ONE WORLD ○ OUR APPROVAL

Wireless test report – 366445-TRFWL

Applicant:

Corning Optical Communications LLC

Product name:

Smallcell Indoor Radio Node

Model:

SCRN-330-4148

Model variant:

N/A

FCC ID:

Y47RN3304148

Specifications:

WINNF-TS-0122, Version V1.0.0

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: February 8, 2019

Test engineer(s): Andres Martinez/WL Engineer

Reviewed by: Juan M. Gonzalez/Business Dev. Manager Signature:

Test location(s)

Company name	Nemko USA Inc.
Address	2210 Faraday Ave, Suite 150
City	Carlsbad
State	California
Postal code	92008
Country	USA
Telephone	+1 760 444 3500
Website	www.nemko.com
FCC Site Number	Test Firm Registration Number: 392943 Designation Number: US5058
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.

Copyright notification

Nemko USA Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.
Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.
Nemko USA Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.
© Nemko USA Inc.

Table of contents

Table of contents **3**

Section 1. Report summary **5**

1.1 Applicant and manufacturer 5

1.2 Test specifications 5

1.3 Statement of compliance 5

1.4 Exclusions 5

1.5 Test report revision history 5

Section 2. Summary of test results **6**

2.1 WINNF-TS-0122 requirements test results 6

Section 3. Equipment under test (EUT) details **7**

3.1 Sample information 7

3.2 EUT information 7

3.3 Technical information 7

3.4 Product description and theory of operation 7

3.5 UUT exercise details 7

3.6 EUT setup diagram 8

3.7 EUT sub assemblies 8

Section 4. Engineering considerations **9**

4.1 Modifications incorporated in the EUT 9

4.2 Technical judgment 9

4.3 Deviations from laboratory tests procedures 9

Section 5. Test conditions **10**

5.1 Atmospheric conditions 10

5.2 Power supply range 10

Section 6. Measurement uncertainty **11**

6.1 Uncertainty of measurement 11

Section 7. Test equipment **12**

7.1 Test equipment list 12

Section 8. Testing data **13**

8.1 6.1 CBSD Registration Process 13

8.2 6.3 CBSD Spectrum Grant Process 24

8.3 6.4 CBSD Heart Beat Process 27

8.4 6.5 CBSD Measurement Report 36

8.5 6.6 CBSD Relinquishment Process 38

8.6 6.7 CBSD Deregistration Process 40

8.7 6.8 CBSD Security Validation 42

8.8 7.1 CBSD RF Power Measurement 48

Section 9. Block diagrams of test set-ups **53**

9.1 Test equipment set-up 53

Section 10. Log files library **54**

10.1 Log file for test case ID: WINNF.FT.D.REG.2 54

10.2 Log file for test case ID: WINNF.FT.D.REG.4 64

10.3 Log file for test case ID: WINNF.FT.C.REG.7 for device -48-00:24:48:0e:f5:27 69

10.4 Log file for test case ID: WINNF.FT.C.REG.7 for device - 49-00:24:48:0e:e1:47 76

10.5 Log file for test case ID: WINNF.FT.D.REG.9 89

10.6 Log file for test case ID: WINNF.FT.D.REG.11 92

10.7 Log file for test case ID: WINNF.FT.D.REG.13 95

10.8 Log file for test case ID: WINNF.FT.D.REG.15 100

10.9 Log file for test case ID: WINNF.FT.D.REG.17 105

10.10 Log file for test case ID: WINNF.FT.D.REG.19 108

10.11 Log file for test case ID: WINNF.FT.C.REG.20 (reference Log) 113

10.12 Log file for test case ID: WINNF.FT.D.GRA.1 for device - 48-00:24:48:0e:f5:27 121

10.13 Log file for test case ID: WINNF.FT.D.GRA.1 for device - 49-00:24:48:0e:e1:47 127

10.14 Log file for test case ID: WINNF.FT.C.GRA.2 for device - 48-00:24:48:0e:f5:27 133

10.15 Log file for test case ID: WINNF.FT.C.GRA.2 for device - 49-00:24:48:0e:e1:47 139
10.16 Log file for test case ID:WINNF.FT.D.HBT.2 145
10.17 Log file for test case ID: WINNF.FT.C.HBT.3 for device - 48-00:24:48:0e:f5:27 162
10.18 Log file for test case ID: WINNF.FT.C.HBT.3 for device - 49-00:24:48:0e:e1:47 170
10.19 Log file for test case ID: WINNF.FT.C.HBT.5 for device - 48-00:24:48:0e:f5:27 178
10.20 Log file for test case ID: WINNF.FT.C.HBT.5 for device - 49-00:24:48:0e:e1:47 185
10.21 Log file for test case ID: WINNF.FT.C.HBT.6 for device - 48-00:24:48:0e:f5:27 192
10.22 Log file for test case ID: WINNF.FT.C.HBT.6 for device - 49-00:24:48:0e:e1:47 200
10.23 Log file for test case ID: WINNF.FT.C.HBT.7 for device - 48-00:24:48:0e:f5:27 208
10.24 Log file for test case ID: WINNF.FT.C.HBT.7 for device - 49-00:24:48:0e:e1:47 216
10.25 Log file for test case ID: WINNF.FT.D.HBT.8 224
10.26 Log file for test case ID: WINNF.FT.C.HBT.9 for device - 48-00:24:48:0e:f5:27 239
10.27 Log file for test case ID: WINNF.FT.C.HBT.9 for device - 49-00:24:48:0e:e1:47 246
10.28 Log file for test case ID: WINNF.FT.C.HBT.10 for device - 48-00:24:48:0e:f5:27 253
10.29 Log file for test case ID: WINNF.FT.C.HBT.10 for device - 49-00:24:48:0e:e1:47 261
10.30 Log file for test case ID: WINNF.FT.D.MES.2 269
10.31 Log file for test case ID: WINNF.FT.D.RLQ.2 324
10.32 Log file for test case ID: WINNF.FT.D.DRG.2 349
10.33 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.1 364
10.34 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.2 365
10.35 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.3 366
10.36 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.4 367
10.37 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.5 368

Section 1. Report summary

1.1 Applicant and manufacturer

Company name	Company Name: Corning Optical Communications LLC
Address	475 Sycamore Drive.
City	Milpitas
Province/State	CA
Postal/Zip code	95035
Country	U.S.A.

1.2 Test specifications

WINNF-TS-0122 Version V1.0.0	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
TRFWL	February 8, 2019	Original report issued

Section 2. Summary of test results

2.1 WINNF-TS-0122 requirements test results

Section	Test case ID	Test case title	Applicable	Verdict
6.1.4.1.2	WINNF.FT.D.REG.2	Domain Proxy Multi-Step registration	M	**Pass**
6.1.4.1.4	WINNF.FT.D.REG.4	Domain Proxy Single-Step registration for Cat A CBSD	M	**Pass**
6.1.4.1.7	WINNF.FT.C.REG.7	Registration due to change of an installation parameter	M	**Pass**
6.1.4.2.2	WINNF.FT.D.REG.9	Domain Proxy Missing Required parameters (responseCode 102)	M	**Pass**
6.1.4.2.4	WINNF.FT.D.REG.11	Domain Proxy Pending registration (responseCode 200)	M	**Pass**
6.1.4.2.6	WINNF.FT.D.REG.13	Domain Proxy Invalid parameters (responseCode 103)	M	**Pass**
6.1.4.2.8	WINNF.FT.D.REG.15	Domain Proxy Blacklisted CBSD (responseCode 101)	M	**Pass**
6.1.4.2.10	WINNF.FT.D.REG.17	Domain Proxy Unsupported SAS protocol version responseCode 100)	M	**Pass**
6.1.4.2.12	WINNF.FT.D.REG.19	Domain Proxy Group Error (responseCode 201)	M	**Pass**
6.1.4.3.1	WINNF.FT.C.REG.20	Category A CBSD location update	M	**Pass**
6.3.4.2.1	WINNF.FT.D.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**
6.4.4.1.2	WINNF.FT.D.HBT.2	Heartbeat Success Case (first Heartbeat Response)	M	**Pass**
6.4.4.2.1	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	M	**Pass**
6.4.4.2.3	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**
6.4.4.2.6	WINNF.FT.D.HBT.8	Domain Proxy Heartbeat responseCode=500 (TEMINATED_GRANT)	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**
6.5.4.2.2	WINNF.FT.D.MES.2	Domain Proxy Registration Response contains measReportConfig	M	**Pass**
6.6.4.1.2	WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	M	**Pass**
6.7.4.1.2	WINNF.FT.D.DRG.2	Domain Proxy Successful Deregistration	M	**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**
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	UUT RF Transmit Power Measurement	M	**Pass**

Notes:

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	November 5, 2018
Nemko sample ID number	366445

3.2 EUT information

Product name	Smallcell Indoor Radio Node
Model	SCRN-330-4148
Model variant	N/A
FCC ID	Y47RN3304148
Serial number	48-00:24:48:0e:f5:27 / 49-00:24:48:0e:e1:47
Software Details of UUT	Software Version: SCOS_8.0.0.217 || Build Date: 2019-01-31

3.3 Technical information

Frequency band	CBRS band: 3550–3700 MHz
Type of modulation	QPSK, QAM16, QAM64
BW	10 and 20 MHz
Power requirements	56 VDC (PoE)

3.4 Product description and theory of operation

The UUT is a Domain Proxy Category A CBSD.

3.5 UUT exercise details

The UUT was loaded with software version: SCOS_8.0.0.217 and build date: 2019-01-31 for all testing.
All testing was performed with WInnForum SAS test harness version 1.0.0.2

3.6 EUT setup diagram

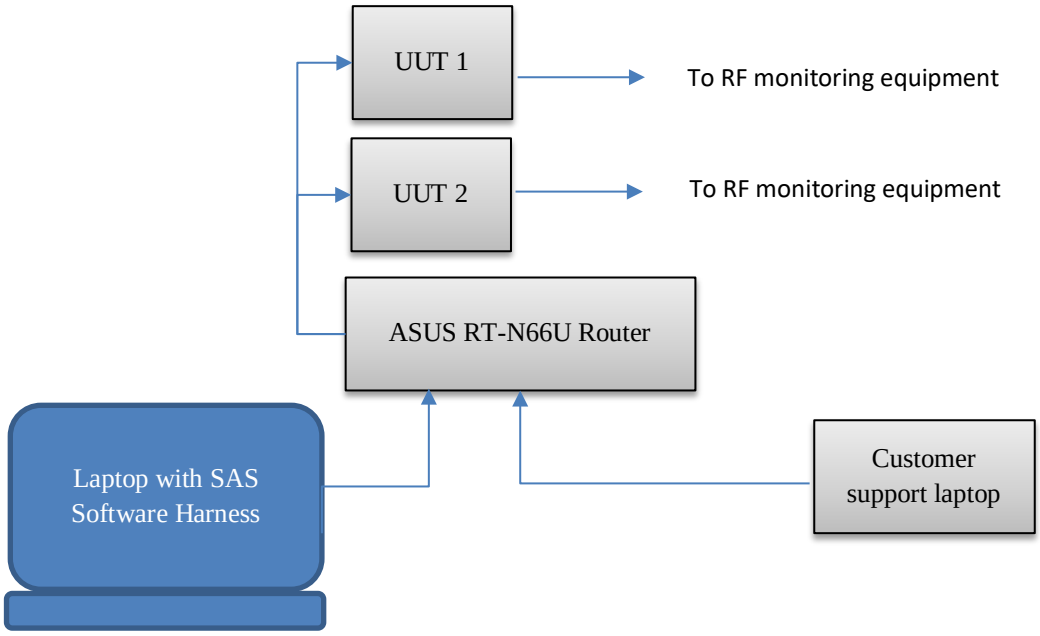


Figure 3.6-1: Setup diagram

3.7 EUT sub assemblies

Table 3.7-1: EUT sub assemblies + Auxiliary Equipment

Description	Brand name	Model/Part number	Serial number
Wireless Router	ASUS	RT-N66U	E4IA08020580
Proxy Server	SpiderCloud	SCSN8000 IMPS	N/A
Support Laptop	Dell	Latitude E6530	DPN-P28X4 A00
Support PC1	Dell	Optiplex 780	30320434333
Support PC2	Dell	Optiplex 780	30318848029
Support PC3	Dell	Optiplex 780	9767420137

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 ±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	ESU 40	E1131	1 year	8/23/19
SAS Test Harness Test Bed Computer	DELL	E5430	DALL0009	N/A	N/A
SAS Test Harness Software	WInnForumq	1.0.0.2		N/A	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 6.1.4.1.2 [WINNF.FT.D.REG.2] Domain Proxy Single-Step registration for Cat A CBSD:

8.1.2.1 Test date

Start date	January 30, 2019

8.1.2.2 Observations, settings and special notes

None

8.1.2.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	DP with two CBSD sends correct Registration request information, as specified in [n.5], in the form of one 2-element Array or as individual messages to the SAS Test Harness: • The required userId, fccId and cbsdSerialNumber registration parameters shall be sent for each 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.	☒	☐
3	• SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or individual messages as follows: o cbsdId = Ci o measReportConfig shall not be included o responseCode = 0 for each CBSD	–	–
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 each 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	☒	☐

8.1.3 6.1.4.1.4 [WINNF.FT.D.REG.4] Domain Proxy Single-Step registration for Cat A CBSD:

8.1.3.1 Test date

Start date	January 30, 2019

8.1.3.2 Observations, settings and special notes

None

8.1.3.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends Registration requests in the form of one 2-element Array or as individual messages to SAS Test Harness. • The required userId, fccId and cbsdSerialNumber and REG-Conditional cbsdCategory, airInterface, installationParam, and measCapability registration parameters shall be sent from the CBSD and conform to proper format and acceptable ranges. • Any optional registration parameters that may be included in the message shall be verified that they conform to proper format and are within acceptable ranges.	☒	☐
3	• SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or individual messages as follows: o cbsdId = Ci o measReportConfig shall not be included o responseCode = 0 for each CBSD	–	–
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 each 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	☒	☐

8.1.4 6.1.4.1.7 [WINNF.FT.C.REG.7] Registration due to change of an installation parameter

8.1.4.1 Test date

Start date	February 1, 2019

8.1.4.2 Observations, settings and special notes

None

8.1.4.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness	–	–
2	UUT has successfully registered with SAS Test Harness	–	–
3	Change an installation parameters at the UUT (time T) o Tester needs to record the current time at which the parameter change is executed.	–	–
4	Monitor the SAS-CBSD interface. UUT sends a deregistrationRequest to the SAS Test Harness The deregistration request shall be sent within (T + 60 seconds) from step 3.	☒	☐

8.1.5 6.1.4.2.2 [WINNF.FT.D.REG.9] Domain Proxy Missing Required parameters (responseCode 102)

8.1.5.1 Test date

Start date	January 30, 2019

8.1.5.2 Observations, settings and special notes

None

8.1.5.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode = Ri for CBSD1 and CBSD2	–	–
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 each 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	☒	☐

8.1.6 6.1.4.2.4 [WINNF.FT.D.REG.11] Domain Proxy Pending registration (responseCode 200)

8.1.6.1 Test date

Start date	January 30, 2019

8.1.6.2 Observations, settings and special notes

None

8.1.6.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode (Ri) = 200 for CBSD1 and CBSD2	–	–
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 each 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	☒	☐

8.1.7 6.1.4.2.6 [WINNF.FT.D.REG.13] Domain Proxy Invalid parameters (responseCode 103)

8.1.7.1 Test date

Start date	January 30, 2019

8.1.7.2 Observations, settings and special notes

None

8.1.7.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode (R1) = 0 for CBSD1 o responseCode (R2) = 103 for CBSD2	–	–
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 each 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	☒	☐

8.1.8 6.1.4.2.68[WINNF.FT.D.REG.15] Domain Proxy Blacklisted CBSD (responseCode 101)

8.1.8.1 Test date

Start date	February 1, 2019

8.1.8.2 Observations, settings and special notes

None

8.1.8.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode (R1) = 0 for CBSD1 o responseCode (R2) = 101 for CBSD2	–	–
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 each 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	☒	☐

8.1.9 6.1.4.2.10 [WINNF.FT.D.REG.17] Domain Proxy Unsupported SAS protocol version responseCode 100)

8.1.9.1 Test date

Start date	January 31, 2019

8.1.9.2 Observations, settings and special notes

None

8.1.9.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode (Ri) = 100 for CBSD1 and CBSD2	–	–
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 each 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	☒	☐

8.1.10 6.1.4.2.12 [WINNF.FT.D.REG.19] Domain Proxy Group Error (responseCode 201)

8.1.10.1 Test date

Start date	January 31, 2019

8.1.10.2 Observations, settings and special notes

None

8.1.10.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness • UUT is in the Unregistered state	–	–
2	The DP with two CBSDs sends a Registration request in the form of one 2-element Array or as individual messages to SAS Test Harness.	–	–
3	SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: o SAS response does not include a cbsdId. o responseCode (R1) = 0 for CBSD1 o responseCode (R2) = 201 for CBSD2	–	–
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 each 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	☒	☐

8.1.11 6.1.4.3.1 [WINNF.FT.C.REG.20] Category A CBSD location update

8.1.11.1 Test date

Start date	February 1, 2019

8.1.11.2 Observations, settings and special notes

WINNF.FT.C.REG20 test case was verified ussing WINNF.FT.C.REG7 : Installation Parameter Changed (Location) then CBSD rebooted to apply parameter change, then CBSD deregister and registered before 60 seconds with new parameter. UUT stoped transmissions when deregister.

8.1.11.3 Test data

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

#	Test Execution Steps	Results	
1	• This section is specific to Category A CBSDs that do not require professional installation. The requirement is for the Category A (non-professionally installed) to report to the SAS any location change exceeding a distance of 50m horizontally or 3m vertically within a 60 second window. It is left to the CBSD vendor and certification lab to generate the required evidence showing the UUT meets the requirement.	☒ 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.D.GRA.1] Unsuccessful Grant responseCode=400 (INTERFERENCE)

8.2.2.1 Test date

Start date	January 31, 2019

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 31, 2019

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 6.4.4.1.2 [WINNF.FT.D.HBT.2] Domain Proxy Heartbeat Success Case (first Heartbeat Response)

8.3.2.1 Test date

Start date	January 30, 2019

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: • DP has two CBSD registered successfully with SAS Test Harness, with cbsdId = Ci, i={1,2}	–	–
2	DP 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	DP sends a Spectrum Inquiry Request message for each CBSD. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message is formatted correctly for each CBSD, including for CBSDi, i={1,2}: • cbsdId = Ci • List of frequencyRange objects sent by DP are within the CBRS frequency range	☒	☐
4	If a separate Spectrum Inquiry Request message was sent for each CBSD, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate Spectrum Inquiry Response message. If a single Spectrum Inquiry Request message was sent containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Spectrum Inquiry Response message containing a 2-object array. Verify parameters for each CBSD within the Spectrum Inquiry Response message are as follows, for CBSDi, i={1,2}: • cbsdId = Ci • availableChannel is an array of availableChannel objects • responseCode = 0	–	–
5	DP sends a Grant Request message for each CBSD. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Grant Request message is formatted correctly for each CBSD, including for CBSDi, i={1,2}: • 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	☒	☐

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 30, 2019

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

8.3.4.1 Test date

Start date	January 30, 2019

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: 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 formatted correctly, including: • cbsdId = C • grantId = G • operationState = "GRANTED"	☒ 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 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: • cbdsId = 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 does not transmit at any time	☒ Pass	☐ Fail

8.3.5 6.4.4.2.4 [WINNF.FT.C.HBT.6] Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response

8.3.5.1 Test date

Start date	January 30, 2019

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: 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 , power P	-	-
2	UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including: • 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 = 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: • cbsdId = C • grantId = G • operationState = "GRANTED" B. UUT sends a Relinquishment request message. Ensure message is correctly formatted with parameters: • cbdsId = 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

8.3.6 6.4.4.2.5 [WINNF.FT.C.HBT.7] Heartbeat responseCode=502 (UNSYNC_OP_PARAM)

8.3.6.1 Test date

Start date	January 30, 2019

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: 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 , power P	-	-
2	UUT sends a Heartbeat Request message. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly, including: • 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: o cbdsId = C o 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

8.3.1 6.4.4.2.6 [WINNF.FT.D.HBT.8] Domain Proxy Heartbeat responseCode=500 (TEMINATED_GRANT)

8.3.1.1 Test date

Start date	January 30, 2019

8.3.1.2 Observations, settings and special notes

None

8.3.1.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • DP has two CBSD registered successfully with SAS Test Harness • Each CBSD {1,2} has a valid single grant as follows: o valid cbsdId = Ci, i={1,2} o valid grantId = Gi, i={1,2} o grant is for frequency range Fi, power Pi o grantExpireTime = UTC time greater than duration of the test • Both CBSD are in AUTHORIZED state and transmitting within their granted bandwidth on RF interface	–	–
2	DP sends a Heartbeat Request message for each CBSD. This may occur in a separate message per CBSD, or together in a single message with array of size 2. Verify Heartbeat Request message is sent within latest specified heartbeatInterval, and is formatted correctly for each CBSD, including, for CBSDi i={1,2}: • cbsdId = Ci, i = {1,2} • grantId = Gi, i = {1,2} • operationState = "AUTHORIZED"	☒	☐
3	If separate Heartbeat Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Heartbeat Request message with a separate Heartbeat Response message. If a single Heartbeat Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Heartbeat Response message containing a 2-object array. Parameters for each CBSD within the Heartbeat Response message should be as follows, for CBSDi: • cbsdId = Ci • grantId = Gi • For CBSD1: o transmitExpireTime = current UTC time + 200 seconds o responseCode = 0 • For CBSD2: o transmitExpireTime = T = current UTC time o responseCode = 500 (TERMINATED_GRANT)	–	–

Nemko Draft

8.3.2 6.4.4.3.1 [WINNF.FT.C.HBT.9] Heartbeat Response Absent (First Heartbeat)

8.3.2.1 Test date

Start date	February 1, 2019

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 • 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	☒	☐

8.3.3 6.4.4.3.2 [WINNF.FT.C.HBT.10] Heartbeat Response Absent (Subsequent Heartbeat)

8.3.3.1 Test date

Start date	February 1, 2019

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. Verify Heartbeat Request message issent 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.	☒	☐

8.4 6.5 CBSD Measurement Report

8.4.1 Definitions and limits

This section explains test steps/condition/procedure for CBSD behavior for Measurement Reports.

8.4.2 6.5.4.2.1 [WINNF.FT.D.MES.2] Domain Proxy Registration Response contains measReportConfig

8.4.2.1 Test date

Start date	February 1, 2019

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	-	-
2	UUT sends a Registration Request message. Validate the Registration Request message is formatted correctly, including: • userId is present and correct • ffId is present and correct • cbsdSerialNumber is present and correct • measCapability= "RECEIVED_POWER_WITHOUT_GRANT"	☒ Pass	☐ Fail
3	SAS Test Harness sends a Registration Response message, with the following parameters: • cbsdId = C=valid cbsdId for this UUT • measReportConfig="RECEIVED_POWER_WITHOUT_GRANT" • responseCode=0	-	-
4	UUT sends a message: • If type message is Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7	-	-
5	UUT sends message type Spectrum Inquiry Request. Verify message contains all required parameters properly formatted, and specifically: • cbsdId=C • measReport is present, and is a properly formatted rcvdPowerMeasReport.	☒ Pass	☐ Fail
6	SAS Test Harness sends a Spectrum Inquiry Response, with the following parameters:: • cbsdId=C • availableChannel is an array of availableChannel objects • responseCode=0.	-	-
7	UUT sends message type Grant Request message. Verify message contains all required parameters properly formatted, and specifically: • cbsdId=C • measReport is present, and is properly formatted rcvdPowerMeasReport.	☒ Pass	☐ Fail

8.5 6.6 CBSD Relinquishment Process

8.5.1 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.

8.5.2 6.6.4.1.2 [WINNF.FT.D.RLQ.2] Domain Proxy Successful Relinquishment

8.5.2.1 Test date

Start date	January 31, 2019

8.5.2.2 Observations, settings and special notes

None

8.5.2.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • DP has successfully completed SAS Discovery and Authentication with SAS Test Harness • DP has successfully registered 2 CBSD with SAS Test Harness, each with cbsdId=Ci, i={1,2} • DP has received a valid grant with grantId = Gi, i={1,2} for each CBSD • Both CBSD are in Grant State AUTHORIZED and actively transmitting within the bounds of their grants. Invoke trigger to relinquish each UUT Grant from the SAS Test Harness	–	–
2	Verify DP sends a Relinquishment Request message for each CBSD. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Relinquishment Request message contains all required parameters properly formatted for each CBSD, specifically, for CBSDi: • cbsdId = Ci • grantId = Gi	☒	☐
3	If a separate Relinquishment Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each request message with a separate response message. If a single Relinquishment Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Response message containing a 2-object array. Parameters for each CBSD within the Relinquishment Response shall be as follows: • cbsdId = Ci • grantId = Gi • 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 each 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 relinquishments and UUT sending the relinquishment requests for each CBSD.	☒	☐

8.6 6.7 CBSD Deregistration Process

8.6.1 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.

n 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.

8.6.1 6.7.4.1.2 [WINNF.FT.D.DRG.2] Domain Proxy Successful Deregistration

8.6.1.1 Test date

Start date	January 31, 2019

8.6.1.2 Observations, settings and special notes

None

8.6.1.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Ensure the following conditions are met for test entry: • Each UUT has successfully registered with SAS Test Harness • Each UUT is in the authorized state • DP has successfully completed SAS Discovery and Authentication with SAS Test Harness • DP has successfully registered 2 CBSD with SAS Test Harness, each with cbsdId=Ci, i={1,2} • DP has received a valid grant with grantId = Gi, i={1,2} for each CBSD • Both CBSD are in Grant State AUTHORIZED and actively transmitting within the bounds of their grants. Invoke trigger to deregister each UUT from the SAS Test Harness	–	–
2	UUT sends a Relinquishment request and receives Relinquishment response with responseCode=0	–	–
3	Verify DP sends a Deregistration Request message for each CBSD. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Deregistration Request message contains all required parameters properly formatted for each CBSD, specifically, for CBSDi: • cbsdId = Ci	☒	☐
4	If a separate Deregistration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each request message with a separate response message. If a single Deregistration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Response message containing a 2-object array. Parameters for each CBSD within the Deregistration Response shall be as follows: • cbsdId = Ci • responseCode = 0	–	–
5	After completion of step 4, SAS Test Harness will not provide any positive response (responseCode=0) to further request messages from the UUT.	–	–

8.7 6.8 CBSD Security Validation

8.7.1 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.

8.7.2 6.8.4.1.1 [WINNF.FT.C.SCS.1] Successful TLS connection between UUT and SAS Test Harness

8.7.2.1 Test date

Start date	January 31, 2019

8.7.2.2 Observations, settings and special notes

None

8.7.2.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: 1. Wireshark "Protocol" column shows "TLSv1.2" 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 3. "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	☒	☐

8.7.3 6.8.4.2.1 [WINNF.FT.C.SCS.2] TLS failure due to revoked certificate

8.7.3.1 Test date

Start date	January 31, 2019

8.7.3.2 Observations, settings and special notes

None

8.7.3.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: 1. Wireshark "Protocol" column shows "TLSv1.2" 2. CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness 3. 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 4. 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. 5. 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. 6. "Application Data" messages are not seen between WInnForum SAS Test Harness and CBSD/DP UUT. 7. 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	☒	☐

8.7.4 6.8.4.2.2 [WINNF.FT.C.SCS.3] TLS failure due to expired server certificate

8.7.4.1 Test date

Start date	January 31, 2019

8.7.4.2 Observations, settings and special notes

None

8.7.4.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: 1. Wireshark "Protocol" column shows "TLSv1.2" 2. CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness 3. 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 4. "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	☒	☐

8.7.5 6.8.4.2.3 [WINNF.FT.C.SCS.4] TLS failure when SAS Test Harness certificate is issued by an unknown CA

8.7.5.1 Test date

Start date	January 31, 2019

8.7.5.2 Observations, settings and special notes

None

8.7.5.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: 1. Wireshark "Protocol" column shows "TLSv1.2" 2. CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness 3. 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 4. "Application Data" messages are not seen between WInnForum SAS Test Harness and CBSD/DP UUT. 5. 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	☒	☐

8.7.6 6.8.4.2.4 [WINNF.FT.C.SCS.5] TLS failure when certificate at the SAS Test Harness is corrupted

8.7.6.1 Test date

Start date	December 31, 2018

8.7.6.2 Observations, settings and special notes

None

8.7.6.3 Test data

Step	Test Execution Steps	Pass	Fail
1	Verify in Wireshark the following in the captured packets: 1. Wireshark "Protocol" column shows "TLSv1.2" 2. CBSD/DP UUT sends "Client Hello" message to WInnForum SAS Test Harness 3. 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 4. "Application Data" messages are not seen between WInnForum SAS Test Harness and CBSD/DP UUT. 5. 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	☒	☐

8.8 7.1 CBSD RF Power Measurement

8.8.1 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.

8.8.2 7.1.4.1.1 [WINNF.PT.C.HBT] UUT RF Transmit Power Measurement

8.8.2.1 Test date

Start date	January 31, 2019

8.8.2.2 Observations, settings and special notes

UUT transmitting at 16dBm/10MHz

8.8.2.3 Test data

8.8.2.4 Observations, settings and special notes

CBSD Vendor declaration of parameters:

Maximum rated power of UUT (EIRP, dBm/MHz)	20 dBm/MHz
Transmit dynamic range of UUT (EIRP, dBm/MHz)	30dB dynamic range (-10 dBm to +20 dBm)
Occupied bandwidth for the test case	20 MHz
maxEirp values for the test case	30
Antenna gain	5dBi +10Log(2)

8.8.2.5 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, Pi, i = {1...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 CBSD ID = C • UUT has a single valid grant G with parameters {lowFrequency = FL, highFrequency = FH, maxEirp = Pi}, with grant in AUTHORIZED state, and grantExpireTime set to a value far past the duration of this test case *Note: in order for the UUT to request a grant with the parameters {lowFrequency, highFrequency, maxEirp), the SAS Test Harness may need to provide appropriate guidance in the availableChannel object of the spectrumInquiry response message, and the operationParam object of the grant response message. Alternately, the UUT vendor may provide the ability to set those parameters on the UUT so that the UUT will request a grant with those parameters.*	-	-
2	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: o cbsdId = C o grantId = G	-	-

- SAS Test Harness responds with Heartbeat Response, including:
  - cbsdId = C
  - grantId = G
  - transmitExpireTime = current UTC time + 200 seconds
  - responseCode = 0

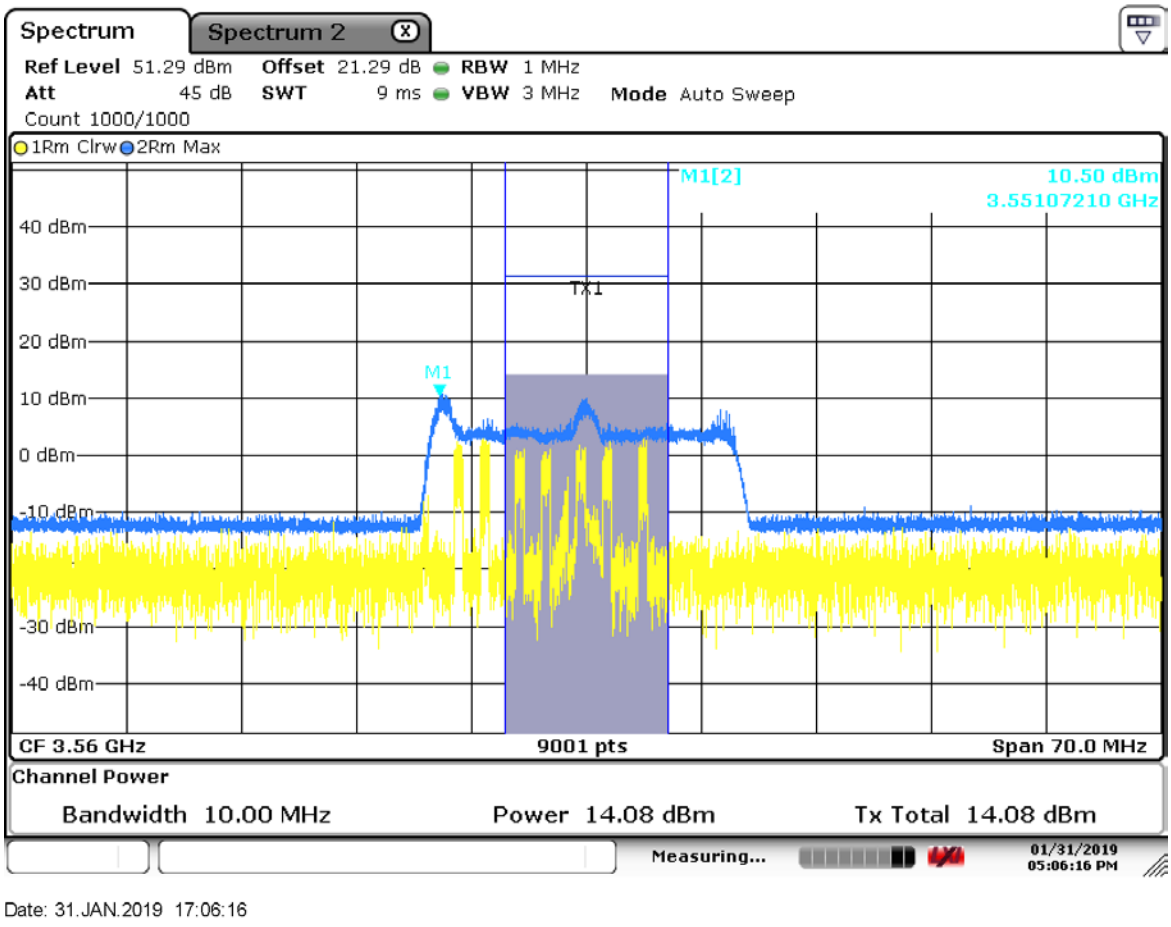
3	Tester performs power measurement on RF interface(s) of UUT, and verifies it complies with the maxEirp setting, Pi. The RF measurement method is out of scope of this document, but may include additional configuration of the UUT, as required, to fulfil the requirements of the power measurement method.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

Power measurement results - lowFrequency

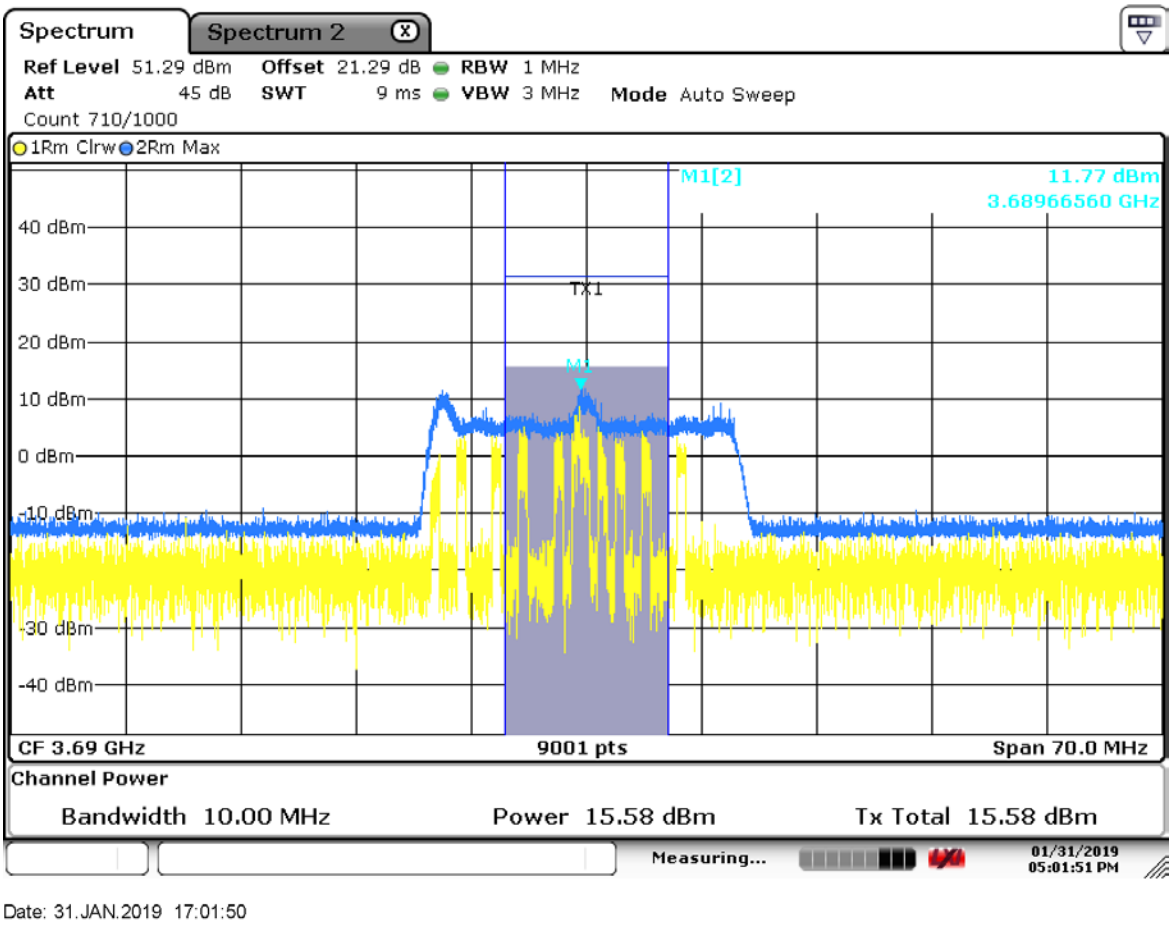
Serial Number	Measured power (dBm)	Antenna gain (dBi)	EIRP (dBm)	EIRP (mW)
48-00:24:48:0e:f5:27	+14.08	5 +10Log(2)	22.08	0.1614

Power measurement results - highFrequency

Serial Number	Measured power (dBm)	Antenna gain (dBi)	EIRP (dBm)	EIRP (mW)
48-00:24:48:0e:f5:27	+15.58	5 +10Log(2)	23.58	0.2280



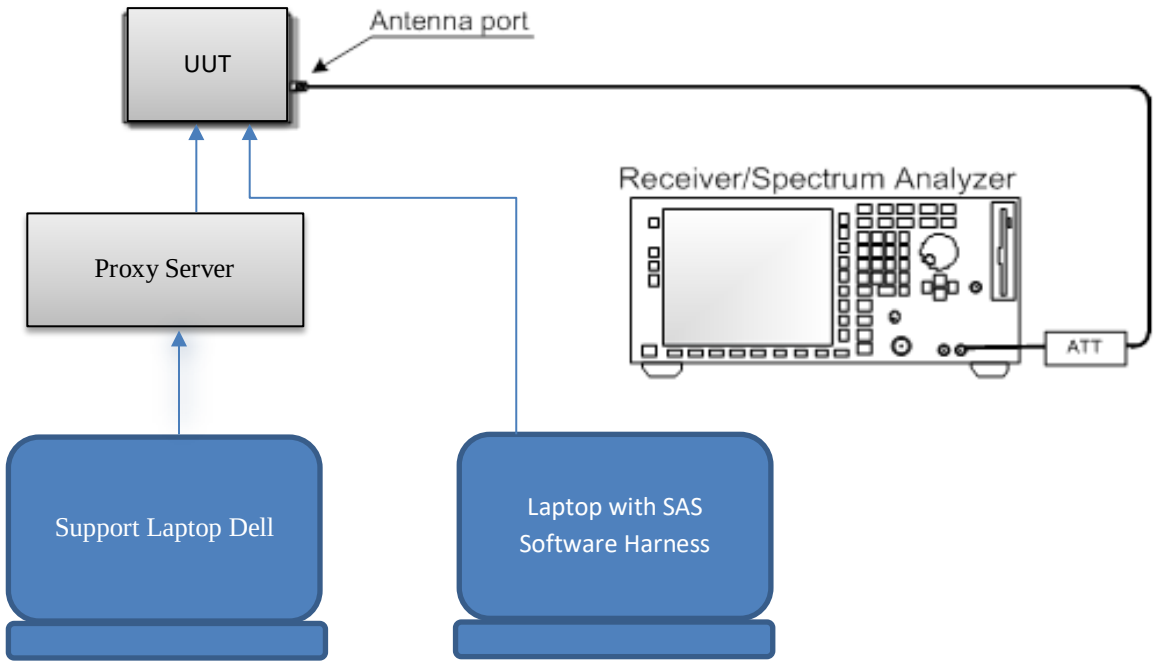
Plot 1 - Low Channel



Plot 2 - High Channel

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.D.REG.2

```
2019-01-30T17:21:49.289Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T17:21:49.289Z - INFO - the selected test from the user :
winnf.ft.d.reg.2 is starting now
2019-01-30T17:22:57.209Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T17:22:57.256Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
```

```
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:22:58.302Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
```

```
                },
                {
                    "highFrequency": 3670000000,
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T17:22:58.302Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:22:59.318Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
```

```
2019-01-30T17:22:59.318Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:23:10.345Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T17:23:10.392Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
```


2019-01-30T17:23:12.023Z - INFO - arrived to nstep starting question answer session with the technician
2019-01-30T17:23:12.023Z - INFO - the question is : Were there RF transmissions from the CBSD1 during the test? please choose one of the answers :
2019-01-30T17:23:21.657Z - INFO - for the question : Were there RF transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T17:23:21.657Z - INFO - the question is : Were there RF transmissions from the CBSD2 during the test? please choose one of the answers :
2019-01-30T17:23:27.398Z - INFO - for the question : Were there RF transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T17:23:42.795Z - INFO - The final result of the test : winnf.ft.d.reg.2 is - passed and :the additional comments for the current test are : NO RF Tx from UUTs
2019-01-30T17:21:49.289Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-May-24
2019-01-30T17:21:49.289Z - INFO - the selected test from the user : winnf.ft.d.reg.2 is starting now
2019-01-30T17:22:57.209Z - INFO - registration request from CBRS : {


```
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
```

```
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T17:22:57.256Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:22:58.302Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
```

```
                "lowFrequency": 3580000000
            },
            {
                "highFrequency": 3610000000,
                "lowFrequency": 3590000000
            },
            {
                "highFrequency": 3620000000,
                "lowFrequency": 3600000000
            },
            {
                "highFrequency": 3630000000,
                "lowFrequency": 3610000000
            },
            {
                "highFrequency": 3640000000,
                "lowFrequency": 3620000000
            },
            {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
            },
            {
                "highFrequency": 3670000000,
                "lowFrequency": 3650000000
            },
            {
                "highFrequency": 3680000000,
                "lowFrequency": 3660000000
            },
            {
                "highFrequency": 3690000000,
                "lowFrequency": 3670000000
            },
            {
                "highFrequency": 3700000000,
                "lowFrequency": 3680000000
            }
        ]
    }
```

```
    ]
}
2019-01-30T17:22:58.302Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:22:59.318Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-30T17:22:59.318Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T17:23:10.345Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
```

```
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T17:23:10.392Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
```

```
2019-01-30T17:23:12.023Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T17:23:12.023Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T17:23:21.657Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T17:23:21.657Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T17:23:27.398Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T17:23:42.795Z - INFO - The final result of the test :
winnf.ft.d.reg.2 is - passed and :the additional comments for the current
test are : NO RF Tx from UUTs
```

10.2 Log file for test case ID: WINNF.FT.D.REG.4

```
2019-01-30T19:22:55.061Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:22:55.061Z - INFO - the selected test from the user :
WINNF.FT.D.REG.4 is starting now
2019-01-30T19:23:07.342Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:23:07.388Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:23:07.999Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T19:23:08.013Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:23:09.017Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-30T19:23:09.032Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:23:39.122Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:23:39.154Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:23:40.700Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T19:23:40.700Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:23:44.608Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:23:44.608Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:23:45.904Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:23:59.874Z - INFO - The final result of the test :
WINNF.FT.D.REG.4 is - passed and :the additional comments for the current
test are : No RF Tx from UUTs
```

10.3 Log file for test case ID: WINNF.FT.C.REG.7 for device -48-00:24:48:0e:f5:27

```
2019-02-01T17:30:05.710Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T17:30:05.710Z - INFO - the selected test from the user :
WINNF.FT.C.REG.7 is starting now
2019-02-01T17:32:54.388Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T17:32:54.436Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T17:32:55.553Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T17:32:55.585Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:32:56.595Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T17:32:56.625Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T17:32:56Z",
            "grantId": "309650214",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:32:57.635Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T17:32:57.667Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T17:36:17Z"
        }
    ]
}
2019-02-01T17:33:42.818Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-02-01T17:33:42.818Z - INFO - Time interval between two heartbeat request
messages is: 45.167, limit is: 65.0
2019-02-01T17:33:42.818Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T17:37:02Z"
        }
    ]
}
2019-02-01T17:34:06.898Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-02-01T17:34:06.914Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:34:08.069Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T17:34:08.069Z - INFO - the question is : Did the CBSD stop RF
transmissions upon sending the Deregister request? please choose one of the
answers :
2019-02-01T17:34:26.789Z - INFO - for the question : Did the CBSD stop RF
transmissions upon sending the Deregister request? , the user choose y
2019-02-01T17:34:35.851Z - INFO - The final result of the test :
WINNF.FT.C.REG.7 is - passed and :the additional comments for the current
test are : verified.
```

10.4 Log file for test case ID: WINNF.FT.C.REG.7 for device - 49-00:24:48:0e:e1:47

```
2019-02-01T19:24:26.736Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T19:24:26.736Z - INFO - the selected test from the user :
WINNF.FT.C.REG.7 is starting now
2019-02-01T19:24:44.460Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T19:24:44.507Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T19:24:45.571Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T19:24:45.585Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:24:46.601Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T19:24:46.618Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T19:24:46Z",
            "grantId": "115465001",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:24:47.632Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T19:24:47.648Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:28:07Z"
        }
    ]
}
2019-02-01T19:25:24.276Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-02-01T19:25:24.276Z - INFO - Time interval between two heartbeat request
messages is: 36.643, limit is: 65.0
2019-02-01T19:25:24.290Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:28:44Z"
        }
    ]
}
2019-02-01T19:25:56.417Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:25:56.417Z - INFO - Time interval between two heartbeat request
messages is: 32.142, limit is: 65.0
2019-02-01T19:25:56.433Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:29:16Z"
        }
    ]
}
2019-02-01T19:26:41.059Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-02-01T19:26:41.059Z - INFO - Time interval between two heartbeat request
messages is: 44.642, limit is: 65.0
2019-02-01T19:26:41.075Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:30:01Z"
        }
    ]
}
2019-02-01T19:27:13.203Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:27:13.203Z - INFO - Time interval between two heartbeat request
messages is: 32.143, limit is: 65.0
2019-02-01T19:27:13.217Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:30:33Z"
        }
    ]
}
2019-02-01T19:27:50.345Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
```

```
2019-02-01T19:27:50.345Z - INFO - Time interval between two heartbeat request
messages is: 37.142, limit is: 65.0
2019-02-01T19:27:50.359Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:31:10Z"
        }
    ]
}
2019-02-01T19:28:28.987Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:28:28.987Z - INFO - Time interval between two heartbeat request
messages is: 38.643, limit is: 65.0
2019-02-01T19:28:29.003Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:31:49Z"
        }
    ]
}
2019-02-01T19:29:15.131Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:29:15.131Z - INFO - Time interval between two heartbeat request
messages is: 46.143, limit is: 65.0
```

```
2019-02-01T19:29:15.145Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:32:35Z"
        }
    ]
}
2019-02-01T19:30:00.273Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:30:00.273Z - INFO - Time interval between two heartbeat request
messages is: 45.143, limit is: 65.0
2019-02-01T19:30:00.289Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:33:20Z"
        }
    ]
}
2019-02-01T19:30:47.931Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:30:47.931Z - INFO - Time interval between two heartbeat request
messages is: 47.658, limit is: 65.0
2019-02-01T19:30:47.947Z - INFO - engine sent successfully, the response to
CBRS  : {
```

```
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:34:07Z"
        }
    ]
}
2019-02-01T19:31:22.075Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:31:22.075Z - INFO - Time interval between two heartbeat request
messages is: 34.144, limit is: 65.0
2019-02-01T19:31:22.092Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:34:42Z"
        }
    ]
}
2019-02-01T19:32:02.217Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:32:02.217Z - INFO - Time interval between two heartbeat request
messages is: 40.142, limit is: 65.0
2019-02-01T19:32:02.250Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:35:22Z"
        }
    ]
}
2019-02-01T19:32:43.378Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:32:43.378Z - INFO - Time interval between two heartbeat request
messages is: 41.161, limit is: 65.0
2019-02-01T19:32:43.394Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "115465001",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:36:03Z"
        }
    ]
}
2019-02-01T19:32:43.519Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47"
        }
    ]
}
2019-02-01T19:32:43.519Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
```

```
}
2019-02-01T19:32:44.769Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T19:32:44.785Z - INFO - the question is : Did the CBSD stop RF
transmissions upon sending the Deregister request? please choose one of the
answers :
2019-02-01T19:32:52.128Z - INFO - for the question : Did the CBSD stop RF
transmissions upon sending the Deregister request? , the user choose y
2019-02-01T19:32:57.191Z - INFO - The final result of the test :
WINNF.FT.C.REG.7 is - passed and :the additional comments for the current
test are : Verified.
```

10.5 Log file for test case ID: WINNF.FT.D.REG.9

```
2019-01-30T19:14:07.351Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:14:07.351Z - INFO - the selected test from the user :
WINNF.FT.D.REG.9 is starting now
2019-01-30T19:14:16.259Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:14:16.305Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 102
            }
        }
```

```
    ]
}
2019-01-30T19:14:23.930Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:14:23.977Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 102
            }
        }
    ]
}
2019-01-30T19:14:25.602Z - INFO - arrived to nstep starting question answer
session with the technician
```

```
2019-01-30T19:14:25.602Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:14:34.931Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:14:34.931Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:14:37.759Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:14:48.759Z - INFO - The final result of the test :
WINNF.FT.D.REG.9 is - passed and :the additional comments for the current
test are : No UUT RF TX
```

10.6 Log file for test case ID: WINNF.FT.D.REG.11

```
2019-01-30T19:26:18.543Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:26:18.543Z - INFO - the selected test from the user :
WINNF.FT.D.REG.11 is starting now
2019-01-30T19:26:31.286Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:26:31.411Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 200
            }
        }
```

```
    ]
}
2019-01-30T19:26:43.036Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:26:43.068Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 200
            }
        }
    ]
}
2019-01-30T19:26:44.944Z - INFO - arrived to nstep starting question answer
session with the technician
```

```
2019-01-30T19:26:44.944Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:26:52.209Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:26:52.209Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:26:53.881Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:27:09.960Z - INFO - The final result of the test :
WINNF.FT.D.REG.11 is - passed and :the additional comments for the current
test are : No RF Tx from UUTs, verified
```

10.7 Log file for test case ID: WINNF.FT.D.REG.13

```
2019-01-30T19:30:55.753Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:30:55.753Z - INFO - the selected test from the user :
WINNF.FT.D.REG.13 is starting now
2019-01-30T19:31:09.051Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:31:09.176Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:31:10.239Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T19:31:10.239Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:31:11.260Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-30T19:31:11.260Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:31:18.328Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:31:18.375Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 103
            }
        }
```

```
    ]
}
2019-01-30T19:31:20.000Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T19:31:20.000Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:31:24.938Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:31:24.954Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:31:26.063Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:31:38.032Z - INFO - The final result of the test :
WINNF.FT.D.REG.13 is - passed and :the additional comments for the current
test are : No RF Tx from UUTs, verified.
```

10.8 Log file for test case ID: WINNF.FT.D.REG.15

```
2019-01-30T19:33:43.831Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:33:43.831Z - INFO - the selected test from the user :
WINNF.FT.D.REG.15 is starting now
2019-01-30T19:33:58.471Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:33:58.596Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:33:59.644Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T19:33:59.658Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:34:00.674Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-30T19:34:00.674Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:34:08.207Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:34:08.237Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 101
            }
        }
```

```
    ]
}
2019-01-30T19:34:10.237Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T19:34:10.237Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:34:14.973Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:34:14.973Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:34:15.737Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:34:40.207Z - INFO - The final result of the test :
WINNF.FT.D.REG.15 is - passed and :the additional comments for the current
test are : No RF Tx from UUTs
```

10.9 Log file for test case ID: WINNF.FT.D.REG.17

```
2019-01-30T19:36:31.351Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:36:31.351Z - INFO - the selected test from the user :
WINNF.FT.D.REG.17 is starting now
2019-01-30T19:36:44.322Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:36:44.447Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 100
            }
```

```
        }
    ]
}
2019-01-30T19:36:51.072Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:36:51.104Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 100
            }
        }
    ]
}
2019-01-30T19:36:52.651Z - INFO - arrived to nstep starting question answer
session with the technician
```

```
2019-01-30T19:36:52.651Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:36:55.572Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:36:55.572Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:36:56.151Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:37:08.167Z - INFO - The final result of the test :
WINNF.FT.D.REG.17 is - passed and :the additional comments for the current
test are : No RF TX from UUTs.
```

10.10 Log file for test case ID: WINNF.FT.D.REG.19

```
2019-01-30T19:39:40.849Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:39:40.849Z - INFO - the selected test from the user :
WINNF.FT.D.REG.19 is starting now
2019-01-30T19:39:54.282Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:39:54.407Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:39:55.510Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T19:39:55.526Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3555000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:39:56.526Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-30T19:39:56.542Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:40:03.105Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:40:03.151Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "response": {
                "responseCode": 201
            }
        }
```

```
    ]
}
2019-01-30T19:40:05.151Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T19:40:05.151Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:40:10.917Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:40:10.917Z - INFO - the question is : Were there RF
transmissions from the CBSD2 during the test? please choose one of the
answers :
2019-01-30T19:40:14.026Z - INFO - for the question : Were there RF
transmissions from the CBSD2 during the test? , the user choose n
2019-01-30T19:40:32.246Z - INFO - The final result of the test :
WINNF.FT.D.REG.19 is - passed and :the additional comments for the current
test are : No RF Tx from Both UUTs
```

10.11 Log file for test case ID: WINNF.FT.C.REG.20 (reference Log)

------**For Reference only**----------

WINNF.FT.C.REG20 test case was verified by below WINNF.FT.C.REG7 (This log is for REFERENCE ONLY)

```
2019-02-01T17:30:05.710Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T17:30:05.710Z - INFO - the selected test from the user :
WINNF.FT.C.REG.7 is starting now
2019-02-01T17:32:54.388Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
```

```
    ]
}
2019-02-01T17:32:54.436Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:32:55.553Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
```

```
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T17:32:55.585Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
```

```
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3580000000,
                "lowFrequency": 3560000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3590000000,
                "lowFrequency": 3570000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3600000000,
                "lowFrequency": 3580000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3610000000,
                "lowFrequency": 3590000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3620000000,
                "lowFrequency": 3600000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
```

```
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3630000000,
                "lowFrequency": 3610000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3640000000,
                "lowFrequency": 3620000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3670000000,
                "lowFrequency": 3650000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3680000000,
                "lowFrequency": 3660000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:32:56.595Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T17:32:56.625Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
```

```
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T17:32:56Z",
            "grantId": "309650214",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:32:57.635Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T17:32:57.667Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T17:36:17Z"
        }
    ]
}
2019-02-01T17:33:42.818Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "operationState": "AUTHORIZED"
        }
    ]
}
```

```
2019-02-01T17:33:42.818Z - INFO - Time interval between two heartbeat request
messages is: 45.167, limit is: 65.0
2019-02-01T17:33:42.818Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "309650214",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T17:37:02Z"
        }
    ]
}
2019-02-01T17:34:06.898Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-02-01T17:34:06.914Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T17:34:08.069Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T17:34:08.069Z - INFO - the question is : Did the CBSD stop RF
transmissions upon sending the Deregister request? please choose one of the
answers :
2019-02-01T17:34:26.789Z - INFO - for the question : Did the CBSD stop RF
transmissions upon sending the Deregister request? , the user choose y
2019-02-01T17:34:35.851Z - INFO - The final result of the test :
WINNF.FT.C.REG.7 is - passed and :the additional comments for the current
test are : verified.
```

10.12 Log file for test case ID: WINNF.FT.D.GRA.1 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T19:59:00.109Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T19:59:00.109Z - INFO - the selected test from the user :
WINNF.FT.C.GRA.1 is starting now
2019-01-30T19:59:13.234Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T19:59:13.282Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T19:59:14.344Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T19:59:14.359Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T19:59:15.365Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T19:59:15.398Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 400
            }
        }
    ]
}
2019-01-30T19:59:17.286Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T19:59:17.286Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T19:59:23.375Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T19:59:44.387Z - INFO - The final result of the test :
WINNF.FT.C.GRA.1 is - passed and :the additional comments for the current
test are : No RF Tx from CBSD1
```

10.13 Log file for test case ID: WINNF.FT.D.GRA.1 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T20:06:14.154Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T20:06:14.154Z - INFO - the selected test from the user :
WINNF.FT.C.GRA.1 is starting now
2019-01-30T20:06:28.470Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T20:06:28.500Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T20:06:29.563Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T20:06:29.579Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T20:06:30.595Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T20:06:30.627Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 400
            }
        }
    ]
}
2019-01-30T20:06:32.377Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T20:06:32.377Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T20:06:38.174Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T20:06:48.924Z - INFO - The final result of the test :
WINNF.FT.C.GRA.1 is - passed and :the additional comments for the current
test are : No RF Tx from CBSD1.
```

10.14 Log file for test case ID: WINNF.FT.C.GRA.2 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T20:11:07.960Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T20:11:07.960Z - INFO - the selected test from the user :
WINNF.FT.C.GRA.2 is starting now
2019-01-30T20:11:24.461Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T20:11:24.586Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T20:11:25.634Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T20:11:25.664Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T20:11:26.680Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T20:11:26.696Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 401
            }
        }
    ]
}
2019-01-30T20:11:28.321Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T20:11:28.336Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T20:11:33.384Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T20:11:52.915Z - INFO - The final result of the test :
WINNF.FT.C.GRA.2 is - passed and :the additional comments for the current
test are : No RF Tx from CBSD1.
```

10.15 Log file for test case ID: WINNF.FT.C.GRA.2 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T20:08:00.664Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T20:08:00.664Z - INFO - the selected test from the user :
WINNF.FT.C.GRA.2 is starting now
2019-01-30T20:08:20.107Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T20:08:20.154Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T20:08:21.203Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T20:08:21.219Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T20:08:22.234Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T20:08:22.250Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 401
            }
        }
    ]
}
2019-01-30T20:08:23.875Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T20:08:23.875Z - INFO - the question is : Were there RF
transmissions from the CBSD1 during the test? please choose one of the
answers :
2019-01-30T20:08:27.798Z - INFO - for the question : Were there RF
transmissions from the CBSD1 during the test? , the user choose n
2019-01-30T20:08:56.549Z - INFO - The final result of the test :
WINNF.FT.C.GRA.2 is - passed and :the additional comments for the current
test are : No RF Tx from CBSD2.
```

10.16 Log file for test case ID:WINNF.FT.D.HBT.2

```
2019-01-30T21:23:18.805Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:23:18.819Z - INFO - the selected test from the user :
WINNF.FT.D.HBT.2 is starting now
2019-01-30T21:23:39.088Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:23:39.134Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:23:40.181Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:23:40.213Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:23:41.227Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:23:41.243Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:23:41Z",
            "grantId": "448157689",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:23:42.259Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:23:42.275Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:27:02Z"
        }
    ]
}
2019-01-30T21:23:46.290Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
```

```
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:23:46.338Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:23:47.354Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
```

```
            "highFrequency": 3580000000,
            "lowFrequency": 3560000000
        },
        {
            "highFrequency": 3590000000,
            "lowFrequency": 3570000000
        },
        {
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
        },
        {
            "highFrequency": 3670000000,
            "lowFrequency": 3650000000
        },
        {
            "highFrequency": 3680000000,
            "lowFrequency": 3660000000
        },
        {
            "highFrequency": 3690000000,
            "lowFrequency": 3670000000
        },
        {
            "highFrequency": 3700000000,
            "lowFrequency": 3680000000
```

```
                }
            ]
        }
    ]
}
2019-01-30T21:23:47.369Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3600000000,
                        "lowFrequency": 3580000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3610000000,
                        "lowFrequency": 3590000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
```

```
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3620000000,
        "lowFrequency": 3600000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3630000000,
        "lowFrequency": 3610000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3640000000,
        "lowFrequency": 3620000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3650000000,
        "lowFrequency": 3630000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3660000000,
        "lowFrequency": 3640000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3670000000,
        "lowFrequency": 3650000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
```

```
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:23:48.384Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:23:48.401Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
```

```
            "grantExpireTime": "2019-02-06T21:23:48Z",
            "grantId": "313486824",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:23:49.417Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:23:49.431Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:27:09Z"
        }
    ]
}
2019-01-30T21:24:18.059Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:24:18.059Z - INFO - Time interval between two heartbeat request
messages is: 35.799, limit is: 65.0
2019-01-30T21:24:18.075Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
```

```
            },
            "transmitExpireTime": "2019-01-30T21:27:38Z"
        }
    ]
}
2019-01-30T21:24:30.107Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:24:30.122Z - INFO - Time interval between two heartbeat request
messages is: 40.69, limit is: 65.0
2019-01-30T21:24:30.138Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:27:50Z"
        }
    ]
}
2019-01-30T21:24:57.265Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:24:57.265Z - INFO - Time interval between two heartbeat request
messages is: 39.206, limit is: 65.0
2019-01-30T21:24:57.280Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:28:17Z"
```

```
        }
    ]
}
2019-01-30T21:25:18.344Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:25:18.344Z - INFO - Time interval between two heartbeat request
messages is: 48.237, limit is: 65.0
2019-01-30T21:25:18.359Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:28:38Z"
        }
    ]
}
2019-01-30T21:25:38.907Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:25:38.907Z - INFO - Time interval between two heartbeat request
messages is: 41.643, limit is: 65.0
2019-01-30T21:25:38.924Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:28:58Z"
        }
    ]
```

```
}
2019-01-30T21:25:52.970Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:25:52.970Z - INFO - Time interval between two heartbeat request
messages is: 34.627, limit is: 65.0
2019-01-30T21:25:52.986Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:29:12Z"
        }
    ]
}
2019-01-30T21:26:22.112Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:26:22.112Z - INFO - Time interval between two heartbeat request
messages is: 43.205, limit is: 65.0
2019-01-30T21:26:22.128Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:29:42Z"
        }
    ]
}
2019-01-30T21:26:36.176Z - INFO - heartbeat request from CBRS  : {
```

```
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:26:36.176Z - INFO - Time interval between two heartbeat request
messages is: 43.205, limit is: 65.0
2019-01-30T21:26:36.191Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:29:56Z"
        }
    ]
}
2019-01-30T21:27:08.319Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:27:08.319Z - INFO - Time interval between two heartbeat request
messages is: 32.144, limit is: 65.0
2019-01-30T21:27:08.335Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "313486824",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:30:28Z"
        }
    ]
}
2019-01-30T21:27:11.351Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:27:11.351Z - INFO - Time interval between two heartbeat request
messages is: 49.239, limit is: 65.0
2019-01-30T21:27:11.382Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "448157689",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:30:31Z"
        }
    ]
}
2019-01-30T21:27:12.898Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:27:12.914Z - INFO - the question is : Did the CBSD1 transmit
power prior to AUTHORIZED state (first successful HBT response)? please
choose one of the answers :
2019-01-30T21:27:40.102Z - INFO - for the question : Did the CBSD1 transmit
power prior to AUTHORIZED state (first successful HBT response)? , the user
choose n
2019-01-30T21:27:40.118Z - INFO - the question is : Did the CBSD2 transmit
power prior to AUTHORIZED state (first successful HBT response)? please
choose one of the answers :
2019-01-30T21:27:44.368Z - INFO - for the question : Did the CBSD2 transmit
power prior to AUTHORIZED state (first successful HBT response)? , the user
choose n
2019-01-30T21:28:06.447Z - INFO - The final result of the test :
WINNF.FT.D.HBT.2 is - passed and :the additional comments for the current
test are : No Tx Power transmitted prior to Heartbeat 1
```

10.17 Log file for test case ID: WINNF.FT.C.HBT.3 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T21:34:18.387Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:34:18.387Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.3 is starting now
2019-01-30T21:34:31.982Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:34:32.029Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:34:33.131Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:34:33.164Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:34:34.178Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:34:34.194Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:34:34Z",
            "grantId": "968635643",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:34:35.210Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:34:35.226Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:37:55Z"
        }
    ]
}
2019-01-30T21:35:17.345Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T21:35:17.345Z - INFO - Time interval between two heartbeat request
messages is: 42.134, limit is: 65.0
2019-01-30T21:35:17.361Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:38:37Z"
        }
    ]
}
2019-01-30T21:35:49.950Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:35:49.950Z - INFO - Time interval between two heartbeat request
messages is: 32.606, limit is: 65.0
2019-01-30T21:35:49.967Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:39:09Z"
        }
    ]
}
2019-01-30T21:36:22.076Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T21:36:22.076Z - INFO - Time interval between two heartbeat request
messages is: 32.126, limit is: 65.0
2019-01-30T21:36:22.092Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "968635643",
            "response": {
                "responseCode": 105
            },
            "transmitExpireTime": "2019-01-30T21:36:22Z"
        }
    ]
}
2019-01-30T21:36:23.483Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:36:23.483Z - 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 :
2019-01-30T21:36:28.779Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 105? , the user choose y
2019-01-30T21:36:56.000Z - INFO - The final result of the test :
WINNF.FT.C.HBT.3 is - passed and :the additional comments for the current
test are : Verified. No Tx within 60 secs after response code 105.
```

10.18 Log file for test case ID: WINNF.FT.C.HBT.3 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T21:37:59.736Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:37:59.736Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.3 is starting now
2019-01-30T21:38:13.354Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:38:13.479Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:38:14.529Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:38:14.559Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:38:15.565Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:38:15.596Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:38:15Z",
            "grantId": "399930597",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:38:16.601Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:38:16.614Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:41:36Z"
        }
    ]
}
2019-01-30T21:39:06.253Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T21:39:06.253Z - INFO - Time interval between two heartbeat request
messages is: 49.652, limit is: 65.0
2019-01-30T21:39:06.269Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:42:26Z"
        }
    ]
}
2019-01-30T21:39:51.443Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:39:51.443Z - INFO - Time interval between two heartbeat request
messages is: 45.189, limit is: 65.0
2019-01-30T21:39:51.457Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:43:11Z"
        }
    ]
}
2019-01-30T21:40:24.082Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T21:40:24.082Z - INFO - Time interval between two heartbeat request
messages is: 32.639, limit is: 65.0
2019-01-30T21:40:24.112Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "399930597",
            "response": {
                "responseCode": 105
            },
            "transmitExpireTime": "2019-01-30T21:40:24Z"
        }
    ]
}
2019-01-30T21:40:26.049Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:40:26.065Z - 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 :
2019-01-30T21:40:41.930Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 105? , the user choose y
2019-01-30T21:40:56.336Z - INFO - The final result of the test :
WINNF.FT.C.HBT.3 is - passed and :the additional comments for the current
test are : No Tx power after code 105.
```

10.19 Log file for test case ID: WINNF.FT.C.HBT.5 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T21:46:44.262Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:46:44.262Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.5 is starting now
2019-01-30T21:46:59.240Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:46:59.288Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:46:59.849Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:46:59.865Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:47:00.881Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:47:00.913Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:47:00Z",
            "grantId": "813281658",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:47:01.413Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "813281658",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:47:01.427Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "813281658",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-01-30T21:47:01Z"
        }
    ]
}
2019-01-30T21:47:05.016Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "813281658"
        }
```

```
    ]
}
2019-01-30T21:47:05.046Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "813281658",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:47:06.470Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:47:06.470Z - INFO - the question is : Did the CBSD transmit at
any time during the test? please choose one of the answers :
2019-01-30T21:47:09.477Z - INFO - for the question : Did the CBSD transmit at
any time during the test? , the user choose n
2019-01-30T21:47:19.025Z - INFO - The final result of the test :
WINNF.FT.C.HBT.5 is - passed and :the additional comments for the current
test are : Verified.
```

10.20 Log file for test case ID: WINNF.FT.C.HBT.5 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T21:42:28.290Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:42:28.290Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.5 is starting now
2019-01-30T21:42:42.336Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:42:42.461Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:42:43.566Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:42:43.598Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:42:44.605Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:42:44.619Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:42:44Z",
            "grantId": "336056882",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:42:45.631Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "336056882",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:42:45.647Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "336056882",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-01-30T21:42:45Z"
        }
    ]
}
2019-01-30T21:42:49.207Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "336056882"
        }
```

```
    ]
}
2019-01-30T21:42:49.253Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "336056882",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:42:50.486Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:42:50.486Z - INFO - the question is : Did the CBSD transmit at
any time during the test? please choose one of the answers :
2019-01-30T21:43:26.710Z - INFO - for the question : Did the CBSD transmit at
any time during the test? , the user choose n
2019-01-30T21:43:33.571Z - INFO - The final result of the test :
WINNF.FT.C.HBT.5 is - passed and :the additional comments for the current
test are : No.
```

10.21 Log file for test case ID: WINNF.FT.C.HBT.6 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T21:48:51.461Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:48:51.461Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.6 is starting now
2019-01-30T21:49:07.200Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:49:07.325Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:49:08.372Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:49:08.404Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:49:09.404Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:49:09.436Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:49:09Z",
            "grantId": "629653924",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:49:10.450Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:49:10.467Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:52:30Z"
        }
    ]
}
2019-01-30T21:49:46.128Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T21:49:46.128Z - INFO - Time interval between two heartbeat request
messages is: 35.677, limit is: 65.0
2019-01-30T21:49:46.144Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:53:06Z"
        }
    ]
}
2019-01-30T21:50:28.257Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:50:28.257Z - INFO - Time interval between two heartbeat request
messages is: 42.13, limit is: 65.0
2019-01-30T21:50:28.273Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:53:48Z"
        }
    ]
}
2019-01-30T21:51:02.382Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T21:51:02.382Z - INFO - Time interval between two heartbeat request
messages is: 34.125, limit is: 65.0
2019-01-30T21:51:02.414Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-01-30T21:51:02Z"
        }
    ]
}
2019-01-30T21:51:05.979Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924"
        }
    ]
}
2019-01-30T21:51:05.994Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "629653924",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:51:07.726Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:51:07.742Z - 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 :
2019-01-30T21:51:18.206Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 501? , the user choose y
2019-01-30T21:51:22.770Z - INFO - The final result of the test :
WINNF.FT.C.HBT.6 is - passed and :the additional comments for the current
test are : Verified.
```

10.22 Log file for test case ID: WINNF.FT.C.HBT.6 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T21:53:27.048Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T21:53:27.048Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.6 is starting now
2019-01-30T21:53:44.217Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T21:53:44.263Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T21:53:45.372Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T21:53:45.404Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:53:46.404Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T21:53:46.436Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T21:53:46Z",
            "grantId": "347395768",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:53:47.436Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T21:53:47.467Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:57:07Z"
        }
    ]
}
2019-01-30T21:54:27.082Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T21:54:27.082Z - INFO - Time interval between two heartbeat request
messages is: 39.646, limit is: 65.0
2019-01-30T21:54:27.096Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:57:47Z"
        }
    ]
}
2019-01-30T21:55:02.197Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T21:55:02.197Z - INFO - Time interval between two heartbeat request
messages is: 35.116, limit is: 65.0
2019-01-30T21:55:02.213Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T21:58:22Z"
        }
    ]
}
2019-01-30T21:55:41.319Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T21:55:41.319Z - INFO - Time interval between two heartbeat request
messages is: 39.122, limit is: 65.0
2019-01-30T21:55:41.351Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-01-30T21:55:41Z"
        }
    ]
}
2019-01-30T21:55:45.372Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768"
        }
    ]
}
2019-01-30T21:55:45.388Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "347395768",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T21:55:47.348Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T21:55:47.364Z - 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 :
2019-01-30T21:55:54.885Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 501? , the user choose y
2019-01-30T21:56:01.306Z - INFO - The final result of the test :
WINNF.FT.C.HBT.6 is - passed and :the additional comments for the current
test are : Verified.
```

10.23 Log file for test case ID: WINNF.FT.C.HBT.7 for device - 48-00:24:48:0e:f5:27

```
2019-01-30T22:06:43.355Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T22:06:43.355Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.7 is starting now
2019-01-30T22:06:56.200Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T22:06:56.325Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T22:06:57.372Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T22:06:57.404Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:06:58.407Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T22:06:58.438Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T22:06:58Z",
            "grantId": "399079158",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:06:59.444Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T22:06:59.460Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:10:19Z"
        }
    ]
}
2019-01-30T22:07:42.092Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T22:07:42.092Z - INFO - Time interval between two heartbeat request
messages is: 42.648, limit is: 65.0
2019-01-30T22:07:42.107Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:11:02Z"
        }
    ]
}
2019-01-30T22:08:23.226Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:08:23.226Z - INFO - Time interval between two heartbeat request
messages is: 41.134, limit is: 65.0
2019-01-30T22:08:23.242Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:11:43Z"
        }
    ]
}
2019-01-30T22:09:12.371Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T22:09:12.371Z - INFO - Time interval between two heartbeat request
messages is: 49.146, limit is: 65.0
2019-01-30T22:09:12.403Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "response": {
                "responseCode": 502
            },
            "transmitExpireTime": "2019-01-30T22:09:12Z"
        }
    ]
}
2019-01-30T22:09:13.424Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158"
        }
    ]
}
2019-01-30T22:09:13.457Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "399079158",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:09:14.676Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T22:09:14.690Z - 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 :
2019-01-30T22:09:19.349Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 502? , the user choose y
2019-01-30T22:09:23.801Z - INFO - The final result of the test :
WINNF.FT.C.HBT.7 is - passed and :the additional comments for the current
test are : Verified.
```

10.24 Log file for test case ID: WINNF.FT.C.HBT.7 for device - 49-00:24:48:0e:e1:47

```
2019-01-30T22:01:42.269Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T22:01:42.269Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.7 is starting now
2019-01-30T22:01:57.069Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T22:01:57.131Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T22:01:58.236Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T22:01:58.266Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:01:59.273Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T22:01:59.289Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T22:01:59Z",
            "grantId": "492749756",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:02:00.306Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T22:02:00.322Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:05:20Z"
        }
    ]
}
2019-01-30T22:02:31.926Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-01-30T22:02:31.926Z - INFO - Time interval between two heartbeat request
messages is: 31.619, limit is: 65.0
2019-01-30T22:02:31.940Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:05:51Z"
        }
    ]
}
2019-01-30T22:03:13.108Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:03:13.108Z - INFO - Time interval between two heartbeat request
messages is: 41.182, limit is: 65.0
2019-01-30T22:03:13.122Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:06:33Z"
        }
    ]
}
2019-01-30T22:03:53.286Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-01-30T22:03:53.286Z - INFO - Time interval between two heartbeat request
messages is: 40.178, limit is: 65.0
2019-01-30T22:03:53.316Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "response": {
                "responseCode": 502
            },
            "transmitExpireTime": "2019-01-30T22:03:53Z"
        }
    ]
}
2019-01-30T22:03:54.335Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756"
        }
    ]
}
2019-01-30T22:03:54.367Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "492749756",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:03:55.483Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T22:03:55.497Z - 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 :
2019-01-30T22:04:06.076Z - INFO - for the question : Did the CBSD stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 502? , the user choose y
2019-01-30T22:04:10.448Z - INFO - The final result of the test :
WINNF.FT.C.HBT.7 is - passed and :the additional comments for the current
test are : Verified.
```

10.25 Log file for test case ID: WINNF.FT.D.HBT.8

```
2019-01-30T22:24:01.536Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-30T22:24:01.536Z - INFO - the selected test from the user :
WINNF.FT.D.HBT.8 is starting now
2019-01-30T22:24:16.138Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T22:24:16.186Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-30T22:24:17.236Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-30T22:24:17.266Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:24:18.286Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T22:24:18.302Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-06T22:24:18Z",
            "grantId": "527622083",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:24:19.315Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T22:24:19.331Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:27:39Z"
        }
    ]
}
2019-01-30T22:24:21.845Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
```

```
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-30T22:24:21.907Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:24:22.917Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
```

```
            "highFrequency": 3580000000,
            "lowFrequency": 3560000000
        },
        {
            "highFrequency": 3590000000,
            "lowFrequency": 3570000000
        },
        {
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
        },
        {
            "highFrequency": 3670000000,
            "lowFrequency": 3650000000
        },
        {
            "highFrequency": 3680000000,
            "lowFrequency": 3660000000
        },
        {
            "highFrequency": 3690000000,
            "lowFrequency": 3670000000
        },
        {
            "highFrequency": 3700000000,
            "lowFrequency": 3680000000
```

```
                }
            ]
        }
    ]
}
2019-01-30T22:24:22.948Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3600000000,
                        "lowFrequency": 3580000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3610000000,
                        "lowFrequency": 3590000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
```

```
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3620000000,
        "lowFrequency": 3600000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3630000000,
        "lowFrequency": 3610000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3640000000,
        "lowFrequency": 3620000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3650000000,
        "lowFrequency": 3630000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3660000000,
        "lowFrequency": 3640000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3670000000,
        "lowFrequency": 3650000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
```

```
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:24:23.960Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-30T22:24:23.990Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
```

```
            "grantExpireTime": "2019-02-06T22:24:23Z",
            "grantId": "284934047",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-30T22:24:25.015Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-30T22:24:25.030Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:27:45Z"
        }
    ]
}
2019-01-30T22:24:56.109Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:24:56.109Z - INFO - Time interval between two heartbeat request
messages is: 36.795, limit is: 65.0
2019-01-30T22:24:56.125Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "response": {
                "responseCode": 0
```

```
            },
            "transmitExpireTime": "2019-01-30T22:28:16Z"
        }
    ]
}
2019-01-30T22:25:13.197Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:25:13.197Z - INFO - Time interval between two heartbeat request
messages is: 48.182, limit is: 65.0
2019-01-30T22:25:13.227Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:28:33Z"
        }
    ]
}
2019-01-30T22:25:35.328Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:25:35.345Z - INFO - Time interval between two heartbeat request
messages is: 39.219, limit is: 65.0
2019-01-30T22:25:35.361Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:28:55Z"
```

```
        }
    ]
}
2019-01-30T22:25:48.914Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:25:48.914Z - INFO - Time interval between two heartbeat request
messages is: 35.717, limit is: 65.0
2019-01-30T22:25:48.928Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:29:08Z"
        }
    ]
}
2019-01-30T22:26:16.059Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:26:16.075Z - INFO - Time interval between two heartbeat request
messages is: 40.731, limit is: 65.0
2019-01-30T22:26:16.091Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "527622083",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-30T22:29:36Z"
        }
    ]
```

```
}
2019-01-30T22:26:34.138Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-30T22:26:34.153Z - INFO - Time interval between two heartbeat request
messages is: 45.224, limit is: 65.0
2019-01-30T22:26:34.168Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "284934047",
            "response": {
                "responseCode": 500
            },
            "transmitExpireTime": "2019-01-30T22:26:34Z"
        }
    ]
}
2019-01-30T22:26:35.900Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-30T22:26:35.914Z - INFO - the question is : Did the CBSD1 transmit
power prior to AUTHORIZED state (first successful HBT response)? please
choose one of the answers :
2019-01-30T22:27:06.831Z - INFO - for the question : Did the CBSD1 transmit
power prior to AUTHORIZED state (first successful HBT response)? , the user
choose n
2019-01-30T22:27:06.846Z - INFO - the question is : Did the CBSD2 stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 500? please choose one of the answers :
2019-01-30T22:27:14.664Z - INFO - for the question : Did the CBSD2 stop RF
transmission within 60 seconds of receiving Heartbeat response with
responseCode = 500? , the user choose y
2019-01-30T22:27:20.811Z - INFO - The final result of the test :
WINNF.FT.D.HBT.8 is - passed and :the additional comments for the current
test are : verified.
```

10.26 Log file for test case ID: WINNF.FT.C.HBT.9 for device - 48-00:24:48:0e:f5:27

```
2019-02-01T01:43:04.805Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T01:43:04.805Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.9 is starting now
2019-02-01T01:43:19.836Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T01:43:19.961Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T01:43:21.009Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T01:43:21.023Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T01:43:22.039Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T01:43:22.055Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T01:43:22Z",
            "grantId": "205544903",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T01:43:23.071Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "205544903",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T01:46:43.158Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "205544903",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-02-01T01:46:43Z"
        }
    ]
}
2019-02-01T01:46:45.033Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T01:46:45.033Z - INFO - the question is : Were there RF
transmissions from the CBSD during the test? please choose one of the answers
:
```

```
2019-02-01T01:47:33.457Z - INFO - for the question : Were there RF
transmissions from the CBSD during the test? , the user choose n
2019-02-01T01:48:13.911Z - INFO - The final result of the test :
WINNF.FT.C.HBT.9 is - passed and :the additional comments for the current
test are : No RF Tx from CBSD1 from start of test to 60 sec.
```

10.27 Log file for test case ID: WINNF.FT.C.HBT.9 for device - 49-00:24:48:0e:e1:47


```
2019-02-01T19:09:41.565Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T19:09:41.565Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.9 is starting now
2019-02-01T19:10:04.460Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T19:10:04.507Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T19:10:05.553Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T19:10:05.585Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:10:06.601Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T19:10:06.618Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T19:10:06Z",
            "grantId": "264915568",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:10:07.624Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "264915568",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T19:13:27.713Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "264915568",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-02-01T19:13:27Z"
        }
    ]
}
2019-02-01T19:13:29.697Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T19:13:29.697Z - INFO - the question is : Were there RF
transmissions from the CBSD during the test? please choose one of the answers
:
```

```
2019-02-01T19:13:41.684Z - INFO - for the question : Were there RF
transmissions from the CBSD during the test? , the user choose n
2019-02-01T19:13:48.464Z - INFO - The final result of the test :
WINNF.FT.C.HBT.9 is - passed and :the additional comments for the current
test are : Verified.
```

10.28 Log file for test case ID: WINNF.FT.C.HBT.10 for device - 48-00:24:48:0e:f5:27

```
2019-02-01T02:01:54.778Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T02:01:54.778Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.10 is starting now
2019-02-01T02:02:17.545Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T02:02:17.670Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T02:02:18.717Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T02:02:18.747Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T02:02:19.763Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T02:02:19.779Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T02:02:19Z",
            "grantId": "364365862",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T02:02:20.795Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T02:02:20.811Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T02:05:40Z"
        }
    ]
}
2019-02-01T02:02:53.437Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-02-01T02:02:53.437Z - INFO - Time interval between two heartbeat request
messages is: 32.642, limit is: 65.0
2019-02-01T02:02:53.453Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T02:06:13Z"
        }
    ]
}
2019-02-01T02:03:36.579Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T02:03:36.595Z - INFO - Time interval between two heartbeat request
messages is: 43.143, limit is: 65.0
2019-02-01T02:03:36.595Z - INFO - LAST HBT RESPONSE THAT SET
TRANSMIT_EXPIRE_TIME WAS AT:  2019-02-01 02:02:53.437000
2019-02-01T02:05:02.414Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T02:05:02.414Z - INFO - request message received while HBT is
absent, sleep 119 sec before responding
2019-02-01T02:05:44.479Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-02-01T02:05:44.479Z - INFO - request message received while HBT is
absent, sleep 77 sec before responding
2019-02-01T02:06:56.607Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "364365862",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-02-01T02:06:56Z"
        }
    ]
}
2019-02-01T02:06:58.075Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T02:06:58.075Z - INFO - the question is : Did the CBSD stop RF
transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? please choose one of the answers :
2019-02-01T02:11:09.476Z - INFO - engine sent successfully, the response to
CBRS  : "list index out of range"
2019-02-01T02:11:09.476Z - INFO - engine sent successfully, the response to
CBRS  : "list index out of range"
2019-02-01T02:11:09.476Z - INFO - for the question : Did the CBSD stop RF
transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? , the user choose y
2019-02-01T02:12:46.793Z - INFO - The final result of the test :
WINNF.FT.C.HBT.10 is - passed and :the additional comments for the current
test are : the additional comments for the current test are : Exception
happened during processing of request from----------------------------------
-----HB request before HB response code 501
```

10.29 Log file for test case ID: WINNF.FT.C.HBT.10 for device - 49-00:24:48:0e:e1:47

```
2019-02-01T19:15:23.364Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T19:15:23.364Z - INFO - the selected test from the user :
WINNF.FT.C.HBT.10 is starting now
2019-02-01T19:15:42.163Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T19:15:42.288Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-02-01T19:15:43.345Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-02-01T19:15:43.361Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:15:44.375Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T19:15:44.391Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T19:15:44Z",
            "grantId": "344704651",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:15:45.413Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T19:15:45.428Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:19:05Z"
        }
    ]
}
2019-02-01T19:16:28.035Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "operationState": "AUTHORIZED"
```

```
        }
    ]
}
2019-02-01T19:16:28.051Z - INFO - Time interval between two heartbeat request
messages is: 42.622, limit is: 65.0
2019-02-01T19:16:28.066Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-02-01T19:19:48Z"
        }
    ]
}
2019-02-01T19:17:08.693Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:17:08.693Z - INFO - Time interval between two heartbeat request
messages is: 40.658, limit is: 65.0
2019-02-01T19:17:08.709Z - INFO - LAST HBT RESPONSE THAT SET
TRANSMIT_EXPIRE_TIME WAS AT:  2019-02-01 19:16:28.035000
2019-02-01T19:18:35.088Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-02-01T19:18:35.088Z - INFO - request message received while HBT is
absent, sleep 118 sec before responding
2019-02-01T19:19:18.105Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "operationState": "AUTHORIZED"
        }
    ]
```

```
}
2019-02-01T19:19:18.105Z - INFO - request message received while HBT is
absent, sleep 75 sec before responding
2019-02-01T19:20:28.734Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "344704651",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-02-01T19:20:28Z"
        }
    ]
}
2019-02-01T19:20:30.641Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T19:20:30.641Z - INFO - the question is : Did the CBSD stop RF
transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? please choose one of the answers :
2019-02-01T19:20:42.048Z - INFO - engine sent successfully, the response to
CBRS  : "list index out of range"
2019-02-01T19:20:42.048Z - INFO - engine sent successfully, the response to
CBRS  : "list index out of range"
2019-02-01T19:20:42.048Z - INFO - for the question : Did the CBSD stop RF
transmissions within (transmitExpireTime + 60seconds) of last valid heartbeat
response? , the user choose y
2019-02-01T19:20:49.736Z - INFO - The final result of the test :
WINNF.FT.C.HBT.10 is – passed
```

10.30 Log file for test case ID: WINNF.FT.D.MES.2

```
2019-02-01T19:00:55.283Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-02-01T19:00:55.283Z - INFO - the selected test from the user :
WINNF.FT.D.MES.2 is starting now
2019-02-01T19:03:26.543Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T19:03:26.591Z - INFO - Response message contains measReportConfig
2019-02-01T19:03:26.591Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "measReportConfig": [
                "RECEIVED_POWER_WITHOUT_GRANT"
```

```
            ],
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:03:27.707Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
```

```
                "lowFrequency": 3640000000
            },
            {
                "highFrequency": 3670000000,
                "lowFrequency": 3650000000
            },
            {
                "highFrequency": 3680000000,
                "lowFrequency": 3660000000
            },
            {
                "highFrequency": 3690000000,
                "lowFrequency": 3670000000
            },
            {
                "highFrequency": 3700000000,
                "lowFrequency": 3680000000
            }
        ],
        "measReport": {
            "rcvdPowerMeasReports": [
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3550000000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3551400000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3552800000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3554200000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3555600000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3557000000,
                    "measRcvdPower": -100
```

```
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3558400000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3559800000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3561200000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3562600000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3564000000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3565400000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3566800000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3568200000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3569600000,
        "measRcvdPower": -100
    },
    {
        "measBandwidth": 1400000,
        "measFrequency": 3571000000,
        "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3572400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3573800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3575200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3576600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3578000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3579400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3580800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3582200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3583600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3585000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3586400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3587800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3589200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3590600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3592000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3593400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3594800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3596200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3597600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3599000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3600400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3601800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3603200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3604600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3606000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3607400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3608800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3610200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3611600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3613000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3614400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3615800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3617200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3618600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3620000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3621400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3622800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3624200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3625600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3627000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3628400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3629800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3631200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3632600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3634000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3635400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3636800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3638200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3639600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3641000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3642400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3643800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3645200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3646600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3648000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3649400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3650800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3652200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3653600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3655000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3656400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3657800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3659200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3660600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3662000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3663400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3664800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3666200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3667600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3669000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3670400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3671800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3673200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3674600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3676000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3677400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3678800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3680200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3681600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3683000000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3684400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3685800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3687200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3688600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3690000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3691400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3692800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3694200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3695600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3697000000,
            "measRcvdPower": -100
```

```
                    },
                    {
                        "measBandwidth": 1600000,
                        "measFrequency": 3698400000,
                        "measRcvdPower": -100
                    }
                ]
            }
        }
    ]
}
2019-02-01T19:03:27.753Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3600000000,
                        "lowFrequency": 3580000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
```

```
            "frequencyRange": {
                "highFrequency": 3610000000,
                "lowFrequency": 3590000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3620000000,
                "lowFrequency": 3600000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3630000000,
                "lowFrequency": 3610000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3640000000,
                "lowFrequency": 3620000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3670000000,
```

```
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:03:28.770Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "measReport": {
                "rcvdPowerMeasReports": [
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3550000000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3551400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3552800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3554200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3555600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3557000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3558400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3559800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3561200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3562600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3564000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3565400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3566800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3568200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3569600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3571000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3572400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3573800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3575200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3576600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3578000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3579400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3580800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3582200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3583600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3585000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3586400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3587800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3589200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3590600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3592000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3593400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3594800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3596200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3597600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3599000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3600400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3601800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3603200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3604600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3606000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3607400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3608800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3610200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3611600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3613000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3614400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3615800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3617200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3618600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3620000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3621400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3622800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3624200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3625600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3627000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3628400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3629800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3631200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3632600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3634000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3635400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3636800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3638200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3639600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3641000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3642400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3643800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3645200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3646600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3648000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3649400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3650800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3652200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3653600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3655000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3656400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3657800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3659200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3660600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3662000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3663400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3664800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3666200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3667600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3669000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3670400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3671800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3673200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3674600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3676000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3677400000,
```

```
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3678800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3680200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3681600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3683000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3684400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3685800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3687200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3688600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3690000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3691400000,
```

```
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3692800000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3694200000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3695600000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3697000000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1600000,
                        "measFrequency": 3698400000,
                        "measRcvdPower": -100
                    }
                ]
            },
            "operationParam": {
                "maxEirp": 14,
                "operationFrequencyRange": {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T19:03:28.802Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T19:03:28Z",
            "grantId": "791244007",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
```

```
            }
        }
    ]
}
2019-02-01T19:03:29.920Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "791244007",
            "operationState": "GRANTED"
        }
    ]
}
2019-02-01T19:03:29.920Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "791244007",
            "response": {
                "responseCode": 501
            },
            "transmitExpireTime": "2019-02-01T19:03:29Z"
        }
    ]
}
2019-02-01T19:03:50.984Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 5,
                "eirpCapability": 24,
                "height": 5,
                "heightType": "AGL",
```

```
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-02-01T19:03:51.032Z - INFO - Response message contains measReportConfig
2019-02-01T19:03:51.046Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "measReportConfig": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:03:52.062Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
```

```
            },
            {
                "highFrequency": 3620000000,
                "lowFrequency": 3600000000
            },
            {
                "highFrequency": 3630000000,
                "lowFrequency": 3610000000
            },
            {
                "highFrequency": 3640000000,
                "lowFrequency": 3620000000
            },
            {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
            },
            {
                "highFrequency": 3670000000,
                "lowFrequency": 3650000000
            },
            {
                "highFrequency": 3680000000,
                "lowFrequency": 3660000000
            },
            {
                "highFrequency": 3690000000,
                "lowFrequency": 3670000000
            },
            {
                "highFrequency": 3700000000,
                "lowFrequency": 3680000000
            }
        ],
        "measReport": {
            "rcvdPowerMeasReports": [
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3550000000,
                    "measRcvdPower": -100
                },
                {
                    "measBandwidth": 1400000,
                    "measFrequency": 3551400000,
                    "measRcvdPower": -100
                },
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3552800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3554200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3555600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3557000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3558400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3559800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3561200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3562600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3564000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3565400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3566800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3568200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3569600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3571000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3572400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3573800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3575200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3576600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3578000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3579400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3580800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3582200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3583600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3585000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3586400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3587800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3589200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3590600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3592000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3593400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3594800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3596200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3597600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3599000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3600400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3601800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3603200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3604600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3606000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3607400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3608800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3610200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3611600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3613000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3614400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3615800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3617200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3618600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3620000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3621400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3622800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3624200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3625600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3627000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3628400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3629800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3631200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3632600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3634000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3635400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3636800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3638200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3639600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3641000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3642400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3643800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3645200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3646600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3648000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3649400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3650800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3652200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3653600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3655000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3656400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3657800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3659200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3660600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3662000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3663400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3664800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3666200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3667600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3669000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3670400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3671800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3673200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3674600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3676000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3677400000,
    "measRcvdPower": -100
},
```

```
{
    "measBandwidth": 1400000,
    "measFrequency": 3678800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3680200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3681600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3683000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3684400000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3685800000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3687200000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3688600000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3690000000,
    "measRcvdPower": -100
},
{
    "measBandwidth": 1400000,
    "measFrequency": 3691400000,
    "measRcvdPower": -100
},
```

```
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3692800000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3694200000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3695600000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3697000000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1600000,
                        "measFrequency": 3698400000,
                        "measRcvdPower": -100
                    }
                ]
            }
        }
    ]
}
2019-02-01T19:03:52.078Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
```

```
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3590000000,
            "lowFrequency": 3570000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
```

```
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3670000000,
                "lowFrequency": 3650000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3680000000,
                "lowFrequency": 3660000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3690000000,
                "lowFrequency": 3670000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3700000000,
                "lowFrequency": 3680000000
            },
            "ruleApplied": "FCC_PART_96"
        }
    ],
    "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
    "response": {
```

```
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:03:53.109Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "measReport": {
                "rcvdPowerMeasReports": [
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3550000000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3551400000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3552800000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3554200000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3555600000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3557000000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3558400000,
                        "measRcvdPower": -100
                    },
                    {
                        "measBandwidth": 1400000,
                        "measFrequency": 3559800000,
                        "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3561200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3562600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3564000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3565400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3566800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3568200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3569600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3571000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3572400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3573800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3575200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3576600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3578000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3579400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3580800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3582200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3583600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3585000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3586400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3587800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3589200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3590600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3592000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3593400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3594800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3596200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3597600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3599000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3600400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3601800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3603200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3604600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3606000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3607400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3608800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3610200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3611600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3613000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3614400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3615800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3617200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3618600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3620000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3621400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3622800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3624200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3625600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3627000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3628400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3629800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3631200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3632600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3634000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3635400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3636800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3638200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3639600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3641000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3642400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3643800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3645200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3646600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3648000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3649400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3650800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3652200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3653600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3655000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3656400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3657800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3659200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3660600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3662000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3663400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3664800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3666200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3667600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3669000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3670400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3671800000,
            "measRcvdPower": -100
```

```
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3673200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3674600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3676000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3677400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3678800000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3680200000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3681600000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3683000000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3684400000,
            "measRcvdPower": -100
        },
        {
            "measBandwidth": 1400000,
            "measFrequency": 3685800000,
            "measRcvdPower": -100
```

```
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3687200000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3688600000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3690000000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3691400000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3692800000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3694200000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3695600000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1400000,
                "measFrequency": 3697000000,
                "measRcvdPower": -100
            },
            {
                "measBandwidth": 1600000,
                "measFrequency": 3698400000,
                "measRcvdPower": -100
            }
        ]
    },
    "operationParam": {
        "maxEirp": 14,
```

```
                "operationFrequencyRange": {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                }
            }
        }
    ]
}
2019-02-01T19:03:53.141Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-08T19:03:53Z",
            "grantId": "251929036",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-02-01T19:03:54.907Z - INFO - arrived to nstep starting question answer
session with the technician
2019-02-01T19:04:01.141Z - INFO - The final result of the test :
WINNF.FT.D.MES.2 is - passed and :the additional comments for the current
test are : Verified.
```

10.31 Log file for test case ID: WINNF.FT.D.RLQ.2

```
2019-01-31T00:12:10.410Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-31T00:12:10.410Z - INFO - the selected test from the user :
WINNF.FT.D.RLQ.2 is starting now
2019-01-31T00:12:27.161Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-31T00:12:27.286Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-31T00:12:28.332Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-31T00:12:28.364Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:12:29.378Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-31T00:12:29.394Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-07T00:12:29Z",
            "grantId": "397510996",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:12:30.411Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-31T00:12:30.426Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:15:50Z"
        }
    ]
}
2019-01-31T00:12:34.941Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
```

```
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-31T00:12:35.066Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:12:36.082Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
```

```
            "highFrequency": 3580000000,
            "lowFrequency": 3560000000
        },
        {
            "highFrequency": 3590000000,
            "lowFrequency": 3570000000
        },
        {
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
        },
        {
            "highFrequency": 3670000000,
            "lowFrequency": 3650000000
        },
        {
            "highFrequency": 3680000000,
            "lowFrequency": 3660000000
        },
        {
            "highFrequency": 3690000000,
            "lowFrequency": 3670000000
        },
        {
            "highFrequency": 3700000000,
            "lowFrequency": 3680000000
```

```
                }
            ]
        }
    ]
}
2019-01-31T00:12:36.098Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3600000000,
                        "lowFrequency": 3580000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3610000000,
                        "lowFrequency": 3590000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
```

```
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
        "frequencyRange": {
            "highFrequency": 3670000000,
            "lowFrequency": 3650000000
        },
        "ruleApplied": "FCC_PART_96"
    },
    {
        "channelType": "GAA",
```

```
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:12:37.114Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-31T00:12:37.130Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
```

```
            "grantExpireTime": "2019-02-07T00:12:37Z",
            "grantId": "107293308",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:12:38.144Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-31T00:12:38.161Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:15:58Z"
        }
    ]
}
2019-01-31T00:13:08.786Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:13:08.786Z - INFO - Time interval between two heartbeat request
messages is: 38.376, limit is: 65.0
2019-01-31T00:13:08.802Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
```

```
            },
            "transmitExpireTime": "2019-01-31T00:16:28Z"
        }
    ]
}
2019-01-31T00:13:16.834Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:13:16.834Z - INFO - Time interval between two heartbeat request
messages is: 38.689, limit is: 65.0
2019-01-31T00:13:16.849Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:16:36Z"
        }
    ]
}
2019-01-31T00:13:49.976Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:13:49.976Z - INFO - Time interval between two heartbeat request
messages is: 41.189, limit is: 65.0
2019-01-31T00:13:50.039Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:17:10Z"
```

```
        }
    ]
}
2019-01-31T00:14:01.069Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:14:01.085Z - INFO - Time interval between two heartbeat request
messages is: 44.236, limit is: 65.0
2019-01-31T00:14:01.101Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:17:21Z"
        }
    ]
}
2019-01-31T00:14:27.211Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:14:27.211Z - INFO - Time interval between two heartbeat request
messages is: 37.236, limit is: 65.0
2019-01-31T00:14:27.226Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:17:47Z"
        }
    ]
```

```
}
2019-01-31T00:14:43.775Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:14:43.775Z - INFO - Time interval between two heartbeat request
messages is: 42.705, limit is: 65.0
2019-01-31T00:14:43.790Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:18:03Z"
        }
    ]
}
2019-01-31T00:15:05.915Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:15:05.915Z - INFO - Time interval between two heartbeat request
messages is: 38.704, limit is: 65.0
2019-01-31T00:15:05.931Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:18:25Z"
        }
    ]
}
2019-01-31T00:15:14.979Z - INFO - heartbeat request from CBRS  : {
```

```
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:15:14.979Z - INFO - Time interval between two heartbeat request
messages is: 31.204, limit is: 65.0
2019-01-31T00:15:14.994Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:18:34Z"
        }
    ]
}
2019-01-31T00:15:55.121Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:15:55.121Z - INFO - Time interval between two heartbeat request
messages is: 49.205, limit is: 65.0
2019-01-31T00:15:55.137Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:19:15Z"
        }
    ]
}
2019-01-31T00:15:55.262Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:15:55.262Z - INFO - Time interval between two heartbeat request
messages is: 40.283, limit is: 65.0
2019-01-31T00:15:55.278Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:19:15Z"
        }
    ]
}
2019-01-31T00:16:33.904Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:16:33.920Z - INFO - Time interval between two heartbeat request
messages is: 38.783, limit is: 65.0
2019-01-31T00:16:33.934Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:19:53Z"
        }
    ]
}
2019-01-31T00:16:34.950Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
```

```
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:16:34.950Z - INFO - Time interval between two heartbeat request
messages is: 39.689, limit is: 65.0
2019-01-31T00:16:34.950Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:19:54Z"
        }
    ]
}
2019-01-31T00:17:16.092Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:17:16.092Z - INFO - Time interval between two heartbeat request
messages is: 41.142, limit is: 65.0
2019-01-31T00:17:16.108Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:20:36Z"
        }
    ]
}
2019-01-31T00:17:18.124Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
```

```
    ]
}
2019-01-31T00:17:18.124Z - INFO - Time interval between two heartbeat request
messages is: 44.22, limit is: 65.0
2019-01-31T00:17:18.140Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:20:38Z"
        }
    ]
}
2019-01-31T00:18:03.766Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:18:03.766Z - INFO - Time interval between two heartbeat request
messages is: 47.674, limit is: 65.0
2019-01-31T00:18:03.782Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:21:23Z"
        }
    ]
}
2019-01-31T00:18:07.798Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
```

```
2019-01-31T00:18:07.798Z - INFO - Time interval between two heartbeat request
messages is: 49.674, limit is: 65.0
2019-01-31T00:18:07.813Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:21:27Z"
        }
    ]
}
2019-01-31T00:18:36.940Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:18:36.940Z - INFO - Time interval between two heartbeat request
messages is: 33.173, limit is: 65.0
2019-01-31T00:18:36.954Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:21:56Z"
        }
    ]
}
2019-01-31T00:18:42.986Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:18:42.986Z - INFO - Time interval between two heartbeat request
messages is: 35.189, limit is: 65.0
```

```
2019-01-31T00:18:43.002Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:22:02Z"
        }
    ]
}
2019-01-31T00:19:17.128Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:19:17.128Z - INFO - Time interval between two heartbeat request
messages is: 40.189, limit is: 65.0
2019-01-31T00:19:17.144Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:22:37Z"
        }
    ]
}
2019-01-31T00:19:30.691Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:19:30.707Z - INFO - Time interval between two heartbeat request
messages is: 47.705, limit is: 65.0
2019-01-31T00:19:30.723Z - INFO - engine sent successfully, the response to
CBRS  : {
```

```
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:22:50Z"
        }
    ]
}
2019-01-31T00:20:05.848Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:20:05.848Z - INFO - Time interval between two heartbeat request
messages is: 48.72, limit is: 65.0
2019-01-31T00:20:05.880Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:23:25Z"
        }
    ]
}
2019-01-31T00:20:15.911Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:20:15.911Z - INFO - Time interval between two heartbeat request
messages is: 45.22, limit is: 65.0
2019-01-31T00:20:15.943Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
```

```
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:23:35Z"
        }
    ]
}
2019-01-31T00:20:50.069Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:20:50.069Z - INFO - Time interval between two heartbeat request
messages is: 34.158, limit is: 65.0
2019-01-31T00:20:50.085Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:24:10Z"
        }
    ]
}
2019-01-31T00:20:51.615Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996"
        }
    ]
}
2019-01-31T00:20:51.631Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "397510996",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-31T00:20:52.663Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-31T00:20:52.663Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:20:52.663Z - INFO - Time interval between two heartbeat request
messages is: 46.814, limit is: 65.0
2019-01-31T00:20:52.678Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:20:52.678Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:24:12Z"
        }
    ]
}
2019-01-31T00:20:54.210Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308"
```

```
        }
    ]
}
2019-01-31T00:20:54.226Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "107293308",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
```


2019-01-31T00:20:55.492Z - INFO - arrived to nstep starting question answer session with the technician
2019-01-31T00:20:55.506Z - INFO - the question is : Did the CBSD1 stop RF transmission upon sending Relinquishment request? please choose one of the answers :
2019-01-31T00:21:22.569Z - INFO - for the question : Did the CBSD1 stop RF transmission upon sending Relinquishment request? , the user choose y
2019-01-31T00:21:22.585Z - INFO - the question is : Did the CBSD2 stop RF transmission upon sending Relinquishment request? please choose one of the answers :
2019-01-31T00:21:26.444Z - INFO - for the question : Did the CBSD2 stop RF transmission upon sending Relinquishment request? , the user choose y
2019-01-31T00:21:32.615Z - INFO - The final result of the test : WINNF.FT.D.RLQ.2 is - passed and :the additional comments for the current test are : Verified.

10.32 Log file for test case ID: WINNF.FT.D.DRG.2

```
2019-01-31T00:24:55.249Z - INFO - WINNF TEST HARNESS RELEASE: 1.0.0.2 - 2018-
May-24
2019-01-31T00:24:55.249Z - INFO - the selected test from the user :
WINNF.FT.D.DRG.2 is starting now
2019-01-31T00:25:11.140Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "48-00:24:48:0e:f5:27",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone1",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 3,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-31T00:25:11.265Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
```

```
        }
    ]
}
2019-01-31T00:25:12.312Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
                    "highFrequency": 3580000000,
                    "lowFrequency": 3560000000
                },
                {
                    "highFrequency": 3590000000,
                    "lowFrequency": 3570000000
                },
                {
                    "highFrequency": 3600000000,
                    "lowFrequency": 3580000000
                },
                {
                    "highFrequency": 3610000000,
                    "lowFrequency": 3590000000
                },
                {
                    "highFrequency": 3620000000,
                    "lowFrequency": 3600000000
                },
                {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                },
                {
                    "highFrequency": 3640000000,
                    "lowFrequency": 3620000000
                },
                {
                    "highFrequency": 3650000000,
                    "lowFrequency": 3630000000
                },
                {
                    "highFrequency": 3660000000,
                    "lowFrequency": 3640000000
                },
                {
                    "highFrequency": 3670000000,
```

```
                    "lowFrequency": 3650000000
                },
                {
                    "highFrequency": 3680000000,
                    "lowFrequency": 3660000000
                },
                {
                    "highFrequency": 3690000000,
                    "lowFrequency": 3670000000
                },
                {
                    "highFrequency": 3700000000,
                    "lowFrequency": 3680000000
                }
            ]
        }
    ]
}
2019-01-31T00:25:12.342Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
```

```
                "highFrequency": 3600000000,
                "lowFrequency": 3580000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3610000000,
                "lowFrequency": 3590000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3620000000,
                "lowFrequency": 3600000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3630000000,
                "lowFrequency": 3610000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3640000000,
                "lowFrequency": 3620000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3650000000,
                "lowFrequency": 3630000000
            },
            "ruleApplied": "FCC_PART_96"
        },
        {
            "channelType": "GAA",
            "frequencyRange": {
                "highFrequency": 3660000000,
                "lowFrequency": 3640000000
```

```
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3670000000,
                        "lowFrequency": 3650000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:25:13.358Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
```

```
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-31T00:25:13.375Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "channelType": "GAA",
            "grantExpireTime": "2019-02-07T00:25:13Z",
            "grantId": "844994310",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:25:14.390Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-31T00:25:14.405Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:28:34Z"
        }
    ]
}
2019-01-31T00:25:17.921Z - INFO - registration request from CBRS  : {
    "registrationRequest": [
        {
            "airInterface": {
                "radioTechnology": "E_UTRA"
            },
```

```
            "cbsdCategory": "A",
            "cbsdInfo": {
                "model": "RN-330",
                "vendor": "Spidercloud"
            },
            "cbsdSerialNumber": "49-00:24:48:0e:e1:47",
            "fccId": "SCW-Temp",
            "groupingParam": [
                {
                    "groupId": "zone2",
                    "groupType": "INTERFERENCE_COORDINATION"
                }
            ],
            "installationParam": {
                "antennaGain": 3,
                "eirpCapability": 28,
                "height": 5,
                "heightType": "AGL",
                "indoorDeployment": true,
                "latitude": 39.56318664550781,
                "longitude": -104.8172378540039
            },
            "measCapability": [
                "RECEIVED_POWER_WITHOUT_GRANT"
            ],
            "userId": "NPLxLI"
        }
    ]
}
2019-01-31T00:25:17.969Z - INFO - engine sent successfully, the response to
CBRS  : {
    "registrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:25:18.983Z - INFO - spectrumInquiry request from CBRS  : {
    "spectrumInquiryRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "inquiredSpectrum": [
                {
                    "highFrequency": 3570000000,
                    "lowFrequency": 3550000000
                },
                {
```

```
            "highFrequency": 3580000000,
            "lowFrequency": 3560000000
        },
        {
            "highFrequency": 3590000000,
            "lowFrequency": 3570000000
        },
        {
            "highFrequency": 3600000000,
            "lowFrequency": 3580000000
        },
        {
            "highFrequency": 3610000000,
            "lowFrequency": 3590000000
        },
        {
            "highFrequency": 3620000000,
            "lowFrequency": 3600000000
        },
        {
            "highFrequency": 3630000000,
            "lowFrequency": 3610000000
        },
        {
            "highFrequency": 3640000000,
            "lowFrequency": 3620000000
        },
        {
            "highFrequency": 3650000000,
            "lowFrequency": 3630000000
        },
        {
            "highFrequency": 3660000000,
            "lowFrequency": 3640000000
        },
        {
            "highFrequency": 3670000000,
            "lowFrequency": 3650000000
        },
        {
            "highFrequency": 3680000000,
            "lowFrequency": 3660000000
        },
        {
            "highFrequency": 3690000000,
            "lowFrequency": 3670000000
        },
        {
            "highFrequency": 3700000000,
            "lowFrequency": 3680000000
```

```
                }
            ]
        }
    ]
}
2019-01-31T00:25:19.016Z - INFO - engine sent successfully, the response to
CBRS  : {
    "spectrumInquiryResponse": [
        {
            "availableChannel": [
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3570000000,
                        "lowFrequency": 3550000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3580000000,
                        "lowFrequency": 3560000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3590000000,
                        "lowFrequency": 3570000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3600000000,
                        "lowFrequency": 3580000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3610000000,
                        "lowFrequency": 3590000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
```

```
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3620000000,
        "lowFrequency": 3600000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3630000000,
        "lowFrequency": 3610000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3640000000,
        "lowFrequency": 3620000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3650000000,
        "lowFrequency": 3630000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3660000000,
        "lowFrequency": 3640000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
    "frequencyRange": {
        "highFrequency": 3670000000,
        "lowFrequency": 3650000000
    },
    "ruleApplied": "FCC_PART_96"
},
{
    "channelType": "GAA",
```

```
                    "frequencyRange": {
                        "highFrequency": 3680000000,
                        "lowFrequency": 3660000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3690000000,
                        "lowFrequency": 3670000000
                    },
                    "ruleApplied": "FCC_PART_96"
                },
                {
                    "channelType": "GAA",
                    "frequencyRange": {
                        "highFrequency": 3700000000,
                        "lowFrequency": 3680000000
                    },
                    "ruleApplied": "FCC_PART_96"
                }
            ],
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:25:20.016Z - INFO - grant request from CBRS  : {
    "grantRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "operationParam": {
                "maxEirp": 18,
                "operationFrequencyRange": {
                    "highFrequency": 3630000000,
                    "lowFrequency": 3610000000
                }
            }
        }
    ]
}
2019-01-31T00:25:20.046Z - INFO - engine sent successfully, the response to
CBRS  : {
    "grantResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "channelType": "GAA",
```

```
            "grantExpireTime": "2019-02-07T00:25:20Z",
            "grantId": "936613113",
            "heartbeatInterval": 60,
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:25:21.046Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113",
            "operationState": "GRANTED"
        }
    ]
}
2019-01-31T00:25:21.078Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:28:41Z"
        }
    ]
}
2019-01-31T00:25:59.706Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:25:59.706Z - INFO - Time interval between two heartbeat request
messages is: 45.316, limit is: 65.0
2019-01-31T00:25:59.720Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310",
            "response": {
                "responseCode": 0
```

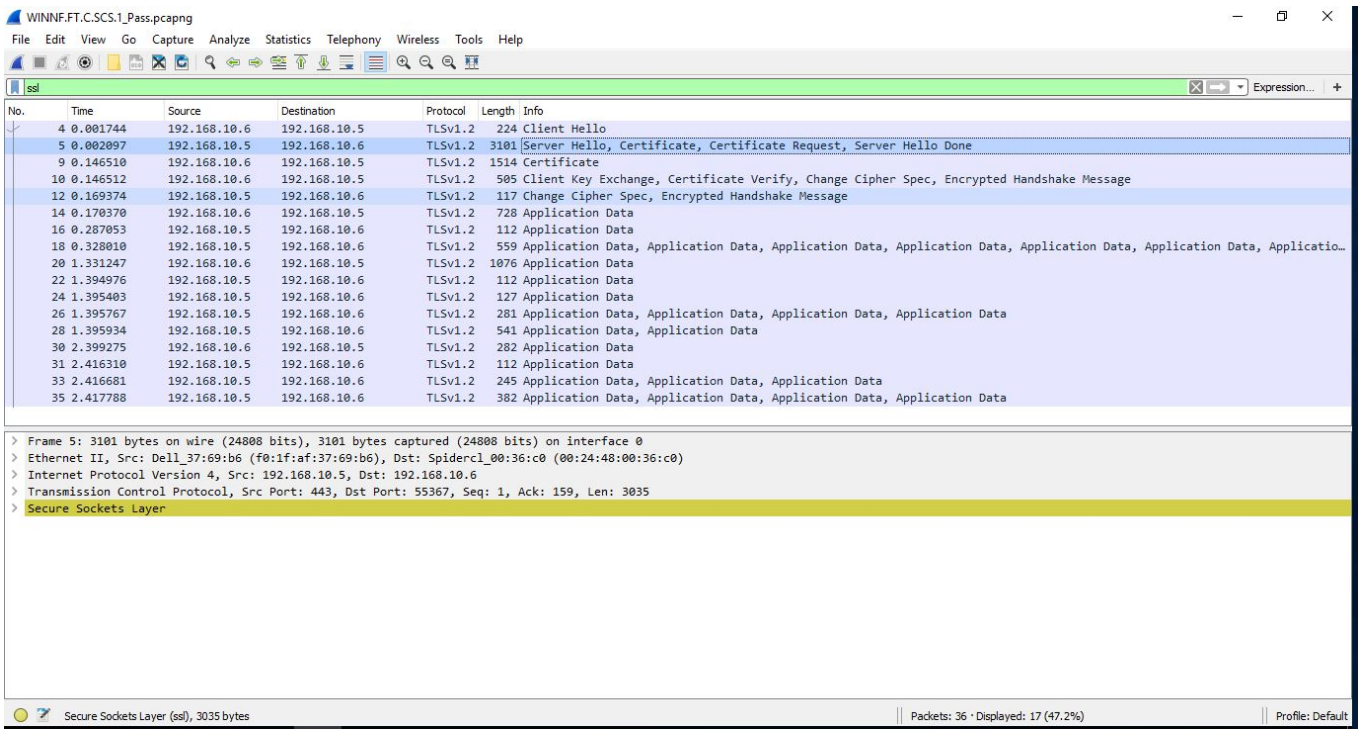
```
            },
            "transmitExpireTime": "2019-01-31T00:29:19Z"
        }
    ]
}
2019-01-31T00:26:03.736Z - INFO - heartbeat request from CBRS  : {
    "heartbeatRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113",
            "operationState": "AUTHORIZED"
        }
    ]
}
2019-01-31T00:26:03.736Z - INFO - Time interval between two heartbeat request
messages is: 42.69, limit is: 65.0
2019-01-31T00:26:03.767Z - INFO - engine sent successfully, the response to
CBRS  : {
    "heartbeatResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113",
            "response": {
                "responseCode": 0
            },
            "transmitExpireTime": "2019-01-31T00:29:23Z"
        }
    ]
}
2019-01-31T00:26:17.299Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310"
        }
    ]
}
2019-01-31T00:26:17.331Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "grantId": "844994310",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:26:18.346Z - INFO - deregistration request from CBRS  : {
```

```
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27"
        }
    ]
}
2019-01-31T00:26:18.471Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS48-00:24:48:0e:f5:27",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:26:20.503Z - INFO - relinquishment request from CBRS  : {
    "relinquishmentRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113"
        }
    ]
}
2019-01-31T00:26:21.065Z - INFO - engine sent successfully, the response to
CBRS  : {
    "relinquishmentResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "grantId": "936613113",
            "response": {
                "responseCode": 0
            }
        }
    ]
}
2019-01-31T00:26:22.082Z - INFO - deregistration request from CBRS  : {
    "deregistrationRequest": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47"
        }
    ]
}
2019-01-31T00:26:22.096Z - INFO - engine sent successfully, the response to
CBRS  : {
    "deregistrationResponse": [
        {
            "cbsdId": "SCW-TempMock-SAS49-00:24:48:0e:e1:47",
            "response": {
```

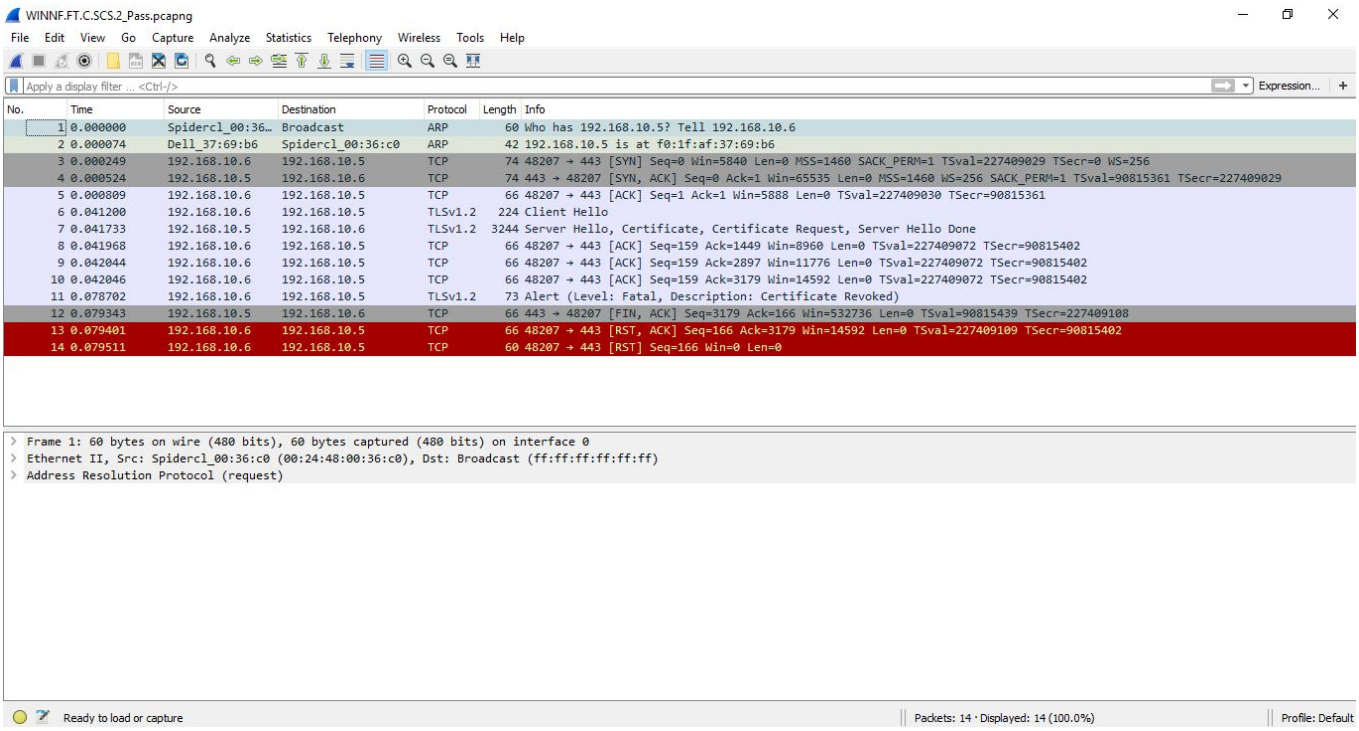
```
                "responseCode": 0
            }
        }
    ]
}
```


```
2019-01-31T00:26:23.596Z - INFO - arrived to nstep starting question answer
session with the technician
2019-01-31T00:26:23.596Z - INFO - the question is : Did the CBSD stop RF
transmissions upon sending the Deregister request? please choose one of the
answers :
2019-01-31T00:26:36.644Z - INFO - for the question : Did the CBSD stop RF
transmissions upon sending the Deregister request? , the user choose y
2019-01-31T00:26:36.644Z - INFO - the question is : Did the CBSD stop RF
transmissions upon sending the Deregister request? please choose one of the
answers :
2019-01-31T00:26:37.598Z - INFO - for the question : Did the CBSD stop RF
transmissions upon sending the Deregister request? , the user choose y
2019-01-31T00:26:41.269Z - INFO - The final result of the test :
WINNF.FT.D.DRG.2 is - passed and :the additional comments for the current
test are : Verified.
```

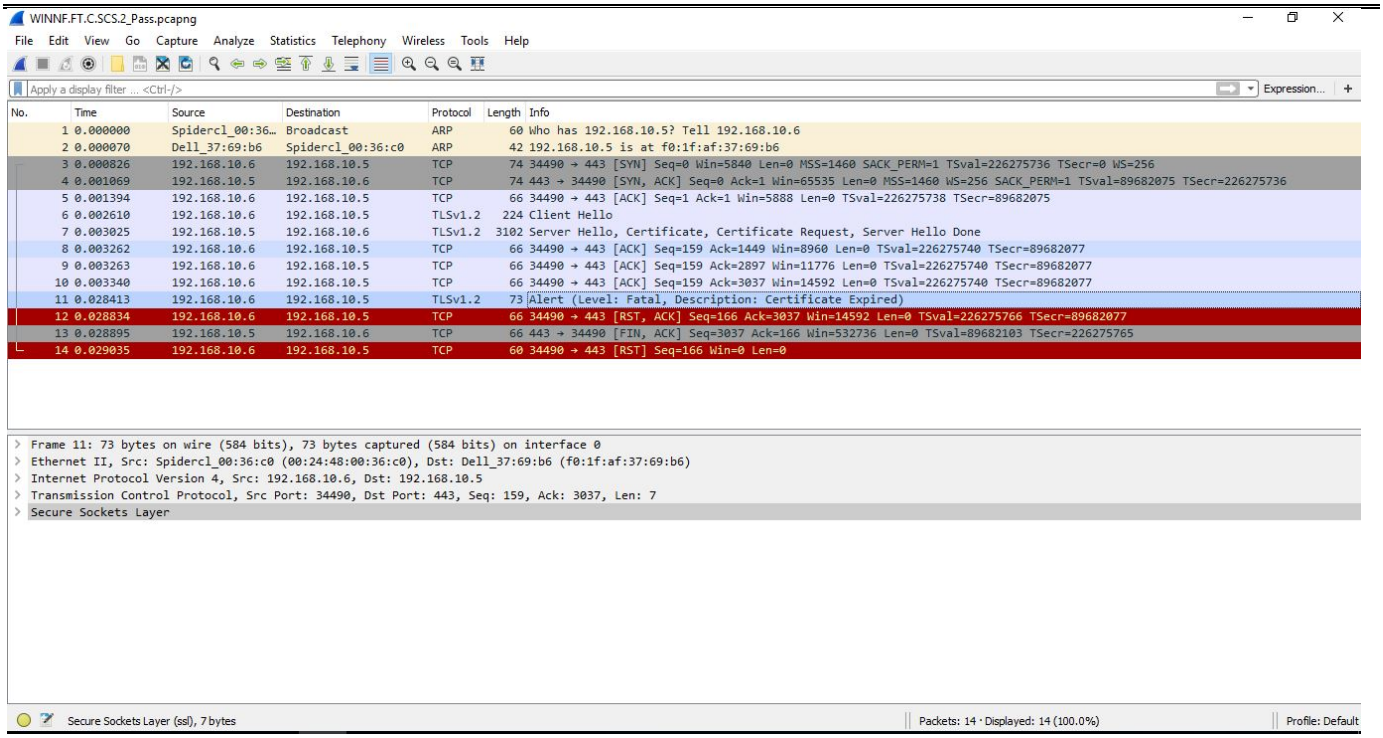
10.33 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.1



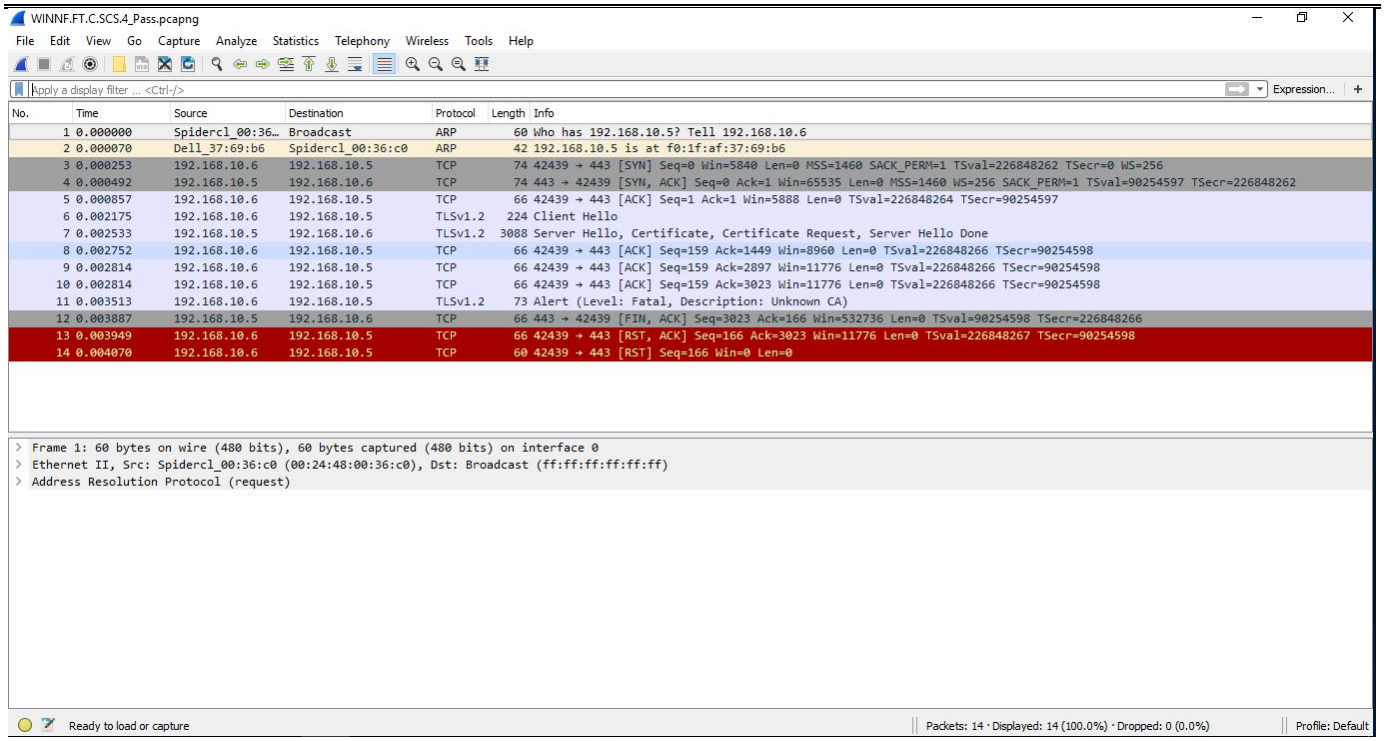
10.34 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.2



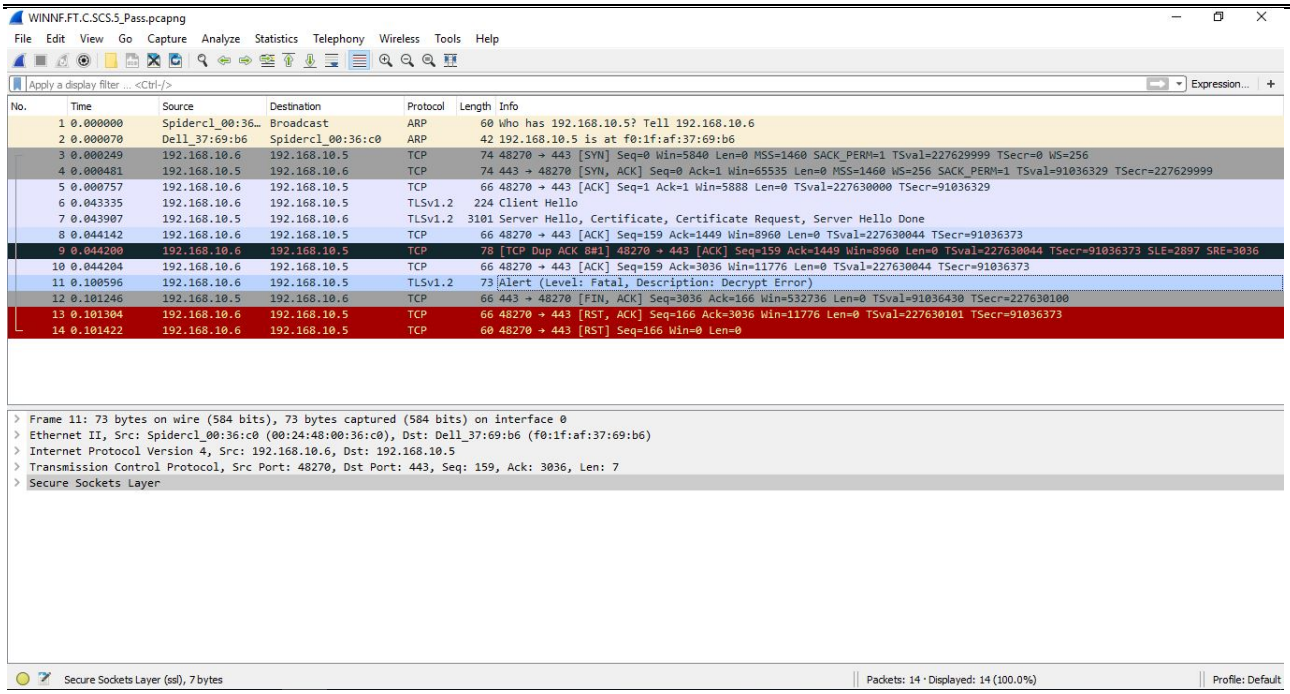
10.35 Wireshark capture screenshot for test case ID: WINNF.FT.C.SCS.3



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



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



Thank you for choosing