

## CBSD Test Report

**Report No.:** RFBCUN-WTW-P25040590

**FCC ID:** H8NSCU2140

**Test Model:** NR xCell 46116A1F

**Received Date:** Jun. 11, 2025

**Test Date:** Jun. 11, 2025 ~ Jun. 20, 2025

**Issued Date:** Jul. 08, 2025

**Applicant:** Askey Computer Corp

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

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**FCC Registration/**  
**Designation Number:** 281270 / TW0032



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### Release Control Record

Issue No.	Description	Date Issued
RFBCUN-WTW-P25040590	Original release	Jul. 08, 2025

## 1 Certificate of Conformity

**Product:** 5G Small Cell

**Brand:** ASKEY

**Test Model:** NR xCell 46116A1F

**Sample Status:** Engineering sample

**Applicant:** Askey Computer Corp

**Test Date:** Jun. 11, 2025 ~ Jun. 20, 2025

**Standards:** WINNF-TS-0122 V1.0.2

ONGO-TS-9001 V1.3.0

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

**Prepared by :** Pettie Chen , **Date:** Jul. 08, 2025

Pettie Chen / Senior Specialist

**Approved by :** Jeremy Lin , **Date:** Jul. 08, 2025

Jeremy Lin / Project Engineer

## 2 Summary of Test Results

WINNF-TS-0122			
Classes	Test Case Items	Pass Items	Pass Rate (%)
FT(CBSD, DP/CBSD)	26	26	100
PT(CBSD, DP/CBSD)	1	1	100
Total	27	27	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.

Supported Features in details:

WINNF-TS-0122 Test Case		
Definitions	Test Case ID	Supported
C1	WINNF.FT.C.REG.1	Yes
C2	NA	No
C3	WINNF.FT.C.REG.5	Yes
C4	NA	No
C5	NA	No
C6	WINNF.FT.C.REG.7	Yes

WINNF-TS-0122 Test Case			
Section	Test Case ID	Test Case Title	Test Result
6.1.4.1.1	WINNF.FT.C.REG.1	Multi-Step registration	Pass
6.1.4.1.2	WINNF.FT.D.REG.2	Domain Proxy Multi-Step registration	NA
6.1.4.1.3	WINNF.FT.C.REG.3	Single-Step registration for Category A CBSD	NA
6.1.4.1.4	WINNF.FT.D.REG.4	Domain Proxy Single-Step registration for Cat A CBSD	NA
6.1.4.1.5	WINNF.FT.C.REG.5	Single-Step registration for CBSD with CPI signed data	Pass
6.1.4.1.6	WINNF.FT.D.REG.6	Domain Proxy Single-Step registration for CBSD with CPI signed data	NA
6.1.4.1.7	WINNF.FT.C.REG.7	Registration due to change of an installation parameter	Pass
6.1.4.2.1	WINNF.FT.C.REG.8	Missing Required parameters (responseCode 102)	Pass
6.1.4.2.2	WINNF.FT.D.REG.9	Domain Proxy Missing Required parameters (responseCode 102)	NA
6.1.4.2.3	WINNF.FT.C.REG.10	Pending registration (responseCode 200)	Pass
6.1.4.2.4	WINNF.FT.D.REG.11	Domain Proxy Pending registration (responseCode 200)	NA
6.1.4.2.5	WINNF.FT.C.REG.12	Invalid parameter (responseCode 103)	Pass
6.1.4.2.6	WINNF.FT.D.REG.13	Domain Proxy Invalid parameters (responseCode 103)	NA
6.1.4.2.7	WINNF.FT.C.REG.14	Blacklisted CBSD (responseCode 101)	Pass
6.1.4.2.8	WINNF.FT.D.REG.15	Domain Proxy Blacklisted CBSD (responseCode 101)	NA
6.1.4.2.9	WINNF.FT.C.REG.16	Unsupported SAS protocol version (responseCode 100)	Pass
6.1.4.2.10	WINNF.FT.D.REG.17	Domain Proxy Unsupported SAS protocol version (responseCode 100)	NA
6.1.4.2.11	WINNF.FT.C.REG.18	Group Error (responseCode 201)	Pass
6.1.4.2.12	WINNF.FT.D.REG.19	Domain Proxy Group Error (responseCode 201)	NA
6.1.4.3.1	WINNF.FT.C.REG.20	Category A CBSD location update	NA

WINNF-TS-0122 Test Case			
Section	Test Case ID	Test Case Title	Test Result
6.3.4.2.1	WINNF.FT.D.GRA.1	Unsuccessful Grant responseCode=400 (INTERFERENCE)	Pass
6.3.4.2.2	WINNF.FT.C.GRA.2	Unsuccessful Grant responseCode=401 (GRANT_CONFLICT)	Pass
6.4.4.1.1	WINNF.FT.C.HBT.1	Heartbeat Success Case (first Heartbeat Response)	Pass
6.4.4.1.2	WINNF.FT.D.HBT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	NA
6.4.4.2.1	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	Pass
6.4.4.2.2	WINNF.FT.C.HBT.4	Heartbeat responseCode=500 (TERMINATED_GRANT)	Pass
6.4.4.2.3	WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	Pass
6.4.4.2.4	WINNF.FT.C.HBT.6	Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	Pass
6.4.4.2.5	WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAM)	Pass
6.4.4.2.6	WINNF.FT.D.HBT.8	Domain Proxy Heartbeat responseCode=500 (TERMINATED_GRANT)	NA
6.4.4.3.1	WINNF.FT.C.HBT.9	Heartbeat Response Absent (First Heartbeat)	Pass
6.4.4.3.2	WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Pass
6.4.4.4.1	WINNF.FT.C.HBT.11	Successful Grant Renewal in Heartbeat Test Case	NA
6.5.4.2.1	WINNF.FT.C.MES.1	Registration Response contains measReportConfig	NA
6.5.4.2.2	WINNF.FT.D.MES.2	Domain Proxy Registration Response contains measReportConfig	NA
6.5.4.2.3	WINNF.FT.C.MES.3	Grant Response contains measReportConfig	NA
6.5.4.2.4	WINNF.FT.C.MES.4	Heartbeat Response contains measReportConfig	NA
6.5.4.2.5	WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains measReportConfig	NA

WINNF-TS-0122 Test Case			
Section	Test Case ID	Test Case Title	Test Result
6.6.4.1.1	WINNF.FT.C.RLQ.1	Successful Relinquishment	Pass
6.6.4.1.2	WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	NA
6.6.4.2.1	WINNF.FT.C.RLQ.3	Unsuccessful Relinquishment, responseCode=102	NA
6.6.4.2.2	WINNF.FT.D.RLQ.4	Domain Proxy Unsuccessful Relinquishment, responseCode=102	NA
6.6.4.3.1	WINNF.FT.C.RLQ.5	Unsuccessful Relinquishment, responseCode=103	NA
6.6.4.3.2	WINNF.FT.D.RLQ.6	Domain Proxy Unsuccessful Relinquishment, responseCode=103	NA
6.7.4.1.1	WINNF.FT.C.DRG.1	Successful Deregistration	Pass
6.7.4.1.2	WINNF.FT.D.DRG.2	Domain Proxy Successful Deregistration	NA
6.7.4.2.1	WINNF.FT.C.DRG.3	Deregistration responseCode=102	NA
6.7.4.2.2	WINNF.FT.D.DRG.4	Domain Proxy Deregistration responseCode=102	NA
6.7.4.3.1	WINNF.FT.C.DRG.5	Deregistration responseCode=103	NA
6.8.4.1.1	WINNF.FT.C.SCS.1	Successful TLS connection between UUT and SAS Test Harness	Pass
6.8.4.2.1	WINNF.FT.C.SCS.2	TLS failure due to revoked certificate	Pass
6.8.4.2.2	WINNF.FT.C.SCS.3	TLS failure due to expired server certificate	Pass
6.8.4.2.3	WINNF.FT.C.SCS.4	TLS failure when SAS Test Harness certificate is issued by unknown CA	Pass
6.8.4.2.4	WINNF.FT.C.SCS.5	TLS failure when certificate at the SAS Test Harness is corrupted	Pass
7.1.4.1.1	WINNF.PT.C.HBT	UUT RF Transmit Power Measurement	Pass

Note: Section as per WINNF-TS-0122 If the product as tested complies with the specification, the UUT is deemed to comply with the standard and is deemed a "Pass" grade. If not "Fail" grade is issued. Where "NA" is stated this means the test case is not applicable.

## 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the UUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions above 1 GHz	1GHz ~ 18GHz	1 dB

## 2.2 Modification Record

Following the FCC KDB 940660 D02 CPE-CBSD Handshake Procedures v01, when running the test cases in WINNF-TS-0122 for CPE-CBSD device type, for the last execution step appearing in WINNF-TS-0122:

1. The Pass/Fail criteria "UUT shall not transmit RF" is replaced by "CPE-CBSD UUT shall not transmit user traffic".
2. The Pass/Fail criteria "UUT shall stop transmission" is replaced by CPE-CBSD UUT shall stop transmitting user traffic"

### 3 General Information

#### 3.1 General Description of EUT

Product	5G Small Cell
Brand	ASKEY
Test Model	NR xCell 46116A1F
Hardware Version	REV3
Firmware Version	3.2.10
Status of EUT	Engineering sample
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. The EUT uses following accessories.

Item	Brand	Model	Specification
AC Adapter	TOPOW	TPA187-62480-T3	AC Input : 100-240V, 50/60Hz, 2.5A MAX DC Output : 48.0V, 1.3A, 62.4W Power Line : 0.57m
Power Cord	-	-	1.7m
GPS Antenna	-	-	7m

#### Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
WINNF-TS-0122	25deg. C, 65%RH	120Vac, 60Hz	Matthew Yang

### 3.2 General Description of Applied Standards

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

**Test standard:**

FCC 47 CFR Part 96

All test items have been performed and recorded as per the above standards.

**References Test Guidance:**

KDB 940660 D01 Part 96 CBRS Eqpt v03

All test items have been performed as a reference to the above KDB test guidance.

## 4 Measurement

### 4.1 CBSD Measurement

The CBSD shall validate and ensure that the Conformance and Performance Test results from compliance with SAS functional requirements.

### 4.2 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 Test Harness.
- d. Each test case results was recorded and validated by SAS Test Harness system and RF instruments test cases was recorded test results from SAS Test Harness system.

### 4.3 Test Environment

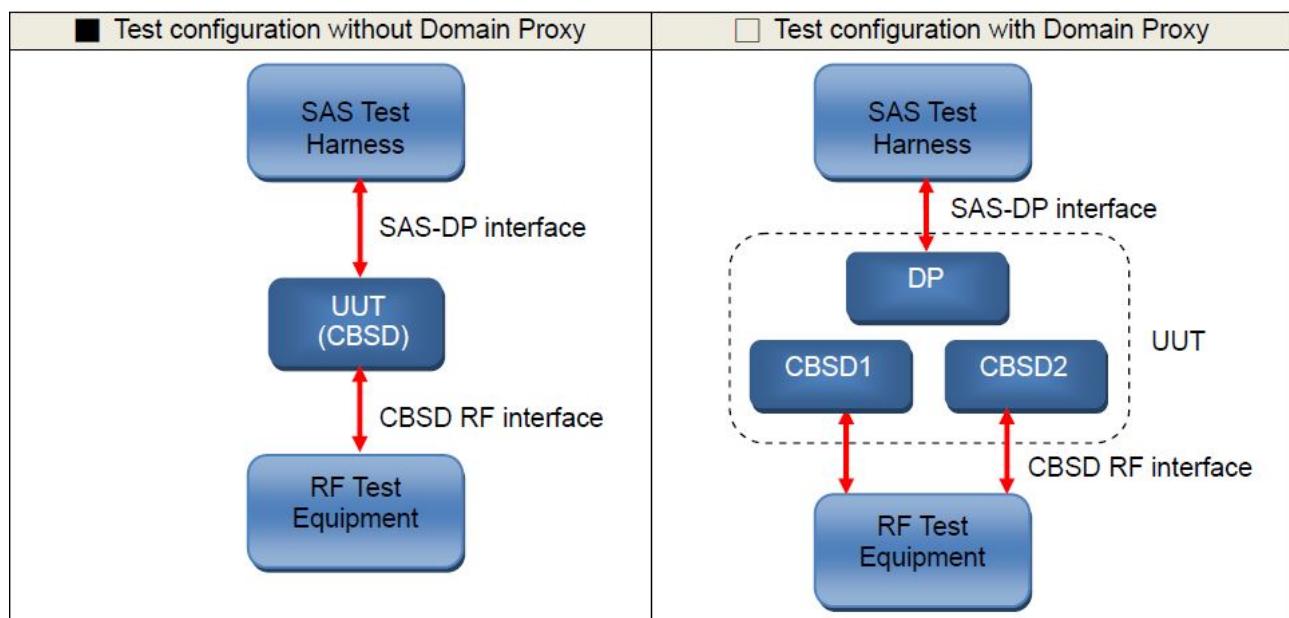
Test Harness Version	V1.0.0.3
Operating System	Microsoft Windows 10
TLS Version	1.2
Python	2.7.13

#### 4.4 Test Equipment

Description & Manufacturer	Model no.	Serial No.	Calibrated Date	Calibrated Until
ROHDE & SCHWARZ Signal Analyzer	FSV	E2-010642	May 29, 2024	May 28, 2026
Temperature & Humidity Chamber TERCHY	TFA 452019	E2-010883	Dec. 13, 2024	Dec. 12, 2025
Laptop Lenovo	P137G	P137G001	NA	NA

Note: 1. The test was performed in WM-OVEN Test Room.  
 2. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.5 Test Setup



## 4.6 Test Results

### 4.6.1 CBSD Registration Process

#### 4.6.1.1 WINNF.FT.C.REG.1

■ Test Case ID : WINNF.FT.C.REG.1       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>● The required userId, fcld and cbsdSerialNumber registration parameters shall be sent from the CBSD and conform to proper format and acceptable ranges.</li> <li>● 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.</li> </ul> <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"/> Pass	<input type="checkbox"/> Fail
3	<ul style="list-style-type: none"> <li>● SAS Test Harness sends a CBSD Registration Response as follows:           <ul style="list-style-type: none"> <li>- <i>cbsdId</i> = C</li> <li>- <i>measReportConfig</i> shall not be included</li> <li>- <i>responseCode</i> = 0</li> </ul> </li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.2 WINNF.FT.C.REG.5

Test Case ID : WINNF.FT.C.REG.5       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> <li>● All of the required and REG-Conditional parameters shall be configured and CPI signature provided</li> </ul>	--	--
2	<p>CBSD sends Registration request to the SAS Test Harness:</p> <ul style="list-style-type: none"> <li>● The required userId, fccId and cbssdSerialNumber and REG-Conditional cbssdCategory, airInterface, measCapability and cpiSignatureData registration parameters shall be sent from the CBSD and conform to proper format and acceptable ranges.</li> <li>● 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.</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
3	<ul style="list-style-type: none"> <li>● SAS Test Harness sends a CBSD Registration Response as follows:           <ul style="list-style-type: none"> <li>- <i>cbsdId = C</i></li> <li>- <i>measReportConfig</i> shall not be included</li> <li>- <i>responseCode = 0</i></li> </ul> </li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode=0</i> ) to further request messages from the UUT.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
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"> <li>● UUT shall not transmit RF</li> </ul>		

#### 4.6.1.3 WINNF.FT.C.REG.7

Test Case ID : WINNF.FT.C.REG.7       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> </ul>	--	--
2	UUT has successfully registered with SAS Test Harness	--	--
3	<p>Change an installation parameters at the UUT (time T)            Tester needs to record the current time at which the parameter change is executed.</p>	--	--
4	<p>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.</p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.4 WINNF.FT.C.REG.8

Test Case ID : WINNF.FT.C.REG.8       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsdId</i></li> <li>- <i>responseCode</i> = R = 102</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.5 WINNF.FT.C.REG.10

■ Test Case ID : WINNF.FT.C.REG.10       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsdId</i></li> <li>- <i>responseCode</i> = R = 200</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.6 WINNF.FT.C.REG.12

■ Test Case ID : WINNF.FT.C.REG.12       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsdId</i></li> <li>- <i>responseCode</i> = R = 103</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.7 WINNF.FT.C.REG.14

■ Test Case ID : WINNF.FT.C.REG.14       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsdId</i></li> <li>- <i>responseCode</i> = R = 101</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =101) 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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.8 WINNF.FT.C.REG.16

■ Test Case ID : WINNF.FT.C.REG.16       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsdId</i></li> <li>- <i>responseCode</i> = R = 100</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.1.9 WINNF.FT.C.REG.18

Test Case ID : WINNF.FT.C.REG.18       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT is in the Unregistered state</li> </ul>	--	--
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"> <li>- SAS response does not include <i>cbsId</i></li> <li>- <i>responseCode</i> = R = 201</li> </ul>	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =201) 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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

## 4.6.2 CBSD Spectrum Grant Process

### 4.6.2.1 WINNF.FT.C.GRA.1

■ Test Case ID : WINNF.FT.C.GRA.1       NA

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: ● UUT has registered successfully with SAS Test Harness, with <i>cbsdId</i> = C	--	--
2	UUT sends valid Grant Request.	--	--
3	SAS Test Harness sends a Grant Response message, including ● <i>cbsdId</i> =C ● <i>responseCode</i> = R = 400	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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: ● UUT shall not transmit RF	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.2.2 WINNF.FT.C.GRA.2

Test Case ID : WINNF.FT.C.GRA.2       NA

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: ● UUT has registered successfully with SAS Test Harness, with <i>cbsdId</i> = C	--	--
2	UUT sends valid Grant Request.	--	--
3	SAS Test Harness sends a Grant Response message, including ● <i>cbsdId</i> =C ● <i>responseCode</i> = R = 401	--	--
4	After completion of step 3, SAS Test Harness will not provide any positive response ( <i>responseCode</i> =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: ● UUT shall not transmit RF	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.3 CBSD Heart Beat Process

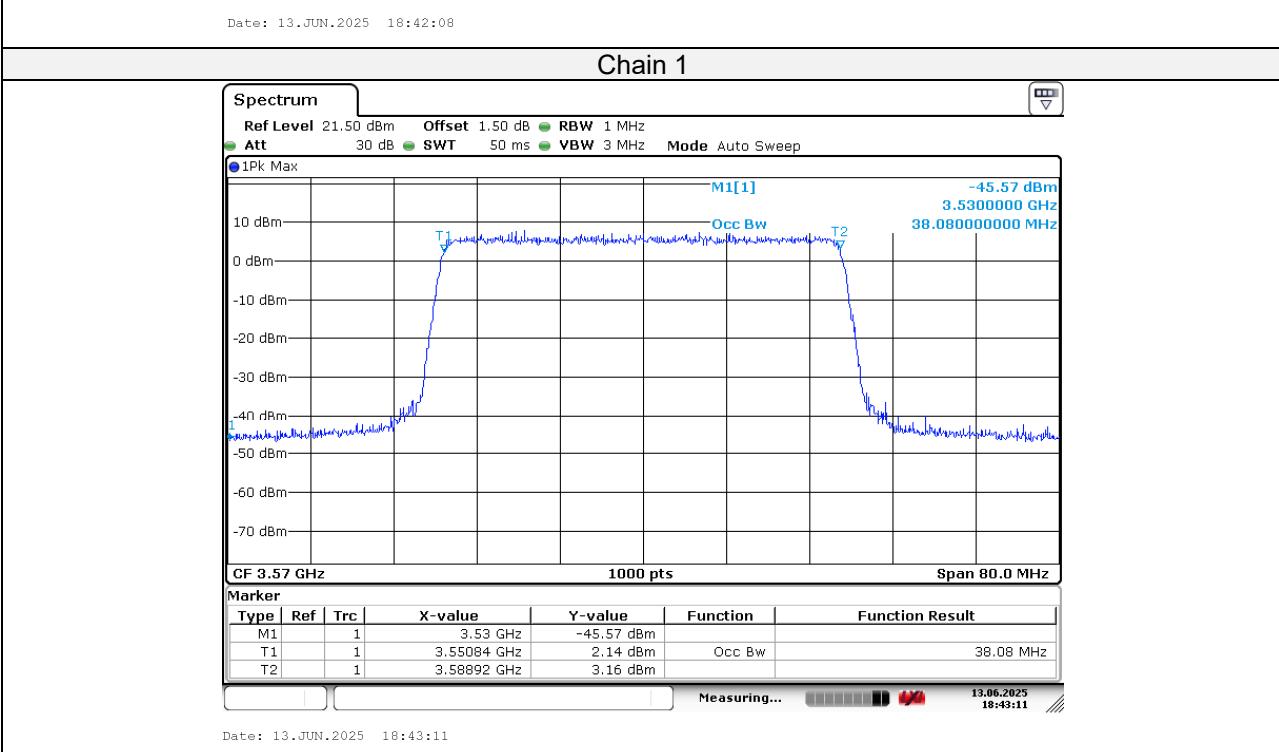
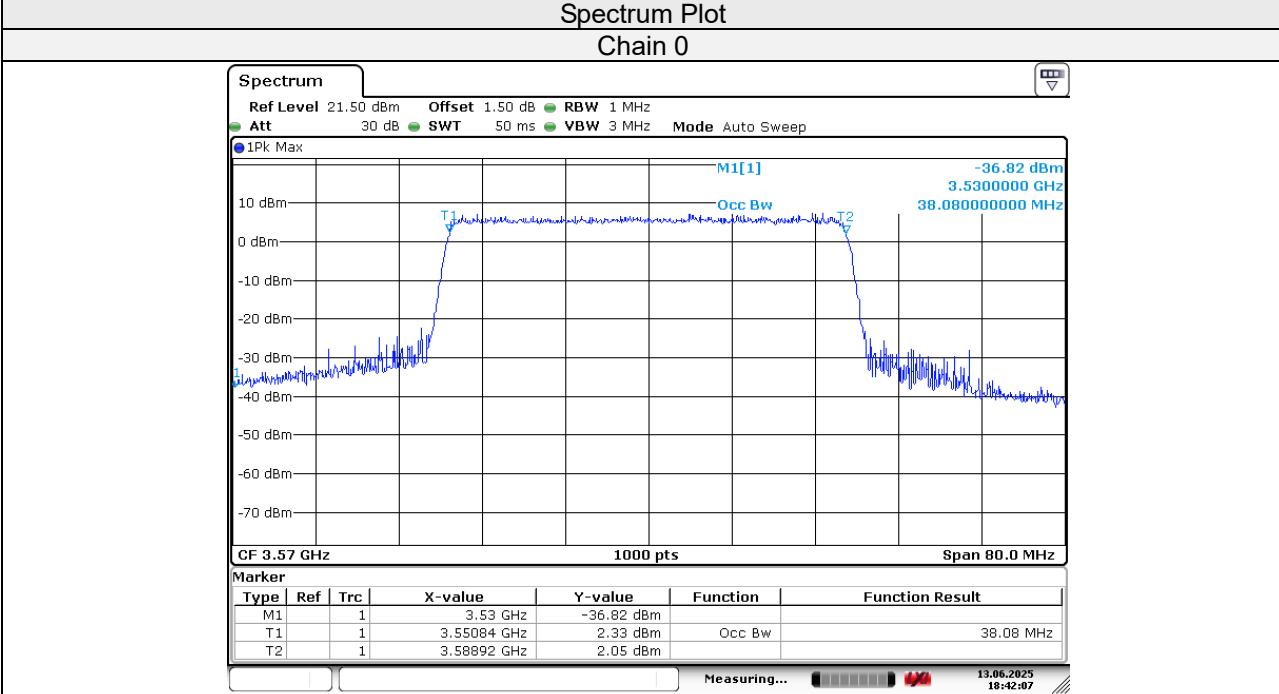
##### 4.6.3.1 WINNF.FT.C.HBT.1

■ Test Case ID : WINNF.FT.C.HBT.1  NA

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

- UUT transmits after step 8 is complete, and its transmission is limited to within the bandwidth range F.

Channel	Freq. (MHz)	OCP 99 Band Width (MHz)	
		F = 40MHz	
		Chain (0)	Chain (1)
Middle	3570	38.08	38.08



#### 4.6.3.2 WINNF.FT.C.HBT.3

■ Test Case ID : WINNF.FT.C.HBT.3       NA

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

#### 4.6.3.3 WINNF.FT.C.HBT.4

■ Test Case ID : WINNF.FT.C.HBT.4       NA

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

#### 4.6.3.4 WINNF.FT.C.HBT.5

Test Case ID : WINNF.FT.C.HBT.5       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has registered successfully with SAS Test Harness</li> <li>● UUT has a valid single grant as follows:           <ul style="list-style-type: none"> <li>○ valid <i>cbsdId</i> = C</li> <li>○ valid <i>grantId</i> = G</li> <li>○ grant is for frequency range F, power P</li> <li>○ <i>grantExpireTime</i> = UTC time greater than duration of the test</li> </ul> </li> <li>● UUT is in GRANTED, but not AUTHORIZED state (i.e. has not performed its first Heartbeat Request)</li> </ul>	--	--
2	<p>UUT sends a Heartbeat Request message.</p> <p>Verify Heartbeat Request message is formatted correctly, including:</p> <ul style="list-style-type: none"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>operationState</i> = "GRANTED"</li> </ul>	<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"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>transmitExpireTime</i> = T = current UTC time</li> <li>? <i>responseCode</i> = 501 (SUSPENDED_GRANT)</li> </ul>	--	--
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"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>operationState</i> = "GRANTED"</li> </ul> <p>B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters:</p> <ul style="list-style-type: none"> <li>● <i>cbdsId</i> = C</li> <li>● <i>grantId</i> = G</li> </ul> <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> <li>● UUT does not transmit at any time</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.3.5 WINNF.FT.C.HBT.6

Test Case ID : WINNF.FT.C.HBT.6  NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has registered successfully with SAS Test Harness</li> <li>● UUT has a valid single grant as follows:           <ul style="list-style-type: none"> <li>○ valid <i>cbsId</i> = C</li> <li>○ valid <i>grantId</i> = G</li> <li>○ grant is for frequency range F, power P</li> <li>○ <i>grantExpireTime</i> = UTC time greater than duration of the test</li> </ul> </li> <li>● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface</li> </ul>	--	--
2	<p>UUT sends a Heartbeat Request message.</p> <p>Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> <li>● <i>cbsId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>operationState</i> = "AUTHORIZED"</li> </ul>	<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"> <li>● <i>cbsId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>transmitExpireTime</i> = T = current UTC time</li> <li>● <i>responseCode</i> = 501 (SUSPENDED_GRANT)</li> </ul>	--	--
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"> <li>● <i>cbsId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>operationState</i> = "GRANTED"</li> </ul> <p>B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters:</p> <ul style="list-style-type: none"> <li>● <i>cbdsId</i> = C</li> <li>● <i>grantId</i> = G</li> </ul> <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> <li>● UUT shall stop transmission within (T+60) seconds of completion of step 3</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.3.6 WINNF.FT.C.HBT.7

■ Test Case ID : WINNF.FT.C.HBT.7       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has registered successfully with SAS Test Harness</li> <li>● UUT has a valid single grant as follows:           <ul style="list-style-type: none"> <li>○ valid <i>cbsdId</i> = C</li> <li>○ valid <i>grantId</i> = G</li> <li>○ grant is for frequency range F, power P</li> <li>○ <i>grantExpireTime</i> = UTC time greater than duration of the test</li> </ul> </li> <li>● UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface</li> </ul>	--	--
2	<p>UUT sends a Heartbeat Request message.</p> <p>Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:</p> <ul style="list-style-type: none"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>operationState</i> = "AUTHORIZED"</li> </ul>	<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"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> <li>● <i>transmitExpireTime</i> = T = current UTC time</li> <li>● <i>responseCode</i> = 502 (UNSYNC_OP_PARAM)</li> </ul>	--	--
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:</p> <ul style="list-style-type: none"> <li>● UUT sends a Grant Relinquishment Request message. Verify message is correctly formatted with parameters:           <ul style="list-style-type: none"> <li>○ <i>cbsdId</i> = C</li> <li>○ <i>grantId</i> = G</li> </ul> </li> </ul> <p>Monitor the RF output of the UUT. Verify:</p> <ul style="list-style-type: none"> <li>● UUT shall stop transmission within (T+60) seconds of completion of step 3</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.3.7 WINNF.FT.C.HBT.9

■ Test Case ID : WINNF.FT.C.HBT.9       NA

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

#### 4.6.3.8 WINNF.FT.C.HBT.10

■ Test Case ID : WINNF.FT.C.HBT.10       NA

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

#### 4.6.4 CBSD Relinquishment Process

##### 4.6.4.1 WINNF.FT.C.RLQ.1

Test Case ID : WINNF.FT.C.RLQ.1       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT has successfully registered with SAS Test Harness, with <i>cbsdId</i>=C</li> <li>● UUT has received a valid grant with <i>grantId</i> = G</li> <li>● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant.</li> </ul> <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"> <li>● <i>cbsdId</i> = C</li> <li>● <i>grantId</i> = G</li> </ul>	<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"> <li>- <i>cbsdId</i> = C</li> <li>- <i>grantId</i> = G</li> <li>- <i>responseCode</i> = 0</li> </ul>	--	--
4	<p>After completion of step 3, SAS Test Harness will not provide any additional positive response (<i>responseCode</i>=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"> <li>● UUT shall stop RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

#### 4.6.5 CBSD Deregistration Process

##### 4.6.5.1 WINNF.FT.C.DRG.1

■ Test Case ID : WINNF.FT.C.DRG.1       NA

#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness</li> <li>● UUT has successfully registered with SAS Test Harness, with <i>cbsdId</i>=C</li> <li>● UUT has received a valid grant with <i>grantId</i> = G</li> <li>● UUT is in Grant State AUTHORIZED and is actively transmitting within the bounds of its grant.</li> </ul> <p>Invoke trigger to deregister UUT from the SAS Test Harness</p>	--	--
2	UUT sends a Relinquishment request and receives Relinquishment response with <i>responseCode</i> =0	--	--
3	UUT sends Deregistration Request to SAS Test Harness with <i>cbsdId</i> = C.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	SAS Test Harness shall approve the request with a Deregistration Response message with parameters:	--	--
	<ul style="list-style-type: none"> <li>● <i>cbsdId</i> = C</li> <li>● <i>responseCode</i> = 0</li> </ul>		
5	After completion of step 3, SAS Test Harness will not provide any additional positive response ( <i>responseCode</i> =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"> <li>● UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs:           <ol style="list-style-type: none"> <li>UUT sending a Registration Request message, as this is not mandatory</li> <li>UUT sending a Deregistration Request message</li> </ol> </li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

## 4.6.6 CBSD Security Validation

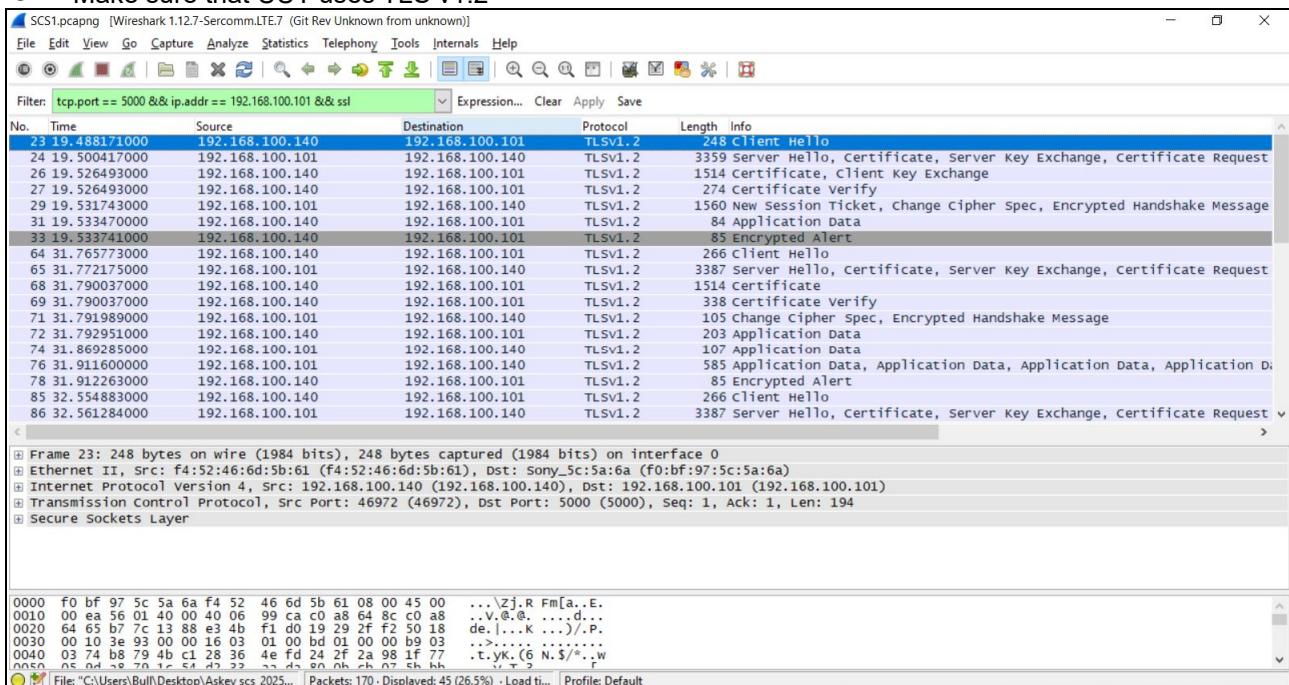
### 4.6.6.1 WINNF.FT.C.SCS.1

■ Test Case ID : WINNF.FT.C.SCS.1  NA

#	Test Execution Steps	Results	
1	<ul style="list-style-type: none"> <li>● UUT shall start CBSD-SAS communication with the security procedure</li> <li>● The UUT shall establish a TLS handshake with the SAS Test Harness using configured certificate.</li> <li>● Configure the SAS Test Harness to accept the security procedure and establish the connection</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	<ul style="list-style-type: none"> <li>● Make sure that Mutual authentication happens between UUT and the SAS Test Harness.</li> <li>● Make sure that UUT uses TLS v1.2</li> <li>● Make sure that cipher suites from one of the following is selected,           <ul style="list-style-type: none"> <li>● TLS_RSA_WITH_AES_128_GCM_SHA256</li> <li>● TLS_RSA_WITH_AES_256_GCM_SHA384</li> <li>● TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256</li> <li>● TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384</li> <li>● TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256</li> </ul> </li> </ul>	<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> <ul style="list-style-type: none"> <li>● UUT sends a registration request to the SAS Test Harness and the SAS Test Harness sends a Registration Response with <i>responseCode</i> = 0 and <i>cbldId</i>.</li> </ul>	<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"> <li>● UUT shall not transmit RF</li> </ul>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Wireshark Capture Example for Test Case :

- Make sure that UUT uses TLS v1.2



Wireshark capture example showing a TLS handshake between 192.168.100.101 and 192.168.100.140. The capture shows frames 23 to 86, detailing the Client Hello, Certificate, Server Hello, and Change Cipher Spec messages.

Frame 23: 248 bytes on wire (1984 bits), 248 bytes captured (1984 bits) on interface 0

Frame 24: 3359 bytes on wire (26872 bits), 3359 bytes captured (26872 bits) on interface 0

Frame 25: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface 0

Frame 26: 274 bytes on wire (2192 bits), 274 bytes captured (2192 bits) on interface 0

Frame 27: 1560 bytes on wire (12480 bits), 1560 bytes captured (12480 bits) on interface 0

Frame 28: 84 bytes on wire (672 bits), 84 bytes captured (672 bits) on interface 0

Frame 29: 85 bytes on wire (680 bits), 85 bytes captured (680 bits) on interface 0

Frame 30: 266 bytes on wire (2128 bits), 266 bytes captured (2128 bits) on interface 0

Frame 31: 3387 bytes on wire (27096 bits), 3387 bytes captured (27096 bits) on interface 0

Frame 32: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface 0

Frame 33: 338 bytes on wire (2704 bits), 338 bytes captured (2704 bits) on interface 0

Frame 34: 105 bytes on wire (840 bits), 105 bytes captured (840 bits) on interface 0

Frame 35: 203 bytes on wire (1624 bits), 203 bytes captured (1624 bits) on interface 0

Frame 36: 107 bytes on wire (856 bits), 107 bytes captured (856 bits) on interface 0

Frame 37: 585 bytes on wire (4680 bits), 585 bytes captured (4680 bits) on interface 0

Frame 38: 85 bytes on wire (680 bits), 85 bytes captured (680 bits) on interface 0

Frame 39: 266 bytes on wire (2128 bits), 266 bytes captured (2128 bits) on interface 0

Frame 40: 3387 bytes on wire (27096 bits), 3387 bytes captured (27096 bits) on interface 0

Frame 41: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 42: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 43: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 44: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 45: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 46: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 47: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 48: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 49: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 50: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 51: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 52: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 53: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 54: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 55: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 56: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 57: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 58: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 59: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 60: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 61: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 62: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 63: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 64: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 65: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 66: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 67: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 68: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 69: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 70: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 71: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 72: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 73: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 74: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 75: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 76: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 77: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 78: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 79: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 80: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 81: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 82: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 83: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 84: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 85: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

Frame 86: 0 bytes on wire (0 bits), 0 bytes captured (0 bits) on interface 0

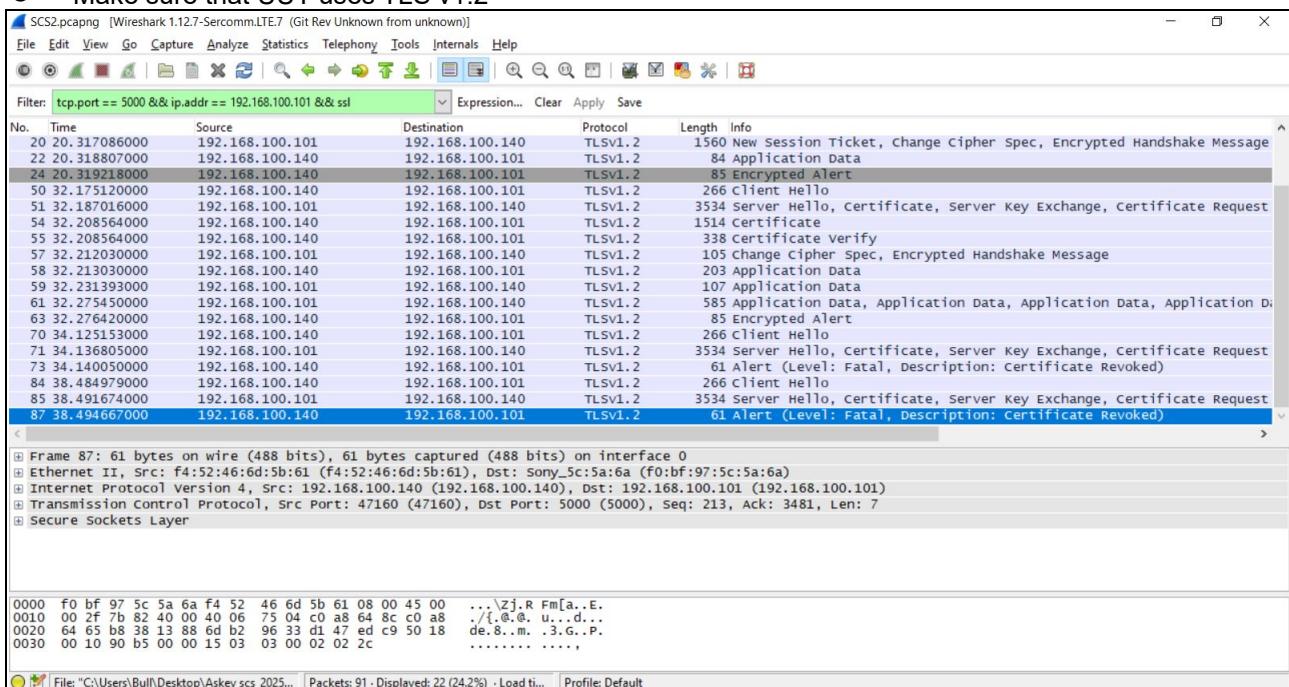
#### 4.6.6.2 WINNF.FT.C.SCS.2

■ Test Case ID : WINNF.FT.C.SCS.2       NA

#	Test Execution Steps	Results	
1	● UUT shall start CBSD-SAS communication with the security procedures	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
2	● 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	UUT may retry for the security procedure which shall fail.	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail
4	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: ● UUT shall not transmit RF	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

Wireshark Capture Example for Test Case :

- Make sure that UUT uses TLS v1.2



SCS2.pcapng [Wireshark 1.12.7-Sercomm.LTE.7 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: `tcp.port == 5000 && ip.addr == 192.168.100.101 && ssl`

No. Time Source Destination Protocol Length Info

20 20.317086000 192.168.100.101 192.168.100.140 TLSV1.2 1560 New Session Ticket, Change Cipher Spec, Encrypted Handshake Message

22 20.318807000 192.168.100.140 192.168.100.101 TLSV1.2 84 Application Data

24 20.319218000 192.168.100.140 192.168.100.101 TLSV1.2 85 Encrypted Alert

50 32.175120000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

51 32.187016000 192.168.100.101 192.168.100.140 TLSV1.2 3534 Server Hello, Certificate, Server Key Exchange, Certificate Request

54 32.208564000 192.168.100.140 192.168.100.101 TLSV1.2 1514 Certificate

55 32.208564000 192.168.100.140 192.168.100.101 TLSV1.2 338 Certificate Verify

57 32.212030000 192.168.100.101 192.168.100.140 TLSV1.2 105 Change Cipher Spec, Encrypted Handshake Message

58 32.213030000 192.168.100.140 192.168.100.101 TLSV1.2 203 Application Data

59 32.231393000 192.168.100.101 192.168.100.140 TLSV1.2 107 Application Data

63 32.275450000 192.168.100.101 192.168.100.140 TLSV1.2 585 Application Data, Application Data, Application Data, Application Data

63 32.276420000 192.168.100.140 192.168.100.101 TLSV1.2 85 Encrypted Alert

70 34.125153000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

71 34.136805000 192.168.100.101 192.168.100.140 TLSV1.2 3534 Server Hello, Certificate, Server Key Exchange, Certificate Request

73 34.140005000 192.168.100.140 192.168.100.101 TLSV1.2 61 Alert (Level: Fatal, Description: Certificate Revoked)

84 38.484979000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

85 38.491674000 192.168.100.101 192.168.100.140 TLSV1.2 3534 Server Hello, Certificate, Server Key Exchange, Certificate Request

87 38.494667000 192.168.100.140 192.168.100.101 TLSV1.2 61 Alert (Level: Fatal, Description: Certificate Revoked)

Frame 87: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface 0

Ethernet II, Src: f4:52:46:6d:5b:61 (f4:52:46:6d:5b:61), Dst: Sony\_Sc5:5a:6a (f0:bf:97:5c:5a:6a)

Internet Protocol Version 4, Src: 192.168.100.140 (192.168.100.140), Dst: 192.168.100.101 (192.168.100.101)

Transmission Control Protocol, Src Port: 47160 (47160), Dst Port: 5000 (5000), Seq: 213, Ack: 3481, Len: 7

Secure Sockets Layer

0000 f0 bf 97 5c 5a 6a f4 52 46 6d 5b 61 08 00 45 00 ..\Zj.R Fm[a..E..

0010 00 2f 7b 82 40 00 40 06 75 04 c0 a8 64 8c c0 a8 ..\{. @. @. u..d..

0020 64 65 b8 38 13 88 6d b2 96 33 d1 47 ed c9 50 18 de.8..m. .3.G..P.

0030 00 10 90 b5 00 00 15 03 03 00 02 02 2c ..... .

File: 'C:\Users\Bull\Desktop\Askey scs\_2025...' | Packets: 91 | Displayed: 22 (24.2%) | Load t... | Profile: Default

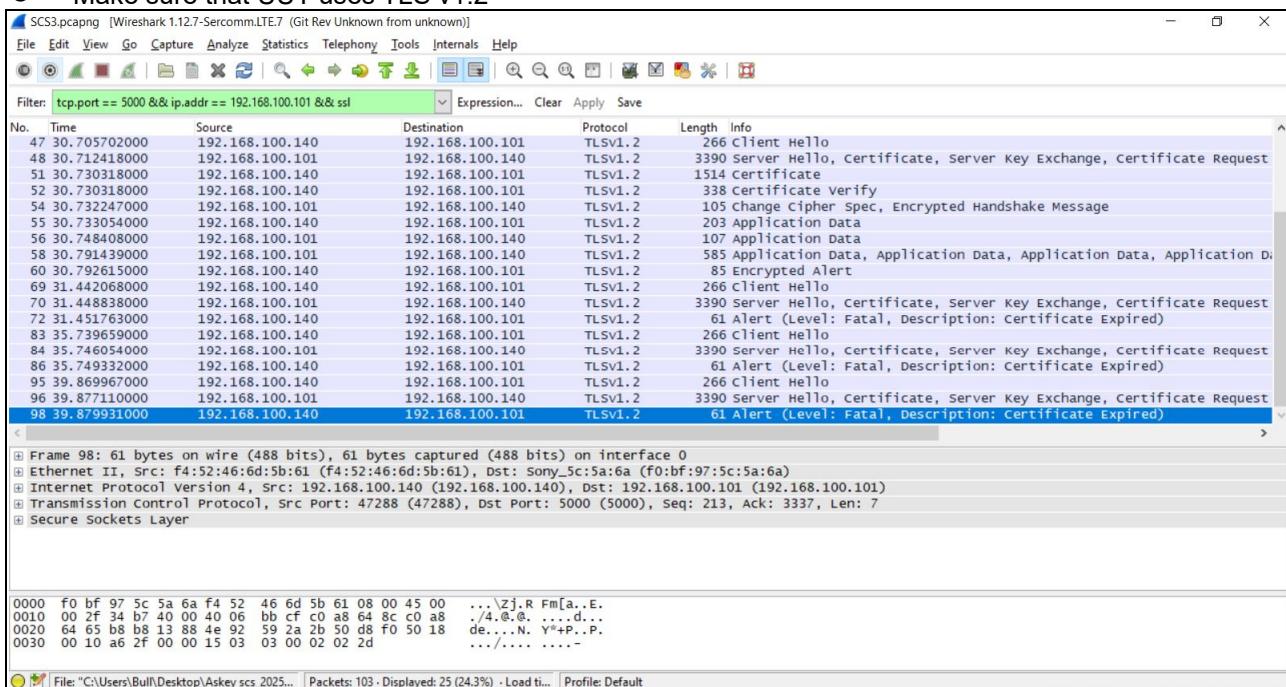
#### 4.6.6.3 WINNF.FT.C.SCS.3

■ Test Case ID : WINNF.FT.C.SCS.3  NA

#	Test Execution Steps	Results	
1	● UUT shall start CBSD-SAS communication with the security procedures	■ Pass	□ Fail
2	● 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.	■ Pass	□ Fail
3	UUT may retry for the security procedure which shall fail.	■ Pass	□ Fail
4	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: ● UUT shall not transmit RF	■ Pass	□ Fail

Wireshark Capture Example for Test Case :

- Make sure that UUT uses TLS v1.2



SCS3.pcapng [Wireshark 1.12.7-Sercomm.LTE.7 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: `tcp.port == 5000 && ip.addr == 192.168.100.101 && ssl`

Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
47	30.705702000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
48	30.712418000	192.168.100.101	192.168.100.140	TLSV1.2	3390	Server Hello, Certificate, Server Key Exchange, Certificate Request
51	30.730318000	192.168.100.140	192.168.100.101	TLSV1.2	1514	Certificate
52	30.730318000	192.168.100.140	192.168.100.101	TLSV1.2	338	Certificate Verify
54	30.732247000	192.168.100.101	192.168.100.140	TLSV1.2	105	Change Cipher Spec, Encrypted Handshake Message
55	30.733054000	192.168.100.140	192.168.100.101	TLSV1.2	203	Application Data
56	30.748408000	192.168.100.101	192.168.100.140	TLSV1.2	107	Application Data
58	30.791439000	192.168.100.101	192.168.100.140	TLSV1.2	585	Application Data, Application Data, Application Data, Application Data
60	30.792615000	192.168.100.140	192.168.100.101	TLSV1.2	85	Encrypted Alert
69	31.442068000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
70	31.448838000	192.168.100.101	192.168.100.140	TLSV1.2	3390	Server Hello, Certificate, Server Key Exchange, Certificate Request
72	31.451763000	192.168.100.140	192.168.100.101	TLSV1.2	61	Alert (Level: Fatal, Description: Certificate Expired)
83	35.739659000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
84	35.746054000	192.168.100.101	192.168.100.140	TLSV1.2	3390	Server Hello, Certificate, Server Key Exchange, Certificate Request
86	35.749332000	192.168.100.140	192.168.100.101	TLSV1.2	61	Alert (Level: Fatal, Description: Certificate Expired)
95	39.869967000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
96	39.877110000	192.168.100.101	192.168.100.140	TLSV1.2	3390	Server Hello, Certificate, Server Key Exchange, Certificate Request
98	39.879931000	192.168.100.140	192.168.100.101	TLSV1.2	61	Alert (Level: Fatal, Description: Certificate Expired)

Frame 98: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface 0

Ethernet II, Src: f4:52:46:6d:5b:61 (f4:52:46:6d:5b:61), Dst: Sony\_5c:5a:6a (f0:bf:97:5c:5a:6a)

Internet Protocol Version 4, Src: 192.168.100.140 (192.168.100.140), Dst: 192.168.100.101 (192.168.100.101)

Transmission Control Protocol, Src Port: 47288 (47288), Dst Port: 5000 (5000), Seq: 213, Ack: 3337, Len: 7

Secure Sockets Layer

0000 f0 bf 97 5c 5a 6a f4 52 46 6d 5b 61 08 00 45 00 ...\\Zj.R Fm[a..E.  
0010 00 2f 34 b7 40 00 40 06 bb cf c0 a8 64 8c c0 a8 ./4.0@. ....d...  
0020 64 65 b8 13 88 4e 92 59 2a 2b 50 d8 f0 50 18 de..N. Y\*+P.-P.  
0030 00 10 a6 2f 00 00 15 03 03 00 02 02 2d ..../.... ....-

File: 'C:\Users\Bull\Desktop\Askey scs\_2025...' | Packets: 103 | Displayed: 25 (24.3%) | Load time: | Profile: Default

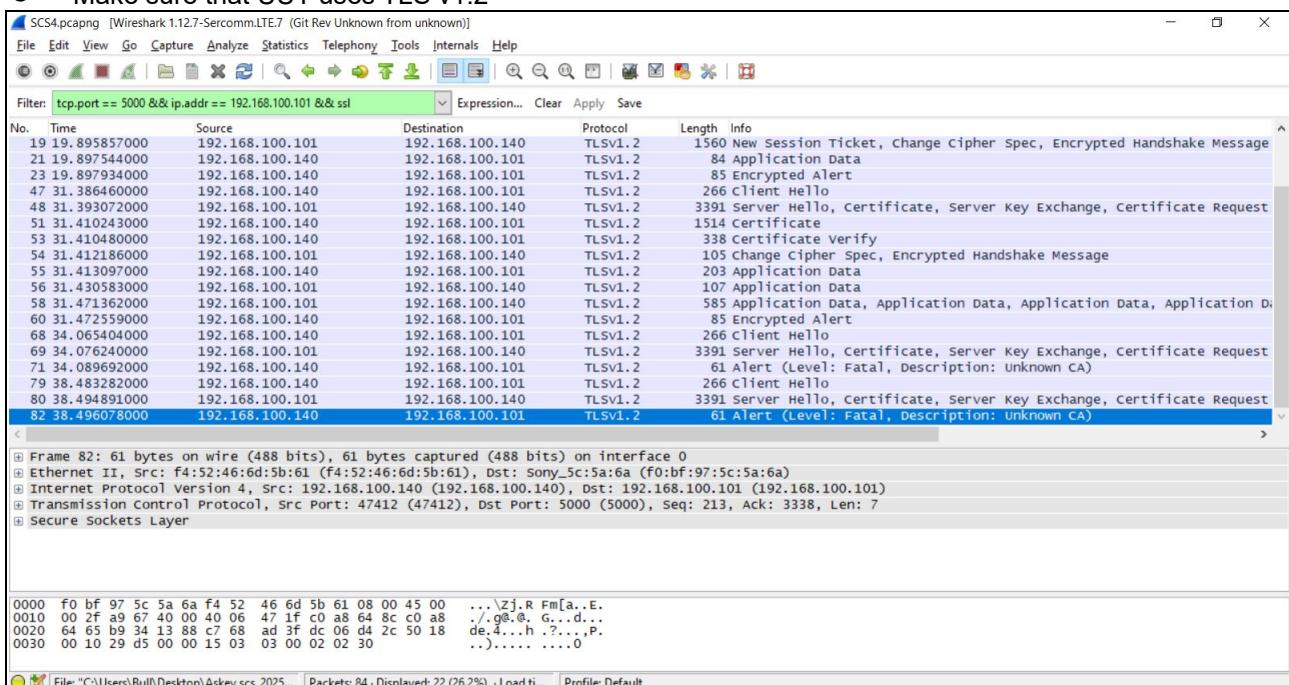
#### 4.6.6.4 WINNF.FT.C.SCS.4

■ Test Case ID : WINNF.FT.C.SCS.4  NA

#	Test Execution Steps	Results	
1	● UUT shall start CBSD-SAS communication with the security procedures	■ Pass	□ Fail
2	● 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.	■ Pass	□ Fail
3	UUT may retry for the security procedure which shall fail.	■ Pass	□ Fail
4	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: ● UUT shall not transmit RF	■ Pass	□ Fail

Wireshark Capture Example for Test Case :

- Make sure that UUT uses TLS v1.2



SCS4.pcapng [Wireshark 1.12.7-Sercomm.LTE.7 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: `tcp.port == 5000 && ip.addr == 192.168.100.101 && ssl`

No. Time Source Destination Protocol Length Info

19 19.895857000 192.168.100.101 192.168.100.140 TLSV1.2 1560 New Session Ticket, Change Cipher Spec, Encrypted Handshake Message

21 19.897544000 192.168.100.140 192.168.100.101 TLSV1.2 84 Application Data

23 19.897934000 192.168.100.140 192.168.100.101 TLSV1.2 85 Encrypted Alert

47 31.386460000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

48 31.393072000 192.168.100.101 192.168.100.140 TLSV1.2 3391 Server Hello, Certificate, Server Key Exchange, Certificate Request

51 31.410243000 192.168.100.140 192.168.100.101 TLSV1.2 1514 Certificate

53 31.410480000 192.168.100.140 192.168.100.101 TLSV1.2 338 Certificate Verify

54 31.412186000 192.168.100.101 192.168.100.140 TLSV1.2 105 Change Cipher Spec, Encrypted Handshake Message

55 31.413097000 192.168.100.140 192.168.100.101 TLSV1.2 203 Application Data

56 31.430583000 192.168.100.101 192.168.100.140 TLSV1.2 107 Application Data

58 31.471362000 192.168.100.101 192.168.100.140 TLSV1.2 585 Application Data, Application Data, Application Data, Application Data

60 31.472559000 192.168.100.140 192.168.100.101 TLSV1.2 85 Encrypted Alert

68 34.065404000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

69 34.076240000 192.168.100.101 192.168.100.140 TLSV1.2 3391 Server Hello, Certificate, Server Key Exchange, Certificate Request

71 34.089692000 192.168.100.140 192.168.100.101 TLSV1.2 61 Alert (Level: Fatal, Description: Unknown CA)

79 38.483282000 192.168.100.140 192.168.100.101 TLSV1.2 266 Client Hello

80 38.494891000 192.168.100.101 192.168.100.140 TLSV1.2 3391 Server Hello, Certificate, Server Key Exchange, Certificate Request

82 38.496078000 192.168.100.140 192.168.100.101 TLSV1.2 61 Alert (Level: Fatal, Description: Unknown CA)

Frame 82: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface 0

Ethernet II, Src: Sony\_Sc5a:6a (f4:52:46:6d:5b:61), Dst: Sony\_Sc5a:6a (f0:bf:97:5c:5a:6a)

Internet Protocol Version 4, Src: 192.168.100.140 (192.168.100.140), Dst: 192.168.100.101 (192.168.100.101)

Transmission Control Protocol, Src Port: 47412 (47412), Dst Port: 5000 (5000), Seq: 213, Ack: 3338, Len: 7

Secure Sockets Layer

0000 f0 bf 97 5c 5a 6a f4 52 46 6d 5b 61 08 00 45 00 ... \Zj.R Fm[a..E.

0010 00 2f a9 67 40 00 40 06 47 1f c0 a8 64 8c c0 a8 ./g@. @. G...d...

0020 64 65 b9 34 13 88 c7 68 ad 3f dc 06 d4 2c 50 18 de.4..h.?....,P.

0030 00 10 29 d5 00 00 15 03 03 00 02 02 30 ...). .... . . .

File: 'C:\Users\Bull\Desktop\Askey scs\_2025...' | Packets: 84 - Displayed: 22 (26.2%) - Load ti... | Profile: Default

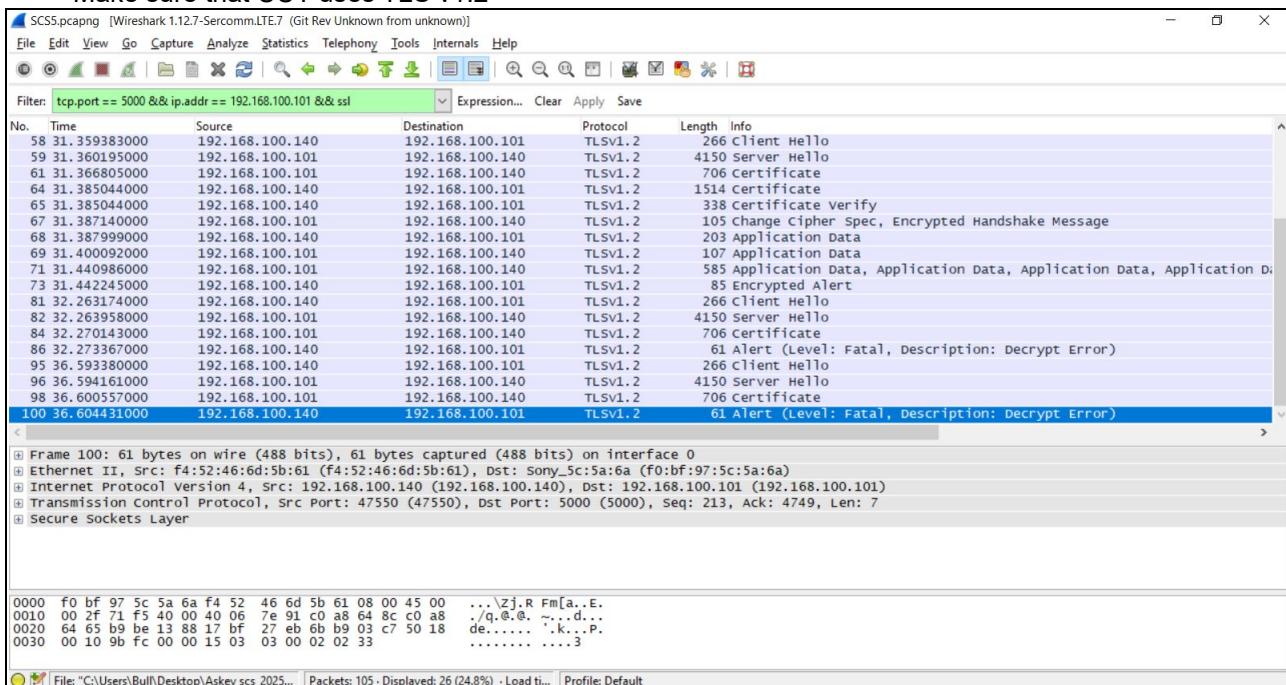
#### 4.6.6.5 WINNF.FT.C.SCS.5

■ Test Case ID : WINNF.FT.C.SCS.5  NA

#	Test Execution Steps	Results	
1	● UUT shall start CBSD-SAS communication with the security procedures	■ Pass	□ Fail
2	● 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.	■ Pass	□ Fail
3	UUT may retry for the security procedure which shall fail.	■ Pass	□ Fail
4	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: ● UUT shall not transmit RF	■ Pass	□ Fail

Wireshark Capture Example for Test Case :

- Make sure that UUT uses TLS v1.2



SCS5.pcapng [Wireshark 1.12.7-SercommLTE.7 (Git Rev Unknown from unknown)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: `tcp.port == 5000 && ip.addr == 192.168.100.101 && ssl`

No. Time Source Destination Protocol Length Info

58	31.359383000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
59	31.360195000	192.168.100.101	192.168.100.140	TLSV1.2	4150	Server Hello
61	31.366805000	192.168.100.101	192.168.100.140	TLSV1.2	706	Certificate
64	31.385044000	192.168.100.140	192.168.100.101	TLSV1.2	1514	Certificate
65	31.385044000	192.168.100.140	192.168.100.101	TLSV1.2	338	Certificate Verify
67	31.387140000	192.168.100.101	192.168.100.140	TLSV1.2	105	Change Cipher Spec, Encrypted Handshake Message
68	31.387999000	192.168.100.140	192.168.100.101	TLSV1.2	203	Application Data
69	31.400092000	192.168.100.101	192.168.100.140	TLSV1.2	107	Application Data
71	31.440986000	192.168.100.101	192.168.100.140	TLSV1.2	585	Application Data, Application Data, Application Data, Application Data
73	31.442245000	192.168.100.140	192.168.100.101	TLSV1.2	85	Encrypted Alert
81	32.263174000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
82	32.263958000	192.168.100.101	192.168.100.140	TLSV1.2	4150	Server Hello
84	32.270143000	192.168.100.101	192.168.100.140	TLSV1.2	706	Certificate
86	32.273367000	192.168.100.140	192.168.100.101	TLSV1.2	61	Alert (Level: Fatal, Description: Decrypt Error)
95	36.593380000	192.168.100.140	192.168.100.101	TLSV1.2	266	Client Hello
96	36.594161000	192.168.100.101	192.168.100.140	TLSV1.2	4150	Server Hello
98	36.600557000	192.168.100.101	192.168.100.140	TLSV1.2	706	Certificate
100	36.604431000	192.168.100.140	192.168.100.101	TLSV1.2	61	Alert (Level: Fatal, Description: Decrypt Error)

Frame 100: 61 bytes on wire (488 bits), 61 bytes captured (488 bits) on interface 0

Ethernet II, Src: f4:52:46:6d:5b:61 (f4:52:46:6d:5b:61), Dst: Sony\_5c:5a:6a (f0:bf:97:5c:5a:6a)

Internet Protocol Version 4, Src: 192.168.100.140 (192.168.100.140), Dst: 192.168.100.101 (192.168.100.101)

Transmission Control Protocol, Src Port: 47550 (47550), Dst Port: 5000 (5000), Seq: 213, Ack: 4749, Len: 7

Secure Sockets Layer

0000 f0 bf 97 5c 5a 6a f4 52 46 6d 5b 61 08 00 45 00 ... \zj.R Fm[a..E.  
0010 00 2f 71 f5 40 00 40 06 7e 91 c0 a8 64 8c c0 a8 ./q. @. ~..d..  
0020 64 65 b9 be 13 88 17 bf 27 eb 6b b9 03 c7 50 18 de.....k..P.  
0030 00 10 9b fc 00 00 15 03 03 00 02 02 33 .....3

File: 'C:\Users\Bull\Desktop\Askey scs\_2025...' | Packets: 105 | Displayed: 26 (24.8%) | Load time: 1.100s | Profile: Default

#### 4.6.7 CBSD RF Power Measurement

##### 4.6.7.1 WINNF.PT.C.HBT.1

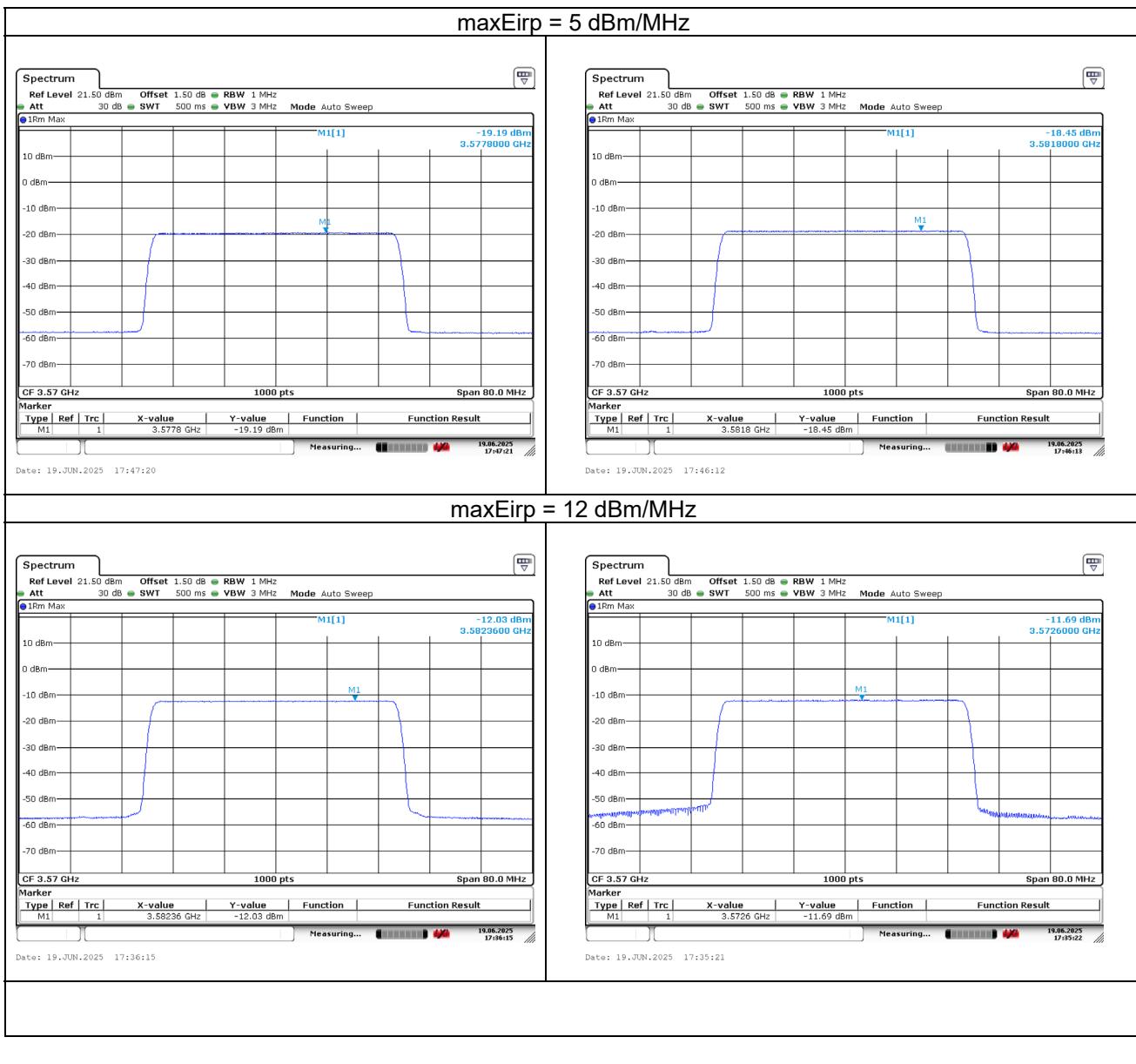
■ Test Case ID : WINNF.PT.C.HBT.1  NA

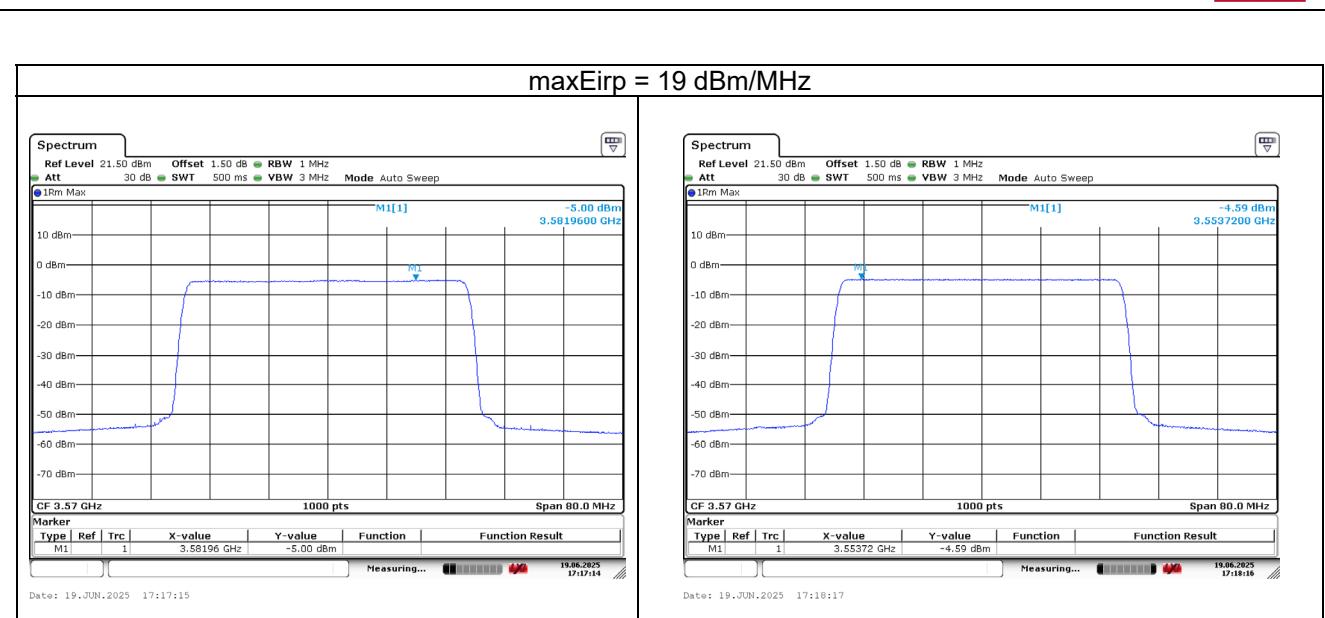
#	Test Execution Steps	Results	
1	<p>Ensure the following conditions are met for test entry:</p> <ul style="list-style-type: none"> <li>● UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness</li> <li>● UUT has registered with the SAS, with CBSD ID = C</li> <li>● UUT 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</li> </ul> <p><i>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</i></p>	--	--
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"> <li>● UUT sends Heartbeat Request, including:           <ul style="list-style-type: none"> <li>○ cbsdId = C</li> <li>○ grantId = G</li> </ul> </li> <li>● SAS Test Harness responds with Heartbeat Response, including:           <ul style="list-style-type: none"> <li>○ cbsdId = C</li> <li>○ grantId = G</li> <li>○ transmitExpireTime = current UTC time + 200 seconds</li> <li>○ responseCode = 0</li> </ul> </li> </ul>	--	--
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><i>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.</i></p>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Fail

## 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.

Channel	Freq. (MHz)	40MHz			Limit	Pass / Fail	
		Conducted Power Density (dBm/MHz)		Gain(dBi)			
		Chain 0	Chain 1	Total			
Middle	3570	-19.19	-18.45	-15.85	-1.40	5	Pass
Middle	3570	-12.03	-11.69	-8.83	5.62	12	Pass
Middle	3570	-5.00	-4.59	-1.78	12.67	19	Pass





## **5 Pictures of Test Arrangements**

Please refer to the attached file (Test Setup Photo).

## **6 WinnForum Logs**

Please refer to the attached file (Test Logs).

## Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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The address and road map of all our labs can be found in our web site also.

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