

Video and Embedded Evaluation Kit - Multi-touch

1. Overview



The Video and Embedded Evaluation Kit - Multi-touch (VEEK-MT) is a comprehensive design environment with everything embedded developers need to create processing-based systems. VEEK-MT delivers an integrated platform that includes hardware, design tools, intellectual property (IP) and reference designs for developing embedded software and hardware platform in a wide range of applications. The fully integrated kit allows developers to rapidly customize their processor and IP to best suit their specific application. The VEEK-MT features the DE2-115 development board targeting the Cyclone IV E FPGA, as well as a capacitive LCD multimedia color touch panel which natively supports multi-touch gestures. A 5-megapixel digital image sensor, ambient light sensor, and 3-axis accelerometer make up the rich feature-set.

2. Specification

Cyclone IV EP4CE115 FPGA

- 114,480 logic elements (LEs)
- 432 M9K memory blocks
- **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**

- 3,888 Embedded memory (Kbits)
- 266 Embedded 18 x 18 multipliers
- 4 General-purpose PLLs
- 528 User I/Os

Configuration

- EPCS64 serial configuration device
- On-board USB-Blaster circuitry
- JTAG and AS mode configuration supported

Memory Devices

- 128MB SDRAM
- 2MB SRAM
- 8MB FLASH with 8-bit mode
- 32Kbit EEPROM

Switches and Indicators

- 18 switches and 4 Push-buttons
- 18 red and 9 green LEDs
- Eight 7-segment displays

Audio

- 24-bit encoder/decoder (CODEC)
- Line-in, line-out, and 3.5mm jacks

Character Display

- 16x2 LCD module

On-board Clocking Circuitry

- Three 50MHz oscillator clock inputs
- SMA connectors (external clock input/output)

SD Card Socket

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

Two Gigabit Ethernet Ports

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- Integrated 10/100/1000 Ethernet

172-pin High Speed Mezzanine Card (HSMC)

- Extension for LCD and camera module
- Configurable I/O standards (voltage levels: 3.3/2.5/1.8/1.5V)

USB Type A and B

- Provides host and device controller compliant with USB 2.0
- Support for data transfer at full-speed and low-speed
- PC driver available

40-pin Expansion Port

- Configurable I/O standards (voltage levels: 3.3/2.5/1.8/1.5V)

VGA-out Connector

- VGA DAC (high speed triple DACs)

DB-9 Serial Connector

- RS-232 port with flow control

PS/2 Connector

- PS/2 connector for connecting a PS/2 mouse or keyboard

Remote Control

- Infrared receiver module

TV-in Connector

- TV decoder (NTSC/PAL/SECAM)

Power

- 12V DC input
- Switching and step-down regulators LM3150MH

Capacitive LCD Multi-touch Screen

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- 7-inch TFT LCD with pixel resolution of 800*480
- 16 million colors (8-bit RGB)
- LED backlight

5-Megapixel Digital Image Sensor

- 2,592H x 1,944V active pixels with Bayer color arrangement
- Programmable frame rate up to 70FPS (VGA)
- Snapshot-mode mode to take frames on demand
- Simple two-wire serial control interface

Digital Accelerometer

- Up to 13-bit resolution at +/- 16g
- SPI (3- and 4-wire) digital interface
- Flexible interrupts modes

Ambient Light Sensor

- Precise illumination measurement under diverse lighting conditions
- Programmable interrupts
- 16-bit digital output with I2C fast-mode at 400 kHz
- Programmable analog gain and Integration time
- 50/60Hz lighting ripple rejection

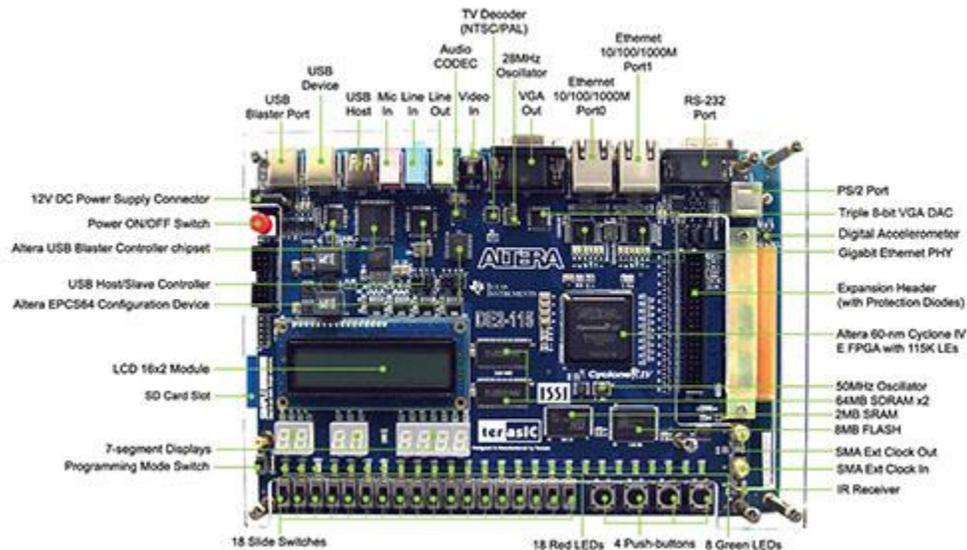
3. Kit content

The VEEK-MT package includes:



4. Layout

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- Size : 223*160*47 mm

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