XILINX

XILINX - HW-V5-ML507-UNI-G Evaluation Board

Product Overview:

Xilinx ML507 is a feature-rich Power PC (PPC) 440 Processor, RocketIO GTX, general purpose FPGA evaluation and development platform. The ML507 offers users the ability to create PPC 440 based and high speed serial designs utilizing the Virtex™-5 PPC 440 Processor and RocketIO™ GTX transceivers. A variety of on-board memories and industry standard connectivity interfaces add to the ML507's ability to serve as a versatile development platform for embedded platform.

The Virtex-5 FXT platform contains an embedded PowerPC 440 processor block with integrated DMA engines and a multi-port crossbar switches that offers designer's unparalleled FPGA processing power through the ML507. It utilizes Xilinx XC5VFX70T-1FFG1136 Virtex 5 FXT Fpga where the user Users can obtain a quick understanding of the features offered by the ML507 Board.

Kit Contents:

Following are included with Virtex-5 FXT FPGA ML507 Board:

- ML507 platform
- DVI adapter
- Compact Flash card
- SATA cross-over cable
- Development tools and PC download cable are not included and must be ordered separately

Key Features of Xilinx V5 FXT ML507 Board:

Below are the Major features of ML507 Board:

- Xilinx Virtex-5 FPGA
  - XC5VFX70T-1FFG1136 (ML507)

- Xilinx XC95144XL CPLD for glue logic

- Two Xilinx XCF32P Platform Flash PROMs (32 Mb each) for storing large device Configurations

- Xilinx System ACE™ CompactFlash configuration controller with Type I CompactFlash connector

- 64-bit wide, 256-MB DDR2 small outline DIMM (SODIMM), compatible with EDK supported IP and software drivers

- General purpose DIP switches , LEDs , pushbuttons, rotary encoder and 16-character x 2-line LCD display

- Expansion header with 32 single-ended I/O, 16 LVDS-capable differential pairs, 14 spare I/Os shared with buttons and LEDs, power, JTAG chain expansion capability, and IIC bus expansion

- Stereo AC97 audio codec with line-in, line-out, 50-mW headphone, microphone-in jacks, SPDIF digital audio jacks, and piezo audio transducer

- RS-232 serial port, DB9 and header for second serial port

- One 8-Kb IIC EEPROM and other IIC capable devices

- PS/2 mouse and keyboard connectors

- Video input/output
    - o Video input (VGA)
    - o Video output DVI connector

- ZBT synchronous SRAM, 9 Mb on 32-bit data bus with four parity bits

- Intel P30 StrataFlash linear 32MB flash chip

- Serial Peripheral Interface (SPI) 2MB flash

- 10/100/1000 tri-speed Ethernet PHY transceiver and RJ-45 with support for MII,GMII, RGMII, and SGMII Ethernet PHY interfaces

- USB interface chip with host and peripheral ports

- Rechargeable lithium battery to hold FPGA encryption keys

- JTAG configuration port for use with Parallel Cable III, Parallel Cable IV, or Platform USB download cable

- Onboard power supplies for all necessary voltages

- MII, GMII, RGMII, and SGMII Ethernet PHY Interfaces

- GTP/GTX : SFP (1000Base-X), SMA (RX and TX Differential Pairs),
  SGMII, PCI Express® (PCIe™) edge connector (x1 Endpoint) and SATA (dual host connections) with loopback cable

- 5V @ 6A AC adapter

Ordering Information:

Products:

Part Number	Manufacturer	Farnell P/N	Newark P/N
HW-V5-ML507-UNI-G	Xilinx	1671116	19P0521

Associated Products:

Part Number	Manufacturer	Description	Farnell P/N	Newark P/N
Voltage Regulator	TI	TI Single Output LDO	1783636	28M7836
DC/DC Convertor	TI	JTAG USB	1273086	71K9425
Logic Buffer IC	TI	Single Bus Buffer Gate with 3-State Output	1621010	76C4084
Inverter Logic IC	TI	TI CMOS Hex Inverter	1014046	78K5875
Serial Flash Memory	ST Micro	32 Mbit, Low Voltage, Serial Flash Memory	1661754	24M5082
EEPROM	ST Micro	Serial EEPROM 128KBIT	1224409	26M1751
Transceiver IC	Analog Devices	RS-232 Line Drivers/Receivers	1438719	59K2063
Microcontroller	Cypress	USB Host/Peripheral Controller	1769877	19M7094
Power Distribution Switch	Micrel	USB Power Switch	1556727	67J0252
Oscillator	Abracon	25MHz Crystal	7942941	13J1892
MOSFET	Fairchild Semiconductor	N-Channel Logic Level Enhancement Mode Field Effect Transistor	1369448	58K2016

Similar Products:

Part Number	Manufacturer	Description	Support Device	Farnell P/N	Newark P/N
DK-V5-EMBD-ML507-G	Xilinx	EMBEDDED HW-SW KIT V5	Virtex 5	1673072	33P6844
HW-V5-ML505-UNI-G	Xilinx	EVAL PLATFORM, VIRTEX-5 LXT	Virtex 5	1762512	52R3587
HW-V5-ML506-UNI-G	Xilinx	EVAL PLATFORM, VIRTEX-5 SXT	Virtex 5	1762513	52R3588

HW-V5-ML510-G	Xilinx	EVAL PLATFORM, VIRTEX-5 FXT	Virtex 5	1762514	52R3589
HW-V5-ML550-UNI-G	Xilinx	EVAL PLATFORM, VIRTEX-5, LM550	Virtex 5	1762516	52R3590
HW-V5-ML555-G	Xilinx	DEVELOPMENT KIT VIRTEX 5 FOR PCI I/F	Virtex 5	1605828	12N2258
HW-V5GBE-DK-UNI-G	Xilinx	KIT, DEV, VIRTEX-5 LXT, GIGABIT ENET	Virtex 5	1762511	52R3591

Document List:

Datasheets:

Part Number	Description	Size
Xilinx Virtex-5 Series	o Virtex®-5 Family Overview o Virtex 5 Datasheet	313KB 2.80MB
XCCACE — TQG144I	System ACE™ CF Controller	820.79KB
XC95144XL	CPLD	205KB
XCF32P	Platform Flash	1.02MB
ML507	ML507 Motherboard Resources	

Application Notes:

File Name	Size
XAPP1060 - Reference System: Debugging PowerPC 440 Processor Systems	1.72MB
XAPP957 - Virtex-5 Embedded Tri-Mode Ethernet MAC Hardware Demonstration Platform	389KB
XAPP1040 - Reference System: PLBv46 Endpoint Bridge for PCI Express in a ML507 Embedded Development Platform	7.54MB
XAPP1117 - Software Debugging Techniques for PowerPC 440 Processor Embedded Platforms	410KB
XAPP502 - Using a Microprocessor to Configure Xilinx FPGAs via Slave Serial or SelectMAP Mode	356KB

Hardware & Software Resources:

File Name	Size
ISE Design Suite Evaluation	88.8MB
ML507 Schematic Files	1.2MB
ModelSim Xilinx Edition-III (MXE-III)	206MB