

# Net **X**pert XG

Next Generation Ethernet Speed Certifier

September 2019  
Menu structure and user guide



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# NetXpert XG – Next Generation Qualifier

## Main operating modes

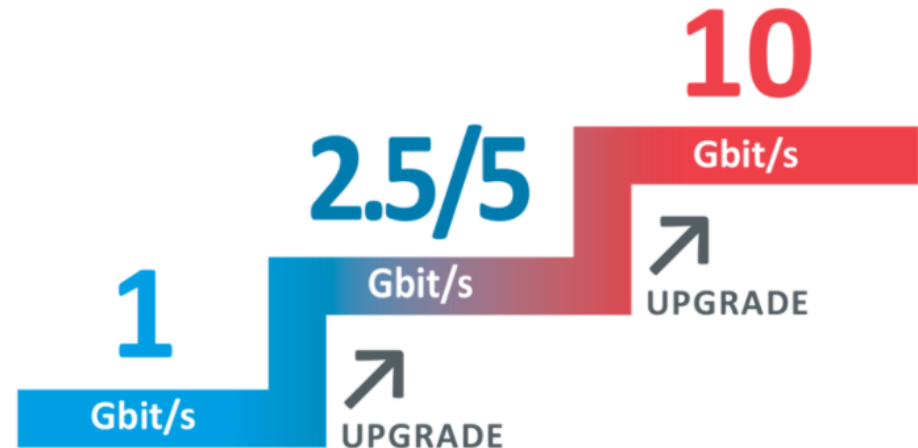
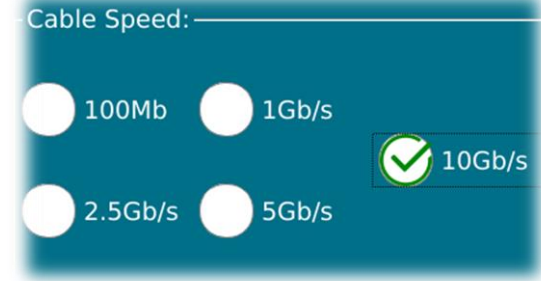
- Qualifying passive communication lines on copper and fiber
  - Main unit communicates with wiremap, mapper or active remotes at the far end of the line to...
    - ...implement a wiremap test and troubleshoot the cable
    - ...locate the connected ports
    - ...identify the Ethernet performance of a transmission path (up to 10 Gbit/s)
- Ethernet commissioning and troubleshooting
  - Main unit is connected directly to an active Switch-Port to...
    - ...identify Ethernet connection speed and PoE capabilities
    - ...identify existing network structure
    - ...test PoE/PoE+/PoE++ availability (idle and loaded)
    - ...test DHCP
    - ...implement ping and traceroute tests
    - ...find related switch ports
    - ...decode CDP und LLDP protocols
    - ...identify VLANs



# Three Speed Levels

- NetXpert XG – Next Generation „Ethernet Speed Certifier“

- Three scalable models
  - 100 Megabit and 1 Gigabit Ethernet
  - 100 Megabit and 1/2,5/5 Gigabit Ethernet
  - 100 Megabit and 1/2,5/5/10 Gigabit Ethernet
- Passive copper cable qualification
  - Wiremap
  - Signal to noise ratio (SNR)
  - Bit Error Rate Testing (BERT)
  - Delay Skew
- Passive qualification of fiber cables
  - Bit Error Rate Testing (BERT)
- Tools for setup and troubleshooting in active networks
  - Copper
  - Fiber optic (1G/10G)
  - WLAN (2,4 GHz Band)



# Hardware

- Main unit
  - Housing is impact-resistant plastic with edge protector elastic bands
  - Foldable kickstand for convenient operation
  - Ergonomic landscape format to maximize readability
  - Hand straps for carrying comfort
  - Rubber material to cover all the ports
  - User accessible battery
  - On/off button
    - Power unit on and off
    - Integrated LED indicates the status of the power supply
    - Green= Battery charge >20%
    - Green flashing = Unit is charging (both fans are running)
    - Red= Battery charge <20%
    - Red flashing= Unit is not charging because of excessive internal heating (Do not unplug the charger! Both fans are running and charging will start automatically, when temperature returns to normal)



# Ports

## Micro-USB port (in conjunction with an adapter)

- For importing...
  - Logos for reporting
  - List Based Testing (LBT) test lists from eXport-Software
  - Firmware-Updates
  - License key
- For exporting...
  - Test-projects in various formats to share or external processing

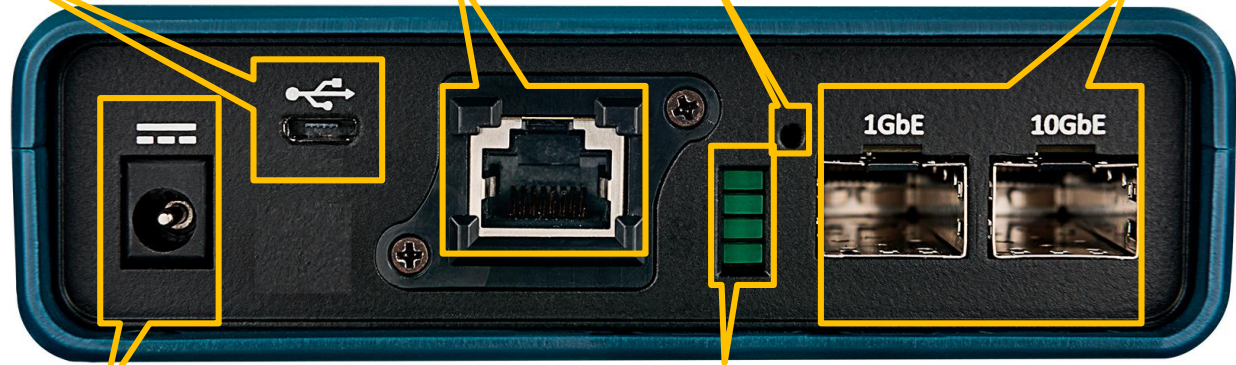
## RJ45 measuring port

- Replaceable parts with 10 Gigabit Performance
- Part number XY

## Restart button

## SFP slots

- 1 Gigabit Ethernet LWL SFP
- 10 Gigabit Ethernet



## Power supply connection (12 Vdc)

- Operations of the device and charging the batteries (Li-Ion)

## LED port indicators (top to bottom)

- Optical Link and Activity, 10G
- Optical Link and Activity, 1G
- Copper Link, any speed
- Copper Activity, any speed

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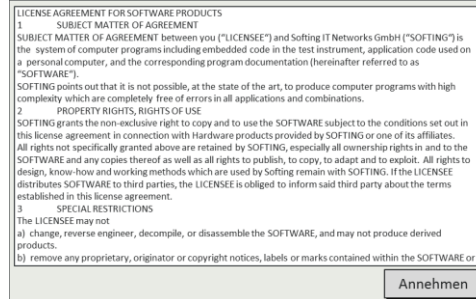
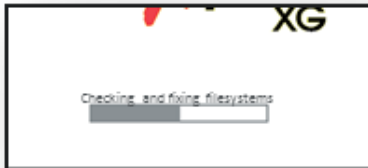
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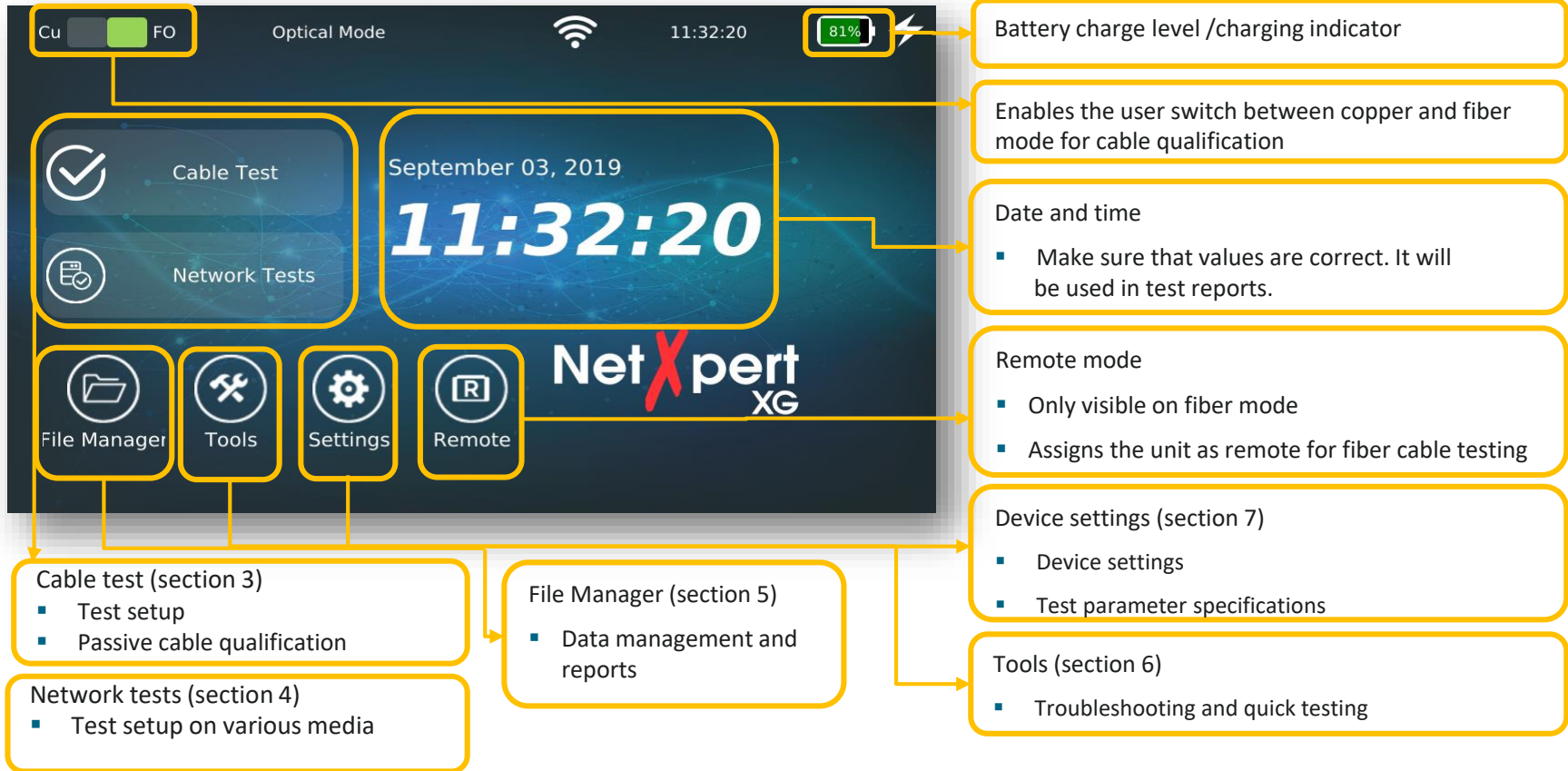


# Setting up the device

- Switch-on
  - Boot-Screen appears with a progress bar
  - During initial operation, EULA (End User License Agreement) must be confirmed
    - Hardware belongs to the user
    - Operating software is licensed to the user
- Switch-off
  - Long press on on/off button
    - Prevents accidentally turning off the unit
    - Confirmation screen requires entry
  - Shut down screen appears with a progress bar
    - File structure is evaluated and if necessary repaired



# Start screen



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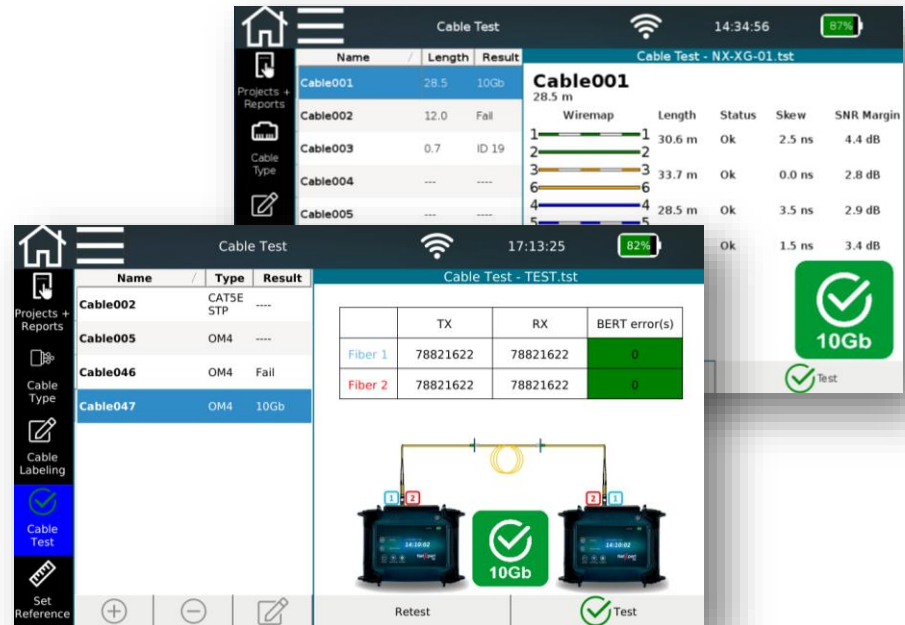
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# Cable Test Function

## Determining transmission capabilities of passive cabling

- Supported media
  - Copper (connected to active remote)
  - Fiber optic
    - Second main unit is required
- Test parameters
  - Wiremap
  - Signal to noise ratio (SNR)
  - Signal propagation delay (Delay Skew)
  - Bit Error Rate Test (BERT)
- Available Ethernet speeds
  - 100 Megabit/1 Gigabit Ethernet
    - All models
  - 100 Megabit and 1/2,5/5 Gigabit Ethernet
    - Model „NX\_XG\_10G / 226552“ and „NX\_XG\_25\_5G / 226553“
  - 100 Megabit and 1/2,5/5/10 Gigabit Ethernet
    - Model „NX\_XG\_10G / 226552“
  - Upgrading all the models up to 10 Gigabit Ethernet is possible via license key



# Testing passive copper cabling

## Remotes and cable tracking

- Available remotes
  - Test parameters are determined by the type of remote used
  - Ethernet Speed Certification Active Remote
    - Starting a test is possible on the remote unit (test and link indicator)
    - Status indicator for battery charge and last test result (pass/fail)
  - Wiremap test and port identification via optional wiremap remote units (#1 to 8)
  - Port identifying via optional mapper remote units (#1 to 24)
- Cable tracking/ acoustic port allocation
  - Intern tone generator
  - Optional analog cable tracker/port locator (e.g. Softing CP15, shown here)



Wiremap Remotes (226528)



Mapper Remotes (226581)



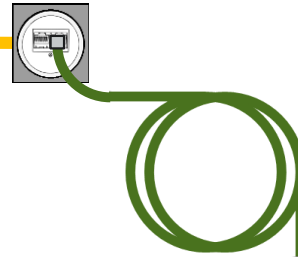
Cable tracker/port locator (226007)



# Testing passive copper cabling

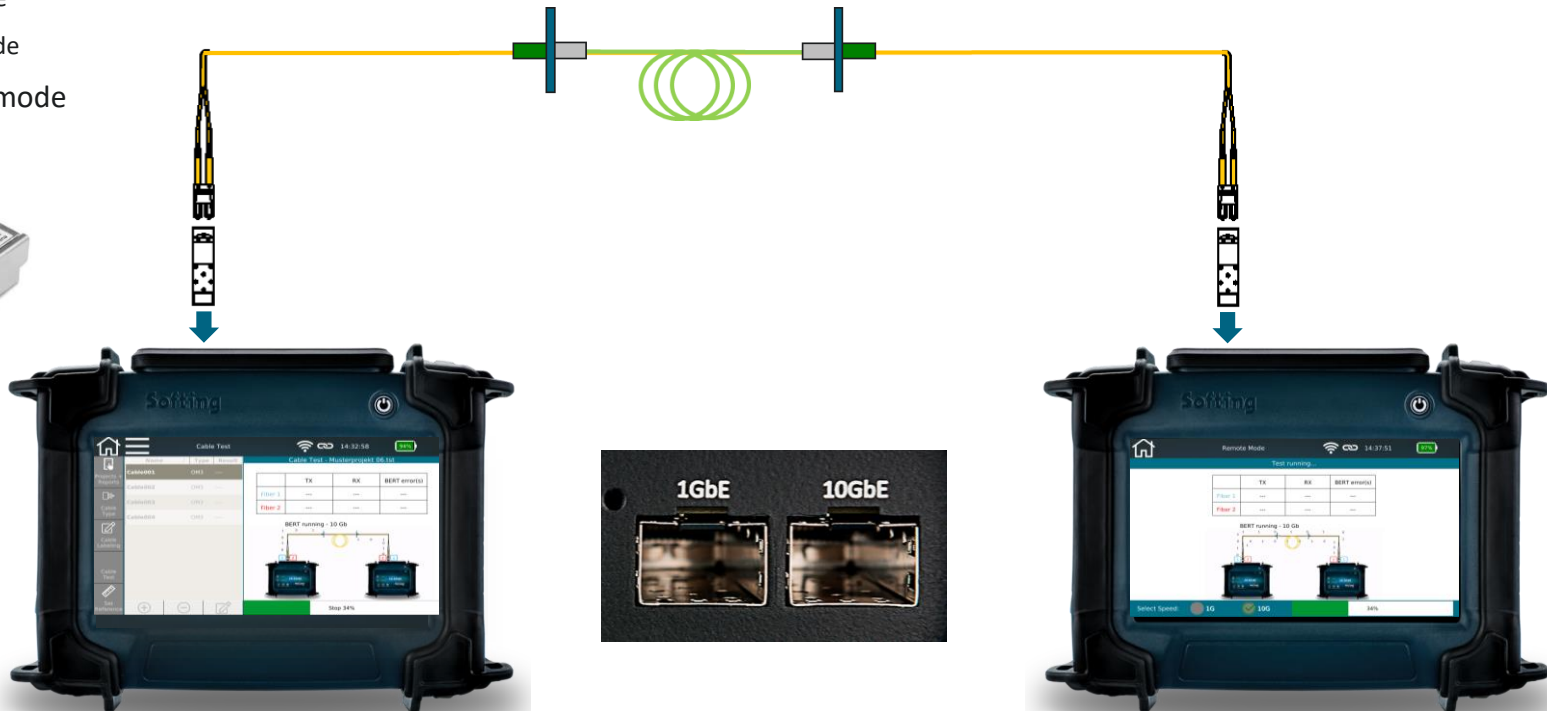
## Test setup for qualification

- Main unit and active remote required
- „Set reference“ of both test cables of the main unit and remote unit before starting a test



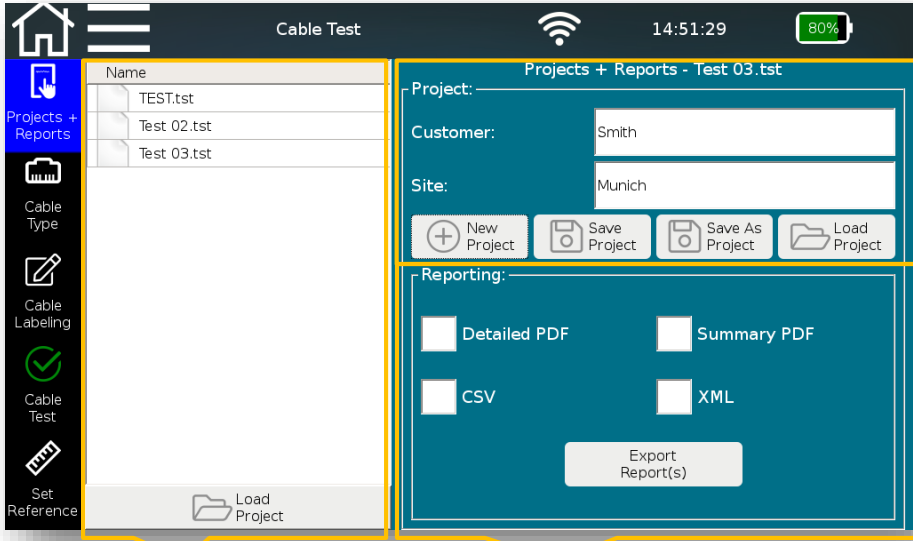
# Testing passive fiber cabling

- Two main units are required
  - With corresponding SFP 1G or 10G modules
    - Multimode
    - Single mode
  - Master/Slave mode



# Process of a cable testing project

## Create a project- Initial screen



- Open project chosen from the list at the left side
- Details are shown for the chosen project
  - Customer data
  - Site data
- Project management
  - Creating new projects
  - Saving changes
  - Loading projects via File Manager menu

- Load existing projects in the device

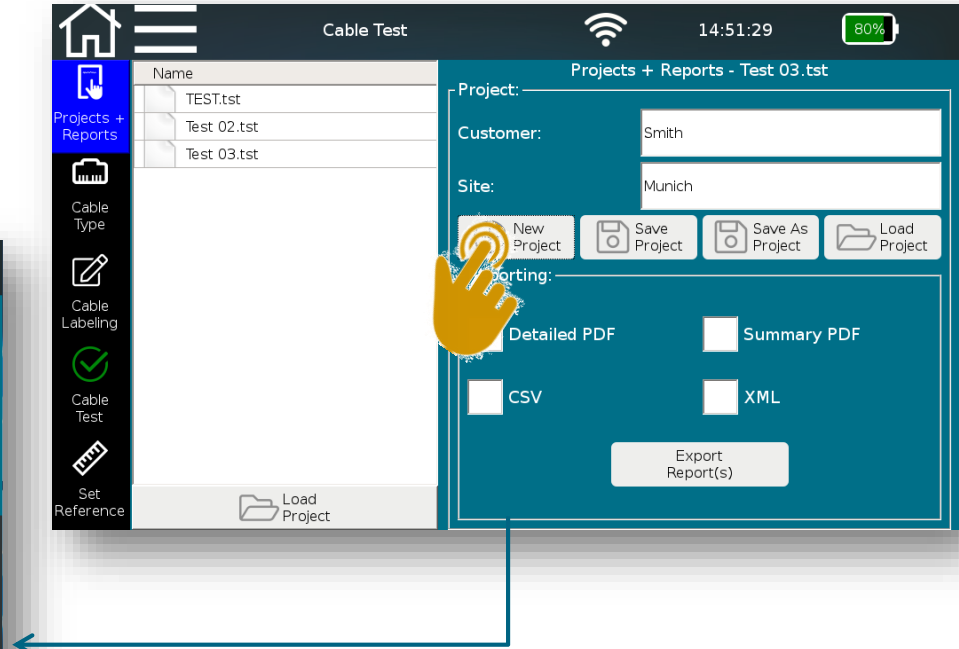
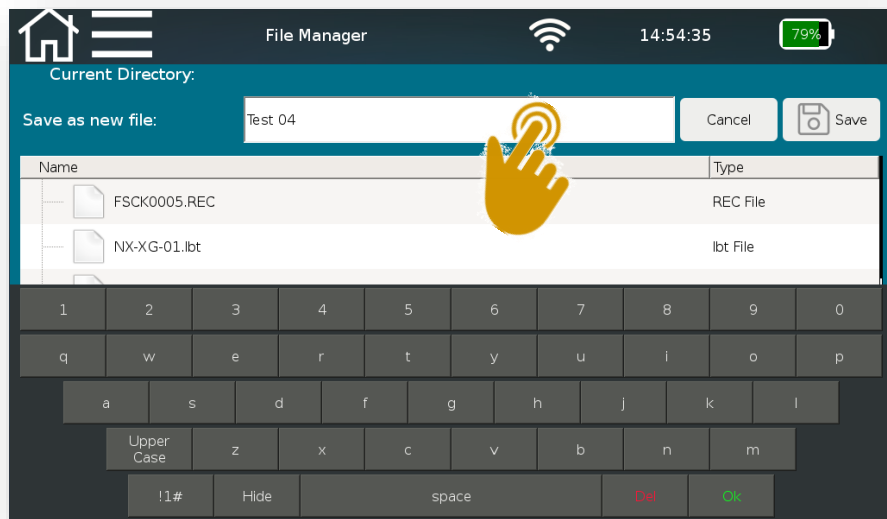
- Internal documentation generation
  - Detailed PDF (summary and details)
  - Summary PDF
  - CSV – open format, e.g. preparation on Excel
  - XML – exchange format with eXport



# Process of a cable testing project

## Create a project

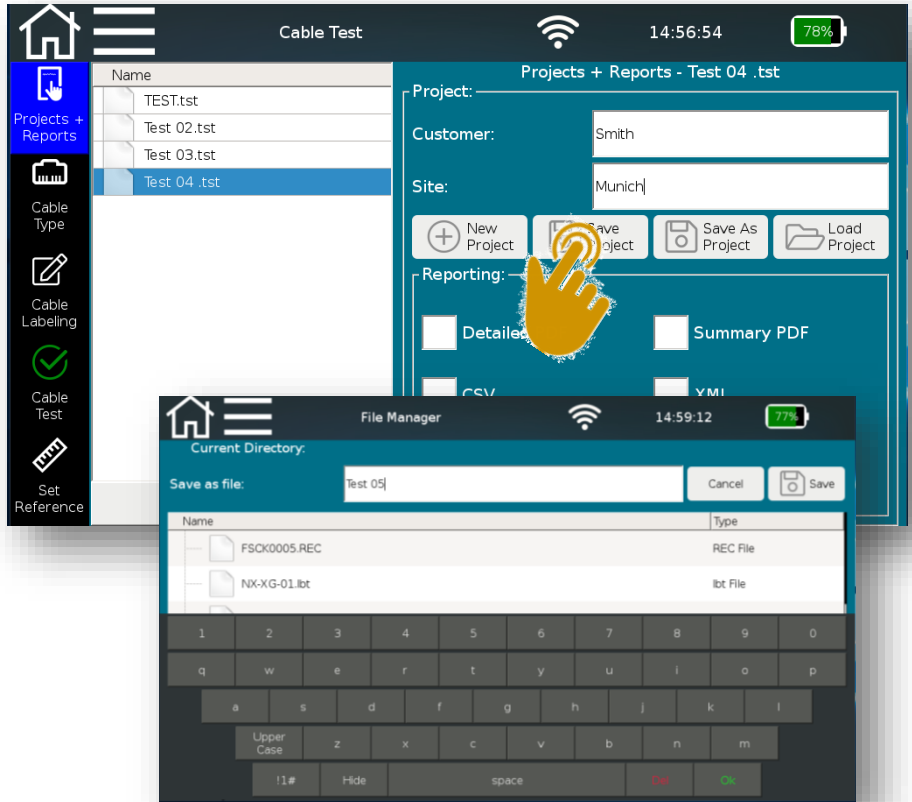
- Creating a „new project“
  - Opens „File Manager “ menu
  - Enter project name



# Process of a cable testing project

## Create a project

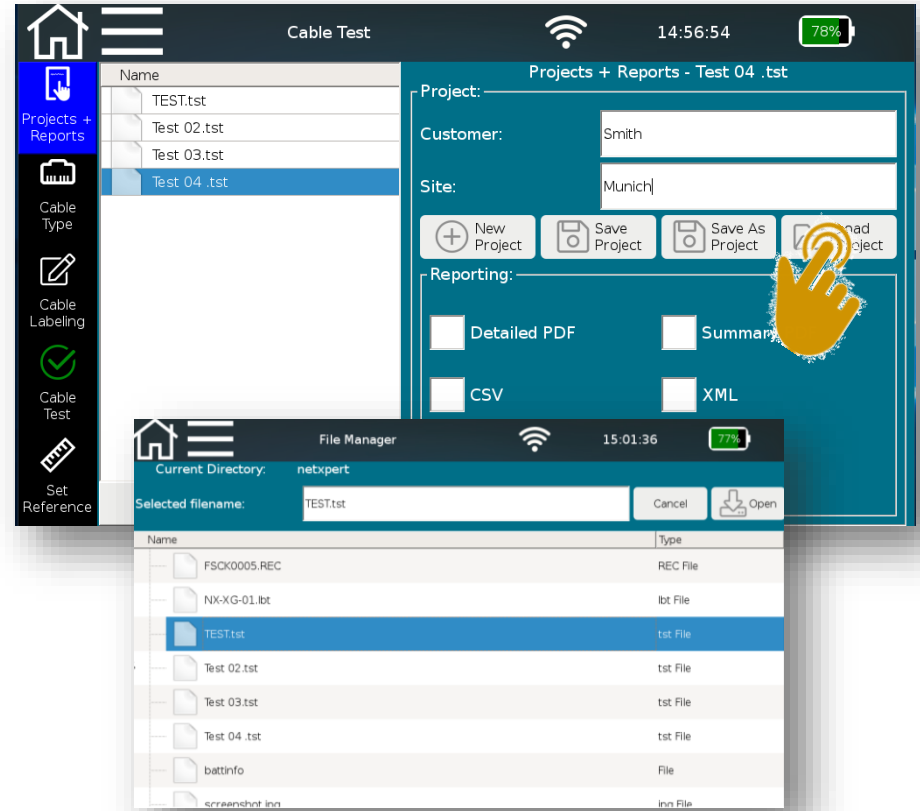
- „Creating a „new project““
  - Opens „File Manager “ menu
  - Enter project name
- „Save Project“ saves changed information to the open project
  - Customer
  - Site
- „Save As Project“ creates a new project based on changed information



# Process of a cable testing project

## Create a project

- „Creating a „new project““
  - Opens „File Manager “ menu
  - Enter project name
- „Save Project“ saves changed information to the open project
  - Customer
  - Site
- „Save As Project“ creates a new project based on changed information
- „Load Project“ via File Manager menu



# Process of a cable testing project

## Defining test standards- Initial screen

The screenshot shows the 'Cable Test' application interface. On the left is a navigation menu with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main area is divided into two sections. The top section is a table with columns for 'Copper' and 'Fiber', and sub-columns for 'Name', 'Speed', and 'pF/m'. The bottom section is a configuration form for 'Cable Type - NEU.tst' with fields for 'Name', 'pf/m', 'NVP', 'Learn Length Constants', 'Speed' (radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb, 100Mb), 'Cable Shield' (radio buttons for No Shield, Shielded, Ignore Shield), 'Cable Wiring' (radio buttons for Two-Pair, Straight, X-over, Ignore X-over), and buttons for 'Apply Type Changes' and 'Set Current Type'.

Copper		Fiber	
Name	Speed	pF/m	
CAT5 UTP	1 Gb	49.2	
CAT5 STP	1 Gb	49.2	
CAT5E UTP	1 Gb	52.5	
CAT5E STP	1 Gb	45.9	
CAT6 UTP	1 Gb	52.5	
CAT6 STP	1 Gb	42.7	
CAT6A UTP	1 Gb	55.8	
CAT6A STP	1 Gb	42.7	

### Templates of test standards

- Basis for own test standards
- List is expendable
- Pattern or external template can be imported

### Defining test standards via „Cable Type“ which is assigned to the currently open project

- Name of the test standard
- Constants for length determination
  - pf/m – cable capacity
  - NVP value – Nominal Velocity of Propagation
  - Values can be found on data sheets of the cables or determined simply by “Learn Length Constants” (Reference length>30m)

### Details on test standards

- „Speed“ – maximum Ethernet speed to be tested
- Cable structure
  - „Cable Shield“ – Consideration of the shielding of the installed cable
  - „Cable Wiring“ – Number of wire pairs and orientation

# Process of a cable testing project

## Defining test standards

- Selecting a template
  - Select a template similar to your application
  - Using the available templates helps to avoid mistakes
    - Write and deletion protection, if test results available (if some tests are already done)

Copper		Fiber	
Name	Speed	pF/m	
CAT5 UTP	1 Gb	49.2	
CAT5 STP	1 Gb	49.2	
CAT5E UTP	1 Gb	52.5	
CAT5E STP	1 Gb	45.9	
CAT6 UTP	1 Gb	52.5	
CAT6 STP	1 Gb	42.7	
CAT6A UTP	1 Gb	55.8	
CAT6A STP	1 Gb	42.7	

**Cable Type - TEST.tst**

Name: CAT5 UTP

pF/m: 49.2

NVP: 68 Learn Length Constants

**Speed**

- 10Gb
- 5Gb
- 2.5Gb
- 1Gb
- 100Mb

**Cable Shield**

- No Shield
- Shielded
- Ignore Shield

**Cable Wiring**

- Two-Pair
- Straight
- X-over
- Ignore X-over

Apply Type Changes Set Current Type

# Process of a cable testing project

## Defining test standards

- Selecting a template
  - Select a template similar to your application
  - Using the available templates helps to avoid mistakes
    - Write and deletion protection, if test results available (if some tests are already done)
    - If a cable test type (template) is being used in a label definition or in a cable test, the cable test type parameters on the right will be grayed out and are not editable. This will keep you from accidentally changing a cable parameter for cable templates in use.
    - If you delete the cable labels and cable tests, the template will become editable once again.

The screenshot shows the 'Cable Test' application interface. At the top, there's a status bar with a home icon, a menu icon, the title 'Cable Test', a Wi-Fi signal icon, the time '14:42:49', and a battery level indicator at '95%'. Below the status bar, there are two tabs: 'Copper' (selected) and 'Fiber'. A table lists various cable templates with columns for 'Name', 'Speed', and 'pF/m'. The table is scrollable, showing templates like CAT5 UTP, CAT5 STP, CAT5E UTP, CAT5E STP, CAT6 UTP, CAT6 STP, CAT6A UTP, and CAT6A STP. To the right of the table, there are configuration panels for 'Name' (set to 'CAT5 UTP'), 'pF/m' (set to '49.2'), and 'NVP' (set to '68'). Below these are three sections: 'Speed' with radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb (selected), and 100Mb; 'Cable Shield' with radio buttons for No Shield (selected), Shielded, and Ignore Shield; and 'Cable Wiring' with radio buttons for Two-Pair, Straight, X-over, and Ignore X-over (selected). At the bottom right, there are two buttons: 'Apply Type Changes' and 'Set Current Type'. On the left side of the interface, there is a vertical navigation menu with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'.

Name	Speed	pF/m
CAT5 UTP	1 Gb	49.2
CAT5 STP	1 Gb	49.2
CAT5E UTP	1 Gb	52.5
CAT5E STP	1 Gb	45.9
CAT6 UTP	1 Gb	52.5
CAT6 STP	1 Gb	42.7
CAT6A UTP	1 Gb	55.8
CAT6A STP	1 Gb	42.7

# Process of a cable testing project

## Defining test standards

- Selecting a template
  - Select a template similar to your application
  - Using the available templates helps to avoid mistakes
    - Write and deletion protection, if test results available (if some tests are already done)
    - If a cable test type (template) is being used in a label definition or in a cable test, the cable test type parameters on the right will be grayed out and are not editable. This will keep you from accidentally changing a cable parameter for cable templates in use.
    - If you delete the cable labels and cable tests, the template will become editable once again.
    - The current cable test (Set Current Type) will be highlighted in Green.

The screenshot shows the 'Cable Test' application interface. At the top, there's a status bar with a home icon, a menu icon, the title 'Cable Test', a Wi-Fi signal icon, the time '14:43:29', and a battery level of '95%'. Below the status bar, there are two tabs: 'Copper' (selected) and 'Fiber'. A table lists various cable templates with columns for 'Name', 'Speed', and 'pF/m'. The 'CAT6A UTP' template is highlighted in green, indicating it is the current selection. To the right of the table, there are configuration options for the selected template, including 'Name' (CAT6A UTP), 'pF/m' (55.8), and 'NVP' (66). There are also three sections for configuration: 'Speed' (radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb (checked), 100Mb), 'Cable Shield' (radio buttons for No Shield (checked), Shielded, Ignore Shield), and 'Cable Wiring' (radio buttons for Two-Pair, Straight, X-over, Ignore X-over (checked)). At the bottom, there are buttons for 'Apply Type Changes' and 'Set Current Type'. A vertical sidebar on the left contains icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'.

Name	Speed	pF/m
CAT5 UTP	1 Gb	49.2
CAT5 STP	1 Gb	49.2
CAT5E UTP	1 Gb	52.5
CAT5E STP	1 Gb	45.9
CAT6 UTP	1 Gb	52.5
CAT6 STP	1 Gb	42.7
<b>CAT6A UTP</b>	1 Gb	55.8
CAT6A STP	1 Gb	42.7

# Process of a cable testing project

## Defining test standards

- Copy template
  - Copy will be added to the end of the list

The screenshot shows the 'Cable Test' application interface. At the top, there's a status bar with a home icon, a menu icon, the title 'Cable Test', a Wi-Fi signal icon, the time '14:44:20', and a battery level of '95%'. Below the status bar is a navigation sidebar with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main area is divided into two sections: a table on the left and configuration panels on the right.

	Copper	Fiber
Name	Speed	pF/m
CAT6 UTP	1 Gb	52.5
CAT6 STP	1 Gb	42.7
CAT6A UTP	1 Gb	55.8
CAT6A STP	1 Gb	42.7
CAT7 STP	1 Gb	42.7
CAT7A STP	1 Gb	42.7
CAT8 STP	1 Gb	42.7
CAT7A STP-copy	1 Gb	42.7

The right section is titled 'Cable Type - TEST.tst' and contains several configuration panels:

- Name:** CAT7A STP-copy
- pF/m:** 42.7
- NVP:** 78 (with a 'Learn Length Constants' button)
- Speed:** Radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb (checked), and 100Mb.
- Cable Shield:** Radio buttons for No Shield, Shielded (checked), and Ignore Shield.
- Cable Wiring:** Radio buttons for Two-Pair, Straight, X-over, and Ignore X-over (checked).
- Buttons:** 'Apply Type Changes' and 'Set Current Type'.

A yellow hand icon is pointing at the bottom of the table, specifically at the 'CAT7A STP-copy' row.



# Process of a cable testing project

## Defining test standards

- Copy template
  - Copy will be added to the end of the list
- Select copy
  - Customize name
  - Edit parameters
    - Cable constants
    - Ethernet speed
    - Shielding features
    - Cable Wiring

The screenshot shows the 'Cable Test' application interface. On the left, a sidebar contains navigation icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Settings + Reference'. The main area displays a table of cable types with columns for 'Name', 'Speed', and 'pF/m'. A yellow hand icon points to the 'CAT7A STP-copy' entry. To the right, a configuration panel for 'Cable Type - TEST.tst' is open, showing fields for 'Name', 'pF/m', and 'NVP'. Below these are three sections: 'Speed' with radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb (checked), and 100Mb; 'Cable Shield' with radio buttons for No Shield, Shielded (checked), and Ignore Shield; and 'Cable Wiring' with radio buttons for Two-Pair, Straight, X-over, and Ignore X-over (checked). At the bottom of the panel are buttons for 'Apply Type Changes' and 'Set Current Type'.

Name	Speed	pF/m
CAT6 UTP	1 Gb	52.5
CAT6 STP	1 Gb	42.7
CAT6A UTP	1 Gb	55.8
CAT6A STP	1 Gb	42.7
CAT7 STP	1 Gb	42.7
CAT7A STP	1 Gb	42.7
CAT8 STP	1 Gb	42.7
CAT7A STP-copy	1 Gb	42.7

This screenshot shows the same application interface as above, but with a virtual keyboard overlay at the bottom. The keyboard is in a compact, numeric layout, suggesting the user is editing a field in the configuration panel.

# Process of a cable testing project

## Defining test standards

- Copy template
  - Copy will be added to the end of the list
- Select copy
  - Customize name
  - Edit parameters
    - Cable constants
    - Ethernet speed
    - Shielding features
    - Cable Wiring
  - Confirm with "Apply Type Changes" and select "Set Current Type" for this project
  - Stored test standards or results can no longer be edited

The screenshot displays the 'Cable Test' application interface. At the top, there's a status bar with a home icon, a menu icon, the title 'Cable Test', a Wi-Fi signal icon, the time '14:44:20', and a battery level of '95%'. Below the status bar, there's a navigation menu with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main content area is divided into two sections: a table of cable types and a configuration panel for 'Cable Type - TEST.tst'. The table has columns for 'Name', 'Speed', and 'pF/m'. The configuration panel has sections for 'Name', 'pF/m', 'NVP', 'Speed', 'Cable Shield', and 'Cable Wiring'. The 'Speed' section has radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb (checked), and 100Mb. The 'Cable Shield' section has radio buttons for No Shield, Shielded (checked), and Ignore Shield. The 'Cable Wiring' section has radio buttons for Two-Pair, Straight, X-over, and Ignore X-over (checked). At the bottom, there are two buttons: 'Apply Type Changes' and 'Set Current Type'. A hand icon is pointing at the 'Apply Type Changes' button.

	Copper	Fiber
Name	Speed	pF/m
CAT6 UTP	1 Gb	52.5
CAT6 STP	1 Gb	42.7
CAT6A UTP	1 Gb	55.8
CAT6A STP	1 Gb	42.7
CAT7 STP	1 Gb	42.7
CAT7A STP	1 Gb	42.7
CAT8 STP	1 Gb	42.7
CAT7A STP-copy	1 Gb	42.7

Cable Type - TEST.tst

Name: CAT7A STP-copy

pF/m: 42.7

NVP: 78 Learn Length Constants

Speed:  10Gb  5Gb  2.5Gb  1Gb  100Mb

Cable Shield:  No Shield  Shielded  Ignore Shield

Cable Wiring:  Two-Pair  Straight  X-over  Ignore X-over

Apply Type Changes Set Current Type

# Process of a cable testing project

## Defining test standards

- Copy template
  - Copy will be added to the end of the list
- Select copy
  - Customize name
  - Edit parameters
    - Cable constants
    - Ethernet speed
    - Shielding features
    - Cable Wiring
  - Confirm with "Apply Type Changes" and select "Set Current Type" for this project
  - Stored test standards or results can no longer be edited
  - Switch between copper and fiber cables by tapping on the corresponding tab

The screenshot displays the 'Cable Test' application interface. At the top, there's a navigation bar with a home icon, a menu icon, and the title 'Cable Test'. The status bar shows the time '14:46:19' and a battery level of '94%'. Below the navigation bar, there are two tabs: 'Copper' and 'Fiber', with 'Fiber' being the active tab. A yellow hand icon is pointing to the 'Fiber' tab. The main area is divided into two sections. On the left, there's a table with columns 'Name' and 'Speed'. The table contains the following data:

Name	Speed
OM1	1 Gb
OM2	1 Gb
OM3	1 Gb
OM4	1 Gb
OM5	10 Gb
OS1	1 Gb
OS1a	1 Gb
OS2	1 Gb

The 'OS1' row is highlighted in green. On the right side, there's a configuration screen for 'Cable Type - TEST.tst'. It has a 'Name' field with 'OS1' and a 'Speed' dropdown menu. The 'Speed' dropdown is open, showing '10Gb' and '1Gb' options, with '1Gb' selected and marked with a green checkmark. At the bottom of the screen, there are two buttons: 'Apply Type Changes' and 'Set Current Type'. A 'Set Reference' button is also visible at the bottom left.

# Process of a cable testing project

## Setting up a test list- Create names for cabling

Cable Test

13:53:44 45%

Cable Labeling - Test.tst

Template:

Next Label:

Current Type: CAT6A UTP Change Cable Type Clear Label

Name		Rack	
Building		Panel	
Floor		Speed	10 Gb
Room		ID	1
Seperator -		Number of Cables to Add:	1

Cable count: 0 of 1000 Add Cables

- Based on "Current Type" selected previously from the Cable Type menu

# Process of a cable testing project

## Setting up a test list- Create names for cabling

The screenshot shows the 'Cable Test' application interface. The top bar displays 'Cable Test', signal strength, time (13:51:28), and battery (46%). The left sidebar contains navigation options: 'Projects + Reports', 'Cable Type', 'Cable Labeling' (highlighted in blue), 'Cable Test', and 'Set Reference'. The main area is titled 'Cable Labeling - Test.tst' and contains a 'Template:' section with 'Next Label:' and 'Current Type: CAT6A UTP'. There are buttons for 'Change Cable Type' and 'Clear Label'. Below this is a table with the following data:

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	1
Seperator	-	Number of Cables to Add:	1

At the bottom, it shows 'Cable count: 0 of 1000' and an 'Add Cables' button.

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field

# Process of a cable testing project

## Setting up a test list- Create names for cabling

Cable Test

13:50:12 47%

Cable Labeling - Test.tst

Template: <Name>  
Next Label: Cable

Current Type: CAT6A UTP Change Cable Type Clear Label

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	1
Seperator	-	Number of Cables to Add:	1

Cable count: 0 of 1000 Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name

# Process of a cable testing project

## Setting up a test list- Create names for cabling

The screenshot shows the 'Cable Labeling - Test.tst' screen in the Cable Test application. The interface includes a sidebar with navigation options: Projects + Reports, Cable Type, Cable Labeling (highlighted), Cable Test, and Set Reference. The main area displays a table for entering cable parameters. The 'Seperator' field is highlighted with a yellow box and a hand icon pointing to it.

Name	Length	Result
Cable Labeling - Test.tst		
Template: <Name>-<Building>-<Floor>-<ID>		
Next Label: Cable-1-GF-001		
Current Type: CAT6A UTP	Change Cable Type	Clear Label
Name: Cable	Rack: 1	
Building: 1	Panel: A	
Floor: GF	Speed: 10 Gb	
Room: VT01	ID: 1	
Seperator: -	Number of Cables to Add: 1	

able count: 0 of 1000

Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter. "Template" and "Next Label" will be updated accordingly.

# Process of a cable testing project

## Setting up a test list- Create names for cablings

Cable Test

14:06:45 40%

Cable Labeling - Test.tst

Template: <Name>-<Building>-<Floor>-<ID>

Next Label: Cable-1-GF-001

Current Type: CAT6A UTP

Change Cable Type Clear Label

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	1
Seperator	-	Number of Cables to Add:	1

Cable count: 0 of 1000 Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template



# Process of a cable testing project

## Setting up a test list- Create names for cabling

The screenshot shows the 'Cable Labeling - Test.tst' screen in the Cable Test application. The interface includes a sidebar with navigation options: Projects + Reports, Cable Type, Cable Labeling (highlighted), Cable Test, and Set Reference. The main area features a table for entering cable parameters and a 'Clear Label' button.

Name	Length	Result	
Cable Labeling - Test.tst			
Template:			
Next Label:			
Current Type: CAT6A UTP		Change Cable Type	
		Clear Label	
Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	1
Seperator	-	Number of Cables to Add:	1

Cable count: 0 of 1000 Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template
- "Clear Label" will clear the label template, but already entered names and values will not be affected.

# Process of a cable testing project

## Setting up a test list- Create names for cabling

The screenshot shows the 'Cable Test' application interface. On the left is a navigation menu with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling' (highlighted in blue), 'Cable Test', and 'Set Reference'. The main screen is titled 'Cable Test' and displays a table of cables with columns for 'Name', 'Length', and 'Result'. Below the table is a configuration screen for 'Cable Labeling - Test.tst'. The configuration includes a template, current type (CAT6A UTP), and buttons for 'Change Cable Type' and 'Clear Label'. A table of parameters is shown with green highlights on 'Cable', 'Building', 'Floor', and 'ID'. The 'Number of Cables to Add' field is highlighted with a yellow box and contains the value '10'. A hand icon is pointing at the 'Add Cables' button. The bottom status bar shows 'Cable count: 10 of 1000'.

Name	Length	Result
Cable-1-GF-002	---	----
Cable-1-GF-003	---	----
Cable-1-GF-004	---	----
Cable-1-GF-005	---	----
Cable-1-GF-006	---	----
Cable-1-GF-007	---	----
Cable-1-GF-008	---	----
Cable-1-GF-009	---	----
Cable-1-GF-010	---	----

**Cable Labeling - Test.tst**

Template: <Name>-<Building>-<Floor>-<ID>  
Next Label: Cable-1-GF-011

Current Type: CAT6A UTP    Change Cable Type    Clear Label

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	11
Seperator	-	Number of Cables to Add:	10

Cable count: 10 of 1000    Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template
- "Clear Label" will clear the label template, but the names and values will not be cleared.
- Add cables by entering number of cables to be tested in the input field

# Process of a cable testing project

## Setting up a test list- Create names for cablings

Cable Test

14:21:48 36%

Cable Labeling - Test.tst

Template: <Name>-<Building>-<Floor>-<ID>

Next Label: Cable-1-GF-004

Current Type: CAT6A UTP

Change Cable Type

Clear Label

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	4
Seperator	-	Number of Cables to Add:	10

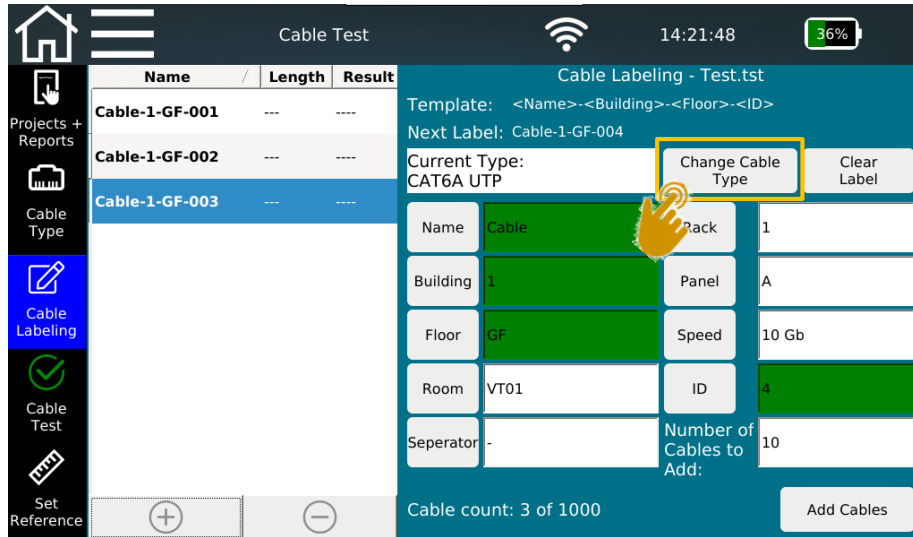
Cable count: 3 of 1000

Add Cables

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template
- "Clear Label" will clear the label template, but the names and values will not be cleared.
- Add cables by entering number of cables to be tested in the input field
- Or simply tap on the "+" button to add cables one by one

# Process of a cable testing project

## Setting up a test list- Create names for cabling



- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template
- "Clear Label" will clear the label template, but the names and values will not be cleared.
- Add cables by entering number of cables to be tested in the input field
- Or simply tap on the "+" button to add cables one by one
- Having any number of cable types is possible when creating new test lines
  - „Change cable type "jumps back to the previous menu and allows selection of another test standard
  - Cable type can no longer be changed for already created or measured test lines

# Process of a cable testing project

## Setting up a test list- Create names for cabling

Cable Test

14:21:48 36%

Cable Labeling - Test.tst

Template: <Name>-<Building>-<Floor>-<ID>

Next Label: Cable-1-GF-004

Current Type: CAT6A UTP

Change Cable Type

Clear Label

Name	Cable	Rack	1
Building	1	Panel	A
Floor	GF	Speed	10 Gb
Room	VT01	ID	4
Separator	-	Number of Cables to Add:	10

Cable count: 3 of 1000

Add Cables

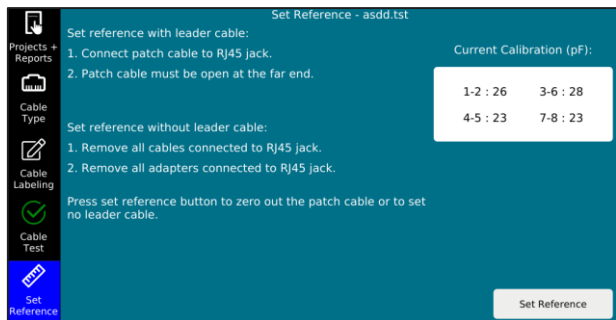
- There will be an error message, if...
  - „ID“ field is not included in the name
  - No name field is selected and the template is empty

- Based on "Current Type" selected previously from the Cable Type menu
- Enter the names and values by pressing on the respective input field
- By tapping on the corresponding label button, the label parameter will turn green, which means the parameter will be used in the label name
- Separator can be used multiple times by tapping on it each time after selecting one parameter and "Next Label" will be updated accordingly.
- "ID" field (counter) can be positioned anywhere within the template
- "Clear Label" will clear the label template, but the names and values will not be cleared.
- Add cables by entering number of cables to be tested in the input field
- Or simply tap on the "+" button to add cables one by one
- Having any number of cable types is possible when creating new test lines
  - „Change cable type "jumps back to the previous menu and allows selection of another test standard
  - Cable type can no longer be changed for already created or measured test lines

# Process of a cable testing project



## Set reference for copper cable testing

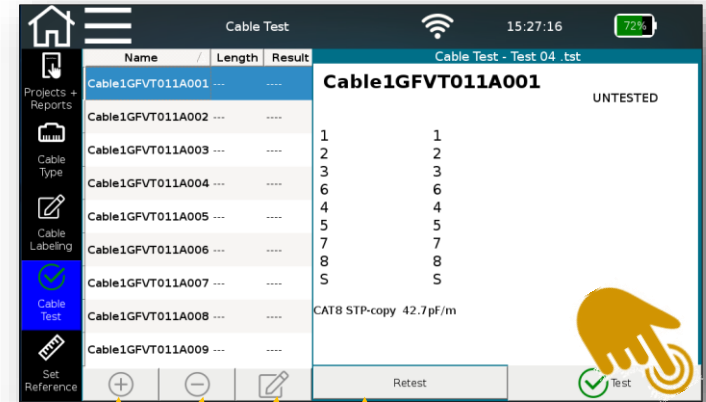
- Increase the accuracy of the length determination
- Set reference without using patch cables
  - Remove all cables and adapters and tap on Set Reference
- Set reference without using patch cables
  - Connect reference cables only to the main unit
    - Connect both test cords by a coupler
    - Connect one end to the local tester and leave the other end open
    - Determination of capacity determines cable capacitance
    - Cable capacitance will be subtracted from the overall result later
    - Repeat the process, if you change the test cord



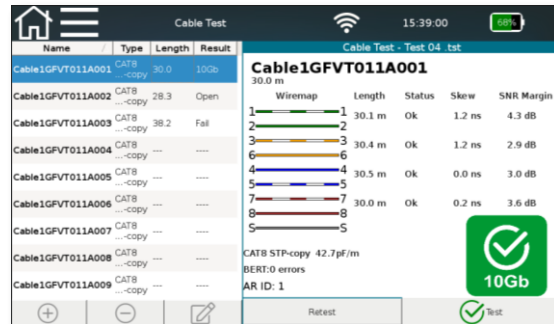
# Process of a cable testing project

## Performing a test for copper testing

- Test any listed cable in a random order
- Initiate a test by pressing the  Test button
- Cancel a test run by pressing the  Test Stoppen button
- By pressing the test button, the next entry on the list will be tested
  - If the end of the list is reached, a new entry will be created automatically
- When a new test list is created, it is permanently connected with test standards
  - If the test standard is wrong...
    - Delete incorrect list entries
    - Correct the test standard in the previous menu
    - Recreate the test list



Repeat the test by pressing "retest"



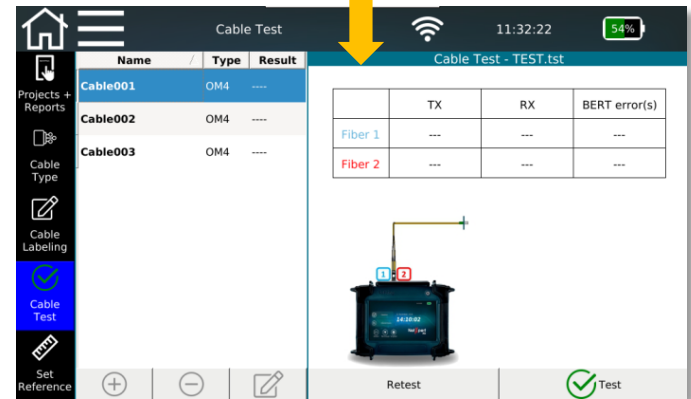
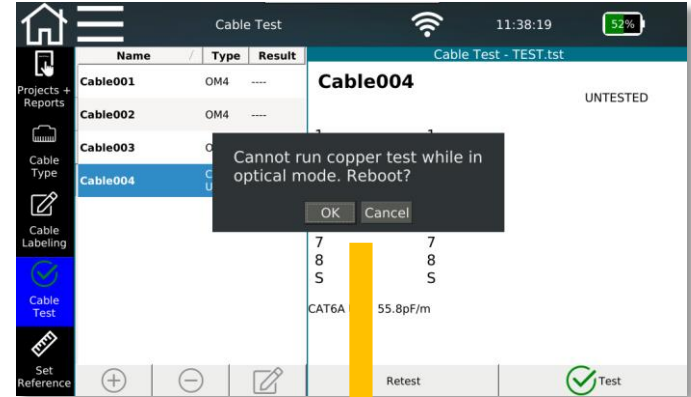
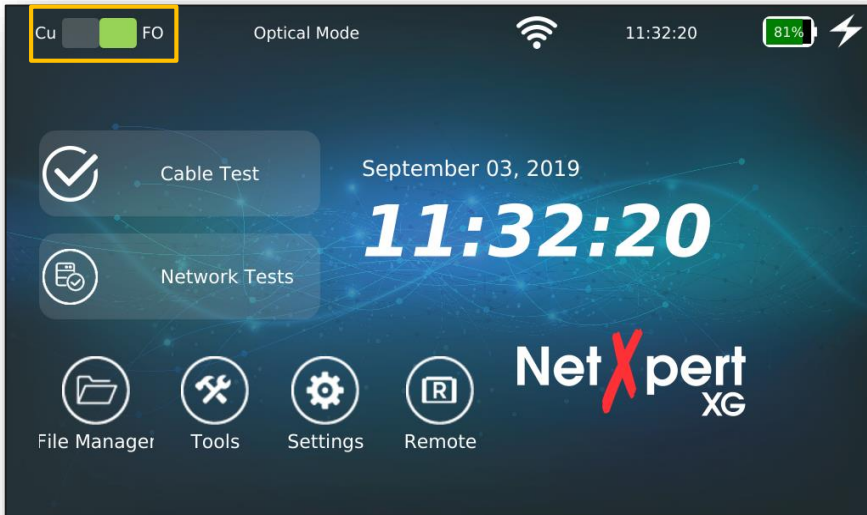
▪ Editing the cable name later is possible

▪ Adding and deleting cable names is also possible here

# Process of a cable testing project

## Performing a test for fiber testing

- If the media to be tested is changed, a confirmation message appears to change the mode of the unit.
- Mode of the unit can be changed on the main screen as well.

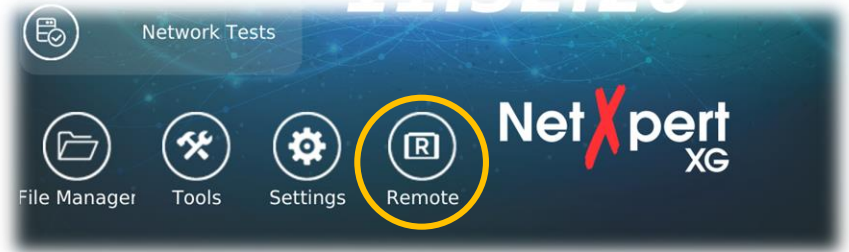




# Process of a cable testing project

## Performing a test for fiber testing

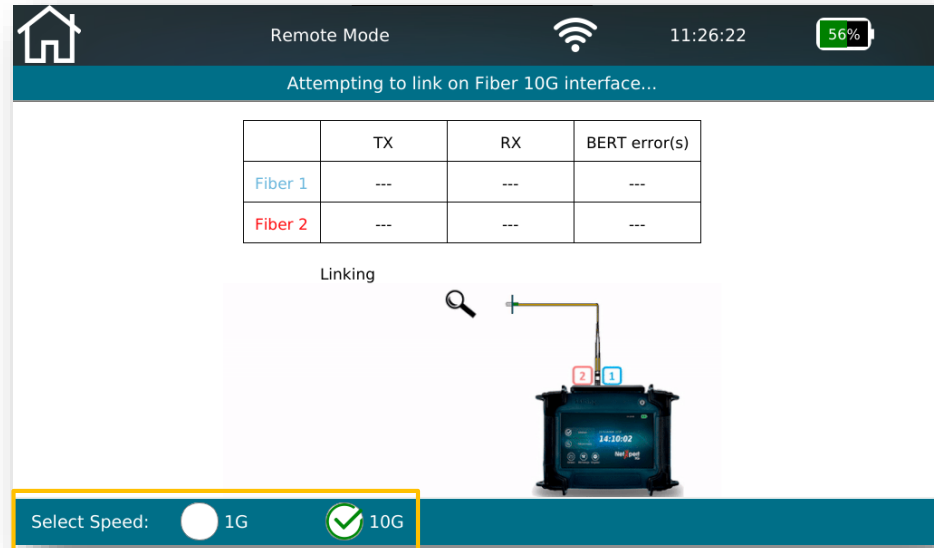
- Switch to fiber mode on both units and assign one of the units as remote by tapping on the remote icon on the main screen
- Mode of the unit can be changed on the main screen as well.
- Assign one of the main units as remote and select desired test speed on the remote screen
  - Hint: Makes sure to have the correct remote unit to perform the desired test



- Copper mode:  
Standard active remote





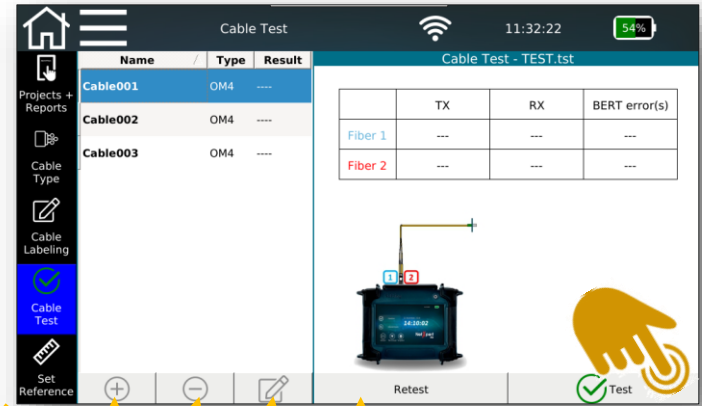
- Optical mode  
Seconde main unit  
in remote mode



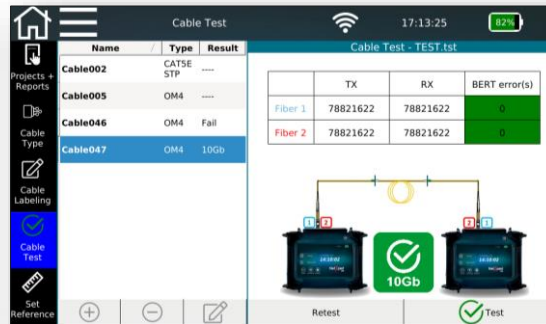
# Process of a cable testing project

## Performing a test for fiber testing

- Test any listed cable in a random order
- Initiate a test by pressing the  button
- Cancel a test run by pressing the  button
- By pressing the test button, the next entry on the list will be tested
  - If the end of the list is reached, a new entry will be created automatically
- When a new test list is created, it is permanently connected with test standards
  - If the test standard is wrong...
    - Delete incorrect list entries
    - Correct the test standard in the previous menu
    - Recreate the test list



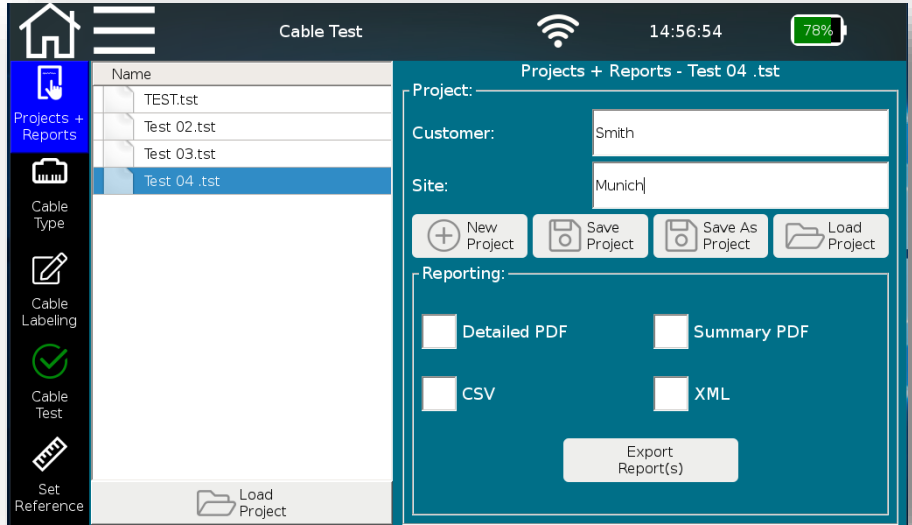
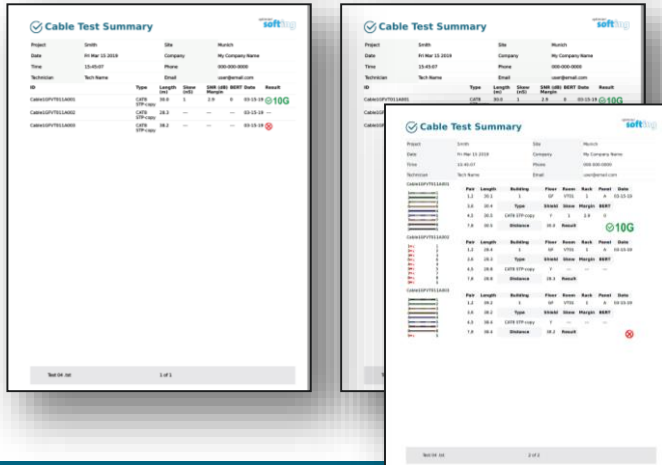
Repeat the test by pressing "retest"



- Editing the cable name later is possible
- Adding and deleting cable names is also possible here

# Process of a cable testing project Reporting

- Internal documentation
  - PDF summary
  - PDF details – summary and details
  - CSV – open format, e.g. editing on Excel
  - XML – exchange format with eXport
- Reports can be generated after completion or during project processing



- Creation of documentation in the device automatically
  - Selection of one or more output formats
  - "Export Report (s)" to initiate internal report generation

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  - Example test setup

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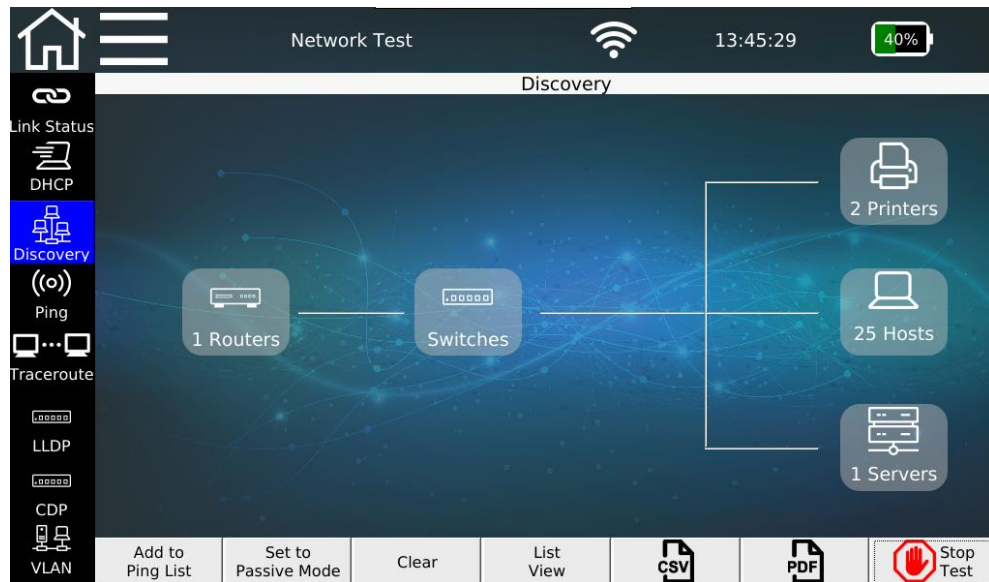
7

8

# „Network Tests“ function

## Simple diagnosis of an active network

- General
  - Supported media
    - Copper, fiber optic and Wi-Fi
  - IPv4/IPv6 support
- Available Ethernet speed
  - 100 Mb / 1 Gb Ethernet
    - All models
  - 100Mb and 1/2,5/5 Gb Ethernet
    - Model „NX\_XG\_10G / 226552“ and „NX\_XG\_25\_5G / 226553“
  - 100Mb and 1/2,5/5/10 Gb Ethernet
    - Model „NX\_XG\_10G / 226552“
- Upgrade of all models up to 10 Gb Ethernet is possible with license key



# „Network Tests“ function

## Test setup

- Via RJ45 copper connection
- Via SFP module on fiber optic
  - 1 Gbit/s
  - 10 Gbit/s
- Via Wi-Fi
  - Internal antenna
  - 2,4 GHz Band



# „Network Tests“ function

## Test parameters

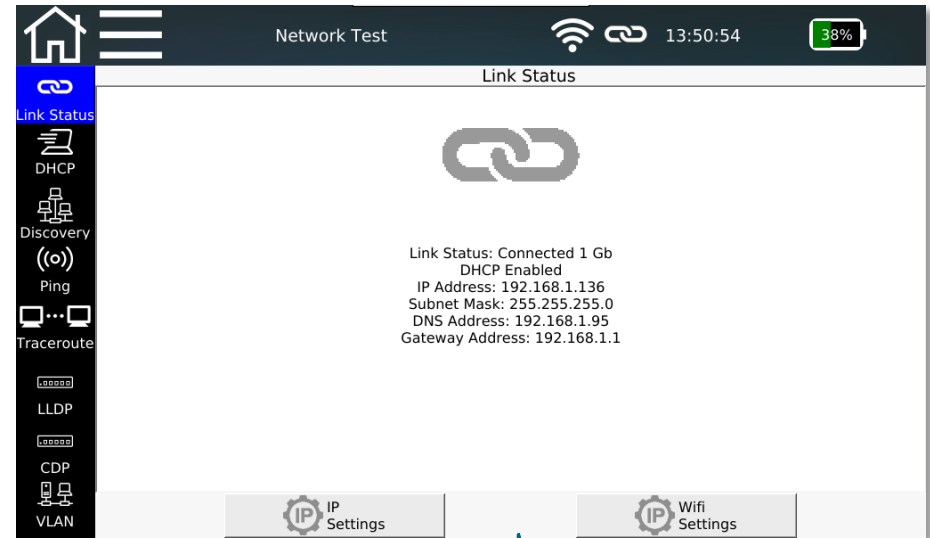


- Link-Status
  - Establishing connection with Switch via DHCP or fixed addressing
- DHCP-Test
  - Establishing a connection via dynamic addressing with output of the connection data
- Discovery
  - Search for stations in the network and categorization by device class
- Pinging specific addresses and address lists
  - Manual entry or transferring the address from network discovery function
  - Internal addresses or external URLs
- Traceroute
  - Step by step target tracking
- CDP und LLDP protocol detection
  - Exchange of connection information
- VLAN detection
  - Tagging after IEEE 802.1q

# „Network Tests“ function

## Test parameters

- Link Status
  - Establishing connection with Switch via DHCP or fixed addressing
  - Output of connection details

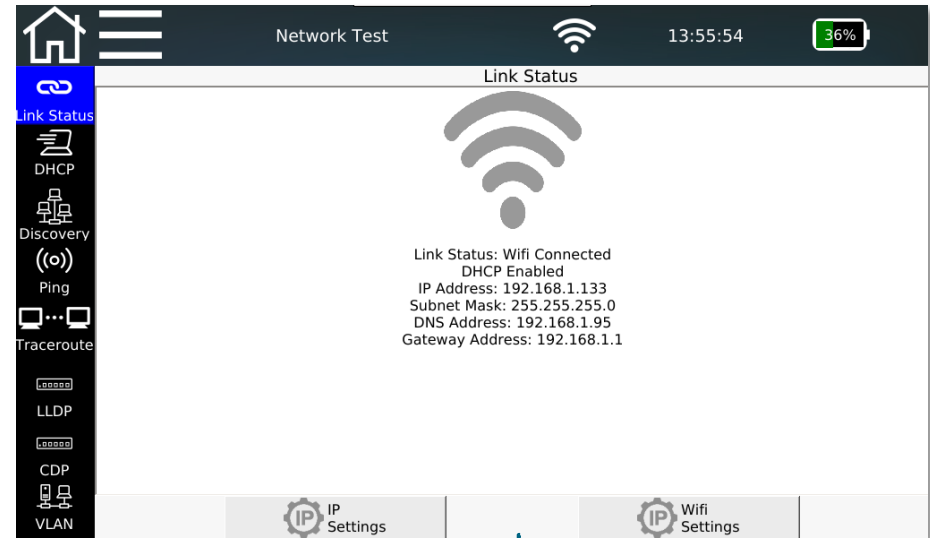
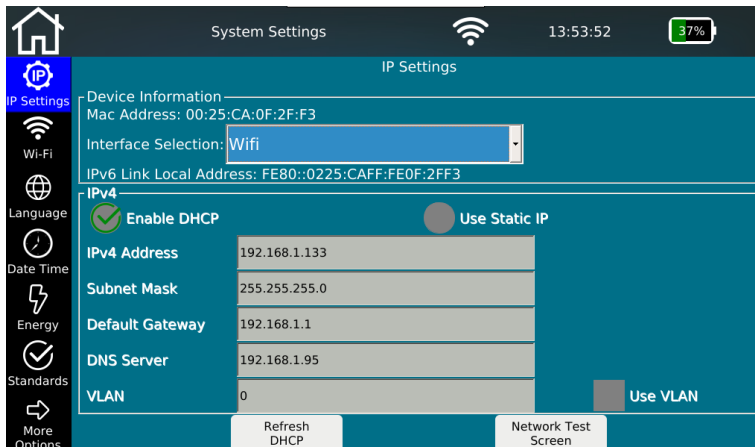




# „Network Tests“ function

## Test parameters

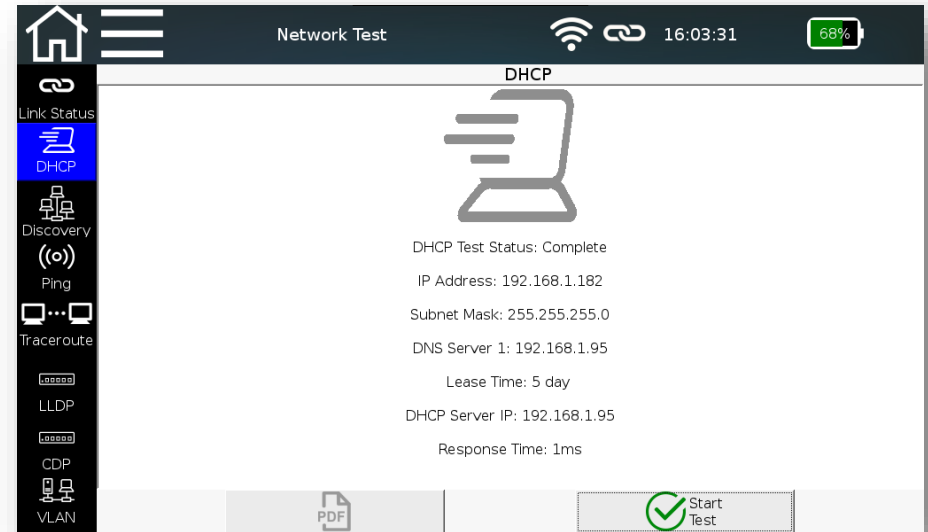
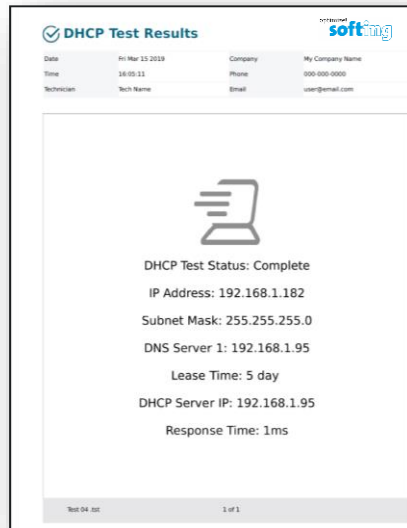
- Link Status (Wi-Fi Connection)
  - Establishing connection with Switch via DHCP or fixed addressing
  - Output of connection details



# „Network Tests“ function

## Test parameters

- DHCP-Test
  - Establishing a connection via dynamic addressing with output of the connection data
  - It can be documented as PDF report



# „Network Tests“ function

## Test parameters

- Network discovery
  - Search for stations in the network and categorization by device class (active or passive mode)
  - Graphical or tabular layout
  - DNS resolution
  - Selectable addresses for ping list
  - Duplicate IP addresses will be marked in **red**
  - Documentable as PDF report or CSV export

Mac Address	IPV4 Address	IPV6 Address	DNS Name	Netbios Name	Device Type
00:12:3B:44:C3:2A	192.168.1.107				Host
78:1B:34:00:00:00	192.168.1.108				Host
00:0C:29:00:00:00	192.168.1.109				Host
00:0F:00:75:02:A3	192.168.1.111				Host
00:09:0F:09:00:12	192.168.1.1				Router
70:72:CF:87:78:08	192.168.1.10				Host
00:1A:58:05:8B:26	192.168.1.145				Host
18:62:24:4C:82:21	192.168.1.160				Host
84:39:8E:66:14:55	192.168.1.93				Host
00:ED:4C:08:57:30	192.168.1.174				Host
00:13:8D:80:83:96	192.168.1.178				Host
C4:24:58:89:46:90	192.168.1.155				Host
00:15:99:A4:C3:08	192.168.1.157				Host
00:06:71:41:00:25	192.168.1.141				Host
04:8E:09:C6:8A:05	192.168.1.151				Host
00:1E:4F:28:09:1A	192.168.1.192				Host
00:0F:0C:13:16:17	192.168.1.150				Host
80:48:7A:BB:8D:50	192.168.1.252				Host
54:9F:35:23:97:9C	192.168.1.99				Host
04:8E:09:0C:89:09	192.168.1.156				Host
00:26:73:58:A4:F2	192.168.1.82				Host
30:10:64:0C:62:1A	192.168.1.125				Host
20:10:ED:0C:12:A8	192.168.0.1				Host
A0:63:91:8B:33:94					Switch

Mac Address	IPv4 Address	IPv6 Address	DNS Name	Netbios Name	Device Type
1	F0:1F:AF:3A:7F:5A	192.168.1.167	huber-pc.dhcp.softing.com	HUBER-PC	Host
3	F8:00:00:75:02:A3	192.168.1.111	cam-3224-0a.pstiber.local		Host
4	00:09:0F:09:00:12	192.168.1.1	No Such Name		Router
5	70:72:CF:87:78:08	192.168.1.10	No Such Name		Host
6	00:1A:58:05:8B:26	192.168.1.145	No Such Name		Host
7	18:62:24:4C:82:21	192.168.1.160	wfca.dhcp.softing.com	WFCA	Host
8	84:39:8E:66:14:55	192.168.1.93	No Such Name	EXPORT-CLOUD-DE	Host
9	00:ED:4C:08:57:30	192.168.1.174	pc-fneuhoff.dhcp.softing.com	PC-FNEUHOFF	Host
10	00:13:8D:80:83:96	192.168.1.178	No Such Name		Host
11	C4:24:58:89:46:90	192.168.1.155	psiber001.pstiber.local	PSIBER001	Server
12	00:15:99:A4:C3:08	192.168.1.157	No Such Name	SAMSUNG-ITN-PM	Host
13	00:06:71:41:00:25	192.168.1.141	No Such Name		Host
14	04:8E:09:C6:8A:05	192.168.1.151	lager-pc.pstiber.local	LAGER-PC	Host
15	00:1E:4F:28:09:1A	192.168.1.192	No Such Name		Host
16	00:0F:0C:13:16:17	192.168.1.150	No Such Name		Host
17	80:48:7A:BB:8D:50	192.168.1.252	No Such Name		Host
18	54:9F:35:23:97:9C	192.168.1.99	srvact.pstiber.local	SRVACT	Host
19	04:8E:09:0C:89:09	192.168.1.156	gerhardh-pc.dhcp.softing.com	GERHARDT-PC	Host
20	00:26:73:58:A4:F2	192.168.1.82	rico2500.pstiber.local	RNP026758A4F2	Host
21	30:10:64:0C:62:1A	192.168.1.125	No Such Name		Host
22	20:10:ED:0C:12:A8	192.168.0.1	No Such Name		Host
23	A0:63:91:8B:33:94		No Such Name		Switch

Mac Address	IPv4 Address	IPv6 Address	DNS Name	Netbios Name	Device Type
00:13:FA:04:18:84					Host
00:10:6C:00:29:...	172.17.0.19				Host
00:15:5D:00:34:...	172.17.0.203				Host
00:09:0F:F1:4C:1A	172.17.0.14				Host
00:0D:23:0F:B0:C8	172.17.0.70				Host
00:15:5D:00:4D:...	172.17.0.242				Host
9C:3D:CF:F2:1D...	172.17.43.142				Host
00:15:5D:00:34:...	172.17.0.12				Host
60:12:8B:D4:4C:...	172.17.0.124				Host
00:09:0F:E1:86:02	172.17.0.4				Host
00:1F:33:FB:2C:07	172.17.0.186				Host
00:22:64:CC:15:FB	172.17.0.21				Host
CC:40:D0:56:37:...	172.17.43.211				Host
00:15:5D:00:3C:...	172.17.4.90				Host

# „Network Tests“ function

## Test parameters

- Pinging specific addresses and address lists
  - Manual entry or transferring the address from network discovery function
  - Internal addresses or external URLs
  - Documentable as PDF report or CSV export

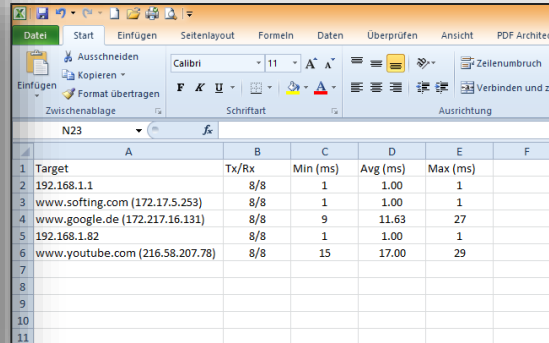


**Ping Test Summary**

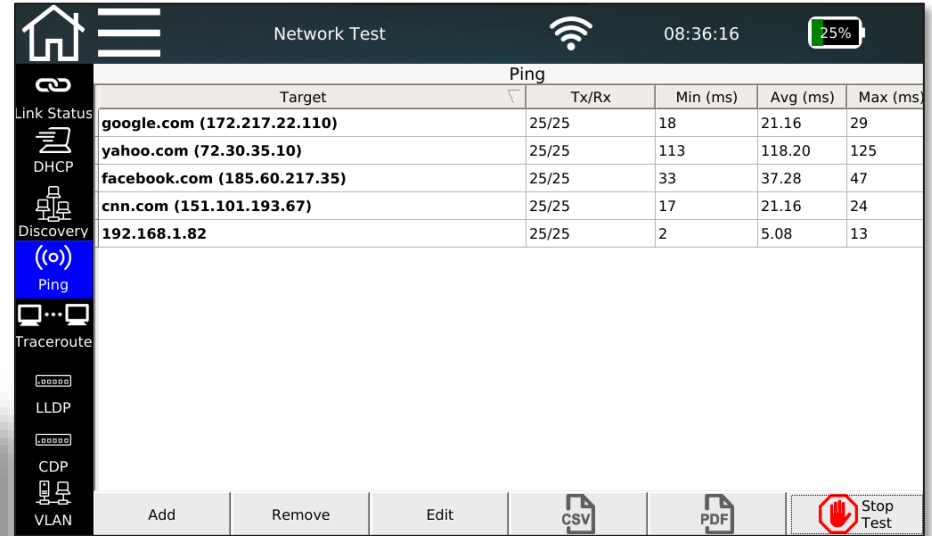
Date: Fri Mar 13 2015  
Time: 08:38:12  
Technician: Tech-Name

Company: My Company Name  
Phone: 000-000-0000  
Email: user@company.com

Target	Tx/Rx	Min (ms)	Max (ms)	Avg (ms)
www.softing.com (172.17.5.253)	8/8	1	2	1.33
www.yahoo.com (97.248.98.7)	8/8	36	56	39.38
192.168.1.1	8/8	1	1	1.00
192.168.1.157	8/8	1	2	1.25



Target	Tx/Rx	Min (ms)	Avg (ms)	Max (ms)
192.168.1.1	8/8	1	1.00	1
www.softing.com (172.17.5.253)	8/8	1	1.00	1
www.google.de (172.217.16.131)	8/8	9	11.63	27
192.168.1.82	8/8	1	1.00	1
www.youtube.com (216.58.207.78)	8/8	15	17.00	29



Network Test

08:36:16 25%

Target	Tx/Rx	Min (ms)	Avg (ms)	Max (ms)
google.com (172.217.22.110)	25/25	18	21.16	29
yahoo.com (72.30.35.10)	25/25	113	118.20	125
facebook.com (185.60.217.35)	25/25	33	37.28	47
cnn.com (151.101.193.67)	25/25	17	21.16	24
192.168.1.82	25/25	2	5.08	13

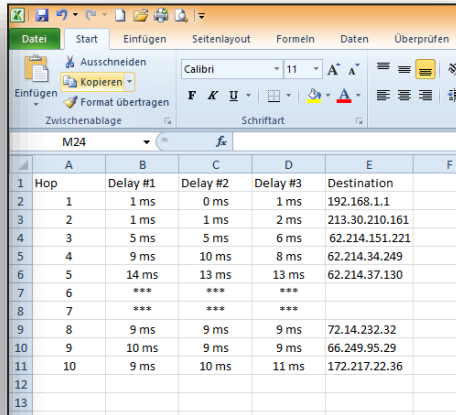
Link Status  
DHCP  
Discovery  
Ping  
Traceroute  
LLDP  
CDP  
VLAN

Add Remove Edit CSV PDF Stop Test

# „Network Tests“ function

## Test parameters

- Traceroute
  - Step by step target tracking
  - Localization of interruptions in the path
    - Internal problem
    - Provider problem
  - Documentable as PDF report or CSV export



Network Test 08:38:57 24%

Traceroute www.google.com

Hop	Delay #1	Delay #2	Delay #3	Destination
1	1 ms	5 ms	5 ms	192.168.1.1
2	5 ms	5 ms	3 ms	213.30.210.161
3	13 ms	13 ms	11 ms	62.214.151.221
4	13 ms	16 ms	16 ms	62.214.34.249
5	39 ms	18 ms	17 ms	62.214.37.130
6	17 ms	16 ms	14 ms	89.246.109.250
7	18 ms	17 ms	14 ms	108.170.251.129
8	11 ms	25 ms	21 ms	74.125.37.167
9	17 ms	26 ms	15 ms	172.217.18.164

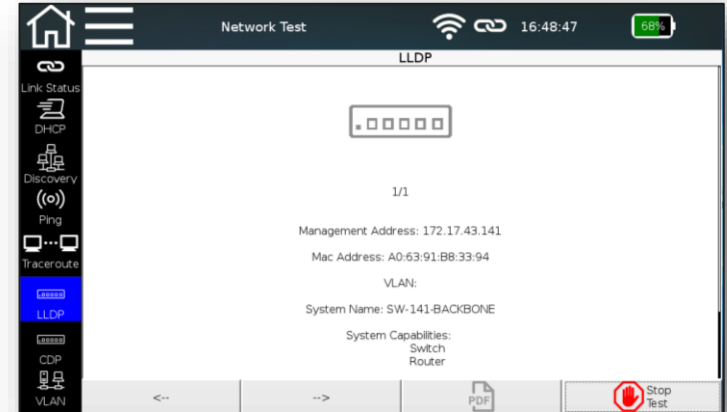
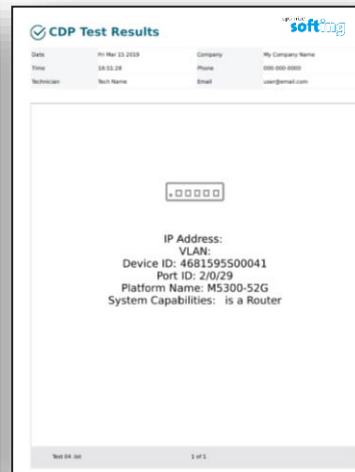
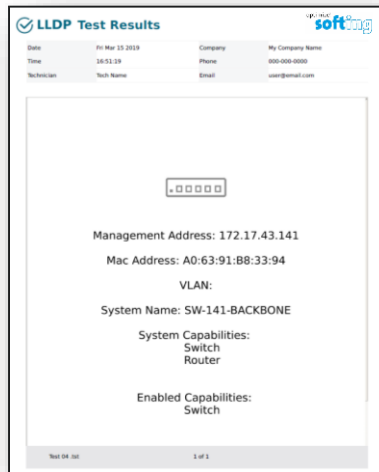
Link Status  
DHCP  
Discovery  
Ping  
Traceroute  
LLDP  
CDP  
VLAN

Edit Target CSV PDF Start Test

# „Network Tests“ function

## Test parameters

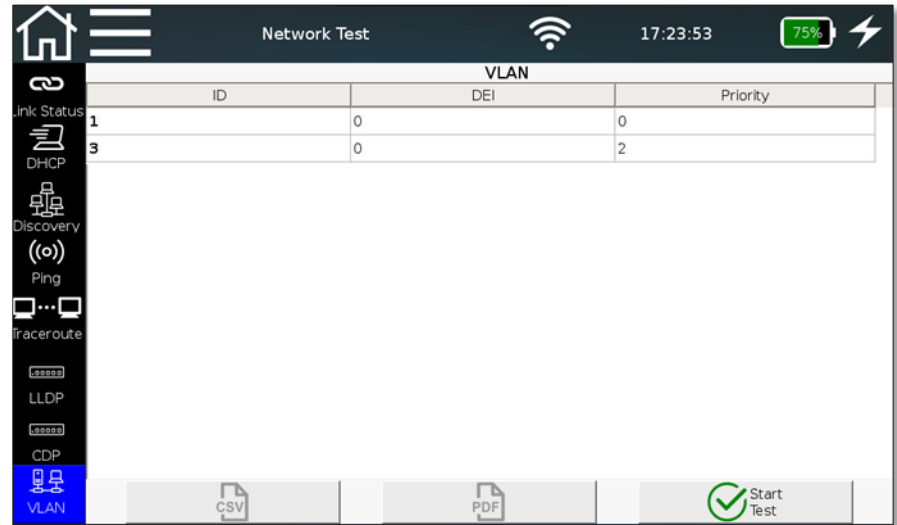
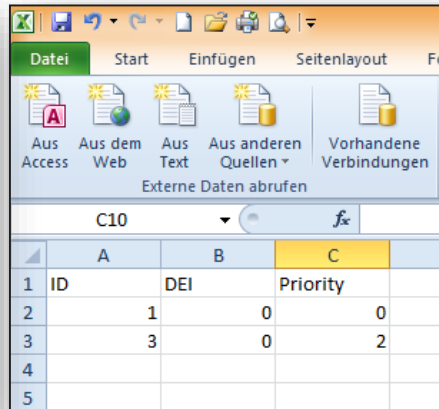
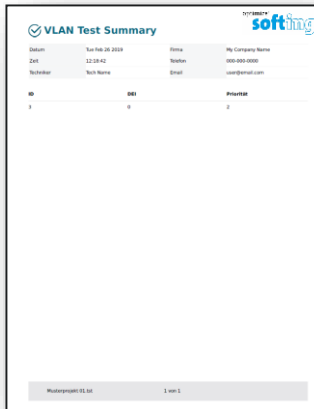
- Protocol detection
  - LLDP – Link Layer Discovery Protocol
  - CDP – Cisco Discovery Protocol
  - Exchange of connection information
  - In some applications important for mapping
  - Documentable as PDF



# „Network Tests“ function

## Test parameters

- VLAN detection
  - Tagging after IEEE 802.1q
  - Output of
    - ID – Number of the VLAN
    - DEI – Drop Eligible Indicator: Can be used to indicate that frames can be dropped in the presence of network congestions (formerly CFI).
    - Priority – User priority information
  - Documentable as PDF report or CSV export



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- Data management
  - Data functions
  - Data types
  - Data export and import

- Single tests
  - Copper Tools menu
  - Fiber Tools menu

- Basic settings
  - Device settings
  - Test parameter specifications

- Licensing and updates
  - Speed upgrades
  - Firmware updates

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6

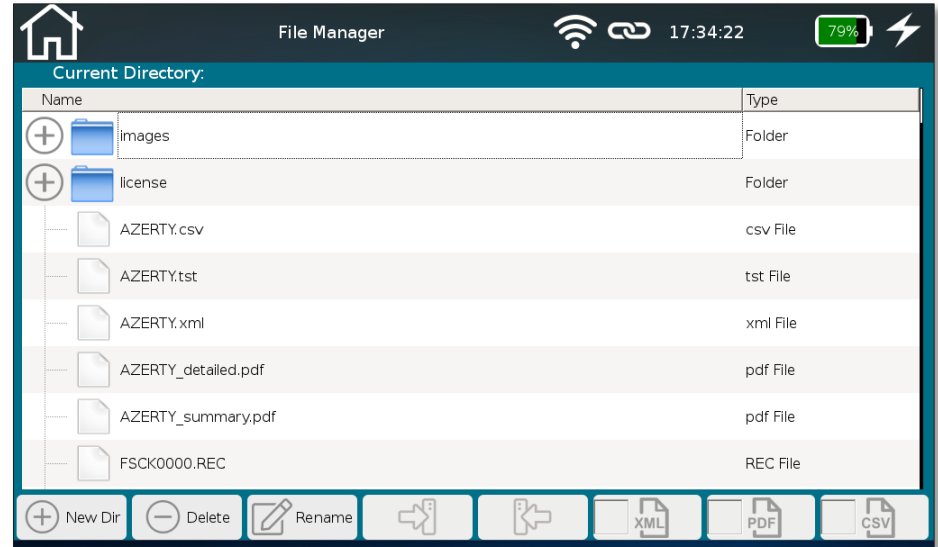
7

8



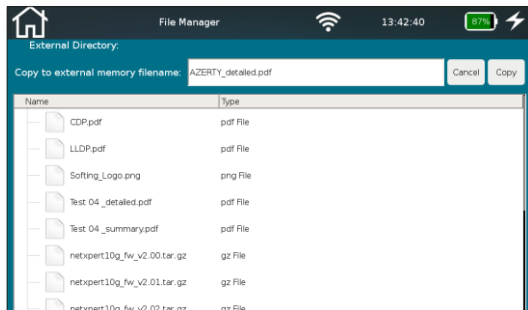
# „File Manager“ menu

- Management of different file types
  - Original test data ending with ".tst"
  - Test protocols for direct transfer via PDF format
    - Summary
    - Detailed
  - Test data as open „CSV“ format
    - Further processing e.g. on MS-Excel
    - Integration in network administration programs
  - Data exchange with eXport data management software via XML format (in progress)
  - Delete and rename existing files
- Switchable format filters make it easier to see an overview



# „File Manager“ menu

- Create your own project structures
- Import/download...
  - external test data from eXport data management software
  - Firmware updates
  - Logos to use on reports
- Data exchange between internal memory and external medium via USB stick (micro-USB adapter is included)
  - Possibility to change the file name when copying
  - Please connect the USB flash drive with the adapter cable before inserting it to the main unit!



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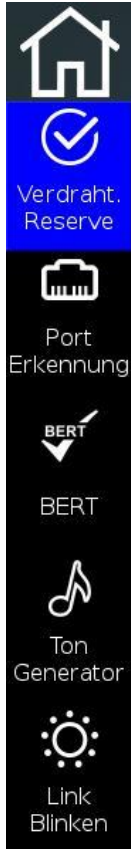
6

7

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# Copper „Tools“ menu

## General

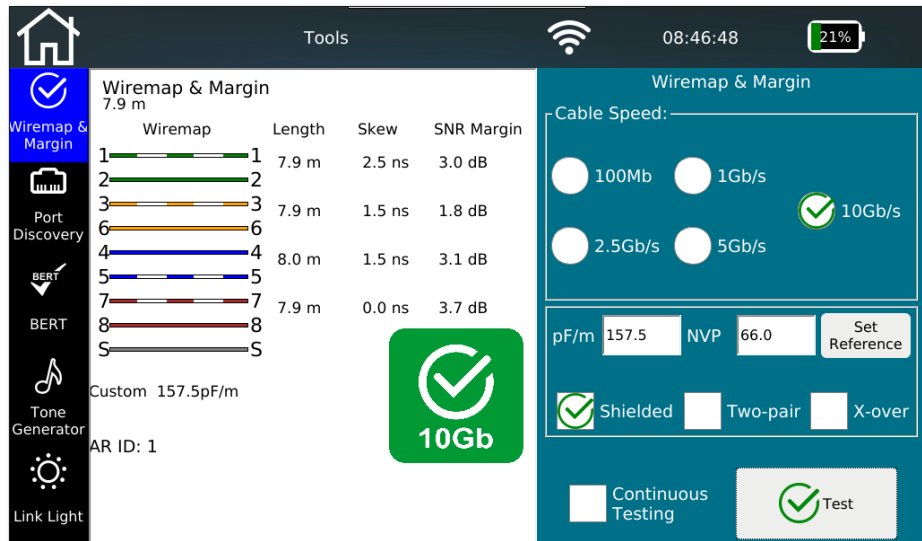


- Additional functions
  - Wiremap and margin
  - Port discovery
  - BERT
  - Tone Generator
  - Link Light

# Copper „Tools“ menu

## Wiremap and margin

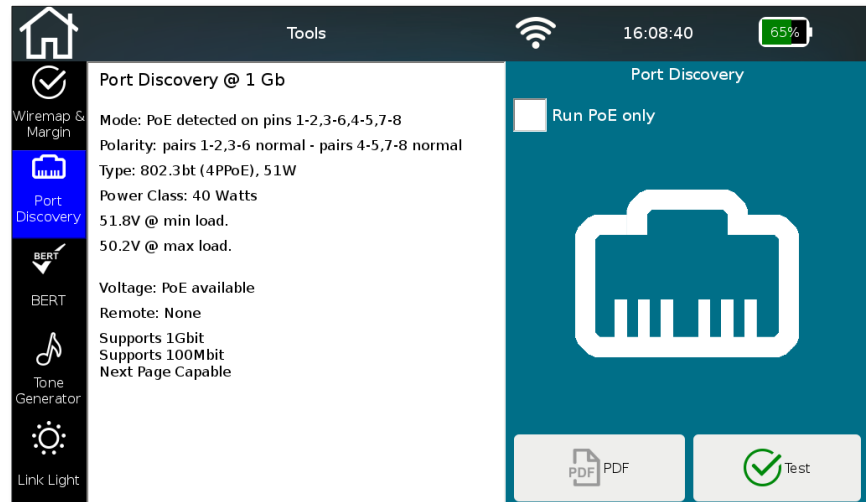
- Passive single test
  - Wiremap test
    - Length determination
    - Error output
  - Performance test
    - Selectable Ethernet speed
- Cable wiring and shield freely selectable
  - Shielded / No shield
  - Straight / X-Over
  - Four pair / two pair
  - In case of a wrong selection, and error message will be displayed
- Continuous test
  - Locate loose contacts
  - Interruptions due to temporary events



# Copper „Tools“ menu

## Port discovery

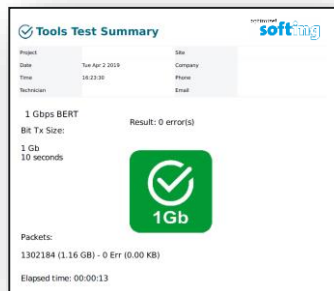
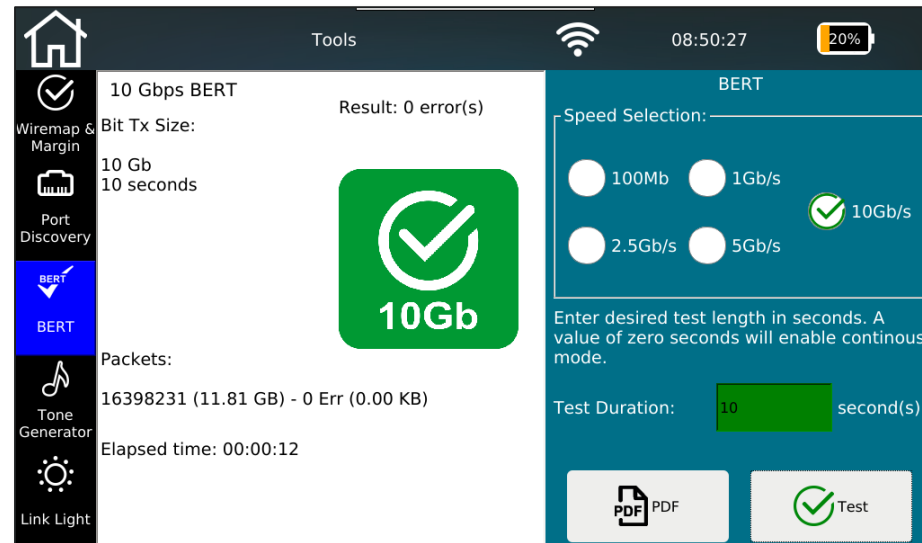
- Provides detailed information about the switch port
  - Ethernet speed of the current connection
  - Possible speeds of the port
- PoE evaluation (also as a single function)
  - Operating mode
  - Polarity
  - Type / power class
    - PoE / PoE+ / PoE ++
  - Voltage drop with or without load
  - Documentable as PDF



# Cooper „Tools“ menu

## Separate Bit Error Rate Test (BERT)

- Preset test times depending on selected Ethernet speed
  - Test times are based on statistical security (see table below, which is based on “required bit error rate” defined by IEEE)
  - Values can also be adjusted between 0 (continuous test) to 300 seconds
  - Evaluation via sent and received packets
  - Documentable as PDF

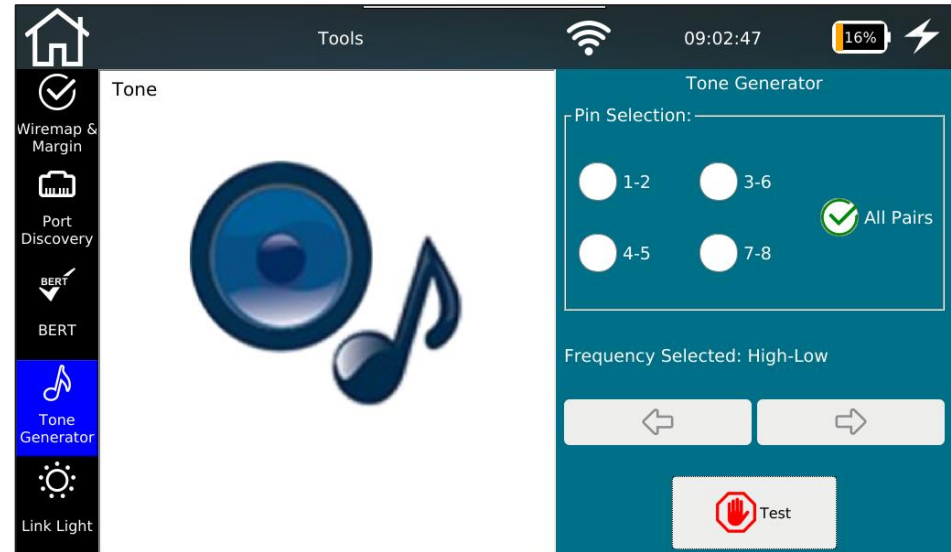


Transmission format	Standards reference	Required Bit Error Rate in standards reference	Test time for 10% confidence level	Test time for 63% confidence level	Test time for 95% confidence level
1G	IEEE Std 802.3ab	$10^{-10}$	1 second	10 seconds	30 seconds
2.5G	IEEE Std 802.3bz	$10^{-12}$	42 seconds	6 minutes 38 seconds	19 minutes 58 seconds
5G	IEEE Std 802.3bz	$10^{-12}$	21 seconds	3 minutes 19 seconds	9 minutes 59 seconds
10G	IEEE Std 802.3an	$10^{-12}$	11 seconds	1 minute 39 seconds	5 minutes 0 seconds

# Copper „Tools“ menu

## Ton generator

- Acoustic signaling
  - Signal pairs freely selectable
- Acceptance via any analog inductive receiver

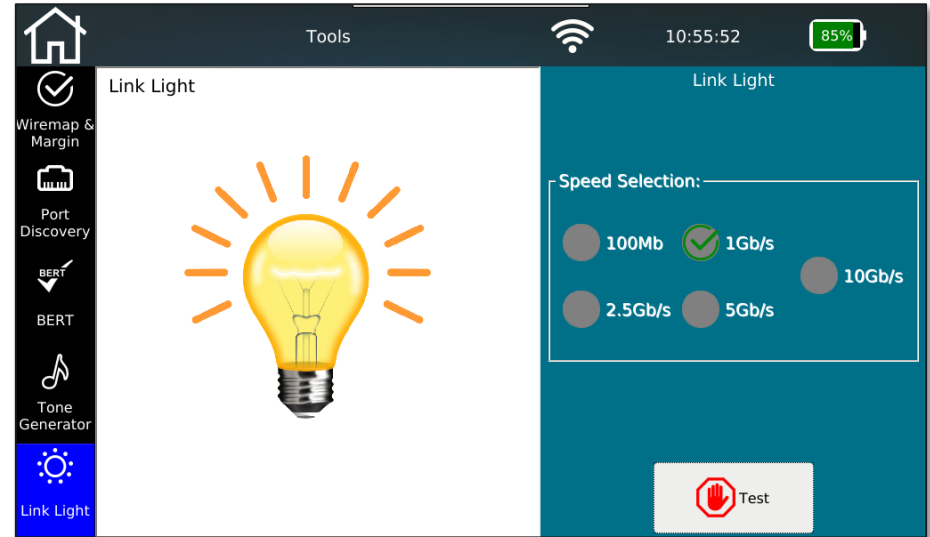




# Copper „Tools“ menu

## Link light

- Optical port detection on the switch
  - Localization of the connected switch port
  - Slow flashing link LED (0.5Hz)



# Fiber „Tools“ menu

## General

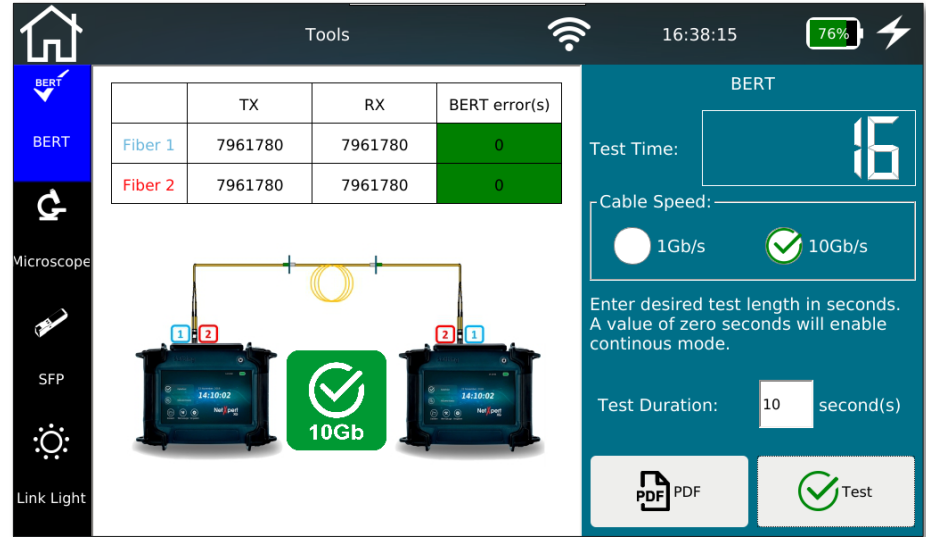


- Additional functions
  - BERT
  - Microscope (in progress)
  - SFP test (in progress)
  - Link Light

# Fiber „Tools“ menu

## BERT

- Preset test times depending on selected Ethernet speed
  - Test times are based on statistical security (see table below, which is based on “required bit error rate” defined by IEEE )
  - Values can also be adjusted between 0 (continuous test) to 300 seconds
  - Evaluation via sent and received packets
  - Documentable as PDF

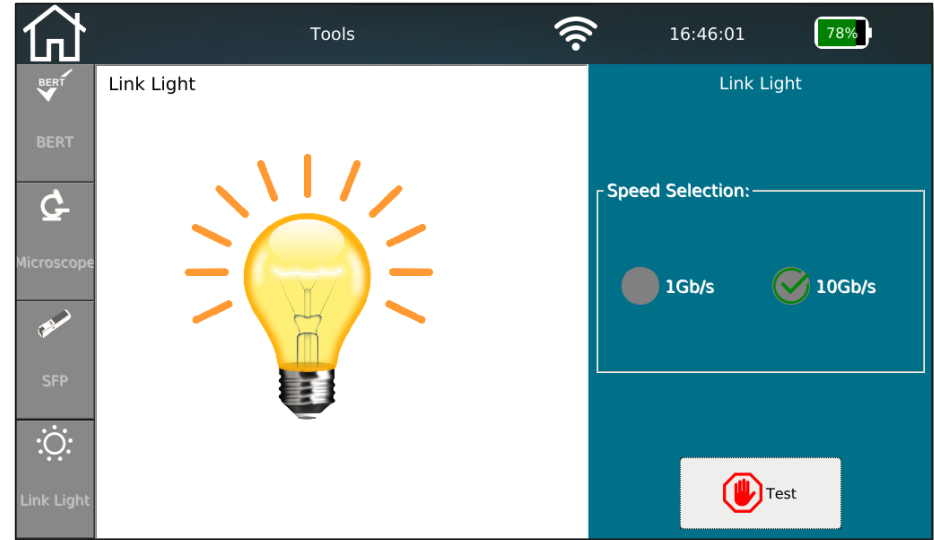


Transmission format	Standards reference	Required Bit Error Rate in standards reference	Test time for 10% confidence level	Test time for 63% confidence level	Test time for 95% confidence level
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# Fiber „Tools“ menu

## Link light

- Optical port detection on the switch
  - Localization of the connected switch port
  - Slow flashing link LED (0.5Hz)



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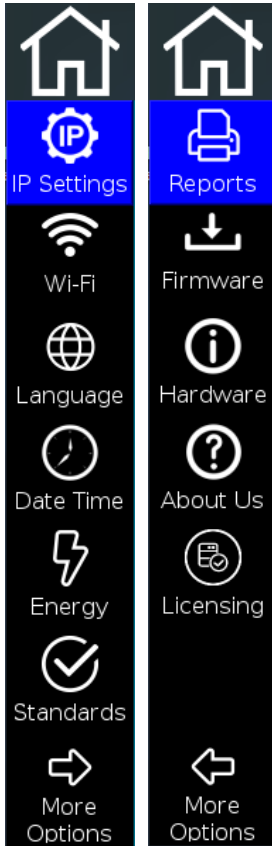
6

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# „Settings“ menu

## General

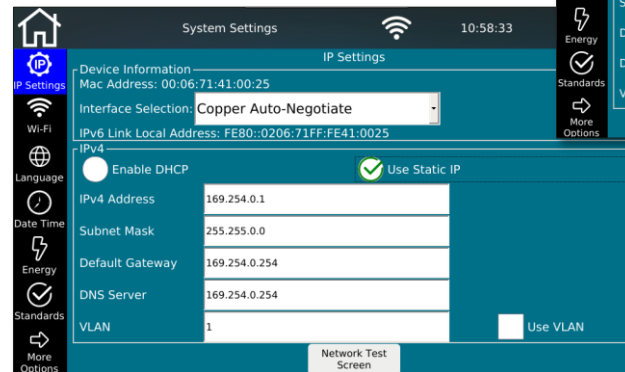
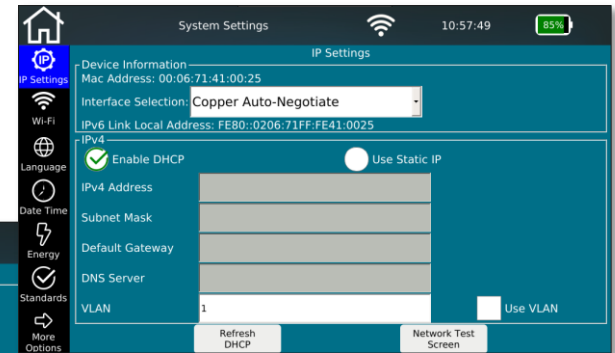
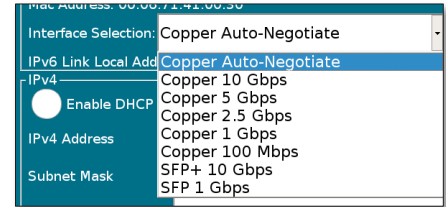


- Specify IP Details
- Wi-Fi scan and connection
- System settings
  - Language settings
  - Date/time
  - Energy saving options
  - Units (ft/m) and wiring standard (T568A/T568B) settings
- Header information and logo selection for report generation
- Info screens on
  - Installed firmware
  - Integrated hardware
  - Manufacturer contact details
  - Active licenses and upgrade options

# „Settings“ menu

## Specify IP Details

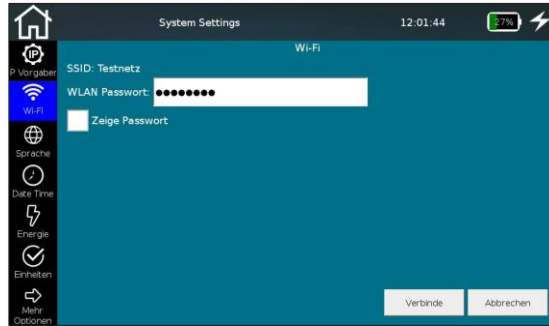
- Selecting interface for active tests
  - RJ45-Port for copper
    - Auto negotiation or fixed speed
  - „1GbE“ cage for fiber optic testing at 1 Gigabit Ethernet via optional SFP module
  - „10GbE“- cage for fiber optic testing at 1 Gigabit Ethernet via optional SFP+ module
    - After this selection, the device boots into a special mode
  - Wi-Fi
    - Wi-Fi connection with DHCP address assignment
    - Wi-Fi is enabled, only if the unit is connected to a network
- Additional device information for integration into an active network
  - MAC address
  - IPv6 Link local address
- IPv4 address assignment
  - Via DHCP or
  - Manual input
  - Optional activation of VLAN function



# „Settings“ menu

## Wi-Fi scan and connection

- By selecting the menu item, a network scan in the 2.4 GHz band starts automatically
- Display of founded SSIDs
  - Display the name
  - Signal strength
  - Encryption methods
- Selection of the WLAN network to establish the connection
  - Password entry (if necessary)
- After the connection is established, all active network tests are available
  - “WiFi” must be selected from the drop-down list as interface in the IP Settings menu
- Available VNC functions
  - Remote control of the device functions
  - Presentation mode



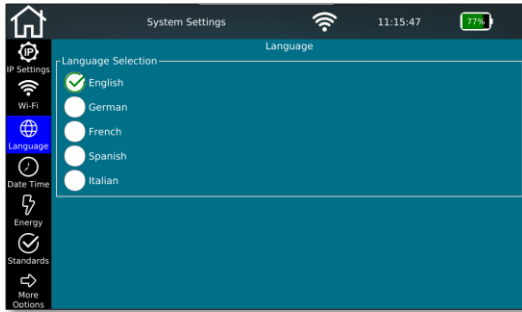


# „Settings“ menu

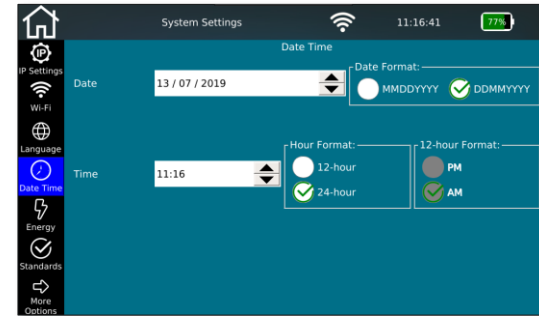
## System settings

- Device specific system settings

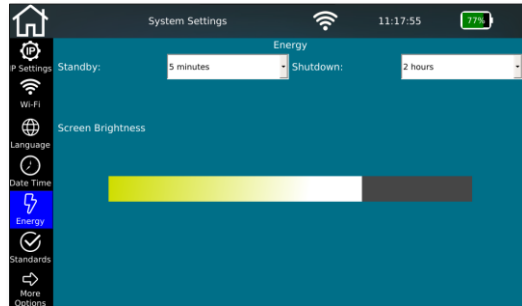
- Language settings



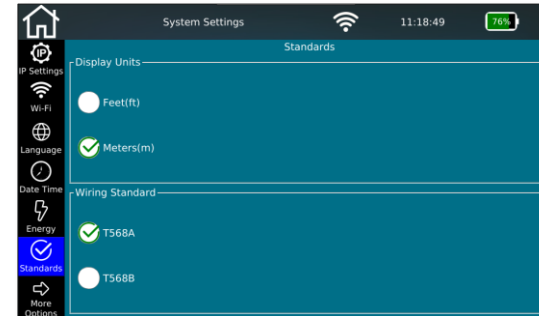
- Date/Time



- Energy saving options



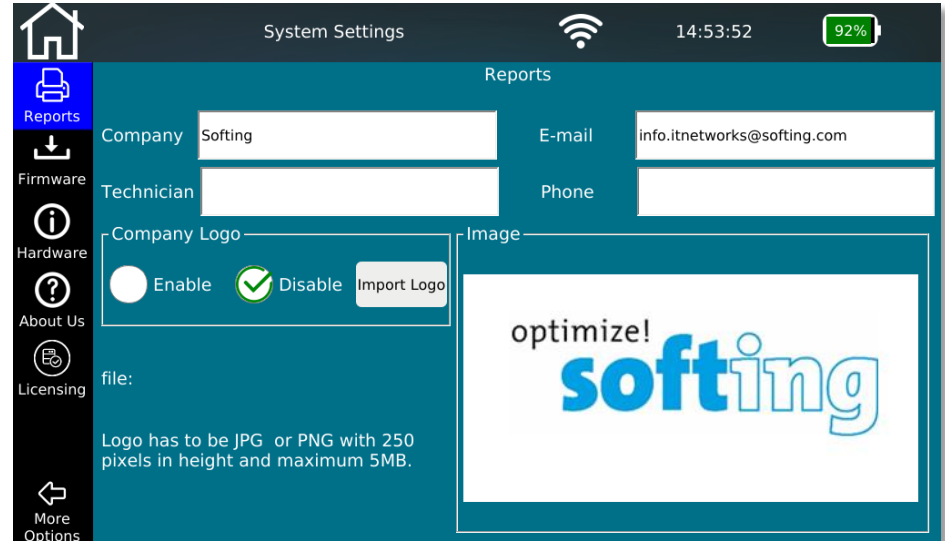
- Units (ft/m) /wiring standards



# „Settings“ menu

## Header information and logo selection for report generation

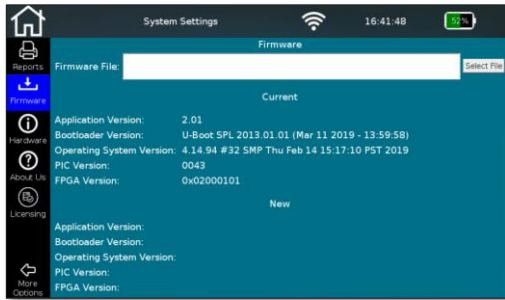
- Information that can be permanently displayed as header information on the test reports
  - Company that is conducting the test
  - Technician who is conducting the test
  - Contact details of the company
    - E-mail address
    - Telephone number
- Logo of the company that is conducting the test
  - Enable and disable the logo display on the test reports
  - Import from external sources via USB stick
    - Note allowed file formats
    - Note size limitation



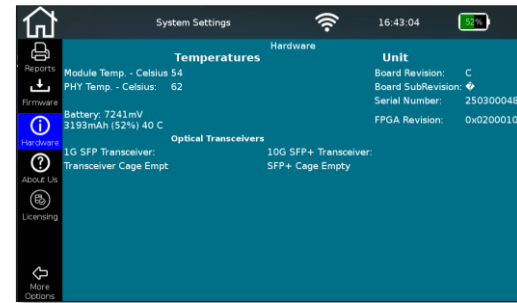
# „Settings“ menu

## Info screens

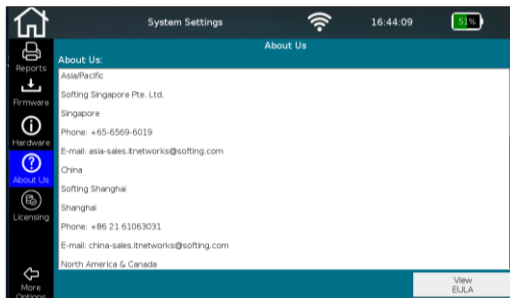
- Info screens on
  - Installed firmware



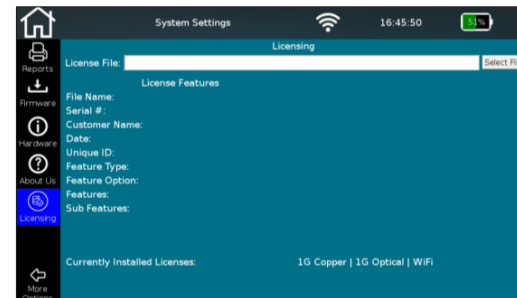
- Integrated hardware



- Manufacturer contact details



- Active licenses and upgrade options



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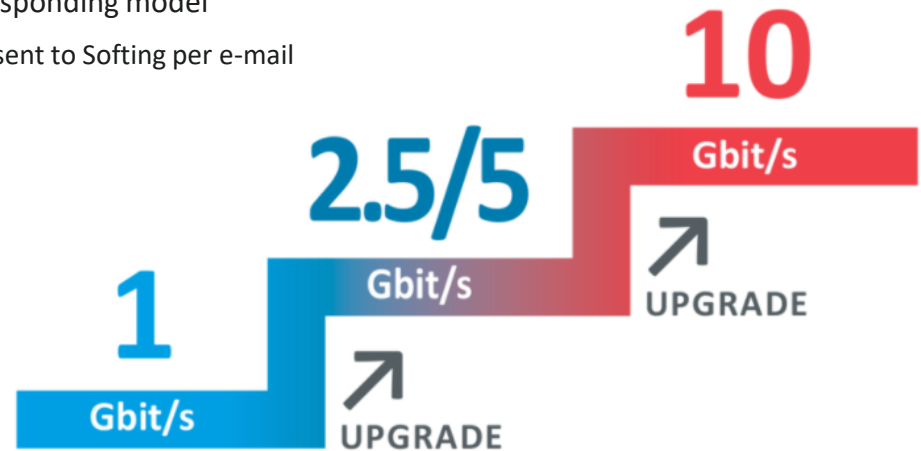
7

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# Licensing system

## General

- „Step-up“ license
  - Upgrades the test speed one level at a time
  - Installation via USB-Stick after purchase
- „Functional“ license
  - Free or paid feature enhancements
- Hardware has a license preinstalled up to 1 Gbit/s
- Higher models need additionally 1 or 2 license vouchers for corresponding model
  - The serial number of the product and the voucher code must be sent to Softing per e-mail
- License key is binary file for specific serial numbers
  - It can only be used on one device



# Licensing system

## Installing a license

- Two ways to upgrade a license
  - Buy a NetXpert XG in 2.5 / 5G or 10G version
    - Product is always delivered with a 1G license installed
    - One or two license vouchers are delivered in a separate box
    - Email the voucher codes and the serial number of the main unit to [upgrade.itnetworks@softing.com](mailto:upgrade.itnetworks@softing.com) (Serial number can be found on system settings → hardware or at the back side of the main unit)
    - Softing replies with a file (binary license file) to be installed on the main unit via USB-Stick
  - Buy a voucher at a later date
    - Classic order transaction via dealer with the serial number of the main unit
    - Download the attached file from the e-mail (binary license file) to USB stick and import to main unit
- Each installed license will be displayed at the bottom of the screen



# Firmware updates

- Regular firmware updates
  - Bug fixing
  - Basic (free of charge) performance enhancements
  - Informing the end customers directly
  - Available via Softing webpage at no charge
  - Regular update cycle
  - Installing via USB stick
  - „Over the air“ (planned)



# For further inquiries and support:

## EMEA

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94000 Créteil • France  
+33 (0) 1 45 17 28 05  
[info.france@softing.com](mailto:info.france@softing.com)

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**IT Networks**