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UHSDR Bootloader General Reading

Forum:

- https://www.amateurfunk-sulingen.de/forum/index.php?board=15;action=display;threadid=551;start=75
- https://www.amateurfunk-sulingen.de/forum/index.php?board=15;action=display;threadid=947

Github Wiki:

- https://github.com/df8oe/UHSDR/wiki/Bootloader-Installation
- https://github.com/df8oe/UHSDR/blob/81dd4afae1a52103b2f1824cba34e2ff35e805ea/mchf-eclipse/useful_manuals/bootloader_doc.md
- https://github.com/df8oe/UHSDR/wiki/Topics:-UHSDR:-SW-Installation-on-SDR
- https://github.com/df8oe/UHSDR/wiki/Firmware-Upgrades

Bootloader Installation - General Comments

Three different options exist to do boot loader installation or upgrade:

- Option 1: Debug adapter approach. Preconditions:
  - STM „ST-Link V2“ adapter, STM Link SW
- Option 2: STM „Defuse“ approach. Preconditions:
  - PC with STM Defuse Tool installed
  - USB to micro-USB cable (to connect PC with OVI40 mini-USB socket)
- Option 3: USB-Stick approach. Preconditions:
  - USB stick with correct boot loader image
  - prior boot loader installation existing and working on OVI40 UI

The latest boot loader SW can be found here. Depending on the upgrade approach chosen (ST-link, DFuse, USB-Stick) you need to either use the

- *.bin file (pure binary file)
- *.dfu file (containing binary and additional info such as target address on MCU)

For a very first boot loader installation (e.g. just after assembling the OVI40 UI board) you need to use the „P6 jumper“ method, see below. Subsequent upgrades do not require this jumper closed anymore.

Please refer to the next sections for more details

"P6 Jumper" Method for very first boot loader upgrade

Close P6 jumper in case:

- There was never a UHSDR boot loader on the MCU (e.g. new assembled board)

- Boot loader malfunctions, no upgrade with Defuse or USB-Stick possible

After closing jumper „P6“ continue with Option 1 (ST-Link) or option 2 (Defuse Tool)

After upgrade please **remember** to remove jumper P6 again!!

Option 1: ST-Link upgrade

ToDo

Preconditions

- Download latest bl-40SDR.bin bootloader from here.
- Connect STM ST-Link V2 adapter to PC and to OVI40 UI.
- ST-Link SW installed and running on PC, USB drivers installed, adapter recognized by PC
- OVI40 UI powered up with 5V (JP1)

Procedure

Further Reading

- ST-Link V2 user manual
- STM32 ST-Link SW Utility user manual
- STM ST-Link/V2 USB drivers available here
- ST-Link SW utility available at bottom of this page

Option 2: DeFuse Tool upgrade

ToDo

Preconditions

- Download latest bl-40SDR.dfu bootloader from here.
- Install ST-Micro DeFuse Tool: http://www.st.com/en/development-tools/stsw-stm32080.html
- Connect PC with OVI40 UI via USB - to - MiniUSB cable. Use MiniUSB plug on OVI40 UI
- ST-Micro DFuse SW installed on PC and running, USB drivers installed, OVI40 UI recognized by PC
- OVI40 UI powered up with 5V (JP1)

Procedure

- Boot loader installation described here

Further reading

ST-Micro DFuse Tool description

Option 3: USB-Stick upgrade upgrade

ToDo

Preconditions

- Download latest bl-40SDR.bin bootloader from here.
- Format USB-Stick with FAT file partition. MAke sure - just in case - that USB-stick is otherwise empty
- Copy .bin file to stick. Make sure it is copied as file, not just a link / short-cut
- OVI40 UI powered up with 5V and 8V (JP1). The 8V powers the USB stick via voltage regulator

Procedure

Further reading

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Kontrolle der geladenen Bootloader Version

Nach erfolgreicher Bootloader-Installation den „P6“ Jumber entfernen und OVI40 UI booten.

Wenn Du im System-Menü der Firmware die Bootloader Version anzeigen lässt - was wird Dir dann angezeigt? Sollte es etwas anderes als 3.4.5 sein hol Dir bitte den Bootloader (.dfu - Datei) und flashe den mit Jumper und dem dfu-Tool. Und dann schau nochmal nach, ob dann der 3.4.5 angezeigt wird.

Nachfolgende Bootloader Update Installationen

Note: ToDo

Bootloader laden

Siehe auch mcHF Inbetriebnahme Tipps

Stromversorgung dazu 5 Volt Pin 28+ , Pin 30 Gnd)

UHSDR Firmware laden

Nachdem im DFU mode (J6) der neueste Bootloader geladen wurde (bl-40SDR.dfu):

1. +8V on JP1 pin 29 - zur Stromversorgung des USB stick!
2. Drücke und (wichtig!) halte Taste „BAND -“
3. +5V on JP1 pin 28 legen - um bootloader zu starten
4. USB stick in USB port stecken - auf richtigen Firmware Namen achten (fw-40SDR.bin)
5. Warten bis FW upload fertig ist
6. Taste „Band -“ loslassen
7. +5V aus und wieder einschalten für OVI40 UI board reboot.

From:
https://www.amateurfunk-sulingen.de/wiki/ - **Afu - Wiki des DARC OV Sulingen I40**

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https://www.amateurfunk-sulingen.de/wiki/doku.php?id=en:uhsdr:uhsdrbl&rev=1517850429

Last update: **05.02.2018 17:07**