



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

**Certificate registration number:** G3.1512.059.1.A2

**Certificate holder:** Renesas Electronics Corporation,

**Platform designation:** Y-G-OFDM-PLC-X2,  
Hardware version Cool Phoenix 2 / RX631, Firmware version Cenelec-A r42704

**Certification date:** December 9<sup>th</sup>, 2015

This certificate indicates the above mentioned platform successfully completed certification testing with regards to the reference specification ITU G.9903 (02-2014) plus the changes listed in an annex to this certificate. The optional feature coherent mode of the G3-PLC protocol is also covered by this certification.

The certificate applies to certification profile Metering Cenelec A and the device was configured as a PAN-Device.

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 November 2015. The results and remarks can be found in the complete test report.

Applied tests	Performed by	Document evidence
Conformance and interoperability testing according to the test specification referenced by the test report	Laboratoire des Applications Numériques (LAN)	LAN15AF048

The device tested is a G3-PLC platform: a solution providing an implementation of the G3-PLC specification. This certificate is valid from December 9<sup>th</sup>, 2015.

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. The certificate may only be reproduced in full.

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, December 9<sup>th</sup>, 2015

For the G3-PLC Alliance:

  
**Bernard Lassus**  
Chairman

  
**Madeleine Francillard**  
Chair Certification Program





## Annex 1: Reference Version for Certification

The reference version for this certificate is published in 'Narrowband OFDM PLC specifications for G3-PLC network, April 2015'.

The reference version for this certification is:

ITU-T G.9903 (02-2014)

- + CCTT #24-25-30: Implementation of MAC security (anti-replay) solution F1
- + CCTT #61: ADPM-Buffer behavior clarification
- + CCTT #143: AC Phase Detection v2
- + CCTT #144: Hop Limit usage during route repair v3
- + CCTT #145: Value of RCoord when the node is at adpMaxHops hops from the coordinator
- + CCTT #146: Pilot tone generation
- + CCTT #147: Link-cost computation for Path discovery v2
- + CCTT #148: Path discovery frame routing v3
- + CCTT #152: Scrambler reset
- + CCTT #154: Clarification of PANCount and PANDescriptor
- + CCTT #156: Clarification of ADPM-NETWORK-STATUS.indication
- + CCTT #157: Interleaver Equation v2
- + CCTT #158: Unicast Routing Process
- + CCTT #159: Correct the windowing function description
- + CCTT #160: Clarify 16QAM quantisation and optionality
- + CCTT #161: Correct aMaxFrameSize and aMinFrameSize for FCC/ARIB bandplans
- + CCTT #162: Interleaver co-prime number clarification v2
- + CCTT #163: CRC5 and CRC8 packing order
- + CCTT #164: Route Repair v2
- + CCTT #165: Clarification Neighbour Table v2
- + CCTT #167: HOP COUNT metric identifier v2
- + CCTT #169: Clarification on PLME\_GET v4
- + CCTT #170: Clarification to Frame Counter Handling Mechanism v2
- + CCTT #172: Windowing in coherent mode
- + CCTT #173: Clarification of LOADng mechanism used to detect bidirectional links
- + CCTT #174: Avoiding duplicated MAC packets
- + CCTT #175: LOADng - subsequent RREP generation
- + CCTT #176: Link cost function of LQI v3
- + CCTT #177: Broadcast routing - filtering frames on the source
- + CCTT #178: Coexistence of G3-PLC with other PLC technologies v3
- + CCTT #179: RREP Filtering v3
- + CCTT #181: Route Repair v2



## Annex 2: 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	FALSE	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	FALSE	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 3: Copy of test report cover sheet



G3-PLC Certification Test Report  
 RENESAS Y-G-OFDM-PLC-X2 CENELEC A  
 LAN15AF048 Ed.00 December 2, 2015 Page 10/15



## G3-PLC Platform Certification Test Report

Vendor Name: **RENESAS**  
 Model Name: **Y-G-OFDM-PLC-X2**  
 Serial N°: **0200157**  
 HW version: **Cool Phoenix2/RX631**  
 FW version: **CENELEC A r42704**

Test Report #: **TR\_LAN15AF048 Ed.00**  
 Date: **December 2, 2015**

CONF Tests Specification: **version 0.19. 01/09/2015**  
 CONF Tests Suite: **version 2.1. 10/2015**  
 IOT Tests Specification: **version 0.7. 21/04/2015**  
 IOT Tests Suite: **version 2.1. 10/2015**

Test Tool: **version 1.7**  
 Tester Modem: **version 1.09**  
 Certification Test Procedures: **version 1.5. 01/12/2015**

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



Initiation	Date	Description of modification	Ed.
Order CONF	December 2, 2015	Creation	00
<b>Name</b>	<b>Realized by</b>	<b>Checked by</b>	<b>Approved by</b>
	Order DOLUP	Vincent BUCHOUP	Thierry DOUGET
<b>Date</b>	December 2, 2015	December 2, 2015	December 2, 2015
<b>Sign</b>			

The technical report and the test results published in this certificate are given for information only and shall not be relied on by any third person for any reason.  
 This report certifies the compliance of the equipment certified and its operation authorized in the territory. The issuer of this report holds only the direct control and does not undertake the global control of equipment and the safety of the report. It should be noted that technical limitations or modification authorizations on the application may depend on the results reported in this certificate.