



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 1 of 55

TEST REPORT

Application No.: KSCR2403000374AT
FCC ID: 2BFRXELT622PI
Applicant: EasyCell Co., Ltd
Address of Applicant: #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea
Manufacturer: EasyCell Co., Ltd
Address of Manufacturer: #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea
Factory: EasyCell Co., Ltd
Address of Factory: #1115, Ace Pyeong chon Tower, 361 Simin-daero, Dongan-gu, Anyang-si, Gyeonggi-do Korea
Equipment Under Test (EUT):
EUT Name: CBRs CAT-A Indoor CBSD
Model No.: ELT-622PI
Standard(s): CBRSA-TS-9001-V1.2.1
WINNF-TS-0122-V1.0.2
FCC 47 CFR Part 96
KDB 940660 D01 V03
Date of Receipt: 2024-03-08
Date of Test: 2024-04-03 to 2024-04-07
Date of Issue: 2024-04-08

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

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Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 2 of 55

Revision Record			
Version	Description	Date	Remark
00	Original	2024-04-08	/

Authorized for issue by:				
Tested By		Damon Zhou		
		Damon_Zhou/Project Engineer		
Approved By		Terry Hou		
		Terry Hou /Reviewer		

2 Test Summary

Item	Standard	Test Case ID	Result
Multi-Step registration	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.1	Pass
Single-Step registration for Category A CBSD	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.3	Pass
Single-Step registration for CBSD with CPI signed data	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.5	Pass
Registration due to change of an installation parameter	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.7	Pass
Missing Required parameters (responseCode 102)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.8	Pass
Pending registration (responseCode 200)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.10	Pass
Invalid parameter (responseCode 103)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.12	Pass
Blacklisted CBSD (responseCode 101)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.14	Pass
Unsupported SAS protocol version (responseCode 100)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.16	Pass
Group Error (responseCode 201)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.18	Pass
Category A CBSD location update	WINNF-TS-0122-V1.0.2	WINNF.FT.C.REG.20	Pass
Unsuccessful Grant responseCode=400 (INTERFERENCE)	WINNF-TS-0122-V1.0.2	WINNF.FT.D.GRA.1	Pass
Unsuccessful Grant responseCode=401 (GRANT_CONFLICT)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.GRA.2	Pass
Heartbeat Success Case (first Heartbeat Response)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.1	Pass
Heartbeat responseCode=105 (DEREGISTER)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.3	Pass
Heartbeat responseCode=500 (TERMINATED_GRANT)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.4	Pass
Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.5	Pass
Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.6	Pass
Heartbeat responseCode=502 (UNSYNC_OP_PARAM)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.7	Pass
Heartbeat Response Absent (First Heartbeat)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.9	Pass
Heartbeat Response Absent (Subsequent Heartbeat)	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.10	Pass



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 4 of 55

Item	Standard	Test Case ID	Result
Successful Grant Renewal in Heartbeat Test Case	WINNF-TS-0122-V1.0.2	WINNF.FT.C.HBT.11	Pass
Registration Response contains measReportConfig	WINNF-TS-0122-V1.0.2	WINNF.FT.C.MES.1	Pass
Grant Response contains measReportConfig	WINNF-TS-0122-V1.0.2	WINNF.FT.C.MES.3	Pass
Heartbeat Response contains measReportConfig	WINNF-TS-0122-V1.0.2	WINNF.FT.C.MES.4	Pass
Successful Relinquishment	WINNF-TS-0122-V1.0.2	WINNF.FT.C.RLQ.1	Pass
Deregistration responseCode=102	WINNF-TS-0122-V1.0.2	WINNF.FT.C.RLQ.3	Pass
Deregistration responseCode=103	WINNF-TS-0122-V1.0.2	WINNF.FT.C.RLQ.5	Pass
Successful Deregistration	WINNF-TS-0122-V1.0.2	WINNF.FT.C.DRG.1	Pass
Deregistration responseCode=102	WINNF-TS-0122-V1.0.2	WINNF.FT.C.DRG.3	Pass
Deregistration responseCode=103	WINNF-TS-0122-V1.0.2	WINNF.FT.C.DRG.5	Pass
Successful TLS connection between UUT and SAS Test Harness	WINNF-TS-0122-V1.0.2	WINNF.FT.C.SCS.1	Pass
TLS failure due to revoked certificate	WINNF-TS-0122-V1.0.2	WINNF.FT.C.SCS.2	Pass
TLS failure due to expired server certificate	WINNF-TS-0122-V1.0.2	WINNF.FT.C.SCS.3	Pass
TLS failure when SAS Test Harness certificate is issue by unknown CA	WINNF-TS-0122-V1.0.2	WINNF.FT.C.SCS.4	Pass
TLS failure when certificate at the SAS Test Harness is corrupted	WINNF-TS-0122-V1.0.2	WINNF.FT.C.SCS.5	Pass
UUT RF Transmit Power Measurement	WINNF-TS-0122-V1.0.2	WINNF.PT.C.HBT	Pass
SAS Version: 1.0.0.3			

The UUT is a CPE-CBSD product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

CBRSA-TS-9001-V1.0.0

CBRS Alliance Certification Test Plan

WINNF-TS-0122-V1.0.2

Test and Certification for Citizens Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT)

KDB 940660 D01 Part 96 CBRS Eqpt v03

3 Contents

	Page
1 COVER PAGE	1
2 Test Summary	3
3 Contents	5
4 General Information.....	6
4.1 Details of E.U.T.	6
4.2 Description of CBSD/DP Support Features	7
4.3 Summary of Test Results	8
4.4 Measurement Uncertainty	8
4.5 Description of Support Units	9
4.6 Test Location.....	9
4.7 Test Facility	9
5 Equipment List	10
6 Test Method and Environment	11
6.1 CBSD/DP Conformance and Performance	11
6.2 CBSD Test Procedure.....	11
6.3 Test Environment	11
6.4 Test Setup	12
7 Test Data	14
7.1 CBSD Registration Process	14
7.2 CBSD Spectrum Grant Process	23
7.3 CBSD HeartBeat Process	25
7.4 CBSD Measurement Report	35
7.5 CBSD Relinquishment Process	37
7.6 CBSD Deregistration Process.....	41
7.7 CBSD Security Validation	44
7.8 CBSD RF Power Measurement	47
8 Test Data Log	50
8.1 WINNF.FT.C.SCS.1	50
8.2 WINNF.FT.C.SCS.2	51
8.3 WINNF.FT.C.SCS.3	52
8.4 WINNF.FT.C.SCS.4	53
8.5 WINNF.FT.C.SCS.5	54
9 Test Setup Photo	55
10 EUT Constructional Details (EUT Photos)	55

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 6 of 55

4 General Information

4.1 Details of E.U.T.

Power supply:	AC 120V/60Hz by adapter Adapter : Model No: SW42-12003500-W Input: AC 100~240V 50/60Hz Output: DC 12V/3.5A
Serial Number of Tested EUT:	6MT020188000005
CBSD Class:	Category A CBSD
Transmitter Frequency Band:	Band48
Transmitter Frequency Range:	3550~3700MHz
Hardware Version:	V0.2
Software Version:	Version 6.4.0 Version Suffix : g50-lt621ct-9738 Build Date : Wed Mar 27 14:27:31 KST 2024
Antenna Gain:	Antenna 1&2:7dBi (Provided by manufacturer)

4.2 Description of CBSD/DP Support Features

Condition	Feature Description	Supported
C1	Mandatory for UUT which supports multi-step registration message.	Y
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.	Y
C3	Mandatory for UUT which supports single-step registration containing CPI-signed data in the registration message.	Y
C4	Mandatory for UUT which supports RECEIVED_POWER_WITHOUT_GRANT measurement report type.	Y
C5	Mandatory for UUT which supports RECEIVED_POWER_WITH_GRANT measurement report type.	Y
C6	Mandatory for UUT which supports parameter change being made at the UUT and prior to sending a deregistration.	Y

Y: Supported

N: Not supported

4.3 Summary of Test Results

WINNF-TS-0122			
Classes	Test Case Items	Pass Items	Pass Rate (%)
FT (CBSD, DP/CBSD)	37	37	100
PT (CBSD, DP/CBSD)	1	1	100
Total	38	38	100

Note:

1. Functional Test (FT): Test to validate the conformance of the Protocols and functionalities implemented in the CBSD/DP UUT to the requirements developed by WinnForum and supporting FCC/DoD requirements.
2. Field/Performance Test (PT): Test to check the capability of the CBSD/DP UUT to support various traffic models and actual operations in the field.

4.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	RF conducted power	$\pm 0.75\text{dB}$
3	Temperature test	$\pm 1^{\circ}\text{C}$
4	Humidity test	$\pm 3\%$
5	Supply voltages	$\pm 1.5\%$
6	Time	$\pm 3\%$

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 9 of 55

4.5 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
EndUser	Infomark	IML-C4510W	99000184
EPC	Intel NUC	D54250WYK	G6YK4370022C SA H14752-104
Router	TP-Link	TL-R860+	1175379002425

4.6 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• A2LA

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

• FCC

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

• ISED

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

• VCCI

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 10 of 55

5 Equipment List

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (yyyy-mm-dd)	Cal. Due date (yyyy-mm-dd)
Laptop	Lenovo	Y510P	HFL000026	N/A	N/A
Spectrum Analyzer	KEYSIGHT	N9020A	KUS2001M00 1-2	2023/8/24	2024/8/23
Shield Room	YanChuang	N/A	KS301115-2	N/A	N/A
Coaxial Cable	Thermax	N/A	13	2023/09/15	2024/09/14
Attenuator	Mini-Circuits	NAT-6-2W	15542-1	N.C.R.	N.C.R.
Humidity / Temperature Indicator	Renke	RS-WS- N01-6J	1032844	2024/03/19	2025/03/18

6 Test Method and Environment

6.1 CBSD/DP Conformance and Performance

Test Requirement: CBRS CBSD Test Specification WINNF-TS-0122-V1.0.2
Test Method: CBRS CBSD Test Specification WINNF-TS-0122-V1.0.2
WINNF-IN-0156_WinnForum_SAS_Test_Harness_CBSD_UUT_Tutorial_
v1_0_0_1

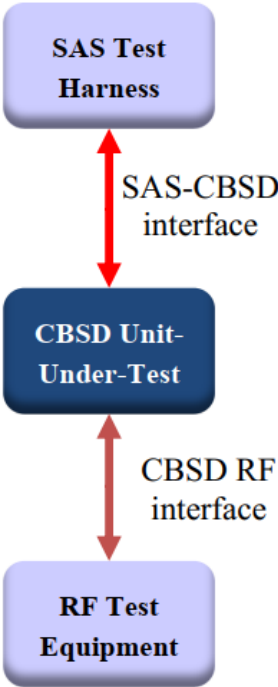
6.2 CBSD Test Procedure

- a. Connect the UUT to SAS Test Harness system and RF Test instruments via the CBSD interface and RF components. The highest level is set to test configuration.
- b. UUT shall be UTC time synchronized
- c. The frequency band is granted and set as UUT supported Modulation and Channels, transmitted power of the UUT according to it granted parameters from the SAS TestHarness.
- d. Each test case results were recorded and validated by SAS Test Harness system and RF instruments test cases was recorded test results from SAS Test Harness system.

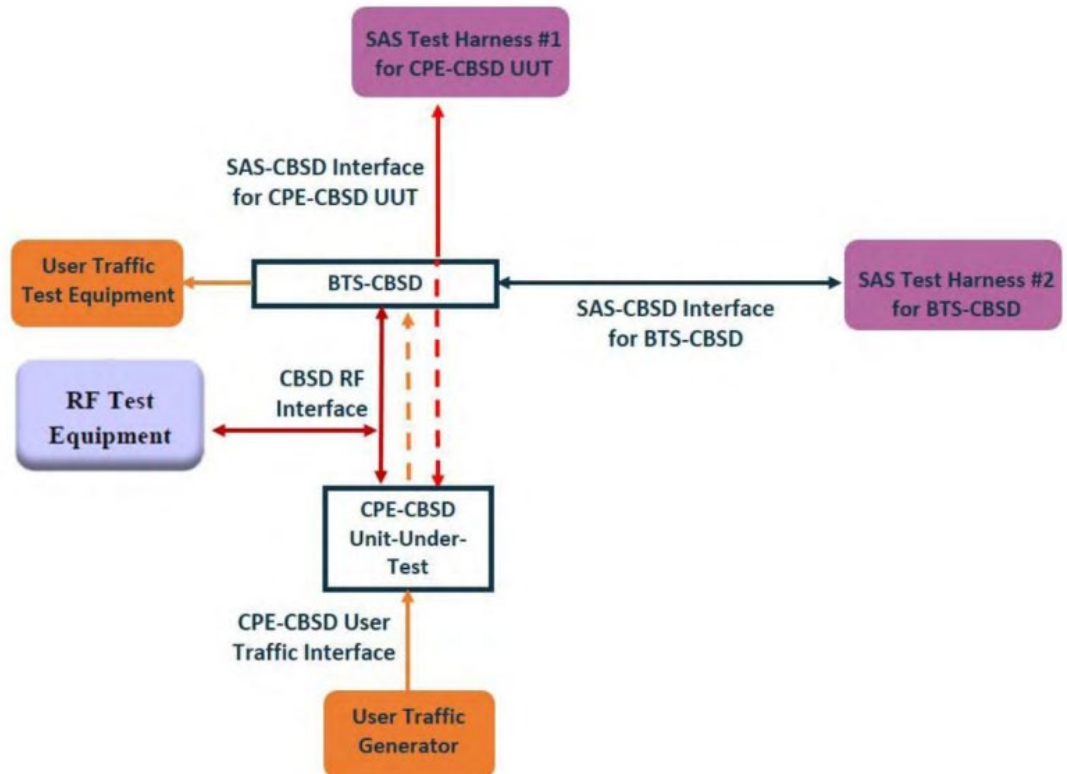
6.3 Test Environment

Test Harness Version: V1.0.0.3
Operating System: Microsoft Windows 10
TLS Version: 1.2
Python Version: 2.7.13
Environmental Conditions: 25deg. C, 65%RH

6.4 Test Setup



CBSD as UUT



Test setup diagram for WINNF.PT.C.HBT Test case

7 Test Data

7.1 CBSD Registration Process

7.1.1 WINNF.FT.C.REG.1

#	Test Execution Steps	Results	
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 	--	--
2	<p>CBSD sends correct Registration request information, as specified in [n.5], to the SAS Test Harness:</p> <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>	<div>■</div> Pass	<div>□</div> Fail
3	<p>SAS Test Harness sends a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> cbsdId = C measReportConfig shall not be included responseCode = 0 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.</p>	--	--
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 	<div>■</div> Pass	<div>□</div> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 15 of 55

7.1.2 WINNF.FT.C.REG.3

#	Test Execution Steps	Results	
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 	--	--
2	<p>CBSD sends Registration request to SAS Test Harness: all required and REG-Conditional parameter included (userId, fcld, cbsdSerialNumber, cbsdCategory, airInterface, installationParam, measCapability) for a Category A CBSD.</p> <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 optional registration parameters that may be included in the message shall be verified that they conform to proper format and are within acceptable ranges. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>SAS Test Harness sends a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> cbsdId = C measReportConfig shall not be included responseCode = 0 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.</p>	--	--
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"/> Pass	<input type="checkbox"/> Fail

7.1.3 WINNF.FT.C.REG.5

#	Test Execution Steps	Results	
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 All of the required and REG-Conditional parameters shall be configured and CPI signature provided 	--	--
2	<p>CBSD sends Registration request to SAS Test Harness:</p> <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 optional registration parameters that may be included in the message shall be verified that they conform to proper format and are within acceptable ranges. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 16 of 55

3	SAS Test Harness sends a CBSD Registration Response as follows: <ul style="list-style-type: none"> - cbsdId = C - 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	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: <ul style="list-style-type: none"> ● UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.1.4 WINNF.FT.C.REG.7

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> ● UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness 	--	--
2	<ul style="list-style-type: none"> ● UUT has successfully registered with SAS Test Harness 	--	--
3	Change an installation parameters at the UUT (time T) <ul style="list-style-type: none"> - Tester needs to record the current time at which the parameter change is executed. 	--	--
4	Monitor the SAS-CBSD interface. UUT sends a deregistrationRequest to the SAS Test Harness The deregistration request shall be sent within (T + 60 seconds) from step 3.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.1.5 WINNF.FT.C.REG.8

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> ● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness ● UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 17 of 55

3	<p>SAS Test Harness rejects the request by sending a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> - SAS response does not include cbsdId - responseCode = 102 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.</p>	--	--
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"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 18 of 55

7.1.6 WINNF.FT.C.REG.10

#	Test Execution Steps	Results	
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 SAS Test Harness • UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--
3	<p>SAS Test Harness rejects the request by sending a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> - SAS response does not include cbsdId - responseCode = 200 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=200) 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"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 19 of 55

7.1.7 WINNF.FT.C.REG.12

#	Test Execution Steps	Results	
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 SAS Test Harness UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--
3	<p>SAS Test Harness rejects the request by sending a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> SAS response does not include cbsdId responseCode = 103 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=103) 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"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 20 of 55

7.1.8 WINNF.FT.C.REG.14

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--
3	SAS Test Harness rejects the request by sending a CBSD Registration Response as follows: <ul style="list-style-type: none"> SAS response does not include cbsdId responseCode = 101 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=101) to further request messages from the UUT.	--	--
5	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: <ul style="list-style-type: none"> UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 21 of 55

7.1.9 WINNF.FT.C.REG.16

#	Test Execution Steps	Results	
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 SAS Test Harness UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--
3	<p>SAS Test Harness rejects the request by sending a CBSD Registration Response as follows:</p> <ul style="list-style-type: none"> SAS response does not include cbsdId responseCode = 100 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=100) 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"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 22 of 55

7.1.10 WINNF.FT.C.REG.18

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state 	--	--
2	CBSD sends a Registration request to SAS Test Harness.	--	--
3	SAS Test Harness rejects the request by sending a CBSD Registration Response as follows: <ul style="list-style-type: none"> - SAS response does not include cbsdId - responseCode = 201 	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=201) to further request messages from the UUT.	--	--
5	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: <ul style="list-style-type: none"> • UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.1.11 WINNF.FT.C.REG.20

The test case ID is provided as a means to ensure that evidence is provided showing compliance to this requirement.

7.2 CBSD Spectrum Grant Process

7.2.1 WINNF.FT.C.GRA.1

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has registered successfully with SAS Test Harness, with cbsdId = C 	--	--
2	UUT sends valid Grant Request.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	SAS Test Harness sends a Grant Response message, including <ul style="list-style-type: none"> cbsdId=C - responseCode = 400 	--	--
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	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: <ul style="list-style-type: none"> UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 24 of 55

7.2.2 WINNF.FT.C.GRA.2

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has registered successfully with SAS Test Harness, with cbsdId = C 	--	--
2	UUT sends valid Grant Request.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	SAS Test Harness sends a Grant Response message, including - cbsdId=C - responseCode = 401	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=401) to further request messages from the UUT.	--	--
5	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: <ul style="list-style-type: none"> UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 25 of 55

7.3 CBSD HeartBeat Process

7.3.1 WINNF.FT.C.HBT.1

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: ● UUT has registered successfully with SAS Test Harness, with cbsdId = C	--	--
2	UUT sends a message: ● If message is type Spectrum Inquiry Request, go to step 3, or ● If message is type Grant Request, go to step 5	--	--
3	UUT sends Spectrum Inquiry Request. Validate: ● cbsdId = C ● List of frequencyRange objects sent by UUT are within the CBRS frequency range	■ Pass	□ Fail
4	SAS Test Harness sends a Spectrum Inquiry Response message, including the following parameters: ● cbsdId = C ● availableChannel is an array of availableChannel objects ● responseCode = 0	--	--
5	UUT sends Grant Request message. Validate: ● cbsdId = C ● maxEIRP is at or below the limit appropriate for CBSD category as defined by Part 96 ● operationFrequencyRange, F, sent by UUT is a valid range within the CBRS band	■ Pass	□ Fail
6	SAS Test Harness sends a Grant Response message, including the parameters: ● cbsdId = C ● grantId = G = a valid grant ID ● grantExpireTime = UTC time greater than duration of the test ● responseCode = 0	--	--
7	UUT sends a first Heartbeat Request message. Verify Heartbeat Request message is formatted correctly, including: ● cbsdId = C ● grantId = G ● operationState = "GRANTED"	■ Pass	□ Fail
8	SAS Test Harness sends a Heartbeat Response message, with the following parameters: ● cbsdId = C ● grantId = G ● transmitExpireTime = current UTC time + 200 seconds ● responseCode = 0	--	--
9	For further Heartbeat Request messages sent from UUT after completion of step 8, validate message is sent within latest specified heartbeatInterval, and: ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" and SAS Test Harness responds with a Heartbeat Response message including the following parameters: ● cbsdId = C ● grantId = G ● transmitExpireTime = current UTC time + 200 seconds ● responseCode = 0	■ Pass	□ Fail

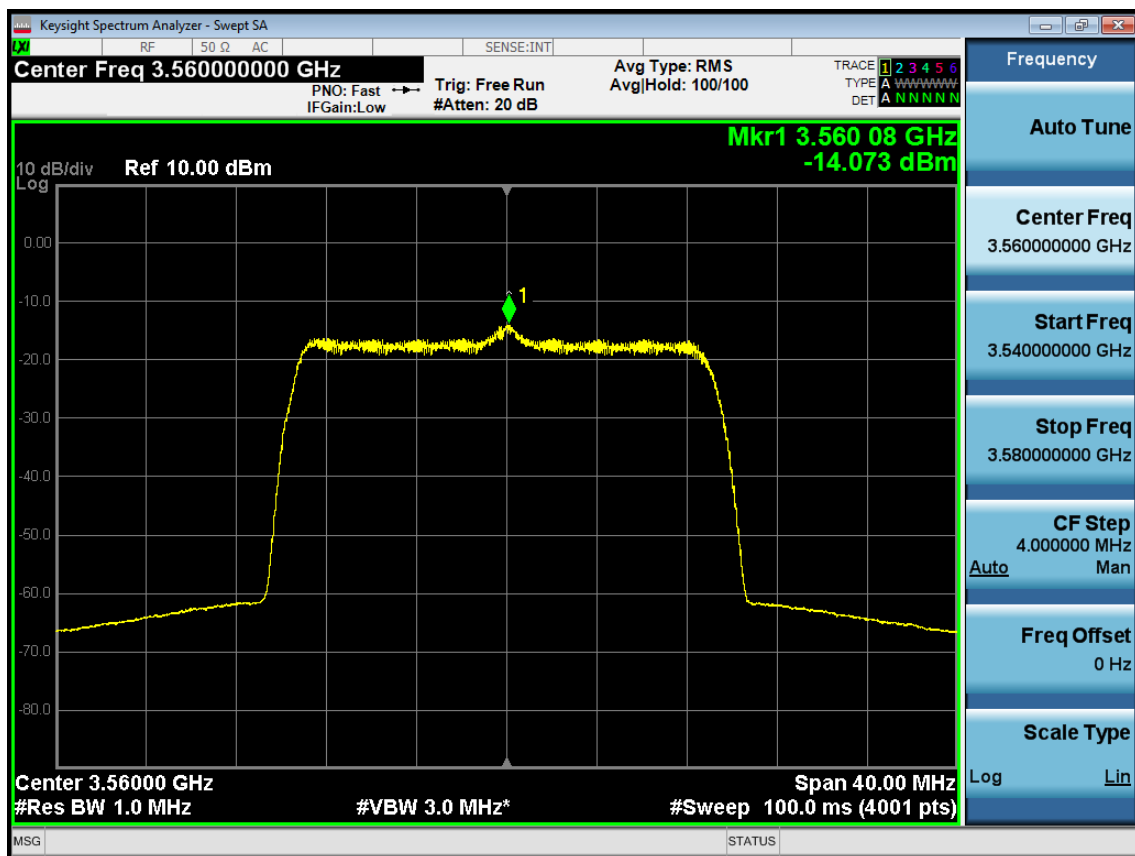
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 26 of 55

10	<p>Monitor the RF output of the UUT from start of test until UUT transmission commences. Verify:</p> <ul style="list-style-type: none"> UUT does not transmit at any time prior to completion of the first heartbeat response UUT transmits after step 8 is complete, and its transmission is limited to within the bandwidth range F. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
----	--	--	-------------------------------



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 27 of 55

7.3.2 WINNF.FT.C.HBT.3

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	--	--
2	<p>UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within Heartbeat Interval specified in the latest Heartbeat Response, and formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" 	--	--
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● transmitExpireTime = T = Current UTC time ● responseCode = 105 (DEREGISTER) 	--	--
4	<p>After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.</p>	--	--
5	<p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT shall stop transmission within (T + 60 seconds) of completion of step 3 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 28 of 55

7.3.3 WINNF.FT.C.HBT.4

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	--	--
2	<p>UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● transmitExpireTime = T = current UTC time ● responseCode = 500 (TERMINATED_GRANT) 	--	--
4	<p>After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.</p>	--	--
5	<p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT shall stop transmission within (T + 60 seconds) of completion of step 3 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 29 of 55

7.3.4 WINNF.FT.C.HBT.5

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in GRANTED, but not AUTHORIZED state (i.e. has not performed its first Heartbeat Request) 	--	--
2	<p>UUT sends a Heartbeat Request message. Verify Heartbeat Request message is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "GRANTED" 	<div>■</div> Pass	<div>□</div> Fail
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● transmitExpireTime = T = current UTC time ● ?responseCode = 501 (SUSPENDED_GRANT) 	--	--
4	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	--	--
5	<p>Monitor the SAS-CBSD interface. Verify either A OR B occurs:</p> <p>A. UUT sends a Heartbeat Request message. Ensure message is sent within latest specified heartbeatInterval, and is correctly formatted with parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "GRANTED" <p>B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT does not transmit at any time 	<div>■</div> Pass	<div>□</div> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 30 of 55

7.3.5 WINNF.FT.C.HBT.6

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	--	--
2	<p>UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" 	<div>■</div> Pass	<div>□</div> Fail
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> □ cbsdId = C □ grantId = G □ transmitExpireTime = T = current UTC time ● responseCode = 501 (SUSPENDED_GRANT) 	--	--
4	<p>After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.</p>	--	--
5	<p>Monitor the SAS-CBSD interface. Verify either A OR B occurs:</p> <p>A. UUT sends a Heartbeat Request message. Ensure message is sent within latest specified heartbeatInterval, and is correctly formatted with parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "GRANTED" <p>B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT shall stop transmission within (T+60) seconds of completion of step 3 	<div>■</div> Pass	<div>□</div> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 31 of 55

7.3.6 WINNF.FT.C.HBT.7

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	--	--
2	<p>UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> □ cbsdId = C □ grantId = G □ transmitExpireTime = T = current UTC time ● responseCode = 502 (UNSYNC_OP_PARAM) 	--	--
4	<p>After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.</p>	--	--
5	<p>Monitor the SAS-CBSD interface. Verify:</p> <ul style="list-style-type: none"> ● UUT sends a Grant Relinquishment Request message. Verify message is correctly formatted with parameters: <ul style="list-style-type: none"> ○ cbsdId = C ○ grantId = G <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT shall stop transmission within (T+60) seconds of completion of step 3 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 32 of 55

7.3.7 WINNF.FT.C.HBT.9

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in GRANTED, but not AUTHORIZED state(i.e. has not performed its first Heartbeat Request) 	--	--
2	<p>UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "GRANTED" 	<div>■</div> Pass	<div>□</div> Fail
3	<p>After completion of step 2, SAS Test Harness does not respond to any further</p> <ul style="list-style-type: none"> ● messages from UUT to simulate loss of network connection 	--	--
4	<p>Monitor the RF output of the UUT from start of test to 60 seconds after step 3. Verify: At any time during the test, UUT shall not transmit on RF interface</p>	<div>■</div> Pass	<div>□</div> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 33 of 55

7.3.8 WINNF.FT.C.HBT.10

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> ● UUT has registered successfully with SAS Test Harness ● UUT has a valid single grant as follows: <ul style="list-style-type: none"> ○ valid cbsdId = C ○ valid grantId = G ○ grant is for frequency range F, power P ○ grantExpireTime = UTC time greater than duration of the test ● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	--	--
2	<p>UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G ● operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>SAS Test Harness sends a Heartbeat Response message, including the following parameters:</p> <ul style="list-style-type: none"> □ cbsdId = C □ grantId = G □ transmitExpireTime = T = current UTC time + 200 seconds ● responseCode = 0 	--	--
4	<p>After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.</p>	--	--
5	<p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> ● UUT shall stop all transmission on RF interface within (transmitExpireTime + 60 seconds), using the transmitExpireTime sent in Step 3. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 34 of 55

7.3.9 WINNF.FT.C.HBT.11

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> UUT has registered successfully with SAS Test Harness UUT has a valid single grant as follows: <ul style="list-style-type: none"> valid cbsdId = C valid grantId = G grant is for frequency range F, power P UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface. Grant has the following parameters at the start of the test: <ul style="list-style-type: none"> grantExpireTime = UTC time equal to time at start of test + 300 seconds = Tgrant_expire transmitExpireTime = UTC time equal to time at start of test + 200 seconds heartbeatInterval = 60 seconds 	--	--
2	<p>UUT sends a Heartbeat Request message.</p> <p>If Heartbeat Request message contains grantRenew = TRUE, go to Step 6, else go to Step 3.</p>	--	--
3	<p>Verify Heartbeat Request message is sent within the latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<p>SAS Test Harness sends a Heartbeat Response message, with the following parameters:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G transmitExpireTime = current UTC + 200 seconds grantExpireTime = same as Step 1 responseCode = 0 	--	--
5	Go to Step 2	--	--
6	<p>Verify Heartbeat Request message is sent within the latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G operationState = "AUTHORIZED" grantRenew = TRUE 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
7	<p>SAS Test Harness sends a Heartbeat Response message, with the following parameters:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G grantExpireTime = UTC time set far in the future transmitExpireTime = current UTC time + 200 seconds responseCode = 0 	--	--
8	<p>Continue to respond to any subsequentHeartbeat Request from CBSD with Heartbeat Response with the following parameters:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G transmitExpireTime = same as Step 7 responseCode = 0 	--	--
9	<p>Monitor RF transmission of UUT from start of test until Tgrant_expire + 60 seconds and ensure UUT continues to transmit throughout the time period.</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.4 CBSD Measurement Report

7.4.1 WINNF.FT.C.MES.1

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness 	--	--
2	UUT sends a Registration Request message. <ul style="list-style-type: none"> userId is present and correct fcld is present and correct cbsdSerialNumber is present and correct measCapability = "RECEIVED_POWER_WITHOUT_GRANT" 	<div>■</div> Pass	<div>□</div> Fail
3	SAS Test Harness sends a Grant Response message, with the following parameters: <ul style="list-style-type: none"> cbsdId = C = valid cbsdId for this UUT measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" responseCode = 0 	--	--
4	UUT sends a message. <ul style="list-style-type: none"> If message is type Spectrum Inquiry Request, go to step 5, or If message is type Grant Request, go to step 7 	--	--
5	UUT sends message type Spectrum Inquiry Request. <ul style="list-style-type: none"> cbsdId = C measReport is present, and is a properly formatted rcvdPowerMeasReport. 	<div>■</div> Pass	<div>□</div> Fail
6	SAS Test Harness sends a Heartbeat Response message, containing all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C availableChannel is an array of availableChannel /objects responseCode = 0 	--	--
7	UUT sends message type Grant Request message. Verify message contains all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C measReport is present, and is a properly formatted rcvdPowerMeasReport. 	<div>■</div> Pass	<div>□</div> Fail

7.4.2 WINNF.FT.C.MES.3

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT has successfully registered with SAS Test Harness, with cbsdId=C and measCapability = "RECEIVED_POWER_WITH_GRANT" 	--	--
2	UUT sends a Grant Request message. Verify Grant Request message contains all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C 	<div>■</div> Pass	<div>□</div> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 36 of 55

	<ul style="list-style-type: none"> operationParam is present and format is valid 		
3	<p>SAS Test Harness sends a Grant Response message, with the following parameters:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G = valid grant ID grantExpireTime = UTC time in the future heartbeatInterval = 60 seconds measReportConfig= "RECEIVED_POWER_WITH_GRANT" operationParam is set to valid operating parameters channelType = "GAA" responseCode = 0 	--	--
4	<p>UUT sends a Heartbeat Request message. Verify message contains all required parameters properly formatted, and specifically:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G operationState = "GRANTED" 	<div>■</div> Pass	<div>□</div> Fail
5	<p>If Heartbeat Request message (step 4) contains measReport object, then:</p> <ul style="list-style-type: none"> verify measReport is properly formatted as object rcvdPowerMeasReport end test, with PASS result <p>else, if Heartbeat Request message (step 4) does not contain measReport object, then:</p> <ul style="list-style-type: none"> If number of Heartbeat Requests sent by UUT after Step 3 is =5, then stop test with result of FAIL 	<div>■</div> Pass	<div>□</div> Fail
6	<p>SAS Test Harness sends a Heartbeat Response message, containing all required parameters properly formatted, and specifically:</p> <ul style="list-style-type: none"> cbsdId = C grantId = G transmitExpireTime = current UTC time + 200 seconds responseCode = 0 <p>Go to Step 4, above</p>	--	--

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 37 of 55

7.4.3 WINNF.FT.C.MES.4

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT has successfully registered with SAS Test Harness, with cbsdId=C and measCapability = "RECEIVED_POWER_WITH_GRANT" UUT has received a valid grant with grantId = G UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. Grant has heartbeatInterval = 60 seconds 	--	--
2	UUT sends a Heartbeat Request message. Verify Heartbeat Request message contains all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C grantId = G operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	SAS Test Harness sends a Heartbeat Response message, containing all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C grantId = G measReportConfig= "RECEIVED_POWER_WITH_GRANT" responseCode = 0 	--	--
4	UUT sends a Heartbeat Request message. Verify message contains all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C grantId = G operationState = "AUTHORIZED" 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
5	If Heartbeat Request message (step 4) contains measReport object, then: <ul style="list-style-type: none"> verify measReport is properly formatted as object rcvdPowerMeasReport end test, with PASS result else, if Heartbeat Request message (step 4) does not contain measReport object, then: <ul style="list-style-type: none"> If number of Heartbeat Requests sent by UUT after Step 3 is = 5, then stop test with result of FAIL 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
6	SAS Test Harness sends a Heartbeat Response message, containing all required parameters properly formatted, and specifically: <ul style="list-style-type: none"> cbsdId = C grantId = G responseCode = 0 Go to Step 4, above	--	--

7.5 CBSD Relinquishment Process

7.5.1 WINNF.FT.C.RLQ.1

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: <ul style="list-style-type: none"> UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness 	--	--

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 38 of 55

	<ul style="list-style-type: none"> ● UUT has successfully registered with SAS Test Harness, with cbsdId=C ● UUT has received a valid grant with grantId = G ● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to relinquish UUT Grant from the SAS Test Harness</p>		
2	<p>UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>SAS Test Harness shall approve the request with a Relinquishment Response message with parameters:</p> <ul style="list-style-type: none"> - cbsdId = C - grantId = G ● responseCode = 0 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any additional positive response (responseCode=0) to further request messages from the UUT</p>	--	--
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 stop RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 39 of 55

7.5.2 WINNF.FT.C.RLQ.3

#	Test Execution Steps	Results	
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 SAS Test Harness ● UUT has successfully registered with SAS Test Harness, with cbsdId=C ● UUT has received a valid grant with grantId = G ● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to relinquish UUT Grant from the SAS Test Harness</p>	--	--
2	<p>UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G 	--	--
3	<p>SAS Test Harness shall approve the request with a Relinquishment Response message with parameters:</p> <ul style="list-style-type: none"> - cbsdId = C - grantId = G ● responseCode = R 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any additional positive</p> <ul style="list-style-type: none"> ● 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 stop RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request 	<div> <div>■</div> <div>Pass</div> </div>	<div> <div>□</div> <div>Fail</div> </div>

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 40 of 55

7.5.3 WINNF.FT.C.RLQ.5

#	Test Execution Steps	Results	
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 SAS Test Harness ● UUT has successfully registered with SAS Test Harness, with cbsdId=C ● UUT has received a valid grant with grantId = G ● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to relinquish UUT Grant from the SAS Test Harness</p>	--	--
2	<p>UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically:</p> <ul style="list-style-type: none"> ● cbsdId = C ● grantId = G 	--	--
3	<p>SAS Test Harness shall approve the request with a Relinquishment Response message with parameters:</p> <ul style="list-style-type: none"> - cbsdId = C - grantId = G ● responseCode = 103 	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any additional positive</p> <ul style="list-style-type: none"> ● 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 stop RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request 	<div> <div>■</div> <div>Pass</div> </div>	<div> <div>□</div> <div>Fail</div> </div>

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 41 of 55

7.6 CBSD Deregistration Process

7.6.1 WINNF.FT.C.DRG.1

#	Test Execution Steps	Results	
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 SAS Test Harness ● UUT has successfully registered with SAS Test Harness, with cbsdId=C ● UUT has received a valid grant with grantId = G ● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to deregister UUT from the SAS Test Harness</p>	--	--
2	<p>UUT sends a Relinquishment request and receives Relinquishment response with</p> <ul style="list-style-type: none"> ● responseCode=0 	--	--
3	<ul style="list-style-type: none"> ● UUT sends Deregistration Request to SAS Test Harness with cbsdId = C. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<p>SAS Test Harness shall approve the request with a Deregistration Response message with parameters:</p> <ul style="list-style-type: none"> ● cbsdId = C ● responseCode = 0 	--	--
5	<p>After completion of step 3, SAS Test Harness will not provide any additional positive</p> <ul style="list-style-type: none"> ● response (responseCode=0) to further request messages from the UUT. 	--	--
6	<p>Monitor the RF output of the UUT from start of test until 60 seconds after Step 4 is complete. This is the end of the test. Verify:</p> <ul style="list-style-type: none"> ● UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: <ul style="list-style-type: none"> A. UUT sending a Registration Request message, as this is not mandatory B. UUT sending a Deregistration Request message 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 42 of 55

7.6.2 WINNF.FT.C.DRG.3

#	Test Execution Steps	Results	
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 SAS Test Harness • UUT has successfully registered with SAS Test Harness, with cbsdId=C • UUT has received a valid grant with grantId = G • UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to deregister UUT from the SAS Test Harness</p>	--	--
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	--	--
3	<ul style="list-style-type: none"> • UUT sends Deregistration Request to SAS Test Harness with cbsdId = C. 	--	--
4	<p>The SAS Test Harness sends the Deregistration Response Message to UUT with:</p> <ul style="list-style-type: none"> • No cbsdId • responseCode = 103 	--	--
5	After completion of step 3, SAS Test Harness will not provide any additional positive response (responseCode=0) to further request messages from the UUT.	--	--
6	<p>Monitor the RF output of the UUT from start of test until 60 seconds after Step 4 is complete. This is the end of the test. Verify:</p> <ul style="list-style-type: none"> • UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: <ul style="list-style-type: none"> A. UUT sending a Registration Request message, as this is not mandatory B. UUT sending a Deregistration Request message 	<div> <div>■</div> <div>Pass</div> </div>	<div> <div>□</div> <div>Fail</div> </div>

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 43 of 55

7.6.3 WINNF.FT.C.DRG.5

#	Test Execution Steps	Results	
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 SAS Test Harness UUT has successfully registered with SAS Test Harness, with cbsdId=C UUT has received a valid grant with grantId = G UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant. <p>Invoke trigger to deregister UUT from the SAS Test Harness</p>	--	--
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	--	--
3	<ul style="list-style-type: none"> UUT sends Deregistration Request to SAS Test Harness with cbsdId = C. 	--	--
4	<p>The SAS Test Harness sends the Deregistration Response Message to UUT with:</p> <ul style="list-style-type: none"> cbsdId=C responseCode = 103 	--	--
5	After completion of step 3, SAS Test Harness will not provide any additional positive response (responseCode=0) to further request messages from the UUT.	--	--
6	<p>Monitor the RF output of the UUT from start of test until 60 seconds after Step 4 is complete. This is the end of the test. Verify:</p> <ul style="list-style-type: none"> UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: <p>C. UUT sending a Registration Request message, as this is not mandatory</p> <p>D. UUT sending a Deregistration Request message</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.7 CBSD Security Validation

7.7.1 WINNF.FT.C.SCS.1

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> UUT shall start CBSD-SAS communication with the security procedure The UUT shall establish a TLS handshake with the SAS Test Harness using configured certificate. Configure the SAS Test Harness to accept the security procedure and establish the connection 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	<ul style="list-style-type: none"> Make sure that Mutual authentication happens between UUT and the SAS Test Harness. Make sure that UUT uses TLS v1.2 Make sure that cipher suites from one of the following is selected, <ul style="list-style-type: none"> TLS_RSA_WITH_AES_128_GCM_SHA256 TLS_RSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>A successful registration is accomplished using one of the test cases described in section 6.1.4.1, depending on CBSD capability.</p> <p>E. UUT sends a registration request to the SAS Test Harness and the SAS Test Harness sends a Registration Response with responseCode = 0 and cbsdId.</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<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"/> Pass	<input type="checkbox"/> Fail

7.7.2 WINNF.FT.C.SCS.2

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> UUT shall start CBSD-SAS communication with the security procedures 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	<ul style="list-style-type: none"> Make sure that UUT uses TLS v1.2 for security establishment. Make sure UUT selects the correct cipher suite. UUT shall use CRL or OCSP to verify the validity of the server certificate. Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<p>F. UUT may retry for the security procedure which shall fail.</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<ul style="list-style-type: none"> SAS Test-Harness shall not receive any Registration request or any application data. 	--	--
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"/> Pass	<input type="checkbox"/> Fail

7.7.3 WINNF.FT.C.SCS.3

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> UUT shall start CBSD-SAS communication with the security procedures 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 45 of 55

2	<ul style="list-style-type: none"> ● Make sure that UUT uses TLS v1.2 for security establishment. ● Make sure UUT selects the correct cipher suite. ● UUT shall use CRL or OCSP to verify the validity of the server certificate. ● Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	G. UUT may retry for the security procedure which shall fail.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<ul style="list-style-type: none"> ● SAS Test-Harness shall not receive any Registration request or any application data. 	--	--
5	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: <ul style="list-style-type: none"> ● UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

7.7.4 WINNF.FT.C.SCS.4

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> ● UUT shall start CBSD-SAS communication with the security procedures 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	<ul style="list-style-type: none"> ● Make sure that UUT uses TLS v1.2 for security establishment. ● Make sure UUT selects the correct cipher suite. ● UUT shall use CRL or OCSP to verify the validity of the server certificate ● Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	H. UUT may retry for the security procedure which shall fail.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<ul style="list-style-type: none"> ● SAS Test-Harness shall not receive any Registration request or any application data. 	--	--
5	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: <ul style="list-style-type: none"> ● UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 46 of 55

7.7.5 WINNF.FT.C.SCS.5

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> UUT shall start CBSD-SAS communication with the security procedures 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	<ul style="list-style-type: none"> Make sure that UUT uses TLS v1.2 for security establishment. Make sure UUT selects the correct cipher suite. UUT shall use CRL or OCSP to verify the validity of the server certificate Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	I. UUT may retry for the security procedure which shall fail.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	<ul style="list-style-type: none"> SAS Test-Harness shall not receive any Registration request or any application data. 	--	--
5	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: <ul style="list-style-type: none"> UUT shall not transmit RF 	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 47 of 55

7.8 CBSD RF Power Measurement

7.8.1 WINNF.PT.C.HBT

#	Test Execution Steps	Results	
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 has registered with the SAS, with CBSD ID = C • UUT has a single valid grant G with parameters {lowFrequency = FL, highFrequency = FH, maxEirp = Pi}, with grant in AUTHORIZED state, and grantExpireTime set to a value far past the duration of this test case • Note: in order for the UUT to request a grant with the parameters {lowFrequency, highFrequency, maxEirp}, the SAS Test Harness may need to provide appropriate guidance in the availableChannel object of the spectrumInquiry response message, and the operationParam object of the grant response message. Alternately, the UUT vendor may provide the ability to set those parameters on the UUT so that the UUT will request a grant with those parameters 	--	--
2	<p>UUT and SAS Test Harness perform a series of Heartbeat Request/Response cycles, which continues until the other test steps are complete. Messaging for each cycle is as follows:</p> <ul style="list-style-type: none"> • UUT sends Heartbeat Request, including: <ul style="list-style-type: none"> ○ cbsdId = C ○ grantId = G • SAS Test Harness responds with Heartbeat Response, including: <ul style="list-style-type: none"> ○ cbsdId = C ○ grantId = G ○ transmitExpireTime = current UTC time + 200 seconds • responseCode = 0 	--	--
3	<p>Tester performs power measurement on RF interface(s) of UUT, and verifies it complies with the maxEirp setting, Pi. The RF measurement method is out of scope of this document, but may include additional configuration of the UUT, as required, to fulfill the requirements of the power measurement method.</p> <p>J. Note: it may be required for the vendor to provide a method or configuration to bring the UUT to a mode which is required by the measurement methodology. Any such mode is vendor-specific and depends upon UUT behavior and the measurement methodology.</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 48 of 55

RF measurement plot for Test Case:

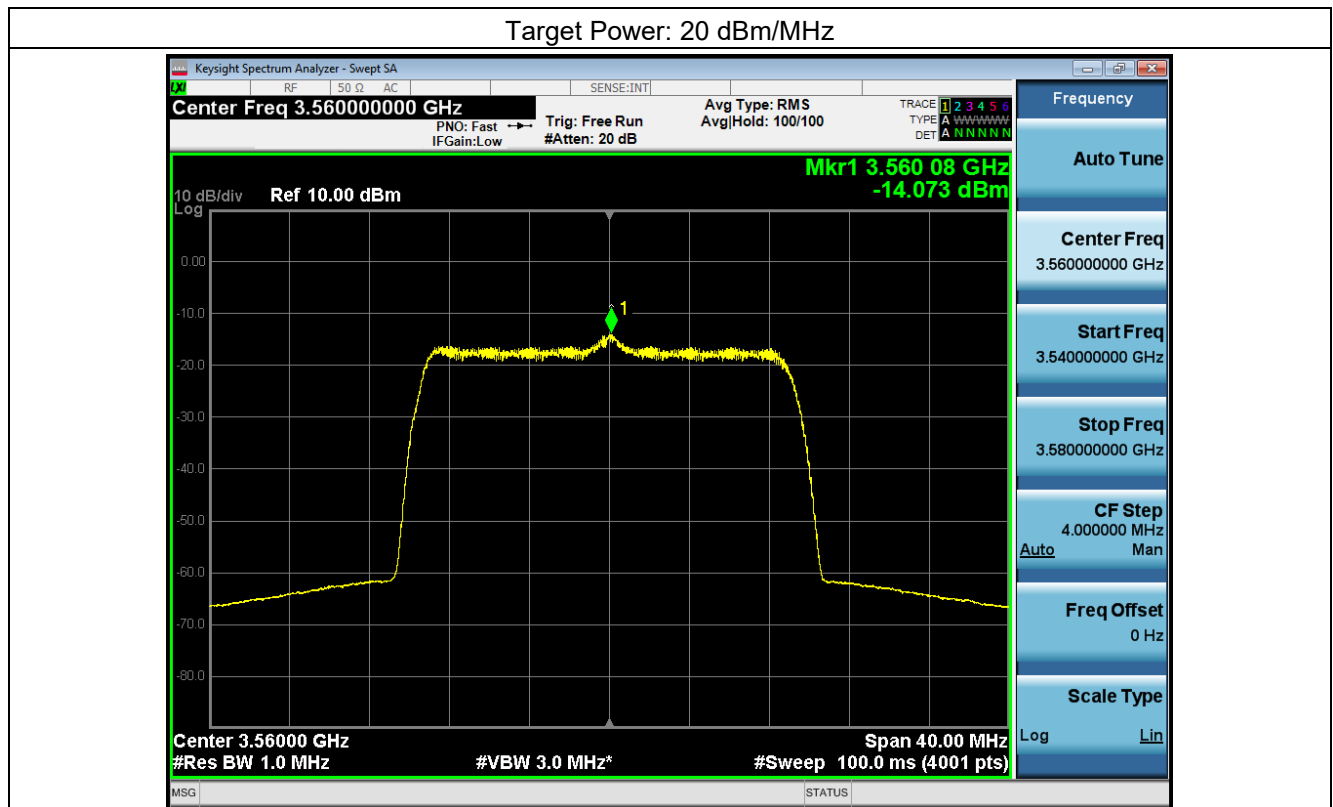
- Tester performs power measurement on RF interface(s) of UUT, and verifies it complies with the maxEirp setting, Pi. The RF measurement method is out of scope of this document, but may include additional configuration of the UUT, as required, to fulfill the requirements of the power measurement method.

Frequency (MHz)	Channel Bandwidth (MHz)	Granted maxEIRP (dBm/MHz)	Conducted PSD (dBm/MHz)	MIMO Factor (dB)	DC Factor (dB)	Antenna Gain (dBi)	Cable Loss (dB)	maxEIRP (dBm/MHz)
3560	20	20	-14.073	3.01	1.2	7	11	8.137
3560	20	10	-16.148	3.01	1.2	7	11	6.062
3560	20	5	-21.056	3.01	1.2	7	11	1.154

Note:

MaxEIRP= Conducted PSD+ Antenna Gain+ Cable loss+DC Factor+MIMO Factor

Target Power: 20 dBm/MHz



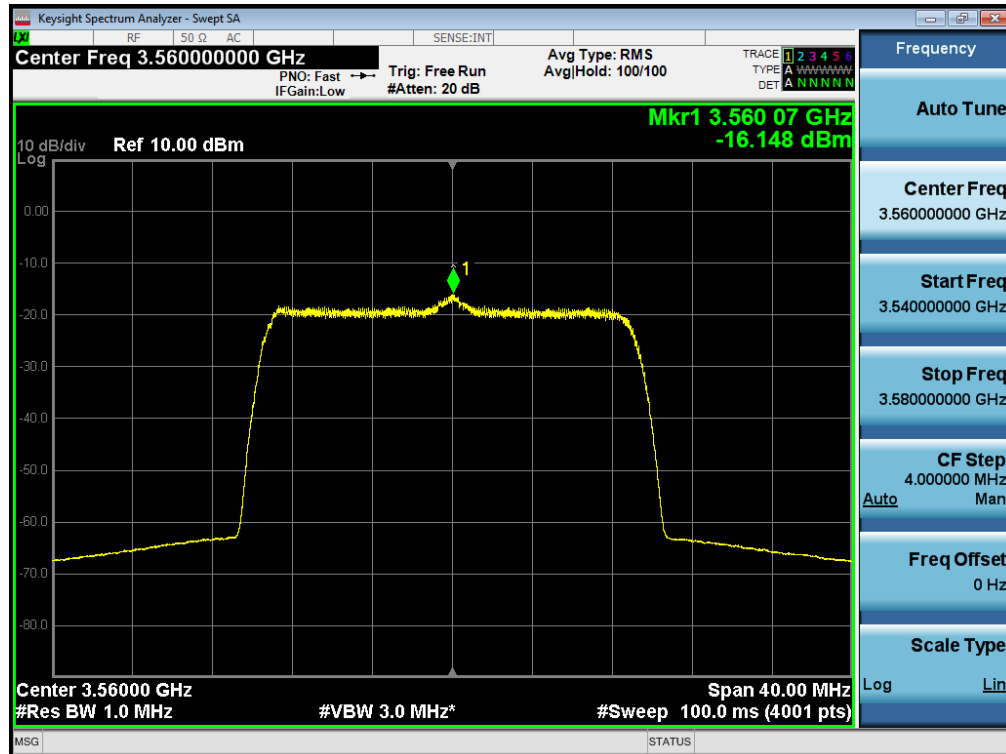
Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

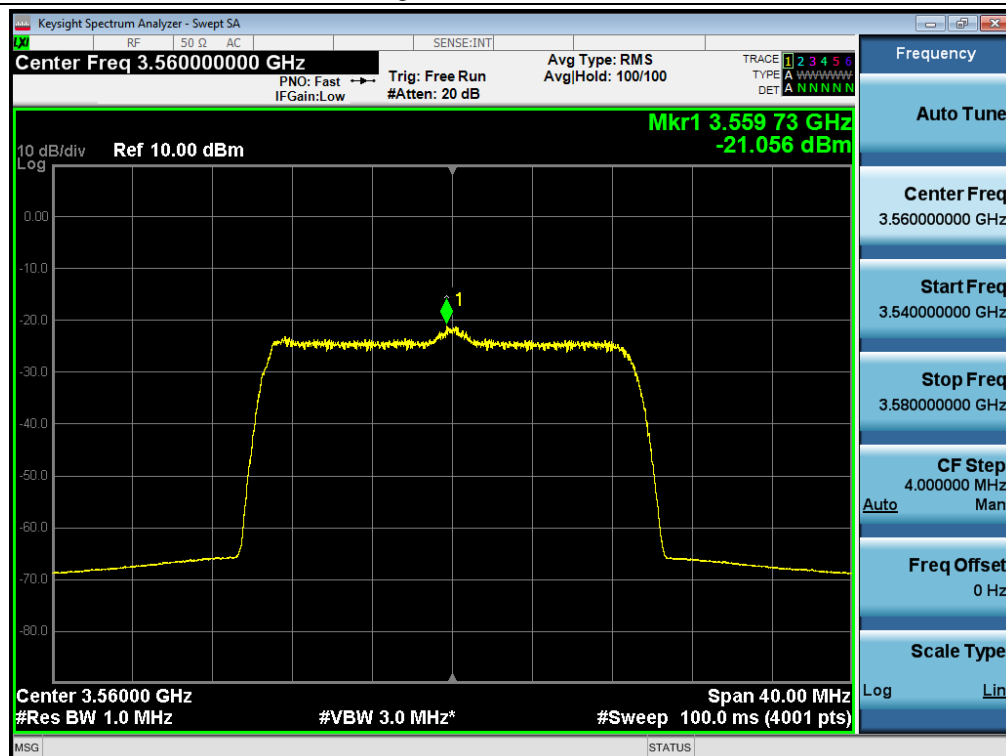
Report No.: KSCR240300037404

Page: 49 of 55

Target Power: 10 dBm/MHz



Target Power: 5 dBm/MHz





Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 50 of 55

8 Test Data Log

Test data log refer to log files (Log files appendix) except for security test cases which shows below.

B.1 WINNF.FT.C.SCS.1

No.	Time	Source	Destination	Protocol	Length	Info
189	134.567551	10.1.45.104	10.1.45.110	TLSv1.2	571	Client Hello
190	134.569284	10.1.45.110	10.1.45.104	TLSv1.2	1514	Server Hello
195	134.569938	10.1.45.110	10.1.45.104	TLSv1.2	273	Certificate, Certificate Request, Server Hello Done
200	134.591659	10.1.45.104	10.1.45.110	TLSv1.2	1295	Certificate
202	134.634575	10.1.45.104	10.1.45.110	TLSv1.2	641	Client Key Exchange, Certificate Verify, Change Cipher Spec, Encrypted Handshake Message
204	134.639234	10.1.45.110	10.1.45.104	TLSv1.2	105	Change Cipher Spec, Encrypted Handshake Message
205	134.640878	10.1.45.104	10.1.45.110	TLSv1.2	948	Application Data
206	134.663717	10.1.45.110	10.1.45.104	TLSv1.2	100	Application Data
208	134.699657	10.1.45.110	10.1.45.104	TLSv1.2	540	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, App...
210	134.704356	10.1.45.104	10.1.45.110	TLSv1.2	396	Application Data
211	134.706150	10.1.45.110	10.1.45.104	TLSv1.2	100	Application Data
213	134.739439	10.1.45.110	10.1.45.104	TLSv1.2	798	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, App...
215	134.745525	10.1.45.104	10.1.45.110	TLSv1.2	413	Application Data
216	134.747401	10.1.45.110	10.1.45.104	TLSv1.2	100	Application Data
218	134.779412	10.1.45.110	10.1.45.104	TLSv1.2	535	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, App...
220	134.781823	10.1.45.104	10.1.45.110	TLSv1.2	317	Application Data
221	134.783260	10.1.45.110	10.1.45.104	TLSv1.2	100	Application Data
223	134.819369	10.1.45.110	10.1.45.104	TLSv1.2	542	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, App...
225	134.821160	10.1.45.104	10.1.45.110	TLSv1.2	95	Encrypted Alert

Transmission Control Protocol, Src Port: 5000, Dst Port: 45591, Seq: 1, Ack: 518, Len: 1460

Transport Layer Security

- TLSv1.2 Record Layer: Handshake Protocol: Server Hello
 - Content Type: Handshake (22)
 - Version: TLS 1.2 (0x0303)
 - Length: 86
 - Handshake Protocol: Server Hello
 - Handshake Type: Server Hello (2)
 - Length: 82
 - Version: TLS 1.2 (0x0303)
 - Random: 56ae82ea1316626eae6a14977a77bd687df9e46285ff2aada62ab0749a80164
 - Session ID Length: 32
 - Session ID: 58bb7fc5b886af932605ce396b62698e6c4bef6a876121fec2160d5db91f6
 - Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
 - Compression Method: null (0)
 - Extensions Length: 10



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 51 of 55

8.2 WINNF.FT.C.SCS.2

scs.2.pcapng

文件(F) 编辑(E) 视图(V) 跳转(G) 捕获(C) 分析(A) 统计(S) 电话(O) 无线(W) 工具(T) 帮助(H)

File Edit View Go Capture Analyze Statistics Phone Wireless Tools Help

File Edit View Go Capture Analyze Statistics Phone Wireless Tools Help

No.	Time	Source	Destination	Protocol	Length	Info
190	133.887313	10.1.45.104	10.1.45.110	TLSv1.2	571	Client Hello
191	133.889028	10.1.45.110	10.1.45.104	TLSv1.2	1514	Server Hello
196	133.890336	10.1.45.110	10.1.45.104	TLSv1.2	421	Certificate, Certificate Request, Server Hello Done
199	133.897800	10.1.45.104	10.1.45.110	TLSv1.2	61	Alert (Level: Fatal, Description: Certificate Revoked)

> Frame 199: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface \Device\NPF_{B78ED34A-33C7-4134-B1D8-135BAB9958D5}, id 0

> Ethernet II, Src: Junikore_26:02:17 (64:a8:37:26:02:17), Dst: AsixElec_b6:72:c7 (00:0e:c6:b6:72:c7)

> Internet Protocol Version 4, Src: 10.1.45.104, Dst: 10.1.45.110

> Transmission Control Protocol, Src Port: 54934, Dst Port: 5000, Seq: 518, Ack: 4464, Len: 7

> Transport Layer Security

- > TLSv1.2 Record Layer: Alert (Level: Fatal, Description: Certificate Revoked)
 - Content Type: Alert (21)
 - Version: TLS 1.2 (0x0303)
 - Length: 2
- > Alert Message
 - Level: Fatal (2)
 - Description: Certificate Revoked (44)



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 52 of 55

8.3 WINNF.FT.C.SCS.3

scs.3.pcapng

文件(F) 编辑(E) 视图(V) 跳转(G) 捕获(C) 分析(A) 统计(S) 电话(T) 无线(W) 工具(I) 帮助(H)

File Edit View Capture Analyze Statistics Phone Wireless Tools Help

File Edit View Capture Analyze Statistics Phone Wireless Tools Help

No.	Time	Source	Destination	Protocol	Length	Info
59	29.377853	10.1.45.104	10.1.45.110	TLSv1.2	571	Client Hello
60	29.379235	10.1.45.110	10.1.45.104	TLSv1.2	1514	Server Hello
66	29.380001	10.1.45.110	10.1.45.104	TLSv1.2	278	Certificate, Certificate Request, Server Hello Done
68	29.391396	10.1.45.104	10.1.45.110	TLSv1.2	61	Alert (Level: Fatal, Description: Certificate Expired)

> Frame 68: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface \Device\NPF_{B78ED34A-33C7-4134-B1D8-135BAB9958D5}, id 0

> Ethernet II, Src: Junikore_26:02:17 (64:a8:37:26:02:17), Dst: AsixElec_b6:72:c7 (00:0e:c6:b6:72:c7)

> Internet Protocol Version 4, Src: 10.1.45.104, Dst: 10.1.45.110

> Transmission Control Protocol, Src Port: 45594, Dst Port: 5000, Seq: 518, Ack: 4321, Len: 7

> Transport Layer Security

- > TLSv1.2 Record Layer: Alert (Level: Fatal, Description: Certificate Expired)
 - > Content Type: Alert (21)
 - > Version: TLS 1.2 (0x0303)
 - > Length: 2
 - > Alert Message
 - > Level: Fatal (2)
 - > Description: Certificate Expired (45)



Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 53 of 55

8.4 WINNF.FT.C.SCS.4

scs.4.pcapng

文件(F) 编辑(E) 视图(V) 跳转(J) 捕获(C) 分析(A) 统计(S) 电话(T) 无线(W) 工具(I) 帮助(H)

File Edit View Jump Capture Analyze Statistics Phone Wireless Tools Help

Filter: tls

No.	Time	Source	Destination	Protocol	Length	Info
145	92.104357	10.1.45.104	10.1.45.110	TLSv1.2	571	Client Hello
146	92.104816	10.1.45.110	10.1.45.104	TLSv1.2	1470	Server Hello, Certificate, Certificate Request, Server Hello Done
148	92.106453	10.1.45.104	10.1.45.110	TLSv1.2	61	Alert (Level: Fatal, Description: Unknown CA)

> Frame 148: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface \Device\NPF_{B78ED34A-33C7-4134-B1D8-135BAB9958D5}, id 0

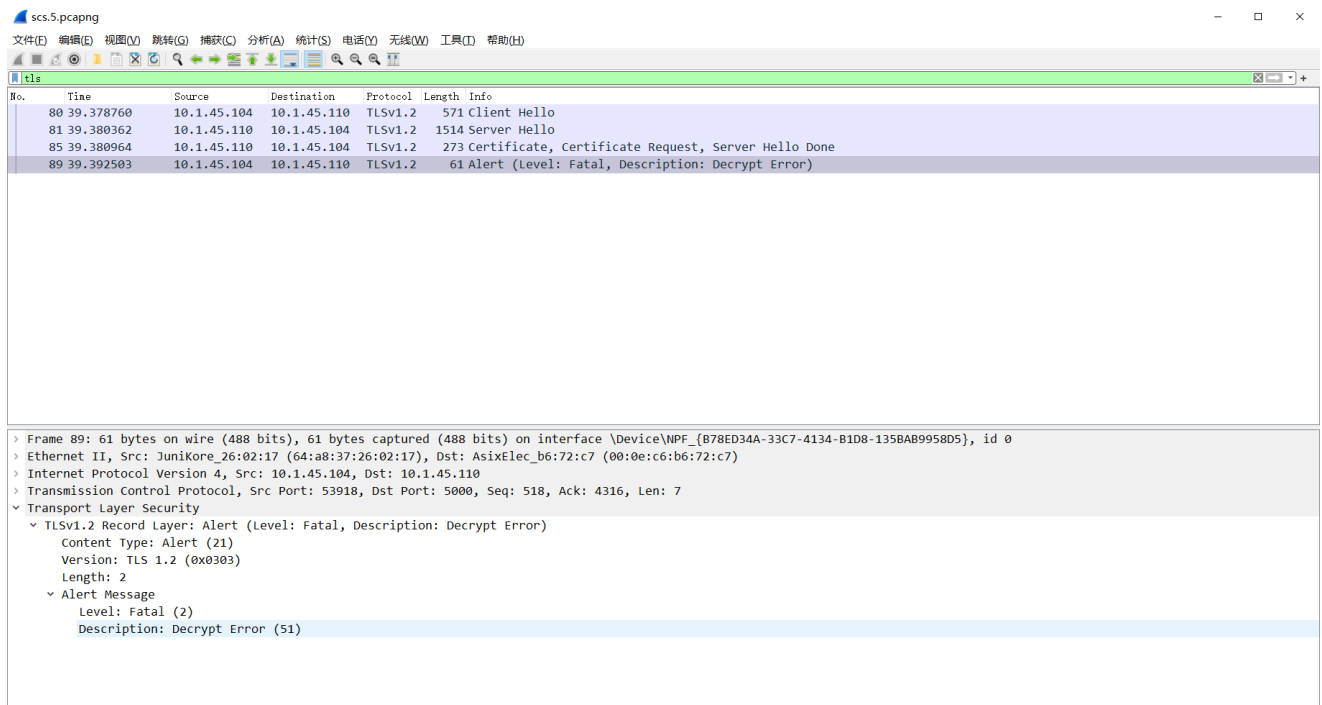
> Ethernet II, Src: Junikore_26:02:17 (64:a8:37:26:02:17), Dst: AsixElec_b6:72:c7 (00:0e:c6:b6:72:c7)

> Internet Protocol Version 4, Src: 10.1.45.104, Dst: 10.1.45.110

> Transmission Control Protocol, Src Port: 53913, Dst Port: 5000, Seq: 518, Ack: 1417, Len: 7

> Transport Layer Security

- > TLSv1.2 Record Layer: Alert (Level: Fatal, Description: Unknown CA)
 - > Content Type: Alert (21)
 - > Version: TLS 1.2 (0x0303)
 - > Length: 2
- > Alert Message
 - > Level: Fatal (2)
 - > Description: Unknown CA (48)





Compliance Certification Services (Kunshan) Inc.

CCSEM-TRF-001 Rev. 02 Sep 01, 2023

Report No.: KSCR240300037404

Page: 55 of 55

9 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2403000374AT

10 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2403000374AT