



Wireless test report – REP0023530-1TRFWL

Applicant:

Fujitsu Network communications, Inc.

Product name:

FujiCell

Model:

SC-B48-4x4-5W

Model variant:

N/A

FCC ID:

CFD1663

Specifications:

WINNF-TS-0122, Version 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)

WINNF-IN-00129, Version V1.0.0.0

WinnForum CBSD/DP UUT Security Test 6 Cases Tutorial

Date of issue: January 16, 2023

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ISED Test Site	2040B-3

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of WINNF-TS-0122 [Test and Certification for Citizens Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT)] .

Nemko San Diego has successfully completed the requirements to become a WinnForum CBRS Approved Lab and a CBRS Alliance Authorized Test Lab: <https://cbrs.wirelessinnovation.org/cbsd-certification-program>.

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Section 1. Report summary

1.1 Applicant and manufacturer

Company name	Fujitsu Network Communications, Inc.
Address	2801 Telecom Parkway
City	Richardson
Province/State	Texas
Postal/Zip code	75082
Country	USA

1.2 Test specifications

WINNF-TS-0122 Version 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)
WINNF-IN-00129, Version V1.0.0.0	WinnForum CBSD/DP UUT Security Test 6 Cases Tutorial

1.3 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard except as noted in section 1.4 below. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See "Summary of test results" for full details.

1.4 Exclusions

None

1.5 Test report revision history

Revision #	Date of issue	Details of changes made to test report
1TRFWL	January 16, 2023	Original report issued

Section 2. Summary of test results

Per Customer declaration the UUT support the following cases:

CBSD	x
Domain Proxy	
Single-step registration without CPI-signed data in registration message	
Single-step registration with CPI-signed data in registration message	
Multi-step registration	x
UUT supports RECEIVED_POWER_WITHOUT_GRANT measurement report type	
UUT supports RECEIVED_POWER_WITH_GRANT measurement report type	
UUT supports parameter change being made at the UUT and prior to sending a deregistration	

Note.- UUT is a CBSD Class B

2.1 WINNF-TS-0122 requirements test results

Section	Test case ID	Test case title	Applicable	Verdict
6.1.4.1.1	WINNF.FT.C.REG.1	Multi-Step registration	M	Pass
6.1.4.2.1	WINNF.FT.C.REG.8	Missing Required parameters (responseCode 102)	M	Pass
6.1.4.2.3	WINNF.FT.C.REG.10	Pending registration (responseCode 200)	M	Pass
6.1.4.2.5	WINNF.FT.C.REG.12	Invalid parameter (responseCode 103)	M	Pass
6.1.4.2.7	WINNF.FT.C.REG.14	Blacklisted CBSD (responseCode 101)	M	Pass
6.1.4.2.9	WINNF.FT.C.REG.16	Unsupported SAS protocol version (responseCode 100)	M	Pass
6.1.4.2.11	WINNF.FT.C.REG.18	Group Error (responseCode 201)	M	Pass
6.3.4.2.1	WINNF.FT.C.GRA.1	Unsuccessful Grant responseCode=400 (INTERFERENCE	M	Pass
6.3.4.2.2	WINNF.FT.C.GRA.2	Unsuccessful Grant responseCode=401	M	Pass
6.4.4.1.1	WINNF.FT.C.HBT.1	Heartbeat Success Case (first Heartbeat Response)	M	Pass
6.4.4.2.1	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	M	Pass
6.4.4.2.2	WINNF.FT.C.HBT.4	Heartbeat responseCode=500 (TERMINATED_GRANT)	M	Pass
6.4.4.2.3	WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	M	Pass
6.4.4.2.4	WINNF.FT.C.HBT.6	Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	M	Pass
6.4.4.2.5	WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAM)	M	Pass
6.4.4.3.1	WINNF.FT.C.HBT.9	Heartbeat Response Absent (First Heartbeat)	M	Pass
6.4.4.3.2	WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	M	Pass
6.4.4.4.1	WINNF.FT.C.HBT.11	Successful Grant Renewal in Heartbeat Test Case	O	Pass
6.6.4.1.1	WINNF.FT.C.RLQ.1	Successful Relinquishment	M	Pass
6.6.4.2.1	WINNF.FT.C.RLQ.3	Unsuccessful Relinquishment, responseCode=102	O	Pass
6.6.4.3.1	WINNF.FT.C.RLQ.5	Unsuccessful Relinquishment, responseCode=103	O	Pass
6.7.4.1.1	WINNF.FT.C.DRG.1	Successful Deregistration	M	Pass
6.7.4.2.1	WINNF.FT.C.DRG.3	Deregistration responseCode=102	O	Pass
6.7.4.3.1	WINNF.FT.C.DRG.5	Deregistration responseCode=103	O	Pass
6.8.4.1.1	WINNF.FT.C.SCS.1	Successful TLS connection between UUT and SAS Test Harness	M	Pass
6.8.4.2.1	WINNF.FT.C.SCS.2	TLS failure due to revoked certificate	M	Pass

Section 2:

Summary of test results



6.8.4.2.2	WINNF.FT.C.SCS.3	TLS failure due to expired server certificate	M	Pass
6.8.4.2.3	WINNF.FT.C.SCS.4	TLS failure when SAS Test Harness certificate is issue by unknown CA	M	Pass
6.8.4.2.4	WINNF.FT.C.SCS.5	TLS failure when certificate at the SAS Test Harness is corrupted	M	Pass
7.1.4.1.1	WINNF.PT.C.HBT .1	UUT RF Transmit Power Measurement	M	Pass

Notes:

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	January 9, 2023
Nemko sample ID number	0023530

3.2 EUT information

Product name	CAT-B Outdoor CBSD
Model	FujiCell SC-B48-4x4-5W
Model variant	N/A
FCC ID	CFD1663
Serial number	A194708151:0
Software Details of UUT	R3.2.1-VES-CBRS-Engineering-20221202_1
Hardware Details of UUT	GC01

3.3 Technical information

Frequency band	CBRS band: 3550–3700 MHz
Type of modulation	QPSK, QAM16, QAM64
BW	10 and 20 MHz
Power requirements	-36 to -58 VDC (-48VDC nominal)

3.4 Product description and theory of operation

The UUT is a Category B CBSD.

3.5 UUT exercise details

The UUT was loaded with software Version: R3.2.1-VES-CBRS-Engineering-20221202_1 & hardwareVersion GC01 for all testing.
All testing was performed with WinnForum SAS test harness version 1.0.0.3

3.6 EUT setup diagram

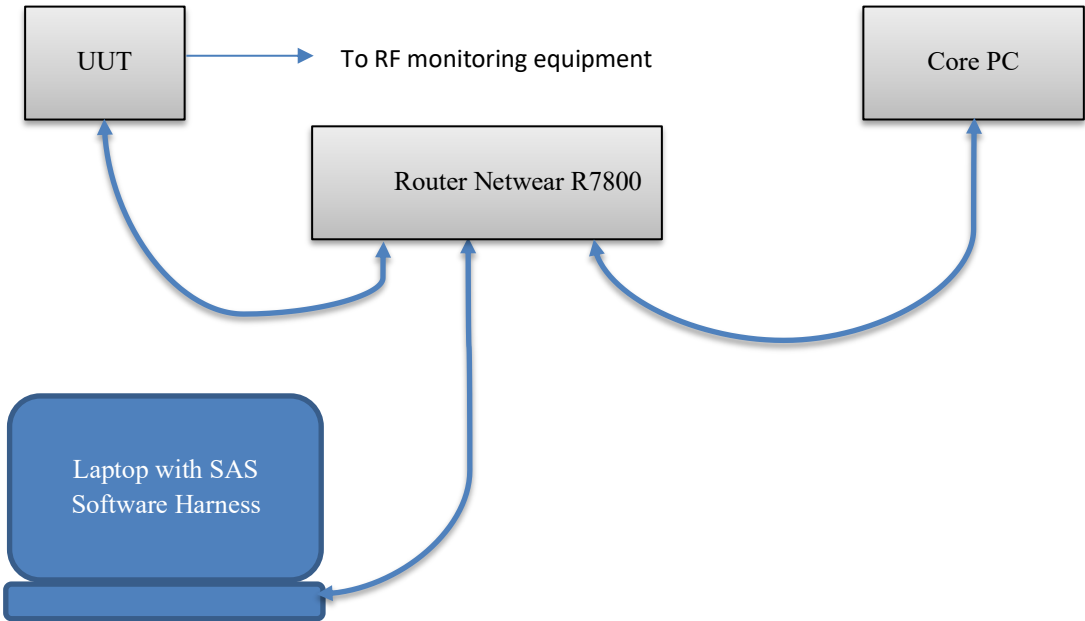


Figure 3.6-1: Setup diagram

3.7 EUT sub assemblies

Table 3.7-1: EUT sub assemblies + Auxiliary Equipment

Description	Brand name	Model/Part number	Serial number/System Name
Wireless Router	NETGEAR	R7800	4H46715D0039C
SAS Harness Laptop	DELL	Latitude E7470	NEM-HG38MC2/IT2303
Core PC	DELL	OPTIFLEX 9010	21683816533/IT1158

Section 4. Engineering considerations

4.1 Modifications incorporated in the EUT

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5. Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	860–1060 mbar

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages $\pm 5\%$, for which the equipment was designed.

Section 6. Measurement uncertainty

6.1 Uncertainty of measurement

UKAS Lab 34 and TIA-603-B have been used as guidance for measurement uncertainty reasonable estimations with regards to previous experience and validation of data. Nemko Canada, Inc. follows these test methods in order to satisfy ISO/IEC 17025 requirements for estimation of uncertainty of measurement for wireless products.

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of $K = 2$ with 95% certainty.

Table 6.1-1: Measurement uncertainty

Test name	Measurement uncertainty, dB
All antenna port measurements	0.55

Section 7. Test equipment

7.1 Test equipment list

Table 7.1-1: Equipment list

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
Spectrum Analyzer	Rohde & Schwarz	FSV3030	E1321	1 year	4/19/23
SAS Test Harness Test Bed Computer	DELL	Latitude E7470	IT2303	NCR	N/A
Core PC (Linux)	DELL	OPTIFLEX 9010	IT1158	NCR	N/A
SAS Test Harness Software	WinnForumq	1.0.0.3	N/A	NCR	N/A
Wireless Router	NETGEAR	R7800	N/A	NCR	N/A

Note: NCR - no calibration required, VOU - verify on use

Section 8. Testing data

8.1 6.1 CBSD Registration Process

8.1.1 Definitions and limits

Upon a successful response from the SAS, the CBSD will generate its next message to the SAS. The SAS Test Harness, when configured for verification of a particular CBSD-SAS protocol procedure (i.e. registration), will / may not respond to any subsequent messages sent by the CBSD once the procedure being tested is complete.

8.1.2 6.1.4.1.1 [WINNF.FT.C.REG.1] Multi-step registration:

8.1.2.1 Test date

Start date January 11, 2023

8.1.2.2 Observations, settings and special notes

None

8.1.2.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness • UUT is in the Unregistered state	-	-
	CBSD sends correct Registration request information, as specified in [n.5], to the SAS Test Harness:		
2	• The required userId, fcId 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.	☒ Pass	☐ Fail
3	SAS Test Harness sends a CBSD Registration Response as follows: - 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: UUT shall not transmit RF during monitoring time	☒ Pass	☐ Fail

8.1.3 6.1.4.2.1 [WINNF.FT.C.REG.8] Missing Required parameters (responseCode 102)

8.1.3.1 Test date

Start date January 11, 2023

8.1.3.2 Observations, settings and special notes

None

8.1.3.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: - UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode = R	-	-
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: UUT shall not transmit RF	☒ Pass	☐ Fail

8.1.4 6.1.4.2.3 [WINNF.FT.C.REG.10] Pending registration (responseCode 200)

8.1.4.1 Test date

Start date January 11, 2023

8.1.4.2 Observations, settings and special notes

None

8.1.4.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: - UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode (R)= 200	-	-
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: UUT shall not transmit RF	☒ Pass	☐ Fail

8.1.5 6.1.4.2.5 [WINNF.FT.C.REG.12] Invalid parameter (responseCode 103)

8.1.5.1 Test date

Start date January 11, 2023

8.1.5.2 Observations, settings and special notes

None

8.1.5.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode (R)= 103	-	-
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: • UUT shall not transmit RF	☒ Pass	☐ Fail

8.1.6 6.1.4.2.7 [WINNF.FT.C.REG.14] Blacklisted CBSD (responseCode 101)

8.1.6.1 Test date

Start date January 11, 2023

8.1.6.2 Observations, settings and special notes

None

8.1.6.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode (R) = 101	-	-
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: • UUT shall not transmit RF	☒ Pass	☐ Fail

8.1.7 6.1.4.2.9 [WINNF.FT.C.REG.16] Unsupported SAS protocol version (responseCode 100)

8.1.7.1 Test date

Start date January 11, 2023

8.1.7.2 Observations, settings and special notes

None

8.1.7.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: - UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode (R) = 100	-	-
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: UUT shall not transmit RF	☒ Pass	☐ Fail

8.1.8 6.1.4.2.11 [WINNF.FT.C.REG.18] Group Error (responseCode 201)

8.1.8.1 Test date

Start date January 11, 2023

8.1.8.2 Observations, settings and special notes

None

8.1.8.3 Test data

The registrationRequest groupingParam is an optional field and will be validated by the SAS Test Harness if provided in the Registration Request message. This test will validate that the CBSD will remain Unregistered after receiving responseCode 201.

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with the 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: - SAS response does not include cbsdId - responseCode (R) = 201	-	-
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: • UUT shall not transmit RF	☒ Pass	☐ Fail

8.2 6.3 CBSD Spectrum Grant Process

8.2.1 Definitions and limits

The test cases in this section are for verifying the handling of CBSD for various responseCodes in response from the-SAS Test Harness.
The actions taken in response of any responseCode are beyond the scope of this document unless mentioned in the test procedure.

8.2.2 6.3.4.2.1 [WINNF.FT.C.GRA.1] Unsuccessful Grant responseCode=400 (INTERFERENCE)

8.2.2.1 Test date

Start date January 11, 2023

8.2.2.2 Observations, settings and special notes

None

8.2.2.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness, with cbsdId = C	–	–
2	UUT sends valid Grant Request.	–	–
3	SAS Test Harness sends a Grant Response message, including • cbsdId=C • responseCode = R	–	–
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: • UUT shall not transmit RF	☒	☐

8.2.3 6.3.4.2.2 [WINNF.FT.C.GRA.2] Unsuccessful Grant responseCode=401 (GRANT_CONFLICT)

8.2.3.1 Test date

Start date January 11, 2023

8.2.3.2 Observations, settings and special notes

None

8.2.3.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness, with cbsdId = C	–	–
2	UUT sends valid Grant Request.	–	–
3	SAS Test Harness sends a Grant Response message, including • cbsdId=C • responseCode (R) = 401	–	–
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: • UUT shall not transmit RF	☒	☐

8.3 6.4 CBSD Heart Beat Process

8.3.1 Definitions and limits

The test cases in this section test the success path for the Heartbeat process. The SAS Test Harness shall use a heartBeatInterval of 60 seconds, unless specifically provided in the test case.

This test case incorporates validation of successful Spectrum Inquiry messaging (if present) and successful Grant messaging into the Heartbeat Success case.

8.3.2 6.4.4.1.1 [WINNF.FT.D.HBT.1] Heartbeat Success Case (first Heartbeat Response)

8.3.2.1 Test date

Start date January 11, 2023

8.3.2.2 Observations, settings and special notes

None

8.3.2.3 Test data

Step	Test Execution Steps	Pass	Fail
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 a Spectrum Inquiry Request, go to step 3 • If message is a Grant Request, go to step 5	–	–
3	UUT sends a Spectrum Inquiry Request. Validate: Verify Spectrum Inquiry Request message is formatted correctly for each CBSD, including for CBSDi, i={1,2}: • cbsdId = C • List of frequencyRange objects sent by UUT are within the CBRS frequency range	☒	☐
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 a Grant Request. Validate: • cbsdId = C • maxEIRP is at or below the limit appropriate for CBSD category as defined by Part 96 • operationFrequencyRange, Fi, sent by UUT is a valid range within the CBRS band	☒	☐
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"	☒	☐
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: • cbsdId = C • grantId = G • operationState = "AUTHORIZED" and SAS Test Harness responds with a Heartbeat Response message including the following parameters, for CBSDi • cbsdId = C • grantId = G • transmitExpireTime = current UTC time + 200 seconds • responseCode = 0	☒	☐
10	Monitor the RF output of the UUT from start of test until UUT transmission commences. Monitor the RF output of the UUT from start of test until RF 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 Fi.	☒	☐

8.3.3 6.4.4.2.1 [WINNF.FT.C.HBT.3] Heartbeat responseCode=105 (DEREGISTER)

8.3.3.1 Test date

Start date January 11, 2023

8.3.3.2 Observations, settings and special notes

None

8.3.3.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: - o valid cbsdId = C - o valid grantId = G - o grant is for frequency range F, power P - o 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	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: • cbsdId = C • grantId = G • operationState = "AUTHORIZED"	☒	☐
3	SAS Test Harness sends a Heartbeat Response message, including the following parameters: • cbsdId = C • grantId = G • transmitExpireTime = T = Current UTC time • responseCode = 105 (DEREGISTER)	–	–
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: • UUT shall stop transmission within (T + 60 seconds) of completion of step 3	☒	☐

8.3.4 6.4.4.2.2 [WINNF.FT.C.HBT.4] Heartbeat responseCode=500 (TERMINATED_GRANT)

8.3.4.1 Test date

Start date January 11, 2023

8.3.4.2 Observations, settings and special notes

None

8.3.4.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: ○ 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 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:	-	-
2	• cbsdId = C • grantId = G • operationState = "AUTHORIZED"	☒ Pass	☐ Fail
3	SAS Test Harness sends a Heartbeat Response message, including the following parameters: • cbsdId=C • grantId = G • transmitExpireTime = T = Current UTC time • responseCode = 105 (DEREGISTER)	-	-
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 from start of test until 60 seconds after Step 3 is complete. This is the end of the test. Verify: • UUT shall stop transmission within (T + 60 seconds) of completion of step 3	☒ Pass	☐ Fail

8.3.5 6.4.4.2.3 [WINNF.FT.C.HBT.5] Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response

8.3.5.1 Test date

Start date January 11, 2023

8.3.5.2 Observations, settings and special notes

None

8.3.5.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: ○ 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) UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is formatted correctly, including: • cbsdId = C • grantId = G • operationState = "GRANTED"	-	-
2	SAS Test Harness sends a Heartbeat Response message, including the following parameters: • cbsdId=C • grantId = G • transmitExpireTime = T = Current UTC time • responseCode = 105 (DEREGISTER)	Pass	Fail
3	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	-	-
4	Monitor the SAS-CBSD interface. Verify either A OR B occurs: A. UUT sends a Heartbeat Request message. Ensure message is sent within latest specified heartbeatInterval, and is correctly formatted with parameters: • cbsdId = C • grantId = G • operationState = "GRANTED" B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters: • cbsdId = C • grantId = G	Pass	Fail
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 does not transmit at any time		

8.3.6 6.4.4.2.4 [WINNF.FT.C.HBT.6] Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response

8.3.6.1 Test date

Start date January 11, 2023

8.3.6.2 Observations, settings and special notes

None

8.3.6.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: ○ valid cbsId = 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 , power P UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:	-	-
2	• cbsId = C • grantId = G • operationState = "AUTHORIZED"	☒ Pass	☐ Fail
3	SAS Test Harness sends a Heartbeat Response message, including the following parameters: • cbsId=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	Monitor the SAS-CBSD interface. Verify either A OR B occurs: A. UUT sends a Heartbeat Request message. Ensure message is sent within latest specified heartbeatInterval, and is correctly formatted with parameters: • cbsId = C • grantId = G • operationState = "GRANTED" B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters: • cbsId = C • grantId = G 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 stop transmission within (T + 60 seconds) of completion of step 3	☒ Pass	☐ Fail

8.3.7 6.4.4.2.5 [WINNF.FT.C.HBT.7] Heartbeat responseCode=502 (UNSYNC_OP_PARAM)

8.3.7.1 Test date

Start date	January 11, 2023
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8.3.7.2 Observations, settings and special notes

None

8.3.7.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: - UUT has registered successfully with SAS Test Harness - UUT has a valid single grant as follows: - 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 , power P UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including:	-	-
2	- cbsdId = C - grantId = G - operationState = "AUTHORIZED"	☒ Pass	☐ Fail
3	SAS Test Harness sends a Heartbeat Response message, including the following parameters: - cbsdId=C - grantId = G - transmitExpireTime = T = current UTC time - responseCode = 502 (UNSYNC_OP_PARAM)	-	-
4	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	-	-
5	Monitor the SAS-CBSD interface. Verify: - UUT sends a Grant Relinquishment Request message. Verify message is correctly formatted with parameters: - cbsdId = C - grantId = G 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. - UUT shall stop transmission within (T + 60 seconds) of completion of step 3	☒ Pass	☐ Fail

8.3.8 6.4.4.3.1 [WINNF.FT.C.HBT.9] Heartbeat Response Absent (First Heartbeat)

8.3.8.1 Test date

Start date January 11, 2023

8.3.8.2 Observations, settings and special notes

None

8.3.8.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: - o valid cbsdId = C - o valid grantId = G - o grant is for frequency range F, power P - o 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	UUT sends a Heartbeat Request message. Ensure Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including: • cbsdId = C • grantId = G • operationState = “GRANTED”	☒	☐
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: • At any time during the test, UUT shall not transmit on RF interface	☒	☐

8.3.9 6.4.4.3.2 [WINNF.FT.C.HBT.10] Heartbeat Response Absent (Subsequent Heartbeat)

8.3.9.1 Test date

Start date January 11, 2023

8.3.9.2 Observations, settings and special notes

None

8.3.9.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: ◦ 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	UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within the latest specified heartbeatInterval, and is formatted correctly, including: • cbsdId = C • grantId = G • operationState = "AUTHORIZED"	☒	☐
3	SAS Test Harness sends a Heartbeat Response message, with the following parameters: • cbsdId = C • grantId = G • transmitExpireTime = current UTC time + 200 seconds • responseCode = 0	–	–
4	After completion of Step 3, SAS Test Harness does not respond to any further messages from UUT	–	–
5	Monitor the RF output of the UUT. Verify: • UUT shall stop all transmission on RF interface within (transmitExpireTime + 60 seconds), using the transmitExpireTime sent in Step 3.	☒	☐

8.3.10 6.4.4.4.1 [WINNF.FT.C.HBT.11] Successful Grant Renewal in Heartbeat Test Case

8.3.10.1 Test date

Start date January 11, 2023

8.3.10.2 Observations, settings and special notes

None

8.3.10.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has registered successfully with SAS Test Harness • UUT has a valid single grant as follows: ○ 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: ○ 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	UUT sends a Heartbeat Request message. If Heartbeat Request message contains grantRenew = TRUE, go to Step 6, else go to Step 3.	-	-
3	Verify Heartbeat Request message is sent within the latest specified heartbeatInterval, and is formatted correctly, including: • cbsdId = C • grantId = G • operationState = "AUTHORIZED"	☒ Pass	☐ Fail
4	SAS Test Harness sends a Heartbeat Response message, with the following parameters: • cbsdId = C • grantId = G • transmitExpireTime = current UTC + 200 seconds • grantExpireTime = same as Step 1 • responseCode = 0	-	-
5	Go to Step 2		
6	Verify Heartbeat Request message is sent within the latest specified heartbeatInterval, and is formatted correctly, including: - cbsdId = C - grantId = G - operationState = "AUTHORIZED" - grantRenew = TRUE	☒ Pass	☐ Fail
6		-	-
7	SAS Test Harness sends a Heartbeat Response message, with the following parameters: • cbsdId = C • grantId = G • grantExpireTime = UTC time set far in the future • transmitExpireTime = current UTC time + 200 seconds • responseCode = 0	☒ Pass	☐ Fail
8	Continue to respond to any subsequentHeartbeat Request from CBSD with Heartbeat Response with the following parameters: - cbsdID=C - grantID=G - transmitExpireTime=same as Step 7	-	-
9	Monitor RF transmission of UUT from start of test until Tgrant_expire + 60 seconds and ensure UUT continues to transmit throughout the time period.	☒ Pass	☐ Fail

8.4 6.6 CBSD Relinquishment Process

8.4.1 Definitions and limits

This section provides test steps, condition and procedures to test the conformance of the CBSD implementation for the CBSD Relinquishment Procedure. A precondition is the CBSD has successfully discovered the SAS it wants to communicate with.

8.4.2 6.6.4.1.1 [WINNF.FT.C.RLQ.1] Successful Relinquishment

8.4.2.1 Test date

Start date January 11, 2023

8.4.2.2 Observations, settings and special notes

None

8.4.2.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • 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. Invoke trigger to relinquish UUT Grant from the SAS Test Harness	-	-
2	UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically: • cbsdId = C • GrantId = G	☒ Pass	☐ Fail
3	SAS Test Harness shall approve the request with a Relinquishment Response message with parameters: • cbsdId = C • grantId = G • responseCode = 0	-	-
4	• After completion of step 3, SAS Test Harness will not provide any additional 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: • UUT shall stop RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request	☒ Pass	☐ Fail

8.4.3 6.6.4.2.1 [WINNF.FT.C.RLQ.3] Unsuccessful Relinquishment, responseCode=102

8.4.3.1 Test date

Start date January 11, 2023

8.4.3.2 Observations, settings and special notes

None

8.4.3.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • 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. Invoke trigger to relinquish UUT Grant from the SAS Test Harness	-	-
2	UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically: • cbsdId = C • GrantId = G	-	-
3	SAS Test Harness shall send a Relinquishment Response message with parameters: • cbsdId = C • grantId = G • responseCode = R	-	-
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: • UUT stopped RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request	☒ Pass	☐ Fail

8.4.4 6.6.4.3.1 [WINNF.FT.C.RLQ.5] Unsuccessful Relinquishment, responseCode=103

8.4.4.1 Test date

Start date January 11, 2023

8.4.4.2 Observations, settings and special notes

None

8.4.4.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • 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. Invoke trigger to relinquish UUT Grant from the SAS Test Harness UUT sends a Relinquishment Request message. Verify message contains all required parameters properly formatted, and specifically:	-	-
2	• cbsdId = C • GrantId = G	-	-
3	SAS Test Harness shall send a Relinquishment Response message with parameters: • cbsdId = C • grantId = G • responseCode = 103 • responseData = "grantId"	-	-
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: • UUT stopped RF transmission at any time between triggering the relinquishment and UUT sending the relinquishment request	☒ Pass	☐ Fail

8.5 6.7 CBSD Deregistration Process

8.5.1 Definitions and limits

A Deregistration request is issued by a CBSD to request a SAS to deregister the CBSD from the SAS. A Deregistration Request Message issued by a CBSD is provided in [n.5], Section 10.11.

In the Deregistration Response message, the SAS should echo back an array of DeregistrationResponse object. Each deregistrationResponse object consists of a cbsdId and a responseCode. If the deregistration request was successful, the responseCode should be set to 0, otherwise responseCode is set to appropriate error value. The deregistrationResponse Message and the deregistrationResponse object are provided in [n.5], Section 10.12.

Each test generates a CBSD deregistration request and validates the CBSD takes the appropriate actions following the SAS deregistration response.

These deregistration test cases assume the CBSD is the source (operator initiated, for instance reset site). Deregistrations triggered by the SAS in a response message with a responseCode of 105 are covered in other test cases.

8.5.1 6.7.4.1.1 [WINNF.FT.DRG.1] Successful Deregistration

8.5.1.1 Test date

Start date January 11, 2023

8.5.1.2 Observations, settings and special notes

None

8.5.1.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: - 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. Invoke trigger to deregister UUT from the SAS Test Harness	-	-
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	-	-
3	UUT sends Deregistration Request to SAS Test Harness with cbsdId = C.	☒ Pass	☐ Fail
4	SAS Test Harness shall approve the request with a Deregistration Response message with parameters: - cbsdId = C - responseCode = 0	-	-
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	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: - UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: A. UUT sending a Registration Request message, as this is not mandatory B. UUT sending a Deregistration Request message	☒ Pass	☐ Fail

8.5.2 6.7.4.2.1 [WINNF.FT.C.DRG.3] Deregistration responseCode=102

8.5.2.1 Test date

Start date January 11, 2023

8.5.2.2 Observations, settings and special notes

None

8.5.2.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • 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. Invoke trigger to deregister UUT from the SAS Test Harness	-	-
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	-	-
3	UUT sends Deregistration Request to SAS Test Harness with cbsdId = C.	-	-
4	The SAS Test Harness sends the Deregistration Response Message to UUT with: • No cbsdId • responseCode = 102	-	-
5	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.	-	-
6	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: • UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: C. UUT sending a Registration Request message, as this is not mandatory D. UUT sending a Deregistration Request message	☒ Pass	☐ Fail

8.5.3 6.7.4.3.1 [WINNF.FT.C.DRG.5] Deregistration responseCode=103

8.5.3.1 Test date

Start date January 11, 2023

8.5.3.2 Observations, settings and special notes

None

8.5.3.3 Test data

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • 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. Invoke trigger to deregister UUT from the SAS Test Harness	-	-
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	-	-
3	UUT sends Deregistration Request to SAS Test Harness with cbsdId = C.	-	-
4	The SAS Test Harness sends the Deregistration Response Message to UUT with: • No cbsdId • responseCode = 103 • responseData = "cbsdId"	-	-
5	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.	-	-
6	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: • UUT stopped RF transmission at any time between triggering the deregistration and either A OR B occurs: E. UUT sending a Registration Request message, as this is not mandatory F. UUT sending a Deregistration Request message	☒ Pass	☐ Fail

8.6 6.8 CBSD Security Validation

8.6.1 Definitions and limits

This section provides test steps, condition and procedures to test the conformance of the CBSD implementation for the Security Establishment Procedure. A precondition is the CBSD has successfully discovered the SAS it wants to communicate with. In all test cases under this category, the TLS connection is established successfully between the SAS Test Harness and CBSD. A pre-condition for these tests is that Certificates at CBSD and SAS Test Harness are correct and valid. The security procedure is irrespective of the procedures defined for the SAS Test Harness to CBSD communication.

8.6.2 6.8.4.1.1 [WINNF.FT.C.SCS.1] Successful TLS connection between UUT and SAS Test Harness

8.6.2.1 Test date

Start date January 11, 2023

8.6.2.2 Observations, settings and special notes

None

8.6.2.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: - Wireshark "Protocol" column shows "TLSv1.2" - CBSD/DP UUT sends "Client Hello" message to WinnForum SAS Test Harness WinnForum SAS Test Harness sends "Server Hello" message to CBSD/DP UUT. - The "Server Hello" message "Handshake Protocol" IE includes the "Cipher Suite" IE. - Verify the "Cipher Suite" shown in Wireshark is one of the following: 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 "Application Data" messages are exchanged between WinnForum SAS Test Harness and CBSD/DP UUT.	☒	☐
2	Verify that WinnForum SAS Test Harness Command Prompt shows Registration Request Message from CBSD/DP UUT	☒	☐

8.6.3 6.8.4.2.1 [WINNF.FT.C.SCS.2] TLS failure due to revoked certificate

8.6.3.1 Test date

Start date January 11, 2023

8.6.3.2 Observations, settings and special notes

None

8.6.3.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: - Wireshark "Protocol" column shows "TLSv1.2" - CBSD/DP UUT sends "Client Hello" message to WinnForum SAS Test Harness - WinnForum SAS Test Harness sends "Server Hello" message to CBSD/DP UUT. - The "Server Hello" message "Handshake Protocol" IE includes the "Cipher Suite" IE. - Verify the "Cipher Suite" shown in Wireshark is one of the following: 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 - CBSD/DP UUT performs DNS resolution for the FQDN of the CRL server, or OCSP server, or both listed in the X.509v3 extensions described above for the X.509 certificate of SAS Test Harness. - CBSD/DP UUT: - Download the CRL file according to the full URI listed in X.509v3 extension of "CRL Distribution Points" described above. OR - Send to the OCSP server an OCSP "Request" message containing the certificate serial number, and OCSP server replies. OR - Both CRL file download and OCSP transaction as described above. "Application Data" messages are not seen between WinnForum SAS Test Harness and CBSD/DP UUT. - CBSD/DP UUT may send a TLS "Alert" message to WinnForum SAS Test Harness notifying of rejecting the TLS connection before attempting to establish the TLS connection again.	☒	☐
2	Verify that WinnForum SAS Test Harness Command Prompt does not show any Request Message from CBSD/DP UUT	☒	☐

8.6.4 6.8.4.2.2 [WINNF.FT.C.SCS.3] TLS failure due to expired server certificate

8.6.4.1 Test date

Start date January 11, 2023

8.6.4.2 Observations, settings and special notes

None

8.6.4.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: - Wireshark "Protocol" column shows "TLSv1.2" - CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness - WInnForum SAS Test Harness sends "Server Hello" message to CBSD/DP UUT. - The "Server Hello" message "Handshake Protocol" IE includes the "Cipher Suite" IE. - Verify the "Cipher Suite" shown in Wireshark is one of the following: - 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 "Application Data" messages are exchanged between WInnForum SAS Test Harness and CBSD/DP UUT.	☒	☐
2	Verify that WInnForum SAS Test Harness Command Prompt does not show any Request Message from CBSD/DP UUT	☒	☐

Section 8	Testing data
Test name	6.8.4.2.3 [WINNF.FT.C.SCS.4] TLS failure when SAS Test Harness certificate is issued by an unknown CA
Specification	WINNF-TS-0122-V1.0.0 and WINNF-IN-00129-V1.0.0.0



8.6.5 6.8.4.2.3 [WINNF.FT.C.SCS.4] TLS failure when SAS Test Harness certificate is issued by an unknown CA

8.6.5.1 Test date

Start date January 11, 2023

8.6.5.2 Observations, settings and special notes

None

8.6.5.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: - Wireshark "Protocol" column shows "TLSv1.2" - CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness - WInnForum SAS Test Harness sends "Server Hello" message to CBSD/DP UUT. - The "Server Hello" message "Handshake Protocol" IE includes the "Cipher Suite" IE. - Verify the "Cipher Suite" shown in Wireshark is one of the following: - 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 "Application Data" messages are not seen between WInnForum SAS Test Harness and CBSD/DP UUT. - CBSD/DP UUT may send a TLS "Alert" message to WInnForum SAS Test Harness notifying of rejecting the TLS connection before attempting to establish the TLS connection again.	☒	☐
2	Verify that WInnForum SAS Test Harness Command Prompt does not show any Request Message from CBSD/DP UUT	☒	☐

8.6.6 6.8.4.2.4 [WINNF.FT.C.SCS.5] TLS failure when certificate at the SAS Test Harness is corrupted

8.6.6.1 Test date

Start date January 11, 2023

8.6.6.2 Observations, settings and special notes

None

8.6.6.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: - Wireshark "Protocol" column shows "TLSv1.2" - CBSD/DP UUT sends "Client Hello" message to WinnForum SAS Test Harness - WinnForum SAS Test Harness sends "Server Hello" message to CBSD/DP UUT. - The "Server Hello" message "Handshake Protocol" IE includes the "Cipher Suite" IE. - Verify the "Cipher Suite" shown in Wireshark is one of the following: 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 "Application Data" messages are not seen between WinnForum SAS Test Harness and CBSD/DP UUT. - CBSD/DP UUT may send a TLS "Alert" message to WinnForum SAS Test Harness notifying of rejecting the TLS connection before attempting to establish the TLS connection again.	☒	☐
2	Verify that WinnForum SAS Test Harness Command Prompt does not show any Request Message from CBSD/DP UUT	☒	☐

8.7 7.1 CBSD RF Power Measurement

8.7.1 Definitions and limits

This section provides test steps, condition and procedures to demonstrate conformance of the CBSD to limitations on transmit power due to maxEirp setting of AUTHORIZED grants for that CBSD.

8.7.2 7.1.4.1.1 [WINNF.PT.C.HBT.1] UUT RF Transmit Power Measurement

8.7.2.1 Test date

Start date January 11, 2023

8.7.2.2 Observations, settings and special notes

CBSD Vendor declaration of parameters:

Maximum rated power of UUT (EIRP, dBm/MHz)	EIRP:43dBm/10MHz
Occupied bandwidth for the test case	20 MHz
maxEirp values for the test case	47 dBm/10MHz
Antenna gain	6dBi (The transmitter output signals are completely uncorrelated)

General Information

- The EUT, Fujicel 3.55-3.7GHz, Band 48, is part of an LTE broadband fixed cellular wireless access system. The system provides a radio link between an end-user (a subscriber) and a network to give high-speed data access. The Fujicel transceiver/receiver supports up to 64 QAM modulation. The Fujicel Band 48 is equipped with a 6dBi external antenna. Advanced Antenna Techniques 4x4 and 2x2 MIMO are supported. The maximum RF output power (not including antenna gain) is 37.0 dBm per antenna port (with 6dBi antenna) and it can be reduced by software to support high-gain antennas.
- In 2x2 MIMO mode, antennas 1 and 2 serve one sector and antennas 3 and 4 serve another sector.
- The Fujicel is installed outdoors. The Fujicel provides subscribers with "always-on" Internet, high speed data only, or data and voice (VoIP) services and is configured with a unique base station reference number, preventing the LTE UE from relocating to another subscriber premises without authorization.
- The Fujicel defined as Category B CBSD (Citizens Broadband Radio Service Device)
- The transmitter output signals are completely uncorrelated.
- The sectors are either non-overlapping by operation on different frequency channels or by different sectors coverage without overlapping of antenna beams

Max EIRP for various Operating Modes

Carrier Mode	MIMO	BW (MHz)	FREQ	RF#1 (dBm)	RF#2 (dBm)	RF#3 (dBm)	RF#4 (dBm)	Antenna Gain (dBi)	EIRP (dBm/20MHz)	EIRP* (dBm/10MHz)	Limit (dBm/10MHz)
Single	2x2	10	Any	37.0	37.0	NA	NA	6.0	NA	43.0	47.0
Single	2x2	20	Any	37.0	37.0	NA	NA	6.0	43	40.48	47.0
Dual	2x2	10	Any	37.0	37.0	37.0	37.0	6.0	NA	43.0	47.0
Dual	2x2	20	Any	37.0	37.0	37.0	37.0	6.0	43	40.48	47.0

*The transmitter output signals are completely uncorrelated

For 10MHz, EIRP (dBm/10MHz) = Max SA reading (RF#1/RF#2 or RF#3/RF#4) + Antenna Gain

For 20MHz, EIRP (dBm/10MHz) = Max SA reading (RF#1/RF#2 or RF#3/RF#4) – 10Log[OBW(MHz)/10MHz] + Antenna Gain
= Max SA reading (RF#1/RF#2 or RF#3/RF#4) – 2.52] + Antenna Gain

Max EIRP for various Operating Modes

Carrier Mode	MIMO	BW (MHz)	FREQ	RF#1 (dBm)	RF#2 (dBm)	RF#3 (dBm)	RF#4 (dBm)	Antenna Gain (dBi)	EIRP (dBm/20MHz)	EIRP* (dBm/10MHz)	Limit (dBm/10MHz)
Single	4x4	10	Any	37.0	37.0	37.0	37.0	6.0	NA	43.0	47.0
Single	4x4	20	Any	37.0	37.0	37.0	37.0	6.0	43	40.48	47.0

The transmitter output signals are completely uncorrelated

For 10MHz, EIRP (dBm/10MHz) = Max SA reading (RF#1/RF#2/RF#3/RF#4) + Antenna Gain

For 20MHz, EIRP (dBm/10MHz) = Max SA reading (RF#1/RF#2/RF#3/RF#4) – 10Log[OBW(MHz)/10MHz] + Antenna Gain
= Max SA reading (RF#1/RF#2/RF#3/RF#4) – 2.52] + Antenna Gain

8.7.2.3 Test data

To demonstrate compliance, the following parameters shall be chosen:

- lowFrequency, highFrequency of the grant. These values should correspond to the bandwidth of operation for the test, appropriate to the OBW of signal under test. Where a UUT is capable of multiple bandwidth operation modes, a single bandwidth operation mode shall be chosen for this test.

The test case below shall be performed for each of the maxEirp values: {P1, P2, ... PN}, determining a pass or fail for each. The UUT must comply with the grant maxEirp parameter for each test. Choice of maxEirp values {P1, P2, ... PN} should be made with knowledge of any limitations on UUT power control steps.

The UUT should be configured during the test to apply the maxEirp values to the entire occupied bandwidth and is implicitly expected to not exceed the dBm/MHz grant requirement.

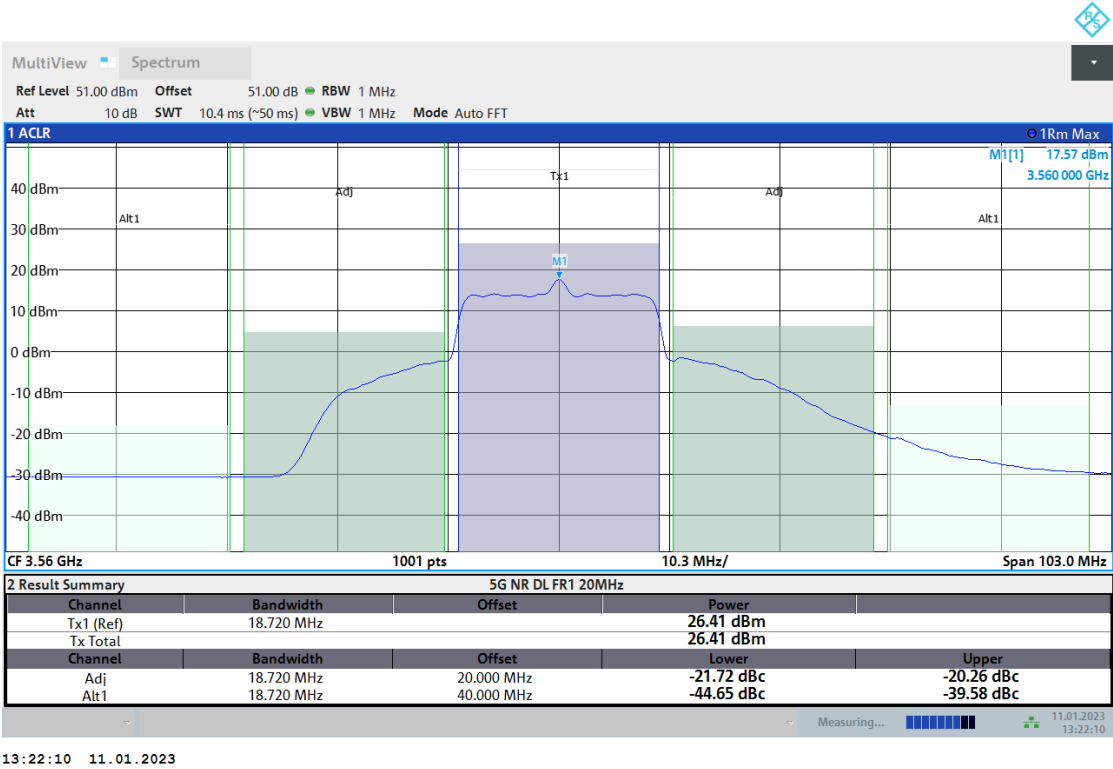
The test execution steps below will yield a single measurement case. The test steps are to be repeated for each power measurement step, P_i , $i = \{1 \dots N\}$.

#	Test Execution Steps	Results	
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with the SAS Test Harness • UUT has registered with the SAS, with CBSID ID = C • UUT has a single valid grant G with parameters {lowFrequency = FL, highFrequency = FH, maxEirp = P_i}, with grant in AUTHORIZED state, and grantExpireTime set to a value far past the duration of this test case <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> 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: • UUT sends Heartbeat Request, including: ○ cbsdId = C ○ grantId = G	-	-
2	• SAS Test Harness responds with Heartbeat Response, including: ○ cbsdId = C ○ grantId = G ○ transmitExpireTime = current UTC time + 200 seconds ○ responseCode = 0	-	-
3	Tester performs power measurement on RF interface(s) of UUT, and verifies it complies with the maxEirp setting, P_i. The RF measurement method is out of scope of this document, but may include additional configuration of the UUT, as required, to fulfil the requirements of the power measurement method. <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>	☒ Pass	☐ Fail



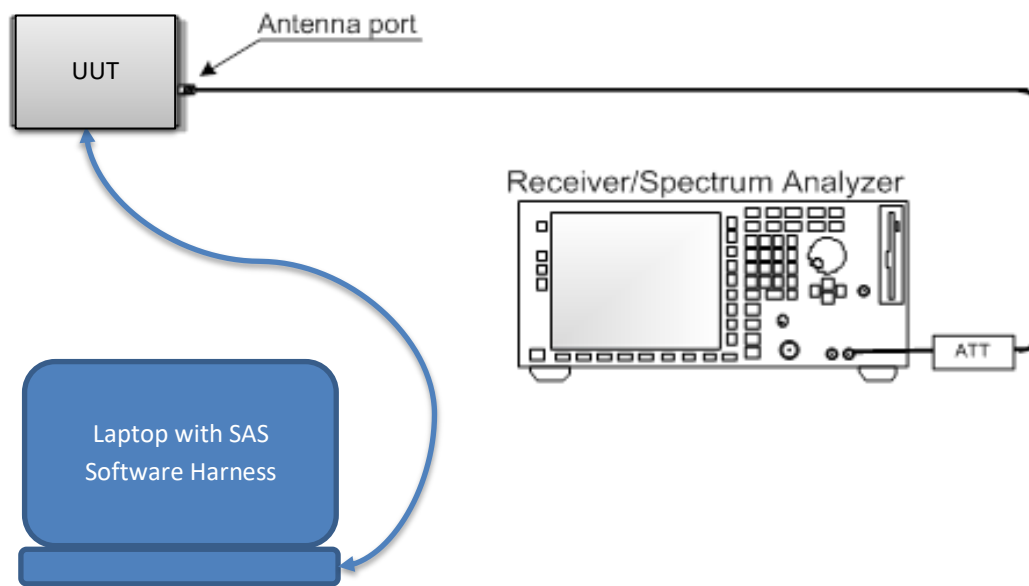
Power measurement results –

maxEIRP	Measured power (dBm)	Antenna gain (dBi)	EIRP (dBm)	EIRP (mW)
P1	+26.41	6	32.41	1741.8



Section 9. Block diagrams of test set-ups

9.1 Test equipment set-up



Section 10. Log files library

10.1 Log file for test case ID: WINNF.FT.C.REG.1

2023-01-11T17:39:24.180Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T17:39:24.180Z - INFO - the selected test from the user : WINNF.FT.C.REG.1 is starting now

2023-01-11T17:42:33.223Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T17:42:33.292Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T17:42:34.486Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T17:42:34.510Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T17:42:49.963Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T17:43:02.338Z - INFO - The final result of the test : WINNF.FT.C.REG.1 is - passed and :the additional comments for the current test are : no Tx observed

10.2 Log file for test case ID: WINNF.FT.C.REG.8

2023-01-11T17:44:01.470Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T17:44:01.471Z - INFO - the selected test from the user : WINNF.FT.C.REG.8 is starting now

2023-01-11T17:46:48.427Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T17:46:48.461Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 102
    }
  }
]
```

2023-01-11T17:46:49.627Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T17:46:49.628Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T17:46:56.032Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T17:47:35.196Z - INFO - The final result of the test : WINNF.FT.C.REG.8 is - passed and :the additional comments for the current test are : No Tx Observed

10.3 Log file for test case ID: WINNF.FT.C.REG.10

2023-01-11T17:56:27.813Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T17:56:27.815Z - INFO - the selected test from the user : WINNF.FT.C.REG.10 is starting now

2023-01-11T17:59:26.858Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T17:59:26.914Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 200
    }
  }
]
```

2023-01-11T17:59:28.250Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T17:59:28.250Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:00:05.684Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:00:16.788Z - INFO - The final result of the test : WINNF.FT.C.REG.10 is - passed and :the additional comments for the current test are : No Tx Observed

10.4 Log file for test case ID: WINNF.FT.C.REG.12

2023-01-11T18:23:13.821Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:23:13.822Z - INFO - the selected test from the user : WINNF.FT.C.REG.12 is starting now

2023-01-11T18:26:17.576Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:26:17.651Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 103
    }
  }
]
```

2023-01-11T18:26:19.263Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T18:26:19.265Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:27:01.092Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:27:08.750Z - INFO - The final result of the test : WINNF.FT.C.REG.12 is - passed and :the additional comments for the current test are : No Tx Observed

10.5 Log file for test case ID: WINNF.FT.C.REG.14

2023-01-11T18:28:19.910Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:28:19.911Z - INFO - the selected test from the user : WINNF.FT.C.REG.14 is starting now

2023-01-11T18:31:01.940Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:31:01.971Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 101
    }
  }
]
```

2023-01-11T18:31:03.578Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T18:31:03.578Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:31:19.944Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:31:28.038Z - INFO - The final result of the test : WINNF.FT.C.REG.14 is - passed and :the additional comments for the current test are : No Tx Observed

10.6 Log file for test case ID: WINNF.FT.C.REG.16

2023-01-11T18:32:03.240Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:32:03.242Z - INFO - the selected test from the user : WINNF.FT.C.REG.16 is starting now

2023-01-11T18:35:02.661Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:35:02.710Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 100
    }
  }
]
```

2023-01-11T18:35:04.107Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T18:35:04.108Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:35:11.084Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:35:19.753Z - INFO - The final result of the test : WINNF.FT.C.REG.16 is - passed and :the additional comments for the current test are : No Tx Observed

10.7 Log file for test case ID: WINNF.FT.C.REG.18

2023-01-11T18:36:11.997Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:36:11.999Z - INFO - the selected test from the user : WINNF.FT.C.REG.18 is starting now

2023-01-11T18:39:10.849Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:39:10.891Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "response": {
      "responseCode": 201
    }
  }
]
```

2023-01-11T18:39:12.665Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T18:39:12.670Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:39:19.211Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:39:25.476Z - INFO - The final result of the test : WINNF.FT.C.REG.18 is - passed and :the additional comments for the current test are : No Tx Observed

10.8 Log file for test case ID: WINNF.FT.C.GRA.1

2023-01-11T18:46:44.698Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:46:44.700Z - INFO - the selected test from the user : WINNF.FT.C.GRA.1 is starting now

2023-01-11T18:49:43.028Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:49:43.084Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T18:49:43.130Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T18:49:43.151Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
```

```

        "lowFrequency": 3550000000
      },
      "ruleApplied": "FCC_PART_96"
    }
  ],
  "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
  "response": {
    "responseCode": 0
  }
}
}
}
2023-01-11T18:49:43.194Z - INFO - grant request from CBRS : {
  "grantRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "operationParam": {
        "maxEirp": 37,
        "operationFrequencyRange": {
          "highFrequency": 3570000000,
          "lowFrequency": 3550000000
        }
      }
    }
  ]
}
}
2023-01-11T18:49:43.211Z - INFO - engine sent successfully, the response to CBRS : {
  "grantResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "response": {
        "responseCode": 400
      }
    }
  ]
}
}
2023-01-11T18:49:44.520Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T18:49:44.525Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :
2023-01-11T18:50:38.809Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n
2023-01-11T18:50:46.306Z - INFO - The final result of the test : WINNF.FT.C.GRA.1 is - passed and :the additional comments for the current test are : No Tx
Observed

```

10.9 Log file for test case ID: WINNF.FT.C.GRA.2

2023-01-11T18:51:40.687Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:51:40.687Z - INFO - the selected test from the user : WINNF.FT.C.GRA.2 is starting now

2023-01-11T18:54:44.316Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:54:44.401Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T18:54:44.446Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T18:54:44.460Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T18:54:44.500Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T18:54:44.512Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 401
    }
  }
]
```

2023-01-11T18:54:45.667Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T18:54:45.670Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :

2023-01-11T18:54:53.502Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n

2023-01-11T18:55:02.762Z - INFO - The final result of the test : WINNF.FT.C.GRA.2 is - passed and :the additional comments for the current test are : No Tx Observed

10.10 Log file for test case ID: WINNF.FT.C.HBT.1

2023-01-11T18:55:52.970Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T18:55:52.970Z - INFO - the selected test from the user : WINNF.FT.C.HBT.1 is starting now

2023-01-11T18:58:52.415Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T18:58:52.510Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T18:58:52.563Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T18:58:52.575Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T18:58:52.617Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T18:58:52.631Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T18:58:52Z",
    "grantId": "968743407",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:01:44.536Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "968743407",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T19:01:44.578Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:05:04Z"
    }
  ]
}
2023-01-11T19:02:33.618Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:02:33.628Z - INFO - Time interval between two heartbeat request messages is: 49.083, limit is: 65.0
2023-01-11T19:02:33.644Z - INFO - grantRenew received in HBT request message
2023-01-11T19:02:33.648Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T19:02:33Z",
      "grantId": "968743407",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:05:53Z"
    }
  ]
}
2023-01-11T19:03:22.618Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:03:22.618Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T19:03:22.624Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T19:06:42Z"
}
]
}
2023-01-11T19:04:11.617Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:04:11.618Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T19:04:11.625Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:07:31Z"
    }
  ]
}
2023-01-11T19:05:00.618Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:05:00.621Z - INFO - Time interval between two heartbeat request messages is: 49.002, limit is: 65.0
2023-01-11T19:05:00.631Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:08:20Z"
    }
  ]
}
2023-01-11T19:05:49.615Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",

```

```

        "operationState": "AUTHORIZED"
    }
}
}
2023-01-11T19:05:49.630Z - INFO - Time interval between two heartbeat request messages is: 48.997, limit is: 65.0
2023-01-11T19:05:49.653Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "968743407",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:09:09Z"
    }
  ]
}
}
2023-01-11T19:05:51.289Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T19:05:51.290Z - INFO - the question is : Did CBSD1 transmit power prior to AUTHORIZED state (first successful HBT response)? please choose one of the answers :
2023-01-11T19:10:52.881Z - INFO - for the question : Did CBSD1 transmit power prior to AUTHORIZED state (first successful HBT response)? , the user choose n
2023-01-11T19:10:52.882Z - INFO - the question is : Did CBSD1 transmit only within the frequency range specified in its grantRequest message? please choose one of the answers :
2023-01-11T19:11:19.878Z - INFO - for the question : Did CBSD1 transmit only within the frequency range specified in its grantRequest message? , the user choose y
2023-01-11T19:13:00.119Z - INFO - The final result of the test : WINNF.FT.C.HBT.1 is - passed and :the additional comments for the current test are : EUT Tx after the Authorized state and within the Authorized Frequency range

```

10.11 Log file for test case ID: WINNF.FT.C.HBT.3

2023-01-11T19:25:35.684Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T19:25:35.686Z - INFO - the selected test from the user : WINNF.FT.C.HBT.3 is starting now

2023-01-11T19:28:30.473Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T19:28:30.618Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:28:30.667Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T19:28:30.681Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:28:30.720Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T19:28:30.736Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T19:28:30Z",
    "grantId": "271468956",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:31:22.385Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "271468956",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T19:31:22.414Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:34:42Z"
    }
  ]
}
2023-01-11T19:32:11.461Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:32:11.466Z - INFO - Time interval between two heartbeat request messages is: 49.076, limit is: 65.0
2023-01-11T19:32:11.482Z - INFO - grantRenew received in HBT request message
2023-01-11T19:32:11.483Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T19:32:11Z",
      "grantId": "271468956",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:35:31Z"
    }
  ]
}
2023-01-11T19:33:00.461Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:33:00.467Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T19:33:00.480Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T19:36:20Z"
}
]
}
2023-01-11T19:33:49.461Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:33:49.466Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T19:33:49.483Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "271468956",
      "response": {
        "responseCode": 105
      },
      "transmitExpireTime": "2023-01-11T19:33:49Z"
    }
  ]
}
2023-01-11T19:33:50.822Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T19:33:50.852Z - INFO - the question is : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 105? please choose one of the answers :
2023-01-11T19:34:17.315Z - INFO - for the question : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 105? , the user choose y
2023-01-11T19:34:57.303Z - INFO - The final result of the test : WINNF.FT.C.HBT.3 is - passed and :the additional comments for the current test are : EUT Stop Tx within 5 seconds after Response code 105

```

10.12 Log file for test case ID:WINNF.FT.C.HBT.4

2023-01-11T19:35:46.799Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T19:35:46.801Z - INFO - the selected test from the user : WINNF.FT.C.HBT.4 is starting now

2023-01-11T19:38:29.700Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T19:38:29.789Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:38:29.838Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T19:38:29.865Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:38:29.911Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T19:38:29.936Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T19:38:29Z",
    "grantId": "646640595",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T19:41:21.707Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "646640595",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T19:41:21.719Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:44:41Z"
    }
  ]
}
2023-01-11T19:42:10.763Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:42:10.769Z - INFO - Time interval between two heartbeat request messages is: 49.057, limit is: 65.0
2023-01-11T19:42:10.782Z - INFO - grantRenew received in HBT request message
2023-01-11T19:42:10.786Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T19:42:10Z",
      "grantId": "646640595",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:45:30Z"
    }
  ]
}
2023-01-11T19:42:59.760Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:42:59.765Z - INFO - Time interval between two heartbeat request messages is: 48.998, limit is: 65.0
2023-01-11T19:42:59.775Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T19:46:19Z"
}
]
}
2023-01-11T19:43:48.760Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:43:48.767Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T19:43:48.782Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:47:08Z"
    }
  ]
}
2023-01-11T19:44:37.759Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T19:44:37.759Z - INFO - Time interval between two heartbeat request messages is: 48.997, limit is: 65.0
2023-01-11T19:44:37.765Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T19:47:57Z"
    }
  ]
}
2023-01-11T19:45:26.760Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",

```

```

        "operationState": "AUTHORIZED"
    }
}
}
2023-01-11T19:45:26.766Z - INFO - Time interval between two heartbeat request messages is: 49.003, limit is: 65.0
2023-01-11T19:45:26.786Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "646640595",
      "response": {
        "responseCode": 500
      },
      "transmitExpireTime": "2023-01-11T19:45:26Z"
    }
  ]
}
2023-01-11T19:45:28.622Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T19:45:28.631Z - INFO - the question is : Did the CBSD1 stop RF transmission within 60 seconds of receiving Heartbeat response with
responseCode = 500? please choose one of the answers :
2023-01-11T19:45:44.665Z - INFO - for the question : Did the CBSD1 stop RF transmission within 60 seconds of receiving Heartbeat response with
responseCode = 500? , the user choose y
2023-01-11T19:46:09.862Z - INFO - The final result of the test : WINNF.FT.C.HBT.4 is - passed and :the additional comments for the current test are : EUT Stop
Tx within 5 seconds after response code 500

```

10.13 Log file for test case ID: WINNF.FT.C.HBT.5

```

2023-01-11T20:24:01.713Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13
2023-01-11T20:24:01.720Z - INFO - the selected test from the user : WINNF.FT.C.HBT.5 is starting now
2023-01-11T20:27:03.736Z - INFO - registration request from CBRS : {
  "registrationRequest": [
    {
      "airInterface": {
        "radioTechnology": "E_UTRA"
      },
      "cbsdCategory": "B",
      "cbsdInfo": {
        "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
        "hardwareVersion": "GC01",
        "model": "FujiCell SC-B48-4x4-5W",
        "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
        "vendor": "Fujitsu Network Communications"
      },
      "cbsdSerialNumber": "A194708151:0",
      "fccId": "FNC-TEST-FCCID",
      "installationParam": {
        "antennaAzimuth": 0,
        "antennaBeamwidth": 360,
        "antennaDowntilt": 0,
        "antennaGain": 6,
        "indoorDeployment": false
      },
      "measCapability": [],
      "userId": "pGPWTZ"
    }
  ]
}
2023-01-11T20:27:03.848Z - INFO - engine sent successfully, the response to CBRS : {
  "registrationResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "response": {
        "responseCode": 0
      }
    }
  ]
}
2023-01-11T20:27:03.895Z - INFO - spectrumInquiry request from CBRS : {
  "spectrumInquiryRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "inquiredSpectrum": [
        {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        }
      ]
    }
  ]
}
2023-01-11T20:27:03.918Z - INFO - engine sent successfully, the response to CBRS : {
  "spectrumInquiryResponse": [
    {
      "availableChannel": [
        {
          "channelType": "GAA",
          "frequencyRange": {
            "highFrequency": 3700000000,

```

```

        "lowFrequency": 3550000000
      },
      "ruleApplied": "FCC_PART_96"
    }
  ],
  "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
  "response": {
    "responseCode": 0
  }
}
}
}
2023-01-11T20:27:03.959Z - INFO - grant request from CBRS : {
  "grantRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "operationParam": {
        "maxEirp": 37,
        "operationFrequencyRange": {
          "highFrequency": 3570000000,
          "lowFrequency": 3550000000
        }
      }
    }
  ]
}
}
2023-01-11T20:27:03.976Z - INFO - engine sent successfully, the response to CBRS : {
  "grantResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "channelType": "GAA",
      "grantExpireTime": "2023-01-18T20:27:03Z",
      "grantId": "587063429",
      "heartbeatInterval": 60,
      "response": {
        "responseCode": 0
      }
    }
  ]
}
}
2023-01-11T20:29:55.628Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "587063429",
      "operationState": "GRANTED"
    }
  ]
}
}
2023-01-11T20:29:55.647Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "587063429",
      "response": {
        "responseCode": 501
      },
      "transmitExpireTime": "2023-01-11T20:29:55Z"
    }
  ]
}
}
2023-01-11T20:30:54.691Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {

```

```

    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "587063429",
    "operationState": "GRANTED"
  }
}
}
2023-01-11T20:30:54.694Z - INFO - Time interval between two heartbeat request messages is: 59.063, limit is: 65.0
2023-01-11T20:30:54.706Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "587063429",
      "response": {
        "responseCode": 501
      },
      "transmitExpireTime": "2023-01-11T20:30:54Z"
    }
  ]
}
2023-01-11T20:30:55.957Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T20:30:55.974Z - INFO - the question is : Did the CBSD transmit at any time during the test? please choose one of the answers :
2023-01-11T20:31:07.757Z - INFO - for the question : Did the CBSD transmit at any time during the test? , the user choose n
2023-01-11T20:31:21.404Z - INFO - The final result of the test : WINNF.FT.C.HBT.5 is - passed and :the additional comments for the current test are : No Tx
during all test

```

10.14 Log file for test case ID: WINNF.FT.C.HBT.6

2023-01-11T21:19:08.858Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T21:19:08.858Z - INFO - the selected test from the user : WINNF.FT.C.HBT.6 is starting now

2023-01-11T21:22:07.154Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T21:22:07.187Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:22:07.239Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T21:22:07.246Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:22:07.292Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T21:22:07.299Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T21:22:07Z",
    "grantId": "135835891",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:24:58.940Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "135835891",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T21:24:58.969Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T21:28:18Z"
    }
  ]
}
2023-01-11T21:25:48.009Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:25:48.012Z - INFO - Time interval between two heartbeat request messages is: 49.069, limit is: 65.0
2023-01-11T21:25:48.016Z - INFO - grantRenew received in HBT request message
2023-01-11T21:25:48.016Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T21:25:48Z",
      "grantId": "135835891",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T21:29:08Z"
    }
  ]
}
2023-01-11T21:26:37.010Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:26:37.013Z - INFO - Time interval between two heartbeat request messages is: 49.001, limit is: 65.0
2023-01-11T21:26:37.025Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "response": {

```

```

        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T21:29:57Z"
    }
  ]
}
2023-01-11T21:27:26.012Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:27:26.016Z - INFO - Time interval between two heartbeat request messages is: 49.001, limit is: 65.0
2023-01-11T21:27:26.029Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "response": {
        "responseCode": 501
      },
      "transmitExpireTime": "2023-01-11T21:27:26Z"
    }
  ]
}
2023-01-11T21:27:32.036Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891"
    }
  ]
}
2023-01-11T21:27:32.055Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "135835891",
      "response": {
        "responseCode": 0
      }
    }
  ]
}
2023-01-11T21:27:33.348Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T21:27:33.368Z - INFO - the question is : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 501? please choose one of the answers :
2023-01-11T21:27:41.660Z - INFO - for the question : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 501? , the user choose y
2023-01-11T21:28:10.028Z - INFO - The final result of the test : WINNF.FT.C.HBT.6 is - passed and :the additional comments for the current test are : EUT Stop Tx withing 5 seconds from response code 501

```

10.15 Log file for test case ID: WINNF.FT.C.HBT.7

2023-01-11T21:37:00.256Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T21:37:00.256Z - INFO - the selected test from the user : WINNF.FT.C.HBT.7 is starting now

2023-01-11T21:39:58.154Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T21:39:58.263Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:39:58.309Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T21:39:58.329Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:39:58.374Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T21:39:58.390Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T21:39:58Z",
    "grantId": "77855953",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:42:50.773Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "77855953",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T21:42:50.786Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T21:46:10Z"
    }
  ]
}
2023-01-11T21:43:39.832Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:43:39.834Z - INFO - Time interval between two heartbeat request messages is: 49.058, limit is: 65.0
2023-01-11T21:43:39.842Z - INFO - grantRenew received in HBT request message
2023-01-11T21:43:39.842Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T21:43:39Z",
      "grantId": "77855953",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T21:46:59Z"
    }
  ]
}
2023-01-11T21:44:28.831Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:44:28.835Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T21:44:28.845Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T21:47:48Z"
}
}
}
2023-01-11T21:45:17.831Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T21:45:17.832Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T21:45:17.839Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "response": {
        "responseCode": 502
      },
      "transmitExpireTime": "2023-01-11T21:45:17Z"
    }
  ]
}
2023-01-11T21:45:23.846Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953"
    }
  ]
}
2023-01-11T21:45:23.861Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "77855953",
      "response": {
        "responseCode": 0
      }
    }
  ]
}
2023-01-11T21:45:24.891Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T21:45:24.911Z - INFO - the question is : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 502? please choose one of the answers :
2023-01-11T21:45:32.549Z - INFO - for the question : Did the CBSD stop RF transmission within 60 seconds of receiving Heartbeat response with responseCode = 502? , the user choose y
2023-01-11T21:46:11.315Z - INFO - The final result of the test : WINNF.FT.C.HBT.7 is - passed and :the additional comments for the current test are : EUT Stop TX within 5 seconds after response code 502

```

10.16 Log file for test case ID: WINNF.FT.C.HBT.9

2023-01-11T21:55:45.029Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T21:55:45.029Z - INFO - the selected test from the user : WINNF.FT.C.HBT.9 is starting now

2023-01-11T21:58:26.661Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T21:58:26.734Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:58:26.786Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T21:58:26.799Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T21:58:26.838Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T21:58:26.849Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T21:58:26Z",
    "grantId": "125395864",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:01:18.454Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "125395864",
    "operationState": "GRANTED"
  }
]
```

```
]
}
2023-01-11T22:04:38.507Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "125395864",
      "response": {
        "responseCode": 501
      },
      "transmitExpireTime": "2023-01-11T22:04:38Z"
    }
  ]
}
2023-01-11T22:04:39.947Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T22:04:39.984Z - INFO - the question is : Were there RF transmissions from the CBSD during the test? please choose one of the answers :
2023-01-11T22:05:15.966Z - INFO - for the question : Were there RF transmissions from the CBSD during the test? , the user choose n
2023-01-11T22:05:29.249Z - INFO - The final result of the test : WINNF.FT.C.HBT.9 is - passed and :the additional comments for the current test are : no Tx
during all test
```

10.17 Log file for test case ID: WINNF.FT.C.HBT.10

2023-01-11T22:06:38.667Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T22:06:38.668Z - INFO - the selected test from the user : WINNF.FT.C.HBT.10 is starting now

2023-01-11T22:09:38.809Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T22:09:38.920Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:09:38.974Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T22:09:38.993Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:09:39.033Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T22:09:39.048Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T22:09:39Z",
    "grantId": "823569076",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:12:31.049Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "823569076",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T22:12:31.072Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:15:51Z"
    }
  ]
}
2023-01-11T22:13:20.119Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:13:20.125Z - INFO - Time interval between two heartbeat request messages is: 49.071, limit is: 65.0
2023-01-11T22:13:20.138Z - INFO - grantRenew received in HBT request message
2023-01-11T22:13:20.141Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T22:13:20Z",
      "grantId": "823569076",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:16:40Z"
    }
  ]
}
2023-01-11T22:14:09.122Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:14:09.128Z - INFO - Time interval between two heartbeat request messages is: 49.003, limit is: 65.0
2023-01-11T22:14:09.137Z - INFO - LAST HBT RESPONSE THAT SET TRANSMIT_EXPIRE_TIME WAS AT: 2023-01-11 22:13:20.121000
2023-01-11T22:14:19.217Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",

```

```

        "operationState": "AUTHORIZED"
    }
}
}
2023-01-11T22:14:19.217Z - INFO - request message received while HBT is absent, sleep 194 sec before responding
2023-01-11T22:14:29.316Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:14:29.316Z - INFO - request message received while HBT is absent, sleep 184 sec before responding
2023-01-11T22:14:39.413Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:14:39.413Z - INFO - request message received while HBT is absent, sleep 174 sec before responding
2023-01-11T22:14:49.509Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:14:49.509Z - INFO - request message received while HBT is absent, sleep 164 sec before responding
2023-01-11T22:14:59.601Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:14:59.601Z - INFO - request message received while HBT is absent, sleep 154 sec before responding
2023-01-11T22:15:09.706Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:15:09.706Z - INFO - request message received while HBT is absent, sleep 144 sec before responding

```

```

2023-01-11T22:15:19.789Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:15:19.789Z - INFO - request message received while HBT is absent, sleep 134 sec before responding
2023-01-11T22:15:29.875Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:15:29.875Z - INFO - request message received while HBT is absent, sleep 124 sec before responding
2023-01-11T22:15:39.980Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:15:39.980Z - INFO - request message received while HBT is absent, sleep 114 sec before responding
2023-01-11T22:15:50.062Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:15:50.062Z - INFO - request message received while HBT is absent, sleep 104 sec before responding
2023-01-11T22:16:00.104Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:16:00.104Z - INFO - request message received while HBT is absent, sleep 94 sec before responding
2023-01-11T22:16:10.253Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "823569076",

```

```

        "operationState": "AUTHORIZED"
    }
}
}
2023-01-11T22:16:10.255Z - INFO - request message received while HBT is absent, sleep 83 sec before responding
2023-01-11T22:16:20.359Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:16:20.361Z - INFO - request message received while HBT is absent, sleep 73 sec before responding
2023-01-11T22:16:30.359Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:16:30.361Z - INFO - request message received while HBT is absent, sleep 63 sec before responding
2023-01-11T22:16:40.536Z - INFO - heartbeat request from CBRS : {
    "heartbeatRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "operationState": "AUTHORIZED"
        }
    ]
}
}
2023-01-11T22:16:40.536Z - INFO - request message received while HBT is absent, sleep 53 sec before responding
2023-01-11T22:16:50.539Z - INFO - relinquishment request from CBRS : {
    "relinquishmentRequest": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076"
        }
    ]
}
}
2023-01-11T22:16:50.539Z - INFO - request message received while HBT is absent, sleep 43 sec before responding
2023-01-11T22:17:29.161Z - INFO - engine sent successfully, the response to CBRS : {
    "heartbeatResponse": [
        {
            "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
            "grantId": "823569076",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2023-01-11T22:17:29Z"
        }
    ]
}
}

```

```

}
2023-01-11T22:17:30.653Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T22:17:30.654Z - INFO - the question is : Did the CBSD stop RF transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? please choose one of the answers :
2023-01-11T22:17:33.227Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.259Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.321Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.368Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.368Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.428Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.520Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.555Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.555Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.619Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.710Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.802Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.881Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:33.989Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:34.066Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:17:34.115Z - INFO - engine sent successfully, the response to CBRS : "list index out of range"
2023-01-11T22:19:55.625Z - INFO - for the question : Did the CBSD stop RF transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? , the user choose y
2023-01-11T22:21:44.967Z - INFO - The final result of the test : WINNF.FT.C.HBT.10 is - passed and :the additional comments for the current test are : EUT
Stop TX less than (transmitExpireTime + 60seconds) or 200+54 seconds

```

10.18 Log file for test case ID: WINNF.FT.C.HBT.11

2023-01-11T22:23:16.497Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T22:23:16.499Z - INFO - the selected test from the user : WINNF.FT.C.HBT.11 is starting now

2023-01-11T22:25:33.035Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T22:25:33.108Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:25:33.151Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T22:25:33.161Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:25:33.209Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T22:25:33.220Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-11T22:31:33Z",
    "grantId": "40953374",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:28:24.381Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "40953374",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T22:28:24.391Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:31:33Z"
    }
  ]
}
2023-01-11T22:29:13.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:29:13.434Z - INFO - Time interval between two heartbeat request messages is: 49.05, limit is: 65.0
2023-01-11T22:29:13.447Z - INFO - grantRenew received in HBT request message
2023-01-11T22:29:13.451Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-11T22:35:13Z",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:32:33Z"
    }
  ]
}
2023-01-11T22:30:02.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:30:02.434Z - INFO - Time interval between two heartbeat request messages is: 48.998, limit is: 65.0
2023-01-11T22:30:02.443Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T22:33:22Z"
}
]
}
2023-01-11T22:30:51.428Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:30:51.430Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T22:30:51.447Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:34:11Z"
    }
  ]
}
2023-01-11T22:31:40.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:31:40.434Z - INFO - Time interval between two heartbeat request messages is: 49.002, limit is: 65.0
2023-01-11T22:31:40.444Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:35:00Z"
    }
  ]
}
2023-01-11T22:32:29.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",

```

```

        "operationState": "AUTHORIZED"
    }
}
}
2023-01-11T22:32:29.434Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T22:32:29.444Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:35:13Z"
    }
  ]
}
2023-01-11T22:33:18.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:33:18.431Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T22:33:18.437Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:35:13Z"
    }
  ]
}
2023-01-11T22:34:07.428Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:34:07.430Z - INFO - Time interval between two heartbeat request messages is: 48.999, limit is: 65.0
2023-01-11T22:34:07.434Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {

```

```

        "responseCode": 0
    },
    "transmitExpireTime": "2023-01-11T22:35:13Z"
}
]
}
2023-01-11T22:34:56.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:34:56.433Z - INFO - Time interval between two heartbeat request messages is: 49.001, limit is: 65.0
2023-01-11T22:34:56.444Z - INFO - grantRenew received in HBT request message
2023-01-11T22:34:56.447Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-11T22:40:56Z",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:38:16Z"
    }
  ]
}
2023-01-11T22:35:45.430Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:35:45.434Z - INFO - Time interval between two heartbeat request messages is: 49.0, limit is: 65.0
2023-01-11T22:35:45.444Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "40953374",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:39:05Z"
    }
  ]
}
2023-01-11T22:35:47.092Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T22:35:47.092Z - INFO - the question is : Did the CBSD renew its grant successfully? please choose one of the answers :

```

2023-01-11T22:36:20.065Z - INFO - for the question : Did the CBSD renew its grant successfully? , the user choose y

2023-01-11T22:37:01.505Z - INFO - The final result of the test : WINNF.FT.C.HBT.11 is - passed and :the additional comments for the current test are : EUT
Renewed its Grant and continued Tx

10.19 Log file for test case ID: WINNF.FT.C.RLQ.1

2023-01-11T22:50:48.713Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T22:50:48.713Z - INFO - the selected test from the user : WINNF.FT.C.RLQ.1 is starting now

2023-01-11T22:53:23.023Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T22:53:23.141Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:53:23.187Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T22:53:23.198Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:53:23.240Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T22:53:23.259Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T22:53:23Z",
    "grantId": "834868929",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T22:56:14.676Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "834868929",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T22:56:14.707Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "834868929",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T22:59:34Z"
    }
  ]
}
2023-01-11T22:57:03.743Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "834868929",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T22:57:03.746Z - INFO - Time interval between two heartbeat request messages is: 49.067, limit is: 65.0
2023-01-11T22:57:03.752Z - INFO - grantRenew received in HBT request message
2023-01-11T22:57:03.753Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T22:57:03Z",
      "grantId": "834868929",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:00:23Z"
    }
  ]
}
2023-01-11T22:57:21.365Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "834868929"
    }
  ]
}
2023-01-11T22:57:21.381Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "834868929",
      "response": {
        "responseCode": 0
      }
    }
  ]
}

```

```
}  
]  
}
```

2023-01-11T22:57:22.733Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T22:57:22.743Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? please choose one of the answers :

2023-01-11T22:58:00.811Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? , the user choose y

2023-01-11T22:58:17.178Z - INFO - The final result of the test : WINNF.FT.C.RLQ.1 is - passed and :the additional comments for the current test are : EUT Stop Tx

10.20 Log file for test case ID: WINNF.FT.C.RLQ.3

2023-01-11T22:59:59.397Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T22:59:59.398Z - INFO - the selected test from the user : WINNF.FT.C.RLQ.3 is starting now

2023-01-11T23:02:20.838Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T23:02:20.943Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:02:20.996Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T23:02:21.015Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:02:21.061Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T23:02:21.078Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T23:02:21Z",
    "grantId": "791008329",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:05:13.076Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "791008329",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T23:05:13.095Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "791008329",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:08:33Z"
    }
  ]
}
2023-01-11T23:06:02.132Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "791008329",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T23:06:02.134Z - INFO - Time interval between two heartbeat request messages is: 49.056, limit is: 65.0
2023-01-11T23:06:02.144Z - INFO - grantRenew received in HBT request message
2023-01-11T23:06:02.144Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T23:06:02Z",
      "grantId": "791008329",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:09:22Z"
    }
  ]
}
2023-01-11T23:06:20.073Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "791008329"
    }
  ]
}
2023-01-11T23:06:20.144Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "response": {
        "responseCode": 102,
        "responseData": [
          "grantId"
        ]
      }
    }
  ]
}

```

```
    ]  
  }  
}  
]  
}
```

2023-01-11T23:06:21.322Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T23:06:21.323Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? please choose one of the answers :

2023-01-11T23:06:54.334Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? , the user choose y

2023-01-11T23:07:04.690Z - INFO - The final result of the test : WINNF.FT.C.RLQ.3 is - passed and :the additional comments for the current test are : EUT Stop Tx

10.21 Log file for test case ID: WINNF.FT.C.RLQ.5

2023-01-11T23:07:50.694Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T23:07:50.694Z - INFO - the selected test from the user : WINNF.FT.C.RLQ.5 is starting now

2023-01-11T23:10:37.085Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T23:10:37.151Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:10:37.198Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T23:10:37.203Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:10:37.243Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T23:10:37.253Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T23:10:37Z",
    "grantId": "299948246",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:13:34.569Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "299948246",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T23:13:34.579Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "299948246",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:16:54Z"
    }
  ]
}
2023-01-11T23:14:23.624Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "299948246",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T23:14:23.628Z - INFO - Time interval between two heartbeat request messages is: 49.055, limit is: 65.0
2023-01-11T23:14:23.645Z - INFO - grantRenew received in HBT request message
2023-01-11T23:14:23.648Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T23:14:23Z",
      "grantId": "299948246",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:17:43Z"
    }
  ]
}
2023-01-11T23:14:41.095Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "299948246"
    }
  ]
}
2023-01-11T23:14:41.111Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "response": {
        "responseCode": 103,
        "responseData": [
          "grantId"
        ]
      }
    }
  ]
}

```

```
    ]  
  }  
}  
]  
}
```

2023-01-11T23:14:43.009Z - INFO - arrived to nstep starting question answer session with the technician

2023-01-11T23:14:43.016Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? please choose one of the answers :

2023-01-11T23:14:53.404Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment Request by Test Harness? , the user choose y

2023-01-11T23:14:59.947Z - INFO - The final result of the test : WINNF.FT.C.RLQ.5 is - passed and :the additional comments for the current test are : EUT Stop Tx

10.22 Log file for test case ID: WINNF.FT.C.DRG.1

2023-01-11T23:32:44.167Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T23:32:44.168Z - INFO - the selected test from the user : WINNF.FT.C.DRG.1 is starting now

2023-01-11T23:35:32.226Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T23:35:32.312Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:35:32.367Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T23:35:32.381Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:35:32.417Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T23:35:32.430Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T23:35:32Z",
    "grantId": "642859212",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:38:29.545Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "642859212",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T23:38:29.569Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "642859212",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:41:49Z"
    }
  ]
}
2023-01-11T23:39:18.609Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "642859212",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T23:39:18.615Z - INFO - Time interval between two heartbeat request messages is: 49.066, limit is: 65.0
2023-01-11T23:39:18.634Z - INFO - grantRenew received in HBT request message
2023-01-11T23:39:18.634Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T23:39:18Z",
      "grantId": "642859212",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:42:38Z"
    }
  ]
}
2023-01-11T23:39:36.392Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "642859212"
    }
  ]
}
2023-01-11T23:39:36.404Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "642859212",
      "response": {
        "responseCode": 0
      }
    }
  ]
}

```

```

    }
  ]
}
2023-01-11T23:39:36.414Z - INFO - deregistration request from CBRS : {
  "deregistrationRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0"
    }
  ]
}
2023-01-11T23:39:36.426Z - INFO - engine sent successfully, the response to CBRS : {
  "deregistrationResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "response": {
        "responseCode": 0
      }
    }
  ]
}
2023-01-11T23:39:37.801Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T23:39:37.862Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? please choose one of the answers :
2023-01-11T23:40:08.298Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? , the user choose y
2023-01-11T23:40:16.282Z - INFO - The final result of the test : WINNF.FT.C.DRG.1 is - passed and :the additional comments for the current test are : EUT Stop Tx

```

10.23 Log file for test case ID: WINNF.FT.C.DRG.3

2023-01-11T23:40:51.874Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T23:40:51.875Z - INFO - the selected test from the user : WINNF.FT.C.DRG.3 is starting now

2023-01-11T23:43:52.266Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T23:43:52.312Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:43:52.369Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T23:43:52.380Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:43:52.420Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T23:43:52.428Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T23:43:52Z",
    "grantId": "240000842",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:46:44.232Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "240000842",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T23:46:44.240Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "240000842",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:50:04Z"
    }
  ]
}
2023-01-11T23:47:33.288Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "240000842",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T23:47:33.292Z - INFO - Time interval between two heartbeat request messages is: 49.057, limit is: 65.0
2023-01-11T23:47:33.309Z - INFO - grantRenew received in HBT request message
2023-01-11T23:47:33.312Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T23:47:33Z",
      "grantId": "240000842",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:50:53Z"
    }
  ]
}
2023-01-11T23:47:51.246Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "240000842"
    }
  ]
}
2023-01-11T23:47:51.253Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "240000842",
      "response": {
        "responseCode": 0
      }
    }
  ]
}

```

```

    }
  ]
}
2023-01-11T23:47:51.260Z - INFO - deregistration request from CBRS : {
  "deregistrationRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0"
    }
  ]
}
2023-01-11T23:47:51.269Z - INFO - engine sent successfully, the response to CBRS : {
  "deregistrationResponse": [
    {
      "response": {
        "responseCode": 102
      }
    }
  ]
}
2023-01-11T23:47:53.259Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T23:47:53.262Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? please choose one of the answers :
2023-01-11T23:48:16.670Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? , the user choose y
2023-01-11T23:48:27.611Z - INFO - The final result of the test : WINNF.FT.C.DRG.3 is - passed and :the additional comments for the current test are : EUT Stop Tx

```

10.24 Log file for test case ID: WINNF.FT.C.DRG.5

2023-01-11T23:49:14.221Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.3 - 2018-November-13

2023-01-11T23:49:14.223Z - INFO - the selected test from the user : WINNF.FT.C.DRG.5 is starting now

2023-01-11T23:52:13.894Z - INFO - registration request from CBRS : {

```
"registrationRequest": [
  {
    "airInterface": {
      "radioTechnology": "E_UTRA"
    },
    "cbsdCategory": "B",
    "cbsdInfo": {
      "firmwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "hardwareVersion": "GC01",
      "model": "FujiCell SC-B48-4x4-5W",
      "softwareVersion": "R3.2.1-VES-CBRS-Engineering-20221202_1",
      "vendor": "Fujitsu Network Communications"
    },
    "cbsdSerialNumber": "A194708151:0",
    "fccId": "FNC-TEST-FCCID",
    "installationParam": {
      "antennaAzimuth": 0,
      "antennaBeamwidth": 360,
      "antennaDowntilt": 0,
      "antennaGain": 6,
      "indoorDeployment": false
    },
    "measCapability": [],
    "userId": "pGPWTZ"
  }
]
```

2023-01-11T23:52:13.930Z - INFO - engine sent successfully, the response to CBRS : {

```
"registrationResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:52:13.976Z - INFO - spectrumInquiry request from CBRS : {

```
"spectrumInquiryRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "inquiredSpectrum": [
      {
        "highFrequency": 3700000000,
        "lowFrequency": 3550000000
      }
    ]
  }
]
```

2023-01-11T23:52:13.983Z - INFO - engine sent successfully, the response to CBRS : {

```
"spectrumInquiryResponse": [
  {
    "availableChannel": [
      {
        "channelType": "GAA",
        "frequencyRange": {
          "highFrequency": 3700000000,
          "lowFrequency": 3550000000
        },
        "ruleApplied": "FCC_PART_96"
      }
    ],
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:52:14.028Z - INFO - grant request from CBRS : {

```
"grantRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "operationParam": {
      "maxEirp": 37,
      "operationFrequencyRange": {
        "highFrequency": 3570000000,
        "lowFrequency": 3550000000
      }
    }
  }
]
```

2023-01-11T23:52:14.035Z - INFO - engine sent successfully, the response to CBRS : {

```
"grantResponse": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "channelType": "GAA",
    "grantExpireTime": "2023-01-18T23:52:14Z",
    "grantId": "637808409",
    "heartbeatInterval": 60,
    "response": {
      "responseCode": 0
    }
  }
]
```

2023-01-11T23:55:05.707Z - INFO - heartbeat request from CBRS : {

```
"heartbeatRequest": [
  {
    "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
    "grantId": "637808409",
    "operationState": "GRANTED"
  }
]
```

```

    ]
  }
2023-01-11T23:55:05.726Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "637808409",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:58:25Z"
    }
  ]
}
2023-01-11T23:55:54.763Z - INFO - heartbeat request from CBRS : {
  "heartbeatRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "637808409",
      "grantRenew": true,
      "operationState": "AUTHORIZED"
    }
  ]
}
2023-01-11T23:55:54.766Z - INFO - Time interval between two heartbeat request messages is: 49.055, limit is: 65.0
2023-01-11T23:55:54.770Z - INFO - grantRenew received in HBT request message
2023-01-11T23:55:54.772Z - INFO - engine sent successfully, the response to CBRS : {
  "heartbeatResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantExpireTime": "2023-01-18T23:55:54Z",
      "grantId": "637808409",
      "response": {
        "responseCode": 0
      },
      "transmitExpireTime": "2023-01-11T23:59:14Z"
    }
  ]
}
2023-01-11T23:56:12.095Z - INFO - relinquishment request from CBRS : {
  "relinquishmentRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "637808409"
    }
  ]
}
2023-01-11T23:56:12.118Z - INFO - engine sent successfully, the response to CBRS : {
  "relinquishmentResponse": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0",
      "grantId": "637808409",
      "response": {
        "responseCode": 0
      }
    }
  ]
}

```

```

    }
  ]
}
2023-01-11T23:56:12.131Z - INFO - deregistration request from CBRS : {
  "deregistrationRequest": [
    {
      "cbsdId": "FNC-TEST-FCCIDMock-SASA194708151:0"
    }
  ]
}
2023-01-11T23:56:12.141Z - INFO - engine sent successfully, the response to CBRS : {
  "deregistrationResponse": [
    {
      "response": {
        "responseCode": 103,
        "responseData": [
          "cbsdId"
        ]
      }
    }
  ]
}
2023-01-11T23:56:13.563Z - INFO - arrived to nstep starting question answer session with the technician
2023-01-11T23:56:13.565Z - INFO - the question is : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? please choose one of the answers :
2023-01-11T23:56:18.980Z - INFO - for the question : Did CBSD1 cease RF transmission before receipt of Relinquishment request (if sent) or Deregistration request at Test Harness? , the user choose y
2023-01-11T23:56:23.664Z - INFO - The final result of the test : WINNF.FT.C.DRG.5 is - passed and :the additional comments for the current test are : EUT Stop Tx

```

10.25 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.1

WINNF.FT.C.SCS.1 capture.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

(((ip.src == 192.168.1.31) && (ip.dst == 192.168.1.2))) || (((ip.src == 192.168.1.2) && (ip.dst == 192.168.1.31))) && tls

No.	Time	Source	Destination	Protocol	Length	Info
906	533.490386	192.168.1.31	192.168.1.2	TLSv1.2	351	Client Hello
907	533.495737	192.168.1.2	192.168.1.31	TLSv1.2	3046	Server Hello, Certificate, Certificate Request, ...
911	533.499472	192.168.1.31	192.168.1.2	TLSv1.2	384	Certificate, Client Key Exchange, Change Cipher S...
912	533.499574	192.168.1.2	192.168.1.31	TLSv1.2	61	Alert (Level: Fatal, Description: Handshake Fail...
932	584.304088	192.168.1.31	192.168.1.2	TLSv1.2	571	Client Hello
933	584.332194	192.168.1.2	192.168.1.31	TLSv1.2	3415	Server Hello, Certificate, Server Key Exchange, ...
939	584.375286	192.168.1.31	192.168.1.2	TLSv1.2	450	Certificate, Client Key Exchange, Certificate Ver...
941	584.381144	192.168.1.2	192.168.1.31	TLSv1.2	105	Change Cipher Spec, Encrypted Handshake Message
943	584.382440	192.168.1.31	192.168.1.2	TLSv1.2	787	Application Data
944	584.430640	192.168.1.2	192.168.1.31	TLSv1.2	100	Application Data
946	584.467560	192.168.1.2	192.168.1.31	TLSv1.2	545	Application Data, Application Data, Application ...
948	584.478341	192.168.1.31	192.168.1.2	TLSv1.2	371	Application Data
949	584.482584	192.168.1.2	192.168.1.31	TLSv1.2	100	Application Data
951	584.517919	192.168.1.2	192.168.1.31	TLSv1.2	803	Application Data, Application Data, Application ...
953	584.522988	192.168.1.31	192.168.1.2	TLSv1.2	371	Application Data
954	584.526537	192.168.1.2	192.168.1.31	TLSv1.2	100	Application Data

10.26 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.2

WINNF.FT.C.SCS.2 capture.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

Filter: (((ip.src == 192.168.1.31) && (ip.dst == 192.168.1.2))) || (((ip.src == 192.168.1.2) && (ip.dst == 192.168.1.31))) && tls

No.	Time	Source	Destination	Protocol	Length	Info
305	298.306390	192.168.1.2	192.168.1.31	TLSv1.2	3280	Server Hello, Certificate, Certificate Request, S
309	298.313916	192.168.1.31	192.168.1.2	TLSv1.2	384	Certificate, Client Key Exchange, Change Cipher S
310	298.314080	192.168.1.2	192.168.1.31	TLSv1.2	61	Alert (Level: Fatal, Description: Handshake Failu
361	349.079574	192.168.1.31	192.168.1.2	TLSv1.2	571	Client Hello
362	349.089052	192.168.1.2	192.168.1.31	TLSv1.2	3649	Server Hello, Certificate, Server Key Exchange, C
366	349.132103	192.168.1.31	192.168.1.2	TCP	1514	50418 → 5000 [ACK] Seq=518 Ack=3596 Win=23360 Len
368	349.132103	192.168.1.31	192.168.1.2	TLSv1.2	450	Certificate, Client Key Exchange, Certificate Ver
370	349.135189	192.168.1.2	192.168.1.31	TLSv1.2	105	Change Cipher Spec, Encrypted Handshake Message
372	349.136651	192.168.1.31	192.168.1.2	TLSv1.2	85	Encrypted Alert



10.27 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.3

WINNF.FT.C.SCS.3 capture.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

(((ip.src == 192.168.1.31) && (ip.dst == 192.168.1.2)))|((ip.src == 192.168.1.2) && (ip.dst == 192.168.1.31))) && tls

Time	Source	Destination	Protocol	Length	Info
96.350858	192.168.1.31	192.168.1.2	TLSv1.2	351	Client Hello
96.351551	192.168.1.2	192.168.1.31	TLSv1.2	3067	Server Hello, Certificate, Certificate Request, Server Hello ...
96.355506	192.168.1.31	192.168.1.2	TLSv1.2	384	Certificate, Client Key Exchange, Change Cipher Spec, Encrypt...
96.355746	192.168.1.2	192.168.1.31	TLSv1.2	61	Alert (Level: Fatal, Description: Handshake Failure)
147.214965	192.168.1.31	192.168.1.2	TLSv1.2	571	Client Hello
147.236298	192.168.1.2	192.168.1.31	TLSv1.2	3436	Server Hello, Certificate, Server Key Exchange, Certificate R...
147.242449	192.168.1.31	192.168.1.2	TLSv1.2	61	Alert (Level: Fatal, Description: Certificate Expired)



10.28 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.4

WINNF.FT.C.SCS.4 capture.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

(((ip.src == 192.168.1.31) && (ip.dst == 192.168.1.2)))|((ip.src == 192.168.1.2) && (ip.dst == 192.168.1.31))) && tls

	Time	Source	Destination	Protocol	Length	Info
2	154.509988	192.168.1.31	192.168.1.2	TLSv1.2	351	Client Hello
3	154.512569	192.168.1.2	192.168.1.31	TLSv1.2	3069	Server Hello, Certificate, Certificate Request, Server Hello ..
7	154.516127	192.168.1.31	192.168.1.2	TLSv1.2	384	Certificate, Client Key Exchange, Change Cipher Spec, Encrypt..
3	154.516561	192.168.1.2	192.168.1.31	TLSv1.2	61	Alert (Level: Fatal, Description: Handshake Failure)
2	205.068049	192.168.1.31	192.168.1.2	TLSv1.2	571	Client Hello
3	205.093306	192.168.1.2	192.168.1.31	TLSv1.2	3438	Server Hello, Certificate, Server Key Exchange, Certificate R..
7	205.095387	192.168.1.31	192.168.1.2	TLSv1.2	61	Alert (Level: Fatal, Description: Unknown CA)



10.29 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.5

WINNF.FT.C.SCS.5 capture.pcapng

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

(((ip.src == 192.168.1.31) && (ip.dst == 192.168.1.2)))|(((ip.src == 192.168.1.2) && (ip.dst == 192.168.1.31))) && tls

Time	Source	Destination	Protocol	Length	Info
129.279444	192.168.1.31	192.168.1.2	TLSv1.2	351	Client Hello
129.281670	192.168.1.2	192.168.1.31	TLSv1.2	3046	Server Hello, Certificate, Certificate Request, Server Hello
129.287592	192.168.1.31	192.168.1.2	TLSv1.2	384	Certificate, Client Key Exchange, Change Cipher Spec, Encrypt
129.287930	192.168.1.2	192.168.1.31	TLSv1.2	61	Alert (Level: Fatal, Description: Handshake Failure)
180.360741	192.168.1.31	192.168.1.2	TLSv1.2	571	Client Hello
180.396816	192.168.1.2	192.168.1.31	TLSv1.2	3415	Server Hello, Certificate, Server Key Exchange, Certificate R
180.401157	192.168.1.31	192.168.1.2	TLSv1.2	61	Alert (Level: Fatal, Description: Decrypt Error)

Thank you for choosing

