

MPC8245 Hardware Specification Addendum for the MPC8245TXXnnnX 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

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

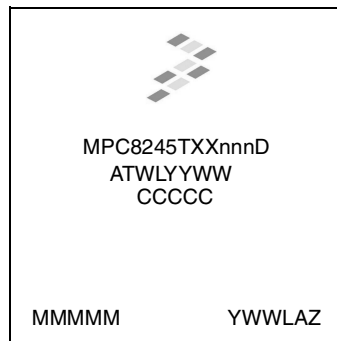
MPC	nnnn	X	xx	nnn	x	
Product Code	Part Identifier	Process Descriptor	Package ¹	Processor Frequency ²	Revision Level	Processor Version Register Value
MPC	8245	T: -40° to 105°C	ZU = TBGA V V ³ = Lead-free TBGA	266 MHz, 300 MHz: 1.7 V to 2.1 V 333 MHz, 350 MHz: 1.9 V to 2.2 V	D:1.4 Rev ID:0x14	0x80811014

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.

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

How to Reach Us:

Home Page:

www.freescale.com

email:

support@freescale.com

USA/Europe or Locations Not Listed:

Freescale Semiconductor
Technical Information Center, CH370
1300 N. Alma School Road
Chandler, Arizona 85224
(800) 521-6274
480-768-2130
support@freescale.com

Europe, Middle East, and Africa:

Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
support@freescale.com

Japan:

Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku
Tokyo 153-0064, Japan
0120 191014
+81 2666 8080
support.japan@freescale.com

Asia/Pacific:

Freescale Semiconductor Hong Kong Ltd.
Technical Information Center
2 Dai King Street
Tai Po Industrial Estate,
Tai Po, N.T., Hong Kong
+800 2666 8080
support.asia@freescale.com

For Literature Requests Only:

Freescale Semiconductor
Literature Distribution Center
P.O. Box 5405
Denver, Colorado 80217
(800) 441-2447
303-675-2140
Fax: 303-675-2150
LDCForFreescaleSemiconductor
@hibbertgroup.com

Information in this document is provided solely to enable system and software implementers to use Freescale Semiconductor products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Freescale Semiconductor reserves the right to make changes without further notice to any products herein. Freescale Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Freescale Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Freescale Semiconductor does not convey any license under its patent rights nor the rights of others. Freescale Semiconductor products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale Semiconductor product could create a situation where personal injury or death may occur. Should Buyer purchase or use Freescale Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale Semiconductor was negligent regarding the design or manufacture of the part.

Freescale™ and the Freescale logo are trademarks of Freescale Semiconductor, Inc. The described product contains a PowerPC processor core. The PowerPC name is a trademark of IBM Corp. and used under license. All other product or service names are the property of their respective owners.

© Freescale Semiconductor, Inc., 2005.

Document Number: MPC8245ECS01AD
Rev. 1.1
12/2005