

phyCORE[®]-Vybrid System on Module

PRODUCT BRIEF

EASIER

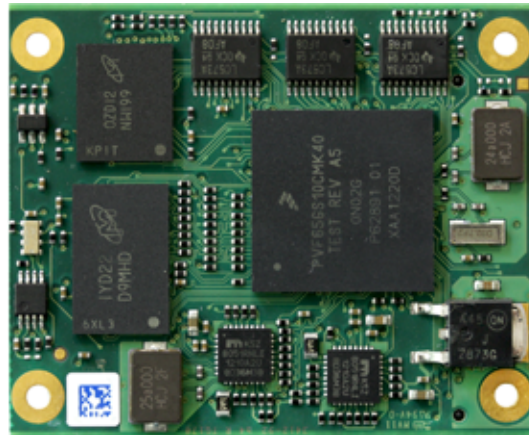
Building a new embedded device from the ground up is an enormous challenge and risk. Embedded development can be made much easier by leveraging existing solutions.

FASTER

Deploy a production-ready SOM and BSP and eliminate 6-12 months from your development timeline.

CHEAPER

Save substantial non-recurring engineering costs by eliminating specification, parts selection, schematic, layout, validation, and Operating System porting efforts. Use an off-shelf SOM and BSP instead.



The phyCORE-Vybrid SOM supports the Freescale Vybrid family of devices with asymmetrical-multiprocessing from the ARM[®] Cortex[™]-A5 and Cortex[™]-M4 cores. The increasing complexity and demands of embedded systems creates a greater need for sophisticated HMI, multiple connectivity options and powerful peripherals.

Vybrid is the perfect solution for applications that require a rich human-machine interface, concurrent to real-time control. The Vybrid multicore solution and the low latency of communication between high-level operating systems such as Linux and real-time operating systems like MQX brings together these two very different system paradigms, all within a single silicon.

phyCORE-Vybrid Product Highlights:

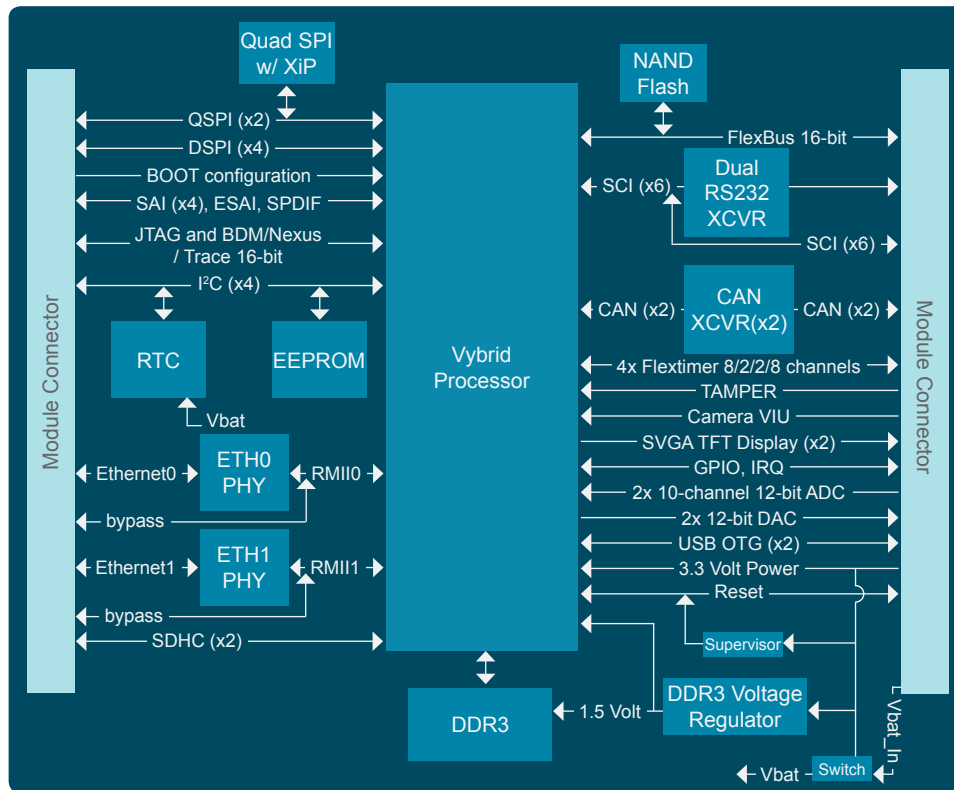
- // Ultra low-cost and feature-packed
- // Tiny form-factor of 41x51 mm
- // Asymmetrical-multiprocessing
- // Open VG 1.1 GPU
- // Dual: Ethernet, USB OTG, and CAN
- // Dual TFT display up to SVGA
- // Linux and MQX BSP support

The flexibility of the phyCORE-Vybrid SOM, supports all the families in the Vybrid portfolio, which span entry-level for ultra-low cost ARM to devices with large on-chip SRAM, up to highly integrated heterogeneous dual-core solutions that can serve industrial and consumer markets.

The combination of industrial temperature rating, 3.3V I/O, and highly reliable interconnects of the phyCORE-Vybrid SOM, make it possible for developers to create products that can endure rugged and extreme thermal industrial environments, with safe, secure and predictable operation.

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phyCORE-Vybrid SOM BLOCK DIAGRAM

SERVICES

Product developers with aggressive timelines or limited resources can employ PHYTEC's full range of design services, which include hardware board design, customized software board support packages, and complete turnkey design.

PHYTEC

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SOM FEATURES / Part No. PCM-052:

Processor

- Freescale Vybrid: VF5xx, VF6xx
- ARM® Cortex™-A5 @ 450 MHz
- ARM® Cortex™-M4 @ 167 MHz
- Open VG 1.1 GPU

Memory

- 1.5 MB on-chip SRAM, 512 KB SRAM with ECC, 512 MB DDR3 SDRAM, 2 GB NAND, 128 MB SPI-NOR with XiP, 4 kB EEPROM

Peripherals (Not all peripherals are available concurrently due to signal multiplexing)

- 2x 10/100 Ethernet with L2 switch, IEEE 1588 PTP for Real-Time Ethernet
- 2x USB
- 2x SD/MMC
- 2x RS-232, 4x UARTS, 2x CAN, 4x I²C, 4x SPI, 2x QSPI, 4x PWM
- Audio (SAI, I²S, AC97, ESAI, SPDIF)
- 16-bit bus interface
- External and on-chip RTC
- Dual display controller with support for 24-bit TFT displays up to SVGA, touch controller
- VIU for camera input
- 4x Security TAMPER signals, 2x 10-channel 12-bit ADC, 2x 12-bit DAC, JTAG and BDM/Nexus port

Mechanical

- 41 x 51 mm
- Two 0.5 mm pitch connectors (120 pins each)

Supply

- 3.3 V

Temperature

- -40° to +85°C

Operating Systems - Kit Availability

- Linux – Q4/2012
- MQX – Q1/2013

DEVELOPMENT KIT

The phyCORE-Vybrid SOM is available in a development kit that includes the SOM, a carrier board, optional LCD, and all accessories required for immediate start-up.