

# Xilinx VSK BareBone

I have a Xilinx Spartan3A-based Video Starter Kit (comes complete with camera daughterboard and DVI output). However, I do not want to use the Microblaze-based system created using EDK. I want to create a full custom design from scratch using ISE.

## Software Preparation

Using ISE 12.1 (Vivado does not support Spartan devices and ISE 14 is absurdly big) on Slackware 14.1.

## Installation

Needs to be done as root (even when target path is writable by normal user).

## Running

Needs QT\_PLUGIN\_PATH variable to be null (or maybe just set ISE path before existing??). I set everything in my start-up script discussed [here](#). The latest version is always available at [my GitHub site](#).

## Cable Setup

Requires [fxload](#) and [cable usb driver](#) (Git here). Installation steps are given in the README file.

## Board Information

### Pin Information

- FPGA Clocking
  - Clock generator: IDT5V9885PFGL
  - Output: 4\_N, FPGA Pin: AE13, Default Frequency: 31.25MHz
  - Output: 6, FPGA Pin: AF13, Default Frequency: 27MHz
  - **[20150410] VERIFIED! DETAILS LATER...**
- RS232 Serial Port (need a pin to probe signal!)
  - FPGA Pin: V14, TX
  - FPGA Pin: AA20, RX

- LEDs:
  - FPGA Pin: W23, LED DS10
  - FPGA Pin: V22, LED DS11
  - FPGA Pin: V25, LED DS12
  - FPGA Pin: V24, LED DS13
- Switches:
  - FPGA Pin: N25, # S4 NORTH
  - FPGA Pin: N26, # S5 WEST
  - FPGA Pin: Y26, # S6 CENTER
  - FPGA Pin: N23, # S7 EAST
  - FPGA Pin: P21, # S8 SOUTH
- Soft-touch connectors:
  - FPGA Pin: H2, Soft-touch A1 (FMC\_LA03\_P)
  - FPGA Pin: H1, Soft-touch A2 (FMC\_LA03\_N)
  - FPGA Pin: J5, Soft-touch A4 (FMC\_LA14\_P)
  - FPGA Pin: J4, Soft-touch A5 (FMC\_LA14\_N)
- FMC#1 Connectors:
  - FPGA Pin: L4, FMC#1 C10 (0\_LA06\_P)
  - FPGA Pin: L3, FMC#1 C11 (0\_LA06\_N)
  - FPGA Pin: M2, FMC#1 D01 (PGC2M)
  - FPGA Pin: D3, FMC#1 D11 (0\_LA05\_P)
  - FPGA Pin: E4, FMC#1 D12 (0\_LA05\_N)
- Misc.:
  - FPGA Pin: R9, # set: 1 to use FMC#1, 0 to use memory

*to be continued...*

## Project from Scratch

Some notes on the things I try to build from 'scratch'.

### Check Clock Signal

I start with something simple:

- define 2 input clock pins
- use clock signal to generate basic square-waveform
- also try to control basic input (switch) and output (led)

[my1fpga.vhdl](#)

*to be continued...*

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