

NetXpert
XG

Next Generation Ethernet Speed Certifier

August 2020
Menu structure and user guide



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NetXpert XG – Next Generation Qualifier

Main operating modes

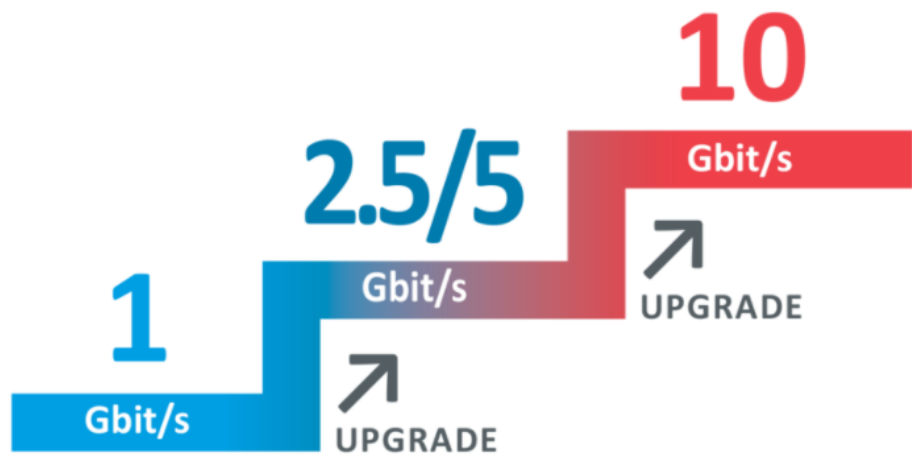
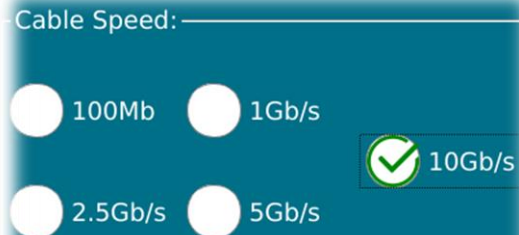
- Qualifying passive communication lines on copper and fiber
 - Main unit communicates with wiremap, mapper or active remotes at the far end of the line to...
 - ...implement a wiremap test and troubleshoot the cable
 - ...locate the connected ports
 - ...identify the Ethernet performance of a transmission 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)
 - Loss
 - Length
- Tools for setup and troubleshooting in active networks
 - Copper
 - Fiber optic (1G/10G)
 - Wi-Fi



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

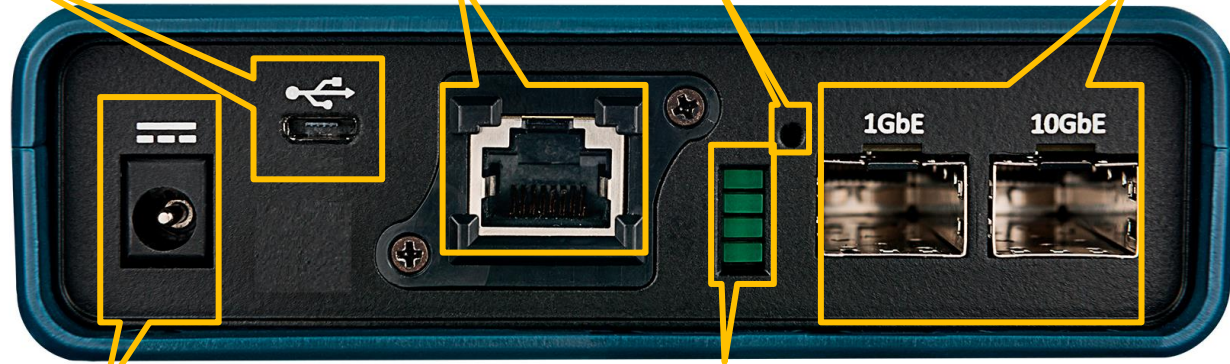
RJ45 measuring port

- 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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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

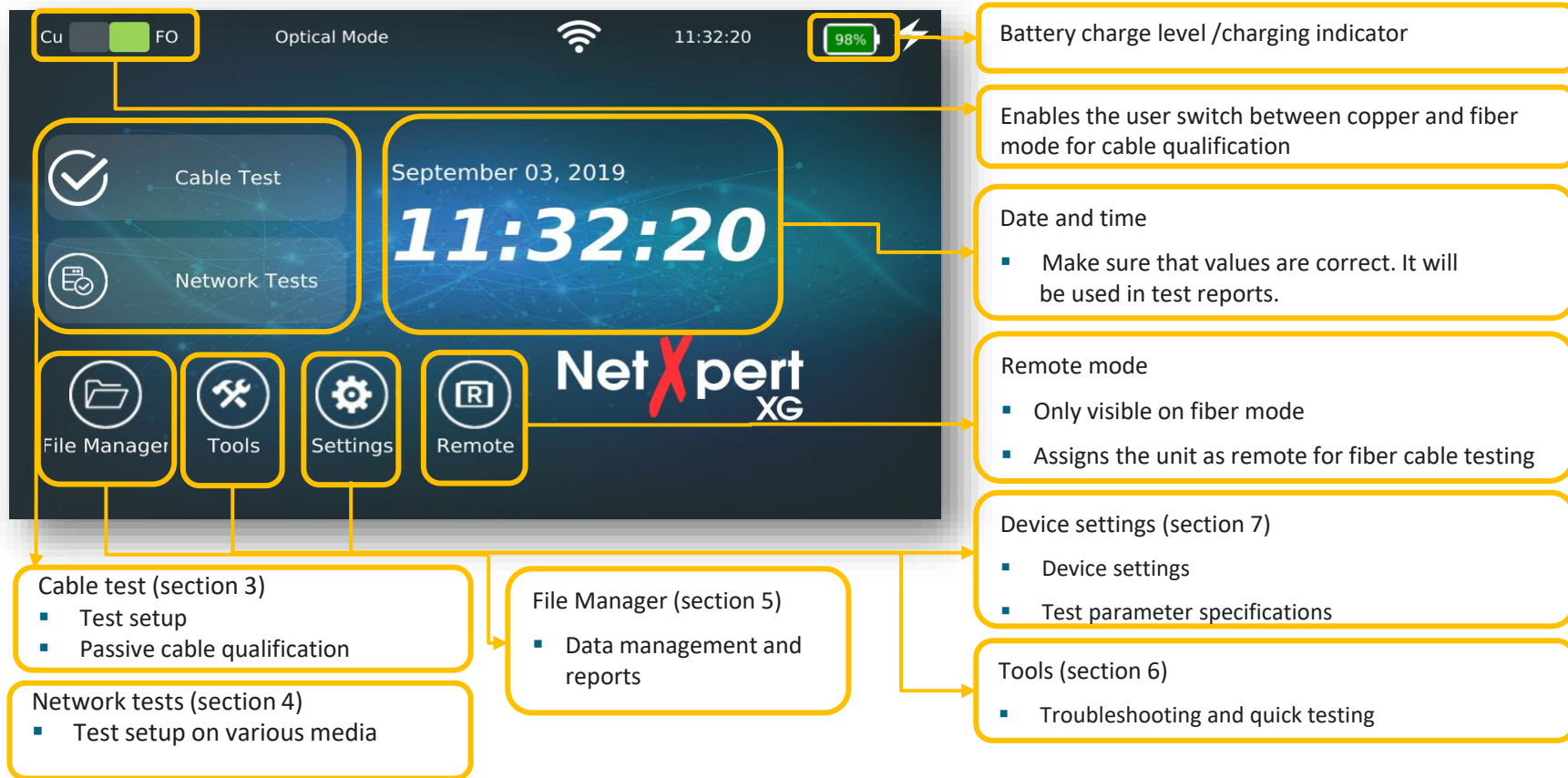


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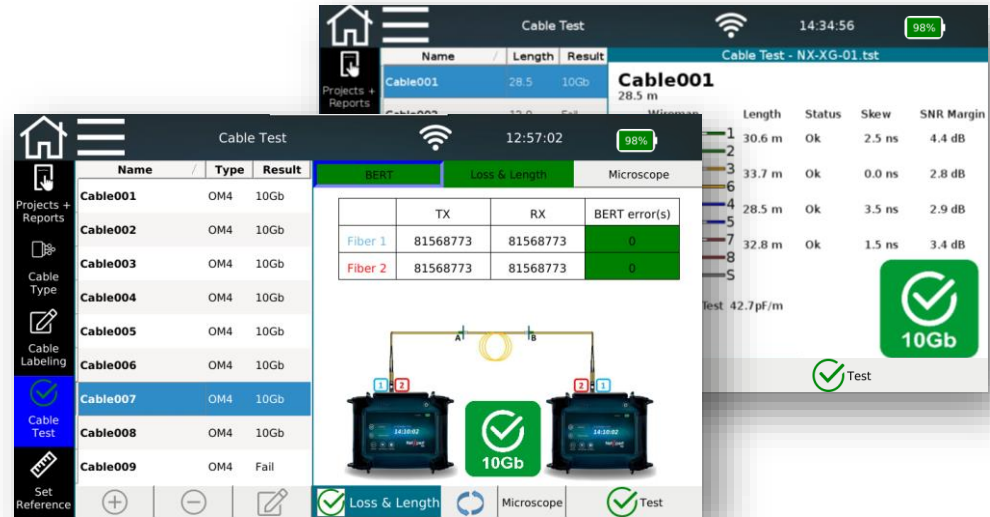
7

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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)



Active Remote (226583)



Wiremap Remotes (226528)



Mapper Remotes (226581)

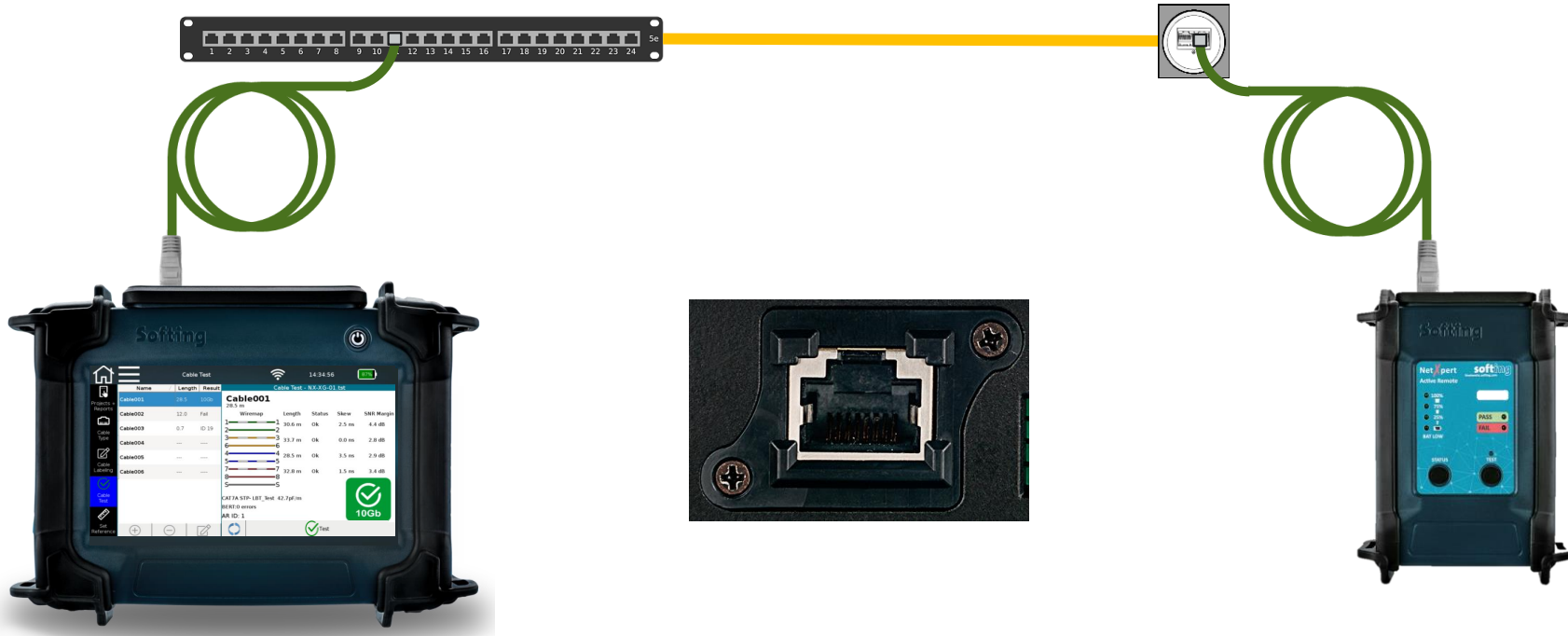


Cable tracker/port locator (226007)

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



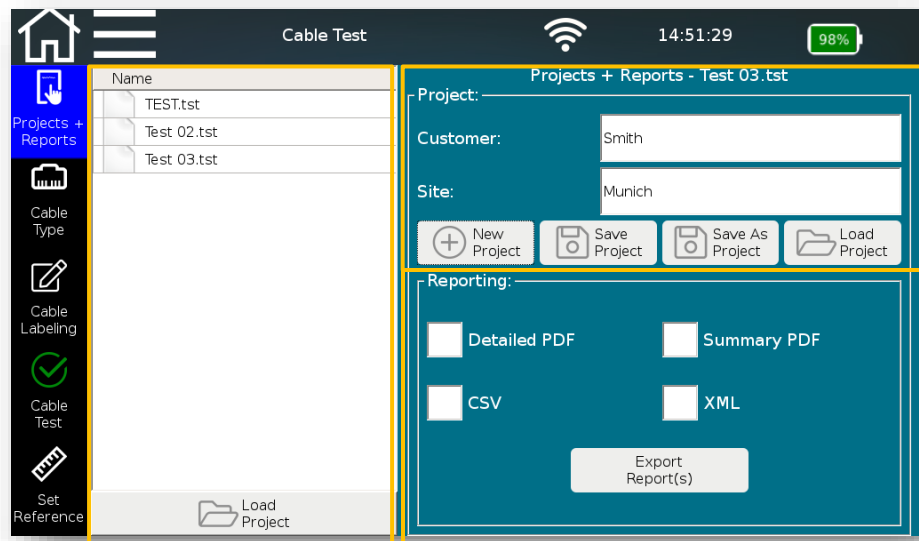
Testing passive fiber cabling

- 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

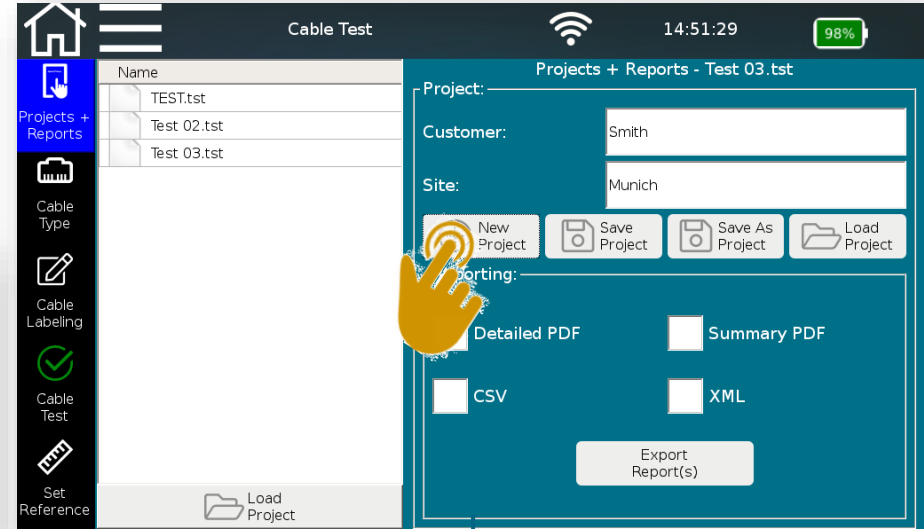
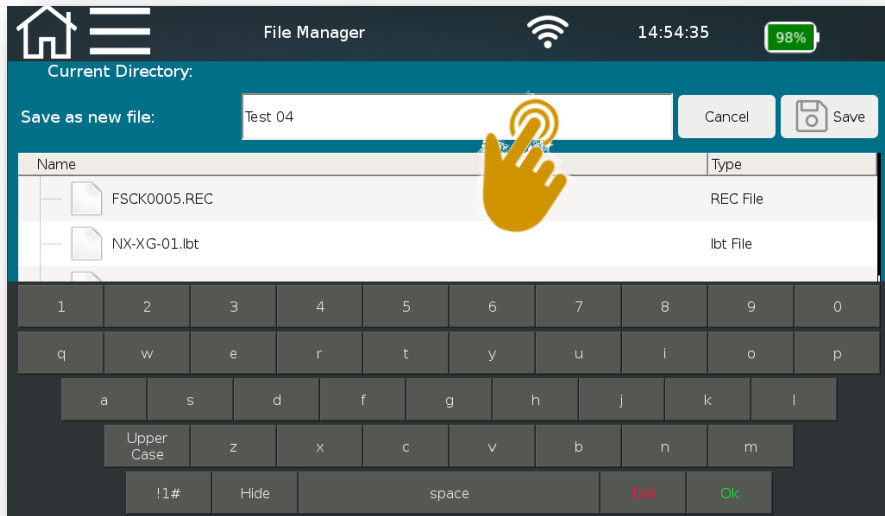
- Load existing projects in the device

- 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

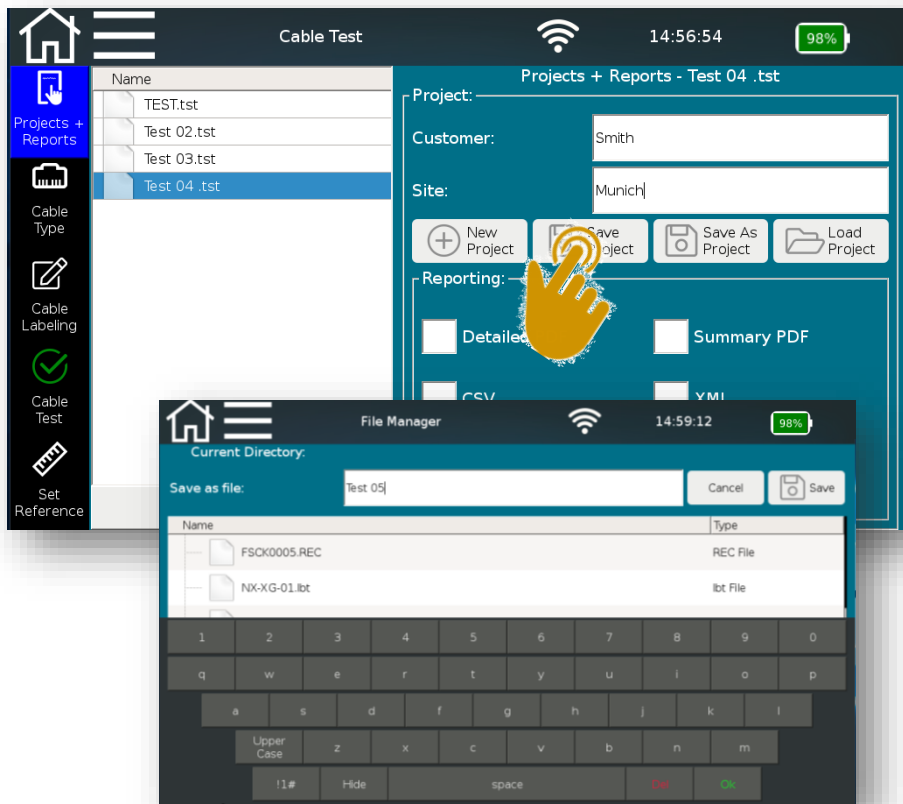
- Creating a „new project“
 - Opens „File Manager “ menu
 - Enter project name



Process of a cable testing project

Create a project

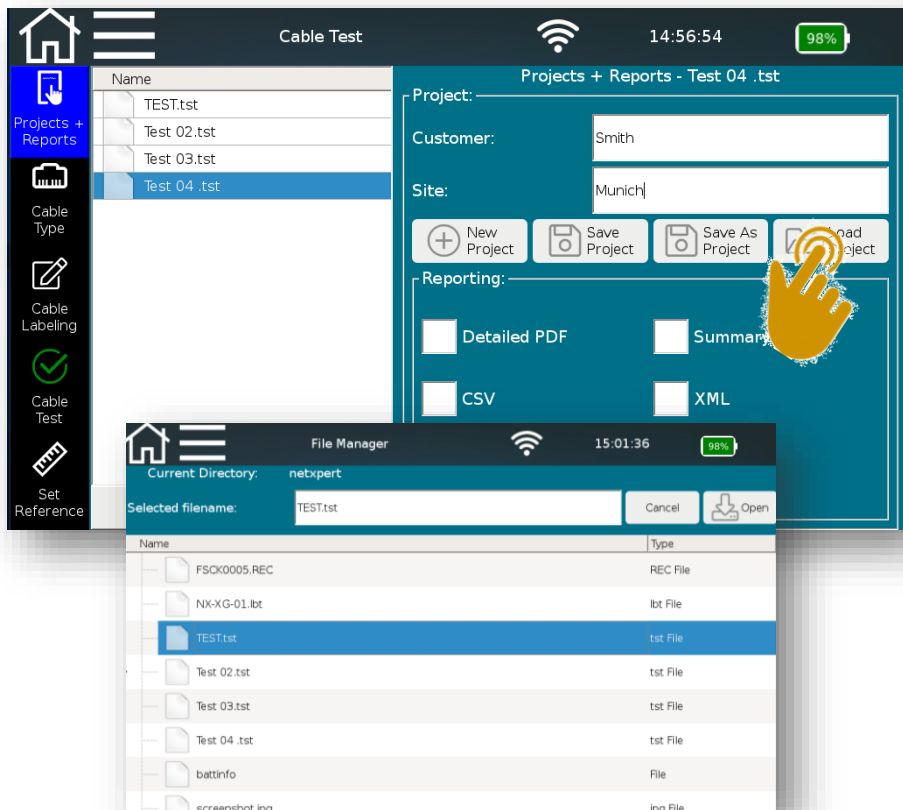
- „Creating a „new project““
 - Opens „File Manager “ menu
 - Enter project name
- „Save Project“ saves changed information to the open project
 - Customer
 - Site
- „Save As Project“ creates a new project based on changed information



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 sidebar with icons for 'Projects + Reports', 'Cable Type' (highlighted), 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main area is titled 'Cable Test' and shows a table of existing cable types under 'Copper' and 'Fiber' categories. The 'CAT6 STP' cable type is selected. To the right of the table is a form for defining a new cable type, titled 'Cable Type - NEU.tst'. The form includes fields for 'Name', 'pf/m', and 'NVP'. Below these are three sections: 'Speed' with radio buttons for 10Gb, 5Gb, 2.5Gb, 1Gb, and 100Mb; 'Cable Shield' with radio buttons for No Shield, Shielded, and Ignore Shield; and 'Cable Wiring' with radio buttons for Two-Pair, Straight, X-over, and Ignore X-over. At the bottom of the form are buttons for 'Apply Type Changes' and 'Set Current Type'. A 'Learn Length Constants' button is also present next to the NVP field.

| 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)

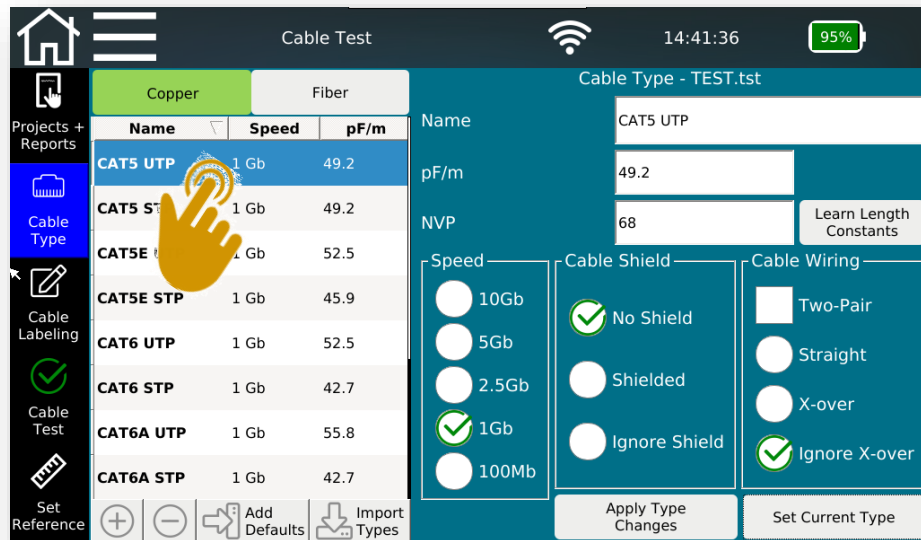
■ Details on test standards

- „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)



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. On the left is a sidebar with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main area is divided into a table of templates and a configuration panel on the right.

| 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 |

The right panel, titled 'Cable Type - TEST.tst', contains the following configuration options:

- Name:** CAT5 UTP
- pF/m:** 49.2
- NVP:** 68
- Speed:** 10Gb, 5Gb, 2.5Gb, 1Gb (selected), 100Mb
- Cable Shield:** No Shield (selected), Shielded, Ignore Shield
- Cable Wiring:** Two-Pair, Straight, X-over, Ignore X-over (selected)
- Buttons:** 'Learn Length Constants', '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 current cable test (Set Current Type) will be highlighted in Green.

The screenshot shows the 'Cable Test' application interface. On the left is a sidebar with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling', 'Cable Test', and 'Set Reference'. The main area is titled 'Cable Test' and has tabs for 'Copper' and 'Fiber'. Below these is a table of templates. The 'CAT6A UTP' template is highlighted in green, indicating it is the current selection. To the right of the table are configuration fields for 'Name' (CAT6A UTP), 'pF/m' (55.8), and 'NVP' (66). There are also sections for 'Speed' (1Gb is selected), 'Cable Shield' (No Shield is selected), and 'Cable Wiring' (Ignore X-over is selected). At the bottom right are 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 |

Cable Type - TEST.tst

Name: CAT6A UTP

pF/m: 55.8

NVP: 66 Learn Length Constants

Speed

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

Cable Shield

- ☒ No Shield
- ☐ Shielded
- ☐ Ignore Shield

Cable Wiring

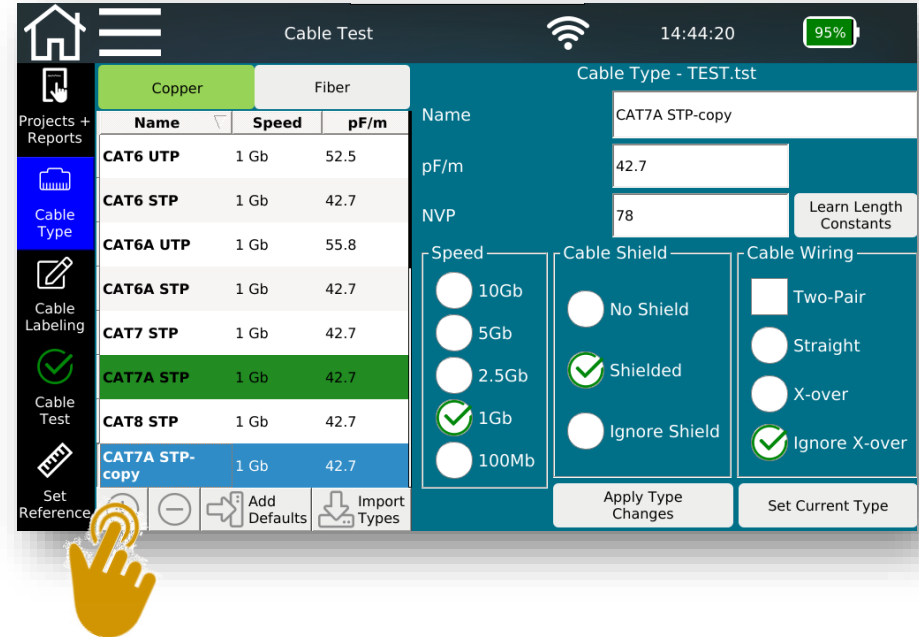
- ☐ Two-Pair
- ☐ Straight
- ☐ X-over
- ☒ Ignore X-over

Apply Type Changes Set Current Type

Process of a cable testing project

Defining test standards

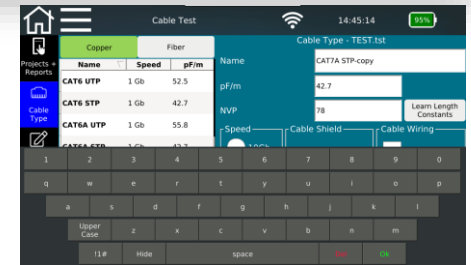
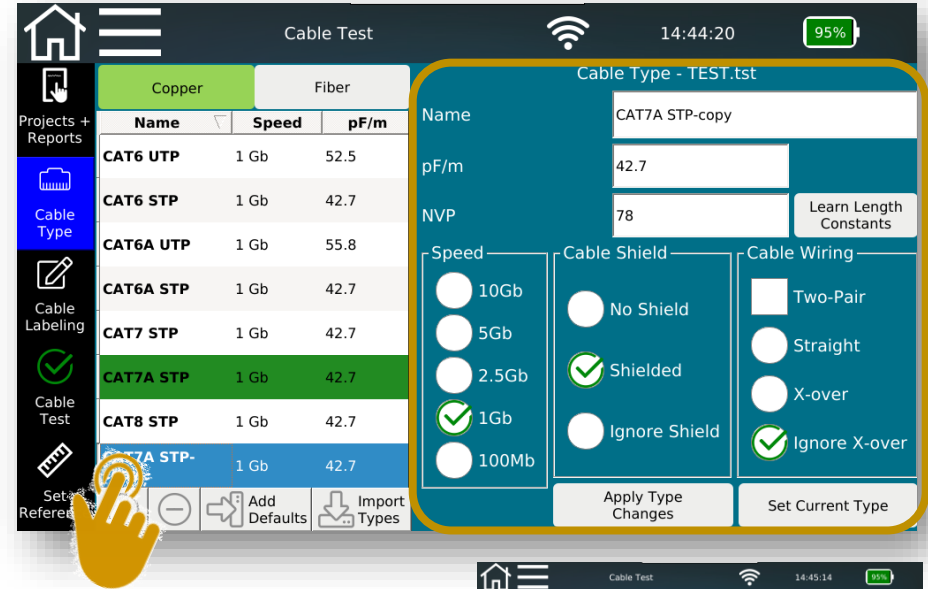
- Copy template
 - Copy will be added to the end of the list



Process of a cable testing project

Defining test standards

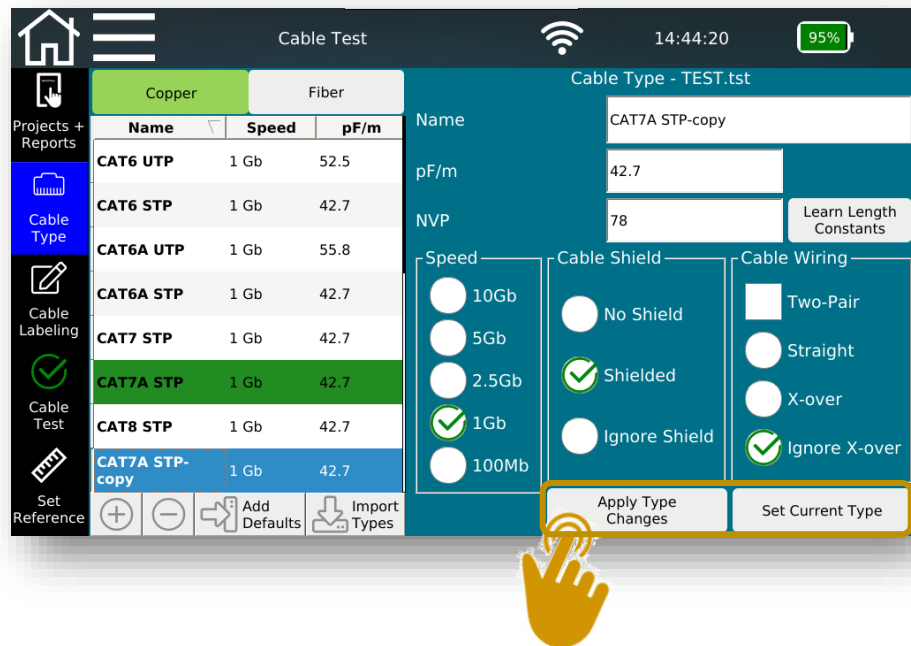
- Copy template
 - Copy will be added to the end of the list
- Select copy
 - Customize name
 - Edit parameters
 - Cable constants
 - Ethernet speed
 - Shielding features
 - Cable Wiring



Process of a cable testing project

Defining test standards

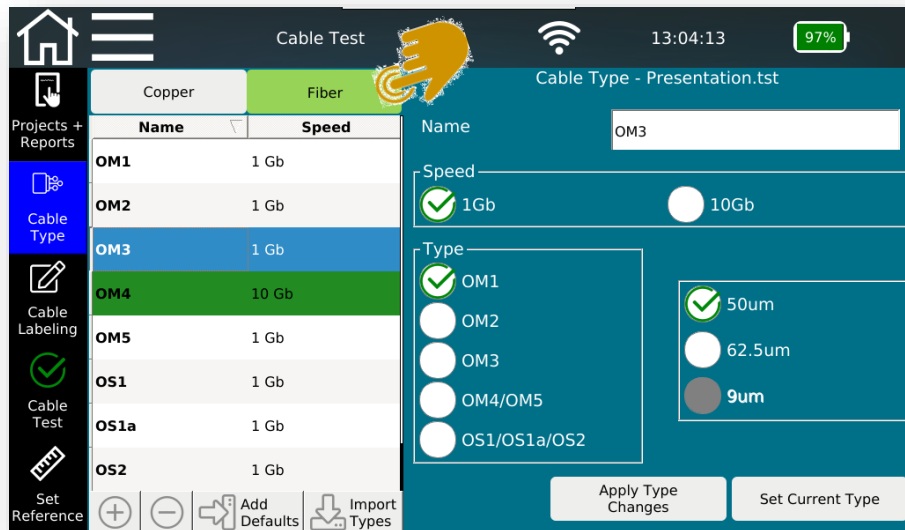
- Copy template
 - Copy will be added to the end of the list
- Select copy
 - Customize name
 - Edit parameters
 - Cable constants
 - Ethernet speed
 - Shielding features
 - Cable Wiring
 - Confirm with "Apply Type Changes" and select "Set Current Type" for this project
 - Stored test standards or results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



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



Process of a cable testing project

Setting up a test list- Create names for cablings

Cable Test

13:53:44 98%

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 |
| Separator | - | 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 cablings

The screenshot shows the 'Cable Test' application interface. The top status bar displays 'Cable Test', a Wi-Fi icon, the time '13:51:28', and a battery level of '98%'. The left sidebar contains navigation icons: '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 for entering cable details:

| 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 cablings

Cable Test

13:50:12 98%

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 cablings

Cable Test

14:06:45 98%

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. "Template" and "Next Label" will be updated accordingly.

Process of a cable testing project

Setting up a test list- Create names for cablings

The screenshot shows the 'Cable Test' app interface. The top bar includes a home icon, a menu icon, the title 'Cable Test', a Wi-Fi icon, the time '14:06:45', and a battery level indicator at '98%'. The left sidebar contains icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling' (highlighted in blue), 'Cable Test', and 'Set Reference'. The main screen is titled 'Cable Labeling - Test.tst'. It features a 'Template' field with the text '<Name>-<Building>-<Floor>-<ID>' and a 'Next Label' field showing 'Cable-1-GF-001'. Below these are buttons for 'Change Cable Type' and 'Clear Label'. A form contains several input fields: 'Name' (Cable), 'Building' (1), 'Floor' (GF), 'Room' (VT01), 'Rack' (1), 'Panel' (A), 'Speed' (10 Gb), and 'ID' (1). The 'ID' field is highlighted with a yellow box. At the bottom, there is a 'Seperator' field with a hyphen, a 'Number of Cables to Add' field with the value 1, and an 'Add Cables' button. A status bar at the very bottom shows 'Cable count: 0 of 1000'.

| 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 |

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 cablings

Cable Test

13:51:28 98%

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 cablings

The screenshot shows the 'Cable Test' application interface. On the left is a sidebar with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling' (highlighted in blue), 'Cable Test', and 'Set Reference'. The main area is divided into two sections. The top section is a table with columns 'Name', 'Length', and 'Result'. It lists cables from 'Cable-1-GF-002' to 'Cable-1-GF-010'. The bottom section is titled 'Cable Labeling - Test.tst' and contains a template '<Name>-<Building>-<Floor>-<ID>', the 'Next Label: Cable-1-GF-011', and a 'Current Type: CAT6A UTP'. Below this are input fields for 'Name' (Cable), 'Building' (1), 'Floor' (GF), 'Room' (VT01), and 'Separator' (-). To the right of these are buttons for 'Change Cable Type', 'Clear Label', 'Rack', 'Panel', 'Speed', and 'ID'. A 'Number of Cables to Add' field is set to 10. At the bottom, it says 'Cable count: 10 of 1000' and has an 'Add Cables' button. A hand icon is pointing at the 'Add Cables' button.

| 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 |
| Separator | - | 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

The screenshot shows the 'Cable Test' app interface. At the top, there's a status bar with a home icon, a menu icon, the title 'Cable Test', a Wi-Fi icon, the time '14:21:48', and a battery level '98%'. Below the status bar is a sidebar with icons for 'Projects + Reports', 'Cable Type', 'Cable Labeling' (highlighted in blue), 'Cable Test', and 'Set Reference'. The main area is divided into two sections. The left section is a table with columns 'Name', 'Length', and 'Result'. It contains three rows: 'Cable-1-GF-001', 'Cable-1-GF-002', and 'Cable-1-GF-003'. The right section is titled 'Cable Labeling - Test.tst' and contains a template: '<Name>-<Building>-<Floor>-<ID>'. Below the template is 'Next Label: Cable-1-GF-004'. There are two buttons: 'Change Cable Type' and 'Clear Label'. Below these are input fields for 'Name' (Cable), 'Building' (1), 'Floor' (GF), 'Room' (VT01), and 'Separator' (-). There are also input fields for 'Rack' (1), 'Panel' (A), 'Speed' (10 Gb), 'ID' (4), and 'Number of Cables to Add' (10). At the bottom, there's a 'Cable count: 3 of 1000' and an 'Add Cables' button. A hand icon is pointing to the '+' button at the bottom left.

| Name | Length | Result |
|----------------|--------|--------|
| Cable-1-GF-001 | --- | --- |
| Cable-1-GF-002 | --- | --- |
| Cable-1-GF-003 | --- | --- |

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

- 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 cablings

| Name | Length | Result |
|----------------|--------|--------|
| Cable-1-GF-001 | --- | --- |
| Cable-1-GF-002 | --- | --- |
| Cable-1-GF-003 | --- | --- |

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

- 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 cablings

Cable Test

14:21:48 98%

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...

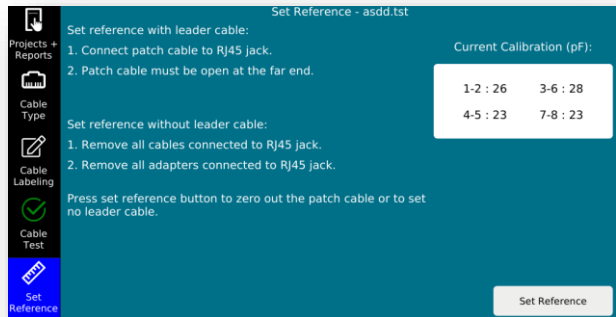
- „ID“ field is not included in the name
- No name field is selected and the template is empty

- 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

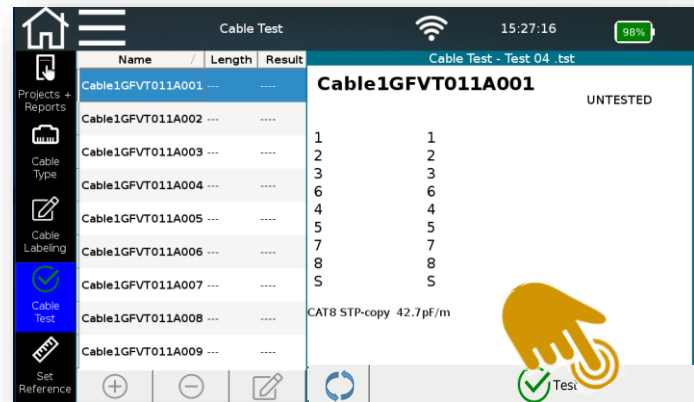
- Increase the accuracy of the length determination
- Set reference without using patch cables
 - Remove all cables and adapters and tap on Set Reference
- Set reference without using patch cables
 - Connect reference cables only to the main unit
 - Connect both test cords by a coupler
 - Connect one 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



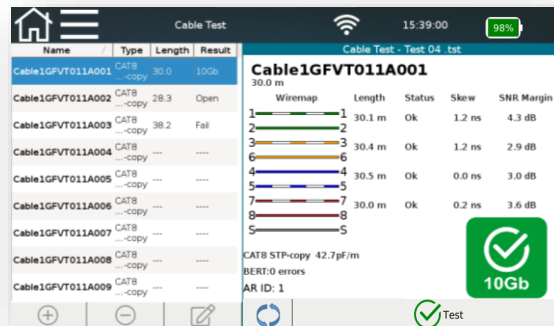
Process of a cable testing project

Performing a test for copper

- 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"

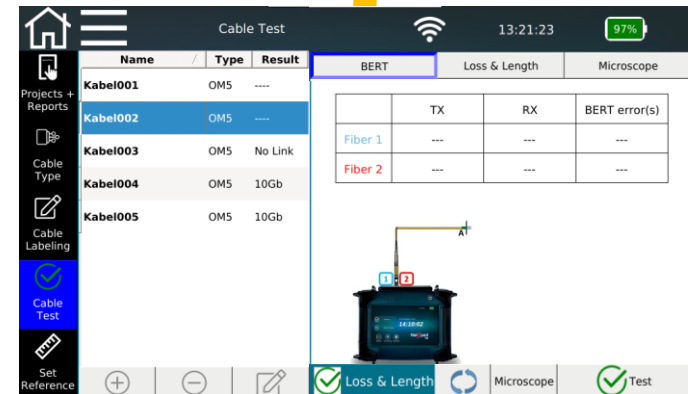
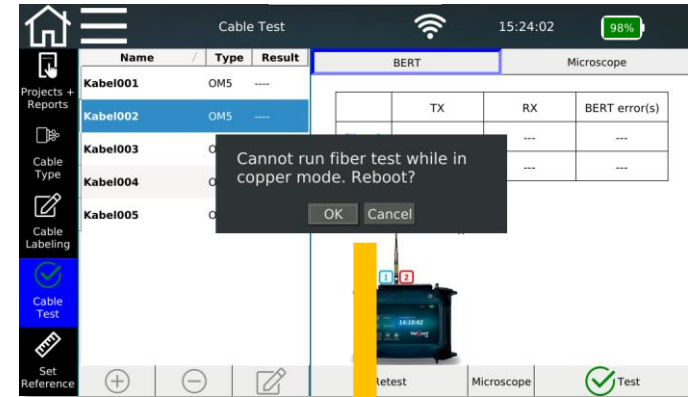
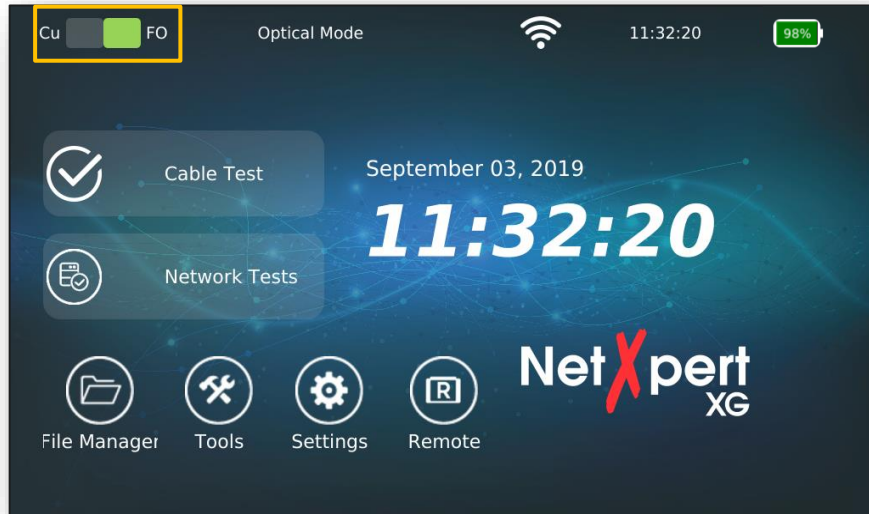


- Editing the cable name later is possible
- Adding and deleting cable names is also possible here

Process of a cable testing project

Performing a test for fiber

- 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

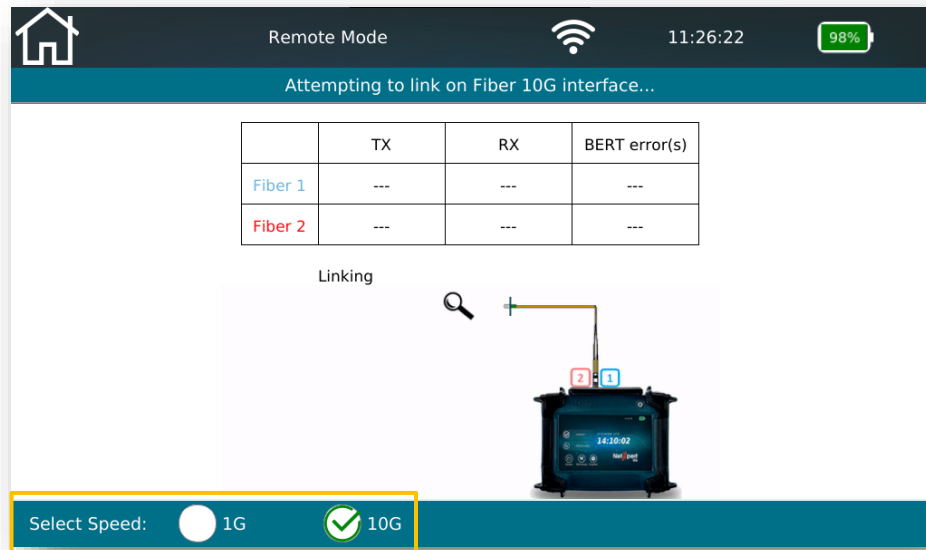
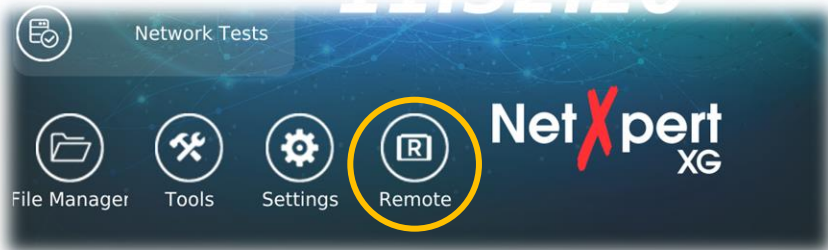
Performing a test for fiber

- 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





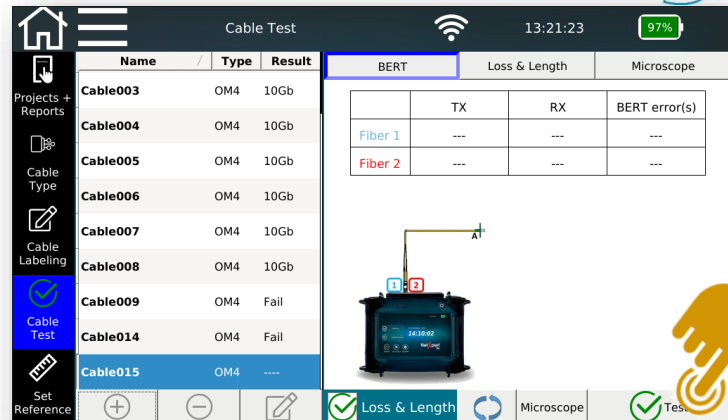
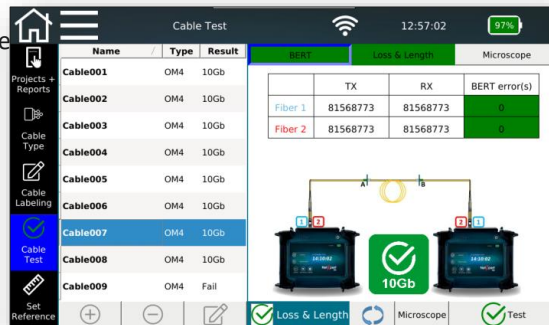
- Optical mode
Seconde main unit
in remote mode



Process of a cable testing project

Performing a test for fiber

- 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

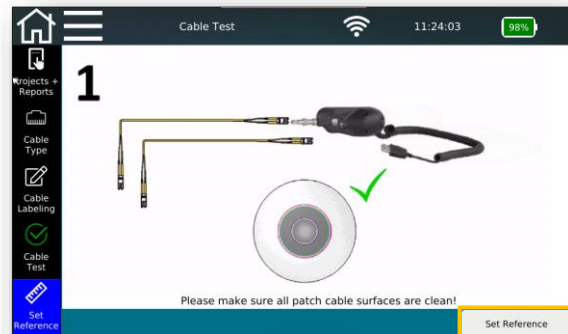


- Re-run a test by tapping the button
- Editing the cable name later is possible
- Adding and deleting cable names is also possible here

Process of a cable testing project

Performing a set reference

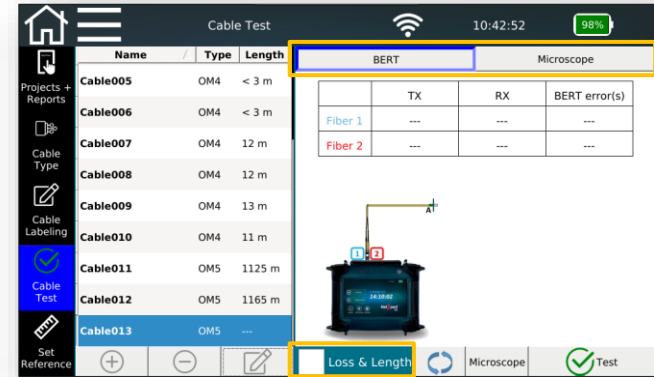
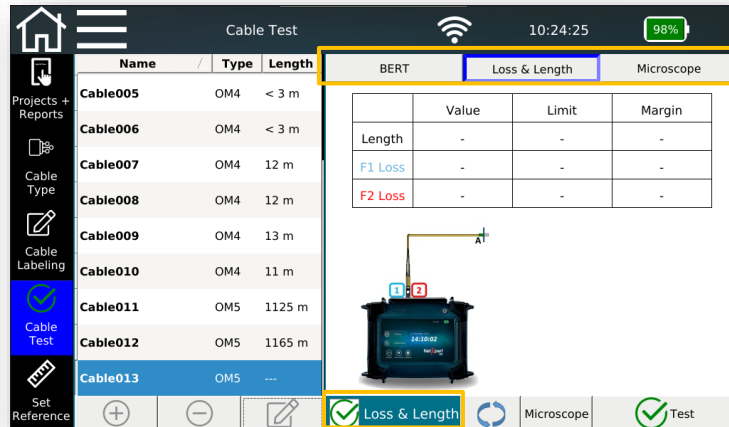
- Before running a fiber qualification test, a set reference process is necessary.
- Follow the instructions on the set reference menu and click on set reference. Remote unit should stay on “remote mode” as in qualification test.
- Every time the test setup changes, there is a need for a new set reference. When new SFPs detected or a new cable type is selected, user will be asked to run a set reference.



Process of a cable testing project

Performing a test for fiber

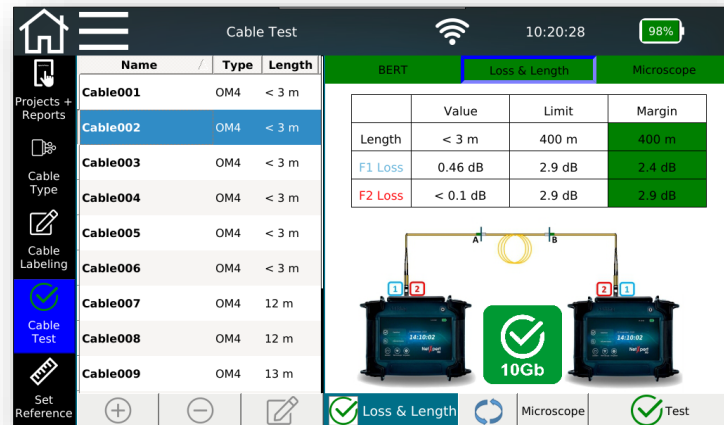
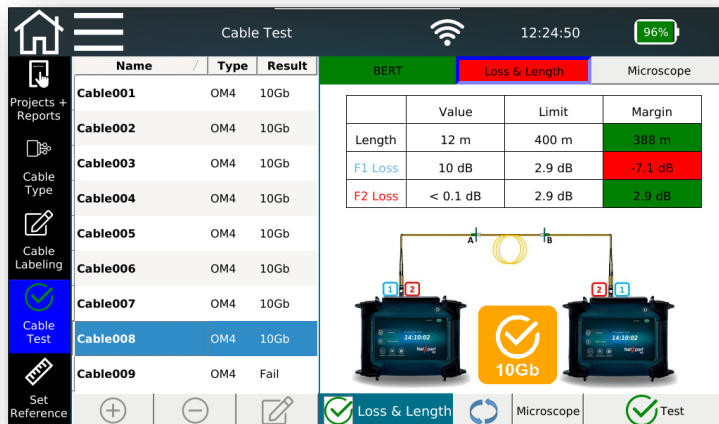
- Checking the box before running the test will include Loss & Length to the qualification of the cable.
- A new tab “Loss & Length” on the top bar will appear.



Process of a cable testing project

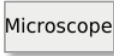
Performing a test for fiber

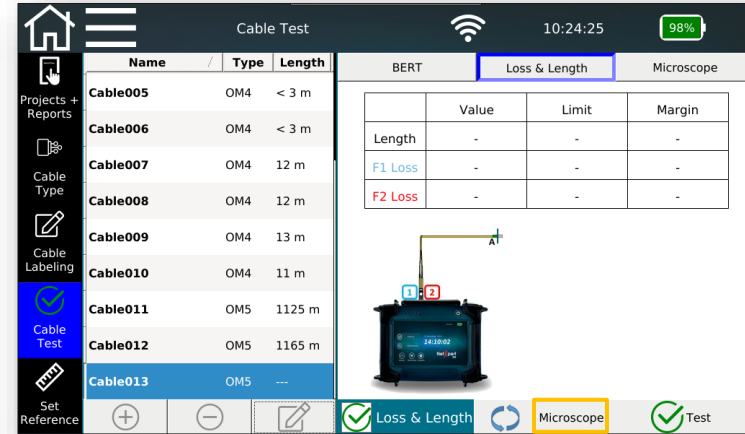
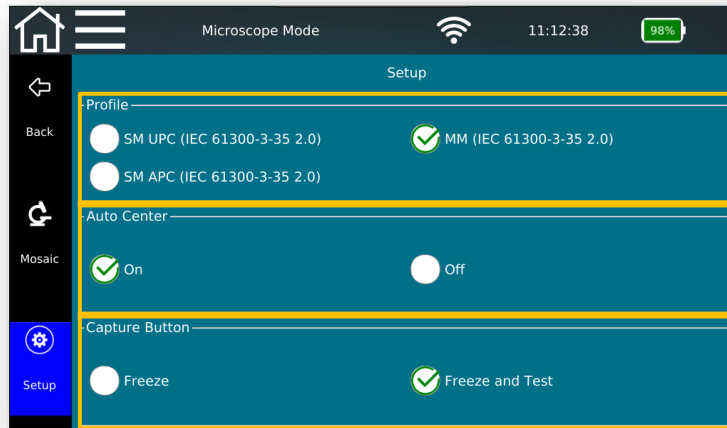
- Checking the box before running the test will include Loss & Length to the qualification of the cable.
- A new tab “Loss & Length” on the top bar will appear.
- Loss and Length are informative parameters. If there is no BERT error, the test result will always be a pass. However, pass colour will turn yellow to inform the user that there could be potential failures in the cable.



Process of a cable testing project

Performing a microscope test

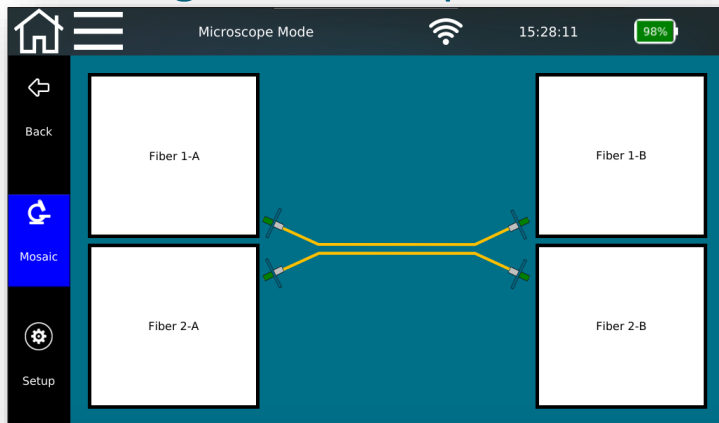
- Enter the microscope menu by pressing  button
- Before running a microscope test, make sure to have the right settings



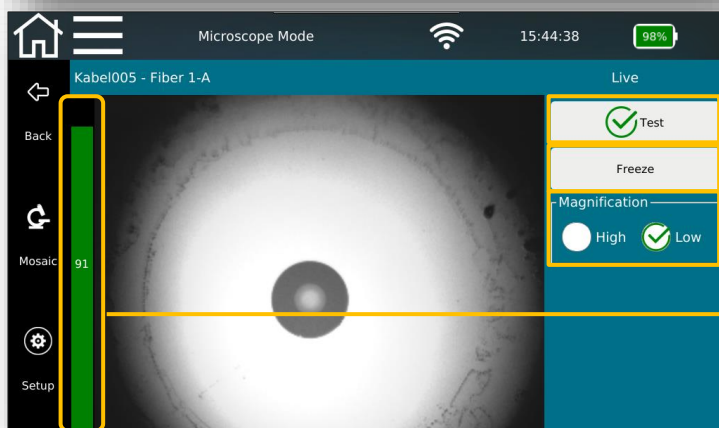
- Make sure to select the right profile before running your test.
- Auto center locates the core of the fiber automatically
- It defines the function of the capture button on the microscope

Process of a cable testing project

Performing a microscope test



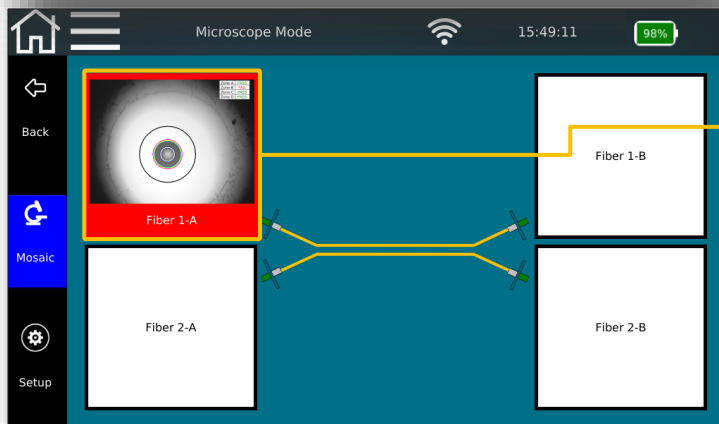
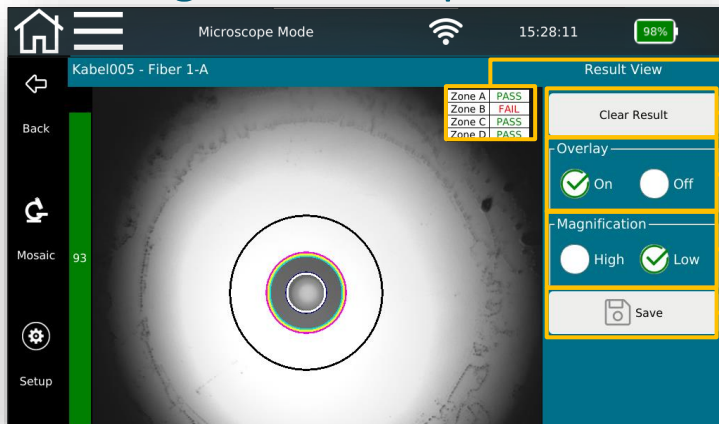
- Mosaic menu shows an overview of the connector end-faces
- The connector end-faces are pre-labeled and illustrated to help users identify the connector ends.
„1“ and „2“ refers to two fiber cables under test and
„A“ and „B“ refers to the two sides of the cable.



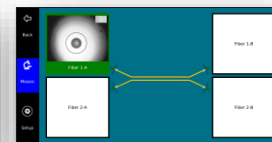
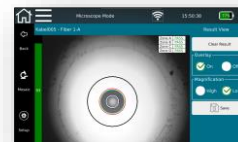
- Initiates a microscope test with a pass/fail evaluation
- Freezes the microscope screen without evaluation
- Allows users change magnification to better locate dirt or scratch on the connector end-face
- Focus bar increases or decreases by adjusting the focus wheel on the microscope. Focus must be over 50% to be able to run a test with a pass/fail evaluation

Process of a cable testing project

Performing a microscope test

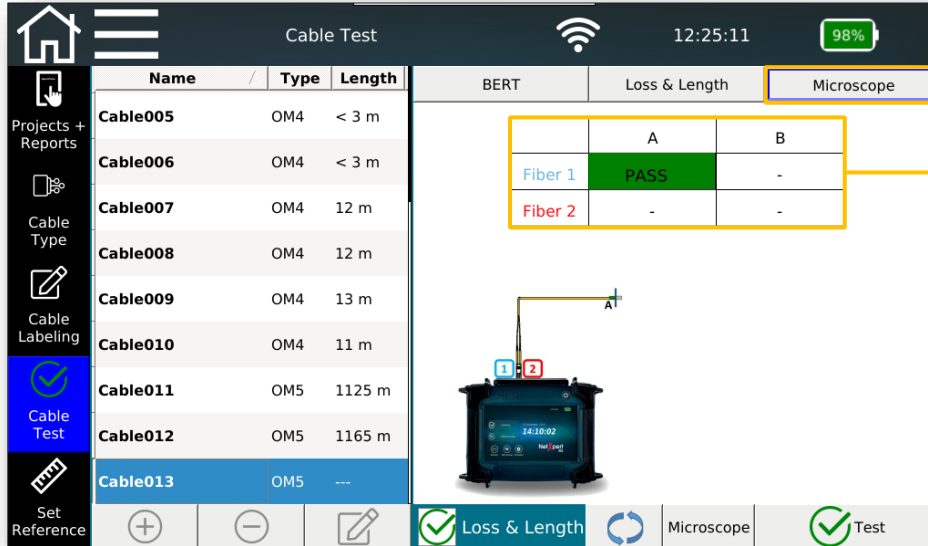


- Shows pass/fail evaluation for each zone of the connector end-face as defined in the international standards
- Clears the result and switches back to the live view
- Removes overlay together with the evaluation table to have a better view of the connector end-face
- Allows users change magnification to better locate dirt or scratch on the connector end-face
- Saves the result
- Shows the evaluation of the connector end-face. Red background indicates that the overall result was fail, whereas green background shows that all four zones have passed the test and connector end face is ready to be qualified.



Process of a cable testing project

Performing a microscope test



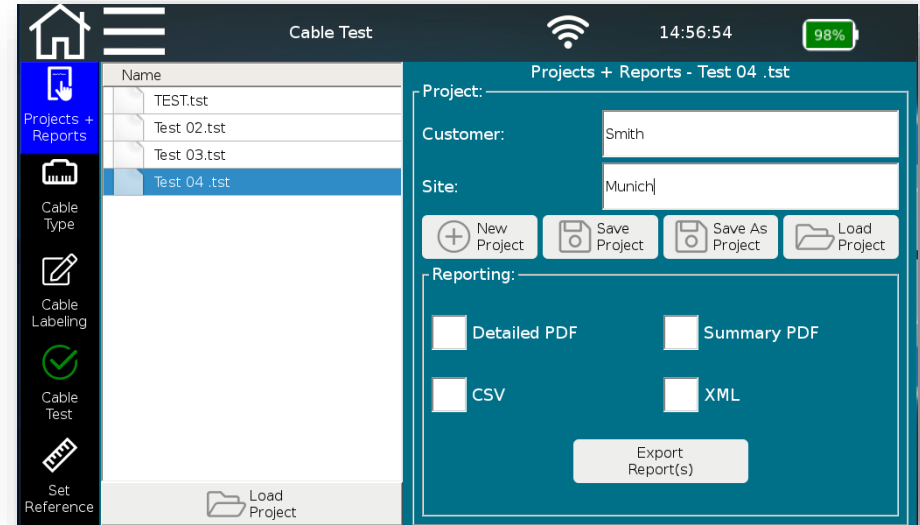
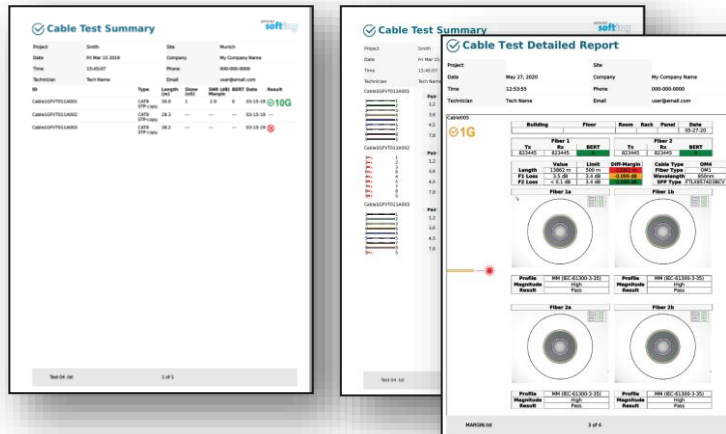
- Microscope tab turns to green, if all connector end-faces have a pass.
- Overview of all connector end-faces of two fiber cables that are under test
- If all connector end-faces are tested, the result will be added to the qualification (BERT) test in the report.

❖ Microscope test is only informative and does not have any effect on the overall speed qualification of the fiber cable.



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

Table of contents

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 - „Network test“ functions
 - Test setup on different media
 - Test types

- Data management
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 - Data export and import

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 - Fiber Tools menu

- Basic settings
 - Device settings
 - Test parameter specifications

- Licensing and updates
 - Speed upgrades
 - Firmware updates

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„Network Tests“ function

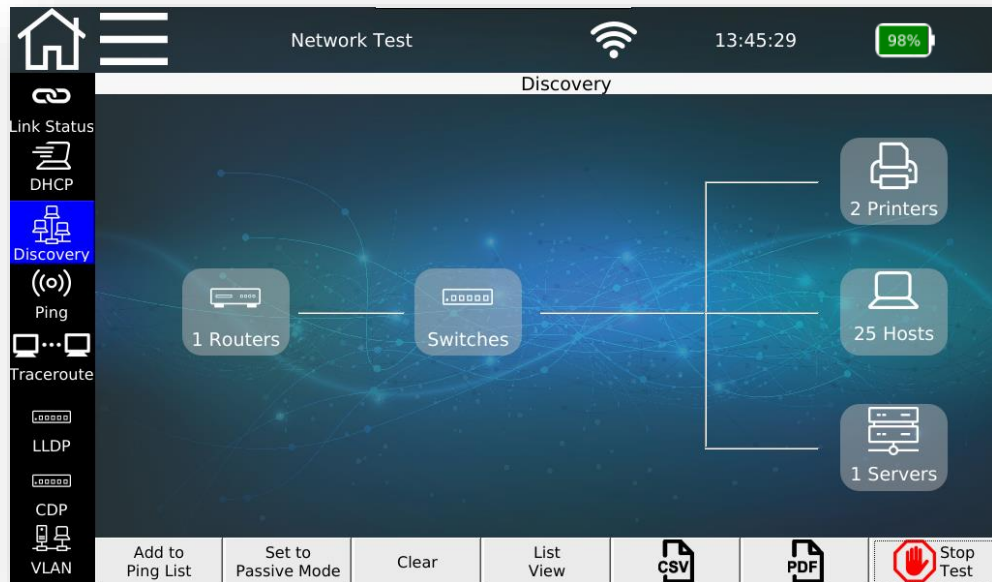
Simple diagnosis of an active network

- 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



Link Status



DHCP



Discovery



Ping



Traceroute



LLDP



CDP



VLAN

■ 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

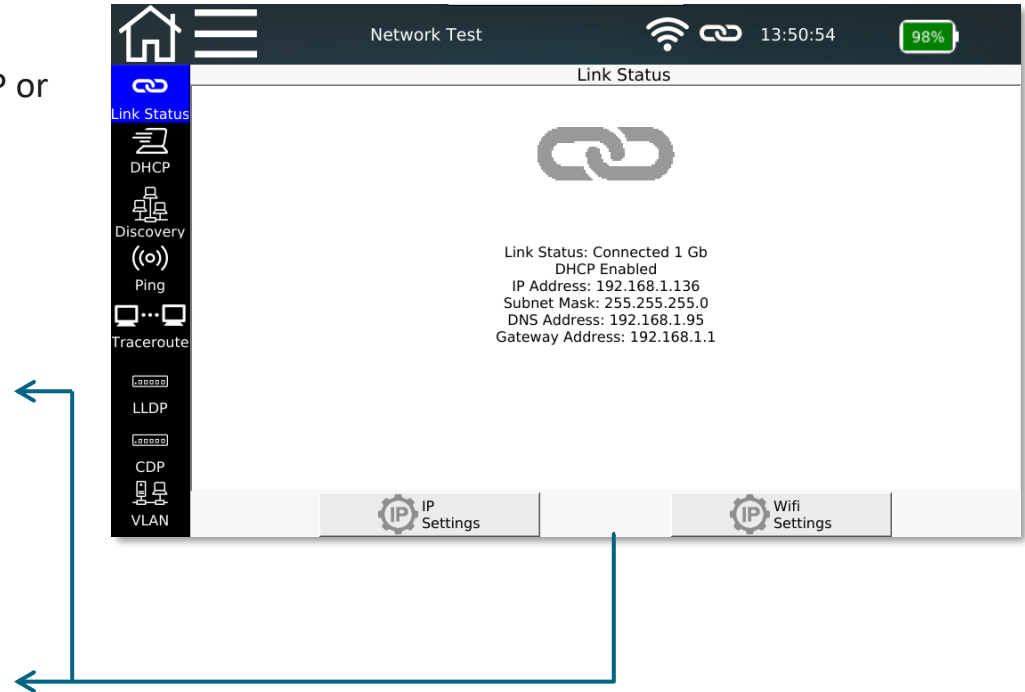
■ VLAN detection

- Tagging after IEEE 802.1q

„Network Tests“ function

Test parameters

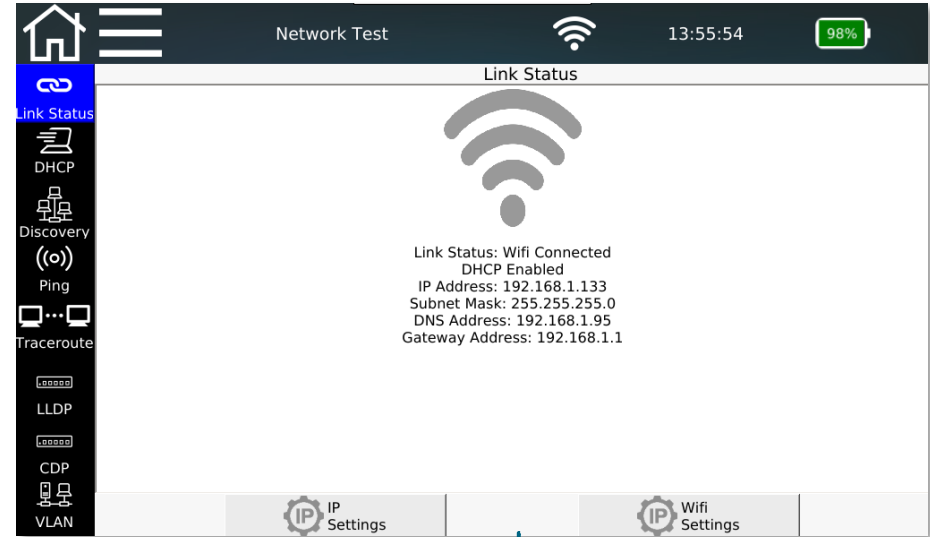
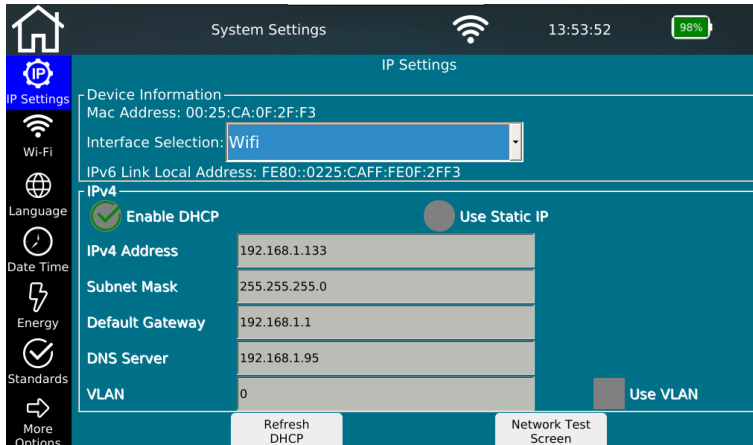
- Link Status
 - Establishing connection with Switch via DHCP or fixed addressing
 - Output of connection details



„Network Tests“ function

Test parameters

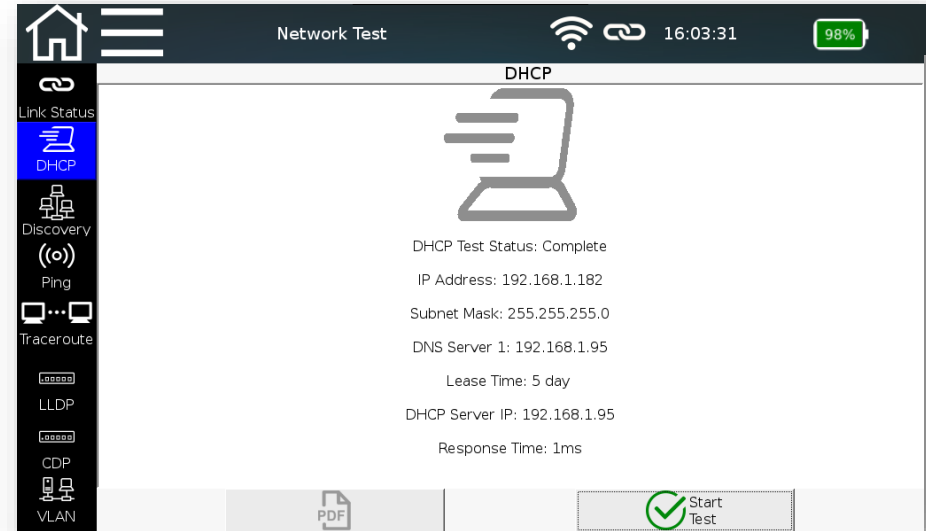
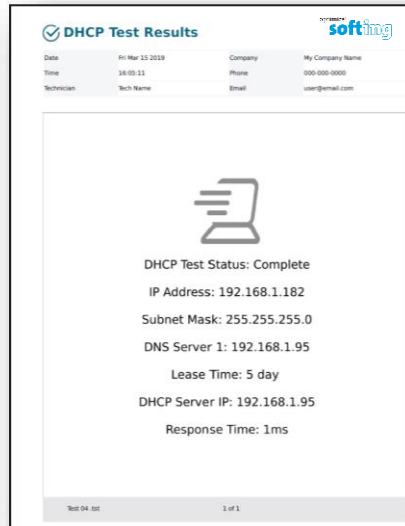
- Link Status (Wi-Fi Connection)
 - Establishing connection with Switch via DHCP or fixed addressing
 - Output of connection details



„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



optimize!
softing

„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: 16:38:12 Company: My Company Name Technician: Tech Name Phone: 000-000-0000 Email: user@domain.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 (91.188.86.71) | 8/8 | 16 | 16 | 16.33 |
| 192.168.1.1 | 8/8 | 1 | 1 | 1.00 |
| 192.168.1.101 | 8/8 | 1 | 2 | 1.25 |

New test 000 1 of 1

Excel spreadsheet showing test results:

| 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 interface showing Ping results:

| 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 |

Buttons: 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

Traceroute Test Summary

Date: 2019-05-13 08:53 Company: M. Company Name
 Host: 192.168.1.1 IP: 192.168.1.1
 Technician: Test Name Email: test@company.com

| Hop | Delay #1 | Delay #2 | Delay #3 | Destination |
|-----|----------|----------|----------|----------------|
| 1 | 5 ms | 5 ms | 5 ms | 192.168.1.1 |
| 2 | 2 ms | 5 ms | 5 ms | 213.30.210.161 |
| 3 | 5 ms | 7 ms | 7 ms | 62.214.151.221 |
| 4 | 9 ms | 9 ms | 8 ms | 62.214.34.249 |
| 5 | 12 ms | 13 ms | 13 ms | 62.214.37.130 |
| 6 | 9 ms | 9 ms | 9 ms | 72.14.232.32 |
| 7 | 10 ms | 9 ms | 9 ms | 66.249.95.29 |
| 8 | 10 ms | 10 ms | 11 ms | 172.217.22.36 |

Test OK 0/0 0 of 1

Excel interface showing the same traceroute data in a spreadsheet format.

| Hop | Delay #1 | Delay #2 | Delay #3 | Destination |
|-----|----------|----------|----------|----------------|
| 1 | 5 ms | 5 ms | 5 ms | 192.168.1.1 |
| 2 | 2 ms | 5 ms | 5 ms | 213.30.210.161 |
| 3 | 5 ms | 7 ms | 7 ms | 62.214.151.221 |
| 4 | 9 ms | 9 ms | 8 ms | 62.214.34.249 |
| 5 | 12 ms | 13 ms | 13 ms | 62.214.37.130 |
| 6 | 9 ms | 9 ms | 9 ms | 72.14.232.32 |
| 7 | 10 ms | 9 ms | 9 ms | 66.249.95.29 |
| 8 | 10 ms | 10 ms | 11 ms | 172.217.22.36 |

Network Test interface showing the Traceroute results for www.google.com.

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 |

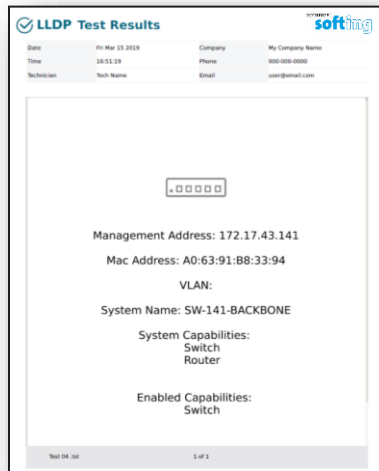
Left sidebar: Link Status, DHCP, Discovery, Ping, Traceroute (selected), LLDP, CDP, VLAN.

Bottom bar: Edit Target, CSV, PDF, Start Test (with green checkmark).


„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




optimize!
softing

- 

VLAN Test Summary

NOVEMBER 2015



| | | | |
|-------------|-----------------|-----------|-------------------|
| Serial: | Tue Feb 25 2015 | City: | My Corporate Name |
| Lat: | 12.34.42 | Location: | 100-000-0000 |
| Technician: | Techn Name | Email: | user@gmail.com |

| ID | QoS | Priority |
|----|-----|----------|
| 1 | 0 | 2 |

Placeholder 11.5x

1 von 1

The screenshot displays the 'Network Test' application interface. At the top, the title 'Network Test' is shown alongside a Wi-Fi signal icon, the time '17:23:53', and a battery level indicator at '98%'. The main content area is titled 'VLAN' and contains a table with three columns: 'ID', 'DEI', and 'Priority'. The table lists two entries: ID 1 with DEI 0 and Priority 0, and ID 3 with DEI 0 and Priority 2. On the left side, a vertical toolbar includes icons for Link Status, DHCP, Discovery, Ping, Traceroute, LLDP, CDP, and VLAN (which is currently selected). At the bottom, there are three buttons: 'CSV', 'PDF', and 'Start Test' (which features a green checkmark icon).

| ID | DEI | Priority |
|----|-----|----------|
| 1 | 0 | 0 |
| 3 | 0 | 2 |

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- Single tests
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- Licensing and updates
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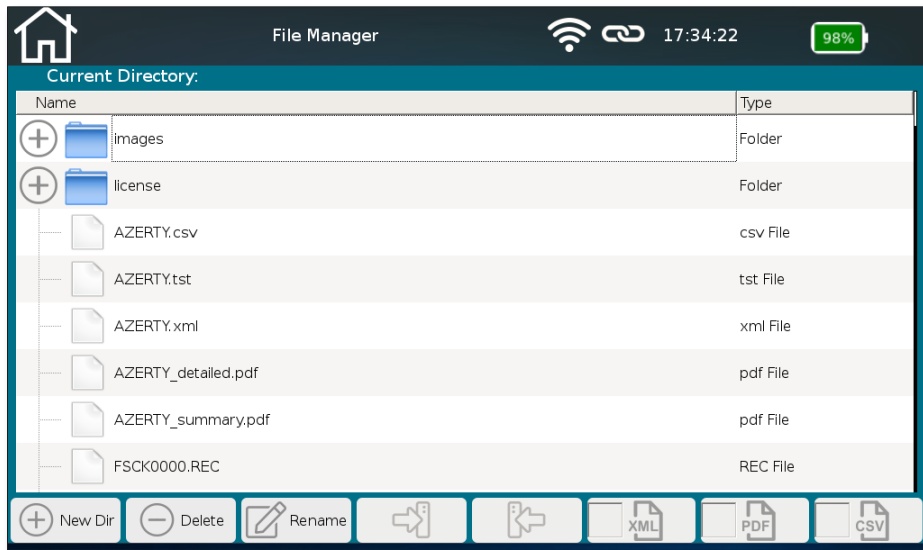
6

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„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!

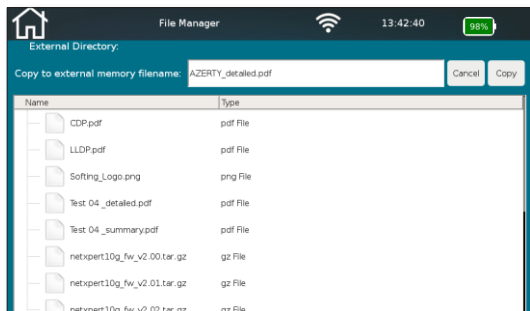


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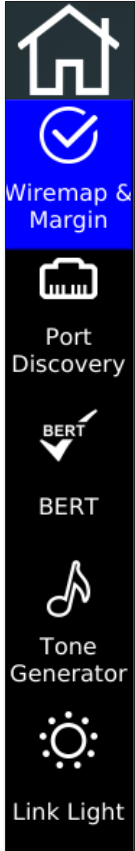
6

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Copper „Tools“ menu

General

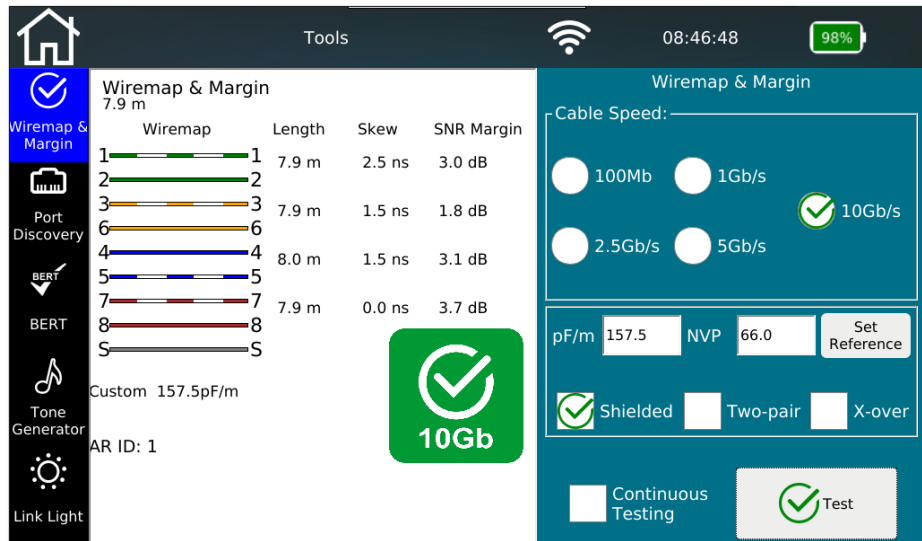


- Additional functions
 - Wiremap and margin
 - Port discovery
 - BERT
 - Tone Generator
 - Link Light

Copper „Tools“ menu

Wiremap and margin

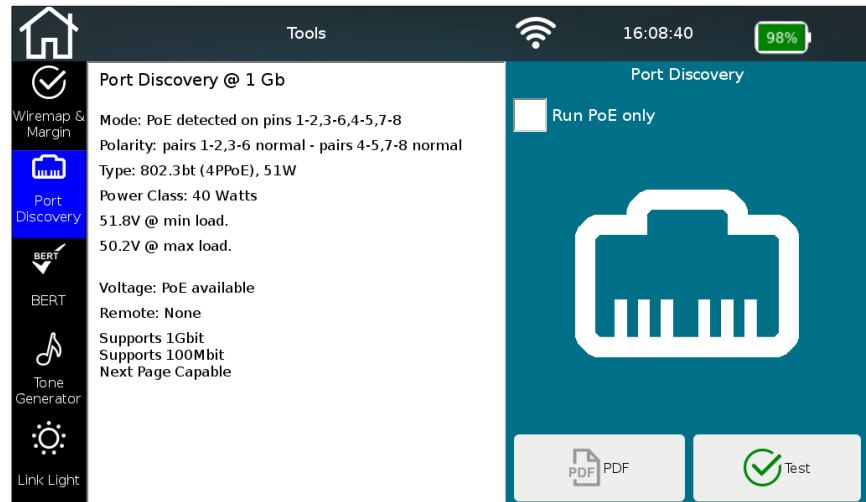
- Passive single test
 - Wiremap test
 - Length determination
 - Error output
 - Performance test
 - Selectable Ethernet speed
- Cable wiring and shield freely selectable
 - Shielded / No shield
 - Straight / X-Over
 - Four pair / two pair
 - In case of a wrong selection, and error message will be displayed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



Copper „Tools“ menu

Port discovery

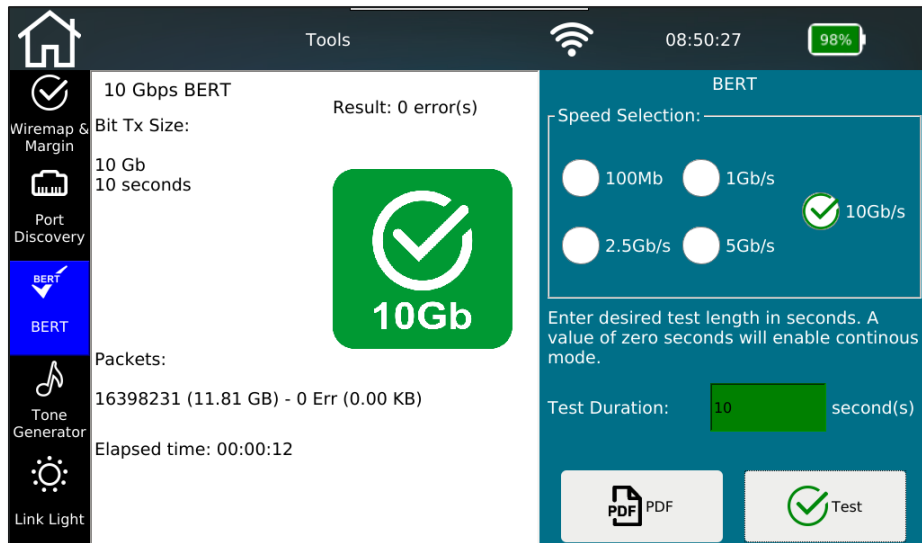
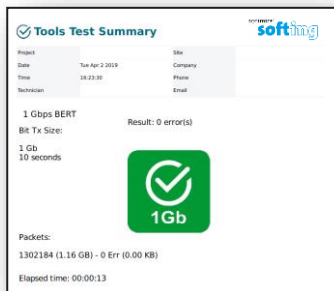
- Provides detailed information about the switch port
 - Ethernet speed of the current connection
 - Possible speeds of the port
- PoE evaluation (also as a single function)
 - Operating mode
 - Polarity
 - Type / power class
 - PoE / PoE+ / PoE ++
 - Voltage drop with or without load
 - Documentable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

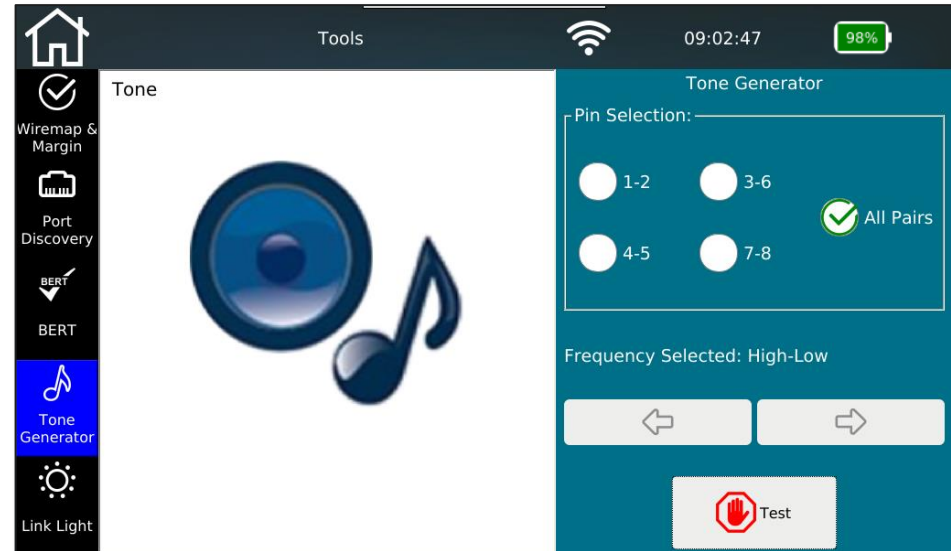


| Transmission format | Standards reference | Required Bit Error Rate in standards reference | Test time for 10% confidence level | Test time for 63% confidence level | Test time for 95% confidence level |
|---------------------|---------------------|--|------------------------------------|------------------------------------|------------------------------------|
| 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

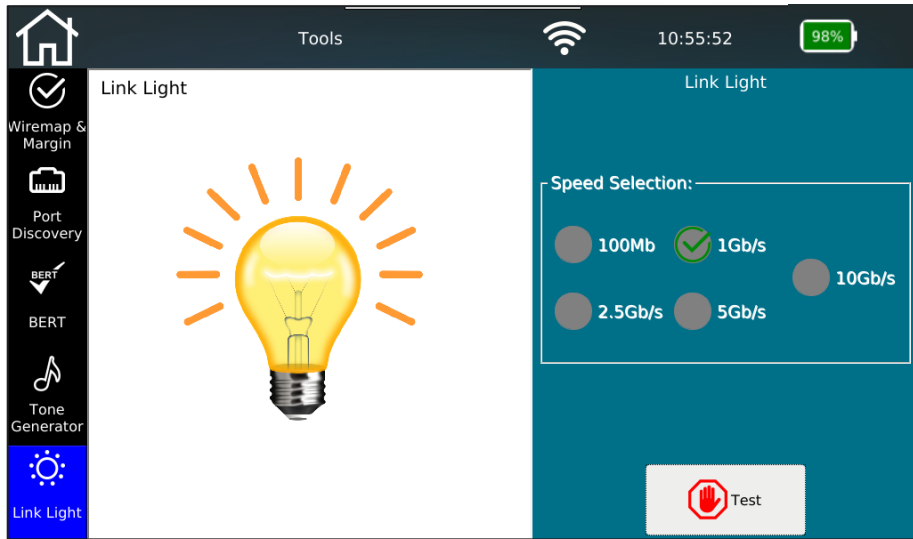
- Acoustic signaling
 - Signal pairs freely selectable
- Acceptance via any analog inductive receiver



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



BERT



Microscope



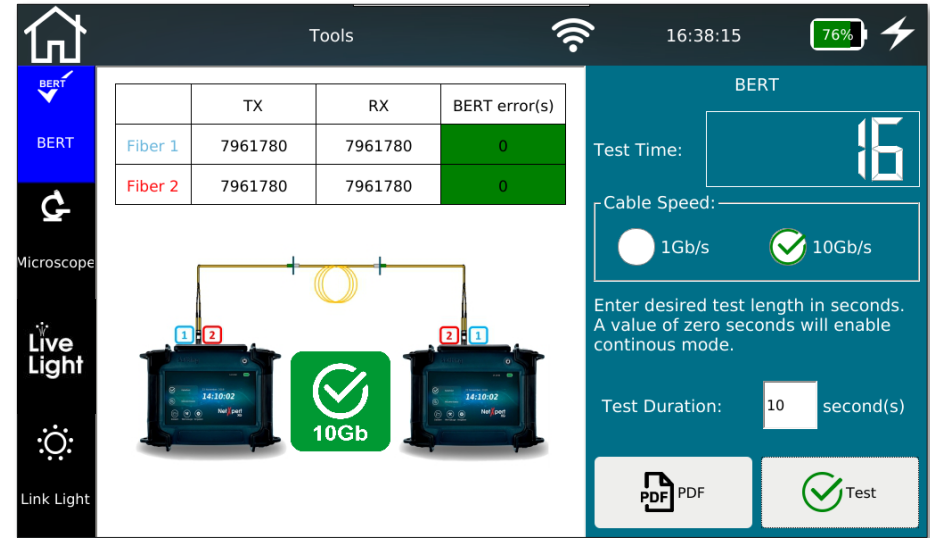
Link Light

- Additional functions
 - BERT
 - Microscope
 - Loss Monitor (two main units are needed)
 - Link Light

Fiber „Tools“ menu

BERT

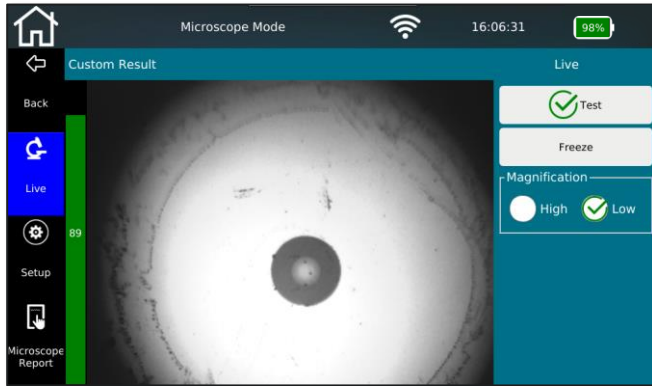
- Preset test times depending on selected Ethernet speed
 - Test times are based on statistical security (see table below, which is based on “required bit error rate” defined by IEEE)
 - Values can also be adjusted between 0 (continuous test) to 300 seconds
 - Evaluation via sent and received packets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



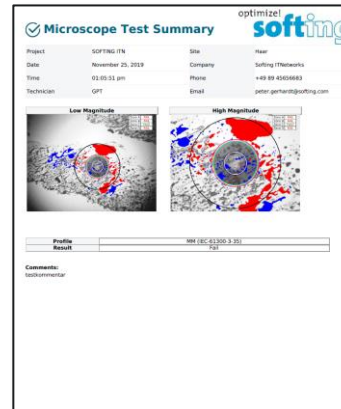
| Transmission format | Standards reference | Required Bit Error Rate in standards reference | Test time for 10% confidence level | Test time for 63% confidence level | Test time for 95% confidence level |
|---------------------|---------------------|--|------------------------------------|------------------------------------|------------------------------------|
| 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 |

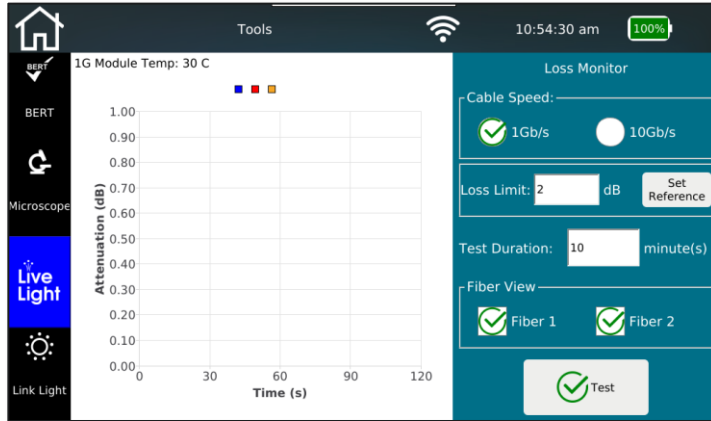
Fiber „Tools“ menu

Microscope



- Microscope results can be saved separately under tools menu
- Results can be saved either with a pass/fail evaluation through test button or just as an image by tapping on the freeze button
- Comments can be added to each image, which will be documented in the PDF report as well

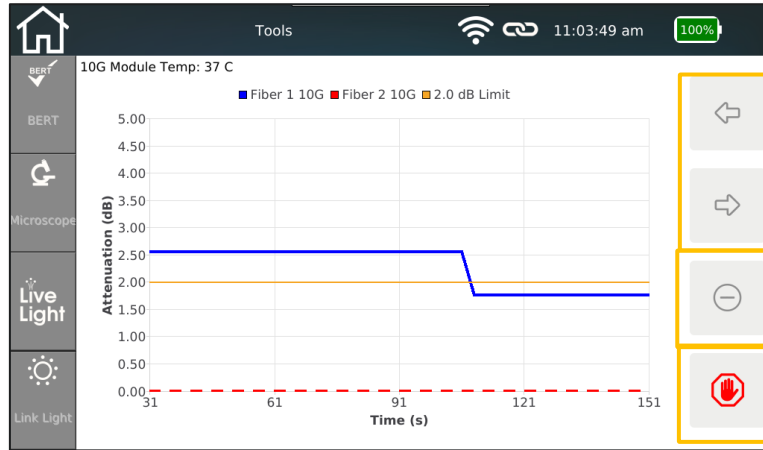




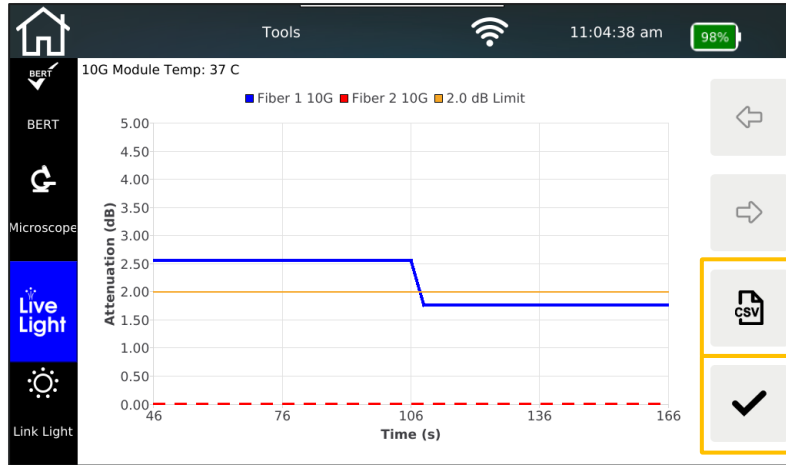
- A set reference procedure should be followed as in cable test
- Loss limit and test duration can be set freely before starting the test
- Fiber cables can be tested individually by selecting the cable to be tested under fiber view option

- **LiveLight** is a tool designed and developed by Softing for troubleshooting high attenuation in the link
- A time (s) over attenuation (db) graph

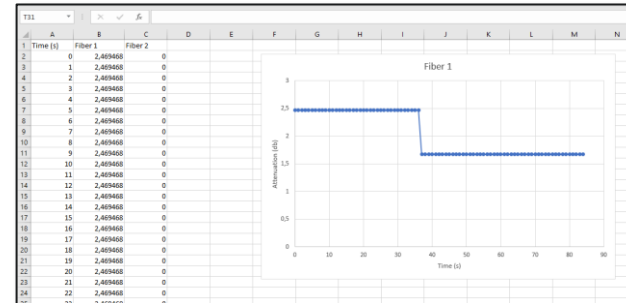




- Changes in the attenuation can be observed in live monitor as changes being made in the potential loss causing points in the fiber link
- Arrows can be used to move between time slots to see the difference in attenuation value over time
- Clears the result, while on live modus. Test starts automatically from zero.
- Stops the live test



- CSV report will be saved in file manager and can be transferred to a PC using a USB stick
 - Exits the screen and goes back to initial Loss Monitor screen.
- CSV reports can be created only on this screen.



Fiber „Tools“ menu

Link light

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

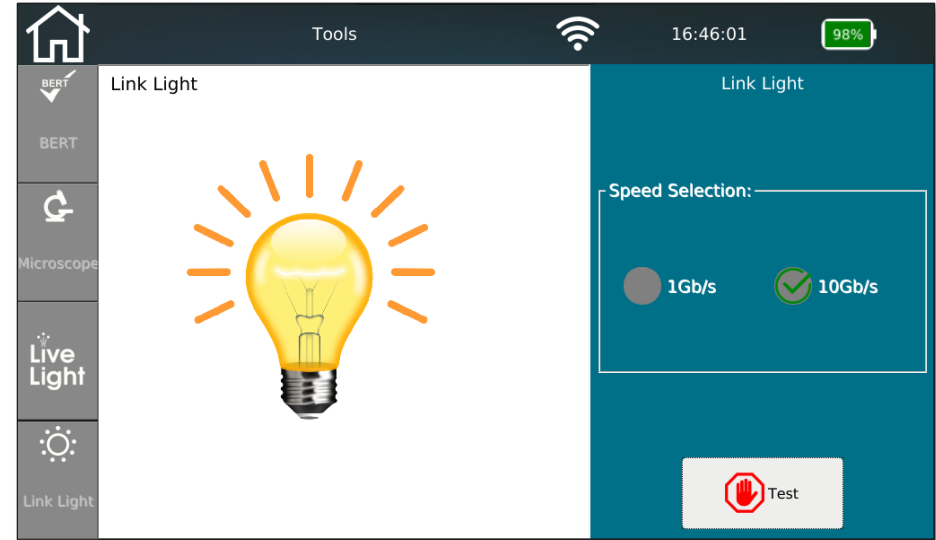


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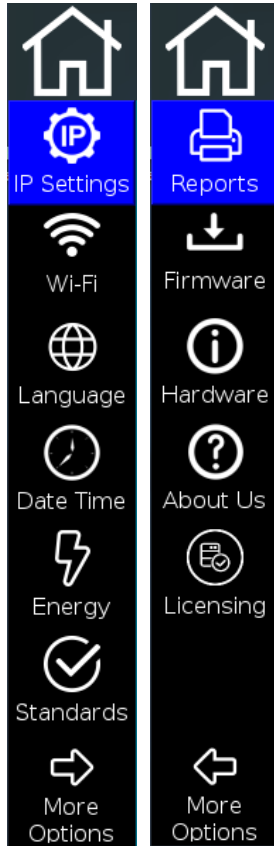
6

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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

Mac Address: 00:06:71:41:00:25

Interface Selection: Copper Auto-Negotiate

IPv6 Link Local Address: Copper Auto-Negotiate

IPv4 ☐ Enable DHCP ☐ Use Static IP

IPv4 Address

Subnet Mask

Default Gateway

DNS Server

VLAN 1 ☐ Use VLAN

Refresh DHCP Network Test Screen

System Settings 10:58:33

Device Information

Mac Address: 00:06:71:41:00:25

Interface Selection: Copper Auto-Negotiate

IPv6 Link Local Address: FE80::0206:71FF:FE41:0025

IPv4 ☐ Enable DHCP ☒ Use Static IP

IPv4 Address 169.254.0.1

Subnet Mask 255.255.0.0

Default Gateway 169.254.0.254

DNS Server 169.254.0.254

VLAN 1 ☐ Use VLAN

Network Test Screen

System Settings 10:57:49 98%

Device Information

Mac Address: 00:06:71:41:00:25

Interface Selection: Copper Auto-Negotiate

IPv6 Link Local Address: FE80::0206:71FF:FE41:0025

IPv4 ☒ Enable DHCP ☐ Use Static IP

IPv4 Address

Subnet Mask

Default Gateway

DNS Server

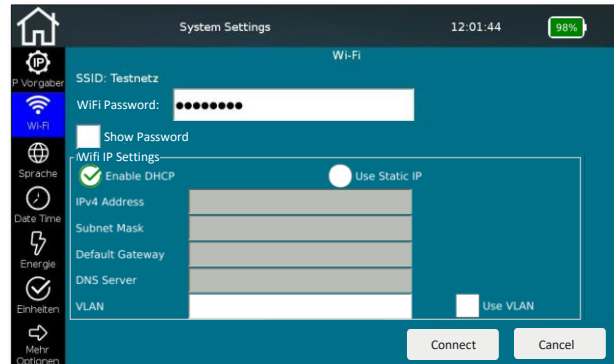
VLAN 1 ☐ Use VLAN

Refresh DHCP Network Test Screen

„Settings“ menu

Wi-Fi scan and connection

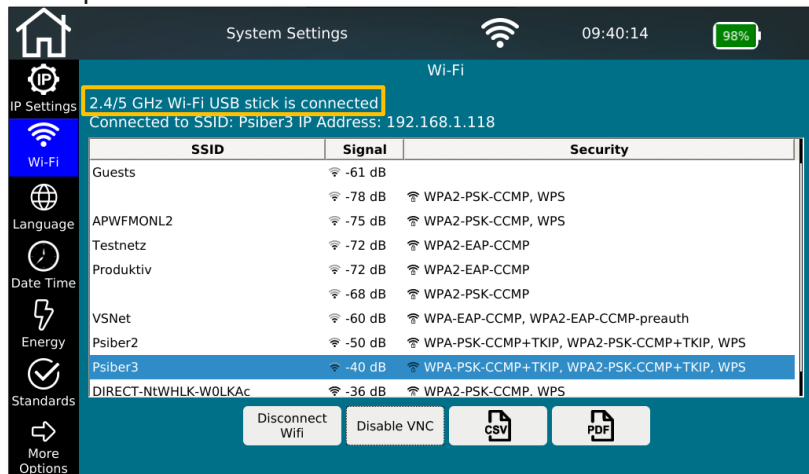
- By selecting the menu item, a network scan in the 2.4 GHz band starts automatically
- Display of founded SSIDs
 - Display the name
 - Signal strength
 - Encryption methods
- Selection of the WLAN network to establish the connection
 - Password entry (if necessary)
- After the connection is established, all active network tests are available
 - “Wi-Fi” 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

Wi-Fi scan and connection with 2.4/5 GHz Wi-Fi USB stick

- Connect the Wi-Fi USB Stick to the main unit using the micro USB adapter
- Wi-Fi stick will be automatically active, without a need for any setting changes. The status text at the top of the screen will show whether internal or external Wi-Fi is active
- Wi-Fi USB Stick will scan additionally all 5GHz access points available in the network and make it possible to run all network tests when connected to those access points
- Disconnecting the Wi-Fi stick will automatically enable the internal 2.4GHz Wi-Fi chip



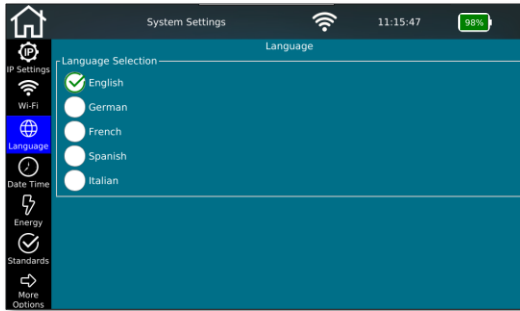
NetXpert XG-2.4/5GHz
Wi-Fi USB-Adapter (226586)

„Settings“ menu

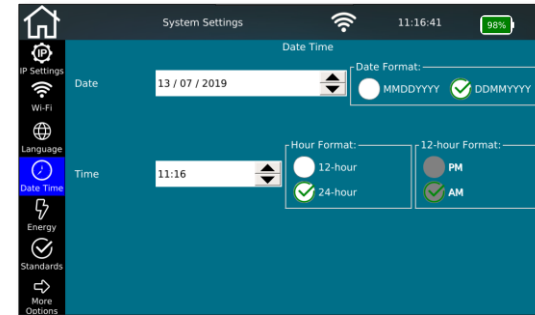
System settings

- Device specific system settings

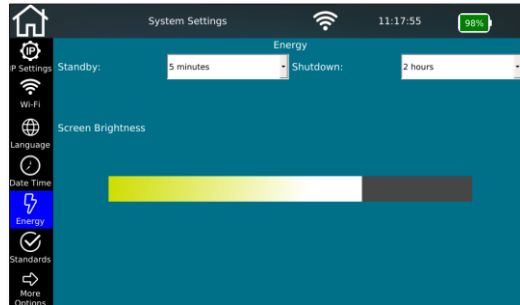
- Language settings



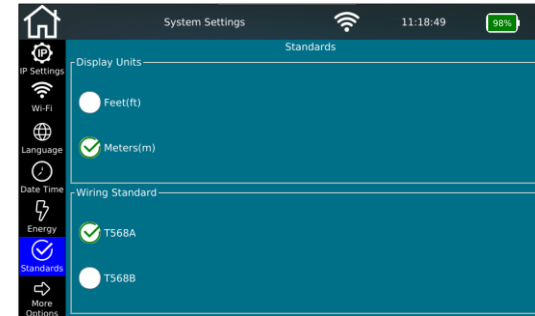
- Date/Time



- 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

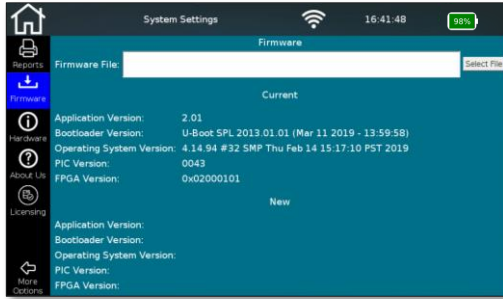
The screenshot shows the 'System Settings' application with the 'Reports' tab selected. The interface has a dark blue header bar with a home icon, 'System Settings', signal strength, time (14:53:52), and battery (98%). A left sidebar contains icons for Reports (selected), Firmware, Hardware, About Us, Licensing, and More Options. The main content area is divided into two columns. The left column contains form fields for 'Company' (filled with 'Softing'), 'Technician' (empty), and 'Company Logo' (with radio buttons for 'Enable' and 'Disable', where 'Disable' is selected, and an 'Import Logo' button). The right column contains form fields for 'E-mail' (filled with 'info.itnetworks@softing.com') and 'Phone' (empty). Below these is a large 'Image' preview area showing the 'optimize! softing' logo. At the bottom of the main area, a 'file:' section states: 'Logo has to be JPG or PNG with 250 pixels in height and maximum 5MB.'

„Settings“ menu

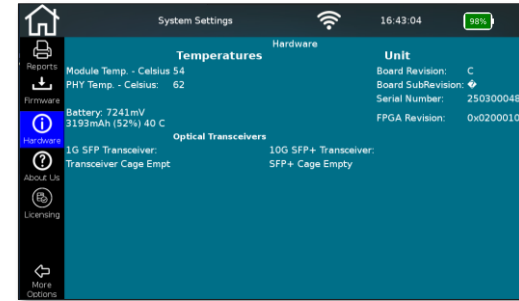
Info screens

- Info screens on

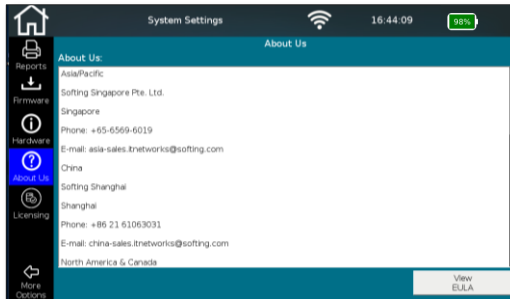
- Installed firmware



- Integrated hardware



- Manufacturer contact details



- Active licenses and upgrade options

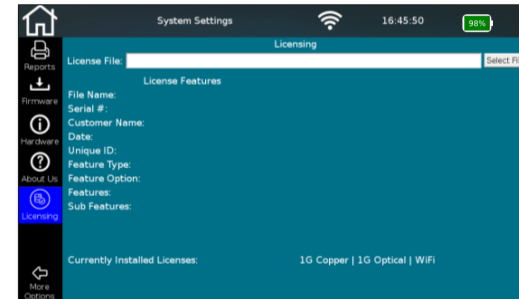


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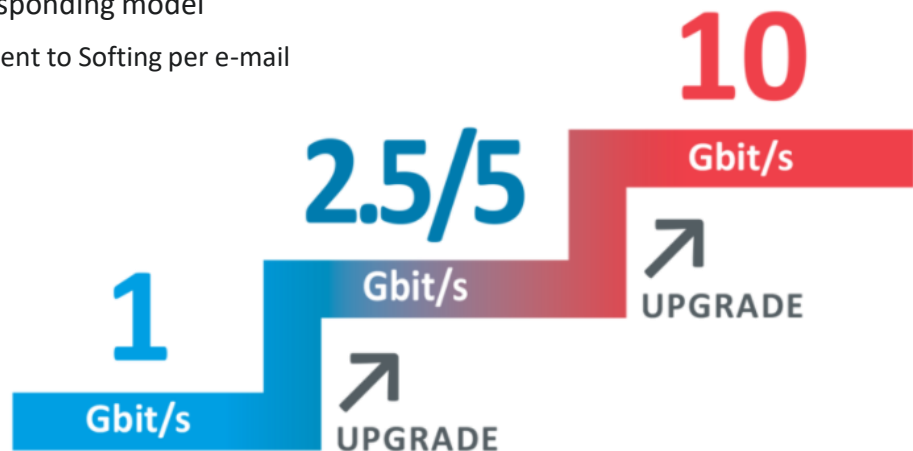
7

8

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 (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:

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