

TEST REPORT
CBSD-SAS Interoperability

Applicant Name:

Netcomm Wireless Pty Ltd
18-20 Orion Road
Lane Cove NSW 2066,
Sydney Australia

Date of Testing:

7/19/2021 – 7/23/2021

Test Site/Location:

PCTEST Lab. Columbia, MD, USA

Test Report Serial No.:

1M2107260084-R1.XIA

FCC ID:**XIA-CFW2132****APPLICANT:****NetComm Wireless Pty Ltd.****Application Type:**

Class II Permissive Change

Model:

CFW-2132

EUT Type:

Outdoor LTE Router

Frequency Range:

3550 – 3700 MHz

FCC Classification:

Citizens Band Category A and B Devices (CBD)

FCC Rule Part(s):

Part 96

Test Procedure(s):

KDB 940660 D01 v02, KDB 940660 D02 v01, WINNF-TS-0122-V1.0.0, CBRSA-TS-9001 V.1.0.0, [WINNF-19-IN-00033] CBRS CPE-CBSD as UUT Test Guidelines Version V1.0

Class II Perm. Change:

Please see Change Document.

This revised Test Report (S/N: 1M2107260084-R1.XIA) supersedes and replaces the previously issued test report(s) 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.

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 the test procedures listed above. Test results reported herein relate only to the item(s) tested.

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



Randy Ortanez
President

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of compliance with the technical rules and regulations of the Federal Communications Commission.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility located at 7185 Oakland Mills Road, Columbia, MD 21046.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab located in Columbia, MD 21046, U.S.A.

- PCTEST is an OnGo Alliance Approved Test Lab (ATL)
- PCTEST is a Wi-Fi Forum Approved Test Lab
- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for CBRS Alliance Certification Test Plan and Wi-Fi Forum Conformance and Performance Test Technical Standard.
- PCTEST is an ISO 17025-2005 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the Casa Systems Outdoor LTE Router **FCC ID: XIA-CFW2132**. The test data contained in this report pertains only to CBSD-SAS interoperability. The EUT is not a Domain Proxy.

EUT Serial Number(s): 070499201200005

EUT Hardware Version: 1.0

EUT Software Version: 1.1.42.5

EUT SAS Client Version: 0.01

2.2 Device Capabilities

This device contains the following capabilities:

LTE Band 48

This device supports the following conditional features:

	Conditional Test Case Definitions	Supported
C1	Mandatory for UUT which supports multi-step registration message	<input checked="" type="checkbox"/>
C2	Mandatory for UUT which supports single-step registration with no CPI-signed data in the registration message. By definition, this is a subset of Category A devices which determine all registration information, including location, without CPI intervention.	<input type="checkbox"/>
C3	Mandatory for UUT which supports single-step registration containing CPI-signed data in the registration message.	<input checked="" type="checkbox"/>
C4	Mandatory for UUT which supports RECEIVED_POWER_WITHOUT_GRANT measurement report type.	<input type="checkbox"/>
C5	Mandatory for UUT which supports RECEIVED_POWER_WITH_GRANT measurement report type.	<input type="checkbox"/>
C6	Mandatory for UUT which supports parameter change being made at the UUT and prior to sending a deregistration	<input type="checkbox"/>

Table 2-1. Conditional Features

2.3 Test Configuration

Test configuration is setup per [WINNF-19-IN-00033] CBRS CPE-CBSD as UUT Test Guidelines Version V1.0. The EUT was connected to the SAS Test Harness developed by WINNF WG4-CBSD. The BTS-CBSD used is the Ruckus Q710 (FCC ID: S9GQ910US00). The latest version of the SAS Test Harness (V1.0.0.2) provided by CBRS Alliance was used for BTS-CBSD and CPE-CBSD. The SAS Test Harnesses are synchronized to UTC time.

2.4 Modifications

No modifications were made to EUT during testing.

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3.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	N9020A	MXA Signal Analyzer	8/14/2020	Annual	8/14/2021	US46470561
Dell	Latitude 5580	Test Harness Laptop	N/A	N/A	N/A	N/A

Table 3-1 Annual Test Equipment Calibration Schedule

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4.0 ENVIRONMENTAL CONDITIONS

The temperature is controlled within range of 15°C to 35°C. The relative humidity is controlled within range of 10% to 75%. The atmospheric pressure is monitored within the range 86-106kPa (860-1060mbar).

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5.0 EVALUATION PROCEDURE

The measurement procedure described in KDB 940660 D01 v01 and WINNF-TS-0122-V1.0.0 was used in the measurement of the EUT.

Deviation from measurement procedure.....None

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6.0 TEST SUMMARY

6.1 Summary

Company Name: Casa Systems

FCC ID: XIA-CFW2132

Table 6-1. Summary of Test Results

FCC Part Section(s)	KDB940660 D01 Section 3.3 a	Test Case Description	WInnForum Test Case	Test Result
96.39 (c)	1	Confirm that the device will only transmit after it receives authorization from a SAS	WINNF.FT.C.REG.1	Pass
96.39 (c)	2	Check the device registration and authorization with the SAS – determine if the device behaves appropriately for successful and unsuccessful registrations. The device should not be transmitting without authorization from the SAS.	WINNF.FT.C.REG.1	Pass

Notes:

- During testing, the antenna RF output port was monitored during testing.
- Spectrum analyzer plots show that the device is transmitting on a channel used by or indicated by the BTS-CBSD after receiving an authorization signal from the BTS-CBSD.
- Please see Appendices for test data.

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7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the Casa Systems Outdoor LTE Router **FCC ID: XIA-CFW2132** has been tested to show compliance with Part 96 and KDB 940660.

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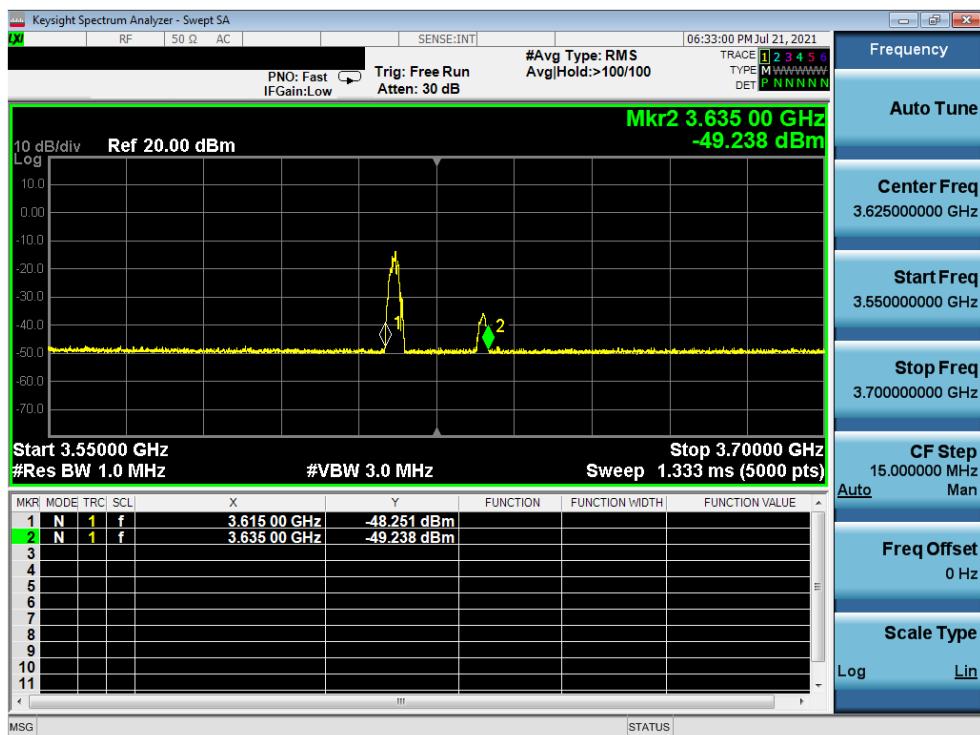
APPENDIX A – TEST RESULT AND DATA

A1 [WINNF.FT.C.REG.1] Multi-Step registration

	Test Execution Steps	PASS	FAIL
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> • UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness • UUT is in the Unregistered state <p>CBSD sends correct Registration request information, as specified in [n.5], to the SAS Test Harness:</p>	--	--
2	<ul style="list-style-type: none"> • The required userId, fcld and cbsdSerialNumber registration parameters shall be sent from the CBSD and conform to proper format and acceptable ranges. • Any REG-conditional or optional registration parameters that may be included in the message shall be verified that they conform to proper format and are within acceptable ranges. <p>Note: It is outside the scope of this document to test the Registration information that is supplied via another means.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	<ul style="list-style-type: none"> • SAS Test Harness sends a CBSD Registration Response as follows: <ul style="list-style-type: none"> - cbsdId = Ci - measReportConfig shall not be included - responseCode = 0 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.	--	--
5	<p>Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete. This is the end of the test. Verify:</p> <ul style="list-style-type: none"> • UUT shall not transmit RF 	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Test Plots:



Plot 1. Conducted Measurement – UUT RF transmission range and bandwidths are less or equal to frequency range and bandwidth of compatible BTS-CBSD(WINNF.FT.C.REG.1)

NOTE: Test logs are available upon requests.

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