

## Makefile

# Define project-specific variables

TOP=top

PCF\_FILE=VSIDSquadronFM

BOARD\_FREQ=12

CPU\_FREQ=20

FPGA\_VARIANT=up5k

FPGA\_PACKAGE=sg48

VERILOG\_FILE=top.v

#Uart Var

PICO\_DEVICE=/dev/ttyUSB0 # replace by the terminal used by your device

BAUDS=115200

build:

yosys -DCPU\_FREQ=\$(CPU\_FREQ) -q -p "synth\_ice40 -abc9 -device u -dsp -top \$(TOP) -json \$(TOP).json" \$(VERILOG\_FILE)

nextpnr-ice40 --force --json \$(TOP).json --pcf \$(PCF\_FILE).pcf --asc \$(TOP).asc --freq \$(BOARD\_FREQ) --\$(FPGA\_VARIANT) --package \$(FPGA\_PACKAGE) --opt-timing -q

icetime -p \$(PCF\_FILE).pcf -P \$(FPGA\_PACKAGE) -r \$(TOP).timings -d \$(FPGA\_VARIANT) -t \$(TOP).asc

icepack -s \$(TOP).asc \$(TOP).bin

flash:

iceprog \$(TOP).bin

clean:

rm -rf \$(TOP).blif \$(TOP).asc \$(TOP).bin \$(TOP).json \$(TOP).timings

terminal:

sudo picocom -b \$(BAUDS) \$(PICO\_DEVICE) --imap lfcrLf,crCrLf --omap delbs,crLf --send-cmd "ascii-xfr -s -l 30 -n"

cycle:

git pull

make

sudo make flash