3U VPX FREESCALE QORIQ™ P2041 SINGLE BOARD COMPUTER

- general purpose 3U VPX SBC
- 1.2 GHz Freescale QorIQ™ P2041 processor, soldered DDR3 SDRAM
- PCIe (4x), SATA, gigabit ethernet on the VPX backplane
- support for PMC or XMC mezzanines
- standard air- and rugged conduction-cooled versions
PRODUCT OVERVIEW

VX3240 is a low-power 3U VPX SBC featuring a quad-core Freescale P2041 QorIQ™ device with quad PowerPC e500mc cores at 1.2 GHz. VX3240 supports up to 8 GByte DDR-3 SDRAM and provides a wide range of I/Os including Gigabit Ethernet, GPIOs, PMC/XMC I/Os, USB, SATA and serial ports. With such a feature set, VX3240 is the ideal general purpose solution for SWaP-C constrained embedded applications. Coupled with Kontron Long Term Supply policy, VX3240 is the perfect migration path to a new 10+ year period of deployments for PowerPC-based applications in the Military, Aerospace and Transportation markets.

TARGET APPLICATIONS

Console and Rugged Servers

In today’s network-centric battlefield, console and high-end servers applications require rugged computers to operate in the most difficult environments. Kontron VX3240 is designed around a high-end Quad Core CPU. Providing up to 8 GByte DDR3-SDRAM, multiple Ethernet and an XMC support, the VX3240 offers numerous configuration variants.

STANDARDS

- 3U VPX VITA 46, OpenVPX VITA 65, VPX REDI VITA 48.
- Single CPU: compatible with all existing legacy application PowerPC codes.

SWAP-C

Four Execution Threads: compact 4-way SMP solution for parallel computing tasks at low power, low size.

SAFETY CRITICAL

- One channel of DDR3 soldered memory with ECC.
- 1 Mbit of permanent Ferroelectric Random Access Memory (F-RAM) allowing permanent retention of application key operational data.
- 128 MByte of System Flash with Recovery Firmware Image and permanent storage of parameters.

CONNECTIVITY

- 4 lanes of gen2 PCIe to the backplane: I/O extensions at peak bandwidth.
- One XMC site with x4 PCIe interface.

VERSATILITY

VX3240 is available in Standard Air- (SA) and Rugged Conduction-cooled (RC) versions.

COMPATIBILITY: CERTIFIED SOLUTION

VX3240 is compatible with all Kontron VPX building blocks (Payload boards, carriers, switches, backplanes, OS and drivers) and offer backward compatibility with the previous product generations (VX3230 SBCs).

LONG TERM SUPPLY (LTS)

The VX3240 SBC is part of the Kontron Extended Life Cycle product family, which offers a +10 year life cycle organization on top of Freescale product longevity program. Available in Kontron 3U VPX development systems, along with 3U VPX carriers and 3U VPX Ethernet plus PCIe switches, the VX3240 is the ideal candidate for long term programs in search of general purpose solutions.
## TECHNICAL INFORMATION

### SYSTEM PROCESSOR
- Freescale QoriQ™ P2041 operating at 1.2 GHz
- 4x e500mc cores based on Power Architecture technology
- 32 KByte L1-I cache and 32 KByte L1-D cache per core
- 128 KByte L2 cache per core
- 1 MByte CoreNet™ platform cache with ECC
- 64-bit DDR3/3L Memory Controller with ECC

### SYSTEM MEMORY
- Up to 8 GByte of DDR3 SDRAM running at 1066 MHz, with ECC, soldered
- 128 MByte FLASH, with recovery image
- One S12 Kbits FRAM
- One 256 Kbits serial EEPROM dedicated to system data
- One 256 Kbits serial EEPROM dedicated to application data
- Up to 32 GByte SATA Nand Flash storage

### ONBOARD CONTROLLER
- Board controller for power sequencing, reset handling, monitoring and failure detection.
- Provides configuration/status registers on Local Bus interface
- Separated low port RTC with optional onboard battery

### FRONT PANEL INTERFACES
- One USB 2.0 port on 4-pin standard USB connector
- Two 1000BASE-T ports on RJ-45 connectors
- One RJ-12 connector for EIA-232/EIA-485 simplified UART interface (with RTS/CTS)
- Three LEDs reporting the board CPU health status and activity
- Reset push button

### SLOT PROFILES
- SLT3-PAY-2F2U-14 2.3, SLT3-PAY-2F2T-14 2.5, SLT3-PAY-2F14-2.7, SLT3-PAY-1FU-14-2.10

### REAR I/O VIA P0/P1/P2
- One x4 PCIe port on P1
- One SATA II port on P1
- Two Gigabit Ethernet ports (1000BASE-T or 1000BASE-BX) on P1
- One USB 2.0 port on P1
- Two simplified EIA-232/EIA-485 interfaces on P2 (with RTS/CTS)
- 3 User GPIOs on P1, including OpenVPX GDISCRETE1 and MASKABLE RESET, and 3 additional GPIOs on P0
- PMC I/Os on P2
- XMC I/Os on P2

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- XMC I/Os on P2

### ONBOARD CONTROLLERS
- COP interface for CPU debugging
- 4x PCIe x4 slot
- PCI 32 bits 33 MHz PMC slot

### POWER SUPPLIES
- On P0:
  - VS1=12 V, VS3=5 V, 3.3 V_AUX optional,
  - +12 V_AUX and VS2 (3.3 V) not connected

### POWER CONSUMPTION
- Lower than 25 W typ.

## ENVIRONMENTAL SPECIFICATION

### CONFORMAL COATING
- Optional

### AIRFLOW
- 1.5 m/s without throttling at 55°C

### TEMPERATURE
- VITA 47-Class AC1

### COOLING METHOD
- Convection

### OPERATING
- 0° to +35°C
- -45° to +85°C
- 20-500 Hz - 2 g

### VIBRATION SINE (OPERATING)
- VITA 47-Class V1
- 20g/11 ms Half Sine

### RANDOM
- -1,500 to 60,000 ft

### SHOCK (OPERATING)
- 20g/11 ms Half Sine

### ALTITUDE (OPERATING)
- -1,500 to 60,000 ft

### RELATIVE HUMIDITY
- 90% without condensation

### ENVIRONMENTAL SPECIFICATION

### CONFORMAL COATING
- Optional

### AIRFLOW
- Standard

### TEMPERATURE
- VITA 47-Class CC

### COOLING METHOD
- Conduction

### OPERATING
- -40° to +85°C
- 22-2,000 Hz - 2 g

### VIBRATION SINE (OPERATING)
- VITA 47-Class V3
- 40g/11 ms Half Sine

### RANDOM
- -1,500 to 60,000 ft

### SHOCK (OPERATING)
- 20g/11 ms Half Sine

### ALTITUDE (OPERATING)
- 95% without condensation

## ORDERING INFORMATION

<table>
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<tr>
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