



EXCELSENSE



ToughEye-1700™
CONTROLLER MODULE FIRMWARE UPDATE GUIDE
V1.1



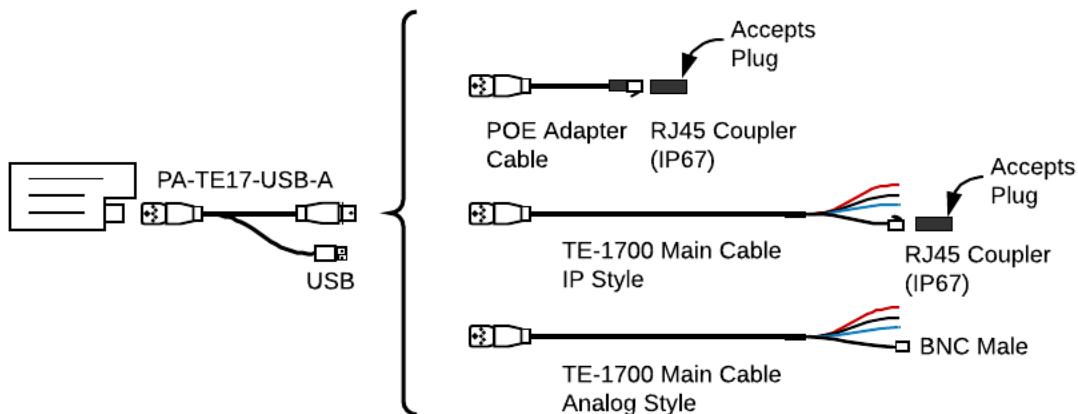
Introduction

This document outlines the steps to perform a firmware update onto the controller module of the ToughEye-1700™ self-cleaning camera. A TE1700 Programming Adapter cable is an obvious choice for this process if you have access to one. Alternatively, if a TE1700 Dual-Output Main cable is already available, this upload requires only an additional RS-232 to USB converter.

Hardware Configurations

Configuration A - Programming Adapter Method

The ToughEye-1700™ controller module uses the serial RS-232 protocol to communicate with service software applications. These applications can be used to retrieve cleaning cycle data or update the controller firmware. The programming adapter [PA-TE17-USB-A], which breaks out a USB connection to the client-side PC, is connected in-line between the ToughEye-1700™ and the connecting cable (main/extension cable or POE adapter cable). This is shown in the diagram below.



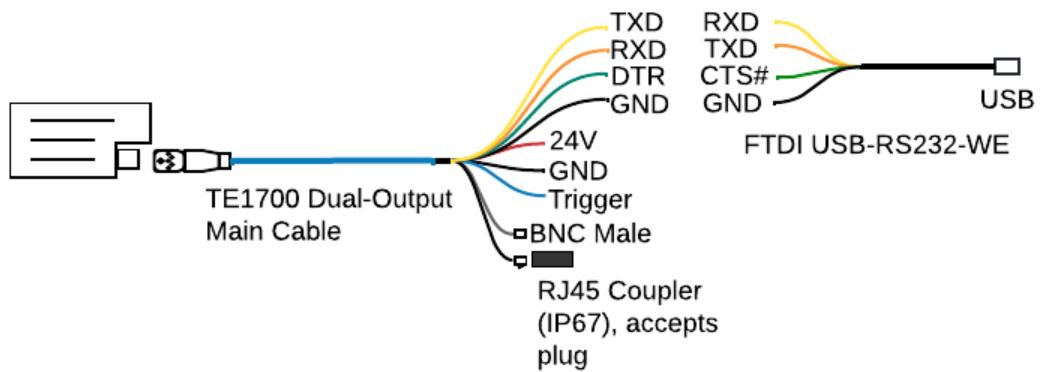
ToughEye-1700™ Programming Cabling



Configuration B - Dual-Output Cable with RS-232 to USB Converter

Alternatively if a TE1700 dual-output cable is available, some simple wire-to-wire connections to an off-the-shelf RS-232 to USB converter cable can enable communication and firmware uploads. See the diagram below for reference:

The recommended converter cable is the FTDI USB-RS232-WE series cables (e.g. the FTDI USB-RS232-WE-1800-BT_3.3). To use this cable, follow the diagram and wiring connection table below.



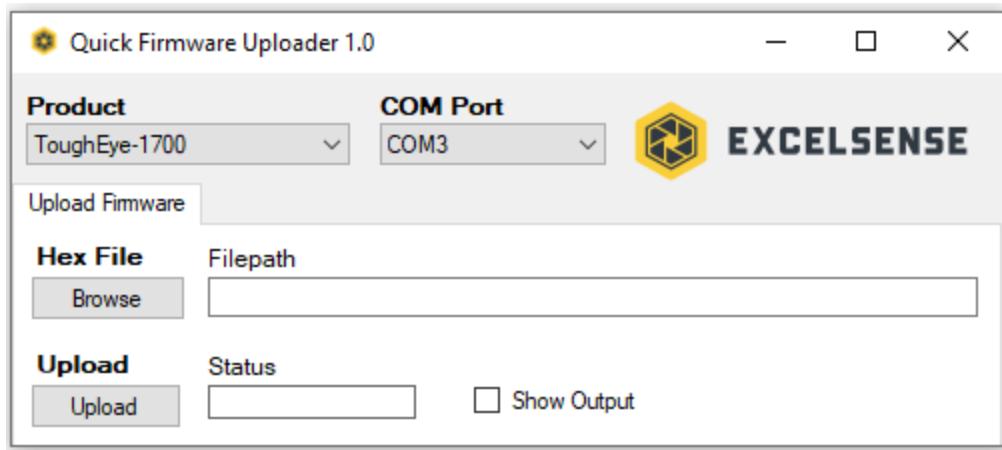
TE1700 Dual-Output Main Cable		FTDI RS-232 to USB Converter Cable	
Wire Colour	Signal	Wire Colour	Signal
Yellow	TXD	Yellow	RXD
Orange	RXD	Orange	TXD
Green	DTR	Green	RTS#
Black	GND	Black	GND



Steps to Upload Firmware

Regardless of the hardware configuration chosen, programming will be done through the USB connector that has been made available. The following steps should be followed in order to upload firmware to the ToughEye-1700™ controller module.

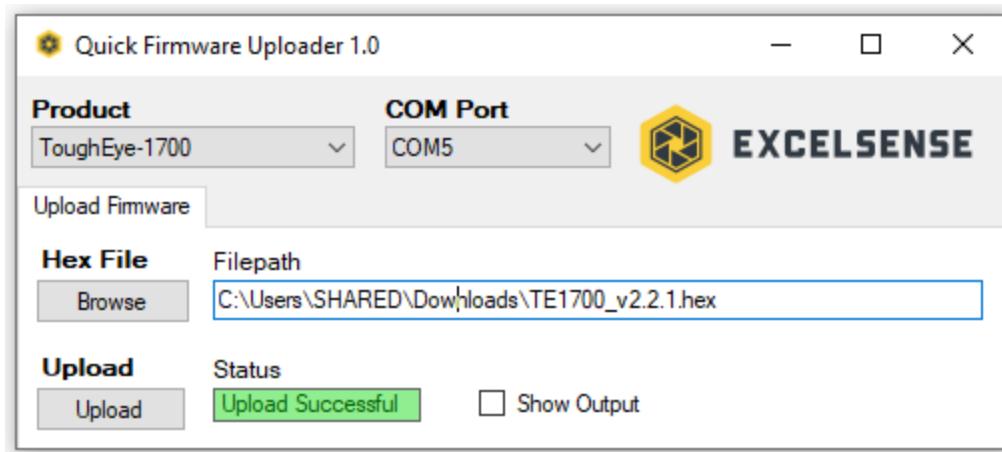
1. Power the TE1700 unit through either a standard IEEE802.3at compliant PSE (i.e. capable of powering a PoE+ PD) or through 24VDC. Refer to the ToughEye-1700™ User Manual, available [here](#), for more information on powering the unit.
2. Download and unzip the Quick Firmware Uploader application, available [here](#).
3. Run the Quick Firmware Uploader 1.0 executable. You may need to bypass some firewall/security warnings in order to run it correctly. The following window can be seen upon running the app:



4. Plug in the USB connector into the PC and select the appropriate COM port.
5. Browse for and select the firmware file under hex_files > TE1700 and click OK.
6. Upload the firmware by clicking the Upload button. If the unit is powered correctly and the USB is recognized (i.e. your laptop already has the necessary USB driver) then you should see green and red LEDs flashing rapidly on the USB connector. This means that the unit is being programmed. Uploading this program should take about 30 seconds. Once the unit is programmed, the status textbox on the app window will show the results.
7. If the upload was successful, you will see the following:



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8. If the status says that the upload has failed, you can select the "Show Output" checkbox to see the logs of the results. If there are any issues with the upload process, please contact ExcelSense technical support.