Tiny-PPC837

High Performance PowerPC based PCI/104-Express Communications Controller

Advanced Micro Peripherals
THE EMBEDDED VIDEO EXPERTS

The Tiny-PPC837 is a highly integrated PowerPC based controller board optimized for extreme, high performance, and mission critical systems. The Tiny-PPC837 is powered by the 667MHz MPC8377E PowerQUICC II Pro embedded processor, offering two Gigabit Ethernet ports with dual PCI-Express controllers.

The Tiny-PPC837 is an industry standard PCI/104-Extpress form factor and offers both PCI Express and tranditional 32bit PCI interfaces. The Tiny-PPC837 supports up to 2Gbytes of DDR DRAM and an onboard 2Gbyte solid state Flash drive for application and data storage. Off board data storage can be achieved using either the USB 2.0 port or the high speed SATA drive interface.

High-performance

PowerPC based

Solidly constructed

Versatile

Design

PRELIMINARY INFORMATION (Rev A.01)
Subject to change without notification

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EMBEDDED-PC PC/104 MODULES

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The Tiny-PPC837 is currently supported by embedded Linux. VxWorks and other OS support can be made available on request

Extended temperature and conformal coating options for tough environments

Applications

Industrial Automation Controller

Portable Test Equipment

Mission computers

Backbone communication routers

Point-of-sale and Kiosk applications

Security, Transportation, Telematics

Embedded Internet/Intranet Appliance

Windows, Linux, QNX, VxWorks Support

Rugged Harsh Environment Applications

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PowerPC based

Dual Gigabit

Ethernet Ports

Support PCI-104,

mini PCI, and

PCIe/104

peripheral modules

Features

667MHz MPC8377E PowerQUICC II processor

Integrated security encryption accelerator

Soldered BGA DDR2 SDRAM

Soldered PATA NAND Drive

Dual integrated Gigabit Ethernet ports

Standard SATA I/II compatible interface

Enhanced Secured Digital Host Controller (eSDHC)

Two serial ports (RS-232 and RS-422/485)

PCIe/104 connector offering four x1 PCIe links (500Mbytes/sec per link)

32 bit PCI expansion via standard PCI-104 expansion connector and mini PCI port

Software support under Linux and VxWorks (Optional)

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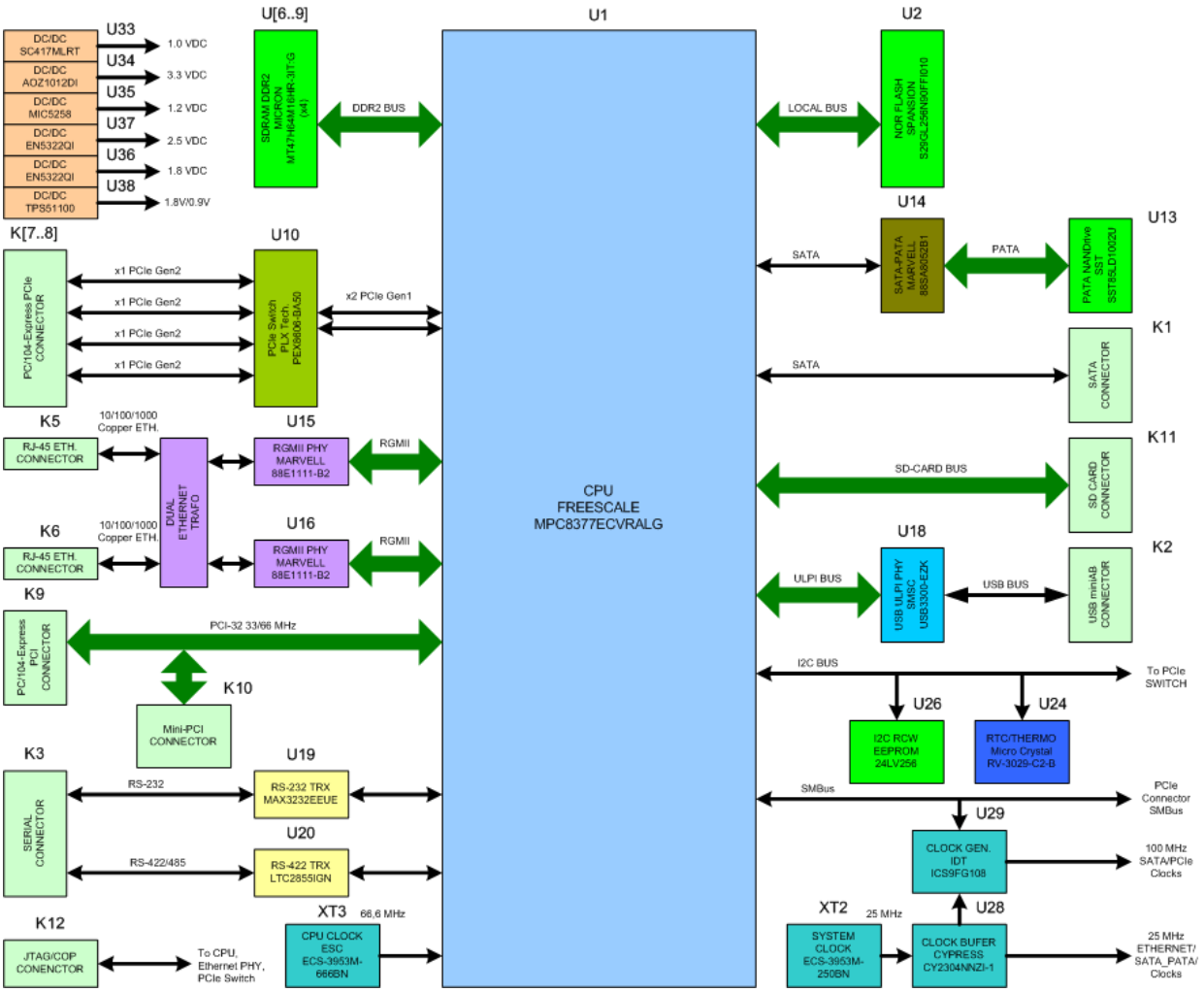
Operation Summary



Tiny-PPC837 Block Diagram

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Tiny-PPC837

Rev A.01

High Performance PowerPC based PCI/104-Express Communications Controller

Technical Specification

Processor
MPC8377E PowerQUICC™ II Pro Processor
e300c4s core (32KB I-cache and 32KB D-cache)
One floating point unit & wwo integer units
133 MHz 32-bit local bus
Integrated power management controller
Optional encryption acceleration engine

Main Memory
Soldered 512MBytes DDR2 SDRAM (Up to 1GB)
Support for up to 400-MHz data rate
Support for up to 32 simultaneous open pages
On-the-fly power management using CKE

On-board Storage
Soldered PATA NANDrive 2GB (Up to 4GB)
On SATA interface through SATA-PATA converter

Network
Two Gigabit Ethernet ports
10/100/1000 Auto-negotiation
RGMII PHY 88E1111-B2
Support for Wake-on-Magic Packet™

Peripherals
Standard SATA I/II compatible interface
1 x RS-232
1 x RS-422/485 serial ports
Mini-AB USB 2.0 Port
Enhanced Secured Digital Host Controller

PCI/104-Express Bus
Stackable 156-pin PCIe bus connector
Four PCI Express x1 Lanes
SMBus

PCI-104 Bus
133MB/sec bus bandwidth
PCI-104 bus master/initiator
Up to 4 Bus master add-on cards capable
3.3V or 5V PCI bus signalling

mini PCI Bus
133MB/sec bus bandwidth
PCI-104 bus master/initiator

Power
+5V Power Supply

Physical
PCI/104-Express stackable card form factor.
Standard 3.775" x 4.05"
Passive cooling

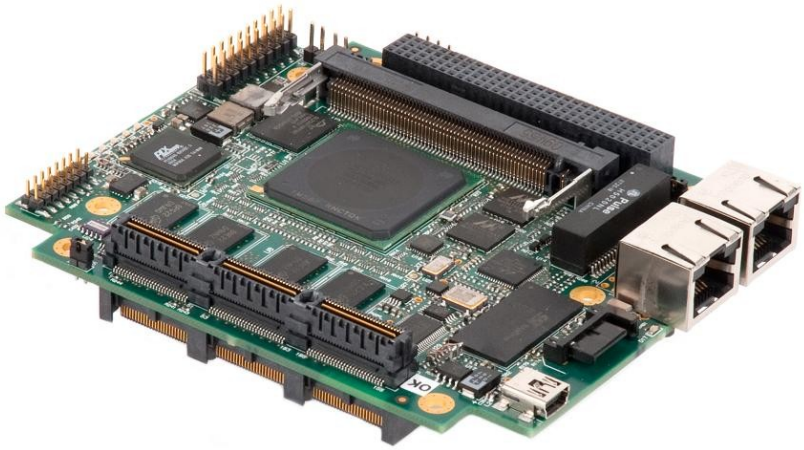
Environmental
Operating temperature at 0ºC to 60ºC
(-40ºC to +85ºC -EXT option)
Relative humidity 5% to 95% non-condensing
(optional conformal coating)

Miscellaneous
Single +5V supply

Software Support
Linux
VxWorks and others on request

Ordering Information
Tiny-PPC837-666/512-2G
MPC8377E PowerPC SBC (0 to 60˚C)

Tiny-PPC837-666/512-2G-Ext
MPC8377E PowerPC SBC (-40 to 85˚C)



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