

FCC LISTED, REGISTRATION  
NUMBER: 2764.01

Test report No:

ISED LISTED REGISTRATION  
NUMBER: 23595-1

**NIE: 02209CBRS.001A2**

## Test report

### Citizen Broadband Radio Service Test report as per WINNForum Test Specification WINNF-TS-0122-V1.0.0

Identification of item tested.....:	CPE8100-PRO-1D-3.x
Trademark .....	
CBSD Identifier .....	CPE8100-PRO-1D-3.x
CBSD Final HW version .....	NA
CBSD Final SW version .....	TELRAD_SQN3220SC_V1.3.OP0_R1178
Domain Proxy Identifier .....	BreezeVIEW
Domain Proxy Final HW version .....	NA
Domain Proxy Final SW version .....	7.0.0.028
Features .....	CPE, CBSD, Domain Proxy, LTE-TDD 48
Manufacturer.....:	Telrad Networks Ltd. 1 Bat Sheva Street, P.O.B. 6118, Lod 711600, Israel
Test method requested, standard.....:	WinnForum TEST SPECIFICATION WINNF-TS-0122-V1.0.0
Summary .....	IN COMPLIANCE
Approved by (name / position & signature) .....	Bryan Mikesh, Chief Operating Officer, DEKRA Certification Inc. <i>Bryan Mikesh - COO</i>
Date of issue.....:	2018-12-14
Report template No.....:	FDT08_20



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The results presented in this Test Report apply only to the particular item under test established in this document.

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## Uncertainty

Uncertainty (factor  $k=2$ ) was calculated according to the DEKRA Certification Inc. internal document PODT000.

## Usage of samples

Samples undergoing test have been selected by: **the client**

Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
02209.001	CPE 8100	CPE8100-PRO-1D-3.x	TLR41DFE970B	05/11/2018
NA	Domain Proxy Software	BreezeVIEW version 7.0.0.028	NA	05/11/2018

## Test sample description

The test sample is a CPE. The unit connects to the Domain Proxy via the base station over a radio interface and hence is not always connected to the SAS system. The unit is activated by a Commercial Professional Installer. The CPI activates the radio interface on the unit so that it can connect to the Domain Proxy over LTE TDD 48 band. After this connection is established the Unit starts its communication with the Domain Proxy server and accepts instructions that the Domain proxy relays based on its communication with the SAS. Testing was performed using the CPE8100-PRO-1D-3.x as CBSD in combination with BreezeVIEW version 7.0.0.028 as the Domain Proxy software and the radio link connecting the two was manually initiated by the CPI every single time as expressed in this description. The combination of the Domain Proxy and the CPE unit was considered as the Unit Under Test.

## Testing period

2018-05-23 to 2018-06-26

## Environmental conditions

In the shielded chamber, the following limits were not exceeded during the test.

<b>Temperature</b>	Min. = 15 °C Max. = 35 °C
<b>Relative humidity</b>	Min. = 20 % Max. = 75 %
<b>Air pressure</b>	Min. = 860 mbar Max. = 1060 mbar

## Remarks and comments

1: The tests have been performed by the technical personnel: Vinayak Thotton Veetil

## Modifications to the reference test report

Following editorial modifications are introduced with respect to the test report number 2209CBRS.001A1 related with the same samples, in the next clauses and sub-clauses:

Clauses / Sub-clauses	Modification	Justification
<b>Test Results</b>	<b>Test results table was updated to include HW version</b>	<b>Editorial</b>

This modification test report cancels and replaces the test report 02209CBRS.001A1

## Testing verdicts

<b>Not applicable</b> ..... :	N/A
<b>Pass</b> ..... :	P
<b>Fail</b> ..... :	F
<b>Inconclusive</b> .....	I

## Appendix A – Test result

## Summary of Test Results

	<b>PASS VERDICT</b>
	<b>TDD</b>
<b>Standard</b>	<b>48</b>
<b>WINNF-TS-0122</b>	<b>33</b>
<b>Total</b>	<b>33</b>

## Test Results

Test Spec	Ref	Name	Condition	Date	Test sample	Result	SAS version	SW Version	HW Version
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.2	Domain Proxy Multi- Step registration	Normal	6/21/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.C .REG.7	Registration due to change of an installation parameter	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.9	Domain Proxy Missing Required parameters (responseCode 102)	Normal	6/21/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.11	Domain Proxy Pending registration (responseCode 200)	Normal	6/21/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.13	Domain Proxy Invalid parameters (responseCode 103)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.15	Domain Proxy Blacklisted CBSD (responseCode 101)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.17	Domain Proxy Unsupported SAS protocol version responseCode 100)	Normal	6/21/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .REG.19	Domain Proxy Group Error (responseCode 201)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .GRA.1	Unsuccessful Grant responseCode=400 (INTERFERENCE)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.C .GRA.2	Unsuccessful Grant responseCode=401 (GRANT_CONFLICT )	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D
WINN F-TS- 0122- V1.0.0	WINNF.FT.D .HBT.2	Domain Proxy Heartbeat Success Case (first Heartbeat Response)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_ R1178	AM410 0D

Test Spec	Ref	Name	Condition	Date	Test sample	Result	SAS version	SW Version	HW Version
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.3	Heartbeat responseCode=105 (DEREGISTER)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.4	Heartbeat responseCode=500 (TERMINATED_GRANTED)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.5	Heartbeat responseCode=501 (SUSPENDED_GRANTED) in First Heartbeat Response	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.6	Heartbeat responseCode=501 (SUSPENDED_GRANTED) in Subsequent Heartbeat Response	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.7	Heartbeat responseCode=502 (UNSYNC_OP_PARAMETER)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.HBT.8	Domain Proxy Heartbeat responseCode=500 (TERMINATED_GRANTED)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.9	Heartbeat Response Absent (First Heartbeat)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.10	Heartbeat Response Absent (Subsequent Heartbeat)	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.HBT.11	Successful Grant Renewal in Heartbeat Test Case	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.MES.3	Grant Response contains measReportConfig	Normal	6/26/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.MES.5	Domain Proxy Heartbeat Response contains measReportConfig	Normal	6/26/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D



Test Spec	Ref	Name	Condition	Date	Test sample	Result	SAS version	SW Version	HW Version
WINN F-TS-0122-V1.0.0	WINNF.FT.D.RLQ.2	Domain Proxy Successful Relinquishment	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.RLQ.4	Domain Proxy Unsuccessful Relinquishment, responseCode=102	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.RLQ.6	Domain Proxy Unsuccessful Relinquishment, responseCode=103	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.DRG.2	Domain Proxy Successful Deregistration	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.D.DRG.4	Domain Proxy Deregistration responseCode=102	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.DRG.5	Deregistration responseCode=103	Normal	6/22/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.SCS.1	Successful TLS connection between UUT and SAS Test Harness	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.SCS.2	TLS failure due to revoked certificate	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.SCS.3	TLS failure due to expired server certificate	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.SCS.4	TLS failure when SAS Test Harness certificate is issue by unknown CA	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.FT.C.SCS.5	TLS failure when certificate at the SAS Test Harness is corrupted	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D
WINN F-TS-0122-V1.0.0	WINNF.PT.C.HBT	UUT RF Transmit Power Measurement	Normal	5/23/2018	02209.001	P	1.0.0.2	TELRAD_SQN3220SC_V1.3.0P0_R1178	AM4100D

## Appendix B – Test Systems

## Test System Used

Model	Description	Control Number	Uncertainties
Dell Latitude, Windows 7, 64-bit	Laptop with SAS harness	CTC-5233-K	NA
EXA N9010A	Signal Analyzer	0018	NA
MXA N9020A	Signal Analyzer	0382	NA
HWg-STE Plain	Ethernet SNMP Thermometer	1107	NA
DR-4X7S201-LH	Shielded Chamber	0131	NA

## Appendix C – CBSD/ DP Supported Features

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

## Appendix D – Reference Standards and Procedures

## Reference Standards

Test and Certification for Citizens Broadband Radio Service (CBRS); Conformance and Performance Test Technical Specification; CBSD/DP as Unit Under Test (UUT) Working Document WINNF-TS-0122	V1.0.0
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## Test Procedures

PECB001_00: CBRS Alliance Certification Testing Based On WINN Forum CBRS CBSD Test Specification "WINNF-TS-0122"
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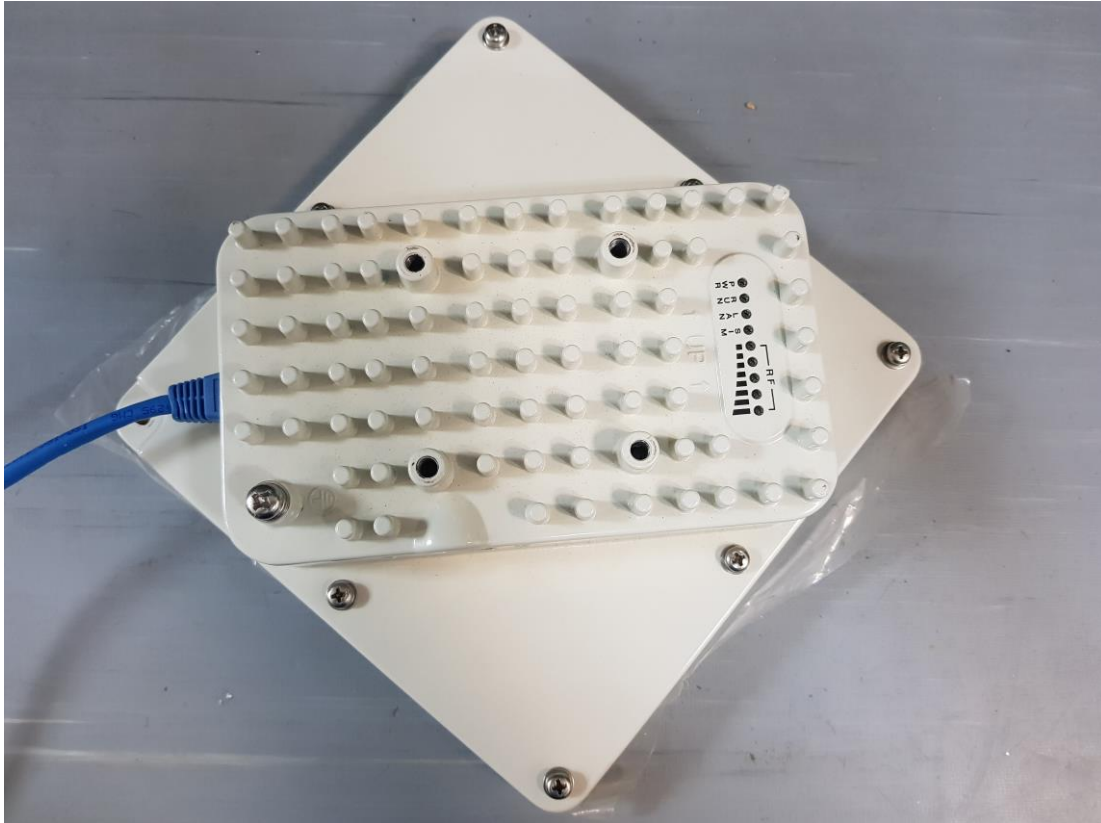
## Appendix E – Photographs



**FRONT VIEW**



REAR VIEW



**SIDE VIEW**



### INTERNAL VIEW

