User Guide

MAX-800 Series

MaxTester Unit

www.EXFO.com

Telecom Test and Measurement

EXPERTISE REACHING OUT

Copyright © 2016 EXFO Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form, be it electronically, mechanically, or by any other means such as photocopying, recording or otherwise, without the prior written permission of EXFO Inc. (EXFO).

Information provided by EXFO is believed to be accurate and reliable. However, no responsibility is assumed by EXFO for its use nor for any infringements of patents or other rights of third parties that may result from its use. No license is granted by implication or otherwise under any patent rights of EXFO.

EXFO's Commerce And Government Entities (CAGE) code under the North Atlantic Treaty Organization (NATO) is 0L8C3.

The information contained in this publication is subject to change without notice.

Trademarks

EXFO's trademarks have been identified as such. However, the presence or absence of such identification does not affect the legal status of any trademark.

Units of Measurement

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

Patents

The design patent is pending for these products.

Version number: 1.0.1.1

Contents

Certification Information vi

1 Introducing the MAX-800 Series MaxTester Unit 1

Main Features 1
LED Indicators Description 5
Function Buttons Description 7
Power Sources 8
Automatic Fan Speed Management 8
Software Options for Your Unit 9
Product Registration 9
Conventions 10

2 Safety Information 11

Other Safety Symbols on Your Unit 12
Laser Safety Information 13
Electrical Safety Information 13

3 Getting Started with Your Unit 17

Positioning Your Unit 17
Turning On Your Unit 18
Turning Off Your Unit 18
Configuring Your Unit At First Startup 24
Accessing and Exiting Mini Toolbox X 26
Starting Module Applications 27
Using the On-Screen (Virtual) Keyboard 28
Working with Windows Embedded 8 Standard 29
Right-Clicking with the Touchscreen 31
Installing or Upgrading the Applications 32
Activating Software Options 35
Installing Third-Party Software on Your Unit 40
Protecting your Unit with an Antivirus Software 40
Securing your Unit Using the Kensington Lock 41
Using a Keyboard, Mouse or Other USB Devices 42
Inserting and Removing microSD Cards 44
Working with Bluetooth Devices 48

4 Setting Up Your MAX-800 Series MaxTester Unit 49
Adjusting Brightness 49
Adjusting Speaker and Microphone Volume 50
Customizing the Right-Click Feature 56
Enabling or Disabling the Automatic Logon 60
Selecting the Startup Applications 64
Configuring Network Printers 66
Selecting the Language of Operation 68
Setting Date and Time Formats 77
Adjusting the Date, Time and Time Zone 79
Configuring the Power Management Options 80
Setting Mini Toolbox X Behavior 90
Configuring the Internet Options 92
Configuring Parameters via Windows Mobility Center 94
Setting Other Parameters 95

5 Working with Your Unit 97
Printing Documents 97
Viewing PDF Files 98
Taking Screen Captures 99
Browsing the Web 100
Accessing the Internet with a 3G USB Modem Key 101
Managing Favorites 103
Using the Calculator 111
Using the Text Editor 111
Accessing Other Tools 112

6 Inspecting Fibers with a Probe 113

7 Managing Data 115
Viewing Disk Space and Managing Files 116
Transferring Data via Bluetooth 117
Connecting to a Wireless Network 126
Using the USB to RS-232 Adapter 128
Freeing Up Disk Space with the Disk Cleanup Utility 134
Enabling or Disabling the Wireless Communication 138
Connecting to a VPN from Your Unit 141

8 Accessing Your Unit Remotely 147
Working with Remote Desktop 148
Working With VNC 158
Adding Exceptions to the Firewall 166

9 Testing Network Connections 171
Performing a Ping Test 171
Performing a Trace Route Test 174
Exporting the Results 176

10 Maintenance 177
Cleaning the Touchscreen 178
Recharging the Battery 178
Replacing the Battery 181
Managing Windows Updates 188
Recycling and Disposal (Applies to European Union Only) 190

11 Troubleshooting 191
Solving Common Problems 191
Restoring Your Unit to Normal Operation 195
Accessing the Online Documentation 211
Contacting the Technical Support Group 213
Viewing System Information 214
Retrieving Network Interfaces Information 217
Transportation 221

12 Warranty 223
General Information 223
Liability 223
Exclusions 224
Certification 224
Service and Repairs 225
EXFO Service Centers Worldwide 226

A Technical Specifications 227

Index 229

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.

Note: *Information such as the FCC and IC numbers is available directly from Mini Toolbox X. From the button bar, tap* *, and then select the* ***Platform*** *tab. The numbers are listed under* ***Regulatory information****.*

If you purchased the Wi-Fi and Bluetooth options, 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.
- This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
- This device complies with the US/Canada portable RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this user documentation. The further RF exposure reduction can be achieved if the device can be kept as far as possible from the user's body.
- This device does not contain any user-serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.

European Community Declaration of Conformity

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

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

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

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

- Bluetooth: Between the frequencies 2400.0 MHz - 2483.5 MHz. The output power is 4.0 dBm typical.
- Wi-Fi: Between the frequencies 2400.0 MHz - 2483.5 MHz. The maximum output power is 16.0 dBm.
- Wi-Fi: Between the frequencies 5150.0 MHz - 5825.0 MHz. The maximum output power is 12.0 dBm.

This device is a 2.4 GHz and 5 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries, except in France and Italy where restrictive use applies.

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

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

1 Introducing the MAX-800 Series MaxTester Unit

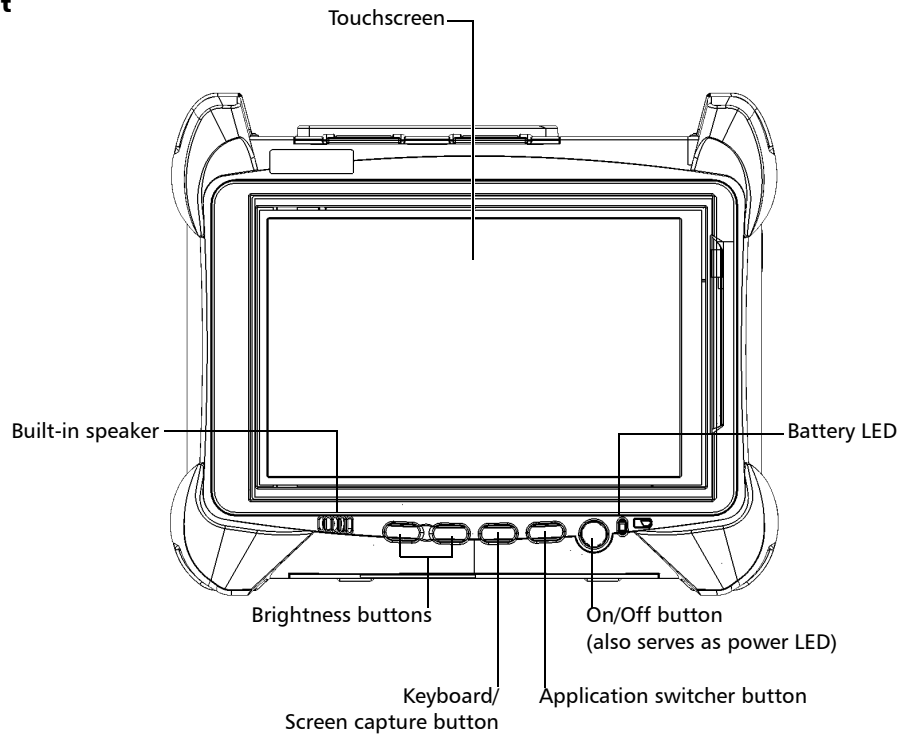
Note: *In this documentation, the words "tap" and "double-tap" (related to the use of a touchscreen) replace the words "click" and "double-click".*

Main Features

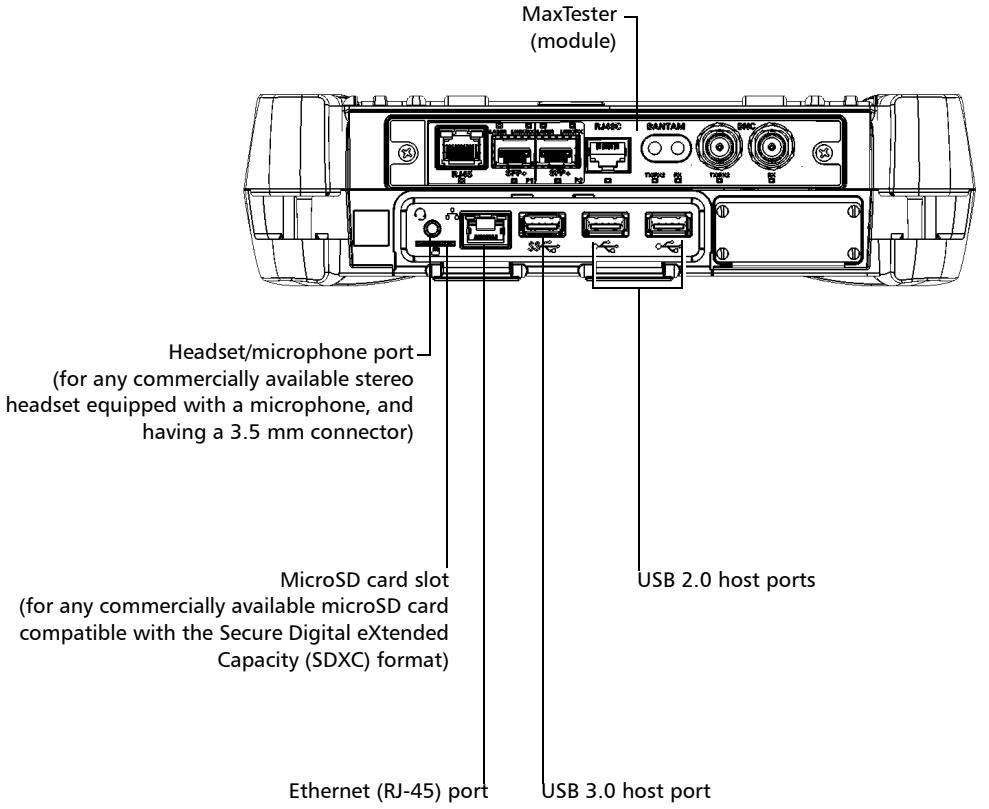
Your unit includes the following:

- 8-inch color capacitive touchscreen (LCD and touchscreen optimized for outdoor use available as an option)
- Two USB 2.0 host ports and one USB 3.0 host port
- Ethernet port (10/100/1000 Base-T)
- Headset/microphone port (for headsets equipped with a microphone)
- MicroSD card slot for extended storage space
- Optional Wi-Fi and Bluetooth capability
- Windows Embedded 8 Standard operating system
- Multitasking possibilities
- Remote access to your unit (via VNC or Remote Desktop)
- Direct Web access from your unit
- Possibility to take screen captures
- PDF file viewer available from your unit
- Easy transfer of files and folders to an external storage device
- Easy software updates

Front

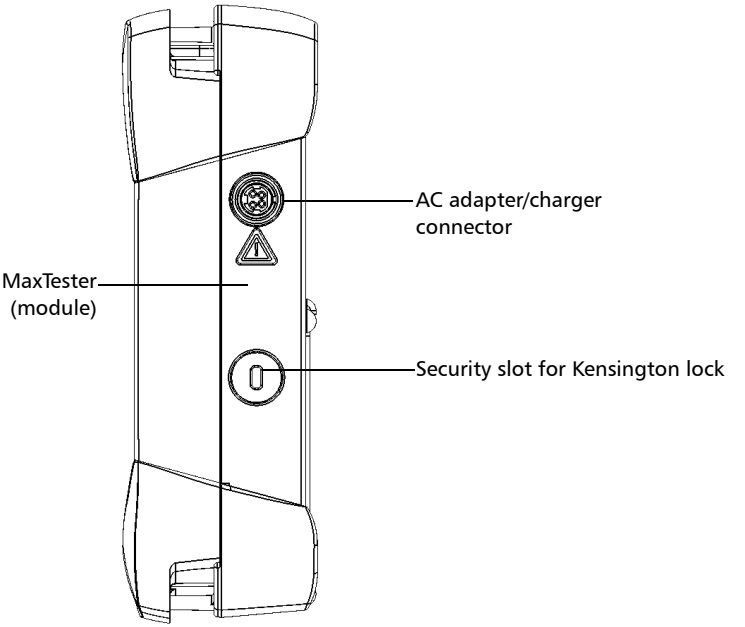

Touchscreen
Built-in speaker
Battery LED
Brightness buttons
On/Off button
(also serves as power LED)
Keyboard/
Screen capture button
Application switcher button

Top

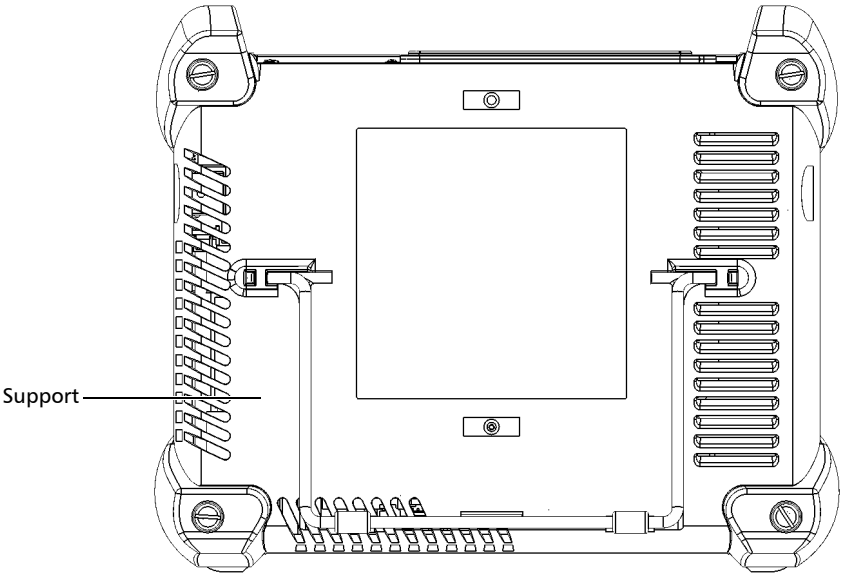


Note: *For a complete description of your module's ports, refer to the documentation of the MaxTester application.*

Right panel


AC adapter/charger connector
MaxTester (module)
Security slot for Kensington lock

Back



LED Indicators Description

There are two LED indicators located on the front panel of your unit, providing you with information about the power and battery statuses.

LED	Status	Meaning
⏻	Green	Unit is on.
	Green, blinking	Unit is in Sleep mode.
	Off	Unit is off or in Hibernation mode.
	Red	There is a major hardware problem with the unit. Contact EXFO.

LED	Status	Meaning
(when unit is connected to an external power source)	Green	All batteries are fully charged.
	Green, blinking	The battery is charging.
	Yellow, blinking	The unit would be using more power than what is available from the battery. Do not disconnect AC power while it is in use. A blinking yellow LED takes precedence over a blinking green one, so when AC power is connected, even if the LED is blinking yellow, the battery is probably charging (depending on conditions).
	Red	Battery error. Contact EXFO.
	Red, blinking	The detected temperature is too high. This could lead to a thermal shutdown of the unit if no action is taken to reduce the temperature.
	Off	No battery present in the unit.
(when unit is not connected to an external power source)	Off	The global level of the batteries is above the “low-battery threshold”.
	Yellow	The global level of batteries is low.
	Yellow, blinking	The unit would be using more power than what is available from the battery. Connect AC power as soon as possible.
	Red, blinking	The detected temperature is too high. This could lead to a thermal shutdown of the unit if no action is taken to reduce the temperature.

Function Buttons Description

Your unit is equipped with function buttons that give you access to features at all times.

The table below shows an overview of their purpose.

Button	Meaning
	Adjust the display brightness level. Press the desired button as many times as needed. For more information, see *Adjusting Brightness* on page 49.
	➤ Displays the on-screen keyboard. Press once to show the keyboard. Press once again to hide it. ➤ Takes a screen capture. Hold down for a few seconds. For more information, see *Taking Screen Captures* on page 99.
	Enables you to switch from one task to another. It is the equivalent of pressing the ALT + TAB key combination on a hardware keyboard. ➤ Press once to view the list of running applications. ➤ Press as many times as needed to select the desired application.
	Turns your unit on and off. Press to turn the unit on. For more information on the various ways to turn off your unit, see *Turning Off Your Unit* on page 18.

Power Sources

Your unit operates with the following power sources:

- AC adapter/charger (connected to standard power outlet—indoor use only). Compatible car outlet adapter available upon request.

  When it is connected to an external power source with the AC adapter/charger, the unit will function even if the battery is not present.

- One lithium-ion rechargeable battery (automatically takes over if you disconnect the unit from its external power source).

  - Possible to switch from an external power source to battery power or vice versa without affecting operation.

  - The battery recharges automatically when the unit is connected to an external power source (with the AC adapter/charger or car outlet adapter).

Note: *When the ambient temperature is below 0 °C (32 °F) or when it reaches or exceeds about 40 °C, the batteries can either charge more slowly than usual, or not charge at all, depending on the internal temperature of your unit.*

For more information, see *Electrical Safety Information* on page 13.

Automatic Fan Speed Management

Your unit will determine the most appropriate fan speed, depending on the power requirements.

If the temperature keeps rising and reaches the limit: your unit will turn off as self-protection.

Software Options for Your Unit

The IPT option, offered for your unit, enables you to perform *ping* and *trace route* tests.

For more information on the software options available for the MaxTester module, test instruments, or dedicated applications, refer to their respective user documentation.

For more information on how to activate software options for your unit, see *Activating Software Options* on page 35.

Product Registration

You can now register your new EXFO products either online or directly from your unit (if it is connected to the Internet), and benefit from every possible opportunity to optimize their performance. By doing so, you will always be notified of the latest software updates, key product enhancements and up-to-date support information related to your products.

To register your product directly from your unit:

1. Ensure that your unit can access the Internet.
2. From Mini Toolbox X, tap **Utilities**, and then **Product Registration**.
3. Follow the on-screen instructions.

To register your product online:

1. Open a Web browser and go to www.exfo.com.
2. Log in to your EXFO account.
3. Tap **Support**.
4. Under **Tools**, tap **Manage My Products**.
5. Tap **Register**.
6. Follow the on-screen instructions.

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
	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)
OR	On/Off (Power)
	Fuse

Laser Safety Information

Your unit does not include laser components in itself. For this reason, the laser class of your unit depends on the model of the MaxTester module that you use. Refer to the user guide or the online help of the MaxTester application 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. For more information on how to remove the battery, see the section about replacing the battery in this user documentation.

WARNING

- **Never connect the unit to the AC mains (with the adapter/charger) when it is used outdoors.**
- **Position the unit so that the air can circulate freely around it.**
- **Operation of any electrical instrument around flammable gases or fumes constitutes a major safety hazard.**
- **To avoid electrical shock, do not operate the unit if any part of the outer surface (covers, panels, etc.) is damaged.**
- **Only authorized personnel should carry out adjustments, maintenance or repair of opened units under voltage. A person qualified in first aid must also be present. Do not replace any components while the power cable and battery are connected.**
- **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. The car outlet adapter contains a replaceable fuse. Replace the damaged fuse ONLY with a fuse of the same type: 3AB fast-acting fuse, certified, 250 V, 15 A, with a nominal I^2t of 292 A^2sec. 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 batteries: 0 °C to 50 °C (32 °F to 122 °F)[a,b] ➤ unit connected to AC adapter: 0 °C to 40 °C (32 °F to 104 °F)
➤ Storage	➤ unit without batteries: –40 °C to 70 °C (–40 °F to 158 °F) ➤ unit with batteries: –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; 3.75 A ➤ AC adapter: ~ 100 - 240 V; 50/60 Hz; 2 A

a. When the unit is used at an altitude of 5000 m, the maximum operating temperature is 32 °C (89.6 °F)
b. Operating time is dependent upon power consumption and temperature. If the unit is used at maximum power and maximum temperature, it will power off automatically any time after 10 minutes for safety reasons.
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.

CAUTION

The use of voltages higher than those indicated on the label affixed to your unit may damage the unit.

CAUTION

The operation and storage temperatures, as well as the altitude and relative humidity values of some modules may differ from those specified for your unit. In this case, always ensure that you comply with the most restrictive conditions (either module or unit).

3 Getting Started with Your Unit

Positioning Your Unit

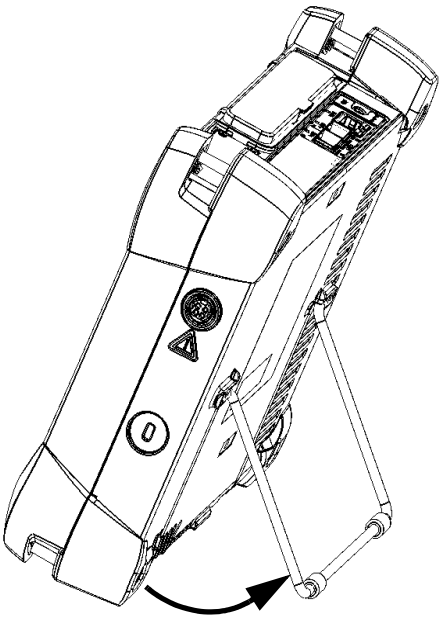
You can position your unit either vertically (with the screen facing you), or at an angle, using the support on the back panel.

You can also hold your unit with the provided hand strap.

Note: *The stand ensures optimum stability to the unit during your tests.*

To position the unit using the support:

Pull out the support.



Turning On Your Unit

When you turn on the unit for the very first time, a wizard for license agreements and safety instructions is displayed (see the corresponding section for more information).

Once you have accepted all the license agreements and confirmed the reading of safety instructions, the main window is displayed.

To turn on the unit:

Press the On/Off button.

Turning Off Your Unit

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

- *Sleep*: 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 *Sleep* mode, but it requires less battery power when the unit is off.
- *Shutdown*: 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 Mini Toolbox X 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 shut down when you press the power button. 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 (power outage, emergency shutdown, sleep, or hibernation modes) when battery level is too low.

To exit the sleep mode (or hibernation mode) and resume your work:

Press the On/Off button.

To turn off the unit completely from the unit itself:

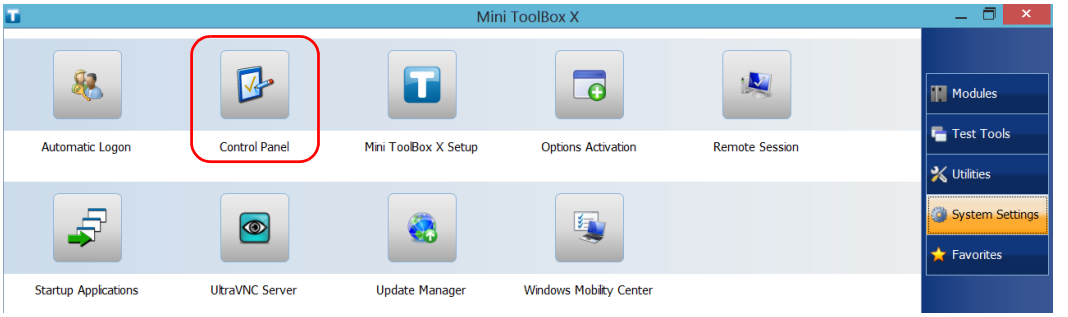
Press the On/Off button.

To turn off the unit completely from Windows:

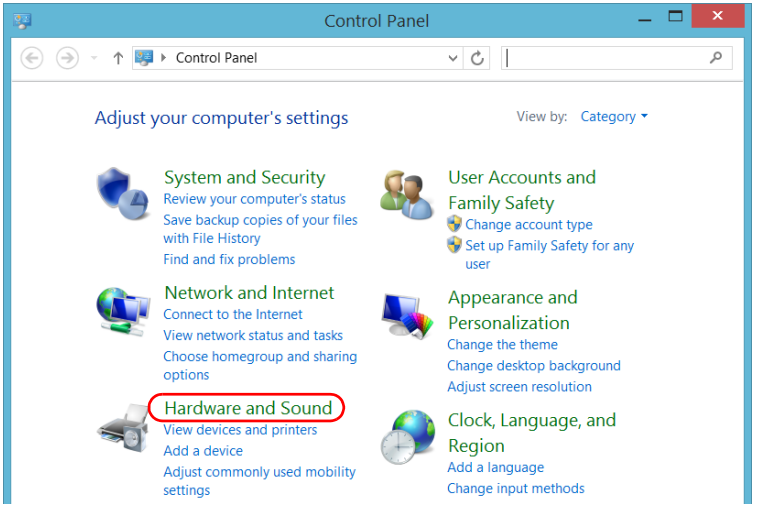
1. From the right side of the screen, swipe left to display the Charm bar. For more information, see the section about working with Windows 8.1 Pro or Windows Embedded 8 Standard.
2. Tap **Settings** > **Power** > **Shut down**.

To define the behavior of the power button:

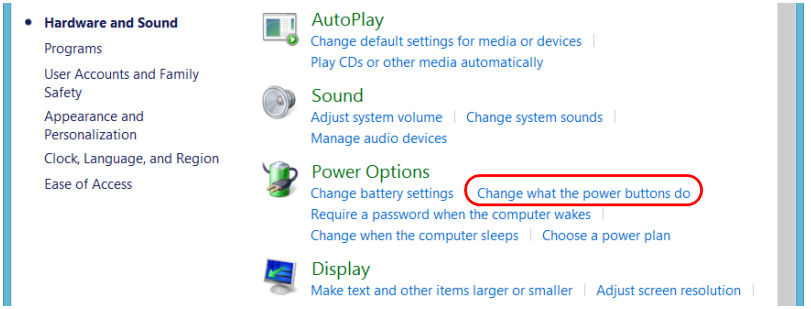
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



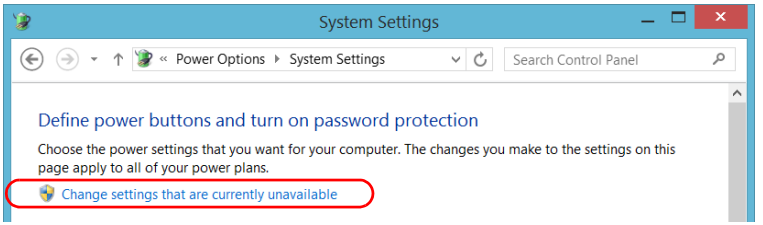
3. Tap **Hardware and Sound**.



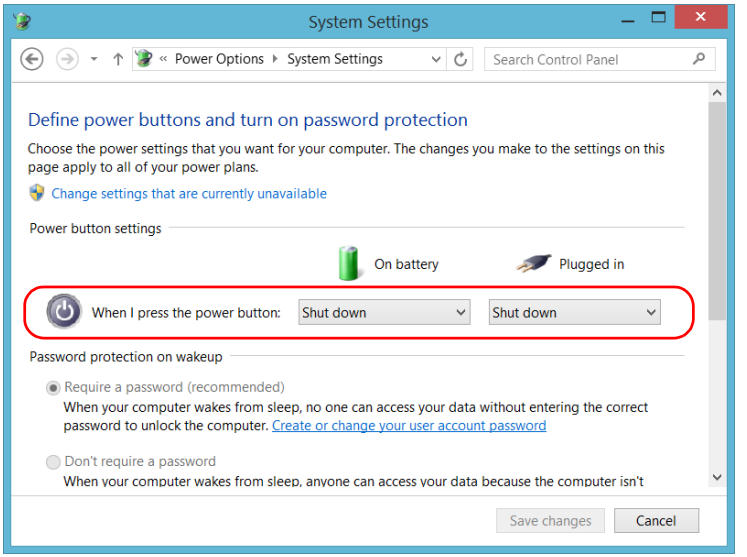
4. Under **Power Options**, tap **Change what the power buttons do**.



5. Tap **Changes settings that are currently unavailable**.



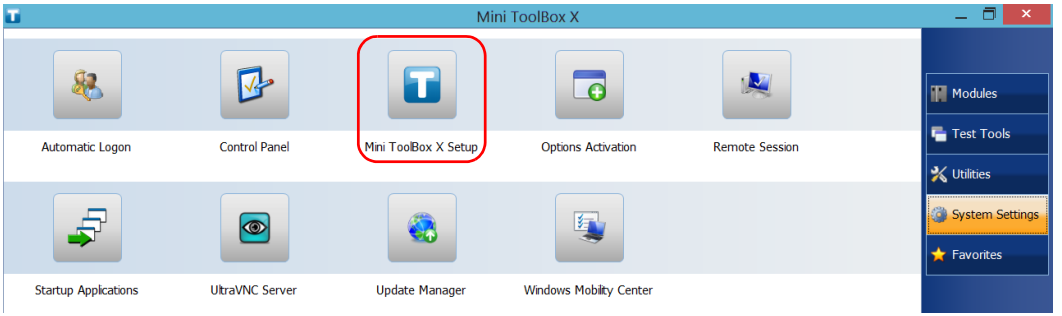
6. From the **When I press the power button** lists, select the desired behavior when the unit is powered by batteries, or by AC current (**Shut down** option is selected by default in both cases).



7. Tap **Save changes** to confirm the changes and return to the **Power Options** window.

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

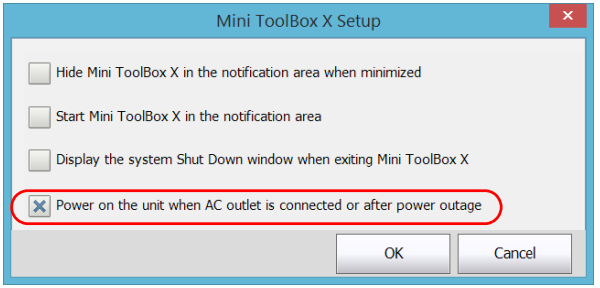
1. From the main window, tap the **System Settings** button.
2. Tap **Mini ToolBox X Setup**.



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 **System Settings** window.

Configuring Your Unit At First Startup

The first time you turn on the unit, a Windows configuration wizard is displayed, enabling you to set all the regional and language settings such as the country and operation language.

IMPORTANT

The operation language that you select at the first startup (labelled "App language") becomes the default system language, that is the language that will be available at logon.

During the configuration process, you will also be asked to read and accept the Microsoft end-user license agreement (EULA).

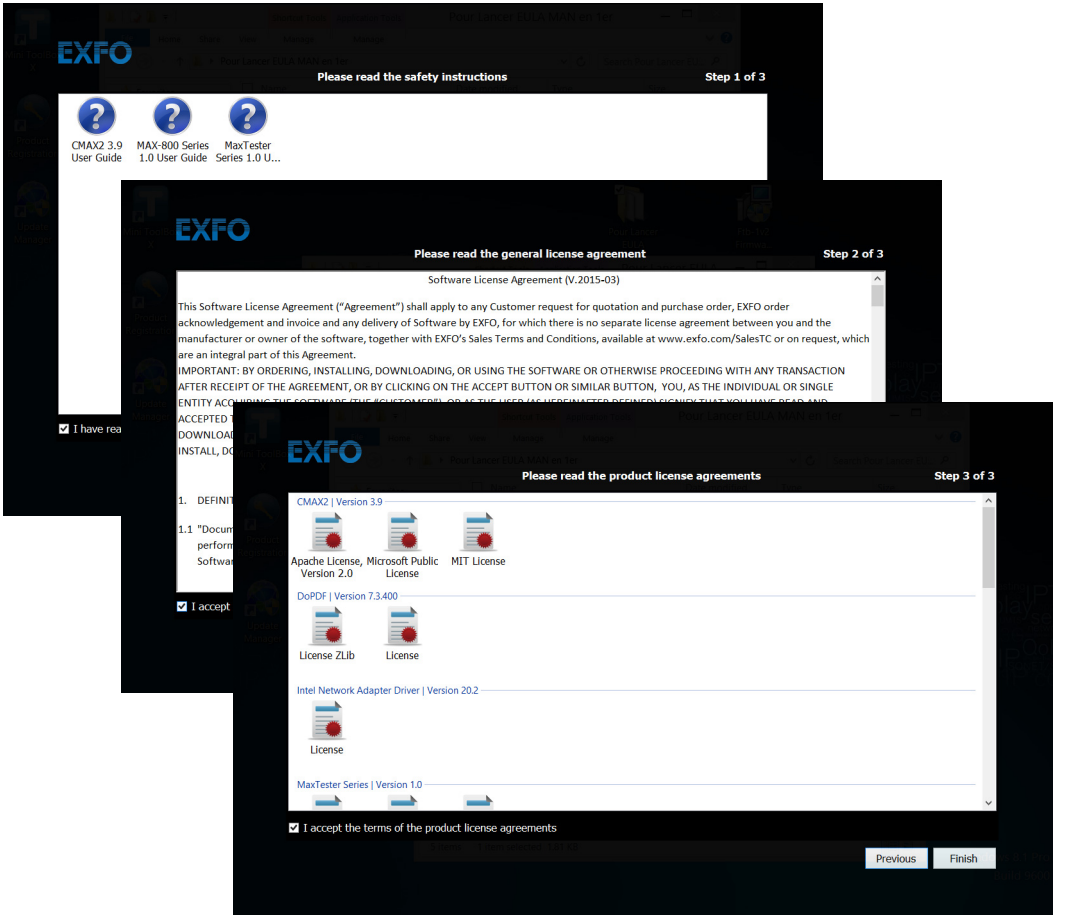
Once the configuration is complete in Windows, an EXFO wizard will be displayed, allowing you to read the user documentation for important safety information, and to read and accept the EULA related to your unit, modules, and instruments.

Note: *To be able to work with the unit, you must accept all the EULA (from Microsoft and EXFO), and confirm that you have read the security information.*

To configure your unit at first startup:

1. If it is not already done, turn on the unit (see *Turning On Your Unit* on page 18).
2. When the Windows wizard is displayed, set the parameters according to your needs.
3. Read and accept the Microsoft EULA.
   The configuration of Windows parameters may take several minutes.

4. When the EXFO wizard is displayed, follow the on-screen instructions.



5. Tap **Finish** to close the wizard and start working.

Accessing and Exiting Mini Toolbox X

By default, Mini Toolbox X is displayed automatically when you turn on the unit.

However, you can configure your unit to send Mini Toolbox X to the notification area (see *Setting Mini Toolbox X Behavior* on page 90). This could be useful, for example, if you prefer to start working in Windows. You can also configure your unit to start any of the available applications as soon as Mini Toolbox X is started (see *Selecting the Startup Applications* on page 64).

To access Mini Toolbox X from the Windows environment:

Double-tap the

icon on your desktop.

Note: *If Mini Toolbox X has been sent to the notification area, from this location, right-click the* *icon, and then select* ***Restore Mini ToolBox X****.*

To exit Mini Toolbox X:

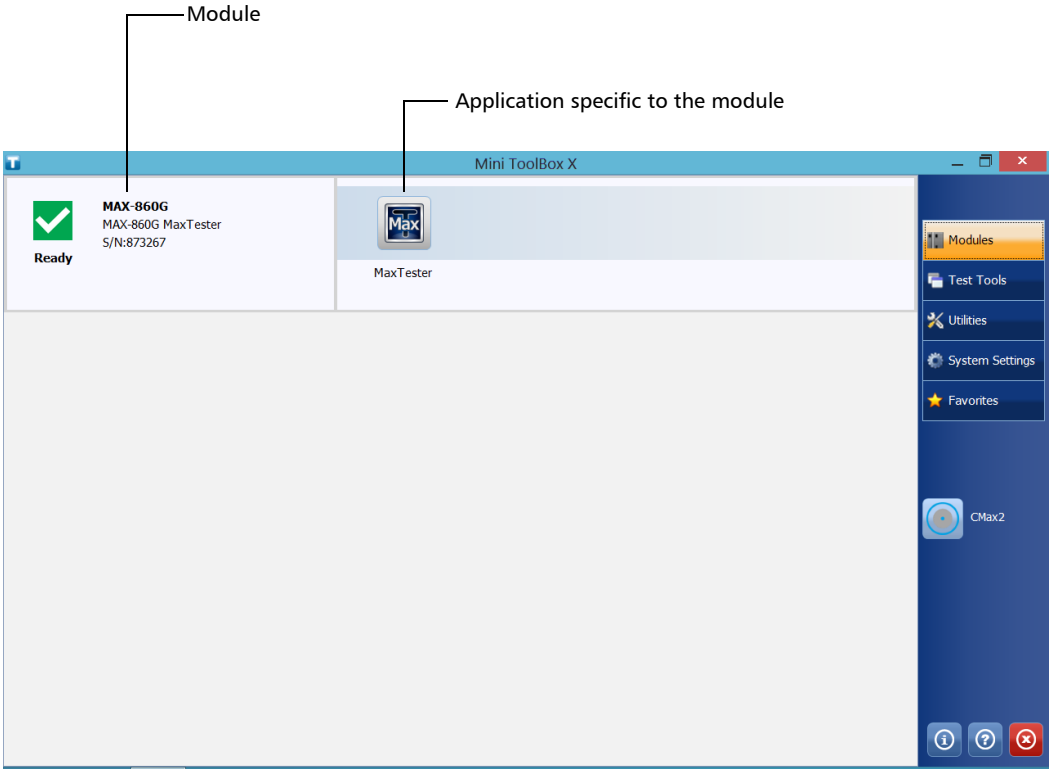
Tap .

Starting Module Applications

Your module can be configured and controlled from the MaxTester application in Mini Toolbox X.

To start the MaxTester application:

1. If necessary, tap the **Modules** button to display the module window.



2. Tap the **MaxTester** icon.

Using the On-Screen (Virtual) Keyboard

Whenever you need to enter alphanumeric data, you can use the on-screen keyboard. This keyboard supports multilingual features, and functions according to the keyboard settings set in Windows.

To use the on-screen keyboard:

1. Select the location where you want to enter text.
2. From the unit's front panel, press the / button.

   OR

   From the taskbar, tap the on-screen keyboard icon (located to the left of the clock).

3. Enter the data as required.
4. Close the keyboard when you are done entering data.

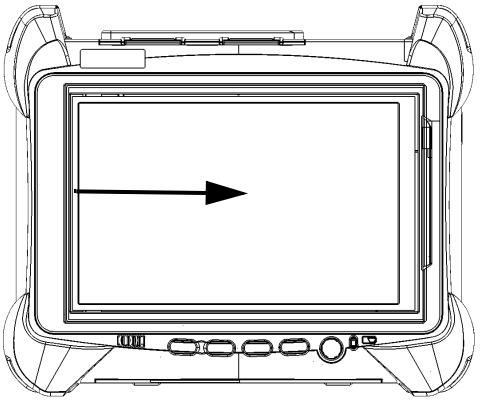
Working with Windows Embedded 8 Standard

If you are not familiar with Windows Embedded 8 Standard, you may want to visit Microsoft Web site for tutorials as well as detailed information on the features and concepts brought by this operating system.

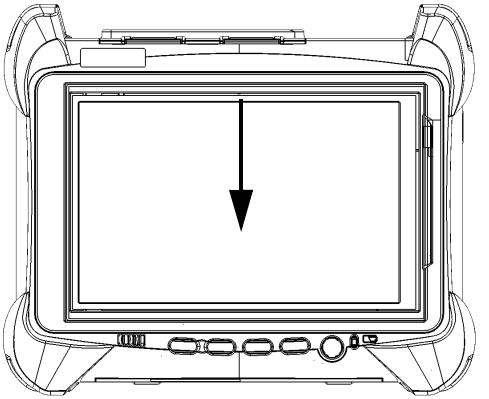
One of the new features is the use of touchscreen gestures to perform certain tasks. In this documentation, all the necessary gestures are explained throughout the procedures.

Here is an overview of the gestures that you may use the most with your unit.

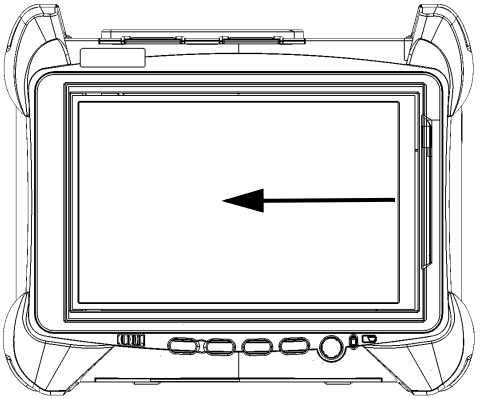
- Tap and double-tap: Equivalent of a click and double-click with a mouse.
- Swipe right: To return to the last used application.
  From the left edge of the screen, swipe towards the right.



➤ Swipe down: To close windows that do not have a close button.
From the top edge of the screen, swipe towards the bottom.



➤ Swipe left: To display the Charm bar, which is a special toolbar that gives you access to many tools and settings.
From the right edge of the screen, swipe towards the left.



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.

This feature is enabled by default, but you can disable it if you prefer. You can also modify the right-click behavior. For more information, see *Customizing the Right-Click Feature* on page 56.

To right-click with the touchscreen:

From the location where you want to right-click, using the provided stylus or any capacitive (conductive) stylus, 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.

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.*

When updates are available for an application, you will need to download them from Internet, either directly on your unit or on a computer. The update files must be copied to the location that has been specified for the deployment packages in Update Manager.

For the installation or upgrade, you will need:

- your unit
- a computer equipped with a USB port; Windows must be installed on the computer
- a USB memory key

Note: *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 Mini Toolbox X and the module's 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, double-tap the Update Manager setup 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.

3. Exit Mini Toolbox X and the module's applications.

4. 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.

5. 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.

6. On your unit, from Windows desktop, double-tap the **Update Manager** icon to start the corresponding application. For more information on how to install or upgrade applications, refer to the Update Manager online help.

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

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.

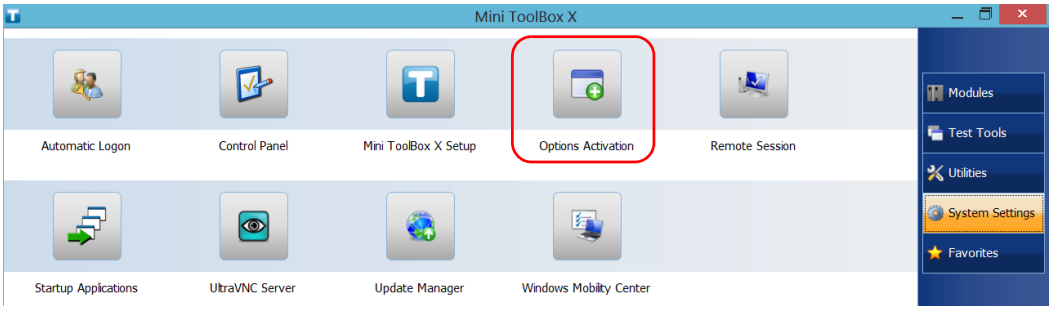
Before being able to activate options, you need to contact EXFO with the following information:

- Purchase order number of the newly purchased options
- Module or platform serial number (depending on whether the software options were purchased for the module or the unit itself)
- Customer's name
- Customer’s company name
- Customer’s phone number
- Customer’s e-mail address
- Module or unit on which the option will be installed

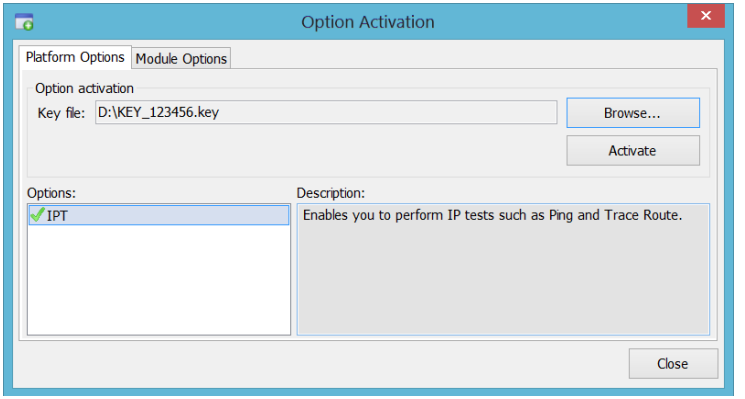
You will receive a single key (.key) file with which you will be able to unlock all the new options that you have purchased.

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 the main window, tap the **System Settings** button, and then tap **Options Activation**.



5. In the **Platform Options** tab, use the **Browse** button to locate the key file that you want to use.



6. Tap **Activate**.

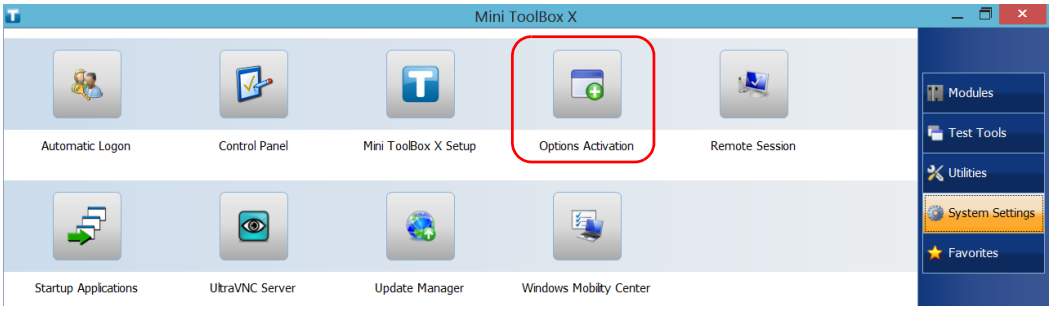
   The option indicator will turn into a green check mark to confirm that the option is now active.

7. Tap **OK** to close the confirmation message, and then **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.*

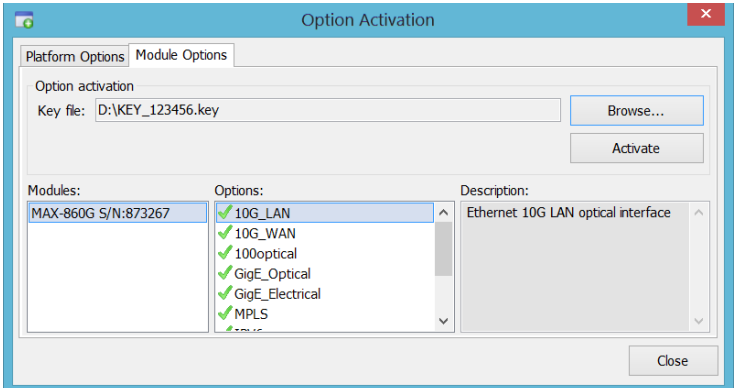
To activate software options for your module:

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 the main window, tap the **System Settings** button, and then tap **Options Activation**.



5. When the application prompts you to authorize the changes to your unit (identified as “computer”), tap **Yes**.

6. In the **Module Options** tab, use the **Browse** button to locate the key file that you want to use.



7. Tap **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.*

8. Tap **OK** to close the confirmation message, and then **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.*

Installing Third-Party Software on Your Unit

To comply with the terms of the Microsoft license for your unit, you should only install antivirus software and the applications provided by EXFO.

IMPORTANT

EXFO does not provide any support for the installation, use or troubleshooting of third-party software. Should you need help, refer to the corresponding third-party software documentation or technical support.

Protecting your Unit with an Antivirus Software

By default, your unit is protected with the Windows Defender antivirus software. However, you can apply your own security standards and antivirus strategy.

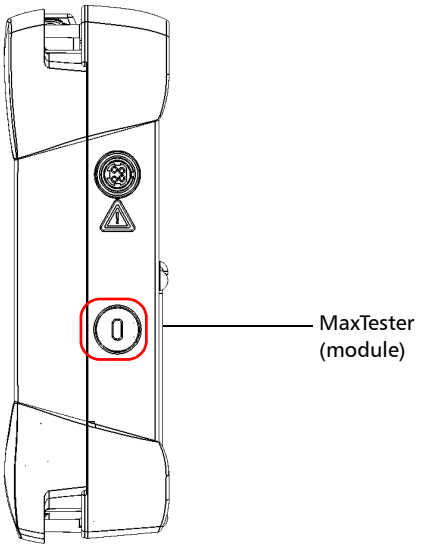
Securing your Unit Using the Kensington Lock

You can connect an optional Kensington lock (security cable) to your unit to prevent theft.

To secure your unit:

Connect your lock to the security slot located on the side panel of your unit.

Right panel



Using a Keyboard, Mouse or Other USB Devices

Your unit supports many USB devices. The table below gives an overview of 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 Mini Toolbox X.*
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.
Printer	To print documents such as reports directly from you unit. If you prefer to use a network printer, you can also configure one. For more information, see *Configuring Network Printers* on page 66.

Device	Details
3G USB modem key	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 101.
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 128.

You can connect several devices at the same time.

To use a USB device with your unit:

Connect the USB device to any of the USB ports located on the top of the unit (see *Main Features* on page 1).

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).

Inserting and Removing microSD Cards

Your unit is equipped with a slot for microSD cards for extra storage capacity. You can use any commercially available microSD card compatible with the Secure Digital eXtended Capacity (SDXC) format.

CAUTION

- **Inserting a microSD card upside down could damage both your unit and the card. Always ensure that the card is properly positioned before trying to insert it into the slot.**
- **To prevent damage to your microSD card, avoid touching its gold area.**

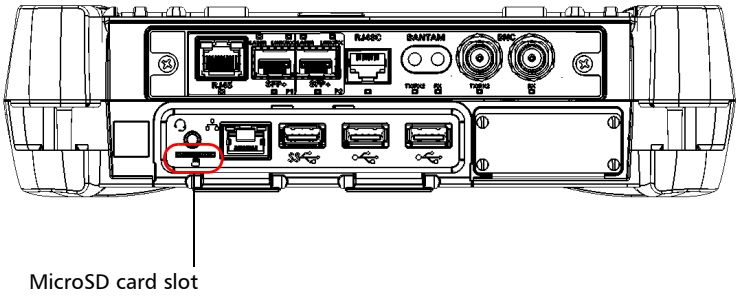
IMPORTANT

Always insert or remove the microSD card while the unit is completely off (shutdown).

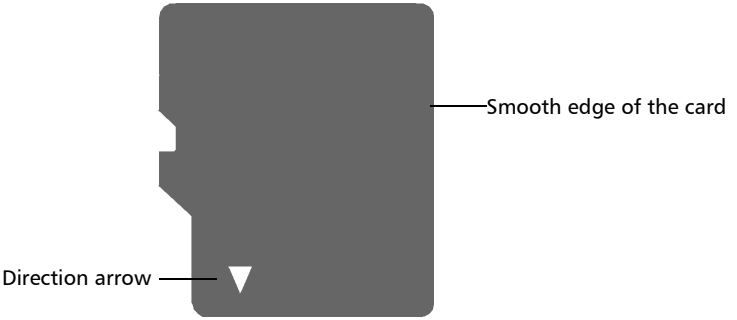
Otherwise, the microSD card may not be detected properly.

To insert a microSD card into your unit:

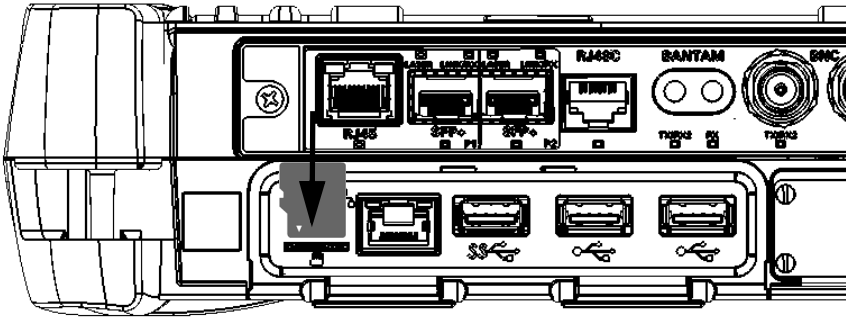
1. Locate the microSD card slot on the top panel of your unit.



2. Position the card vertically so that its smooth edge is on the right and you do not see its gold area. If an arrow is printed on your card, it should point toward the bottom.



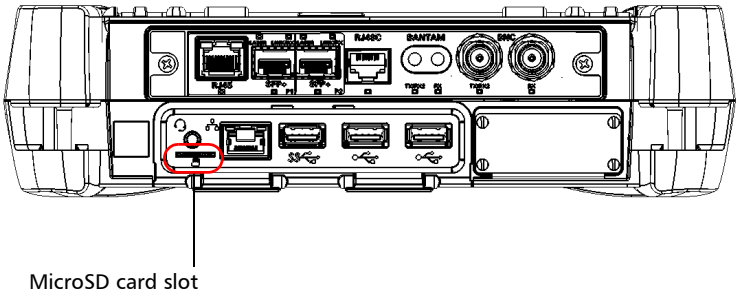
3. Slide the card into the unit's microSD card slot, and push it all the way to the bottom of the card slot.



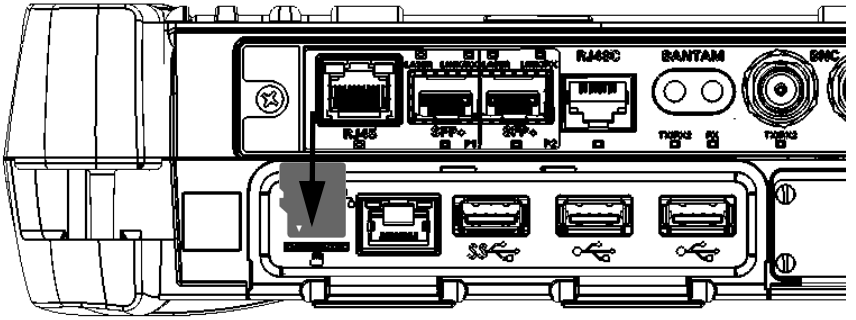
The microSD card is now ready to be used.

To remove a microSD card from your unit:

1. Locate the microSD card slot on the top panel of your unit.



2. Pull the card out of the unit's microSD card slot.



Working with Bluetooth Devices

If you have purchased the Bluetooth option, you can use many Bluetooth devices with your unit.

With the supported Bluetooth profiles, you can do the following:

- Use a wireless mouse and keyboard.
- Use a wireless headset.
- Print from your unit to a Bluetooth-enabled printer.
- Transfer files between your unit and a cell phone (see *Transferring Data via Bluetooth* on page 117).
- Share files between your unit and Bluetooth-enabled computers (see *Transferring Data via Bluetooth* on page 117).

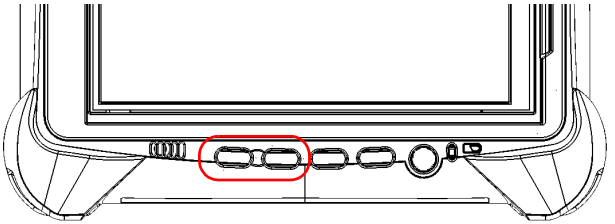
4 Setting Up Your MAX-800 Series MaxTester Unit

Adjusting Brightness

You may want to adjust the display brightness yourself to better fit your work environment or preferences. Values are kept in memory even when you turn the unit off.

To adjust the display brightness:

From the unit's front panel, press the ☼ ▼ (decrease) or ☼ ▲ (increase) button until the brightness level suits you.



The new brightness value is taken into account immediately.

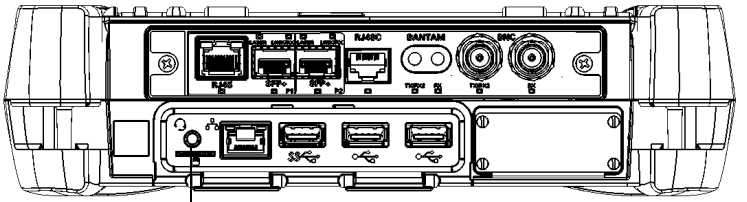
Adjusting Speaker and Microphone Volume

Your unit is equipped with a built-in speaker, but you can also connect a headset to your unit.

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

To adjust the speaker (or headphones) volume:

1. If necessary, ensure that the headset is connected to the audio port located on the top panel of the unit.

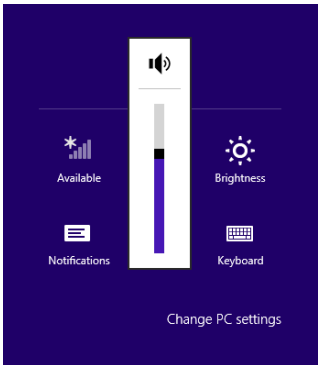


2. From the right side of the screen, swipe left to display the Charm bar.

3. Tap **Settings**, and then the

icon.

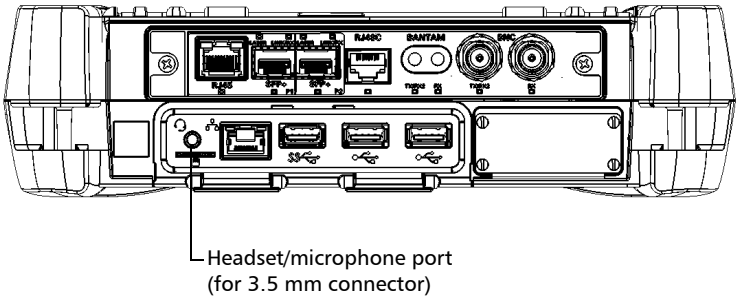
4. Move the slider until the sound level is to your liking.



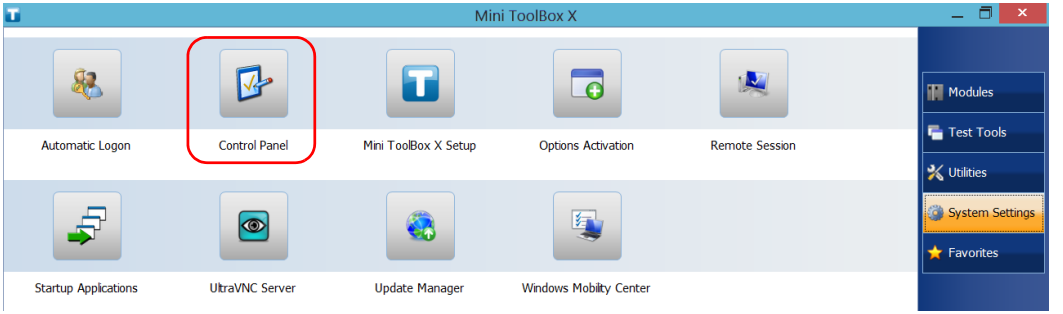
Note: *You can also access the sound level slider by tapping the* *icon from the taskbar.*

To adjust the microphone volume:

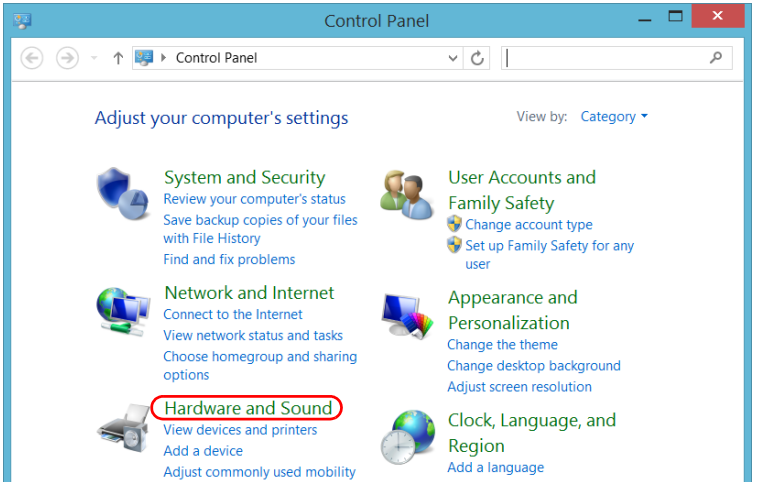
1. Ensure that your headset is connected to the audio port located on the top panel of the unit.



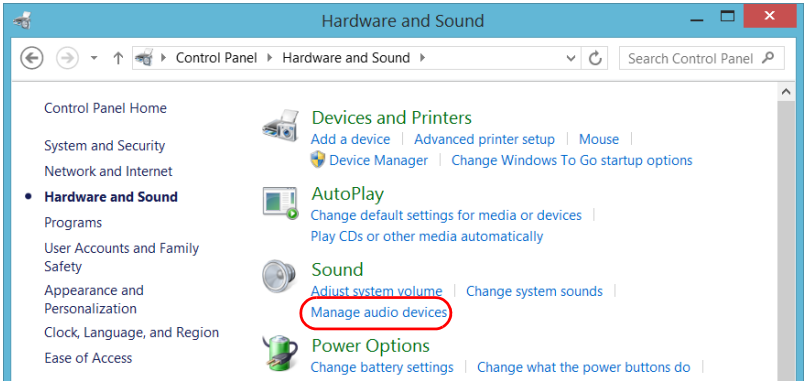
2. From the main window, tap the **System Settings** button.
3. Tap **Control Panel**.



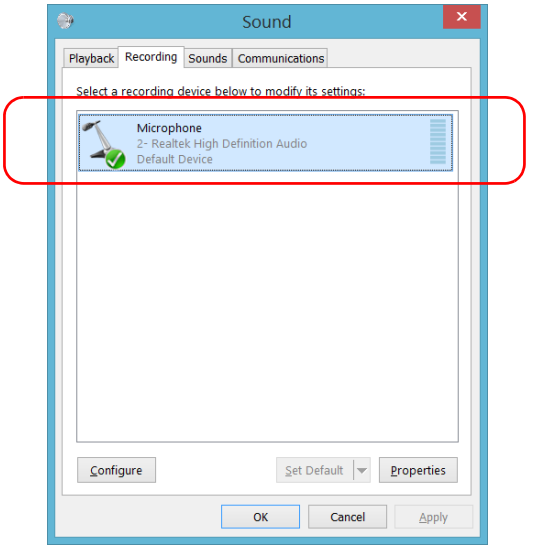
4. Tap **Hardware and Sound**.



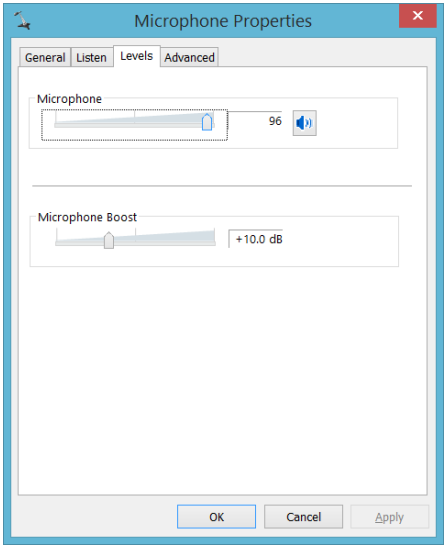
5. Under **Sound**, tap **Manage audio devices**.



6. Select the **Recording** tab.
7. Ensure that your microphone is selected, and then tap **Properties**.



8. From the **Levels** tab, move the sliders until the settings are to your liking. If the sound coming from your microphone is too low, you may want to adjust the boost level as well.



9. Tap **OK** to confirm your new settings and close the window.

10. Tap **OK** to close the window and return to Control Panel.

The new value is taken into account immediately.

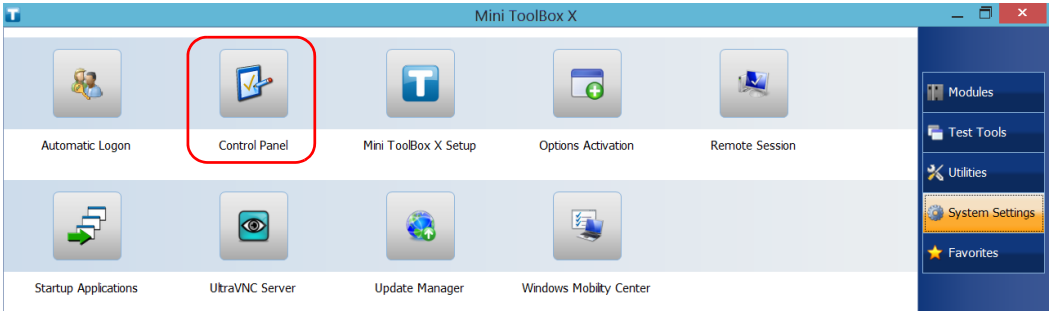
Customizing the Right-Click Feature

By default, you can perform a “press and hold” action which corresponds to right-clicking with your touchscreen (see *Right-Clicking with the Touchscreen* on page 31). However, you can disable this feature if you prefer.

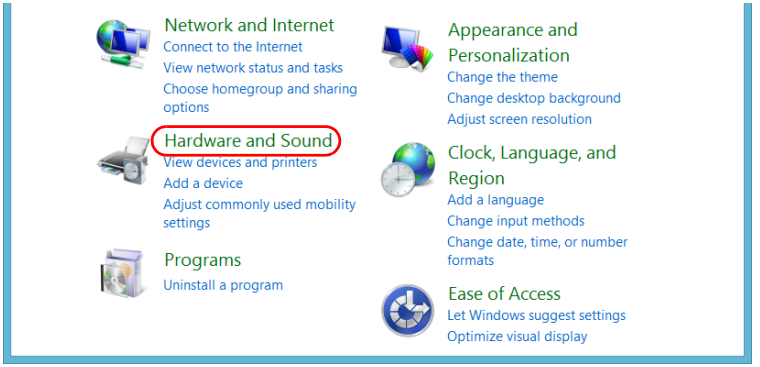
You can also modify the delay before the unit considers that you are right-clicking, as well as the amount of time before displaying the shortcut menu once you have right-clicked.

To customize the right-click feature:

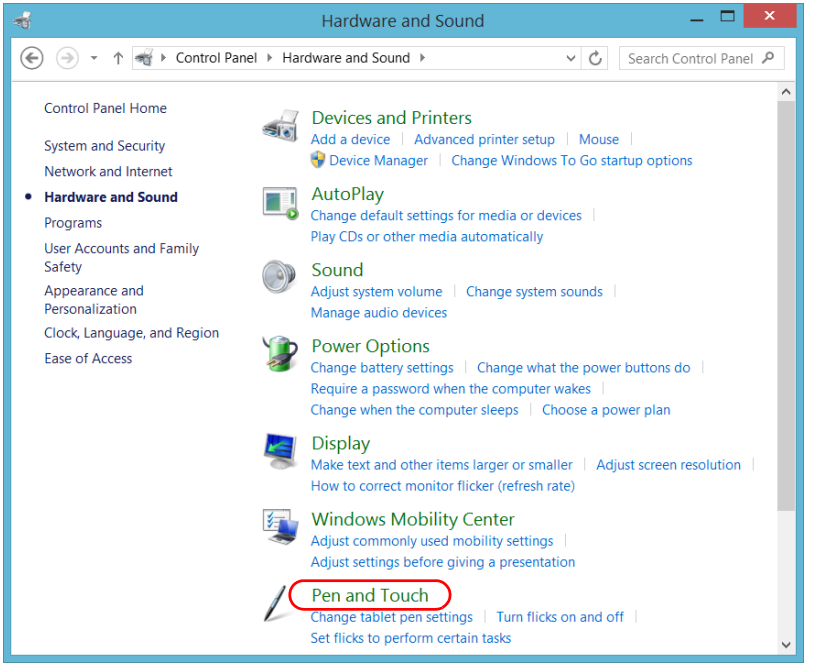
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



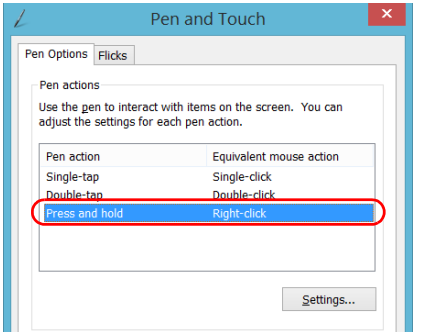
3. Tap **Hardware and Sound**.



4. Tap **Pen and Touch**.

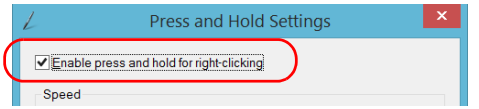


5. From the list, select **Press and hold**.

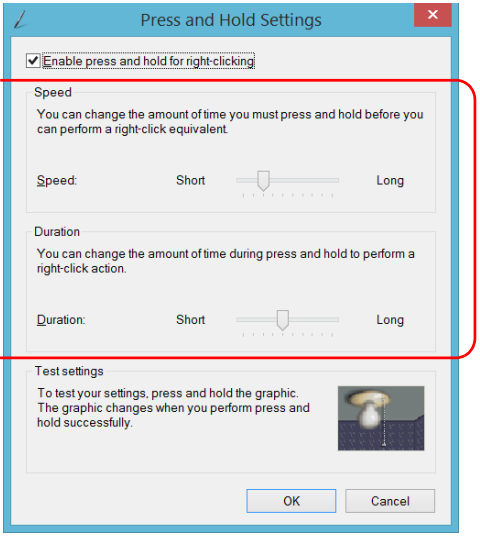


6. Tap **Settings**.

7. If you want to use the right-click feature with your unit, select the **Enable press and hold for right-clicking** check box. Clear the check box if you prefer not to use this feature.



8. If you want to modify the response time of the right-click, move the **Speed** or **Duration** sliders to adjust the configuration to your needs.



9. Tap **OK** to confirm your changes.

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 sleep mode, the application will prompt you to select a user and enter a password, even if you have enabled the automatic logon feature.*

Also for security reasons, by default, the automatic logon is not enabled. Once it is enabled, if you want to modify the password of 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.

IMPORTANT

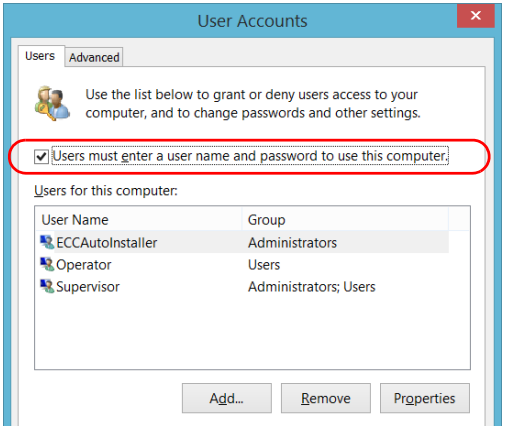
The user name and password that you specify for the automatic logon must correspond to those of an existing user account.

You can create user accounts or modify passwords from the Accounts window (Charm bar > Settings > Change PC settings > Users).

To enable the automatic logon:

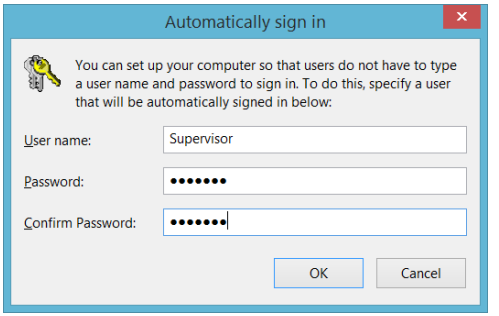
1. From the main window, tap the **System Settings** button.
2. Tap **Automatic Logon**.

3. From the User Accounts window, clear the **Users must enter a user name and password to use this computer** check box.



4. Tap **OK** to confirm.

5. Enter the desired user name (account) and the corresponding password.

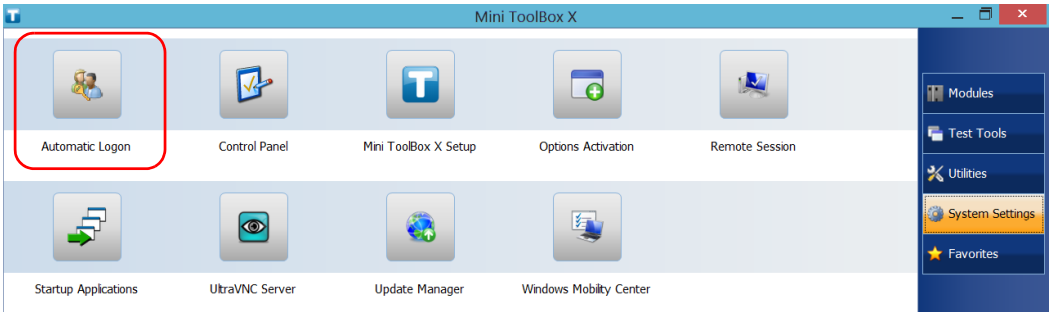


6. Tap **OK** to confirm and to return the **System Settings** window.

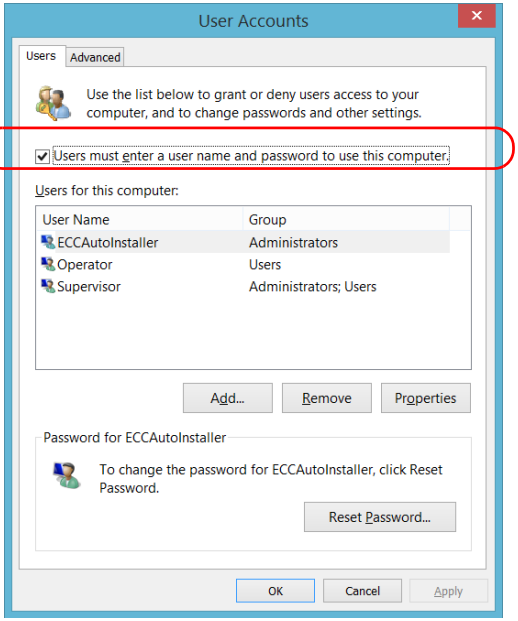
   At next startup, you will no longer need to specify a user name and password (except if the unit comes back from sleep mode).

To disable the automatic logon:

1. From the main window, tap the **System Settings** button.
2. Tap **Automatic Logon**.



3. From the User Accounts window, select the **Users must enter a user name and password to use this computer** check box.



4. Tap **OK** to confirm and to return the **System Settings** window.

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

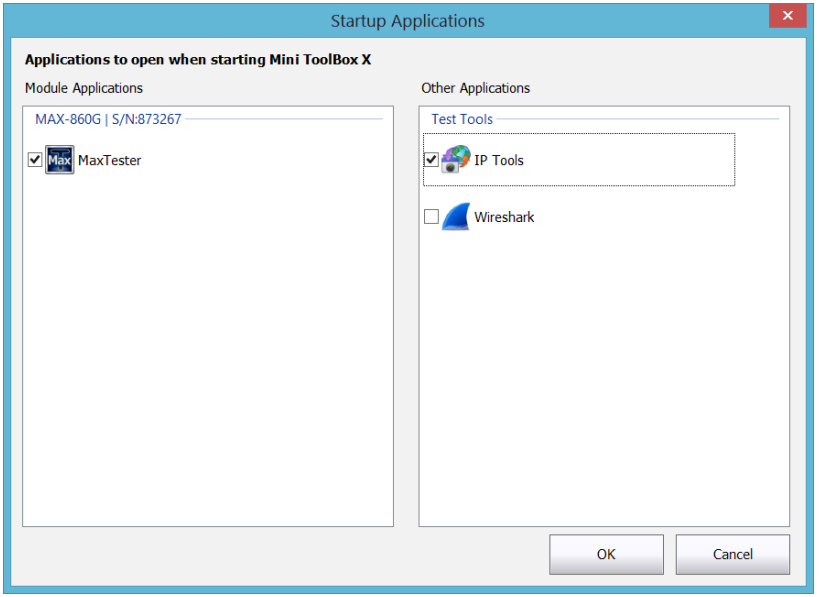
Selecting the Startup Applications

The first time you start your unit, Mini Toolbox X is displayed. You can configure your unit to automatically start any of the available applications as soon as Mini Toolbox X is started. This can save you time, as you do not need to ensure that they are already running before starting your tests.

To set applications to start automatically at Mini Toolbox X startup:

1. From the main window, tap the **System Settings** button.
2. Tap **Startup Applications**.

3. Under **Module Applications** or **Other Applications**, select the applications you want to start automatically by selecting the corresponding check boxes.



4. Tap **OK** to use the new settings. Tap **Cancel** to exit without using the new settings.

Note: *The new settings will be taken into account the next time Mini ToolBox X is started.*

Configuring Network Printers

Your unit supports both (local) USB and network printers (you may have to install specific drivers on your unit).

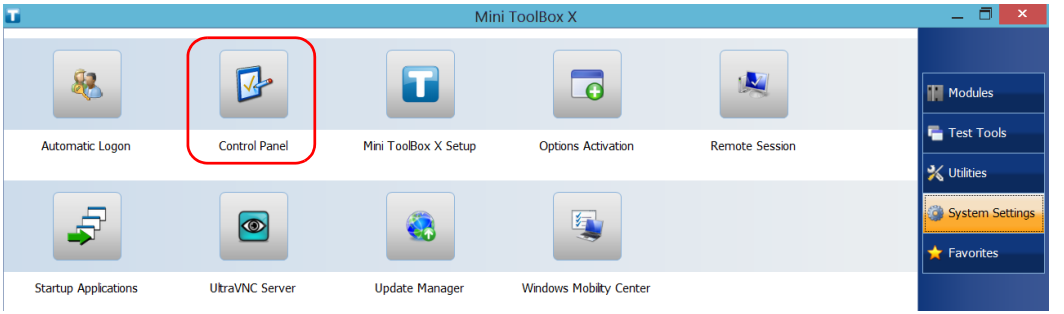
For more information on USB printers connection, see *Using a Keyboard, Mouse or Other USB Devices* on page 42.

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, and ensure that your unit is connected to the same network as the printer (either wireless or Ethernet connection). Contact your network administrator for more information on your specific network configuration.

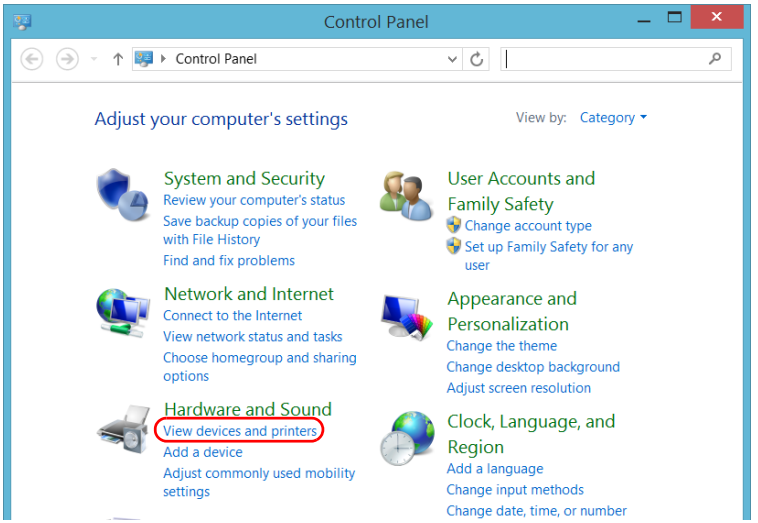
For more information on printing, see *Printing Documents* on page 97.

To configure the printer:

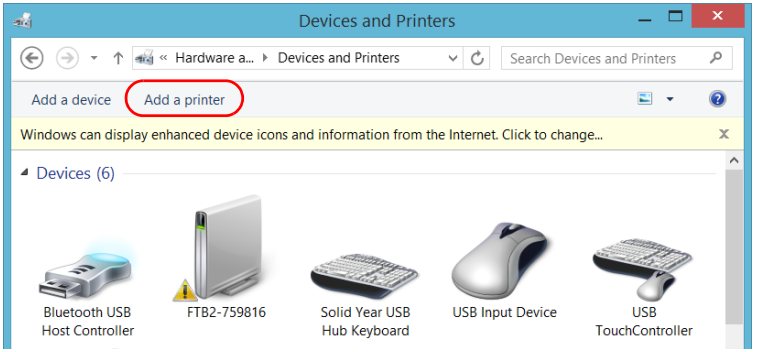
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



3. Under **Hardware and Sound,** tap **View devices and printers**.



4. Tap **Add a printer**.



5. Follow the on-screen instructions.

Selecting the Language of Operation

You may display the user interface in one of the available languages.

The availability of the languages is function of the language group that was installed on your unit at time of purchase. It is possible to download language packs from the Microsoft Website to add extra languages if necessary.

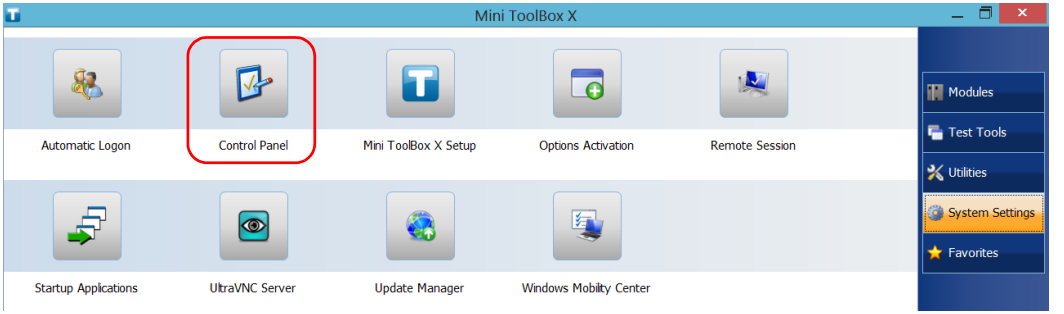
The Mini Toolbox X application is offered in several languages. This means that if Mini Toolbox X supports the language currently selected in Windows, it will automatically be displayed in this language. If the selected language is not supported, the English version will be used.

When you change the interface language, the corresponding keyboard is automatically added to the list of available keyboards. You can then 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.

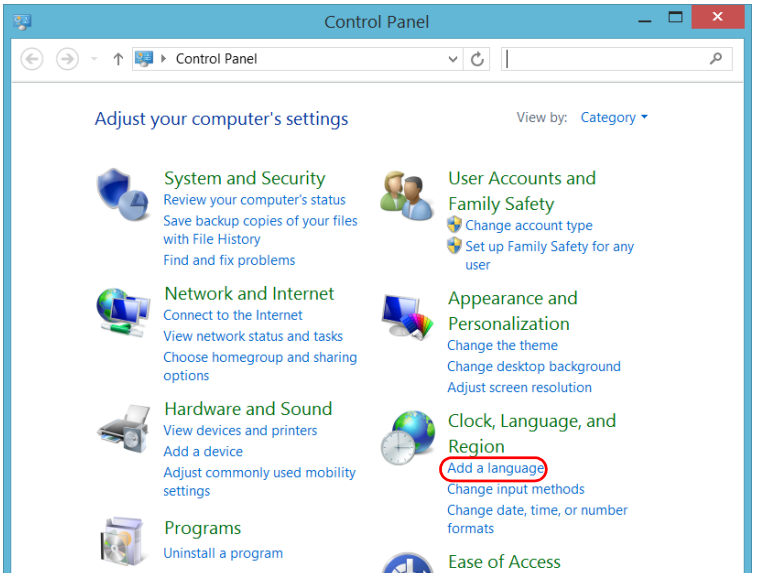
Values are kept in memory even when you turn the unit off.

To select a new interface language:

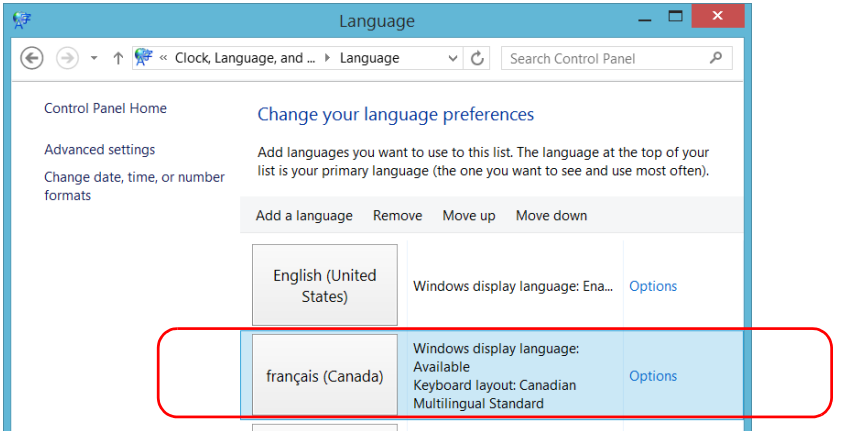
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



3. Under **Clock, Language, and Region**, tap **Add a language**.



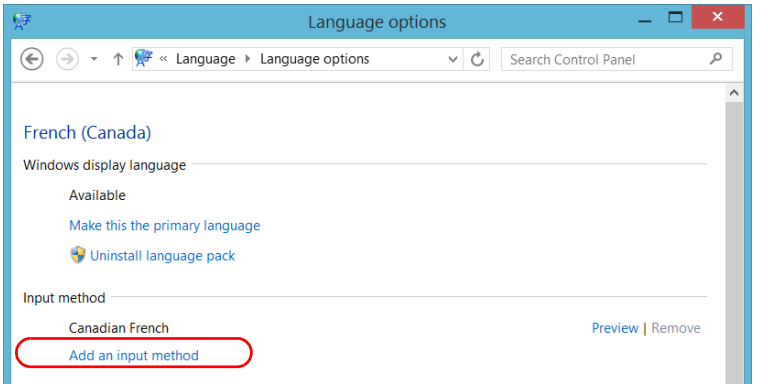
4. Select the desired language from the list.



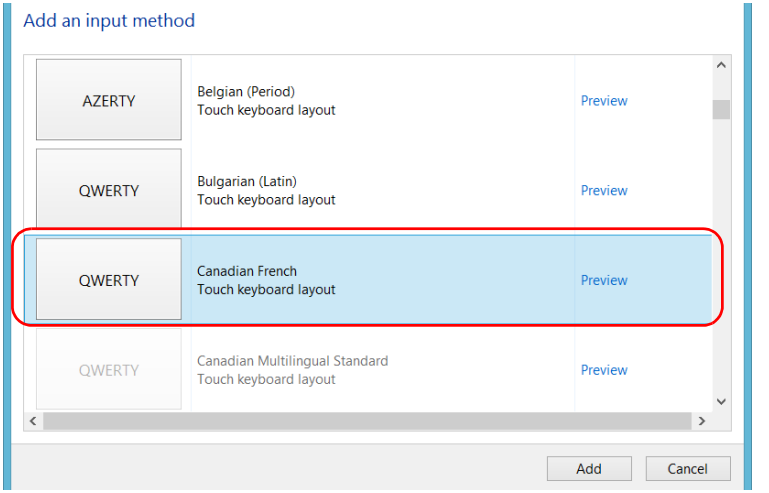
5. Tap **Options**.

6. If you want to select another keyboard layout than the one that has been added by default, proceed as follows.

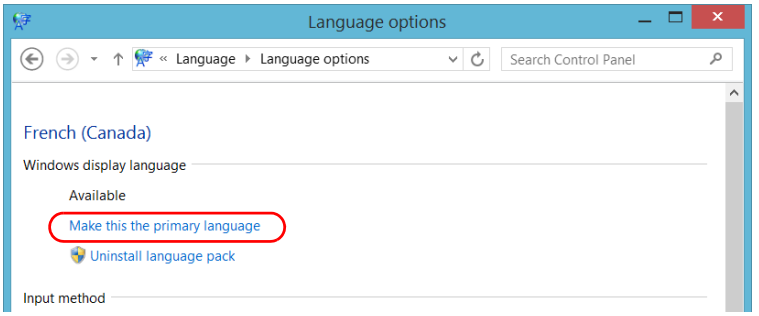
6a. Under **Input method**, tap **Add an input method**.



6b. Select the desired keyboard layout, and then tap **Add**.



7. Under **Windows display language**, tap **Make this the primary language**.



8. When the application prompts you to log off, tap **Log off now**.
9. Once you see the lock screen, swipe it down to reveal the user accounts.
10. Log to your user account.

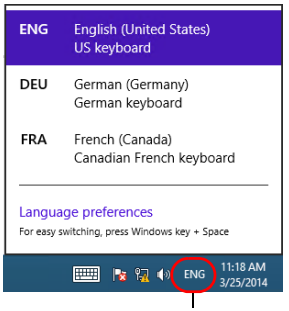
The new language is now selected and you are able to switch from one input language to another.

IMPORTANT

When you select a language that you have installed manually, the Windows interfaces do not switch to the selected language. They remain in the language configured at time of purchase. However, the EXFO applications are displayed in the selected language (when available).

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

1. From the taskbar, tap the language code to display the list of available input languages.



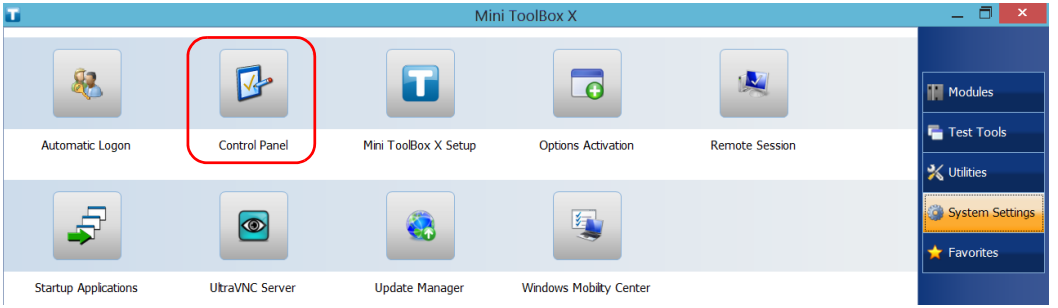
2. From the list of languages, select the desired one.

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

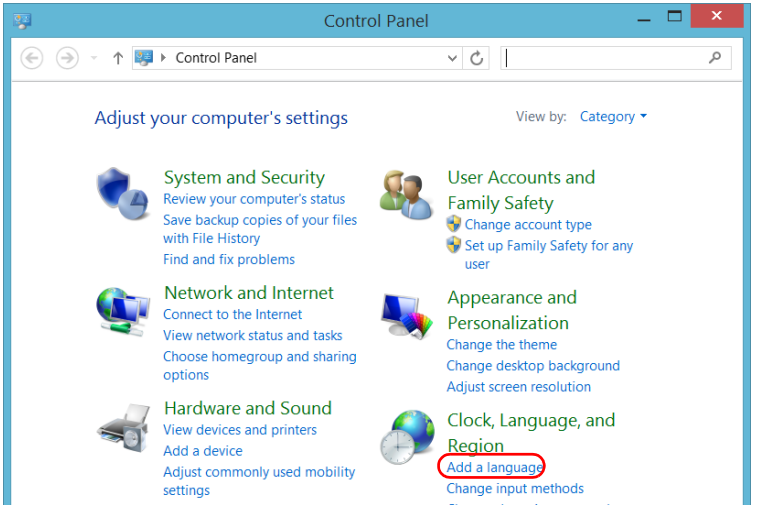
Note: *Modifying the input language does not modify the language of the interface.*

To download language packs:

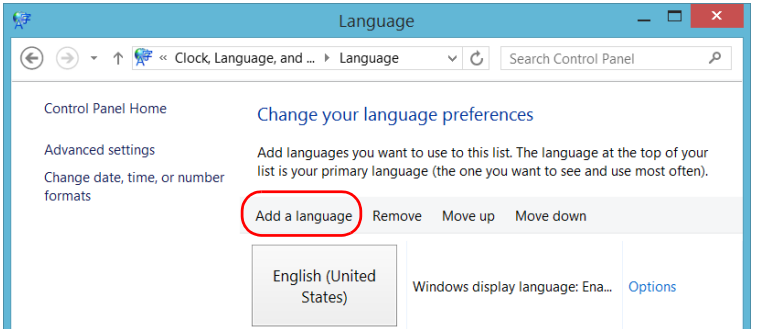
1. Ensure that your unit has access to the Internet.
2. From the main window, tap the **System Settings** button.
3. Tap **Control Panel**.



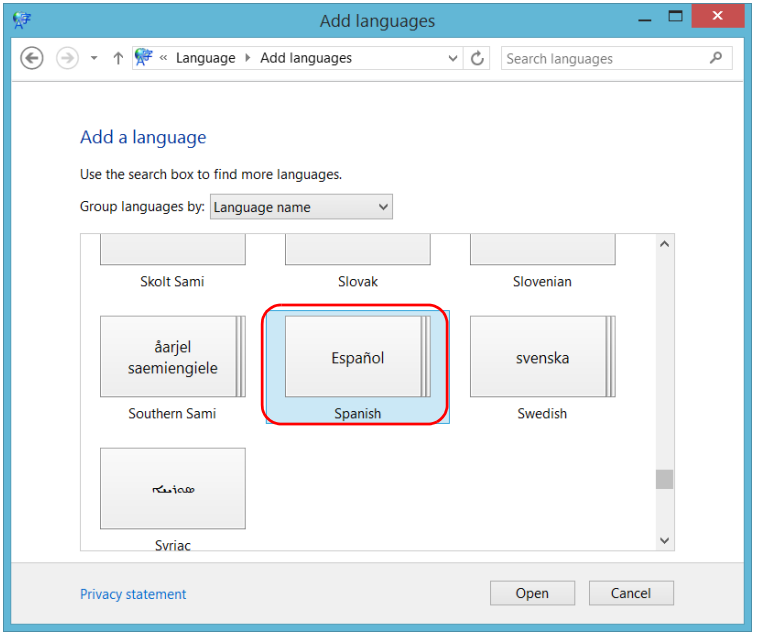
4. Under **Clock, Language, and Region**, tap **Add a language**.



5. Tap **Add a language**.

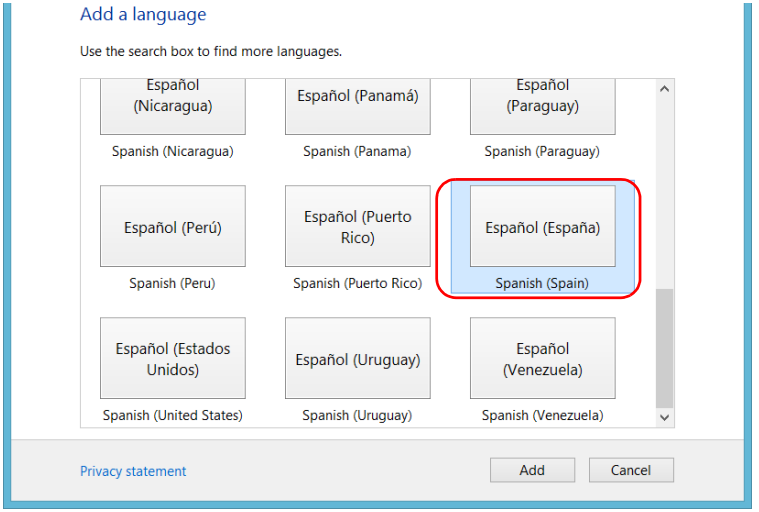


6. Browse the list of languages, and then select the one that you want to use.

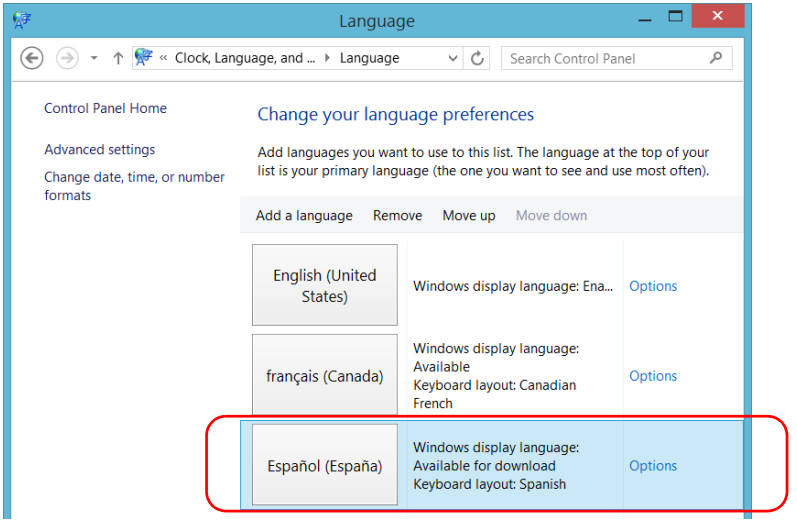


7. Tap **Open** to access the list of sub-languages.

8. Select the desired sub-language, and then tap **Add**.

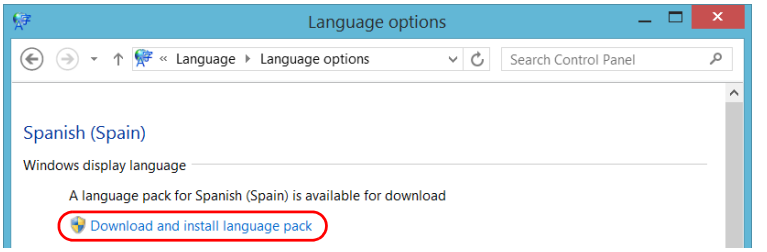


9. Select the desired language from the list.



10. Tap **Options**.

11. Tap **Download and install language pack**.



12. When the application prompts you to allow the installation, tap **Yes**. The installation may take a few minutes.

13. When the installation is complete, restart your unit.

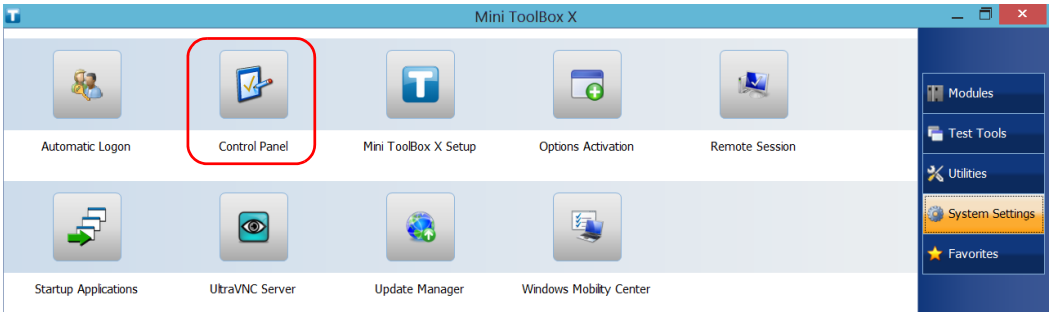
Setting Date and Time Formats

By default, the dates (short and long) and time are displayed in the formats associated with the global language format (locale). The time can be expressed with a 12- or a 24-hour notation. You can modify the way dates and time are displayed if the default values do not suit your needs.

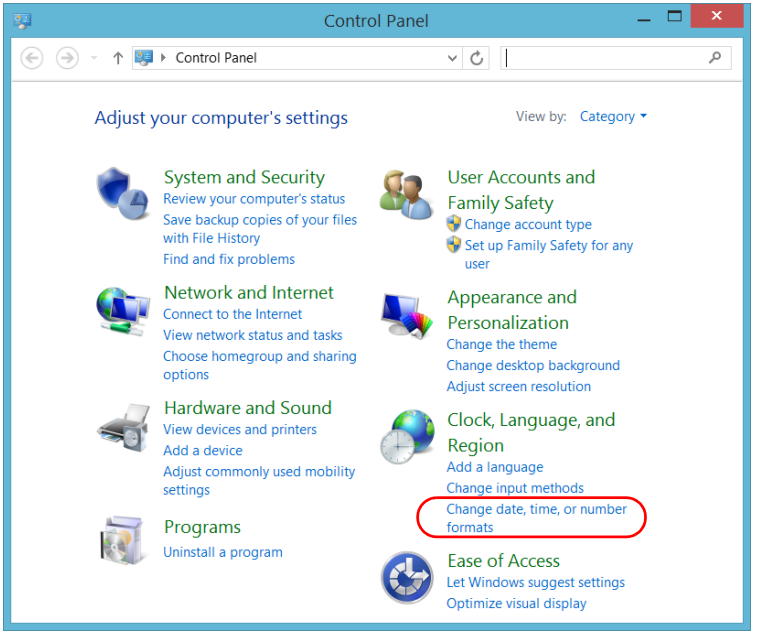
For information on how to adjust the date, the time, and the time zone, see *Adjusting the Date, Time and Time Zone* on page 79.

To set date and time formats:

1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



3. Under **Clock, Language, and Region**, tap **Change date, time, or number formats**.



4. Refine the settings according to your needs.

5. Tap **Apply** to confirm, and then **OK** to close the window.

The new values are taken into account immediately.

Adjusting the Date, Time and Time Zone

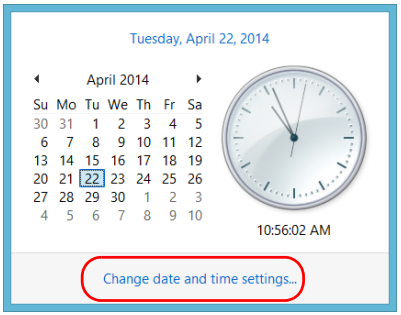
Note: *Only administrator-level users can adjust the date and time. All users can modify the time zone.*

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

For information on how to modify the format in which the date and time are displayed, see *Setting Date and Time Formats* on page 77.

To adjust the date, time or time zone:

1. From the main window, tap the date and time displayed in the lower right corner of the screen.
2. Tap **Change date and time settings**.



3. Modify the settings according to your needs.
4. Tap **Apply** to confirm, and then **OK** to close the window.

The new values are taken into account immediately.

Configuring the Power Management Options

To help you get the optimum performance out of your unit, it comes with predefined sets of parameters (plans) 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 sleep mode after the specified duration has expired (see *Turning Off Your Unit* on page 18).

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 and the ⏻ LED is lit and not blinking, the unit operation is not interrupted. Touch anywhere on the screen to return to normal operation.*

The table below identifies the predefined power plans.

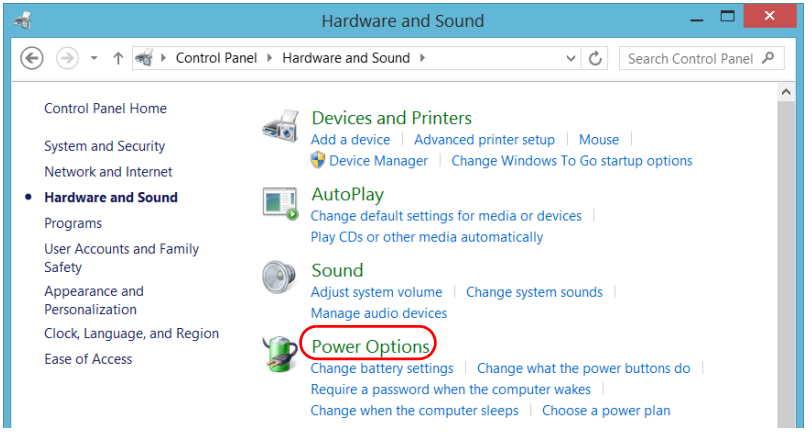
Power Plan	Characteristics
Balanced (selected by default)	Provides extra power when your unit needs it, and saves power when your unit consumes less.
High Performance	Provides maximum power, which could be particularly useful when you intend to work with modules requiring extra power.
Power Saver	Optimizes the energy consumption, which could be particularly useful when you operate the unit on batteries.

You can either modify one of the existing power plans or create one (based on an existing power plan). It is always possible to revert to factory default values for the predefined plans. You can delete custom power plans that you no longer use, but not the predefined plans.

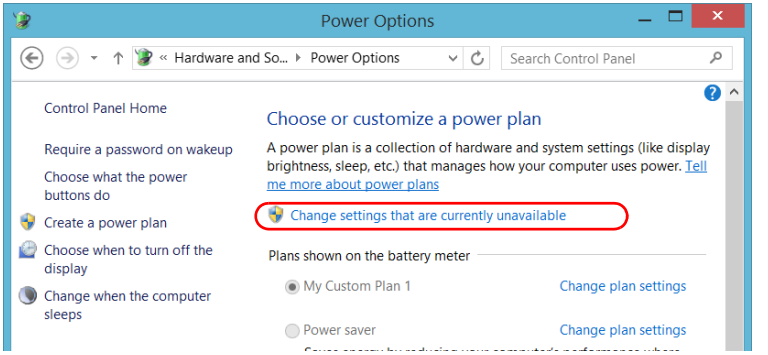
To select a power plan:

1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.

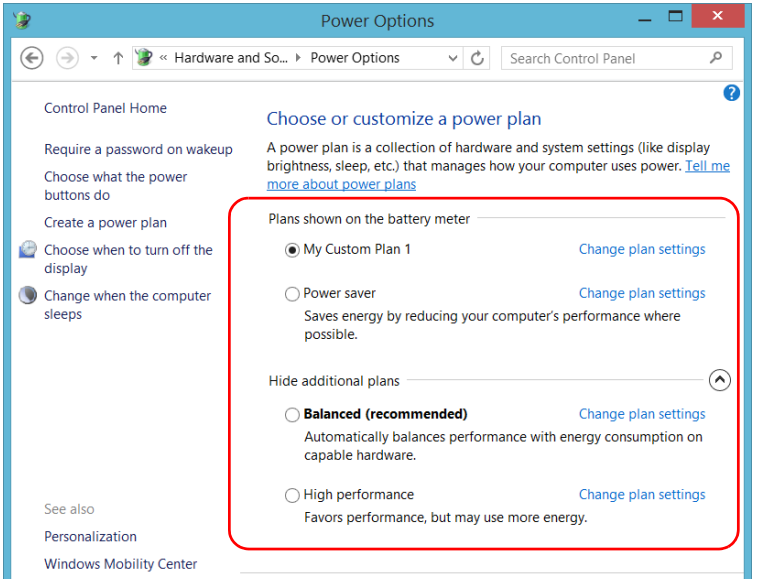
3. Tap **Hardware and Sound** > **Power Options**.



4. If necessary, tap **Change settings that are currently unavailable**.



5. From the list of available power plans, select the desired set of parameters.



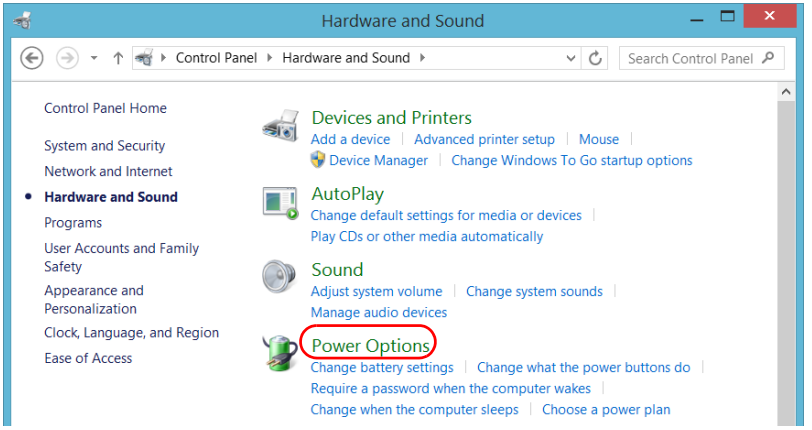
6. Close the window.

The new values are taken into account immediately.

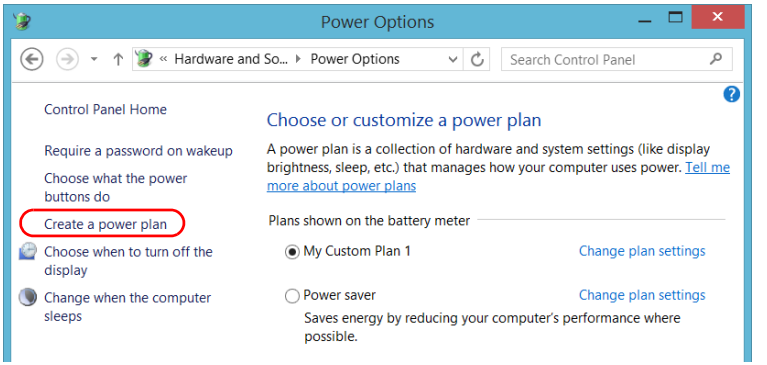
To create a power plan:

1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.

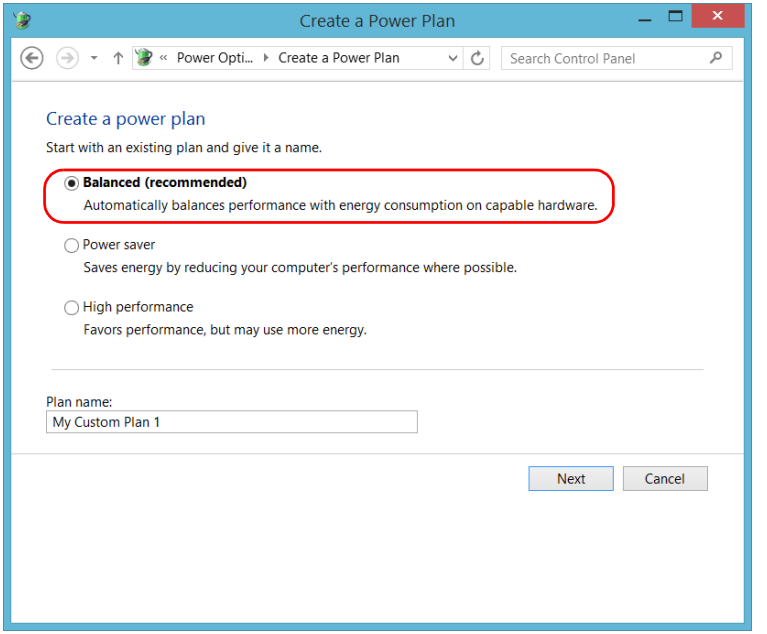
3. Tap **Hardware and Sound** > **Power Options**.



4. From the list on the left, tap **Create a power plan**.

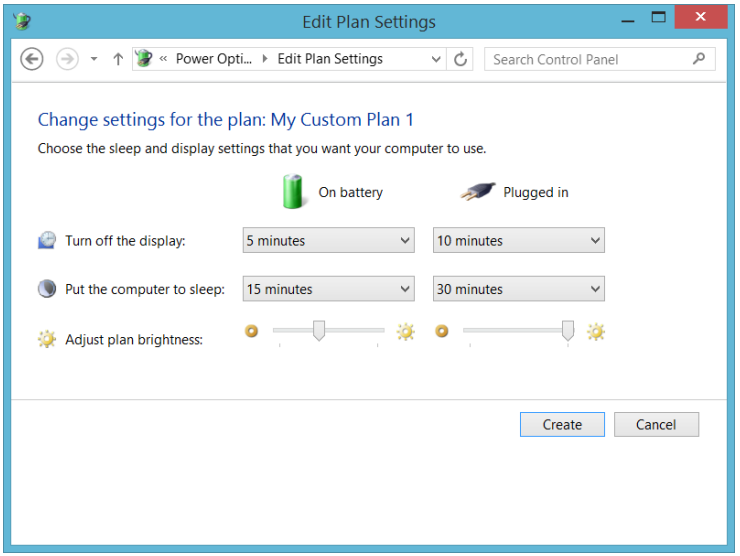


5. Select a power plan that will serve as a basis.



6. Enter a name, and then tap **Next**.

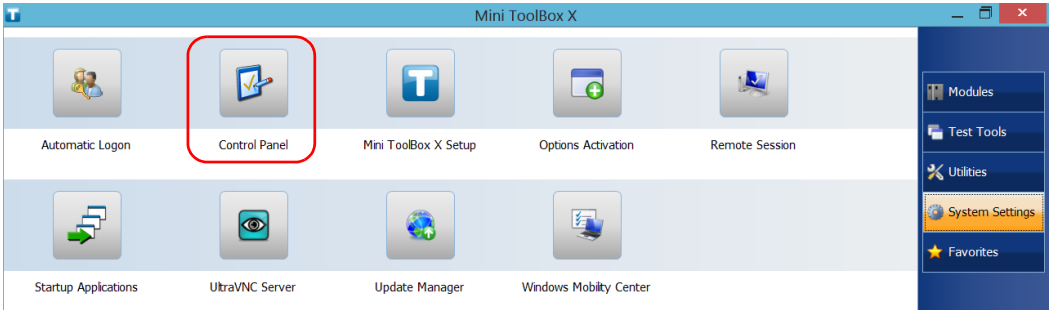
7. Modify the parameters to suit your needs.



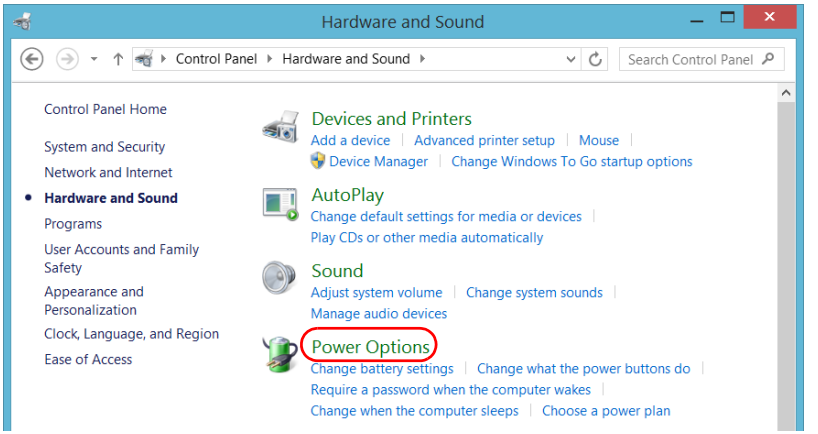
8. Tap **Create**.

To modify or delete an existing power plan:

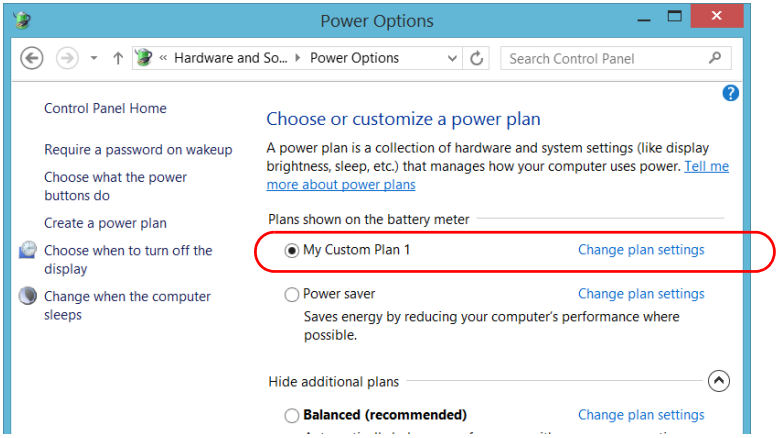
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



3. Tap **Hardware and Sound** > **Power Options**.



4. From the list of available power plans, locate the set of parameters that you want to modify or delete.

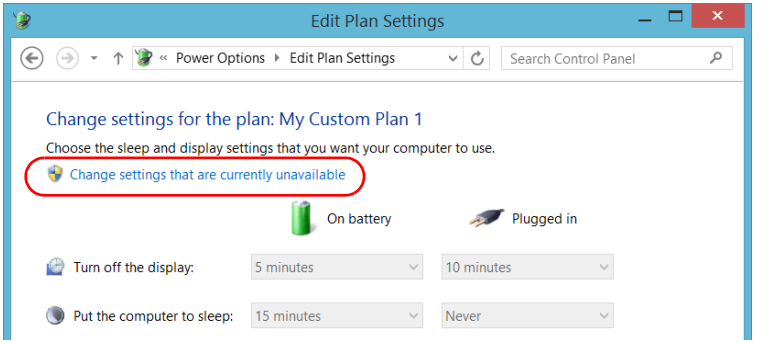


Note: *You can only delete custom power plans, not predefined ones. If the custom power plan that you want to delete is currently in use, you must select another plan first.*

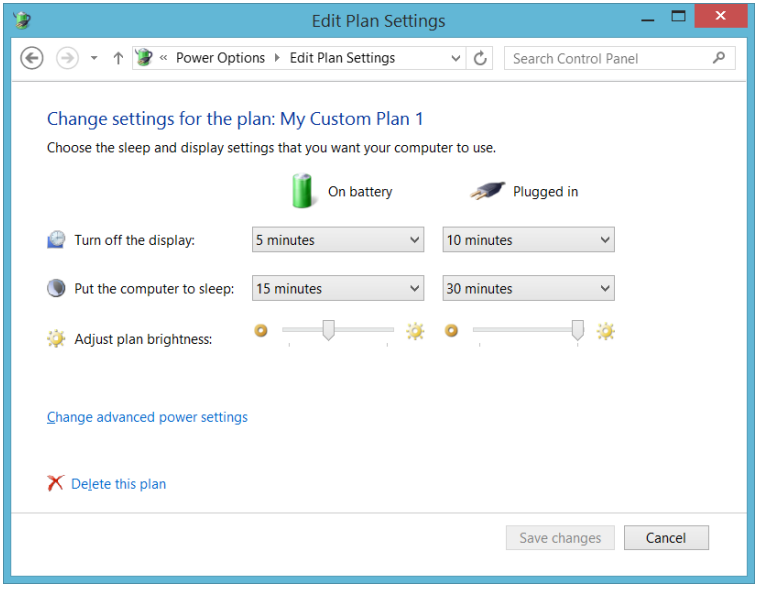
5. Tap **Change plan settings** (appearing next to the power plan).

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

6a. If necessary, tap **Change settings that are currently unavailable**.

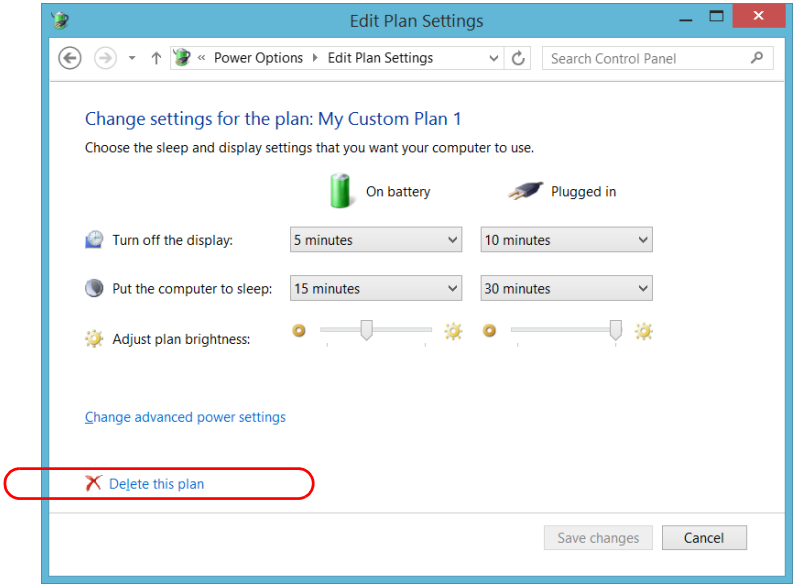


6b. Modify the parameters to your needs.



6c. Tap **Save changes**.

7. If you want to delete the power plan, tap **Delete this plan**, and then confirm the deletion.



8. Close the window.

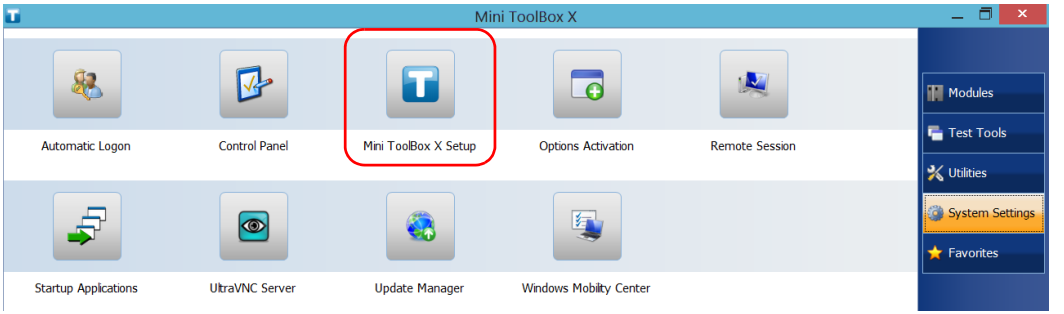
The changes are taken into account immediately.

Setting Mini Toolbox X Behavior

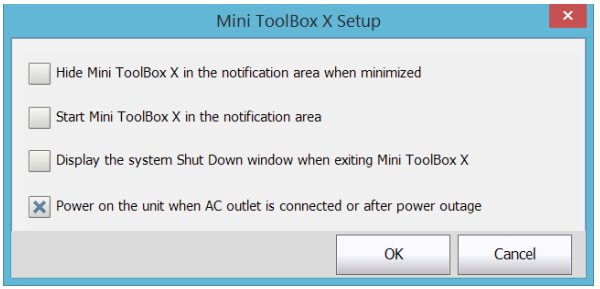
You can specify how Mini Toolbox X behaves when the application is started, minimized or closed.

To set the Mini Toolbox X behavior:

1. From the main window, tap the **System Settings** button.
2. Tap **Mini ToolBox X Setup**.



3. Select the items corresponding to the desired behavior.



- **Hide Mini ToolBox X in the notification area when minimized**: If this option is selected, the Mini Toolbox X icon appears in the notification area (where the clock is located) when you minimize the window.
- **Start Mini ToolBox X in the notification area**: If this option is selected, Mini Toolbox X is automatically started, then minimized to the notification area (system tray).
- **Display the system Shut Down window when exiting Mini ToolBox X**: If this option is selected, the standard system Shut Down window appears to let you shut down the unit directly instead of closing the Mini Toolbox X application, then shutting down the unit from Windows. For more information on the different ways to turn off your unit, see *Turning Off Your Unit* on page 18.

4. Tap **OK** to confirm your settings and close the window.

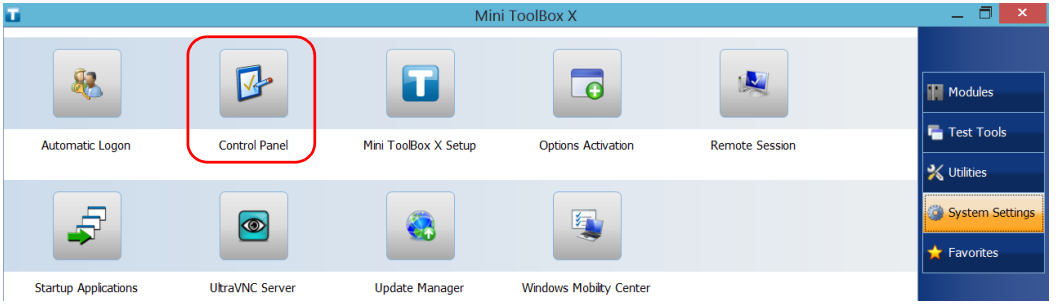
Configuring the Internet Options

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.

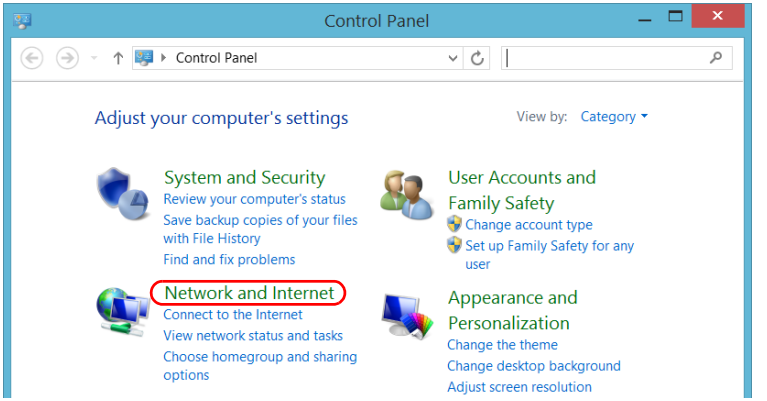
If you are not sure about how you should configure your Internet access, contact your network administrator.

To configure the Internet options:

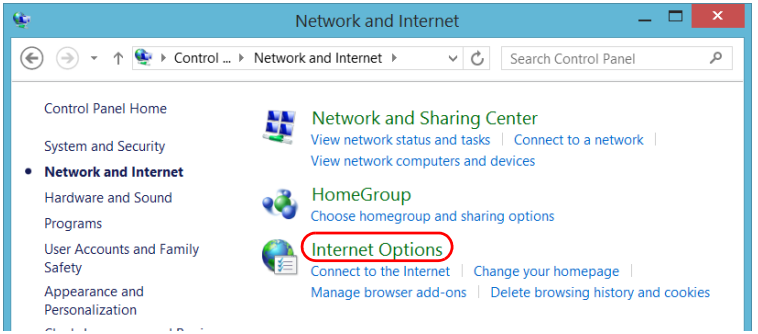
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



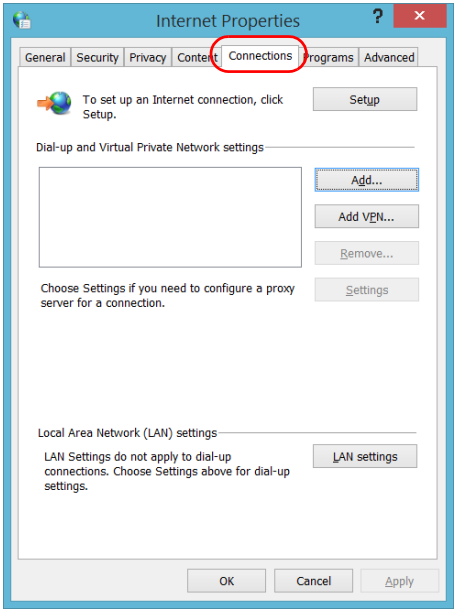
3. Tap **Network and Internet**.



4. Tap **Internet Options**.



5. Go to the **Connections** tab.



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

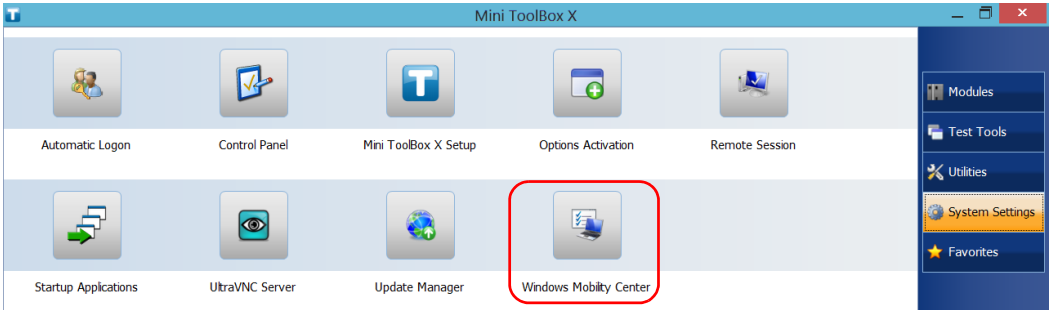
7. Tap **OK** to return to the **Control Panel** window.

Configuring Parameters via Windows Mobility Center

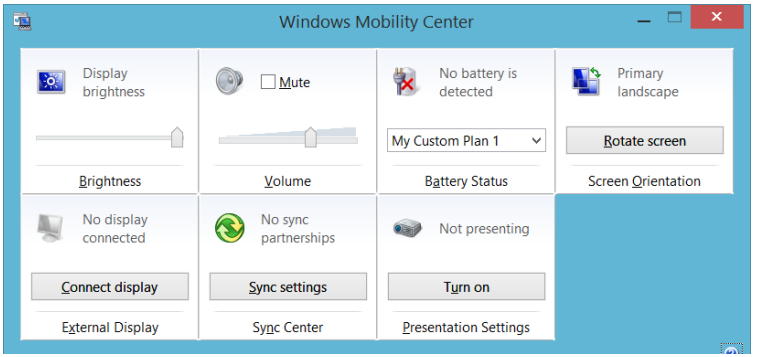
For a quick access to various parameters such as the volume or power plans, you may want to use the Windows Mobility Center.

To configure the parameters via Windows Mobility Center:

1. From the main window, tap the **System Settings** button.
2. Tap **Windows Mobility Center**.



3. Set the parameters as desired.



Note: *To adjust the brightness, from the unit's front panel, press the ☼ ▼ or ☼ ▲ button until the brightness level suits you.*

Setting Other Parameters

You can also configure many other parameters via the **Control Panel** window. Refer to Windows Embedded 8 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 provided PDF creation tool or an external printer (for printing on paper).

You can view the PDF files from your unit, using the provided PDF reader. For more information, see *Viewing PDF Files* on page 98.

You can use a local or a network printer to print on paper.

- Local printer: You must connect the printer to your unit and install the required software and drivers provided by the manufacturer of the printer.
- 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 66).

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

To print documents:

1. Open the document that you want to print.
2. From the application in which you have opened your file, access the print function.

Note: *In most applications, you can access the print function by the* ***File*** *menu or by a* ***Print*** *button.*

3. Select the desired printer (PDF creation tool by default).
4. If necessary, adjust the printer's parameters to your needs.
5. Tap **Print** to start the printing process, and follow the on-screen instructions.

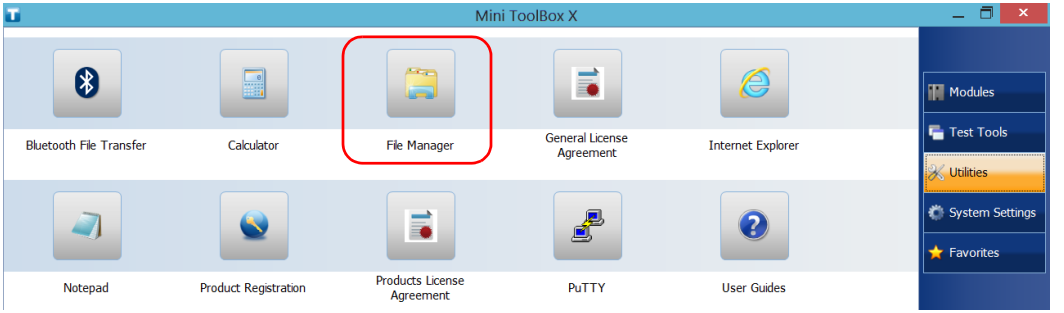
Viewing PDF Files

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

Note: *You may need a connection to the Internet to access the PDF viewer online help.*

To view PDF files:

1. From the main window, tap the **Utilities** button.
2. Tap **File Manager**.



3. Browse through the folders to find the desired PDF file.
4. Double-tap the file.
5. The file opens automatically in the PDF viewer.

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.

➤ The images are saved in .png format. They are sent to the following folder (in the account of the user currently logged on the unit):

This PC|Pictures|Screenshots

➤ The application generates file names as follows:

Screenshot (<Sequential_number>).png

where

Sequential_number corresponds to the number that is added each time you take a screen capture.

Note: *The name of the folders and of the files described above will vary according to the language that is currently selected in Windows.*

To take a screen capture:

From the unit's front panel, press the button and hold it down for a few seconds.

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

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

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 92. 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 101.

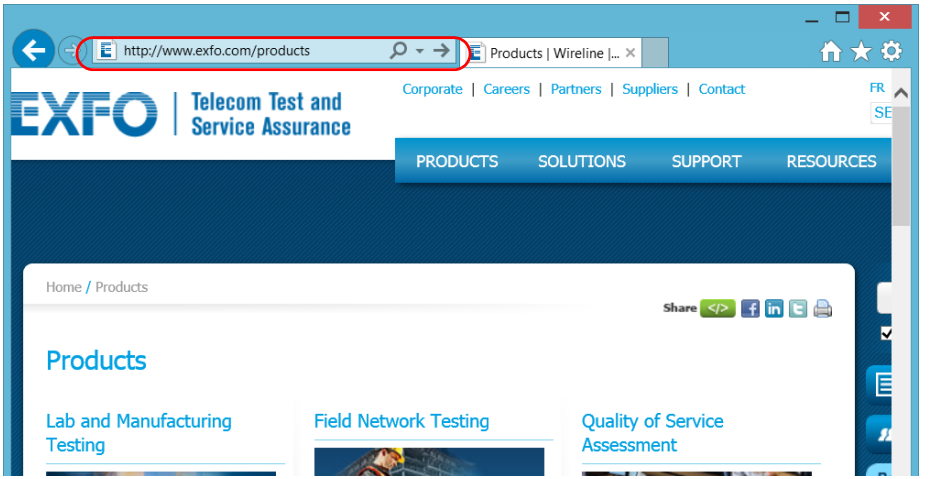
To browse the Web:

1. Open a Web browser as follows:

   1a. From the main window, tap the **Utilities** button.

   1b. 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** window.

Accessing the Internet with a 3G USB Modem Key

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

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

You need to use a 3G modem key equipped with an unlocked and activated Subscriber Identity Module (SIM) card (you must subscribe to a package of mobile services). If you need more information on the 3G coverage in your area, contact your provider of mobile services.

Usually, you have to install an application with which you will establish a connection with the mobile network whenever you want to work with your USB modem key. Most of the time, this application is installed automatically the very first time you connect a USB modem key to your unit. In all cases, you only need to install this application once.

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, connect the USB modem key to one of the USB ports of your unit.
3. Start the application allowing you to establish a connection to the mobile network.
4. Once the application starts, connect to the mobile network.

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

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.*

5. When you have finished working, disconnect from the mobile network, and then remove the USB modem key from your unit.

Managing Favorites

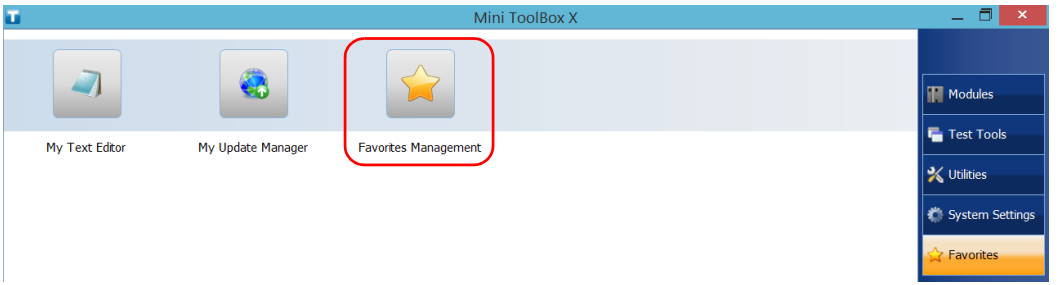
For a quicker access to the applications that you use most often, you may want to build your own list of favorite applications (Favorites).

You can add and remove Favorites from the list. You can also import and export lists of Favorites, which could be useful for backup and recovery purposes, or to share the same Favorites among several units.

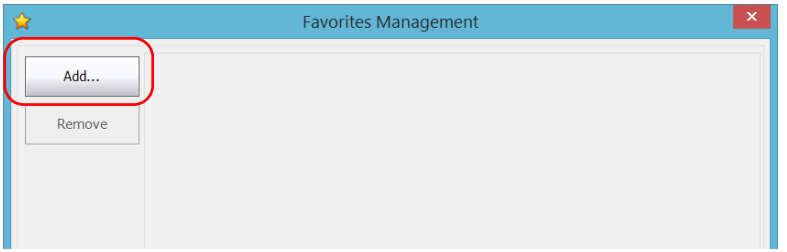
Note: *To have access to the same Favorites on several units, the corresponding applications must be available on all units.*

To add Favorites:

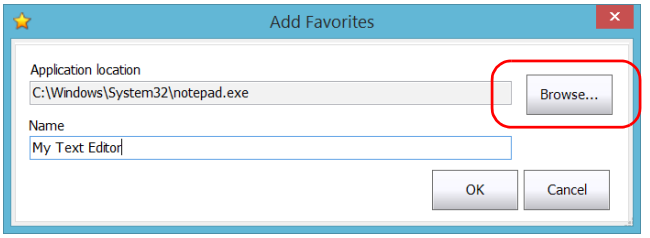
1. From the main window, tap the **Favorites** button.
2. Tap **Favorites Management**.



3. Tap **Add**.



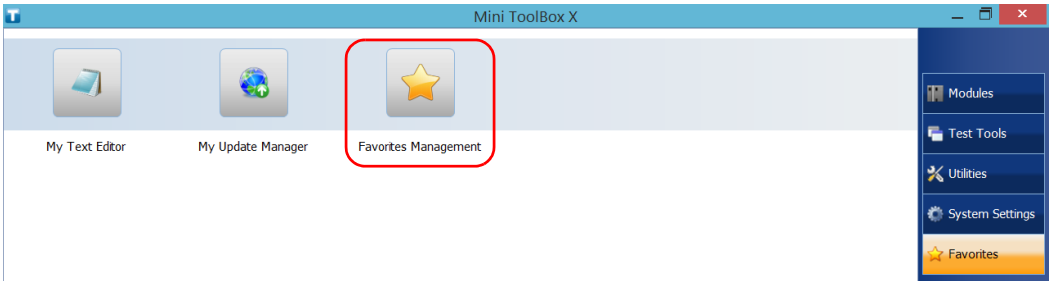
4. Tap **Browse** to locate the desired application.



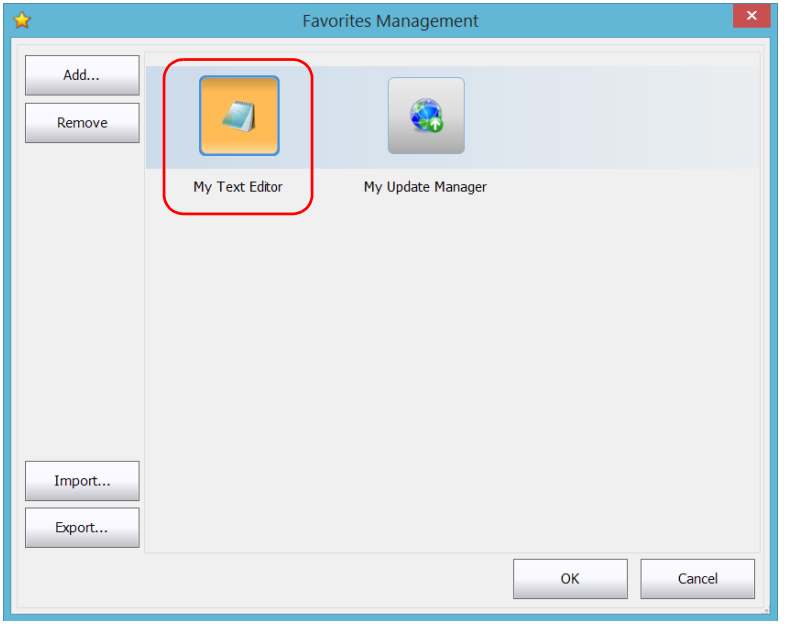
5. Type a name for the new Favorite.
6. Tap **OK** to confirm the location and name.
7. Repeat the previous steps with all the Favorites that you want to add.
8. Tap **OK** to apply the changes and close the window.

To remove Favorites:

1. From the main window, tap the **Favorites** button.
2. Tap **Favorites Management**.



3. Tap the icon corresponding to the Favorite that you want to remove from the list.



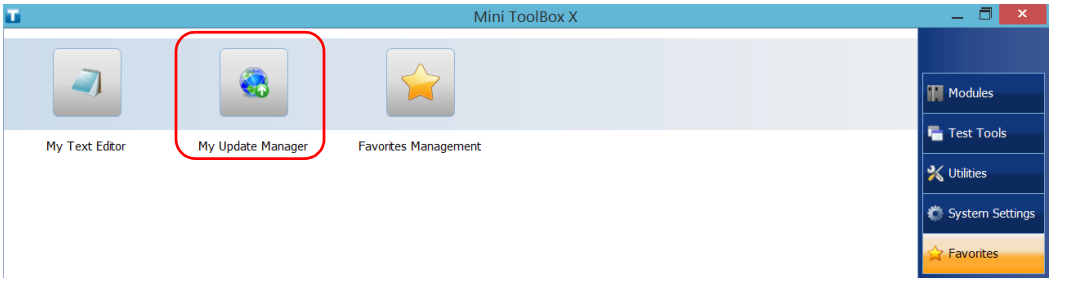
4. Tap **Remove**.

Note: *The application will not prompt you to confirm the removal of the Favorite from the list. Removing a Favorite from the list does not uninstall the application from the unit.*

5. Tap **OK** to apply the changes and close the window.

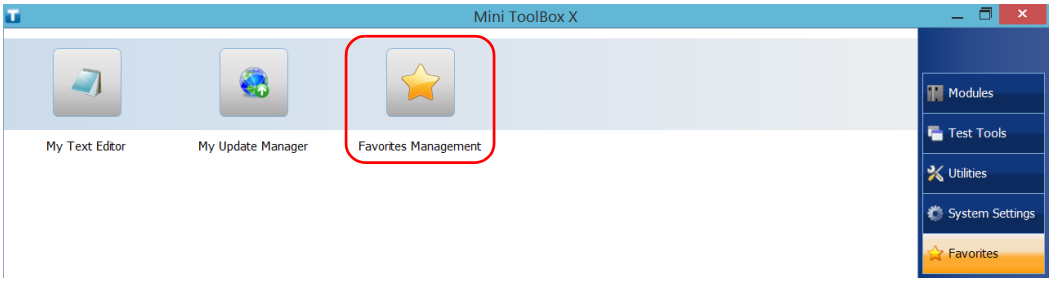
To work with Favorites:

1. From the main window, tap the **Favorites** button.
2. Tap the icon corresponding to the application that you want to use.

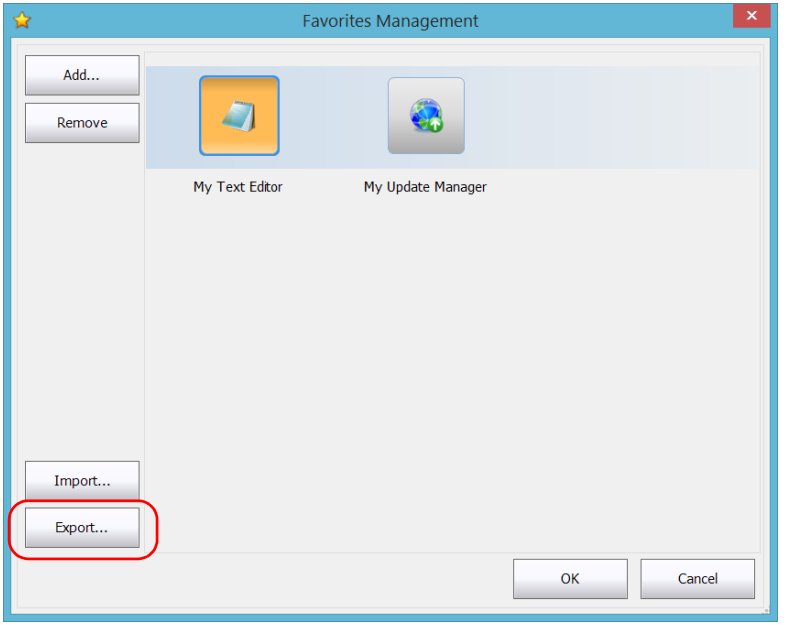


To export the list of Favorites:

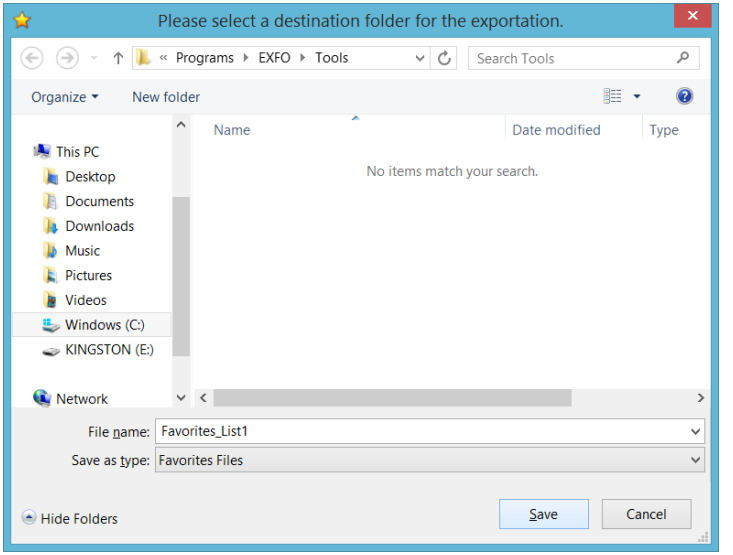
1. From the main window, tap the **Favorites** button.
2. Tap **Favorites Management**.



3. Tap **Export**.



4. Select a location and type a name for the Favorites list.

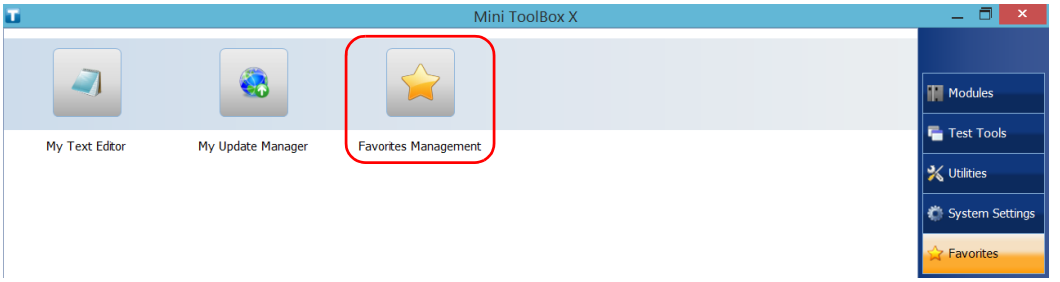


5. Tap **Save**.

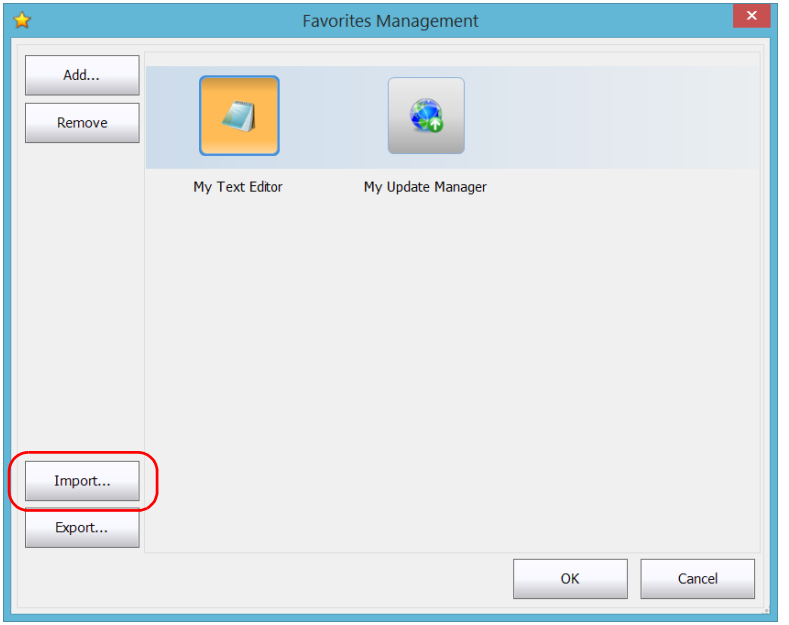
6. Tap **OK** to apply the changes and close the window.

To import a list of Favorites:

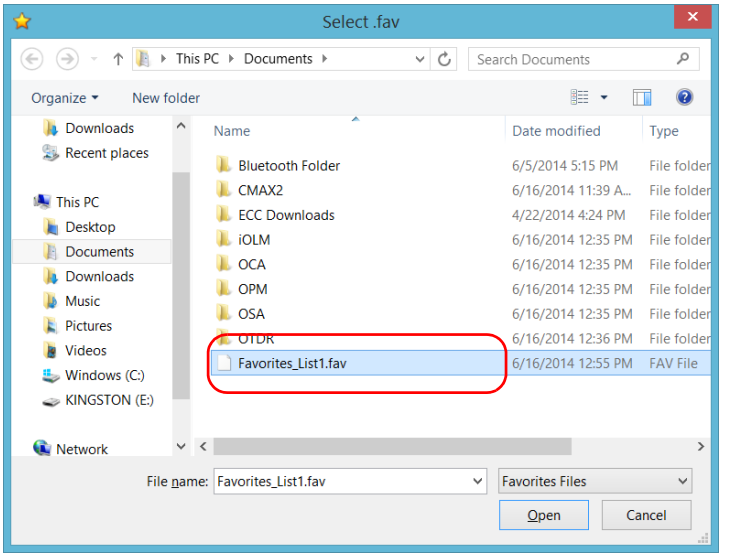
1. From the main window, tap the **Favorites** button.
2. Tap **Favorites Management**.



3. Tap **Import**.



4. Select the desired Favorites list.



5. Tap **Open**.

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

Using the Calculator

You can use Microsoft Calculator directly from your unit.

To use the Calculator:

1. From the main window, tap the **Utilities** button.
2. Tap **Calculator**.

Using the Text Editor

You can use Microsoft Notepad directly from your unit.

To use the text editor:

1. From the main window, tap the **Utilities** button.
2. Tap **Notepad**.

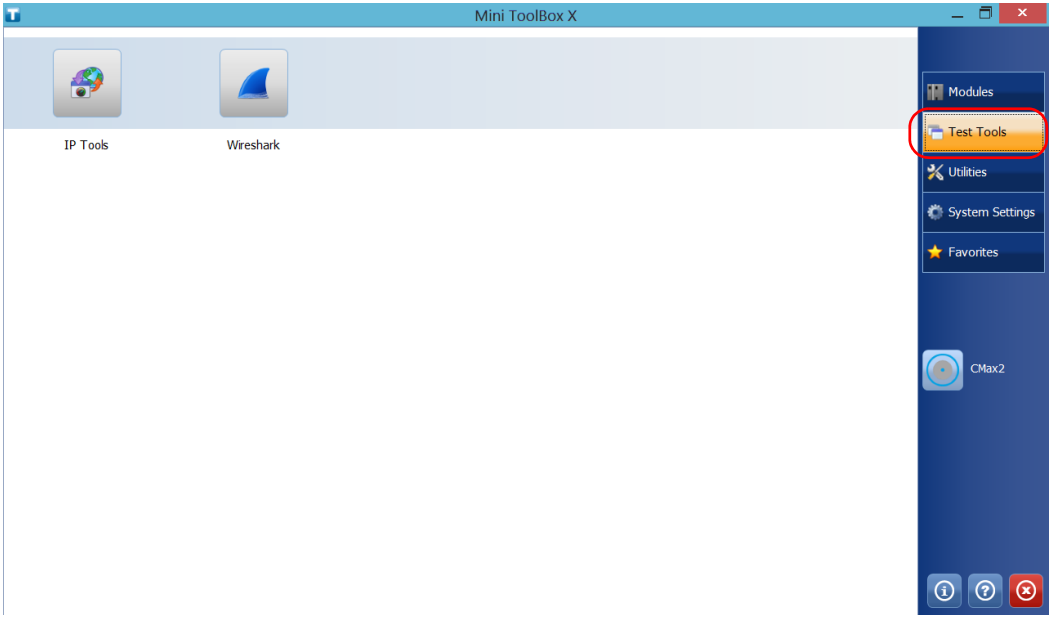
Accessing Other Tools

Your unit comes with various tools that can help you better analyze or manage your data.

You have also access to free tools such as Wireshark to help you troubleshoot networks. For more information, refer to the online help provided with these tools, when applicable.

To access the applications:

1. From the main window, tap the **Test Tools** button.



2. Tap the icon corresponding to the application that you want to start.

6 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 an FIP to your unit to view fiber ends.

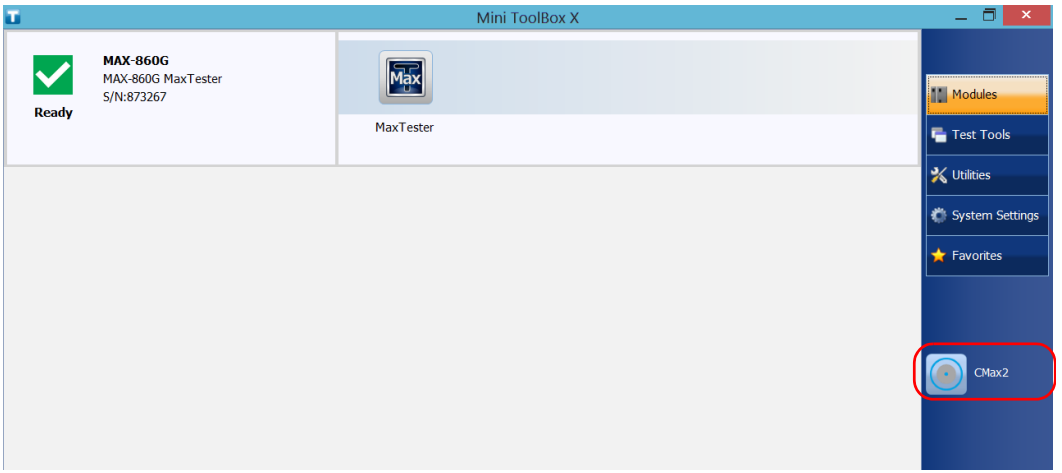
IMPORTANT

Only the probes of the FIP-400B series are supported on your unit.

Fiber inspections are made using the ConnectorMax2 application. For more information, refer to the ConnectorMax2 online help.

To inspect fibers with a probe:

1. Connect the probe to one of the USB ports of your unit (right or top panel).
2. From Mini Toolbox X, tap the **CMax2** button to open the application.



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

7 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:

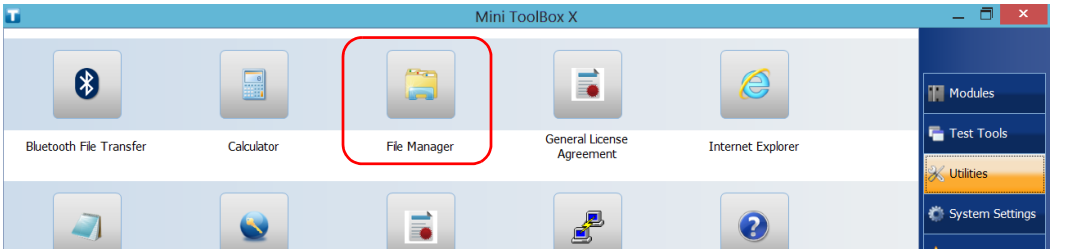
- A microSD card slot to insert a memory card
- Two USB 2.0 ports and one USB 3.0 port to connect a memory key
- an Ethernet port to connect to a network (for transfer via VNC or Remote Desktop - see *Accessing Your Unit Remotely* on page 147)
- internal Wi-Fi and Bluetooth modules (optional) to connect to a wireless network or transfer data via Bluetooth

Viewing Disk Space and Managing Files

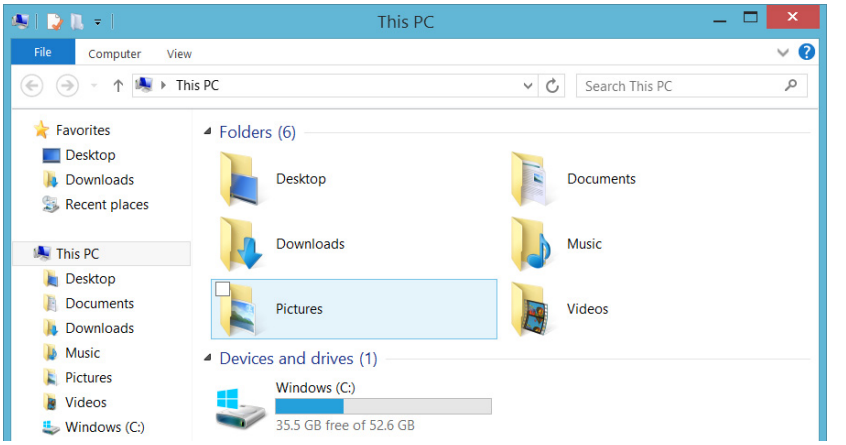
To help you manage the data that is stored on your unit, you can easily view the remaining disk space. You can also copy, move, rename, delete files and folders directly from your unit.

To view the free disk space, and manage files and folders:

1. From the main window, tap the **Utilities** button.
2. Tap **File Manager**.



The file explorer is displayed.



Note: *The free disk space is also visible from the **Platform** tab (tap* *in the lower right corner of the main window).*

Transferring Data via Bluetooth

If you have purchased the Bluetooth option, you can transfer data between your unit and a computer (or another device such as a smartphone) using the Bluetooth technology. In all cases, you must ensure that the computer or the device is Bluetooth-compatible and configured properly.

Note: *Some Bluetooth-compatible devices only allow data transfer between devices of the same manufacturer. In this case, you will need to use another type of device or a standard computer to transfer data from your unit.*

If you have disabled the Bluetooth device, you must enable it before trying to connect to a wireless network (see *Enabling or Disabling the Wireless Communication* on page 138).

Note: *To save power when your unit is running on battery, you may wish to disable the Bluetooth module when you do not use it.*

Your unit must be located within a 10-meter area from your computer (limitation of the Bluetooth Class 2 devices).

Since transfer speed is limited for larger files (more than 1 GB), if you need to transfer such files, you may want to 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 (or on the smartphone that you are using), it is possible that only data transfer secured with a passkey be allowed.

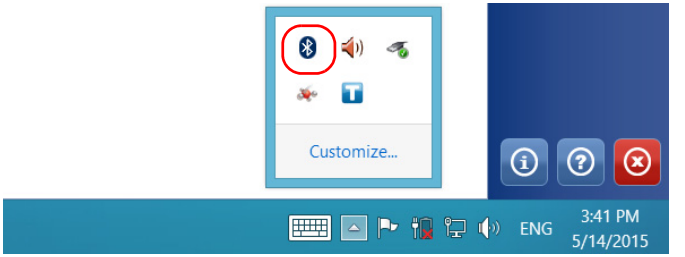
The procedure presented hereafter explains how to transfer data from your unit to a computer.

Note: *If you transfer files from a computer to your unit, they will be sent automatically to the* This PC\Documents\Bluetooth Folder *on your unit.*

To configure your unit and the computer for transfer:

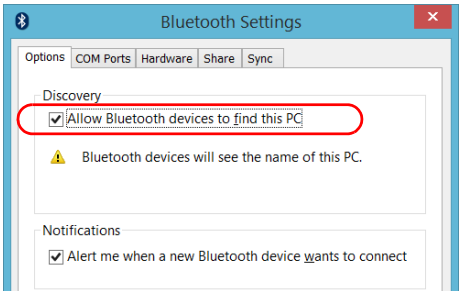
1. Configure your unit as follows:

1a. From the notification area, tap the Bluetooth icon.

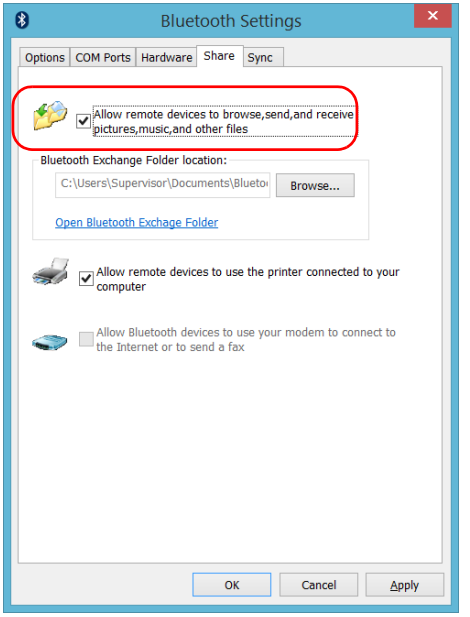


1b. Tap **Open Settings**.

1c. From the **Options** tab, under **Discovery**, select the **Allow Bluetooth devices to find this PC** check box.



1d. From the **Share** tab, ensure that the **Allow remote devices to browse, send, and receive pictures, music, and other files** check box is selected.



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

2. Configure the computer as follows:

2a. From the notification area, click the Bluetooth icon.

2b. Select **Open Settings**.

2c. Ensure that the option allowing Bluetooth devices to find the computer is selected.

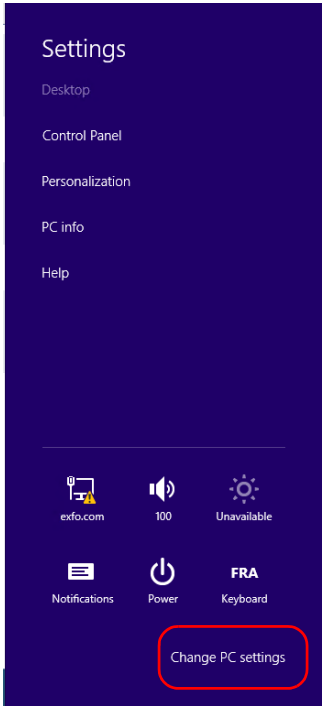
2d. Click **OK** to confirm.

To transfer data via Bluetooth:

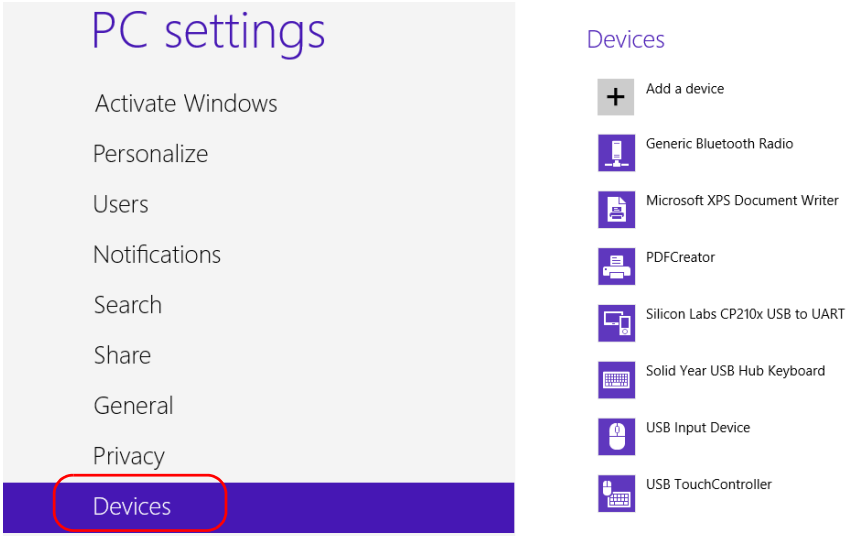
1. Pair your computer with your unit as follows.

1a. On your unit, from the right side of the screen, swipe left to display the Charm bar.

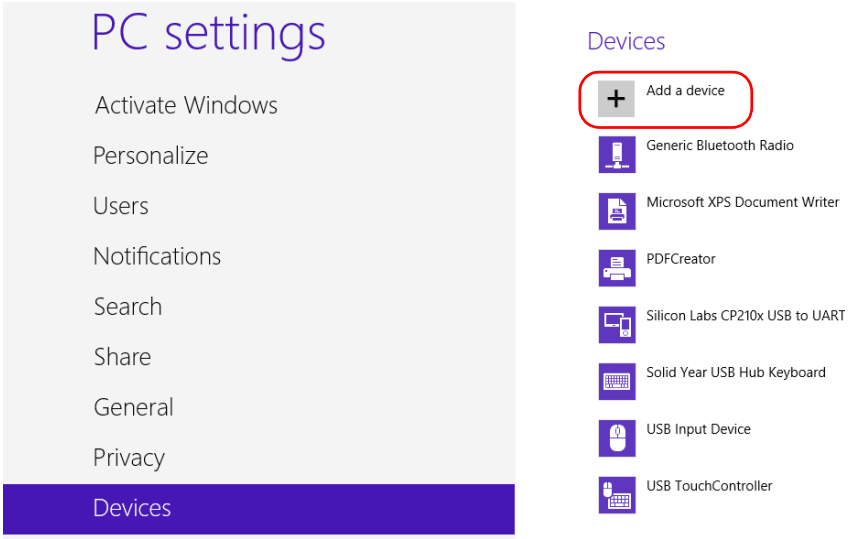
1b. Tap **Settings** > **Change PC settings**.



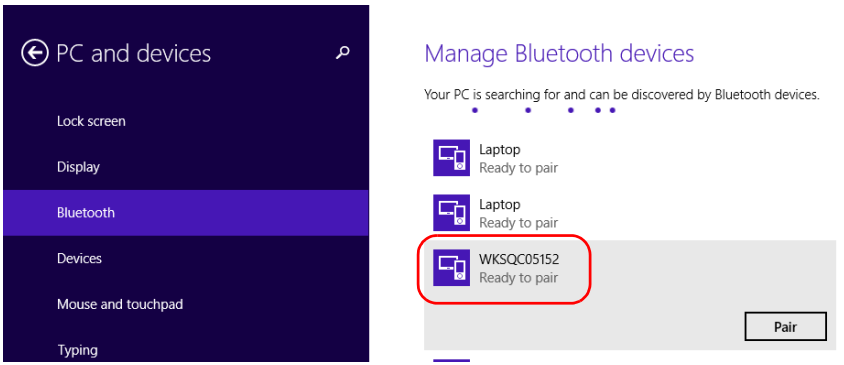
1c. Tap **Devices**.



1d. Tap **Add a device**.



1e. From the list of Bluetooth devices, tap the item corresponding to the computer to which you want to transfer files.



The application tries to establish the pairing automatically.

Note: *If the computer or device that you want to select is already paired, you must remove the pairing first. Tap the ⊖ button to access the* ***Remote device*** *button.*

Note: *Depending on the computer that you are using, the application will either provide you with a passkey, or prompt you to confirm that the displayed passkey matches the passkey used on the computer.*

1f. If necessary, write down the provided passkey.

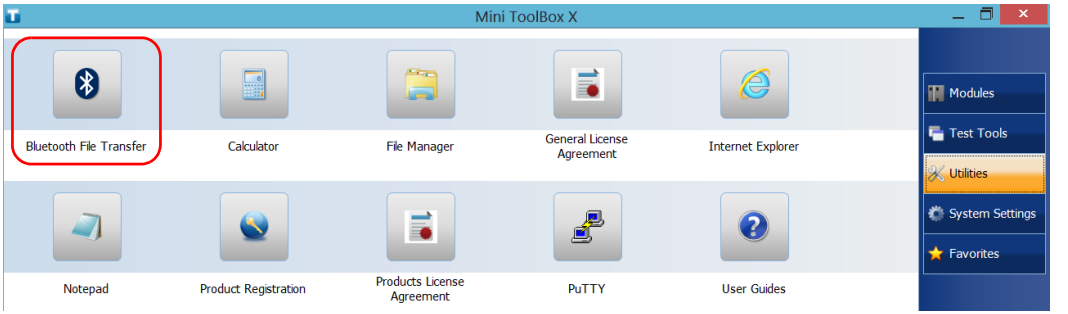
1g. On the computer, when the application prompts you, click the Bluetooth icon (located on the taskbar) to display the wizard allowing you to add a Bluetooth device.

1h. Follow the on-screen instructions. Enter the passkey that you wrote down earlier, or confirm the correspondence between the two passkeys.

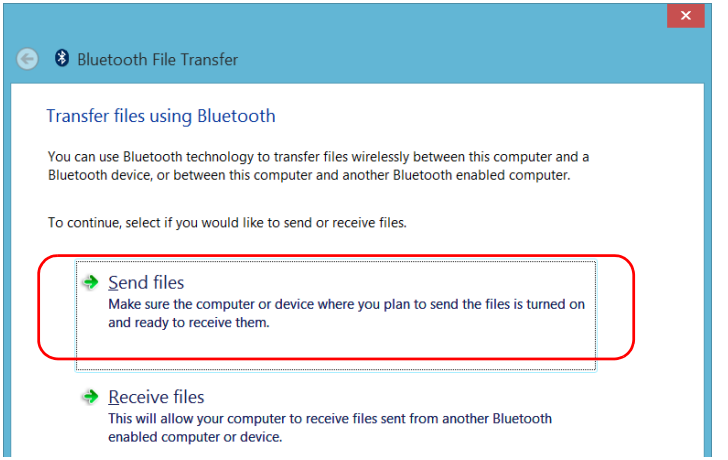
2. Transfer the files as follows.

2a. From the main window, tap the **Utilities** button.

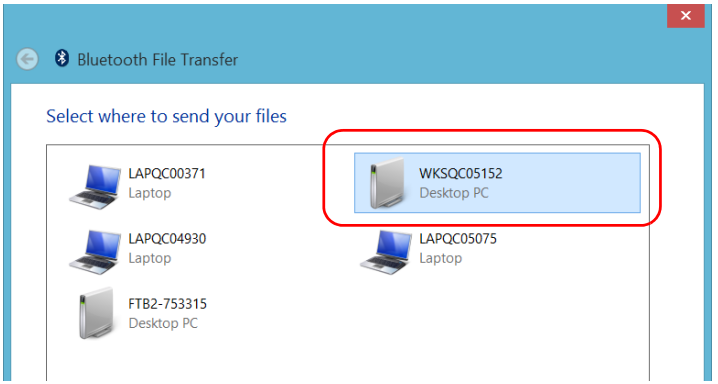
2b. Tap **Bluetooth File Transfer**.



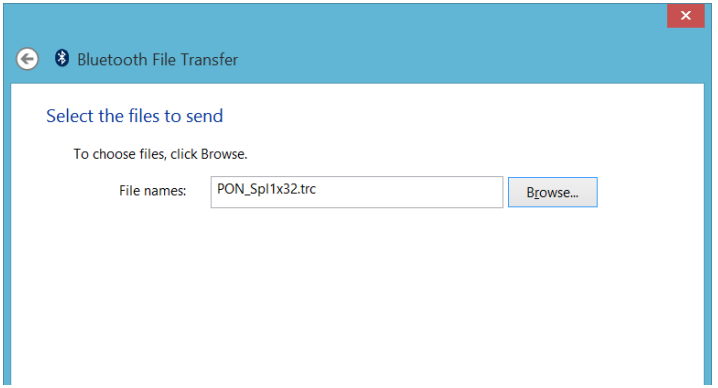
2c. Select **Send files**.



2d. Select the desired computer, and then tap **Next**.



2e. Tap the **Browse** button to select the file that you want to transfer, and then tap **Next**.



2f. Tap **Finish** when the transfer is complete.

Connecting to a Wireless Network

If you have purchased the Wi-Fi option, 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, the internal wireless module is enabled, but not connected to a network.

If you have disabled the Wi-Fi device, you must enable it before trying to connect to a wireless network (see *Enabling or Disabling the Wireless Communication* on page 138).

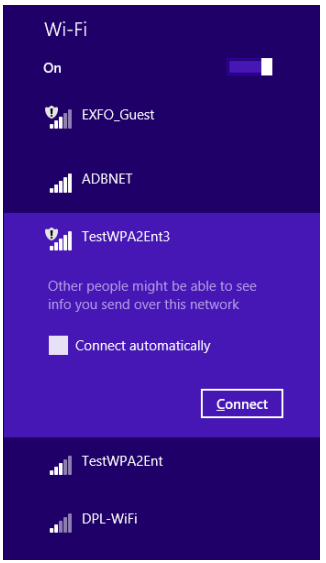
Note: *To save power when your unit is running on batteries, you may wish to disable the Wi-Fi device when you do not use it.*

To connect to a wireless network:

1. From the right side of the screen, swipe left to display the Charm bar.
2. Tap **Settings**, and then the

icon.

3. Tap the item corresponding to the wireless network to which you want to connect.



4. Tap **Connect**.
5. If the network is protected by a network security key (password) enter it in the corresponding box and tap **Next**.
6. Follow the on-screen instructions.

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 **Networks** list, tap **Disconnect** to stop communication with the wireless network.

Using the USB to RS-232 Adapter

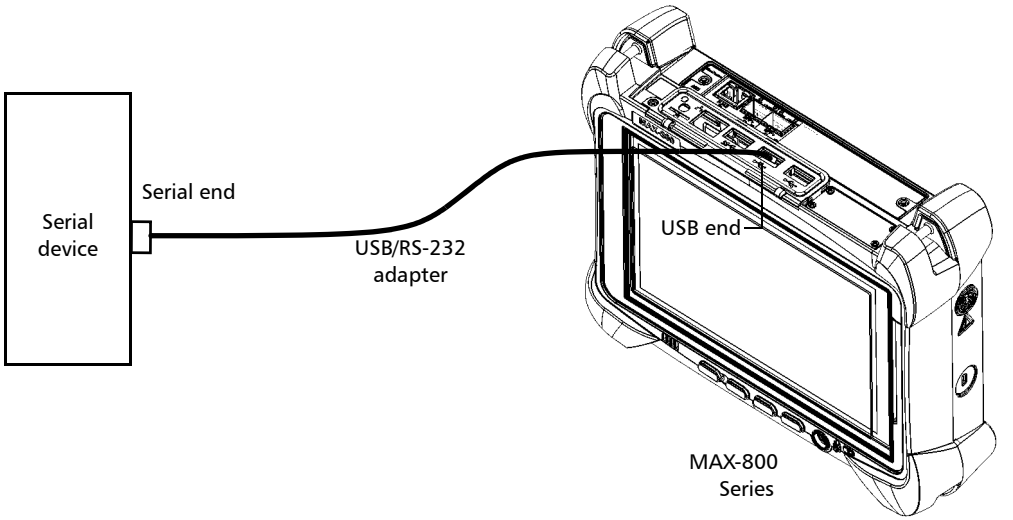
If you want to transfer data between your unit and a device that is only equipped with RS-232 (serial) ports, you have to use a USB/RS-232 adapter (sold by EXFO).

Once the adapter has been detected, the unit assigns it a COM port number (for some adapters, values do not begin at COM 1). 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.



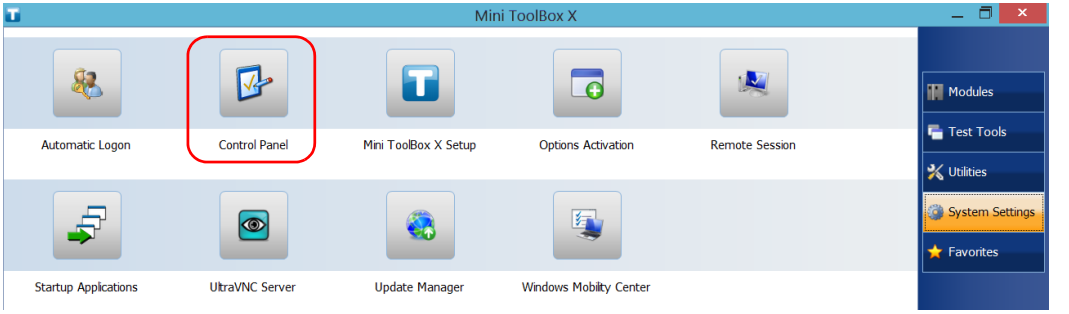
Note: *If the device that you want to use is a computer (not equipped with USB ports) you may want to use a null-modem serial cable as an "extension cable" between the device and the USB/RS-232 adapter.*

The adapter will be detected automatically on your unit.

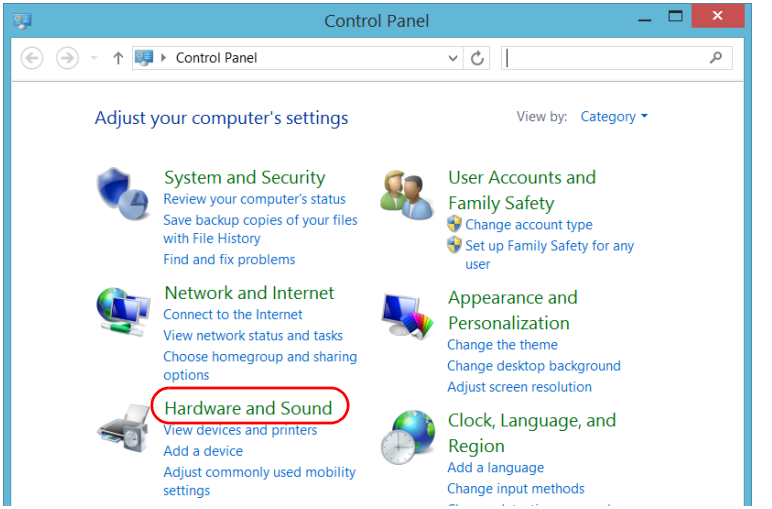
3. From your unit, retrieve the COM port of the adapter as follows:

3a. From the main window, tap the **System Settings** button.

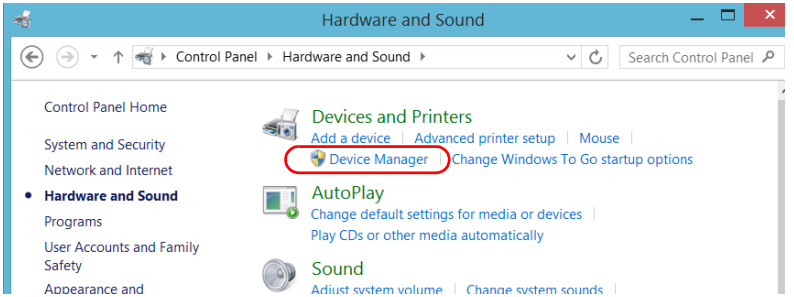
3b. Tap **Control Panel**.



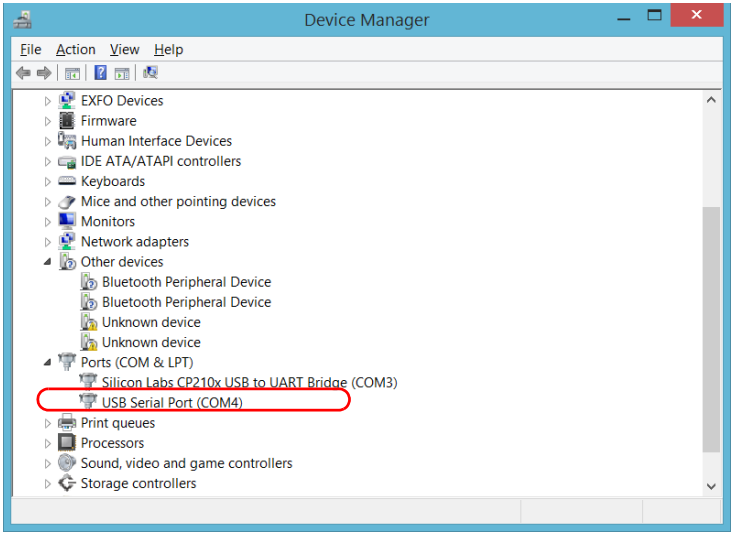
3c. Tap **Hardware and Sound**.



3d. Under **Devices and Printers**, tap **Device Manager**.



3e. Expand the **Ports (COM & LPT)** list to retrieve the COM port number that has been assigned to the adapter (identified as *USB Serial Port*) and write it down.



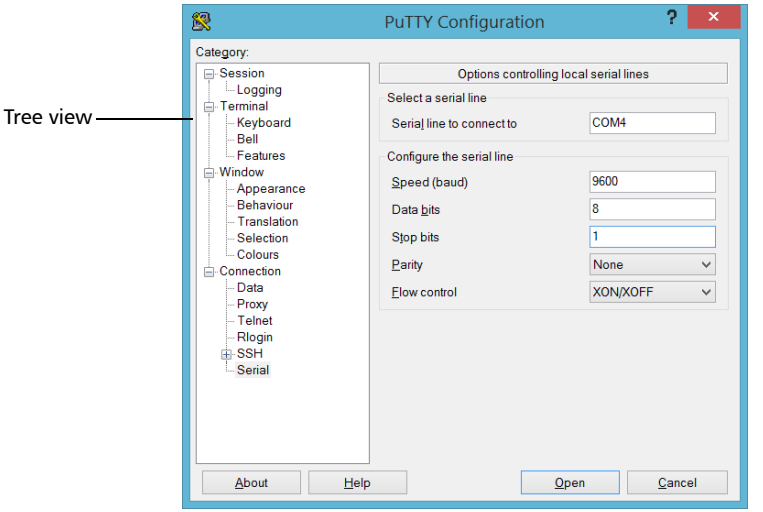
3f. Close the *Device Manager*.

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

4a. From the main window, tap the **Utilities** button.

4b. Tap **PuTTY**.

4c. Configure the parameters.



➤ 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 3e.

➤ 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.

4d. 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.).

Freeing Up Disk Space with the Disk Cleanup Utility

If you need to free up disk space on your unit, you can use the Windows Disk Cleanup utility.

With this utility, you can clear files such as the Internet temporary files, files from the Recycle bin, or even files that you no longer need from the previous installation. The files from the previous installation are stored in the *Windows.old* folder that Windows creates automatically when you perform a refresh operation.To avoid losing data, you may want to back up files from this folder before removing it.

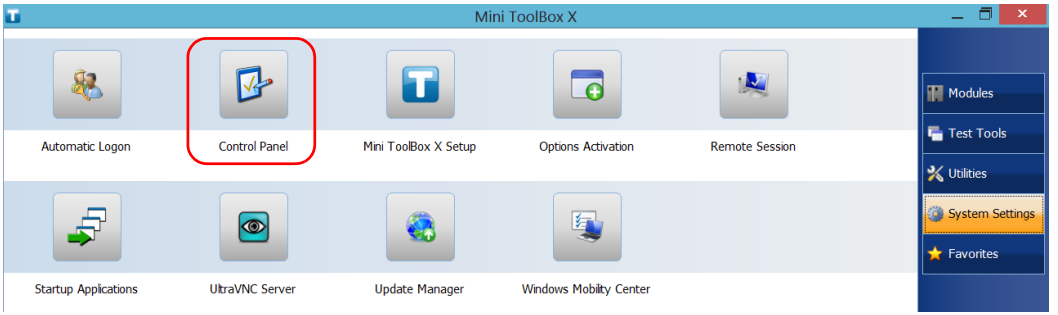
To free up disk space with the Disk Cleanup utility:

1. If desired, back up your data.

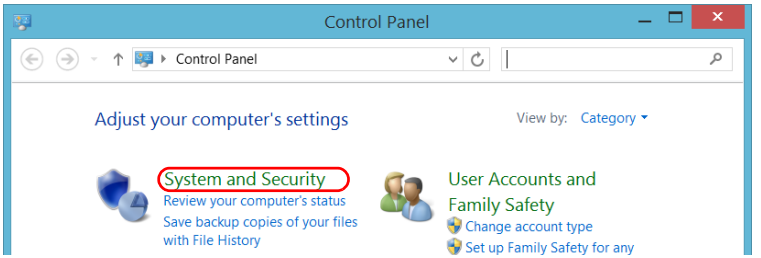
Note: *If you want to have a look at the content of the Windows.old folder containing files of the previous installation, go to the root of the C drive (Windows (C:)). If you do not see the Windows.old folder, it means no refresh operation has ever been performed on your unit.*

2. From the main window, tap the **System Settings** button.

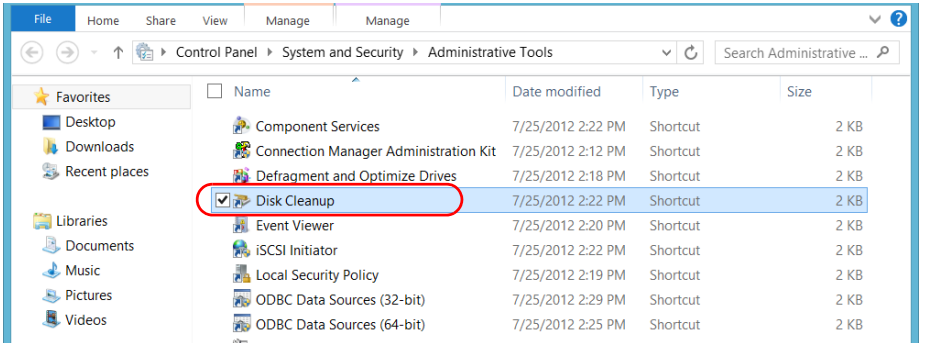
3. Tap **Control Panel**.



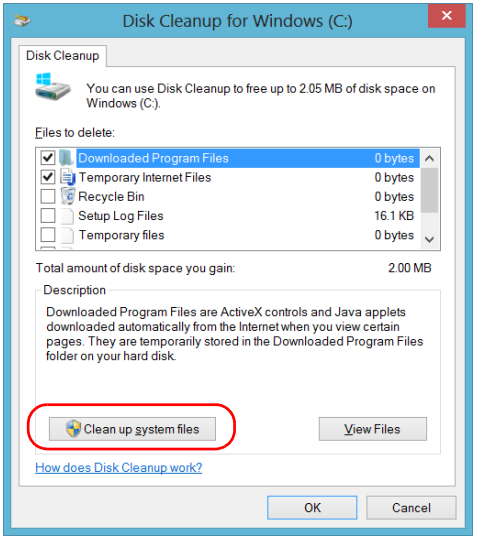
4. Tap **System and Security**.



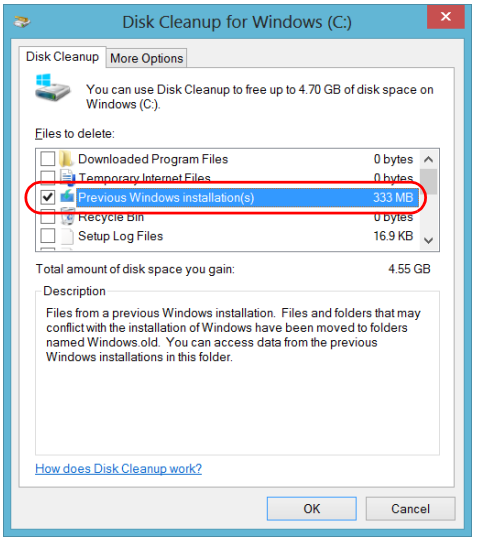
5. Tap **Administrative Tools**, and then double-tap **Disk Cleanup**.



6. If you want to remove system files such as the files from the Windows.old folder, tap **Clean up system files**.



7. When the folders are displayed, select the check box corresponding to the desired item. If you want to clear the Windows.old folder, select the **Previous Windows installation(s)** check box. Ensure that all the other check boxes are cleared.



Note: *If you cannot see the **Previous Windows installation(s)** check box, this means that no refresh operation has been made on your unit yet.*

8. Tap **OK**.

9. When the application prompts you to confirm the deletion of the folder, tap **Delete Files**.

Enabling or Disabling the Wireless Communication

By default, the internal Wi-Fi and Bluetooth modules are enabled on your unit if you have purchased the Wi-Fi and Bluetooth options.

However, if you do not intend to work with a wireless network for a certain period of time, you may wish to disable the Wi-Fi device to extend battery life. If you prefer, you can disable both the Wi-Fi device and the 3G USB modem key at the same time by activating the “airplane mode”.

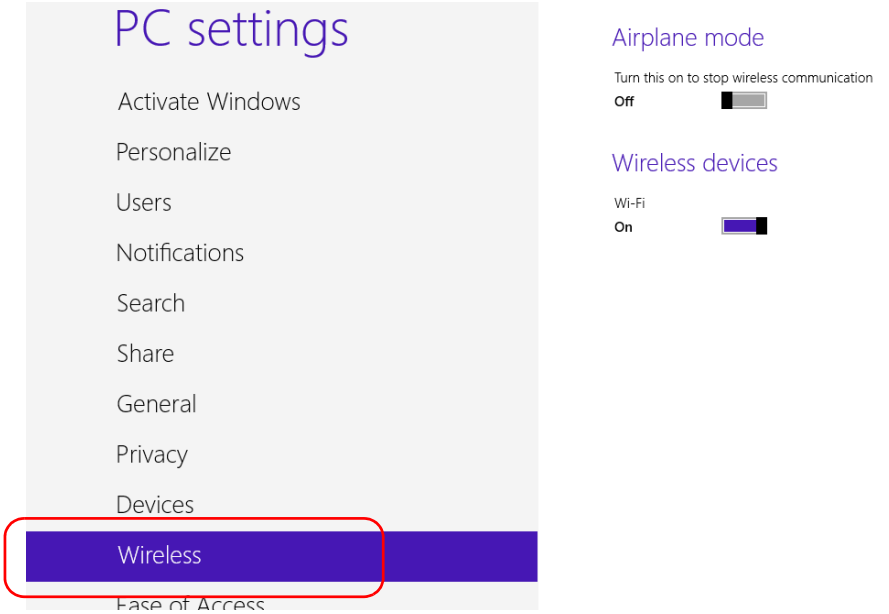
IMPORTANT

You cannot disable the Bluetooth device either manually or with the airplane mode.
When you activate the airplane mode, only the Wi-Fi device and the 3G USB modem key (connected to your unit) are disabled.

You can enable the Wi-Fi device and the 3G USB modem key again at any time.

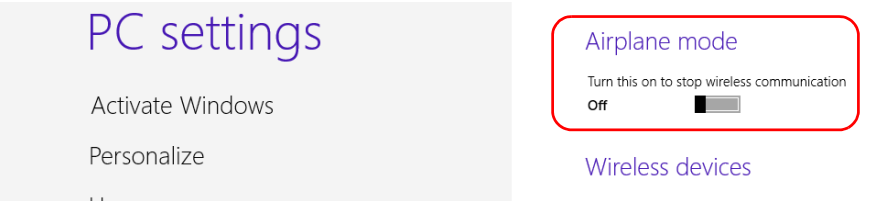
To enable or disable the wireless communication on your unit:

1. From the right side of the screen, swipe left to display the Charm bar.
2. Tap **Settings**, and then **Change PC Settings**.
3. Tap **Wireless**.

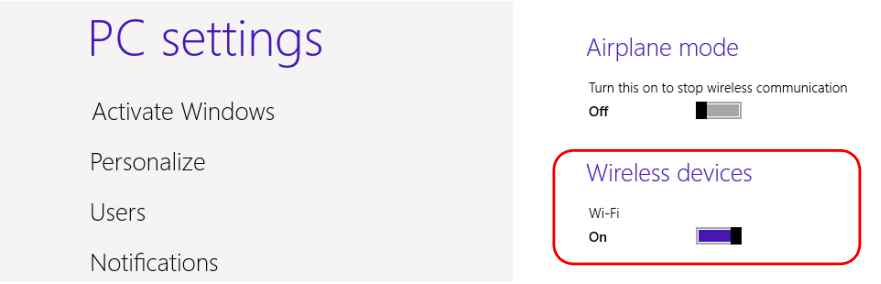


4. Set the wireless communication parameters as needed.

➤ If you want to set the parameters for the Wi-Fi device and the 3G USB key at the same time, set the **Airplane mode** slider to the **Off** position to enable the communication, or to the **On** position to disable it.



➤ If you want to set the parameters for the Wi-Fi device only, set the **Wi-Fi** slider to the **On** position to enable the communication, or to the **Off** position to disable it.



Connecting to a VPN from Your Unit

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

You can connect to a Virtual Private Network (VPN) from your unit if you use one of the VPN clients (applications) that are part of Windows Embedded 8 Standard. 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 3G USB modem key (see *Accessing the Internet with a 3G USB Modem Key* on page 101) 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.*

IMPORTANT

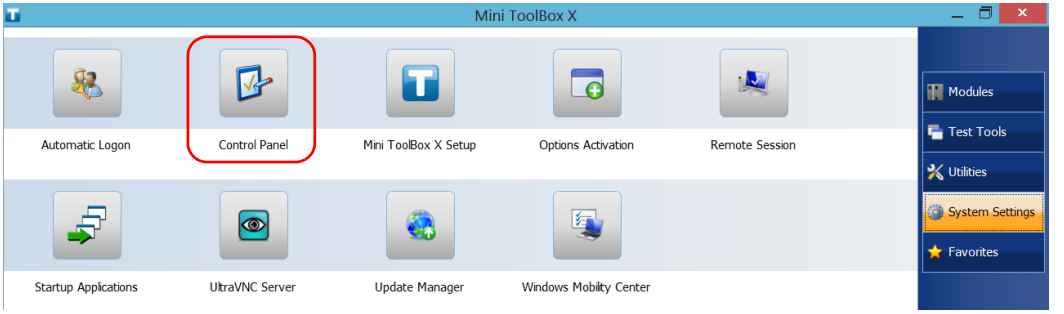
EXFO will not provide any support regarding the VPN clients or connection.

IMPORTANT

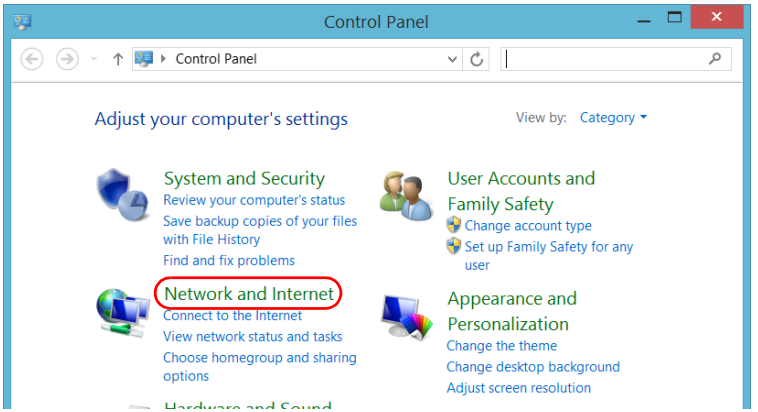
To avoid communication problems between the VPN client and the VPN server, ensure that the date set on your unit corresponds to the current date.

To add a VPN connection on your unit:

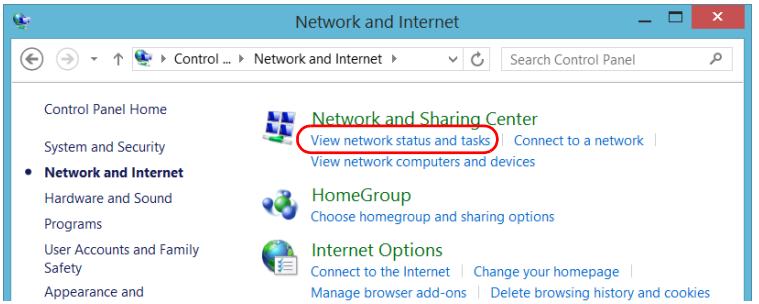
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



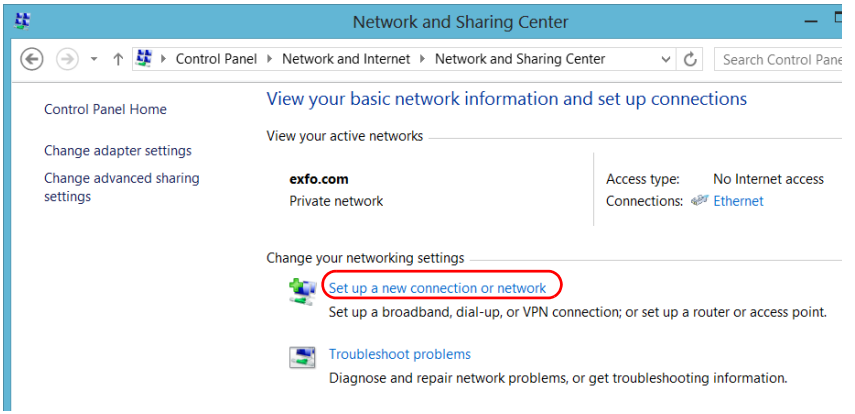
3. Tap **Network and Internet**.



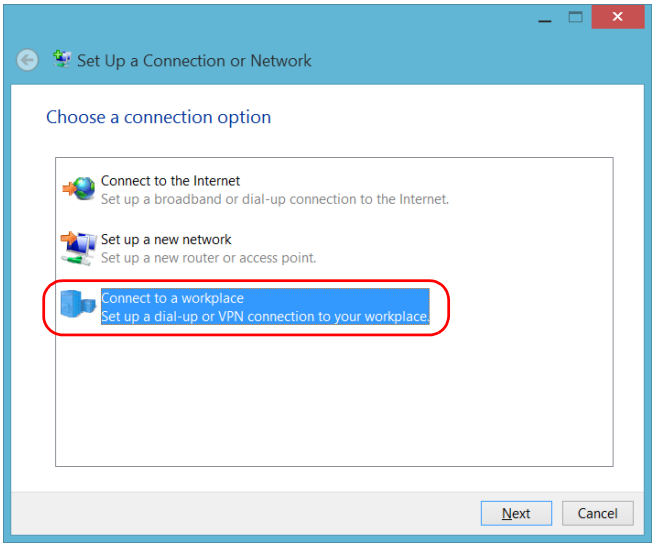
4. Under **Network and Sharing Center**, tap **View network status and tasks**.



5. Tap **Set up a new connection or network**.



6. Tap **Connect to a workplace**, and then tap **Next**.

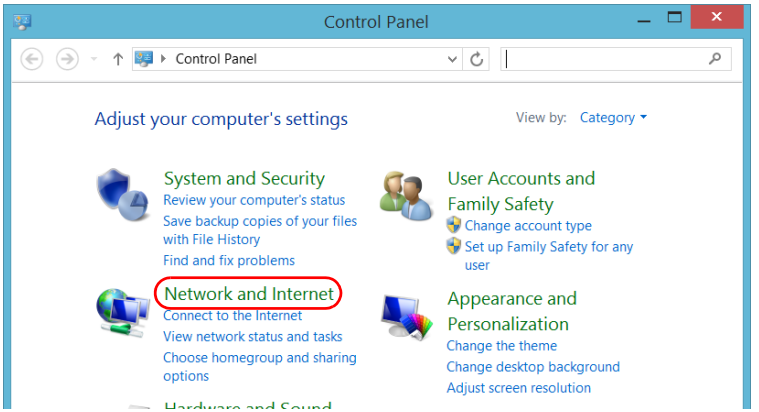


7. Follow the on-screen instructions.

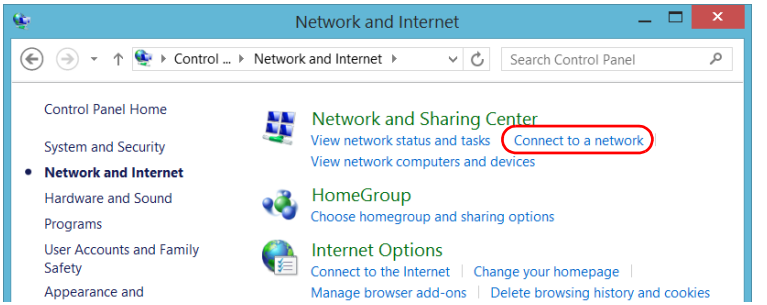
To connect to a VPN from your unit:

1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.

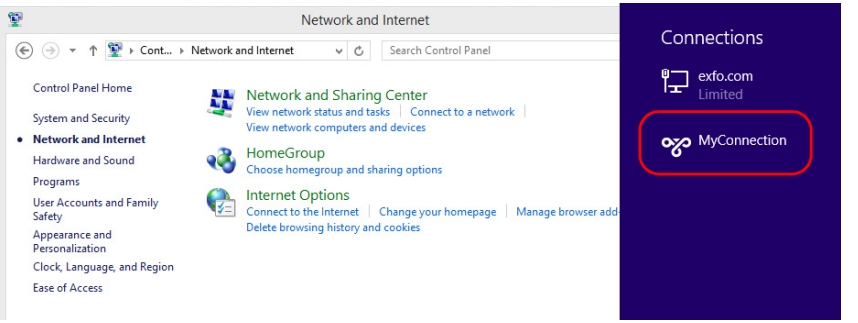
3. Tap **Network and Internet**.



4. Under **Network and Sharing Center**, tap **Connect to a network**.



5. Under **Connections**, select the desired VPN connection.



6. Follow the on-screen instructions.

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

8 Accessing Your Unit Remotely

You can access your unit remotely from a computer using the Remote Desktop Connection application.

You can access your unit remotely from a computer using either the Remote Desktop Connection application or a VNC viewer.

The table below presents the differences between the two applications.

Characteristic	Remote Desktop Connection	VNC Viewer
Type of connection	Direct between the unit and the computer; only one user can be connected to the unit at a time. Usually, the connection is made with the user name of the person currently logged on the unit. Otherwise, this person will be automatically disconnected.	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. You must define a password on the UltraVNC Server the first time you start the server. By default, all people that use the UltraVNC Viewer (or another VNC viewer) 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 VNC.

Working with Remote Desktop

By default, the remote access to your unit with Remote Desktop is not enabled. However, once you enable it, all the accounts with administrator rights can use Remote Desktop. If you want accounts with limited rights to be able to use it 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:

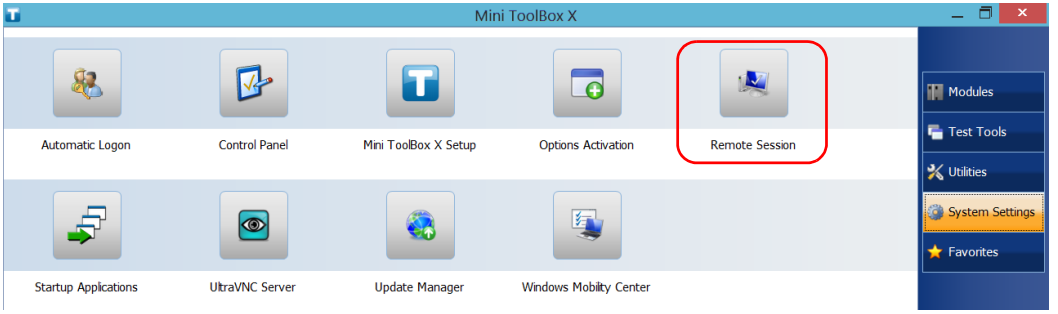
- Allow the remote access to your unit (only necessary the first time that you access your unit with Remote Desktop).
- Know the IP address of the unit and provide it in the connection settings on the computer.

Note: *If your unit and the computer are on the same network, you can even use the computer name of your unit, which corresponds to the model of your unit, followed by its serial number. You can view the computer name of your unit from* ***System Settings*** *>* ***Remote Session*** *>* ***Computer Name****.*

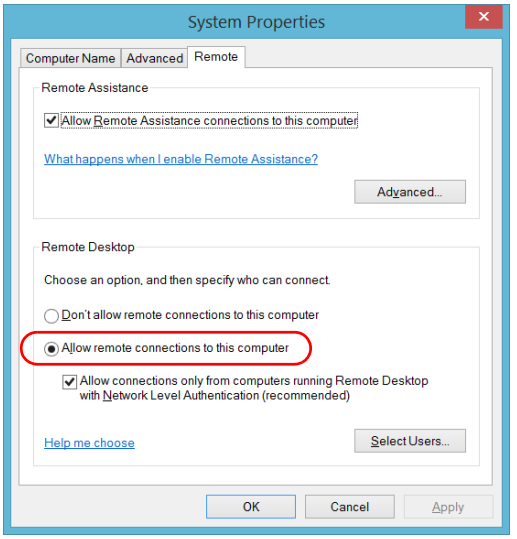
- Use an account that is secured by a password. Remote Desktop will not allow any connection with empty passwords.
- Enter the appropriate user name when Remote Desktop application prompts you. Usually, this user name must correspond to the user name of the person currently logged on the unit. Otherwise, you will disconnect the person that was already connected.

To allow the remote access to your unit with Remote Desktop:

1. From the main window, tap the **System Settings** button.
2. Tap **Remote Session**.



3. Under **Remote Desktop**, select **Allow remote connections to this computer**.



4. Tap **OK** to confirm the changes and return to the **System Settings** window.

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 Ethernet (RJ-45) port located on its right panel.

   ➤ 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).

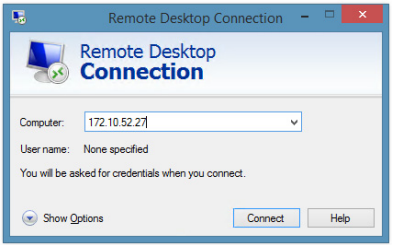
2. Turn on both the computer and the unit.
3. On your unit, from Mini Toolbox X, tap the button (located at the bottom of the button bar).
4. Select the **Platform** tab, write down the IP address, and then close the window.

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

5. From the computer, open the Remote Desktop Connection window.

   - If your computer runs Windows Vista or Windows 7: On the taskbar, click **Start**, then select **All Programs** > **Accessories** > **Remote Desktop Connection**.
   - If your computer runs Windows 8: On the taskbar, point the lower left corner, and then click the **Start** screen icon. Right-click the bottom of the screen, and then click **All apps**. Under **Windows Accessories**, select **Remote Desktop Connection**.
   - If your computer runs Windows 8.1: On the taskbar, click the **Start** button ( ), then under **Windows Accessories**, select **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.



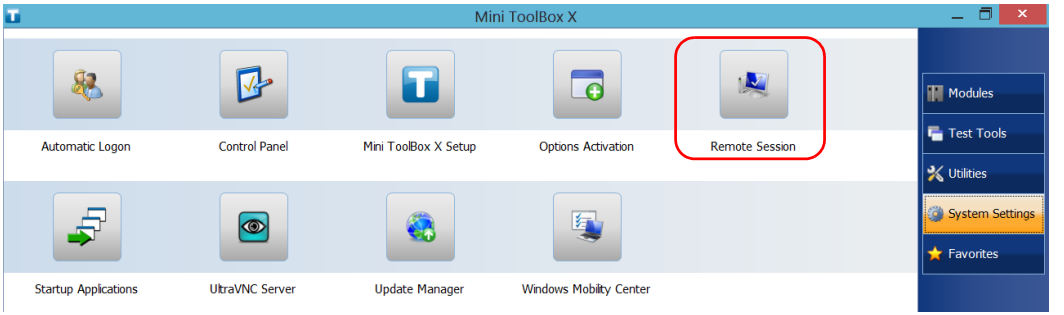
7. Click **Connect**.
8. When the application prompts you, enter your user name and password.
9. Click **OK** to open the session.

Allowing Users with Limited Accounts to Use Remote Desktop

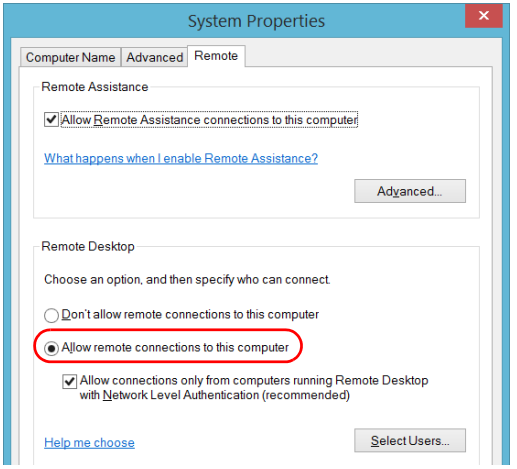
By default, only the accounts with administrator rights can use Remote Desktop. However, you can assign extra user rights to accounts with limited rights so that they can also use Remote Desktop.

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

1. From the main window, tap the **System Settings** button.
2. Tap **Remote Session.**

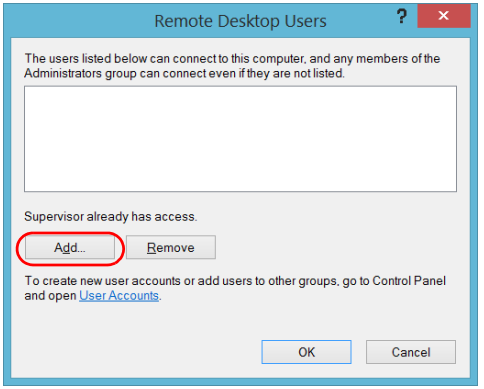


3. Under **Remote Desktop**, select **Allow remote connections to this computer**.

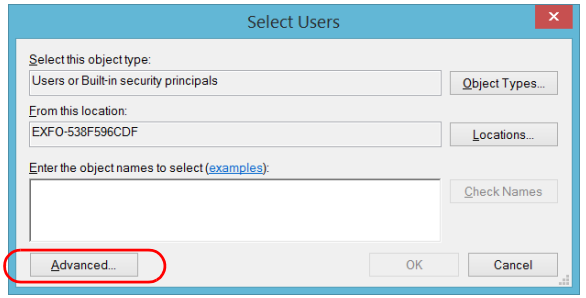


4. Tap **Select Users**.

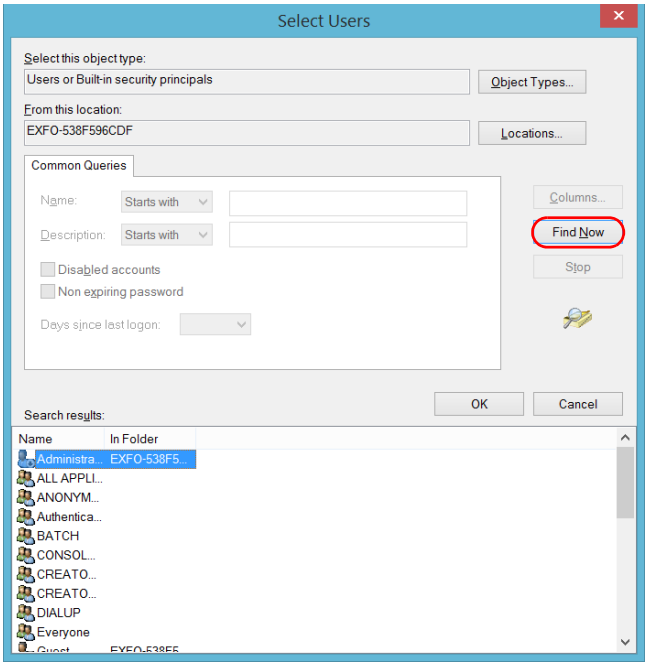
5. From the **Remote Desktop Users** dialog box, tap **Add**.



6. From the **Select Users** dialog box, tap **Advanced**.

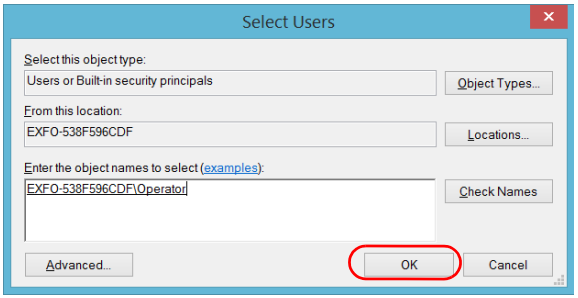


7. Tap **Find Now** to let the system find and display the list of users.



8. Select the user to which you want to grant access rights, and then tap **OK**.

9. From the list of users, select the user that you have just added, and then tap **OK**.



10. Repeat steps 7 to 9 with all the users to which you want to grant access rights.

11. From the **Remote Desktop Users** dialog box, tap **OK**.

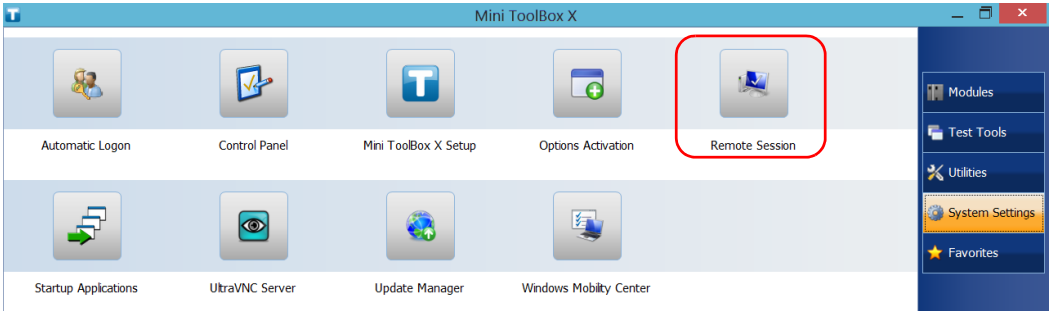
12. From the **System Properties** dialog box, tap **OK** to confirm the changes and return to the **System Settings** window.

Preventing Users from Connecting with Remote Desktop

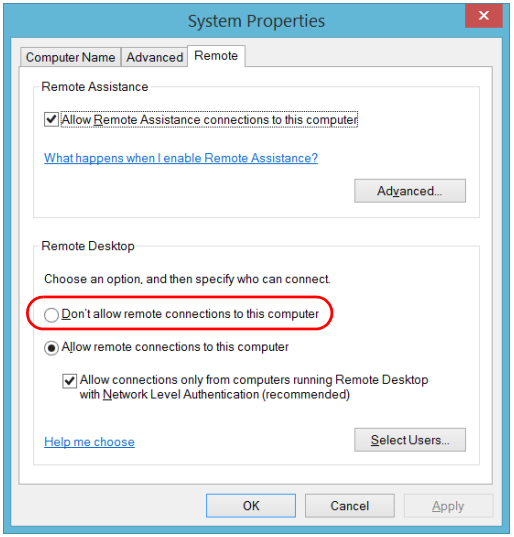
You can also configure the unit to prevent users to access it using Remote Desktop. However, all users having administrator user rights will be able to modify this setting at any time.

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

1. From the main window, tap the **System Settings** button.
2. Tap **Remote Session**.



3. Under **Remote Desktop**, select **Don't allow remote connections to this computer**.



4. Tap **OK** to confirm the changes and return to the **System Settings** window.

Working With VNC

The control of your unit with VNC requires the UltraVNC Server (already installed on your unit) and a VNC viewer (that you must install on your computer).

To be able to connect to the unit using VNC, 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 VNC.

Configuring the VNC Server

The UltraVNC Server is already installed on your unit. By default, the server is configured to accept secured connections only. This means that you must configure a password before establishing a connection between a computer and your unit.

You can modify various connection settings to better suit your needs.

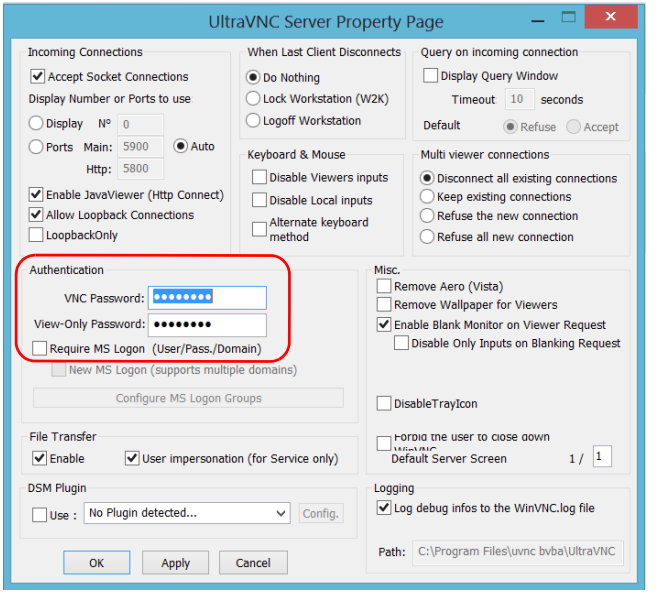
To configure the VNC Server:

1. From the main window, tap the **System Settings** button.
2. Tap **UltraVNC Server**.

3. From the notification area, right-click the UltraVNC icon.

4. From the shortcut menu, tap **Admin Properties**.

5. Depending on the type of connection that you want, under **Authentication**, enter a value in the **VNC Password** or **View-Only Password** box.



Note: *The VNC and view-only passwords are independent of each other. They do not have to be identical.*

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

Installing the VNC Viewer on a Client Computer

If no VNC viewer is already installed on your computer, you can download the UltraVNC Viewer from the Web for free.

IMPORTANT

EXFO does not provide licenses for UltraVNC Viewer. Always ensure that you are entitled to install it on your computer.

To install the UltraVNC Viewer on your computer:

1. Open a Web browser and go to http://www.uvnc.com/downloads/ultravnc.html.
2. Download the version of the viewer that corresponds to the operating system that your computer is running.
3. Double-click the file that you have just downloaded to start the installation.
4. Follow the on-screen instructions.

Connecting to Your Unit with VNC

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

To connect to your unit with UltraVNC:

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.

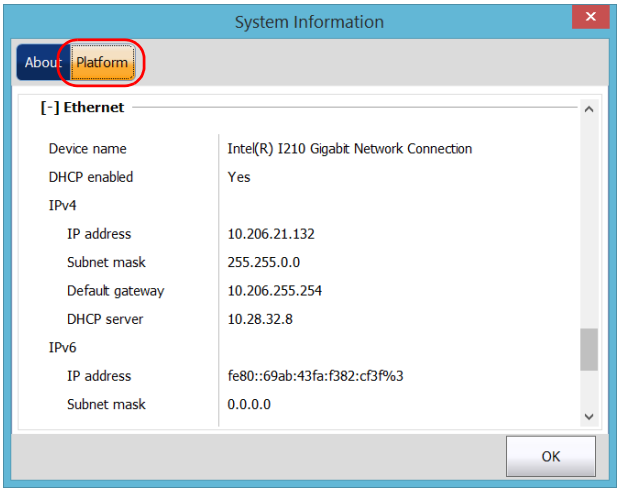
   ➤ If you want to use an Ethernet network, connect an RJ-45 (network) cable to the unit's RJ-45 port located on its top panel.

   ➤ 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 117).

2. Turn on both the computer and the unit.
3. On your unit, ensure that Mini ToolBox X is open.
4. At the bottom of the button bar, tap .

5. Tap **Platform**.
6. Scroll down until you can see the IP address.

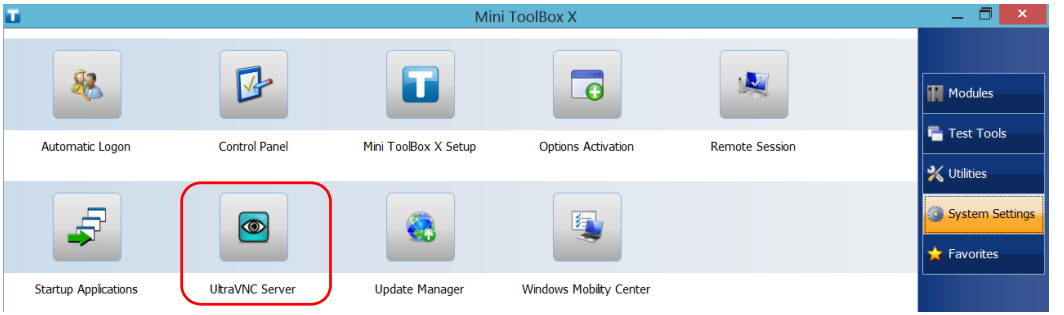


7. Write down the IP address, and then close the window.

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

8. From the main window, tap the **System Settings** button.

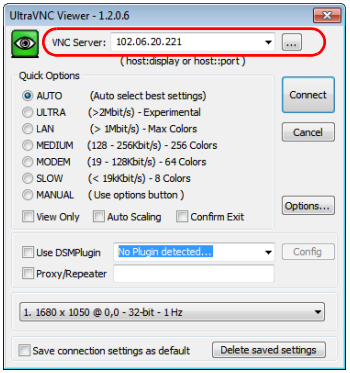
9. Tap **UltraVNC Server** to start the server.



Note: *For security reasons, the UltraVNC Server is not started automatically. However, if you prefer that your unit remains ready for remote connections at all times, you can install the corresponding service (right-click the UltraVNC icon, and then tap **Install Service**). Refer to the Web site of UltraVNC (http://www.uvnc.com) for more information.*

10. From your computer, start the UltraVNC Viewer.

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



Note: *The appearance of the UltraVNC Viewer window may vary depending on the version of the viewer that you have.*

12. Click **Connect**.

13. When the application prompts you for a password, enter it and click **OK** to confirm.

Adding Exceptions to the Firewall

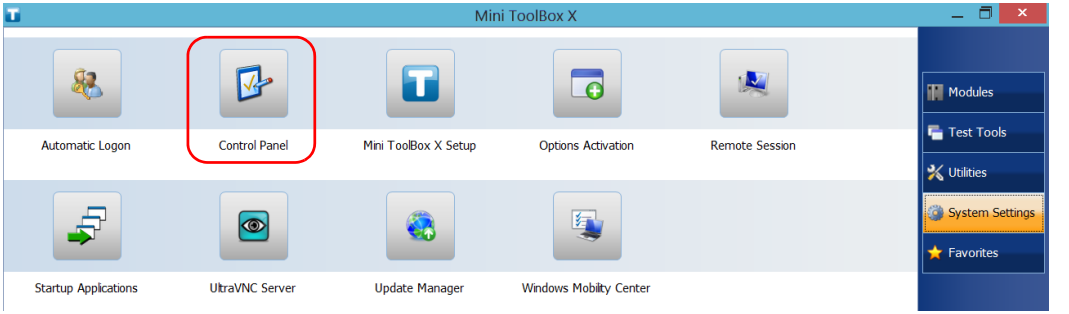
Note: *Only administrator-level users can add exceptions to the firewall.*

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.

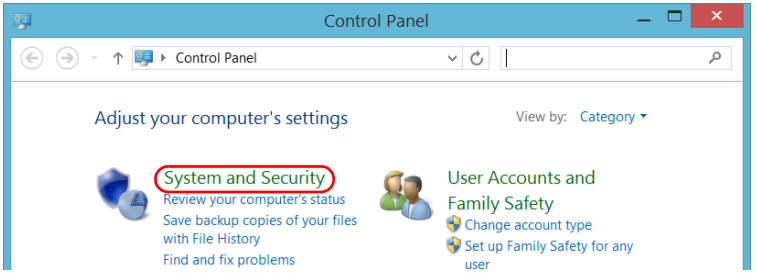
If you are not sure about how to configure the firewall, contact your network administrator.

To add exceptions to the firewall:

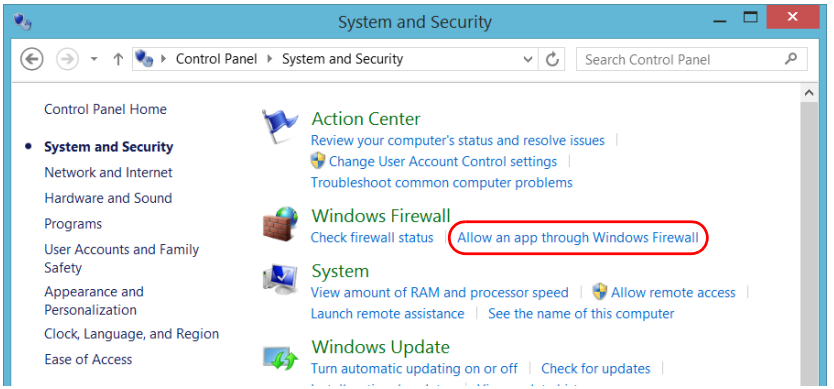
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



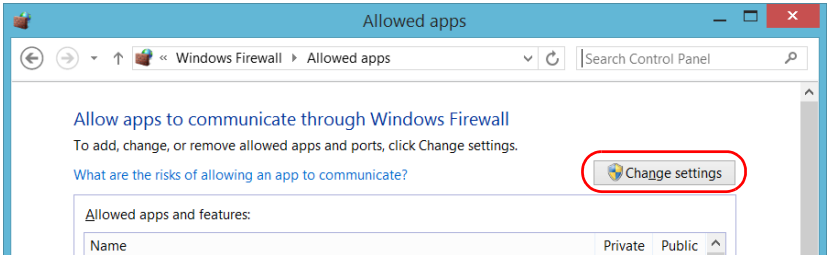
3. Tap **System and Security**.



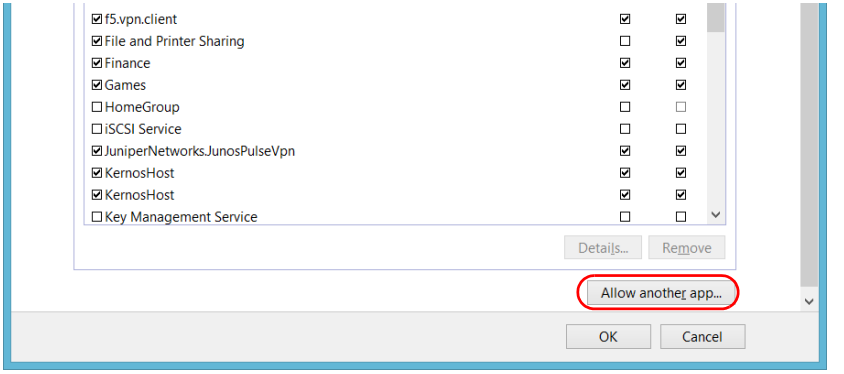
4. Under **Windows Firewall**, tap **Allow an app through Windows Firewall**.



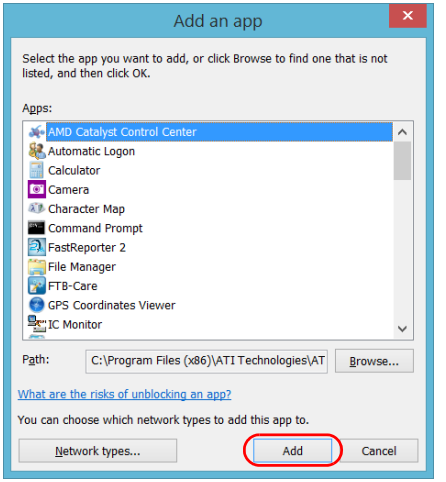
5. Tap the **Change settings** button.



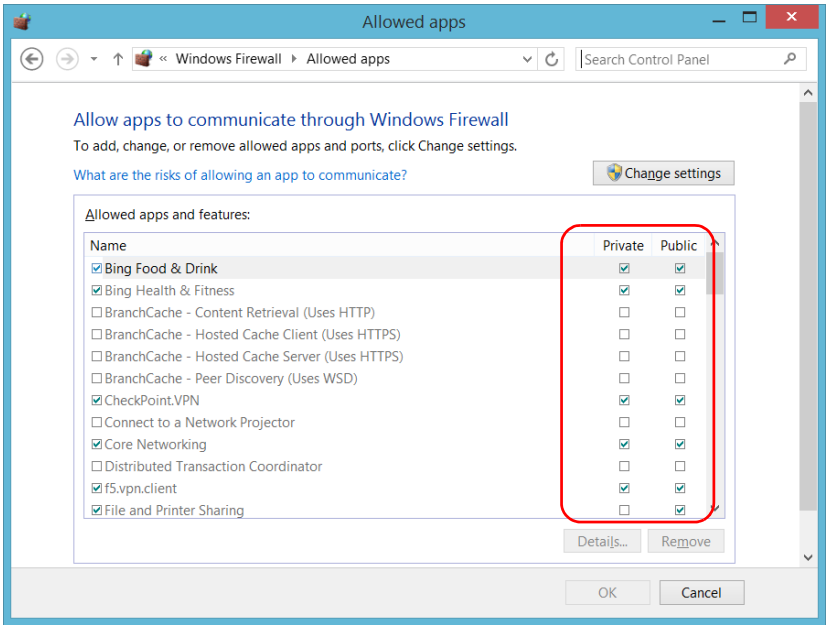
6. Tap the **Allow another app** button.



7. Select the desired application from the list, and then tap **Add**.



8. Ensure that the **Private** and **Public** settings of the added application suit your needs.



9. When you have finished, tap **OK** to confirm the changes and return to the **Control Panel** window.

9 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:

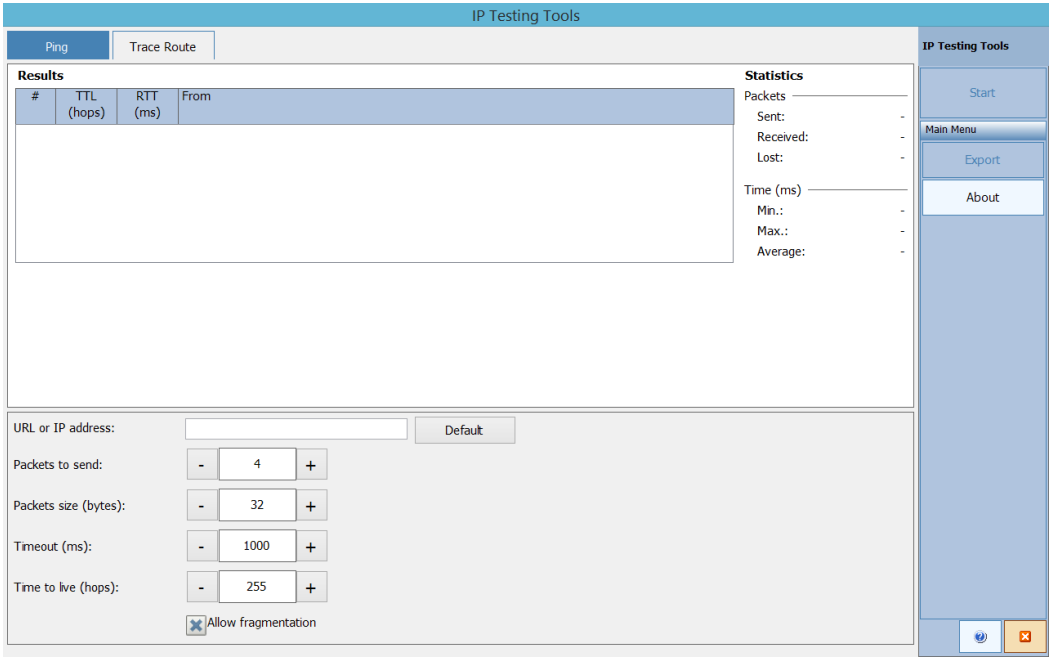
- The URL (IP address)
- The number of packets to send
- The packet size
- The maximum time allowed for a packet to reach the remote host
- The maximum number of hops allowed for reaching the remote host (TTL)
- A flag to indicate whether a packet can be fragmented.

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 the main window, tap **Test Tools**.
2. Tap **IP Tools**.

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



4. 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.
5. 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.
6. 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).

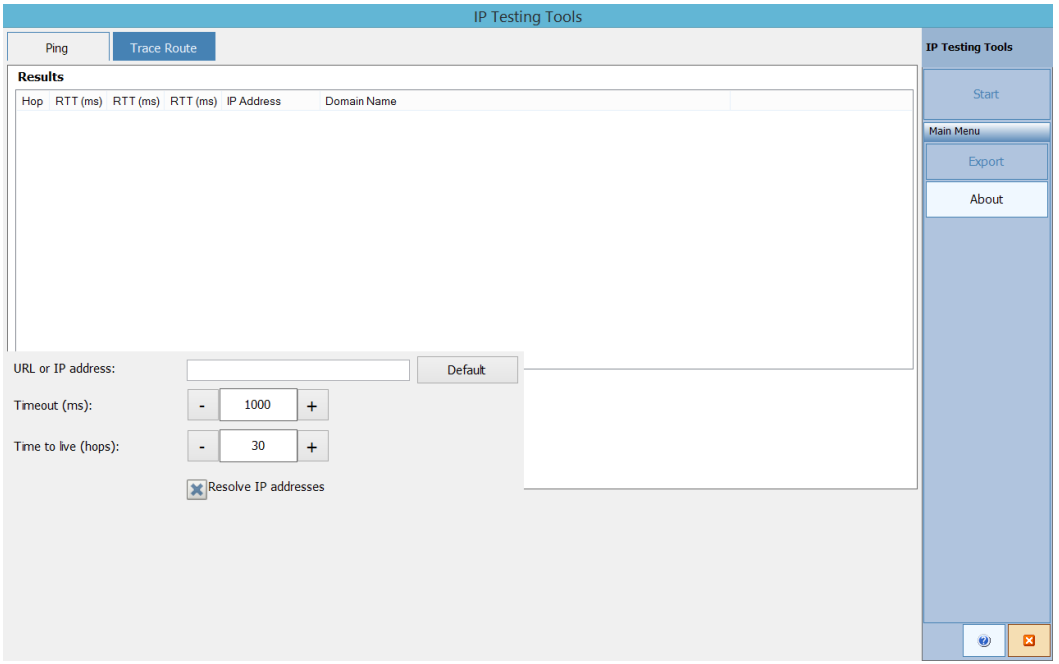
This trace route test utility enables you to:

- 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 July 3rd, 2014, the suggested filename would be:

Ping for www.yoursite.org on 2014_07_03.txt

To export results:

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

10 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 the Touchscreen

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 Battery

Your unit uses one smart lithium-ion (Li-Ion) battery.

- The charge status is shown in the taskbar (at the left of the clock). Simply tap the battery icon for more information.
- The unit also indicates the charge status with the LED on its front panel (see *LED Indicators Description* on page 5).

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. You must fully charge them before using the unit for the first time.The batteries are fully charged after a few hours or when the battery LED indicator stops flashing.**
- **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 0 °C and 40 °C (32 °F and 104 °F). Store them between –20 °C to 60 °C (–4 °F to 140 °F).**
- **Do not leave a battery discharged for several days.**
- **After 300 cycles (approximately 18 months of use), you may want to replace the battery with a new one to maintain optimal operation conditions. Otherwise, the operating time might be reduced.**

IMPORTANT

- **If the unit will not be used for more than two weeks, turn it off (shutdown).**
- **If you need to store the batteries for an extended period of time, place them in a cool dry place, and ensure that they are charged at around 50 % of their capacity. Every three months during the storage period, verify the battery level. Recharge the batteries when necessary, so that their charge level remains around 50 % of the total capacity. This will ensure that you get the optimum performance out of the batteries.**

To recharge the battery:

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

The charge cycle will start and end automatically.

Replacing the Battery

Your unit can be powered either by battery or from an appropriate power outlet when used with the provided AC adapter/charger.

WARNING

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

WARNING

Your unit uses a smart lithium-ion (Li-Ion) battery with built-in protection that has been especially designed for EXFO. For this reason, you can only replace it with batteries of the same type and model.

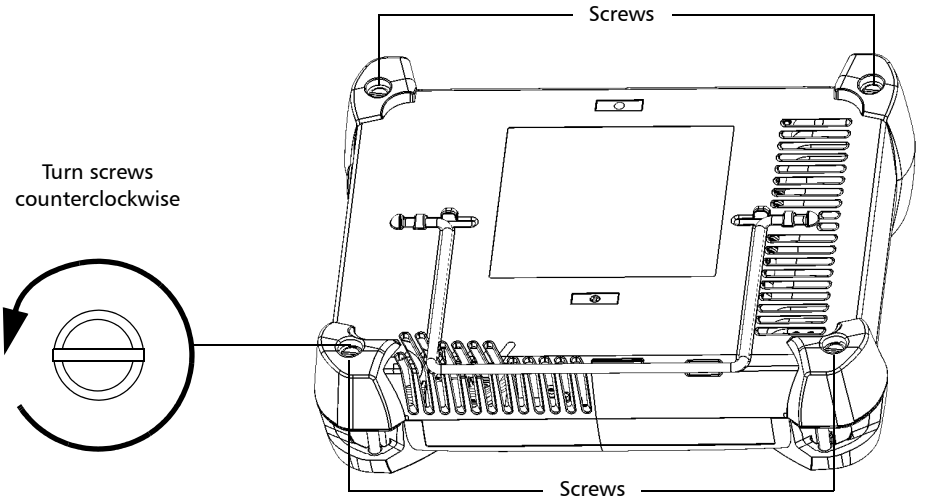
The use of other batteries may damage your unit and compromise your safety.

For more information on the available power sources for your unit, as well as their characteristics, see *Technical Specifications* on page 227.

Before you go out in the field, you may want to install a full battery in the unit unless you have an adequate and reliable power source.

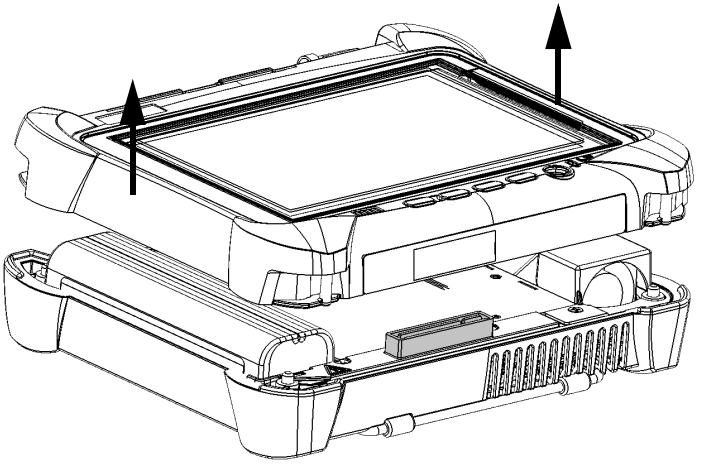
To remove the battery:

1. Turn off the unit (shutdown) and disconnect it from AC power.
2. Position the unit so that its front panel rests on a flat surface such as a table.
3. On the back of the unit, using a flat screwdriver, turn the screws (4) counterclockwise until they are loose. Since they are captive screws, you cannot remove them completely.

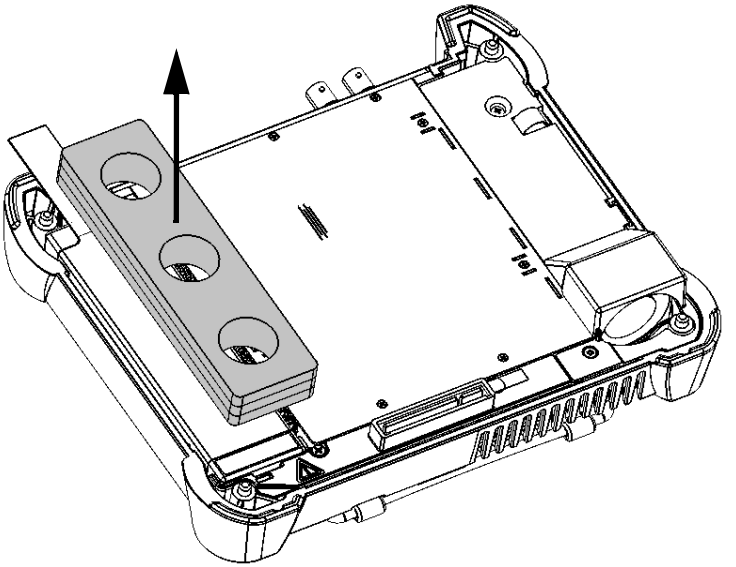


4. While holding the front and the back panels firmly together, turn the unit over, and position it so that its *back* panel rests on a flat surface such as a table.

5. Hold the front panel by its sides and pull it up.

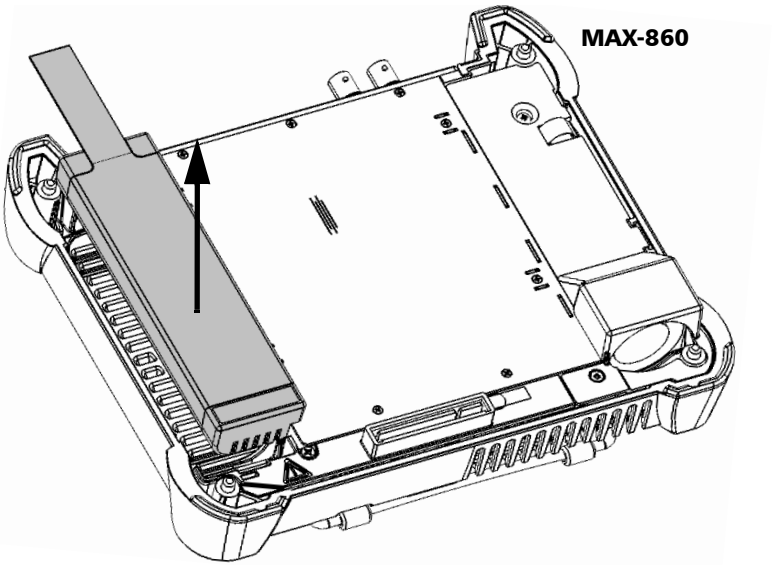


6. If you are working with a MAX-860 unit, pull up the battery filler to remove it and expose the battery.

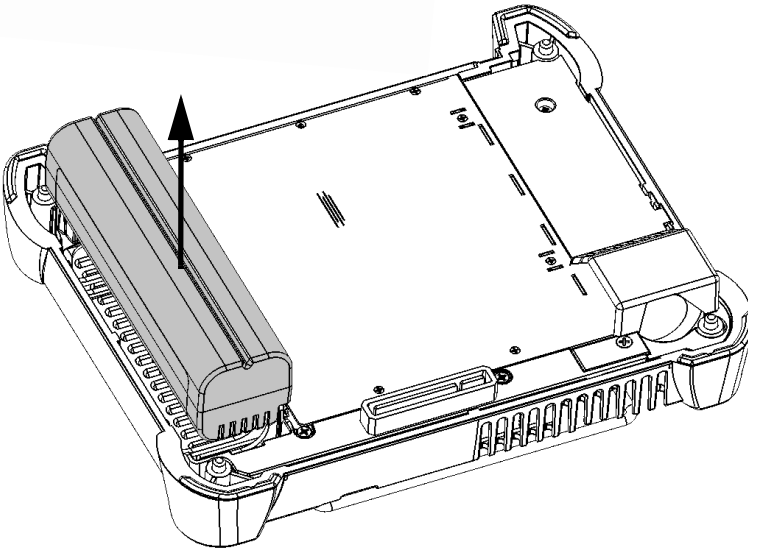


7. Pull on the battery's tab to free it from its socket.

MAX-860



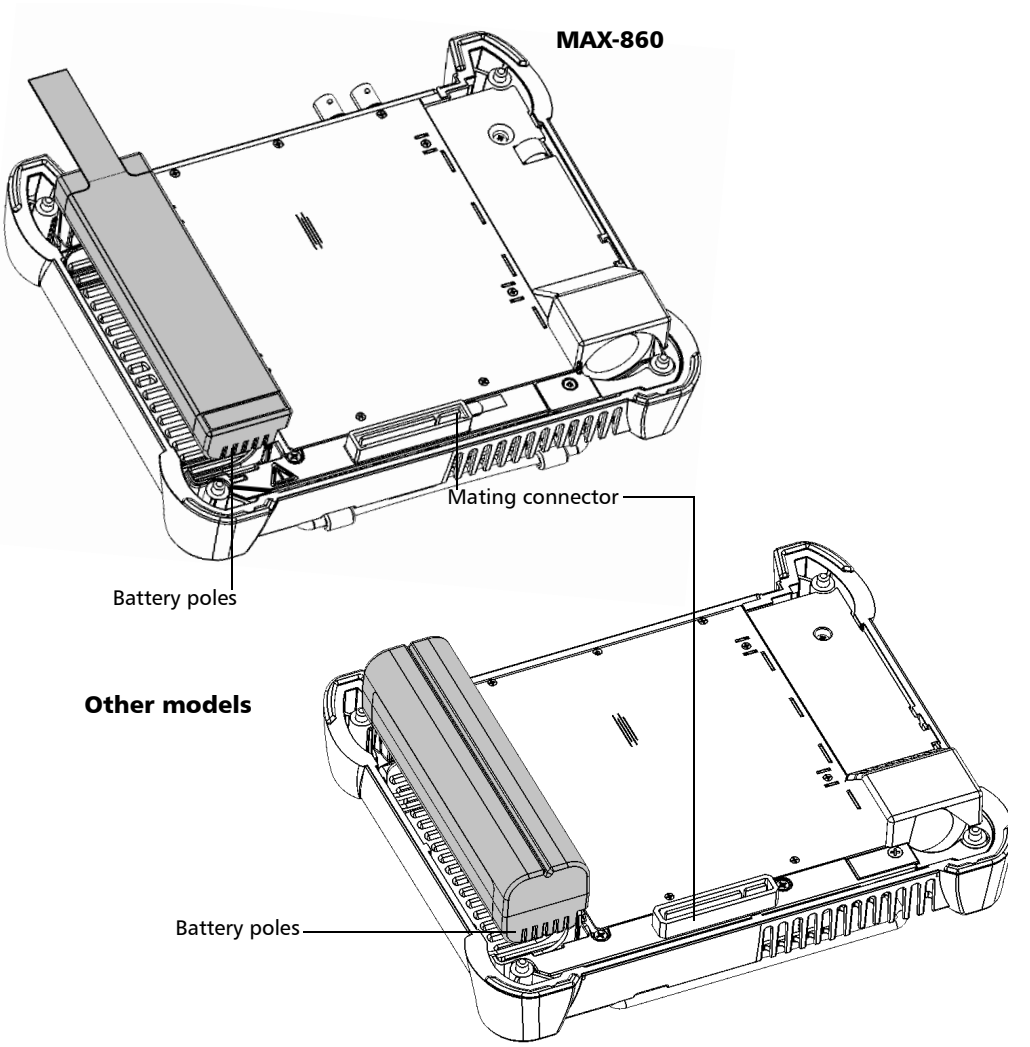
Other models



You are now ready to replace the battery.

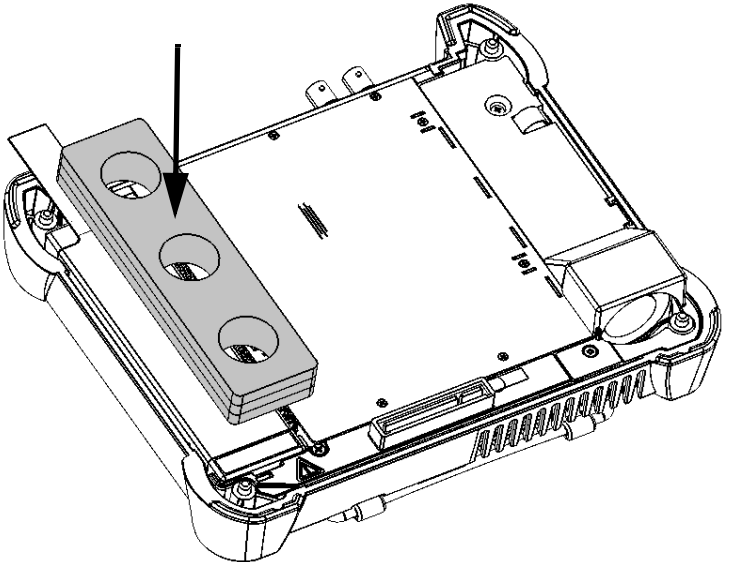
To replace the battery in the unit:

1. Place the new battery so that its poles are facing down and that they point to the same side of the case as the mating connector of the back panel.

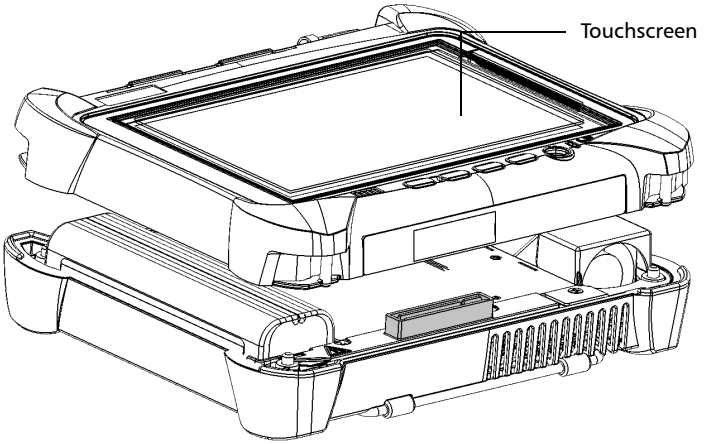


2. Push the new battery toward the bottom of the case until it stops.

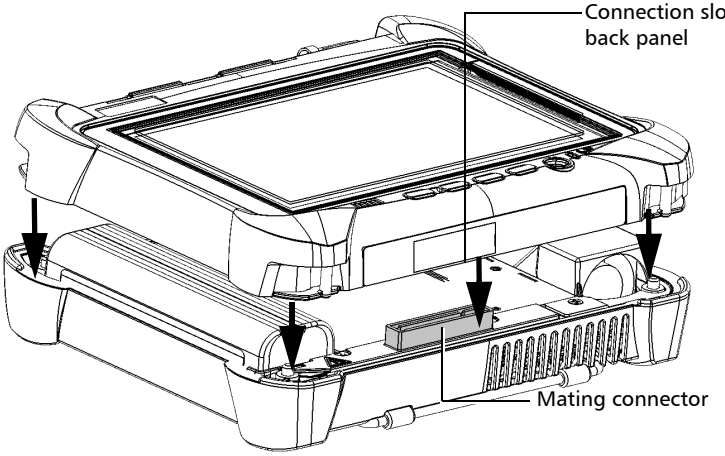
3. If you are working with a MAX-860 unit, put the battery filler back into place on the battery. The ends of the filler should be flush with those of the battery.



4. Hold the front panel so that you can see the touchscreen.



5. Place the front panel on the back panel of the unit, making sure that the mating connector of the back panel is well aligned with the corresponding slot on the front. The bumpers of the back panel should be flush with those of the front. If necessary, slightly move the front panel until alignment is correct.



6. While holding the front and the back panels firmly together, turn the unit over, and position it so that its *front* panel rests on a flat surface such as a table.

7. Using a flat screwdriver, turn the screws (4) clockwise until they are tightened.

   This will secure the back panel into its “seated” position.

Managing Windows Updates

By default, your unit is configured to check for updates, but to let you choose whether you want to download and install them or not.

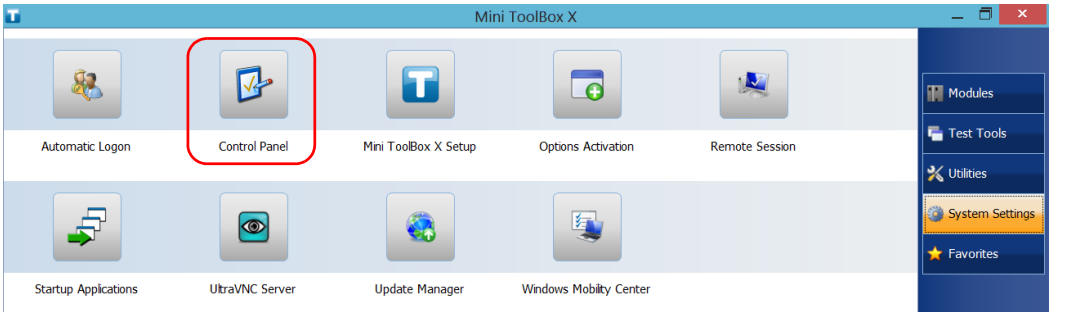
However, if you prefer, you can configure your unit to automatically search and install Windows updates to ensure that you benefit from the latest versions of the Windows applications. Your unit will need an Internet access for the updates.

Only the applications from Microsoft will be updated with the automatic Windows update feature. If you want to update EXFO applications, see *Installing or Upgrading the Applications* on page 32. The third-party applications will need to be updated manually.

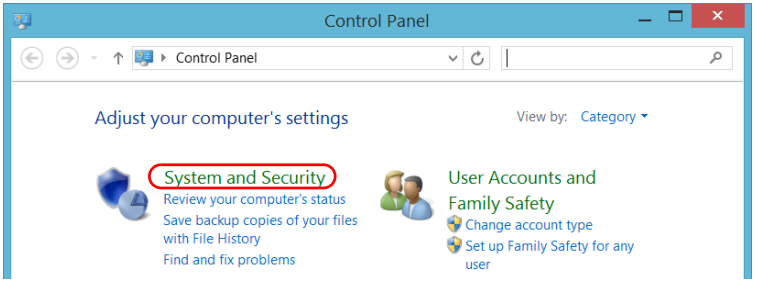
To manage the updates for Windows applications:

1. From the main window, tap the **System Settings** button.

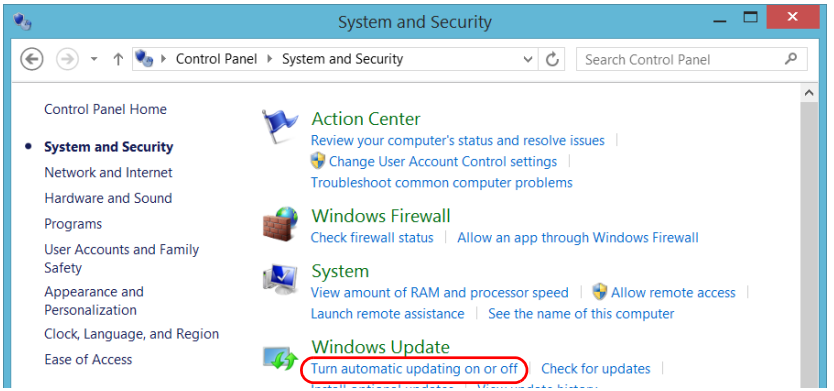
2. Tap **Control Panel**.



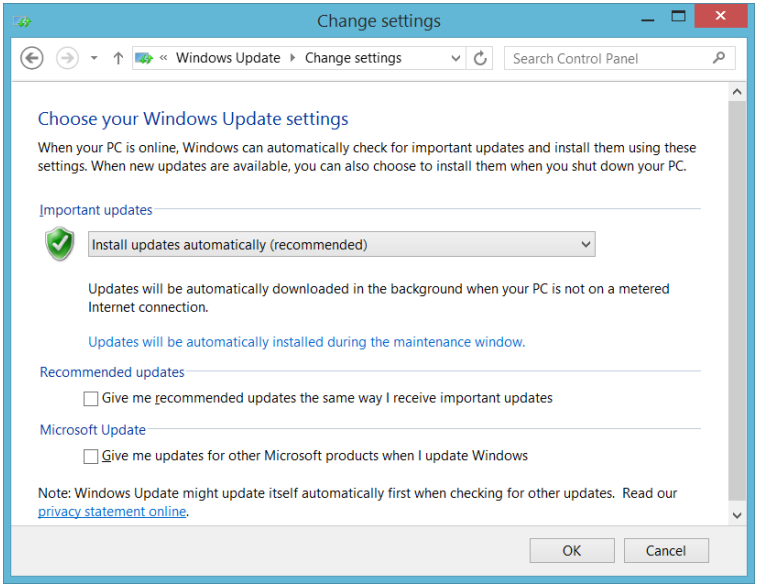
3. Tap **System and Security**.



4. Under **Windows Update**, tap **Turn automatic updating on or off**.



5. Select the update options that best suit your needs.



6. Tap **OK** to confirm your changes and return to Control Panel.

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.

11 Troubleshooting

Solving Common Problems

Before calling EXFO's technical support, you may want to consider the following solutions to problems that could occur.

Problem	Possible Cause	Solution
My unit does not start.	It is not connected to a power source.	Make sure that the external power supply is connected at both ends.
	The battery is completely discharged.	Change or recharge the battery.
	The system has encountered a problem.	Press the On/Off button for at least ten seconds to force a hardware reset on the unit.
	Windows startup files have been corrupted.	Contact EXFO.

Problem	Possible Cause	Solution
My unit is running slower than expected.	The configuration of some of the Windows components is underway in the background.	The first few times that you start your unit, after a reset operation, or after certain updates, you may notice that the performance of your unit is not optimum. If this is the case, you may want to leave your unit idle for about an hour to give Windows the time to complete its configuration tasks.
My unit is not responding.	The system has encountered a problem.	Press the On/Off button for at least ten seconds to force a hardware reset on the unit.
The USB device I have just connected is not working.	The device has not been detected.	Disconnect, then reconnect the device. Turn off the unit, then turn it on again.
	You do not have the proper driver for this device.	Ensure that you have the right driver (can be provided with the device itself).

Problem	Possible Cause	Solution
The 3G USB modem key is connected, but I am 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 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. There is a problem with the mobile network.	Contact your provider of mobile services.
The battery is not recharging.	Ambient temperature is too high or too low.	Make sure that the temperature in the location where you recharge the battery is within the specifications
	The AC adapter is not connected properly.	Make sure that the AC power cord is connected to the unit and the AC outlet.
I cannot adjust the brightness of the screen using the Windows controls.	The brightness can only be adjusted with the physical buttons.	From the unit's front panel, press the ▼ or ▲ button until the brightness level suits you.

Problem	Possible Cause	Solution
An error message warns me that there is not enough disk space to perform a refresh operation on my unit.	➤ When you perform a refresh operation, Windows creates a folder (*Windows.old*) in which the files from the previous installation are stored. This folder now uses too much disk space. ➤ The disk needs a cleanup.	Remove the Windows.old folder or the unused files with the Disk Cleanup utility. For more information, see *Freeing Up Disk Space with the Disk Cleanup Utility* on page 134.
The Windows interfaces do not switch to the selected language.	When you select a language that you have installed manually, the Windows interfaces remain in the language configured at time of purchase. However, the EXFO applications are displayed in the selected language (when available).	Contact EXFO if you think that the language that was configured at time of purchase does not cover your needs.

Restoring Your Unit to Normal Operation

If you ever encounter major problems with your unit (for example, the unit does not behave the way it used to), you can revert it to a previous state. You can revert your unit either to its initial state (as it was at time of purchase), or to a specific state with a backup image (WIM file) created previously.

Note: *For current updates, use Update Manager.*

You can create your own WIM files directly from your unit and store them on a USB key for future use.

IMPORTANT

The WIM files that you create are based on the serial number of your unit. This means that the WIM files created on one unit are only valid to restore this particular unit.

When you want to restore your unit, there are several options. The table below gives an overview of the possibilities.

Method	Description
Refresh	➤ The unit will be reverted to its initial state. ➤ All data files that were saved to the default personal folders (Documents, Pictures, etc.) will still be available once the operation is complete. ➤ If you have installed products and updates since you purchased your unit, you will have to reinstall them. ➤ Refer to Microsoft documentation for more information.
Reset	➤ The unit will be reverted to its initial state. ➤ All data files will be lost once the operation is complete. ➤ If you have installed products and updates since you purchased your unit, you will have to reinstall them. ➤ Refer to Microsoft documentation for more information.
Restore	➤ The unit will be reverted to the state in which it was when the WIM file was created. ➤ All data files will be lost once the operation is complete. ➤ If you have installed products and updates since the WIM file was created, you will have to reinstall them.

CAUTION

- **Before starting one of the recovery operations, connect your unit to a power outlet using the provided AC adapter/charger.**
- **DO NOT TURN OFF your unit while the recovery operation is underway. Doing so may severely damage your unit. Damaged units will need to be sent back to EXFO for repair.**

IMPORTANT

- **Refresh operation: All the data that is stored in the default personal folders will still be available once the operation is complete. However, any data stored in other folders will be lost. You may want to back up this data before refreshing your unit.**
- **Reset and restore operations: To avoid losing the data that is stored on your unit, you may want to back it up before resetting or restoring your unit. Otherwise, all your files will be lost.**

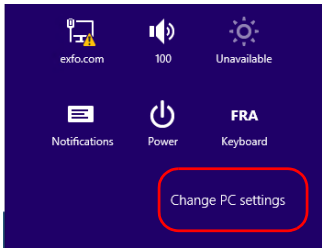
To revert your unit to a previous state:

1. Ensure that your unit will remain powered on during the operation by connecting it to a power outlet using the provided AC adapter/charger.
2. If desired, back up your data.

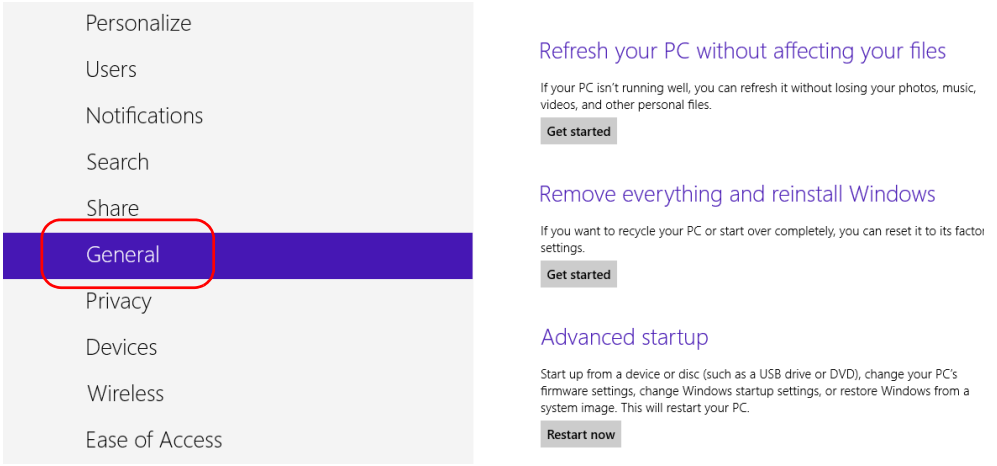
Note: *If you want to have a look at the content of the Windows.old folder containing files of the previous installation, go to the root of the C drive (Windows (C:)). If you do not see the Windows.old folder, it means no refresh operation has ever been performed on your unit.*

3. If you intend to refresh your unit and a refresh operation has been performed on it before, remove the existing *Windows.old* folder (with Disk Cleanup). Otherwise, you will receive an error message indicating that the disk space is insufficient and your unit will not be refreshed. For more information on how to remove the Windows.old folder, see *Freeing Up Disk Space with the Disk Cleanup Utility* on page 134.

   When the cleanup operation is complete, you are ready to perform a refresh operation on your unit.
4. On your unit, from the right side of the screen, swipe left to display the Charm bar.
5. Tap **Settings** > **Change PC settings**.

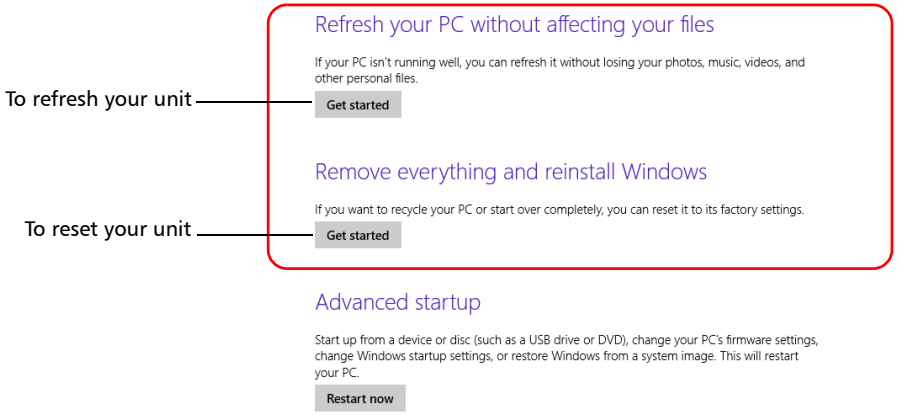


6. Tap **General**, and then scroll down the list.



7. If you want to refresh or reset your unit, proceed as follows:

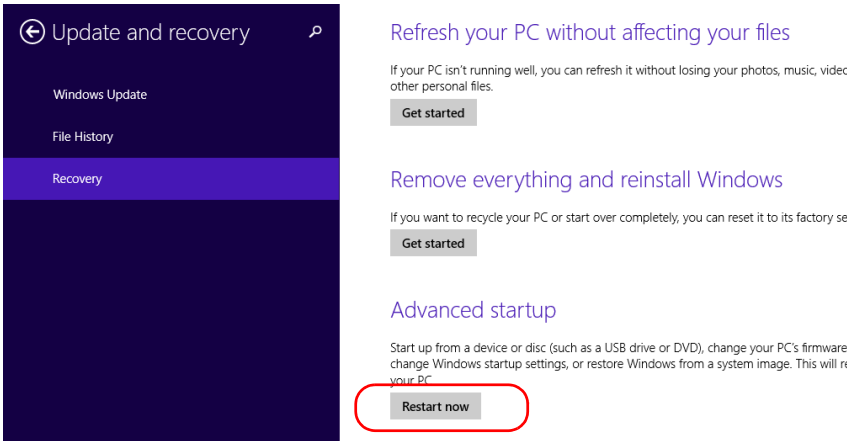
7a. Tap the **Get started** button corresponding to your choice.



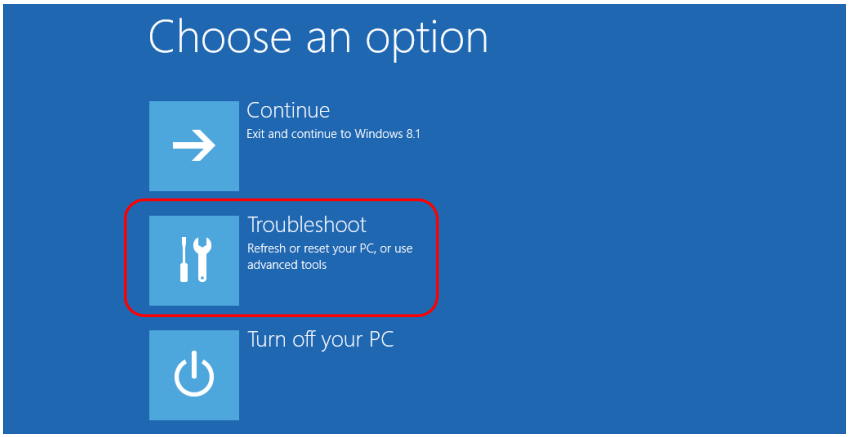
7b. Follow the on-screen instructions.

8. If you want to restore your unit (with a WIM file), proceed as follows:

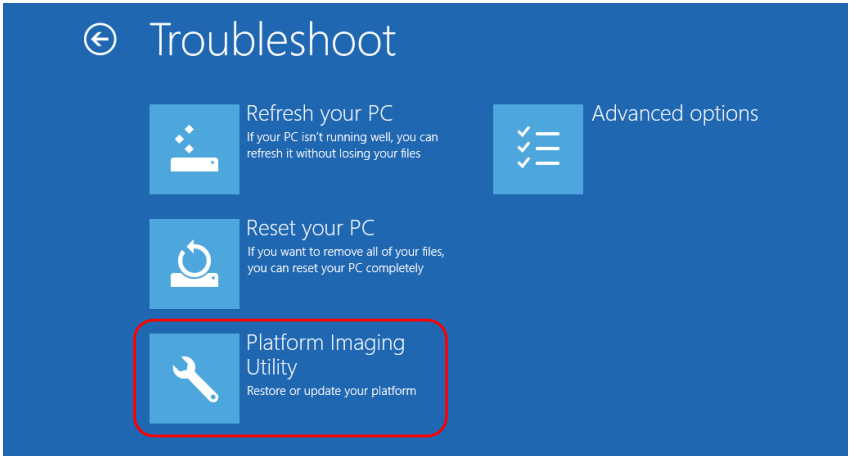
8a. Under **Advanced Startup**, tap **Restart now**.



8b. Under **Choose an option**, tap **Troubleshoot**.

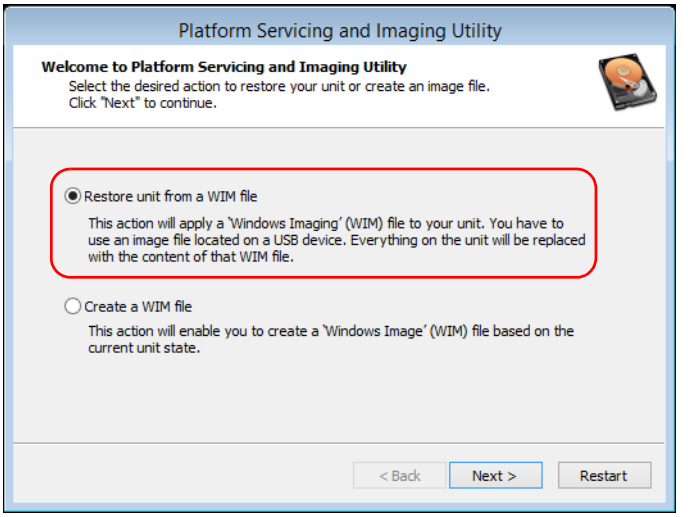


8c. Tap **Platform Imaging Utility** to display the corresponding application.

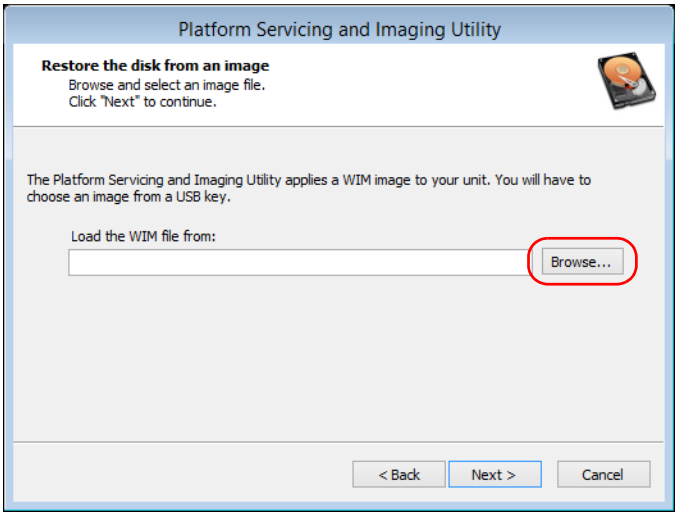


8d. Connect the USB key with the desired WIM file to your unit.

8e. From the Platform Servicing and Imaging Utility wizard, select **Restore unit from a WIM file**, and then tap **Next**.



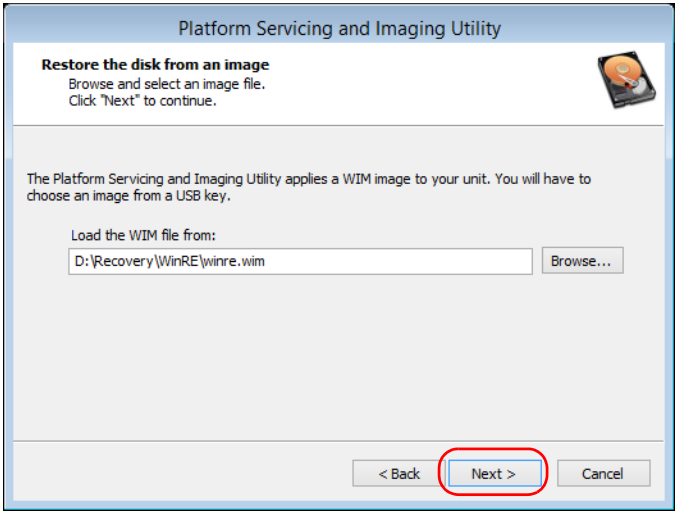
8f. Tap **Browse**.



8g. Locate the USB key, and then double-tap its identifier to access the contents.

8h. Select the desired WIM file.

8i. Tap **Next**.



8j. Read the warning, and then tap **Start** to restore the unit with the selected image.

8k. When the operation is complete and the application prompts you, disconnect the USB key, and then tap **OK**.

The unit will restart.

IMPORTANT

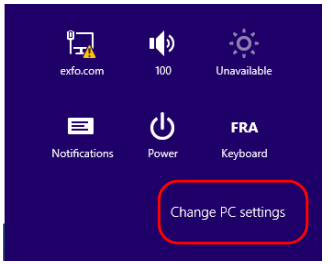
The creation of a WIM file implies a compression of the files that are currently installed on your unit. The size of the files after compression cannot be estimated beforehand.

For this reason, the application WILL NOT PROMPT YOU AT THE BEGINNING of the operation if the storage capacity (or the file system) of your USB key is not appropriate.

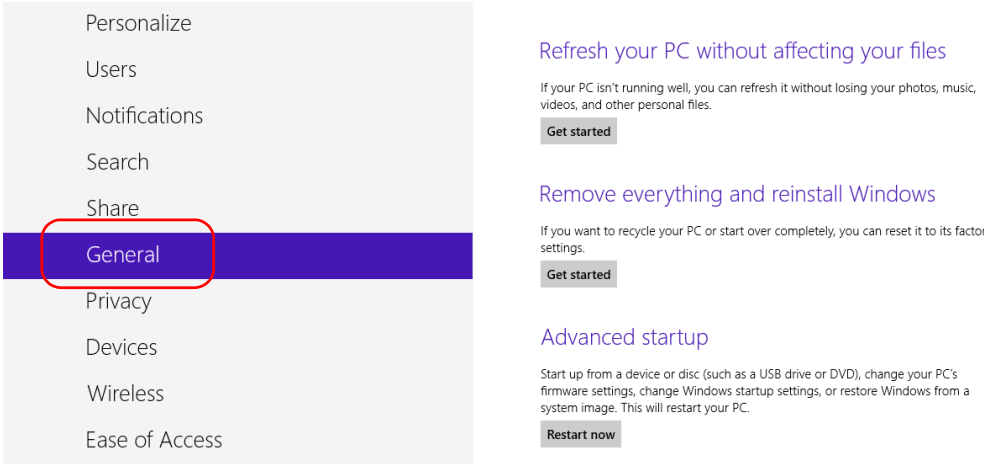
To avoid problems, always use a USB key with an NTFS file system, and a minimum of 16 GB of free disk space.

To create a WIM file for your unit:

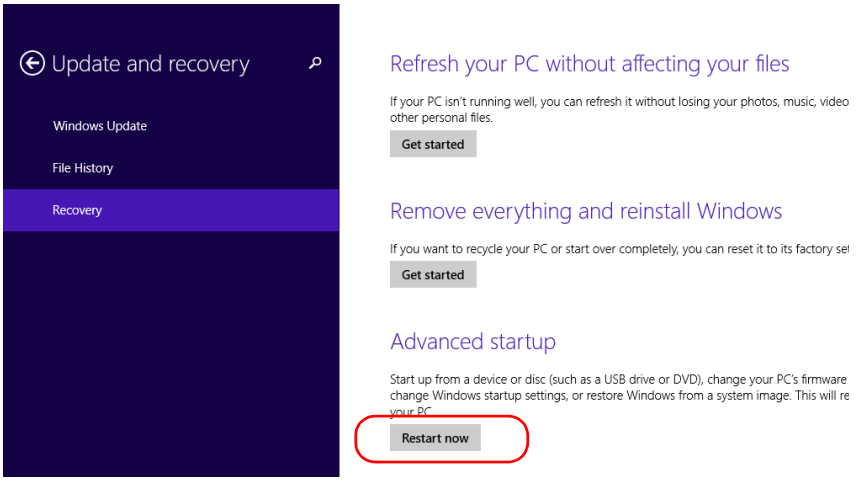
1. On your unit, from the right side of the screen, swipe left to display the Charm bar.
2. Tap **Settings** > **Change PC settings**.



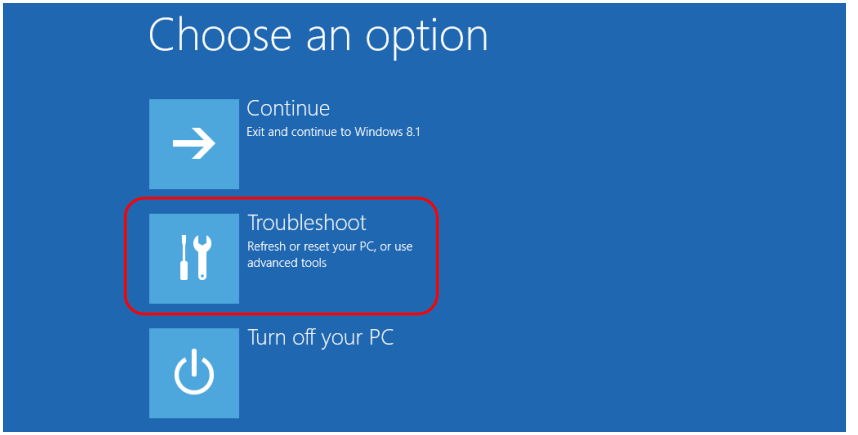
3. Tap **General**, and then scroll down the list.



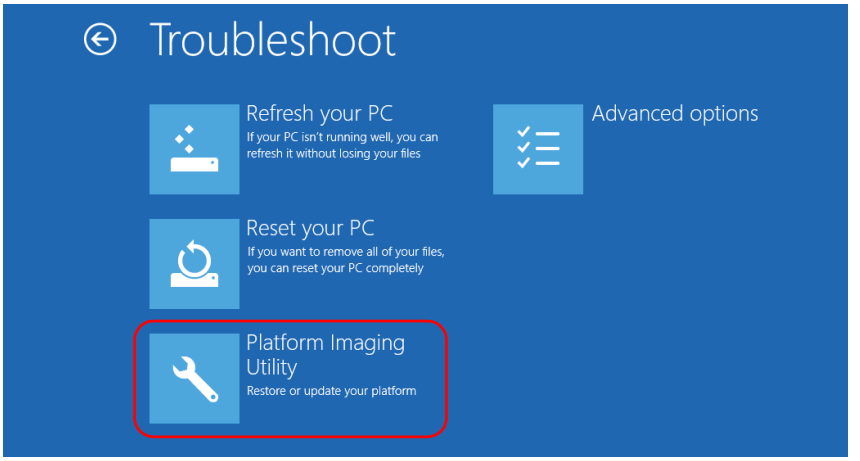
4. Under **Advanced Startup**, tap **Restart now**.



5. Under **Choose an option**, tap **Troubleshoot**.

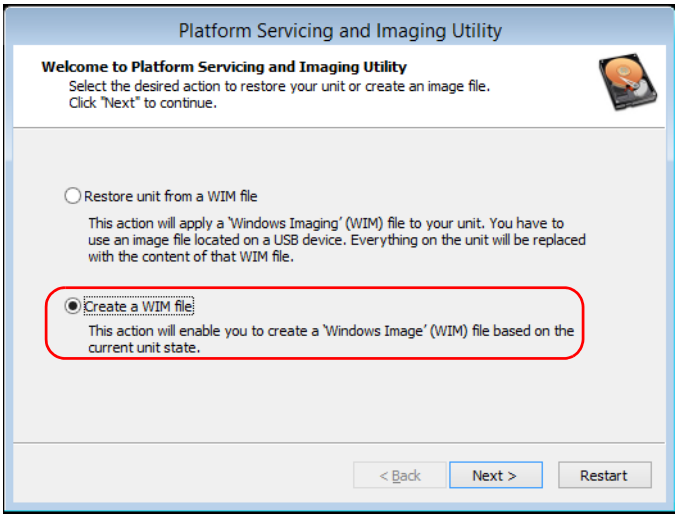


6. Tap **Platform Imaging Utility** to display the corresponding application.

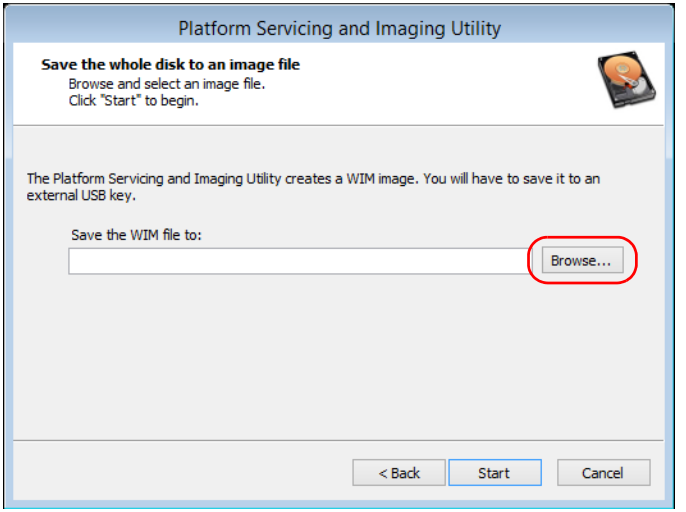


7. Connect a USB key to your unit.

8. From the Platform Servicing and Imaging Utility wizard, select **Create a WIM file**, an then tap **Next**.



9. Tap **Browse**.

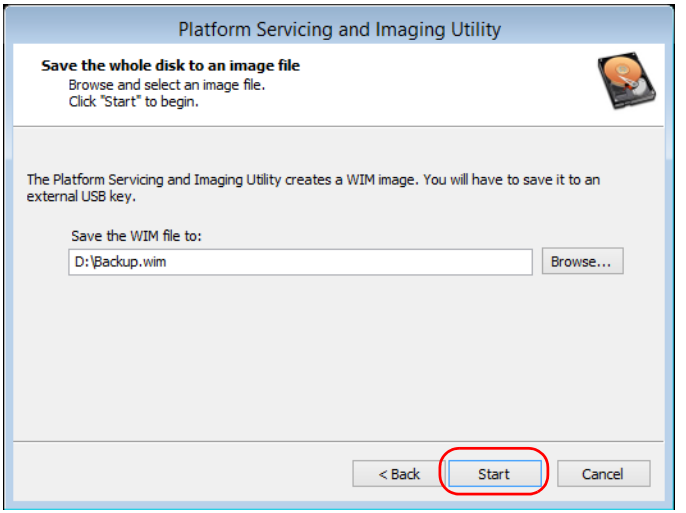


10. Locate the USB key, and then double-tap its identifier to access the contents.

11. Select the desired folder.

12. Enter a file name, and then tap **Save**.

13. Tap **Start**.



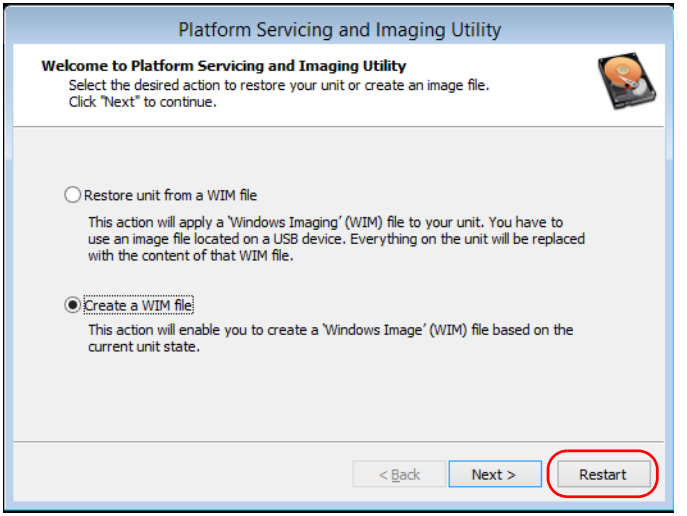
Note: *The time required to create the image varies with the configuration of your unit.*

14. When the operation is complete and the application prompts you, tap **OK**.

15. Disconnect the USB key.

16. Tap **Cancel** to return to the Welcome window of the utility.

17. Tap **Restart**.



The WIM file is ready for future use.

Accessing the Online Documentation

You can access the user documentation as well as the license agreements at all times from your unit.

There are two formats of user documentation provided on your unit: online help and complete user guides (for products having safety instructions). When you open user documentation in PDF format from Mini Toolbox X (or the configuration wizard), the files are displayed automatically in the provided PDF viewer.

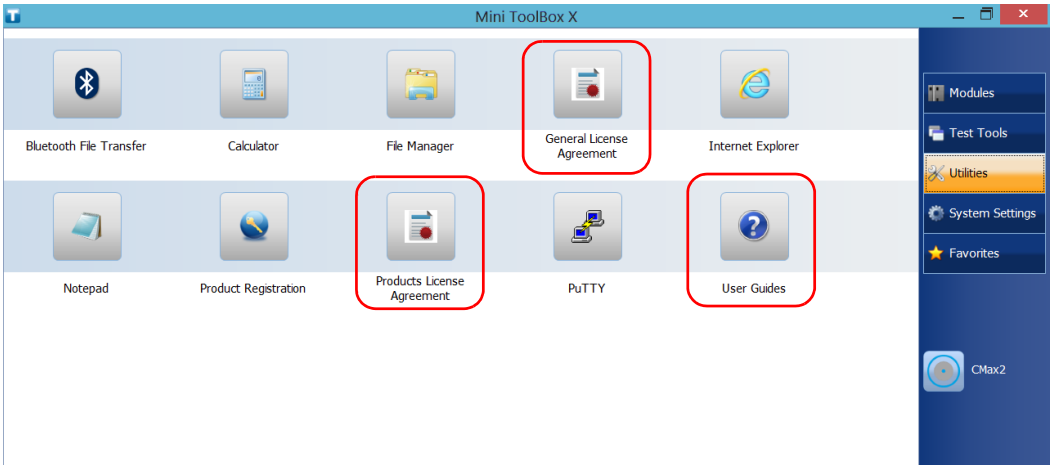
Note: *The user guides of all products are available from the My EXFO section of the EXFO Web site (www.exfo.com) for download in PDF format.*

To view the online help:

From Mini Toolbox X, a module or an instrument application, tap (or the equivalent).

To view the documentation in PDF format:

1. From the main window, tap the **Utilities** button.
2. Tap the icon corresponding to the type of document that you want to view.



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
Quebec (Quebec) G1M 2K2
CANADA

1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

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

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

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

Viewing System Information

You can easily access important information such as the serial number, version numbers for Mini Toolbox X and hardware components, or network interfaces information directly from your unit. You can also find the contact information if you ever need to reach EXFO.

Retrieving the Serial Number of Your Unit

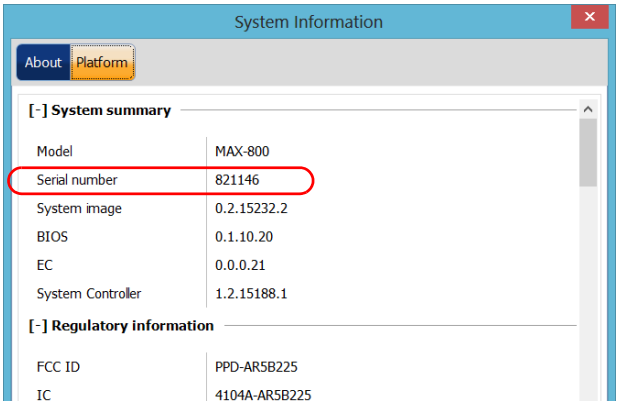
The serial number of your unit is easily accessible from Mini Toolbox X.

Note: *You can also view the serial number on the label affixed to the bottom of your unit.*

To retrieve the serial number of your unit:

1. In the lower right corner of the main window, tap .
2. Tap the **Platform** tab.

   The serial number is displayed.



Note: *The serial numbers of your modules are visible from the **Modules** window.*

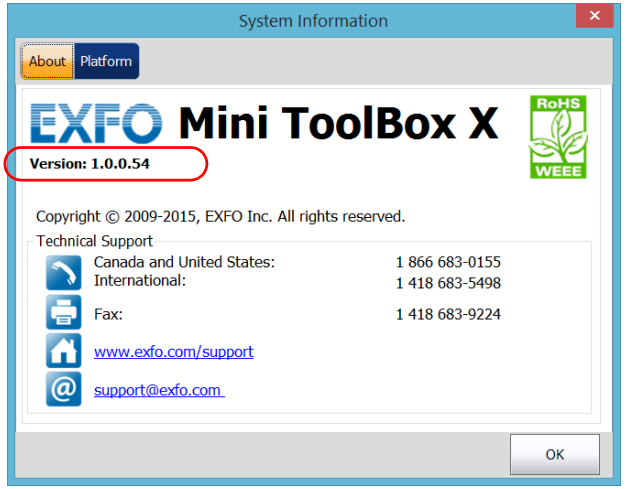
Retrieving the Component Versions

You can view the version of Mini Toolbox X as well as those of the system image and hardware components that are installed on your unit.

To retrieve the Mini Toolbox X version:

1. In the lower right corner of the main window, tap .
2. Tap the **About** tab.

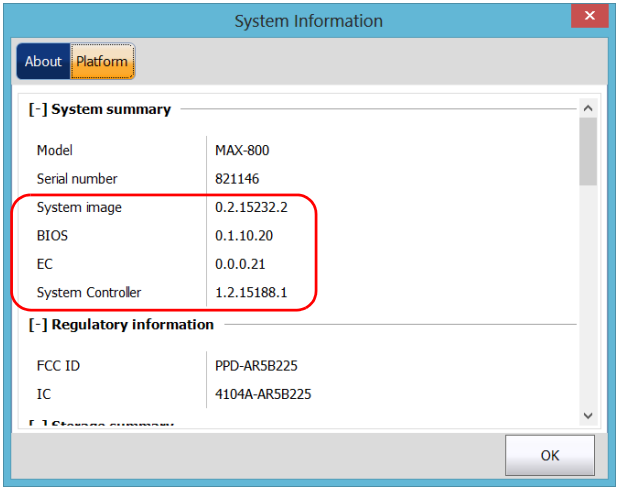
   The version number is displayed.



To retrieve the version numbers of the system image and hardware components:

1. In the lower right corner of the main window, tap .
2. Tap the **Platform** tab.

   The version numbers are displayed.



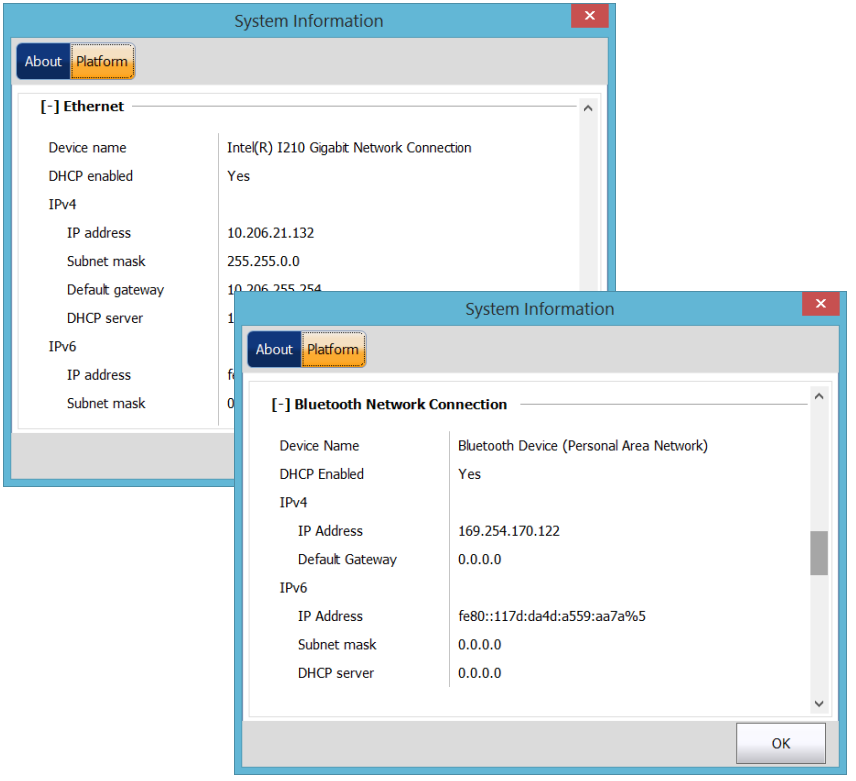
Retrieving Network Interfaces Information

You can view the information related to the network interfaces (adapters) such as the status of the interfaces, the IP address, etc.

To retrieve network interfaces information for Ethernet and Bluetooth:

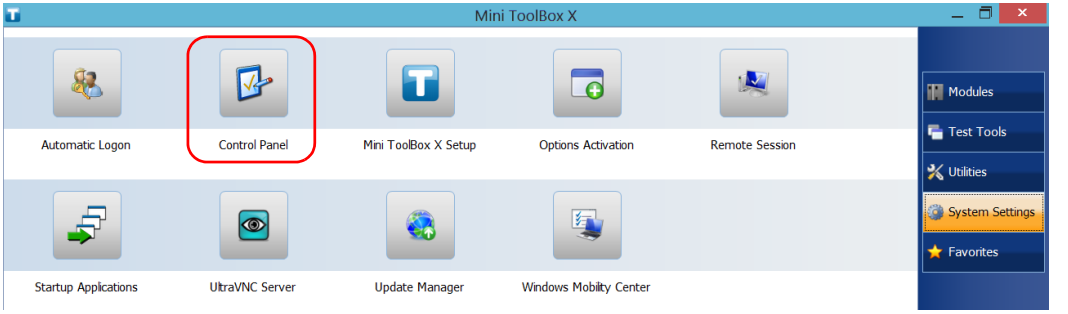
1. In the lower right corner of the main window, tap .
2. Tap the **Platform** tab.

   The information is displayed (one section per network interface).

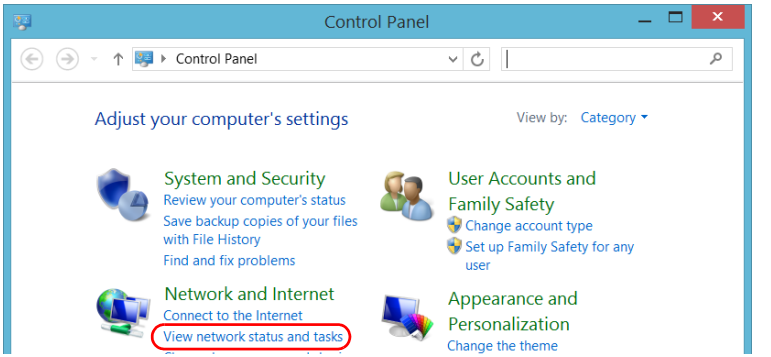


To retrieve network interfaces information for Wi-Fi:

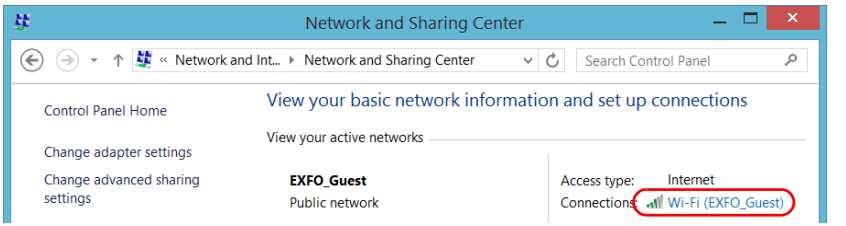
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



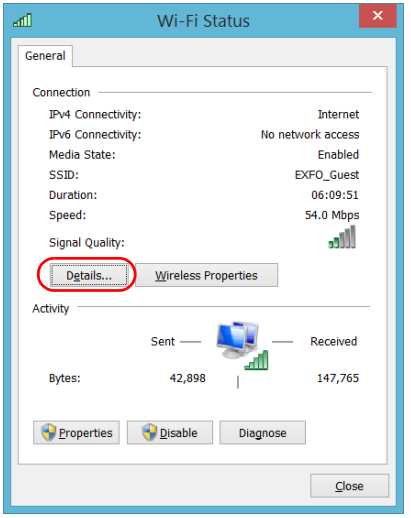
3. Under **Network and Internet**, tap **View network status and tasks**.



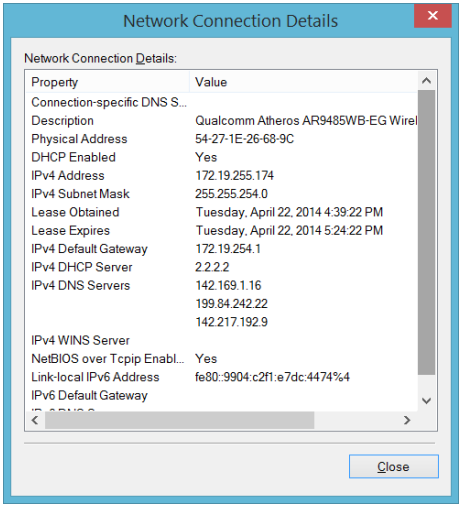
4. Tap the link corresponding to the Wi-Fi network.



5. From the **Wi-Fi Status** window, tap **Details**.



6. When your work is done, close the window.



7. Close all other windows to return to Mini ToolBox X.

Retrieving the Contact Information

All the information necessary to contact EXFO is available from your unit.

To retrieve the contact information:

1. In the lower right corner of the main window, tap .
2. Tap the **About** tab.

   The contact information is displayed.

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.

12 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.

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)(UI) 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.

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 226). 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 226).

EXFO Service Centers Worldwide

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

EXFO Headquarters Service Center
400 Godin Avenue
Quebec (Quebec) G1M 2K2
CANADA

1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

EXFO Europe Service Center
Winchester House, School Lane
Chandlers Ford, Hampshire S053 4DG
ENGLAND

Tel.: +44 2380 246800
Fax: +44 2380 246801
support.europe@exfo.com

EXFO Telecom Equipment (Shenzhen) Ltd.
3rd Floor, Building C,
FuNing Hi-Tech Industrial Park, No. 71-3,
Xintian Avenue,
Fuyong, Bao'An District,
Shenzhen, China, 518103

Tel: +86 (755) 2955 3100
Fax: +86 (755) 2955 3101
support.asia@exfo.com

To view EXFO's network of partner-operated Certified Service Centers nearest you, please consult EXFO's corporate website for the complete list of service partners:
http://www.exfo.com/support/services/instrument-services/exfo-service-centers.

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*.

General Specifications[a]	
Size (H x W x D)	210 mm x 254 mm x 66 mm (8 ¼ in x 10 in x 2 5/8 in)
Weight (with battery)	➤ MAX-860: 2.1 kg (4.6 lb) ➤ MAX-860G/MAX-880: 2.6 kg (5.7 lb)
Temperature ➤ Operation ➤ Storage[b]	 ➤ 0 °C to 50 °C (32 °F to 122 °F) ➤ –40 °C to 70 °C (–40 F to 158 °F)
Relative humidity	0 % to 95 %, non-condensing
Processing	Dual-core processor/4 GB RAM/Windows Embedded 8 Standard
Display	Multitouch, widescreen, color, 1280 x 800 TFT 203 mm (8 in)
Interfaces	➤ RJ-45 LAN 10/100/1000 Mbit/s ➤ Two USB 2.0 ports ➤ One USB 3.0 port ➤ MicroSD card slot ➤ 3.5 mm headset/microphone port
Storage	128 GB internal memory (flash)
Battery	Rechargeable Li-ion smart battery
Power supply	AC/DC adapter, input: ~ 100 - 240 V; 50/60 Hz; 2.5 A max, output: ⎓ 24 V; 3.75 A

a. All specifications valid at 23 °C (73 °F).
b. Battery storage temperatures: –20 °C to 60 °C (–4 °F to 140 °F) for shipping, and –20 °C to 45 °C (–4 °F to 113 °F) for long-term storage.

Index

2.0 USB port 3
3.0 USB port 3
3G USB modem, using 101

A

AC power
  adapter 8
  connector 4
AC requirements 15, 16
accessing
  Internet with a 3G USB modem 101
  Mini ToolBox X 26
  online help 211
activating on-screen keyboard 28
adapter 14
adjusting
  brightness 49
  date, time and time zone 79
  right-click 56
  volume 50
after-sales service 213
amber LED 5
anti-theft mechanism 4, 41
antivirus software 40
appearance, date and time 77
applications
  installing 32
  Mini ToolBox X, starting 112
  module, starting 27
automatic
  fan speed 8
  Windows updates 188

B

backlight, setting 49
battery 8
  error 5
  LED 2
  level 178
  maintenance recommendations 178
  replacing or removing 181
  type allowed 181
black LED 5
blinking LED 5
Bluetooth
  data transfer 117
  devices 48
  frequency band data viii
  limitations 117
  option 9
boot, first 24
brightness, adjusting 49, 94
browsing Web 100
buttons 7

C

capacitors 13
capacity, storage 116
capturing images 2, 99
caution
  of personal hazard 10
  of product hazard 10
certification information vi
changing
  battery 181
  date and time 79
  language 68
charge icon 178
charger 14
Charm bar, display 29

choosing
language ... 68
power management option ... 80
time zone ... 79
cleaning
front panel ... 177
touchscreen ... 178
cleanup disk ... 134
close window ... 29
colors, LEDs ... 5
configuring
power management options ... 80
unit ... 24
connecting
to a VPN ... 141
unit to wireless network ... 126
USB device ... 42
ConnectorMax2 ... 113
consulting PDF files ... 98
conventions, safety ... 10
copying files and folders ... 116
creating PDF files ... 97
current, electrical ... 15
customer service ... 225

D

data transfer ... 117
date and time
adjusting ... 79
formats ... 77
deactivating Wi-Fi ... 138
deleting
files and folders ... 116
unused system files ... 134
description, function buttons ... 7
dirty fibers ... 113
Disk Cleanup ... 134
disk space, free ... 116, 134
display Charm bar ... 29
documentation ... 211
documents, printing ... 97
dongle, 3G USB ... 101
down, swipe ... 29

E

enabling wireless device ... 138
equipment returns ... 225
Ethernet port ... 3
exiting Mini ToolBox X ... 26
Explorer, Internet ... 100
exporting results ... 176
external power supply ... 14

F

fan speed ... 8
fiber probe ... 113
file
format ... 176
name ... 176
size limit, Bluetooth ... 117
files and folders, managing ... 116
first startup ... 24
flashing LED ... 5
free disk space ... 116, 134
frequency, Bluetooth and Wi-Fi ... viii
front panel, cleaning ... 177
function buttons description ... 7

G

gestures, touchscreen ... 29
green LED ... 5

H

hazard, laser radiation 13
headset
  Bluetooth 48
  port 3
  volume 50
help, online 211
hibernation mode 18
host ports, USB 3
hour, setting 79

I

icon, battery 178
identification label 213
identifying defects on fibers 113
indoor use 13
input current 15
inserting battery 181
inspection probe 113
installing
  software 32
  third-party software 40
  VPN clients 141
interface, changing language 68
Internet connection 100, 101

K

Kensington lock 4, 41
keyboard
  button 7
  on-screen 28
  USB 42

L

label, identification 213
language, selecting 68
laser safety information 13
launching probe application 113
LED
  battery 2
  indicators 5
left, swipe 29
level, battery 178
linking units via Bluetooth 48
lock mechanism 41

M

maintenance
  battery 178
  front panel 177
  general information 177
  touchscreen 178
managing files and folders 116
manuals 211
maximum
  distance, Bluetooth 117
  file size 117
  input current 15
microphone
  port 3
  volume 50
Mini ToolBox X
  applications 112
  language 68
  options 90
modifying power plans 80
module
  location 3
  view 27
mouse
  Bluetooth 48
  USB 42
moving files and folders 116

N

navigating the Internet 100

O

off LED 5
on/off button 2
online help 211
on-screen keyboard 2, 28
opening user guides 98
operating system 29
operation language 68
options
  Bluetooth 48, 117
  Mini ToolBox X 90
  software 9, 35
  Wi-Fi 126
orange LED 5

P

parameters
  for ping 171
  for trace route 174
PDF files
  generating 97
  viewing 98
physical keyboard 42
ping, performing a test 171
port
  Ethernet 3
  USB 3
power
  management 80
  selecting and modifying plans 80
  sources 8, 15
  supply 14
press and hold 31
printer, Bluetooth 48
printing documents 97
product
  identification label 213
  specifications 227
profiles, Bluetooth 48
program switcher button 7
purchased options 35

R

radiation hazard, laser 13
reading PDF files 98
real keyboard 42
receiving data via Bluetooth 117
red LED 5
regional and language settings 24
remaining disk space 116
removing battery 181
repairing unit 13
return merchandise authorization (RMA) 225
right, swipe 29
right-clicking with touchscreen 31, 56
RJ-45 port 3

S

safety
  caution 10
  conventions 10
  information 13
  warning 10
saving test results 176
screen captures 2, 7, 99
securing unit 41
selecting
  language 68
  startup applications 64
  time zone 79
sending data via Bluetooth 117
service and repairs 225
service centers 226
setting date and time 77, 79
sharing data 48
shipping to EXFO 225
short and long formats, date 77
show Charm bar 29
shutdown modes 18
sleep mode 18

software
accessing 26
exiting 26
installing 32
options 9, 35
upgrading 32
speaker volume 50, 94
specifications, product 227
speed of right-click 56
stand for unit 17
starting
applications 27, 112
Mini ToolBox X 26
probe application 113
Wi-Fi module 138
startup, selecting applications for 64
stopping Wi-Fi device 138
storage requirements 177
support for unit 17
surfing the Internet 100
swipe 29
symbols, safety 10

T

technical specifications 227
technical support 213
temperature for storage 177
third-party software 40
time zone, selecting 79
touchscreen 2
cleaning 178
gestures 29
right-clicking 31
trace route, performing a test 174
transferring data via Bluetooth 117
transportation requirements 177, 221
turning off
unit 18
Wi-Fi 138

U

unit
back support 17
first configuration 24
repairing 13
updating
applications 32
Windows applications 188
upgrading software 32
USB
device 42
ports 3
user guides 211
using
a 3G USB modem 101
Bluetooth devices 48

V

viewing
current module 27
PDF files 98
virtual private network (VPN) 141

W

warranty
certification 224
exclusions 224
general 223
liability 223
Web browser 100
Wi-Fi
connecting 126
frequency band data viii
option 9
Windows
Embedded 8 Standard 29
update of applications 188
Windows Mobility Center 94
Windows.old folder 134

wireless
connection 101
internal device 138
mouse and keyboard 48
network 126
printer 48
wizard, configuration 24
working with Windows 29

Y

yellow LED 5

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。

P/N: 1068816

www.EXFO.com · info@exfo.com

CORPORATE HEADQUARTERS	400 Godin Avenue	Quebec (Quebec) G1M 2K2 CANADA Tel.: 1 418 683-0211 · Fax: 1 418 683-2170
EXFO AMERICA	3400 Waterview Parkway Suite 100	Richardson, TX 75080 USA Tel.: 1 972-761-9271 · Fax: 1 972-761-9067
EXFO EUROPE	Winchester House, School Lane	Chandlers Ford, Hampshire S053 4DG ENGLAND Tel.: +44 2380 246 800 · Fax: +44 2380 246 801
EXFO ASIA-PACIFIC	62 Ubi Road 1, #09-01/02 Oxley Bizhub 2	SINGAPORE 408734 Tel.: +65 6333 8241 · Fax: +65 6333 8242
EXFO CHINA	Beijing Global Trade Center, Tower C, Room 1207, 36 North Third Ring Road East, Dongcheng District	Beijing 100013 P. R. CHINA Tel.: +86 (10) 5825 7755 · Fax: +86 (10) 5825 7722
EXFO SERVICE ASSURANCE	270 Billerica Road	Chelmsford MA, 01824 USA Tel.: 1 978 367-5600 · Fax: 1 978 367-5700
EXFO FINLAND	Elektroniikkatie 2	FI-90590 Oulu, FINLAND Tel.: +358 (0) 403 010 300 · Fax: +358 (0) 8 564 5203
TOLL-FREE	(USA and Canada)	1 800 663-3936

© 2016 EXFO Inc. All rights reserved.
Printed in Canada (2016-01)

EXPERTISE REACHING OUT