32-bit Microprocessors

MPC5125
For high-resolution display applications

Overview

The MPC5125 is a cost and power consumption optimized, industrial networking and human-machine interface (HMI) solution.
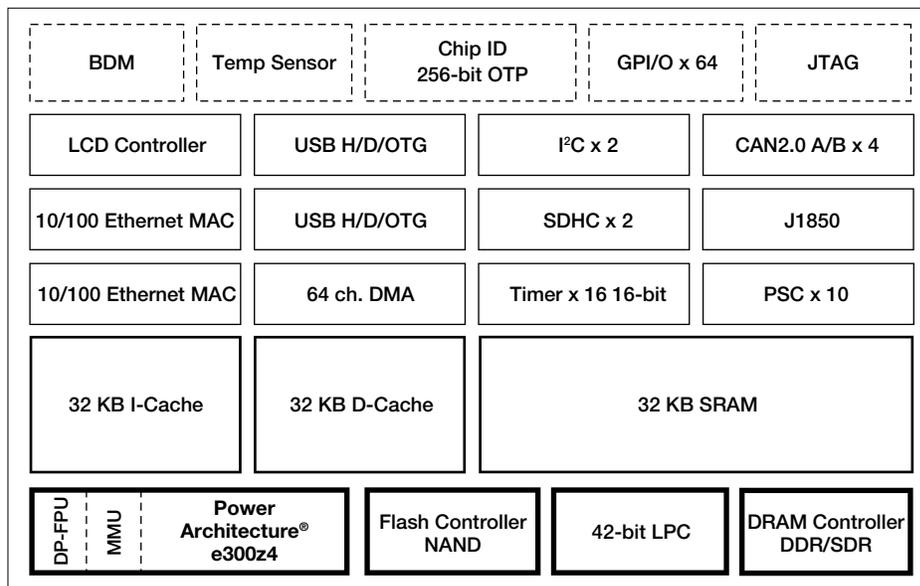
Reduce your development time

- Speed development with a suite of easy-to-use tools, including Freescale MQX RTOS, Linux® OS, CodeWarrior IDE and a wide variety of third-party enablement solutions.

- Design for what you need today and for the future with our Tower system—a modular development platform which allows you to save time through rapid prototyping and tool re-use.

More communication peripherals at a competitive price

- For $10.95*, the MPC5125 includes a host of communication peripherals, including dual Ethernet, dual USB and multiple CAN interfaces as well as a graphical display controller, making it ideal for industrial networking, bridge and HMI applications.

MPC5125 Block Diagram

BDM	Temp Sensor	Chip ID 256-bit OTP	GPI/O x 64	JTAG
LCD Controller	USB H/D/OTG	I²C x 2		CAN2.0 A/B x 4
10/100 Ethernet MAC	USB H/D/OTG	SDHC x 2		J1850
10/100 Ethernet MAC	64 ch. DMA	Timer x 16 16-bit		PSC x 10
32 KB I-Cache	32 KB D-Cache	32 KB SRAM		

DP-FPU | MMU | Power Architecture® e300z4 | Flash Controller NAND | 42-bit LPC | DRAM Controller DDR/SDR

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Ultra-low power meets high performance

- Get 800 MIPS of performance at less than 1 watt, giving you the flexibility to optimize your design while meeting your energy budget.

Target Applications

Factory Automation and Drives

- Industrial Control
  - Programmable logic controllers
  - Fieldbus to Ethernet gateways
  - I/O controllers
  - Process controllers
  - Motor control
  - Robotics
- Industrial Networking
  - Gateways (routers)
  - Converters (bridges)

Building Controls

- High-End Lighting Control
- Fire and Alarm Systems/Applications
  - Supervisory controllers (PLC or network node/gateway)
  - Security panels
- HVAC Systems/Applications
  - Central management system
  - Supervisory controllers
- Digital Advertisement and Sales
  - Digital signage
  - Kiosks
  - Point-of-Sale terminals
- Medical
  - Patient monitor
  - Hospital bed control
  - Smart hospital gateway
  - Tele-health gateway
  - Portable or low-cost diagnostics

Features	Benefits
Display controller	Drive up to WXGA/720p resolution displays
Dual Ethernet	Implement Ethernet bridging solutions
Double precision floating point	High precision applications
Robust NAND flash controller	Lowest cost per bit flash for industrial applications
DDR controller	Low-cost DDR2 or low-power LPDDR
Serial connectivity	Large number of UART, SPI and CAN
Low power	Benefit: No heat sinks or fans required

Development Tools

TWR-MPC5125 32-bit MPU Module— $119 MPU card only

Single-Board Computer Features

- 8 GB of MLC NAND flash
- 256 MB of DDR2
- HDMI port with HDMI-DVI adaptor
- USB2.0 OTG host/device port with 4:1 USB hub
- Audio interfaces, including on-board microphone and stereo out
- 10/100BaseT Ethernet port
- CAN 2.0 A/B port
- SD card interface

Out-of-Box Experience Includes Quick Start Guide, Auto-Play Demo and Board Flashing Lab

- Board boots to auto-play graphical demo driving display over HDMI port
- Interrupt auto-play demo for boot to MQX or Linux
- Managed Web site to download desired demos/labs
- Board flashing lab explains how to download demos/labs
- Board control using host over USB debugger interface/OTG, keyboard/mouse over USB hub

Integrated USB-to-BDM Interface (OSBDM)

- No USBMULTILINKBDME required— $99 savings

- In-circuit debugging and flash programming
- No serial monitor emulation or other debugging techniques required
- Tower system board can be powered by the USB circuit
- No need for external power supply

TWR-MPC5125-KIT—$169

Dual Ethernet prototype kit includes:

- TWR-MPC5125 32-bit MPU Module
- TWR-SER Serial Module
- TWR-ELEV2 Elevator Cards

ADS5125—$999

Full-featured evaluation system for the MPC5125 device

CodeWarrior Development Studio for Microcontrollers v6.3

- Part number: CWX-HXX-SE
- Complimentary Special Edition with 32K compiler
- Single tool suite supports software development for future migration opportunities for both 8-bit or 32-bit and includes Processor Expert rapid application development tool

Product Selector Guide		
Part Number	Temp Ranges	Package
MPC5125YVN400	-40°C to +85°C	324 TEPBGA
SPC5125YVN400	-40°C to +85°C	324 TEPBGA

Learn more: For more information, visit **www.freescale.com/mpc5125**.

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