

# MAX-800 Series

## MaxTester Unit



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

### ***Patents***

The exhaustive list of patents is available at [EXFO.com/patent](https://www.exfo.com/patent).

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# Regulatory Information



## CAUTION

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## USA Electromagnetic Interference Regulatory Statement

Electronic test and measurement equipment is exempt from FCC part 15, subpart B compliance in the United States of America. 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 documentation, 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.

### Canada Electromagnetic Interference Regulatory Statement

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference.

Cet équipement génère, utilise et peut émettre de l'énergie radio-fréquence et, s'il n'est pas installé et utilisé conformément à la documentation de l'utilisateur, il peut occasionner une interférence néfaste aux communications radio. L'utilisation de cet équipement dans une zone résidentielle est susceptible d'occasionner une interférence néfaste.

**Caution:** This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

**Attention :** Cet appareil n'est pas destiné à être utilisé dans des environnements résidentiels et peut ne pas assurer la protection adéquate à la réception radioélectrique dans ce type d'environnements.

This is a class A, group 1 product.

Ceci est un produit de classe A, groupe 1.

- Class A equipment: Equipment that is, by virtue of its characteristics, highly unlikely to be used in a residential environment, including a home business shall be classified as class A and shall comply with the class A limits specified in the applicable ICES standard. Characteristics considered in this assessment include price, marketing and advertising methodology, the degree to which the functional design inhibits applications suitable to residential environments, or any combination of features that would effectively preclude the use of such equipment in a residential environment.

Classe A : Matériel qui, en raison de ses caractéristiques, ne sera fort probablement pas utilisé dans un milieu domiciliaire ni par des entreprises établies à domicile. Parmi les caractéristiques considérées dans cette évaluation, il y a le prix, les méthodes de commercialisation et de publicité, la mesure dans laquelle les fonctions de l'appareil font qu'il ne se prête pas à des applications convenant au milieu domiciliaire ou toute combinaison de ces caractéristiques qui aurait pour conséquence d'en prévenir effectivement l'utilisation à domicile. Utilisé également pour indiquer les limites d'émission correspondantes qui s'appliquent à un tel matériel.

- Class B equipment: Equipment that cannot be classified as Class A shall comply with the Class B limits specified in the applicable ICES standard.

Classe B : Matériel qui ne peut pas être inclus dans la classe A. Utilisé également pour indiquer les limites d'émission correspondantes qui s'appliquent à un tel matériel.



- Group 1 equipment: group 1 contains all equipment which is not classified as group 2 equipment, and includes equipment such as laboratory and scientific equipment, industrial process, measurement and control equipment.

Group 2 equipment: group 2 contains all ISM RF equipment in which radio-frequency energy in the frequency range 9 kHz to 400 GHz is intentionally generated and used or only used locally, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material for inspection/analysis purposes, or for transfer of electromagnetic energy.

Appareils du groupe 1 : le groupe 1 réunit tous les appareils compris dans le domaine d'application de la présente Norme, qui ne sont pas classés comme étant des appareils du groupe 2. Le groupe 1 inclut les appareils scientifiques et de laboratoire, les processus industriels, appareils de mesure ou de contrôle.

Appareils du groupe 2 : le groupe 2 réunit tous les appareils ISM à fréquences radioélectriques dans lesquels de l'énergie à fréquences radioélectriques dans la plage de fréquences comprises entre 9 kHz et 400 GHz est produite et utilisée volontairement ou uniquement utilisée localement sous forme de rayonnement électromagnétique, de couplage inductif et/ou capacitif, pour le traitement de la matière, à des fins d'examen ou d'analyse ou pour le transfert d'énergie électromagnétique.

## Supplier's Declaration of Conformity (SDoC)

The SDoC for your product is as follows:

CAN ICES-001 (A) / NMB-001 (A)

### EU and UK Electromagnetic Compatibility Regulatory Statement

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. Your product is suitable for use in industrial electromagnetic environments.

### General Wireless Compliance Related Information

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

Your unit comes with an internal wireless module (adapter) and antenna for which the information hereafter applies:

This product does not contain any wireless user-serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.

**Note:** *The RF software option is required to be able to work with Wi-Fi or Bluetooth on more recent units. See the section about Activating Software Options if you want to validate the activation status of the option on your unit.*

*For any MAX-860, MAX-860G, or MAX-880 units, and for MAX-890 or MAX-890Q units whose hardware version is B or earlier, the presence of the Wi-Fi and Bluetooth options (and related hardware) depends on the model that you purchased.*

*For more information, see the section about Retrieving the Hardware Version of Your Unit in this documentation.*

### Canada and/or USA Wireless Compliance Related Information

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

Your unit comes with an internal wireless module (adapter) and antenna for which the information hereafter applies:

This product does not contain any wireless user-serviceable components. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.

- This device complies with Part 15 of the FCC Rules.
- This device complies with Innovation, Sciences and Economic Development Canada license-exempt RSS standards.
- 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.

#### ***Use in Specific Environments:***

- The use of wireless products in hazardous locations is limited by the constraints posed by the safety directors of such environments.
- The use of wireless products on airplanes is governed by the Federal Aviation Administration (FAA).
- The use of wireless products in hospitals is restricted to the limits set forth by each hospital.
- Do not operate a portable transmitter near unshielded blasting caps or in an explosive environment.
- This wireless product is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz and 5.470 to 5.75 GHz frequency ranges.

## Regulatory Information

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- Innovation, Sciences and Economic Development Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems.
- High-power radars are allocated as the primary users of the 5.25 to 5.35 GHz, and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage to this device.

### ***Radiation Exposure Statement:***

- The product 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.
- Further RF exposure reduction can be achieved if the device can be kept as far as possible from the user's body.

**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**.*

### EU and UK Wireless Compliance Related Information

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

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 typical.
- Wi-Fi: Between the frequencies 5150.0 MHz - 5825.0 MHz.  
The maximum output power is 12.0 dBm.

This is a 2.4 GHz and 5 GHz wideband transmission system (transceiver), intended for use in all EU member states, United Kingdom, 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. In the European Union, the low band 5.15 - 5.35 GHz is for indoor use only.

### **Local Restrictions on 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and 802.11ac Radio Usage**

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

Due to the fact that the frequencies used by 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and 802.11ac wireless LAN devices may not yet be harmonized in all countries, 802.11a, 802.11b, 802.11d, 802.11g, 802.11n, and 802.11ac products are designed for use only in specific countries, and are not allowed to be operated in countries other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country of use.

### **Simplified EU and UK Declaration of Conformity**

Hereby, EXFO declares that the radio equipment type “MAX-800 Series” is in compliance with European Directive 2014/53/EU and the UK legislation S.I. 2017/1206 Radio Equipment Regulations 2017.

The full text of the declaration of conformity is available at the following Internet address: *[www.exfo.com/en/resources/legal-documentation](http://www.exfo.com/en/resources/legal-documentation)*.

### **EU Economic Operator**

**EXFO Solutions SAS**  
2, rue Jacqueline Auriol,  
Saint-Jacques-de-la-Lande,  
35091 Rennes Cedex 9  
FRANCE

### Japan Wireless Compliance Related Information

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

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

- Bluetooth:
  - 2402 - 2480 MHz (79 channels) 0.22 m W/MHz
  - 2402 - 2480 MHz (40 channels) 3.16 mW
- WiFi:
  - 2412 - 2472 MHz (13 channels) 7.13 mW/MHz
  - 2412 - 2472 MHz (13 channels) 7.00 mW/MHz
  - 2412 - 2472 MHz (13 channels) 6.84 mW/MHz
  - 2422 - 2462 MHz (9 channels) 2.95 mW/MHz
  - 5180 - 5320 MHz (8 channels) 3.08 mW/MHz
  - 5180 - 5320 MHz (8 channels) 3.14 mW/MHz
  - 5190 - 5310 MHz (4 channels) 1.56 mW/MHz

### Japanese Technical Conformity Mark for Radio Law

**Note:** *The information hereafter does not apply to MAX-840-NRF units.*

This equipment contains specified radio equipment that has been certified to the Technical Regulation Conformity Certification for Japan, under the Radio Law.



**R**

**201-135229**



# **1** *Introducing the MAX-800 Series MaxTester Unit*

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 10 IoT Enterprise or Windows Embedded 8 Standard, depending on the time of purchase of your unit. Units running Windows Embedded 8 Standard can be upgraded to Windows 10 IoT Enterprise by purchasing a license from EXFO.
- Simplified software updates

## Introducing the MAX-800 Series MaxTester Unit

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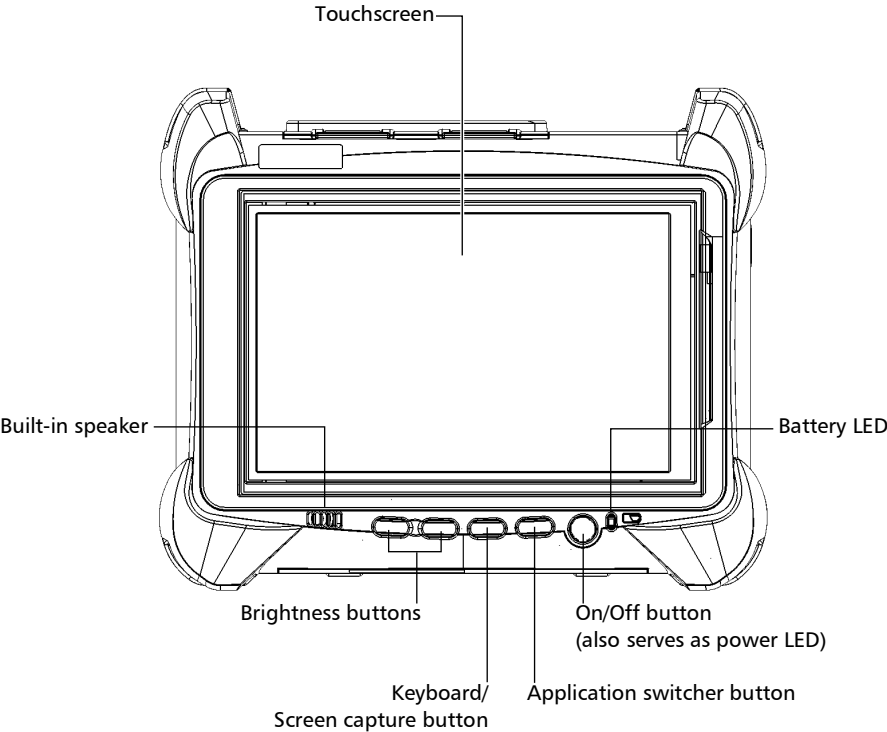
- Multitasking possibilities
- Remote access to your unit (via VNC or Remote Desktop)
- Direct Web access from your unit
- Possibility to take screen captures
- PDF file viewer available from your unit
- Easy transfer of files and folders to an external storage device

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

**Note:** *Depending on the version of operating system that your unit is running, the appearance of the applications may vary slightly from the illustrations presented in this documentation.*

**Note:** *To simplify the text, the word “batteries” is used throughout this documentation. Unless otherwise specified, the information applies to all models, regardless of the number of batteries that power them.*

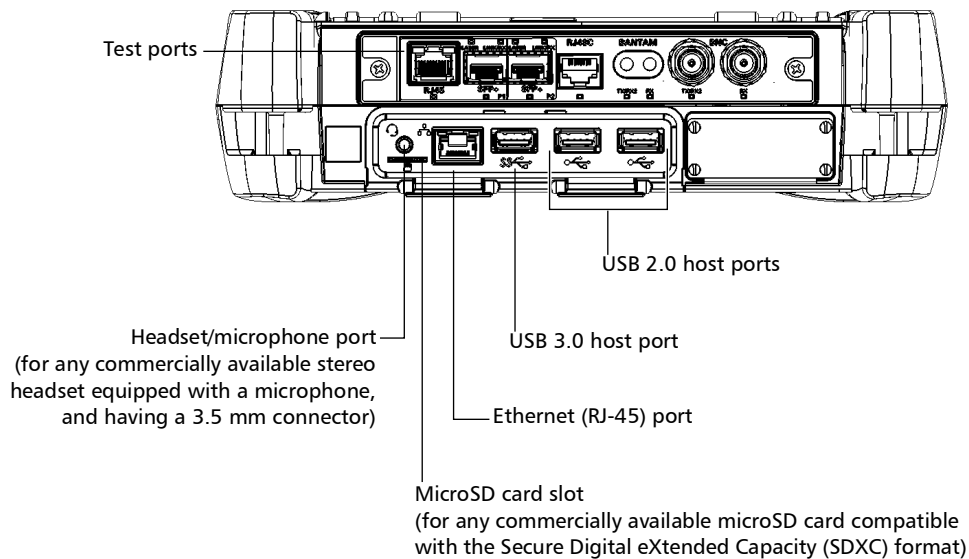
**Front panel**



## Introducing the MAX-800 Series MaxTester Unit

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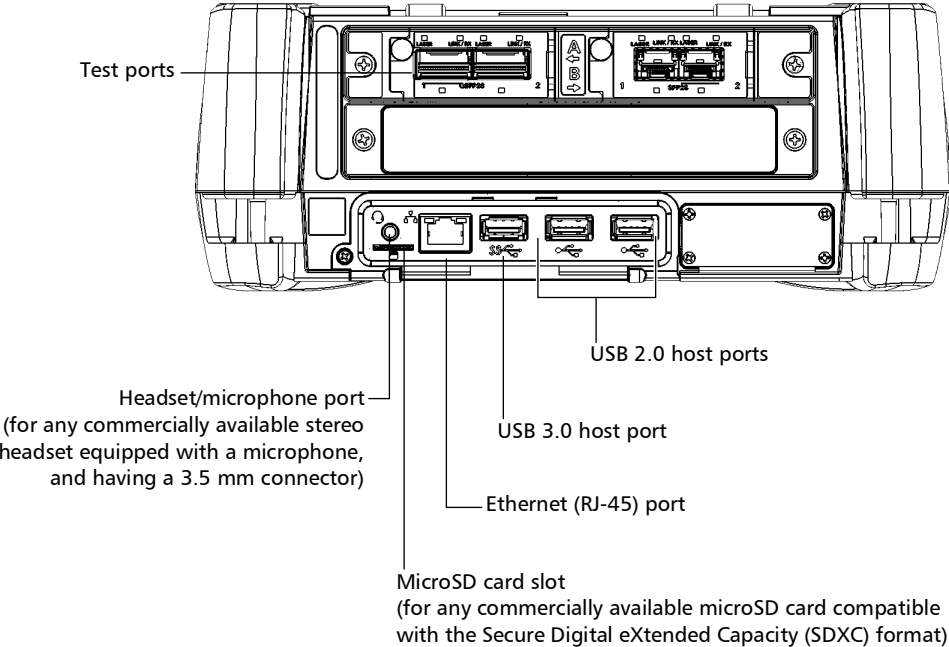
### Top panel – MAX-860, MAX-860G, and MAX-880 (shown)



# Introducing the MAX-800 Series MaxTester Unit

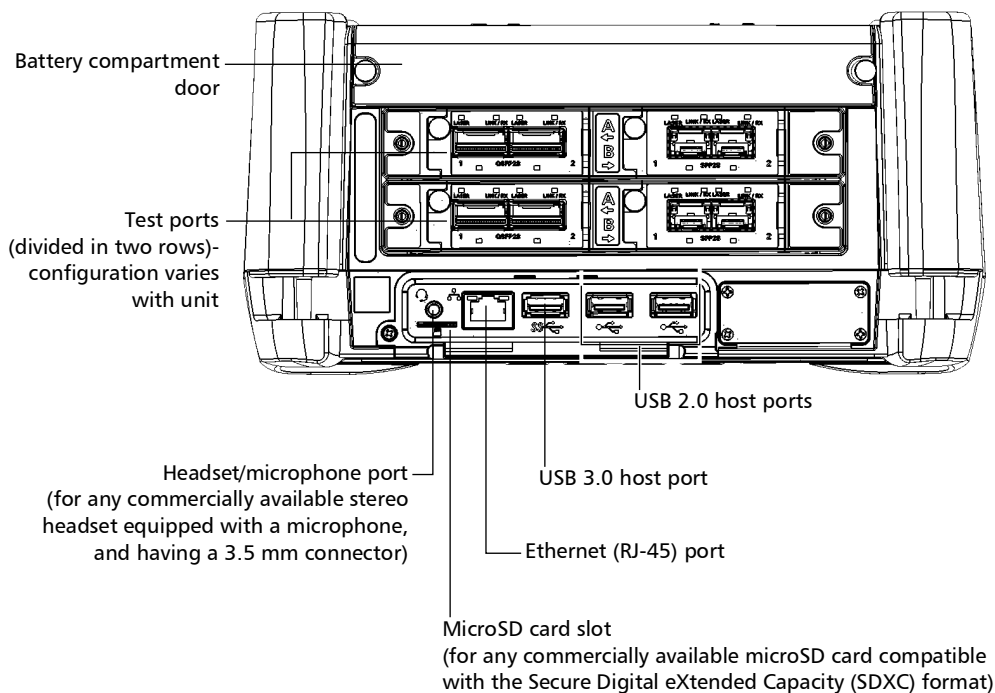
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## Top panel – MAX-890



## Introducing the MAX-800 Series MaxTester Unit

### Top panel – MAX-840 and MAX-890Q (shown)



**Note:** Regardless of the model of unit that you have, for a complete description of the test ports, refer to the documentation of the MaxTester application.

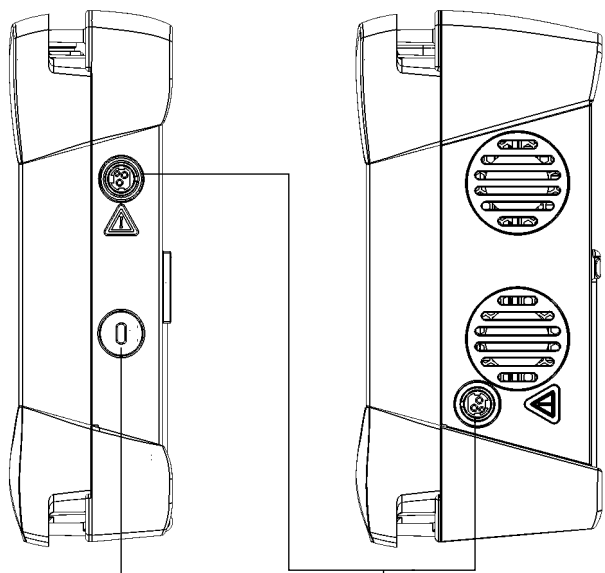
Introducing the MAX-800 Series MaxTester Unit

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Right panel

**MAX-860,  
MAX-860G, and  
MAX-880**

**MAX-890**



AC/DC power adapter connector

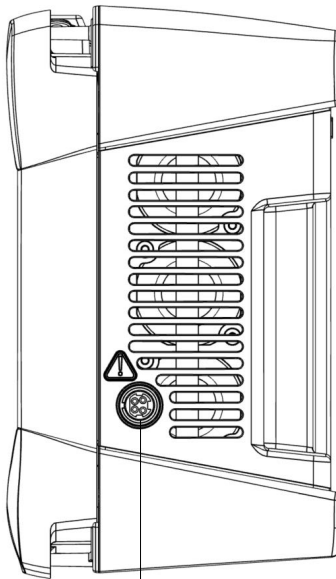
Security slot for Kensington lock

## Introducing the MAX-800 Series MaxTester Unit

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### Right panel

#### MAX-840 and MAX-890Q (HPDCv2)



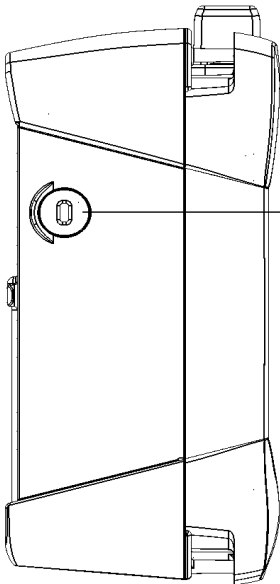
AC/DC power adapter connector  
(a yellow ring is present on the unit as well as  
on the provided AC/DC power adapter)



Introducing the MAX-800 Series MaxTester Unit

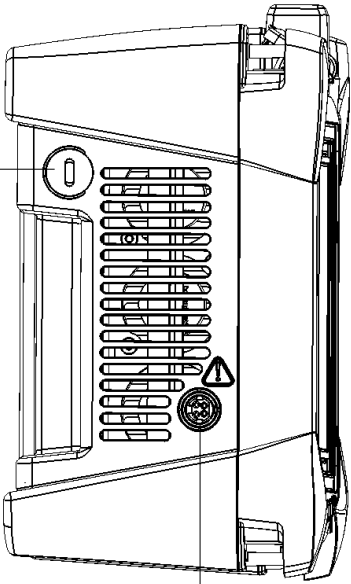
Left panel

MAX-890



MAX-840 and MAX-890Q

Security slot for  
Kensington lock



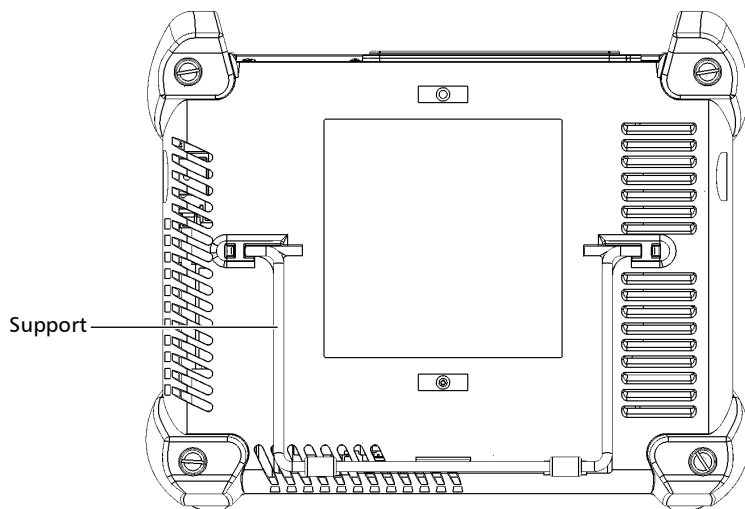
AC/DC power adapter connector  
(present only on MAX-890Q units other than  
HPDCv2)

## Introducing the MAX-800 Series MaxTester Unit

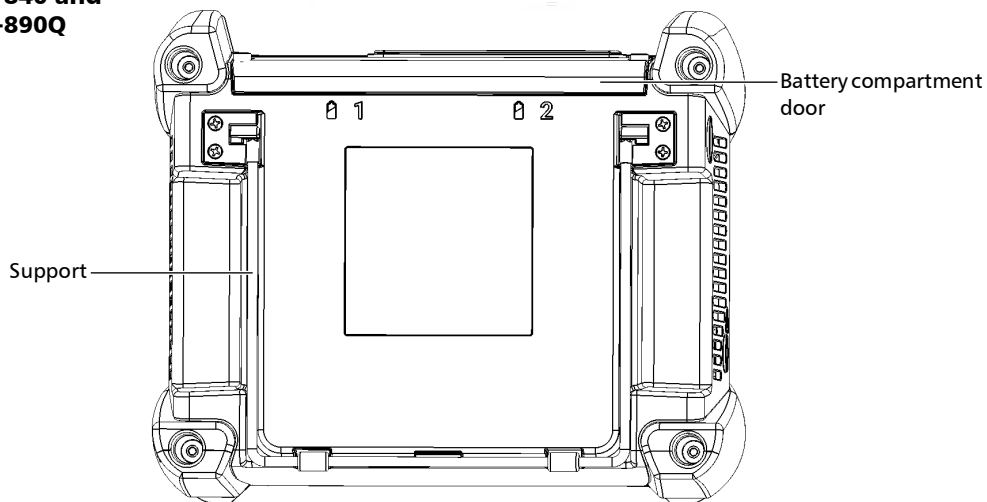
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### Back panel

All models, except MAX-840 and MAX-890Q





**MAX-840 and  
MAX-890Q**



## 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.
 (when unit is connected to an external power source)	Green	The batteries are fully charged.
	Green, blinking	The batteries are charging.
	Yellow, blinking	The unit would be using more power than what is available from the batteries. Do not disconnect AC power while the unit 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 batteries are probably charging (depending on conditions).
	Red	Battery error. For more information, see <i>Solving Common Problems</i> on page 219.
	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.

# Introducing the MAX-800 Series MaxTester Unit

## LED Indicators Description







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LED	Status	Meaning
 (when unit is not connected to an external power source)	Off	The battery level is above the “low-battery threshold”.
	Yellow	The battery level is low.
	Yellow, blinking	The unit would be using more power than what is available from the batteries. Connect the unit to 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 <i>Adjusting Brightness</i> on page 57.
	<ul style="list-style-type: none"><li>➤ Displays the on-screen keyboard. Press once to show the keyboard. Press once again to hide it.</li><li>➤ Takes a screen capture. Hold down for a few seconds. For more information, see <i>Taking Screen Captures</i> on page 111.</li></ul>
	Enables you to switch from one task to another. It is the equivalent of pressing the ALT + TAB key combination on a hardware keyboard, or tapping  from the taskbar in Windows 10. <ul style="list-style-type: none"><li>➤ Press once to view the list of running applications.</li><li>➤ Press as many times as needed to select the desired application.</li></ul>
	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 <i>Turning off Your Unit</i> on page 29.

## Power Sources

Your unit operates with the following power sources:

- AC/DC power adapter (connected to standard power outlet—indoor use only). Compatible car outlet adapter available upon request for all models, except the MAX-840 and MAX-890Q.

When it is connected to an external power source with the AC/DC power adapter, the unit will function even if no battery is present.

**Note:** *If you are working with a MAX-840 or a MAX-890Q HPDCv2, ensure that you use the provided AC/DC power adapter with the matching yellow ring.*

- Lithium-ion rechargeable batteries (automatically take over if you disconnect the unit from its external power source). All models, except the MAX-840 and MAX-890Q, have one battery. The MAX-840 and MAX-890Q have two batteries.
  - Possible to switch from an external power source to battery power or vice versa without affecting operation.
  - The batteries recharge automatically when the unit is connected to an external power source (with the AC/DC power adapter or car outlet adapter, when applicable).

**Note:** *When the ambient temperature is below 10 °C (50 °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 22.

### Software Options for Your Unit

The following software options are offered for your unit.

Name of the Option	Description
IPT	Enables you to perform <i>ping</i> and <i>trace route</i> tests.
RF <sup>a, b</sup>	Enables you to work with Wi-Fi and Bluetooth technology.

- a. Offered for MAX-840 units, but not for MAX-840-NRF units.
- b. Offered for MAX-890 or MAX-890Q units whose hardware version is C or later (including double-letter version). For more information, see *Retrieving the Hardware Version of Your Unit* on page 258.

For more information on how to activate software options for your unit, see *Activating Software Options* on page 46.

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

## 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.

## Product Registration

You can now register your new EXFO products online 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 online:***

- 1.** Open a Web browser and go to [www.exfo.com](http://www.exfo.com).
- 2.** Log in to your EXFO account.
- 3.** Click **Support > Product registration**.
- 4.** Under **My Products**, click **Register**.
- 5.** Follow the on-screen instructions.

## Technical Specifications

To obtain this product's technical specifications, visit the EXFO website at [www.exfo.com](http://www.exfo.com).



### Conventions

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



#### **WARNING**

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



#### **CAUTION**

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



#### **CAUTION**

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



#### **IMPORTANT**

Refers to information about this product you should not overlook.



## 2 ***Safety Information***

### **General 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.



#### **WARNING**

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



#### **WARNING**

Use only accessories designed for your unit and approved by EXFO. For a complete list of accessories available for your unit, refer to its technical specifications or contact EXFO.



#### **CAUTION**

This product does not contain any user-serviceable components, except if indicated otherwise in this document. Any unauthorized product changes or modifications will invalidate warranty and all applicable regulatory certifications and approvals.

## Safety Information

### General Safety Information

---




### IMPORTANT

Refer to the documentation provided by the manufacturers of any accessories used with your EXFO product. It may contain environmental and/or operating conditions limiting their use.




### 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

When you see the following symbol on your unit , it indicates that the unit is equipped with a laser source, or that it can be used with instruments equipped with a laser source. These instruments include, but are not limited to, modules and external optical units.













### 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

## Safety Information

### *Laser Safety Information*

---

## 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 that you use. Refer to the user guide or the online help of the MaxTester application for the exact information.

## Electrical Safety Information



### **WARNING**

If you need to ensure that the unit is completely turned off, disconnect the power cable and remove the batteries. For more information on how to remove the batteries, see the section about replacing the batteries in this user documentation.



### **WARNING**

- Use the external power supply (AC/DC power adapter) indoors only.
- 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 ES1 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/DC power adapter 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.
- All models except the MAX-840 and MAX-890Q: Use only the car outlet adapter 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  $A^2sec$ .



### CAUTION

- Position the unit so that the air can circulate freely around it.
- When you use the unit outdoors, ensure that it is protected from liquids, dust, direct sunlight, precipitation, and full wind pressure.

## Safety Information

### Electrical Safety Information

---

Equipment Ratings	
Temperature	
➤ Operation	➤ unit powered by batteries: 0 °C to 50 °C (32 °F to 122 °F) <sup>a,b</sup>
	➤ unit connected to AC power (with AC/DC power adapter): 0 °C to 40 °C (32 °F to 104 °F) <sup>c</sup>
➤ 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 <sup>d</sup>	➤ unit: ≤ 95 % non-condensing
	➤ AC/DC power adapter: 10 % to 80 % non-condensing
Maximum operation altitude	5000 m (16405 ft) (unit connected to external power source or operated from batteries)
Pollution degree	➤ 2 (unit connected to external power source)
	➤ 3 (unit operated from batteries) <sup>e</sup>
Overvoltage category	➤ unit: I
	➤ AC/DC power adapter: II



Equipment Ratings	
Measurement category	Not rated for measurement categories II, III, or IV
Input power <sup>f</sup>	<ul style="list-style-type: none"> <li>➤ all models, except MAX-840 and MAX-890Q: <ul style="list-style-type: none"> <li>➤ unit: 24 V <math>\overline{\text{---}}</math>; 3.75 A</li> <li>➤ AC/DC power adapter: 100 - 240 V <math>\sim</math>; 50/60 Hz; 2.5 A</li> </ul> </li> <li>➤ MAX-840 and MAX-890Q (HPDCv2): <ul style="list-style-type: none"> <li>➤ unit: 24 V <math>\overline{\text{---}}</math>; 13.75 A</li> <li>➤ AC/DC power adapter: 100 - 240 V <math>\sim</math>; 50/60 Hz; 5.0 - 2.5 A</li> </ul> </li> <li>➤ MAX-890Q (other than HPDCv2): <ul style="list-style-type: none"> <li>➤ unit: 24 V <math>\overline{\text{---}}</math>; 8.33 A</li> <li>➤ AC/DC power adapter: 100 - 240 V <math>\sim</math>; 50/60 Hz; 3.5 - 2.5 A</li> </ul> </li> </ul>

- 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. If the unit is used with high power consuming modules, it will power off immediately.
- c. When the ambient temperature is below 10 °C (50 °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.
- d. Measured in 0 °C to 31 °C (32 °F to 87.8 °F) range, decreasing linearly to 50 % at 40 °C (104 °F).
- e. Equipment must be normally protected against exposure to direct sunlight, precipitation and full wind pressure.
- f. Not exceeding  $\pm 10$  % of the nominal voltage.

## Safety Information

### *Electrical Safety Information*

---



### **CAUTION**

- The use of voltages higher than those indicated on the label affixed to your unit may damage the unit.
- The operation and storage temperatures, as well as the altitude and relative humidity values of some models, may differ from those specified in this documentation. Always ensure that you comply with the most restrictive conditions (either those specified in this documentation or in the MaxTester application user documentation).

## 3 **Getting Started with Your Unit**

### **Positioning Your Unit**

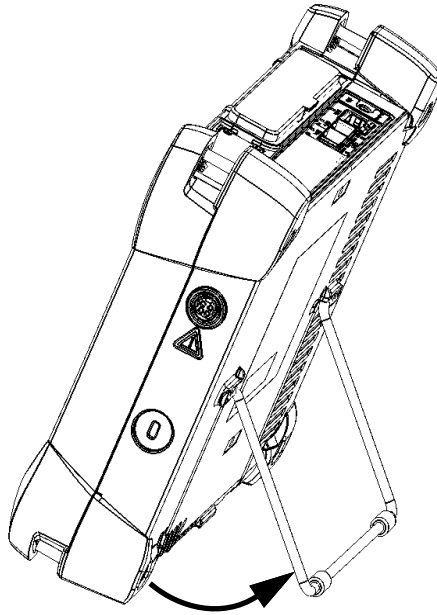
You can position your unit either vertically (with the screen facing you), or at an angle, using the support on the back panel.

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.



## Getting Started with Your Unit

### *Turning on Your Unit*

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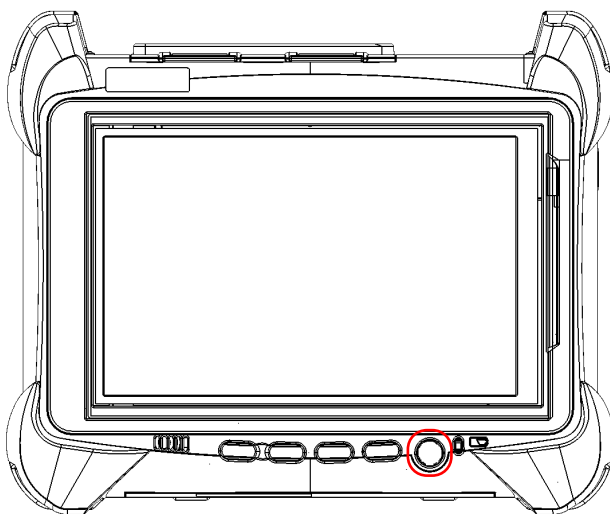
## Turning on Your Unit

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 on/off 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.

## Getting Started with Your Unit

### *Turning off Your Unit*

---

#### ***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 10:***

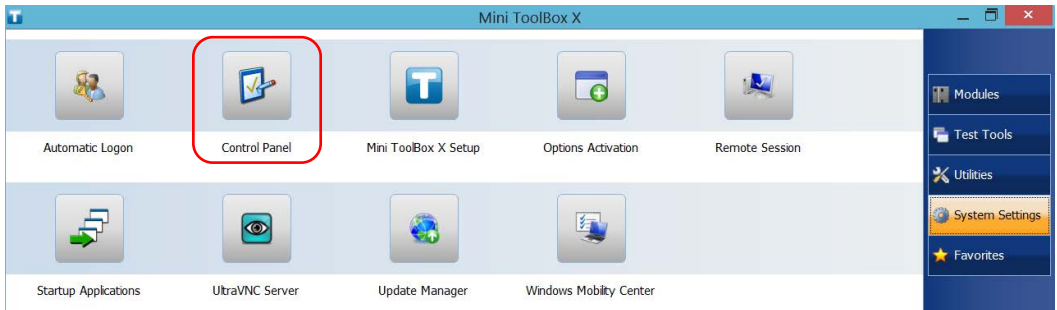
1. From the lower left corner of the screen, tap the **Start** button ()
2. From the **Start** menu, tap .
3. Tap **Shut down**.

#### ***To turn off the unit completely from Windows Embedded 8 Standard:***

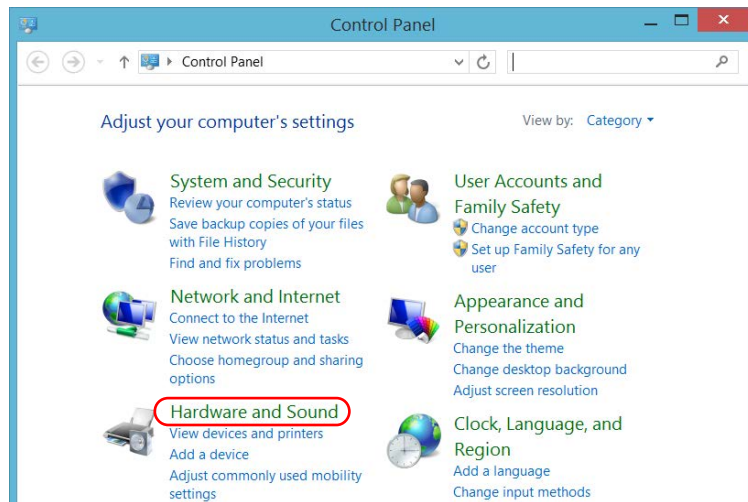
1. From the right side of the screen, swipe left to display the Charm bar.  
For more information, see the section about working with Windows Embedded 8 Standard.
2. Tap **Settings > Power > Shut down**.

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

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



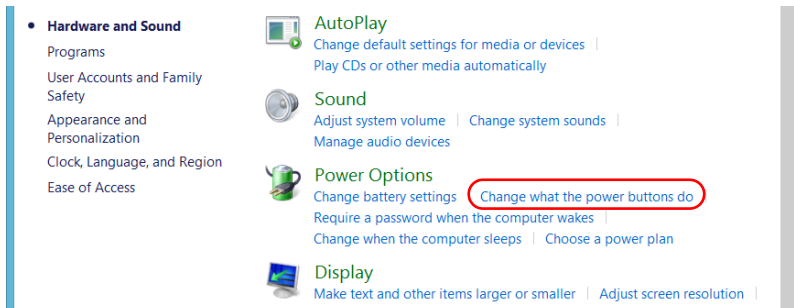
3. Tap **Hardware and Sound**.



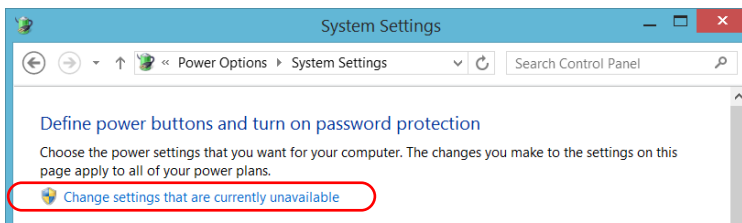
## Getting Started with Your Unit

### Turning off Your Unit

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

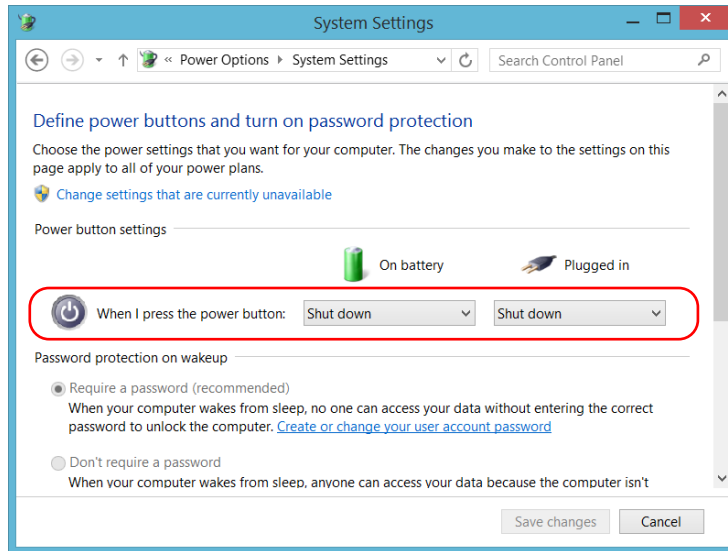


5. Tap **Changes settings that are currently unavailable**.





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



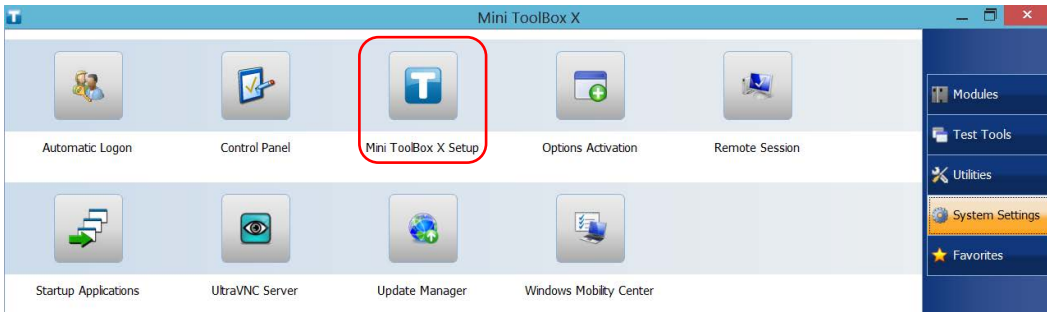
7. Tap **Save changes** to confirm the changes and return to the **Power Options** window.

## Getting Started with Your Unit

### Turning off Your Unit

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

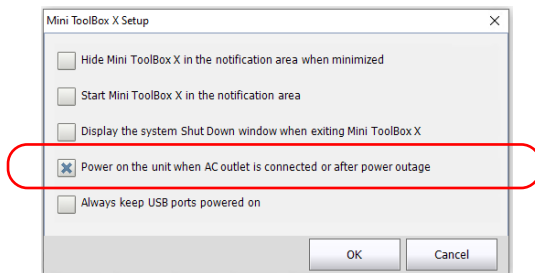
1. From the main window, tap the **System Settings** button.
2. Tap **Mini ToolBox X Setup**.



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

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



### IMPORTANT

If you have a language choice at the first startup, the operation language that you select at that time (labelled “App language”) becomes the default system language, that is the language that will be available at logon.

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

**Note:** *If no Windows configuration wizard is displayed, it means that the settings have been pre-configured before the shipment of your unit. In this case, you can always modify the various settings later to better suit your needs, if necessary (see Selecting the Language of Operation on page 76 and Adjusting the Date, Time and Time Zone on page 87).*

In all cases, 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 and instruments.

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

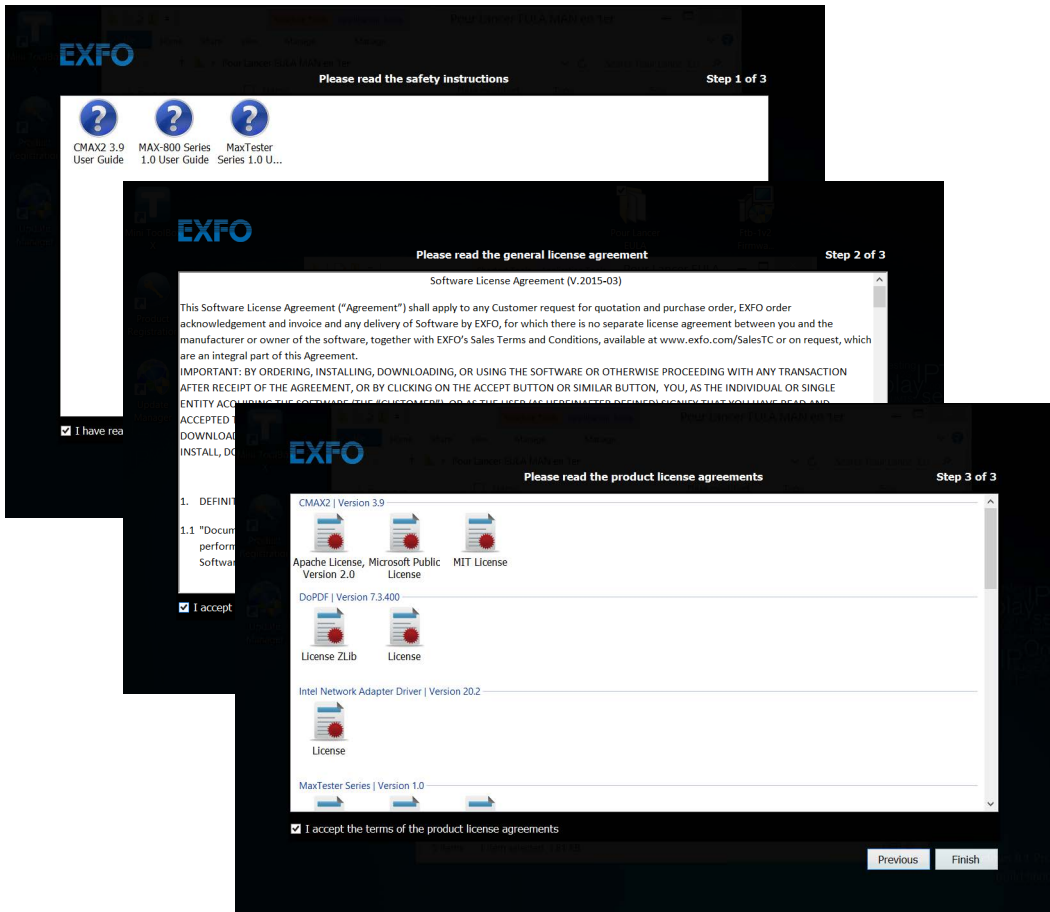
### **To configure your unit at first startup:**

1. If it is not already done, turn on the unit (see *Turning on Your Unit* on page 28).
2. If the Windows wizard is displayed, set the parameters according to your needs.

## Getting Started with Your Unit

### Configuring Your Unit At First Startup

3. If the Microsoft EULA is displayed, read and accept it.  
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 102). 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 72).

### ***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 .

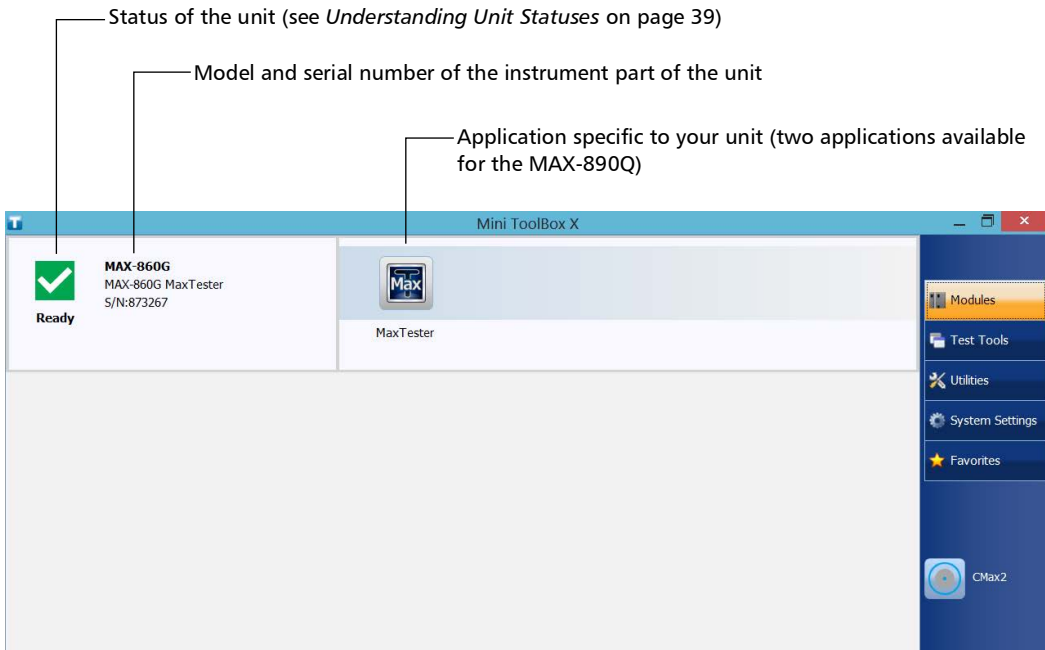
## Getting Started with Your Unit

### Starting Dedicated Applications

Your unit can also be configured and controlled from the dedicated MaxTester application in Mini Toolbox X.

#### **To start the MaxTester application:**

1. If necessary, tap the **Modules** button to display the window presenting the dedicated application.






2. Tap the **MaxTester** icon.

**Note:** If you are working with a MAX-890Q, two applications are available (MaxTester-A and MaxTester-B). Depending on your testing needs, you can run only one of the applications or both of them simultaneously.

## Understanding Unit Statuses

The different statuses of the unit are visible from Mini Toolbox X.

The table below lists the possible statuses.

Status	Meaning
 Ready	The unit is available for tests.
 In use	The unit is currently in use. This status is visible in the following cases: <ul style="list-style-type: none"><li>➤ At startup of the dedicated application.</li><li>➤ When the unit is controlled from external applications such as EXFO Remote ToolBox.</li></ul>
 Error	The unit cannot be used at this time because it had to protect itself from a critical problem. Restart your unit.

## Getting Started with Your Unit


### *Using the On-Screen (Virtual) Keyboard*

---

## 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.



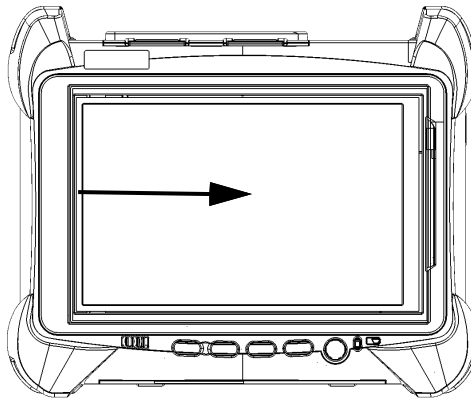
## **Working with Windows Embedded 8 Standard**

If you are not familiar with Windows Embedded 8 Standard, you may want to visit the Microsoft website 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.

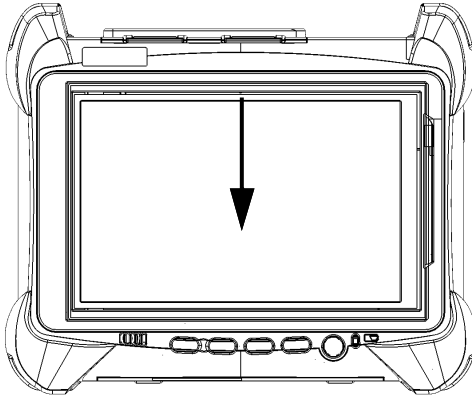


## Getting Started with Your Unit

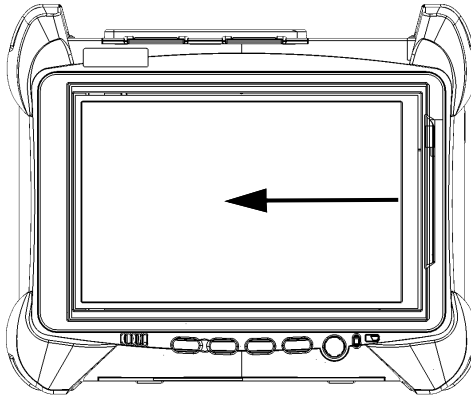
### *Working with Windows Embedded 8 Standard*

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- **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 64.

### ***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 EXFO 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.

EXFO Software Update allows you to check for updates, download these updates and install them on your unit. It replaces the former Update Manager application. If EXFO Software Update is not already available on your unit (shortcut not present on the Windows desktop), you can download it from the EXFO Web site and install it on your unit.

In addition to managing the updates of the dedicated and instrument applications, EXFO Software Update also manages its own updates when new versions become available (no need to download subsequent versions of this application yourself from EXFO Apps).

**Note:** *Your unit must have access to an Internet connection to be able to use EXFO Software Update.*

**Note:** *If you want to update Microsoft applications or Windows features, see the section about Managing Windows Updates in this user documentation.*

#### **To install EXFO Software Update:**

1. If it is not already done, turn on your unit.
2. Retrieve the EXFO Software Update installation file from EXFO Apps at <http://www.exfo.com/software/exfo-apps> (in the page corresponding to your unit).

**Note:** *If you do not intend to download the installation file directly to your unit, you can download it to your computer, and then transfer it to your unit using a USB memory key.*

3. Double-tap the file you have just downloaded to start the installation.
4. Follow the on-screen instructions.

#### **To install or upgrade applications:**

1. Ensure that your unit has access to the Internet.
2. If it is not already done, turn on your unit.
3. Exit Mini Toolbox X, the dedicated application, and any instrument applications.
4. On your unit, from Windows desktop, double-tap the **EXFO Software Update** icon to start the corresponding application.
5. From the EXFO Software Update tool, tap the button to start the process.
6. Follow the on-screen instructions.

## 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.

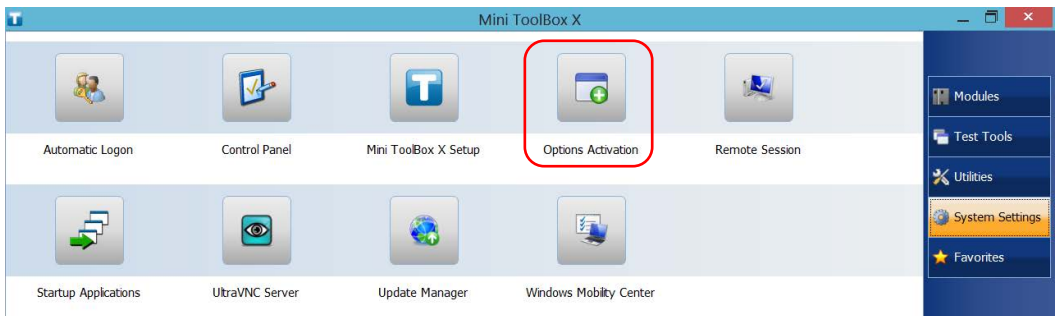
Before being able to activate options, you need to contact EXFO with the following information:

- Purchase order number of the newly purchased options
- Serial number of the unit (platform) or of its instrument part (depending on whether the software options were purchased for the unit itself or its instrument part)
- Customer's name
- Customer's company name
- Customer's phone number
- Customer's e-mail address
- Unit on which the options 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 software options:***

- 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**.

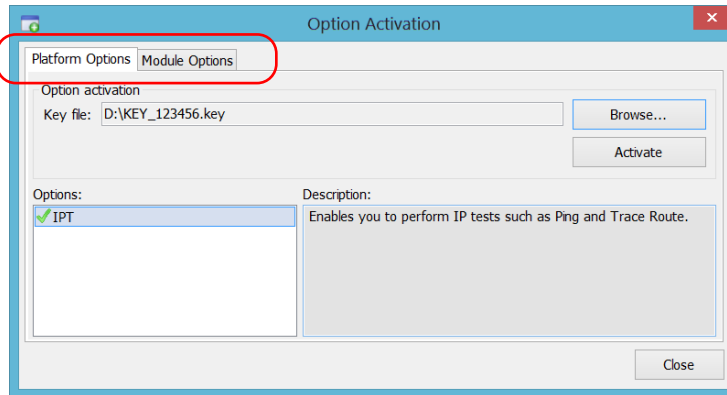


## Getting Started with Your Unit

### Activating Software Options

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5. Tap the **Platform Options** tab (unit) or the **Module Options** tab (instrument part), depending on the type of options that you want to activate.



6. 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 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**

The applications that can be installed on your unit depend on the operating system that it runs. The type of license differs from one operating to the other.



### **IMPORTANT**

- If your unit runs Microsoft Windows 10 IoT Enterprise: You can install any third-party software, as long as it is used as a complementary tool to help you perform tests and measurements with your unit, or provides system utilities, resource management, or anti-virus or similar protection.
- If your unit runs Windows Embedded 8 Standard: To comply with the terms of the Microsoft license, you should only install antivirus software and the applications provided by EXFO.

In all cases, 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.

## Getting Started with Your Unit

### *Securing your Unit Using the Kensington Lock*

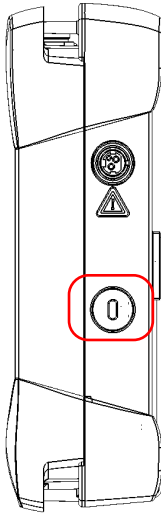
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## Securing your Unit Using the Kensington Lock

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

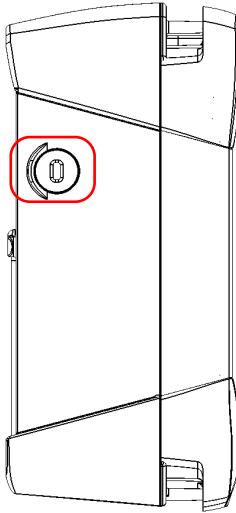
### **To secure your unit:**

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



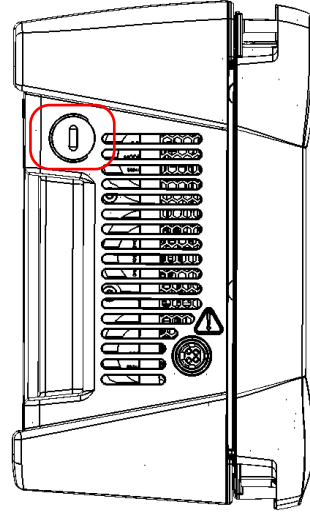
**Right panel**

**MAX-860, MAX-860G,  
and MAX-880**



**Left panel**

**MAX-890**



**Left panel**

**MAX-840 and  
MAX-890Q**

## 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 <i>Managing Data</i> on page 127.
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.  <b>Note:</b> <i>Even if a keyboard is connected, the on-screen keyboard will still be displayed when you work in Mini Toolbox X.</i>
Mouse	If you 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 your unit. If you prefer to use a network printer, you can also configure one. For more information, see <i>Configuring Network Printers</i> on page 74.

## Getting Started with Your Unit

### *Using a Keyboard, Mouse or Other USB Devices*

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Device	Details
Mobile broadband USB modem key	To access the Internet without having to connect to a Wi-Fi or an Ethernet network. For more information, see <i>Accessing the Internet with a Mobile Broadband USB Modem Key</i> on page 113.
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 <i>Using the USB to RS-232 Adapter</i> on page 139.

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.

**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.



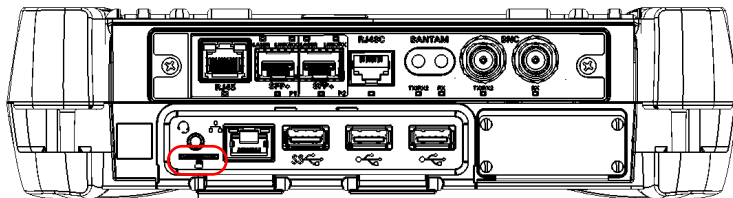
### IMPORTANT

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.



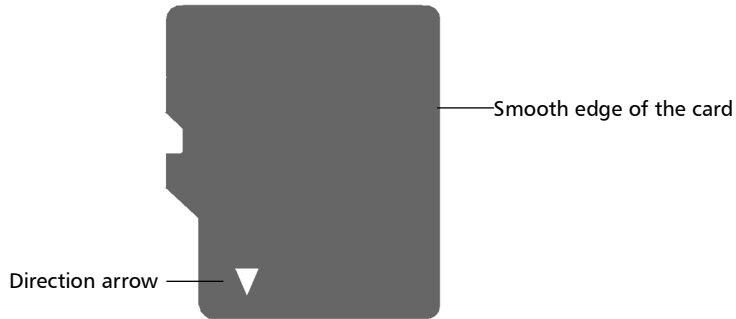
MicroSD card slot

## Getting Started with Your Unit

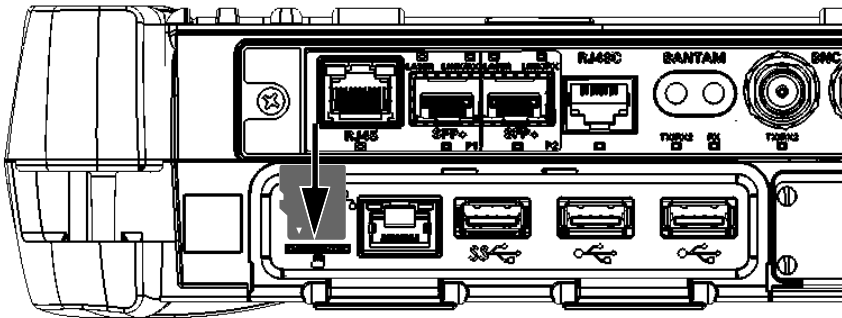
### *Inserting and Removing microSD Cards*

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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.



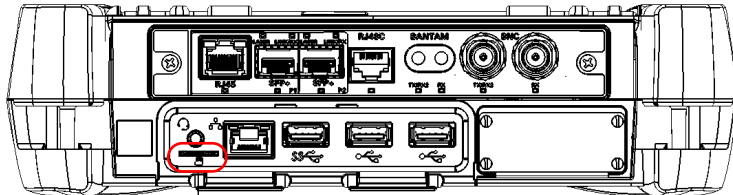
3. Slide the card into the unit's microSD card slot, and push it all the way to the bottom of the card slot.



The microSD card is now ready to be used.

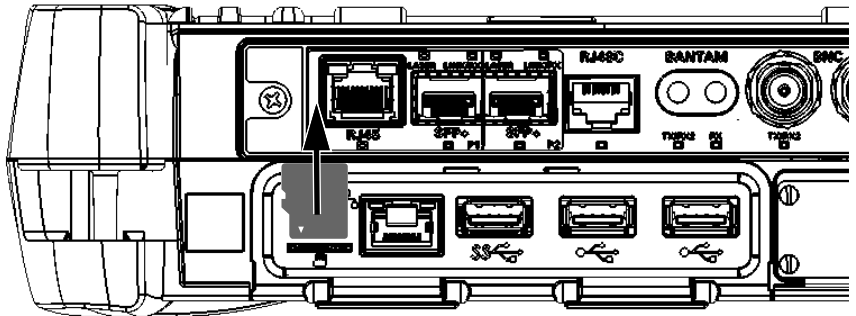
#### ***To remove a microSD card from your unit:***

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



MicroSD card slot

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



## Working with Bluetooth Devices

If you have purchased the Wi-Fi and 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 printer compatible with the Bluetooth technology.
- Transfer files between your unit and a cell phone (see *Transferring Data via the Bluetooth Technology* on page 129).
- Share files between your unit and computers compatible with the Bluetooth technology (see *Transferring Data via the Bluetooth Technology* on page 129).



## 4

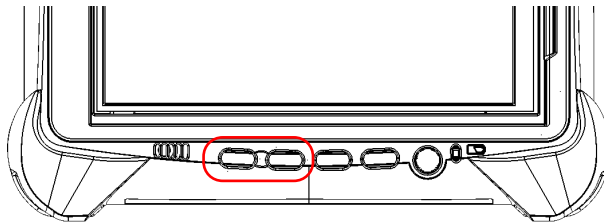
# Setting Up Your MAX-800 Series MaxTester Unit

## 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.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting Speaker and Microphone Volume*

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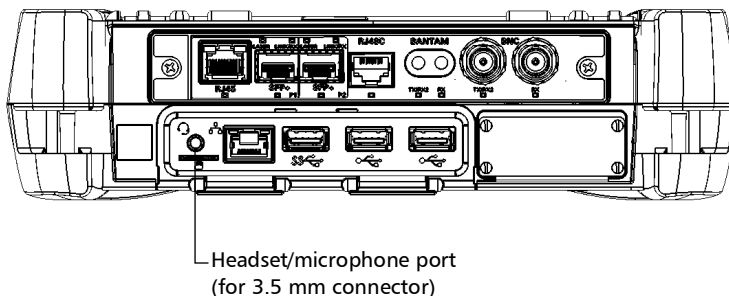
## Adjusting Speaker and Microphone Volume

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.

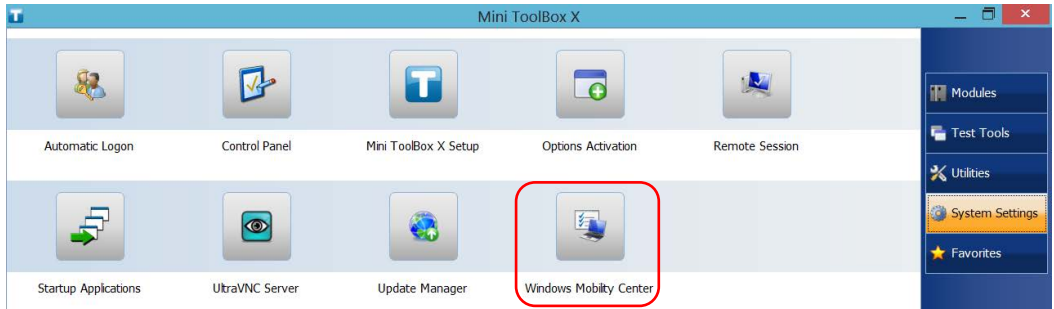


2. From the main window, tap the **System Settings** button.

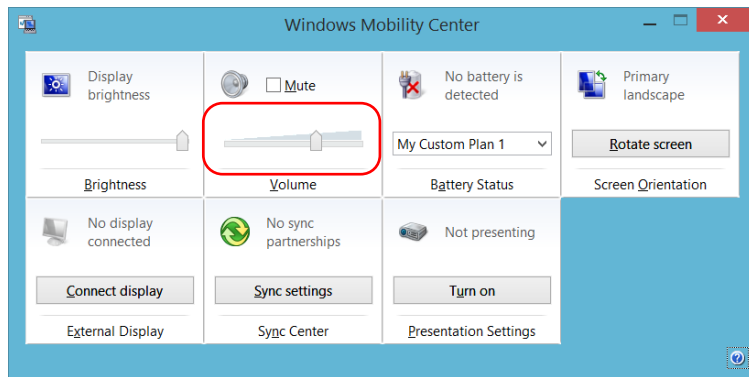
## Setting Up Your MAX-800 Series MaxTester Unit


### *Adjusting Speaker and Microphone Volume*

#### 3. Tap Windows Mobility Center.



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

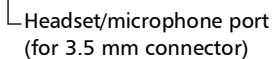


**Note:** You can also access the sound level slider by tapping the  icon from the taskbar.

The new value is taken into account immediately.

## Adjusting Speaker and Microphone Volume

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



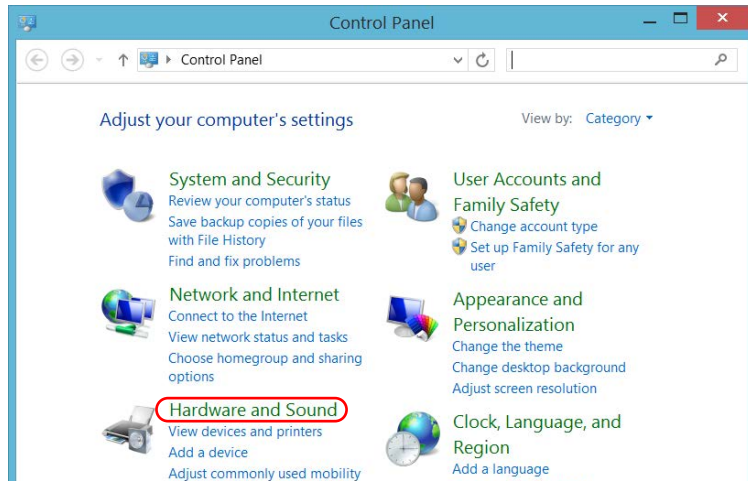
2. From the main window, tap the **System Settings** button.
3. Tap **Control Panel**.



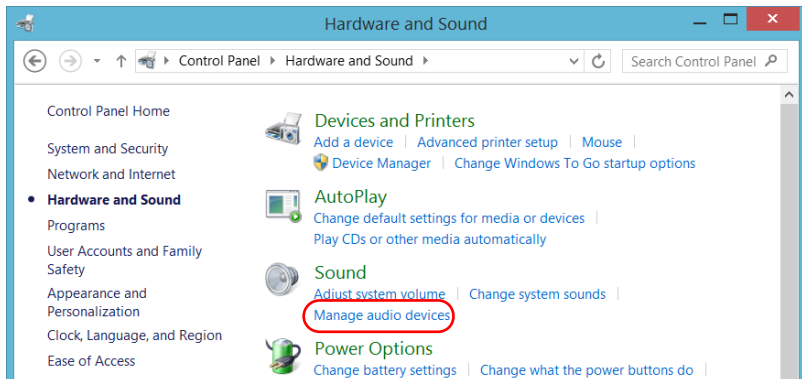
## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting Speaker and Microphone Volume*

#### 4. Tap **Hardware and Sound**.



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

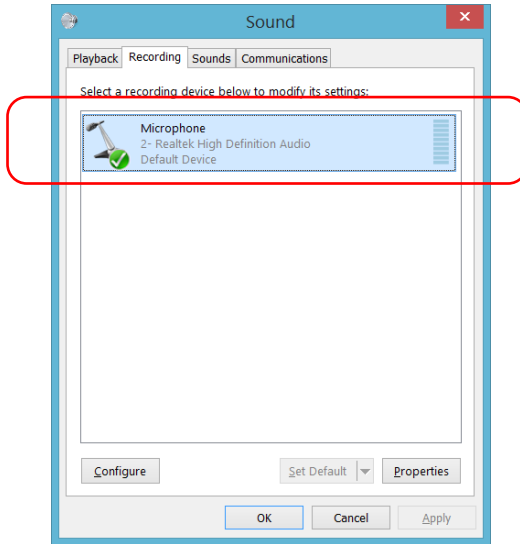


## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting Speaker and Microphone Volume*

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

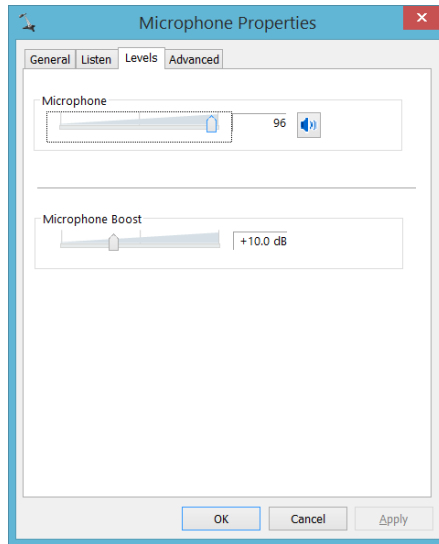


## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting Speaker and Microphone Volume*

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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.

## Setting Up Your MAX-800 Series MaxTester Unit

### Customizing the Right-Click Feature

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## 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 43). 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**.

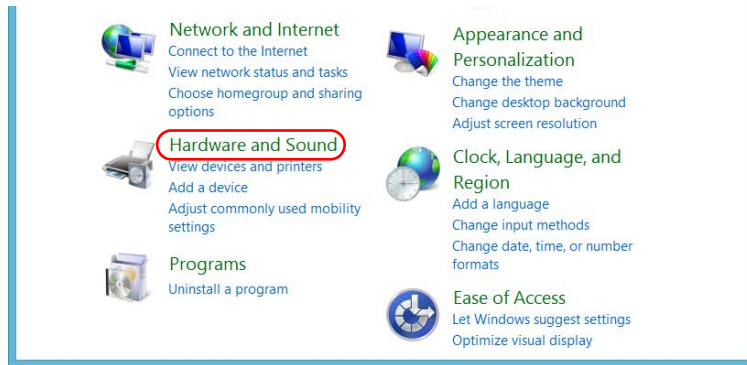




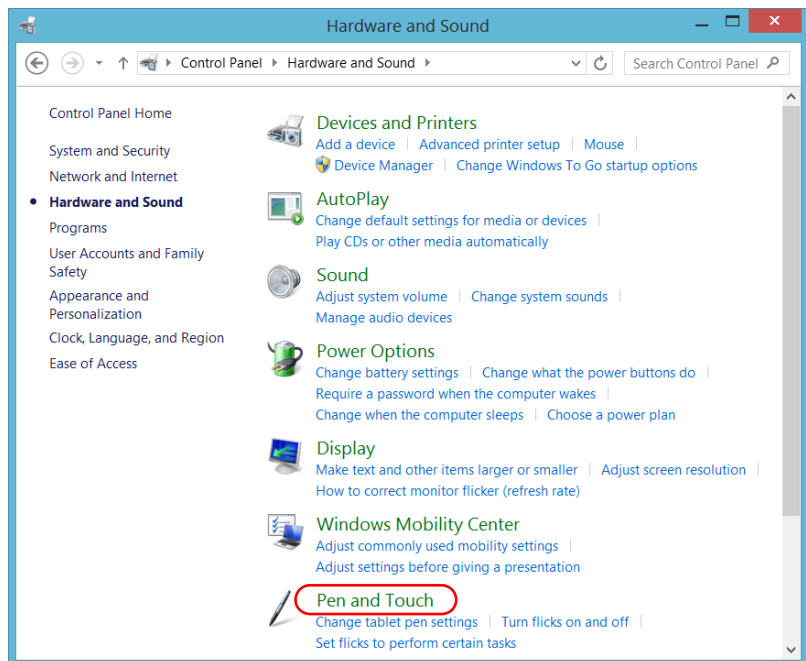
## Setting Up Your MAX-800 Series MaxTester Unit

### Customizing the Right-Click Feature

#### 3. Tap **Hardware and Sound**.



#### 4. Tap **Pen and Touch**.

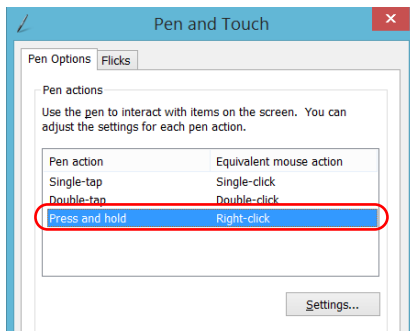


## Setting Up Your MAX-800 Series MaxTester Unit

### Customizing the Right-Click Feature

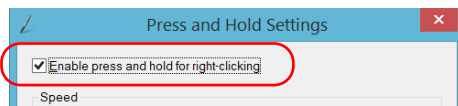
---

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

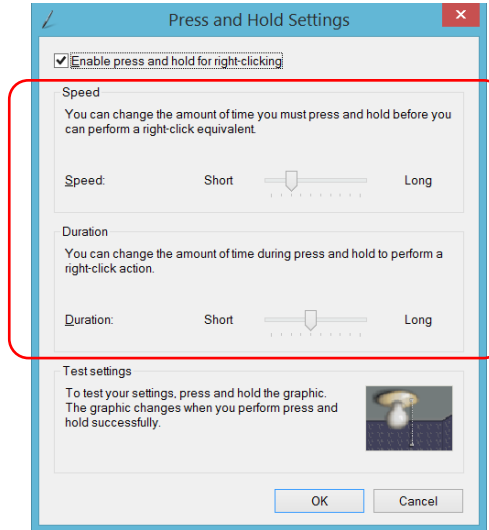


6. Tap **Settings**.

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.

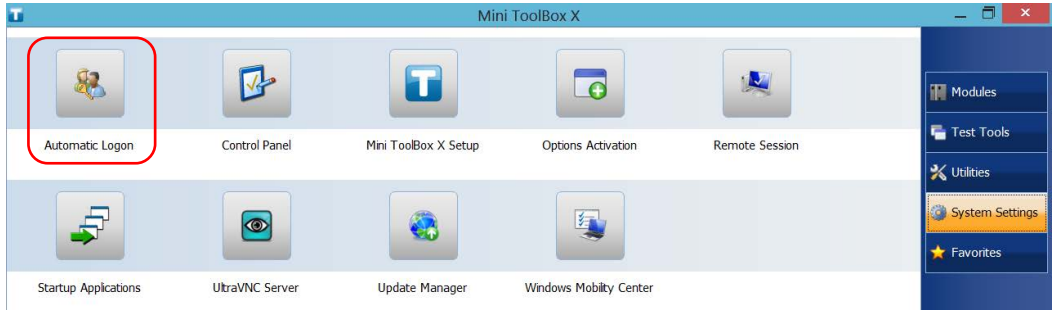
- In Windows 10: Start button > Settings > Accounts.
- In Windows Embedded 8 Standard: Charm bar > Settings > Change PC settings > Users.

## Setting Up Your MAX-800 Series MaxTester Unit

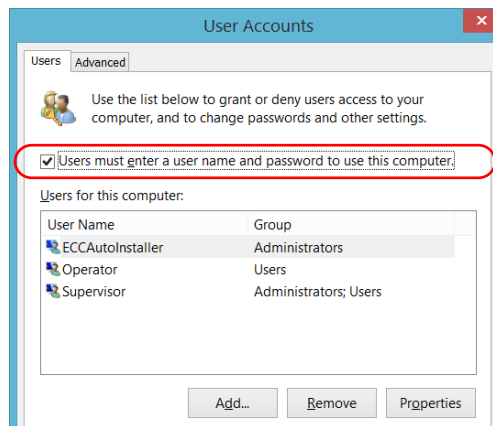
### *Enabling or Disabling the Automatic Logon*

#### **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.

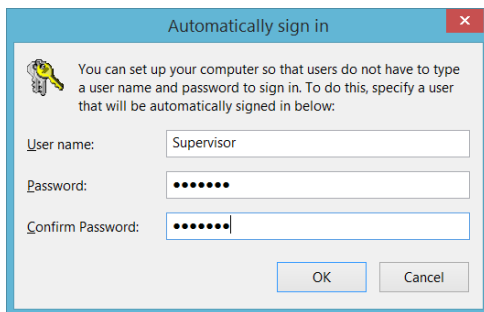


4. Tap **OK** to confirm.

## Setting Up Your MAX-800 Series MaxTester Unit

### Enabling or Disabling the Automatic Logon

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:***

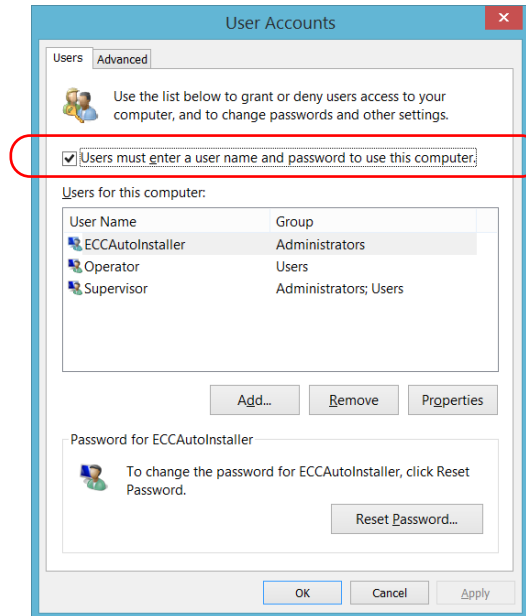
1. From the main window, tap the **System Settings** button.
2. Tap **Automatic Logon**.



## Setting Up Your MAX-800 Series MaxTester Unit

*Enabling or Disabling the 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.

## Setting Up Your MAX-800 Series MaxTester Unit

### Selecting the Startup Applications

---

## 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.

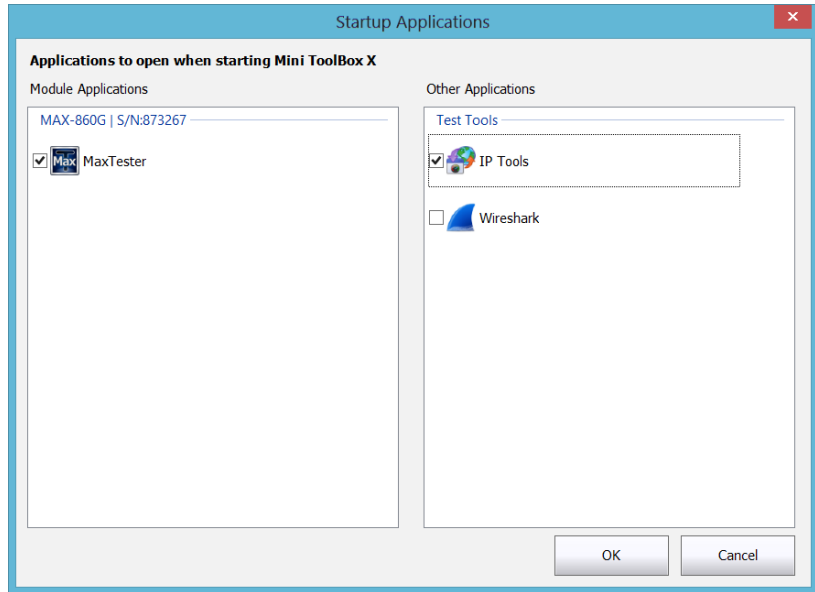
**To set applications to start automatically at Mini Toolbox X startup:**

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 51.

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 109.

### **To configure the printer:**

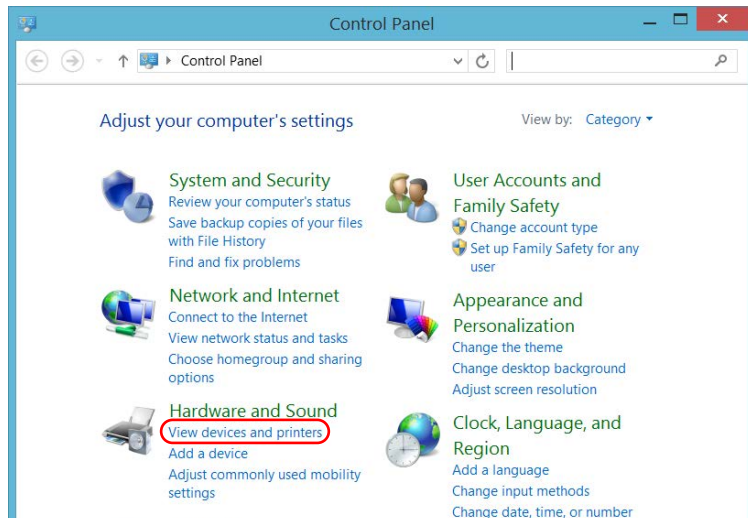
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



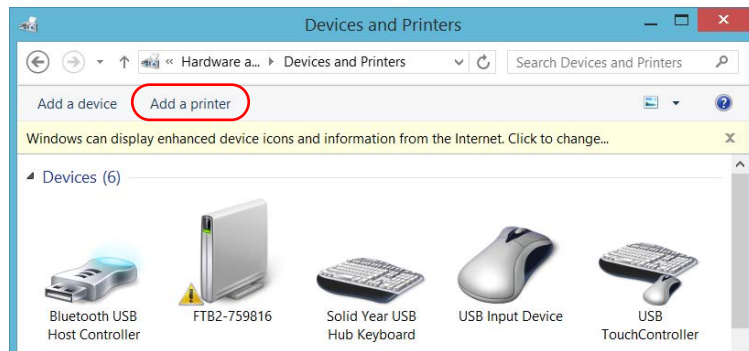
## Setting Up Your MAX-800 Series MaxTester Unit

### Configuring Network Printers

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



4. Tap **Add a printer**.



5. Follow the on-screen instructions.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Selecting the Language of Operation*

---

## 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:***

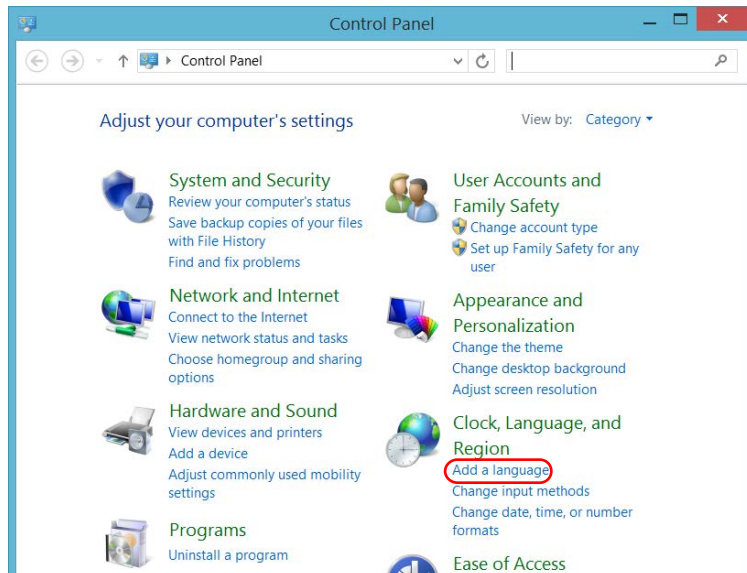
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



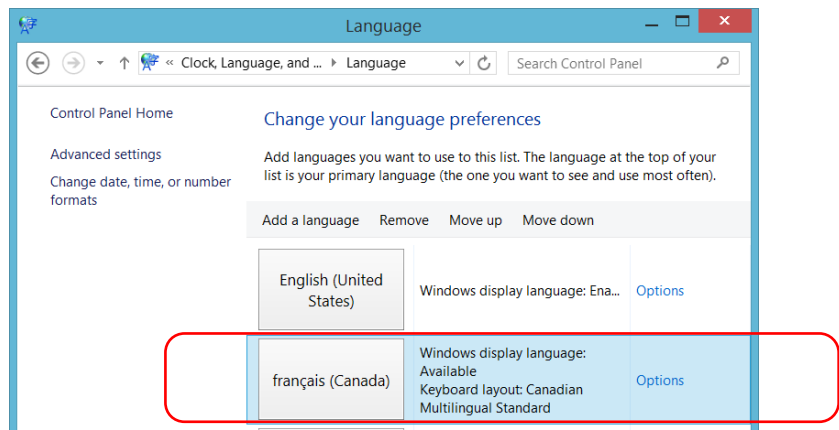
## Setting Up Your MAX-800 Series MaxTester Unit

### *Selecting the Language of Operation*

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



4. Select the desired language from the list.



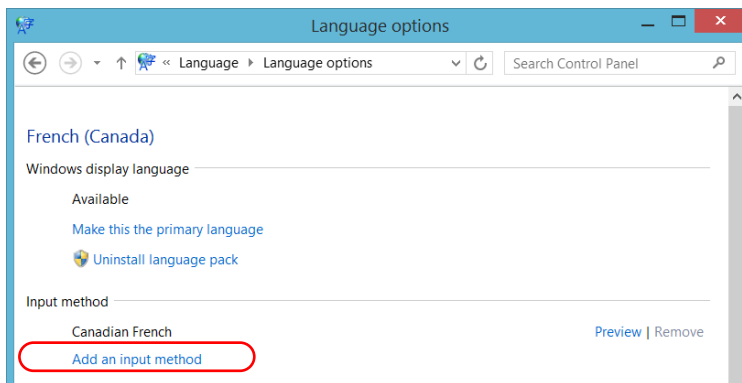
5. Tap **Options**.

## Setting Up Your MAX-800 Series MaxTester Unit

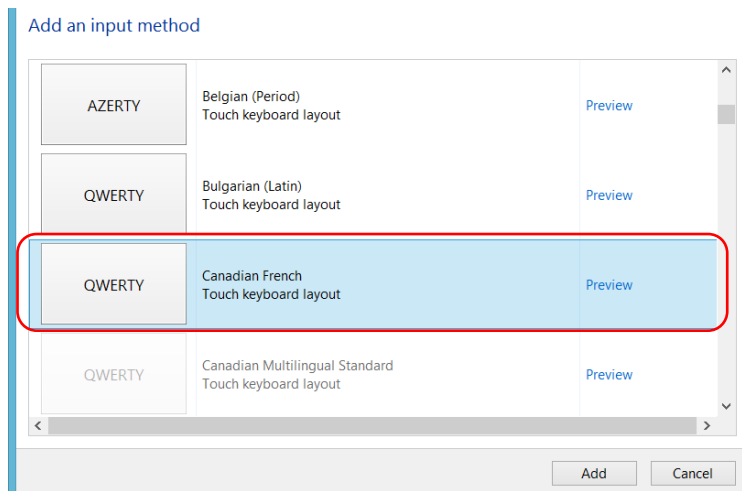
### Selecting the Language of Operation

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

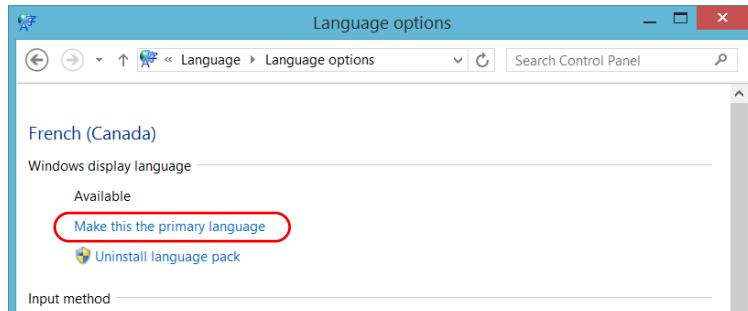
**6a.** Under **Input method**, tap **Add an input method**.



**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

In Windows Embedded 8 Standard, 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).

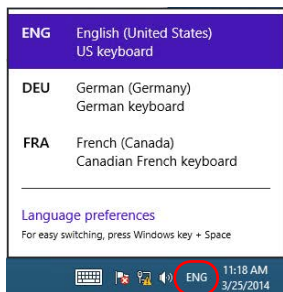
## Setting Up Your MAX-800 Series MaxTester Unit

### *Selecting the Language of Operation*

---

***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.



Language code

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.*



## Setting Up Your MAX-800 Series MaxTester Unit

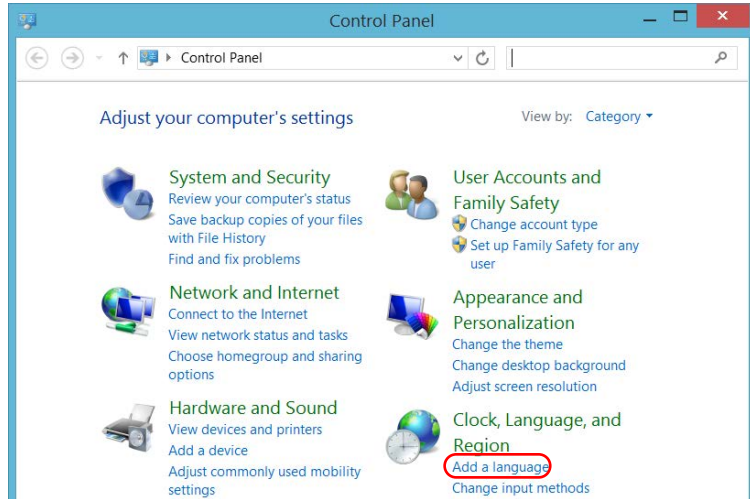
### *Selecting the Language of Operation*

#### **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**.



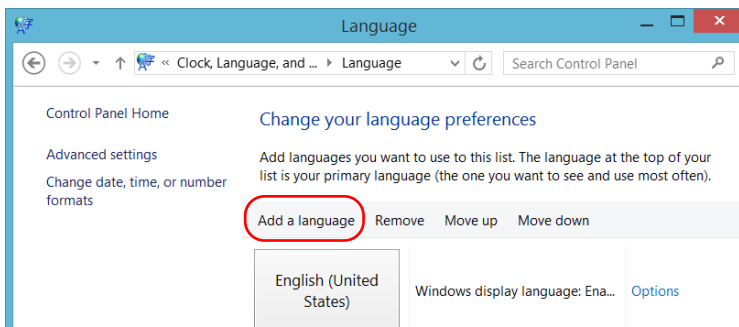
4. Under **Clock, Language, and Region**, tap **Add a language**.



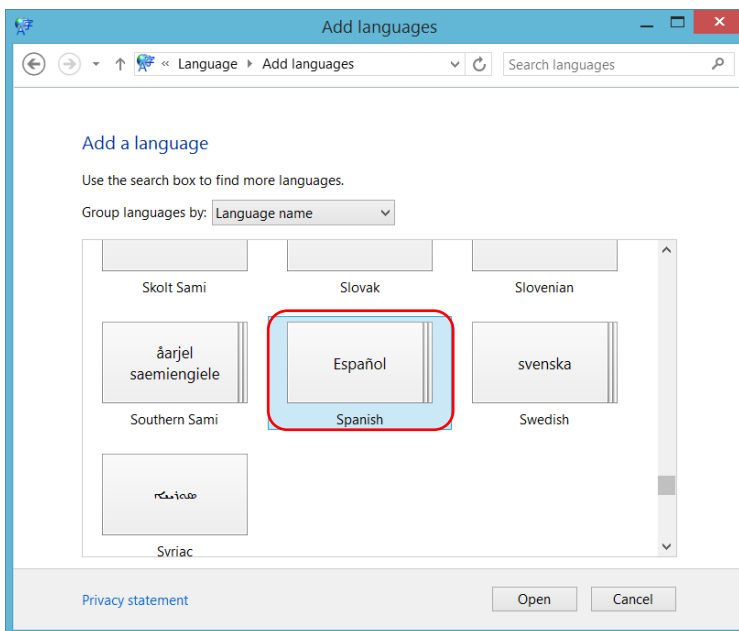
## Setting Up Your MAX-800 Series MaxTester Unit

### Selecting the Language of Operation

#### 5. Tap Add a language.



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

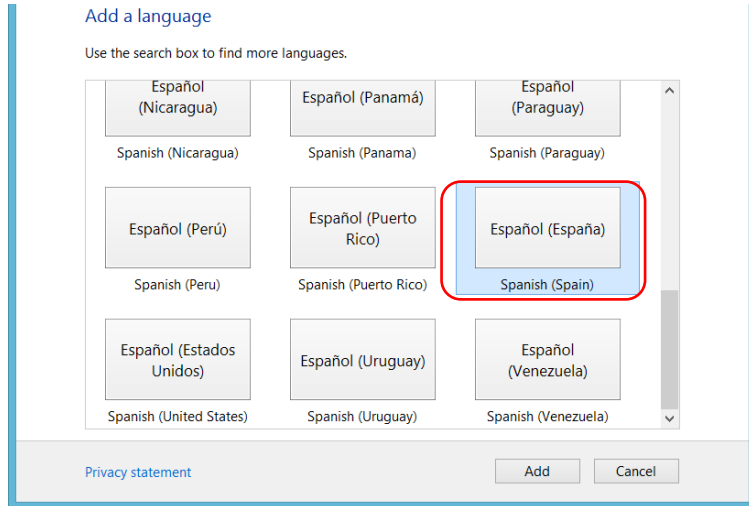


#### 7. Tap Open to access the list of sub-languages.

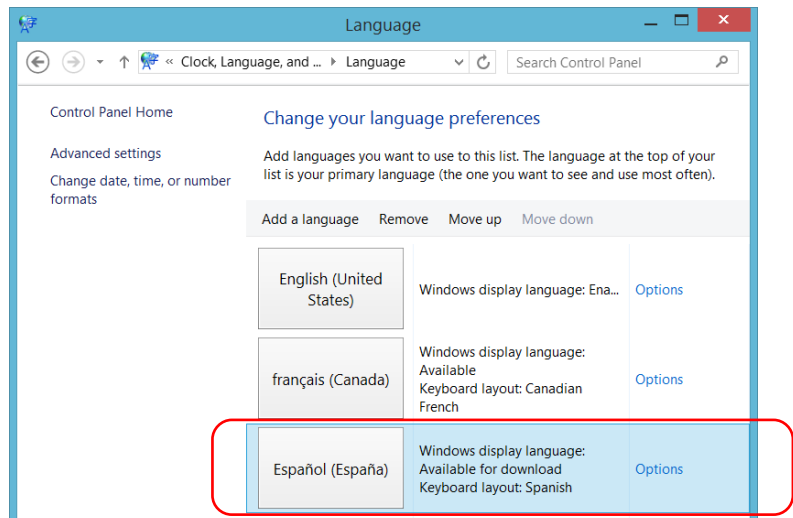
## Setting Up Your MAX-800 Series MaxTester Unit

### Selecting the Language of Operation

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



9. Select the desired language from the list.



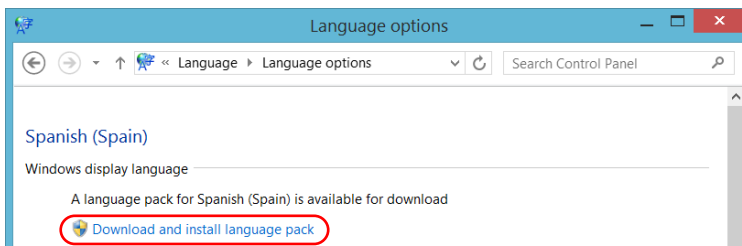
10. Tap **Options**.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Selecting the Language of Operation*

---

#### **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.**

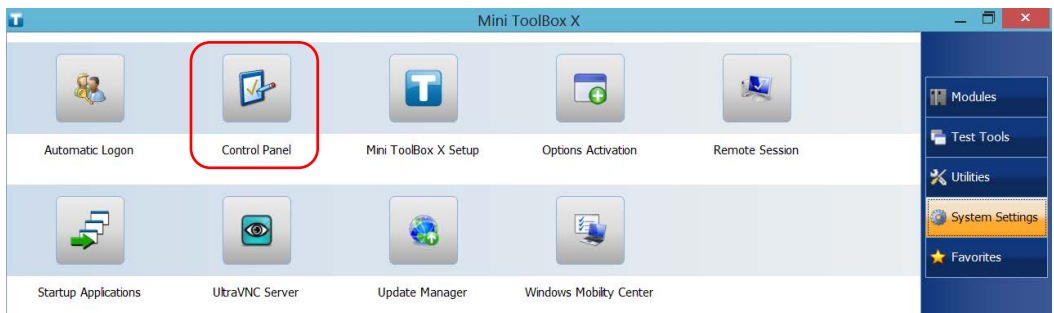
## Setting Date and Time Formats

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 87.

### ***To set date and time formats:***

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

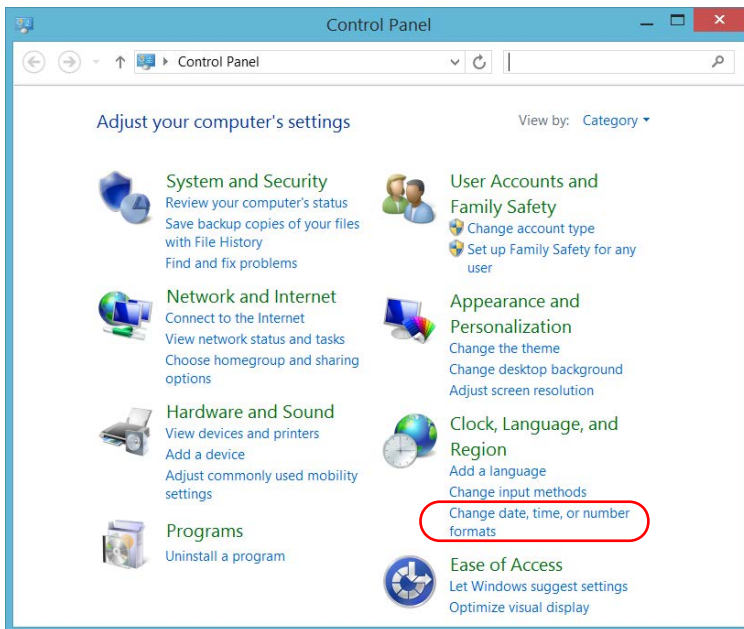


## Setting Up Your MAX-800 Series MaxTester Unit

### *Setting Date and Time Formats*

---

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 85.

### **To adjust the date, time or time zone:**

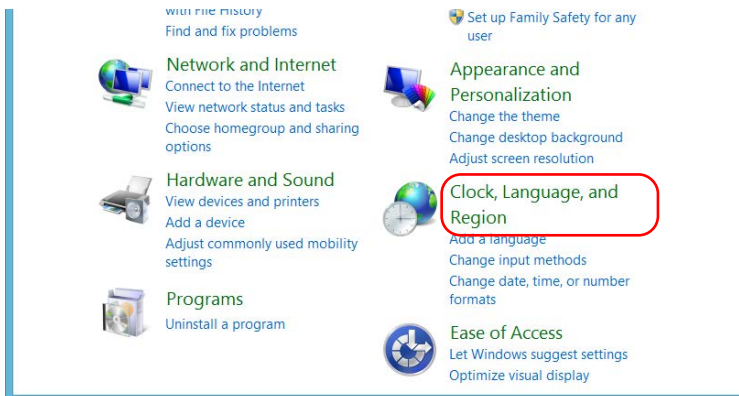
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



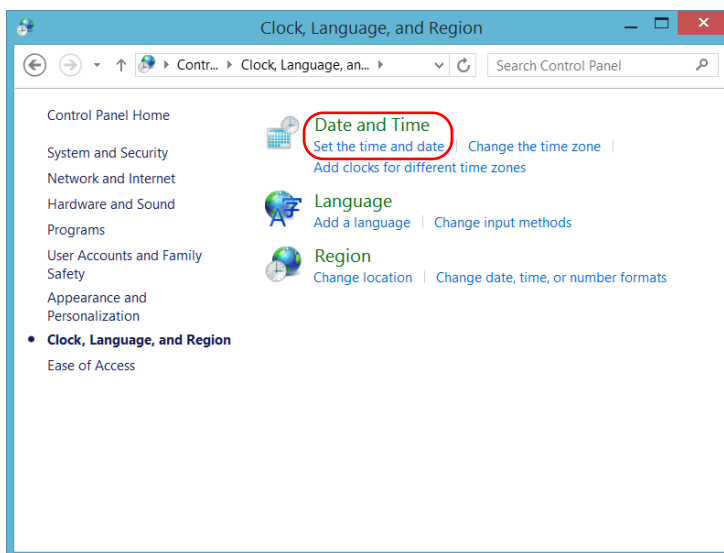
## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting the Date, Time and Time Zone*

#### 3. Tap **Clock, Language, and Region**.



#### 4. Under **Date and Time**, tap **Set the time and date**.



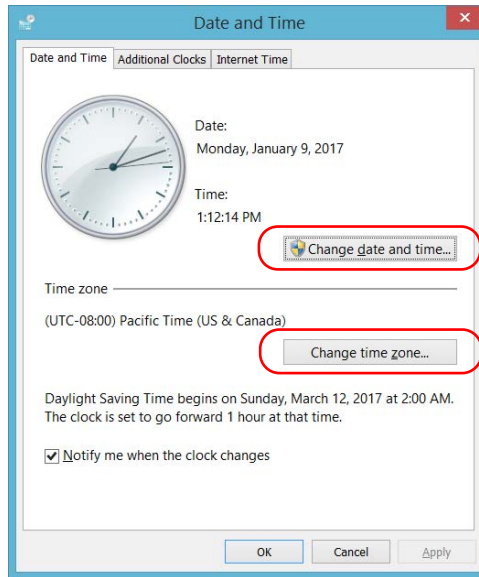


## Setting Up Your MAX-800 Series MaxTester Unit

### *Adjusting the Date, Time and Time Zone*

---

5. Tap **Change date and time** or **Change time zone**, depending on the settings that you want to modify.



6. Modify the settings according to your needs, and then tap **OK**.
7. 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 29).

For all of these actions, you can set idle durations for AC/DC power adapter 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 when you need to work with your unit without optimizing the energy consumption.
Power Saver	Optimizes the energy consumption, which could be particularly useful when you operate the unit on battery.

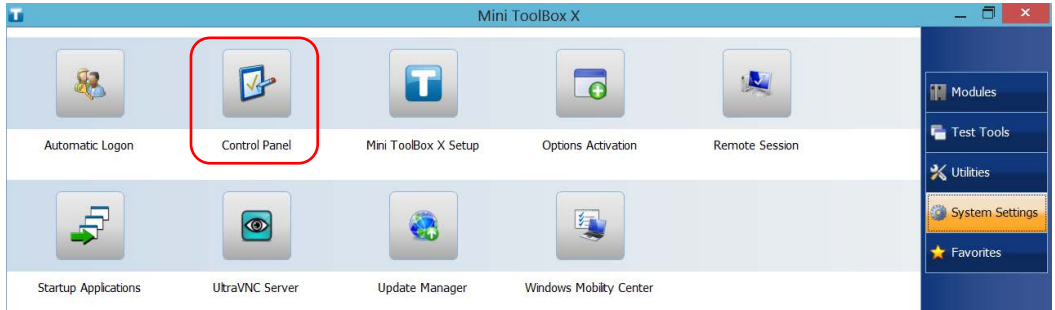
You can either modify one of the existing power plans or create one (based on an existing power plan). It is always possible to revert to factory default values for the predefined plans. You can delete custom power plans that you no longer use, but not the predefined plans.

## Setting Up Your MAX-800 Series MaxTester Unit

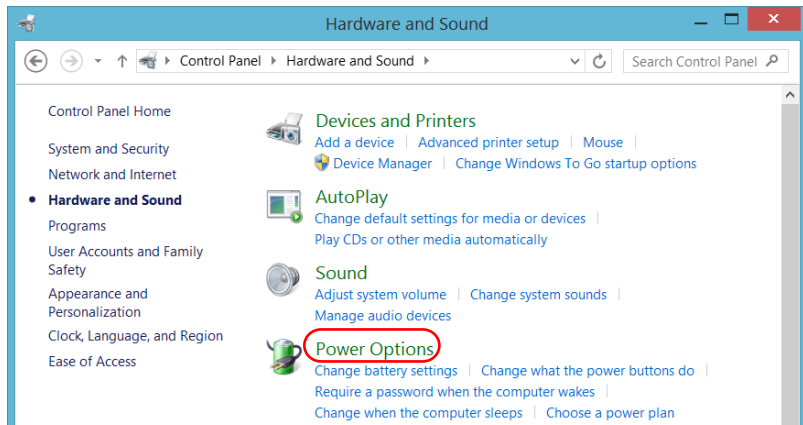
### *Configuring the Power Management Options*

#### **To select a power plan:**

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



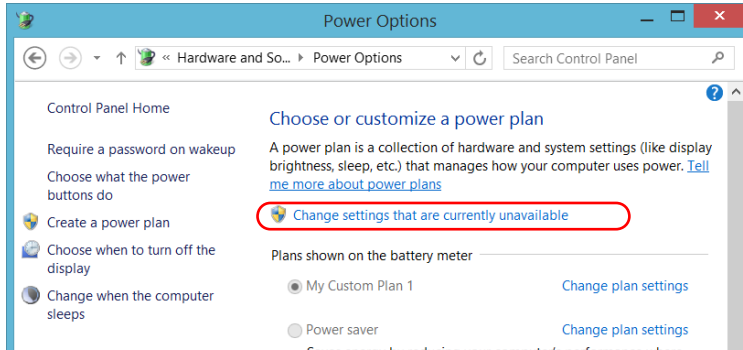
3. Tap **Hardware and Sound > Power Options**.



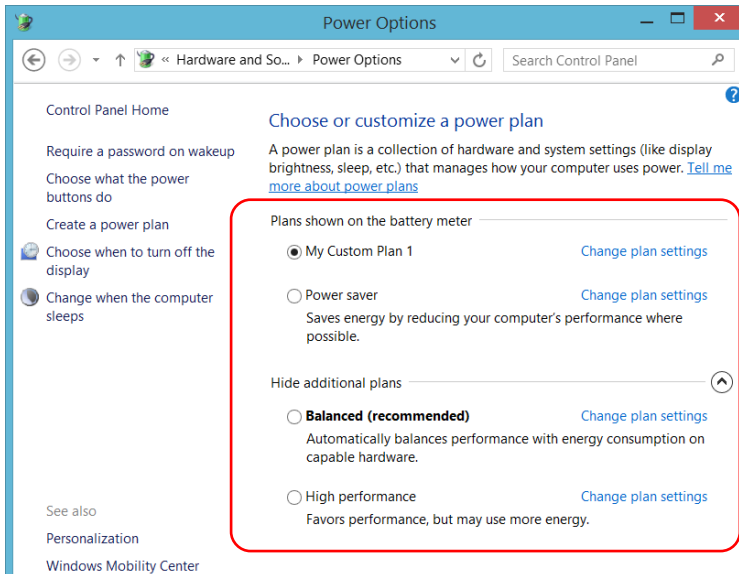
## Setting Up Your MAX-800 Series MaxTester Unit

### Configuring the Power Management 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.

## Setting Up Your MAX-800 Series MaxTester Unit

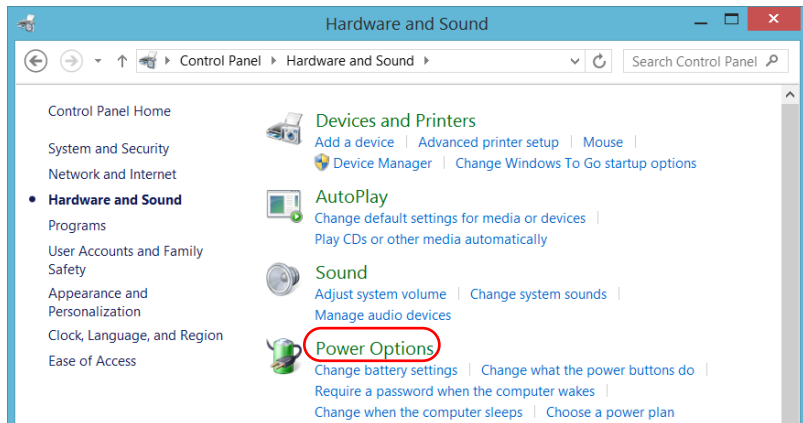
### *Configuring the Power Management Options*

#### **To create a power plan:**

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



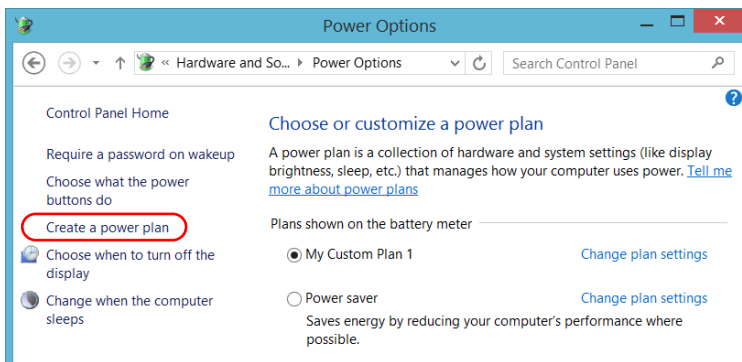
3. Tap **Hardware and Sound > Power Options**.



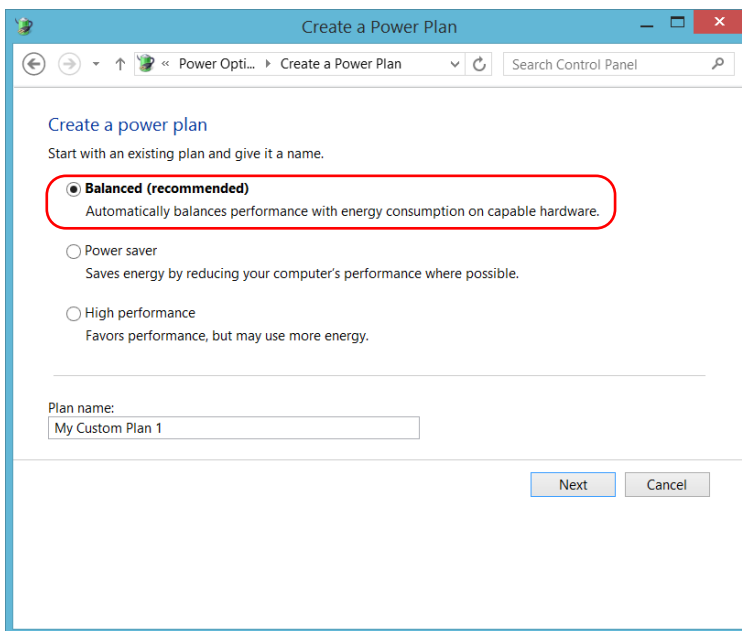
## Setting Up Your MAX-800 Series MaxTester Unit

### Configuring the Power Management Options

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



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



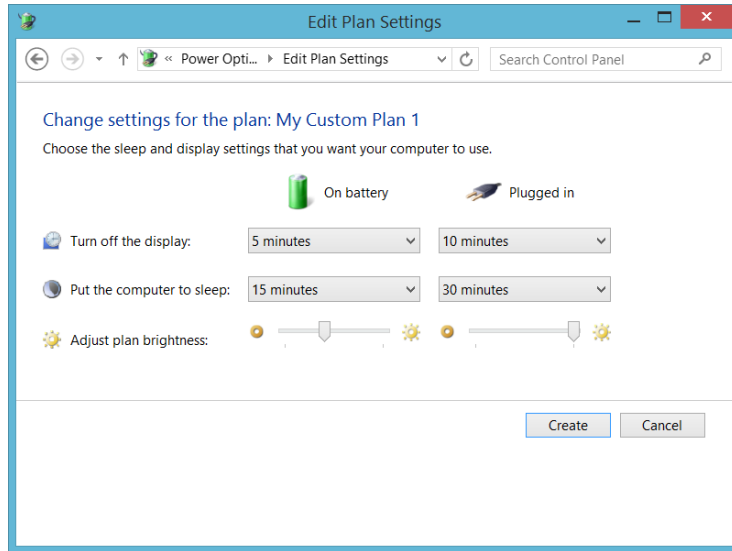
6. Enter a name, and then tap **Next**.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Configuring the Power Management Options*

---

#### 7. Modify the parameters to suit your needs.



#### 8. Tap **Create**.

## Setting Up Your MAX-800 Series MaxTester Unit

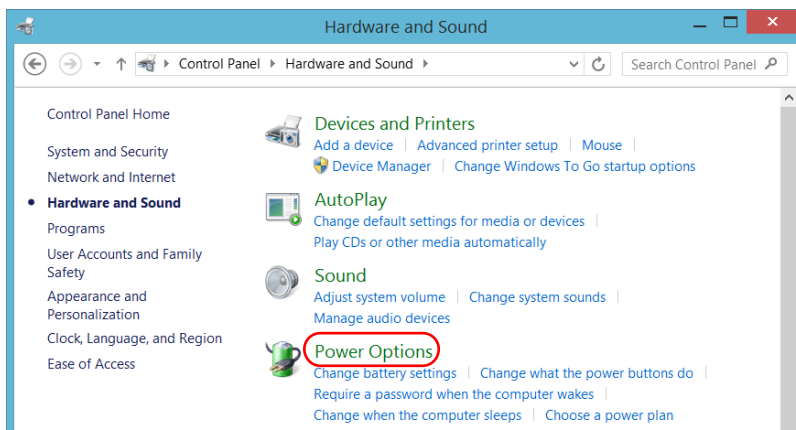
### Configuring the Power Management Options

#### **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**.

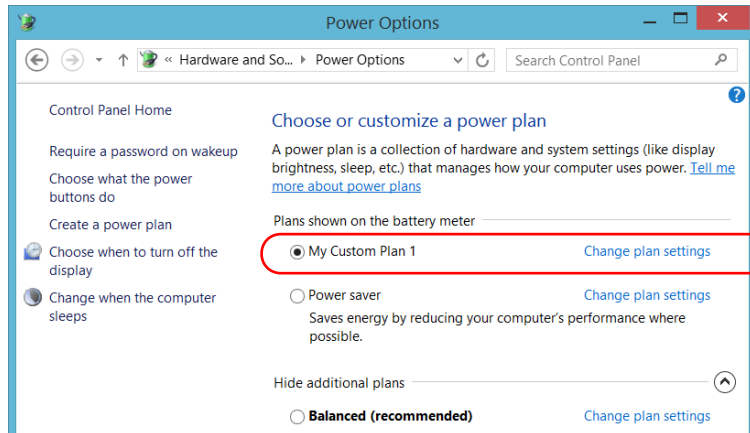




## Setting Up Your MAX-800 Series MaxTester Unit

### Configuring the Power Management Options

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



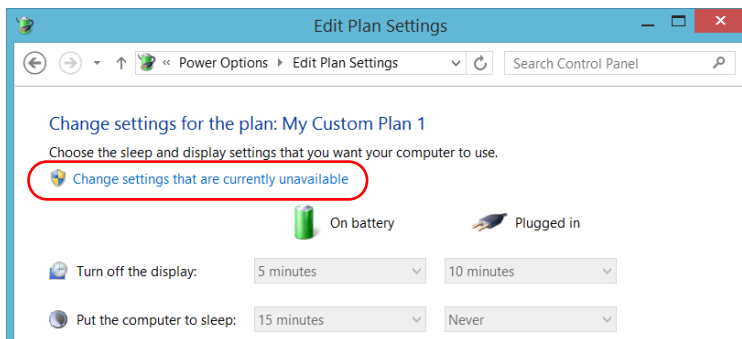
**Note:** You can only delete custom power plans, not predefined ones. If the custom power plan that you want to delete is currently in use, you must select another plan first.

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

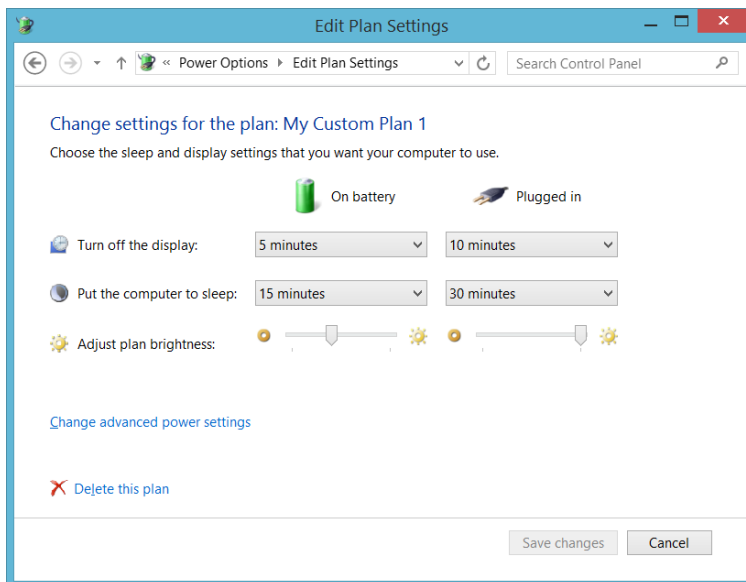
## Setting Up Your MAX-800 Series MaxTester Unit

### Configuring the Power Management Options

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.



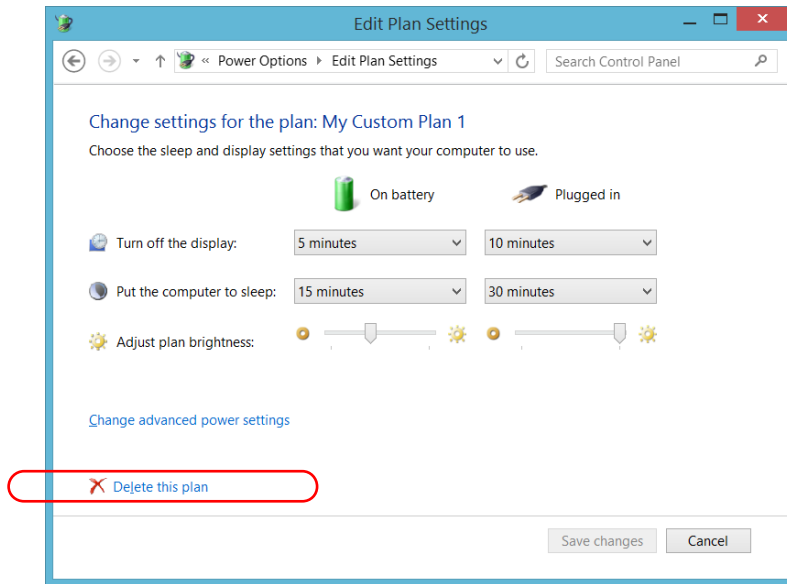
- 6c. Tap **Save changes**.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Configuring the Power Management Options*

---

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 Up Your MAX-800 Series MaxTester Unit

*Configuring Your Unit to Always Keep USB Ports On*

# Configuring Your Unit to Always Keep USB Ports On

Depending on your testing needs, you may want to configure your unit so that the USB ports always remain on (even when the unit is off). This could be useful to continue charging a device that would be connected to a USB port even when the unit is off, for example.

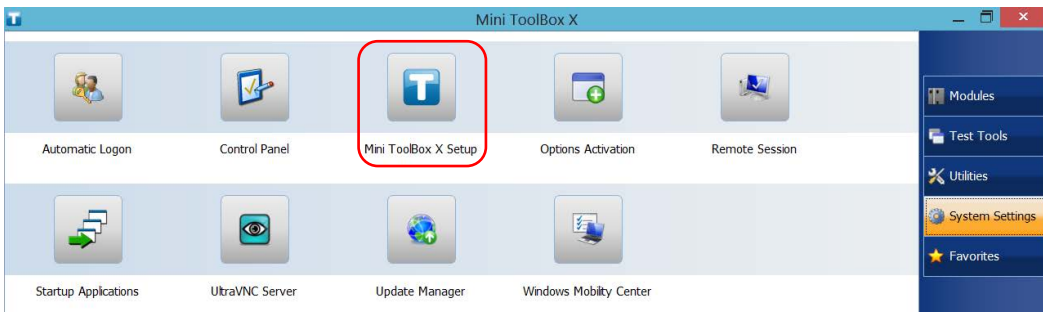


## IMPORTANT

- Enabling the feature allowing to keep USB ports powered on will have an impact on your unit's battery life. For this reason, EXFO recommends that you connect your unit to AC power to avoid draining the batteries when the feature is enabled.
- All USB ports will remain powered on when the corresponding option is enabled.

***To configure your unit to always keep USB ports on:***

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

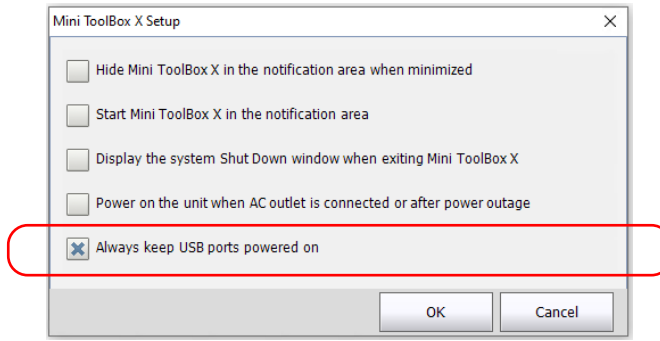


## Setting Up Your MAX-800 Series MaxTester Unit

### *Configuring Your Unit to Always Keep USB Ports On*

---

#### **3. Select Always keep USB ports on.**



**Note:** *If you cannot see the option on the list, it means that your unit does not support it.*

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

## Setting Up Your MAX-800 Series MaxTester Unit

### Setting Mini Toolbox X Behavior

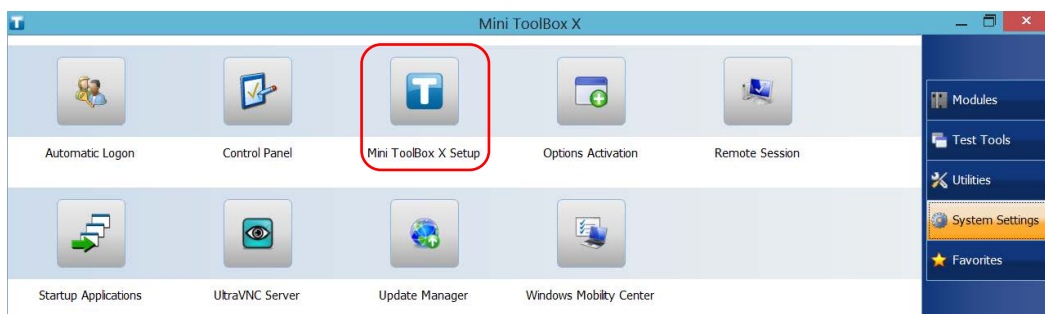
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## Setting Mini Toolbox X Behavior

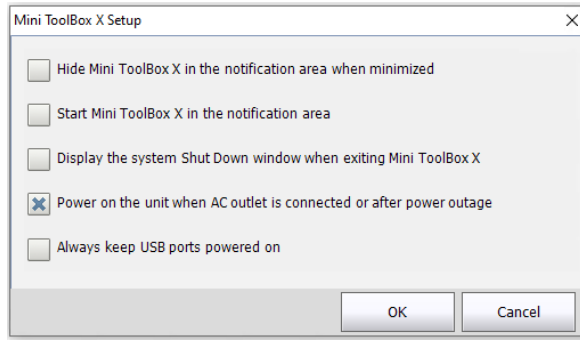
You can specify how Mini Toolbox X behaves when the application is started, minimized or closed.

**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 29.
4. Tap **OK** to confirm your settings and close the window.

## Setting Up Your MAX-800 Series MaxTester Unit

### *Configuring the Internet Options*

---

## 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**.



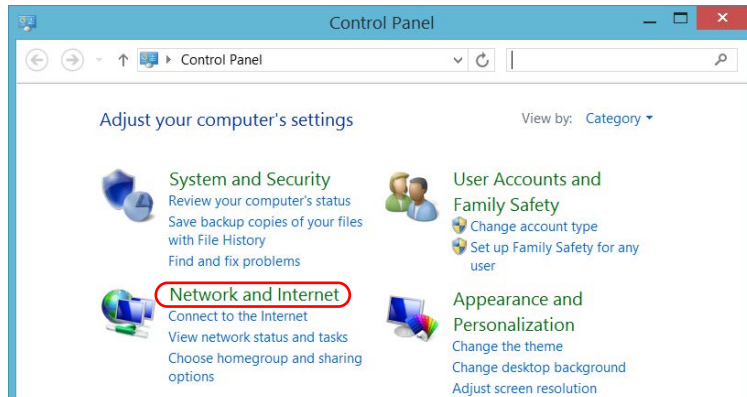


## Setting Up Your MAX-800 Series MaxTester Unit

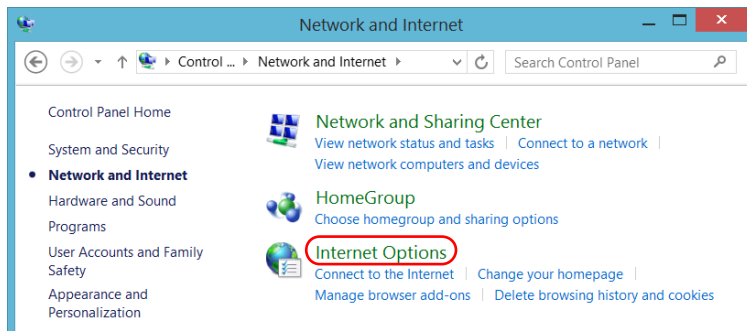
### *Configuring the Internet Options*

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#### 3. Tap **Network and Internet**.



#### 4. Tap **Internet Options**.

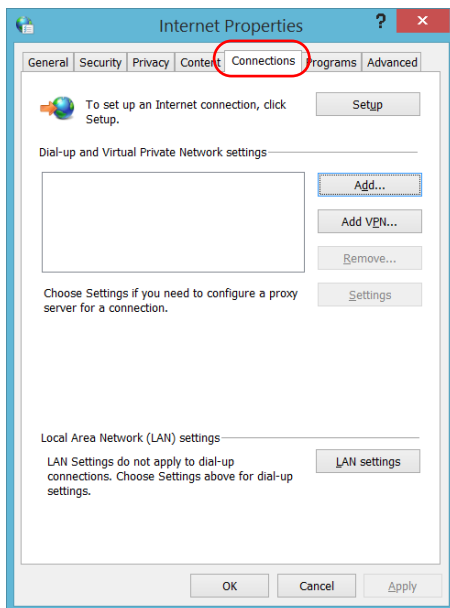


## Setting Up Your MAX-800 Series MaxTester Unit

### *Configuring the Internet Options*

---

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



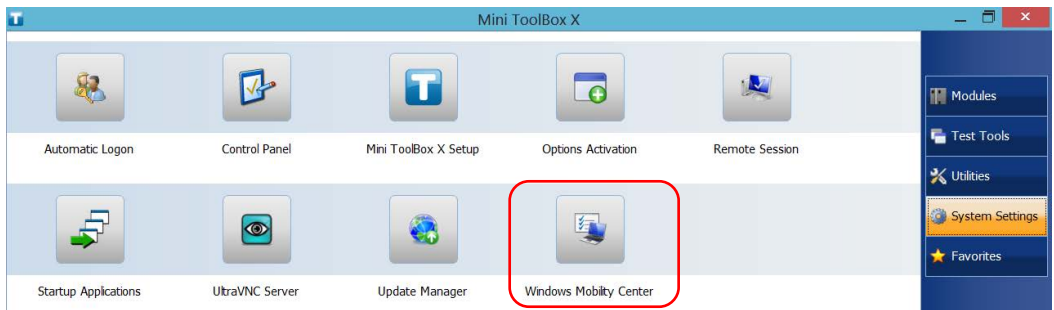
6. Modify the settings using the information provided by your network administrator.
7. Tap **OK** to return to the **Control Panel** window.

## 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**.

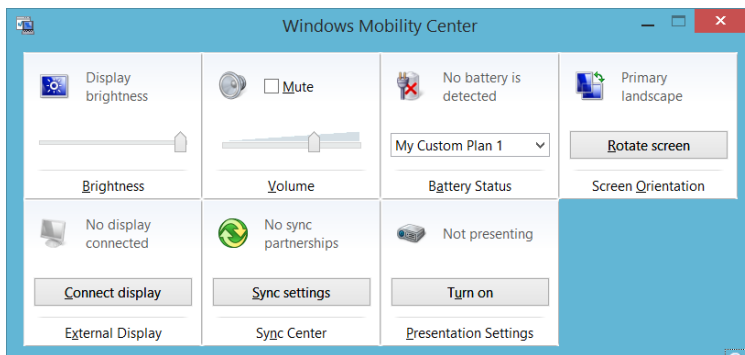




## Setting Up Your MAX-800 Series MaxTester Unit

### Setting Other Parameters

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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 110.

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 74).

**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.

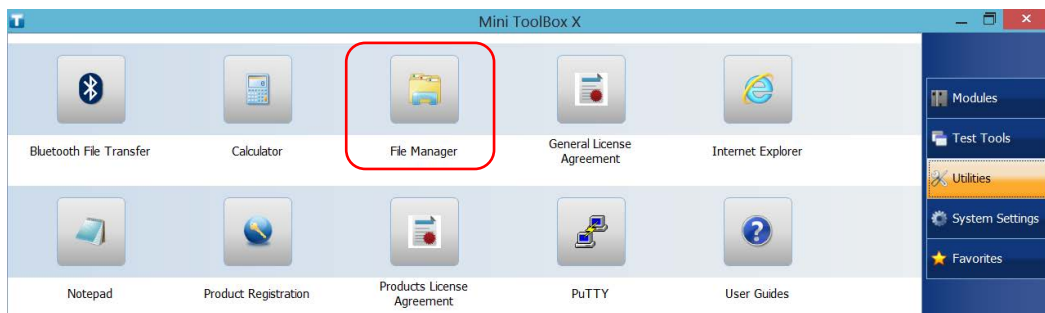
## Viewing PDF Files

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.*

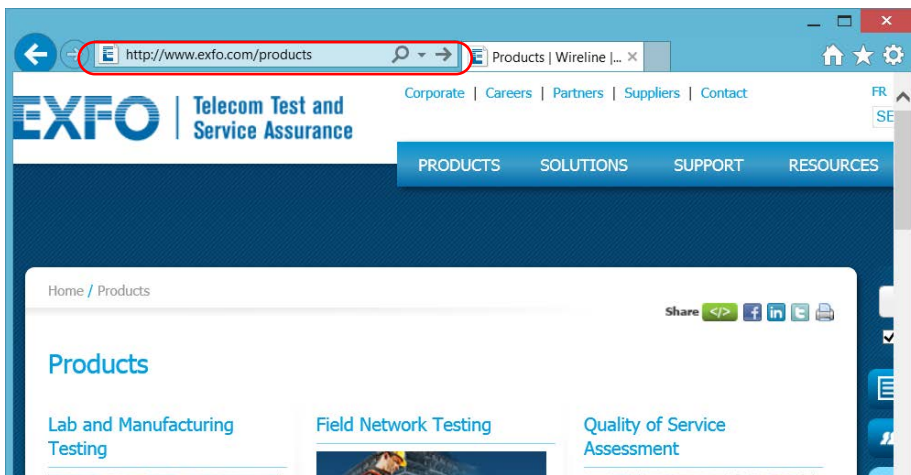
## Browsing the Web

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 104. For more information on how to connect to the Internet using a mobile broadband USB modem key, see *Accessing the Internet with a Mobile Broadband USB Modem Key* on page 113.

### To browse the Web:

1. Open a Web browser as follows:
  - 1a. From the main window, tap the **Utilities** button.
  - 1b. Tap the **Edge** (Windows 10) or the **Internet Explorer** (Windows Embedded 8 Standard) 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 Mobile Broadband 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.*

You can connect a mobile broadband USB modem key to your unit to have a wireless access to the Internet.

You need to use a mobile broadband 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 mobile broadband 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.

## Working with Your Unit

### *Accessing the Internet with a Mobile Broadband USB Modem Key*

---

#### ***To work with a mobile broadband 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

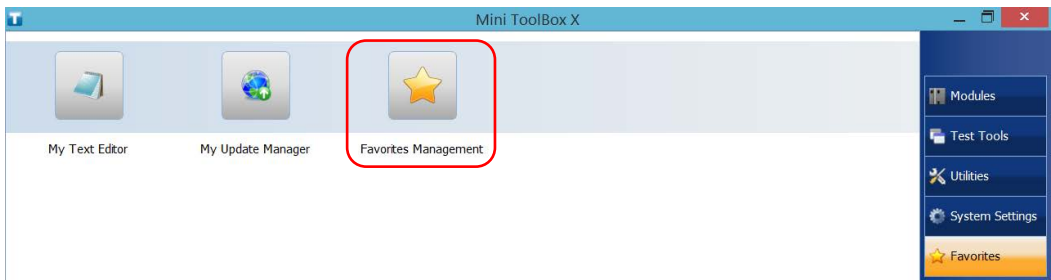
For a quicker access to the applications that you use most often, you may want to build your own list of favorite applications (Favorites).

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.

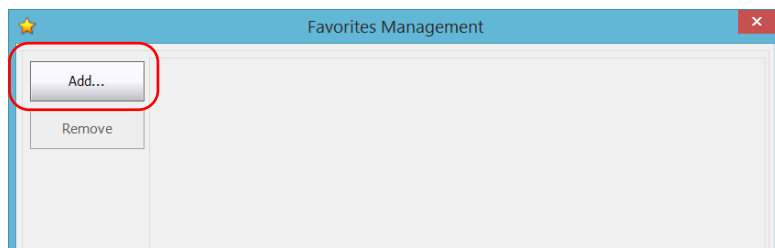
**Note:** *To have access to the same Favorites on several units, the corresponding applications must be available on all units.*

### To add Favorites:

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



3. Tap **Add**.

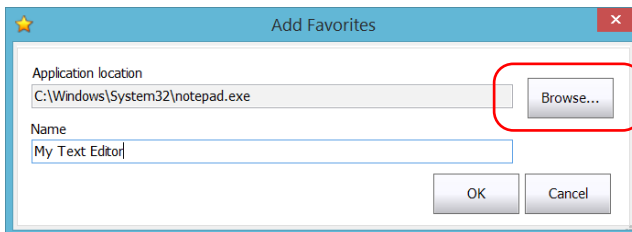


## Working with Your Unit

### Managing Favorites

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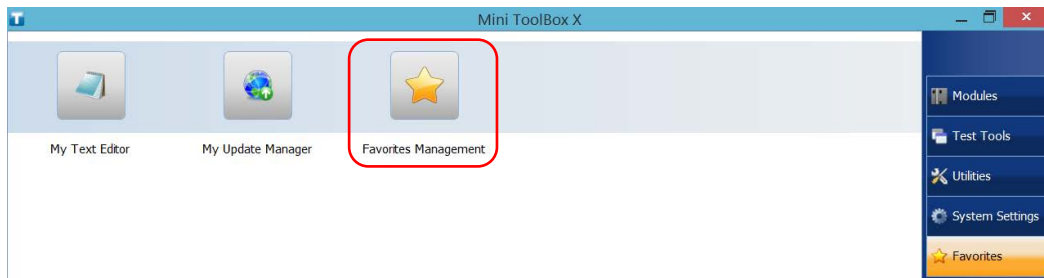
4. Tap **Browse** to locate the desired application.



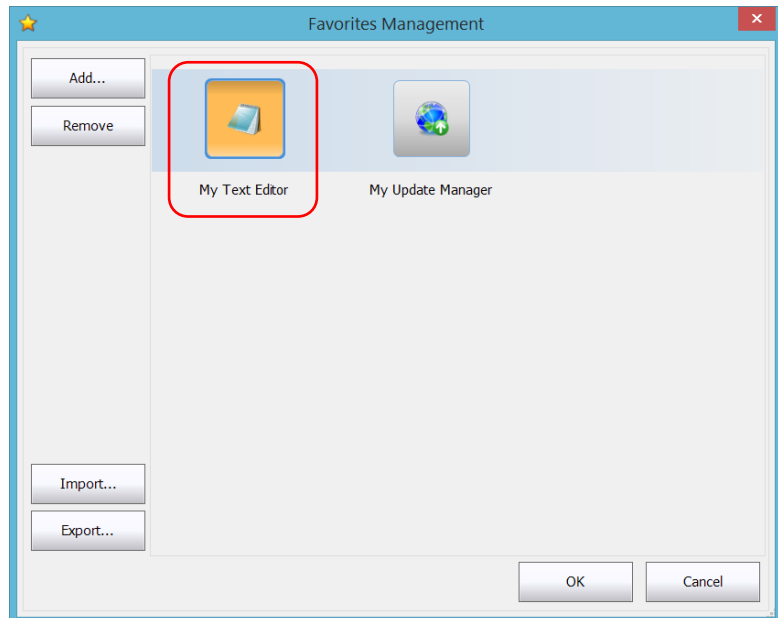
5. Type a name for the new Favorite.
6. Tap **OK** to confirm the location and name.
7. Repeat the previous steps with all the Favorites that you want to add.
8. Tap **OK** to apply the changes and close the window.

#### **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.

## Working with Your Unit

### Managing Favorites

---

#### ***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.

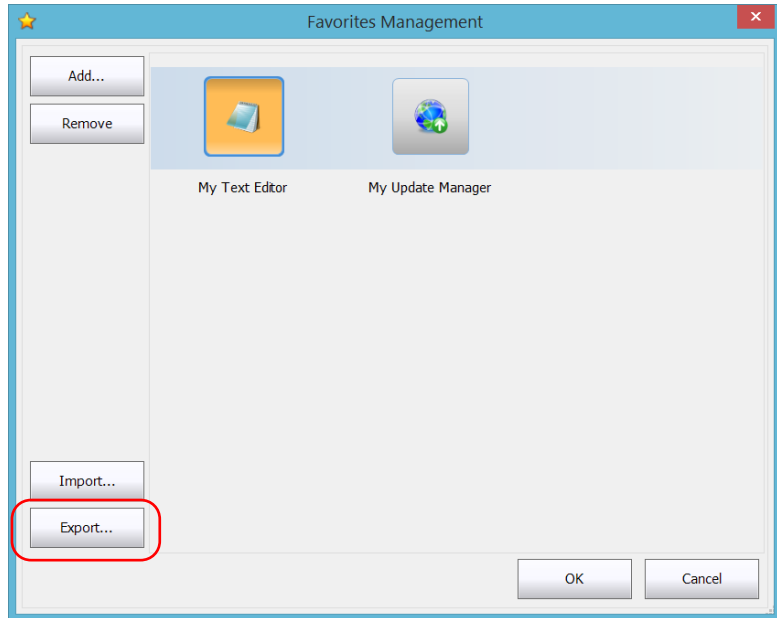


#### ***To export the list of Favorites:***

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



### 3. Tap **Export**.

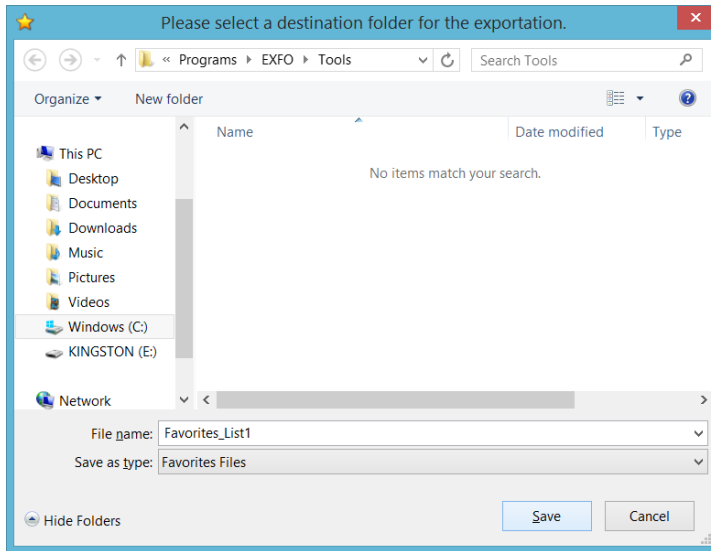


## Working with Your Unit

### *Managing Favorites*

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

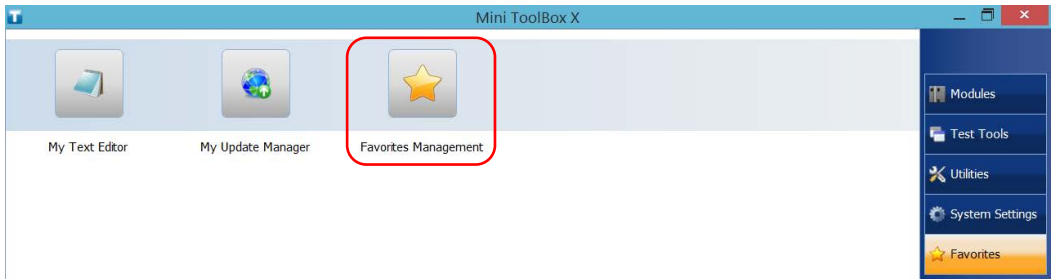


5. Tap **Save**.
6. Tap **OK** to apply the changes and close the window.

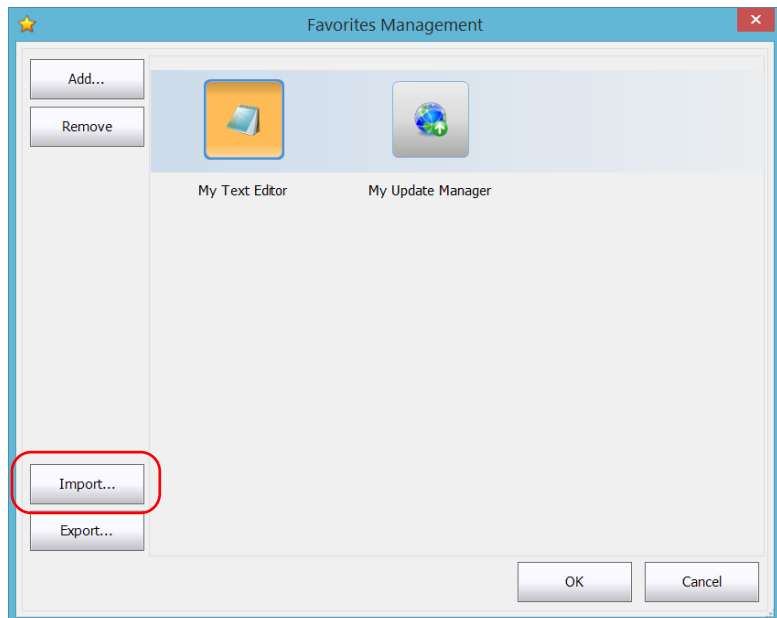


#### **To import a list of Favorites:**

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



3. Tap **Import**.

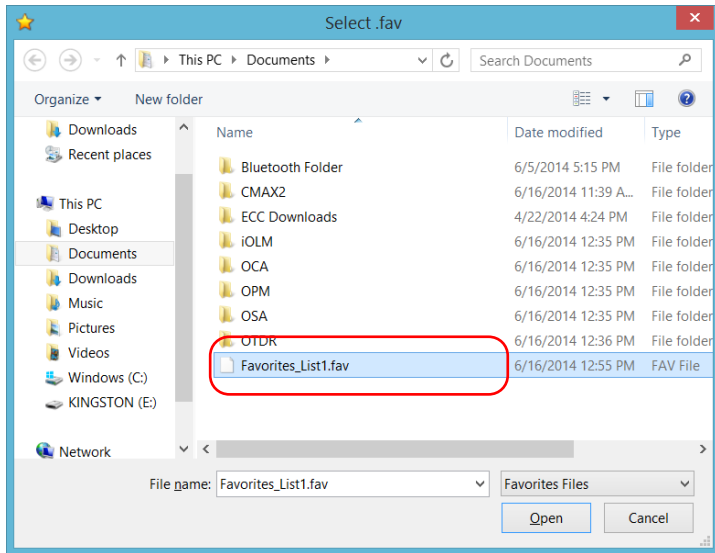


## Working with Your Unit

### Managing Favorites

---

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**.

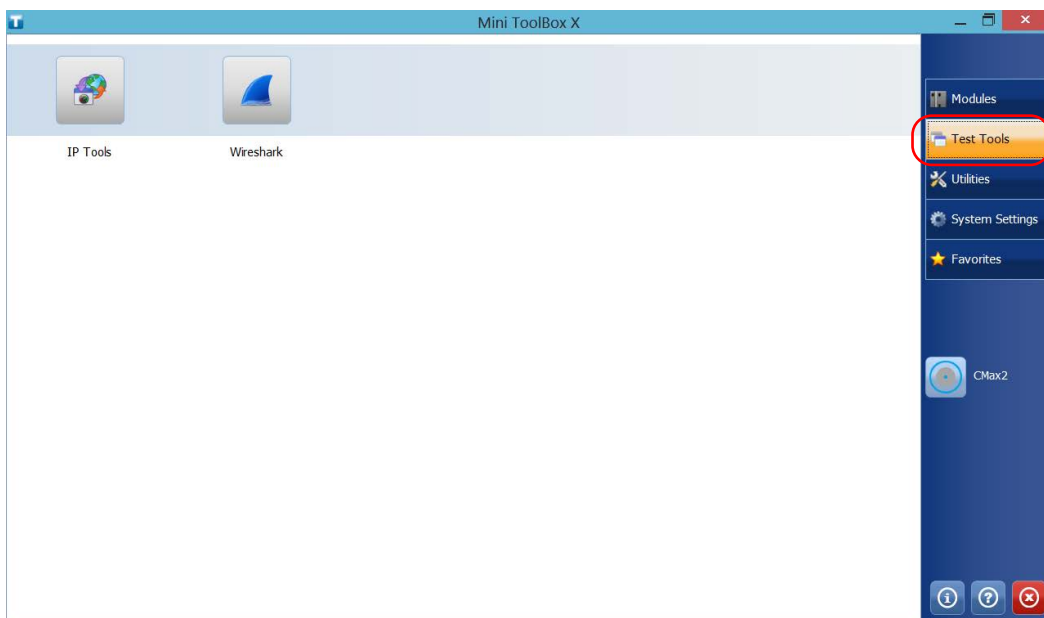
## Accessing Other Tools

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.



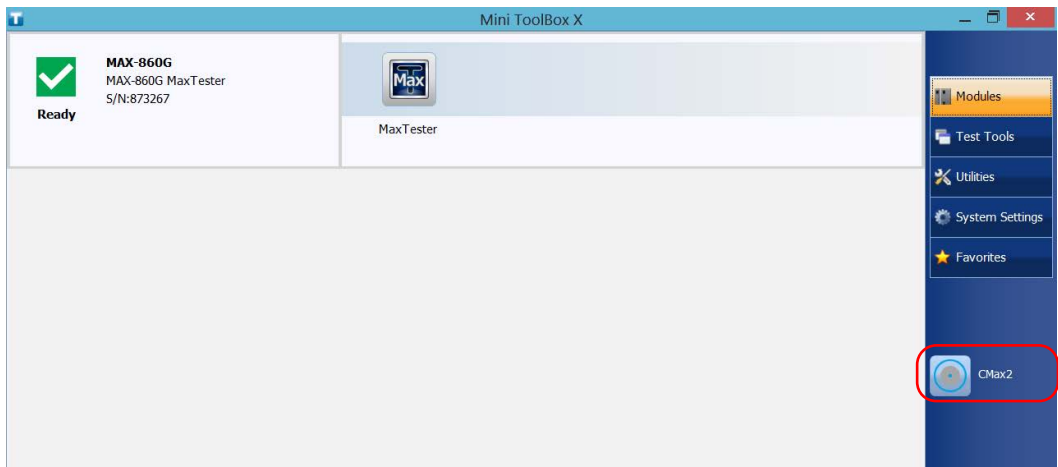
### IMPORTANT


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 159)
- internal Wi-Fi and Bluetooth modules (optional) to connect to a wireless network or transfer data via the Bluetooth technology

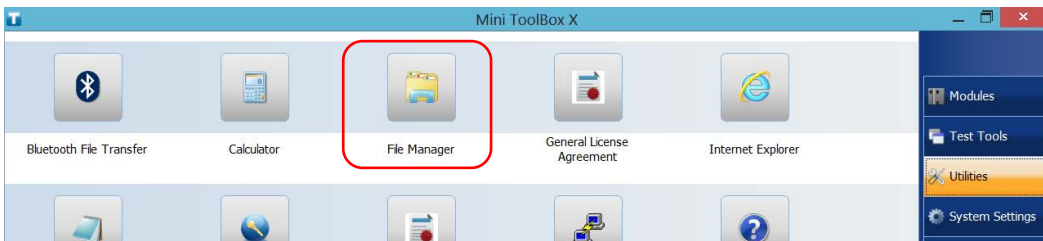
## Managing Data

### Viewing Disk Space and Managing Files

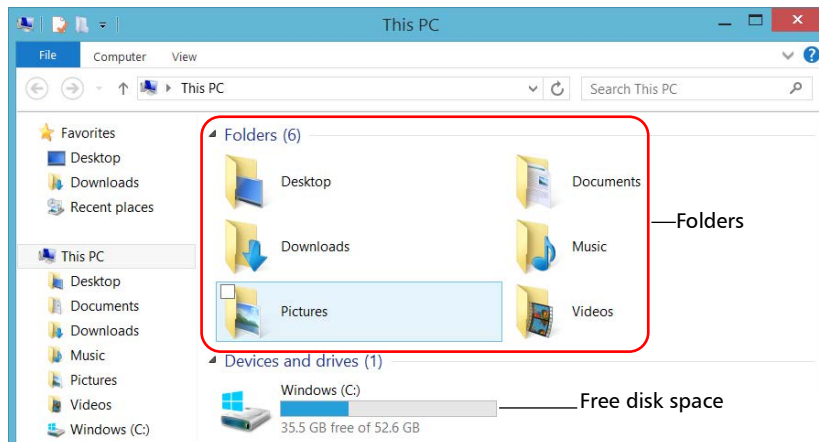
To help you manage the data that is stored on your unit, you can easily view the remaining disk space. You can also copy, move, rename, delete files and folders directly from your unit.


**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 the Bluetooth Technology

If you have purchased the Wi-Fi and 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 compatible with the Bluetooth technology and configured properly.

**Note:** *Some devices that are compatible with the Bluetooth technology 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 wireless module, you must enable it before trying to connect to a wireless network (see *Enabling or Disabling the Wireless Communication* on page 149).

**Note:** *To save power when your unit is running on battery, you may wish to disable the wireless 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.

## Managing Data

### Transferring Data via the Bluetooth Technology

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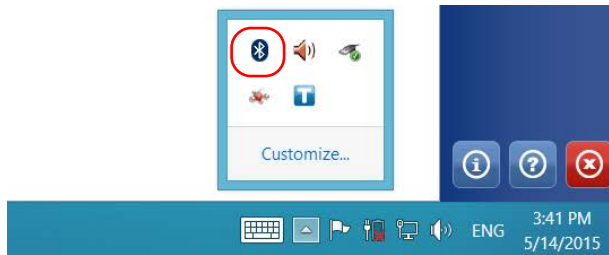
The procedure presented hereafter explains how to transfer data from your unit to a computer.

**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:**

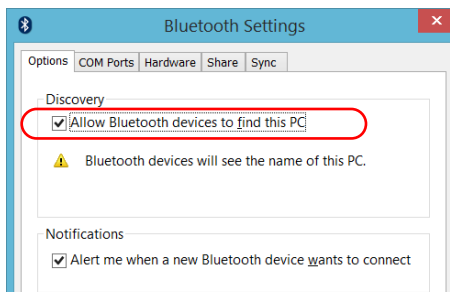
**1.** Configure your unit as follows:

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

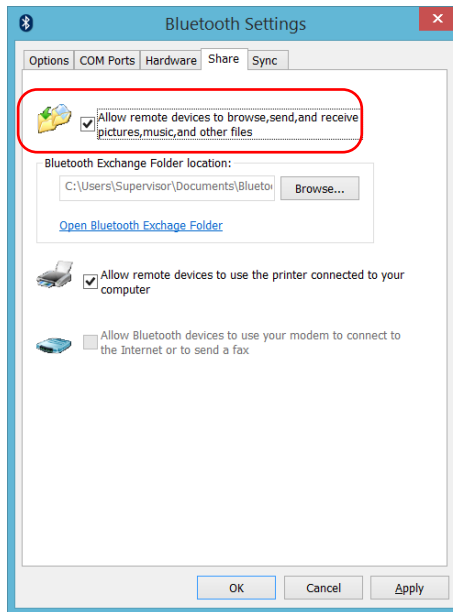


**1b.** Tap **Open Settings**.

**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.

## Managing Data

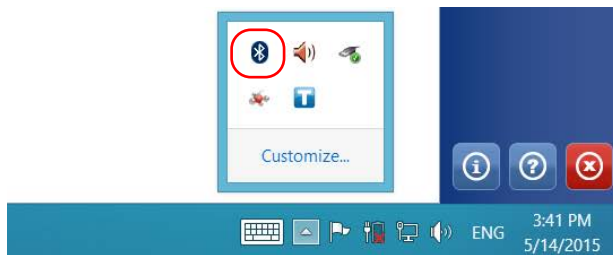
### *Transferring Data via the Bluetooth Technology*

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#### **To transfer data via the Bluetooth technology:**

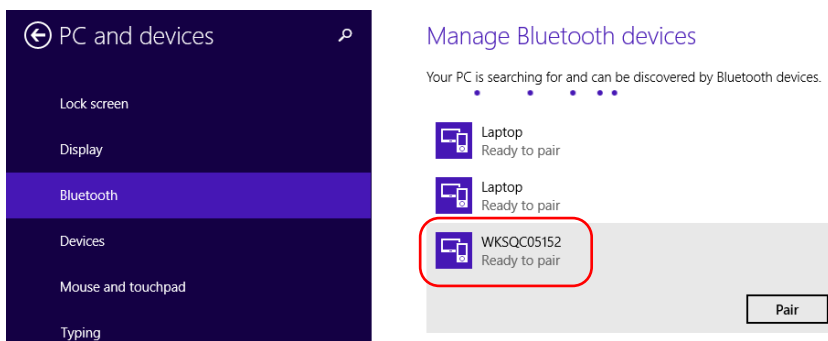
**1.** Pair your computer with your unit as follows.

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




**1b.** Tap **Add a Bluetooth Device**.

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



- 1d.** On units running Windows 10, tap **Pair**. On units running Windows Embedded 8 Standard, 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 with the **Remove device** button. On units running Windows Embedded 8 Standard, you must first tap the  button to view the **Remove 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.*

- 1e.** If necessary, write down the provided passkey.

- 1f.** On the computer, when the application prompts you, 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**.

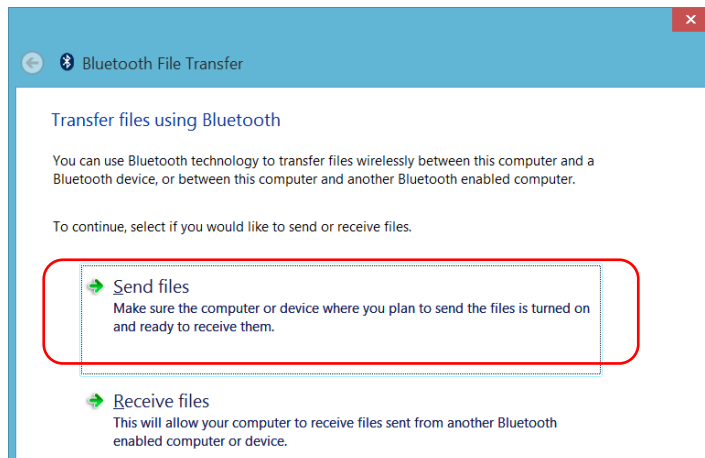


## Managing Data

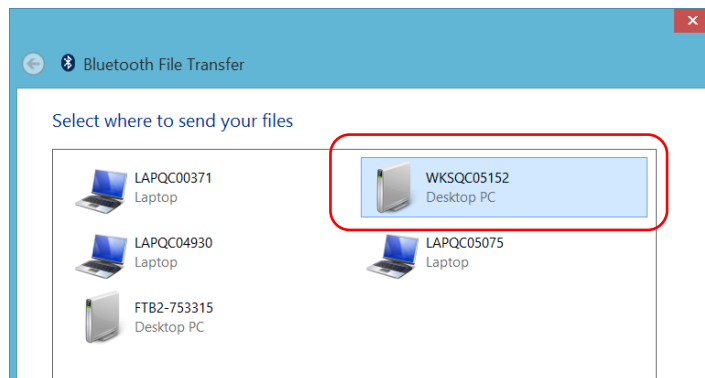
### *Transferring Data via the Bluetooth Technology*

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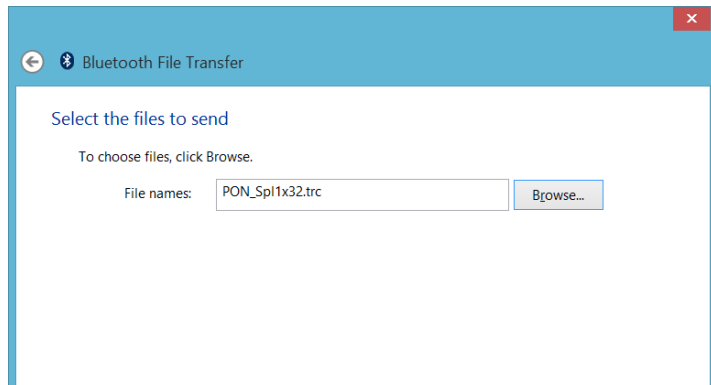
#### **2c. Select Send files.**



#### **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.

## Managing Data

### Connecting to a Wireless Network

---

## 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 149).

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

### To connect to a wireless network:

1. In Windows 10, from the notification area, tap the notification preview icon.

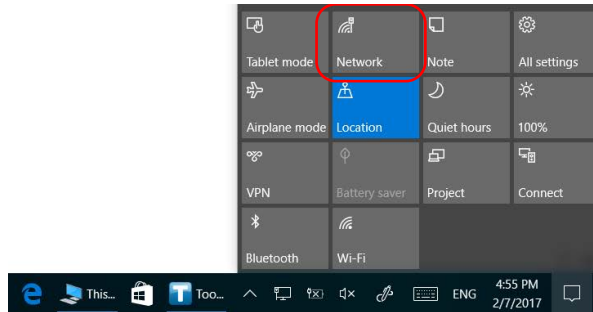


OR

In Windows Embedded 8 Standard, from the right side of the screen, swipe left to display the Charm bar.



2. In Windows 10, tap **Network**.



OR

In Windows Embedded 8 Standard, tap **Settings**, and then the  icon.

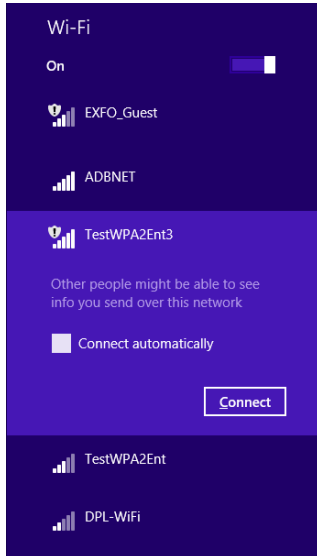


## Managing Data

### Connecting to a Wireless Network

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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.

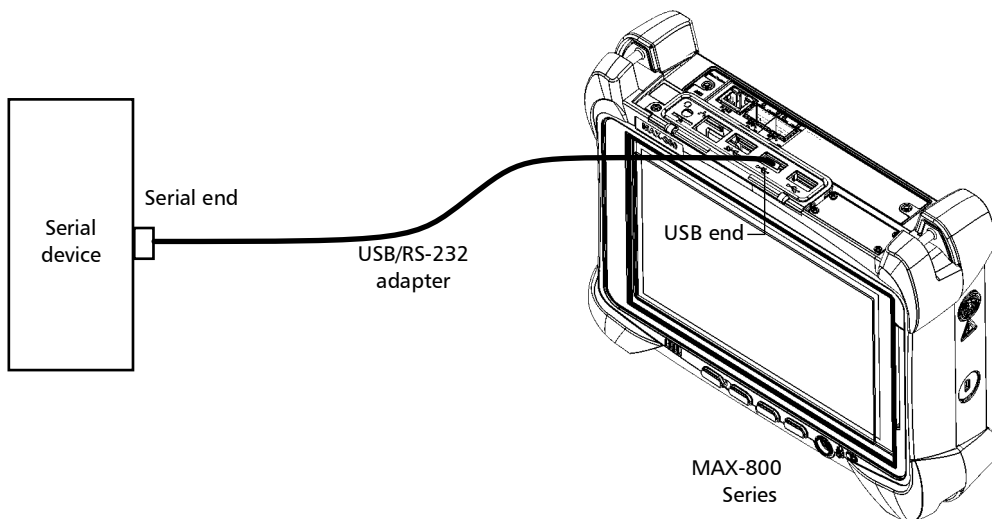
## Managing Data

### Using the USB to RS-232 Adapter

---

#### **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.

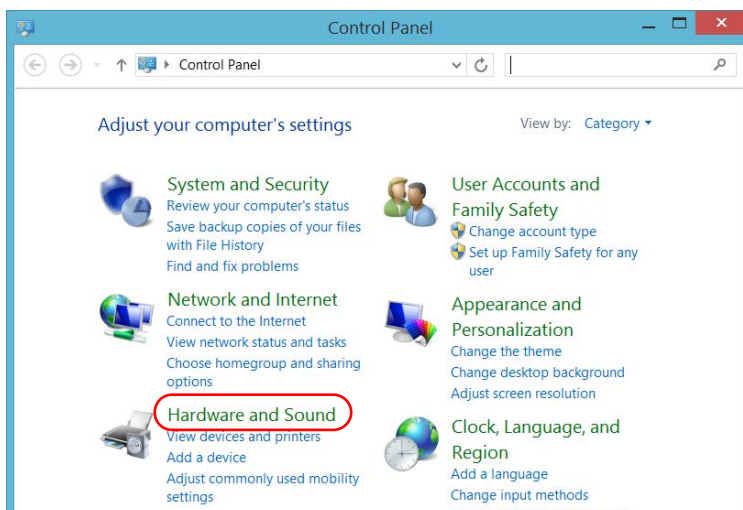
**3.** From your unit, retrieve the COM port of the adapter as follows:

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

**3b.** Tap **Control Panel**.



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

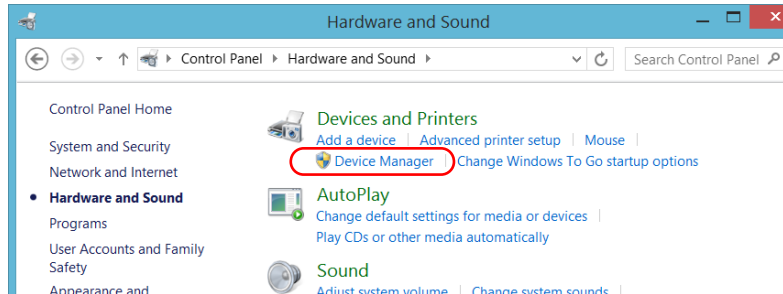


## Managing Data

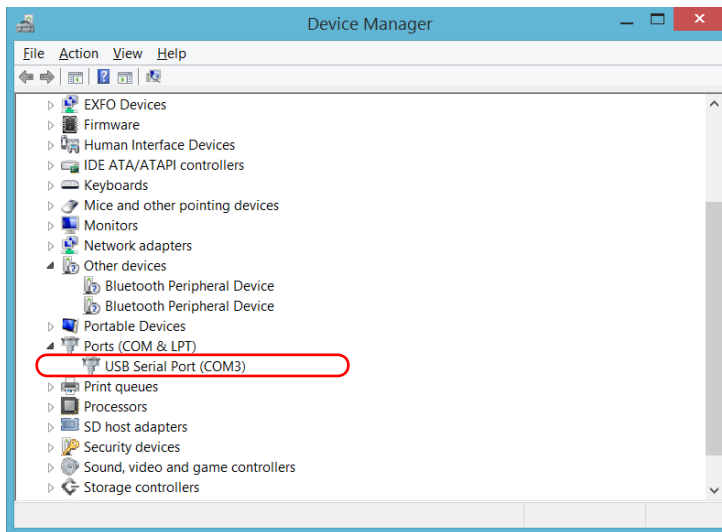
### Using the USB to RS-232 Adapter

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

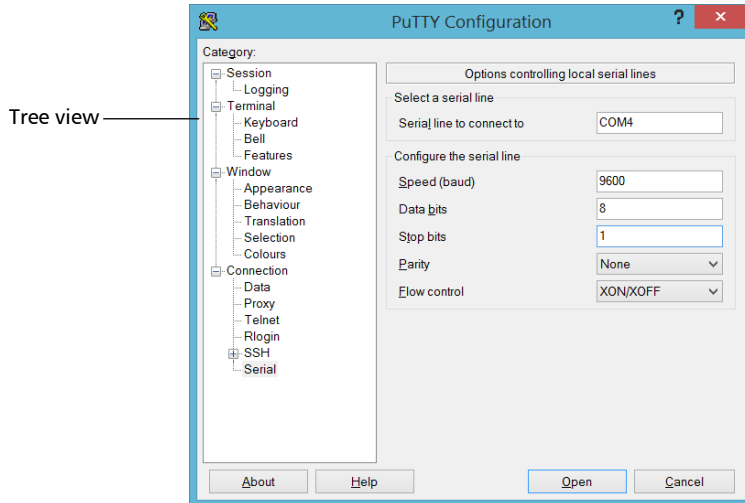


**3e.** Expand the **Ports (COM & LPT)** list to retrieve the COM port number that has been assigned to the adapter (identified as *USB Serial Port*) and write it down.



**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.

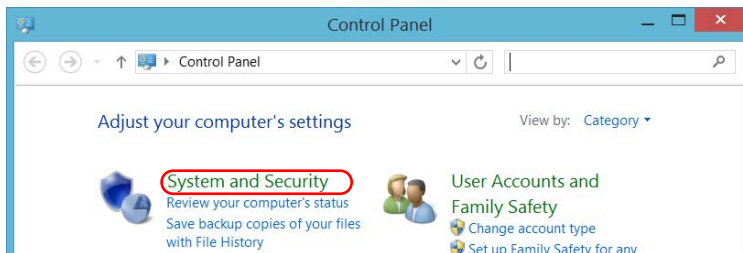
## Managing Data

### *Freeing Up Disk Space with the Disk Cleanup Utility*

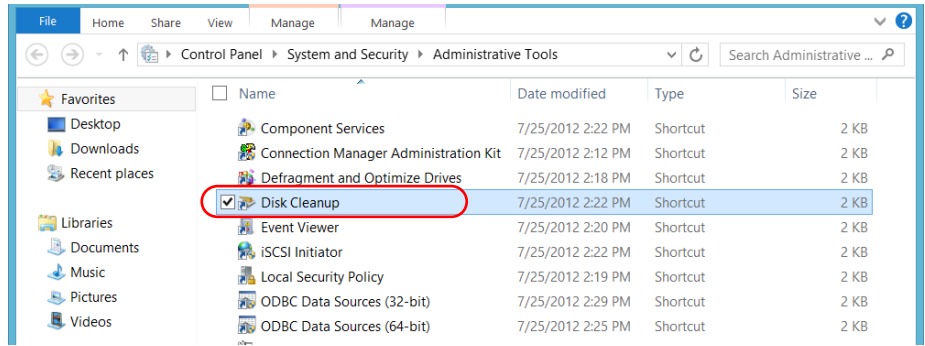
#### 3. Tap Control Panel.



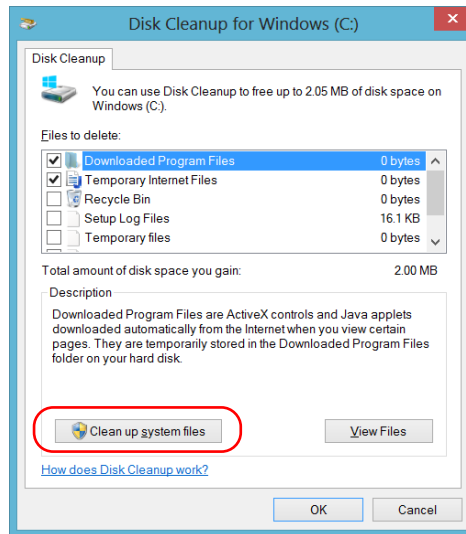
#### 4. Tap System and Security.



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



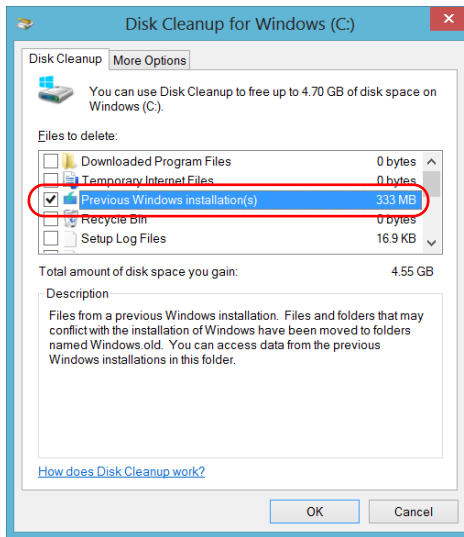
**6. If you want to remove system files such as the files from the Windows.old folder, tap Clean up system files.**



## Managing Data

### *Freeing Up Disk Space with the Disk Cleanup Utility*

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 or to transfer data with the Bluetooth technology for a certain period of time, you may wish to disable the wireless communication to extend battery life. If you prefer, you can disable the Wi-Fi and Bluetooth communication as well as the mobile broadband USB modem key at the same time by activating the “airplane mode”.



### **IMPORTANT**

**On units running Windows Embedded 8 Standard, you cannot disable the Bluetooth<sup>®</sup> communication either manually or with the airplane mode.**

**When you activate the airplane mode, only the Wi-Fi communication and the mobile broadband USB modem key (connected to your unit) are disabled.**

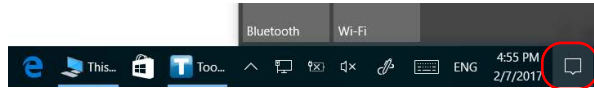
You can enable the Wi-Fi and Bluetooth communication as well as the mobile broadband USB modem key again at any time.

## Managing Data

### Enabling or Disabling the Wireless Communication

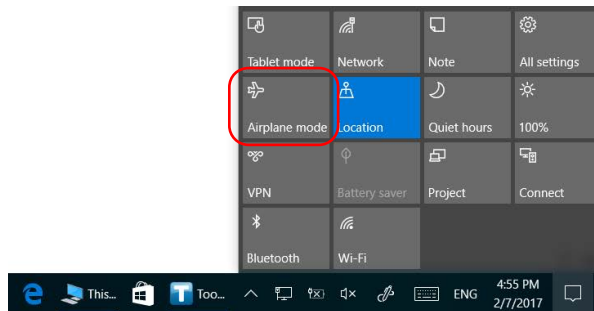
#### To enable or disable the wireless communication in Windows 10:

1. From the notification area, tap the notification preview icon.

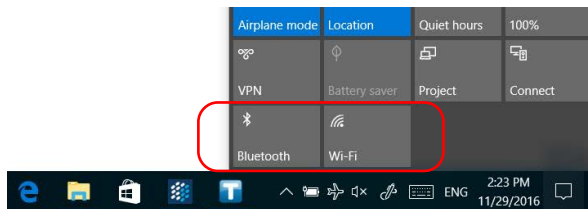


2. Set the wireless communication parameters as needed.

- If you want to set the parameters for the Wi-Fi and the Bluetooth communication, as well as the mobile broadband USB key at the same time, tap the **Airplane mode** button to turn this mode on or off. Turning this mode on disables the communication, and turning it off enables the communication.

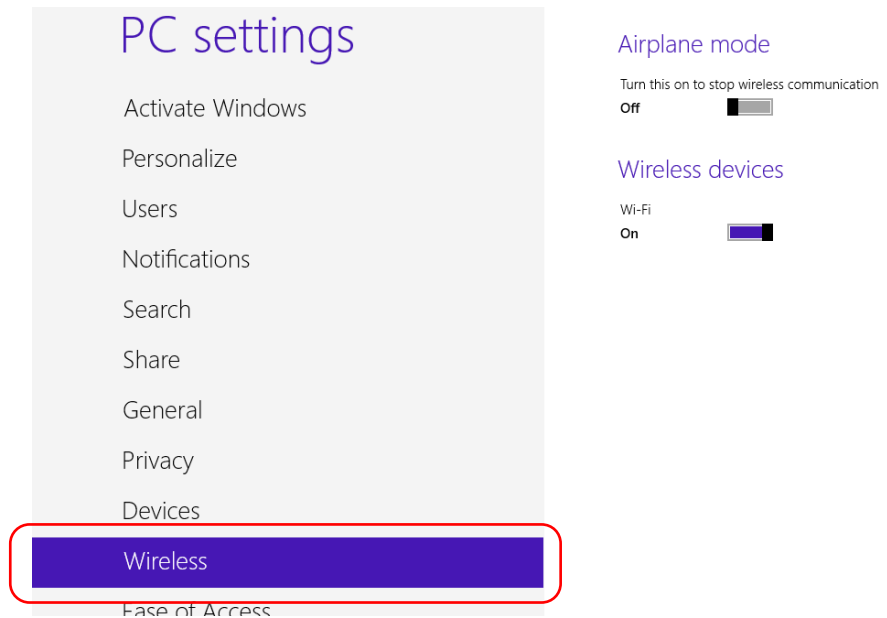


- If you want to set the parameters for the Wi-Fi or the Bluetooth communication only, tap the desired button to turn the corresponding communication on or off.



***To enable or disable the wireless communication in Windows Embedded 8 Standard:***

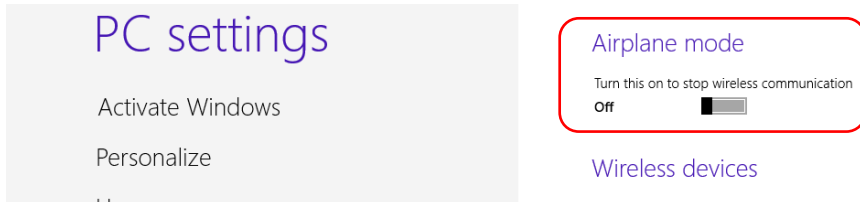
- 1.** From the right side of the screen, swipe left to display the Charm bar.
- 2.** Tap **Settings**, and then **Change PC Settings**.
- 3.** Tap **Wireless**.



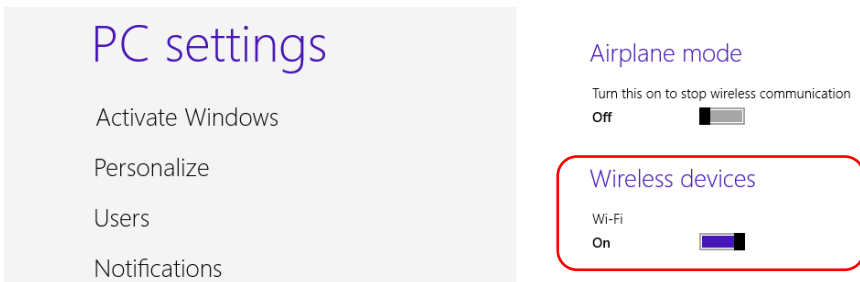
## Managing Data

### *Enabling or Disabling the Wireless Communication*

4. Set the wireless communication parameters as needed.
  - If you want to set the parameters for the Wi-Fi device and the mobile broadband 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, or provide your own compatible VPN client (Windows 10 only). 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 mobile broadband USB modem key (see *Accessing the Internet with a Mobile Broadband USB Modem Key* on page 113) 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 does not provide any VPN clients. You must either use one of the VPN clients available directly in Windows or provide the installation files for another VPN client yourself.
- EXFO will not provide any support regarding the VPN clients or connection.

## Managing Data

*Connecting to a VPN from Your Unit*



### IMPORTANT

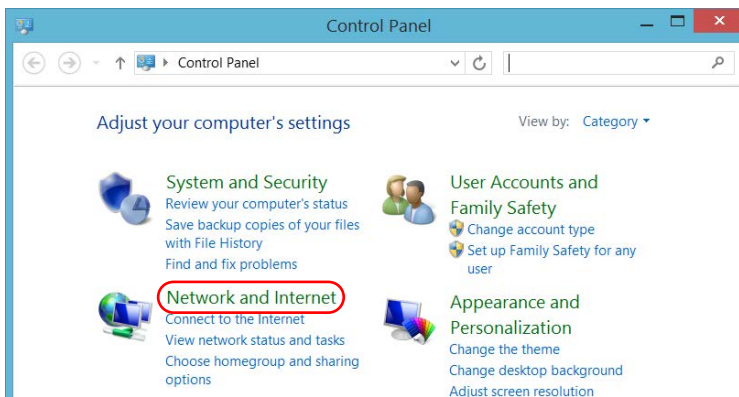
To avoid communication problems between the VPN client and the VPN server, ensure that the date set on your unit corresponds to the current date.

#### ***To add a VPN connection:***

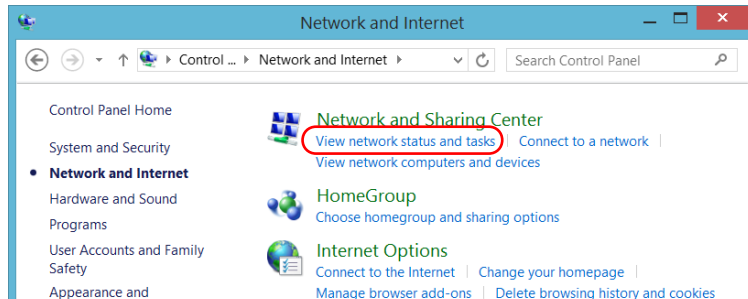
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



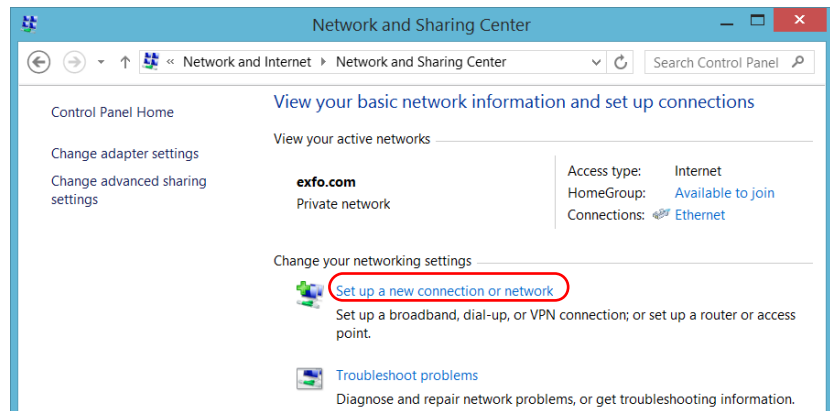
3. Tap **Network and Internet**.



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



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

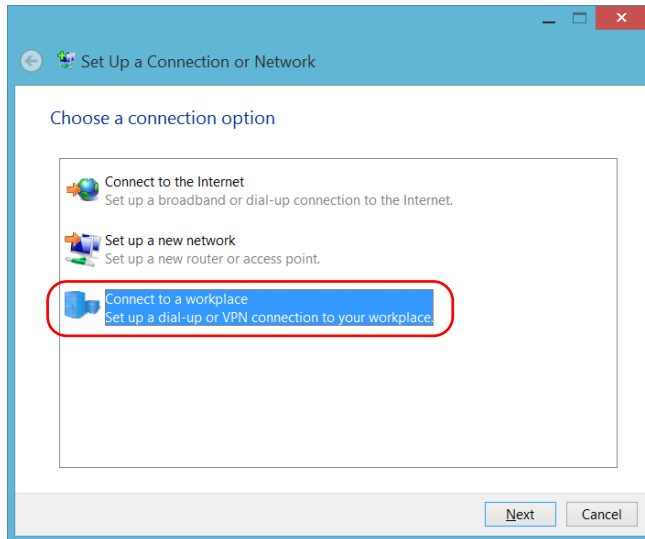


## Managing Data

### *Connecting to a VPN from Your Unit*

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



7. Follow the on-screen instructions.

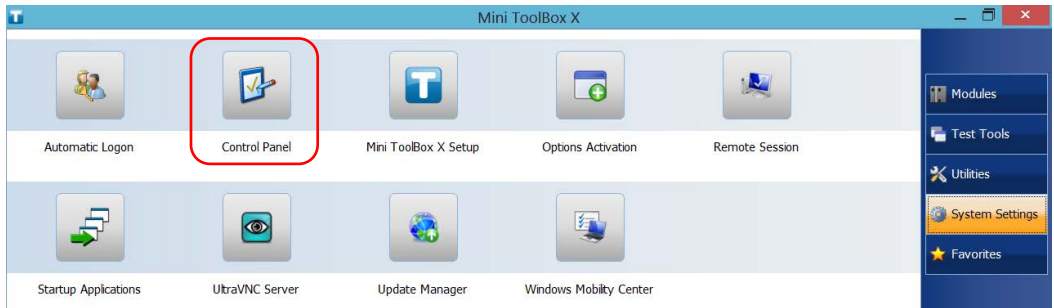
#### **To install a VPN client on your unit (Windows 10 only):**

1. Start the installation of the VPN client using the files and settings provided by your network administrator.
2. Follow the on-screen instructions.

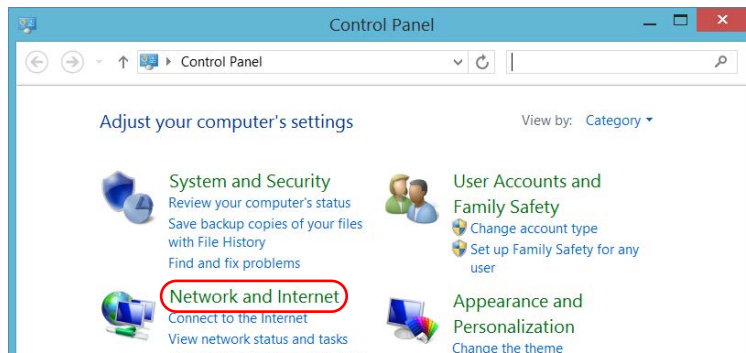
Once the installation is complete, all users will now be able to connect to a VPN from the unit.

#### **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**.

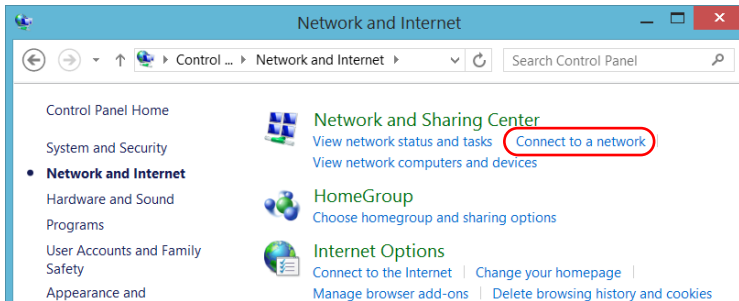


## Managing Data

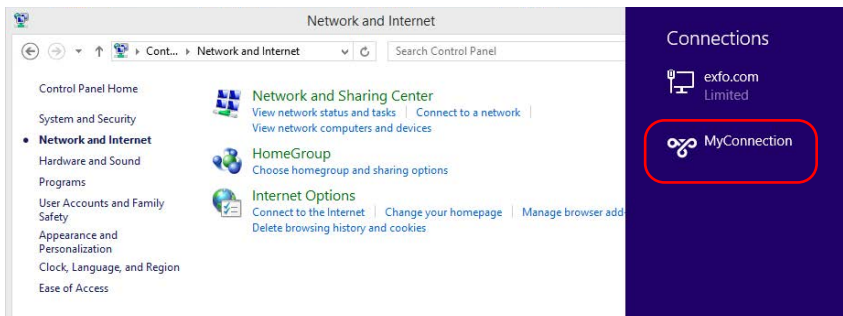
### Connecting to a VPN from Your Unit

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



5. From the list displayed at the right of the screen, select the desired VPN connection.



6. If your unit is running Windows 10, a new window will open. Select the desired VPN connection from the list.
7. Tap **Connect**.
8. Enter your sign-in information to the VPN, and then tap **OK**.

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.

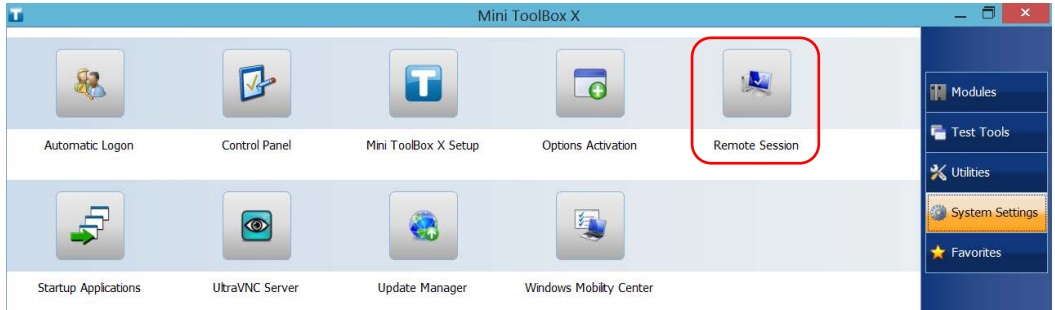
**Note:** *If your unit and the computer are on the same network, you can even use the computer name of your unit, which corresponds to the model of your unit, followed by its serial number. You can view the computer name of your unit from **System Settings > Remote Session > Computer Name**.*

- 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.

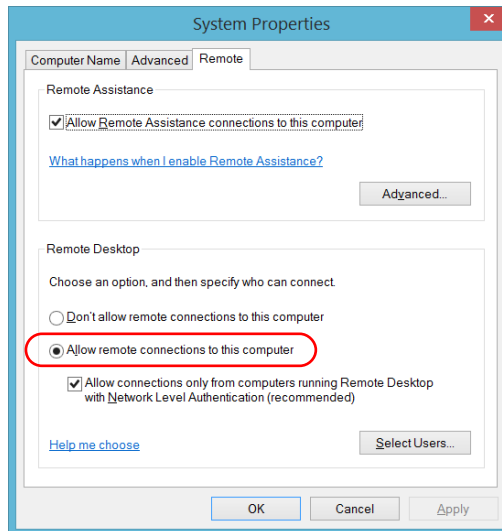


**To allow the remote access to your unit with Remote Desktop:**

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.

## Accessing Your Unit Remotely


### *Working with Remote Desktop*

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#### ***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 136.
- 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 or Windows 10: 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.

## Accessing Your Unit Remotely

### *Working with Remote Desktop*

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## Allowing Users with Limited Accounts to Use Remote Desktop

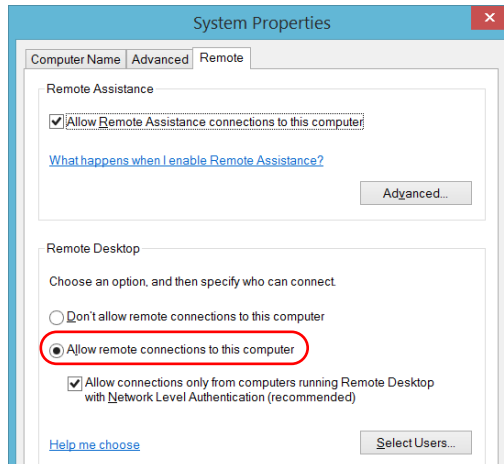
By default, only the accounts with administrator rights can use Remote Desktop. However, you can assign extra user rights to accounts with limited rights so that they can also use Remote Desktop.

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

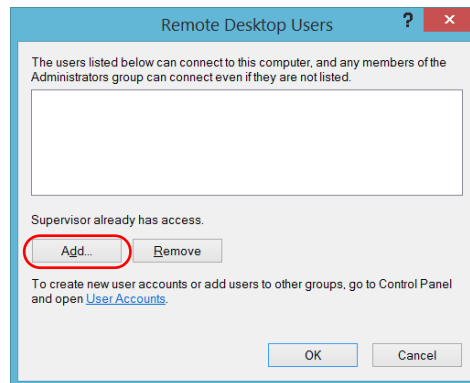
1. From the main window, tap the **System Settings** button.
2. Tap **Remote Session**.



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



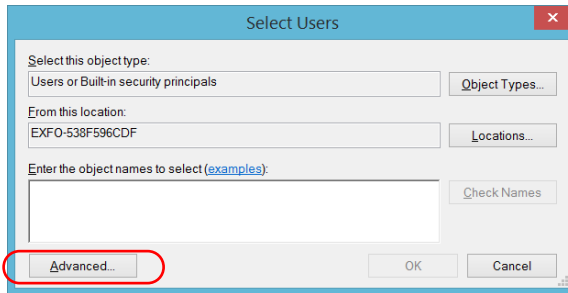
4. Tap **Select Users**.
5. From the **Remote Desktop Users** dialog box, tap **Add**.



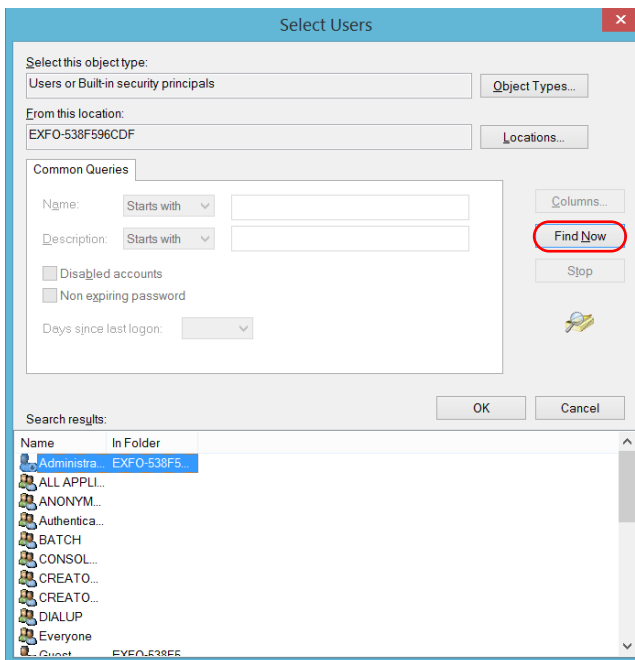
## Accessing Your Unit Remotely

### Working with Remote Desktop

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

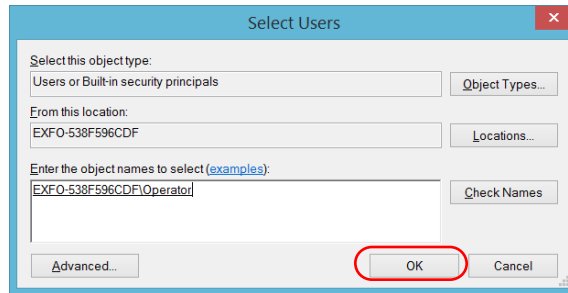


7. Tap **Find Now** to let the system find and display the list of users.



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.

## Accessing Your Unit Remotely

### *Working with Remote Desktop*

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## 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.

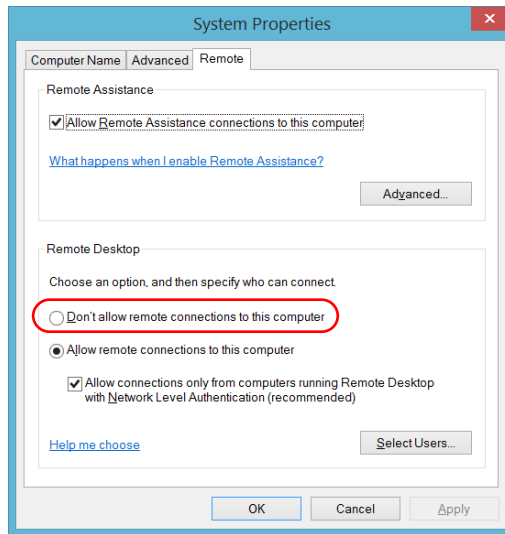
### ***To prevent users from connecting to the unit using Remote Desktop:***

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.

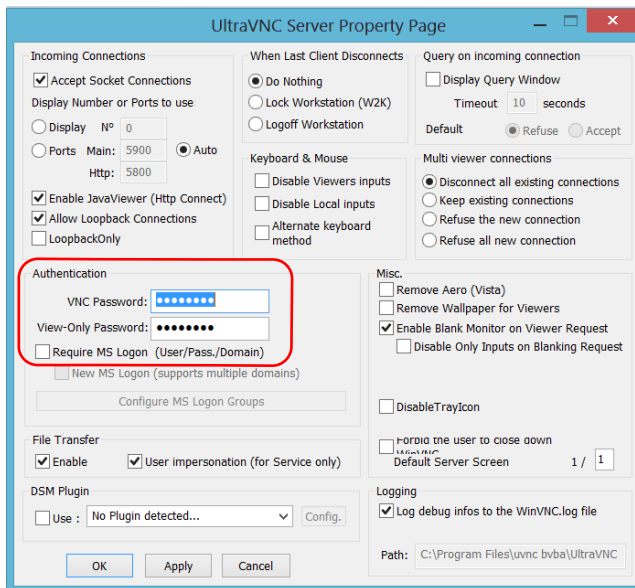


4. From the shortcut menu, tap **Admin Properties**.

## Accessing Your Unit Remotely

### Working With VNC

- 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.

- 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.

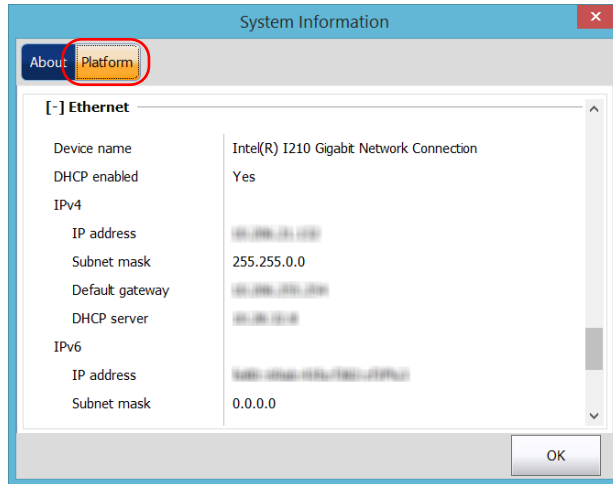
## Connecting to Your Unit with VNC

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 136.
  - You can also create a Private Area Network with your Bluetooth device (see *Transferring Data via the Bluetooth Technology* on page 129).
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.*

## Accessing Your Unit Remotely

### Working With VNC

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8. From the main window, tap the **System Settings** button.
9. Tap **UltraVNC Server** to start the server.

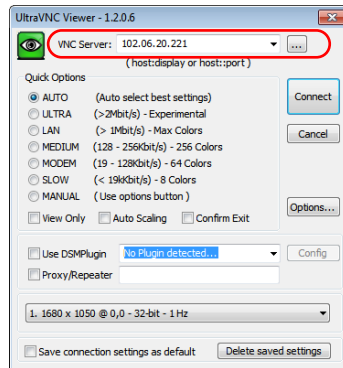


**Note:** For security reasons, the UltraVNC Server is not started automatically. However, if you prefer that your unit remains ready for remote connections at all times, you can install the corresponding service (right-click the UltraVNC icon, and then tap **Install Service**). Refer to the Web site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

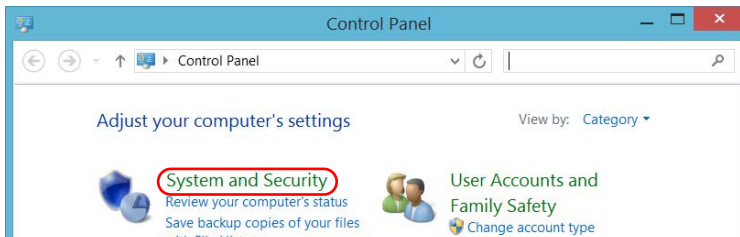
If you are not sure about how to configure the firewall, contact your network administrator.

### **To add exceptions to the firewall:**

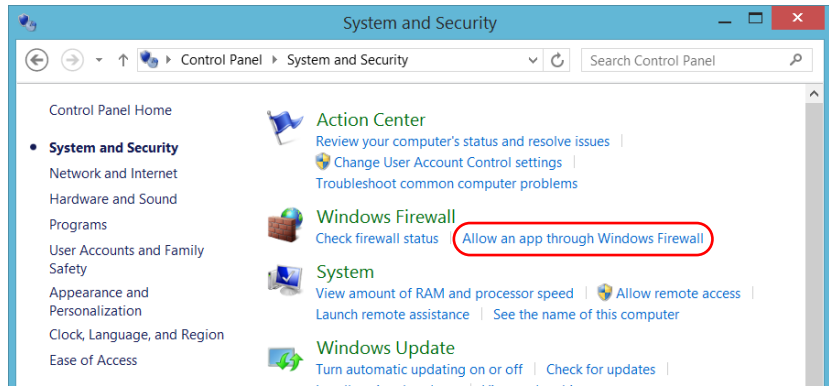
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



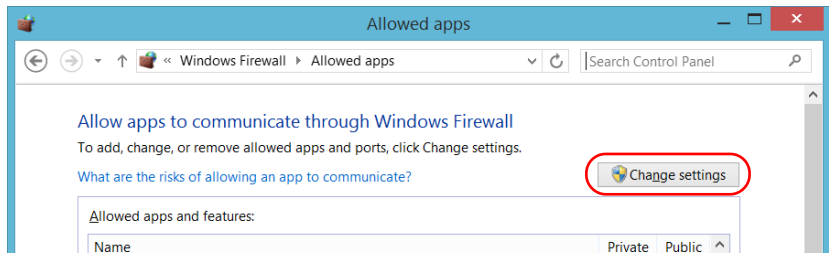
3. Tap **System and Security**.



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



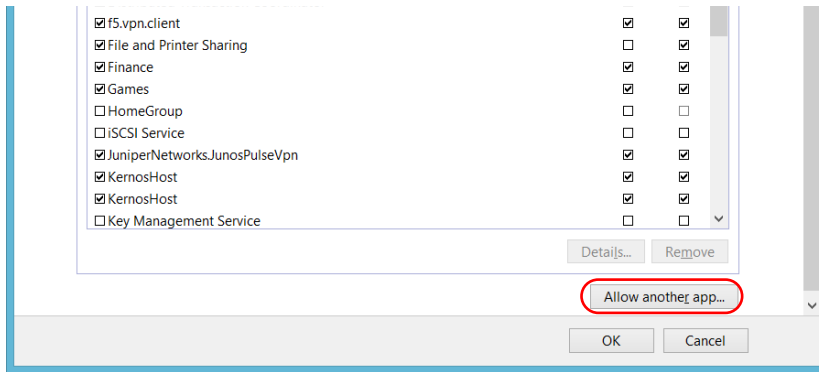
5. Tap the **Change settings** button.



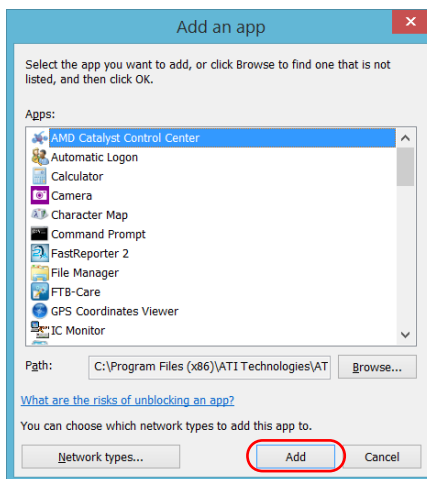
## Accessing Your Unit Remotely

### Adding Exceptions to the Firewall

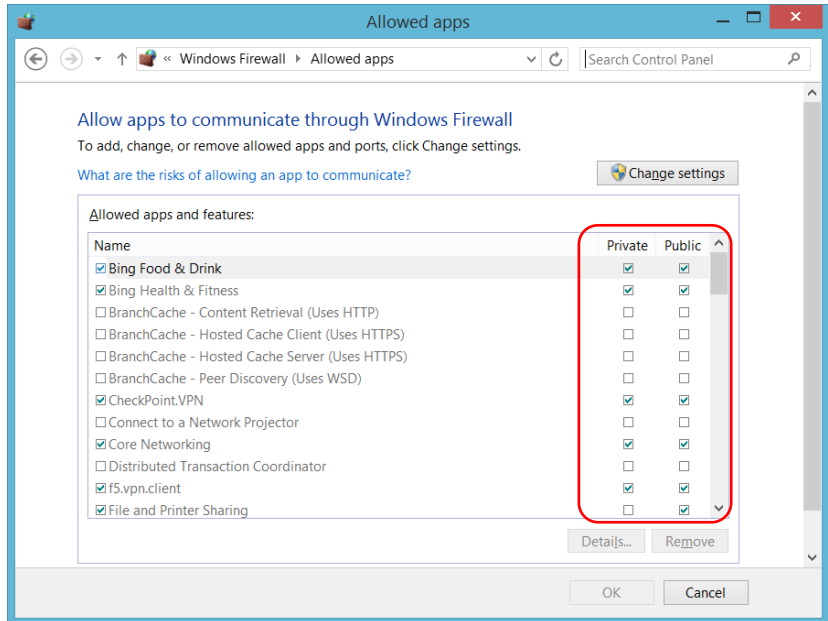
6. Tap the **Allow another app** button.



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.

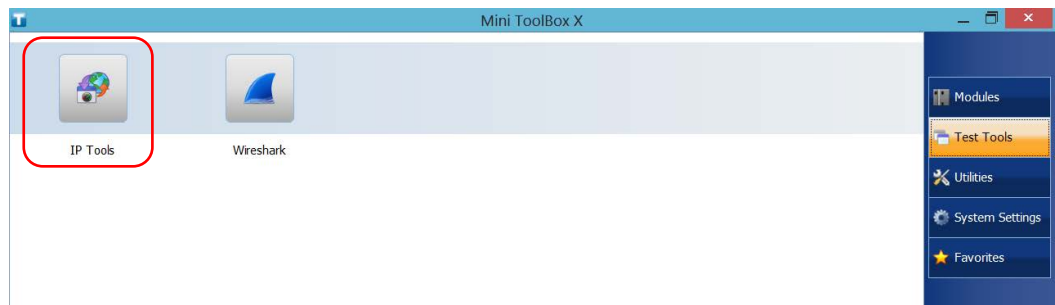
When the test is complete, you can export the results. You can later import the generated text file (tab-delimited) directly into Microsoft Excel.

# Testing Network Connections

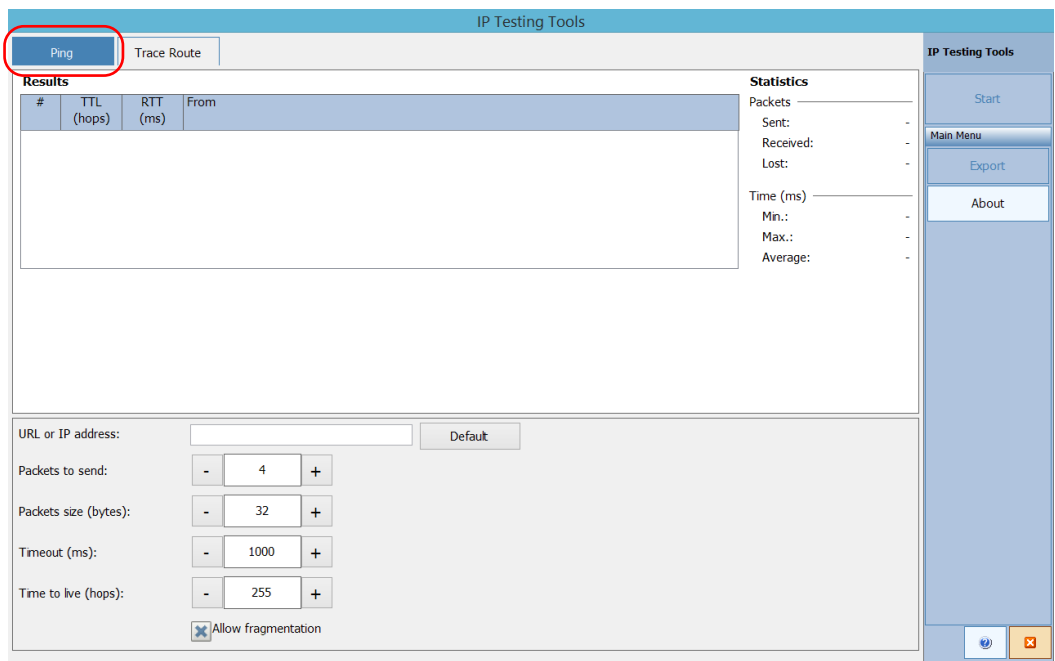
## Performing a Ping Test

### 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.

**Note:** *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).

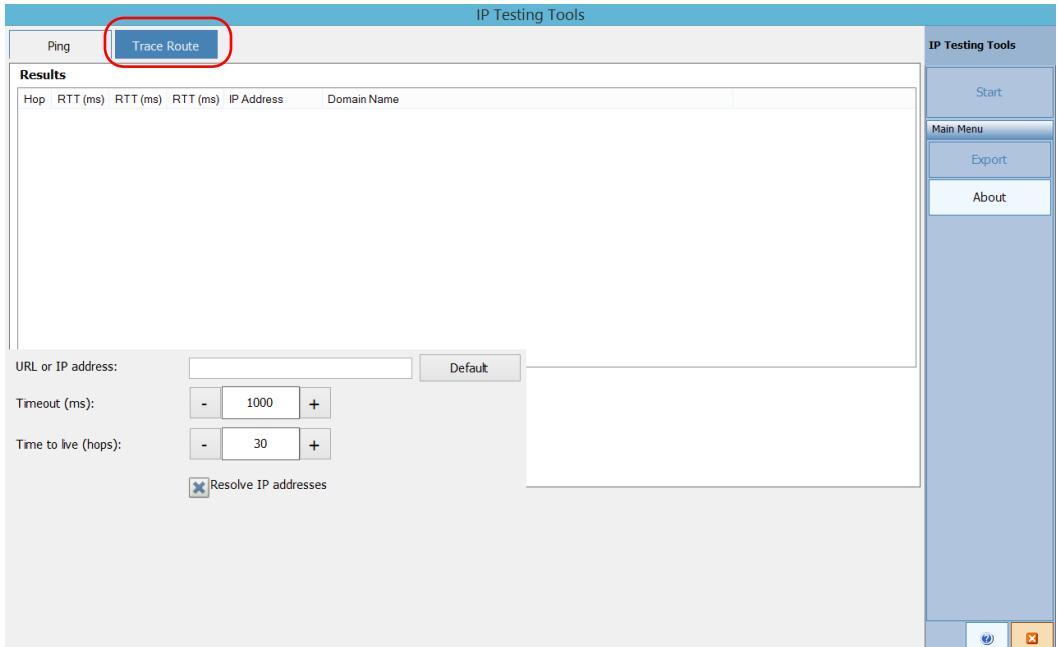
This trace route test utility enables you to:

- 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.

**Note:** 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](http://www.yoursite.org) made on July 3<sup>rd</sup>, 2014, the suggested filename would be:

Ping for [www.yoursite.org](http://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.

## Battery Maintenance Recommendations



### WARNING

Your unit uses the following type of batteries: Smart lithium ion.

These are batteries with built-in protection that have been especially designed for EXFO. For this reason, you can only replace them with EXFO-approved batteries of the same type and model.



### WARNING

The use of unapproved batteries may result in the batteries expanding or igniting (that is, catching fire).



### WARNING

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the manufacturer's instructions.



### WARNING

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



### IMPORTANT

Recycle or dispose of used batteries properly, in accordance with local regulations. Do not dispose of them in ordinary garbage receptacles. For more information, see the section about recycling and disposal in this user documentation.

- At EXFO, we take the safety of our customers very seriously and want to make sure any battery replacement is done properly.

The batteries of all EXFO-branded products are tested, certified, and in compliance with these international safety standards:

- United Nations (UN) Transport Regulations UN38.3: Covers battery safety during air transport.
- UL 61010-1, CAN/CSA C22.2 61010-1 and International Standard IEC/EN 61010-1: Covers the use of batteries for test and measurement equipment.
- International Standard IEC 62133: Covers secondary cells and batteries containing alkaline or other non-acid electrolytes.
- In some countries, when required, EXFO-approved batteries have been certified and are marked as per local regulation.
- To get pricing and correct part number for replacement batteries for your products, please contact (via email):
  - For Americas: [Isales.us@exfo.com](mailto:Isales.us@exfo.com)
  - For Europe: [Isales.emea@exfo.com](mailto:Isales.emea@exfo.com)
  - For APAC: [Isales.apac@exfo.com](mailto:Isales.apac@exfo.com)
  - For China: [Isales.China@exfo.com](mailto:Isales.China@exfo.com)
- You may also obtain replacement batteries for your products by contacting your local distributor:  
<https://www.exfo.com/en/how-to-buy/find-distributor>
- You may return your unit for service at your local service center:  
<https://www.exfo.com/en/services/field-network-testing/exfo-service-centers/>

## Recharging the Batteries

All models, except the MAX-840 and MAX-890Q, use one smart lithium-ion (Li-ion) battery. The MAX-840 and MAX-890Q use two smart Li-ion batteries.

- 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 11).



### CAUTION

Only charge the batteries with the AC/DC power adapter (or the car outlet adapter, when offered) provided by EXFO with your unit. If you are working with a MAX-840 or a MAX-890Q HPDCv2 unit, ensure that you use the provided AC/DC power adapter with the matching yellow ring.





## **IMPORTANT**

- The 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 the batteries depends on various factors such as the model of the unit and the ambient temperature.
- To ensure that the batteries function or charge properly, keep them in temperatures between 10 °C and 40 °C (50 °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 batteries with new ones to maintain optimal operation conditions. Otherwise, the operating time might be reduced.

## Maintenance

### *Recharging the Batteries*

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## IMPORTANT

- If the unit will not be used for more than two weeks, ensure that the batteries are charged at around 50 % of their capacity, and then turn the unit off (shutdown). For optimum battery performance, follow the recommendations below about battery storage.
- 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 levels. Recharge the batteries when necessary, so that their charge levels remains around 50 % of the total capacity. This will ensure that you get the optimum performance out of the batteries.

### ***To recharge the batteries:***

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

## Modifying the Low-Battery Thresholds

Your unit was set at the factory to warn you about low battery charge level (when it reaches about 10 %), and to shut down automatically when the batteries reach a very low charge level (less than 5 %).

However, you can modify these thresholds to better suit your needs.

**Note:** Each power plan has its own set of thresholds. This means that when you modify the thresholds of a given power plan, the thresholds of the other power plans are not changed automatically. If you want to modify the thresholds of other power plans, you have to select them in turn and make the required changes.

### To modify the low-battery thresholds:

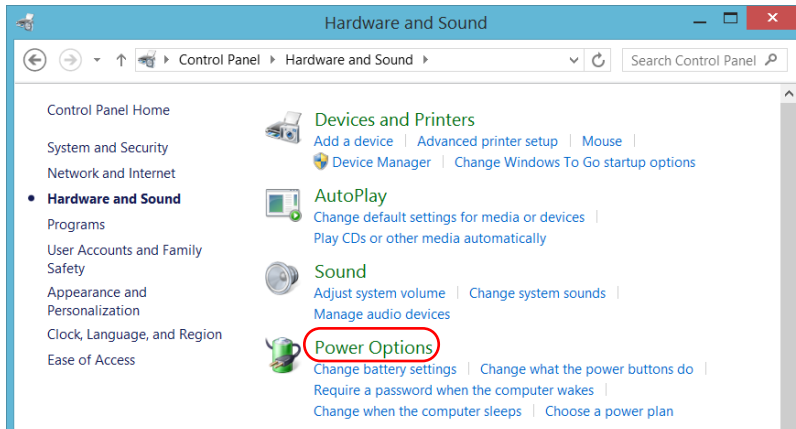
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



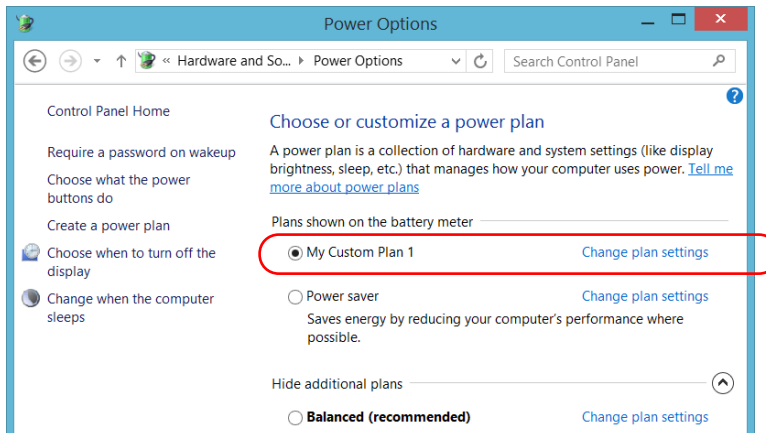
## Maintenance

### *Modifying the Low-Battery Thresholds*

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

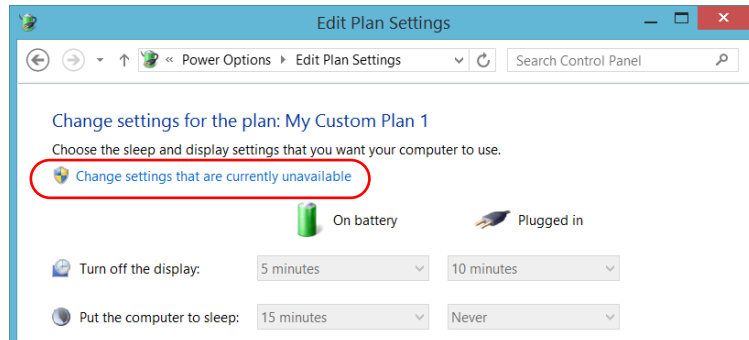


#### 4. From the list of available power plans, locate the set of parameters that you want to modify.

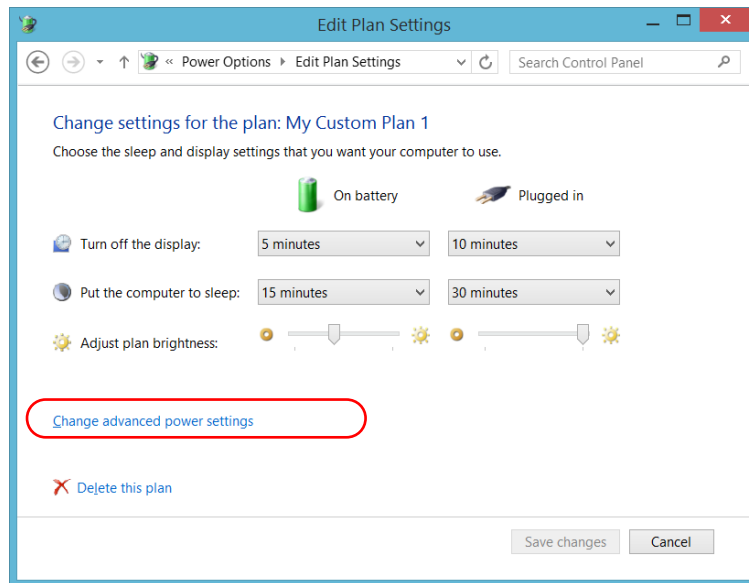


#### 5. Tap **Change plan settings** (appearing next to the power plan).

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



7. Tap **Change advanced power settings**.

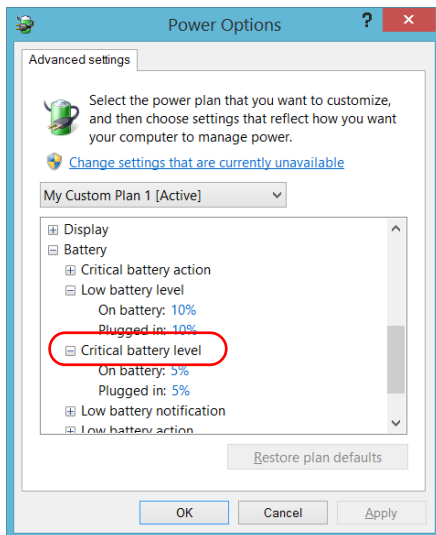


## Maintenance

### *Modifying the Low-Battery Thresholds*

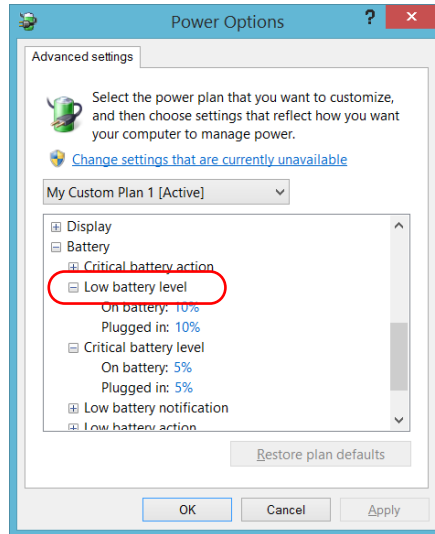
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8. From the list of settings, go to **Battery** > **Critical battery level**.



9. Under **On battery**, enter the new value.

- 10.** From the list of settings, go to **Battery** > **Low battery level**.



- 11.** Under **On battery**, enter the new value.

- 12.** Tap **OK**.

- 13.** Close the window.

The changes are taken into account immediately.

## Maintenance

*Replacing the Battery (All Models Except MAX-840 and MAX-890Q)*

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### Replacing the Battery (All Models Except MAX-840 and MAX-890Q)

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



#### 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. You can purchase new batteries from EXFO.

**Note:** *The size of the battery may vary depending on the model of your unit and its time of manufacturing.*

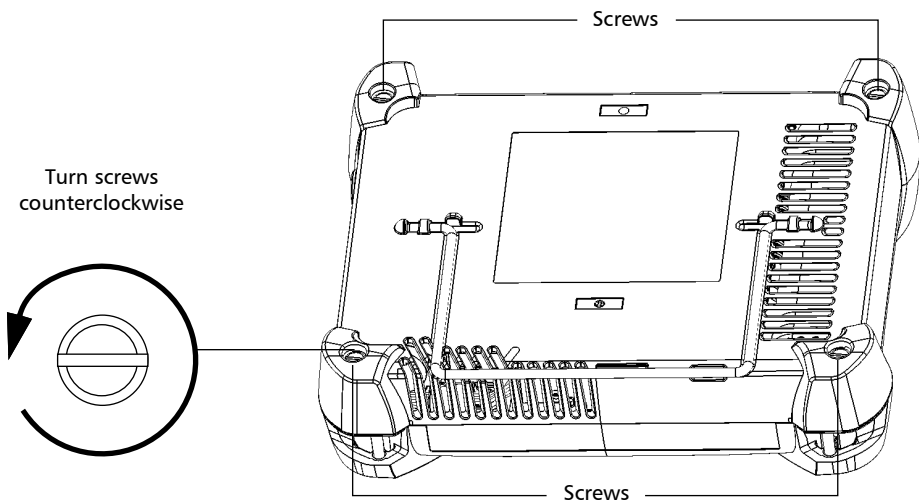
For more information on the available power sources for your unit, as well as their characteristics, refer to the *Technical Specifications* of your product.

Before you go out in the field, you may want to install a fully charged 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.



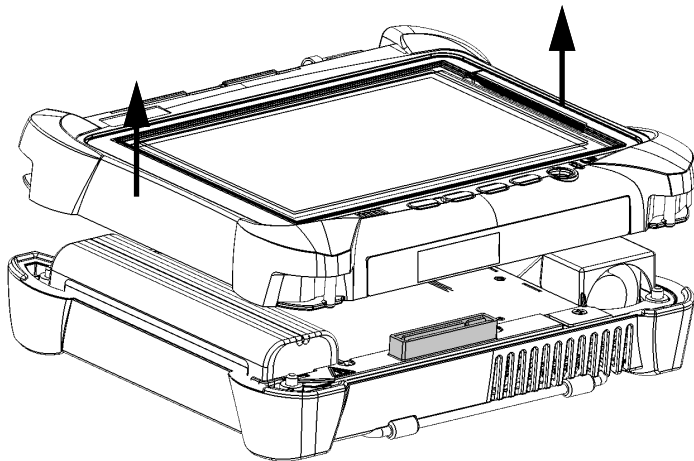
- 4.** While holding the front and the back panels firmly together, turn the unit over, and position it so that its *back* panel rests on a flat surface such as a table.

## Maintenance

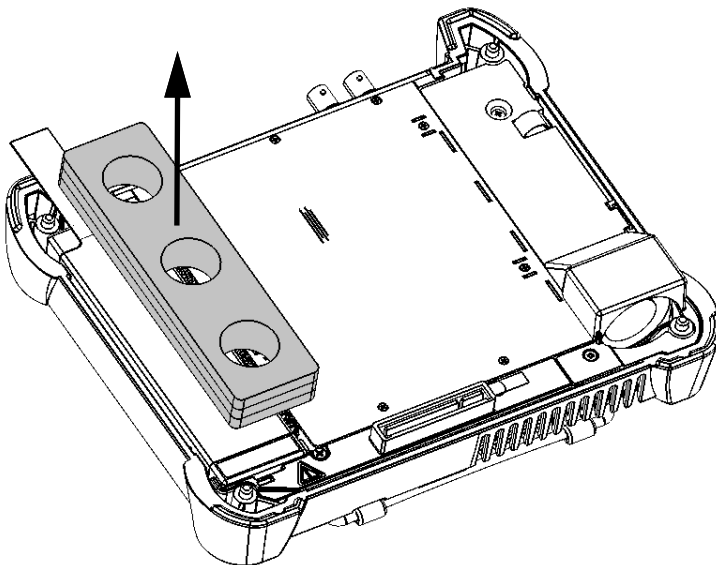
### *Replacing the Battery (All Models Except MAX-840 and MAX-890Q)*

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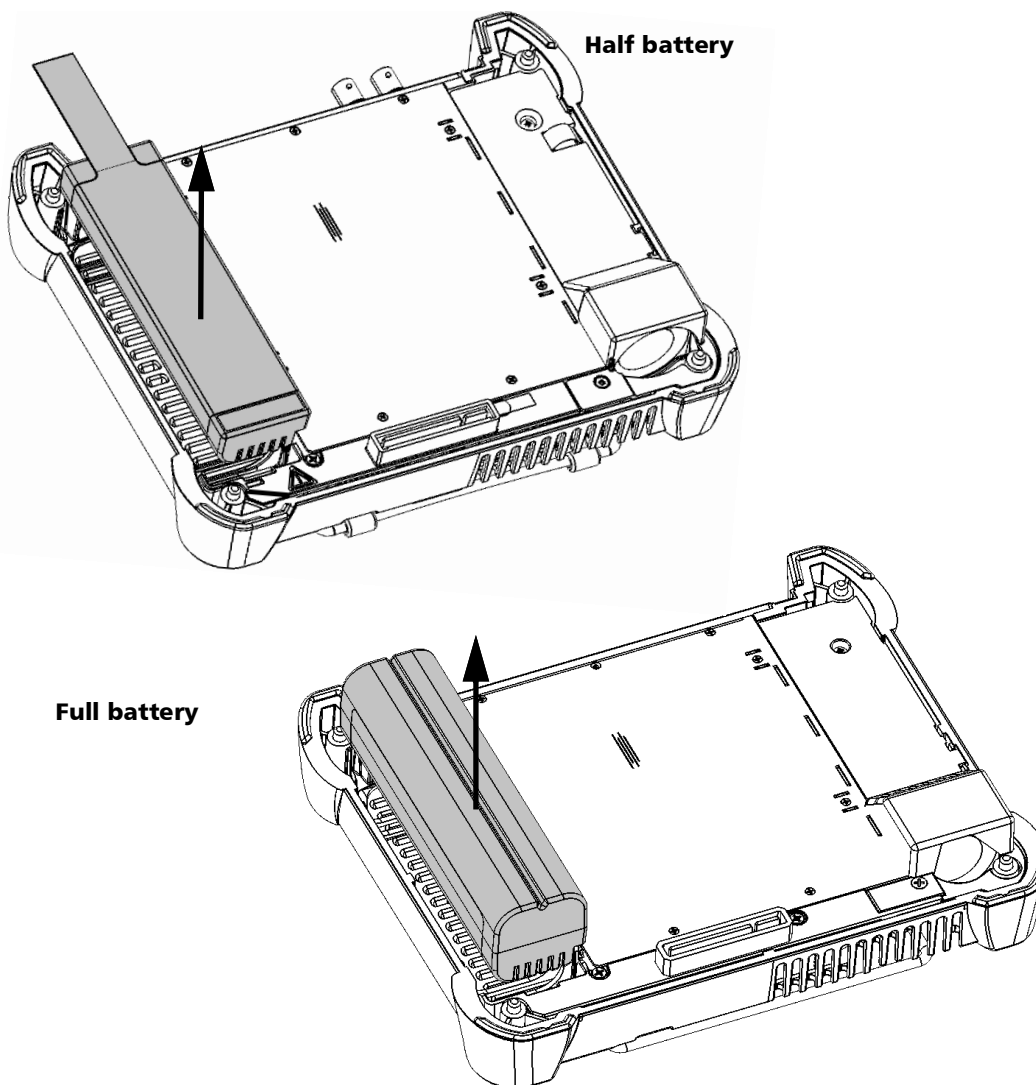
5. Hold the front panel by its sides and pull it up.



6. If your unit is equipped with a battery filler, pull it up to remove it and expose the battery.



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



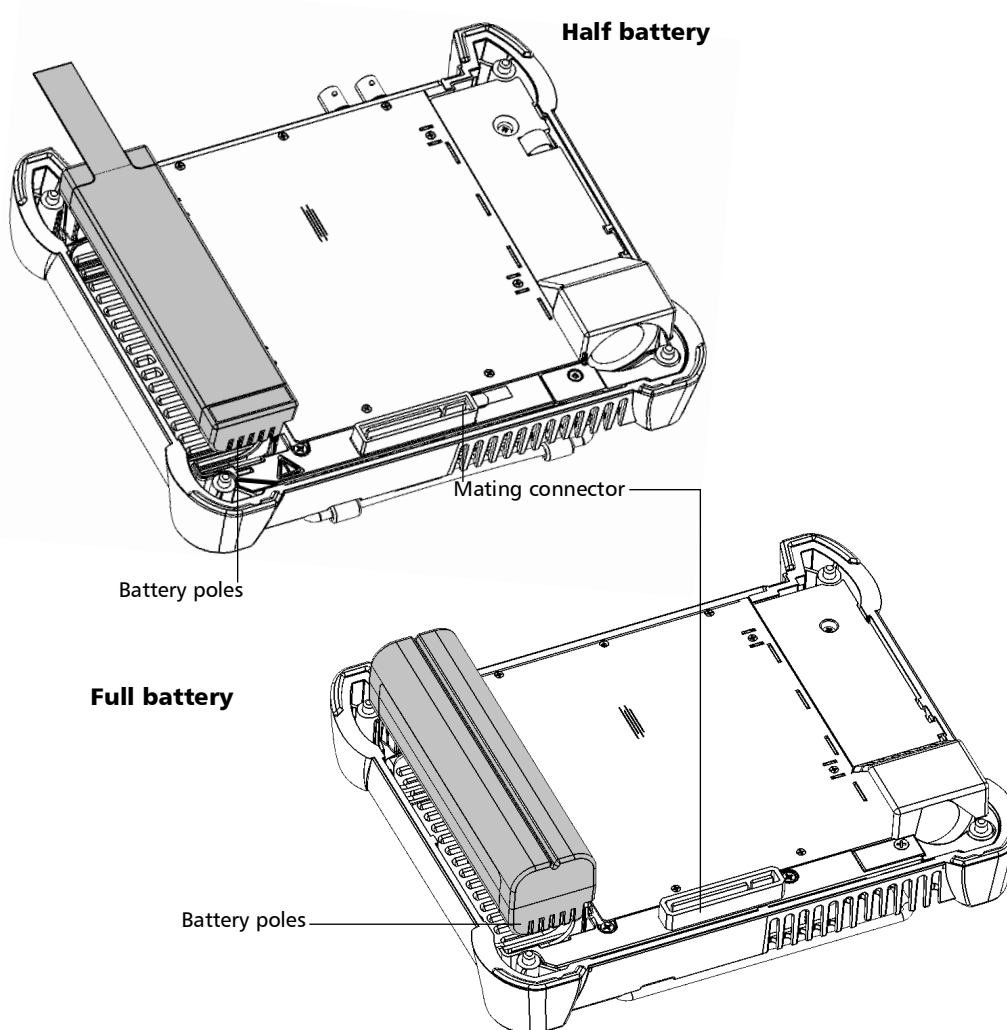
You are now ready to replace the battery.

## Maintenance

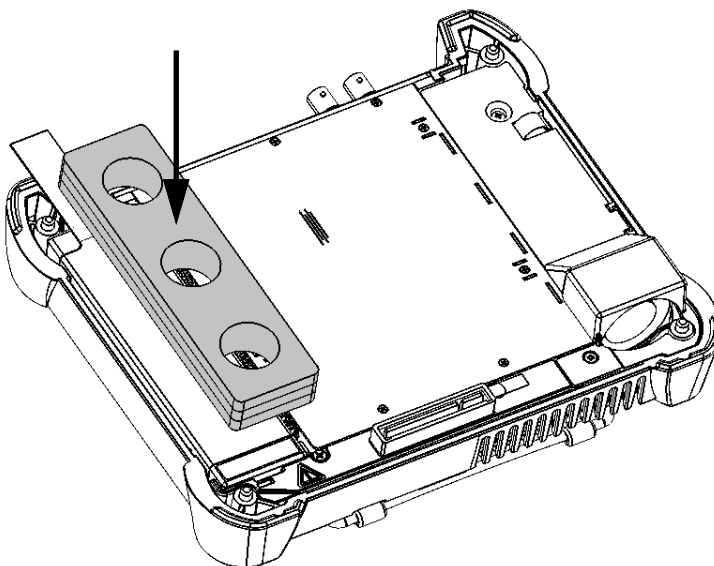
### *Replacing the Battery (All Models Except MAX-840 and MAX-890Q)*

#### **To replace the battery in the unit:**

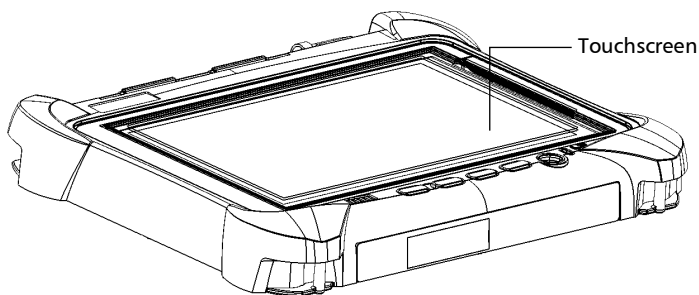
1. Place the new battery so that its poles are facing down and that they point to the same side of the case as the mating connector of the back panel.



2. Push the new battery toward the bottom of the case until it stops.
3. If you are working with a half battery, 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.

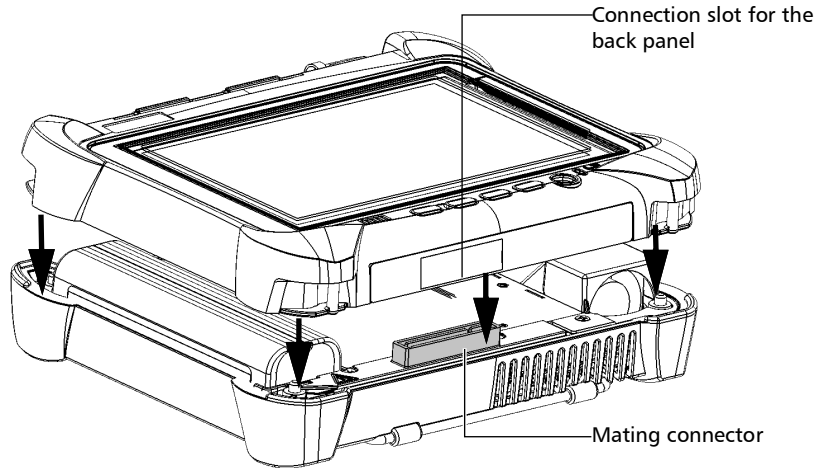


## Maintenance

### *Replacing the Battery (All Models Except MAX-840 and MAX-890Q)*

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5. Place the front panel on the back panel of the unit, making sure that the mating connector of the back panel is aligned properly 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.

## Replacing the Batteries (MAX-840 and MAX-890Q)

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



### **WARNING**

Your unit uses two smart lithium-ion (Li-ion) batteries with built-in protection that have been especially designed for EXFO. For this reason, you can only replace them with batteries of the same type and model. You can purchase new batteries from EXFO.

You can easily replace the batteries while the unit is running, as long as the unit remains powered by another reliable power source during the operation.

For more information on the available power sources for your unit, as well as their characteristics, refer to the unit's technical specifications.

Before you go out in the field, make sure you install batteries in the unit unless you have an adequate and reliable power source.

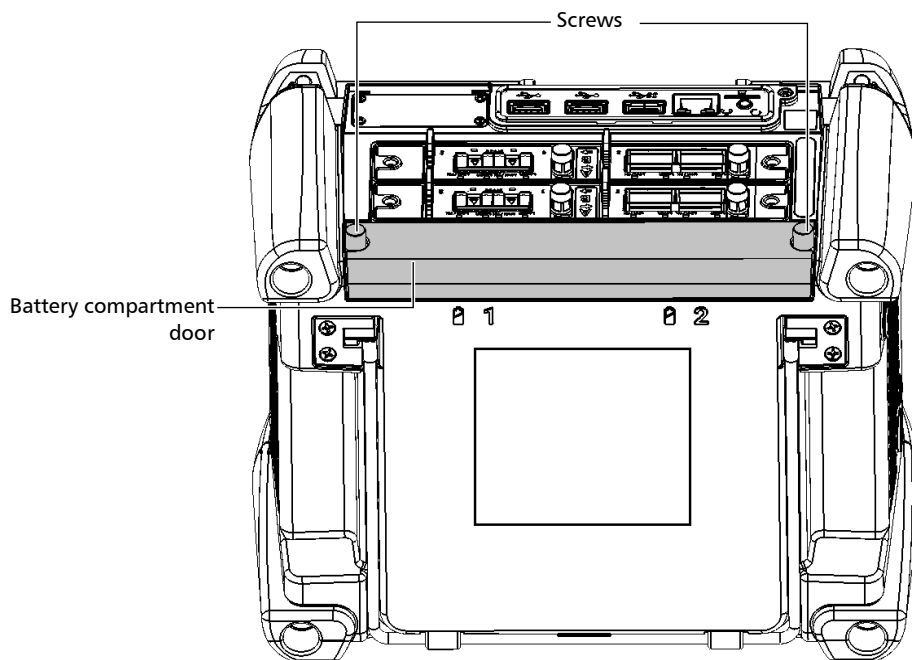
## Maintenance

### *Replacing the Batteries (MAX-840 and MAX-890Q)*

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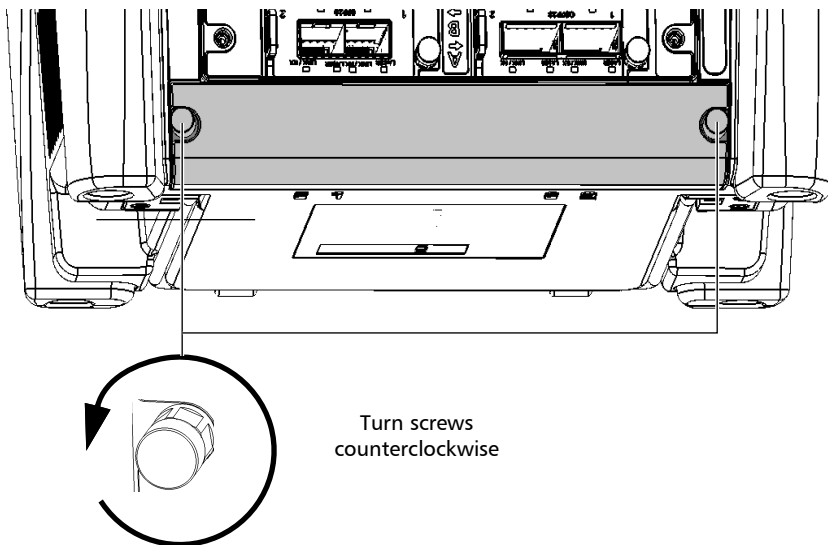
#### **To replace (or install) the batteries:**

- 1.** Open the battery compartment as follows:
  - 1a.** Position the unit vertically so that its back panel is facing you, and you can see the battery compartment screws on its top.

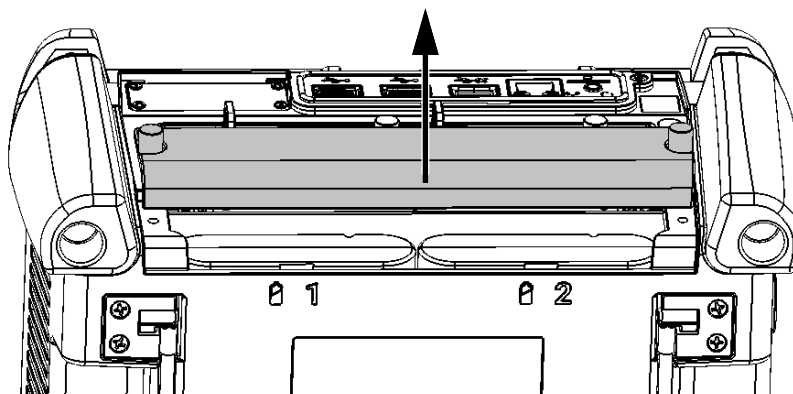




- 1b.** Turn the battery compartment screws counterclockwise until the compartment door is loose. Since they are captive screws, you cannot remove them completely.



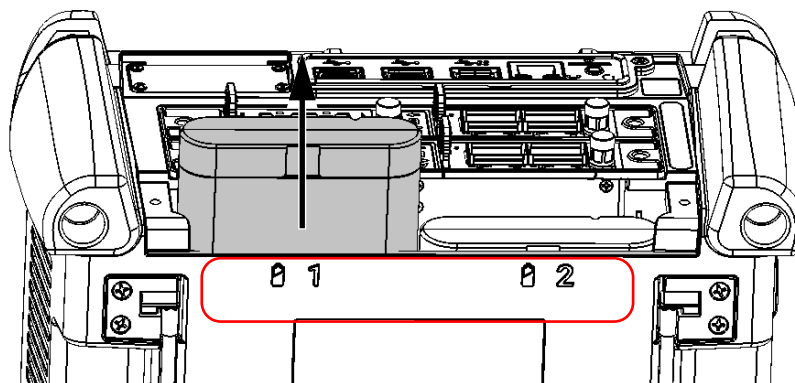
- 1c.** Remove the battery compartment door.



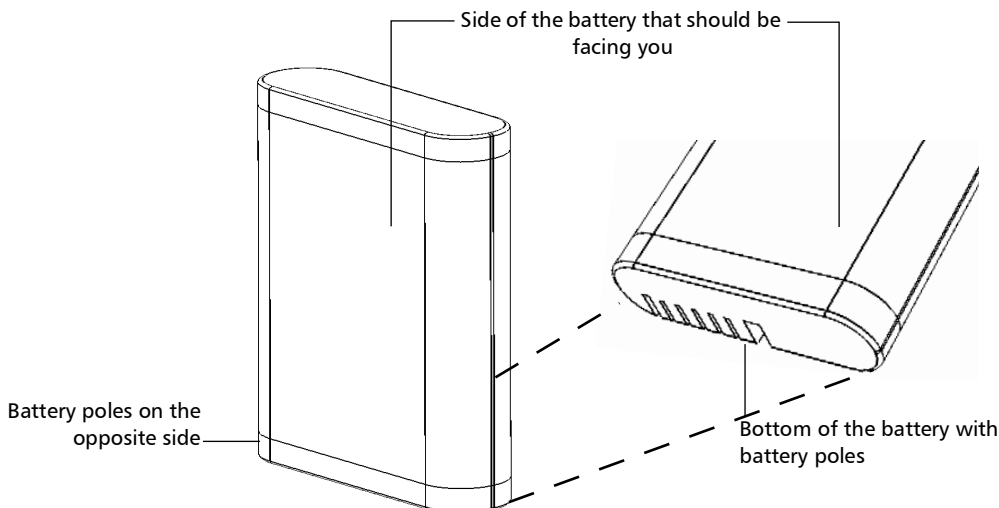
## Maintenance

### Replacing the Batteries (MAX-840 and MAX-890Q)

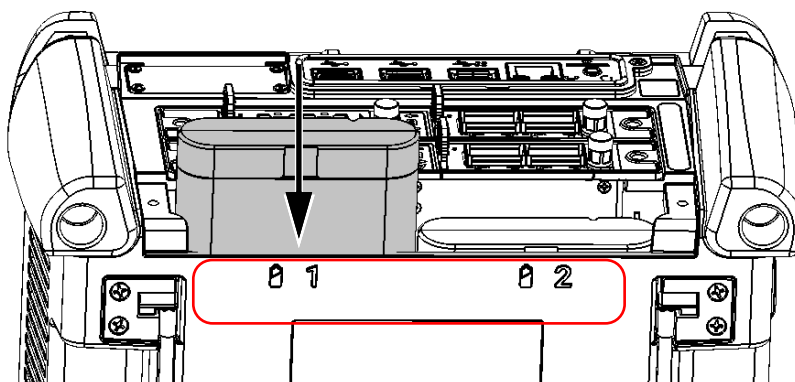
2. Use the markings on the back panel to locate the battery that you want to replace, and then pull on the battery's tab to free it from its socket.



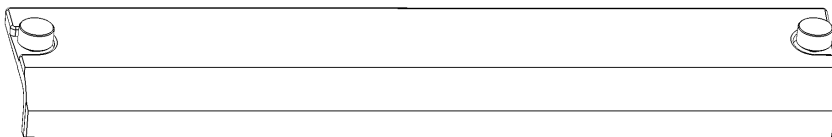
3. Install the new battery as follows:
  - 3a. Place the battery so that its poles are facing down and that they point towards the front of the unit (you should not be able to see the battery poles).



- 3b.** Slide in the new battery, and push it toward the bottom of the unit until it stops.



- 4.** Repeat steps 2 and 3 with the other battery if it also needs replacement.
- 5.** Position the battery compartment door so that you can see its two screws and the rounded side is facing you.

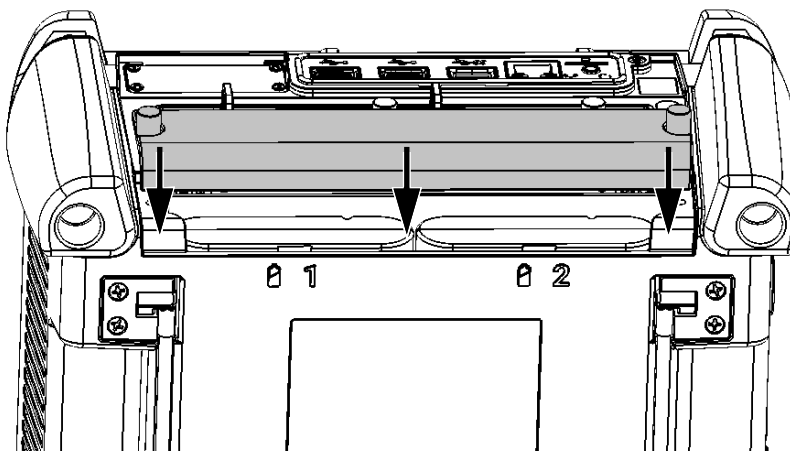


## Maintenance

### *Replacing the Batteries (MAX-840 and MAX-890Q)*

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6. Place the battery compartment door on the unit, making sure that the sides of the compartment door are flush with the top and back of the unit. If necessary, slightly move the battery compartment door until alignment is correct.



7. Turn the battery compartment screws clockwise until they are tightened.

## Managing Windows Updates

The parameters that are available to configure the updates depend on the operating system that your unit is running.

In all cases, 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 EXFO Applications* on page 44. The third-party applications will need to be updated manually.



### Windows 10

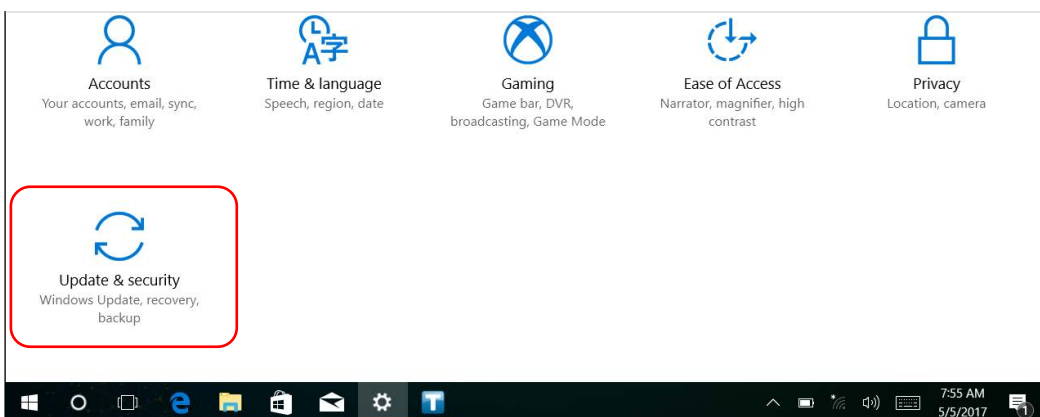
By default, your unit is configured to check for updates, but to let you choose whether you want to download and install them or not.

If you prefer, you can manually check for updates.

You can also pause the updates for a maximum of 35 days, after which they will be automatically installed. Refer to Microsoft documentation for more information.

#### **To manually check for updates:**

1. From the task bar, tap the **Start** button (  ), and then **Settings** (  ).
2. Tap **Update & security**.

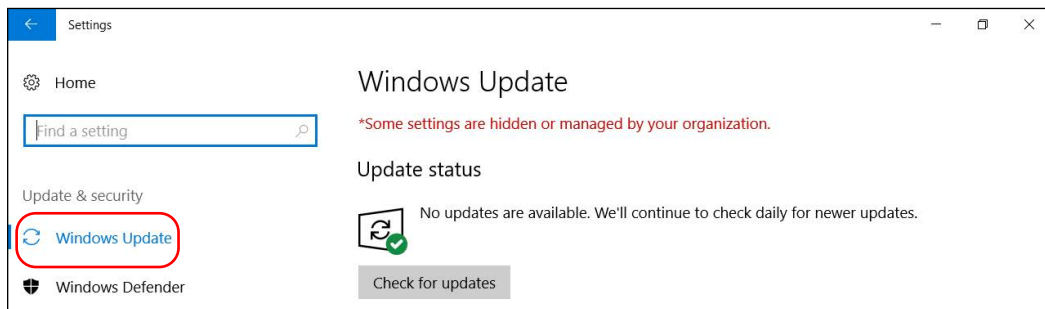


## Maintenance

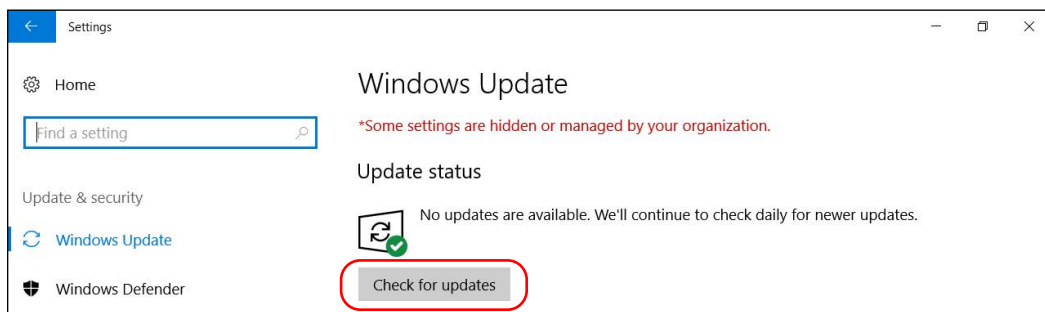
### Managing Windows Updates

---

#### 3. Select **Windows Update**.



#### 4. Under **Update status**, tap **Check for updates**.



#### 5. Follow the on-screen instructions.

## Windows Embedded 8 Standard

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 EXFO Applications* on page 44. 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**.

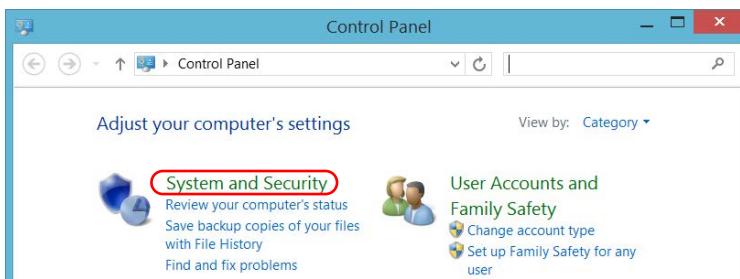


## Maintenance

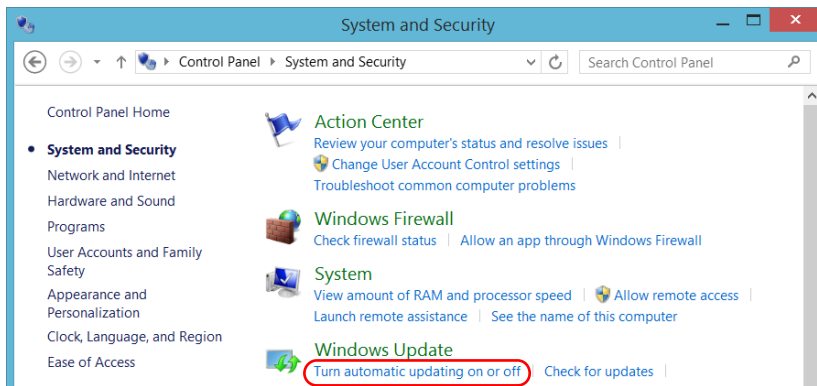
### Managing Windows Updates

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#### 3. Tap **System and Security**.

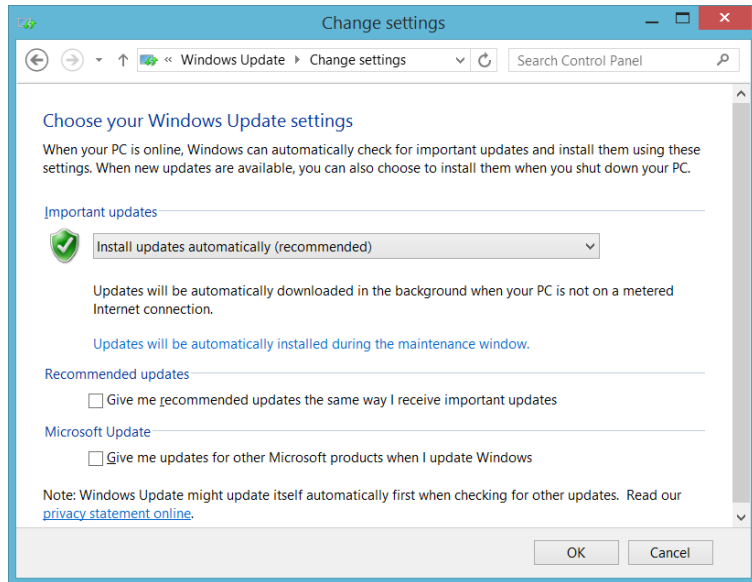


#### 4. Under **Windows Update**, tap **Turn automatic updating on or off**.





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



This symbol on the product means that you should recycle or dispose of your product (including electric and electronic accessories) properly, in accordance with local regulations. Do not dispose of it in ordinary garbage receptacles.

For complete recycling/disposal information, visit the EXFO Web site at [www.exfo.com/recycle](http://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 batteries are completely discharged.	Change or recharge the batteries.
	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.
My unit is running slower than expected.	The configuration of some of the Windows components is underway in the background.	<p>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.</p> <p>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.</p>
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.

## Troubleshooting

### *Solving Common Problems*

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Problem	Possible Cause	Solution
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).
The mobile broadband 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 batteries are not recharging.	Ambient temperature is too high or too low.	Make sure that the temperature in the location where you recharge the batteries is within the specifications.
	The AC/DC power adapter is not connected properly.	Make sure that the AC power cord is connected to the unit and the AC outlet.
	The batteries are already full.	The unit will start charging the batteries once they have been discharged below a certain level.

Problem	Possible Cause	Solution
When the unit is connected to an external power source, the battery LED (  ) is red (steady).	The batteries may have been stored for an extended period of time.	<ul style="list-style-type: none"> <li>➤ Turn off the unit (shut down).</li> <li>➤ Disconnect the unit from its external power source, and remove the batteries.</li> <li>➤ Put the batteries back in place, and reconnect the unit to its external power source.</li> <li>➤ Restart the unit.</li> </ul> <p>The unit will try to detect and reactivate the batteries, but the batteries probably will have partially lost their ability to hold a charge.</p> <p>If the LED remains red even after performing the steps above, there is a problem with the batteries. Contact EXFO.</p>
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.

# Troubleshooting

## Solving Common Problems

Problem	Possible Cause	Solution
An error message warns me that there is not enough disk space to perform a refresh operation on my unit.	<ul style="list-style-type: none"><li>➤ When you perform a refresh operation, Windows creates a folder (<i>Windows.old</i>) in which the files from the previous installation are stored. This folder now uses too much disk space.</li><li>➤ The disk needs a cleanup.</li></ul>	Remove the <i>Windows.old</i> folder or the unused files with the Disk Cleanup utility. For more information, see <i>Freeing Up Disk Space with the Disk Cleanup Utility</i> on page 145.

Problem	Possible Cause	Solution
The Windows interfaces switch partially or do not switch at all to the selected language.	In Windows 10, when you select a language that you have installed manually, the Windows interfaces may remain in the language configured at time of purchase because some of the components need to be updated first.	<ul style="list-style-type: none"> <li>➤ From the taskbar, tap the  icon.</li> <li>➤ Locate the application that did not switch to the current language. You can search for the “Windows” keyword if you prefer to view only the Windows applications.</li> <li>➤ From the selected application’s page, tap <b>Update</b>. Follow the on-screen instructions.</li> </ul>
	In Windows Embedded 8 Standard, 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.

# Troubleshooting

## Restoring Your Unit to Normal Operation

Problem	Possible Cause	Solution
I am experiencing communication problems between the VPN client and the VPN server.	The date on your unit may not be properly configured.	Ensure that the date set on your unit corresponds to the current date.
I have performed a recovery operation on my unit and I no longer see my EXFO applications.	The unit is running Windows 10 and the recovery operation was performed using the recovery tools from Microsoft instead of the wizard provided by EXFO.	Reset your unit to its factory settings. For more information, see the corresponding procedure in <i>Restoring Your Unit to Normal Operation</i> on page 224.

# 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 *EXFO Software Update*.

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.





## 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.



## CAUTION

- Before starting one of the recovery operations, connect your unit to a power outlet using the provided AC/DC power adapter or power cord.
- **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.

The recovery operations that are offered for your unit depend on the operating system that it is running.

## Troubleshooting

### *Restoring Your Unit to Normal Operation*

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## Windows 10

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

Method	Description
Restore	<ul style="list-style-type: none"><li>➤ The unit will be reverted to the state in which it was when the WIM file was created.</li><li>➤ All data files will be lost once the operation is complete.</li><li>➤ If you have installed products and updates since the WIM file was created, you will have to reinstall them.</li></ul>
Reset to factory settings	<ul style="list-style-type: none"><li>➤ The unit will be reverted to its initial state.</li><li>➤ All data files will be lost once the operation is complete.</li><li>➤ If you have installed products and updates since you purchased your unit, you will have to reinstall them.</li></ul>



## IMPORTANT

To avoid problems, always use the wizard provided by EXFO to revert your unit to a previous state, not the recovery tools provided by Microsoft.





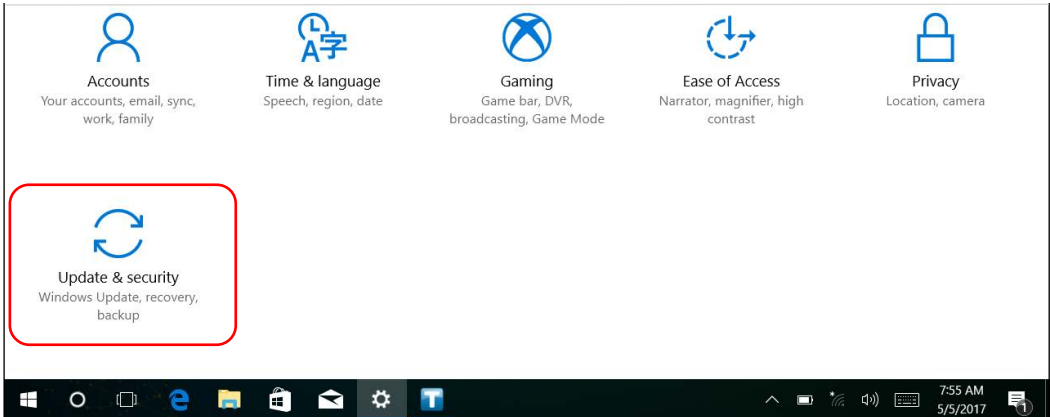
## IMPORTANT

The size of the WIM will depend on the disk space that is currently used on your unit.

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:***

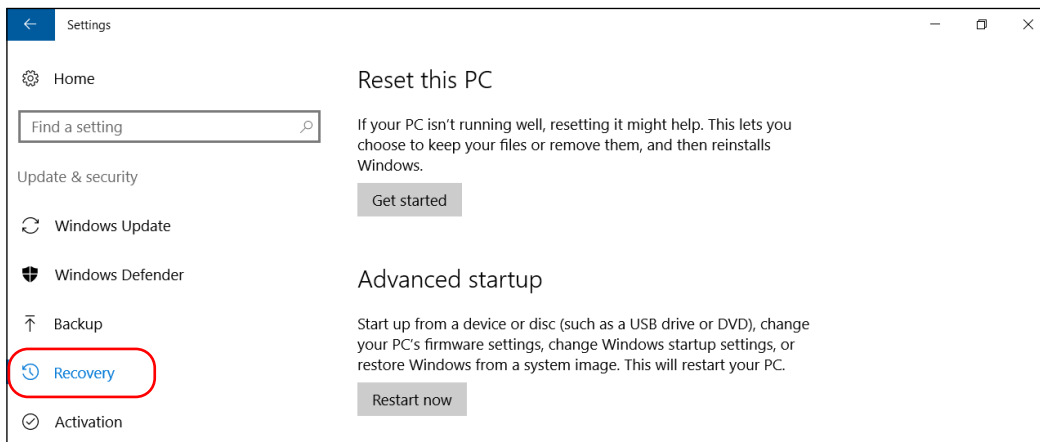
1. From the task bar, tap the **Start** button () , and then **Settings** ().
2. Tap **Update & security**.



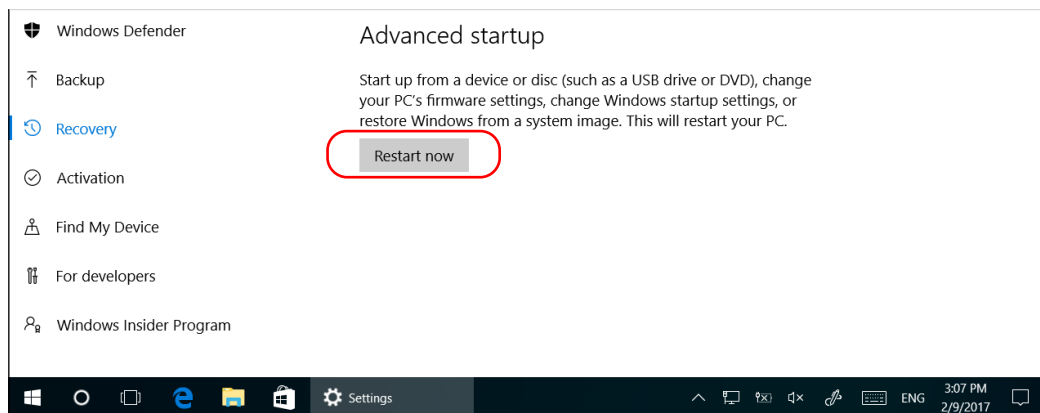
## Troubleshooting

### *Restoring Your Unit to Normal Operation*

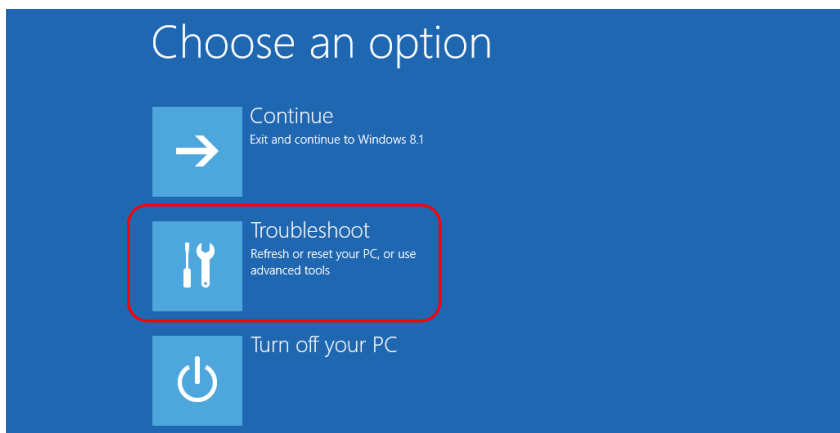
#### 3. Select **Recovery**.



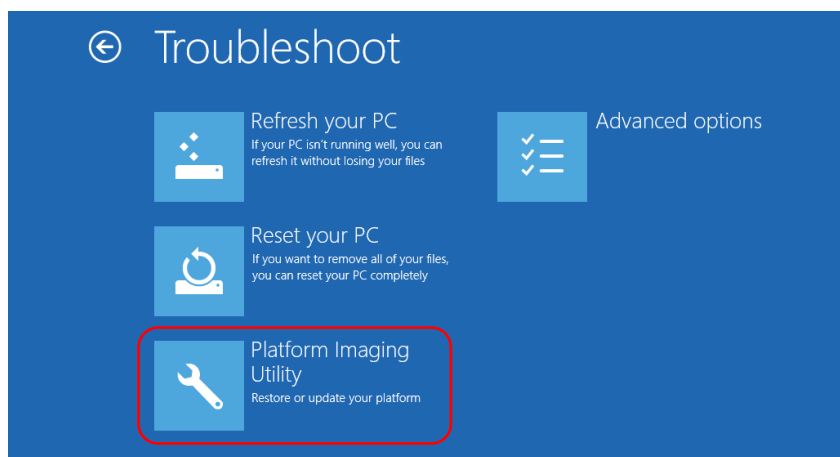
#### 4. Under **Advanced Startup**, tap **Restart now**.



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



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

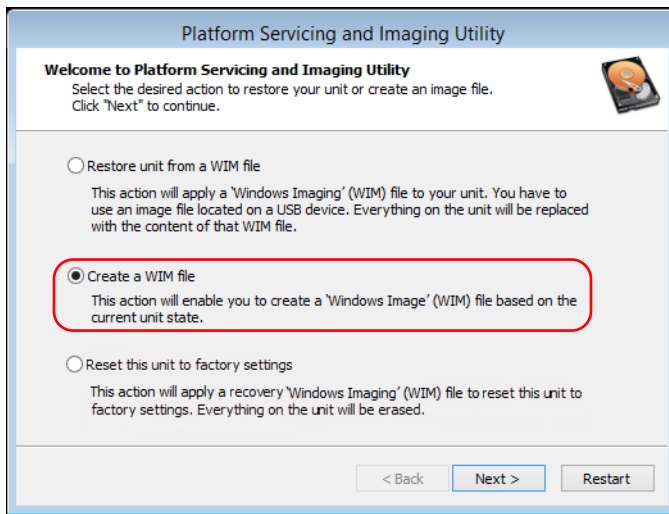


7. Connect a USB key to your unit.

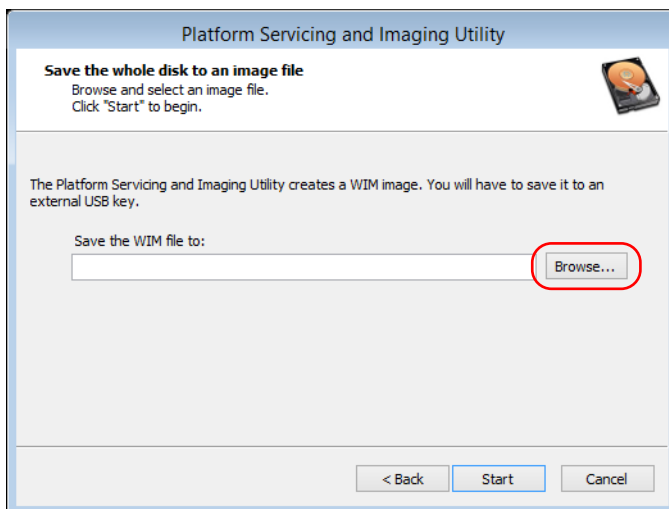
## Troubleshooting

### Restoring Your Unit to Normal Operation

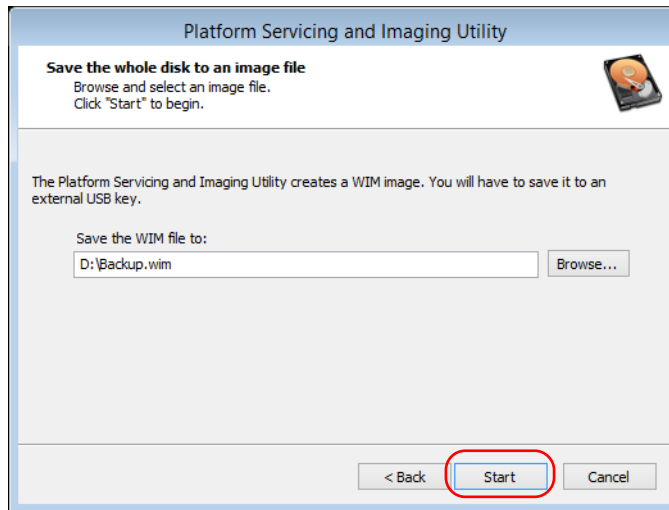
- From the Platform Servicing and Imaging Utility wizard, select **Create a WIM file**, an then tap **Next**.



- 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.

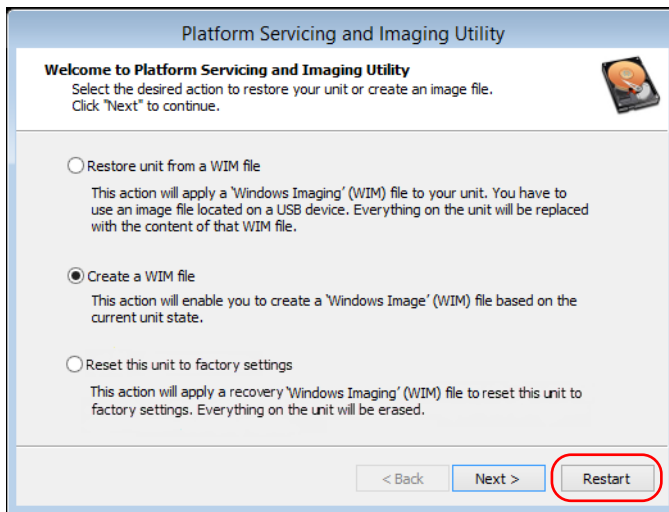
## Troubleshooting

### *Restoring Your Unit to Normal Operation*

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



**17. Tap **Restart**.**

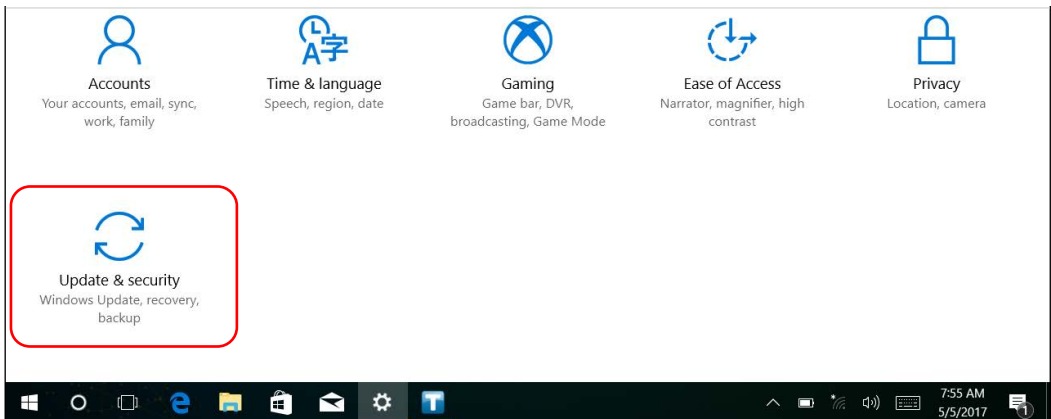


The WIM file is ready for future use.



#### **To revert your unit to a previous state with a WIM file:**

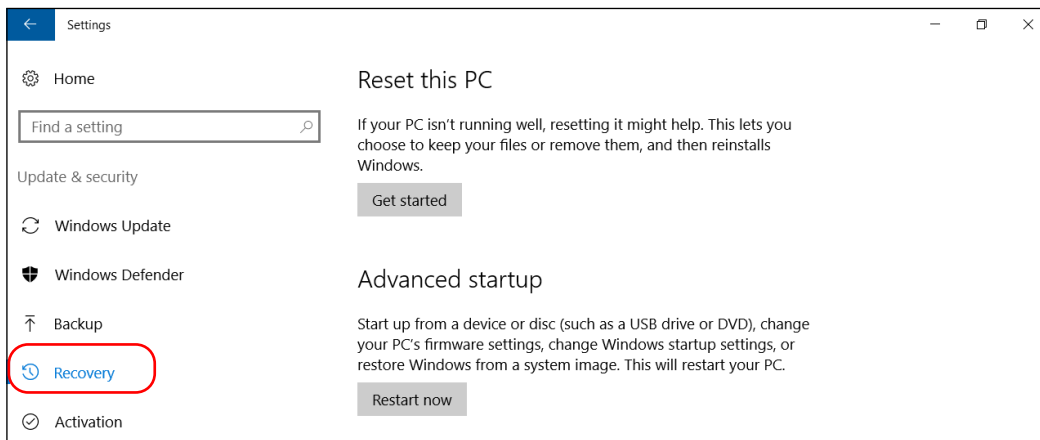
1. Ensure that your unit will remain powered on during the operation by connecting it to a power outlet using the provided AC/DC power adapter or power cord.
2. If desired, back up your data.
3. From the task bar, tap the **Start** button (  ), and then **Settings** (  ).
4. Tap **Update & security**.



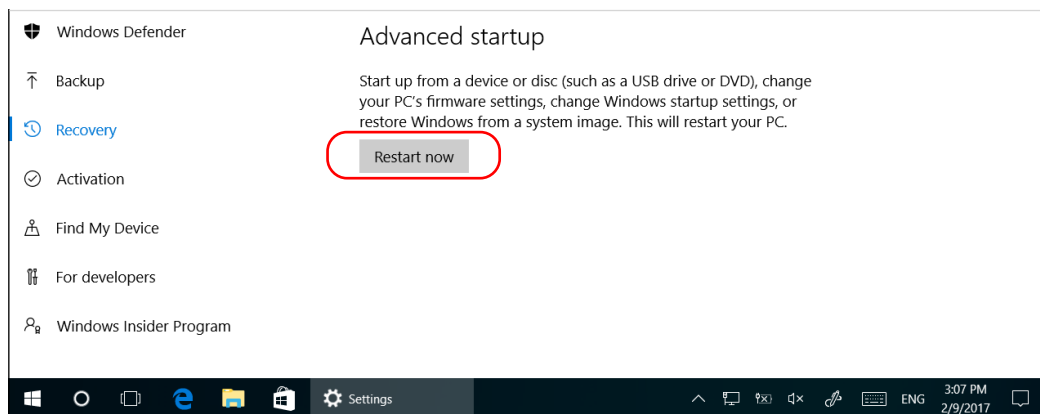
## Troubleshooting

### Restoring Your Unit to Normal Operation

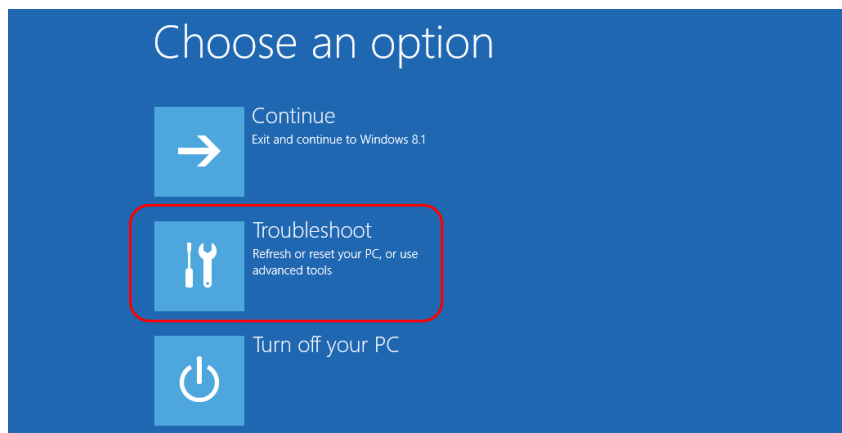
#### 5. Select **Recovery**.



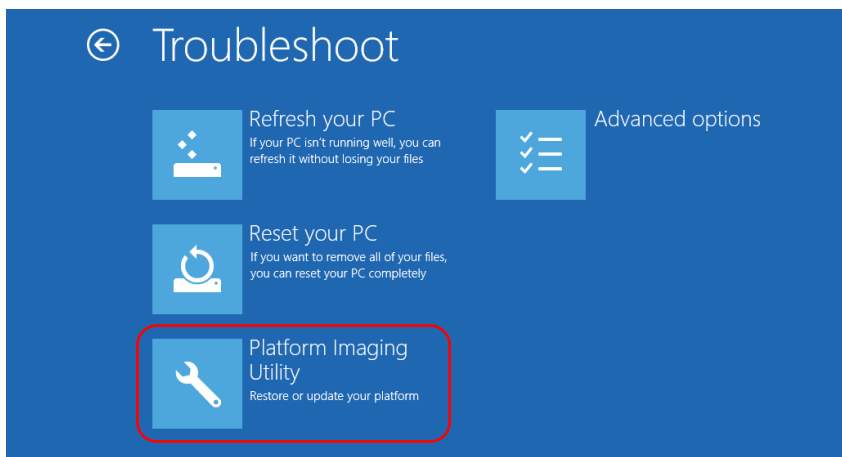
#### 6. Under **Advanced Startup**, tap **Restart now**.



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



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

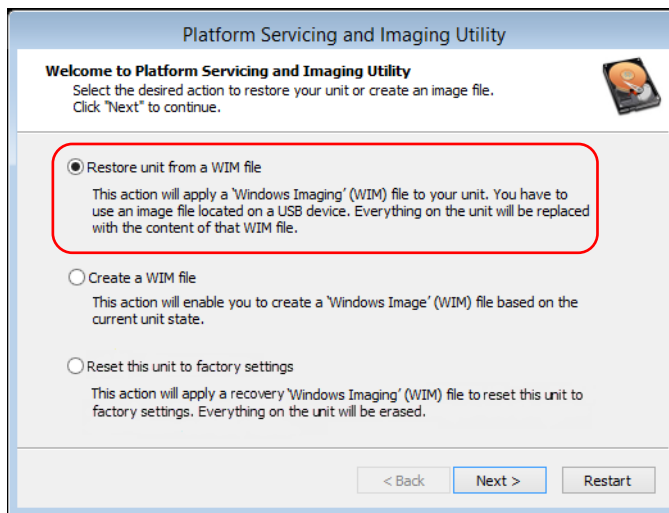


9. Connect the USB key with the desired WIM file to your unit.

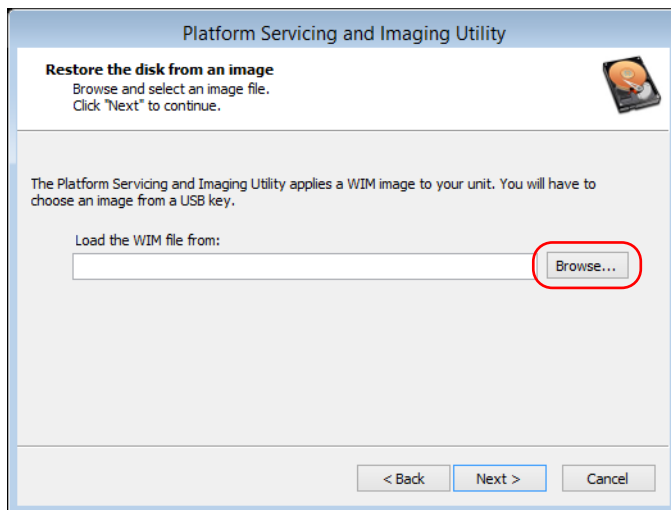
## Troubleshooting

### Restoring Your Unit to Normal Operation

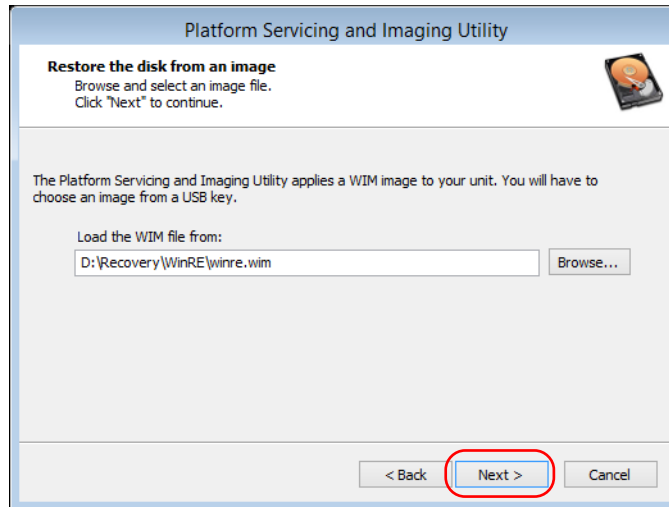
10. From the Platform Servicing and Imaging Utility wizard, select **Restore unit from a WIM file**, and then tap **Next**.



11. Tap **Browse**.



- 12.** Locate the USB key, and then double-tap its identifier to access the contents.
- 13.** Select the desired WIM file.
- 14.** Tap **Next**.



- 15.** Read the warning, and then tap **Start** to restore the unit with the selected image.
- 16.** When the operation is complete and the application prompts you, disconnect the USB key, and then tap **OK**.



The unit will restart.

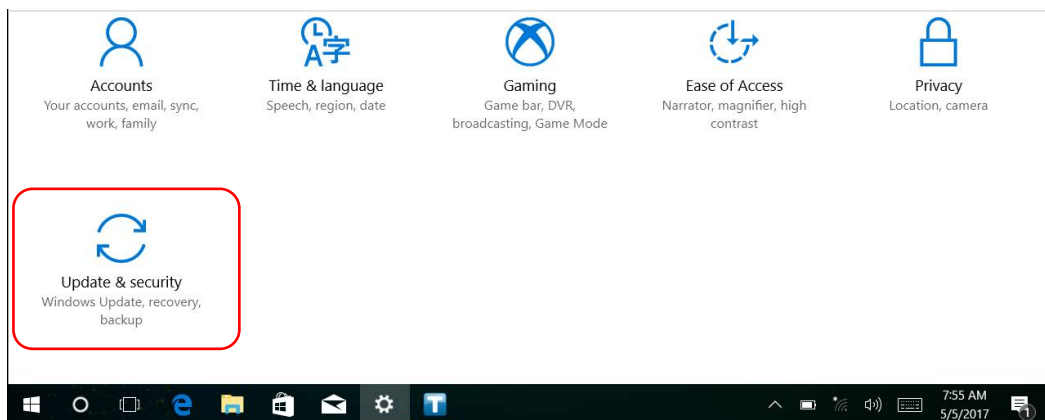
## Troubleshooting

### Restoring Your Unit to Normal Operation

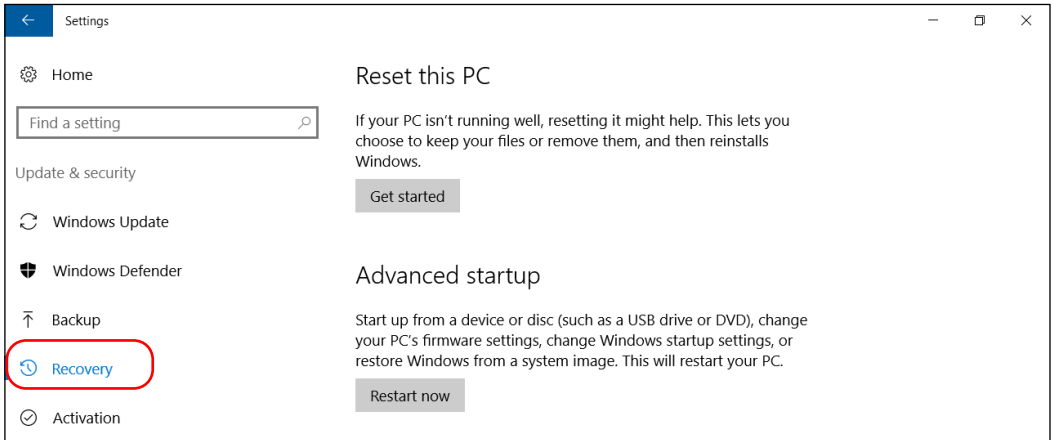
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#### **To reset your unit to its factory settings:**

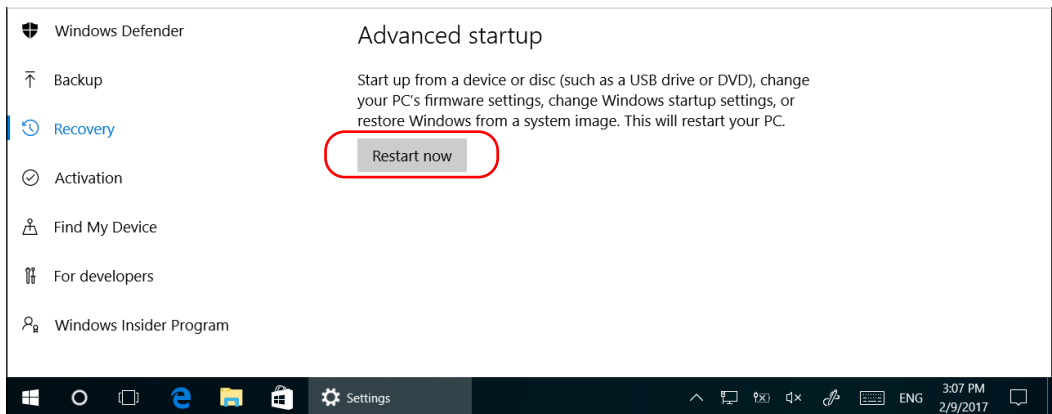
1. Ensure that your unit will remain powered on during the operation by connecting it to a power outlet using the provided AC/DC power adapter.
2. If desired, back up your data.
3. From the task bar, tap the **Start** button (  ), and then **Settings** (  ).
4. Tap **Update & security**.



### 5. Select **Recovery**.



### 6. Under **Advanced Startup**, tap **Restart now**.

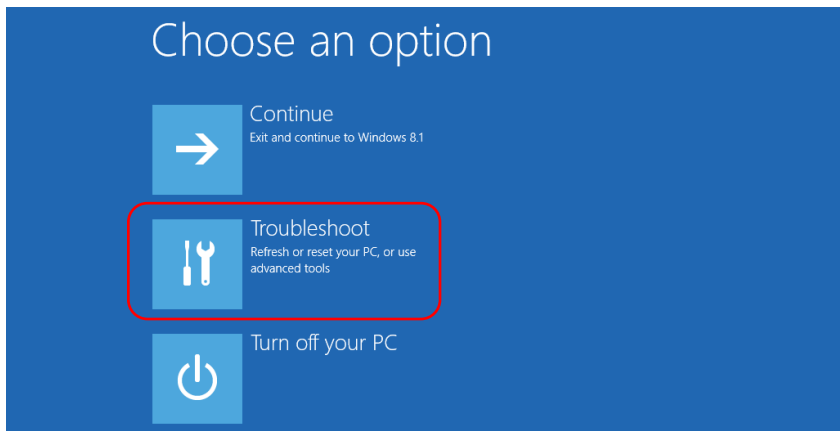


## Troubleshooting

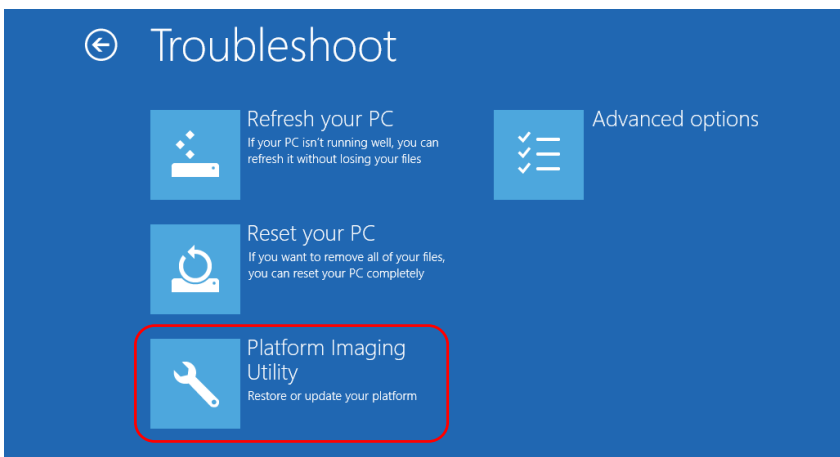
### *Restoring Your Unit to Normal Operation*

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- 7. Under **Choose an option**, tap **Troubleshoot**.**

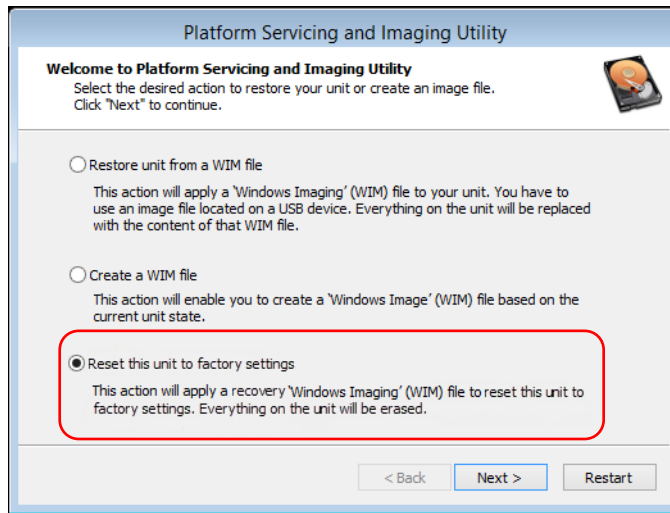


- 8. Tap **Platform Imaging Utility** to display the corresponding application.**





9. From the Platform Servicing and Imaging Utility wizard, select **Reset this unit to factory settings**, and then tap **Next**.



10. Read the warning, and then tap **Start** to restore the unit with the selected image.
11. When the operation is complete and the application prompts you, tap **OK**.  
The unit will restart.
12. Configure the regional parameters, and accept the license agreements as you would do when you first receive a unit (see *Configuring Your Unit At First Startup* on page 35).

## Windows Embedded 8 Standard

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

Method	Description
Refresh	<ul style="list-style-type: none"><li>➤ The unit will be reverted to its initial state.</li><li>➤ All data files that were saved to the default personal folders (Documents, Pictures, etc.) will still be available once the operation is complete.</li><li>➤ If you have installed products and updates since you purchased your unit, you will have to reinstall them.</li><li>➤ Refer to Microsoft documentation for more information.</li></ul>
Reset	<ul style="list-style-type: none"><li>➤ The unit will be reverted to its initial state.</li><li>➤ All data files will be lost once the operation is complete.</li><li>➤ If you have installed products and updates since you purchased your unit, you will have to reinstall them.</li><li>➤ Refer to Microsoft documentation for more information.</li></ul>
Restore	<ul style="list-style-type: none"><li>➤ The unit will be reverted to the state in which it was when the WIM file was created.</li><li>➤ All data files will be lost once the operation is complete.</li><li>➤ If you have installed products and updates since the WIM file was created, you will have to reinstall them.</li></ul>



## 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.



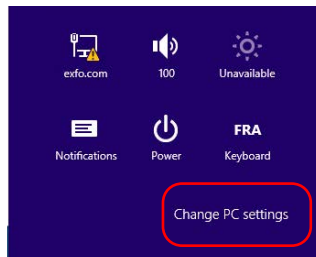
## IMPORTANT

The size of the WIM will depend on the disk space that is currently used on your unit.

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:***

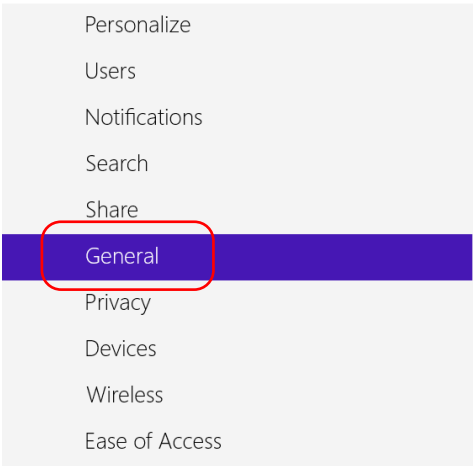
1. On your unit, from the right side of the screen, swipe left to display the Charm bar.
2. Tap **Settings** > **Change PC settings**.



# Troubleshooting

## Restoring Your Unit to Normal Operation

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



### Refresh your PC without affecting your files

If your PC isn't running well, you can refresh it without losing your photos, music, videos, and other personal files.

Get started

### Remove everything and reinstall Windows

If you want to recycle your PC or start over completely, you can reset it to its factory settings.

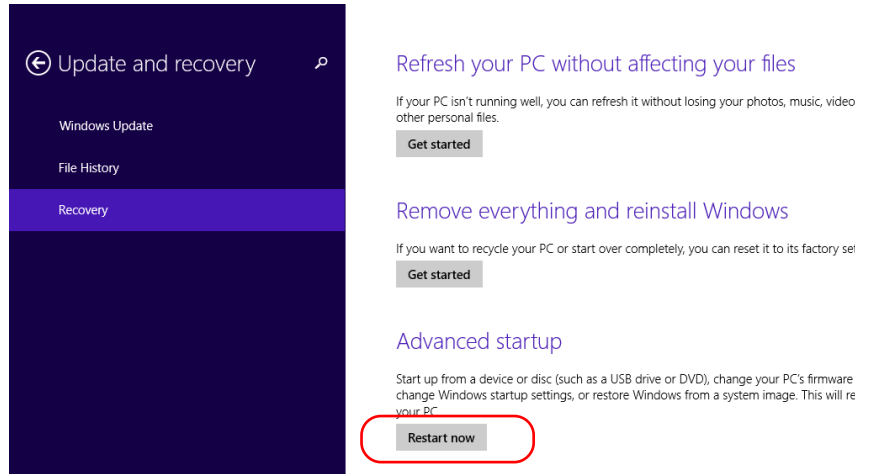
Get started

### Advanced startup

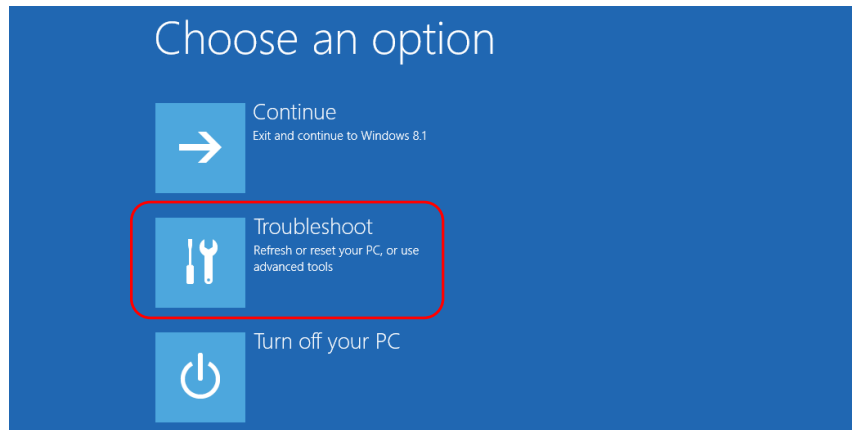
Start up from a device or disc (such as a USB drive or DVD), change your PC's firmware settings, change Windows startup settings, or restore Windows from a system image. This will restart your PC.

Restart now

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



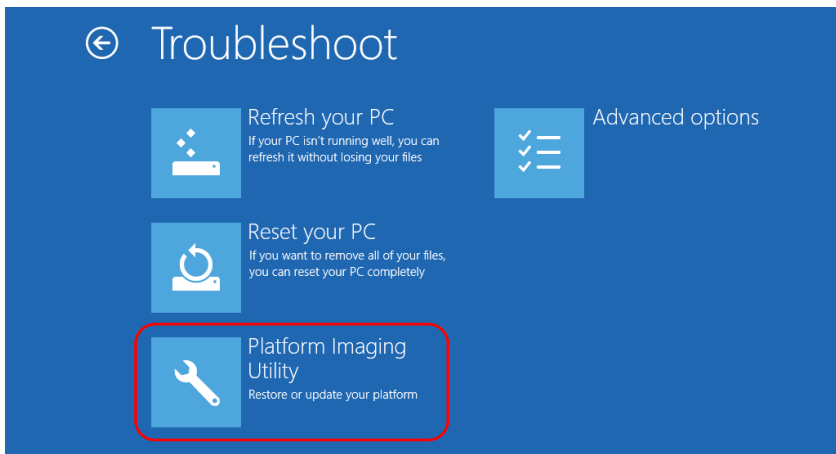
**5. Under **Choose an option**, tap **Troubleshoot**.**



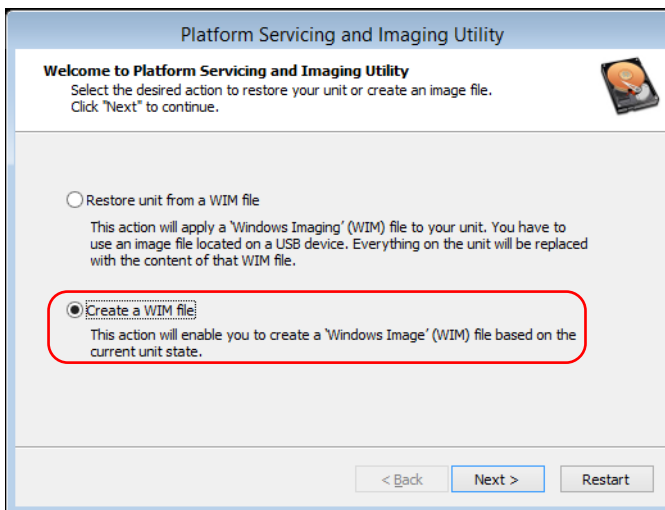
## Troubleshooting

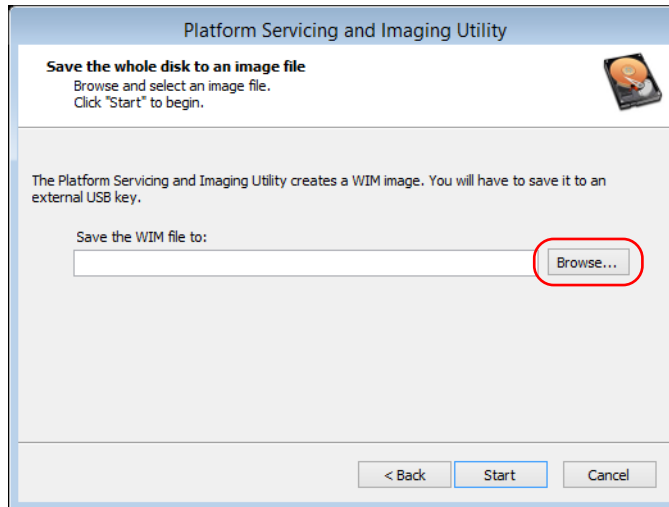
### Restoring Your Unit to Normal Operation

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**, and 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.

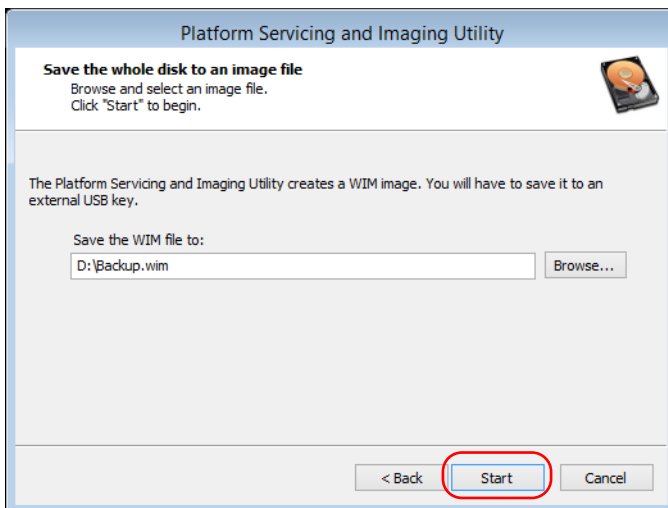
**12.** Enter a file name, and then tap **Save**.

## Troubleshooting

### *Restoring Your Unit to Normal Operation*

---

#### **13. Tap Start.**



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

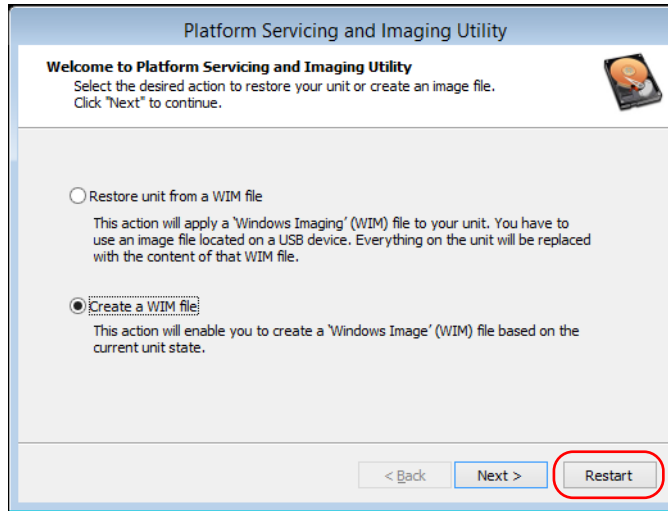
#### **14. When the operation is complete and the application prompts you, tap OK.**

#### **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.

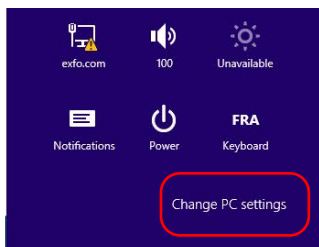
## Troubleshooting

### *Restoring Your Unit to Normal Operation*

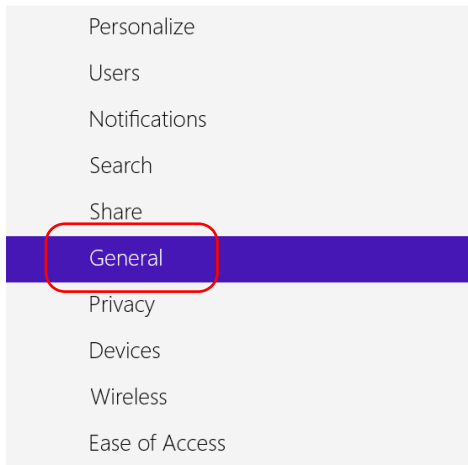
---

#### **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/DC power adapter.
2. If desired, back up your data.
3. On your unit, from the right side of the screen, swipe left to display the Charm bar.
4. Tap **Settings** > **Change PC settings**.



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



#### Refresh your PC without affecting your files

If your PC isn't running well, you can refresh it without losing your photos, music, videos, and other personal files.

[Get started](#)

#### Remove everything and reinstall Windows

If you want to recycle your PC or start over completely, you can reset it to its factory settings.

[Get started](#)

#### Advanced startup

Start up from a device or disc (such as a USB drive or DVD), change your PC's firmware settings, change Windows startup settings, or restore Windows from a system image. This will restart your PC.

[Restart now](#)

# Troubleshooting

## Restoring Your Unit to Normal Operation

- 6. If you want to refresh or reset your unit, proceed as follows:
  - 6a. Tap the **Get started** button corresponding to your choice.

To refresh your unit

To reset your unit

### Refresh your PC without affecting your files

If your PC isn't running well, you can refresh it without losing your photos, music, videos, and other personal files.

Get started

### Remove everything and reinstall Windows

If you want to recycle your PC or start over completely, you can reset it to its factory settings.

Get started

### Advanced startup

Start up from a device or disc (such as a USB drive or DVD), change your PC's firmware settings, change Windows startup settings, or restore Windows from a system image. This will restart your PC.

Restart now

- 6b. Follow the on-screen instructions.
- 7. If you want to restore your unit (with a WIM file), proceed as follows:
  - 7a. Under **Advanced Startup**, tap **Restart now**.

Update and recovery

Windows Update

File History

Recovery

### Refresh your PC without affecting your files

If your PC isn't running well, you can refresh it without losing your photos, music, videos and other personal files.

Get started

### Remove everything and reinstall Windows

If you want to recycle your PC or start over completely, you can reset it to its factory set

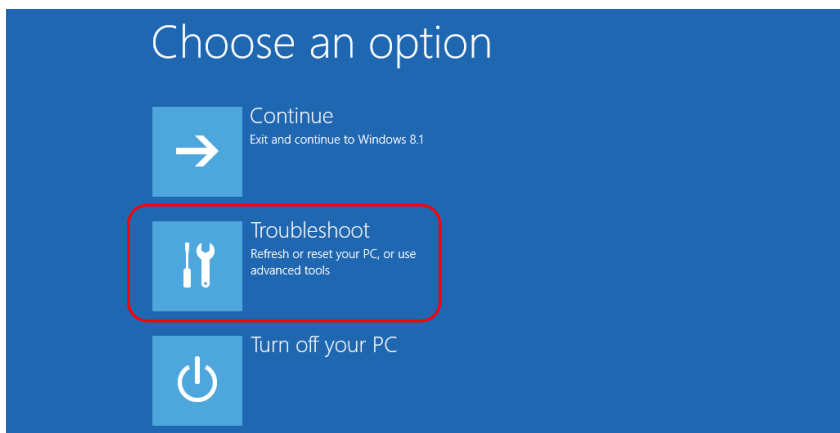
Get started

### Advanced startup

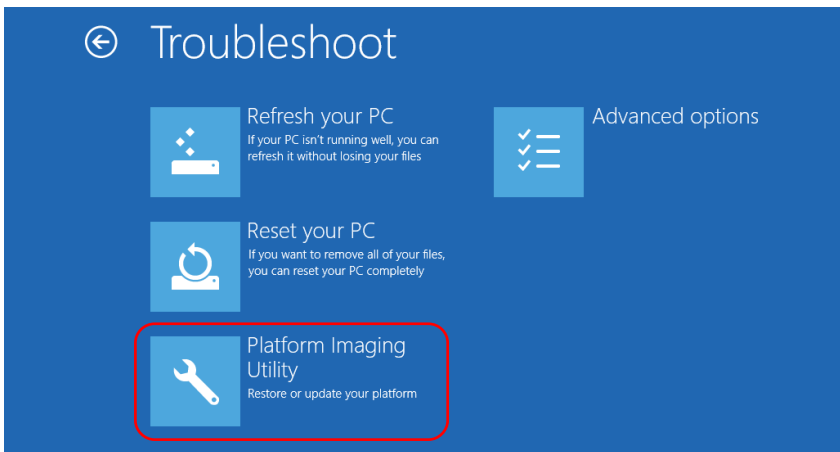
Start up from a device or disc (such as a USB drive or DVD), change your PC's firmware : change Windows startup settings, or restore Windows from a system image. This will re: your PC

Restart now

**7b.** Under **Choose an option**, tap **Troubleshoot**.



**7c.** Tap **Platform Imaging Utility** to display the corresponding application.

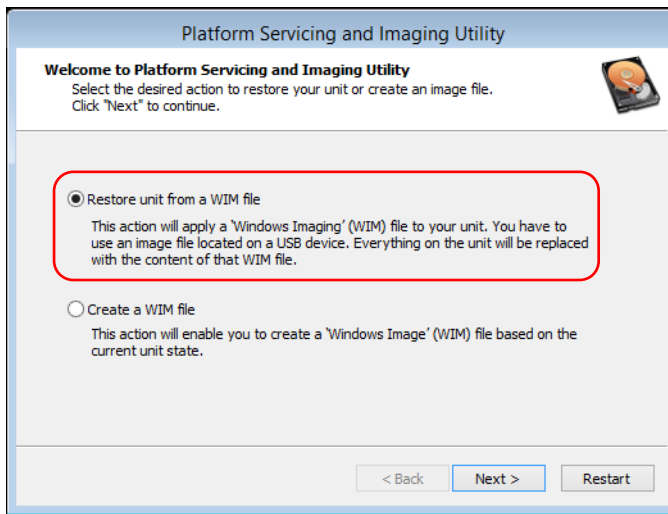


**7d.** Connect the USB key with the desired WIM file to your unit.

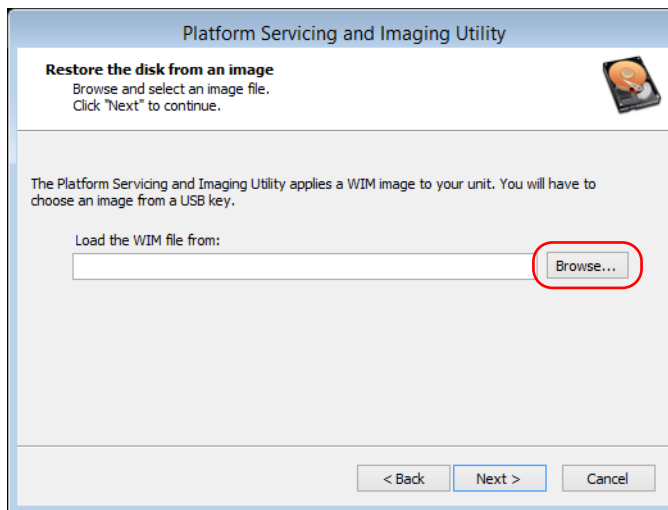
## Troubleshooting

### Restoring Your Unit to Normal Operation

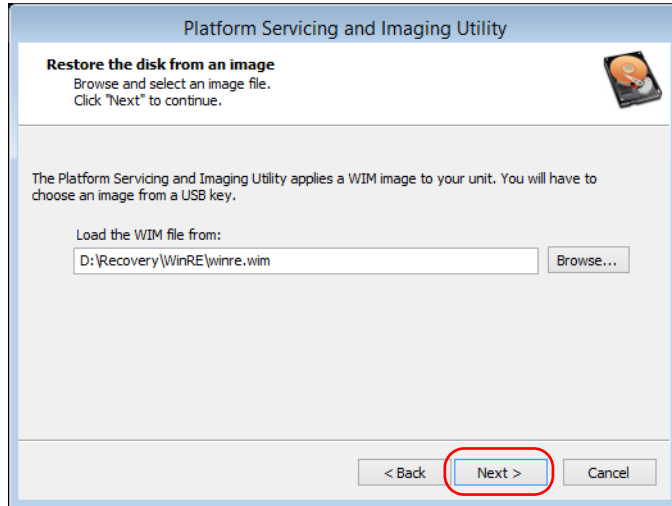
- 7e.** From the Platform Servicing and Imaging Utility wizard, select **Restore unit from a WIM file**, and then tap **Next**.



- 7f.** Tap **Browse**.



- 7g.** Locate the USB key, and then double-tap its identifier to access the contents.
- 7h.** Select the desired WIM file.
- 7i.** Tap **Next**.



- 7j.** Read the warning, and then tap **Start** to restore the unit with the selected image.
- 7k.** When the operation is complete and the application prompts you, disconnect the USB key, and then tap **OK**.  
The unit will restart.

## 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](http://www.exfo.com)) for download in PDF format.*

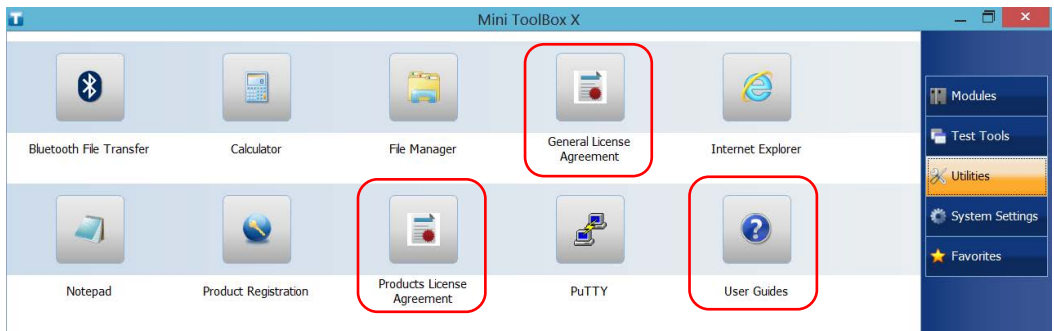


#### **To view the online help:**

From Mini Toolbox X, the MaxTester dedicated application, 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](http://www.exfo.com).

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

## Retrieving the Hardware Version of Your Unit

Some features of your unit may vary according to its hardware version, as identified in this documentation. You can view the hardware version of your unit on the label affixed to your unit.



## Viewing System Information


You can easily access important information such as the serial number, version number for Mini Toolbox X, 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

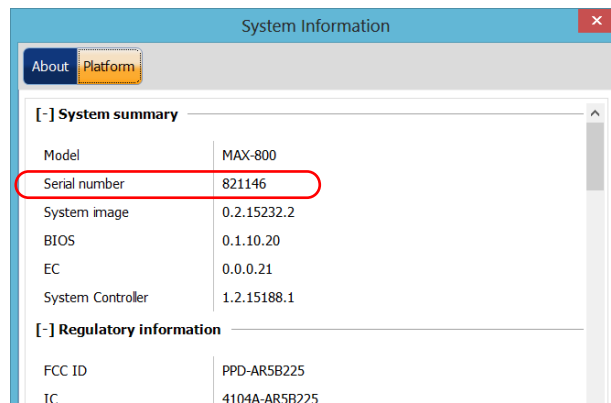
The serial number of your unit is easily accessible from Mini Toolbox X.

**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 number of the instrument part of your unit is visible from the **Modules** window.

## Retrieving the Mini Toolbox X Version

You can view the version of Mini Toolbox X that is 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.



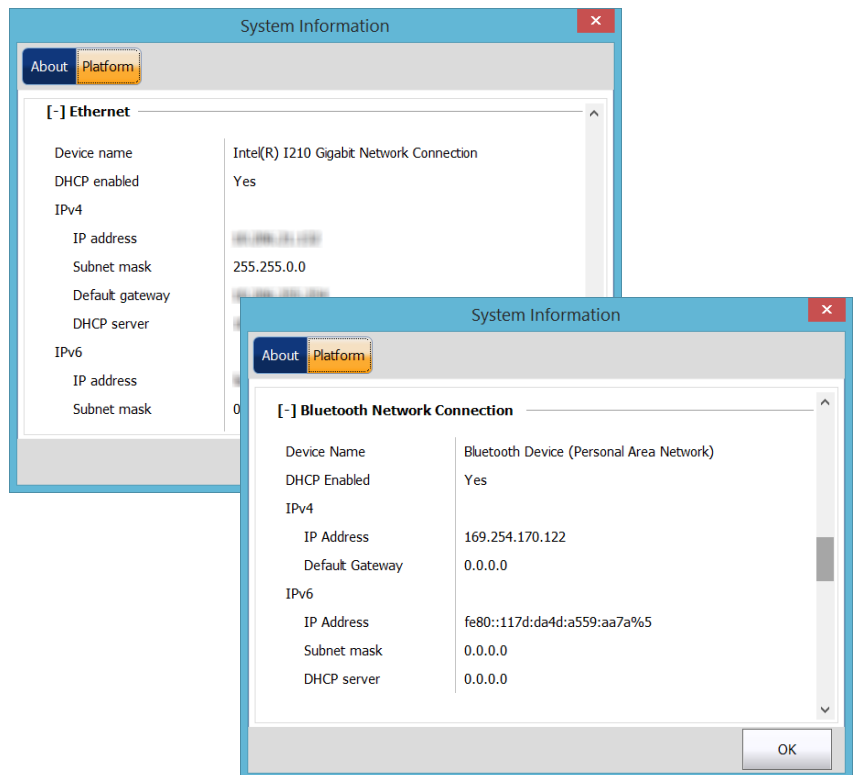
## Retrieving Network Interfaces Information

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).



## Troubleshooting

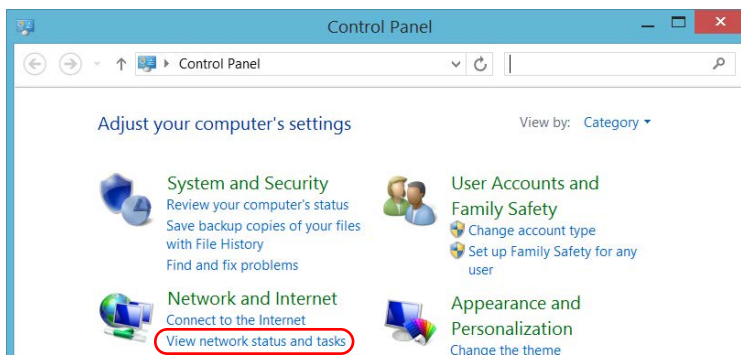
### Retrieving Network Interfaces Information

#### **To retrieve network interfaces information for Wi-Fi:**

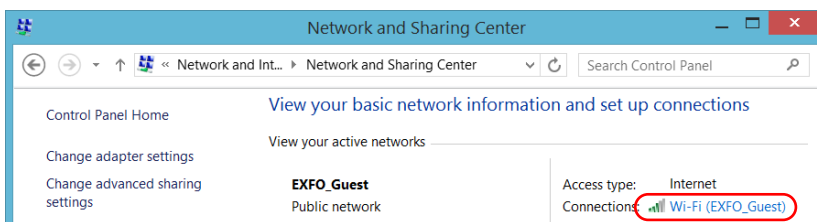
1. From the main window, tap the **System Settings** button.
2. Tap **Control Panel**.



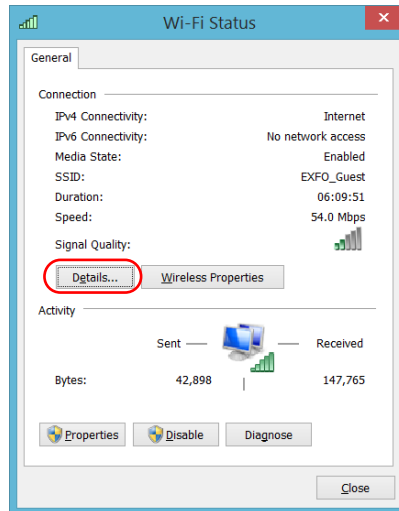
3. Under **Network and Internet**, tap **View network status and tasks**.



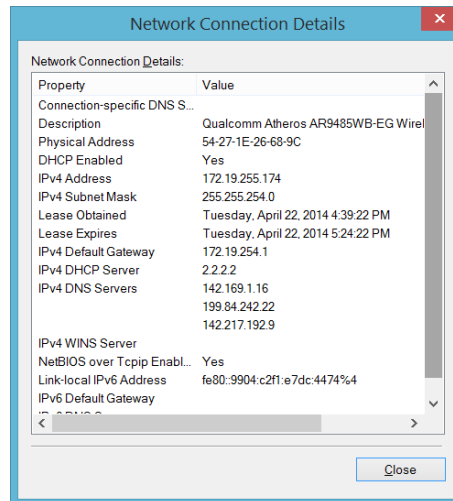
4. Tap the link corresponding to the Wi-Fi network.



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.



### **IMPORTANT**

The warranty can become null and void if:

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

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

## Gray Market and Gray Market Products

Gray market is a market where products are traded through distribution channels that are legal but remain unofficial, unauthorized, or unintended by the original manufacturer. Intermediaries using such channels to distribute products are considered to be part of the gray market (hereafter unauthorized intermediary).

EXFO considers that a product originates from the gray market (hereafter gray market product) in the following situations:

- A product is sold by an unauthorized intermediary.
- A product is designed and destined for a particular market and sold on a second market.
- A product is resold, despite being reported lost or stolen.

When products are purchased on the gray market, rather than through an authorized EXFO distribution channel, EXFO is unable to guarantee the source and quality of those products nor the local safety regulations and certifications (CE, UL, etc.).

EXFO will not honor warranty, install, maintain, repair, calibrate, provide technical support nor make any support contracts available for gray market products.

For complete information, refer to EXFO's policy regarding gray market products at

[www.exfo.com/en/how-to-buy/sales-terms-conditions/gray-market/](http://www.exfo.com/en/how-to-buy/sales-terms-conditions/gray-market/)

## **Liability**

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

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

## **Exclusions**

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

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



### **IMPORTANT**

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

## **Certification**

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

## Service and Repairs

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

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

- 1.** Call one of EXFO's authorized service centers (see *EXFO Service Centers Worldwide* on page 271). 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 271).

## **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,  
Fuhai, 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:

<https://www.exfo.com/en/services/field-network-testing/exfo-service-centers>.





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## 中国关于危害物质限制的规定

包含在本 EXFO 产品中的有毒有害物质或元素的名称及含量

Part Name 部件名称	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 镉 (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 电子和电气组件	X	O	X	O	X	X
Optical sub-assembly <sup>a</sup> 光学组件 <sup>a</sup>	X	O	O	O	O	O
Mechanical sub-assembly <sup>a</sup> 机械组件 <sup>a</sup>	O	O	O	O	O	O

**Note:**

注:

This table is prepared in accordance with the provisions of SJ/T 11364.

本表依据 SJ/T 11364 的规定编制。

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。

X: indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572. Due to the limitations in current technologies, parts with the “X” mark cannot eliminate hazardous substances.



X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求。

标记“X”的部件,皆因全球技术发展水平限制而无法实现有害物质的替代。

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 <sup>a</sup> 电池	5	

a. If applicable.  
如果适用。



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