Updating Atmel based ADL-1 OTP Printer Firmware

These instructions are for updating the ADL-1 firmware for Atmel based systems only. For ESP based systems see the instructions here :

https://partisanlabs.com/adl-1-otp-printer-firmware-downloads/

We are using Linux for all of this, if you are using Windows, Mac, IOS, or Android translate these for you platform – the steps are the same but the commands will be different.

Please read all these instructions before beginning.

WARNING:

Make sure you are using an external 12vdc power source. If the batteries die during the update you may have to send the unit back to us for repair.

Prerequisites

You will need a 3.3v USB to TTL Serial cable with a 6 position header on the end that matches this FTDI cable: https://ftdichip.com/products/ttl-232r-3v3/ failure to use the correct cable will damage your device.

You will need a 1/16 inch hex key to remove the panel screws.

Install the avrdude package using the package manager. For Debian based systems, open a terminal and type:

```
$ sudo apt install avrdude
```

Apt will do it's thing and install it. Make sure your user is a member of the 'dialout' group

```
$ sudo adduser $USER dialout
```

You will have to log out and log back in for the group change to take effect.

1. Download firmware package from

   https://partisanlabs.com/adl-1-otp-printer-firmware-downloads/

   following the instructions on the page.

2. Open a terminal in your home directory.

3. Unzip and check SHA512 hash values for the firmware binaries.

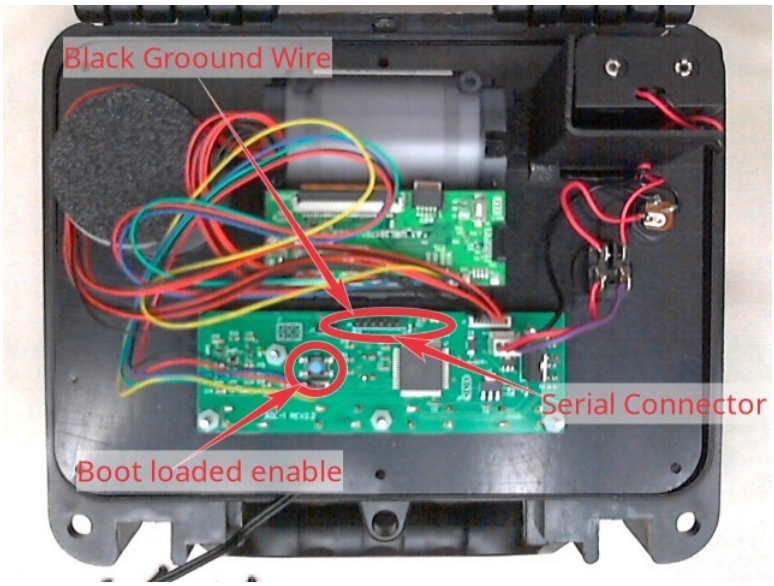
```
$ unzip ~/Download/<downloaded-file-name>
$ cd ADL-1_Atmel_Version_2.2.2
$ sha512sum -c sha512sum.txt

   ADL-1_Atmel_2.2.2.hex: OK
```

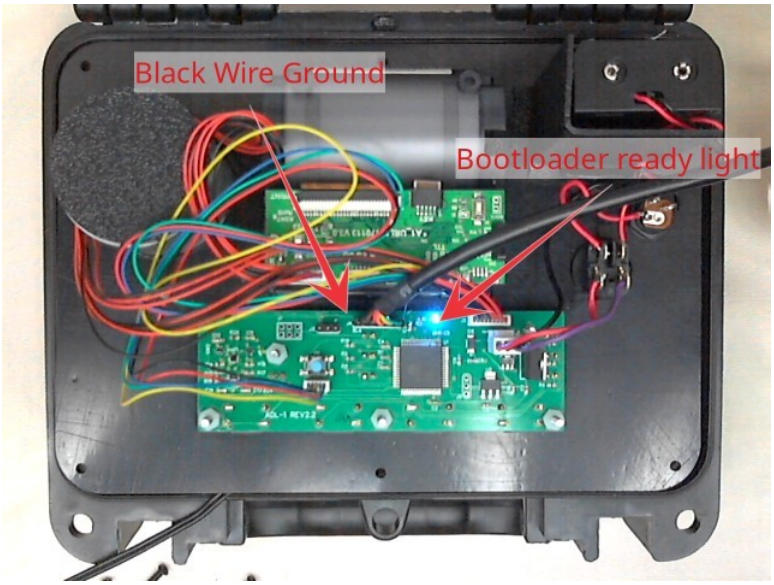
4. Using the 1/16 inch hex key, remove the 6 panel screws.



5. Plug in a 12vdc power supply keeping the unit turned off. Flip the panel over and set it back in the case.



6. Plug in the USB to 3.3v TTL Serial cable, making sure to get the ground (black wire on the FTDI cable) to the left as in the picture. Hold down the boot loader enable button and reach under and turn the unit on. The blue boot loader ready light should light up.



7. Once the cable is hooked up and the unit is in boot loader mode, type this in your terminal window to determine what device file the cable is.

```
$ sudo dmesg | grep Serial | tail -10
```

You are looking for a line that looks similar to this:

```
[765252.462792] usb 1-1.2: FTDI USB Serial Device converter now attached to ttyUSB0
```

8. In the terminal run the following with ttyUSB0 replaced with whatever device you found in the preceding step.

```
$ avrdude  -D -e -p atxmega256c3 -P /dev/ttyUSB0 -c avr911 -b 57600
  -U flash:w:ADL-1_Atmel_2.2.2.hex

   avrdude: AVR device initialized and ready to accept instructions
   avrdude: device signature = 0x1e9846 (probably x256c3)
   avrdude: erasing chip
   avrdude: reading input file ADL-1_Atmel_2.2.2.hex for flash
            with 28550 bytes in 1 section within [0, 0x6f85]
            using 56 pages and 122 pad bytes
   avrdude: writing 28550 bytes flash ...

   Writing | ################################################## | 100% 6.65 s

   avrdude: 28550 bytes of flash written
   avrdude: verifying flash memory against ADL-1_Atmel_2.2.1.hex

   Reading | ################################################## | 100% 6.58 s

   avrdude: 28550 bytes of flash verified

   avrdude done.  Thank you.
```

If you get an error about the chip not being a atxmega256c3, turn off the unit and repeat step 6 and 7, replacing atxmega256c3 with atxmega192c3 Both chips were used.

9. Turn off the unit, unplug the serial cable and flip the panel back over. Check the firmware version number by holding down the “Generate” button and turning the power on. It will print the currently flashed firmware version. It should be the new version, 2.2.2.

10. Put the panel screws back in, you are finished.

If you have any problems with these instructions, please email us at support@partisanlabs.com