G3-PLC CERTIFIED CEN A

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

**Certificate registration number:** G3.1612.114.1.A2

**Certificate holder:** Semtech Corporation

**Platform designation:** ENIGMA,
Hardware version EV8010, Firmware version 4.0

**Certification date:** December 1st, 2016

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 the 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 October - November 2016. 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) | LAN16AF079 |

The device tested is a G3-PLC platform: a solution providing an implementation of the G3-PLC specification. This certificate is valid from December 1st, 2016.

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, December 1st, 2016

For the G3-PLC Alliance:

**Bernard Lassus**
Chairman

**Madeleine Francillard**
Chair Certification Program

G3-PLC Alliance

# 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 RCCoord 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.<br>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. |

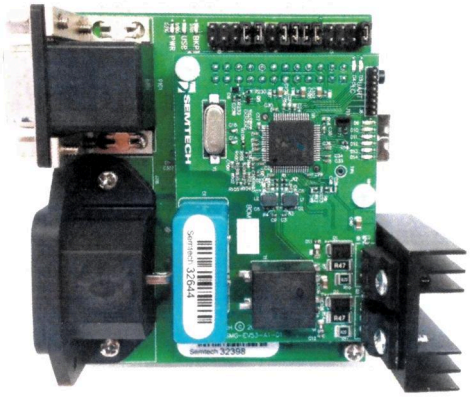
# Annex 3:
# Copy of test report cover sheet



G3-PLC Alliance

## G3-PLC Platform Certification Test Report

| | |
|---|---|
| Vendor Name | SEMTECH |
| Model Name | ENIGMA |
| Serial N° | **32644** |
| HW version | **EV8010** |
| FW version | **4.0** |
| Test Report # | **TR_LAN16AF079 Ed.00** |
| Date | **November 29, 2016** |
| 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 1.7. 30/05/2016** |
| Certification Profile | **A (CENELEC A)** |
| Role | **PAN Device** |
| Overall Verdict | **PASS** |



| Initiation | Date | Description of modification | Ed. |
|---|---|---|---|
| Omar DIOUF | November 29, 2016 | Creation | 00 |

| | Realised by | Checked by | Approved by |
|---|---|---|---|
| Name | Omar DIOUF | Vincent BUCHOUX | Thierry DOLIGEZ |
| Date | November 29, 2016 | November 29, 2016 | November 29, 2016 |
| Sign | | | |

# Annex 4: Additional details of the certified platform

| | |
|---|---|
| **Platform model name:** | ENIGMA |
| **Platform hardware version:** | EV8010 |
| **Platform firmware version:** | 4.0 |
| **Exact part number of all the chips running G3-PLC stack in the certified platform:** | EV8010ILPT |
| **What each part number runs: lower MAC (incl. CSMA/CA) or PHY or other parts of the stack:** | PHY+MAC+6LowPAN |
| **Hardware version of this chip:** | EV8010 |
| **Software version running on this chip:** | 4.0 |
| **Internal CPU frequency:** | 240 MHz |

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

**Certificate registration number:** G3.2107.454.1.A2

**Certificate holder:** Farlink Technology Limited

**Platform designation:** ENIGMA,
Hardware version EV8010, Firmware version 4.0

**Certification date:** July 28th, 2021

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 the 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 October - November 2016. 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) | LAN21AF043 |

The device tested is a G3-PLC platform: a solution providing an implementation of the G3-PLC specification. This certificate is valid from July 28th, 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 28th, 2021

For the G3-PLC Alliance:

**Marc Delandre**
Chairman

**Madeleine Francillard**
Chair Certification Program

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# Reference Version for Certification

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The reference version for this certification is:
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G3-PLC Alliance

## G3-PLC Platform Certification Test Report

| | |
|---|---|
| Vendor Name | Farlink Technology Limited |
| Model Name | ENIGMA |
| Serial N° | **32644** |
| HW version | **EV8010** |
| FW version | **4.0** |
| Test Report # | **TR_LAN21AF043 Ed.00** |
| Date | **July 22, 2021** |
| 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 1.7. 30/05/2016** |
| Certification Profile | **A (CENELEC A)** |
| Role | **PAN Device** |
| Overall Verdict | **PASS** |

**The results reported in this test report are based on the test done on the ENIGMA SEMTECH and reported in the test report Ref. TR_LAN16AF079 Ed.00 (according to the manufacturer, both platforms are identical).**

| Initiation | Date | Description of modification | Ed. |
|---|---|---|---|
| Omar DIOUF | July 22, 2021 | Creation | 00 |
| | | | |

| | Realised by | Checked by | Approved by |
|---|---|---|---|
| Name | Omar DIOUF | Vincent BUCHOUX | Thierry DOLIGEZ |
| Date | July 22, 2021 | July 22, 2021 | July 22, 2021 |
| Sign | | | |

# Annex 4: Additional details of the certified platform

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|---|---|
| **Platform model name:** | ENIGMA |
| **Platform hardware version:** | EV8010 |
| **Platform firmware version:** | 4.0 |
| **Exact part number of all the chips running G3-PLC stack in the certified platform:** | EV8010ILPT |
| **What each part number runs: lower MAC (incl. CSMA/CA) or PHY or other parts of the stack:** | PHY+MAC+6LowPAN |
| **Hardware version of this chip:** | EV8010 |
| **Software version running on this chip:** | 4.0 |
| **Internal CPU frequency:** | 240 MHz |