

Opal i.MX53 CPU Module

Accelerating Embedded Development

Create powerful connected devices faster with the Opal i.MX53 CPU module.

Reduce Development Time and Cost

Focus on your product, and not on complex processor design

When you start a project using Opal, you eliminate a big piece of complex and risky design work. There is no memory interfacing or power supply design work to be done. You can also forget about having to lay out multi-layer boards with several BGA chips; that work is done too and it's all packaged into a module that is easy to integrate into your final design.

Start writing your application, and not porting an Operating System

Don't spend time writing low-level C and assembly code, or spending hours bringing up your prototypes. Opal runs Windows Embedded Compact 7, Android and Linux. Choose the OS you need, the tools you know, and get to work on the features your customers are looking for.

Get started on real hardware

The Opal Development Kit provides a platform for evaluation and prototyping of new designs. Common features are available on the board and expansion connectors make it easy to add application specific components.

Powerful Multimedia Features

Multiple display options

Opal interfaces directly with RGB and LVDS panels, and analog VGA displays. Two of these interfaces may be used simultaneously.

Video and Graphics acceleration

Opal includes video and graphics acceleration hardware enabling full HD video playback and stunning user interfaces.

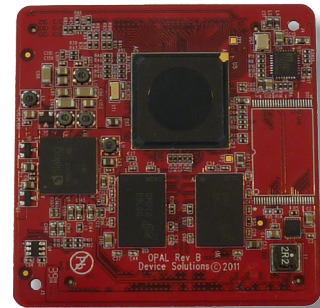
High Level of Integration for a Faster Design Cycle

Connectivity

Opal is not just about multimedia. It has connectivity options including Ethernet, serial and CAN, enabling connected industrial and automotive devices.

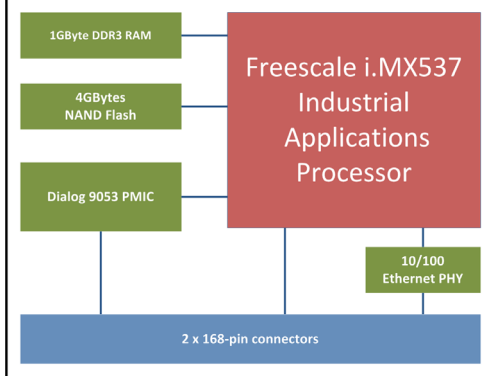
Storage

NAND Flash, USB, SD and SATA interfaces are included to enable permanent and removable storage of any size.



Opal i.MX53 CPU Module

Simplified Block Diagram



Applications

- Human Machine Interface (HMI)
- Medical Devices
- Factory Automation
- Building and Home Automation
- Automotive Displays
- Point-of-Sale Kiosks
- Retail Displays



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Opal i.MX53 CPU Module – Features

Core

- Freescale i.MX53 applications processor including Cortex-A8 core at 800MHz+
- 512MBytes or 1GByte DDR3 RAM
- 512MBytes+ NAND Flash
- Power Management IC with battery charger
- Voltage input - run off USB or Li-ion battery

Hardware Acceleration

- Video and Image Processing (Full HD 1920x1080)
- 2D/3D Graphics (DirectDraw, Direct3D Mobile, OpenGL-ES, OpenVG)
- Security

Connectivity

- 10/100 Ethernet (PHY included on Opal CPU)
- 2 x FlexCAN
- High-Speed USB Host & OTG
- SATA-II
- 4 x SD/SDIO/MMC
- 3 x I2C/AC97 for audio
- 5 x UART
- Configurable SPI
- I2C
- One-Wire
- 3 x 10-bit ADC
- 3.3V General Purpose I/O

Graphics and User Interface

- 5 display interfaces with up to 2 active at any one time. 180Mpixels/second at 24bit/pixel.
- Interface to RGB and LVDS TFT panels
- Analog VGA output
- 2 x camera sensor inputs
- Resistive touch screen controller
- Keypad controller

Operating System Support

- Microsoft Windows® Embedded Compact 7 supported by GuruCE (www.GuruCE.com)
- Android™ and Linux supported by TrygTech (www.trygtech.com)

Opal i.MX53 Development Kit

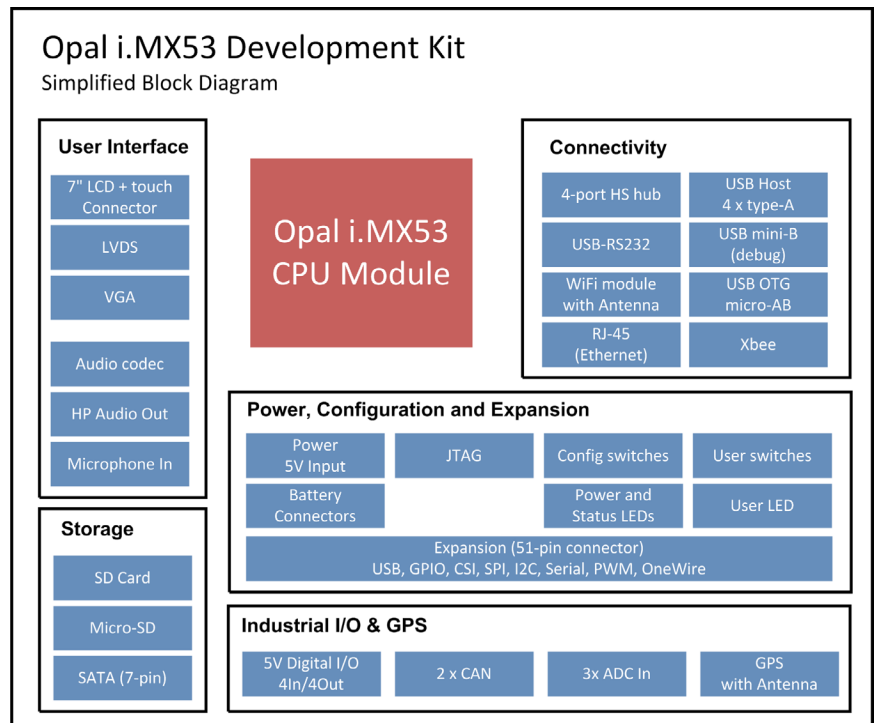
The Opal i.MX53 Development Kit is an ideal platform for evaluation and prototyping new devices.

Highlights

- Opal i.MX53 CPU Module
- 10/100 Ethernet
- WiFi b/g/n (on-board antenna)
- GPS (on-board antenna)
- 7" LCD with touch-screen included
- VGA monitor and LVDS interface
- 2 x CAN including transceivers
- 4 x USB Host ports
- Connect via USB for debug - no serial port required!

Design Support

Device Solutions offers product development services from design support through to turn-key manufacturing.



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