Common Functions User Manual

V150 Series

P/N D07-00-121P Rev. D00

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General Information

This user manual is suitable for novice, intermediate, and experienced users and is intended to help use the features and capabilities of VeEX Inc. products successfully. It is assumed that the user has basic computer experience and skills, and is familiar with telecommunication and other concepts related to VeEX Inc. product usage, terminology, and safety.

Every effort was made to ensure that the information contained in this user manual is accurate. Information is subject to change without notice and we accept no responsibility for any errors or omissions. In case of discrepancy, the web version takes precedence over any printed literature. The content in this manual may vary from the software version installed in the unit. For condition of use and permission to use these materials for publication in other than the English language, contact VeEX Inc.

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Customer Support

For more technical resources, visit www.veexinc.com.

For assistance or questions related to the use of this product, call or e-mail our customer care department for customer support. Before contacting our customer care department, have the product model, serial number, and software version ready. Please locate the serial number on the back of the chassis. Please provide this number when contacting VeEX Inc. customer care.

Support hours may vary depending on the product.

Product Technical Support Contact Information

Hours: Support is generally available 8:00 AM to 8:00 PM, Eastern Standard Time, Monday to Friday.
Phone: +1 510 651 0500
E-mail: customercare@veexinc.com

Warranty

For warranty information on VeEX Inc. products, go to www.veexinc.com.

To activate the warranty, please register your production at www.veexinc.com/Support/ProductRegistration.

Patent Information

VeEX Inc. product hardware and software may be protected by one or more patents on file with the United States Patent Office.

Documentation Conventions

Icons used in this manual:

	Marks a helpful tip (action or method), which can save time and improve usability of the product.
	Provides important information needed to use this product and avoid mis-steps.
	Cautions against and action or inactivity, which can hinder productivity.
	Strongly warns against a condition, an action, or inactivity which can lead to a health hazard, injury, equipment damage, data loss, and/or financial losses.
	Stop and read before continuing.

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Safety Information

Safety precautions should be observed during all phases of operation of this instrument. The instrument has been designed to ensure safe operation; however, please observe all safety markings and instructions. Do not operate the instrument in the presence of flammable gases or fumes or any other combustible environment. VeEX Inc. assumes no liability for the customer's failure to comply with safety precautions and requirements.

Lithium-ion Battery Precautions

Lithium-ion (Li-ion) battery packs are compact and offer high capacity and autonomy, which make them ideal for demanding applications, like providing long lasting power to portable test equipment. For safety reasons, due to their high energy concentration, these batteries packs and products containing them must be used, charged, handled, and stored properly, according to the manufacturer’s recommendations.

Li-ion battery packs contain individual Li-ion cells as well as battery monitoring and protection circuitry, sealed in its plastic container that shall not be disassembled or serviced.

The test set unit's battery pack is also fitted with a safety connector to prevent accidental short circuits and reverse polarity.

- Always charge the unit's battery pack inside the test platform battery bay using the AC/DC adapter supplied by VeEX.
- Do not charge or use the battery pack if any mechanical damage is suspected (shock, impact, puncture, crack, etc).
- Do not continue charging the battery if it does not recharge within the expected charging time.
- Storage: For long term storage, the battery pack should be stored at 20°C/68°F (room temperature), charged to about 30 to 50% of its capacity. Spare battery packs should be charged and used at least once a year to prevent over-discharge (rotate them regularly).
- It is recommended to charge and use battery packs at least every three months. Battery packs shall not go without recharging (reconditioning) for more than six months.

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- After extended storage, battery packs may reach a deep discharge state or enter into sleep mode. For safety reasons, Li-ion batteries in deep discharge state may limit the initial charging current (pre-recharge) before starting their regular fast charging cycle. The pre-charging state may take several hours.
- Air transportation of Li-ion batteries is regulated by United Nations' International Air Transportation Association (IATA) Dangerous Goods Regulations and by country-specific regulations. Please check local regulations and with common carriers before shipping Li-ion battery packs or products containing relatively large Li-ion battery packs.

Lithium-Polymer Battery Precautions

LiPO batteries are intended to be used with compatible VeEX products only. Any damaged caused by misuse or modifications will void the warranty and can cause serious injury.

The test set unit's battery pack is also fitted with a safety connector to prevent accidental short circuits and reverse polarity.

General Safety Guidelines

- NEVER use any other charger (e.g., for NiCd, NiMH, or Li-ion) other than the one supplied by VeEX to charge the Li-Po batteries in this product. Only use chargers designed for Lithium Polymer (Li-Po) batteries.
- NEVER attempt to service or remove the battery from this product.
- NEVER let the battery’s positive and negative leads to touch. This can cause the battery to short and lead to a FIRE. If for any reason you need to cut the terminal wires, it will be necessary to cut each wire SEPARATELY, to make sure the wires do NOT touch each other.
- NEVER charge a swollen or ballooned battery (even if swollen upon purchase). Continuing to charge a battery that has begun to swell will result in a fire. Follow these steps:
    - STOP the charging process and disconnect battery immediately.
    - Disconnect battery from the device immediately.
    - Place it in an open non-flammable area.

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- Watch it for approx. 30 minutes from a safe distance.
- Follow proper procedure to dispose of battery, according to local laws or ordinaces.
- After impact, drop or high shock, check the product for dents, punctures or cracks on its back. Do not leave the product unattended while charging, after a high impact event.

Lithium Polymer Battery Handling & Storage Advice

- Keep LiPo battery packs out of reach of children or pets.
- ALWAYS store equipment containing Li-Po batteries in cool, dry places between 40-80° F (below 0C or above 50C).
- Do not put battery packs in pockets or bags where they can short circuit.
- Do not store or transport batteries where they can come into contact with sharp or metallic objects.
- The speed at which a LiPo battery ages during storage is based on both storage temperature and state of charge. For optimum battery life always store your LiPo's partially charged at room temperature. This will maintain their performance levels over time and there's no need to cycle them unless stored for periods longer than 3-6 months.
- Never store a RC LiPo in a hot car fully charged for an extended period of time, this will cause damage.
- When storing batteries for extended periods, store at a half charged state.

Optical Connectors

The test sets display a laser warning icon when the laser source is active to alert the user about a potentially dangerous situation. It is recommended to:

1. Deactivate the laser before connecting or disconnecting optical cables or patchcords.
2. Never look directly into an optical patchcord or an optical connector interface (SFP+) while the laser is enabled. Even though optical transceivers are typically fitted with Class 1 or 2 lasers, which are considered eye safe, optical radiation for an extended period can cause irreparable damage to the

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eyes.

3. Never use a fiber microscope to check the optical connectors when the laser source is active.

Electrical Connectors

Telephone lines may carry dangerous voltage. Always connect the electrical test ports to known test interfaces which carry low level signals.

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Introduction to V150 Series Functions

This user manual describes common features available on V150 series test sets, such as but not limited to:

- CX310
- FX150+
- MTX150
- MTX150x
- WX150

Some features may not be available on all V150 series test sets. Check the product's datasheet on www.veexinc.com for more information.

Product Specifications

The most recent product specifications can be downloaded from the product page of the VeEX Inc.website (www.veexinc.com).

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Basic Operation

Hard Buttons and Interfaces

Test port and touchscreen variations may exist between different models.

A. Save: Saves current test results in the unit's memory and provides automatic naming and time stamping function.

B. Power: Press for 2 seconds to turn the test set ON or OFF.

C. Home: Returns the screen to the home menu. Pressing the Home key for 3 seconds puts the unit in sleep mode. Once in Sleep Mode, press the Home key for 3 seconds to return to normal operation.

More about sleep mode

This is not full power shutdown.

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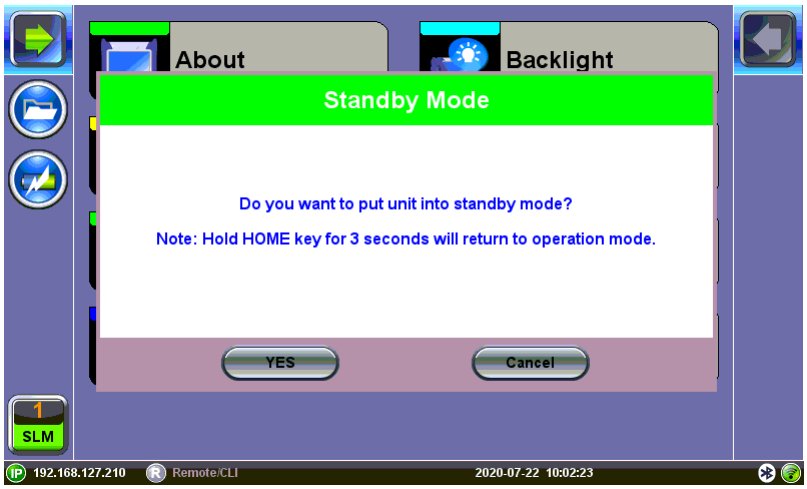


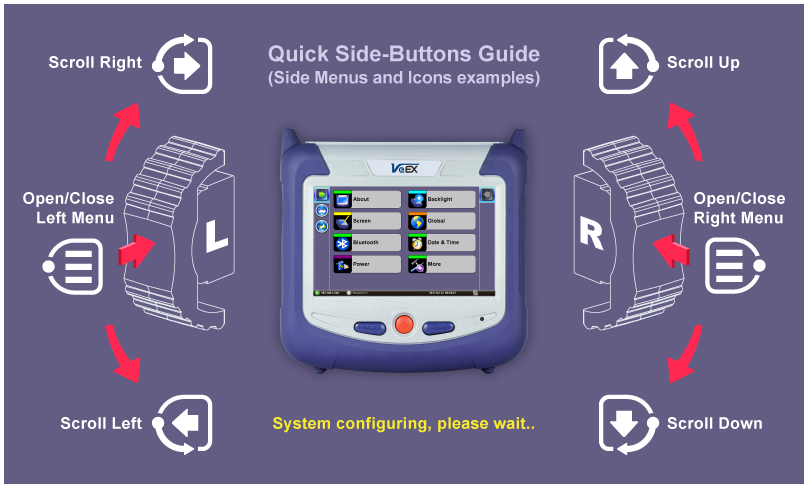
Standby/Sleep Mode

F. Side Buttons: Side buttons on the left and right side of the unit provide additional feature-specific functionality such as revealing menus and scrolling through table results. Button functions vary depending on individual applications (e.g., push to expand left or right menu bar, scroll left/right or up/down, capture screenshots). Refer to "Hard Buttons" on page 16 for the Quick Guide displayed during boot-up sequence.

Side Button Shortcuts:

- **Right side + Save:** Saves the screen (bmp)
- **Right side + Home:** Hibernates device

More about side buttons



Side buttons on the left and right of the unit can reveal menus or other functions depending on the unit

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D. LED: Power ON and battery charge LED indicator

- **Off** - Power is OFF, not charging.
- **Orange** - Battery is charging.
- **Green** - Power is ON.

E. Micro-B USB: Use an USB-A OTG cable (optional with purchase) to connect a USB to the micro-B USB port. The port supports memory drives and USB add-on devices such as fiberscopes. An optional Micro-B OTG to Ethernet adapter is also available for network connection. *(Only VeEX approved OTG to Ethernet Cables can be used.)*

G. Test port connector:

H. Touch screen LCD

I. Stylus: Use when finer touch screen control is required.

J. DC power socket: Use VeEX-supplied AC/DC chargers only.

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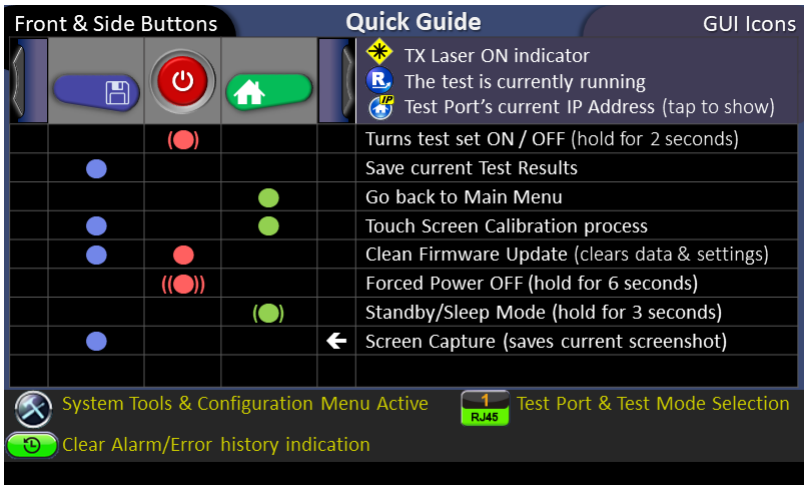
Special Functions

Hard Buttons

The test set buttons provide additional functions when using specific combinations.



Button Quick Guide

Power ON/OFF: Press and hold for approximately two seconds, until the test set emits one beep to turn it **ON**. and two beeps to turn it **OFF**, then wait for the power LEDs to turn **OFF**.

Wait at least 10 seconds before turning the test set back on.

Forced Power OFF: In the unlikely event that the test set becomes non-responsive or behaves improperly, press and hold for approximately six seconds to force the test set off.

No results will be saved when forcing the test set to power down.

Standby/Sleep Mode: This mode is used to conserve battery when the test set is required to "boot up" and be ready to test faster.
First, release any active test application. Then, press and hold the for approximately three seconds to activate the Sleep or Standby mode. Once activated, the power LEDs will flash green to indicate that the test set is in standby mode (the fans may stay on until all electronics cool down).

After switching to Standby mode, the fans may stay on until all electronics cool down.

While in Standby mode, quickly press to see the current standby time and remaining battery charge. Press the button again for three seconds to bring the test set back to full operation.

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Save Results: Press save the current test results.

Home Menu: Press to go back to the Main Menu. Tap on the screen to return to the previous menu level.

Screen Capture: Press **+ right slider buttons** simultaneously to store a picture of the current screen (screenshot). The test set will emit a confirmation beep/tone when the screen is captured. The images are named with a date + time code. Go to **Utilities>Files >Saved** to manage, view, or transfer captured screens. Refer to "Working with Saved Results, Profiles, Images" on page 64 for more details.

Touch Screen Calibration: If the touch screen becomes non-responsive, press **+** simultaneously to invoke the touch screen calibration procedure. Refer to "Touch Screen Calibration" on page 28 for more details.

Clean Software Install: With the test set OFF, press **+** buttons simultaneously to initiate a clean software install from an USB memory stick. Refer to "Software Update Process" on page 116 for more details.

All settings, test results and user data will be erased when performing a Clean Software Install. Backing up all data to a USB memory stick is recommended. To back up to USB, go to Utilities>Files >Saved and tap To USB. Refer to "Working with Saved Results, Profiles, Images" on page 64 for more details.

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Touch-Screen Display

The LCD supports touch-screen operation. To operate the touch-screen, use the stylus located in the top cover to navigate the menus and tabs. Please observe the following precautions:

- Never use excessive pressure on the touch-screen as this may damage its functionality.
- Never use sharp objects such as a pen, screwdriver etc. as this may damage the surface.
- Clean the surface of the touch screen using a soft cloth and mild detergent only. Do not use alcohol.

See "Touch Screen Calibration" on page 28 for instructions on how to recalibrate the touch-screen.

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Battery

Overview

The V150 chassis is equipped with an intelligent Li-ion or Li-poly rechargeable battery pack, depending on the product, which is located in the rear of the unit. Refer to the product data sheet for specific battery information related to the unit. The battery will be partially charged upon delivery, so it is recommended to charge the battery fully before use. Please charge the battery at room temperature to preserve its life and to obtain maximum charge. The battery is charged during operation provided the unit is connected to the AC Mains using the supplied AC adapter. Removing the battery, while the unit is powered on is not recommended - this may result in damage. Charge the battery by connecting the AC Main adapter to the power jack on the left side.

Battery Safety Precautions

For more information on safety precautions for batteries, see Lithium-ion Battery Precautions Lithium-Polymer Precautions in "Safety Information" on page 8.

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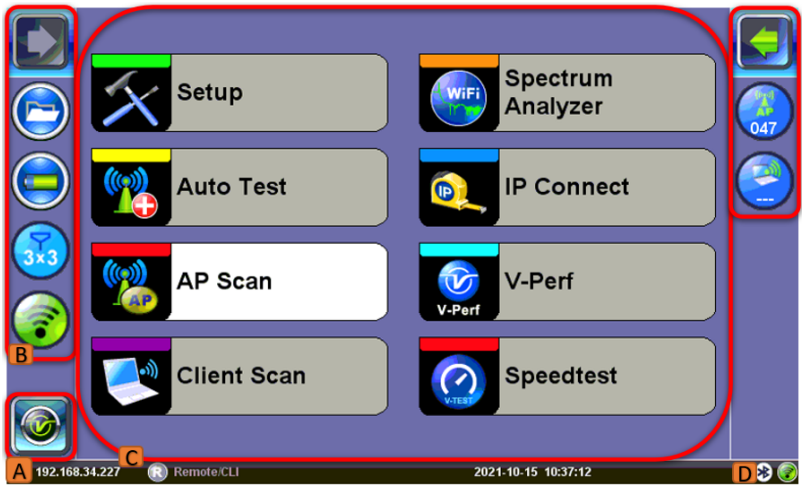
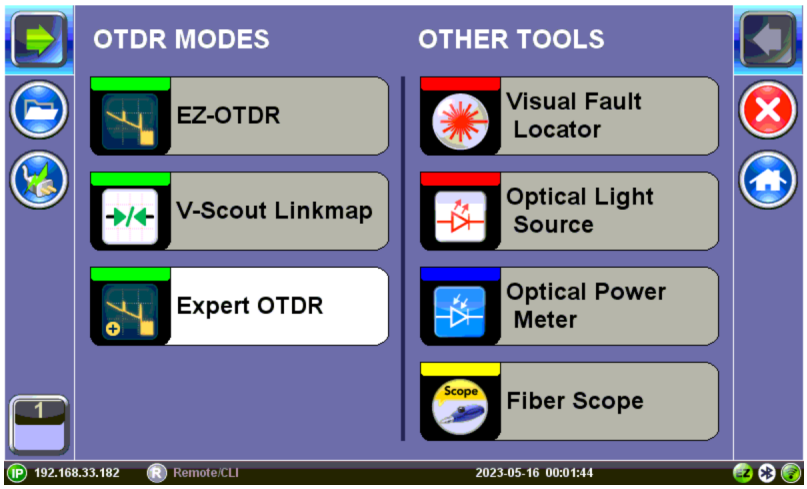
Home Menu and Navigation

V150 home menu layouts vary slightly depending on the test set, but are generally arranged as follows:



WX150 Home Menu



FX150+ Home Menu

A. Test Applications

The Test Application availability depends on the Active Test Application Icon and the Background Test Application Icon.

The ***Active Test Application Icon*** indicates the test application in use on the V150 chassis platform. In this example, WiFi is displayed for the WX150.

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The ***Background Test Application Icon*** opens the **Utilities** menu.

B. Screen Icons

Displays the status of external connections, i.e. Bluetooth, WiFi, power supply, etc.

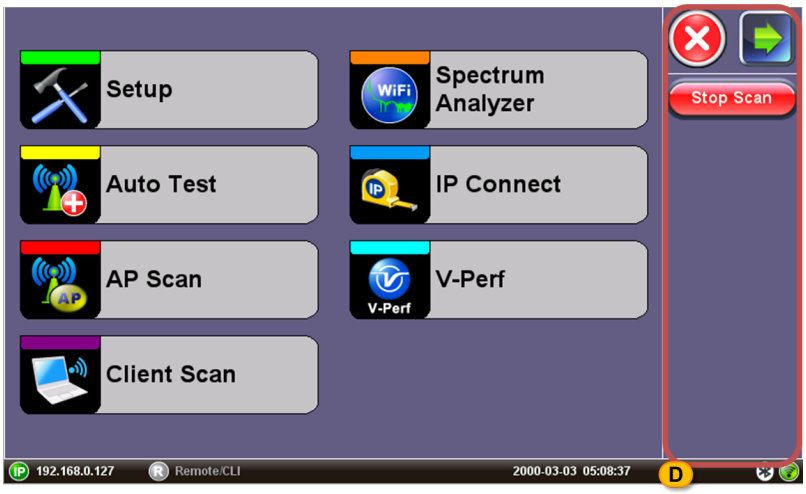
Refer to "Platform Screen Icons" on the next page for more information on icons.

C. Test Application Menu

Select an option to access the corresponding menu interface.

D. Function Keys

Depending on the test set series, function keys controlling the test in progress may be available. Tap the arrow or push in with the physical right shift button to reveal the function keys.



Pressing the Right Shift Button Reveals the Stop Scan Function Key on the WX150

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Platform Screen Icons

File: Provides general internal storage information. indicates the presence/detection of compatible USB memory stick and provides proper memory stick ejection function (before removing).

Exit: Return to the previous screen.

Home: Return to the Home Menu.

Help: Displays product help.

Active Test Application: Access to test applications or test application menu which varies depending on the test set mode.

Utilities Test Application: Opens the System Tools and Utilities menu.

Shift Key: Serve the same function of expanding the side menu bars as pushing the physical side buttons on the sides of the unit. Tap to reveal/hide icons and test function keys.

AC Charging: The unit is plugged into external AC power. Tap to see battery charge status.

Battery Powered: The unit is powered by the battery. Tap to see battery charge status and estimated autonomy time.

Fiberscope: Indicates that a fiberscope is connected to the unit. Tap the icon to go to the Fiberscope application.

OTDR Viewer: Analyzes standard OTDR .SOR files created by supported VeEX test sets and controls the OPX-BOXe OTDR.

FX40/45/48 Viewer: Controls FX40/45/48 optical test loss test sets and analyzes standard OPM files.

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Platform Functions

Tools tab

Depending on the test set, it may be necessary to tap the **Test Application** icon to access the Platform Settings menu. Tap to reveal the following functions common to all VeEX test sets:

- **Utilities** (" Utilities Overview" on the facing page)
- **Files** ("File Manager" on page 64)
- **Tools** ("Tools Overview" on page 71)

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Utilities

Utilities Overview

The **Utilities** tab provides settings for the global parameters of the test set or platform (system settings).

Utilities/Settings Menu

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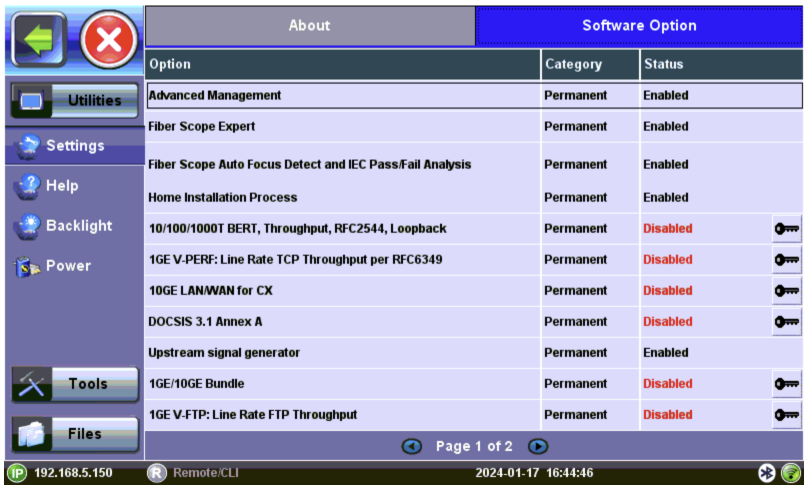
About/Software Options

This section provides information about the software platform version, serial number, and as well other information relevant to the test set, which may be required when contacting Customer Support. The tab provides a list of software licenses (optional test features) currently loaded in the test set.

About Tab



Software Options Tab

Activating New Licenses: Features and options marked as ‘Expired’ or "Disabled" (not currently loaded into the test set) can be purchased at any time and activated via VeExpress using an internet connection. Upon order confirmation, connect the test set to the internet via LAN or Wi-Fi, go to **>Utilities >VeExpress** and press the **Check** button. The test set will download all newly added features and options from VeExpress servers and install them automatically.

If company policy doesn’t allow access to the public internet or the test sets are used within a secured network, request License Keys for manual activation. License keys must be requested at the time new options are

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purchased. To activate new features, tap on the **expired item** and enter the Activation Code received from VeEX, VeEX partner or manager. Press **Activate** to complete the licensing process. Each activation code is specific to a test set and a feature. If multiple features are ordered, individual activation codes will be sent for each of them. Manually activated features are specific to a test set and can’t be shared with other test sets.

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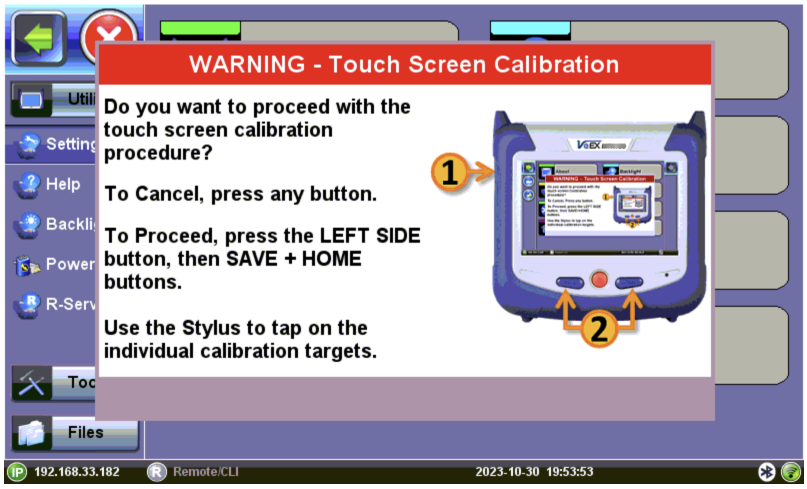
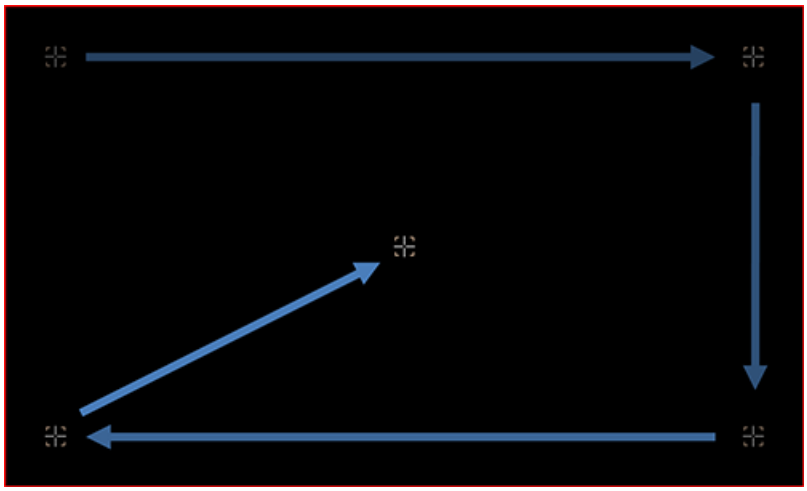
Touch Screen Calibration

Screen calibration can be accessed from **Utilities** > **Settings** > **Touch Screen Calibration**.



Press the **Save** and **Home** buttons simultaneously, until you hear a tone (beep), quickly press the **LeftSideButton +** + combination to confirm. Then the touch screen calibration procedure starts.



Once the touch screen calibration sequence has been started, it must be completed. Accurately touch the calibration points with the tip of the stylus.

If the above procedures do not fix the touch screen issues, go to the VeEX website's Contact Us page, select [√] Customer Service/Tech Support, then provide the Product Type, Serial Number

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and a brief description of the behavior being experienced. If it is related to colder ambient temperatures, please state the approximate temperatures.

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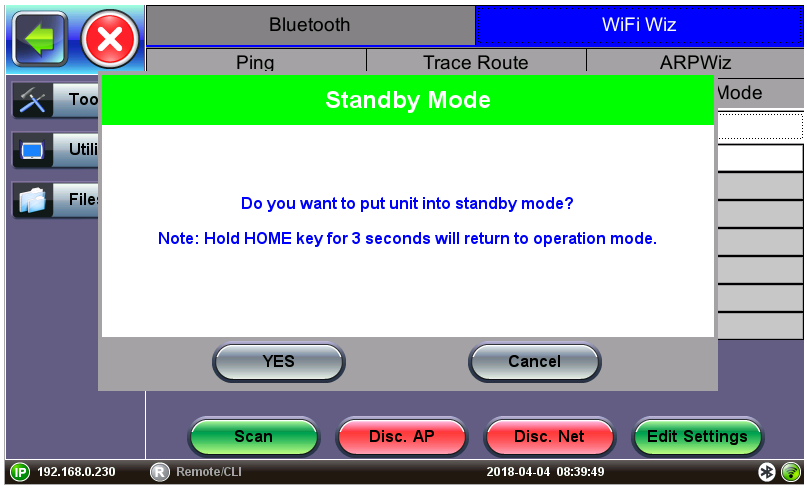
Standby Mode



Standby Mode Message

Standby Mode puts the unit to sleep, so that it wakes up faster than pressing **Power** to turn on the unit. To enter standby mode, press and hold the **Home** key for 3 seconds until the unit beeps, then tap **YES**. The screen will be off, but the power LED will blink. Press **Home** to view battery life and standby mode run time. Pressing and holding **Home** for 3 seconds again will return the unit to normal operation.

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Bluetooth/WiFi Wiz

Bluetooth

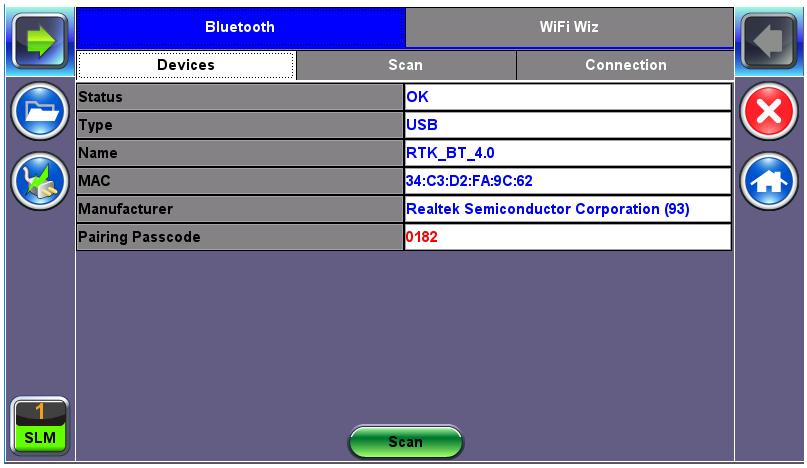
Built-in Bluetooth support offers wireless connectivity up to 10 meters (30 feet), providing an untethered connection between the tester and other Bluetooth compatible devices such as a PCs and smart phones, enabling users to transfer test results and other files.

A **Bluetooth** icon displayed on screen indicates the Bluetooth connectivity status. A grey icon indicates no Bluetooth connectivity, while a green icon indicates a successful Bluetooth connection.

Bluetooth Adaptors - Compatibility Not all Bluetooth adaptors on the market are supported. Please use adaptors that have been tested and supplied by VeEX only to ensure compatibility and correct operation.

Devices

Bluetooth details will be displayed including the MAC address of the device and the last 4 digits of the test set serial #. The last 4 digits of the test set will be the pairing code between the unit and the external device.



Bluetooth Devices

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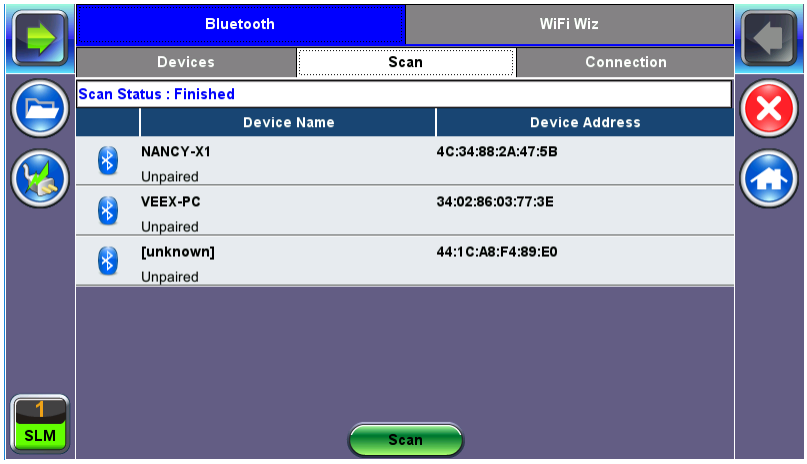
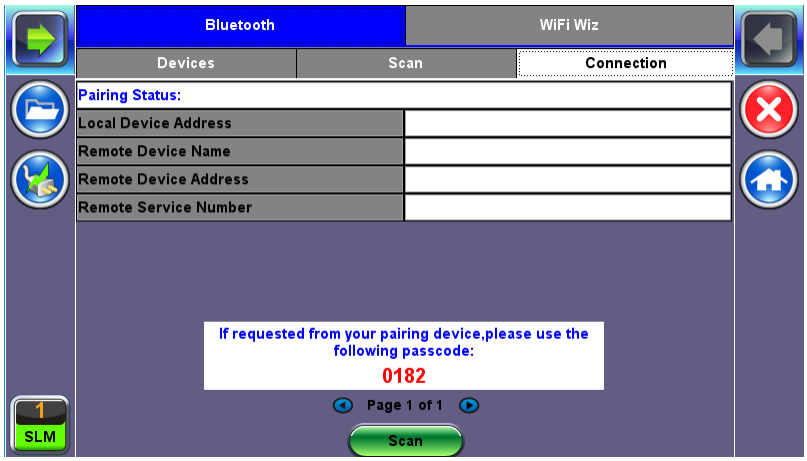


Bluetooth - Scan



Bluetooth - Connection - Passcode

Bluetooth Setup

1. Press **Scan** to check for available Bluetooth devices. Once scanning is complete, a list of discovered Bluetooth devices will be listed. Please ensure the peripheral device is set to **Discoverable** during Scanning and Pairing operation.
2. Press **Pair BT** to begin the pairing process. During the pairing operation, you will be prompted to enter a code on the peripheral device (PC or Mobile Phone) in order to pair successfully. Enter the last 4 digits of the test set's serial number as shown in the **Connection** tab.

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3. Once paired, click the **Services** button at the bottom of the screen to check the service attributes. To upload test results via Bluetooth, full data upload service will be required.

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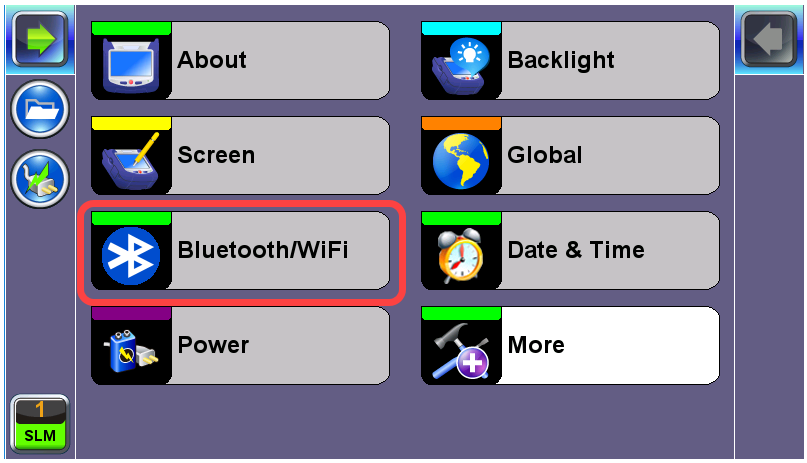
WiFi Wiz



Built-in web browser remote control is available when WiFi is enabled.

Passwords are case sensitive. If the wrong network key is entered, the test set will still connect to the Access Point but will not be able to connect to the web or perform the Ping test.

The WiFi Wiz function can be used to provide WiFi connectivity to the unit. Depending on the unit's model, it supports 802.11 b/g/n (2.4 GHz frequency band) connectivity or 802.11 a/b/g/n/ac (2.4 GHz and 5 GHz frequency bands) connectivity. Refer to the unit's specification sheet for details.

The WiFi Wiz function supports:

- WEP, WPA, WPA2 Encryption
- Scanning
- SSID broadcasting and report
- Signal Strength
- IP Connection and Ping Test

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WiFi Procedure

1. To access the WiFi option, tap **Tools**, and then tap **Bluetooth/WiFi**.
2. Select the **WiFi Wiz** tab.
3. Tap **Scan** to scan the list of available WiFi APs.

   AP List

   The following information is displayed for each AP:

   - SSID name of the AP
   - BSSID (MAC address) of the AP
   - AP's radio channel number
   - Lock symbol indicates if security is set on the AP (WEP, WPA or WPA2).
     When the AP is unsecured, no lock symbol is displayed.
   - Signal strength of the AP
4. Select one of the Access Points (AP) to start a connection. If the AP is locked, a network key is required to complete the connection. The key can either be 10 characters or 26 characters. Once selected, an **Edit Settings** function key appears.

   If the wrong network key is entered, the test set will still connect to the Access Point, but will not be able to connect to the web or perform the Ping test.
5. Tap **Edit Settings** or **Connect AP** to change the Encryption Type and enter the WiFi Key.
   - **Encryption Type:** Supported encryption types include WEP, WPA, and WPA2.
   - **Password/Key:** Security phrase or password necessary to access SSID and network. Tap the **Password** field to enter the AP password on the pop-up keypad.

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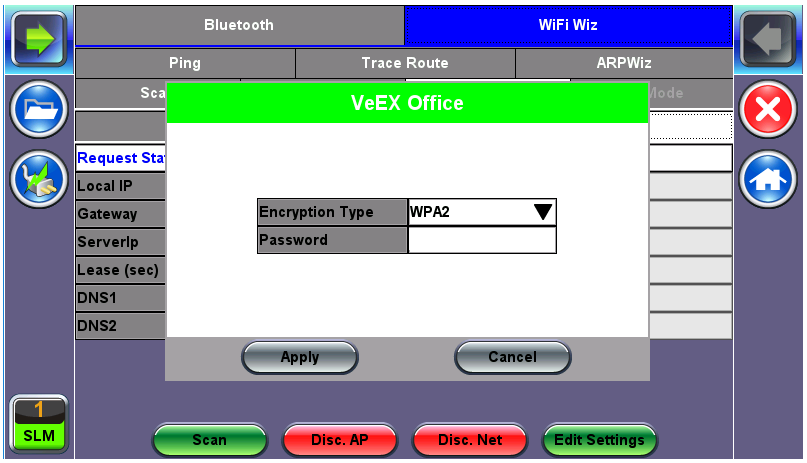
- ASCII formatting supported
- The password/phrase can be hidden (**Global Settings** > **Show Password** > **Yes/No**).

Passwords are case sensitive.

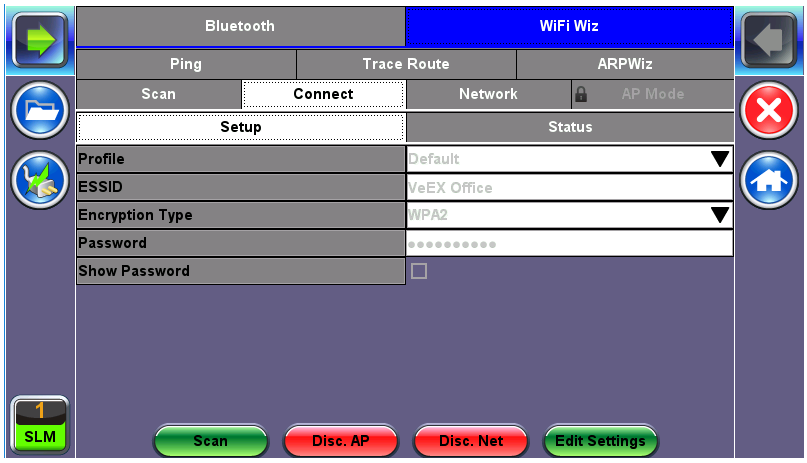
6. Tap **Apply** after selecting the Encryption Type and entering the key/password. The **Connect AP** button will change to **Disc. AP** upon successful connection and the **Connect Net** key will appear.



WiFi Wiz - AP Encryption Settings

Connect

The **Setup** tab displays the Profile, ESSID, Encryption Type and Password.



WiFi Wiz Connection Setup

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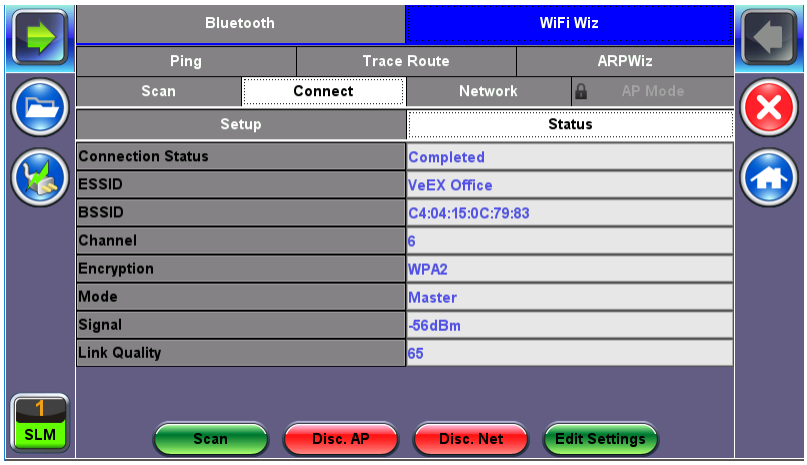
Status

The Status Tab displays the following information on the connection:

- **Connection Status**
- **ESSiD:** Name connected to
- **BSSiD:** MAC address of wireless router/device connected to
- **Channel:** WiFi Channel # connected to
- **Encryption:** Encryption type
- **Mode**
- **Signal:**
  - Radio signal level (dBm)
  - Link quality score



WiFi Wiz Connection Status

After a successful connection to the Access Point, tap **Connect IP** to obtain an IP address and access the additional IP tests like Ping, Trace Route etc.

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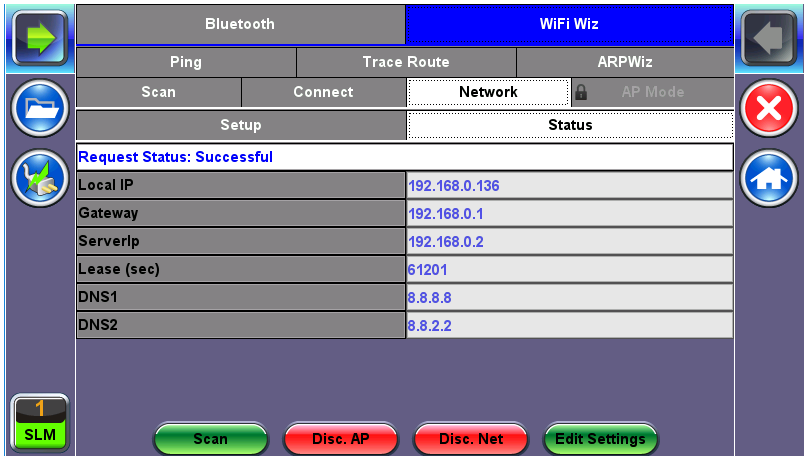

WiFi Wiz Connect IP

AP Mode

In AP Mode, the unit emulates a WiFi access point/DHCP server and allows WiFi Clients (PC/Phone/Tablet) to connect to the unit.

- **Mode:** Auto, Manual
    - Auto mode uses the default SSID and IP range
    - In Manual mode, the user can configure AP SSIDs and the IP range used by the DHCP server
- **SSID:** Displays the default SSID or the manually configured SSID used by the AP
- **IP Address:** Displays the default or manually configured IP address range used by the AP

Press **Enable** to enable AP Mode. After pressing enable, the test set will broadcast its SSID, which any WiFi client device can connect to.

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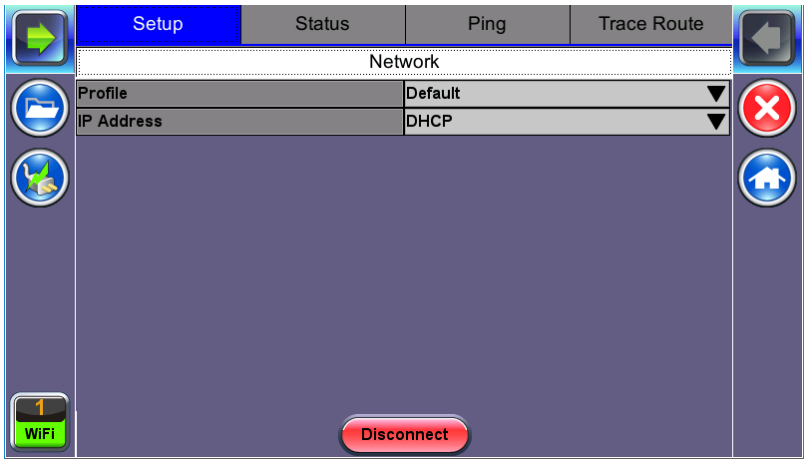
LAN (USB OTG Adapter)

The LAN port, also known as Management Port, is used by the test platform functions, to communicate with remote clients, Internet, cloud applications and run some basic connectivity tests. Network parameters must be configured prior to performing any connection dependent measurements. An IP connection needs to be established in order to perform a Ping or Trace Route test. An (optional) external USB OTG to 10/100BASE-T adapter is required for LAN connection.

You can access the management port configuration on the **Tools > LAN (USB adapt)** menu.

Setup

Network configuration settings are available in the Setup menu.



Setup

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By default, the IP configuration is set to DHCP and the unit will automatically attempt to connect. Additional fields will vary depending on Static or DHCP connection:

- **Profile:** Default, Delete, Save, Save as..., Default, or Last configuration
- **IP Address:** Select from Static or DHCP
  - **Static:** If Static is selected, enter the Local IP, Gateway address (if Gateway and DNS are set to Enable), and Subnet. All Static fields can be filled by tapping on the section to access an alphanumeric keypad.
  - **DHCP:** If DHCP is selected, the unit will obtain IP address parameters from the DHCP server
- **Local IP:** IP address of the test set
- **Subnet:** Enter the subnet mask
- **Gateway and DNS:** ON or OFF
  - **ON:** If enabled, enter the IP address of the Gateway and DNS server in Static mode, or use the IP address provided by the DHCP server in DHCP mode

    If DNS is set to Primary or Primary & Secondary, a DNS IP is required in order to use the URL as a destination.
  - **OFF:** If disabled, no Gateway or DNS server will be used for the tests

Enter all parameters then press **Connect** to start the test.

IP Connection Status

Ensure the Status is **PASS** before continuing with any IP tests. If the connection fails, go back to the setup screen to verify that the parameters are entered correctly. Verify that the Ethernet cable is properly connected on the management port on the left hand side of the unit.

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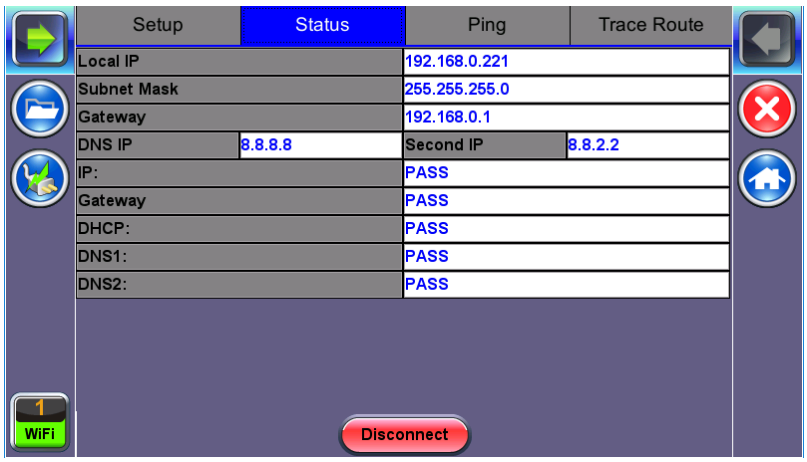


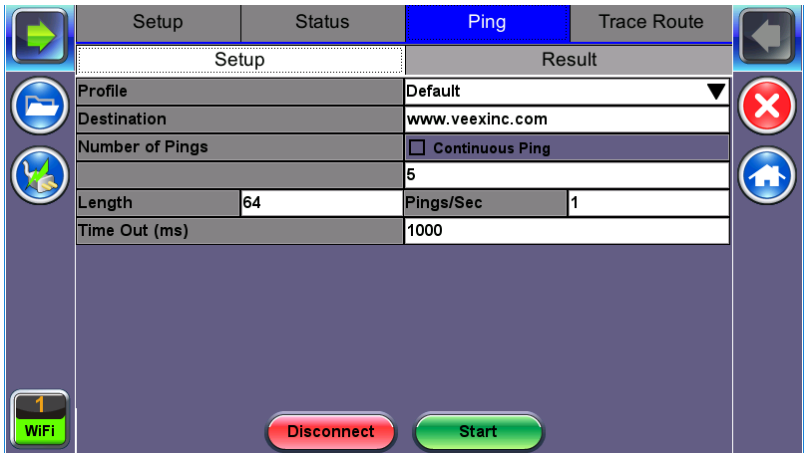
Status

- **DHCP:** PASS indicates that an IP address has successfully been assigned.
- **IP:** PASS indicates that the IP address assigned has been verified to be unique in the network.
- **Gateway:** PASS indicates that the gateway IP address is valid.
- **DNS:** PASS indicates that the DNS IP address is valid.

Ping Testing

The Ping Result provides the number of Sent, Received, Unreach, Missing, and the Round Trip delay.

Ping is a popular computer network tool used to test whether a particular host is reachable across an IP network. A ping is performed by sending an echo request or ICMP (Internet Control Message Protocol) to the echo response replies.



Ping Setup

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Ping Setup

- **Profile:** Delete, Save, Save as..., or Default.
- **Destination:** Press the drop -down menu and enter the destination IP address or URL to ping.
- **Number of Pings:** Enter the number of ping attempts (up to 10000) that will be performed to reach the network device.

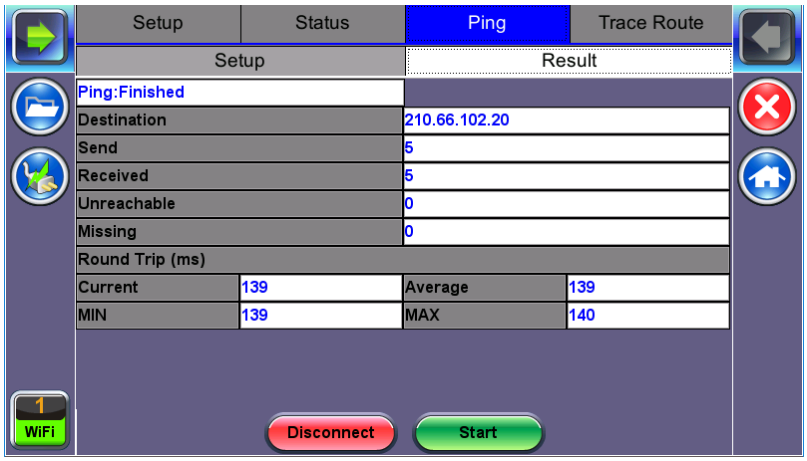
  *If Continuous Ping is selected, the user is not required to enter the number of pings. The test set will continuously ping the target host until the user presses **Stop**.*

- **Length:** Enter the length of the ICMP echo request packet transmitted.
- **Ping/Sec:** Enter the Ping repetition rate (Ping/second).
- **Time Out:** Time-to-Live (TTL) in milliseconds. Enter the maximum time allowed (in ms, up to 99999 ms) between an ICMP ping and echo response.

Once the parameters are configured, press **Start** to begin the test.

Ping Results

Pressing Ping will take you to the **Result** tab and start the Ping test.



Ping Result

- **Destination:** Indicates the destination IP address.
- **Ping status:** In Progress, PASS, or FAIL.

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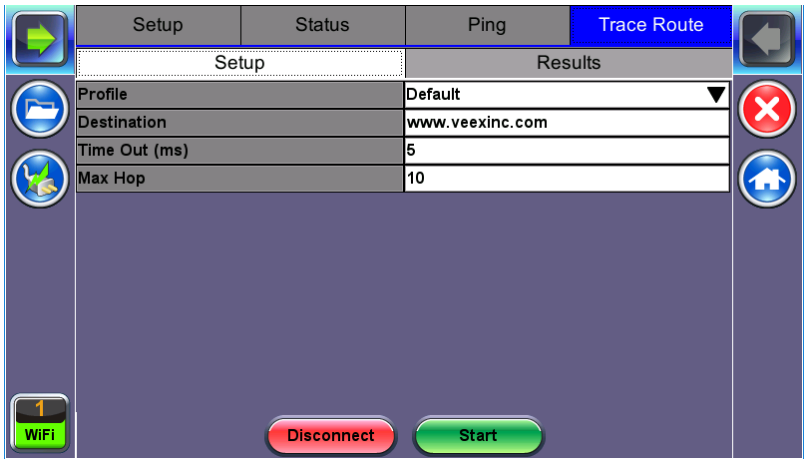
- **Sent, Received, Unreach, Missing:** Number of pings sent, received, unreached or missing. A Ping is counted missing if no response is received before timeout. A Ping is counted unreached if an echo response is received with host unreachable set.
- PING also estimates the round-trip time in milliseconds.
    - **Current:** The current time for a Ping request to be answered.
    - **Average:** The average time recorded for a Ping request to be answered.
    - **Max:** The maximum time recorded for a Ping request to be answered.
    - **Min:** The minimum time recorded for a Ping request to be answered.

Trace Route

Trace Route is a common method used to find the route to the destination IP address or URL. It is often used to identify routing problems and unreachable destinations. All the remote IP addresses and their response times are displayed indicating possible network congestion points.



Trace Route - Setup

Trace Route Setup

The following setup selections are available:

- **Profile:** Delete, Save, Save as..., Default. Select Default to recall a trace route file or create a new test.
- **Destination:** Enter the IP address or URL of the network device to be detected.

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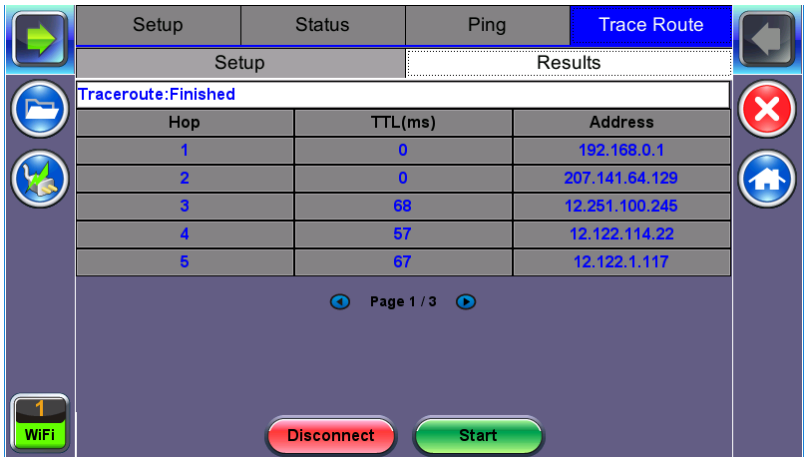
- **Time Out:** Enter the maximum time allowed between an ICMP echo and response at each hop.
- **Max Hop:** Enter the maximum number of network devices the packet is allowed to transit.

Once the parameters are configured, press **Start** to begin the test.



Trace Route - Results

Results

- **Hop:** Order of the routers on the route.
- **TTL:** Time to reach each router on the route.
- **Address:** Address of each router on the route.

If there is no response from a particular hop, an asterisk will be displayed.

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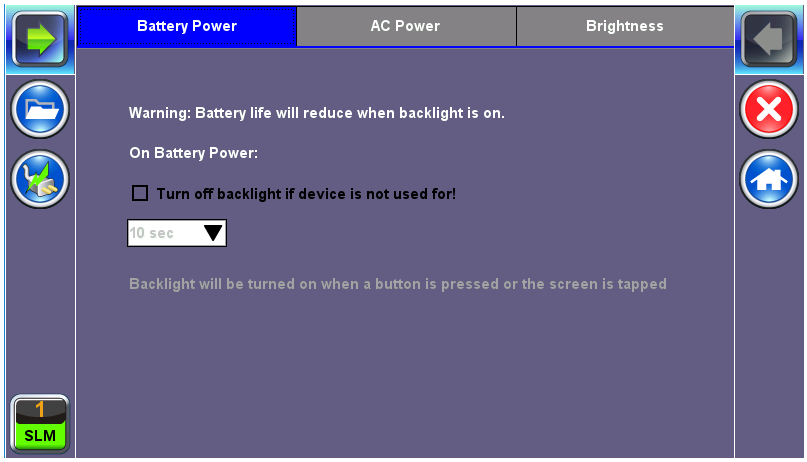
Backlight

This section provides backlight control of the unit. There are two intensity settings:

1. Battery power and
2. AC power.

On Battery Power

- Select a timer to turn off the backlight if the unit is not in use. This function helps improve the battery autonomy and preserve LCD life.
- To enable the timer, check "Turn off backlight if device is not used for" and with the drop-down menu, adjust the duration of the idle time before the backlight is turned off.
- Once the timer is active and the backlight turned off, any action on the test set (touch screen, keypad) will turn on the backlight again.



Backlight - Battery Power

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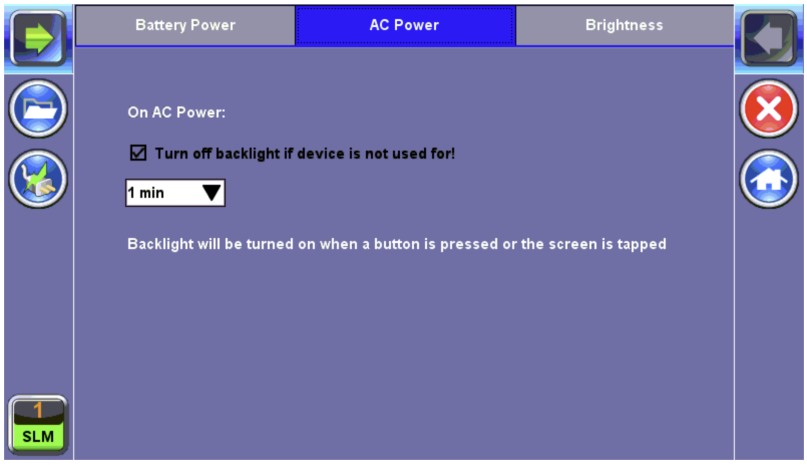
On AC Power

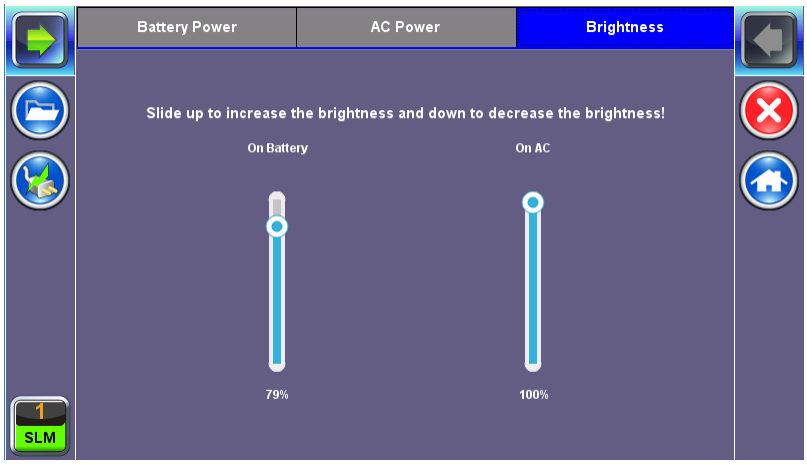
Similar settings can be applied for when the test set is operating on **AC Power**.



Backlight - AC Power

Brightness

Select the brightness level for Battery and AC operation modes.



Backlight - Brightness

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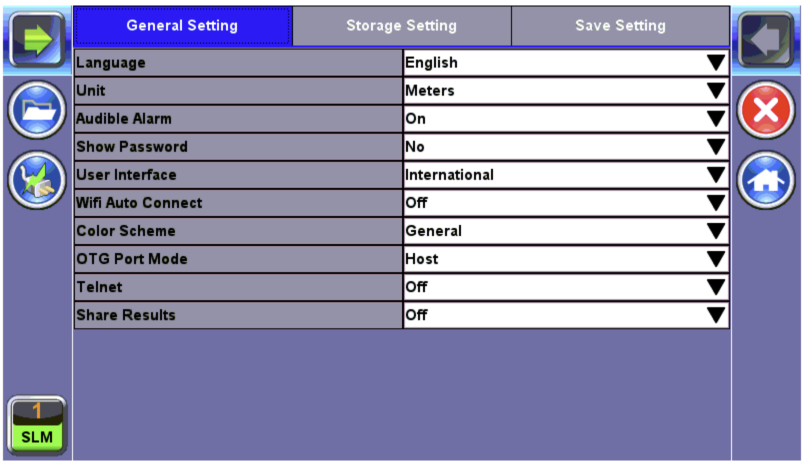
Global Settings



Utility Settings - General Setting

General Setting

- **Language:** An alternative language for the user interface (if available). The device must be rebooted to fully activate the new language.
- **Unit:** Measurement system (English - feet or Metric - meter).
- **Audible Alarm:** When enabled, the test set's buzzer will sound (beep) when alarms and errors are being detected (if supported by the test application).
- **Show Password:** Hides/unhides username and password information associated with FTP and related IP functions.
- **User Interface:** The USA user interface version presents SONET/DSn application-oriented menus, while the International setting is more open to all settings.
- **WiFi Auto Connect:** After successfully connecting to a WiFi access point, the unit will attempt to automatically connect to the same AP after the unit is turned off and turned back on.
- **Auto Color Scheme**:Sets the color scheme for the GUI.
- **RTU-410 (OTDR) Emulation Mode***(FX150+ only)*: Enables remote control of the FX150 OTDR using API commands.

Turn OFF RTU-410 (OTDR) Emulation Mode when not being used. It can conflict with the OTDR Server button in the OTDR app.

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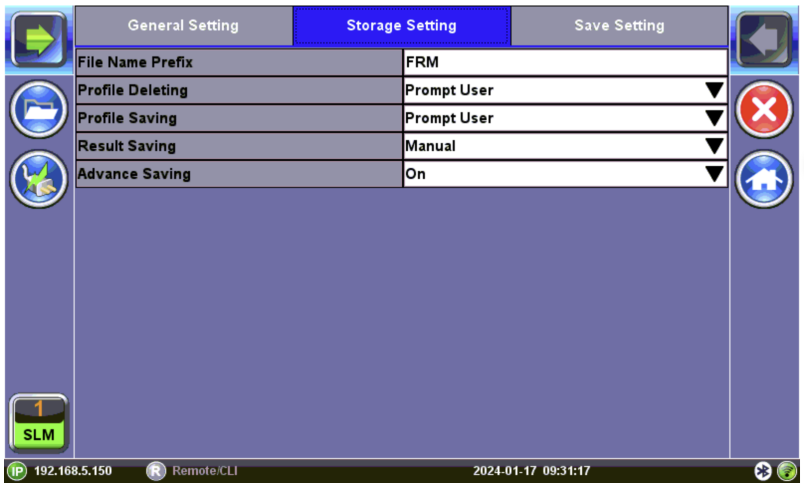
- **OTG Port Mode:** Configures how the micro-B USB port will appear to any USB device connected to it via an USB on-the-go (OTG) cable. Later models may detect and configure the OTG port to host or device mode automatically.
    - **Host:** Enables the micro-B USB port to connect with USB devices, dongles, or accessories, such as a USB memory stick or Fiberscope. USB devices (dongles) will not be recognized if the OTG port is not set to Host mode.
    - **Device:**Enables the test set's micro-B USB port to connect directly with a Windows® PC and act as a storage device (like a memory stick), for the Share Results function.
- **Telnet/SSH:** Allow or disallow telnet connection to the unit (e.g., remote terminals, Customer Support troubleshooting, CLI or automation via scripts).
- **Share Results:**Enables direct transfer of saved results from a unit to a Windows PC. To directly transfer files, connect the unit to a PC via an OTG cable, set the OTG port to Device mode and turn Shared Results ON. In this mode, all new saved test results are copied to a shared partition that the PC can see as a drive.

  If Share Results is turned OFF, results are saved to the internal partition of the unit and can only be transferred to a USB memory stick using the "USB Memory Browser" on page 68 in the File Manager . To directly transfer saved files to a PC, refer to the **Share Results** function.



Utility Settings - Storage Setting

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Storage Setting

Storage Settings are not currently supported for OTDR, OPM, and Fiberscope results.

- **File Name Prefix:** Tap on the box to enter the file name prefix using the pop up alphanumeric keypad. Not used for OTDR filenaming.
- **Profile Deleting:** Auto Delete or Prompt before deleting profile.
- **Profile Saving:** Auto Overwrite or Prompt before saving profile.
- **Result Saving:** Manual or Prompt before saving results.
- **Advanced Saving:** Turn ON to add extra information to the results file to be uploaded to a centralized R-Server. *Requires Advanced Management Option.*.

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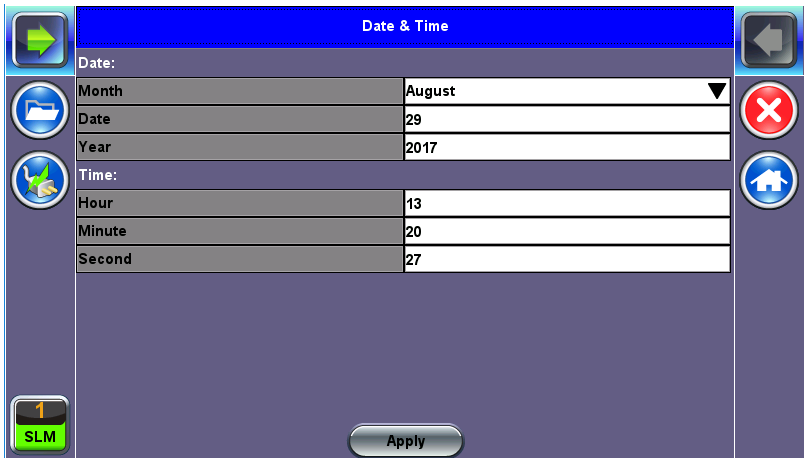
Date and Time

This screen allows the date, time and time zone to be set. Daylight Daylight Savings Time (DST) is enabled automatically.



Date and Time Setup

Go to **System Tools >Utilities >Settings >Date & Time**, to manually set the date, time and time zone. Then, tap **Apply**.

To enable daylight saving time (DST), manually select a neighboring time zone with a +1:00 relative to the standard time zone of the current location. Set it back to the standard time zone offset when DST ends.

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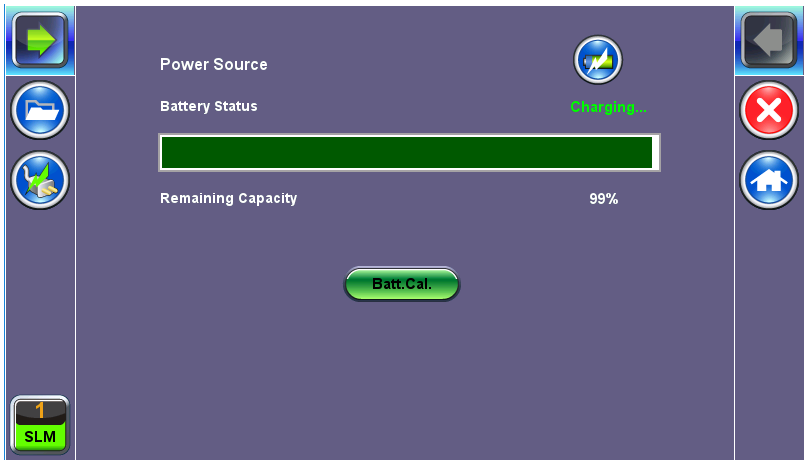
Power

This section provides information about current power source and information about the battery's charge level and estimated autonomy (under current load conditions) . Tap the **battery icon** on the top bar to bring battery charge and estimated autonomy information.



Utility Settings - Battery Power

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Remote Access

There are different ways to control or access the test set and the information it contains, from a local (LAN) or remote (WAN) connected PC.

- ReVeal PC software
- Remote Control (Screen Mirroring)
- EZ Remote

The EZ Remote service provides public registration servers to help users and test sets establish remote sessions, without having to get IT departments involved. It is considered a convenient on-demand service, for quick/temporary collaboration tasks. It should not be used for long-term applications (VeEX offers other remote tools for long-term applications). Refer to "EZ Remote" on page 56 for more information.

After accessing the test set remotely, a tab will open up for each selection made, allowing for quick access to each function.

Profiles

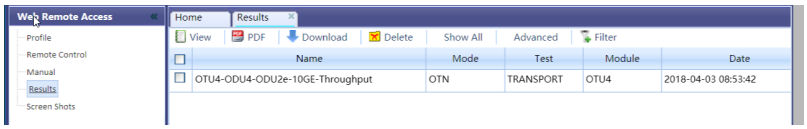
Test Profiles are configurations saved by the user that can be retrieved and reapplied to the test set. For example, commonly used configurations and test limits/threshold can be saved as test profiles, for different types of services.

Manual

The feature provides access to the user manual that is built into the test set. In this application, the use of a local copy of the PDF file is recommended as the PDF client in the local computer is most likely faster than accessing the remote one and may offer better tools and function, including search capabilities. User manuals can be downloaded from the products' page at www.veexinc.com.

Results

Results list all the test results files currently stored in the remote test set. Users can **View**, **Rename** and **Delete** files stored in the remote test set, as well as **Download** selected files to the local computer or convert them to **PDF** and download.



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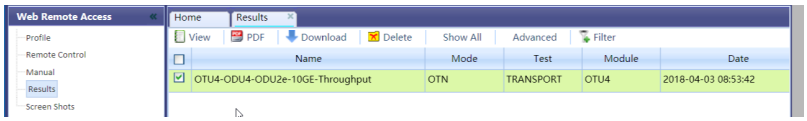
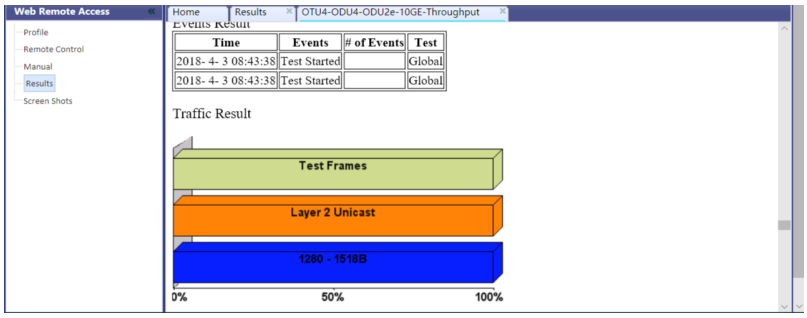
To open a test results file, select it from the list and tap on **View**.





Files can be downloaded by clicking on **Download** (original file format) or **PDF**.

Screen Shots

Pictures (PNG) taken of the screen can be accessed from this link and sub-tab. Pictures can be viewed or downloaded to the local computer.

Screen captures can be made using the Lock button (🔒) on the test set or from the remote computer, using the links provided or the respective F-key on the computer's keyboard. The screen capture function can be enabled in **>Utilities >Settings >Global >Save Settings**.

Remote Control (Screen Mirroring)

It is similar to using VNC, but in this case no VNC client installation is required. It uses standard Java-based web browser as a client. It mirrors the screen, mouse inputs and the rubber buttons available in the front panel of the test set.

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1. On the test set, select the **Remote Access** option and enter the following information:
    - **VNC Service:** Enable or disable the remote access through remote web-browser clients running on PCs, Macs or certain tablets. The web browser must support Java (tm)
    - **Web Super User Password:** Defines the password for users allowed to control the test set via standard web browser clients
    - **Web Regular User Password:** Defines the password given to users who are only allowed to view the test set current screen via standard web browser clients, but not make any changes to test or test set.
2. In a web browser, enter the test set IP address. To locate the test set local IP address, refer to "WiFi Wiz" on page 34.
3. Click **vnc-home.html** and enter the Super/Regular password when prompted for a password. Use the buttons and icons on the right to navigate the test set remotely.

ReVeal Software

This VeEX application allows the test set to connect, using the platform's IP address. ReVeal CX300 is used for cable test sets, ReVeal FX300 for fiber test sets, and ReVeal MTX for MTTplus or TX series WiFi and transport test sets. ReVeal offers the following functions:

- Test Profiles Management: Create, Edit, upload and download complex Ethernet and Fibre Channel test profiles (BERT, Throughput, RFC2544, Y1564 SAM, Scan, IP, Ping/Trace, Packet Capture, etc)
- Test Results Management: Download results from the test set, manage local test results (PC HDD), generate detailed test reports, export to CSV or PDF, and print.
- View software options, licenses, serial numbers, perform remote software updates

ReVeal is a Windows® application that can be downloaded free of charge from www.veexinc.com.

Users are able to connect remotely from a desktop PC via ReVeal tool software or through Remote Access on the test set. To proceed with remote access, make sure that remote control software is installed on the PC device. The user is able to configure the Profile, VNC Server Service, Web Service, VNC and Web passwords on the Remote Access page. Input the test set IP address and specified user password when prompted by the software to initiate Remote Access.

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For more information on using the ReVeal software for V150 series test units, refer to the ReVeal RXTS User Manual on www.veexinc.com.

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EZ Remote

The EZ Remote functionality allows users to quickly and securely connect to VeEX test sets all over the world, without the need for VPN, port forwarding or public IP addresses. This VeEX hosted service and user interface take care of all the complex tasks required, and present users with a simple application. Connect online anytime anywhere with any computer, tablet or smartphone, using standard web browser clients for screen-sharing, remote control and access to test results. Use it for remote control, collaboration, technical support or training purposes.

The basic EZ Remote service is offered by VeEX free of charge. It provides public registration servers to help users and test sets establish remote sessions, without having to get IT departments involved. All you need is internet access for the test set and a remote user. Feature location and functionality may vary from product to product.

VeEX's EZ Remote provides:

- **Remote Control** functionality to give users full control of remote test sets (screen mirroring and control).
- **Remote Access** functionality allows users to View, Download, Rename, Delete, Export and Convert results (PDF).

EZ Remote is considered a convenient on-demand service, for quick/temporary collaboration tasks. It should not be used for long-term applications (VeEX offers other remote tools for long-term applications).

Initiate an EZ Remote Session from the Test Set

1. Use the **IP Tool** to connect the test set to a LAN using the RJ45 Ethernet management port (or using the micro-B USB OTG to 100BASE-T adapter), located on the side of the unit (recommended), or use **WiFi Wiz** to connect to a WLAN (using built-in Wi-Fi or a compatible external USB dongle). Make sure the test set gets a local IP address and that the LAN/WLAN provides access to the public internet (web).

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2. Go to **>Utilities >Settings >More >EZ Remote**.

3. On the EZ Remote screen, set **EZ Remote** to **Enable**, confirm the **URL** is **ezremote.veexinc.net** (without www.), and tap on **Apply** to connect and establish a session with the EZ Remote server.

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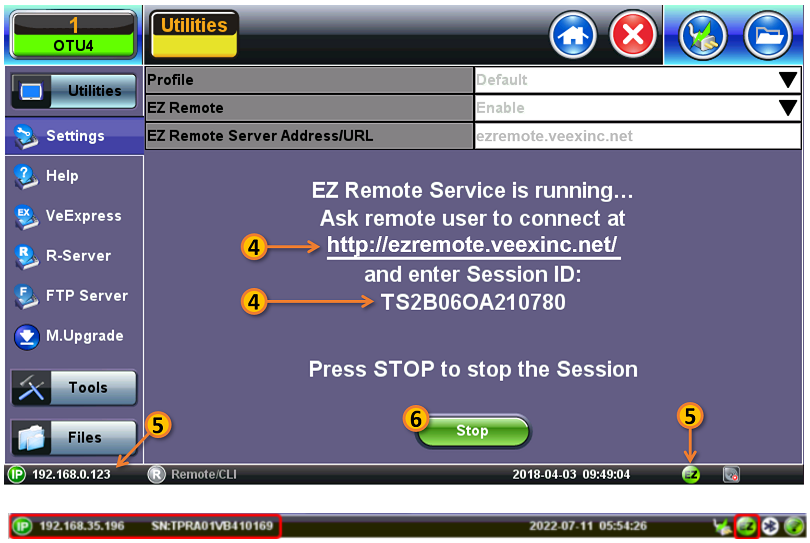
4. Provide the resulting **URL** and **Session ID** to the intended remote user.

5. You may continue to use the test set until a remote user logs in, then both will share control over the unit. Make sure the test set remains connected to the LAN/WLAN/Internet and that the **EZ remote session indicator** at the bottom of the screen stays green.



6. When finished, use the **Stop** button to terminate the EZ Remote session and disconnect from the server.

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Connect to the Remote Test Set from a Computer, Tablet or Phone

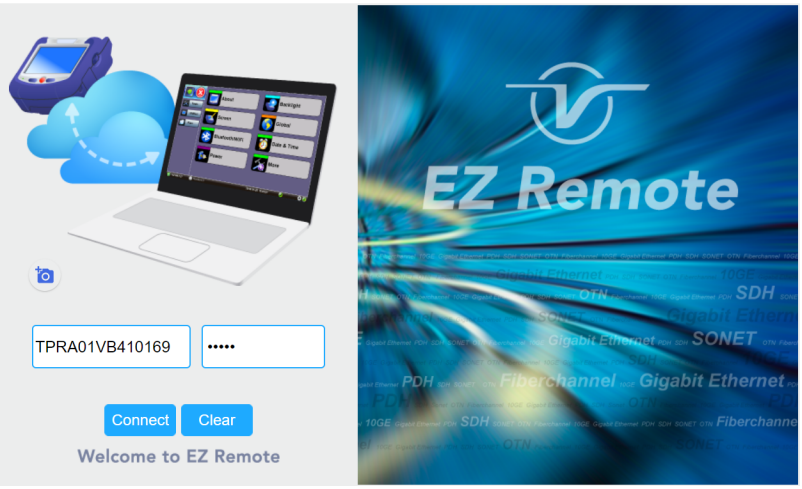
Establish a Remote Access Connection

EZ Remote provides two types of services:

- **Remote Control** (screen and mouse/touch mirroring) to operate a test set from a different location.
- **Remote Platform Access** to access information stored in the remote test set, such as Test Results, Profiles, User Manual, Screen Captures (screen shots), information about the test set (Home) and its local IP address.

Although multiple users could simultaneously log-in to the same test set, they would be sharing the same mirrored GUI image and mouse control. This is not recommended since it is equivalent to having multiple users trying to operate one test set at the same time (also known as "mouse fight"). Nonetheless, it may be effective for training purposes with one or two extra users.

1. From a PC, Mac, Tablet or Smartphone launch an industry-standard Web Browser application and enter the URL http://ezremote.veexinc.net (without the www.). Enable pop-ups for your browser and be sure to authorize access to the site, if confirmation is requested by the browser or OS.
2. Enter the **Session ID** provided, making sure not to confuse zeroes (0) with Os. Click **Search** to find the target test set and stablish a peer-to-peer connection.



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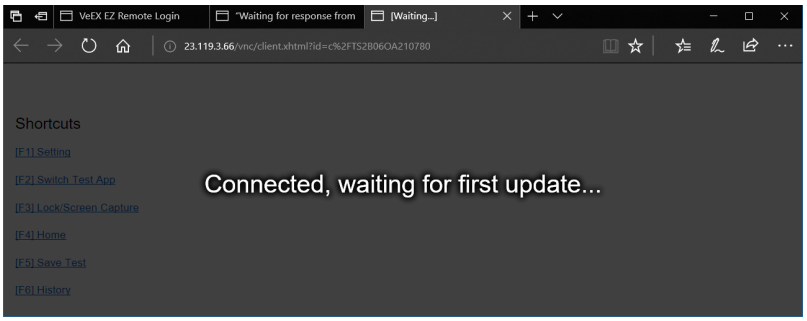
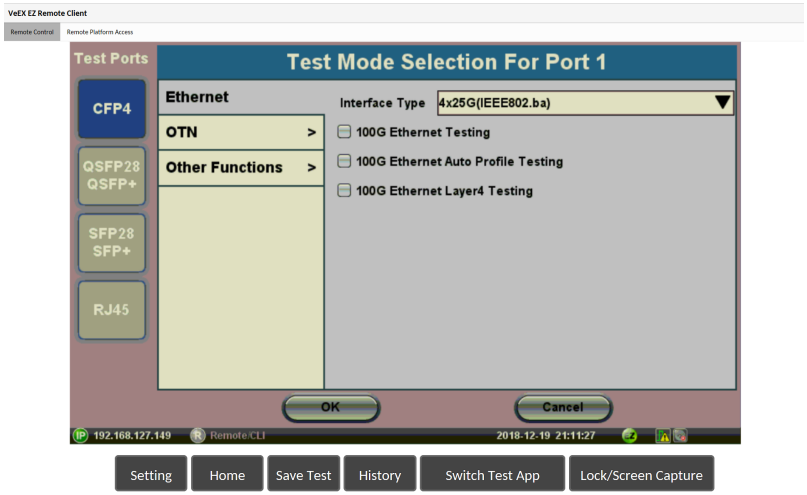
3. Once verified and connected, wait for the remote user interface to refresh. This may take a few seconds.



4. Depending on the type of test set used, shortcut buttons may be provided below the mirrored screen, allowing access to functions provided by physical buttons on the instrument, such as **Settings**, **Home**, **Save Test** results. Click or tap on the shortcut to activate it.



5. Once the remote GUI appears, you can use the **Remote Control** tab to operate the test set in the same way you would control a local unit from its touch screen.

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Save Test Results

To save the results of a test, from the remote computer, press the **Save** button below the screen image. Then use the pop-up keypad and/or the PC keyboard to enter the file name and add any extra details (if Advanced Save is enabled).

Access Remote Test Result Files

The **Remote Platform Access** tab provides links to access test results, test profiles, screen shots, the user manual and other information stored in the test set.

After accessing the test set remotely, a tab will open up for each selection made, allowing for quick access to each function.

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Profiles

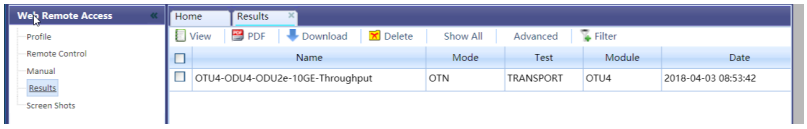
Test Profiles are configurations saved by the user that can be retrieved and reapplied to the test set. For example, commonly used configurations and test limits/threshold can be saved as test profiles, for different types of services.

Manual

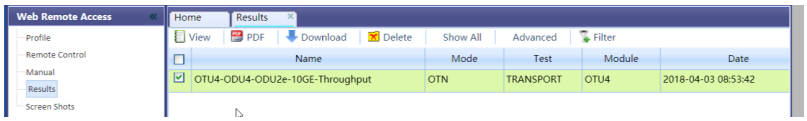
The feature provides access to the user manual that is built into the test set. In this application, the use of a local copy of the PDF file is recommended as the PDF client in the local computer is most likely faster than accessing the remote one and may offer better tools and function, including search capabilities. User manuals can be downloaded from the products' page at www.veexinc.com.

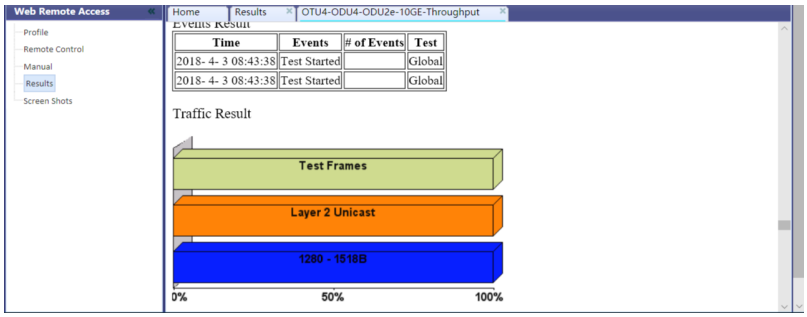
Results

Results list all the test results files currently stored in the remote test set. Users can **View**, **Rename** and **Delete** files stored in the remote test set, as well as **Download** selected files to the local computer or convert them to **PDF** and download.



To open a test results file, select it from the list and tap on **View**.





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Files can be downloaded by clicking on **Download** (original file format) or **PDF**.

Screen Shots

Pictures (PNG) taken of the screen can be accessed from this link and sub-tab. Pictures can be viewed or downloaded to the local computer.

Screen captures can be made using the Lock button (🔒) on the test set or from the remote computer, using the links provided or the respective F-key on the computer's keyboard. The screen capture function can be enabled in **>Utilities >Settings >Global >Save Settings**.

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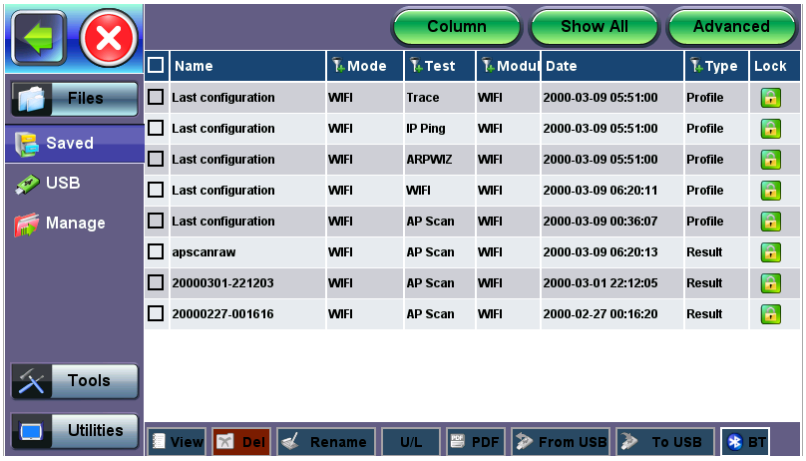
Files

File Manager



File Manager, Advanced

The File Manager (**Utilities** > **Files** > **Saved**) displays files stored in the test set, including profiles, test results, and screen shots. When managing files, use the check box ☑ to select the desired file(s). The File Management system offers backup **To USB** and restore **From USB** functions to preserve user data.

Tests Results/Reports

To access the test results stored in the test set:

1. Press , then press on the top left of the screen.
2. Select . The File Management screen is displayed.
3. Select the desired results file to open the test report.

To navigate the test results report, use the links in its Table of Contents and the right rocker switch to scroll Up and Down.

Working with Saved Results, Profiles, Images

Access the File Manager by selecting **Files**> **Saved** in the left panel of the platform menu. Files can be viewed, edited, or exported to a USB dongle, Windows PC, SD card, or a PDF file (using a FAT32 USB Memory stick).

Use the check box ☑ to select the desired file(s) or choose all files by selecting the check box in the top header row.

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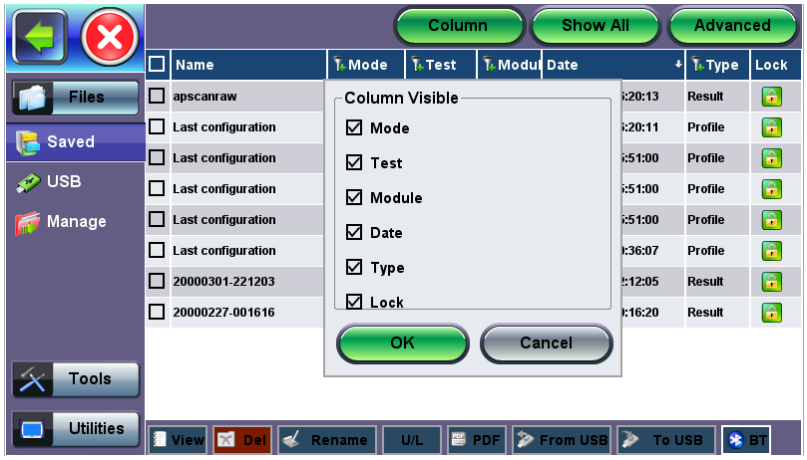
Table Sorting

Tap a column header to sort the table in ascending or descending order by the column selected.

Tap the filter icon in the column header row to filter for specific test results stored on the unit.

At the top of the screen, tap the green buttons for view options.

- Show Name — Displays full filename.
- Column — Select columns to make visible.
- Show All — Displays all records.
- Advanced — Search for specific file(s) using advanced search terms.



Selecting columns to make visible

Viewing and Managing Files

Use the options at the bottom of the screen to manage selected file(s).

- View — Opens the selected test report (one).
- Close — Closes the current test report and returns to File Manager.
- Exits the File Manager.
- Del — Deletes all unlocked test reports that are selected with checkmarks.
- Rename — Renames the selected test report (one).
- U/L — Unlocks or Locks test reports. Locked reports are identified by a red padlock icon. Locked test reports cannot be deleted or renamed.

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PDF	Generates a PDF copy of the test report and stores it in an attached USB memory stick (required) for distribution (e.g., via email).
From USB	Imports (restores) all test results, test profiles and screenshots stored in an attached USB Memory Stick. The included On-The-Go (OTG) micro-B USB to USB-A adapter cable is required for the USB memory stick.
To USB	Exports (backup) all selected test results, test profiles and screenshots stored to an attached USB Memory Stick. The included On-The-Go (OTG) micro-B USB to USB-A adapter cable is required for the USB memory stick.
BT	Transfers selected test results, test profiles and screenshot files to a paired Bluetooth® smartphone, tablet or PC.
Load	Loads the selected test profile, if supported.
Load & Run	Loads the selected test profile and runs the test, if supported.

Enabling To USB and From USB Functions

1. Insert a USB Memory stick (FAT32 file format) into a USB port on the side of the unit.
2. Wait for the USB memory to be detected (the folder icon at the top-right corner will change to a green USB memory icon). After the unit detects the USB memory stick, files can be downloaded to or restored from USB. See "USB Memory Browser" on page 68 for details about using a USB memory stick with the test set.

Downloading Files To USB

1. Select the test results, test profiles, screen capture files to be saved. For a full backup, tap the check box in the top header row to select all files.
2. At the bottom of the screen, tap the **To USB** button To USB to initiate the file transfer procedure and wait for the progress bar to finish. Original files won't be deleted from the test set. Each file is saved into it's own folder using the "MyVeEX" tree directory format.
3. When all files have been copied to the USB, tap the folder icon (top-right corner) and or tap Eject to make sure all cached data is transferred to the USB drive, especially when transferring small files.

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Exporting Files to Mobile Devices via Bluetooth

Applies to test sets with optional built-in Bluetooth or compatible Bluetooth USB dongle attached.

1. Select the test results, test profiles, screen capture files to be exported. For a full backup, tap the check box in the top header row to select all files.
2. At the bottom of the screen, tap **BT** BT. The test set scans for Bluetooth devices automatically.
3. After pairing the device, tap **Send** to export the selected files. Original files won't be deleted from the test set. Each file is saved into it's own folder using the "MyVeEX" tree directory format.

Exporting Results to PDF

1. Select the test result files to be exported.
2. At the bottom of the screen, tap **PDF** PDF. A "PDF file will be generated to USB disk" message appears.
3. Tap **Yes**.

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USB Memory Browser

Use an USB-A OTG cable (optional with purchase) to connect a USB to the micro-B USB port. The port supports memory drives and USB add-on devices such as fiberscopes.

The File Manager (**Files** > **USB**) provides basic USB memory stick management tools to browse and manage files without the need of a PC. If needed, use the micro-B USB to USB-A adapter to connect to the USB memory stick.

Import OTDR	When an OTDR module is used, OTDR test results (SOR files) can be imported.
Reload	Refreshes the USB stick info.
Delete	Erases the selected files or folders.
Up	Exits the current folder and moves up to a higher folder in the file tree hierarchy. The current folder structure is shown in the top bar.
Open	Opens certain file types.

- **HTML:** Launches the browser to display its content (test results and OPM results)
- **TXT:** Launches a basic text viewer to display its content (test results and OPM results)
- **PCAP:** Launches the built-in Wireshark® protocol analyzer
- **MTIE:** Launches the optional built-in Wander Analysis tool

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- **SOR**: Supported with OTDR module or built-in test set only.
- **PNG**: Screenshots (Fiberscope images)

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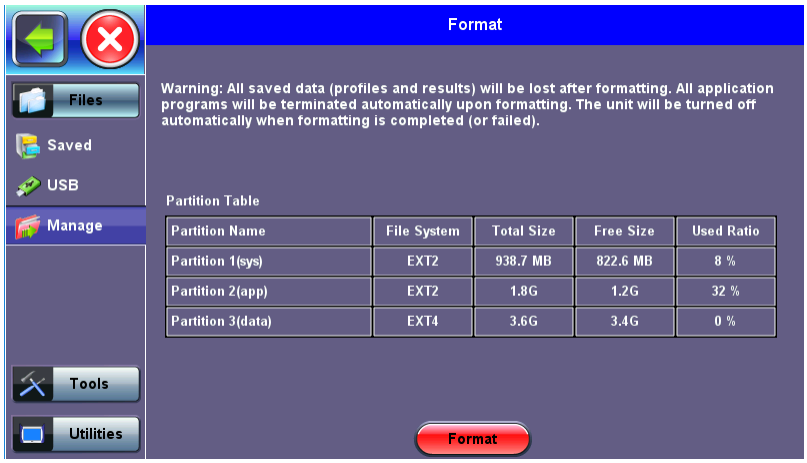
Manage Internal SD Card



Internal SD Card Format

The SD card tool (**Files** > **Manage**) provides Internal SD card's partition capacity information.

All saved files, such as profiles, test results, and screen shots, are stored in the Data partition 3(data).

If the data partition is nearly full, use the **File Manager** to backup files to USB, then delete selected files.

The **Format** function is exclusively a maintenance tool. Use **ONLY** when instructed by a VeEX Customer Care representative. **It erases all the information stored in the test set!**

- *The internal SD Card contains the System OS, all the Test Applications (Apps) and user's data.*
- *Only the Data partition is accessible to users, through the test set's functions.*
- *Do not remove or reformat the SD Card outside of the test set.*
- *The SD card can only be accessed by opening the test set.*

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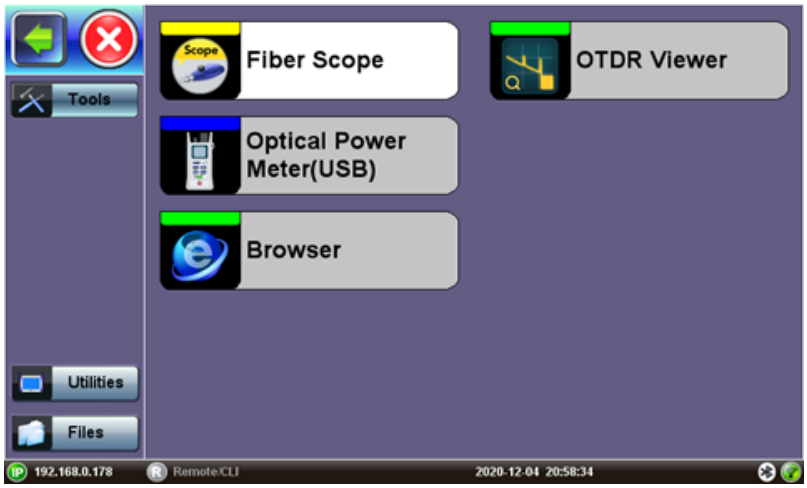
Tools

Tools Overview



Fiber Tools Home Menu (FX150 reference)

Available Tool applications depend on the product model.

Fiber Scope

- "DI-1000 Digital Fiber Inspection Microscope" on page 74
- "DI-1000MPO Digital Fiber Inspection Microscope for Single and Multi-Fiber Connectors" on page 75
- "DI-3000 Auto-Focus Digital Fiber Inspection Microscope" on page 79

The VeEX digital fiber inspection scopes evaluate fiber optic connectors for dirt and end face quality. The hand-held probe design enables easy inspection of patch cords and connector panels. Extended tips are available for hard to reach bulkhead or patch panel connectors. Clear images are displayed on the test sets for immediate analysis and can be saved for record keeping.

The Fiberscope test application can be used in conjunction with any VeEX Digital Fiber Inspection Microscope.

All DI series fiberscopes can auto freeze image when focus is achieved to capture the image and qualify the connector endface for cleanliness and damage per IEC 61300-3-35. For more information about available connector tips, see the *DI-1000/DI-1000MPO/DI-3000 Digital Fiber Inspection Microscope Adapter Tips Guide.*

All wired fiber inspection scopes are powered via a USB Type-A connection with a host device or the VeEX Power Bank/WiFi Bridge. For host devices that have Micro-B or Micro-C input ports, USB Type A to Micro-B or Micro-C OTG dongle adapters are available as an add-on order from VeEX.

More about Fiber Scope functions

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OTDR Viewer

This built-in application allows the test platform to view previously saved .sor trace results and edit events, as needed. IF an OPX-BOXe is connected to the platform via direct USB connection, WiFi or Bluetooth®., this built-in application can also be used to control all OTDR test functions.

More about OTDR Viewer functions

OPM

The VeEX Inc Optical Power meters are made with fast and accurate testing in mind. They are used to measure the power running through a cable at a given wavelength, and interface with phone, PC, or other VeEX devices to save and generate reports on the findings. This information is used to verify that the cable span is working correctly and to find the source of the problem when it's not. When paired with a VeEX Optical Light Source (OLS) or as part of a VeEX Optical Loss Test Set (OLTS), which includes both, WaveID can be used to quickly test several wavelengths without having to adjust the OPM settings.

More about OPM functions

Browser

The built-in web browser uses the management port IP connection. An active IP connection can be established either through Ethernet or WiFi. The web browser defaults to VeEX's test website. Use the Web browser's navigation bar to enter the name of the website you wish to reach. Navigation capabilities may be limited.

More about Browser functions

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Fiber Scope

- "DI-1000 Digital Fiber Inspection Microscope" on the next page
- "DI-1000MPO Digital Fiber Inspection Microscope for Single and Multi-Fiber Connectors" on page 75
- "DI-3000 Auto-Focus Digital Fiber Inspection Microscope" on page 79

The VeEX digital fiber inspection scopes evaluate fiber optic connectors for dirt and end face quality. The hand-held probe design enables easy inspection of patch cords and connector panels. Extended tips are available for hard to reach bulkhead or patch panel connectors. Clear images are displayed on the test sets for immediate analysis and can be saved for record keeping.

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The Importance of Fiber Connector Inspection

Dirty or scratched connectors introduce loss, increase ORL and/or damage other connectors (Loss and Return Loss becomes more critical at higher data rates). End-face contamination is a leading cause of fiber link failures in data centers, corporate networks, MSOs and Telecom environments.

Fiber Inspection Scopes provide a magnified image of the fiber optic connector's end face, focusing on the contact areas (most likely to impact network performance or permanent damage by mating of contaminated connectors). Images, visual inspection, and automated tools are often used to grade the health and cleanliness of connectors, after polishing or cleaning and before being used.

To achieve maximum power and prevent false readings, clean the optical fiber connector interfaces before inserting them into the test port.

Please ensure the correct fiber connector type is used before inserting it into the test port or connector. Mismatched connector types will damage the optical end faces and the test set.

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DI-1000 Digital Fiber Inspection Microscope

DI-1000 Digital Fiber Inspection Microscope

- **Locknut**: a threaded fastener that secures the tips in place.
- **Inspection Tip**: a front-end component inserted to view the connector endface
- **Capture Button**: a button that starts and stops (play or pauses) the video stream of the fiber end-face to save an image at the current frame.
- **Focus Knob**: a rotating dial that can be turned clockwise or counterclockwise to view clearer image. Make sure connector is properly seated in the adapter tip.
- **USB Type A output**: USB connector to plug into host power source to enable operation.

Single and Multi-fiber (MPO/MTP®) connector tips supported. For more information on using the DI-1000, see the DI-1000 Quick Guide on www.veexinc.com.

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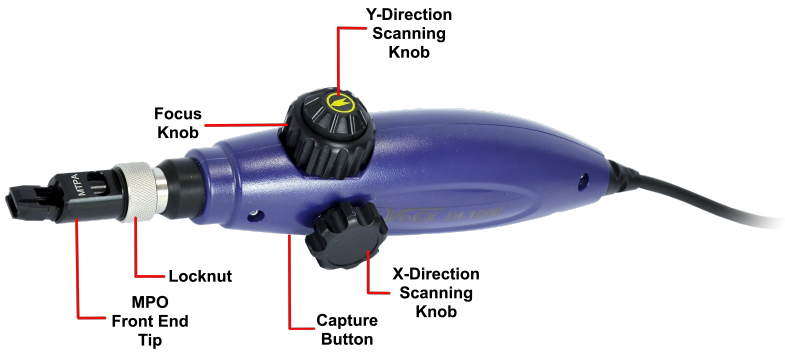
DI-1000MPO Digital Fiber Inspection Microscope for Single and Multi-Fiber Connectors



DI-1000MPO Digital Fiber Inspection Microscope for Single and Multi-Fiber Connectors

- *WiFi support requires VeEX Power Bank/WiFi Bridge accessory and host device/test set has built-in WiFi capability. See the test set's data sheet on www.veexinc.com or contact VeEX Customer Care for more information.*
- *To work with single fiber tips, the front end tip should be replaced with the collar provided with the scope. For more information adapter tips, see the DI-1000 Digital Fiber Inspection Microscope Adapter Tips Guide on www.veexinc.com.*

For more information on using the DI-1000MPO, see the DI-1000MPO Quick Guide on www.veexinc.-com.

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DI-1000MPO Fiber Analysis

There are two methods to inspect MPO fibers using the DI-1000MPO:

1. **Touchscreen (standard)**

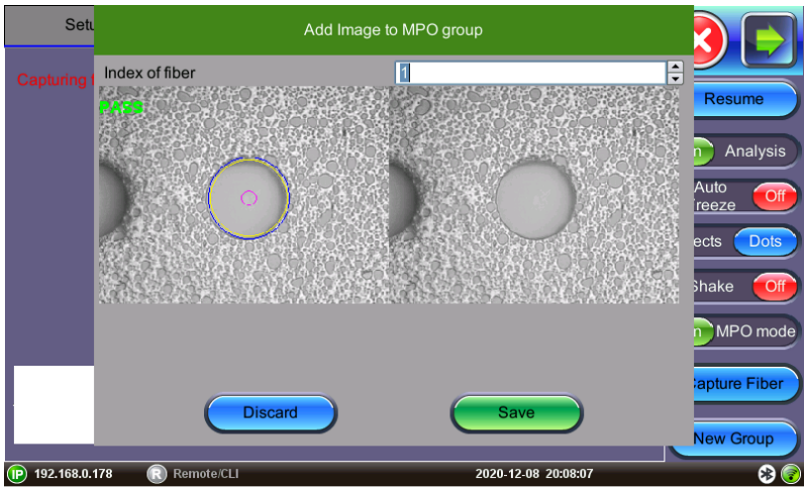
   Press the **Capture Fiber** button on the touchscreen for every MPO fiber properly focused, analyzed, and scoped.

   Press **OK** in the pop-up window to confirm the MPO fiber number, then adjust the scope controls (horizontal (x-axis) control only) to navigate to the next fiber.

2. **Fiber Scope button (fast)**

   Press the Capture button (located on the bottom of the DI-1000MPO fiberscope) successively to capture, confirm the MPO fiber number, and add the fiber screenshot to the list. As the x-direction (horizontal control) is rotated to the next consecutive MPO fiber the logging actions are done on the fiberscope itself. Scoping an MPO-12 fiber can be done under a minute.

   Press **New Group** to create a new set of MPO images.



MPO Group - Add Image

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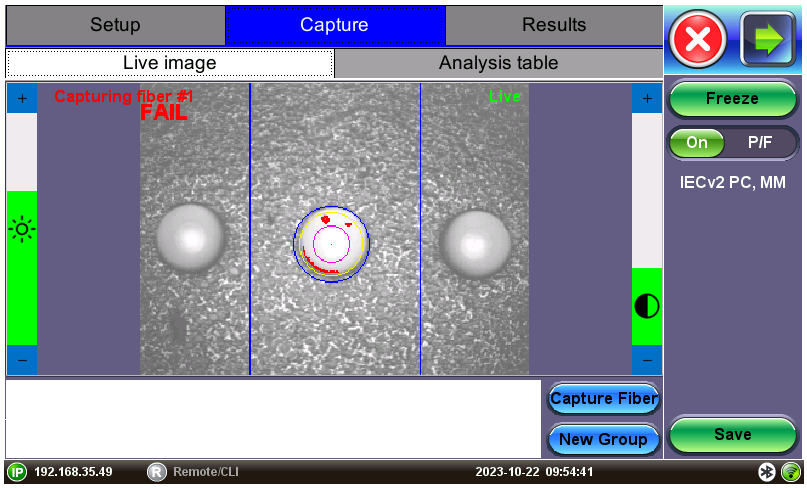
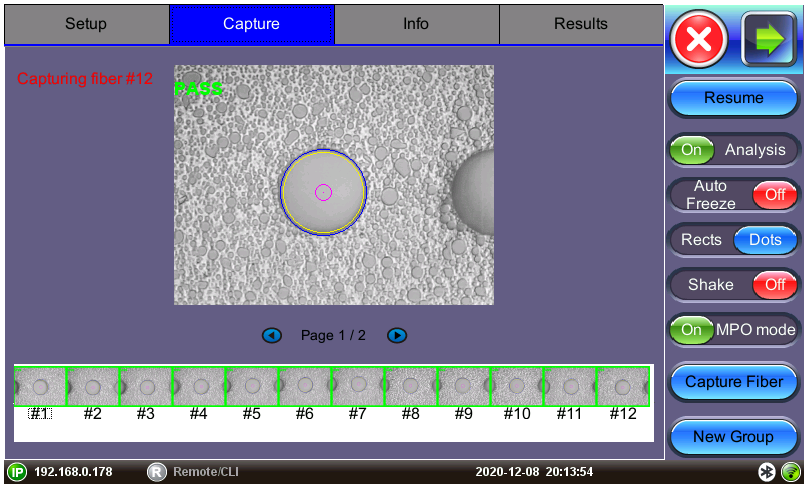


Aligning Fiber for Analysis

When using a DI-1000MPO+, which has a wider field of view, align the correct fiber between the two lines for analysis.

The example below shows a completed MPO-12 cable inspection.

The key-up and key-down adapter that comes with the DI-1000MPO standard package is a straight-through connection so the MPO fiber # at the start matches the MPO fiber # at the end (not flipped). When using the adapter, fibers will be in the opposite orientation of the camera. In the below example, fiber #1 is on the right.



MPO Group - Completed (PASS)

To save MPO results, navigate to the **Results** tab once all fibers have been captured and press the **Save** button.

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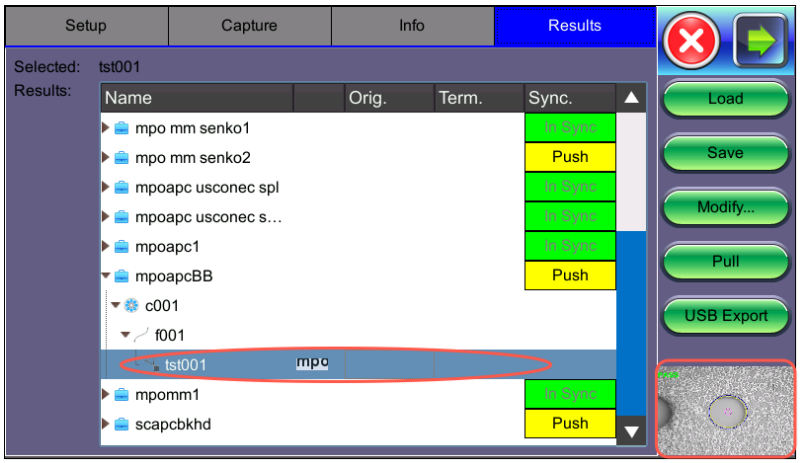
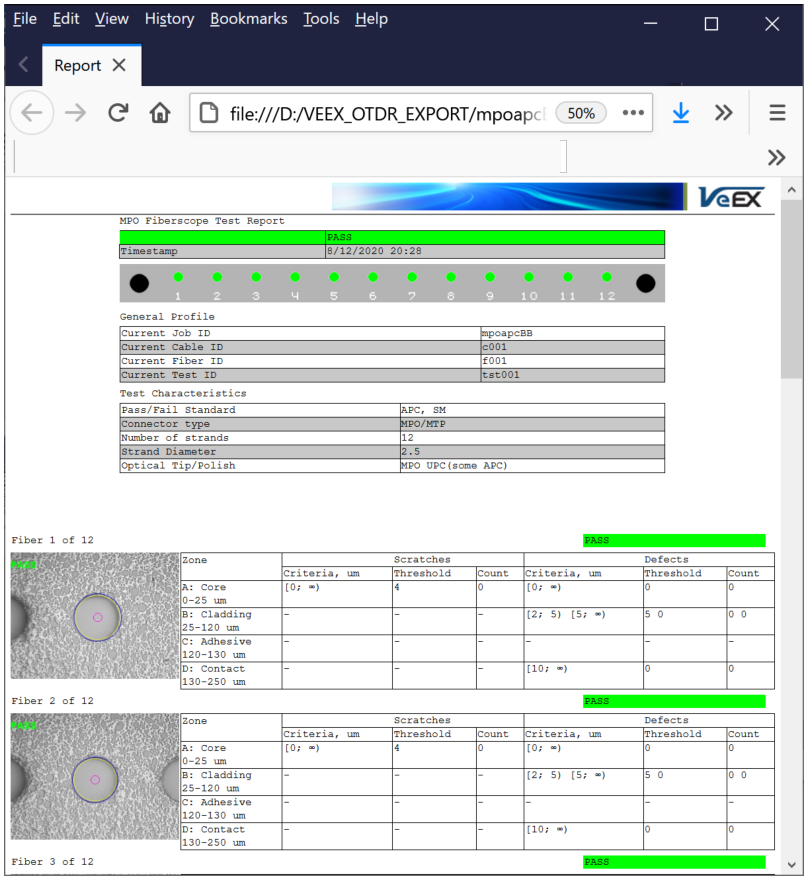
To view results on the unit, on the **Results** tab navigate to the **mpo** heading on the saved trace and press **Load**. Tap each individual screenshot to view the individual MPO fibers.



MPO results

(Scope image appears on bottom right corner of the screen.)



Fiberscope MPO endface test viewed in an HTML browser

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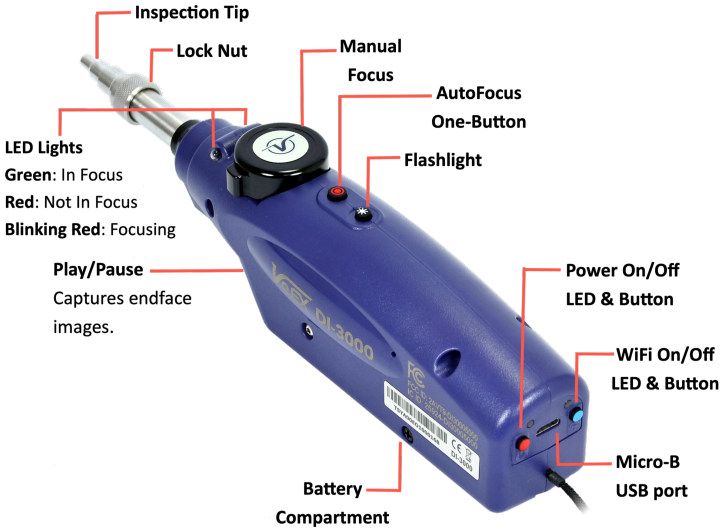
DI-3000 Auto-Focus Digital Fiber Inspection Microscope



DI-3000 Wi-Fi Autofocus digital inspection scope

WiFi support requires host device/test set has built-in WiFi capability. See the test set's data sheet on www.veexinc.com or contact VeEX Customer Care for more information.

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Connecting the Fiberscope

Use an USB-A OTG cable (optional with purchase) to connect a USB to the micro-B USB port. The port supports memory drives and USB add-on devices such as fiberscopes.

OPTICAL SAFETY

- *Deactivate the laser before connecting or disconnecting optical cables or patchcord.*
- *Never look directly into an optical patchcord or optical interface while the laser is enabled. Exposure to optical radiation for an extended period can caused irreparable damage to eyes.*
- *Never use a fiber microscope to check the optical connectors when a laser source is active.*

The operator is assumed to have received basic training in fiber optics and related testing and measurement practices.

Read the "Safety Information" on page 8 before beginning using optical features of the test set.

Fiber Scope image view requires the Fiber Scope Expert option to be enabled on the chassis/platform except for the VS500 which can already include this option. This can be confirmed by viewing the device ID is either -1500 or -2500.

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Attach the DI-1000/DI-1000MPO/DI-3000

Attach one end of the OTG cable (optional with purchase) to the microUSB port on the test set and the other end to the fiberscope USB port.

Older analog fiberscopes require a USB adapter.

If using a DI-3000, WiFi can be used to connect to a platform with WiFi available. See below.

When the DI-1000, DI-1000MPO, or DI-3000 are powered, they will emit a blue LED. Select the tip that best matches the connector endface that is to be inspected.

For more information about available connector tips, see the DI-1000 Digital Fiber Inspection Microscope Adapter Tips Guide on www.veexinc.com.

After powering on and setting up the fiberscope, select the tip that best matches the connector endface that is to be inspected.

Scope tips are secured in place with a locknut. There is a slot (specialty tips may have more than one slot) that will ensure the tip is aligned properly to the top of the fiberscope prior to securing the locknut. Attach a tip by rotating the locknut clockwise (tip faced away). Remove a tip by rotating the locknut counterclockwise (tip faced away). With the correct tip fastened and secured, launch the Fiberizer application (PC, mobile, VeEX test set) and plug into an available USB interface or connect to the WiFi network.

Rotate the round focus knob to manually bring the image into focus. For the DI-3000 scope, a built-in autofocus button can also be used.

Once the fiberscope is detected, tap **Yes** in the pop-up window to enter the Fiberscope menu.

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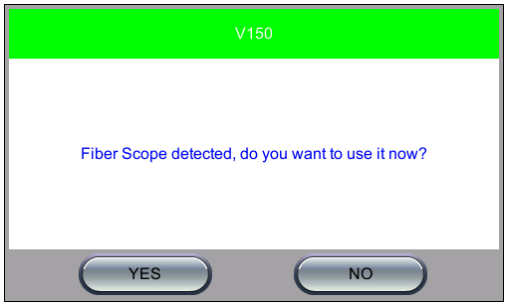
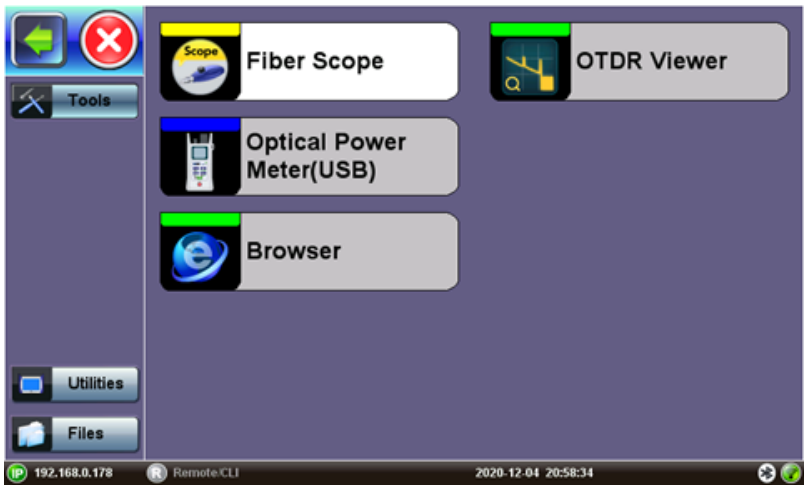
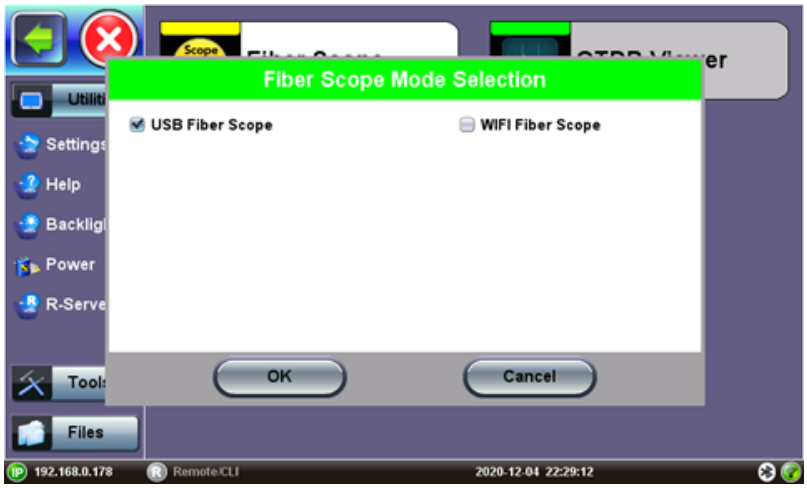


Fiber Scope Detected Message

Alternatively, select the **Test Application icon** > **Utilities** > **Fiber Scope**.





Fiber Scope Connection Mode Selection (USB for direct connection, Wi-Fi for DI-3000 AP)

Select the **USB Fiber Scope** checkbox for wired fiberscopes, such as the DI-1000, DI-1000MPO, VS500 *(discontinued)*, or DI-3000 via USB.

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Select **WiFi Fiber Scope** to initiate a scan for an available DI-3000.

See the WiFi Wiz section for more information on setting up a WiFi Access Point if automatic scanning fails.

The WiFi Access Point password is: "veex" plus the last six digits of the serial number of the DI-3000 to connect with e.g. "veexA00700", where the serial number is SN:LA-3KA00700.

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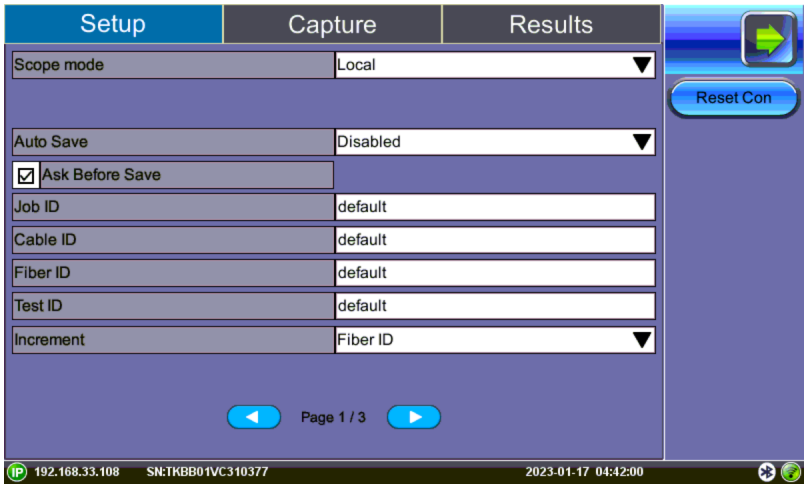
Fiberscope Setup

Captured patch cord image files are saved within a folder directory. In the **Setup** tab, name each folder and file in the directory and select a save increment.



Fiber Scope Setup - Page 1

- **Scope mode**: Sets Fiber Scope connection method.
  - **Local**: Direct USB (wired) connection.
  - **Remote DI-3000**: Wifi connection to DI-3000.
- **Reset Con**: Resets connection method currently used (Remote or Local) with fiberscope, so another can be selected.
- **Auto Save**: **Disable**, **Autosave on Tap**, or **Autosave after freeze**. If **Autosave on Tap** or **Autosave after freeze** is enabled, the unit automatically saves and creates the filename using the Trace ID after the test. The file location and name will display. Auto Save is available for single fiber analysis only.
  - **Disabled**: Turns off Autosave function. When Autosave is disabled, results can be manually saved on the Results tab after finishing the fiber endface inspection.
  - **Autosave on Tap**: On the **Capture** tab, tap the screen to automatically save the captured image. “Tap screen to save” will appear to indicate that the feature is enabled.

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- **Autosave after freeze**: Automatically saves the captured image upon freezing the image. (Auto-freeze enabled or normal Freeze.)

When **Ask Before Save** is selected, the **Save** menu will display with naming and comment options.

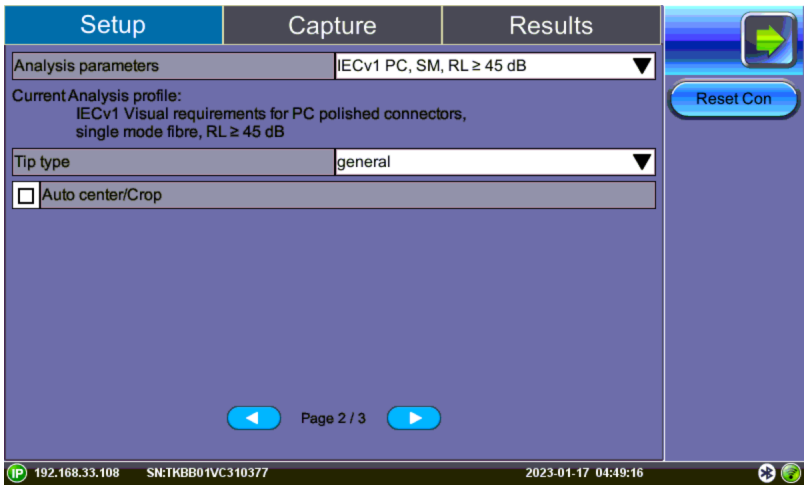
The details entered in the following fields can be used to pre-set the filename automatically and increment the fiber or test number automatically.

- **Job ID**, **Cable ID**, **Fiber ID**, and **Trace ID** are nested folders that store saved results. Folders are nested in the following order: **Job** > **Cable** > **Fiber** > **Trace**.

  Tap the blank fields to edit the names.

- **Increment**: Increments the selected ID name if an Auto Save option is selected.

Saved image files can be retrieved from File Manager or managed from the **Results** tab. Refer to "Working with Saved Results, Profiles, Images" on page 64 for more details.



Fiber Scope Setup - Page 2

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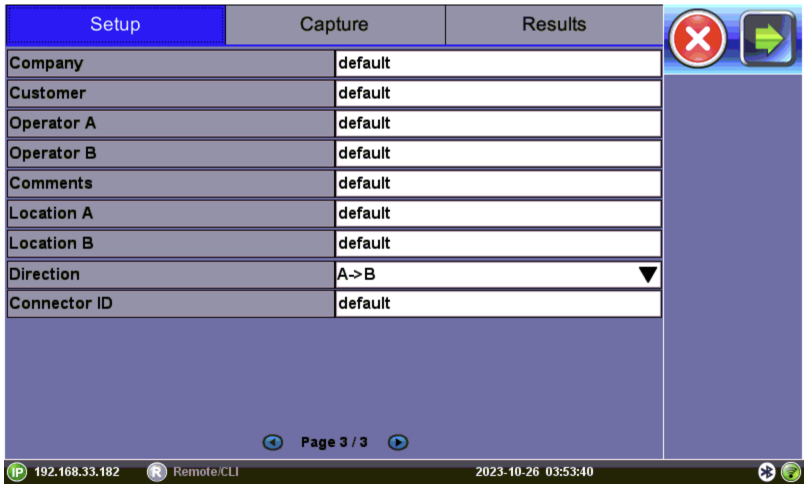

Fiber Scope Setup - Page 3

Analyze Fiber Connectors

1. After assigning the scope mode and save options on Page 1, select the analysis profile from the **Analysis parameters** drop-down box on **Page 2/2** of the **Setup** tab.

   The analysis profile is based on the fiber endface connector inspected, as well as applicable to MTP™/MPO (multi-fiber) connectors. .

   - **PC, SM RL ≥ 45 dB**: SPC or UPC polished connector
   - **PC, SM RL ≥ 26 dB**: Older connectors with flat or PC polish (used with LC/MU)
   - **APC, SM**: Angled polished connector

2. Select the **Tip Type** from the drop-down box. Tip Type is used to optimize Pass/Fail analysis for certain types of connector tips.

   - **General**: Encompasses standard SC, FC, ST, and other 2.5 mm ferrules. LC/APC and E2000/APC should not use general tip type.
   - **LC**: Lucent connector (male). Use on all 1.25 mm connectors with ceramic (LC/MU connectors).

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- **LC female**: Lucent connector (coupler/bulkhead). Use when inspecting 1.25 mm type patch panels, MUX and test ports.
- **E2000™**: Proprietary family of connectors invented by Diamond SA known for its low insertion loss characteristics and built-in (latched) shutter. Use when inspecting Diamond E2000 connector with ceramic ferrule.
- **E2000/APC Metal**: Use when inspecting Diamond E2000 APC connector with metal ferrule.
- **Evolv™**: Use when inspecting Corning Evolv terminal connector ports.
- **LC APC short extended A6 female**: Use when inspecting hard to reach LC/APC connector coupler/bulkhead.
- **MPO PC female**: Use when inspecting SM ribbon cables with MPO/MTP via coupler.
- **MPO APC female**: Use when inspecting SM ribbon cables with MPO/MTP angle polished connector via coupler.
- **MPO MM female**: User when inspecting MM ribbon cables with MPO/MTP connector via coupler.

3. After the image is frozen, select the **Auto center/Crop** checkbox to take the current video frame and center it by the detected fiber image inside the program window, i.e. in case of long (extension) tips or handshaking. Initially, a blank screen will display. This is ideal for APC images. This is recommended when inspecting Angled bulkheads/couplers with Shake OFF.
4. Select the **Capture** tab.

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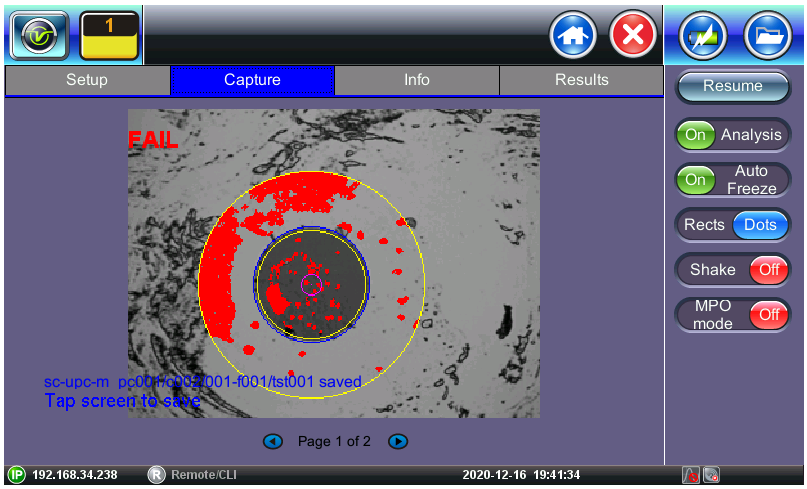
Capture Images (View)

The **Capture** tab is the main user interface for the connector end face inspection and analysis. It presents a real-time view of the connector's end face allowing for alignment and focus. **Page 1** of the capture screen displays a live image of the connector face and features analysis and freeze tools.

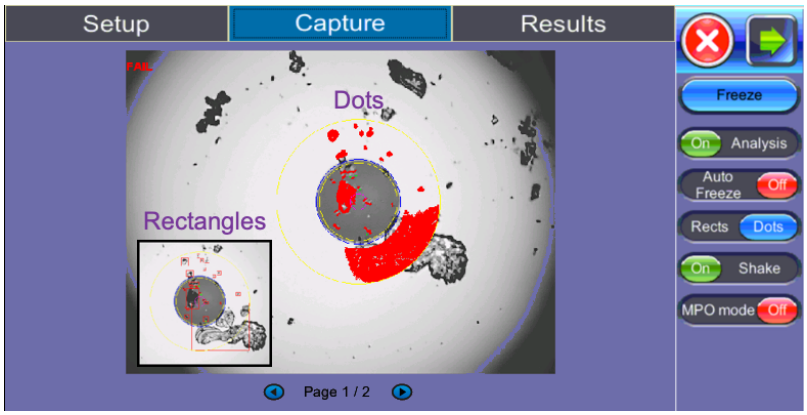
The fiber end face image will normally display near the middle of viewing window area. The exception will be when inspecting bulkhead/couplers of APC connectors or using A6 type tips. The end face image will appear off-center. AutoFocus and Shake OFF setting is recommended when inspecting couplers. Gently adjust centering while manually focusing the image and image will freeze as soon as focus is achieved.

For the DI-3000, press the autofocus (red target) button when the image is out of focus to enable the device's automated focusing operation. With a steady hand, the end face will be promptly autofocused and ready for capture.

*Initially, there is no screen shown until **Resume** is pressed.*



Real time video of the connector face. Red contours indicate scratches and defects.



Fiber Scope Capture - Dots vs Rectangles

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The radio buttons on the right panel do not indicate the current state or setting, they indicate the action that would take place if pressed. For example, if “Analysis OFF” is tapped, the analysis function is turned OFF and the button displays “Analysis ON”.

- **Resume / Freeze**: Stops the video capture from the fiberscope. If the optional Auto Freeze feature is enabled, the test set will automatically freeze the image when it comes into focus. Once the image is frozen, tap the image to save it.
- **Analysis On / OFF**: Turn ON/OFF the automatic Pass/Fail threshold defined by IEC 61300-3-35.
- **Auto Freeze**: Turn ON/OFF the ability to freeze the video automatically, when in Focus. The default is set to OFF. To see the image after it freezes, tap **Resume**.

Auto Freeze may be useful when scoping certain angled polish fibers.

- **Rectangles / Dots**: Dots draw a red contour around scratches and defects. Rectangles highlight scratches and defects without obstructing the view. The selection between dots or rectangles does not affect the area calculation or the Pass/Fail results. Dots are set as default.
- **Shake**: Turn ON or OFF the ability to Auto Freeze or Analyze when probe image is unsteady, such as when inspecting a female connector or bulkhead. It minimizes significant vibrations and unsteadiness generated from the fiberscope being held. Typically, this function is not always needed with the use of image focusing.
  When inspecting bulkhead couplers or MUX/transceivers set Shake to OFF.
- **MPO mode**: Turn ON when inspecting ribbon fibers (MPO/MPT connectors). Create a **New Group** for each MPO ribbon and **Capture Fiber** to save an image for each strand.

*When inspecting MPO/MPT connectors, it is recommended to set **Auto Freeze** and **Shake** to **OFF**.*

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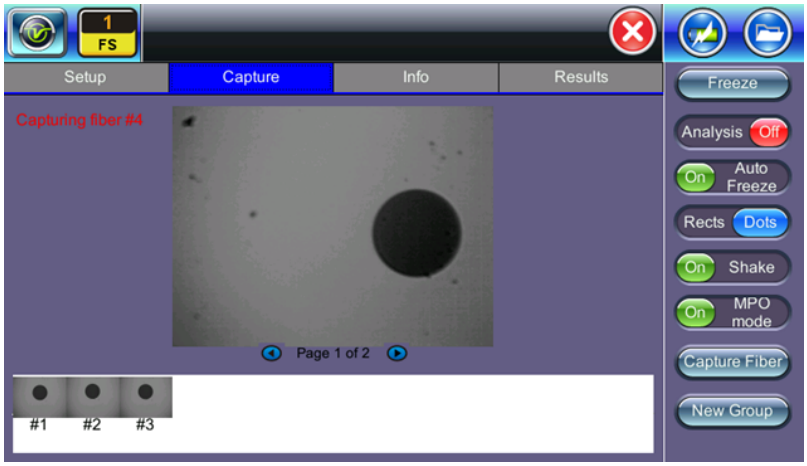
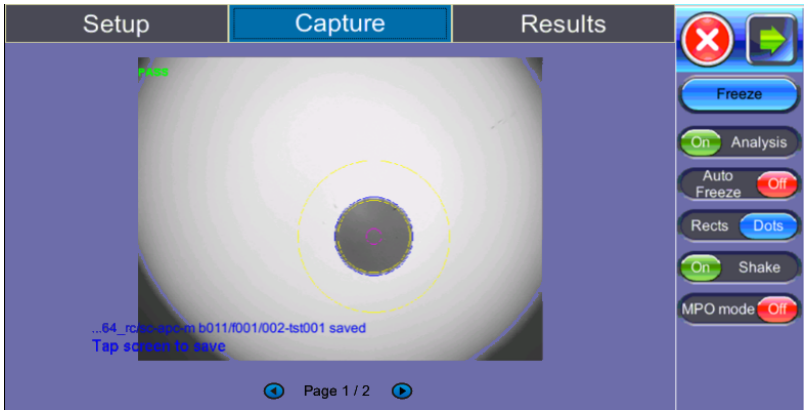


Fiber Scope MPO mode

To save the image on the screen, tap the screen after freezing.

After saving, go to **Results** or **> Utilities > FilesFiles** to view the report and export to PDF or USB.



Fiber Scope Capture - PASS

In the example above, the message in blue states that the image can be saved when tapped. This indicates that the **Autosave** on Tap option was enabled on **Page 1** of the **Setup** tab. If **Autosave after freeze** were selected, no message to tap the screen would appear.

Page 2 displays all numeric results from defect and scratch events found for all four zones. These are used for the evaluation of the Pass/Fail criteria, according to the IEC 61300-3-35 standard. (Scratch requirements refer to width.)

This table will also be included in the reports.

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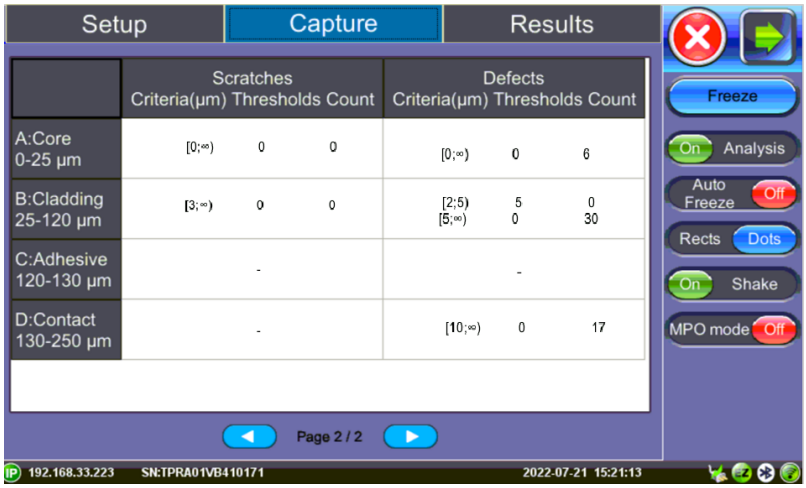

Pass/Fail IEC analysis table

(Measured scratches and defects compared with threshold criteria for each fiber layer)

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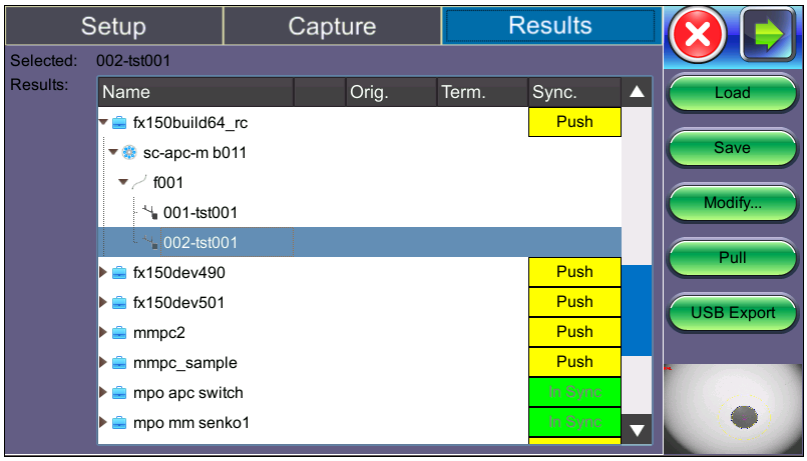
Results/Reports



Fiber Scope Analysis

(For Fiberscope Results, Scope image appears on bottom right corner of the screen.)

The results screen is used to view previously saved results. Test results can be pushed/pulled from Fiberizer Cloud. The directory displays the location of stored files. Connect to Fiberizer Cloud, then select the file(s) by tapping them.

- **Push/In Sync**: Uploads locally saved results to Fiberizer Cloud. *In Sync* indicates the results have been saved to Fiberizer Cloud successfully.
- **Load**: Loads the selected image onto the Capture tab.
- **Save**: Manually saves and names the image displayed in Capture (autosave is disabled). Once saved, the files can be accessed in the "File Manager" on page 64 or R-Server.
- **Modify**: Select a file or folder in the directory to modify. Options to Rename, Remove, and upload the selection to Fiberizer Cloud are available.
- **Pull**: When connected, pulls file from Fiberizer Cloud onto test set.
- **USB Export**: Exports files to USB stick. Choose Export Group to retain the tree format (sub-directory) or Export Flat to create a single filename using sub-directories to build a name.
  In the Result Files example above when choosing to retain the tree format, the highlighted 022-tst001 results file can be found in the following directory after exporting:
  >fx150build64_rc > sc-apc-m b01.

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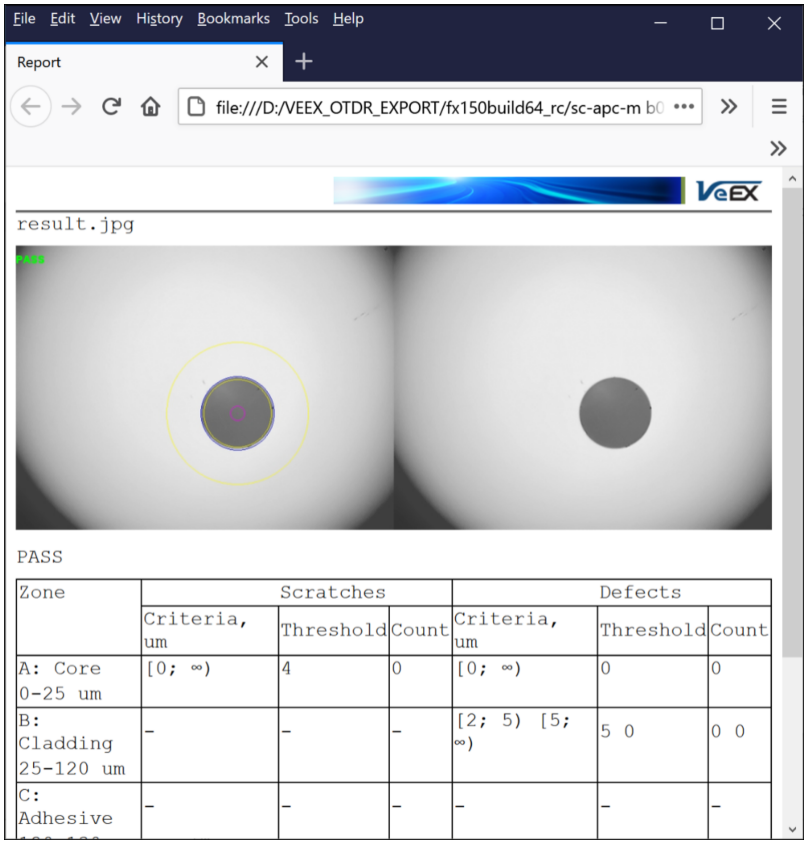

Zone	Scratches			Defects		
	Criteria, um	Threshold	Count	Criteria, um	Threshold	Count
A: Core 0-25 um	[0; ∞)	4	0	[0; ∞)	0	0
B: Cladding 25-120 um	-	-	-	[2; 5) [5; ∞)	5 0	0 0
C: Adhesive	-	-	-	-	-	-

Fiberscope test viewed in an HTML browser

Reports can also be viewed as pdf files.

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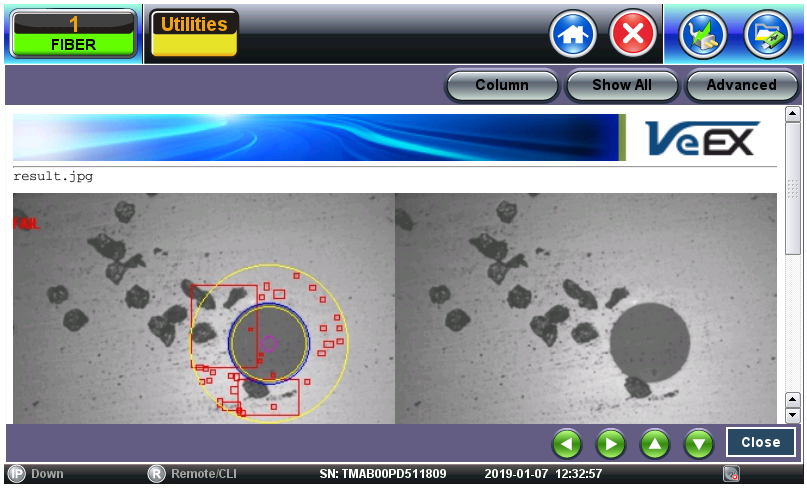
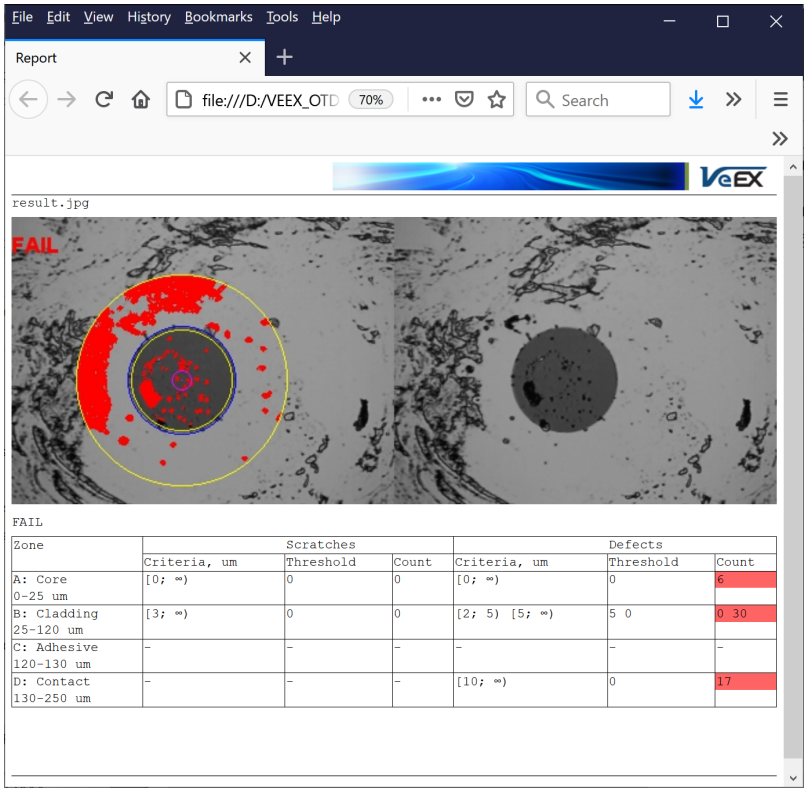
Test Analysis Report

To view the report files, tap **Utilities>Files>Save**. The Fiber Scope test report can be viewed in JPG format or exported to PDF. In addition, all fiber optic test results can be viewed using Fiberizer Cloud or the Fiberizer Desktop Plus PC software. For more information on viewing reports, see "File Manager" on page 64.



Analysis Report (.jpg format)

The test report can also be viewed in HTML format.



Zone	Scratches			Defects		
	Criteria, um	Threshold	Count	Criteria, um	Threshold	Count
A: Core 0-25 um	[0; ∞)	0	0	[0; ∞)	0	6
B: Cladding 25-120 um	[3; ∞)	0	0	[2; 5) [5; ∞)	5 0	0 30
C: Adhesive 120-130 um	-	-	-	-	-	-
D: Contact 130-250 um	-	-	-	[10; ∞)	0	17

Test Report viewed in an HTML browser

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Fiberizer Cloud

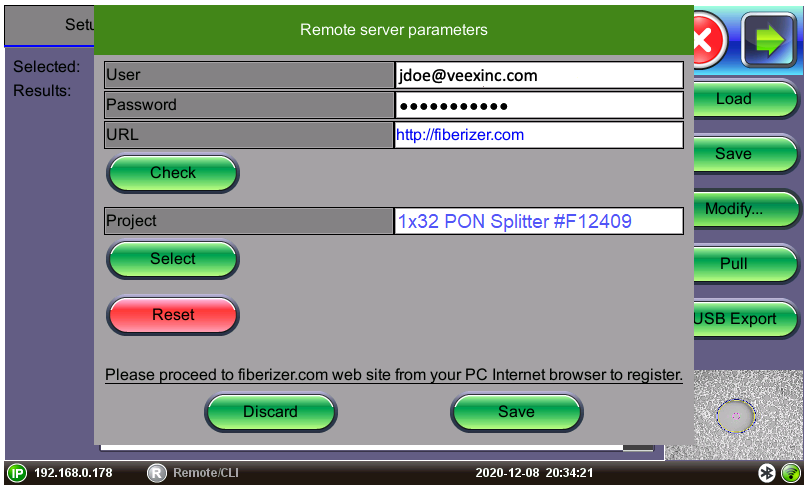
Fiber test results including Fiberscope images can also be uploaded to a registered Fiberizer Cloud account. Registration is free.

Connecting to Fiberizer Cloud

To connect the test set to Fiberizer Cloud, you must be a registered user. For new users, go to the fiberizer.com website from a PC Internet browser to register before proceeding with these directions.

Go to http://fiberizercloud.com to register.

1. After registering, tap on **Modify > Settings**.
2. Enter the username and password, then tap **Check**. If the message ***Connection has been successfully verified*** does not display, recheck the username and password.
3. Tap **Select** to choose a project folder to upload files to and tap **OK**.
4. **Save** or **Discard** the cloud login details.



Settings to connect to Fiberizer Cloud

Uploading/Downloading Files with Fiberizer Cloud

Before attempting to upload or download, ensure that the test set is successfully connected to Fiberizer Cloud. Tap **Push** next to a directory item to upload it into Fiberizer Cloud. Tap **Pull** to download the directory collection from Fiberizer Cloud.

The Project selection defines the project folder location on the Fiberizer Cloud account to which to save the results. The default setting uploads to the global root folder.

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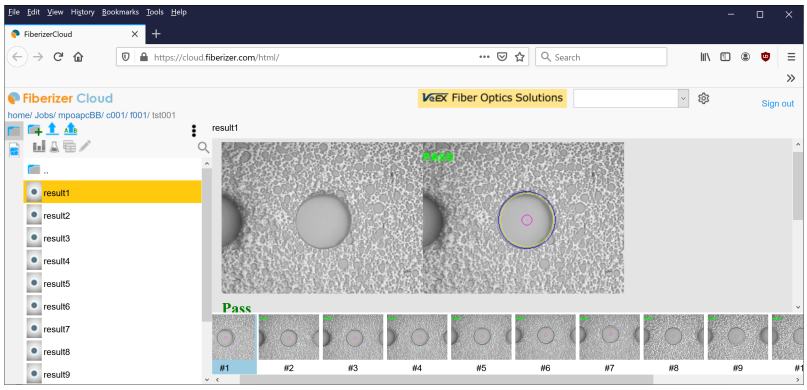
For a project folder to appear in the project list, it must be created in Fiberizer Cloud first. The test set cannot create Fiberizer Cloud project folders.

After pushing results to the Fiberizer Cloud project, check the Jobs folder to which the saved cable folder was uploaded. Use Fiberizer Cloud to create professional reports or serve as an online storage backup. The example below shows MPO results on Fiberizer Cloud.



MPO Fiber View on Fiberizer Cloud

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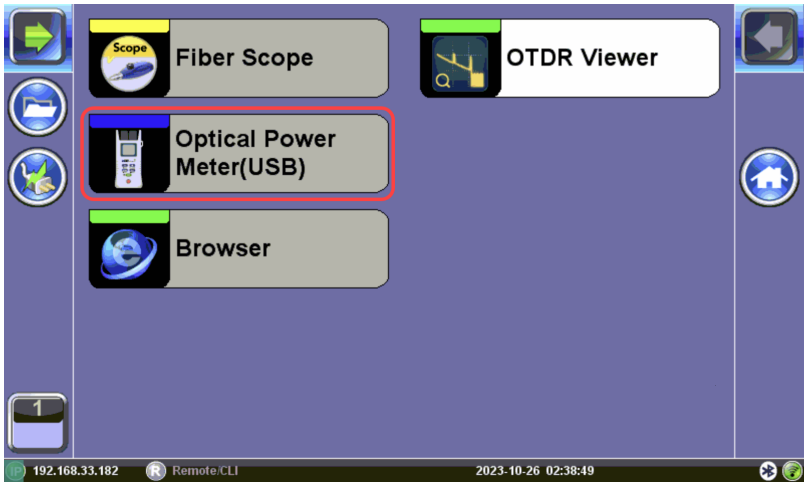
Optical Power Meter (OPM)

The VeEX Inc Optical Power meters are made with fast and accurate testing in mind. They are used to measure the power running through a cable at a given wavelength, and interface with phone, PC, or other VeEX devices to save and generate reports on the findings. This information is used to verify that the cable span is working correctly and to find the source of the problem when it's not. When paired with a VeEX Optical Light Source (OLS) or as part of a VeEX Optical Loss Test Set (OLTS), which includes both, WaveID can be used to quickly test several wavelengths without having to adjust the OPM settings.



Optical Power Meter

Only optical power meters (e.g. Built-in or FX4x/8x OPM series meters) approved by VeEX are supported. WaveID will work with OLS in CW mode only. Accessing the Optical Power Meter module shuts down GPS and the atomic service.

Do not connect the fiber before opening the OPM application. First, zero the meter with the dust cap closed before making any measurements.

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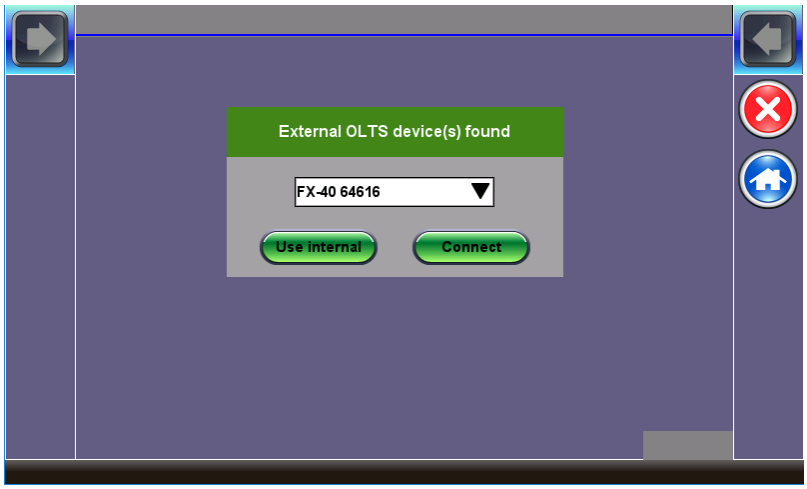
Connecting to the internal (built-in) OPM

1. Tap the **X** icon to close OTDR mode. The **Fiber main menu** appears.
2. Tap **Optical Power Meter** on the main menu. The **OPM** screen appears with the **Caution** warning.

Alternatively, access the OPM screen by selecting **Optical Power(USB)** from the Platform menu.

Connecting an External OLTS Device

1. Insert USB dongle into the test set's microUSB port and connect it to a VeEX Inc. supported Optical Light Test Set (OLTS) device before launching the application.
2. Power on the external meter. Then, tap **Optical Power Meter** on the menu. The **External OLTS device(s) found** screen appears.
3. Select the connected external meter and tap **Connect** to proceed to the external OPM menu or **Use Internal** to use the built-in OPM menu if it supported by the test set. The **OPM** screen appears with the **Caution** warning.



The Name of the External OLTS device is Displayed Once Detected

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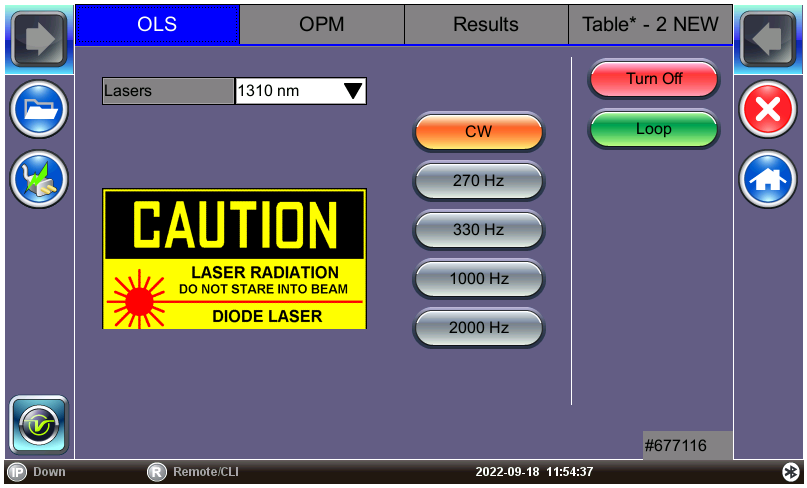
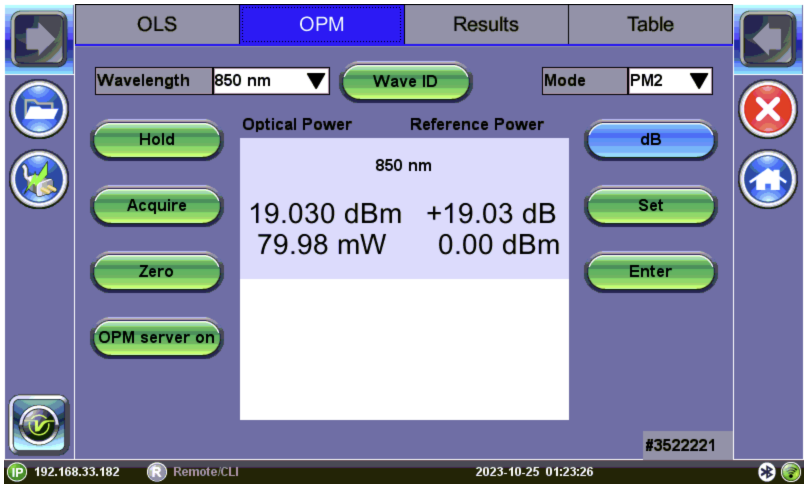


OLS Menu

Setup and Measurements



OPM Menu

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- **Wavelength**: Matches the calibrated wavelength to the signal being measured.
- **Wave ID**: Detects the incoming wavelength automatically from a supported VeEX Inc.OLS. Use when operating the OLS in continuous wave (CW) mode with or without Loop enabled.
- **dB/dBm:** Switches between dB and dBm measurement units. A Green dB button shows absolute power level in dBm. A Blue dB button measures relative power loss in dB. Use the Set (Reference) and Enter (edit Reference) to set Reference, edit Reference, and view measurements in three units: dBm, dB, and Watts.
  After toggling to the dB button to blue, the Set and Enter buttons appear.
- **Set**: Sets the reference value for the current wavelength.
- **Enter**: Edits current wavelength reference value.
- **Hold**: Freeze measurement to the last power or loss reading on the screen. “HOLD” appears next to “Optical Power” when tapped. Tap **Hold** again to unfreeze it.
- **Acquire**: Loads current measured value into the **Table** tab. The **Table** tab indicates how many new records have been temporarily saved into memory. In manual IL test mode, the **Acquire** button must be used to capture each individual reading (e.g. same fiber at different wavelengths) unless Loop is turned on.

  If your device is equipped with a built-in clock, the saved measurement result will have a time stamp.

  To permanently save the table of results, you must save into a test file.
- **Zero**: Recalibrates the OPM to treat current conditions as zero. Used when measurement conditions change significantly or to re-calibrate the OPM. Make sure the cover is shut on the OPM test port before tapping **Zero**. When in doubt, recalibrate prior to making any measurements, e.g, when testing in cold outdoor temperatures and then moving testing into a heated building.

  Put the cover over the OPM test port BEFORE recalibrating.

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- **OPM Server On:***Remote control feature not currently supported.* Broadcasts the IP address on the current network for users to connect to the test set module's built-in optical power meter through Ethernet/TCP/IP using **Fiberizer LTSync Windows Desktop** software for remote control and access.
- **Mode**: Designates the measurement specification built-in: PM1 (-70 to +10dBm), PM2 (-50 to +25dBm), or PM3 (-65 to +15dBm). For specific information on the PM1, PM2, and PM3 specifications, see the platform's datasheet at *www.veexinc.com*.

Calibrating to Laser Source

To perform loss (dB) testing, the meter must be referenced (calibrated) to the Laser Source output.

To measure reference cable loss using the built-in light source (Loopback Referencing):

1. If beginning testing, zero the meter by closing the dust cap and pressing the **Zero** button.
2. Connect the port with the desired wavelength OLS to the OPM port using a patch cord.
3. Turn on dB measurement by toggling the **dB** button to **blue**.
4. Select the **OLS** tab, select the laser wavelength, and turn **ON**. Press **Loop** to cycle through all supported wavelengths.
5. Select the **OPM** tab and select the measurement wavelength or press **Wave ID** to automatically detect the correct wavelength.
6. Tap **Set** to record the 0.00 dB point. A reference point is established and the calibrated LS can be connected to the far-end of the fiber to measure the loss. Tapping **Set** will overwrite previously saved reference value(s).

To measure reference cable loss using an external light source:

1. Connect the OLS to the OPM port using a patch cord.
2. Turn on dB measurement by toggling the **dB** button to **blue**.
3. Select the measurement wavelength. If using a supported VeEX light source in CW mode, pressing "Wave ID" automatically selects the correct wavelength.

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4. Tap **Set** to record the 0.00 dB point. A reference point is established and the calibrated LS can be connected to the far-end of the fiber to measure the loss. Tapping **Set** will overwrite previously saved reference value(s).

Measuring Power (dBm)

1. If beginning testing, zero the meter by closing the dust cap and pressing the **Zero** button.
2. Insert the fiber being tested into the OPM port.
3. Select the measurement wavelength. If using a supported VeEX light source in CW mode, pressing "Wave ID" automatically selects the correct wavelength.
4. Tap **Acquire** to record a result. Acquired results can be viewed from the **Table** tab and saved from the **Results** tab.

Measuring Loss (dB)

1. Set reference values for all testing wavelengths (refer to [Calibrating to Laser Source] for more details.
2. Remove the reference cable and connect fiber to the OPM port on the unit.
3. Tap **Acquire** to record a result. Acquired results can be viewed from the **Table** tab and saved from the **Results** tab.

Readings (Table tab)

OPM readings appear in the **Table** tab. Saving readings will permanently write data to the **Results tab**. More than one reading can be saved at a time. Use this function to organize/filter results in project batches, so that the correct set of results are grouped together appropriately. Pressing **Remove** will permanently remove the readings from the current list.

To view and save (enter) test results into the Results table:

1. Select the OPM tab. Verify the insertion loss (IL) values are acceptable, then tap **Acquire** to load values into the **Table** tab. The **Table** tab title shows how many fiber records have been temporarily saved in the format **Table*-*n* NEW**, where n is the number of new records.

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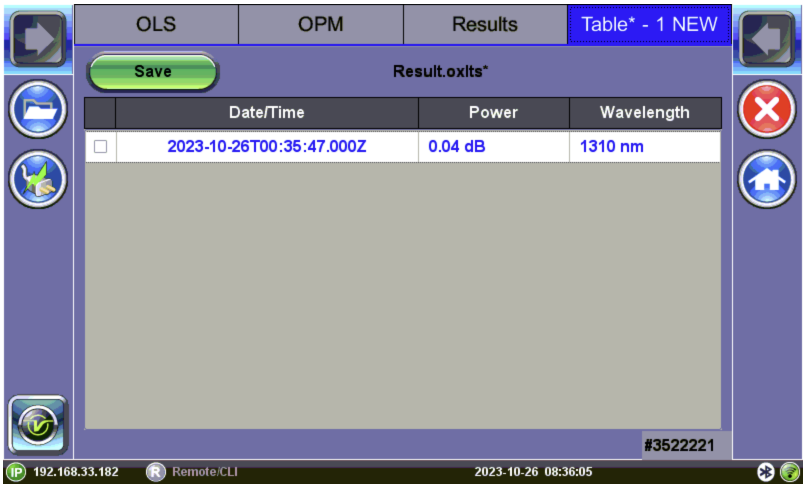
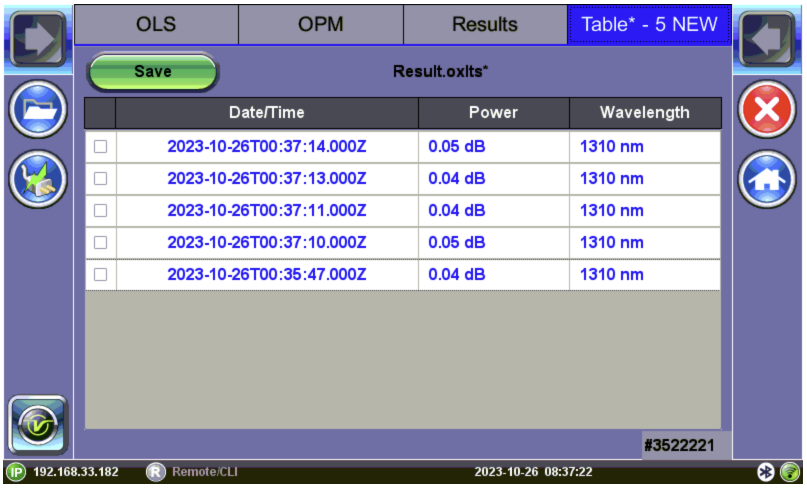
2. To view the active results table, select the **Table** tab.





3. To permanently save the fiber record locally, select the record(s) and press **Save**. The **Result saving** screen appears. The filename will default to the date/time stamp unless a specific file name is entered.

The JobID/CableID/FiberID/TraceID fields determine the location to which the trace is saved. If these settings are not set accurately, the trace will not save to the desired location.

4. Tap **OK**. The readings are saved to a file and the table resets.

To remove results before saving, select the checkbox next to the reading(s), then tap **Remove**.

After saving power or loss readings to a file, access the file in the **Results** tab.

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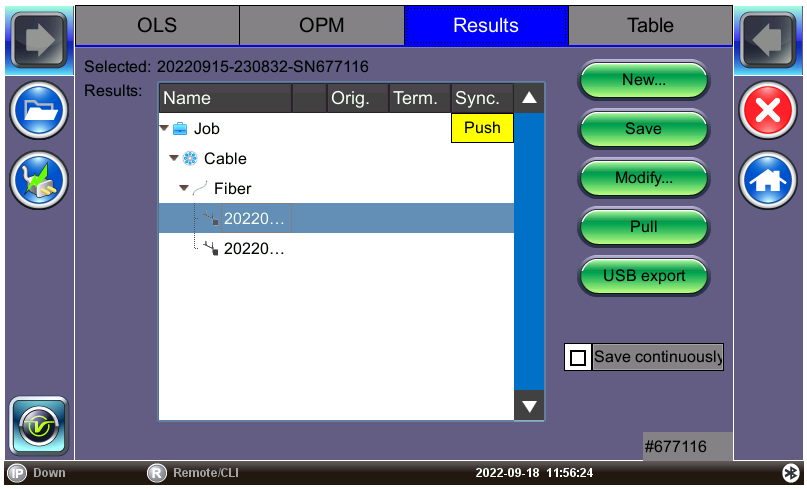
Results

Results can be saved to the test set, exported to USB, or uploaded to Fiberizer Cloud.



Results Management Menu

The results screen is used to view previously saved results. Test results can be pushed/pulled from Fiberizer Cloud. The directory displays the location of stored files. Connect to Fiberizer Cloud, then select the file(s) by tapping them. Refer to "Fiberizer Cloud" on page 95 for details on connecting to Fiberizer Cloud. Refer to "Results/Reports" on page 92 for more details on fiber test results.

Use the following options when using the **Results** screen:

- **Push/In Sync**: Uploads locally saved results to Fiberizer Cloud. *In Sync* indicates the results have been saved to Fiberizer Cloud successfully. To push the results to Fiberizer Cloud, ensure connection to the network via Ethernet or WiFi, and then tap **Modify>Settings** to sync with Fiberizer Cloud. Then, tap **Push** to sync saved files to the cloud.

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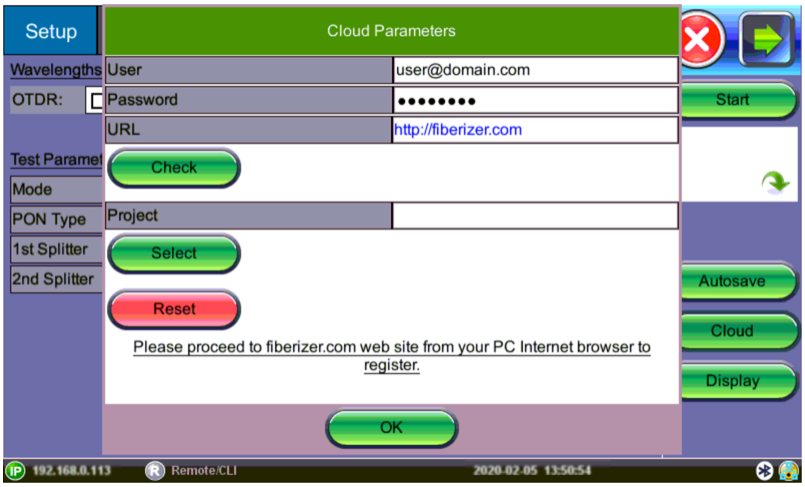

Fiberizer Cloud set up screen

- **New**: To create a new folder.
- **Save**: Saves results. Once saved, the files can be accessed in File Manager and R-Server (if available). Refer to "Working with Saved Results, Profiles, Images" on page 64 and R-Server for more information.
- **Modify**: Select a file or folder in the directory to modify. Options to Rename, Remove, and upload the selection to Fiberizer Cloud are available.
- **Pull**: When connected, pulls file from Fiberizer Cloud onto the test set.
- **USB Export**: Exports files to a USB stick. Choose Export Group to retain the tree format (sub-directory) or Export Flat to create a single filename using sub-directories to build a name.
- **Save continuously:** To autosave results at a specified interval (1 to 60 seconds). Use this option to check power drift.

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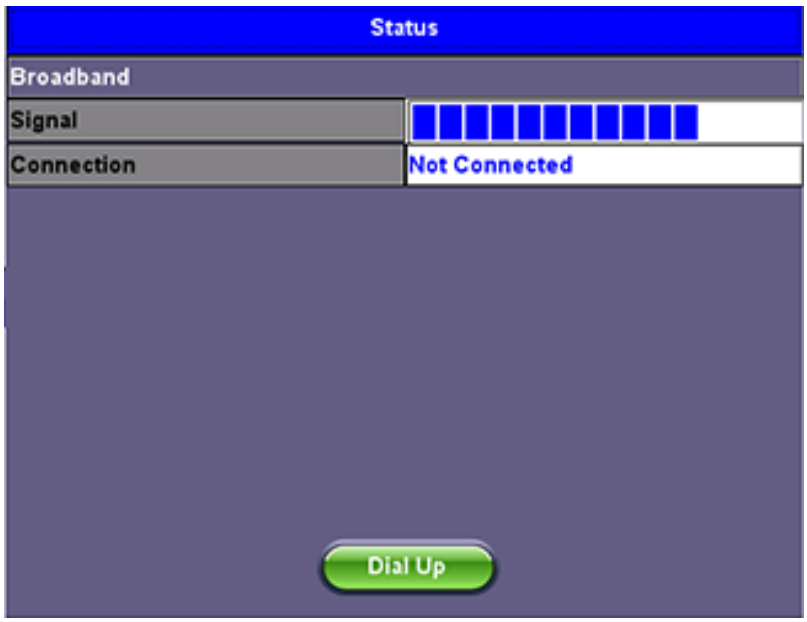
Data Card (3G/4G Cellular Modem)

To establish an IP connection using a data card, the data card must be connected to the USB port. Once connected, the **Data Card** icon will appear at the bottom of the screen.

Only datacards provided by VeEX are supported and have the driver necessary for connection.



Data Card - Status

Press **Dial Up**.In the **IP Tools Setup** menu, **Port** will be displayed as "Datacard Port".

The D for Data icon in the bar on the lower end of the screen will have a red cross to show that datacard is not connected .

Select the **configuration parameters**, then press **Connect**.

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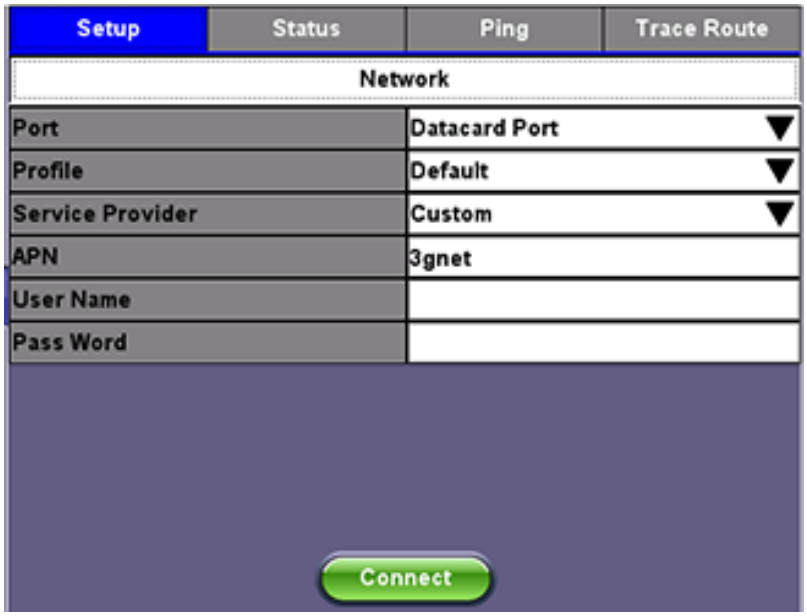

Data Card - Setup

When a connection is successfully established:

- The **D** for Data in the icon turns green .
- The connection details are displayed in the **IP Tools Status** tab.

If the test set is powered off/on and you are in a good reception area or if you enter a bad cell area and return to a good one, the test set will reconnect automatically.

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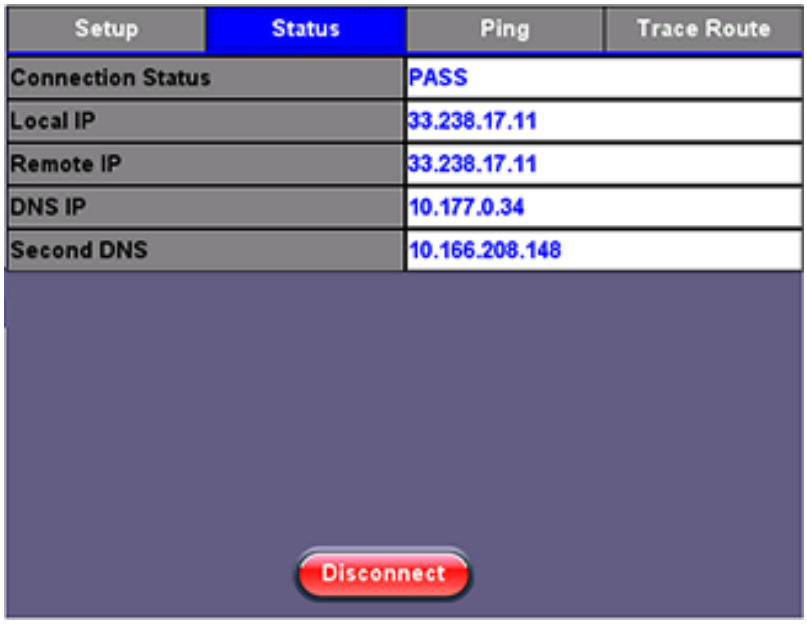

Data Card - Connection Established

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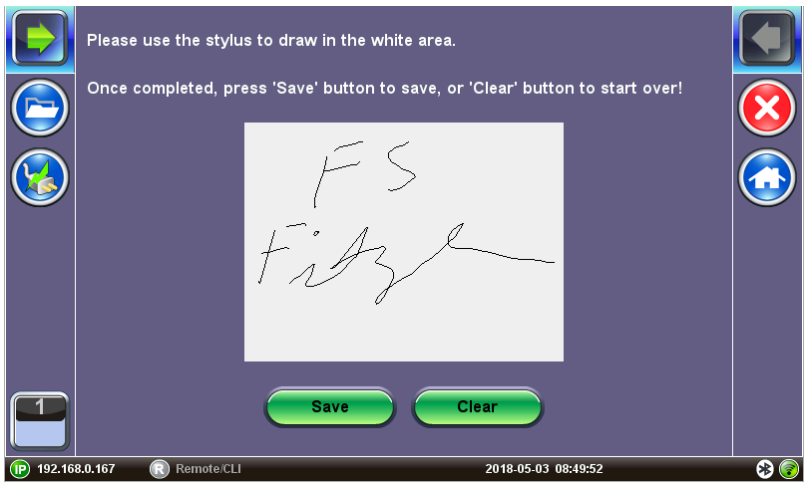
Signature Pad

This feature enables a portion of the screen to be used as a signature pad. To begin, please make sure that the **Advanced Saving** Global Storage Setting feature is on. To verify, see **Utilities** > **Settings** > **Global** > **Storage Setting**. If the Signature Pad is not enabled, a warning message will appear.



Signature Draw with a Stylus

Press **Clear** to erase all changes from the signature pad. Press **Save** to save the signature and the following Advanced Save Settings can be configured in the pop-up window (as shown below):

- Enter the desired Current Job ID, Current Account, Current Location, and Comments using the alphanumeric keypad
- **Locator**: None
- **Type**: None

Once the settings have been configured, press **OK**.

The Signature and Advanced save setting fields will be added to all subsequent stored test results.

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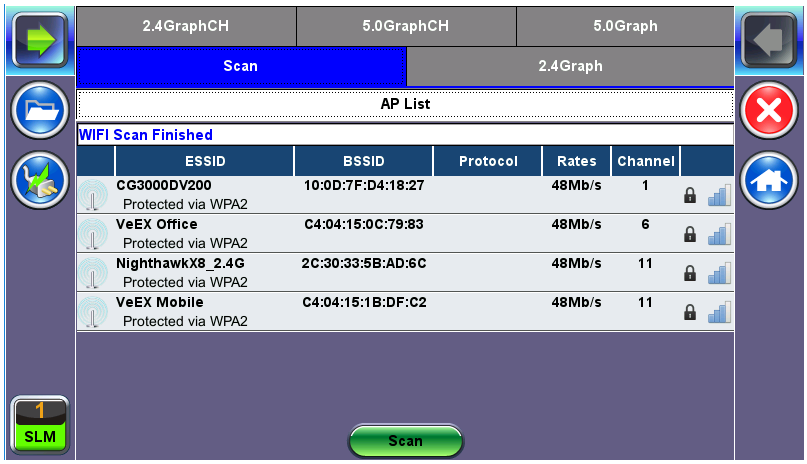
WiFi inSSIDer



WiFi inSSIDer Home

The WiFi InSSider supports only the 2.4 GHz frequency band or 2.4 GHz and 5 GHz frequency bands depending on the V150 product model (refer to product specifications for details). The home screen has tabs to display test results for both frequency bands and also for graphical presentation of results for both.

1. Tap the **Scan** button on the right side of the screen. After the scan is completed, the unit displays the list of access points (AP) detected in the 2.4 GHz and 5 GHz bands.
2. The following information is displayed for each AP:
   - SSID name of the AP
   - BSSID (MAC address) of the AP
   - 802.11 protocol version supported by the AP
   - Max data rate supported by the AP
   - AP's radio channel number
   - Lock symbol indicates if security is set on the AP (WEP, WPA, or WPA2).
     When the AP is unsecured, no lock symbol is displayed
   - Signal strength of the AP

   Access Points in the 5.0 GHZ spectrum can only be displayed if the VeEX USB Wifi adapter supports 802.11a/n or 802.11 a/n/ac. Refer to the USB Wifi adapter specifications.

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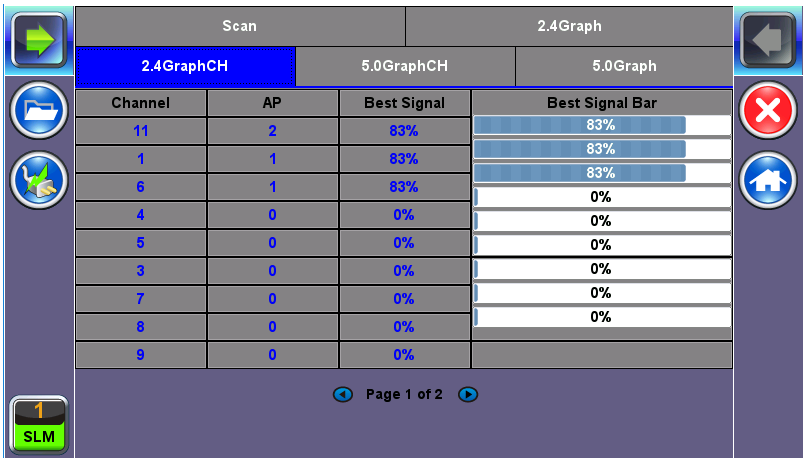
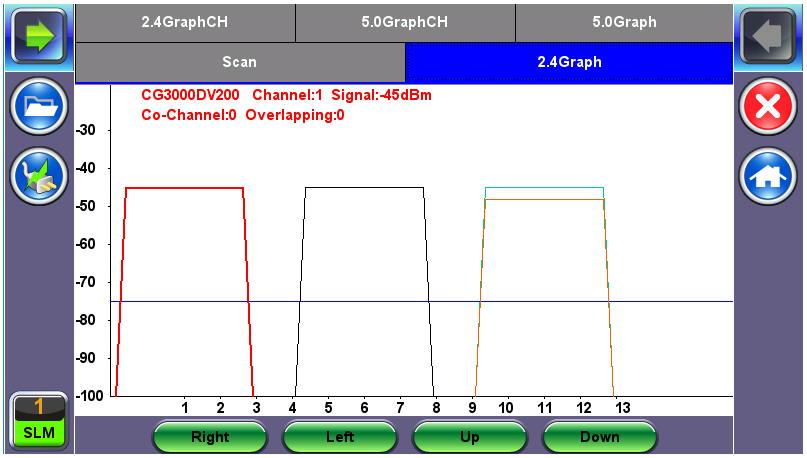
3. Use the 2.4GHz GraphCH and 5.0GraphCH tabs to view the number of Access Points detected for each channel in the 2.4GHz and 5GH bands and the strength of the strongest AP's signal for each channel.



2.4GHZ Channel

4. Tap the **Graph** tab of the respective Channel to view the results in a graphical presentation.



Graph

5. Use the Right/Left/Up/Down function keys or the arrow keys on the unit's keypad to navigate the graph and get additional information for the access points. Detailed information for each Access Point includes:

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- SSID: name of the AP
- AP's radio Channel number
- Signal strength (dBm)
- Number of co-channel: Number of APs using the same radio channel
- Number of Overlapping APs: Number of APs using channels whose frequency band overlaps with the AP

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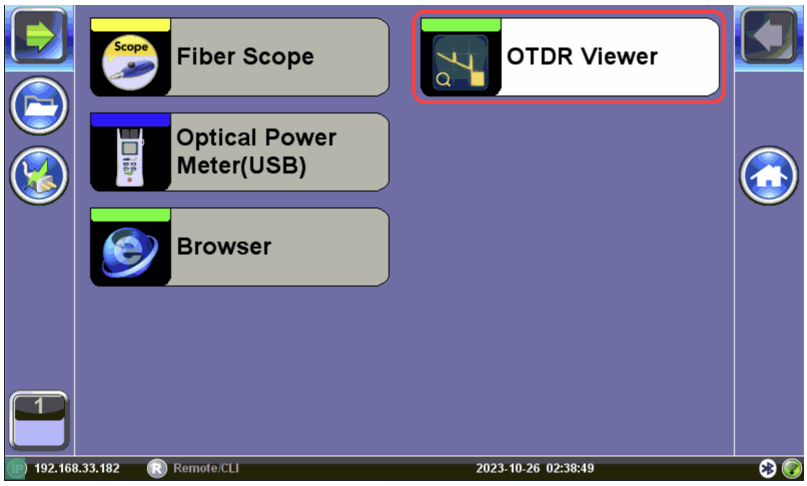
OTDR Viewer

This built-in application allows the test platform to view previously saved .sor trace results and edit events, as needed. IF an OPX-BOXe is connected to the platform via direct USB connection, WiFi or Bluetooth®., this built-in application can also be used to control all OTDR test functions.

To access the OTDR Viewer from the Platform Screen, select **Tools** > **OTDR Viewer**.



Once paired or connected to the micro OTDR, the test set displays a virtual OTDR user interface that is used to control the OPX-BOXe and perform measurements.

- Traces and Events table view
- Loss calculations
- V-Scout Link Mapper option
- Compatible with Fiberizer Cloud (upload and download)
- Controls external OPX-BOXe OTDR

Since fibers are commonly placed in access, metro, and transport networks, having a companion add-on OTDR to inspect drop fiber reduces dependence on specialized fiber construction crews troubleshooting fiber related problems.

Refer to the OPX-BOXe User Manual and OTDR Series User Manual for further details about OTDR operations.

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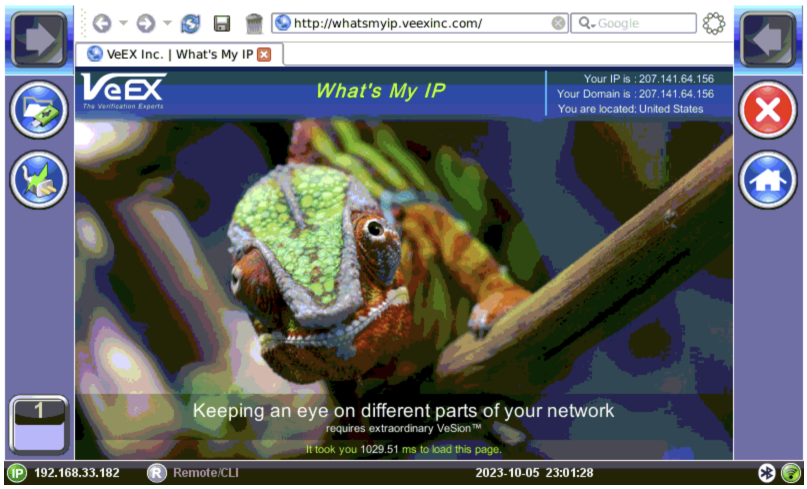
Web Browser

A web browser is available in the **Tools > Browser** menu and can be used to quickly verify Internet connectivity.

The built-in web browser uses the management port IP connection. An active IP connection can be established either through Ethernet or WiFi. The web browser defaults to VeEX's test website. Use the Web browser's navigation bar to enter the name of the website you wish to reach. Navigation capabilities may be limited.



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Help

The **Help** option opens up the user manual. Use the scroll bars, table of contents, and hyperlinks to navigate the content.

Help

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Software Update Process

1. To download the latest software version, go to www.veexinc.com and use any of the following options:

   a) Enter the full product name in the **Search** box, click on the **Software** section to expand it, and download the appropriate software installer package.

   b) Go to the >**Support** > **Software** section and enter the first four characters of the product's serial number, to obtain the software installer package specific to the product.

2. Unzip the downloaded file(s) and copy the file ending in **.tar.gz** or **.tar.xz** to the root directory of a FAT32 USB flash drive.

3. Connect the AC/DC adapter to the test set.

4. Turn off the test set and plug the USB into a USB-A to micro-B USB OTG adapter.

5. Connect the USB OTG adapter to the test set's micro-B USB port.

At this point, it is possible to perform a clean or standard software update. Be sure to back up all data prior to performing a clean software update as it will reformat the internal storage and erase all user settings and test results.

A clean software update will erase all user settings, test profiles and saved results. Use the "USB Memory Browser" on page 68 **in the >File Manager to back up all data prior to performing a clean software update.**

- **Clean software update**: Press and hold the **Save** and **Power** buttons simultaneously.
- **Standard software update**: Press and hold the **Home** and the **Power** buttons simultaneously.

In both instances, press and hold the buttons for at least 3 seconds, then release.

The unit will automatically locate and load the software file from the USB flash drive. Wait for the upgrade process to finish.

After the software upgrade is completed, go to the **Utilities** > **About** menu to confirm the software version.

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Software Version is displayed in the About section.

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Certifications and Declarations

Declaration of Conformity

What is CE?

The CE marking is a mandatory European marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European Directives. To permit the use of a CE mark on a product, proof that the item meets the relevant requirements must be documented.
Use of this logo implies that the unit conforms to requirements of European Union and European Free Trade Association (EFTA). EN61010-1

For a copy of the CE Declaration of Conformity relating to VeEX products, please contact VeEX customer service.

ROHS Statement

RoHS ComplianceVeEX QUALITY AND ENVIRONMENTAL POLICY

Our quality and environmental policy is to limit and progressively eliminate the use of hazardous substances and chemicals in the design and manufacture of our products.

VeEX products are classified as Monitoring and Control Instruments under Article 2, Section (1), Category 9 of the WEEE 2002/96/EC Directive.

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RoHS and WEEE Position Statement

The Council of the European Union and the European Parliament adopted Directive 2002/95/EC (January 27, 2003), to Reduce the use of certain Hazardous Substances (RoHS) in Electrical and Electronic Equipment, and Directive 2002/96/EC on Waste Electrical and Electronics Equipment (WEEE), with the purpose of reducing the environmental impact of waste electrical and electronic equipment. Both were later recast by Directives 2011/65/EU and 2012/19/EU respectively. All VeEX products being placed on the EU market conform with these directives.

Additional RoHS substance restrictions for the Monitoring and Control Instruments were adopted by EU Directive 2015/863 (March 31, 2015). These new restrictions will take effect from July 22, 2021. VeEX has established a program to ensure that from July 22, 2021, all its products to be sold and shipped into the EU market will conform with (EU) 2015/863.

VeEX Inc. is committed to comply with RoHS and WEEE Directives to minimize the environmental impact of our products.

For more information about RoHS as it relates to VeEX Inc, go to www.veexinc.-com/company/rohscompliance .

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About VeEX

VeEX Inc., a customer-oriented communications test and measurement company, develops innovative test and monitoring solutions for next generation telecommunication networks and services. With a blend of advanced technologies and vast technical expertise, VeEX products address all stages of network deployment, maintenance, field service turn-up, and integrate service verification features across copper, fiber optics, CATV/DOCSIS, mobile 4G/5G backhaul and fronthaul, next generation transport network, Fibre Channel, carrier & metro Ethernet technologies, WLAN and synchronization.

Visit us online at www.veexinc.com for the latest updates and additional documentation.

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