



C E R T I F I C A T E

Certificate registration number: G3.2104.436.1.A4

Certificate holder: Hangzhou Vango Technologies, Inc

Platform designation: Vango PLC V6201B,
Hardware version VTPLCS6201B, Firmware version Phoenix.0.0.1_0.0.0.0

Certification date: April 22nd, 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 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-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 March - April 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 | 60399828 003 |

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 22nd, 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, April 22nd, 2021

For the G3-PLC Alliance:

Marc Delandre
Chairman

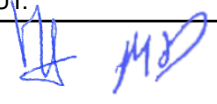
Madeleine Francillard
Chair Certification Program



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 | 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 |
|---|-------|------|-------------|
| <p>PICS related to performance are available through vendor only.</p> | | | |

Annex 3: Copy of test report cover sheet

Prüfbericht - Produkte
Test Report - Products



| | | | | |
|---|---|---|--------------|--------------------------------|
| Prüfbericht-Nr.: <i>Test report no.:</i> | 60399828 003 | Auftrags-Nr.: <i>Order no.:</i> | 150227723 30 | Seite 1 von 45 Page 1 of 45 |
| Kunden-Referenz-Nr.: <i>Client reference no.:</i> | none | Auftragsdatum: <i>Order date:</i> | 2020-07-17 | |
| Auftraggeber: <i>Client:</i> | Hangzhou Vango Technologies, Inc 368 Liuhe Rd, Ste B4004, North Bldg, Hi-Tech Park, Binjiang, Hangzhou, China, 310053 | | | |
| Prüfgegenstand: <i>Test item:</i> | G3-PLC CENELEC-A Platform (PAN Device) | | | |
| Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i> | Vango PLC V6201B | | | |
| Auftrags-Inhalt: <i>Order content:</i> | G3-PLC Certification Test | | | |
| Prüfgrundlage: <i>Test specification:</i> | G3-PLC Conformance L1-L2 Test Suite Specification v0.30 G3-PLC 1-to-1 Interoperability Test Suite Specification v0.13 G3-PLC Performance Test Suite Specification v0.27 G3-PLC Certification Test Procedures v1.14 | | | |
| Wareneingangdatum: <i>Date of sample receipt:</i> | 2021-03-17 | | | |
| Prüfmuster-Nr.: <i>Test sample no.:</i> | A003017282 | | | |
| Prüfzeitraum: <i>Testing period:</i> | 2021-03-17 - 2021-04-06 | | | |
| 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> | 2021-04-20 | Ausstellungsdatum: <i>Issue date:</i> | 2021-04-20 | |
| Stellung / Position: | Tester | Stellung / Position: | Reviewer | |
| Sonstiges / Other: | Corrigendum of report 60399828 003: Hardware version was corrected. | | | |
| 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> | | | |
| <small>* 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</small> | | | | |
| 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. <i>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 photocopied in extracts. This test report does not entitle to carry any test mark.</i> | | | | |



Annex 4: Additional details of the certified platform

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|--|-----------------------|
| Platform model name: | Vango PLC V6201B |
| Platform hardware version: | VTPLCS6201B |
| Platform firmware version: | Phoenix.0.0.1_0.0.0.0 |
| Exact part number of all the chips running G3-PLC stack in the certified platform: | V6201B |
| 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: | Revision A0 |
| Software version running on this chip: | Phoenix.0.0.1_0.0.0.0 |
| Internal CPU frequency: | 137.5 MHz |

[Handwritten signatures]