665	3692.5	1 / 36	21.91	1.00	22.91	0.196	23.00	-0.09
	16-QAM	56665	3692.5	1 / 36	21.04	1.00	22.04	0.160	23.00	-0.96
10 MHz	QPSK	55290	3555.0	1 / 22	21.95	1.00	22.95	0.197	23.00	-0.05
		55990	3625.0	1 / 12	21.54	1.00	22.54	0.179	23.00	-0.46
		56690	3695.0	1 / 12	21.98	1.00	22.98	0.199	23.00	-0.02
	16-QAM	56690	3695.0	1 / 12	21.26	1.00	22.26	0.168	23.00	-0.74
5 MHz	QPSK	55265	3552.5	1 / 9	21.97	1.00	22.97	0.198	23.00	-0.03
		55990	3625.0	1 / 9	21.66	1.00	22.66	0.185	23.00	-0.34
		56715	3697.5	1 / 1	21.93	1.00	22.93	0.196	23.00	-0.07
	16-QAM	55265	3552.5	1 / 9	20.91	1.00	21.91	0.155	23.00	-1.09

Table 7-5. Conducted Power Output and EIRP Data (LTE Band 48 – Ant1)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	TT/2 BPSK	638000	3570.0	1 / 104	21.68	1.00	22.68	0.185	23.00	-0.32
		641666	3625.0	1 / 104	21.80	1.00	22.80	0.191	23.00	-0.20
		645332	3680.0	1 / 104	21.90	1.00	22.90	0.195	23.00	-0.10
	QPSK	638000	3570.0	1 / 104	21.77	1.00	22.77	0.189	23.00	-0.23
		641666	3625.0	1 / 104	21.73	1.00	22.73	0.187	23.00	-0.27
		645332	3680.0	1 / 104	21.96	1.00	22.96	0.198	23.00	-0.04
30 MHz	TT/2 BPSK	645332	3680.0	1 / 104	21.10	1.00	22.10	0.162	23.00	-0.90
		637666	3565.0	1 / 39	21.71	1.00	22.71	0.186	23.00	-0.29
		641666	3625.0	1 / 1	21.67	1.00	22.67	0.185	23.00	-0.33
	QPSK	645666	3685.0	1 / 76	21.93	1.00	22.93	0.196	23.00	-0.07
		637666	3565.0	1 / 76	21.63	1.00	22.63	0.183	23.00	-0.37
		641666	3625.0	1 / 1	21.62	1.00	22.62	0.183	23.00	-0.38
20 MHz	TT/2 BPSK	645666	3685.0	1 / 39	21.91	1.00	22.91	0.195	23.00	-0.09
		645666	3685.0	1 / 76	20.92	1.00	21.92	0.156	23.00	-1.08
		637334	3560.0	1 / 1	21.95	1.00	22.95	0.197	23.00	-0.05
	QPSK	641666	3625.0	1 / 1	21.74	1.00	22.74	0.188	23.00	-0.26
		646000	3690.0	1 / 1	21.85	1.00	22.85	0.193	23.00	-0.15
		637334	3560.0	1 / 1	21.95	1.00	22.95	0.197	23.00	-0.05
15 MHz	TT/2 BPSK	641666	3625.0	1 / 1	21.72	1.00	22.72	0.187	23.00	-0.28
		646000	3690.0	1 / 49	21.96	1.00	22.96	0.198	23.00	-0.04
		646000	3690.0	1 / 49	21.18	1.00	22.18	0.165	23.00	-0.82
	QPSK	637166	3557.5	1 / 19	21.91	1.00	22.91	0.195	23.00	-0.09
		641666	3625.0	1 / 19	21.68	1.00	22.68	0.186	23.00	-0.32
		646166	3692.5	1 / 36	21.86	1.00	22.86	0.193	23.00	-0.14
10 MHz	TT/2 BPSK	637166	3557.5	1 / 36	21.86	1.00	22.86	0.193	23.00	-0.14
		641666	3625.0	1 / 36	21.67	1.00	22.67	0.185	23.00	-0.33
		646166	3692.5	1 / 36	21.86	1.00	22.86	0.193	23.00	-0.14
	QPSK	646166	3692.5	1 / 36	21.12	1.00	22.12	0.163	23.00	-0.88
		637000	3555.0	1 / 22	21.98	1.00	22.98	0.199	23.00	-0.02
		641666	3625.0	1 / 22	21.60	1.00	22.60	0.182	23.00	-0.40
5 MHz	TT/2 BPSK	646332	3695.0	1 / 1	21.84	1.00	22.84	0.192	23.00	-0.16
		637000	3555.0	1 / 1	21.80	1.00	22.80	0.191	23.00	-0.20
		641666	3625.0	1 / 22	21.46	1.00	22.46	0.176	23.00	-0.54
	16-QAM	646332	3695.0	1 / 22	21.99	1.00	22.99	0.199	23.00	-0.01

Table 7-6. Conducted Power Output and EIRP Data (NR Band n48 – Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular		Page 16 of 146

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	638000	3570.0	1 / 104	21.37	1.00	22.37	0.173	23.00	-0.63
		641666	3625.0	1 / 104	21.36	1.00	22.36	0.172	23.00	-0.64
		645332	3680.0	1 / 104	21.61	1.00	22.61	0.182	23.00	-0.39
	QPSK	638000	3570.0	1 / 104	21.38	1.00	22.38	0.173	23.00	-0.62
		641666	3625.0	1 / 104	21.42	1.00	22.42	0.174	23.00	-0.58
		645332	3680.0	1 / 104	21.47	1.00	22.47	0.176	23.00	-0.53
	16-QAM	645332	3680.0	1 / 104	20.77	1.00	21.77	0.150	23.00	-1.23

Table 7-7. Conducted Power Output and EIRP Data (NR Band n48 – SRS Ant3)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	638000	3570.0	1 / 1	21.95	1.00	22.95	0.197	23.00	-0.05
		641666	3625.0	1 / 53	21.89	1.00	22.89	0.194	23.00	-0.11
		645332	3680.0	1 / 1	21.97	1.00	22.97	0.198	23.00	-0.03
	QPSK	638000	3570.0	1 / 1	21.97	1.00	22.97	0.198	23.00	-0.03
		641666	3625.0	1 / 1	21.89	1.00	22.89	0.195	23.00	-0.11
		645332	3680.0	1 / 104	21.98	1.00	22.98	0.199	23.00	-0.02
	16-QAM	638000	3570.0	1 / 104	21.58	1.00	22.58	0.181	23.00	-0.42

Table 7-8. Conducted Power Output and EIRP Data (NR Band n48 – SRS Ant4)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular		Page 17 of 146

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Ant6 Conducted Power [dBm]	Ant1 Conducted Power [dBm]	Ant Gain [dBi]	Ant6 + Ant1 EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
40 MHz	π/2 BPSK	638000	3570.0	1 / 1	17.63	17.80	1.00	21.73	0.149	23.00	-1.27
		641666	3625.0	1 / 1	17.83	17.69	1.00	21.77	0.150	23.00	-1.23
		645332	3680.0	1 / 104	17.95	17.77	1.00	21.87	0.154	23.00	-1.13
	QPSK	638000	3570.0	1 / 1	17.64	17.66	1.00	21.66	0.147	23.00	-1.34
		641666	3625.0	1 / 1	17.65	17.62	1.00	21.64	0.146	23.00	-1.36
		645332	3680.0	1 / 104	17.62	17.55	1.00	21.59	0.144	23.00	-1.41
	16-QAM	645332	3680.0	1 / 104	16.62	16.74	1.00	20.69	0.117	23.00	-2.31
30 MHz	π/2 BPSK	637666	3565.0	1 / 1	17.95	17.87	1.00	21.93	0.156	23.00	-1.07
		641666	3625.0	1 / 76	17.87	17.61	1.00	21.75	0.150	23.00	-1.25
		645666	3685.0	1 / 76	17.85	17.66	1.00	21.76	0.150	23.00	-1.24
	QPSK	637666	3565.0	1 / 1	17.73	17.57	1.00	21.66	0.147	23.00	-1.34
		641666	3625.0	1 / 76	17.46	17.66	1.00	21.57	0.144	23.00	-1.43
		645666	3685.0	1 / 76	17.77	17.62	1.00	21.71	0.148	23.00	-1.29
	16-QAM	645666	3685.0	1 / 76	16.66	16.71	1.00	20.70	0.117	23.00	-2.30
20 MHz	π/2 BPSK	637334	3560.0	1 / 1	17.89	17.95	1.00	21.93	0.156	23.00	-1.07
		641666	3625.0	1 / 49	17.71	17.59	1.00	21.66	0.147	23.00	-1.34
		646000	3690.0	1 / 25	17.51	17.59	1.00	21.56	0.143	23.00	-1.44
	QPSK	637334	3560.0	1 / 1	18.19	18.07	1.00	22.14	0.164	23.00	-0.86
		641666	3625.0	1 / 49	17.72	17.51	1.00	21.63	0.146	23.00	-1.37
		646000	3690.0	1 / 25	17.56	17.60	1.00	21.59	0.144	23.00	-1.41
	16-QAM	641666	3625.0	1 / 49	17.14	16.60	1.00	20.89	0.123	23.00	-2.11
15 MHz	π/2 BPSK	637166	3557.5	1 / 19	17.94	17.87	1.00	21.92	0.156	23.00	-1.08
		641666	3625.0	1 / 36	17.76	17.65	1.00	21.72	0.149	23.00	-1.28
		646166	3692.5	1 / 1	17.74	17.56	1.00	21.66	0.147	23.00	-1.34
	QPSK	637166	3557.5	1 / 19	17.93	17.97	1.00	21.96	0.157	23.00	-1.04
		641666	3625.0	1 / 36	17.61	17.64	1.00	21.64	0.146	23.00	-1.36
		646166	3692.5	1 / 1	17.60	17.54	1.00	21.58	0.144	23.00	-1.42
	16-QAM	641666	3625.0	1 / 36	16.41	16.69	1.00	20.56	0.114	23.00	-2.44
10 MHz	π/2 BPSK	637000	3555.0	1 / 1	18.01	17.92	1.00	21.98	0.158	23.00	-1.02
		641666	3625.0	1 / 12	17.62	17.45	1.00	21.55	0.143	23.00	-1.45
		646332	3695.0	1 / 22	17.68	17.68	1.00	21.69	0.148	23.00	-1.31
	QPSK	637000	3555.0	1 / 1	17.86	17.70	1.00	21.79	0.151	23.00	-1.21
		641666	3625.0	1 / 12	17.48	17.40	1.00	21.45	0.140	23.00	-1.55
		646332	3695.0	1 / 22	17.45	17.43	1.00	21.45	0.140	23.00	-1.55
	16-QAM	637000	3555.0	1 / 1	16.98	16.89	1.00	20.95	0.124	23.00	-2.05

Table 7-9. Conducted Power Output and EIRP Data (NR Band n48 – UL-MIMO Antenna 6 + 1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 18 of 146

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 $\geq 3 \times$ 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.

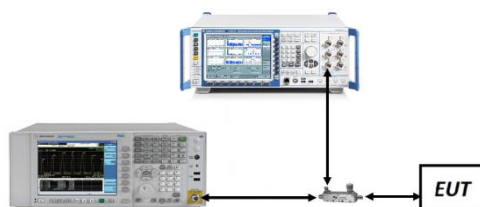


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None

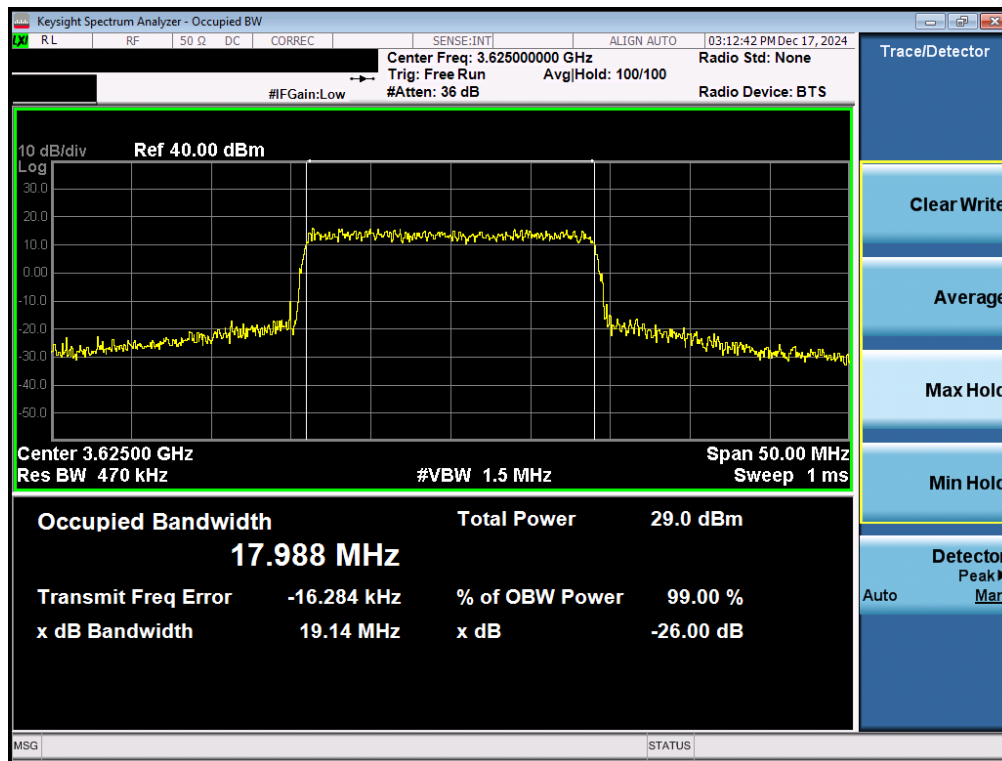
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 19 of 146

Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B48	20 MHz	QPSK	17.99
		16QAM	18.06
	15 MHz	QPSK	13.48
		16QAM	13.48
	10 MHz	QPSK	8.99
		16QAM	9.01
	5 MHz	QPSK	4.51
		16QAM	4.49
LTE-B48	20+20MHz	QPSK	37.67
		16QAM	37.64
	20+15MHz	QPSK	32.82
		16QAM	32.88
	20+10MHz	QPSK	27.84
		16QAM	27.87
	20+5MHz	QPSK	22.94
		16QAM	22.89
NR-n48	40MHz	$\pi/2$ BPSK	35.92
		QPSK	38.11
		16QAM	37.96
	30MHz	$\pi/2$ BPSK	26.87
		QPSK	28.00
		16QAM	28.04
	20MHz	$\pi/2$ BPSK	18.07
		QPSK	18.34
		16QAM	18.36
	15MHz	$\pi/2$ BPSK	13.02
		QPSK	13.66
		16QAM	13.75
	10 MHz	$\pi/2$ BPSK	8.73
		QPSK	8.69
		16QAM	8.66

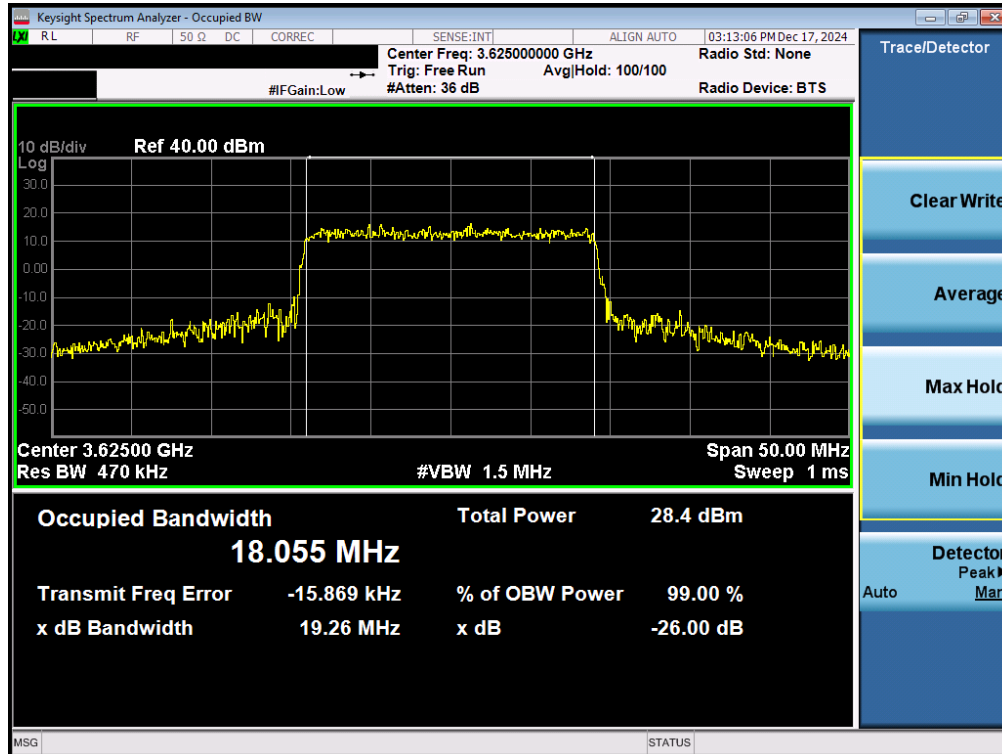
Table 7-10. Occupied Bandwidth Test Results – Ant6

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 20 of 146

LTE Band 48 – Ant6

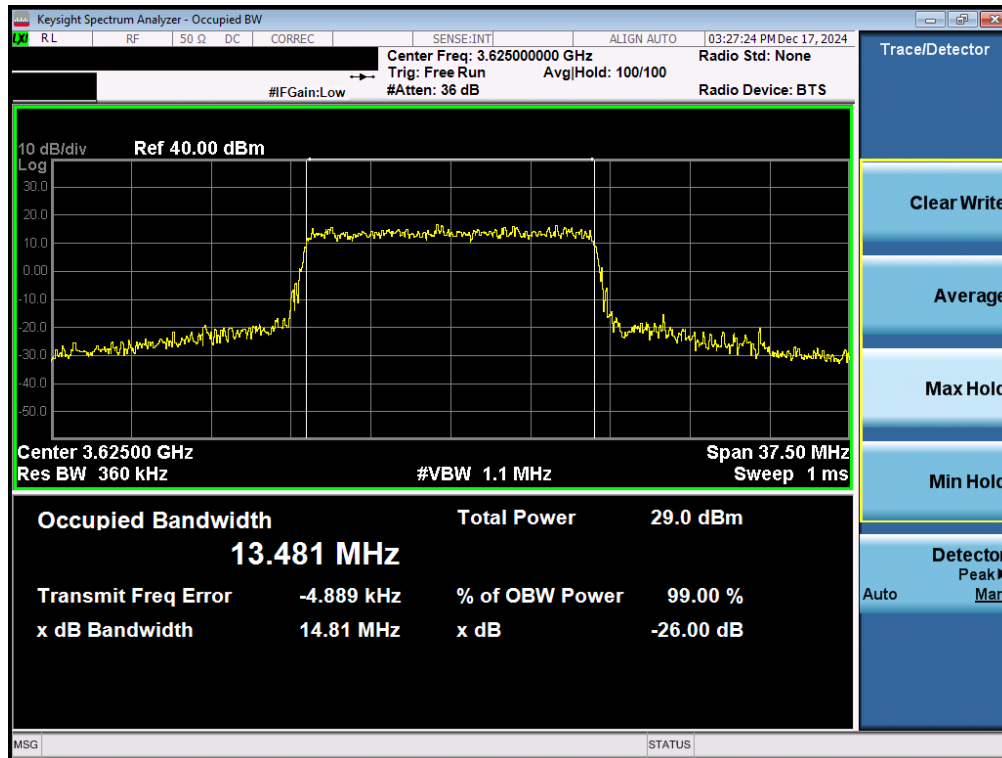


Plot 7-1. Occupied Bandwidth Plot (LTE Band 48 - 20MHz QPSK - Full RB Configuration - Ant6)

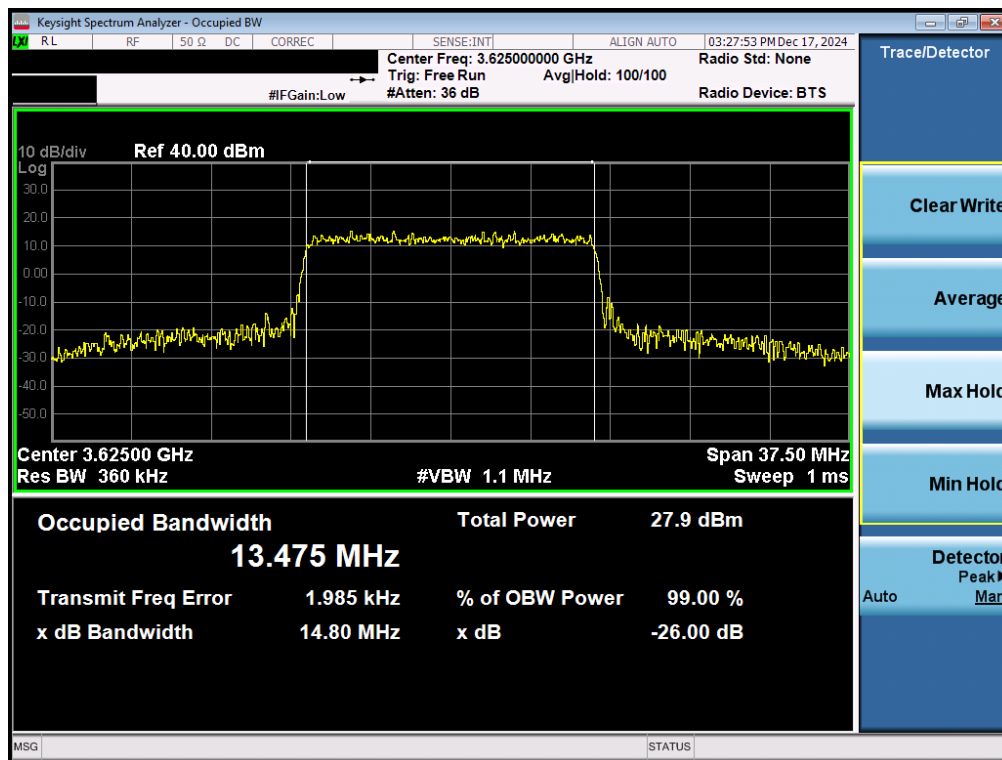


Plot 7-2. Occupied Bandwidth Plot (LTE Band 48 - 20MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 21 of 146

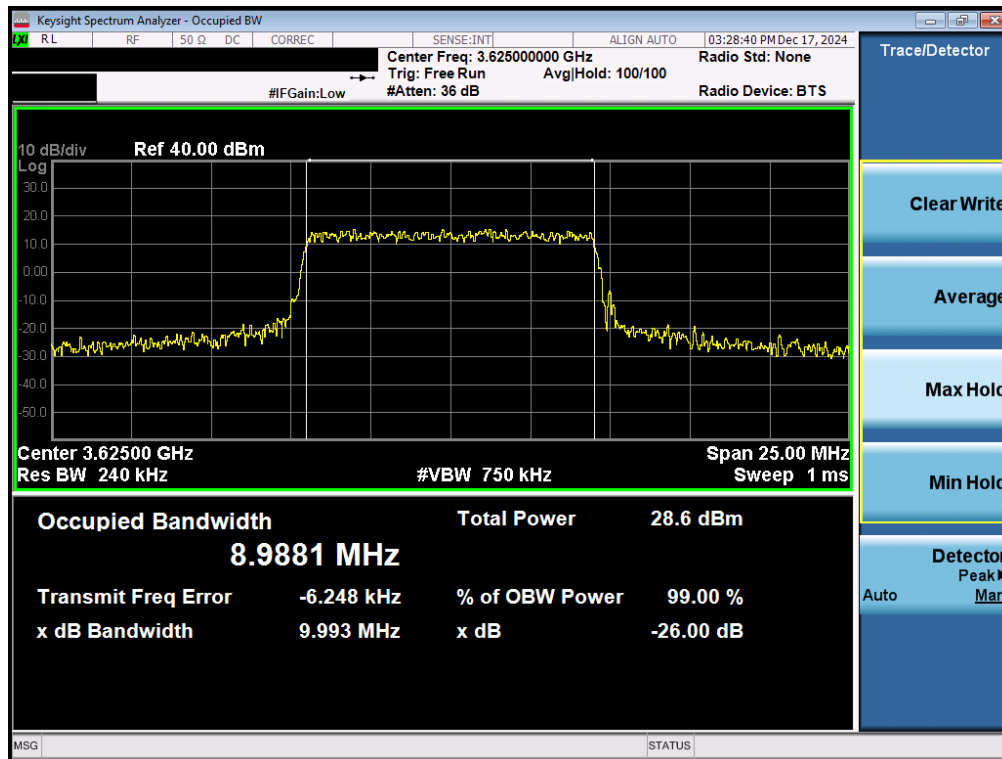


Plot 7-3. Occupied Bandwidth Plot (LTE Band 48 - 15MHz QPSK - Full RB Configuration - Ant6)

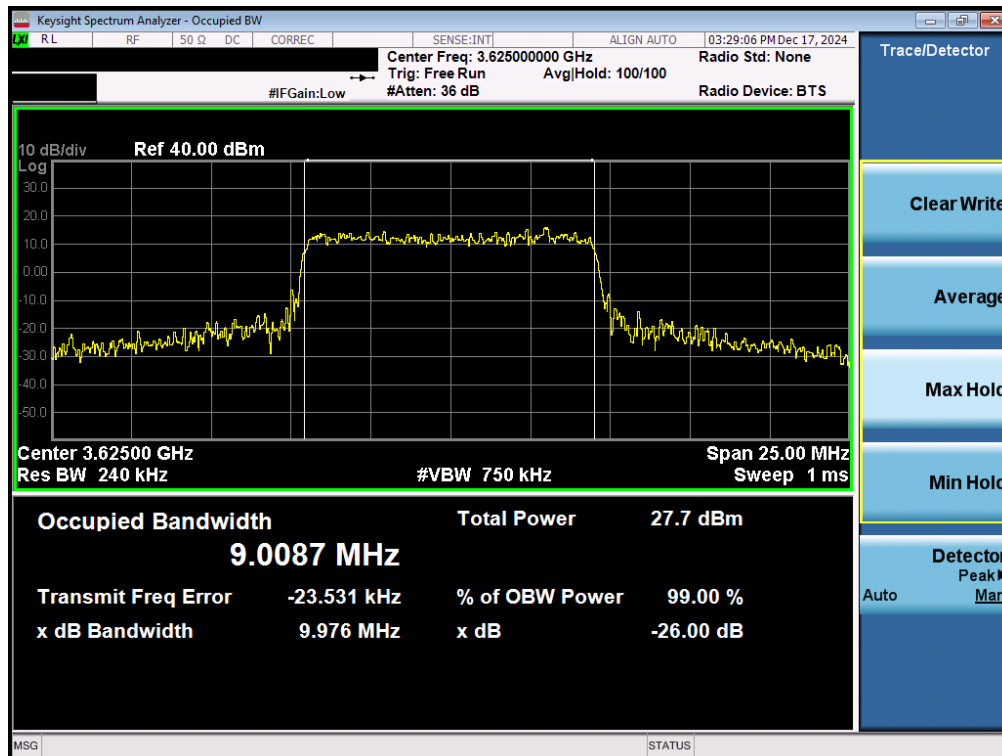


Plot 7-4. Occupied Bandwidth Plot (LTE Band 48 - 15MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 - 4/29/2025	EUT Type: Full Modular	Page 22 of 146

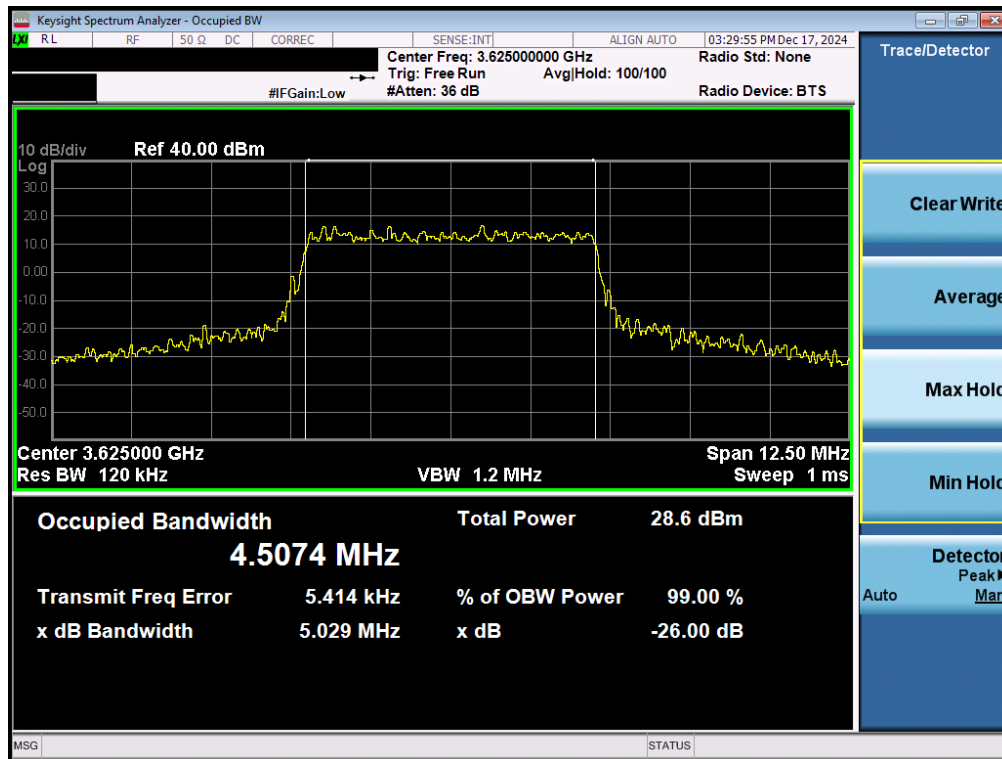


Plot 7-5. Occupied Bandwidth Plot (LTE Band 48 - 10MHz QPSK - Full RB Configuration - Ant6)

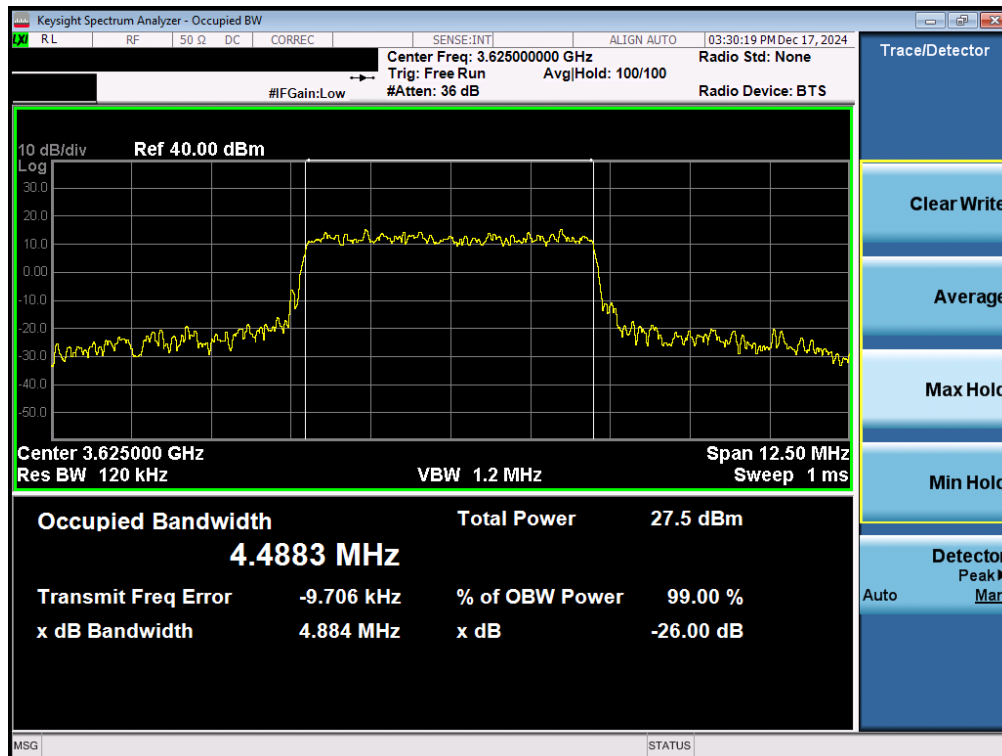


Plot 7-6. Occupied Bandwidth Plot (LTE Band 48 - 10MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 - 4/29/2025	EUT Type: Full Modular	Page 23 of 146



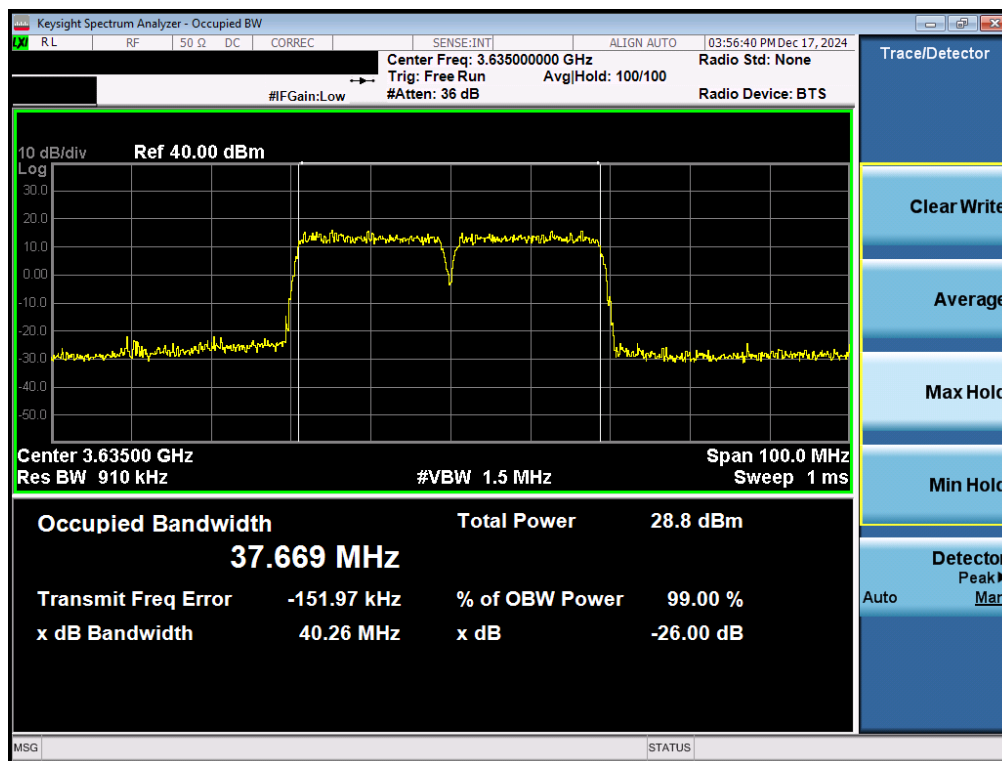
Plot 7-7. Occupied Bandwidth Plot (LTE Band 48 - 5MHz QPSK - Full RB Configuration - Ant6)



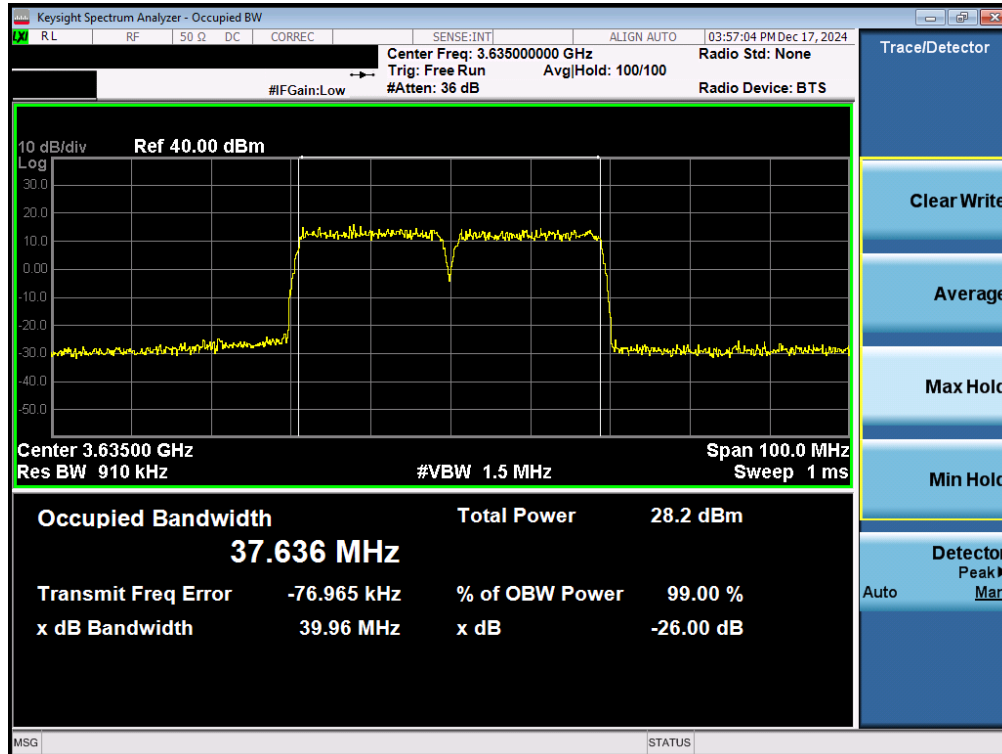
Plot 7-8. Occupied Bandwidth Plot (LTE Band 48 - 5MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 24 of 146

ULCA LTE Band 48 – Ant6

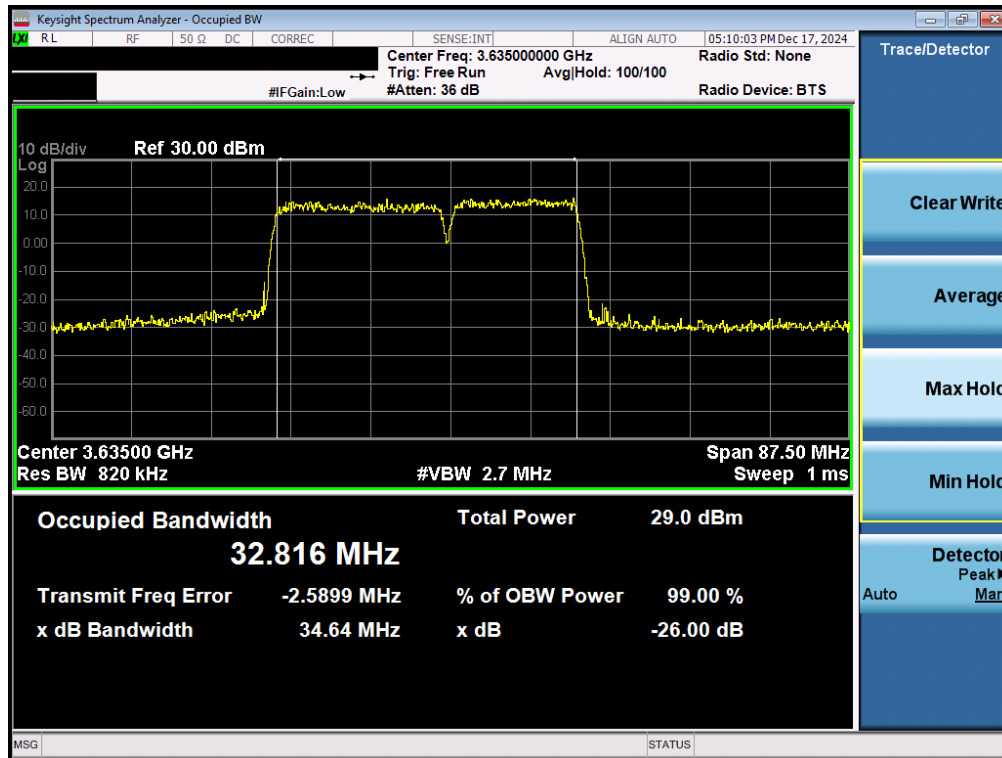


Plot 7-9. Occupied Bandwidth Plot (ULCA LB48 - 20+20MHz QPSK - Full RB Configuration - Ant6)

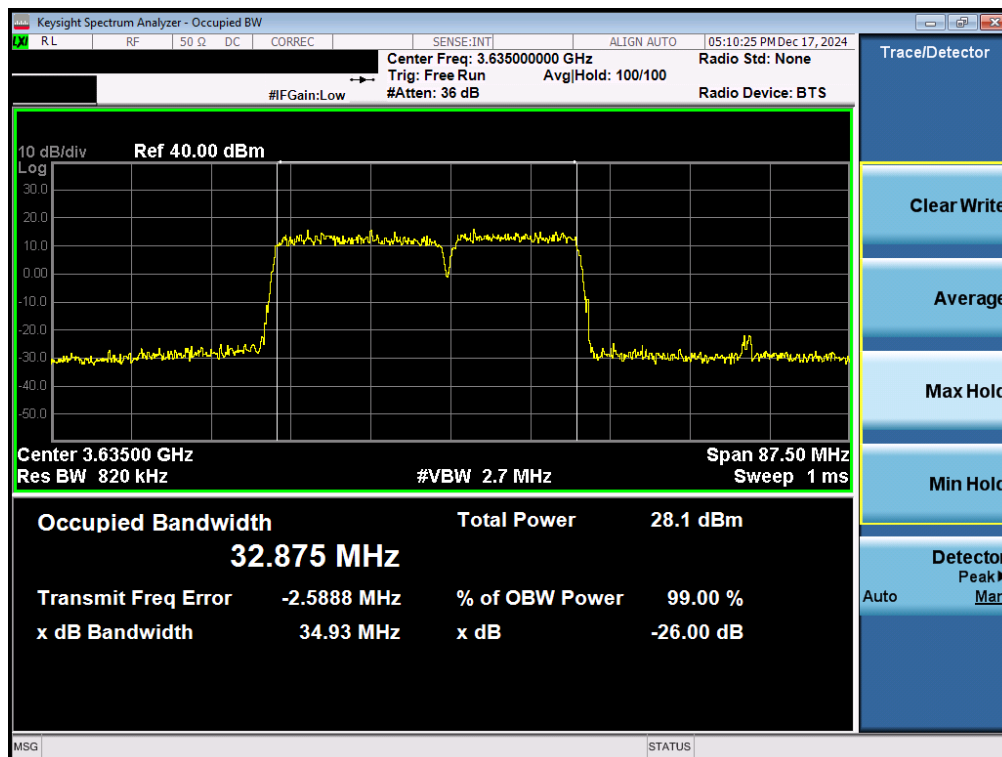


Plot 7-10. Occupied Bandwidth Plot (ULCA LB48 - 20+20MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 25 of 146

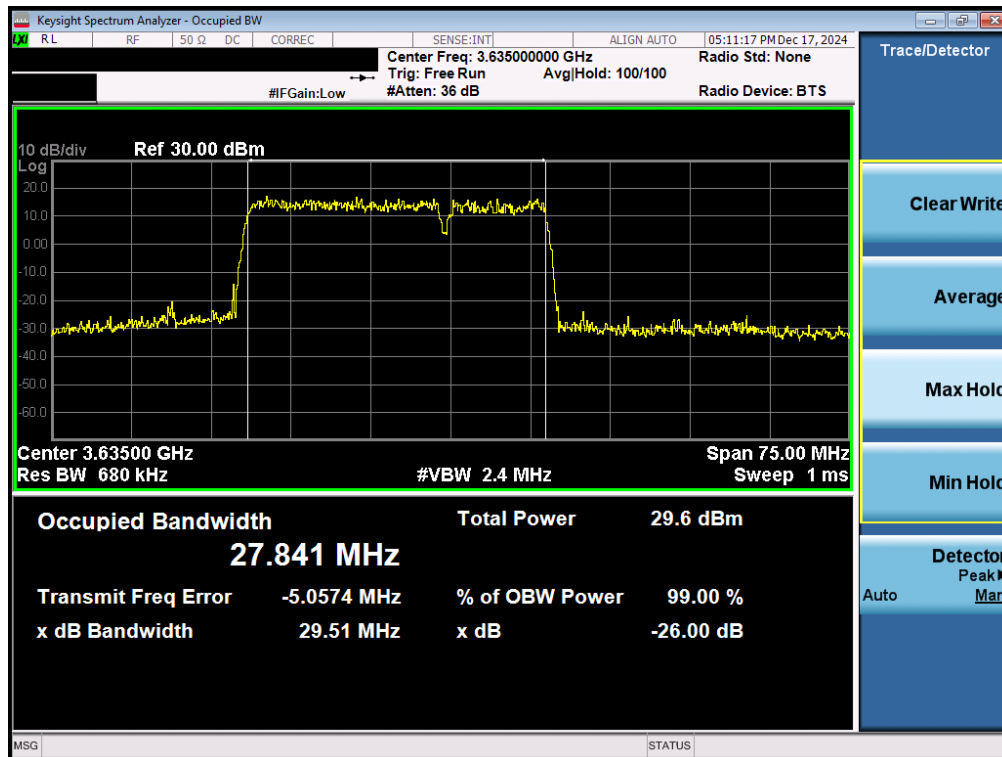


Plot 7-11. Occupied Bandwidth Plot (ULCA LB48 - 20+15MHz QPSK - Full RB Configuration - Ant6)

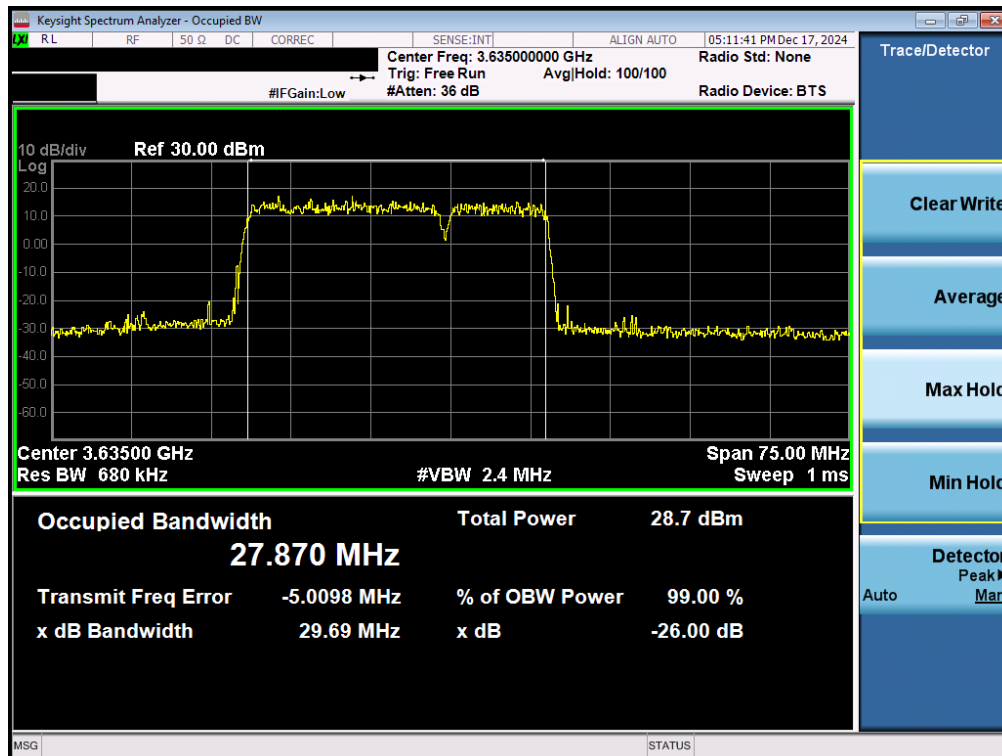


Plot 7-12. Occupied Bandwidth Plot (ULCA LB48 - 20+15MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 26 of 146

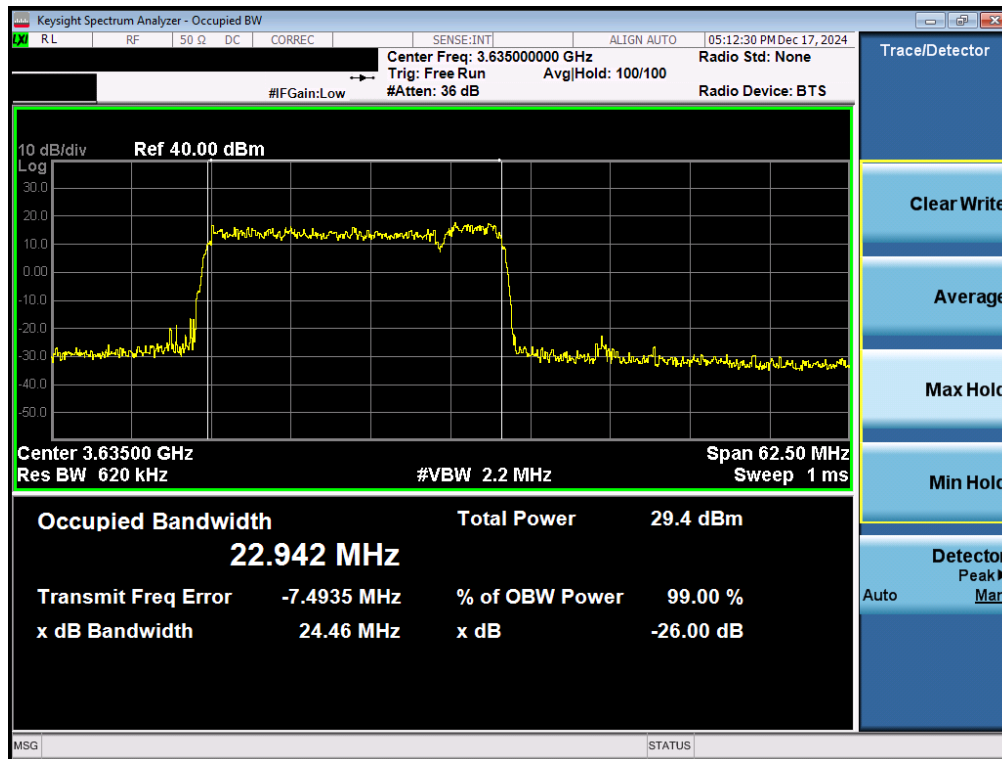


Plot 7-13. Occupied Bandwidth Plot (ULCA LB48 - 20+10MHz QPSK - Full RB Configuration - Ant6)

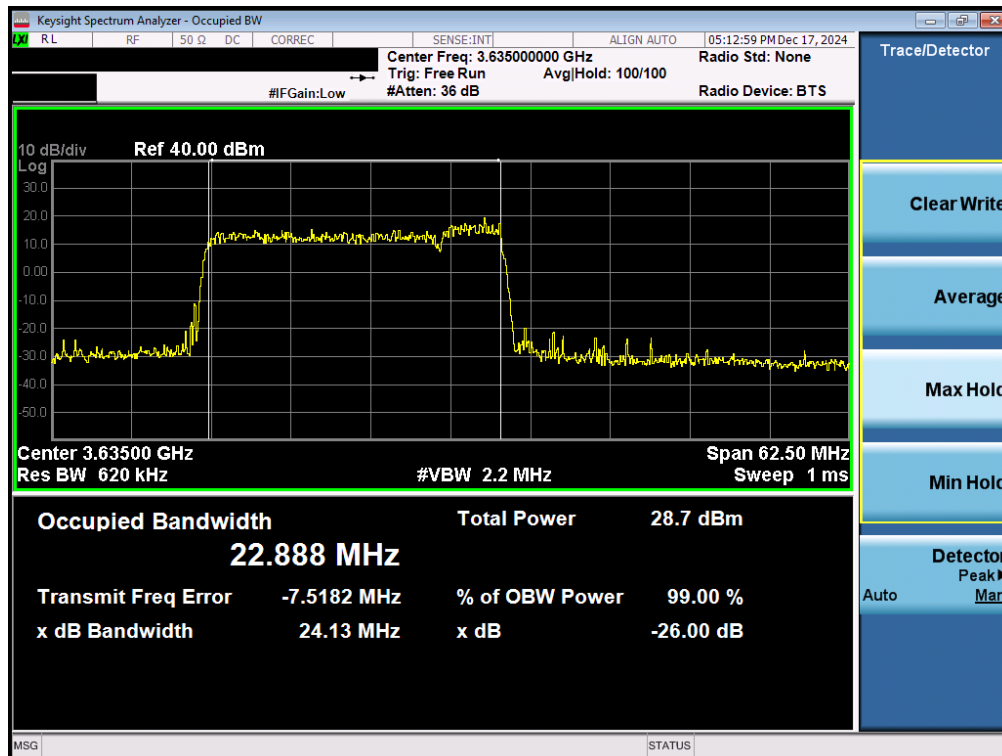


Plot 7-14. Occupied Bandwidth Plot (ULCA LB48 - 20+10MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 27 of 146



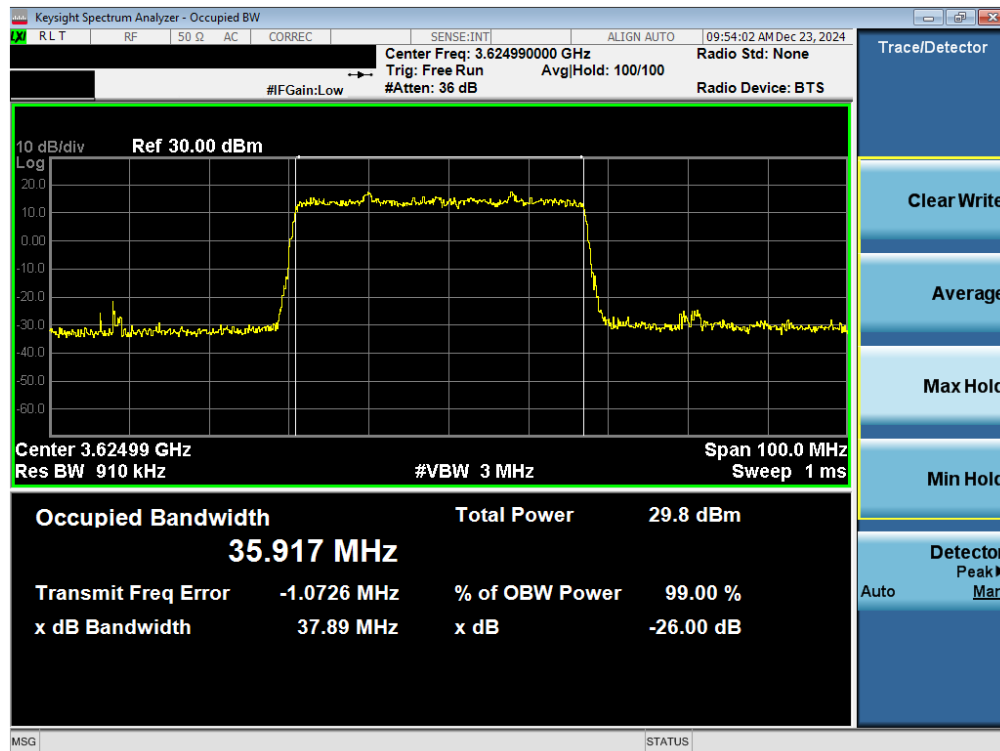
Plot 7-15. Occupied Bandwidth Plot (ULCA LB48 - 20+5MHz QPSK - Full RB Configuration - Ant6)



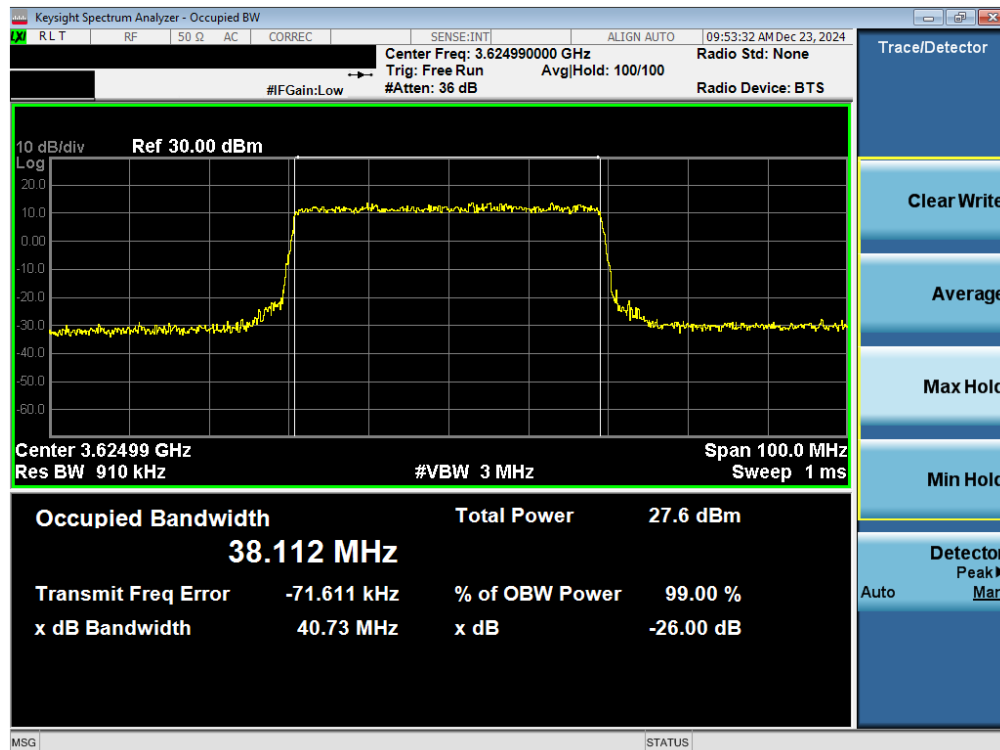
Plot 7-16. Occupied Bandwidth Plot (ULCA LB48 - 20+5MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 28 of 146

NR Band n48 – Ant6

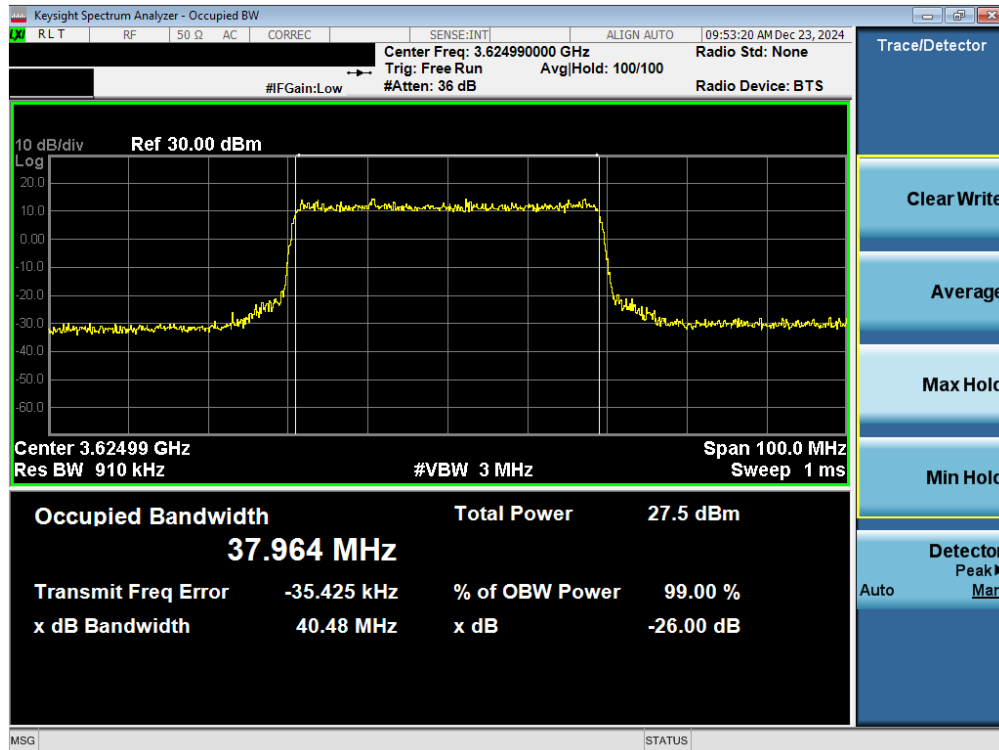


Plot 7-17. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration - Ant6)

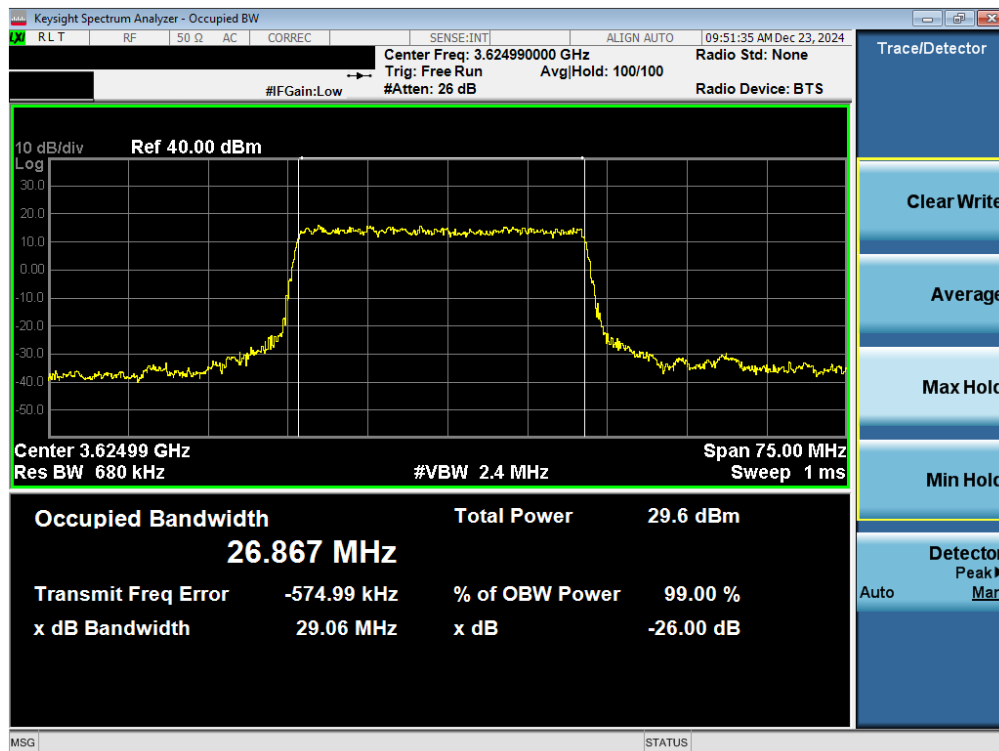


Plot 7-18. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 29 of 146

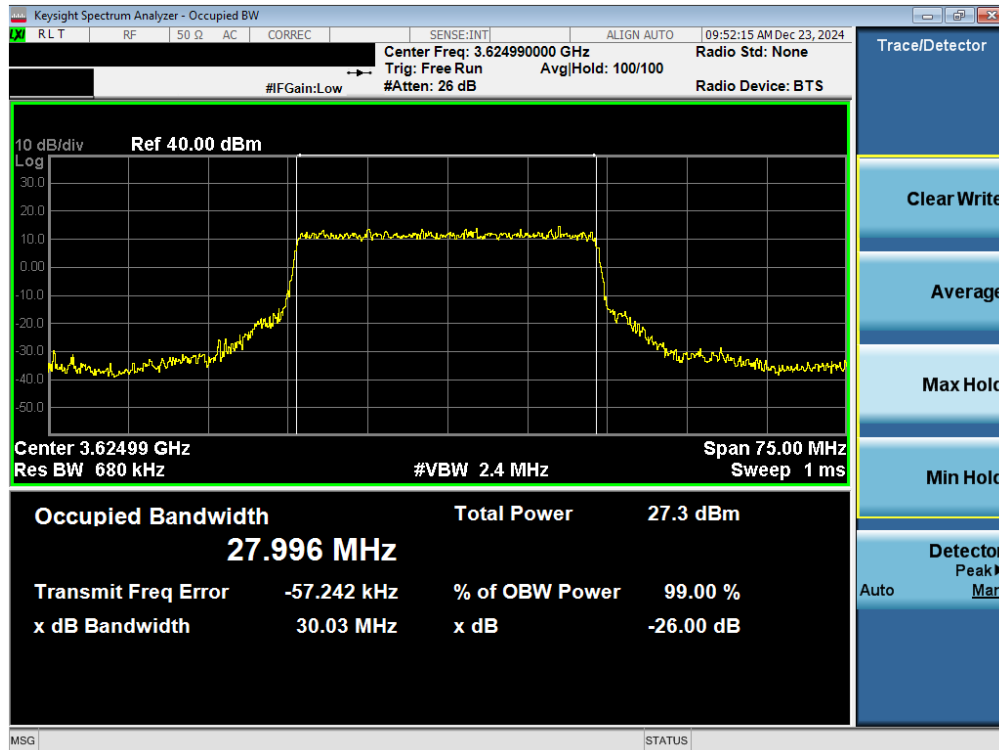


Plot 7-19. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration - Ant6)

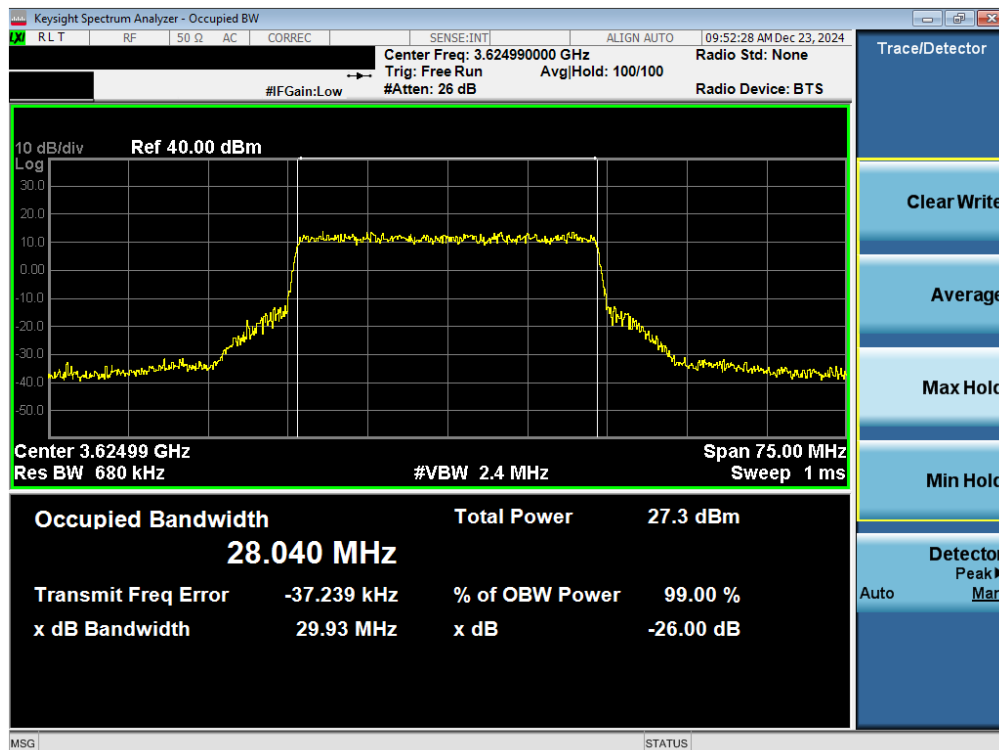


Plot 7-20. Occupied Bandwidth Plot (NR Band n48 - 30MHz $\pi/2$ BPSK - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 30 of 146

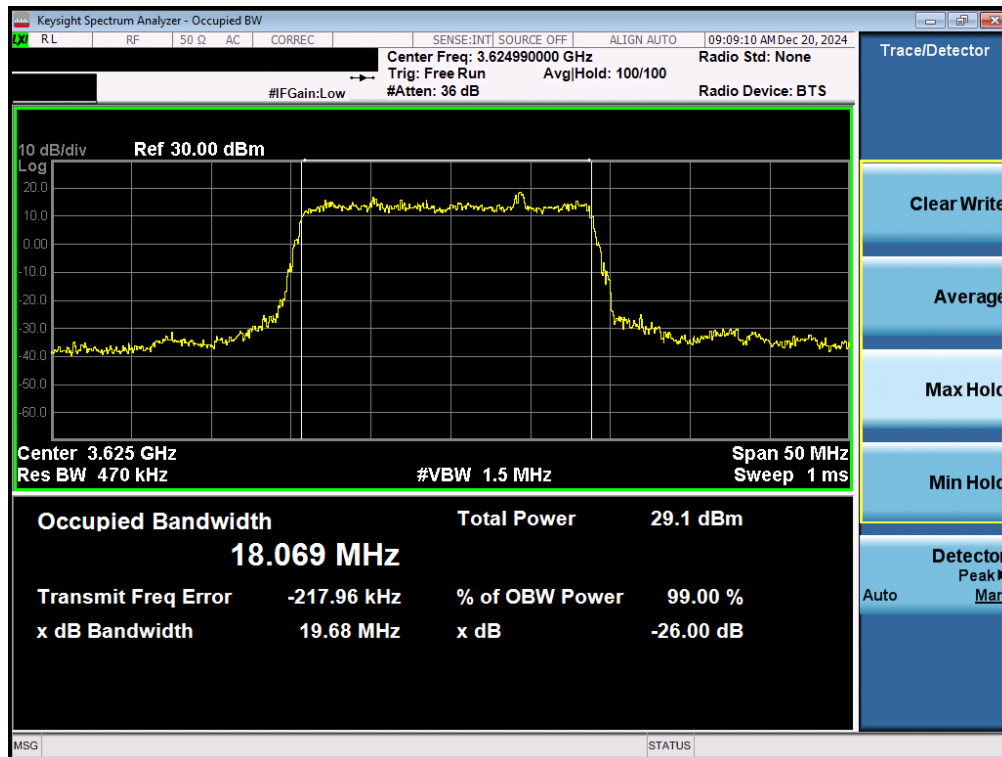


Plot 7-21. Occupied Bandwidth Plot (NR Band n48 - 30MHz QPSK - Full RB Configuration - Ant6)

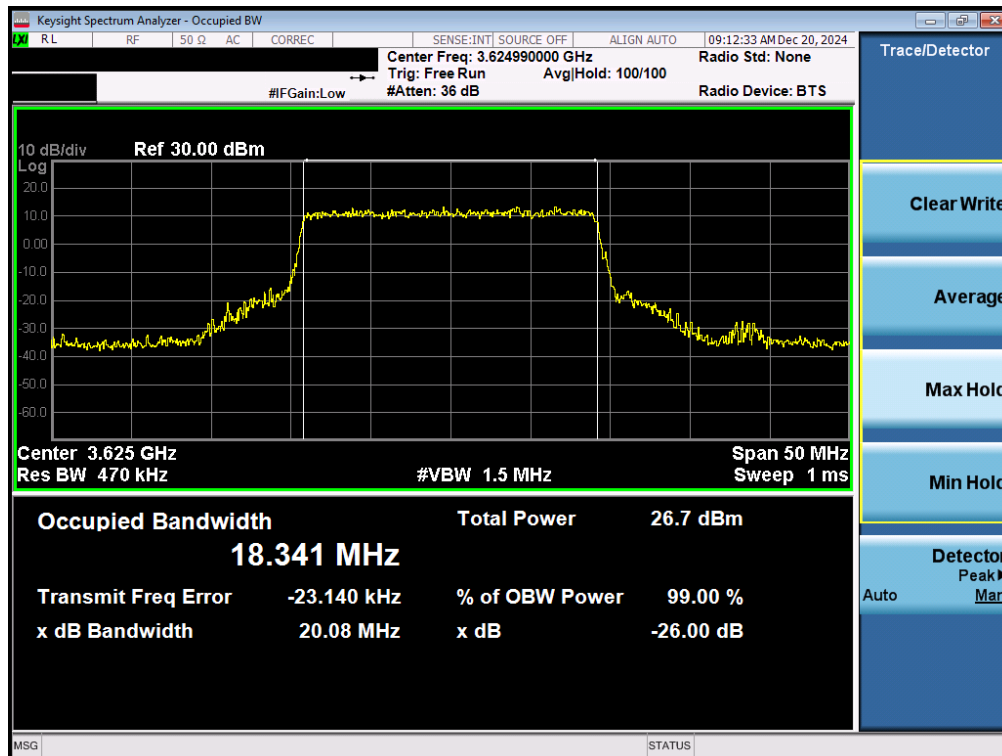


Plot 7-22. Occupied Bandwidth Plot (NR Band n48 - 30MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 31 of 146

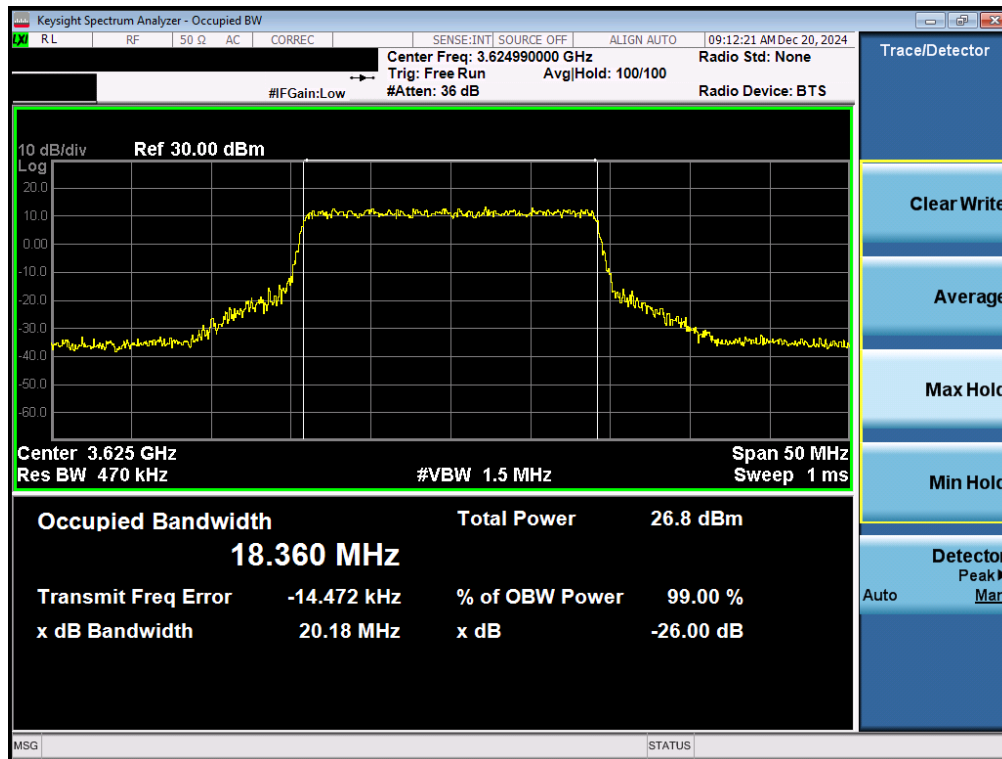


Plot 7-23. Occupied Bandwidth Plot (NR Band n48 - 20MHz $\pi/2$ BPSK - Full RB Configuration - Ant6)

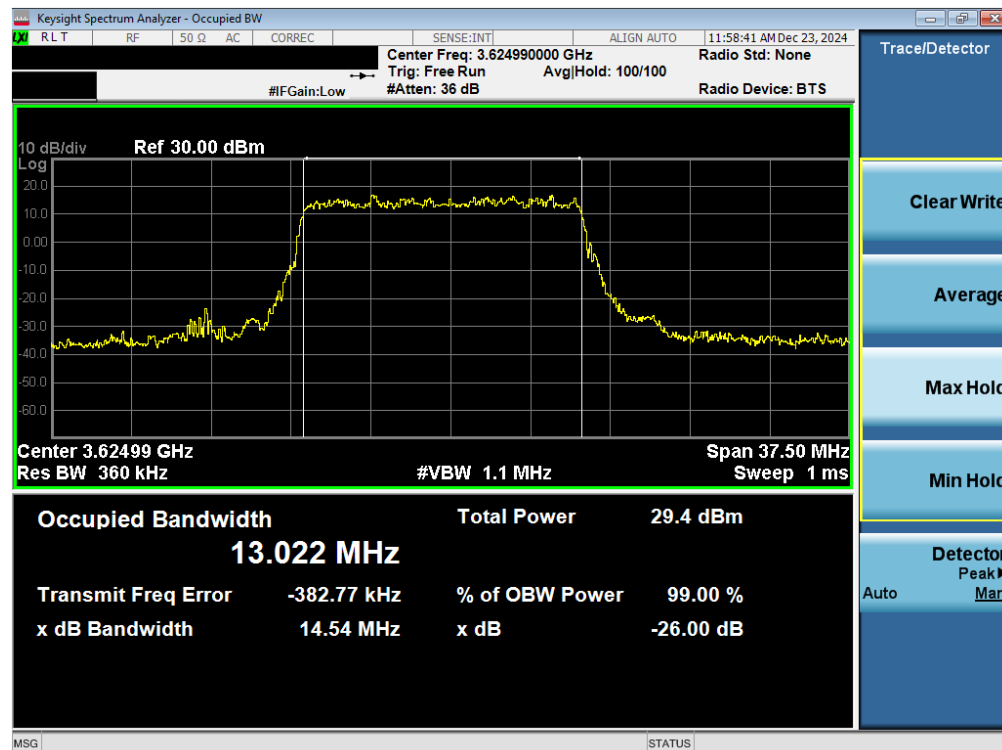


Plot 7-24. Occupied Bandwidth Plot (NR Band n48 - 20MHz QPSK - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 32 of 146

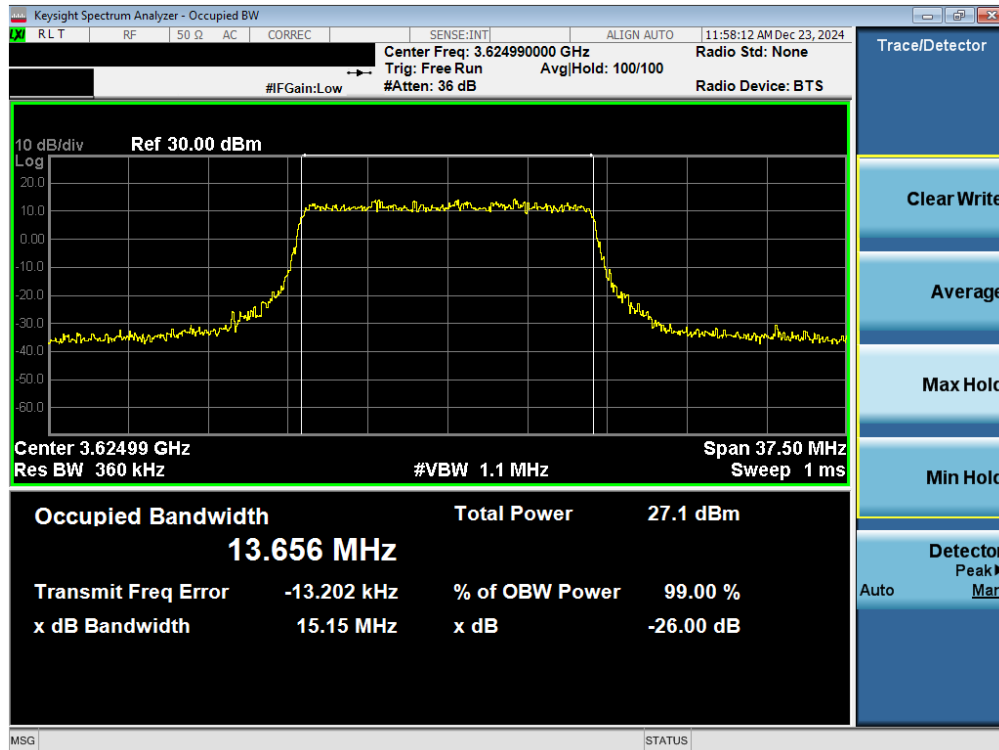


Plot 7-25. Occupied Bandwidth Plot (NR Band n48 - 20MHz 16-QAM - Full RB Configuration - Ant6)

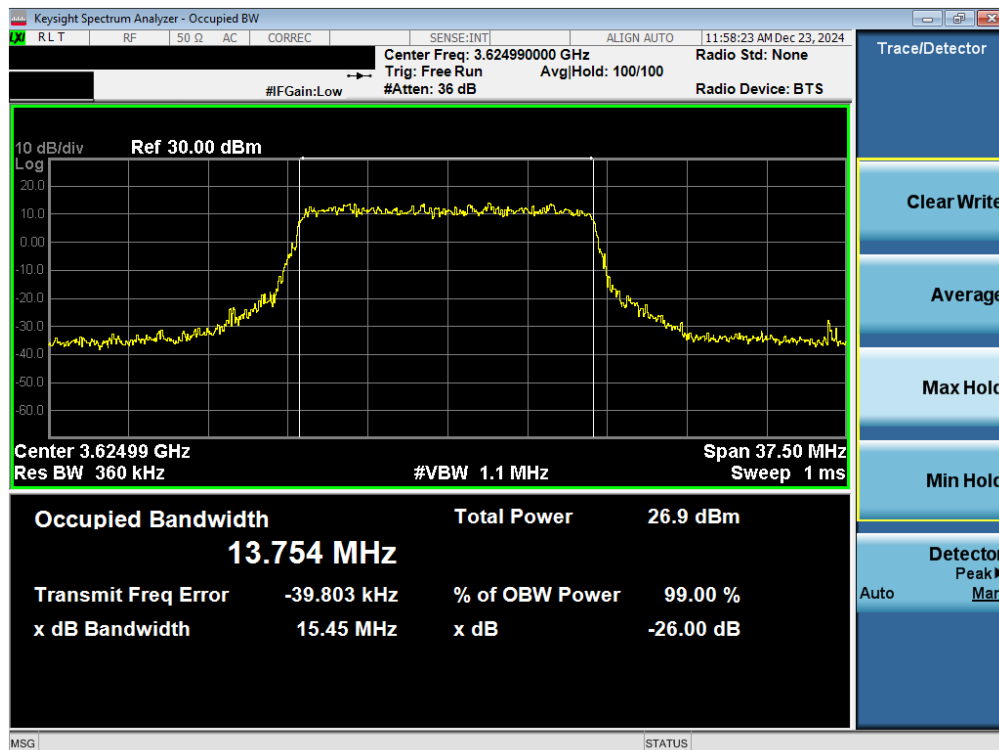


Plot 7-26. Occupied Bandwidth Plot (NR Band n48 - 15MHz $\pi/2$ BPSK - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 - 4/29/2025	EUT Type: Full Modular	Page 33 of 146

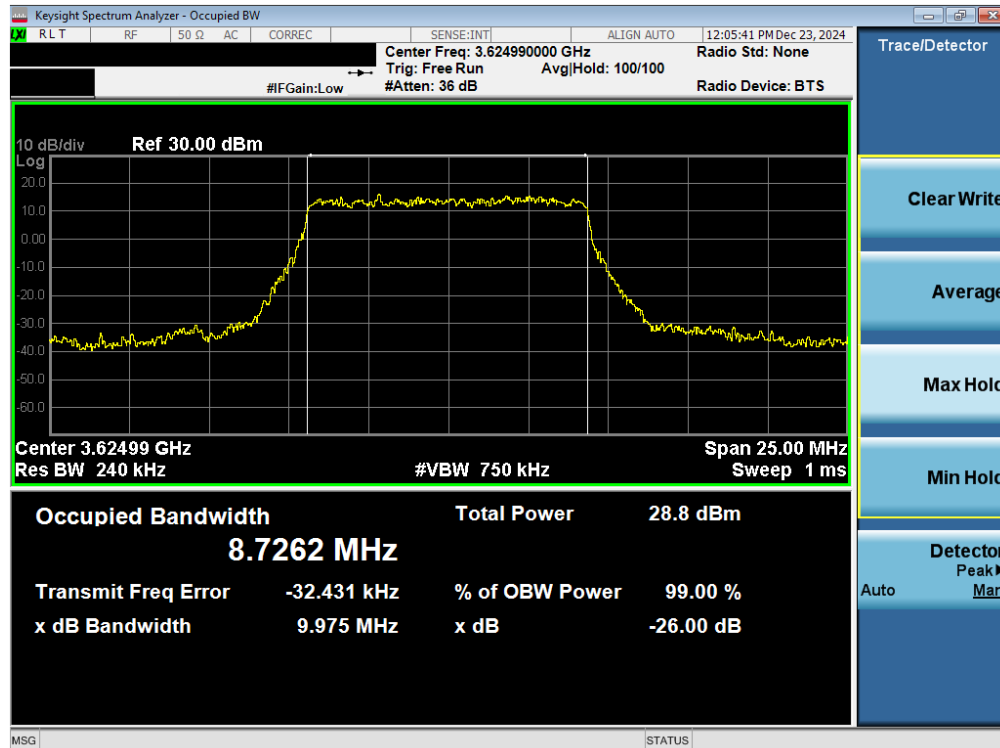


Plot 7-27. Occupied Bandwidth Plot (NR Band n48 - 15MHz QPSK - Full RB Configuration - Ant6)

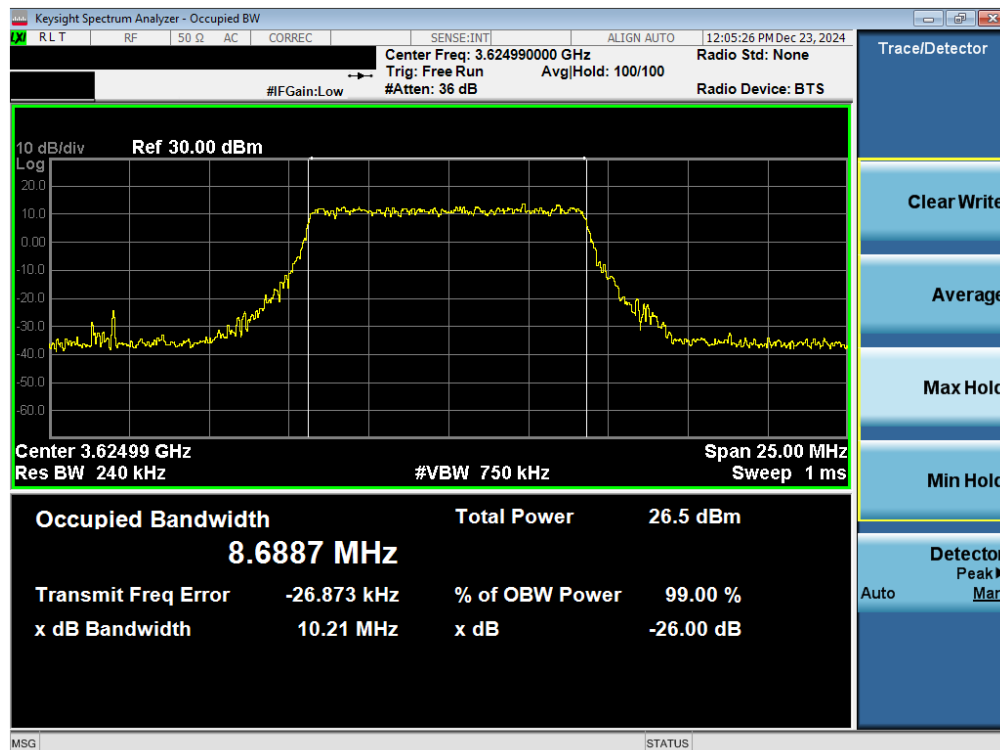


Plot 7-28. Occupied Bandwidth Plot (NR Band n48 - 15MHz 16-QAM - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 34 of 146

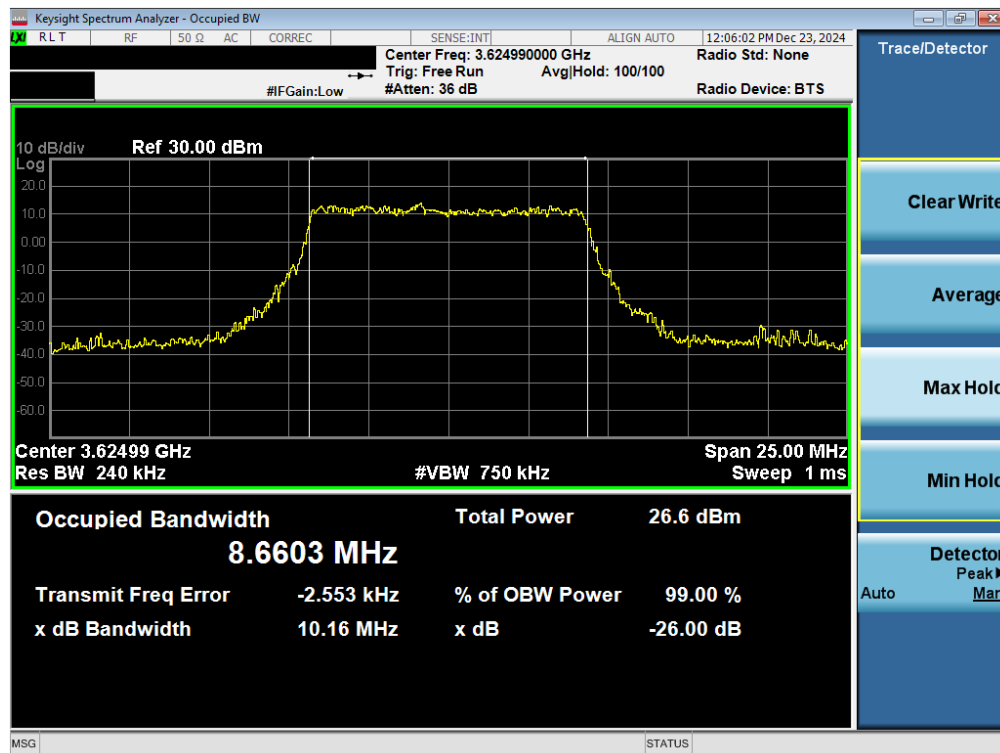


Plot 7-29. Occupied Bandwidth Plot (NR Band n48 - 10MHz $\pi/2$ BPSK - Full RB Configuration - Ant6)



Plot 7-30. Occupied Bandwidth Plot (NR Band n48 - 10MHz QPSK - Full RB Configuration - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 35 of 146



Plot 7-31. Occupied Bandwidth Plot (NR Band n48 - 10MHz 16-QAM - Full RB Configuration - Ant6)

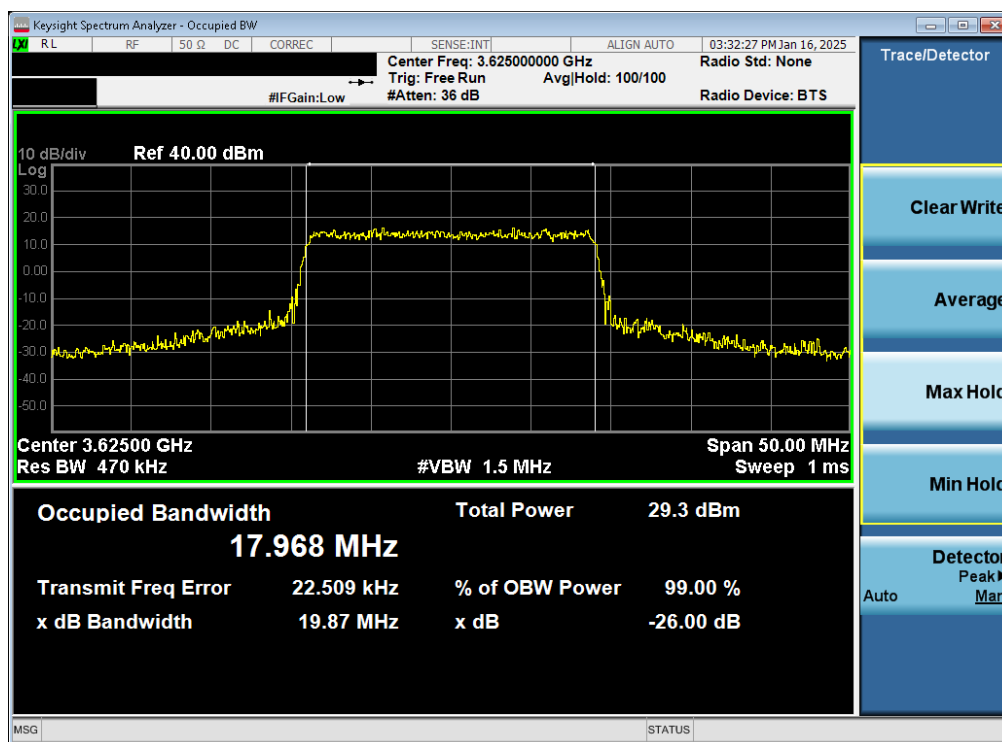
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 36 of 146

Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B48	20 MHz	QPSK	17.97
		16QAM	18.01
	15 MHz	QPSK	13.49
		16QAM	13.51
	10 MHz	QPSK	9.01
		16QAM	9.02
	5 MHz	QPSK	4.49
		16QAM	4.52
NR-n48	40MHz	$\pi/2$ BPSK	35.77
		QPSK	38.05
		16QAM	38.07
	30MHz	$\pi/2$ BPSK	27.03
		QPSK	27.99
		16QAM	28.11
	20MHz	$\pi/2$ BPSK	17.96
		QPSK	18.31
		16QAM	18.35
	15MHz	$\pi/2$ BPSK	13.02
		QPSK	13.73
		16QAM	13.70
	10 MHz	$\pi/2$ BPSK	8.69
		QPSK	8.69
		16QAM	8.70

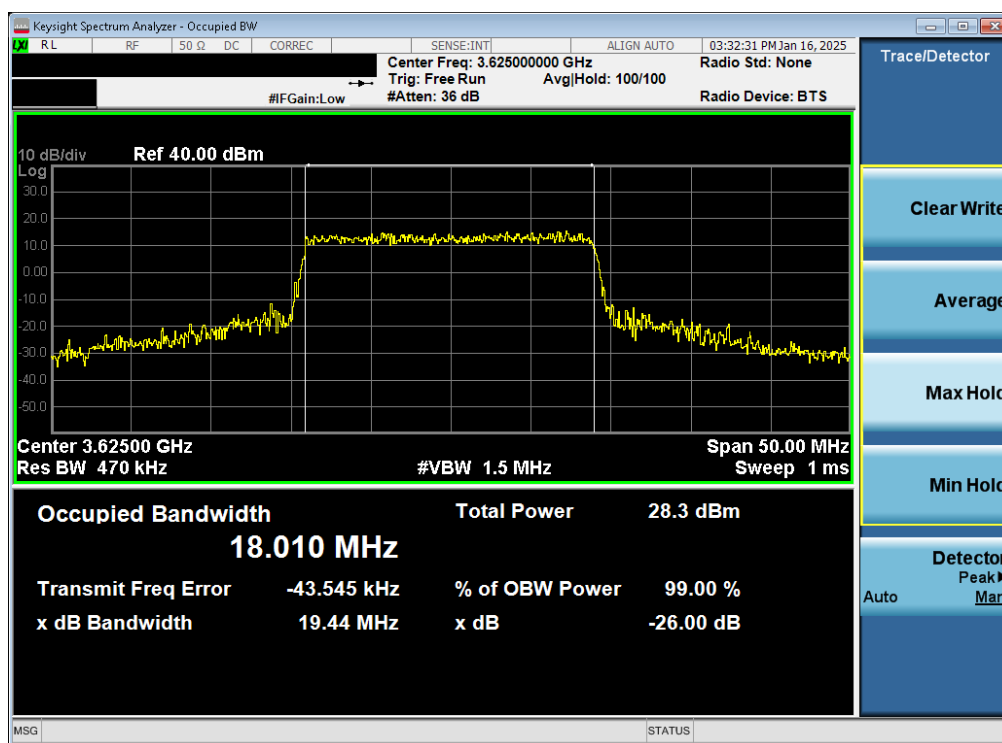
Table 7-11. Occupied Bandwidth Test Results – Ant1

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 37 of 146

LTE Band 48 – Ant1

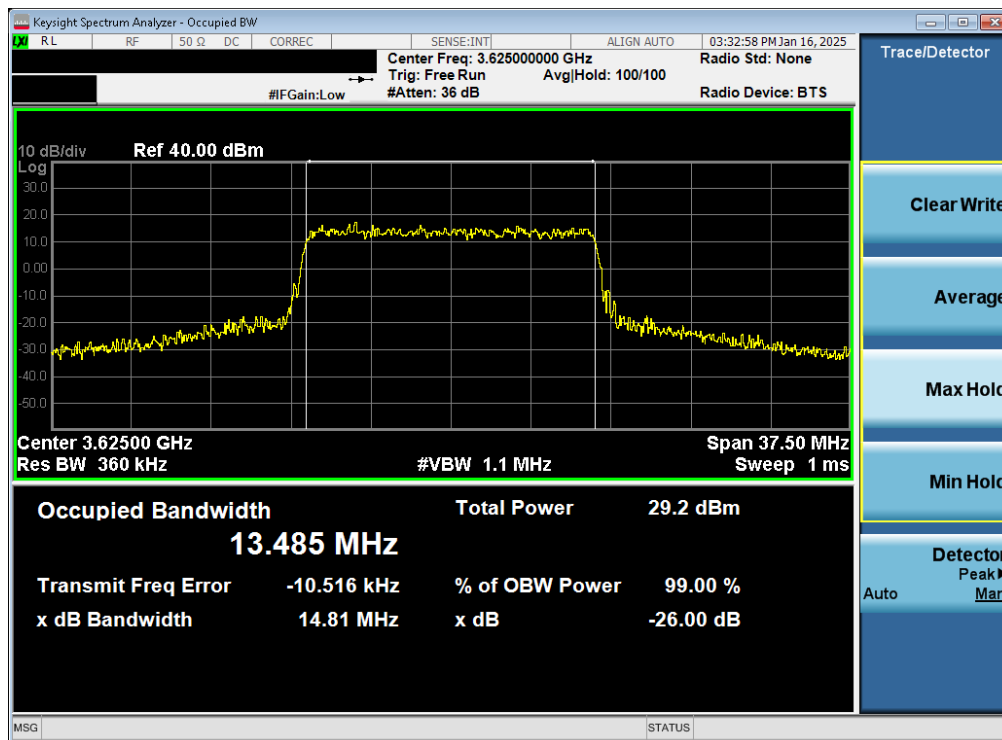


Plot 7-32. Occupied Bandwidth Plot (LTE Band 48 - 20MHz QPSK - Full RB Configuration - Ant1)

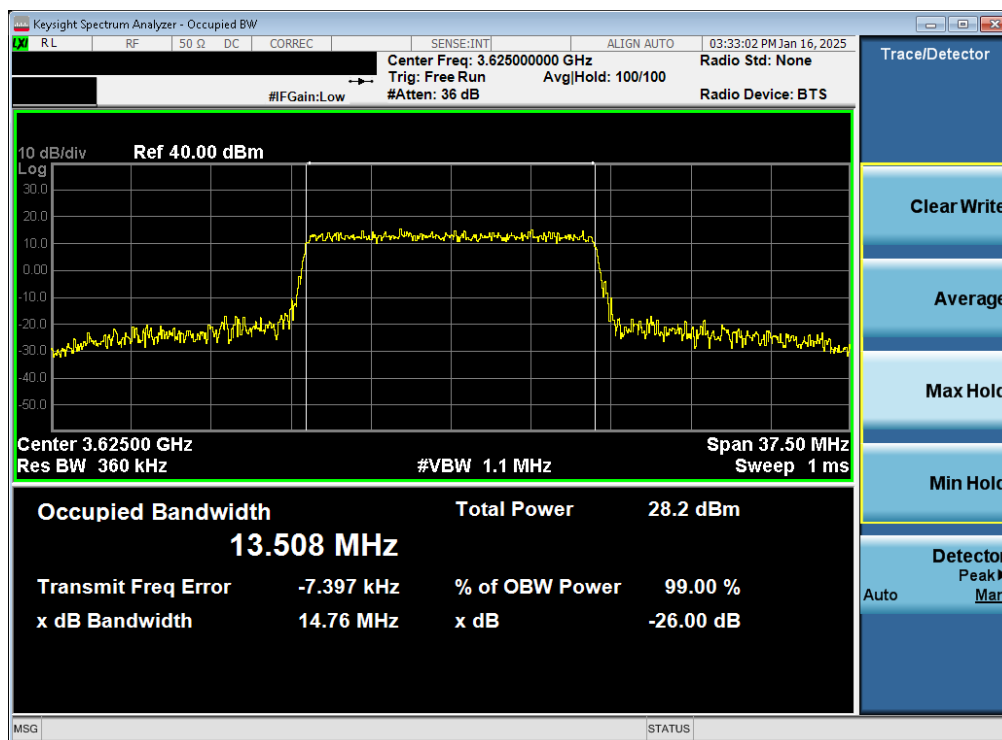


Plot 7-33. Occupied Bandwidth Plot (LTE Band 48 - 20MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 38 of 146

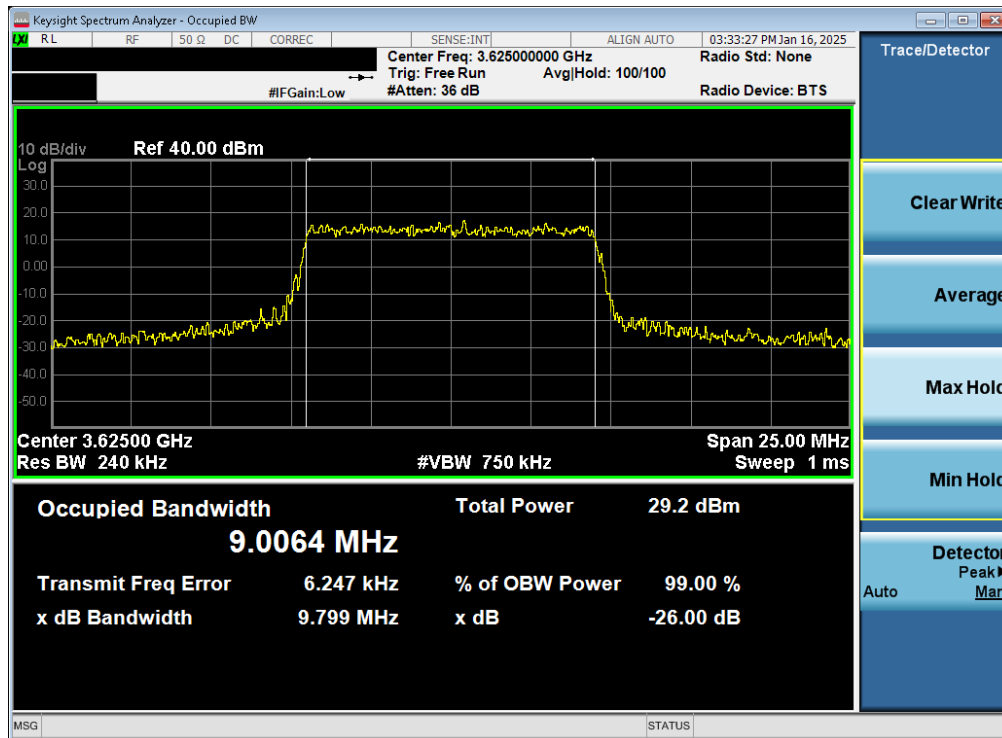


Plot 7-34. Occupied Bandwidth Plot (LTE Band 48 - 15MHz QPSK - Full RB Configuration - Ant1)

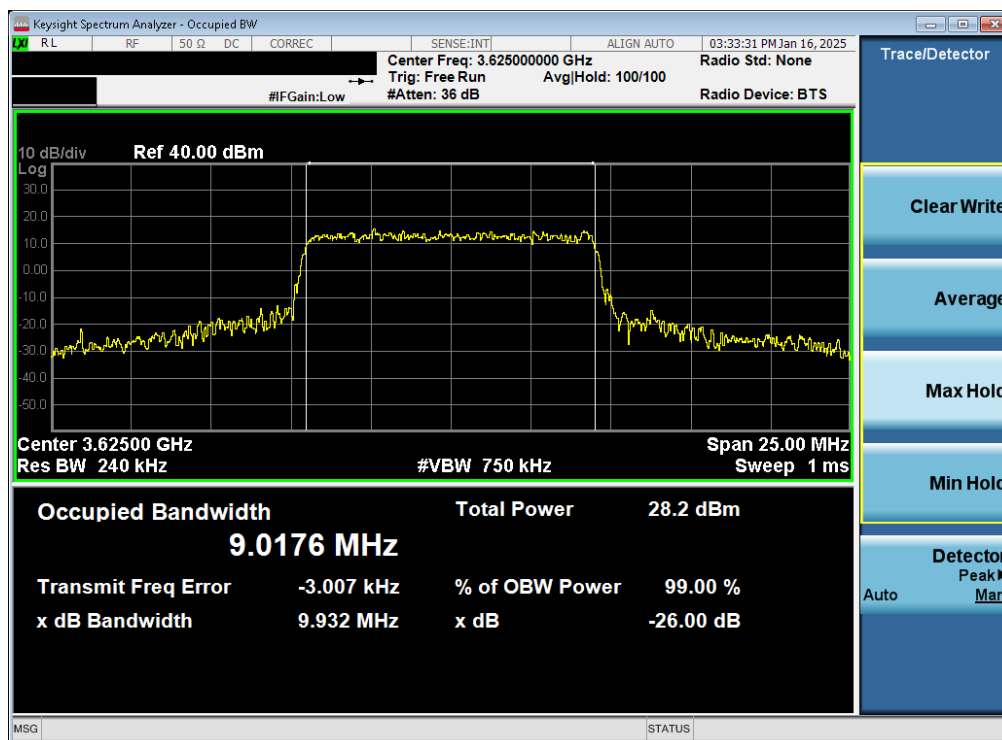


Plot 7-35. Occupied Bandwidth Plot (LTE Band 48 - 15MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 - 4/29/2025	EUT Type: Full Modular	Page 39 of 146

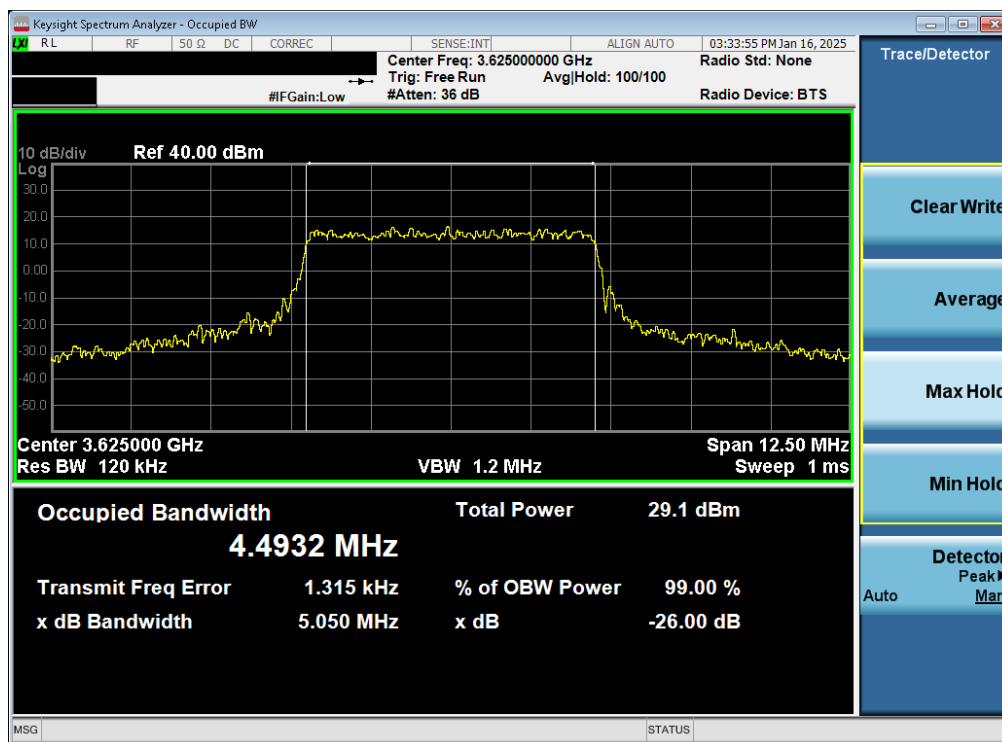


Plot 7-36. Occupied Bandwidth Plot (LTE Band 48 - 10MHz QPSK - Full RB Configuration - Ant1)

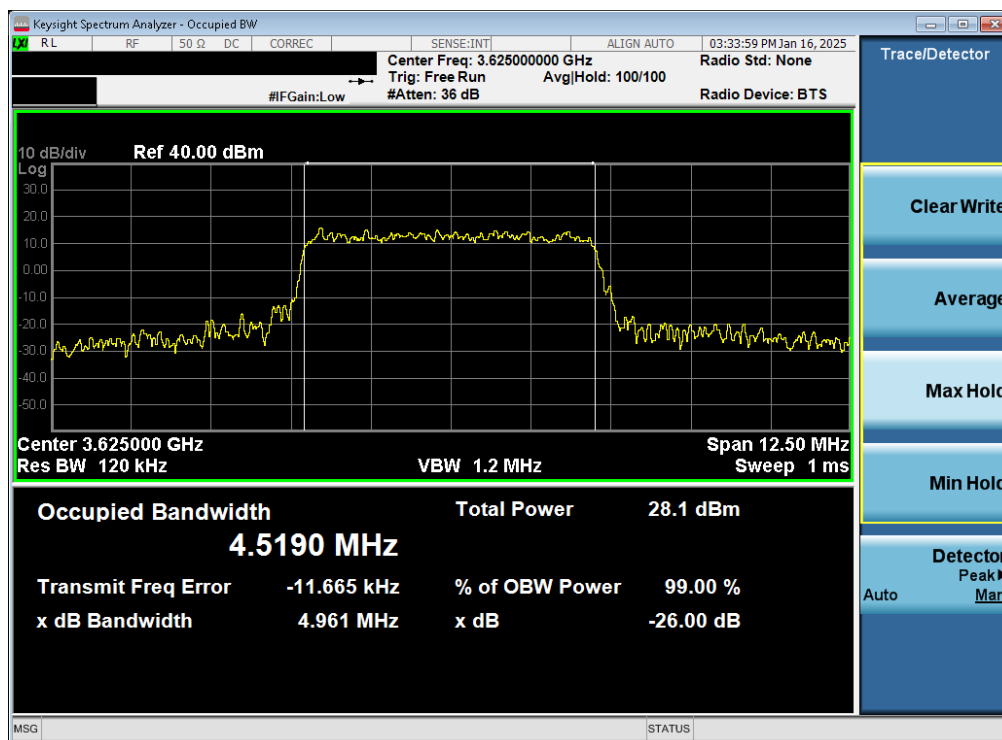


Plot 7-37. Occupied Bandwidth Plot (LTE Band 48 - 10MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 40 of 146



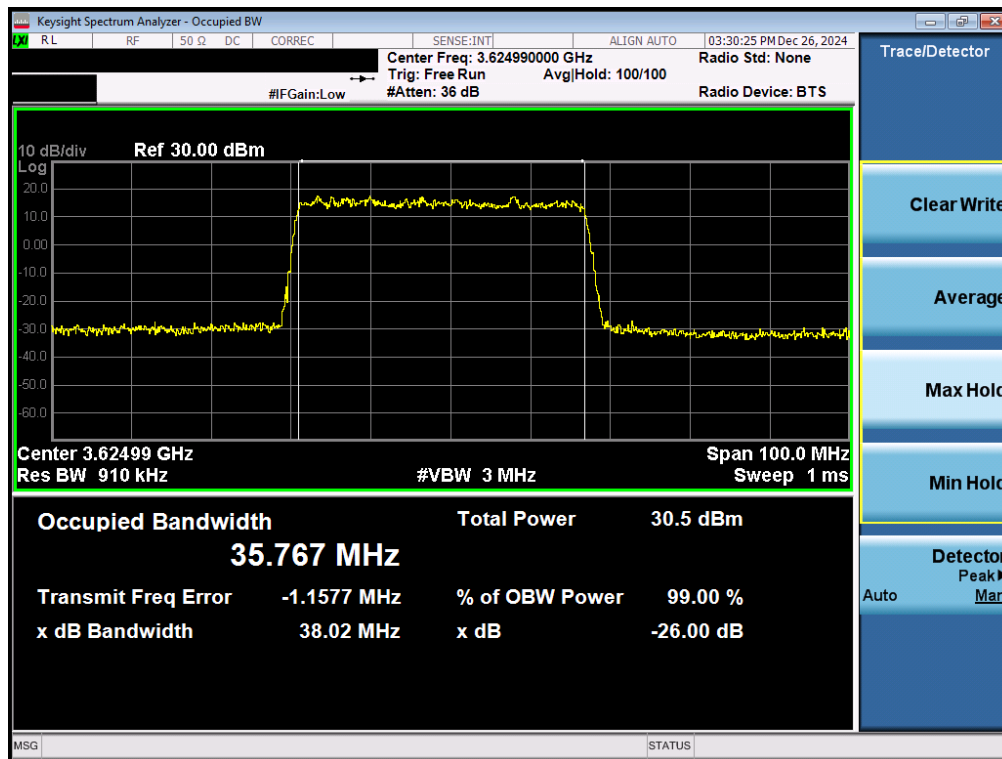
Plot 7-38. Occupied Bandwidth Plot (LTE Band 48 - 5MHz QPSK - Full RB Configuration - Ant1)



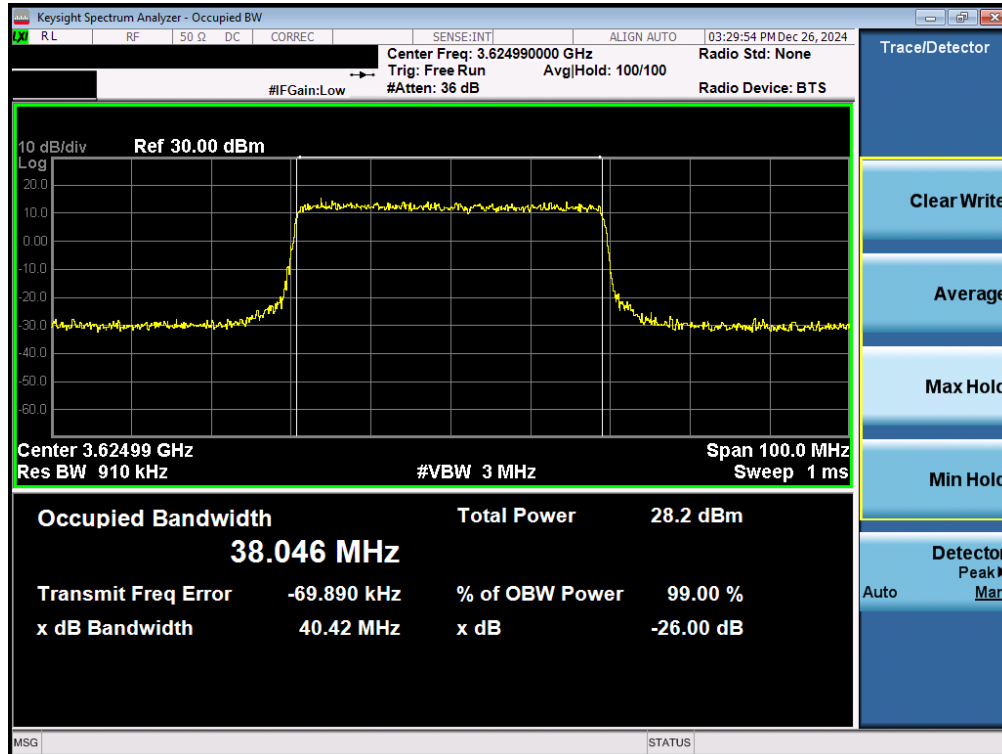
Plot 7-39. Occupied Bandwidth Plot (LTE Band 48 - 5MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 41 of 146

NR Band n48 – Ant1

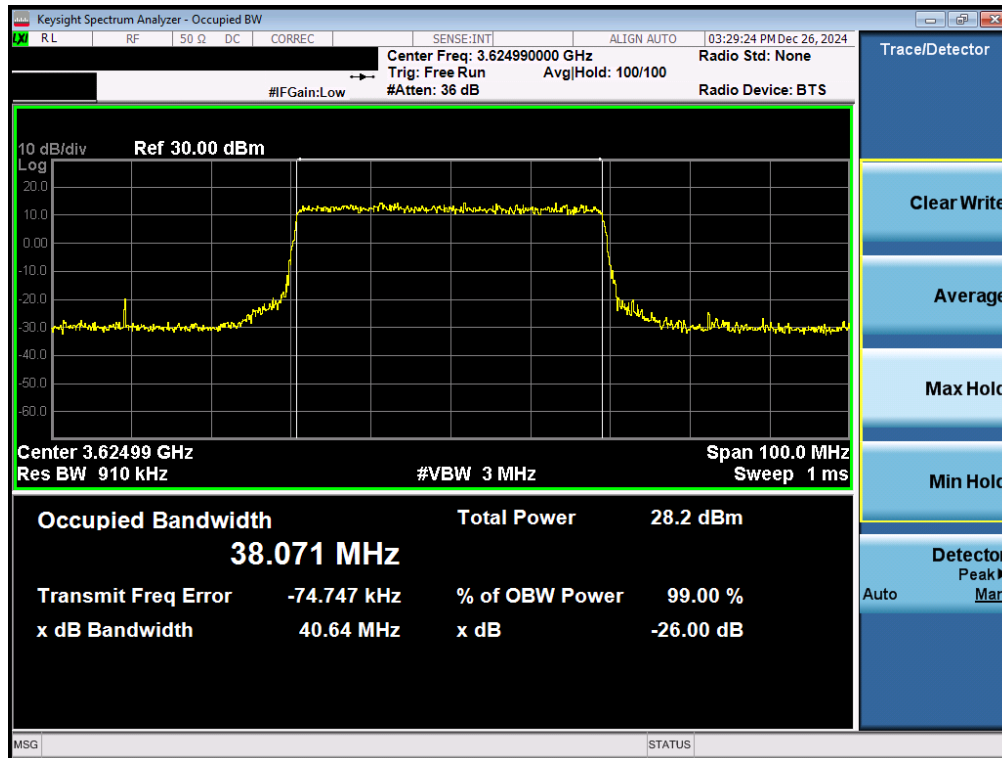


Plot 7-40. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration - Ant1)

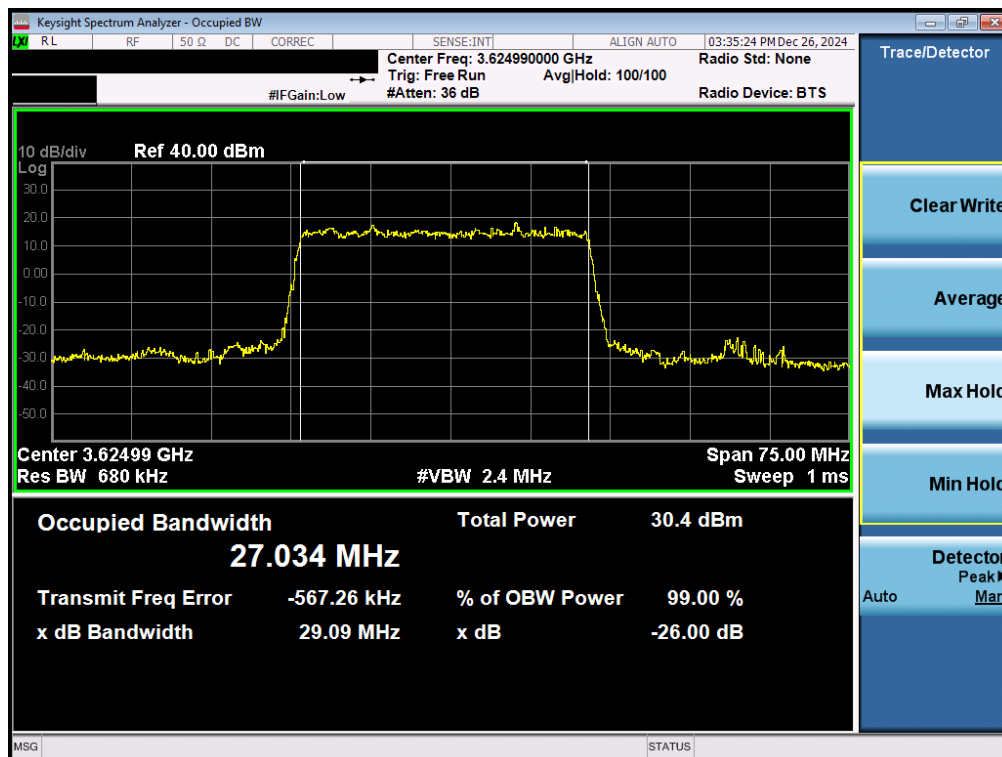


Plot 7-41. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 42 of 146

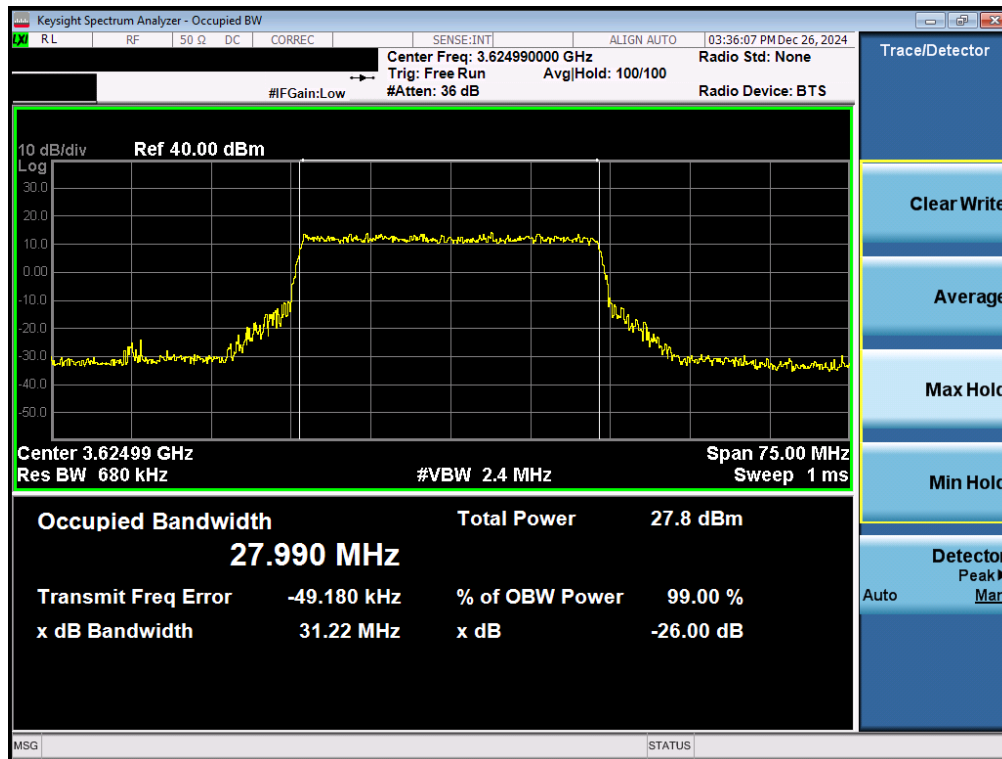


Plot 7-42. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration - Ant1)

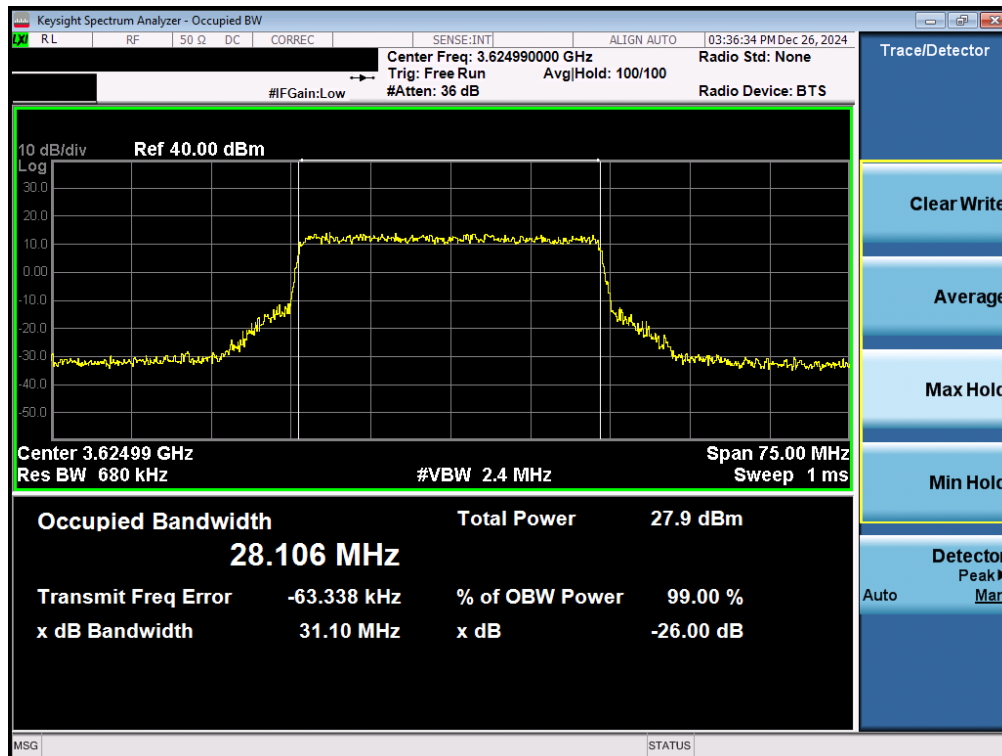


Plot 7-43. Occupied Bandwidth Plot (NR Band n48 - 30MHz $\pi/2$ BPSK - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 43 of 146

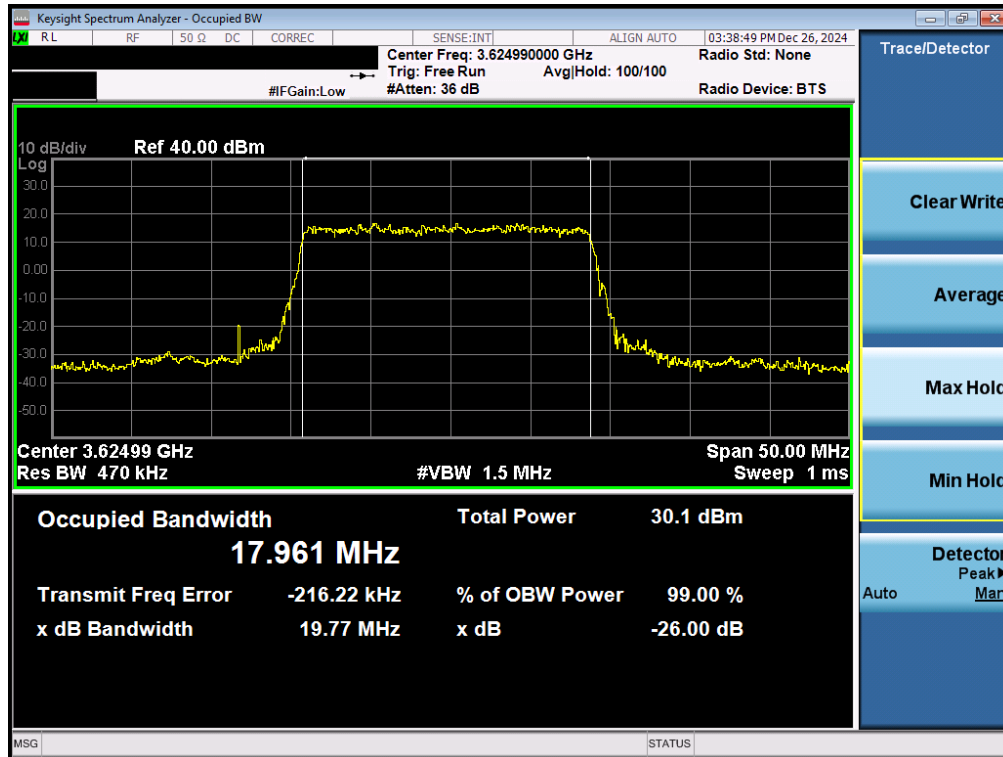


Plot 7-44. Occupied Bandwidth Plot (NR Band n48 - 30MHz QPSK - Full RB Configuration - Ant1)

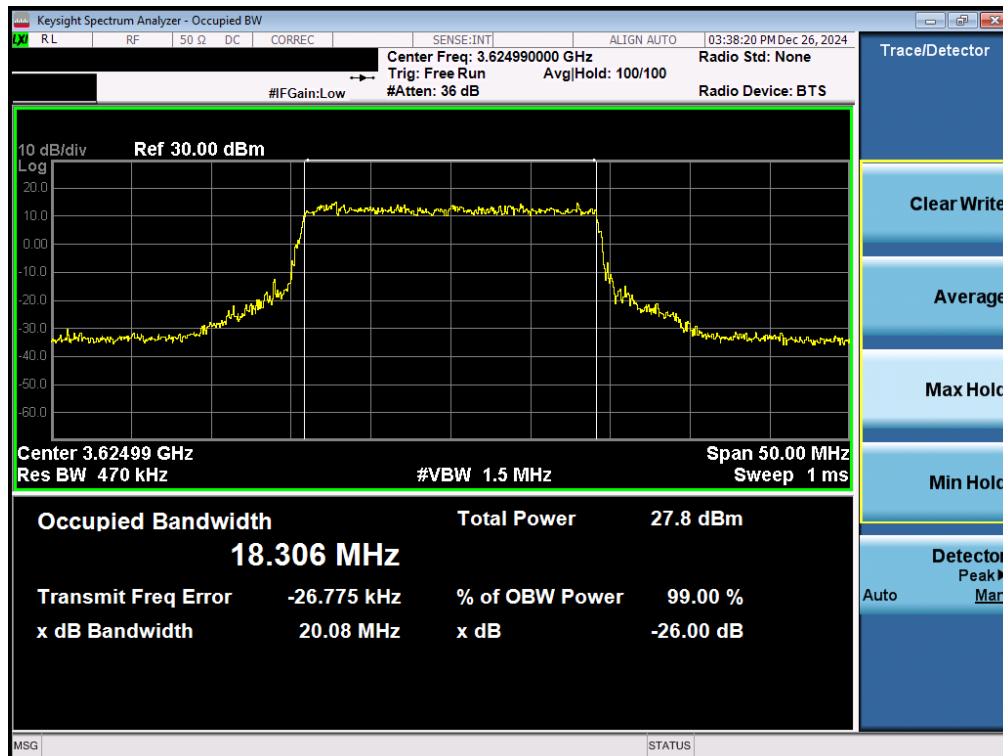


Plot 7-45. Occupied Bandwidth Plot (NR Band n48 - 30MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 44 of 146

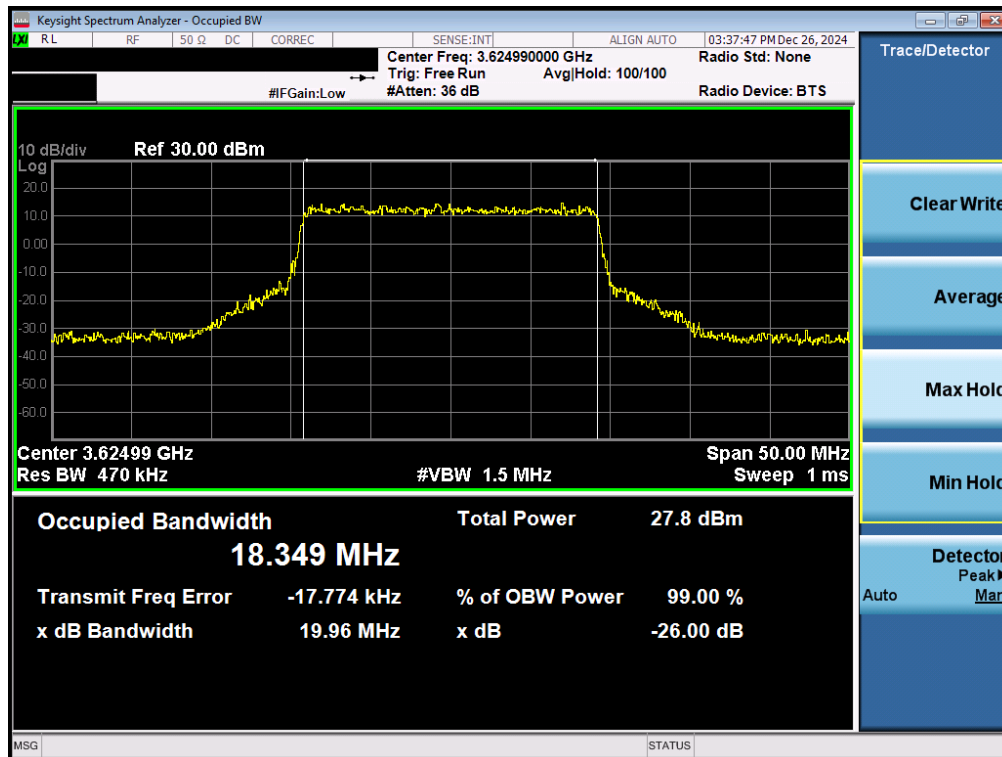


Plot 7-46. Occupied Bandwidth Plot (NR Band n48 - 20MHz $\pi/2$ BPSK - Full RB Configuration - Ant1)

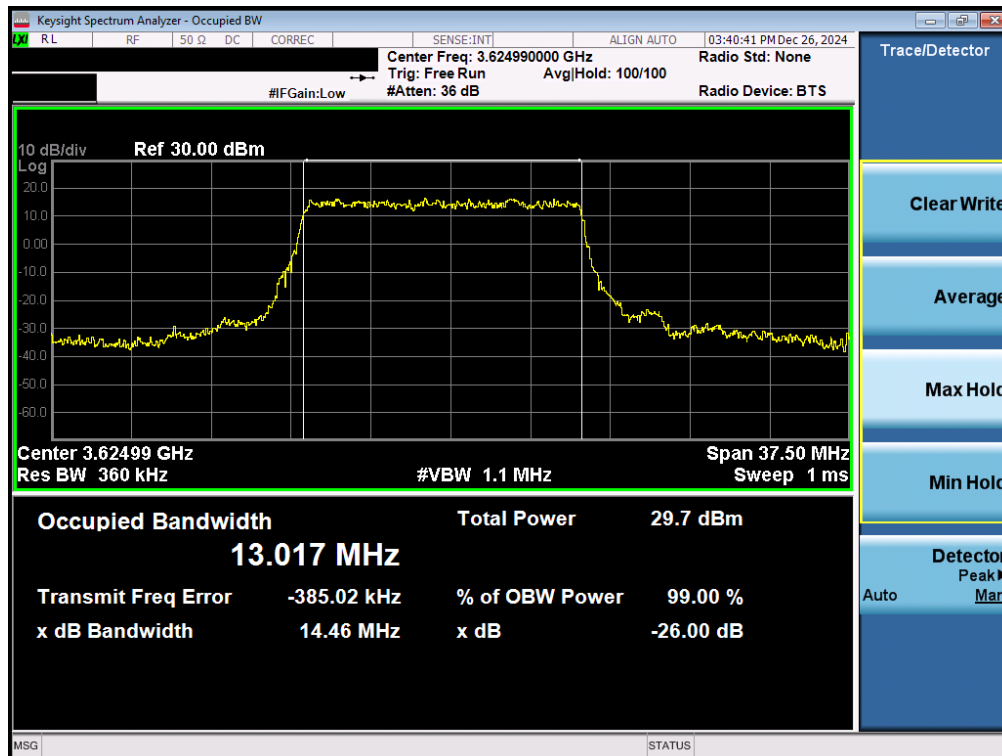


Plot 7-47. Occupied Bandwidth Plot (NR Band n48 - 20MHz QPSK - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 45 of 146



Plot 7-48. Occupied Bandwidth Plot (NR Band n48 - 20MHz 16-QAM - Full RB Configuration - Ant1)

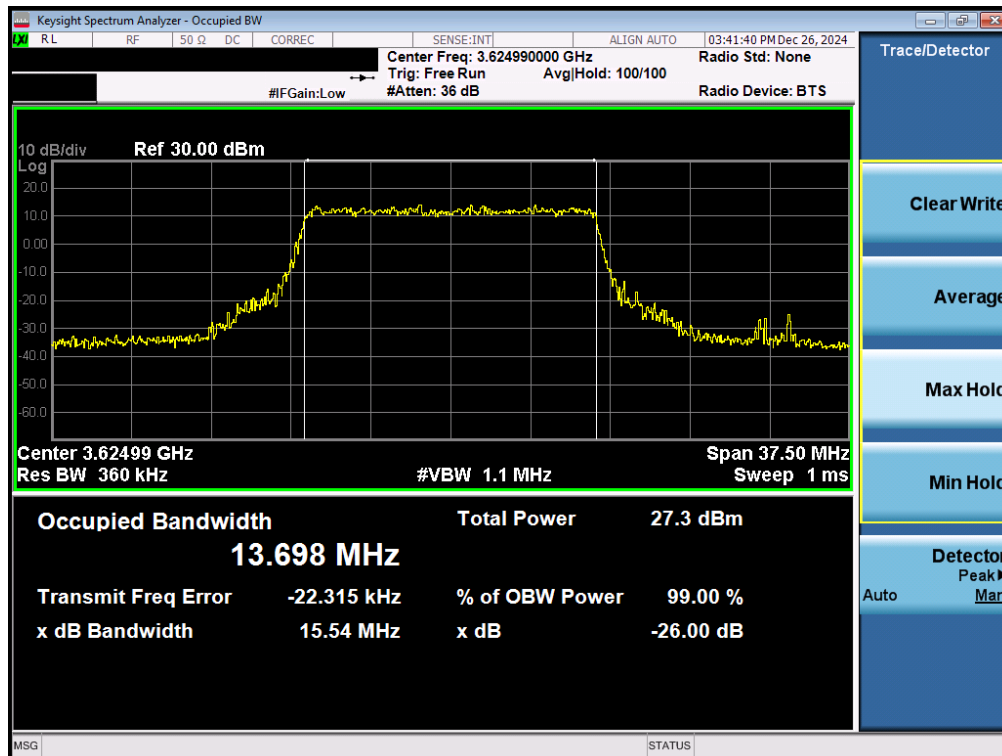


Plot 7-49. Occupied Bandwidth Plot (NR Band n48 - 15MHz $\pi/2$ BPSK - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 46 of 146

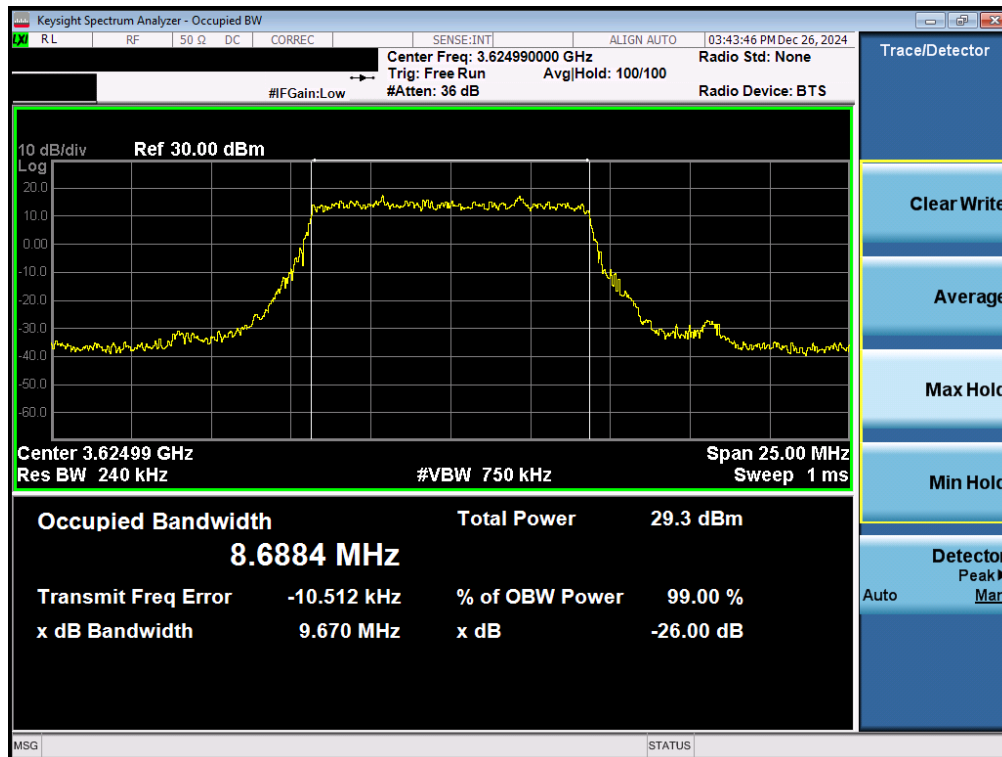


Plot 7-50. Occupied Bandwidth Plot (NR Band n48 - 15MHz QPSK - Full RB Configuration - Ant1)

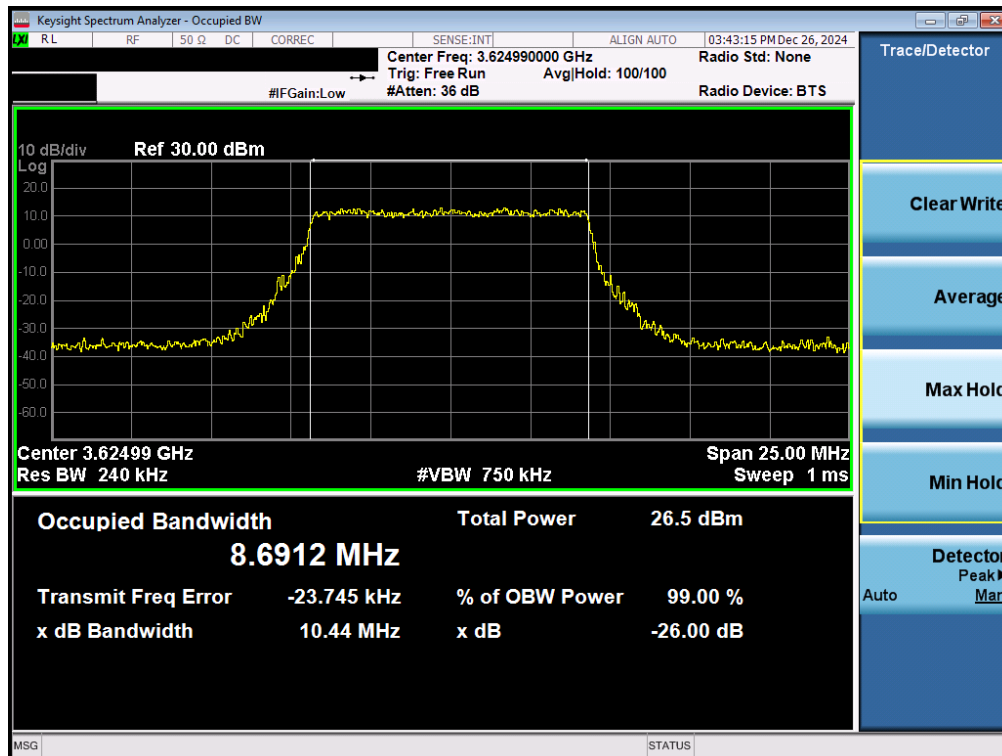


Plot 7-51. Occupied Bandwidth Plot (NR Band n48 - 15MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 47 of 146



Plot 7-52. Occupied Bandwidth Plot (NR Band n48 - 10MHz $\pi/2$ BPSK - Full RB Configuration - Ant1)



Plot 7-53. Occupied Bandwidth Plot (NR Band n48 - 10MHz QPSK - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 48 of 146



Plot 7-54. Occupied Bandwidth Plot (NR Band n48 - 10MHz 16-QAM - Full RB Configuration - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 49 of 146

Mode	Bandwidth	Modulation	OBW [MHz]
NR-n48	40MHz	$\pi/2$ BPSK	36.00
		QPSK	38.06
		16QAM	38.01

Table 7-12. Occupied Bandwidth Test Results – SRS Ant3

Mode	Bandwidth	Modulation	OBW [MHz]
NR-n48	40MHz	$\pi/2$ BPSK	35.95
		QPSK	38.02
		16QAM	37.98

Table 7-13. Occupied Bandwidth Test Results – SRS Ant4

Mode	Bandwidth	Modulation	OBW [MHz]
UL MIMO NR-48	40MHz	$\pi/2$ BPSK	35.90
		QPSK	37.95
		16QAM	38.13

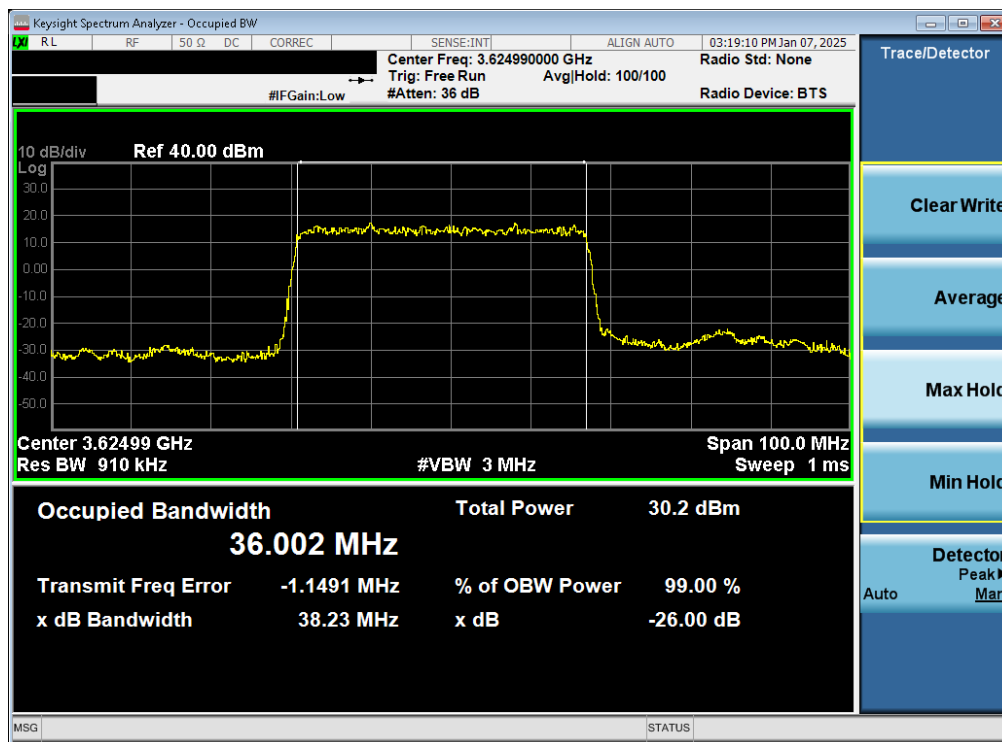
Table 7-14. Occupied Bandwidth Test Results – UL MIMO Ant6

Mode	Bandwidth	Modulation	OBW [MHz]
UL MIMO NR-48	40MHz	$\pi/2$ BPSK	35.87
		QPSK	38.08
		16QAM	37.92

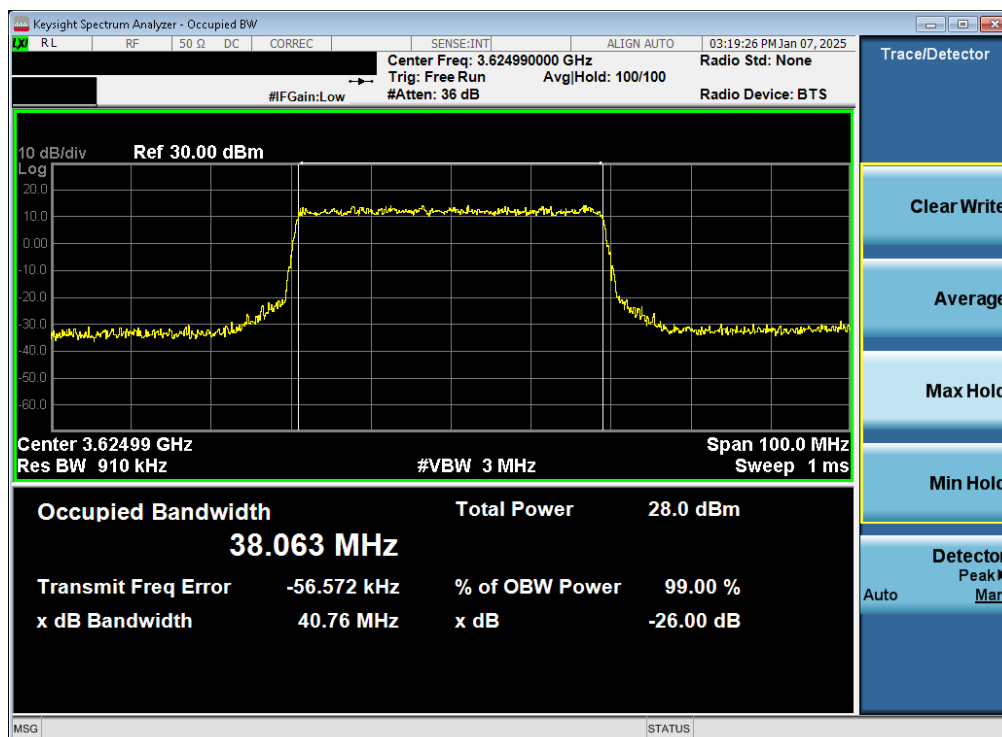
Table 7-15. Occupied Bandwidth Test Results – UL MIMO Ant1

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 50 of 146

NR Band n48 – SRS Ant3

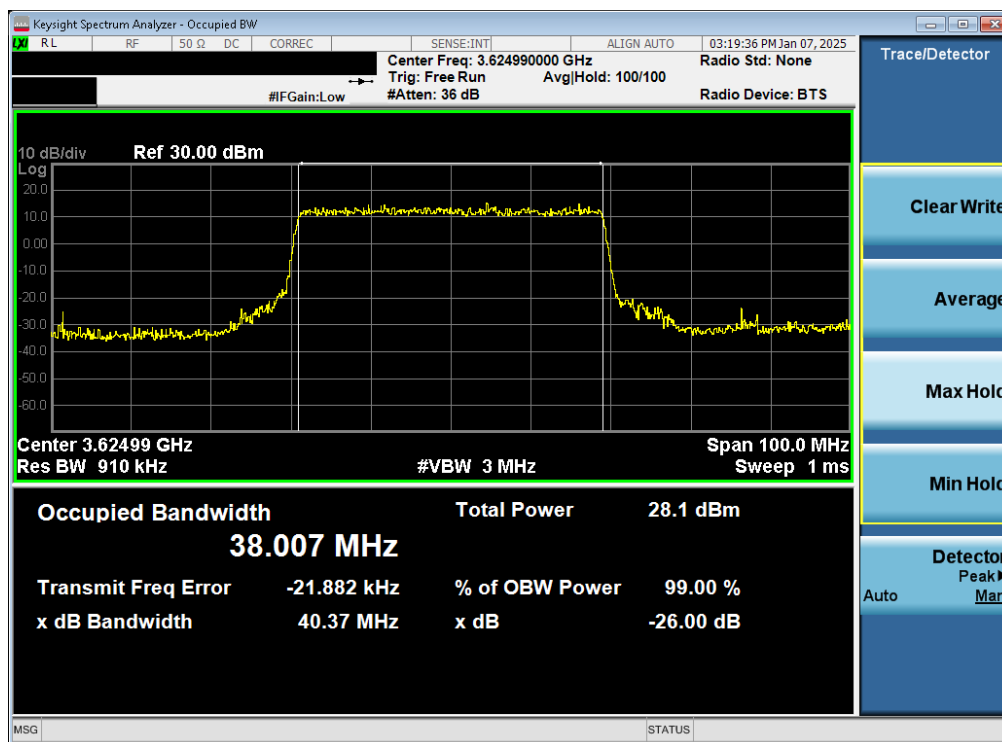


Plot 7-55. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration – SRS Ant3)



Plot 7-56. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration – SRS Ant3)

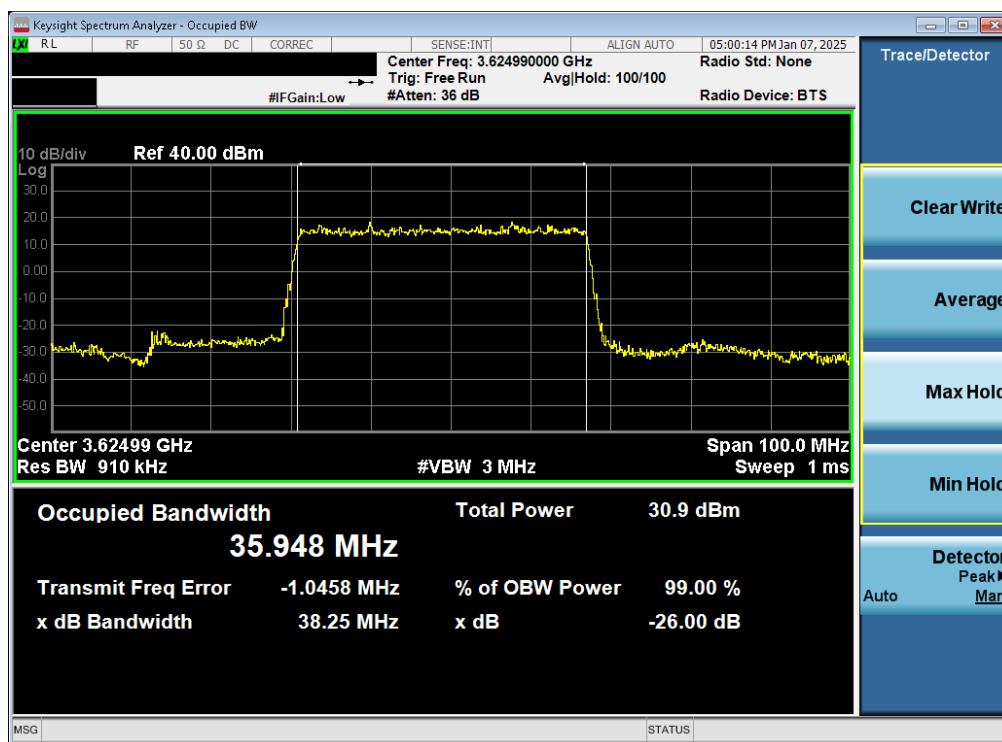
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 51 of 146



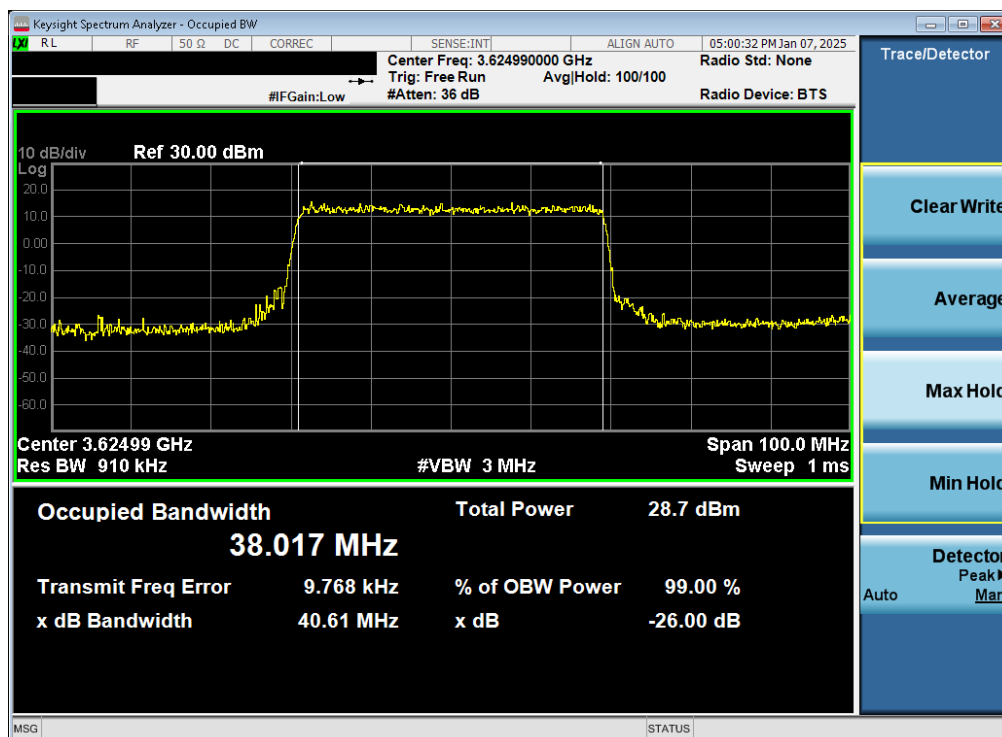
Plot 7-57. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration – SRS Ant3)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 52 of 146

NR Band n48 – SRS Ant4

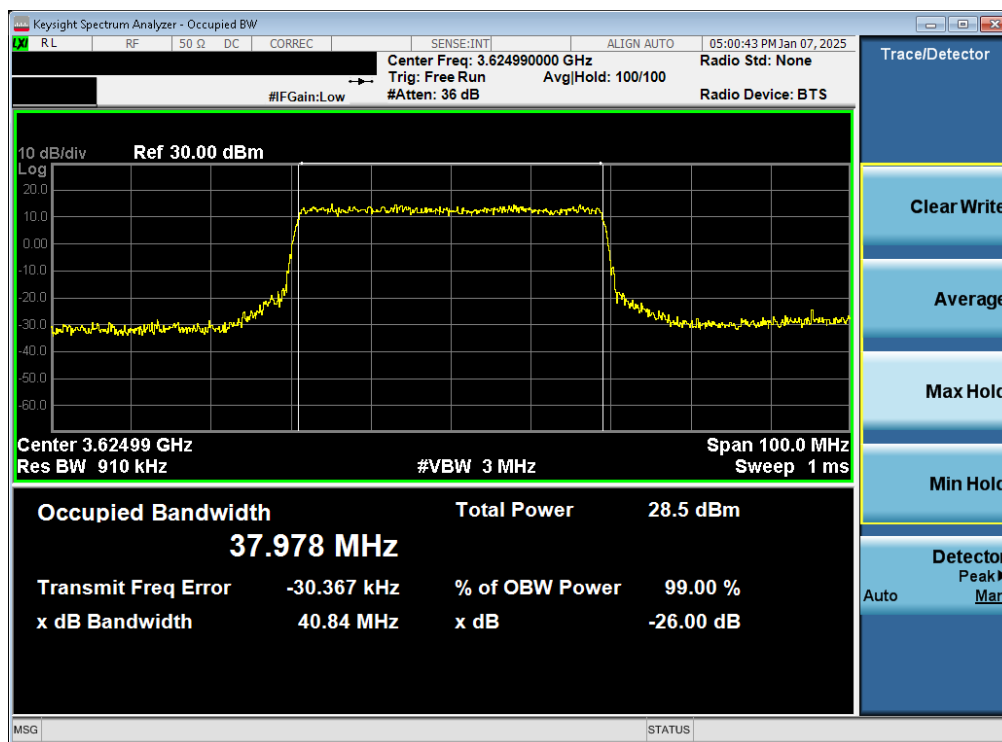


Plot 7-58. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration – SRS Ant4)



Plot 7-59. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration – SRS Ant4)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 53 of 146



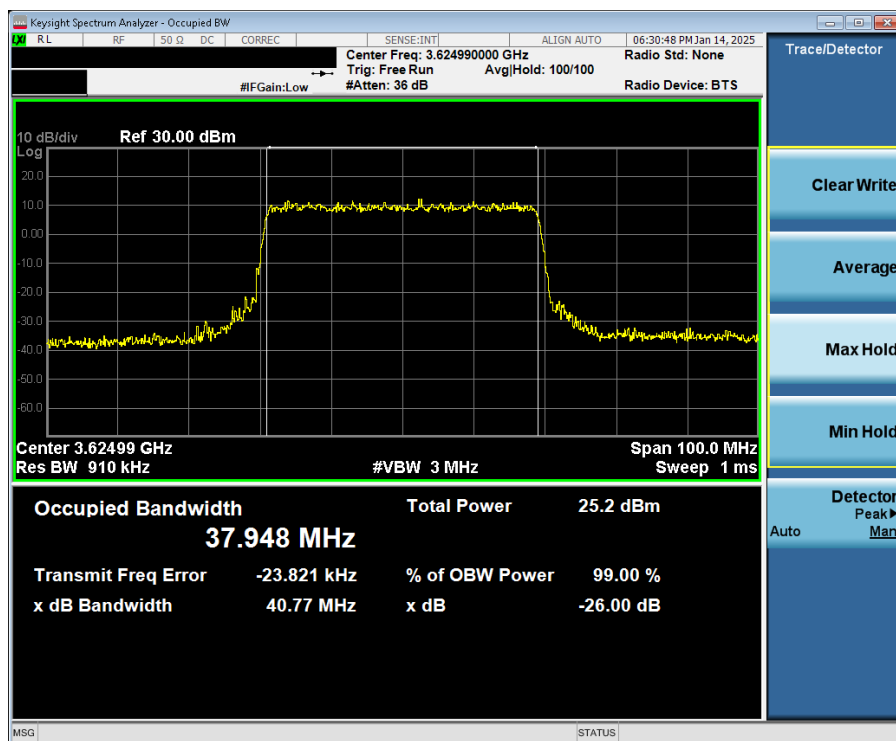
Plot 7-60. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration – SRS Ant4)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 54 of 146

NR Band n48 – UL MIMO Ant6



Plot 7-61. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration – UL MIMO Ant6)



Plot 7-62. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration – UL MIMO Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 55 of 146



Plot 7-63. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration – UL MIMO Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 56 of 146

NR Band n48 – UL MIMO Ant1



Plot 7-64. Occupied Bandwidth Plot (NR Band n48 - 40MHz $\pi/2$ BPSK - Full RB Configuration – UL MIMO Ant1)



Plot 7-65. Occupied Bandwidth Plot (NR Band n48 - 40MHz QPSK - Full RB Configuration – UL MIMO Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 57 of 146



Plot 7-66. Occupied Bandwidth Plot (NR Band n48 - 40MHz 16-QAM - Full RB Configuration – UL MIMO Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular		Page 58 of 146

7.4 Spurious and Harmonic Emissions at Antenna Terminal

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions 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.

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.4

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = Max Hold
4. Sweep time = auto couple
5. The trace was allowed to stabilize
6. Please see test notes below for RBW and VBW settings

Test Setup

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

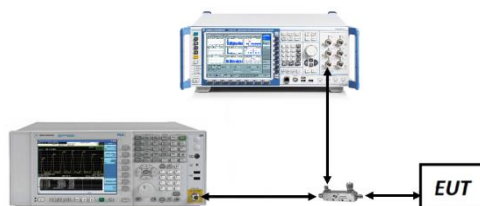


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.
3. Per ANSI C63.26-2015, MIMO compliance was addressed by adding $10\log(2) = 3\text{dB}$ to the output of each antenna. A visual inspection of the plots for each antenna shows that the emissions are still compliant even after adding 3dB.

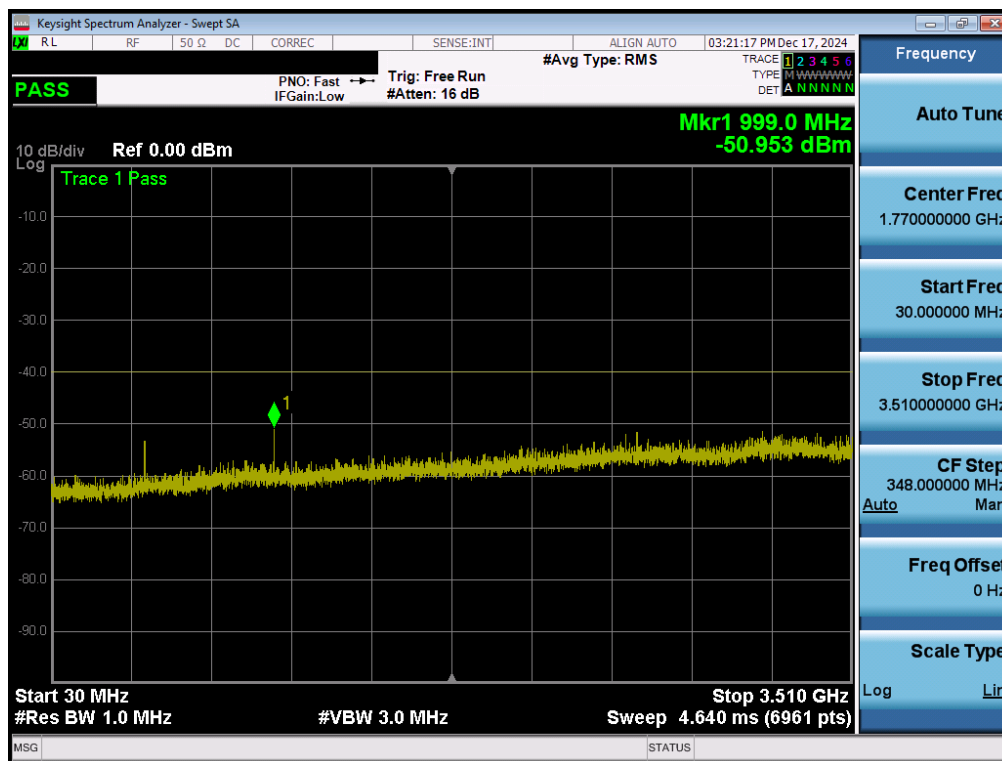
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 59 of 146

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B48	20MHz	Low	30.0 - 3510.0	-50.95	-40.0	-10.95
		Low	3610.0 - 15000.0	-42.38	-40.0	-2.38
		Low	15000.0 - 27000.0	-42.33	-40.0	-2.33
		Low	27000.0 - 37000.0	-43.59	-40.0	-3.59
		Mid	30.0 - 35750.0	-51.2	-40.0	-11.20
		Mid	3675.0 - 15000.0	-42.9	-40.0	-2.90
		Mid	15000.0 - 27000.0	-46.55	-40.0	-6.55
		Mid	27000.0 - 39000.0	-45.88	-40.0	-5.88
		High	30.0 - 3640.0	-51.92	-40.0	-11.92
		High	3740.0 - 15000.0	-42.39	-40.0	-2.39
		High	15000.0 - 27000.0	-46.82	-40.0	-6.82
		High	27000.0 - 39000.0	-45.75	-40.0	-5.75
LTE Band 48 ULCA	20+20MHz	Low	30.0 - 3510.0	-49.86	-40.0	-9.86
		Low	3540.0 - 3630.0	-34.17	-	-
		Low	3610.0 - 15000.0	-43.3	-40.0	-3.30
		Low	15000.0 - 27000.0	-42.86	-40.0	-2.86
		Low	27000.0 - 37000.0	-44.6	-40.0	-4.60
		Mid	30.0 - 3575.0	-50.62	-40.0	-10.62
		Mid	3575.0 - 3720.0	-34.94	-	-
		Mid	3675.0 - 15000.0	-41.58	-40.0	-1.58
		Mid	15000.0 - 27000.0	-46.08	-40.0	-6.08
		Mid	27000.0 - 37000.0	-43.44	-40.0	-3.44
		High	30.0 - 3620.0	-51.81	-40.0	-11.81
		High	3620.0 - 3710.0	-34.92	-	-
		High	3740.0 - 15000.0	-41.47	-40.0	-1.47
		High	15000.0 - 27000.0	-46.65	-40.0	-6.65
		High	27000.0 - 37000.0	-47.32	-40.0	-7.32
NR-n48	40MHz	Low	30.0 - 3510.0	-48.98	-40.0	-8.98
		Low	3610.0 - 15000.0	-44.22	-40.0	-4.22
		Low	15000.0 - 27000.0	-52.09	-40.0	-12.09
		Low	27000.0 - 37000.0	-46.45	-40.0	-6.45
		Mid	30.0 - 35750.0	-47.44	-40.0	-7.44
		Mid	3675.0 - 15000.0	-42.46	-40.0	-2.46
		Mid	15000.0 - 27000.0	-50.09	-40.0	-10.09
		Mid	27000.0 - 39000.0	-46.87	-40.0	-6.87
		High	30.0 - 3640.0	-51.79	-40.0	-11.79
		High	3740.0 - 15000.0	-43.45	-40.0	-3.45
		High	15000.0 - 27000.0	-51.7	-40.0	-11.70
		High	27000.0 - 39000.0	-47.85	-40.0	-7.85

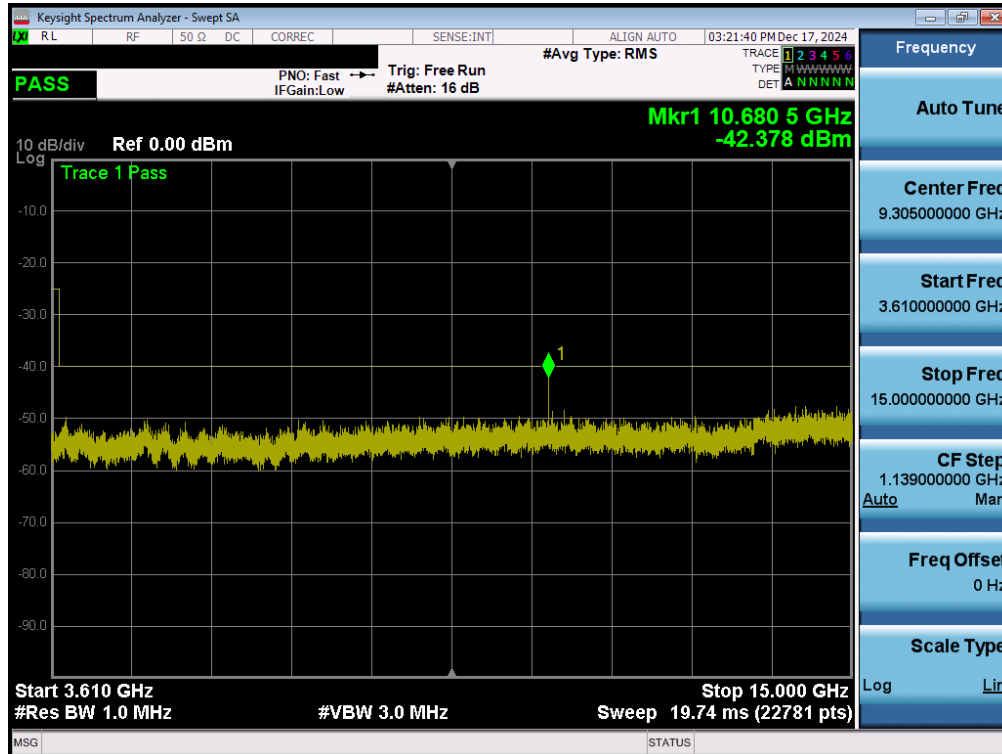
Table 7-16. Conducted Spurious Emission Test Results – Ant6

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 60 of 146

LTE Band 48 – Ant6

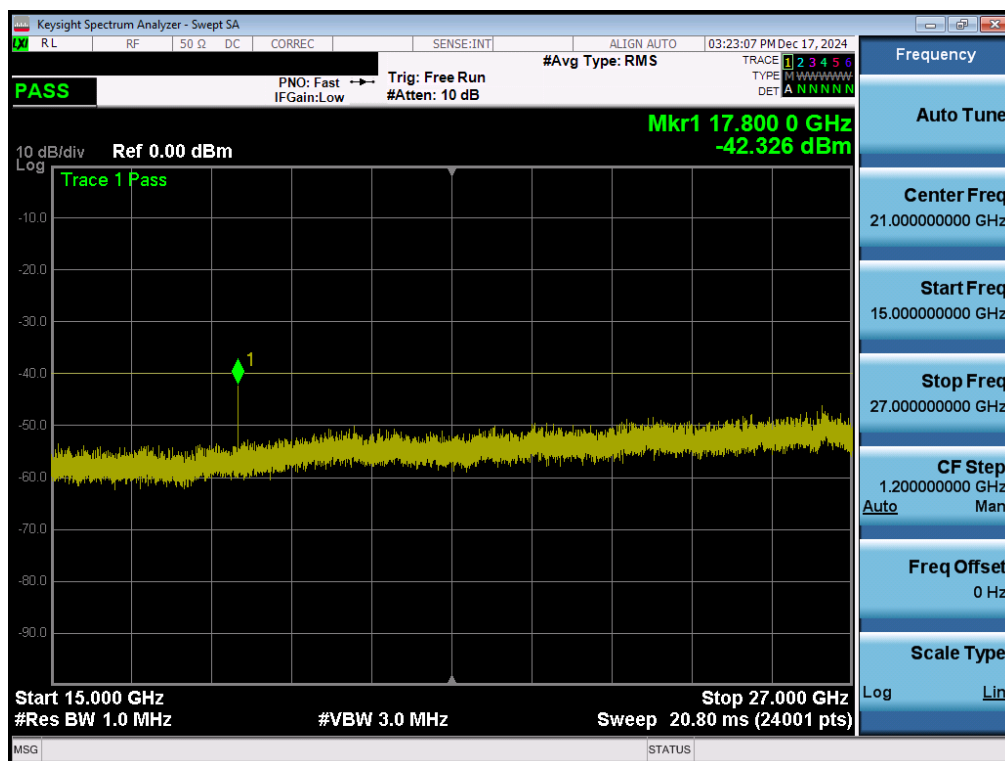


Plot 7-67. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Low Channel - Ant6)

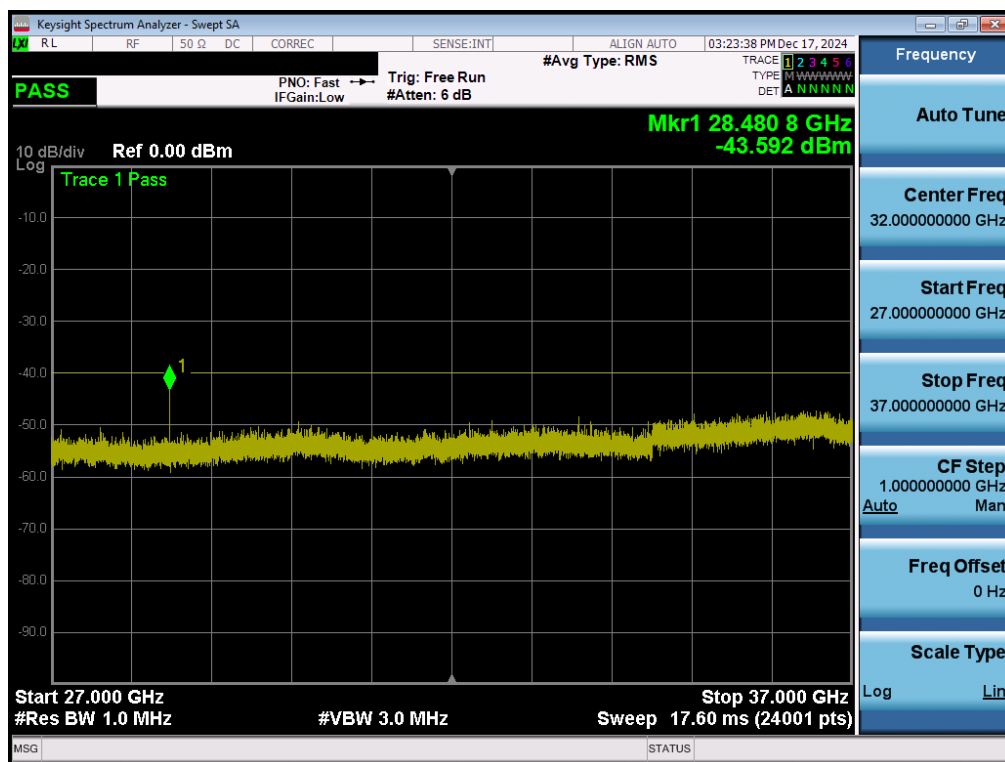


Plot 7-68. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Low Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 61 of 146



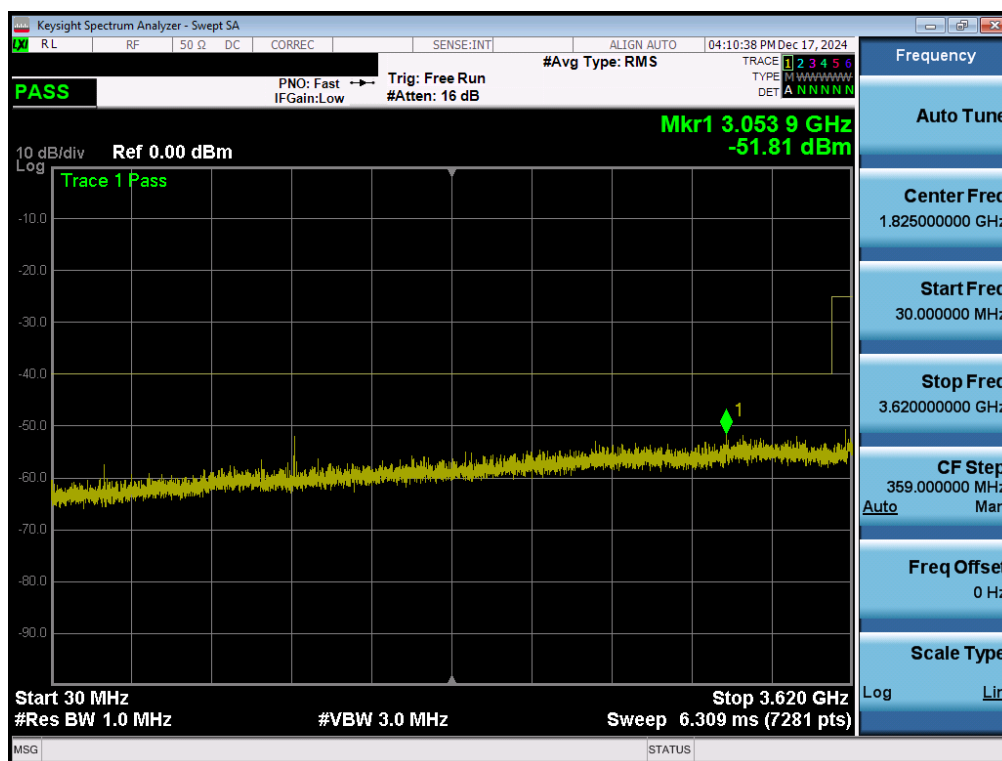
Plot 7-69. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Low Channel - Ant6)



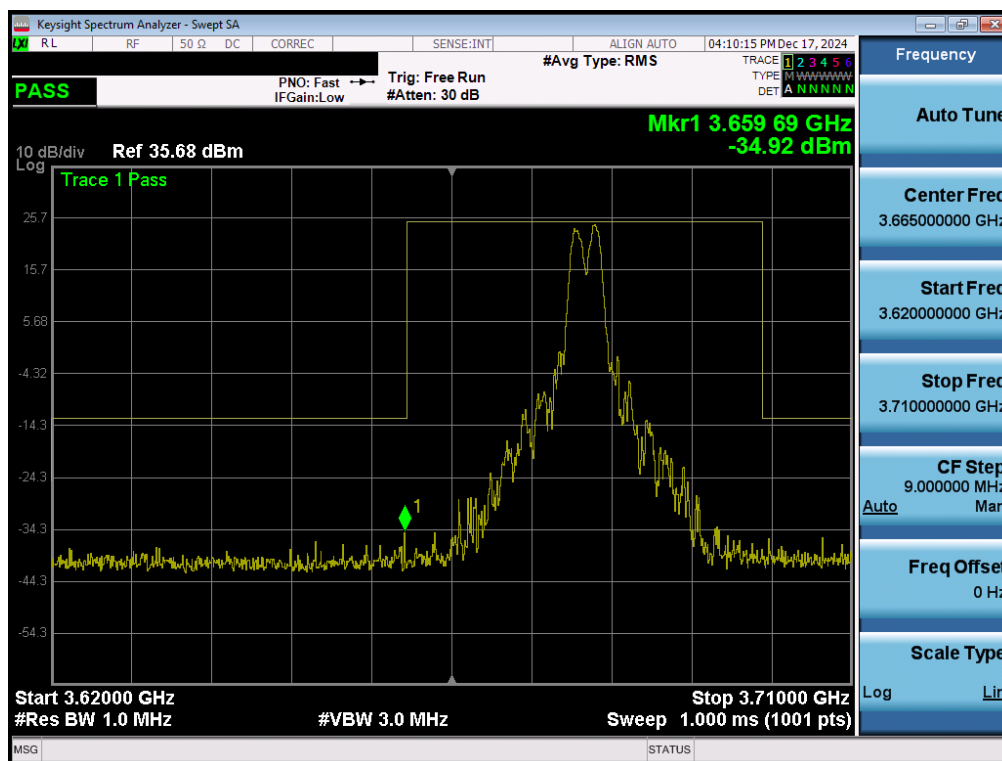
Plot 7-70. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Low Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 62 of 146

ULCA LB48 – Ant6

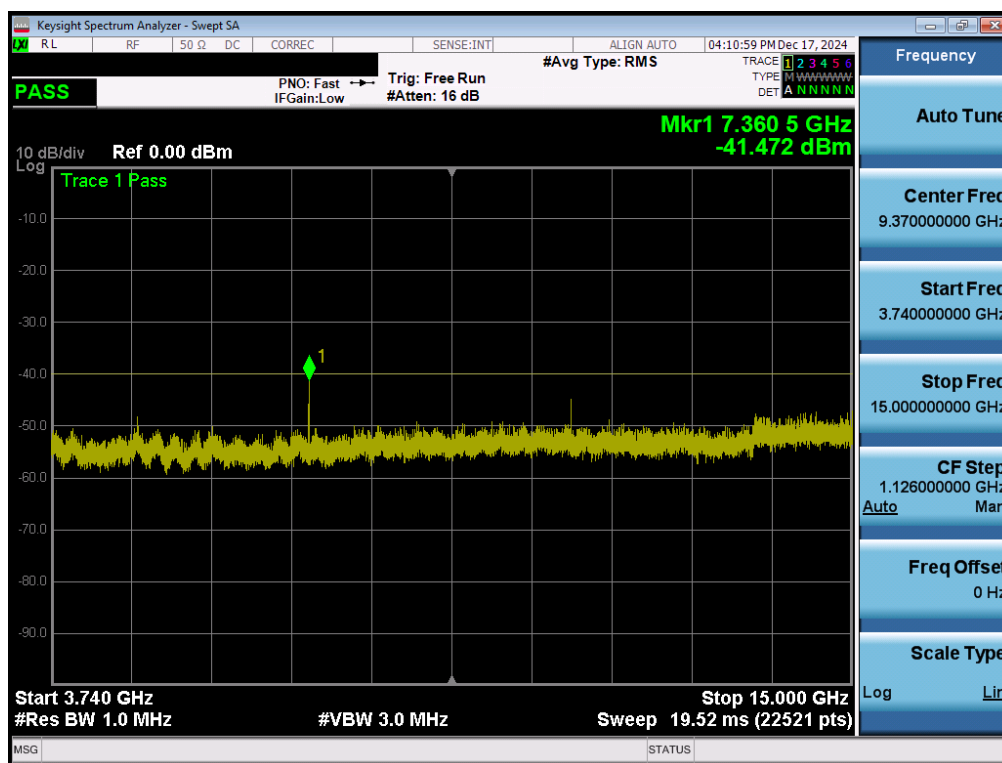


Plot 7-71. Conducted Spurious Plot (ULCA LB48 - 20+20MHz QPSK - High Channel - Ant6)

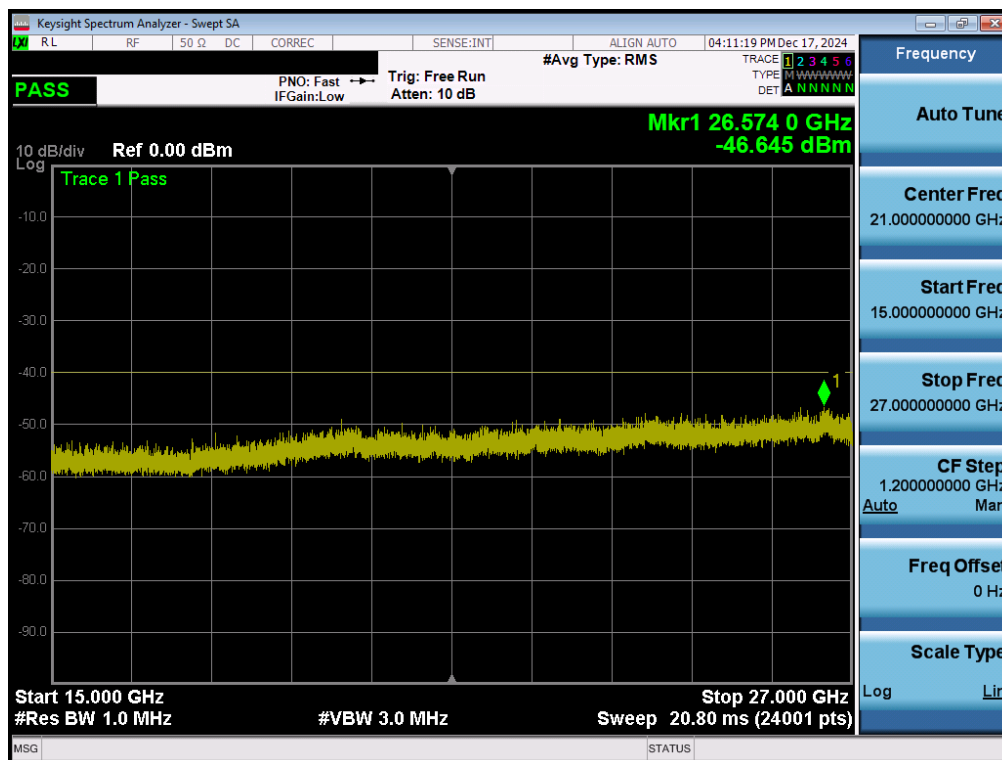


Plot 7-72. Conducted Spurious Plot (ULCA LB48 - 20+20MHz QPSK - High Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 63 of 146

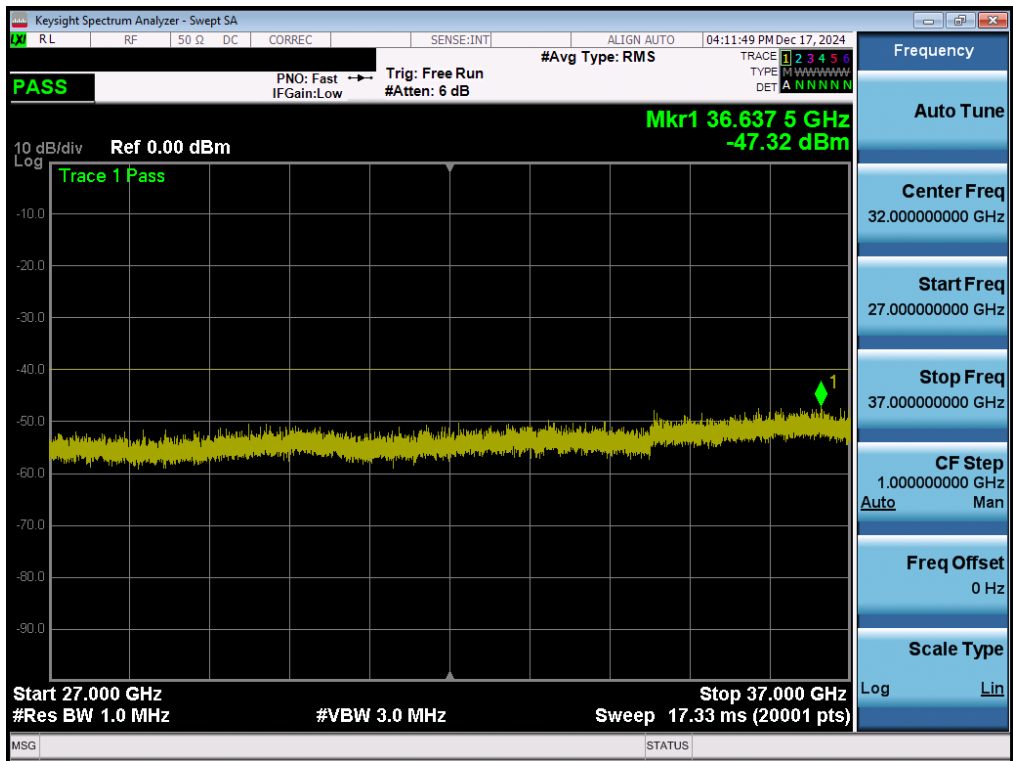


Plot 7-73. Conducted Spurious Plot (ULCA LB48 - 20+20MHz QPSK - High Channel - Ant6)



Plot 7-74. Conducted Spurious Plot (ULCA LB48 - 20+20MHz QPSK - High Channel - Ant6)

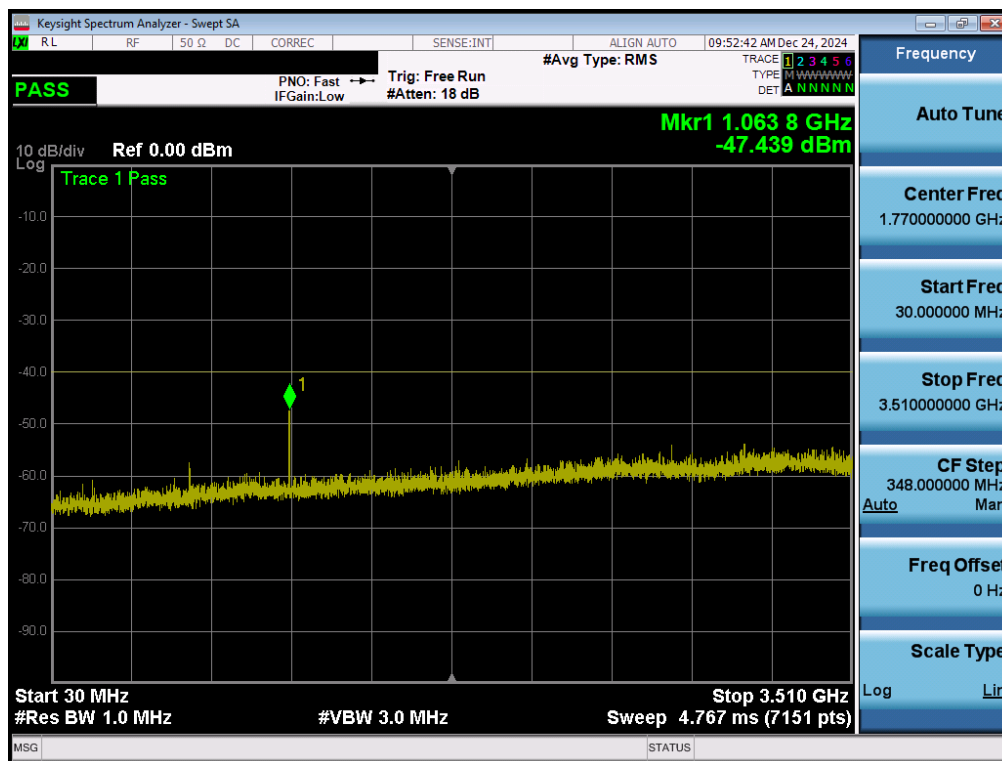
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 64 of 146



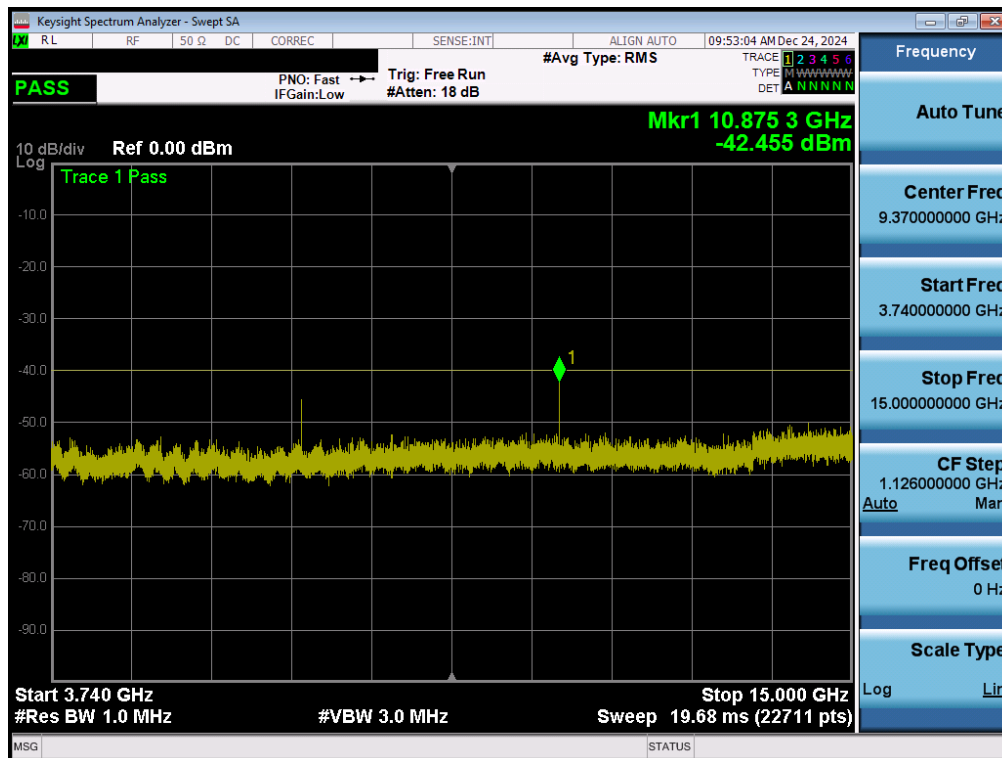
Plot 7-75. Conducted Spurious Plot (ULCA LB48 - 20+20MHz QPSK - High Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 65 of 146

NR Band n48 – Ant6

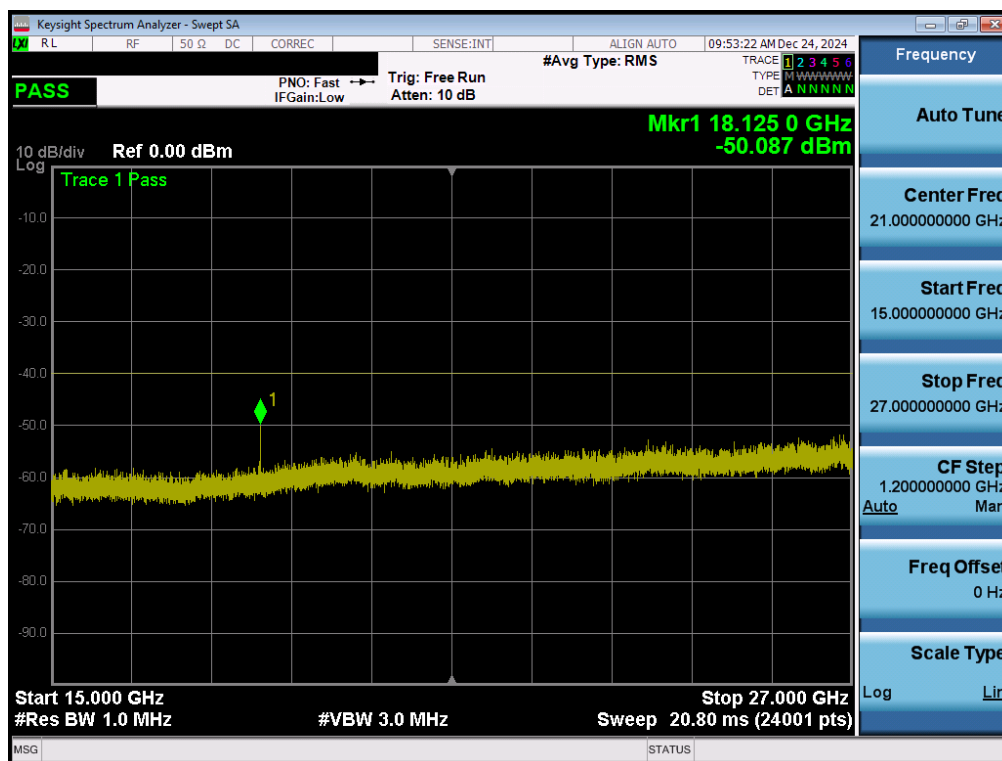


Plot 7-76. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel - Ant6)

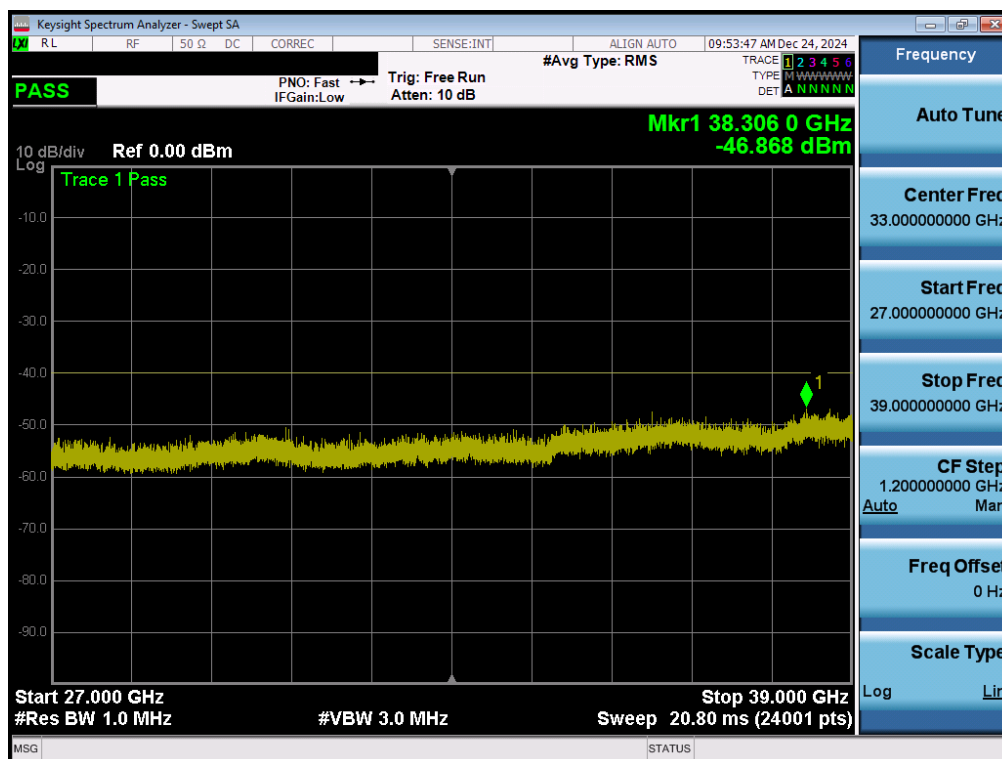


Plot 7-77. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 66 of 146



Plot 7-78. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel - Ant6)



Plot 7-79. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Mid Channel - Ant6)

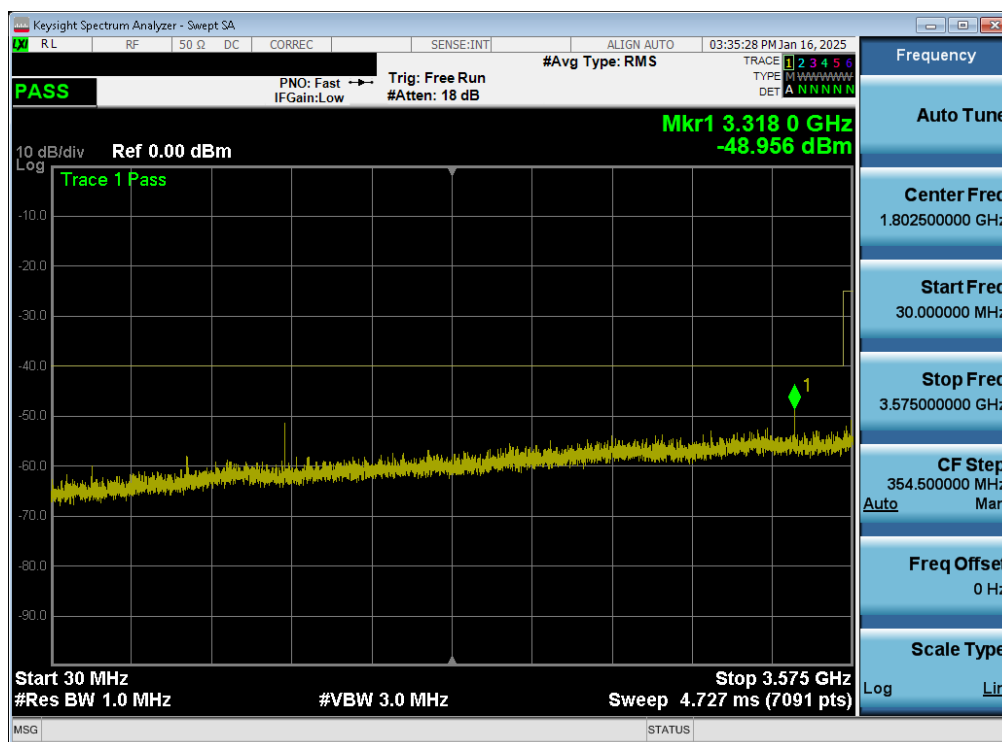
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 67 of 146

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B48	20MHz	Low	30.0 - 3510.0	-51.58	-40.0	-11.58
		Low	3610.0 - 15000.0	-41.66	-40.0	-1.66
		Low	15000.0 - 27000.0	-43.68	-40.0	-3.68
		Low	27000.0 - 37000.0	-42.3	-40.0	-2.30
		Mid	30.0 - 35750.0	-48.96	-40.0	-8.96
		Mid	3675.0 - 15000.0	-42.46	-40.0	-2.46
		Mid	15000.0 - 27000.0	-41.58	-40.0	-1.58
		Mid	27000.0 - 39000.0	-42.49	-40.0	-2.49
		High	30.0 - 3640.0	-50.52	-40.0	-10.52
		High	3740.0 - 15000.0	-42.08	-40.0	-2.08
		High	15000.0 - 27000.0	-43.76	-40.0	-3.76
		High	27000.0 - 37000.0	-42.49	-40.0	-2.49
NR-n48	40MHz	Low	30.0 - 3510.0	-49.51	-40.0	-9.51
		Low	3610.0 - 15000.0	-41.34	-40.0	-1.34
		Low	15000.0 - 27000.0	-46.13	-40.0	-6.13
		Low	27000.0 - 37000.0	-43.54	-40.0	-3.54
		Mid	30.0 - 35750.0	-50.59	-40.0	-10.59
		Mid	3675.0 - 15000.0	-41.82	-40.0	-1.82
		Mid	15000.0 - 27000.0	-43.69	-40.0	-3.69
		Mid	27000.0 - 39000.0	-43.91	-40.0	-3.91
		High	30.0 - 3640.0	-50.02	-40.0	-10.02
		High	3740.0 - 15000.0	-42.47	-40.0	-2.47
		High	15000.0 - 27000.0	-44.86	-40.0	-4.86
		High	27000.0 - 39000.0	-43.82	-40.0	-3.82

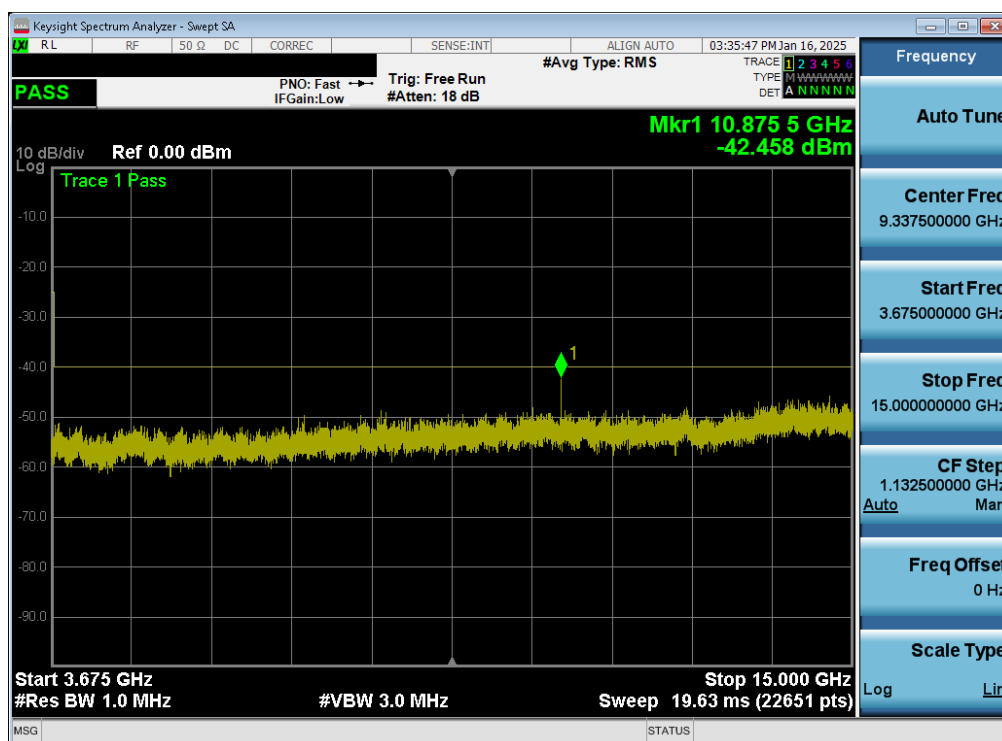
Table 7-17. Conducted Spurious Emission Test Results – Ant1

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 68 of 146

LTE Band 48 – Ant1

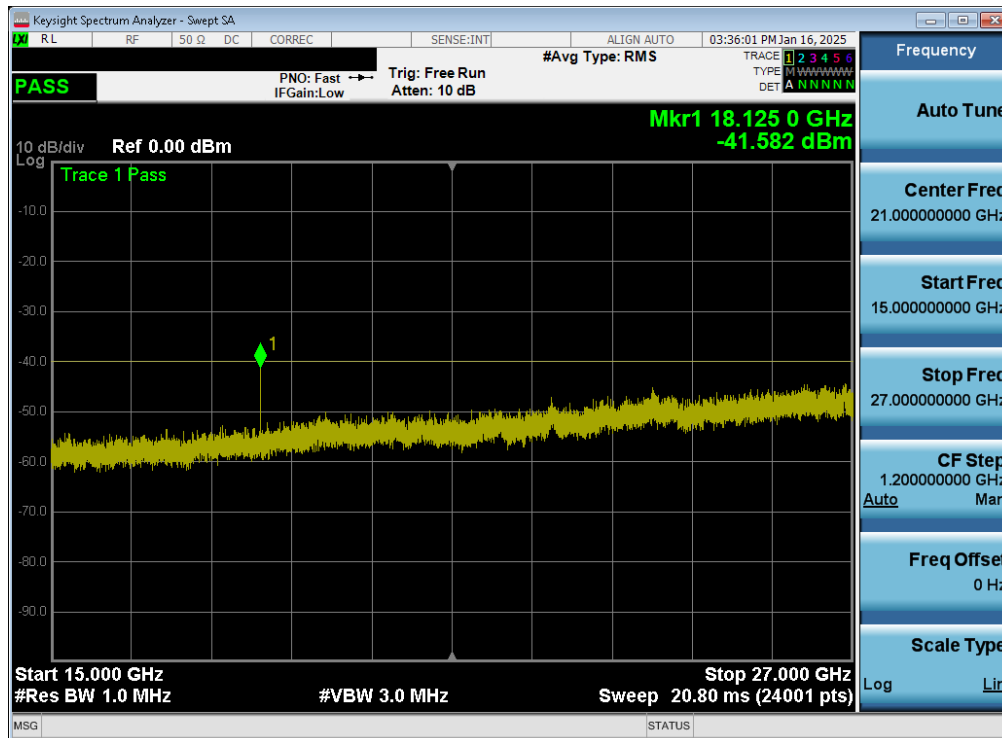


Plot 7-80. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant1)

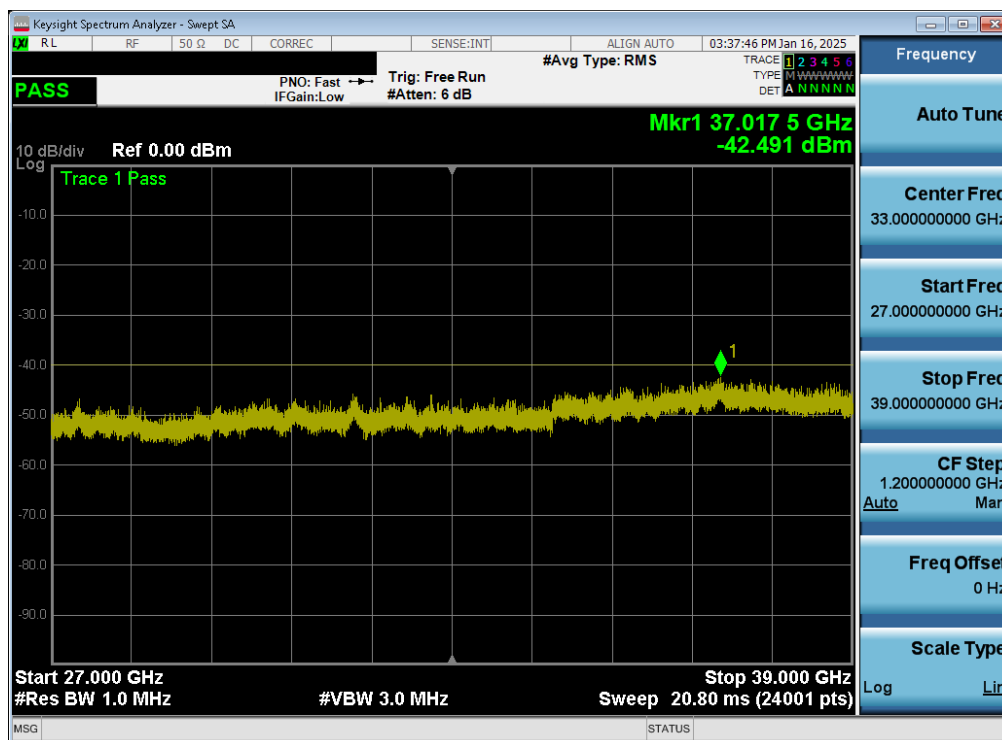


Plot 7-81. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 69 of 146



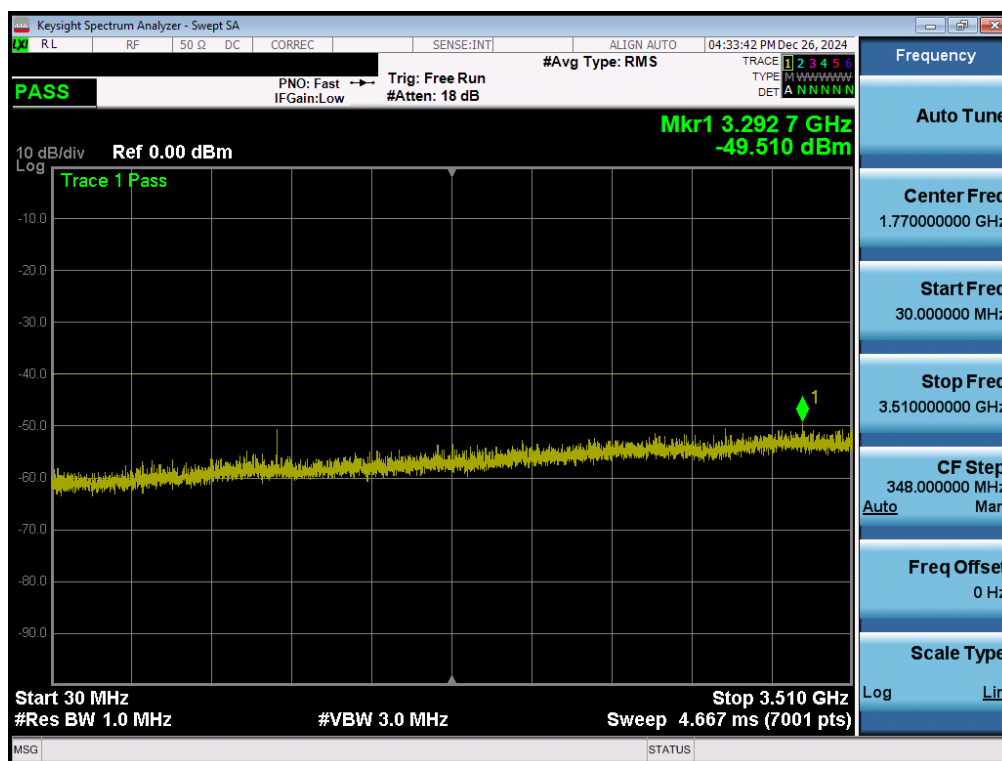
Plot 7-82. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant1)



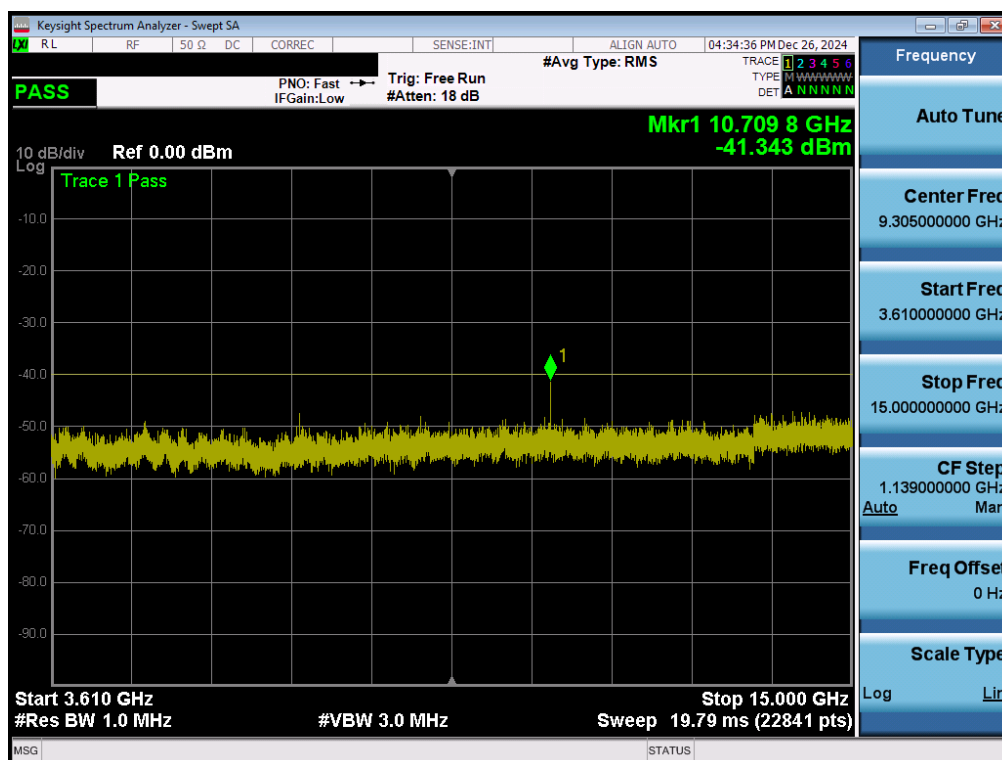
Plot 7-83. Conducted Spurious Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 70 of 146

NR Band n48 – Ant1



Plot 7-84. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel - Ant1)



Plot 7-85. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel - Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 71 of 146

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n48	40MHz	Low	30.0 - 3510.0	-49.48	-40.0	-9.48
		Low	3610.0 - 15000.0	-47.23	-40.0	-7.23
		Low	15000.0 - 27000.0	-49.78	-40.0	-9.78
		Low	27000.0 - 37000.0	-45.6	-40.0	-5.60
		Mid	30.0 - 35750.0	-50.47	-40.0	-10.47
		Mid	3675.0 - 15000.0	-47.11	-40.0	-7.11
		Mid	15000.0 - 27000.0	-50.56	-40.0	-10.56
		Mid	27000.0 - 39000.0	-45.85	-40.0	-5.85
		High	30.0 - 3640.0	-51.77	-40.0	-11.77
		High	3740.0 - 15000.0	-44.34	-40.0	-4.34
		High	15000.0 - 27000.0	-51.02	-40.0	-11.02
		High	27000.0 - 39000.0	-45.61	-40.0	-5.61

Table 7-18. Conducted Spurious Emission Test Results– SRS Ant3

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
NR-n48	40MHz	Low	30.0 - 3510.0	-47.65	-40.0	-7.65
		Low	3610.0 - 15000.0	-45.35	-40.0	-5.35
		Low	15000.0 - 27000.0	-50.93	-40.0	-10.93
		Low	27000.0 - 37000.0	-44.87	-40.0	-4.87
		Mid	30.0 - 35750.0	-48.84	-40.0	-8.84
		Mid	3675.0 - 15000.0	-47.21	-40.0	-7.21
		Mid	15000.0 - 27000.0	-50.64	-40.0	-10.63
		Mid	27000.0 - 39000.0	-45.87	-40.0	-5.87
		High	30.0 - 3640.0	-50.97	-40.0	-10.97
		High	3740.0 - 15000.0	-43.69	-40.0	-3.69
		High	15000.0 - 27000.0	-50.71	-40.0	-10.71
		High	27000.0 - 39000.0	-45.51	-40.0	-5.51

Table 7-19. Conducted Spurious Emission Test Results– SRS Ant4

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 73 of 146

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
UL MIMO NR-n48	40MHz	Low	30.0 - 3510.0	-50.12	-40.0	-10.12
		Low	3610.0 - 15000.0	-40.94	-40.0	-0.94
		Low	15000.0 - 27000.0	-43.07	-40.0	-3.07
		Low	27000.0 - 37000.0	-44.04	-40.0	-4.04
		Mid	30.0 - 35750.0	-49.64	-40.0	-9.64
		Mid	3675.0 - 15000.0	-41.48	-40.0	-1.48
		Mid	15000.0 - 27000.0	-49.52	-40.0	-9.52
		Mid	27000.0 - 39000.0	-43.57	-40.0	-3.57
		High	30.0 - 3640.0	-51.21	-40.0	-11.21
		High	3740.0 - 15000.0	-43.22	-40.0	-3.22
		High	15000.0 - 27000.0	-48.7	-40.0	-8.70
		High	27000.0 - 39000.0	-43.06	-40.0	-3.06

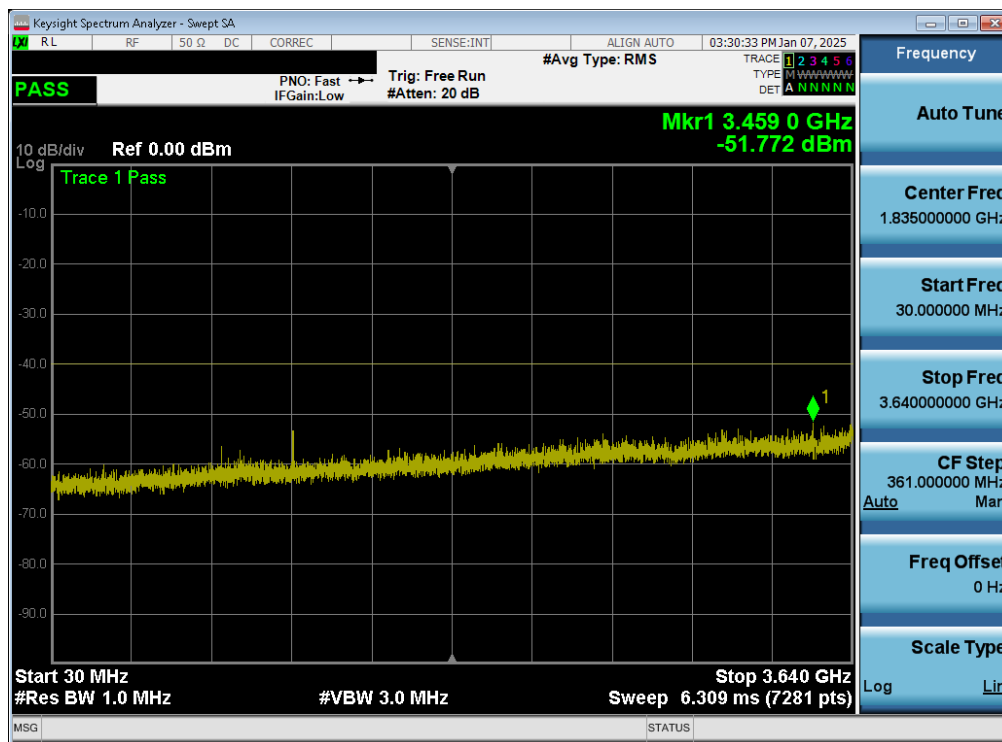
Table 7-20. Conducted Spurious Emission Test Results– UL MIMO Ant6

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
UL MIMO NR-n48	40MHz	Low	30.0 - 3510.0	-46.34	-40.0	-6.34
		Low	3610.0 - 15000.0	-42.84	-40.0	-2.83
		Low	15000.0 - 27000.0	-47.67	-40.0	-7.67
		Low	27000.0 - 37000.0	-44.18	-40.0	-4.18
		Mid	30.0 - 35750.0	-49.81	-40.0	-9.80
		Mid	3675.0 - 15000.0	-42.12	-40.0	-2.12
		Mid	15000.0 - 27000.0	-47.55	-40.0	-7.55
		Mid	27000.0 - 39000.0	-44.26	-40.0	-4.26
		High	30.0 - 3640.0	-51.43	-40.0	-11.43
		High	3740.0 - 15000.0	-41.65	-40.0	-1.65
		High	15000.0 - 27000.0	-49.74	-40.0	-9.74
		High	27000.0 - 39000.0	-44.27	-40.0	-4.27

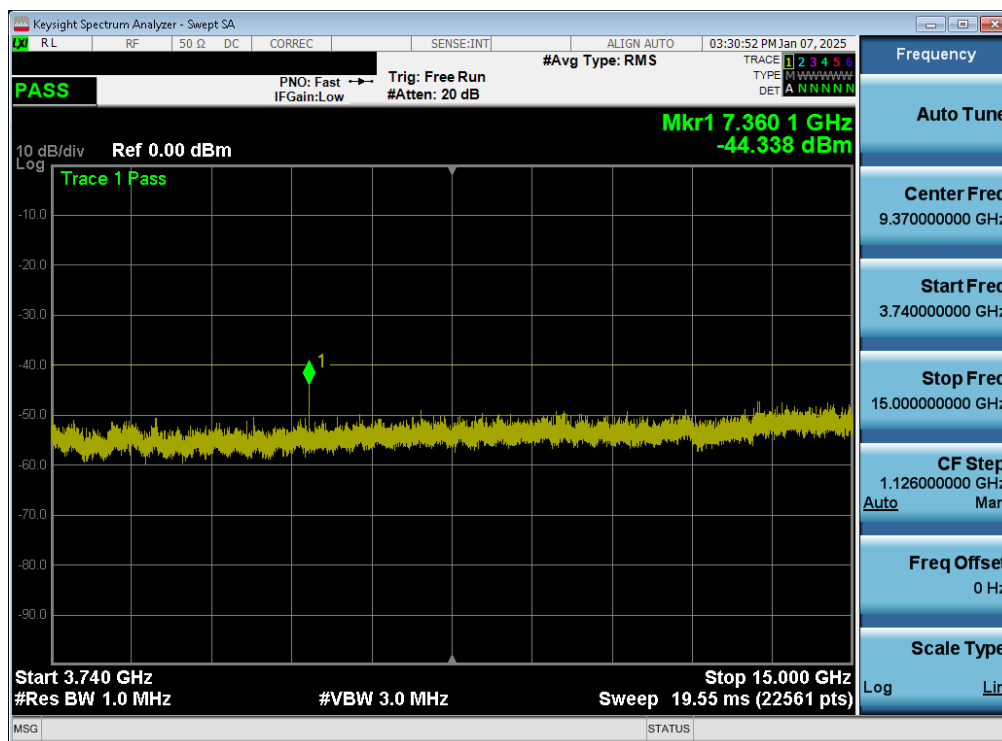
Table 7-21. Conducted Spurious Emission Test Results– UL MIMO Ant1

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 74 of 146

NR Band n48 – SRS Ant3

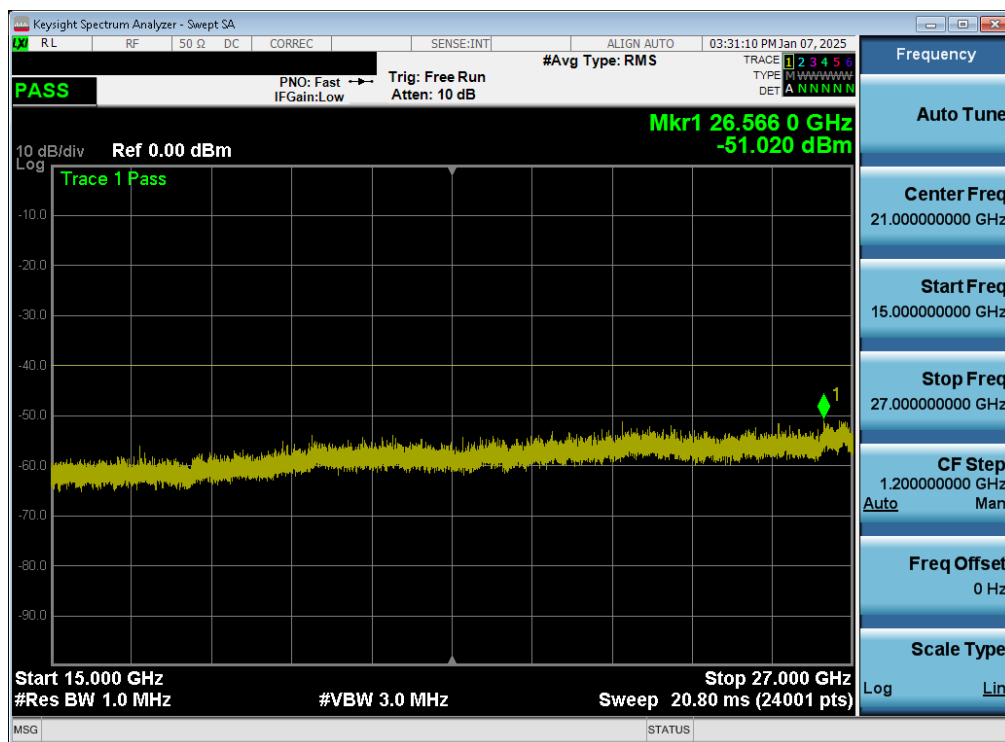


Plot 7-88. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant3)

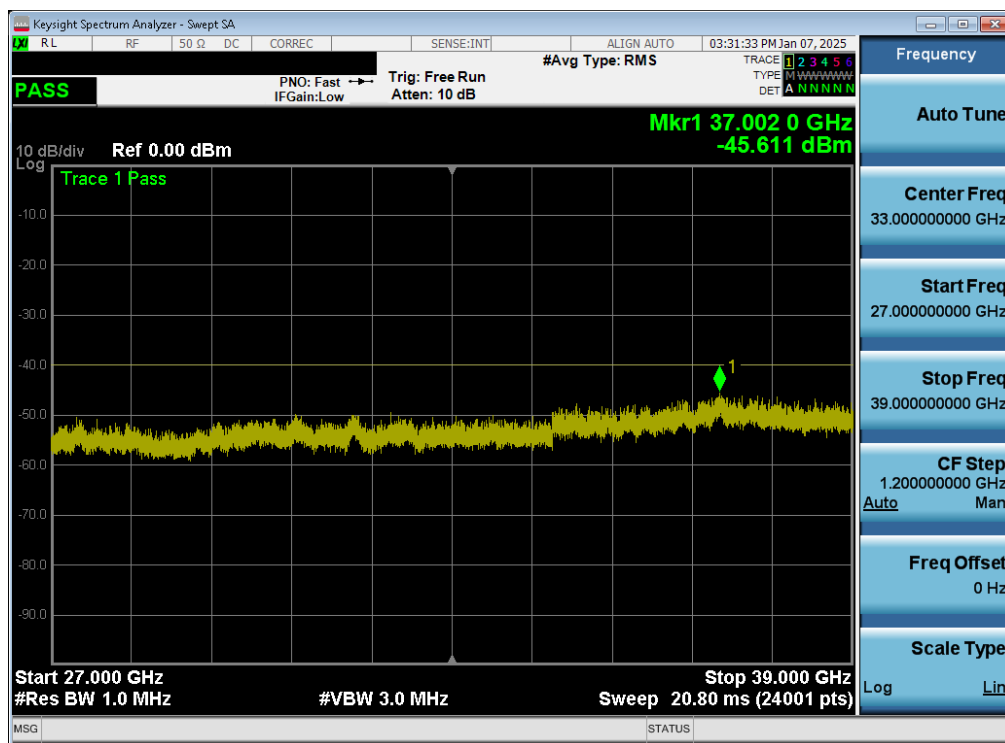


Plot 7-89. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant3)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 75 of 146



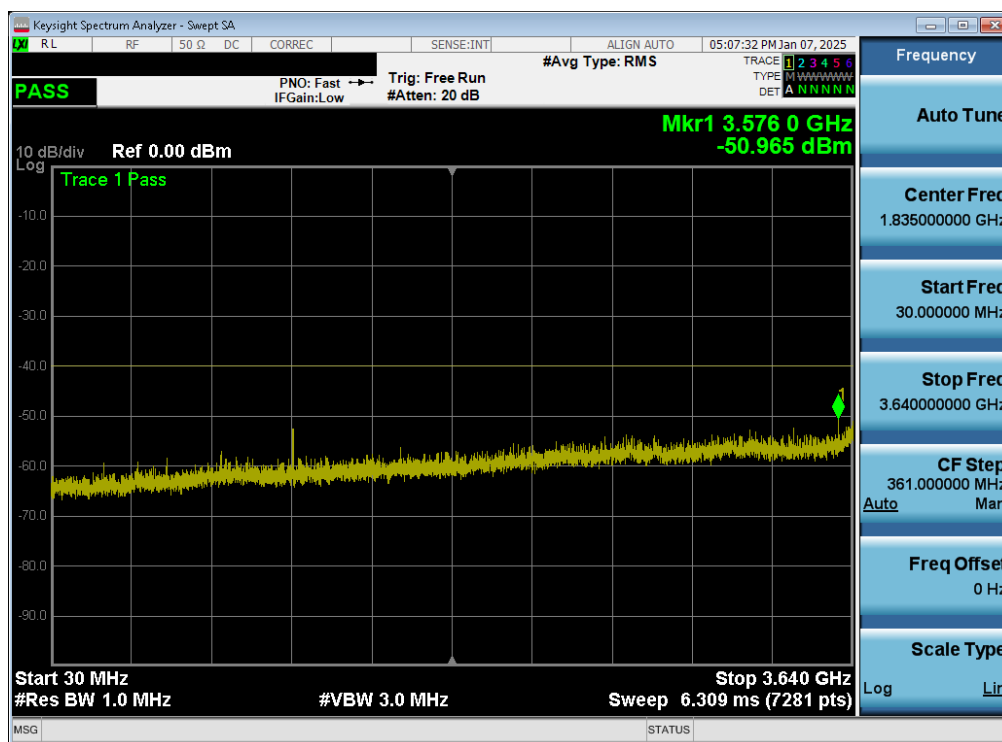
Plot 7-90. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant3)



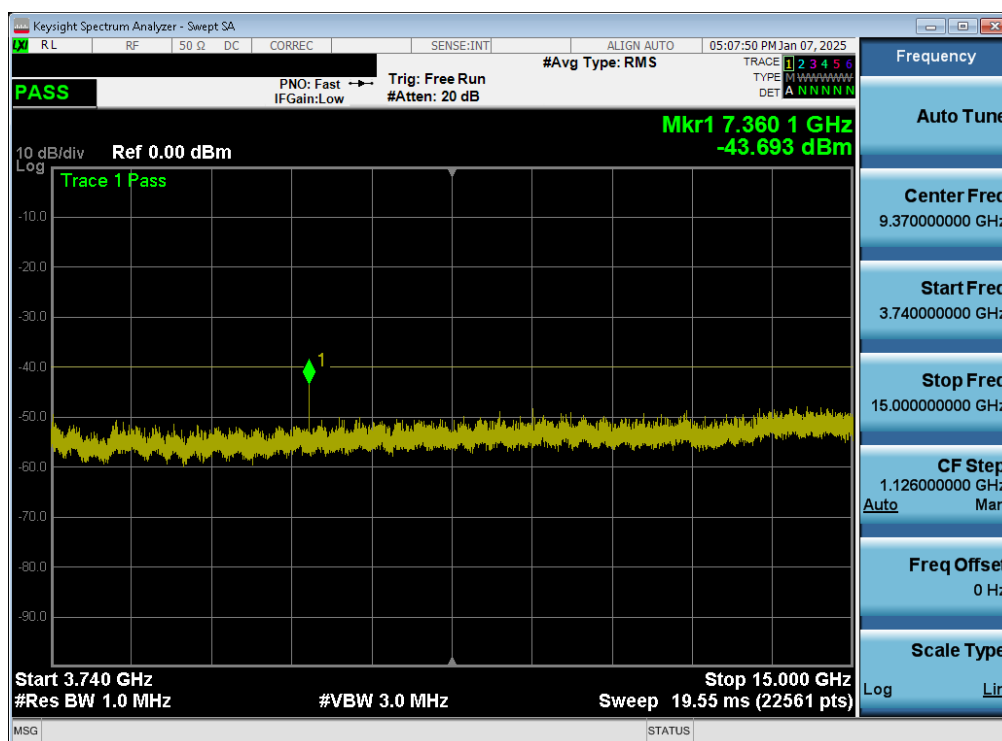
Plot 7-91. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant3)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 76 of 146

NR Band n48 – SRS Ant4

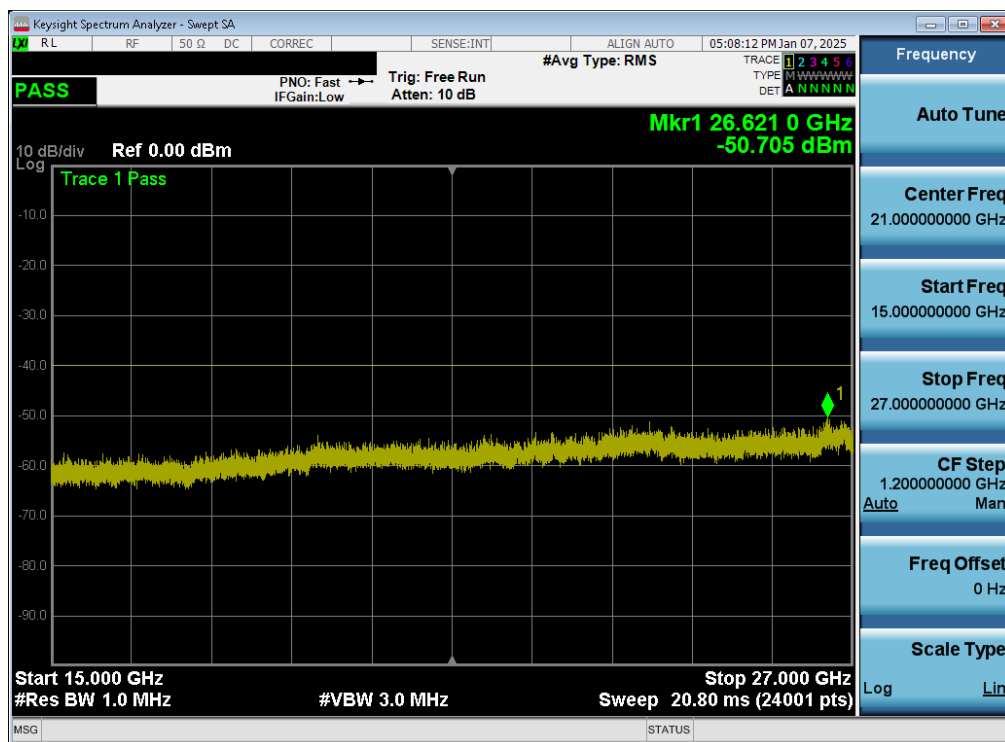


Plot 7-92. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant4)

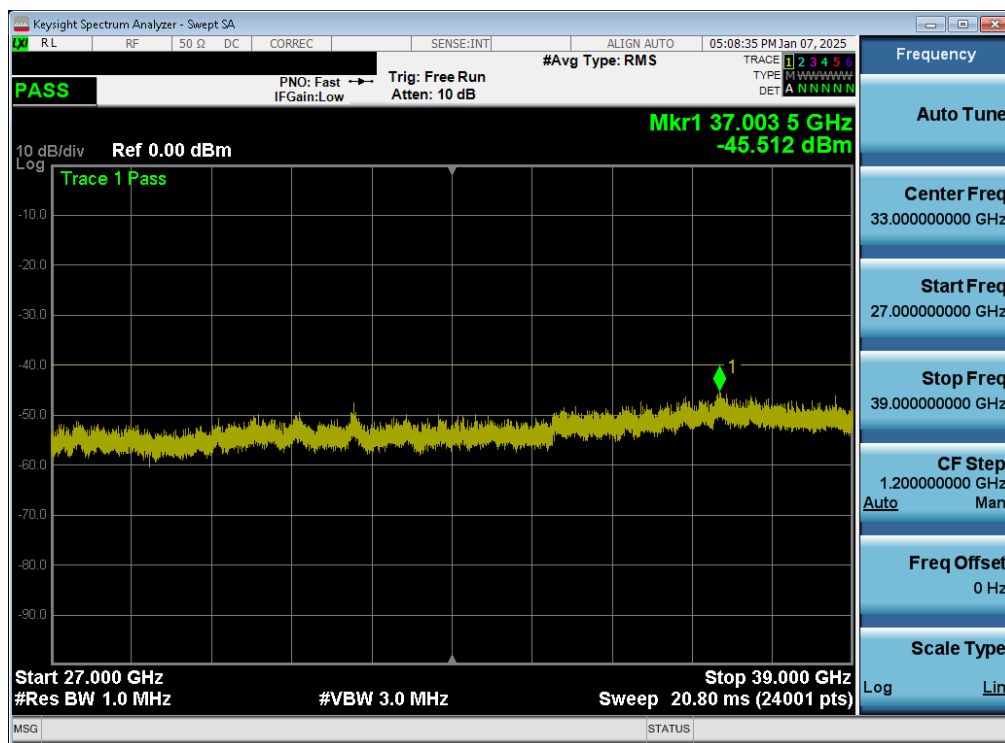


Plot 7-93. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant4)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 77 of 146



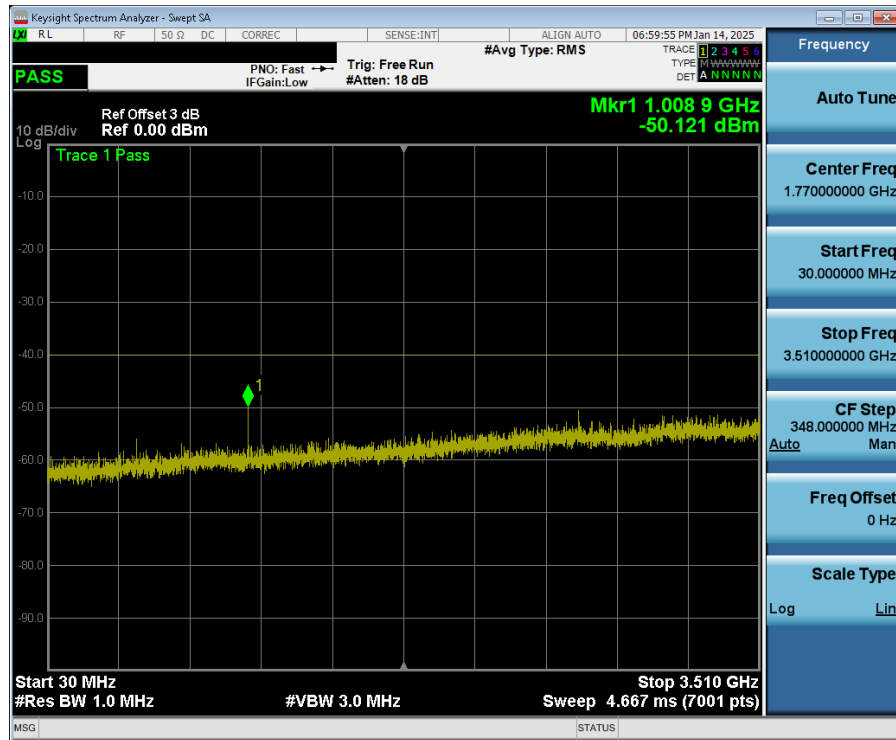
Plot 7-94. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant4)



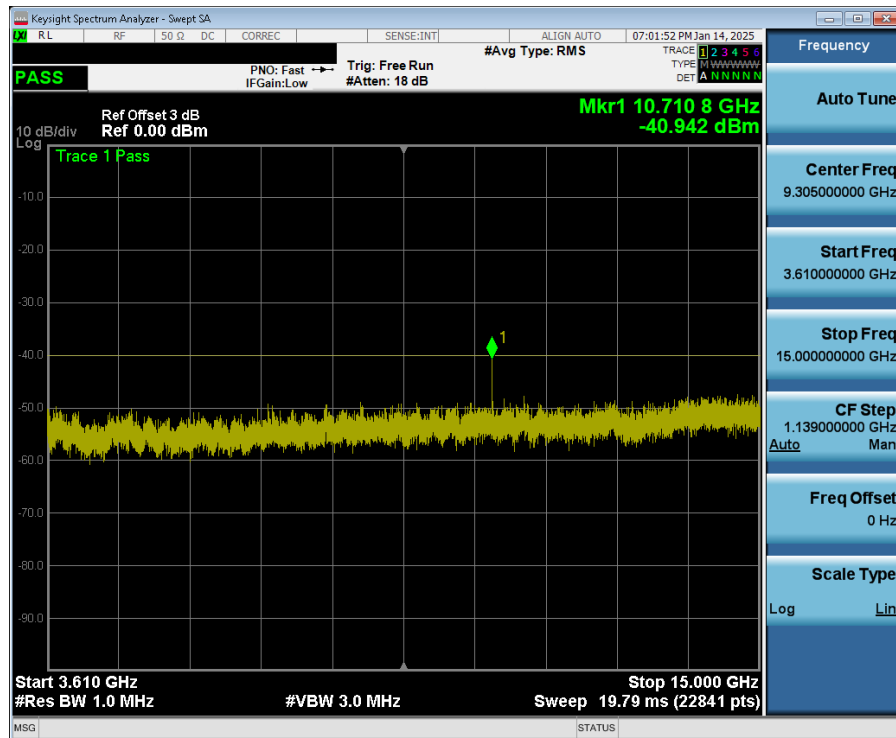
Plot 7-95. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – SRS Ant4)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 78 of 146

NR Band n48 – UL MIMO Ant6

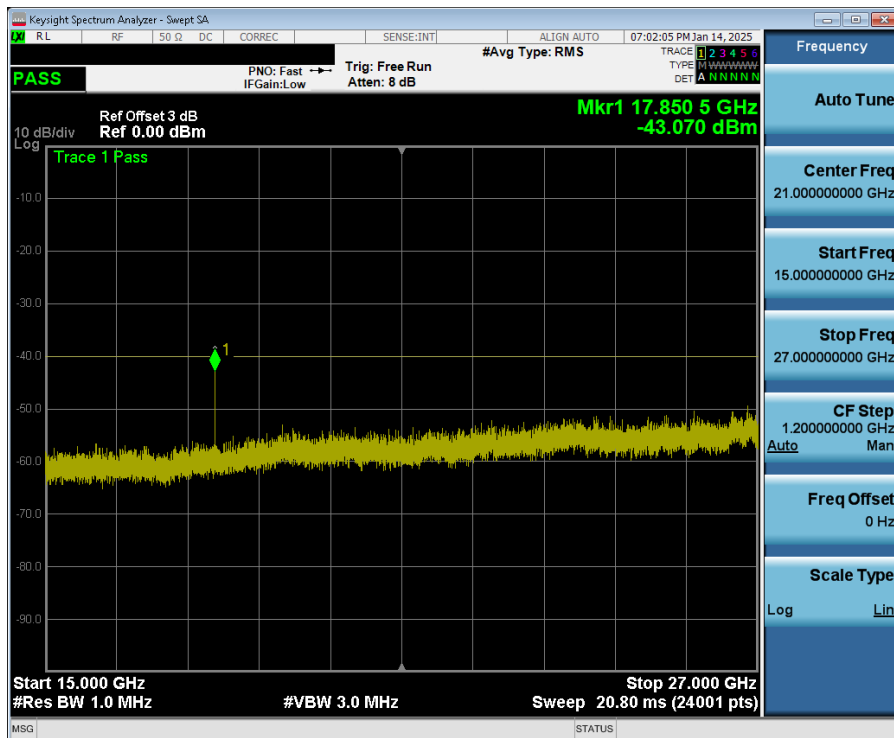


Plot 7-96. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant6)

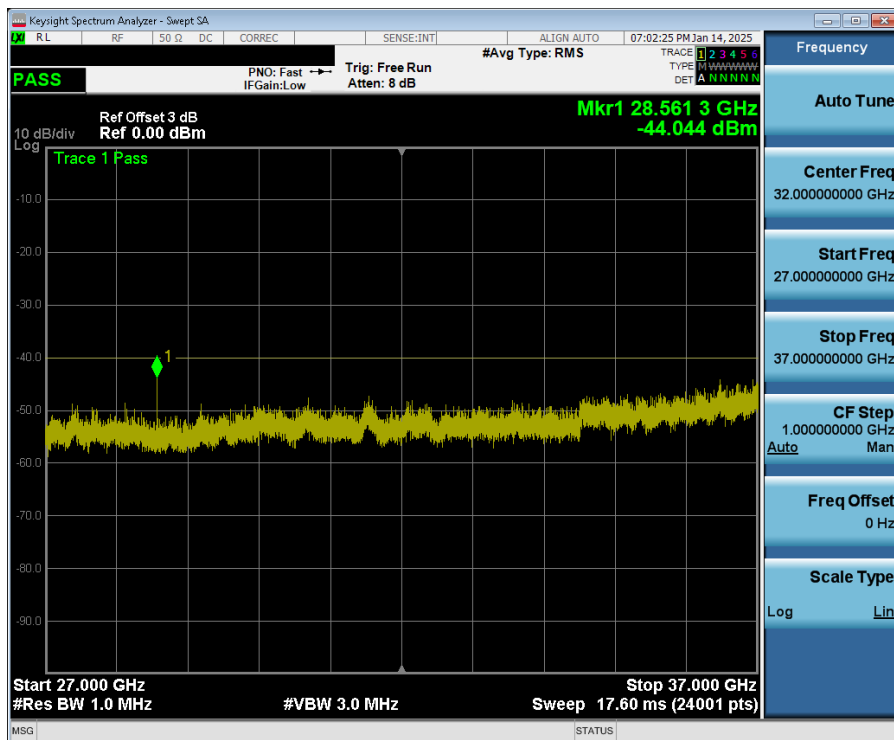


Plot 7-97. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 79 of 146



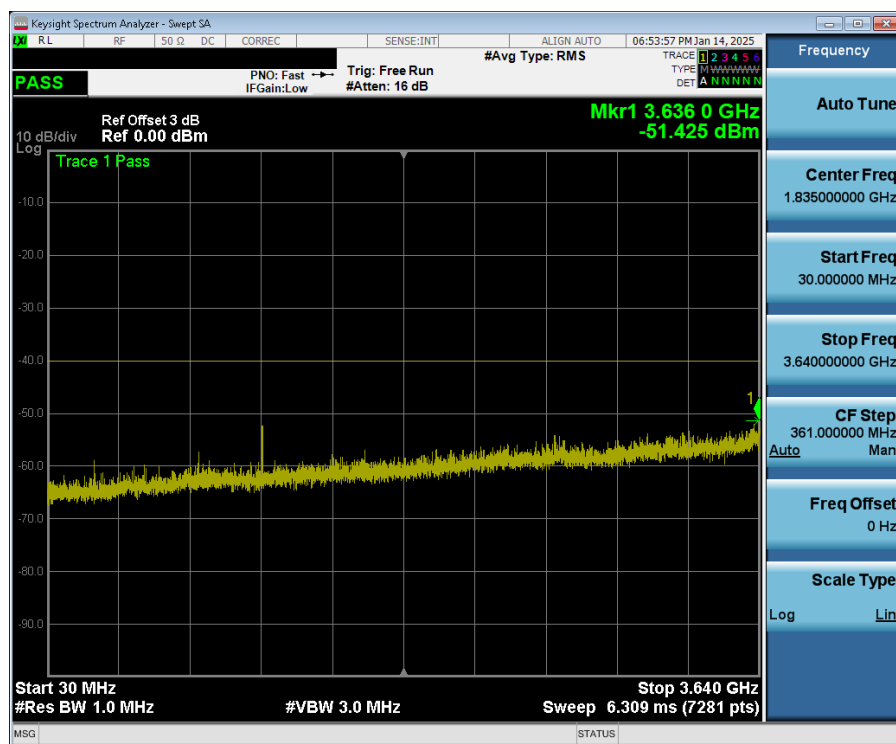
Plot 7-98. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant6)



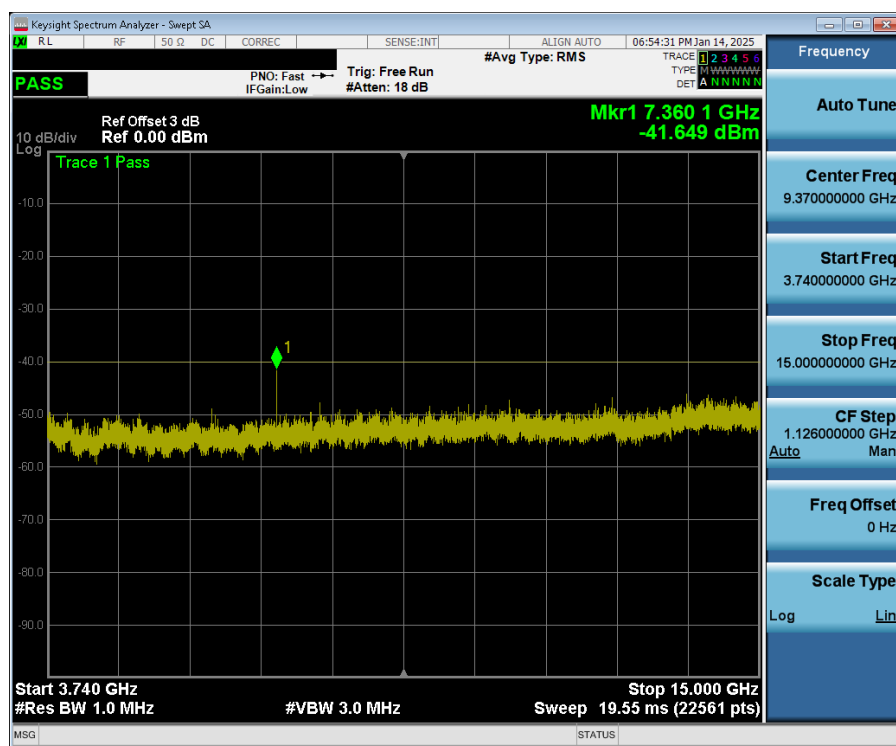
Plot 7-99. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - Low Channel – UL MIMO Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 80 of 146

NR Band n48 – UL MIMO Ant1

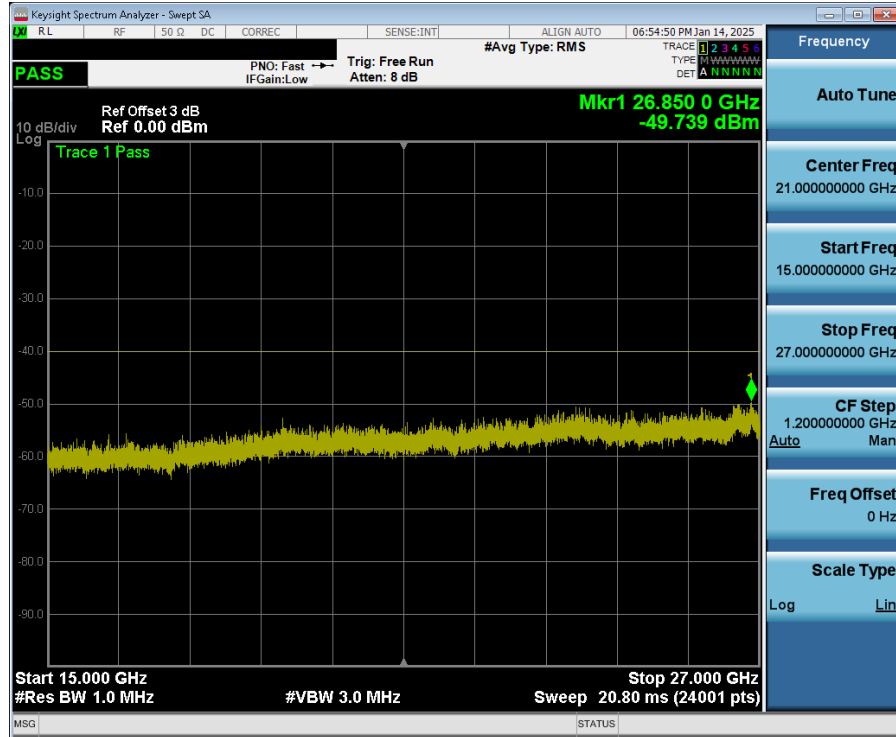


Plot 7-100. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – UL MIMO Ant1)

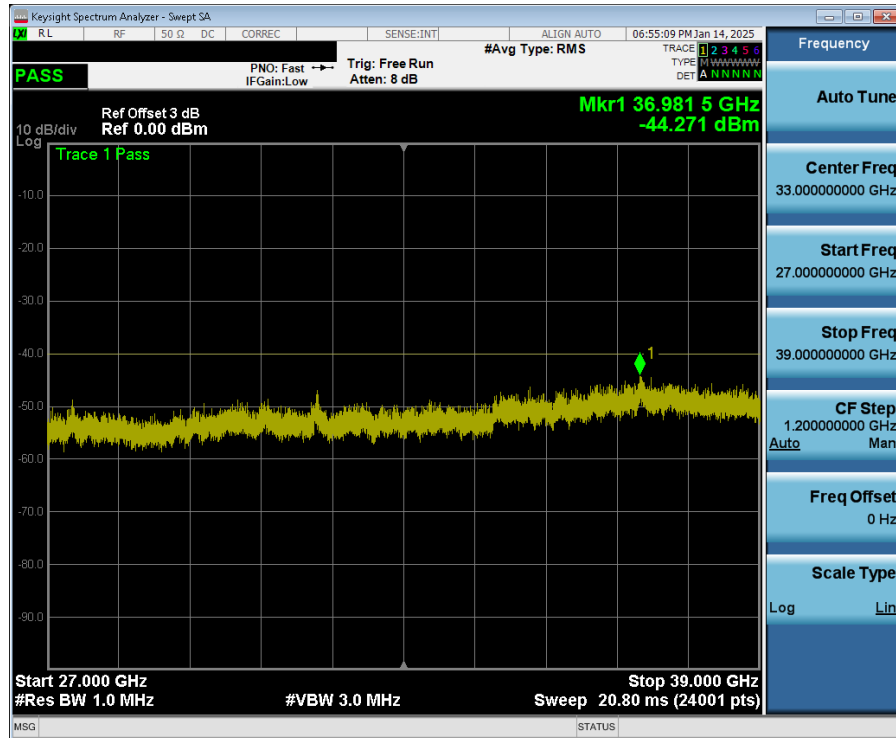


Plot 7-101. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – UL MIMO Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 81 of 146



Plot 7-102. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – UL MIMO Ant1)



Plot 7-103. Conducted Spurious Plot (NR Band n48 - 40MHz QPSK - High Channel – UL MIMO Ant1)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 82 of 146

7.5 Band Edge Emissions at Antenna Terminal

Test Overview

All out of band emissions 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.

For an End User Device, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0 to B MHz (where B is the bandwidth in MHz of the assigned channel or multiple contiguous channels of the End User Device) above the upper CBSD-assigned channel edge and within 0 to B MHz below the lower CBSD-assigned channel edge. At all frequencies greater than B MHz above the upper CBSD assigned channel edge and less than B MHz below the lower CBSD-assigned channel edge, the conducted power of any end user device emission shall not exceed -25 dBm/MHz. The conducted power of emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz.

Test Procedure Used

ANSI C63.26-2015 – Section 5.7.3

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. RBW $\geq 1\%$ of the emission bandwidth
4. VBW $\geq 3 \times$ RBW
5. Detector = RMS
6. Number of sweep points $\geq 2 \times$ Span/RBW
7. Trace mode = trace average
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.

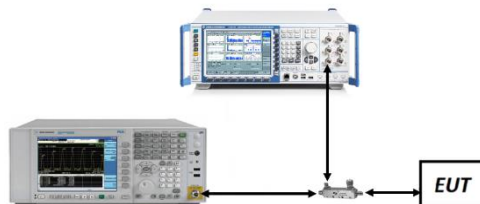


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 83 of 146

Test Notes

1. Per 96.41(e)(3)(i), compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's authorized frequency channel, a resolution bandwidth of no less than one percent of the fundamental emission bandwidth may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full reference bandwidth (i.e., 1 MHz or 1 percent of emission bandwidth, as specified). The fundamental emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.
2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) 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.
3. Per ANSI C63.26-2015, MIMO compliance was addressed by adding $10\log(2) = 3\text{dB}$ to the output of each antenna. A visual inspection of the plots for each antenna shows that the emissions are still compliant even after adding 3dB.

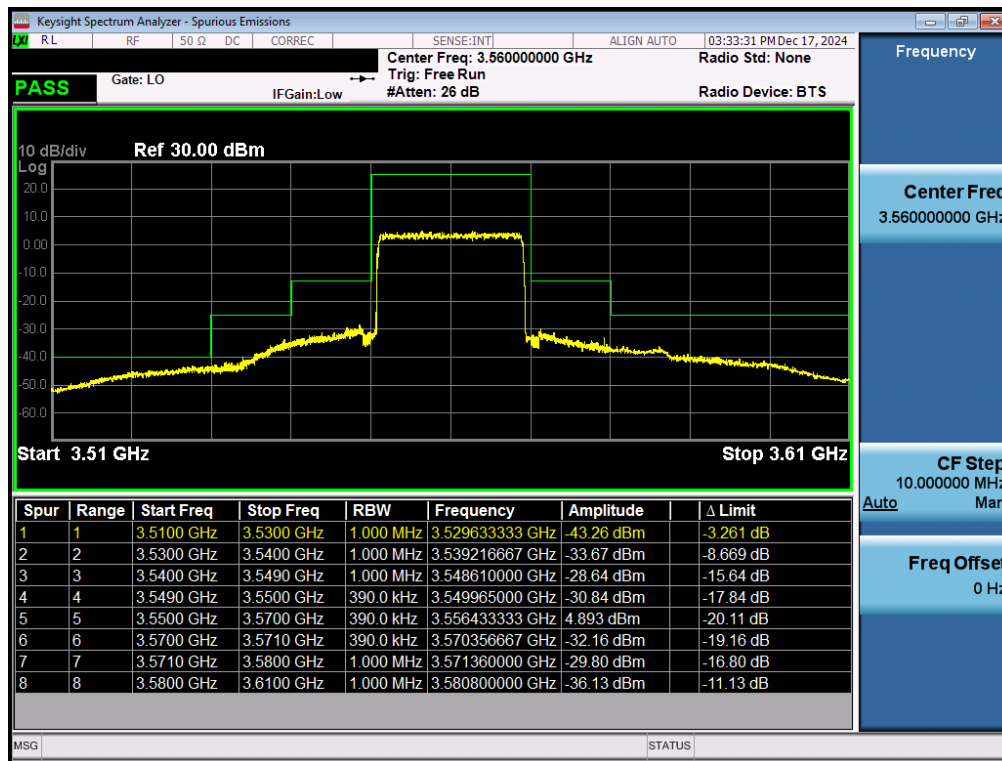
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 84 of 146

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B48	20 MHz	Low	Band Edge	-43.26	-40	-3.26
		Mid	Band Edge	-34.88	-25	-9.88
		High	Band Edge	-41.19	-40	-1.19
	15 MHz	Low	Band Edge	-46.06	-40	-6.06
		Mid	Band Edge	-37.06	-25	-12.06
		High	Band Edge	-43.99	-40	-3.99
	10 MHz	Low	Band Edge	-50.45	-40	-10.45
		Mid	Band Edge	-40.89	-25	-15.89
		High	Band Edge	-48.60	-40	-8.60
	5 MHz	Low	Band Edge	-53.39	-40	-13.39
		Mid	Band Edge	-27.50	-13	-14.50
		High	Band Edge	-50.73	-40	-10.73
ULCA LB48	20+20MHz	Low	Band Edge	-58.74	-40	-18.74
		Mid	Band Edge	-26.91	-13	-13.91
		High	Band Edge	-39.33	-25	-14.33
NR-n48	40MHz	Low	Band Edge	-43.33	-40	-3.33
		Mid	Band Edge	-39.21	-25	-14.21
		High	Band Edge	-56.31	-40	-16.31
	30MHz	Low	Band Edge	-43.37	-40	-3.37
		Mid	Band Edge	-40.51	-25	-15.51
		High	Band Edge	-43.57	-40	-3.57
	20MHz	Low	Band Edge	-45.98	-40	-5.98
		Mid	Band Edge	-41.07	-25	-16.07
		High	Band Edge	-42.15	-40	-2.15
	15MHz	Low	Band Edge	-48.56	-40	-8.56
		Mid	Band Edge	-44.05	-25	-19.05
		High	Band Edge	-45.25	-40	-5.25
	10MHz	Low	Band Edge	-48.78	-40	-8.78
		Mid	Band Edge	-40.10	-25	-15.10
		High	Band Edge	-46.52	-40	-6.52

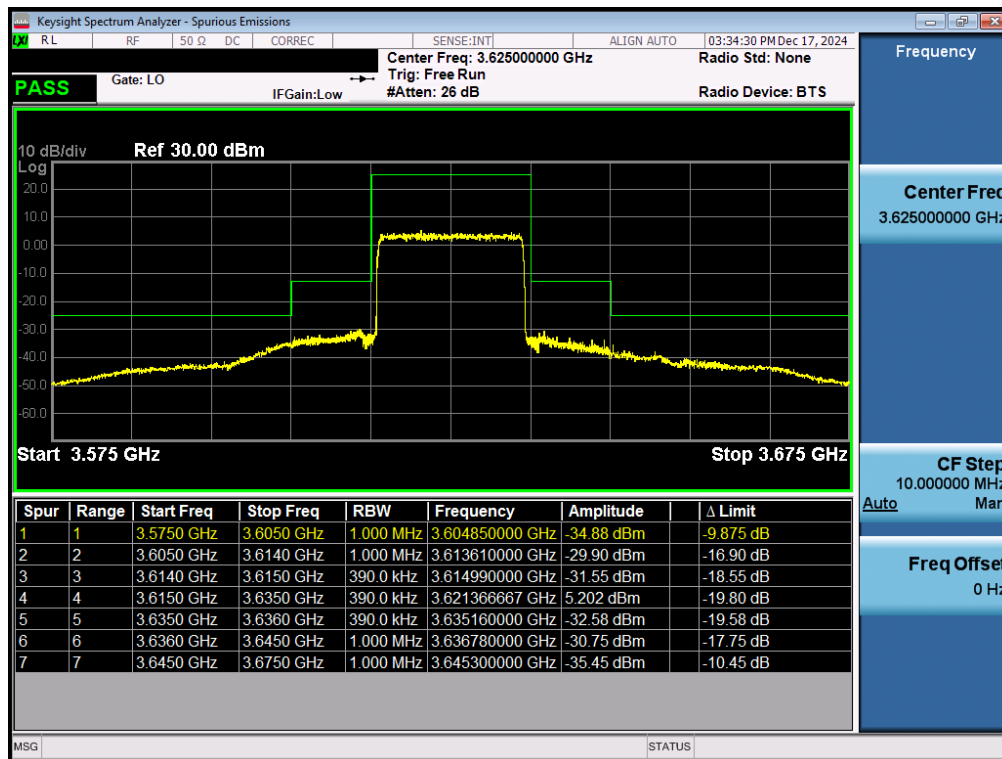
Table 7-22. Conducted Band Edge Test Results – Ant6

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 85 of 146

LTE Band 48 – Ant6

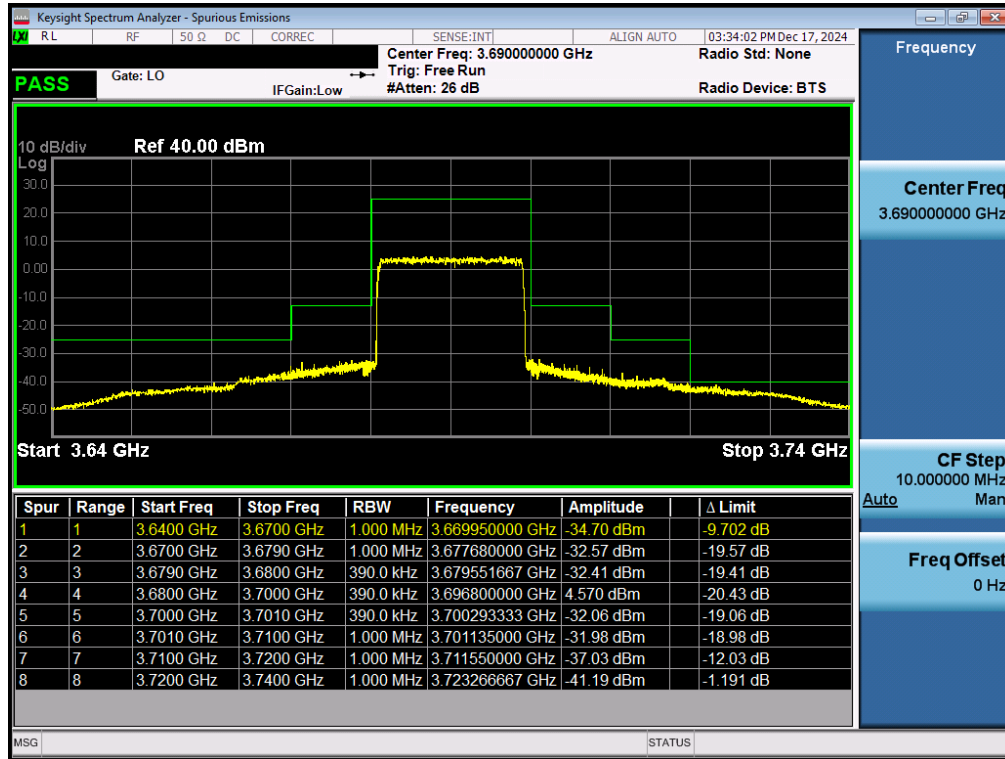


Plot 7-104. Channel - Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - Low Channel - Ant6)



Plot 7-105. Channel - Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - Mid Channel - Ant6)

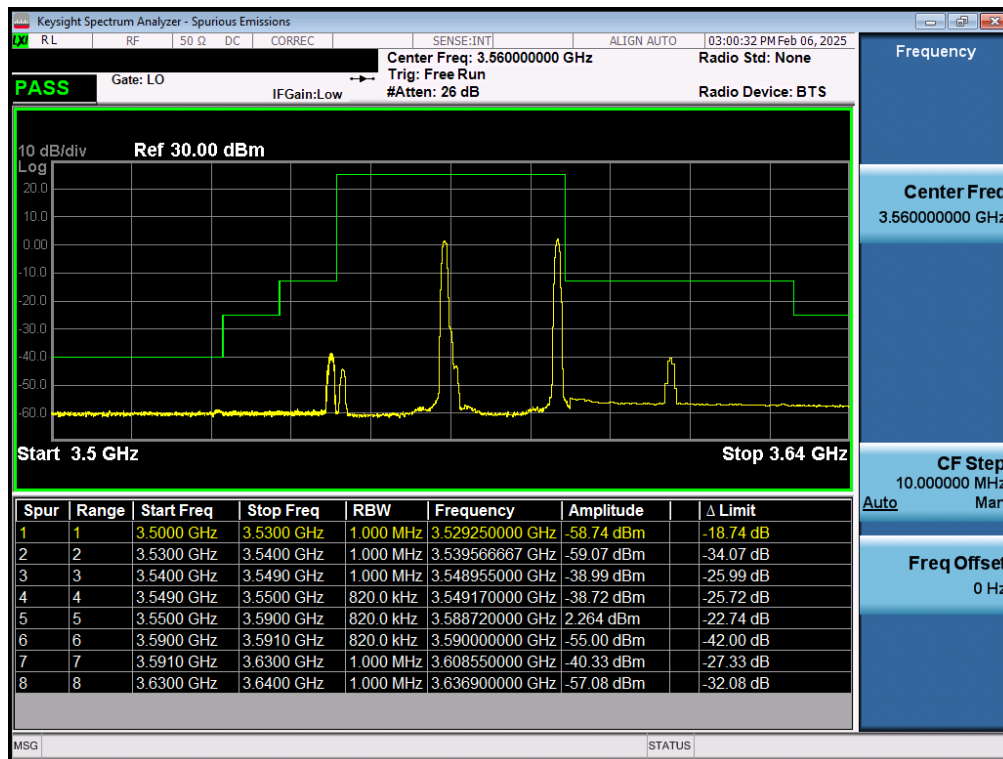
FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 86 of 146



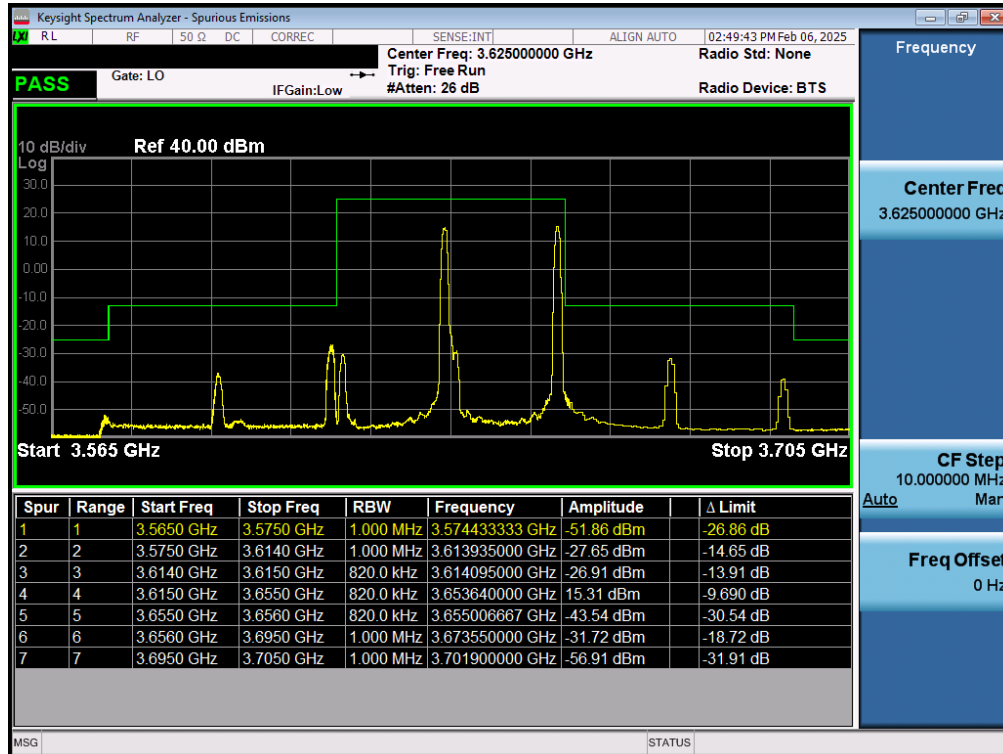
Plot 7-106. Channel - Ant6 Edge Plot (LTE Band 48 - 20MHz QPSK - High Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 87 of 146

ULCA LB48 – Ant6

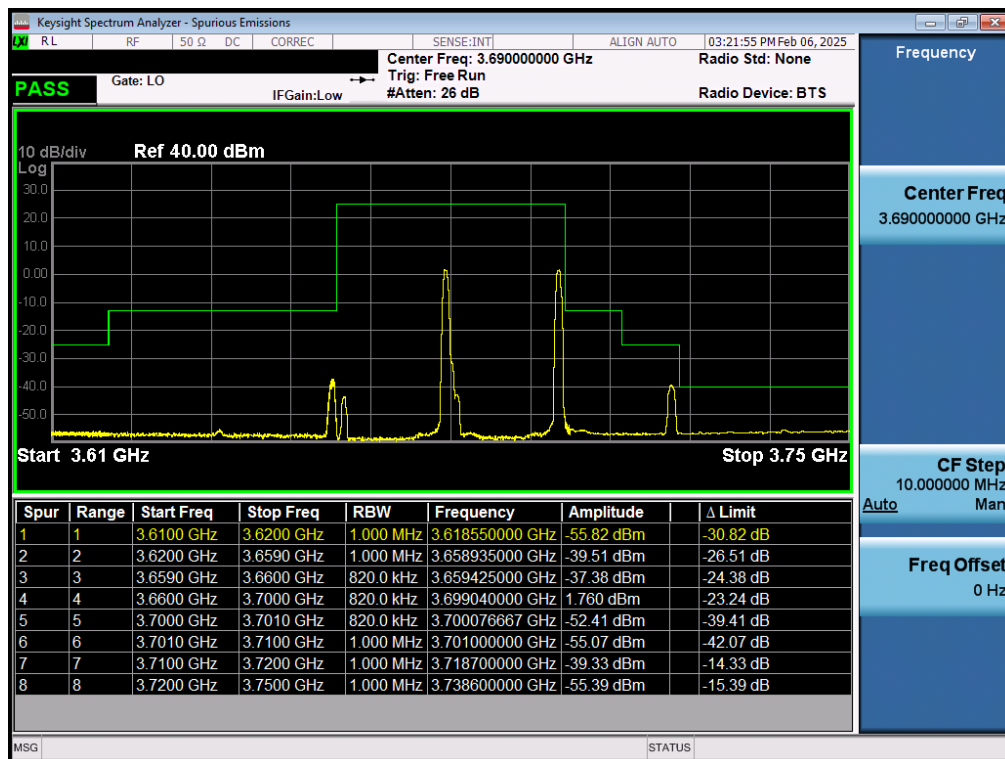


Plot 7-107. Channel - Ant6 Edge Plot (LTE Band 48 – 20+20MHz QPSK - Low Channel A-MRP - Ant6)



Plot 7-108. Channel - Ant6 Edge Plot (LTE Band 48 – 20+20MHz QPSK - Mid Channel - Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 88 of 146



Plot 7-109. Channel - Ant6 Edge Plot (LTE Band 48 – 20+20MHz QPSK - High Channel A-MPR- Ant6)

FCC ID: C3K2114	PART 96 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-07-R3.C3K	Test Dates: 12/3/2024 – 4/29/2025	EUT Type: Full Modular	Page 89 of 146