

Test Report

As per

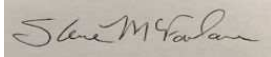
FCC Part 96 SAS requirements (CBRS Test Plan)

on the

**Ericsson Remote Radio Unit KRY 901 537/1 DOT
2256 B48B41B25B66 (3550-3700MHz)
KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-
3700MHz)**

Issued by:
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1280 Teron Rd,
Ottawa, ON K2K 2C1
Canada

Steve McFarlane
Test Personnel



Scott Drysdale
Report Reviewer



**Add value.
Inspire trust.**

Testing produced for

Ericsson Canada

See Appendix A for full
client & EUT details.



Testing Laboratory
Certificate #2955.02



Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

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

Report Scope

This report addresses the EMC verification testing and test results of the **KRY 901 537/2 DOT 2266 B48 (3550-3700MHz)** 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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Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Summary

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

Equipment Under Test (EUT)	KRY 901 537/2 DOT 2266 B48B41B25B666 (3550-3700MHz) Note: Non-Tested Variant Dot 2256 B48B41B25B666 KRY 901 537/1 (See Appendix A Technical Description for similarity description)
EUT passed all tests performed	Yes
Tests conducted by	Steve McFarlane


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

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


Test Results Summary

Section as per Working Document WINNF-TS-0122


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	--	X	WINNF.FT.D.R EG.2	Domain Proxy Multi-Step registration	Monitor for 60 seconds after REG message sent. No transmission during test.	P
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.	P
6.1.4.1.7	X	X	WINNF.FT.C.R EG.7	Registration due to change of an	Test waits until transmission starts, then trigger an	N/A

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


				installation parameter	installationParam change. <ul style="list-style-type: none"> Record time at which transmission stops. Time must be within 60 seconds of the installationParam change taking effect. 	
6.1.4.2.1	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.	P
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.	P
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.	P
6.1.4.2.7	X	--	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.	P
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.	P
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.	P
6.1.4.3.1	X	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.	P
6.3.4.2.2	X	X	WINNF.FT.C.G RA.2	Unsuccessful Grant responseCode=401 (GRANT_CONFLICT)	Monitor for 60 seconds after REG message sent. No transmission during test.	P
6.4.4.1.1	X	--	WINNF.FT.C.H BT.1	Heartbeat Success Case (first Heartbeat Response)	Monitor RF from start of test. Ensure that: <ul style="list-style-type: none"> Transmission does not start until time of first 	N/A

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					<p>heartbeat response or after.</p> <ul style="list-style-type: none"> After transmission starts, measure that transmission is within the granted channel (frequencyLow, frequencyHigh) 	
6.4.4.1.2	--	X	WINNF.FT.D.H BT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	<p>Monitor RF from start of test. Ensure that:</p> <ul style="list-style-type: none"> Transmission does not start until time of first heartbeat response or after. After transmission starts, measure that transmission is within the granted channel (frequencyLow, frequencyHigh) 	P
6.4.4.2.1	X	X	WINNF.FT.C.H BT.3	Heartbeat responseCode=105 (DEREGISTER)	<p>Monitor RF transmission. Ensure that:</p> <ul style="list-style-type: none"> CBSD stops transmission within 60 seconds of the heartbeatResponse which contains 	P

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					responseCode = 105	
6.4.4.2.2	X	--	WINNF.FT.C.H BT.4	Heartbeat responseCode=500 (TERMINATED_GRANT)		N/A
6.4.4.2.3	X	X	WINNF.FT.C.H BT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	Monitor RF transmission from start of test. Ensure there is no transmission during the test	P
6.4.4.2.4	X	X	WINNF.FT.C.H BT.6	Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission within 60 seconds of heartbeatResponse which contains responseCode=501 	P
6.4.4.2.5	X	X	WINNF.FT.C.H BT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAMETER)	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission within 60 seconds of heartbeatResponse which contains responseCode=502 	P
6.4.4.2.6	--	X	WINNF.FT.D.H BT.8	Domain Proxy Heartbeat responseCode=500 (TERMINATED_GRANT)	Monitor RF transmission. CBSDs will have different behavior: <ul style="list-style-type: none"> • CBSD1: will continue to transmit to 	P

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					<p>end of test (this is not a pass/fail criteria, but check)</p> <ul style="list-style-type: none"> • CBSD2: must stop transmission within 60 seconds of being sent heartbeatResponse with responseCode = 500 	
6.4.4.3.1	X	X	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	P
6.4.4.3.2	X	X	WINNF.FT.C.H BT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Monitor RF transmission. Verify: <ul style="list-style-type: none"> • CBSD must stop transmission within transmitExpirationTime+60 seconds, where transmitExpirationTime is from last successful heartbeatResponse message 	P
6.5.4.2.1	X	--	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	No RF monitoring	P

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				Response contains measReportConfig		
6.5.4.2.3	X	X	WINNF.FT.C.MES.3	Grant Response contains measReportConfig	No RF monitoring	P
6.5.4.2.4	X	--	WINNF.FT.C.MES.4	Heartbeat Response contains measReportConfig	No RF monitoring	N/A
6.5.4.2.5	--	X	WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains measReportConfig	No RF monitoring	P
6.6.4.1.1	X	--	WINNF.FT.C.RLQ.1	Successful Relinquishment	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission at any time prior to sending the relinquishmentRequest message. 	N/A
6.6.4.1.2	--	X	WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission at any time prior to sending the relinquishmentRequest message. 	P
6.7.4.1.1	X	--	WINNF.FT.C.DRG.1	Successful Deregistration	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission at any time prior to sending the relinquishmentRequest message or deregistrationRequest 	N/A


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					message (whichever is sent first)	
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 time prior to sending the relinquishmentRequest message or deregistrationRequest message (whichever is sent first)	P
6.8.4.1.1	X	X	WINNF.FT.C.SCS.1	Successful TLS connection between UUT and SAS Test Harness	No RF transmission during test Check the tcpdump for the TLS information	P
6.8.4.2.1	X	X	WINNF.FT.C.SCS.2	TLS failure due to revoked certificate	No RF transmission during test Check the tcpdump for the TLS information	P
6.8.4.2.2	X	X	WINNF.FT.C.SCS.3	TLS failure due to expired server certificate	No RF transmission during test Check the tcpdump for the TLS information	P
6.8.4.2.3	X	X	WINNF.FT.C.SCS.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	P
6.8.4.2.4	X	X	WINNF.FT.C.SCS.5	TLS failure when certificate at the SAS Test Harness is corrupted	No RF transmission during test Check the tcpdump for the TLS information	P
7.1.4.1.1	X	X	WINNF.PT.C.H BT	UUT RF Transmit Power Measurement	Power Spectral Density test case.	P

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					<p>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.</p>	
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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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Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Notes, Justifications, or Deviations

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

Testing was performed at the client site, as per customer request

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.


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-V1.0.2
 - 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-V1.0.2, 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-V1.0.2, 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 mark. 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 UTC in the logs.

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


- WINNF-TS-0122 Conformance and Performance Test Technical Specification;
Version V1.0.2 CBSD/DP as Unit Under Test (UUT)
25 November 2020 Working Document

- ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

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Document Revision Status

Revision 001:	April 24, 2023	First Draft
Revision 002:	May 01, 2023	Second Draft
Revision 003:	May 03, 2023	Third Draft

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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 performed at the client site, as per customer request.

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 (°C)	Humidity (%)	Pressure (kPa)
April 18-19, 2023	All	SM	20-23	40-55	99.58

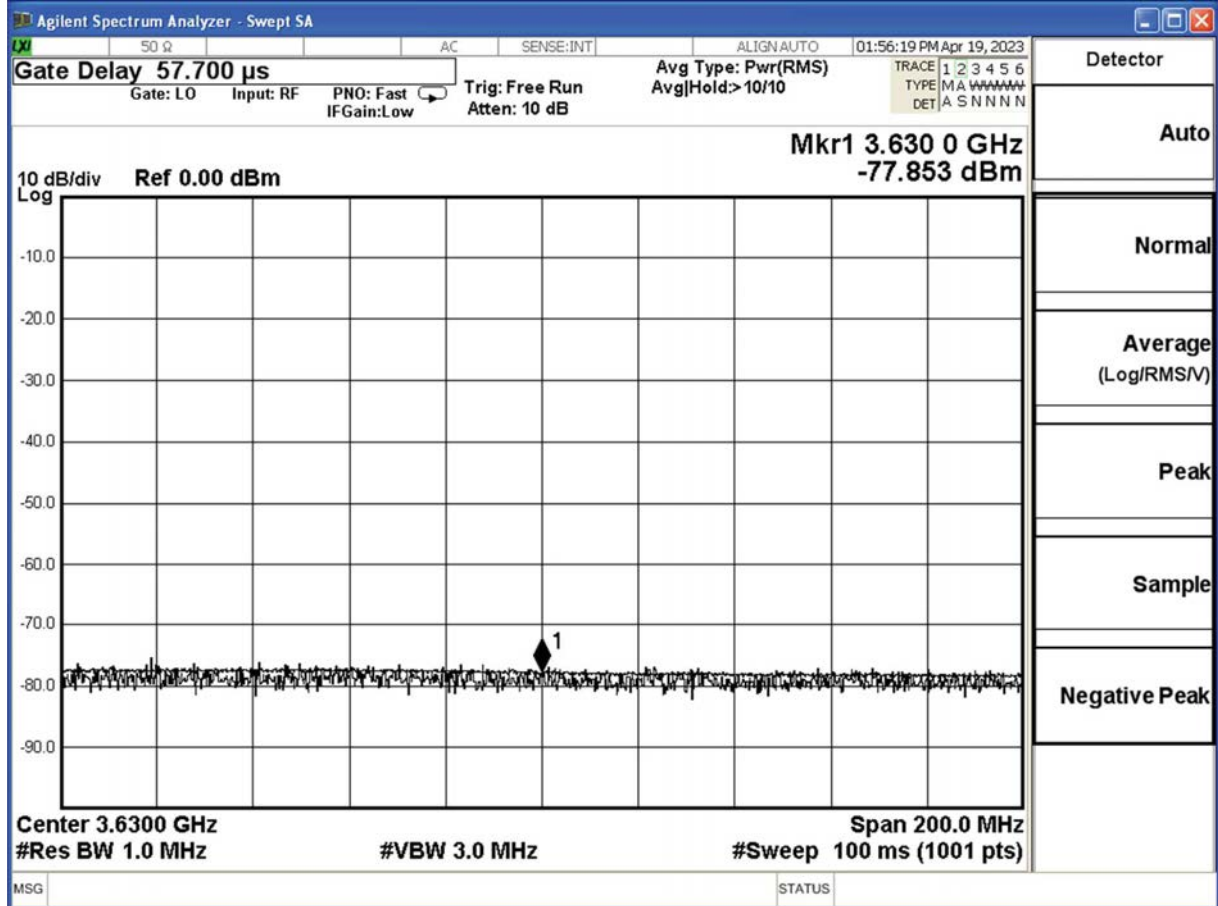
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Detailed Test Results Section

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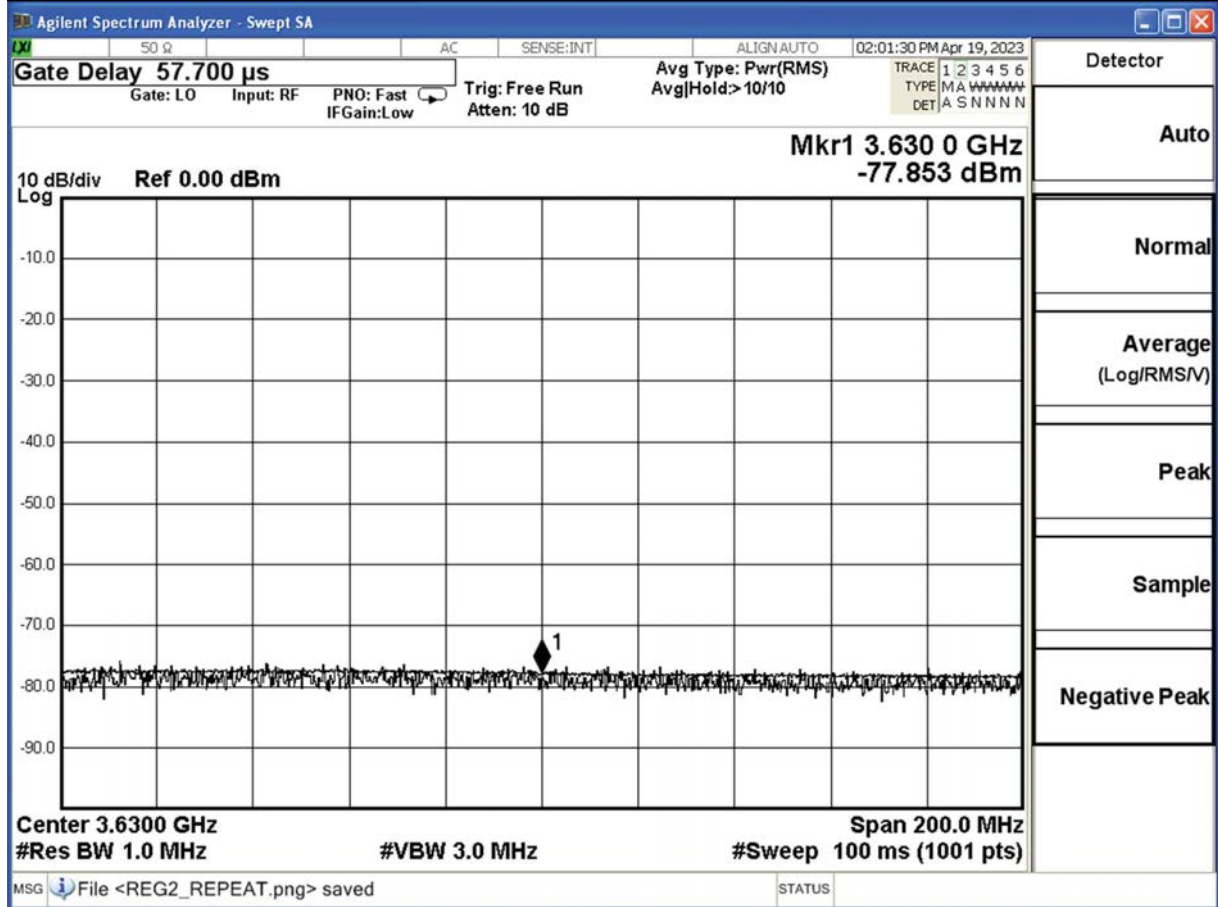
Authorization transmit after it receives authorization from a SAS.


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	P



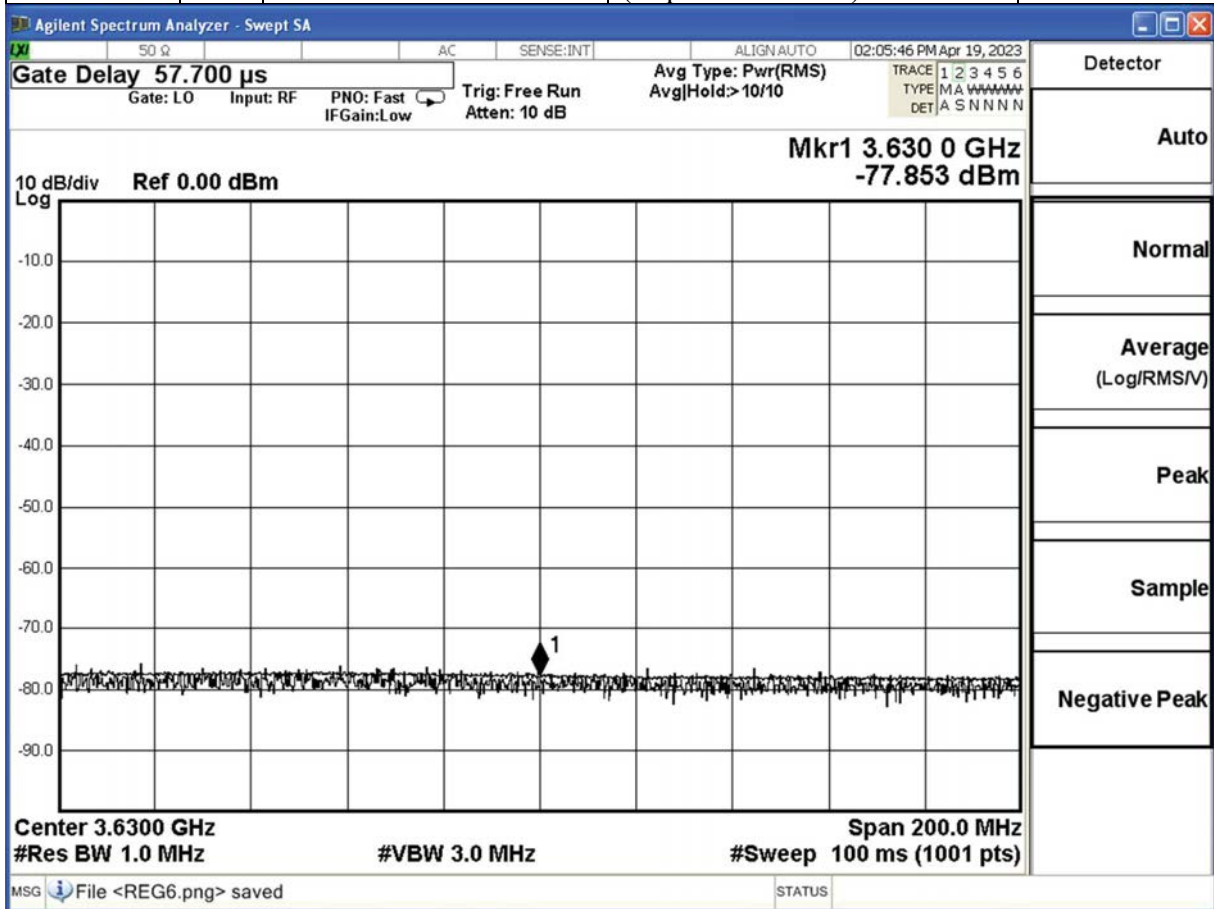
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6.1.4.1.6	X	WINNF.FT.D.REG.6	Domain Proxy Single-Step registration for CBSD with CPI signed data	P
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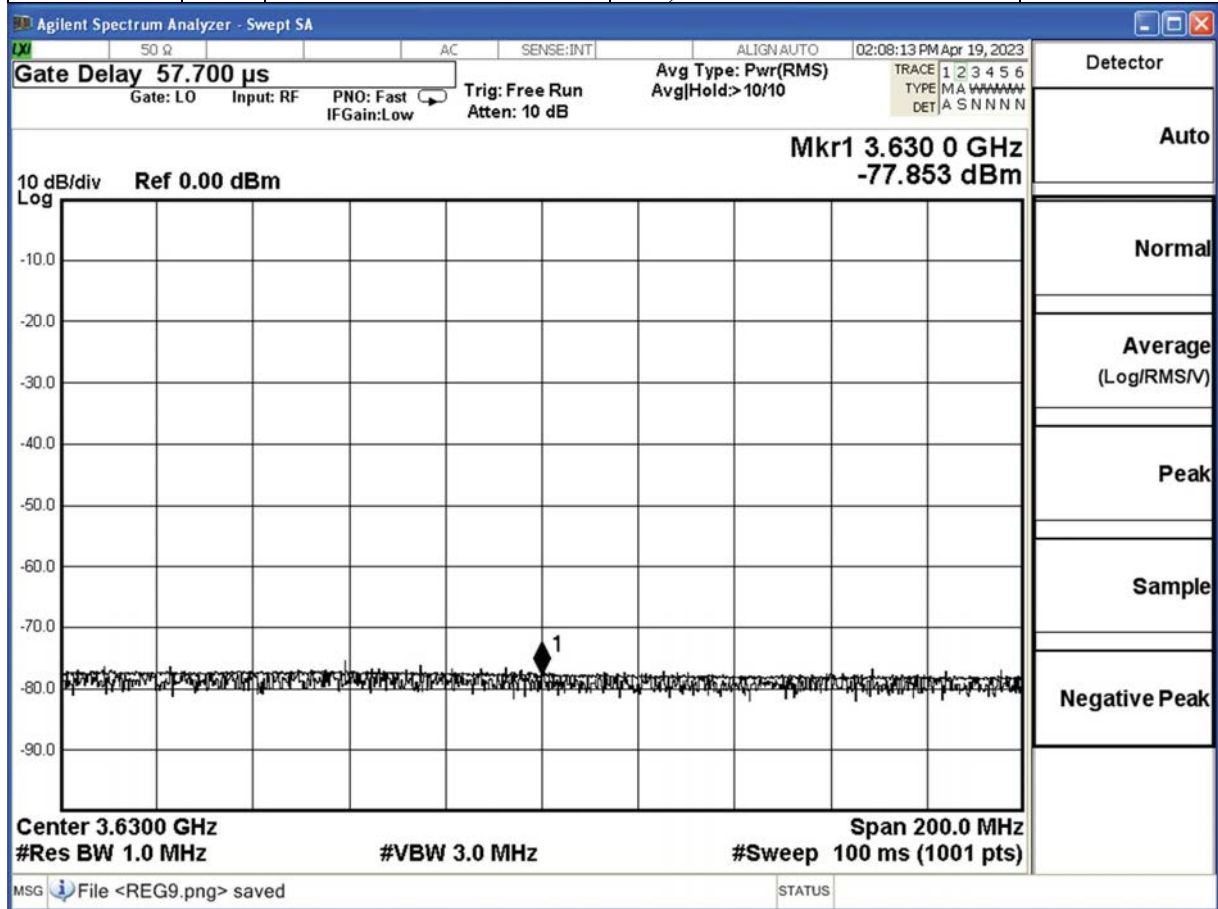
Client	Ericsson	
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6.1.4.2.2	X	WINNF.FT.D.REG.9	Domain Proxy Missing Required parameters (responseCode 102)	P
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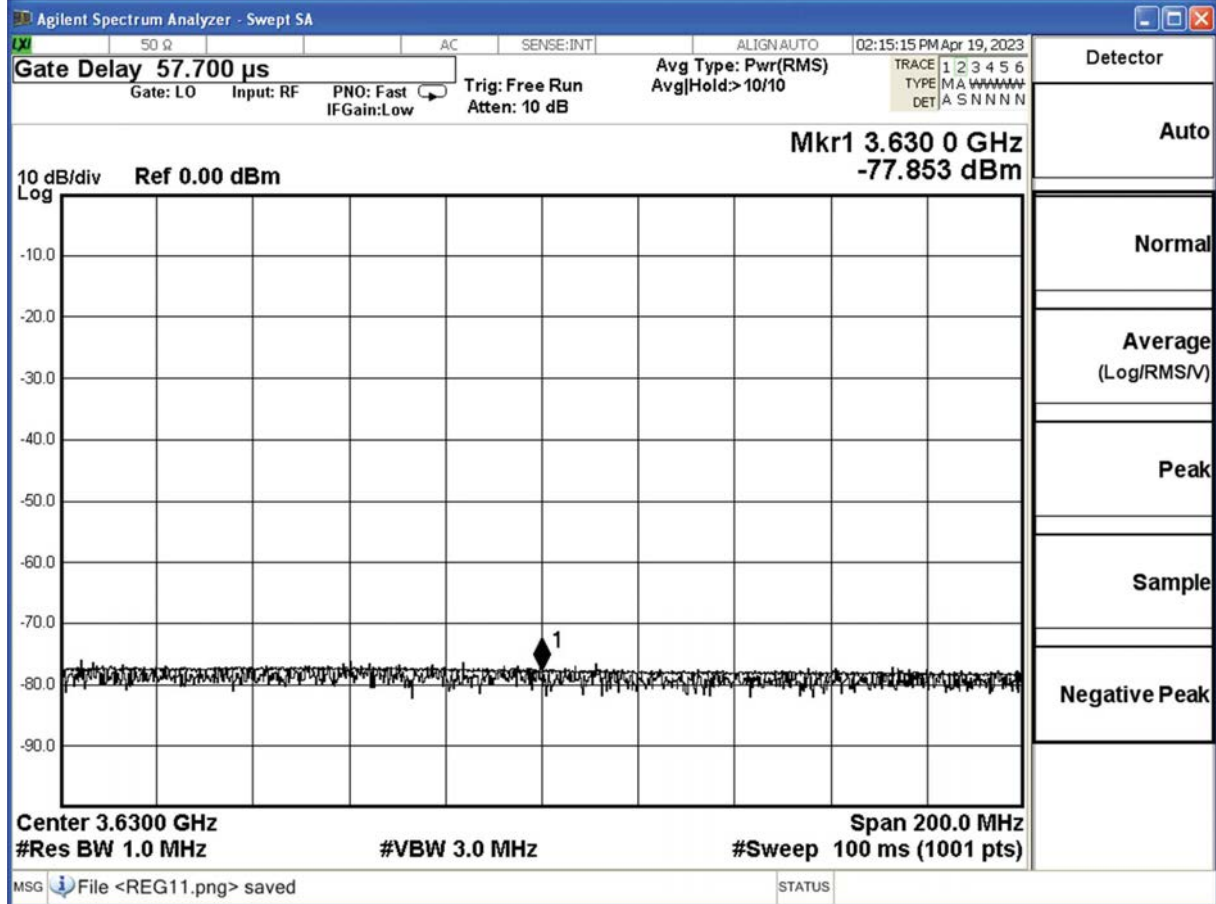
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6.1.4.2.4	X	WINNF.FT.D.REG.11	Domain Proxy Pending registration (responseCode 200)	P
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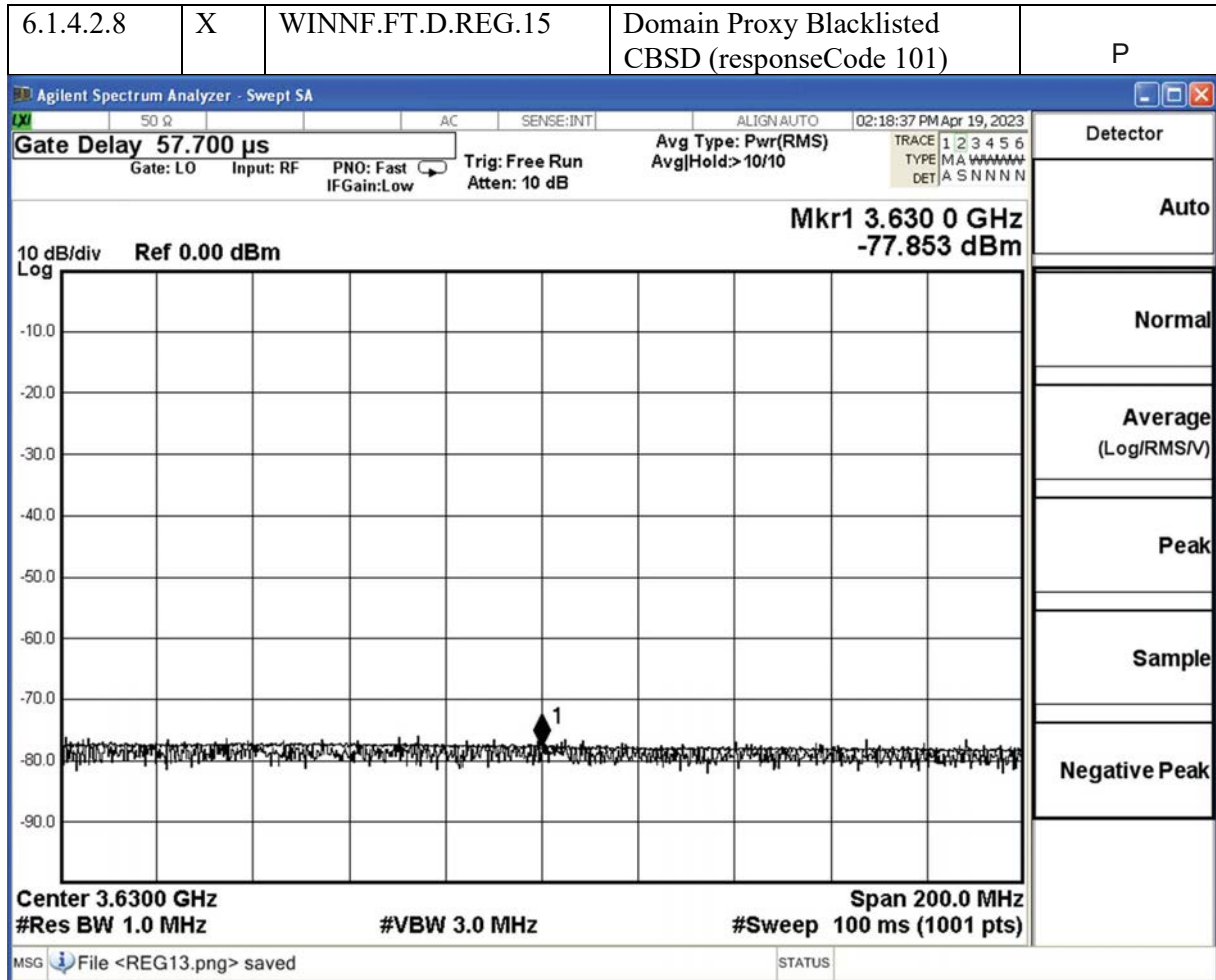



Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

6.1.4.2.6	X	WINNF.FT.D.REG.13	Domain Proxy Invalid parameters (responseCode 103)	P
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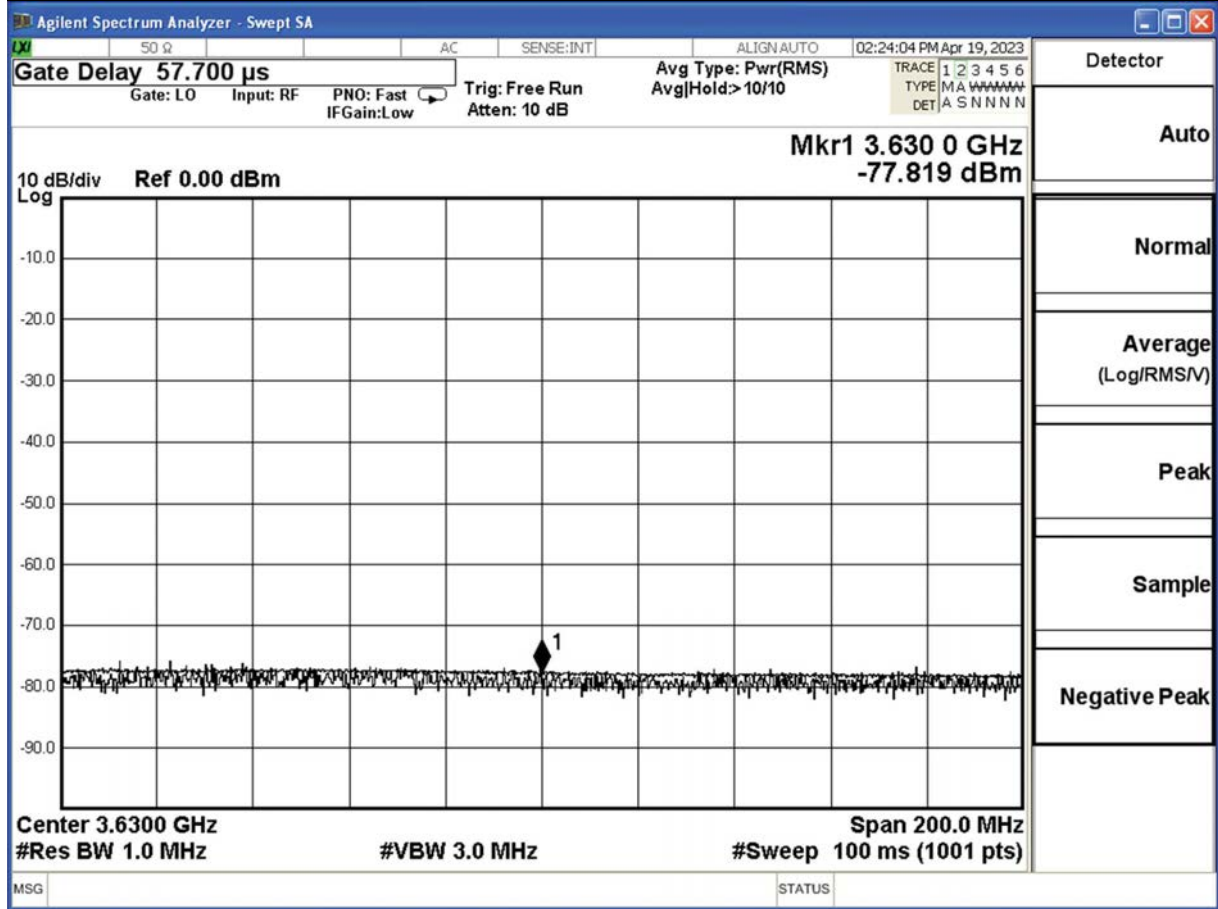



Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

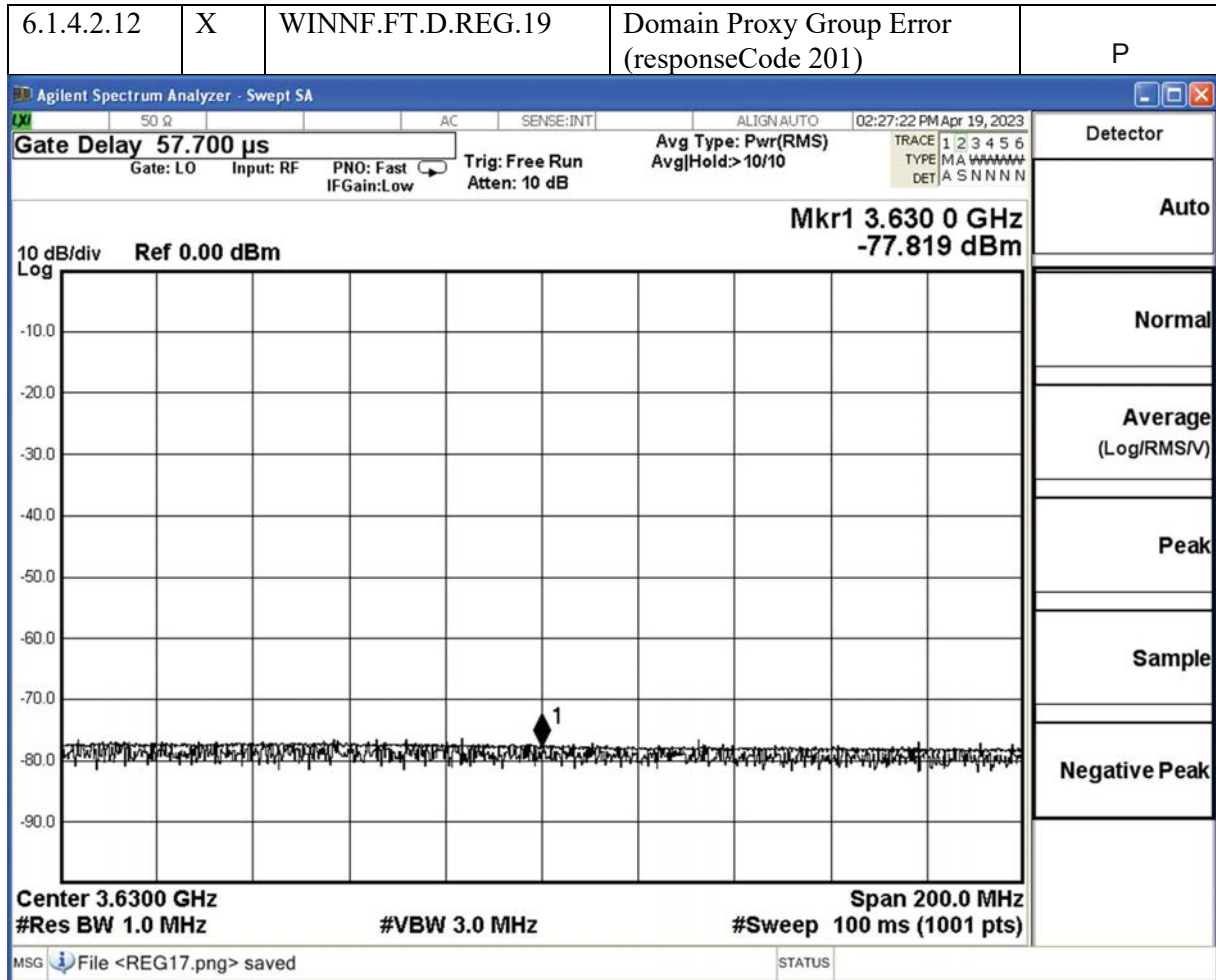



Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

6.1.4.2.10	X	WINNF.FT.D.REG.17	Domain Proxy Unsupported SAS protocol version responseCode 100)	P
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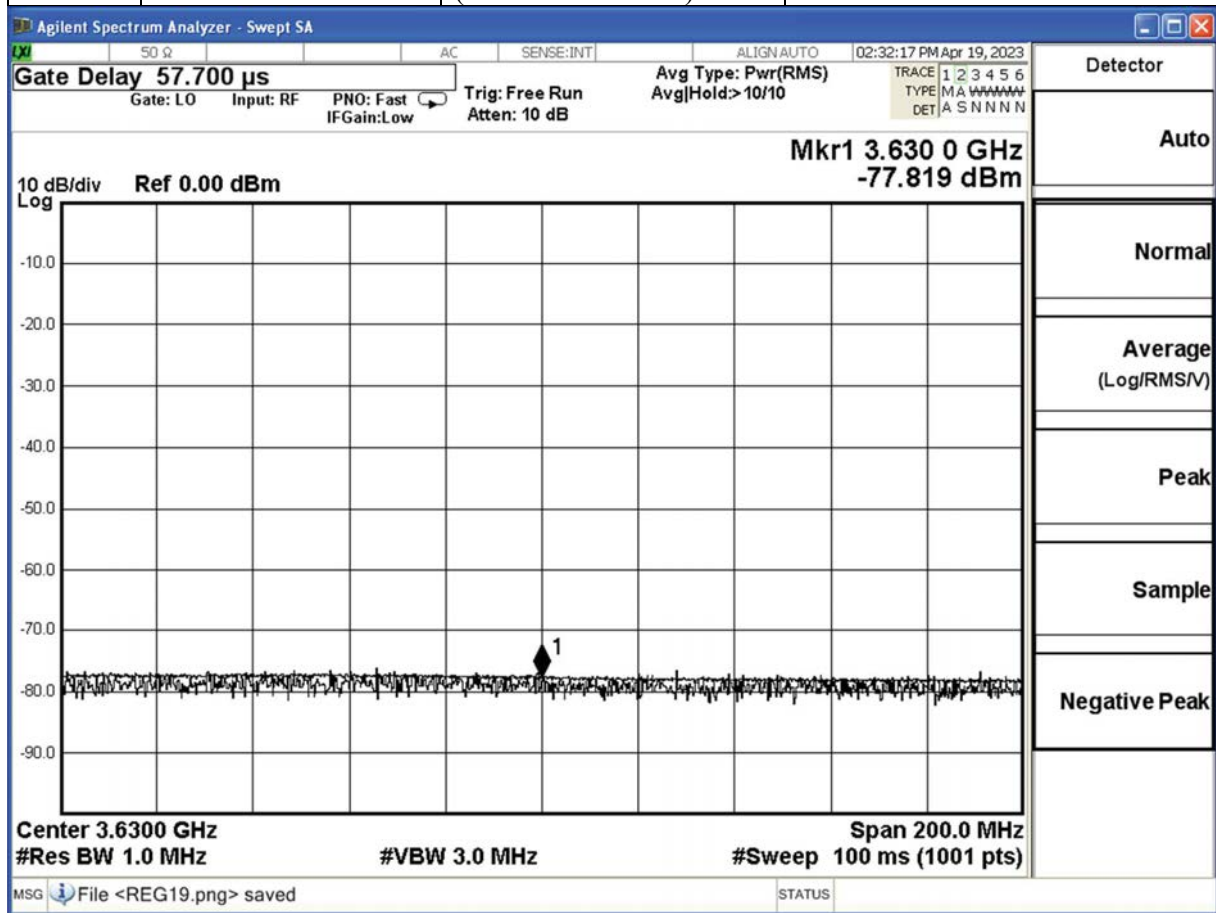
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	




Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

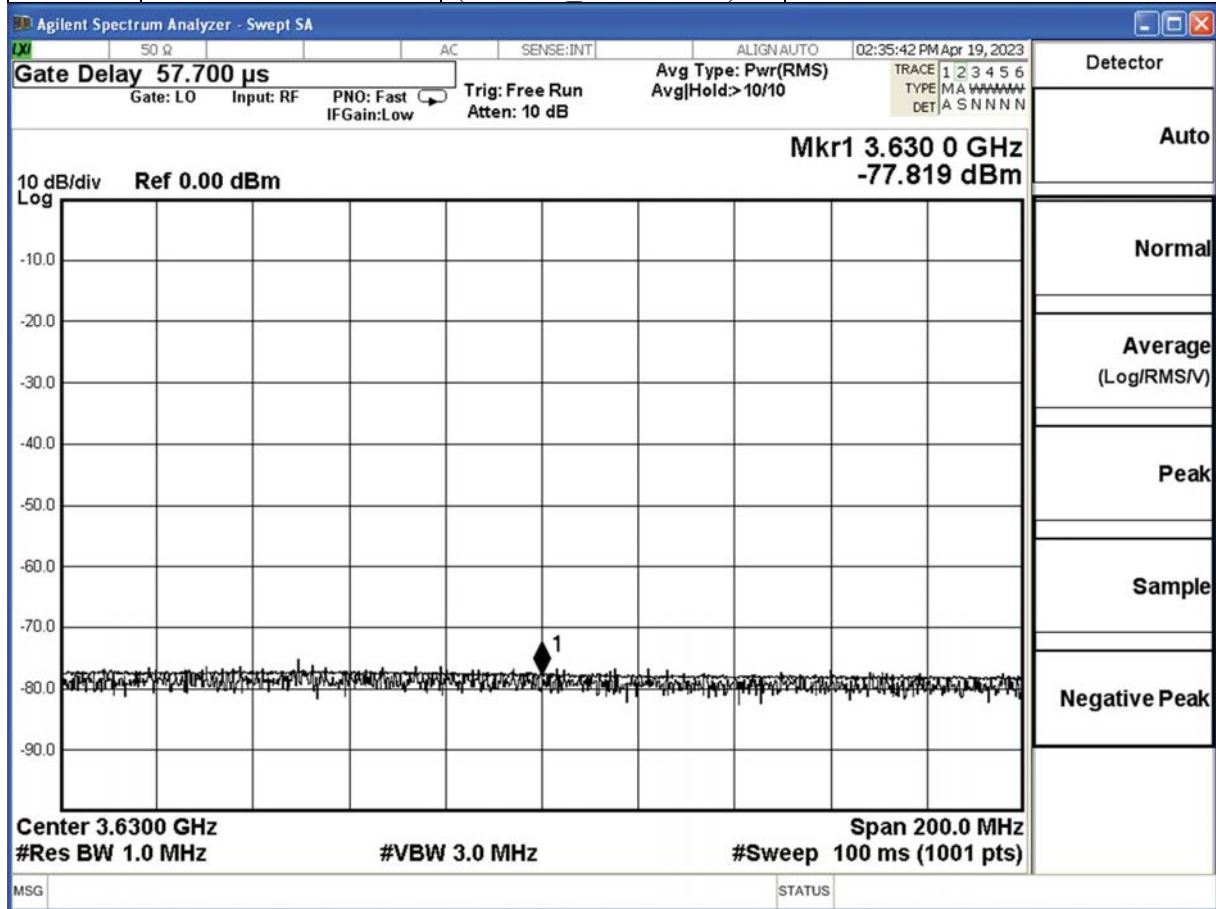
Check the device registration and authorization with the SAS, Confirm that the device changes its operating power and/or channel in response to a command from the SAS and Confirm that the device correctly configures based on the different license classes.


6.3.4.2.1	WINNF.FT.C.GRA.1	Unsuccessful Grant responseCode=400 (INTERFERENCE)	Monitor for 60 seconds after REG message sent. No transmission during test.	P
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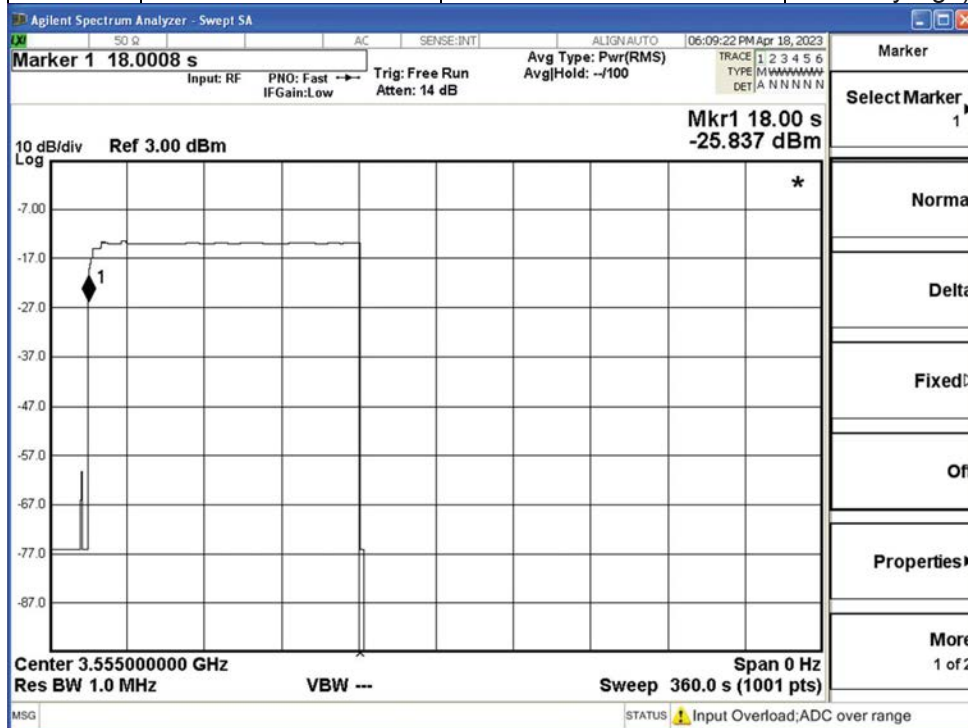
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.3.4.2.2	WINNF.FT.C.GRA.2	Unsuccessful Grant responseCode=401 (GRANT CONFLICT)	Monitor for 60 seconds after REG message sent. No transmission during test.	P
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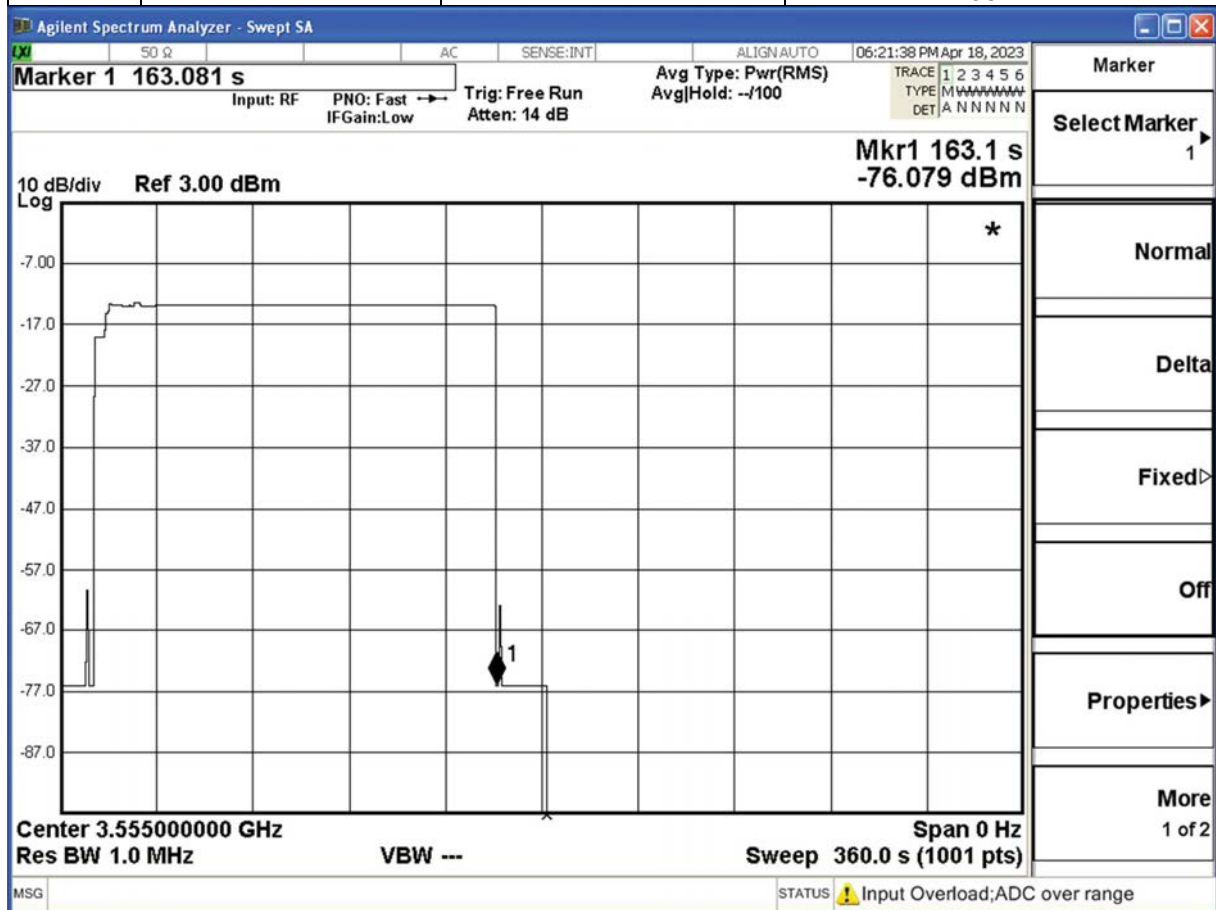
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.1.2	WINNF.FT.D.HBT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	Monitor RF from start of test. Ensure that: <ul style="list-style-type: none"> • Transmission does not start until time of first heartbeat response or after. • After transmission starts, measure that transmission is within the granted channel (frequencyLow, frequencyHigh) 	P
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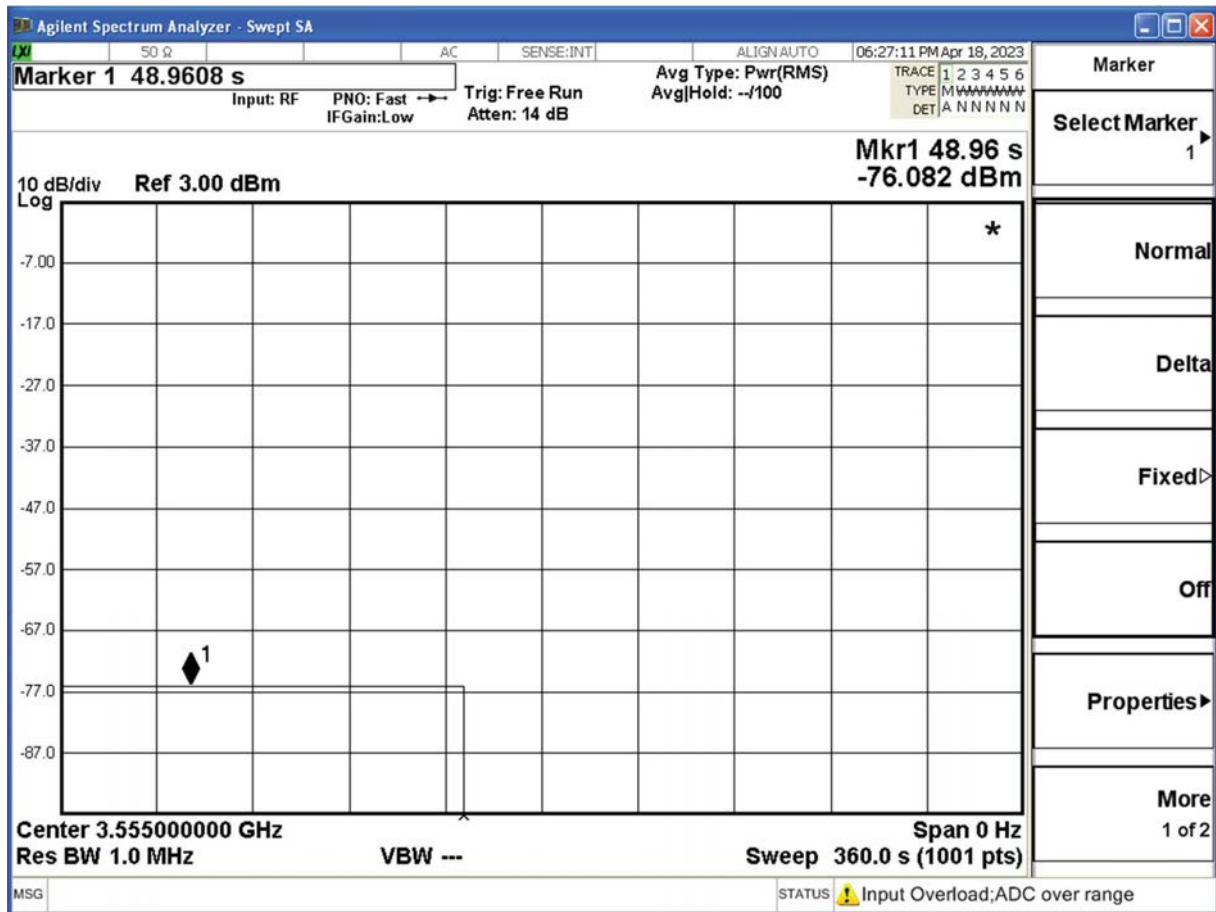
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.2.1	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	Monitor RF transmission. Ensure that: <ul style="list-style-type: none"> • CBSD stops transmission within 60 seconds of the heartbeatResponse which contains responseCode = 105 	P
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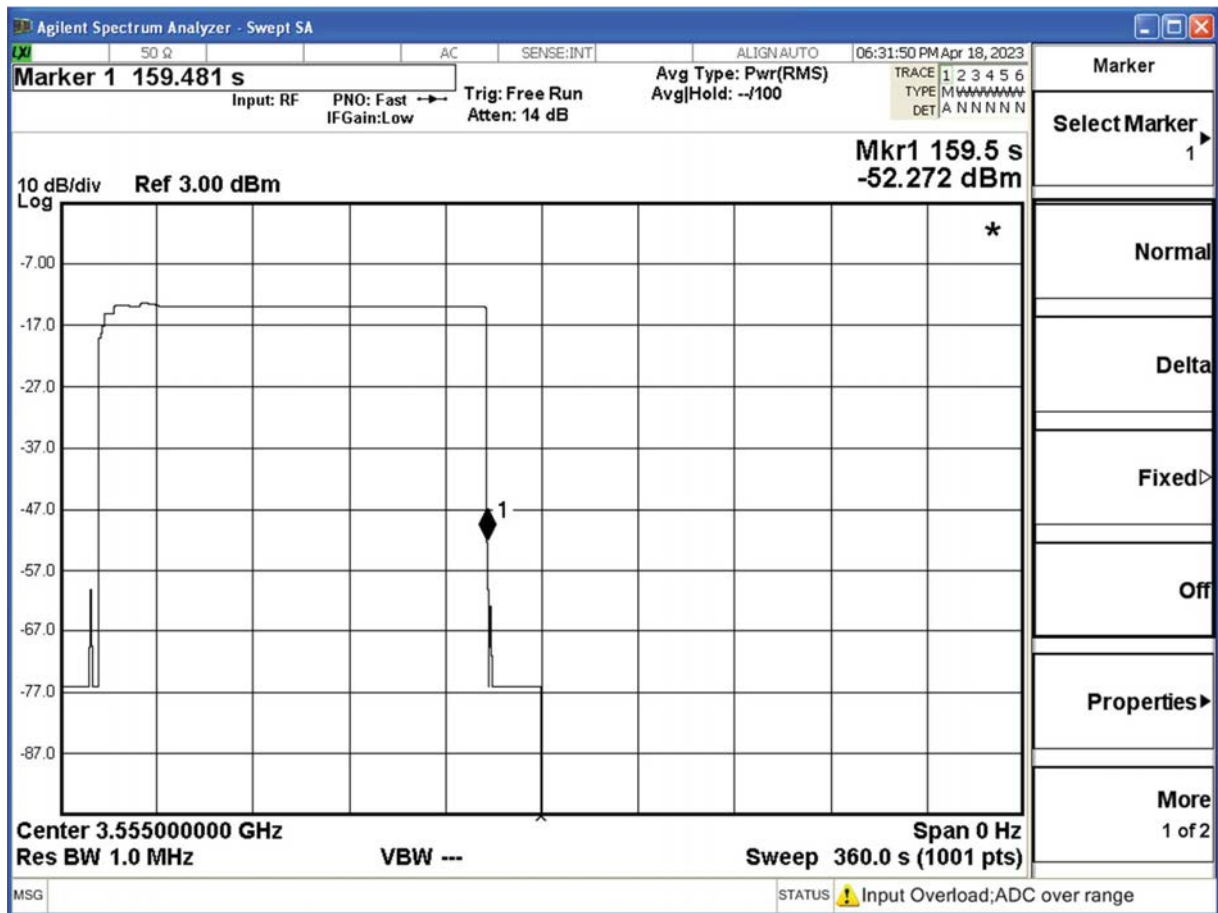
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.2.3	WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANT) in First Heartbeat Response	Monitor RF transmission from start of test. Ensure there is no transmission during the test	p
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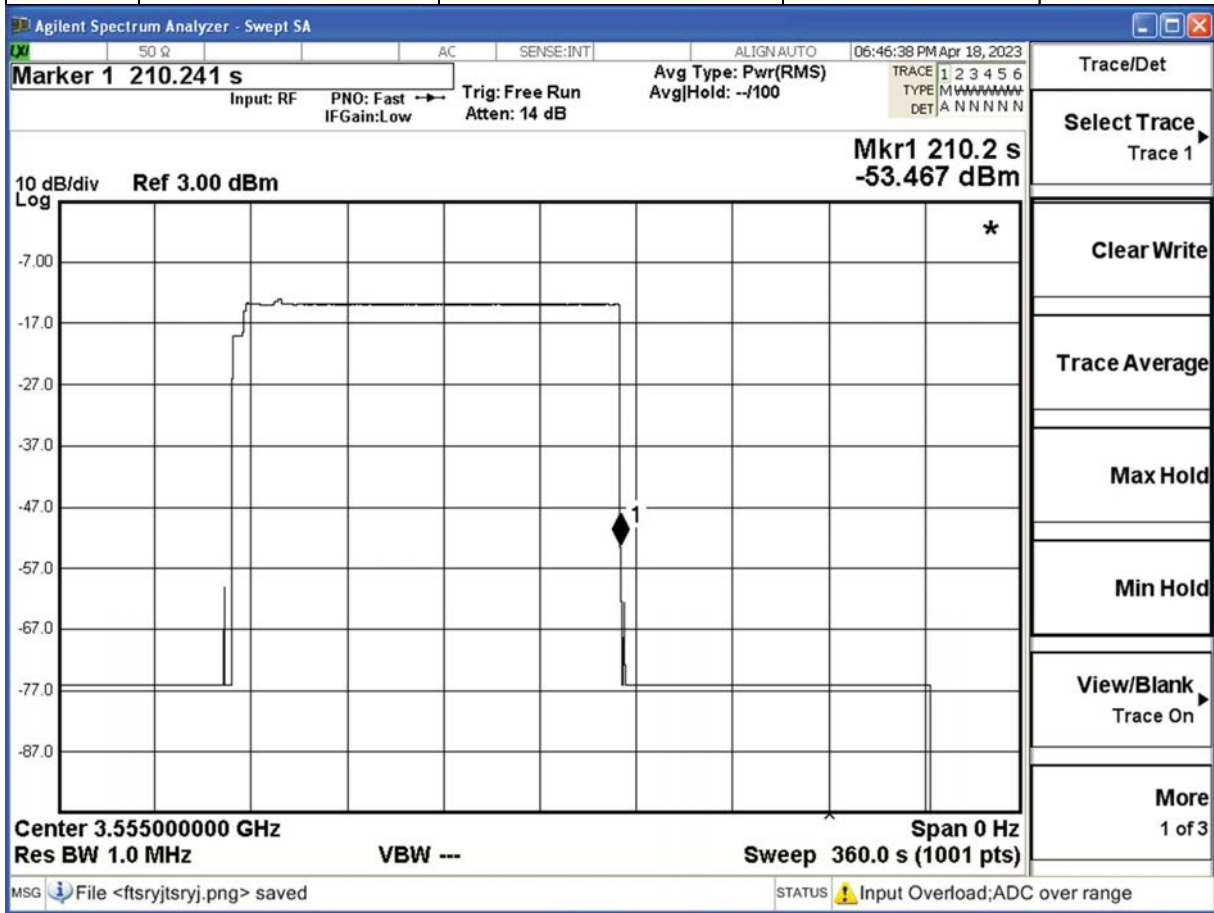
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.2.4	WINNF.FT.C.HBT.6	Heartbeat responseCode=501 (SUSPENDED_GRANT) in Subsequent Heartbeat Response	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission within 60 seconds of heartbeatResponse which contains responseCode=501 	p
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Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

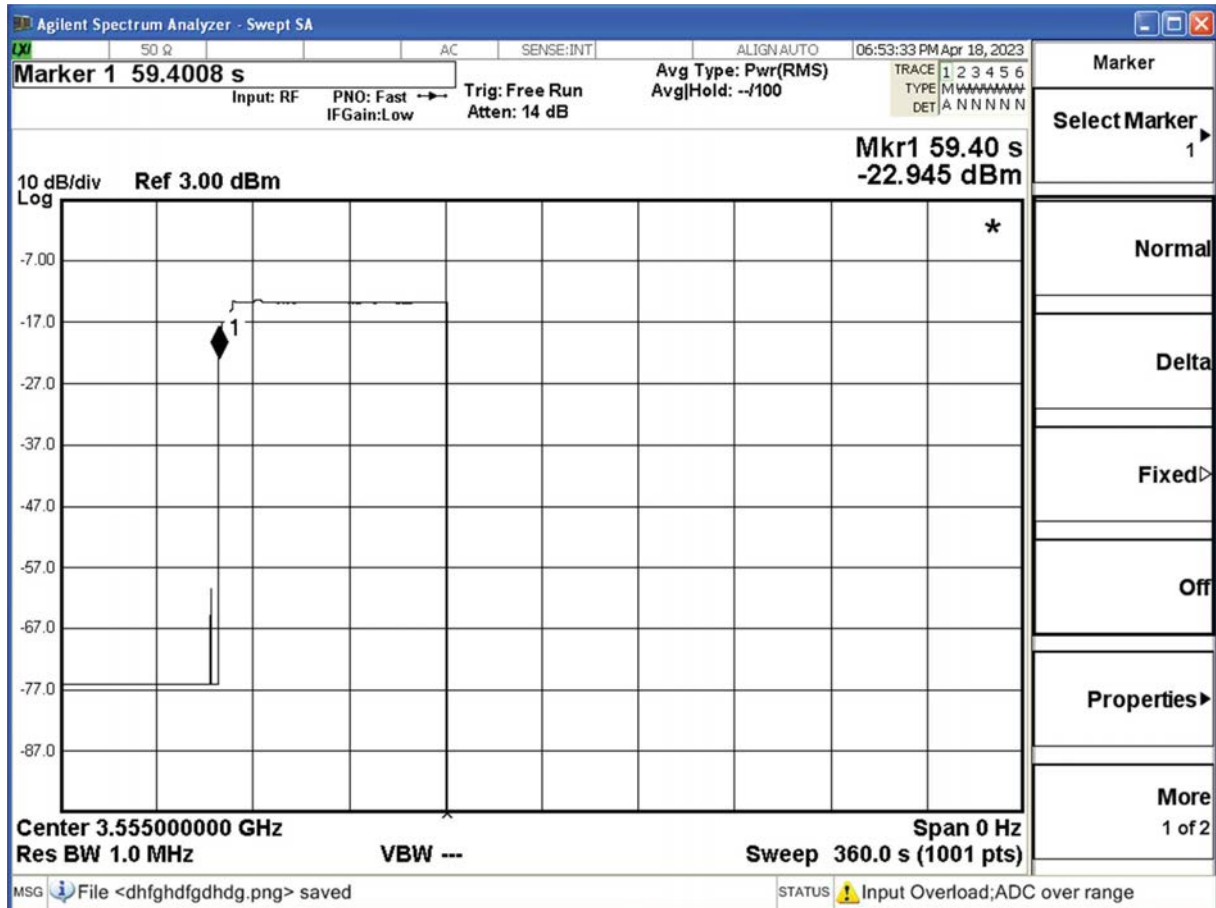
6.4.4.2.5	WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAM)	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission within 60 seconds of heartbeatResponse which contains responseCode=502 	P
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Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

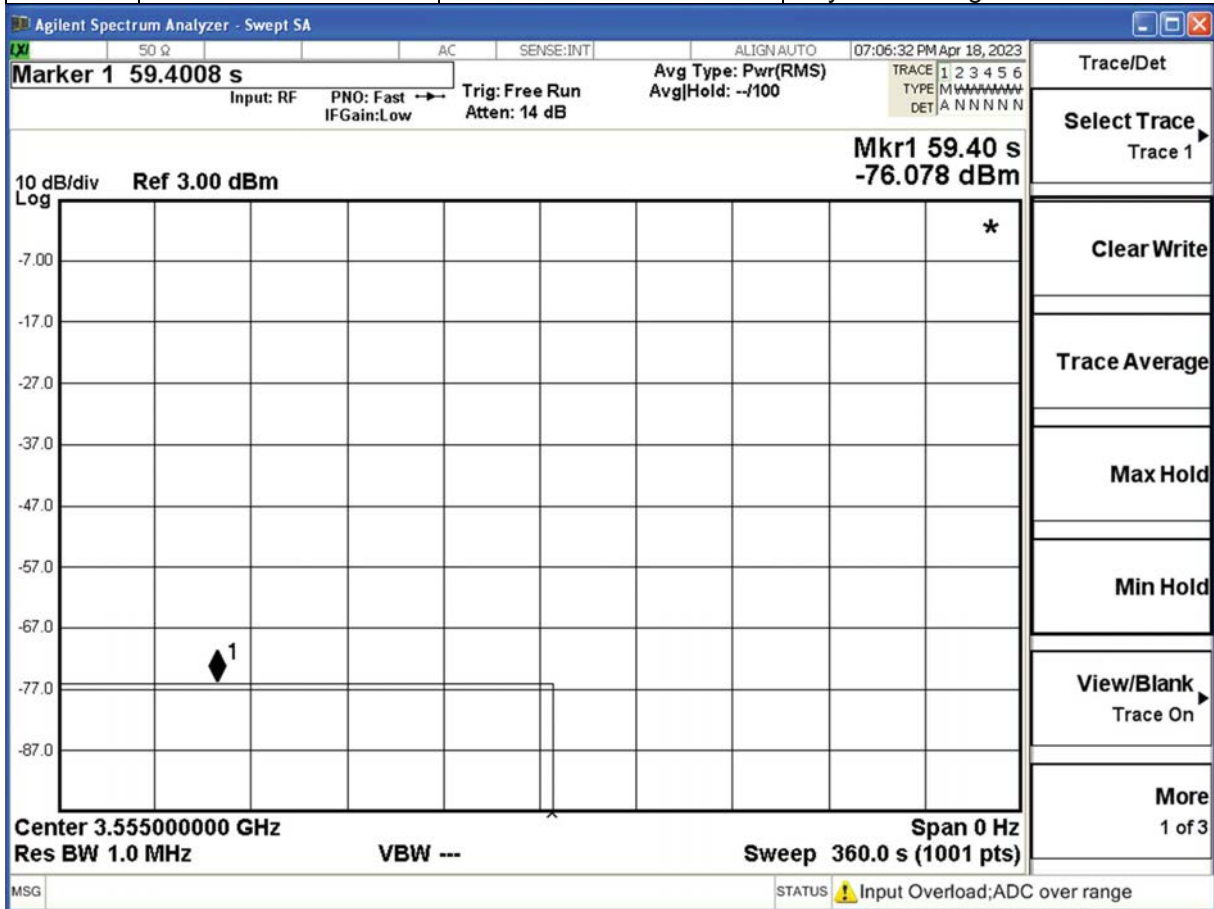
6.4.4.2.6	--	X	WINNF.FT.D.H BT.8	Domain Proxy Heartbeat responseCode=500 (TEMINATED_GR ANT)	Monitor RF transmission. CBS D s will have different behavior: <ul style="list-style-type: none"> • CBS D1: will continue to transmit to end of test (this is not a pass/fail criteria, but check) • CBS D2: must stop transmission within 60 seconds of being sent heartbeatRe sponse with responseCod e = 500 	P
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Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	



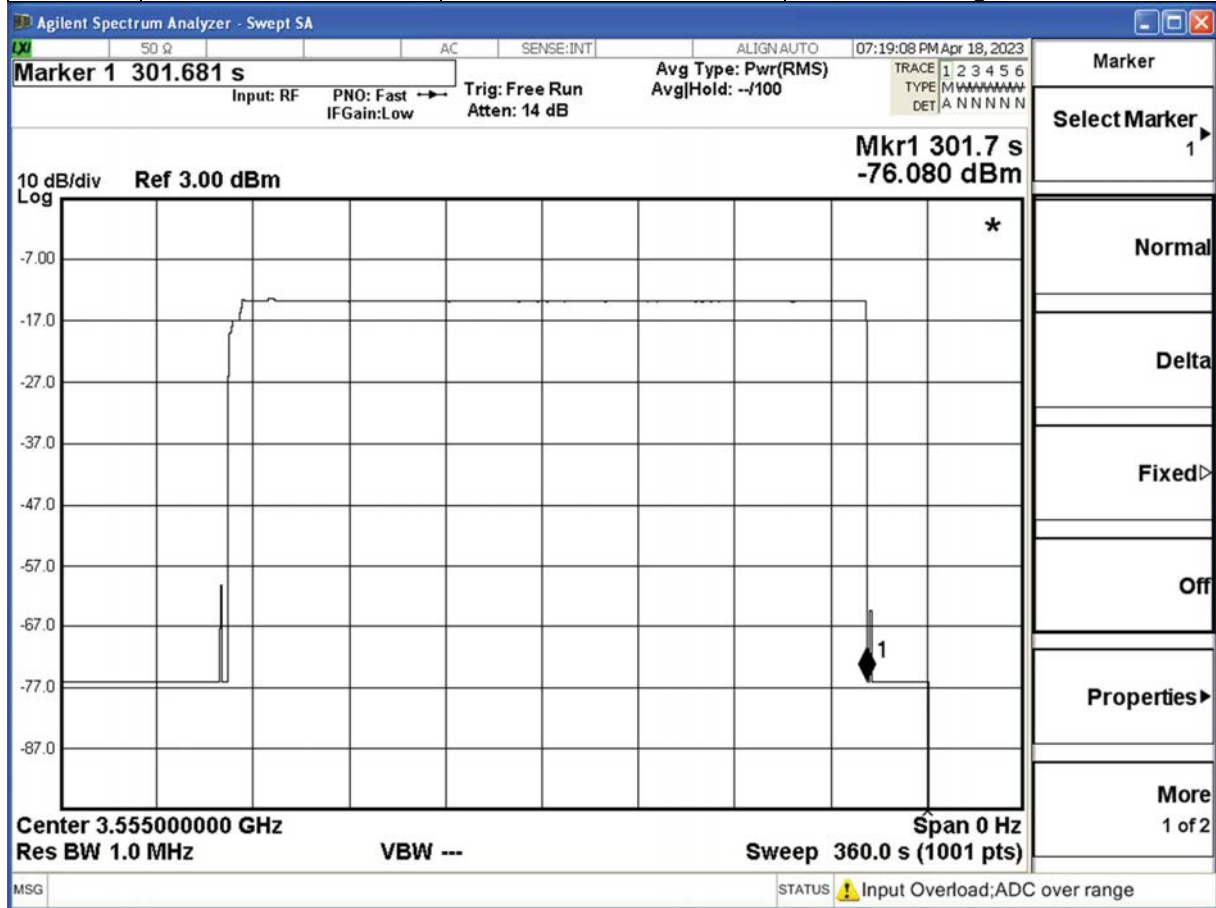
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.3.1	WINNF.FT.C.HBT.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	P
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Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.4.4.3.2	WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Monitor RF transmission. Verify: <ul style="list-style-type: none"> • CBSD must stop transmission within transmitExpireTime+60 seconds, where transmitExpireTime is from last successful heartbeatResponse message 	P
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Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.5.4.2.2	WINNF.FT.D.MES.2	Domain Proxy Registration Response contains measReportConfig	No RF monitoring	P
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Pass saw “measreportconfig” in logs

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.5.4.2.3	WINNF.FT.C.MES.3	Grant Response contains measReportConfig	No RF monitoring	P
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Pass saw “measreportconfig” in logs

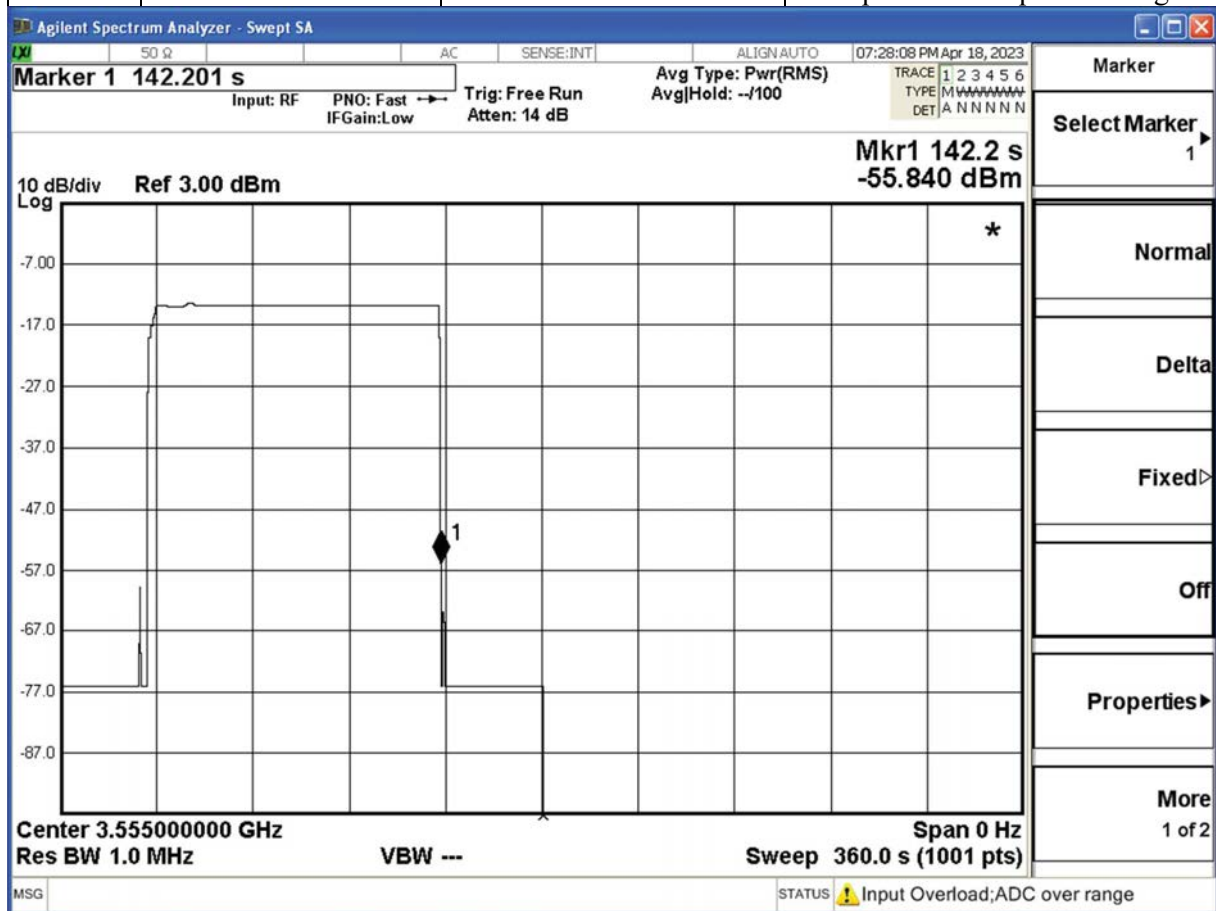
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.5.4.2.5	WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains measReportConfig	No RF monitoring	P
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Pass saw “measreportconfig” in logs

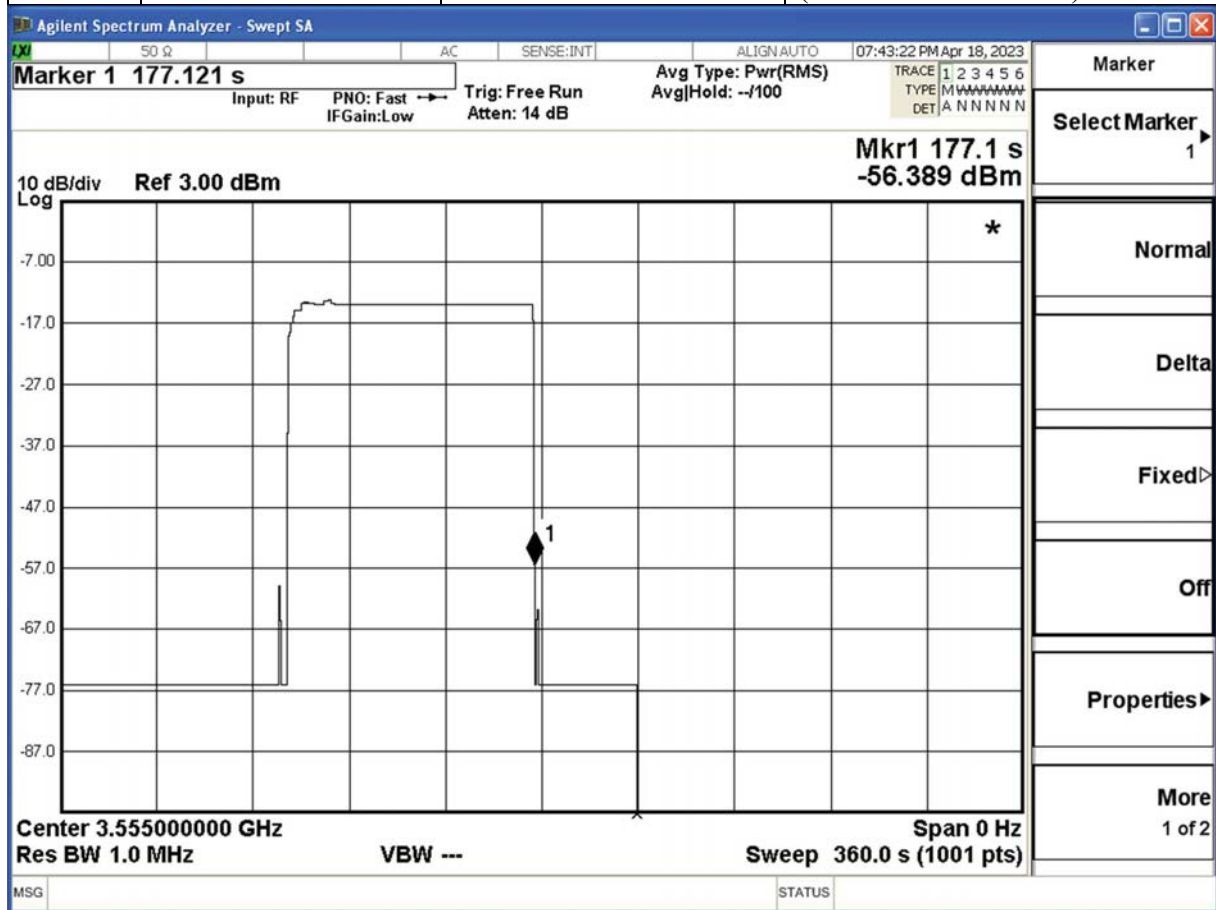
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.6.4.1.2	WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission at any time prior to sending the relinquishmentRequest message. 	P
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Client	Ericsson	 TUV SUD Canada
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


6.7.4.1.2	WINNF.FT.D.DRG.2	Domain Proxy Successful Deregistration	Monitor RF transmission. Ensure: <ul style="list-style-type: none"> • CBSD stops transmission at any time prior to sending the relinquishment Request message or deregistration Request message (whichever is sent first) 	P
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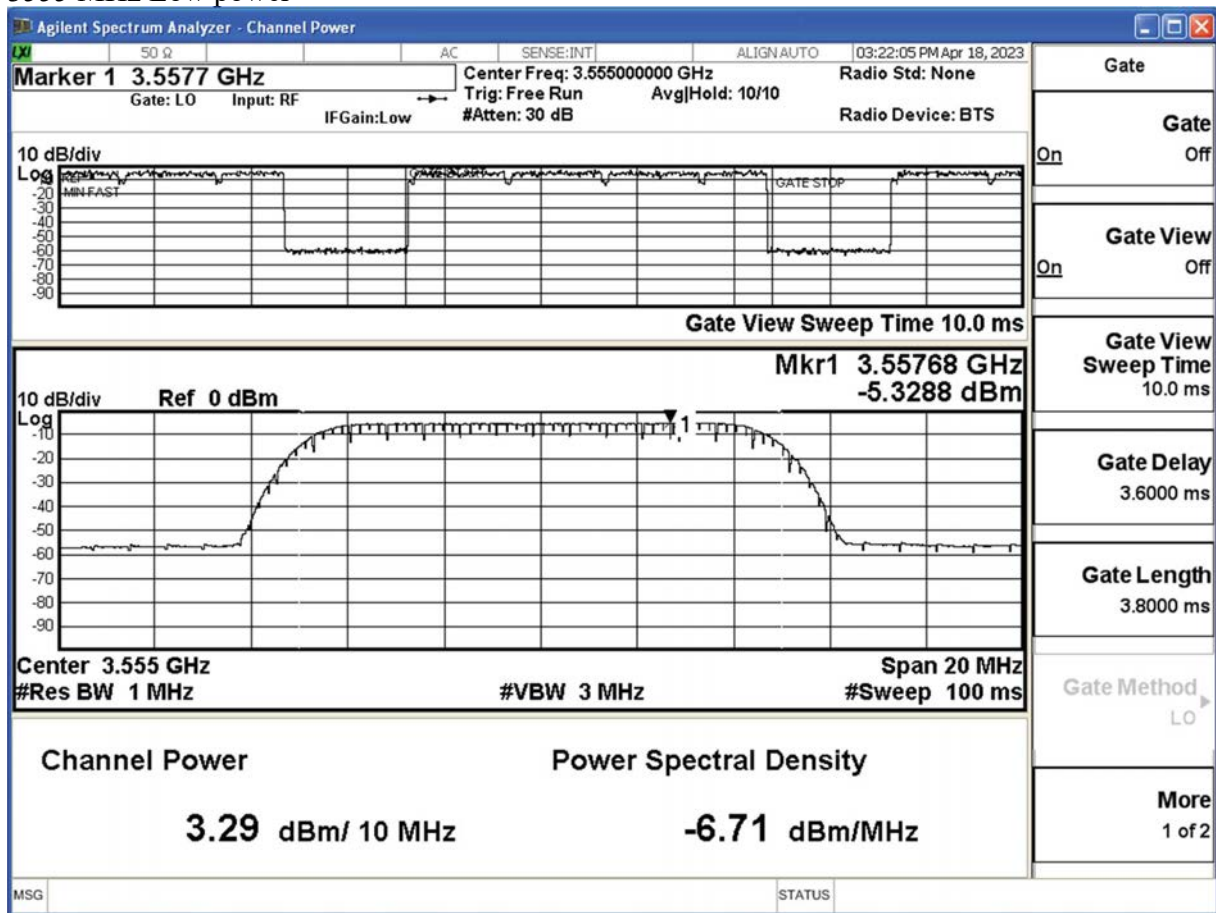
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


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

7.1.4.1.1	X	X	WINNF.PT.C.H BT	UUT RF Transmit Power Measurement	Power Spectral Density test case. 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.	P
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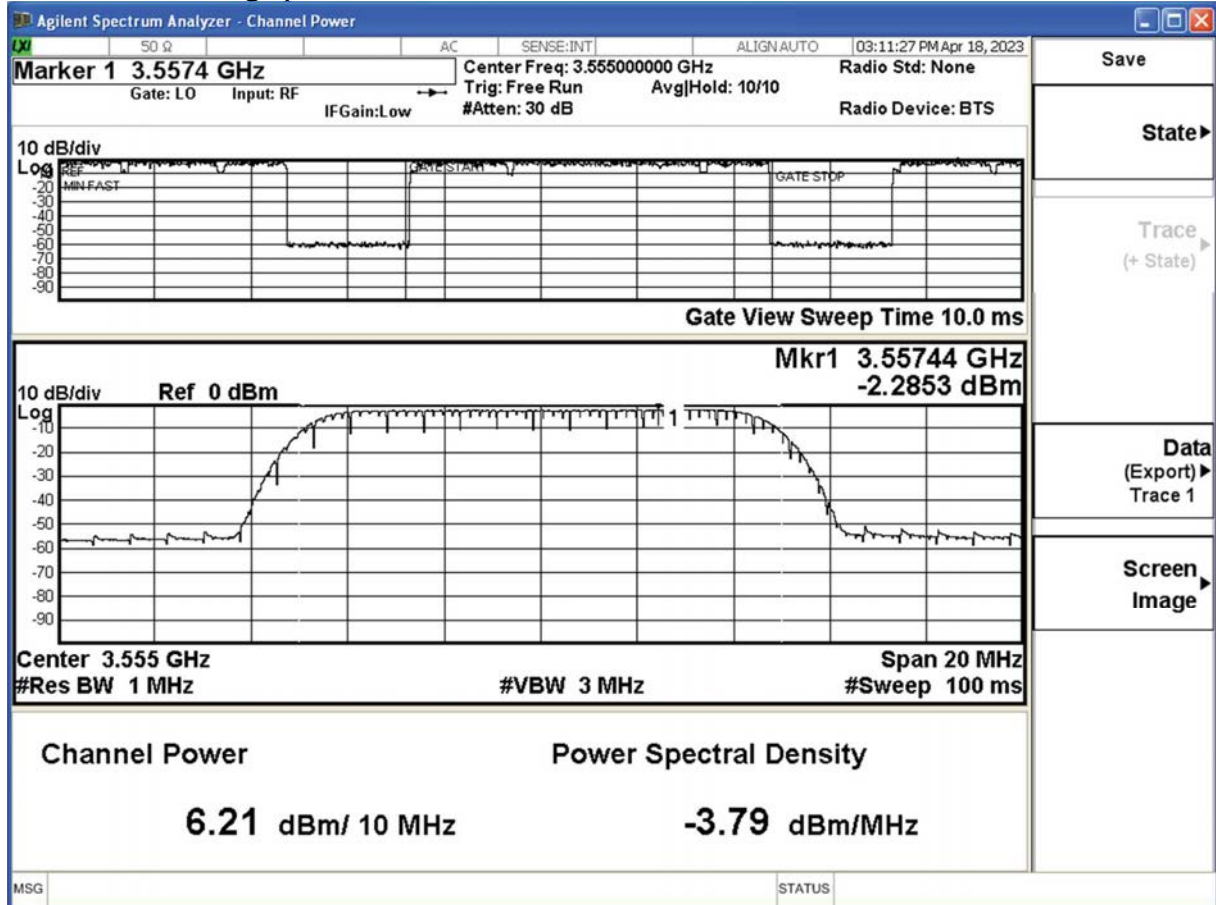
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


3555 MHz Low power



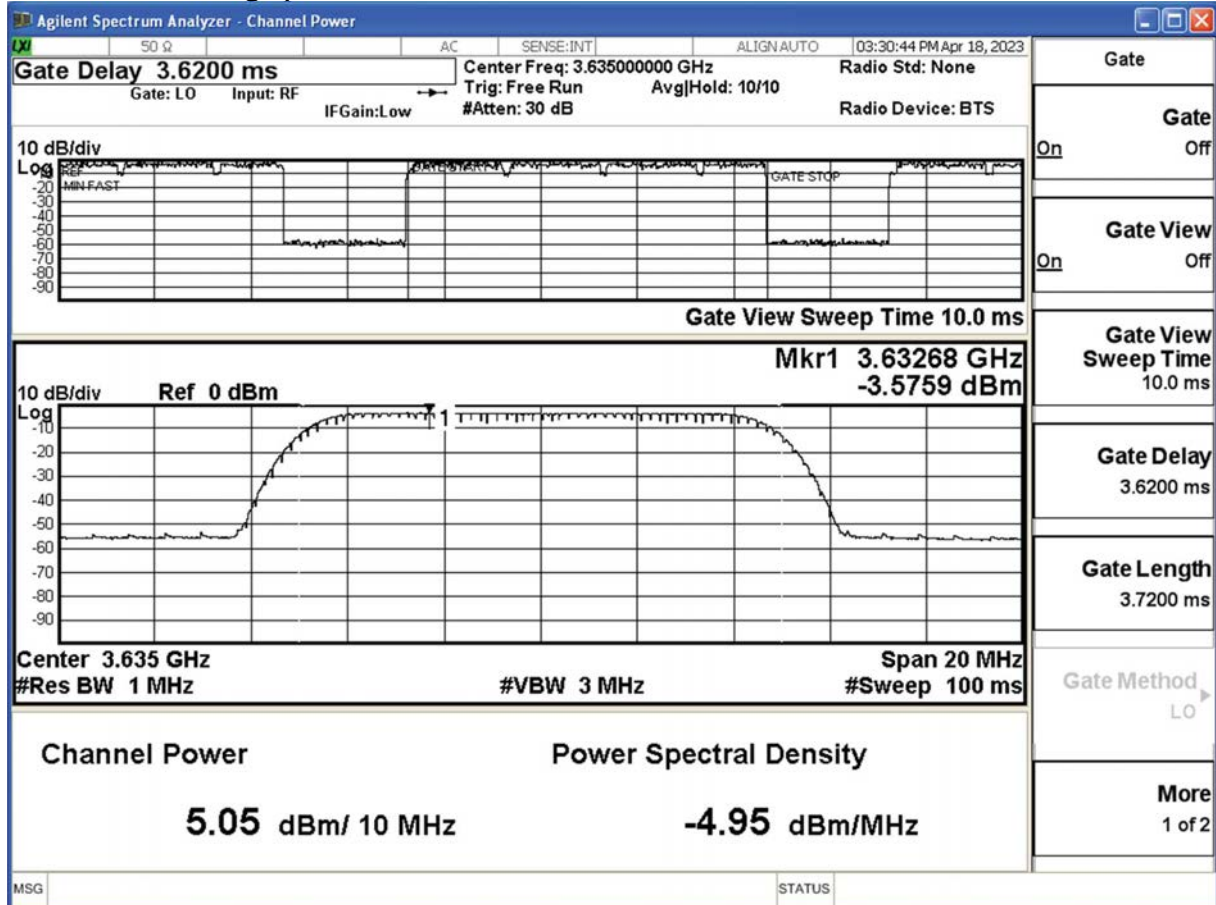
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


PSD 3555 MHz High power



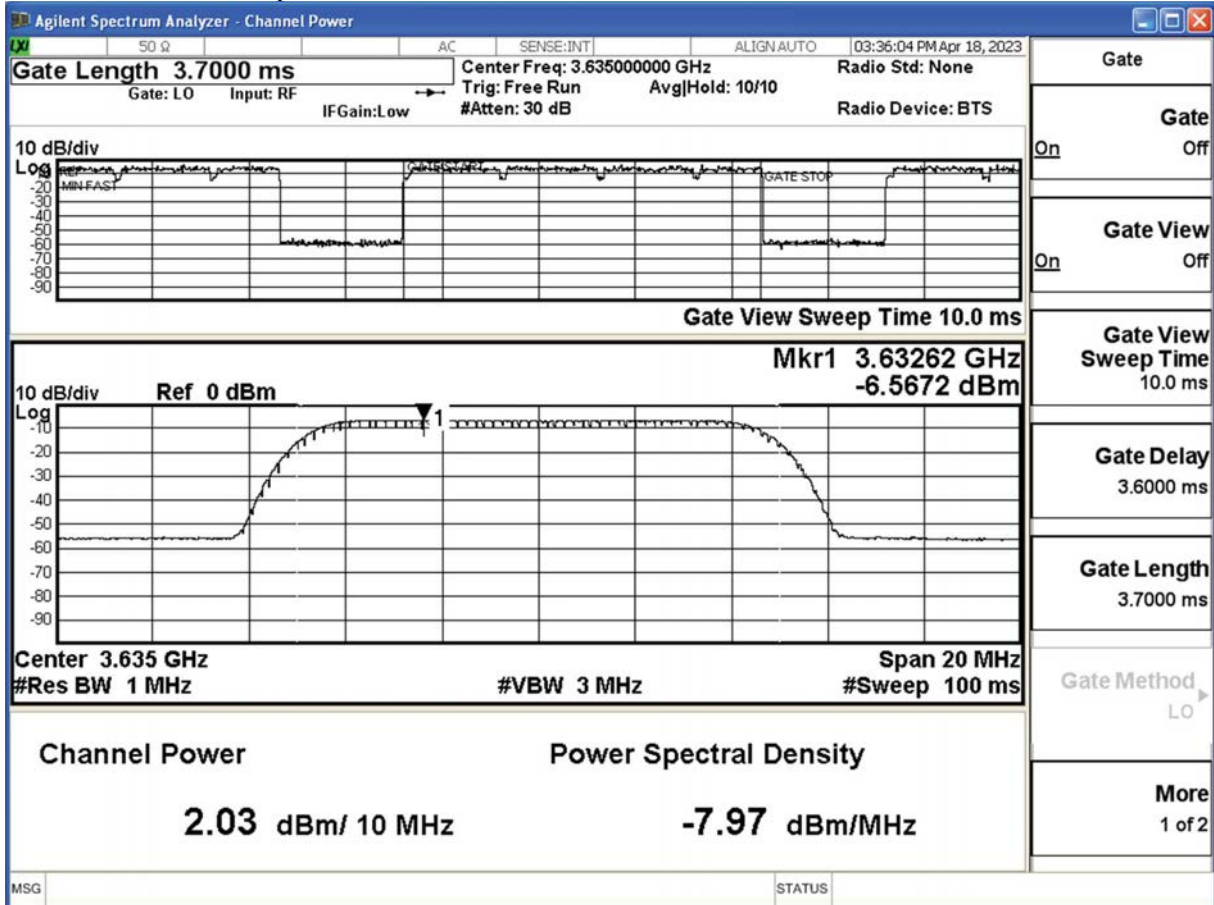
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


PSD 3635 MHz High power



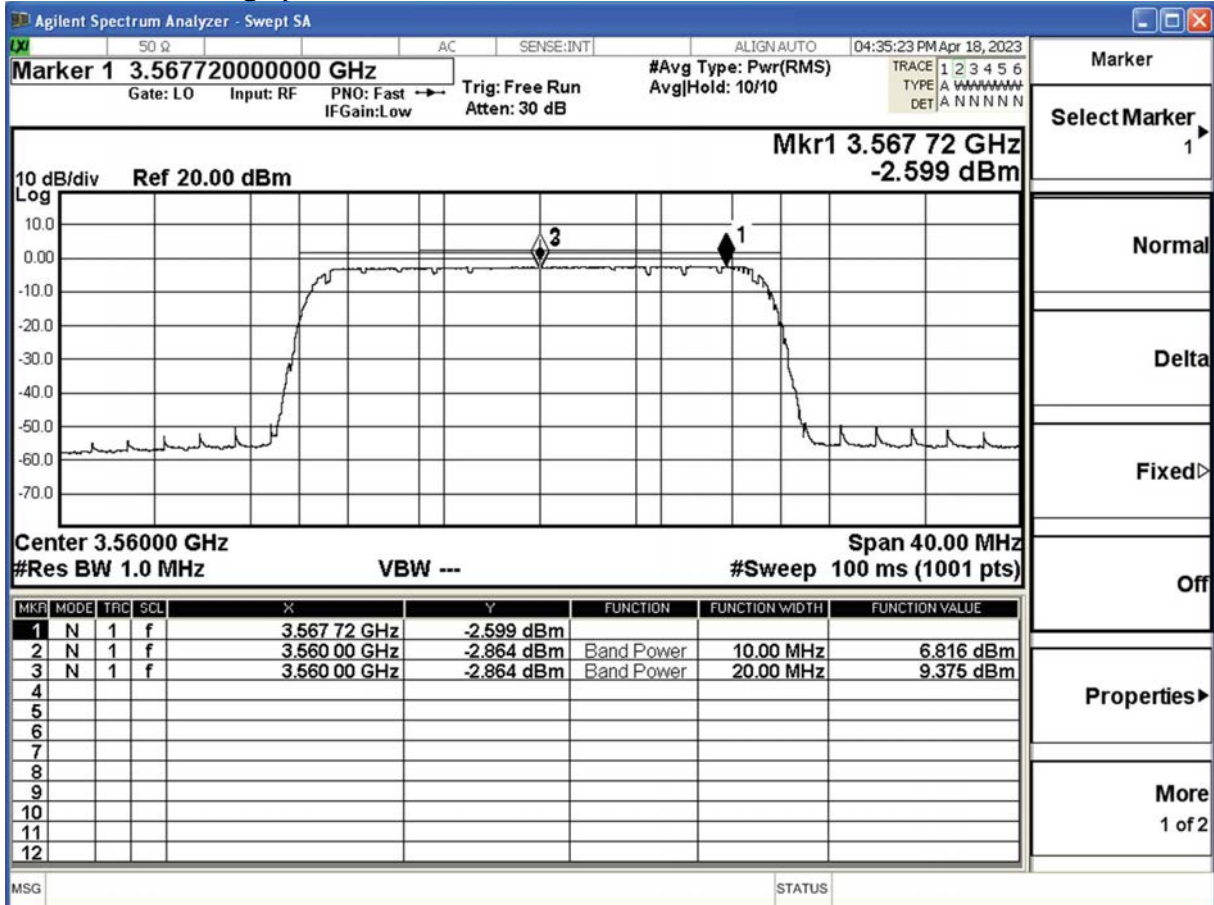
Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


PSD 3560 MHz Low power



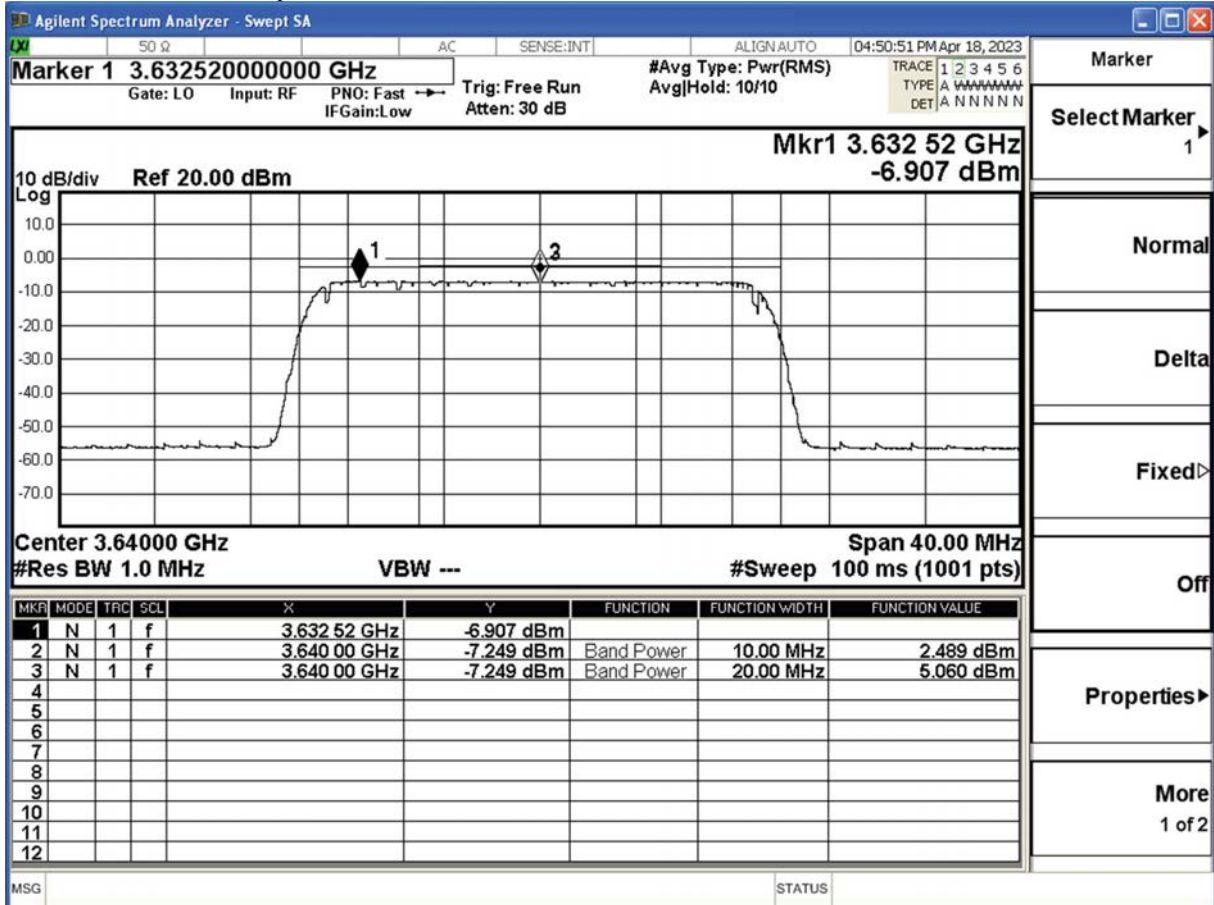
Client	Ericsson	 Canada
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


PSD 3560 MHz High power



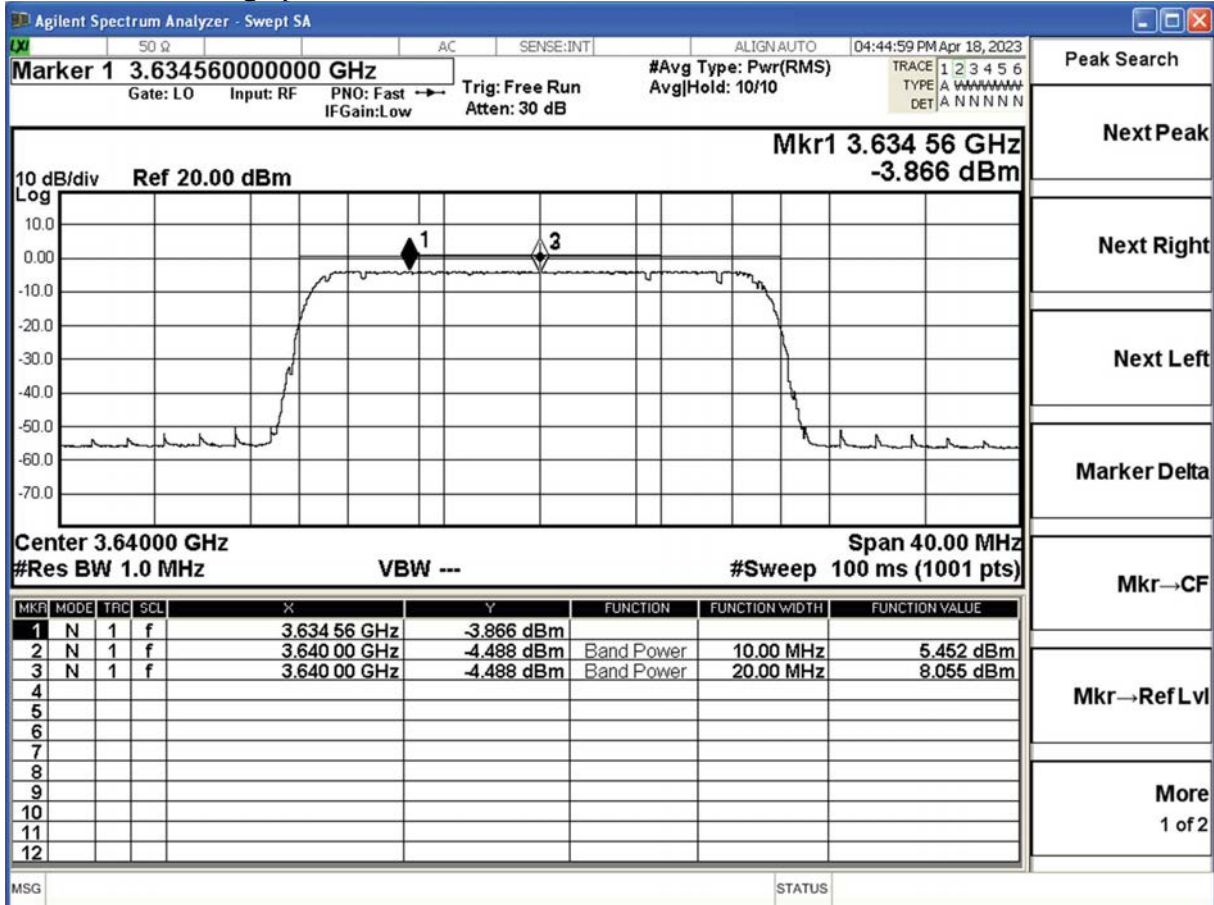
Client	Ericsson	 Canada
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


PSD 3640 MHz Low power



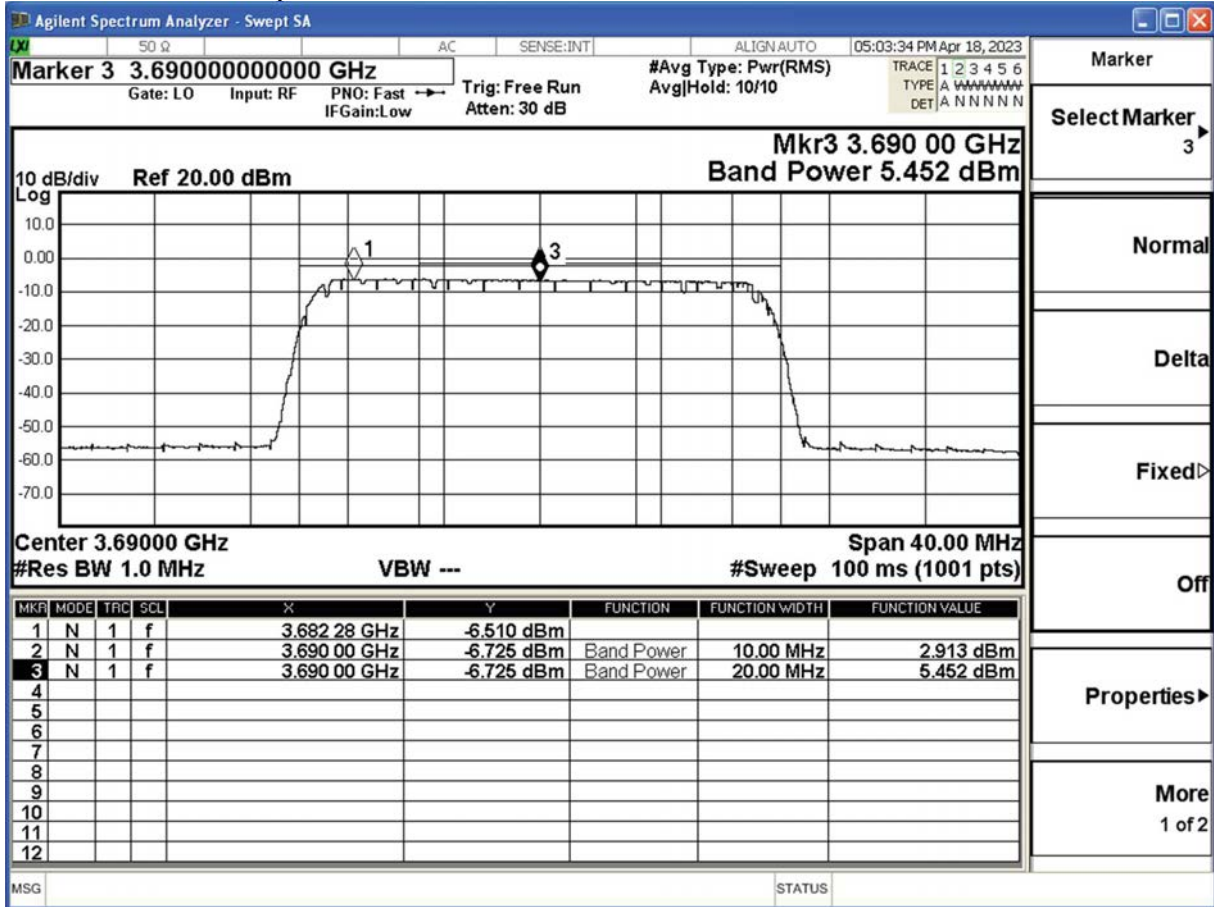
Client	Ericsson	 TUV SUD Canada
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

PSD 3640 MHz High power




Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

PSD 3690 MHz Low power




PSD Measurements Table LTE

Freq	1MHz EIRP limit (target) dBm	Raw		External Losses (dB)	Conducted dBm/MHz	Antenna gain dBi	Ports	Port gain (dB)	EIRP 1 MHz dBm/MHz	EIRP 10 MHz dBm	Margin dB
		10 MHz	1 MHz								
3555	20	6.21	-2.28	14.3	12.02	4.9	2	3.01	19.93	28.42	0.07
3555	17	3.29	-5.3	14.3	9	4.9	2	3.01	16.91	25.50	0.09
3635	20	5.05	-3.5	14.3	10.8	4.9	2	3.01	18.71	27.26	1.29
3635	17	2.03	-6.5	14.3	7.8	4.9	2	3.01	15.71	24.24	1.29
3695	20	5.32	-3.3	14.3	11	4.9	2	3.01	18.91	27.53	1.09
3695	17	2.29	-6.4	14.3	7.9	4.9	2	3.01	15.81	24.50	1.19

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

PSD Measurements Table NR

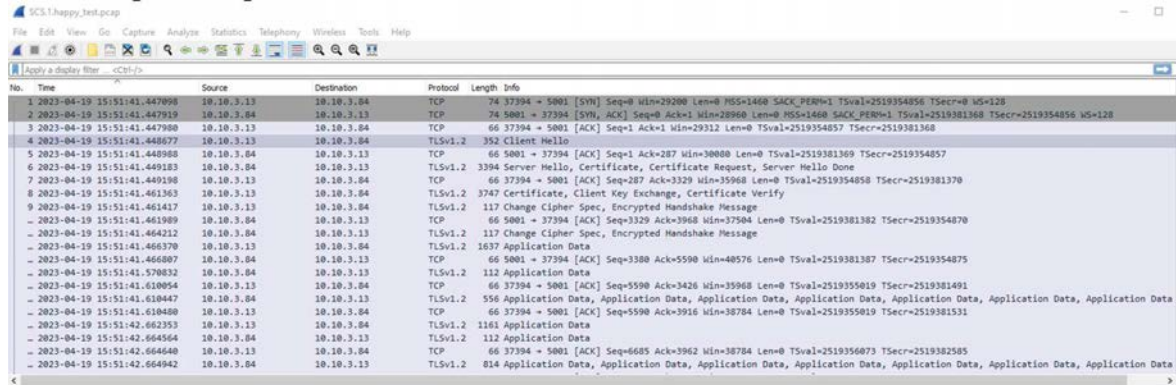
Freq	1MHz EIRP limit (target) dBm	Raw		External	Conducted	Antenna gain dBi	Ports	Port gain (dB)	EIRP 1 MHz	EIRP 20 MHz	Margin
		20 MHz	1 MHz	Losses (dB)	dBm/MHz				dBm/MHz	dBm	dB
3560	20	9.37	-2.5	14.3	11.8	4.9	2	3.01	19.71	31.58	0.29
3560	17	6.3	-5.4	14.3	8.9	4.9	2	3.01	16.81	28.51	0.19
3640	20	8.1	-3.8	14.3	10.5	4.9	2	3.01	18.41	30.31	1.59
3640	17	5	-6.9	14.3	7.4	4.9	2	3.01	15.31	27.21	1.69
3690	20	8.5	-3.2	14.3	11.1	4.9	2	3.01	19.01	30.71	0.99
3690	17	5.4	-6.1	14.3	8.2	4.9	2	3.01	16.11	27.61	0.89

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

WINNF Security Test Case Analysis

WINNF.FT.C.SCS.1

Packet Capture Sequence



No.	Time	Source	Destination	Protocol	Length	Info
1	2023-04-19 15:51:41.447090	10.10.3.13	10.10.3.84	TCP	74	37394 → 5001 [SYN] Seq=0 Win=29200 Len=0 MSS=1460 SACK_PERM=1 TSval=2519354856 TSecr=0 WS=128
2	2023-04-19 15:51:41.447919	10.10.3.84	10.10.3.13	TCP	74	5001 → 37394 [SYN, ACK] Seq=0 Ack=1 Win=28968 Len=0 MSS=1460 SACK_PERM=1 TSval=2519381368 TSecr=2519354856 WS=128
3	2023-04-19 15:51:41.447960	10.10.3.13	10.10.3.84	TCP	66	37394 → 5001 [ACK] Seq=1 Ack=1 Win=29312 Len=0 TSval=2519354857 TSecr=2519381368
4	2023-04-19 15:51:41.448677	10.10.3.13	10.10.3.84	TLSv1.2	352	Client Hello
5	2023-04-19 15:51:41.448988	10.10.3.84	10.10.3.13	TCP	66	5001 → 37394 [ACK] Seq=1 Ack=287 Win=30080 Len=0 TSval=2519381369 TSecr=2519354857
6	2023-04-19 15:51:41.449183	10.10.3.84	10.10.3.13	TLSv1.2	3394	Server Hello, Certificate, Certificate Request, Server Hello Done
7	2023-04-19 15:51:41.449198	10.10.3.13	10.10.3.84	TCP	66	37394 → 5001 [ACK] Seq=287 Ack=3329 Win=35968 Len=0 TSval=2519354858 TSecr=2519381370
8	2023-04-19 15:51:41.461363	10.10.3.13	10.10.3.84	TLSv1.2	3747	Certificate, Client Key Exchange, Certificate Verify
9	2023-04-19 15:51:41.461417	10.10.3.13	10.10.3.84	TLSv1.2	117	Change Cipher Spec, Encrypted Handshake Message
-	2023-04-19 15:51:41.461989	10.10.3.84	10.10.3.13	TCP	66	5001 → 37394 [ACK] Seq=3329 Ack=3968 Win=37504 Len=0 TSval=2519381382 TSecr=2519354870
-	2023-04-19 15:51:41.464212	10.10.3.84	10.10.3.13	TLSv1.2	117	Change Cipher Spec, Encrypted Handshake Message
-	2023-04-19 15:51:41.466370	10.10.3.13	10.10.3.84	TLSv1.2	1637	Application Data
-	2023-04-19 15:51:41.466807	10.10.3.84	10.10.3.13	TCP	66	5001 → 37394 [ACK] Seq=3308 Ack=5590 Win=40576 Len=0 TSval=2519381387 TSecr=2519354875
-	2023-04-19 15:51:41.579832	10.10.3.84	10.10.3.13	TLSv1.2	112	Application Data
-	2023-04-19 15:51:41.610054	10.10.3.13	10.10.3.84	TCP	66	37394 → 5001 [ACK] Seq=5590 Ack=3426 Win=35968 Len=0 TSval=2519355019 TSecr=2519381491
-	2023-04-19 15:51:41.610447	10.10.3.84	10.10.3.13	TLSv1.2	556	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data
-	2023-04-19 15:51:41.610480	10.10.3.13	10.10.3.84	TCP	66	37394 → 5001 [ACK] Seq=5590 Ack=3916 Win=38784 Len=0 TSval=2519355019 TSecr=2519381531
-	2023-04-19 15:51:42.062353	10.10.3.13	10.10.3.84	TLSv1.2	1161	Application Data
-	2023-04-19 15:51:42.064564	10.10.3.84	10.10.3.13	TLSv1.2	112	Application Data
-	2023-04-19 15:51:42.064640	10.10.3.13	10.10.3.84	TCP	66	37394 → 5001 [ACK] Seq=6685 Ack=3962 Win=38784 Len=0 TSval=2519356073 TSecr=2519382585
-	2023-04-19 15:51:42.064942	10.10.3.84	10.10.3.13	TLSv1.2	814	Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data, Application Data


WINNF test requirements:

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

2	<ul style="list-style-type: none"> • 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, <ul style="list-style-type: none"> • TLS_RSA_WITH_AES_128_GCM_SHA256 • TLS_RSA_WITH_AES_256_GCM_SHA384 • TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 • TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 • TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 	PASS
---	--	------

Analysis of WINNF Test Requirements

1. From Client Hello: TLS version = TLS 1.2

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


```

> Frame 4: 352 bytes on wire (2816 bits), 352 bytes captured (2816 bits)
> Ethernet II, Src: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f), Dst: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48)
> Internet Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84
> Transmission Control Protocol, Src Port: 37394, Dst Port: 5001, Seq: 1, Ack: 1, Len: 286
▼ Transport Layer Security
  ▼ 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: 1a84bce4a4a727de982799cca38fd39cc9274634e792bda04f4a897b743968ef
      Session ID Length: 0
      Cipher Suites Length: 86
      ▼ 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)

```

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)
 - 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)

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	


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)

```

> Frame 6: 3394 bytes on wire (27152 bits), 3394 bytes captured (27152 bits)
> Ethernet II, Src: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48), Dst: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f)
> Internet Protocol Version 4, Src: 10.10.3.84, Dst: 10.10.3.13
> Transmission Control Protocol, Src Port: 5001, Dst Port: 37394, Seq: 1, Ack: 287, Len: 3328
▼ Transport Layer Security
  ▼ 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: 8e480c20290a3712e457f7e8274b28085cb6c05b7055b82e5a7a8d9f58901b58
      Session ID Length: 32
      Session ID: ed571d9a5e764d2b85420f0559335e0199daafee3b7bca62c0f9848c8d0ca3c
      Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
      Compression Method: null (0)
      Extensions Length: 5
      > Extension: renegotiation_info (len=1)
        [JA3S Fullstring: 771,157,65281]
        [JA3S: f75082535b4a79c07b31bdd0e2b7eb87]
  
```

4. The Registration request message arrived at the Test Harness, authentication was completed.

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

```

> 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
  ▼ 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_SHA256
 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:

```

> Frame 3455: 2498 bytes on wire (19984 bits), 2498 bytes captured (19984 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: 8100, Dst Port: 42352, Seq: 1, Ack: 337, Len: 2432
HyperText Transfer Protocol
  online Certificate Status Protocol
    responseStatus: successful (0)
  ▼ responseBytes
    responseType Id: 1.3.6.1.5.5.7.48.1.1 (id-pkix-ocsp-basic)
  ▼ BasicOCSPResponse
    tbsResponseData
      > responderID: hostname (1)
      > producedAt: 2019-09-03 14:27:14 (UTC)
      > responses: 1 item
        ▼ singleResponse
          > certID
            > hashAlgorithm (SHA-1)
              Algorithm Id: 1.3.14.3.2.26 (SHA-1)
              IssuerNameHash: 5360d2163294273808b5c3ba4c4e6f3066441
              IssuerKeyHash: 5063d70b6e95ca42c49450451b47e5cd0ee1fd04
              serialNumber: 0x08fd40048a70e779df
            > certStatus: revoked (1)
              > revoked
                > revocationTime: 2019-09-02 13:59:41 (UTC)
                > thisUpdate: 2019-09-03 14:27:14 (UTC)
          > signatureAlgorithm (sha1withRSAEncryption)
            Algorithm Id: 1.2.840.113549.1.1.5 (sha1withRSAEncryption)
            Padding: 0
            signature: 906f60430a1260eb9d7e21c1f2049042f94c7f6ee409ad67eb09140a771cfe3e7ec5990...
          > certs: 1 item
            > certificate (id-at-commonName=SAS-OCSP-EXAMPLE,id-at-organizationalUnitName=IInForum SAS OCSP Responder,Cert,id-at-organizationName=Test Lab for FCC PART 96,id-at-countryName=US)
              > signedCertificate
                > algorithmIdentifier (sha256withRSAEncryption)
                  Algorithm Id: 1.2.840.113549.1.1.11 (sha256withRSAEncryption)
                  Padding: 0
                  encrypted: 88a547c487789b3ad804c353d8c708ff2c507626c2094bc12b172f6282a8f870bae87...

```

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


Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

```

> Frame 3461: 73 bytes on wire (584 bits), 73 bytes captured (584 bits)
> Ethernet 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)
> Internet Protocol Version 4, Src: 10.10.0.61, Dst: 10.10.0.124
> Transmission Control Protocol, Src Port: 55972, Dst Port: 5000, Seq: 130, Ack: 3147, Len: 7
▼ Transport Layer Security
  ▼ TLSv1.2 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)

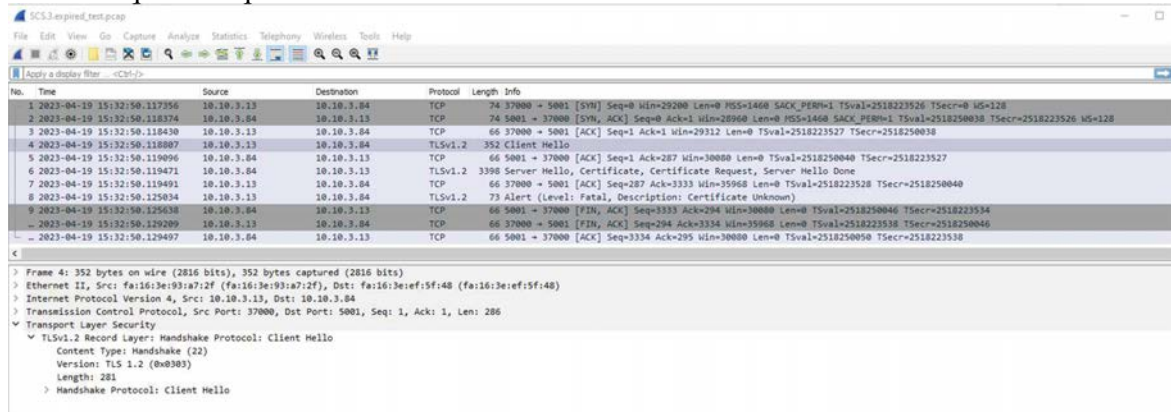
```

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

Client	Ericsson	 TUV SUD Canada
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

WINNF.FT.C.SCS.3

Packet Capture Sequence



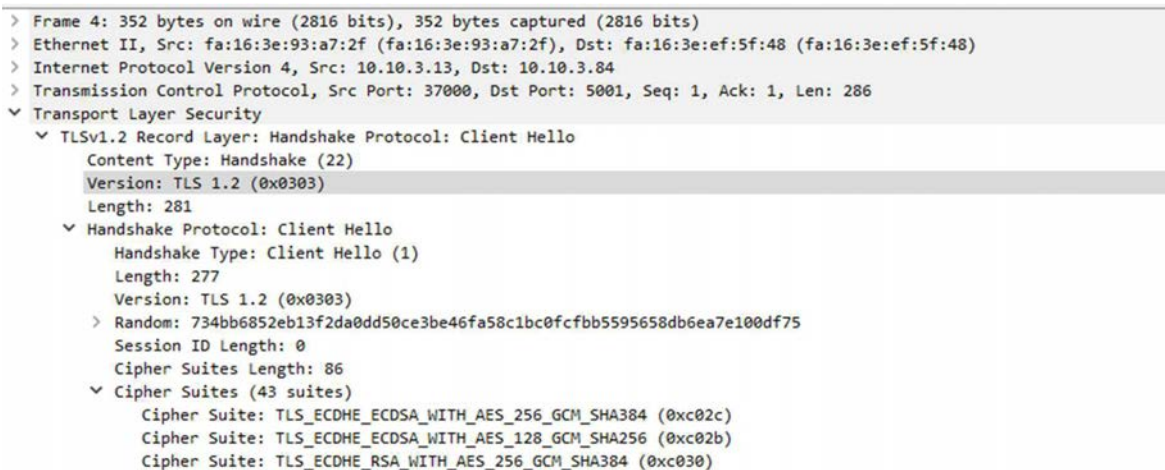
WINNF Test Requirements:

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

2	<ul style="list-style-type: none"> 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
---	--	------


Analysis of WINNF Test Requirements

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




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

Cipher Suites

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

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)
 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)

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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

```

> Frame 6: 3398 bytes on wire (27184 bits), 3398 bytes captured (27184 bits)
> Ethernet II, Src: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48), Dst: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f)
> Internet Protocol Version 4, Src: 10.10.3.84, Dst: 10.10.3.13
> Transmission Control Protocol, Src Port: 5001, Dst Port: 37000, Seq: 1, Ack: 287, Len: 3332
▼ Transport Layer Security
  ▼ 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: 4d29e9d53fae6388b99521f15f2144dce1da0c607dd28e5c24d1c1a1d5e2f6bd
      Session ID Length: 32
      Session ID: 73c766b62ab44ef238c8199ef0f9fe00380edfd0dd19bbe7f0952e8a1c67a2be
      Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
      Compression Method: null (0)
      Extensions Length: 5
      > Extension: renegotiation_info (len=1)
        [JA3S Fullstring: 771,157,65281]
        [JA3S: f75082535b4a79c07b31bdd0e2b7eb87]
    ▼ TLSv1.2 Record Layer: Handshake Protocol: Certificate

```


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

```

> Frame 8: 73 bytes on wire (584 bits), 73 bytes captured (584 bits)
> Ethernet II, Src: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f), Dst: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48)
> Internet Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84
> Transmission Control Protocol, Src Port: 37000, Dst Port: 5001, Seq: 287, Ack: 3333, Len: 7
▼ Transport Layer Security
  ▼ TLSv1.2 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)

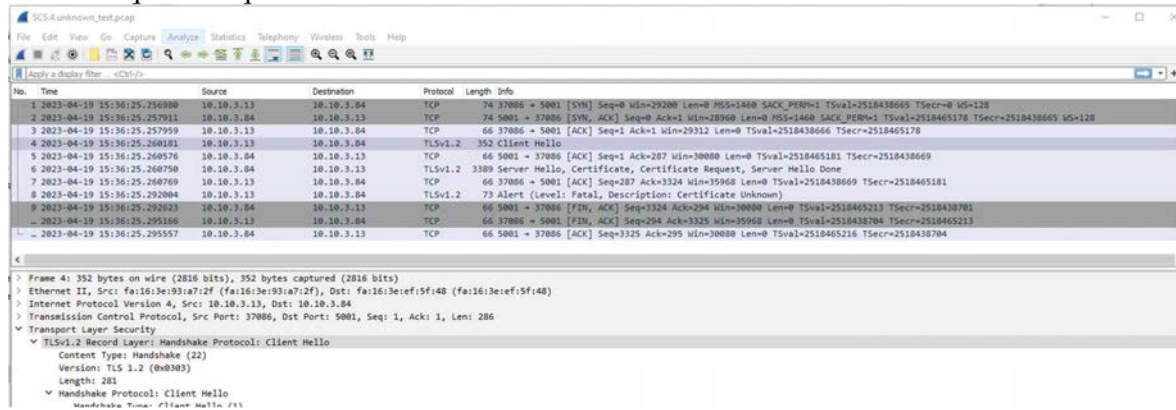
```

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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

WINNF.FT.C.SCS.4

Packet Capture Sequence



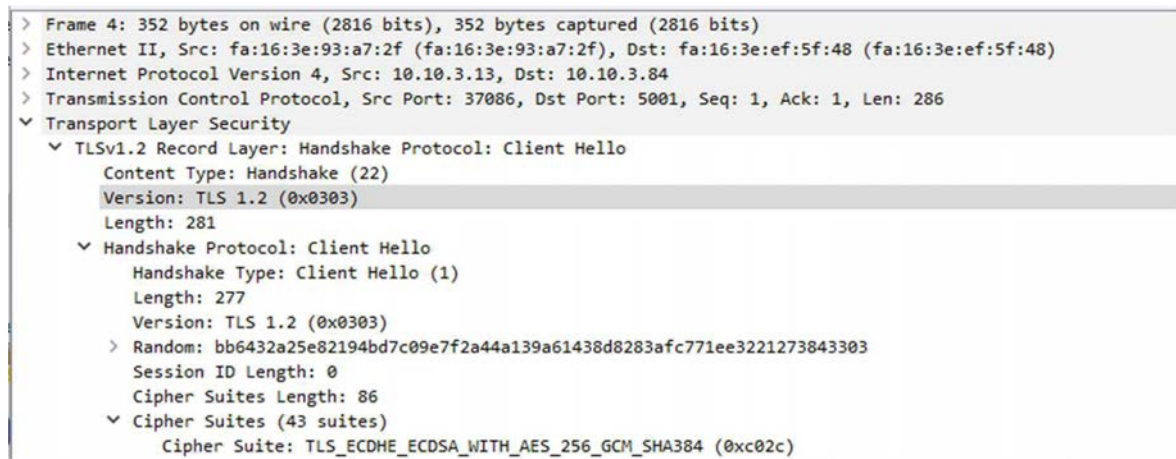
WINNF Test Requirements:

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


2	<ul style="list-style-type: none"> • 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
---	--	------	------

Analysis of WINNF Test Requirements

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




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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

- 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)
- 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)

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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

```

> Frame 6: 3389 bytes on wire (27112 bits), 3389 bytes captured (27112 bits)
> Ethernet II, Src: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48), Dst: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f)
> Internet Protocol Version 4, Src: 10.10.3.84, Dst: 10.10.3.13
> Transmission Control Protocol, Src Port: 5001, Dst Port: 37086, Seq: 1, Ack: 287, Len: 3323
▼ Transport Layer Security
  ▼ 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: 091aa7955fa08c6eafe1de67049299baa4cacc088616f7259cfaeb761e104cb3
    Session ID Length: 32
    Session ID: 22116f6b93e0d87fec9932e6b8e55852ce09ca3a8fcc886b34c7656a9f75c8f3
    Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
    Compression Method: null (0)
    Extensions Length: 5
  > Extension: renegotiation_info (len=1)
    [JA3S Fullstring: 771,157,65281]
    [JA3S: f75082535b4a79c07b31bdd0e2b7eb87]
  ▼ TLSv1.2 Record Layer: Handshake Protocol: Certificate

```

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

```


> Frame 8: 73 bytes on wire (584 bits), 73 bytes captured (584 bits)
> Ethernet II, Src: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f), Dst: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48)
> Internet Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84
> Transmission Control Protocol, Src Port: 37086, Dst Port: 5001, Seq: 287, Ack: 3324, Len: 7
▼ Transport Layer Security
  ▼ TLSv1.2 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)

```

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

WINNF.FT.C.SCS.5

Packet Capture Sequence

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	



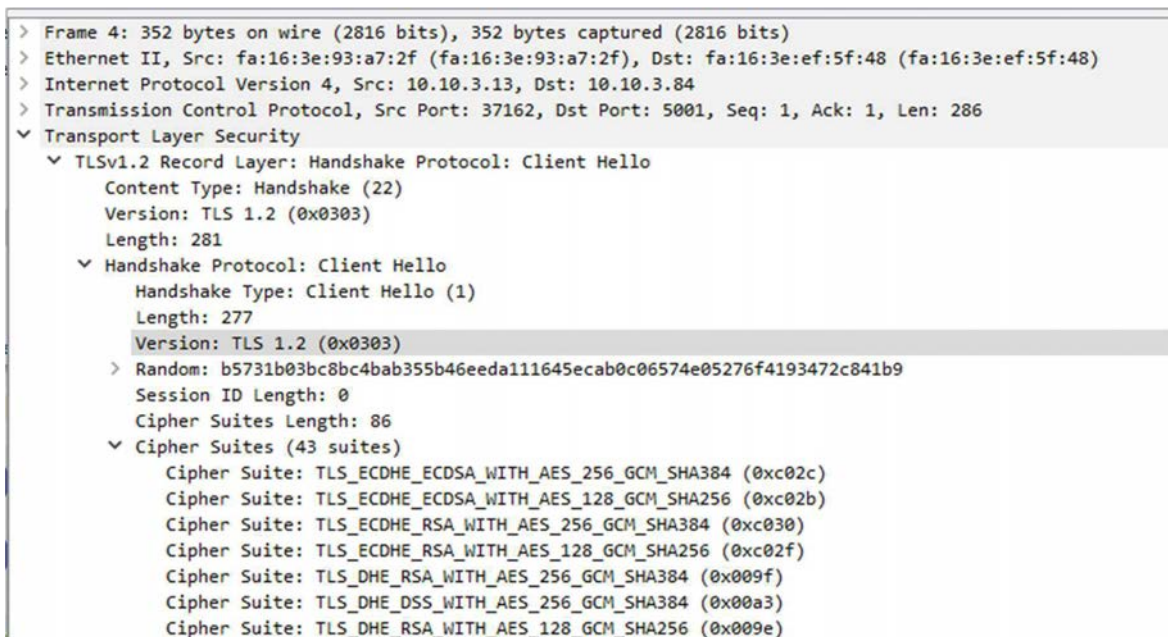
WINNF Test Requirements:

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


2	<ul style="list-style-type: none"> 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
---	--	------	------

Analysis of WINNF Test Requirements

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



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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

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)

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)

3. From Server Hello, cipher suite chosen:

TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

```

> Frame 6: 3427 bytes on wire (27416 bits), 3427 bytes captured (27416 bits)
> Ethernet II, Src: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48), Dst: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f)
> Internet Protocol Version 4, Src: 10.10.3.84, Dst: 10.10.3.13
> Transmission Control Protocol, Src Port: 5001, Dst Port: 37162, Seq: 1, Ack: 287, Len: 3361
v Transport Layer Security
  v TLSv1.2 Record Layer: Handshake Protocol: Server Hello
    Content Type: Handshake (22)
    Version: TLS 1.2 (0x0303)
    Length: 81
  v Handshake Protocol: Server Hello
    Handshake Type: Server Hello (2)
    Length: 77
    Version: TLS 1.2 (0x0303)
  > Random: fe063005d2d54a7a2ea3e07ee49c89c9996ef3c8f1d40c041cd5e414f9732a89
    Session ID Length: 32
    Session ID: 08380921b6b2ee31020e7ad861995ea267fd2cf02e5264f3fe890e49913141f6
    Cipher Suite: TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
    Compression Method: null (0)
    Extensions Length: 5
  > Extension: renegotiation_info (len=1)
    [JA3S Fullstring: 771,157,65281]
    [JA3S: f75082535b4a79c07b31bdd0e2b7eb87]
  v TLSv1.2 Record Layer: Handshake Protocol: Certificate
    Content Type: Handshake (22)
    Version: TLS 1.2 (0x0303)
    Length: 3219

```


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

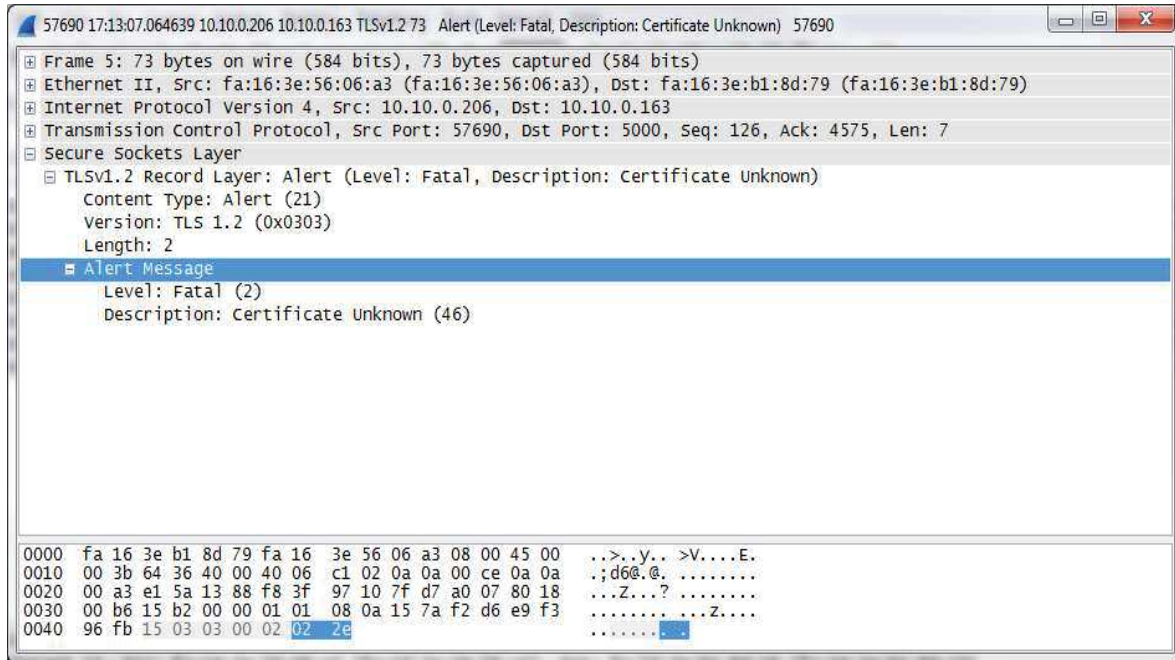
```

> Frame 8: 73 bytes on wire (584 bits), 73 bytes captured (584 bits)
> Ethernet II, Src: fa:16:3e:93:a7:2f (fa:16:3e:93:a7:2f), Dst: fa:16:3e:ef:5f:48 (fa:16:3e:ef:5f:48)
> Internet Protocol Version 4, Src: 10.10.3.13, Dst: 10.10.3.84
> Transmission Control Protocol, Src Port: 37162, Dst Port: 5001, Seq: 287, Ack: 3362, Len: 7
v Transport Layer Security
  v TLSv1.2 Record Layer: Alert (Level: Fatal, Description: Certificate Unknown)
    Content Type: Alert (21)
    Version: TLS 1.2 (0x0303)
    Length: 2
  v Alert Message
    Level: Fatal (2)
    Description: Certificate Unknown (46)


```

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

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	




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


Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

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	12 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	-


Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Appendix A – EUT & Client Provided Details

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

General EUT Description

Manufacturer	Ericsson
Address	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden
Product Name	Dot 2266 B48B41B25B66 Dot 2256 B48B41B25B66 (Non-Tested Variant. See Technical Description for the similarity description)
Product Number	KRY 901 537/2 KRY 901 537/1 (Non-Tested Variant. See Technical Description for the similarity description)
Serial Number(s)	TD3W388604
RAN Software Version	CXP9024418/15-R73B05
Domain Proxy Software Version	ERICdomainproxyservice_CXP9035414 2.63.4
Hardware Version	R1B
Test Specification/Issue/Date	FCC CFR 47 Part 96: 2017

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Technical Description

The Equipment Under Test (EUT) Dot 2266 B48B41B25B66 (KRY 901 537/2) are Remote Radio Units forming part of the Ericsson Radio Base Station (RBS) equipment. The Dot provides radio access for mobile and fixed devices and is intended for the indoor environment. The radio operates over 8 Transmit ports in MRO (NR+LTE); Single, Multi-Carrier, and MIMO transmission with a maximum rated RF output up to 0.4W per port over an operational temperature of 5deg C to +40 deg C. The unit is designed to be ceiling or wall mounted.

The 2256 and 2266 radios are identical except that Dot 2256 has internal antennas and Dot 2266 has external RF ports.

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.

Domain Proxy Software Version: ERICdomainproxyservice_CXP9035414 2.63.4

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Appendix B – EUT, Peripherals, and Test Setup Photos

Client	Ericsson	
Product	KRY 901 537/1 DOT 2256 B48B41B25B66 (3550-3700MHz) & KRY 901 537/2 DOT 2266 B48B41B25B66 (3550-3700MHz)	
Standard(s)	FCC Part 96 SAS requirements (CBRS Test Plan)	

Test setup

