FIP-400B Series
Fiber Inspection Probe and ConnectorMax2
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Certification Information

North America Regulatory Statement

This unit was certified by an agency approved in both Canada and the United States of America. It has been evaluated according to applicable North American approved standards for product safety for use in Canada and the United States.

Electronic test and measurement equipment is exempt from FCC part 15, subpart B compliance in the United States of America and from ICES-003 compliance in Canada. However, EXFO Inc. makes reasonable efforts to ensure compliance to the applicable standards.

The limits set by these standards are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.
The wireless probe comes with an internal wireless module and antenna for which the following information applies:

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

- This device complies with the US/Canada portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this user documentation. The further RF exposure reduction can be achieved if the device can be kept as far as possible from the user’s body.

- This device does not contain any user-serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.
European Community Declaration of Conformity

Warning: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

Hereby, EXFO declares that the radio equipment type “Wide Band Data Transmission” is in compliance with Directive 2014/53/EU.

An electronic version of the complete declaration of conformity for your product is available on our website at www.exfo.com. Refer to the product’s page on the Web site for details.

The information about the Wi-Fi frequency bands is as follows:

Between the frequencies 2400.0 MHz - 2483.5 MHz.
The maximum output power is 15 dBm.

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

In Italy, the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying access to telecommunications and/or network services.

This device may not be used for setting up radio links in France, and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 - 2483.5 MHz. For detailed information, the end-user should contact the national spectrum authority in France.
Japanese Technical Conformity Mark for Radio Law

Technical parameters:

- Standards: IEEE 802.11b/g/n
- Operation Frequency: 2412 ~ 2483.5 MHz
- Throughput: 150 Mbps, 1T1R

![Japanese Technical Conformity Mark]
1 Introducing the FIP-400B Series Fiber Inspection Probe and ConnectorMax2

The FIP-400B Series Fiber Inspection Probe is a portable video microscope used to inspect fiber ends. Unlike traditional microscopes, the FIP-400B Series facilitates the examination of patchcord connectors and also hard-to-reach connectors on the back of patch panels and bulkhead adapters.

Probe

The FIP-400B Series is designed to be an intuitive, easy-to-use piece of equipment. This video microscope is used for inspecting fiber ends.

Capture control Magnification control
Status LED
Retaining nut
Interchangeable adapter tips
Focus

FIP-410B/420B/430B
Introducing the FIP-400B Series Fiber Inspection Probe and ConnectorMax2

Probe

The focus knob can be turned in either direction to focus the image.

The magnification control button allows you to shift between three levels of magnification. When pressed for one second, it activates the auto focus.

The capture control button allows you to capture an image, perform an analysis, or return to the Live Video mode.

The retaining nut holds tips securely in place, ensuring they are always fastened in the correct position.

The status LED gives you information about the probe or the analysis results.

The interchangeable adapter tips give you the possibility to use various tips depending on the type of connector you are inspecting.

Note: This applies to the FIP-425B and FIP-435B models only.
Introducing the FIP-400B Series Fiber Inspection Probe and ConnectorMax2

Available Models

- The micro USB adapter connector recharges the battery of the probe when it is low. You can recharge the battery with the provided USB cable and the adapter/charger that you connect to a power outlet. You can also use the provided USB cable alone that you connect to a USB port of a computer.

When the probe is connected to a power outlet or to a USB port, it still works via Wi-Fi.

- The battery compartment door is for battery replacement.

The probe comes equipped with a protective cap that fits over basic tips; therefore, you do not need to remove the tip before putting the cap on.

Available Models

The features available for your probe are automatically detected when you connect it to your unit. The table below shows which feature is available for each model.

<table>
<thead>
<tr>
<th>Models</th>
<th>Inspection</th>
<th>Auto analysis</th>
<th>Auto centering</th>
<th>Auto focus</th>
<th>Auto capture</th>
<th>Wireless</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIP-410B</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FIP-420B</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>FIP-425B</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>FIP-430B</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>FIP-435B</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Note: The auto capture is not available in multifiber mode.

Note: When the internal temperature of the FIP-430B and FIP-435B is too low, the probe performs a warm-up that can last up to a minute.
**Probe Tips**

The FIP-400B Series comes with two interchangeable tips included in two different packages (UPC or APC). Additional models are also available.

- **UPC package:**
  - FIPT-400-FC-SC: FC-SC Bulkhead tip
  - FIPT-400-U25M: Universal patchcord tip (2.5 mm ferrule)

- **APC package:**
  - FIPT-400-SC-APC: SC APC tip for bulkhead adapter
  - FIPT-400-U25MA: Universal patchcord tip for 2.5 mm ferrules

Other tip models are available for various bulkhead adapters and patchcord connectors. For more information about tips and their use, see the *Fiber Inspection Probe Tip Compatibility Chart* on page 107, or visit the EXFO Web site.
LED Indicators

The LEDs located on the probe give you information about the probe or the analysis results.

**FIP-410B/FIP-420B/FIP-430B**

<table>
<thead>
<tr>
<th>LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>➤ Detection of the probe in progress &lt;br&gt;➤ Analysis in progress &lt;br&gt;➤ Waiting mode. The auto focus process starts automatically when you insert an optical fiber connector (FIP-430B only) &lt;br&gt;➤ Auto focus in progress (FIP-430B only) &lt;br&gt;➤ Probe is initializing</td>
</tr>
<tr>
<td>Flashing red</td>
<td>There is a major problem preventing the probe from functioning properly</td>
</tr>
<tr>
<td>Blue</td>
<td>➤ Probe detected and ready &lt;br&gt;➤ On a computer, the USB port is in suspend mode</td>
</tr>
<tr>
<td>Red</td>
<td>In Capture mode, current FIP result status is Fail (FIP-420B and FIP-430B)</td>
</tr>
<tr>
<td>Green</td>
<td>In Capture mode, current FIP result status is Pass (FIP-420B and FIP-430B)</td>
</tr>
</tbody>
</table>
Introducing the FIP-400B Series Fiber Inspection Probe and ConnectorMax2

LED Indicators

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>Processing in progress</td>
</tr>
<tr>
<td>Flashing red</td>
<td>► There is a problem with the probe.</td>
</tr>
<tr>
<td></td>
<td>Follow the instructions on screen.</td>
</tr>
<tr>
<td></td>
<td>► The auto focus is in timeout</td>
</tr>
<tr>
<td></td>
<td>► There is an analysis error</td>
</tr>
<tr>
<td>Blue</td>
<td>The probe is ready and operational</td>
</tr>
<tr>
<td>Red</td>
<td>In Capture mode, current FIP result status is Fail.</td>
</tr>
<tr>
<td>Green</td>
<td>In Capture mode, current FIP result status is Pass.</td>
</tr>
</tbody>
</table>
### LED Indicators

<table>
<thead>
<tr>
<th>Battery LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>USB connected, battery charging</td>
</tr>
<tr>
<td>Blue</td>
<td>USB connected, battery fully charged</td>
</tr>
<tr>
<td>Red</td>
<td>Battery error (only visible when connected to a USB cable)</td>
</tr>
<tr>
<td>Flashing yellow</td>
<td>USB connected, battery not charging because the battery temperature does not allow the battery to charge</td>
</tr>
<tr>
<td>Yellow</td>
<td>USB not connected, critical battery level</td>
</tr>
<tr>
<td>Not lit</td>
<td>USB not connected, battery above low level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wi-Fi LED</th>
<th>Status</th>
</tr>
</thead>
</table>
| Blue              | ➤ Ready to transmit
    ➤ Wireless transmission in progress |
| Red               | Transmission error                                                     |
| Not lit           | ➤ Probe is off
    OR
    ➤ Probe is initializing     |
ConnectorMax2 Software

ConnectorMax2 is the application used to view the fiber inspections. You can also use specific test configurations and analyze the fibers automatically upon capturing a picture. This application is available on the MAX-FIP Viewer.

All platforms except FTB-200v2

- Focus indicator
- Features
- Test configuration
- Power meter controls and results/VFL
- Viewing area
- Image, Results, and Power Meter tabs
- Global status (Power meter and current connector (SF) or all fibers (MF))
- Capture/Live mode button
- Button bar
- Probe connection status and connection mode (USB or Wi-Fi)
Technical Specifications

To obtain this product’s technical specifications, visit the EXFO Web site at www.exfo.com.
### Conventions

Before using the product described in this guide, you should understand the following conventions:

**WARNING**

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Do not proceed unless you understand and meet the required conditions.

**CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. Do not proceed unless you understand and meet the required conditions.

**CAUTION**

Indicates a potentially hazardous situation which, if not avoided, may result in component damage. Do not proceed unless you understand and meet the required conditions.

**IMPORTANT**

Refers to information about this product you should not overlook.

**Note:** The appearance of the application may vary for other operating systems and units.

**Note:** In this documentation, the words “tap” and “double-tap” (related to the use of a touchscreen) replace the words “click” and “double-click”.
### Safety Information

<table>
<thead>
<tr>
<th><strong>WARNING</strong></th>
<th>Do not install or terminate fibers while a light source is active. Never look directly into a live fiber and ensure that your eyes are protected at all times.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WARNING</strong></td>
<td>The use of controls, adjustments and procedures, namely for operation and maintenance, other than those specified herein may result in hazardous radiation exposure or impair the protection provided by this unit.</td>
</tr>
<tr>
<td><strong>IMPORTANT</strong></td>
<td>When you see the following symbol on your unit, make sure that you refer to the instructions provided in your user documentation. Ensure that you understand and meet the required conditions before using your product.</td>
</tr>
<tr>
<td><strong>IMPORTANT</strong></td>
<td>Other safety instructions relevant for your product are located throughout this documentation, depending on the action to perform. Make sure to read them carefully when they apply to your situation.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>Do not use the fiber probe outdoors in wet locations.</td>
</tr>
</tbody>
</table>
**Other Safety Symbols on Your Unit**

One or more of the following symbols may also appear on your unit.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Direct current symbol" /></td>
<td>Direct current</td>
</tr>
<tr>
<td><img src="image" alt="Alternating current symbol" /></td>
<td>Alternating current</td>
</tr>
<tr>
<td><img src="image" alt="Earth terminal symbol" /></td>
<td>The unit is equipped with an earth (ground) terminal.</td>
</tr>
<tr>
<td><img src="image" alt="Protective conductor terminal symbol" /></td>
<td>The unit is equipped with a protective conductor terminal.</td>
</tr>
<tr>
<td><img src="image" alt="Frame or chassis terminal symbol" /></td>
<td>The unit is equipped with a frame or chassis terminal.</td>
</tr>
<tr>
<td><img src="image" alt="Power symbol" /></td>
<td>On (Power)</td>
</tr>
<tr>
<td><img src="image" alt="Power symbol" /></td>
<td>Off (Power)</td>
</tr>
<tr>
<td><img src="image" alt="Power symbol" /></td>
<td>On/Off (Power)</td>
</tr>
<tr>
<td><img src="image" alt="Fuse symbol" /></td>
<td>Fuse</td>
</tr>
</tbody>
</table>
Electrical Safety Information

If you need to ensure that the unit is completely turned off, disconnect the power cable and remove the battery.

**WARNING**

> Use the external electrical power supply indoors only.
> Position the unit so that the air can circulate freely around it.
> Operation of any electrical instrument around flammable gases or fumes constitutes a major safety hazard.
> To avoid electrical shock, do not operate the unit if any part of the outer surface (covers, panels, etc.) is damaged.
> Only authorized personnel should carry out adjustments, maintenance or repair of opened units under voltage. A person qualified in first aid must also be present. Do not replace any components while the power cable and battery are connected.
> Capacitors inside the unit may be charged even if the unit has been disconnected from its electrical supply.
> Use only the listed and certified AC adapter/charger provided by EXFO with your unit. It provides reinforced insulation between primary and secondary, and is suitably rated for the country where the unit is sold.
## Equipment Ratings for FIP-410B/FIP-420B/FIP-430B

<table>
<thead>
<tr>
<th>Equipment Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
</tr>
<tr>
<td>➤ Operation</td>
</tr>
<tr>
<td>➤ Storage</td>
</tr>
<tr>
<td><strong>Relative humidity</strong></td>
</tr>
<tr>
<td><strong>Maximum operation altitude</strong></td>
</tr>
<tr>
<td><strong>Pollution degree</strong></td>
</tr>
<tr>
<td><strong>Overvoltage category</strong></td>
</tr>
</tbody>
</table>

a. Equipment should be normally protected against exposure to direct sunlight, precipitations and full wind pressure.
## Electrical Safety Information

### Equipment Ratings for FIP-425B/FIP-435B

<table>
<thead>
<tr>
<th>Equipment Ratings</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td>➤ Unit powered by batteries: -10 °C to 40 °C (14 °F to 104 °F)</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>➤ Unit connected to USB adapter: 0 °C to 40 °C (32 °F to 104 °F)</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>➤ Unit without batteries: -40 °C to 70 °C (-40 °F to 158 °F)</td>
</tr>
<tr>
<td></td>
<td>➤ Unit with batteries: -20 °C to 60 °C (-4 °F to 140 °F)</td>
</tr>
<tr>
<td><strong>Relative humidity</strong>a</td>
<td>➤ unit: ≤ 95 % non-condensing</td>
</tr>
<tr>
<td></td>
<td>➤ USB adapter: 5 % to 95 % for storage and 8 % to 90 % for operating temperature</td>
</tr>
<tr>
<td><strong>Maximum operation altitude</strong></td>
<td>➤ 2000 m (6562 ft) (unit connected to USB adapter)</td>
</tr>
<tr>
<td></td>
<td>➤ 3000 m (9843 ft) (unit operated from batteries)</td>
</tr>
<tr>
<td><strong>Pollution degree</strong></td>
<td>➤ 2 (unit connected to external power supply)</td>
</tr>
<tr>
<td></td>
<td>➤ 3 (unit operated from batteries)b</td>
</tr>
<tr>
<td><strong>Overvoltage category</strong></td>
<td>➤ unit: I</td>
</tr>
<tr>
<td></td>
<td>➤ AC adapter: II</td>
</tr>
<tr>
<td><strong>Measurement category</strong></td>
<td>Not rated for measurement categories II, III, or IV</td>
</tr>
<tr>
<td><strong>Input power</strong>c</td>
<td>➤ unit: ≈ 5 VDC; 1.8 A</td>
</tr>
<tr>
<td></td>
<td>➤ USB adapter: ~ 100 - 240 Vac; 50 Hz to 60 Hz; 0.4 A Max</td>
</tr>
</tbody>
</table>

- a. Measured in 0 °C to 31 °C (32 °F to 87.8 °F) range, decreasing linearly to 50 % at 40 °C (104 °F).
- b. Equipment must be normally protected against exposure to direct sunlight, precipitation and full wind pressure.
- c. Not exceeding ± 10 % of the nominal voltage.
3 Setting up Your Fiber Inspection Probe and ConnectorMax2

You can change various settings in ConnectorMax2, such as the default storage location or the automated file name. These settings are stored for each user and kept for future work sessions.

Connecting or Disconnecting the Wireless Probe

**IMPORTANT**

- Working with a wireless probe is not possible on FTB-200v2 and IQS platforms.
- On supported platforms, the Wi-Fi option must be installed and the wireless communication must be enabled if you want to work with a wireless probe. For more information, refer to the corresponding user guide.

The probes are identified by their serial numbers and type.

It is also possible to disconnect the probe if you want to perform the following:

- Work with another probe
- Work with another platform

**Note:** Once a connection has been established with a wireless probe, the latter remains connected as long as you do not disconnect it. However, when the application is in standby mode, the connection is lost. The application will try to reconnect automatically when the image reappears on screen.
To connect the wireless probe:
1. Turn on the probe by pressing the ON button.
2. Ensure the Wi-Fi is activated on your platform.
3. Start the ConnectorMax2 application.
4. Select the wireless probe you want to work with and tap Connect.

**Note:** The probes are identified by their serial numbers and types.
To disconnect the wireless probe:

1. From the main window, tap \[
\text{\[icon\]} \]

2. Select Disconnect.
Changing the Fiber Inspection Probe Tip

You can use various tips depending on the type of connector you are inspecting. For more information about tips you can use, see the *Fiber Inspection Probe Tip Compatibility Chart* on page 107, or contact your vendor for additional information.

**To change a tip:**

1. Untighten the tip’s retaining nut.
2. Remove the tip.
3. Insert a new tip.
4. Adjust the tip to the notch.
5. Retighten the retaining nut.
**Adjusting Brightness**

Once the probe is connected to a fiber, you can adjust brightness in order to better view the fiber under inspection.

The default brightness value is 50%. This corresponds to the automatic brightness mode. The brightness automatically returns to 50%:

- when you exit the application and the probe is still connected
- when the application is open and you plug and unplug the probe
- when the platform is in suspend or resume mode
- when you lock or unlock a session (except on a MAX-700B)
- when you log in or log out of a session (except on a MAX-700B)

**To adjust brightness:**

1. In Live video mode, tap the button to switch to video settings mode.

![Brightness button](image)

Fiber Inspection Probe
Setting up Your Fiber Inspection Probe and ConnectorMax2

Adjusting Brightness

2. Use the brightness slider to set the levels to suit your needs.

**Note:** The application returns to the FIP controls default mode after 10 seconds of inactivity.

**Note:** To optimize the analysis of the connector, EXFO recommends to set the brightness to Auto most of the time.

When the brightness level is different than 50 %, the Automatic button appears. Tapping on the Automatic button resets the brightness value to 50 %. The Automatic button disappears when the brightness level equals 50 %.
Setting up Autonaming

The autonaming feature is useful to make a relevant naming scheme for your tests. This also ensures that you do not overwrite files by mistake. You can select which item goes in the file name (appears at the bottom of the window), as well as the type of separator you want to use in between.

A preview is available to show you the final output of the file name.

The file name is made of one or more static parts (alphanumeric) and one or more variable parts (numeric) that will be incremented or decremented, according to your selection, as follows:

<table>
<thead>
<tr>
<th>If you choose incrementation...</th>
<th>If you choose decrementation...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable part increases until it reaches the highest possible value with the selected number of digits, then restarts at 1.</td>
<td>Variable part decreases until it reaches 1, then restarts at the highest possible value with the selected number of digits.</td>
</tr>
</tbody>
</table>

Note: To decrement values, the start number must be higher than the stop number.

The file name can be incremented using one or more identifiers. Selecting a single identifier will follow the incrementation (or decrementation) value you have set.
For single fibers (SF or Transceivers), when selecting more than one identifier, the latter appear sequentially in the order that you have set, and the incrementation will start with the last item in the list (the one with the farthest indentation). For example, if you have a file name with the Location, Cable and Fiber identifiers, in that order, the first item to be incremented is the Fiber identifier, then Cable, then Location:

Location 1, Cable 1, Fiber 1
Location 1, Cable 1, Fiber 2
Location 1, Cable 2, Fiber 1
Location 1, Cable 2, Fiber 2
and so forth.

For multifibers, when several identifiers for the filename are selected, they appear sequentially in the order you have set. However, only one increment can be used to create a multifiber set of captures. If several increments are selected, only the most indented identifier will be used as the increment. If no auto increment is defined, the identifier Frame is used (whether or not it is selected for the file name).

After a result is saved, you have to return to the Live video mode so that the application prepares the next file name by incrementing (or decrementing) the suffix.

**Note:** If you choose not to save a particular file, the suggested file name remains available for the next capture. This applies to all type of connectors.
This function is particularly useful when testing multiple-fiber cables.

If you deactivate the automatic file naming function, the application displays a *Save As* window and no default file name is suggested.

The autonaming parameters can be set only for files that have not been saved yet. You will only see the parameters for the current and next capture (when the test is done but not saved yet), or for the next capture only (test is not done yet). Otherwise, the parameters will not be displayed.

It is also possible to revert the settings to their default values.

**To configure the automatic file naming:**

1. From the Main Menu, tap **Identification**.
2. From the **Apply to** list, ensure that **Next capture** or **Current and Next capture** is selected.

![Identification window](image)

3. Enter all the information as follows:

   **3a.** Locate the row corresponding to the identifier that you want to modify.

   If an identifier is marked with an icon, a predefined list with choices is available. If you select None, it disables the field from the list (Next capture and Current and Next capture).

   **Note:** When in **Current capture**, the identifiers set to **None** disappear from the list.

   **Note:** The identifiers marked with an icon are fields that can be customized and edited. The name of the identifier and its value can be modified.

   **3b.** Tap the **Value** column corresponding to the desired identifier.

   **3c.** Enter the information.

   **Note:** You cannot edit the information in the dark gray boxes.
4. If you want to increment automatically the cable ID, the fiber ID, the location (A and/or B), the Connector ID, or the Frame, proceed as follows:

4a. Tap the **Increment** button.

4b. In the **Increment** window, select the **Auto Increment** check box corresponding to the identifier you want to increment.
4c. Enter the start, stop and increment values as desired.

**Note:** The identifiers are processed in order, from the one with the largest indentation to the one with the smallest. For a given identifier, when the increment value reaches the stop value, the incrementation automatically switches to the next identifier. The order of the identifiers in the increment window (and thereby the order of increment) follows the order of the identification window.

**Note:** An identifier set to None will not appear in the increment window.

**Note:** To decrement values, the start number must be higher than the stop number.

4d. Tap **OK** to return to the **Identification** window.
5. Select the desired identifiers to include in the file name. You can change the order of appearance of the highlighted component with the up and down arrow buttons.

6. Tap OK to confirm your new settings and to return to the main window. The new settings will apply the next time you perform a capture.
Setting up Your Fiber Inspection Probe and ConnectorMax2

Setting up Autonaming

To clear the values:

1. From the Main Menu, tap Identification.
2. In the Apply to list, select Next capture.
3. Tap the Clear Values button.
4. Tap OK to return to the main window.

All values in the Value column are erased from the white boxes.
Managing and Selecting Test Configurations

You can create and select specific test configurations according to the type of fiber you are analyzing, the connector type you are using or the type of anomaly you are looking for.

**Note:** If you have the FIP-420B or FIP-430B probe, some test configurations as per IEC 61300-3-35 and IPC 8497-1 standards, and other configurations with an enlarged adhesive C zone are available by default.

Creating custom test configurations is done through duplicating an existing configuration, and then modifying the desired criteria.

If you create configurations on one unit or computer, and want to transfer them to another unit or computer, you can do so.

**To select a test configuration:**
1. From the **Main Menu**, select **Test Config**.
2. Select FIP.

3. If necessary, in the **Apply to** list, select **Next capture**.

4. Choose the type of connector you want to use and tap the > button at the end of the row.
5. In the list of available test configurations, select the configuration you want to use and tap OK.

*To create a test configuration:*

1. From the Main Menu, select Test Config.
Setting up Your Fiber Inspection Probe and ConnectorMax2
Managing and Selecting Test Configurations

2. Select FIP.

3. If necessary, in the **Apply to** list, select **Next capture**.

4. Choose the type of connector you want to use and tap the **>** button at the end of the row.
5. Select the row corresponding to the configuration that is the closest to the one you want to create, then tap **Duplicate**.

6. If you want to modify the general information, proceed as follows:

   6a. In the **Configuration Details** window, tap the > button at the end of the **Properties** row.

   6b. Modify the parameters as needed.

   ➤ **Configuration name**: the application suggests a name for the configuration. You can change it as needed (maximum 256 characters), but if you select a name that already exists, a suffix will automatically be added so as not to overwrite files.

   ➤ **Connector type**: Select which type of connector you are using for your inspection.

   ➤ **Fiber type**: Select whether you are inspecting singlemode or multimode fibers.

   ➤ **Polishing type**: Select the type of polishing for the fibers between APC, PC or UPC.
Setting up Your Fiber Inspection Probe and ConnectorMax2

Managing and Selecting Test Configurations

- **Analysis mode**: Select the type of analysis between Outside plant (selected by default) and Manufacturing. The manufacturing mode is more sensitive for scratches and defects detection.

- **Cladding diameter**: This value is set at 125 μm by default.

- **Zone diameters**: You can change the zone dimension for single fiber connectors and Transceiver fiber receptacles.

**Note**: Zone C (adhesive) cannot be removed and the superior diameter of zone D cannot exceed 280 μm.

![Test Configuration](image)

**Note**: When a multifiber connector is selected, zone D is not available.

**Note**: When you duplicate and edit a test configuration, you cannot change the connector type field.

6c. Tap **OK** to confirm your choice and close the window.

OR

Use the **Config. Details** arrow to go back to the **Configuration Details** window and configure other parameters.
7. If you want to modify the information about the inspection zones, proceed as follows:

7a. Tap the button corresponding to the desired inspection zones.

7b. Modify the parameters as needed to indicate whether you want to be notified of scratches, defects or both for each zone in the fiber, then set thresholds for each item you select.

You can set up to 3 criteria per zone, and per anomaly type (scratches or defects). The thresholds are divided into three categories:

➤ Any: this enables the next criterion, which requires a specific value.

➤ 1 to 10: the next criterion is automatically filled out to show the infinity symbol (∞) and 0 as a threshold.

➤ 0: the criterion definition is complete.

Note: Zone C, as well as zone dimensions cannot be modified, as they are set as per IEC and IPC recommendations.
7c. Tap OK to confirm your choice and close the window.

OR

Use the Config. Details arrow to go back to the Configuration Details window and configure other parameters.

8. If necessary, use the Config. Details arrow to go back to the Configuration Details window and tap OK to close the window.

OR

Use the FIP Config. arrow to go back to the FIP configuration list.
To edit a test configuration:

1. From the Main Menu, select Test Config.

2. Select FIP.
3. If necessary, in the **Apply to** list, select **Next capture**.

4. Choose the type of connector you want to use and tap the ➤ button at the end of the row.

![Diagram of configuration selection]

5. Select the configuration you want to edit and tap the ➤ button at the end of the row.

**Note:** You cannot edit standard test configurations.

6. Change the criteria as required. For details, see the section on creating a test configuration.
To delete a test configuration:

1. From the Main Menu, select Test Config.

2. Select FIP.
3. If necessary, in the Apply to list, select Next capture.

4. Choose the type of connector you want to use and tap the button at the end of the row.

IMPORTANT
The application will not prompt you for confirmation before deleting a configuration.
5. Select the row corresponding to the configuration you want to remove, then tap Delete.

**Note:** You cannot delete standard test configurations.
To import test configurations:

1. From the Main Menu, select Test Config.

2. Select FIP.
3. Choose the type of connector you want to use and tap the button at the end of the row.

4. From the FIP Configuration window, tap Import.
5. From the **Open** dialog box, select the file you want to import.

6. Tap **OK** to close the window.
To export test configurations:

1. From the Main Menu, select Test Config.

2. Select FIP.
3. Choose the type of connector you want to use and tap the button at the end of the row.

4. From the FIP Configuration window, select the row corresponding to the test configuration you want to export.

**Note:** You cannot export standard test configurations.

5. Tap Export.
6. From the **Save As** dialog box, select the folder where you want to export your file.

7. If desired, modify the file name.

8. Tap **OK** to close the window.
Editing the Power Meter Test Configurations

You can activate and set pass/fail threshold parameters for your power meter measurements. You can set thresholds for absolute power and insertion loss. You can set different pass/fail thresholds for each available test wavelength, or apply the same thresholds to all wavelengths. Values that are greater than the predefined thresholds are displayed in white on a red background. Values that are pass are displayed in green.

To edit the power meter test configurations:
1. From the Main Menu, select Test Config.
2. Select **Power Meter**.

![Image of Power Meter interface](image)

3. In the **Apply to** list, select **Next capture**.
4. Select the desired wavelength.
5. Set the pass/fail thresholds for the selected wavelength.

**Note:** *You can apply the settings to all wavelengths.*
6. Choose the absolute power units.

7. If you want to see the pass/fail status, check the **Apply thresholds (Pass/Fail status)** option.

---

**Reverting to Factory Settings**

At any time in the application, you can revert to factory settings in your menus. However, the **Restore to Factory Settings** button is valid only for the window or tab where you use it.
Changing Fiber Information of Existing Captures

It is possible to modify the information for an existing capture. This information is provided by the automatic file naming. The procedure is almost the same as the one for autonaming but the changes apply to the current capture only.

**To change fiber information:**

1. From the Main Menu, tap Identification.
2. From the Apply to list, ensure that Current capture is selected.
3. Set the parameters as needed. For more information, see *Setting up Autonaming* on page 23.
4 Inspecting Fiber Ends

Viewing the fiber inspection is done using ConnectorMax2. You can start the application before or after connecting the probe, and the view on-screen will be automatically updated.

WARNING

Never look directly into a live fiber. It could cause serious eye damage. Always use your FIP-400B Series Fiber Inspection Probe.

Inspecting Fiber Ends (Single Fiber and Transceiver - Fiber Receptacles)

When you connect the FIP-400B Series Fiber Inspection Probe to your unit, you can view and inspect fiber ends right away. This direct viewing mode is known as the Live Video mode.

Since the available controls depend on the probe that is connected, if you disconnect the probe, the application will show an empty window. The controls become available again as soon as you reconnect the probe (no need to restart the application).

Note: When the internal temperature of the FIP-430B and FIP-435B is too low, the probe performs a warm-up that can last up to a minute.

You can also capture images of your inspections to include in reports, or save them for future analyses. This is known as the Capture mode.

Note: A digital watermark is added to the images generated by the application. This also applies to ConnectorMax1 files converted to the ConnectorMax2 format.
Inspecting Fiber Ends

Inspecting Fiber Ends (Single Fiber and Transceiver - Fiber Receptacles)

The focus indicator, which is displayed in the upper left part of the main window, indicates whether the current view is optimized for a capture. A green indicator shows a picture that can be captured and analyzed. Analysis will be more difficult with a yellow indicator, and impossible with a red indicator. A vertical black bar displays the peak focus level.

**Note:** The peak focus level is shown only when the auto focus sequence is complete.

For more information on analysis, see Analyzing Captures on page 74.

**To inspect fiber ends (single fiber) in Live mode:**

1. Install a probe tip (see Changing the Fiber Inspection Probe Tip on page 20).
2. Insert the fiber into the probe tip.
3. Connect your Fiber Inspection Probe to a computer or your unit. On an FTB-500, connect the probe to the lower USB port located on the front of the unit.
4. Start ConnectorMax2 if it is not already started.

5. Ensure to configure the automatic file naming (see Setting up Autonaming on page 23).

6. Choose whether you are using an SF or Transceiver connector.

7. Choose the type of connector you want to use between Standard, LC APC, or E2000.
Inspecting Fiber Ends
Inspecting Fiber Ends (Single Fiber and Transceiver - Fiber Receptacles)

8. Depending on the probe you are using, proceed as follows:
   ➤ If you have an FIP-420B, activate the auto centering, then adjust the magnification level and the image focus to have the best view of the fiber end.
   ➤ If you have an FIP-430B, activate the auto centering and the auto focus.
   
   For more information, see Analyzing Captures on page 74.

9. If the fiber end is dirty, remove it from the probe, clean it and reinspect it.

10. Once you are satisfied with the inspection, when in high magnification level, press Capture.

    OR

    Press the Fiber Inspection Probe handset button.

11. Go to the next connector or close the application.
Setting Up Multifiber Inspection

Inspecting and analyzing multifiber connectors can be done separately for each fiber, or as a batch.

When the inspection and the analysis are done separately, there is a transition between the Live Video mode and the Capture mode after an image is captured.

To speed up the process of inspecting and analyzing connectors and fibers, you can use the batch inspection feature. With this feature, all fibers are captured and previewed one after the other for a configured period of time. Then the analysis is launched when all fibers are inspected.

To use the batch inspection and analysis process:

1. From the main window, select User Preferences.
2. Select the MF Connector tab.
3. Choose Use batch inspection or analysis process (applies to the next capture).
   This enables the preview duration time box.
4. Enter the time you want the preview to last.
5. Tap OK to confirm your choice and close the window.
Displaying Multifiber Connector Overlay

By default, ConnectorMax2 displays the multifiber overlay only in high magnification. The overlay is used to see which of the connectors in a multifiber connector is being inspected. It is possible to see four fibers at a time when the overlay is displayed.

**Note:** The FIP-410B probe does not display the overlay in multifiber.

**To display the multifiber connector overlay:**
1. From the main window, select **User Preferences**.
2. Select the **MF Connector** tab.
3. Choose **Include multifiber connector overlay**.
4. Tap **OK** to confirm your choice and close the window.
Inspecting Fiber Ends (Multifiber)

In the main window, a blue arrow now indicates the fiber under test.

Inspecting Fiber Ends (Multifiber)

The multifiber inspection with a FIP-430B probe allows you to see multiple fibers at a time.

You can also capture images of your inspections to include in reports, or save them for future analyses. This is known as the Capture mode.

A digital watermark is added to the images generated by the application. This also applies to ConnectorMax1 files converted to the ConnectorMax2 format.
Inspecting Fiber Ends

The focus indicator, which is displayed in the upper left part of the main window, indicates whether the current view is optimized for a capture. A green indicator shows a picture that can be captured and analyzed. Analysis will be more difficult with a yellow indicator, and impossible with a red indicator. A vertical black bar displays the peak focus level.

**Note:** *The peak focus level is shown only when the auto focus sequence is complete.*

To speed up the process of inspecting and analyzing connectors and fibers, you can use the batch inspection feature. With this feature, all fibers are captured and previewed one after another for a configured period of time. Then the analysis is launched when all fibers are inspected.

For more information on analysis, see *Analyzing Captures* on page 74.
To inspect fiber ends (multifiber) in Live mode:

1. Install a probe tip (see Changing the Fiber Inspection Probe Tip on page 20).
2. Insert the fiber into the probe tip.
3. Insert replaceable APC or UPC nozzle in and tighten it (turn clockwise).
4. For patchcord inspection, insert a mating tip.
5. Connect your Fiber Inspection Probe to a computer or your unit. On an FTB-500, connect the probe to the lower USB port located on the front of the unit.
6. Start ConnectorMax2 if it is not already started.

7. Ensure to configure the automatic file naming (see Setting up Autonaming on page 23).

8. Choose MF.

OR

Tap **File**, then **New**.
9. Choose the type of connector you want to use between MPO/MTP (selected by default) or OptiTip.

10. Depending on the probe you are using, proceed as follows:
    - If you have an FIP-420B, activate the auto centering.
    - If you have an FIP-430B, activate the auto centering and the auto focus.

    For more information, see *Analyzing Captures* on page 74.

11. Set the probe to **Low Magnification** and locate the first fiber.
12. Set the probe to **High Magnification**.

**Note:** The FIP-420B and FIP-430B probes show a low magnification connector image in the overlay.

13. Center the appropriate connector in the array:
   - For multi-row tips, use the Y wheel to select the required fiber row.
   - For multi-row and single-row tips, use the X wheel to select the required fiber.
14. View results on screen.

Note: The auto focus starts automatically only for the first fiber (FIP-430B only).

➤ Hold the magnification control button located on the probe for one second to reactivate the auto focus process (FIP-430B only).

OR

➤ Adjust focus manually.

15. If the fiber end is dirty, remove it from the probe, clean it and reinspect it.

16. When in high magnification level, press Capture.

OR

Press the Fiber Inspection Probe handset button.

17. If you are not using the batch inspection feature, return to Live Video mode. Repeat steps 13 to 17 until you reach the end of the connector.

18. If you are using the batch inspection feature, press Process.

OR

To continue the current connector inspection, return to Live Video mode.

19. To inspect a new connector, tap File, then New.
Retesting a Fiber (Multifiber)

Sometimes, a capture will show a fail status, but it could only be because the fiber is dirty and you want to clean it and test it again. However, if you have saved the file, the next capture you take will be incremented instead of replacing the current file.

In order to avoid this incrementation and end up with unwanted files, you can test a fiber again.

To retest a fiber in Live Video mode:

1. Use the list to navigate between the captured fibers.

2. Tap Capture.
To retest a fiber in Capture mode:

1. Use the list to navigate between the captured fibers.

   - To view next fiber
   - To view previous fiber
   - To minimize or maximize the navigation toolbar
   - To retest a fiber
   - Pass/Fail status for current SF and power meter

2. Tap Reset.
Saving Files

In Capture mode, you can save the acquisition files manually for future reference.

You can also set ConnectorMax2 so that it saves the capture automatically only if the result is Pass, or regardless of the status.

**Note:** *Saving a file automatically after a capture is not possible in multifiber mode.*

**Note:** *When you return to the Live Video mode, your file name structure will be automatically incremented or decremented so that you do not overwrite your work.*

**To save files automatically, or automatically only when the status is set to Pass:**

1. From the main window, select **User Preferences**.
2. Select the **General** tab.

3. Select whether you want the capture to be automatically saved regardless of the result (all models), saved if the result of the analysis is pass (only available with the FIP-420B and FIP-430B models), or select the manual save option if you only want to save specific files.

4. If you want to change the default location where the files will be saved, you can do so by using the **Save file after capture** button.

5. Tap **OK** to confirm your choice.
To save a file:
From the main window, tap the button.

OR

Select the File menu, then Save to overwrite an existing file.

OR

Select the File menu, then Save As to change the file name or location.

Note: If you change the location for saving the files, this location will remain as the default location for the remainder of the work session, or until you change the location again.

IMPORTANT
If you have enabled the Generate report on save option, the new report file will automatically overwrite the old one without notifying you.
Opening and Closing Files

You can open captured files directly from the application to view them.

You can either open current .cmax2 files, .cmax files (not supported by MAX-700B and MAX-FIP), or a legacy image file taken from a previous fiber inspection.

The .cmax files, when saved with the ConnectorMax 2 application, are compatible with any EXFO applications. However, the .cmax2 files can be opened with the ConnectorMax 2 application only.

Note: The accepted image formats for legacy files are .bmp, .jpg and .gif.

Note: Sample files are available on the platform.

To open a file:
1. From the main window, select File, and then Open.
2. Select the desired file, and then tap OK.
**Inspecting Fiber Ends**  

*Analyzing Captures*

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# Analyzing Captures

With the capture analysis option (FIP-420B/FIP-425B and FIP-430B/FIP-435B), you can perform automated pass/fail analyses according to the criteria you have set.

**Note:** Analysis is not available for the FIP-410B.

Depending on the fiber probe that you have, you may have access to the following features:

- **Auto centering:** displays the fiber in the middle of the image. It is compatible with all connector types and fibers with a cladding of 125 μm. The auto centering is enabled only in high magnification. Working with the auto centering feature can be useful with standard connectors. When inspecting special connectors, it is also possible to uncheck the auto centering check box.

- **Auto focus:** focuses on the connector image. It is enabled if the auto centering is activated and only in high magnification. The auto focus is only possible in Live Video mode, and if the focus is not done manually. It starts automatically when you insert an optical fiber connector. For more information, see *Fiber Inspection Probe Tip Compatibility Chart* on page 107.

- **Auto capture:** is possible with an acceptable focus level. It is enabled if the auto centering and auto focus are activated. The auto capture is possible only in high magnification. For the FIP-430B probe, the auto capture is not displayed when a multifiber connector is selected.

- **Auto analysis:** displays 4 inspection zones: core, cladding, adhesive, and contact. It is enabled only in high magnification and with a good focus. When a multifiber connector is selected, the auto analysis is available for zone A and B only.
An indicator is located at the left of the available features. The color of this indicator shows the status of the feature:

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey</td>
<td>The item is not selected</td>
</tr>
<tr>
<td>Green</td>
<td>The item is selected and the conditions allow the analysis.</td>
</tr>
</tbody>
</table>
| Black | The item is selected but the conditions do not allow the analysis.  
       | The auto focus process was aborted by the user. |
| Red   | The application is in timeout state because it is unable to complete the auto focus process. There are three ways to reapply the auto focus:  
       | Clear the auto focus check box and select it again  
       | Press the FIP-400B Series magnification button for 1 second  
       | From Capture mode, return to Live video mode |
Inspecting Fiber Ends
Analyzing Captures

To select the analysis features:
Select the features you need for the capture.

The analysis results are available as soon as you tap **Process** or when you press the capture button on the probe. Fibers are analyzed sequentially. The process time depends on the number of fibers to be analyzed.

The global status is displayed in the upper right part of the window after an analysis. The **Image** and **Results** tabs are displayed when a capture is made (using the button from the button bar or on the probe). When you are ready to inspect another fiber, you have to return to the Live Video mode first.

To disable the analysis features:
Clear the check box next to the corresponding features.

The results are available as an image or in a detailed table.
The **Image** tab shows the snapshot of the fiber when you captured it. You can see all the anomalies that have been detected.

The overlay shows the status of the analysis, the status per zone, the analysis zones, any anomaly (defects, scratches) found on the fiber endface. The color of the circles shows the status of the analysis zone:

- **Green:** pass
- **Blue:** no analysis was performed or the function is disabled
- **Red:** fail

**Note:** You can change the diameter of the analysis zones. For more information, see Managing and Selecting Test Configurations on page 31.

By default, the overlay is shown after an analysis, but you can hide it using the **Hide Overlay** button.
Inspecting Fiber Ends
Analyzing Captures

- The **Results** tab shows detailed information for scratches and defects detected in each test zone and the corresponding test status.

**Note:** *When there is no analysis, the **Results** tab does not appear.*
Displaying or Hiding the Power Meter and VFL Controls

By default, the power meter and VFL controls are displayed in the left side bar of the main window. However, you can hide them. This option is present on all platforms even if no power meter or VFL is available, except on computers.

To display or hide the power meter and VFL controls:
1. From the main window, select User Preferences.
2. Select the General tab.
3. Under Display, select Display power meter/VFL controls.
4. Tap OK to confirm your choice and close the window.
Clearing Power Meter Measurements Automatically

Measurements can be automatically erased from memory upon returning to the Live video mode. This option is present on all platforms even if no power meter is available, except on computers.

To clear power meter measurements automatically:

1. From the main window, select User Preferences.
2. Select the General tab.
4. Tap OK to confirm your choice and close the window.
Measuring Power or Insertion Loss

If your unit is equipped with a power meter, ConnectorMax2 provides power meter measurements. The power meter view displays current power and loss measurements. This view is available either in Live mode or Capture mode.

For the MAX-700B platform, you can either perform measurements manually and select each wavelength yourself, or you can use the auto-wavelength and auto-switching modes of your source.

**Note:** *When there is a selected wavelength and the source is in Auto mode, the power meter switches automatically to Auto mode.*

The correction factors and the offset nulling are not supported by ConnectorMax2. For more information on your power meter, refer to the corresponding user guide.
Viewing Power Meter Results

You can view the power meter results stored in memory in a separate tab (see Measuring Power or Insertion Loss on page 81). The global pass/fail status also takes the power meter measurements into account.

To view power or insertion loss measurements:
Select the Power Meter tab. All your measurements are displayed in the order they were performed.
Identifying Fiber Faults Visually with the VFL

Your unit can be equipped with an optional visual fault locator (VFL) to help you identify bends, faulty connectors, splices and other causes of signal loss. It can also help the person at the other end of the link to identify the fiber under test, which could be particularly useful when working with cables containing many fibers.

From its dedicated port, the VFL emits a red signal which becomes visible at the location of a fault on the fiber. This signal can be continuous (CW) or blinking (1 Hz).

The VFL is available either in Live mode or Capture mode. It can be switched from one state to another (on, off or blink).

**WARNING**

When the VFL is active, the VFL port emits visible laser radiation. Avoid exposure and do not stare directly into the beam. Protect any unused port with a cap.
Creating Reports

You can create a report based on the current inspection and analysis results. This report can be saved in the following formats: PDF, HTML and MHTML.

However, HTML and MHTML reports are not supported on the MAX-700B and MAX-FIP platforms.

**Note:** The report creation is available only in Capture mode.

**Note:** The report may include the OPM results or not. Even if there are no OPM results, the report title still mentions OPM results and the global pass/fail includes both FIP and OPM results.

If you have selected the **Generate report on save** option, a report is automatically created when you save your capture.

**IMPORTANT**

Your application has been designed for optimal viewing of the fonts shown in reports in all supported languages. Ensure the language settings for Non-Unicode applications remains to English (United States).
To activate automated report creation:
1. From the main window, select User Preferences.
2. Select the General tab.
4. Tap OK to confirm your choice and close the window.
**Inspecting Fiber Ends**  
*Creating Reports*

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**To create a report manually:**

1. From the main window, tap `Report`.

   OR

   Select the **File** menu, then **Report**.

2. From the **Save As** dialog box, select a folder or create one to save your file.
3. If desired, modify the file name.

4. Tap **OK** to close the window.

You can now open the report with PDF reader from the location where the file was saved. The HTML and MHTML reports are compatible with Internet Explorer (IE 7 and latest), and the latest software release of FireFox and Google Chrome.

## Updating the Firmware and Software

The FIP-400B Series is designed to provide automatic software update notifications and firmware updates whenever necessary. This allows you to benefit from the updates of your unit each time you use it. The firmware and software updates can be recommended or required.

To notify you, a message box appears each time a firmware or software update is recommended.

When a firmware update is required, the application shows an error if you choose not to update the FIP-400B Series. If a firmware update fails, ConnectorMax2 performs a fault recovery procedure the next time the FIP-400B Series is connected.

The FIP-400B Series becomes unavailable if a software update is required or when a firmware update is in progress. The Live video button becomes disabled in capture view and in video view, the capture button becomes disabled as well.

---

**CAUTION**

Do not disconnect the probe or turn off the unit when an update is in progress.
Once an update is started, follow the indications to complete the process.

**IMPORTANT**

During the automatic upgrade of the firmware of your FIP-400B Series probe, you may be prompted to install USB drivers for your instrument. In that case, you need to map your fiber inspection probe with the necessary driver.

*To be notified of the firmware or software updates automatically:*

1. From the main window, select **User Preferences**.
2. Select the **General** tab.
3. Under **Display**, choose the appropriate option.
4. Tap **OK** to confirm your choice and close the window.

**Note:** By default, both check boxes are selected.
To configure the USB driver for your fiber inspection probe:

1. Confirm the firmware upgrade when ConnectorMax2 prompts you.

2. During the upgrade process, the Found New Hardware wizard can be displayed. In this case, if the application prompts you to connect to Windows Update to search for software, select No, not this time, and then click Next.

3. Make sure that the Install the software automatically (Recommended) option is selected, and click Next.
**Inspecting Fiber Ends**

*Updating the Firmware and Software*

4. The wizard may display a warning message indicating that the hardware has not passed Windows Logo testing. In this case, since it has been verified that the drivers work with Windows, click **Continue Anyway**.

![Hardware Installation](image)

5. Follow the on-screen instructions, and then click **Finish** when the installation is complete.

6. When the application displays an error message indicating that the FIP firmware update has failed, click **OK** to close the message. The automatic upgrade process will continue normally since the driver has been associated with your fiber inspection probe already.

**Note:** *If the application continues to display the firmware update error message even after the driver has been associated correctly with your fiber inspection probe, contact technical support.*
5 Maintenance

General Maintenance

To help ensure long, trouble-free operation:

- Always inspect fiber-optic connectors before using them and clean them if necessary.
- Keep the unit free of dust.
- Clean the unit casing with a cloth slightly dampened with water.
- Store unit at room temperature in a clean and dry area. Keep the unit out of direct sunlight.
- Avoid high humidity or significant temperature fluctuations.
- Avoid unnecessary shocks and vibrations.
- If any liquids are spilled on or into the unit, turn off the power immediately, disconnect from any external power source, remove the batteries and let the unit dry completely.

**WARNING**

The use of controls, adjustments and procedures, namely for operation and maintenance, other than those specified herein may result in hazardous radiation exposure or impair the protection provided by this unit.

Recycling and Disposal
(Applies to European Union Only)

For complete recycling/disposal information as per European Directive WEEE 2012/19/UE, visit the EXFO Web site at www.exfo.com/recycle.
Recharging the Battery (FIP-425B and FIP-435 Models Only)

The battery in your Fiber Inspection Probe is a Li-ion polymer battery with three-cell format. The charge status is shown with the LEDs on the Fiber Inspection Probe. The ConnectorMax2 software application also indicates the charge status.

---

**CAUTION**

Only charge the battery with the USB cable and adapter/charger provided by EXFO with your unit.

You can purchase a new battery from EXFO.

---

**IMPORTANT**

- The battery is not charged at the factory. You must fully charge it before using the unit for the first time. The battery is fully charged after a few hours or when the battery LED indicator stops flashing. The charge cycle starts and stops automatically.

- The time required to charge the battery depends on various factors such as the ambient temperature.

- To ensure that the battery functions or charges properly, keep it within operation and storage temperature range.

---

The micro USB adapter connector recharges the battery of the probe when it is low. You can recharge the battery with the provided USB cable and the adapter/charger that you connect to a power outlet. You can also use the provided USB cable alone that you connect to a USB port of a computer.

When the probe is connected to a power outlet or to a USB port, it still works via Wi-Fi.

It is possible to recharge the battery of the probe when it is connected to the USB port of a computer (500 mA).
Replacing the Battery (FIP-425B and FIP-435 Models Only)

Your probe is powered by a Li-ion polymer rechargeable battery.

**WARNING**

- Your unit uses a three-cell battery that has been especially designed for EXFO. For this reason, you can only replace it with a battery of the same type and model. The use of other batteries may damage your unit and compromise your safety.

- Battery replacement should only be done by a qualified technician with the appropriate tools on an electronic bench or similar environment.

- Do not throw the battery into fire or water and do not short-circuit the battery electrical contacts. Do not disassemble.

**CAUTION**

To avoid irremediable damage to the battery, always remove the battery compartment door carefully, ensuring that the battery does not fall.
To replace the battery:

1. Turn off the probe.

2. Unplug any power cable.

3. Using a screwdriver, remove the two screws that are located on the side of the probe.

4. Remove the battery compartment door.

CAUTION
Gently pull on the battery to avoid damaging the wires.
5. Remove the battery.

6. Replace the battery, respecting the polarity (black, yellow, and red wires).

7. Close the battery compartment door.

8. Using a screwdriver, put the screws that you have removed at step 3 back in place.
## 6 Troubleshooting

### Solving Common Problems

The table below presents common problems and their solutions.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| I cannot analyze an image                    | ➤ The image is not focused properly; use the focus knob on the probe until the focus indicator displays the best value available. Yellow indicates an acceptable range, and green shows the preferred range.  
➤ Ensure that the probe is connected properly.  
➤ Ensure that the connector is aligned properly.  
➤ Ensure that the focus value is sufficient to perform the analysis.  
➤ Ensure that you are using a high magnitude level. |
| I cannot see the fiber on-screen             | ➤ Connect the probe to the USB port of the unit.  
➤ Verify the probe connection status to see if ConnectorMax2 is detecting the probe properly. If the probe is connected properly, close ConnectorMax2 and open it again.  
➤ If you are working with a FTB-500, ensure that the probe is connected to the lower USB port located in front of the unit.  
➤ Ensure that the Wi-Fi is on.  
➤ Ensure that the probe is on.                  |
| The FIP internal temperature is too high     | Let the FIP cool down.                                                                                                                                                                                 |
| The FIP has encountered a critical internal error | Contact EXFO for technical support.                                                                                                                                                                   |
| Violation of EXFO embedded software copyright | Contact EXFO for technical support.                                                                                                                                                                   |
**Troubleshooting**  
*Solving Common Problems*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| The auto centering does not function properly                           | ➤ Clean the connector.  
➤ Adjust the image focus.  
➤ When working with MF connectors, ensure to choose the appropriate connector between MPO/MTP or OptiTip. |
| The analysis was interrupted before it was completed                    | ➤ Ensure that the Live video mode is selected.  
➤ Adjust the image settings.                                           |
| FIP_ERROR_CODE_101                                                      |                                                                        |
| A connection error occurred                                             | ➤ Ensure that the probe is not currently in use by another application.  
➤ On a MAX-700B, ensure that the Wi-Fi communication with the probe is not encrypted in the platform settings. For more information on how to define manual configurations, refer to the MaxTester Series user guide. You will find the information in the section about connecting to a wireless network, in the procedure about manual configurations.  
➤ On a MAX-700B, ensure that the connection with the probe was made as explained in *Connecting or Disconnecting the Wireless Probe* on page 17, and not through the Wi-Fi connection of the platform.  
➤ The probe may be outside of the working range.  
➤ Try to connect the probe again.                                       |
| An APC fiber is connected to an FIP-430B or FIP-435B probe, the blue LED is blinking and the motor is not running | Try to put the fiber back in place.                                     |
## Troubleshooting

### Solving Common Problems

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresh rate is very low</td>
<td>➤ Ensure that the CPU throttling is not in degrade mode.</td>
</tr>
<tr>
<td></td>
<td>➤ Choose another power scheme which is not Max Battery. For more information about power scheme, refer to the</td>
</tr>
<tr>
<td></td>
<td>power management options section in your platform user guide.</td>
</tr>
<tr>
<td></td>
<td>➤ Reduce the number of probes operating in the vicinity.</td>
</tr>
<tr>
<td>The FIP status LED blinks red for 2 seconds in Live Video mode and turns</td>
<td>Try to put the fiber back in place.</td>
</tr>
<tr>
<td>from back to blue (auto focus timeout)</td>
<td></td>
</tr>
<tr>
<td>The FIP LED blinks red for 2 seconds in Capture mode and no analysis</td>
<td>There was an analysis error. Repeat the inspection process.</td>
</tr>
<tr>
<td>results are available</td>
<td></td>
</tr>
<tr>
<td>On a computer, in Live video mode, the probe no longer works when it</td>
<td>Tap anywhere in the application window to bring it back to the front.</td>
</tr>
<tr>
<td>loses its focus</td>
<td></td>
</tr>
<tr>
<td>The firmware update fails when the driver installation process is too</td>
<td>Disconnect the probe and try to connect it again.</td>
</tr>
<tr>
<td>long.</td>
<td></td>
</tr>
<tr>
<td>On a Dell computer, the same image is displayed twice, one on top of</td>
<td>Ensure to disable the Show Original Video option.</td>
</tr>
<tr>
<td>the other, when the Dell Webcam Central software is installed and the</td>
<td></td>
</tr>
<tr>
<td>Show Original Video option is enabled.</td>
<td></td>
</tr>
</tbody>
</table>
## Troubleshooting

*Solving Common Problems*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>An error message regarding the initialization of the application may appear when starting the ConnectorMax2 application.</td>
<td>You must install .NET Framework 3.5 SP1 or higher on your unit.</td>
</tr>
<tr>
<td>The list of available FIPs is empty.</td>
<td>➤ Ensure that the Wi-Fi is on.</td>
</tr>
<tr>
<td></td>
<td>➤ Ensure that the probe is on.</td>
</tr>
<tr>
<td>A probe is no longer listed among the list of available FIPs for connection.</td>
<td>➤ Wait a few minutes for the probe to appear in the list of available FIPs.</td>
</tr>
<tr>
<td></td>
<td>➤ Connect the Wi-Fi probe with a USB cable.</td>
</tr>
<tr>
<td></td>
<td>➤ Restart the platform.</td>
</tr>
</tbody>
</table>
Contacting the Technical Support Group

To obtain after-sales service or technical support for this product, contact EXFO at one of the following numbers. The Technical Support Group is available to take your calls from Monday to Friday, 8:00 a.m. to 7:00 p.m. (Eastern Time in North America).

Technical Support Group
400 Godin Avenue 1 866 683-0155 (USA and Canada)
Quebec (Quebec) G1M 2K2 Tel.: 1 418 683-5498
CANADA Fax: 1 418 683-9224
support@exfo.com

For detailed information about technical support, and for a list of other worldwide locations, visit the EXFO Web site at www.exfo.com.

If you have comments or suggestions about this user documentation, you can send them to customer.feedback.manual@exfo.com.

To accelerate the process, please have information such as the name and the serial number (see the product identification label), as well as a description of your problem, close at hand.
Viewing Information About ConnectorMax2

You can view information about ConnectorMax2 such as the version number and contact information for technical support in the About window.

*To view ConnectorMax2 information:*
From the main window, tap ![i].

Viewing Online Help

You can view the online help for ConnectorMax2 at any time.

*To view the online help:*
From the main window, tap ![i].

Transportation

Maintain a temperature range within specifications when transporting the unit. Transportation damage can occur from improper handling. The following steps are recommended to minimize the possibility of damage:

- Pack the unit in its original packing material when shipping.
- Avoid high humidity or large temperature fluctuations.
- Keep the unit out of direct sunlight.
- Avoid unnecessary shocks and vibrations.
7 Warranty

General Information

EXFO Inc. (EXFO) warrants this equipment against defects in material and workmanship for a period of one year from the date of original shipment. EXFO also warrants that this equipment will meet applicable specifications under normal use.

During the warranty period, EXFO will, at its discretion, repair, replace, or issue credit for any defective product, as well as verify and adjust the product free of charge should the equipment need to be repaired or if the original calibration is erroneous. If the equipment is sent back for verification of calibration during the warranty period and found to meet all published specifications, EXFO will charge standard calibration fees.

IMPORTANT

The warranty can become null and void if:

➤ unit has been tampered with, repaired, or worked upon by unauthorized individuals or non-EXFO personnel.
➤ warranty sticker has been removed.
➤ case screws, other than those specified in this guide, have been removed.
➤ case has been opened, other than as explained in this guide.
➤ unit serial number has been altered, erased, or removed.
➤ unit has been misused, neglected, or damaged by accident.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL EXFO BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.
Liability

EXFO shall not be liable for damages resulting from the use of the product, nor shall be responsible for any failure in the performance of other items to which the product is connected or the operation of any system of which the product may be a part.

EXFO shall not be liable for damages resulting from improper usage or unauthorized modification of the product, its accompanying accessories and software.

Exclusions

EXFO reserves the right to make changes in the design or construction of any of its products at any time without incurring obligation to make any changes whatsoever on units purchased. Accessories, including but not limited to fuses, pilot lamps, batteries and universal interfaces (EUI) used with EXFO products are not covered by this warranty.

This warranty excludes failure resulting from: improper use or installation, normal wear and tear, accident, abuse, neglect, fire, water, lightning or other acts of nature, causes external to the product or other factors beyond the control of EXFO.

IMPORTANT

In the case of products equipped with optical connectors, EXFO will charge a fee for replacing connectors that were damaged due to misuse or bad cleaning.

Certification

EXFO certifies that this equipment met its published specifications at the time of shipment from the factory.
Service and Repairs

EXFO commits to providing product service and repair for five years following the date of purchase.

**To send any equipment for service or repair:**

1. Call one of EXFO’s authorized service centers (see *EXFO Service Centers Worldwide* on page 106). Support personnel will determine if the equipment requires service, repair, or calibration.

2. If equipment must be returned to EXFO or an authorized service center, support personnel will issue a Return Merchandise Authorization (RMA) number and provide an address for return.

3. If possible, back up your data before sending the unit for repair.

4. Pack the equipment in its original shipping material. Be sure to include a statement or report fully detailing the defect and the conditions under which it was observed.

5. Return the equipment, prepaid, to the address given to you by support personnel. Be sure to write the RMA number on the shipping slip. *EXFO will refuse and return any package that does not bear an RMA number.*

**Note:** *A test setup fee will apply to any returned unit that, after test, is found to meet the applicable specifications.*

After repair, the equipment will be returned with a repair report. If the equipment is not under warranty, you will be invoiced for the cost appearing on this report. EXFO will pay return-to-customer shipping costs for equipment under warranty. Shipping insurance is at your expense.

Routine recalibration is not included in any of the warranty plans. Since calibrations/verifications are not covered by the basic or extended warranties, you may elect to purchase FlexCare Calibration/Verification Packages for a definite period of time. Contact an authorized service center (see *EXFO Service Centers Worldwide* on page 106).
EXFO Service Centers Worldwide

If your product requires servicing, contact your nearest authorized service center.

**EXFO Headquarters Service Center**
400 Godin Avenue
Quebec (Quebec) G1M 2K2
CANADA
1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

**EXFO Europe Service Center**
Winchester House, School Lane
Chandlers Ford, Hampshire S053 4DG
ENGLAND
Tel.: +44 2380 246800
Fax: +44 2380 246801
support.europe@exfo.com

**EXFO Telecom Equipment (Shenzhen) Ltd.**
3rd Floor, Building C,
FuNing Hi-Tech Industrial Park, No. 71-3,
Xintian Avenue,
Fuyong, Bao’An District,
Shenzhen, China, 518103
Tel: +86 (755) 2955 3100
Fax: +86 (755) 2955 3101
support.asia@exfo.com

To view EXFO's network of partner-operated Certified Service Centers nearest you, please consult EXFO's corporate website for the complete list of service partners:
With some tips that include lenses, and before performing an automatic focus, you must adjust the focus manually for the first inspection.

**Note:** The tips for which the probe requires a manual focus before the first inspection are listed in the table below.

**To reach the focus level manually:**
1. Bring the focus manually close to the focal point.
2. Activate the auto focus or press the magnification control button on the probe and hold it down until the auto focus is activated again.

The table below establishes the Fiber Inspection Probe tip compatibility with the different operations: fiber inspection, auto analysis (option), auto focus (option), and auto detection (option) provided with the ConnectorMax2 application:

<table>
<thead>
<tr>
<th>Tip Description</th>
<th>Tip Code</th>
<th>Inspection (all models)</th>
<th>Analysis (FIP-420B/FIP-425B/FIP-430B/FIP-435B)</th>
<th>Auto focus (FIP-430B/FIP-435B)</th>
<th>Connector Auto detection (FIP-430B/FIP-435B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uni.2.5mm for PC connector</td>
<td>FIPT-400-U25M</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Uni.2.5mm for APC connector</td>
<td>FIPT-400-U25MA</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Uni.1.25mm for PC Connector</td>
<td>FIPT-400-U12M</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Uni.1.25mm for APC connector</td>
<td>FIPT-400-U12MA</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>FC APC tip for bulkhead adapter</td>
<td>FIPT-400-FC-APC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
</tbody>
</table>
### Fiber Inspection Probe Tip Compatibility Chart

<table>
<thead>
<tr>
<th>Tip Description</th>
<th>Tip Code</th>
<th>Inspection (all models)</th>
<th>Analysis (FIP-420B/FIP-425B/FIP-430B/FIP-435B)</th>
<th>Auto focus (FIP-430B/FIP-435B)</th>
<th>Connector Auto detection (FIP-430B/FIP-435B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC and SC tip for bulkhead adapter</td>
<td>FIPT-400-FC-SC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>ST for UPC bulkhead adapter</td>
<td>FIPT-400-ST</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>E-2000 for PC bulkhead</td>
<td>FIPT-400-E2000</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>E-2000 for APC bulkhead adapter</td>
<td>FIPT-400-E2000-APC</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>FIPT-400-FC-SC-A6 bulkhead adapter</td>
<td>FIPT-400-FC-SC-A6</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>MU for UPC bulkhead adapter</td>
<td>FIPT-400-MU</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>MU-L for UPC bulkhead adapter</td>
<td>FIPT-400-MU-L</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>149 mm, Extended MU tip for PC bulkhead adapter</td>
<td>FIPT-400-MU-L-149</td>
<td>OK</td>
<td>OK</td>
<td>OKa</td>
<td>NO</td>
</tr>
<tr>
<td>ODC 4 Pin Plug (female) Guide tip</td>
<td>FIPT-400-ODC-4PIN-P</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>ODC Socket (male) tip</td>
<td>FIPT-400-ODC-S</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>ODC Universal Guide tip</td>
<td>FIPT-400-ODC-U</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>ODC 2 Pin Plug (female) Guide tip</td>
<td>FIPT-400-ODC-2PIN-P</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Tip Description</td>
<td>Tip Code</td>
<td>Inspection (all models)</td>
<td>Analysis (FIP-420B/FIP-425B/FIP-430B/FIP-435B)</td>
<td>Auto focus (FIP-430B/FIP-435B)</td>
<td>Connector Auto detection (FIP-430B/FIP-435B)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>D4 bulkhead adapter</td>
<td>FIPT-400-D4</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>FIPT-400-U20M2 is for male ferule connector</td>
<td>FIPT-400-U20M2</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>FIPT-400-Lemo for bulkhead adapter</td>
<td>FIPT-400-Lemo</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>OptiTap for APC bulkhead adapter</td>
<td>FIPT-400-OTAP-APC</td>
<td>OK</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>MT/ACP type OptiTip and OptiTap multifiber adapter for male and female connectors</td>
<td>FIPT-400-OTAP-MTP-APC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>LC for PC bulkhead</td>
<td>FIPT-400-LC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>LC for APC bulkhead adapter</td>
<td>FIPT-400-LC-APC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>LC for bulkhead adapter 60 Degree Angled</td>
<td>FIPT-400-LC-A6</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>Extended LC tip for PC bulkhead adapter</td>
<td>FIPT-400-LC-L</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>137 mm, Extended LC tip for PC bulkhead adapter</td>
<td>FIPT-400-LC-L-137</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>NO</td>
</tr>
<tr>
<td>Tip Description</td>
<td>Tip Code</td>
<td>Inspection (all models)</td>
<td>Analysis (FIP-420B/FIP-425B/FIP-430B/FIP-435B)</td>
<td>Auto focus (FIP-430B/FIP-435B)</td>
<td>Connector Auto detection (FIP-430B/FIP-435B)</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>------------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>LX5 for UPC bulkhead adapter</td>
<td>FIPT-400-LX.5</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>LX5 for APC bulkhead adapter</td>
<td>FIPT-400-LX5-APC</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>MTP/APC Tip for bulkhead adapter - Extended &amp; Improved</td>
<td>FIPT-400-MTPA2</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>FIPT-400-MTP2 bulkhead adapter</td>
<td>FIPT-400-MTP2</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Bulkhead adapter Westover</td>
<td>FIPT-400-ADAPTER</td>
<td>OK</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>SMA bulkhead adapter</td>
<td>FIPT-400-SMA</td>
<td>OK</td>
<td>NO</td>
<td>OK(^b)</td>
<td>OK(^b)</td>
</tr>
<tr>
<td>SMA male connector</td>
<td>FIPT-400-SMAM</td>
<td>OK</td>
<td>NO</td>
<td>OK(^b)</td>
<td>OK(^b)</td>
</tr>
<tr>
<td>Uni. 1.6 for PC connector</td>
<td>FIPT-400-U16M</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>MTRJ bulkhead adapter</td>
<td>FIPT-400-MTRJ</td>
<td>OK</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>SC APC for bulkhead</td>
<td>FIPT-400-SC-APC</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
</tr>
<tr>
<td>Extended SC tip for PC bulkhead adapter</td>
<td>FIPT-400-SC-L</td>
<td>OK</td>
<td>OK</td>
<td>OK(^a)</td>
<td>NO</td>
</tr>
</tbody>
</table>
### Fiber Inspection Probe Tip Compatibility Chart

<table>
<thead>
<tr>
<th>Tip Description</th>
<th>Tip Code</th>
<th>Inspection (all models)</th>
<th>Analysis (FIP-420B/FIP-425B/FIP-430B/FIP-435B)</th>
<th>Auto focus (FIP-430B/FIP-435B)</th>
<th>Connector Auto detection (FIP-430B/FIP-435B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>149 mm Extended SC tip for PC bulkhead adapter</td>
<td>FIPT-400-SC-L-149</td>
<td>OK</td>
<td>OK</td>
<td>OK&lt;sup&gt;a&lt;/sup&gt;</td>
<td>NO</td>
</tr>
<tr>
<td>SC for APC bulkhead adapter – extended</td>
<td>FIPT-400-SC-APC-L</td>
<td>OK</td>
<td>NO</td>
<td>OK</td>
<td>NO</td>
</tr>
</tbody>
</table>

<sup>a</sup> A manual focus is required for the first inspection.
<sup>b</sup> Only with a 125 μm ferrule.

Contact your vendor for additional information regarding the most recent Fiber Inspection Probe tips that are not listed above.
Working With the Fiber Inspection Probe in TestFlow

You can perform FIP captures and analyses with the Fiber Inspection Probe when it is used with the TestFlow application.

Note: TestFlow may not be available on all platforms.

Supported Models in TestFlow

The table below shows which models of probes are supported in TestFlow.

<table>
<thead>
<tr>
<th>Models</th>
<th>Supported in TestFlow</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIP-410B</td>
<td>No</td>
</tr>
<tr>
<td>FIP-420B</td>
<td>Yes</td>
</tr>
<tr>
<td>FIP-425B</td>
<td>➤ FTB-1: USB cable only</td>
</tr>
<tr>
<td></td>
<td>➤ FTB-1v2: USB cable or Wi-Fi</td>
</tr>
<tr>
<td>FIP-430B</td>
<td>Yes</td>
</tr>
<tr>
<td>FIP-435B</td>
<td>➤ FTB-1: USB cable only</td>
</tr>
<tr>
<td></td>
<td>➤ FTB-1v2: USB cable or Wi-Fi</td>
</tr>
</tbody>
</table>
LED Indicators

The LEDs located on the probe gives you information about the probe or the analysis results.

**FIP-420B and FIP-430B**

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>- Detection of the probe in progress</td>
</tr>
<tr>
<td></td>
<td>- Analysis in progress</td>
</tr>
<tr>
<td></td>
<td>- Waiting mode. The auto focus process starts automatically when you insert an optical fiber connector (FIP-430B and FIP-435B only)</td>
</tr>
<tr>
<td></td>
<td>- Auto focus in progress (FIP-430B and FIP-435B only)</td>
</tr>
<tr>
<td></td>
<td>- Probe is initializing</td>
</tr>
<tr>
<td>Flashing red</td>
<td>There is a major problem preventing the probe from functioning properly</td>
</tr>
<tr>
<td>Blue</td>
<td>Probe detected and ready</td>
</tr>
<tr>
<td>Red</td>
<td>In Capture mode, current FIP result status is Fail (except for FIP-410B models)</td>
</tr>
<tr>
<td>Green</td>
<td>In Capture mode, current FIP result status is Pass (except for FIP-410B models)</td>
</tr>
</tbody>
</table>
## LED Indicators

### Status LED

<table>
<thead>
<tr>
<th>Status LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>Processing in progress</td>
</tr>
<tr>
<td>Flashing red</td>
<td>![Bullet point] There is a problem with the probe. Follow the instructions on screen. ![Bullet point] The auto focus is in timeout ![Bullet point] There is an analysis error</td>
</tr>
<tr>
<td>Blue</td>
<td>The probe is ready and operational</td>
</tr>
<tr>
<td>Red</td>
<td>In Capture mode, current FIP result status is Fail.</td>
</tr>
<tr>
<td>Green</td>
<td>In Capture mode, current FIP result status is Pass.</td>
</tr>
</tbody>
</table>
## Working With the Fiber Inspection Probe in TestFlow

### LED Indicators

<table>
<thead>
<tr>
<th>Battery LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashing blue</td>
<td>USB connected, battery charging</td>
</tr>
<tr>
<td>Blue</td>
<td>USB connected, battery fully charged</td>
</tr>
<tr>
<td>Red</td>
<td>Battery error (only visible when connected to a USB cable)</td>
</tr>
<tr>
<td>Flashing yellow</td>
<td>USB connected, battery not charging because the battery temperature does not allow the battery to charge</td>
</tr>
<tr>
<td>Yellow</td>
<td>USB not connected, critical battery level</td>
</tr>
<tr>
<td>Not lit</td>
<td>USB not connected, battery above low level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wi-Fi LED</th>
<th>Status</th>
</tr>
</thead>
</table>
| Blue             | ➤ Ready to transmit  
➤ Wireless transmission in progress |
| Red              | Transmission error                                                    |
| Not lit          | ➤ Probe is off  
OR  
➤ Probe is initializing |
Connecting or Disconnecting the Wireless Probe

When your wireless probe is detected by the application, it is added to the list of the available probes. The probes are identified by their serial numbers and types.

**Note:** *Once a connection has been established with a wireless probe, the latter remains connected as long as you do not disconnect it. However, if the connection is lost, the probe is automatically disconnected. You have to reselect a probe in the list of available probes to establish a new connection.*

You may want to disconnect a specific probe if you want to perform the following:

- Work with another probe
- Work with another platform
To connect the wireless probe:

1. Turn on the probe by pressing the ON button.
2. Ensure the Wi-Fi is activated on your platform.
3. Select the Probe tab.
4. Select the wireless probe you want to work with and tap Connect.
To disconnect the wireless probe:

1. In Live Video mode, select the Probe tab.

2. Tap Disconnect.
Inspecting Fiber Ends

**Note:** When the internal temperature of the FIP-430B and FIP-435B is too low, the probe performs a warm-up that can last up to a minute.

When you connect the FIP-400B Series Fiber Inspection Probe to your unit, you can view and inspect fiber ends right away. This direct viewing mode is known as the *Live Video* mode.

**Note:** If the connection between the probe and the unit is lost, it may take a few seconds for the Live Video to return once the probe is reconnected.

You can also capture images of your inspections to save them for future analyses. This is known as the *Capture* mode.

A digital watermark is added to the images generated by the application.

The focus indicator, which is displayed in the left part of the main window, indicates whether the current view is optimized for a capture. A green indicator shows a picture that can be captured and analyzed. Analysis will be more difficult with a yellow indicator, and impossible with a red indicator.
To inspect fiber ends (single fiber) in Live mode:

1. Install a probe tip (see Changing the Fiber Inspection Probe Tip on page 20).

2. Insert the fiber into the probe tip.

3. Connect your Fiber Inspection Probe to your unit.

4. Choose the test configuration you want to use.
5. You can adjust the brightness by enabling or disabling the Auto checkbox. When the Auto checkbox is disabled, use the brightness slider to set the levels to suit your needs.

*Note:* The brightness feature is set to 50% by default.
6. Depending on the fiber probe that you have, you can enable the auto capture, the auto focus, the auto analysis and the auto centering features to perform your inspection.

![Image of Fiber Inspection Probe in TestFlow]

**Note:** As soon as a capture is made, the **Settings** tab appears. This tab allows you to select the features you want to enable for the next inspection.
7. Choose the magnification level between the three levels available (low, medium, high).

8. If the fiber end is dirty, remove it from the probe, clean it and reinspect it.

9. Once you are satisfied with the inspection, when in high magnification level, tap Capture.

OR

Press the Fiber Inspection Probe handset button.
10. Go to the next connector or start a new task.

If you want to enable the auto capture, the auto focus, the auto analysis or the auto centering features for the next capture, select the Settings tab.

Analyzing Captures

With the capture analysis option, you can perform automated pass/fail analyses according to the criteria you have set.

Depending on the fiber probe that you have, you may have access to the following features:

- Auto centering: displays the fiber in the middle of the image. It is compatible with all connector types and fibers with a cladding of 125 μm. The auto centering is enabled only in high magnification. Working with the auto centering feature can be useful with standard connectors. When inspecting special connectors, you may want to disable the auto centering. In some cases, special connectors have alignment pins that can be mistakenly taken for the core of the fiber.
Working With the Fiber Inspection Probe in TestFlow

Analyzing Captures

- Auto focus: focuses on the connector image. It is enabled if the auto centering is activated and only in high magnification. The auto focus is only possible in Live Video mode, and if the focus is not done manually. It starts automatically when you insert an optical fiber connector. For more information, see Fiber Inspection Probe Tip Compatibility Chart on page 107.

- Auto capture: is possible with an acceptable focus level. It is enabled if the auto centering and auto focus are activated. The auto capture is possible only in high magnification.

Note: Depending on the sequence used, the auto capture feature may be enabled by default.

- Auto analysis: displays 4 inspection zones: core, cladding, adhesive, and contact. It is enabled only in high magnification.

An indicator is located at the left of the available features. The color of this indicator shows the status of the feature:

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grey</td>
<td>The item is not selected</td>
</tr>
<tr>
<td>Green</td>
<td>The item is selected and the conditions allow the analysis.</td>
</tr>
<tr>
<td>Black</td>
<td>The item is selected but the conditions do not allow the analysis.</td>
</tr>
<tr>
<td></td>
<td>The auto focus process was aborted by the user.</td>
</tr>
</tbody>
</table>
To select the analysis features:

In Live Video mode, select the features you need for the capture.

The analysis results are available as soon as you tap Capture or when you press the capture button on the probe.

**Note:** When there is no analysis, the Results tab does not appear.

The Image and Results tabs are displayed when a capture is made (using the button from the button bar or on the probe). When you are ready to inspect another fiber, you have to return to the Live Video mode first.
The **Image** tab shows the snapshot of the fiber when you captured it. You can see all the anomalies that have been detected. Two images are displayed:

- one without the overlay (on the left)
- one with the overlay (on the right)

The overlay shows:

- the status of the analysis
- the status per zone
- the analysis zones
- any anomaly (defects, scratches) found on the fiber endface

The color of the circles shows the status of the analysis zone:

- Green: pass
- Blue: no analysis was performed
- Red: fail
The **Results** tab shows detailed information for scratches and defects detected in each test zone and the corresponding test status.

**Note:** When there is no analysis, the **Results** tab does not appear.
Updating the Firmware

The FIP-400B Series is designed to provide firmware updates whenever necessary. This allows you to benefit from the updates of your unit each time you use it. The firmware updates can be recommended or required.

- Recommended firmware updates can be performed directly when the probe is connected to the platform using a USB cable or with a Wi-Fi connection. You can still use the probe with the TestFlow application even if you do not perform the firmware update.

- Depending on the probe used, required firmware updates are performed when the probe is connected directly to the platform using a USB cable. It is mandatory to perform the firmware update if you still want to use the probe with the TestFlow application.

The table below shows how to perform the firmware update depending on the model you are using.

<table>
<thead>
<tr>
<th>Model</th>
<th>Recommended Update</th>
<th>Required Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIP-410B</td>
<td>Model not supported in TestFlow</td>
<td>Model not supported in TestFlow</td>
</tr>
<tr>
<td>FIP-420B</td>
<td>Probe connected directly to the platform using a USB cable</td>
<td>Probe connected directly to the platform using a USB cable</td>
</tr>
<tr>
<td>FIP-425B</td>
<td>Probe connected directly to the platform using a USB cable or with a Wi-Fi connection</td>
<td>Probe connected directly to the platform using a USB cable</td>
</tr>
</tbody>
</table>
Updating the Firmware

You will be notified of firmware updates through a message box in your application.

You cannot select a probe in the TestFlow application when a firmware update is underway or if the update failed.

<table>
<thead>
<tr>
<th>Model</th>
<th>Recommended Update</th>
<th>Required Update</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIP-430B</td>
<td>Probe connected directly to the platform using a USB cable</td>
<td>Probe connected directly to the platform using a USB cable</td>
</tr>
<tr>
<td>FIP-435B</td>
<td>Probe connected directly to the platform using a USB cable or with a Wi-Fi connection</td>
<td>Probe connected directly to the platform using a USB cable</td>
</tr>
</tbody>
</table>

**CAUTION**

Do not disconnect the probe or turn off the unit when an update is in progress.

Once an update is started, follow the indications to complete the process.

*To perform a recommended or required update:*

When the application prompts you, follow the instructions on screen.
The table below presents common problems and their solutions.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| I cannot analyze an image                         | ► The image is not focused properly; use the focus knob on the probe until the focus indicator displays the best value available. Yellow indicates an acceptable range, and green shows the preferred range.  
  ► Ensure that the probe is connected properly.  
  ► Ensure that the connector is aligned properly.  
  ► Ensure that the focus value is sufficient to perform the analysis.  
  ► Ensure that you are using a high magnitude level. |
| There is a problem preventing the probe from functioning properly | Try to connect the probe again and start a new test sequence             |
Viewing Information About the FIP

You can view information about the FIP such as the model, serial number, firmware version, and battery level of the wireless probe at any time.

**To view information about the FIP:**
In Live Video mode, select the **Probe** tab.
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### Notice

**Chinese Regulation on Restriction of Hazardous Substances**

**Names and Contents of the Toxic or Hazardous Substances or Elements Contained in This Exfo Product**

包含在本EXFO产品中的有毒有害物质或元素的名称和含量

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Toxic or Hazardous Substances and Elements</th>
<th>Isocon</th>
<th>Mercury (Hg)</th>
<th>Cadmium (Cd)</th>
<th>Hexavalent Chromium (Cr VI)</th>
<th>Polybrominated Biphenyls (PBB)</th>
<th>Polybrominated Diphenyl Ethers (PBDE)</th>
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</thead>
<tbody>
<tr>
<td>Enclosure</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Electronic and electrical sub-assembly</td>
<td>X</td>
<td>O</td>
<td>X</td>
<td>O</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Optical sub-assembly&lt;sup&gt;a&lt;/sup&gt;</td>
<td>X</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Mechanical sub-assembly&lt;sup&gt;a&lt;/sup&gt;</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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</table>

**Note:** If applicable.

如果适用。
## MARKING REQUIREMENTS

标注要求

<table>
<thead>
<tr>
<th>Product</th>
<th>Environmental protection use period (years)</th>
<th>Logo</th>
</tr>
</thead>
<tbody>
<tr>
<td>This EXFO product 本 EXFO 产品</td>
<td>10</td>
<td><img src="10" alt="Logo" /></td>
</tr>
<tr>
<td>Battery电池 a</td>
<td>5</td>
<td><img src="5" alt="Logo" /></td>
</tr>
</tbody>
</table>

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*a. If applicable. 如果适用。*