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Note: Attention: Work in progress - page under construction

# UHSDR development - Build using eclipse

## Preconditions, Assumptions, Scope

- UHSDR toolchain installed, see [here](#)

## Pull UHSDR source from Github, import into eclipse

- Goto <https://github.com/df8oe/UHSDR> and click button „clone or download“
- Unpack the downloaded .zip file on your hard disk. Do not change the name, do not change the internal zip structure
- In Eclipse, choose „File→Import“.
- .. then choose „General→Existing Projects into Workspace“.
- Then choose the folder „mchf-eclipse in the path where you just downloaded the zip file as „root-directory“
- The project is now recognized and can be imported

## Build UHSDR using eclipse

- Project → Build Configurations → Set Active → DebugLibOVI40 (OVI49 DSP Library (STM32F7))
- Click on the „hammer“ in the tool bar
- Watch Console window in Eclipse - if all ok console output ends with “ ... Build finished ...,”
- Project → Build Configurations → Set Active → DebugOVI40 (OVI40 Firmware (STM32F7) ...)
- Click on the „hammer“ in the tool bar
- Watch Console window in Eclipse - if all ok console output ends with “ ... Build finished ...,”

Newly built binary fw-ovi40.bin can be found in the eclipse project explorer (left sidebar): mchf-eclipse → DebugOVI40 → fw-ovi40.bin

## Download new firmware .bin to OVI40 UI

- Please refer to [https://www.amateurfunk-sulingen.de/wiki/doku.php?id=en:uhsdr:uhsdrfw#st-link\\_v2\\_firmware\\_upgrade](https://www.amateurfunk-sulingen.de/wiki/doku.php?id=en:uhsdr:uhsdrfw#st-link_v2_firmware_upgrade)
- UHSDR FW build should run.
- Hit switch „Menu“, then select „System Info“ and „Build“. Check the build date and time

corresponds to your compile time in eclipse approximately

## Generate .dfu file from .bin file

With .bin file the FW can be installed via USB stick of ST-Link/V2 adapter. You may want to create a dfu file from the bin file so that the DfuSE FW install method can be used.

Section 4.2.1 of STM manual UM0412 describes step-by-step the generation of a .dfu file.

The ST-Micro UM0412 manual on DfuSe can be found

here

. Original source is [this](#).

## Eclipse user guide

- User guide can be found [here](#).
- Profiling is described [here](#)

This covers basic usage as well as advanced tools such as profiling and others.

## Debug, tracing, real-time diagnostics

- [nice summary of Cortex M tools here](#)
- [OpenOCD & Eclipse debug step-by-step instructions](#)
- [AN4989 Application note STM32 microcontroller debug toolbox](#)
- Concurrent use of ST-Link debugger and SWO Viewer not possible, see [here](#) - but [this](#) link states Eclipse support in debugger for SWO?
- J-Link Debug Probe [here](#)

## Further reading

- <https://www.amateurfunk-sulingen.de/forum/index.php?board=15;action=display;threadid=313;start=0>
- <https://www.amateurfunk-sulingen.de/forum/index.php?board=15;action=display;threadid=263>
- SWV and SWO and Eclipse explained [here](#)

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