





TEST REPORT IEC 62368-1 Audio/video, information and communication technology equipment Part 1: Safety requirements	
Report reference No. : 16-EL-0019.S02 Date of issue : 2016-10-31 Total number of pages : 74 CB Testing Laboratory : Electrosuisse Address : Luppmenstrasse 1 8320 Fehraltorf SWITZERLAND  	
Applicant's name : NetModule AG Address : Meriedweg 11, 3172 Niederwangen SWITZERLAND	
Test specification : Standard : IEC 62368-1:2014 (Second Edition) Test procedure : Type testing for CE Non-standard test method : N/A	
Test Report Form No. : IEC62368_1B Test Report Form(s) Originator : UL(US) Master TRF : 2014-03	
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Test Item description	Wireless Router
Trade Mark	NetModule
Manufacturer	NetModule AG Meriedweg 11, 3172 Niederwangen SWITZERLAND
Model/Type reference	NB3800
Ratings	24 - 60 V $\overline{=}$, 1.0 A, 25 W 72 - 110 V $\overline{=}$, 0.4 A, 20 W (NB3800-Pb)

<input checked="" type="checkbox"/>	CB Testing Laboratory:	Electrosuisse
Testing location/ address		Luppenstrasse 1, 8320 Fehraltorf SWITZERLAND
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name + signature)		Robert Kaufmann Project Engineer
Approved by (name + signature)		Truong Van Kham Project Engineer
<input type="checkbox"/>	Testing procedure: TMP/CTF Stage 1	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT/CTF Stage 2	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT/CTF Stage 3 or 4	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

List of Attachments (including a total number of pages in each attachment):

- Appendix List of Test Equipment: 1 page
- ATTACHMENT TO TEST REPORT IEC 62368-1, EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES: 3 pages
- Appendix Photo Documentation: 8 pages

Summary of testing:

The equipment complies with this standard.

Tests performed (name of test and test clause):**Complete test performed**

- 4.1.2.....:List of critical components
- 5.2.....: Classification of electrical energy sources
- 5.4.1.4.....: Temperature measurements
- 5.4.2/.3.....: Minimum Clearances/Creepage distance
- 5.4.9.....:Electric strength tests
- 5.5.2.2.....: Stored discharge on capacitors
- 6.2.2.....:Electrical power sources (PS) measurements for classification
- 6.2.3.....:Determination of Potential Ignition Sources
- B.2.5.....: Input test
- B.3.....:Abnormal operating condition tests
- B.4.....:Fault condition tests
- T.2/.3/.4/.5...:Steady force test
- T.6/.9.....:Impact tests

This test report No. 16-EL-0019.S02 replaces the test report No. 16-EL-0019.S01, dated 2016-04-25.

History of changes

- Tested standard changed from EN 60950-1:2006/ A11:2009/A1:2010/A12:2011/A2:2013 to EN 62368-1:2014
- Housing of equipment has changed
- Additional variants are added, see Model Differences

Testing location:

**Electrosuisse Albislab
Albisriederstrasse 199, 8047 Zürich
SWITZERLAND**

Summary of compliance with National Differences:

List of countries addressed: CENELEC

☒ The product fulfils the requirements of EN 62368-1:2014











Test Procedure:

- Type testing for CE

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

net Module		NB3800	NetModule AG CH-3172 Niederwangen www.netmodule.com
Serial No	00112BFFDD94		
IMEI	860461025234934		
IMEI	860461025235790		
IMEI	860461025239396		
IMEI	860461025241335		
WLAN MAC	04F0211F3677		
WLAN MAC	04F0211F3678		
Input:	24-60V ~ / 1.0A / 25W		
GSM	850/900/1800/1900 MHz		
UMTS	850/900/1900/2100 MHz		
LTE	800(B20)/850/900/1800/1900/2100/2600 MHz		
WLAN	2.4/5 GHz		
Use only according to manual!		contains FCC ID TK4-10-WLE600VX	
Einsatz nur gemäss Handbuch!			

net Module		NB3800	NetModule AG CH-3172 Niederwangen www.netmodule.com
Serial No	00112BFFDD8B		
IMEI	860461025239735		
IMEI	860461025235956		
IMEI	860461025240832		
WLAN MAC	04F0211F3679		
Input:	72-110V ~ / 0.4A / 20W		
GSM	850/900/1800/1900 MHz		
UMTS	850/900/1900/2100 MHz		
LTE	800(B20)/850/900/1800/1900/2100/2600 MHz		
WLAN	2.4/5 GHz		
Use only according to manual!		contains FCC ID TK4-10-WLE600VX	
Einsatz nur gemäss Handbuch!			

Note: Depending on the input voltage range and the implemented radio modules, additional letters and numbers may be added to "NB3800" (see also Model Differences).

TEST ITEM PARTICULARS:	
Classification of use by	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection	<input type="checkbox"/> AC Mains <input checked="" type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input checked="" type="checkbox"/> ES3
Supply % Tolerance	<input type="checkbox"/> +10 %/-10 % <input type="checkbox"/> +20 %/-15 % <input checked="" type="checkbox"/> +5 %/-30 %; NB3800-Pb: +25 %/-30 % <input type="checkbox"/> None
Supply Connection – Type	<input type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> mating connector <input type="checkbox"/> other: _____
Considered current rating of protective device as part of building or equipment installation.....	4 A; NB3800-Pb: 2 A Installation location: <input type="checkbox"/> building; <input checked="" type="checkbox"/> equipment
Equipment mobility	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC)	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD)	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient	70 °C
IP protection class	<input type="checkbox"/> IPX0 <input checked="" type="checkbox"/> IP40, with SIM cover
Power Systems	<input type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V _{L-L}
Altitude during operation (m)	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 4000 m; NB3800-Pb: 2000 m
Altitude of test laboratory (m)	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg)	<input checked="" type="checkbox"/> 2.0 kg
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
TESTING:	
Date of receipt of test item	2016-09-19
Date (s) of performance of tests	2016-09-19 to 2016-10-31

GENERAL REMARKS:

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC60060-2:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....

☐ Yes
☒ Not applicable

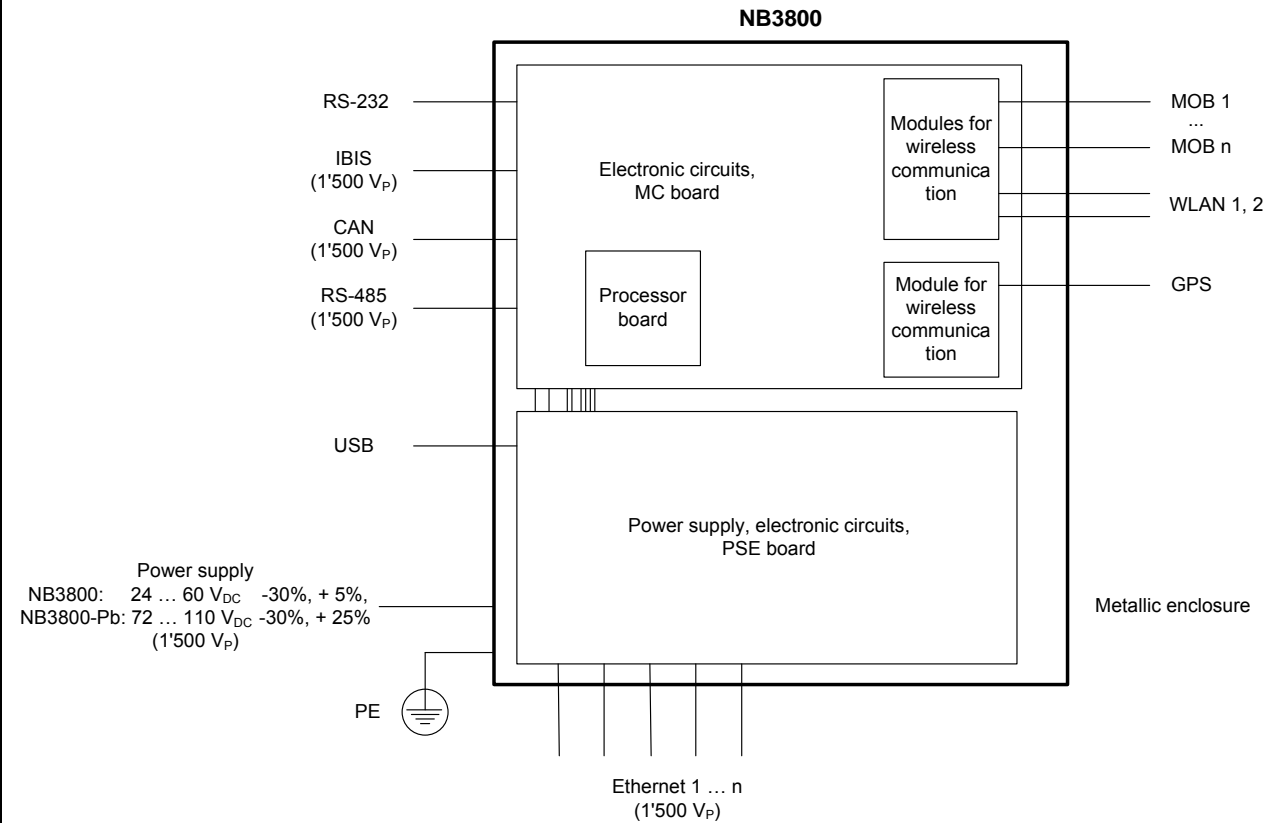
When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies)

NetModule AG
 Meriedweg 11
 3172 Niederwangen
 SWITZERLAND

GENERAL PRODUCT INFORMATION:**Product Description –**

The EUT is a versatile router for a multiplicity of communication interfaces (wired and radio interfaces). It is intended to be used especially in vehicle applications.



Overall size of equipment (W x D x H): 190 mm x 150 mm x 59 mm

Model Differences –

Note: Depending on the implemented radio modules, additional letters and numbers may be added to “NB3800”.

Tested Equipment	Covered Variants	Explanation ¹⁾
NB3800-4L2WacDf-G NB3800- 3LWacCGePbDf	NB3800-H1...Hn-S1...Sn	<p>All covered NB3800 variants contain the same CP Modules, MC Boards, and PSE Boards, have the same case and the same form factor.</p> <p>They can host up to six communication or interface modules and a data storage. There can be up to 11 antenna connectors.</p> <p>All wireless communication modules applied have been CE and FCC certified in an independent way of the tested equipment.</p> <p>‘H1...Hn’ is a sequence of the following letters that identify the options included:</p> <p>R: none, router only Ed: 2G = GPRS/EDGE U: 3G+ = 2G+UMTS/HSPA/HSPA+ L: 4G = 3G+ + LTE La: LTE 450MHz Lb: LTE US Lc: LTE Asia Cat 6 Ld: LTE Europe Cat 6 Ca: CDMA450 Gr: GSM-R Ge: GNSS W: WLAN a/b/g/n Client & Access Point Wac : WLAN a/b/g/n/ac 2.4 / 5 GHz A: Audio in/out C: CAN-bus Sa: RS-485 (on the same module as CAN) I: IBIS-bus Sb: RS-232 (on the same module as IBIS) Pb: Power Supply 72 , 96, 110 VDC Da: Data Storage 32 GB Db: Data Storage 64 GB Dc: Data Storage 128 GB Dd: Data Storage 256 GB De: Data Storage 512 GB Df: Data Storage 1 TB ... (more to follow)</p> <p>‘S1...Sn’ indicate the software options activated:</p> <p>G: GPS V: Voice gateway M: Mobile IP (Client) S: Server</p>

Tested Equipment	Covered Variants	Explanation ¹⁾
NB3800-4L2WacDf-G NB3800-3LWacCGePbDf	NB3800-H1...Hn-S1...Sn	The following NB3800 variants are currently available or planned: NB3800-R NB3800-Wac NB3800-2Wac NB3800-UWacA-GV NB3800-LWac-G NB3800-LWac-GV NB3800-LWacA-GV NB3800-LWacC-G NB3800-LWacI-G NB3800-LGrGeDa NB3800-L2Wac NB3800-L2Wac-G NB3800-2L NB3800-2L-G NB3800-2LWac NB3800-2LWac-G NB3800-2LWacPb-G NB3800-2LWacGe NB3800-2LWacDf-G NB3800-2L2Wac-G NB3800-2L2WacPb-G NB3800-2L2WacDf-G NB3800-3L-G NB3800-3LWac-G NB3800-4L-G NB3800-3L2Wac-G NB3800-4L2Wac-G NB3800-4L2WacDf-G
1) according to information of the customer and not verified by Electrosuisse		
Additional application considerations – (Considerations used to test a component or sub-assembly) –		

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:

(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)

(Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.

Electrically-caused injury (Clause 5):

(Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)

Example: +5 V dc input

ES1

Source of electrical energy	Corresponding classification (ES)
Power input circuits	ES3
NB3800: Circuits after transformer (Ts100)	ES1
NB3800-Pb: Circuits after DC/DC converter (Ns153)	ES1

Electrically-caused fire (Clause 6):

(Note: List sub-assembly or circuit designation and corresponding energy source classification)

Example: Battery pack (maximum 85 watts):

PS2

Source of power or PIS	Corresponding classification (PS)
Power input circuits	PS3
NB3800: Circuits after transformer (Ts100)	PS2
NB3800-Pb: Circuits after DC/DC converter (Ns153)	PS2
USB output	PS1

Injury caused by hazardous substances (Clause 7)

(Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)

Example: Liquid in filled component

Glycol

Source of hazardous substances	Corresponding chemical
N/A	N/A
---	---

Mechanically-caused injury (Clause 8)

(Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.)

Example: Wall mount unit

MS2

Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges & corners	MS1
Fixed device	MS1

Thermal burn injury (Clause 9)

(Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)

Example: Hand-held scanner – thermoplastic enclosure

TS1

Source of thermal energy	Corresponding classification (TS)
Accessible surfaces	TS1
---	---

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:**Radiation (Clause 10)**

(Note: List the types of radiation present in the product and the corresponding energy source classification.)
Example: DVD – Class 1 Laser Product RS1

Type of radiation	Corresponding classification (RS)
LED indicators	RS1
WWAN & WLAN modules	RS1

ENERGY SOURCE DIAGRAM

Indicate which energy sources are included in the energy source diagram. Insert diagram below

☐ ES ☐ PS ☐ MS ☐ TS ☐ RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source	Safeguards		
	(ES3: Primary Filter circuit)	Basic	Supplementary	Reinforced (Enclosure)
NB3800:				
Ordinary	ES2: Power input circuits	Enclosure	N/A	N/A
Ordinary	ES1: Circuits after transformer (Ts100)	N/A	N/A	N/A
NB3800-Pb:				
Ordinary	ES3: Power input circuits	Enclosure	Protection earth	N/A
Ordinary	ES1: Circuits after DC/DC converter (Ns153)	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source	Safeguards		
	(PS2: 100 Watt circuit)	Basic	Supplementary	Reinforced
All combustible materials within equipment fire enclosure	PS3: Power input circuits	No excessive temp.	Suitable material	N/A
USB connector	PS1 : USB output	N/A	N/A	N/A
NB3800:				
All combustible materials within equipment fire enclosure	PS2: Circuits after transformer (Ts100)	No excessive temp.	Suitable material	N/A
NB3800-Pb:				
All combustible materials within equipment fire enclosure	PS2: Circuits after DC/DC converter (Ns153)	No excessive temp.	Suitable material	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source	Safeguards		
	(hazardous material)	Basic	Supplementary	Reinforced
---	---	---	---	---
---	---	---	---	---
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source	Safeguards		
	(MS3:High Pressure Lamp)	Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges & corners	N/A	N/A	N/A
Ordinary	MS1: Fixed device	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source	Safeguards		
	(TS2)	Basic	Supplementary	Reinforced

OVERVIEW OF EMPLOYED SAFEGUARDS				
Ordinary	TS1: Accessible surfaces	N/A	N/A	N/A
---	---	---	---	---
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED indicators	N/A	N/A	N/A
Ordinary	RS1: WWAN & WLAN modules	N/A	N/A	N/A
Supplementary Information: (1) See attached energy source diagram for additional details. (2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components		P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions	(See Annex F)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests.....	(See Annex T.7)	P
4.4.4.4	Impact tests.....	(See Annex T.6)	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests	No such parts (See Annex T.3)	N/A
4.4.4.6	Glass Impact tests	(See Annex T.9, Annex U)	N/A
4.4.4.74	Thermoplastic material tests.....	(See Annex T.8)	N/A
4.4.4.8	Air comprising a safeguard	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness		P
4.5	Explosion		N/A
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to	Internal wire or components	P
4.7	Equipment for direct insertion into mains socket - outlets	No mains	N/A
4.7.2	Mains plug part complies with the relevant standard..		N/A
4.7.3	Torque (Nm).....	---	N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction	No battery	N/A
	Means to reduce the possibility of children removing the battery	---	—
4.8.4	Battery Compartment Mechanical Tests	(See Table 4.8.4)	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object	No openings, without SIM cover only small SIM card slots, can't be entry (See Annex P)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications	ES3: NB3800-Pb, power input circuits ES2: NB3800, power input circuits ES1: NB3800, circuits after transformer (Ts100) NB3800-Pb, circuits after DC/DC converter (Ns153) (See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current	See appended table 5.2)	P
5.2.2.3	Capacitance limits.....	(See appended table 5.2)	N/A
5.2.2.4	Single pulse limits	(See appended table 5.2)	N/A
5.2.2.5	Limits for repetitive pulses	(See appended table 5.2)	N/A
5.2.2.6	Ringing signals	(See Annex H)	N/A
5.2.2.7	Audio signals	(See Clause E.1)	N/A
5.3	Protection against electrical energy sources		P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V.....		P
	b) Electric strength test potential (V).....	---	N/A
	c) Air gap (mm)	---	N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning.....	No hygroscopic material (See sub-clause 5.4.8)	N/A
5.4.1.4	Maximum operating temperature for insulating materials	Considered to be class 130 (B) (See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree	2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature	(See appended table 5.4.1.10.2)	N/A
5.4.1.10.3	Ball pressure	(See appended table 5.4.1.10.3)	N/A
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage.....	---	---
	b) d.c. mains transient voltage	1'500 V _{peak}	---
	c) external circuit transient voltage.....	1'500 V _{peak} (Ethernet, CAN, RS-485, IBIS)	---
	d) transient voltage determined by measurement ...	---	---
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages	NB3800: up to 4000 m (NB3800-Pb: up to 2000 m)	P
5.4.3	Creepage distances.....	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group	IIIb	---
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation	(See appended table 5.4.4.2)	N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs)	---	N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material	(See appended Table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz.....	(See appended Table 5.4.4.9)	N/A
5.4.5	Antenna terminal insulation	Certified WLAN & WWAN modules	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....		---

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.6	Insulation of internal wire as part of supplementary safeguard	(See appended table 5.4.4.2)	N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%)	---	—
	Temperature (°C)	---	—
	Duration (h)	---	—
5.4.9	Electric strength test	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		P
5.4.10.1	Parts and circuits separated from external circuits	(See appended table 5.4.9)	P
5.4.10.2	Test methods		P
5.4.10.2.1	General		P
5.4.10.2.2	Impulse test.....	(See appended table 5.4.9)	N/A
5.4.10.2.3	Steady-state test.....	(See appended table 5.4.9)	P
5.4.11	Insulation between external circuits and earthed circuitry.....	(See appended table 5.4.9)	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage U_{op} (V).....	---	—
	Nominal voltage U_{peak} (V).....	---	—
	Max increase due to variation U_{sp}	---	—
	Max increase due to ageing ΔU_{sa}	---	—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$	---	—
5.5	Components as safeguards		P
5.5.1	General		P
5.5.2	Capacitors and RC units		P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See sub-clause 5.4 or Annex G.12)	P
5.5.5	Relays	(See Annex G.2)	N/A
5.5.6	Resistors	(See Annex G.10)	N/A
5.5.7	SPD's	(See Annex G.8)	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable	(See Annex G.10.3)	N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm ²)	---	—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm ²)	---	—
	Protective current rating (A)	---	—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		P
5.6.5.1	Requirement		P
	Conductor size (mm ²), nominal thread diameter (mm).....	6 mm	P
5.6.5.2	Corrosion		P
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω).....	(See appended table 5.6.6.2)	N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current.....	(See appended table 5.7.4)	N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection).....	---	—
	Multiple connections to mains (one connection at a time/simultaneous connections)	---	—
5.7.4	Earthed conductive accessible parts	(See appended Table 5.7.4)	N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V).....	---	—
	Measured current (mA).....	---	—
	Instructional Safeguard	(See F.4 and F.5)	N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA)..... :	---	N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) :	---	N/A
6	ELECTRICALLY- CAUSED FIRE		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault..... :	(See appended table 6.2.2)	P
6.2.2.4	PS1 :	USB output (See appended table 6.2.2)	P
6.2.2.5	PS2 :	NB3800: circuits after transformer (Ts100) NB3800-Pb: circuits after DC/DC converter (Ns153) (See appended table 6.2.2)	P
6.2.2.6	PS3 :	Power input circuits (See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources		P
6.2.3.1	Arcing PIS :	All PIS within fire enclosure (See appended table 6.2.3.1)	P
6.2.3.2	Resistive PIS :	All PIS within fire enclosure (See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials..... :	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method		P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		P
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.3.3	Single Fault Conditions..... :	(See appended table B.4)	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		P
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards	(See appended tables 4.1.2 and Annex G)	P
6.4.6	Control of fire spread in PS3 circuit		P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General	(See tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Metal	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings, without SIM cover only small SIM card slots	P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm)	No openings	P
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm)	No openings	P
	Flammability tests for the bottom of a fire enclosure	---	N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....	No door or cover that can be opened	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating..... :	---	N/A
6.5	Internal and external wiring		N/A
6.5.1	Requirements		P
6.5.2	Cross-sectional area (mm ²)	0.34	—
6.5.3	Requirements for interconnection to building wiring :	(See Annex Q.)	N/A
6.6	Safeguards against fire due to connection to additional equipment		N/A
	External port limited to PS2 or complies with Clause Q.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7	INJURY CAUSED BY HAZARDOUS SUBSTANCES		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions	---	—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....	---	—
7.6	Batteries	(See Annex M)	N/A
8	MECHANICALLY-CAUSED INJURY		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1: Fixed device	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	No moving parts	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard.....	---	—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks	(See Annex F.4 and Annex K)	N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....	---	—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N)	---	N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....	(See appended table 8.5.5.2)	N/A
8.6	Stability	Fixed device	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....	---	—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force	---	—

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt :	---	—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) :	---	N/A
	Position of feet or movable parts..... :	---	—
8.7	Equipment mounted to wall or ceiling		N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) :	---	N/A
8.7.2	Direction and applied force..... :	---	N/A
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force :	---	N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force :	---	—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard..... :	---	—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force :	---	—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N)..... :	---	—
8.10.6	Thermoplastic temperature stability (°C) :	---	N/A
8.11	Mounting means for rack mounted equipment		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> :	---	N/A
8.11.4	Mechanical strength test 250N, including end stops	---	N/A
8.12	Telescoping or rod antennas.....	(See Annex T)	N/A
	Button/Ball diameter (mm)..... :	---	—

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Clause	Requirement + Test	Result - Remark	Verdict
9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	TS1: Accessible surfaces	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard	---	N/A
10	RADIATION		P
10.2	Radiation energy source classification	RS1: LED indicators	P
10.2.1	General classification		P
10.3	Protection against laser radiation		N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault.....	---	N/A
	Instructional safeguard	---	—
	Tool	---	—
10.4	Protection against visible, infrared, and UV radiation		N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons	---	N/A
10.4.1.b)	RS3 accessible to a skilled person	---	N/A
	Personal safeguard (PPE) instructional safeguard	---	—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions	(See appended table B.3 & B.4)	N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque	---	N/A
10.4.1.f)	UV attenuation	---	N/A
10.4.1.g)	Materials resistant to degradation UV	---	N/A
10.4.1.h)	Enclosure containment of optical radiation	---	N/A
10.4.1.i)	Exempt Group under normal operating conditions :	---	N/A
10.4.2	Instructional safeguard	---	N/A
10.5	Protection against x-radiation		N/A
10.5.1	X- radiation energy source that exists equipment :	(See appended table B.3 & B.4)	N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards	---	N/A
	Instructional safeguard for skilled person	---	N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation	---	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Abnormal and single-fault condition..... :	(See appended table B.3 & B.4)	N/A
	Maximum radiation (pA/kg)..... :	---	N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :	---	N/A
	Output voltage, unweighted r.m.s..... :	---	N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards..... :	---	N/A
	Equipment safeguard prevent ordinary person to RS2..... :	---	—
	Means to actively inform user of increase sound pressure..... :	---	—
	Equipment safeguard prevent ordinary person to RS2..... :	---	—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) L_{Aeq} acoustic pressure output..... :	---	—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A)..... :	---	—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :	---	—
B	NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers..... :	(See Annex E)	N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test..... :	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements..... :	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		P
B.3.4	Setting of voltage selector..... :	No such parts	N/A
B.3.5	Maximum load at output terminals..... :	USB	P
B.3.6	Reverse battery polarity		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited.....:	(See appended table B.4)	N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature	(See Clause G.5)	N/A
B.4.4	Short circuit of functional insulation		P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors		N/A
B.4.6	Short circuit or disconnect of passive components		P
B.4.7	Continuous operation of components		P
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions....:	(See Annex M)	N/A
C	UV RADIATION		N/A
C.1	Protection of materials in equipment from UV radiation		N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
D	TEST GENERATORS		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V)..... :	---	—
	Rated load impedance (Ω)	---	
E.2	Audio amplifier abnormal operating conditions		N/A
F	EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS		P
F.1	General requirements		P
	Instructions – Language	English	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	See marking plate	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification	NetModule	—
F.3.2.2	Model identification	NB3800	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains	No mains	N/A
F.3.3.2	Equipment without direct connection to mains		P
F.3.3.3	Nature of supply voltage	==	—
F.3.3.4	Rated voltage..... :	NB3800: 24 - 60 V== NB3800-Pb: 72 - 110 V==	—
F.3.3.4	Rated frequency	---	—
F.3.3.6	Rated current or rated power..... :	NB3800: 1.0 A / 25 W NB3800-Pb: 0.4 A / 20 W	—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device		N/A
F.3.5	Terminals and operating devices		P
F.3.5.1	Mains appliance outlet and socket-outlet markings :	---	N/A
F.3.5.2	Switch position identification marking	---	N/A
F.3.5.3	Replacement fuse identification and rating markings	Not replaceable by user	N/A
F.3.5.4	Replacement battery identification marking..... :	---	N/A
F.3.5.5	Terminal marking location		P
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking :	---	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		P
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
j)	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		N/A
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
G	COMPONENTS		P
G.1	Switches		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	Relays		N/A
G.2.1	General requirements		N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.2.4	Mains relay, modified as stated in G.2		N/A
G.3	Protection Devices		P
G.3.1	Thermal cut-offs		N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H)..... :	---	—
	Single Fault Condition..... :	---	—
	Test Voltage (V) and Insulation Resistance (Ω) .:	---	—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.4		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions :	(See appended Table B.4)	N/A
G.4	Connectors		P
G.4.1	Spacings		P
G.4.2	Mains connector configuration :	No mains	N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	Wound Components		N/A
G.5.1	Wire insulation in wound components :	(See Annex J)	N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s)..... :	---	—
	Temperature (°C)..... :	---	—
G.5.2.3	Wound Components supplied by mains		N/A
G.5.3	Transformers		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) :	Transformer Ts100: G.5.3.2 and G.5.3.3	P
	Position :	---	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Method of protection	---	—
G.5.3.2	Insulation		P
	Protection from displacement of windings	---	—
G.5.3.3	Overload test.....	(See appended table B.4)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit	Class F	P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	Motors		N/A
G.5.4.1	General requirements		N/A
	Position	---	—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days)	---	—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V)	---	—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h)	---	N/A
	Electric strength test (V)	---	—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature	---	N/A
	Electric strength test (V)	---	N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h).....	---	N/A
	Electric strength test (V)	---	N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage	---	—
G.6	Wire Insulation		P
G.6.1	General		P
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	Mains supply cords		N/A
G.7.1	General requirements	No mains	N/A
	Type	---	—
	Rated current (A)	---	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Cross-sectional area (mm ²), (AWG) :	---	—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) :	---	—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :	---	—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry :	(See appended table 5.4.11.1)	N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) :	---	—
	Diameter (m) :	---	—
	Temperature (°C) :	---	—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
G.8	Varistors		N/A
G.8.1	General requirements		N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test :	(See appended table B.3)	N/A
G.8.3.3	Temporary overvoltage :	(See appended table B.3)	N/A
G.9	Integrated Circuit (IC) Current Limiters		P
G.9.1 a)	Manufacturer defines limit at max. 5A.	Certified component (Nu100), see table: List of critical components	P
G.9.1 b)	Limiters do not have manual operator or reset		P
G.9.1 c)	Supply source does not exceed 250 VA :	NB3800: 31.2 W NB3800-Pb: 52.5 W	—
G.9.1 d)	IC limiter output current (max. 5A) :	1.0 A	—
G.9.1 e)	Manufacturers' defined drift :	0.6 A ... 1.0 A	—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
G.10	Resistors		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
G.11	Capacitor and RC units		P
G.11.1	General requirements		P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
G.12	Optocouplers		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results)	Electric strength test	P
	Type test voltage Vini	3'750 VAC	—
	Routine test voltage, Vini,b	---	—
G.13	Printed boards		P
G.13.1	General requirements		P
G.13.2	Uncoated printed boards		P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		P
	Compliance with cemented joint requirements (Specify construction)	---	—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation	(See appended table 5.4.4.5)	N/A
	Number of insulation layers (pcs)	---	—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
G.14	Coating on components terminals		N/A
G.14.1	Requirements	(See G.13)	N/A
G.15	Liquid filled components		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
G.16	IC including capacitor discharge function (ICX)		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage	---	N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage	---	—
D1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance	---	—
D3)	Resistance	---	—
H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General		N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz)	---	—
H.3.1.2	Voltage (V)	---	—
H.3.1.3	Cadence; time (s) and voltage (V)	---	—
H.3.1.4	Single fault current (mA):	---	—
H.3.2	Tripping device and monitoring voltage.....	---	N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V).....	---	—
J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		N/A
	General requirements	(See separate test report)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K	SAFETY INTERLOCKS		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism	(See Annex G)	N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance	(See appended table B.4)	N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method	---	N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location)	---	N/A
K.7.2	Overload test, Current (A).....	---	N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test	(See appended table 5.4.11)	N/A
L	DISCONNECT DEVICES		P
L.1	General requirements	Plug	P
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		P
L.8	Multiple power sources		N/A
M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) ..	---	N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance :	(See appended Tables and Annex M and M.4)	N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature :	(See Table M.4)	—
M.4.2.2 b)	Single faults in charging circuitry :	(See Annex B.4)	—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) :	---	N/A
M.6.2	Leakage current (mA) :	---	N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume V_z (m ³ /s) :	---	—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.8.2.3	Correction factors..... :	---	—
M.8.2.4	Calculation of distance d (mm) :	---	—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) :	---	N/A
N	ELECTROCHEMICAL POTENTIALS		P
	Metal(s) used :	Aluminum/stainless steel	—
O	MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES		P
	Figures O.1 to O.20 of this Annex applied..... :	---	—
P	SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS		P
P.1	General requirements		P
P.2.2	Safeguards against entry of foreign object		P
	Location and Dimensions (mm) :	No openings	—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts :	---	N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) :	---	N/A
P.3	Safeguards against spillage of internal liquids	No internal liquids	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	T_c (°C)..... :	---	—
	T_r (°C) :	---	—
	T_a (°C) :	---	—
P.4.2 b)	Abrasion testing :	(See G.13.6.2)	N/A
P.4.2 c)	Mechanical strength testing :	(See Annex T)	N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) :	---	—
	Current limiting method..... :	---	—
R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). :	---	N/A
S	TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	Metal	N/A
	Samples, material :	---	—
	Wall thickness (mm) :	---	—
	Conditioning (°C) :	---	—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material :	---	—
	Wall thickness (mm) :	---	—
	Conditioning (°C) :	---	—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material	---	---
	Wall thickness (mm)	---	---
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material	---	---
	Wall thickness (mm)	---	---
	Conditioning (test condition), (°C).....	---	---
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
T	MECHANICAL STRENGTH TESTS		P
T.1	General requirements		P
T.2	Steady force test, 10 N	(See appended table T.2)	P
T.3	Steady force test, 30 N	(See appended table T3)	P
T.4	Steady force test, 100 N	(See appended table T4)	N/A
T.5	Steady force test, 250 N	(See appended table T5)	P
T.6	Enclosure impact test	(See appended table T6)	P
	Fall test		P
	Swing test		N/A
T.7	Drop test	Fixed device (See appended table T7)	N/A
T.8	Stress relief test	(See appended table T8)	N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J).....	---	---
	Height (m)	---	---
T.10	Glass fragmentation test.....	(See sub-clause 4.4.4.9)	N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm)	---	---

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
U	MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION		N/A
U.1	General requirements		N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen:	(See Annex T)	N/A
V	DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)		P
V.1	Accessible parts of equipment	Enclosure & interface connectors	P
V.2	Accessible part criterion		P

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
- Description ²⁾ :	PSE_Board NB3800					
PCB PSE_Board (5xM12_2GE) Rev. 1.2	Wuerth Elektronik GmbH & Co or various	50 or various	FR-4 UL94 V-0 1.6 mm 130 °C	UL 796 CSA C22.2 No. 0.17	cURus E76251 or UL listed	
Fuse Fs100, Fs102 with fuse holder	Schurter	OMT125 3404.0120 OMH125 0031.7701	4 A T, 125 V	UL 248-14 CSA C22.2 No. 248.14 UL 4248-1 CSA C22.2 No. 4248.1	cURus E41599 cURus E39328	
Transient voltage suppressor Ds100	Pan Jit Electronics Co Ltd	SMCJ64CA	Bidirectional, 64 V	UL 497B	UR E210467	
	Taiwan Semiconductor Co Ltd	SMCJ64CA	Bidirectional, 64 V	UL1557	UR E326243	
	Vishay General Semiconductor	SMCJ64CA	Bidirectional, 64 V	UL 497B	UR E136766	
Ethernet Transformer Te300B, Te301B, Te400B	Pulse	HX1188NL	10/100Base-T 1'500 VAC	IEEE 802.3 IEC/EN 62368-1	Tested in appliance	
Ethernet Transformer Te700A, Te800A	Halo	TG111-E12	1000Base-T 1'500 VAC	IEEE 802.3 IEC/EN 62368-1	Tested in appliance	
Capacitor Ce306, Ce313, Ce406, Ce739, Ce839	AVX	1210GC102M AT1A	1 nF 2'000 V	IEC/EN 62368-1	Tested in appliance	
Transfomer Ts100	Manfred Schmelzer GmbH	MS11203B	20 VA 4'500 VAC Class F see annex	IEC/EN 62368-1	Tested in appliance	
Capacitor Cs109, Cs110	Vishay Electronic GmbH	VY1472M63Y 5UG6*V0	X1: 760 VAC Y1: 500 VAC 4.7 nF 4'000 VAC	IEC 60384-14 UL 60384-14 CSA C22.2 E60384-14	ENEC 10 VDE DE1-32019 cURus E183844	
Capacitor Cs118	Vishay Electronic GmbH	VY1222M47Y 5UG6*V0	X1: 760 VAC Y1: 500 VAC 2.2 nF 4'000 VAC	IEC 60384-14 UL 60384-14 CSA C22.2 E60384-14	ENEC 10 VDE DE1-32019 cURus E183844	
I2C Isolator Us301	Analog Devices Inc	ADM3260	400 VAC single prot. 2'500 VAC	UL 1577 CSA C22.2 60950-1	UR E214100 CSA 205078	
Connector Xs100	Molex	5569 Series 39-30-1020	600 V, 13 A 2-pol.	UL 1977	TÜV R72081037 UL E29179	

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
- Description ²⁾ :	PSE_Board NB3800-Pb					
PCB PSE_Board (5xM12_2GE 72-110V) Rev. 1.0	Wuerth Elektronik GmbH & Co or various	50 or various	FR-4 UL94 V-0 1.6 mm 130 °C	UL 796 CSA C22.2 No. 0.17	cURus E76251 or UL listed	
Fuse Fs100, Fs101 with fuse holder	Schurter	OMF250 3403.0019	2 A F, 250 V	IEC 60127-4/2 UL 248-14 CSA C22.2 No. 248.14	VDE 106328 cURus E41599	
Varistor Rs100	Bourns Inc	MOV- 14D201K	170 VDC	UL 1449 CSA C22.2 No. 269	cURus E313168	
DC/DC converter Ns153	Traco Electronic AG	TEN 40- 7211WIR	Input: 43 - 160 VDC, 1.045 A Output: 5 VDC, 8 A, Isolation: 3'000 VDC	IEC/EN 60950-1 UL 60950-1 CSA C22.2 60950-1	CB DK-54813- UL cURus E188913	
Transient voltage suppressor Ds102	Pan Jit Electronics Co Ltd	SMCJ150CA	Bidirectional, 150 V	UL 497B	UR E210467	
	Diodes Inc	SMCJ150CA	Bidirectional, 150 V	UL 497B	UR E156346	
Ethernet Transformer Te300B, Te301B, Te400B	Pulse	HX1188NL	10/100Base-T 1'500 VAC	IEEE 802.3 IEC/EN 62368-1	Tested in appliance	
Ethernet Transformer Te700A, Te800A	Halo	TG111-E12	1000Base-T 1'500 VAC	IEEE 802.3 IEC/EN 62368-1	Tested in appliance	
Capacitor Ce306, Ce313, Ce406, Ce739, Ce839	AVX	1210GC102M AT1A	1 nF 2'000 V	IEC/EN 62368-1	Tested in appliance	
Capacitor Cs100, Cs105, Cs161, Cs162	Murata MFG Co Ltd	GA355DR7GF 472KW01	Y2: 250 VAC 4.7 nF	IEC 60384-14 UL 60384-14 CSA C22.2 E60384-14	VDE, SEMKO cURus E37921	
Connector Xs100	Molex	5569 Series 39-30-1020	600 V, 13 A 2-pol.	UL 1977	TÜV R72081037 UL E29179	
- Description ²⁾ :	MC Board					
Current limiter Nu100	Diodes Inc	AP2151SW	5.5 VDC, prot. current: 1 A	IEC 60950-1 UL 2367	CB UR E322375	

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
- Description ²⁾ :	Mini PCIe CAN/RS-485 Module					
Capacitor Cc210, Cc211, Cr310, Cr311	Johanson Dielectrics Inc	202R18W102 KV4E	1 nF 2'000 VDC	IEC/EN 62368-1	Tested in appliance	
Isolated CAN Transceiver Uc200	Analog Devices Inc	ADM3053	424 VAC single protection 2'500 VAC	UL 1577 CSA C22.2 60950-1	UR E214100 CSA 205078	
Isolated RS-485 Transceiver Ur300	Analog Devices Inc	ADM2587E	single protection 2'500 VAC	UL 1577	UR E214100	
- Description ²⁾ :	Mini PCIe IBIS/RS-232 Module					
Capacitor C200, C202, C203, C205	AVX	1206GC101K AT1A	100 pF 2'000 V	IEC/EN 62368-1	Tested in appliance	
Capacitor C304, C305	Kemet	C1206C102K GRACU	1 nF 2'000 VAC	IEC/EN 62368-1	Tested in appliance	
Photocoupler U200	Toshiba Corp, Semiconductor Co Discrete Semiconductor Div	TLP187	single protection 3'750 VAC	UL 1577	cURus E67349	
Photocoupler U201	Toshiba Corp, Semiconductor Co Discrete Semiconductor Div	TLP291GB	double protection 3'750 VAC	EN 60950-1 UL 1577	SEMKO 1200315 BSI 9037 cURus E67349	
Isolated RS-232 Transceiver U300	Linear Technology PTE Ltd	LTM2882	400 VAC, single protection 2'500 VAC	UL 1577	cURus E151738	
- Description ²⁾ :	Other components					
Connector power input	Phoenix Contact GmbH	SACC-E-MS- 4CON- M16/0,5 SCO (1523450)	250 V, 4 A 4-pol. assembled with wires: 0.34 mm ² , 300 V, test voltage 3'000 VAC	UL 2238 CSA C22.2 No. 182.3	cURus E221474	
Choke at power input	Schaffner EMV AG	Schaffner EMV AG	RN 114-2/02	UL 1283	VDE UL E64388	
Solide State Drive	Transcend	TSxxSSD420I	SATA III 6 Gb/s 5 VDC, 1.5 A	EN 60950-1	CE FCC Manu- facturers declaration	
WWAN module	Huawei Technologies	ME909u-521	compliant with communication standards	LTE, UMTS, GSM, GPRS, EDGE	CE0682 FCC	

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹	
WLAN module	Compex Systems	WLE200NX	compliant with communication standards	Dual-band 802.11ac	CE FCC	
Enclosure	NetModule AG	NB3800 IP40	Aluminium min. 1.9	IEC/EN 62368-1	Tested in appliance	
Supplementary information: ¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039. ²⁾ Description line content is optional. Main line description needs to clearly detail the component used for testing						

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
4.8.4.2	TABLE: Stress Relief test			—
Part		Material	Oven Temperature (°C)	Comments
4.8.4.3	TABLE: Battery replacement test			—
Battery part no.:			—	
Battery Installation/withdrawal			Battery Installation/Removal Cycle	Comments
			1	
			2	
			3	
			4	
			5	
			6	
			8	
			9	
			10	
4.8.4.4	TABLE: Drop test			—
Impact Area		Drop Distance	Drop No.	Observations
			1	
			2	
			3	
4.8.4.5	TABLE: Impact			—
Impacts per surface		Surface tested	Impact energy (Nm)	Comments
4.8.4.6	TABLE: Crush test			—

4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests			N/A
(The following mechanical tests are conducted in the sequence noted.)				
Test position	Surface tested	Crushing Force (N)		Duration force applied (s)
Supplementary information:				

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position		Surface tested	Force (N)	Duration force applied (s)
Supplementary information:				

5.2	Table: Classification of electrical energy sources						P
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (A _{pk} or A _{rms})	Hz	
NB3800:							
1	63 VDC	Power input circuits	Normal	63 VDC	---	---	ES2
			Abnormal	63 VDC	---	---	
			Single fault – OC/SC	63 VDC / 0 VDC	---	---	
2	63 VDC	USB connector	Normal	4.97 VDC	---	---	ES1
			Abnormal	4.97 VDC	---	---	
			Single fault – OC/SC	4.97 VDC / 0 VDC	---	---	
NB3800-Pb:							
3	137.5 VDC	Power input circuits	Normal	137.5 VDC	---	---	ES3
			Abnormal	137.5 VDC	---	---	
			Single fault – OC/SC	137.5 VDC / 0 VDC	---	---	
4	137.5 VDC	USB connector	Normal	4.97 VDC	---	---	ES1
			Abnormal	4.97 VDC	---	---	
			Single fault – OC/SC	4.97 VDC / 0 VDC	---	---	

5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
---	---	---	Normal	---	---	---	
			Abnormal	---	---		
			Single fault – SC/OC	---	---		
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
---	---	---	Normal	---	---	---	---
			Abnormal	---	---	---	
			Single fault – SC/OC	---	---	---	
5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
---	---	---	Normal	---	---	---	---
			Abnormal	---	---	---	
			Single fault – SC/OC	---	---	---	
Test Conditions: Normal – Abnormal - Supplementary information: SC=Short Circuit, OC=Open Circuit							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements						P
	Supply voltage (V)	16.8 VDC	63 VDC	50.4 VDC	137.5 VDC	—	
	Ambient T _{min} (°C)	24.5	24.2	24.2	23.9	—	
	Ambient T _{max} (°C)	24.8	24.5	24.5	24.2	—	
	T _{ma} (°C)	70	70	70	70	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T _{max} (°C)	
NB3800, surface temperatures:							
Enclosure (rear side)		41	42	---	---	51	
Power connector		37	36	---	---	51	
NB3800, component temperatures:							
Transtormer Ts100, class F		64	70	---	---	130	
PCB below transformer		63	69	---	---	120	
Inductor Ls100		54	52	---	---	---	
---		---	---	---	---	---	
NB3800-Pb, surface temperatures:							
Enclosure (cooling fins)		---	---	39	40	51	
Power connector		---	---	34	35	51	
NB3800-Pb, component temperatures:							
DC/DC converter Ns153		---	---	45	51	---	
PCB below DC/DC converter		---	---	45	51	130	
Inductor Ls100		---	---	45	40	---	
---		---	---	---	---	---	
Supplementary information:							
Note: This test covers only safety aspects; functional failures due to the temperatures are not considered							
Temperature T of winding:	t ₁ (°C)	R ₁ (Ω)	t ₂ (°C)	R ₂ (Ω)	T (°C)	Allowed T _{max} (°C)	Insulation class
---	---	---	---	---	---	---	---
Supplementary information:							
Note 1: T _{ma} should be considered as directed by applicable requirement							
Note 2: T _{ma} is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics		N/A
Penetration (mm)			—
Object/ Part No./Material	Manufacturer/t rademark	T softening (°C)	
supplementary information:			

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm)		≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance							P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) ¹	Required cl (mm)	cl (mm) ²	Required ₃ cr (mm)	cr (mm)	
NB3800:								
Functional:								
---	---	---	---	---	---	---	---	
Basic/supplementary:								
PWR_IN to GND_IN Power input before fuses Fs100 / Fs102	1'500	63	---	1.0 ¹⁾	2.3	1.25	2.3	
Power input area (PWR_IN, GND_IN) to circuits after transformer (Ts100)	1'500	63	---	1.0 ¹⁾	2.6	1.25	2.6	
Reinforced:								
---	---	---	---	---	---	---	---	
NB3800-Pb:								
Functional:								
---	---	---	---	---	---	---	---	
Basic/supplementary:								
PWR_IN to GND_IN Power input before fuses Fs100 / Fs101	1'500	137.5	---	0.76	2.5	1.6	2.5	
Reinforced:								
Power input area (PWR_IN, GND_IN) to circuits after DC/DC converter (Ns153)	1'500	137.5	---	1.52	3.3	3.2	3.3	
Supplementary information: ¹⁾ For operating up to 4'000 m sea level (multiplication factor = 1.29) 0.76 mm * 1.29 = 0.98 mm => 1.0 mm clearance Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material Group								

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			I
	Pollution Degree:			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
NB3800:				
Ethernet to enclosure (including USB, power supply)		1'500 Vp	0.65 ¹⁾	0.65
CAN/RS-485 to enclosure (including USB, power supply)		1'500 Vp	0.65 ¹⁾	1.2
IBIS to enclosure (including USB, power supply)		1'500 Vp	0.65 ¹⁾	1.2
NB3800-Pb:				
Ethernet to enclosure (including USB, power supply)		1'500 Vp	0.5	1.0
CAN/RS-485 to enclosure (including USB, power supply)		1'500 Vp	0.5	1.2
IBIS to enclosure (including USB, power supply)		1'500 Vp	0.5	1.2
Supplementary information: ¹⁾ For operating up to 4'000 m sea level (multiplication factor = 1.29) 0.5 mm * 1.29 = 0.645 mm => 0.65 mm clearance				

5.4.2.4	TABLE: Clearances based on electric strength test			N/A
Test voltage applied between:		Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:		Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
Supplementary information:						

5.4.9	TABLE: Electric strength tests			P
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
NB3800:				
Functional:				
---	---	---	---	
Basic/supplementary:				
PWR_IN to GND_IN Power input before fuses Fs100 / Fs102		DC	1'725 ¹⁾	No
Power input area (PWR_IN, GND_IN) to circuits after transformer (Ts100)		DC	1'725 ¹⁾	No
Ethernet to enclosure (including USB, power supply)		DC	1'650 ²⁾	No
CAN/RS-485 to enclosure (including USB, power supply)		DC	1'650 ²⁾	No
IBIS to enclosure (including USB, power supply)		DC	1'650 ²⁾	No
Reinforced:				
---	---	---	---	
Routine Tests:				
---	---	---	---	
NB3800-Pb:				
Functional:				
---	---	---	---	
Basic/supplementary:				
PWR_IN to GND_IN Power input before fuses Fs100 / Fs101		DC	1'500	No
Ethernet to enclosure (including USB, power supply)		DC	1'500	No
CAN/RS-485 to enclosure (including USB, power supply)		DC	1'500	No
IBIS to enclosure (including USB, power supply)		DC	1'500	No
Reinforced:				
Power input area (PWR_IN, GND_IN) to circuits after DC/DC converter (Ns153)		DC	2'500	No
Routine Tests:				
---	---	---	---	
Supplementary information: ¹⁾ For operating up to 4'000 m sea level (≥ 1 mm; multiplication factor = 1.15) 1'500 V * 1.15 = 1'725 V ²⁾ For operating up to 4'000 m sea level (< 1 mm; multiplication factor = 1.10) 1'500 V * 1.10 = 1'650 V				

5.5.2.2	TABLE: Stored discharge on capacitors					P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification	
137.5 VDC	NB3800-Pb Power input	N	---	1 V	ES1	
137.5 VDC	NB3800-Pb Power input	S (no load) 57.4 μ F, 100 k Ω	---	97 V	ES2	
<p>Supplementary information:</p> <p>X-capacitors installed for testing are:</p> <p><input type="checkbox"/> bleeding resistor rating:</p> <p><input type="checkbox"/> ICX:</p> <p>Notes:</p> <p>A. Test Location:</p> <p>Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth</p> <p>B. Operating condition abbreviations:</p> <p>N – Normal operating condition (e.g., normal operation, or open fuse); S – Single fault condition</p>						

5.6.6.2	TABLE: Resistance of protective conductors and terminations				N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (Ω)	
Supplementary information:					

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part		N/A
Supply voltage :		—	
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)	
	1		
	2*		
	3		
	4		
	5		
	6		
	8		
Supplementary Information:			
Notes: [1] Supply voltage is the anticipated maximum Touch Voltage [2] Earthed neutral conductor [Voltage differences less than 1% or more] [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3 [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable. [5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

6.2.2	Table: Electrical power sources (PS) measurements for classification					P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s [*]	PS Classification	
NB3800:						
A	Transformer (Ts100) output	Power (W) :	31.2	---	PS2	
		V _A (V) :	5.2	---		
		I _A (A) :	6.0	---		
B	USB output	Power (W) :	3.53	---	PS1	
		V _A (V) :	4.97	---		
		I _A (A) :	0.71	---		
NB3800-Pb:						
A	DC/DC converter (Ns153) output	Power (W) :	52.53	---	PS2	
		V _A (V) :	5.1	---		
		I _A (A) :	10.3	---		
B	USB output	Power (W) :	3.93	---	PS1	
		V _A (V) :	4.97	---		
		I _A (A) :	0.79	---		
Supplementary Information: (*) Measurement taken only when limits at 3 seconds exceed PS1 limits						

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)				P
Location	Open circuit voltage After 3 s (V _p)	Measured r.m.s current (I _{rms})	Calculated value (V _p x I _{rms})	Arcing PIS? Yes / No	
NB3800:					
Power input circuits	63	0.247	15.56	Yes	
NB3800-Pb:					
Power input circuits	137.5	0.099	13.61	No	
Supplementary information:					
An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V _p) and normal operating condition rms current (I _{rms}) is greater than 15.					

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)					P
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	
NB3800:						
Power input circuits	Normal	15.56	15.56	No	Yes	
Power input circuits	Before fuse Fs100 or Fs102 melts	504	504	No	Yes	
NB3800-Pb:						
Power input circuits	Normal	13.61	13.61	No	No	
Power input circuits	Before fuse Fs100 or Fs101 melts	550	550	No	Yes	
Supplementary Information:						
A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.						

8.5.5	TABLE: High Pressure Lamp		N/A
Description	Values	Energy Source Classification	
Lamp type..... :		—	
Manufacturer :		—	
Cat no. :		—	
Pressure (cold) (MPa) :		MS_	
Pressure (operating) (MPa) :		MS_	
Operating time (minutes) :		—	
Explosion method..... :		—	
Max particle length escaping enclosure (mm) :		MS_	
Max particle length beyond 1 m (mm) :		MS_	
Overall result :			
Supplementary information:			

B.2.5		TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status	
NB3800:								
16.8	0.882	1.0	14.82	25	Fs100 / Fs102	4	Data transfer via wireless modules, access to SSD	
24	0.608	1.0	14.59	25	Fs100 / Fs102	4	Data transfer via wireless modules, access to SSD	
48	0.314	1.0	15.07	25	Fs100 / Fs102	4	Data transfer via wireless modules, access to SSD	
60	0.256	1.0	15.36	25	Fs100 / Fs102	4	Data transfer via wireless modules, access to SSD	
63	0.247	1.0	15.56	25	Fs100 / Fs102	4	Data transfer via wireless modules, access to SSD	
NB3800-Pb:								
50.4	0.251	0.4	12.65	20	Fs100 / Fs101	2	Data transfer via wireless modules, access to SSD	
72	0.178	0.4	12.82	20	Fs100 / Fs101	2	Data transfer via wireless modules, access to SSD	
110	0.120	0.4	13.20	20	Fs100 / Fs101	2	Data transfer via wireless modules, access to SSD	
137.5	0.099	0.4	13.61	20	Fs100 / Fs101	2	Data transfer via wireless modules, access to SSD	
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured								

B.3	TABLE: Abnormal operating condition tests							P
Ambient temperature (°C)					25			—
Power source for EUT: Manufacturer, model/type, output rating ...					See below			—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
NB3800:								
Power input connector	reverse polarity	60	---	---	---	---	---	Reverse polarity protection, no hazard
USB connector	overload	60	30	---	---	---	---	Max. current: 0.71 A @ 4.66 V, certified current limiter Nu100, no hazard
NB3800-Pb:								
Power input connector	reverse polarity	110	---	---	---	---	---	Reverse polarity protection, no hazard
USB connector	overload	110	30	---	---	---	---	Max. current: 0.79 A @ 4.60 V, certified current limiter Nu100, no hazard
Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.								

B.4		TABLE: Fault condition tests						P
Ambient temperature (°C)					25			—
Power source for EUT: Manufacturer, model/type, output rating ...					See below			—
Component No.	Fault Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
NB3800:								
Cs200	short circuit after transformer (Ts100)	60	30	Fs100 / Fs102	4	---	---	No overheating, internal short circuit current: 6 A
Cs229	short circuit 3.3 V supply	60	---	---	---	---	---	Current limited and thermal protected step down regulator (Ns205)
Cs217	short circuit 2.6 V supply	60	---	---	---	---	---	Short circuit and overtemperature protected step down regulator (Ns200)
Cs233	short circuit 1.3 V supply	60	---	---	---	---	---	Current limited and thermal protected step down regulator (Ns206)
Cs237	short circuit 1.2 V supply	60	---	---	---	---	---	Current limited and thermal protected step down regulator (Ns207)
NB3800-Pb:								
Cs153	short circuit after DC/DC converter (Ns153)	110	---	Fs100 / Fs101	2	---	---	No overheating, certified DC/DC converter (Ns153), max. current: 10.3 A @ 3.60 V

B.4		TABLE: Fault condition tests							P
Ambient temperature (°C)					25			—	
Power source for EUT: Manufacturer, model/type, output rating ...					See below			—	
Component No.	Fault Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Cs229	short circuit 3.3 V supply	110	---	---	---	---	---	Current limited and thermal protected step down regulator (Ns205)	
Cs217	short circuit 2.6 V supply	110	---	---	---	---	---	Short circuit and overtemperature protected step down regulator (Ns200)	
Cs233	short circuit 1.3 V supply	110	---	---	---	---	---	Current limited and thermal protected step down regulator regulator (Ns206)	
Cs237	short circuit 1.2 V supply	110	---	---	---	---	---	Current limited and thermal protected step down regulator regulator (Ns207)	
Supplementary information: If no test time is declared test has not been carried out because considering the situation. All components within metallic enclosure without openings.									

Annex M	TABLE: Batteries								N/A	
The tests of Annex M are applicable only when appropriate battery data is not available								N/A		
Is it possible to install the battery in a reverse polarity position?							---		N/A	
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:									Verdict	
- Chemical leaks										
- Explosion of the battery										
- Emission of flame or expulsion of molten metal										
- Electric strength tests of equipment after completion of tests										
Supplementary information:										

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
	Normal					
	Abnormal					
	Single fault –SC/OC					
	Normal					
	Abnormal					
	Single fault – SC/OC					
Supplementary Information:						

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
Supplementary Information:				

Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					N/A	
Note: Measured UOC (V) with all load circuits disconnected:							
Output Circuit	Components	U _{oc} (V)	I _{sc} (A)		S (VA)		
			Meas.	Limit	Meas.	Limit	
Supplementary Information: SC=Short circuit, OC=Open circuit							

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Internal wire	PVC	---	10	5	No hazard	
Enclosure	Metal	Min. 1.9	30	5	No hazard	
Enclosure	Metal	Min. 1.9	250	5	No hazard	
Supplementary information:						

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Whole product	Metallic enclosure	Min. 1.9	1'300	No hazard	
Supplementary information:					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information: Fixed device					

T.8	TABLE: Stress relief test					N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Supplementary information:						

List of test equipment used:

A completed list of used test equipment shall be provided in the Test Reports when a Manufacturer Testing Laboratory according to TMP/CTF stage 1 or WMT/CTF stage 2 procedure has been used.

Clause	Measurement / testing	Testing / measuring equipment / material used	Inventory no	Last calibration	Calibration due
all	Ambient conditions	PCE Deutschland GmbH, PCE-THB 40, Thermo-/Hygro-/Barometer	12.6632.12	12/2015	12/2016
5.2, 6.2, B.2.5, B.3, B.4	Electrical data, fault condition tests	Fluke, 189, Digital Multimeter	DV9771	09/2015	09/2016 ¹⁾
5.2, 6.2, B.2.5, B.3, B.4	Electrical data, fault condition tests	Fluke, 189, Digital Multimeter	DV9772	10/2015	10/2016
5.2, 6.2, B.2.5, B.3, B.4	Electrical data, fault condition tests	Fluke, 87, Digital Multimeter	DV6681	11/2015	11/2016
5.3.2	Accessibility to electrical energy sources	Siemens, IEC 61032 Fig. 2B, Test Pin IEC 60950-1	MG9701	10/2013	10/2016
5.3.2	Accessibility to electrical energy sources	Siemens, EN 60950:2000, Test Probe IEC 60950-1 Fig. 2C	MG9703	07/2014	07/2017
5.4.2, 5.4.3	Clearances, creepage distances	Etalon, 0 - 150 mm, Caliper Gauge	M9702	07/2016	07/2017
5.4.1.4, 6.3.2, 9.0, B.2.6	Temperature measurements, fault condition tests	Fluke, 51, Digital Thermometer for K/J Thermocouples	DV9362	02/2015	02/2017
5.4.1.4, 6.3.2, 9.0, B.2.6	Temperature measurements, fault condition tests	Roth+Co, Typ K, Thermoelement Typ K (NiCr-Ni)	11.6632.01, 11.6632.02, 11.6632.03	12/2014	12/2017
5.4.9, 5.5.10	Electric strength tests	ETL, ATS400, High Voltage Tester	14.6632.03	05/2016	05/2017

¹⁾ Measurements done during 09/2016

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)	
EN 62368-1:2014	EN 62368-1:2014
EU_GD_IEC62368_1B	EU_GD_IEC62368_1B
Intertek Semko AB	Intertek Semko AB
Date (2015-08)	Date (2015-08)
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IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	CENELEC COMMON MODIFICATIONS (EN)		P
1	NOTE Z1		P
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:		N/A
	a) Included as parts of the equipment		N/A
	b) For components in series with the mains; by devices in the building installation		N/A
	c) For pluggable type B or permanently connected; by devices in the building installation		N/A
5.4.2.3.2.4	Interconnection with external circuit		N/A
10.2.1	Additional requirements in 10.5.1		N/A
10.5.1	RS1 compliance measurement conditions		N/A
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances		N/A
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz		P
G.7.1	NOTE Z1		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)		N/A
4.1.15	Denmark, Finland, Norway and Sweden: Class I pluggable equipment type A marking		N/A
4.7.3	United Kingdom: Torque test socket-outlet BS 1363, and the plug part BS 1363.		N/A
5.2.2.2	Denmark: Warning for high touch current		N/A
5.4.11.1 and Annex G	Finland and Sweden: Separation of the telecommunication network from earth		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.2.1	Norway: Capacitors rated for the applicable line-to-line voltage (230 V).		N/A
5.5.6	Finland, Norway and Sweden: Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N/A
5.6.1	Denmark: Protection for pluggable equipment type A; integral part of the equipment		N/A
5.6.4.2.1	Ireland and United Kingdom: The protective current rating is taken to be 13 A		N/A
5.6.5.1	Ireland and United Kingdom: Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N/A
5.7.5	Denmark: The installation instruction affixed to the equipment if high protective conductor current		N/A
5.7.6.1	Norway and Sweden: Television distribution system isolation text in user manual		N/A
5.7.6.2	Denmark: Warning for high touch current		N/A
B.3.1 and B.4	Ireland and United Kingdom: Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N/A
G.4.2	Denmark: Appliances rated ≤ 13 A provided with a plug according to DS 60884-2-D1:2011.		N/A
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A
	If a single-phase equipment having rated >13 A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N/A
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a.		N/A
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N/A
	Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		N/A
G.4.2	United Kingdom: The plug part of direct plug-in equipment assessed to BS 1363		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	United Kingdom: Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768		N/A
G.7.1	Ireland: Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use		N/A
G.7.2	Ireland and United Kingdom: A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)		N/A
10.5.2	Germany: Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.		N/A
F.1	Italy: The power consumption in Watts (W) indicated on TV receiver and in instruction for use		N/A
	TV receivers provided with an instruction for use, schematic diagrams and adjustments procedure in Italian language.		N/A
	Marking for controls and terminals in Italian language.		N/A
	Conformity declaration according to the above requirements in the instruction manual		N/A
	First importers of TV receivers manufactured outside EEC previous conformity certification to the Italian Post Ministry and Certification number on the backcover.		N/A

ATTACHMENT TO TEST REPORT IEC 62368-1

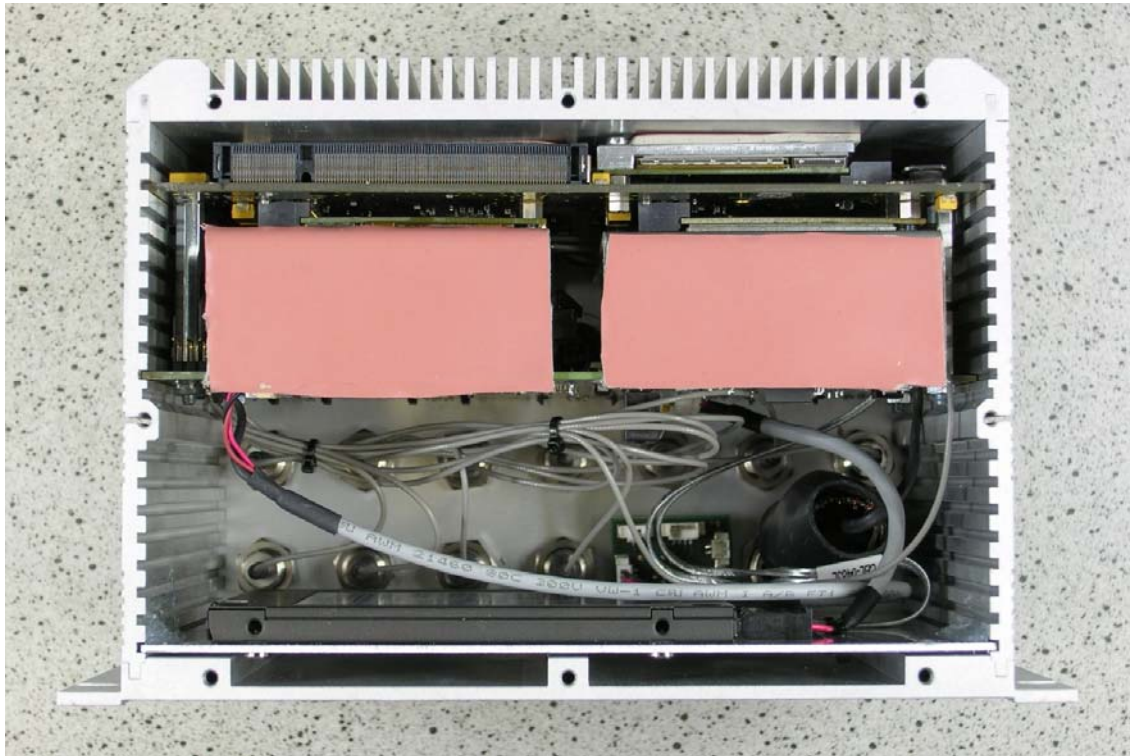
Pictures of the EUT



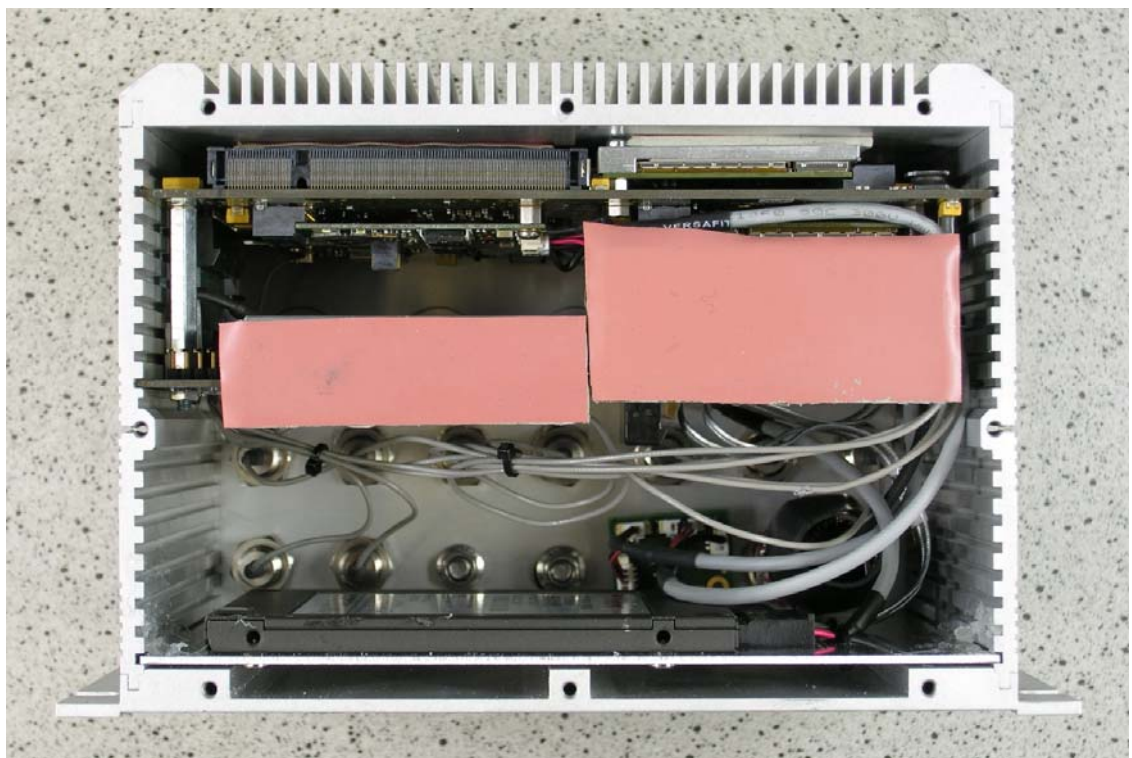
NB3800, total view



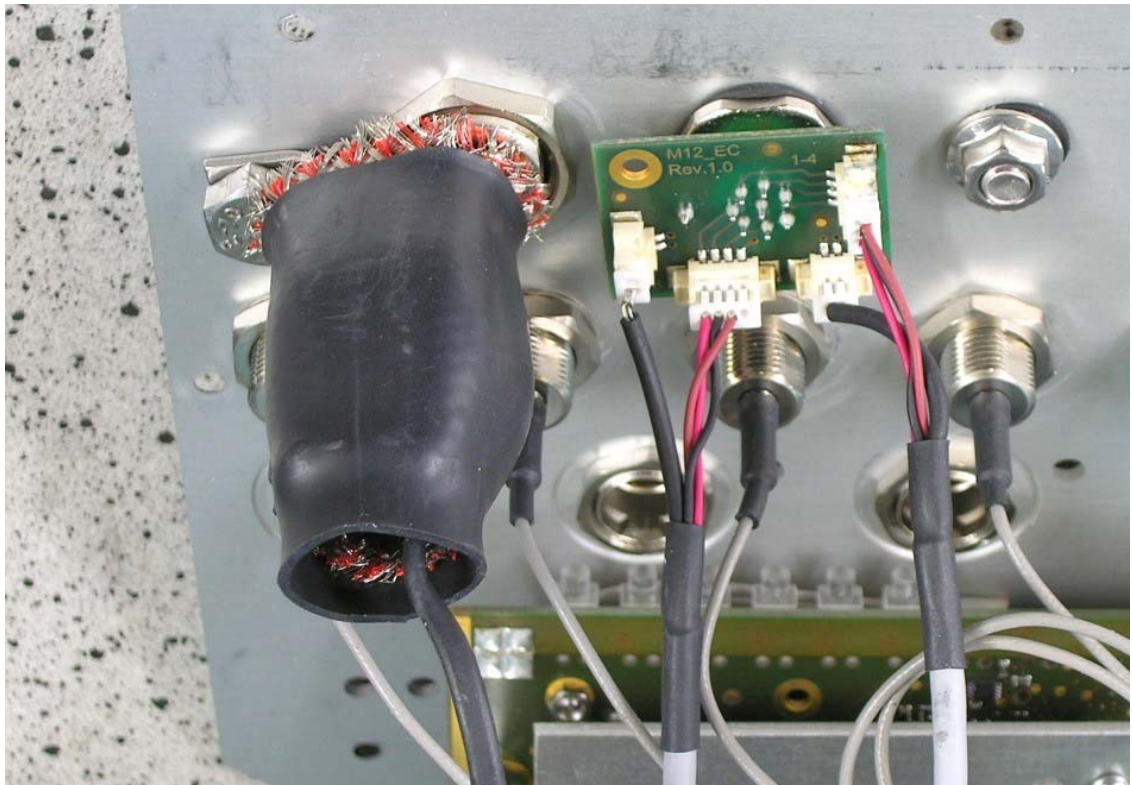
NB3800, rear view



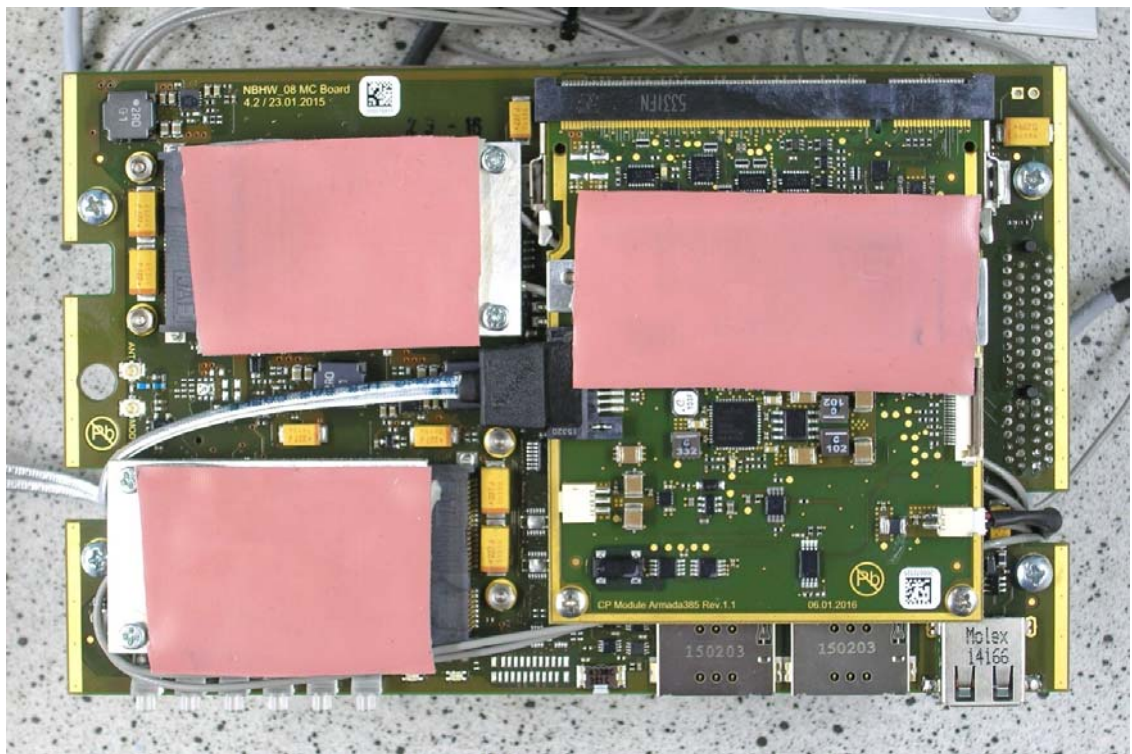
**NB3800, rear cover removed,
PSE 5xM12 2GE in the middle, solid state drive on bottom**



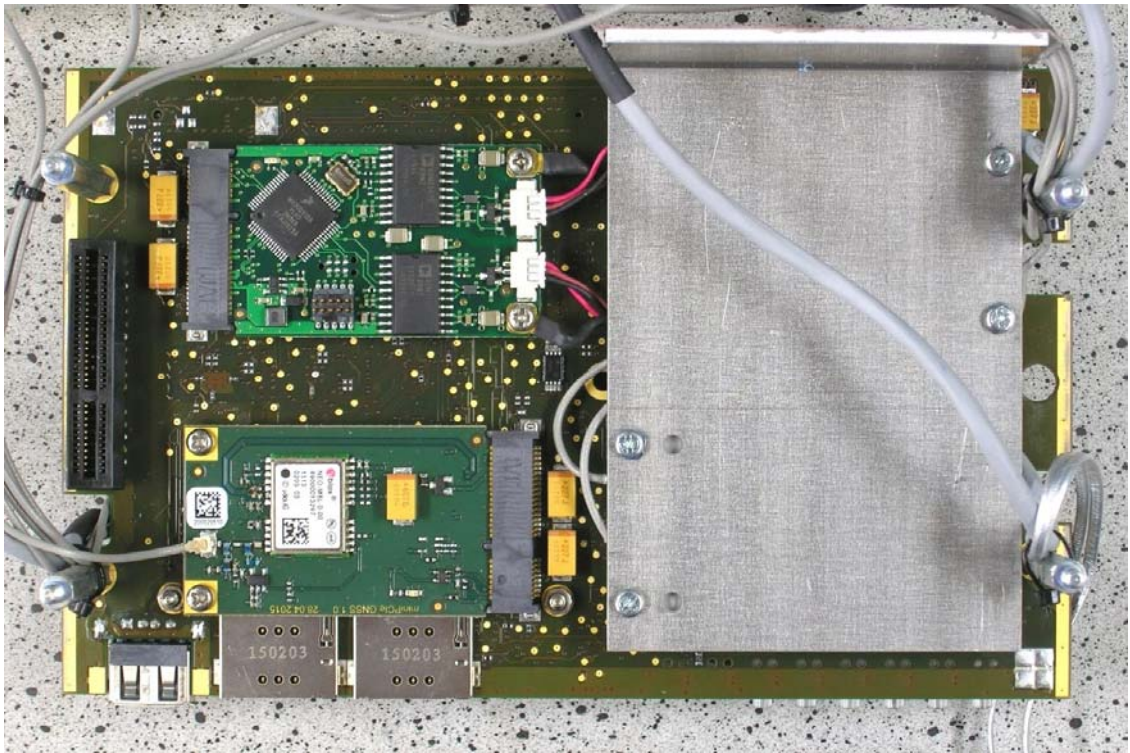
**NB3800-Pb rear cover removed,
PSE 5xM12 2GE (110V) in the middle, solid state drive on bottom**



Detail view of power input and optional CAN/RS-485 resp. IBIS cable termination



Top view of MC board with radio modules



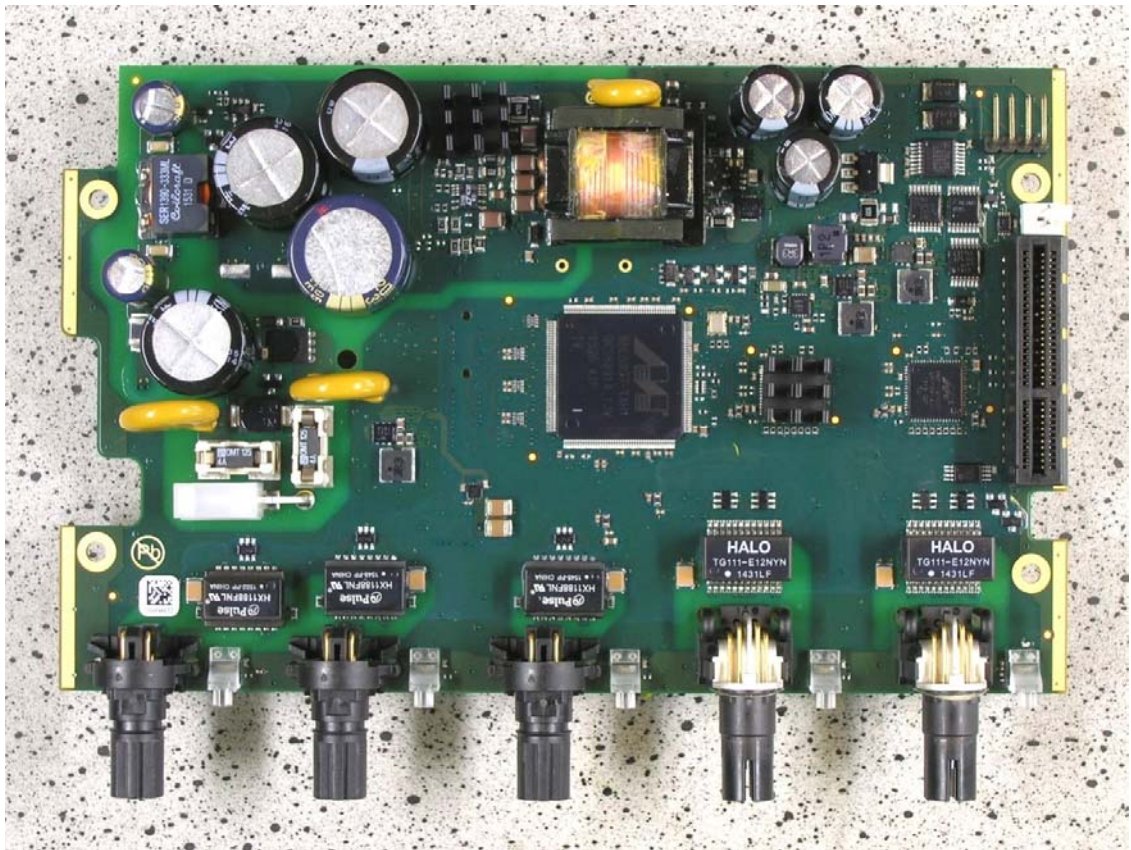
Bottom view of MC board with CAN/RS-485 module (top left)



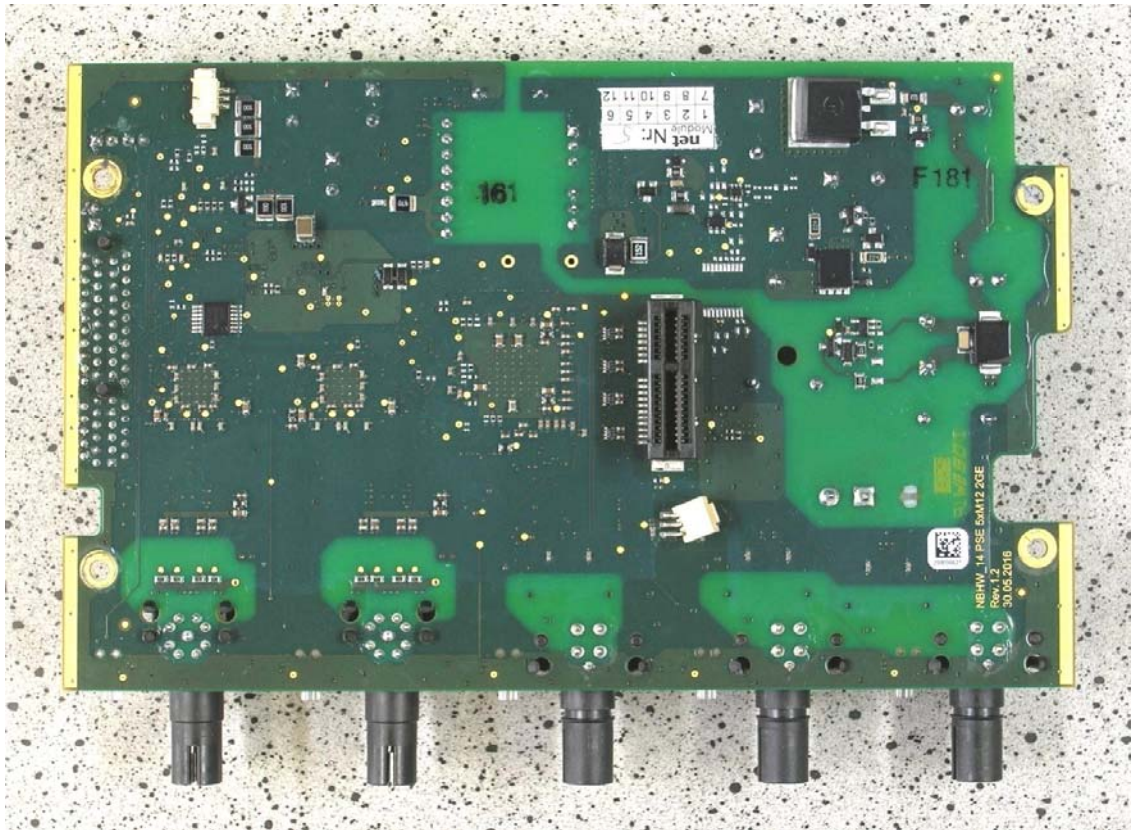
Detail view of optional equipped CAN/RS-485 module



Detail view of optional equipped IBIS module



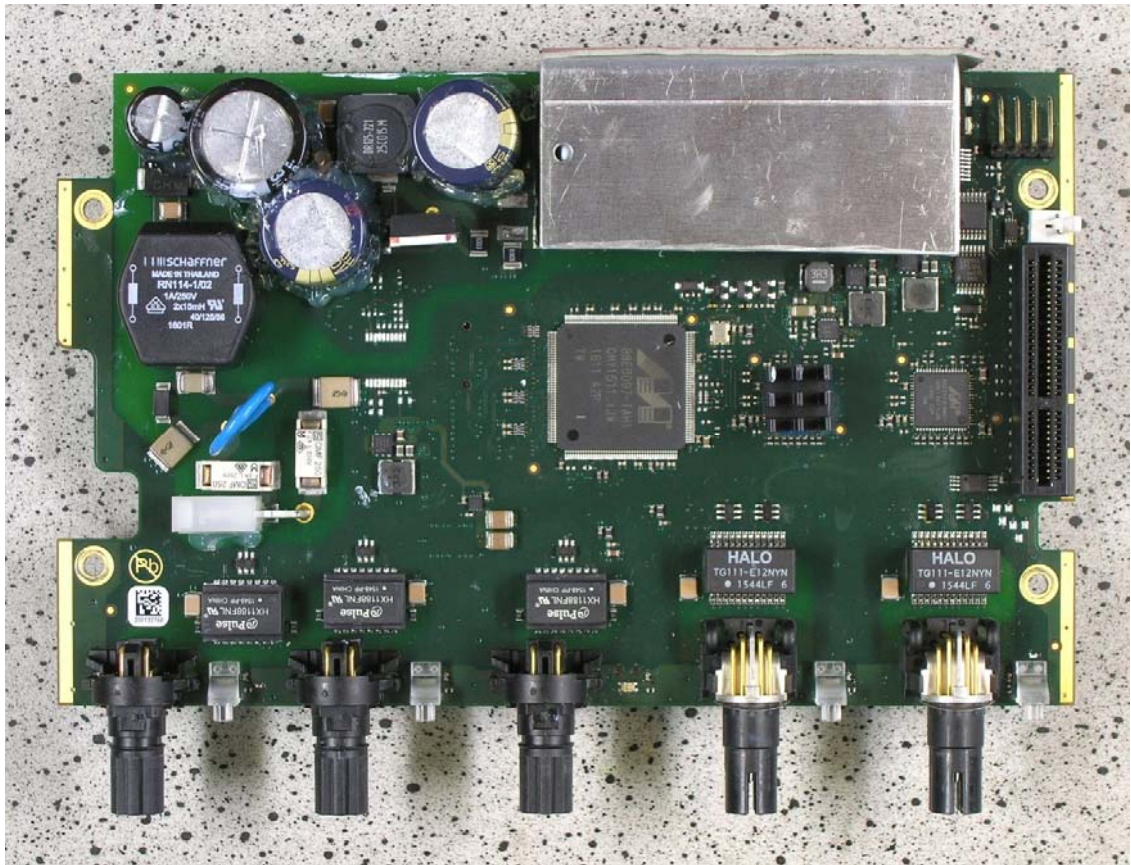
PSE 5xM12 2GE, top view



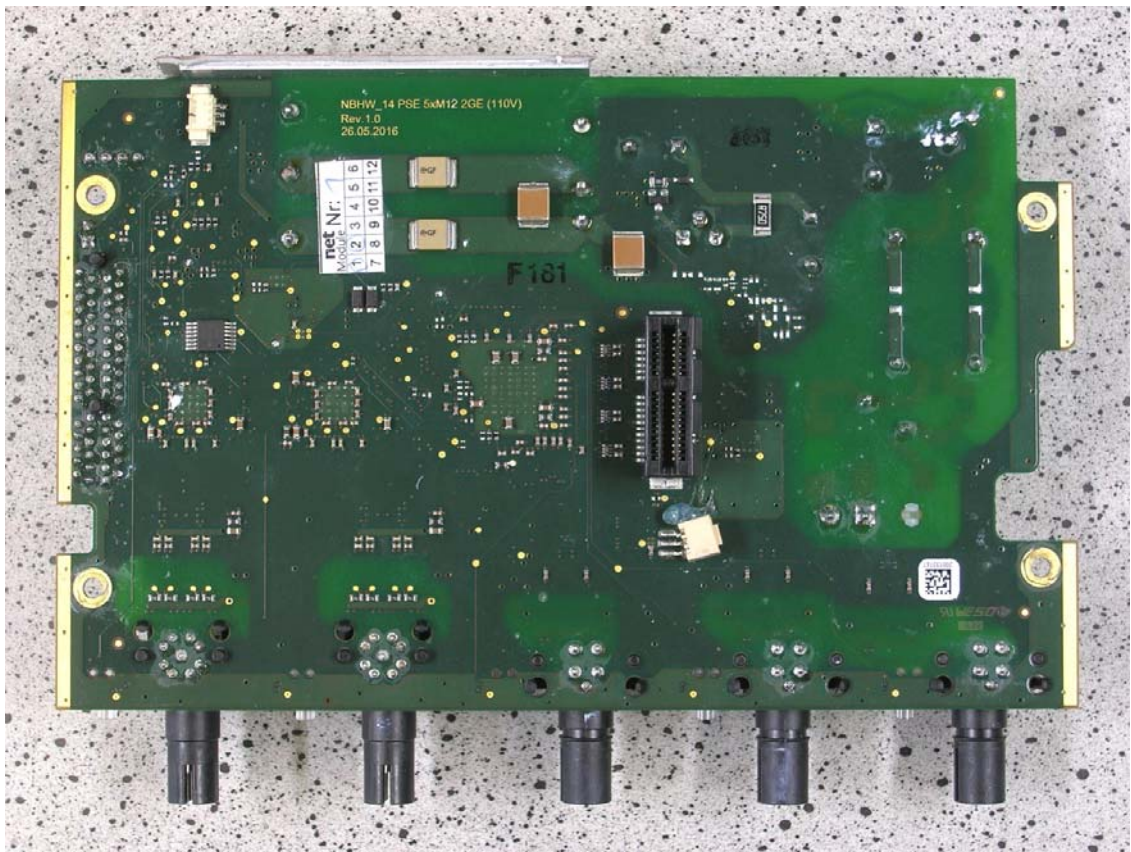
PSE 5xM12 2GE, bottom view



PSE 5xM12 2GE, detail view of markings



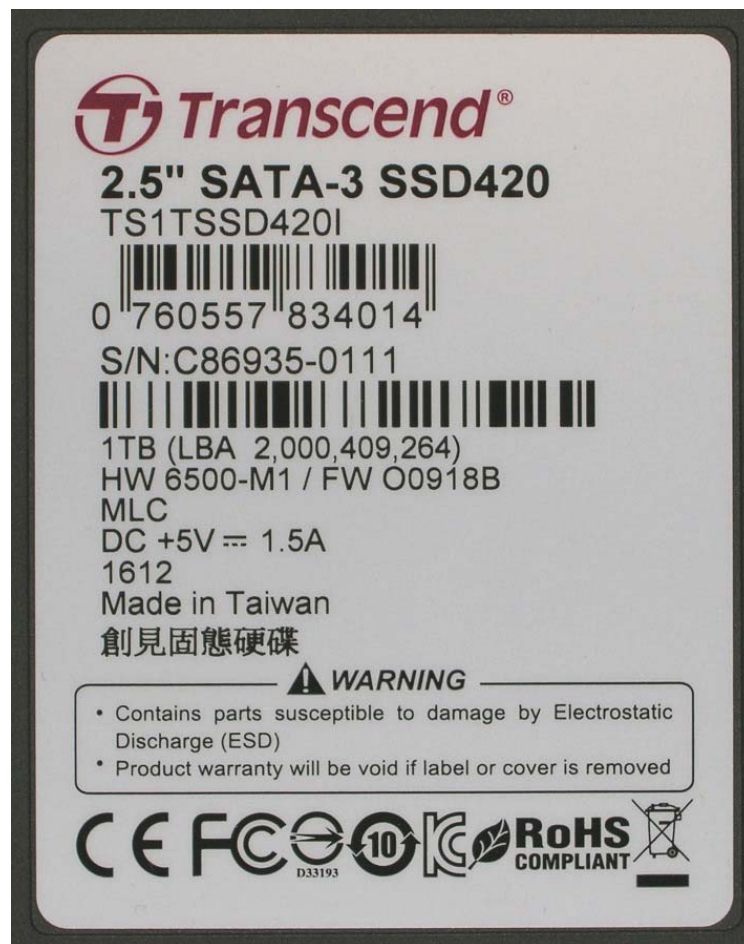
PSE 5xM12 2GE (110V), top view



PSE 5xM12 2GE (110V), bottom view



PSE 5xM12 2GE (110V), detail view of markings



Type label of solid state drive