

UP4DAR

HOWTO: Firmware update via the RS232 serial interface

General Information

Homepage: <http://www.up4dar.de/>

Mailing list: <http://groups.yahoo.com/group/up4dar>

GitHub Repository: <https://github.com/dl1bff>

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1 Introduction

This manual is a step by step guide to update the Firmware/ software of the UP4DAR via the RS232 interface.

The System's Firmware, developed by Michael (DL1BFF) is available to programmers under the conditions of GNU General Public License Version 2 at <https://github.com/dl1bff>.



Note

This guide uses the software version from 2012-10-13. For any other versions, please change the file name accordingly.

2 How to retrieve the software versions of your board

Booting into the update mode also shows the software versions installed on the UP4DAR. Hold the very left key (key1) down while the board is powered on.

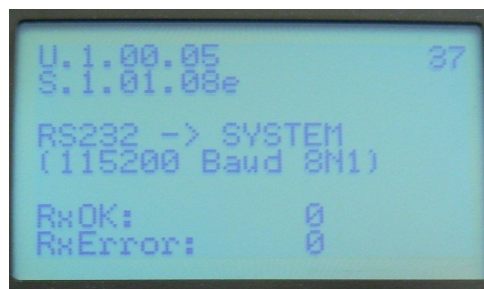


Figure 1: Update mode

The board used in figure 1 has got System Firmware version „S.1.01.08e“ installed.

3 Preparation

First of all, a serial connection via the RS232 interface between the MS Windows computer and the UP4DAR board is needed.

The latest version of Firmware can be downloaded from www.up4dar.de from the „Software“ section. Unpack the zipped file into a dedicated folder, e.g. update-2012-10-13 on the desktop.

The zipped file contains these files:

P.x.xx.xx.bin	PHY Firmware (UC3B controller). [optional]
S.x.xx.xx.bin	System Firmware (Display, Network, AMBE control, and related)
up4dar-flash.exe	Flash utility using the RS232 interface
update-howto.pdf	this manual

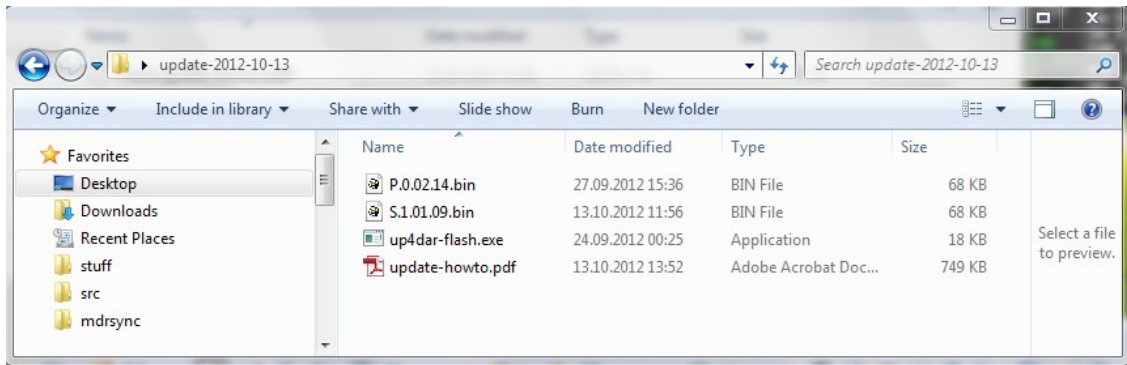


Figure 2: files after unpacking



Note

Up4dar-flash.exe can not be run on a double click. It is a commandline tool.

4 Updating the Firmware

4.1 Commandline

The commandline (cmd) can be started several ways. Go to Start → Run and enter `cmd` (Win XP) or search for `cmd` and double click (Windows Vista/ 7). Pressing „Win“-key + R should display the run dialog where `cmd` can be entered (applies to Windows XP and later).

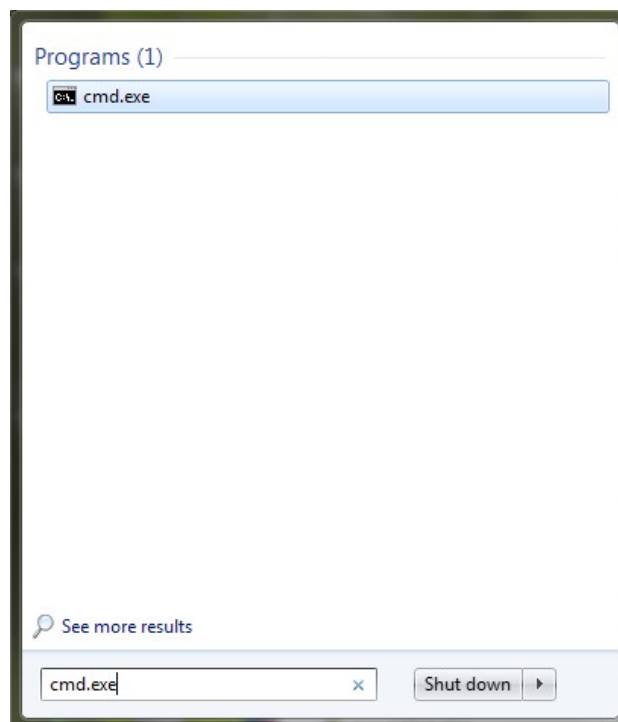


Figure 3: starting the commandline tool

4.2 Change to the folder containing the updates

On the commandline change into the Desktop folder entering:

```
cd Desktop
```

and then into the folder holding the new files:

```
cd update-2012-10-13
```



Note

The „Tab“-key can be used for auto completion on the commandline, i.e. having typed `desk` followed by „Tab“-key auto-completes to `Desktop`. This can be applied to any folder and file name but cycling through with the „Tab“-key might be necessary when similar folder and file names are present.

4.3 Display a list of available RS232 interfaces (COM ports)

Entering `up4dar-flash.exe` without any options displays all available RS232 interfaces (COM ports):

```
CA. Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\mdirska>cd desktop
C:\Users\mdirska\Desktop>cd update-2012-10-13
C:\Users\mdirska\Desktop\update-2012-10-13>up4dar-flash.exe
Usage: up4dar-flash.exe <COMPORT> <FirmwareFile> [/DEBUG]
The following COM ports are active on this system:
  COM9
  COM10
  COM11
C:\Users\mdirska\Desktop\update-2012-10-13>
```

Figure 4: Display available COM ports entering „up4dar-flash.exe“

COM9 was connected to the UP4DAR board in this setup.



Note

Refer to your hardware settings (Device Manager) to find the COM port your UP4DAR is connected to.

4.4 System Firmware update

Power the board off, hold the very left key (key1) down and power the board back on again.



Figure 5: Enabling the Update mode

The board is in update mode now:

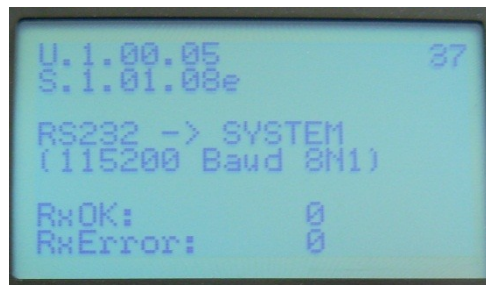


Figure 6: Update mode

The System Firmware update need to be started within the next 60 seconds of getting into the update mode. Notice the countdown timer in the top right hand corner. Following command will start the update process:

```
up4dar-flash.exe <COMPORT> <SystemFirmwareFile>
```

Example:

```
up4dar-flash.exe COM9 S.1.01.09.bin
```

```
ca. Command Prompt
Usage: up4dar-flash.exe <COMPORT> <FirmwareFile> [/DEBUG]
The following COM ports are active on this system:
  COM9
  COM10
  COM11
C:\Users\ndirska\Desktop\update-2012-10-13>up4dar-flash.exe com9 S.1.01.09.bin
UP4DAR Flash Tool Version: F.1.00.04e
(C) 2012 Michael Dirska, DL1BFF
Firmware file: 69632 bytes
Firmware version in file: S.1.01.09
UP4DAR Updater U.1.00.05
S/N: 5c-28-ed-53-44-35-43-51-46-20-20-20-ff-19-12
Updater Firmware version on UP4DAR: U.1.00.05
UP4DAR is now in update mode
UP4DAR Updater U.1.00.05
S/N: 5c-28-ed-53-44-35-43-51-46-20-20-20-ff-19-12
System Firmware upload done.
C:\Users\ndirska\Desktop\update-2012-10-13>
```

Figure 7: Successful update of the System Firmware

The Firmware for the UC3A has been uploaded.

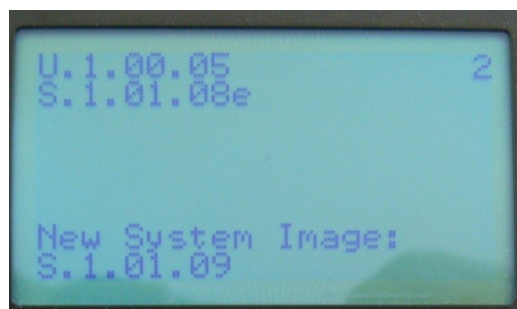


Figure 8: New System Firmware of the UC3A (CPU)

The timer will time out after the update and the UP4DAR automatically restarts. Please wait few seconds until the system is fully loaded (supply voltage is shown in the top center of the display).

4.5 PHY Firmware update

The PHY Firmware (named P.x.xx.xx.bin) for the IC UC3B can be updated the same way. Refer to 4.4 and change the file name accordingly.

```
up4dar-flash.exe <COMPORT> <PhyFirmwareFile>
```

Example:

```
up4dar-flash.exe COM9 P.0.02.14.bin
```

Have fun using the UP4DAR board you just updated!

5 The howto's changelog

Revision 0.1	initial version
26.11.2012	Michael DL1BFF, Thomas OE7OST
