
EECS 194/290C Chipyard Lab Handout

Chipyard Command Cheatsheet

2023-08-28

1. Clone Chipyard

```
git clone https://github.com/ucb-bar/chipyard.git
cd ./chipyard
export chipyard=$pwd
cd $chipyard
```

2. Configure Chipyard

```
$chipyard/build-setup.sh riscv-tools -s 6 -s 7 -s 8 -s 9 --force
```

3. Source Environment Variables

```
source $chipyard/env.sh
```

4. Running RTL Simulation

```
cd $chipyard/sims/verilator
make run-binary CONFIG=ExampleChipConfig LOADMEM=1
BINARY=$chipyard/software/baremetal-ide/workspace/build/firmware.elf TIMEOUT_CYCLES=1000000
```

5. Running FPGA Build Bitstream

5.1 Setting up vivado

```
PATH=/home/tk/Documents/Xilinx/Vivado/2022.1/bin:$PATH
```

5.2 Building bitstream

```
cd $chipyard/fpga
make SUB_PROJECT=ExampleChipArty100TConfig bitstream
```

6. Compiling Baremetal-IDE Programs

```
cd $chipyard/software/baremetal-ide/workspace
make CHIP=examplechip
```

7. Debugging the DUT

```
cd $chipyard/software/baremetal-ide/workspace
openocd -f ./debug/examplechip.cfg
riscv64-unknown-elf-gdb --eval "target remote localhost:3333" ./build/firmware.elf
```