



# X600M

*Industrial Web-Enabled I/O Controller*

## Firmware Update Guide

For models: X-600M-I



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X-600M Firmware Update Guide Revisions	
Revision	Description
1.0	Initial release

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## Section 1: Installing New Firmware

From time to time, updates and bug fixes are made to the X-600M firmware. The X-600M firmware can be updated in the field. Xytronix recommends that new firmware be installed only if there is a specific reason to do so. The procedure for updating the firmware is outlined below. Please note it is important that this procedure be followed precisely.

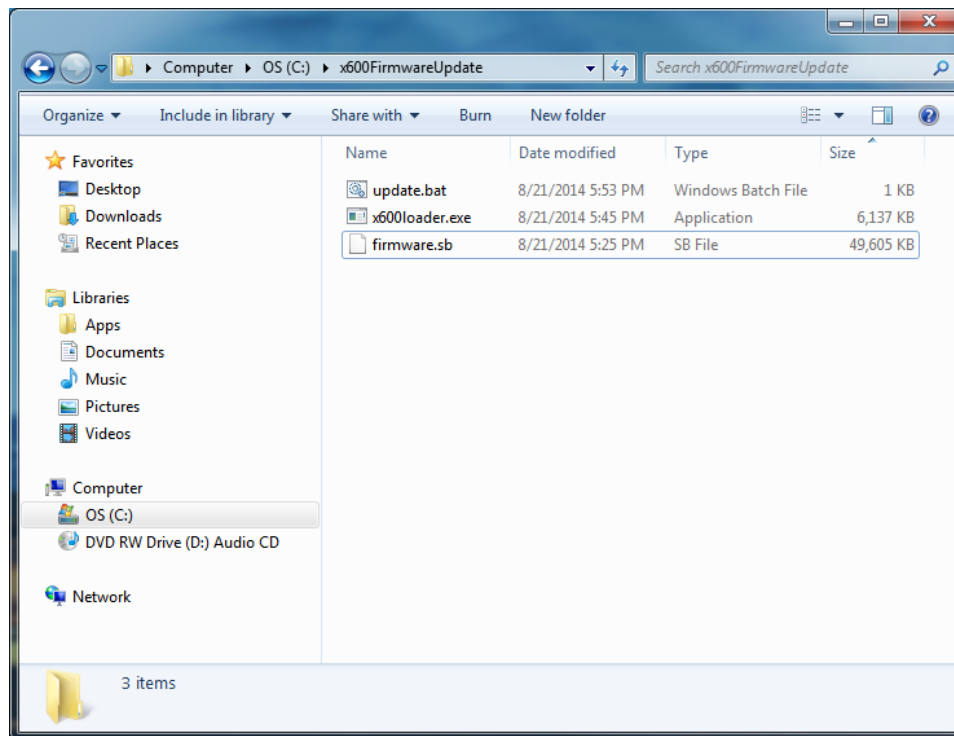
### Requirements

To update the firmware on the X-600M, the following items are required:

1. A PC running the Windows operating system.
2. An USB 2.0 Type-A to Mini-B Cable.
3. The X-600M Firmware Update Package (Down-loadable from [www.ControlByWeb.com/x600m/downloads.html](http://www.ControlByWeb.com/x600m/downloads.html))
4. A thin, non-conductive object (e.g. Toothpick or plastic paperclip) to press and hold the internal button located on the back side of the unit (inside one of the DIN-rail mount ears). Do not confuse this access hole with the hole on the bottom side. The hole on the bottom side is used to restore the module to factory default settings as described in the previous Appendix.

### Setup

Before updating the firmware make sure to backup all the settings, custom web pages, and ssl certificates found on the X-600M. Also, download any log files of importance as they too will be erased. Settings can be downloaded through **System > Backup/Restore**. SSL certificates can be downloaded through **System > SSL Certificates**. Custom web pages can be downloaded through **System > Custom Web Pages**. The settings, web pages, and ssl certificates can be uploaded (restored) to the X-600M once the firmware update procedure is finished through the same setup pages. Everything will be erased from the X-600M during the update procedure. Once everything is backed up, extract the firmware update package. Three files should be present: update.bat, x600loader.exe, and firmware.sb (the last file might have a different name depending on the firmware revision.)



## Upgrade Procedure

To update the X-600M firmware:

1. Remove the DC power from the X-600M.
2. On your PC, start the X-600M Firmware Update Utility by double clicking on the update.bat file.
3. With the DC power off, connect the USB cable between the Mini-B connector on the X-600M and your PC.
4. Press and hold in the firmware update button on the back of the X-600M. CAUTION: only a gentle force is necessary. A tactile feedback can be felt as the button is depressed.
5. While depressing the firmware update button, apply power to the X-600M. The Firmware Update Utility should automatically recognize the X-600M and begin the firmware update. Once the update has started, the button may be released.



The firmware update process should take between 3 and 5 minutes. When completed, the Firmware Update Utility will indicate if the process was successful, or if it failed. If it failed, turn off the X-600M, restart the update utility, press and hold the firmware update button and power-up the X-600M again. The update process will automatically begin again.

A screenshot of a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window shows the execution of the command "C:\x600FirmwareUpdate>x600loader.exe -f firmware.sb". The output text is as follows:

```
C:\x600FirmwareUpdate>x600loader.exe -f firmware.sb
Waiting for X600M for 30 seconds...
Downloading firmware.sb to device.....
.....
Waiting for X600M to begin firmware extraction...
File download successfull. Waiting for extraction process to begin..
Waiting for X600M for 30 seconds...

Extracting firmware. This can take up to 5 minutes..
Firmware update successful.
C:\x600FirmwareUpdate>pause
Press any key to continue . . .
```

## Section 2: Configuration and Setup After Firmware Update

### 2.1 Establishing Communications Over Wired Network

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In order to configure the X-600M using its built-in web browser, the X-600M and computer must be addressed on the same network. This can be done by one of two methods:

Method 1 – Use NetBIOS/mDNS to access the X-600M after it has obtained an ip address using DHCP.

**-OR-**

Method 2 – Temporarily change the IP address of a connected computer to the match the default IP address used by the X-600M.

**Note:** If multiple ControlByWeb products are used on the same network, install one at a time and set the IP address and NetBIOS/mDNS name (or disable NetBIOS/mDNS) of each unit before connecting the next unit to the network. This avoids having multiple devices on the network with the same factory default IP address at the same time. If this approach is used, be sure to clear the arp cache after disconnecting each unit (`arp -d`) and clear the NetBIOS/mDNS cache ("`nbstat -RR`" on Windows "`sudo killall -HUP mDNSResponder`" on OS X Mountain Lion).

#### 2.1.1 Method 1: Use DHCP and NetBios

This option can be used on a new X-600M. For this to work, the X-600M needs to be installed on a network which has a DHCP server. Most routers have a DHCP server installed and enabled by default.

This method works as follows:

1. Connect X-600M to local network using an Ethernet Cable.
2. After the network is connected, apply power (See wiring diagram top-right).
3. Wait about 15 seconds and enter <http://x600.local/setup.html> into the address bar of your browser.
4. Enter the username (`admin`) and password (`webrelay`).
5. Click on the Network setup pages and change the IP address to the desired setting.

Once connected, make sure to go to the Network > Advanced Network > NetBIOS / mDNS settings tab and change the Local Host Name from `x600` to another name, especially if you have multiple X-600M units to configure. Also, you will need to clear the NetBIOS or mDNS cache before configuring another unit using this method. In Windows, this can be achieved by opening a command prompt as an administrator and typing "`nbtstat -RR`". In MAC OS X, stale mDNS entries will be flushed after a failed communication attempt after about 15 seconds.

If you are not using a router (no DHCP server), or are using a direct connection between the X-600M and your computer you must use Method 2 described below.

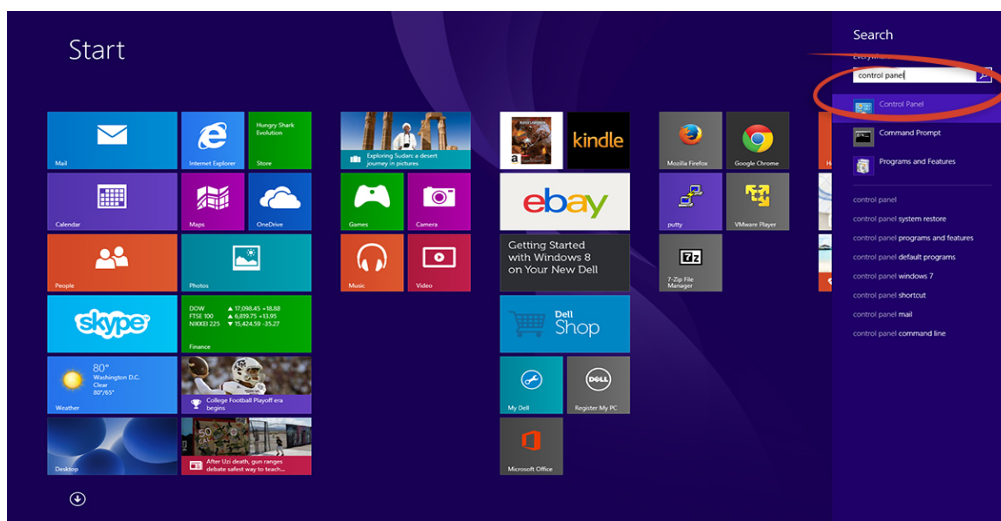
**Note:** After power-up the X-600M attempts to obtain an IP address from your DHCP server up to three times in a nine second period. If all attempts fail, the IP address reverts to 192.168.1.2 and you must use Method 2 as described below.

### 2.1.2 Method 2: Assign a Temporary IP Address to the Configuration Computer

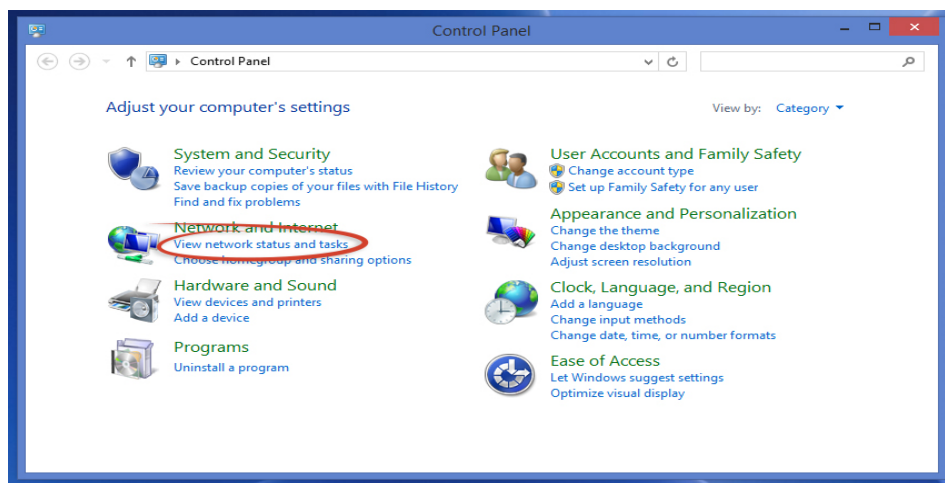
If the first option above is not used, you can use this option to communicate with the X-600M. By default, the X-600M comes from the factory with an IP address of 192.168.1.2. Communication with the X-600M may be established by assigning an IP address to the configuration computer such that it is on the same network as the X-600M (for example, the configuration computer could be assigned to 192.168.1.50)

The following example is for those running the Windows-8 operating system:

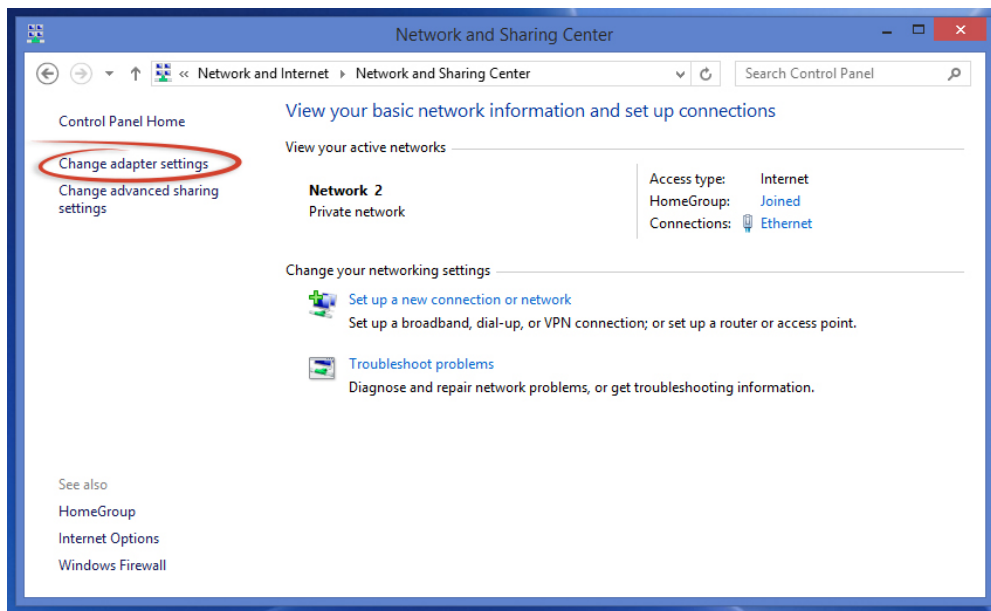
1. Apply Power, wait 15 seconds for the X-600M to become operational, and then connect the Ethernet cable.
2. Open the Windows 8 start screen
3. Type “**Control Panel**” and press enter (the search box opens automatically when you begin typing).



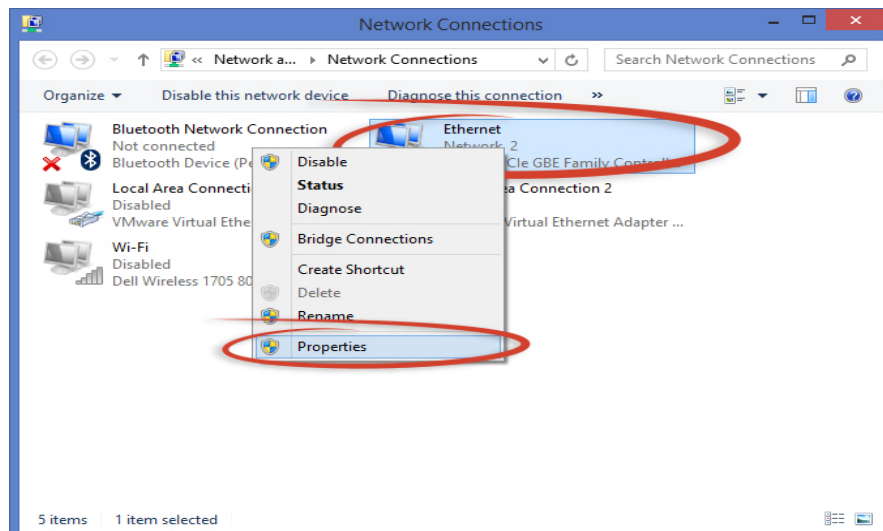
4. Click or touch **View network status and tasks**.



5. Click or touch **Change adapter settings**

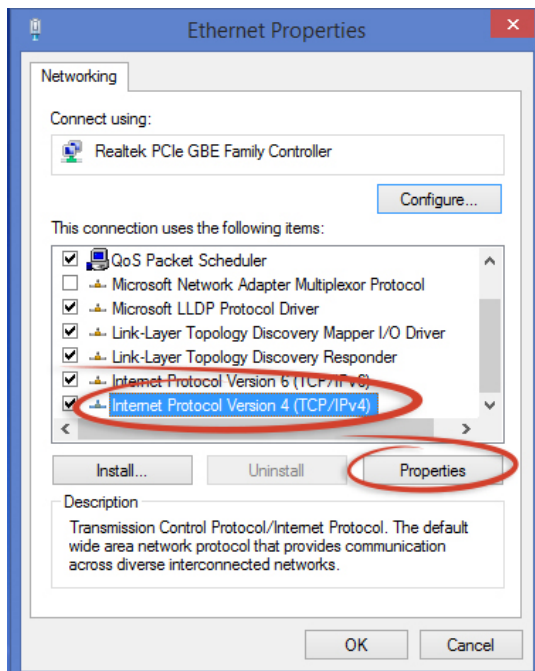


6. Your machine may have more than one Internet connection shown. Right click on the adapter for your connection to the internet. A drop down box will appear, choose **Properties** to view/edit the settings for this internet connection.

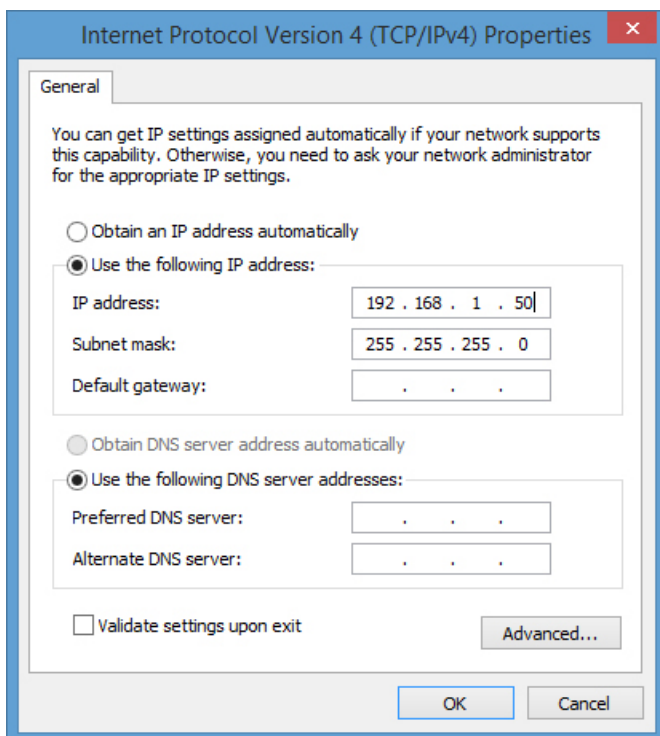




7. Select **Internet Protocol Version 4 (TCP/IPv4)** and then click the **Properties** button.



8. If "Use the following IP address" is already selected, the computer has been setup with a static IP address. Record these values so that the current IP address of the computer can be restored once the IP address of the X-600M has been successfully changed.



Select the radio button labeled **"Use the following IP address"** and type in the IP address:

192.168.1.50

Type in the subnet mask:

255.255.255.0

No need to change the default gateway field. Click **OK** to accept the new settings.

9. Open the setup pages by entering the following URL in the address bar of a web browser:

`http://{ipaddress}/setup.html`

(For example: `http://192.168.1.2/setup.html`)

**Note:** *If the setup pages are not accessible, verify that the X-600M is powered on and that the LINK light is illuminated. Check all network connections and settings.*

*Another way to check communications is to ping the X-600M from the command prompt by typing:*

`ping [ipaddress] (e.g. ping 192.168.1.2)`