FTB-200 v2
Compact Modular Platform

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Units of measurement in this publication conform to SI standards and practices.

Version number: 18.0.3

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Contents

Contents

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.

If you purchased the Wi-Fi and Bluetooth option, your unit 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.

➤ FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

➤ 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.

European Community Declaration of Conformity

An electronic version of the 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.

1 Introducing the FTB-200 v2 Compact Modular Platform

Optimized for all phases of the network lifecycle, the FTB-200 v2 Compact Modular Platform houses any of EXFO's FTB one- or two-slot modules to meet your evolving needs. You can configure your platform by combining optical, transport and datacom modules to cover a wide range of applications.

Note: In this documentation, the words "tap" and "double-tap" (related to the use of a touchscreen) replace the words "click" and "double-click".

Main Features

Your unit has the following characteristics:

➤ Two-slot platform

➤ Multitasking possibilities

➤ Touchscreen (LCD and touchscreen optimized for outdoor use available as an option)

➤ USB 2.0 ports (host)

➤ Ethernet port (10/100/1000 Base-T)

➤ Fiber inspection probe port

➤ Headset/microphone port (for any commercially available headset equipped with a microphone, and having a 2.5 mm connector)

➤ Optional internal Wi-Fi and Bluetooth devices

➤ Optional GPS USB key

➤ Optional 3G USB modem key

➤ VPN capability

➤ Autonomy (8 hours)

➤ Windows Embedded Standard operating system

➤ Ruggedness (GR-196-CORE)

Introducing the FTB-200 v2 Compact Modular Platform
Main Features

➤ Optional built-in power meter and VFL

➤ Direct Web access from your unit

➤ Possibility to take screen captures

➤ PDF file generator and viewer available from your unit

➤ Easy transfer of files and folders to a USB storage device

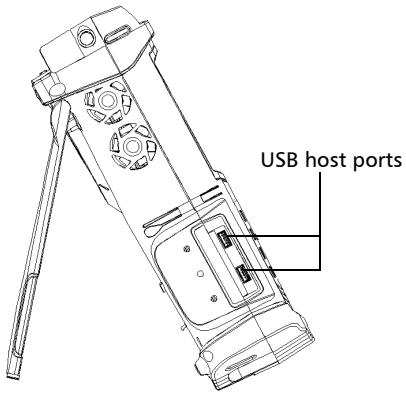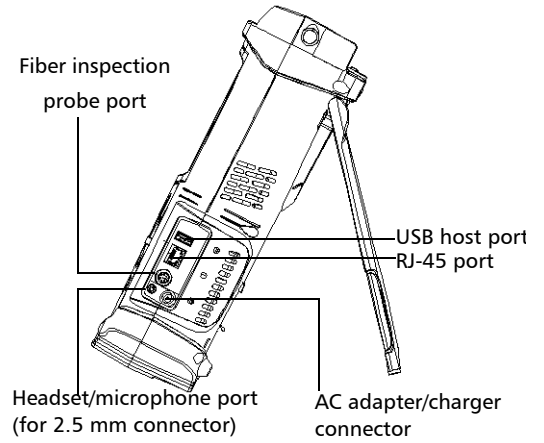➤ Easy updates for applications via Update Manager

Front panel

Touchscreen

LEDs

Keypad

Keypad

Knob with ENTER button

Brightness button

On/Off button

Left panel

Right panel

USB host ports

Fiber inspection
probe port

USB host port
RJ-45 port

Headset/microphone port
(for 2.5 mm connector)

AC adapter/charger
connector

Top panel

VFL   Built-in power meter

Battery
compartment

Module slots

Bottom panel

Retaining screws

LED Panel Description

The LED panel located on the front of the unit provides you with the status of your unit.

Note: *The function of certain LEDs vary with the applications.*

LED	Status	Meaning
⏻	Green	Unit is on.
	Green, blinking	Unit is in Standby mode.
	Off	Unit is off or in Hibernation mode.
⊂⊏	Green	Battery is fully charged.
	Green, blinking	Battery is charging.
	Yellow	Unit is not powered by AC and battery is low.
	Red	No battery in the unit or battery error.
	Off	Unit is off or unit is not powered by AC and battery level is above the "low-battery threshold".

| LED	Status	Meaning
⚠	Red, blinking	Laser status LED At least one module emits an optical signal.
	Off	No modules emit signal.
✓|X	Green	Result status from application currently displayed. Pass (result does not exceed the defined threshold).
	Green, blinking	Result statuses from two or more applications. Pass (no results exceed the defined threshold).
	Red	Result status from application currently displayed. Fail (result exceeds the defined threshold).
	Red, blinking	Result statuses from two or more applications. ➤ Fail (all results exceed the defined threshold). OR ➤ Mixed statuses (some are Pass and some are Fail).

Keypad Description

The keypad of your unit gives you access to various functions at all times. The table below shows an overview of their purpose.

Note: *The function of certain buttons vary with the applications.*

Button	Meaning
0	First shortcut button. Starts the associated application or the on-screen (virtual) keyboard (see *Configuring the Shortcut Buttons* on page 59).
1 /⚡	Second shortcut button. Starts the associated application, the on-screen keyboard or the built-in power meter application (see *Configuring the Shortcut Buttons* on page 59).
	Starts the fiber probe application.
	➤ Enables you to switch from one task to another. ➤ Displays shortcuts to the on-screen keyboard and to the tool to take screen captures.
⏻	Turns on and off your unit. For more information, see *Turning On or Off the Unit* on page 28.
☼	Adjusts screen brightness.
🔒|▶	Lock/Start acquisition/F1 button (depends on application).
🔇|←|→	Mute/Move markers/F2 button (depends on application).
|↱	Report/Next λ or trace/F3 button (depends on application).
💾	Save/F4 button (depends on application).

Ports

Your unit is equipped with several communication ports (for probe, mouse, keyboard, hub, etc.). It can also be equipped with internal Wi-Fi and Bluetooth devices for wireless information transfer. These two devices are optional.

➤ There are two USB 2.0 host ports located on the left panel of the unit.

➤ All the other ports are located on the right panel of the unit:

   ➤ 8-pin (mini-DIN) connector to connect the fiber inspection probe.

   ➤ USB 2.0 host port (type A connector) ▭ to connect USB memory drives, keyboards, mouse devices, etc.

   ➤ RJ-45 (10/100/1000 Base-T) port to connect your unit to an Ethernet network.

   ➤ Headset/microphone port (for 2.5 mm connector).

Power Sources

The unit operates with the following power sources:

➤ AC adapter/charger (connected to a standard power outlet–indoor use only).

➤ Rechargeable Lithium-Ion battery (automatically takes over if you disconnect the AC adapter/charger).

Note: *When it is connected with the AC adapter/charger, the unit will function even if the battery is not present.*

CAUTION

EXFO guarantees the specifications and viability of the products ONLY if they are used with chargers and batteries provided by EXFO.

➤ Possible to switch from AC adapter/charger to battery power or vice versa without affecting operation.

➤ Automatic recharge when AC adapter/charger is connected.

➤ Rechargeable battery (for clock). This battery can keep the date and time for weeks even if AC power and the Lithium-Ion battery (main battery) are not connected.

Optional Software Package

An optional software package (IPT package) is offered with the application. With this package, you can perform *ping* and *trace route* tests. For more information on how to activate software options, see *Activating Software Options* on page 37.

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.

2   Safety Information

WARNING

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.

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.

IMPORTANT

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.

IMPORTANT

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.

Other Safety Symbols on Your Unit

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

Symbol	Meaning
⎓	Direct current
∼	Alternating current
≈	Both direct and alternating current
⏚	The unit is equipped with an earth (ground) terminal.
⏚	The unit is equipped with a protective conductor terminal.
⏚	The unit is equipped with a frame or chassis terminal.
		On (Power)
○	Off (Power)

Laser Safety Information

Units with Built-In VFL

Your instrument is a Class 3R laser product in compliance with standards IEC 60825-1: 2007 and 21 CFR 1040.10, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Laser radiation is emitted at the output port. It is potentially harmful in direct intrabeam viewing.

The following label(s) indicate that the product contains a Class 3R source:

Affixed to back of unit
(under the stand).

When the VFL laser is active, the ⚠ LED on the front of the unit blinks, and the ⚡ symbol is displayed in the power meter and VFL application.

Units without Built-In VFL

If your unit is not equipped with a VFL, the laser class of your unit depends on the modules that you use. Refer to the user guide or the online help of the different modules for the exact information.

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 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 power cable and battery are connected.

➤ Unless otherwise specified, all interfaces are intended for connection to Safety Extra Low Voltage (SELV) circuits only.

➤ Capacitors inside the unit may be charged even if the unit has been disconnected from its electrical supply.

WARNING

➤ **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.**

➤ **Use only accessories (such as the car outlet adapter, batteries, and fiber inspection probe) designed for your unit and approved by EXFO. For a complete list of accessories available for your unit, refer to its technical specifications.**

➤ **When you use the unit outdoors, ensure that it is protected from liquids, dust, direct sunlight, precipitation, and full wind pressure.**

Equipment Ratings	
Temperature	
➤ Operation	➤ unit powered by battery: 0 °C to 50 °C[a] (32 °F to 122 °F)
	➤ unit connected to AC adapter: 5 °C to 40 °C (41 °F to 104 °F)
➤ Storage	➤ unit without battery: –40 °C to 70 °C[b] (–40 °F to 158 °F)
	➤ unit with battery: –20 °C to 60 °C (–4 °F to 140 °F)
	➤ AC adapter: –20 °C to 60 °C (–4 °F to 140 °F)
Relative humidity[c]	➤ unit: ≤ 95 % non-condensing
	➤ AC adapter: 10 % to 80 % non-condensing
Maximum operation altitude	➤ 2000 m (6562 ft) (unit connected to external power supply)
	➤ 5000 m (16405 ft) (unit operated from battery)
Pollution degree	➤ 2 (unit connected to external power supply)
	➤ 3 (unit operated from battery)[d]
Overvoltage category	➤ unit: I
	➤ AC adapter: II
Measurement category	Not rated for measurement categories II, III, or IV
Input power[e]	unit: ⎓ 24 V;4 A

a. With FTB-8XXX modules, the maximum operation temperature is 40 °C (104 °F).
b. With FTB-8XXX modules, the maximum storage temperature is 50 °C (122 °F).
c. Measured in 0 °C to 31 °C (32 °F to 87.8 °F) range, decreasing linearly to 50 % at 40 °C (104 °F).
d. Equipment must be normally protected against exposure to direct sunlight, precipitation and full wind pressure.
e. Not exceeding ± 10 % of the nominal voltage.

IMPORTANT

The operation and storage temperatures of some modules may differ from the temperatures specified for your platform. In this case, always ensure that you comply with the most restrictive conditions (either module or platform).

3 *Getting Started with Your Unit*

Inserting and Removing Test Modules

CAUTION
Never insert or remove a module while the Compact Modular Platform is turned on. This will result in immediate and irreparable damage to both the module and unit.

CAUTION
To avoid damaging your unit, use it only with modules approved by EXFO.
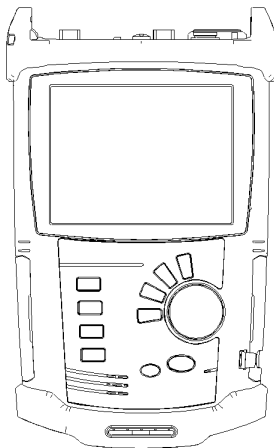
WARNING
When the laser safety LED is flashing, at least one of your modules is emitting an optical signal. Please check all modules, as it might not be the one you are currently using.

To insert a module into the Compact Modular Platform:

1. Turn off your unit.

2. Position the unit so that its front panel is facing you.

3. Take the module and place it vertically so that the retaining screw hole is at the left of the connector pins.

CAUTION

Inserting a module upside down could result in permanent damage to the module, as the connector pins might be bent.

4. Insert the protruding edges of the module into the grooves of the unit's module slot.

5. Push the module all the way to the bottom of the slot, until the retaining screw makes contact with the unit casing.

6. Place the unit so that its bottom panel is facing you.

7. While applying slight pressure to the module, lift the mobile part of the retaining screw and use it to turn the retaining screw clockwise until it is tightened.

This will secure the module into its "seated" position.

Turn retaining screws
clockwise
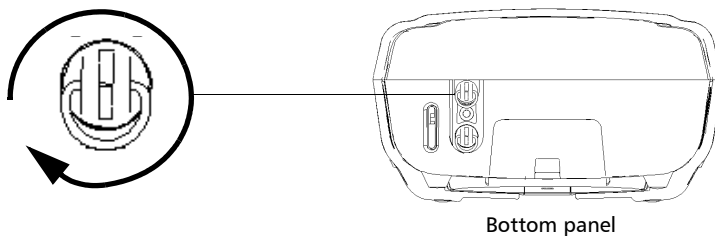
Bottom panel

When you turn on the unit, the startup sequence will automatically detect the module.

To remove a module from the Compact Modular Platform:

1. Turn off your unit.

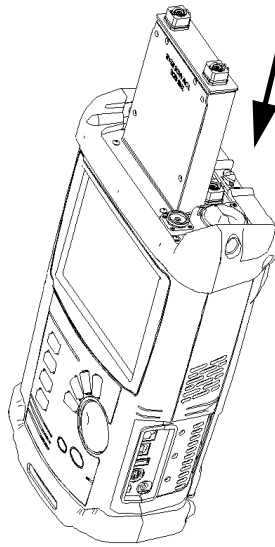2. Position the unit so that the bottom panel is facing you.

3. Lift the mobile part of the retaining screw and use it to turn the retaining screw counterclockwise until it stops.

   The module will be slowly released from the slot.

Turn retaining screws
counterclockwise

Bottom panel
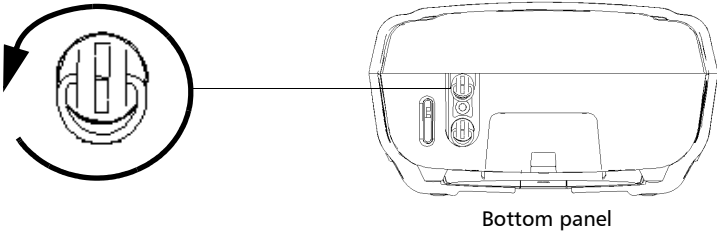
4. Place the unit so that the top panel is facing you.

5. Hold the module by its sides or by the handle (*NOT by the connector*) and pull it out.
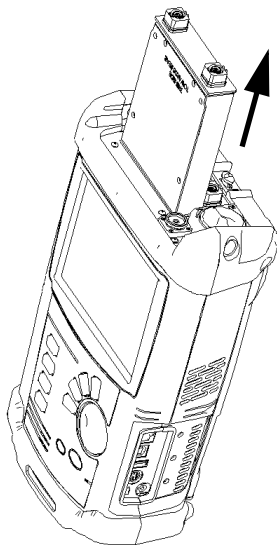
CAUTION

Pulling out a module by a connector could seriously damage both the module and connector. Always pull out a module by its casing.

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6. Cover empty slots with the supplied protective covers.

Using a Keyboard, Mouse or Other USB Devices

Your unit supports many USB devices. The table below lists the supported USB devices.

Device	Details
Memory key	For data transfer between your unit and a computer when you do not have access to a network. If you need information on how to transfer data using a memory key, see *Managing Data* on page 115.
Keyboard	When you are required to enter alphanumeric data, an on-screen (virtual) keyboard is displayed. However, if you prefer, you can use a hardware keyboard. ***Note:*** *Even if a keyboard is connected, the on-screen keyboard will still be displayed when you work in Compact Toolbox.*
Mouse	If your prefer to use a mouse instead of the touchscreen, you can connect one.
Composite device	You can use composite devices, that is devices that input information to your unit using more than one mean (for example, combinations of keyboard and mouse).
Hub	This device will be particularly useful to you if you need extra USB ports.
USB to RS-232 adapter (purchased from EXFO)	To be able to transfer data between your unit and a device only equipped with RS-232 (serial) ports. For more information, see *Using the USB to RS-232 Adapter* on page 131.

Device	Details
GPS USB key (purchased from EXFO)	To be able to know the position of your unit (latitude and longitude coordinates). For more information, see *Retrieving the GPS Location of Your Unit* on page 106.
3G USB modem key (purchased from EXFO)	To access the Internet without having to connect to a Wi-Fi or an Ethernet network. For more information, see *Accessing the Internet with a 3G USB Modem Key* on page 100.

You can connect several devices at the same time.

IMPORTANT

Your unit does not support USB printers. If you want to print documents, you must use PDFCreator or a network printer (see *Printing Documents* on page 83), or transfer your files to a computer (see *Managing Data* on page 115) that has access to a network printer.

To use a USB device with your unit:

Connect the USB device to any of the USB ports (located on the left or right side of the unit).

Note: *It is not necessary to turn off the unit before connecting the USB device. The software will automatically detect its presence.*

Your device is automatically recognized and immediately usable (provided that it uses the drivers already available on your unit).

Using the On-Screen (Virtual) Keyboard

Your unit is equipped with an on-screen keyboard that supports multilingual features. This keyboard functions according to the keyboard settings of Windows.

To use the on-screen keyboard:

1. From Compact Toolbox, tap the on-screen keyboard icon on the lower-right part of the screen (under the clock).
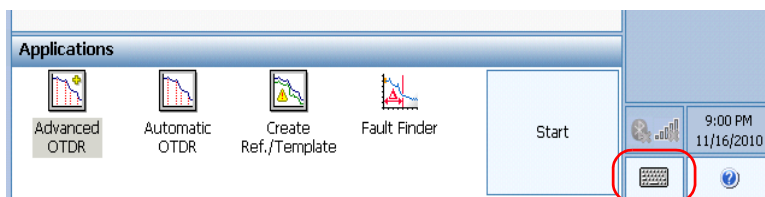
2. Select the location where you want to enter text.

3. Enter the data as required.

4. Exit the location when you have finished entering data.

Right-Clicking with the Touchscreen

If you are used to work with a mouse, you may find it useful to be able to perform a right-click on your touchscreen.

To right-click with the touchscreen:

From the location where you want to right-click, using the stylus or any blunt pointing device, press the screen for a few seconds until the shortcut menu appears.

If you want to hide the shortcut menu without performing any action, simply tap anywhere outside the menu.

Turning On or Off the Unit

There are several ways to turn off the unit, including the following:

➤ *Standby*: keeps the unit's status information in memory (RAM). The next time you turn your unit on, you will quickly return to your work environment (running applications will still be running). This mode will take more battery power while the unit is off.

➤ *Hibernation*: saves the unit's status information that was in memory (RAM) to a special file on the disk. The next time you turn your unit on, this file will be used to ensure that you return to your work environment (running applications will still be running). The unit will take longer to start up than in *Standby* mode, but it requires less battery power when the unit is off. You can configure your unit to switch automatically from *Standby* to *Hibernation* mode after the specified delay.

➤ *Shutdown*: completely cuts power to the test modules and platform; the unit will perform a complete restart routine the next time you use it. You should perform a shutdown if you do not intend to use your unit for a week or more.

After a shutdown, the unit will start in Compact Toolbox or in the application you defined as the startup application.

Note: *Should the unit ever stop responding, you can force a hardware reset by pressing and holding down the power button for more than 10 seconds.*

By default, your unit will display the standard shutdown window from which you can select the desired shutdown mode. However, you can configure your unit to perform a different action when the power button is pressed.

You can also configure your unit to automatically restart when AC power comes back after the unit has turned off (emergency shutdown, standby, or hibernation modes) when battery level is too low.

To turn on the unit:

Press the On/Off button.

To turn off the unit:

1. Press the On/Off button.

   OR

   On the Windows taskbar, tap **Start.**

   This will display the standard shutdown window, from which you have a choice of actions or shutdown modes.

2. Select **Shutdown.**

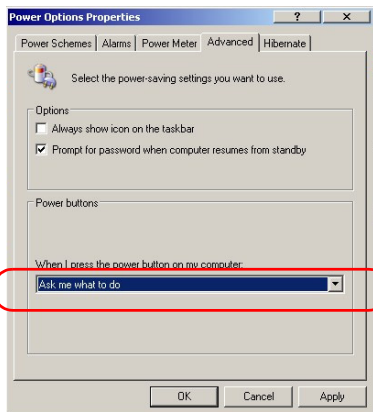### To define the behavior of the power button:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Power Options**.

3. Select the **Advanced** tab.

4. From the **When I press the power button on my computer** list, select the desired behavior (**Ask me what to do** option is selected by default).


5. Tap **Apply** to confirm the changes, and then **OK** to return to **Control Panel**.

To configure your unit to automatically restart after AC power comes back:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Application Startup**.

3. Select the **Power on the unit when AC outlet is connected or after power outage** box to enable the corresponding option.

   OR

   Clear the box if you prefer that your unit does not restart automatically after AC power comes back.
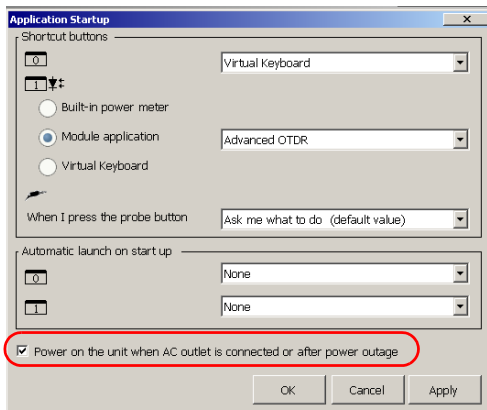
4. Tap **OK** to confirm the changes and return to the **Control Panel** window.

Installing or Upgrading the Applications

All the necessary applications have been preinstalled and configured at the factory. However, you may have to upgrade some applications when new versions become available or to reinstall them.

Note: Only administrator-level users can install software under Windows Embedded Standard.

From the DVD that came with your unit, you can create an installation USB key in case you ever need to reinstall Compact ToolBox (the software that comes with your platform) and the module applications as well as Update Manager. All the necessary files will be copied to the USB key.

Each time you purchase a new module, you will also receive a DVD with which you could create a new installation USB key. It could be a good idea to verify that the most recent Update Manager application is installed on your unit.

When updates are available for an application, you will need to download them from Internet, either directly on your unit or on a computer. In the latter case, you will need to transfer the update files to your unit (see *Managing Data* on page 115). The update files must be copied to the location that has been specified for the deployment packages in Update Manager.

> # IMPORTANT
>
> **If you ever need to reinstall Update Manager on your unit, ensure that:**
>
> ➤ **The installation files for Update Manager remain on your unit. Otherwise, it will not be possible to install new versions of this application later.**
>
> ➤ **You choose the folder containing the Update Manager installation files carefully. If you move or rename this folder, you will have to manually browse for the modified folder when you want to install new versions of this application.**

For the creation of an installation USB key, you will need:

➤ the installation DVD

➤ a computer equipped with a USB port; Windows must be installed on the computer

➤ a USB memory key

For the upgrades, you will need:

➤ an FTB-200 v2 Compact Modular Platform unit

➤ a computer equipped with a USB port; Windows must be installed on the computer

➤ a USB memory key

Note: *For the upgrades, the computer and USB key are only necessary if you do not wish to download the files directly on your unit.*

*Note:* *For more information on the installation, refer to the Update Manager online help.*

To update or reinstall Update Manager:

1. If necessary, retrieve the desired installation files from the Internet.

If you do not intend to download files directly on your unit, connect a USB memory key to one of the USB ports of the computer and copy the installation files to this USB key.

2. If it is not already done, turn on your unit.

3. Exit Compact Toolbox and the modules' applications.

4. If you want to install Update Manager using the USB key, disconnect it from the computer and connect it to one of the USB ports of your unit.

5. On your unit, create a folder on the Windows desktop.

6. Copy the installation files (from the USB key) to the newly created folder.

7. From the newly created folder, tap the *Setup.exe* file to start the installation.

8. Follow the on-screen instructions.

9. When the installation is complete, simply disconnect the USB memory key.

To install or upgrade the applications:

1. If necessary, retrieve the desired installation files from the Internet.

    If you do not intend to download files directly on your unit, connect a USB memory key to one of the USB ports of the computer and copy the installation files to this USB key.

2. If it is not already done, turn on your unit. If necessary, exit the modules' applications.

3. If you want to install or update applications using the USB key, disconnect it from the computer and connect it to one of the USB ports of your unit.

4. Copy the installation files (from the USB key) to the folder containing the update and installation packages on your unit. By default, Update Manager will search for files at the root of the USB key. For more information, refer to the Update Manager online help.

5. From Compact ToolBox, on your unit, select the **Utilities** tab.

6. Double-tap **Update Manager** to start the corresponding application. For more information on how to install or upgrade applications, refer to the Update Manager online help.
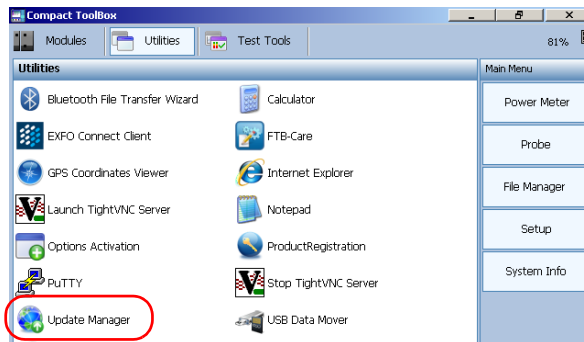
7. When installation is complete, simply disconnect the USB memory key.

To create an installation USB key:

1. Turn on the computer and insert the installation DVD in the CD/DVD drive.

2. Connect a USB memory key to one of the USB ports of the computer.

3. From the **Welcome** window on the installation DVD, click **Compact Toolbox and Tools**.

4. Select the **Compact Toolbox** check box and click **Next**.

5. Follow the on-screen instructions. All the necessary components will be copied to your USB key.

6. When the operation is complete, click **Close**, and then **Exit** to close the installation DVD window.

7. Disconnect the USB memory key from the computer.

Your new installation USB key is now ready.

Activating Software Options

The software options purchased at the same time as your unit have been activated for you already. However, if you purchase options afterwards, you will have to activate them yourself.

> **IMPORTANT**
>
> **If you want to activate software options for *modules of the FTB-81xx Series or the FTB-85xx Series*, refer to the user guide of your product for the specific activation instructions.**
>
> **In all other cases, you can follow the instructions presented in this section.**

Before being able to activate options, you need to contact EXFO with the following information:

➤ Purchase order number of the newly purchased options

➤ Module or platform serial number (depending on whether the software options were purchased for a module or the platform)

➤ Customer's name

➤ Customer's company name

➤ Customer's phone number

➤ Customer's e-mail address

➤ Module or platform on which the option will be installed

You will receive a single key (.key) file with which you will be able to unlock all the new options that you have purchased.

To activate the options for your unit:

1. Connect a USB memory key to one of the USB ports of your computer.

2. Copy the key file to the USB memory key.

3. Disconnect the USB key from the computer and connect it to your unit.

4. From Compact ToolBox, select the **Utilities** tab, then double-tap **Options Activation**.
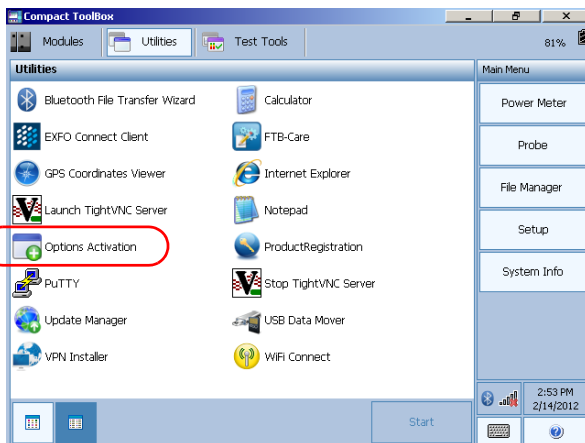
5. In the **Platform Options** tab, use the **Browse** button to locate the key file that you want to use.
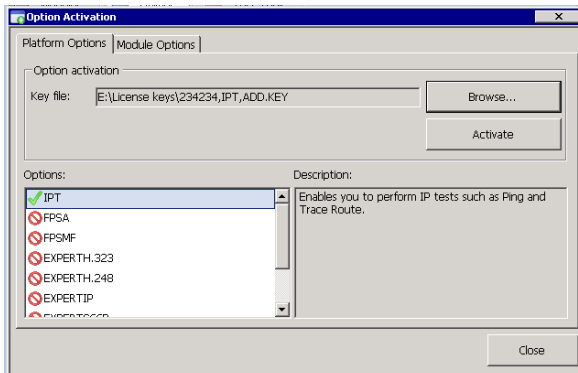
6. Press **Activate**.

The option indicator will turn into a green check mark to confirm that the option is now active.

7. **Close** to exit

Note: *At this point, if you have used a USB key to copy your key file, you can remove it as it is not required to use your new options.*

To activate software options for your module:

1. Connect a USB memory key to one of the USB ports of your computer.

2. Copy the key file to the USB memory key.

3. Disconnect the USB key from the computer and connect it to your unit.

4. From Compact ToolBox, select the **Utilities** tab, then double-tap **Options Activation**.
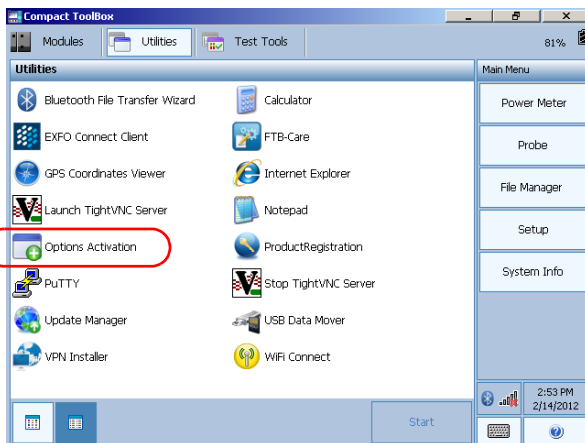
5. In the **Module Options** tab, use the **Browse** button to locate the key file that you want to use.
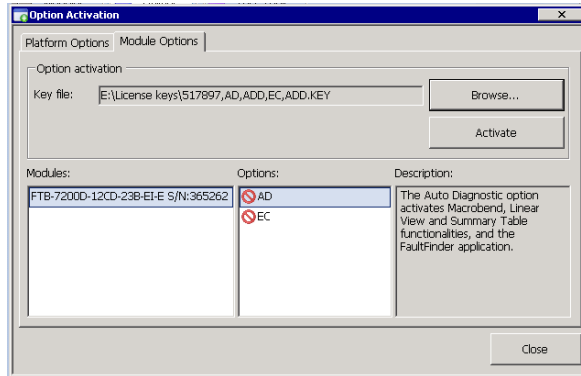
6. Press **Activate**.

The option indicator will turn into a green check mark to confirm that the option is now active.

Note: *You can see the supported options for the module in the **Options** list.*

7. Press **Close** to exit the **Option Activation** window.

Note: *At this point, if you have used a USB key to copy your key file, you can remove it as it is not required to use your new options.*

Starting Module Applications

Your modules can be configured and controlled from their dedicated applications in Compact Toolbox.

To start a module application:

1. From Compact Toolbox, select the module to use.

It will turn blue to indicate that it is highlighted.
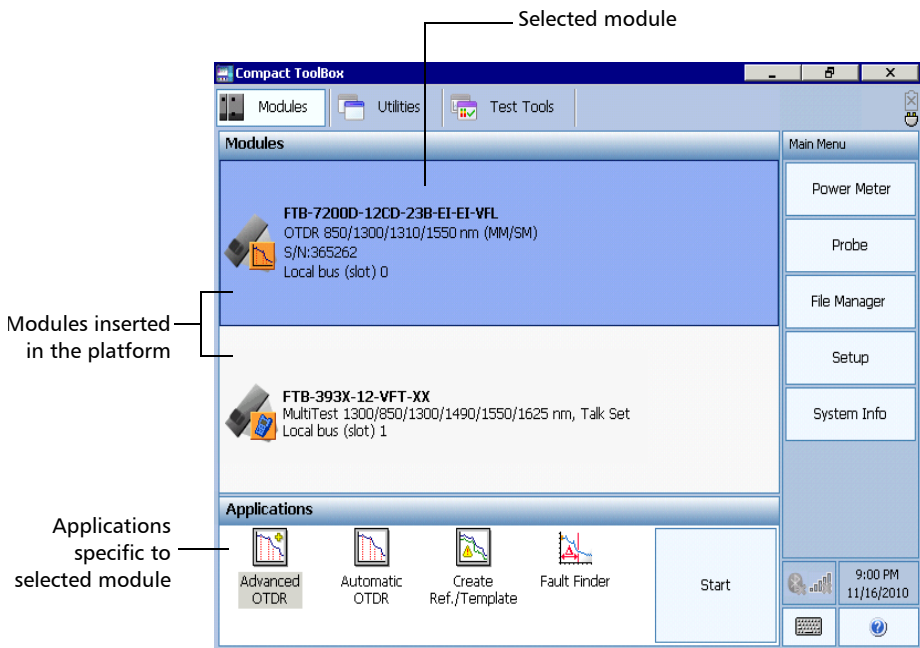
2. Under **Applications**, select an application, then press **Start**.

To start the Power Meter or Probe application:

From **Main Menu**, press **Power Meter** or **Probe**.

4 *Setting Up Your Unit*

Adjusting Brightness

To fit your work environment, you may adjust the LCD brightness. Values are kept in memory even when you turn the unit off.

Note: *These settings do not apply to a fiber inspection probe display.*

To adjust the display brightness:

Press the ☼ key repeatedly to switch between brightness levels.

OR

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Brightness**.

3. Move the slider until the screen appearance is to your liking.

If you select the lowest brightness setting, the backlight will be completely deactivated. Press the ☼ button to reactivate it.

4. Tap **OK** to return to the **Control Panel** window.

Adjusting Microphone and Speaker Volume

To fit your work environment, you may adjust the microphone and speaker volume. Values are kept in memory even when you turn the unit off.
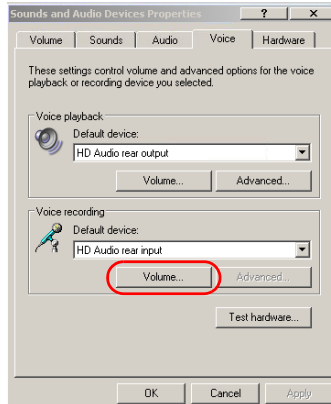
To adjust the microphone volume:

1. From the **Main Menu**, tap **Setup**.
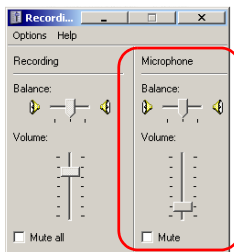
2. Double-tap **Sounds and Audio Devices**.
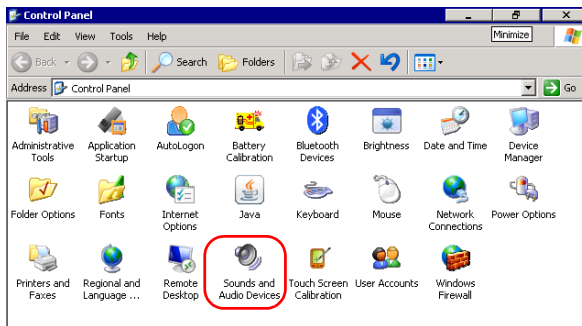
3. Select the **Voice** tab.
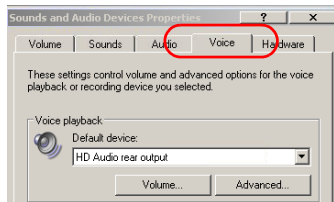
4. Under **Voice recording**, tap **Volume**.

5. Under **Microphone**, use the slider to adjust the sound of your microphone. Close the window when your settings are complete.

6. Tap **OK** to return to the **Control Panel** window.

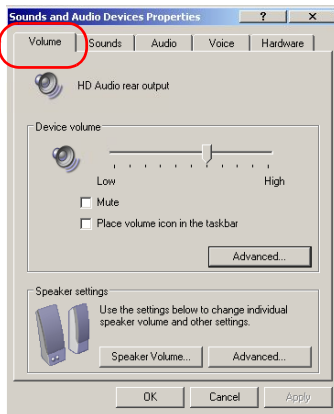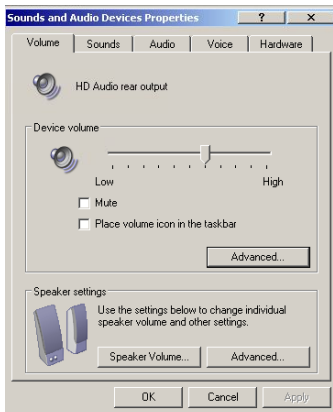### *To adjust the speaker volume:*

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Sounds and Audio Devices**.
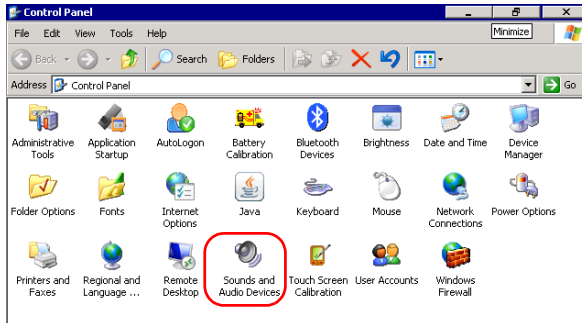
3. Select the **Volume** tab.

4. Under **Device volume**, use the slider to adjust the sound of your speaker.

Note: *You can also select the **Mute** check box if you want to quickly turn off the sound.*

Note: *You can tap the **Advanced** button if you want to refine the volume according to the source of the sound (**Master Volume** and **Wave** controls).*

5. Tap **OK** to return to the **Control Panel** window.
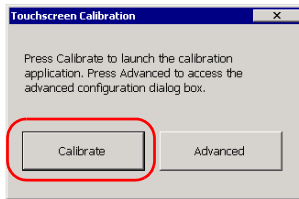
Recalibrating the Touchscreen

If you notice the touchscreen does not behave in the way it used to (for example, it is now difficult to select items) it probably needs a recalibration.

The default calibration method is performed using four points, but you can also perform a 25-point calibration (linearization) if you need more accuracy.
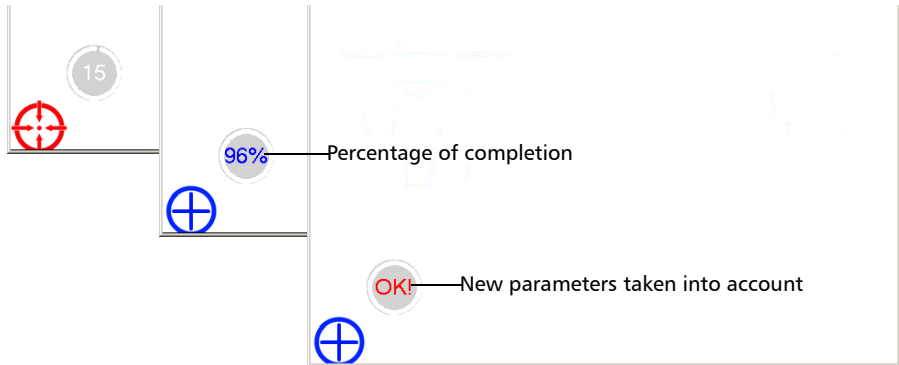
You can stop the calibration process at any time, but the touchscreen will still need calibration. The parameters are taken into account only when the process is complete.

To recalibrate the touchscreen with a 4-point calibration:

1. From the **Main Menu**, tap **Setup**, then double-tap **Touch Screen Calibration**.

2. Tap **Calibrate**.

3. Using the stylus (or any blunt pointing device), simply press the center of the different targets that appear on the screen. Keep pressing until the application displays **OK** to indicate that the new parameters have been taken into account.

Percentage of completion

New parameters taken into account

Note: *If you want to stop the calibration process, stop pressing the screen. The application will close automatically after a few seconds and you will return to the* **Touchscreen Calibration** *window.*
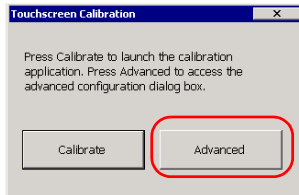
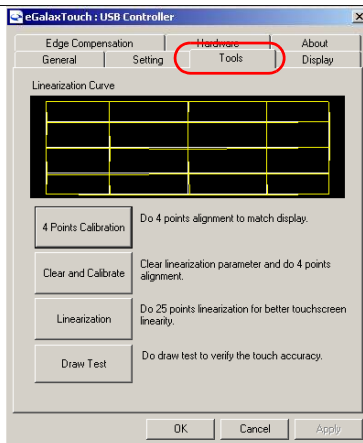**4.** When the calibration is complete, tap [**X**] to close the **Touchscreen Calibration** window.

To recalibrate the touchscreen with a 25-point linearization:

1. From the **Main Menu**, tap **Setup**, then double-tap **Touch Screen Calibration**.
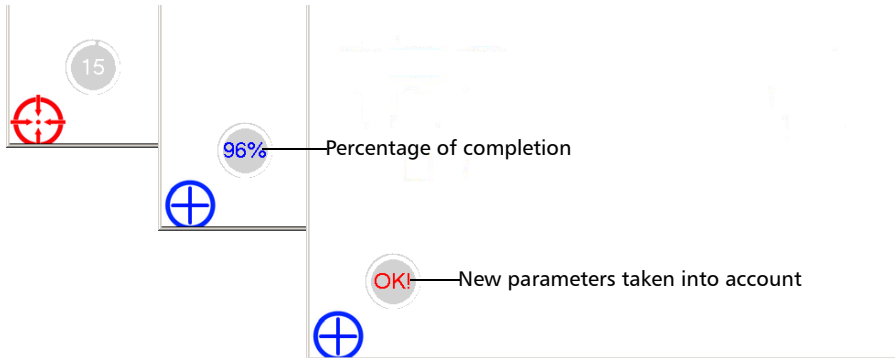
2. Tap **Advanced**.

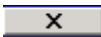

3. Select the **Tools** tab.

4. Tap **Linearization**.

5. Using the stylus (or any blunt pointing device), simply press the center of the different targets that appear on the screen. Keep pressing until the application displays **OK** to indicate that the new parameters have been taken into account.

15

96%————Percentage of completion

OK!————New parameters taken into account

Note: *If you want to stop the calibration process, stop pressing the screen. The application will close automatically after a few seconds and you will return to the **Touchscreen Calibration** window.*

6. When the calibration is complete, tap ☒ to close the **Touchscreen Calibration** window.
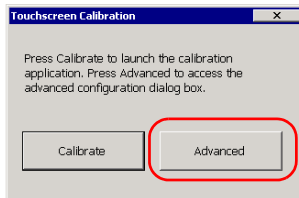
Enabling or Disabling the Touchscreen Right-Click Feature

By default, you can right-click with your touchscreen (see *Right-Clicking with the Touchscreen* on page 27). However, you can disable this feature if you prefer.

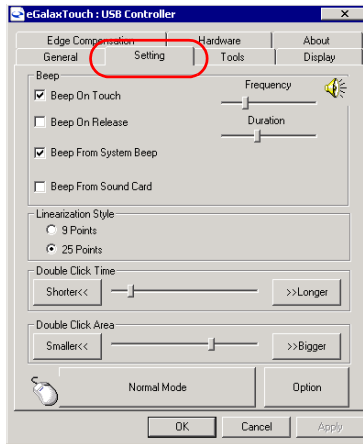### *To enable or disable the right-click of the touchscreen:*

1. From the **Main Menu**, tap **Setup.**

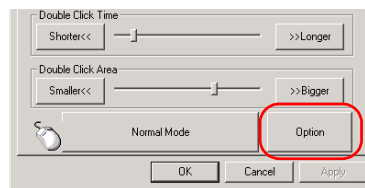*2.* Double-tap **Touch Screen Calibration**.

3. Tap **Advanced**.

4. Select the **Setting** tab.

5. Tap the **Option** button.

6. From the **Option** tab, select the **Enable Auto Right Click** check box to enable the option.

OR

Clear the check box if you prefer to disable the right-click.
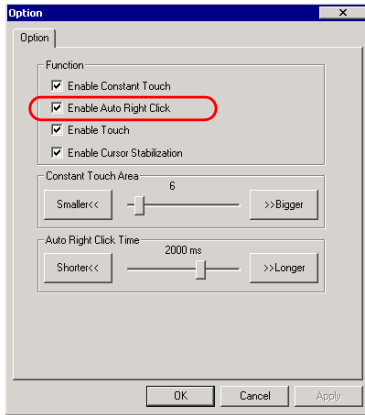
7. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

8. Tap **OK** once again to close the touchscreen parameters window.

*9.* Tap [✕] to close the **Touchscreen Calibration** window.

Customizing the On-Screen Keyboard

You can customize the appearance and behavior of the on-screen keyboard. For more information on the various parameters that you can set, refer to the on-screen keyboard online help.

For information on how to switch from one of the available languages to another, see *Selecting the Language of Operation* on page 68.

To customize the appearance and behavior of the on-screen keyboard:

1. Minimize the Compact Toolbox window.

2. On the Windows taskbar, tap **Start**, then select **All Programs** > **Touch-It Virtual Keyboard** >**Setup**.

3. Configure the keyboard according to your needs.
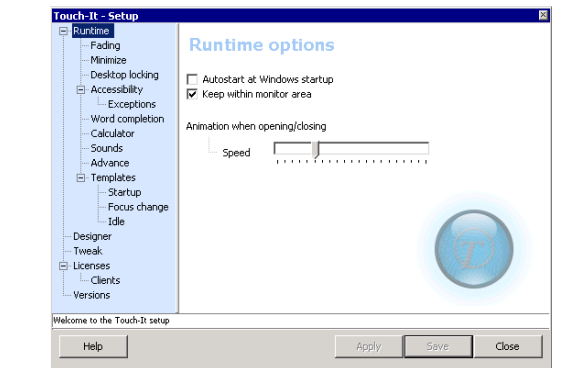
Note: *You can access the online help related to the keyboard options by tapping the **Help** button.*

4. When you have finished, tap **Close**.

Enabling or Disabling the Automatic Logon

Note: *Only administrator-level users can enable or disable the automatic logon feature.*

You can configure your unit to automatically log on to Windows at startup (no need to select a user and enter a password). You can also disable this feature if you prefer to define separate user accounts with different user access rights and passwords.

Note: *For security reasons, when the unit comes back from standby or hibernate modes, the application will prompt you to select a user and enter a password, even if you have enabled the automatic logon feature.*

By default, the automatic logon is enabled for the *Operator* user account, with an empty password. If you want to create (or modify) a password for the user account for which the automatic logon is enabled, you will have to disable the feature first, and then enable it again once the new password is defined.

If you want to modify the account used for the automatic logon, you will also have to disable the feature first, and then enable it again for the new account.

To enable (or modify) the automatic logon:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **AutoLogon**.
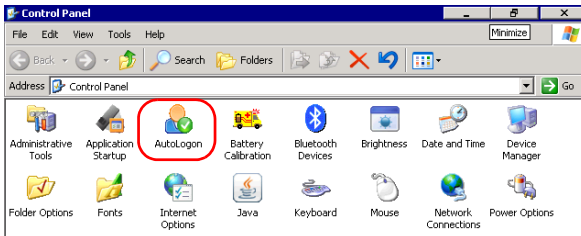
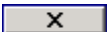**3.** Enter the desired user name (account) and the corresponding password.

┃!┃ # IMPORTANT

You cannot create user accounts or modify passwords from the Automatic Logon window.

The user name and password that you specify must correspond to those of an account that has been defined from User Accounts in Control Panel.

4. Tap **Enable Auto Logon**.

5. Tap [✕] to return to the **Control Panel** window.

At next startup, you will no longer need to specify a user name and password (except if the unit comes back from standby or hibernate modes).

To disable the automatic logon:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **AutoLogon**.

3. Tap **Disable Auto Logon**.

4. When the application prompts you, confirm with **Yes**.

5. Tap [**X**] to return to the **Control Panel** window.

   At next startup, you will have to specify the user name and password.

Configuring the Shortcut Buttons

You can start a particular application directly by pressing one of the shortcut buttons. You can determine which application each of these shortcut buttons will start.

There are two shortcut buttons:

➤ one to start an application related to the module in slot 0 or the on-screen (virtual) keyboard.

➤ another to start either the built-in power meter application (if your unit is equipped with this option), the on-screen keyboard, or an application related to the module in slot 1.

To configure the shortcut buttons:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Application Startup**.
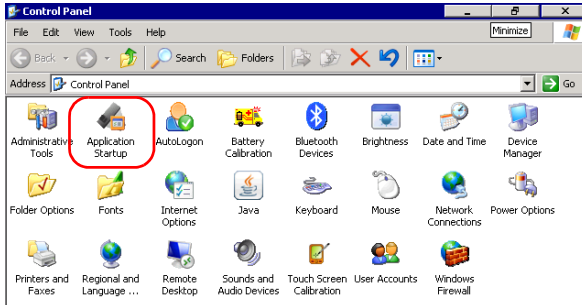
3. Under **Shortcut buttons**, associate the application to each button.

4. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Selecting the Startup Application

The first time you start your unit, Compact Toolbox is displayed. However, you can configure your unit to automatically start in any of the available applications.

The selected application or applications will start automatically the next time you turn on your unit after a shutdown (not in standby mode). For more information, see *Turning On or Off the Unit* on page 28.

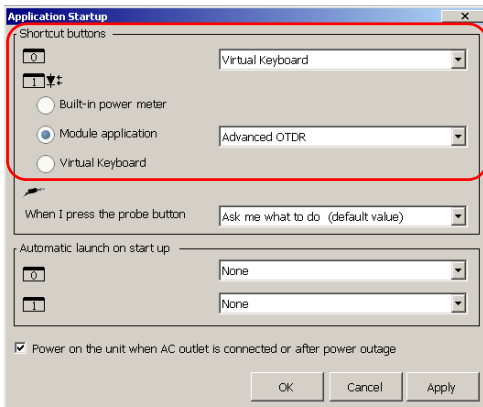If the specified application cannot be started (for example, the required module is not present in the unit or is not inserted in the same slot), the startup application setting is automatically reset to **None**. You will have to select the application again when the module is inserted into the unit.

To select a startup application:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Application Startup.**

3. Under **Automatic launch on start up**, select the application or applications you want to start automatically when you turn on your unit.
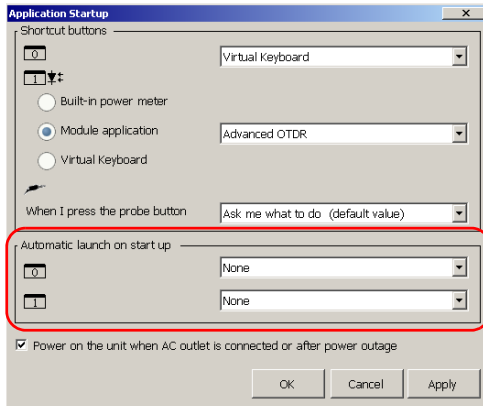
Note: *The Power Meter application is only available if you purchased this option with your unit.*

4. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Selecting the FIP Startup Application

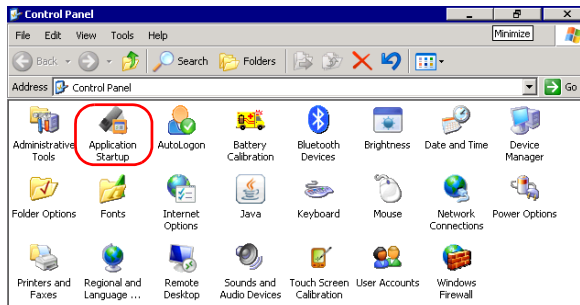Your unit supports both the fiber inspection probes (FIP) of the FIP-400 and FIP-400B series. By default, the unit prompts you to select the application corresponding to the FIP with which you want to work (FIP-400 or FIP-400B). If you prefer, you can configure the unit to always start your favorite application directly instead.

To select the FIP startup application:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Application Startup.**
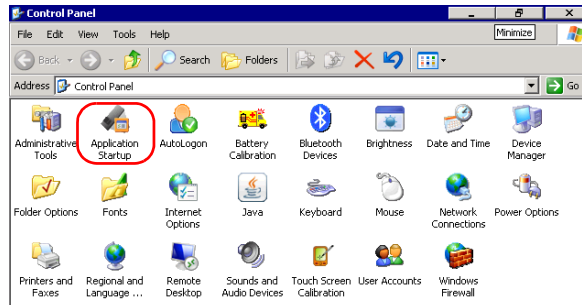
3. From the **When I press the Probe button** list, select the desired behavior. If you want to be prompted each time to confirm the application to use, select the **Ask me what to do** option.

Note: *If the list is not available, it means that the ConnectorMax2 application is not installed on your unit. In this case, the ConnectorMax application will start automatically, enabling you to work with the probes of the FIP-400 series. If you also wish to work with probes of the FIP-400B series, you will need to install the most recent ConnectorMax kit.*
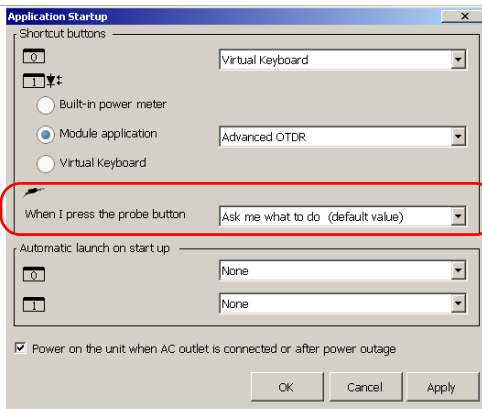
4. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Configuring Network Printers

To print documents and images on a network printer, you must configure the printer first.You must know the IP address of the network printer that you want to configure (contact your network administrator).

IMPORTANT

➤ **Your unit does not support USB printers.**

➤ **Your unit only supports network printers compatible with PCL 6 (which is a "Printer Control Language"). If you are not sure whether a specific printer is compatible or not, contact your network administrator.**

For more information on printing, see *Printing Documents* on page 83.

To configure the printer:

1. On your unit, from the **Main Menu**, tap **Setup**.

2. Double-tap **Printers and Faxes**.
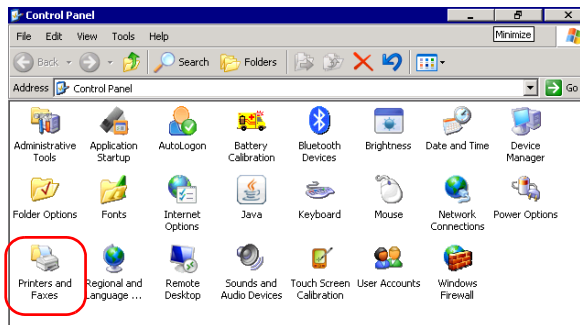
3. Select the **HP Universal Printing PCL 6** item.
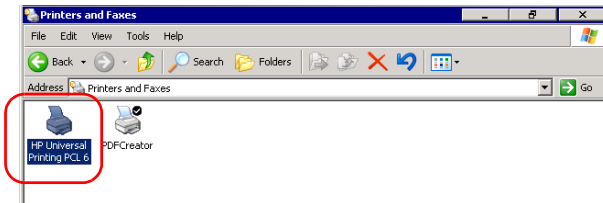
4. From the menu, select **File** > **Printing Preferences**.

5. Under **Find a Printer**, select **Enter a Printer Address**.
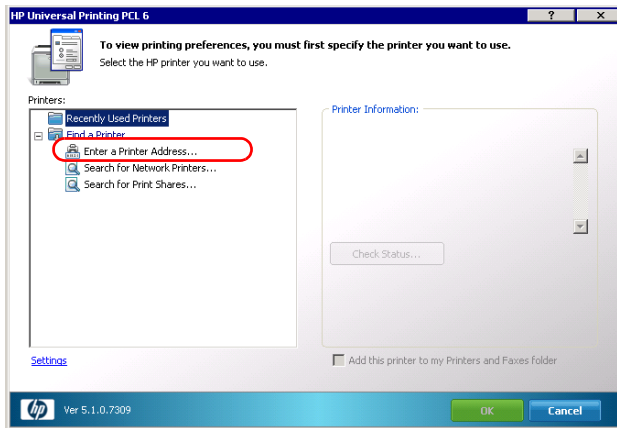
6. Enter the IP address of the printer that you want to configure, and then tap **OK**.
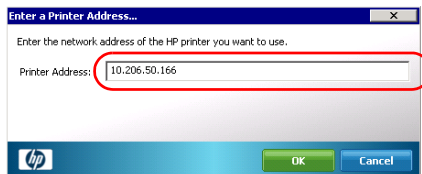
7. Select the **Add this printer to my Printers and Faxes** folder check box.
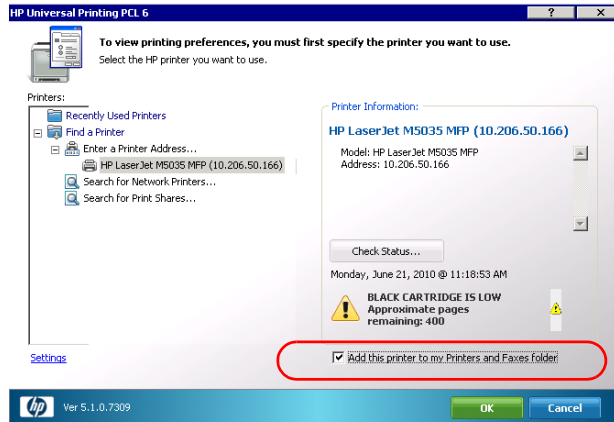
8. Tap **OK** to confirm. The operation can take several minutes to complete.

9. When the application prompts you, click **OK** to acknowledge the message.

10. If desired, modify the printer preferences to your liking.
You can save the whole set of preferences for future use with the

Save As button or press the unit's knob to save the parameters for the current work session.

11. Close the **Printing Preferences** window, and then close the **Printers and Faxes** window to return to Compact Toolbox.

The printer is now ready to use.

Selecting the Language of Operation

You may display the user interface in one of the available languages (default is English).

When you change the interface language, the corresponding keyboard is not automatically added to the list of available keyboards. You must add the desired keyboard separately if you want to enter text in a specific language (both on-screen or "real" keyboards). Once the keyboards are added, you can switch easily from one input language to another.

IMPORTANT

The keyboards that you add will not be available from the logon window.

To avoid problems, when you define or modify passwords, EXFO recommends that you always use the keyboard corresponding to the language of the unit at time of purchase. Otherwise, you might not be able to log on to your user account (unsupported characters, different keyboard layout, etc.)

Values are kept in memory even when you turn the unit off.

IMPORTANT

The language setting of the VLC media player is independent of the language setting of Compact Toolbox. You must configure both separately.

To select a new interface language:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Regional and Language Options**.
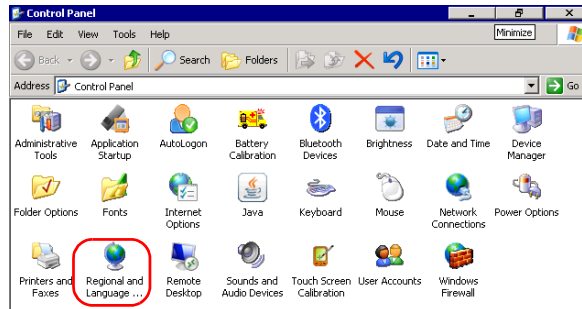
3. Select the **Languages** tab.
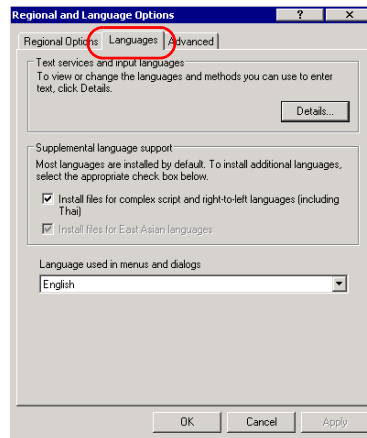
4. From the **Language used in menus and dialogs** list, select the desired language.

5. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

The new interface language will become available at the next startup.

To add new input languages:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Regional and Language Options**.
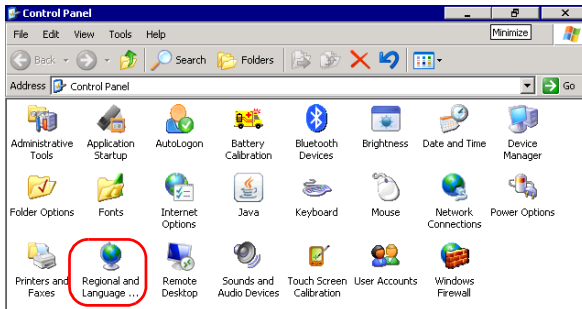
3. Select the **Languages** tab.
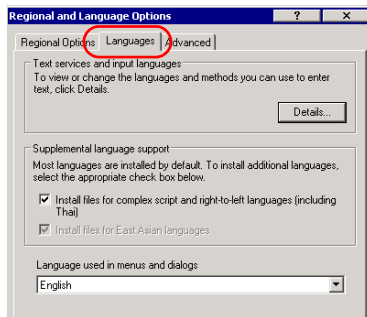
4. Under **Text services and input languages**, tap **Details**.
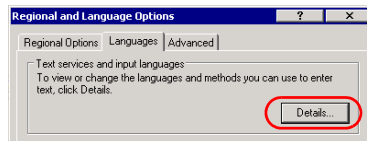
5. Under **Installed services**, tap **Add**.
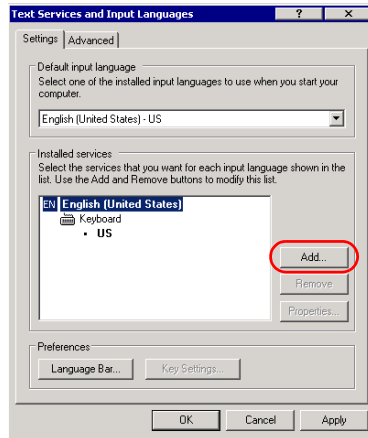
6. From the **Input language** list, select the desired language.
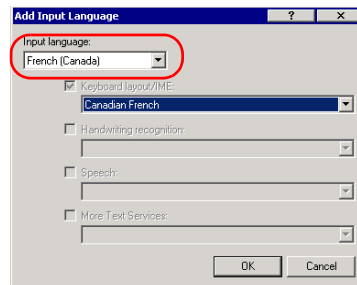
7. If necessary, from the **Keyboard layout/IME** list, select the desired option.

8. Tap **OK** to confirm.

9. Repeat steps 5 to 8 for all the languages that you want to add.

10. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

The added keyboards are available immediately. You can now switch from one input language to another.

To switch from one of the available input languages to another:

1. From the unit's keypad, press the ⬜\⌨ button to display the shortcut to the on-screen keyboard.

2. Tap ⌨ to display the on-screen keyboard.

3. From the on-screen keyboard, tap 💬 to display the list of available input languages.

4. From the list of languages, select the desired one.

You are now ready to start entering text in the selected input language.

Note: *Modifying the input language does not modify the language of the interface.*

To modify the language of the VLC media player:

1. Minimize the Compact Toolbox window.

2. On the Windows taskbar, tap **Start**, then select **All Programs** > **VideoLAN** > **VLC media player**.

3. From the menu, select **Tools** > **Preferences**.

4. Under **Language**, select the desired language from the list.

    By default, the language is set to **Auto**, to follow the *Standards and formats* setting of Windows, but you can select any other language.

5. Tap **Save** to confirm and close the application.

Note: *This operation has no impact on the date and time formats in Windows Embedded Standard and in the Compact Toolbox applications.*

Setting Date and Time Formats

The current date and time are displayed at the bottom of the **Main Menu**.

You can modify the format in which the date and time are displayed.

For information on how to adjust the date, the time, and the time zone, see *Adjusting the Date, Time and Time Zone* on page 75.

Note: *Modifying location, date and time settings will affect some of the Windows Embedded Standard settings.*

To set date and time formats:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Regional and Language Options**.

3. Select the **Regional Options** tab.
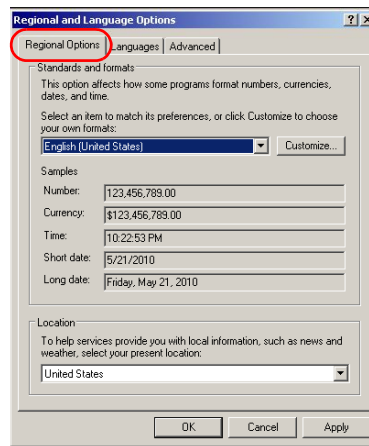
4. Under **Standards and formats**, select the desired language. This will determine the date formats available for the time as well as the short and long dates.

5. If necessary, refine the settings as follows:

5a. Tap **Customize** to display the detailed settings.
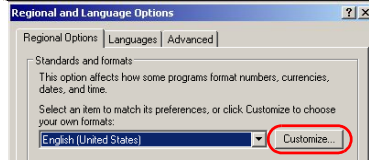
5b. Select either the **Time** or **Date** tab, depending on the settings that you want to modify.
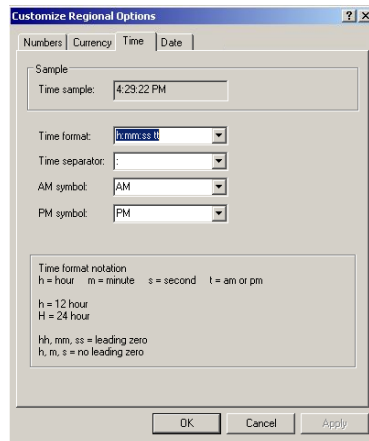
6. Modify the settings.

7. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Adjusting the Date, Time and Time Zone

Note: *Only administrator-level users can adjust the date, time and time zone.*

The current date and time are displayed at the bottom of the **Main Menu**. When saving results, the unit also saves the corresponding date and time.

Note: *A dedicated clock battery keeps the date and time accurate. For details, see* Replacing Batteries *on page 182.*

For information on how to modify the format in which the date and time are displayed, see *Setting Date and Time Formats* on page 73.

Note: *Modifying date and time settings will affect some of the Windows Embedded Standard settings.*

To adjust the date and time:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Date and Time**.
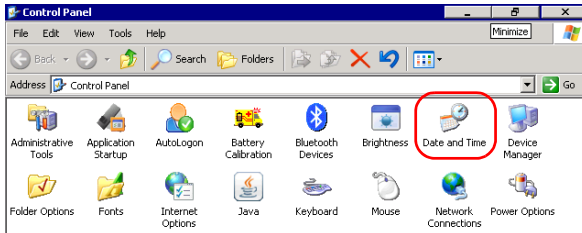
3. Select the **Date & Time** tab.
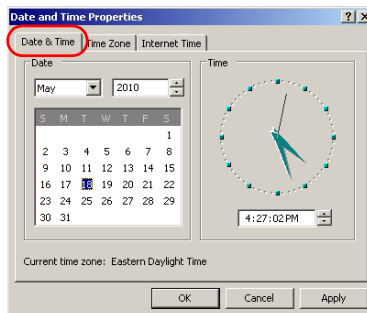
4. Modify the settings according to your needs.

5. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

To change the time zone:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Date and Time**.
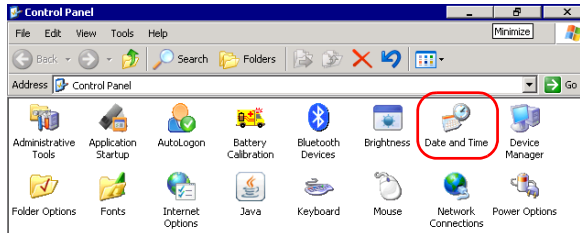
3. Select the **Time Zone** tab.
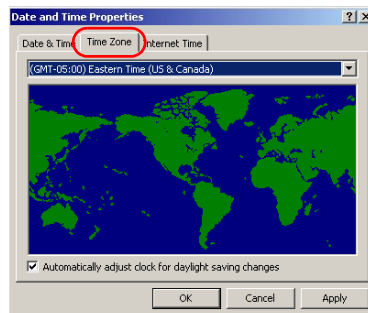
4. Modify the settings according to your needs.

5. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Configuring the Power Management Options

Note: *Only administrator-level users can configure the power management options. These options can only be modified for administrator-level accounts.*

To get the optimum performance out of your Compact Modular Platform, your unit comes with three predefined sets of parameters (schemes) to manage power.

When you do not use the unit for a while, the display may be turned off to save power. You can also configure the unit to go into standby or hibernation mode after the specified duration has expired (see *Turning On or Off the Unit* on page 28).

For all of these actions, you can set idle durations for AC adapter/charger and battery operation. The values that you set are kept in memory even when you turn the unit off.

Note: *When the backlight is turned off, the unit operation is not interrupted. Press any key or touch anywhere on the screen to return to normal operation.*

The table below indicates the default values that are included in each of the predefined power schemes.

Power Scheme	Action	When AC is connected	Running on batteries
Standard (selected by default)	Turn off monitor	Never	After 5 minutes
	System standby	Never	After 15 minutes
	System hibernates	Never	After 30 minutes
Always On	Turn off monitor	Never	Never
	System standby	Never	Never
	System hibernates	Never	Never
Max Battery	Turn off monitor	After 15 minutes	After 5 minutes
	System standby	After 30 minutes	After 15 minutes
	System hibernates	After 45 minutes	After 30 minutes

Note: The Turn off hard disks *setting is not taken into account (not applicable).*

You can either modify one of the existing power schemes or create one (based on an existing power scheme).

CAUTION

Your unit has been designed to manage power as well as battery alarms automatically. Never modify the parameters that appear on the Alarms tab. Doing so WILL prevent the unit from working properly.

To select a power scheme:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Power Options**.
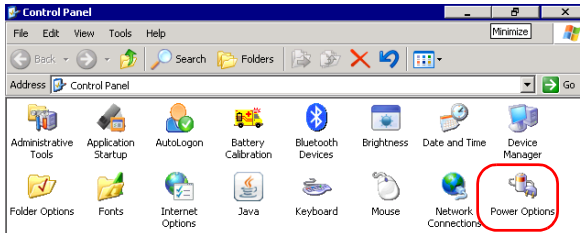
3. From the **Power Schemes** list, select the desired predefined set of parameters.
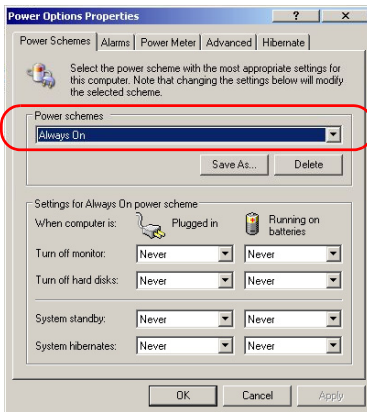
4. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

To modify a power scheme:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Power Options**.
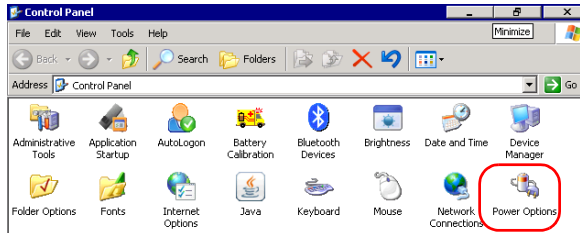
3. From the **Power Schemes** list, select the predefined set of parameters that you want to modify or on which you want to base your new scheme.

4. Modify the parameters to your needs.

5. Tap **Save As**.
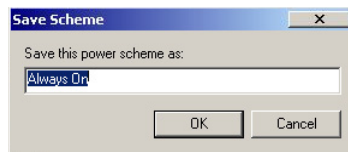
➤ If you want to modify the existing power scheme, keep the name as is, and then tap **OK**.

   OR

➤ If you prefer to create a new power scheme, enter a new name, and then tap **OK**.

6. Tap **Apply** to confirm the changes, and then **OK** to return to the **Control Panel** window.

Configuring the Internet Options

You can browse the Web directly from your unit, provided that you have access to an Internet connection and that the Internet options are configured properly.

If you are not sure about how you should configure your Internet access, contact your network administrator.

To configure the Internet options:

1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Internet Options**.
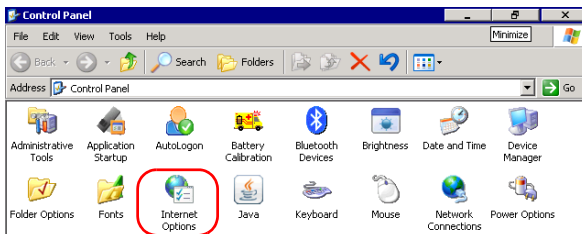
3. Go to the **Connections** tab.

4. Modify the settings using the information provided by your network administrator.

5. Tap **OK** to return to the **Control Panel** window.

Setting Other Parameters

You can also configure other parameters via the **Control Panel** window. Refer to Microsoft Windows Embedded Standard documentation for details.

5   *Working with Your Unit*

Printing Documents

You can print documents and images directly from your unit by using either the PDFCreator (for PDF files) or a network printer (for printing on paper).

You can view the PDF files from your unit, using the SumatraPDF reader. For more information, see *Viewing PDF Files* on page 86.

To print on a network printer, your unit must be accessible from this network by Wi-Fi or standard Ethernet. You must also define the printer on your unit before attempting to access it (see *Configuring Network Printers* on page 65).

If you cannot connect your unit to a network, you can use a USB memory key to transfer the files that you want to print to a computer connected to the network.

If you need more flexibility and a greater choice of report types, you can also transfer result files to a computer onto which applications such as EXFO FastReporter 2 are installed.

Note: *Some applications may not offer print functions.*

To print documents:

1. Open a Web browser as follows:

    1a. From Compact Toolbox, select the **Utilities** tab.

    1b. Double-tap the **Internet Explorer** icon to open the browser.
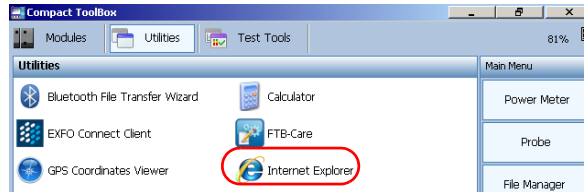
2. Select the document that you want to print as follows:

    2a. From the menu, select **File** > **Open**.

    2b. Tap **Browse** to locate the file that you want to open.
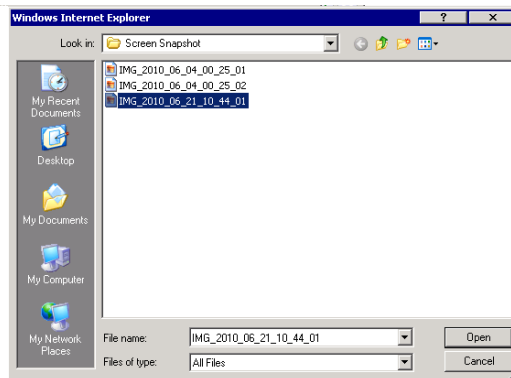
    2c. Tap **Open** to load the file in Internet Explorer.

    2d. Tap **OK** to confirm.

3. From the menu, select **File** > **Print**.

4. From the **General** tab, select the desired printer (PDFCreator by default).

5. If necessary, tap **Preferences** to adjust the parameters to your needs.

Note: *If you selected a network printer, you can save the whole set of preferences for future use with the **Save As** button or simply press the unit's knob to save the parameters for the current work session.*

6. Tap **Print** to start the printing process.

7. If you selected PDFCreator, proceed as follows:

7a. Enter the desired information.

To view the PDF file immediately after its creation

7b. Tap **Save**.

7c. Specify a location and a file name and tap **Save**. If you have selected the option to view the PDF file after its creation, the SumatraPDF reader will display the new file.

7d. If necessary, tap ☒ to close the SumatraPDF window.

8. Tap ☒ to close Internet Explorer and return to the **Utilities** tab.

Viewing PDF Files

You can view PDF files directly from your unit using the SumatraPDF reader. For more information on the available features for this reader, refer to the SumatraPDF online help.

To view PDF files:

1. From **Main Menu**, select **File Manager**.

2. Browse through the folders to find the desired PDF file.

3. Double-tap the file.

4. The file opens automatically in the SumatraPDF application.
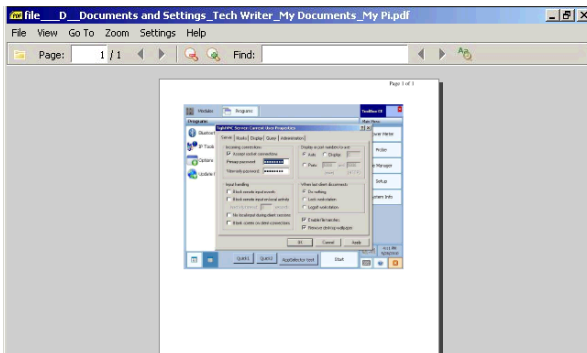
Note: *You can access the online help directly from the **Help** menu of the SumatraPDF application. You will need a connection to the Internet to view the online help.*

Taking Screen Captures

You can take captures of what is displayed on your screen, directly from your unit. This could be useful for troubleshooting when you need another person to have a look at a specific configuration or problem. You could also use this tool for training purposes.

If you want to capture images of the fibers that you examine with the fiber inspection probe, you can use the capture feature of the probe instead.

For more information on how to modify the default file format and destination folder, see *Setting Storage Parameters for Screen Captures* on page 90.

➤ Images are saved using the defined file format. By default, images are created in .bmp format, but you can modify this parameter.
By default, they are kept in the following folder:

D:\Documents and Settings\User_currently_logged _on\My Documents\Screen Snapshot

where *User_currently_logged_ on* corresponds to the user name of the person that is currently logged on the unit.

It is possible to modify the folder in which images are automatically saved.

➤ By default, the application generates file names as follows:

IMG_[YEAR]_[MONTH]_[DAY]_[HOUR]_[MINUTE]_
[SEQUENTIAL NUMBER].bmp

Example:

For a screen capture taken on August 20, 2010, the file name could be:

IMG_2010_08_20_13_23_01.bmp.

Note: *The HOUR value will appear in a 24-hour format, regardless of your unit's time settings.*

Note: *The SEQUENTIAL NUMBER value is used to differentiate two captures that would have been taken at the same date and time.*

➤ There are two ways to capture images: a quick mode (the screen capture tool is automatically closed as soon as the capture is made) and a multiple-capture mode (the screen capture button is part of a floating toolbar that remains available until you close it). By default, this toolbar is located in the lower-right corner of the screen. However, you can move it to a location that better suits your needs.

To take only one screen capture:

1. From the unit's keypad, press the ⊡\⌨ button.

2. Tap the 📷 button.

The screen capture is automatically taken (a sound and visual effect typical of a camera taking a picture indicate that the capture is complete).

Note: *If a keyboard is connected to your unit, you can also press the PRINT SCREEN key.*

To take several screen captures:

1. If you have configured one of the shortcut buttons to automatically display the virtual keyboard, press the appropriate button.

   OR

   From Compact Toolbox, tap the on-screen keyboard icon on the lower-right part of the screen (under the clock).

2. Once the on-screen keyboard is displayed, tap the 🔲 button.

3. From the floating toolbar, tap the 📷 button.

The screen capture is automatically taken (a sound and visual effect typical of a camera taking a pictureindicate that the capture is complete).

Setting Storage Parameters for Screen Captures

You can modify the file format of the screen captures as well as the destination folder, that is the folder to which the captures will be sent.

➤ By default, images are saved in .bmp format, but you can configure the application to save them in .jpg or .png format.

➤ By default, images are kept in the following folder:

D:\Documents and Settings\User_currently_logged _on\My Documents\Screen Snapshot

where *User_currently_logged _on* corresponds to the user name of the person that is currently logged on the unit.

You can select any other folder as the destination either locally on your unit, on a USB memory key.

Note: *If the specified folder is no longer available (folder name has been modified, folder has been deleted), the screen captures will be sent to the default folder. Similarly, if you have defined a destination folder on a USB key and this key is not connected to your unit when you take screen captures, the latter will be sent to the default folder.*

To set the default image format:

1. Minimize the Compact Toolbox window.

2. From the Windows taskbar, double-tap the [camera] icon.

3. Under **Image format**, select the option corresponding to the desired format.
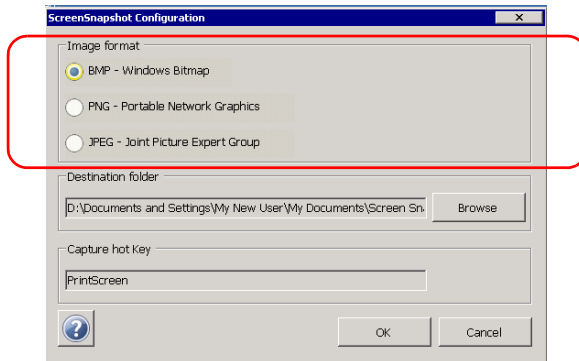
4. Tap **OK** to confirm the changes and close the window.

To modify the destination folder:

1. Minimize the Compact Toolbox window.

2. From the Windows taskbar, double-tap the 📷 icon.

3. Under **Destination folder**, tap **Browse**.
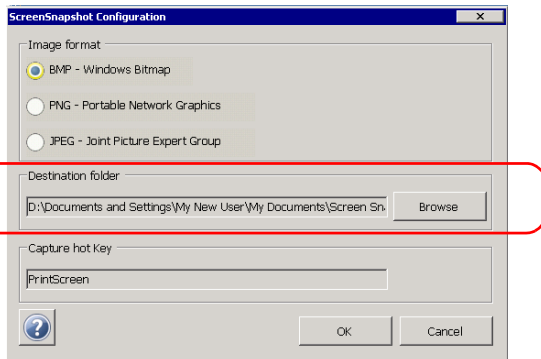
4. From the **Browse for Folder** window, select the folder that you want to use to store the screen captures. If necessary, you can create a folder.
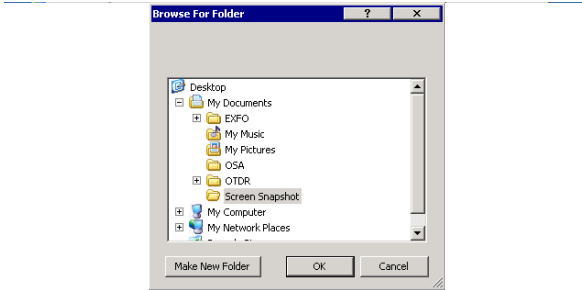
5. When your selection is made, tap **OK**.

6. Tap **OK** to confirm the changes and close the window.

Reading Audio and Video Files

Your unit is equipped with the VLC media player which enables you to read audio files and to view video files (such as .avi and .divx). This could be especially useful if your company wants to use multimedia files for training. The player can read files that are stored on your unit, on a USB memory key, on a network folder, or even on a Web site.

IMPORTANT

The VLC media player does not support the Flash format. If you want to read files in this format, you will need to install the Adobe Flash Player application (see *Installing Adobe Flash Player on Your Unit* on page 96).

For more information on how to configure the language of the media player, see *Selecting the Language of Operation* on page 68.

For more information on how to use the video player, refer to the VideoLAN online help.

To read video or audio files:

1. From Compact Toolbox, select **File Manager**.

2. Locate the video or audio file that you want to read.

3. Double-tap the file.

The media player starts reading automatically if the file format is recognized.

Note: *You can access the online help from the **Help** menu of the VCL Media Player application. You will need a connection to the Internet to view the online help.*

Installing Adobe Flash Player on Your Unit

The Adobe Flash Player application is not installed on your unit by default, but you can install it if you need to read files in Flash format.

> # **IMPORTANT**
>
> **EXFO does not provide licenses for Adobe Flash Player. Contact Adobe to purchase a license that will entitle you to install Flash Player on your unit.**

To download the installation files, you will need a connection to the Internet. You can either download the files directly to your unit or to a computer (and transfer them to your unit later using a USB key).

Note: *Only administrator-level users can install software under Windows Embedded Standard. However, when the installation is complete, all users will be able to read files in Flash format.*

IMPORTANT

Ensure to download the latest installation package for the 32-bit version of Flash Player for Windows (operating system), and Internet Explorer (browser). You should retrieve the EXE installer component.

To install Adobe Flash Player on your unit:

1. If necessary, turn on your unit.

2. From your computer or your unit, open a Web browser and go to http://www.adobe.com/special/products/flashplayer/fp_distribution3.html.

3. Locate the most recent version of Flash Player 32 bits.

4. Under Flash Player 32 bits, locate the entry corresponding to Windows (operating system) and Internet Explorer (browser).

5. Save the corresponding *EXE installer* to a location of your choice (on a USB memory key connected to your computer or on your unit).

6. If you have downloaded the file to a USB key, connect the key to your unit.

7. Double-tap the downloaded file, and follow the on-screen instructions.

Note: *At this point, if you have used a USB memory key to transfer the installation files to your unit, you can remove it.*

All users are now ready to read files in Flash format.

Browsing the Web

You can browse the Web directly from your unit, provided that you have access to an Internet connection.

If you need to modify the Internet options, see *Configuring the Internet Options* on page 82. For more information on how to connect to the Internet using a 3G USB modem key, see *Accessing the Internet with a 3G USB Modem Key* on page 100.

To browse the Web:

1. Open a Web browser as follows:

    1a. From Compact Toolbox, select the **Utilities** tab.

    1b. Double-tap the **Internet Explorer** icon to open the browser.
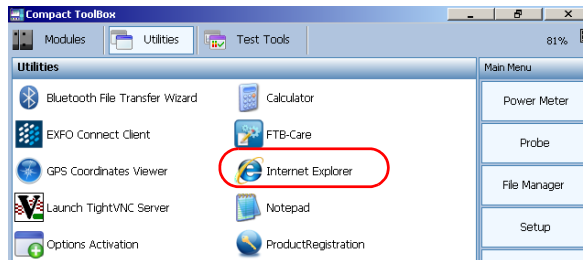
2. Enter the desired Web address in the address bar and tap the

→ button (located at the right of the address bar) to start browsing.
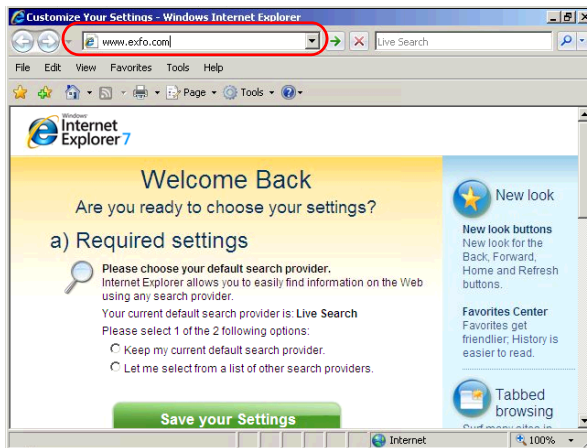
3. Close the window to return to the **Utilities** tab. Simply close the **Control Panel** window to return to Compact Toolbox.

Accessing the Internet with a 3G USB Modem Key

Note: *Only administrator-level users can install software under Windows Embedded Standard. However, when the installation is complete, all users will have the possibility to access the Internet using a USB modem key.*

You can connect an optional 3G USB modem key to your unit to have a wireless access to the Internet.

When you receive your modem key, it contains no Subscriber Identity Module (SIM) card. This means that you will need to:

➤ Purchase a compatible and unlocked SIM card from a provider offering 3G services. If you need more information on the 3G coverage in your area, contact your regional EXFO sales representative.

➤ Have the card activated (you must subscribe to a package of mobile services).

➤ Insert the card in the modem key.

The very first time you connect a USB modem key to your unit, the AirCard Watcher application will be installed automatically on your unit. You will use this application to establish a connection with the mobile network whenever you want to work with your USB modem key. You only need to install this application once.

> # IMPORTANT
>
> ➤ **Only the Sierra Wireless 319U keys provided by EXFO are supported on your unit.**
>
> ➤ **Before using the USB modem key for the first time, you must install the most recent System Upgrade and Platform kits for your unit. To do this, you will need a standard USB memory key and a computer with an Internet access. You can also retrieve the kits directly from your unit, but you will need an Internet access (other that the one that would be provided by the 3G USB modem key).**
>
> ➤ **Always turn your unit on *before* connecting the USB modem key to it. Otherwise, the USB modem may not be detected properly.**

To upgrade your unit to the latest System Upgrade and Platform components:

1. If necessary, turn on your unit.

2. Retrieve the latest System Upgrade and Platform kits:

   2a. From your computer or your unit, open a Web browser and go to www.exfo.com.

   2b. Log on to your My EXFO account.

   2c. Under FTB-200 v2 Compact Modular Platform, find the System Upgrade and Platform kits. If you need information on how to download the kits, refer to the Readme files provided with the kits.

3. Install the retrieved kits on your unit:

3a. Install the System Upgrade. For more information, refer to the installation procedure provided with the kit.

3b. Once the installation of the System Upgrade is complete, install the Platform kit on your unit. For more information, refer to the Readme file provided with the kit.

Note: *At this point, if you have used a USB memory key to transfer the installation files to your unit, you can remove it.*

You are now ready to install the AirCard Watcher application as explained hereafter.

To install the AirCard Watcher application on your unit:

1. If necessary, turn on your unit and wait for the startup sequence to complete.

2. If necessary, insert the SIM card into the USB modem key. For more information, refer to the documentation that came with your modem key.

3. Connect the USB modem key to one of the USB ports of your unit.

The installation of the AirCard Watcher application will start automatically.

4. Follow the on-screen instructions.

You will know that the installation is complete when the AirCard Watcher application starts.

5. Close the AirCard Watcher application.

6. Disconnect the USB modem key from your unit.

7. Reconnect the USB modem key to your unit so that it can be detected properly.

All users are now ready to start working with the USB modem key as explained hereafter.

To work with a 3G USB modem key:

1. If necessary, turn on your unit and wait for the startup sequence to complete.

2. If necessary, insert the SIM card into the USB modem key. For more information, refer to the documentation that came with your modem key.

3. If necessary, connect the USB modem key to one of the USB ports of your unit.

4. From the Windows desktop, double-tap the AirCard Watcher icon to start the application.

5. Once the AirCard Watcher application starts, tap **Connect** to establish a connection with the mobile network.

As soon as the connection is established, you are ready to browse the Web.

Note: *If you want to customize the behavior and appearance of the AirCard Watcher application, refer to the online help provided with the application (available by tapping ? from the toolbar).*

Note: *The application will display a warning message if no SIM card has been inserted in the USB modem key.*

Note: *Depending on the package that you have purchased with your service provider and the type of network, you may have to set specific parameters. If you are not sure on how to proceed or need more information about the configuration, contact your service provider.*

6. When you have finished working, tap **Disconnect** from the AirCard Watcher application, and then remove the USB modem key from your unit.

Retrieving the GPS Location of Your Unit

With the optional GPS USB key and the provided GPS utility, you can retrieve the latitude and longitude coordinates of your unit as well as the date and time of the reading. You will see either the last known coordinates or the current ones, depending on if the GPS key can establish a connection with the GPS satellites or not.

Note: *To be able to establish a communication, the unit must be used outdoors and as far away as possible from buildings and other solid objects.*

In addition to viewing the GPS information on-screen, you can copy it to the Clipboard in two formats: a text string or a URL link. The text string contains the GPS coordinates as well as a date and time stamp. Once the information is in the Clipboard, you can paste it to any document or test report (in editable sections). If your unit is connected to the Internet, you can even directly paste the URL link to a Web browser to locate your unit on a map.

IMPORTANT

➤ **Only the Canmore GT-730F(L) keys provided by EXFO are supported on your unit.**

➤ **Before using the GPS USB key for the first time, you must install the most recent System Upgrade and Platform kits for your unit. To do this, you will need a standard USB memory key and a computer with an Internet access. You can also retrieve the kits directly from your unit, but you will need an Internet access.**

Note: *Only administrator-level users can install software under Windows Embedded Standard.*

To upgrade your unit to the latest System Upgrade and Platform components:

1. If necessary, turn on your unit.

2. Retrieve the latest System Upgrade and Platform kits:

2a. From your computer or your unit, open a Web browser and go to www.exfo.com.

2b. Log on to your My EXFO account.

2c. Under FTB-200 v2 Compact Modular Platform, find the System Upgrade and Platform kits. If you need information on how to download the kits, refer to the Readme files provided with the kits.

3. Install the retrieved kits on your unit:

3a. Install the System Upgrade. For more information, refer to the installation procedure provided with the kit.

3b. Once the installation of the System Upgrade is complete, install the Platform kit on your unit. For more information, refer to the Readme file provided with the kit.

All users are now ready to start working with the GPS USB key as explained hereafter.

Note: *At this point, if you have used a USB memory key to transfer the installation files to your unit, you can remove it.*

> # IMPORTANT
>
> **Always turn your unit on *before* connecting the GPS USB key to it. Otherwise, the GPS key may not be detected properly.**

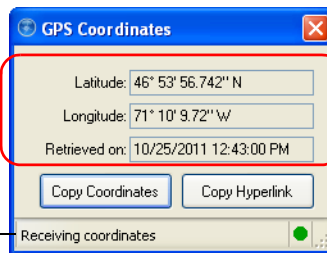*To retrieve the GPS location of your unit:*

1. Go outdoors with your unit.

2. If necessary, turn on your unit and wait for the startup sequence to complete.

3. Ensure that the GPS USB key is connected to your unit.

4. From Compact Toolbox, select the **Utilities** tab, then double-tap **GPS Coordinates Viewer**.
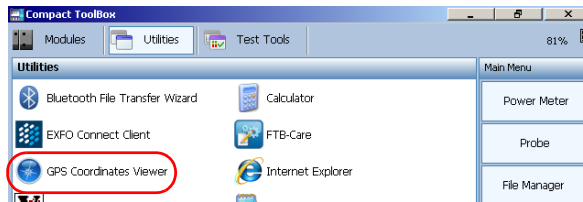
The GPS coordinates are displayed.

Status of the connection

Note: *If you see "GPS not detected" at the bottom of the **GPS Coordinates** window, this means that the GPS key is not connected to your unit. Once the GPS key is connected properly, the utility will display "Searching". Finally, when a connection can be established with the GPS satellites, the utility will display "Receiving coordinates".*

Note: *As this is the case with any other GPS device, you may have to wait a few minutes to get a valid GPS signal.*

➤ Tap **Copy Coordinates** to send the displayed information to the Clipboard as a text string.

➤ Tap **Copy Hyperlink** to send the displayed information to the Clipboard as a URL link.

5. When your work is finished, tap ☒ to close the utility.

Using the Calculator

You can use Microsoft Calculator directly from your unit.

To use the Calculator:

1. From Compact Toolbox, select the **Utilities** tab.

2. Double-tap **Calculator**.

Using the Text Editor

You can use Microsoft Notepad directly from your unit.

To use the text editor:

1. From Compact Toolbox, select the **Utilities** tab.

2. Double-tap **Notepad**.

Accessing Other Tools

Your unit comes with free tools such as Wireshark to help you troubleshoot networks. For more information, refer to the online help provided with these tools.

You can also purchase advanced software tools if you need more flexibility and possibilities. Online help is available from these applications to guide you.

To access tools:

1. From Compact Toolbox, select the **Test Tools** tab.

2. Double-tap the icon corresponding to the tool that you want to use.

6 *Using the Optional Built-In Power Meter and VFL*

The FTB-200 v2 Compact Modular Platform can be equipped with an optical power meter to measure absolute power (dBm or W) or insertion loss (dB). The power meter can detect modulated signals (1 kHz, 2 kHz, and 270 Hz).

The FTB-200 v2 can also include a visual fault locator (VFL) to inspect or identify fibers.

For more information on how to use the power meter or the VFL, refer to the power meter online help.

Note: *The appearance of your application may vary depending on the options that you have purchased and the module you are using. The illustrations presented herafter show the application as it appears when the unit is equipped with a built-in power meter and VFL.*

To access the built-in power meter or the VFL:

From the **Main Menu**, tap **Power Meter**.
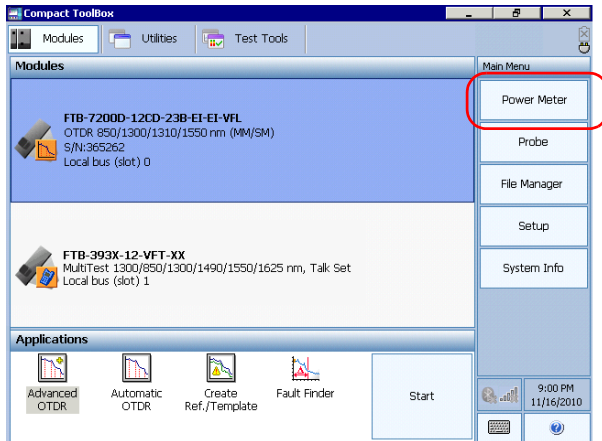
Note: *You can access the online help of the power meter and the VFL by tapping the ⊙ button from the power meter application.*

7 *Inspecting Fibers with a Probe*

The fiber inspection probe (FIP) is used to find dirty or damaged connectors by displaying an enlarged view of the connector surface. You can connect a probe to your unit to view fiber ends.

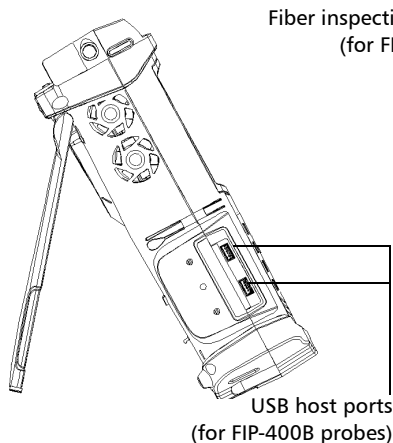Your unit supports both the probes of the FIP-400 and FIP-400B series.

Fiber inspections are made using the ConnectorMax (FIP-400) or the ConnectorMax2 (FIP-400B) application, depending on the probe that you use. By default, you will be prompted to select the application with which you want to work. If you prefer, you can configure the unit to always start your favorite application directly instead (see *Selecting the FIP Startup Application* on page 63).

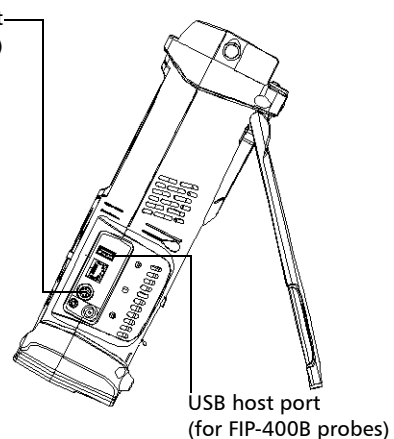For more information on how to work with the probe, refer to the ConnectorMax or ConnectorMax2 online help.

To inspect fibers with a probe:

1. Connect the probe to your unit.

➤ For a probe of the FIP-400 series, connect it to the probe port.

➤ For a probe of the FIP-400B series, connect it to one of the USB ports.

Left panel   **Right panel**

Fiber inspection probe port
(for FIP-400 probes)

USB host ports
(for FIP-400B probes)

USB host port
(for FIP-400B probes)

2. From the **Main Menu**, tap **Probe**.

3. If the unit prompts you to select an application, tap the button corresponding to the probe that you want to use to start the corresponding application.
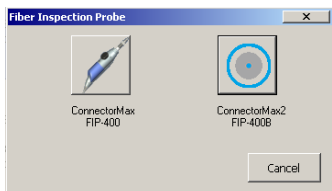
Note: *If the ConnectorMax2 application is not installed on your unit, the ConnectorMax application will start automatically, enabling you to work with the probes of the FIP-400 series. If you also wish to be able to work with probes of the FIP-400B series, you will need to install the most recent ConnectorMax kit.*

Note: *You can access the online help by tapping the* *button from the ConnectorMax or ConnectorMax2 application.*

8 *Managing Data*

You can copy, move, rename, delete files and folders directly on your unit.

You can transfer files from your unit to a USB memory key or a computer. You can also transfer data from a storage device or a computer to your unit.

Your unit is equipped with the following ports and devices for data transfer:

➤ Three USB 2.0 ports to connect a memory key or a USB to RS-232 adapter (see *Using the USB to RS-232 Adapter* on page 131.)

➤ an Ethernet port to connect to a network (for transfer via VNC or Remote Desktop - see *Accessing Your Unit Remotely* on page 153)

➤ internal Wi-Fi device (optional) to connect to a wireless network

➤ internal Bluetooth device (optional) to transfer data via Bluetooth.

To view the free disk space on your unit:

1. From **Main Menu**, tap **System Info**.

2. Select **Platform**.

   The free disk space is displayed next to the **Available Flash on "D:\ (APP)"** item.
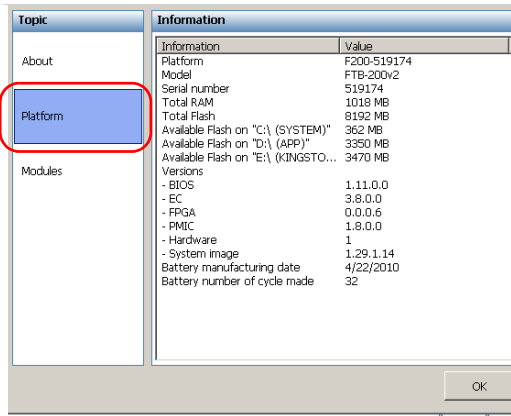
3. When you have finished, tap **OK** to close **System Information**.

To manage files or folders on your unit only:

From **Main Menu**, select **File Manager**.

To transfer files or folders between your unit and a USB memory key:

1. Connect the USB memory key to the USB port.

2. From **Main Menu**, select **File Manager**.

    The list of available drives and folders should include the memory key (**Removable Disk**). You can now manage your files and folders as you wish.

Note: *If you do not see the memory key, close File Manager and reopen it. You can also use the **Refresh** option from the **View** menu.*

3. When you have finished, remove the memory drive.

Transferring Data via Bluetooth

If your unit is equipped with the optional Bluetooth device (internal), you can transfer data between your unit and a computer using the Bluetooth technology. By default, both the Bluetooth and Wi-Fi devices are enabled, but not connected to a network.

If you have disabled the devices, you must enable them before trying to transfer data via Bluetooth (see *Enabling or Disabling the Bluetooth and Wi-Fi Devices* on page 137).

The computer that you use must run Windows XP SP3 or later; otherwise, there could be problems during data transfer. The computer must also be equipped with a Bluetooth device and be configured properly.

Note: *If you prefer to use devices such as BlackBerry smartphones instead of a computer for data transfer, you must ensure that they are Bluetooth-compatible and configured properly.*
Some devices only allow data transfer between devices of the same make. In this case, you will need to use another type of device or a standard computer to transfer data from your FTB-200 v2 unit.

Your unit must be located within a 9-meter area from your computer (limitation of the Bluetooth technology).

If you need to transfer large files (more than 1 Gb), use a USB key, or connect to a Wi-Fi or an Ethernet network.

> # IMPORTANT
>
> **Depending on the operating system that your computer is running, it is possible that only data transfer secured with a passkey be allowed.**
>
> **Since your unit cannot receive data secured with passkeys, in such a case, data transfer would only be possible *from your unit to the compute*r.**

The procedure presented hereafter explains how to transfer data from your unit to a computer. Data transfer from the computer to your unit is similar, except that data will be sent using the Bluetooth Transfer Wizard of the computer (*Send a file* option) and received by the unit (*Receive a file* option).
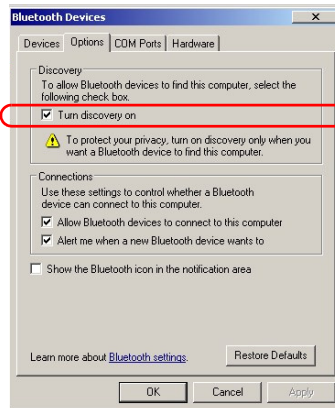
To transfer data via Bluetooth:

1. Configure your unit as follows:

1a. From the **Main Menu**, tap **Setup**.

1b. Double-tap **Bluetooth Devices**.
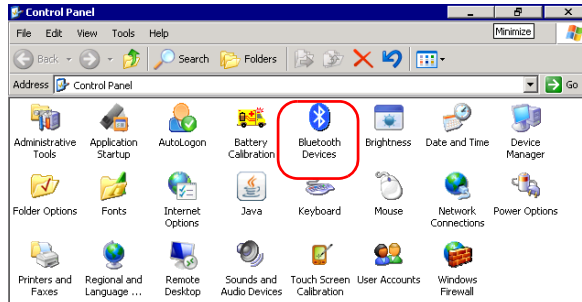
1c. From the **Options** tab, under **Discovery**, select the **Turn discovery on** check box.


1d. Ensure that the **Allow Bluetooth devices to connect to this computer** check box is selected.

1e. Tap **OK** to confirm.

2. Configure the computer as follows:

2a. On the computer, from **Control Panel**, double-click **Bluetooth Devices**.

2b. From the **Options** tab, under **Discovery**, select the **Turn discovery on** check box.

2c. Ensure that the **Allow Bluetooth devices to connect to this computer** check box is selected.

2d. Tap **OK** to confirm.

3. On the computer, click the Bluetooth icon (located on the taskbar) and select **Receive a file**.

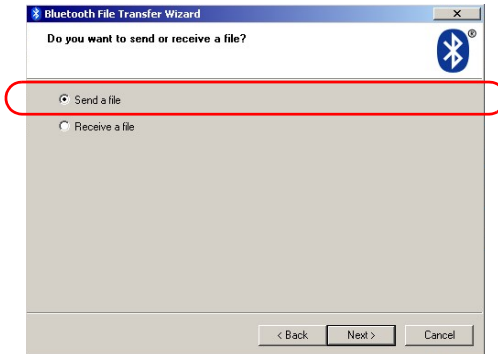**4.** On your unit, from Compact ToolBox, select the **Utilities** tab.

5. Double-tap **Bluetooth File Transfer Wizard**.
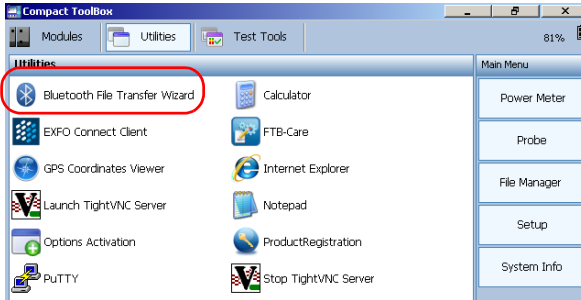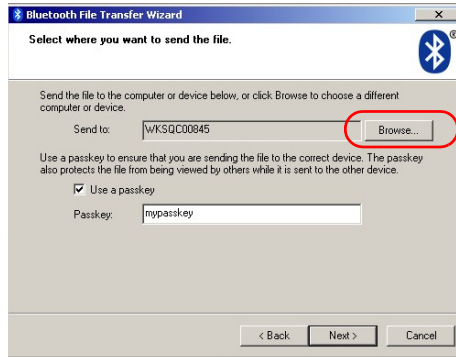

6. From the **Welcome** window, tap **Next**.

7. Select **Send a file** and tap **Next**.
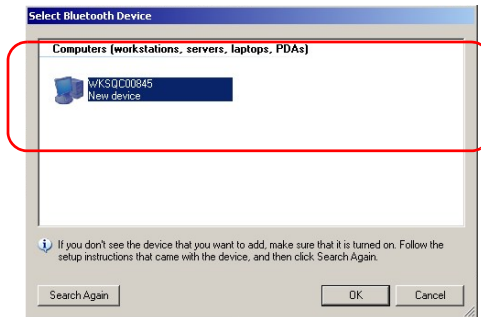
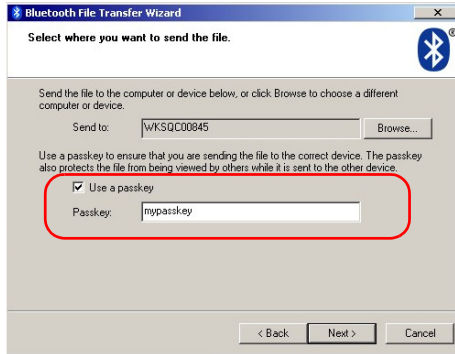**8.** Select the computer to which you want to transfer data as follows:

> **8a.** Tap **Browse**.

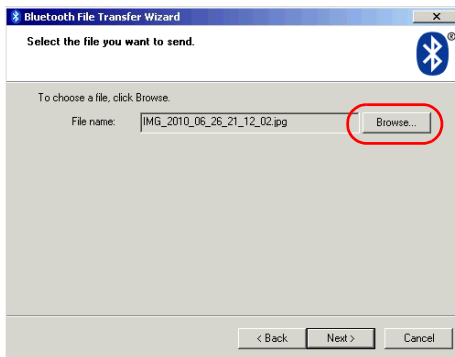> **8b.** Select the desired computer, and then tap **OK** to confirm.

9. If you want to use a passkey, select the corresponding check box and enter the passkey.

When you have finished, tap **Next**.

10. Tap **Browse** to select the file that you want to send to the computer.

11. Select the file, tap **Open** to confirm, and then **Next**.

12. On the computer, when the application prompts you, allow the connection and enter the passkey if necessary.

Note: *Once you have established a secured connection using a passkey, this passkey is kept in memory both on your unit and on the computer until you remove this connection (**Setup > Bluetooth Devices > Devices**) or change the passkey.*

13. On the computer, click **Finish**.

14. From the Bluetooth File Transfer Wizard on your computer, if necessary, modify the name of the received file and the storage location. Click **Next** to save the file. Click **Finish** to close the wizard.

**15.** On your unit, tap **Finish** to close the Bluetooth File Transfer Wizard.

Connecting to a Wireless Network

If your unit is equipped with the optional Wi-Fi device (internal), you can connect to a wireless network and benefit from all resources that are available on this network. You can transfer data exactly as you would do from an Ethernet network. By default, both the Bluetooth and Wi-Fi devices are enabled, but not connected to a network.

If you have disabled the devices, you must enable them before trying to connect to a wireless network (see *Enabling or Disabling the Bluetooth and Wi-Fi Devices* on page 137).
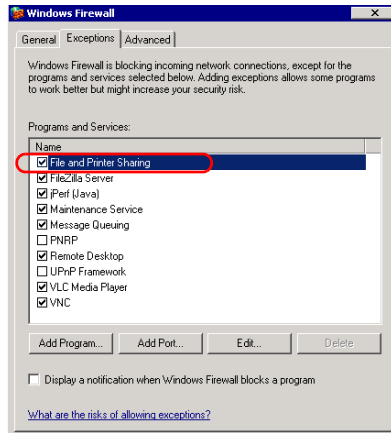
To connect to a wireless network:

1. If it is not already done, share all the required folders both on your unit and on your computer. If you are not sure on how to proceed, contact your network administrator.

2. If it is not already done, configure the firewall as follows:

2a. From **Main Menu**, tap **Setup**.

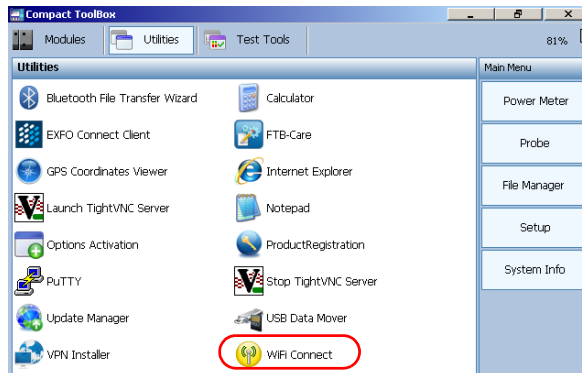*2b.* Double-tap **Windows Firewall**.
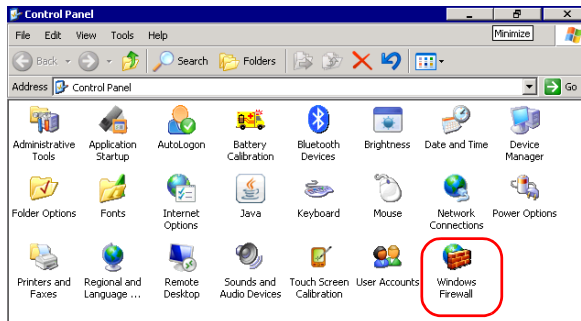
2c. Select the **Exceptions** tab.

2d. Ensure that the **File and Printer Sharing** item is selected.

2e. Tap **OK** to confirm.

3. On your unit, from Compact ToolBox, select the **Utilities** tab.
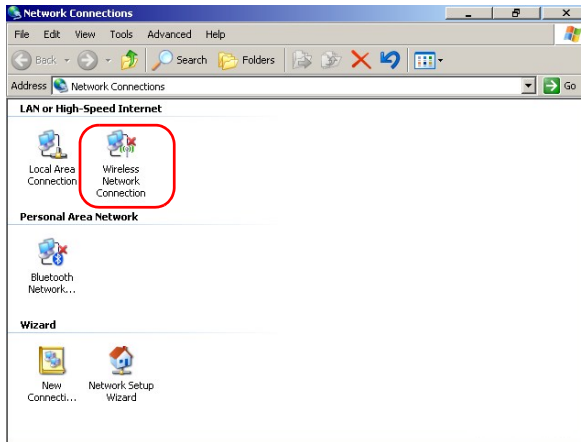
4. Double-tap **WiFi Connect**.

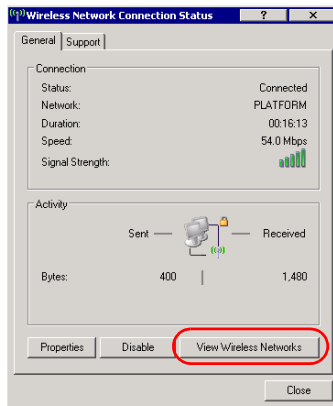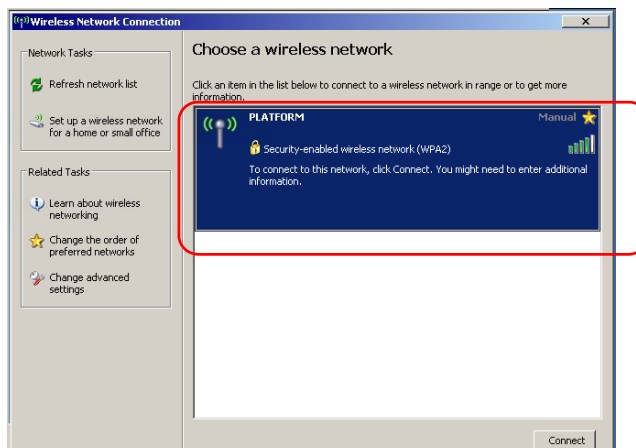**5.** Tap **OK** to acknowledge the message on how to display the list of wireless networks.

6. Double-tap **Wireless Network Connection**.

7. If your unit is already connected to a wireless network, tap **View Wireless Networks** to display the list of wireless networks.

8. From the **Wireless Network Connection** window, select the wireless network to which you want to connect.
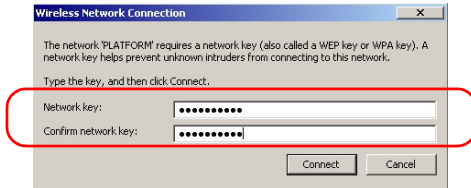

9. Tap **Connect**.

10. If the network is protected by a network key (password) enter it in the corresponding boxes and tap **Connect**.

Note: *Since all networks are different, you may also need to configure other parameters before being able to transfer data via Wi-Fi. For information on the configuration specific to your network, contact your network administrator.*

As soon as the connection is established, you can start working with the selected wireless network. When you have finished, from the **Wireless Network Connection** window, tap **Disconnect** to stop communication with the wireless network.

Using the USB to RS-232 Adapter

If you want to transfer data between your unit and a device that is only equipped with RS-232 (serial) ports, you have to use a USB/RS-232 adapter.

IMPORTANT

Only the USB/RS-232 adapters sold by EXFO are supported.

Once the adapter has been detected, the unit assigns it a COM port number (values begin at COM 3). This COM port number is kept in memory even when you turn the unit off. This means that next time you connect the same adapter to any of the USB ports, the unit will recognize the adapter and identify it with the saved COM port number.
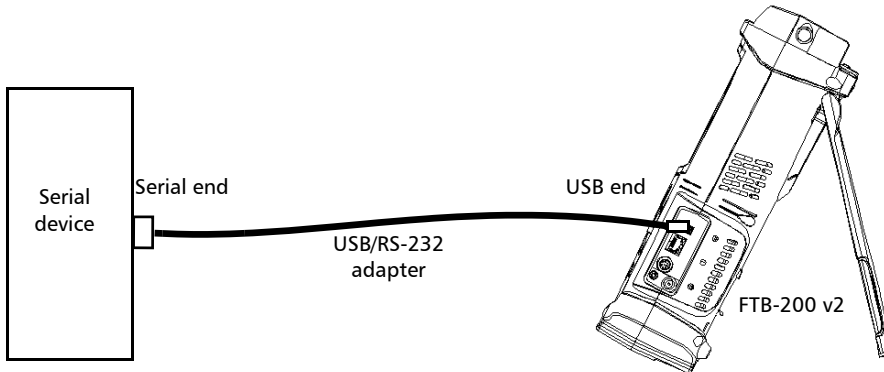
The communication between your unit and the device is established using the PuTTY application.

To use the USB/RS-232 adapter:

1. Turn on both the unit and the serial device.

2. Connect as shown. You can connect the USB end of the adapter to any of the USB ports.


Note: *If the device that you want to use is a computer (not equipped with USB ports) you may want to use a null-modem serial cable as an "extension cable" between the device and the USB/RS-232 adapter.*

The adapter will be detected automatically on your unit.

3. From your unit, retrieve the COM port of the adapter as follows:

3a. On your unit, from the **Main Menu**, select **Setup**.

3b. Double-tap **Device Manager**.
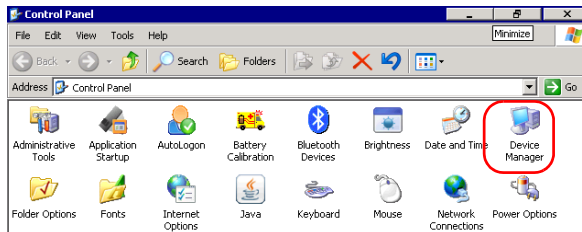
3c. Expand the **Ports (COM & LPT)** list to retrieve the COM port number that has been assigned to the adapter and write it down.
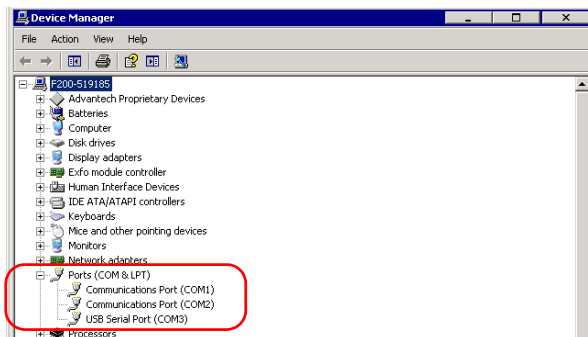
3d. Close the *Device Manager*.

4. From your unit, configure the communication parameters as follows:

4a. On your unit, from Compact ToolBox, select the **Utilities** tab, then double-tap **PuTTY**.

4b. Configure the parameters.
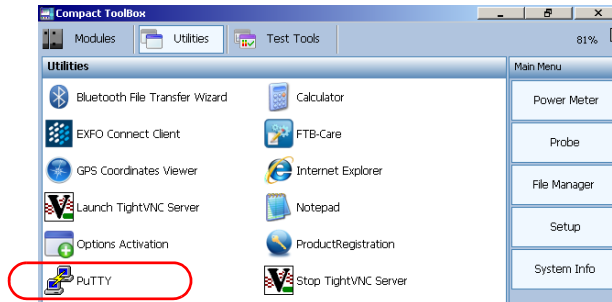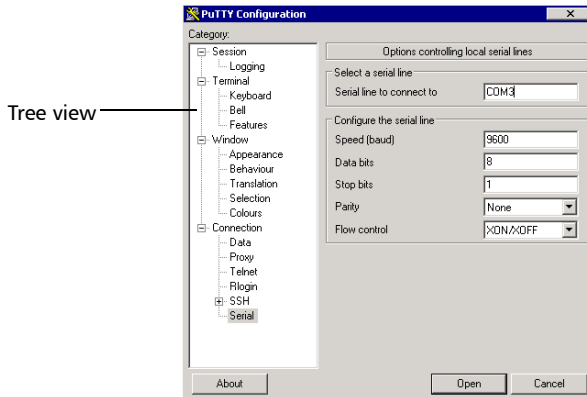
Tree view ————

➤ From the tree view, select **Connection** > **Serial** and set the parameters as needed. Ensure that the COM port that you specify corresponds to the one that you wrote down at step 3c.

➤ If you want to view the characters that you type on screen, from the tree view, select **Terminal**. Under **Local echo**, set the value to **Force on**.

➤ From the tree view, select **Session**. Select **Serial**. The COM port number and the speed should correspond to those that you have previously entered.

4c. Tap **Open**. The unit is now ready to receive or send data.

5. From the device, set the communications parameters.

> # IMPORTANT
>
> **To be able to establish a communication between the unit and the device, you must set the following parameters to the same values as those defined on your unit:**
>
> ➤ **Speed**
>
> ➤ **Data bits**
>
> ➤ **Stop bit**
>
> ➤ **Parity**
>
> ➤ **Flow control**

Note: *The COM port number that you set on your device will probably differ from the one that you used on your unit.*

6. From the device, establish communication with the unit using your favorite communication tool (PuTTY, HyperTerminal, etc.).

Enabling or Disabling the Bluetooth and Wi-Fi Devices

By default, both the Wi-Fi and Bluetooth devices are enabled on units that are equipped with the corresponding options.

If you do not intend to transfer files via Bluetooth or to work with a wireless network for a certain period of time, you may wish to disable the devices to extend battery life.

As soon as you disable the Wi-Fi device, the Bluetooth is automatically disabled as well.

You can enable the devices again at any time.

To enable or disable the Bluetooth and Wi-Fi devices:
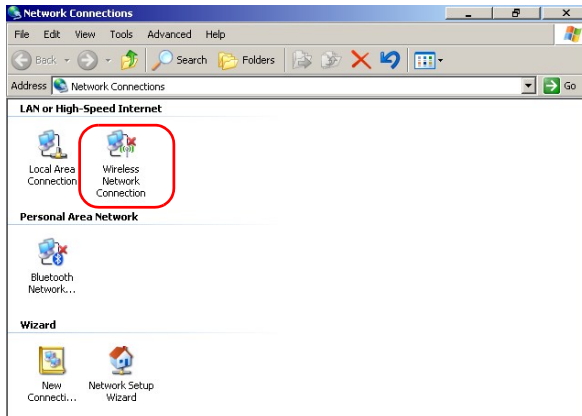
1. From the **Main Menu**, tap **Setup**.

2. Double-tap **Network Connections**.
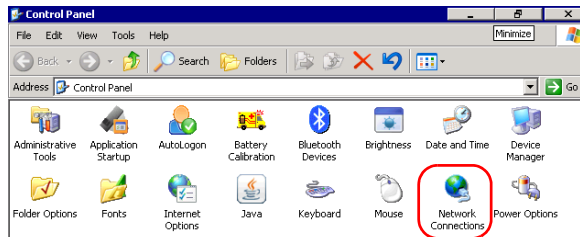
3. Select **Wireless Network Connection**.

4. From the **File** menu, select **Enable** or **Disable**, according to your needs.

Transferring Files with the USB Data Mover Application

With the USB Data Mover application, you can copy folders and files from your unit to a USB storage device quickly.

You can retrieve files from the predefined source folders or specify your own folders.

The predefined folders are:

➤ My Documents, which path is *D:\Documents and Settings\User_currently_logged _on\My Documents*

where *User_currently_logged _on* corresponds to the user name of the person that is currently logged on the unit.

➤ Shared Documents, which path is *D:\Documents and Settings\All Users\Shared Documents*.

Note: *You cannot remove the predefined folders from the list of source folders, but you can remove the ones that you have added.*

By default, the application retrieves the files from all the folders appearing on the list of source folders. However, you can specify which folders you want to take into account.

Each time you copy data, the application creates a folder on the storage device. This folder will contain the copied files and subfolders (original folder structure as well as folder and file names are kept).

The application generates folder names as follows:

[YEAR]-[MONTH]-[DAY]_[HOUR]-[MINUTE]-[SECOND]

Example:

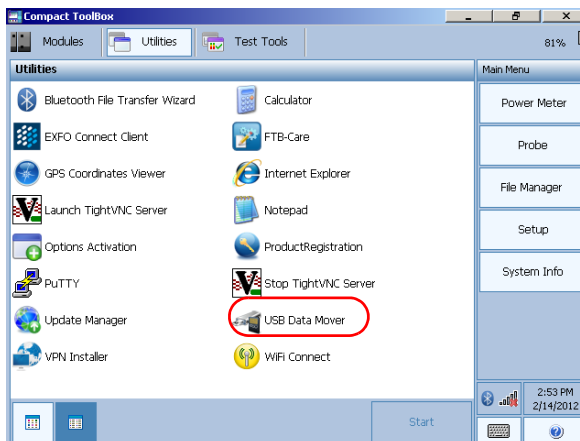For a copy operation requested on September 20, 2013, the folder name could be:
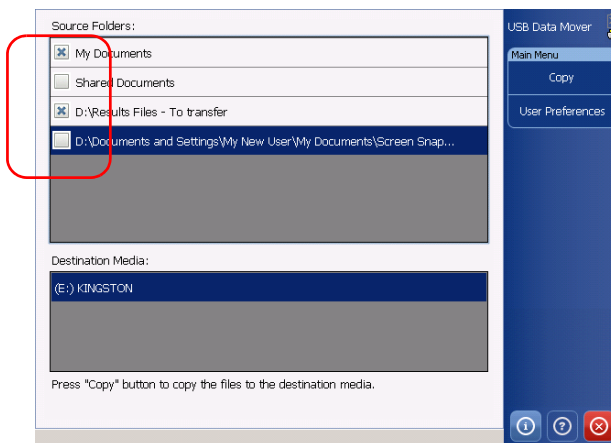
2013-09-20-13_23-01-45.

Note: *The HOUR value will appear in a 24-hour format, regardless of your unit's time settings.*

To transfer files with the USB Data Mover:

1. Connect a USB storage device to one of the USB ports.

2. From Compact Toolbox, select the **Utilities** tab.

3. Double-tap **USB Data Mover**.

4. Select or clear the check boxes to adjust the folder selection to your needs.

5. If necessary, under **Destination media**, select the desired USB storage device.

6. Tap **Copy**. The files will remain on your unit after the transfer.

7. When you have finished, tap ⊗ to exit the USB Data Mover application.

To manage the list of source folders:

1. From Compact Toolbox, select the **Utilities** tab.

2. Double-tap **USB Data Mover**.
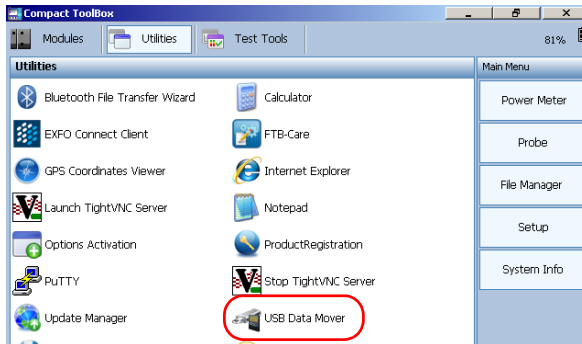
3. Tap **User Preferences**.
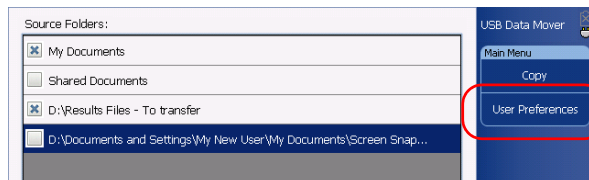
4. If you want to add your own folders to the list of source folders, proceed as follows:

4a. Tap **Add a Folder**.
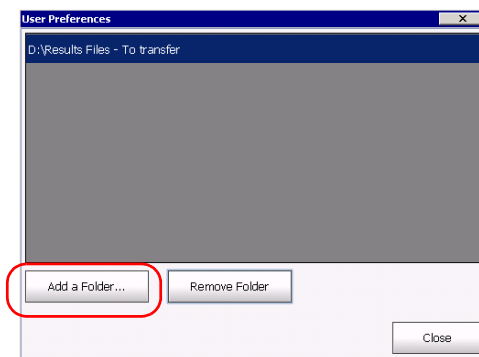
4b. Select the desired folder, and then tap **OK**.
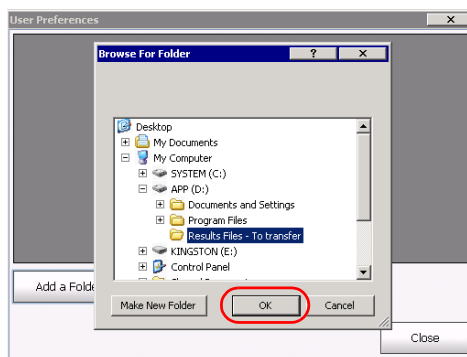
5. If you want to remove folders from the list of source folders, proceed as follows:

5a. Select the folder that you want to remove.
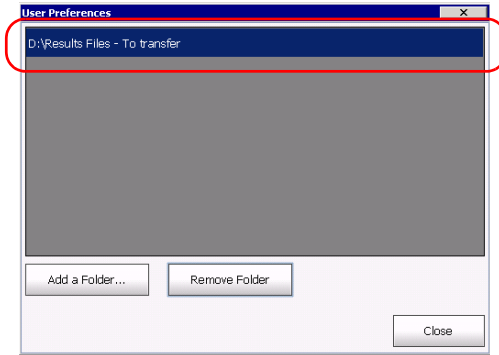
5b. Tap **Remove Folder**.

Note: *The application will not prompt you to confirm the removal of the folder from the list.*

6. When you have finished, tap **Close**. Your changes are reflected automatically. All the newly added folders are selected by default.

7. Tap ⊗ to exit the USB Data Mover application.

Connecting to a VPN from Your Unit

Note: *Only administrator-level users can install software under Windows Embedded Standard. However, when the installation is complete, all users will have the possibility to connect to a VPN from the unit.*

You can connect to a Virtual Private Network (VPN) from your unit if you install one of the supported VPN clients (applications). Such clients allow you to connect to the VPN of your company from anywhere in the world and have access to network resources as if your unit was connected locally to the network. This could be useful if you need to transfer data to a centralized folder on the company's private network, for example.

To establish the communication between the VPN client and the VPN server, you can use either a Wi-Fi connection (see *Connecting to a Wireless Network* on page 126), a 3G USB modem key (see *Accessing the Internet with a 3G USB Modem Key* on page 100), or a standard Ethernet connection.

Note: *Since all networks are different, the parameters that you need to configure before being able to connect to the VPN may vary. For information on the configuration specific to your network, contact your network administrator.*

If you ever need to change to another VPN client or remove it, see *Solving Common Problems* on page 185.

![I] **IMPORTANT**

EXFO does not provide any VPN clients. You must provide the installation files for one of the supported VPN clients yourself. The complete list is available from the VPN Installer application.

EXFO cannot guarantee that any VPN client other that those listed will work properly on your unit.

To retrieve the list of supported VPN clients:

1. On your unit, from Compact ToolBox, select the **Utilities** tab.

2. Double-tap **VPN Installer**.

3. From the VPN Installer first window, tap **Continue**.
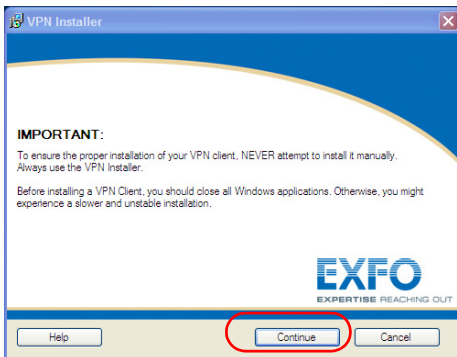
4. All the supported VPN clients appear on the **Supported software and versions** list. You can write down this list and contact your network administrator to get the installation files.
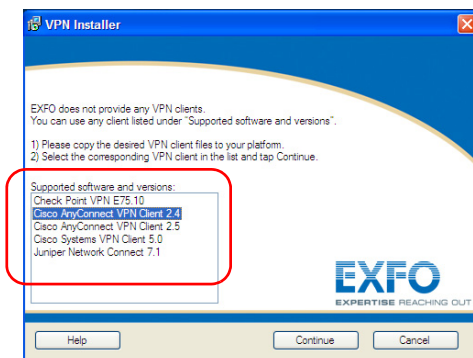
5. Tap **Cancel** to close the VPN Installer.

You are ready to go to the procedure explaining how to install the VPN client on your unit.

CAUTION

➤ To ensure the proper installation of your VPN client, NEVER attempt to install it manually. Always use the VPN Installer.

➤ DO NOT restart your unit during the installation even if you are prompted to do so. Otherwise, the VPN client will not be installed properly. The EXFO VPN Installer will restart your unit automatically to complete the installation. If you updated the VPN client by mistake, see *Solving Common Problems* on page 185.

➤ Your unit has been designed to work with specific versions of VPN clients. NEVER UPDATE the VPN client manually and ensure that the VPN server will not update the client either. Otherwise, the VPN client may no longer work properly.

IMPORTANT

EXFO does not recommend to install more than one VPN client on a single FTB-200 v2 unit.

IMPORTANT

To avoid communication problems between the VPN client and the VPN server, ensure that the date set on your unit corresponds to the current date.

To install a VPN client on your unit:

1. If the date on your unit does not correspond to the current date, modify it (see *Adjusting the Date, Time and Time Zone* on page 75).

2. Retrieve the installation files on your unit as follows:

   2a. On your unit, create a folder on the Windows desktop.

   2b. Copy the installation files (from a USB key or a folder network) to the newly created folder.

3. On your unit, from Compact ToolBox, select the **Utilities** tab.

4. Double-tap **VPN Installer**.
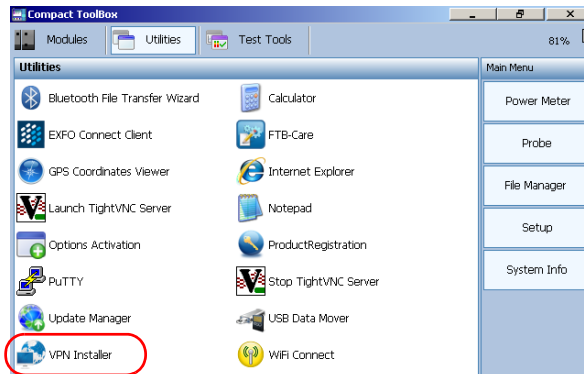
5. From the VPN Installer first window, read the information. When you have finished, tap **Continue**.
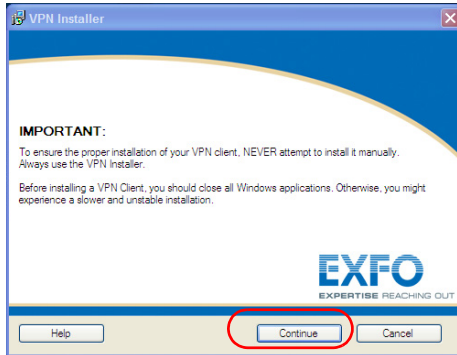
6. From the **Supported software and versions** list, select the entry corresponding to the VPN client for which you have retrieved installation files at step 2.
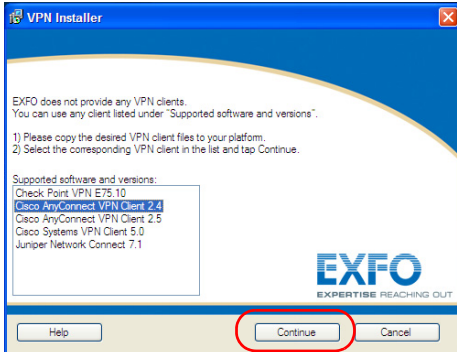
Tap **Continue**.

7. From the VPN Installer, select the corresponding setup file using the **Browse** button.

> # IMPORTANT
> **To avoid installation problems, ensure that the installation files are available from the Windows desktop of your unit. Never use installation files directly from a USB key.**
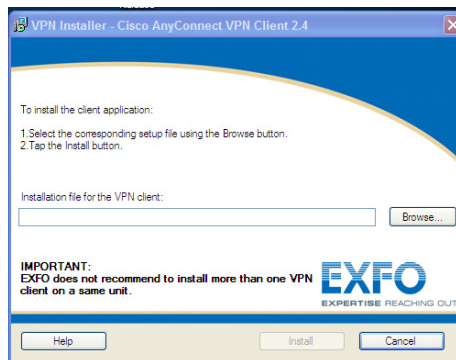
Note: *Depending on the VPN client that you have selected previously, you may have two installation files to select (two **Browse** buttons instead of one). For more information, refer to the online help provided with the VPN Installer.*

8. Tap the **Install** button.

9. Follow the on-screen instructions.

Your unit will restart automatically to complete the installation of the VPN client. All users will now be able to connect to a VPN from the unit.

To connect to a VPN from your unit:

Start the VPN client and follow the on-screen instructions.

If you are not sure about the information that you should provide, contact your network administrator.

9 *Accessing Your Unit Remotely*

You can access your unit remotely from a computer using either the Remote Desktop Connection or TightVNC Client applications.

The table below presents the differences between the two applications.

Characteristic	Remote Desktop Connection	TightVNC Client
Type of connection	Direct between the unit and the computer; only one user can be connected to the unit at a time.	Not exclusive; several users can be connected to the unit at the same time (sharing the same session).
Windows user rights	Taken into account.	Not taken into account.
Password-protected	Yes; mandatory. The user name and password are the same as those used to connect to the unit. By default, all the accounts with administrator rights can use Remote Desktop Connection. If you want accounts with limited rights to be able to use Remote Desktop as well, you must specifically grant them access.	Yes; mandatory. The password is defined on the TightVNC Server, the first time you start the server. This password is not related to the one used to connect to the unit. By default, all people that use TightVNC Client will enter the same password (as defined on the server). Each user to whom you provide the password will be able to connect to the unit via TightVNC.

Working with Remote Desktop

By default, all the accounts with administrator rights can use Remote Desktop. If you want accounts with limited rights to be able to use Remote Desktop as well, you must specifically grant them access.

You can also configure the unit to prevent users from accessing it remotely.

Accessing Your Unit with Remote Desktop

To be able to connect to the unit using Remote Desktop, you must:

➤ Know the IP address of the unit and provide it in the connection settings on the computer.

➤ Use an account that is secured by a password. Remote Desktop will not allow any connection with empty passwords.

➤ Enter the appropriate user name when Remote Desktop application prompts you. Usually, this user name must correspond to the user name of the person currently logged on the unit. Otherwise, you will disconnect the person that was already connected.

To access your unit remotely with Remote Desktop:

1. Connect both the computer and your unit to the same network and make sure they can "see" each other as network restrictions might prevent them from communicating.

   ➤ If you want to use an Ethernet network, connect an RJ-45 (network) cable to the unit's RJ-45 port located on its right side.

   ➤ If you want to use a wireless network, see *Connecting to a Wireless Network* on page 126.

   ➤ You could also create a Private Area Network with your Bluetooth device (contact your network administrator).

2. Turn on both the computer and the unit.

3. On your unit, in Compact Toolbox, go to **Main Menu**. Select **System Info** > **Platform**.

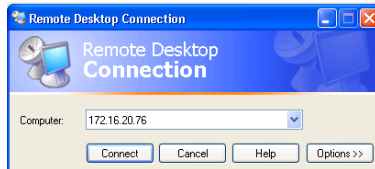4. Write down the IP address, and then close the window.

Note: *It may take a few seconds before you see the IP address on the list.*

5. From the computer, on the taskbar, click **Start**, then select **All Programs** > **Accessories** > **Remote Desktop Connection**.

6. In the **Connecting to Remote Desktop** window, in the **Computer** list, type the IP address of the unit that you wrote down at step 4.

7. Click **Connect**.

8. When the application prompts you, enter your user name and password.

9. Click **OK** to open the session.

## Allowing Users with Limited Accounts to Use Remote Desktop

By default, only the accounts with administrator rights can use Remote Desktop. However, you can assign extra user rights to accounts with limited rights so that they can also use Remote Desktop.

To allow a user with limited accounts to use Remote Desktop:

1. On your unit, from the **Main Menu**, select **Setup**.

2. Double-tap **Remote Desktop**.
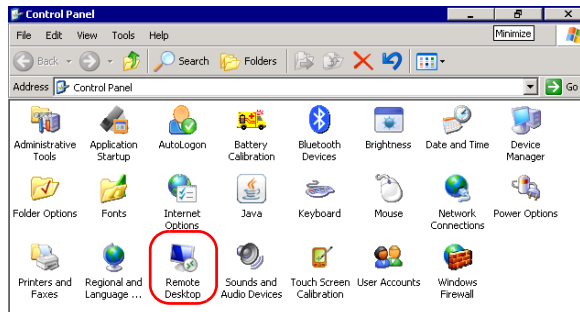
3. Ensure that **Allow remote connections to this unit from computer using Remote Desktop client application** is selected.
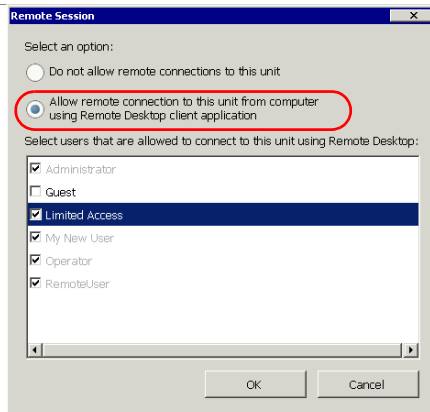
4. From the list of users, select the boxes corresponding to the users to whom you want to grant access.

5. When your selection is complete, tap **OK** to confirm.

Preventing Users from Connecting with Remote Desktop

You can also configure the unit to prevent users to access it using Remote Desktop. However, all users having administrator user rights will be able to modify this setting at any time.

To prevent users from connecting to the unit using Remote Desktop:

1. On your unit, from the **Main Menu**, select **Setup**.

2. Double-tap **Remote Desktop**.
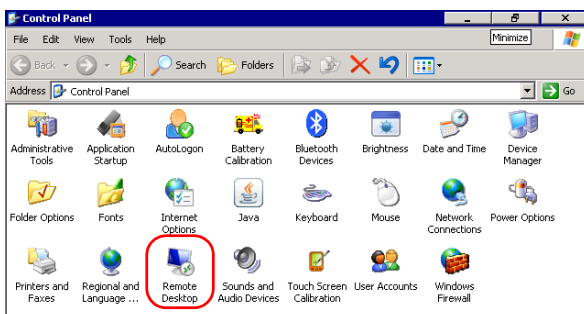
3. Select the **Do not allow remote connections to this unit** option.
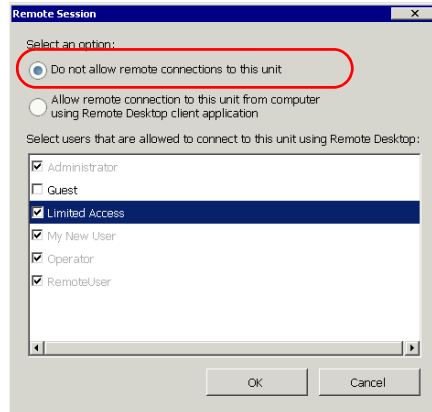
4. Tap **OK** to confirm.

Restarting or Turning Off Your Unit While Working with Remote Desktop

In some cases, you may need to restart or shutdown your unit while you are controlling it remotely.

To restart or turn off your unit with Remote Desktop:

1. Close all applications, including Compact Toolbox.

2. On the taskbar, click **Start**, then select **Run**.

3. If you want to restart your unit, in the **Open** box, enter *Shutdown -r*.

OR

If you want to turn off your unit, in the **Open** box, enter *Shutdown -s*.
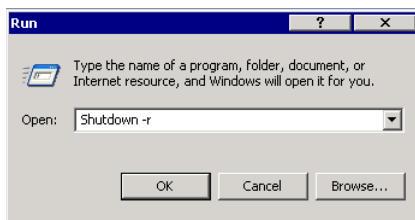
Working With TightVNC

The control of your unit with TightVNC requires the TightVNC Server (already installed on your unit) and the TightVNC Client Viewer (that you must install on your computer).

The first time you start the TightVNC Server on your unit, the application will prompt you to define passwords. Once these passwords are defined, you are now ready to connect to your unit using the TightVNC Client (on your computer).

CAUTION

Be very careful if you use TightVNC to transfer files between a computer and your unit (TightVNC Server).

➤ *Transfer from a computer to your unit:* **If the transfer is interrupted, all files on your unit having the same name as those on the computer WILL BE DELETED. However, the files on the computer will remain available.**

➤ *Transfer from your unit to a computer:* **If the transfer is interrupted, all files on the computer having the same name as those on your unit WILL BE DELETED. However, the files on your unit will remain available.**

To be able to connect to the unit using TightVNC, you must:

➤ Know the IP address of the unit and provide it in the connection settings on the computer.

➤ Know the password (same for all users by default).

This section provides you with the basic information to control your unit with TightVNC. For more information, refer to the TightVNC online help.

Configuring the TightVNC Server

The TightVNC Server is already installed on your unit. You must configure passwords before establishing a connection between a computer and your unit.

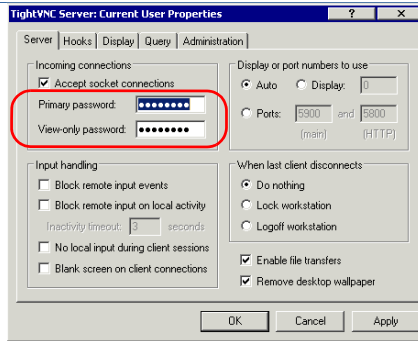### *To configure the TightVNC Server:*

1. From Compact Toolbox, select the **Utilities** tab, then double-tap **Launch TightVNC Server**.
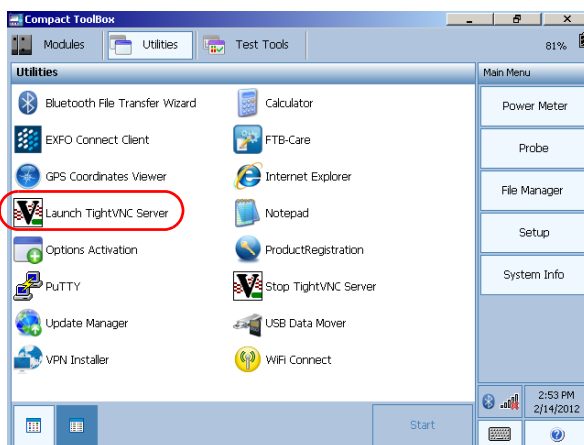
2. Select the **Server** tab.

3. In the **Primary password** and **View-only password** boxes, type the desired passwords.

Note: *The two passwords are independent of each other. They do not have to be identical.*

4. Tap **Apply**, and then **OK**.

Installing the TightVNC Viewer on a Client Computer

If the TightVNC Viewer is not already installed on your computer, you can install it with the DVD that came with your FTB-200 v2.

To install the TightVNC Viewer on your computer:

1. Insert the installation DVD into the CD/DVD drive of your computer.

2. From the DVD **Main Menu**, click **Explore this DVD**.

3. Open the **Utilities** folder, and then copy the **VNC Client** folder.

4. Paste the **VNC Client** folder to a location of your choice on your computer.

You are now ready to start working with the TightVNC Viewer.

Note: *If you want to access the TightVNC Viewer without having to install it on your computer, you can start it from the DVD (**Main Menu > Utilities > VNC Client**)*

Connecting to Your Unit with TightVNC

Once the TightVNC Viewer is installed on your computer, you are ready to access your unit remotely.

To connect to your unit with TightVNC:

1. Connect both the computer and your unit to the same network and make sure they can "see" each other as network restrictions might prevent them from communicating.

> ➤ If you want to use an Ethernet network, connect an RJ-45 (network) cable to the unit's RJ-45 port located on its right side.

> ➤ If you want to use a wireless network, see *Connecting to a Wireless Network* on page 126.

> ➤ You can also create a Private Area Network with your Bluetooth device (see *Transferring Data via Bluetooth* on page 118).

2. Turn on both the computer and the unit.

3. On your unit, in Compact Toolbox, go to **Main Menu**. Select **System Info** > **Platform**.

4. Write down the IP address, and then close the window.

Note: *It may take a few seconds before you see the IP address on the list.*
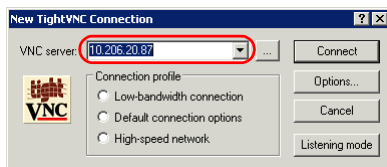
5. From Compact Toolbox, select the **Utilities** tab, then double-tap **Launch TightVNC Server**.
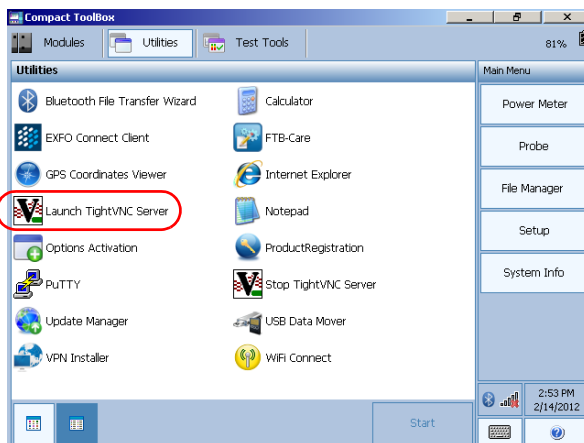
6. From your computer, double-click the TightVNC Viewer shortcut on your desktop.

7. In the **VNC Server** list, type the IP address of your unit that you wrote down at step 4.

8. Click **Connect**.
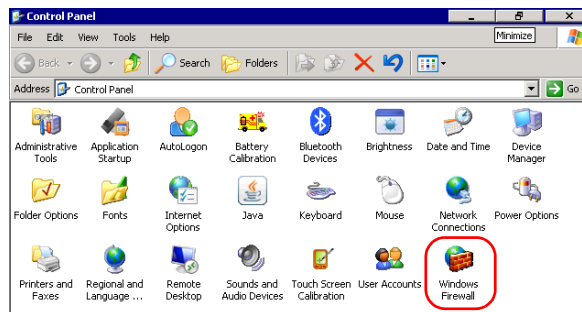
Adding Exceptions to the Firewall

Note: *Only administrator-level users can add exceptions to the firewall.*

Your unit is protected by the Microsoft firewall to prevent unauthorized access when it is connected to a network or to the Internet. The firewall has been preconfigured so that all the applications that come with your unit work properly. However, you can allow other applications to access the network or the Internet by adding exceptions.

If you are not sure about how to configure the firewall, contact your network administrator.
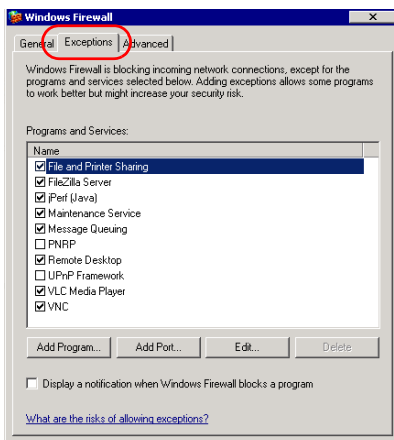
To add exceptions to the firewall:

1. On your unit, from the **Main Menu**, tap **Setup**.

2. Double-tap **Windows Firewall**.

3. Select the **Exceptions** tab.

4. Tap **Add Program** to add any application that you need.

5. When you have finished, tap **OK** (located at the bottom of the dialog box) to confirm the changes and return to the **Control Panel** window.

10 *Testing Network Connections*

Note: *This function is available with the optional IPT software package only.*

The two most common basic tests widely used in networking are the *ping* test and the *trace route* test. With these tests, you can ensure that IP packets travel as expected from a local host to a remote host and vice versa.

IMPORTANT

To avoid misleading results, always ensure that your unit is only connected to one network at a time (either standard Ethernet or wireless network) before performing ping or trace route tests.

Performing a Ping Test

The ping test is a basic test that measures the average time it takes for a packet to reach the remote host. With this test, you can quickly verify that the remote host functions properly.

The ping test has six common parameters:

➤ The URL (IP address)

➤ The number of packets to send

➤ The packet size

➤ The maximum time allowed for a packet to reach the remote host

➤ The maximum number of hops allowed for reaching the remote host (TTL)

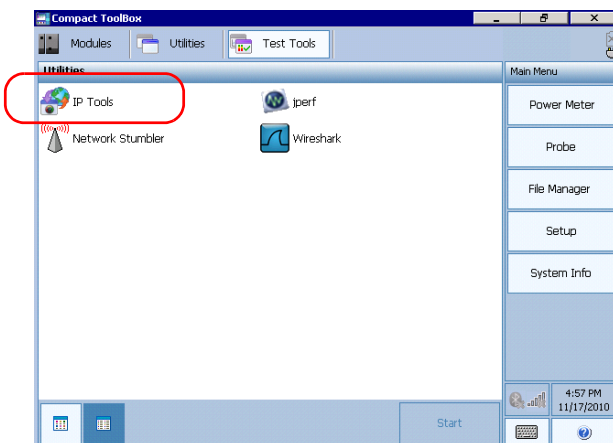➤ A flag to indicate whether a packet can be fragmented.

When the test is complete, you can export the results. You can later import the generated text file (tab-delimited) directly into Microsoft Excel.
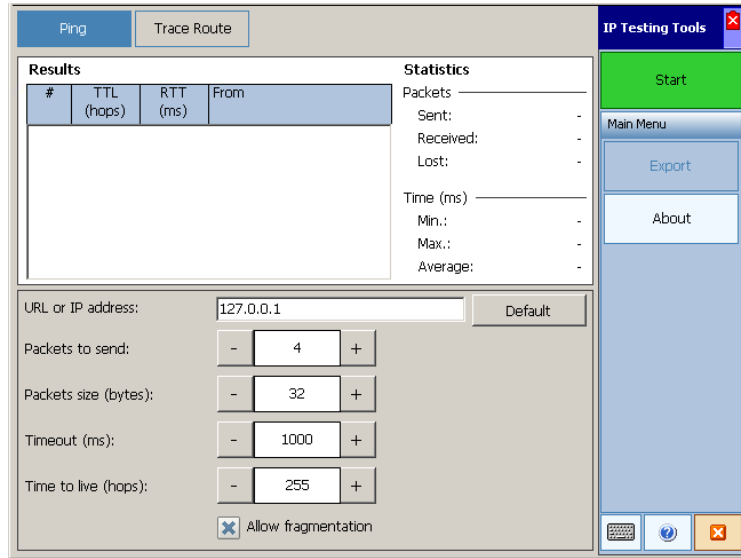
To perform a ping test:

1. From Compact Toolbox, select the **Test Tools** tab, then double-tap **IP Tools**.

2. From **IP Testing Tools**, select the **Ping** tab.

3. Enter a URL or an IP address to reach. You can tap the **Default** button to use the unit's default ping address. The default value cannot be configured.

4. Set the other parameters:

➤ Number of packets to send

➤ Packet size

➤ Timeout limit

➤ TTL limit

➤ Clear the **Allow fragmentation** check box if you prefer sending complete packets to the host.

5. Tap the **Start** button.

You can stop a ping test at any time by tapping the **Stop** button.

Performing a Trace Route Test

The trace route test is used to evaluate the average number of nodes that are required to reach the final host. It is often used to troubleshoot networks (identify accesses blocked by firewalls or routing problems).

This trace route test utility enables you to:

➤ Enter a remote host address.

➤ Set the maximum time allowed for a packet to reach the remote host.

➤ Set the maximum number of hops allowed for reaching the remote host (TTL).

➤ Choose whether to resolve DNS for the IP address or not.

When the test is complete, you can export the results. You can later import the generated text file (tab-delimited) directly into Microsoft Excel.

To perform a trace route test:

1. From **IP Testing Tools**, select the **Trace Route** tab.

2. Enter an URL or an IP address to reach. You can tap the **Default** button to use the unit's default trace route address. The default value cannot be configured.
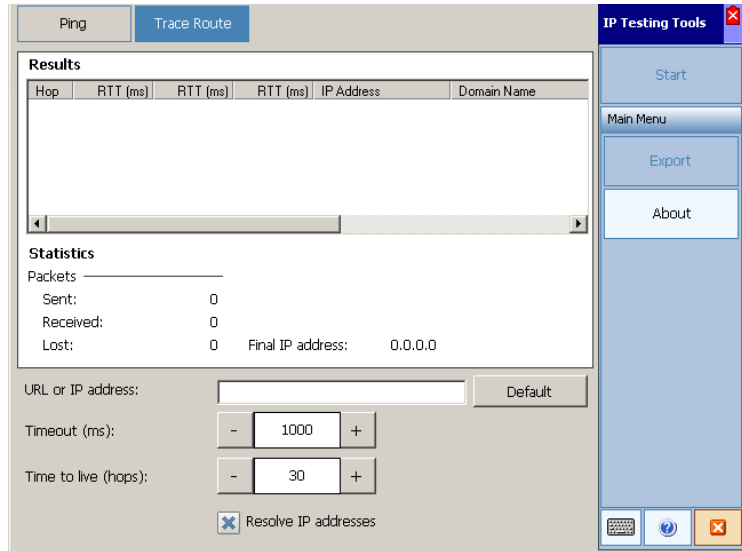
3. Set the other parameters:

   ➤ Timeout limit

   ➤ TTL limit

   ➤ Select or clear the **Resolve IP addresses** check box if you want to get the host name for the corresponding IP address of nodes.

4. Tap the **Start** button.

You can stop a trace route test at any time by tapping the **Stop** button.

Exporting the Results

When a test is complete, you can export the results of the current test page. If you want to keep your results for future use, you must export them because result files cannot be opened directly from your unit.

Results are sent to a text file. Fields are separated by the "TAB" character to simplify the importation into a Microsoft Excel worksheet.

By default, the application suggests a file name:

➤ For ping tests:

Ping for [URL] on [YEAR]_[MONTH]_[DAY].txt

➤ For trace route tests:

Trace Route for [URL] on [YEAR]_[MONTH]_[DAY].txt

Where:

  ➤ [URL] is the entered URL or IP address,

  ➤ [YEAR] is the year of the test,

  ➤ [MONTH] is the month of the test,

  ➤ [DAY] is the day of the test.

Example:

For a ping test at www.yoursite.org made on January 3rd, 2010, the suggested filename would be:

Ping for www.yoursite.org on 2010_01_03.txt

To export results:

Tap the **Export** button. If necessary, modify the suggested file name.

11 *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 and front panel 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.

Cleaning Detector Ports

Regular cleaning of detectors will help maintain measurement accuracy.

> # ❗IMPORTANT
> **Always cover detectors with protective caps when unit is not in use.**

To clean detector ports:

1. Remove the protective cap and adapter (FOA) from the detector.

2. If the detector is dusty, blow dry with compressed air.

3. Being careful not to touch the soft end of the swab, moisten a cleaning tip with *only one drop* of isopropyl alcohol.

> # ❗IMPORTANT
> **Alcohol may leave traces if used abundantly. Do not use bottles that distribute too much alcohol at a time.**

4. While applying light pressure (to avoid breaking the detector window), gently rotate the cleaning tip on the detector window.

5. Repeat step 4 with a dry cleaning tip or blow dry with compressed air.

6. Discard the cleaning tips after one use.

Cleaning the Touchscreen of Your FTB-200 v2 Unit

Clean the touchscreen with a soft, non-abrasive cloth, such as one used for cleaning reading glasses, dampened with water.

CAUTION

Using anything else than water can damage the special coating of the touchscreen.

Recharging the Main Battery

The main Lithium-Ion battery will last about 8 hours in normal operation. The clock battery is recharged automatically along with the main battery.

➤ In Compact Toolbox, the charge status is shown above **Main Menu**.

➤ The unit also indicates the charge status with the LED on its front panel (see *LED Panel Description* on page 4):

Status LED	Battery Charge Status
Green	Fully charged
Green, blinking	Charging
Yellow	Low
Red	Error or battery is not in the unit

CAUTION

Only charge the battery with the AC adapter/charger (or the car outlet adapter) provided by EXFO with your unit.

> # ❗ IMPORTANT
>
> ➤ Batteries are not charged at the factory. Fully charge them (about 3 hours) before using the unit for the first time.
>
> ➤ The time required to charge batteries depends on various factors such as the type of modules currently in use and the ambient temperature.
>
> ➤ To ensure that batteries function or charge properly, keep them in temperatures between 10 °C and 40 °C (50 °F and 104 °F). Store below 50 °C (122 °F).
>
> ➤ Depending on the way the unit is used, after a while, the charge status icon may no longer correspond to the actual power level of the battery (for example, icon indicates that power level is sufficient, but unit turns off because battery is too weak). A complete calibration cycle will be necessary (see *Recalibrating the Battery* on page 179).

To recharge the main battery:

Connect the unit to a power outlet using the AC adapter/charger. The charge cycle will start and end automatically.

Recalibrating the Battery

Depending on the way the unit is used, after a while, the charge status icon may no longer correspond to the actual power level of the battery (for example, the battery level icon indicates that power level is sufficient, but unit turns off because battery is too weak). A complete calibration cycle will be necessary.

> ### IMPORTANT
> **When the estimate offset value (displayed in the battery calibration application) is of 10 % or more, EXFO recommends that you recalibrate the battery.**

You can perform a recalibration with the battery calibration utility:

➤ The utility will charge the battery until it is full.

➤ It will then discharge the battery completely.

➤ You will have to let the battery recharge completely.

The whole calibration process can take several hours. You can stop the process at any time, but the battery will still need calibration and the battery will not necessarily be full (depending on the moment at which you stop the process).

When a calibration step is underway, the LED preceding the step name appears in yellow. When a step is complete, the LED turns to green.

To recalibrate the batteries:

1. From the **Main Menu**, select **Setup**, and then double-tap **Battery Calibration**.
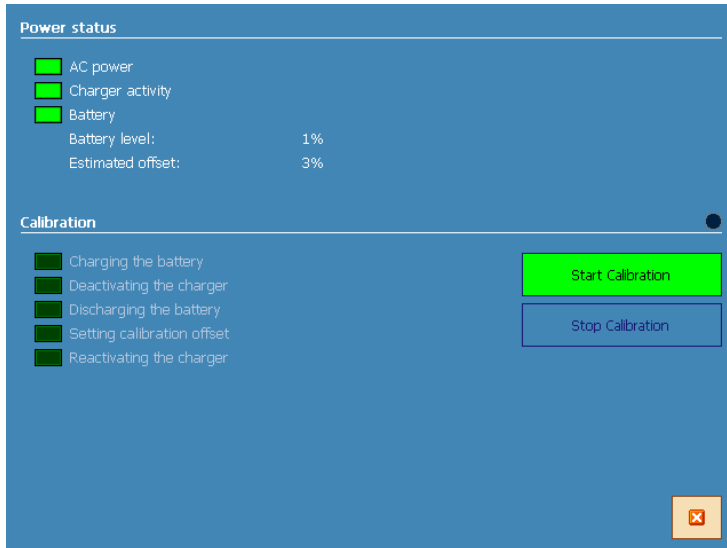
2. Connect the AC adapter/charger to your unit.

3. Tap the **Start Calibration** button (the **Stop Calibration** button will become available).

Once calibration is complete, the **Start Calibration** button becomes available again.
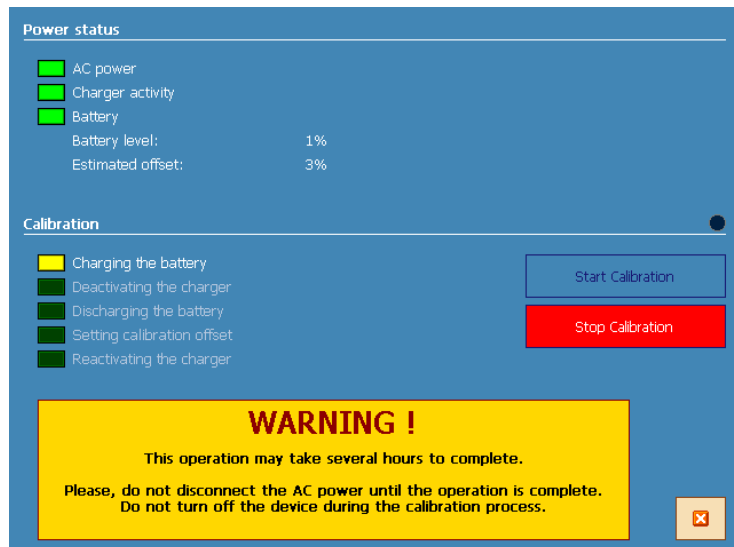
Replacing Batteries

Your unit uses a battery with built-in protection that has been especially designed for EXFO. For this reason, you can only replace the main battery with a similar one.

You can purchase new batteries from EXFO.

CAUTION

Use Li-Ion batteries of the same type and model only. Use of other batteries may damage your unit and compromise your safety.

WARNING

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

To replace the main battery:

1. If you do not have a replacement battery, contact EXFO to purchase a new one.

2. Turn off the unit.

3. Open the battery compartment door located at the top of the unit (turn the cap counterclockwise and pull it away).

4. Replace the battery.

5. Close the battery compartment door.

Note: *You cannot replace the clock battery yourself.*

Recalibrating the Unit

EXFO manufacturing and service center calibrations are based on the ISO/IEC 17025 standard (*General Requirements for the Competence of Testing and Calibration Laboratories*). This standard states that calibration documents must not contain a calibration interval and that the user is responsible for determining the re-calibration date according to the actual use of the instrument.

The validity of specifications depends on operating conditions. For example, the calibration validity period can be longer or shorter depending on the intensity of use, environmental conditions and unit maintenance, as well as the specific requirements for your application. All of these elements must be taken into consideration when determining the appropriate calibration interval of this particular EXFO unit.

Under normal use, the recommended interval for your FTB-200 v2 Compact Modular Platform is: one year.

For newly delivered units, EXFO has determined that the storage of this product for up to six months between calibration and shipment does not affect its performance (EXFO Policy PL-03).

To help you with calibration follow-up, EXFO provides a special calibration label that complies with the ISO/IEC 17025 standard and indicates the unit calibration date and provides space to indicate the due date. Unless you have already established a specific calibration interval based on your own empirical data and requirements, EXFO would recommend that the next calibration date be established according to the following equation:

Next calibration date = Date of first usage (if less than six months after the calibration date) + Recommended calibration period (one year)

To ensure that your unit conforms to the published specifications, calibration may be carried out at an EXFO service center or, depending on the product, at one of EXFO's certified service centers. Calibrations at EXFO are performed using standards traceable to national metrology institutes.

Note: *You may have purchased a FlexCare plan that covers calibrations. See the Service and Repairs section of this user documentation for more information on how to contact the service centers and to see if your plan qualifies.*

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.

12 *Troubleshooting*

Solving Common Problems

Problem	Cause	Solution
Unit does not turn on.	Battery is discharged.	➤ Charge the battery. ➤ Replace the battery with a fully charged one. ➤ Connect the unit to an external power supply using the AC adapter/charger.
	Unit is not connected to an external power supply.	Connect the unit to an external power supply using the AC adapter/charger.
	External power supply is disconnected.	Make sure the external power supply is connected at both ends.
Unit screen is dark.	Unit's backlight is off.	Press the backlight button.
	Battery is discharged and unit has shut down.	➤ Charge the battery. ➤ Replace the battery with a fully charged one. ➤ Connect the unit to an external power supply using the AC adapter/charger.
External keyboard is not working.	External keyboard has not been detected.	➤ Disconnect the keyboard, and then connect it again. ➤ Turn off the unit, connect the keyboard, and turn on the unit.
Screen characters are dim.	Brightness is not set properly.	Adjust brightness.

Problem	Cause	Solution
Module is not detected.	Module is not inserted correctly.	Ensure that your module is inserted and secured in place correctly (see the *Inserting and Removing Test Modules* section).
	The module's application has not been installed yet on your unit or the module's application is not up-to-date.	Ensure that the latest version for your module's application is available on your unit (see the *Installing or Upgrading the Applications* section).

Problem	Cause	Solution
One of the applications is not responding.		Press ⏻ and hold it down until the shutdown menu appears, then select **Turn off**. Turn the unit on again to reset it.
Impossible to calibrate the touchscreen via the **Stylus** application in Control Panel.	Screen calibration is very poor.	➤ Press ⏻ and hold it down until the shutdown menu appears, then select **Turn off**. ➤ Turn on the unit. ➤ While the system is displaying the boot menu (3 seconds), press ⊘◄|► from the unit's keypad to select the emergency system tools operation mode. OR Press the ARROW DOWN key on the keyboard (if you have connected one). ➤ Press the unit's knob or ENTER on your keyboard to confirm your choice. ➤ Press ⬚\⌨ to start the screen calibration.
Unit's operating time is reduced.	Battery is probably worn out.	Replace the battery.
	Battery was not fully charged.	➤ Charge the battery. ➤ Perform a complete battery calibration cycle[a].
Battery indicator remains low after a full charge.	Battery is not completely charged.	Perform a complete battery calibration cycle[a].

Problem	Cause	Solution
Batteries are not charging.	Ambient temperature is too high or too low.	Ensure that the temperature in the location where you charge the batteries is within the specifications.
	AC adapter/charger is not connected properly.	Ensure that the adapter/charger is connected both to your unit and the power outlet.
Unit switches to standby or hibernation mode unexpectedly.	Power schemes are not defined correctly.	Select one of the predefined power schemes (Always On or Max Battery). For more information, see the *Configuring the Power Management Options* section.
Unit is not responding.		If you were not trying to install a VPN client and your unit stopped responding, restore your unit. To do so, see the *Restoring Your Unit to Normal Operation* section. If you were trying to install a VPN client, restart your unit and start a new installation. If the problem persists, restore your unit.

Problem	Cause	Solution
The 3G USB modem key is connected, but you are not able to access the Internet.	➤ There is no SIM card in the USB modem key.	Insert the SIM card into the USB modem key. For complete instructions, refer to the documentation that came with your modem key.
	➤ The FTB-200 v2 unit is not up to date.	Ensure that the latest System Upgrade and Platform kits are installed on your unit before connecting your USB modem key. For more information, see the *Accessing the Internet with a 3G USB Modem Key* section.
	➤ The USB modem key is not detected properly.	Disconnect the modem key from your unit, and try connecting it again. If the modem key is still not detected, try connecting it to another USB port.
	➤ The SIM card has not been activated or there is a problem with service package that you purchased. ➤ The SIM card is locked. ➤ There is a problem with the mobile network.	Contact your provider of mobile services.
The GPS USB key is not detected.	---	Disconnect the GPS key from your unit, and try connecting it again. If the GPS key is still not detected, try connecting it to another USB port.

Problem	Cause	Solution
Problems or errors occurred during the installation of the VPN client.	---	Restart your unit and start a new installation. If the problem persists, restore your unit. To do so, see the *Restoring Your Unit to Normal Operation* section.
You want to change your VPN client for another client. OR You need to remove the VPN client from your unit.	---	Restore your unit. To do so, see the *Restoring Your Unit to Normal Operation* section.
The VPN client has been updated accidentally.	---	Restore your unit. To do so, see the *Restoring Your Unit to Normal Operation* section.

a. A complete battery calibration cycle consists of a full charge, immediately followed by a full discharge, then followed by a full charge.

Restoring Your Unit to Normal Operation

Your FTB-200 v2 is set to start using the standard Windows startup sequence. However, you can also use the emergency system tools feature if you need to:

➤ check the disk integrity

➤ back up some files directly onto a USB storage device for recovery purposes

➤ revert your unit to its initial state (as it was when you purchased it) or restore it with a specific Windows image (WIM) that could have been provided to you by EXFO customer service, for example.

⚠ IMPORTANT

The restoration of the system partition cannot be undone or stopped once it is started.

If you have installed other products that are not included in your image file, you will have to reinstall them afterwards.

To avoid loosing the data that is stored on the D drive, you may want to back it up before restoring the system partition. Otherwise, all your files will be lost.

Note: *You may find useful to connect a keyboard and a mouse to your unit before using the emergency system tools.*

To navigate in the various windows using the unit's keypad:

➤ Press 🔒 | ▶ to go up.

➤ Press 🔇 | ←|→ to go down.

➤ Press ⬛ 0 to go to the right (equivalent of the TAB key).

➤ Press the knob to select an item (equivalent of the ENTER key).

To restore the system partition:

1. Turn on the FTB-200 v2.

2. While the system is displaying the boot menu (3 seconds), press

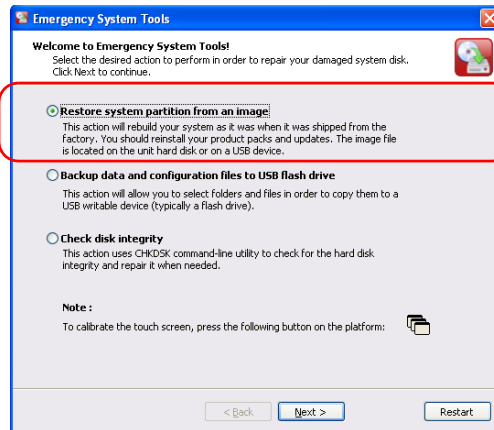   🔇 | ←|→ from the unit's keypad to select the *Maintenance and recovery* mode.

   OR

   Press the ARROW DOWN key on the keyboard (if you have connected one).

3. Press the unit's knob or ENTER on your keyboard to confirm your choice.

Note: *The touchscreen becomes effective at this point.*

4. From the main window, select **Restore system partition from an image**, then tap **Next**.

5. If you want to revert your unit to its initial state (most cases), select **Factory recovery image**.

OR

If you prefer to use an image file (provided by customer service, for example), select .wim file and use the **Browse** button to locate the file.
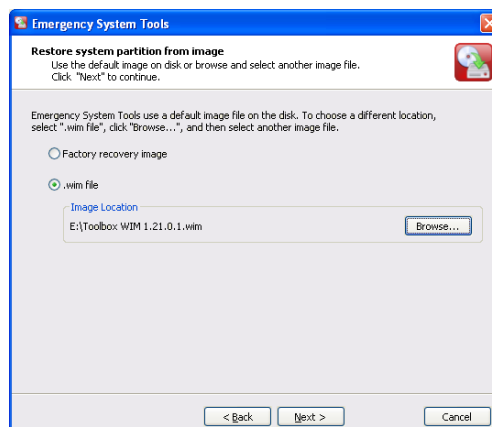
6. Tap **Next** to proceed to the next step.
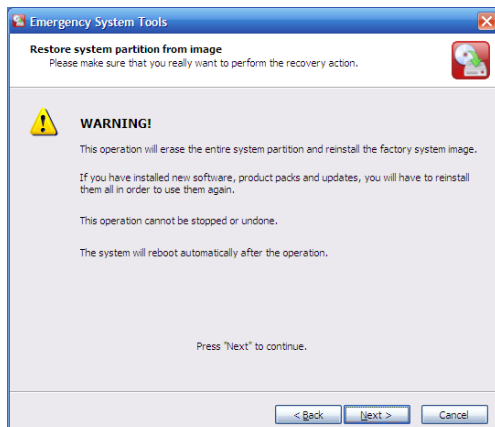
7. Tap **Next** to start the restoration process. The unit will restart upon completion of the process.

To retrieve data from the D drive:

1. Turn on the FTB-200 v2.

2. While the system is displaying the boot menu (3 seconds), press

   🔇 ←|→ from the unit's keypad to select the *Maintenance and recovery* mode.

   OR

   Press the ARROW DOWN key on the keyboard (if you have connected one).

3. Press the unit's knob or ENTER on your keyboard to confirm your choice.

Note: *The touchscreen becomes effective at this point.*

4. From the main window, select **Backup data and configuration files to USB flash drive**, then tap **Next**.
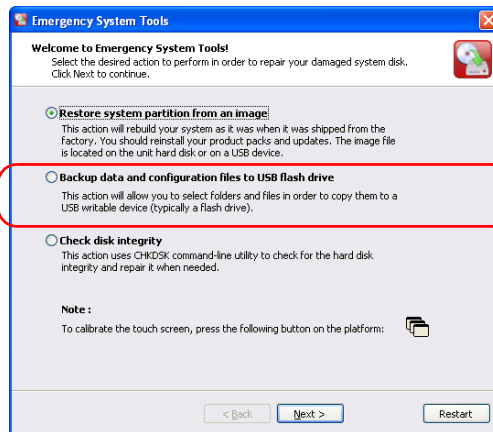
5. Select the files to back up.

A check mark indicates a selection of the entire folder (subfolders and files). A shaded check box indicates that not all of the files of subfolders are selected.
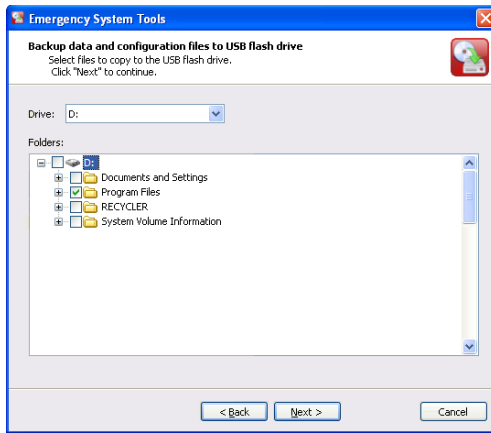
6. If the USB device you want to use is not connected to the unit, connect it now so that the system can find it. Tap **Next**.

7. Select the USB device onto which you want to save the data from the list of available devices.
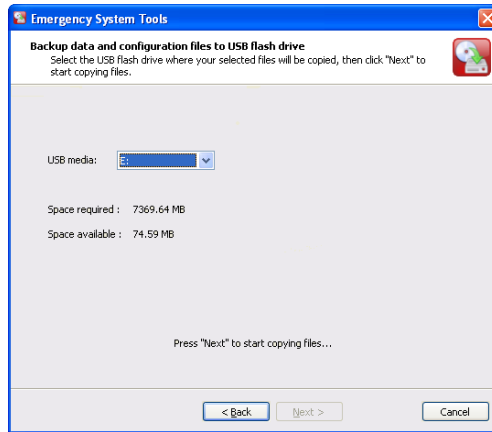
Note: *If you have forgotten to connect the USB device at this point and that it does not show up in the list, tap **Back**, connect the device, then tap **Next** to return to this window.*

8. Tap **Next** to start the file copy process.

A progress bar indicates which files are being copied. If you tap **Cancel** while the transfer is in progress, any file that was copied onto the USB device will still be on the USB device.

9. Once the transfer is complete, tap **Cancel** to return to the main window.

To verify disk integrity:

1. Turn on the FTB-200 v2.

2. While the system is displaying the boot menu (3 seconds), press

   🔇 ←|→ from the unit's keypad to select the *Maintenance and recovery* mode.
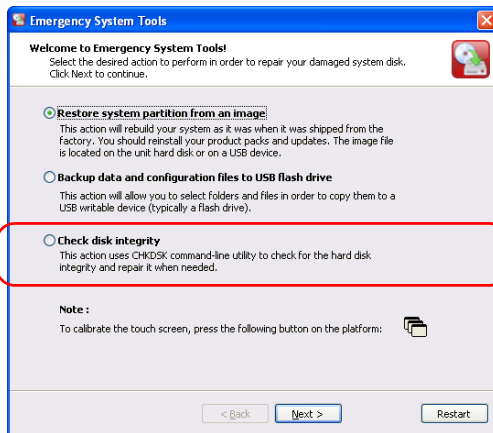
   OR

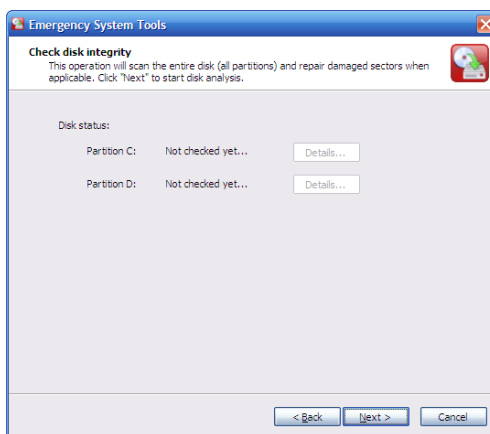   Press the ARROW DOWN key on the keyboard (if you have connected one).

3. Press the unit's knob or ENTER on your keyboard to confirm your choice.

Note: *The touchscreen becomes effective at this point.*

4. From the main window, select **Check disk integrity**, then tap **Next**.

5. Tap **Next** to start the disk analysis.

Once the analysis is complete, you can view a report on each drive by tapping **Details**.

6. Tap **OK** once you have finished.

7. To exit the integrity analysis tool, tap **Cancel** to return to the main window.

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.

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.

13 *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 204). 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 204).

EXFO Service Centers Worldwide

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

EXFO Headquarters Service Center

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

EXFO Europe Service Center

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

EXFO Telecom Equipment (Shenzhen) Ltd.

3rd Floor, Building 10,	Tel: +86 (755) 2955 3100
Yu Sheng Industrial Park (Gu Shu	Fax: +86 (755) 2955 3101
Crossing), No. 467,	support.asia@exfo.com
National Highway 107,	
Xixiang, Bao An District,	
Shenzhen, China, 518126	

A Technical Specifications

> ## IMPORTANT
> The following technical specifications can change without notice. The information presented in this section is provided as a reference only. To obtain this product's most recent technical specifications, visit the EXFO Web site at *www.exfo.com*.

SPECIFICATIONS [a]

Display	Touchscreen, color, 640 x 480 TFT 163 mm (6.5 in)
Interfaces	Two USB 2.0 ports RJ-45 LAN 10/100/1000 Mbit/s Fiber inspection probe connector port (video) Built-in Bluetooth and Wi-Fi (hardware option)
Storage	8 GB internal memory (flash)
Battery	Rechargeable lithium-ion batteries 8 hours of operation as per Telcordia (Bellcore) GR-196
Power supply	AC/DC adapter, input 100-240 VAC, 50-60 Hz, 1.6 A max, output: 24 VDC, 90 W
Computer	Intel ATOM processor Windows Embedded Standard

GENERAL SPECIFICATIONS

Temperature
   Operating
   Storage [b]
	
	0 °C to 50 °C (32 °F to 122 °F)
	−40 °C to 60 °C (−40 °F to 140 °F)

Relative humidity	0 % to 95 % non-condensing
Size (H x W x D)	322 mm x 197 mm x 109 mm (12 $^{11}/_{16}$ in x 7 ¾ in x 4 $^{5}/_{16}$ in)
Weight [b]	2.1 kg (4.6 lb)
Vibration	<1.5 g at 10 Hz to 500 Hz (on three main axes)
Mechanical shock	<760 mm on six sides and eight main edges (compliant to GR-196-CORE)

ACCESSORIES

FP4S	400x Fiber Inspection Probe	GP-2028	Computer security cable kit
FP4D	200x/400x Fiber Inspection Probe	GP-2112	3G Universal USB Dongle
GP-10-070	Rigid FTB-200 carrying case	GP-2113	GPS USB Dongle
GP-10-072	Semi-rigid FTB-200 carrying case	GP-2116	Single-slot storage module
GP-302	USB mouse	GP-2137	USB-to-RS-232 converter
GP-1002	Headset	GP-2138	DC car adapter/inverter
GP-1008	VFL adapter (2.5 mm to 1.25 mm)	GP-2144	USB 16G micro-drive
GP-2001	USB keyboard	GP-2155	Carry-on size backpack [c]
GP-2016	10 feet RJ-45 LAN cable		

Technical Specifications

PM-200 BUILT-IN POWER METER SPECIFICATIONS [d]	
Calibrated wavelengths (nm)	850, 1300, 1310, 1490, 1550, 1625, 1650
Optional CWDM calibrated wavelengths (nm)	1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1383, 1625
Power range (dBm)	10 to −86 (InGaAs) 26 to −64 (GeX)
Uncertainty (%) [e]	±5 % ± 3 pW (InGaAs) ±5 % ± 0.4 nW (GeX)
Display resolution (dB)	
InGaAs	0.01 = max to −76 dBm 0.1 = −76 dBm to −86 dBm 1 = −86 dBm to min
GeX	0.01 = max to −54 dBm 0.1 = −54 dBm to −64 dBm 1 = −64 dBm to min
Automatic offset nulling range [f]	Max power to −63 dBm for InGaAs Max power to −40 dBm for GeX
Tone detection (Hz)	270/1000/2000

VISUAL FAULT LOCATOR (VFL) (OPTIONAL)
Laser, 650 nm ±10 nm
CW
Typical P_{out} in 62.5/125 µm: 3 dBm (2 mW)

Notes

a. All specifications valid at 23 °C (73 °F).

b. Not including internal batteries. Battery maximum storage temperature: 60 °C (140 °F).

c. The selected model may change without notice.

d. At 23 °C ± 1 °C, 1550 nm and FC connector. With modules in idle mode. Battery operated.

e. Up to 5 dBm.

f. For ±0.05 dB, from 18 °C to 28 °C.

Index

Index

NOTICE
通告

CHINESE REGULATION ON RESTRICTION OF HAZARDOUS SUBSTANCES
中国关于危害物质限制的规定

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

O	Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T11363-2006 标准规定的限量要求以下。
X	Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T11363-2006 标准规定的限量要求。

Part Name 部件名称	Toxic or hazardous Substances and Elements 有毒有害物质和元素					
	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 隔 (Cd)	Hexavalent Chromium 六价铬 (Cr VI)	Polybrominated biphenyls 多溴联苯 (PBB)	Polybrominated diphenyl ethers 多溴二苯醚 (PBDE)
Enclosure 外壳	O	O	O	O	O	O
Electronic and electrical sub-assembly 电子和电子组件	X	O	X	O	X	X
Optical sub-assembly[a] 光学组件 [a]	X	O	O	O	O	O
Mechanical sub-assembly[a] 机械组件 [a]	O	O	O	O	O	O

a. If applicable.
    如果适用。

MARKING REQUIREMENTS
标注要求

Product 产品	Environmental protection use period (years) 环境保护使用期限（年）	Logo 标志
This Exfo product 本 EXFO 产品	10	
Battery[a] 电池 [a]	5	

a. If applicable.
    如果适用。

EXFO

EXPERTISE REACHING OUT

ISO 900¹ CE