COMSOFT

is making the link

NetTEST II

PROFIBUS Analysis Tool

Professional Test Tool

for PROFIBUS-DP-Networks

FT Automação Industrial

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NetTEST II – available in 3 versions

- NetTEST II Basis System for performing physical measurements
- NetTEST II with DP-Mono-Master function for DP-Slave configuration
- NetTEST II with Online-Function for the use with operational Profibus networks

NetTEST II – thoroughly checks your PROFIBUS DP-Network

Costs

Standstill of

Delays

Interruption

Stop of delay

- 95% of all problems in PROFIBUS DP-Networks are caused by incorrect installations. Installation errors increase interference susceptibility enormously, whether it is a missing terminator or a broken shield. This results in sporadic non-reproducible errors, which can be caused for example by an increased EMC-load. Trouble shooting can cost days or even weeks.
- NetTEST II checks your PROFIBUS DP-Networks in detail and detects most typical installation problems.
- Find out for yourself that NetTEST II proves to be a powerful tool for eliminating PROFIBUS problems.

NetTEST II – a flexible system for mobile operation

- Graphical 128 x 64 Pixels LCD-Display with background illumination
- 6 x 4 - Keyboard
- Power supply via a rechargeable battery pack
- Battery capacity for approximately 4 hours of operation
- 9-pole SUB-D – gender changer for connection to PC and PROFIBUS
- Complete transport case with international battery charging set incl. power supply, additional battery, power supply adapter, Profibus-Configurator and various adapter cables for PC and PROFIBUS

NetTEST II – performs detailed measurements on physical level of the PROFIBUS line

Determines the

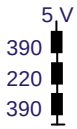
Impedance

as well as the

Cable Length

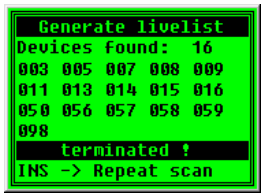
of the connected PROFIBUS line

NetTEST II – discovers most of the typical installation problems

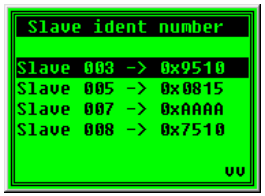
- Disruption  of strand A, strand B and shield
  (with distance measured in m)
- Switched  pairs of strands
- Short circuits  (with distance measured in m)
- Branches  (with distance measured in m)
- Inhomogeneous line segments  (with distance measured in m)
- Correct terminating resistor 

(number and value)
- Non-powered terminating resistors 

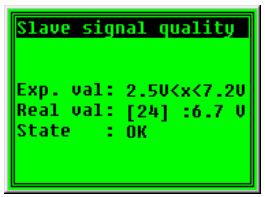
NetTEST II – contains helpful analysis functions for superior error detection



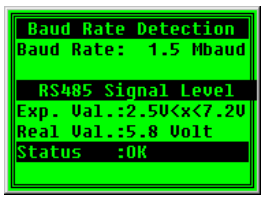
- Display of Live List of DP-Slaves



- Display of Ident-Numbers of DP-Slaves



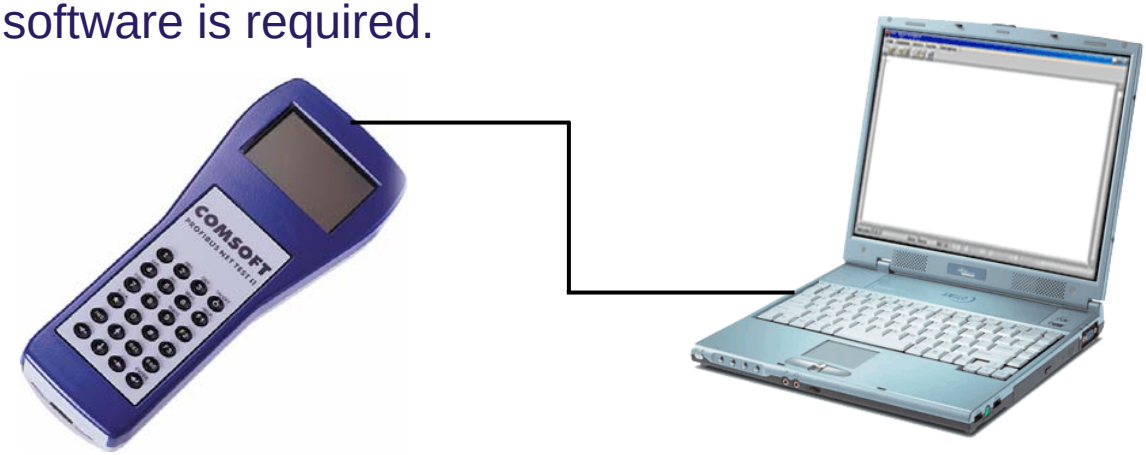
- Signal Quality of DP-Slaves



- Baud Rate Detection und Signal Quality at Running Systems

NetTEST II – logs & archives your measurements

- Generation, display and storage of up to 20 test reports
- Management and archiving of the test reports via connected PC or notebook
- Communication from PC to NetTEST II via COM-interface und standard-terminal-software (e.g.Hyperterminal). No special software is required.



NetTEST II Measurement report

```
**************************************************
Resulting protocol for PROFIBUS Network
**************************************************
SW V2.20  05.11.01/21
Test company
Name : COMSOFT GmbH
Str. : Wachhaustr. 5a
City : 76227 Karlsruhe
Phone: 0721/9497-0
Mail : http/www.comsoft.de
User name : Kurpat
**************************************************
Customer
Name : COMSOFT GmbH
Str. : Wachhausstr. 5a
City : 76227 Karlsruhe
Phone: 0721/9497-0
Mail : info@comsoft.de
**************************************************
Unit : Area 1
Name: Segment 1
Own profibus address: 001
Number of 12Mbit/s-conns in seg.   : 000
Number of profibus-devices in seg. : 002
Baud rate: 1.5  Mbaud
Slot time: 001000
Date: 15/11/01
Time: 17:03:57
**************************************************
Analysation result for Test with no term.
Analyzation result : No fault!
****************************************
Irregularity A<->B  not detectable
Irregularity B<->Shield not detectable
Irregularity A<->Shield not detectable
capacitive load junction or
Impedance changes not detectable
Broken line not detectable
Cabling ok
Impedance app 133 ohms
Cable length   26m

************************************************************
Analysation result for Test with 1 term.
Analyzation result : No fault!
****************************************
Irregularity B<->Shield not detectable
Irregularity A<->Shield not detectable
Correct termination
Number of retries: 3

************************************************************
Analysation result for Test with 2 term.
Analyzation result : No fault!
****************************************
Irregularity B<->Shield not detectable
Irregularity A<->Shield not detectable
Correct termination
Number of retries: 1

************************************************************

Detected slaves in segment

 PB addr.: Level: Status:      Ident.:   [Name:]
-------------------------------------------------

   042    8.0V   Reflections   0x7510
   055    8.0V   Reflections   0x9510 -> XPS9510

Expected value for level measure  : 2.5v<x<7.2v

******
```

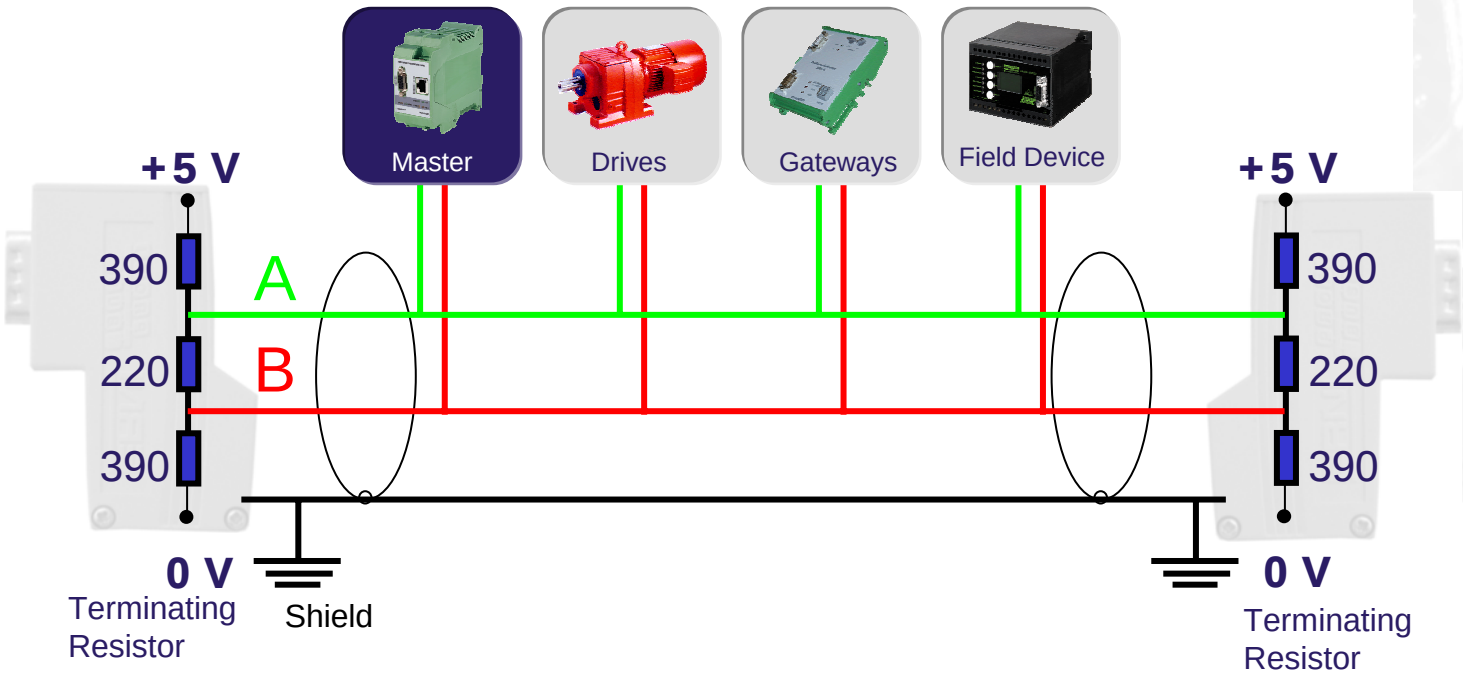
Analysis of the tested PROFIBUS segment at one glance. All requirements of modern quality systems are met:

- Evidence of Functionality
- Archiving
- Traceability
- Reproducibility

Performing the measurement

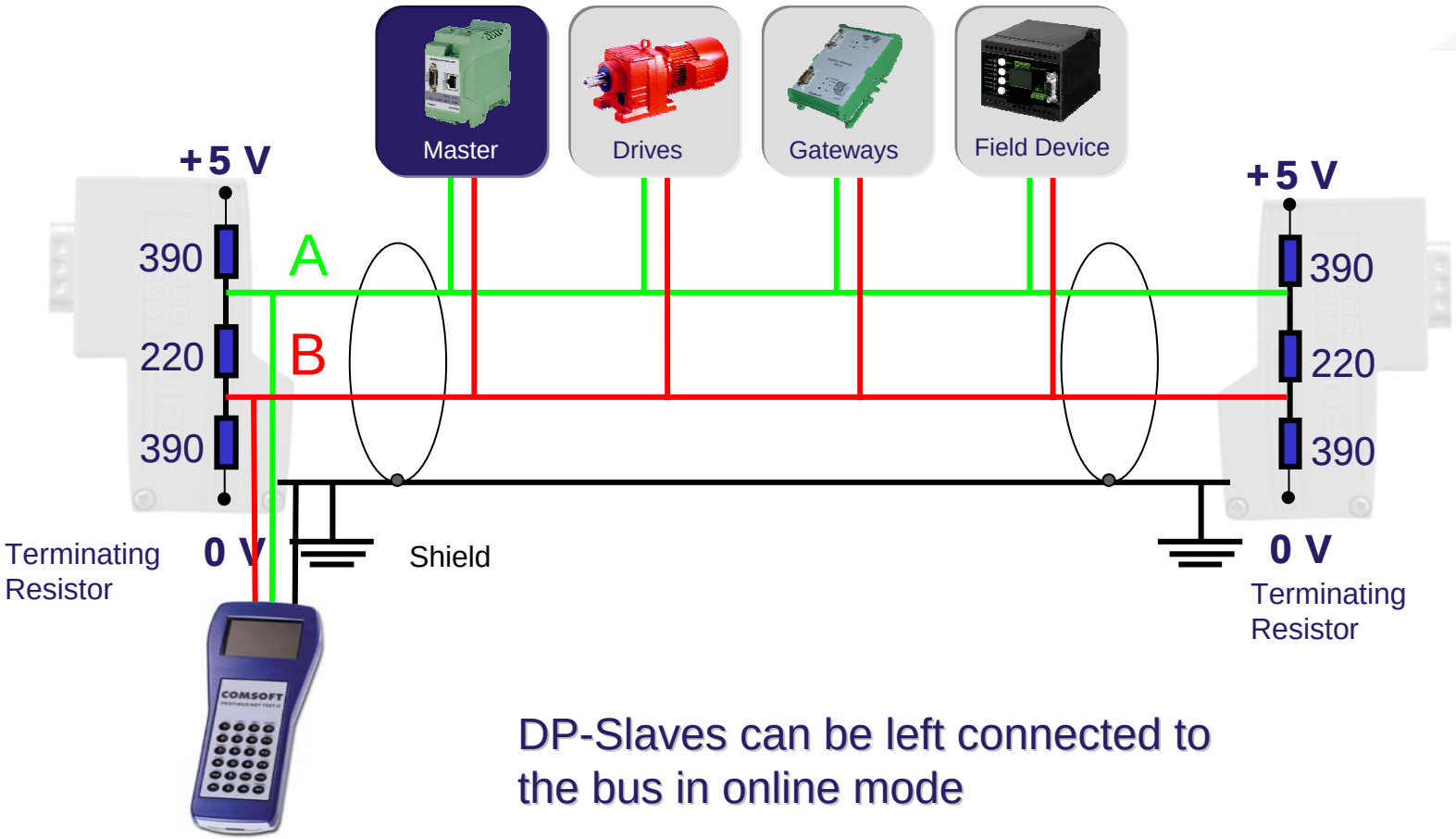
A typical Profibus-DP-RS485 segment consists of:

* Strand A
* Strand B
* Shield
* Terminating resistor 1
* Terminating resistor 2
* DP-Master and DP-Slaves



Connection with the PROFIBUS

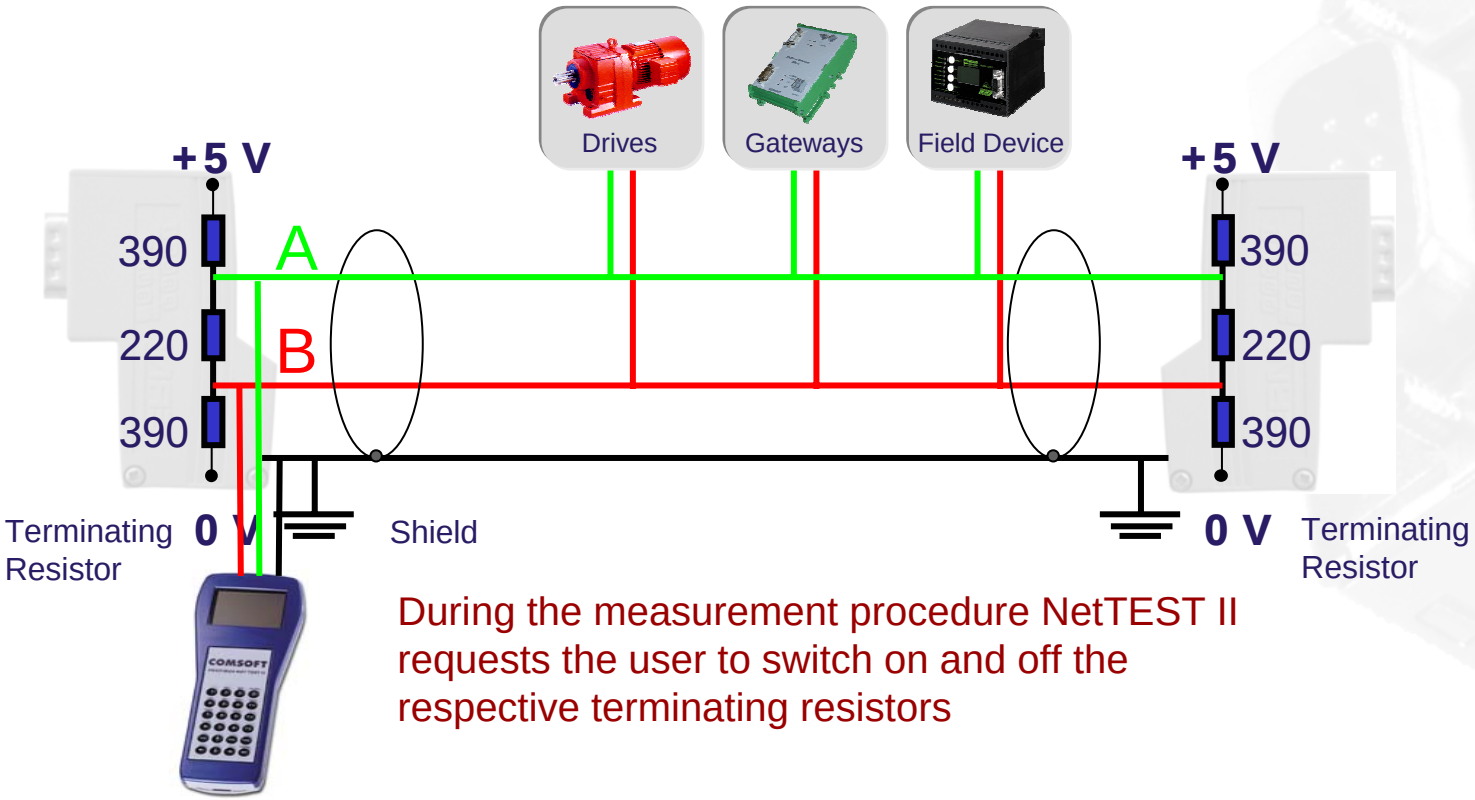
NetTEST II is connected instead of the DP-Master
at either one of the two bus ends



DP-Slaves can be left connected to
the bus in online mode

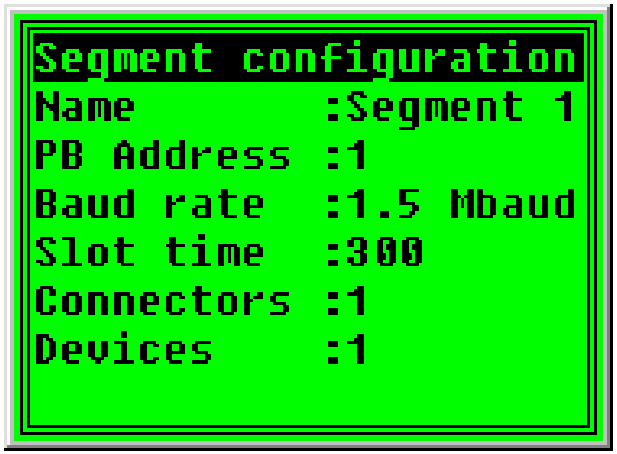
Performing a 3- stage test

1. without terminating resistors
2. with one terminating resistors
3. with both terminating resistors



During the measurement procedure NetTEST II requests the user to switch on and off the respective terminating resistors

Simple & quick adaptation to the DP segment subject of measurement



- PROFIBUS address
- System Baud rate
- Slot time
- Number of 12 MBit plugs used
- Number of devices connected to the bus

Useful information for physical measurements

- Only active stations (masters) have to be disconnected from the bus, slaves may stay connected.
- The physical measurement of the PROFIBUS line is only carried out within electrical segments, without including repeaters.
- The minimum length of line to be measured is 10 m. The shorter the line lengths, the more inexactly the measurement may become.
- NetTEST II is designed for standard PROFIBUS-Cable type A (150 Ohm surge impedance, core cross section >0,34 mm^2). Different types of cables, e.g. obsolete cable type B (100 Ohm surge impedance) are not to be used and are recognized as faulty by NetTEST II.

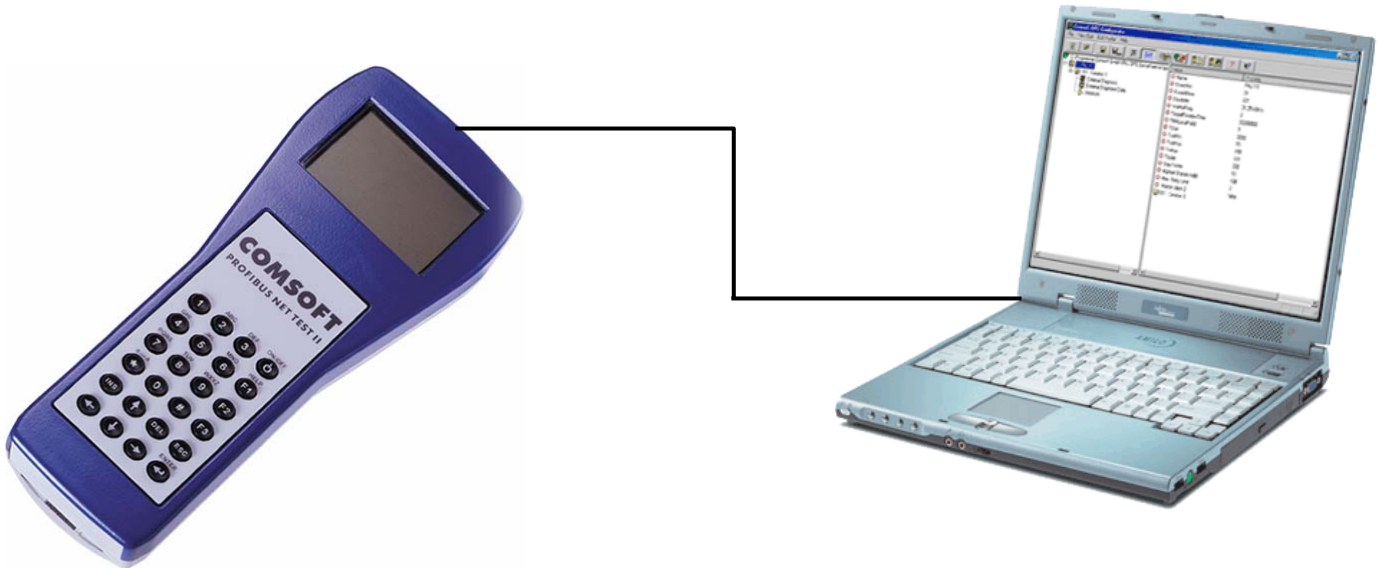
Start

NetTEST II with DP-Master function for mobile setting into operation

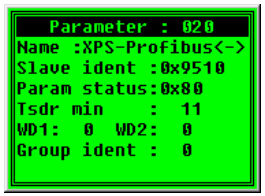
- Setting into operation of DP-Slaves without time-consuming implementation of an SPS
- Configuration of DP-Slaves via comfortable PC tool on the basis of GSD file and integrated download function
- Comfortable access to the I/O-Data of DP-Slaves via freely definable tags
- Display and Coding of DP-Slave diagnostic data

NetTEST II – Trouble-free & comfortable

The COMSOFT PROFIBUS-Configurator supplies NetTEST II with the DP-Slave configuration

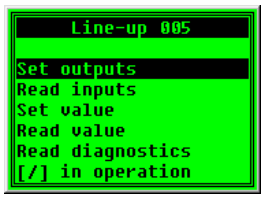


NetTEST II – Multi-Talent as DP-Master

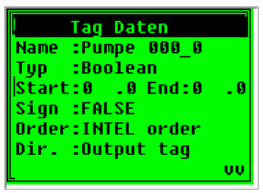


- Changing all DP-Slave parameters

- Execution of single PROFIBUS-DP services



- Simple DP-Slave start-up –
  not just for PROFIBUS experts



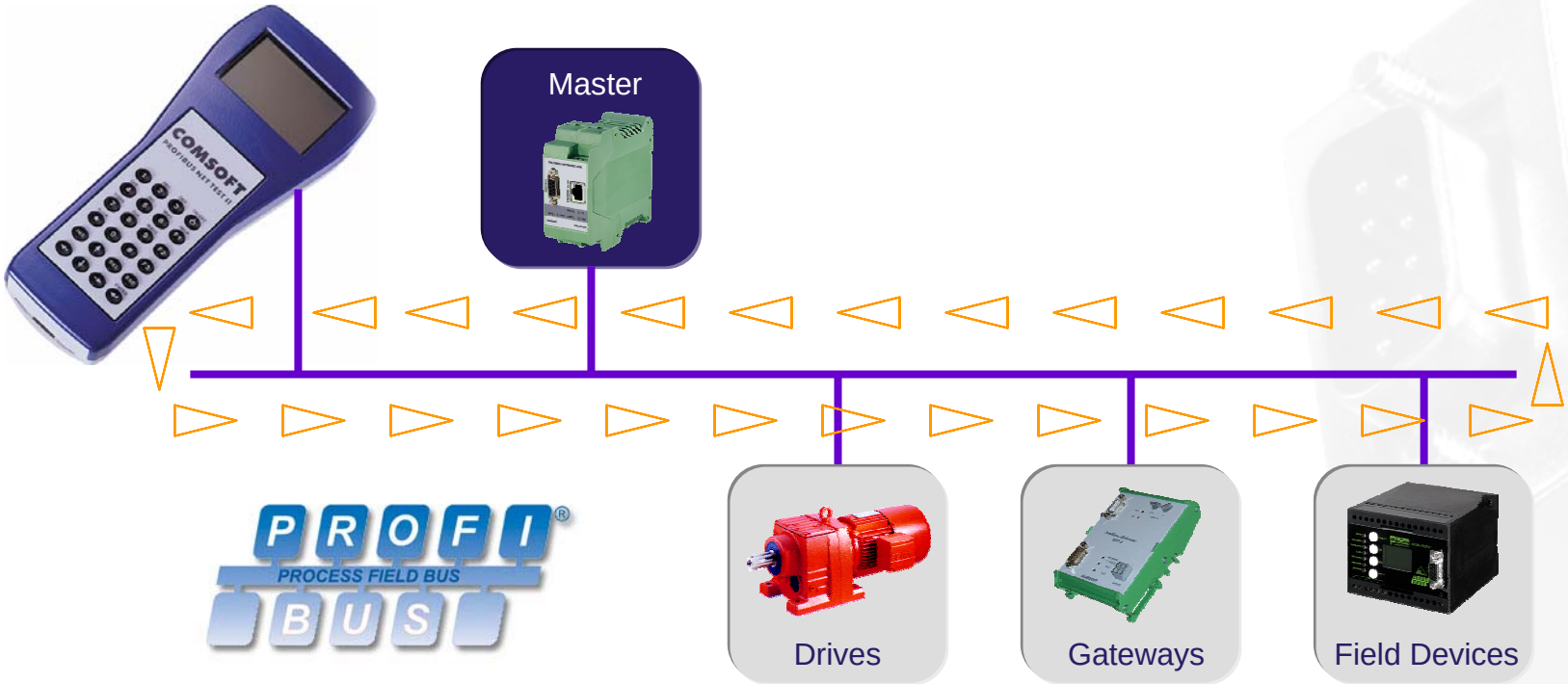
- Direct access to selective I/O-Data,
  e.g. digital outputs

Start

NetTEST II with Online Function up to 12 Mbit/s – another highlight

- NetTEST II was enhanced by very powerful online measurement functions which even on the operative Profibus give detailed information about existing installation problems.

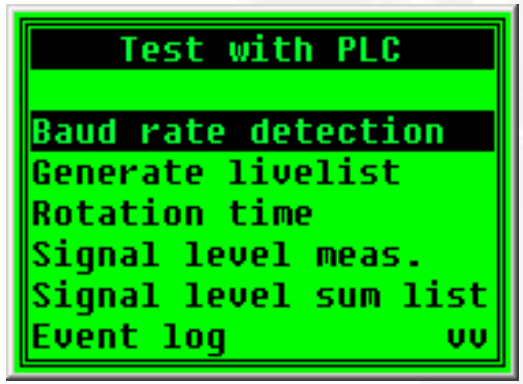
Measurements on the operative Bus



Measurements with PLC

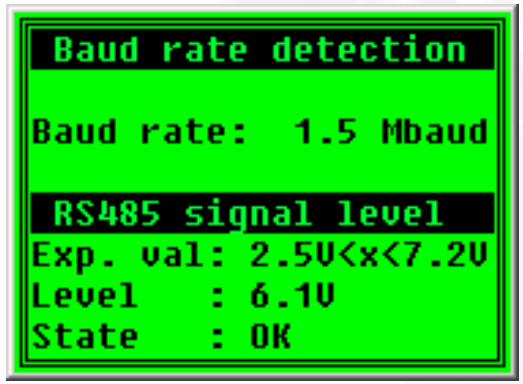
The following measurements can be conducted in online mode:

- Baud rate detection
- Generate live list
- Rotation time
- Signal level measurement
- Signal level summary list
- Event log
- Event count
- Diagnostic event



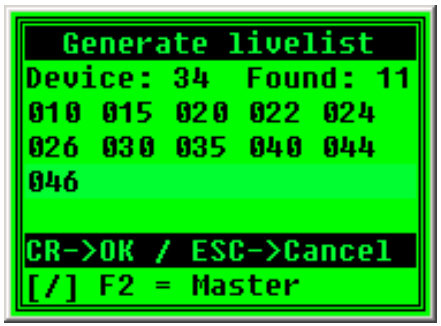
Baud rate detection

- During this Baud rate scan the overall signal quality at the Profibus is measured and a status is indicated.

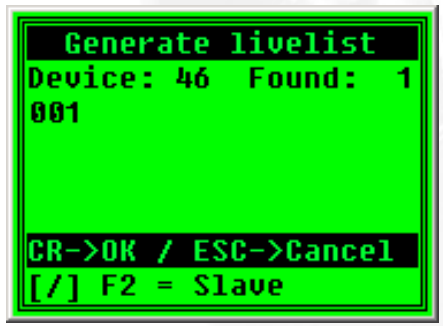


Generating a Live List

- NetTEST II analyses the bus traffic and generates a Live List of all active and passive bus subscribers broken down by Masters and Slaves.



Current Slave Live List

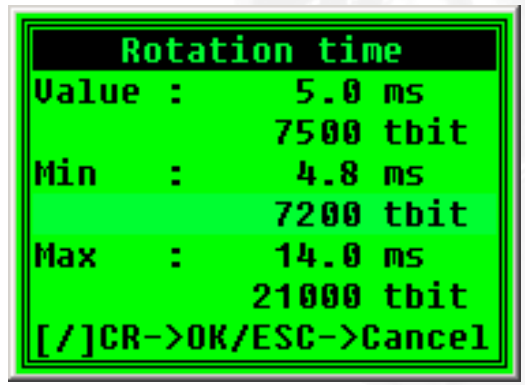


Current Master Live List

Rotation Time

- NetTEST II determines the time the DP-Master needs in order to poll all configured DP-Slaves.
- The minimum and maximum values are stored and indicated.

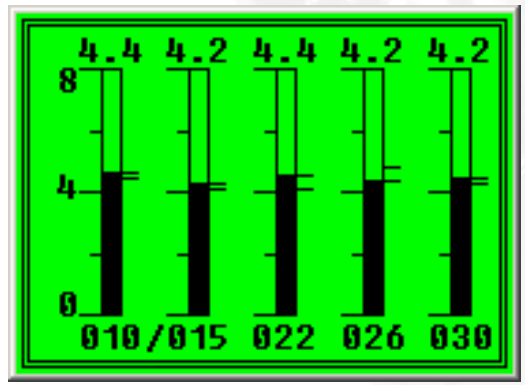
➡ Rotation time is an explicit indicator for performance problems, e.g. in a sporadically disfunctional Profibus network



Level measurement

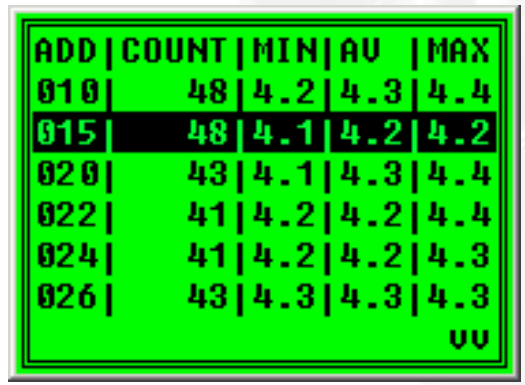
- NetTEST II measures the signal quality of each DP-Slave and visualises the value in a bar graph.

➡ Discrepancies of the measured signal levels from the allowed range point to specific errors of the Profibus network, e.g. signal levels above the allowed maximum are typical for reflexions in the profibus network.



Signal level sum list

- In the signal level sum list, the result of the signal level measurement is indicated in form of a table:
  - ADD – Participant address
  - COUNT – Number of measurements (excl. Time-outs)
  - MIN – Minimum Values
  - AV – Average Values
  - MAX – Maximum Values

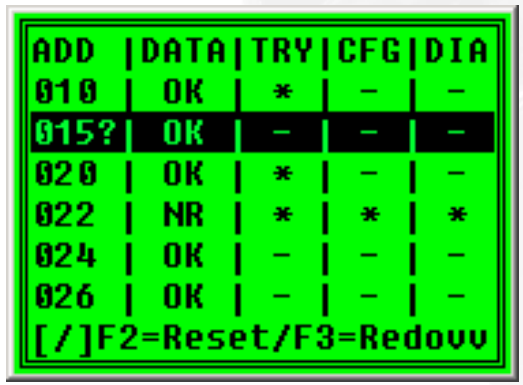


ADD	COUNT	MIN	AV	MAX
010	48	4.2	4.3	4.4
015	48	4.1	4.2	4.2
020	43	4.1	4.3	4.4
022	41	4.2	4.2	4.4
024	41	4.2	4.2	4.3
026	43	4.3	4.3	4.3

VV

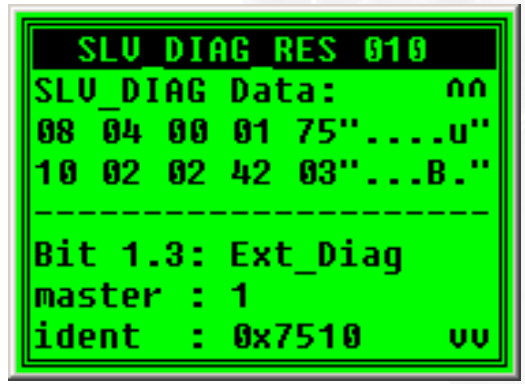
Event log

- NetTEST II analyses the data traffic between DP-Master and DP-Slaves and triggers upon communication status changes. The event log is represented in form of a table:
  - ADD – DP-Slave address
  - DATA OK – DP-Slave is in status of data exchange
  - NR – No Response, DP-Slave is not responding
  - TRY – DP-Slave responds only after multiple retries by DP Master
  - CFG – DP-Slave was parameterised or configured
  - DIA – Diagnostic messages pending at DP-Slave



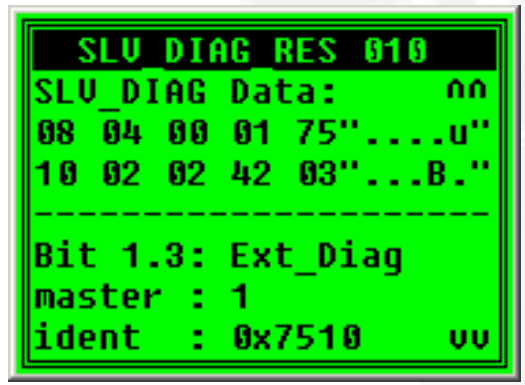
Event count

- Should a singular DP-Slave show communication problems in the event protocol, it can be analysed in detail by the event counting.
- The event count shows the communication statistic for a single DP-Slave in detail. Also retries and communication errors are counted.



Diagnostic event

- The diagnostic event is an extended function of the event counting and serves the detailed analysis of an event.
- NetTEST II offers the choice between 6 events that may be triggered, e.g. diagnostic data or input/output data can be analysed.
- Should the selected event occur, all relevant data are displayed along with it.



Are you interested in more information ?

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Start