Updating Atmel based ADL-1 OTP Printer Firmware on Windows

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 Windows for this, if you are using Linux please see these instructions.

https://partisanlabs.com/wp-content/uploads/2025/01/ADL-1_ATMEL_UPDATE.pdf

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: <u>https://ftdichip.com/products/ttl-232r-3v3/</u> Failure to use the correct cable will damage your device.

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

Download and extract the avrdudess package from github.

https://github.com/ZakKemble/AVRDUDESS/releases/download/v2.18/AVRDUDESS-2.18portable.zip

Right click on the downloaded zip file and choose 'Extract All'. Once it is complete, keep the window open where the files were extracted.

1. Download firmware package from

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

following the instructions on the page.

2. Right click on the downloaded firmware zip file and choose 'Extract All'. Once it is complete, keep the window open where the files were extracted. You can get the path from the Explorer bar for the next step.

3. Open a command window and change directory to where the firmware zip file was extracted.

```
Command Prompt
               Downloads\ADL-1_Atmel_Version_2.2.1\ADL-1_Atmel_Version_2.2.1>dir
C:\Users\
Volume in drive C is Windows-SSD
Volume Serial Number is 4879-69ED
Directory of C:\Users\
                           Downloads\ADL-1_Atmel_Version_2.2.1\ADL-1_Atmel_Version_2.2.1
01/20/2025
           10:22 AM
                       <DIR>
01/20/2025
01/20/2025
           10:22 AM
                       <DTR>
                              80,318 ADL-1_Atmel_2.2.1.hex
321,007 ADL-1_ATMEL_UPDATE.pdf
           10:22 AM
01/20/2025
01/20/2025
           10:22 AM
                                  402 releasenotes.txt
           10:22 AM
01/20/2025
           10:22 AM
                                  152 sha512sum.txt
              4 File(s)
                               401,879 bytes
              2 Dir(s) 3,282,122,018,816 bytes free
C:\Users\
```

4. In the open command window, check SHA512 hash values for the firmware binaries.

```
C:/<path>> certutil -hashfile ADL-1_Atmel_2.2.1.hex SHA512
```

The SHA512 hash value will be printed to the screen. Then verify against the hash value in the sha512sum.txt file

```
C:/<path>> type sha512sum.txt
```

Compare the output from both commands, the hash values must match.



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



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



7. 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.



8. Once the serial cable is connected, go to the Explorer window where avrdudess was uncompressed. Double click on the file 'avrdudess.exe' Windows will probably complain about it, run it anyway.

$\Box \rightarrow \text{Downloads} \rightarrow \text{AVRDUDESS-2.18-portable} \rightarrow$											
, (i) (j) (j)	↑↓ Sort ~ 📰 View ~										
Name	Date modified	Туре	Size								
∨ Today											
avrdude.conf	1/20/2025 10:16 AM	CONF File	850 KB								
avrdude.exe	1/20/2025 10:16 AM	Application	2,511 KB								
Changelog.txt	1/20/2025 10:16 AM	Text Document	8 KB								
Credits.txt	1/20/2025 10:16 AM	Text Document	3 KB								
License.txt	1/20/2025 10:16 AM	Text Document	35 KB								
portable.txt	1/20/2025 10:16 AM	Text Document	1 KB								
C presets.xml	1/20/2025 10:16 AM	Microsoft Edge HT	7 KB								
README.md	1/20/2025 10:16 AM	Markdown Source	2 KB								
TODO.txt	1/20/2025 10:16 AM	Text Document	1 KB								
🗹 🖤 avrdudess.exe	1/20/2025 10:16 AM	Application	146 KB								
avrdudess.exe.config	1/20/2025 10:16 AM	BDS.config	1 KB								
avr-size.exe	1/20/2025 10:16 AM	Application	799 KB								
💽 bits.xml	1/20/2025 10:16 AM	Microsoft Edge HT	20 KB								
📒 Languages	1/20/2025 10:16 AM	File folder									

9. In the window that just opened select the following options:

Programmer: avr911

Port: < Whatever port windows assigned the serial cable>

Baud Rate: 57600

MCU: ATxmega256C3

Flash: <The firmware image path and file>

Options: 'Erase flash and EEPROM (-e)' check this.

 AVRDUDESS 2.18 (avrdude ver 	sion 8.0)											
Programmer (-c)								MCU (-p)				
avr911 (Atmel bootloader (AVR109. AVR911))					~	ATxmega256C3 ~						
Port (P) Baud rate (b) Bit clock (-B)						Flash: 264 KB 1E				1E984		
COM3 - 57600					EEPROM: 4 KB Det				Detect			
Flash								Presets				
C:\Users	L-1_Atmel_Version_2.2.	1\ADL-1_Atmel_Version	ion_2.2.1\ADL-1_Atmel_2.2.1.hex					Default				~
O Write ○ Read ○ Verify) Write 🔿 Read 🔿 Venfy 🛛 Go Format Auto (writing only) 🗸					~	Manager					
EEPROM								Fuses & lo	ock bits			
								L	Read	Write		
• Write O Read O Verify	Go				Format	Auto (writing only)	~	н	Set fu	uses		
Ontions								E	Fuse sett	ings		
Force (-F)	Erase flash and	EEPROM (-e)						LB	Read	Write		
Disable verify (-V)	Do not write (-n)								Set la	ock		
Disable flash erase (-D)	Verbosity 0	~									Bit selector	
Program!	Stop	Options ?					?	Additional	command line	args		
-c avr911 -p x256c3 -P COM3 -	b 57600 -e -U flas	h:w:"C:\Users\	\Downloads\ADL-1_Atmel_Ve	Version_2.2.1\ADL-1_Atmel_Version	_2.2.1\ADL-1_A	atmel_2.2.1.hex":a						
Running in portable mode >>: avrdude.exe Loadd 143 programmers and 35 Checking for update3 You have the lutest version: ARL-1_Atmel_2.2.1.hex: 28,550	5 MCUS) / 270,336 Bytes (10.56%)										

10. Press the program button, The command output will scroll by in the black area of the window. When it completes it will look like this.



If you get an error about the chip not being a atxmega256c3, turn off the unit and repeat step 7, then go to step 9, replacing atxmega256c3 with atxmega192c3 in step 9. Both chips were used.

11. 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, 2.2.1.

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

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