LANTEK IV-S

THE FUTURE OF CABLE CERTIFICATION

QUICK REFERENCE GUIDE

TREND NETWORKS

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LanTEK IV-S
Quick Reference Guide

163819 rev1 2022

English

INTRODUCTION

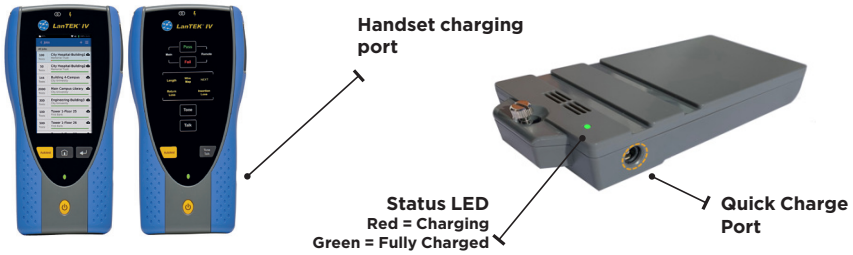
The LanTEK IV-S and TREND AnyWARE are a Cable Certification System. This guide will give you an overview of the key features of LanTEK IV-S and how to start using AnyWARE to manage your project and test results.

EN

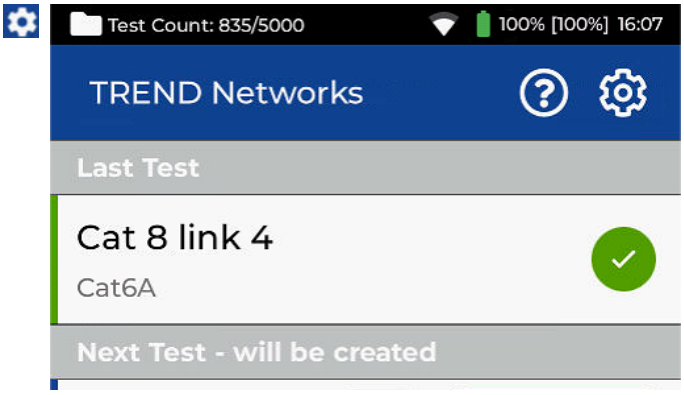
GETTING STARTED

Before you start using your LanTEK IV-S follow the steps below to ensure you can take advantage of all the features your LanTEK IV-S has to offer.

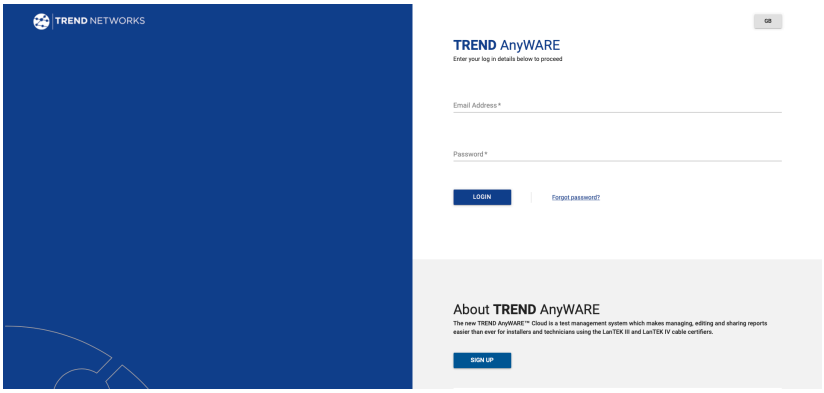
1. Fully charge the display and remote units using the power supply included in your case. This can be connected to the main charging port on the LanTEK IV-S or the quick charge port on the battery. The quick charge port reduces the charging time by 50%. To access the quick charge port the battery must first be removed by releasing the retaining screw.



2. Select the language by selecting the setup gear at the top left of the screen.



3. Visit anyware.trend-networks.net to setup your free TREND AnyWARE account to Manage, Share, Edit and Pre-configure your projects. Select; sign up for cloud based software or download for the desktop version.



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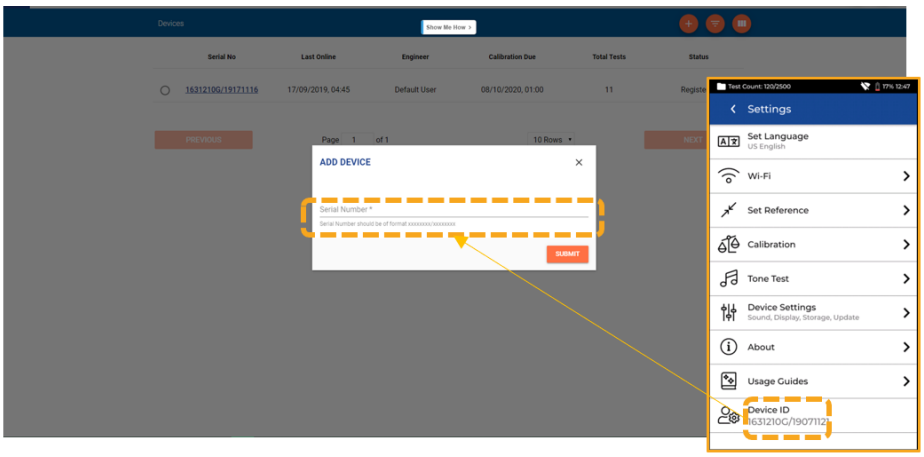
4. Link your LanTEK IV-S to your TREND AnyWARE Account by logging into your TREND AnyWARE account.
   - Select Menu: ☰ Click Devices: Devices Add Device: +
   - Enter your Device ID and select submit. The LanTEK IV-S device ID is found in the settings menu (below).



HELP OPTIONS

LanTEK IV-S and AnyWARE cloud have a comprehensive on-board help which will guide you through how to use the features. This can be accessed as follows;

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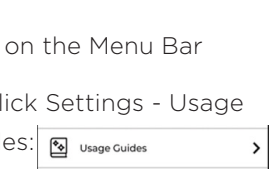
Help on the LanTEK IV-S

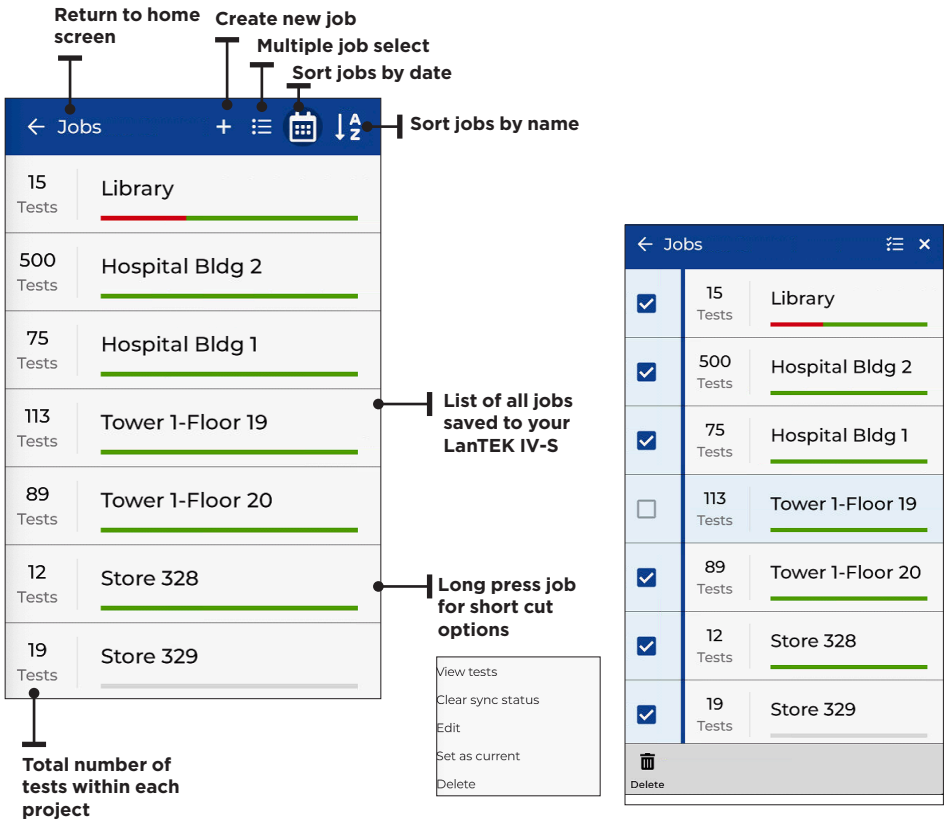
Icon on the Menu Bar

Or click Settings - Usage Guides:



Help on the AnyWARE Cloud

AnyWARE Cloud assistance can be accessed by the Walk Me Through tab located on the bottom right-hand side.

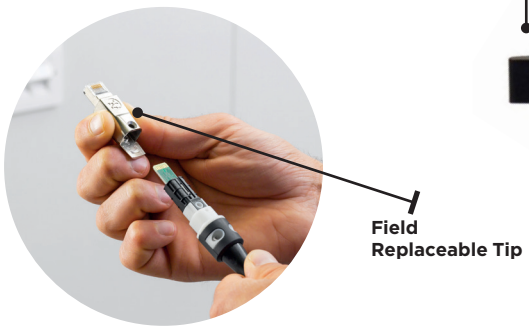


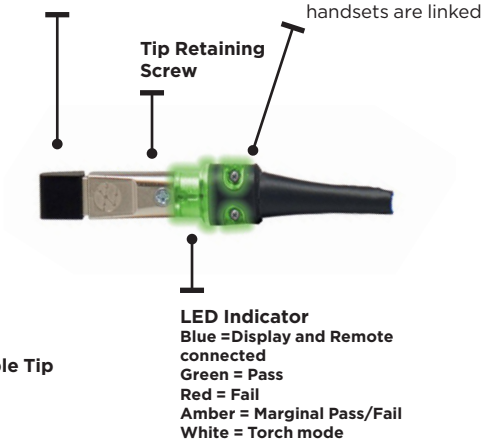
KEY FUNCTIONS

LanTEK IV-S

VisiLINQ™

VisiLINQ™ incorporates a multi-color LED indicator and action button to initiate tests and report the status independent of the tester handsets.





HOME SCREEN

The LanTEK IV-S home screen has been designed to display the details of the current project in either Standard mode or Advanced mode. Press the Settings button to change the Operation mode between Standard or Advanced. Standard is the default mode.

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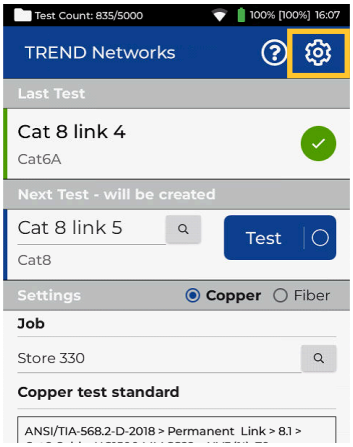
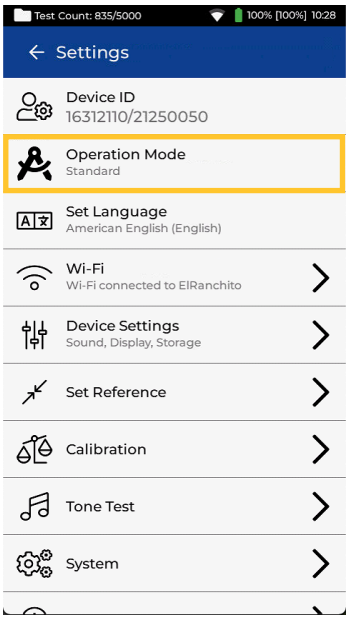
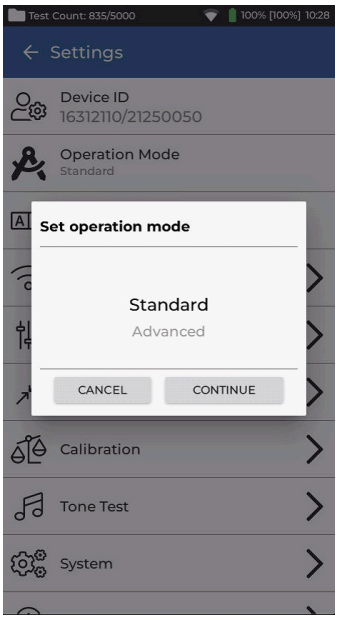
Setting the Operating Mode







HOME SCREEN (Standard)

The Standard mode displays all of the settings needed to perform a test on a single screen and is used when sequential test IDs are used, or each ID needs to be manually entered.

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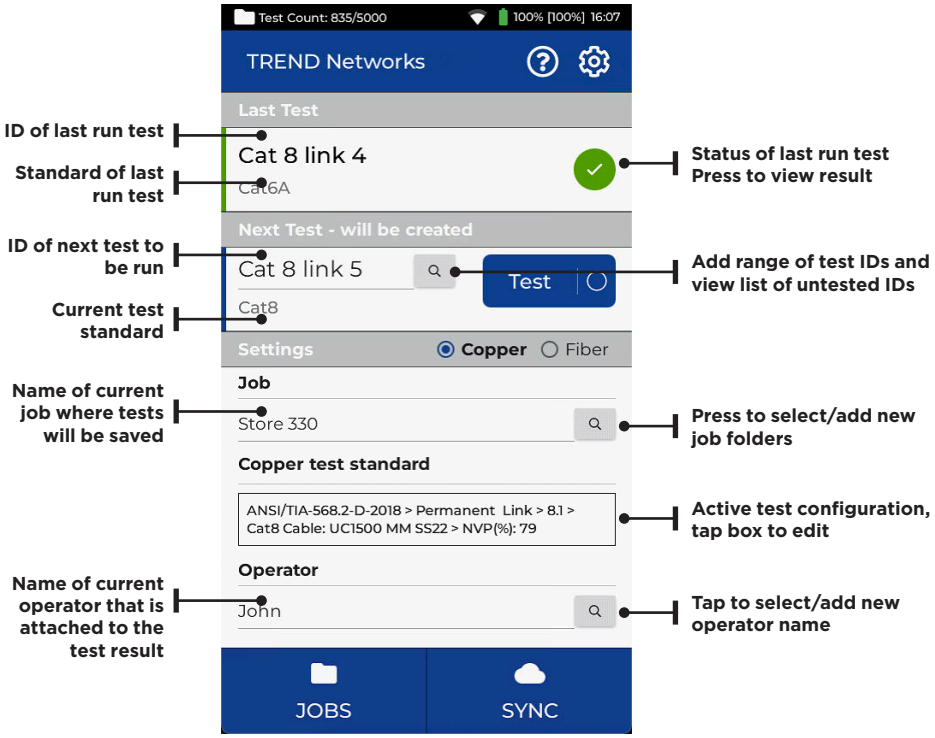

HOME SCREEN (Advanced Mode)

The Advanced mode is used primarily when a pre-defined list of test ID's has been created in the LanTEK or downloaded from AnyWARE Cloud.

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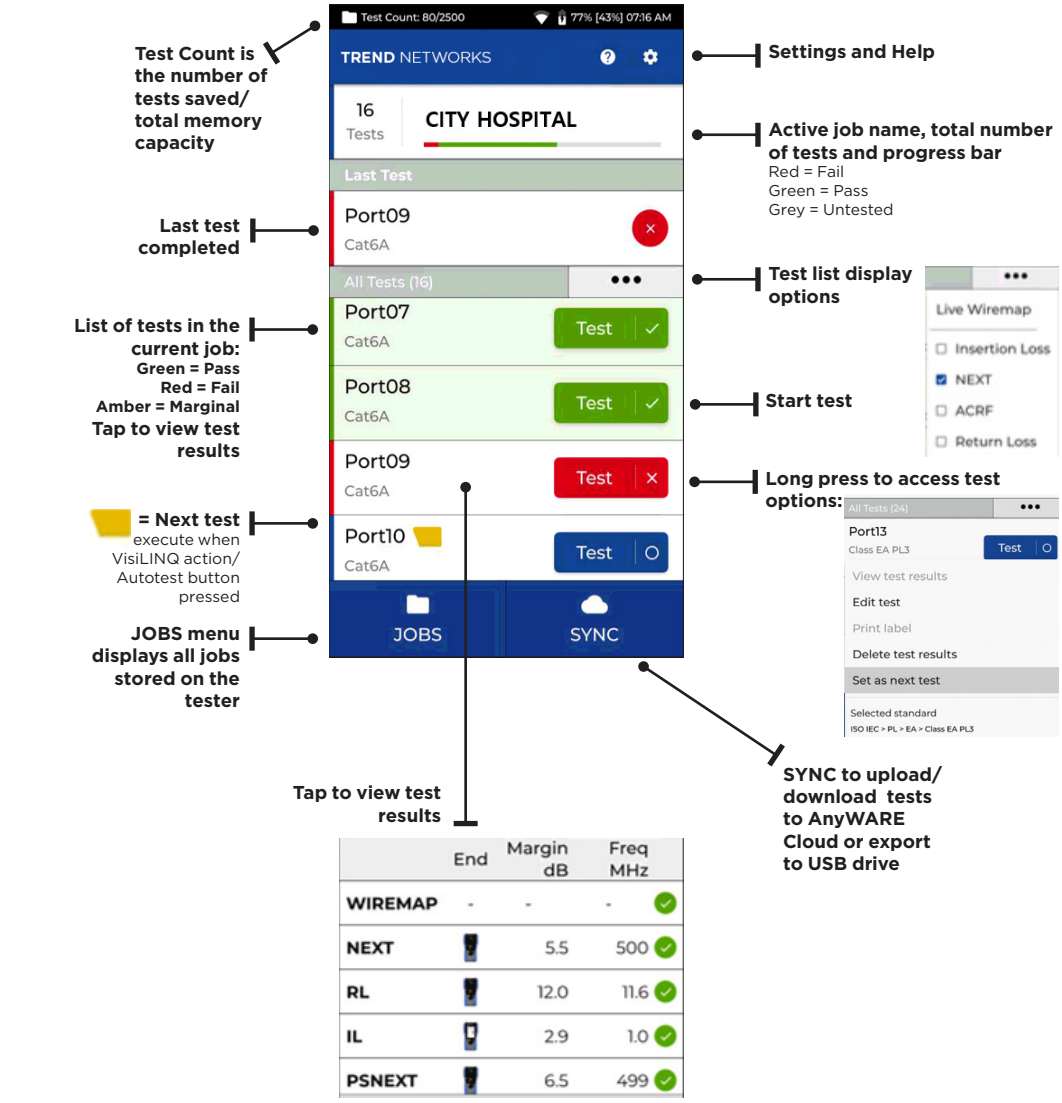
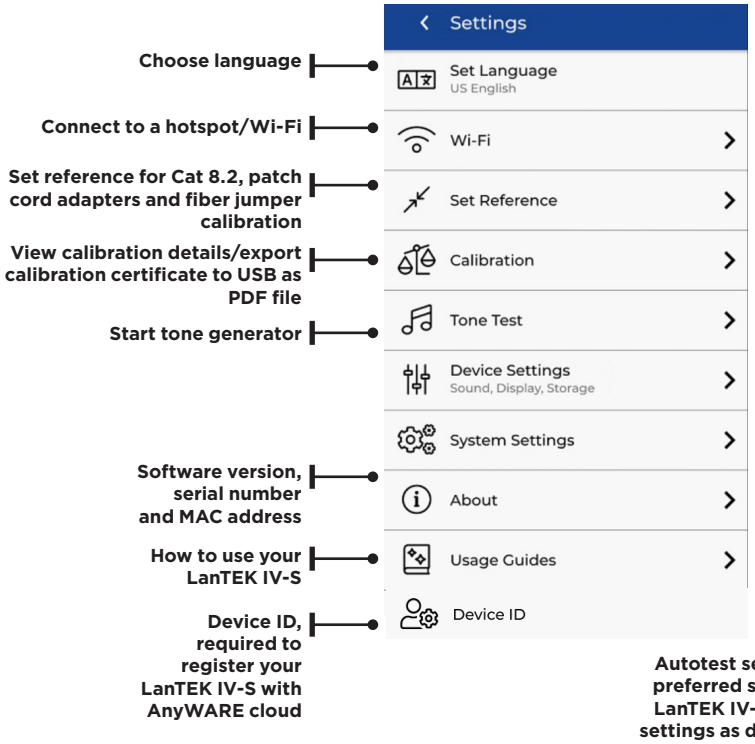
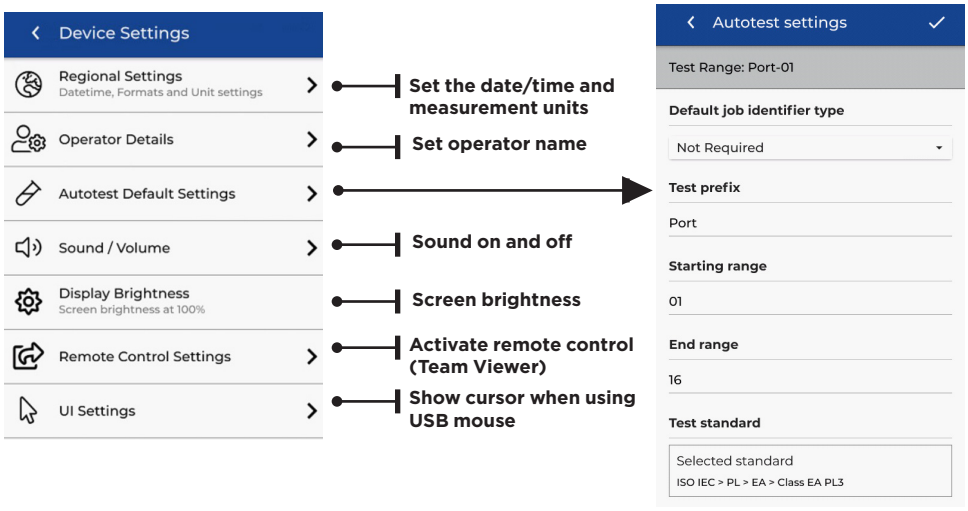


SETTINGS

The settings can be accessed from the settings menu on the home screen.





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CREATING A JOB

To create a job, select JOBS from the menu bar and then select: +

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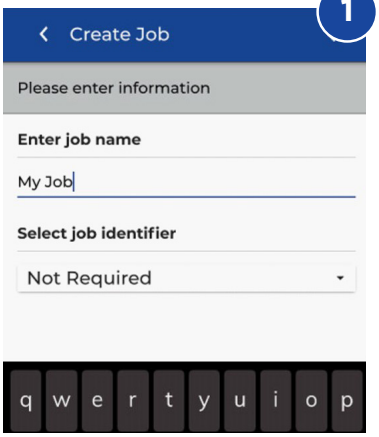
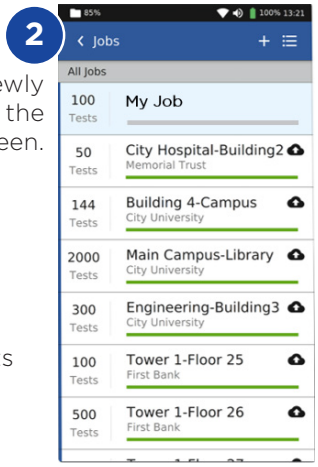
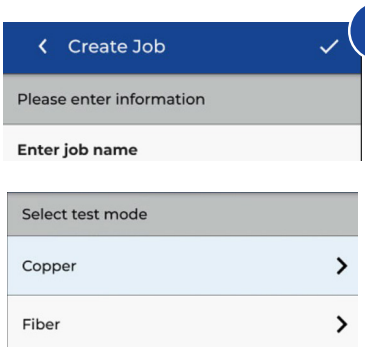


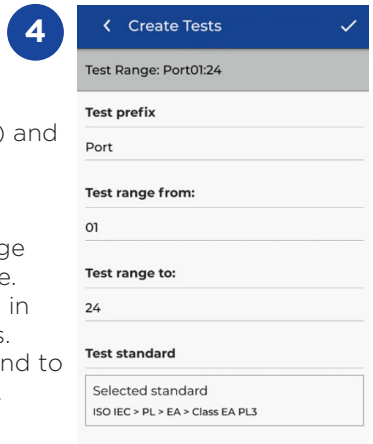
Enter job name and if required, select the job identifiers (optional). This will allow tests to be grouped specifically by building, floor, etc.
Select ✔ when complete.



Select the newly created job from the jobs screen.



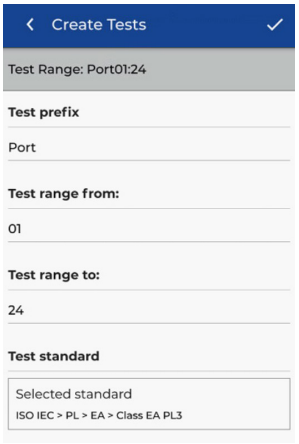
Select + to add tests to the job, then choose Copper or Fiber



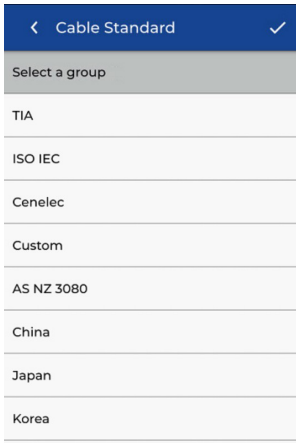
In Create Tests, enter the prefix (optional) and the test range.

Test Ranges
Enter an alpha-numeric value in Test Range from: that is the first test ID of a sequence. Then enter the last value of the sequence in Test range to: generate the list of test ID's. A red warning will be shown if the from and to ranges cannot create a continuous series.

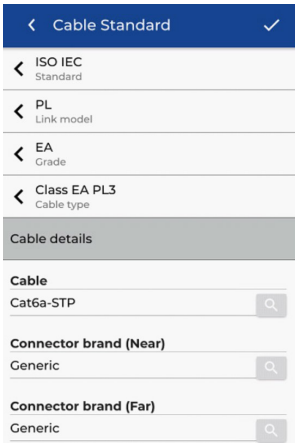
CREATING A JOB



5 Select standard

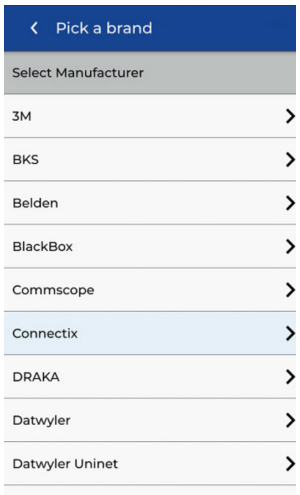


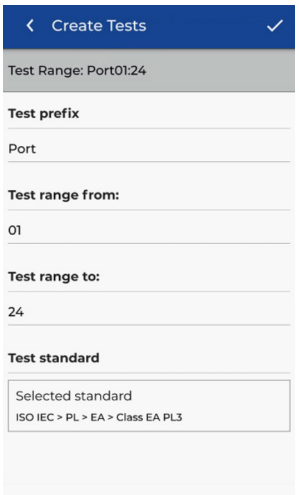
6 Choose the appropriate standard



7 Choose type of link

8 Optional Step, During the set-up the Cable and Connector manufacture can be selected to add more detail to the finished report





9 Select ✔ when completed

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CONNECTING TO WI-FI

To connect LanTEK IV-S to Wi-Fi, firstly select the Settings menu

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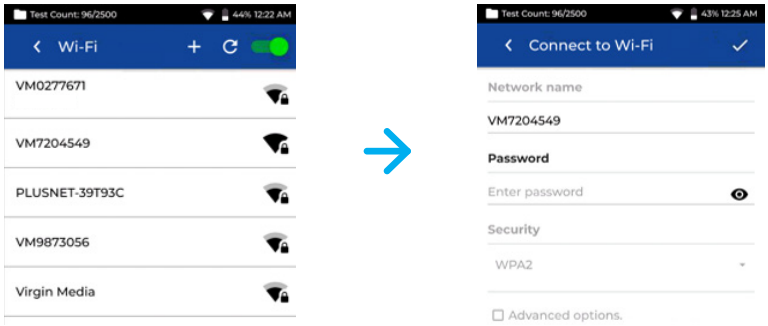
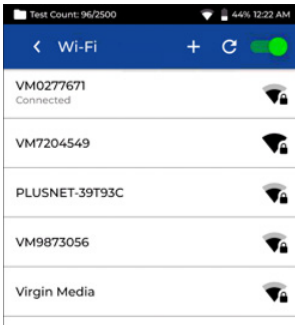
Select Wi-Fi from the Settings menu and switch toggle to turn on Wi-Fi.



Select your chosen Network and enter password (if required).

Wi-Fi successfully connected



SYNCHRONISING

Selecting SYNC will allow you to download pre-configured jobs or upload completed jobs to the cloud. If you are using the TREND AnyWARE desktop SYNC will also allow you to download results to USB. To SYNC your LanTEK IV-S:

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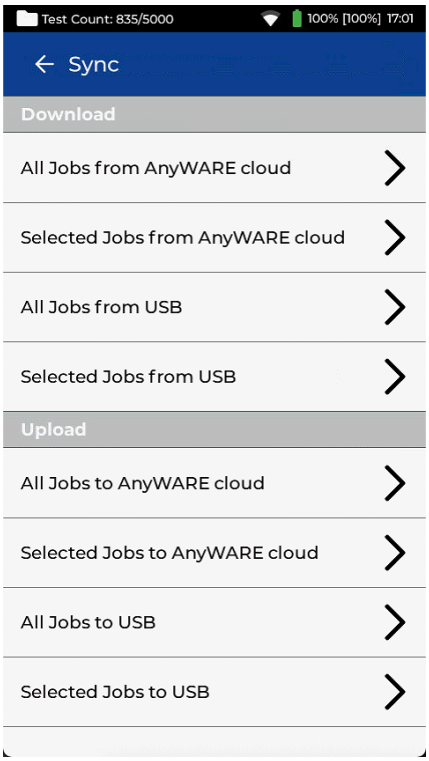
Select SYNC 



Download all new jobs from the cloud

Display a list of jobs and select the job(s) to be downloaded from the cloud

Download all new jobs from a USB drive

Display a list of jobs and select the job(s) to be downloaded from a USB drive

Upload all jobs to the cloud

Display a list of jobs and select the job(s) to be uploaded to the cloud

Upload all new jobs to a USB drive

Display a list of jobs and select the job(s) to be uploaded to a USB drive

LIVE WIREMAP

Live Wiremap allows an instant, constantly updating Wiremap view for connected links without the need to perform an Auto test. Live Wiremap can be used in two ways. In an active job or free mode which does not require a project to be set-up.

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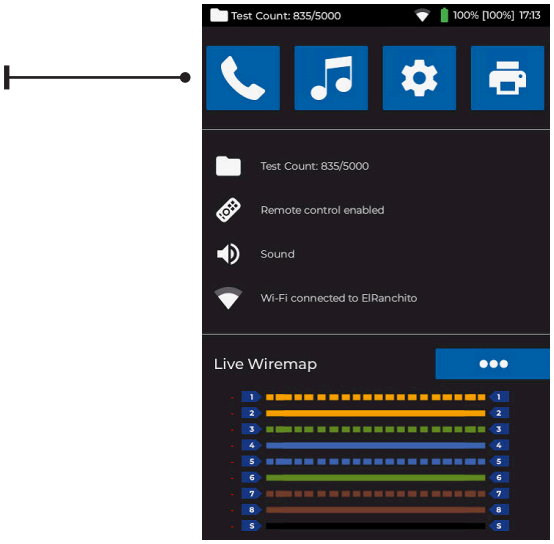
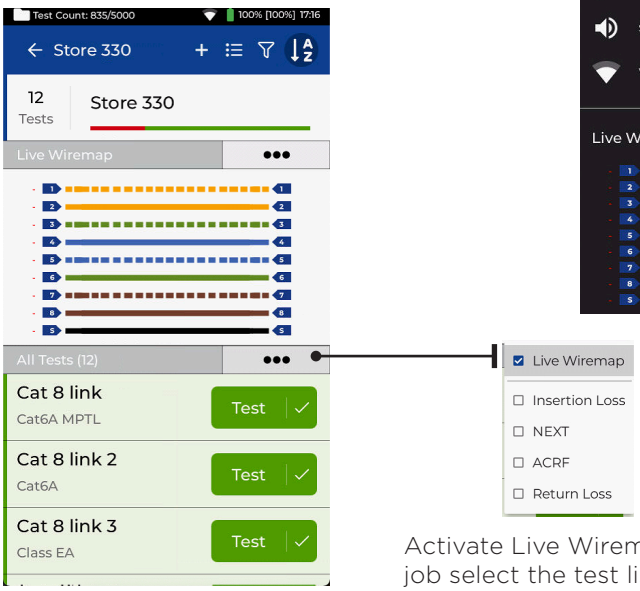
To activate Live Wiremap in free mode. Swipe down from the top of the screen.





Activate Live Wiremap in a job select the test list options menu.

CREATING A TEST REPORT

Jobs can be reviewed and edited using TREND AnyWARE Cloud or Desktop, Jobs synced via Wi-Fi will automatically be added to jobs menu of the cloud.

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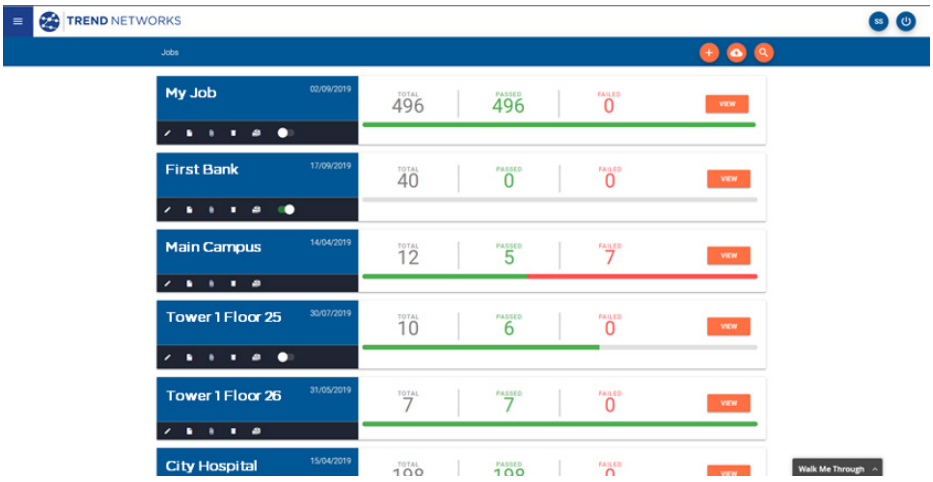


Key:

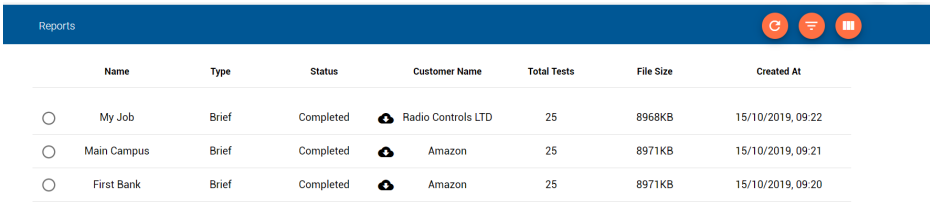
Upload jobs from USB using the Cloud and Desktop Swipe down from the top of the screen

View, download and email PDF reports

Download report

Generate a PDF test report

Share the report via an email link where the recipient can view and save the report



Name	Type	Status	Customer Name	Total Tests	File Size	Created At
My Job	Brief	Completed	Radio Controls LTD	25	8968KB	15/10/2019, 09:22
Main Campus	Brief	Completed	Amazon	25	8971KB	15/10/2019, 09:21
First Bank	Brief	Completed	Amazon	25	8971KB	15/10/2019, 09:20

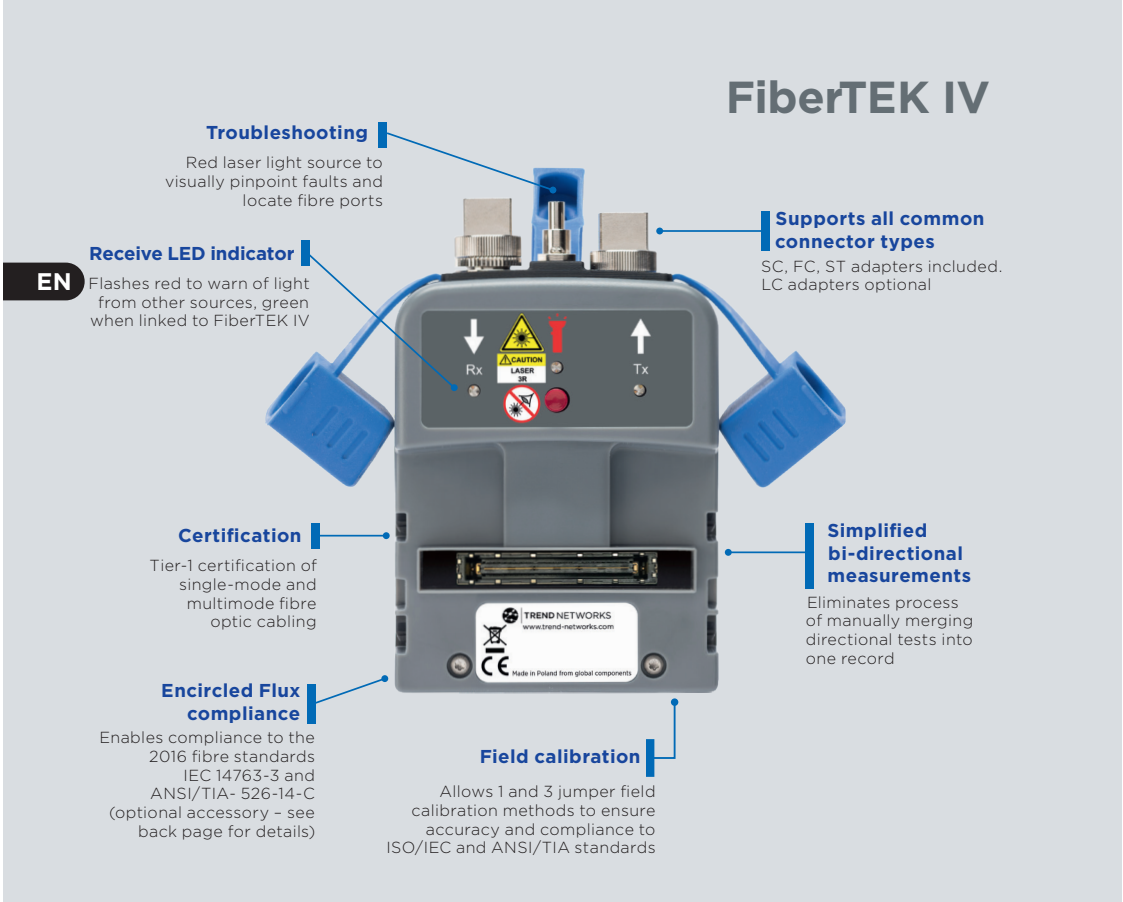
TREND NETWORKS

FiberTEK IV

Quick Reference Guide

Depend On Us

English



INTRODUCTION

The LanTEK IV, FiberTEK IV and TREND AnyWARE Cloud features industry leading performance, reliability, durability and time saving functionality.

FiberTEK IV adapters are used with LanTEK IV for fast and simple certification of high bandwidth single-mode and multimode fibre optic cabling including support for encircled flux testing (optional).

To pinpoint fibre cabling faults every FiberTEK IV adapter includes a built-in visible light source to help you visually pinpoint faults and locate fibre ports.

FiberTEK IV provides optical loss (dB) measurements meeting Tier 1 certification requirements.

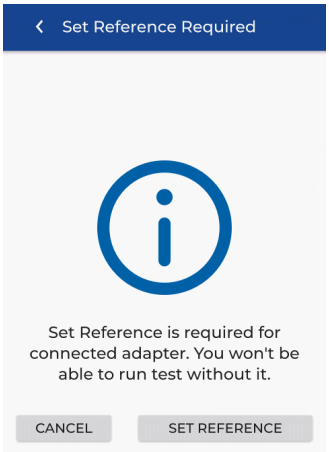
GETTING STARTED

Ensure the software version installed on the LanTEK IV is 1.11 or higher. This can be verified by pressing the gear icon in the upper-right corner of the screen, then **About** and **Software Version.**
The remote software version is displayed when it is powered on and connected to the main handset with either a copper or fibre optic cabling link.

EN

SC/ST/FC adapters are included with the FiberTEK IV modules, An optional LC kit is available which includes LC adapters for the Rx ports of the modules and SC-LC test cords for use on the Tx ports.

Optional Encircled Flux (EF) launch cables are available for use when a EF launch is required/desired for multimode testing. EF cords are not necessary when testing single-mode fibre.



When a FiberTEK IV module is first connected to the main handset the Set Reference screen will appear. Set Reference is used to "calibrate" the launch cords used during testing. Press **CANCEL** to bypass and perform the Set Reference procedure later, or press **SET REFERENCE** to perform the procedure now.

Pressing **SET REFERENCE** will display the set reference screen with the default settings.

HELP OPTIONS

LanTEK IV and AnyWARE cloud have a comprehensive on-board help which will guide you through how to use the features. This can be accessed as follows:

Help on the LanTEK IV

Icon on the Menu Bar

Or click Settings - Usage Guides:

Help on the AnyWARE Cloud

AnyWARE Cloud assistance can be accessed by the Walk Me Through tab located on the bottom right-hand side.

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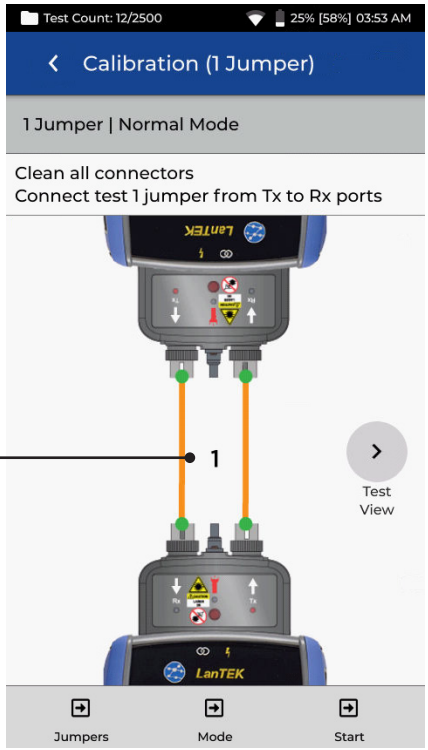

Displays current setup that will be used when **Start** is pressed

Test cord number

Jumpers: Cycles through the number of jumpers to be used during testing

Test View: Cycles between the view of the calibration setup and the view when connected to the fibre under test

Start: Initiates set reference procedure

Mode: Cycles between Normal (2 FiberTEK module) and Loopback (1 FiberTEK module)

REFERENCE METHODS

Three options are available when setting the reference prior to testing. Each method determines which components of the installed link are measured during the certification test.

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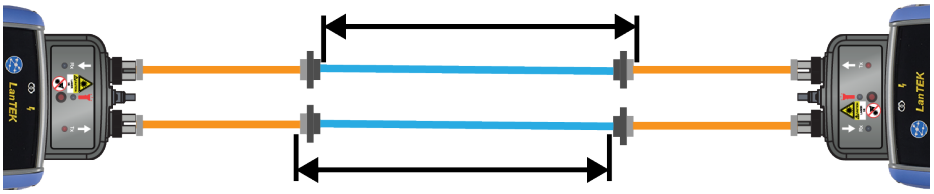
1-Jumper Reference

The 1-Jumper method includes the cable plus the connections on each side of the cable:

2-Jumper Reference

The 2-Jumper method includes the cable plus the connection closest to the light source side of the link. The connection on the side of the cable on the power meter side of the link is not included in the measurement:



3-Jumper Reference

The 3-Jumper method measures only the cable and does not include the connection on either side of the cable:

1 JUMPER | NORMAL MODE

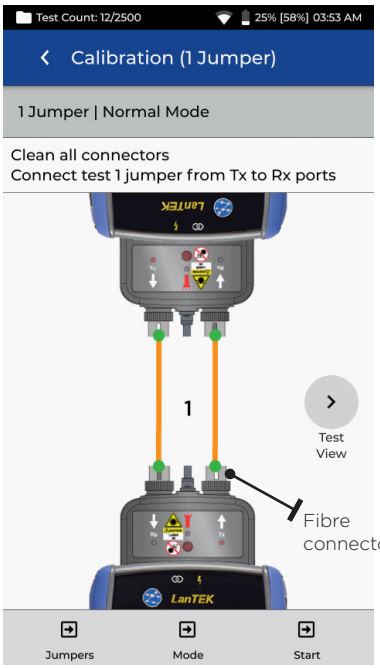
The 1 Jumper method is preferred by most cabling standards because it most accurately represents the signal loss experienced by the equipment during operation.

EN

When testing the loss of the 2nd test cord, the cable under test and the two connections of the cable under test are measured.

TEST CORD CONFIGURATION VIEW

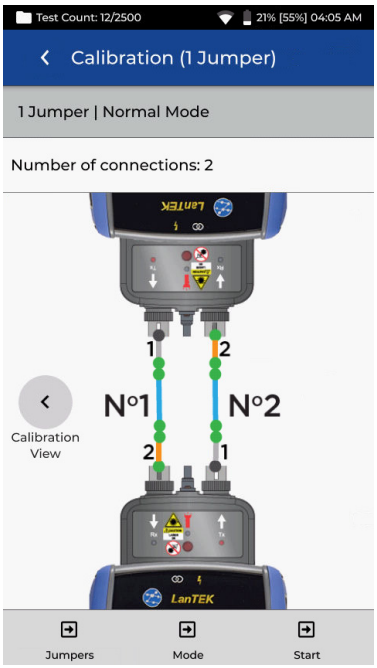
Connect test cords as shown for 1 Jumper Reference test:



Orange test cord connected during Set Reference

TEST CORD AND FIBRE UNDER TEST VIEW

Displays the components that are included in the Autotest measurement:



Orange line: Test cord that is included in the autotest measurement
Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

2 JUMPER | NORMAL MODE

The 2 Jumper method excludes the loss of the 2nd test cord and one of the connections of the cable under test. The measured loss will be slightly under-reported compared to the 1 Jumper method.

This method can be used when the connector type of the cable under test are not available on the test equipment and hybrid test cords are required.

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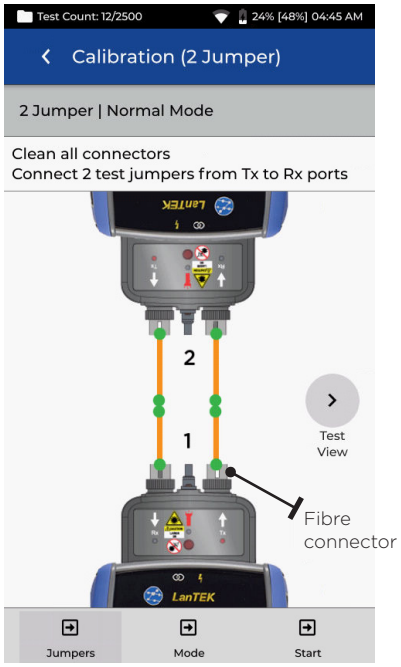
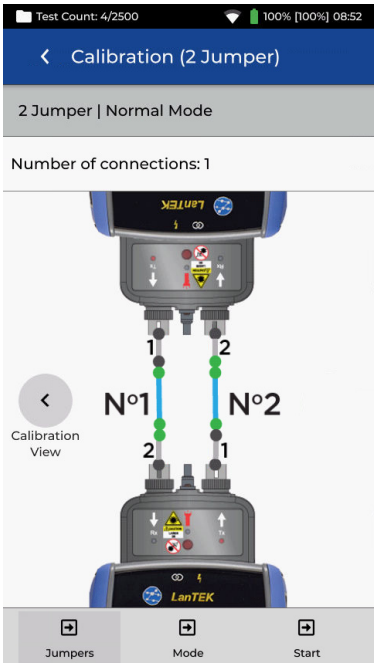


Orange test cord connected during Set Reference



Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

3 JUMPER | NORMAL MODE (MODIFIED 2 JUMPER)

The 3 Jumper method is preferred when hybrid test cords are required to interface with the cable under test. It is essentially the 2 Jumper method with a 3rd Jumper added after the reference is set to simulate the measurement loss of the 1 Jumper method.

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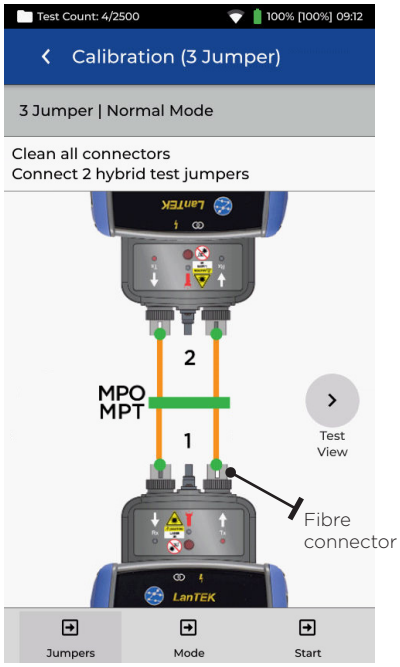
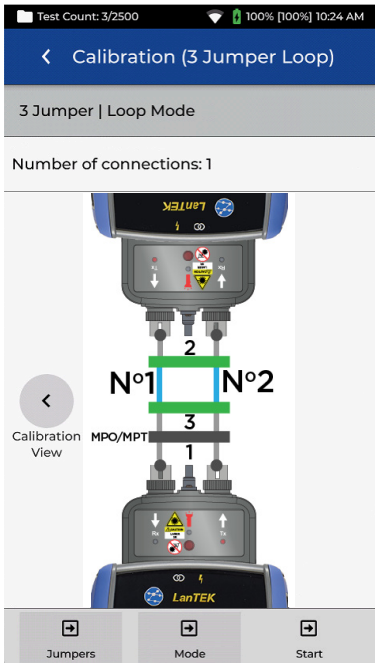


Orange test cord connected during Set Reference



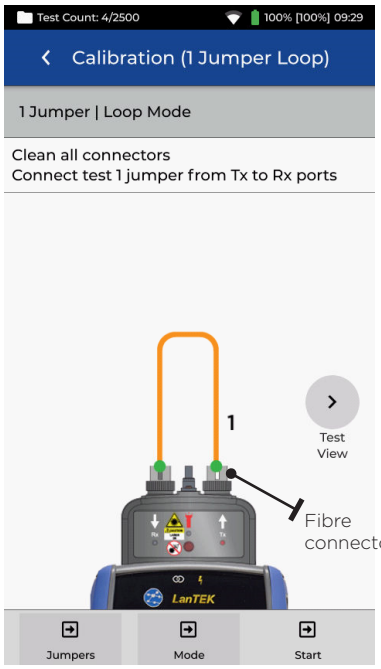
Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

1 JUMPER | LOOPBACK

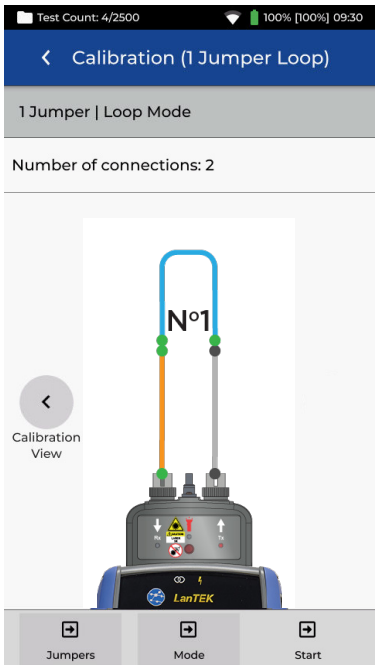
Loopback mode uses one FiberTEK module to test a single fibre when both ends are located at the handset.

1 Jumper reference measures the cable under test and the connections at both ends.

EN



Orange test cord connected during Set Reference



Orange line: Test cord that is included in the autotest measurement
Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

2 JUMPER | LOOPBACK

Loopback mode uses one FiberTEK module to test a single fibre when both ends are located at the handset.

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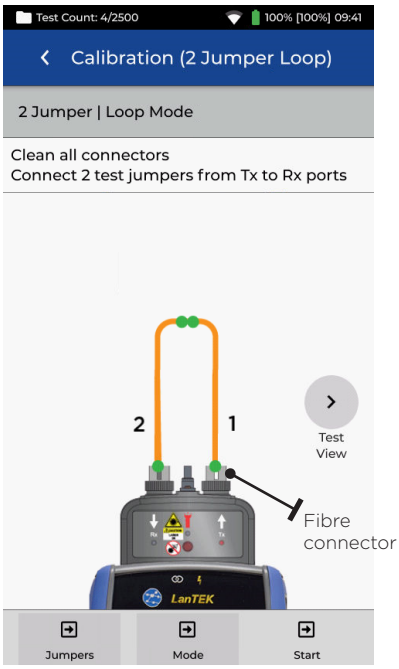
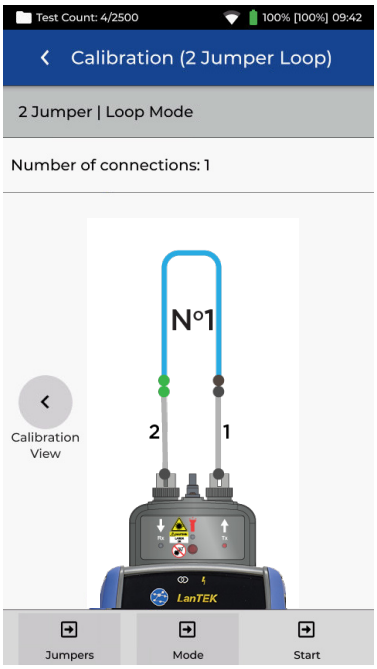
2 Jumper reference measures the cable under test and the loss from only one connection. The measured loss will be less than the 1 Jumper method.



Orange test cord connected during Set Reference



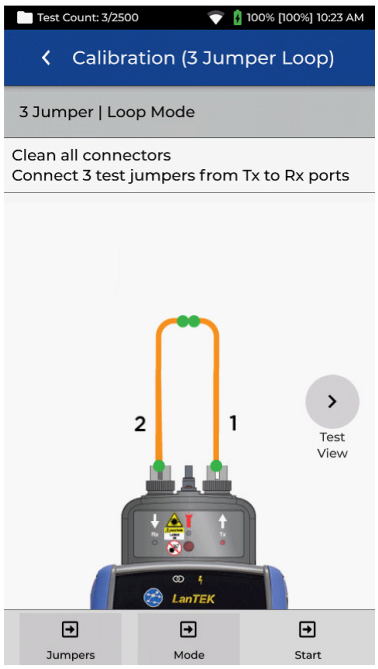
Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

3 JUMPER | LOOPBACK

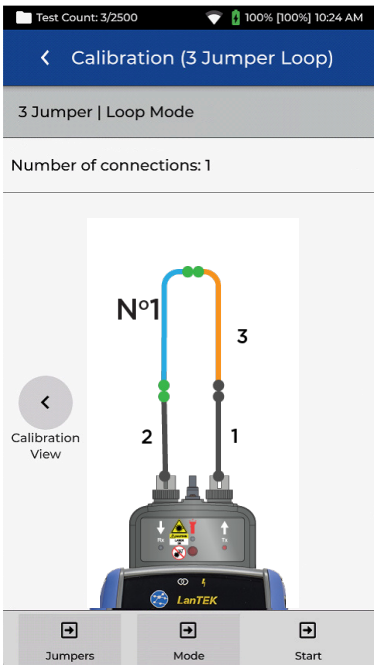
Loopback mode uses one FiberTEK module to test a single fibre when both ends are located at the handset.

The 3 Jumper method is preferred when hybrid test cords are required to interface with the cable under test. It is essentially the 2 Jumper method with a 3rd Jumper added after the reference is set to simulate the measurement loss of the 1 Jumper method.

EN



Orange test cord connected during Set Reference

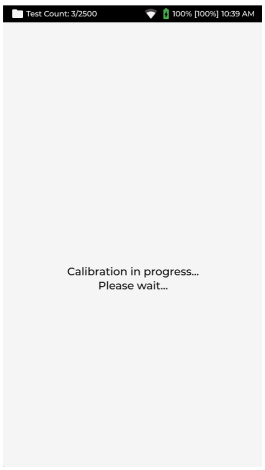


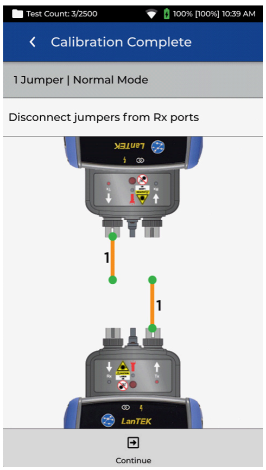
Orange line: Test cord that is included in the autotest measurement
Blue line: Fibre under test
Grey line: Test cord that is not included in the autotest measurement
Grey dot: Connectors that are not included in the autotest measurement
Green dot: Connectors that are included in the autotest measurement
N1/N2: Fibre number when testing two fibres

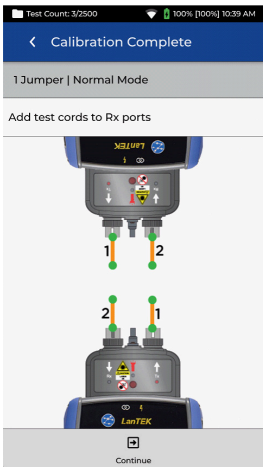
SET REFERENCE | RESULTS

EN

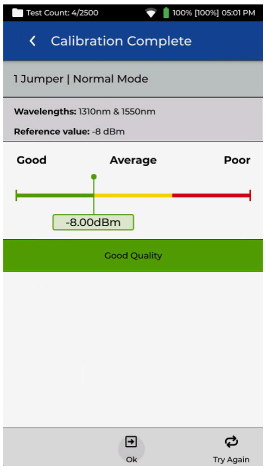
After pressing Start with the desired reference type selected - example, 1-Jumper|Normal, the reference calibration process will begin. Once the reference is set the user interface will indicate which end of the jumper to disconnect from the module, and whether additional jumpers need to be attached before testing.

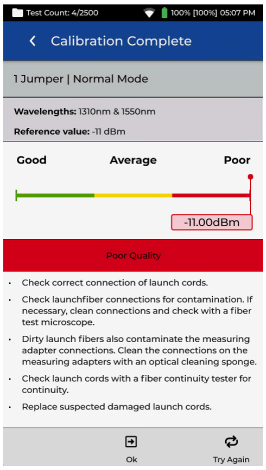






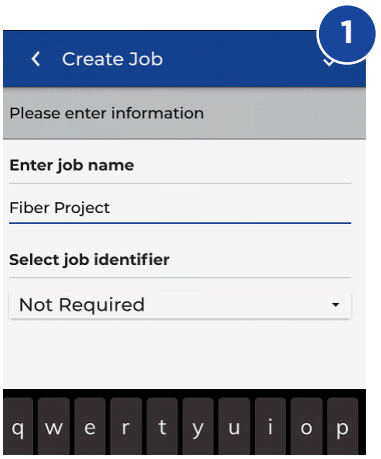
The Calibration Reference results will be displayed on a range from Good-to-Poor. Begin testing only when a Good quality reference is achieved. If Average or Poor is shown, follow the on-screen recommendations to improve performance. Clean the connectors of the reference cords and the FiberTEK IV modules, replace worn/damaged cords.
Always use fibre optic specific cleaning products and 99% isopropanol/IPA, never use rubbing alcohol. Use extreme care when cleaning module ports to prevent damage.





CREATING A JOB

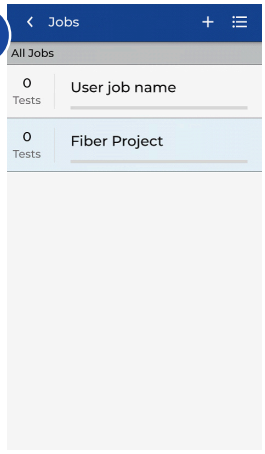
To create a job, select JOBS from the menu bar and then select: +

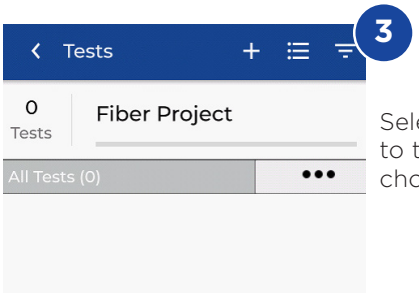


Enter job name and if required, select the job identifiers (optional). This will allow tests to be grouped specifically by building, floor, etc.
Select ✔ when complete

EN

Select the newly created job from the jobs screen



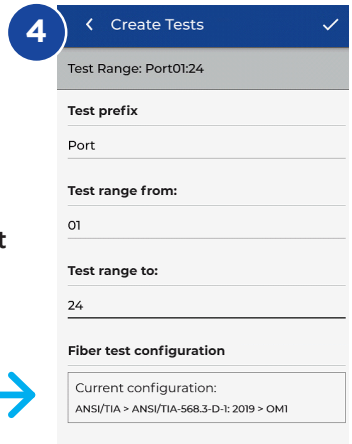


Select + to add tests to the job, then choose fibre

In Create Tests, enter the prefix (optional) and the test range.

Test Ranges
Enter an alpha-numeric value in **Test Range from:** that is the first test ID of a sequence.
Then enter the last value of the sequence in **Test range to:** generate the list of test ID's.
A red warning will be shown if the from and to ranges cannot create a continuous series.

Tap on the test standard box to change the default test standard selection.



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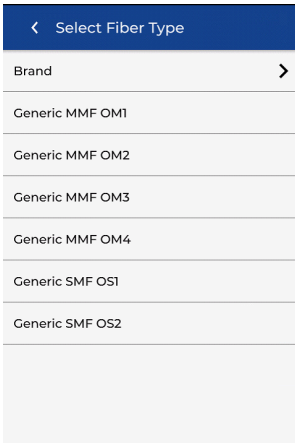
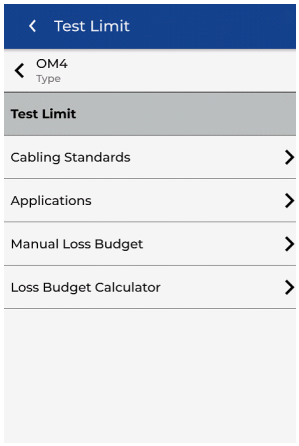
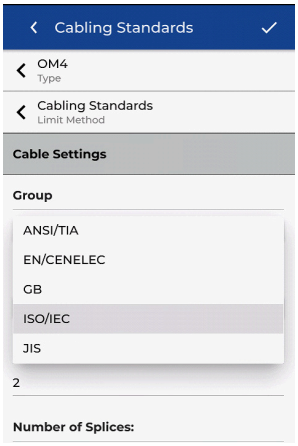
CREATING A JOB



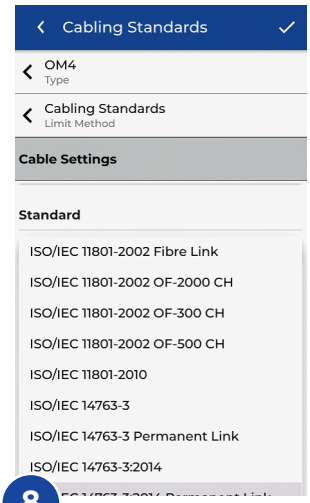
5 Select “Type” and choose appropriate fibre then tap “Limit Method”



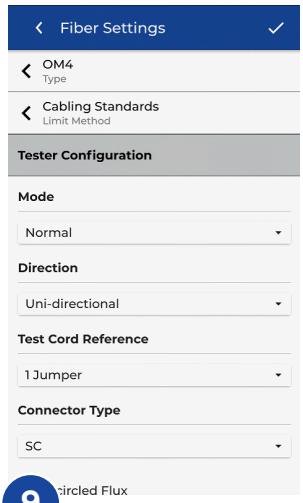
6 Select “Cabling Standards”



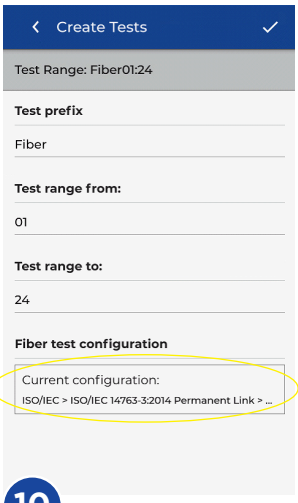
7 Select ISO/IEC from the “Group” menu



8 Select the desired test standard from the “Standard” menu



9 Verify the other test parameters are correct then select ✔



10 Confirm the prefix, test range and test standard, then ✔ to add the new tests to the job

FIBRE OPTIC TEST LIMITS

A test limit must be selected when adding fibre tests to a LanTEK IV Job. Four types of test limits are available; Cabling Standards, Applications, Manual Loss Budget and Calculated Loss Budget.

EN

CHOOSING A LIMIT TYPE

Cabling Standards are limits defined by the same standards organisations that create limits for copper cabling, namely ISO/IEC, ANSI/TIA, CENELEC/EN and others. These limits are typically for backbone and horizontal fibre cabling installed in commercial buildings. The limits are generic and are not designed to support a specific application or data rate, instead the limits are designed to support a wide range of high-performance applications. In nearly all cases there are limits for both wavelengths in multimode or single-mode systems.

APPLICATIONS

Applications limits are used to determine whether a specific application such as 40 Gb/s multimode Ethernet can be supported by the fibre under test. The pass/fail criterion are specific to the application and are always wavelength specific. For example the 10GBase-L application has a limit for 1310nm only, while the 10GBase-E application has a limit for 1550nm only. These applications are designed for specific types of hardware, each with its specified operational wavelength and maximum supported distance.

LOSS BUDGET CALCULATOR

Manual budget

EN

Budgets can be manually set when the allowable loss of the cabling is known. A common use for manual loss budgets is when a network designer supplies the maximum allowed loss to the installer or when the active equipment to be operated on the cabling has a known loss budget.

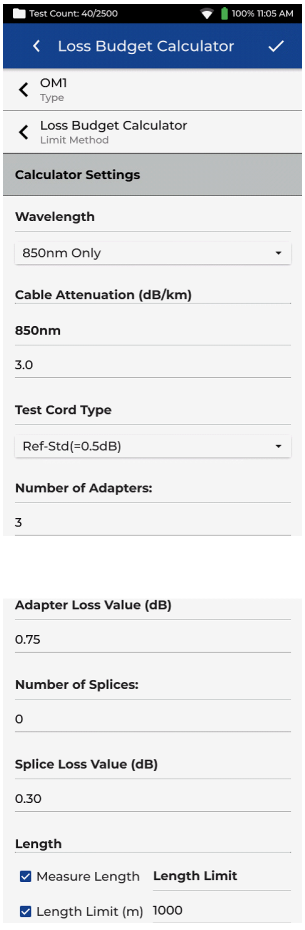
Budget Calculator

Budget Calculator allows the loss budget to be calculated based on the components of the link under test.
Enter the attenuation coefficient of the fibre cable, the number of adapters and splices plus the attenuation of each and the system will calculate the loss limit based on the length of cable for each test.

For example, if the entered parameters are
Fibre attenuation coefficient = 3dB/km
3 connections at 0.75db each
2 splices at 0.3db each

For a 2km cable the loss limit is 8.85dB.
2km of fibre x 3dB = 6dB
3 connections x 0.75dB = 2.25dB
2 splices x 0.3dB = 0.6dB

The calculator settings allow single or dual wavelength measurements to meet testing requirements.



FiberMASTER OTDR

Quick Reference Guide

English

FiberMASTER OTDR

EN

The TREND FiberMASTER range provides powerful performance in a small package. A simplified user interface is easy for beginners yet has full manual and custom setups for experienced users.

Tier 2 OTDR certification fast and accurate with instant-on, zero boot times and selections for TIA/ISO/IEEE/CENELEC standards to eliminate setup errors.

Match a light source with an OTDR to perform end-to-end testing on multimode or single-mode cable using the included power meter.

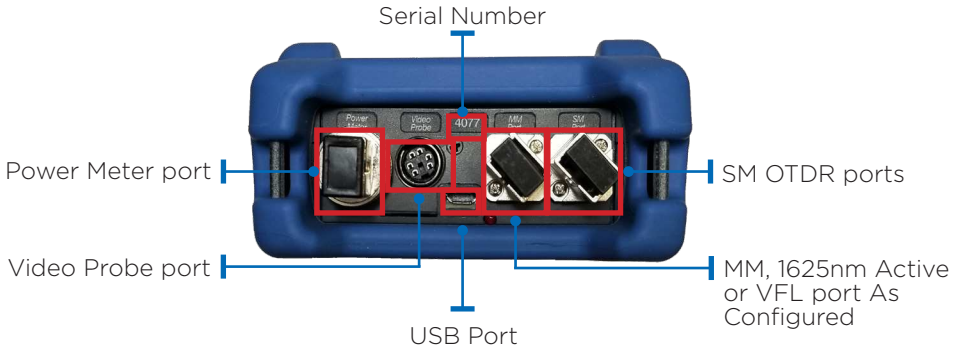
The PON OTDR features ultra-high dynamic range to measure 1:32 splitters for installation testing and troubleshooting.

Getting started with the FiberMASTER

Press and hold the power button for one second to power on the FiberMASTER. The home screen will be displayed and the icons will show available functions, battery level and if a VFL is available. It also allows access to the device setup screen and information about the device through the information icon.

EN

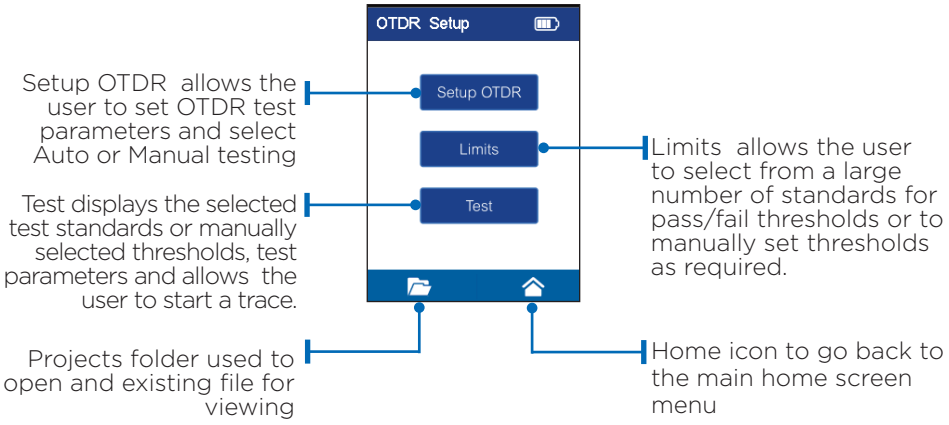
There are one or two available OTDR ports. Dual Wave OTDRs will have one port, Quad Wave OTDRs will have a SM and a MM port (2 ports) and the PON OTDR will have a 1310/1550nm port and an active 1625nm port (2 ports). Determine the appropriate port and connect the fiber under test.



Touch the OTDR icon to open the OTDR function.

Setting Test Parameters

Once in the OTDR function the OTDR Setup screen will be displayed.



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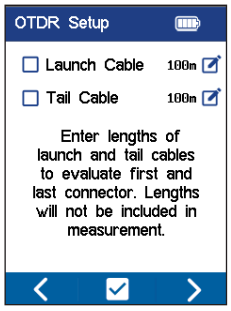
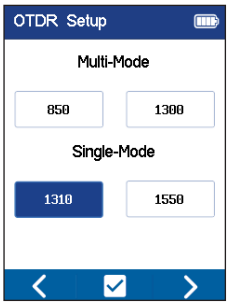
Setup OTDR Screens

The Setup OTDR Screens walk through the basic setup for auto mode testing and manual mode testing. The left/previous arrow, returns to the previous page and the right/next arrow, advances to the next page. The check box in the bottom middle returns to the main OTDR Setup page.



Use these check boxes to set the launch or tail cable on or off.

Select the edit icons to input the length of the launch and tail cables as appropriate. These may also be set to auto, in which case the OTDR will establish the first event as the end of the launch cable and the second to last event (the event before the end event) as the beginning of the tail cable.



Select one or both wavelengths in either multimode or single-mode.

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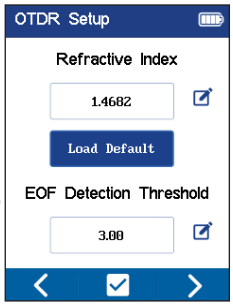
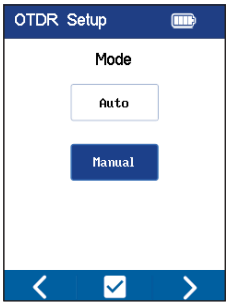


Set the Refractive Index if known. Select Load Default if the index of refraction (IOR) and/or helix factor are unknown.

Set the End Of Fiber (EOF) Detection Threshold.

Enough information has now been entered to conduct an Auto Test. If Auto is selected, the averaging time, range and pulse width will be automatically set based on analysis conducted by the OTDR. Select Manual and those parameters automatically set in Auto Mode will be available for adjustment.



For the purposes of this quick start guide please select Auto followed by the check box at the bottom of the screen.

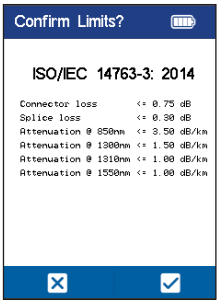
Setting Limits for Pass/Fail

Standard Limits are pre-set limits/thresholds against which the traces are measured for pass/fail analysis to certify network links.

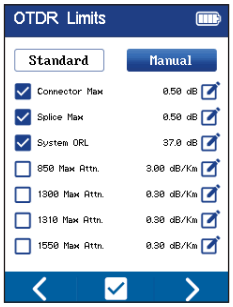
Standard limits will be highlighted, There are 5 pages of pre-set limits/ thresholds to which the test will be measured to determine Pass/Fail. The first page lists cabling standards and pages 2-5 lists application standards.

Manual allows for setting user defined Pass/Fail thresholds

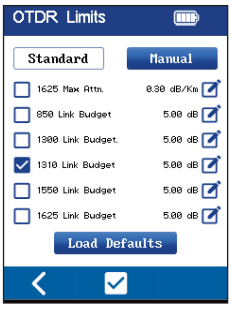
If a standard set of limits is selected, when the check box at the bottom of the display is touched, a page confirming those standards will be shown, such as this sample page.



Manual limits may be selected on the OTDR Limits page. The following two pages of limits will be displayed to set limits/thresholds.



Once all settings have been established, touch the check mark at the bottom of the page.

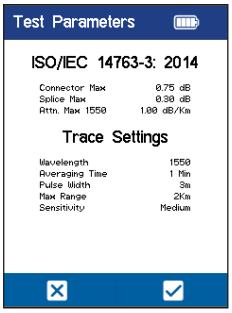


Load Defaults sets the default limit values that would be industry standard for each measured item.

Note: The Limits and test thresholds will be displayed for review prior to taking a test.

Conducting a Test

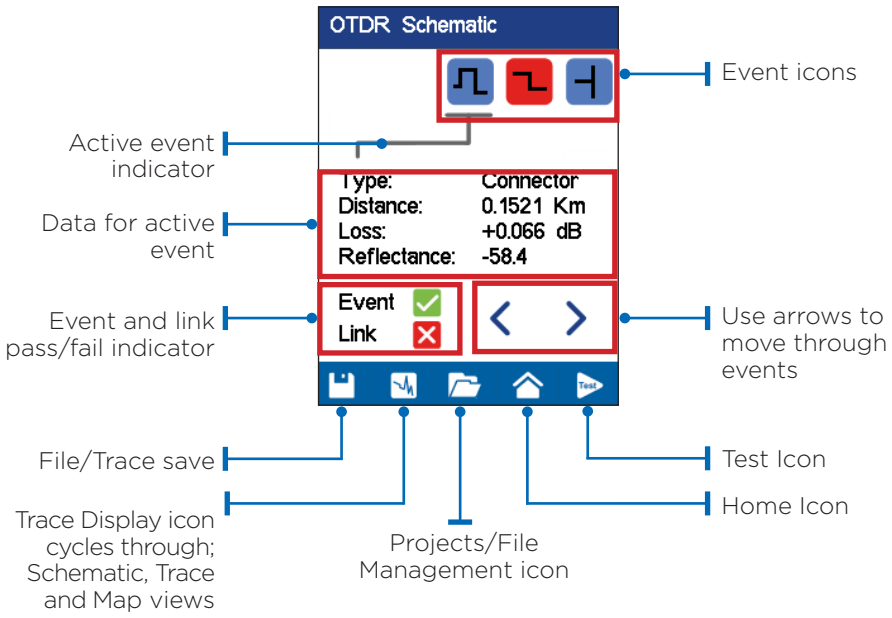
Take a trace by selecting the Test button on the OTDR Setup screen. Once the Test button is selected, the Test Parameter screen below will be displayed. This screen displays the limits/thresholds that have been selected for pass/fail analysis and the parameters set for the trace.



If the settings are correct, select the check box to start the test. A scanning status bar will be displayed, followed by a finding event message.

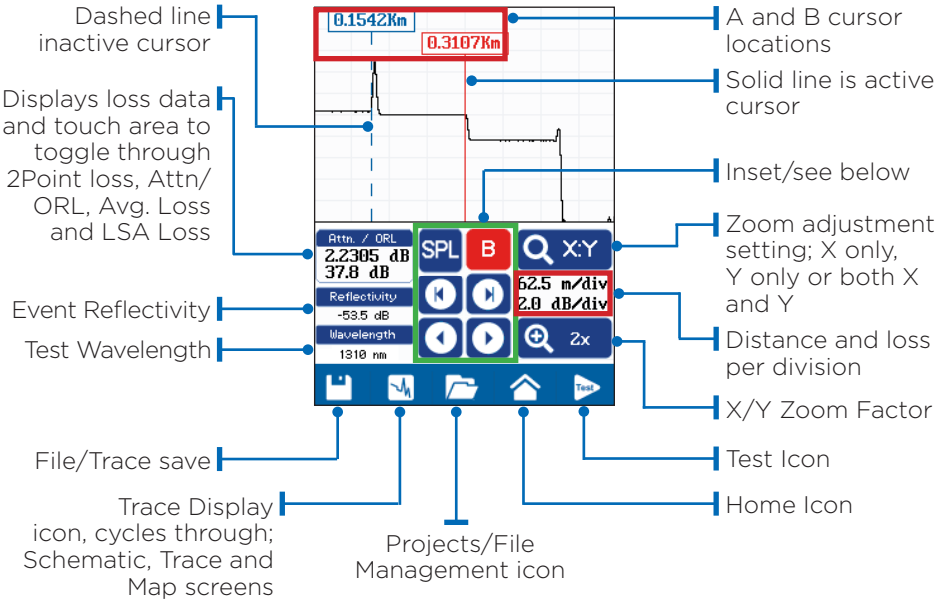
OTDR Schematic Screen will be displayed once the test is complete.

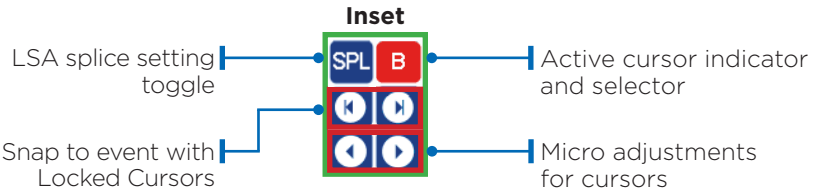
EN



OTDR Trace Screen use Trace Display icon to cycle to the trace screen view.

EN





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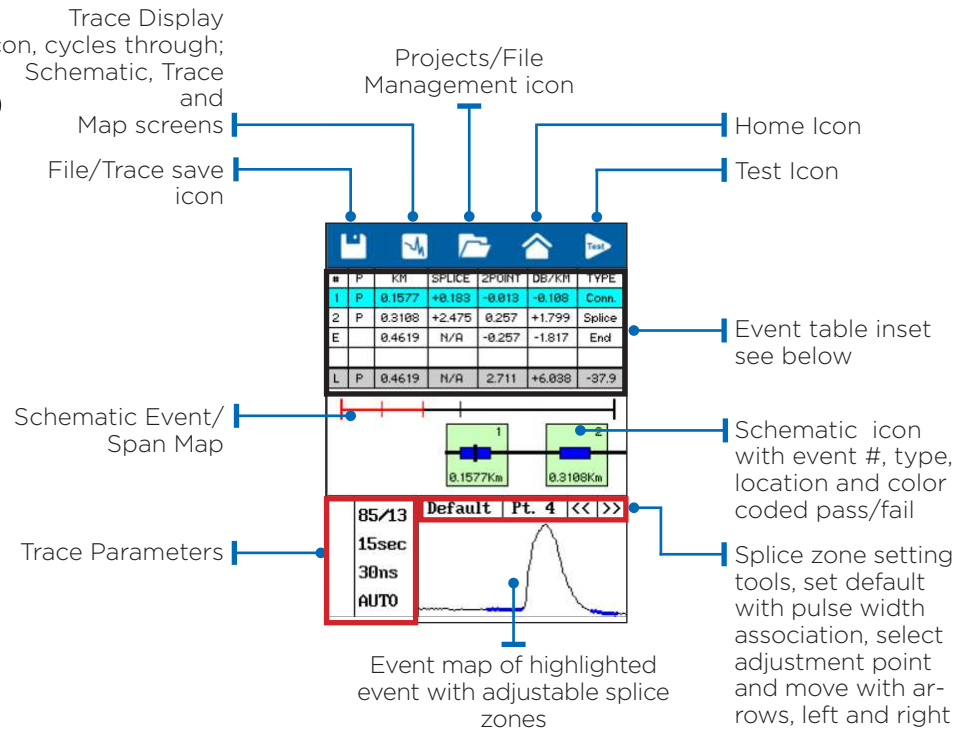
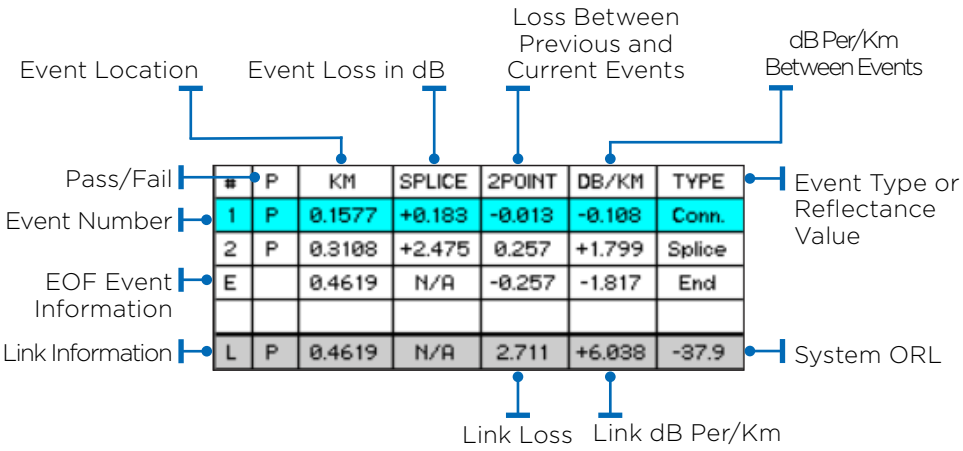
OTDR Map Screen use Trace Display icon to cycle to the view.



Event Table



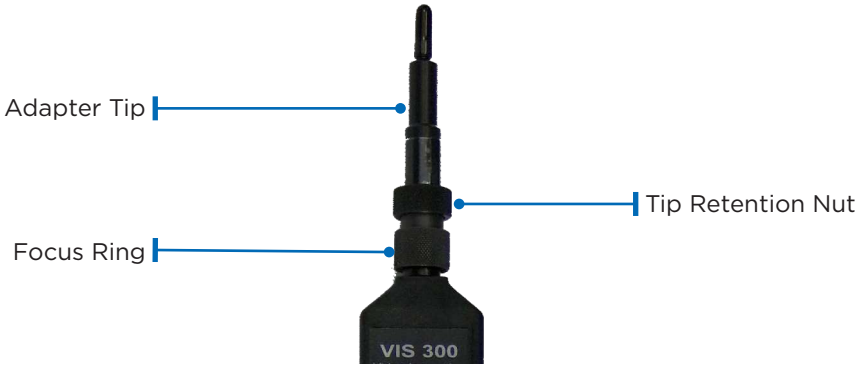
Getting started with the Video Inspection Scope

To operate the video scope, touch the Scope icon on the Home Screen.

EN

If a probe is not connected already, connect the Video Inspection Probe R240-VIP to the video probe port on the top of the OTDR.

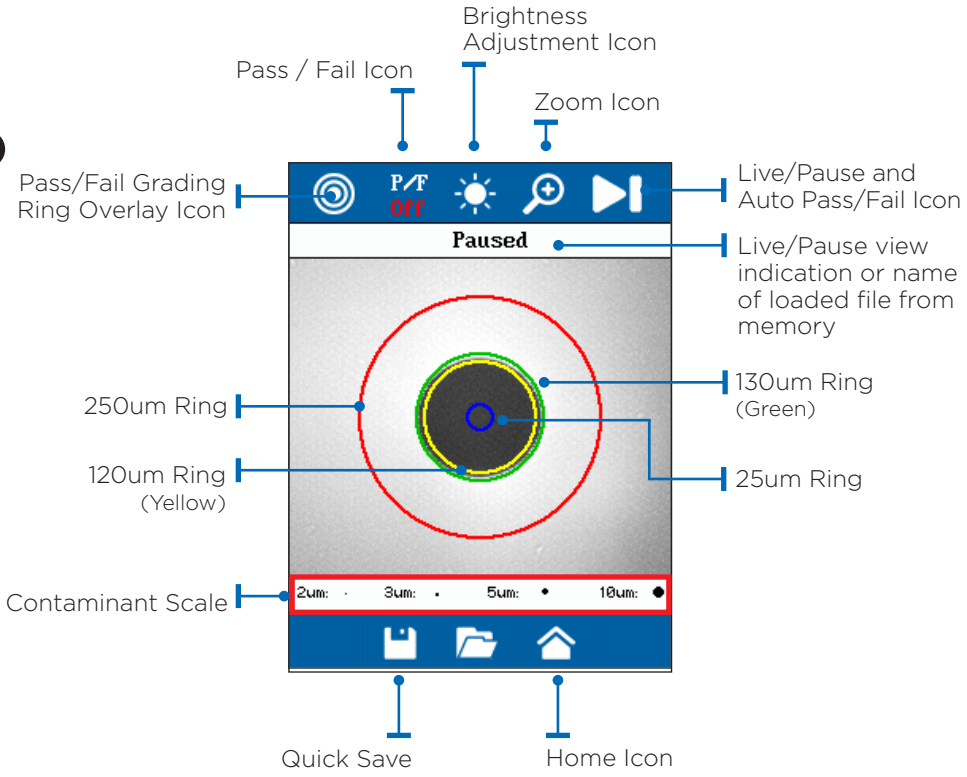
Place proper tip on VIP



To remove a tip from the probe, grasp the probe tip and unscrew the tip retention nut. As oriented in the picture; rotate left to loosen and right to tighten the retention nut on the probe tip. Pull the tip straight up from the probe. To place a tip on the probe, ensure the lens is clean, slide the tip on to the end of the probe and tighten the tip retention nut. Do not over tighten the retention nut.

EN

Video Scope Screen



View Connector and Auto Test

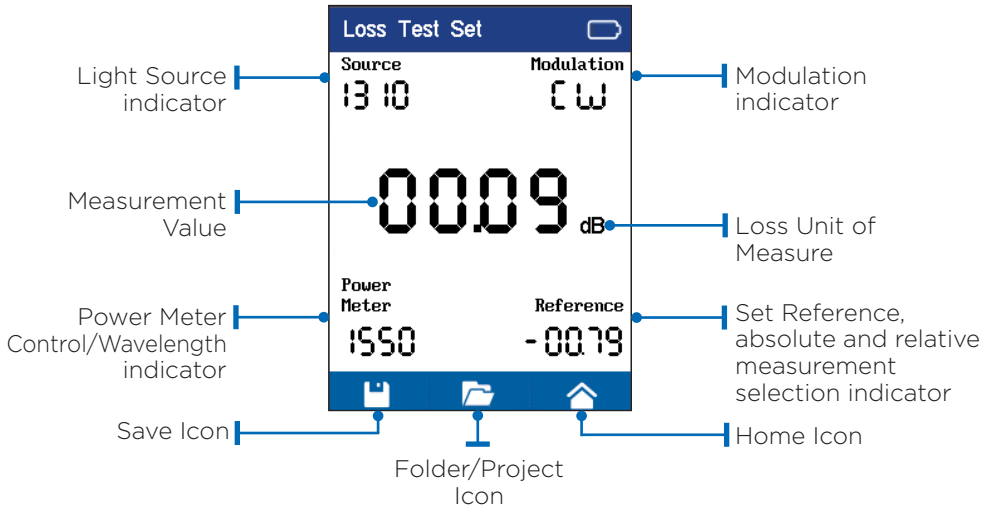
- With appropriate universal tip installed, insert connector into tip.
- Hold connector into the probe tip and rotate focus ring until image is sharp.
- Once focused touch the center of connector to snap it to the center of the screen.
- Set Pass/Fail Icon to Auto.
- Select the Live/Pause icon and allow unit to perform test.
- The result will be displayed in the bottom right of the displayed.

Getting started with Loss Test Set

From the Home Screen select the PM/LS icon to open the Loss Test Set.

EN

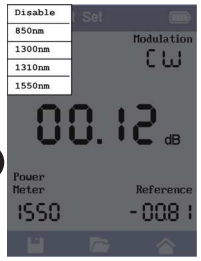
Power Meter/Light Source Screen



Power Meter/Light Source Connections

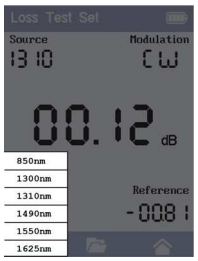
EN

Basic Single Cord PM/LS Operation



Touch the Source indicator to show the light source wavelengths available and select the desired wavelength for the test. Allow the light source 2-3 minutes to warm up and stabilize.

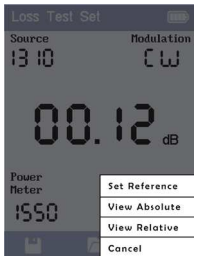
Touch the Modulation indicator to open the modulation options and set the modulation to CW for continuous wave.



Touch the Power Meter indicator to show the power meter wavelengths available and select the appropriate wavelength for the test.

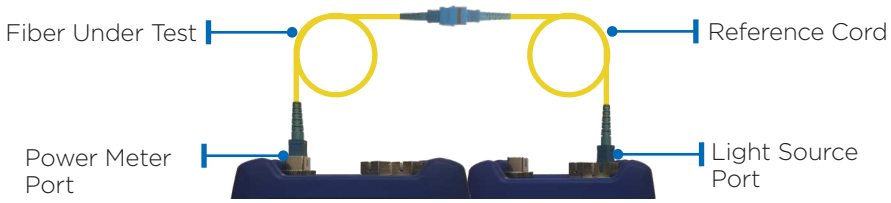
Note: This step may be skipped as the power meter will set itself to the appropriate wavelength, if it is being used with a compatible source.

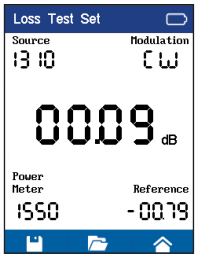
Plug one end of a reference cord into the light source and the other end into the power meter as shown below.



Touch reference indicator in the bottom right of the display and select, Set Reference to zero out the reference cord.

Disconnect the fiber from the PM port and connect it to a mating sleeve, and connect the cable/cord under test between the mating sleeve and the power meter port, as shown below.





The value in dB, in the center of the display is the loss of the cable under test.

Note: This Example shows two OTDRs with PM and using the optical ports as CW sources for the light source. When using stand alone PM and LS, the PM will only have a single power meter port and the light source will have one or two ports depending on whether it is a dual or quad wave light source.