

PRODUCT OVERVIEW

The Rocco Embedded Controller board (K-EC1) is a System on module that provides flexibility and high performance processing capability at low-cost and low-power with the AMCC PPC405EXr and the Xilinx Spartan3A FPGA.

The System-on-Module can be combined with the Rhea development platform (K-DP1) for prototyping or used as part of a finished product.

MECHANICAL/ELECTRICAL

Its small form factor (9 x 11cm) enables its integration into 3U rackmount systems. It can source 3.3V up to 5A to other user modules and is powered from a 5V to 15V source.

CONNECTIVITY

High throughput standard interfaces such as PCI-express x1, Gigabit Ethernet and USB 2.0 allows easy and efficient system interconnectivity. JTAG, IIC, SPI and UART are also available. Up to 198 User IOs and 50 User Inputs are connected to FPGA for parallel processing.

SOFTWARE/FIRMWARE/DEVELOPMENT

Rocco is offered with U-boot (GNU GPL) from DENX and Linux 2.6; or a custom BSP for Neutrino RTOS (Apache - QDL).

FPGA - XILINX SPARTAN3A FAMILY

FPGA options	Équivalent Logic Cells	RAM bits		Dedicated Multipliers /DSP48As
		Distributed	Block	
XC3S1400A	25,344	176K	576K	32
XC3SD1800A	37,440	260K	1512K	84
XC3SD3400A	53,712	373K	2268K	126

- Standard Option XC3S1400A
- Configuration with FPGA or SPI Flash 32Mbits
- Up to 198 user IOs
- Up to 50 user inputs
- Two external differential clocks
- External 100MHz low-power PSRAM
 - o Asynchronous / Synchronous / Burst Modes
 - o Up to 16MB

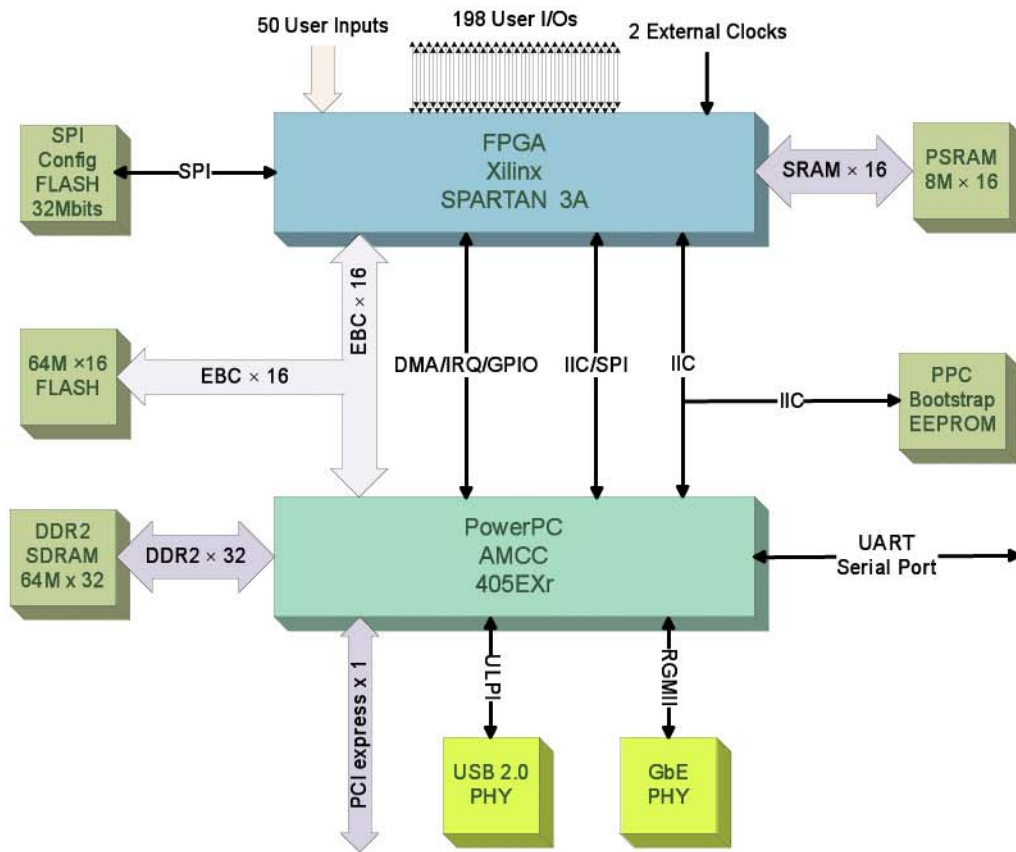


EMBEDDED PROCESSOR - AMCC POWERPC 405EXR

- Up to 533MHz
- Up to 512MB DDR2 400MHz
- One PCI Express x1
- One USB 2.0 On-the-Go
- One Gigabit Ethernet MDI/SGMII Interface
- Two UARTs
- NOR Flash up to 128MB
- Configuration with Flash or download from tftp or serial
- Configuration with JTAG (via Kyvox tools in FPGA)

PROCESSOR - FPGA INTERFACE

- External Bus Controller (EBC) up to 100MHz
 - o 16-bit Data, 26-bit Address, 3 Chip Selects
 - o Configurable DMA, Parity, IRQ, User IOs
- SPI and IIC bus
- IIC Shared EEPROM 2kB (for processor bootstrap)



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MECHANICAL SPECIFICATIONS

- PCB Dimensions: 9 cm x 11 cm – 3.54' x 4.33'
- PCB Thickness: 2.2 mm – 0.087'
- Top / Bottom Component Height: 3 mm (total: 8.2mm – 0.32')
- Connectors: Two Samtec MIS-095-01-x-D-A-x
- Carrier board should use two Samtec MIT-095-xx-x-D-A-x
- Connectors Match Height: 5, 8, 11, 16, 18.75 or 22 mm – 0.2', 0.31', 0.43', 0.63', 0.74, or 0.87'

ELECTRICAL SPECIFICATIONS

- Input Power : 5V to 15V
(Standard configuration 6V to 12V)
- Output Power : 3.3V up to 5A
- USB 2.0 : Vbus up to 1A
- 2.5Vref for GbE center tap

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