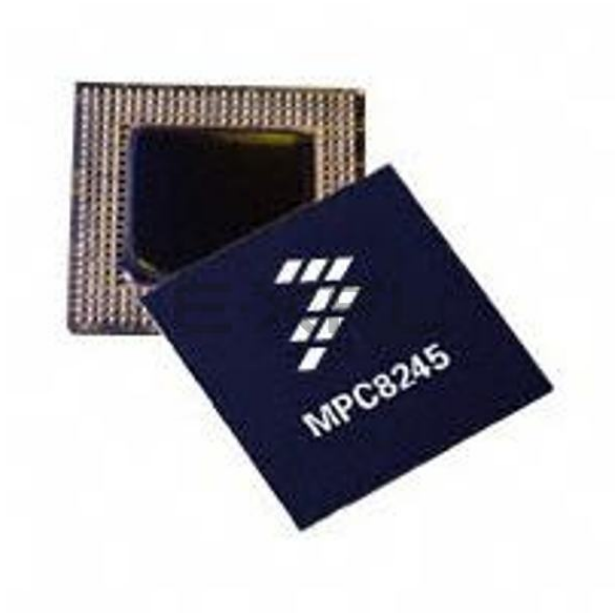

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Understanding Embedded - Microprocessors

Embedded microprocessors are specialized computing chips designed to perform specific tasks within an embedded system. Unlike general-purpose microprocessors found in personal computers, embedded microprocessors are tailored for dedicated functions within larger systems, offering optimized performance, efficiency, and reliability. These microprocessors are integral to the operation of countless electronic devices, providing the computational power necessary for controlling processes, handling data, and managing communications.

Applications of Embedded - Microprocessors

Embedded microprocessors are utilized across a broad spectrum of applications, making them indispensable in

Details	
Product Status	Obsolete
Core Processor	PowerPC 603e
Number of Cores/Bus Width	1 Core, 32-Bit
Speed	350MHz
Co-Processors/DSP	-
RAM Controllers	SDRAM
Graphics Acceleration	No
Display & Interface Controllers	-
Ethernet	-
SATA	-
USB	-
Voltage - I/O	3.3V
Operating Temperature	-40°C ~ 105°C (TA)
Security Features	-
Package / Case	352-LBGA
Supplier Device Package	352-TBGA (35x35)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/kmpc8245tvv350d

Freescale Semiconductor
Technical Data

Document Number: MPC8245ECS01AD
Rev. 1.1, 12/2005

MPC8245 Hardware Specification Addendum for the MPC8245T*XXnnnX* Series

This document describes part-number-specific changes to recommended operating conditions and revised electrical specifications, as applicable, from those described in the general *MPC8245 Integrated Processor Hardware Specifications* (Order No. MPC8245EC). The MPC8245 combines a PowerPC™ MPC603e core with a PCI bridge.

Specifications provided in this document supersede those in the *MPC8245 Integrated Processor Hardware Specifications*, Revision 7 or later, for the part numbers listed in Table A only. Specifications not addressed herein are unchanged. Because this document is frequently updated, refer to http://www.freescale.com or to a local Freescale sales office for the latest version.

Note that headings and table numbers in this document are not consecutively numbered. They correspond to the heading or table affected in the general hardware specification.

Part numbers addressed in this document are listed in Table A. For more detailed ordering information, see Section 9, "Ordering Information."

Freescale Part Numbers Affected:

MPC8245TVV266D
MPC8245TZU266D
MPC8245TVV300D
MPC8245TZU300D
MPC8245TVV333D
MPC8245TZU333D
MPC8245TVV350D
MPC8245TZU350D

freescale™ semiconductor

Table A. Part Numbers Addressed by This Data Sheet

Freescale Part Number	Operating Conditions			Significant Differences from Hardware Specification	Processor Version Register Value
	CPU Frequency	V_{DD}	T_J (°C)		
MPC8245TVV266D MPC8245TZU266D	266 MHz	1.7 V–2.1 V	–40 to 105	Extended temperature range for additional part offering	0x80811014
MPC8245TVV300D MPC8245TZU300D	300 MHz				
MPC8245TVV333D MPC8245TZU333D	333 MHz	2.0 ± 100 mV			
MPC8245TVV350D MPC8245TZU350D	350 MHz				

Note: The X prefix in a Freescale part number designates it as a 'Pilot Production Prototype' as defined by Freescale SOP 3-13. These are part of 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. Note that the VV package refers to lead free TBGA and is only available in part revision D.

4.1.3 DC Electrical Characteristics

Table 2 provides the recommended operating conditions for the MPC8245 part numbers described herein.

Table 2. Recommended Operating Conditions

Characteristic	Symbol	Recommended Value	Unit
Die-junction temperature	T_j	–40 to 105	°C

Note: These are the recommended and tested operating conditions. Proper device operation outside of these conditions is not guaranteed.

Please consult the *MPC8245 Integrated Processor Hardware Specifications* document for more details concerning the part's specifications.

9 Ordering Information

Ordering information for the parts fully covered by this document is provided in Section 9.1, "Part Numbers Fully Addressed by This Document." This section also addresses the marking specifications.

9.1 Part Numbers Fully Addressed by This Document

Table 21 provides the ordering information for the MPC8245 parts described in this document. Note that the individual part numbers correspond to a maximum processor core frequency.

Table 21. Part Numbers Addressed by this document

MPC	*nnnn*	X	*xx*	*nnn*	*x*

Product Code	Part Identifier	Process Descriptor	Package [1]	Processor Frequency [2]	Revision Level	Processor Version Register Value
MPC	8245	T: –40° to 105°C	ZU = TBGA V V[3]= Lead-free TBGA	266 MHz, 300 MhZ: 1.7 V to 2.1 V 333 MHz, 350 MHz: 1.9 V to 2.2 V	D:1.4 Rev ID:0x14	0x80811014

Notes:

1.See Section 5, “Package Description,”in the *MPC8245 Integrated Processor Hardware Specifications* for more information on available package types.

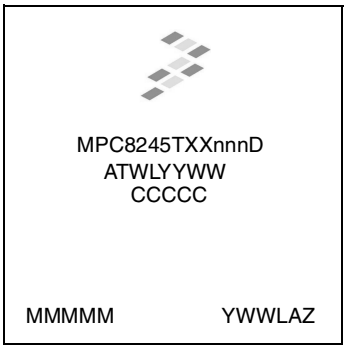
2.Processor core frequencies supported by parts addressed by this specification only. Not all parts described in this specification support all core frequencies. Additionally, parts addressed by part number specifications may support other maximum core frequencies.

3.Note that the V V package option is only available in part revision D.

9.3 Part Marking

Parts are marked as in the example shown in Figure 33.

Figure 33. Freescale Part Marking for TBGA Device



Notes:

MMMMM is the 5-digit mask number.
ATWLYYWW is Test traceability code.
YWWLAZ is the Assembly traceability code.
CCCCC is the country code.

Document Revision History

Table B provides a revision history for this part number specification.

Table B. Document Revision History

Revision	Date	Substantive Change(s)
1.1	12/2005	Changed all occurrences of XPC to MPC. Table 21 and Figure 33 were updated to reflect current part nomenclature and marking.
1	10/05/04	Added range information regarding 1.7V to 2.1V for 266 MHz and 300 MHz parts. Changed title wording from ‘Part Number Specification’ to ‘Hardware Specification Addendum’; adopted new Document ID numbering scheme. This document replaces the earlier document MPC8245TXXPNS.
0	03/14/04	Original version of MPC8245TXXPNS. Information in this document supersedes that of the MPC8245TZUPNS as lead free (VV) information was added.

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