NXP ARM7-based microcontroller with integrated LCD controller LH754xx and LH7952x

ARM7-based MCUs with integrated LCD controller

These flexible, powerful microcontrollers, based on ARM7 cores, integrate an LCD controller, so they save time-to-market for applications that use an LCD screen. Supported by comprehensive software and hardware design tools, they make it easy to design a wide range of applications.

Key features

- Powerful, flexible ARM cores
  - 84-MHz, 32-bit ARM7TDMI-S™ (LH754xx)
  - 77-MHz, 32-bit ARM720T™ (LH7952x)
- Integrated LCD controller
  - Support for STN, CSTN, TFT, and AD-TFT
  - Resolutions up to 1024 x 768
  - 16-level greyscale or up to 64k colors
- Integrated touch screen controller
- 16- or 32-bit external bus with optional SDRAM controller and NAND Flash boot capability
- Up to 32 KB of internal SRAM and 8 KB of cache
- Up to 10-channel, 10-bit A/D converter
- Multiple 16-bit counter/timers and multiple PWMs
- Real-time clock, Watchdog timer, and PLL
- Extensive selection of serial interfaces, including SSI/SSP, multiple UARTs, IrDA, I²C-bus, I²S, CAN 2.0B, USB 2.0 device, 10/100 Base-T Ethernet MAC
- 5 V - tolerant I/O
- Up to 104 GPIO
- Temperature range: -40 to +85 °C
- LQFP and LFBGA packages

Applications

- Any application that uses an LCD display
  - Consumer
  - Entertainment
  - Industrial/commercial
  - Medical
  - Automotive

These ARM7-based microcontrollers integrate an LCD controller, for powerful, flexible performance in all sorts of applications, including consumer, entertainment, industrial/commercial, medical, and automotive.

The LH754xx family uses a 84-MHz, 32-bit ARM7TDMI-S as its core, while the the LH7952x uses a 77-MHz, 32-bit ARM720T. They all use a 1.8-V core supply, with a 3.3-V I/O supply, and operate within -40 to +85 °C.

High integration and a range of options make it easy to select the right set of features, whether the end product is a low-cost consumer device or a media-rich system.

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LH754xx family

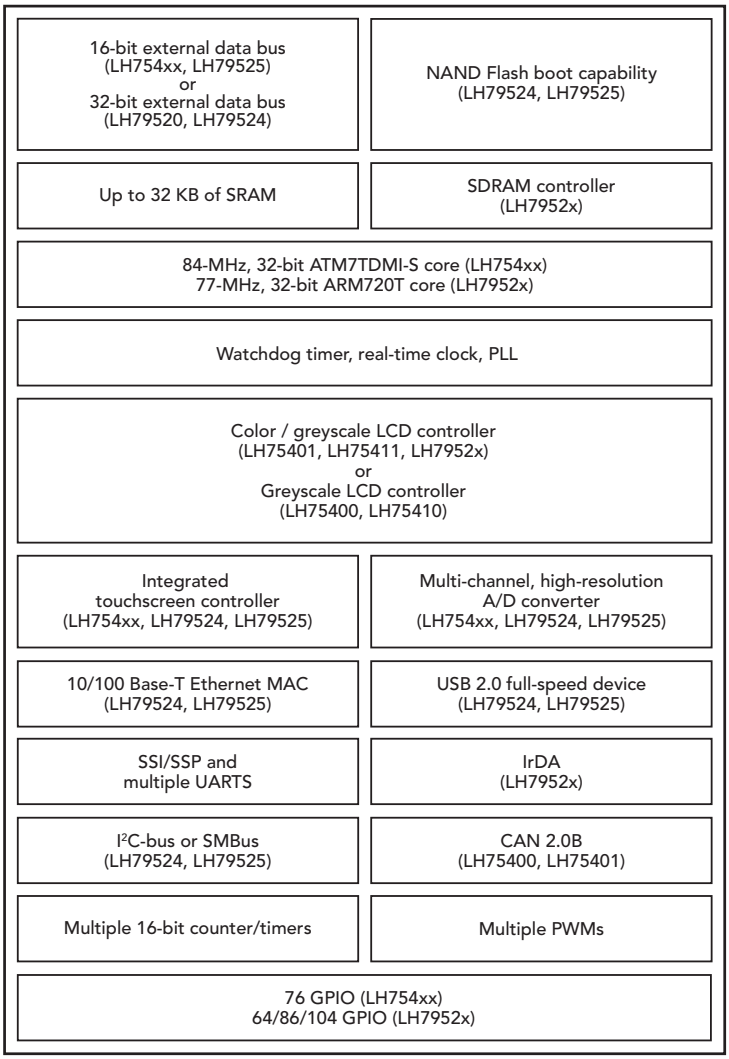
The four devices in the LH754xx family are LH75400, LH75401, LH75410, and LH75411.

LH7952x family

The three devices in the LH7952x family are LH79520, LH79524, and LH79525

Third-Party Development Tools

Through third-party suppliers, we offer a range of development and evaluation tools for our microcontrollers. For the most current listing, please visit www.nxp.com/microcontrollers.



LH754xx and LH7952x block diagram

LH754xx and LH7952x selection guide

Type	CPU core	RAM	GPIO	LCD controller	A/D converter	Serial interfaces	Temperature range (°C)	Package
LH75400	ARM7TDMI-S	32 KB	76	1024 x 768 16-level greyscale	8 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART, CAN 2.0B	-40 to +85	LQFP144
LH75401	ARM7TDMI-S	32 KB	76	640 x 480: 4096 colors 800 x 600: 256 colors 1024 x 768: 16 colors	8 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART, CAN 2.0B	-40 to +85	LQFP144
LH75410	ARM7TDMI-S	32 KB	76	1024 x 768 16-level greyscale	8 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART	-40 to +85	LQFP144
LH75411	ARM7TDMI-S	32 KB	76	640 x 480: 4096 colors 800 x 600: 256 colors 1024 x 768: 16 colors	8 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART	-40 to +85	LQFP144
LH79520	ARM720T	8 KB (cache) 32 KB (SRAM)	64	800 x 600: 64k colors 1024 x 768: 256 colors		SPI/SSP, 3 x UART, IrDA	-40 to +85	LQFP176
LH79524	ARM720T	8 KB (cache) 16 KB (SRAM)	104	800 x 600: 64k colors 1024 x 768: 256 colors	10 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART, IrDA, I²C-bus, I²S, USB 2.0 device, 10/100 Base-T Ethernet	-40 to +85	LFBGA208
LH79525	ARM720T	8 KB (cache) 16 KB (SRAM)	86	800 x 600: 64k colors 1024 x 768: 256 colors	10 x 10-bit with touchscreen interface	SPI/SSP, 3 x UART, IrDA, I²C-bus, I²S,USB 2.0 device, 10/100 Base-T Ethernet	-40 to +85	LQFP176

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