BLACK BOX
NETWORK SERVICES

Application Note
USB Firmware Programming Instructions

ACU1500A

Required Hardware/Software

Software:

In order to program the embedded USB ASIC units using ExpressLink, the host computer must have the following:

Windows Operating System
- USB connector
- Microsoft .NET Framework 4.0. The installer can be downloaded here: http://www.microsoft.com/downloads/en/details.aspx?FamilyID=9cfb2d51-5ff4-4491-b0e5-b386f32c0992&displaylang=en
- ExpressLink Program
- FTDI USB to Serial driver. The driver can be found at: http://www.ftdichip.com/Drivers/VCP.htm

Hardware:

The following hardware is required to perform a USB firmware upgrade on an ACU1500A unit: Custom Programming Adapter Cable with Mini USB

Hardware Setup:

The following steps outline the required hardware connections in order to perform a firmware upgrade to an ACU1500A unit.

1) Connect USB A connector side of the TTL-232R-3V3 Cable to the PC (ensure drivers are installed).

2) Connect the 6 Pin receptacle to the 6 Pin header labelled "LG UART" on the Programming Adapter Card. Ensure that the side with the GREEN wire is positioned to be closest to the mini-USB cable connection.

3) Connect the mini-USB connector of the ACU1500A Programming Adapter Card to the "Config" port of the ACU1500A unit that requires the upgrade.

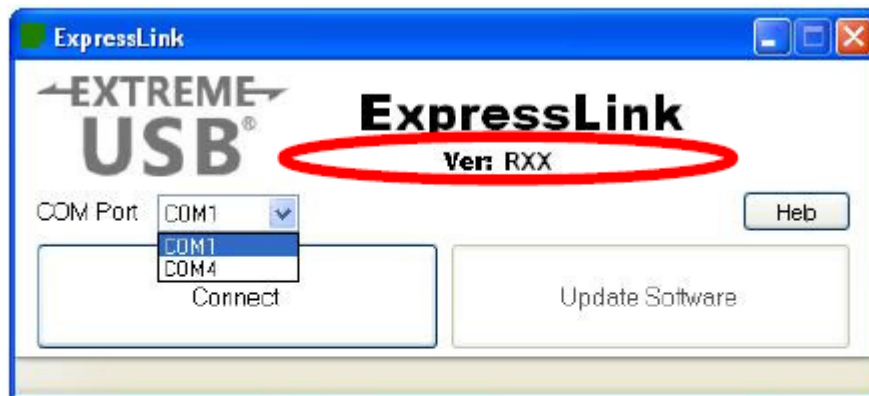4) Apply power to the ACU1500A unit using the supplied power adapter.

Figure 1: Required Hardware Connections to ACU1500A Unit

Using ExpressLink

The following outlines the steps required to perform the USB firmware upgrade on an ACU1500A unit.

1) Launch the ExpressLink Program. Upon launching ExpressLink, the user will see the following screen, if .NET Framework 4.0 is properly installed.

NOTE:

The red circle in the picture above shows the version of the USB Extension firmware that the ExpressLink software application has. If this is NOT the expected version, please contact Icron Technical Support.

2) Expand the COM Port drop down box and remember the existing ports. Then, after connecting the A connector of the USB cable to a USB port on the computer, check the drop down menu for the two new COM ports that show up. The new COM port with the highest numerical value should be selected. Once selected click the Connect button.

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3) With all connections established, cycle the power on the ACU1500A unit. ExpressLink will then detect that the unit is in programming mode. Once ExpressLink detects that the device is in programming mode, the "Update Software" button will become available and the version of the boot loader detected will be displayed on the status bar on the bottom. Click the "Update Software" button. If ExpressLink does not detect that the device is in programming mode, switch the com port to the other available port

4) Once the Update Software button is clicked, a progress bar will appear showing the estimated time remaining in the update process.

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5) The "Download Complete" displayed at the bottom of the window indicates the download was a success. If an error has occurred, it will also display that in a pop up message box.