Test Report

No B41-20-BT-I1 (M1)

PRIME 1.4 Certification Tests Cases for Service Nodes

EQUIPMENT UNDER TEST	THREE-PHASE METER WITH INTEGRATED PRIME Power Line Communications
MODEL	GAMA350
FIRMWARE VERSION	10-2755c

CERTIFICATION SCOPE	PRIME v1.4: Certification Process
	Profile: Electricity Meter with PRIME PHY and PRIME MAC. PRIME 1.4 CH1
	• PRIME 1.4 PHY
	• PRIME 1.4 MAC layer
	  ○ Exclufing security profiles
	  ○ Excluding backward compatibility
	• PRIME 1.4 Convergence layer

DATE OF EXECUTION	13th July to 03rd August 2020

Responsible for tests	Smart Data & Protocol Laboratory Manager
	
Ibone García-Borreguero	Marta Castro

Author: Ibone García-Borreguero. Responsible for tests
Reviewer: Marta Castro. Smart Data & Protocol Laboratory Manager

NOTE: This test report shows the detailed information associated with the Test Report Summary no. B41-20-BT-I1 (M1) summary
* This report supersedes test report B41-20-BT-I1 dated 06th August 2020.

INDEX

1.- EQUIPMENT UNDER TEST IDENTIFICATION

Unit:	THREE-PHASE ELECTRICITY METER WITH INTEGRATED PRIME Power Line Communications
Model:	GAMA350
Trade Mark:	Elgama-Elektronika
Serial Number:	20061003 (MAC:00:80:E1:A3:F6:92)
Manufacturer:	Elgama-Elektronika

The samples were selected and delivered by the applicant.

Equipment characteristics declared by the applicant:

Device type	THREE-PHASE ELECTRICITY METER WITH INTEGRATED PRIME Power Line Communications
BaudRate	57600
Firmware version	10-2755c
Applicable channel	Channel 1
Previous Tests	The board passed all the tests requested to be compliant with: EN 50065-1:2011 EN 50065-2-3:2003 + Ec:2003 + A1:2005 EN 50065-7:2001 according to TEST REPORT No. B41-20-BF-I1 dated on 7th July 2020 of Electronic Devices Laboratory of TECNALIA
Applicable tests	Profile Electricity Meter with PRIME PHY and PRIME MAC. PRIME 1.4 CH1 using precertified chipset. • PRIME 1.4 PHY

	• PRIME 1.4 MAC layer according yo precertified chipset
	  ○ Excluding security profiles
	  ○ Excluding backwards compatibility
	• PRIME 1.4 Convergence layer according to precertified chipset
	
	PRIME PLC MODEM is certified PRIME 1.4 tests report number No B41-18-BI-I1 dated on 31th October 2018(see Annex II) of the Smart Data & Protocol Laboratory of TECNALIA laboratory.

2.- SUMMARY OF TEST RESULTS FOR CHANNEL 1

Device under test is using a precertified chipset. Reduced scope certification according to "Annex H. Basic FCC test suite" of "20190401_PRIME14_SN_testbook_v2.13.docx" document.

- **PHY Layer:** All the tests
- **MAC Layer:**

  3.2.5 - Service Node start-up (time condition in the transmission of PNPDUs)

  3.3.1 - Channel access- Shared Contention Period. Channel is idle

  3.3.3 - Channel access- Contention Free Period.

  3.4.1 - Registration accepted (Base Node available when DUT powers up).

  3.5.2 - Promotion process initiated by the service node DUT when receiving PNPDUs from another device.

  3.6.2 - Connection establishment initiated by the Service node.

  3.8.2 - Keep-Alive process (response from DUT as Switch).

  3.9.2 - Modulation scheme updated with packet header information
- **Convergence Layer:**

  4.2.1 - Correct establishment and disconnection of 4-32 link

  4.3.1 - Firmware upgrade process (unicast).

  4.4.1 – DLMS traffic over 4-32 connection

  4.5.1 - Get PIB attribute query

  4.5.2 – Set PIB attribute query

  4.5.3 - Reboot device

PHY layer tests must be applied for the three phases independently, as the meter is a three phase PRIME Service Node with PRIME tx through 3 phases.

Tools used for Certification
• **STMicroelectronics Vendor Tool (VT) to configure the DUT, trigger actions, and confirm manually MAC and CL tests result. Also used as auxiliary SW to run some MAC and CL tests.**
• **Neuron Conformance Test Tool (NT) to run testcases defined in PRIME Certification 1.4 Service Node Test book v2.9.**
• **Tecnalia Testing Tool (TT) to run testcases defined in PRIME Certification 1.4 Service Node Test book v2.9.**
• **Tecnalia Lab. Auxiliary tools (LT) to run MAC and CL tests when needed and to check manually testcases to confirm final result.**

PRIME 1.4 PHY Layer					Tools
2.5 PHY Test Cases: Transmission and reception test cases					
Type A Frame		**PHASE 1**	**PHASE 2**	**PHASE 3**	
2.3.2.1	Verify error free reception of DBPSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.2.2	Verify error free transmission of DBPSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.3.1	Verify error free reception of DBPSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.3.2	Verify error free transmission of DBPSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.4.1	Verify error free reception of DQPSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.4.2	Verify error free transmission of DQPSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.5.1	Verify error free reception of DQPSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.5.2	Verify error free transmission of DQPSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.6.1	Verify error free reception of D8PSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.6.2	Verify error free transmission of D8PSK type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.7.1	Verify error free reception of D8PSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.7.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1	PASS	PASS	PASS	NT
2.3.8.1	Verify error free reception of DBPSK type A frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.8.2	Verify error free transmission of DBPSK type A frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.9.1	Verify error free reception of D8PSK_C type A frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.9.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
Type B Frame		**PHASE 1**	**PHASE 2**	**PHASE 3**	
2.3.10.1	Verify error free reception of DBPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.10.2	Verify error free transmission of DBPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.11.1	Verify error free reception of DBPSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT

2.3.11.2	Verify error free transmission of DBPSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.12.1	Verify error free reception of DQPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.12.2	Verify error free transmission of DQPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.13.1	Verify error free reception of DQPSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.13.2	Verify error free transmission of DQPSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.14.1	Verify error free reception of D8PSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.14.2	Verify error free transmission of D8PSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.15.1	Verify error free reception of D8PSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.15.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.16.1	Verify error free reception of Robust DBPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.16.2	Verify error free transmission of Robust DBPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.17.1	Verify error free reception of Robust DQPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.17.2	Verify error free transmission of Robust DQPSK type B frames in channel ch 1	PASS	PASS	PASS	NT
2.3.18.1	Verify error free reception of DBPSK type B frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.18.2	Verify error free transmission of DBPSK type B frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.19.1	Verify error free reception of D8PSK_C type B frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.19.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
	Type BC Frame				
2.3.20.1	Verify error free reception of DBPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.20.2	Verify error free transmission of DBPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.21.1	Verify error free reception of DBPSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.21.2	Verify error free transmission of DBPSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.22.1	Verify error free reception of DQPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.22.2	Verify error free transmission of DQPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT

2.3.23.1	Verify error free reception of DQPSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.23.2	Verify error free transmission of DQPSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.24.1	Verify error free reception of D8PSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.24.2	Verify error free transmission of D8PSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.25.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.25.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.26.1	Verify error free reception of Robust DBPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.26.2	Verify error free transmission of Robust DBPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.27.1	Verify error free reception of Robust DQPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.27.2	Verify error free transmission of Robust DQPSK type BC frames in channel ch 1	PASS	PASS	PASS	NT
2.3.28.1	Verify error free reception of DBPSK type BC frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.28.2	Verify error free transmission of DBPSK type BC frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.29.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
2.3.29.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1 (55º)	PASS	PASS	PASS	NT
PHY Test Cases: Regulatory category: PASS					

PRIME 1.4 MAC layer		
3.2 MAC Test Cases: Service Node Start-up		
3.2.1	Service node start-up (forcing the reception of beacons).	N.A.
3.2.2	Service node start-up (No PNPDUs are transmitted when DUT receives BPDUs).	N.A.
3.2.3	Service node start-up (PNPDUsgeneration latency, transmission parameters and transmission rate of PNPDUs reduced by factor of received PNPDUs).	N.A.
3.2.4	Service node start-up (Seeking promotion of DUT after an unsuccessful registration process).	N.A.
3.2.5	Service Node start-up (RANDOMness in the transmission of PNPDUs)	PASS
3.2.6	Robust mode of Service Node start-up (PNPDU transmission modulation change).	N.A.

3.3 MAC Test Cases: Channel Access		
3.3.1	Channel access- Shared Contention Period. Channel is idle	PASS
3.3.2	Channel access- Shared Contention Period. Channel is occupied.	N.A.
3.3.3	Channel access- Contention Free Period.	PASS
3.3.4	Channel access- Contention Free Period.	N.A.
3.3.5	Channel access-Adaptation to frame structure change (FRA)	N.A.
3.3.6	Channel access-Adaptation to frame length change (FRA)	N.A.
3.3.7	Switch's beacon transmission time tolerance with respect to frame's beginning time.	N.A.
3.4 MAC Test Cases: Registration		
3.4.1	Registration accepted (Base Node available when DUT powers up).	PASS
3.4.2	Registration accepted (Base Node not available when DUT powers up).	N.A.
3.4.3	Registration accepted (DUT connected to a Switch node and the Switch node is connected to the Base Node).	N.A.
3.4.4	Tracking available Switches	N.A.
3.4.5	Unregistering process initiated by a terminal node.	N.A.
3.4.6	Unregistering process initiated by the Base node.	N.A.
3.5 MAC Test Cases: Promotion		
3.5.1	Promotion process initiated by the base node.	N.A.
3.5.2	Promotion process initiated by the service node DUT when receiving PNPDUs from another device.	PASS
3.5.3	Switching process: 2 levels of switching (DUT1 as a level 1 switch).	N.A.
3.5.4	Tracking Switches under one node	N.A.
3.5.5	Switching process: 2 levels of switching (DUT as a level 2 switch).	N.A.
3.5.6	Switching process: Multicast switching	N.A.
3.5.7	Switching functions: BPDU transmisión	N.A.
3.5.8	Switching functions: BPDU modulation change initiated by the Base Node	N.A.
3.5.9	Switching functions: BPDU modulation change initiated by the DUT	N.A.
3.5.10	Promotion rejected by the base node.	N.A.
3.5.11	Demotion process initiated by the base node.	N.A.
3.5.12	Double Switching process initiated by the DUT.	N.A.
3.5.13	DS-enabling promotion rejection from the base node.	N.A.
3.5.14	Full demotion process initiated by the base node.	N.A.
3.5.15	Double Switching process initiated by the base node.	N.A.
3.5.16	DS-enabling promotion rejection by the DUT.	N.A.
3.6 MAC Test Cases: Connection		
3.6.1	Connection establishment initiated by the Base node.	N.A.
3.6.2	Connection establishment initiated by the Service node.	PASS
3.6.3	Connection establishment rejected by the Base node.	N.A.

3.6.4	Connection closing initiated by the Base node.	N.A.
3.6.5	Connection closing initiated by the Service node.	N.A.
	3.7 MAC Test Cases: ARQ	
3.7.1	Verify correct behaviour of the DUT in a setup where the Base Node does not support ARQ.	N.A.
3.7.2	Verify correct behaviour of the DUT in a setup where the Base Node does support ARQ.	N.A.
3.7.3	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.
3.7.4	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	N.A.
3.7.5	Verify that the DUT is able to effectively respond against congestion situation.	N.A.
3.7.6	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.
3.7.7	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.
3.7.8	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	N.A.
3.7.9	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	N.A.
	3.8 MAC Test Cases: Alive	
3.8.1	Keep-Alive process (response from DUT as Terminal).	N.A.
3.8.2	Keep-Alive process (response from DUT as Switch).	PASS
3.8.3	Keep-Alive process (timeout and disconnect).	N.A.
3.8.4	Keep-Alive process (timeout refresh of DUT as a Terminal)	N.A.
3.8.5	Keep-Alive process (timeout refresh of DUT as a Switch).	N.A.
3.8.6	Keep-Alive process (changes in Keep Alive timeout).	N.A.
3.8.7	Keep-Alive process (three levels hierarchy with the DUT as the first level Switch).	N.A.
3.8.8	Keep-Alive process (1.3.6 mechanism).	N.A.
	3.9 MAC Test Cases: Management	
3.9.1	Forced modulation scheme	N.A.
3.9.2	Modulation scheme updated with packet header information	PASS
3.9.3	Modulation scheme updated with ALIVE mechanism: lost ACK	N.A.
3.9.4	Modulation scheme updated with ALIVE mechanism: lost response	N.A.
	3.10 MAC Test Cases: Backwards Compatibility	
3.10.1	Service node start-up (No PNPDUs are transmitted when DUT receives CBCN).	N.A.
3.10.2	Backwards Compatibility Capability at registration	N.A.

3.10.3	PNPDUs discarding	N.A.
3.10.4	Demotion process initiated by the base node.	N.A.
3.10.5	DUT connected through a 1.3.6 Switch node	N.A.
3.10.6	Unregistering process initiated by the DUT when connected through a 1.3.6 Switch.	N.A.
3.10.7	DUT as a Switch node for a 1.3.6 Terminal node	N.A.
3.10.8	DUT as a level 2 switch with a 1.4 “parent” and 1.3.6 “son”	N.A.
3.10.9	DUT as a level 2 switch with a 1.3.6 “parent” and 1.3.6 “son”	N.A.
3.10.10	DUT as a level 2 switch with a 1.3.6 “parent” and 1.4 “son”	N.A.
3.10.11	BC Keep-Alive process (response from DUT).	N.A.
3.10.12	BC Keep-Alive process (timeout and disconnect).	N.A.
3.10.13	BC Keep-Alive process (changes in Keep Alive timeout).	N.A.
3.11 MAC Test Cases: Time Reference		
3.11.1	Verify correct behavior of the DUT in a setup where the Base Node does support time reference.	N.A.
3.11.2	Verify correct behavior of the DUT (as the Switch Node) between the Base Node and Auxiliary Device (as Service Node) do support time reference.	N.A.
3.11.3	Check each zero cross detection circuits available in the DUT.	N.A.
3.12 MAC Test Cases: Security		
3.12.1	Registration process with security profile 1	N.A.
3.12.2	Registration process with security profile 2	N.A.
3.12.3	Registration rejection with security profile 1	N.A.
3.12.4	Registration rejection with security profile 2	N.A.
3.12.5	Nonce usage	N.A.
3.12.6	Keys updating with a correct KWK	N.A.
3.12.7	Keys updating rejection when a wrong KWK is used	N.A.
3.12.8	SWK usage	N.A.
3.12.9	SWK modification handling	N.A.

CONVERGENCE LAYER 1.4		
4.2 CL Test Cases: Convergence sublayer procedures		
4.2.1	Correct establishment and disconnection of 4-32 link	PASS
4.2.2	Verify the correct implementation of the Segmentation at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the DUT..	N.A.
4.2.3	Verify the correct implementation of the Reassembly Mechanism at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the Base Node.	N.A.

4.2.4	Verify the correct implementation of the Reassembly Mechanism when incorrect CRC is received at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the Base Node.	N.A.
4.3 CL Test Cases: Firmware Upgrade		
4.3.1	Firmware upgrade process (unicast).	PASS
4.3.2	Firmware upgrade process (multicast).	N.A.
4.3.3	Firmware upgrade page retransmission	N.A.
4.3.4	Firmware upgrade process (unicast). EXCEPTION State. Bit error in the signature of the image	N.A.
4.3.5	Firmware upgrade process (unicast). EXCEPTION State. Bit error in the image	N.A.
4.4 CL Test Cases: DLMS traffic over 4-32 connection		
4.4.1	CS4-32 is able to pass valid DLMS payload between the meter and the test system.	PASS
4.5 CL Test Cases: PRIME Management Plane Communication Profile		
4.5.1	Get PIB attribute query	PASS
4.5.2	Set PIB attribute query	PASS
4.5.3	Reboot device	PASS

For more detailed information about the test results see Annex I

3.- APPLICANT

Nerijus Kruopis

Elgama-Elektronika Ltd.

Visoriu str. 2, LT-08300 Vilnius, Lithuania

4.- PLACE OF RECEPTION AND EXECUTION OF THE TESTS

The reception of the equipment took place in the Smart Data & Protocol Laboratory of TECNALIA, in Derio (Spain).

The performing of the test took place in Smart Data & Protocol Laboratory of TECNALIA, in Derio (Spain).

5.- STANDARDS AND TEST PROCEDURES EMPLOYED

Standards:

- PRIME-Specs V1.4: Specification for Power line Intelligent Metering Evolution. Version 1.4
- EN 50065-1 (2011): “Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148.5 kHz. Part 1: General requirements, frequency bands and electromagnetic disturbances”.
- EN 50065-2-3 (2003) + A1 (2005): “Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148.5 kHz. Part 2-3: Immunity requirements for mains communications equipment and systems operating in the range of frequencies of 3 kHz to 95 kHz and intended for use by electricity suppliers and distributors”.
- EN 50065-7 (2001): “Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148.5 kHz. Part 7: Equipment impedance”.

Testing procedures:

- PRIME Certification 1.4 Service Node Test book v2.9.
- PRIME Certification 1.4 Service Node Test book v2.12. Annex H Basic FCC test suite

6.- CONCLUSIONS

In view of the results and in the test conditions expressed in the present report, the tested sample of:

Unit:	THREE-PHASE ELECTRICITY METER WITH INTEGRATED PRIME Power Line Communications
Model:	GAMA350
Trade Mark:	Elgama-Elektronika
Serial Number:	20061003 (MAC:00:80:E1:A3:F6:92)
Manufacturer:	Elgama-Elektronika

- ✓ **COMPLIES** with:
  - ✓ Profile: Electricity Meter with PRIME PHY and PRIME MAC. PRIME 1.4 CH1
    - ✓ PRIME 1.4 PHY
    - ✓ PRIME 1.4 MAC layer
      - Excluding security profiles
      - Excluding backward compatibility.
    - ✓ PRIME 1.4 Convergence layer

  In the conditions expressed in sections 2 of this report.

- This test report is granted on account of tests made at location of TECNALIA, in Derio (Spain).
- The results of the present report apply only to the samples tested and the moment and conditions under which the measurements were performed.
- The complete results, including remarks and limitations, are laid down in ANNEX I of this report.

ANNEX I. TEST RESULTS

Place: Smart Data & Protocol Laboratory in TECNALIA

Electronic devices Laboratory in TECNALIA

Climatic conditions: 19 ºC 44% H.R. 1014 mbar

Responsible: Ibone Gª-Borreguero Melero

Used instruments:

	Measurement instruments
X	*Tecnalia PRIME 1.4 SN Testing Tool (**TT**)*
X	*SD&P Laboratory auxiliary tools (**LT**)*
X	*SW Neuron PRIME 1.4 SN Certification Testing Tool (**NT**)* ✓ PRIME v1.4 Conformance Tester (release 2020_05_RC5)
X	*HW Neuron PRIME 1.4 SN Certification Testing Tool* ✓ *BASE NODE* ✓ *AUX1* ✓ *AUX2* ✓ *AUX3* ✓ *AUX4* ✓ *SNIFFER* ✓ *CONTROL UNIT*
X	*EL092142 – LISN*
X	*EL092115 – LISN PRIME*
X	*EL052008 - CLIMATIC CHAMBER*
X	*EL022011 - DIGITAL OSCILLOSCOPE*
X	*EL082055 – ISOLATING TRANSFORM*

Data registers storage place	
C.U.	*Neuron PRIME 1.4 SN CTT Control Unit*
LAB. PC1	*C:/Clientes/PRIME14_ELGAMA-SN*

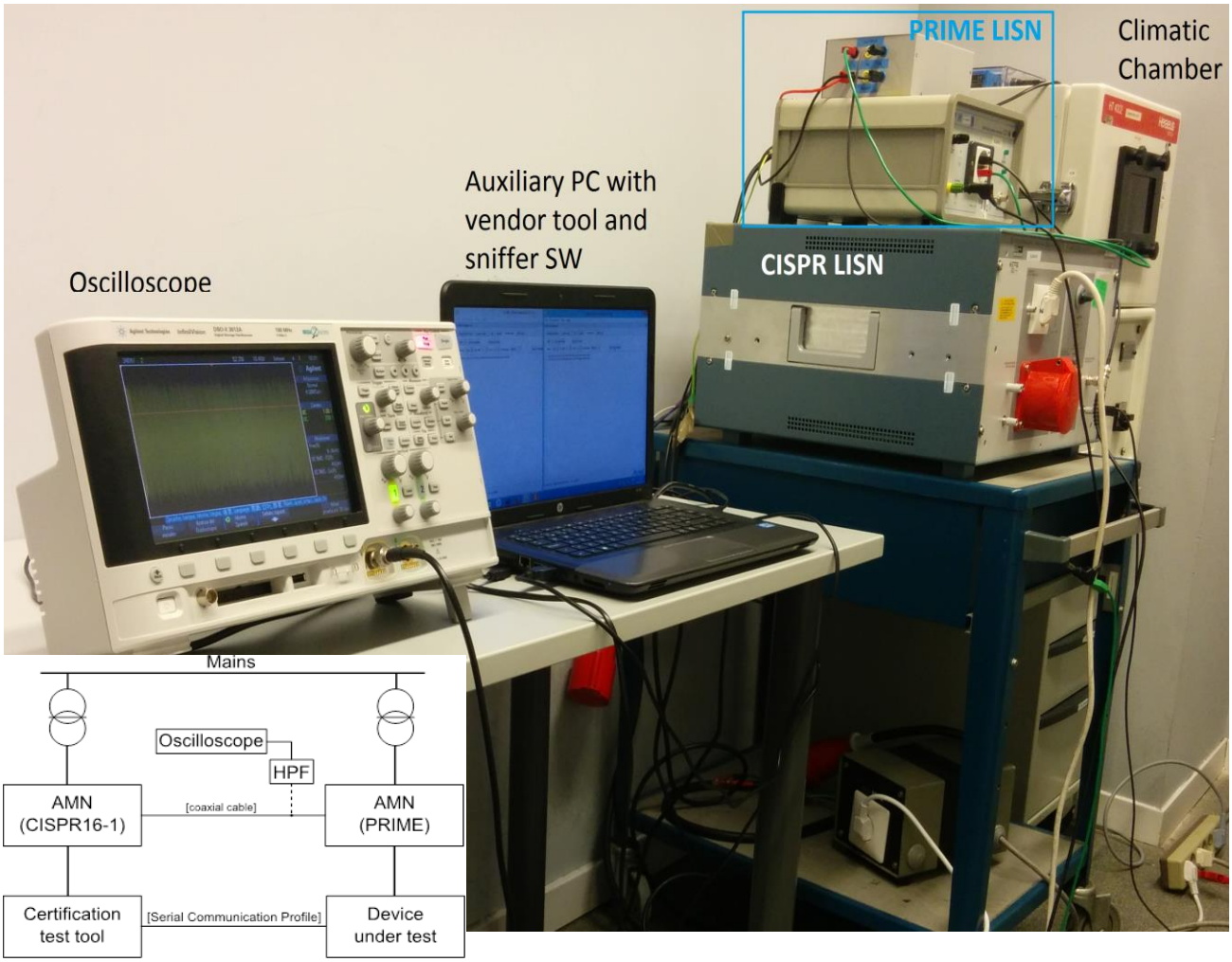
Used instruments provided by the manufacturer:

	Measurement instruments
X	*SW STMicroelectronics* ✓ *Vendor Tool: PRIMEGUI 1.4 Rev 1.0.6 (**VT**)*

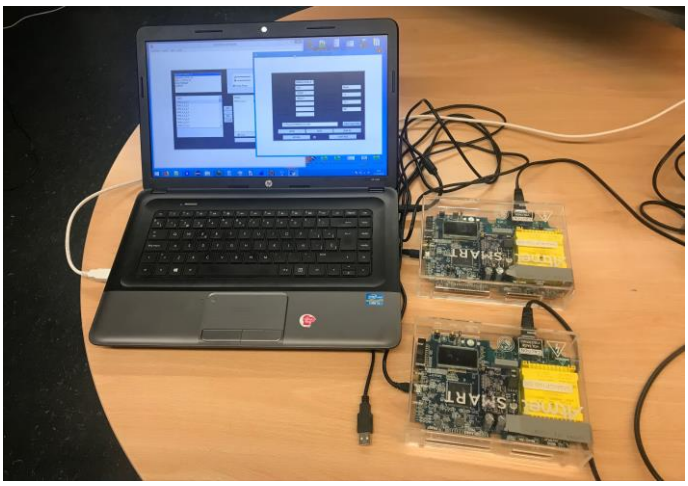
Results:

A.1. PHY layer

A.1.1. Test setup



✓ TECNALIA PRIME 1.4 SN TESTING TOOL (TT)

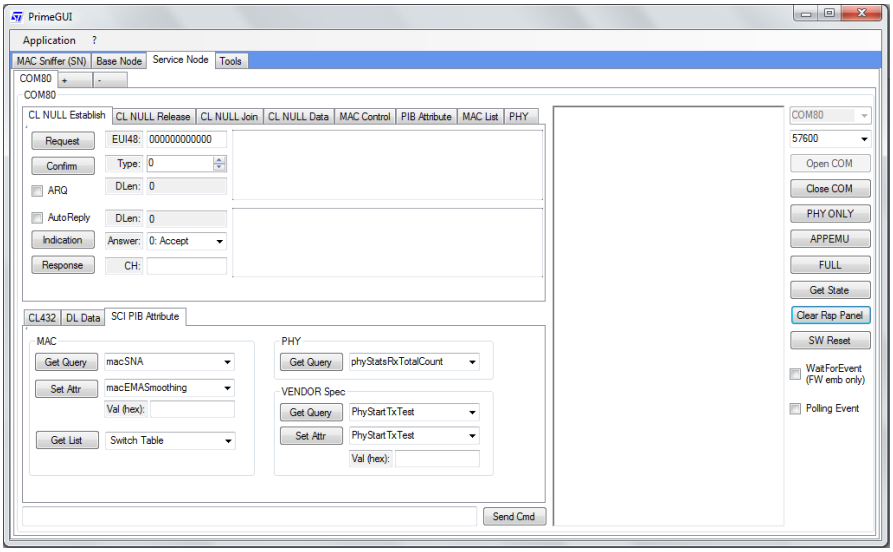


DUT connections:

Serial Port:

- to manage the DUT
- connected to auxiliary PC to configure the DUT in different modes (PHY tx, PHY rx)
- to access to PIB values (not for certification but only for checkings)

- DUT has to be configured in PHY reception and PHY transmission mode.
- STMicroelectronics Vendor Tool:
  - to manage and configure the DUT in PHY mode RX/TX
  - to read PIB attributes

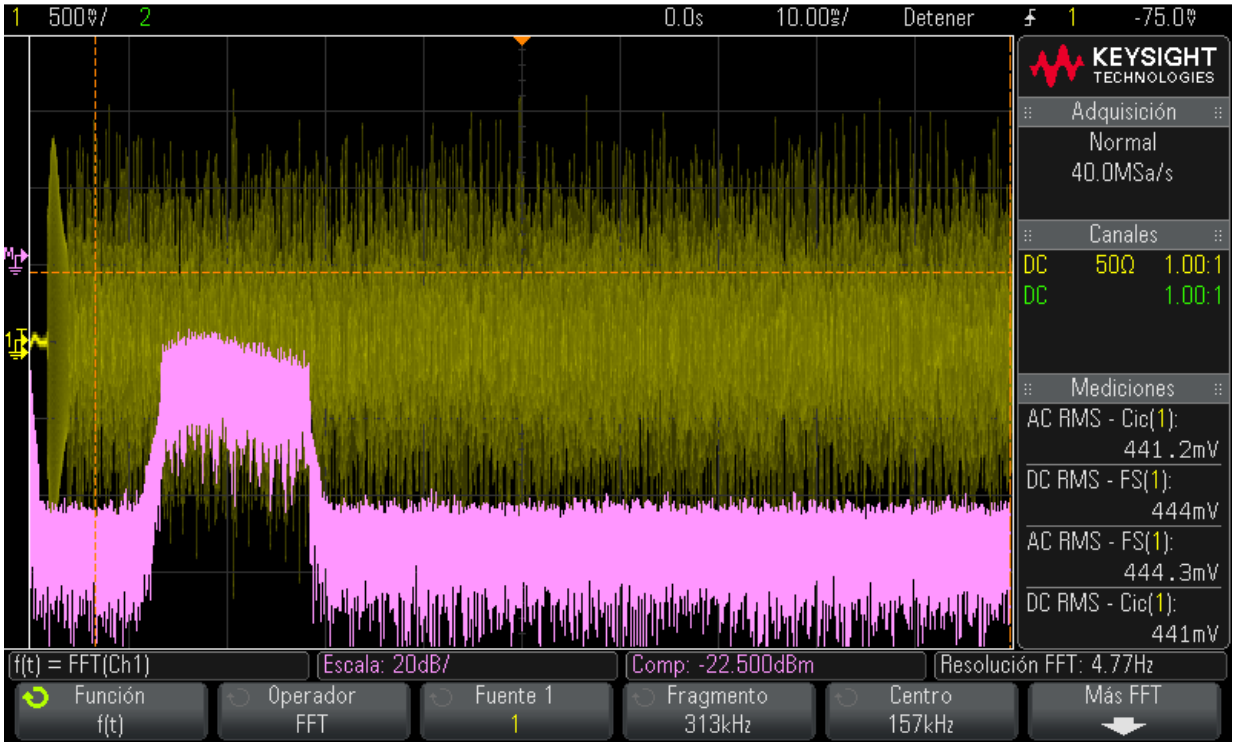


Oscilloscope:

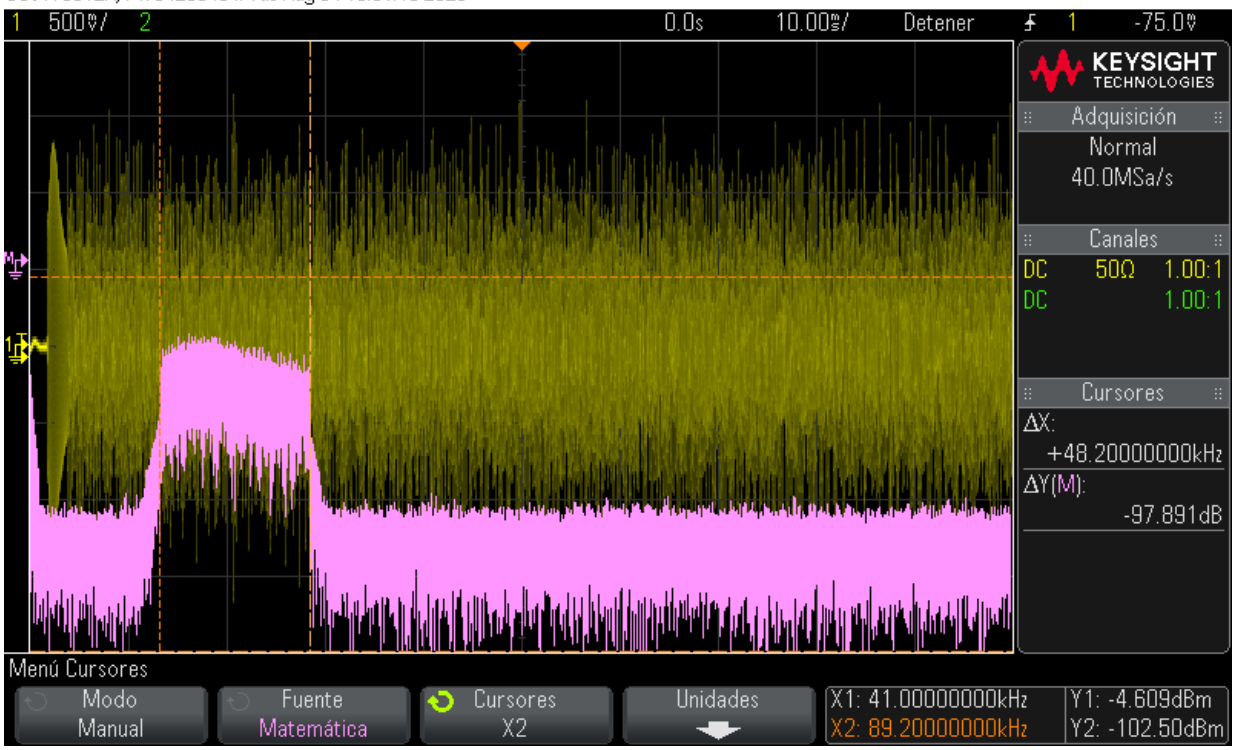
- To measure the frecuency band
- To measure the output level of the PRIME signal

DBPSK_CC Type A (testcase 2.3.3.2)

DSO-X 3012A, MY54230404: Tue Aug 04 10:00:34 2020

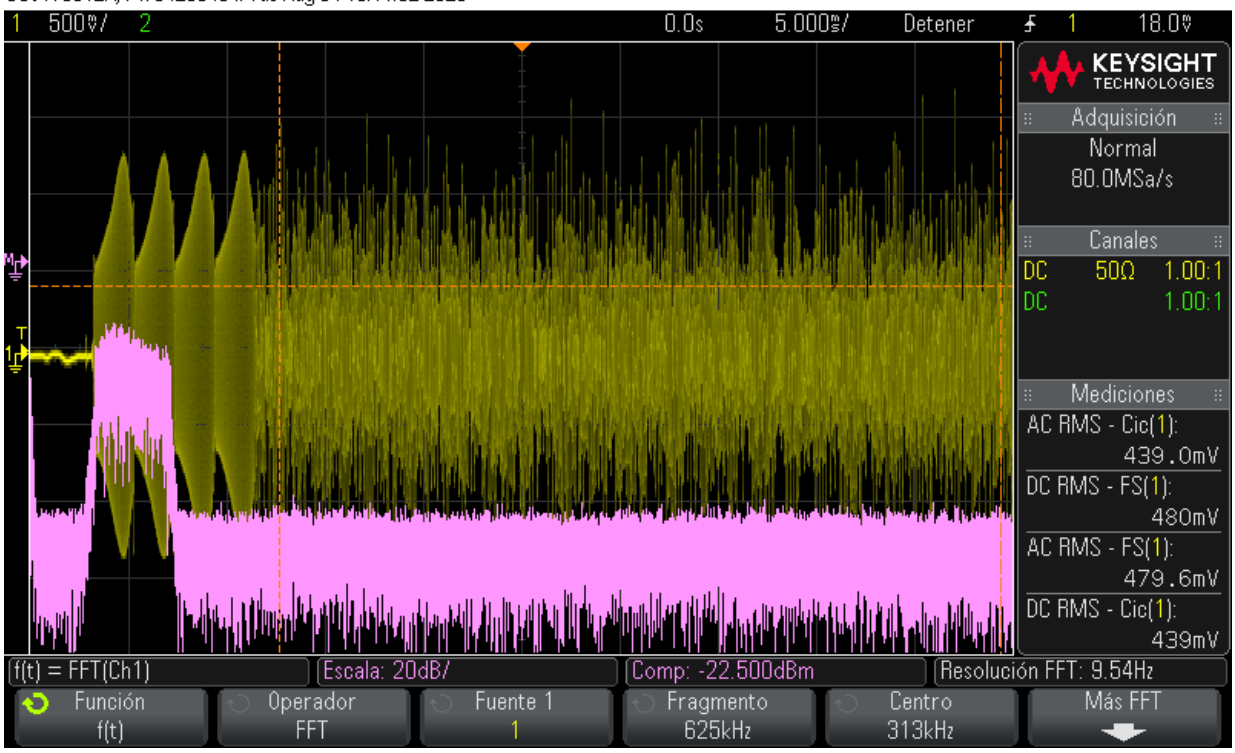


DSO-X 3012A, MY54230404: Tue Aug 04 10:01:10 2020

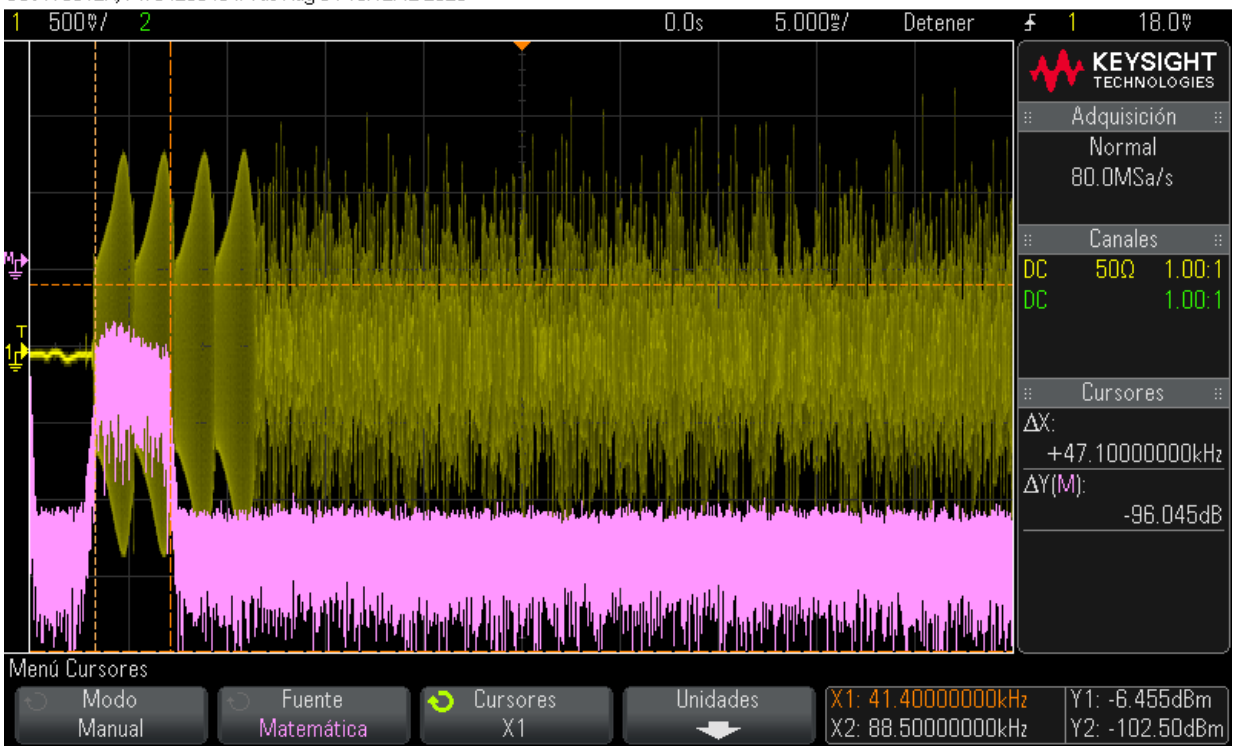


DBPSK_CC Type B (testcase 2.3.11.2)

DSO-X 3012A, MY54230404: Tue Aug 04 10:11:02 2020

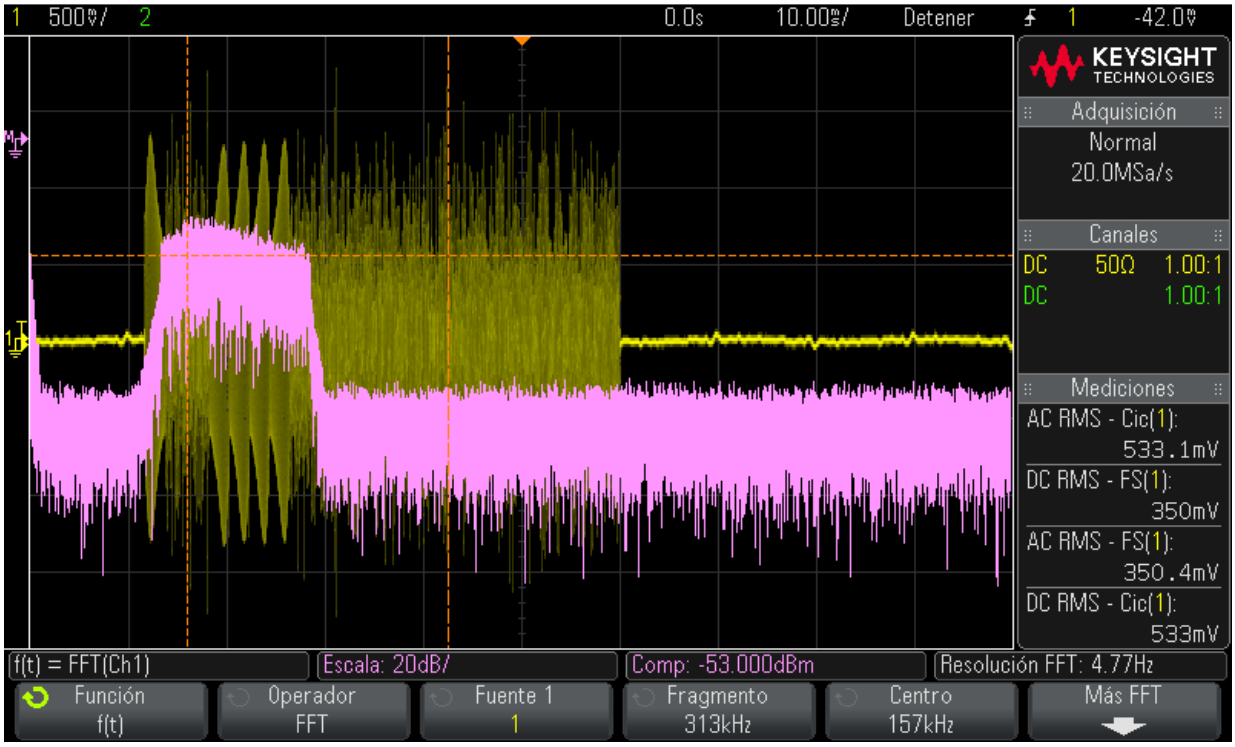


DSO-X 3012A, MY54230404: Tue Aug 04 10:12:42 2020

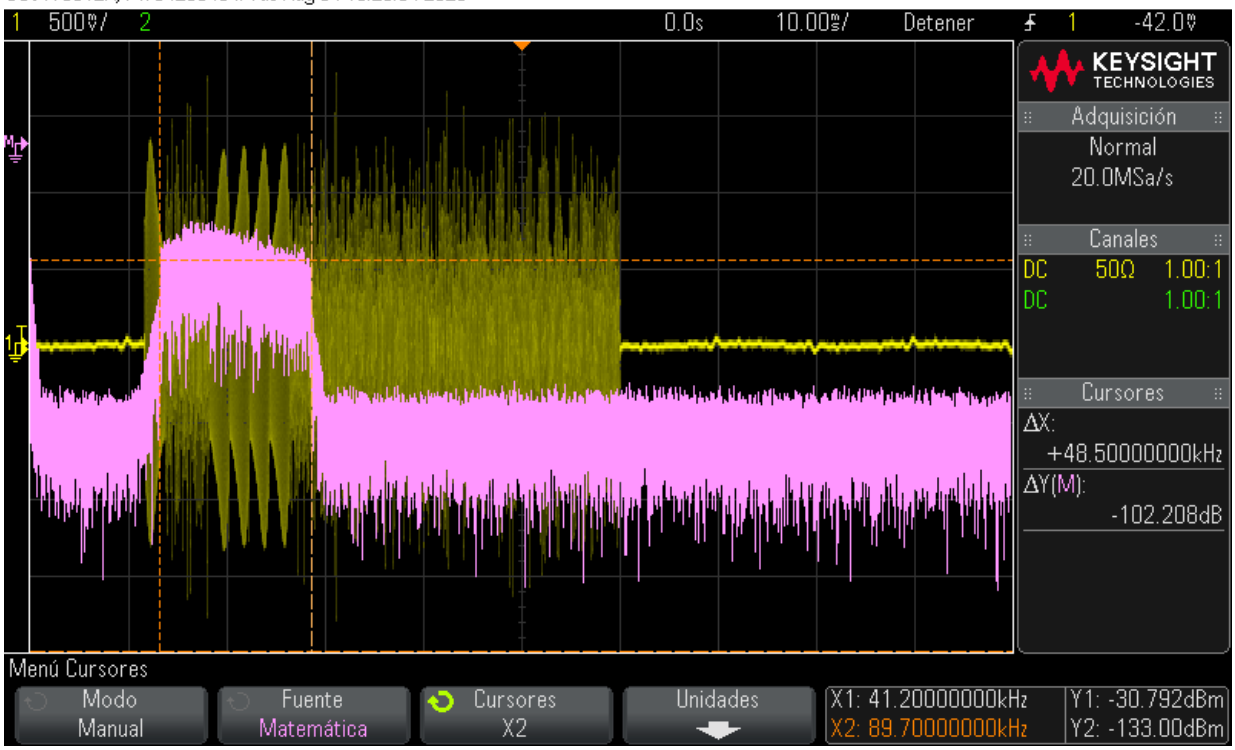


DBPSK_CC Type BC (testcase 2.3.21.2)

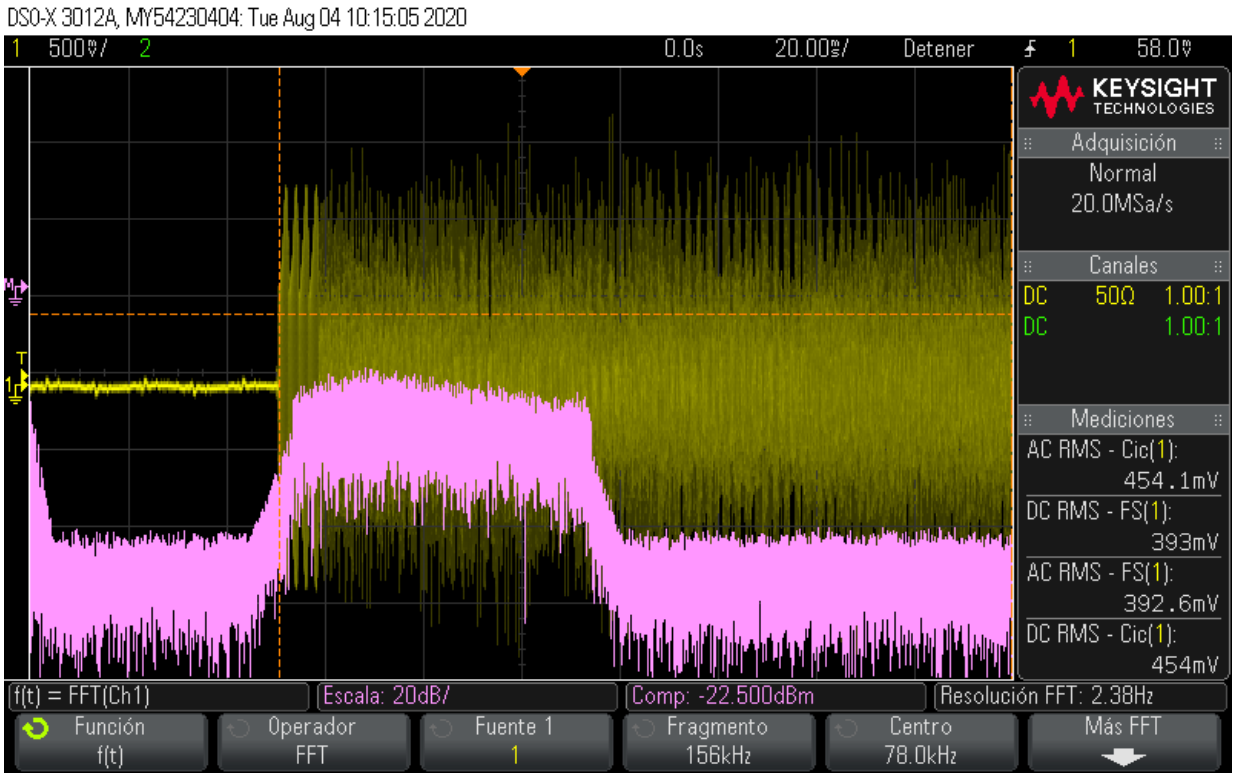
DSO-X 3012A, MY54230404: Tue Aug 04 10:28:27 2020



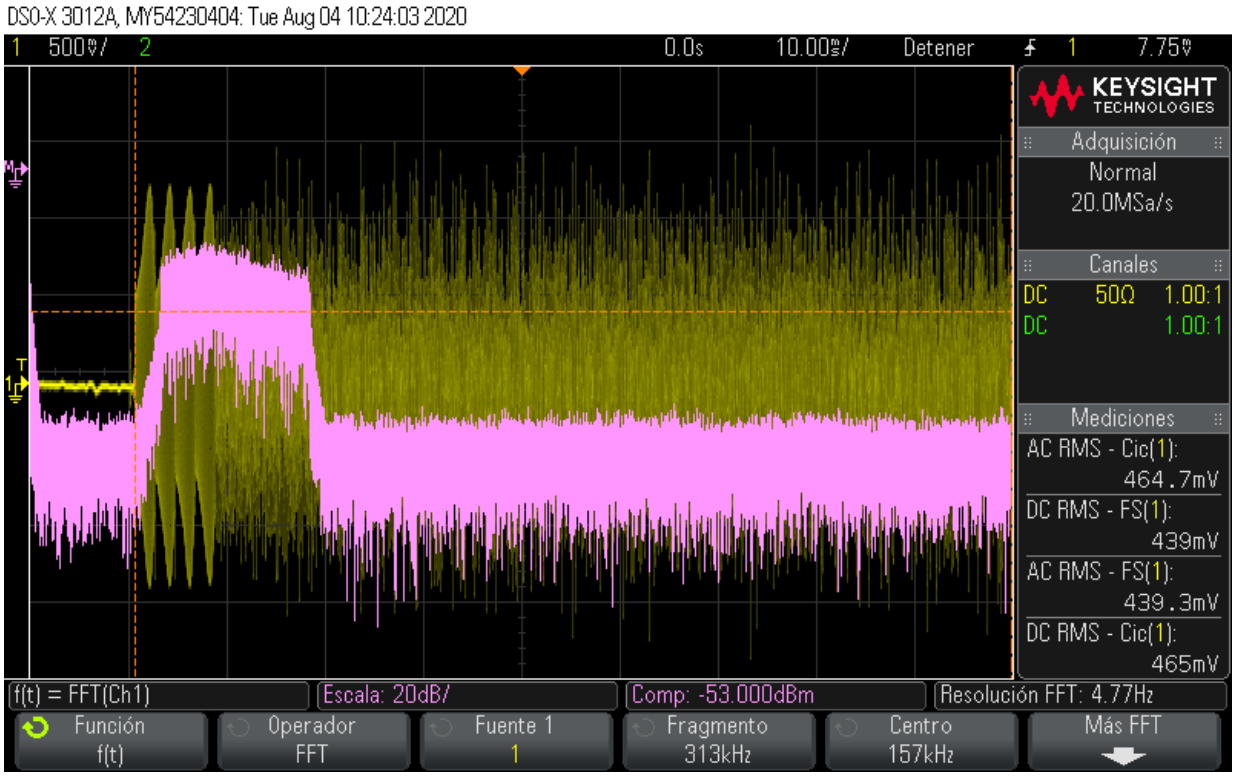
DSO-X 3012A, MY54230404: Tue Aug 04 10:28:54 2020



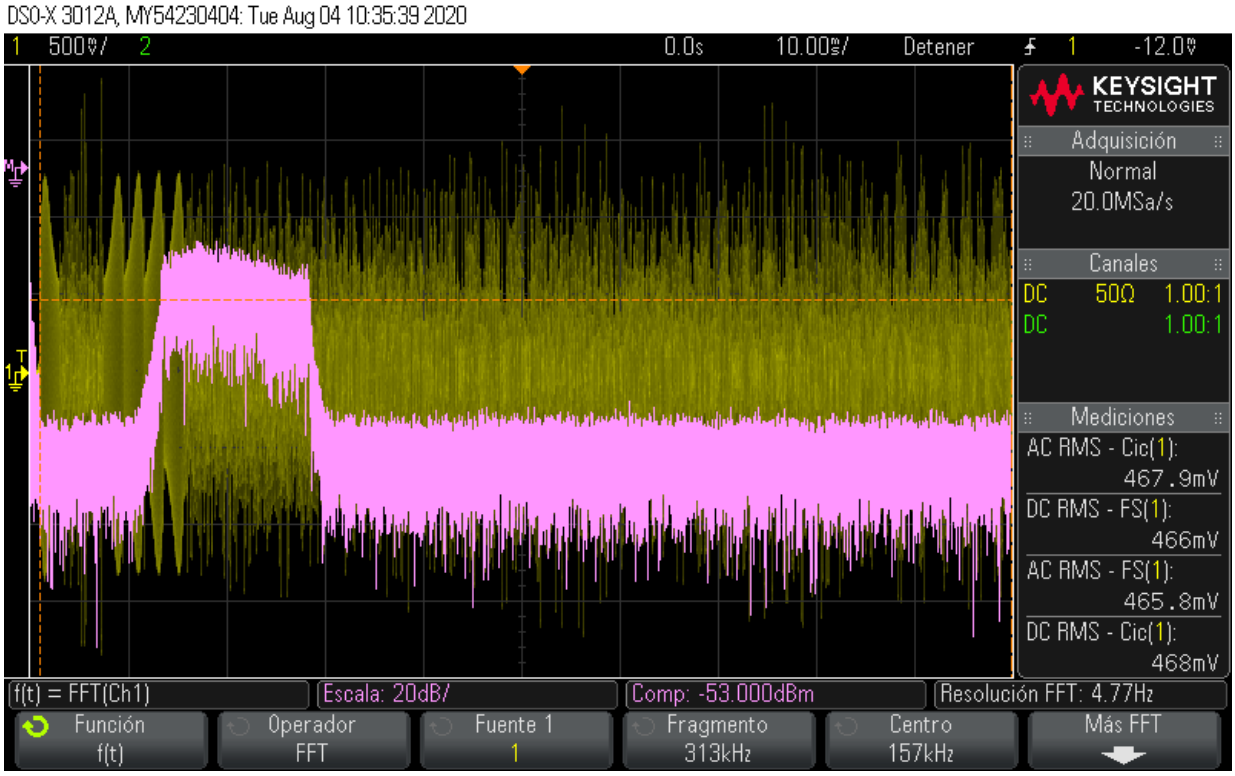
DBPSK_rob Type B(testcase 2.3.16.2)



DQPSK_rob Type B (testcase 2.3.17.2)



DBPSK_rob Type BC(testcase 2.3.26.2)



A.1.2. PHY Test results for CHANNEL 1

PHY LAYER 1.4 PHASE 1						
CODE	**DESCRIPTION**	**RESULT**	**EXPECTED**	**STAT.**	**COMMENTS**	**TOOL**
2.5 PHY Test Cases: Transmission and reception test cases						
Type A Frame						
2.3.2.1	Verify error free reception of DBPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.2.2	Verify error free transmission of DBPSK type A frames in channel ch 1	Frames: 1997	at least 1996 frames	PASS	Sample: M1	NT
2.3.3.1	Verify error free reception of DBPSK_C type A frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.3.2	Verify error free transmission of DBPSK_C type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.1	Verify error free reception of DQPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.2	Verify error free transmission of DQPSK type A frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT

2.3.5.1	Verify error free reception of DQPSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.5.2	Verify error free transmission of DQPSK_C type A frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.6.1	Verify error free reception of D8PSK type A frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.6.2	Verify error free transmission of D8PSK type A frames in channel ch 1	Frames: 2000 18,22 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.7.1	Verify error free reception of D8PSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.7.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.1	Verify error free reception of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.2	Verify error free transmission of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.9.1	Verify error free reception of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.9.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
Type B Frame						
2.3.10.1	Verify error free reception of DBPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.10.2	Verify error free transmission of DBPSK type B frames in channel ch 1	Frames: 1997	at least 1996 frames	PASS	Sample: M1	NT
2.3.11.1	Verify error free reception of DBPSK_C type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.11.2	Verify error free transmission of DBPSK_C type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.1	Verify error free reception of DQPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.2	Verify error free transmission of DQPSK type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT

2.3.13.1	Verify error free reception of DQPSK_C type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.13.2	Verify error free transmission of DQPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.14.1	Verify error free reception of D8PSK type B frames in channel ch 1	Frames: 1999 17,86 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.14.2	Verify error free transmission of D8PSK type B frames in channel ch 1	Frames: 1998 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.15.1	Verify error free reception of D8PSK_C type B frames in channel ch 1	Frames: 1996	at least 1996 frames	PASS	Sample: M1	NT
2.3.15.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.1	Verify error free reception of Robust DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.2	Verify error free transmission of Robust DBPSK type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT

2.3.17.1	Verify error free reception of Robust DQPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.17.2	Verify error free transmission of Robust DQPSK type B frames in channel ch 1	Frames: 1997	at least 1996 frames	PASS	Sample: M1	NT
2.3.18.1	Verify error free reception of DBPSK type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.18.2	Verify error free transmission of DBPSK type B frames in channel ch 1 (55º)	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.19.1	Verify error free reception of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.19.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
Type BC Frame						
2.3.20.1	Verify error free reception of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.20.2	Verify error free transmission of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.21.1	Verify error free reception of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.21.2	Verify error free transmission of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.1	Verify error free reception of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.2	Verify error free transmission of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.23.1	Verify error free reception of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.23.2	Verify error free transmission of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.24.1	Verify error free reception of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT

2.3.24.2	Verify error free transmission of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.25.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.25.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.1	Verify error free reception of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.2	Verify error free transmission of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.27.1	Verify error free reception of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.27.2	Verify error free transmission of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.28.1	Verify error free reception of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.28.2	Verify error free transmission of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.29.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.29.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

PHY LAYER 1.4 PHASE 2						
CODE	**DESCRIPTION**	**RESULT**	**EXPECTED**	**STAT.**	**COMMENTS**	**TOOL**
2.5 PHY Test Cases: Transmission and reception test cases						
Type A Frame						
2.3.2.1	Verify error free reception of DBPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.2.2	Verify error free transmission of DBPSK type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.3.1	Verify error free reception of DBPSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.3.2	Verify error free transmission of DBPSK_C type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.1	Verify error free reception of DQPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.2	Verify error free transmission of DQPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.5.1	Verify error free reception of DQPSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.5.2	Verify error free transmission of DQPSK_C type A frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.6.1	Verify error free reception of D8PSK type A frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.6.2	Verify error free transmission of D8PSK type A frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.7.1	Verify error free reception of D8PSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.7.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.1	Verify error free reception of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.2	Verify error free transmission of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.9.1	Verify error free reception of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.9.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
Type B Frame						
2.3.10.1	Verify error free reception of DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.10.2	Verify error free transmission of DBPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT

2.3.11.1	Verify error free reception of DBPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.11.2	Verify error free transmission of DBPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.1	Verify error free reception of DQPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.2	Verify error free transmission of DQPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.13.1	Verify error free reception of DQPSK_C type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.13.2	Verify error free transmission of DQPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.14.1	Verify error free reception of D8PSK type B frames in channel ch 1	Frames: 2000 17,86 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.14.2	Verify error free transmission of D8PSK type B frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT

2.3.15.1	Verify error free reception of D8PSK_C type B frames in channel ch 1	Frames: 1997	at least 1996 frames	PASS	Sample: M1	NT
2.3.15.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.1	Verify error free reception of Robust DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.2	Verify error free transmission of Robust DBPSK type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.17.1	Verify error free reception of Robust DQPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.17.2	Verify error free transmission of Robust DQPSK type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.18.1	Verify error free reception of DBPSK type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.18.2	Verify error free transmission of DBPSK type B frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT

2.3.19.1	Verify error free reception of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.19.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
Type BC Frame						
2.3.20.1	Verify error free reception of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.20.2	Verify error free transmission of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.21.1	Verify error free reception of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.21.2	Verify error free transmission of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.1	Verify error free reception of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.2	Verify error free transmission of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.23.1	Verify error free reception of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.23.2	Verify error free transmission of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.24.1	Verify error free reception of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.24.2	Verify error free transmission of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.25.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.25.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.1	Verify error free reception of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.2	Verify error free transmission of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.27.1	Verify error free reception of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.27.2	Verify error free transmission of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.28.1	Verify error free reception of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.28.2	Verify error free transmission of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.29.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.29.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

PHY LAYER 1.4 PHASE 3						
CODE	**DESCRIPTION**	**RESULT**	**EXPECTED**	**STAT.**	**COMMENTS**	**TOOL**
2.5 PHY Test Cases: Transmission and reception test cases						
Type A Frame						

2.3.2.1	Verify error free reception of DBPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.2.2	Verify error free transmission of DBPSK type A frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.3.1	Verify error free reception of DBPSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.3.2	Verify error free transmission of DBPSK_C type A frames in channel ch 1	Frames: 1996	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.1	Verify error free reception of DQPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.4.2	Verify error free transmission of DQPSK type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.5.1	Verify error free reception of DQPSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.5.2	Verify error free transmission of DQPSK_C type A frames in channel ch 1	Frames: 1996	at least 1996 frames	PASS	Sample: M1	NT

2.3.6.1	Verify error free reception of D8PSK type A frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.6.2	Verify error free transmission of D8PSK type A frames in channel ch 1	Frames: 1996 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.7.1	Verify error free reception of D8PSK_C type A frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.7.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.1	Verify error free reception of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.8.2	Verify error free transmission of DBPSK type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.9.1	Verify error free reception of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.9.2	Verify error free transmission of D8PSK_C type A frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT

Type B Frame						
2.3.10.1	Verify error free reception of DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.10.2	Verify error free transmission of DBPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.11.1	Verify error free reception of DBPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.11.2	Verify error free transmission of DBPSK_C type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.1	Verify error free reception of DQPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.12.2	Verify error free transmission of DQPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.13.1	Verify error free reception of DQPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.13.2	Verify error free transmission of DQPSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.14.1	Verify error free reception of D8PSK type B frames in channel ch 1	Frames: 2000 17,86 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.14.2	Verify error free transmission of D8PSK type B frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.15.1	Verify error free reception of D8PSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.15.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.1	Verify error free reception of Robust DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.16.2	Verify error free transmission of Robust DBPSK type B frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.17.1	Verify error free reception of Robust DQPSK type B frames in channel ch 1	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
2.3.17.2	Verify error free transmission of Robust DQPSK type B frames in channel ch 1	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT

2.3.18.1	Verify error free reception of DBPSK type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.18.2	Verify error free transmission of DBPSK type B frames in channel ch 1 (55º)	Frames: 1998	at least 1996 frames	PASS	Sample: M1	NT
2.3.19.1	Verify error free reception of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.19.2	Verify error free transmission of D8PSK_C type B frames in channel ch 1 (55º)	Frames: 1999	at least 1996 frames	PASS	Sample: M1	NT
Type BC Frame						
2.3.20.1	Verify error free reception of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.20.2	Verify error free transmission of DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.21.1	Verify error free reception of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.21.2	Verify error free transmission of DBPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.1	Verify error free reception of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.22.2	Verify error free transmission of DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.23.1	Verify error free reception of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.23.2	Verify error free transmission of DQPSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.24.1	Verify error free reception of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.24.2	Verify error free transmission of D8PSK type BC frames in channel ch 1	Frames: 2000 17,96 dB	at least 1996 frames EVM above 17dB	PASS	Sample: M1	NT
2.3.25.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.25.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.1	Verify error free reception of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.26.2	Verify error free transmission of Robust DBPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.27.1	Verify error free reception of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.27.2	Verify error free transmission of Robust DQPSK type BC frames in channel ch 1	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.28.1	Verify error free reception of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.28.2	Verify error free transmission of DBPSK type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT
2.3.29.1	Verify error free reception of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1	NT

2.3.29.2	Verify error free transmission of D8PSK_C type BC frames in channel ch 1 (55º)	Frames: 2000	at least 1996 frames	PASS	Sample: M1		NT

A.1.4. PHY Test Cases: Regulatory category for CHANNEL 1

DUT is EN50065-1, EN50065-2-3 and EN50065-7 compliant in order to be PRIME compliant.

- According to Test report B41-20-BF-I1 of TECNALIA laboratory. DUT identification

And the tested sample of: **Unit:** THREE-PHASE ELECTRICITYMETER WITH INTEGRATED PRIME PLC
Brand: Elgama-Elektronika
Model: GAMA 350
Manufacturer: Elgama-Elektronika
PRIME version: 10-2755c
Serial number: 20061002

COMPLIES with EN 50065-1:2011.

- Paragraph 6.2.1, 6.2.2, 6.3.
- Paragraph 7.2.

And the tested sample of: **Unit:** THREE-PHASE ELECTRICITYMETER WITH INTEGRATED PRIME PLC
Brand: Elgama-Elektronika
Model: GAMA 350
Manufacturer: Elgama-Elektronika
PRIME version: 10-2755c
Serial number: 20061001

COMPLIES with EN 50065-1:2011.

- Paragraph 7.3.

COMPLIES with EN 50065-2-3:2003+A1:2005.

- Paragraph 7.2.1, table 1-a and 1-b.
- Paragraph 7.2.1, table 4-a.
- Paragraph 7.2.2.

- According to Test report B41-20-BE-I1 of TECNALIA laboratory. DUT identification

And the tested sample of: **Unit:** THREE-PHASE ELECTRICITYMETER WITH INTEGRATED PRIME PLC
Brand: Elgama-Elektronika

Model:	GAMA 350
Manufacturer:	Elgama-Elektronika
PRIME version:	00-2740c
Serial number:	20051502

COMPLIES with EN 50065-1:2011. - Paragraph 7.3.
COMPLIES with EN 50065-2-3:2003+A1:2005.
COMPLIES with EN 50065-7:2001.

A.2. MAC and CONVERGENCE layer

A.2.1. Test setup

DUT connections:

- Serial port:
  - to configure the DUT in different modes (PHY tx, PHY rx, AppEmu, MAC)
  - to manage the DUT
  - connected to auxiliary PC
  - to access to PIB values with Vendor Tool
  - connected to Neuron Prime 1.4 Certification Testing Tool

Auxiliary PC with the following Software:

- STMicroelectronics Vendor Tool PRIME GUI. To configure the DUT in different modes and manage the DUT

DUT configuration for MAC test cases

- Connect serial port to Vendor Tool in auxiliary PC
- Start the test with “NEURON Prime 1.4 Certification Testing Tool”

Testing tools needed for MAC and CL testcases:

- Neuron Prime 1.4 Certification Testing Tool (**NT**)
- Tecnalia Lab. auxiliary tools **(LT**) when needed (external sniffers, base nodes and auxiliary Prime 1.4 service nodes, noise generator, oscilloscope)
- STMicroelectronics Vendor Tool (**VT**)

A.2.2. MAC Test results for CHANNEL 1

PRIME 1.4 MAC layer						
CODE	DESCRIPTION	RESULT	EXPECTED	STAT.	COMMENTS	TOOLS
3.2 MAC Test Cases: Service Node Start-up						
3.2.1	Service node start-up (forcing the reception of beacons).	N.A.	N.A.	N.A.	N.A.	N.A.
3.2.2	Service node start-up (No PNPDUs are transmitted when DUT receives BPDUs).	N.A.	N.A.	N.A.	N.A.	N.A.
3.2.3	Service node start-up (PNPDUsgeneration latency, transmission parameters and transmission rate of PNPDUs reduced by factor of received PNPDUs).	Correct PNPDU generation latency	Correct PNPDU generation latency	N.A.	N.A.	N.A.
3.2.4	Service node start-up (Seeking promotion of DUT after an unsuccessful registration process).	N.A.	N.A.	N.A.	N.A.	N.A.
3.2.5	Service Node start-up (Time condition in the transmission of PNPDUs)	Correct Time condition in TX of PNPDUs	Correct randomness in TX of PNPDUs	PASS	Sample: M1	NT
3.2.6	Robust mode of Service Node start-up (PNPDU transmission modulation change).	N.A.	N.A.	N.A.	N.A.	N.A.
3.3 MAC Test Cases: Channel Access						

3.3.1	Channel access-Shared Contention Period. Channel is idle	Data sent during SCP	Data sent during SCP	PASS	Sample: M1	NT, VT to Trigger TX_DATA Burst
3.3.2	Channel access-Shared Contention Period. Channel is occupied.	N.A.	N.A.	N.A.	N.A.	N.A.
3.3.3	Channel access-Contention Free Period.	DUT does not transmit during CFP	DUT does not transmit during CFP	PASS	Sample: M1	NT, VT to Trigger TX_DATA Burst
3.3.4	Channel access-Contention Free Period.	N.A.	N.A.	N.A.	N.A.	N.A.
3.3.5	Channel access-Adaptation to frame structure change (FRA)	N.A.	N.A.	N.A.	N.A.	N.A.
3.3.6	Channel access-Adaptation to frame length change (FRA)	N.A.	N.A.	N.A.	N.A.	N.A.
3.3.7	Switch's beacon transmission time tolerance with respect to frame's beginning time.	Correct beacon transmission time tolerance	N.A.	N.A.	N.A.	N.A.
3.4 MAC Test Cases: Registration						
3.4.1	Registration accepted (Base Node available when DUT powers up).	Succesful registration to Base Node	Succesful registration to Base Node	PASS	Sample: M1	LT
3.4.2	Registration accepted (Base Node not available when DUT powers up).	N.A.	N.A.	N.A.	N.A.	N.A.
3.4.3	Registration accepted (DUT connected to a Switch node and the Switch node is connected to the Base Node).	N.A.	N.A.	N.A.	N.A.	N.A.

3.4.4	Tracking available Switches	MACListAvailableSwitches contains both available switches	N.A.	N.A.	N.A.	N.A.
3.4.5	Unregistering process initiated by a terminal node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.4.6	Unregistering process initiated by the Base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5 MAC Test Cases: Promotion						
3.5.1	Promotion process initiated by the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.2	Promotion process initiated by the service node DUT when receiving PNPDUs from another device.	Succesful promotion process	Succesful promotion process	PASS	Sample: M1	NT
3.5.3	Switching process: 2 levels of switching (DUT1 as a level 1 switch).	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.4	Tracking Switches under one node	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.5	Switching process: 2 levels of switching (DUT as a level 2 switch).	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.6	Switching process: Multicast switching	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.7	Switching functions: BPDU transmission	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.8	Switching functions: BPDU modulation change initiated by the Base Node	N.A.	N.A.	N.A.	N.A.	N.A.

3.5.9	Switching functions: BPDU modulation change initiated by the DUT	Correct BPDU modulation change	N.A.	N.A.	N.A.	N.A.
3.5.10	Promotion rejected by the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.11	Demotion process initiated by the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.12	Double Switching process initiated by the DUT.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.13	DS-enabling promotion rejection from the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.14	Full demotion process initiated by the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.15	Double Switching process initiated by the base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.5.16	DS-enabling promotion rejection by the DUT.	N.A.	N.A.	N.A.	N.A.	N.A.
3.6 MAC Test Cases: Connection						
3.6.1	Connection establishment initiated by the Base node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.6.2	Connection establishment initiated by the Service node.	Sucessful connection establishment	Sucessful connection establishment	PASS	Sample: M1	LT, VT to trigger 4_32 conn
3.6.3	Connection establishment rejected by the Base node.	N.A.	N.A.	N.A.	N.A.	N.A.

3.6.4	Connection closing initiated by the Base node.	Succesful connection closing	N.A.	N.A.	N.A.	N.A.
3.6.5	Connection closing initiated by the Service node.	N.A.	N.A.	N.A.	N.A.	N.A.
3.7 MAC Test Cases: ARQ						
3.7.1	Verify correct behaviour of the DUT in a setup where the Base Node does not support ARQ.	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.2	Verify correct behaviour of the DUT in a setup where the Base Node does support ARQ.	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.3	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.4	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	DUT resends PPDUs that it does not receive ACK for	N.A.	N.A.	N.A.	N.A.
3.7.5	Verify that the DUT is able to effectively respond against congestion situation.	N.A.	N.A.	N.A.	N.A.	N.A.

3.7.6	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.7	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as RX).	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.8	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	N.A.	N.A.	N.A.	N.A.	N.A.
3.7.9	Verify correct behaviour of the DUT during a transmission of PPDUs in a setup where the Base Node does support ARQ (DUT as TX).	N.A.	N.A.	N.A.	N.A.	N.A.
3.8 MAC Test Cases: Alive						
3.8.1	Keep-Alive process (response from DUT as Terminal).	N.A.	N.A.	N.A.	N.A.	N.A.
3.8.2	Keep-Alive process (response from DUT as Switch).	ALV control packets are transacted with its correct priority	ALV control packets are transacted with its correct priority	PASS	Sample: M1	LT
3.8.3	Keep-Alive process (timeout and disconnect).	N.A.	N.A.	N.A.	N.A.	N.A.

3.8.4	Keep-Alive process (timeout refresh of DUT as a Terminal)	N.A.	N.A.	N.A.	N.A.	N.A.
3.8.5	Keep-Alive process (timeout refresh of DUT as a Switch).	N.A.	N.A.	N.A.	N.A.	N.A.
3.8.6	Keep-Alive process (changes in Keep Alive timeout).	N.A.	N.A.	N.A.	N.A.	N.A.
3.8.7	Keep-Alive process (three levels hierarchy with the DUT as the first level Switch).	N.A.	N.A.	N.A.	N.A.	N.A.
3.8.8	Keep-Alive process (1.3.6 mechanism).	N.A.	N.A.	N.A.	N.A.	N.A.
3.9 MAC Test Cases: Management						
3.9.1	Forced modulation scheme	N.A.	N.A.	N.A.	N.A.	N.A.
3.9.2	Modulation scheme updated with packet header information	Modulation scheme of the first message from the DUT is the most robust one available	Modulation scheme of the first message from the DUT is the most robust one available	PASS	Sample: M1	VT, LT to confirm manually
3.9.3	Modulation scheme updated with ALIVE mechanism: lost ACK	N.A.	N.A.	N.A.	N.A.	N.A.
3.9.4	Modulation scheme updated with ALIVE mechanism: lost response	N.A.	N.A.	N.A.	N.A.	N.A.
3.10 MAC Test Cases: Backwards Compatibility						

3.10.1	Service node start-up (No PNPDUs are transmitted when DUT receives CBCN).	N.A.	N.A.	N.A.	N.A.
3.10.2	Backwards Compatibility Capability at registration	N.A.	N.A.	N.A.	N.A.
3.10.3	PNPDUs discarding	N.A.	N.A.	N.A.	N.A.
3.10.4	Demotion process initiated by the base node.	N.A.	N.A.	N.A.	N.A.
3.10.5	DUT connected through a 1.3.6 Switch node	N.A.	N.A.	N.A.	N.A.
3.10.6	Unregistering process initiated by the DUT when connected through a 1.3.6 Switch.	N.A.	N.A.	N.A.	N.A.
3.10.7	DUT as a Switch node for a 1.3.6 Terminal node	N.A.	N.A.	N.A.	N.A.
3.10.8	DUT as a level 2 switch with a 1.4 “parent” and 1.3.6 “son”	N.A.	N.A.	N.A.	N.A.
3.10.9	DUT as a level 2 switch with a 1.3.6 “parent” and 1.3.6 “son”	N.A.	N.A.	N.A.	N.A.
3.10.10	DUT as a level 2 switch with a 1.3.6 “parent” and 1.4 “son”	N.A.	N.A.	N.A.	N.A.
3.10.11	BC Keep-Alive process (response from DUT).	N.A.	N.A.	N.A.	N.A.
3.10.12	BC Keep-Alive process (timeout and disconnect).	N.A.	N.A.	N.A.	N.A.

3.10.13	BC Keep-Alive process (changes in Keep Alive timeout).	N.A.	N.A.	N.A.		N.A.
3.11 MAC Test Cases: Time Reference						
3.11.1	Verify correct behavior of the DUT in a setup where the Base Node does support time reference.	N.A.	N.A.	N.A.	N.A.	N.A.
3.11.2	Verify correct behavior of the DUT (as the Switch Node) between the Base Node and Auxiliary Device (as Service Node) do support time reference.	N.A.	N.A.	N.A.	N.A.	N.A.
3.11.3	Check each zero cross detection circuits available in the DUT.	N.A.	N.A.	N.A.	N.A.	N.A.
3.12 MAC Test Cases: Security						
3.12.1	Registration process with security profile 1	N.A.	N.A.	N.A.		N.A.
3.12.2	Registration process with security profile 2	N.A.	N.A.	N.A.		N.A.
3.12.3	Registration rejection with security profile 1	N.A.	N.A.	N.A.		N.A.
3.12.4	Registration rejection with security profile 2	N.A.	N.A.	N.A.		N.A.
3.12.5	Nonce usage	N.A.	N.A.	N.A.		N.A.
3.12.6	Keys updating with a correct KWK	N.A.	N.A.	N.A.		N.A.

3.12.7	Keys updating rejection when a wrong KWK is used	N.A.	N.A.	N.A.	N.A.
3.12.8	SWK usage	N.A.	N.A.	N.A.	N.A.
3.12.9	SWK modification handling	N.A.	N.A.	N.A.	N.A.

A.2.5. Converge Layer Test results for CHANEL 1

CONVERGENCE LAYER 1.4						
CODE	**DESCRIPTION**	**RESULT**	**EXPECTED**	**STAT.**	**COMMENTS**	**TOOLS**
4.2 CL Test Cases: Convergence sublayer procedures						
4.2.1	Correct establishment and disconnection of 4-32 link	Succesful 4-32 communication	Succesful 4-32 communication	PASS	Sample: M1	LT, VT to trigger 4_32 conn
4.2.2	Verify the correct implementation of the Segmentation at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the DUT.	N.A.	N.A.	N.A.	N.A.	N.A.
4.2.3	Verify the correct implementation of the Reassembly Mechanism at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the Base Node.	N.A.	N.A.	N.A.	N.A.	N.A.
4.2.4	Verify the correct implementation of the Reassembly Mechanism when incorrect CRC is received at the DUT side. Force the lenght of the data being transmitted to 16 bytes at the Base Node.	N.A.	N.A.	N.A.	N.A.	N.A.
4.3 CL Test Cases: Firmware Upgrade						
4.3.1	Firmware upgrade process (unicast).	Succesful unicast FW Upgrade	Succesful unicast FW Upgrade	PASS	Sample: M1	LT&VT to check manually

4.3.2	Firmware upgrade process (multicast).	N.A.	N.A.	N.A.	N.A.	N.A.
4.3.3	Firmware upgrade page retransmission	N.A.	N.A.	N.A.	N.A.	N.A.
4.3.4	Firmware upgrade process (unicast). EXCEPTION State. Bit error in the signature of the image	N.A.	N.A.	N.A.	N.A.	N.A.
4.3.5	Firmware upgrade process (unicast). EXCEPTION State. Bit error in the image	N.A.	N.A.	N.A.	N.A.	N.A.
4.4 CL Test Cases: DLMS traffic over 4-32 connection						
4.4.1	CS4-32 is able to pass valid DLMS payload between the meter and the test system.	DLMS parameter is correctly obtained	DLMS parameter is correctly obtained	PASS	Sample: M1	LT,VT
4.5 CL Test Cases: PRIME Management Plane Communication Profile						
4.5.1	Get PIB attribute query	Succesful reading of PIB attribute	Succesful reading of PIB attribute	PASS	Sample: M1	NT
4.5.2	Set PIB attribute query	Succesful setting of PIB attribute	Succesful setting of PIB attribute	PASS	Sample: M1	NT
4.5.3	Reboot device	Succesful rebooting of device	Succesful rebooting of device	PASS	Sample: M1	NT

ANNEX II. PRIME 1.4 CERTIFICATION OF PLC MODEM

tecnalia Inspiring Business
PRIME ALLIANCE

Test Report Summary
No B41-18-BI-I1 summary

PRIME Certification Tests Cases for Service Nodes

EQUIPMENT UNDER TEST	Smart meter and powerline communication system-on-chip (Chip reference design for Service Node)
MODEL	EVALKITST8500-1
FIRMWARE VERSION	2755c
CERTIFICATION SCOPE[1]	Profile: Chip Reference design. PRIME 1.4 CH1, CH3, CH8 • PRIME 1.4 PHY • PRIME 1.4 MAC layer ✓ Without security profiles nor backward compatibility. • PRIME 1.4 Convergence layer
MANUFACTURER	STMicroelectronics S.r.l.
APPLICANT	STMicroelectronics S.r.l.
DATE OF RECEPTION	19th July 2018
PRIME SPECIFICATION VERSION	PRIME-Specs V1.4
TEST CASE VERSION	PRIME Certification Tests Cases for Service Nodes version 2.9
DATE OF EXECUTION	8th October 2018 to 26th October 2018
DATE OF ISSUE OF REPORT	Brussels, 31st October 2018

LAB SERVICES tecnalia LAB SERVICES

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* This test report summary is granted on account of tests made at location of TECNALIA: Parque Tecnológico de Bizkaia. c/ Geldo. Edificio 700 E-48160 Derio – Bizkaia- Spain.
* The results of the present report apply only to the samples tested and the moment and conditions under which the measurements were performed.
* The complete results, including remarks and limitations, are laid down in our complete test report no. B41-18-BE-I1 which can be obtained at TECNALIA. The certificate and the test report are indivisible.
* The test report summary is issued by PRIME Alliance. It shall not be reproduced, in total or in part and in whatever way, without written permission of TECNALIA.

[1] IMPORTANT: Remarks apply to the implementation of this function. See complete test report (ANNEX I) for full details

TEST REPORT No B41-18-BI-I1 PAGE 1 / 1