



Test report No:
 NIE: 67217RLR.001

Test report

LoRa Alliance End Device Certification Requirements

(*) Product Name	Onethinx Core Module OTX-18
(*) Product Version	OTX-18
(*) Other identification of the product	HW Version: EU V1.0 FW Version: V1.03
(*) Detailed Description	The Onethinx Core OTX-18 module is a full featured ultra-secure IoT module with integrated antenna.
Manufacturer	Onethinx BV. Punterweg 2. 8042 PB Zwolle. The Netherlands.
Test method requested, standard	Lora Alliance Certification Program
Standard.....:	LoRaWAN V1.0.2
Test Specification.....:	LoRaWAN® European EU 863-870MHz Region End Device Certification Requirements document V1.6
LoRa_Certification_Questionnaire:	LoRaWAN_Certification_Questionnaire_V1.2
Test procedure(s).....:	PELR000_00 LoRa Alliance Testing Procedure
(*) Supported Optional Features	
Adaptive Data Rate (ADR).....:	Yes
SF7BW250.....:	Yes
FSK50	Yes
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Noemi Perez IoT Lab Manager
Date of issue	2021-04-27
Report template No	FLR001_04 (* "Data provided by the client")

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Competences and guarantees

DEKRA Testing and Certification S.A.U is a LoRa Alliance accredited Test Lab competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification S.A.U. has a calibration and maintenance program for its measurement equipment.

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

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Uncertainty

N/A

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Product Name", "Product Version", "Other identification of the product", "Detailed Description", "Supported Optional Features" and "Test Sample Description").
3. The ICS provided by the customer via the LoRaWAN Certification Questionnaire V2.1 and used for testing are indicated in Annex B.

DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples undergoing test have been selected by: the client

Sample M/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
67217/003.002	Module with FW v1.01	-	-	2021-02-22

Sample M/02 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
67217/003.004	Module with FW v1.03	-	-	2021-04-14

*The customer declared that no changes affecting the stack exist between FW v1.01 and FW v1.03 (no changes related to LoRaWAN code, just minor changes).

Test sample description(*)

The Onethinx Core module is tailored for LoRaWAN™ projects that requires quick time-to-market and robust LoRaWAN™ & BLE5.0 functionality. Due to the integrated antenna and the ready implemented ultra-secure isolated LoRaWAN™ stack, this LoRa Alliance and CE/FCC certified module is ready to use out-of-the-box. Using Infineon's PSoC® 6 configurable h/w blocks, sensors can be directly connected by using a minimum of additional components.

Identification of the client

Onethinx BV.
Punterweg 2.
8042 PB Zwolle.
The Netherlands.

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2021-03-03
Date (finish)	2021-03-14

Document history

Report number	Date	Description
67217RLR.001	2021-04-27	First release (test report without logs to be uploaded to the public area of LoRa Alliance website).
67217RLR.002	2021-04-27	Identical test report as '67217RLR.001' with the addition of the test logs.

Remarks and comments

Testing was performed by: Daniel Ríos Toca.

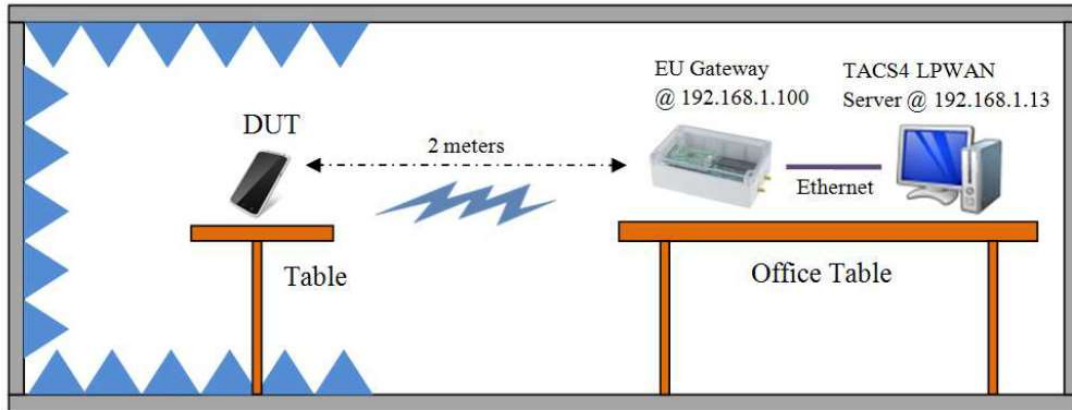
Means of testing identification

TEST SYSTEM	BANCO LORA EU		
Control Number	5866		
Control PC	Control No.	Equipment	Serial No.
	7218	Control PC with TACS4 v2.0.0_R1 and Technology Packet Version LORA v6.1.0_R1	-
LoRa Gateway	7342	Semtech GW	-
RF Shielded box	5387	RF Shielded Test Enclosure	0001114
Test Setup:	See "Test Setup" section.		

Test setup

TS1: This Test Setup has been used for EU testing:

SEMTECH EUROPEAN GATEWAY AND TACS4 LPWAN CONFIGURATION:



Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Appendix A: Test results

Test campaign report

The abbreviations used in the header row of the test campaign report tables are:

Test Case ID :	As it can be found on the standard
Verdict:	Records the verdict assigned to each Test Case run to completion (<u>Testing verdicts</u>)
Date:	Date of the beginning of the execution.
Observations:	Provides a reference to additional information relevant to the test presented in “Test Setup” section.
Logs:	See 67217RLR.002

Test Case ID	Description	Date	Verdict	Observations
TP_A_EU868_ED_MAC_BV_000_A	Device activation (OTAA)	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_000_A	Device activation (ABP)	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_001_A	Over The Air activation	2021-04-14	P	M/02
TP_A_EU868_ED_MAC_BV_001_B	Activation by Personalization	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_002	Test application functionality	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_003	AES encryption and message integrity	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_004	Downlink error rate	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_005	Downlink window timing	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_006	Frame sequence number	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_007	DevStatusReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_008	MAC Commands	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_009	NewChannelReq MAC command	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_010	DIChannelReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_011	Confirmed packets	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_012	RXParamSetupReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_013	RXTimingSetupReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_014_A	LinkADRRReq MAC command (Part 1)	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_014_B	LinkADRRReq MAC command (Part 2)	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_015_A	RX1 Receive window test (Part 1)	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_015_B	RX1 Receive window test (Part 2)	2021-03-04	P	M/01
TP_A_EU868_ED_MAC_BV_016	RX2 Receive window test	2021-03-04	P	M/01

TP_A_EU868_ED_MAC_BV_017	RX1 and RX2 simultaneous frames	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_018	TXParamSetupReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_019	LinkCheckReq MAC command	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_020	RX Oversized payload	2021-03-03	P	M/01
TP_A_EU868_ED_MAC_BV_021	Maximum Allowed payload	2021-03-04	P	M/01

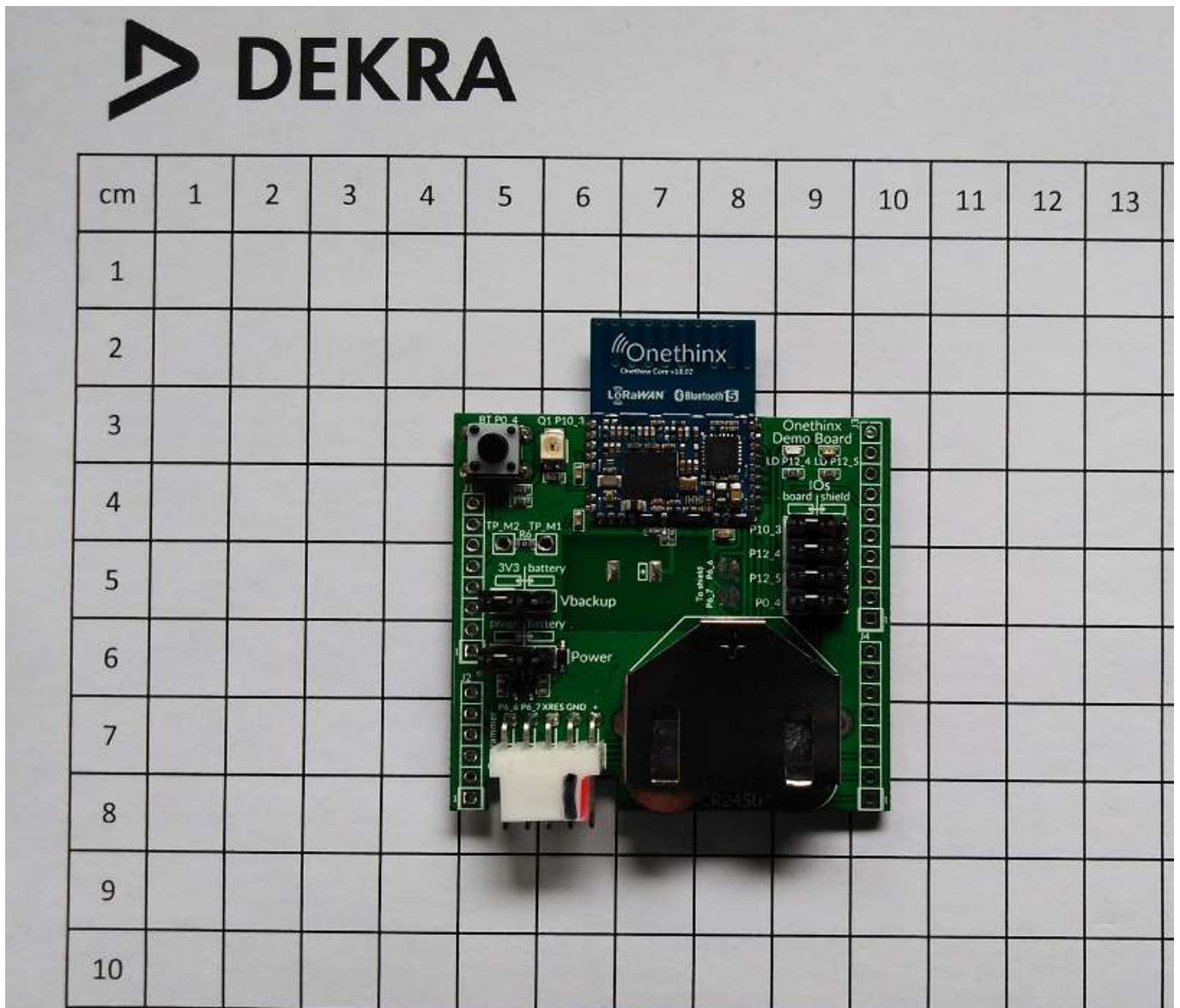
Appendix B: ICS

Implementation Conformance Statement (ICS)

Name	Title	Groupname	Mandatory	Value
C_ISM_EU868	DUT works in Asia 923MHz ISM Band	BAND	C	FALSE
C_ISM_EU868	DUT works in EU 868MHz ISM Band	BAND	C	TRUE
C_ISM_IN865	DUT works in India 865-867 MHz ISM Band	BAND	C	FALSE
C_ISM_KR920	DUT works in South Korea 920MHz ISM Band	BAND	C	FALSE
C_ISM_US915	DUT works in USA 915MHz ISM Band	BAND	C	FALSE
C_CERT_102rB	DUT implements LoRaWAN v1.0.2rB certification	CERT	C	TRUE
C_CERT_103rA	DUT implements LoRaWAN v1.0.3rA (Class B)	CERT	C	FALSE
C_CERT_104	DUT implements LoRaWAN v1.0.4 certification	CERT	C	FALSE
C_CLASS_A	DUT is a Class A Device (All End Devices)	CLASS	C	TRUE
C_CLASS_B	DUT is a Class B Device (Beacon Mode)	CLASS	C	FALSE
C_ED_ADR	DUT supports Adaptive Data Rate (ADR) feature	ED	C	TRUE
C_ED_ADR_BLOCK	DUT supports LinkADRReq block	ED	C	TRUE
C_ED_CONFIRMED_FRAME_RET	DUT support uplink re-transmissions for Confirmed	ED	C	TRUE
C_ED_CW	DUT supports Continuous Wave command	ED	C	TRUE
C_ED_DL_CHAN	DUT supports DIChannelReq MAC command	ED	C	TRUE
C_ED_JOIN_ISSUES_REMEDIES_	DUT supports the Lorawan-1.0.x-join-synch-issues-	ED	C	FALSE
C_ED_OTAA	DUT supports Over-The-Air Activation (OTAA)	ED	C	TRUE
C_ED_RESET	DUT needs a reset after deactivating Test Mode	ED	C	TRUE
C_ED_TM_TRI	DUT supports Trigger Join Request command in Test	ED	C	TRUE

Appendix C: Photographs

Front view (M01 & M02)



Rear view (M01 & M02)

