

DE2i-150 FPGA Development Kit

1. Overview



A groundbreaking embedded platform that combines an Intel embedded N2600 processor with the flexibility of an Altera Cyclone IV GX FPGA, DE2i-150 is a full-featured computer system that fuses together the world of high performance processing and unbelievably high configurability. The Altera Cyclone IV GX FPGA on the DE2i-150 board is able speed up the responsiveness of the system while still keeping your solution cost and power effective.

DE2i-150 is equipped with around 150K logic elements with ultimate flexibility in terms of reconfiguration of actual hardware circuitry and intellectual property as well as on-board multimedia peripherals, extendibility options for a true system-ready solution for any task.

The Intel Atom processor and the FPGA device are linked together via two high-speed PCIe lanes such that high speed communication between them is guaranteed. DE2i-150 offers a powerful hardware-software co-development environment with amazing and unlimited potential.

- **Company: Terasic**
- **Tel: +886-3-5750880**
- **Fax: +886-3-5726690**
- **Add: 9F., No.176, Sec.2, Gongdao 5th Rd, East Dist, Hsinchu City, 30070. Taiwa**

DE2i-150 is selected as the instant boot platform by WinZent for its wION (Instant ON) legacy BIOS solution in 2014.

2. Specification

1) Microprocessor

- CPU: Intel® Atom™ Dual Core Processor N2600(1M Cache, 1.6GHz)

Intel® Hyper-Threading Technology(4 execution threads)

Intel SpeedStep® Technology

Instruction Set: 64-bit

Instruction Set Extensions: SSE2, SSE3, SSSE3

Integrated Graphics

Graphics Base Frequency: 400MHz

- Chipset: Intel® NM10 Express Chipset

DMI x2 to CPU

Intel® High Definition Audio

Serial ATA (SATA) 3 Gb/s

Universal Serial Bus(USB) Hi-Speed USB 2.0

PCI Express Gen 1

- Memory

DDR3 SO-DIMM SDRAM

- Display

VGA

HDMI 1.3a

- Intel® Centrino® Wireless-N 135

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802.11b/g/n

Bluetooth 4.0

Wi-Fi Direct

- Audio Codec

Realtek ALC272VA3-GR

- BIOS

DIP package Bios Flash: GD25Q16

Programming Interface for Bios: Dedi-Prog Interface

-Debug Interface

XDP header

- Clock System

CK505: 9VRS4339B

32768 Hz RTC crystal

27MHz VGA clock source

- Ethernet

Intel® 82583V GbE Controller

10/100/1000 Mb/s RJ45

3 status indicting LEDs

- Others

Power header for hard-disk

Current limit for USB

Buzzer

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Mini PCIE header (Default for Intel® Centrino® Wireless-N 135 WiFi module)

mSATA header

RTC battery: CR2032

2) FPGA

- Featured Devices

Cyclone IV EP4CGX150DF31 device

149,760 LEs

720 M9K memory blocks

6,480 Kbits embedded memory

8 PLLs

FPGA configuration

JTAG and AS mode configuration

EPCS64 serial configuration device

On-board USB Blaster circuitry

- Memory devices

128MB (32Mx32bit) SDRAM

4MB (1Mx32) SSRAM

64MB (4Mx16) Flash with 16-bit mode

- SD Card socket

Provides SPI and 4-bit SD mode for SD Card access

- Connectors

Ethernet 10/100/1000 Mbps ports

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High Speed Mezzanine Card (HSMC) (voltage levels: 2.5V)

40-pin expansion port (voltage levels: 3.3V)

VGA-out connector

VGA DAC (high speed triple DACs)

DB9 serial connector for RS-232 port with flow control

- Clock

Three 50MHz oscillator clock inputs

SMA connectors (external clock input/output)

- Display

16x2 LCD module

- Switches and indicators

18 slide switches and 4 push-buttons switches

18 red and 9 green LEDs

Eight 7-segment displays

- Other features

Infrared remote-control receiver module

TV decoder (NTSC/PAL/SECAM) and TV-in connector

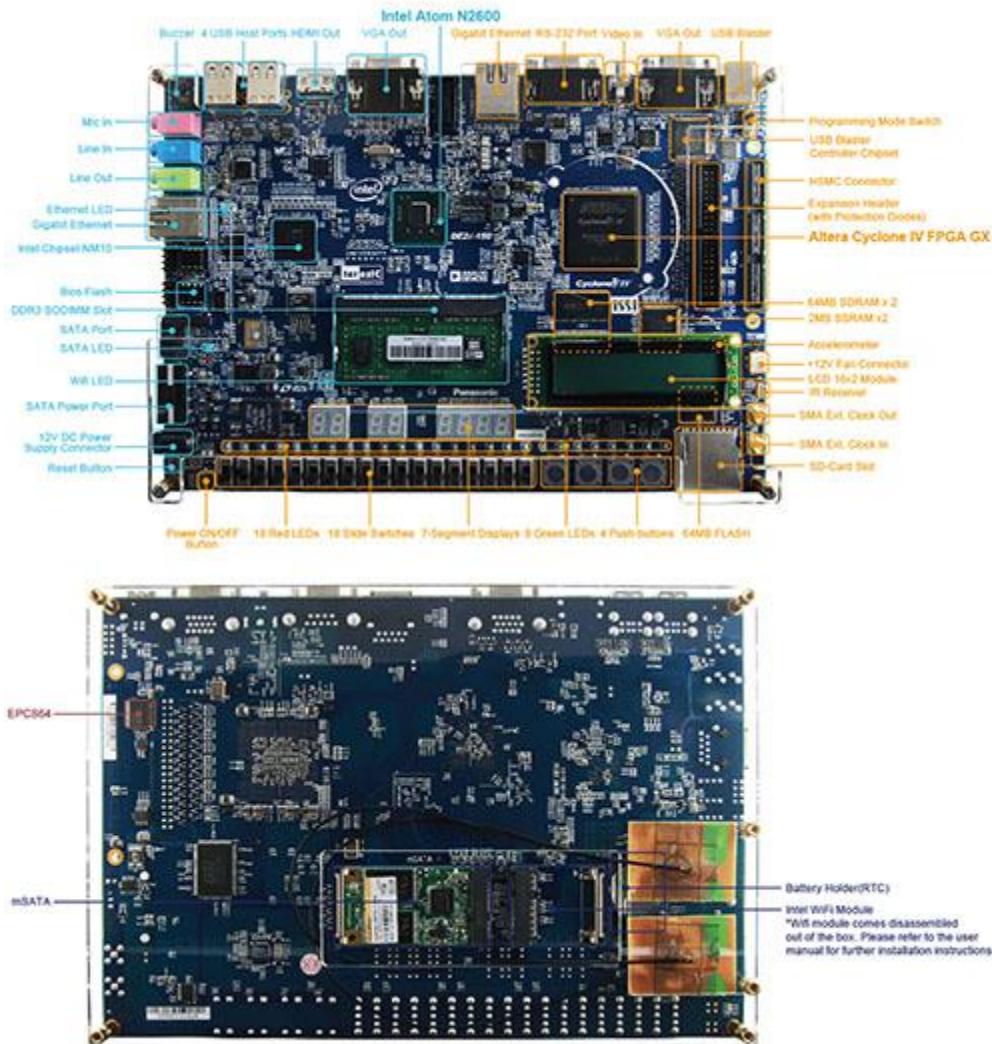
3. Kit content

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- 01 DE2i-150 Development Board
- 02 DE2i-150 Quick Start Guide
- 03 HSMC Loopback Adapter
- 04 Intel WiFi Module
- 05 Power Supply (12V)
- 06 Altera Complete Design Suite DVD
- 07 Remote Controller
- 08 DDR3 SODIMM (installed)
- 09 mSATA SSD (installed)
- 10 Type A-B USB cable

4. Layout



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- Size : 250*170 mm

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