

TLCS-870 Family TLCS-870/C Series		
8bit	TMP86FH47AUG TMP86FH47ADUG	 44/48 pin

8-bit microcontrollers with flash memory, 10-bit AD converter and various serial interfaces

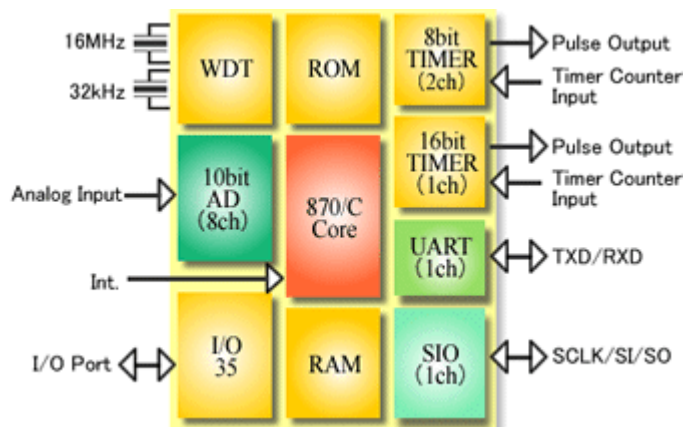
Features

● TLCS-870/C CPU Core

- Operating voltage:
2.7 to 5.5 V
- Minimum instruction execution time:
250 ns (at 16 MHz / 4.5 to 5.5 V)
500 ns (at 8 MHz/ 2.7 to 5.5 V)
- Internal ROM: 16 Kbytes
- Internal RAM: 512 bytes

● Built-in Functions

- 10-bit AD converter : 8 channels
- UART : 1 channel
- SIO : 1 channel
- 8-bit timer : 2 channels
- 16-bit timer : 1 channel
- Key-on wake-up : 4 channels



● Product Lineup

Part number	ROM(bytes)	RAM(bytes)	Packages
TMP86C847UG	8K	512	P-LQFP44-1010-0.80A
TMP86CH47AUG	16K	512	P-LQFP44-1010-0.80B
TMP86CM47AUG	32K	1K	P-LQFP44-1010-0.80A
TMP86PH47UG	16K(OTP)	512	P-LQFP44-1010-0.80B
TMP86PM47AUG	32K(OTP)	1K	P-LQFP44-1010-0.80A

Development Systems

● Software Products

Toshiba Integrated Development Environment	C Compiler	SW89CN0-ZCC: 1 license SW89CN3-ZCC: 10 licenses
	Integrated Development Environment	SW00MN0-ZCC: 1 license SW00MN3-ZCC: 10 licenses The controller and Light emulator comes with a single-seat download license.

● Hardware Products Emulator

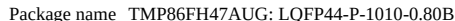
RTE870/C model 15 system	Controller Interface module Emulation module Target connection board	BM1040R0A BMP86A100010B BMP86A200010B BMP86D044DE0A: LQFP44 (10×10) / BMP86D048DG0A: LQFP48 (7×7)
	Emulation chip	TMP86C947XB
RTE870/C Light system	Light emulator	BMP86A300010A
	Emulation chip	TMP86C947XB

- › Select either RTE870/C model 15 system or RTE870/C Light system.
- › As to hardware products, additional accessories are also needed.

» For further information about Toshiba microcomputers and Toshiba microcomputer development systems, please visit <http://www.semicon.toshiba.co.jp/eng/product/micro/index.html>

» Contact the Toshiba sales representative for information about RoHS compliance before you purchase any components.

● Pin Assignments



Package name TMP86FH47ADUG: LOFP48-P-0707-0.50D

* This product uses the SuperFlash® technology under license of Silicon Storage Technology, Inc. Super Flash® is a registered trademark of Silicon Storage Technology, Inc.

- The information contained herein is subject to change without notice. 021023_D
- Toshiba is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of design for making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges and not in excess of those provided in Toshiba's "Handbook of Semiconductor Reliability" or "TOSHIBA Semiconductor Reliability Handbook." etc. 021023_A
- The TOSHIBA products listed in this document are intended for use in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial machinery, domestic appliances, etc.). These Toshiba products are neither intended nor warranted for use in equipment that requires high reliability, such as aerospace, defense, medical, nuclear, or health care equipment, or in equipment for critical energy control systems, airplane or spacecraft instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc. Unintended Use of Toshiba products listed in this document shall be at the customer's own risk. 021023_B
- The products described in this document shall not be embedded in any downstream products of which manufacture, use and/or sale are prohibited under applicable laws and regulations. 060106_Q
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patents or other rights of TOSHIBA or the third parties. 070122_Z
- Please contact your sales representative for product-by-product details in this document regarding RoHS compatibility. Please use these products in this document in compliance with all applicable laws and regulations that regulate the inclusion or use of controlled substances. Toshiba assumes no liability for damage or losses occurring as a result of noncompliance with applicable laws and regulations. 060819_Z
- The products described in this document may include products subject to the foreign exchange and foreign trade laws. 021023_F
- The products described in this document contain components made in the United States and Japan to support export control of the U.S. authorities. Diversion contrary to the U.S. law is prohibited. 021023_G
- TOSHIBA has made this document deliberately in order to make its contents as accurate as possible. Nevertheless, if any trouble should occur due to any error contained in this document, TOSHIBA shall not have any liability thereon. Also, please keep in mind the precautions and conditions set forth in the "Instruction Manual or Operation Manual of TOSHIBA products," or "the Precautions or Procedure Files described in the Installation Disk such as Floppy Disk or CD-ROM etc." Please constantly pay attention to the latest information on the TOSHIBA products which is to be released through the web page of TOSHIBA microcomputer.

TOSHIBA
TOSHIBA CORPORATION
Semiconductor Company
<http://www.semicon.toshiba.co.jp/eng>

Copyright © 1995-2007 TOSHIBA CORPORATION, All Rights Reserved.