

Scientech 102A is Spartan3 FPGA based development Platform for students and designers to rapidly prototype FPGA based designs. Wire-wrap or manually soldered board or more than 15 ready to use application boards at a very low cost can be used to design various small & big applications

Features

- XILINX spartan3,FPGA ,400K gates,8064 logic cells).
- I/O ports 136, number of pins 208.
- 40 Pin, 4 header connector for external I/Os.
- Xilinx webpack development software CD.
- Sample code for board testing.
- Compatible with more than 15 application boards (optional).
- On board crystal oscillators and EPROM for FPGA backup.

Scope of Learning

- Basic gates, flip-flop, counters, resistors.
- Multiplexer/demultiplexer, encoder, decoder.
- ALU, real time clock, traffic light controller.
- IP for peripheral interface, ADC-DAC, memory interface and many more applications by combining Scientech 102A & compatible application boards.

Functional Explanation of Development Platform:

- The FPGA includes 400K gate count and its interior circuit uses the SRAM cells architecture
- Therefore its speed has reached several hundred MHz
- Data can be stored in an EPROM as a final design depends on the circuit size.
- The connecting pins of FPGA could arbitrarily set, and the input/output port need not use the single wire to be connected for signal output in order to avoid the experimental mistake to destroy the board
- It has four, 40pin IDC connector to interface the compatible VB Series boards & can also be used to connect external digital design
- Mode select for downloading bit stream into FPGA or EPROM On board user selectable clock up to 25MHz

Explanation of System Architecture :

- FPGA development platform (XILINX spartan3, 400K gates,8064 logic cells).
- I/O ports 136, number of pins 208.
- The I/O experiments board.
- Xilinx ISE development software CD.
- Sample code for board testing.

Compatible VLSI Application Boards

VB1 - Digital Input Output

Optional Boards

VB2 - Peripheral Interface

VB3 - Analog to Digital

VB4 - Digital to Analog

VB5 - Static RAM

VB6 - Traffic Light Controller

VB7 - Real Time Clock

VB8 - LED Flasher

VB9 - Hex Keypad

VB10 - LCD Interface

VB11 - Rotary Encoder

VB12 - Alpha Numeric Display

VB13 - Relay Control

VB14 - Stepper Motor

VB15 - LED Matrix Display

VB16 - Sensor and Displacement

VB17 - Sensors Interface

Vb19 - Dot Graphics LCD Interface

Technical Specifications

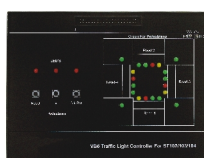
1. Xilinx family:
Spartan3.
XC3S400PQ208.
2. Device density:
400K gates.
8064 logic cells.
3. On board +5V, +3.3V, +2.5V supply to FPGA & other hardware circuit.
4. On board, 2 crystals - 8 MHz & 25 MHz.
5. Master reset key for hardware reset, program key for FPGA reconfiguration.
6. Onboard EPROM XCF02 (2Mbit) for FPGA backup.
7. Configuration methods:
IEEE 1149 JTAG interface (boundary scan).
PROM interface.
8. 40 pin, 4 header connector for external I/O's.
9. Number of I/Os: 136.

Package contains

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|------------------------------------|------|
| 1. Learning Material CD | 1no. |
| 2. JTAG cable (boundary scan) | 1no. |
| 3. FRC cable | 1no. |
| 4. VB 1 (VB1 Digital Input Output) | 1no. |
| 5. Power Supply (Scientech 102A) | 1no. |
| 6. Xilinx ISE Webpack | |



VB1 Digital Input Output



VB6 Traffic Light Controller (optional)



VB7 Real Time Clock (optional)



VB9 Hex Keypad (optional)



VB10 LCD Interface (Optional)