iVPX7225 Series

3U VITA 46 VPX & VITA 65 OpenVPX Processor Board

PRELIMINARY DATA SHEET

Fully Rugged 3U SBC for

- 3rd generation Intel® Core™ i7 2.5 GHz dual-core integrated processor
- 8GB ECC-protected DDR3L-1600, soldered down
- Intel® QM77 platform controller hub (PCH)
- 1MByte F-RAM
- 4GB USB NAND Flash
- PCI Express Fat Pipe data plane
- 1000BASE-BX/KX control plane
- SATA, USB and serial interfaces
- Integrated 2D/3D graphics with digital and VGA output
- One XMC site
- Optional rear transition module
- Extended temperature -40 °C to +71 °C and rugged variants
- Air and conduction cooled
- VITA 48 REDI two-level maintenance (2LM)

One of first in a new line of VPX products from Emerson Network Power, the 3U iVPX7225 features the dual-core 3rd generation Intel® Core™ i7 2.5 GHz processor with integrated graphics and memory controller and the mobile Intel® QM77 PCH chipset with leading edge I/O functionality. This high compute density platform offers both high speed fabric connectivity with PCI Express and Gigabit Ethernet control plane connectivity with data transfer rates up to 5Gbps. On-board memory includes 8GB DDR3L-1600 memory (designed for 16GB), embedded USB flash, and 1MByte non-volatile Ferroelectric Random Access Memory (F-RAM). Additional connectivity includes three USB 2.0 ports, two serial ports, three SATA ports, eight GPIO, DisplayPort, VGA and one XMC site for maximum flexibility.

The iVPX7225 is a fully rugged SBC for extreme environments with extended shock, vibration, temperatures and conduction cooling. It is designed for a range of industrial, communication and military/aerospace applications.

The iVPX7225 software support includes UEFI compliant BIOS with password protection and a wide range of operating systems including Wind River VxWorks 6.9 and Linux 3.x.
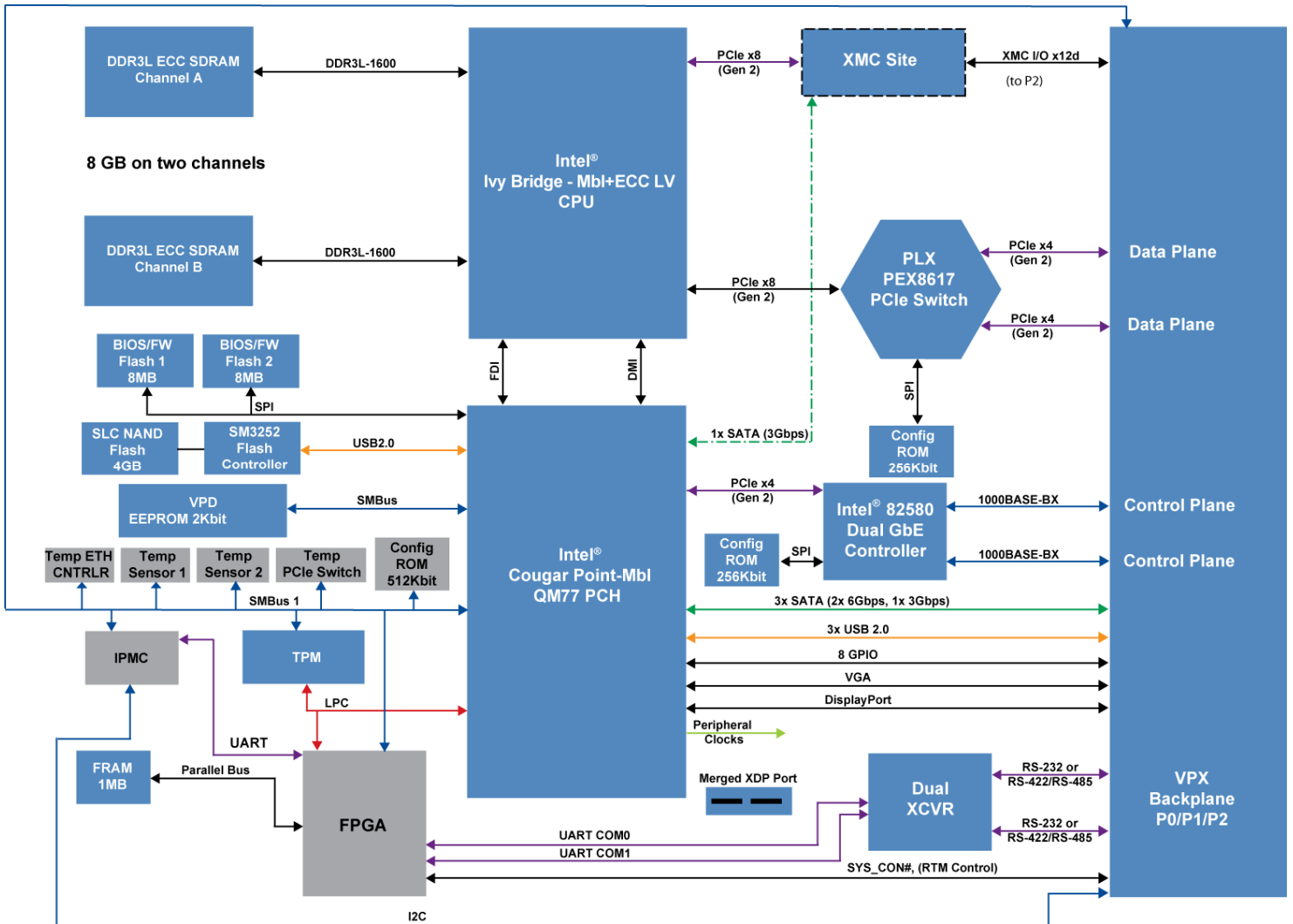
PRELIMINARY DATA SHEET

iVPX7225 block Diagram

PROCESSOR

- Dual core 3rd generation Intel® Core™ i7 3555LE, 2.5GHz, 4MB L2 cache, 25W

MEMORY

- Dual channel DDR3L with ECC, soldered down
- Support for 8GBytes memory (designed to support up to 16GBytes)

USER FLASH / NVRAM MEMORY

- 4GByte embedded USB flash
- 1MByte F-RAM (NVRAM)

BOOT FLASH MEMORY

- Dual UEFI BIOS in dual 8MB SPI flash devices
- Support for crisis recovery

BACKPLANE I/O

- Two (2) 1000BASE-BX/KX Ethernet (Ultra Thin Pipe (control plane)
- Two (2) PCIe x4 Gen2 (Fat Pipe data plane)
  - ▲ One port configurable with non-transparent bridging capability
- One (1) DisplayPort
- One (1) VGA
- Three (3) USB 2.0
- Three (3) SATA (2x 6Gbps, 1x 3Gbps)
- Two (2) RS-232/RS-422/RS-485
- Eight (8) GPIO
- XMC X12d I/O (to P2; optional X8d)
- SMBus
- IPMC I2C
- Selective Read-Only Override pins
- RTM control signals

FRONT PANEL

- Air cooled
  - ▲ XMC front panel I/O
  - ▲ Reset switch
  - ▲ Status LEDs

- Conduction cooled
  - ▲ Reset switch
  - ▲ Status LEDs

ETHERNET CONTROLLERS

- PCIe x4 to 2X 1000BASE-BX/KX to OpenVPX backplane through 82580 Ethernet controller

EXPANSION I/O

- One (1) XMC expansion site with PCIe x8 Gen 2 and 1 x SATA 3Gbps connections.

OpenVPX PROFILES

- Payload module profile
  - ▲ MOD3-PAY-2F2U-16.2.3-2/3
  - ▲ MOD3-PAY-1F1F2U-16.2.4-3/4
- Payload slot profile
  - ▲ SLT3-PAY-2F2U-14.2.3
  - ▲ SLT3-PAY-1F1f2U-14.2.4

OPTIONAL TRANSITION MODULE

- Mini DisplayPort, VGA, USB 2.0, Ethernet, Serial, I^2C, GPIO, SATA, SMC I/O, write protect override switches

OTHER FEATURES

- Watchdog unit
- Trusted Platform Module (TPM)
- Intel® vPro™ Technology capable (supports Intel® TXT, VT, and TPM)
- VITA 46.11 system management IPMI V1.5 compliant
- Multiple 32-bit timers
- Temperature sensors
- Status and user LEDs
- Reset switch
- Locking ejector handle

BIOS

- UEFI BIOS

POWER REQUIREMENTS

- Maximum for 2.5GHz, 8GByte memory variant
  - ▲ 5.0 V 58W (Estimated)

POWER REQUIREMENTS

- Intended for use in systems meeting the following regulations:
  - ▲ US: FCC Part 15, Subpart B, Class A (non-residential)
  - ▲ Canada: ICES-003, Class A (non-residential)

DOCUMENTATION

- Installation and User Manual: Front Board and RTM
- Hardware Release Notes
- Software Release Notes/Guides

PRELIMINARY DATA SHEET

ENP2 and ENP3 variants available for this product line.

Environmental Specifications				
Ruggedization Level	**ENP1**	**ENP2**	**ENP3**	**ENP4**
Cooling Method	Forced Air	Forced Air	Conduction	Conduction
Operating Temperature	0 °C to +55 °C	-40 °C to +71 °C	-40 °C to +71 °C	-40 °C to +85 °C
Storage Temperature	-40 °C to +85 °C	-50 °C to +100 °C	-50 °C to +100 °C	-50 °C to +125 °C
Vibration Sine (10 min/Axis)	2G, 5 to 2000 HZ	10G, 15 to 2000 HZ	10G, 15 to 2000 HZ	10G, 15 to 2000 HZ
Vibration Random (1 Hr/Axis)	0.01g**2**/Hz, 15 to 2000 Hz	0.04g**2**/Hz, 15 to 2000 Hz (8GRMS)[1]	0.1g**2**/Hz, 15 to 2000 Hz (12GRMS)[2]	0.1g**2**/Hz, 15 to 2000 Hz (12GRMS)[2]
Shock	20g/11ms	30g/11ms	40g/11ms	40g/11ms
Humidity	to 95% RH[3]	to 100% RH[3]	to 100% RH[3]	to 100% RH[3]
Conformal Coating	Optional	Optional	Optional	Optional

Note 1: Flat 15-1000 Hz, -6db/octave 1000-2000 Hz [MIL-STD 810F Figure 514.5C-17]
Note 2: +3db/octave 15-300 Hz, Flat .1g2 300-1000 Hz, -6db/octave 1000-2000 Hz [MIL-STD 810F Figure 514.5C-8]
Note 3: Up to 100% RH with optional conformal coating

Ordering Information

Part Number	Description
iVPX7225-02250802	3U VPX, Air, Dual-Core 2.5GHz 3555LE, 8GB DDR3L, .8" FP, ENP2
iVPX7225-02250822	3U VPX, Air, QuadDual-Core 2.5GHz E3555LE, 8GB DDR3L, 1" FP, ENP2
iVPX7225-02250813L	3U VPX, Conduction, Dual-Core 2.5GHZ 3555LE, 8GB DDR3L, .85" PITCH, ENP3
IVPX7225-02250813	3U VPX, Conduction, Dual-Core 2.5GHZ 3555LE, 8GB DDR3L, .85" PITCH, ENP3, NO 2LM COVERS
IVPX7225-RTM	3U VPX, AIR, RTM FOR IVPX7225, .8" FACEPLATE
IVPX7225-RTM-1	3U VPX, AIR COOLED, RTM FOR IVPX7225, 1" FACEPLATE

SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

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- ■ Connectivity
- ■ DC Power
- ■ **Embedded Computing**
- ■ Embedded Power
- ■ Infrastructure Management & Monitoring
- ■ Outside Plant
- ■ Power Switching & Controls
- ■ Precision Cooling
- ■ Racks & Integrated Cabinets
- ■ Services
- ■ Surge Protection

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