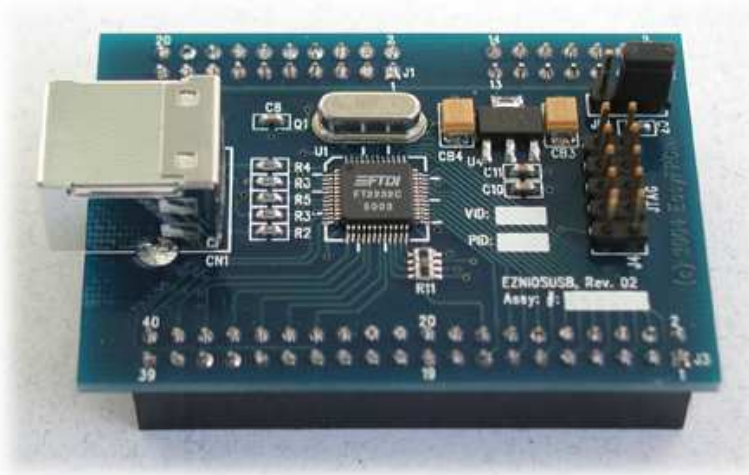


EZNIOSUSB—Altera Nios USB Daughter Card

Provides instant USB connectivity for the Altera Nios development kits



The EZNIOSUSB daughter card adds USB capabilities to the line of Altera NIOS development boards. The EZNIOSUSB features an integrated USB function controller providing a single-chip solution ideal for embedded USB applications. Entire USB protocol is processed on the daughter card. Nios development board interfaces to USB daughter card thru generic parallel FIFO interface. The EZNIOSUSB is USB 2.0 Full Speed (12 Mb/s) compliant.

Key Features

- Connects to the host PC via USB
- Features FTDI FT2232C USB controller
- USB data transfer rate up to 1 MB/s (One Mega Byte per second)
- Compatible with 5-V and 3.3-V expansion connector groups
- Simple FIFO-like interface: (8 data bits, 2 control and 2 status bits)
- FT2232C Configuration EEPROM interface
- 8 general purpose I/O pins
- JTAG header output for programming Nios (optional software required)
- Standard Type-B USB connector
- No USB-specific firmware programming required
- Royalty free USB driver (Windows 98/Me/2000/XP/Server2003)
- VB6/VB.NET/Delphi/C++ application examples
- VHDL examples

Supported Nios Boards

- Nios Development Board - Apex Edition
- Nios Development Board - Cyclone Edition
- Nios Development Board - Stratix Edition

Applications

- Rapid prototyping and development of Altera APEX/Cyclone/Stratix Nios designs
- IP development and testing
- Telecommunications
- Digital Signal Processing
- Data acquisition and control
- Signal generation
- Test bench

Kit Contents

- USB A->B cable
- Documentation
- USB Drivers
- VB6/VB.NET/Delphi/C++ application examples
- VHDL examples
- JTAG programming software (optional)

Warranty

- One year - parts, labor, technical support
- Free software upgrades

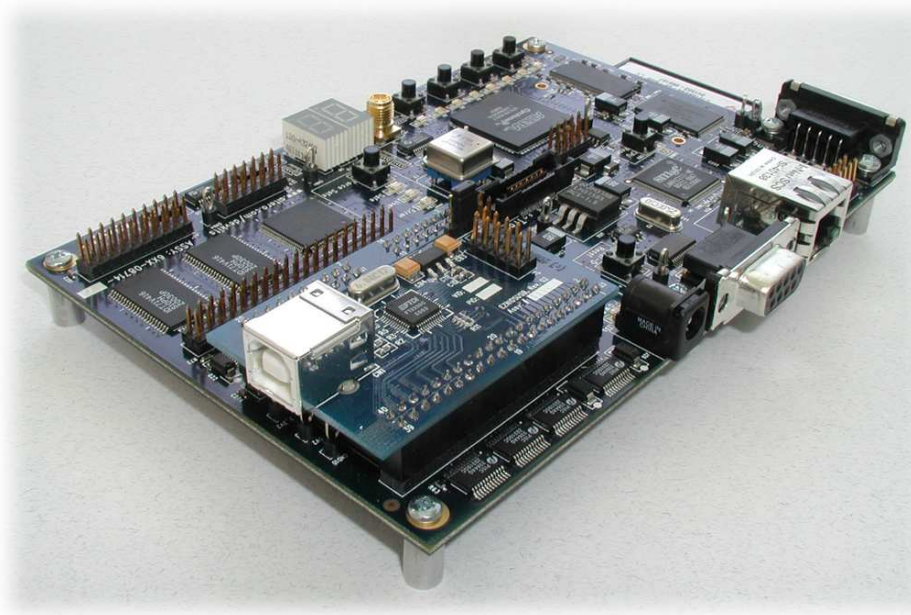
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Altera Nios Development Kit



Connectors Pinouts (Top Side)

J2		
GND	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.
N.C.	■	N.C.

J1		
VCC	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND
N.C.	■	GND

J3		
GND	■	GND
USB_D1	■	USB_D0
USB_D3	■	USB_D2
USB_D5	■	USB_D4
USB_D7	■	USB_D6
USB_TXE#	■	USB_RXF#
USB_WR	■	USB_RD#
SI/WUA	■	SI/WUB
PWREN#	■	USB_RESET#
GND	■	N.C.
EEDIN	■	GND
EESK	■	GND
EECS	■	GND
GPIOL0	■	GPIOH3
GPIOL1	■	GND
GPIOL2	■	N.C.
GPIOL3	■	N.C.
GPIOH0	■	N.C.
GPIOH1	■	CARDSEL#
GPIOH2	■	GND

Signal Description

- USB_D[7..0] - Bi-directional data bus
- USB_TXE# - Transmit FIFO Empty Flag
- USB_RXF# - Receive FIFO Full Flag
- USB_WR - FIFO Write Strobe
- USB_RD# - FIFO Read Strobe
- SI/WUA - Send Immediate/ Wake-up
- SI/WUB - Send Immediate/ Wake-up
- PWREN# - Goes high during USB suspend
- USB_RESET# - FT2232C Reset
- GPIOH[3..0] - General Purpose I/O pins
- GPIOL[3..0] - General Purpose I/O pins
- CARDSEL# - Presence detect
- EEDIN - EEPROM Data I/O
- EESK - EEPROM Clock
- EECS - EEPROM Chip Select
- VCC - Power, GND - Ground, N.C.- Not Connected