PowerPC™

Motorola Part Numbers Affected:
XPC604RRX266LD
XPC604RRX300LD
XPC604RRX333LD

Application-Specific Information

PowerPC 604e™ RISC Microprocessor Family:
PIDAq-604e and PID9q-604e (Mach5) Part Number Specifications

This document defines a unique part number for a PowerPC 604e microprocessor manufactured by Motorola. It describes changes to recommended operating conditions and revised electrical specifications, as applicable, from those described in the *PowerPC 604e RISC Microprocessor Family: PID9q-Mach5 Hardware Specifications*. Any functional differences (errata) for these parts from the functional description provided in the *PowerPC™ 604 RISC Microprocessor User's Manual* (order # MPC604UM/AD) or its addendum (order # MPC604UMAD/AD) are described in a separate Errata List available from your local Motorola sales office.

Specifications provided in this data sheet supercede those in 4/97 Revision of the *PID9q-Mach5 Hardware Specifications* (order #: MPC604E9QEC/D); specifications not addressed herein are unchanged. This document is frequently updated; refer to the website at http://www.mot.com/SPS/PowerPC/ for the latest version.

Note that headings and tables in this data sheet are not numbered; however, they are intended to correspond directly to the heading or table affected in the general hardware specifications. Any additional information (including tables) not included in the hardware specifications are noted.

Part numbers addressed in this document and a summary of their differences from the general specification are listed in the following table. For more detailed ordering infomation see "Ordering Information for the PB-604e Microprocessor" on page 2.

Part Numbers Addressed by this Data Sheet

Motorola Part Number	Operating Conditions			Significant Differences from Hardware Specification
	CPU Frequency	Vdd	T_J (°C)	
XPC604RRX266LD	266 MHz	1.80 to 2.00V	0 to 85	New PVR.; BTAC Disabled
XPC604RRX300LD	300 MHz	1.80 to 2.00V	0 to 85	New PVR ; BTAC Disabled
XPC604RRX333LD	333 MHz	1.80 to 2.00V	0 to 85	New PVR ; BTAC Disabled

Note: The X prefix in a Motorola PowerPC part number designates a "Pilot Production Prototype" as defined by Motorola SOP 3-13. These are from a limited production volume of prototypes manufactured, tested and Q.A. inspected on a qualified technology to simulate normal production. These parts have only preliminary reliability and characterization data. Before pilot production prototypes may be shipped, written authorization from the customer must be on file in the applicable sales office acknowledging the qualification status and the fact that product changes may still occur while shipping pilot production prototypes.

Feature Changes

This section summarizes significant feature changes beween the revision of the PID9q-604e addressed by this document and the previously available revision 1.01 (XPC604RRXnnnPB where nnn is the CPU frequency) and revision 1.1 (XPC604RRXnnnPC).

•   Errata #7 from these earlier revisions is corrected on revision 1.2.

The following features are significantly different from the feature set described in the *PowerPC 604 RISC Microprocessor User's Manual* (order # MPC604UM/AD) or its addendum (order # MPC604UMAD/AD). While they are unchanged from revisions 1.01 and 1.1, they bear repeating here.

•   In-system testability and debugging features through JTAG boundary-scan capability is not guaranteed in these part revisions.

- These part revisions will have different processor version register (PVR) contents. This register is a read-only register that identifies the version (model) and revision level of the PowerPC processor. The processor version is 0x000a for revision 1.01 parts and is 0x0009 for revision 1.1 and revision 1.2 parts. The processor revision level for revision 1.01 is 0x0101 and for revision 1.1 is 0x2110 and for revison 1.2 is 0x2210. This change was made to ensure compatibility with other members of the 604e family of microprocessors.

- The revision 1.1 and revision 1.2 parts have the Branch Target Address Cache (BTAC) enabled.

Ordering Information

The following table provides the ordering information for the unique device part numbers described herein.

Ordering Information for the PB-604e Microprocessor

Package Type	Device Rev	Process	Mask Code	CPU Frequency (MHz)	Motorola Part Number*
255 CBGA	1.2	HIP4.0	74H76K	250 MHz	XPC604RRX250LD
				300 MHz	XPC604RRX300LD
				333 MHz	XPC604RRX333LD

Note: Per 604E-PE Part Number Specifications

Part Marking

This section provides information on Motorola device marking. Parts are marked as shown below.


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XPC604RRX250LD




MMMMMM     WLYYWWZ
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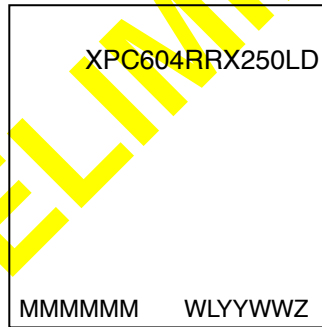
BGA

Notes:

MMMMMM is the 6-digit mask code
WLYYWWZ is the traceability code

Motorola Part Marking for BGA Devices