

iVPX7225 Series

3U VITA 46 VPX & VITA 65 OpenVPX Processor Board

Embedded Computing for
Business-Critical Continuity™

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.



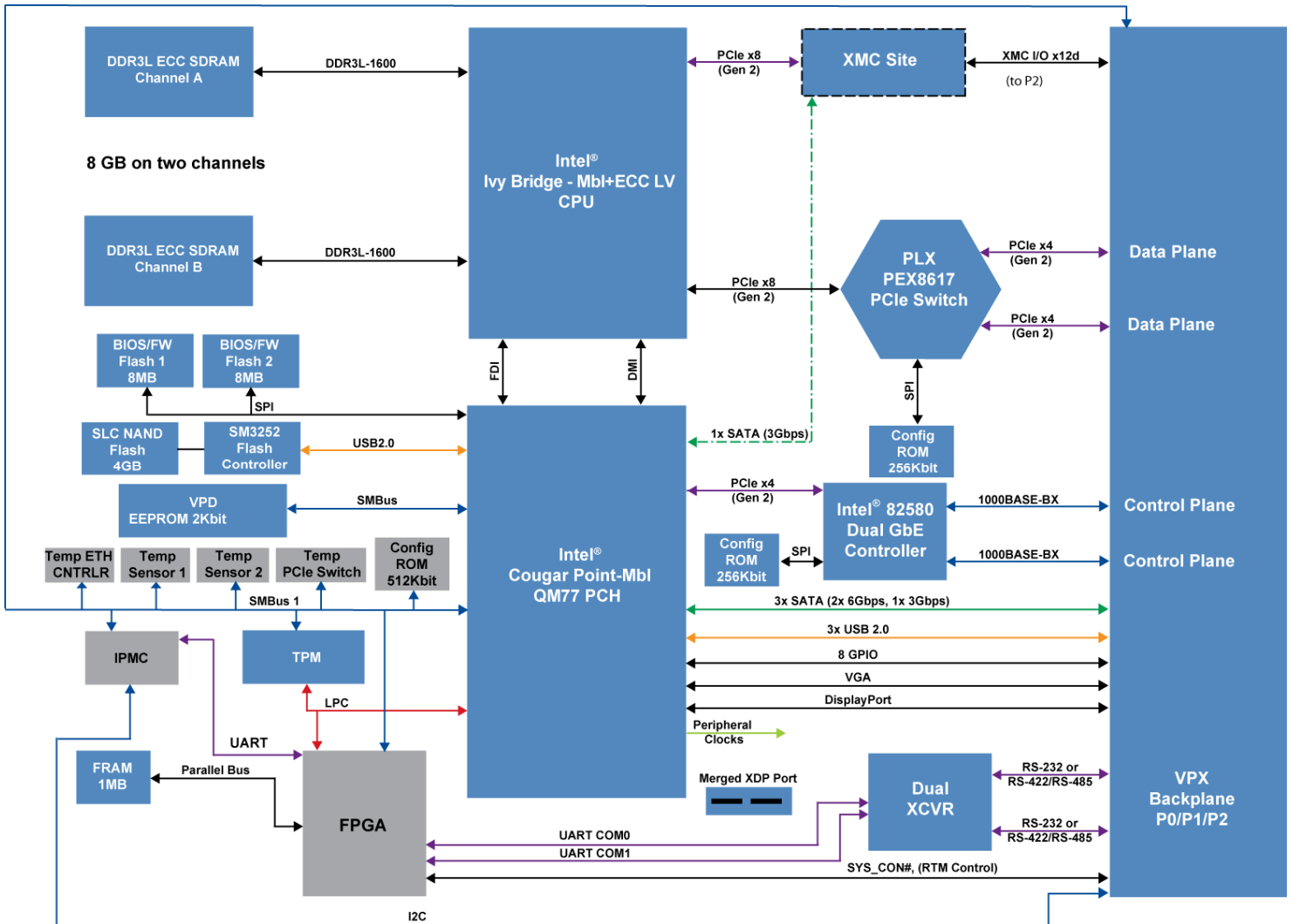
OpenVPX™

VPX REDI


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PRELIMINARY DATA SHEET

iVPX7225 block Diagram



PRELIMINARY DATA SHEET **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, I²C, 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

PRELIMINARY DATA SHEET

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

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