



# C E R T I F I C A T E

**Certificate registration number:** G3.1904.282.1.A4

**Certificate holder:** STMicroelectronics

**Platform designation:** ST8500,

Hardware version: EVALMODSTST8500-1, Firmware version 4.4.2 - v13207345 - r1.1

**Certification date:** April 25<sup>th</sup>, 2019

This certificate indicates the above mentioned platform successfully completed certification testing with regards to the reference specification ITU G.9903 (08-2017). The optional feature coherent mode of the G3-PLC protocol is also covered by this certification.

The certificate applies to certification profile CENELEC A and the device was configured as a PAN-Coordinator.

Test cases have been performed as described in the test report referred to below. This certificate is granted on account of tests conducted by Laboratoire des Applications Numériques (LAN) in Tauxigny, France in April 2019. The results and remarks can be found in the complete test report.

Applied tests	Performed by	Document evidence
Conformance, interoperability and performance testing according to the test specification referenced by the test report	Laboratoire des Applications Numériques (LAN)	LAN19AF027

The device tested is a G3-PLC platform: a solution providing an implementation of the G3-PLC specification. The Protocol Implementation Conformance Statement in the Annex includes the PICS related to performance and is an integral part of this certificate. This certificate is valid from April 25<sup>th</sup>, 2019.

The certificate is only applicable to the platform described above and permits the use of the G3-PLC™ logo as laid down in the G3-PLC logo license agreement.

This certificate does not imply assessment of the production. This certificate shall not be defined, or used as a guarantee covering quality of a product which includes G3-PLC. The liability of the Alliance and the test laboratory or any of her representatives is excluded for any damages or losses of the certified company.

Paris, April 25<sup>th</sup>, 2019

For the G3-PLC Alliance:

  
**Marc Delandre**  
Chairman

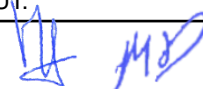
  
**Madeleine Francillard**  
Chair Certification Program



# Annex 1: Protocol Implementation Conformance Statement (PICS)

## Feature implementation statement

Name	Value	Description
BAND_PLAN	CENELEC A	Indicate the band-plan supported by the device.
FEATURE_PAN_COORDINATOR	TRUE	Indicate if the device is a PAN-Coordinator (true) or a normal device (false).
FEATURE_COHERENT_MODULATION	TRUE	Indicate if coherent modulation is supported.
FEATURE_EAP_SERVER	TRUE	Indicate if an EAP-PASK server is implemented by the DUT. Apply only if FEATURE_PAN_COORDINATOR = true.
FEATURE_D8PSK_MODULATION	TRUE	True / False
FEATURE_ROUTING	TRUE	Indicate if the routing is implemented by the IUT.
FEATURE_SECURITY	F1	Indicate the security implemented by the device. Possible values are: F1, F2.
FEATURE_ACTIVE_SCAN	TRUE	Indicate if the active scan process is done by the IUT after power-up.
FEATURE_PREAMBLE_COEXISTENCE_MECHANISM	FALSE	Indicate if the preamble-based coexistence mechanism is used by the IUT.



# Annex 2: Protocol Implementation Conformance Statement (PICS)

## PICS related to performance

The device tested is a G3-PLC CENELEC A platform. Operating voltage applied for certification testing was 230V / 50Hz.

Name	Value	Unit	Description
PHY_007_SNR	-2.5	dB	Indicate the SNR level that can be supported by the DUT so PHY header (FCH) are correctly decoded (with less than 10% of loss)
PHY_008_SIGNAL_LEVEL	25	dBμV	Indicate the signal level of a frame that can be received correctly by the DUT (with FER<10%)
PHY_009_LQI_MIN_RANGE	40	-	Lower value of LQI to be tested during test PHY_009
PHY_009_LQI_MAX_RANGE	100	-	Higher value of LQI to be tested during test PHY_009
BOOTSTRAP_001_DURATION	n/a	ms	Duration needed for the DUT to reply to bootstrap messages EAP-PSK #1 and #3. Apply only if FEATURE_DEVICE_TYPE = PAN-Device
BOOTSTRAP_002_DURATION	398	ms	Duration needed for the DUT to reply to bootstrap messages joining, EAP-PSK #2 and #4. Apply only if FEATURE_EAP_SERVER is true
BOOTSTRAP_003_DURATION	n/a	ms	Duration needed for the DUT to relay bootstrap messages. Apply only if FEATURE_DEVICE_TYPE = PAN-Device
TONE_MAP_001_FER	0	%	The Frame Error Rate that can be expected when applying the tone-map configuration provided by the DUT
TONE_MAP_002_DATARATE_1	4800	bits/s	The data-rate that can be expected when applying the tone-map configuration provided by the DUT in situation #1
TONE_MAP_002_DATARATE_2	5600	bits/s	The data-rate that can be expected when applying the tone-map configuration provided by the DUT in situation #2
TONE_MAP_002_DATARATE_3	5500	bits/s	The data-rate that can be expected when applying the tone-map configuration provided by the DUT in situation #3
TONE_MAP_002_DATARATE_4	4600	bits/s	The data-rate that can be expected when applying the tone-map configuration provided by the DUT in situation #4
MESH_ROUTING_001_DURATION	82	ms	Duration needed for the DUT to relay short mesh routed data frames
MESH_ROUTING_002_DURATION	79	ms	Duration needed for the DUT to relay maximum size mesh routed data frames



# Annex 3: Copy of test report cover sheet



*Your digital lab*

G3-PLC Certification Test Report			
STMICROELECTRONICS	ST8500 HW:EVALMODSTST8500-1 FW: 4.4.2 - v13207345 - r1.1		
LAN19AF027	Ed.00	April 19, 2019	Page 1/45

**G3-PLC Alliance**  
**G3-PLC Platform Certification Test Report**

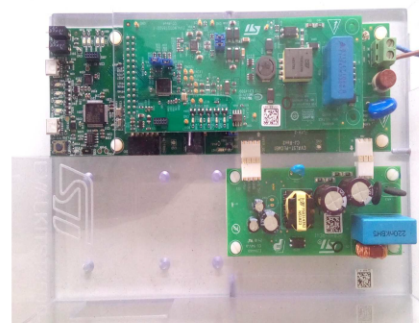
Vendor Name **STMICROELECTRONICS**  
 Model Name **ST8500**  
 Serial N° **CL-141**  
 HW version **EVALMODSTST8500-1**  
 FW version **4.4.2 - v13207345 - r1.1**

Test Report # **TR\_LAN19AF027 Ed.00**  
 Date **April 19, 2019**

CONF Tests Specification	<b>version 0.30.</b>	<b>03/12/2018</b>
CONF Tests Suite	<b>version 2.9.</b>	<b>03/2019</b>
IOT Tests Specification	<b>version 0.13.</b>	<b>28/12/2018</b>
IOT Tests Suite	<b>version 2.6.</b>	<b>03/2019</b>
PERF Tests Specification	<b>version 0.27.</b>	<b>05/03/2019</b>
PERF Tests Suite	<b>version 2.9.</b>	<b>03/2019</b>




Test Tool **version 2.3**  
 Tester Modem **version 2.0**  
 Certification Test Procedures **version 1.13**      **03/06/2019**

Certification Profile **A (CENELEC A)**  
 Role **PAN Coordinator**  
 Overall Verdict **PASS**



Initiation	Date	Description of modification	Ed.
Omar DIOUF	April 19, 2019	Creation	00

	Realised by	Checked by	Approved by
<b>Name</b>	Omar DIOUF	Vincent BUCHOUX	Thierry DOLIGEZ
<b>Date</b>	April 19, 2019	April 19, 2019	April 19, 2019
<b>Sign</b>			



The current report and the test results produced in this current are given for information only and must not be relied on by any third person for any reason.  
 This report contains an assessment of the apparatus carried out on samples submitted to the laboratory. The results in this report relate only to the items tested and were obtained in the period between the initial receipt of samples and the issue of the report. It should be noted that technical hardware or software modifications on the apparatus may impact the results reported in this document.



## Annex 4: Additional details of the certified platform

Platform model name:	ST8500
Platform hardware version:	EVALMODSTST8500-1
Platform firmware version:	4.4.2 - v13207345 - r1.1
Exact part number of all the chips running G3-PLC stack in the certified platform:	ST8500
What each part number runs: lower MAC (incl. CSMA/CA) or PHY or other parts of the stack:	PHY, MAC and 6LowPAN
Hardware version of this chip:	revBB
Software version running on this chip:	4.4.2 - v13207345 - r1.1
Internal CPU frequency:	100 MHz for Cortex and 400 MHz for RTE

*[Handwritten signatures]*