Introduction of Micetek PowerPC development tools (2009)

Freescale PowerPC processors are ideal for RISC embedded application. With excellent performance, high level of integration and advanced technology, these processors are widely applied for networking, industry, aerospace and defense, storage and pervasive computing applications, such as home media, printers, computer clusters and gaming systems. MICETEK supplies PowerPC (PowerQUICC I, II, II Pro and III family) development platforms, in-circuit emulator and integrated development environment (IDE) with strong technology supports and good services for the developers. These products help the developers reduce the design cycle and fasten their products to the market.

This document introduces the hardware of MICETEK PowerPC development boards, material for hardware and software and brief introduction of USB TAP and JediView for PowerPC IDE. For the details, please visit www.micetek.com.

PowerQUICC I development platform

- MPC860

PowerQUICC II development platform

- MPC8241

PowerQUICC II Pro 83xx development platform

- MPC8349E-mITX
- MPC8349E-mITX-GP cost-down
- MPC8313E-RDB
- MPC8323E-RDB
- MPC8347EPC
- MPC8347E-RDB
- MPC8315-RDB
- MPC8379E-RDB

PowerQUICC III 85xx processor card

- MPC8541EPC
- MPC8560PC
- MPC8548EPC
- MPC8572PC (high-performance, dual core)

PowerPC carriers

- Type-N carrier for **networking communication**
- Type-A carrier for **ATCA or UTCA chassis**
- Type-S carrier for **Network Attached Storage**

PowerPC development tools

- JediView for PowerPC development kit (supporting MPC8XX, MPC82XX, MPC83XX, MPC85XX, MPC5XX, MPC52XX family)

Highly integrated processors, MPC83xx family, offer good performance ranging from 333 to 667MHz with abundant interfaces such as DDR memory controller, USB 2.0 interface, Gigabit, Ethernet controllers. MPC83xx family processors are cost-effective and ideal for substituting for MPC82xx and applied for the products based on Gigabit Ethernet.

Hardware of PQ2 Pro reference design board

MPC83xx family processors are ideal for substituting for MPC82xx

Product	CPU	RAM	Flash (bytes)	Ethernet	PCI	PCI-E	SATA	USB	Other interface
MPC8313E -RDB	333MHz	128MB DDR2	8M NOR Flash 32M NAND Flash 256Kbits E2PROM SD card	1 x 10/100/1000M, 5-port 10/100/1000 switch	1 x PCI, 1 x miniPCI			2 x USB2.0 with PHY integrated	2 x RS232 RTCTemp. Sensor Programmable LED
MPC8323E -RDB	333MHz	64MB DDR2	16M NOR Flash 256Kbits E2PROM SD card	1 x 10/100M, 4-port 10/100 switch	1 x PCI 1 x miniPCI	-	-	2 x USB2.0	1 x RS232 DSP switch, UTOPIA Level 2
MPC8315E -RDB	400MHz	128MB DDR2	8M NOR Flash 32M NAND Flash 256Kbits E2PROM	2 x 10/100/1000M	1 x PCI, 1 x miniPCI	PCI-E miniPCI -Express	Integrated 2 x SATA	2 x USB2.0 (4-port USB hub)	1 x RS232 SPI, TDM, RTC
MPC8347E -RDB	533MHz	128M DDR1	8M NOR Flash, (Up to 16M flash)	2 x 10/100/1000M	1 x miniPCI	-	1 x SATA, 1 x e-SATA	1 x USB 2.0	2 x RS232 GPIO RTC
MPC8349E -mITX	533MHz,	256M DDR1	16M Flash Compact Flash	1 x 10/100/1000, 5-port 10/100/1000 switch	1 x PCI, 1 x miniPCI	-	4 x SATA	2 x USB2.0 (4-port USB) 1 x miniUSB	2 x RS232 RTC Local bus expan
MPC8349E -mITX-GP	533MHz,	256M DDR1	8M Flash 8Kbits E2PROM	1 x 10/100/1000	1 x PCI			1 x miniUSB2.0	1 x RS232 RTC
MPC8379E -RDB	667HZ 1260MIPS @667MHZ	256M DDR2	8M NOR Flash 32MNAND Flash 256Kbits E2PROM SD card	1 x 10/100/1000M 5-port , 10/100/1000M switch	1 x PCI, 1 x miniPCI	PCI Express, miniPCI -Express	2 x SATA II (8377) Integrated4 x SATAII	2 x USB2.0 (4-port USB hub) 1 x miniUSB2.0	2 x RS232 SPI, I2C Temp. Sensor Programmable LED

MICETEK supplies MPC85xx development boards consist of MPC85xx processor cards with three kinds of carriers for different applications. Combined with processor card, type-N carrier can be used for networking communication, type-A carrier for ATCA or UTCA chassis and type-S for Network Attached Storage (NAS).

These PQ 37 family processors include MPC8540, MPC8541E, MPC8555E and MPC8560. MPC85xx family processors are designed for high-end communications and networking products. MPC8560 is required for ATM and TDM telecom-based applications and MPC8541E is one of the best solutions for high-end firewall.

These PQ 38 processors, the MPC8548E, MPC8547E, MPC8545E and MP8543E, are designed to deliver gigahertz-plus communications processing performance and advanced features with the exceptional integration and high-speed connectivity required by enterprise networking, telecom transmission and switching, 3G wireless infrastructure, storage and high-end imaging markets. The processors are designed to offer clock speeds scaling up to 1.333 GHz with headroom for 1.5 GHz.

The MPC8572 family of processors is designed to offer clock speeds from 1.2 GHz up to 1.5 GHz, combining two powerful processor cores, enhanced peripherals and high-speed interconnect technology to balance processor performance with I/O system throughput.

The hardware of the development boards which consist of PQ III processor card and Type-N carrier for Networking Communication application

Product	CPU	RAM	Flash	Ethernet	PCI	PCI-Express	General	Other interfaces	Dimension, power supply
MT8541E-N	833MHz, 1850MIPS	256M DDR1	16 Mbytes	2 x 10/100/1000, 1 x 10/100	3 x PCI	-	RTC, LM75 Temp. Sensor IS24024A, E2PROM, S232, Eight Programmable LED Indicator Power Indicator, light for Ethernet port	AMC connector Two BSH connectors 16-bit UTOPIA TDM interface 32-bit local bus	Processor card: 147mm x 70.9mm, 8-layer PCB routing, Carrier: 220mm x 148mm, 6-layer PCB routing, 4pin 5V, 12V input
MT8560-N					2 x PCI				
MT8548E-N	1333MHz 3065MIPS	256M DDR1		4 x 10/100/1000	3 x PCI	1 x PCI-Express			
MT8572-N	Dual e500 core, 1333MHZ 6897MIPS	512M DDR2 533MHZ							

Hardware of the development boards which consist of PQ II Pro, III processor card and Type-S for Network Attached Storage applications								
Product	**CPU**	**RAM**	**Flash**	**Ethernet**	**PCI**	**SATA &USB**	**I2C&serial port, LED**	**Dimension, power supply**
MT8347E-S	400MHz (PBGA)	256M DDR1	16 Mbytes	1 x 10/100/1000M 4-port 10/100 Ethernet switch	1 x PCI, 2 x miniPCI	4 x SATA, 2 x USB 2.0	1 x RS232 RTC IS24024A E2PROM Programmable LED Indicator light for Power and Ethernet port	Processor card: 147mm x 70.9mm 8-layer PCB routing Carrier: 170mm x 170mm 6-layer PCB routing 4pin 5V, 12V input
MT8541E-S	833MHZ 1850MIPS					4 x SATA		
MT8560-S	833MHZ 1850MIPS							

The hardware of the development systems which consist of PQ III processor card and Type-A carrier for ATCA or UTCA chassis									
Product	**CPU**	**RAM**	**Flash**	**Ethernet**	**PCI**	**SATA**	**I2C& serial port, LED**	**AMC interface**	**Dimension, Power, PCB**
MT8548E-A	1.3GHz 3065MIPS	256M DDR2	16 Mbytes, Compact Flash (option)	2 x 10/100/1000M	1 x miniPCI (Option)	1 x SATA	RTC LM75 E2PROM 1 x RS232, Programmable LED, Indicator light for power and Ethernet port	x 8 SERDES (SRIO& PCI-Express, or PCI-Express x 8)	Processor card: 147mm x 70.9mm, 8-layer PCB routing Carrier: 180mm x 74mm,6-layer PCB routing, 4pin 5V, 12V input
MT8572-A	Dual e500 core, 1333MHZ 6897MIPS	512M DDR2 533MHZ							

MPC83xx, MPC85xx documents in CD-ROM:

(1) Documentation

MPC83xx development board user manual

MPC85xxPC processor card user manual

Type-N/A/S carrier user manual

(2) Hardware

Schematics for MPC83xx development board, MPC85xx processor card

Schematics for Type-N/A/S carrier

Type-N/A/S PCB design document

(3) Software

MPC85xx, MPC83xx RAMDISK

MPC85xx, MPC83xx Linux-2.4.xx, Linux-2.6.xx kernel image

MPC85xx, MPC83xx u-boot-1.1.x

LTIB for MPC83xx or MPC85xx

(4) Readme

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The range of technology support for PowerPC development board:

Thanks for using our products. We supply 90 days warranty for our development boards except for CPU and BGA on them. And you can get the services by MSN, email or telephone. Please check the range of our technology supports as following:

1. Help user test and run all the hardware on the board, such as serial port, Ethernet port, PCI slot and PCI-Express slot etc
2. Help user resume the board to factory default setting
3. Help user to use the LTIB in CD and compile Linux and bootloader
4. Help user run the Linux system correctly on the board
5. Supply user the matters needing attention when using the development board
6. Give the reply for the software and hardware problem on the board

Introducing of PowerPC development tools

Combined with USB TAP, JediView for PowerPC is the ideal for helping the development the products based on PowerPC.

USB TAP supports Freescale MPC8xx, MPC82xx, MPC83xx, MPC85xx, MPC7xxx, MPC7xx, MPC5xxx and MPC5xx

JediView for PowerPC IDE highlights

- Support Freescale MPC8XX, MPC82XX, MPC83XX, MPC85XX, MPC5XX, MPC52XX
- Support C/C++ language and assembly programming-level debugging
- Debugging bootloader, Vxworks, Linux, uclinux etc
- Real-time debugging: single-step, free run, reset, software/hardware breakpoint and jump
- Hardware Diagnostics to detect if there's any problem with CPU, RAM or Flash on the board
- Windows for CPU and registers, memory, variable and stack etc for checking and revising the data
- Watch window for adding custom register, memory address and variable
- In-circuit Flash programming, support more than 200 kinds of Flash. And user can add flash type by user refer to our document.
- Strong technology support and service