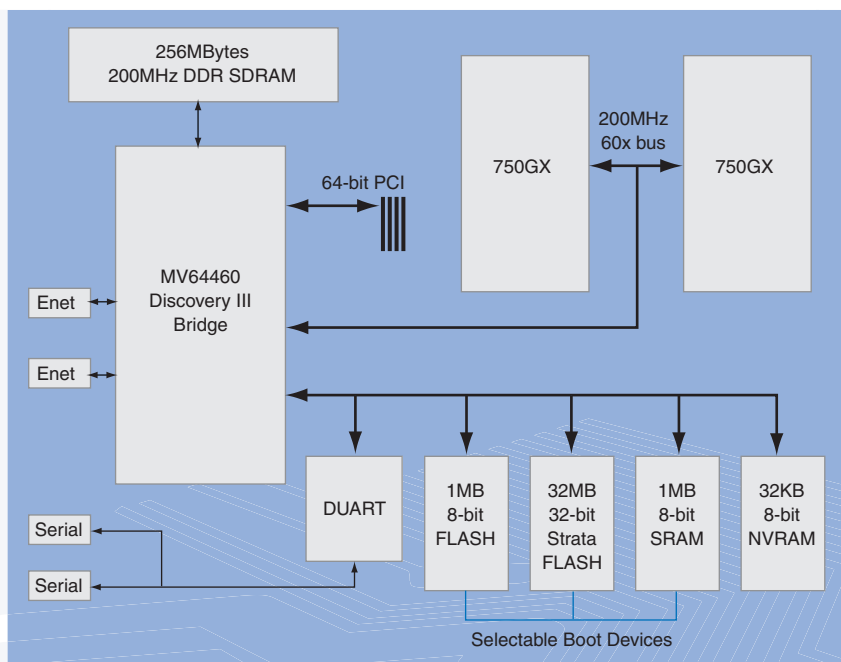


PowerPC 750GX Evaluation Board Kit



750GX Evaluation Platform hardware features

- Stand-alone board, approx. 9"x12"
- Dual 750GX processors
- MV64460 Discovery III bridge chip with 200MHz processor bus and 66MHz PCI interface
- Four 32/64-bit PCI/PCI-X slots (3.3V only)
- JTAG connector for hardware processor debug
- Two 10/100 Ethernet ports accessible via RJ-45 connectors
- Two serial port connections; four wire NS16550 compatible interface accessible via RJ-12 connectors
- 3 LED indicators under program control
- 32MBytes of 32-bit StrataFLASH memory that can be write protected via jumper select
- 1MByte of socketed 8-bit FLASH
- 1MByte of 8-bit SRAM
- 32KBytes of Ferroelectric 8-bit NVRAM
- 256MBytes of DDR SDRAM with ECC
- PLL options completely configurable with on-board switches
- Boot device can be any one of: 1MByte socketed FLASH; 1MByte SRAM; 32MBytes StrataFLASH
- Card reset button
- Facilities to vary processor voltages, measure current, and supply external clocking

Highlights

- **Primarily intended for software developers porting or developing applications for the IBM PowerPC® 750GX processor**
- **Serves as a possible starting point for custom 750GX hardware designs**
- **Features dual 750GX processors and a Marvell Discovery III bridge chip implemented on a stand-alone board with four PCI slots**
- **Includes PowerPC Initialization and Boot Software (PIBS) firmware, Embedded PowerPC Operating System (EPOS), sample applications and the RISCWatch™ software debugger (working in PIBS target mode)**
- **Can operate in a lab environment as a stand-alone board with an ATX power supply. The supplied software utilizes the kit hardware as a stand-alone processing platform. Because of the variety of potential PCI configurations, additional customer programming is required to enable the PCI features for specific hardware and software environments with the four PCI slots that are available.**

750GX Evaluation Kit software

Several software support offerings are available for the evaluation platform.

IBM Evaluation Kit software

- Embedded PowerPC Operating System (EPOS)
- PowerPC Initialization and Boot Software (PIBS)
- RISCWatch C/C++ source level debugger

EPOS is sample software from IBM intended to facilitate 750GX evaluation and provide a reference for customer software engineers. Features: Supplied in source form. Documentation, samples, and pre-built libraries permit easy evaluation.

PIBS is designed to serve as initialization and configuration software and comes preloaded on the card boot device. Like EPOS, the source is included as a customer reference.

RISCWatch is IBM's PowerPC debugger solution. A version of RISCWatch configured to operate with EPOS is included in the kit.



© Copyright International Business Machines Corporation 2004

All Rights Reserved

Printed in the United States of America 04-04

The following are trademarks or registered of International Business Machines Corporation in the United States, or other countries, or both:
IBM the IBM Logo PowerPC
the PowerPC (logo) RISCWatch

Linux is a registered trademark of Linus Torvalds. Windows is a registered trademark of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others.

The IBM 750GX Evaluation Kit software tools are targeted for a cross-development environment hosted on a Windows® platform.

VxWorks from Wind River

VxWorks is licensed Wind River software and is not supplied with the 750GX Evaluation Kit. Contact ppcsupp@us.ibm.com for additional information. Features: VxWorks BSP targeted for Tornado 2.2 (Single processor operation)

Linux® Professional Edition from MontaVista

Linux LSP features: MontaVista Linux Professional Edition for the PowerPC 750GX Evaluation Platform (single processor operation). Contact MontaVista Software at sales@mvista.com or visit their Web site at www.mvista.com.

750GX Evaluation Kit contents

- Dual 750GX stand-alone board
- Serial communications cable/adapters for RJ-12 to PC DB9
- Ethernet cables
- Kit CD, including: 750GX board schematics; Evaluation Board Kit User's Manual; EPOS Software User's Guide; source and object files for EPOS, PIBS, and sample applications
- PowerPC Documentation CD

All information contained in this document is subject to change without notice. The products described in this document are NOT intended for use in applications such as implantation, life support, or other hazardous uses where malfunction could result in death, bodily injury, or catastrophic property damage. The information contained in this document does not affect or change IBM product specifications or warranties. Nothing in this document shall operate as an express or implied license or indemnity under the intellectual property rights of IBM or third parties. All information contained in this document was obtained in specific environments, and is presented as an illustration. The results obtained in other operating environments may vary.

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED ON AN "AS IS" BASIS. In no event will IBM be liable for damages

About the 750GX¹

- CPU frequency 733MHz to 1.1GHz
- Technology 0.13-micron CMOS copper with SOI
- 750GX performance (est.)
 - 2.32 DMIPS/MHz, 2320 DMIPS @ 1GHz
 - SPECint95 52 @ 1GHz, SPECfp95 30.2 @ 1GHz (est.)
- L1 caches: 32KB instruction, 32KB data with parity on tags and arrays
- L2 cache: 1MB internal with ECC on-cache array and parity checking on-cache tags. The 4-way set-associative L2 cache supports cache locking by way.
- Eight instruction and eight data block address translation (BAT) registers permit large static address translations without complex memory management
- Typical power dissipation 8.3W @ 1GHz, 1.5V
- 60x bus frequency up to 200MHz
- Dual PLL design supports dynamic switching between high and low frequencies to reduce power during idle times
- I/O voltage selectable via power on strap options between 1.8V, 2.5V, and 3.3V²

¹ These specifications reflect the use of the 750GX in embedded environments.

² The 750GX Evaluation Kit is set for 2.5V 60x bus operation.

arising directly or indirectly from any use of the information contained in this document.

IBM Microelectronics Division
2070 Route 52, Bldg. 330
Hopewell Junction, NY 12533-6351

The IBM home page can be found at: <http://www.ibm.com>. The IBM Microelectronics Division home page can be found at: <http://www.ibm.com/chips>

Keep in touch with the fast pace of developments within IBM Microelectronics through news summaries and technical updates delivered electronically at: [ibm.com/chips/techemail](http://www.ibm.com/chips/techemail)

G000-0000-00