

# EDA385 Project Proposal – VT100

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## 1. Description

The VT100 is a simple device to operate. The terminal (Figure 1-1) is basically a typewriter that uses a video screen instead of paper and communicates with a computer. If you can operate a typewriter, you can operate a VT100.



Figure 1-1 VT100 Terminal

## 2. Architecture

The Microblaze processor sits on the PLB bus, and is the only Master on the Bus. The remaining blocks, namely the VGA Controller, PS/2 Controllers, and Compact Flash Card Controller are attached as slaves on the PLB Bus.

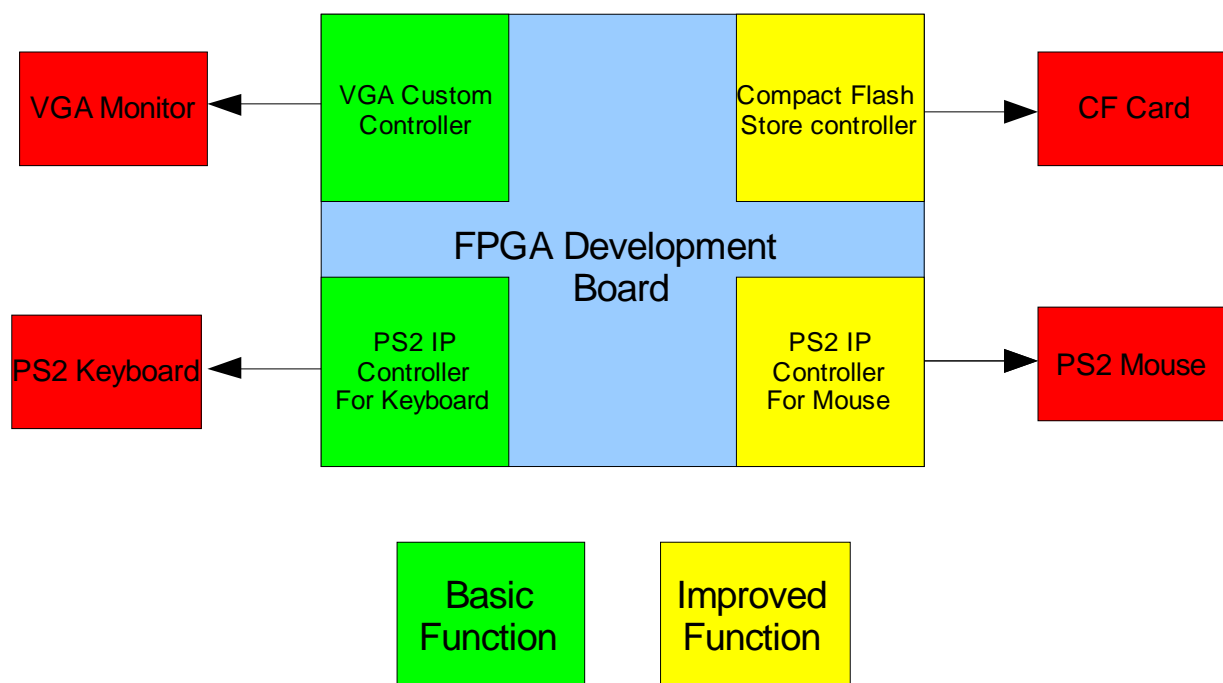


Figure 1-2 Hardware Function Block Diagram

Based on Xilinx FPGA Development Board, four functions are wanted to be implemented. The basic functions are to receive characters through PS/2 keyboard typing and then display on the VGA monitor. The additional functions are that PS/2 mouse can be used and the typing content can be saved on Compact Flash Card as a txt file

### **3. PS/2 controller**

The PS/2 cores interact with the PS/2 keyboard and the PS/2 mouse, read in the scan codes sent by the keyboard and the mouse and interrupt the Microblaze when data is received. The data received by the PS/2 Controller is written into a memory mapped data register. This IP core is provided by Xilinx.

### **4. VGA controller**

A VGA Controller is needed to produce the synchronizing signals as well as the VGA data to be displayed. The VGA Controller will also need to interface with the PLB Bus to allow the Microblaze to control the images that are being displayed.

### **5. Improvements**

- PS/2 mouse
- CF card

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## 6. Time plan

ID	Task	Start	Stop	Duration Time	September																														October															
					9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16								
1	Architecture Design	2009-9-9	2009-9-16	8d																																														
2	Software Development	2009-9-17	2009-9-27	11d																																														
3	Hardware Development	2009-9-28	2009-10-7	10d																																														
4	Integration & Testing	2009-10-8	2009-10-16	9d																																														