





TEST REPORT

No. I22Z62158-WMD01

for

Baicells Technologies Co., Ltd.

Product Name: 5G NR Base Station

Model Name: BSC7048A243

FCC ID: 2AG32BSC7048A243

with

Hardware Version: CBSD: Ver.A, DP: X86 6133 Software Version: CBSD: BaiBBU_QSS_1.1.7, DP: BaiOMC_8.2.4

Issued Date: 2022-11-25

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S.Government.

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I22Z62158-WMD01	Rev.0	1 st edition	2022-11-16
I22Z62158-WMD01	Rev.1	Model name and FCC	2022-11-25
		id modified	

Note: the latest revision of the test report supersedes all previous version.





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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), ISED accredited test laboratory (CN0066), and OnGo alliance/WInnForum authorized test lab. The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Address:

Location 1: CTTL(Huayuan North Road)

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

1.3. Testing Environment

Normal Temperature:	15-35 ℃
Relative Humidity:	20-75%

1.4. Project data

Testing Start Date:	2022-10-10
Testing End Date:	2022-11-01

1.5. Signature



Dong Yuan (Prepared this test report)



Zhou Yu (Reviewed this test report)

赵慧麟

Zhao Hui Lin Deputy Director of the laboratory (Approved this test report)





2. Client Information

2.1. Applicant Information

Company Name:	Baicells Technologies Co., Ltd.
Address:	9-10F, 1stBldg., No.81 Beiqing Road, Haidian District, Beijing, China
City:	Beijing
Postal Code:	100094
Country:	China
Telephone:	010-62607100
Fax:	010-62607100

2.2. Manufacturer Information

Company Name:	Baicells Technologies Co., Ltd.
Address:	9-10F, 1stBldg., No.81 Beiqing Road, Haidian District, Beijing, China
City:	Beijing
Postal Code:	100094
Country:	China
Telephone:	010-62607100
Fax:	010-62607100





3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	5G NR base station
Model Name	BSC7048A243
FCC ID	2AG32BSC7048A243
CBSD Category	Category B
EUT in Test	CBSD with Domain Proxy
CBSD HW Version	Ver.A
CBSD SW Version	BaiBBU_QSS_1.1.7
Domain Proxy HW Version	X86 6133
Domain Proxy SW Version	BaiOMC_8.2.4
Antenna Gain	13dBi
Supported Channel bandwidth	NR:10/20/30/40 MHz
Output Power	Conducted maximum 0.25W/MHz, maximum 10W
Number of Antenna ports	2
Frequency range	n48 3550MHz-3700MHz
Type of modulation	QPSK, 64QAM, 256QAM
Extreme Temperature	-40/+50 ℃
Normal Voltage	48V DC
Note: This is a BTS-CBSD comm	unication with Domain Proxy. Domain Proxy information show as
below:	

Model No. of Domain Proxy:

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT01a	12020005382283B0006	VER.A	BaiBBU_QSS_1.1.7	2022.10.10
UT02a	12020005382283B0022	VER.A	BaiBBU_QSS_1.1.7	2022.10.10

*EUT ID: is used to identify the test sample in the lab internally.





4. <u>Reference Documents</u>

4.1. Documents supplied by applicant

Supported features, referring to Annex A for detailed information, are supplied by the client or manufacturer, which is the basis of testing. CAICT is not responsible for the accuracy of customer supplied technical information that may affect the test results (for example, antenna gain and loss of customer supplied cable).

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
WINNF-TS-0122	Test and Certification for Citizens Broadband Radio Service	V1.0.2
	(CBRS); Conformance and Performance Test Technical	
	Specification; CBSD/DP as Unit Under Test (UUT)	
ONGO-TS-9001	OnGo Release 1 Certification Test Plan	V1.2.1
FCC 47 CFR Part 96	Citizens Broadband Radio Service	10-1-21
		Edition
KDB 940660 D01	Certification And Test Procedures For Citizens Broadband Radio	Eqpt v03
	Service Devices Authorized Under Part 96	October 29
		2018

Note:WINNF-TS-0122 andONGO-TS-9001 are not in the scope of accreditation by NVLAP





5. Test Results

5.1. Summary of Test Results

Test Case Name	Description	Verdict	
WINNF.FT.D.REG.2	Domain Proxy Multi-Step registration		
WINNF.FT.D.REG.6	Domain Proxy Single-Step registration for CBSD with CPI signed data		
WINNF.FT.D.REG.9	Domain Proxy Missing Required parameters (responseCode 102)	Pass	
WINNF.FT.D.REG.11	Domain Proxy Pending registration (responseCode 200)	Pass	
WINNF.FT.D.REG.13	Domain Proxy Invalid parameters (responseCode 103)	Pass	
WINNF.FT.D.REG.15	Domain Proxy Blacklisted CBSD (responseCode 101)	Pass	
WINNF.FT.D.REG.17	Domain Proxy Unsupported SAS protocol version responseCode 100)	Pass	
WINNF.FT.D.REG.19	Domain Proxy Group Error (responseCode 201)	Pass	
WINNF.FT.C.GRA.1	Unsuccessful Grant responseCode=400 (INTERFERENCE)	Pass	
WINNF.FT.C.GRA.2	Unsuccessful Grant responseCode=401 (GRANT CONFLICT)	Pass	
WINNF.FT.D.HBT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	Pass	
WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	Pass	
WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	Pass	
WINNF.FT.C.HBT.6	Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	Pass	
WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC OP PARAM)	Pass	
WINNF.FT.D.HBT.8	Domain Proxy Heartbeat responseCode=500 (TEMIN/ATED_GRANT)	Pass	
WINNF.FT.C.HBT.9	Heartbeat Response Absent (First Heartbeat)		
WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Pass	
WINNF.FT.D.MES.2	Domain Proxy Registration Response contains measReportConfig	Pass	
WINNF.FT.C.MES.3	Grant Response contains measReportConfig	Pass	
WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains measReportConfig	Pass	
WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	Pass	
WINNF.FT.D.DRG.2	Domain Proxy Successful Deregistration	Pass	
WINNF.FT.C.SCS.1	Successful TLS connection between UUT and SAS Test Harness	Pass	
WINNF.FT.C.SCS.2	TLS failure due to revoked certificate	Pass	
WINNF.FT.C.SCS.3	TLS failure due to expired server certificate	Pass	
WINNF.FT.C.SCS.4	TLS failure when SAS Test Harness certificate is issue by unknown CA	Pass	
WINNF.FT.C.SCS.5	TLS failure when certificate at the SAS Test Harness is corrupted	Pass	
WINNF.PT.C.HBT.1	UUT RF Transmit Power Measurement	Pass	

Note: please refer to Annex B in this test report for the detailed test results.

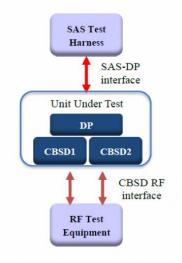
The following terms are used in the above table.

Pass	Amount of testcases with pass results in the given frequency band.
Fail	Amount of testcases with fail results in the given frequency band.
Inc	Amount of testcases with ambiguous results in the given frequency band.
Declare	Amount of testcases with conformity declaration from the client in the given
	frequency band.





5.2. Test Setup Diagram



5.3. <u>Statements</u>

5G NR Base Station, Model BSC7048A243, manufactured by Baicells Technologies Co., Ltd. is an initial model for the test.

The CBSD1, CBSD2, OMC, EPC and the Laptop with SAS test harness were connected to a switch. DP software is deployed on the OMC. The RF antenna port on UUT was connected to spectrum analyzer with RF cable. UUT and the SAS Test Harnesses were UTC time synchronized. The WInnForum Test Harness Test Harness (V1.0.0.3) was used. The RF measurement was performed by conducted method.

CTTL has verified that the compliance of the tested device specified in section 3 of this test report is evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.





6. <u>Test Facilities Utilized</u>

Test Equipment List

Description	Туре	Series Number	Manufacture	Cal Due Date	Calibration Interval
Signal Analyzer	FSV	101576	rohde&schwarz	2023-5-5	1 year
Signal Analyzer	9030B	MY57142378	Keysight	2023-3-1	1 year

Description of Support Units

Description	Model No.	Series Number	Manufacture
5GC	KEY-8201SAS-AB00E	GSD7238780	Advantech
OMC	1501000101	AD60B45FB07D181E7F20FE705C05	Baicells
Laptop(with			
SAS Test	Thinkpad E480	PF-136YPF	Lenovo
Harness)			
Switch	S6520-16S-SI	210235A3J5H203000170	H3C
Hub	TL-SG1008D	1199C50004642	TP-Link

7. MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Discipline	Measurement Uncertainty
Conducted RF power	0.75dB
Temperature	1°C
Humidity	3%





ANNEX A: Supported Features

Condition	Feature Description	Supported
C1	Mandatory for UUT which supports multi-step registration message	Y
C2	Mandatory for UUT which supports single-step registration with no CPI-signed data in the registration message. By definition, this is a subset of Category A devices which determine all registration information, including location, without CPI intervention.	N
C3	Mandatory for UUT which supports single-step registration containing CPI-signed data in the registration message.	Y
C4	Mandatory for UUT which supports RECEIVED_POWER_WITHOUT_GRANT measurement report type.	Y
C5	Mandatory for UUT which supports RECEIVED_POWER_WITH_GRANT measurement report type.	Y
C6	Mandatory for UUT which supports parameter change being made at the UUT and prior to sending a deregistration.	N

Y: Supported

N: Not supported





ANNEX B: Detailed Test Results

Annex B.1 Terms used in Results column

Pass	This testcase has been tested, and EUT is conformant to the applied standards in the given frequency band.
Fail	This testcase has been tested, but EUT is not conformant to the applied standards in the given frequency band.
n/a	This test case is either not required/not applicable in the specified band or is not applicable according to the specific PICS/PIXIT for the EUT.
Inc	Test case result is ambiguous in the given frequency band.
Decl	Declaration is received from the client to demonstrate the conformity to the relevant specification in the given frequency band.
BR	This testcase is not tested in the given frequency band, but this testcase was tested with pass result for the initial model in the given frequency band.





Annex B.2 Testcases Results

1) [WINNF.FT.D.REG.2] Domain Proxy Multi-Step registration

This test is mandatory for the Domain proxy that is controlling CBSDs which support multi-step registration. This test validates that each of the required parameters appear within the registration request message. This test case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps:

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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. Note: It is outside the scope of this document to test the Registration information that is supplied via another means. 	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or individual messages asfollows: cbsdId = Ci measReportConfig shall not be included responseCode = 0 for each CBSD 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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 	PASS





2) [WINNF.FT.D.REG.6] Domain Proxy Single-Step registration for CBSD with CPI signed data

The following are the test execution steps:

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state All of the required and REG-Conditional parameters shall be configured and CPI signature provided 	PASS
2	 The DP with two CBSDs sends Registration requests in the form of one 2-element Array or as individual messages to the SAS Test Harness: The required userId, fccId and cbsdSerialNumber and REG-Conditional cbsdCategory, airInterface, measCapability and cpiSignatureData 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. 	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: <i>cbsdId</i> = Ci <i>measReportConfig</i> for each CBSD shall not be included. <i>responseCode</i> = 0 for each CBSD 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode</i> =0) to further request messages from the UUT.	PASS
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 	PASS

If a waiver for the measurement capability has been obtained from the FCC for the CBSD, the WINNF.FT.D.REG.6_waiver test case shall be executed which is the same as above, but where measCapability is not required in the request message.





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

This test case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps where the Registration response contains *responseCode* (Ri) = 102 for each CBSD:

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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.	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: – SAS response does not include a <i>cbsdId</i>. – <i>responseCode</i> = Ri for CBSD1 and CBSD2 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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 	PASS

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

The same steps provided for WINNF.FT.D.REG.9 shall be executed for this test, with the exception that the Registration response contains *responseCode* (Ri) = 200 for each CBSD.

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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.	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: – SAS response does not include a <i>cbsdId</i>. – <i>responseCode</i> = Ri for CBSD1 and CBSD2 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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	PASS





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

The same steps provided for WINNF.FT.D.REG.9 shall be executed for this test, with the exception that the Registration response contains *responseCode* R1 = 0 for CBSD1 and R2 = 103 for CBSD2

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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.	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: – SAS response does not include a <i>cbsdId</i>. – <i>responseCode</i> = Ri for CBSD1 and CBSD2 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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	PASS

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

The same steps provided for WINNF.FT.D.REG.9 shall be executed for this test, with the exception that the Registration response contains *responseCode* R1 = 0 for CBSD1 and R2 = 101 for CBSD2.

#	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	PASS
-	• 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	PASS
2	individual messages to SAS Test Harness.	TASS
	• SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or	
3	as individual messages as follows:	PASS
5	- SAS response does not include a <i>cbsdId</i> .	1 499
	- responseCode = Ri for CBSD1 and CBSD2	
4	After completion of step 3, SAS Test Harness will not provide any positive response (responseCode=0)	PASS
+	to further request messages from the UUT.	IASS
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:	PASS
	UUT shall not transmit RF	





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

The same steps provided for WINNF.FT.D.REG.9 shall be executed for this test, with the exception that the Registration response contains *responseCode* (Ri) = 100 for each CBSD.

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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.	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: – SAS response does not include a <i>cbsdId</i>. – <i>responseCode</i> = Ri for CBSD1 and CBSD2 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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 	PASS

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

The same steps provided for WINNF.FT.D.REG.9 shall be executed for this test, with the exception that the Registration response contains *responseCode* R1 = 0 for CBSD1 and R2 = 201 for CBSD2.

#	Test Execution Steps	Results
1	 Ensure the following conditions are met for test entry: UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness UUT is in the Unregistered state 	PASS
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.	PASS
3	 SAS Test Harness sends a CBSD Registration Response in the form of one 2-element Array or as individual messages as follows: – SAS response does not include a <i>cbsdId</i>. – <i>responseCode</i> = Ri for CBSD1 and CBSD2 	PASS
4	After completion of step 3, SAS Test Harness will not provide any positive response (<i>responseCode=</i> 0) to further request messages from the UUT.	PASS
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 	PASS





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

The following steps describe the test execution where the Grant response contains responseCode (R) = 400.

#	Test Execution Steps	Results
	Ensure the following conditions are met for test entry:	
1	• UUT has registered successfully with SAS Test Harness, with	PASS
	cbsdId = C	
2	UUT sends valid Grant Request.	PASS
	SAS Test Harness sends a Grant Response message, including	
3	• cbsdId=C	PASS
	• $responseCode = \mathbf{R}$	
4	After completion of step 3, SAS Test Harness will not provide any positive response	PASS
4	(responseCode=0) to further request messages from the UUT.	TASS
	Monitor the RF output of each UUT from start of test until 60 seconds after Step 3 is complete. This is	
5	the end of the test. Verify:	PASS
	UUT shall not transmit RF	

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

The same steps provided for WINNF.FT.C.GRA.1 shall be executed for this test, with the exception that the Grant response contains *responseCode* (\mathbf{R}) = 401.

#	Test Execution Steps	Results
	Ensure the following conditions are met for test entry:	
1	• UUT has registered successfully with SAS Test Harness, with	PASS
	• $cbsdId = C$	
2	UUT sends valid Grant Request.	PASS
	SAS Test Harness sends a Grant Response message, including	
3	• cbsdId=C	PASS
	• $responseCode = R$	
4	After completion of step 3, SAS Test Harness will not provide any positive response	PASS
4	(responseCode=0) to further request messages from the UUT.	PASS
	Monitor the RF output of each UUT from start of test until 60 seconds after Step 3 is complete. This is	
5	the end of the test. Verify:	PASS
	• UUT shall not transmit RF	





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

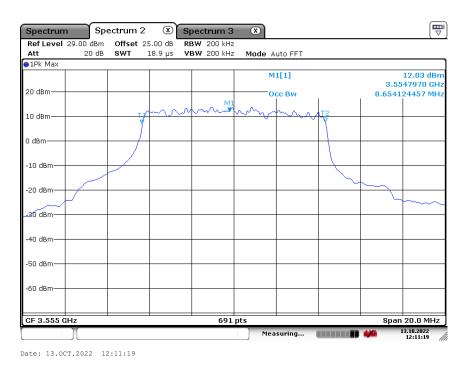
This test case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps.

#	est case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps. Test Execution Steps	Results
π	Ensure the following conditions are met for test entry:	Kesuits
1	 DP has two CBSD registered successfully with SAS Test Harness, 	PASS
1		rass
	• with <i>cbsdId</i> = Ci, i={1,2}	
2	DP sends a message:	DAGG
2	• If message is a Spectrum Inquiry Request, go to step 3	PASS
	If message is a Grant Request, go to step 5	
	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	
3	message is formatted correctly for each CBSD, including for CBSDi, i={1,2}:	PASS
	• $cbsdId = Ci$	
	List of frequencyRange objects sent by DP are within the CBRS frequency range	
	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	
4	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	
	• $responseCode = 0$	
	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}:	
5	• $cbsdId = C$	PASS
	• maxEIRP is at or below the limit appropriate for CBSD category as	
	• defined by Part 96	
	• operationFrequencyRange, Fi, sent by UUT is a valid range within the CBRS band	
6	If a separate Grant Request message was sent for each CBSD, the SAS Test Harness shall respond to	/
6	each Grant Request message with a separate Grant Response message.	/
	Ensure DP sends first Heartbeat 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 Heartbeat Request message is formatted correctly for each CBSD, including,	
7	for CBSDi i={1,2}:	PASS
	• $cbsdId = Ci, i = \{1,2\}$	
	• $grantId = Gi, i = \{1, 2\}$	
	• operationState = "GRANTED"	
		I
	If a separate Heartbeat Request message was sent for each CBSD by the DP, the SAS Test Harness	
8	If a 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.	/





-		1
	CBSD), the SAS Test Harness shall respond with a single Heartbeat Response message containing a	
	2-object array.	
	Verify parameters for each CBSD within the Heartbeat Response message are as follows, for CBSDi:	
	• $cbsdId = Ci$	
	• $grantId = Gi$	
	• <i>transmitExpireTime</i> = current UTC time + 200 seconds	
	• $responseCode = 0$	
	For further Heartbeat Request messages sent from DP after completion of step 8, validate message is	
	sent within latest specified heartbeatInterval for CBSDi:	
	• $cbsdId = Ci$	
	• $grantId = Gi$	
	 operationState = "AUTHORIZED" 	
9	and SAS Test Harness responds with a Heartbeat Response message including the following	PASS
	parameters, for CBSDi	
	• $cbsdId = Ci$	
	• $grantId = Gi$	
	• <i>transmitExpireTime</i> = current UTC time + 200 seconds	
	• $responseCode = 0$	
	Monitor the RF output of the UUT from start of test until UUT transmission	
	commences. Monitor the RF output of the UUT from start of test until RF transmission commences.	
	Verify:	
10	• UUT does not transmit at any time prior to completion of the first	PASS
	heartbeat response	
	• UUT transmits after step 8 is complete, and its transmission is limited to within the	
	bandwidth range Fi.	



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

#	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 <i>cbsdId</i> = C o valid <i>grantId</i> = G o grant is for frequency range F, power P o <i>grantExpireTime</i> = UTC time greater than duration of the test UUT is in AUTHORIZED state and is transmitting within the grant bandwidth F on RF interface 	PASS
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" 	PASS
3	 SAS Test Harness sends a Heartbeat Response message, including the following parameters: <i>cbsdId</i> = C <i>grantId</i> = G <i>transmitExpireTime</i> = T = Current UTC time <i>responseCode</i> = 105 (DEREGISTER) 	PASS
4	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	PASS
5	 Monitor the RF output of the UUT. Verify: UUT shall stop transmission within (T + 60 seconds) of completion of step 3 	PASS





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

The following	are the to	est execution	steps.
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#	Test Execution Steps	Results
	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 $cbsdId = C$	
1	o valid $grantId = G$	PASS
	o grant is for frequency range F, power P	
	o <i>grantExpireTime</i> = UTC time greater than duration of the test	
	• UUT is in GRANTED, but not AUTHORIZED state (i.e. has not	
	performed its first Heartbeat Request)	
	UUT sends a Heartbeat Request message.	
	Verify Heartbeat Request message is formatted correctly, including:	
2	• $cbsdId = C$	PASS
	• $grantId = G$	
	 operationState = "GRANTED" 	
	SAS Test Harness sends a Heartbeat Response message, including the following parameters:	
	• $cbsdId = C$	
3	• $grantId = G$	PASS
	• <i>transmitExpireTime</i> = T = current UTC time	
	• <i>responseCode</i> = 501 (SUSPENDED_GRANT)	
4	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	PASS
	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:	
	• $cbsdId = C$	
	• $grantId = G$	
5	 operationState = "GRANTED" 	PASS
5	B. UUT sends a Relinquishment request message. Ensure message is	1100
	correctly formatted with parameters:	
	• $cbdsId = C$	
	• $grantId = G$	
	Monitor the RF output of the UUT. Verify:	
	UUT does not transmit at any time	





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

#	Test Execution Steps	Results
	Ensure the following conditions are met for test entry:	
I	• UUT has registered successfully with SAS Test Harness	
	• UUT has a valid single grant as follows:	
	o valid $cbsdId = C$	
1	o valid $grantId = G$	PASS
	o grant is for frequency range F, power P	
	o <i>grantExpireTime</i> = UTC time greater than duration of the test	
	• UUT is in AUTHORIZED state and is transmitting within the grant	
	bandwidth F on RF interface	
	UUT sends a Heartbeat Request message.	
	Verify Heartbeat Request message is sent within latest specified	
2	heartbeatInterval, and is formatted correctly, including:	DACC
2	• $cbsdId = C$	PASS
	• $grantId = G$	
	 operationState = "AUTHORIZED" 	
	SAS Test Harness sends a Heartbeat Response message, including the following parameters:	
	• $cbsdId = C$	
3	• $grantId = G$	PASS
	• <i>transmitExpireTime</i> = T = current UTC time	
	• <i>responseCode</i> = 501 (SUSPENDED_GRANT)	
4	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	PASS
	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:	
	• $cbsdId = C$	
	• $grantId = G$	
5	 operationState = "GRANTED" 	PASS
5	B. UUT sends a Relinquishment Request message. Ensure message is	FASS
	correctly formatted with parameters:	
	• $cbdsId = C$	
	• $grantId = G$	
	Monitor the RF output of the UUT. Verify:	
	• UUT shall stop transmission within $(T + 60 \text{ seconds})$ of completion of step 3	





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

#	Test Execution Steps	Results
	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 $cbsdld = C$	
1	o valid <i>grantId</i> = G	PASS
	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	
	UUT sends a Heartbeat Request message.	
	Verify Heartbeat Request message is sent within latest specified	
2	heartbeatInterval, and is formatted correctly, including:	PASS
2	• $cbsdld = C$	TASS
	• grantId = G	
	 operationState = "AUTHORIZED" 	
	SAS Test Harness sends a Heartbeat Response message, including the following	
	parameters:	
3	• $cbsdld = C$	PASS
5	• grantId = G	TASS
	 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.	PASS
	Monitor the SAS-CBSD interface. Verify:	
	 UUT sends a Grant Relinquishment Request message. Verify message is correctly 	
	formatted with parameters:	
5	$\circ cbdsld = C$	PASS
	\circ grantId = G	
	Monitor the RF output of the UUT. Verify:	
	• UUT shall stop transmission within (T+60) seconds of completion of step 3.	





16) [WINNF.FT.D.HBT.8] Domain Proxy Heartbeat responseCode=500(TERMINATED_GRANT)

This test case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps.

	test case applies to Domain Proxy supervising two CBSDs. The following are the test execution steps.	1
#	Test Execution Steps	Results
	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 cbsdld = Ci, i={1,2} 	
1	o valid <i>grantId</i> = Gi, i={1,2}	PASS
1	o grant is for frequency range Fi, power Pi	IASS
	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	
	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	
2	formatted correctly for each CBSD, including, for CBSDi i={1,2}:	PASS
l	• <i>cbsdld</i> = Ci, i = {1,2}	
I	• <i>grantId</i> = Gi, i = {1,2}	
	 operationState = "AUTHORIZED" 	
	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	
3	CBSDi:	PASS
	• cbsdld = Ci	
	• grantld = Gi	
	• For CBSD1:	
	o <i>transmitExpireTime</i> = current UTC time + 200 seconds	
	\circ responseCode = 0	
	• For CBSD2:	
	o <i>transmitExpireTime</i> = T = current UTC time	
	o $responseCode = 500$ (TERMINATED_GRANT)	
	After completion of step 3, SAS Test Harness shall not allow any further grants to the UUT.	
	If CBSD conde further Heartheat Deguest messages for CBSD1_SAS Test Herness shall	
	If CBSD sends further Heartbeat Request messages for CBSD1, SAS Test Harness shall	
4	respond with a Heartbeat Response message with parameters:	PASS
	• $cbsdld = C1$	
	• grantld = G1	
	• <i>transmitExpireTime</i> = current UTC time + 200 seconds	
	 responseCode = 0 	





	• Heartbeat Request message is within heartbeatInterval of previous Heartbeat Request	
	message	
	Monitor the RF output of CBSD2. Verify:	
5	• CBSD2 shall stop transmission within bandwidth F2 within (T + 60 seconds) of completion of	PASS
	step 3	

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

#	Test Execution Steps	Results
	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 <i>cbsdld</i> = C	
1	o valid <i>grantId</i> = G	PASS
1	o grant is for frequency range F, power P	rass
	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)	
	UUT sends a Heartbeat Request message.	
	Ensure Heartbeat Request message is sent within latest specified <i>heartbeatInterval</i> , and is	
2	formatted correctly, including:	PASS
2	• $cbsdld = C$	IASS
	• grantld = G	
	 operationState = "GRANTED" 	
3	After completion of Step 2, SAS Test Harness does not respond to any further messages	PASS
5	from UUT to simulate loss of network connection	I ASS
4	Monitor the RF output of the UUT from start of test to 60 seconds after step 3. Verify:	PASS
4	 At any time during the test, UUT shall not transmit on RF interface 	I ASS





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

#	Test Execution Steps	Results
	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 <i>cbsdld</i> = C	
1	o valid <i>grantId</i> = G	PASS
1	o grant is for frequency range F, power P	PASS
	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	
	UUT sends a Heartbeat Request message.	
	Verify Heartbeat Request message is sent within the latest specified <i>heartbeatInterval</i> , and is	
2	formatted correctly, including:	PASS
2	• $cbsdld = C$	PASS
	• grantId = G	
	 operationState = "AUTHORIZED" 	
	SAS Test Harness sends a Heartbeat Response message, with the following parameters:	
	• $cbsdld = C$	
3	• grantId = G	PASS
	 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	PASS
4	UUT	TASS
	Monitor the RF output of the UUT. Verify:	
5	• UUT shall stop all transmission on RF interface within (<i>transmitExpireTime</i> + 60 seconds),	PASS
	using the transmitExpireTime sent in Step 3.	





19) [WINNF.FT.D.MES.2] Domain Proxy Registration Response contains measReportConfig

This test case is mandatory for Domain Proxy supervising CBSD which support

RECEIVED_POWER_WITHOUT_GRANT.

The following steps describes the test execution steps:

1 Ensure the following conditions are met for test entry: • DP has successfully completed SAS Discovery and Authentication with SAS Test Harness PASS 1 DP sends a Registration Request message for each of two CBSD. This may occur in a separate Request message per CBSD, or together in a single Request message with array of 2. Verify Registration Request message contains all required parameters properly formatted for CBSDi, i={1,2}, and specifically: • userId is present and correct • fccId is present and correct • cbsdSerialNumber is present and correct • measCapability = "RECEIVED_POWER_WITHOUT_GRANT" PASS If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message. PASS 3 message containing a 2-object array. PASS 9 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • cbsdId = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 UUT sends a message: PASS	#	Test Execution Steps	Results
1 • DP has successfully completed SAS Discovery and Authentication with SAS Test Harness PASS DP sends a Registration Request message for each of two CBSD. This may occur in a separate Request message per CBSD, or together in a single Request message with array of 2. Verify Registration Request message contains all required parameters properly formatted for CBSDi, i={1,2}, and specifically: PASS 2 Verify Registration Request message contains all required parameters properly formatted for CBSDi, i={1,2}, and specifically: PASS 2 <i>verify</i> Registration Request message contains all required parameters properly formatted for CBSDi i={1,2}, and specifically: PASS 2 <i>verify</i> Registration Request message contains all required parameters properly formatted for CBSDi i={1,2}, and specifically: PASS 4 <i>if</i> a separate Registration Request message was sent by the DP containing a 2-object array (one per CBSD). In SAS Test Harness shall respond with a single Registration Response PASS 3 message containing a 2-object array. PASS 9 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: <i>velsdl</i> 4 <i>if</i> message is type Spectrum Inquiry Request, go to step 5, or <i>if</i> message is type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSD, or together in a single message			Results
DP sends a Registration Request message for each of two CBSD. This may occur in a separate Request message per CBSD, or together in a single Request message with array of 2. Verify Registration Request message contains all required parameters properly formatted for CBSDi, i=(1,2), and specifically: PASS 2 <i>Ccld</i> is present and correct <i>eckdSerialNumber</i> is present and correct • <i>cbcdSerialNumber</i> is present and correct <i>eckdSerialNumber</i> is present and correct • <i>measCapability</i> = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: <i>cbsdId</i> = Ci • message ortaging "RECEIVED_POWER_WITHOUT_GRANT" * responseCode = 0 UUT sends a message: If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Spectrum Inquiry Request, go to step 5, or PASS 5 message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: <i>cbsdId</i> = Ci • message contains all required parameters p	1		PASS
separate Request message per CBSD, or together in a single Request message with array of 2. Yeify Registration Request message contains all required parameters properly formatted for CBSDi, i={1,2}, and specifically: PASS 2 CBSDi, i={1,2}, and specifically: PASS • userd is present and correct • fcc/d is present and correct • cbsd/SerialNumber is present and correct • fcc/d is present and correct • measCapability = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS Parameters for each CBSD within the Registration Response message should be as follows, for CBSDI: • cbsd/d = Ci • measReportCorfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 UUT sends a message: UUT sends a message PASS 4 • If message is type Grant Request, go to step 7 PASS UUT sends a message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsd/d = Ci			
2. Verity Registration Request message contains all required parameters properly formatted for CBSD, i={1,2}, and specifically: PASS 2. CBSD, i={1,2}, and specifically: PASS user/d is present and correct cbsdSerialNumber is present and correct cbsdSerialNumber is present and correct cbsdSerialNumber is present and correct cbsdSerialNumber is present and correct cbsdSerialNumber is present and correct If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. PASS If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: cbsdId = Ci measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" measReportConfig= spectrum Inquiry Request, go to step 5, or pass measage is type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSD, i together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSD, i together in a single message with array of 2. Verify Spectrum Inquiry Requ			
Verify Registration Request message contains all required parameters properly formatted for CBSDi, i={1,2}, and specifically: PASS 2 Userifd is present and correct Facility is present and correct PASS 4 is separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness are specifically and specifically is present and correct PASS 7 If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS 9 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • obsdid = Ci • obsdid = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 4 • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSD, is genetically: • obsdid = Ci 5 If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request for CBSDI, i= {1,2}, and specifically: • obsdid = Ci • measReport.			
2 CBSDi, i={1,2}, and specifically: • userId is present and correct PASS • <i>lccld</i> is present and correct • <i>cbsdSerialNumber</i> is present and correct • <i>cbsdSerialNumber</i> is present and correct • <i>measCapability</i> = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS 9arameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • <i>cbsdId</i> = Ci PASS • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • <i>cbsdId</i> = Ci PASS 5 ff a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate PASS 6 Spectrum Inquiry Response message. PASS			
• userId is present and correct • fcc/d is present and correct • fcc/d is present and correct • cbsdSerialNumber is present and correct • measCapability = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • cbsdld = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 UUT sends a message: • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7 UUT sends message type Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7 UUT sends message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsdld = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAST fest Harness shall respond to each Spectrum Inquiry Request message with a separate 6 Spectrum Inquiry Response	2		PASS
• fccld is present and correct • cbsdSerialNumber is present and correct • measCapability = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message. PASS 3 message containing a 2-object array. PASS 9 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • cbsdId = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 UUT sends a message: 4 • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7 PASS 5 message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsdId = Ci • message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsdId = Ci • measReport. PASS 5 Meass Report is present, and is a properly formatted rcvdPowerMeasReport. If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate PASS			
• cbsdSerialNumber is present and correct • measCapability = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • cbsdId = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 PASS 4 •If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7 PASS 5 •CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsdId = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. PASS 5 If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate PASS			
• measCapability = "RECEIVED_POWER_WITHOUT_GRANT" If a separate Registration Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: • cbsdld = Ci • measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • responseCode = 0 PASS UUT sends a message: • If message is type Spectrum Inquiry Request, go to step 5, or • If message is type Grant Request, go to step 7 PASS UUT sends message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • cbsdld = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. PASS 6 Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate PASS			
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Test Harness shall respond to each Registration Request message with a separate Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS 3 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: <i>cbsdld</i> = Ci <i>measReportConfig</i>= "RECEIVED_POWER_WITHOUT_GRANT" <i>responseCode</i> = 0 UUT sends a message: If message is type Spectrum Inquiry Request, go to step 5, or If message is type Grant Request, go to step 7 UUT sends message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSDi, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSDi, is a specifically:			
Registration Response message. If a single Registration Request message was sent by the DP containing a 2-object array (one per CBSD), the SAS Test Harness shall respond with a single Registration Response message containing a 2-object array. PASS 3 Parameters for each CBSD within the Registration Response message should be as follows, for CBSDi: cbsdld = Ci measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" responseCode = 0 PASS 4 • If message is type Spectrum Inquiry Request, go to step 5, or PASS 5 WUT sends message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSDi, or together in a single message with array of 2. Verify Spectrum Inquiry Request message per CBSDi, i = {1,2}, and specifically: cbsdld = Ci measReport is present, and is a properly formatted <i>rcvdPowerMeasReport</i>. PASS 6 Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate	l		
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• measReportConfig= "RECEIVED_POWER_WITHOUT_GRANT" • • responseCode = 0 • 4 • If message is type Spectrum Inquiry Request, go to step 5, or • • If message is type Grant Request, go to step 7 • UUT sends message type Spectrum Inquiry Request. This may occur in a separate message per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request message contains all required parameters properly formatted for CBSDi, i= {1,2}, and specifically: • • cbsdld = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. 6 Spectrum Inquiry Response message. PASS			
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5 specifically: PASS • cbsdld = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate 6 Spectrum Inquiry Response message. PASS		per CBSD, or together in a single message with array of 2. Verify Spectrum Inquiry Request	
specifically: • cbsdld = Ci • cbsdld = Ci • measReport is present, and is a properly formatted rcvdPowerMeasReport. If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate 6 Spectrum Inquiry Response message. PASS	_	message contains all required parameters properly formatted for CBSDi, i= {1,2}, and	
• measReport is present, and is a properly formatted rcvdPowerMeasReport. If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate Spectrum Inquiry Response message. PASS	5	specifically:	PASS
If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate Spectrum Inquiry Response message.		• <i>cbsdld</i> = Ci	
6 SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate 6 Spectrum Inquiry Response message. PASS		• measReport is present, and is a properly formatted rcvdPowerMeasReport.	
6 Spectrum Inquiry Response message. PASS		If a separate Spectrum Inquiry Request message was sent for each CBSD by the DP, the	
6 Spectrum Inquiry Response message. PASS		SAS Test Harness shall respond to each Spectrum Inquiry Request message with a separate	
	6		PASS
If a single Spectrum Inquiry Request message was sent by the DP containing a 2-object array			
		If a single Spectrum Inquiry Request message was sent by the DP 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.	
	Parameters for each CBSD within the Spectrum Inquiry Response message should be as	
	follows:	
	• cbsdld = Ci	
	 availableChannel is an array of availableChannel objects 	
	 responseCode = 0 	
	UUT sends message type Grant Request message. This may occur in a separate message	
	per CBSD, or together in a single message with array of 2.	
7	Verify the Grant Request message contains all required parameters properly formatted for	DACC
7	CBSDi, i= {1,2}, and specifically:	PASS
	• <i>cbsdld</i> = Ci	
	 measReport is present, and is a properly formatted rcvdPowerMeasReport. 	





20) [WINNF.FT.C.MES.3] Grant Response contains measReportConfig

This test case is mandatory for UUT supporting RECEIVED_POWER_WITH_GRANT measurement reports.

The following steps describes the test execution steps:

#	Test Execution Steps	Results
	Ensure the following conditions are met for test entry:	
	• UUT has successfully completed SAS Discovery and Authentication with SAS Test Harness	
1	• UUT has successfully registered with SAS Test Harness, with <i>cbsdld</i> =C and <i>measCapability</i>	PASS
	= "RECEIVED_POWER_WITH_GRANT"	
	UUT sends a Grant Request message.	
	Verify Grant Request message contains all required parameters properly formatted, and	
2	specifically:	PASS
	• $cbsdld = C$	
	 operationParam is present and format is valid 	
	SAS Test Harness sends a Grant Response message, with the following parameters:	
	• cbsdld = C	
	• grantId = G = valid grant ID	
	 grantExpireTime = UTC time in the future 	D 4 6 6
3	 heartbeatInterval = 60 seconds 	PASS
	 measReportConfig= "RECEIVED_POWER_WITH_GRANT" 	
	• channelType = "GAA"	
	• responseCode = 0	
	UUT sends a Heartbeat Request message. Verify message contains all required parameters	
	properly formatted, and specifically:	
4	• $cbsdld = C$	PASS
	• grantId = G	
	operationState = "GRANTED"	
	If Heartbeat Request message (step 4) contains measReport object, then:	
	 verify measReport is properly formatted as object rcvdPowerMeasReport 	
5	end test, with PASS result	PASS
5	else, if Heartbeat Request message (step 4) does not contain measReport object, then:	TASS
	If number of Heartbeat Requests sent by UUT after Step 3 is = 5, then stop test with result of	
	FAIL	
	SAS Test Harness sends a Heartbeat Response message, containing all required parameters	
	properly formatted, and specifically:	
	• $cbsdld = C$	
6	• grantId = G	/
	 transmitExpireTime = current UTC time + 200 seconds 	/
	• responseCode = 0	
	Go to Step 4, above	





21) [WINNF.FT.D.MES.5] Domain Proxy Heartbeat Response contains measReportConfig

This test case is mandatory for Domain Proxy supervising CBSD which support

RECEIVED_POWER_WITH_GRANT measurement reports.

The following steps describes the test execution steps:

#	Test Execution Steps	Results
	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 <i>cbsdld</i> =Ci,	
	i={1,2} and <i>measCapability</i> = "RECEIVED_POWER_WITH_GRANT"	D 4 G G
1	• DP has received a valid grant with grantId = Gi, i={1,2} for each CBSD	PASS
	• Both CBSD are in Grant State AUTHORIZED and actively transmitting within the bounds of	
	their grants.	
	• Grants have <i>heartbeatInterval</i> =60 seconds	
	Verify 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 2.	
	Verify Heartbeat Request message contains all required parameters properly formatted for	
2	each CBSD, specifically, for CBSDi:	PASS
	• <i>cbsdld</i> = Ci	
	• grantld = Gi	
	 operationState = "AUTHORIZED" 	
	If a 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	
2	containing a 2-object array.	DAGG
3		PASS
	Parameters for each CBSD within the Heartbeat Response message containing all required	
	parameters properly formatted, and specifically:	
	• <i>cbsdld</i> = Ci	
	• grantId = Gi	
	 measReportConfig= "RECEIVED_POWER_WITH_GRANT" 	
	• responseCode = 0	
	Verify 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 2.	
	Verify Heartbeat Request message contains all required parameters properly formatted for	
	each CBSD, and specifically, for CBSDi, $i = \{1,2\}$:	D 4 6 6
4	• cbsdld = Ci	PASS
	• grantld = Gi	
	• operationState = "AUTHORIZED"	
	• Check whether <i>measReport</i> is present, and if present, ensure it is a properly formatted	
	<i>rcvdPowerMeasReport</i> object, and record its reception for each CBSDi, i = {1,2}.	





	If Heartbeat Request message (step 4) contains measReport object, then:	
	 Verify measReport is properly formatted as object rcvdPowerMeasReport 	
	 record which CBSD have successfully sent a measReport object 	
5	If all CBSDi, i = {1,2} have successfully sent a measReport object, then	PASS
	• end test, with PASS result	
	else, if the number of Heartbeat Requests sent per CBSD is 5 or more, then stop test with	
	result of FAIL	
	If a 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.	
6		PASS
	Parameters for each CBSD within the Heartbeat Response message containing all required	
	parameters properly formatted, and specifically:	
	• <i>cbsdld</i> = Ci	
	• grantld = Gi	
	 responseCode = 0 	
	Go to Step 4, above.	





22) [WINNF.FT.D.RLQ.2] Domain Proxy Successful Relinquishment

#	Test Execution Steps	Results
	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 <i>cbsdld</i> =Ci, i={1,2} •	
1	DP has received a valid grant with grantId = Gi, i={1,2} for each CBSD	PASS
	• 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	
	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.	
2	Verify Relinquishment Request message contains all required parameters properly formatted	PASS
2	for each CBSD, specifically, for CBSDi:	1100
	• <i>cbsdld</i> = Ci	
	• grantld = Gi	
	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	
3	containing a 2-object array. Parameters for each CBSD within the Relinquishment Response	PASS
	shall be as follows:	
	• <i>cbsdld</i> = Ci	
	• grantId = Gi	
	• responseCode = 0	
4	After completion of step 3, SAS Test Harness will not provide any additional positive response	PASS
	(responseCode=0) to further request messages from the UUT.	11100
	Monitor the RF output of each UUT from start of test until 60 seconds after Step 3 is complete.	
5	This is the end of the test. Verify:	PASS
	• UUT shall stop RF transmission at any time between triggering the relinquishments and UUT	1100
	sending the relinquishment requests for each CBSD.	





23) [WINNF.FT.D.DRG.2] Domain Proxy Successful Deregistration

#	Test Execution Steps	Results
	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	
1	• DP has successfully registered 2 CBSD with SAS Test Harness, each with <i>cbsdld</i> =Ci, i={1,2}	PASS
	 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 may send a Relinquishment request and receives Relinquishment response with	1
Z	responseCode=0	/
	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.	
3	Verify Deregistration Request message contains all required parameters properly formatted	PASS
	for each CBSD, specifically, for CBSDi	
	• <i>cbsdld</i> = Ci	
	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	
4	(one per CBSD), the SAS Test Harness shall respond with a single Response message	PASS
	containing a 2-object array.	
	Parameters for each CBSD within the Deregistration Response shall be as follows:	
	• $cbsdld = Ci$	
	 responseCode = 0 	
5	After completion of step 4, SAS Test Harness will not provide any positive response	PASS
5	(responseCode=0) to further request messages from the UUT.	1 1 2 2
	Monitor the RF output of each UUT from start of test until 60 seconds after Step 4 is complete.	
	This is the end of the test. Verify:	
6	• UUT stopped RF transmission at any time between triggering the deregistration and	PASS
6	either A OR B occurs:	1 733
	A. UUT sending a Registration Request message, as this is not mandatory	
	B. UUT sending a Deregistration Request message	





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

#	Test Execution Steps	Results	
	 UUT shall start CBSD-SAS communication with the security procedure 		
	• The UUT shall establish a TLS handshake with the SAS Test Harness using configured		
1	certificate.	PASS	
	• Configure the SAS Test Harness to accept the security procedure and establish the		
	connection		
	 Make sure that Mutual authentication happens between UUT and the SAS Test Harness. 		
	Make sure that UUT uses TLS v1.2		
	 Make sure that cipher suites from one of the following is selected, 		
2	 TLS_RSA_WITH_AES_128_GCM_SHA256 	PASS	
2	 TLS_RSA_WITH_AES_256_GCM_SHA384 	TASS	
	 TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 		
	 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 		
	 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 		
	A successful registration is accomplished using one of the test cases described in section		
3	6.1.4.1, depending on CBSD capability.	PASS	
5	• UUT sends a registration request to the SAS Test Harness and the SAS Test Harness sends	1 435	
	a Registration Response with responseCode = 0 and cbsdld.		
	Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete.		
4	This is the end of the test. Verify:	PASS	
	• UUT shall not transmit RF		





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文件(F) 编辑(E) 视图(V) 跳转(G			工具(T) 帮助(H)		
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ssl and ip.addr==192.192.1.101					
ime	Source	Destination	Protocol	Info	
022-10-14 07:33:17.666069	192.192.1.101	192.192.1.107	TLSv1.2	Client Hello	
022-10-14 07:33:17.666954	192.192.1.107	192.192.1.101	TLSv1.2	Server Hello	
022-10-14 07:33:17.666954	192.192.1.107	192.192.1.101	TLSv1.2	Certificate, Certificate Request, Server Hello Done	
022-10-14 07:33:17.671652	192.192.1.101	192.192.1.107	TLSv1.2	Certificate, Client Key Exchange	
022-10-14 07:33:17.698879	192.192.1.101	192.192.1.107	TLSv1.2	Certificate Verify	
022-10-14 07:33:17.698879	192.192.1.101	192.192.1.107	TLSv1.2	Change Cipher Spec	
022-10-14 07:33:17.699210	192.192.1.101	192.192.1.107	TLSv1.2	Encrypted Handshake Message	
022-10-14 07:33:17.700049	192.192.1.107	192.192.1.101	TLSv1.2	Change Cipher Spec, Encrypted Handshake Message	
022-10-14 07:33:17.702991	192.192.1.101	192.192.1.107	TLSv1.2	Application Data	
022-10-14 07:33:17.704125	192.192.1.107	192.192.1.101	TLSv1.2	Application Data	
022-10-14 07:33:17.708856	192.192.1.107	192.192.1.101	TLSv1.2	Application Data, Application Data, Application Data, Application Data	
022-10-14 07:33:17.722714	192.192.1.107	192.192.1.101	TLSv1.2	Application Data	
022-10-14 07:33:17.724195	192.192.1.101	192.192.1.107	TLSv1.2	Encrypted Alert	
022-10-14 07:33:17.737309	192.192.1.101	192.192.1.107	TLSv1.2	Client Hello	
022-10-14 07:33:17.738061	192.192.1.107	192.192.1.101	TLSv1.2	Server Hello	
022-10-14 07:33:17.738061	192.192.1.107	192.192.1.101	TLSv1.2	Certificate, Certificate Request, Server Hello Done	
22-10-14 07:33:17.740016	192.192.1.101	192.192.1.107	TLSv1.2	Certificate, Client Key Exchange	
022-10-14 07:33:17.757443	192.192.1.101	192.192.1.107	TLSv1.2	Certificate Verify	
		100 100 1 107			
Frame 79: 207 bytes on wir		es captured (1656 bi		:16:45:26:58:b5)	>
 Frame 79: 207 bytes on wirn Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transmission Layer Security 	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101,	es captured (1656 bi :86:2e), Dst: LCFCHe Dst: 192.192.1.107	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic, Internet Protocol Version d Transmission Control Proto	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security • TLSv1.2 Record Layer: Hi	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22)	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version of Transmission Control Proto Transport Layer Security ~ TLSv1.2 Record Layer: Hi Content Type: Handsha	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22)	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: H Content Type: Handsha Version: TLS 1.2 (0x6	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303)	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security > TLSv1.2 Record Layer: Hu Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: Hi Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: Hindsh Content Type: Handsha Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: C Handshake Type: Cl	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello Lient Hello (1)	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq:	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: Hi Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 (0x6)	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello Lient Hello (1)	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: ent Hello	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: Hi Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 (0x6)	e (1656 bits), 207 byte 	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: ent Hello	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: HH Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 () Random: 6349103d44	e (1656 bits), 207 byte 	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: ent Hello	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version J Transport Layer Security V TLSv1.2 Record Layer: H Content Type: Handsha Version: TLS 1.2 (Øx6 Length: 148 V Handshake Protocol: C Handshake Type: Cl Length: 144 Version: TLS 1.2 () Random: 6349103d4 Session ID Length:	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello Lient Hello (1) '0x0303) Isaddd2c5ccaaabae2fbc34' : 0 ;th: 6	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: ent Hello	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSV1.2 Record Layer: HA Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 () Random: 6349103d44 Session ID Length: Cipher Suites Leng * Cipher Suites (3 s	e (1656 bits), 207 byte _ef:86:2e (ac:1f:6b:ef: 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello Lient Hello (1) '0x0303) Isaddd2c5ccaaabae2fbc34' : 0 ;th: 6	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: int Hello 56e4e9bfdc100235f83	its) Fe_26:58:b5 (8c	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSV1.2 Record Layer: Hu Content Type: Handsha Version: TLS 1.2 (0x Length: 148 * Handshake Protocol: C Handshake Protocol: C Handshake Protocol: C Handshake Protocol: C Handshake Protocol: C Handshake Type: C Length: 144 Version: TLS 1.2 (1 & Random: 6349103d4 Session ID Length: Cipher Suites Lang * Cipher Suites (3 s Cipher Suite: T	e (1656 bits), 207 byte ef:86:2e (ac:1f:6b:ef; 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ske (22) 3303) Client Hello (ient Hello (isent Hello (3x0303) 15addd2c5ccaaabae2fbc34: 0 th: 6 wites)	es captured (1656 bi 18672e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: unt Hello 56e4e9bfdc100235f83.	its) FFe_26:58:b5 (8c : 1, Ack: 1, Ler 245006232440a	:16:45:26:58:b5)	>
 Frame 79: 207 bytes on wir Fthernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto Transport Layer Security TLSv1.2 Record Layer: Hi Content Type: Handsha Version: TLS 1.2 (0x6 Length: 148 Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 (0x6 Sasion ID Length: Cipher Suites (3 s) Cipher Suite: T Cipher Suite: T 	e (1656 bits), 207 byte 	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Jst Port: 5000, Seq: ent Hello 56e4e9bfdc100235f83 M_SHA256 (0x009c) 128_GCM_SHA256 (0x	its) FFe_26:58:b5 (8c : 1, Ack: 1, Ler 245006232440a xc02b)	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Proto Transmission Control Proto Transport Layer Security * TLSv1.2 Record Layer: Hi Content Type: Handshe Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Type: (C) Length: 144 Version: TLS 1.2 (0x6 Anadoma: 6349103d44 Session ID Length: Cipher Suites Leng Cipher Suites (3 s Cipher Suite: T Cipher Suite: T	e (1656 bits), 207 byte e (1656 bits), 207 byte efi86:2e (ac:1fr6b:efi 4, Src: 192.192.1.101, ccl, Src Port: 33578, D andshake Protocol: Clie ske (22) 3303) Client Hello (ient Hello (ient Hello (istent Hello (ister	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Jst Port: 5000, Seq: ent Hello 56e4e9bfdc100235f83 M_SHA256 (0x009c) 128_GCM_SHA256 (0x	its) FFe_26:58:b5 (8c : 1, Ack: 1, Ler 245006232440a xc02b)	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transmort Layer Security * TLSV1.2 Record Layer: HL Content Type: Handsh Version: TLS 1.2 (0x6 Length: 148 * Handshake Protocol: (Handshake Type: Cl Length: 144 Version: TLS 1.2 (Random: 6349103d44 Session ID Length: Cipher Suites Leng Cipher Suites Leng Cipher Suites I Cipher Suite: T Cipher Suite: T	e (1656 bits), 207 byte e (1656 bits), 207 byte e (ac:1f:6b:e; 4, Src: 192.192.1.101, col, Src Port: 33578, D andshake Protocol: Clie ake (22) 3303) Client Hello (1) (0x0303) 15ad8d2c5ccaaabae2fbc34: 0 0 th: 6 uites) 15_RSA_WITH_AES_128_GCH LS_ECOHE_ECOS_MITH_AES_ LS_ECOHE_SCA_WITH_AES_128_GCH LS_ECOHE_RSA_WITH_AES_128_GCH LS_ECOHE_RSA_WITH_AES_128_GCH LS_ECOHE_RSA_WITH_AES_128_GCH LS_ECOHE_RSA_WITH_AES_128_GCH LS_ECOHE_SCA_WITH_AES_128_G	es captured (1656 bi 86:2e), Dst: LCFCHe Dst: 192.192.1.107 Jst Port: 5000, Seq: ent Hello 56e4e9bfdc100235f83 M_SHA256 (0x009c) 128_GCM_SHA256 (0x	its) FFe_26:58:b5 (8c : 1, Ack: 1, Ler 245006232440a xc02b)	:16:45:26:58:b5)	>
Frame 79: 207 bytes on wir Ethernet II, Src: SuperMic Internet II, Src: SuperMic Internet Protocol Version - Transmission Control Proto Transport Layer Security * TLSV1.2 Record Layer: Hu Content Type: Handsha Version: TLS 1.2 (0x Length: 148 * Handshake Protocol: C Handshake Type: C Length: 144 Version: TLS 1.2 (1 & Random: 6349103d4 Session ID Length: Cipher Suites Leng * Cipher Suites (3 s Cipher Suite: T Cipher Suite: T Cipher Suite: T Cipher Suite: T Cipher Suite: T	e (1656 bits), 207 byte 	es captured (1656 bi 186;2e), Dst: LCFCHe Dst: 192.192.1.107 Dst Port: 5000, Seq: int Hello 56e4e9bfdc100235f83 4_5HA256 (0x009c) 5_128_GCM_SHA256 (0xc0	its) FFe_26:58:b5 (8c : 1, Ack: 1, Ler 245006232440a xc02b) 32f)	:16:45:26:58:b5)	>

Packet capture sequence

25) [WINNF.FT.C.SCS.2] TLS failure due to revoked certificate Test prerequisite:

The certificate at the SAS Test Harness shall be marked as revoked.

#	Test Execution Steps	Results
1	 UUT shall start CBSD-SAS communication with the security procedures 	PASS
	 Make sure that UUT uses TLS v1.2 for security establishment. 	
	 Make sure UUT selects the correct cipher suite. 	
2	 UUT shall use CRL or OCSP to verify the validity of the server certificate. 	PASS
	• Make sure that Mutual authentication does not happen between UUT and the SAS Test	
	Harness.	
3	UUT may retry for the security procedure which shall fail	/
4	SAS Test-Harness shall not receive any Registration request or any application data.	PASS
	Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete.	
5	This is the end of the test. Verify:	PASS
	• UUT shall not transmit RF	





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UUT CRL file download





WINNF.FT.C.SCS.2.pcap					
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ssl and ip. addr==192. 192. 1. 101					
Time	Source	Destination	Protocol	Info	
2022-10-14 07:41:32.976627	192.192.1.101	192.192.1.107	TLSv1.2	Client Hello	
2022-10-14 07:41:32.979591	192.192.1.107	192.192.1.101	TLSv1.2	Server Hello	
2022-10-14 07:41:32.979591	192.192.1.107	192.192.1.101	TLSv1.2	Certificate, Certificate Request, Server Hello Done	
2022-10-14 07:41:33.066360	192.192.1.101	192.192.1.107	TLSv1.2	Alert (Level: Fatal, Description: Certificate Unknown)	
 > Ethernet II, Src: SuperMic > Internet Protocol Version 	_ef:86:2e (ac:1f:6b:ef:86:	2e), Dst: LCFCHe : 192.192.1.107	Fe_26:58:b5 (8c:16:45:		
 Transmission Control Proto Transport Layer Security 					
	21)	ption: Certifica	te Unknown)		
 Transport Layer Security TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x6 Length: 2 Alert Message 	21)	···E&X···· k··.	, ••Е•		

Packet capture sequence

26) [WINNF.FT.C.SCS.3] TLS failure due to expired server certificate

Test case pre-requisite:

Configure the SAS Test Harness such that server certificate is valid but expired.

#	Test Execution Steps	Results
1	 UUT shall start CBSD-SAS communication with the security procedures 	PASS
	 Make sure that UUT uses TLS v1.2 for security establishment. 	
	 Make sure UUT selects the correct cipher suite. 	
2	 UUT shall use CRL or OCSP to verify the validity of the server certificate. 	PASS
	• Make sure that Mutual authentication does not happen between UUT and the SAS Test	
	Harness.	
3	UUT may retry for the security procedure which shall fail	/
4	SAS Test-Harness shall not receive any Registration request or any application data.	PASS
	Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete.	
5	This is the end of the test. Verify:	PASS
	• UUT shall not transmit RF	



```
CAICT
No. 122Z62158-WMD01
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✓ WINNEFFLCSCS3.pccp - > ZM(F) ###(G) ####(G) ####(G) ####(G) ####(G) ####(G) ####(G) #####(G) ####################################	文件(F) 编辑(E) 视图(V) 跳转(G)			上具(T) 帮助(H	H)	
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Import 21, Src1 Specify of Histo (Sciff Bost Fight 20), Src1 (Scief Bost Bislo) Import Provide Notion 6, Src 19:33, Sill, Sill Sill Sill Sill Sill Sill Si	022-10-14 07.30.35.344202	152.152.1.101	192.192.1.107	12301.2	Alert (Level, Falar, Description, Certificate Express)	
Import 21, Src1 Specify of Hists (2, Sic1 Hists (1963)), Dir. 1070000 # 2010100 Import Protocol (1000000000000000000000000000000000000						
<pre>Internet Protected Verside 4, Sey: 132.23.1.130, Det: 132.1321.137 Versitation Control Verside 4, Sey: 132.232.1.130, Det: 132.133.137 Versitation Control Verside 4, Sey: 132.232.1.130, Det: 132.14, Act: 1, Len: 133 Versitation Control Verside 4, Sey: 132.24, Market 2, Sey: 132.24, Market 2,</pre>		ef:86:2e (ac:1f:6b:ef	:86:2e), Dst: LCECH	eFe 26:58:b5 ()	8c:16:45:26:58:b5)	
<pre>V TUG.1.2.68cd Layer: Handhake Protect): [] [] [Here Halls Genet Type: Handhake Protect]: [] [] [] [] [] [] [] [] [] [] [] [] []</pre>	Internet Protocol Version 4 Transmission Control Protoc	, Src: 192.192.1.101,	Dst: 192.192.1.107			
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<pre>lungle::144 Version: V1:12 (00080) (hendow::61404747.cc6.0142444122.cc6.07510f3.161142.02412.045512154497.2 Generative Starter Tr.S.1_cC008_CC004_UTIL_045_122_C01_SMA36 (0x087) Claber Satte::T15_CC004_UTIL_045_122_C01_SMA36 (0x087) Claber Satte::T15_CC004_UTIL_045_122_C01_SMA46 (D1122_D112_D1137_T15_C1.2_Claber Satte::T15_C004_UTIL_045_122_C01_SMA46 (D1122_D112_D112_D112_D112_D112_D112_D11</pre>		lient Hello				
<pre>version: TLS 1.2 (00083) > Mode: Starberty-CodeStar</pre>		ient Hello (1)				
> Render: 6340097Cc6c5534e94512c15080525507530753075307530753075320512a15040722 Session D Length: 8 Clark thile: (3 Julie) C Length: 10 Clark thile: (3 Julie) C Length: 11 Secole 11 C Capression Netbods (Length: 1 Secole 11 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 10 Secole 11: Sport Ength: 11 Secole 11: Sport Ength: 11: Sport Ength: 11 Secole 11: Sport Ength: 11 Secole 11: Sport Ength: 11: Sport Ength: 11 Secole 11: Sport Ength: 11 Secole 11: Sport Ength: 11: Sport Ength: 11 Secole 11: Sport Ength: 11 Secole 11: Sport Ength: 11: Sport Ength: 11: Sport Ength: 11 Secole 11: Sport Ength: 11:						
<pre>Session ID Length: 0 Clyber Suites Lingth: 11, 25000; 25004 (0x007) Compression Nethods (12000) Detensions: supported groups (200-2) Detension: supported (200-2) Detension: suppor</pre>			10fb31/31/3203/1=/0	6512a1b0407a2		
<pre>clyber Suites (_smith 6</pre>			10.0014014020041049	0012010040782		
Clamber Suitz: TLS_(SA, HITM_MS, 120_OC)_SHA256 (000000) Clamber Suitz: TLS_(COM_ESA, HITM_MS, 120_OC)_SHA256 (000000) Clamber Suitz: TLS_(COM_ESA, HITM_MS, 120_OC)_SHA256 (000000) Compression Rethold (1 exthol) Compression Rethold (1 exthol) > Compression Rethold (1 exthol) > Compression Rethold (1 exthol) > TROM_FILE (CSA 3, prop) INTERCENT SUBJECT (2000) No. 54 20 50 50 50 20 100 45 00 - 64% ··· (c··. · f: INTERCENT SUBJECT (2000) No. 51 (2000) No. 50 (2000) No						
Cipher Sutt: 15_5CDE (COS.NUTH_AE_J128_COU_SHADS6 (0xc20)) Copression Hethods (in tethod) bitters: 15_5CDE (EAG_UTH_AE_J128_COU_SHADS6 (0xc20)) Copression Hethods (in tethod) bitters: isoproted groups (len+32) Deam Coll 64 52 63 16 52 cd 16 60 cd 50 cd 16 60 cd 50 cd 16 00 cd 16 0	✓ Cipher Suites (3 su	uites)				
Clpher Sutter ILS_CODE REA_UTIL_RES_122_GOL_SMA256 (0xc02f) Compression Nethods (in sethod) > Extension: supported_groups (der50)						
Compression Nethods Length: 1 2 Compression Nethods Length: 97 3 Extension Length: 97 4 Extension						
<pre>> compresion Methods (1 methods) btension: supported_groups (1 methods) btension: support (1 methods) b</pre>			128_GCM_SHA256 (0xc	021)		
bttmsions: upport groups (1n-ds) DWD: 50:16:45:26:55:56:20 WINNEFLCSCS.3pcap Statistic Base Barret Destination Proteonline Istatistic pademits (211) Distatistic pademits (
2000 B 2 16 45 26 58 b5 4 1f 66 ef 66 2 8 68 04 45 00 ···EX···F····E·						
ア TINF.FIC.SSC3.prop - 一 第第: 57 - 日前: 4 (0.8) 第第: 56 - 56 - 56 - 56 - 56 - 56 - 56 - 56	> Extension: supporte	ed_groups (len=52)				
■ WINNEFT.C.SCS.3,prap	0000 8c 16 45 26 58 b5 ac 1f	6b ef 86 2e 08 00 45	500 ··E&X··· k··	E.		
24FP Mail (1) Mail (2) Mai	🔵 🎽 WINNF. FT. C. SCS. 3. pcap				分组: 857 ・ 已显示: 4(0.5%)	配置: Default
1 1 0	WINNF.FT.C.SCS.3.pcap					
Source Destination Protocol Info 022-10-14 07:30:39.540062 192.192.1.101 152.192.1.107 TLSV.1.2 Client Hello 022-10-14 07:30:39.54075 192.192.1.107 152.192.1.107 TLSV.1.2 Gerver Hello 022-10-14 07:30:39.54075 192.192.1.107 192.192.1.101 TLSV.1.2 Gervificate, Certificate, Request, Server Hello Done 022-10-14 07:30:39.540282 192.192.1.101 192.192.1.107 TLSV.1.2 Alert (Level: Fatal, Description: Certificate Expired) 0 Frame 821: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface \Device\NPF_[16842658-1012-4F12-AE31-6507962E1715}, id 6 0 Informet TL, Src: LCFCHEF_2658:165 (Sci:16:452:05:80:55), Dst: SuperMic_ef:86:2e (ac:1f:6b:ef:86:2e) 0 Internet Frootool Version 4, Src: 192.192.1.101 1 Transmission Control Protocol, Src Port: 5000, Dst Port: 3006, Seq: 1, Ack: 154, Len: 1460 V Transport Lawer Security V TLSV.1.2 V TLSV.1.2 (e00303) Length: 71 Version: TLS 1.2 (0x0303) Length: 72 Version: TLS 1.2 (0x0303) Version: 10 Length: 32 Session 10 Length: 32 Session 10 Length: 32 Session 10 Leng) 捕获(C) 分析(A) 统计	-(S) 电话(Y) 无线(W)	工具(T) 帮助(н)	
0022-10-14 07:80:39.544725 102.192.1.101 192.192.1.107 TUSV1.2 Client Hello 0022-10-14 07:30:39.544725 192.192.1.107 192.192.1.101 TUSV1.2 Certificate, Certificate Request, Server Hello Done 0022-10-14 07:30:39.544725 192.192.1.101 192.192.1.101 TUSV1.2 Certificate, Certificate Request, Server Hello Done 0022-10-14 07:30:39.544262 192.192.1.101 192.192.1.107 TUSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 0022-10-14 07:30:39.544262 192.192.1.101 192.192.1.107 TUSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 0022-10-14 07:30:39.544262 192.192.1.101 192.192.1.107 TUSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 0022-10-14 07:30:39.544262 192.192.1.107 TUSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 0021-15.12 Ditsons trap Protocol, Version 4, Serc: 192.192.1.107, Dst: 192.192.1.101 Tusv1.2 Alert (Level: Fatal, Description: Certificate Expired) 1 Transmission Control Protocol, Ser Port: 5000, Dst Port: 3000, Seq: 1, Ack: 154, Len: 1460 Transmission Control Protocol, Ser Port: Sto00, Dst Port: 3000, Seq: 1, Ack: 154, Len: 1460 V Hodshake Protocol: Server Hello Hardshake Protocol: Server Hello Hardshake Protocol: Server Hello <th>文件(F) 编辑(E) 视图(V) 跳转(G)</th> <th></th> <th></th> <th>工具(T) 帮助(</th> <th>н)</th> <th></th>	文件(F) 编辑(E) 视图(V) 跳转(G)			工具(T) 帮助(н)	
1002-10-14 07:30:39.434775 192.192.1.107 192.192.1.101 TLSV1.2 Server Hello 1002-210-14 07:30:39.543775 192.192.1.107 192.192.1.101 TLSV1.2 Certificate, Certificate Request, Server Hello Done 022-10-14 07:30:39.544282 192.192.1.101 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 022-10-14 07:30:39.544282 192.192.1.101 192.192.1.101 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 022-10-14 07:30:39.544282 192.192.1.101 192.192.1.101 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 022-10-14 07:30:39.54282 192.192.1.101 192.192.1.101 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 021-10-14 07:30:30 Internet Protocol Version 4, Src: 192.1.07, Dist: 192.192.1.101 Internet Protocol Version 4, Src: 192.1.107, Dist: 192.102.1.101 Internet Protocol Version 4, Src: 192.1.07, Dist: 192.192.1.101 10-16-17 Transmission Content Type: Handhake Protocol: Server Hello Content Type: Handhake Protocol: Server Hello 10-16-17 Version: TIS 1.2 (0x0303) Length: 31 Version: TIS 1.2 (0x0303) Session 1	文件(F)编辑(E)视图(V)跳转(G)			」 工具(T) 帮助(н)	
2022-10-14 07:30:39.543775 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 Alert (Level: Fatal, Description: Certificate Expired) 2022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 2022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 2022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 2022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 2022-10-14 07:30:39.544282 192.192.1.107 TLSV1.2 Alert (Level: Fatal, Description: Certificate Expired) 2021-2021-2021-2021-2021-2021-2021-2021	文件(F) 編編(E) 视图(V) 跳转(G) 《 圖 《 ④ 』 語 文 ⑤ 《 ssl and ip.addr==192.192.1.101 Time	k ⇔ ⇔ ≌ T <u>k</u> _	Destination	Protocol	Info	
2022-10-14 07:30:39.544282 192.192.1.101 192.192.1.107 TLSv1.2 Alert (Level: Fatal, Description: Certificate Expired) > Frame 521: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface \Device\WFF_(16842658-1012-4F12-AE31-6507962E1715), id 6 > Ethernet IT, Src: LCCCHFe_26:58:165), Dst: 192.192.1.107 > Internet Protocol Version 4, Src: 192.192.1.07, Dst: 192.192.1.101 > Transpostion Control Protocol, Src Port: 5800, Dst Port: 33060, Seq: 1, Ack: 154, Len: 1460 Y TISV.1.2 Record Layer: Handshake Protocol: Server Hello Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 31 Y Handshake Protocol: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) Session D1 Length: 32 Session D1 Length: 32 Session D1 Length: 32 Session D1 Length: 52 Session D1 Length: 52 Copression Method: null (0) Extension: renegotiation_info (len-1)	文件(F) 编辑(E) 视图(V) 跳转(G) sil and ip.addr==192.192.1 101 fine 2022-10-14 07:30:39.540082	 (⇒) ⇒ ≦ (⇒) ⇒ <!--</td--><td>Destination 192.192.1.107</td><td>Protocol TLSv1.2</td><td>Info Client Hello</td><td></td>	Destination 192.192.1.107	Protocol TLSv1.2	Info Client Hello	
<pre>c c c c c c c c c c c c c c c c c c c</pre>	文件(F) 编辑(E) 视图(V) 跳转(G) 《 《 》 》 》 》 》 》 》 《 《 sel and ip.addr==192.192.1.101 Time 1022-10-14 07:30:39.540082 1022-10-14 07:30:39.543775	 ⊕ ⊕ ≦ ↑ ↓ ■ Source 192.192.1.101 192.192.1.107 	Destination 192.192.1.107 192.192.1.101	Protocol TLSv1.2 TLSv1.2	Info Client Hello Server Hello	
<pre>Frame 821: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface \Device\NPF_{16842658-1012-4F12-AE31-6507962E1715}, id 6 Ethernet II, Src: LCFCHeFe_2658:b5 (8c:16:45:26:55), Dst: SuperMic_ef:86:2e (ac:1f:6b:ef:86:2e) Internet Protocol Version 4, Src: 192.192.1.107, Dst: 192.192.1.101 Transmission Control Protocol, Src Port: 3000, Dst Port: 33060, Seq: 1, Ack: 154, Len: 1460 Transport Layer Security V TLSV.2 Record Layer: Handshake Protocol: Server Hello Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 81 V Handshake Type: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) > Random: 12618127af2555c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: co5c350a6858499a3e8aedaal3eb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) </pre>	文件(F) 编辑(E) 视图(V) 跳转(G) 《 ② ③ ③ ③ ③ ③ ③ ④ ④ ④ (1) sel and ip. addr==192.192.1.101 *ime 1022-10-14 07:30:39.5440082 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.543775	Source 192.192.1.101 192.192.1.107 192.192.1.107	Destination 192.192.1.107 192.192.1.101 192.192.1.101	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done	
<pre>> Frame 821: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface \Device\NPF_(16842658-1012-4F12-AE31-65D7962E1715), id 6 > Ethernet II, Src: LCFCHeF26:58:b5 (8c:16:45:26:58:b5), Dst: SuperMic_ef:86:2e (ac:1f:6b:ef:86:2e) > Internet Protocol Version 4, Src: 192.192.1.107, Dst: 192.192.1.101 > Transmot Layer Security </pre> <pre></pre>	文件(F) 编辑(E) 视题(V) 跳转(G) 《 ② ③ ③ ③ ③ ③ ③ ④ ④ ④ sal and ip.addr==192.192.1.101 Time 1022-10-14 07:30:39.540082 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.543775	Source 192.192.1.101 192.192.1.107 192.192.1.107	Destination 192.192.1.107 192.192.1.101 192.192.1.101	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done	
Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 81 V Handshake Protocol: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) > Random: 1268127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID Length: 32 Session ID: c95c350a6058499a9a8eaedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SH4256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (100 mm m	Image: Solution of the second secon	Source 192.192.1.101 192.192.1.107 192.192.1.107	Destination 192.192.1.107 192.192.1.101 192.192.1.101	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done	
<pre>> Transmission Control Protocol, Src Port: 5000, Dst Port: 33060, Seq: 1, Ack: 154, Len: 1460 > Transport Layer Security > TLSyL: Record Layer: Handshake Protocol: Server Hello Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 81 > Handshake Protocol: Server Hello Handshake Type: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0308) > Random: 12638127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID Length: 32 Session ID Length: 32 Session ID : c95c350a6858499a3e8baedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RS_MITH_AES_128_6CH_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (100 0000000000000000000000000000000</pre>	文件(F) 编辑(E) 视图(V) 跳转(G) 《 《 》 《 》 》 》 》 》 》 》 《 》 81 and ip. addr==192.192.11.101 Time 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101	e e e E E	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired)	
<pre>v Transport Layer Security v TLSv1.2 Record Layer: Handshake Protocol: Server Hello Content Type: Handshake Protocol: Server Hello Length: 81 v Handshake Protocol: Server Hello Handshake Type: Server Hello Length: 77 Version: TLS 1.2 (0x0303) Random: 12618127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID: c95c550a6858499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_UTH_AES_128_GCM_SH4256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extensions Length: 5 > Extension: renegotiation_info (len=1)</pre>	文件(F) 编辑(E) 视型(V) 跳转(G) 《 ② ③ ③ ③ ③ ③ ③ ④ ④ ④ ④ 1531 and ip.addr==192.192.1.101 Tise 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.54475 2022-10-14 07:30:39.54475 2022-10-14 07:30:39.544282 < < < > Frame 821: 1514 bytes on wid	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) Alert (Level: Fatal, Description: Certificate Expired)	
<pre> TLSv1.2 Record Layer: Handshake Protocol: Server Hello Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 81 Handshake Protocol: Server Hello Handshake Protocol: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) Random: 12618127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID Length: 32 Session ID: c95c350a6858499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS RSA_UTH_AE5_128_GCM_SH4256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) </pre>	文件(F) 編編(E) 视覺(V) 跳转(G) 《 《 》 ② 》 ③ 》 ③ ③ ③ ③ sal and ip. addr==192.192.11.01 Time 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 (Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 irre (12112 bits), 1514 _26:58:b5 (8c:16:45:26 4, Src: 192.192.1.107,	Q Q Q Image: Constraint of the second se	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 81 V Handshake Protocol: Server Hello Handshake Type: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) > Random: 1263127afe355c70338ce199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: c95c350a6858499a9a8eaedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SH4256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 00880 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (100 mm m	文件(F) 编辑(E) 视圈(V) 跳转(G) 《 《 》 》 》 》 》 》 》 》 》 》 》 》 》 》 》 81 and ip. addr==192.192.1.101 Tise 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.544282 < > Frame 821: 1514 bytes on wi > Ethernet II, Src: LCFCHFE > Thernet Protocol Version 4 > Transission Control Protocol Version 4 > Transission Control Protocol Version 4	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 irre (12112 bits), 1514 _26:58:b5 (8c:16:45:26 4, Src: 192.192.1.107,	Q Q Q Image: Constraint of the second se	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
<pre>Version: TLS 1.2 (0x0303) Length: 81 V Handshake Protocol: Server Hello Handshake Type: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) > Random: 12618127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID Length: 32 Session ID : c95350a6854993a3eadaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extensions Length: 5 > Extension: renegotiation_info (len=1)</pre>	文件(F) 编辑(E) 视题(V) 跳转(G) 《 《 》 》 》 》 》 》 》 》 》 》 》 》 》 》 》 **********	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 irre (12112 bits), 1514 _26:58:b5 (8c:16:45:26 4, Src: 192.192.1.107, col, Src Port: 5000, D	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Length: 81 V Handshake Protocol: Server Hello Handshake Type: Server Hello (2) Length: 77 Version: TL5 1.2 (0x0303) > Random: 126181273fe355c78338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: c95c350a6858499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 CLipher Suite: TL5 RSA_MITH_AE5_122_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0000 28 e5 <u>60 9c</u> 00 00 05 ff 01 00 01 00 16 03 03 0b (1000 cmm)	文件(F) 編攝(E) 视覺(V) 跳转(G) 《 《 ② 》 ③ ③ ③ ③ ③ ③ ③ ③ sal and ip. addr==192.192.1.101 Trime 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 (Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 26:58:b5 (8c:16:45:26 4, Src: 192.192.1.107, col, Src Port: 5000, D	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
<pre> Handshake Protocol: Server Hello Handshake Type: Server Hello (2) Length: 77 Version: TLS 1.2 (0x0303) Nandom: 12638127afe355c70338c199631ba82736fa6bb112ccff0e8c343d804c1cd9a Session ID Length: 32 Session ID: c95c350a6658499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) </pre>	文件(F) 編編(E) 初聞(V) 那時(G) ■ 20 0 1 2017 30:39.540082 1022-10-14 07:30:39.540082 1022-10-14 07:30:39.540082 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.544282 C C Frame 821: 1514 bytes on wi 2 Ethernet II, Src: LCFCHFec 2 Internet Protocol Version 4 3 Transmission Control Protoco 4 Transport Layer Security 4 TLSV1.2 Record Layer: Ha Content Type: Handsha	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 ire (12112 bits), 1514 26:58:05 (8::16:45:26 4, Src: 192.1192.1.107, col, Src Port: 5000, D andshake Protocol: Ser- ike (22)	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Length: 77 Version: TLS 1.2 (0x0303) > Random: 125181273fe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: c95c350a6858499a3e8ædeaa13ebb1586d88e59a65c9a13000571a20361628e5 CLipher Suite: TLS RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0000 28 e5 <u>60 9c</u> 00 00 05 ff 01 00 11 00 16 03 03 0b (100 fm mmmm)	文件(F) 編環(F) 视聞(V) 那時(G) 《 《 ② 》 ③ ③ ③ ③ ③ ③ ③ ③ sal and ip. addr==192.192.1.101 Fine 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 《 Frame 821: 1514 bytes on wi > Ethernet II, Src: LCFCHEfe_ > Internet Protocol Version 4 > Transmission Control Protoc * Transport Layer Security * TLSV1.2 Record Layer: Handsha Version: TLS 1.2 (0x0	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 ire (12112 bits), 1514 26:58:05 (8::16:45:26 4, Src: 192.1192.1.107, col, Src Port: 5000, D andshake Protocol: Ser- ike (22)	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Version: TLS 1.2 (0x0303) > Random: 12618127af=355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: c95c350a6658499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions: Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (1	文件(F) 編攝(E) 视覺(V) 部時(G) 《 《 》 《 》 》 》 》 》 》 》 》 》 》 》 《 》 sal and ip. addr==192.192.1.101 Time 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 pre	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 col, Src Port: 5000, D andshake Protocol: Ser ike (22) 1303)	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
<pre>> Random: 12618127afe355c70338ec199631ba82736fa6bb112ecff0e8c343d804c1cd9a Session ID Length: 32 Session ID: cogst3ba6858499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 of ff 01 00 01 00 16 03 03 0b (10000000000000000000000000000000000</pre>	文件(F) 編編(E) 初聞(V) 那時(G) all and ip.addr==192.192.1.101 Fine 1022-10-14 07:30:39.5440082 1022-10-14 07:30:39.5440882 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.543775 1022-10-14 07:30:39.544282 C Frame 821: 1514 bytes on wi > Frame 821: 1514 bytes on wi > Ethernet II, Src: LCFCHFere > Internet Protocol Version 4 > Transmission Control Protoco Transport Layer Security V TLSV1.2 Record Layer: Ha Content Type: Handsha Version: TLS 1.2 (0x0 Length: 81 V Handshake Protocol: S	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 ire (12112 bits), 1514 26:58:155 (8c:16:45:26 4, Src: 192.1.107, col, Src Port: 5000, D andshake Protocol: Ser ike (22) 1303) ierver Hello	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Session ID Length: 32 Session ID: c95c350a6858499a3e8eadaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: ILS_RSA_MITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 <u>60 9c</u> 00 00 05 ff 01 00 01 00 16 03 03 0b (100 the	文件(F) 編攝(E) 视覺(V) 部時(G) 《 ● ② ③ ④ ③ ② ③ ③ ③ ③ 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 19303) ierver Hello ierver Hello (2)	Q Q Q III Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:b5), Dst: Super Dst: 192.192.1.101 st Port: 33060, Seq	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (thic_ef:86:2e (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Session ID: c95c350a6858499a3e8aedaa13ebb1586d88e59a65c9a13000571a20361628e5 Cipher Suite: TL <u>S</u> RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (1	文件(F) 编辑(E) 视图(V) 那转(G) all and ip.addr==192.192.1.101 Fise 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 Frame 821: 1514 bytes on wi > Ethernet II, Src: LCFCHFere > Internet Protocol Version 4 > Transmission Control Protoco Transport Layer Security V TLSV1.2 Record Layer: Ha Content Type: Handsha Version: TLS 1.2 (0x0 Length: 81 V Handshake Protocol: S Handshake Type: Se Length: 77 Version: TLS 1.2 (1)	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.103 192.103 1	<pre> @ @ @ @ # Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 st: Super Dst: 192.192.1.101 st: 192.192.1.101 st: Port: 33060, Seq ver Hello </pre>	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 " I112 bits) on i Mic_ef:86:22 (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (1	文件(F) 編編(E) 视興(V) 跳转(G) 《 《 ② 》 ③ ③ ③ ② ③ ③ sal and ip. addr==192.192.1.101 Time 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 (Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 (192.192.1.107) (192.107) (192.	<pre> @ @ @ @ # Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 st: Super Dst: 192.192.1.101 st: 192.192.1.101 st: Port: 33060, Seq ver Hello </pre>	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 " I112 bits) on i Mic_ef:86:22 (Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\NPF_{1684265B-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e)	
Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 <u>80 9c</u> 00 00 05 ff 01 00 01 00 16 03 03 0b (100 000 000 000 000 000 000 000 000 00	文件(F) 編攝(E) 视覺(V) 部時(G) 《 ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.101 erver Hello (2) Source Hello (3) Source Hello (3)	Q Q Q Image: Constraint of the second se	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
Extensions Length: 5 > Extension: renegotiation_info (len=1) 0080 28 e5 00 9c 00 00 05 ff 01 00 01 00 16 03 03 0b (1	文(件(F) 編辑(E) 视野(V) 那時(G) I Esl and ip. addr==192.192.1.101 Time 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.544082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 Frame 821: 1514 bytes on wi > Ethernet II, Src: LCFCHFeFe > Internet Protocol Version 4 > Transmission Control Protoco	A ⊕	Q. Q. Q. M. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:15), Dst: Super Dst: 192.192.1.101 st: 192.192.1.101 ver Hello 2736fa6bb112ecff0084 xb1586d88e59a65c9a13	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
> Extension: renegotiation_info (len=1) 00800 28 e5 <mark>00 9c</mark> 00 00 05 ff 01 00 01 00 16 03 03 0b (1000)	文件(F) 編編(E) 初興(V) 部時(G) ▲ 単 ② ④ ● ● ○ ○ ○ ○ ○ ■ sel and ip. addr==192.192.1.101 Frime 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.540082 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.543775 2022-10-14 07:30:39.544282 Frame 821: 1514 bytes on wid > Frame 821: 1514 bytes on wid > Ethernet II, Src: LCFCHEFe > Internet Protocol Version 4 > Transport Layer Security > TLSV1.2 Record Layer: Ha Content Type: Handshak Version: TLS 1.2 (0x0 Length: 81 > Handshake Protocol: S Handshake Type: Se Length: 77 Version: TLS 1.2 (10) > Random: 12618127aff Session ID: c95c35 Cipher Suite: TLS	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 cols for Port: 5000, D andshake Protocol: Ser ike (22) 303) ierver Hello cols55c70338ec199631ba82 32 0a6858499368aedaa13et RSA_WITH AES 128 GCCL	Q. Q. Q. M. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:15), Dst: Super Dst: 192.192.1.101 st: 192.192.1.101 ver Hello 2736fa6bb112ecff0084 xb1586d88e59a65c9a13	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
	文件(F) 編攝(E) 视覺(V) 部時(G) 《 ● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Source 192.192.1.101 192.192.1.107 192.192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107 192.192.1107	Q. Q. Q. M. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:15), Dst: Super Dst: 192.192.1.101 st: 192.192.1.101 ver Hello 2736fa6bb112ecff0084 xb1586d88e59a65c9a13	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
	文(4(F) 編輯(E) 视題(V) 那時(G) ▲ ● ② ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	A ⊕	Q. Q. Q. M. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:15), Dst: Super Dst: 192.192.1.101 st: 192.192.1.101 ver Hello 2736fa6bb112ecff0084 xb1586d88e59a65c9a13	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
	文件(F) 編輯(E) 初聞(V) 那時(G) ■ 20 0 10 10 10 10 10 10 10 10 10 10 10 10	A ⊕	Q. Q. Q. M. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.107 bytes captured (12 :58:15), Dst: Super Dst: 192.192.1.101 st: 192.192.1.101 ver Hello 2736fa6bb112ecff0084 xb1586d88e59a65c9a13	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (112 bits) on i Mic_ef:86:2e (1; 1, Ack: 154, 1; 1, Ack: 154,	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	
	文件(F) 編編(E) 初周(V) 影時(G)	Source 192.192.1.101 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 192.192.1.107 cols and shake Protocol: Sertike (22) 30303) eas6554993386c199631ba82 32 0a6554993386ac4aa13et SA WITH AES 128 GCC 5 i null (0) 5 iation_info (len=1)	Q. Q. Q. H. Destination 192.192.1.107 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 192.192.1.101 st Port: 3060, Seq ver Hello 2736fa6bb112ecff0e84 xb1586d88e59a65c9a13 xHA256 (0x009c)	Protocol TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 TLSv1.2 (1) (1) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	Info Client Hello Server Hello Certificate, Certificate Request, Server Hello Done Alert (Level: Fatal, Description: Certificate Expired) nterface \Device\WPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6 ac:1f:6b:ef:86:2e) Len: 1460	





WINNF.FT.C.SCS.3.pcap					- 🗆
[件(F) 编辑(E) 视图(V) 跳转(G)	捕获(C) 分析(A) 统计(S)	电话(Y) 无线(W)	工具(T) 帮助(H)		
(🔳 🖉 💿 📜 🛅 🗙 🛅 🍳	⇔⇔≌⊺⊻⊒	0,0,0,1			
ssl and ip.addr==192.192.1.101					A A A
me	Source	Destination	Protocol	Info	
022-10-14 07:30:39.540082	192.192.1.101	192.192.1.107	TLSv1.2	Client Hello	
022-10-14 07:30:39.543775	192.192.1.107	192.192.1.101	TLSv1.2	Server Hello	
022-10-14 07:30:39.543775	192.192.1.107	192.192.1.101	TLSv1.2	Certificate, Certificate Request, Server Hello Done	
022-10-14 07:30:39.544282	192.192.1.101	192.192.1.107	TLSv1.2	Alert (Level: Fatal, Description: Certificate Expired)	
Frame 826: 61 bytes on wire				evice\NPF_{16842658-1012-4F12-AE31-65D7962E1715}, id 6	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_	ef:86:2e (ac:1f:6b:ef:86	:2e), Dst: LCFCHe			
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds	:2e), Dst: LCFCHe t: 192.192.1.107	Fe_26:58:b5 (8c:	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds	:2e), Dst: LCFCHe t: 192.192.1.107	Fe_26:58:b5 (8c:	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src Port: 33060, Dst	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src Port: 33060, Dst ert (Level: Fatal, Descr	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security v TLSv1.2 Record Layer: Al	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src Port: 33060, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperNic. Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security * TLSv1.2 Record Layer: Al Content Type: Alert (ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src Port: 33060, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security ✓ TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src Port: 33060, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security V TLSV1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 V Alert Message Level: Fatal (2)	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src: Port: 33060, Dst ert (Level: Fatal, Descr 21) 303)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperNic. Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security * TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 * Alert Message	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src: Port: 33060, Dst ert (Level: Fatal, Descr 21) 303)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
Frame 826: 61 bytes on wire Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security V TLSV1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 V Alert Message Level: Fatal (2)	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src: Port: 33060, Dst ert (Level: Fatal, Descr 21) 303)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	
 Ethernet II, Src: SuperMic_ Internet Protocol Version 4 Transmission Control Protoc Transport Layer Security TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 Alert Message Level: Fatal (2) 	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds ol, Src: Port: 33060, Dst ert (Level: Fatal, Descr 21) 303)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c: 154, Ack: 3088,	16:45:26:58:b5)	

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

Test case pre-requisite:

Equip the SAS Test Harness with certificate signed by an unknown CA to the CBSD.

#	Test Execution Steps	Results
1	UUT shall start CBSD-SAS communication with the security procedures	PASS
	 Make sure that UUT uses TLS v1.2 for security establishment. 	
	Make sure UUT selects the correct cipher suite.	
2	 UUT shall use CRL or OCSP to verify the validity of the server certificate. 	PASS
	• Make sure that Mutual authentication does not happen between UUT and the SAS Test	
	Harness.	
3	UUT may retry for the security procedure which shall fail	/
4	SAS Test-Harness shall not receive any Registration request or any application data.	PASS
	Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete.	
5	This is the end of the test. Verify:	PASS
	• UUT shall not transmit RF	





					- D >
文件(F) 编辑(E) 视图(V) 跳转(G	捕获(C) 分析(A) 统计(S)	电话(Y) 无线(W)	工具(T) 帮助(H)		
4 🔳 🔬 🛞 📜 🛅 🔀 🔂 🔍	← → 옆 T 🛓 📃 🔳	0,0,0, 11			
ssl and ip.addr==192.192.1.101					+ 💌 🔜 🔪
Fime	Source	Destination	Protocol	Info	
2022-10-14 07:20:25.716381	192.192.1.101	192.192.1.107	TLSv1.2	Client Hello	
2022-10-14 07:20:25.721436	192.192.1.107	192.192.1.101	TLSv1.2	Server Hello	
2022-10-14 07:20:25.721436	192.192.1.107	192.192.1.101	TLSv1.2	Certificate, Certificate Request, Server Hello Done	
2022-10-14 07:20:25.722813	192.192.1.101	192.192.1.107	TLSv1.2	Alert (Level: Fatal, Description: Unknown CA)	
<					
 Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Protocol 	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds	:2e), Dst: LCFCHe t: 192.192.1.107	Fe_26:58:b5 (8c:1		
 Ethernet II, Src: SuperMic Internet Protocol Version Transmission Control Protocol 	ef:86:2e (ac:1f:6b:ef:86 b, Src: 192.192.1.101, Ds col, Src Port: 59080, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c:1 154, Ack: 3090,	16:45:26:58:b5)	
 > Ethernet II, Src: SuperMic > Internet Protocol Version 4 > Transmission Control Protoc > Transport Layer Security > TLSV1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0) 	ef:86:2e (ac:1f:6b:ef:86 b, Src: 192.192.1.101, Ds col, Src Port: 59080, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c:1 154, Ack: 3090,	16:45:26:58:b5)	
> Ethernet II, Src: SuperMic > Internet Protocol Version 4 > Transmission Control Protocy * Transport Layer Security * TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2	ef:86:2e (ac:1f:6b:ef:86 b, Src: 192.192.1.101, Ds col, Src Port: 59080, Dst ert (Level: Fatal, Descr 21)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c:1 154, Ack: 3090,	16:45:26:58:b5)	
<pre>> Ethernet II, Src: SuperMic_ > Internet Protocol Version 4 > Transmission Control Protox > Transport Layer Security > TLSv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 > Alert Message</pre>	ef:86:2e (ac:1f:6b:ef:86 , Src: 192.192.1.101, Ds cal, Src: Port: 59080, Dst ert (Level: Fatal, Descr 21) 303)	:2e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq:	Fe_26:58:b5 (8c:1 154, Ack: 3090,	16:45:26:58:b5)	
<pre>>> Ethernet II, Src: SuperMic >> Internet Protocol Version 4 > Transmission Control Protoc >> Transport Layer Security >> TLSV1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 >> Alert Message Level: Fatal (2) Description: Unkno 0020 01 6b e6 c8 13 88 55 15</pre>	ef:86:2e (ac:1f:6b:ef:86 f, Src: 192.192.1.101, Ds iol, Src Port: 59080, Dst ert (Level: Fatal, Descr 21) 303) wn CA (48) e1 42 d3 1c af 5c 50 1	22e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq: iption: Unknown G	Fe_26:58:b5 (8c:1 154, Ack: 3090, A)	16:45:26:58:b5)	
<pre>> Ethernet II, Src: SuperMic_ > Internet Protocol Version 4 > Transmission Control Protox > Transport Layer Security > TISv1.2 Record Layer: Al Content Type: Alert (Version: TLS 1.2 (0x0 Length: 2 > Alert Message Level: Fatal (2) Description: Unkno</pre>	ef:86:2e (ac:1f:6b:ef:86 f, Src: 192.192.1.101, Ds iol, Src Port: 59080, Dst ert (Level: Fatal, Descr 21) 303) wn CA (48) e1 42 d3 1c af 5c 50 1	22e), Dst: LCFCHe t: 192.192.1.107 Port: 5000, Seq: iption: Unknown C	Fe_26:58:b5 (8c:1 154, Ack: 3090, A)	16:45:26:58:b5)	





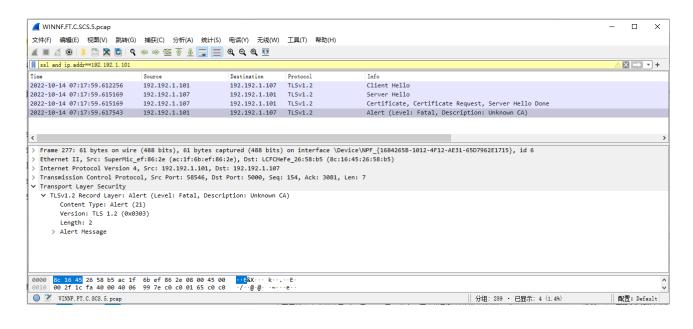
28) [WINNF.FT.C.SCS.5] TLS failure when certificate at the SAS Test Harness is corrupted

Test case pre-requisite:

• The end-entity certificate at the SAS Test Harness shall be corrupted.

The following steps describe the test execution.

#	Test Execution Steps	Results
1	UUT shall start CBSD-SAS communication with the security procedures	PASS
	 Make sure that UUT uses TLS v1.2 for security establishment. 	
	 Make sure UUT selects the correct cipher suite. 	
2	 UUT shall use CRL or OCSP to verify the validity of the server certificate. 	PASS
	• Make sure that Mutual authentication does not happen between UUT and the SAS Test	
	Harness.	
3	UUT may retry for the security procedure which shall fail	/
4	SAS Test-Harness shall not receive any Registration request or any application data.	PASS
	Monitor the RF output of the UUT from start of test until 60 seconds after Step 3 is complete.	
5	This is the end of the test. Verify:	PASS
	• UUT shall not transmit RF	







29) [WINNF.PT.C.HBT.1] UUT RF Transmit Power Measurement

#	Test Execution Steps	Results
	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	
1	the duration of this test case	PASS
1		TASS
	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.	
	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:	
	\circ cbsdld = C	
	\circ grantId = G	
2		PASS
	SAS Test Harness responds with Heartbeat Response, including:	
	\circ cbsdld = C	
	\circ grantId = G	
	 transmitExpireTime = current UTC time + 200 seconds 	
	◦ responseCode = 0	
	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	
3	measurement method.	PASS
	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.	

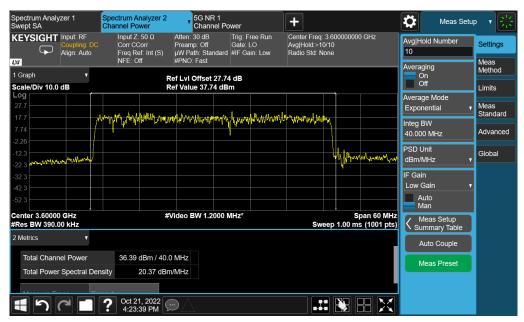




Frequency [MHz]	Bandwidth [MHz]	Granted maxEIRP [dBm/MHz]	Tx1 Conducted PSD [dBm/MHz]	Array Gain [dB]	Antenna Gain [dBi]	maxEIRP PSD [dBm/MHz]	verdict
3600	40	37	20.37	3.01	13	36.38	PASS
3600	40	30	13.26	3.01	13	29.27	PASS
3600	40	15	-6.30	3.01	13	9.71	PASS

Note:

- 1. Array Gain=10log(n), n is the antenna number, for this CBSD the n=2
- 2. From output power pretest results, the Tx1 is the maximum output power antenna port.
- 3. maxEIRP PSD = worst port Tx1 Conducted PSD + Array Gain + Antenna Gain
- 4. The conducted PSD test results include a correction factor for cable loss. The antenna gain is provided by the customer.



Target Power: 37dBm/MHz





Spectrum Analyzer 1 Swept SA	Spectrum Analyzer 2 Channel Power	5G NR 1 Channel Power	+	Frequency 🗸 -	꼾
KEYSIGHT Input: RF Coupling: DC Align: Auto	Corr CCorr Freq Ref: Int (S)	Atten: 30 dB Trig: Free Rur Preamp: Off Gate: LO μW Path: Standard #IF Gain: Low #PNO: Fast	Avg Hold: 56/1000	Center Frequency 3.60000000 GHz Span	s
1 Graph ▼ Scale/Div 10.0 dB		f Lvl Offset 27.74 dB f Value 37.74 dBm		60.000 MHz	
Log 27.7 7.74 -2.26 -1.2 -2.23 -32.3 -42.3	ayer, petracayyal Newcartanen	alualuation the sequences	Municipan Municipan Municipan	CF Step 6.00000 MHz Auto Man Freq Offset 0 Hz	
-52.3 Center 3.60000 GHz #Res BW 390.00 kHz 2 Metrics V Total Channel Power Total Channel Power	29.28 dBm / 40.0 nsity 13.26 dBm/	MHz	Span 60 MH Sweep 1.00 ms (1001 pts		
4 7 C 1	Oct 21, 2022 4:13:51 PM				

Target Power: 30dBm/MHz

Spectrum Analyzer 1 Swept SA	Spectrum Analyzer 2 Channel Power	5G NR 1 Channel Power	+	Amplitude 🔹 👯
KEYSIGHT Coupling: D Align: Auto	Input Z: 50 Ω Corr CCorr Freq Ref: Int (S) NFE: Off	Atten: 8 dB Trig: Free Run Preamp: Off Gate: LO µW Path: Standard #IF Gain: Low #PNO: Fast	Center Freq: 3.60000000 GHz Avg Hold:>10/10 Radio Std: None	Ref Value Y Scale 18.74 dBm Attenuation
1 Graph v Scale/Div 10.0 dB		Ref Lvi Offset 27.74 dB Ref Value 18.74 dBm		Scale/Div Attenuation 10.0 dB Signal Path
8.74 -1.26 -11.3 -21.3 -21.3 -31.3 -31.3 -41.3 -51.3 -61.3	politico de la constancia de la constancia Internación de la constancia de la constanci	under an strate pour	millen i berning in the second s	dBm • Ref Level Offset 27.74 dB On Off Ref Position Top Auto Scaling
-71.3 Center 3.60000 GHz #Res BW 390.00 kHz 2 Metrics	#	Video BW 1.2000 MHz*	Span 60 MH Sweep 1.00 ms (1001 pts	
Total Channel Power Total Power Spectral D	C Oct 21, 2022			

Target Power: 15dBm/MHz





Annex C: Accreditation Certificate

	ates Department of Commerce tute of Standards and Technology
	editation to ISO/IEC 17025:2017
NV	/LAP LAB CODE: 600118-0
Telecommun	ication Technology Labs, CAICT
	Beijing China
	oluntary Laboratory Accreditation Program for specific services, d on the Scope of Accreditation, for:
Electromagnetic	Compatibility & Telecommunications
This accreditation demonstrates techn	cordance with the recognized International Standard ISO/IEC 17025:2017. nical competence for a defined scope and the operation of a laboratory quality (refer to joint ISO-ILAC-IAF Communique dated January 2009).
2022-10-01 through 2023-09-30 Effective Dates	- For the National Voluntary Daboratory Accreditation Progra

END OF REPORT