

Security information

Prevent defects due to external overvoltage

Especially when re-measuring existing or retrofitted systems, damage to active components in the network or to the certification measuring device occurs time and again, triggered by applied voltages. This dangerous voltage may come from active ports, active PoE supplies or improper use of the network cabling by proprietary applications. Often, clear labels are missing, or, most dangerously, they are no longer applicable due to undocumented repatching of ports. In order to avoid risks in unclear circumstances, there are some tips on how active ports can be detected in advance with the WireXpert, or installed PoE injectors can be taken into account metrologically.



WireXpert
Series

What are the sources of overvoltage?

- Active ports of switches, routers or similar central network components
- Passive PoE injectors that constantly apply voltage
- Telecommunications voltage, e.g., open circuit voltage of older telephone systems
- Voltages due to undefined customer-specific applications on network cabling

What are the consequences of the overvoltage?

If a measurement is started on the WireXpert when external voltage in the higher volt range is applied, this will result in damage to the measurement inputs, as these are set to voltages in the mV and μ V range.

The high external voltage can also have the following effects on the measuring device and the measuring environment:

- Indication of open or short-circuited individual wire pairs during wiring test
- Contact between LOCAL and REMOTE device no longer possible
- Possible test scenarios of the WireXpert, especially when determining the wiring plan, can cause damage to external active hardware e.g. passive PoE injectors

Always check the signal state before measuring

By applying DC signals to the different wire pairs, the WireXpert determines the existing wire scheme in normal mode. Therefore, it is always important to know the signal state of the link to be tested before measuring it, and this in order to adjust the measurement parameters with the WireXpert or to de-energize the link to be tested.

Please turn the page over to find instruction →

Ensure that no active signal is present on the port to be tested

- Test for the presence of link pulses if conditions are unclear
- Activate the midspan function with the WireXpert if it is known that PoE injectors are present

Checking the voltage of a link with the switch port status test

There is an RJ45 network socket on the side of the WireXpert (Figure 1). This is not a test socket but is used to synchronize two independent measurement systems specifically for the password protected “laboratory mode”.

A standard patch cable can be connected to this port when the unit is switched on and connected to the socket of the link that is to be tested.

- If there is no voltage on the link with which an active switch port is trying to establish contact with a remote device, then the status LEDs of the RJ45 port of the WireXpert remain off.
- On the other hand, if the voltage on the link is present, the LEDs light up or flash and it is therefore clear that this port cannot be used for certification measurement.

If an active section is nevertheless to be tested, it must first be disconnected from the active equipment and thus be de-energized. Only when this is ensured can certification begin.

Midspan function with existing PoE injectors

The WireXpert determines the wiring diagram of the link to be tested via DC voltage signals. However, these DC voltage signals could also damage the measuring device or the PoE midspan. To avoid this, WireXpert provides the “PoE Midspan” function in the “Test Options” menu (Figure 2). When this option is activated the WireXpert performs a reduced wiring test with AC voltage signals, thus avoiding damage. However, there may be wiring patterns that are not correctly reproduced by this restricted mode. In addition, the DC loop resistance and DC resistance unbalance values cannot be determined in this case. Therefore, the “Midspan” function should only be activated when it is not possible to switch off or remove the PoE injector from the link.

In case of doubt, in order to detect the presence of PoE voltage at the socket, it is recommended to use a commercially available PoE detector.



Figure 1:
RJ45 network interface with status LEDs for testing for active switch ports

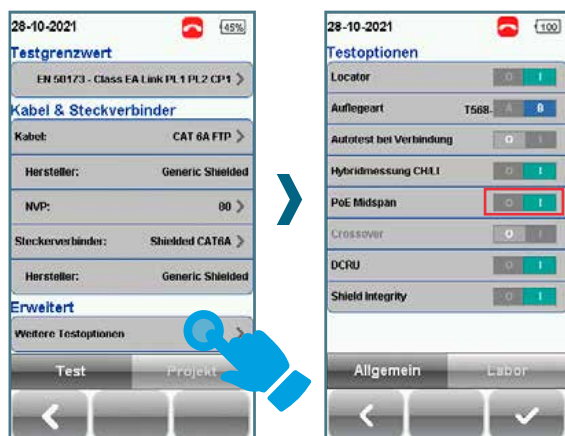


Figure 2:
Settings menu for activating the AC voltage mode in the presence of passive PoE injectors

Enable wiring measurement across PoE midspan device

For more information please visit our support page:

itnetworks.softing.com/support

or contact us at:

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