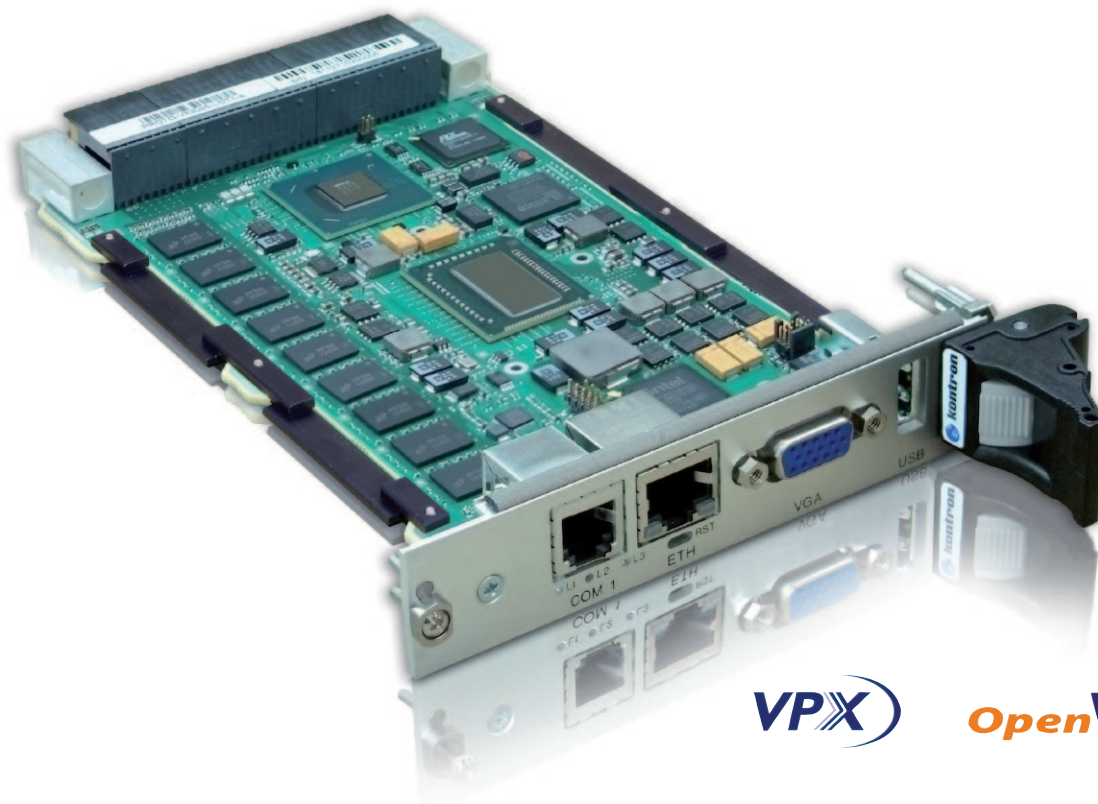


# » VX3035 «



**VPX** **OpenVPX**

## 3U VPX 2<sup>nd</sup> Generation Intel® Core™ i7 Single Board Computer

- » Intel® Core™ i7 2655LE Processor with integrated Intel® HD Graphics and the Intel® QM67 Controller Hub.
- » Two Cores with Hyperthreading (4 threads total) from 1.67 GHz to 2.2 GHz
- » Up to 8 GB dual Channel 1333 SDRAM with ECC
- » Support of Kontron VXFabric™
- » Available also as Turnkey Evaluation/Development Platforms
- » Support for Windows Embedded Standard 7, Linux and VxWorks

## Product Overview

VX3035 is a multipurpose 3U VPX rugged single board computer offering the ultimate performance for embedded applications. Coupled with Kontron Long Term Supply policy, this board is poised to become the general purpose small SBC for many generations of embedded applications for the Military and Aerospace market.

Based on Intel®'s high performance computing architecture, VX3035 offers the best features set:

### Standards

- » 3U VPX VITA 46, OpenVPX VITA65, VPX REDI VITA 48.
- » Single CPU: compatible with all existing legacy application x86 code.

### SWAP-C

- » Four Execution Threads: compact 4-way SMP solution for parallel computing tasks at low power, low size.
- » Turbo Boost: up to 2.9 GHz operation of a single threaded workload in the same power envelope.
- » Integrated Graphics Controller with two DisplayPorts or VGA: for all HMI applications.

### Safety Critical

- » Two channels of DDR3 soldered memory with ECC: performance and security.
- » 64 KB of permanent Ferroelectric Random Access Memory (F-RAM) allowing permanent retention of application key operational data.

- » 8 GB of System Flash with Recovery BIOS Image and permanent storage of BIOS parameters.

### Rugged Design

- » Rugged Conduction-Cooled version: for the harshest environments.

### Connectivity

- » Up to 5 lanes of PCIe to the backplane: I/O extensions at peak bandwidth.
- » 4 SATA ports to the backplane: for secure RAID storage Applications.

### Versatility

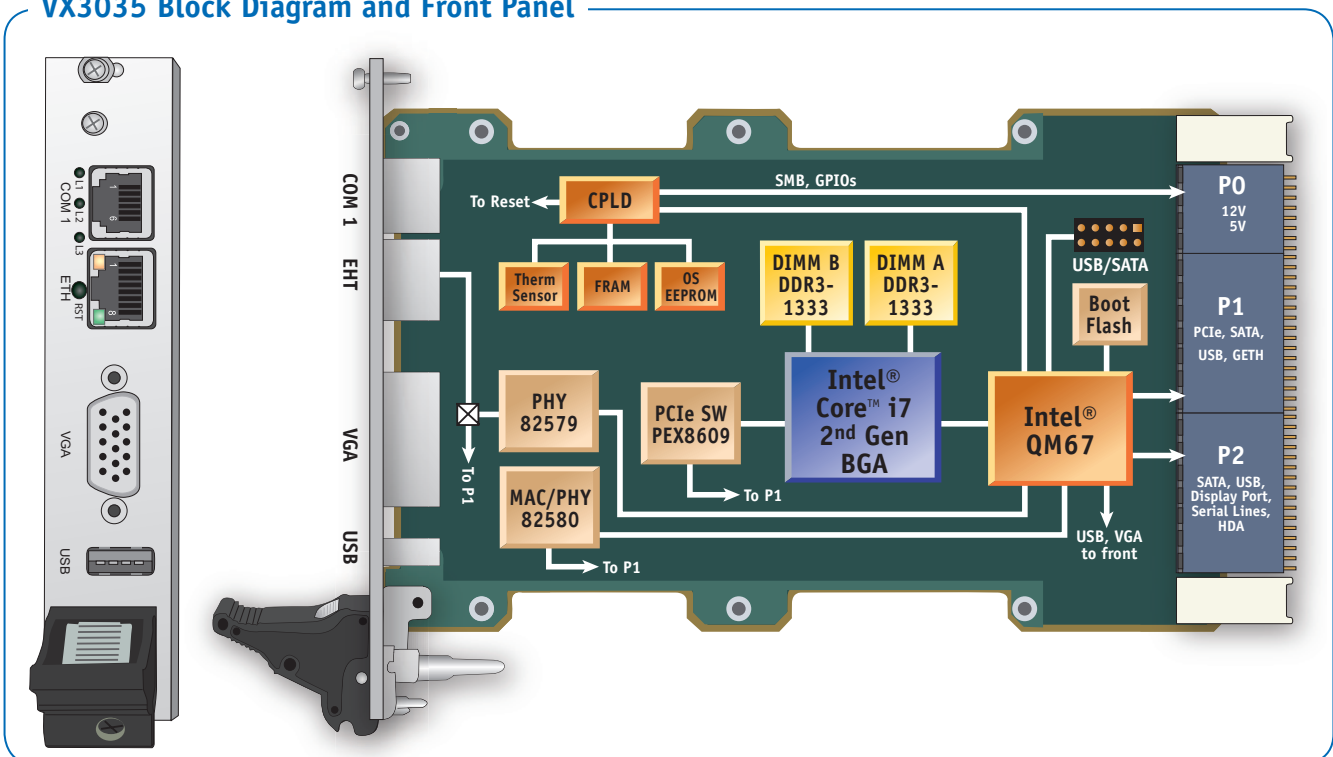
- » VX3035 is compatible with 0.8" and 1" slot pitch. Pick the best size/ power tradeoff for your application.
- » Extension connectors on top and bottom allow SBC custom extension for cost effective program customizations.

### Long Term Supply

VX3035 is the member of Extended Life Cycle product family, which offers a 15-year life cycle organisation on top of Intel® embedded product line silicon life cycle.

Available in Kontron 3U VPX development systems, along with 3U VPX carriers and 3U VPX Ethernet plus PCIe switches, the VX3035 is the ideal candidate for long term programs in search of general purpose or compact high performance parallel computing solutions.

## VX3035 Block Diagram and Front Panel



## Technical Information

<b>Processor</b>	<p>Second Generation Intel® Core™ i7 processor (32nm manufacturing process):</p> <ul style="list-style-type: none"> <li>» Intel® Core™ i7-2655LE Processor (4M Cache, 2.20 GHz)</li> </ul> <p>Please contact Kontron for further information concerning the suitability of other Intel processors for use with the VX3035</p>
<b>Memory</b>	
System Memory	Up to 8 GB dual channel DDR3 SDRAM running at 1333 MHz, with ECC, soldered
Flash (uEFI BIOS)	8 MB FLASH, with recovery image and uEFI BIOS settings
EEPROM	Serial EEPROM (24LC64) 8 KB for storing product VPD
USB/SATA NAND Flash	Flash mezzanine socket for USB or SATA NAND Flash modules (typically 8, 16 or 32 GB)
<b>Onboard Controller</b>	
Platform Controller Hub	<p>Mobile Intel® QM67 Express Chipset:</p> <ul style="list-style-type: none"> <li>» SATA host controller with six ports with RAID 0/1/5/10 support</li> <li>» USB 2.0 host interface with up to 14 ports (6x ports are used on the VX3035)</li> <li>» 2 x PCI Express x4 or 8x PCI Express x1 2.0 ports</li> </ul>
Graphics	<p>High performance 3D graphics controller integrated in the processor:</p> <ul style="list-style-type: none"> <li>» Support for two independent displays</li> <li>» Supports digital display resolutions up to 2560 x 1600 pixels @ 60Hz</li> <li>» Supports analog display resolutions up to 2048 x 1536 pixels @ 75Hz</li> <li>» Dynamic Video Memory Technology (DVMT)</li> </ul>
Gigabit Ethernet	<p>3 x GbE, 2 1000BASE-BX with Intel i82580 Ethernet controller (rear), One 1000BASE-T with i82579 (front or rear, BIOS option)</p>
Watchdog	PLD-based, timeout UP to 510s, IRQ, Reset
RTC	Integrated in QM67 with 256 Byte CMOS RAM plus separate ultra low power time of day device
<b>Front Interfaces 4HP (0,8") or 5HP (1")</b>	
VGA	1 x VGA-CRT 15-pin D-Sub connector
USB	1 x USB 2.0 ports, 4-pin standard USB connectors
Ethernet	1 x RJ45 with integrated LEDs (ACT, SPEED)
Serial	1 x RJ11 EIA-232 (with CTS/RTS)
LED's	3 bicolor Leds for system info (fault, proc hot, WD), and user application feedback
<b>Onboard Interfaces</b>	
Debug Interface	XDP port for processor emulation probe connection
USB/SATA	1 x onboard FLASH mezzanine socket for USB or SATA modules
Top Layer extension	The high-speed I/O connector holds PCIe x4 channel for I/O extensions (XMC, HDD etc), 3.3V Power
Bottom Layer extension	<p>This connector holds the following interfaces</p> <ul style="list-style-type: none"> <li>» PCIe x1 for any I/O extension mezzanine</li> <li>» Four GETH 1000BASE-T signals</li> <li>» 3.3V Power</li> </ul>

### Technical Information

#### VPX Interface

##### Slot Profiles

SLT3-PAY-2F2U-14.2.3  
 SLT3-PAY-1F1F2U-14.2.4  
 SLT3-PAY-1F1U-14.2.10

#### Rear I/O via P1/P2

- The VX3035 supports:
- » One x4 PCIe non transparent port
  - » Four SATA II ports
  - » Three Gigabit Ethernet ports
  - » Four USB 2.0 ports
  - » Two DP ports
  - » One HDA port
  - » One PCIe x1 link.
  - » Two simplified EIA-232/EIA-422 serial (with CTS/RTS)
- #### Supervisory Functions
- » Non Maskable RESET,
  - » NVMRO, SMB 0 and SMB 1 interfaces for Status, Start , Reset. Compatible with Kontron CMB (Monitoring Board), temperature and voltage sensors on the board.
  - » PCIe optional reference clock

### Environmental Specification

**SA - Standard Commercial**  
 (1" single height passive module heat sink, forced air)

<b>Conformal Coating</b>	Optional
<b>Airflow</b>	3.5 m/s
<b>Temperature</b>	VITA 47-Class AC1
<b>Cooling Method</b>	Convection
<b>Operating</b>	0° to +55°C
<b>Storage</b>	-45° to +85°C
<b>Vibration Sine (Operating)</b>	20-500 Hz - 2g
<b>Random</b>	VITA 47-Class V1
<b>Shock (Operating)</b>	20g/11 ms Half Sine
<b>Altitude (Operating)</b>	-1,640 to 15,000 ft
<b>Relative Humidity</b>	90% without condensation (95% with coating)

### Ordering Information

Article	Part.-No.	Description
<b>SA - Standard Commercial</b>		
<b>VX3035</b>	VX3035-SA24-01000	Air-cooled 3U VPX Single Board Computer, 2.2 GHz Intel® Core™ i7 2nd Gen, 4 GB DDR3-SDRAM, front: 1"
<b>VX3035</b>	VX3035-SA24-00000	Air-cooled 3U VPX Single Board Computer, 2.2 GHz Intel® Core™ i7 2nd Gen, 4 GB DDR3-SDRAM, front: 0.8"
<b>VX3035</b>	VX3035-SA12-01000	Air-cooled 3U VPX Single Board Computer, 2.2 GHz Intel® Core™ i7 2nd Gen, 2 GB DDR3-SDRAM /single bank, front: 1", no PCIe on VPX, no P2 VPX I/O connector.
<b>VX3035</b>	VX3035-SA28-01000	Air-cooled 3U VPX Single Board Computer, 2.2 GHz Intel® Core™ i7 2nd Gen, 8 GB DDR3-SDRAM, front: 1"
<b>VX3035</b>	VX3035-SA28-00000	Air-cooled 3U VPX Single Board Computer, 2.2 GHz Intel® Core™ i7 2nd Gen, 8 GB DDR3-SDRAM, front: 0.8"
<b>Associated Products:</b>		
<b>VX3035-RTM</b>	RTM PB-VX3-011	3U VPX Rear Transition Module compatible with the VX3035
<b>USB Flash Module</b>	FDM-USB-xGB-2MM-IV	USB Flash Device (x GB)
<b>SATA Flash Module</b>	FDM-SATA-32GB-COV	32 GBytes MLC device, commercial temperature
<b>SATA Flash Module</b>	FDM-SATA-8GB-IOV	8 GBytes SLC device, industrial temperature
<b>Serial Cable</b>	KIT-2X-RJ12DB9	Serial cable adapter

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