



PROFIBUS Tester 5

New Features in PDS 3.20 and Firmware 1.02.00.00

Industrial

Sales Information
31.07.2016
Hans Endl

New Features

Release 3.20 of the PROFIBUS Diagnostics Suite and the included Firmware 1.02.00.00 for the PROFIBUS Tester 5 provide new unique features that make stand-alone operation even more powerful:

- **„Mission Planning“**
Edit test location designations on your PC and download them to the tester
- **„Locate Stations“**
Use a patented method for detecting the sequence of stations and the distances between stations in stand-alone mode without interfering with the running PROFIBUS network
- **„Handheld Oscilloscope“**
Use the tester as handheld oscilloscope to get a quick and comprehensive view on signal quality

Furthermore, PDS is now supporting Spanish and Portuguese (Brazil).

„Mission Planning“

Use Case: Enter designations for test locations conveniently at the PC prior to stand-alone operation

Entering names for networks, segments and test locations using the rotary knob at the tester is very inconvenient.

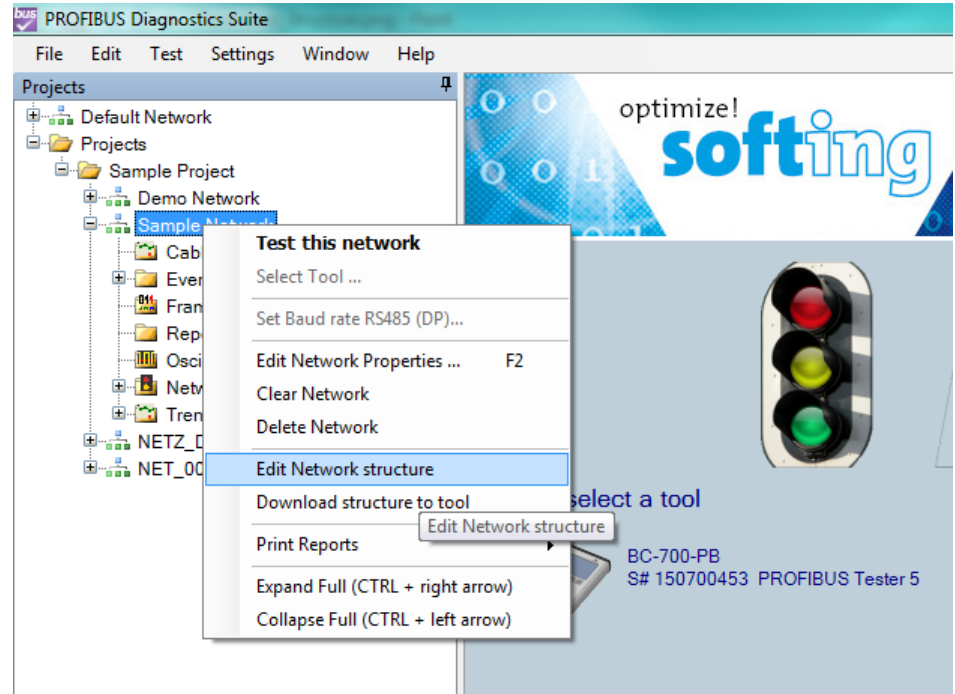
Designations for test locations can be defined in the PROFIBUS Diagnostics Suite, assigned to segments and then downloaded to the tester. Also test locations from former tests at the same network may be used if the project is available.

Whenever a test location has to be selected in stand-alone mode, it may be chosen from the predefined set of test locations assigned to the network.

Preparing for downloading test locations

Create a new project and network or select an existing network.

Select „Edit Network Structure“ to define or modify test locations .



Creating test location designations

Enter test locations and assign them to segments

Segment names may be created or chosen from the existing set of segments.

Edit Test Locations

Network

Name: Sample Network Project Name: Sample Project

Test Locations

☒ Auto sort by Address

#	Test location	Segment	Addr.	Q.I.	S/N	Trend
1	TestLoc_A1	Segment_A	1	X	X	-
2	TestLoc_A2	Segment_A		-	-	-
3	TestLoc_B1	Segment_B		-	-	-
4	TestLoc_B2	Segment_B		-	-	-
5				-	-	-

OK Cancel

Downloading test location designations

Connect the tool via USB and download the network, segment and test location designations.

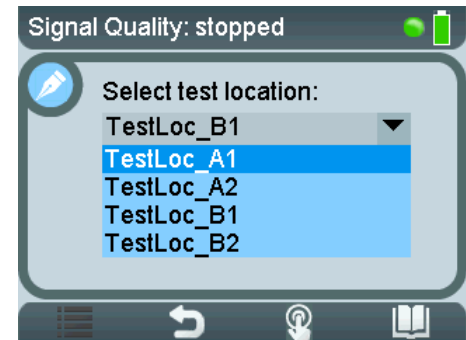
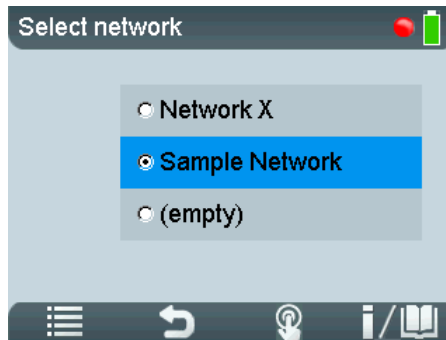
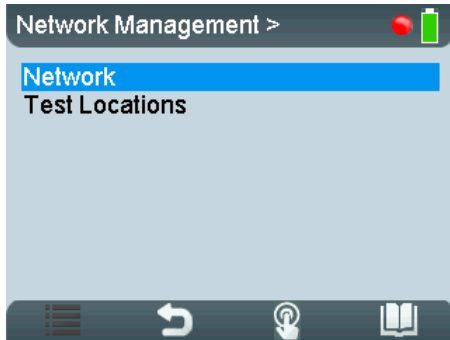
Information about up to three networks may be downloaded.

If there is already information of three networks on the tool, you are asked whether to delete the existing information on the tool.



Selecting a test location in stand-alone mode (1)

Start the tester in stand-alone mode and then select the name of the network you want to measure.

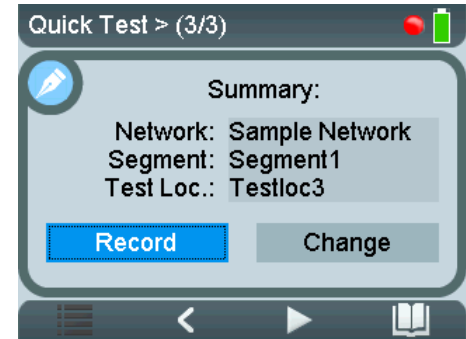
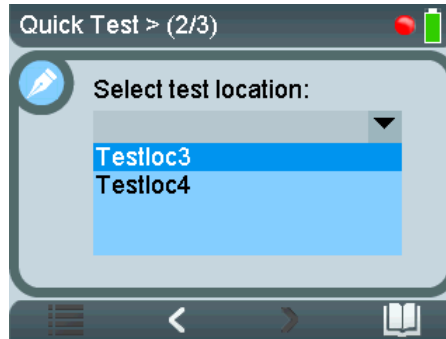
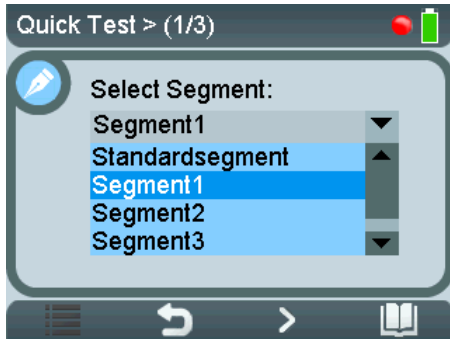


When starting a Signal Quality measurement, the currently used test location is displayed for a few seconds. By means of the menu key you may choose a different one from the downloaded list of test locations.

Selecting a test location in stand-alone mode (2)

When starting a Quick Test or Trend measurement, you are first asked to select the segment and in the next step you may choose a test location associated with that segment.

Of course you can also create new test location designations if necessary.



Locate Stations

Use Case: Determine sequence of stations and distances between stations in stand-alone mode

The signal quality bars provide valuable informations about possible defect causes if they are sorted in geographical order. Furthermore it is often helpful to know the cable distances between stations.

A new patented feature detects the sequence of stations and the distances between neighbor stations in stand-alone mode on a running network without disturbing plant operation (cable test and topology scan are active functions which cannot be applied on a running network).

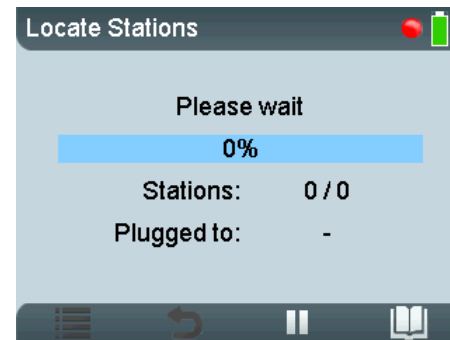
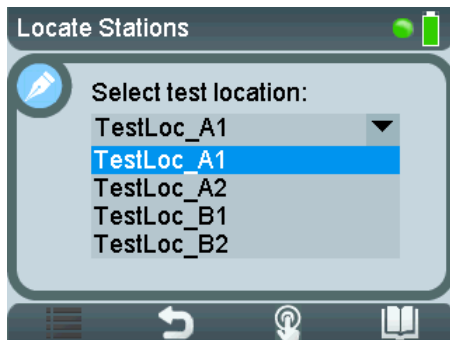
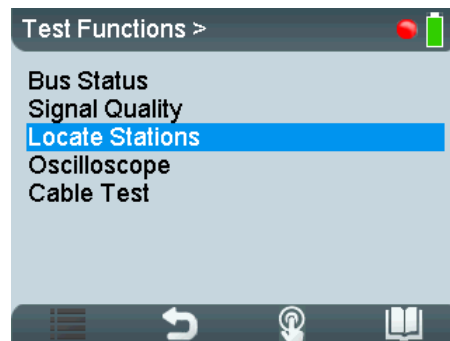
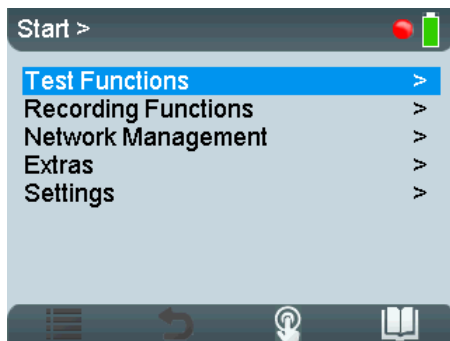
You just have to apply the „Locate Stations“ function at both ends of the bus line when the bus is in operation.

Perform a first measurement at one end

Select „Test Functions“
and „Locate Stations“.

Current test location is displayed
for a second, choose a test
location at one end of the bus

Start measurement

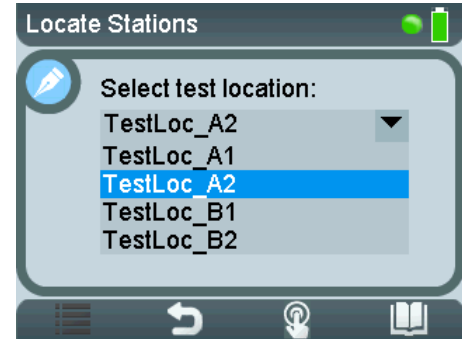
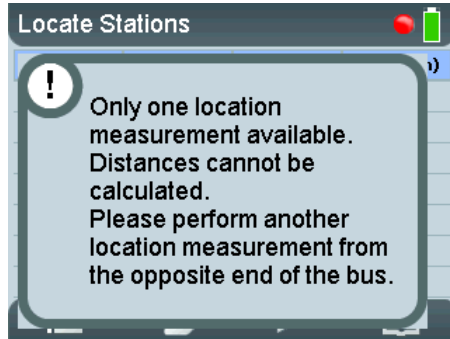


Perform a second measurement to get results

A second measurement from a different test location is required.

Start a second measurement at the opposite end of the bus line.

Based on the two measurements, the sequence of stations, the distances between adjacent stations and the total cable length to the location of each station are shown.



The screenshot shows the 'Locate Stations' app interface with a green status bar. It displays a table with the following data:

Master	Slave	Dist. (m)	Length (m)
M1	M1	0.0	0.0
M1	S56	3.1	3.1
M1	S55	1.4	4.5
M1	S52	1.1	5.6
M1	S51	1.3	6.9
M1	S45	3.6	10.5
M1	S46	0.0	10.5

The bottom navigation bar includes icons for a menu, back, forward, and book.

„Handheld Oscilloscope“

Use Case: Trouble Shooting, quick analysis of signal quality

The signal waveform provides valuable information for the experienced technician, like signal voltage, noise, capacitive load, bus termination.

The oscilloscope view in the display of the BC-700-PB provides a convenient way to check the signal quality at different test locations in a PROFIBUS network.

It is intended to be used as „live view“ on the health of the network. Recordings of the signal waveform are done by means of the oscilloscope view in the PROFIBUS Diagnostics Suite.

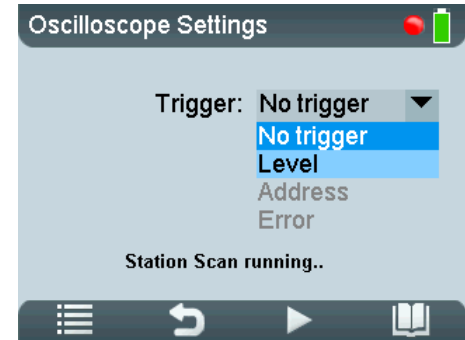
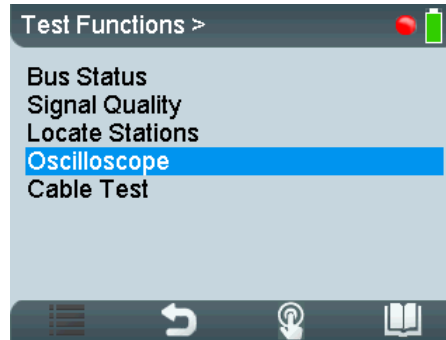
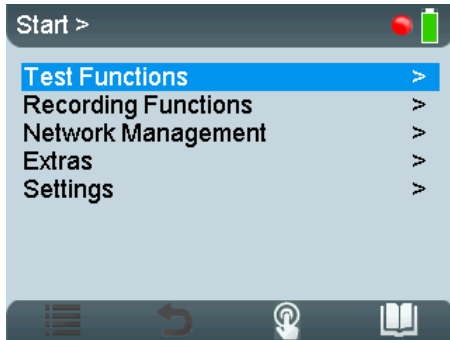
Features of the „handheld“ oscilloscope

A „handheld oscilloscope“ is now included in the PROFIBUS Tester 5:

- Quick analysis of signal waveform without need of USB connection to computer
- PROFIBUS signal A-B waveform shown on tester display
- Up to 384 MHz scan rate and 8192 scan points per scan like in PDS oscilloscope function
- Four trigger modes: free running (no trigger) , voltage level, station address, frame error
- Zoom and shift function for detailed view
- No export to PDS, use oscilloscope view in PDS instead

Starting the oscilloscope

Select oscilloscope view via „Test Functions“ and „Oscilloscope“



Choose the desired trigger function:

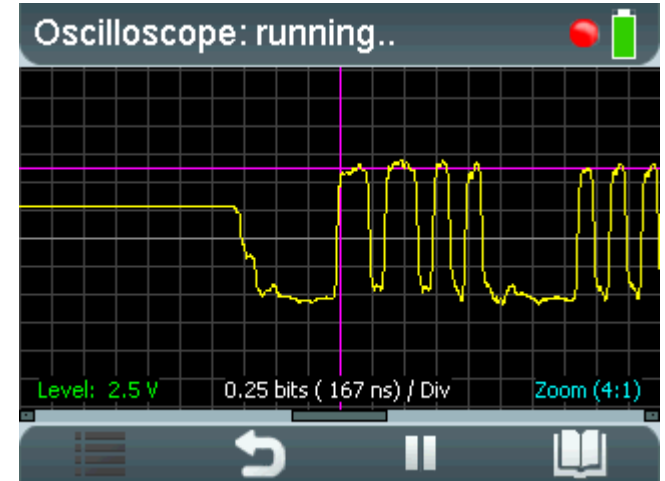
„no trigger“ and „level“ may be selected at any time, trigger on address requires a successful station scan

Using the oscilloscope

Start the oscilloscope view with the ▶ key.

Switch between „zoom“ and „shift“ mode by pressing the rotary knob.

Zoom in/out or shift the visible range by turning the rotary knob.

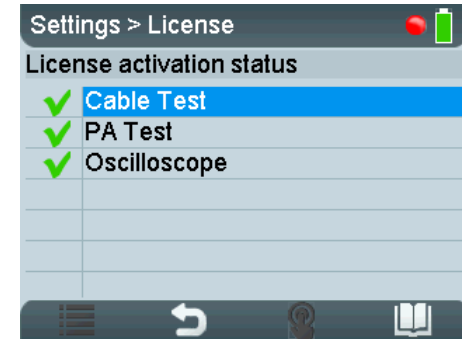
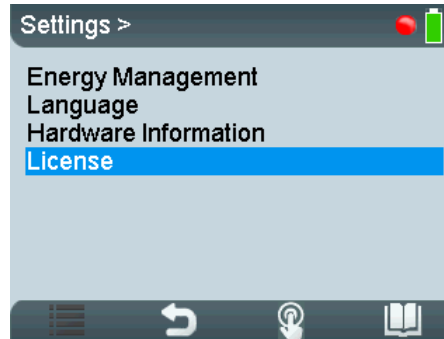
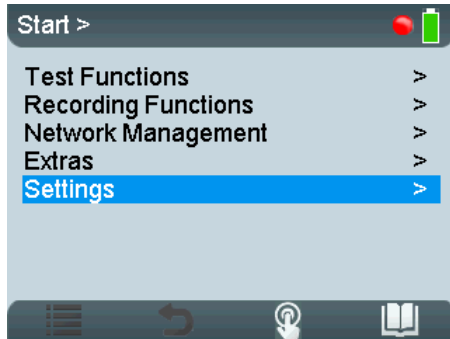


License for „handheld oscilloscope“

- The oscilloscope function is considered to be an expert feature, therefore it is provided as upgrade with a separate license.
- The license is bound to the serial number of the PROFIBUS tester, therefore the serial number has to be provided with the order.
- If there is already a license for the PA option on the tool, the key for the PA option shall be provided as well in order to include that feature in the new key as well. See next slides for retrieving the currently used license key.
- The oscilloscope option can be used on all existing BC-700-PB with firmware release 1.02.00.00 or higher.
- The oscilloscope function in the PDS does not require any license and is completely independent from the „handheld oscilloscope“ in the stand-alone mode.

License Information on the Tester

Select „Settings“ and „License“ to check the installed licenses.



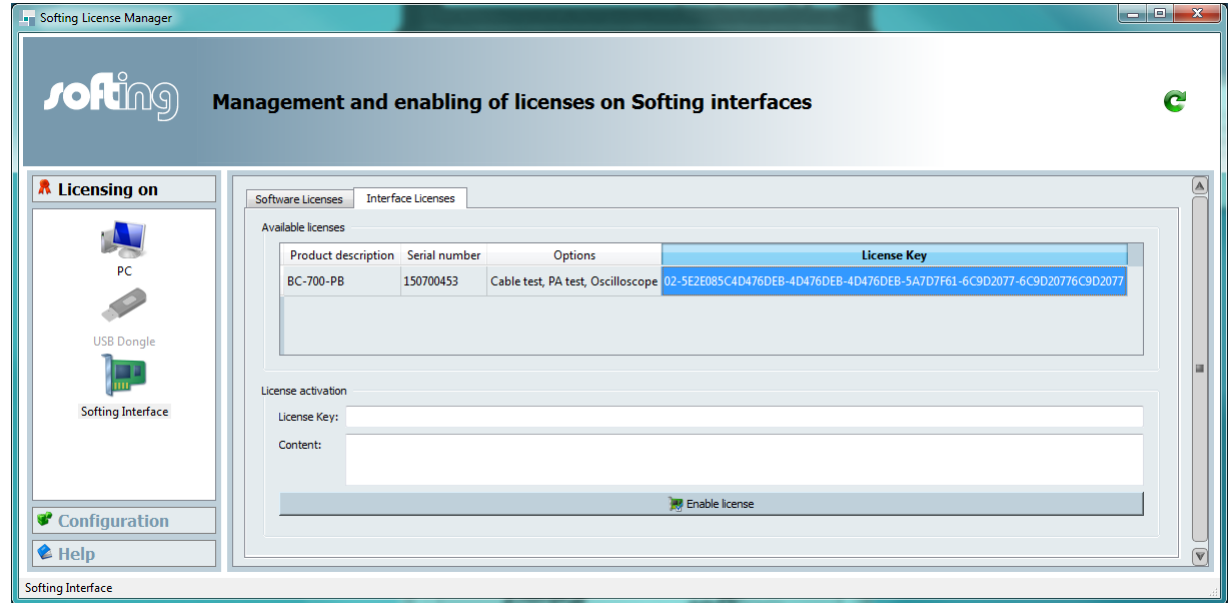
If there is already a license key for PA Test on your Tester, please provide the currently used key when ordering the Oscilloscope option. See next slide on how to retrieve the license key.

How to retrieve the currently used license key

Using the Softing License Manager you can retrieve the license key.

Connect the tester via USB, start the License Manager, select „Softing Interface“ and switch to the „Interface License“ tab. The serial number and the license key of the connected tester are displayed.

Right-click on the license key for copying it to the clipboard.



Ordering Information

The following sets and options are available for the PROIBUS Tester 5:

Product	Part no.
PROFIBUS Tester 5	DDA-NN-006014
Set PROFIBUS Tester 5 + Oscilloscope Option	DDL-NN-006012
Oscilloscope Option as Upgrade	LRA-NN-006011
PA Option (HW adapter + license)	DDL-NL-006010