

PNO Test Report

No PB 144-1

Slave on PROFIBUS DP

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Responsible Party John Swindall	Signature 	Date August 12, 2009
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Model_Name:	ProLinX Communication Gateway
Vendor_Name:	ProSoft Technology
Revision:	2.45
Software/Firmware Release:	2.47
Hardware Release:	4500 – PDP Rev. 1.3
Application:	Gateway
Ident Number:	0x05A5
GSD-File:	PRLX05A5.GSD File Version: Rel 1.0
EDD-File:	-----.DDL File Version: <version number or date>
Minimum Slave Interval	0,1 ms

Solution applied:	<input type="checkbox"/> Processor	<input checked="" type="checkbox"/> ASIC with processor	<input type="checkbox"/> Single Chip
Designation:	SPC3		

Summary:	<input checked="" type="checkbox"/> suggested to be certified	<input type="checkbox"/> restrictions	<input type="checkbox"/> suggested <u>not</u> to be certified
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Scope of test performed:

<input checked="" type="checkbox"/> DP-V0	MS0, Sync, Freeze, Auto_Baud
<input type="checkbox"/> DP-V1	
<input type="checkbox"/> DP-V2	
<input type="checkbox"/> Profiles	

Note: The test of the device is made according to following relevant documents:

- Test Specification for PROFIBUS DP Slaves, Version 3.0, November 2005

Hints and restrictions see chapter 9!

Test report

According to the specified test areas:

1. Physical Layer Test

- Device has a RS485 interface
- Device has no RS485 interface
- Device has a MBP (synchronous, 31,25kbit/s) interface
- Device has no MBP (synchronous, 31,25kbit/s) interface

1.1- Physical Layer according to RS485

Bus Termination

- electrical data comply with the demands
- bus termination external
- electrical data do **not** comply with the demands
- further remarks:

PROFIBUS Connection

- standard 9 pin D-SUB
- standard M12 connector
- non-standard, but includes all mandatory signals and sufficient description of the implementation:
- non-standard and

RS 485

- requirements fulfilled
- requirements **not** fulfilled sufficiently

Component Use

- electrical data comply with the demands
- electrical data do **not** comply with the demands

Signal Reflection for beyond 1,5 MBit/s

- not applicable
- requirements fulfilled
- requirements **not** fulfilled sufficiently

1.2- Physical Layer according to MBP**Polarity**

- device supports automatic polarity detection
- polarity is marked clearly at the device / in the manual
- further remarks:

Operating Voltage

- device can be operated at bus voltage of 13V
- device can be operated at bus voltage of 24V
- further remarks:

Static Current Consumption

- static current consumption is according to manufacturer's declaration
- further remarks:

Inrush Current for Bus Powered Devices

- manufacturer's declaration regarding inrush current has been submitted
- inrush current is within allowed range
- further remarks:

Input Impedance

- manufacturer's declaration regarding input impedance has been submitted
- input impedance at frequencies of 7,8 kHz to 39 kHz is within allowed range
- further remarks:

Asymmetry Attenuation

- manufacturer's declaration regarding asymmetry attenuation has been submitted
- asymmetry attenuation at frequencies of 40 kHz to 1200 kHz is within allowed range
- further remarks:

Bit Rate

- bit rate is within allowed range
- further remarks:

Bit Time

- bit time is within allowed range
- further remarks:

Rise and Fall Time

- rise time is within allowed range
- fall time is within allowed range
- further remarks:

Transmitter Bit Cell Jitter

- transmitter bit cell jitter is within allowed range
- further remarks:

Signal Amplitude and Symmetry

- signal amplitude at 13V is within allowed range
- signal amplitude at 24V is within allowed range
- further remarks:

Overshoot

- overshoot is within allowed range
- further remarks:

Frame Structure (Transmitter)

- start delimiter is coded correctly
- end delimiter is coded correctly
- preamble is coded correctly. Length of preamble is: 16 Bit.
- further remarks:

Receiver Sensitivity and Noise Rejection

- receiver sensitivity is met at 13V
- receiver sensitivity is met at 24V
- noise rejection is met at 13V
- noise rejection is met at 24V
- further remarks:

Receiver Bit Cell Jitter

- telegram with maximum allowed bit cell jitter is detected by the receiver
- further remarks:

Frame Structure (Receiver)

- preamble length in the range of 12 to 64 Bit is accepted by the receiver
- further remarks:

2. Bus Transmission**DP Watchdog**

- expires within allowed tolerance
 expires out of tolerance in the range of:

TSDR

- requirements fulfilled
 recorded timing behaviour does **not** conform with PROFIBUS DP:

Addressing the Test Item under PROFIBUS

- test item can be addressed in the entire available range
 limited addressability:

Device Identifier (Ident Number)

- as issued
 not as issued:

Transmission Rate

- test item can be operated with the following PROFIBUS DP transmission rates:

kBit/s	9,6	19,2	31,25	45,45	93,75	187,5	500	1500	3000	6000	12000
supported	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- restricted operability:

Mixed Network

- no errors in operation detected
 errors in operation when:

Mixed Operation (test item can be operated as DP/FMS slave)

- test item is **not** designed for the mixed operation
 test item is designed for the mixed operation and no errors in operation detected
 test item could **not** be further operated on DP when FMS op. was disturbed or interrupted
 test item could **not** be further operated on FMS when DP op. was disturbed or interrupted
 other errors in operation when:

Consistency

- consistency **not** adjustable on test item
 consistency is supported correctly (*is guaranteed by the buffer system of the ASIC*)
 errors in operation when:

3. Function Testing

Bus Interruption

- correct behaviour
 special behaviour when:
 acceptable
 not acceptable in this form

Supply Voltage

- correct behaviour
 special behaviour when:
 acceptable
 not acceptable in this form

Power off/on at Master

- correct behaviour
 special behaviour when:
 acceptable
 not acceptable in this form

With and without Control Interval Monitoring

- correct behaviour
 special behaviour when:
 acceptable
 not acceptable in this form

Master Class 2

- correct behaviour
 special behaviour when:
 acceptable
 not acceptable in this form

State Transitions

- nothing unusual in operation could be detected
 special behaviour:
 acceptable
 not acceptable in this form

Optional Services

- optional services SYNC and FREEZE are **not** supported
- SYNC is supported and correctly carried out
- FREEZE is supported and correctly carried out
- Fail safe is **not** supported
- Fail safe is supported and correctly carried out
- Set_Slave_Address is **not** supported
- Set_Slave_Address is supported and correctly carried out
- errors in operation when:

Diagnostic

- mandatory diagnostic is carried out correctly
- ext_diag is **not** used
- ext_diag complies with the standard
- special behaviour when:

Acyclic DP-V1 Services

- DP-V1 services are **not** supported
- all following Class1 (MS1) functions are supported and are carried out correctly:
Read, Write, Alarms
- all following Class2 (MS2) functions are supported and are carried out correctly:
Read, Write, Data_Transport
- errors in operation:

Optional DP-V1 Features

- optional feature Prm_Block_Structure is **not** supported
- optional feature Prm_Block_Structure is supported and correctly carried out
- optional feature Ext_Prm_SAP is **not** supported
- optional feature Ext_Prm_SAP is supported and correctly carried out
- errors in operation:

4. I&M Functions

- I&M functions **not** supported
(in that case the following items of this chapter 4 are not applicable)

GSD File Test: Keyword Ident_Maintenance_supp

- supported and correctly defined
- GSD incorrect:

- I&M functions supported **according PA-Profile Specification**
(in that case the following items of this chapter 4 are not applicable;
see chapter I&M functions in the Attachment for PROFIBUS PA profile)

Implemented functional range

record	in Slot 0 (device) implemented & tested	in optional modules implemented & tested
I&M0	<input type="checkbox"/> (mandatory)	<input type="checkbox"/>
I&M1	<input type="checkbox"/> (optional)	<input type="checkbox"/>
I&M2	<input type="checkbox"/> (optional)	<input type="checkbox"/>
I&M3	<input type="checkbox"/> (optional)	<input type="checkbox"/>
I&M4	<input type="checkbox"/> (optional)	<input type="checkbox"/>

I&M Call Service

- Correct
- Incorrect:.....

I&M Addressing

- Correct
- Incorrect:.....

I&M Access Rights & Storage

- Correct
- Incorrect:.....

5. GSD File Test

- GSD syntactically correct
- GSD syntactically **not** correct
- Device properties are according to GSD
- Device properties are **not** according to GSD:

6. Interoperability

Load Test

- load test complies with specifications
 special behaviour when:

Functional Test

- no restrictions could be determined
 restrictions when:

7. EMC and Electrical Safety

- Correct **test report** according to CE standard available

Alternatively:

- Manufacturer's declaration** according CE standard available

Alternatively:

- Correct **test report** according to IEC 61000-6-2 and IEC 61000-6-3 or EN 61000-6-2 and EN 61000-6-3 standard available

or

- Manufacturer's declaration** according to IEC 61000-6-2 and IEC 61000-6-3 or EN 61000-6-2 and EN 61000-6-3 standard available

and

- Correct test report according to IEC 61010 or EN 61010 or EIC 61131-2 standard available

or

- Manufacturer's declaration** according to IEC 61010 or EN 61010 or EIC 61131-2 standard available

- No correct EMC and Electrical Safety test reports or declarations available

8. PROFILES

- no profiles tested

PROFIsafe

- this PROFIBUS DP Slave has been successfully tested in combination with the PROFIsafe profile

PROFIdrive

- this PROFIBUS DP Slave has been successfully tested in combination with the PROFIdrive profile

9. Supplementary Hints and other Restrictions

Here, descriptions of the following functions are reported:

- any errors or special behaviour with reference to the respective test area
- other test product peculiarities
- remarks concerning manufacturer explanations
- remarks concerning documentation comprehension

Hints:

Restrictions:

10. Attachments

The only enclosures are the measurement reports or recordings which are to inform the customer or PROFIBUS User Organization about abnormal behaviour.

All recordings are stored in the test laboratory in two separate places accessible only by test laboratory personnel. The customer and PROFIBUS User Organization can receive all recordings on demand.

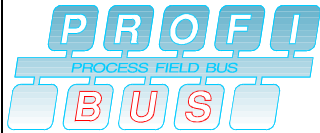
Here also the actual list of test apparatus and equipment used is added.

This documentation guarantees the test's reproducibility for 3 years.

Additionally forms, depending on the marked "Scope of test performed" at the cover sheet, are listed in this section, e.g. profile test specific results.

Attachments:

- Test equipment used for PROFIBUS DP (mandatory)**
- for IsoM**
- for DXB**
- for PROFIBUS PA profile**
- for EDD**
- Additional attachments:**

**Attachment No 1 to PNO Test Report****Test Equipment**

Tektronix Two Channel Digitizing Oscilloscope

PROFIBUS –Devices

Version master class 1 : PROFIScript

Hardware state : Version 1

Software state : Version 2

PROFIBUS Monitor : PROCENTEC ProfiTrace Version 2.3

Version master class 1 : IM 308C - 6ES5 308-3UC11

Hardware state : Version 3

Firmware state :

Version master class 1 : IM 308C - 6ES5 308-3UC11

Hardware state : Version 3

Firmware state :

Version master class 1 : S7414-2

Hardware state :

Firmware state : Version 3.3

Version master class 2 : ComProfibus

Hardware state : CP5611

Firmware state : Version 3.

List of used slaves :

PROFIBUS DP Slaves			
Model Name Slave	DP/PA-Link (IM157)	Model Name Slave	H0-PSCM
Manufacturer	Siemens	Manufacturer	Automation Direct
Hardware Version	1	Hardware Version	1
Address	7	Address	9
Model Name Slave	ET 200B 8DI/8RO-AC	Model Name Slave	ET 200B 8DI/8DO
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 133-0HH00-0XB0	Hardware Version	6ES7 133-0BH00-0XB0
Address	10	Address	13
Model Name Slave	ET 200B 16DO	Model Name Slave	ET 200B 32DI .2A
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 132-0BH01-0XB0	Hardware Version	6ES7 131-0BL10-0XB0
Address	14	Address	15
Model Name Slave	ET 200B 24DI/8DO	Model Name Slave	ET 200M
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 133-0BN01-0XB0	Hardware Version	6ES7 153-1AA00-0XB0
Address	16	Address	18
Model Name Slave	ET 200M	Model Name Slave	S7-215-2 DP
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 153-1AA00-0XB0	Hardware Version	6ES7 215-2.D00-0XB0
Address	19	Address	20
Model Name Slave	ET200X 4DO-2 DP	Model Name Slave	ET200X 8DI-2 DP
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 142-1BD11-0XB0	Hardware Version	6ES7 141-1BF01-0XB0
Address	21	Address	22

Model Name Slave	ET200X 8DI DP	Model Name Slave	ET200X 8DI DP
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 142-1BF00-0XB0	Hardware Version	6ES7 142-1BF00-0XB0
Address	23	Address	24
Model Name Slave	PBIU	Model Name Slave	ET 200C 8DI
Manufacturer	GE-Fanuc	Manufacturer	Siemens
Address	35	Hardware Version	6ES7 141-0BF00-0XB0
Model Name Slave	PBIU	Address	36
Model Name Slave	ET 200C 16DI/16DO	Model Name Slave	DP-ASI Link
Manufacturer	Siemens	Manufacturer	Siemens
Hardware Version	6ES7 143-0BL00-0XB0	Hardware Version	6ES7 156-0AA00-0XA0
Address	37	Address	38
Model Name Slave	H2-PBC	Model Name Slave	T1H-PBC
Manufacturer	Automation Direct	Manufacturer	Automation Direct
Hardware Version	1	Hardware Version	
Address	63	Address	64
Model Name Slave	VersaMax NSM	Model Name Slave	VersaMax NIU
Manufacturer	GE-Fanuc	Manufacturer	GE-Fanuc
Hardware Version	1.0	Hardware Version	1.0
Address	65	Address	66
Model Name Slave	Mark 2002	Model Name Slave	CM31/32
Manufacturer	MicroSmith / NUMATICS	Manufacturer	Escort Memory System (Data Logic)
Hardware Version	1.0	Hardware Version	1.0
Address	67	Address	68

Model Name Slave	AB-DT-PDP (HMS)	Model Name Slave	Versamax NIU
Manufacturer	Miltronics	Manufacturer	GE-Fanuc
Hardware Version		Hardware Version	2
Address	69	Address	71
Model Name Slave	ET 200B 16DO	Model Name Slave	RMC
Manufacturer	Siemens	Manufacturer	Delta
Hardware Version	6ES7 131-1BH00-0XB0	Hardware Version	1
Address	88	Address	99
Model Name Slave	H0-PSCM	Model Name Slave	981PB-2012
Manufacturer	Automation Direct	Manufacturer	Acromag
Hardware Version		Hardware Version	
Address	100	Address	101
PROFIBUS PA Slaves			
Model Name Slave	Deltabar S evolution	Model Name Slave	PA-110 ASCO
Manufacturer	Endress & Hauser	Manufacturer	ASCO
Hardware Version		Hardware Version	
Address	4	Address	10