G3-PLC CERTIFIED FCC

C E R T I F I C A T E

Certificate registration number: G3.1611.104.1.C2

Certificate holder: Andrea Informatique

Platform designation: THUNDER for NXP,
Hardware version 1.0F, Firmware version 2.1.0F

Certification date: November 7th, 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 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 FCC Multipurpose Worldwide 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 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)	LAN16AF082

The device tested is a G3-PLC platform: a solution providing an implementation of the G3-PLC specification. This certificate is valid from November 7th, 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, November 7th, 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

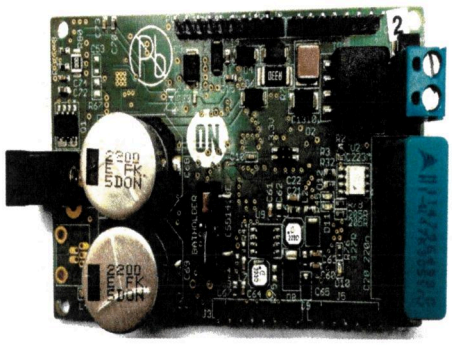
Name	Value	Description
BAND_PLAN	FCC	Indicate the band-plan supported by the device.
FEATURE_PAN_COORDINATOR	FALSE	Indicate if the device is a PAN-Coordinator (true) or a normal device (false).
FEATURE_COHERENT_MODULATION	TRUE	Indicate if coherent modulation is supported.
FEATURE_EAP_SERVER	FALSE	Indicate 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 Alliance

G3-PLC Platform Certification Test Report

Vendor Name	ANDREA Informatique
Model Name	THUNDER for NXP
Serial N°	**002**
HW version	**1.0F**
FW version	**2.1.0F**
Test Report #	**TR_LAN16AF082 Ed.00**
Date	**October 28, 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	**C (FCC)**
Role	**PAN Device**
Overall Verdict	**PASS**



Initiation	Date	Description of modification	Ed.
Omar DIOUF	October 28, 2016	Creation	00

	Realised by	Checked by	Approved by
Name	Omar DIOUF	Vincent BUCHOUX	Thierry DOLIGEZ
Date	October 28, 2016	October 28, 2016	October 28, 2016
Sign			

Annex 4: Additional details of the certified platform

Platform model name:	Thunder for NXP
Platform hardware version:	1.0F
Platform firmware version:	2.1.0F
Exact part number of all the chips running G3-PLC stack in the certified platform:	MKV58F1M0VLQ24
What each part number runs: lower MAC (incl. CSMA/CA) or PHY or other parts of the stack:	PHY+MAC+ADP
Hardware version of this chip:	1.0F
Software version running on this chip:	2.1.0F
Internal CPU frequency:	240 MHz