



**SHARP's New Line
of MCUs and
System-on-Chips**

LH75401 16/32-bit Microcontroller with Color LCD Controller

FEATURES

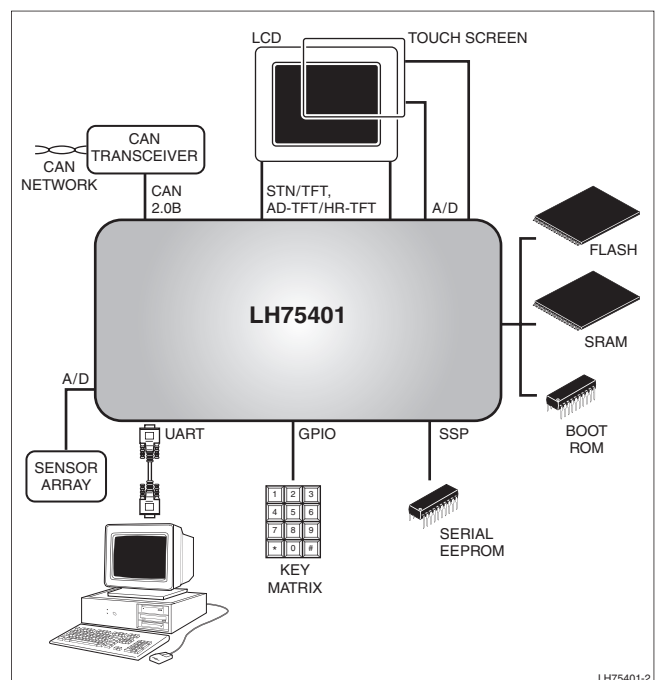
- ARM7TDMI-S™ Core
- High Performance (Up to 90 MHz)
 - Internal PLL-driven or External Clock
- 32KB On-chip SRAM
 - 16KB TCM (0 Wait State) SRAM
 - 16KB Internal SRAM
- Clock and Power Management
 - Low Power Modes: Standby, Sleep, Stop1, Stop2
- Color and Grayscale LCD Controller
 - 12-bit (4,096) Direct Mode Color
 - Up to VGA (640 × 480)
 - 8-bit (256) Direct or Palletized Color
 - Up to SVGA (800 × 600)
 - 4-bit (16) Direct Mode Color/Grayscale
 - Up to XGA (1,204 × 768)
 - Supports STN, TFT, HR-TFT, AD-TFT Displays
- Eight Channel, 10-bit A/D Converter
- Four DMA Channels
- Integrated Touch Screen Controller
- Serial Interfaces
 - 3 × UARTs
 - SSP
- Full-featured Real Time Clock (RTC)
 - Operates from 32 kHz XTAL
- CAN Version 2.0b*
- Three 16-bit Counter/Timers with Capture/Compare/PWM Capability
- Watchdog Timer
- Low Voltage Detector
- JTAG Debug Interface and Boundary Scan
- 3.3 V Operating Voltage
- -40°C to +85°C Operating Temperature
- 144-pin LQFP Package

*Controller Area Network (CAN)

DESCRIPTION

The LH75401 is a low cost microcontroller that utilizes the ARM7TDMI-S core integrated with a wide variety of functions including the ability to control STN, color STN, TFT, HR-TFT, and Advanced-TFT displays with up to 4,096 colors. Other functions include: 32KB of on-chip SRAM, three UARTs, SSP, CAN version 2.0b, three 16-bit Counter/Timers, Analog to Digital Converter with integrated touch screen controller, Watchdog Timer, and Low Voltage Detector. The LH75401 operates up to 90 MHz at 3.3 V over the industrial temperature range of -40°C to +85°C and is offered in a 144-pin LQFP package.

SYSTEM APPLICATION EXAMPLE

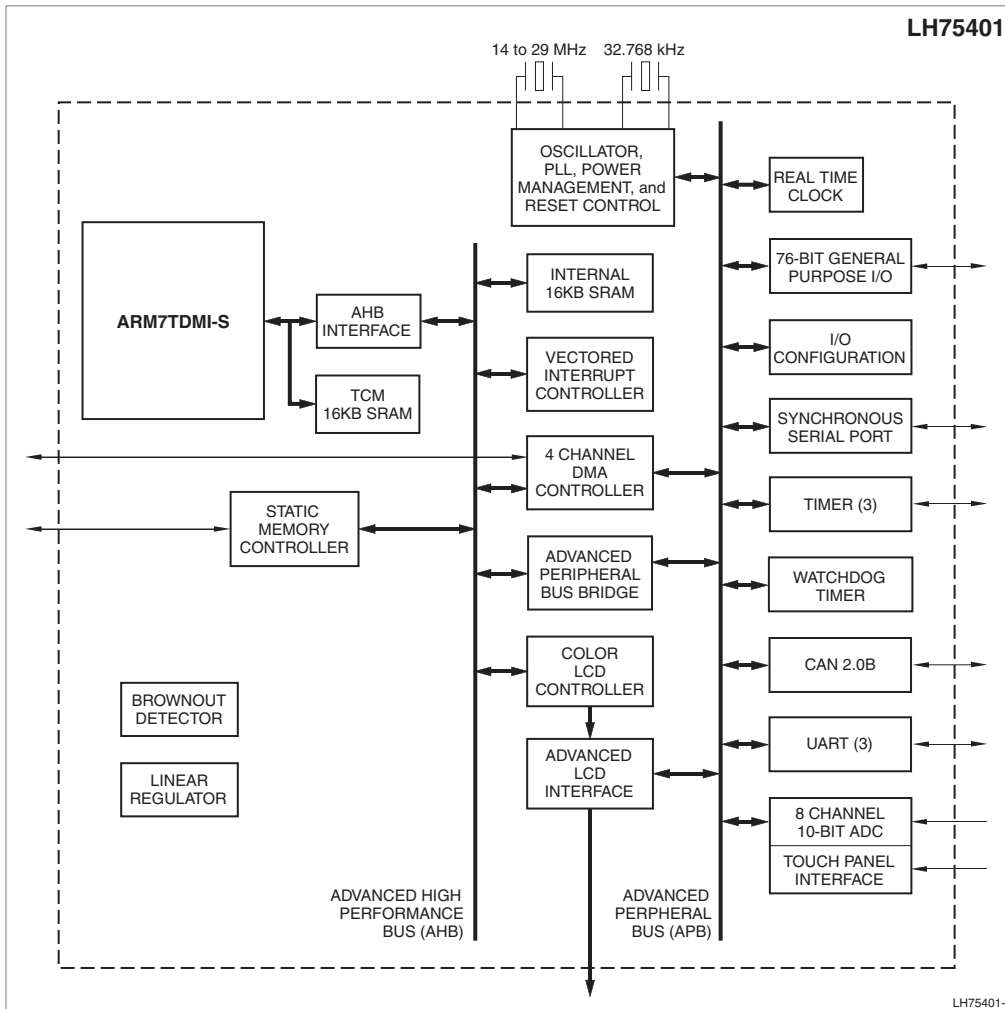


LH75401-2

PRODUCT INFORMATION

SHARP

LH75401 BLOCK DIAGRAM



SHARP[®]

MICROELECTRONICS OF THE AMERICAS

Regional Sales Offices

North American Headquarters

Camas, WA
Ph (360) 834-2500
Fax (360) 834-8903

West

Huntington Beach, CA
Ph (714) 903-4600
Fax (714) 903-0295
San Diego, CA
Ph (858) 597-0982
Fax (858) 597-8701
San Jose, CA
Ph (408) 436-4900
Fax (408) 436-0924

East

Ft. Lauderdale, FL
Ph (954) 267-8883
Fax (954) 267-0254
Burlington, MA
Ph (781) 270-7979
Fax (781) 229-9117
Carey, NC
Ph (919) 460-0695
Fax (919) 460-0795
Pittsburgh, PA
Ph (412) 381-1191
Fax (412) 381-1192
Yardley, PA
Ph (215) 321-5530
Fax (215) 321-5534

Central

Schaumburg, IL
Ph (847) 925-9150
Fax (847) 925-9172
Troy, MI
Ph (248) 458-1527
Fax (248) 391-6165
Austin, TX
Ph (512) 349-7262
Fax (512) 349-7002

Irving, TX
Ph (972) 582-1712
Fax (972) 580-7537
Houston, TX
Ph (281) 955-9909
Fax (281) 955-9910
Muskego, WI
Ph (414) 529-9568
Fax (414) 529-9569

Europe

SHARP Microelectronics
Europe
Hamburg, Germany
Ph (49) 40-2376-2286
Fax (49) 40-2376-2232

Asia

SHARP Corporation
Osaka, Japan
Ph (81) 6-6621-1221
Fax (81) 6117-725300

Product Information: 1-800-642-0261

World Wide Website: <http://www.sharpsma.com>

Specifications are subject to change without notice. Suggested applications (if any) are for standard use; See Important Restrictions for limitations on special applications. See Limited Warranty for SHARP's product warranty. The Limited Warranty is in lieu, and exclusive of, all other warranties, express or implied. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE AND FITNESS FOR A PARTICULAR PURPOSE, ARE SPECIFICALLY EXCLUDED. In no event will SHARP be liable, or in any way responsible, for any incidental or consequential economic or property damage.