UP4DAR HOWTO: Firmware update via the RS232 serial interface

General Information

Homepage: <u>http://www.up4dar.de/</u> Mailing list: <u>http://groups.yahoo.com/group/up4dar</u> GitHub Repository: <u>https://github.com/dl1bff</u>

Release date: 26.11.2012 Revision: 0.1 (**DRAFT**)

Michael, DL1BFF Denis, DL3OCK Thomas, OE7OST Sven, VK3SIX (DJ5AND)

Contents

Contents	. 2
1 Introduction	. 3
2 How to retrieve the software versions of your board	.3
3 Preparation	. 3
4 Updating the Firmware	.4
5 The howto's changelog	. 8

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 .

(j) 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.

U.1.00.05 S.1.01.08e	37
RS232 -> SYSTEM (115200 Baud 8N1)	
RxOK: Ø RxError: Ø	

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 <u>www.up4dar.de</u> 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

Organize 🔻 Include in library 🔻	Share with 🔻 Slide show	Burn New fold	der	•	
🔆 Favorites	^ Name	Date modified	Туре	Size	
🧮 Desktop	■ P.0.02.14.bin	27.09.2012 15:36	BIN File	68 KB	
〕 Downloads	S.1.01.09.bin	13.10.2012 11:56	BIN File	68 KB	
🕮 Recent Places	up4dar-flash.exe	24.09.2012 00:25	Application	18 KB	Select a fi
퉬 stuff	🔁 update-howto.pdf	13.10.2012 13:52	Adobe Acrobat Doc	749 KB	to preview



(j) 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 \rightarrow 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).

Programs (1)		
🖭 cmd.exe		
See more results		
cmd.exe	×	Shut down 🕨
emaiete		Shat down y

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



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 neccessary 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):



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

COM9 was connected to the UP4DAR board in this setup.

(j) 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



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 0.1initial version26.11.2012Michael DL1BFF, Thomas OE7OST