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TEST REPORT

ACCORDING TO:

EN 50136-1:2012+A1:2018
EN 50136-2:2013
EN 50131-10:2014

FOR:
Paradox Security Systems Ltd.

EUT:
LTE/GSM Communicator module

Model:
PCS265LTE
(Where LTE can be LAM, LEU, LAU or LCH)

Including ATS categories:
GPRS(GSM) –SP5

Table of contents

1 Applicant information

Client name:	Paradox Security Systems Ltd.
Address:	780 INDUSTRIAL BLVD ST-EUSTACHE, QC, CANADA J7R 5V3
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E-mail:	alexc@paradox.com
Contact name:	Mr. Alex Chaplik

2 Equipment under test attributes

Description	Model Name	HW Version	SW Version
LTE/GSM Communicator Module	PCS265LTE	LTE module: 710-3040-991 PCS265 board: 710-2260-998	V4.30
The Communicator module was tested using ancillary control equipment:			
Keypad	TM70	680-6006-991	V1.04
Control Panel	EVOHD	668-5005-000	V7.10

Condition of the equipment	Test samples
Receipt date	5-Feb-19

3 Manufacturer information

Manufacturer name:	Paradox Security Systems Ltd.
Address:	780 INDUSTRIAL BLVD ST-EUSTACHE, QC, CANADA J7R 5V3
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Contact name:	Mr. Alex Chaplik

4 Test details

Project ID:	32029
Location:	Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started:	5-Feb-19
Test completed:	13-Mar-19
Test specification(s):	EN 50136-1:2012+A1:2018, EN 50136-2:2013, EN 50131-10:2014

5 EUT description

5.1 General information

The EUT is communicator module model PCS265LTE, mounted in a separate housing to the CIE.
The communicator module classified as ATS SP5, SPT Type X, Environmental **Class II**, Security **Grade 3**, fixed equipment and includes reporting via GPRS network.

The communicator module ATS configuration:
SP5 – single GPRS path.

The communicator module powered by 12Vdc from CIE that contains primary and alternative power supplies and configure as Type A power supply.

PCS265LTE include internal rechargeable battery that function as support power shut down and not to be used as backup as defined in EN50131-6.

There are 4 different options: PCS265LAM (America), LEU (Europe), LAU (Australia), LCH (China).
See declaration of identity in appendix F

PCS265LEU (Europe Market) model was tested under this test report.

The EUTs event log, integrated with the control panel, was tested with ancillary control equipment (keypad).

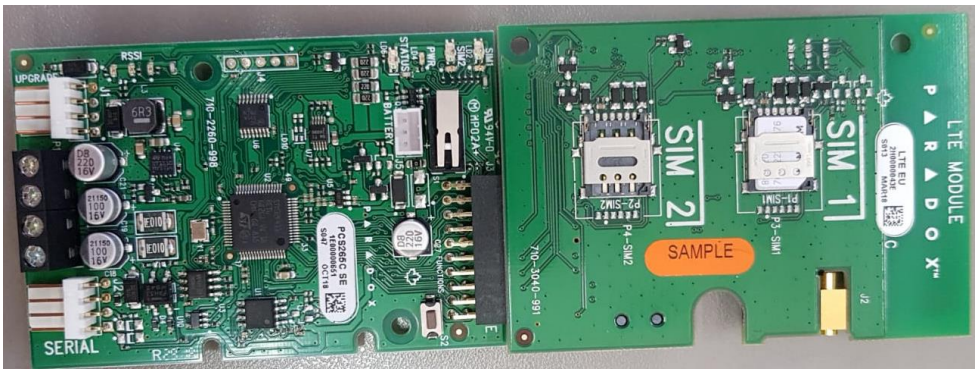
The EUTs are presented in Photographs 5.1.1 to 5.1.7

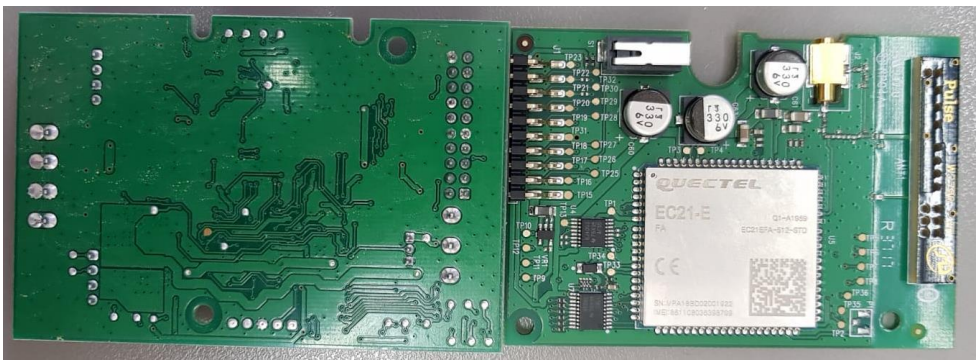
Photograph 5.1.1, 5.1.2 - CIE general view

Photograph 5.1.3 - CIE rear view

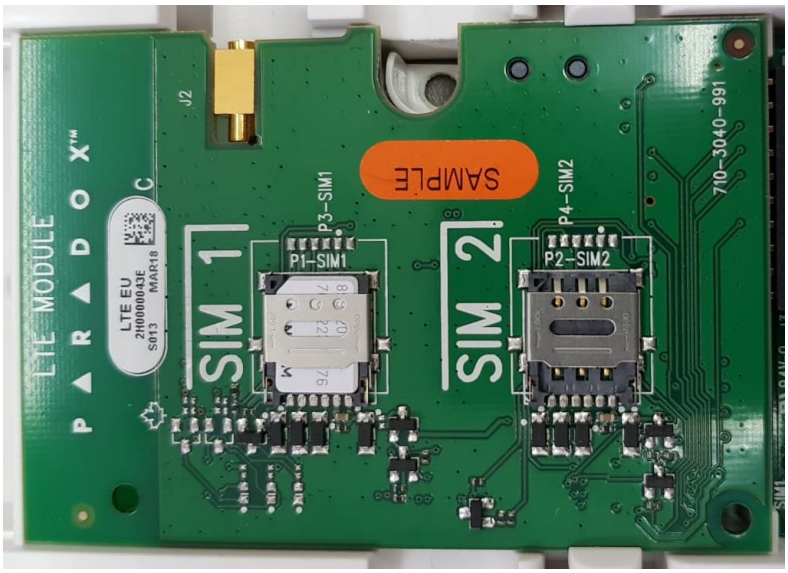
Photograph 5.1.4, 5.1.5 - CIE internal view

Photograph 5.1.6, 5.1.7 - PCB view

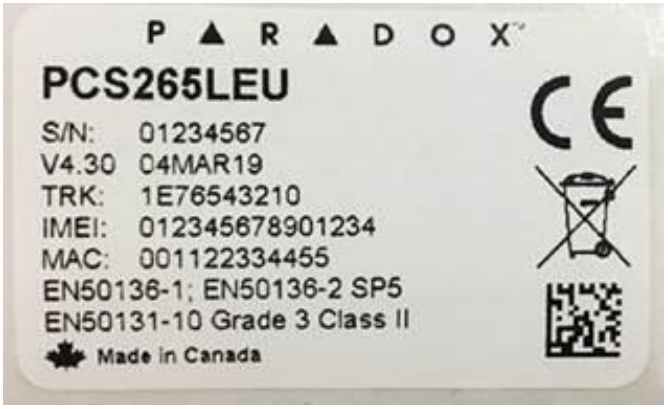




Photograph 5.1.8, 5.1.9– GPRS Module view



Photograph 5.1.10– SPT label



5.2 EUT acceptance criteria

Wherever specified by the EN 50136-2 and EN 50131-10 standards, the EUT shall pass the Reduced Functional Test. The EUT should fulfill all EN 50136-1, EN 50136-2 and EN 50131-10 standard requirements.

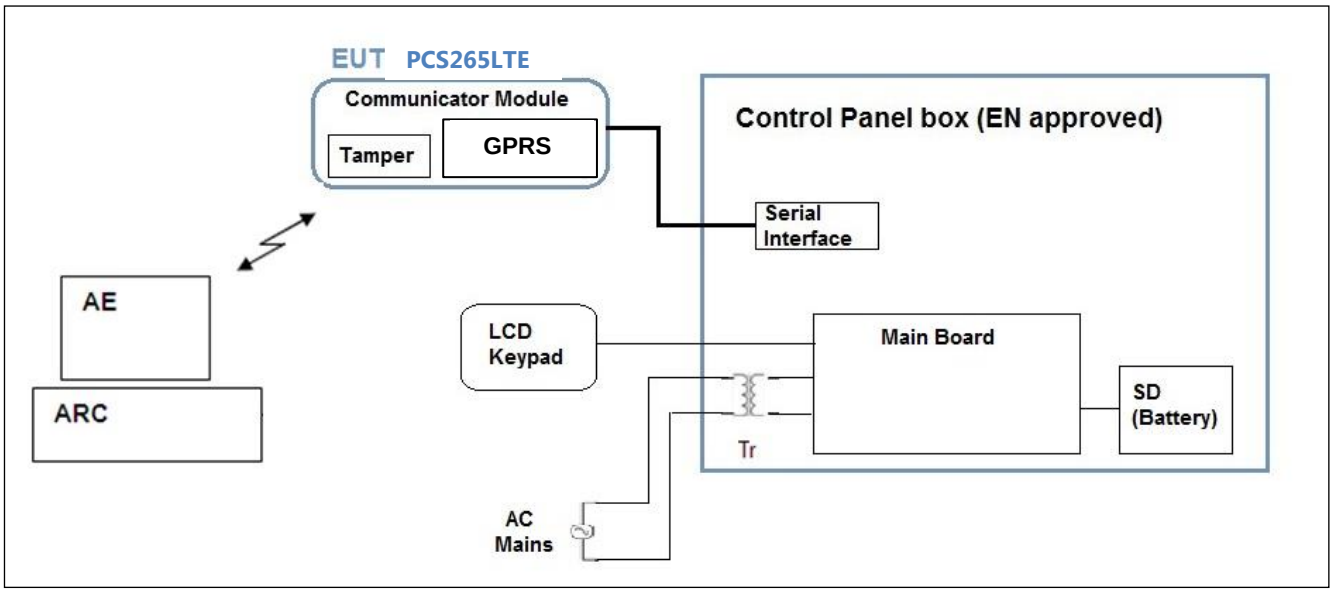
5.3 EUT visual inspection and functional check

Whenever specified by EN50136-2 and EN 50131-10 standards the Reduced Functional Test was carried out also the post tests visual inspections.

5.4 Setup and settings

The test configuration is presented in Figure 5.4.1.

Figure 5.4.1 ATS and test setup configuration



6 Tests summary

The EUTs, ATS category SP5, Type X, were subjected to tests according to EN 50136-1:2012+A1:2018, EN 50136-2:2013 and EN 50131-10:2014 for Security Grade 3, Environmental Class II and found to be in compliance with the standards requirements.

Table 6.1 ATS performance criteria & results

Performance criteria	ATS Configuration & Criteria	Results/ Remark	Verdict
	SP5	**IP Primary and GSM secondary**	
Arithmetic mean of all transmissions	10 sec	3 sec	**C**
95% of all transmissions	15 sec	< 3 sec	**C**
Maximum acceptable transmission time	30 sec	4 sec	**C**
Primary ATP Reporting time	90 sec	75 sec	**C**
Alternative ATP Maximum period when Primary operational	N/A	N/A	**NA**
Alternative ATP Maximum period when primary failed	N/A	N/A	**NA**
ATS reporting when more than 2 ATPs	N/A	N/A	**NA**
Substitution security	Required	See Chapter 7.16 on the present report	**C**
Information security	Required	See Chapter 7.16 on the present report	**C**

Table 6.2 SPT Classifications

SPT description	Security Grade	Environmental Class	SPT Type (EN50131-10)	PS Type
GPRS	3	II	X	A (shared with CIE)

Test	Status
EN 50136-2	
Section 9.4.2, Access levels	Pass
Section 9.4.3, Uploading and downloading of software and firmware	Pass
Section 9.4.4, Parameter storage	Pass
Section 9.4.5, Test of ATS fault reporting to AS	Pass
Section 9.4.6, Standardized serial interface to the AS	Pass
Section 9.4.7, Standardized parallel interface to the AS	N/A*
Section 9.4.8, Proprietary interface to the AS	N/A*
Section 9.4.9, Monitoring of the transmission network interface	Pass
Section 9.4.10, Event logging	Pass
Section 9.4.11, Protection of the log	Pass
Section 9.4.12, Event log capacity and endurance	Pass
Section 9.4.13, Clock resolution	Pass
Section 9.4.14, Store-and-forward operation	N/A**
Section 9.4.15, Pass-through operation	Pass
Section 9.4.16, SPT alarms	Pass
Section 9.4.17, Information and substitution security	Pass
Section 9.4.18, Documentation	Pass
EN 50131-10	
Section 10.3.1, Tamper protection	Pass
Section 10.3.2, Tamper detection – Access to the inside of the housing	Pass
Section 10.3.3, Tamper detection – Removal from mounting	Pass
Section 10.4, Substitution	N/A
Section 10.5.2, Average current consumption	Pass
Section 10.5.3, Test of SPT with type C power supply	N/A***
Section 10.5.4, Peak current consumption	Pass
Section 10.6, Documentation and Marking	Pass
Section 10.7, Environmental and EMC	See Note1

* Serial interface to the AS
** Pass-through operation mode
*** Type A power supply

Note 1: See separate report: PARENV_EN.32029, EMC not tested by HL

Revision History Table:					
Date	**File No.**	**Prepared**	**Reviewed**	**Approved**	**Amendment Description**
March 25, 2019	PARIAS_EN 50136.32029	Mr. Alex Zober Project Manager Product safety & Security Systems 	Mr. Ilan Benihas Site Manager, Product Safety & Security Systems 	Mr. Michael Brun, Safety Group Manager 	Original Report

7 Tests results

Table 7.1 - EN 50136-1 Compliance General Matrix

I. EN 50136-1 reference		Result				Remarks and document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
5	**General requirements**					
5.1	ATS configuration	✓				SP5 configuration tested, See section 6 Test Summary
5.2	ATS categories					
5.2.1	General	✓				See section 6, Test Summary GSM single path = SP5
5.2.2	Custom category			✓		No custom category
5.2.2.1	General			✓		As above
5.2.2.2	Documentation			✓		As above
5.3	Applicable network standards	✓				GSM (GPRS)
6	**System requirements**					
6.1	General	✓				Considered
6.2	Transmission links requirements					
6.2.1	General	✓				GSM (GPRS)
6.2.2	Transmission links shared with other applications	✓				Tested transmission link does not prevent the ATS from meeting the requirements of this European Standard.
6.2.3	Transmission network equipment			✓		Not subject to the requirements of EN 50136-2
6.2.4	ATSN capacity			✓		ATSN , ATP and the compatibles Digital Alarm Communication Receivers (DACRs) were not evaluated as not being part of the tested unit (EUT)
6.2.5	Denial of service			✓		Depend on antivirus protection at SPT and ARC antivirus protection at RCT
6.3	**Performance**					
6.3.1	General	✓				Considered
6.3.2	Transmission time	✓				See Table 6.1 above
6.3.3	Monitoring of the interconnection with the alarm system					
6.3.3.1	General	✓				AS to SPT interconnection and SPT to ATP interconnection monitoring by presenting fault message at AS event log and RCT when there is a communication problem. RCT to AE interconnection and implicitly ATP end-to-end monitoring was not evaluated as not being part of the tested unit (EUT).

I. EN 50136-1 reference		Result				Remarks and document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
6.3.3.2	Monitoring of the interconnection with the AS	✓				Interconnection fault between the AS and SPT is detected and reported by SPT (Tested under EN 50136-2:13).
6.3.3.3	Monitoring of ATS					
6.3.3.3.1	General	✓				Interconnection fault of the ATS monitored, detected and reported within the time described in Table 6.1 above (Tested under EN 50136-2:13).
6.3.3.3.2	Dual path ATS (DP1-DP4)			✓		Single path
6.3.3.4	Monitoring of interconnection with the AE			✓		RCT to AE interconnection and implicitly ATP end-to-end monitoring was not evaluated as not being part of the tested unit (EUT)
6.4	**Securing the messages in the alarm transmission system**	✓				Messages cannot be lost in the event of power failure or any other event generated internally by the SPT or RCT. All messages are secured in AS and those already transmitted in ARC non - volatile memories.
6.5	**Alarm transmission acknowledgement**	✓				A fault message on failure of delivery is sent to the AS by the SPT
6.6	**ATS generated alarms**	✓				All alarms and path failures reported to the AE and AS. (Tested under EN 50136-2:13)
6.7	**Availability**					
6.7.1	General	✓				100% availability during 2 weeks of testing period (daily monitored)
6.7.2	Redundancy/duplication			✓		Single path interface tested
6.7.3	ATS unavailability	✓				Considered
6.7.4	Duration of faults	✓				Considered
6.7.5	ATS availability recording	✓				100% during 7 days (no unavailability recorded)
6.7.6	ATSN availability			✓		New product, no extended 1 year test
6.8	**Security**					
6.8.1	General security requirements	✓				See Chapter 7.16
6.8.2	Substitution security	✓				As above
6.8.3	Information security	✓				As above
7	**Verification of performance**					
7.1	General	✓				Alarm signals and ATS faults were transmitted to RCT and then to AE in order to verify the operation of the ATS. (ATS faults were presented in the AS) The ATS is continuously monitored.
7.2	ATSN performance			✓		Only one SPT tested
7.3	Transmission time	✓				As per Table 2 and Table 3 of the standard. See Table 6.1 above.
7.4	Verification interval			✓		Upon ATSP responsibility

I. EN 50136-1 reference		Result				Remarks and document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
7.5	**Availability**					
7.5.1	Records			✓		Upon ATSP, new product, no records available
7.5.2	Inspection of records			✓		As above
7.5.3	Calculations					
7.5.3.1	General	✓				
7.5.3.2	ATS availability calculations	✓				100% during test period (7 days)
8	**Documentation**	✓				See Chapter 7.18

C= conform; NC= not conform; NA = not applicable; NT = not tested

Table 7.2 - EN 50136-2 Compliance General Matrix

II. EN 50136-2 reference		Result				Remarks/Document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
5	**Functional requirements**					
5.1	General	✓				Considered
5.2	Access levels	✓				See 9.4.2 below
5.3	Remote access			✓		No remote access to SPT according to manufacturer
5.4	Uploading and downloading of software and firmware	✓				See 9.4.3 below
5.5	Storage of parameters	✓				See 9.4.4 below
5.6	ATS and ATP fault reporting to the AS	✓				Tested for Single path See 9.4.5 below
5.7	Interface to the AS	✓				Serial interface to AS See 9.4.6 below
5.8	Monitoring of the transmission network interface(s) – Fault reporting	✓				See 9.4.9 below
5.9	Power supply for the SPT	✓				AS power supply (shared)
5.10	Event logging	✓				The event log is shared with the AS. The event logs of the AS comply with EN 50136-2:13, Table 1. The memory capacity and endurance comply with EN 50136-2:13, Table 2.
6	**Operation**					
6.1	**Modes of acknowledgement operation**					
6.1.1	General	✓				Pass-through operation. No positive acknowledge by the ARC after the message was received. A negative acknowledgement in case the massage not received by RCT.
6.1.2	Store-and-forward operation requirements			✓		Pass-through operation mode
6.1.3	Pass-through operation requirements	✓				See 9.4.15 below
6.2	SPT alarms	✓				See 9.4.16 below
6.3	Substitution security	✓				See 9.4.17 below
6.4	Information security	✓				
7	**Documentation**					
7.1	SPT documentation	✓				See 9.4.18 below
7.2	Marking and identification	✓				
8	**Housing and tamper protection – Tamper protection requirements**	✓				Tested according to security Grade 3 demands. See 10.3 below
9	**Tests**					
9.1	General	✓				Provided

II. EN 50136-2 reference		Result				Remarks/Document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
9.2	**General requirements**	✓				Temperature: 15 - 35 °C; Relative humidity: 25 - 75%; Air pressure: 86 - 106kPa.
9.3	**Reduced functional test**	✓				
9.4	**Functional tests**	✓				
9.4.1	General	✓				Performed as per Table 4 at EN 50136-2 standard
9.4.2	Access levels	✓				See Chapter 7.1
9.4.3	Uploading and downloading of software and firmware	✓				See Chapter 7.2
9.4.4	Parameter storage	✓				See Chapter 7.3
9.4.5	ATS and ATP fault reporting to the AS	✓				See Chapter 7.4
9.4.6	Interface to AS (serial)	✓				See Chapter 7.5
9.4.7	Interface to AS (parallel)			✓		Serial Interface
9.4.8	Interface to AS (proprietary)			✓		Serial Interface
9.4.9	Monitoring of the transmission network interface	✓				See Chapter 7.8
9.4.10	Event Logging	✓				The event log is shared with the AS. See Chapter 7.9
9.4.11	Protection of the log	✓				The log shared with AS. See Chapter 7.10
9.4.12	Log Capacity	✓				The event log is shared with the AS. See Chapter 7.11
9.4.13	Clock resolution	✓				See Chapter 7.12
9.4.14	Store and forward			✓		Pass-through operation mode
9.4.15	Pass-through	✓				See Chapter 7.14
9.4.16	SPT alarms	✓				See Chapter 7.15
9.4.17	Information security	✓				See Chapter 7.16
9.4.18	Documentation	✓				See Chapter 7.18

C= conform; NC= not conform; NA = not applicable; NT = not tested

Table 7.3 - EN 50131-10 Compliance General Matrix

III. EN 50131-10 reference		Result				Remarks/Document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
4	**General requirements**					
4.1	Additional functions			✓		No additional functions
4.2	Equipment features	✓				Comply
4.3	SPT structure	✓				Type X
5	**Security Grade**	✓				Grade 3
6	**Environmental performance**					
6.1	Requirements	✓				Class II
6.2	Environmental tests	✓				See 10.7 below
7	**Functional requirements**					
7.1	Tamper	✓				Tested for security Grade 3 See 10.3 below
7.2	Monitoring of substitution			✓		Not mandatory for Grade 3
7.3	Wireless interconnections			✓		No wireless interconnection between CIE and SPT
7.4	Power Supply	✓				Shared with AS. Tested under EN 50131-1 and EN 50131-6 requirements for type A control panel The power supply is sufficient for all components connected to it and that the necessary standby period can be achieved .
8	**Product Documentation**	✓				See 10.6 below
10	**Tests**					
10.1	**General**	✓				Type X, tested with CIE
10.2	**Test conditions**	✓				Temperature: 15-35°C Relative humidity: 25-75% Air pressure: 86-106kPa
10.3	**Tamper Security tests**					
10.3.1	Tamper protection	✓				See chapter 7.19
10.3.2	Tamper detection – Access to the inside of the housing	✓				See chapter 7.20
10.3.3	Tamper detection – Removal from mounting	✓				See chapter 7.21
10.4	Substitution tests			✓		Not mandatory for Grade 4
10.5	**Power Supply**					
10.5.1	General	✓				EN50131-6, Type A PS tests passed
10.5.2	Average current consumption	✓				See Chapter 7.21
10.5.3	Test of SPT with type C power supply			✓		Type A
10.5.4	Peak current consumption	✓				See Chapter 7.17

III. EN 50131-10 reference		Result				Remarks/Document reference
Section	**Requirement**	**C**	**NC**	**NA**	**NT**	
10.6	Documentation and marking	✓				See Chapter 7.18
10.7	**Environmental tests operational**					
	Dry Heat	✓				Separate HL TR PARENV_EN.32029
	Cold	✓				
	Damp heat (steady state)			✓		
	Damp Heat (cyclic)	✓				
	Water Ingress			✓		
	Impact	✓				
	Mechanical Shock	✓				
	Vibration, sinusoidal	✓				
	EMC				✓	Not tested by HL See Separate TR: 362239-1R1TRFEMC
	Environmental tests endurance					
	Dry Heat			✓		
	Damp heat (steady state)	✓				
	Damp Heat (cyclic)			✓		
	SO_2 Corrosion			✓		
	Salt mist, cyclic			✓		

C= conform; NC= not conform; NA = not applicable; NT = not tested

Test specification:	**Access levels test**		
Test procedure:	EN 50136-2 Section 9.4.2: Access levels test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Remarks:			

7.1 Access levels test procedure and results

7.1.1 Test purpose

To demonstrate the ability of the SPT to comply with 5.2 to provide up to 3 levels of access and verify the relevant access to the functions and controls.

7.1.2 Test procedure

7.1.2.1 An attempt to use functions and controls required by 5.2 was performed, while operating the SPT at each access level and verifying that access is granted for permitted functions and is denied for non-permitted functions.

7.1.3 Test results

Table 7.1.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The uncommission SPT and any necessary equipment to allow the commissioning of the SPT.	Commission the SPT and leave the default key unchanged.	Commissioning not completed	Commissioning shall not be completed.	P
2	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	At access level 1, attempt to operate all the functions and controls as specified by the manufacturer for access level 1.	Access is not permitted (for an EN approved CP)	Access is in accordance with 5.2.	P
3	As above	Repeat as step 1 for access level 2.	Limited access as per 5.2	As above	P
4	As above	Repeat as step 1 for access level 3.	Access is only possible if granted by a level 2 user.	As above	P
5	As above	Try to get access by using three times a wrong key in a 60 s timeframe.	Comply for EN approved CP	No access is granted.	P
6	State after step.5	Wait 80s (+/- 5s) and retry with a valid key to get access.	Access denied for EN approved CP	No access is granted.	P
7	See manufacturer's proof of quality of the algorithm used to achieve remote access with a key of at least 1000000 differs.	Review document.	Comply for SPT embedded in EN approved CP (Grade 2 minimum)	Algorithm can distinguish between 1000000 key differs.	P

Test specification:	**Access levels test**		
Test procedure:	EN 50136-2 Section 9.4.2: Access levels test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Remarks:			

7.1.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Upload and download of software and firmware test**		
Test procedure:	EN 50136-2 Section 9.4.3: Upload and download of software and firmware test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.2 Upload and download of software and firmware test procedure and results

7.2.1 Test purpose

To prove that upload and download of firmware of the SPT, if implemented, complies with the requirements of 5.4.

7.2.2 Test procedure

7.2.2.1 An attempt to use update firmware of the SPT, while operating the SPT at the appropriate access level and following the instructions in the SPT manual, was performed.

7.2.3 Test results

Table 7.2.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	At access level 1, attempt to apply a firmware update.	No possible to update the firmware at access level 1	A firmware update shall not be permitted.	P
2	As above	Repeat as above for access level 2.	As above	As above	P
3	As above	Repeat as above for access level 3.	Software updating by PC is permitted by installer only.	A firmware update shall be permitted.	P
4	As above	Repeat as above for access level 3. Disconnect from the network during the firmware update procedure.	Network connection between PC and SPT was disconnected during updating. The SPT operated normally after this attempt.	The SPT shall operate normally after the attempt to download firmware.	P

7.2.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A

Test specification:	**Parameter storage test**		
Test procedure:	EN 50136-2 Section 9.4.4: Parameter storage test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.3 Parameter storage test procedure and results

7.3.1 Test purpose

To demonstrate the ability of the SPT to comply with 5.5 to provide immunity of the storage of parameters against power failure or boot up sequence

7.3.2 Test procedure

7.3.2.1 At least 2 site specific parameters were changed. These parameters were read back after a power cycle (power loss / power recovery) and boot up sequence.

7.3.3 Test results

Table 7.3.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Change and save at least 2 site specific data according to the procedure in the manual.	Two parameters successfully changed: SPT tamper set from on to off and hour were changed.	-	P
2	As above	Power off the SPT.	SPT power off	-	P
3	SPT in power off state	Wait at least 10 s and power on the SPT again.	After power on the SPT operate properly.	SPT shall be in a functional state as before the power cycle.	P
4	Same as Step 1	Read the changed parameters according to the procedure in the manual.	The parameters values stay as before the power off.	The parameter values shall be the same as before the power cycle.	P
5	As above	Reset the SPT according to the reset procedure in the manual.	The parameters values stay as before the reset.	The parameter values shall be the same as before the reset procedure.	P

Results

(…) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**ATS fault reporting to AS test**		
Test procedure:	EN 50136-2 Section 9.4.5: ATS fault reporting to AS test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.4 ATS fault reporting to AS test procedure and results

7.4.1 Test purpose

To demonstrate the ability of the SPT to report an ATS fault to the AS to comply with 5.6.

7.4.2 Test procedure

7.4.2.1 Each ATP and ATS were failed in order to check the reporting of the ATS fault to the AS within the reporting times defined within EN 50136-1. The test was repeated for every ATS category that the SPT supports as defined by the manufacturer.

7.4.3 Test results

Table 7.4.1 Test results (Dual path ATS)

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any Necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Check that each ATP is operating normally and that output to the AS is reporting ATP operational.	SPT classified as SP5 and referred as single path.	No fault shall be displayed	NA
2	As after step 1.	Fail the primary ATP.	As above	No ATS fault shall be displayed. An ATP fault may be displayed.	NA
3	As after step 2.	Fail the alternative ATP.	As above	The ATS failure condition shall be displayed within the reporting times defined in EN 50136-1.	NA
4	As after step 3.	Restore Primary ATP and Alternative ATP.	As above	No fault shall be displayed.	NA

Test specification:	**ATS fault reporting to AS test**		
Test procedure:	EN 50136-2 Section 9.4.5: ATS fault reporting to AS test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

Table 7.4.2 Test results (Single path ATS)

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Check that the ATS is operating normally and that output to the AS is reporting ATS operational.	SPT in normal functional status and no fault displayed.	No fault shall be displayed	P
2		Fail ATS.	ATS failure displayed at the event log within 30 sec.	The ATS failure condition shall be displayed within the times defined in EN 50136-1:2012, Table 3.	P
3		Restore ATS.	The SPT fault is restored after 10s and no fault is displayed	No fault shall be displayed.	P

7.4.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 5413

Full description is given in Appendix A.

Test specification:	**Standardized serial interface to the AS test**		
Test procedure:	EN 50136-2 Section 9.4.6: Standardized serial interface to the AS test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.5 Standardized serial interface to the AS test procedure and results

7.5.1 Test purpose

To prove that the serial interface to the AS, if implemented, complies with the requirements of 5.7

7.5.2 Test procedure

7.5.2.1 The instructions in the SPT manual for installing the SPT were followed. The monitoring and performance of this link were tested.

7.5.3 Test results

Table 7.5.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Connect SPT to AS via the serial interface as specified in the product documentation.	The interconnecting of SPT with AS is in line with documentation	Interconnecting SPT and AS shall be according to documentation.	P
2	As above	Create event on AS.	Transmission time as per EN 50136-1 was 3 sec	The transmission time shall be within limits of the specified category.	P
3	As above	Disconnect serial interface.	Failure was displayed at the RCT within 28 sec.	Indication shall be present on RCT within maximum reporting time of the specified category.	P

7.5.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 5413

Full description is given in Appendix A.

Test specification:	**Standardized parallel interface to the AS test**		
Test procedure:	EN 50136-2 Section 9.4.7: Standardized parallel interface to the AS test		
Test mode:	Compliance	**Verdict:**	N/A
Test Date:			
Atmospheric conditions during the test:	**Temperature:** ºC	**Air Pressure:** hPa	**Relative Humidity:** %
Test specification:			

7.6 Standardized parallel interface to the AS test procedure and results

7.6.1 Test purpose

To demonstrate the ability of the SPT to comply with Annex A to provide a monitored connection to its associated AS via the standardized parallel interface if implemented.

7.6.2 Test procedure

7.6.2.1 An attempt to was made to use the parallel interface to its associated AS in accordance with Annex A (the test performs alarm transmission, interface failure and alarm acknowledge via the parallel interface to the AS).

7.6.3 Test results

Table 7.6.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	An alarm is triggered by the AS to every SPT parallel alarm Input as required by Annex A.	SPT connected as serial interface to AS	A change of more than ± 40 % from the quiescent resistance value is recognized as an alarm.	NA
2	As above	An AS fault or other message is triggered by the AS to every SPT message/fault input as required by Annex A.	As above	A change of impedance from less than 100 Ω to more than 500 kΩ is recognized as an change of state of the message/fault input of the SPT.	NA
3	As above	Make sure that the ATS is not available.	As above	The SPT fault output (A.1.3.3) shall change state within the reporting time of the appropriate category.	NA
4	As above	Make sure that the ATS is not available and trigger an alarm input on the SPT.	As above	The SPT alarm delivery failure output (A.1.3.2) shall change state after the maximum transmission time of the appropriate category.	NA

Test specification:	**Standardized parallel interface to the AS test**		
Test procedure:	EN 50136-2 Section 9.4.7: Standardized parallel interface to the AS test		
Test mode:	Compliance	**Verdict:**	N/A
Test Date:			
Atmospheric conditions during the test:	**Temperature:** ºC	**Air Pressure:** hPa	**Relative Humidity:** %
Test specification:			

5	As above	Activate both SPT outputs (A.1.3.2 and A.1.3.3) and connect a source of 20 mA to both individual outputs.	As above	Both SPT outputs to the AS can sink at least 20 mA.	NA
6	As above	Tamper the interface to the AS by removing or shortening the interface connection of the SPT to the AS.	As above	Tamper of the SPT to AS connection is detected and reported to the RCT.	NA

7.6.4 Results

(…)The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Proprietary interface to the AS test**		
Test procedure:	EN 50136-2 Section 9.4.8: Proprietary interface to the AS test		
Test mode:	Compliance	**Verdict:**	N/A
Test Date:			
Atmospheric conditions during the test:	**Temperature:** ºC	**Air Pressure:**	**Relative Humidity:** %
Test specification:			

7.7 Proprietary interface to the AS test procedure and results

7.7.1 Test purpose

To prove that the proprietary interface to the AS, if implemented, complies with the requirements of 5.7

7.7.2 Test procedure

7.7.2.1 The instructions in the SPT manual for installing the SPT were followed. The monitoring and performance of this link were tested.

7.7.3 Test results

Table 7.7.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Connect SPT to AS as specified in the product documentation.	SPT connected as serial interface to AS	Interconnecting SPT and AS shall be according to documentation.	NA
2	As above	Create event on AS.	As above	The transmission time shall be within limits of the specified category.	NA
3	As above	Disconnect interface.	As above	Indication shall be present on RCT within maximum reporting time of the specified category. The interface failure shall be detected and delivered within the maximum reporting time.	NA

7.7.4 Results

(…)The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL	HL

Full description is given in Appendix A.

Test specification:	**Monitoring of the transmission network interface test**		
Test procedure:	EN 50136-2 Section 9.4.9: Monitoring of the transmission network interface test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.8 Monitoring of the transmission network interface test procedure and results

7.8.1 Test purpose

To prove that the SPT can detect the failure of each transmission network interface

7.8.2 Test procedure

7.8.2.1 The SPT network interfaces were disconnected from the network, and monitored to see if a fault is generated to the AS.

7.8.3 Test results

Table 7.8.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Disconnect the network connection.	The SPT in normal function state. When network connection is lost at GSM ATP due to removal of SIM card, “No service” message displayed within 75 sec.	The fault shall be transmitted to AS within the reporting time of EN 50136-1:2012, Table 3.	P
2		Reconnect to the network.	In order to restore the SIM card, the SPT power was shut down. After power on, fault message was restored within 10 sec.	The fault reset shall be transmitted to AS within the reporting time of EN 50136-1:2012, Table 3.	P

Test specification:	**Monitoring of the transmission network interface test**		
Test procedure:	EN 50136-2 Section 9.4.9: Monitoring of the transmission network interface test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.8.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 5413

Full description is given in Appendix A.

Test specification:	**Event logging test**		
Test procedure:	EN 50136-2 Section 9.4.10: Event logging test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.9 Event logging test procedure and results

7.9.1 Test purpose

To demonstrate that events are recorded at the SPT as required in Table 1 according to category.

7.9.2 Test procedure

7.9.2.1 Events required in Table 1 were generated according to category, after which they were reviewed for recording in the SPT event log.

7.9.3 Test results

Table 7.9.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Generate each implemented event listed in Table 1, according to category.	The event log is shared with AS. All applicable Table 1 events were tested and displayed at CP's event log.	All implemented events shall be recorded in the SPT event log.	P

7.9.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Protection of the log test**		
Test procedure:	EN 50136-2 Section 9.4.11: Protection of the log test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	14/10/18		
Atmospheric conditions during the test:	**Temperature:** 23.1 ºC	**Air Pressure:** 1007hPa	**Relative Humidity:** 42 %
Test specification:			

7.10 Protection of the log test procedure and results

7.10.1 Test purpose

To validate that the log is protected against accidental or deliberate deletion or alteration of log content

7.10.2 Test procedure

7.10.2.1 Manufacturer methodology was verified to achieve compliance with 5.10. The log was confirmed to be protected against accidental or deliberate deletion or alteration.

7.10.3 Test results

All events protected in AS non-volatile memory and RCT.

7.10.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Event log capacity and endurance test**		
Test procedure:	EN 50136-2 Section 9.4.12: Event log capacity and endurance test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.11 Event log capacity and endurance test procedure and results

7.11.1 Test purpose

To demonstrate that the log contains the minimum of event records according to category, and that the log endures the required duration according to classification.

7.11.2 Test procedure

7.11.2.1 Log event records were created. Their quantity and retention meet the requirements of 5.10.

7.11.3 Test results

Table 7.11.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Create log events in line with Table 2 according to category.	The event log is shared with AS. Capacity and endurance comply with Table 2 for SP5: 1000 events capacity, Memory endurance more than 30 days.	All event records logged correctly.	P
2	As above.	Create log events to exceed the minimum number of log events listed in Table 2 according to category.	1000 events capacity. The most recent event records are logged correctly	The most recent event records are logged correctly.	P
3	As above	Remove power from the equipment as listed in Table 2 according to category. Restore power.	All event records remain logged correctly.	All event records still remain logged correctly.	P

7.11.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Clock resolution test**		
Test procedure:	EN 50136-2 Section 9.4.13: Clock resolution test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.12 Clock resolution test procedure and results

7.12.1 Test purpose

To prove that the accuracy of the timestamps as attached to events in the log complies with the requirements of 5.10.

7.12.2 Test procedure

7.12.2.1 Events were created while verifying the timestamps against a reference time source. The tests were performed against a well-defined time reference. For this purpose, an NTP server on Stratum 2 level generally on the Internet) provides the required accuracy.

7.12.3 Test results

Table 7.12.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	The SPT and any necessary equipment to allow the SPT to perform as required shall be installed and in a functional state.	Create an event.	Clock accuracy of the event log of the Control Panel complies with the requirements of EN 50131-1, 8.10. (CP EN approved) Therefore the event log of the Control Panel comply with the requirements of EN 50136-2 for clock accuracy +-5s	There shall be a log entry, with a minimum resolution of one second and a deviation in relation to the reference time of less than 5 s.	P
2	As after test nr. 1.	Wait for at least 72h. Create a second event.	As above	As above.	P

7.12.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Store-and-forward operation test**		
Test procedure:	EN 50136-2 Section 9.4.14: Store-and-forward operation test		
Test mode:	Compliance	**Verdict:**	N/A
Test Date:			
Atmospheric conditions during the test:	**Temperature:** ºC	**Air Pressure:** hPa	**Relative Humidity:** %
Test specification:			

7.13 Store-and-forward operation test procedure and results

7.13.1 Test purpose

To prove that the store-and-forward operation, if implemented, complies with the requirements of 6.1.2

7.13.2 Test procedure

7.13.2.1 An alarm from the As to the SPT was triggered and monitored if an acknowledgement is transmitted from the SPT to the AS under various ATS conditions.

7.13.3 Test results

Table 7.13.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	General condition: The AS is connected to the SPT. The SPT is configured for store-and forward operation. The ATS is fully operational and configured for any ATS category.	Trigger an alarm transmission from AS to SPT.	The SPT work with Pass - through operation mode	The acknowledgement signal shall be transmitted to AS after successful reception of the alarm by the SPT.	N/A
2	General condition, and: The ATS is not connected; i.e. to make sure that no alarm transmission between SPT and RCT is possible.	As above	As above	The SPT shall transmit an acknowledgement signal to the AS.	N/A
3	General condition, and: The ATS is fully operational and configured for any ATS category.	Trigger an alarm transmission from AS to SPT, and: Disconnect the ATS after the alarm is transmitted to the SPT. Make sure that the alarm is not received and/or acknowledged by the RCT.	As above	The acknowledgement signal shall be transmitted to AS after successful reception of the alarm by the SPT.	N/A

Test specification:	**Store-and-forward operation test**		
Test procedure:	EN 50136-2 Section 9.4.14: Store-and-forward operation test		
Test mode:	Compliance	**Verdict:**	N/A
Test Date:			
Atmospheric conditions during the test:	**Temperature:** ºC	**Air Pressure:** hPa	**Relative Humidity:** %
Test specification:			

4	As above	Power cycle the SPT according to the instruction in the documentation	As above	The SPT shall not transmit any spurious acknowledgement signal to the AS as a result of a previous unsuccessful alarm transmission attempt.	N/A

7.13.4 Results

(…) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Pass-through operation test**		
Test procedure:	EN 50136-2 Section 9.4.15: Pass-through operation test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.14 Pass-through operation test procedure and results

7.14.1 Test purpose

To prove that the pass-through operation, if implemented, complies with the requirements of 6.1.3

7.14.2 Test procedure

7.14.2.1 An alarm from the As to the SPT was triggered and monitored if an acknowledgement is transmitted from the SPT to the AS under various ATS conditions.

7.14.3 Test results

Table 7.14.1 Test results

Step	Test Condition	Test procedure	Measurement	Pass criteria	Verdict
1	General condition: The AS is connected to the SPT. The SPT is configured for store-and forward operation. The ATS is fully operational and configured for any ATS category.	Trigger an alarm transmission from AS to SPT.	The alarm is received at the RCT. No positive acknowledgement signal. Refer to section 6.5 EN 50136-1. In case of alarm receiving failure communication fault message is presented in AS.	The acknowledgement signal shall be transmitted to AS after successful reception of the alarm by the RCT.	P
2	General condition, and: The ATS is not connected; i.e. to make sure that no alarm transmission between SPT and RCT is possible.	As above	In this situation communication failure presented at the AS (A negative acknowledgement signal from SPT to the AS).	The SPT shall not transmit An acknowledgement signal to the AS. A negative acknowledgement signal from SPT to the AS is permitted.	P
3	General condition, and: The ATS is fully operational and configured for any ATS category.	Trigger an alarm transmission from AS to SPT, and: Disconnect the ATS after the alarm is transmitted to the SPT. Make sure that the alarm is not received and/or acknowledged by the RCT.	Alarm message not received at the RCT. Communication failure presented at the AS (A negative acknowledgement signal from SPT to the AS).	The SPT shall not transmit an acknowledgement signal to AS. A negative acknowledgement signal from SPT to the AS is permitted.	P

Test specification:	**Pass-through operation test**		
Test procedure:	EN 50136-2 Section 9.4.15: Pass-through operation test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

4	As after Step 3	Power cycle the SPT according to the instruction in the documentation and restore the ATS to normal operation.	No alarm message received at the RCT	No alarm shall be received at the RCT. If the AS retransmits the previously triggered alarm (Test number 3), the RCT shall receive this alarm and the SPT shall transmit an acknowledgement signal to the AS. Monitoring of the AS retransmission attempt is critical for the pass/fail verdict of this test.	P

7.14.4 Results

(X)The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**SPT alarms test**		
Test procedure:	EN 50136-2 Section 9.4.16: SPT alarms test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.15 SPT alarms test procedure and results

7.15.1 Test purpose

To demonstrate that all messages in Table 3 are generated and transmitted from the SPT to the RCT/AE for the appropriate category.

7.15.2 Test procedure

7.15.2.1 Principle

All of the alarms required in Table 3 were generated for the appropriate category, and reviewed for transmission to the RCT/AE.

7.15.2.2 Condition

The SPT and any necessary equipment to allow the SPT to perform as required was installed in a functional state.

7.15.2.3 Procedure

Each required alarm listed in Table 3 was generated according to category.

7.15.2.4 Measurement

All required alarms are generated and transmitted from the SPT to the RCT/AE for the appropriate category.

7.15.2.5 Pass/Fail criteria

All required alarms shall be generated by the SPT and transmitted to the RCT/AE for the appropriate category.

7.15.3 Test results

Table 7.15.1 Test results

#	**Alarms originated by the SPT and transmitted to the RCT**		
#	**Alarms**	**Verdict**	**Remarks**
1	SPT prime power source failure & restore	**N/A**	SPTs PS sheared with CIE – No dedicated PS
2	SPT alternative power source failure & restore	**N/A**	No alternative power source. The battery function is to support power shut down and not to be used as backup as defined in EN50131-6 (see unit manual)
3	AS to SPT interconnection failure & restore	**Pass**	Failure: Fail to communicate event" Restored: "Fail to communicate Restore".
4	Primary ATP failure & restore	**N/A**	Single path- Applies to dual path system only
5	Secondary ATP failure & restore	**N/A**	Single path- Applies to dual path system only

7.15.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Test specification:	**Information and substitution security test**		
Test procedure:	EN 50136-2 Section 9.4.17: Information and substitution security test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	9/8/2017		
Atmospheric conditions during the test:	**Temperature:** 23 ºC	**Air Pressure:** 1008hPa	**Relative Humidity:** 48 %
Test specification:			

7.16 Information and substitution security test procedure and results

7.16.1 Test purpose

To check and confirm that the customer user manual are in accordance with EN50136-2 requirements for information and substitution security

7.16.2 Test procedure

7.16.2.1 To verify SPT documentation regarding the stated methodology used for the protection against substitution of the SPT with identical equipment or simulation equipment to the requirements outlined in 6.3.

7.16.2.2 Verify that the manufacturer describes in the SPT documentation proper methods used for the protection of the information transmitted by the ATS to prevent unauthorized reading and to unauthorized modification of the information transmitted to the requirements described in 6.4.

7.16.3 Test results

Table 7.16.1 Test results

Clause/test	Mode of implementation	Classification/ requirement	Verdict
Substitution Security	Substitution Security is accomplished by Information Security description below, by means of physical security (Tamper protection) and by designating a unique Serial Number for each equipment. When sent to the receiving center, messages from the ATE are encrypted (as described at Information Security below) and contain the serial number of the SPT. The ARC will be able to alert when a different serial number than the one registered, is in use.	SP5	P
Information Security	IPR512 and IPRS7 Receivers (RCT) provide 256 bit encrypted, supervised communication for compatible Paradox control panels using the PCS265LTE. AES Validation number is 986. This ensure measures to prevent unauthorized reading and/or modification of message.		P

7.16.4 Results

(X)The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Test specification:	**Information and substitution security test**		
Test procedure:	EN 50136-2 Section 9.4.17: Information and substitution security test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	9/8/2017		
Atmospheric conditions during the test:	**Temperature:** 23 ºC	**Air Pressure:** 1008hPa	**Relative Humidity:** 48 %
Test specification:			

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix

Test specification:	Power supply test procedure and results		
Test procedure:	EN 50131-10 Section 10.5: Power supply tests		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.17 Power supply test procedure and results

7.17.1 Test purpose

To confirm by measurement that the average current consumption and peak current consumption of the SPT does not exceed the amount claimed by the manufacturer in the product documentation.

7.17.2 Test procedure

7.17.2.1 [X] For SPT with integral PS, the test carried out with the EPS at nominal value and with APS at a level of at least 80% of fully capacity and connected according the manufacturer's instructions.

7.17.2.2 [] For SPT without integral PS, connect the SPT to a suitable variable, stabilized power supply with a current measuring meter in series. Connect a voltmeter across the power input terminals of the SPT. Set the voltage to the nominal supply voltage.

7.17.2.3 Connect the SPT to CIE or CIE simulator

7.17.2.4 Connect the SPT to an RCT via ATS network, or simulator of this.

7.17.2.5 Allow the SPT to complete any initial power-up activities and stabilize.

7.17.2.6 Let the SPT to operate normally for a period of 1 hour with transmission of alarm once every 5 minutes.

7.17.2.7 Measure the current consumed by the SPT throughout the one-hour period and calculate the average value and the peak value

7.17.3 Tests results

Table 7.17.1 Test results

Average current consumption measured (Section 10.5.2)			
ATS	Average Current consumption Measured [mA]	Current consumption declared [mA]	**Verdict**
GPRS SPT	128	130	P
Peak current consumption measured (Section 10.5.4)			
ATS	Peak Current consumption Measured [mA]	Peak Current consumption declared [mA]	**Verdict**
GPRS SPT	183	300	P
Remark	Max and average following 1 h measurements at 5 min intervals.		

7.17.4 Results

(X)The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 3132

Full description is given in Appendix A.

Test specification:	**Documentation test**		
Test procedure:	EN 50136-2 Section 9.4.18: Documentation test EN 50131-10 Section 10.6: Documentation test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	13/3/19		
Atmospheric conditions during the test:	**Temperature:** 23ºC	**Air Pressure:** 1016hPa	**Relative Humidity:** 48%
Test specification:			

7.18 Documentation test procedure and results

7.18.1 Test purpose

To verify that all required documentation is provided, complete and correct.

7.18.2 Test procedure

7.18.2.1 The documentation relating to an SPT was concise, complete and unambiguous. It was sufficient to ensure correct installation, commissioning and maintenance of the SPT. The integration of the SPT in an ATS was ensured.

7.18.2.2 The SPT operation instructions were designed to minimize the possibility of incorrect operation and were structured to reflect the access level of the user.

7.18.2.3 SPT documentation includes the following: name of manufacturer or supplier, description of equipment, standard to which component claims compliance, ATS categories for which the SPT is suitable, environmental class for which the SPT is suitable, power requirements for the SPT, statement of compatibility with supported type of AS interface(s), statement of compatibility with the supported RCT(s) types and/or protocols, description of the method of operation by which the SPT signals ATP failures to the AS, description of how monitoring of the transmission network interface is implemented, declaration of operation mode (store-and-forward and/or pass-through), methodology to achieve compliance with EN 50136-1:2012+A1:2018, 6.7.2, methodology to achieve compliance with EN 50136-1:2012+A1:2018, 6.7.3.

7.18.3 Results

Table 7.18.1 Test results

EUT: PCS265LTE		**Documents:** PCS265L-EI02.pdf				
Standard/ Section	**Requirement**	**Verdict**				**Remark**
		C	**NC**	**NA**	**NT**	
EN 50136-1 **8. Documentation**	Planning, installation, commissioning, service and operation	✓				
	Access Levels	✓				
	Alarm transmission system classification	✓				
EN 50136-2 **7.1. SPT documentation**	Name of manufacturer or supplier	✓				
	Description of equipment	✓				
	Standard to which component claims compliance	✓				
	ATS categories for which the SPT is suitable	✓				
	Environmental class for which the SPT is suitable	✓				
	Power requirements for the SPT			✓		Integrated in CIE
	Statement of compatibility with the supported type of AS interface(s);	✓				

Test specification:	**Documentation test**		
Test procedure:	EN 50136-2 Section 9.4.18: Documentation test EN 50131-10 Section 10.6: Documentation test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	13/3/19		
Atmospheric conditions during the test:	**Temperature:** 23ºC	**Air Pressure:** 1016hPa	**Relative Humidity:** 48%
Test specification:			

EUT: PCS265LTE		**Documents:** PCS265L-EI02.pdf				
Standard/ Section	**Requirement**	**Verdict**				**Remark**
	Statement of compatibility with the supported RCT(s) types and/or protocols	✓				
	Description of the method of operation by which the SPT signals ATP failures to the AS	✓				
	Description of how monitoring of the transmission network interface is implemented	✓				
	Declaration of operation mode (store-and-forward and/or pass-through)	✓				
	Methodology to achieve compliance with EN 50136-1:2012+A1:2018, 6.7.2			✓		
	Methodology to achieve compliance with EN 50136-1:2012+A1:2018, 6.7.3.	✓				
EN 50131-10 **8. Product documentation**	Operating temperature and humidity range			✓		Integrated in CIE Same as Control Panel
	Weights and dimensions	✓				
	Fixing details	✓				
	Where there are user serviceable parts (e.g. fuses) their type and value			✓		No serviceable parts
	Type of interconnections (interface to CIE);	✓				
	Terminal identifications	✓				
	The average current consumption of the SPT (not applicable to SPT with type C PS) (see 7.4.1)				✓	Part of the main board and whole CP power.
	Lifetime of prime power source (for SPT with type C PS only)			✓		Not Type C
	Permitted types of power source (for SPT with type C PS), (e.g. battery type)			✓		Not Type C
	The peak current consumption of the SPT				✓	Part of the main board and whole CP power.
	Suitable storage device type, capacity and low voltage failure threshold (where applicable);			✓		Integrated in CIE (not considered relevant)

Test specification:	**Documentation test**		
Test procedure:	EN 50136-2 Section 9.4.18: Documentation test EN 50131-10 Section 10.6: Documentation test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	13/3/19		
Atmospheric conditions during the test:	**Temperature:** 23ºC	**Air Pressure:** 1016hPa	**Relative Humidity:** 48%
Test specification:			

EUT: PCS265LTE		**Documents:** PCS265L-EI02.pdf				
Standard/ Section	**Requirement**	**Verdict**				**Remark**
	Programmable functions provided.	✓				
EN 50136-2 **7.2. Marking and identification**	Name of manufacturer	✓				See Photograph 5.1.10
	All ATS categories supported by the SPT	✓				
	Date of manufacture or batch number or serial number	✓				
	Environmental class for which the SPT is suitable	✓				
	The marking shall be legible, durable and unambiguous	✓				
EN 50131-10 **9. Marking and labelling**	Name of manufacturer	✓				See Photograph 5.1.10
	Type	✓				
	Date of manufacture or batch number or serial number	✓				
	Security Grade	✓				
	Environmental class	✓				
	Standard to which the SPT claims compliance	✓				

C=compliant, NC= non-compliant, NA= not applicable, NT= not tested

7.18.4 (X) The above results comply with this section of the standard.
(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460

Full description is given in Appendix A.

Test specification:	**Tamper protection test**		
Test procedure:	EN 50131-10 Section 10.3.1: Tamper protection test		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.19 Tamper protection test

7.19.1 Test purpose

To use Impact testing to verify that the SPT housing meets the tamper protection requirements of 7.1.2.

7.19.2 Test procedure

7.19.2.1 The SPT was installed in his operational position according to the manufacturer's instructions.

7.19.2.2 The SPT housing was subjected to impacts (impacts energy defined according to Table 1 of EN 50131-10 standard) from a small hemispherical hammer-head on any exposed surfaces of the EUT.

7.19.2.3 A visual inspection following by a reduced functional test was performed after the impact test.

7.19.2.4 The results were documented as presented in Table 7.19.1.

7.19.3 Tests results

Table 7.19.1 Test results

Observation	Verdict
- SPT is enclosed in plastic enclosure and it external from the CP – tested for the SPT enclosure - SPT tested with impacts of 1 Joule (3 impacts per point at each exposed surface) - The EUT meet the requirements of the reduced functional test before, during and after the test. - No structural or mechanical damages were registered during the visual inspection. - The EUT passed the impact test.	**Pass**

7.19.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 3013

Full description is given in Appendix A.

Test specification:	Tamper detection - Access to the inside of the housing		
Test procedure:	EN 50131-10 Section 10.3.2: Tamper detection - Access to the inside of the housing		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.20 Tamper detection - Access to the inside of the housing

7.20.1 Test purpose

To verify that it is not possible to insert a tool into the SPT in its normal mounting position and defeat the operation of the tamper detection circuitry before a tamper signal or message is generated.

7.20.2 Test procedure

7.20.2.1 Mount the SPT according to the manufacturer's instructions with housing security closed.

7.20.2.2 For Type X SPT, open the SPT housing by normal means and attempt to introduce a sabotage tool as specified in 7.1.3.2, into the EUT without causing physical damage before the tamper detection device operates.

7.20.2.3 If the tool is successfully inserted, it should be maneuvered to try to interfere with the tamper detection device. The wire test includes forming the wire as appropriate.

7.20.2.4 Attempts shall be restricted to 5 min per tool (10 min for grade 4). If the test fails, it should be repeated and a further failure within 4 further attempts shall result in the overall test failing.

7.20.2.5 The results were documented as presented in Table 7.20.1.

7.20.3 Tests results

Table 7.20.1 Test results

Step	Test Condition	Action	Measurement	Pass criteria	Verdict
1	The SPT should be functional. SPTs enclosed inside CP enclosure – tested for CP	Open by normal means	Screwdriver required for opening.	Opening the SPT by normal means shall only be possible by following the procedure defined by the manufacturer and shall generate a tamper signal or message. The tamper detection device shall not have been defeated before the generation of a tamper signal or message. Visible damage has been caused in order to defeat the tamper detection device.	P
2		Attempt to introduce a sabotage tool by Steel rod.	1mm for grade 3 No access without generation of the tamper signal or massage		P
3		Attempt to introduce a sabotage tool by Flat bar.	5 x 0.5 x 300mm for grade 3 No access without generation of the tamper signal or massage		P
4		Attempt to introduce a sabotage tool by Steel wire.	1mm x 300mm for grade 3 No access without generation of the tamper signal or massage		N/A

Test specification:	Tamper detection - Access to the inside of the housing		
Test procedure:	EN 50131-10 Section 10.3.2: Tamper detection - Access to the inside of the housing		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.20.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 2043	HL 4548

Full description is given in Appendix A.

Test specification:	**Tamper detection - Removal from mounting**		
Test procedure:	EN 50131-10 Section 10.3.3: Tamper detection - Removal from mounting		
Test mode:	Compliance	**Verdict:**	PASS
Test Date:	5/2/19		
Atmospheric conditions during the test:	**Temperature:** 24 ºC	**Air Pressure:** 1012hPa	**Relative Humidity:** 52 %
Test specification:			

7.21 Tamper detection - Removal from mounting

7.21.1 Test purpose

7.21.1.1 To remove the SPT from its mounting surface and monitoring the EUT to determine whether a tamper signal or message is generated within the required time period when the maximum permitted distance is exceeded.

7.21.2 Test procedure

7.21.2.1 Position the EUT on a horizontal flat surface, taking into account any requirements specified by the manufacturer to operate the removal from mounting detection device.

7.21.2.2 Lift the EUT from the flat surface in a perpendicular direction to the mounting surface by a distance exceeding that specified in 7.1.3.3, whilst monitoring the tamper signal or message output.

7.21.2.3 Attempt to slide a test blade as defined in 7.1.3.3 to defeat the removal from mounting detection before and during the above test.

7.21.2.4 Attempts to use pliers as specified in 7.1.3.3 to defeat the removal from mounting detection before and during the above test.

7.21.2.5 Attempts shall be restricted to 5 min per tool (10 min for grade 4). If the test fails, it should be repeated and a further failure within 4 further attempts shall result in the overall test failing.

7.21.2.6 The results were documented as presented in Table 7.21.1.

7.21.3 Tests results

Table 7.21.1 Test results

Step	Test Condition	Action	Measurement	Pass criteria	Verdict
1	The SPT should be functional.	Attempt to slide a 25 x 1 x > 300 mm test blade	Maximum distance allow before tamper detection: 5mm for Grade 3 No way to defeat the removal from mounting detection without generation of tamper signal	The tamper signal or message shall have been generated within 11 s of the EUT exceeding the distance specified in 7.1.3.3. It shall not have been possible to prevent the generation of a tamper signal or message using the test blade or pliers.	P
2		Attempt to use pliers of thickness 5 mm and reach 150 mm			P

7.21.4 Results

(X) The above results comply with this section of the standard.

(…) The above results do not comply with this section of the standard.

Reference numbers of test equipment used

HL 2774	HL 3460	HL 1814

Full description is given in Appendix A.

8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Due Cal./Check
2774	HygroThermometer, Min/Max Memory	Delta TRAK	13301	NA	06-Aug-19
3460	Precision Barometer, 870 - 1050 hPa	LUFFT Mess- und Regeltechnik GmbH	DKD-K-26701	100469	05-Jun-20
5413	Digital Stopwatch	Shenzhen Huibo Industrial & Trading Co. Ltd.	PC396	NA	20-Aug-19
1229	Multimeter dual display	Fluke	45	4915073	29-Jul-19
3132	Data Logger Hydra	Fluke	2625A	5834602	03-Feb-20
1814	Caliper, 150 mm	Mitutoyo	150	367	06-Jun-19
3013	ED&D Universal Spring Hammer	Educated Design & development, Inc.	F 22.50	I1145127	28-Feb-21
4548	Tamper test tool set. EN50131-3:2009 STD	Hermon Laboratories	TTT-1	NA	26-Dec-19

9 APPENDIX B Test laboratory description

Testing laboratory and location	Tests were performed at Hermon Laboratories, which is a fully independent, private safety, EMC, telecommunication and environmental testing facility. Hermon Laboratories is accredited by American Association for Laboratory Accreditation (A2LA, USA) according to ISO GUIDE 17025 (certificate No. 839.01) **and accredited as NCB.** The safety/Security laboratory has gained numerous certifications and accreditations from National Certification Bodies including UL, ETL, TUV, MET, SII, Telefication and others, and provides solution for global safety certification in various product categories. Address: P.O. Box 23, Binyamina 30500, Israel. Telephone: +972 4628 8001 Fax: +972 4628 8277 e-mail: **mail@hermonlabs.com** website: **www.hermonlabs.com** Person for contact: Michael Brun Product Safety Group Manager.

10 APPENDIX C Abbreviations and acronyms

AE	annunciation equipment
AS	alarm system
ATP	alarm transmission path
ATS	alarm transmission system
ARC	alarm receiving center
CIE	control and indicating equipment
EUT	equipment under test
I&HAS	intruder and hold-up alarm systems
RCT	receiving center transceiver
SPT	supervised premises transceiver
HL	Hermon Laboratories
°C	degree Celsius
hPa	hectopascal
kg	kilogram
m	meter
min	minute
mm	millimeter
C	compliant
NA	not applicable
NT	not tested
NC	not compliant
gr.	gram
sec	second
DP	dual path

11 APPENDIX D Tests specifications

1.	EN 50136-1:2012+A1:2018	Alarm systems - Alarm transmission systems and equipment Part 1: General requirements for alarm transmission systems
2.	EN 50136-2:2013	Alarm systems - Alarm transmission systems and equipment Part 2: Requirements for Supervised Premises Transceiver (SPT)
3.	EN 50131-10:2014	Alarm systems - Intrusion and hold-up systems Part 10: Application specific requirements for Supervised Premises Transceiver (SPT)

12 APPENDIX E Measurement uncertainties

Parameter	Uncertainty estimation at 95% confidence	
	Calculated	Limit
Air pressure	± 0.8mBar	± 4.1mBar
Temperature	± 1.2°C	± 2°C
Humidity	± 2.86 %	± 5.0 %
Time measurement	± 1.4 s	-
Current measurement	± 6.07 %	-

Note: Pass/Fail decision was based on nominal values

13 APPENDIX F Declaration of similarity

PARADOX™

To: Hermon Labs

Declaration of Similarity LTE/GSM Communicator Module

It is hereby declared that PCS265LTE Communicator Module operates on LTE / 4G / 3G / 2G / GSM technologies.

PCS265LTE Communicator Module consist of two boards: Main board (PCS265) and LTE board.

EC21 Quectel chip installed in LTE board.

There are 4 different models of this chip which operate at different wireless bands for different markets.

According to above, Paradox has 4 different product models:

PCS265LAM (America), PCS265LEU (Europe), PCS265LAU (Australia), PCS265LCH (China).

All models have the same Electronic Hardware, Firmware and Mechanical Enclosure.

Model PCS265LEU was tested and evaluated in Hermon Labs and considered representative to all models.

March-14-2019

END OF TEST REPORT