Test Report

As per

FCC Part 96 SAS requirements (CBRS Test Plan)



Add value. **Inspire trust.**

on the KRD 901 254 Air 3268 B48 (3550-3700MHz)

FCC ID(s): TA8AKRD901254

Issued by: **TÜV SÜD Canada Inc.** 1280 Teron Rd, Ottawa, ON K2K 2C1 Canada

Testing produced for

Ericcson Canada

See Appendix A for full client & EUT details.

Steve McFarlane. Test Personnel

Scott Drysdale Report Reviewer

Stere Miralan State Drysdale



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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

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Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
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Report Scope

This report addresses the EMC verification testing and test results of the **Ericsson Remote Radio Air 3268 B48 KRD 901 254 (3550-3700 MHz)** herein referred to as EUT (Equipment Under Test). The EUT was tested for compliance against the following standards:

FCC Part 96 SAS requirements (CBRS Test Plan)

Test procedures, results, justifications, and engineering considerations, if any, follow later in this report.

For a more detailed list of the standards and the revision used, see the "Applicable Standards, Specifications and Methods" section of this report.

This report does not imply product endorsement by any government, accreditation agency, or TÜV SÜD Canada Inc.

Opinions or interpretations expressed in this report, if any, are outside the scope of TÜV SÜD Canada Inc accreditations. Any opinions expressed do not necessarily reflect the opinions of TÜV SÜD Canada Inc, unless otherwise stated.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Summary

The results contained in this report relate only to the item(s) tested.

Equipment Under Test (EUT)	Ericsson Remote Radio Air 3268 B48 KRD 901 254 (3550-3700MHz)
EUT passed all tests performed	Yes
Tests conducted by	Steve McFarlane / Scott Drysdale

For testing dates, see 'Testing Environmental Conditions and Dates'.

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Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Test Results Summary

Section as p	er Working Document WINNF-TS-0122
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Section	CBS D	D P	Test Case ID	Test Case Title	RF Measurement Requirement	Pass / Fail
6.1.4.1. 1	X		WINNF.FT.C.R EG.1	Multi-Step registration	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.1. 2		Х	WINNF.FT.D.R EG.2	Domain Proxy Multi-Step registration	Monitor for 60 seconds after REG message sent. No transmission during test.	Р
6.1.4.1. 3	X		WINNF.FT.C.R EG.3	Single-Step registration for Category A CBSD	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.1. 4		X	WINNF.FT.D.R EG.4	Domain Proxy Single-Step registration for Cat A CBSD (Note: Mandatory for without CPI, if EUT will always have signed CPI – asked for email waiver)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.1. 5	X		WINNF.FT.C.R EG.5	Single-Step registration for CBSD with CPI signed data	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.1. 6		X	WINNF.FT.D.R EG.6	Domain Proxy Single-Step registration for CBSD with CPI signed data	Monitor for 60 seconds after REG message sent. No transmission during test.	Р
6.1.4.1. 7	Х	Х	WINNF.FT.C.R EG.7	Registration due to change of an installation parameter	Test waits until transmission starts, then trigger an	N/A

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					 installationParam change. Record time at which transmission stops. Time must be within 60 seconds of the installationPa ram change taking effect. 	
6.1.4.2.	X		WINNF.FT.C.R EG.8	Missing Required parameters (responseCode 102)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.2. 2		X	WINNF.FT.D.R EG.9	Domain Proxy Missing Required parameters (responseCode 102)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.2. 3	X		WINNF.FT.C.R EG.10	Pending registration (responseCode 200)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.2. 4		X	WINNF.FT.D.R EG.11	Domain Proxy Pending registration (responseCode 200)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.2. 5	X		WINNF.FT.C.R EG.12	Invalid parameter (responseCode 103)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.2. 6		X	WINNF.FT.D.R EG.13	Domain Proxy Invalid parameters (responseCode 103)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.2. 7	Х		WINNF.FT.C.R EG.14	Blacklisted CBSD (responseCode 101)	Monitor for 60 seconds after REG message sent. No	N/A

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					transmission during test.	
6.1.4.2. 8		X	WINNF.FT.D.R EG.15	Domain Proxy Blacklisted CBSD (responseCode 101)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.2. 9	X		WINNF.FT.C.R EG.16	Unsupported SAS protocol version (responseCode 100)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.2. 10		X	WINNF.FT.D.R EG.17	Domain Proxy Unsupported SAS protocol version responseCode 100)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.2. 11	X		WINNF.FT.C.R EG.18	Group Error (responseCode 201)	Monitor for 60 seconds after REG message sent. No transmission during test.	N/A
6.1.4.2. 12		X	WINNF.FT.D.R EG.19	Domain Proxy Group Error (responseCode 201)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.1.4.3. 1	Х	X	WINNF.FT.C.R EG.20	Category A CBSD location update		N/A
6.3.4.2. 1	X	X	WINNF.FT.C.G RA.1 (TYPO FIXED D TO C)	Unsuccessful Grant responseCode=400 (INTERFERENCE)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.3.4.2. 2	X	X	WINNF.FT.C.G RA.2	Unsuccessful Grant responseCode=401 (GRANT_CONFLIC T)	Monitor for 60 seconds after REG message sent. No transmission during test.	Ρ
6.4.4.1. 1	Х		WINNF.FT.C.H BT.1	Heartbeat Success Case (first Heartbeat Response)	Monitor RF from start of test. Ensure that: • Transmission does not start until time of first	N/A

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					 heartbeat response or after. After transmission starts, meas ure that transmission is within the granted channel (frequencyLo w, freque ncyHigh) 	
6.4.4.1. 2		X	WINNF.FT.D.H BT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	Monitor RF from start of test. Ensure that: Transmission does not start until time of first heartbeat response or after. After transmission starts, meas ure that transmission is within the granted channel (frequencyLo w, freque ncyHigh)	Ρ
6.4.4.2. 1	X	X	WINNF.FT.C.H BT.3	Heartbeat responseCode=105 (DEREGISTER)	Monitor RF transmission. Ensur e that: • CBSD stops transmission within 60 seconds of the heartbeatRe sponse which contains	Ρ

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					responseCod e = 105	
6.4.4.2. 2	X		WINNF.FT.C.H BT.4	Heartbeat responseCode=500 (TERMINATED_G RANT)		N/A
6.4.4.2. 3	X	X	WINNF.FT.C.H BT.5	Heartbeat responseCode=501 (SUSPENDED_GR ANT) in First Heartbeat Response	Monitor RF transmission from start of test. Ensure there is no transmission during the test	Ρ
6.4.4.2. 4	X	X	WINNF.FT.C.H BT.6	Heartbeat responseCode=501 (SUSPENDED_GR ANT) in Subsequent Heartbeat Response	Monitor RF transmission. Ensur e: • CBSD stops transmission within 60 seconds of heartbeatRe sponse which contains responseCod e=501	Ρ
6.4.4.2. 5	X	X	WINNF.FT.C.H BT.7	Heartbeat responseCode=502 (UNSYNC_OP_PA RAM)	Monitor RF transmission. Ensur e: • CBSD stops transmission within 60 seconds of heartbeatRe sponse which contains responseCod e=502	Ρ
6.4.4.2. 6		X	WINNF.FT.D.H BT.8	Domain Proxy Heartbeat responseCode=500 (TEMINATED_GR ANT)	Monitor RF transmission. CBSD s will have different behavior: • CBSD1: will continue to transmit to end of test	Ρ

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					 (this is not a pass/fail criteria, but check) CBSD2: must stop transmission within 60 seconds of being sent heartbeatRe sponse with responseCod e = 500 	
6.4.4.3. 1	Х	Х	WINNF.FT.C.H BT.9	Heartbeat Response Absent (First Heartbeat)	Monitor RF from start of test to 60 seconds after last heartbeatResponse message was sent. CBSD should not transmit at any time during test	Ρ
6.4.4.3. 2	X	x	WINNF.FT.C.H BT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Monitor RF transmission. Verify: • CBSD must stop transmission within transmitExpir eTime+60 seconds, where transmitExpir eTime is from last successful heartbeatRe sponse message	Ρ
6.5.4.2. 1	Х		WINNF.FT.C.M ES.1	Registration Response contains measReportConfig	No RF monitoring	N/A
6.5.4.2. 2		X	WINNF.FT.D.M ES.2	Domain Proxy Registration Response contains measReportConfig	No RF monitoring	Р

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6.5.4.2. 3	X	X	WINNF.FT.C.M ES.3	Grant Response contains measReportConfig	No RF monitoring	Р
6.5.4.2. 4	Х		WINNF.FT.C.M ES.4	Heartbeat Response contains measReportConfig	No RF monitoring	N/A
6.5.4.2. 5		X	WINNF.FT.D.M ES.5	Domain Proxy Heartbeat Response contains measReportConfig	No RF monitoring	Р
6.6.4.1. 1	X		WINNF.FT.C.R LQ.1	Successful Relinquishment	Monitor RF transmission. Ensur e: • CBSD stops transmission at any time prior to sending the relinquishme ntRequest message.	N/A
6.6.4.1. 2		X	WINNF.FT.D.R LQ.2	Domain Proxy Successful Relinquishment	Monitor RF transmission. Ensure : • CBSD stops transmission at any time prior to sending the relinquishmentReque st message.	Р
6.7.4.1. 1	X		WINNF.FT.C.D RG.1	Successful Deregistration	Monitor RF transmission. Ensur e: • CBSD stops transmission at any time prior to sending the relinquishme ntRequest message or deregistrat ionRequest message (whichever is sent first)	N/A

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6.7.4.1. 2		X	WINNF.FT.D.D RG.2	Domain Proxy Successful Deregistration	Monitor RF transmission. Ensure : • CBSD stops transmission at any	Р
					time prior to sending the relinquishmentReque st message or	
					deregistrationReques t message (whichever is sent first)	
6.8.4.1. 1	X	X	WINNF.FT.C.SC S.1	Successful TLS connection between UUT and SAS Test Harness	No RF transmission during test Check the tcpdump for the TLS information	Р
6.8.4.2. 1	X	X	WINNF.FT.C.SC S.2	TLS failure due to revoked certificate	No RF transmission during test Check the tcpdump for the TLS information	Р
6.8.4.2. 2	X	X	WINNF.FT.C.SC S.3	TLS failure due to expired server certificate	No RF transmission during test Check the tcpdump for the TLS information	Р
6.8.4.2. 3	X	X	WINNF.FT.C.SC S.4	TLS failure when SAS Test Harness certificate is issue by unknown CA	No RF transmission during test Check the tcpdump for the TLS information	Р
6.8.4.2. 4	X	X	WINNF.FT.C.SC S.5	TLS failure when certificate at the SAS Test Harness is corrupted	No RF transmission during test Check the tcpdump for the TLS information	Р
7.1.4.1.	X	X	WINNF.PT.C.H BT	UUT RF Transmit Power Measurement	Power Spectral Density test case. Assume we use 1 carrier bandwidth	Р

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	(say, 5 or 10 MHz),
	one frequency (say
	middle channel in
	band) for
	test. Measure at max
	transmit power, and
	reduce in steps of 3
	dB to minimum
	declared transmit
	power.

If the product as tested complies with the specification, the EUT is deemed to comply with the standard and is deemed a 'PASS' or 'P' grade. If not 'FAIL' grade is issued. Where 'N/A' is stated this means the test case is not applicable, and see Notes, Justifications or Deviations Section for details.

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Notes, Justifications, or Deviations

The following notes, justifications for tests not performed or deviations from the above listed specifications apply:

A later revision of the standard may have been substituted in place of the previous dated referenced revision. The year of the specification used is listed under applicable standards. Using the later revision accomplishes the goal of ensuring compliance to the intent of the previous specification, while allowing the laboratory to incorporate the extensions and clarifications made available by a later revision.

Test results were obtained using the KRD 901 254/31model, the client attests the test results are representative or worst case of all models as listed in appendix A

For the N/A test cases, the following justifications apply:

- a. EUT is a CBSD with Domain Proxy
- b. EUT supports the following Conditional functionality from WINNF-TS-0122-V1.0.0, Table 6-2:
 - i. C1 Multi-step registration (WINNF.FT.D.REG.2)
 - ii. C3 Single step registration containing CPI-signed data in the registration message (WINNF.FT.D.REG.6)
 - iii. C4 RECEIVED_POWER_WITHOUT_GRANT measurement report (WINNF.FT.D.MES.2)
 - iv. C5 RECEIVED_POWER_WITH_GRANT measurement report (WINNF.FT.D.MES.3, WINNF.FT.D.MES.5)
- c. Optional test cases were not performed

The device does not use single-step registration (as defined in condition C2 in WINNF-TS-0122-V1.0.0, Table 6-2), therefore test cases 6.1.4.1.4, and 6.1.4.3.1 are not applicable as per WINNF-TS-0122-V1.0.0, Table 6-3 and therefore not required or performed.

Note, where graph sweeps are incomplete, this was used to set the time stamp of when the events occurred. This can be accomplished by determining the time at which the graph was captured and subtracting the remaining time. For example if there was a 30 second sweep, and 9 out of 10 is complete, that means the end occurred at the 27 second market. If the time on the graph was 12:03:35, this means the graph started at 12:03:08. This allows us to co-ordinate graph with timing provided in the logs.

Additional testing for power spectral density (PSD) requirements were evaluated as the original EUT firmware was changed to allow for higher conducted power with different antenna gains. All other parameters were deemed to not be affected as there was no other changes.

Logs are kept on file.

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Applicable Standards, Specifications and Methods

ANSI C63.4:2014	Methods of Measurement of Radio-Noise Emissions from Low- Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
CFR47 FCC Part 96	Code of Federal Regulations – Citizens Broadband Radio Service
Version V1.0.2	Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT) Working Document
ISO/IEC 17025:2017	General requirements for the competence of testing and calibration laboratories

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Document Revision Status

TR-7169012035-000: Nov 19, 2022. First Draft, unsigned. Subject to review

TR-7169012035-001: Nov 21, 2022. Minor revisions as per customer request. Reviewed and signed.

TR-7169012035-002: Nov 22, 2022. Minor typographical errors corrected as per customer request. Reviewed and signed.

TR-7169012035-003: Nov 24, 2022. Corrected Domain proxy software version on page 68.

TR-7169012035-004: Nov 24, 2022. Removed Appendix C as per client request.

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Definitions and Acronyms

The following definitions and acronyms are applicable in this report. See also ANSI C63.14.

AE – Auxiliary Equipment. A digital accessory that feeds data into or receives data from another device (host) that in turn, controls its operation.

AM – Amplitude Modulation

Class A device – A device that is marketed for use in a commercial, industrial or business environment. A 'Class A' device should not be marketed for use by the general public and the instructions for use accompanying the product shall contain the following text:

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

Class B device – A device that is marketed for use in a residential environment and may also be used in a commercial, business or industrial environments.

EMC – Electro-Magnetic Compatibility. The ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.

EMI – Electro-Magnetic Immunity. The ability to maintain a specified performance when the equipment is subjected to disturbance (unwanted) signals of specified levels.

Enclosure Port – Physical boundary of equipment through which electromagnetic fields may radiate or impinge.

EUT – Equipment Under Test. A device or system being evaluated for compliance that is representative of a product to be marketed.

LISN – Line Impedance Stabilization Network

NCR – No Calibration Required

NSA – Normalized Site Attenuation

RF - Radio Frequency

EMC Test Plan – An EMC test plan established prior to testing. See 'Appendix A – EUT & Client Provided Details'.

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Testing Facility

Testing for EMC on the EUT was carried out at customer location as described in Appendix A.

Calibrations and Accreditations

TÜV SÜD Canada Inc is accredited to ISO/IEC 17025 by A2LA with Testing Certificate #2955.19. The laboratory's current scope of accreditation listing can be found as listed on the A2LA website. All measuring equipment is calibrated on an annual or bi-annual basis as listed for each respective test.

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Testing Environmental Conditions and Dates

Following environmental conditions were recorded in the facility during time of testing

Date	Test	Initials	Temperature (ºC)	Humidity (%)	Pressure (kPa)
Nov 16-17, 2022	All	SD	20-23	40-55	96.106

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Detailed Test Results Section

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Authorization transmit after it receives authorization from a SAS.

Section	DP	Test Case ID	Test Case Title	Pass / Fail
6.1.4.1.2	X	WINNF.FT.D.REG.2	Domain Proxy Multi-Step registration	Р
Agilent Spectrum	Analyzer - Sv	vept SA		
Marker 1 3.6	1380000	AC SENSE:INT 00000 GHz It: RF PN0: Fast Trig: Free Run	Avg Type: Pwr(RMS) AvgIHeld>100/100	Peak Search
10 dB/div Ref	0.00 dB	IFGain:Low Atten: 10 dB	Mkr1 3.613 80 GHz -69.525 dBm	NextPeak
-10.0				Next Righ
30.0				Next Lef
40.0				Marker Delta
-60.0				Mkr→CF
80.0	*****************	******	man and the second and the second	Mkr→RefLv
Center 3.5550		#VBW	Span 150.0 MH #Sweep 29.4 ms (1001 pts	More z 1 of 2
ISG			STATUS	<u></u>

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Р			on for CI	Domain registrati signed da	i.6	Γ.D.REG.6	INNF.FT.I	X WII	.1.6	6.1.4
				0			<u>,</u>	yzer - Swept SA		🛛 Agile
Peak Search	MNov 17, 2022 E 1 2 3 4 5 6	TRAC	ALIGN AUTO Pwr(RMS)		SENSE:INT		0 GHz	600000000	50 Ω er 1 3.612	x Mark
	ET A N N N N N	TYP	100/100	Avg Hold	Free Run 1: 10 dB	L	PNO: Fast G	Input: RF		
NextPea	60 GHz 77 dBm		Mkr1					00 dBm	liu Pof (10 dB/
										- ^{og} [
Next Rig										10.0
										20.0
Next Le										30.0
Marker Del										40.0
	├─── ┃L			_						-50.0
										60.0
Mkr→C	1	•								-00.0
	un human	- A								-70.0 -
	and alwards trade	www.ww	energenergener	amandamalandar	lour margane		-adamptor about the		the second second	80.0
Mkr→RefL										
	╞───╢╞									-90.0
Mo									- 0.55565	Ļ
1 of	50.0 MHz 1001 pts)		Sweep 2	-		BW	#VBV		r 3.55500 BW 1.0 MH	
			STATUS							ISG

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P	g		n Proxy M		G.9	F.FT.D.RE	WINN	Х	1.4.2.2
Р		Required parameters							
		02)	nseCode 10	(resp					
							wept SA	nalyzer - Sw	gilent Spectrum A
Peak Search	TRACE 1 2 3 4 5 6		ALIGNAUTO ype: Pwr(RMS)	Avg	SENSE:INT	Hz AC	00000 G	230000	50 Ω rker 1 3.61
	DET A N N N N N		old:>100/100	Avg	Free Run n: 10 dB	0: Fast 😱 Trig	ut: RF PI		
Next Pea	12 30 GHz 8.860 dBm	1 3.6	Mkr						
	8.860 aBm	-08					m	0.00 dB	B/div Ref
Next Dial									
Next Righ									
	F)
Next Le									
)
Marker Delt									
	L)
)
Mkr→C	la l								
	J warming								
	~ rus viewa			merricles		*****	the second		+
Mkr→RefL									
	E								
Mor									
1 of	an 150.0 MHz								nter 3.55500
	ns (1001 pts)					#VBW		Hz	es BW 1.0 N
		S	STATUS						

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Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.1.4.2.4	X	WINNF.FT.I	D.REG.11	Domain Pr registration 200)			Р
Agilent Spectrum		wept SA		· ·			
Marker 1 3.6	1365000		AC SENSE:INT	Avg Type: P Avg Hold:>1	wr(RMS)	TRACE 1 2 3 4 9 TYPE MWWW	5 6 Peak Search
	Inp	ut: RF PNO: Fast G IFGain:Low	Atten: 10 dB			DET A N N N	Next Dec
10 dB/div Re	f 0.00 dB	m			WINT	-69.106 dB	
-10.0							Next Righ
30.0							Next Le
40.0							Marker Del
60.0						1	Mkr→C
80.0	2	www.manser.an	and the state of t	wanter an and a star water and	ninderson and the	where the second s	Mkr→RefL
90.0 Center 3.5550 #Res BW 1.0 I		#VB\	Ar	#\$	weep 29	Span 150.0 Mi .4 ms (1001 pt	Hz 1 of
ISG					STATUS		

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.1.4.2.6	Х	WINNF.FT.D	.REG.13	Domain Proxy Invalid parameters (responseCode 103)				Р
-				paramete	rs (respo	nseCod	e 103)	
LXI	trum Analyzer - Sr 50 ฉ 3.61290000		C SENSE:INT	Avg Type Avg Hold:	ALIGN AUTO : Pwr(RMS) > 100/100	TRAC	MNov 17, 2022 E 1 2 3 4 5 6 PE MWWWWW	
		IFGain:Low	Atten: 10 dB			3.612	90 GHz 96 dBm	Next Peak
10 dB/div Log	Ref 0.00 dB	m						Next Right
-20.0								Next Left
-40.0								Marker Delta
-60.0						•	1	Mkr→CF
-80.0	he fer an	actor and a second and a second and	warangi na ngangi di kaban kanak			asserved	Wm Uner	Mkr→RefLvl
Center 3.5 #Res BW 1		#VBW		#	≠Sweep 2		50.0 MHz 1001 pts)	
MSG					STATUS			

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.1.4.2.8	X	WINNF.FT.D	Domain CBSD (r	•			Р	
💴 Agilent Spectrum	Analyzer - Sv	vept SA		· · ·	•		· · ·	
Marker 1 3.6	61275000	00000 GHz It: RF PNO: Fast G	AC SENSE:INT	Avg Type Avg Hold	ALIGN AUTO : Pwr(RMS) > 100/100	TRAC	MNov 17, 2022 1 2 3 4 5 6 PE MWWWWWW ET A N N N N N	Peak Search
		IFGain:Low	Atten: 10 dB		Mkr	1 3.612	75 GHz 77 dBm	NextPeak
10 dB/div Re	f 0.00 dB	m				-09.0		
-10.0								Next Right
-20.0								Next Left
-40.0								Marker Delta
-60.0							1	Mkr→CF
-80.0	hangtopurmaspoor	entettingeneringen ander andere an		naninazionezion	- adult ground	man	Mor Calleron	Mkr→RefLvl
Center 3.5550 #Res BW 1.0		#VBW	 		#Sweep 2		50.0 MHz 1001 pts)	More 1 of 2
MSG					STATUS			

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ir.

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.1.4.2.10	Х	WINNF.FT.I	D.REG.17	Domain Proxy U		Р	
					SAS protocol version		
				responseCode 10	00)		
Agilent Spectrum		vept SA					
۵ 50 ۵ Marker 1 3.6		00000 GHz	AC SENSE:INT	ALIGN AUTO Avg Type: Pwr(RMS	TRACE 1 2 3 4 5 6	Peak Search	
		It: RF PNO: Fast G	☐ Trig: Free Run Atten: 10 dB	Avg Hold:>100/100	DET A N N N N		
				Mki	r1 3.611 85 GHz -68.893 dBm	NextPeal	
10 dB/div Ref	0.00 dB	m			-68.893 aBm		
						Next Diab	
10.0						Next Right	
20.0							
						Next Lef	
-30.0							
40.0							
						Marker Delta	
50.0							
60.0							
					♦ ¹	Mkr→CF	
70.0					un home		
80.0		- Maranger and have been able	- Histore con - Marchanton	as the second and the second sec	a menorial manual	Mkr→RefLv	
						WIKI →Kei LV	
90.0							
						More	
Center 3.55500 #Res BW 1.0 N		#VBV	V	#Sween	Span 150.0 MHz 29.4 ms (1001 pts)	1 of 2	
ISG				statu			

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.1.4.2.12	5.1.4.2.12 X WINNF.FT.D.REG.19				Domain Proxy Group Error (responseCode 201)			Р
D Agilent Spectrum		ept SA						
Marker 1 3.6	1350000	0000 GHz			ALIGN AUTO g Type: Pwr(RM g Hold:>100/100	S) TRA	MNov 17, 2022 CE 1 2 3 4 5 6 PE MWWWWW	Peak Search
	Inpu	t: RF PNO: Fast IFGain:Lov				D	ET A N N N N N	NextPeak
10 dB/div Re	f 0.00 dBi	m			Mk	r1 3.613 -69.1	50 GHz 80 dBm	NEXTFEAK
Log								Next Right
-10.0								
-20.0						+		
-30.0								Next Left
-40.0								
								Marker Delta
-50.0								
-60.0								Mkr→CF
-70.0						-	WH Aderatia	
-80.0		~****	49. 44.47	www.an.en.	P)-Barre 100000000000000000000000000000000000	and and	10.10 Williamla	Mkr→RefLvl
-90.0								
00.0								More
Center 3.5550 #Res BW 1.0		#\\	BW		#Sween	Span 1 29.4 ms (50.0 MHz	1 of 2
MSG	141112	#V			#Sweep		(iou prs)	

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i.

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Check the device registration and authorization with the SAS, Confirm that the device changes its operating power and/or channel in response to a command from the SAS and Confirm that the device correctly configures based on the different license classes.

ISG				STATUS	, , , , , , , , , , , , , , , , , , , ,	
Center 3.5 #Res BW 1		#VBW		#Sweep 1	Span 150.0 MHz 00 ms (1001 pts)	1 of:
						Mor
-90.0						
80.0			At			Mkr→RefL
70.0					monthe	
70.0					∳ ¹	Mkr→C
-60.0						
50.0						
40.0						Marker Delt
30.0						Next Le
20.0						
10.0						Next Rigi
						Next Righ
10 dB/div	Ref 0.00 dBm			WIKI	-69.640 dBm	
		n:Low Atten: 10 d	В	Mkr1	3.613 50 GHz	NextPea
Marker 1	3.61350000000 GH	: Fast 😱 Trig: Free F	Run Avg Hol	e: Pwr(RMS) d:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET A N N N N N	Peak Search
Agilent Spect	rum Analyzer - Swept SA 50 Ω	AC SENS	E:INT	ALIGN AUTO	02:17:21 PM Nov 17, 2022	
			LILLIUCL)	during te	est.	
1			Code=400 FERENCE)			Р
6.3.4.2.	WINNF.FT.C.GR		ssful Grant		for 60 seconds	D

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Ρ

	age sent. No tr	Monitor for 60 seco message sent. No during test.			Unsuccessful Grant responseCode=401 (GRANT_CONFLICT)		6.3.4.2.2 WINNF.FT.C.GRA.2		
	y test.	uning te) 44	NFLICT)	RANT_CC				R Anthony Council
Peak Search	TRACE 1 2 3 4 5 6		ALIGNAUTO	Avg Type	SENSE:INT	GHz	yzer - Swept SA 3000000000 (50 Q	KI I
	DET A N N N N N		>100/100	Avg Hold:	g: Free Run ten: 10 dB	PNO: Fast Gain:Low	Input: RF	010120	
Next Peak	.612 30 GHz 69.865 dBm		Mkr				00 dBm	Ref 0.0	0 dB/div
Next Right									0.0
									20.0
Next Left									80.0
Marker Delta	F								40.0
Marker Deila									50.0
Mkr→CF	[_	50.0
Wiki→Cr						_		_	70.0
Mkr→RefLvl	now womanie	an survey of							80.0
									90.0
More									
1 of 2	pan 150.0 MHz ms (1001 pts) _		#Sweep			#VBW			Center 3.55 Res BW 1.
		s	STATUS						SG

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

.4.4.1.2	4.1.2 WINNF.FT.D.HBT.2		Domain Proxy Heartbeat Success Case (first Heartbeat Response)			Monitor RF from start of test. Ensure that: Transmission does not start until time of first heartbeat response or after.			
						stari trans grar	ited char juencyLc	ure that is within the nnel ow, frequenc	
Agilent Spect	rum Analyzer - Swept S 50 Ω		AC SENSE:INT	01775	IAUTO	05:08:23 PMN	In: 16, 2022		
arker 1 4	47.2002 s Input: RF	PNO: Fast G		#Avg Type: Pw Avg Hold:/10	r(RMS)	TRACE	1 2 3 4 5 6 A WWWWW A N N N N N	Marker→	
dB/div	Ref 0.00 dBm					Mkr1 4 -11.200		Mkr→CF	
.0	♦ ¹						*	Mkr→CF Step	
.0									
.0								Mkr→Start	
0								Mkr→Stop	
0									
.0								Mkr∆→Span	
.0								Mkr∆→CF	
.0									
enter 3.55 es BW 1.0	55000000 GHz) MHz	#VBW	·	Sw	/eep 4	Sp 100.0 s (10	an 0 Hz 001 pts)	Mkr→RefLvl	
3					STATUS				

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.4.4.2.1	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	within 60 se	transmission conds of the sponse which ponseCode
Marker 1 2	rum Analyzer - Swept SA 50 Ω 225.000 s Input: RF PNO: Fast C IFGain:Low Ref 0.00 dBm	#Avg Type: Py		Marker→ Mkr→CF
-10.0				Mkr→CF Step
-20.0				Mkr→Start
-40.0				Mkr→Stop
-60.0				Mkr∆→Span
-80.0				Mkr∆→CF
Center 3.55 Res BW 1.0	55000000 GHz) MHz #VB	W Si	Span 0 Hz weep 400.0 s (1001 pts)	Mkr→RefLvl

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.4.4.2.3	WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat	Monitor RF transmission from start of test. Ensure there is no transmission during the test	р
		Response		

Agilent Spe	ectrum Analyzer - Sw 50 ຊ	ept SA	AC	SENSE:INT	ALIGNAUTO	06:12:08 PMNov 16, 2022	
	225.000 s	: RF PNO: Fast IFGain:Low	Trig: Fi	ee Run	#Avg Type: Pwr(RMS Avg Hold:/100		Marker→
0 dB/div	Ref 0.00 dBr	n				Mkr1 225.0 s -80.016 dBm	Mkr→C
10.0							Mkr→CF Step
20.0							Mkr→Star
40.0							WiKi → Stai
50.0							Mkr→Sto
60.0							Mkr∆→Spa
70.0				1			
30.0							Mkr∆→Cl
	.555000000 GH	z				Span 0 Hz	Mkr→RefLv
les BW			BW		Sweep	400.0 s (1001 pts)	
G					STATUS	Input Overload;ADC	over range

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.4.4.2.4	WINNF.FT.C.HBT.6	Heartbeat	Monitor RF transmission. Ensure:	
		responseCode=501	 CBSD stops transmission 	р
		(SUSPENDED_GRANT)	within 60 seconds of	
		in Subsequent Heartbeat	heartbeatResponse which	
		Response	contains responseCode=501	

50 Q	AC	SENSE:INT	ALIGN AUTO	06:19:05 PMNov 16, 2022	Marker→
larker 1 148.600 s Input: Rf	PNO: Fast 😱	Trig: Free Run Atten: 10 dB	#Avg Type: Pwr(RMS) Avg Hold:/100	TYPE A WWWWW DET A N N N N N	
0 dB/div Ref 0.00 dBm				Mkr1 148.6 s -20.237 dBm	Mkr→C
0.0					Mkr→CF Ste
0.0	∳ ¹			L	
0.0					Mkr→Sta
0.0					Mkr→Sto
0.0				L	Mkr∆→Spa
0.0					ткт∆⊸өра
0.0					Mkr∆→C
0.0					Mire Defi
enter 3.555000000 GHz es BW 1.0 MHz	#VBW -	-	Sweep 4	Span 0 Hz 00.0 s (1001 pts)	Mkr→RefL

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

	WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAM)	within 60 se heartbeatRe contains res	transmission	р
	50 Ω 47.800 S Input: RF PNO: Fast ⊂	#Avg Type: P		Marker→	
10 dB/div F	Ref 0.00 dBm	Atten: 10 dB	Mkr1 147.8 s -24.781 dBm	Mkr→CF	
-10.0				Mkr→CF Step	
-20.0	↓ ↓ ↓ ↓ ↓			 Mkr→Start	
-30.0					
-50.0				Mkr→Stop	
-60.0				Mkr∆→Span	
-70.0					
-80.0				Mkr∆→CF	
-90.0					
Center 3.55 Res BW 1.0	5000000 GHz MHz #VBV	/ S	Span 0 Hz weep 400.0 s (1001 pts)	Mkr→RefLvl	
MSG			STATUS 🚹 Input Overload;ADC	over range	

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.4.4.2. 6	 X	WINNF.FT.D.H BT.8	Domain Proxy Heartbeat	Monitor RF transmission, CBSDs will	Р
		D1.0	responseCode=500 (TEMINATED_GR ANT)	 have different behavior: CBSD1: will continue to transmit to end of test (this is not a pass/fail criteria, but check) CBSD2: must stop transmission within 60 seconds of being sent heartbeatResponse with responseCode = 500 	

	pectrum Analyzer - Swept SA					
w Marker '	50 Ω 1 192.200 s Input: RF	PNO: Fast C Atten: 1		ALIGN AUTO #Avg Type: Pwr(RMS) Avg Hold:/100	06:35:54 PMNov 16, 2022 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Marker→
10 dB/div	Ref 0.00 dBm				Mkr1 192.2 s -16.434 dBm	Mkr→CF
-10.0	1		1			Mkr→CF Step
-20.0						Mkr→Start
-40.0						Mkr→Stop
-50.0						Mkr∆→Span
-70.0						mn∆⊸opan
-80.0						Mkr∆→CF
Center 3 Res BW	8.555000000 GHz 1.0 MHz	#VBW		Sweep	Span 0 Hz 400.0 s (1001 pts)	Mkr→RefLvl
MSG				-	Input Overload;ADC	over range

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

										<u>.</u>	
6.4.4.3.1	WINNF.FT.C.	HBT.9		eat Resp						of test to 60	_
			Absent	(First H	leartbeat)	/		s after la			Р
										lessage was	
						:	sent. C	BSD sho	uld no	ot transmit at	
							any tim	e during	test		
🗊 Agilent Spect	rum Analyzer - Swept SA										
Marker 1	50 Ω 26 6000 c	1	AC SE	NSE:INT	#Avg Type:			:01 PM Nov 16, TRACE 1 2 3 4		Select Marker	
Warker		PNO: Fast 😱	Trig: Free		Avg Hold:			TYPE A WAN	UALAN ===		
		FGain:Low	Atten: 10	dB						Marker 1	
								(r1 26.60		IVIAI KCI I	
10 dB/div Log	Ref 0.00 dBm						-80	0.268 dE	sm		
-10.0										Marker 2	
-20.0		_					_		⊣⊢		
										Marker 3	
-30.0										IVIAI KEI J	
-40.0							_				
										Marker 4	
-50.0							_				
-60.0										N A a a a a a	
										Marker 5	
-70.0									╶╢⊢		
	1										
-80.0									-11	Marker 6	
-90.0		-									
										More	
Center 3.5	55000000 GHz		· · · · ·	L				Span 0	Hz	1 of 2	
Res BW 1.0		#VBW				Swee	p 400.0	s (1001 p			
MSG						STA	TUS				

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ir.

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.4.4.3.2	WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Monitor RF transmis CBSD must transmission transmitExp seconds, wh transmitExp from last su heartbeatRe message	stop n within ireTime+60 nere ireTime is ccessful	Ρ
	rum Analyzer - Swept SA				
w Marker 1 2		#Avg Type: Py	INAUTO D6:57:16 PM Nov 16, 2022 wr(RMS) TRACE 1 2 3 4 5 6	Select Marker	
	Input: RF PNO: Fast G IFGain:Low	☐ Trig: Free Run Avg Hold:/1 Atten: 10 dB	00 TYPE A WWWWW DET A N N N N N		
10 dB/div	Ref 0.00 dBm		Mkr1 242.6 s -70.094 dBm	Marker 1	
10 dB/div				Marker 2	
-20.0				Marker 3	
-40.0				Marker 4	
-60.0				Marker 5	
-80.0				Marker 6	
Center 3.55 Res BW 1.0	55000000 GHz) MHz #VBV	V S1	Span 0 Hz weep 400.0 s (1001 pts)	More 1 of 2	
MSG			STATUS		

Test Harness logs and timing on graph was verified, the EUT passed the requirement.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.5.4.2.2	WINNF.FT.D.MES.2	Domain Proxy Registration Response	No RF monitoring	Р
		contains		
		measReportConfig		

Pass. "measreportconfig" in logs. All other requirements verified.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.5.4.2.3	WINNF.FT.C.MES.3	Grant Response contains	No RF monitoring	
		measReportConfig		Р

Pass. "measreportconfig" in logs. All other requirements verified.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.5.4.2.5	WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains	No RF monitoring	Р
		measReportConfig		

Pass. "measreportconfig" in logs. All other requirements verified.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

6.6.4.1.2	WINNF.FT.D.RLQ.	2 Domain Proxy Success	ful Monitor RF transmis	sion. Ensure:
		Relinquishment	CBSD stops	transmission at
		_	any time prior to sen	ding the
			relinquishmentReque	
Agilent Spect	trum Analyzer - Swept SA			
	50 Ω	AC SENSE:INT	ALIGN AUTO 07:12:19 PM Nov 16, 2022 e: Pwr(RMS) TRACE 1 2 3 4 5 6	Select Marker
larker 1	184.600 s Input: RF PNO: Fas	Trig: Free Run Avg Hold		
	IFGain:Lo	Atten: 10 dB		Marker 1
0 dB/div	Ref 0.00 dBm		Mkr1 184.6 s -18.462 dBm	
og	1	A1		Marker 2
20.0			F	
0.0				Marker 3
0.0				Marker 4
50.0				
70.0				Marker 5
80.0				Marker 6
90.0				
enter 3.5f	55000000 GHz		Span 0 Hz	More 1 of 2
les BW 1.0		/BW	Sweep 400.0 s (1001 pts)	
SG			STATUS	

Test Harness logs and timing on graph was verified, the EUT passed the requirement.

Shutdown time taken from Domain Proxy logs, and shutdown confirmed by RF monitoring.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

	T	Τ				<u> </u>
6.7.4.1.2	WINNF.FT.D.DRG.2	Domain Proxy S	Successful	Monitor RF transm		
		Deregistration		CBSD stop	s transmission at	Р
				any time prior to se	ending the	
				relinquishmentReq	uest message or	
				deregistrationRequ		
				(whichever is sent		
Agilent Spect	trum Analyzer - Swept SA			(1
IXI	50 Ω	AC SENSE:INT	ALIGN AL		Salaat Markar	
Marker 1	125.000 s Input: RF PNO: Fast	Tutor France Dava	#Avg Type: Pwr(F Avg Hold:/100	RMS) TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N		
	IFGain:Low	Atten: 10 dB		DET A N N N N N		
				Mkr1 125.0 s	Marker 1	
10 dB/div	Ref 0.00 dBm			-32.231 dBm		
-10.0					Marker 2	
-10.0	1					
-20.0						
-20.0						
-30.0	1				Marker 3	
-55.0						
-40.0						
					Marker 4	
-50.0						
-60.0		++				
					Marker 5	
-70.0	<u> </u>					
-80.0		+	<u> </u>		Marker 6	
-90.0		+ + +				
					More	
Center 3.5	55000000 GHz			Span 0 Hz	1 of 2	
Res BW 1.		¥	Swe	ep 400.0 s (1001 pts)		
MSG			ST	TATUS Input Overload;AD	C over range	

Test Harness logs and timing on graph was verified, the EUT passed the requirement.

Shutdown time taken from Domain Proxy logs, and shutdown confirmed by RF monitoring.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TÜV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Confirm that the device transmits at a power level less than or equal to the maximum power level approved by the SAS.

7.1.4.1.	Х	Х	WINNF.PT.C.H	UUT RF Transmit	Power Spectral	
1			BT	Power Measurement	Density test case.	Р
					Assume we use 1 carrier bandwidth (say, 5 or 10 MHz), one frequency (say middle channel in band) for test. Measure at max transmit power, and reduce in steps of 3 dB to minimum declared transmit power.	

Test Table

		Raw	Raw	External	Conducted				EIRP 1 MHz	EIRP 10 MHz	Margin
Freq	1MHz EIRP limit (target) dBm	10 MHz		Losses (dB)	dBm/MHz	Antenna gain dBi	Ports	Port gain (dB)	dBm/MHz	dBm	dB
3555-Low	34	0.85	-8.01	14.39	6.38	11	32	15.05	32.43	41.29	1.57
3555-High	37	3.77	-5.08	14.39	9.31	11	32	15.05	35.36	44.21	1.64
3630-low	34	0.62	-8.22	14.44	6.22	11	32	15.05	32.27	41.11	1.73
3630-high	37	3.62	-5.56	14.44	8.88	11	32	15.05	34.93	34.93	2.07
3695-low	34	0.84	-7.94	14.53	6.59	11	32	15.05	32.64	41.42	1.36
3695-high	37	3.73	-5.06	14.53	9.47	11	32	15.05	35.52	44.31	1.48

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3555 low power

AC SENSE:INT ALIGN AUTO 10:56:39 AMNov 16, 2022 Center Freq: 3.55500000 GHz Radio Std: None	Gate
Trig: Free Run Avg Hold: 25/25 m:Low #Atten: 30 dB Radio Device: BTS Mkr1 3.558 GHz -8.0168 dBm	Ga
	Gate Vie
s	Gate Vie Sweep Tin 20.0 r
	Gate Del 13.692 r
Span 20 MHz #VBW 3 MHz #Sweep 200 ms	Sate Leng 3.6000 r
Power Spectral Density Ga	te Methoo LC
10 MHz -9.15 dBm/MHz	Mo 1 of

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3555-High power

	50 Ω		A		NSE:INT reg: 3.55500	0000 GHz	ALIGN AUTO	10:51:19 A	MNov 16, 2022 : None	Sweep/Contro
) dB/div	Gate: LO Inpu Ref 0 dBr		⊶ iain:Low		e Run 0 dB	Avg Hold	Mkr	Radio Dev 1 3.557		Sweep Tin 200 r Auto <u>M</u>
10							A COLUMN			
20	_	1								Sweep Setu
30		/					+			
40							+`\			Pau
50							<u> </u>	Lan		
60 										
70 80										
90										
enter 3.5 Res BW				#VE	зw змн	z		Spa #Swee	n 20 MHz p 200 ms	
Channel Power Power Spectral Density						Gat [On, LC				
	3.77	dBm/	10 MH2	z		-6.	23 dB	m/MHz		
										Poir 10
3							STATUS			

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3630 low power

	^{50 Ω} 33.692 ms	Center	Freq: 3.635000	000 GHz	IGN AUTO	11:02:03 / Radio Std	MNov 16, 2022 : None		Gate
) dB/div	Gate: LO Input: RF IFGai Ref 0 dBm	Trig: From #Atten:		Avg Hold: 25		Radio Dev r1 3.63 -8.22	^{vice: BTS} 325 GHz 60 dBm	<u>On</u>	Ga
10		₽ 1			Non Non			On	Gate Vie
30 40 50						L			Gate Vie Sweep Tin 20.0 r
60 70 80									Gate Del 13.692 i
enter 3.6 Res BW 1		#V	/BW/3MHz				n 20 MHz p 200 ms		Gate Leng 3.6000 r
Chann	el Power		Power	Spectral	Dens	ity		G	ate Metho
	0.62 dBm/ 1	0 MHz		-9.38	3 dBi	m/MHz			М о 1 о
3					STATUS				

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i.

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3630-high power

SENSE:INT ALIGN AUTO 11:08:45 AMNov 16, 2022 enter Freq: 3.635000000 GHz Radio Std: None Ga rig: Free Run Avg Hold: 25/25 Ga	ate
Atten: 30 dB Radio Device: BTS Mkr1 3.63184 GHz -5.2662 dBm	G
	ate Vi
On	
	ate Vi ep Ti 20.0
	te De 13.692
	e Leng 3.6000
Power Spectral Density Gate N	/letho
-6.38 dBm/MHz	M 0 1 0

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i.

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3695 low power

	^{50 Ω} 13.692 ms		eq: 3.695000000 GH	ALIGN AUTO Iz Iold:>25/25	11:15:54 AMNov 16, 20 Radio Std: None	22 Gate
0 dB/div	Gate: LO Input: RF IFGai Ref 0 dBm				Radio Device: BTS 1 3.69206 GH -7.9447 dBn	z Ga
-10			***********************			Gate Vie
-30 -40 -50 -60						Gate Vie Sweep Tin 20.0 n
-70						Gate Del 13.692 r
enter 3.6 Res BW		#VB\	N/ 3 MHz		Span 20 MH #Sweep 200 m	Gate Leng Z 3.6000 r
Chann	el Power		Power Spe	ctral Dens	sity	Gate Method
	0.84 dBm/ 1	0 MHz	-	9.16 dB	m/MHz	Mo 1 o
G				STATUS	5	

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r

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3695-high power

ALIGN AUTO 11:21:57 AMNov 16, 2022 Radio Std: None Gate
Radio Device: BTS Mkr1 3.69186 GHz -5.0638 dBm
Gate Vin
Gate Vi Sweep Ti 20.0
Gate De 13.662
Span 20 MHz #Sweep 200 ms
ral Density Gate Metho
27 dBm/MHz

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

DOT CBRS Radio: WINNF / Security Test Case Analysis

1. WINNF.FT.C.SCS.1

Packet Capture Sequence

WIN	INF.FT.C.SCS.1_20	22-11-17-happy_test_1.pd	cap		
ile Er	dit View Go	Canture Analyze St	tatistics Telephony Wire	lerr Toolr Hel	
6.11	A 🕲 📃 🖽	XCK®®	ST 🕹 📑 🔍 '	વ્યા	
Apply	a display filter <	Ctrl-/>			
ю.	Time	Source	Destination	Protocol	Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 37586 + 5001 [SVN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3712115343 TSecr=0 WS=128
	2 0.000757	10.10.3.84	10.10.3.13	TCP	74 5001 + 37586 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3712136145 TSecr=3712115343 WS=128
	3 0.000782	10.10.3.13	10.10.3.84	TCP	66 37586 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3712115343 TSecr=3712136145
	4 0.003243	10.10.3.13	10.10.3.84	TLSv1.2	352 Client Hello
	5 0.003604	10.10.3.84	10.10.3.13	TCP	66 5001 → 37586 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3712136148 TSecr=3712115346
	6 0.003703	10.10.3.84	10.10.3.13	TLSv1.2	3394 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.003714	10.10.3.13	10.10.3.84	TCP	66 37586 → 5001 [ACK] Seq=287 Ack=3329 Win=35968 Len=0 TSval=3712115346 TSecr=3712136148
	8 0.010455	10.10.3.13	10.10.3.84	TLSv1.2	3747 Certificate, Client Key Exchange, Certificate Verify
	9 0.010492	10.10.3.13	10.10.3.84	TLSv1.2	72 Change Cipher Spec
:	10 0.010503	10.10.3.13	10.10.3.84	TLSv1.2	111 Encrypted Handshake Message
3	11 0.011156	10.10.3.84	10.10.3.13	TCP	66 5001 → 37586 [ACK] Seq=3329 Ack=3968 Win=37504 Len+0 TSval=3712136156 TSecr=3712115353
3	12 0.013475	10.10.3.84	10.10.3.13	TCP	66 5001 → 37586 [ACK] Seq=3329 Ack=4019 Win=37504 Len=0 TSval=3712136158 TSecr=3712115353
1	13 0.013485	10.10.3.84	10.10.3.13	TLSv1.2	117 Change Cipher Spec, Encrypted Handshake Message
3	14 0.014606	10,10.3.13	10.10.3.84	TLSv1.2	1764 Application Data
3	15 0.015075	10.10.3.84	10.10.3.13	TCP	66 5001 → 37586 [ACK] Seq=3380 Ack=5717 Win=40832 Len=0 TSval=3712136159 TSecr=3712115357
3	16 0.078229	10.10.3.84	10.10.3.13	TLSv1.2	112 Application Data
4	17 0.117892	10.10.3.13	10.10.3.84	TCP	66 37586 → 5001 [ACK] Seq=5717 Ack=3426 Win=35968 Len=0 TSval=3712115461 TSecr=3712136223
:	18 0.118256	10.10.3.84	10.10.3.13	TLSv1.2	557 Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data
3	19 0.118279	10.10.3.13	10.10.3.84	TCP	66 37586 → 5001 [ACK] Seq=S717 Ack=3917 Win=38784 Len=0 TSval=3712115461 TSecr=3712136263
:	20 1.163907	10.10.3.13	10.10.3.84	TLSv1.2	1162 Application Data
3	21 1.166100	10.10.3.84	10.10.3.13	TLSv1.2	112 Application Data
:	22 1.166124	10.10.3.13	10.10.3.84	TCP	66 37586 + 5001 [ACK] Seq=6813 Ack=3963 Win=38784 Len=0 TSval=3712116509 TSecr=3712137311
3	23 1.166332	10.10.3.84	10.10.3.13	TLSv1.2	815 Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data
- 3	24 1.166340	10.10.3.13	10.10.3.84	TCP	66 37586 + 5001 [ACK] Seq=6813 Ack=4712 Win=41728 Len=0 TSval=3712116509 TSecr=3712137311

WINNF test requirements:

WINNF test requirements from WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification:

2	 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, TLS_RSA_WITH_AES_128_GCM_SHA256 TLS_RSA_WITH_AES_256_GCM_SHA384 TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA2 56 TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA3 84 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 	PASS
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Analysis of WINNF Test Requirements

1. From Client Hello: TLS version = TLS 1.2

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TÜV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

> Frame 4: 352 bytes on wire (2816 bits), 352 bytes captured (2816 bits) > Ethernet II, Src: fa:16:3e:f6:32:cb (fa:16:3e:f6:32:cb), Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) > Internet Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84 > Transmission Control Protocol, Src Port: 37586, Dst Port: 5001, Seq: 1, Ack: 1, Len: 286 Transport Layer Security Y TLSv1.2 Record Layer: Handshake Protocol: Client Hello Content Type: Handshake (22) Version: TLS 1.2 (0x0303) Length: 281 ✓ Handshake Protocol: Client Hello Handshake Type: Client Hello (1) Length: 277 Version: TLS 1.2 (0x0303) Random: 555e75a845ef20741d1c2502edded93ffcc6c68d5b81fcd646640089ce175e73 GMT Unix Time: May 21, 2015 20:17:44.000000000 Eastern Daylight Time Random Bytes: 45ef20741d1c2502edded93ffcc6c68d5b81fcd646640089ce175e73 Session ID Length: 0 Cipher Suites Length: 86

2. Cipher suite list from Client Hello is from WINNF approved list:

Cipher Suites (43 suites)

Cipher Suite: TLS ECDHE ECDSA WITH AES 256 GCM SHA384 (0xc02c) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02b) Cipher Suite: TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 (0xc030) Cipher Suite: TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 (0xc02f) Cipher Suite: TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 (0x009f) Cipher Suite: TLS_DHE_DSS_WITH_AES_256_GCM_SHA384 (0x00a3) Cipher Suite: TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 (0x009e) Cipher Suite: TLS_DHE_DSS_WITH_AES_128_GCM_SHA256 (0x00a2) Cipher Suite: TLS ECDHE ECDSA WITH AES 256 CBC SHA384 (0xc024) Cipher Suite: TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 (0xc028) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 (0xc023) Cipher Suite: TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 (0xc027) Cipher Suite: TLS_DHE_RSA_WITH_AES_256_CBC_SHA256 (0x006b) Cipher Suite: TLS_DHE_DSS_WITH_AES_256_CBC_SHA256 (0x006a) Cipher Suite: TLS_DHE_RSA_WITH_AES_128_CBC_SHA256 (0x0067) Cipher Suite: TLS_DHE_DSS_WITH_AES_128_CBC_SHA256 (0x0040) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_256_GCM_SHA384 (0xc02e) Cipher Suite: TLS_ECDH_RSA_WITH_AES_256_GCM_SHA384 (0xc032) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02d) Cipher Suite: TLS_ECDH_RSA_WITH_AES_128_GCM_SHA256 (0xc031) Cipher Suite: TLS ECDH ECDSA WITH AES 256 CBC SHA384 (0xc026) Cipher Suite: TLS_ECDH_RSA_WITH_AES_256_CBC_SHA384 (0xc02a) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256 (0xc025) Cipher Suite: TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256 (0xc029) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA (0xc00a) Cipher Suite: TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA (0xc014) Cipher Suite: TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA (0xc009)

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Cipher Suite: TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA (0xc013) Cipher Suite: TLS_DHE_RSA_WITH_AES_256_CBC_SHA (0x0039) Cipher Suite: TLS_DHE_DSS_WITH_AES_256_CBC_SHA (0x0038) Cipher Suite: TLS DHE RSA WITH AES 128 CBC SHA (0x0033) Cipher Suite: TLS_DHE_DSS_WITH_AES_128_CBC_SHA (0x0032) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA (0xc005) Cipher Suite: TLS_ECDH_RSA_WITH_AES_256_CBC_SHA (0xc00f) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA (0xc004) Cipher Suite: TLS ECDH RSA WITH AES 128 CBC SHA (0xc00e) Cipher Suite: TLS RSA WITH AES 256 GCM SHA384 (0x009d) Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c) Cipher Suite: TLS_RSA_WITH_AES_256_CBC_SHA256 (0x003d) Cipher Suite: TLS_RSA_WITH_AES_128_CBC_SHA256 (0x003c) Cipher Suite: TLS_RSA_WITH_AES_256_CBC_SHA (0x0035) Cipher Suite: TLS_RSA_WITH_AES_128_CBC_SHA (0x002f) Cipher Suite: TLS_EMPTY_RENEGOTIATION_INFO_SCSV (0x00ff)

3. Cipher suite chosen (from Server Hello): TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)

dy a	display filter <0	ttl-/>			
_	Time	Source	Destination		Length Info
	0.000000	10.10.3.13	10.10.3.84	TCP	74 37586 → 5001 [SYN/] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3712115343 TSecr=0 WS=128
	0.000757	10.10.3.84	10.10.3.13	TCP	74 5001 → 37586 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3712136145 TSecr=3712115343 WS=128
	0.000782	10,10.3.13	10.10,3,84	TCP	66 37586 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3712115343 TSecr=3712136145
	0.003243	10.10.3.13	10.10.3.84		352 Client Hello
	0.003604	10.10.3.84	10.10.3.13	TCP	66 5001 + 37586 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3712136148 TSecr=3712115346
	0.003703	10.10.3.84	10.10.3.13		3394 Server Hello, Certificate, Certificate Request, Server Hello Done
	0.003714	10,10.3.13	10.10.3.84	TCP	66 37586 + 5001 [ACK] Seq=287 Ack=3329 Win=35968 Len=0 TSval=3712115346 TSecr=3712136148
	0.010455	10.10.3.13	10.10.3.84		3747 Certificate, Client Key Exchange, Certificate Verify
	0.010492	10.10.3.13	10.10.3.84	TLSv1.2	
	0.010503	10.10.3.13	10.10.3.84		111 Encrypted Handshake Message
	0.011156	10.10.3.84	10.10.3.13	TCP	66 5001 + 37566 [ACK] Seq=3329 Ack=3968 Win=37504 Len=0 TSval=3712136156 TSecr=3712115353
	0.013475	10.10.3.84	10.10.3.13	TCP	66 5001 → 37586 [ACK] Seq=3329 Ack=4019 Win=37504 Len=0 TSval=3712136158 TSecr=3712115353
	0.013485	10.10.3.84	10.10.3.13		117 Change Cipher Spec, Encrypted Handshake Message
	0.014606	10.10.3.13	10.10.3.84		1764 Application Data
	0.015075	10.10.3.84	10.10.3.13	TCP	66 5001 + 37586 [ACK] Seq=3380 Ack=5717 Win=40832 Len=0 TSval=3712136159 TSecr=3712115357
	0.078229	10.10.3.84	10.10.3.13		112 Application Data
	0.117892	10.10.3.13	10.10.3.84	TCP	66 37586 → 5001 [ACK] Seq=5717 Ack=3426 Win=35968 Len=0 TSval=3712115461 TSecr=3712136223
	0.118256	10.10.3.84	10.10.3.13		557 Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data
	0.118279	10.10.3.13 10.10.3.13	10.10.3.84 10.10.3.84	TCP	66 37586 + 5081 [ACK] Seq=5717 Ack=3917 Win=38784 Len=0 TSval=3712115461 TSecr=3712136263
	1.163907	10.10.3.84	10.10.3.13		1162 Application Data
	1.166100		10.10.3.84		112 Application Data 66 37586 → 5001 [ACK] Seg=6813 Ack=3963 Win=38784 Len=0 TSval=3712116509 TSecr=3712137311
	1.166124	10.10.3.13 10.10.3.84	10.10.3.13	TCP	
	1.166340	10.10.3.13	10.10.3.84	TCP	815 Application Data, 66 37586 → 5001 [ACK] Seq=6813 Ack=4712 Win=41728 Len=0 TSval=3712116509 TSecr=3712137311
24	1.100340	10.10.5.15	10.10.3.04	TCP	00 21200 4 2001 [MCK] 264-0012 MCK-4415 HIL-4125 FEU-0 12481-211110209 1261-21111212111
	Content Type	: Handshake (22)			
	Version: TLS	1.2 (0x0303)			
	Length: 81				
~		otocol: Server Hel			
		Type: Server Hell	o (2)		
	Length: 7				
		TLS 1.2 (0x0303)			
			36b64df23d9f3822483dd		
			980 16:18:53.00000000		
			a36b64df23d9f3822483d	d00cdccba8c57	75462380blc1
		D Length: 32			
			203d76e92ee256eac635a		540bb92ce0e2149
			AES_256_GCM_SHA384 (0	x009d)	
		on Method: null (0)		
		s Length: 5			
		: renegotiation_in			
		renegotiation info			
	Length		(05201)		

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

so authentication was completed.

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

2. WINNF.FT.C.SCS.2

Packet Capture Sequence

	XC 9====		10 11		
coly a those y liter		1 2 3 2 4 4	4 11		
Time	Switt	Destination	Protocol I	winth July	
3448 6.887836	18-38,8-51	18-18-8-124		195 Client Hello	
3441 0.687328	18,10.8,124	18,10, 8,61	TET	00 3008 + 53072 [ADV] Seq-1 Ack-138 Min-13184 Lan-0 TS-al-1139282050 TS-cc1540548185	
3442 6,887561	18,10.0,124	10,10,0.61		1862 Server Hello	
3443 5.887571	10,10,0,01	18,20,9.124	TLP	50 5072 - 5000 (ACN) Sep-330 Ack-2707 Win-10700 Len-0 TSVUL-1540540105 TSec-3159202000	
3444 E-887581	18.38.8.124	18,18.8.61		416 Eertifizate, Certifizate Request, Server Hello Done	
1445 0.887585 1446 6.821453	10,10.8,61 1,11111,10,10,0,58	18,30,8,124 1703::ef81:387	TER	00 35572 + 5869 [ACM] Seq-150 Ack+3147 Min+18712 Lanvé Tival+1548840185 Tiscr+1159282680 194 38178 + 96571 Lanv[3]	
546 W,821423	10,10,00,10,0,50	IN.10.9.124	TEP	194 502/8 * 502/8 LETELS2 74 82222 * 300/8 LETELS2	
448 6-125:51	18.38.W.174	10.10.0.51	TUP	74 JUN - 4202 [SW] MUT	
445 0.825270	10.10.0.01	16.10.5.124	TOP	00 42153 - 6180 [ACK] Seg-1 Ack-1 Min-14268 Lem-0 Thesh-1542045201 Theor-1155182114	
450 6,827794	18,10.0,61	10,10,0.124	TOP	326 42352 + 8100 [PSH, 4CK] Sep-1 Adv-1 HDv-14208 Lev-260 TSval-1540649209 TSecv-1129282114 [TCP segment of a reaccessived PCW]	
493 5,827836	10,30.0,01	18,10,9,124	CESP	142 August	
452 6.826845	18-38.8-124	18.18.8.61	TUP	66 8198 × 42352 [401] Seq=1 Ack=261 MIN=15184 Len=8 TSv81=1129282117 TSecr=1548649285	
1453 0.82885b	18,12.8.124	18, 10, 8, 61	TEP	00 5188 = 42332 [ACM] Seq41 Ack+337 Min+13184 Lan+8 TSval+1139252117 TSec+-1548648395	
454 6,831897 455 6,848731	10,10,0,01	10,10,0.63	TOP	66 38578 + 9000 [ACK] Seg-14259 Ack+11414 Win+501 Len+0 75va1×1340648210 TSecr+1547315568 2406 Response	
456 6.843749	18.18.8.51	18.10.0.124	TIP	Area Hexponer 56 42152 + 3100 [AOC] Sepe337 Ack-2451 Min+1605 Lenet 75va1+1546649221 TSecr+112V28132	
010445.3 7.246	10.10.0.01	16.10 8.114	707	to whole who provide a provide whether and the same constraints and the same set of the	
458 6,844691	10.30.0.134	10.10.0.61	707	e6 0100 - 42362 [V30, 404] Sep-003 ack-037 Win-15100 (ere0 TSun-1100001133 VSec-1540040031	
3432 5,344670	10.10.0.01	10,10,9,124	TUP	15 42152 + 8189 [ADV] Sep-338 Ack-0434 win-15895 Len-9 TV/s]-1548649222 TSec-1129282133	
3468 6.844833	18-38.8-124	18,18.8.61	TUP	66 81WB + 42352 [400] Seq-2454 Ack+381 WIn+15UM Len+0 TSVAI+1139202103 TSezn+1540649222	
5461 0.852530	16,10.6.61	18, 16, 8, 124	713+1-2	75 Alert (Level: Patel, Description: Certificate University)	
3462 6,053030	10.30.0.EI	19,10,9,174	909	ee 39471 = 3000 [fi]0, 4CK2 Sept137 ACK-3147 Min-19713 Len-0 TSv01-1540649131 75ecr-113002096	
3464 6.85X258	18,38,8,124	18,10,9,21	TEP	05 5000 + 55072 (Fin, HCH) Sept147 ACH-LIE WAY-1500 LIEVE TSVEJ-1557482507 TSECH-15500-92500 86 55972 + 5000 FACC Sept138 Activ-3141 MDH-19712 LIEVE TSVEJ-1540649211 TSECH-1139281142	
5405 0.857648	18.12.6.61	16.20.8.03	BITE	BE STATZ * SOME [Work] Schulde economic annexation contractive contraction of the statistic s	
3466 6.861925	18.10.0.03	10,10.8.61	HTTP/3_	587 HTTP/1.1 200 DK , levelsript Object Rotation (application/jion)	
3467 6,861939	10,10,0,61	10,10,0.63	TOP	66 38578 - 9200 [ACM] Seg-13006 Ack-11935 Win-S02 Len-0 TSvol-1540649239 TSecr-1547315636	
3468 6,876601	::ffff:10.10.0.62	ff82::#f81:359	UDP	191 85285 + 85282 Len+129	
3469 6,395639	18,10.0,51	10.10.0.63	TOP	215 58578 → 9200 [PSH, ACH] Seq=15006 Ack+11935 Min=582 Len=149 T5val=1540649273 TSecr=1547315636 [TCP segment of a reassembled PDU]	
5478 6.896117	18.10.0.63	10.10.0.61	HTTP	S1 HTTP/1.1 180 Continue	
thernet II, Srci nternet Protocol	Version 4, Sect 10.10	(16:3e:41:fa:8b), Ds .0.124, Dat: 10.10.0	t: fa:16:3e)	17/b4/ec (fa:16/3e/17/b4/ec)	
	roI Protocol, Src Port	1 8100, Dst Port: 42	352, Seq: 1,	Ack1 337, Leni 2432	
pertaxt Transfe	e Status Protocol				
	c successful (@)				
<pre>responseBytes ResponseType BasicOCSPRe: tbsRespon respon </pre>	a Id: 1.5.6.1.5.5.7.40 sponse nadData derID: byName (1)		anic)		
* respon * sin	wdAt: 2010-02-05 14:23 ises: 1 item glaRasponse certID	:14 (NUE)			
	V hashAlgorithm (SHA- Algorithm Id: 1. issuerRemethanh: 536 issuerKeyHash: 5063 sarialRumber: 0x006	3.14.3.2.26 (SHA-1) Bd21d2529427538588c5 d706695ca42c4945045 d40948±78x7f0df			
	certStatus: revoked (1)			
	* revoked	2819-89-82 13:59:41	ontra		

Requirements:

WINNF test requirements from WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification:

2	 Make sure that UUT uses TLS v1.2 for security establishment. Make sure UUT selects the correct cipher suite. UUT shall use CRL or OCSP to verify the validity of the server certificate. Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	PASS	FAIL	
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Analysis of WINNF Test Requirements

1. From Client Hello can read: TLS version = TLS 1.2

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TÜV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

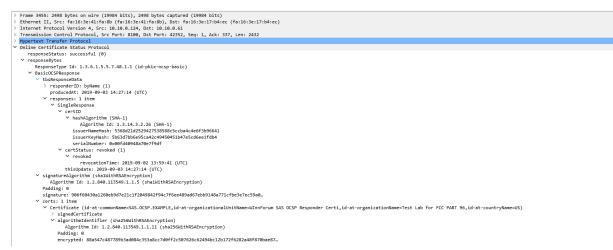
> Frame 3442: 2862 bytes on wire (22896 bits), 2862 bytes captured (22896 bits) > Ethernet II, Src: fa:16:3e:41:fa:8b (fa:16:3e:41:fa:8b), Dst: fa:16:3e:17:b4:ec (fa:16:3e:17:b4:ec) > Internet Protocol Version 4, Src: 10.10.0.124, Dst: 10.10.0.61 > Transmission Control Protocol, Src Port: 5000, Dst Port: 55972, Seq: 1, Ack: 130, Len: 2796 Transport Layer Security Y TLSv1.2 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 (0x0303) Random: 5d6e7842d84d8cbfc7078fe9e913fcf7eb0fe3354f54f192c27204d2031e9aae Session ID Length: 32 Session ID: e50dd1e43d8d5028f12ae61800ad52ffd4fe63dce8630ea523a1fd33b4cc72a4 Cipher Suite: TLS RSA WITH AES 128 GCM SHA256 (0x009c) Compression Method: null (0) Extensions Length: 5 > Extension: renegotiation_info (len=1)

2. From Client Hello, cipher suite list is from WINNF approved list:

TLS_RSA_WITH_AES_128_GCM_SHA25 TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256

3. From Server Hello, cipher suite chosen:

TLS_RSA_WITH_AES_128_GCM_SHA256 4. Read OSCP Request/Response to/from server:



5. Authentication exchange ends with TLS Alert message (i.e. authentication fails):

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

>	Frame	3461: 73 bytes on wire (584 bits), 73 bytes captured (584 bits)
>	Ether	net II, Src: fa:16:3e:17:b4:ec (fa:16:3e:17:b4:ec), Dst: fa:16:3e:41:fa:8b (fa:16:3e:41:fa:8b)
>	Inter	net Protocol Version 4, Src: 10.10.0.61, Dst: 10.10.0.124
>	Trans	mission Control Protocol, Src Port: 55972, Dst Port: 5000, Seq: 130, Ack: 3147, Len: 7
~	Trans	port Layer Security
	Y TL	Sv1.2 Record Layer: Alert (Level: Fatal, Description: Certificate Unknown)
		Content Type: Alert (21)
		Version: TLS 1.2 (0x0303)
		Length: 2
	~	Alert Message
		Level: Fatal (2)
		Description: Certificate Unknown (46)

6. Registration request message is not received at Test Harness (authentication fails)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3. WINNF.FT.C.SCS.3

Packet Capture Sequence

🖬 📰 🖉 😐 🔚 🖾 🕱 🖕 👳 🧟 🖗 🖳 🚍 🔍 🍳 🔍 🕮 🛄						
Apply a deplay filter <cut-></cut->						
No.	Time	Source	Destination	Protocol	Length Info	
	1 0,000000	10.10.3.13	10.10.3.84	TCP	74 41586 → 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3728859469 TSecr=0 WS=128	
	2 0.000358	10.10.3.84	10.10.3.13	TCP	74 5001 + 41586 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728880271 TSecr=3728859469 WS=128	
	3 0,000388	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728859470 TSecr=3728880271	
	4 0.084432	10.10.3.13	10.10.3.84	TLSv1.2	352 Client Hello	
	5 0.005027	10.10.3.84	10.10.3.13	TCP	66 5001 + 41586 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3728880276 TSecr=3728859474	
	6 0.005039	10.10.3.84	10.10.3.13	TLSv1.2	3398 Server Hello, Certificate, Certificate Request, Server Hello Done	
	7 0,005056	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=287 Ack=3333 Win=35968 Len=0 TSval=3728859474 TSecr=3728880276	
	8 0.009178	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)	
	9 0.009328	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [FIN, ACK] Seq=294 Ack=3333 Win=35968 Len=0 TSval=3728859478 TSecr=3728880276	
	10 0.009643	10.10.3.84	10.10.3.13	TCP	66 5001 + 41586 [FIN, ACK] Seq=3333 Ack=295 Win=30080 Len=0 TSval=3728880280 TSecr=3728859478	
L .	11 0.009660	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=295 Ack=3334 Win=35968 Len=0 TSval=3728859479 TSecr=3728880280	

WINNF Test Requirements:

WINNF test requirements from WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification:

2	 Make sure that UUT uses TLS v1.2 for security establishment. Make sure UUT selects the correct cipher suite. UUT shall use CRL or OCSP to verify the validity of the server certificate. 	PASS
	 Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness. 	

Analysis of WINNF Test Requirements

1. From Client Hello can read: TLS version = TLS 1.2

	4: 352 bytes on wire (2816 bits), 352 bytes captured (2816 bits)
	net II, Src: fa:16:3e:f6:32:cb (fa:16:3e:f6:32:cb), Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
	net Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84
	mission Control Protocol, Src Port: 41586, Dst Port: 5001, Seq: 1, Ack: 1, Len: 286
	port Layer Security
Y TL	Sv1.2 Record Layer: Handshake Protocol: Client Hello
	Content Type: Handshake (22)
	Version: TLS 1.2 (0x0303)
	Length: 281
~	Handshake Protocol: Client Hello
	Handshake Type: Client Hello (1)
	Length: 277
	Version: TLS 1.2 (0x0303)
	Random: c7f386730d0a51b7ae0a0db37555ebb95dab0cf68892309fb8d125332cc27888
	GMT Unix Time: Apr 20, 2076 12:27:31.000000000 Eastern Daylight Time
	Random Bytes: 0d0a51b7ae0a0db37555ebb95dab0cf68892309fb8d125332cc27888
	Session ID Length: 0
	Cipher Suites Length: 86

list:

Cipher Suites

Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02d) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384 (0xc026) Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d) Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

3. From Server Hello, cipher suite chosen: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)

▲ ■ 2 @ _ □ 】 X 図 @ + + + + + + + + + + + + + + + + + +						
Apply a display filter <0	Strl-/>					
. Time	Source	Destination	Protocol L			
1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41586 → 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3728859469 TSecr=0 WS=128		
2 0.000358	10.10.3.84	10.10.3.13	TCP	74 5001 → 41586 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728880271 TSecr=3728859469 WS=1		
3 0.000388	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728859470 TSecr=3728880271		
4 0.004432	10.10.3.13	10.10.3.84	TLSv1.2			
5 0.005027	10.10.3.84	10.10.3.13	TCP	66 5001 → 41586 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3728880276 TSecr=3728859474		
6 0.005039	10.10.3.84	10.10.3.13		3398 Server Hello, Certificate, Certificate Request, Server Hello Done		
7 0.005056	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=287 Ack=3333 Win=35968 Len=0 TSval=3728859474 TSecr=3728880276		
8 0.009178	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)		
9 0.009328	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [FIN, ACK] Seq=294 Ack=3333 Win=35968 Len=0 TSval=3728859478 TSecr=3728880276		
10 0.009643	10.10.3.84	10.10.3.13	TCP	66 5001 → 41586 [FIN, ACK] Seq=3333 Ack=295 Win=30080 Len=0 TSval=3728880280 TSecr=3728859478		
11 0.009660	10.10.3.13	10.10.3.84	TCP	66 41586 → 5001 [ACK] Seq=295 Ack=3334 Win=35968 Len=0 TSval=3728859479 TSecr=3728880280		
		its), 3398 bytes capt		ts) f6:32:cb (fa:16:3e:f6:32:cb)		

4. Authentication exchange ends with TLS Alert message (i.e.

authentication fails):

Apply a display filter <cht-></cht->						
No.	Time	Source	Destination	Protocol Le		
10.	1 0.000000	10.10.3.13	10.10.3.84	TCP	rngon inno 74 41586 → 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK PERM=1 TSval=3728859469 TSecr=0 WS=128	
	2 0.000358	10.10.3.84	10.10.3.13	TCP	74 41500 + 3001 [314] 364-0 W11-25200 Le1-0 H35-1400 SACK_PLN1-1 H341-372053405 H361-0 W3-120 74 5001 + 41586 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK PERM=1 TSval=3728880271 TSecr=3728859469 WS=12	
	3 0.000388	10.10.3.13	10.10.3.84	TCP	66 41586 + 5001 [ACK] Seq=1 Ack=1 Win=20312 Len=0 TSval=3728859470 TSecr=3728880271	
	4 0.004432	10.10.3.13	10.10.3.84	TLSv1.2	352 Client Hello	
	5 0.005027	10.10.3.84	10.10.3.13	TCP	66 5001 + 41586 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3728880276 TSecr=3728859474	
	6 0.005039	10.10.3.84	10.10.3.13		3398 Server Hello, Certificate, Certificate Request, Server Hello Done	
	7 0.005056	10.10.3.13	10,10,3,84	TCP	66 41586 → 5001 [ACK] Seg=287 Ack=3333 Win=35968 Len=0 TSval=3728859474 TSecr=3728880276	
	8 0.009178	10.10.3.13	10,10,3,84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)	
	9 0.009328	10.10.3.13	10.10.3.84	TCP	66 41586 - 5001 [FIN, ACK] Sec=294 Ack=3333 Win=35968 Len=0 TSval=3728859478 TSecr=3728880276	
	10 0.009643	10.10.3.84	10.10.3.13	TCP	66 5001 + 41586 [FIN, ACK] Seg=3333 Ack=295 Win=30080 Len=0 TSval=3728880280 TSecr=3728859478	
-	11 0,009660	10.10.3.13	10.10.3.84	TCP	66 41586 + 5001 [ACK] Seq=295 Ack=3334 Win=35968 Len=0 TSval=3728859479 TSecr=3728880280	
Fr	thernet II, Src:	fa:16:3e:f6:32:cb		Dst: fa:16:3e:	00:f3:e6 (fa:16:3e:b0:f3:e6)	
E E	thernet II, Src: nternet Protocol	fa:16:3e:f6:32:cb Version 4, Src: 10	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	Dst: fa:16:3e:1 3.84		
	thernet II, Src: nternet Protocol ransmission Cont	fa:16:3e:f6:32:cb Version 4, Src: 10 trol Protocol, Src F	(fa:16:3e:f6:32:cb),	Dst: fa:16:3e:1 3.84		
Fr Ef Ir Tr	thernet II, Src: nternet Protocol ransmission Cont ransport Layer S	fa:16:3e:f6:32:cb Version 4, Src: 10 Trol Protocol, Src F Security	(fa:16:3e:f6:32:cb), 3.10.3.13, Dst: 10.10. Port: 41586, Dst Port:	Dst: fa:16:3e:1 3.84 5001, Seq: 283	7, Ack: 3333, Len: 7	
	thernet II, Src: nternet Protocol ransmission Cont ransport Layer S TLSv1.2 Record Content Typ	: fa:16:3e:f6:32:cb L Version 4, Src: 16 trol Protocol, Src F Security L Layer: Alert (Leve e: Alert (21)	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	Dst: fa:16:3e:1 3.84 5001, Seq: 283	7, Ack: 3333, Len: 7	
Fr Ef In Tr	thernet II, Src: nternet Protocol ransmission Cont ransport Layer S TLSv1.2 Record Content Typ	: fa:16:3e:f6:32:cb L Version 4, Src: 16 trol Protocol, Src F Security L Layer: Alert (Leve	(fa:16:3e:f6:32:cb), 3.10.3.13, Dst: 10.10. Port: 41586, Dst Port:	Dst: fa:16:3e:1 3.84 5001, Seq: 283	7, Ack: 3333, Len: 7	

5. Registration request message is not received at Test Harness (Authentication fails)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

4. WINNF.FT.C.SCS.4

Packet Capture Sequence

Apply a display filter <ctrl-></ctrl->						
	Time	Source	Destination	Protocol	Length Info	
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41354 + 5001 [SYN] Seq=0 Win+29200 Len+0 MSS+1460 SACK_PERM+1 TSval=3728013260 TSecr+0 WS=128	
	2 0.000959	10.10.3.84	10.10.3.13	TCP	74 5001 + 41354 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728034062 TSecr=3728013260 WS=128	
	3 0.000977	10.10.3.13	10.10.3.84	TCP	66 41354 + 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728013261 TSecr=3728034062	
	4 0.003961	10.10.3.13	10.10.3.84	TLSv1.2	384 Client Hello	
	5 0.004273	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [ACK] Seq=1 Ack=319 Win=30080 Len=0 TSval=3728034066 TSecr=3728013264	
	6 0.004416	10.10.3.84	10.10.3.13	TLSv1.2	3389 Server Hello, Certificate, Certificate Request, Server Hello Done	
	7 0.004428	10.10.3.13	10.10.3.84	TCP	66 41354 + 5001 [ACK] Seq=319 Ack=3324 Win=35968 Len=0 TSval=3728013264 TSecr=3728034066	
	8 0.020823	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)	
	9 0.021521	10.10.3.84	10.10.3.13	TCP	66 5001 + 41354 [FIN, ACK] Seg=3324 Ack=326 Win=30080 Len=0 TSval=3728034083 TSecr=3728013281	
1	18 0.021833	10.10.3.13	10.10.3.84	TCP	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083	
- 3	11 0.022078	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034084 TSecr=3728013282	

WINNF Test Requirements:

WINNF test requirements from WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification:

2

Analysis of WINNF Test Requirements

1. From Client Hello can read: TLS version = TLS 1.2

N [29	pply a display filter <	:Ctrl-/>		
о.	Time	Source	Destination	Protocol Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP 74 41354 + 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3728013260 TSecr=0 WS=128
	2 0.000959	10.10.3.84	10.10.3.13	TCP 74 5001 + 41354 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728034062 TSecr=3728013260 WS=1
	3 0.000977	10.10.3.13	10.10.3.84	TCP 66 41354 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728013261 TSecr=3728034062
	4 0.003961	10.10.3.13	10.10.3.84	TLSv1.2 384 Client Hello
	5 0.004273	10.10.3.84	10.10.3.13	TCP 66 5001 → 41354 [ACK] Seq=1 Ack=319 Win=30080 Len=0 TSval=3728034066 TSecr=3728013264
	6 0.004416	10.10.3.84	10.10.3.13	TLSv1.2 3389 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004428	10.10.3.13	10.10.3.84	TCP 66 41354 → 5001 [ACK] Seq=319 Ack=3324 Win=35968 Len=0 TSval=3728013264 TSecr=3728034066
	8 0.020823	10.10.3.13	10.10.3.84	TLSv1.2 73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.021521	10.10.3.84	10.10.3.13	TCP 66 5001 → 41354 [FIN, ACK] Seq=3324 Ack=326 Win=30080 Len=0 TSval=3728034083 TSecr=3728013281
	10 0.021833	10.10.3.13	10.10.3.84	TCP 66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 TCP 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=372804084 TSecr=3728013282
_				
FE	thernet II, Src:	fa:16:3e:f6:32:cb		Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
FEI	thernet II, Src: internet Protocol	fa:16:3e:f6:32:cb Version 4, Src: 1	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) .3.84
FEIT	thernet II, Src: internet Protocol ransmission Cont	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
FEITT	thernet II, Src: nternet Protocol ransmission Cont ransport Layer S	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src ecurity	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port:	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	thernet II, Src: internet Protocol ransmission Cont ransport Layer S r TLSv1.2 Record	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src 1 ecurity Layer: Handshake 1	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	thernet II, Src: internet Protocol ransmission Cont ransport Layer S r TLSv1.2 Record Content Type	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src ecurity Layer: Handshake M e: Handshake (22)	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port:	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	thernet II, Src: internet Protocol ransmission Cont ransport Layer S r TLSv1.2 Record Content Type Version: TLS	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src: 1 ecurity Layer: Handshake 4 e: Handshake (22) 5 1.2 (0x0303)	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port:	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	thernet II, Src: internet Protocol ransmission Cont ransport Layer S * TLSv1.2 Record Content Type Version: TLS Length: 313	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src ecurity Layer: Handshake 1 e: Handshake (22) S 1.2 (0x0303)	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port: Protocol: Client Hello	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
> E > I > T > T	thernet II, Src: internet Protocol ransmission Cont ransport Layer S r TLSv1.2 Record Content Type Version: TLS	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src: 1 ecurity Layer: Handshake 4 e: Handshake (22) 5 1.2 (0x0303)	(fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port:	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	ithernet II, Src: internet Protocol ransmission Cont ransport Layer S TLSv1.2 Record Content Type Version: TLS Length: 313 Y Handshake Pr	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src: ecurity Layer: Handshake (22) 5 1.2 (0x0303) rotocol: Client Hel	(fa:16:30:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port: Protocol: Client Hello	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318
FEITT	ithernet II, Src: internet Protocol ransmission Cont ransport Layer S TLSv1.2 Record Content Type Version: TLS Length: 313 Y Handshake Pr	fa:16:3e:f6:32:cb Version 4, Src: 1 rol Protocol, Src: ecurity Layer: Handshake (22) S 1.2 (0x0303) rotocol: Client Hell = Type: Client Hell	(fa:16:30:f6:32:cb), 0.10.3.13, Dst: 10.10. Port: 41354, Dst Port: Protocol: Client Hello	Dst: fa:16:3e:b0:f3:e6 (fa:16:3e:b0:f3:e6) 3.84 : 5001, Seq: 1, Ack: 1, Len: 318

2. From Client Hello, cipher suite list is from WINNF approved list:

Cipher Suites

Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02d) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384 (0xc026)

Page 60 of 71	Report Issued: 11/24/2022	Report File #: TR- 7169012035-CBRS-004

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d) Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c)

3. From Server Hello, cipher suite chosen: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)

App					
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lo.	Time	Source	Destination	Protocol L	
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41354 + 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3728013260 TSecr=0 WS=128
	2 0.000959	10.10.3.84	10,10.3.13	TCP	74 5001 + 41354 [SYN, ACK] Seq=0 Ack+1 Win+28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728034062 TSecr=3728013260 WS=1
	3 0.000977	10.10.3.13	10.10.3.84	TCP	66 41354 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728013261 TSecr=3728034062
	4 0.003961	10.10.3.13	10.10.3.84	TLSv1.2	384 Client Hello
	5 0.004273	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [ACK] Seq=1 Ack=319 Win=30080 Len=0 TSval=3728034066 TSecr=3728013264
	6 0.004416	10.10.3.84	10.10.3.13		3389 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004428	10.10.3.13	10.10.3.84	TCP	66 41354 → 5001 [ACK] Seq=319 Ack=3324 Win=35968 Len=0 TSval=3728013264 TSecr=3728034066
	8 0.020823	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.021521	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [FIN, ACK] Seq=3324 Ack=326 Win=30080 Len=0 TSval=3728034083 TSecr=3728013281
	10 0.021833	10.10.3.13 10.10.3.84	10.10.3.84 10.10.3.13	TCP	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 T5val=3728013282 TSecr=3728034083 66 5001 → 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034084 TSecr=3728013282
	ernet II, Src:				
> Int		Version 4, Src: 10	.10.3.84, Dst: 10.10.	3.13	
> Int	ernet Protocol	Version 4, Src: 16 rol Protocol, Src F		3.13	
Int Tra	ernet Protocol Insmission Cont Insport Layer S	Version 4, Src: 10 rol Protocol, Src F security	0.10.3.84, Dst: 10.10. Port: 5001, Dst Port:	3.13 41354, Seq: 1,	
> Int > Tra > Tra	ernet Protocol ensmission Cont ensport Layer S TLSv1.2 Record Content Typ	Version 4, Src: 16 crol Protocol, Src F security Layer: Handshake F e: Handshake (22)	.10.3.84, Dst: 10.10.	3.13 41354, Seq: 1,	
Int Tra	ernet Protocol insmission Cont insport Layer S TLSv1.2 Record Content Typ Version: TL	Version 4, Src: 10 rol Protocol, Src f security Layer: Handshake F	0.10.3.84, Dst: 10.10. Port: 5001, Dst Port:	3.13 41354, Seq: 1,	
> Int > Tra > Tra Y	ernet Protocol ansmission Cont ansport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81	Version 4, Src: 16 rol Protocol, Src F ecurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303)	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	3.13 41354, Seq: 1,	
> Int > Tra > Tra	ernet Protocol ansmission Cont ansport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 Y Handshake P	Version 4, Src: 16 rol Protocol, Src F ecurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hel	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	3.13 41354, Seq: 1,	
Int Tra	ernet Protocol Insmission Cont Insport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 ¥ Handshake P Handshake	Version 4, Src: 16 rol Protocol, Src f iecurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell e Type: Server Hell	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	3.13 41354, Seq: 1,	
Int Tra Tra	ernet Protocol Insmission Cont Insport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 ♥ Handshake P Handshak Length:	Version 4, Src: 10 rol Protocol, Src f iecurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	3.13 41354, Seq: 1,	
Int Tra Tra	ternet Protocol insmission Cont insport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 ¥ Handshake P Handshake Length: Version:	Version 4, Src: 16 rol Protocol, Src f ecurity Layer: Handshake 7 5 1.2 (0x0303) rotocol: Server Hell 77 TL5 1.2 (0x0303)	9.10.3.84, Dst: 10.10 Port: 5001, Dst Port: Protocol: Server Hello lo o (2)	3.13 41354, Seq: 1,	Ack: 319, Len: 3323
Int Tra Tra	ernet Protocol insmission Cont insport Layer S TLSV1.2 Record Content Typ Version: TL Length: 81 V Handshake P Handshake Length: Version: V Random: 0	Version 4, Src: 10 rrol Protocol, Src f ecurity Layer: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77 TLS 1.2 (0x0303) 0bsef58465491af5023	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello 0 (2) 9f55a7006361713bfc6ee	3.13 41354, Seq: 1,	Ack: 319, Len: 3323
Int Tra Tra	ernet Protocol unsmission Cont unsport Layer S TLSV1.2 Record Content Typ Version: TL Length: 81 * Handshake P Handshake Length: Version: * Random: GMT Ur	L Version 4, Src: 11 irol Protocol, Src f eccurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77 TLS 1.2 (0x0303) obsef58465491afb023 ix Time: Jan 17, 1	9,10,3,84, Dit: 10,10 Dort: 5001, Dit Port: rotocol: Server Hello 0 (2) 9f55a7006361713bfc6ee 976 19:23:32,00000000	3.13 41354, Seq: 1, 9e6f048d4ecabc3 0 Eastern Stand	Ack: 319, Len: 3323 9d7598c21 ard Time
Int Tra Tra	ernet Protocol mismission Cont insport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 * Handshake P Handshak Length: Version: * Random: GNT U, Randor	<pre>L Version 4, Src: 14 irrol Protocol, Src f ecurity Layer: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77 TLS 1.2 (0x0303) obSef58465401afb822 nix Time: Jan 17, 1 m Bytes: 65491afb82</pre>	9.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello 0 (2) 9f55a7006361713bfc6ee	3.13 41354, Seq: 1, 9e6f048d4ecabc3 0 Eastern Stand	Ack: 319, Len: 3323 9d7598c21 ard Time
Int Tra Tra	eenet Protocol nnsmission Cont Insport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 > Handshake P Handshake Length: Version: > Random: 4 GMT UN Random Session 1	L Version 4, Src: 11 crol Protocol, Src F eccurity Layer: Handshake F e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77 TLS 1.2 (0x0303) Disef5846341afb823 nix Time: Jan 17, 1 m Sytes: 65491afb82 D Length: 32	9,10,3,84, Dit: 10,10 Dort: 5001, Dit Port: rotocol: Server Hello 0 (2) 9f55a7006361713bfc6ee 976 19:23:32,00000000	3.13 41354, Seq: 1, 9e6f048d4ecabc3 Ø Eastern Stanc e9e6f048d4ecabc3	Ack: 319, Len: 3323 9d7598c21 ard Time 19d7596c21

Y Extension: renegotiation info (len=1)

4. Authentication exchange ends with TLS Alert message (i.e.

authentication fails):

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o.	Time	Source	Destination	Protocol I	Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41354 → 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3728013260 TSecr=0 WS=128
	2 0.000959	10.10.3.84	10.10.3.13	TCP	74 5001 + 41354 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3728034062 TSecr=3728013260 WS=12
	3 0.000977	10.10.3.13	10.10.3.84	TCP	66 41354 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3728013261 TSecr=3728034062
	4 0.003961	10.10.3.13	10.10.3.84	TLSv1.2	384 Client Hello
	5 0.004273	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [ACK] Seq=1 Ack=319 Win=30080 Len=0 TSval=3728034066 TSecr=3728013264
	6 0.004416	10.10.3.84	10.10.3.13		3389 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004428	10.10.3.13	10.10.3.84	TCP	66 41354 → 5001 [ACK] Seq=319 Ack=3324 Win=35968 Len=0 TSval=3728013264 TSecr=3728034066
	8 0.020823	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.021521	10.10.3.84	10.10.3.13	TCP	66 5001 → 41354 [FIN, ACK] Seq=3324 Ack=326 Win=30080 Len=0 TSval=3728034083 TSecr=3728013281
	9 0.021521 10 0.021833	10.10.3.84 10.10.3.13	10.10.3.13 10.10.3.84	TCP	66 5001 → 41354 [FIN, ACK] Seq=3324 Ack=326 Win=30080 Len=0 TSval=3728034083 TSecr=3728013281 66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083
	10 0.021833	10.10.3.13	10.10.3.84	TCP	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3726013282 TSecr=3728034083
	10 0.021833 11 0.022078	10.10.3.13 10.10.3.84	10.10.3.84	ТСР ТСР	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3726013282 TSecr=3728034083
Fra	10 0.021833 11 0.022078 ame 8: 73 bytes	10.10.3.13 10.10.3.84 on wire (584 bits)	10.10.3.84 10.10.3.13 , 73 bytes captured (TCP TCP 584 bits)	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083
Fra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src:	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:3e:f6:32:cb	10.10.3.84 10.10.3.13 , 73 bytes captured (TCP TCP 584 bits) Dst: fa:16:3e:	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 → 41354 [ACK] Seq=3325 Ack=327 Win=30000 Len=0 TSval=3728034084 TSecr=3728013282
Fr: Eti In	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:32:t6:32:t6 Version 4, Src: 10	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10.	TCP TCP 584 bits) Dst: fa:16:3e: 3.84	66 41354 → 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 → 41354 [ACK] Seq=3325 Ack=327 Win=30000 Len=0 TSval=3728034084 TSecr=3728013282
Et In Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src P	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10.	TCP TCP 584 bits) Dst: fa:16:3e: 3.84	66 41354 ÷ 5001 [FIN, ACK] Seq=326 Ack=325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 ÷ 41354 [ACK] Seq=325 Ack=327 Win=30080 Len=0 TSval=3728034084 TSecr=3728013282 b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src P ecurity	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10.	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 b0:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSv1.2 Record	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src P ecurity	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10. ort: 41354, Dst Port:	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 b0:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSv1.2 Record Content Typ	18.10.3.13 10.10.3.84 on wire (584 bits) fa:16:32:f6:32:f6 Version 4, Src: 10 rol Protocol, Src P ecurity Layer: Alert (Leve	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10. ort: 41354, Dst Port:	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 b0:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSv1.2 Record Content Typ	10.10.3.13 10.10.3.84 on wire (584 bits) fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src P ecurity Layer: Alert (Leve :: Alert (21)	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10. ort: 41354, Dst Port:	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 bio:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSV1.2 Record Content Typ Version: TL'	10.10.3.13 10.10.3.84 0 mwire (584 bits) fa:16:3e:16:32:cb Version 4, Src: 10 rol Protocol, Src P ecurity Layer: Alert (Leve :: Alert (21) 5 1.2 (0x0303)	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10. ort: 41354, Dst Port:	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 bio:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7
Fra Eti In Tra Tra	10 0.021833 11 0.022078 ame 8: 73 bytes hernet II, Src: ternet Protocol ansmission Cont ansport Layer S Content Typ Version: TLi Length: 2	10.10.3.13 10.10.3.64 on wire (584 bits) fail6i3e:f6i32:c6 Version 4, Src: 10 rol Protocol, Src P ecurity Layer: Alert (Leve :: Alert (21) 5 1.2 (0x0303) ge	10.10.3.84 10.10.3.13 , 73 bytes captured ((fa:16:3e:f6:32:cb), .10.3.13, Dst: 10.10. ort: 41354, Dst Port:	TCP TCP 584 bits) Dst: fa:16:3e: 3.84 5001, Seq: 31	66 41354 + 5001 [FIN, ACK] Seq=326 Ack=3325 Win=35968 Len=0 TSval=3728013282 TSecr=3728034083 66 5001 + 41354 [ACK] Seq=3325 Ack=327 Win=30080 Len=0 TSval=3728034004 TSecr=3728013282 b0:f3:e6 (fa:16:3e:b0:f3:e6) 19, Ack: 3324, Len: 7

Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

5. Registration request message is not received at Test Harness (authentication fails)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

5. WINNF.FT.C.SCS.5

Packet Capture Sequence

App	ly a display filter <	Ctrl-/>			
lo.	Time	Source	Destination	Protocol	Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41798 + 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3729597078 TSecr=0 WS=128
	2 0.000834	10.10.3.84	10.10.3.13	TCP	74 5001 + 41798 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3729617880 TSecr=3729597078 WS=128
	3 0.000858	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3729597078 TSecr=3729617880
	4 0.004065	10.10.3.13	10.10.3.84	TLSv1.2	352 Client Hello
	5 0.004407	10.10.3.84	10.10.3.13	TCP	66 5001 + 41798 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3729617884 TSecr=3729597082
	6 0.004610	10.10.3.84	10.10.3.13	TLSv1.2	3427 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004627	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=287 Ack=3362 Win=35968 Len=0 TSval=3729597082 TSecr=3729617884
	8 0.008965	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.009456	10.10.3.84	10.10.3.13	TCP	66 5001 + 41798 [FIN, ACK] Seq=3362 Ack=294 Win=30080 Len=0 TSval=3729617889 TSecr=3729597087
	10 0.012614	10.10.3.13	10.10.3.84	TCP	66 41798 + 5001 [FIN, ACK] Seq=294 Ack=3363 Win=35968 Len=0 T5val=3729597090 TSecr=3729617889
-	11 0.012856	10.10.3.84	10.10.3.13	TCP	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090

WINNF Test Requirements:

WINNF test requirements from WINNF-TS-0122-V1.0.2 CBRS CBSD Test Specification:

	•	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	FAIL
		Make sure that Mutual authentication does not happen between UUT and the SAS Test Harness.		

Analysis of WINNF Test Requirements

1. From Client Hello can read: TLS version = TLS 1.2

- A)	oply a display filter <	Ctrl-/>			
lo.	Time	Source	Destination	Protocol	Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41798 + 5001 [SYN] Seq=0 Win=29200 Len=0 MS5=1460 SACK_PERM=1 TSval=3729597078 TSecr=0 WS=128
	2 0.000834	10.10.3.84	10.10.3.13	TCP	74 5001 → 41798 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3729617880 TSecr=3729597078 WS=
	3 0.000858	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3729597078 TSecr=3729617880
	4 0.004065	10.10.3.13	10.10.3.84	TLSv1.2	
	5 0.004407	10.10.3.84	10.10.3.13	TCP	66 5001 → 41798 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3729617884 TSecr=3729597082
	6 0.004610	10.10.3.84	10.10.3.13	TLSv1.2	3427 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004627	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=287 Ack=3362 Win=35968 Len=0 TSval=3729597082 TSecr=3729617884
	8 0.008965	10.10.3.13	10.10.3.84	TLSv1.2	? 73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.009456	10.10.3.84	10.10.3.13	TCP	66 5001 + 41798 [FIN, ACK] Seq=3362 Ack=294 Win=30080 Len=0 T5val=3729617889 TSecr=3729597087
-	10 0.012614 11 0.012856	10.10.3.13 10.10.3.84	10.10.3.84 10.10.3.13	ТСР ТСР	66 41798 + 5001 [FIN, ACK] Seq+234 Ack=3363 Win=35968 Len=0 TSval=3729597090 TSecr=3729617889 66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090
L					
F	11 0.012856 rame 4: 352 byte	10.10.3.84 s on wire (2816 bit	10.10.3.13 ts), 352 bytes capture	TCP ed (2816 bits)	66 5001 + 41798 [ACK] Seq=3363 Ack-295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090
Fi Et	11 0.012856 rame 4: 352 byte thernet II, Src:	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb),	TCP ed (2816 bits) Dst: fa:16:3e	66 5001 → 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090
F	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 16	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	TCP ed (2816 bits) Dst: fa:16:3e 3.84	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fi Et It	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src 1	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb),	TCP ed (2816 bits) Dst: fa:16:3e 3.84	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont ransport Layer S	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src F ecurity	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10, Port: 41798, Dst Port:	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont ransport Layer S ' TLSV1.2 Record	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src F ecurity Layer: Handshake F	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10.	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fr En Tr Tr	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont ransport Layer S ' TLSv1.2 Record Content Typ	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 11 rol Protocol, Src F ecurity Layer: Handshake f2	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10, Port: 41798, Dst Port:	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fr En Tr Tr	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont ransport Layer S ' TLSV1.2 Record Content Typ Version: TL'	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:cb Version 4, Src: 10 rol Protocol, Src F ecurity Layer: Handshake F	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10, Port: 41798, Dst Port:	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fr En In Tr	11 0.012856 rame 4: 352 byte thernet II, Src: nternet Protocol ransmission Cont ransport Layer S TLSV.12 Record Content Typ Version: TL Length: 281	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:f6 Version 4, Src: 16 rol Protocol, Src f ecurity Layer: Handshake F e: Handshake (22) 5 1.2 (0x0303)	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, Dst: 10.10, Port: 41796, Dst Port: Protocol: Client Hello	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
	11 0.012856 rame 4: 352 byte thernet II, Src: thernet Protocol ransmission Cont ransport Layer S 'TLSVL2 Record Content Typ Version: TU Length: 281 ' Handshake P	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:c6 Version 4, Src: 11 rol Protocol, Src f ecurity Layer: Handshake (22) s 1.2 (0x0303) rotocol: Client Hel	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, 052: 10.10. Port: 41798, Dst Port: Protocol: Client Hello	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)
Fr En In Tr	11 0.012856 rame 4: 352 byte thernet II, Src: thernet Protocol ransmission Cont ransport Layer S 'TLSVL2 Record Content Typ Version: TU Length: 281 ' Handshake P	10.10.3.84 s on wire (2816 bit fa:16:3e:f6:32:c6 Version 4, Src: 11 rol Protocol, Src F ecurity Layer: Handshake (22) S 1.2 (0x0303) rotocol: Client Hell Type: Client Hell	10.10.3.13 ts), 352 bytes capture (fa:16:3e:f6:32:cb), 0.10.3.13, 052: 10.10. Port: 41798, Dst Port: Protocol: Client Hello	TCP ed (2816 bits) Dst: fa:16:3e 3.84 5001, Seq: 1	66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090) e:b0:f3:e6 (fa:16:3e:b0:f3:e6)

Cipher Suites

Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02d) Cipher Suite: TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384 (0xc026)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d) Cipher Suite: TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c)

3. From Server Hello, cipher suite chosen:

TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)

4.1					
	ply a display filter <	Ctrl-/>			
No.	Time	Source	Destination		Length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41798 + 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=3729597078 TSecr=0 WS=128
	2 0.000834	10.10.3.84	10.10.3.13	TCP	74 5001 + 41798 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3729617880 TSecr=3729597078 WS=:
	3 0.000858	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3729597078 TSecr=3729617880
	4 0.004065	10.10.3.13	10.10.3.84	TLSv1.2	
	5 0.004407	10.10.3.84	10.10.3.13	TCP	66 5001 → 41798 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3729617884 TSecr=3729597082
	6 0.004610	10.10.3.84	10.10.3.13		3427 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004627	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=287 Ack=3362 Win=35968 Len=0 TSval=3729597082 TSecr=3729617884
	8 0.008965	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.009456	10.10.3.84	10.10.3.13	TCP	66 5001 → 41798 [FIN, ACK] Seq=3362 Ack=294 Win=30080 Len=0 TSval=3729617889 TSecr=3729597087
	10 0.012614 11 0.012856	10.10.3.13	10.10.3.84 10.10.3.13	TCP	66 41798 → 5001 [FIN, ACK] Seq=294 Ack=3363 Win=35968 Len=0 TSval=3729597090 TSecr=3729617889 66 5001 → 41798 [ACK] Seq=3363 Ack=295 Win=30080 Len=0 TSval=3729617892 TSecr=3729597090
> Fr			bits), 3427 bytes capt		its)
> Et > In > Tr	hernet II, Src: ternet Protocol ansmission Cont	fa:16:3e:b0:f3:e6 Version 4, Src: 10 rol Protocol, Src 1		Dst: fa:16:3e 3.13	its) :f6:32:cb (fa:16:3e:f6:32:cb)
> Fr > Et > In > Tr Y Tr	ternet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSV1.2 Record Content Typ Version: TL Length: 81 Y Handshake P Handshake	<pre>fa:16:3e:b0:f3:e6 Version 4, Src: 10 rol Protocol, Src: 10 ecurity Layer: Handshake f e: Handshake (22) 5 1.2 (0x0303) rotocol: Server Hell = Type: Server Hell</pre>	(fa:16:3e:b0:f3:e6), 8.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	Dst: fa:16:3e 3.13 41798, Seq: 1	its) :f6:32:cb (fa:16:3e:f6:32:cb)
> Fr > Et > In > Tr	hernet II, Src: ternet Protocol ansmission Cont ansport Layer S TLSVL2 Record Content Typ Version: TL Length: 81 * Handshake P Handshake Length: Version: Version: W Random I GMT U Random	fa:16:3e:bb:473:e6 Version 4, Src: 14 rol Protocol, Src 1 ecurity Layer: Handshake f e: Handshake (22) S 1.2 (0x0303) rotocol: Server Hell 77 TIS 1.2 (0x0303) se620555dcf88690515 six Time: Dec 18, 2 Bytes: dcf8869951 ng bytes: dcf8869951	(fa:16:3e:b0:f3:e6), 8.10.3.84, Dst: 10.10. Port: 5001, Dst Port: Protocol: Server Hello	Dst: fa:16:3e: 3.13 41796, Seq: 1, 9 feb50b3a679f62 0 Eastern Stam	1t:) :f6:32:cb (fa:16:3e:f6:32:cb) , Ack: 287, Len: 3361 42221d35dd dard Time
Fr Et In Tr	hernet II, Src ternet Protocol ansmission Cont ansport Layer S TLSv1.2 Record Content Typ Version: TL Length: 81 * Handshake P Handshake Length: Version: * Random: & Random: & Random: GWT U Rando Session :	fa:16:3e:bb:473:e6 Version 4, Src: 11 rol Protocol, Src 1 ecurity Layer: Handshake f e: Handshake (22) rotocol: Server Hell 77 TLS 1.2 (0%8393) S0620555dcf88090515 six Time: Dec 18, 2 m Bytes: dcf8609051 six Time: Dec 18, 2	(fa:16:3e:b0:f3:e6), a.103.34, D5t: 10.10. Port: 5001, Dst Port: Protocol: Server Hello llo io (2) i6d25a044f218f0ace5c7a 66 00:53:25.00000000	Dst: fa:16:3e 3.13 41798, Seq: 1, 9 feb50b3a679f62 0 Eastern Stan afeb50b3a679f6	1ts) 1f6:32:cb (fa:16:3e:f6:32:cb) , Ack: 287, Len: 3361 42221d35dd dard Time 242221d35dd

4. Authentication exchange ends with TLS Alert message (i.e.

authentication fails):

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			e 7 1 其 📃 🔍		
App	oly a display filter <	Ctrl-/>			
o.	Time	Source	Destination	Protocol	length Info
	1 0.000000	10.10.3.13	10.10.3.84	TCP	74 41798 + 5001 [5YN] Seq=0 Win=29200 Len=0 MSS=1460 5ACK_PERM=1 TSval=3729597078 TSecr=0 WS=128
	2 0.000834	10.10.3.84	10.10.3.13	TCP	74 5001 → 41798 [SYN, ACK] Seq=0 Ack=1 Win=28960 Len=0 MSS=1460 SACK_PERM=1 TSval=3729617880 TSecr=3729597078 WS=12
	3 0.000858	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=3729597078 TSecr=3729617880
	4 0.004065	10.10.3.13	10.10.3.84	TLSv1.2	352 Client Hello
	5 0.004407	10.10.3.84	10.10.3.13	TCP	66 5001 -> 41798 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=3729617884 TSecr=3729597082
	6 0.004610	10.10.3.84	10.10.3.13		3427 Server Hello, Certificate, Certificate Request, Server Hello Done
	7 0.004627	10.10.3.13	10.10.3.84	TCP	66 41798 → 5001 [ACK] Seq=287 Ack=3362 Win=35968 Len=0 TSval=3729597082 TSecr=3729617884
	8 0.008965	10.10.3.13	10.10.3.84	TLSv1.2	73 Alert (Level: Fatal, Description: Certificate Unknown)
	9 0.009456	10.10.3.84	10.10.3.13	TCP	66 5001 → 41798 [FIN, ACK] Seq=3362 Ack=294 Win=30080 Len=0 TSval=3729617889 TSecr=3729597087
	10 0.012614 11 0.012856	10.10.3.13 10.10.3.84	10.10.3.84 10.10.3.13	TCP TCP	66 41798 → 5001 [FIN, ACK] Seq=294 Ack=3363 Win=35968 Len=0 TSval=3729597090 TSecr=3729617889 66 5001 + 41798 [ACK] Seq=3363 Ack=295 Win=30000 Len=0 TSval=3729617892 TSecr=3729597090

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

5. Registration request message is not received at Test Harness (Authentication fails)

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Test Equipment

Instrument	Manufacturer	Type No.	Serial No	Calibration Period (months)	Calibration Due
Power Supply	Xantrex	XKW 60-50	E00109863	O/P Mon	-
Signal Analyzer	Agilent	MXA	SSG013930	24 months	2024-04-26
Attenuator	Pasternack	PE7004-10	N/S	O/P Mon	-
Switching Control Unit	Hewlett Packard	11713A	3748A060876	O/P Mon	-
RF Switch Unit	Burnsco	RARFSW 4x1	001	O/P Mon	-
Power Supply	Leader	730-3D	9801135	O/P Mon	-

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Appendix A – EUT & Client Provided Details

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

General EUT Description

Manufacturer	Ericsson
Address Product Name	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden AIR 3268 B48
Product Number	KRD 901 254/1 (with antenna, security unlocked) KRD 901 254/11** (with antenna, security locked) KRD 901 254/3 (CAB/RDNB board for testing purpose, security unlocked) KRD 901 254/31* (CAB/RDNB board for testing purpose, security locked)
	Note*: Tested unit Note**: This will be the marketed, sold unit.
Serial Number(s)	E23E345115
Software Version	CXP9024418/15-R52A165_R13A190 Domain Proxy Software Version ERICdomainproxyservice_CXP9035414 2.52.6
Hardware Version	R1B
Test Specification/Issue/Date	FCC CFR 47 Part 96: 2022

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	SUD
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Technical Description

AIR 3268 B48 is a single-band TDD Antenna Integrated Radio unit with 32 transmitters and 32 receivers and 64 dual-polarized antenna elements supporting 3550-3700MHz. It has an enhanced Common Public Radio Interface (eCPRI) and 16/8 downlink/uplink layer multi-user MIMO supporting LTE, and is NR prepared.

The Equipment Under Test (EUT) is shown in the photograph below. A full technical description

can be found in the Manufacturer's documentation.



EUT Configuration

Please see Appendix B for close up pictures of the unit as configured during testing Cables and earthing when applicable were connected as per manufacturer's specification.

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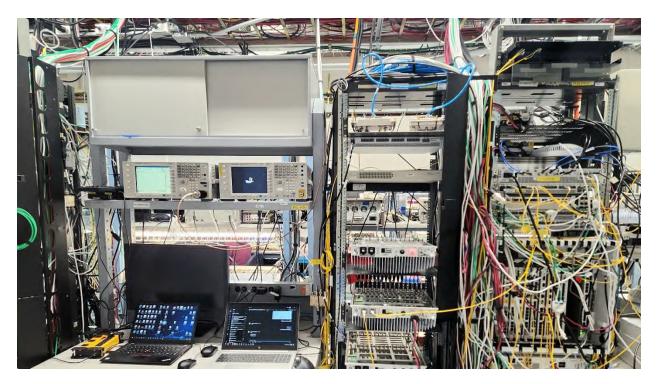
Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TUV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Appendix B – EUT, Peripherals, and Test Setup Photos

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Client	Ericsson	
Product	KRD 901 254 Air 3268 B48 (3550-3700MHz)	TÜV
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	Canada

Test setup



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