

TEST REPORT ON ITRON Intelis wSource for EU863-870 MHz Band

Test Report Reference: VDE_ITRON_2303_(EU863-870)

Version: September 2023

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1 Administrative Data

1.1 Project Information

Project Name: VDE_ITRON_2303
Responsible for Testing and Report: Mohamed El-Fikri
Date of Report: 2023-09-14
Testing Time Frame: 2023-09-11 - 2023-09-12

1.2 Applicant Information

Company Name: ITRON France
Address: 2 rue de Paris / Immeuble les Montalets 92190 Meudon
France
Contact Person: Thierry Gonthier
Phone: +33 3 85 29 39 00
Email: thierry.gonthier@itron.com

1.3 Test Laboratory Information

The following list shows all Locations and Test Resources involved in the generation of test results:

7layers DE, Ratingen, Germany

Company Name	7layers GmbH
Address	Borsigstr. 11 40880 Ratingen NRW Germany
Contact	Michael Albert
Phone	+49 2102 749 201
Email	Michael.Albert@7layers.com

List of Test Resources

ID	Name	Responsible	Accreditation Info
1	LCTT LoRa Compliance Test Tool	Mohamed El-Fikri	

1.4 Signature of the Testing Responsible



(Responsible for Testing and Report)

Mohamed El-Fikri

1.5 Signature of the Accreditation Responsible(s)



(Responsible Accreditation Scope)
Mohamed El-Fikri

2 Test Object Data

2.1 Object Under Test (OUT) Description(s)

The following section lists all Objects Under Test (OUTs) involved during testing.

Object Under Test:	ITRON Intelis wSource
Description:	New Intelis water meter is a unique solution helping utilities engage in the ongoing digitalization of their water distribution network.
Type / Model:	Intelis wSource

Manufacturer:

Company Name:	ITRON France
Address:	2 rue de Paris / Immeuble les Montalets 92190 Meudon France
Contact Person:	Thierry Gonthier
Phone:	+33 3 85 29 39 00
Email:	thierry.gonthier@itron.com
Address:	2 rue de Paris / Immeuble les Montalets 92190 Meudon France

For further details see Annex.

2.2 Sample Description(s)

Sample Name: DE1461003aa01

Object Under Test: Intelis wSource

Description: New Intelis water meter is a unique solution helping utilities engage in the ongoing digitalization of their water distribution network.

Serial Number: 81945

Hardware Version: 2.1.1

Firmware Version: X.3 (Note: 1st digit: Metrology version (not significant for the LoRaWan) 2nd digit: Applicative version (This means the first digit "X" correspond to the Metrology version which can be update without any impact on the LoRaWan part))

Code: aa01

For further details see Annex.

3 Results

3.1 General

Documentation of tested devices: Available at the test laboratory.

Interpretation of the test results: The results of the inspection are described on the following pages, where ‘Conformity’ or ‘Passed’ means that the certification criteria were verified and that the tested device is conform to the applied standard.

In cases where ‘Declaration’ is stated, the required documents are available in the manufacturer’s product documentation.

In cases where ‘not applicable’ is stated, the test case requirements are not relevant to the specific equipment implementation.

- Notes:**
1. This report contains the abbreviated information content pertaining to services rendered. Supporting documentation not included herein is maintained and available at the test laboratory.
 2. All tests are performed under environmental conditions within the requirements of the specifications. Environmental condition records are available at the test laboratory.

3.2 Applicable Test Specification(s)

Test Specification:	LoRaWAN 1.0.4 End Device Certification Requirements for All Regions
Date / Version:	June, 2022 / v1.6
Description:	LoRaWAN 1.0.4 End Device Certification Requirements for All Regions, v1.6 [TS001 LoRaWAN Link Layer Specifications L2 v1.0.4 (TS1-1.0.4), RP002 LoRaWAN Regional Parameters Specification RP2 1.0.3, TS009 LoRaWAN Certification Protocol Specification 1.0.0 (TS9-1.0.0)]

3.3 Result Statistics

Test Specification	Total	Result Verdict			Pass
		Pass	Fail	Declaration	Ratio
LoRaWAN 1.0.4 End Device Certification Requirements for All Regions, v1.6	27	27	0	0	100.00 %

Note: Pass, Declaration, Fail and Inconclusive results are regarded for the Pass Ratio calculation. Pass and Declaration are summarized as Pass results. Fail and Inconclusive are summarized as Fail results. All are summarized as Total count (Pass + Declaration + Fail + Inconclusive). The Pass Ratio is calculated by the number of Pass results divided by the number of Total results. All other results like Error or Not Tested are not regarded for the calculation.

3.4 Result Summary

Test Case Name / Description Test (Condition)	Verdict	Date
TP_A_EU868_ED_MAC_104_BV_000: Activation Pre-test	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_001_A: Over the Air Activation	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_002: Cryptography	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_003: Downlink Sequence Number	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_004: Confirmed Frames	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_005: DevStatusReq MAC command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_006: NewChannelReq MAC command for Dynamic Channel plan devices only	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_007: DIChannelReq for Dynamic Channel plan devices only	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_008: RXParameterSetupReq MAC command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_009: RXTimingSetupReq MAC command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_010: TxParamSetupReq MAC Command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_011: LinkCheckReq MAC Command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_012_A: LinkADRRReq MAC command (Part 1)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_012_B: LinkADRRReq MAC command (Part 2)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_013: DutyCycleReq MAC Command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_014: DeviceTimeReq MAC Command	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_015_A: RX1 Window Test (Part 1)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_015_B: RX1 Window Test (Part 2)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_016: RX2 Receive Window Test	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_017: RX1 and RX2 simultaneous frames	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_018: RX Oversized Payload	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_019_A: Maximum Allowed Payload (Part 1)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_019_B: Maximum Allowed Payload (Part 2)	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_020: MAC Command(s) in App-Payload and/or Frame Options	Passed	2023-09-11

Test Case Name / Description Test (Condition)	Verdict	Date
TP_A_EU868_ED_MAC_104_BV_021: Multiple MAC commands prioritization	Passed	2023-09-11
TP_A_EU868_ED_MAC_104_BV_022: FPort 224 Deactivation	Passed	2023-09-12
TP_A_EU868_ED_MAC_104_RETRANSMISSION_BACKOFF: Retransmission back-off tests for power-up or reset of device – for OTAA device only	Passed <i>(Note: As foreseen by the LA Certification rules this TC might be performed by the Product Manufacturer (ITRON). However, BV 7Layers has verified successfully the provided Log Files and results from ITRON to be Pass)</i>	2023-09-11

4 Test Equipment Details

4.1 List of Test Equipment

The information shown below is valid for the testing time frame of this test report.

Test Resource 1: LCTT LoRaWAN Compliance Test Tool

Description: for LoRaWAN Specification and LoRa Compliance Testspec

Test System LCTT LoRaWAN Compliance Test Environment of Test Resource LCTT LoRa Compliance Test Environment

Test System: LCTT LoRaWAN Compliance Test Environment
Description: Location: 7layers Conformance Lab
Manufacturer: LoRa Alliance

Software Component and Version	Start Date	End Date
LCTT LoRa Compliance Test Tool User Interface v2.5		
LCTT Technology Package v3.9.0_R1	2023-01-26	

Single Devices of Test System 7layers LoRa Compliance Test Environment

Name	Serial Number	Manufacturer
7Layers LoRa Control PC	DSCM004667	Fujitsu
2 x (Semtech SX1301 LoRa 8-Channel Gateway) for EU863-870 MHz	IOTSX1301	Semtech

Software Version	Start Date	End Date
Lora Gateway SW (Driver HAL) v5.0.1; Packet forwarder v4.0.1	2021-01-01	

5 Annex

5.1 Object Under Test (OUT) Features

Supported Features for Object Under Test: Itron Intelis wSource

NAME	VALUE
DUT is a Class A Device (All End Devices)	TRUE
DUT is a Class B Device (Beacon Mode)	FALSE
DUT is a Class C Device (Continuously Listening)	FALSE
DUT works in EU 868MHz ISM Band	TRUE
DUT works in EU 443MHz ISM Band	FALSE
DUT works in USA 915MHz ISM Band	FALSE
DUT works in Asia 923MHz ISM Band	FALSE
DUT works in South Korea 920MHz ISM Band	FALSE
DUT supports Over-The-Air Activation (OTAA) mechanism	TRUE
DUT supports Activation By Personalization (ABP) mechanism	FALSE
DUT supports Adaptive Data Rate (ADR) feature	TRUE
DUT supports data rate DR6 (SF7BW250)	TRUE
DUT supports data rate DR7 (FSK50)	TRUE
DUT supports Trigger Join Request command in Test Mode	TRUE
DUT supports DChannelReq MAC command	TRUE
DUT needs a reset after deactivating Test Mode	FALSE
DUT supports LinkADRReq block	TRUE
DUT implements LoRaWAN v1.0.2rB certification requirements	FALSE
DUT implements LoRaWAN v1.1 certification requirements	FALSE
DUT works in India 865-867 MHz ISM Band	FALSE
DUT supports the Lorawan-1.0.x-join-synch-issues-remedies-v1.0.0	TRUE
DUT implements Data Rate Decay	TRUE
DUT implements LoRaWAN v1.0.4 certification requirements	TRUE
DUT supports uplink re-transmissions for Confirmed frames	TRUE
DUT works in Rusia 864MHz ISM Band	FALSE
DUT works in Australia 915MHz ISM Band	FALSE
DUT permanently enabled Class C	FALSE
DUT works in Asia 923MHz ISM Band Group 1	FALSE
DUT works in Asia 923MHz ISM Band Group 2	FALSE
DUT works in Asia 923MHz ISM Band Group 3	FALSE
DUT works in Asia 923MHz ISM Band Group 4	FALSE
DUT supports SCHC	FALSE
DUT Output Power	+ 14 dBm

5.2 OTA Sample DE1461003aa01 Extra Information Parameters

NAME	VALUE
Object Under Test	Intelis wSource
Serial Number	81945
Code	aa01
End-device identifier (DevEUI)	'0007813770014019 'O
End-device Address assigned during activation (DevAddr)	'00000000'O
Maximum number of uplinks re-transmission	1
Frame counter size	32
RuleIDx for SCHC messages	NA
RuleIDy for SCHC messages	NA
RuleIDz for SCHC messages	101
Maximum number of ACK Request	8
FPortUp of the DUT for SCHC messages	NA
FPortDown of the DUT for SCHC messages	NA
Inactivity timer for SCHC messages	NA
retransmission timer for SCHC messages	NA
Application session key (AppSKey)	NA
Network session key (NwkSKey)	NA
Application key (AppKey)	'D82E0BBA0F3C6889377787067F04AAF4'O
Application identifier (AppEUI)	'0007813770000001 'O
End-device Address (DevAddr)	NA

5.3 Additional Documentation for Samples

The following documents have been attached to Sample definitions as supporting documentation.

Object Under Test: Intelis wSource

Sample Name: DE1461003aa01

Front view:



Side view:



Rear view:



End of Test Report