General Description

This FPGA development board is purpose-built for teaching and experimenting with digital design concepts. It supports learning through practical implementation of combinational and sequential logic circuits using **VHDL** or **Verilog**, providing a hands-on foundation in reconfigurable computing.

Core Specifications

- **FPGA Resources**:

    - 33,650 logic slices

    - Each slice includes four 6-input LUTs and 8 flip-flops

    - ~13 Mbits of high-speed block RAM

    - 740 dedicated DSP slices for signal processing tasks

    - 10 clock management tiles with integrated Phase-Locked Loops (PLLs)

    - Maximum internal clock frequency: > 450 MHz

- **High-Speed Transceivers**:

    - GTP transceivers supporting speeds up to 3.75 Gbps

- **Memory**:

    - On-board DDR3: 512 MiB, 800 MT/s

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

- Serial flash memory

- User EEPROM

- MicroSD card slot for removable storage

Connectivity & Peripherals

- **User I/O**:

  - 8 LEDs

  - 8 switches

  - 6 push-buttons

  - 128×32 pixel monochrome OLED display

- **Display Interfaces**:

  - HDMI Input (Sink)

  - HDMI Output (Source)

  - DisplayPort Output

- **Expansion Options**:

  - 160-pin FMC LPC connector

  - 4x Pmod ports (including dedicated XADC signal port)

- **Audio Interface**:

  - Integrated audio codec

  - Four 3.5mm audio jacks

- **Networking**:

  - 10/100/1000 Ethernet PHY for high-speed LAN communication

- **USB & Programming Support**:

  - USB-UART bridge

  - USB HID Host (supports keyboards, mice, etc.)

  - USB Mass Storage Device (MSD) Host

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- Digilent Adept-compatible USB port for programming and data transfer

- **Additional On-Chip Features**:

    - XADC (Analog-to-Digital Converter)

    - Onboard serial flash

    - EEPROM for user data

Included Accessories

- USB/JTAG programming cables

- Basic input/output expansion modules

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