Some of our regular members may have noticed that I have not added a new S100 board to our list in a while. This is because I have been sinking quite a bit of time into this new board which I am now announcing. It took a lot of time/effort. It is called the V2 S100 Bus FPGA Board. It is an extension of our earlier "V1" Board. It is described here:-

http://s100computers.com/My%20System%20Pages/FPGA%20Board%20V2/FPGA%20Board_V2.htm

This board contains essentially all the circuits and functionality of the V1 board but now has the FPGA output pins arranged into four 16X2 0.1" sockets so that various "FPGA Shield boards" can be added. Much like the Arduino Shield boards concept. These ~ 4"X4.5" two layer boards can be easily and cheaply made by any PCB manufacturing house. This will allow you to add any functionality you like to the S100 bus easily and cheaply.

By way of illustration I will make available a single FPGA shields board that contains

- A UART Serial port
- A VGA Pong Game Demo
- A PS/2 keyboard port
- A two line LCD display
- A SPI driven Digital to Analog Voltage Potentiometer
- A I2C 24C512 EEPROM
- A SPI AT128 EEPROM

All these are available and are driven (together) by the onboard Cyclone IV FPGA. There is still a patch area on the board!

As for the original V1 FPGA board that FPGA can act as an S100 bus master or slave and can monitor/change almost any S100 bus line.

On top of this I have added on this V2 board the equivalent of an Arduino UNO circuit with its own Arduino shields sockets. This is modeled after our MEGA 328-2560 S100 board. Pins from the ATMEL 328 CPU are also brought out to the FPGA Shield sockets so the 328 CPU can interface with the Cyclone IV if needed on the FPGA Shield board. Lastly both the FPGA and 328 CPU share pins with an SD Card adaptor so data can be read/stored.

With this board and our now large portfolio of previous S100 boards encompassing CPUs such as a 6502, 8080, Z80, 68000, 68030, 80386 and 80486, RAM boards from 1MB to 32MB and video boards like our VGA board, our MSDOS Support board and our IDE/CF card board, the sky should be the limit as to what you can do on the S100 bus.

I would really like to impress upon our members to give using and programming FPGA's a try. The Intel programming IDE "Quartus Prime Light" V18 is free. While it takes a little patience to program your first few circuits, once you do so you will not look back.
While I have you...
I now plan to make a major push to bring the Internet to our S100 bus systems. Again using an FPGA shield. BTW, the one gaping board we are missing is a GB+ capacity DRAM S100 board. One or two have tried to tackle this issue, perhaps an FPGA might be an approach.

As always this V2 FPGA board is now open for our members to request a bare board or two. I will also do a group purchase of the illustrated FPGA Shields board which I will call a FPGA Shield #1 board. I also made an empty FPAG Shield #0 board with just a large 0.1" patch area and the shields sockets. If there is interest I can order a batch of these as well. However I would really encourage you to think of doing your own FPGA shields. The KiCAD/Gerber files are available at the bottom of the above page.

Please order the V2 FPGA Board, Shield #1 and Shield #0 boards by responding here:-

https://groups.google.com/forum/#!forum/s100computers

Most members know the drill. The bare boards will take about 1 month to arrive. V2 board is a 4 layer board with gold fingers and will cost about $32/board. The shields will probably run between $12-$16 per board depending on demand. Payment will be via PayPal after you receive your board(s). I have all regular members shipping address. New members contact me directly.

John Monahan