

PART 22 MEASUREMENT REPORT

Applicant Name:
Microsoft Corporation
One Microsoft Way
Redmond, WA 98052
United States

Date of Testing:
12/3/2024 - 2/14/2025
Test Report Issue Date:
4/17/2025
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M2411190103-01-R2.C3K

FCC ID:	C3K2114
APPLICANT:	Microsoft Corporation

Application Type:	Certification
Model:	2114
EUT Type:	Full Modular
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part:	22
Test Procedure(s):	ANSI C63.26-2015

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: 1M2411190103-01-R2.C3K) supersedes and replaces the previously issued test report (S/N: 1M2411190103-01-R1.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 Ortiz
Executive Vice President



CERT #2041.01

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Antenna-5						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
WCDMA	N/A	Spread Spectrum	826.4 - 846.6	1.021	30.09	4M17F9W
LTE Band 26/5	15MHz (Band 26 only)	QPSK	831.5 - 841.5	1.051	30.22	13M6G7D
		16QAM	831.5 - 841.5	0.896	29.52	13M6W7D
	10 MHz	QPSK	829.0 - 844.0	1.112	30.46	9M03G7D
		16QAM	829.0 - 844.0	0.905	29.57	9M06W7D
	5 MHz	QPSK	826.5 - 846.5	1.099	30.41	4M54G7D
		16QAM	826.5 - 846.5	0.908	29.58	4M54W7D
	3 MHz	QPSK	825.5 - 847.5	1.069	30.29	2M71G7D
		16QAM	825.5 - 847.5	0.915	29.62	2M72W7D
	1.4 MHz	QPSK	824.7 - 848.3	1.068	30.28	1M11G7D
		16QAM	824.7 - 848.3	0.924	29.66	1M11W7D
NR Band n5	20 MHz	π/2 BPSK	834.0 - 839.0	1.026	30.11	18M0G7D
		QPSK	834.0 - 839.0	1.033	30.14	19M0G7D
		16QAM	834.0 - 839.0	0.800	29.03	19M0W7D
	15 MHz	π/2 BPSK	831.5 - 841.5	1.045	30.19	13M5G7D
		QPSK	831.5 - 841.5	1.040	30.17	14M2G7D
		16QAM	831.5 - 841.5	0.813	29.10	14M2W7D
	10 MHz	π/2 BPSK	829.0 - 844.0	1.007	30.03	8M99G7D
		QPSK	829.0 - 844.0	1.005	30.02	9M36G7D
		16QAM	829.0 - 844.0	0.774	28.89	9M36W7D
	5 MHz	π/2 BPSK	826.5 - 846.5	1.016	30.07	4M51G7D
		QPSK	826.5 - 846.5	1.019	30.08	4M51G7D
	16QAM	826.5 - 846.5	0.805	29.06	4M52W7D	

Antenna-2						
Mode	Bandwidth	Modulation	Tx Frequency Range [MHz]	ERP		Emission Designator
				Max. Power [W]	Max. Power [dBm]	
LTE Band 26/5	15MHz (Band 26 only)	QPSK	831.5 - 841.5	0.847	29.28	13M5G7D
		16QAM	831.5 - 841.5	0.751	28.76	13M5W7D
	10 MHz	QPSK	829.0 - 844.0	0.885	29.47	8M99G7D
		16QAM	829.0 - 844.0	0.757	28.79	9M00W7D
	5 MHz	QPSK	826.5 - 846.5	0.889	29.49	4M54G7D
		16QAM	826.5 - 846.5	0.762	28.82	4M53W7D
	3 MHz	QPSK	825.5 - 847.5	0.872	29.40	2M70G7D
		16QAM	825.5 - 847.5	0.765	28.84	2M70W7D
	1.4 MHz	QPSK	824.7 - 848.3	0.908	29.58	1M10G7D
		16QAM	824.7 - 848.3	0.752	28.76	1M11W7D
NR Band n5	20 MHz	π/2 BPSK	834.0 - 839.0	0.975	29.89	18M0G7D
		QPSK	834.0 - 839.0	0.979	29.91	19M0G7D
		16QAM	834.0 - 839.0	0.760	28.81	19M0W7D
	15 MHz	π/2 BPSK	831.5 - 841.5	0.984	29.93	13M5G7D
		QPSK	831.5 - 841.5	0.995	29.98	14M2G7D
		16QAM	831.5 - 841.5	0.767	28.85	14M2W7D
	10 MHz	π/2 BPSK	829.0 - 844.0	0.959	29.82	9M02G7D
		QPSK	829.0 - 844.0	0.968	29.86	9M33G7D
		16QAM	829.0 - 844.0	0.755	28.78	9M31W7D
	5 MHz	π/2 BPSK	826.5 - 846.5	0.966	29.85	4M51G7D
		QPSK	826.5 - 846.5	0.975	29.89	4M50G7D
	16QAM	826.5 - 846.5	0.769	28.86	4M54W7D	

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1.0 INTRODUCTION

1.1 Scope

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

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).

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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 licensed transmitters that operate under the provisions of Part 22.

Test Device Serial No.: (004400152020002) EV2#48, EV2#37, EV2#41, EV2#47

2.2 Device Capabilities

This device contains the following capabilities:

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

The calculated antenna gains shown below specify the maximum antenna gains permitted to comply with EIRP and RF exposure requirements when integrating this module into a host device when operating in Stand Alone mode.

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.

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3.0 DESCRIPTION OF TESTS

3.1 Evaluation 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 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 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:

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

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

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

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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

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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:

1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
2. Equipment with a calibration date of "N/A" shown in this list was not used to make direct calibrated measurements.

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6.0 SAMPLE EMISSION DESIGNATORS

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

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

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7.0 TEST RESULTS

7.1 Summary

Company Name: Microsoft Corporation
 FCC ID: C3K2114
 FCC Classification: PCS Licensed Transmitter (PCB)
 Mode(s): WCDMA/LTE/NR/ULCA

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	Transmitter Conducted Output Power/ Effective Radiated Power	2.1046(a), 2.1046(c), 22.913(a)(5)	< 7 Watts max. ERP	PASS	Section 7.2
	Effective Radiated Power / Equivalent Isotropic Radiated Power	22.913(a)(5)	< 7 Watts max. ERP	PASS	Section 7.2
	Occupied Bandwidth	2.1049(h)	N/A	PASS	Section 7.3
	Conducted Band Edge / Spurious Emissions	2.1051, 22.917(a)	$\geq 43 + 10 \log (P[\text{Watts}])$ dB of attenuation below transmitter power	PASS	Sections 7.4, 7.5
	Frequency Stability	2.1055, 22.355	The carrier frequency of the transmitter must be maintained within the 2.5ppm	PASS	Section 7.7
RADIATED	Radiated Spurious Emissions	2.1053, 22.917(a)	$> 43 + 10 \log_{10} (P[\text{Watts}])$ for all out-of-band emissions	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) All conducted emissions measurements are performed with automated test software to capture the corresponding plots necessary to show compliance. The measurement software utilized is EMC Software Tool v2.3.0.

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7.2 Conducted Power Output Data and ERP

Test Overview

All emissions 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.

Test Procedure Used

ANSI C63.26-2015 – Section 5.2

Test Setup

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

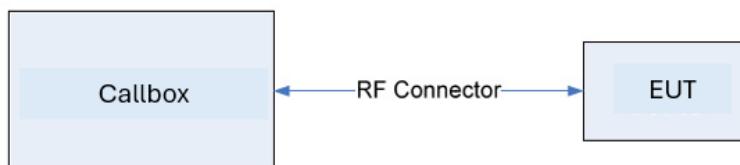


Figure 7-1. Test Instrument & Measurement Setup

Test Notes

1. Uplink carrier aggregation is only supported in this EUT while operating in Power Class 3.
2. Conducted power measurements were evaluated for the two contiguous channels 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.
3. 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.
4. ERP is calculated using conducted power and antenna gain.
5. This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to “1”.
6. This unit was tested using a power supply.
7. 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.

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Power State	Band	Bandwidth (PCC + SCC)	PCC					SCC					ULCA Tx. Power [dBm]
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	
Max	LTE B5	10MHz + 10MHz	QPSK	20450	829.0	1	49	QPSK	20549	838.9	1	0	24.90
				20475	831.5	1	49		20574	841.4	1	0	24.83
				20600	844.0	1	0		20501	834.1	1	49	24.97
			QPSK	20600	844	50	0	QPSK	20501	834.1	50	0	23.09
			16-QAM	20600	844	50	0	16-QAM	20501	834.1	50	0	22.10
			64-QAM	20600	844	50	0	64-QAM	20501	834.1	50	0	22.14
			256-QAM	20600	844	50	0	256-QAM	20501	834.1	50	0	20.16

Table 7-2. Conducted Power Output Data (ULCA LTE Band 5 – Ant 5)

Power State	Band	Bandwidth (PCC + SCC)	PCC					SCC					ULCA Tx. Power [dBm]
			Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	Modulation	UL Channel	UL Frequency	UL # RB	UL RB Offset	
Max	LTE B5	10MHz + 10MHz	QPSK	20450	829.0	1	49	QPSK	20549	838.9	1	0	24.37
				20475	831.5	1	49		20574	841.4	1	0	24.40
				20600	844.0	1	0		20501	834.1	1	49	24.45
			QPSK	20600	844	50	0	QPSK	20501	834.1	50	0	22.59
			16-QAM	20600	844	50	0	16-QAM	20501	834.1	50	0	21.61
			64-QAM	20600	844	50	0	64-QAM	20501	834.1	50	0	21.64
			256-QAM	20600	844	50	0	256-QAM	20501	834.1	50	0	19.59

Table 7-3. Conducted Power Output Data (ULCA LTE Band 5 – Ant 2)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
15MHz (E)	QPSK	26865	831.5	1 / 37	23.97	6.10	30.07	1.015	38.45	-8.39
		26915	836.5	1 / 0	24.07	6.10	30.17	1.040	38.45	-8.28
		26965	841.5	1 / 37	24.12	6.10	30.22	1.051	38.45	-8.24
	16QAM	26865	831.5	1 / 37	23.42	6.10	29.52	0.896	38.45	-8.93
10 MHz	QPSK	26840	829.0	1 / 49	24.08	6.10	30.18	1.042	38.45	-8.27
		26915	836.5	1 / 49	24.36	6.10	30.46	1.112	38.45	-7.99
		26990	844.0	1 / 49	24.18	6.10	30.28	1.066	38.45	-8.17
	16QAM	26990	844.0	1 / 49	23.47	6.10	29.57	0.905	38.45	-8.88
5 MHz	QPSK	26815	826.5	1 / 12	24.26	6.10	30.36	1.086	38.45	-8.09
		26915	836.5	1 / 0	24.31	6.10	30.41	1.099	38.45	-8.04
		27015	846.5	1 / 24	24.31	6.10	30.41	1.098	38.45	-8.04
	16QAM	26915	836.5	1 / 0	23.48	6.10	29.58	0.908	38.45	-8.87
3 MHz	QPSK	26805	825.5	1 / 0	24.19	6.10	30.29	1.069	38.45	-8.16
		26915	836.5	1 / 0	24.17	6.10	30.27	1.063	38.45	-8.18
		27025	847.5	1 / 7	24.18	6.10	30.28	1.066	38.45	-8.17
	16QAM	26915	836.5	1 / 0	23.52	6.10	29.62	0.915	38.45	-8.83
1.4 MHz	QPSK	26797	824.7	1 / 5	24.12	6.10	30.22	1.052	38.45	-8.23
		26915	836.5	1 / 3	24.18	6.10	30.28	1.068	38.45	-8.17
		27033	848.3	1 / 0	24.18	6.10	30.28	1.067	38.45	-8.17
	16QAM	26797	824.7	1 / 5	23.56	6.10	29.66	0.924	38.45	-8.79

Table 7-4. Conducted Power Output Data and ERP Data (LTE Band 26/5 – Ant 5)

FCC ID: C3K2114		PART 22 MEASUREMENT REPORT						Approved by:	
Test Report S/N:		Test Dates:		EUT Type:				Technical Manager	
1M2411190103-01-R2.C3K		12/3/2024 - 2/14/2025		Full Modular				Page 12 of 92	

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
15MHz (E)	QPSK	26865	831.5	1 / 0	23.18	6.10	29.28	0.847	38.45	-9.17
		26915	836.5	1 / 37	23.12	6.10	29.22	0.835	38.45	-9.23
		26965	841.5	1 / 0	23.12	6.10	29.22	0.835	38.45	-9.23
	16QAM	26865	831.5	1 / 37	22.66	6.10	28.76	0.751	38.45	-9.69
10 MHz	QPSK	26840	829.0	1 / 25	23.37	6.10	29.47	0.885	38.45	-8.98
		26915	836.5	1 / 25	23.33	6.10	29.43	0.877	38.45	-9.02
		26990	844.0	1 / 0	23.33	6.10	29.43	0.876	38.45	-9.02
	16QAM	26840	829.0	1 / 49	22.69	6.10	28.79	0.757	38.45	-9.66
5 MHz	QPSK	26815	826.5	1 / 0	23.39	6.10	29.49	0.889	38.45	-8.96
		26915	836.5	1 / 24	23.36	6.10	29.46	0.883	38.45	-8.99
		27015	846.5	1 / 12	23.37	6.10	29.47	0.885	38.45	-8.98
	16QAM	27015	846.5	1 / 12	22.72	6.10	28.82	0.762	38.45	-9.63
3 MHz	QPSK	26805	825.5	1 / 7	23.21	6.10	29.31	0.854	38.45	-9.14
		26915	836.5	1 / 0	23.30	6.10	29.40	0.872	38.45	-9.05
		27025	847.5	1 / 0	23.12	6.10	29.22	0.835	38.45	-9.23
	16QAM	26915	836.5	1 / 14	22.74	6.10	28.84	0.765	38.45	-9.62
1.4 MHz	QPSK	26797	824.7	1 / 3	23.32	6.10	29.42	0.874	38.45	-9.03
		26915	836.5	1 / 3	23.48	6.10	29.58	0.908	38.45	-8.87
		27033	848.3	1 / 0	23.26	6.10	29.36	0.862	38.45	-9.10
	16QAM	26915	836.5	1 / 0	22.66	6.10	28.76	0.752	38.45	-9.69

Table 7-5. Conducted Power Output Data and ERP Data (LTE Band 26/5 – Ant 2)

Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	166800	834.0	1 / 1	23.97	6.10	30.07	1.016	38.45	-8.38
		167300	836.5	1 / 1	24.01	6.10	30.11	1.026	38.45	-8.34
		167800	839.0	1 / 1	23.99	6.10	30.09	1.021	38.45	-8.36
	QPSK	166800	834.0	1 / 1	23.94	6.10	30.04	1.009	38.45	-8.41
		167300	836.5	1 / 1	24.01	6.10	30.11	1.026	38.45	-8.34
		167800	839.0	1 / 1	24.04	6.10	30.14	1.033	38.45	-8.31
	16-QAM	167800	839.0	1 / 1	22.93	6.10	29.03	0.800	38.45	-9.42
	π/2 BPSK	166300	831.5	1 / 1	24.00	6.10	30.10	1.023	38.45	-8.35
		167300	836.5	1 / 1	24.09	6.10	30.19	1.045	38.45	-8.26
		168300	841.5	1 / 1	23.86	6.10	29.96	0.991	38.45	-8.49
15 MHz	QPSK	166300	831.5	1 / 1	24.01	6.10	30.11	1.026	38.45	-8.34
		167300	836.5	1 / 1	24.07	6.10	30.17	1.040	38.45	-8.28
		168300	841.5	1 / 1	23.92	6.10	30.02	1.005	38.45	-8.43
	16-QAM	167300	836.5	1 / 1	23.00	6.10	29.10	0.813	38.45	-9.35
	π/2 BPSK	165800	829.0	1 / 26	23.88	6.10	29.98	0.995	38.45	-8.47
		167300	836.5	1 / 1	23.93	6.10	30.03	1.007	38.45	-8.42
		168800	844.0	1 / 1	23.77	6.10	29.87	0.971	38.45	-8.58
10 MHz	QPSK	165800	829.0	1 / 26	23.92	6.10	30.02	1.005	38.45	-8.43
		167300	836.5	1 / 1	23.86	6.10	29.96	0.991	38.45	-8.49
		168800	844.0	1 / 1	23.75	6.10	29.85	0.966	38.45	-8.60
	16-QAM	165800	829.0	1 / 1	22.79	6.10	28.89	0.774	38.45	-9.56
	π/2 BPSK	165300	826.5	1 / 1	23.97	6.10	30.07	1.016	38.45	-8.38
		167300	836.5	1 / 23	23.97	6.10	30.07	1.016	38.45	-8.38
		169300	846.5	1 / 1	23.89	6.10	29.99	0.998	38.45	-8.46
5 MHz	QPSK	165300	826.5	1 / 23	23.98	6.10	30.08	1.019	38.45	-8.37
		167300	836.5	1 / 1	23.95	6.10	30.05	1.012	38.45	-8.40
		169300	846.5	1 / 1	23.90	6.10	30.00	1.000	38.45	-8.45
	16-QAM	169300	846.5	1 / 1	22.96	6.10	29.06	0.805	38.45	-9.39

Table 7-6. Conducted Power Output Data and ERP Data (NR Band n5 – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT						Approved by: Technical Manager
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Bandwidth	Modulation	Channel	Frequency [MHz]	RB Size/Offset	Conducted Power [dBm]	Ant Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	166800	834.0	1 / 1	23.73	6.10	29.83	0.962	38.45	-8.62
		167300	836.5	1 / 53	23.79	6.10	29.89	0.975	38.45	-8.56
		167800	839.0	1 / 1	23.76	6.10	29.86	0.968	38.45	-8.59
	QPSK	166800	834.0	1 / 1	23.71	6.10	29.81	0.957	38.45	-8.64
		167300	836.5	1 / 53	23.81	6.10	29.91	0.979	38.45	-8.54
		167800	839.0	1 / 53	23.78	6.10	29.88	0.973	38.45	-8.57
		167800	839.0	1 / 1	22.71	6.10	28.81	0.760	38.45	-9.64
15 MHz	π/2 BPSK	166300	831.5	1 / 1	23.71	6.10	29.81	0.957	38.45	-8.64
		167300	836.5	1 / 1	23.83	6.10	29.93	0.984	38.45	-8.52
		168300	841.5	1 / 1	23.76	6.10	29.86	0.968	38.45	-8.59
	QPSK	166300	831.5	1 / 1	23.79	6.10	29.89	0.975	38.45	-8.56
		167300	836.5	1 / 1	23.88	6.10	29.98	0.995	38.45	-8.47
		168300	841.5	1 / 1	23.83	6.10	29.93	0.984	38.45	-8.52
		167300	836.5	1 / 1	22.75	6.10	28.85	0.767	38.45	-9.60
10 MHz	π/2 BPSK	165800	829.0	1 / 50	23.61	6.10	29.71	0.935	38.45	-8.74
		167300	836.5	1 / 1	23.72	6.10	29.82	0.959	38.45	-8.63
		168800	844.0	1 / 50	23.61	6.10	29.71	0.935	38.45	-8.74
	QPSK	165800	829.0	1 / 50	23.67	6.10	29.77	0.948	38.45	-8.68
		167300	836.5	1 / 1	23.76	6.10	29.86	0.968	38.45	-8.59
		168800	844.0	1 / 1	23.65	6.10	29.75	0.944	38.45	-8.70
		167300	836.5	1 / 1	22.68	6.10	28.78	0.755	38.45	-9.67
5 MHz	π/2 BPSK	165300	826.5	1 / 1	23.75	6.10	29.85	0.966	38.45	-8.60
		167300	836.5	1 / 23	23.74	6.10	29.84	0.964	38.45	-8.61
		169300	846.5	1 / 1	23.75	6.10	29.85	0.966	38.45	-8.60
	QPSK	165300	826.5	1 / 23	23.73	6.10	29.83	0.962	38.45	-8.62
		167300	836.5	1 / 23	23.79	6.10	29.89	0.975	38.45	-8.56
		169300	846.5	1 / 1	23.78	6.10	29.88	0.973	38.45	-8.57
		169300	846.5	1 / 1	22.76	6.10	28.86	0.769	38.45	-9.59

Table 7-7. Conducted Power Output Data and ERP Data (NR Band n5 – Ant 2)

Frequency [MHz]	Mode	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
826.40	WCDMA850	23.99	6.10	30.09	1.021	38.45	-8.36
836.60	WCDMA850	23.93	6.10	30.03	1.007	38.45	-8.42
846.60	WCDMA850	23.93	6.10	30.03	1.007	38.45	-8.42

Table 7-8. Conducted Power Output Data and ERP Data (WCDMA Cell – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT				Approved by: Technical Manager
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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 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Setup

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

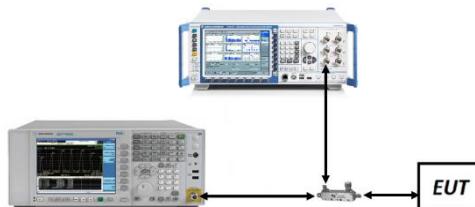


Figure 7-2. Test Instrument & Measurement Setup

Test Notes

None.

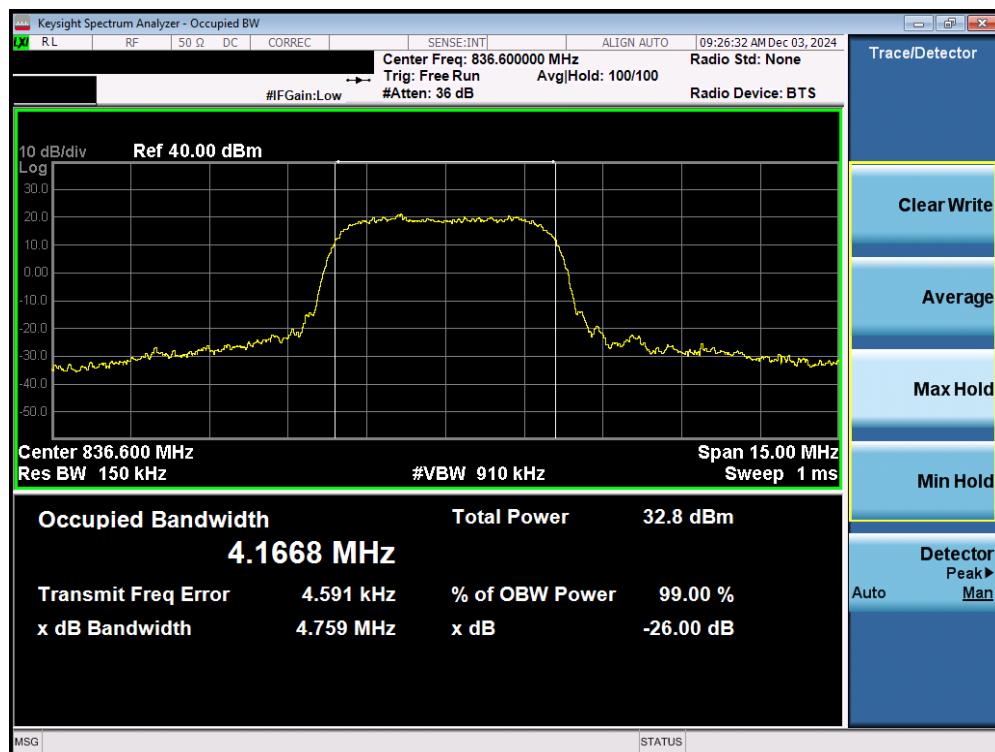
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
WCDMA-Cell	N/A	Spread Spectrum	4.17
	15MHz	QPSK	13.57
		16QAM	13.57
	10MHz	QPSK	9.03
		16QAM	9.06
	5 MHz	QPSK	4.54
		16QAM	4.54
	3 MHz	QPSK	2.71
		16QAM	2.72
	1.4 MHz	QPSK	1.11
		16QAM	1.11
LTE-B26-5	20 MHz	$\pi/2$ BPSK	17.97
		QPSK	18.97
		16QAM	18.95
	15 MHz	$\pi/2$ BPSK	13.53
		QPSK	14.16
		16QAM	14.15
	10 MHz	$\pi/2$ BPSK	8.99
		QPSK	9.36
		16QAM	9.36
	5 MHz	$\pi/2$ BPSK	4.51
		QPSK	4.51
		16QAM	4.52

Table 7-9. Occupied Bandwidth Test Results – Ant 5

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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WCDMA Cell – Ant 5



Plot 7-1. Occupied Bandwidth Plot (WCDMA, Ch. 4183 – Ant 5)

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LTE Band 26/5 – Ant 5

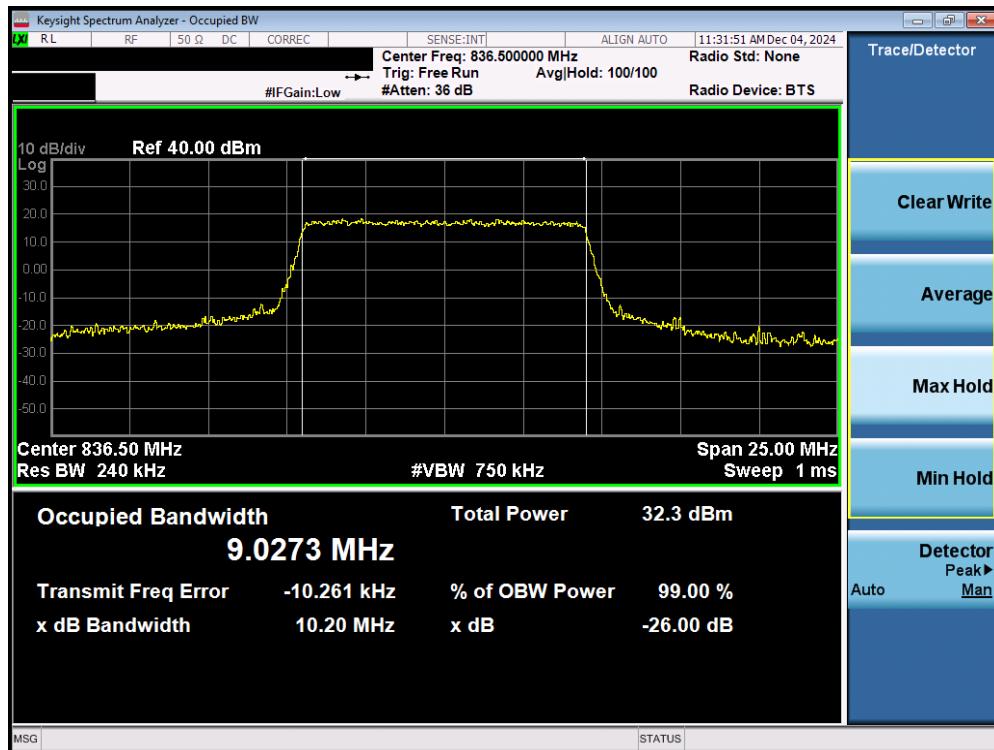


Plot 7-2. Occupied Bandwidth Plot (LTE Band 26 - 15MHz QPSK - Full RB - Ant 5)

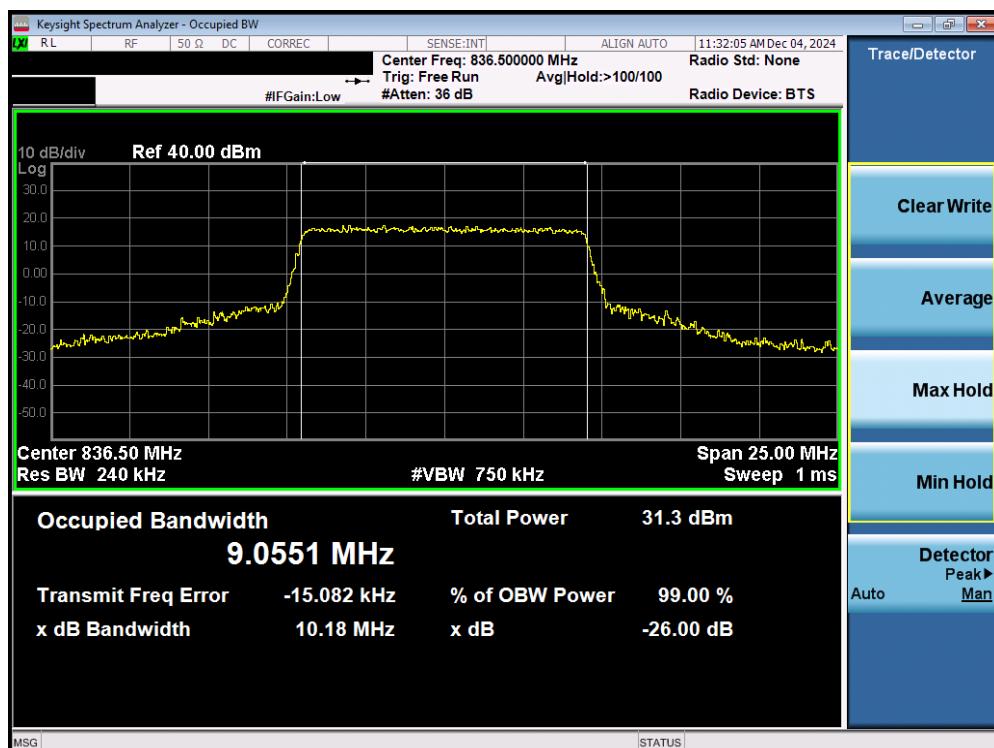


Plot 7-3. Occupied Bandwidth Plot (LTE Band 26 - 15MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-4. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz QPSK - Full RB - Ant 5)



Plot 7-5. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-6. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz QPSK - Full RB - Ant 5)

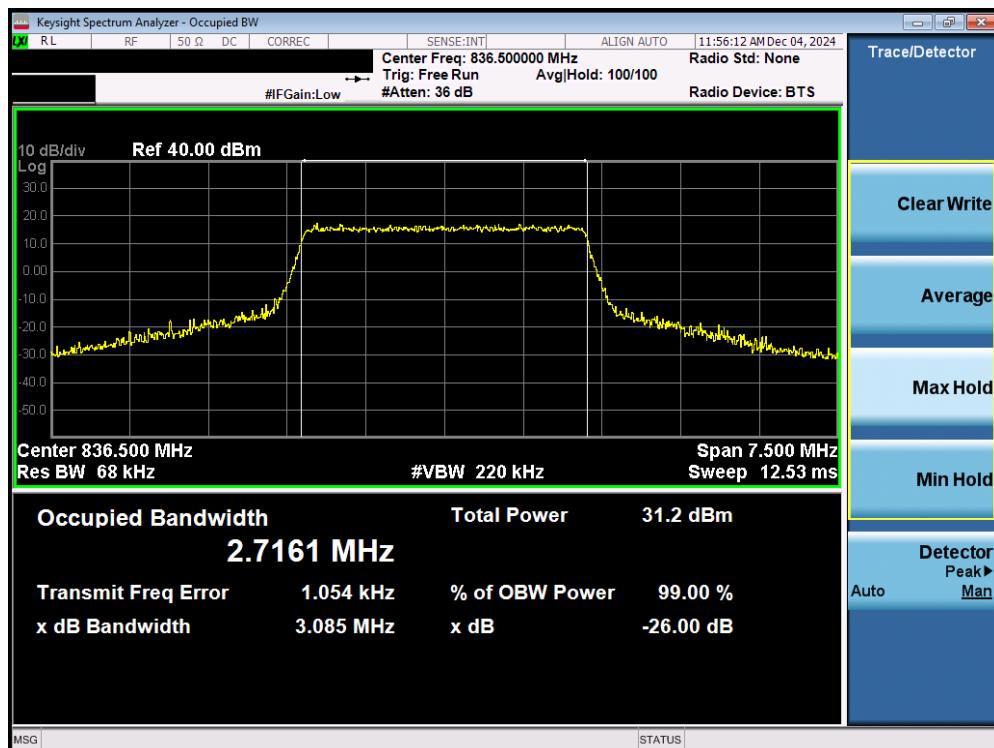


Plot 7-7. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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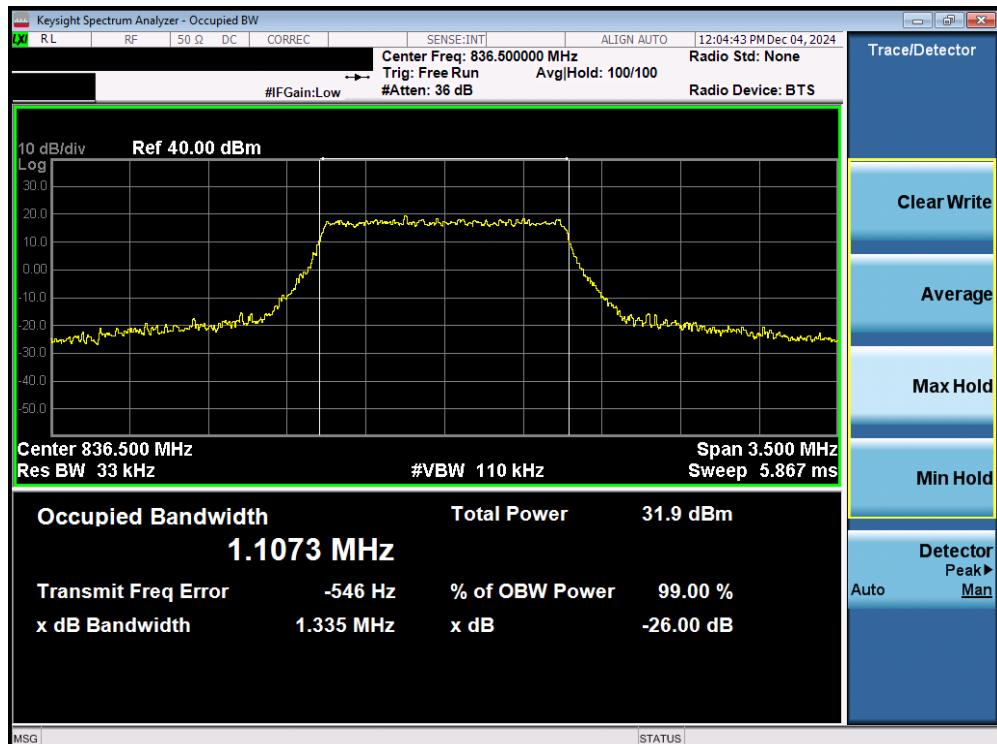


Plot 7-8. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz QPSK - Full RB - Ant 5)

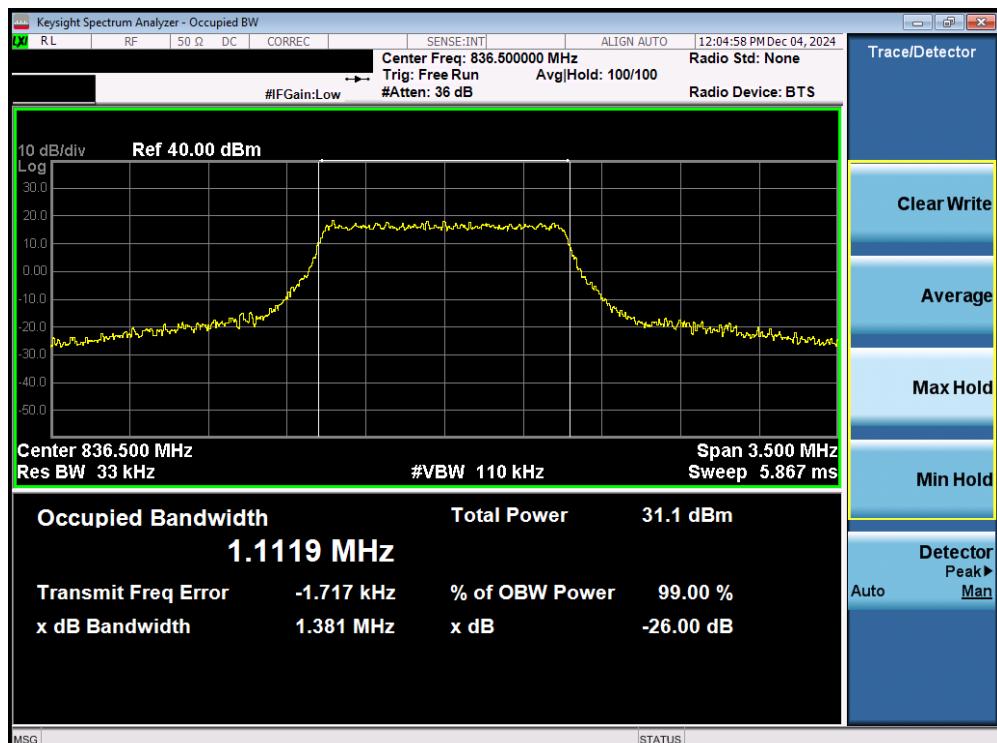


Plot 7-9. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 21 of 92



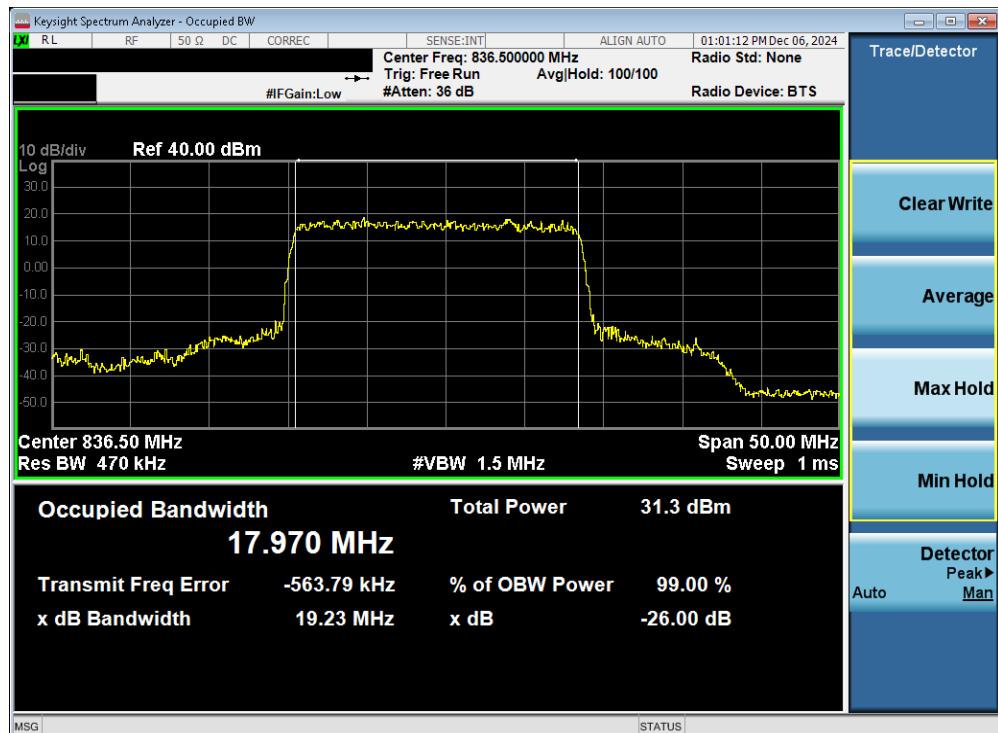
Plot 7-10. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz QPSK - Full RB - Ant 5)



Plot 7-11. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 22 of 92	

NR Band n5 – Ant 5

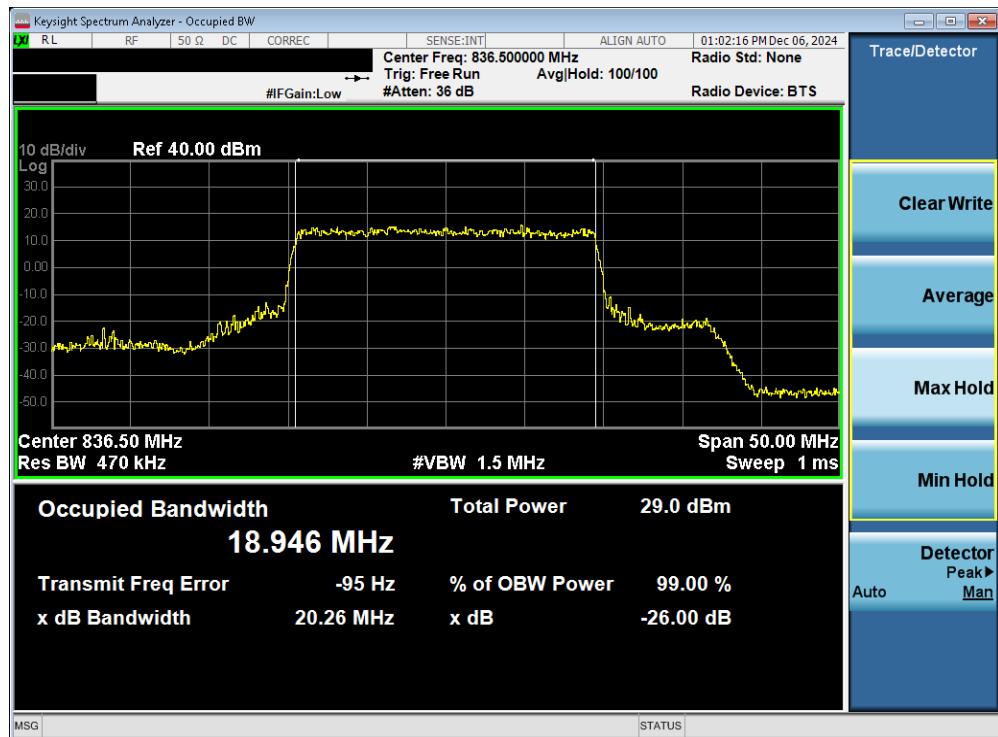


Plot 7-12. Occupied Bandwidth Plot (NR Band n5 - 20MHz $\pi/2$ BPSK - Full RB - Ant 5)

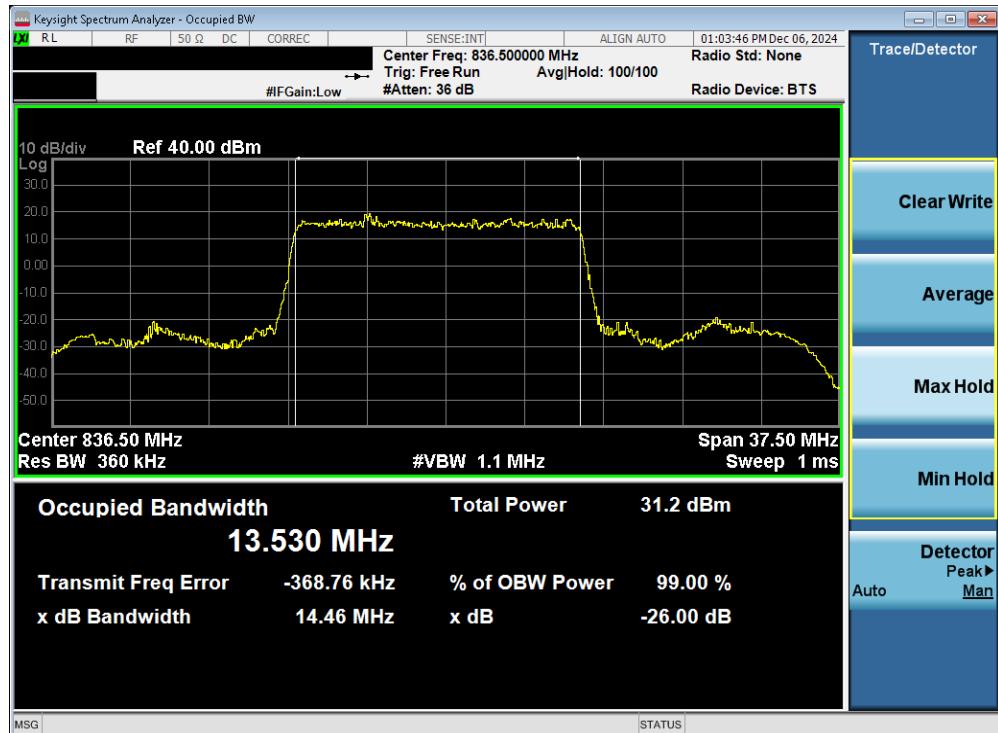


Plot 7-13. Occupied Bandwidth Plot (NR Band n5 - 20MHz QPSK - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 23 of 92

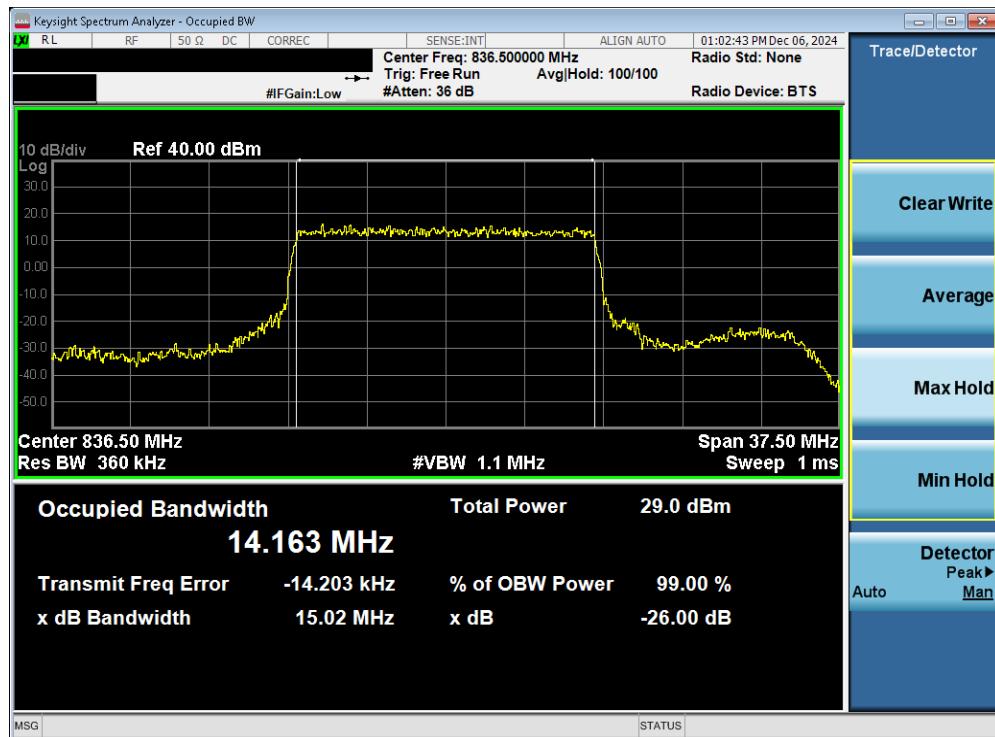


Plot 7-14. Occupied Bandwidth Plot (NR Band n5 - 20MHz 16-QAM - Full RB - Ant 5)

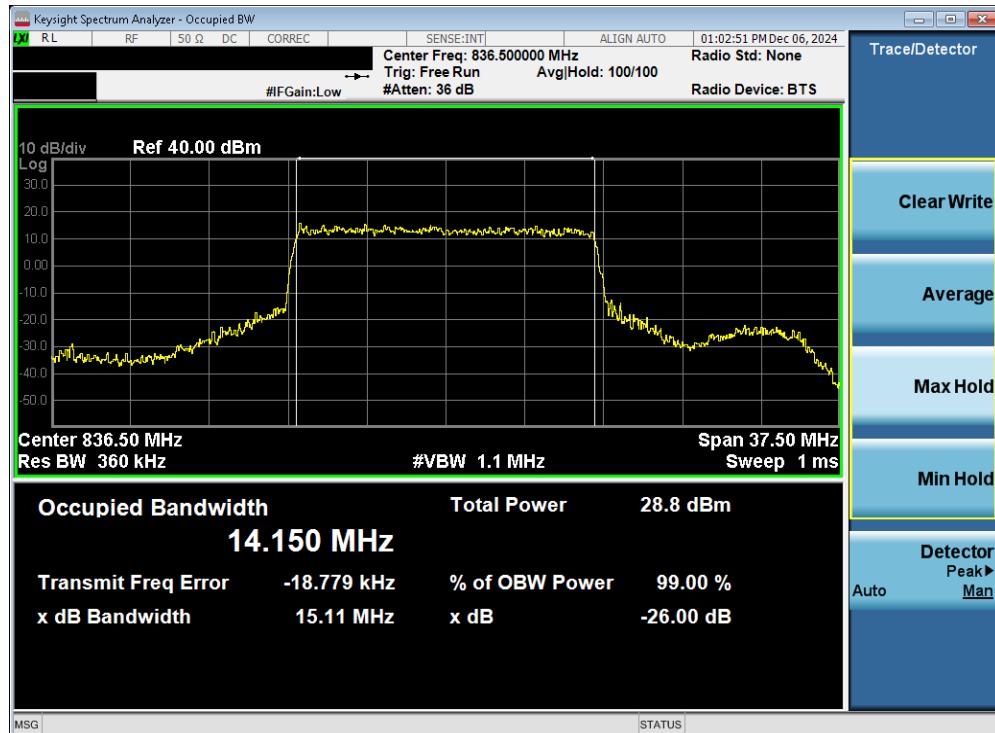


Plot 7-15. Occupied Bandwidth Plot (NR Band n5 - 15MHz π/2 BPSK - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 24 of 92

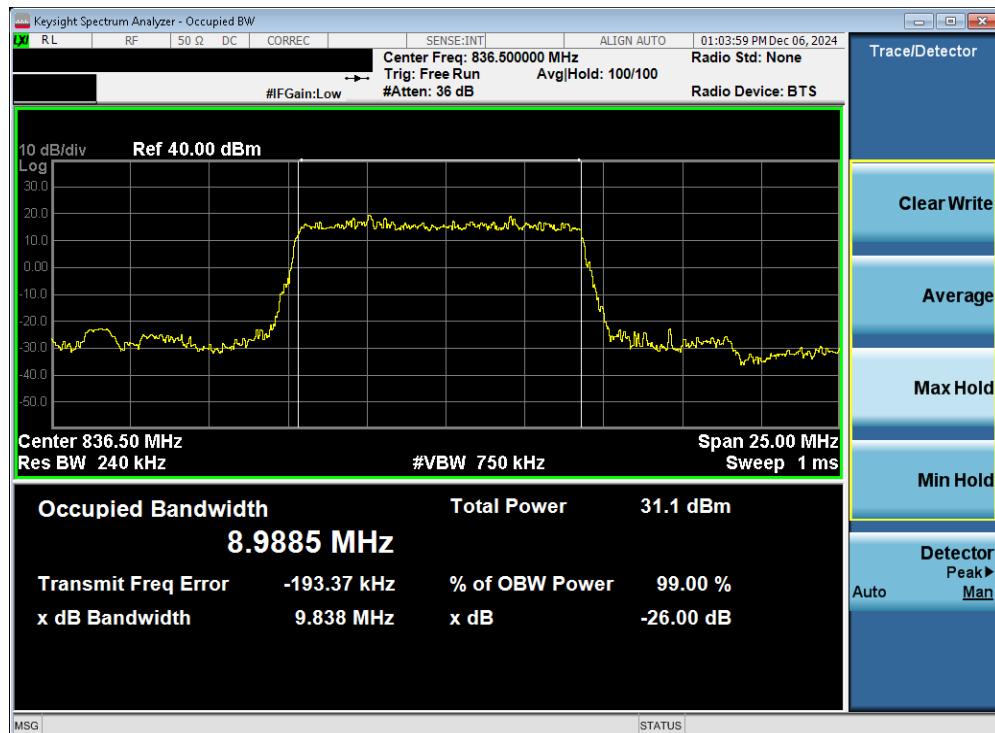


Plot 7-16. Occupied Bandwidth Plot (NR Band n5 - 15MHz QPSK - Full RB - Ant 5)

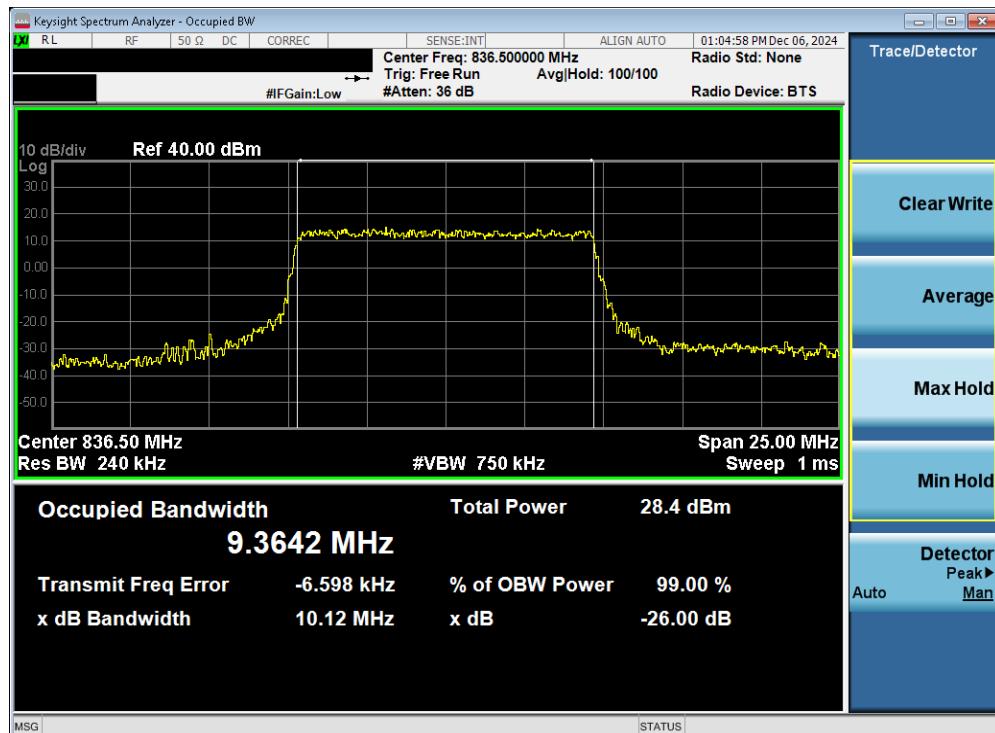


Plot 7-17. Occupied Bandwidth Plot (NR Band n5 - 15MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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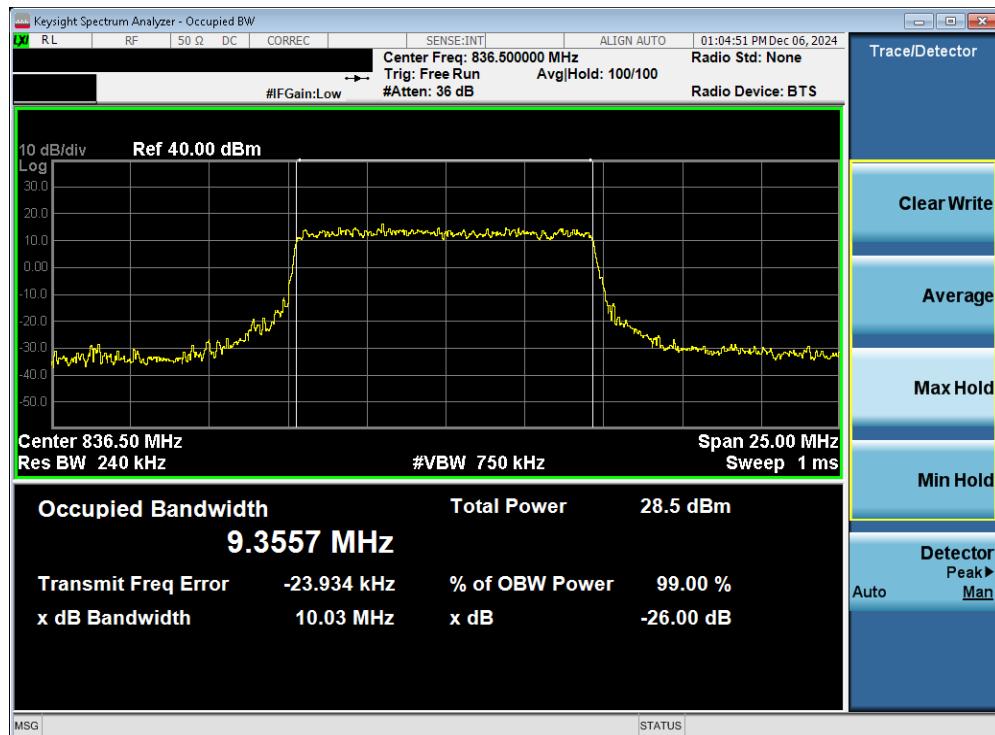


Plot 7-18. Occupied Bandwidth Plot (NR Band n5 - 10MHz $\pi/2$ BPSK - Full RB - Ant 5)



Plot 7-19. Occupied Bandwidth Plot (NR Band n5 - 10MHz QPSK - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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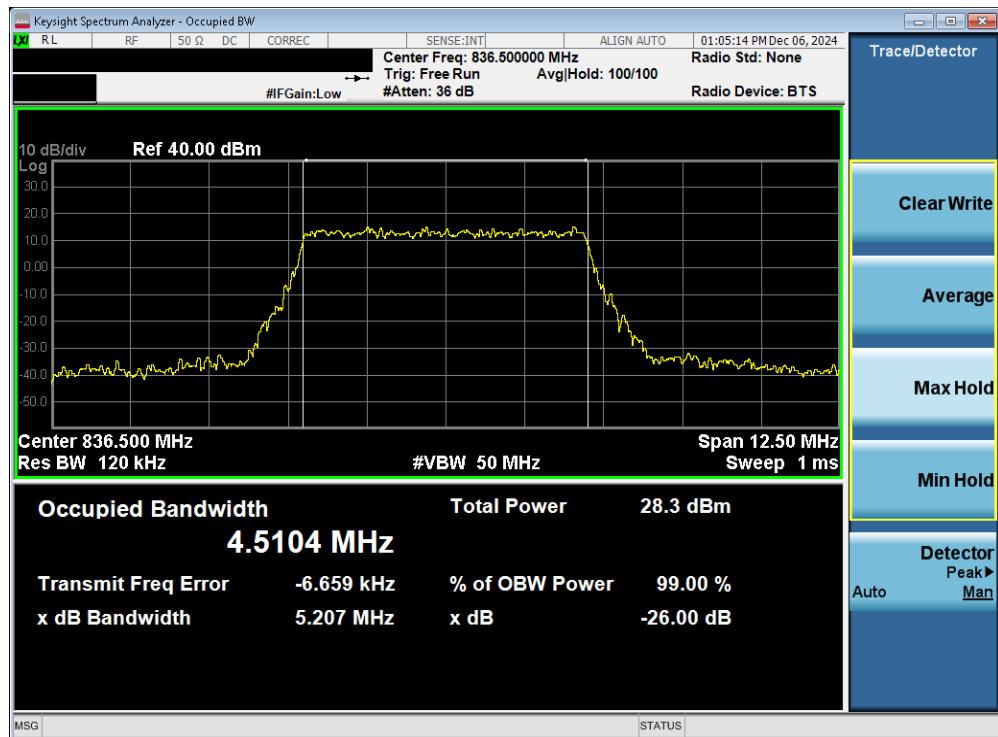


Plot 7-20. Occupied Bandwidth Plot (NR Band n5 - 10MHz 16-QAM - Full RB - Ant 5)

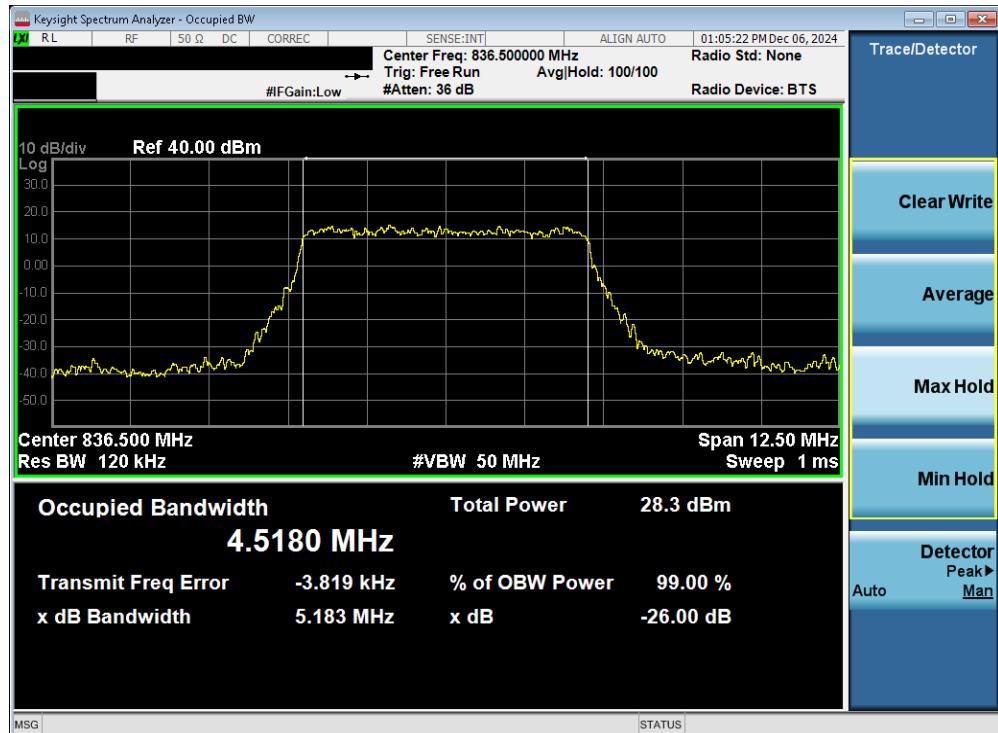


Plot 7-21. Occupied Bandwidth Plot (NR Band n5 - 5MHz π/2 BPSK - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-22. Occupied Bandwidth Plot (NR Band n5 - 5MHz QPSK - Full RB - Ant 5)



Plot 7-23. Occupied Bandwidth Plot (NR Band n5 - 5MHz 16-QAM - Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Mode	Bandwidth	Modulation	OBW [MHz]
LTE-B26-5	15MHz	QPSK	13.49
		16QAM	13.46
	10MHz	QPSK	8.99
		16QAM	9.00
	5 MHz	QPSK	4.54
		16QAM	4.53
	3 MHz	QPSK	2.70
		16QAM	2.70
	1.4 MHz	QPSK	1.10
		16QAM	1.11
NR-n26-5	20 MHz	$\pi/2$ BPSK	17.98
		QPSK	18.96
		16QAM	18.99
	15 MHz	$\pi/2$ BPSK	13.54
		QPSK	14.18
		16QAM	14.18
	10 MHz	$\pi/2$ BPSK	9.02
		QPSK	9.33
		16QAM	9.31
	5 MHz	$\pi/2$ BPSK	4.51
		QPSK	4.50
		16QAM	4.54

Table 7-10. Occupied Bandwidth Test Results – Ant 2

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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LTE Band 26/5 – Ant 2

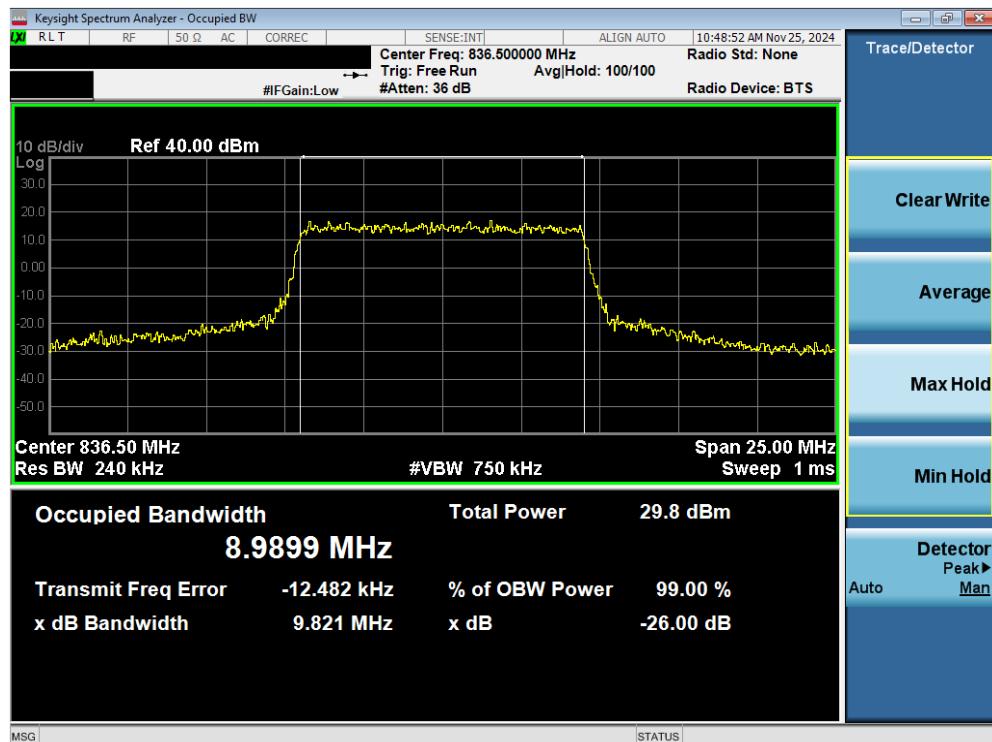


Plot 7-24. Occupied Bandwidth Plot (LTE Band 26 - 15MHz QPSK - Full RB - Ant 2)



Plot 7-25. Occupied Bandwidth Plot (LTE Band 26 - 15MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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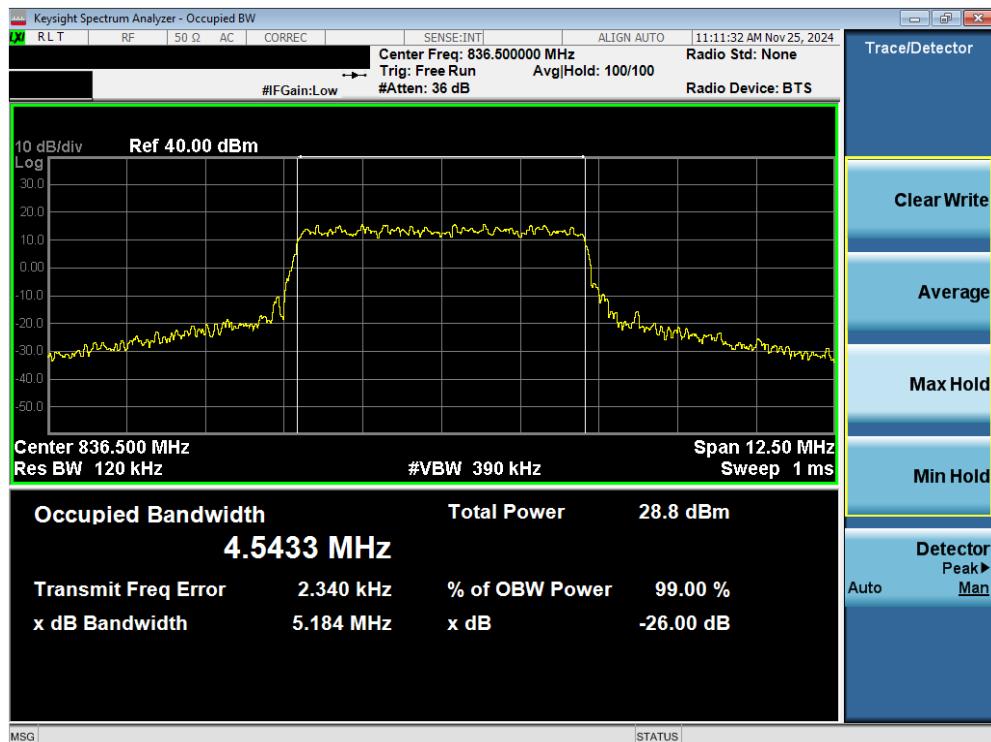


Plot 7-26. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz QPSK - Full RB - Ant 2)

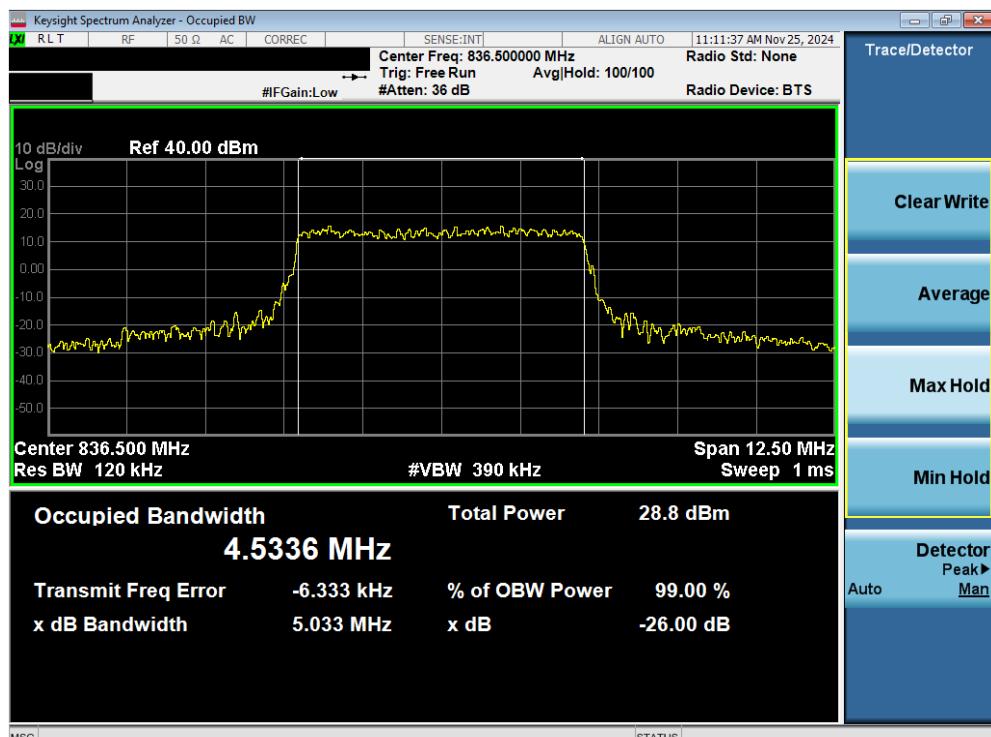


Plot 7-27. Occupied Bandwidth Plot (LTE Band 26/5 - 10MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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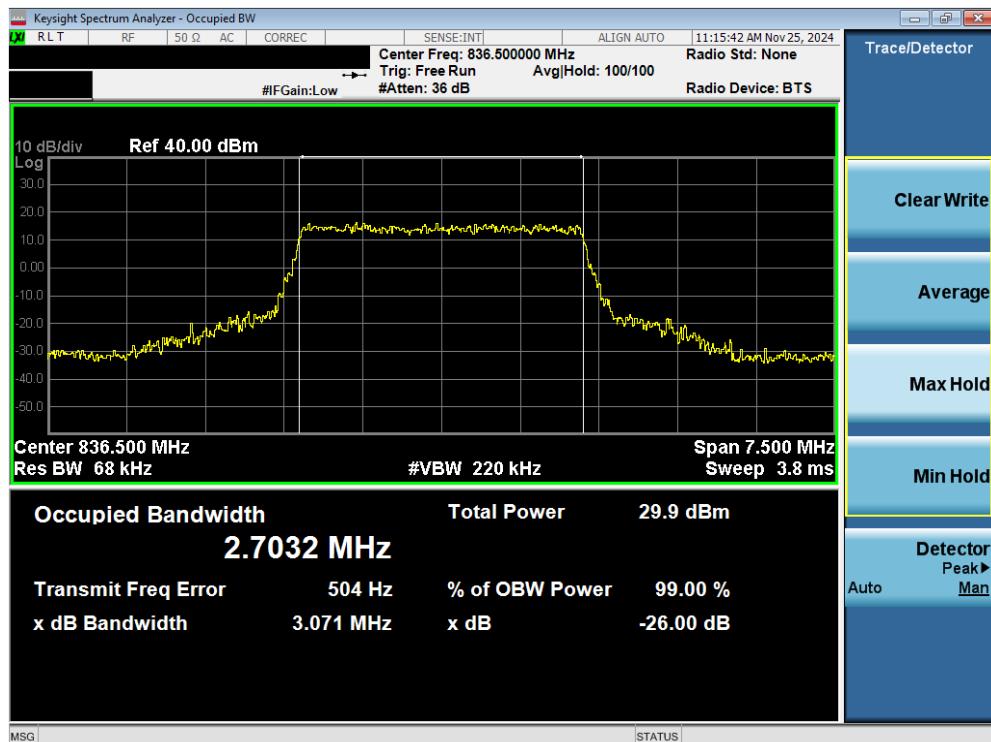


Plot 7-28. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz QPSK - Full RB - Ant 2)

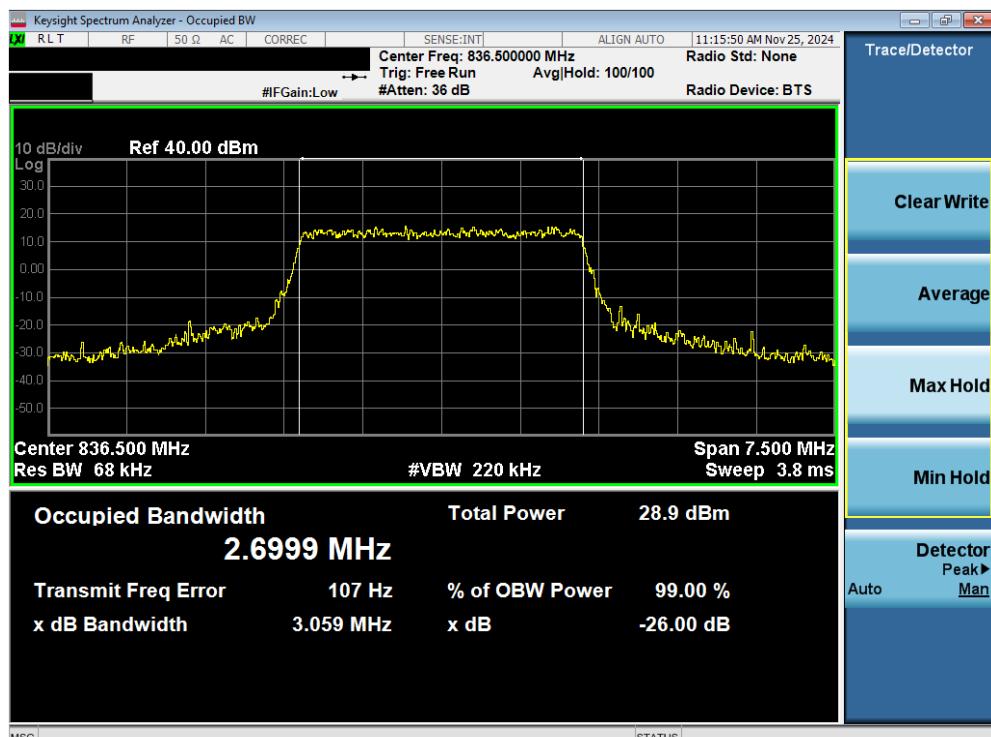


Plot 7-29. Occupied Bandwidth Plot (LTE Band 26/5 - 5MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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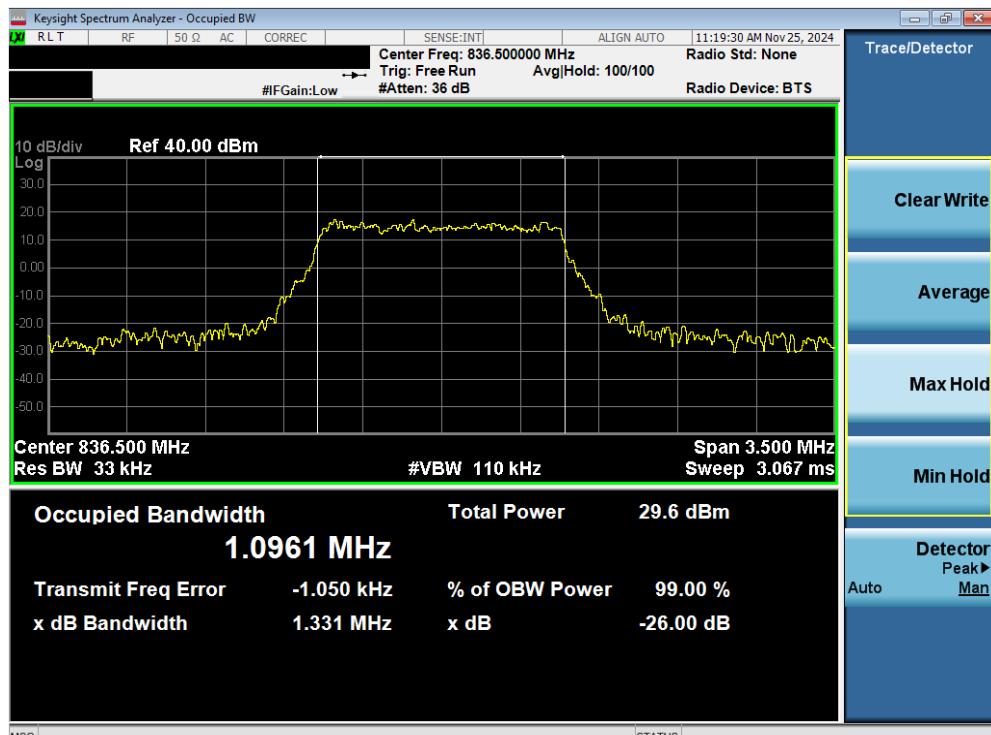


Plot 7-30. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz QPSK - Full RB - Ant 2)

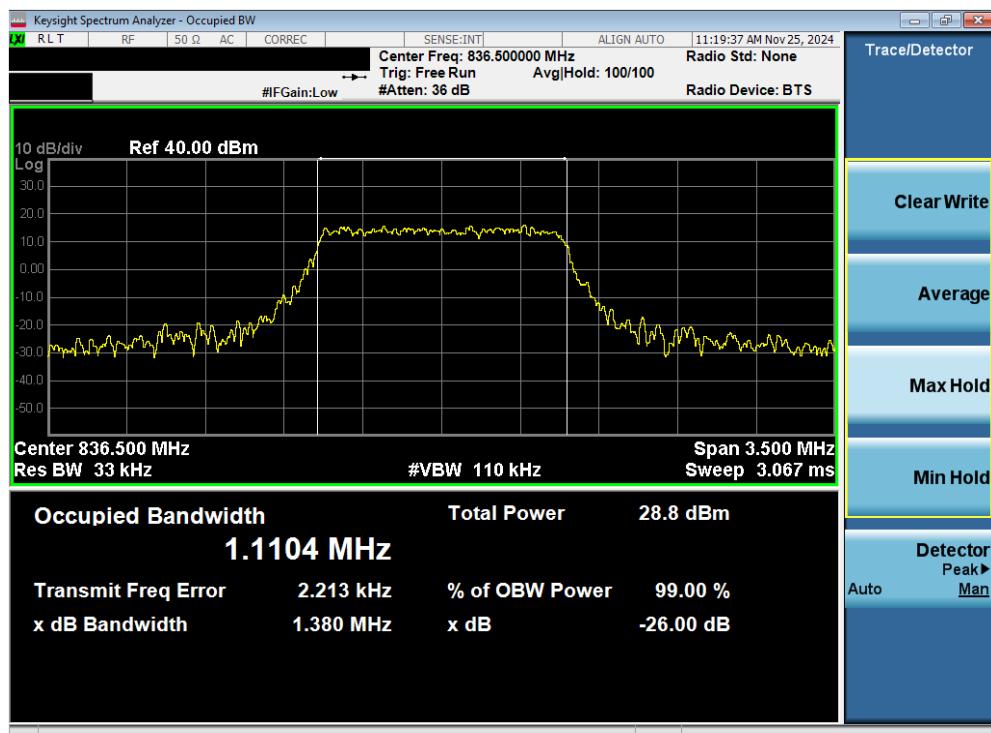


Plot 7-31. Occupied Bandwidth Plot (LTE Band 26/5 - 3MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 33 of 92



Plot 7-32. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz QPSK - Full RB - Ant 2)



Plot 7-33. Occupied Bandwidth Plot (LTE Band 26/5 - 1.4MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 34 of 92

NR Band n5 – Ant 2

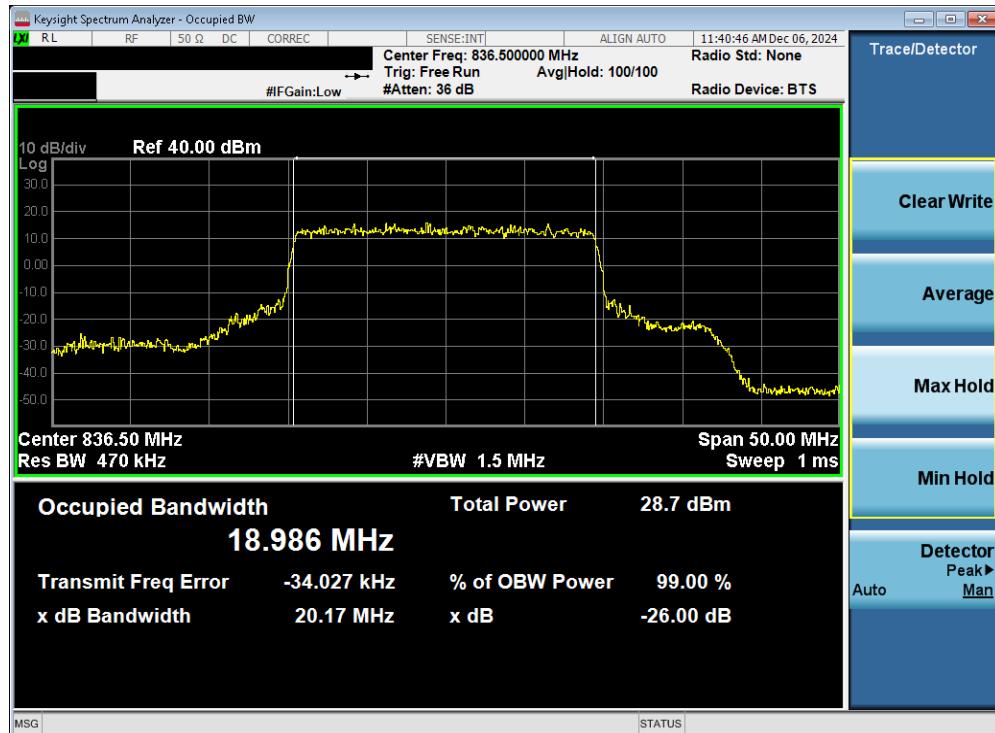


Plot 7-34. Occupied Bandwidth Plot (NR Band n5 - 20MHz $\pi/2$ BPSK - Full RB - Ant 2)

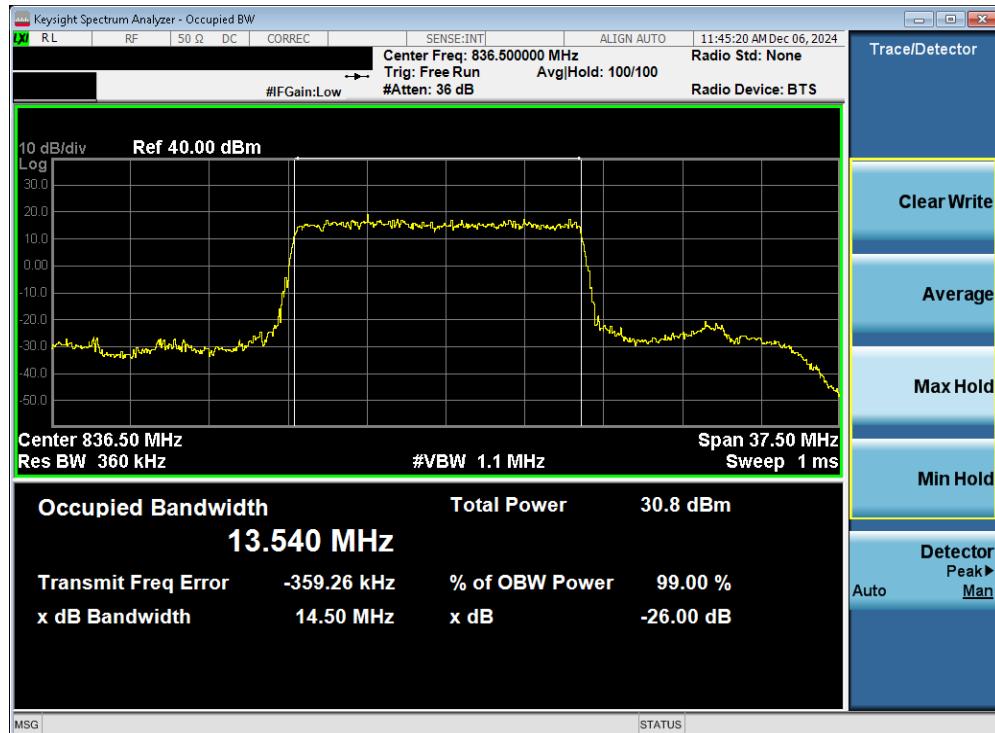


Plot 7-35. Occupied Bandwidth Plot (NR Band n5 - 20MHz QPSK - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 35 of 92

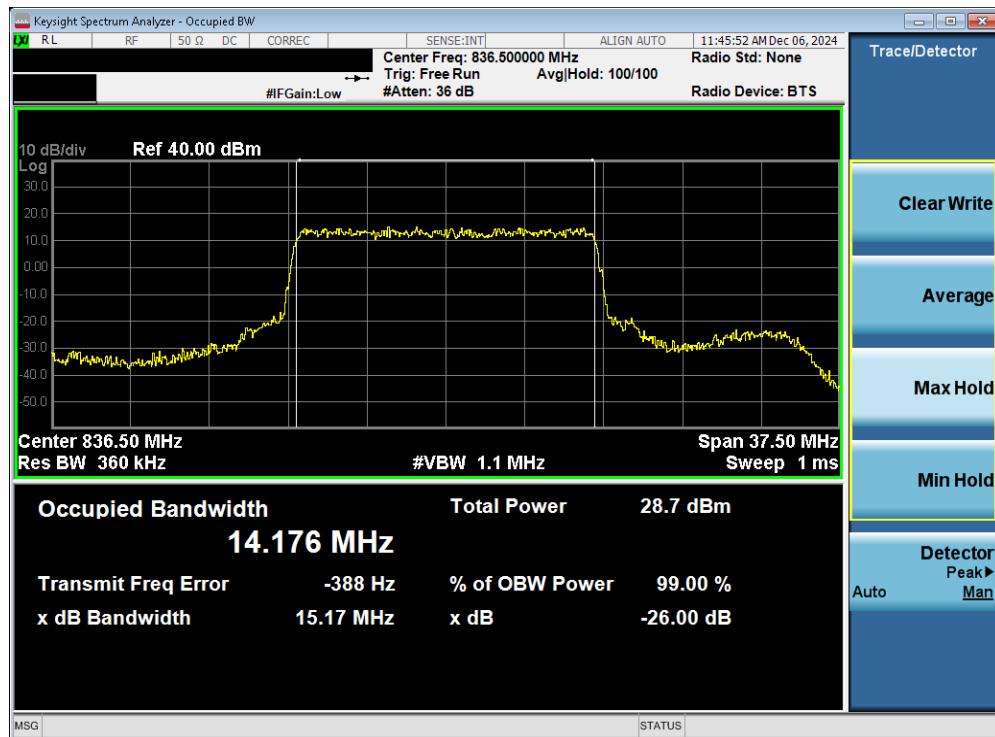


Plot 7-36. Occupied Bandwidth Plot (NR Band n5 - 20MHz 16-QAM - Full RB - Ant 2)

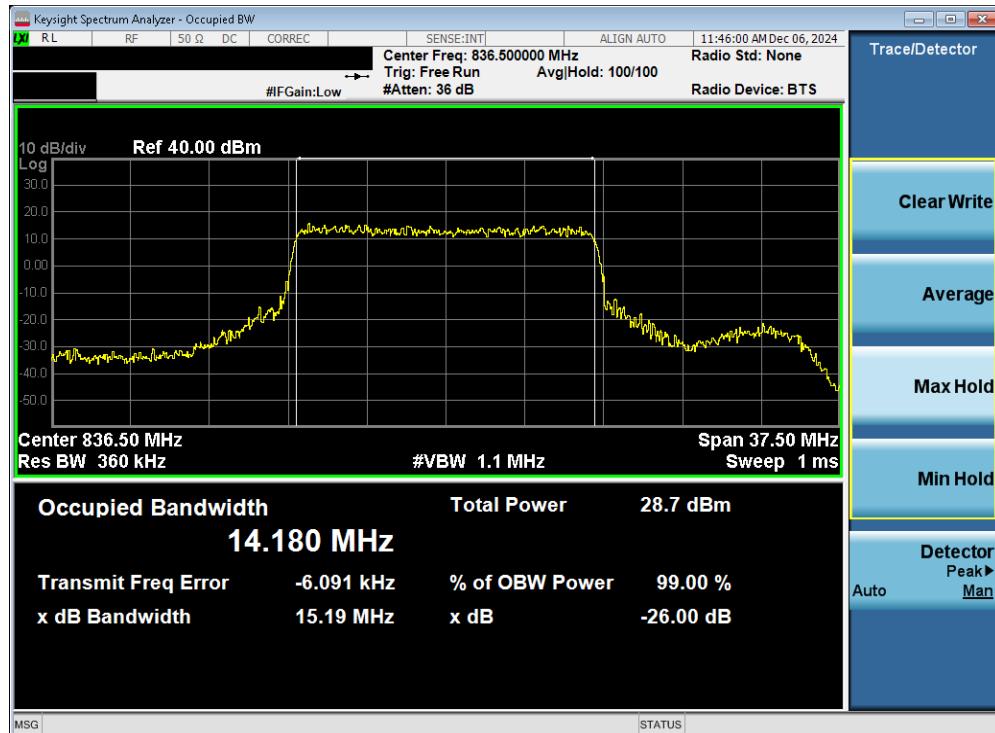


Plot 7-37. Occupied Bandwidth Plot (NR Band n5 - 15MHz π/2 BPSK - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-38. Occupied Bandwidth Plot (NR Band n5 - 15MHz QPSK - Full RB - Ant 2)

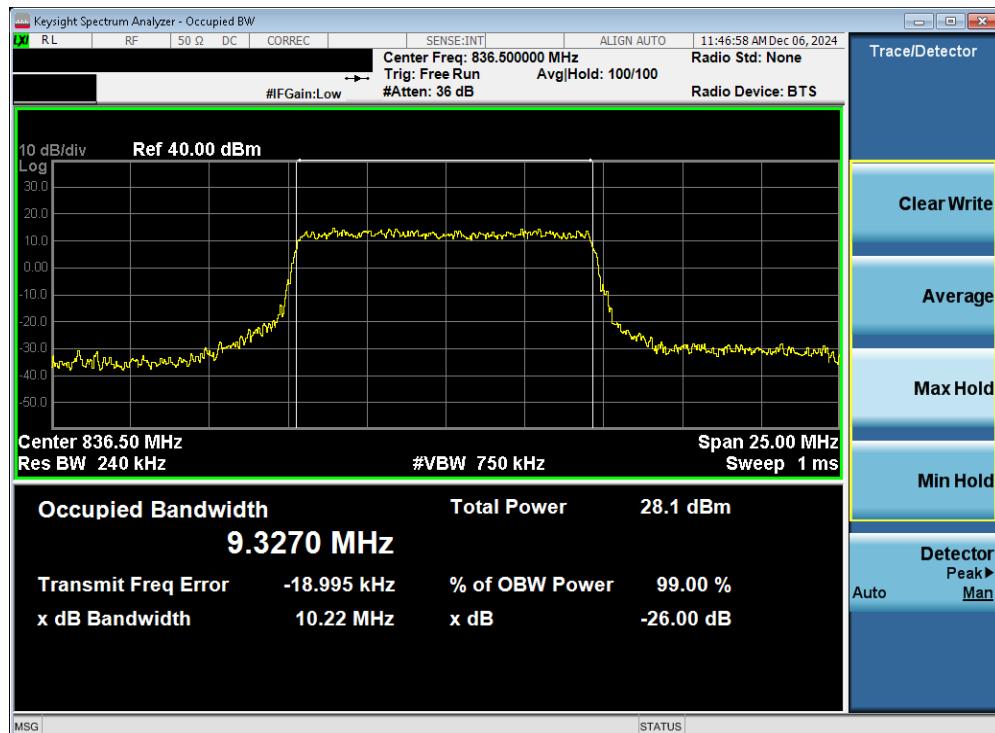


Plot 7-39. Occupied Bandwidth Plot (NR Band n5 - 15MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 37 of 92

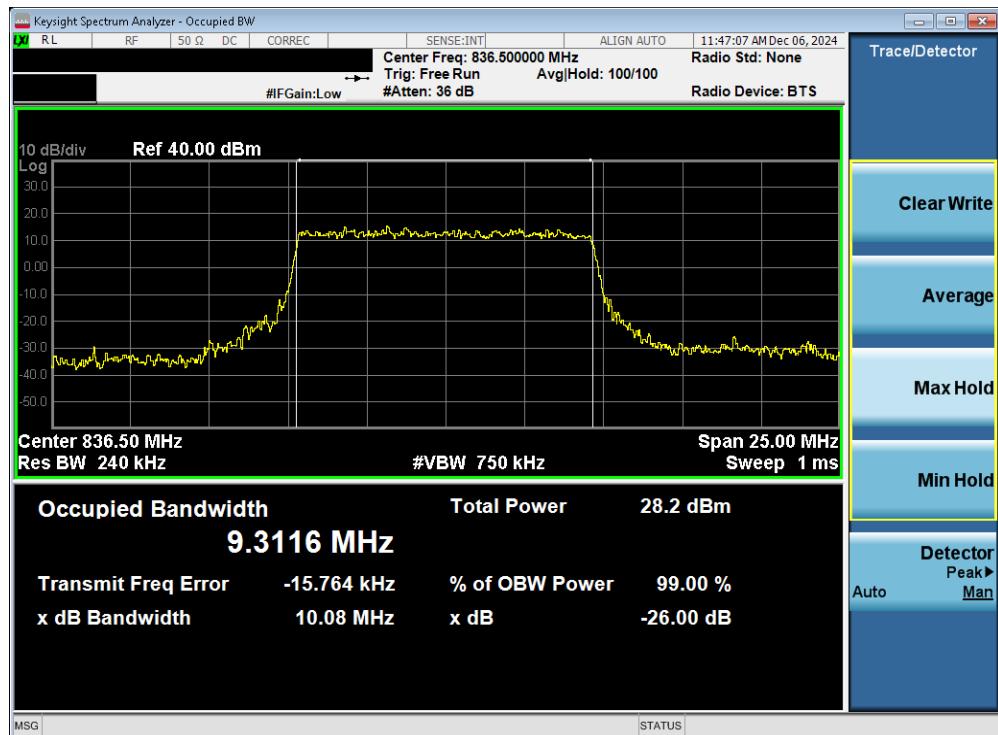


Plot 7-40. Occupied Bandwidth Plot (NR Band n5 - 10MHz π/2 BPSK - Full RB - Ant 2)



Plot 7-41. Occupied Bandwidth Plot (NR Band n5 - 10MHz QPSK - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 38 of 92

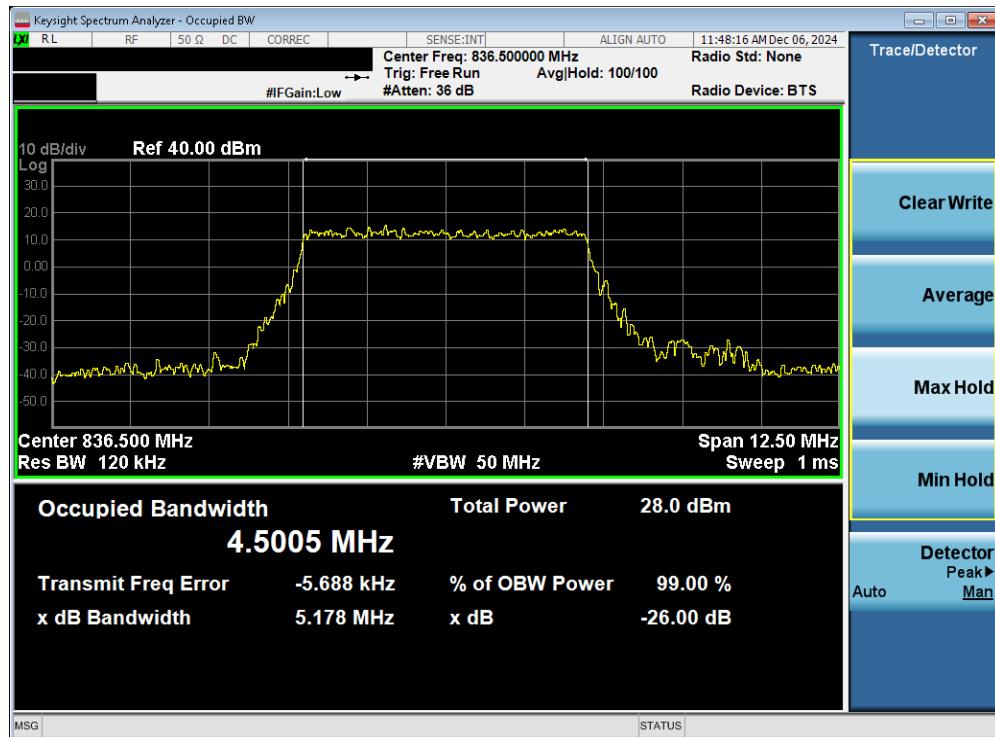


Plot 7-42. Occupied Bandwidth Plot (NR Band n5 - 10MHz 16-QAM - Full RB - Ant 2)

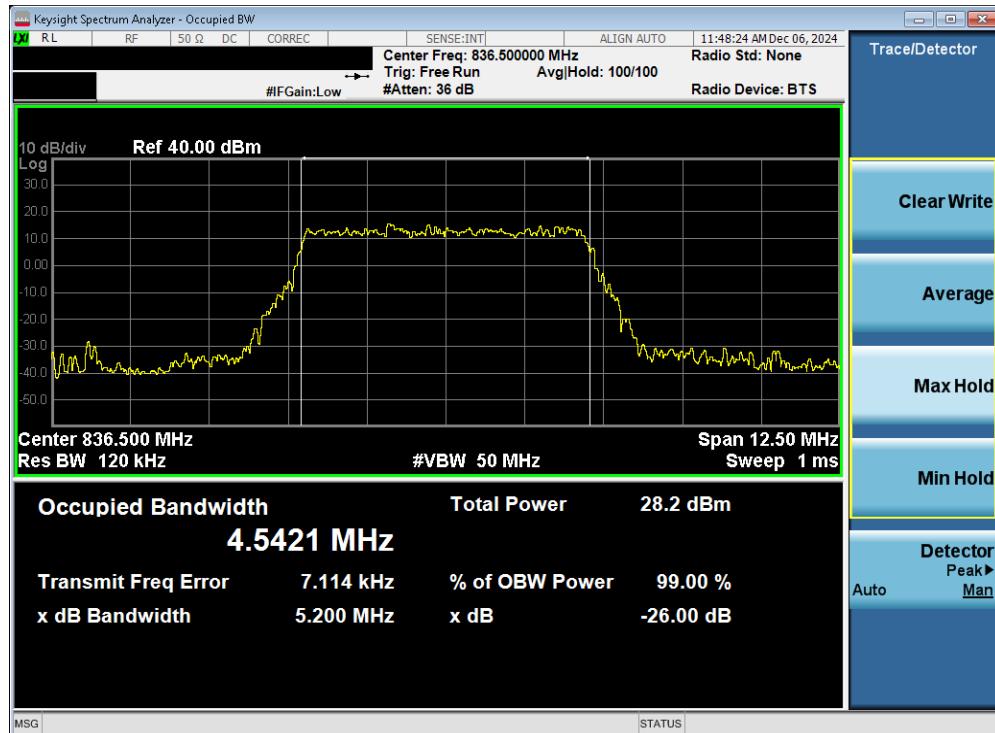


Plot 7-43. Occupied Bandwidth Plot (NR Band n5 - 5MHz π/2 BPSK - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-44. Occupied Bandwidth Plot (NR Band n5 - 5MHz QPSK - Full RB - Ant 2)



Plot 7-45. Occupied Bandwidth Plot (NR Band n5 - 5MHz 16-QAM - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 40 of 92

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 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 minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

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 10GHz (separated into at least two plots per channel)
2. Detector = RMS
3. Trace mode = trace average for continuous emissions, max hold for pulse emissions
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.

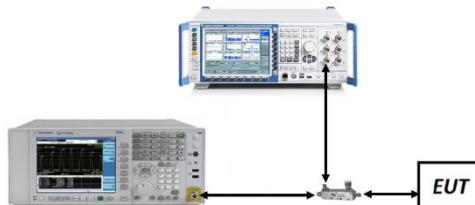


Figure 7-3. Test Instrument & Measurement Setup

Test Notes

1. Per Part 22, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The 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 emission 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.

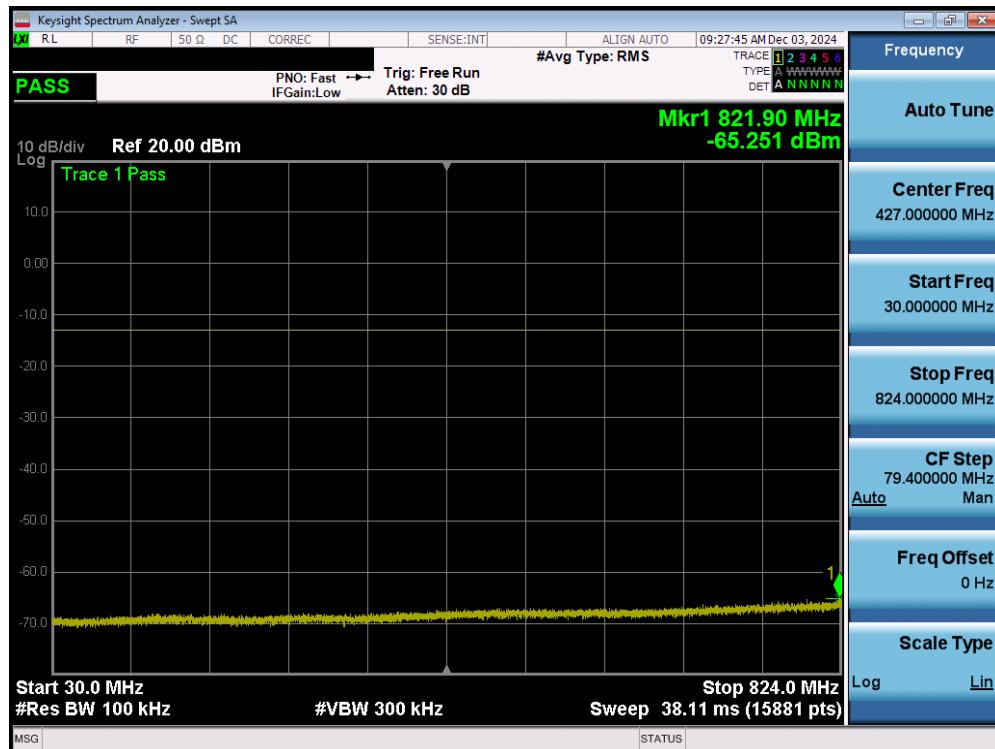
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
WCDMA-Cell	5MHz	Low	30.0 - 823.0	-36.95	-13.0	-23.95
		Low	849.0 - 1000.0	-66.24	-13.0	-53.24
		Low	1000.0 - 10000.0	-47.32	-13.0	-34.32
		Mid	30.0 - 824.0	-58.91	-13.0	-45.91
		Mid	849.0 - 1000.0	-54.06	-13.0	-41.06
		Mid	1000.0 - 10000.0	-47.45	-13.0	-34.45
		High	30.0 - 824.0	-65.25	-13.0	-52.25
		High	850.0 - 1000.0	-32.58	-13.0	-19.58
		High	1000.0 - 10000.0	-47.50	-13.0	-34.50
LTE-B26-5	10MHz	Low	30.0 - 823.0	-60.31	-13.0	-47.31
		Low	849.0 - 1000.0	-65.97	-13.0	-52.97
		Low	1000.0 - 10000.0	-47.37	-13.0	-34.37
		Mid	30.0 - 824.0	-64.02	-13.0	-51.02
		Mid	849.0 - 1000.0	-64.23	-13.0	-51.23
		Mid	1000.0 - 10000.0	-47.03	-13.0	-34.03
		High	30.0 - 824.0	-65.26	-13.0	-52.26
		High	850.0 - 1000.0	-61.16	-13.0	-48.16
		High	1000.0 - 10000.0	-47.42	-13.0	-34.42
ULCA LTE-B5	10+10MHz	Low	30.0 - 824.0	-61.78	-13.0	-48.78
		Low	849.0 - 1000.0	-64.10	-13.0	-51.10
		Low	1000.0 - 10000.0	-46.99	-13.0	-33.99
		Mid	30.0 - 824.0	-60.94	-13.0	-47.94
		Mid	849.0 - 1000.0	-61.75	-13.0	-48.75
		Mid	1000.0 - 10000.0	-47.29	-13.0	-34.29
		High	30.0 - 824.0	-61.58	-13.0	-48.58
		High	850.0 - 1000.0	-59.85	-13.0	-46.85
		High	1000.0 - 10000.0	-46.79	-13.0	-33.79
NR-n5	20MHz	Low	30.0 - 824.0	-61.70	-13.0	-48.70
		Low	849.0 - 1000.0	-64.50	-13.0	-51.50
		Low	1000.0 - 10000.0	-46.06	-13.0	-33.06
		Mid	30.0 - 824.0	-62.62	-13.0	-49.62
		Mid	849.0 - 1000.0	-63.30	-13.0	-50.30
		Mid	1000.0 - 10000.0	-46.32	-13.0	-33.32
		High	30.0 - 824.0	-61.43	-13.0	-48.43
		High	849.0 - 1000.0	-65.22	-13.0	-52.22
		High	1000.0 - 10000.0	-46.41	-13.0	-33.41

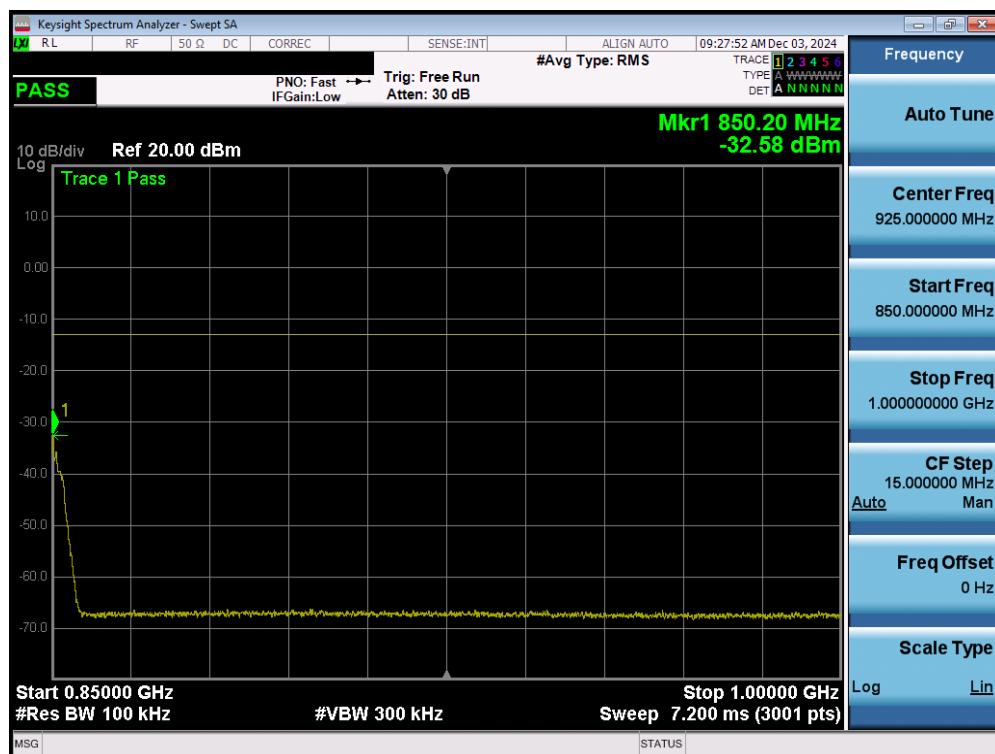
Table 7-11. Conducted Spurious Emission Test Results – Ant 5

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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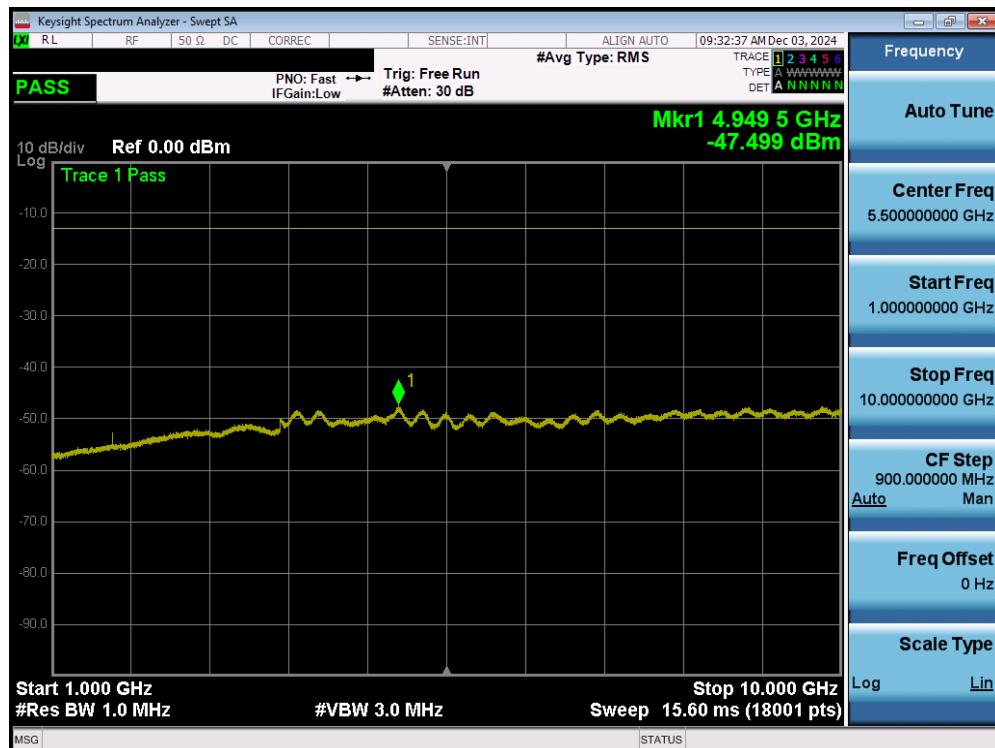
WCDMA Cell – Ant 5



Plot 7-46. Conducted Spurious Plot (WCDMA Ch. 4233 – Ant 5)

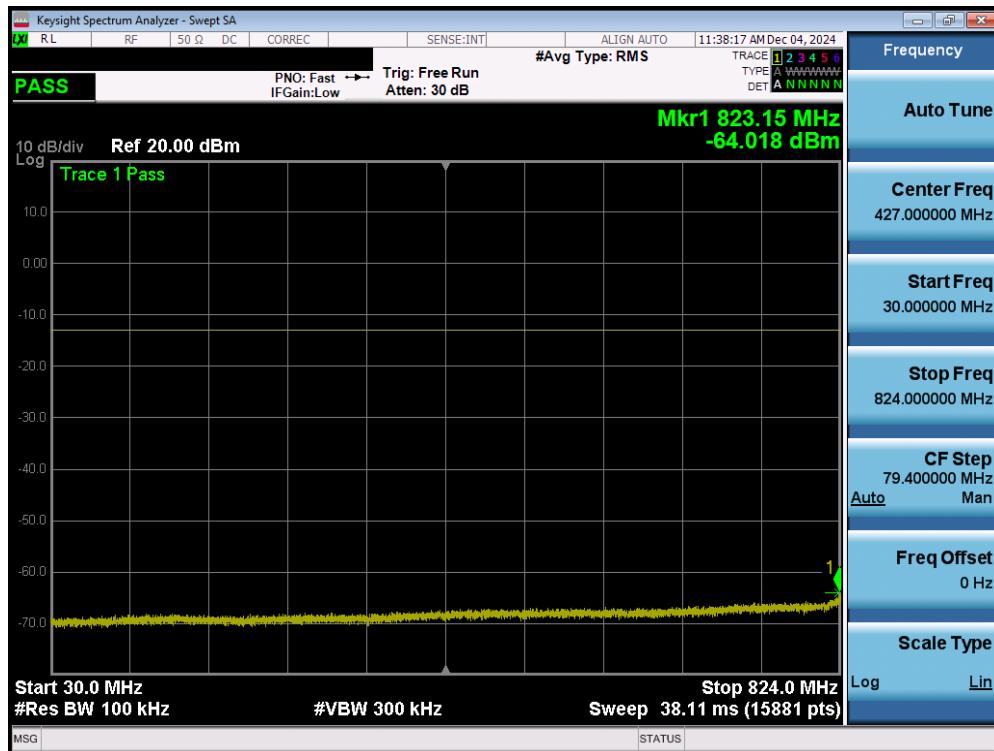


FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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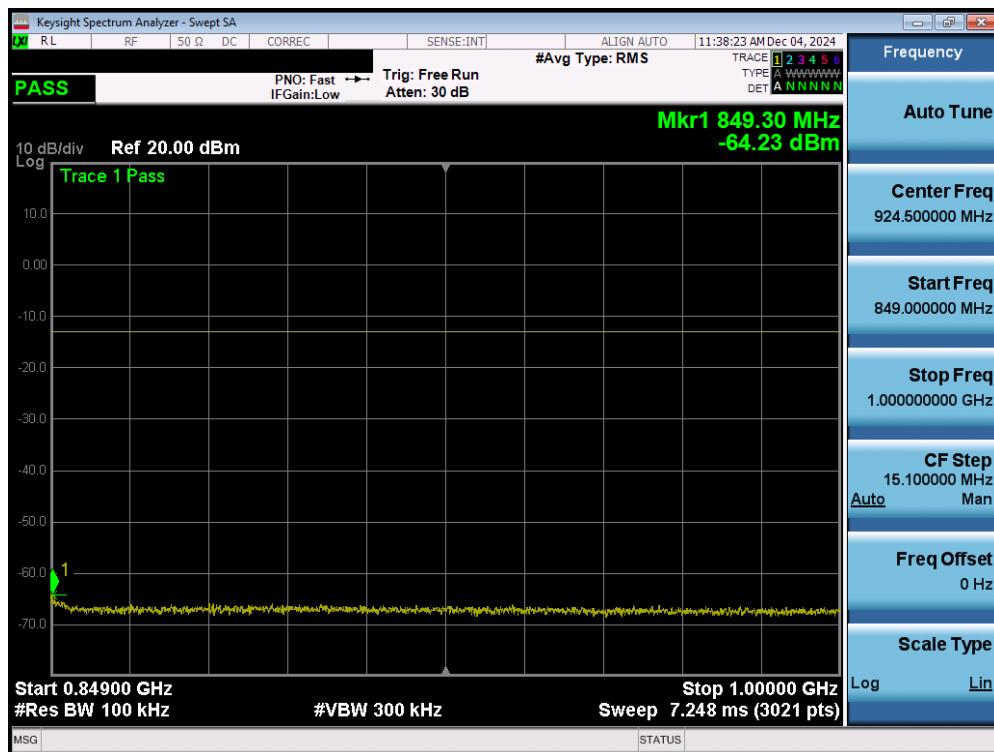
Plot 7-47. Conducted Spurious Plot (WCDMA Ch. 4233 – Ant 5)

Plot 7-48. Conducted Spurious Plot (WCDMA Ch. 4233 – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 26/5 – Ant 5

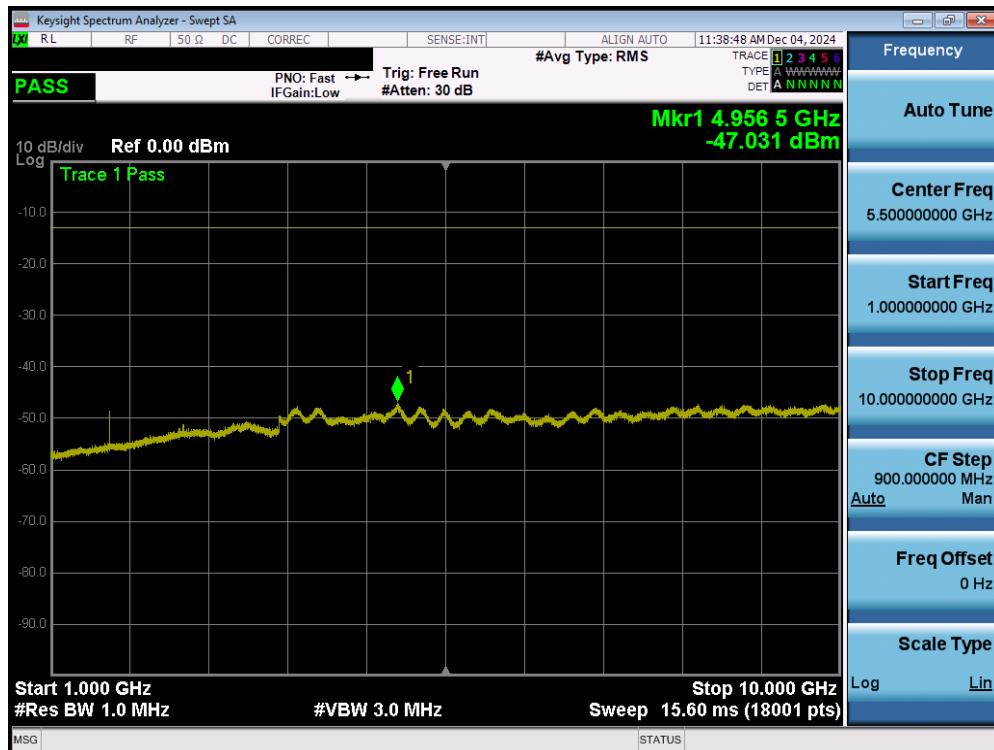


Plot 7-49. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - Mid Channel – Ant 5)



Plot 7-50. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - Mid Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 45 of 92



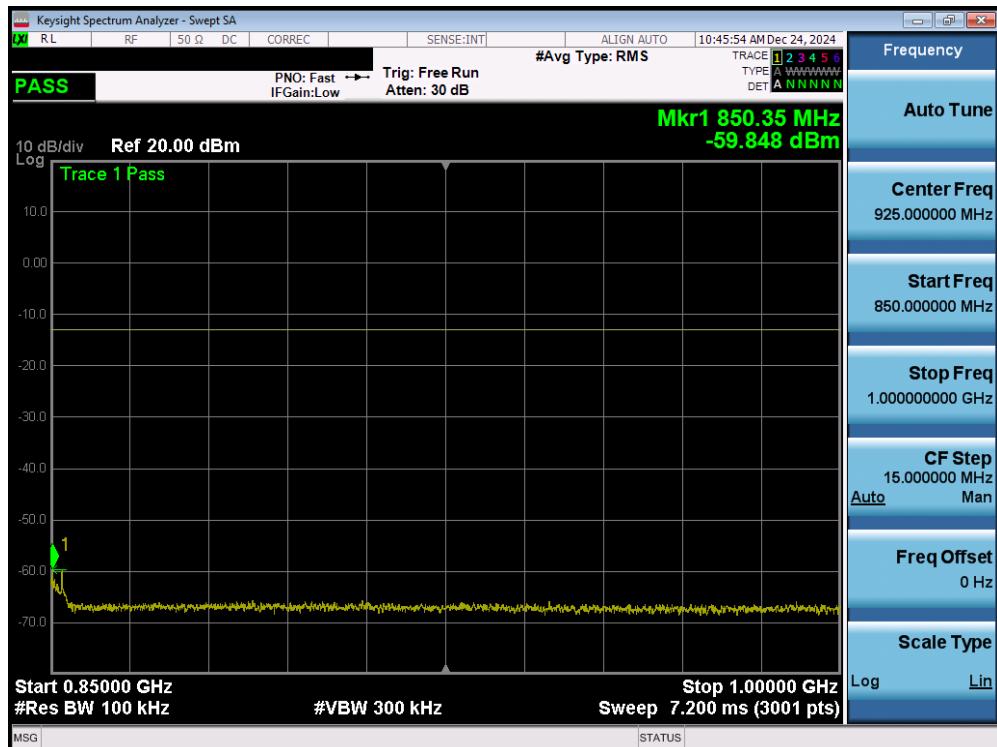
Plot 7-51. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - Mid Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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ULCA LTE Band 5 – Ant 5

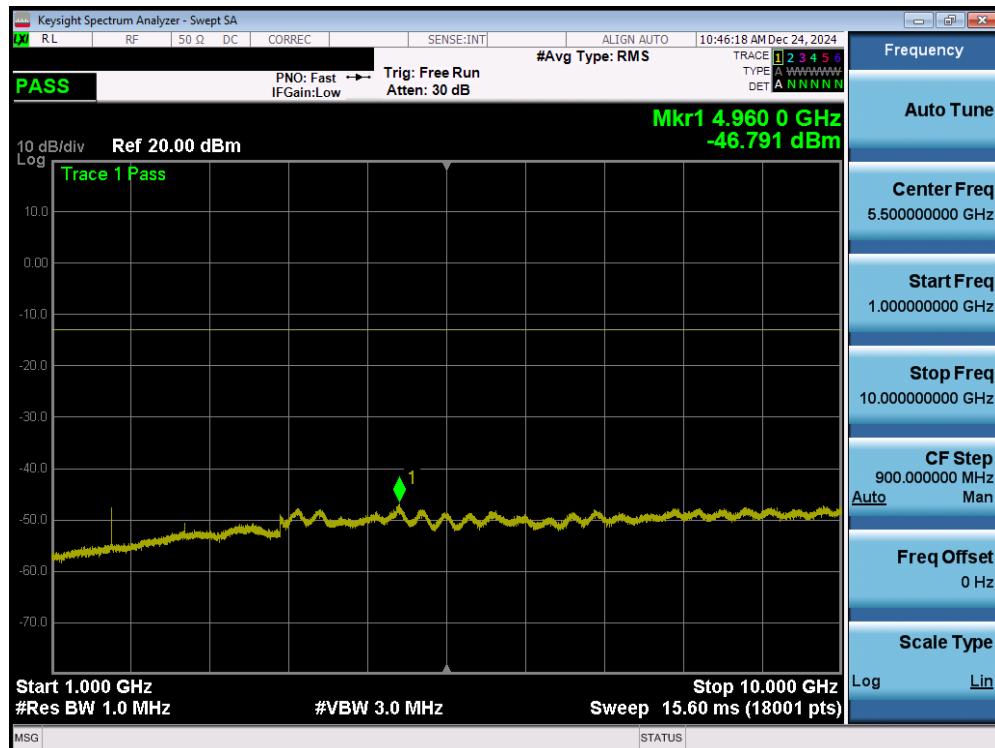


Plot 7-52. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/0 SCC 1/49 - High Channel – Ant 5)



Plot 7-53. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/0 SCC 1/49 - High Channel – Ant 5)

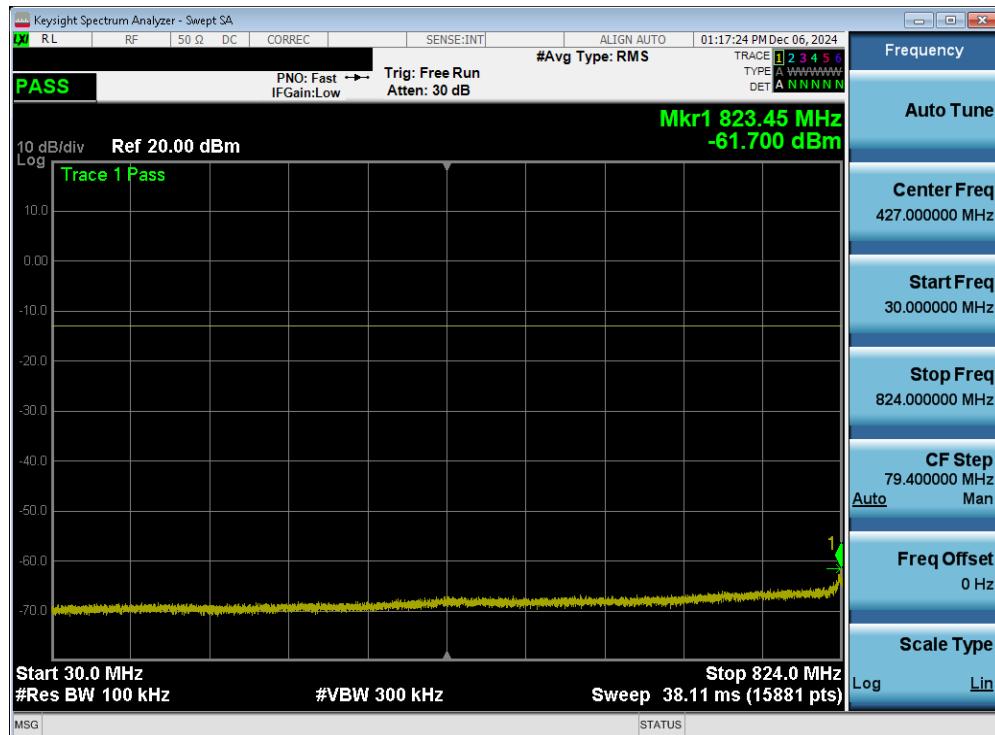
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 47 of 92



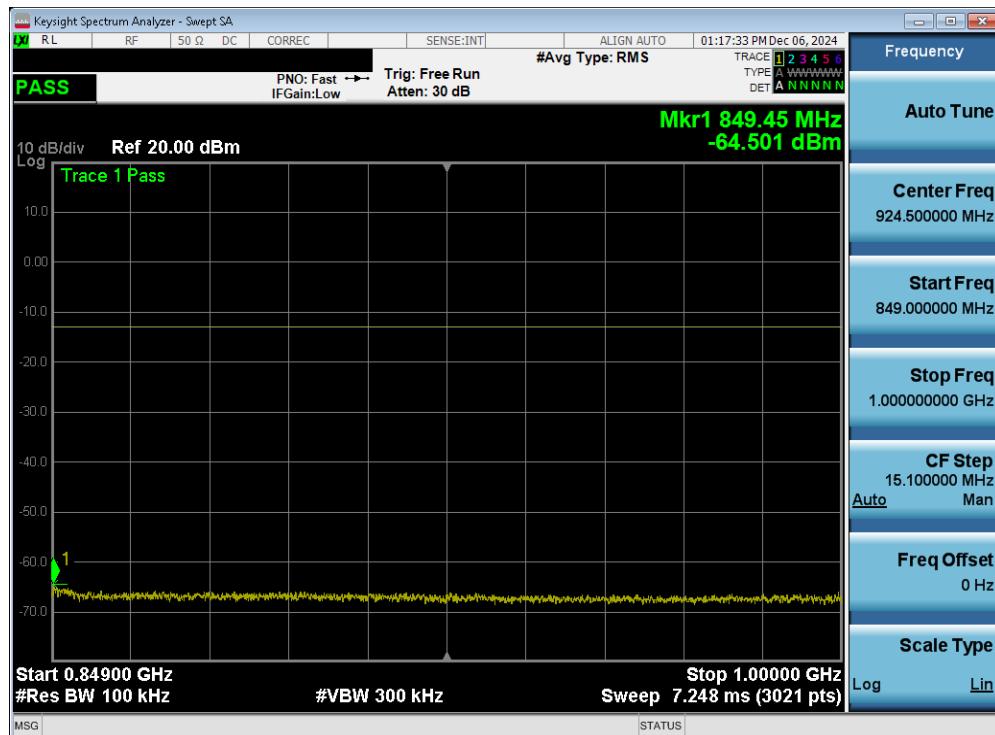
Plot 7-54. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/0 SCC 1/49 - High Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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NR Band n5 – Ant 5

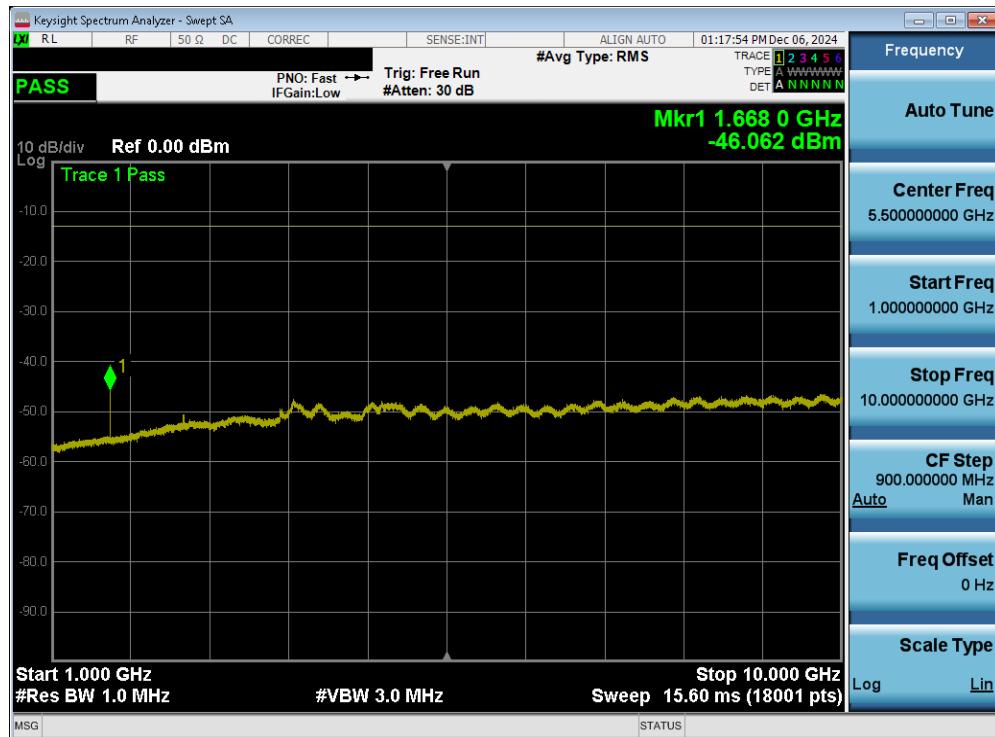


Plot 7-55. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 5)



Plot 7-56. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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Plot 7-57. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 5)

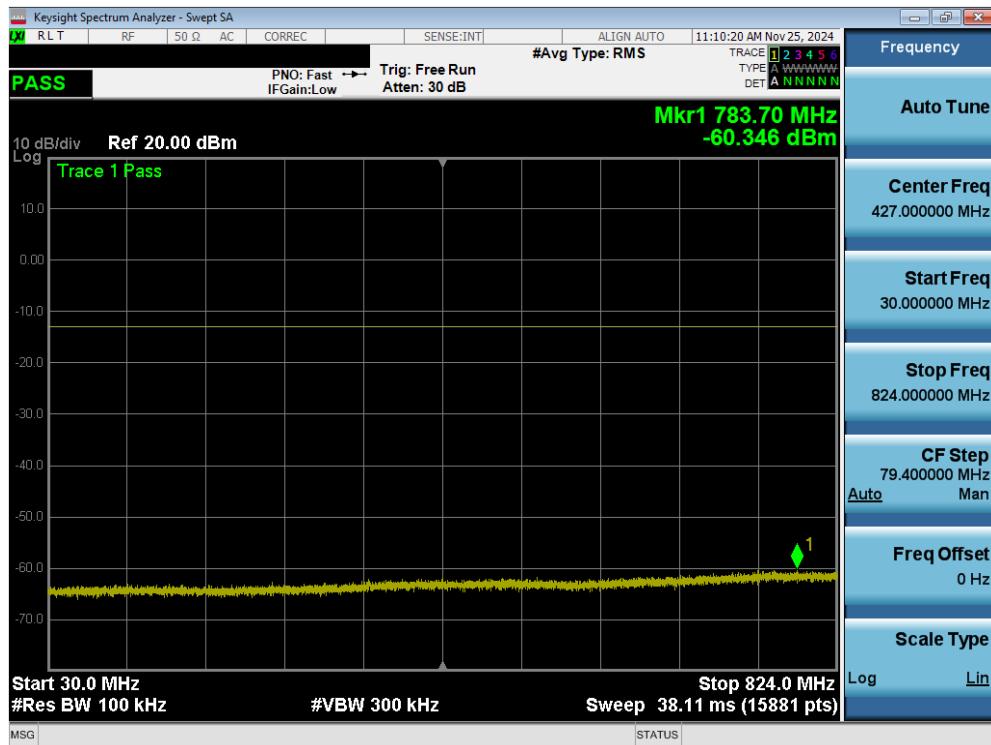
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 50 of 92	

Mode	Bandwidth	Channel	Range [MHz]	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26-5	10MHz	Low	30.0 - 823.0	-58.63	-13.0	-45.63
		Low	849.0 - 1000.0	-60.86	-13.0	-47.86
		Low	1000.0 - 10000.0	-44.41	-13.0	-31.41
		Mid	30.0 - 824.0	-60.19	-13.0	-47.19
		Mid	849.0 - 1000.0	-60.74	-13.0	-47.74
		Mid	1000.0 - 10000.0	-44.50	-13.0	-31.50
		High	30.0 - 824.0	-60.35	-13.0	-47.35
		High	850.0 - 1000.0	-58.91	-13.0	-45.91
		High	1000.0 - 10000.0	-44.20	-13.0	-31.20
ULCA LTE-B5	10+10MHz	Low	30.0 - 824.0	-58.20	-13.0	-45.20
		Low	849.0 - 1000.0	-63.99	-13.0	-50.99
		Low	1000.0 - 10000.0	-46.83	-13.0	-33.83
		Mid	30.0 - 824.0	-61.07	-13.0	-48.07
		Mid	849.0 - 1000.0	-61.41	-13.0	-48.41
		Mid	1000.0 - 10000.0	-46.92	-13.0	-33.92
		High	30.0 - 824.0	-63.39	-13.0	-50.39
		High	850.0 - 1000.0	-55.99	-13.0	-42.99
		High	1000.0 - 10000.0	-46.90	-13.0	-33.90
NR-n26-5	20MHz	Low	30.0 - 824.0	-62.59	-13.0	-49.59
		Low	849.0 - 1000.0	-64.72	-13.0	-51.72
		Low	1000.0 - 10000.0	-46.08	-13.0	-33.08
		Mid	30.0 - 824.0	-63.25	-13.0	-50.25
		Mid	849.0 - 1000.0	-63.19	-13.0	-50.19
		Mid	1000.0 - 10000.0	-46.28	-13.0	-33.28
		High	30.0 - 824.0	-64.09	-13.0	-51.09
		High	849.0 - 1000.0	-62.36	-13.0	-49.36
		High	1000.0 - 10000.0	-46.24	-13.0	-33.24

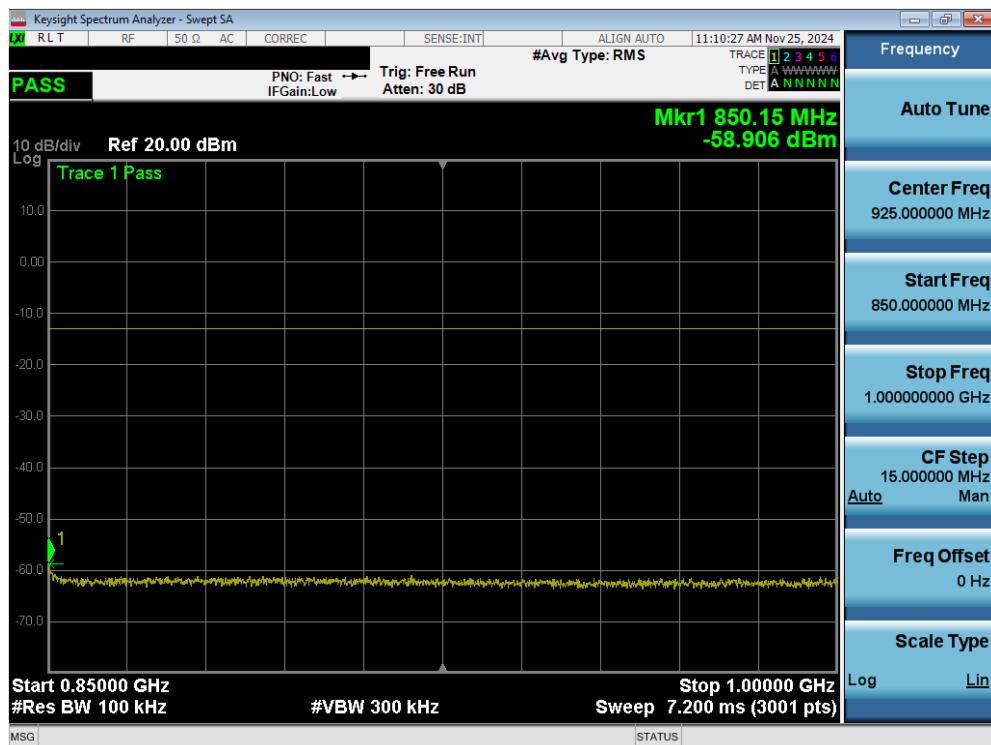
Table 7-12. Conducted Spurious Emission Test Results – Ant 2

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 51 of 92	

LTE Band 26/5 – Ant 2

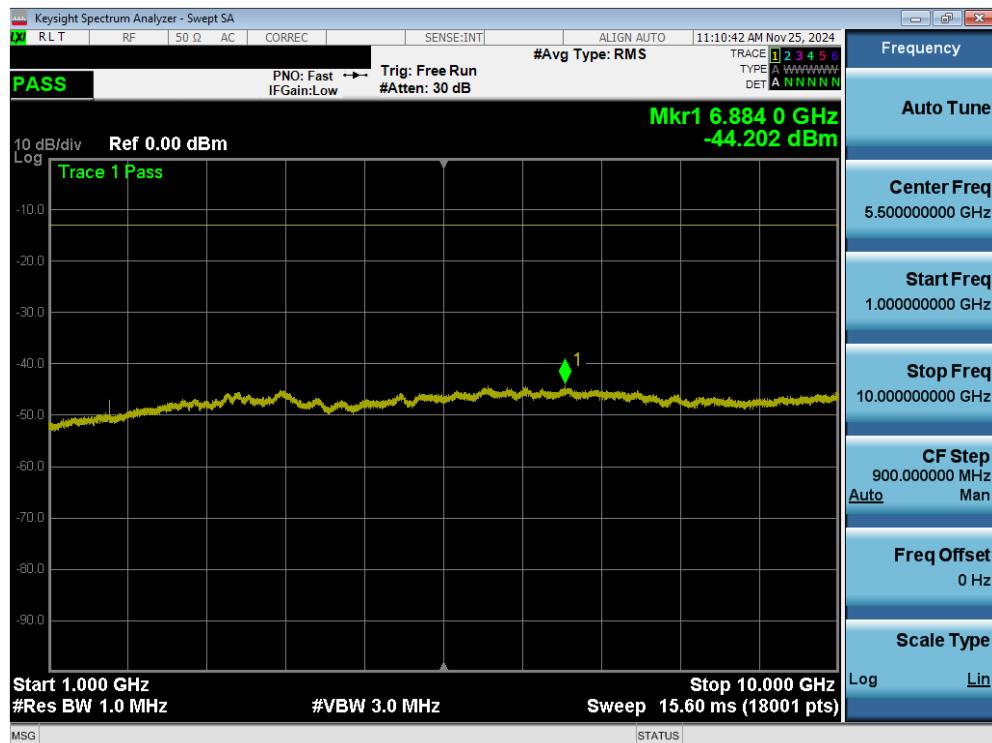


Plot 7-58. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - High Channel – Ant 2)



Plot 7-59. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - High Channel – Ant 2)

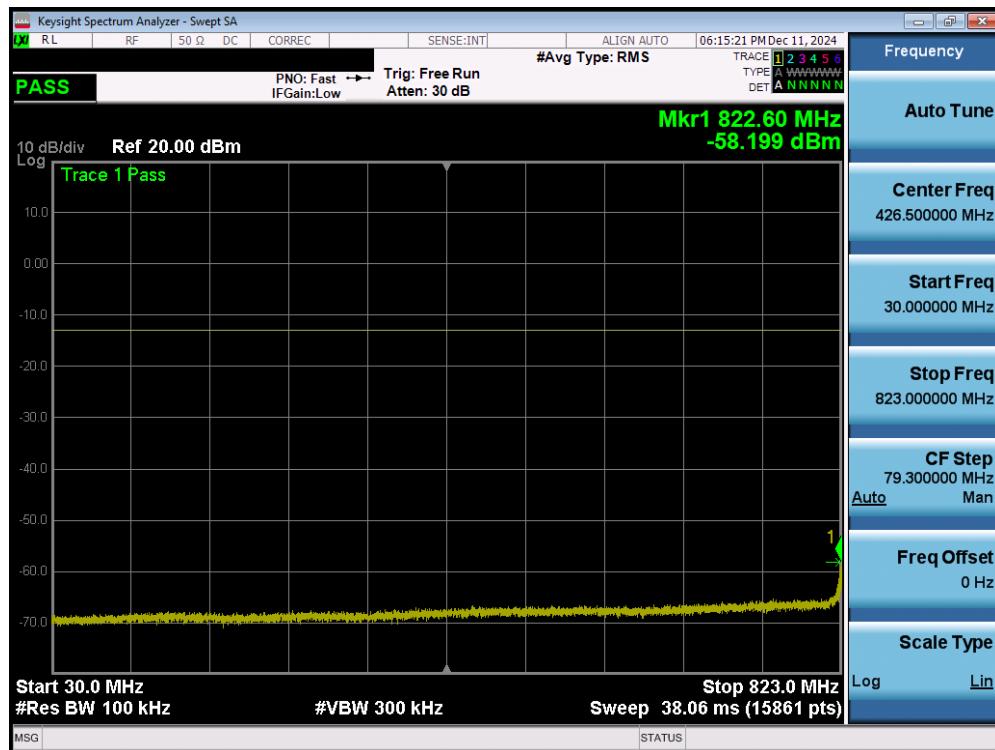
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 52 of 92



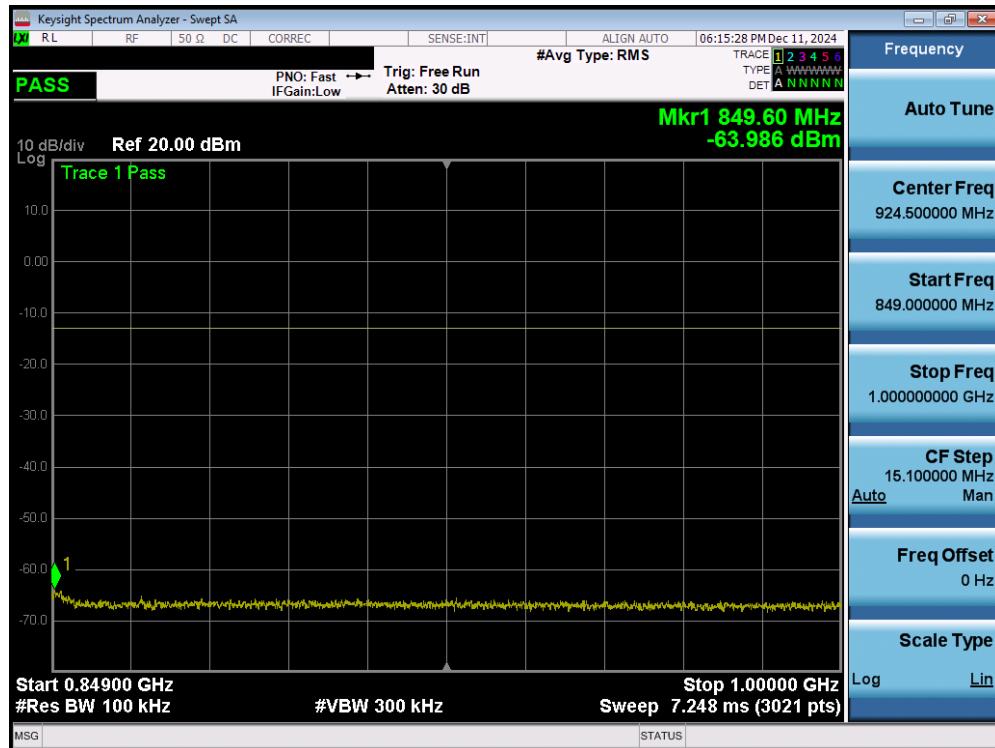
Plot 7-60. Conducted Spurious Plot (LTE Band 26/5 - 10MHz QPSK - 1 RB - High Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 53 of 92

ULCA LTE Band 5 – Ant 2

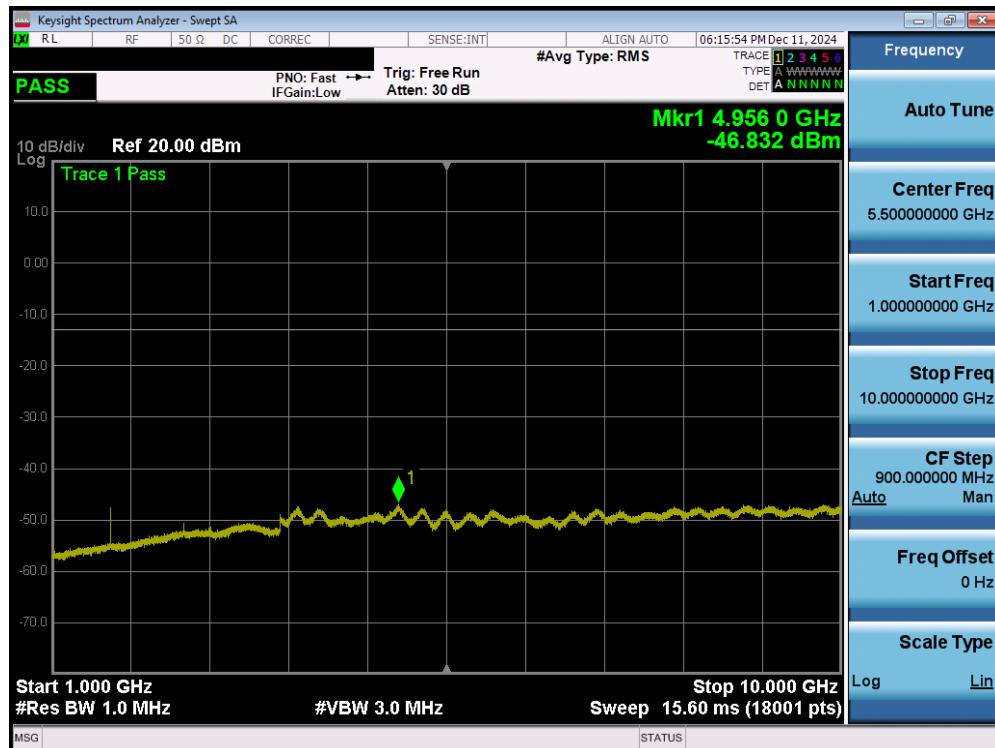


Plot 7-61. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/49 SCC 1/0 - Low Channel – Ant 2)



Plot 7-62. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/49 SCC 1/0 - Low Channel – Ant 2)

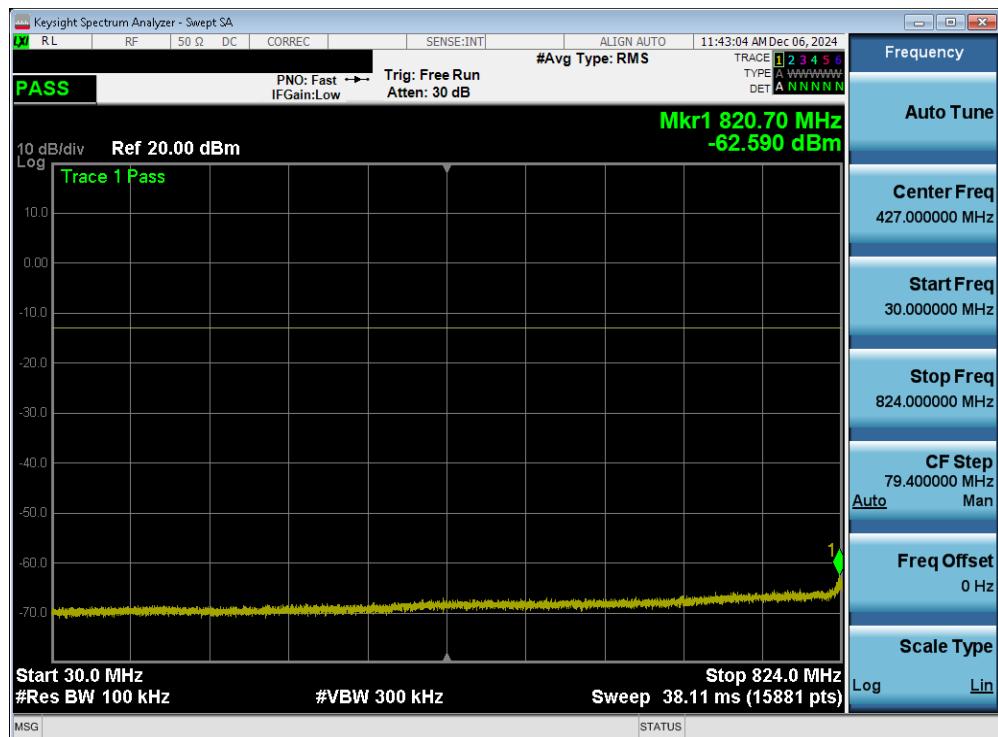
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 54 of 92



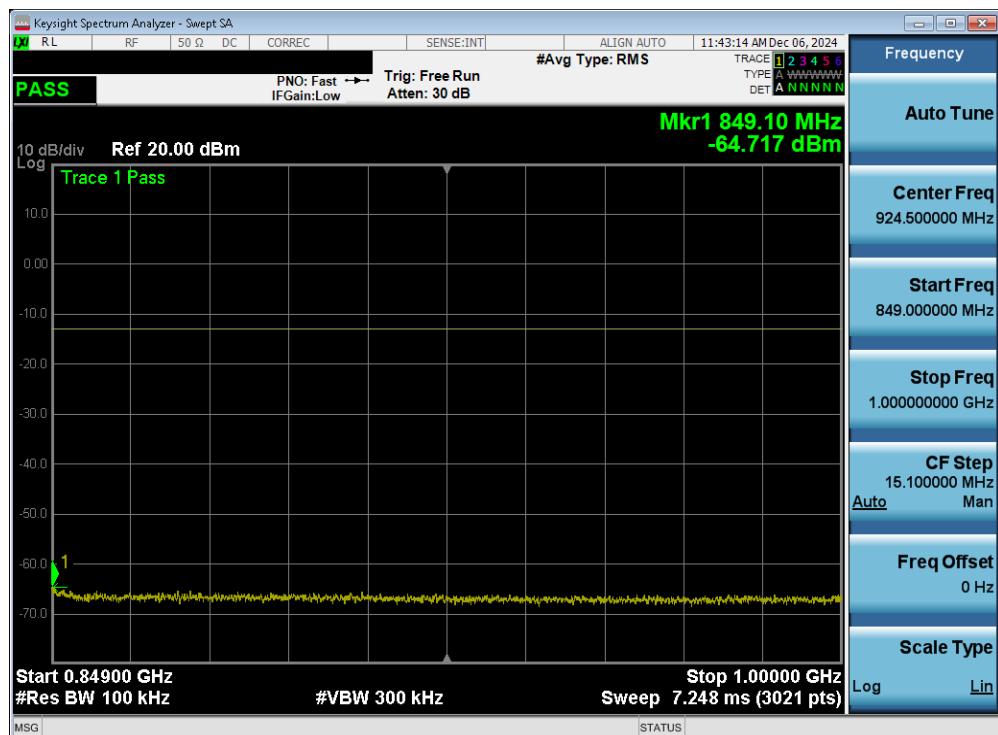
Plot 7-63. Conducted Spurious Plot (ULCA LTE Band 5 – 10+10MHz QPSK – PCC 1/49 SCC 1/0 - Low Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 55 of 92

NR Band n5 – Ant 2

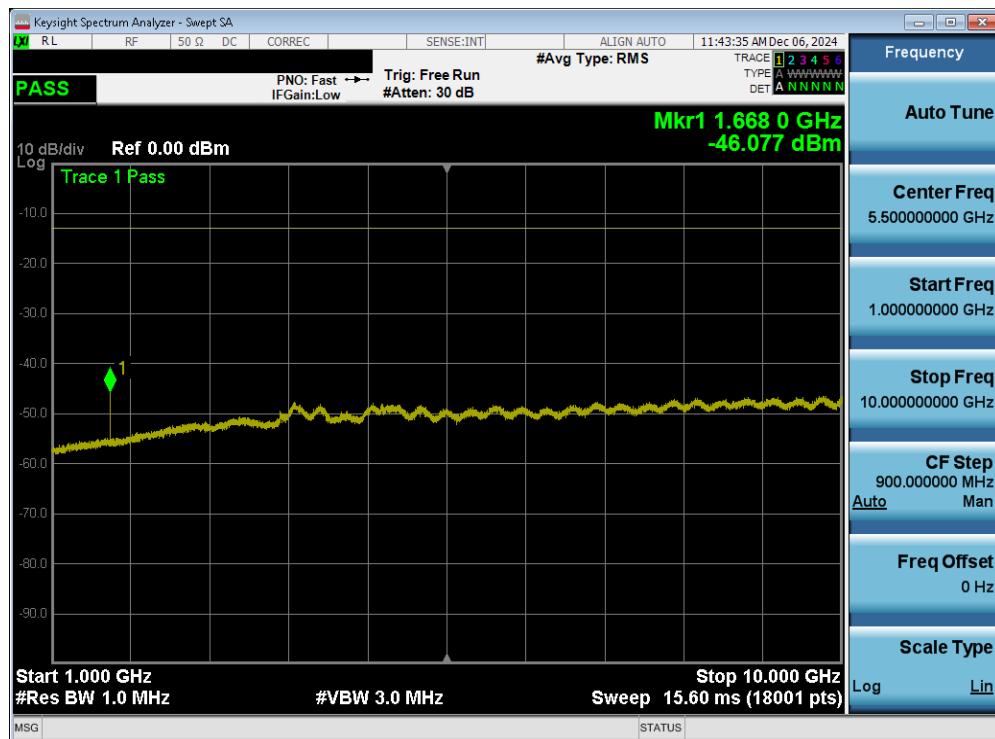


Plot 7-64. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 2)



Plot 7-65. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 56 of 92



Plot 7-66. Conducted Spurious Plot (NR Band n5 - 20.0MHz - 1 RB - Low Channel - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 57 of 92	

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 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 minimum permissible attenuation level of any spurious emission is $43 + 10 \log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

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 for continuous emissions, max hold for pulse emissions
8. Sweep time = auto couple
9. The trace was allowed to stabilize

Test Setup

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

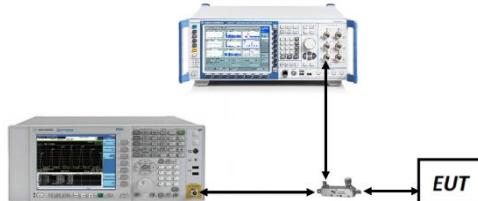


Figure 7-4. Test Instrument & Measurement Setup

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 58 of 92

Test Notes

1. Per 22.917(b), in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to demonstrate compliance with the out-of-band emissions limit. The 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 emission 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.

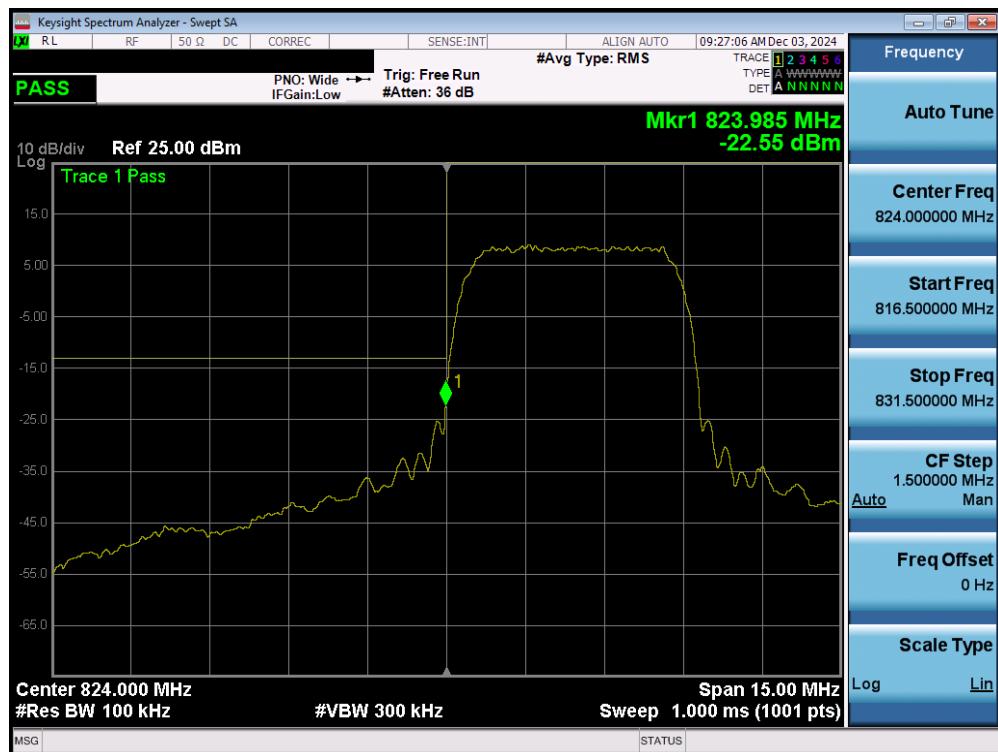
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 59 of 92

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
WCDMA-Cell	5MHz	Low	Band Edge	-22.55	-13	-9.55
		High	Band Edge	-21.61	-13	-8.61
LTE-B26-5	15 MHz	Low	Band Edge	-29.41	-13	-16.41
		High	Band Edge	-29.81	-13	-16.81
	10 MHz	Low	Band Edge	-28.74	-13	-15.74
		High	Band Edge	-28.99	-13	-15.99
	5 MHz	Low	Band Edge	-22.90	-13	-9.90
		High	Band Edge	-24.36	-13	-11.36
	3 MHz	Low	Band Edge	-18.31	-13	-5.31
		High	Band Edge	-19.86	-13	-6.86
	1.4 MHz	Low	Band Edge	-27.54	-13	-14.54
		High	Band Edge	-16.23	-13	-3.23
ULCALTE-B5	10+10MHz	Low	Band Edge	-31.12	-13	-18.12
		High	Band Edge	-32.39	-13	-19.39
NR-n5	20 MHz	Low	Band Edge	-28.75	-13	-15.75
		High	Band Edge	-29.98	-13	-16.98
	15 MHz	Low	Band Edge	-27.40	-13	-14.40
		High	Band Edge	-30.14	-13	-17.14
	10 MHz	Low	Band Edge	-25.95	-13	-12.95
		High	Band Edge	-27.82	-13	-14.82
	5 MHz	Low	Band Edge	-21.98	-13	-8.98
		High	Band Edge	-19.34	-13	-6.34

Table 7-13. Conducted Band Edge Test Results – Ant 5

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 60 of 92

WCDMA Cell – Ant 5



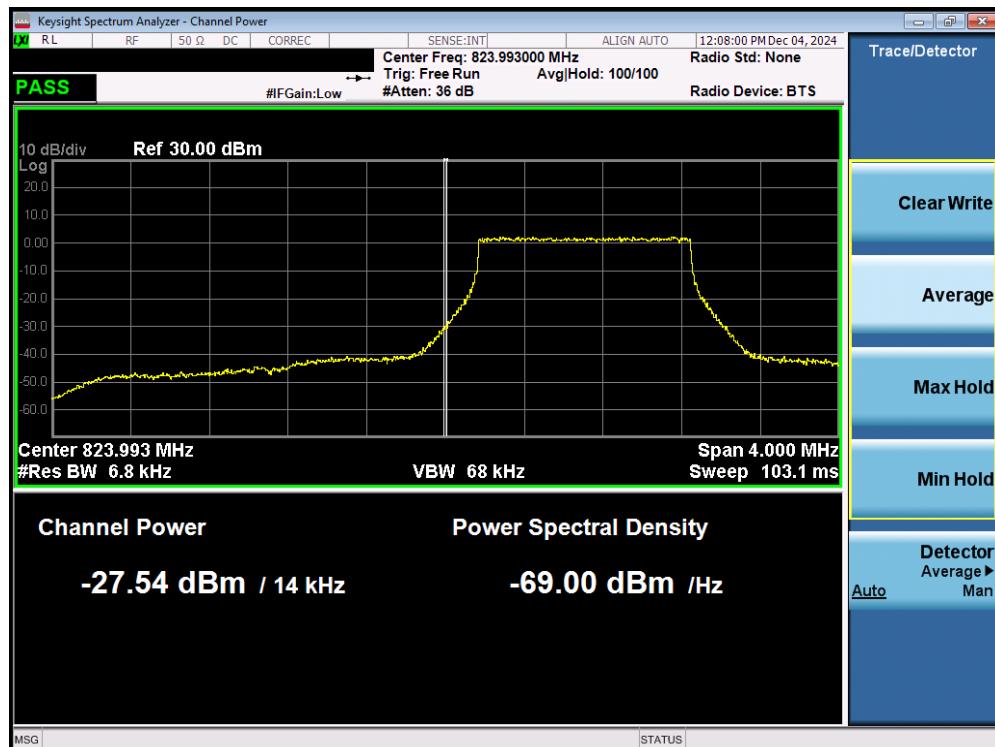
Plot 7-67. Lower Band Edge Plot (WCDMA Cell – Ch. 4132 – Ant 5)



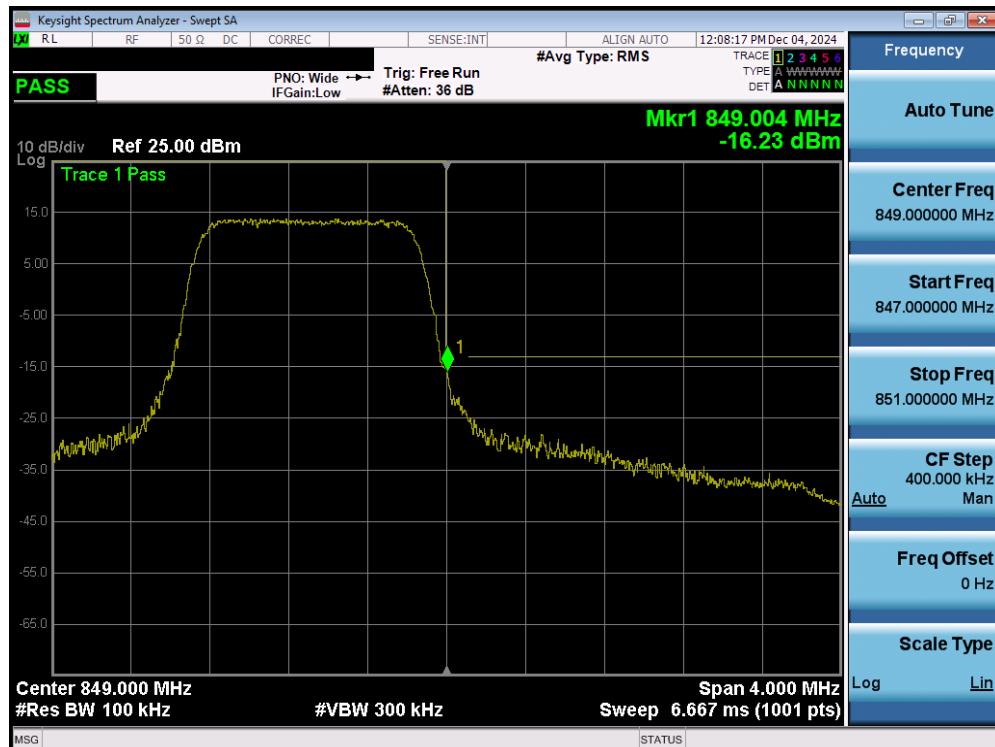
Plot 7-68. Upper Band Edge Plot (WCDMA Cell – Ch. 4233 – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 61 of 92

LTE Band 26/5 – Ant 5



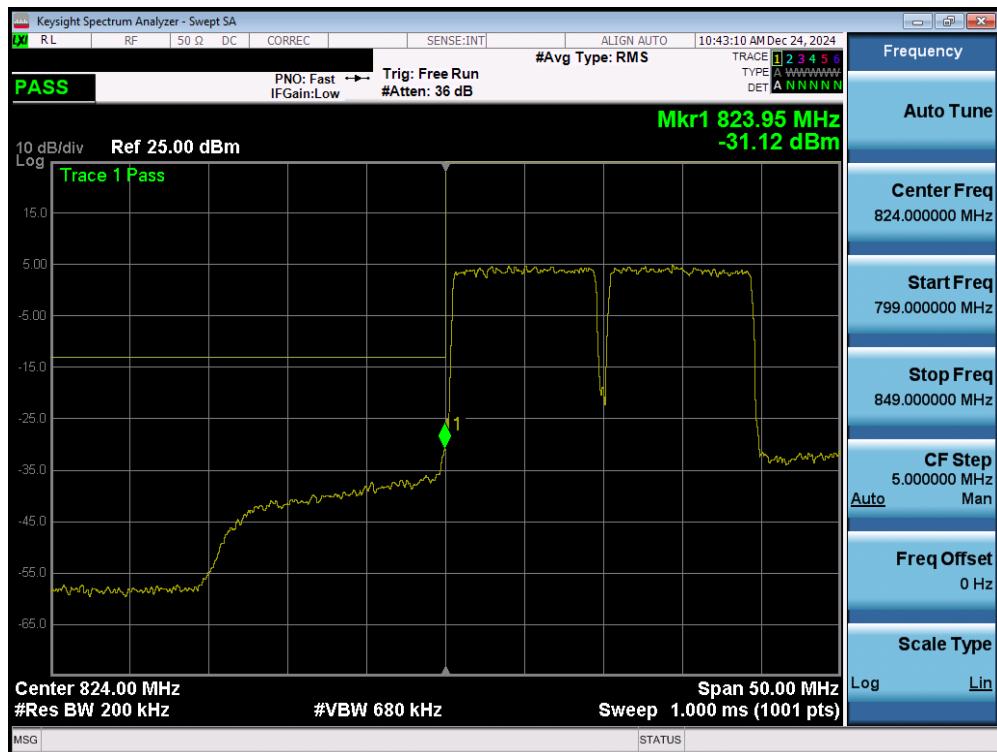
Plot 7-69. Lower Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB - Ant 5)



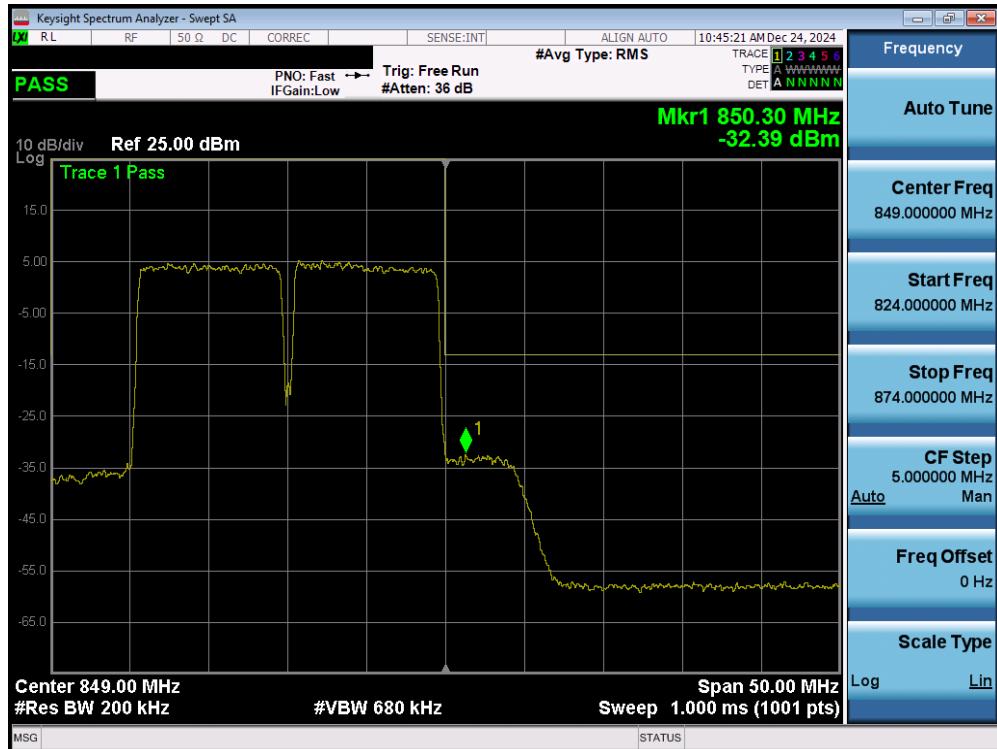
Plot 7-70. Upper Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB - Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M241190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 62 of 92

ULCA LTE Band 5 – Ant 5



Plot 7-71. Lower Band Edge Plot (ULCA LTE Band 5 – 10+10MHz QPSK – Full RB – Ant 5)



Plot 7-72. Upper Band Edge Plot (ULCA LTE Band 5 – 10+10MHz QPSK – Full RB – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 63 of 92

NR Band n5 – Ant 5

Plot 7-73. Lower Band Edge Plot (NR Band n5 – 5.0MHz - Full RB - Ant 5)

Plot 7-74. Upper Band Edge Plot (NR Band n5 – 5.0MHz - Full RB - Ant 5)

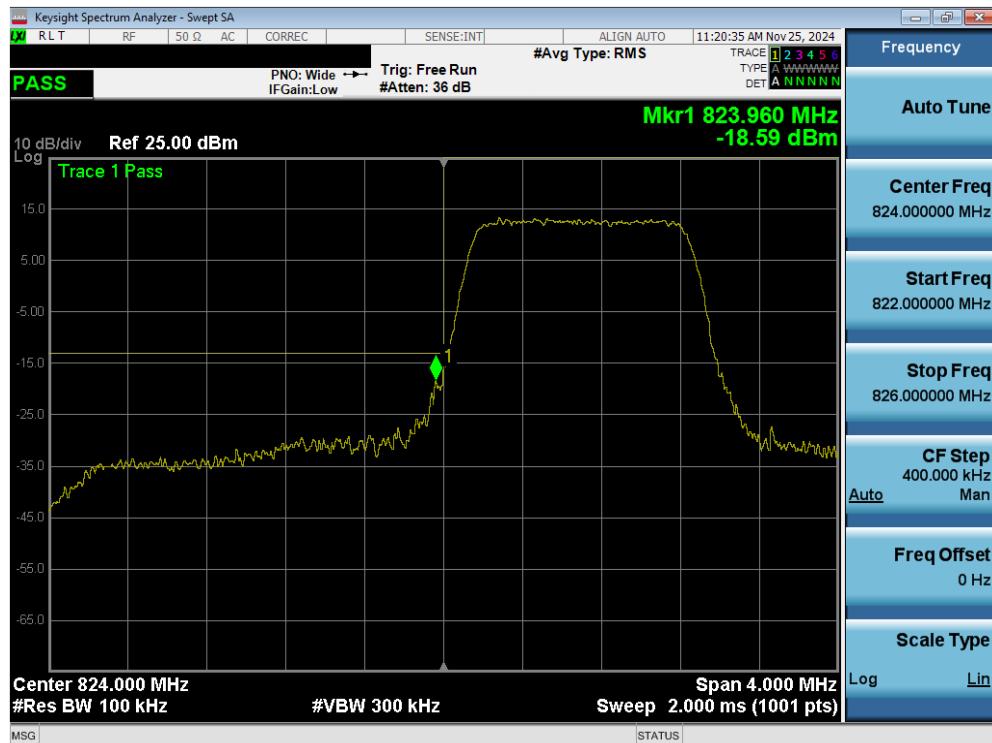
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 64 of 92

Mode	Bandwidth	Channel	Test Case	Level [dBm]	Limit [dBm]	Margin [dB]
LTE-B26-5	15 MHz	Low	Band Edge	-30.24	-13	-17.24
		High	Band Edge	-31.13	-13	-18.13
	10 MHz	Low	Band Edge	-30.38	-13	-17.38
		High	Band Edge	-29.72	-13	-16.72
	5 MHz	Low	Band Edge	-24.62	-13	-11.62
		High	Band Edge	-24.09	-13	-11.09
	3 MHz	Low	Band Edge	-19.50	-13	-6.50
		High	Band Edge	-18.93	-13	-5.93
	1.4 MHz	Low	Band Edge	-18.59	-13	-5.59
		High	Band Edge	-15.30	-13	-2.30
ULCALTE-B5	10+10MHz	Low	Band Edge	-32.65	-13	-19.65
		High	Band Edge	-33.73	-13	-20.73
NR-n5	20 MHz	Low	Band Edge	-28.43	-13	-15.43
		High	Band Edge	-30.16	-13	-17.16
	15 MHz	Low	Band Edge	-28.56	-13	-15.56
		High	Band Edge	-30.97	-13	-17.97
	10 MHz	Low	Band Edge	-25.93	-13	-12.93
		High	Band Edge	-29.30	-13	-16.30
	5 MHz	Low	Band Edge	-22.73	-13	-9.73
		High	Band Edge	-19.04	-13	-6.04

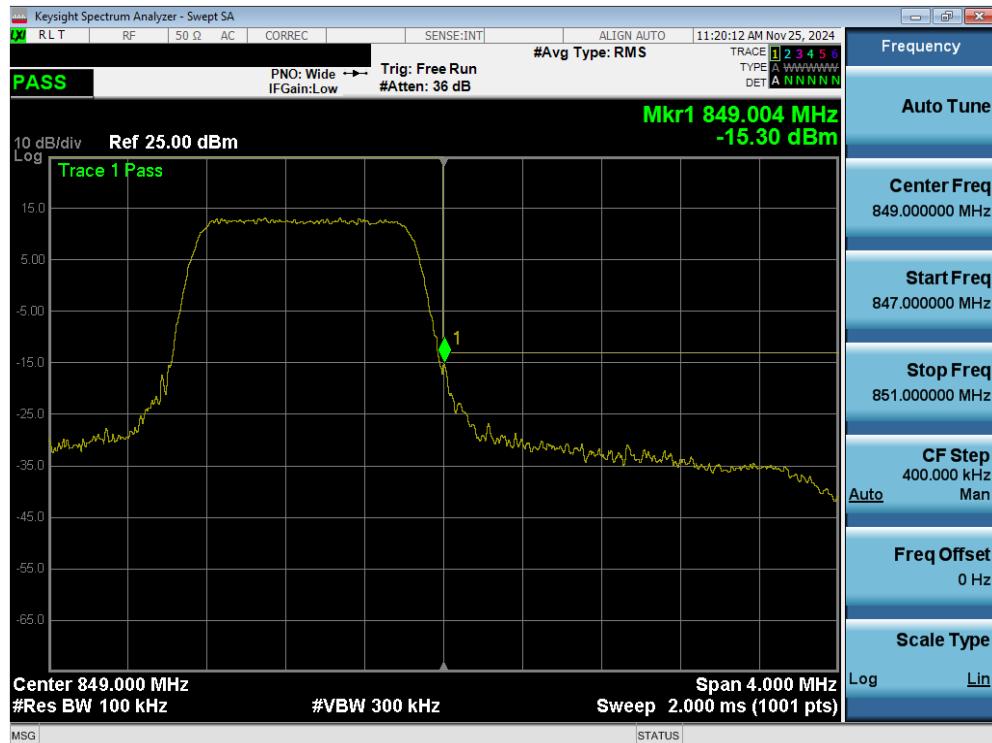
Table 7-14. Conducted Band Edge Test Results – Ant 2

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 65 of 92	

LTE Band 26/5 – Ant 2



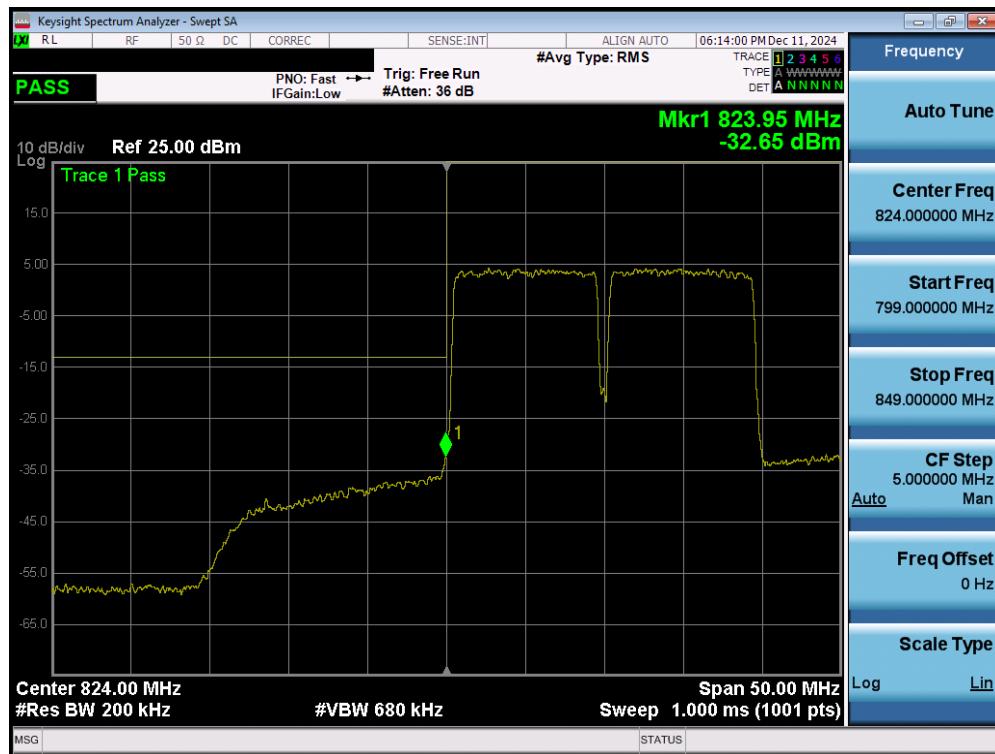
Plot 7-75. Lower Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB - Ant 2)



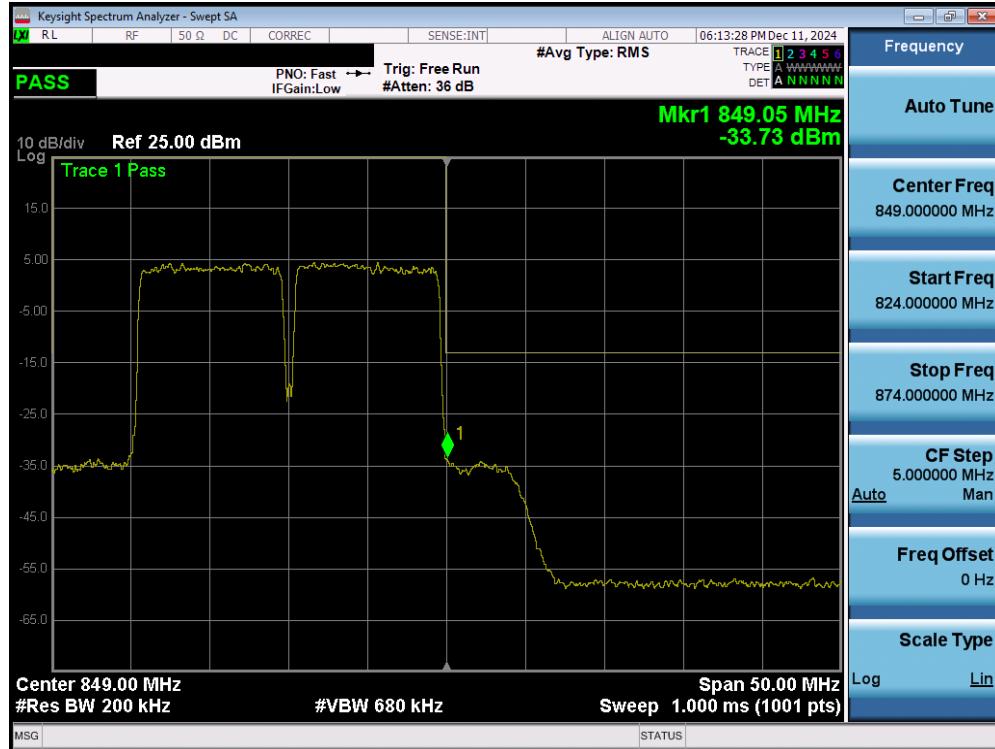
Plot 7-76. Upper Band Edge Plot (LTE Band 26/5 – 1.4MHz QPSK – Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 66 of 92

ULCA LTE Band 5 – Ant 2



Plot 7-77. Lower Band Edge Plot (ULCA LTE Band 5 – 10+10MHz QPSK – Full RB – Ant 2)



Plot 7-78. Upper Band Edge Plot (ULCA LTE Band 5 – 10+10MHz QPSK – Full RB – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular		Page 67 of 92

NR Band n5 – Ant 2

Plot 7-79. Lower Band Edge Plot (NR Band n5 – 5.0MHz - Full RB - Ant 2)

Plot 7-80. Upper Band Edge Plot (NR Band n5 – 5.0MHz - Full RB - Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 68 of 92

7.6 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the field strength conversion method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using hybrid (biconical/log) antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

Test Procedures Used

ANSI C63.26-2015 – Section 5.5.4

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 69 of 92

Test Setup

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

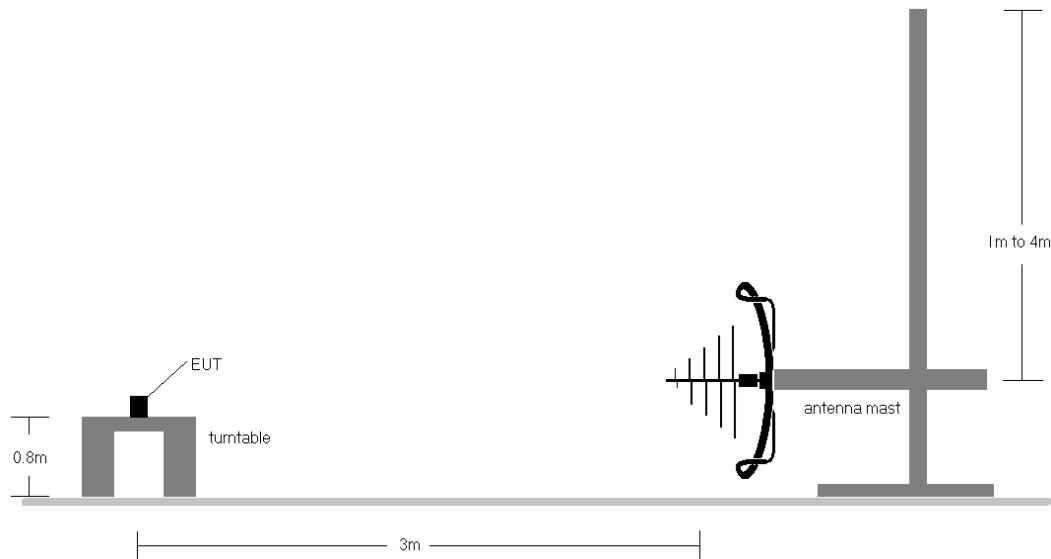


Figure 7-5. Test Instrument & Measurement Setup < 1GHz

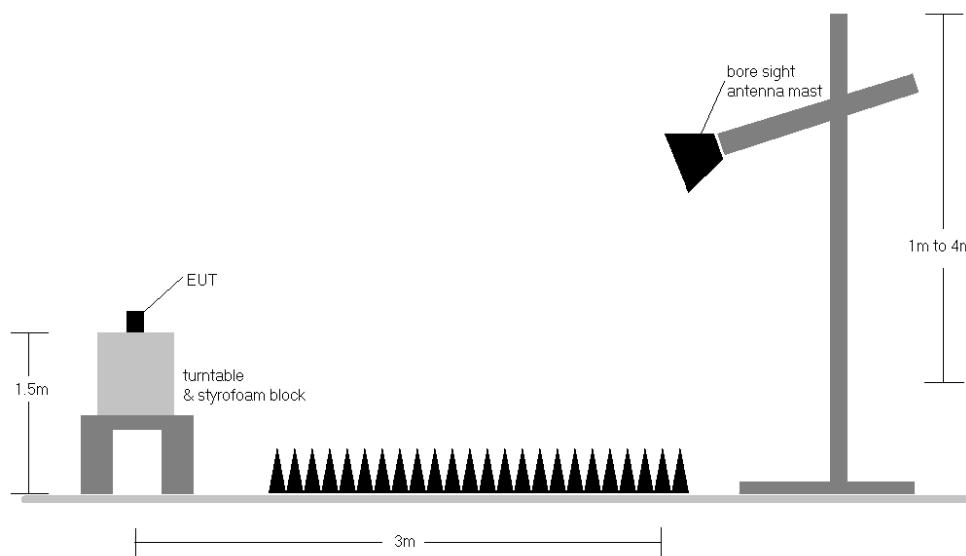


Figure 7-6. Test Instrument & Measurement Setup > 1GHz

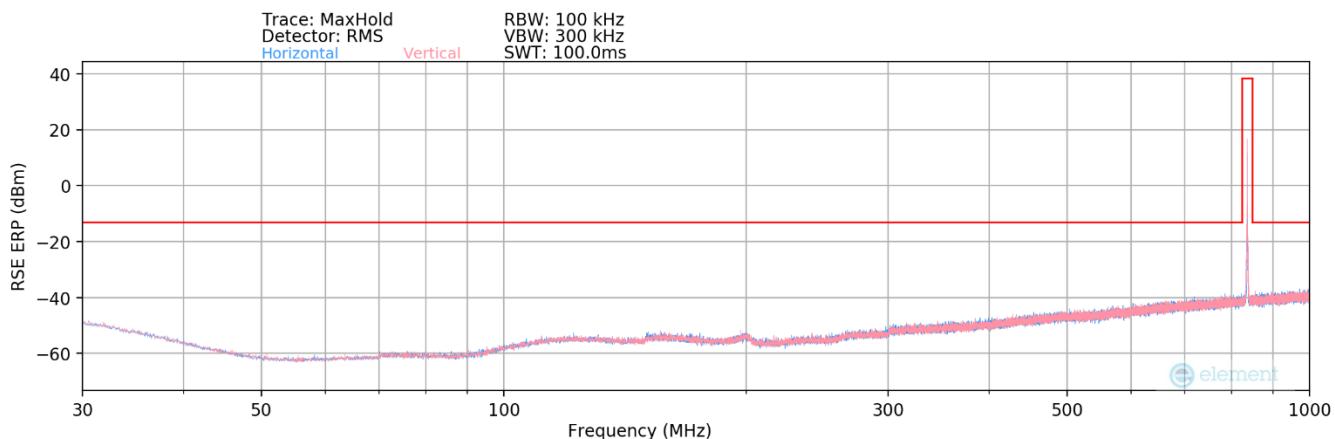
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 70 of 92

Test Notes

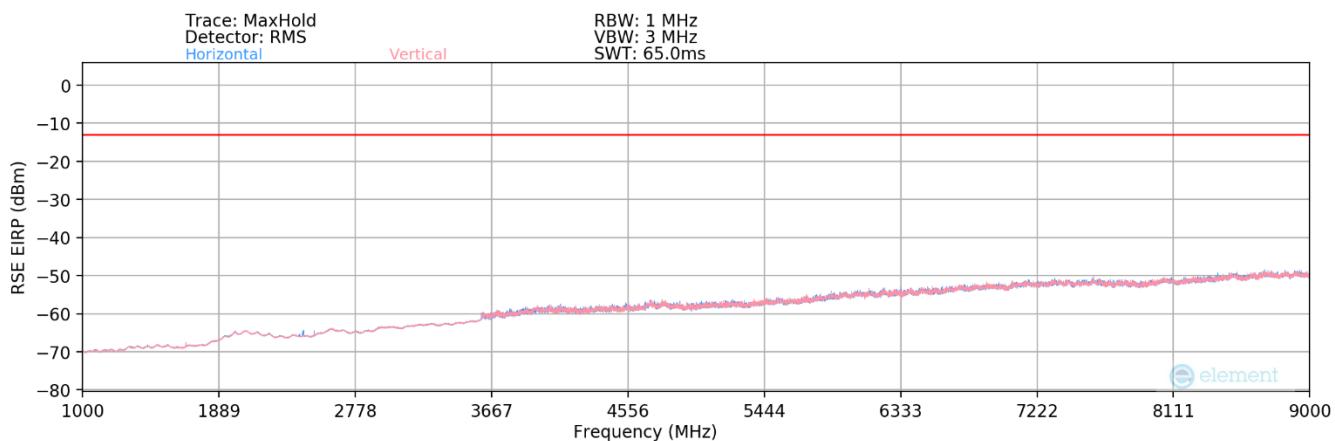
- 1) Field strengths are calculated using the Measurement quantity conversions in ANSI C63.26-2015 Section 5.2.7:
 - a) $E(\text{dB}\mu\text{V}/\text{m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 - b) $\text{EIRP (dBm)} = E(\text{dB}\mu\text{V}/\text{m}) + 20\log D - 104.8$; where D is the measurement distance in meters.
- 2) This device employs UMTS technology with WCDMA (AMR/RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest powers are reported in WCDMA mode with HSDPA Inactive at 12.2 kbps RMC and TPC bits all set to "1".
- 3) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 4) This unit was tested using a power supply.
- 5) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 6) Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
- 7) The " - " shown in the following RSE tables are used to denote a noise floor measurement.
- 8) ULCA spurious emissions measurements were evaluated for the two contiguous channels 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.
- 9) 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.
- 10) Spurious emission in EN-DC Operating mode with Sub 6GHz NR carrier as well as an LTE carrier (anchor) has been checked and was found to not to be the worst case. Spurious emissions from the NR carrier device are subject to the rules under which the NR carrier operates. Spurious emissions caused by the LTE carrier must meet the requirements of the rules under which the LTE carrier operates.

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 26/5 – Ant 5



Plot 7-81. Radiated Spurious Plot Below 1GHz (LTE Band 26/5 – Ant 5)



Plot 7-82. Radiated Spurious Plot Above 1GHz (LTE Band 26/5 – Ant 5)

Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
148.50	H	191	156	-99.13	19.72	27.59	-69.82	-13.00	-56.82
305.00	H	-	-	-108.95	21.33	19.38	-78.03	-13.00	-65.03
507.00	H	-	-	-109.24	25.98	23.74	-73.66	-13.00	-60.66
787.00	H	-	-	-108.41	30.13	28.72	-68.69	-13.00	-55.69

Table 7-15. Radiated Spurious Data (LTE Band 26/5 – Mid Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT				Approved by: Technical Manager
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Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	146	234	-75.08	-7.06	24.86	-70.40	-13.00	-57.40
2487.00	H	155	247	-73.88	-4.26	28.86	-66.40	-13.00	-53.40
3316.00	H	-	-	-77.46	-1.22	28.32	-66.93	-13.00	-53.93
4145.00	H	-	-	-77.86	1.45	30.59	-64.66	-13.00	-51.66
4974.00	H	-	-	-78.13	2.62	31.49	-63.76	-13.00	-50.76

Table 7-16. Radiated Spurious Data (LTE Band 26/5 – Low Channel – Ant 5)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	151	276	-73.79	-6.94	26.27	-68.99	-13.00	-55.99
2509.50	H	152	277	-74.75	-3.99	28.26	-66.99	-13.00	-53.99
3346.00	H	-	-	-77.20	-1.04	28.76	-66.50	-13.00	-53.50
4182.50	H	-	-	-77.95	1.55	30.60	-64.66	-13.00	-51.66
5019.00	H	-	-	-78.35	2.90	31.55	-63.70	-13.00	-50.70

Table 7-17. Radiated Spurious Data (LTE Band 26/5 – Mid Channel – Ant 5)

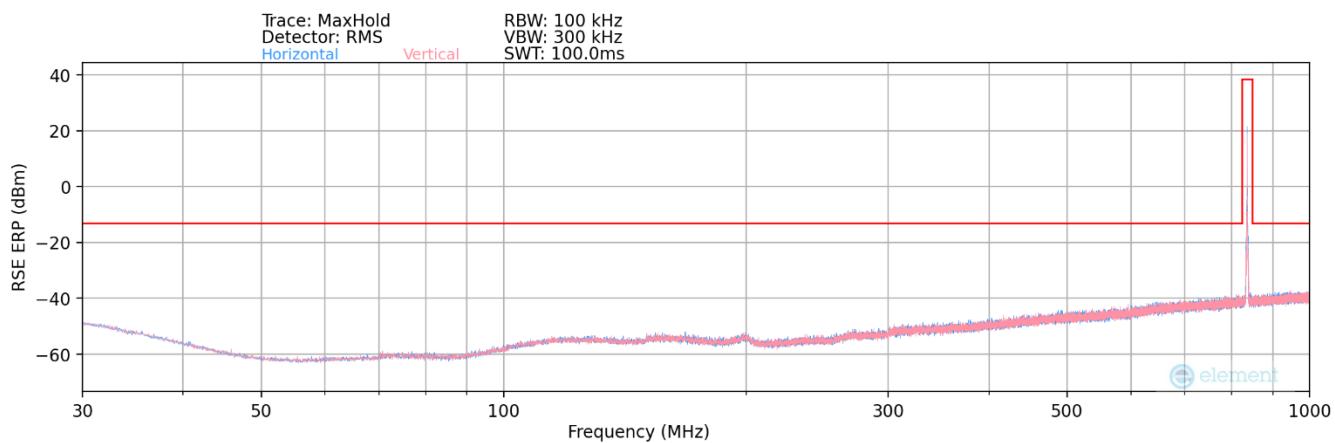
Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	135	242	-74.13	-6.82	26.05	-69.21	-13.00	-56.21
2532.00	H	148	257	-71.84	-3.74	31.42	-63.84	-13.00	-50.84
3376.00	H	-	-	-76.96	-1.03	29.01	-66.25	-13.00	-53.25
4220.00	H	-	-	-77.56	1.54	30.98	-64.28	-13.00	-51.28
5064.00	H	-	-	-78.45	3.12	31.67	-63.59	-13.00	-50.59

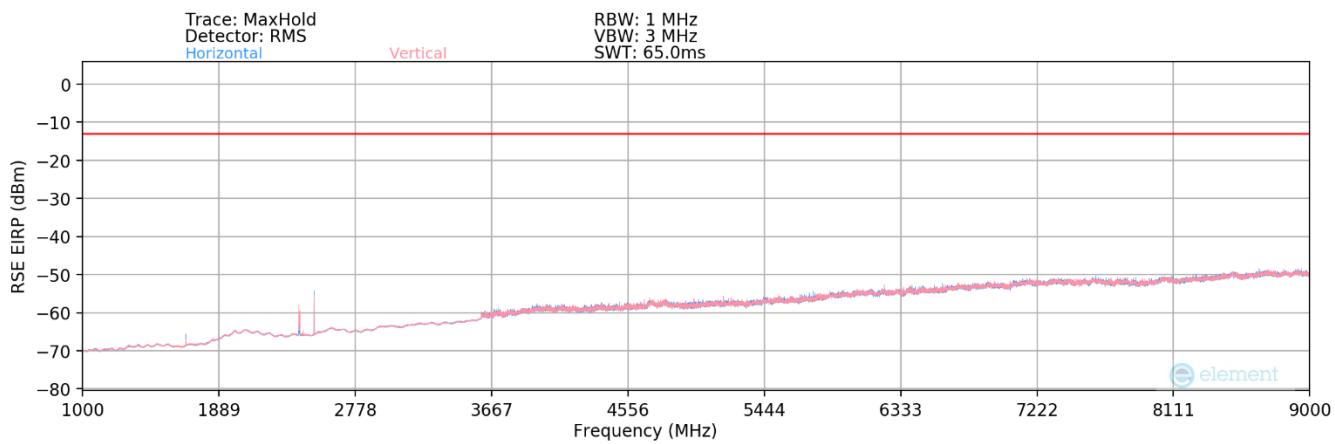
Table 7-18. Radiated Spurious Data (LTE Band 26/5 – High Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular				Page 73 of 92

LTE Band 26/5 – Ant 2



Plot 7-83. Radiated Spurious Plot (LTE Band 26/5 – Ant 2)



Plot 7-84. Radiated Spurious Plot (LTE Band 26/5 – Ant 2)

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
167.00	H	-	-	-109.08	19.58	17.50	-79.90	-13.00	-66.90

Table 7-19. Radiated Spurious Data (LTE Band 26/5 – Mid Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular			Page 74 of 92	

Bandwidth (MHz):	10
Frequency (MHz):	829
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	368	127	-75.29	-7.06	24.65	-70.61	-13.00	-57.61
2487.00	H	370	119	-52.78	-4.26	49.96	-45.30	-13.00	-32.30
3316.00	H	-	-	-77.74	-1.22	28.04	-67.21	-13.00	-54.21
4145.00	H	-	-	-77.64	1.45	30.81	-64.44	-13.00	-51.44
4974.00	H	-	-	-78.19	2.62	31.43	-63.82	-13.00	-50.82

Table 7-20. Radiated Spurious Data (LTE Band 26/5 – Low Channel – Ant 2)

Bandwidth (MHz):	10
Frequency (MHz):	836.5
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	140	224	-70.42	-6.94	29.64	-65.62	-13.00	-52.62
2509.50	H	363	120	-62.79	-3.99	40.22	-55.03	-13.00	-42.03
3346.00	H	-	-	-77.60	-1.04	28.36	-66.90	-13.00	-53.90
4182.50	H	-	-	-77.92	1.55	30.63	-64.63	-13.00	-51.63
5019.00	H	-	-	-78.33	2.90	31.57	-63.68	-13.00	-50.68

Table 7-21. Radiated Spurious Data (LTE Band 26/5 – Mid Channel – Ant 2)

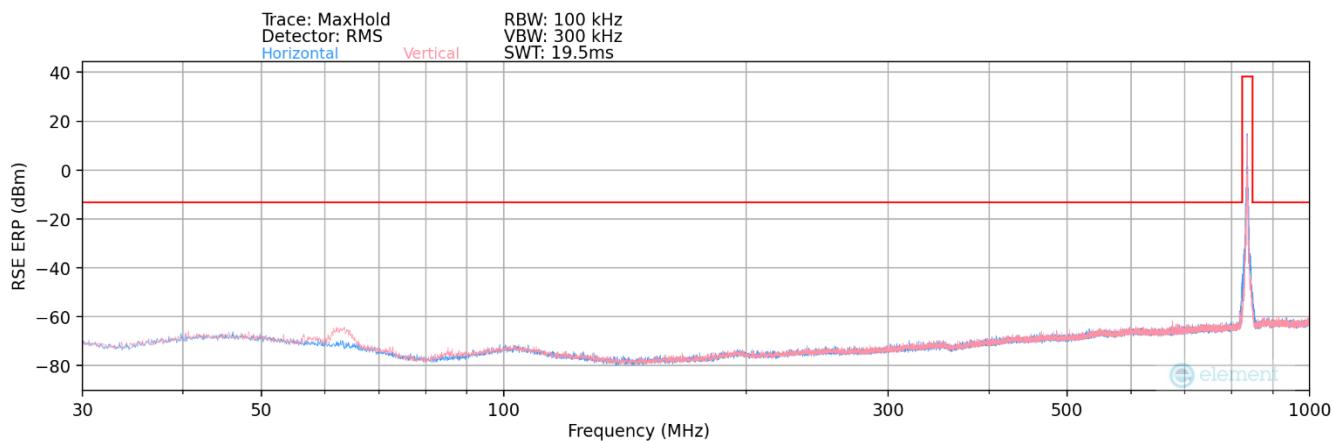
Bandwidth (MHz):	10
Frequency (MHz):	844
RB / Offset:	1 / 37

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	-	-	-76.51	-6.82	23.67	-71.59	-13.00	-58.59
2532.00	H	124	231	-66.57	-3.74	36.69	-58.57	-13.00	-45.57
3376.00	H	-	-	-77.23	-1.03	28.74	-66.52	-13.00	-53.52
4220.00	H	-	-	-77.61	1.54	30.93	-64.33	-13.00	-51.33
5064.00	H	-	-	-78.53	3.12	31.59	-63.67	-13.00	-50.67

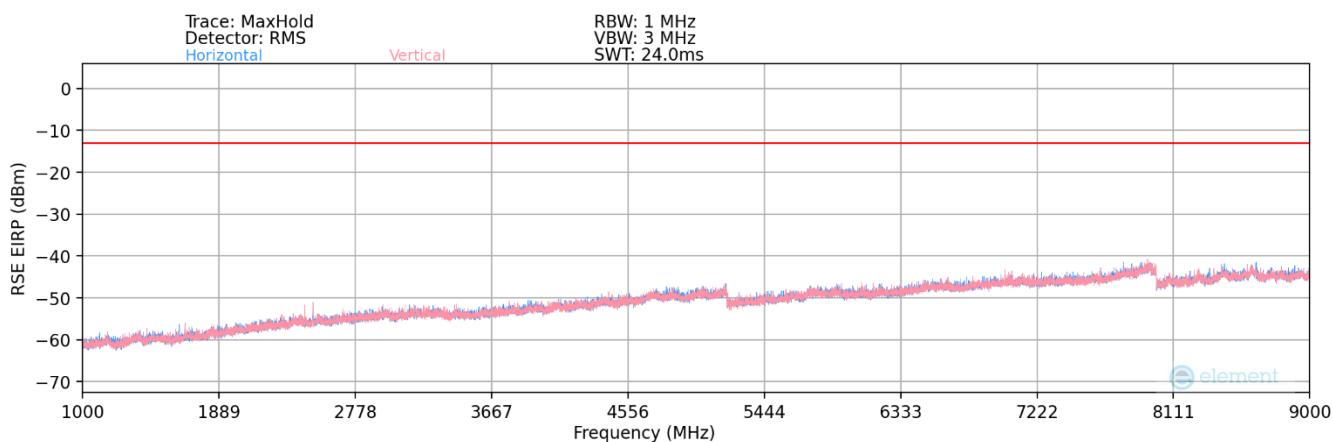
Table 7-22. Radiated Spurious Data (LTE Band 26/5 – High Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular				Page 75 of 92

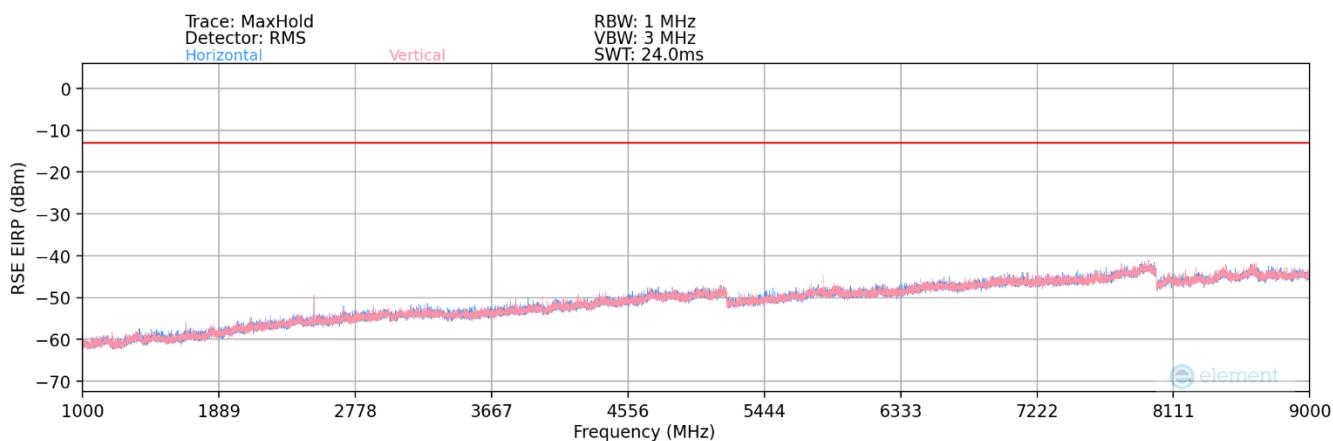
ULCA LTE Band 5 – Ant 5



Plot 7-85. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 5)

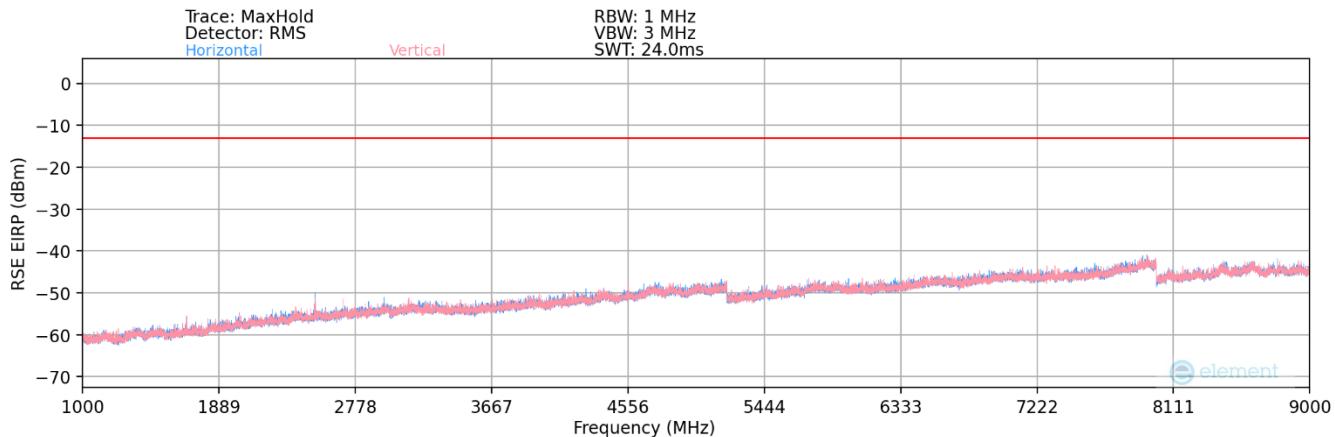


Plot 7-86. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 5)



Plot 7-87. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 76 of 92



PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	844.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	834.1
SCC RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
63.73	H	351	349	-76.76	-13.59	16.65	-80.76	-13.00	-67.76
105.49	H	-	-	-78.67	-13.56	14.77	-82.64	-13.00	-69.64
191.13	H	-	-	-81.80	-13.95	11.25	-86.16	-13.00	-73.16
260.88	H	-	-	-83.40	-11.91	11.69	-85.72	-13.00	-72.72

Table 7-23. Radiated Spurious Data (ULCA LTE Band 5 – High Channel – Ant 5)

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	829.0
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	838.9
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	237	137	-75.37	0.01	31.64	-63.62	-13.00	-50.62
2487.00	H	155	32	-79.85	4.01	31.16	-64.10	-13.00	-51.10
3316.00	H	-	-	-79.89	6.88	33.99	-61.26	-13.00	-48.26
4145.00	H	-	-	-80.06	8.30	35.24	-60.01	-13.00	-47.01
4974.00	H	-	-	-80.57	10.09	36.52	-58.73	-13.00	-45.73

Table 7-24. Radiated Spurious Data (ULCA LTE Band 5 – Low Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular				Page 77 of 92

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	831.5
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	0.0
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1663.00	H	247	153	-74.23	0.17	32.94	-62.31	-13.00	-49.31
2494.50	H	219	38	-76.92	4.05	34.13	-61.13	-13.00	-48.13
3326.00	H	-	-	-79.80	6.93	34.13	-61.13	-13.00	-48.13
4157.50	H	-	-	-80.09	8.22	35.13	-60.13	-13.00	-47.13
4989.00	H	-	-	-80.82	10.11	36.29	-58.97	-13.00	-45.97

Table 7-25. Radiated Spurious Data (ULCA LTE Band 5 – Mid Channel – Ant 5)

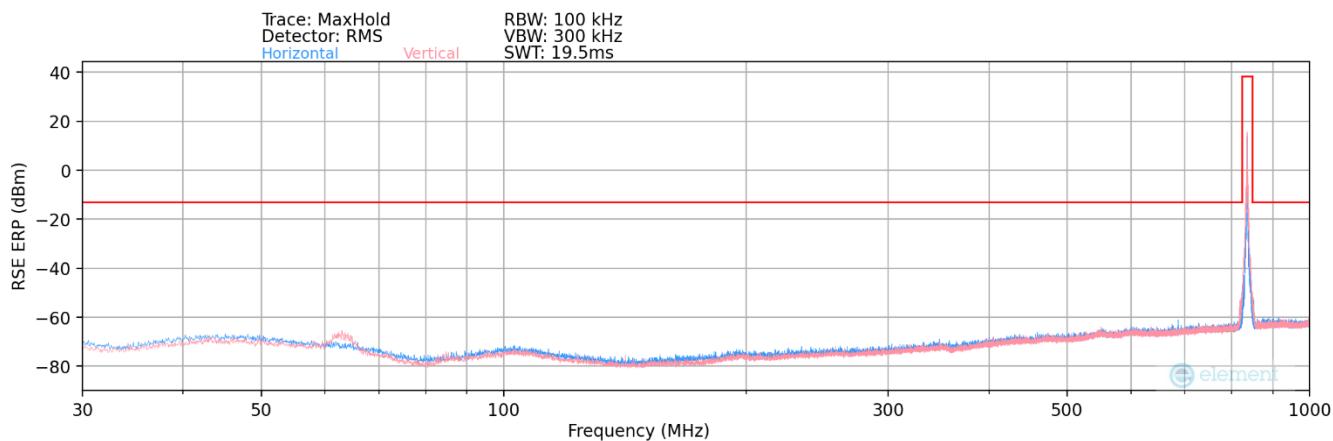
PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	844.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	834.1
SCC RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	123	36	-74.72	0.55	32.83	-62.42	-13.00	-49.42
2532.00	H	216	297	-77.15	4.61	34.46	-60.80	-13.00	-47.80
3376.00	H	-	-	-79.55	6.44	33.89	-61.37	-13.00	-48.37
4220.00	H	-	-	-80.06	8.42	35.36	-59.90	-13.00	-46.90
5064.00	H	-	-	-81.76	10.44	35.68	-59.58	-13.00	-46.58

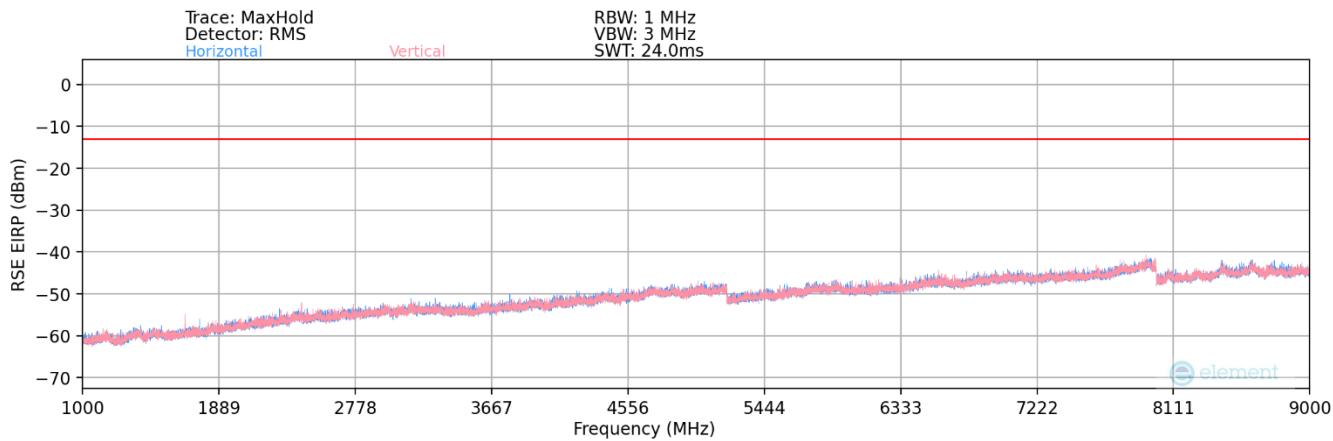
Table 7-26. Radiated Spurious Data (ULCA LTE Band 5 – High Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT				Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular			Page 78 of 92

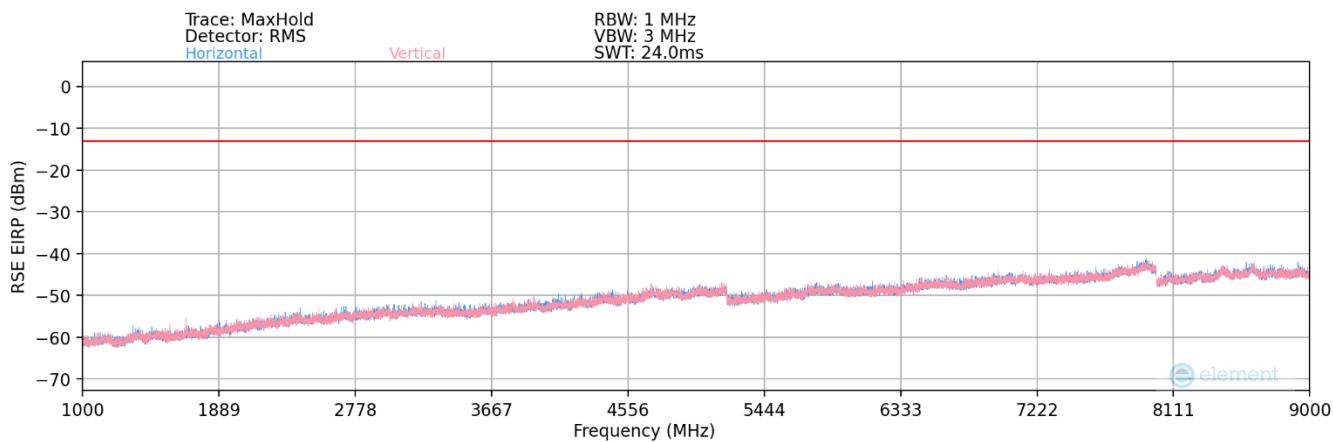
ULCA LTE Band 5 – Ant 2



Plot 7-89. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 2)

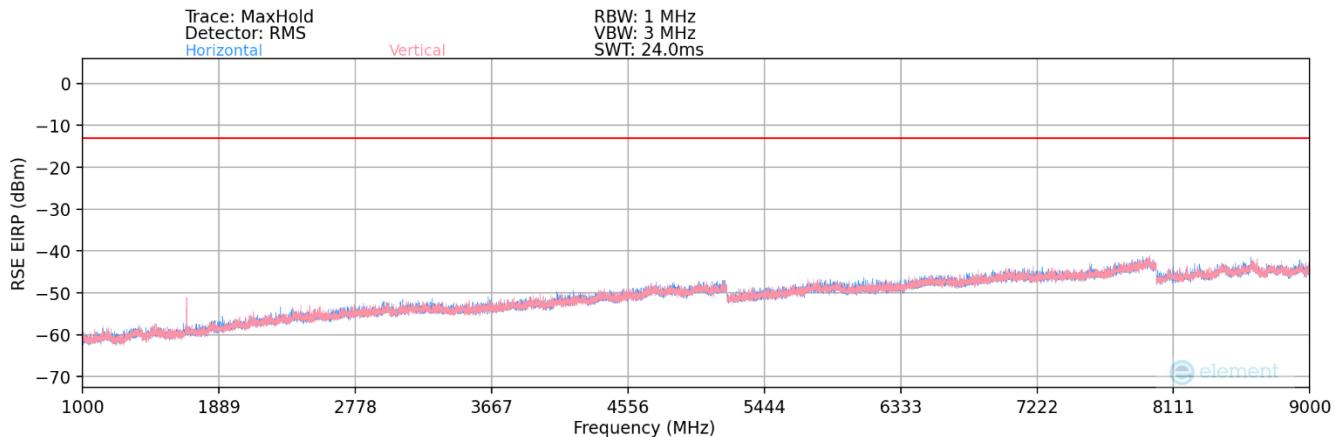


Plot 7-90. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 2)



Plot 7-91. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 79 of 92



Plot 7-92. Radiated Spurious Plot (ULCA LTE Band 5 – Ant 2)

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	831.5
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	841.4
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
62.00	V	30	331	-76.81	-13.07	17.12	-80.29	-13.00	-67.29
99.12	V	-	-	-78.43	-13.77	14.80	-82.60	-13.00	-69.60
304.37	V	-	-	-82.29	-11.11	13.60	-83.81	-13.00	-70.81
401.97	V	-	-	-83.65	-8.36	14.99	-82.41	-13.00	-69.41

Table 7-27. Radiated Spurious Data (ULCA LTE Band 5 – Mid Channel – Ant 2)

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	829.0
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	838.9
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1658.00	H	38	148	-72.87	0.01	34.14	-61.12	-13.00	-48.12
2487.00	H	220	276	-74.01	4.01	37.00	-58.26	-13.00	-45.26
3316.00	H	-	-	-79.78	6.88	34.10	-61.15	-13.00	-48.15
4145.00	H	-	-	-80.22	8.30	35.08	-60.17	-13.00	-47.17
4974.00	H	-	-	-80.73	10.09	36.36	-58.89	-13.00	-45.89

Table 7-28. Radiated Spurious Data (ULCA LTE Band 5 – Low Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular				Page 80 of 92

PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	831.5
PCC RB / Offset:	1 / 49
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	841.4
SCC RB / Offset:	1 / 0

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1663.00	H	142	26	-73.32	0.17	33.85	-61.40	-13.00	-48.40
2494.50	H	327	39	-71.74	4.05	39.31	-55.95	-13.00	-42.95
3326.00	H	-	-	-79.73	6.93	34.20	-61.06	-13.00	-48.06
4157.50	H	-	-	-80.30	8.22	34.92	-60.34	-13.00	-47.34
4989.00	H	-	-	-81.34	10.11	35.77	-59.49	-13.00	-46.49

Table 7-29. Radiated Spurious Data (ULCA LTE Band 5 – Mid Channel – Ant 2)

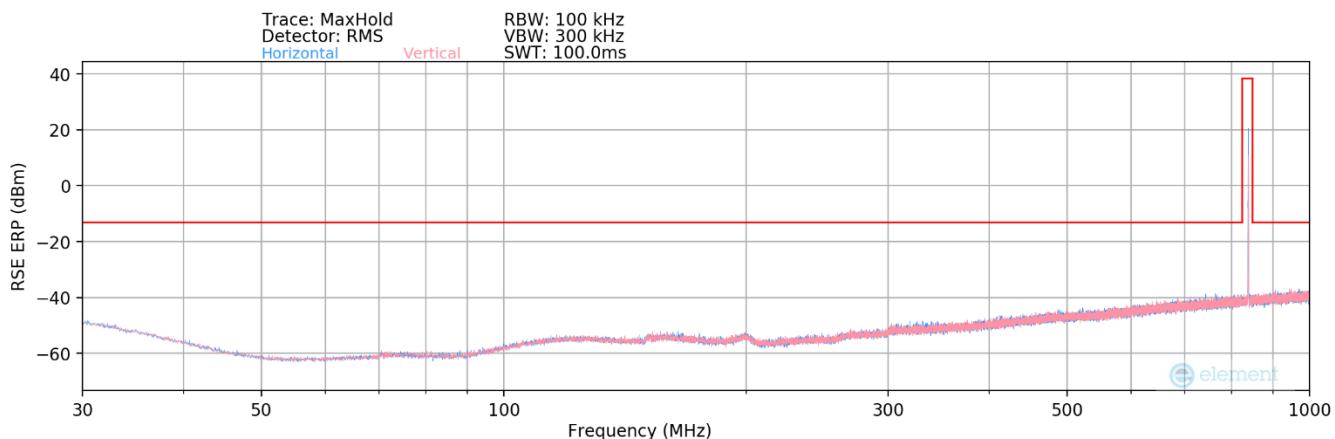
PCC Bandwidth (MHz):	10
PCC Frequency (MHz):	844.0
PCC RB / Offset:	1 / 0
SCC Bandwidth (MHz):	10
SCC Frequency (MHz):	834.1
SCC RB / Offset:	1 / 49

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1688.00	H	125	22	-71.08	0.55	36.47	-58.78	-13.00	-45.78
2532.00	H	122	359	-73.91	4.61	37.70	-57.56	-13.00	-44.56
3376.00	H	-	-	-79.77	6.44	33.67	-61.59	-13.00	-48.59
4220.00	H	-	-	-79.86	8.42	35.56	-59.70	-13.00	-46.70
5064.00	H	-	-	-80.90	10.44	36.54	-58.72	-13.00	-45.72

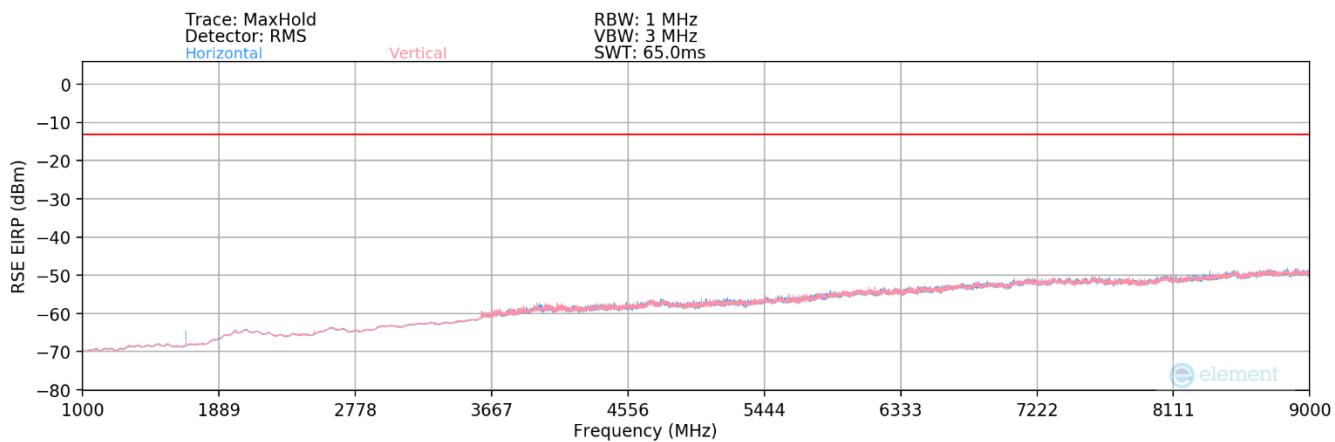
Table 7-30. Radiated Spurious Data (ULCA LTE Band 5 – High Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT				Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular			Page 81 of 92

NR Band n5 – Ant 5



Plot 7-93. Radiated Spurious Plot (NR Band n5 – Ant 5)



Plot 7-94. Radiated Spurious Plot (NR Band n5 – Ant 5)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 53
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
323.00	H	-	-	-108.40	21.60	20.20	-77.21	-13.00	-64.21

Table 7-31. Radiated Spurious Data (NR Band n5 – Mid Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular				Page 82 of 92

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 50
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	H	176	343	-71.87	-7.00	28.13	-67.13	-13.00	-54.13
2502.00	H	183	357	-75.02	-4.14	27.84	-67.41	-13.00	-54.41
3336.00	H	-	-	-77.56	-1.11	28.33	-66.93	-13.00	-53.93
4170.00	H	-	-	-78.11	1.51	30.40	-64.86	-13.00	-51.86
5004.00	H	-	-	-78.14	2.68	31.54	-63.71	-13.00	-50.71

Table 7-32. Radiated Spurious Data (NR Band n5 – Low Channel – Ant 5)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 50
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	193	340	-69.76	-6.94	30.30	-64.96	-13.00	-51.96
2509.50	H	192	344	-75.67	-3.99	27.34	-67.91	-13.00	-54.91
3346.00	H	-	-	-77.43	-1.04	28.53	-66.73	-13.00	-53.73
4182.50	H	-	-	-78.09	1.55	30.46	-64.80	-13.00	-51.80
5019.00	H	-	-	-78.36	2.90	31.54	-63.71	-13.00	-50.71

Table 7-33. Radiated Spurious Data (NR Band n5 – Mid Channel – Ant 5)

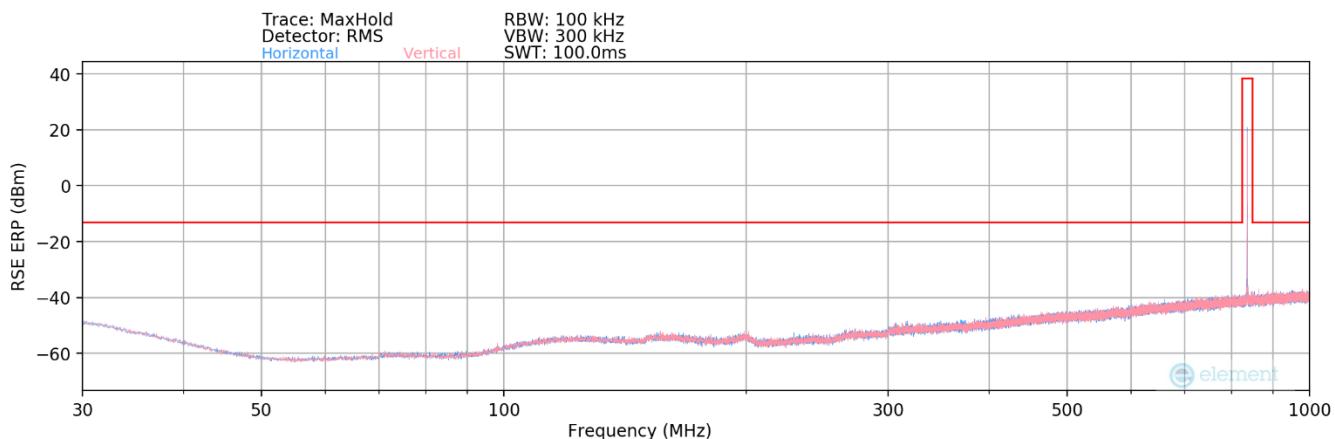
Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 50
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	H	155	343	-70.48	-6.88	29.64	-65.62	-13.00	-52.62
2517.00	H	148	358	-75.46	-3.86	27.68	-67.58	-13.00	-54.58
3356.00	H	-	-	-77.21	-0.98	28.81	-66.45	-13.00	-53.45
4195.00	H	-	-	-77.86	1.57	30.71	-64.55	-13.00	-51.55
5034.00	H	-	-	-78.46	3.06	31.60	-63.65	-13.00	-50.65

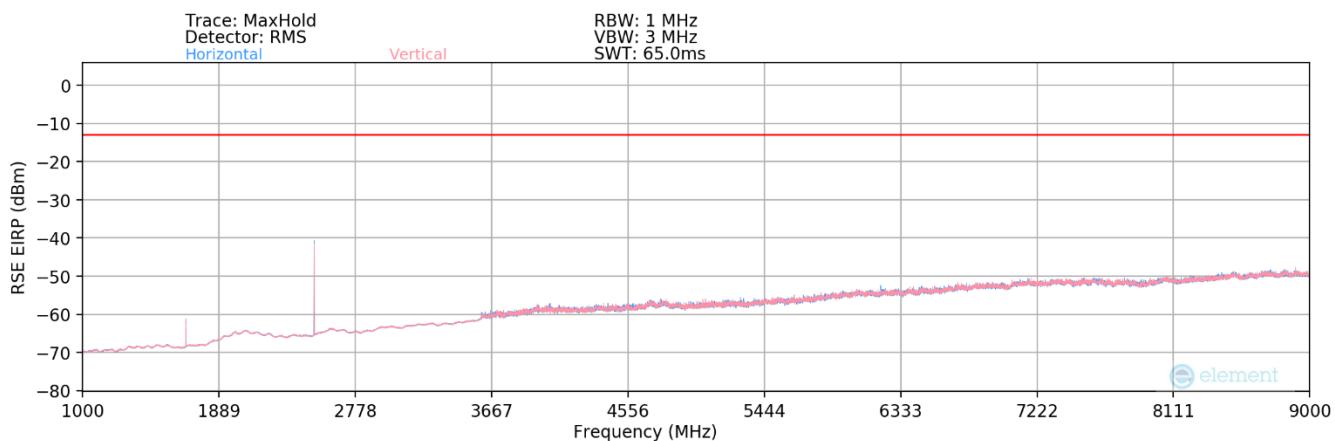
Table 7-34. Radiated Spurious Data (NR Band n5 – High Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
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NR Band n5 – Ant 2



Plot 7-95. Radiated Spurious Plot (NR Band n5 – Ant 2)



Plot 7-96. Radiated Spurious Plot (NR Band n5 – Ant 2)

Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 53
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
662.00	H	-	-	-108.04	28.26	27.22	-70.19	-13.00	-57.19

Table 7-35. Radiated Spurious Data (NR Band n5 – Mid Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
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Bandwidth (MHz):	20
Frequency (MHz):	834
RB / Offset:	1 / 53
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1668.00	H	332	32	-75.14	-7.00	24.86	-70.40	-13.00	-57.40
2502.00	H	328	35	-69.85	-4.14	33.01	-62.24	-13.00	-49.24
3336.00	H	-	-	-77.61	-1.11	28.28	-66.98	-13.00	-53.98
4170.00	H	-	-	-78.06	1.51	30.45	-64.81	-13.00	-51.81
5004.00	H	-	-	-78.14	2.68	31.54	-63.71	-13.00	-50.71

Table 7-36. Radiated Spurious Data (NR Band n5 – Low Channel – Ant 2)

Bandwidth (MHz):	20
Frequency (MHz):	836.5
RB / Offset:	1 / 53
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.00	H	146	351	-73.13	-6.94	26.93	-68.33	-13.00	-55.33
2509.50	H	145	355	-76.07	-3.99	26.94	-68.31	-13.00	-55.31
3346.00	H	-	-	-77.26	-1.04	28.70	-66.56	-13.00	-53.56
4182.50	H	-	-	-78.11	1.55	30.44	-64.82	-13.00	-51.82
5019.00	H	-	-	-78.24	2.90	31.66	-63.59	-13.00	-50.59

Table 7-37. Radiated Spurious Data (NR Band n5 – Mid Channel – Ant 2)

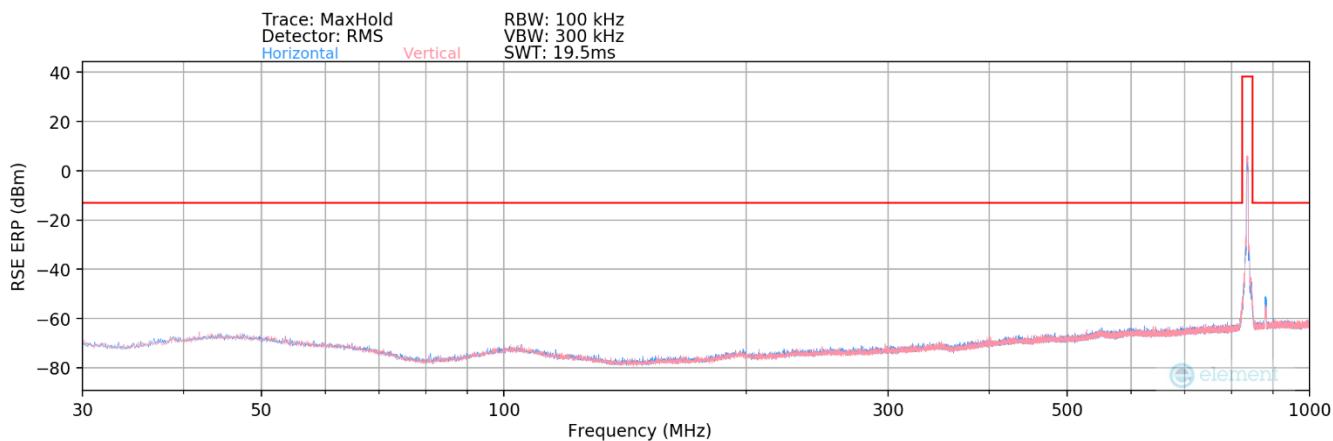
Bandwidth (MHz):	20
Frequency (MHz):	839
RB / Offset:	1 / 53
Mode:	Stand Alone

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1678.00	H	334	50	-74.42	-6.88	25.70	-69.56	-13.00	-56.56
2517.00	H	334	57	-72.80	-3.86	30.34	-64.92	-13.00	-51.92
3356.00	H	-	-	-77.23	-0.98	28.79	-66.47	-13.00	-53.47
4195.00	H	-	-	-77.76	1.57	30.81	-64.45	-13.00	-51.45
5034.00	H	-	-	-78.43	3.06	31.63	-63.62	-13.00	-50.62

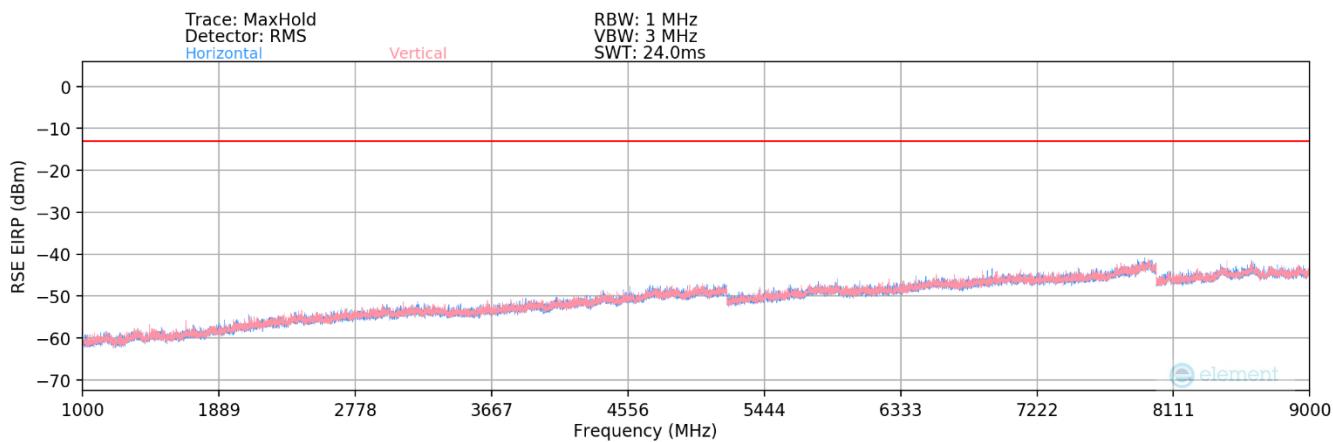
Table 7-38. Radiated Spurious Data (NR Band n5 – High Channel – Ant 2)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
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WCDMA Cell – Ant 5



Plot 7-97. Radiated Spurious Plot (WCDMA Cell – Ant 5)



Plot 7-98. Radiated Spurious Plot (WCDMA Cell – Ant 5)

Mode:	WCDMA RMC	
Channel:	4183	
Frequency (MHz):	826.4	

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	ERP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
100.00	V	-	-	-78.74	-13.64	14.62	-82.79	-13.00	-69.79

Table 7-39. Radiated Spurious Data (WCDMA Cell – Mid Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
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Mode:	WCDMA RMC
Channel:	4132
Frequency (MHz):	826.4

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1652.80	V	121	175	-77.19	-0.13	29.68	-65.58	-13.00	-52.58
2479.20	V	204	250	-75.85	3.93	35.08	-60.18	-13.00	-47.18
3305.60	V	-	-	-79.63	6.70	34.07	-61.18	-13.00	-48.18
4132.00	V	-	-	-80.14	8.15	35.01	-60.25	-13.00	-47.25
4958.40	V	-	-	-80.46	9.78	36.32	-58.93	-13.00	-45.93

Table 7-40. Radiated Spurious Data (WCDMA Cell – Low Channel – Ant 5)

Mode:	WCDMA RMC
Channel:	4183
Frequency (MHz):	836.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1673.20	V	156	151	-75.76	0.43	31.67	-63.58	-13.00	-50.58
2509.80	V	378	148	-69.95	4.07	41.12	-54.13	-13.00	-41.13
3346.40	V	-	-	-79.90	6.77	33.87	-61.38	-13.00	-48.38
4183.00	V	-	-	-80.52	8.24	34.72	-60.54	-13.00	-47.54
5019.60	V	-	-	-80.78	10.54	36.76	-58.49	-13.00	-45.49

Table 7-41. Radiated Spurious Data (WCDMA Cell – Mid Channel – Ant 5)

Mode:	WCDMA RMC
Channel:	4233
Frequency (MHz):	846.6

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dB μ V/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1693.20	V	130	269	-77.75	0.56	29.81	-65.45	-13.00	-52.45
2539.80	V	253	147	-74.50	4.54	37.04	-58.22	-13.00	-45.22
3386.40	V	-	-	-79.55	6.35	33.80	-61.46	-13.00	-48.46
4233.00	V	-	-	-80.45	8.67	35.22	-60.04	-13.00	-47.04
5079.60	V	-	-	-80.70	10.18	36.48	-58.77	-13.00	-45.77

Table 7-42. Radiated Spurious Data (WCDMA Cell – High Channel – Ant 5)

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT					Approved by: Technical Manager
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7.7 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22 and RSS-132, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5 \text{ ppm}$) of the center frequency.

Test Procedure Used

ANSI C63.26-2015 – Section 5.6

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

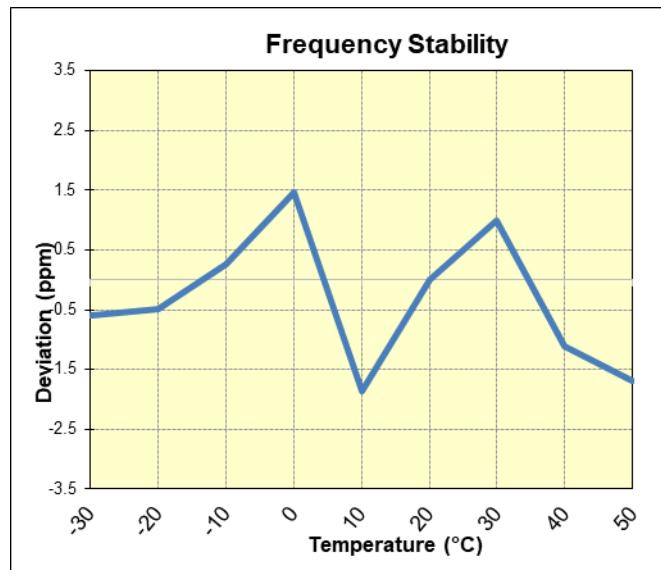
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT		Approved by: Technical Manager
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LTE Band 26/5

Operating Frequency (Hz):	831,500,000
Ref. Voltage (VDC):	3.85
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	- 30	831,505,616	-487	-0.0000586
		- 20	831,505,705	-399	-0.0000479
		- 10	831,506,327	223	0.0000268
		0	831,507,327	1,224	0.0001472
		+ 10	831,504,556	-1,548	-0.0001861
		+ 20 (Ref)	831,506,103	0	0.0000000
		+ 30	831,506,936	833	0.0001002
		+ 40	831,505,175	-928	-0.0001116
		+ 50	831,504,694	-1,409	-0.0001695
Battery Endpoint	2.80	+ 20	831,506,757	653	0.0000786

Table 7-43. LTE Band 26/5 Frequency Stability Data



Plot 7-99. LTE Band 26/5 Frequency Stability Chart

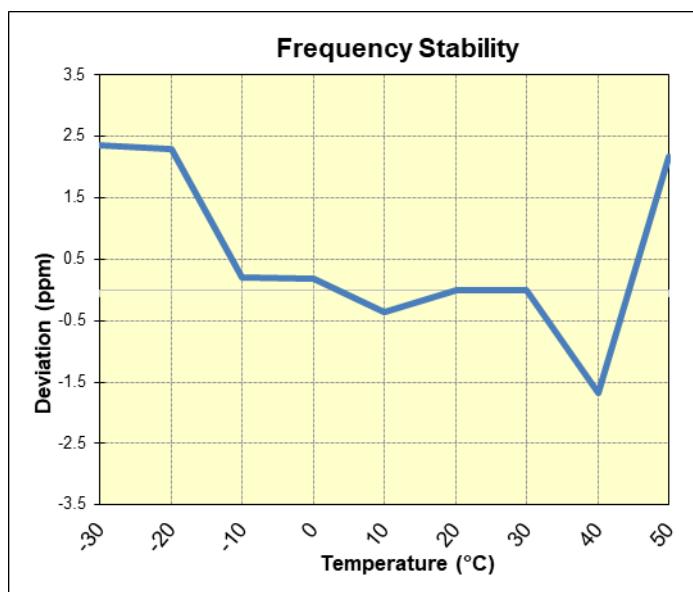
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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NR Band n5

Operating Frequency (Hz):	836,500,000
Ref. Voltage (VDC):	3.85
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	- 30	836,491,875	1,972	0.0002357
		- 20	836,491,817	1,914	0.0002288
		- 10	836,490,079	176	0.0000210
		0	836,490,058	155	0.0000186
		+ 10	836,489,611	-293	-0.0000350
		+ 20 (Ref)	836,489,903	0	0.0000000
		+ 30	836,489,896	-8	-0.0000009
		+ 40	836,488,507	-1,396	-0.0001669
		+ 50	836,491,719	1,816	0.0002171
Battery Endpoint	2.80	+ 20	836,490,043	140	0.0000167

Table 7-44. NR Band n5 Frequency Stability Data



Plot 7-100. NR Band n5 Frequency Stability Chart

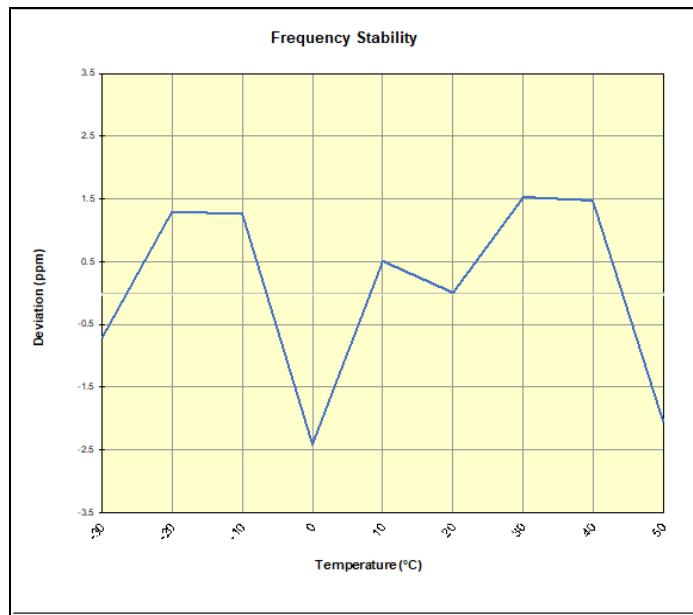
FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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WCDMA Cellular

Operating Frequency (Hz):	836,600,000
Ref. Voltage (VDC):	3.85
Deviation Limit:	± 0.00025% or 2.5 ppm

Voltage (%)	Power (VDC)	Temp (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.85	- 30	836,551,556	-580	-0.0000694
		- 20	836,553,207	1,070	0.0001280
		- 10	836,553,193	1,056	0.0001263
		0	836,550,121	-2,016	-0.0002409
		+ 10	836,552,557	421	0.0000503
		+ 20 (Ref)	836,552,136	0	0.0000000
		+ 30	836,553,409	1,273	0.0001522
		+ 40	836,553,377	1,241	0.0001483
		+ 50	836,550,429	-1,708	-0.0002041
Battery Endpoint	2.80	+ 20	836,551,125	-1,011	-0.0001209

Table 7-45. WCDMA Cell Frequency Stability Data



Plot 7-101. WCDMA Cell Frequency Stability Chart

FCC ID: C3K2114	PART 22 MEASUREMENT REPORT			Approved by: Technical Manager
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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Microsoft Corporation Full Modular** **FCC ID: C3K2114** complies with all the requirements of Part 22 of the FCC rules.

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Test Report S/N: 1M2411190103-01-R2.C3K	Test Dates: 12/3/2024 - 2/14/2025	EUT Type: Full Modular	Page 92 of 92