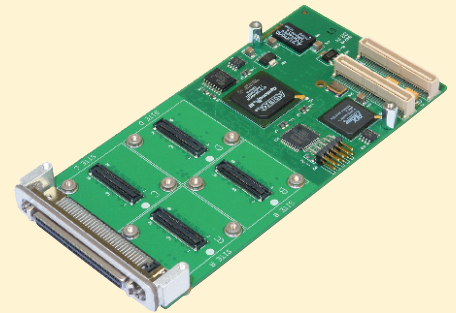# Carrier Card

Micro Mezzanine System Electrical Conversion Modules

The 5495 is the mid-range level PMC form factor carrier for Technobox Micro Mezzanine System Electrical Conversion Modules (ECMs). As many as four ECMs can be accommodated by the carrier. There is a three population configurations (16K, 40K and 120 LEs) based on Altera(R) Cyclone III FPGAs.

The FPGA is effectively the engine for the carrier, executing a resident IP core design and orchestrating various processing and I/O functions for the installed ECMs. The ECMs themselves have unique characteristics and capabilities that are supported by the FPGA and for which separate drivers and code are installed as needed. Each ECM site can be populated by a different module to allow considerable design flexibility. The 5495 supports PCI target, master, and DMA modes and provides only front I/O connectivity. A PLX 9056 serves as the PCI bridge (Universal 3.3 or 5V signaling, 32-bit, 66 MHz).
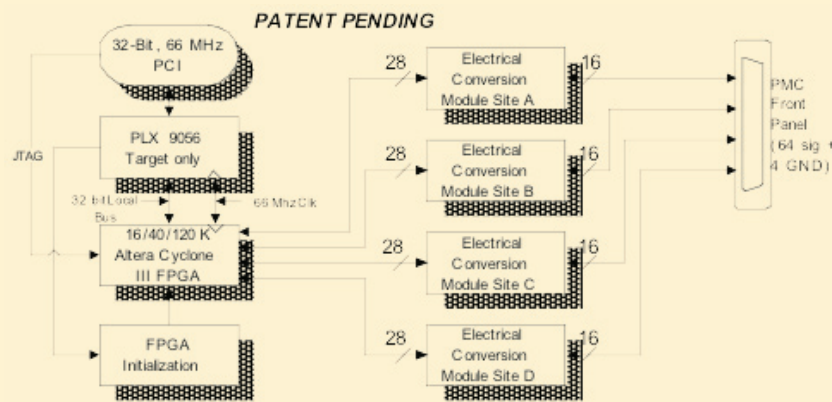
On power up, the EP3C16 configuration cells are automatically loaded from a serial FLASH chip located on the PMC. Technobox provides a sample design, including Altera Quartus files and "C" source code. The user may override this default configuration by dynamically reprogramming the FPGA from the host processor or by in-circuit burning of the re-programmable 16Mbit serial flash chip.
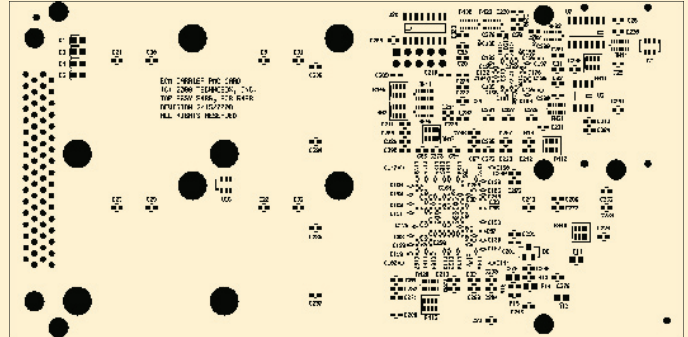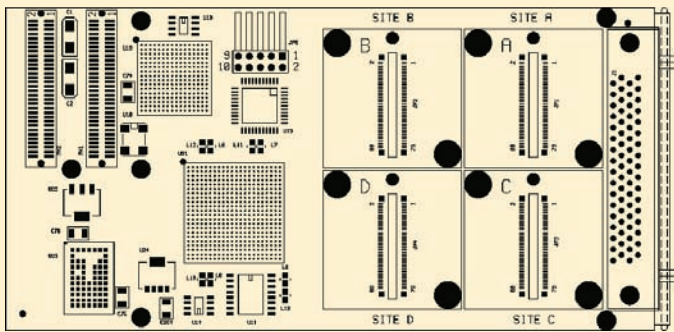
The 68-pin front panel connector is compatible with standard fast/ wide differential SCSI cables. Optional Technobox transition panels (e.g., P/N 4988) may be used to break out the differential signals into more convenient individual connectors, such as DB9 interface connectors.

5495

- **Mid-range ECM carrier PMC**
- **32 bit 66 MHz PCI interface**
- **3.3V or 5V PCI interface**
- **PLX PCI9056 PCI to local bus interface**
- **Supports PCI Target, Master, or DMA**
- **Altera Cyclone III FPGA 8Kb Memories, 18x18 Multipliers, PLL Support**
- **EP3C16F484I7N with 16K Logic Elements (with configuration options for 40K and 120K LEs)**
- **Supports Nios Processor**
- **Easily configurable using Quartus and SoPC Builder**
- **Four ECM sites**
- **Configure FPGA by serial FLASH, PCI or JTAG**
- **Two status LEDs**
- **Industrial temperature**
- **RoHS compliant**

PATENT PENDING

Specifications

Temperature (Operating):	-40 to +85 degrees C
Temperature (Storage):	-55 to +105 degrees C
Altitude:	Not Specified or Characterized Typical similar equipment is at 15,000 ft.
Humidity (Operating/Storage):	5% to 90% non-condensing
Vibration:	Not specified or Characterized
Shock:	Not specified or Characterized
MTBF:	Available on request
Weight:	78 grams
Power:	TBD
PCI Signaling:	5V/3.3V, 32 bits
PCI Clock:	66 MHz PCI
Voltages Required PMC	+5V, +3.3V +/- 5%
Voltages Required ECM:	+12V,-12V,+5V, +3.3V +/-5%
Size	74 mm x 149 mm

Ordering Information

5495: Electrical Conversion Module (ECM) Carrier, PMC Form Factor with 16K LE (Altera EP3C16F484I7N)
8Kb Memories - 56
18x18 Multipliers - 56

5496: Electrical Conversion Module (ECM) Carrier, PMC Form Factor with 40K LE (Altera EP3C40F484I7N)
8Kb Memories - 126
18x18 Multipliers - 126

5497: Electrical Conversion Module (ECM) Carrier, PMC Form Factor with 120K LE (Altera EP3C120F484I7N)
8Kb Memories - 432
18x18 Multipliers - 288

Technobox, inc. ®

**140 Mount Holly Bypass
Unit 1
Lumberton, NJ 08048**

**Tel: 609-267-8988
Fax: 609-261-1011**

www.technobox.com