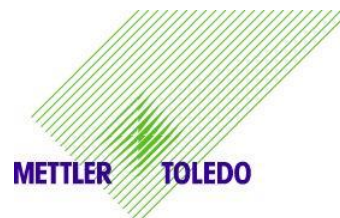


ENL Testing Laboratory
ENL Prüfstelle



Testing Laboratory accredited by the Swiss accreditation service SAS
Prüfstelle akkreditiert von der Schweizerischen Akkreditierungsstelle SAS

Registration No.: **STS 0009** Swiss testing service
Registrier- Nr.: Schweizerischer
Prüfstellendienst



TEST REPORT – Nr.:

20161099.A02.02

Generation date:
Erstellungs-Datum:

2016 - August - 12

Client:
Kunde:

NetModule AG
CH – 3172 Niederwangen

Device under test:
Prüf-Objekt:

NetModule Router for Railways
NB3800 (also includes NB3701 and NB3711)

Test Standard
Prüfnorm:

Standard Norm	Method Methode	P	F	C
EN 60068-2-1	Ad	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EN 60068-2-2	Bd	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EN 60068-2-30	Db	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

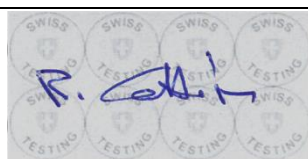
P = Pass / erfüllt; F = Fail / nicht erfüllt; C = Carried out / durchgeführt

Report Lange
Berichtssprache:

☒ : **English**

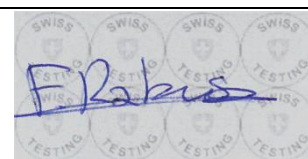
☐ : **Deutsch**

Test performed by:
Test durchgeführt
durch:



Roland Cattin
Project Leader

Test Report released
by:
Test Bericht freige-
geben durch:



Fabia Rakusa
Team Leader

Mettler-Toledo GmbH
ENL Test Laboratory
Heuwinkelstrasse 3
CH – 8606 Nänikon

Phone: +41 44 944 22 34
Fax: +41 44 944 33 10
E-Mail: fabia.rakusa@mt.com

Excerpts from this report may not be copied without written permission of the testing laboratory.
Dieser Bericht darf nicht auszugsweise, ohne schriftliche Genehmigung der Prüfstelle, kopiert werden.

The results of this report apply only to the devices under test listed
Die Ergebnisse in diesem Prüfbericht gelten nur für die aufgeführten Prüfobjekte.

Contents / Inhaltsverzeichnis

Part 1:	Client details / Kundenangaben.....	3
Part 2:	Data of devices under test / Daten der Prüfobjekte.....	3
Part 3:	Documentation of the device under test Dokumentation der Prüfobjekte	5
Part 4:	Peripheral units / Zusatzgeräte	6
Part 5:	Operating mode during test Betriebsart während des Tests	6
Part 6:	Test sequence Reihenfolge der durchgeführten Prüfungen	7
Part 7:	Overview of the test standards Übersicht der verwendeten Normen.....	8
Part 8:	Special occurrence / Spezielle Vorkommnisse	9
Part 8.1:	Special occurrence / Spezielle Vorkommnisse	9
Part 8.2:	Test Report History / Vorgängerberichte	9
Part 9:	Test records and additional sheets Protokolle und Zusatzblätter	9
Part 9.1:	Climatic test, cyclic: Damp Heat, cyclic	10
Part 9.2:	Climatic test, steady state: Cold, partly in operation	13
Part 9.3:	Climatic test, steady state: Dry Heat.....	15
Part 9.4:	Climatic test, steady state: Cold, Storage	17
Part 10:	Testing stations / test instruments Prüfanlagen / Prüfgeräte	19
Part 11:	Description of the initial and final measurement Beschreibung der Start- und Schlussmessungen	20
Part 12:	Test duration / Presence during the test Testdauer / Anwesenheiten	20

Part 1: Client details / Kundenangaben

Name of the company:
Name der Firma:

NetModule AG

Street:
Strasse:

Meriedweg 11

Country / ZIP / City:
Land / PLZ / Ort:

CH - 3172 Niederwangen

Telephone Nr.:
Telefon Nr.:

+41 31 985 25 10

Telephone direct Nr.:
Telefon Direktwahl Nr.:

+41 31 985 25 19

Fax No.:
Fax Nr.:

+41 31 985 25 11

Mobile Phone Nr.:
Mobiltelefon-Nr.:

E – Mail:
E – Mail:

urs.gruetter@netmodule.com

Contact person (s):
Kontaktperson (en):

Mr Urs Grütter, Mr Matteo Dotoli

Part 2: Data of devices under test / Daten der Prüfobjekte

Number of device (s):
Anzahl Geräte:

1

Model / Type:
Modell / Type:

NB3800

Instrument description/function:
Gerätebeschreibung / Funktion:

NetModul Router for Railway Applications

Additional information :
Weitere Angaben:

During the climatic tests the device under test was partially in operation.

Remark:

The NB3701 corresponds to the NB3700 (previously tested, see test report 20141021.A02.01 from 2014-04-28) and uses the CPU module of the NB3800 (tests results described inside this test report).

The NB3711 corresponds to the NB3710 (previously tested, see test report 20151053.A02.01 from 2015-06-15) and uses the CPU module of the NB3800 (tests results described inside this test report).

Serial- / Identifications- No.: / Serien- und Identifikationsnummern:

Test-Object Test-Objekt	Manufacturer Identification number: Hersteller Identifikationsnummer:	Identification number *) Identifikationsnummer
1	NB3800 Serial No: 00112B0114DD IMEI: 860461024916697 IMEI: 860461024911193 WLAN MAC: 04F0211F3822 Input Voltage: 12 .. 60V= / 1.7A / 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 contains FCC ID TK4-10-WLE600VX	01

*) Identification number given by the testing laboratory
Identifikationsnummer, durch die Prüfstelle vergeben

Part 3: Documentation of the device under test Dokumentation der Prüfobjekte

Pictures of the device under test 01 Bildokumentation Prüfkörper 01



Device under test 01:
Overview



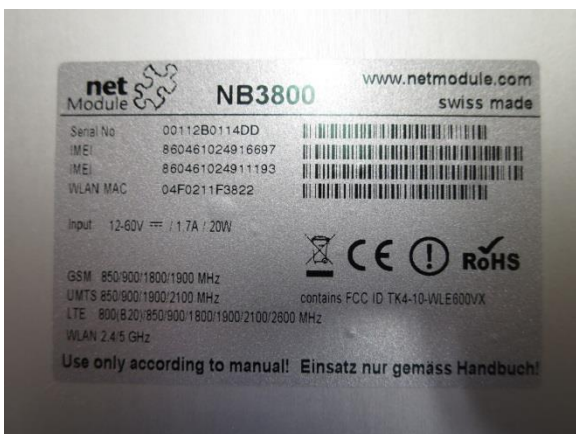
Device under test 01:
Overview (other point of view)



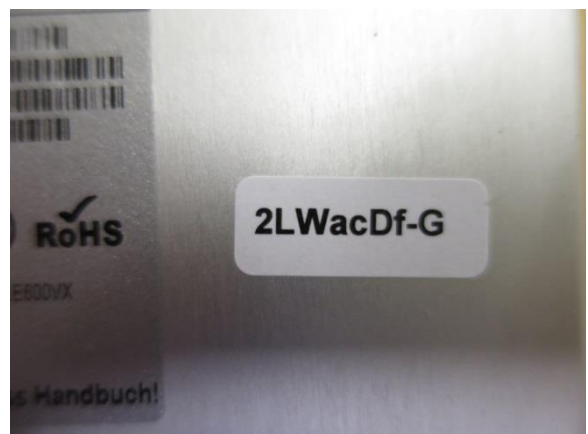
Device under test 01:
Front



Device under test 01:
Rear



Device under test 01:
Label 1



Device under test 01:
Label 2

Part 4: Peripheral units / Zusatzgeräte

Number of instruments / Anzahl Geräte: 1

Unit No. Gerät Nr	Name of manufacturer Hersteller	Model / Type Modell / Typ	Series-Nr. Serie - Nr.	Description of function Funktionsbeschreibung
1	Fujitsu Esprimo Mobile	V6555	YKLM089106	Data logger for NB3800



Overview: All peripheral devices

Part 5: Operating mode during test Betriebsart während des Tests

- ☐ Not in operation / Nicht im Betrieb
- ☐ Continuous operation / Dauerbetrieb
- ☒ Partly in operation as described in test record
Teilweise im Betrieb gemäss Protokoll

Power supply: ☒ Mains: 230V_{AC} nominal voltage / Nennspannung
Speisung: Netz 50 Hz nominal frequency / Nennfrequenz

☐ Other ---
Andere

More details / Weitere Beschreibung:

Part 7: Overview of the test standards Übersicht der verwendeten Normen

Mechanical stress / Transport simulation Mechanische Beanspruchung / Transportsimulation

Tested Ge- testet	Test designation Test Benennung	Standard Norm	Year Jahr	Device under test Testobjekte									
				1	2	3	4	5	6	7	8	9	10
<input type="checkbox"/>	Vibration Sinus	EN 60068-2-6	2008										
<input type="checkbox"/>	Vibration Sinus												
<input type="checkbox"/>	Vibration Random	EN 60068-2-64	2008										
<input type="checkbox"/>	Vibration Random	MIL-STD-810,M514	2008										
<input type="checkbox"/>	Vibration Random												
<input type="checkbox"/>	Shock	EN 60068-2-27	2009										
<input type="checkbox"/>	Shock												
<input type="checkbox"/>	Transport vibration	Mettler PP 426	1994										
<input type="checkbox"/>	Stress vibration	Mettler PP 422	1989										
<input type="checkbox"/>	Drop	Mettler PP 428	1994										
<input type="checkbox"/>	Drop	ISTA 1A	2001										
<input type="checkbox"/>	Drop	ISTA 2A	2011										
<input type="checkbox"/>	Drop												
<input type="checkbox"/>	Vibration Transport	ISTA 1A	2001										
<input type="checkbox"/>	Vibration Transport	ISTA 2A	2011										
<input type="checkbox"/>													
<input type="checkbox"/>													

Climatic- / Environment simulations Klima- / Umweltsimulation

Tested Ge- testet	Test designation Test Benennung	Standard Norm	Year Jahr	Device under test Testobjekte									
				1	2	3	4	5	6	7	8	9	10
<input checked="" type="checkbox"/>	Cold	EN 60068-2-1	2007	X									
<input checked="" type="checkbox"/>	Dry heat	EN 60068-2-2	2007	X									
<input type="checkbox"/>	Temperature cyclic	EN 60068-2-14	2009										
<input type="checkbox"/>	Damp heat steady state	EN 60068-2-78	2008										
<input checked="" type="checkbox"/>	Damp heat cyclic	EN 60068-2-30	2005	X									
<input type="checkbox"/>	Climatic Conditioning	ISTA 2A	2011										
<input type="checkbox"/>													
<input type="checkbox"/>													
<input type="checkbox"/>													
<input type="checkbox"/>													

Part 8: Special occurrence / Spezielle Vorkommnisse

Part 8.1: Special occurrence / Spezielle Vorkommnisse

None / keine

Part 8.2: Test Report History / Vorgängerberichte

This report may have a previous version Dieser Testbericht kann eine Vorgängerversion haben	
Ref. No. / Bericht Nr.	State / Zustand
20161099.A02.01	2016-08-12: Initial test report / Erster Testbericht

Part 9: Test records and additional sheets Protokolle und Zusatzblätter

In the next pages the following test records and additional sheets are documented:
Auf den nachstehenden Seiten sind folgende Protokolle und Zusatzblätter dokumentiert:

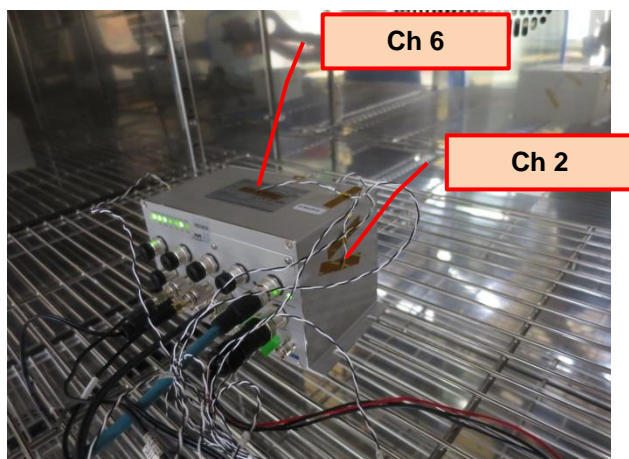
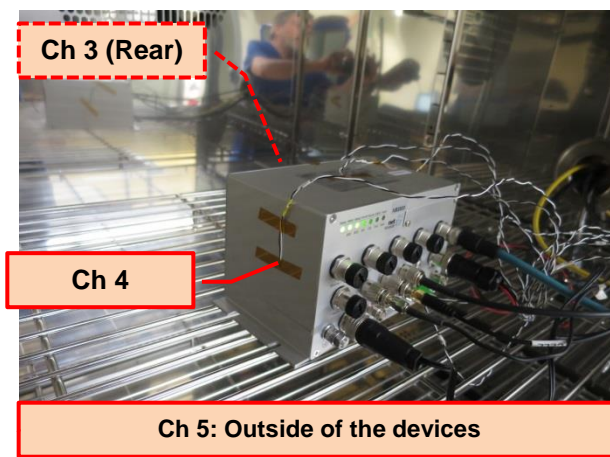
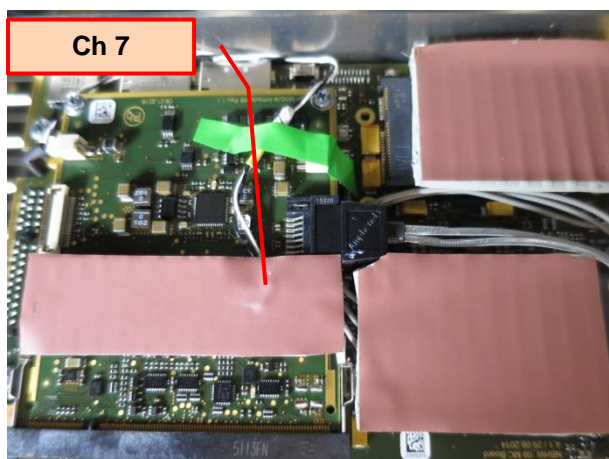
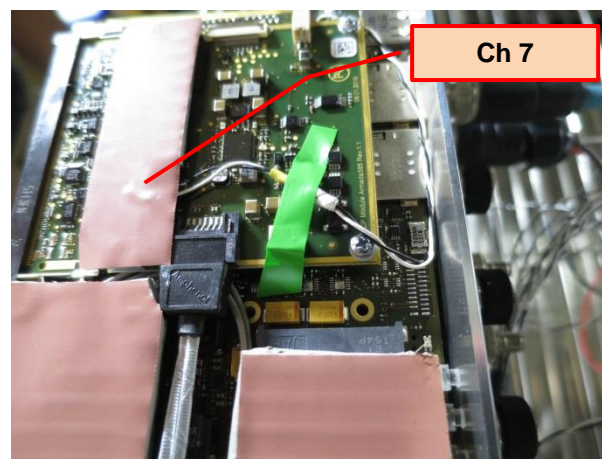
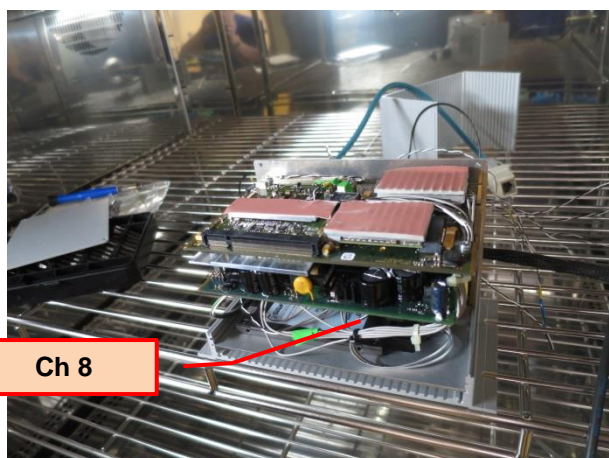
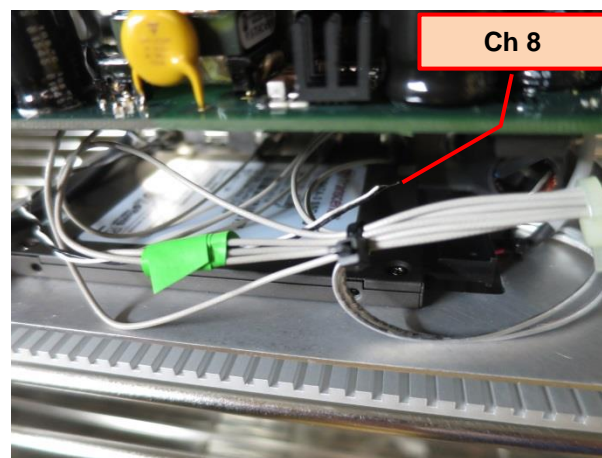
<input checked="" type="checkbox"/>	Part 9.1	Climatic test, cyclic / Klimatest Wechsel	Damp Heat, cyclic	+	2	Additional sheet (s) Zusatzblatt (-blätter)
<input checked="" type="checkbox"/>	Part 9.2	Climatic test, steady state / Klimatest konstant	Cold partly in operation	+	1	Additional sheet (s) Zusatzblatt (-blätter)
<input checked="" type="checkbox"/>	Part 9.3	Climatic test, steady state / Klimatest konstant	Dry heat	+	1	Additional sheet (s) Zusatzblatt (-blätter)
<input checked="" type="checkbox"/>	Part 9.4	Climatic test, steady state / Klimatest konstant	Cold storage	+	1	Additional sheet (s) Zusatzblatt (-blätter)

Part 9.1: Climatic test, cyclic: Damp Heat, cyclic

Type of test Art des Tests	<input type="checkbox"/> Temperature, cyclic / Temperatur Wechsel <input checked="" type="checkbox"/> Damp heat, cyclic / Feuchte Wärme, Wechsel		
Type of test / goal Art des Tests / Zweck	<input checked="" type="checkbox"/> Stress test / Stress Beanspruchung <input type="checkbox"/> Transportation / Transport		
According to standard Nach Norm oder Vorschrift	<input type="checkbox"/> EN 60068-2-14 <input checked="" type="checkbox"/> EN 60068-2-30		
Applicable Test Method Zutreffendes Prüfverfahren	<input checked="" type="checkbox"/> Db		
Test instrument Prüfgerät	ENL-P Nr.		
	<input type="checkbox"/> 000/0298 <input checked="" type="checkbox"/> 000/0483 <input checked="" type="checkbox"/> 000 / 0451 <input checked="" type="checkbox"/> 000 / 0443		
Device under test Prüfobjekt	NB3800		Serial / Ident. No. Seriennummer 01
Client Kunde	NetModule AG, CH – 3172 Niederwangen, Mr Urs Grütter		
Start-Date, Time Start-Datum, Zeit	2016-06-02, 12:35		End-Date, Time End-Datum, Zeit 2016-06-04, 12:35
High Temperature Obere Temperatur	+55°C	Humidity Feuchte 95%r.H.	Hold Time Haltezeit 9 h
Low Temperature Untere Temperatur	+25°C	Humidity Feuchte 95%r.H.	Hold Time Haltezeit 9 h
Uncertainties Temp. Messunsicherheit Temp.	± 1.2 K	Uncertainties .Humidity Messunsicherheit Feuchte	± 2.8 %r.H.
Change of temperature Temperaturrampe	<input type="checkbox"/> 1°C/min <input type="checkbox"/> Change time / Umlagerzeit < 10 s <input checked="" type="checkbox"/> Time from low to high temp: 3 hours		
Number of cycles Anzahl Zyklen	2	Time per cycle Zeit/Zyklus 24 h	Totally time Gesamtzeit 48 h
State of test object Zustand des Testobjekts	<input checked="" type="checkbox"/> Partly in operation <input type="checkbox"/> Not in operation		
Preconditioning Vorbehandlung	None	Post conditioning Nachbehandlung	Cold, partly in operation
Initial measurement Anfangsmessung	Done by the client		
Measurement during the test Zwischenmessung	Done by the client via remote reading		
Final measurement Endmessung	Done by the client (after all tests)		
Remarks Bemerkungen	During all temperature tests there are some temperature sensors mounted in the housing of the device under test, see picture part 9.1.1 The device under test was switched on at the beginning of the second cycle, see diagram.		
Additional sheets Zusatzblätter	2	Test Test	<input checked="" type="checkbox"/> passed erfüllt <input type="checkbox"/> failed nicht erfüllt <input type="checkbox"/> carried out durchgeführt
Tested by Geprüft von	Marcel Cattin		

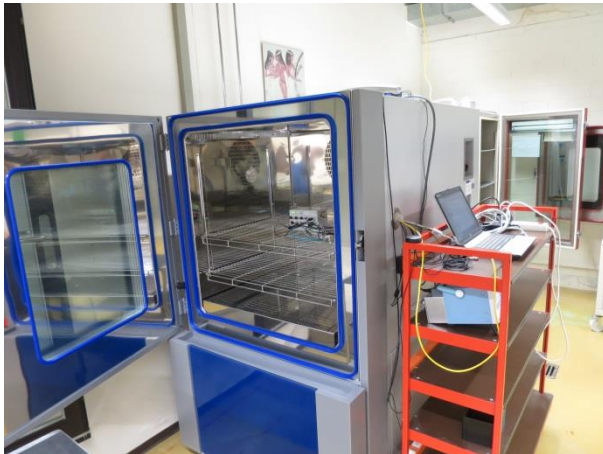
Part 9.1.1: Additional sheet / Zusatzblatt

to Test / zum Test:

Climatic test, cyclic: Damp Heat, cyclicDevice under test
Prüfobjekt**NB3800**Serial / Ident. No.
Seriennummer**01**Position of temperature sensors
OverviewPosition of temperature sensors
Overview (Other point of view)Position of temperature sensor
ControllerPosition of temperature sensor
Controller (other point of view)Position of temperature sensor
Inside of the housingPosition of temperature sensor
Inside of the housing (Detail)

Part 9.1.2: Additional sheet / Zusatzblatt

to Test / zum Test:

Climatic test, cyclic: Damp Heat, cyclicDevice under test
Prüfobjekt**NB3800**Serial / Ident. No.
Seriennummer**01**

Overview climatic chamber



Arrangement of the device under test in the climatic chamber

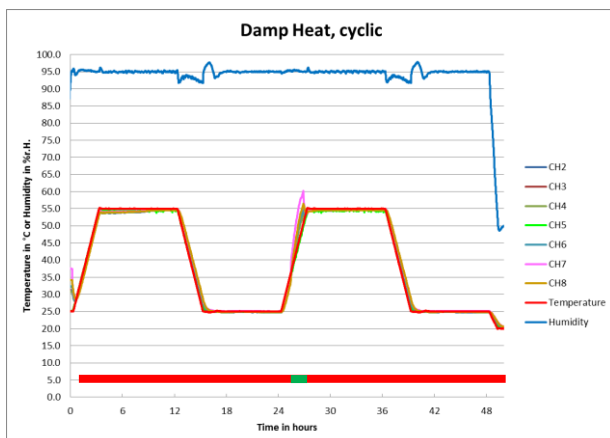


Diagram: Damp heat, cyclic

— : switched on, — : switched off

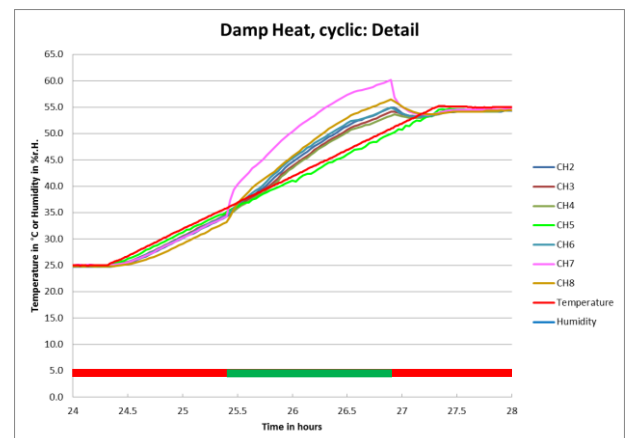


Diagram: Damp heat, cyclic, Detail

— : switched on, — : switched off

Part 9.2: Climatic test, steady state: Cold, partly in operation

Type of test Art des Tests	<input checked="" type="checkbox"/> Temperature, steady state / Temperatur konstant <input type="checkbox"/> Damp heat, steady state / Feuchte Wärme, konstant
Type of test / goal Art des Tests / Zweck	<input checked="" type="checkbox"/> Stress test / Stress Beanspruchung <input type="checkbox"/> Transportation / Transport <input type="checkbox"/> Zulassung
According to standard Nach Norm oder Vorschrift	<input checked="" type="checkbox"/> EN 60068-2-1 <input type="checkbox"/> EN 60068-2-2 <input type="checkbox"/> EN 60068-2-56 <input type="checkbox"/>
Applicable Test Method Zutreffendes Prüfverfahren	<input checked="" type="checkbox"/> Ad <input type="checkbox"/> High air velocity <input checked="" type="checkbox"/> Low air velocity *) <input checked="" type="checkbox"/> Air flow: Bottom-up
Test instrument Prüfgerät	ENL-P Nr. <input type="checkbox"/> 000/0298 <input checked="" type="checkbox"/> 000/0483 <input checked="" type="checkbox"/> 000 / 0451 <input checked="" type="checkbox"/> 000 / 0443

Device under test Prüfobjekt	NB3800	Serial / Ident. No. Seriennummer	01
Client Kunde	NetModule AG, CH – 3172 Niederwangen, Mr Urs Grütter		

Start-Date, Time Start-Datum, Zeit	2016-07-28, 20:50		End-Date, Time End-Datum, Zeit	2016-07-29, 08:50	
Temperature Temperatur	-40°C	Humidity Feuchte	uncontrolled	Duration Dauer	12 h
Uncertainties Temp. Messunsicherheit Temp.	± 1.8 K	Uncertainties Humidity Messunsicherheit Feuchte	--		
Cooling and/or warming up procedure Abkühlungs- bzw. Erwärmungsvorgang	<input type="checkbox"/> Device under test into the preheating / precooling chamber Prüfkörper in vortemperierte Kammer <input type="checkbox"/> Max possible heating / cooling rate / Ofenkonstante <input checked="" type="checkbox"/> 1 °C/min				
State of test object Zustand des Testobjekts	<input checked="" type="checkbox"/> Partly in operation <input type="checkbox"/> Not in operation				
Preconditioning Vorbehandlung	Damp Heat, cyclic		Post conditioning Nachbehandlung	Dry Heat	

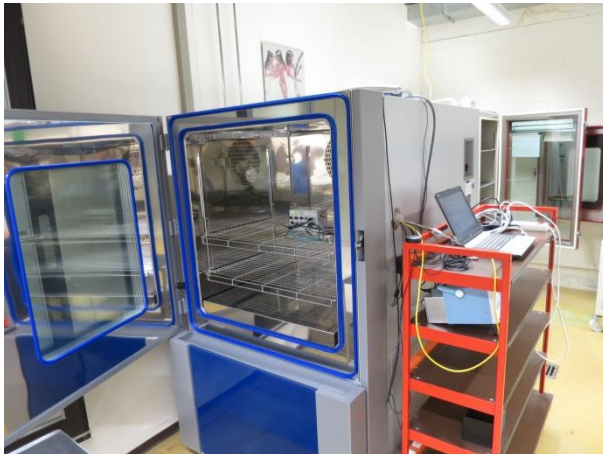
Initial measurement Anfangsmessung	Done by the client
Measurement during the test Zwischenmessung	Done by the client by switching on the device at -40°C (stabilized)
Final measurement Endmessung	Done by the client (after all tests)

Remarks Bemerkungen	During all temperature tests there are some temperature sensors mounted in the housing of the device under test, see picture part 9.1.1 For marking see also part 10 The device under test was switched on for the last 60 minutes of the test *): Heating with free air circulation: max 14 K, Heating with forced circulation: max 10 K
------------------------	---

Additional sheets Zusatzblätter	1	Test Test	<input checked="" type="checkbox"/> passed erfüllt	<input type="checkbox"/> failed nicht erfüllt	<input type="checkbox"/> carried out durchgeführt
Tested by Geprüft von	Fabia Rakusa				

Part 9.2.1: Additional sheet / Zusatzblatt

to Test / zum Test:

Climatic test, steady state: Cold, partly in operationDevice under test
Prüfobjekt**NB3800**Serial / Ident. No.
Seriennummer**01**

Overview climatic chamber



Arrangement of the device under test in the climatic chamber

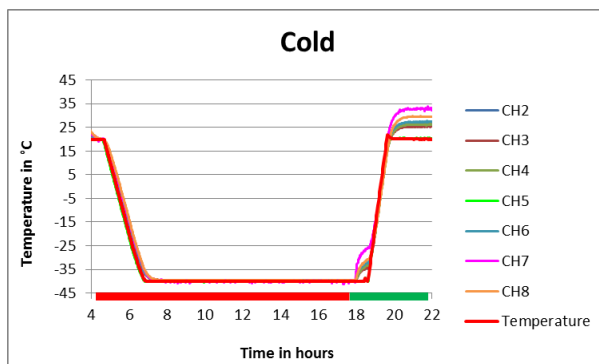


Diagram: Cold partly in operation

— : switched on, — : switched off

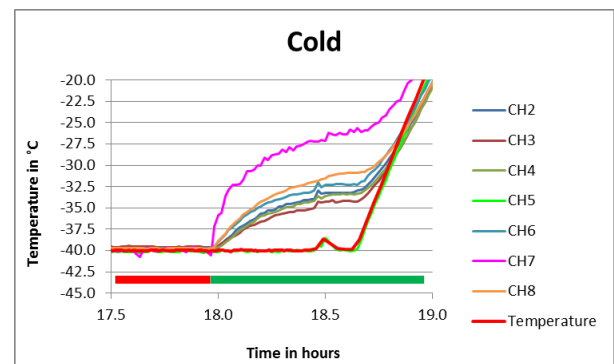


Diagram: Cold partly in operation, Detail

— : switched on, — : switched off

Part 9.3: Climatic test, steady state: Dry Heat

Type of test Art des Tests	<input checked="" type="checkbox"/> Temperature, steady state / Temperatur konstant <input type="checkbox"/> Damp heat, steady state / Feuchte Wärme, konstant
Type of test / goal Art des Tests / Zweck	<input checked="" type="checkbox"/> Stress test / Stress Beanspruchung <input type="checkbox"/> Transportation / Transport <input type="checkbox"/> Zulassung
According to standard Nach Norm oder Vorschrift	<input type="checkbox"/> EN 60068-2-1 <input checked="" type="checkbox"/> EN 60068-2-2 <input type="checkbox"/> EN 60068-2-56 <input type="checkbox"/>
Applicable Test Method Zutreffendes Prüfverfahren	<input checked="" type="checkbox"/> Bd <input type="checkbox"/> High air velocity <input checked="" type="checkbox"/> Low air velocity <input checked="" type="checkbox"/> Air flow: Bottom-up
Test instrument Prüfgerät	ENL-P Nr. <input type="checkbox"/> 000/0298 <input checked="" type="checkbox"/> 000/0483 <input checked="" type="checkbox"/> 000 / 0451 <input checked="" type="checkbox"/> 000 / 0443

Device under test Prüfobjekt	NB3800	Serial / Ident. No. Seriennummer	01
Client Kunde	NetModule AG, CH – 3172 Niederwangen, Mr Urs Grütter		

Start-Date, Time Start-Datum, Zeit	2016-08-02, 00:00	End-Date, Time End-Datum, Zeit	2016-08-02, 13:00
Temperature Temperatur	+70°C	Humidity Feuchte	uncontrolled
Uncertainties Temp. Messunsicherheit Temp.	± 1.2 K	Duration Dauer	13 h
Cooling and/or warming up procedure Abkühlungs- bzw. Erwärmungsvorgang	<input type="checkbox"/> Device under test into the preheating / precooling chamber Prüfkörper in vortemperierte Kammer <input checked="" type="checkbox"/> 1 °C/min		
State of test object Zustand des Testobjekts	<input checked="" type="checkbox"/> In operation / Im Betrieb <input type="checkbox"/> Not in operation / Nicht im Betrieb		
Preconditioning Vorbehandlung	Cold, partly in operation	Post conditioning Nachbehandlung	Cold storage

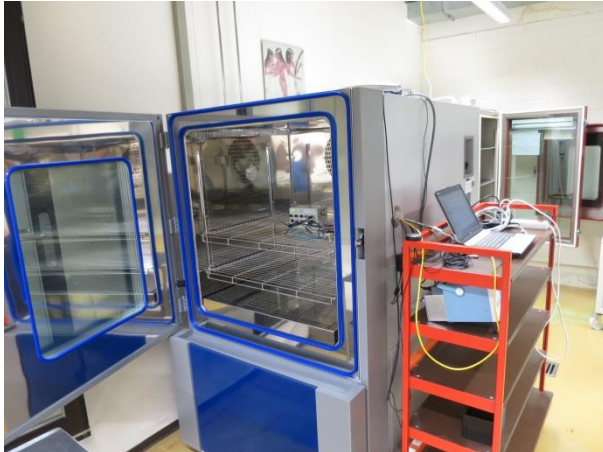
Initial measurement Anfangsmessung	Done by the client
Measurement during the test Zwischenmessung	Done by the client via remote reading during the peak at 85°C
Final measurement Endmessung	Done by the client (after all tests)

Remarks Bemerkungen	During all temperature tests there are some temperature sensors mounted in the housing of the device under test, see picture part 9.1.1 The temperature of the climatic chamber was raised to 85°C for 10 minutes, see diagram in part 9.3.1
------------------------	---

Additional sheets Zusatzblätter	1	Test Test	<input checked="" type="checkbox"/> passed erfüllt	<input type="checkbox"/> failed nicht erfüllt	<input type="checkbox"/> carried out durchgeführt
Tested by Geprüft von	Fabia Rakusa				

Part 9.3.1: Additional sheet / Zusatzblatt

to Test / zum Test:

Climatic test, steady state: Dry HeatDevice under test
Prüfobjekt**NB3800**Serial / Ident. No.
Seriennummer**01**

Overview climatic chamber



Arrangement of the device under test in the climatic chamber

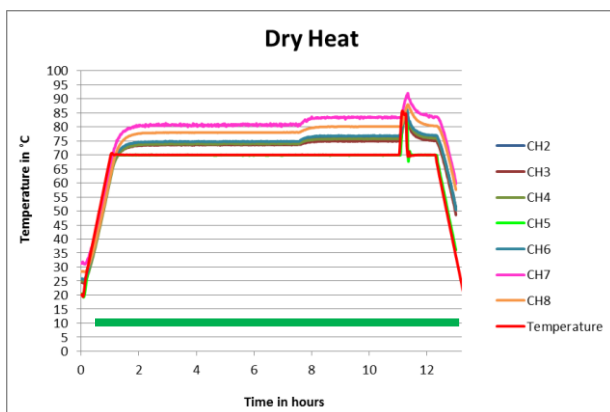


Diagram: Dry heat in operation

— : switched on, — : switched off

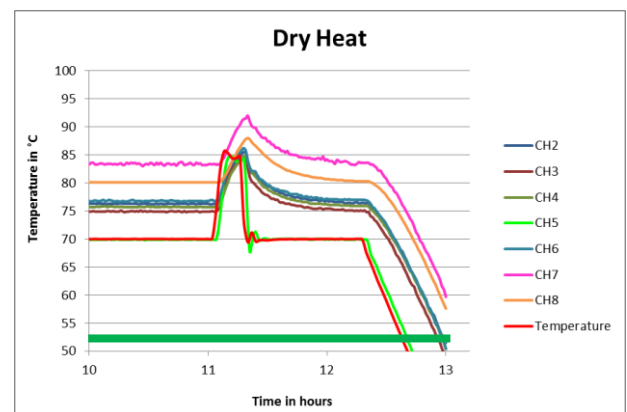


Diagram: Dry heat in operation, Detail

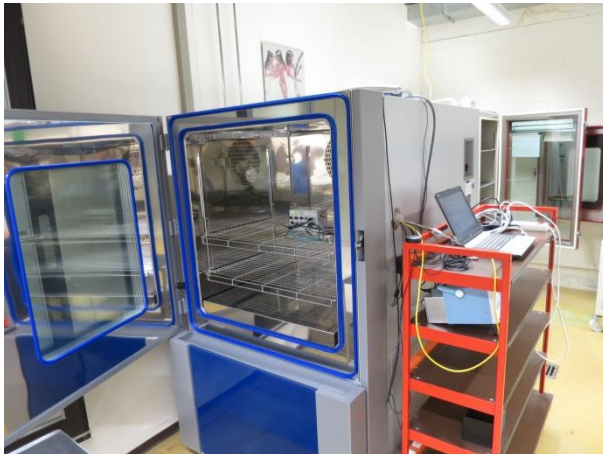
— : switched on, — : switched off

Part 9.4: Climatic test, steady state: Cold, Storage

Type of test Art des Tests	<input checked="" type="checkbox"/> Temperature, steady state / Temperatur konstant <input type="checkbox"/> Damp heat, steady state / Feuchte Wärme, konstant		
Type of test / goal Art des Tests / Zweck	<input checked="" type="checkbox"/> Stress test / Stress Beanspruchung <input type="checkbox"/> Transportation / Transport <input type="checkbox"/> Zulassung		
According to standard Nach Norm oder Vorschrift	<input checked="" type="checkbox"/> EN 60068-2-1 <input type="checkbox"/> EN 60068-2-2 <input type="checkbox"/> EN 60068-2-56 <input type="checkbox"/>		
Applicable Test Method Zutreffendes Prüfverfahren	<input checked="" type="checkbox"/> Ab <input type="checkbox"/> High air velocity <input checked="" type="checkbox"/> Low air velocity <input checked="" type="checkbox"/> Air flow: Bottom-up		
Test instrument Prüfgerät	ENL-P Nr. <input type="checkbox"/> 000/0298 <input checked="" type="checkbox"/> 000/0483 <input checked="" type="checkbox"/> 000 / 0451 <input checked="" type="checkbox"/> 000 / 0443		
Device under test Prüfobjekt	NB3800		Serial / Ident. No. Seriennummer 01
Client Kunde	NetModule AG, CH – 3172 Niederwangen, Mr Urs Grütter		
Start-Date, Time Start-Datum, Zeit	2016-08-02, 15:15		End-Date, Time End-Datum, Zeit 2016-08-03, 07:15
Temperature Temperatur	-40°C	Humidity Feuchte uncontrolled	Duration Dauer 16 h
Uncertainties Temp. Messunsicherheit Temp.	± 1.8 K	Uncertainties .Humidity Messunsicherheit Feuchte	--
Cooling and/or warming up procedure Abkühlungs- bzw. Erwärmungsvorgang	<input type="checkbox"/> Device under test into the preheating / precooling chamber Prüfkörper in vortemperierte Kammer <input type="checkbox"/> Max possible heating / cooling rate / Ofenkonstante <input checked="" type="checkbox"/> 1 °C/min		
State of test object Zustand des Testobjekts	<input type="checkbox"/> Partly in operation <input checked="" type="checkbox"/> Not in operation		
Preconditioning Vorbehandlung	Dry heat	Post conditioning Nachbehandlung	None
Initial measurement Anfangsmessung	Done by the client		
Measurement during the test Zwischenmessung	Done by the client after heating up the device to room temperature		
Final measurement Endmessung	Done by the client (after all tests)		
Remarks Bemerkungen	During all temperature tests there are some temperature sensors mounted in the housing of the device under test, see picture part 9.1.1 		
Additional sheets Zusatzblätter	1	Test Test	<input checked="" type="checkbox"/> passed erfüllt <input type="checkbox"/> failed nicht erfüllt <input type="checkbox"/> carried out durchgeführt
Tested by Geprüft von	Fabia Rakusa		

Part 9.4.1: Additional sheet / Zusatzblatt

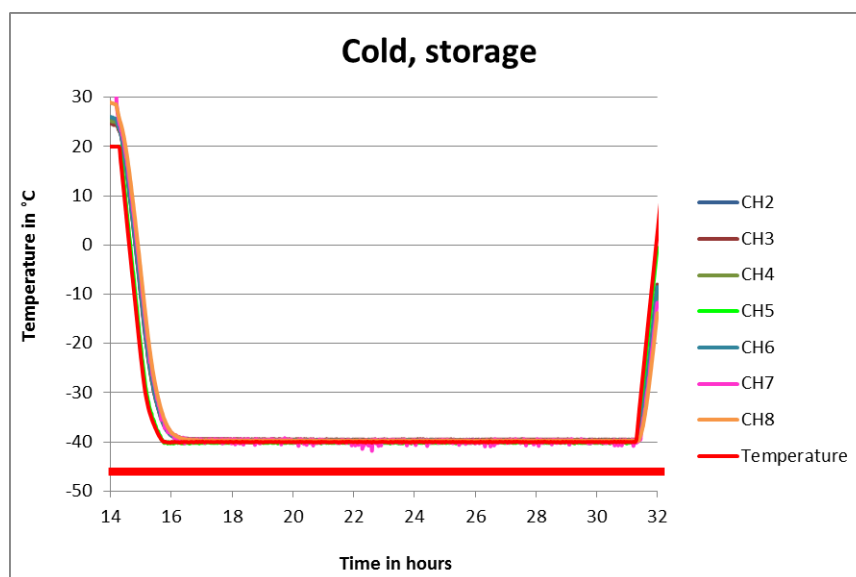
to Test / zum Test:

Climatic test, steady state: Cold, storageDevice under test
Prüfobjekt**NB3800**Serial / Ident. No.
Seriennummer**01**

Overview climatic chamber



Arrangement of the device under test in the climatic chamber



Part 10: Testing stations / test instruments Prüfanlagen / Prüfgeräte

Followed testing instruments are needed in this test procedure:

Measurement Uncertainty:

Measurement uncertainties for the test methods are available on customer request

Folgende Testeinrichtungen wurden in dieser Prüfung verwendet:

Messunsicherheit:

Angaben zur Messunsicherheit können auf Wunsch abgegeben werden.

Equipment / Gerät		Identification number of ENL Testing laboratory	Last Calibration	Next Calibration
Climatic tests / Klimaprüfungen				
<input checked="" type="checkbox"/>	Climatic chamber CTS C-40/600 Klimakammer CTS C-40/600	ENL-P 000 / 0483	2015-05	2016-07
<input checked="" type="checkbox"/>	Logger Yokogawa Logger Yokogawa	ENL-P 000 / 0443	2015-10	2016-10
<input type="checkbox"/>	Logger Testo 176T4 Logger Testo 176T4	ENL-P 000 / 0452	2016-06	2017-06
Vibration / Vibrationstests				
<input type="checkbox"/>	Vibration Control System VibPilot m+p - Jerry Vibrationsregelsystem VibPilot m+p – Jerry	ENL-P 000 / 0467	2015-10	2017-04
<input type="checkbox"/>	Vibration Control System VibPilot m+p - Tom Vibrationsregelsystem VibPilot m+p – Tom	ENL-P 000 / 0465	2015-10	2017-04
<input type="checkbox"/>	System RMS SW 3007 / RMS TGA 3005 System RMS SW 3007 / RMS TGA 3005	ENL-P 062 / 0129 ENL-P 062 / 0130	2015-10	2017-04
<input type="checkbox"/>	Accelerometer built in Beschleunigungsaufnehmer eingebaut	ENL-P 000 / 0392	2015-10	2017-04
<input type="checkbox"/>	System RMS SW 6007 / RMS TGA 6005 System RMS SW 6007 / RMS TGA 6005	ENL-P 063 / 0302 ENL-P 063 / 0303	2015-10	2017-04
<input type="checkbox"/>	Accelerometer built in Beschleunigungsaufnehmer eingebaut	ENL-P 066 / 0318	2015-10	2017-04
<input type="checkbox"/>	Accelerometer Beschleunigungsaufnehmer	ENL-P 066 / 0137		
<input type="checkbox"/>	Accelerometer Beschleunigungsaufnehmer	ENL-P 000 / 0459		
<input type="checkbox"/>	Accelerometer Beschleunigungsaufnehmer			
Drop / Freier Fall				
<input type="checkbox"/>	Drop test machine L.A.B. Accudrop 160 Falltestanlage L.A.B. Accudrop 160	ENL-P 000 / 0060	--	--
<input type="checkbox"/>	Accelerometer Triax Beschleunigungsaufnehmer Triax	ENL-P 066 / 0332		
Shock / Schock				
<input type="checkbox"/>	Mech. Shock tester Mech. Schocktest	ENL-P 000 / 0040	--	--
<input type="checkbox"/>	Accelerometer Beschleunigungsaufnehmer	ENL-P 066 / 0191		

Part 11: Description of the initial and final measurement Beschreibung der Start- und Schlussmessungen

NB3800

Setup:

- LTE: Mobile interfaces, connection to the Internet
- WLAN-AP: connection from notebook computer
- GPS: GPS data receiver
- I/O: data simulation sent from notebook computer
- Serial port: connected to the notebook (syslog)
- Internal HDD: provide files

The router is connected to a notebook computer via Ethernet and WLAN.

The data are collected over these connections from the Internet and GPS interface.

The HDD, serial+ and I/O interfaces are tested by the dedicated applications on the notebook computer.

The measured data are monitored by the client via remote reading.

The copies of the records of the measured data can be found by the client.

No failure detected.

Part 12: Test duration / Presence during the test Testdauer / Anwesenheiten

Test started on : / Prüfung gestartet am: **2016-06-02**

Test completed on : / Prüfung abgeschlossen am: **2016-08-03**

Present during the test: / Während der Prüfung anwesend: **Partly Mr. M. Dotoli**