



C E R T I F I C A T E

Certificate registration number: G3.2107.446.1.A5

Certificate holder: Renesas Electronics Corporation

Platform designation: REL-G3PLC-CPX3+TRG,
Hardware version R9A06G037GNP+RAA604S002GNP,
Firmware version 3.05.00

Certification date: July 2nd,2021

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

The reference version for the optional hybrid feature is the G3-PLC Hybrid PLC&RF companion specification v0.11 (31-07-2020). The certificate applies to certification profile 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 TÜV Rheinland in Yokohama, Japan in June 2021. 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	TÜV Rheinland Japan	JP21G7Q4 001

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 July 2nd, 2021.

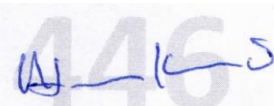
The certificate is only applicable to the platform described above and permits the use of the G3-PLC™ logo as laid down in the G3-PLC logo license agreement.

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, July 2nd 2021

For the G3-PLC Alliance:


Marc Delandre
Chairman


446

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.
BAND_PLAN_RF	863-870 MHz, mode #1	Indicate the RF band-plan.
FEATURE_HYBRID_RF	TRUE	Indicate if Hybrid PLC&RF feature is supported.
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 2: Protocol Implementation Conformance Statement (PICS)

PICS related to performance

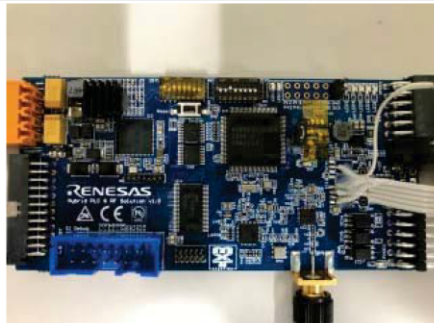


The device tested is a G3-PLC CENELEC A platform. Operating voltage applied for certification testing was 230V / 50Hz.

Name	Value	Unit	Description
<i>PICS related to performance are available through vendor only.</i>			

Annex 3: Copy of test report cover sheet

Prüfbericht - Produkte
Test Report - Products



Prüfbericht-Nr.: <i>Test report no.:</i>	JP21G7Q4 001	Auftrags-Nr.: <i>Order no.:</i>	150244017 10 Seite 1 von 47 Page 1 of 47
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	IACS_AE_21_0006	Auftragsdatum: <i>Order date:</i>	2021-06-11
Auftraggeber: <i>Client:</i>	Renesas Electronics Corporation, 5-20-1, Josuihon-cho, Kodaira-shi, Tokyo, 187-8588, Japan		
Prüfgegenstand: <i>Test item:</i>	G3-PLC CENELEC-A Platform (PAN Device)		
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	REL-G3PLC-CPX3+TRG		
Auftrags-Inhalt: <i>Order content:</i>	G3-PLC Certification Test		
Prüfgrundlage: <i>Test specification:</i>	G3-PLC Conformance Tests Specification v0.32 G3-PLC 1-to-1 Interoperability Tests Specification v0.13 G3-PLC Performance Test Suite Specification v0.27 G3-PLC Certification Test Procedures v2.0 G3-PLC Hybrid PLC&RF Conformance Tests Specification v0.7 G3-PLC Hybrid RF 1 to 1 Interoperability Tests Specification v0.4		
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-06-15		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003071960		
Prüfzeitraum: <i>Testing period:</i>	2021-06-15 – 2021-06-19		
Ort der Prüfung: <i>Place of testing:</i>	4-25-2 Kita-Yamata, Tsuzuki-ku Yokohama 224-0021, Japan		
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Japan Ltd.		
Prüfergebnis*: <i>Test result*:</i>	Pass		
geprüft von: <i>tested by:</i>		genehmigt von: <i>authorized by:</i>	
Datum: <i>Date:</i>	2021-06-28	Ausstellungsdatum: <i>Issue date:</i>	2021-06-28
Stellung / Position:	Tester	Stellung / Position:	Reviewer
Sonstiges / Other:			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>	
<p>* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested</p>			
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be v_{is} applied in extracts. This test report does not entitle to carry any test mark.</p>			

TÜV Rheinland Japan Ltd., Global Technology Assessment Center 4-25-2 Kita-Yamata, Tsuzuki-ku Yokohama 224-0021, Japan

Mail: g3plc@tuv.com · Web: www.tuv.com/



Annex 4: Additional details of the certified platform

Platform model name:	REL-G3PLC-CPX3+TRG	
Platform hardware version:	R9A06G037GNP+RAA604S002GNP	
Platform firmware version:	3.05.00	
Exact part number of all the chips running G3-PLC stack in the certified platform:	Chip #1: R9A06G037GNP#AA0	Chip #2: RAA604S002GNP
What each part number runs: lower MAC (incl. CSMA/CA) or PHY or other parts of the stack:	PLC PHY, MAC and 6LowPAN	RF PHY
Hardware version of this chip:	R9A06G037GNP	RAA604S002GNP
Software version running on this chip:	v5.00	n/a
Internal CPU frequency:	138 MHz	n/a

[Handwritten signatures]