

Part 96 MEASUREMENT REPORT

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

Date of Testing:
 04/24/2023
Test Report Issue Date:
 05/24/23
Test Site/Location:
 Element lab., Columbia, MD, USA
Test Report Serial No.:
 1M2304240058-01-R2.NKR

FCC ID:	NKR-LV65C-T3
APPLICANT:	Wistron NeWeb Corporation

Application Type: Certification
Model(s): WNC-CR200A
EUT Type: Internet Gateway
FCC Classification: Citizens Band End User Devices (CBE)
FCC Rule Part(s): 96
Test Procedure(s): KDB 940660 D01 v03, WINNF-18-IN-00178 v1.0.0.00

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: 1M2209210109-01-R1.NKR) supersedes and replaces the previously issued test report on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

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



RJ Ortanez
Executive Vice President





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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.


1.2 Element Test Location

These measurement tests were conducted at the Element facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014 and KDB 414788 D01 v01r01.

1.3 Test Facility / Accreditations

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

- Element is a OnGo Alliance Approved Test Lab (ATL)
- Element is a WInnForum Approved Test Lab
- Element 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 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 facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Wistron Internet Gateway FCC ID: NKR-LV65C-T3**. The test data contained in this report pertains only to the additional requirements for end user devices specified in 96.47 of the FCC rules for LTE Band 48 and NR n48 operation in the CBRS band. Per FCC Part 96, this device is evaluated as a Citizens Band End User Devices (CBE).

IMEI Allocation/ESN.: 35747387

Hardware Version No.: 0.0.4

2.2 Device Capabilities

This device contains the following capabilities:

LTE Band 48, NR n48

2.3 Test Configuration


The EUT was tested per the guidance of KDB 940660 D01 v03 and WINNF-18-IN-00178 v1.0.0.00. See Section 6.0 of this test report for a description of the tests.

2.4 Software and Firmware

Testing was performed on device(s) using software/firmware version 3.2.0.9+13.00334.023 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 Measurement Procedure

The measurement procedures described in KDB 940660 D01 v03 and WINNF-18-IN-00178 v1.0.0.00 were used in the measurement of the EUT to address the additional requirements for End User Devices.

Deviation from Measurement Procedure.....None

3.2 Additional Requirements for End User Devices


See Section 6.2 of this report for a description of the specific test(s) run in order to demonstrate compliance to this requirement under Part 96.47 of the FCC Rules.

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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

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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
Airspan	AV2700	NR Access Point (RU)	N/A	N/A	N/A	1EU213600244
Dell	Latitude 5590	Test Harness Laptop	N/A	N/A	N/A	BHN3QV2
Keysight	N9020A	MXA Signal Analyzer	3/15/2023	Annual	3/15/2024	US46470561
Ruckus	Q710	LTE Access Point (RU)	N/A	N/A	N/A	991929000125

Table 5-1. Test Equipment 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 TEST RESULTS

6.1 Summary

Company Name: Wistron NeWeb Corporation
 FCC ID: NKR-LV65C-T3
 FCC Classification: Citizens Band End User Devices (CBE)
 Mode(s): LTE, NR

Test Condition	Test Description	FCC Part Section(s)	Test Limit	Test Result	Reference
CONDUCTED	End User Device Additional Requirements (CBSD Protocol)	96.47	<p>End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.</p> <p>An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.</p>	PASS	Section 6.2

Table 6-1. Summary Table

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6.2 End User Device Additional Requirement (CBSD Protocol)

Test Overview and Limit

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (Airspan for NR and Ruckus for LTE) as a companion device to show compliance with Part 96.47.

End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.

Test Procedure Used

KDB 940660 D01 v03, WINNF-18-IN-00178 v1.0.0.00

Test Setup/Method


The EUT was connected via an RF cable to a certified CBSD and spectrum analyzer. The following procedure is performed by applying WINNF-18-IN-00178 v1.0.0.00 CBRS End User Device as UUT Test Guidelines

1. Run#1:
 - a. Setup WINNF.PT.C.HBT.1 with 3615MHz – 3635MHz.
 - b. Enable 4G/5G AP service from CBSD
 - c. Check EUT Tx frequency.
 - d. Disable AP service and check EUT stop transmission within 10s.
2. Run#2:
 - a. Setup WINNF.PT.C.HBT.1 with 3660MHz – 3680MHz.
 - b. Enable 4G/5G AP service from CBSD
 - c. Check EUT Tx frequency.
 - d. Disable AP service and check EUT stop transmission within 10s.

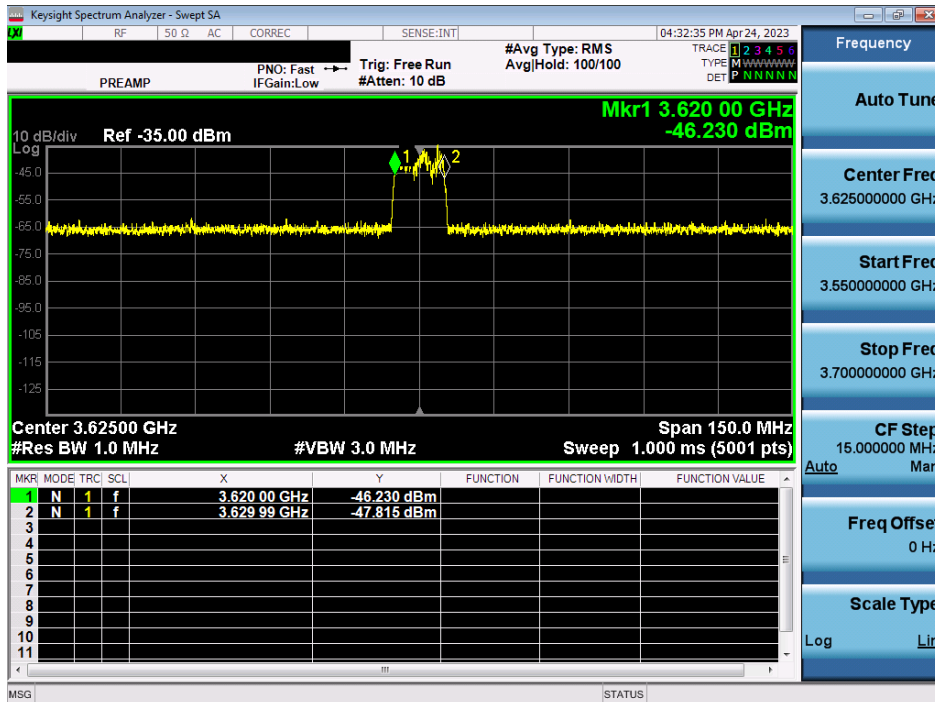
Note: The LTE test was run at the above center frequencies with a 10MHz BW channel.

Test Notes

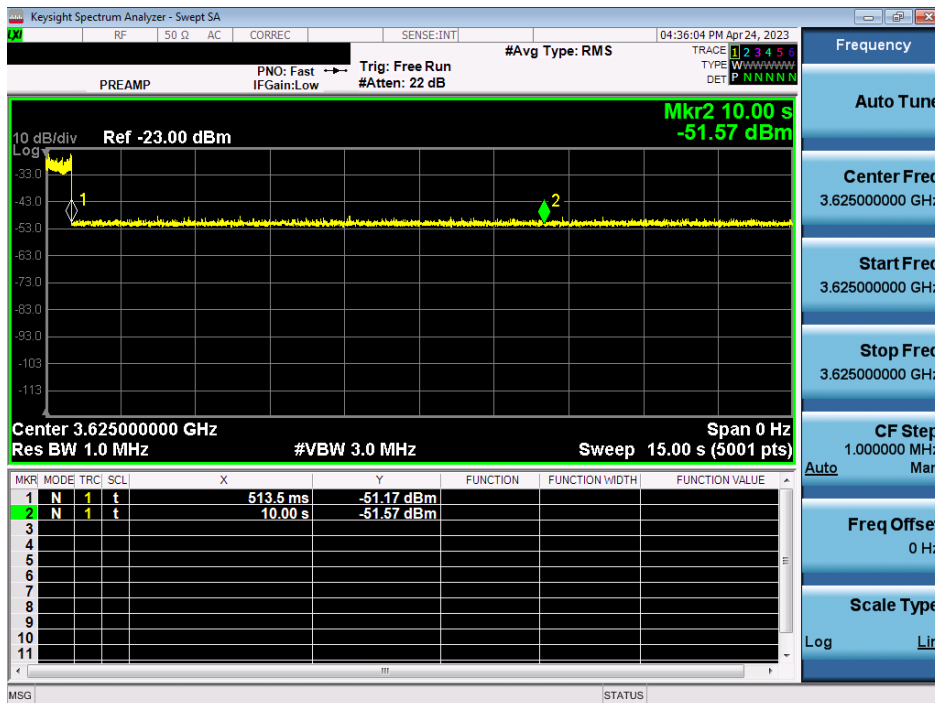
The EUT is an End User Device.

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LTE Run#1:



Plot 6-1. Run#1 End User Device Frequency of Operations (3625MHz) - LTE



Plot 6-2. Run#1 End User Device Discontinues Operations within 10s - LTE

Note:

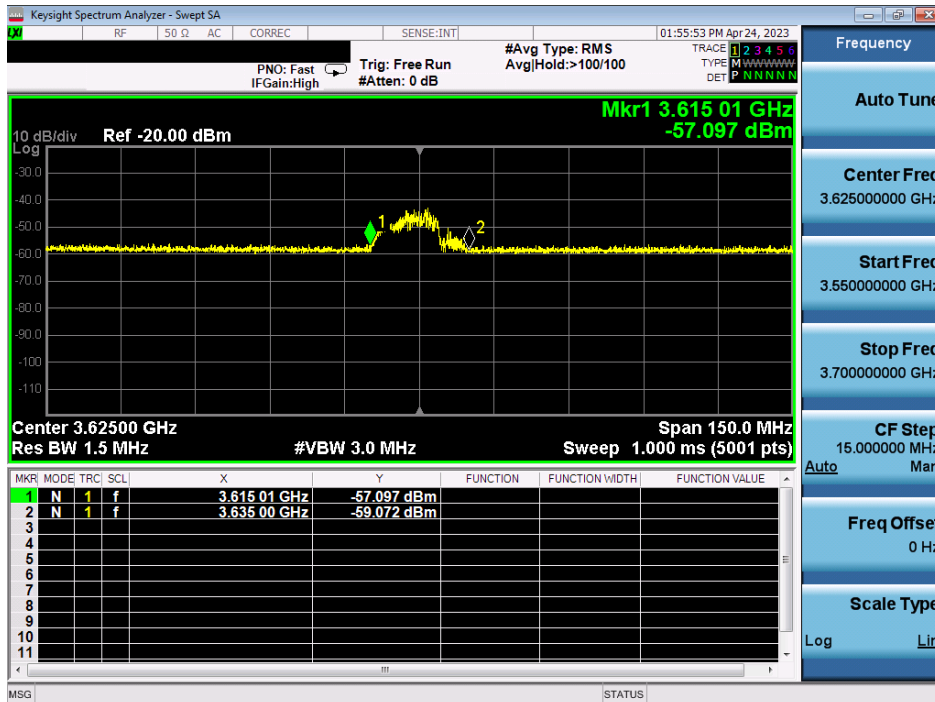
Plot starts when SAS sends deregistration response

Marker 1: EUT discontinues operation.

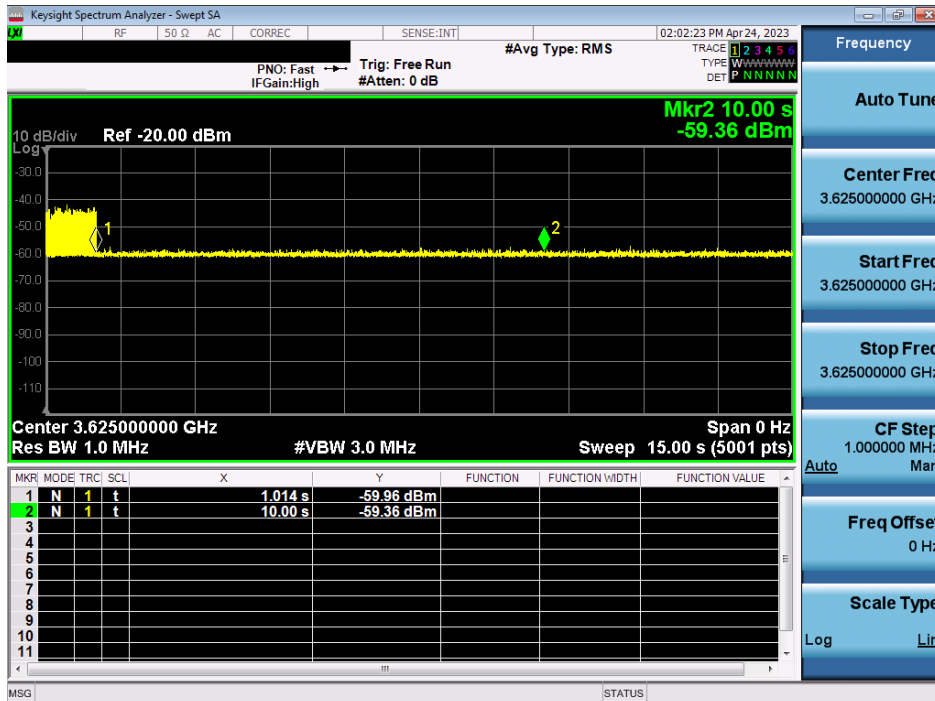
Marker 2: 10 seconds elapsed time from CBSD sending instructions to EUT.

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NR Run#1:



Plot 6-3. Run#1 End User Device Frequency of Operations (3625MHz) - NR



Plot 6-4. Run#1 End User Device Discontinues Operations within 10s - NR

Note:

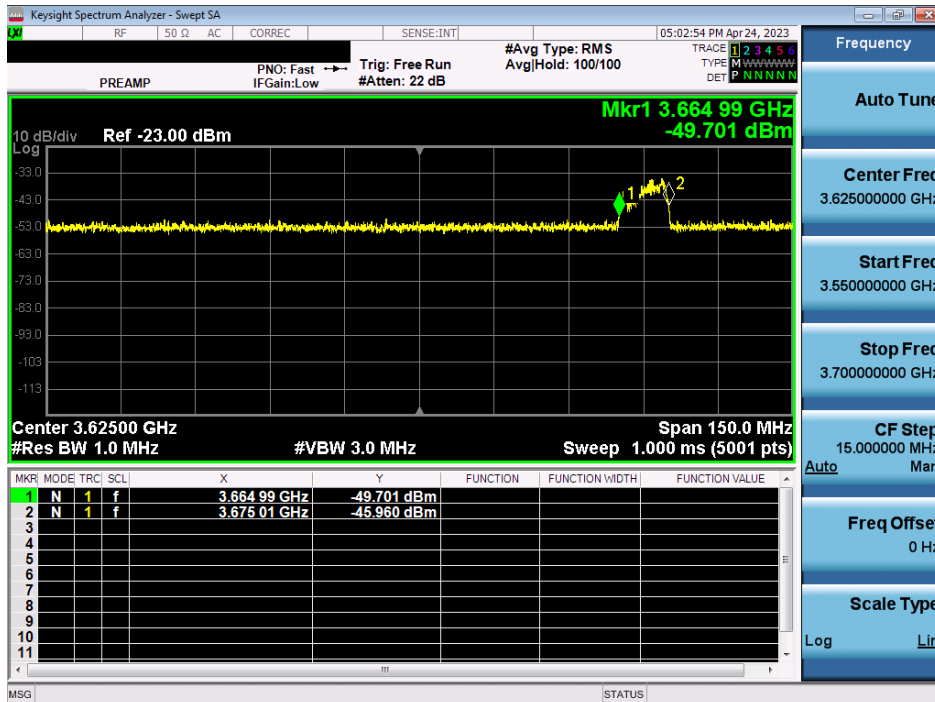
Plot starts when SAS sends deregistration response

Marker 1: EUT discontinues operation.

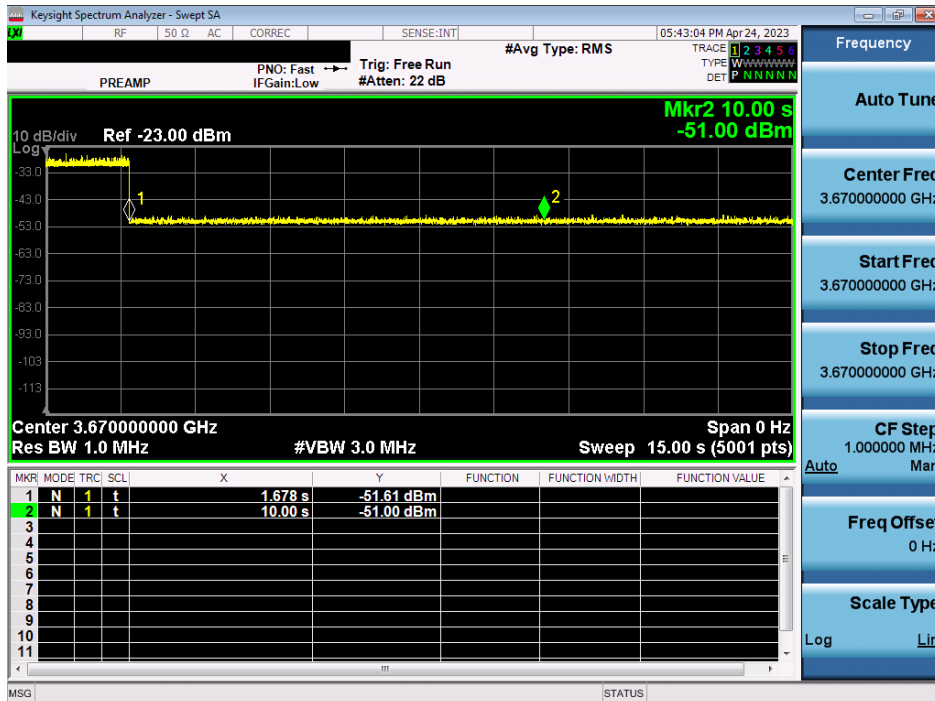
Marker 2: 10 seconds elapsed time from CBSD sending instructions to EUT.

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LTE Run#2:



Plot 6-5. Run#2 End User Device Frequency of Operations (3670MHz) - LTE



Plot 6-6. Run#2 End User Device Discontinues Operations within 10s - LTE

Note:

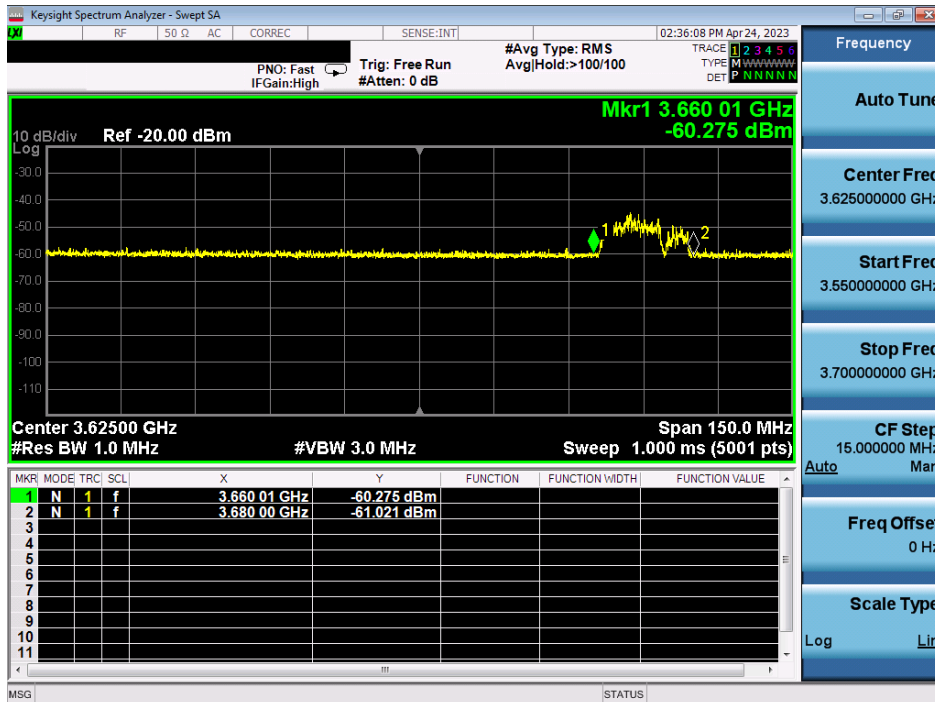
Plot starts when SAS sends deregistration response

Marker 1: EUT discontinues operation.

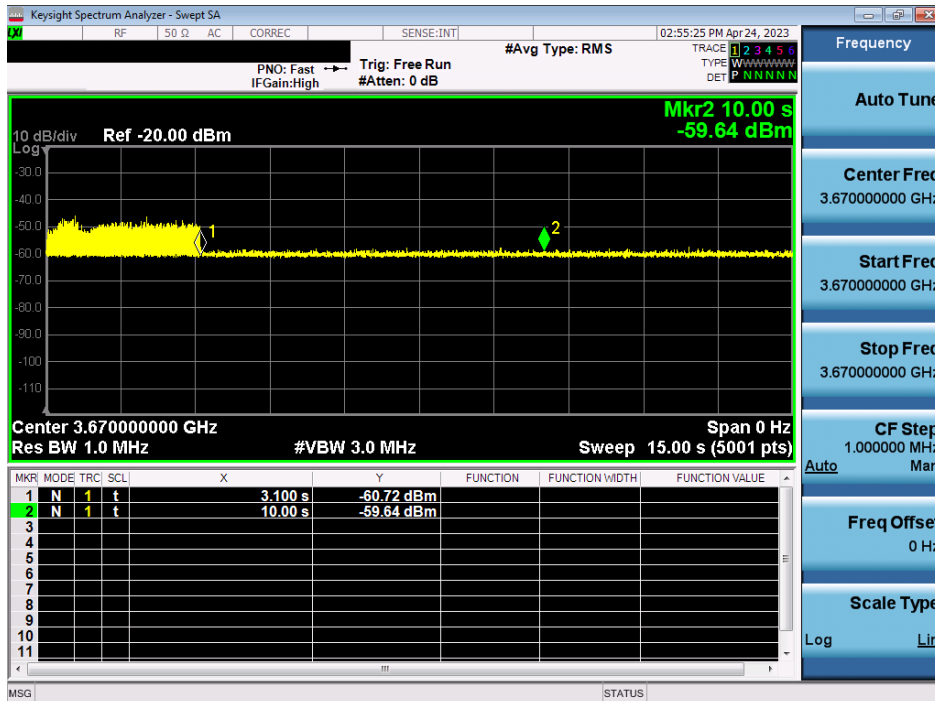
Marker 2: 10 seconds elapsed time from CBSD sending instructions to EUT.

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NR Run#2:



Plot 6-7. Run#2 End User Device Frequency of Operations (3670MHz) - NR



Plot 6-8. Run#2 End User Device Discontinues Operations within 10s - NR

Note:

Plot starts when SAS sends deregistration response


Marker 1: EUT discontinues operation.

Marker 2: 10 seconds elapsed time from CBSD sending instructions to EUT.

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7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Wistron Internet Gateway FCC ID: NKR-LV65C-T3** complies with the Additional Requirements for End User Devices specified in 96.47 of the FCC Rules for NR and LTE operation.

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