**IC** INTERFACE CONCEPT
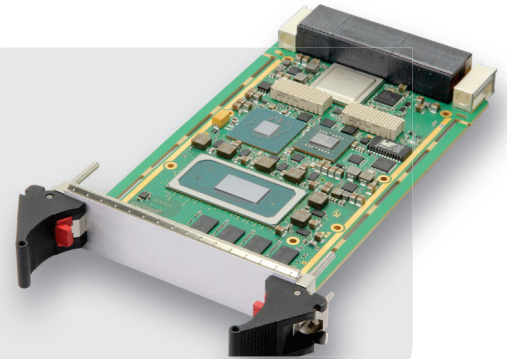ADVANCED ELECTRONIC SOLUTIONS

# IC-INT-VPX3l
## SOSA™-aligned 3U VPX Intel® Xeon® W SBC

- *3U VPX*
- *Intel® Xeon® W (Tiger Lake-H)*
- *DDR4 with ECC up to 32GB*
- *1 * 100G Ethernet port (Data Plane)*
- *1 * PCIe x4 (Expansion Plane)*
- *Aligned with the SOSA™ Technical Standard*

## Overview

The **IC-INT-VPX3l** is a 3U VPX Single Board Computer based on the Intel® Xeon® W (code name Tiger Lake-H) processor and designed in alignment with the SOSA™ Technical Standard. This high-processing module is ideally suited for mil-aero applications and edge applications such as Mission Computer, Radar and Sonar HPEC.

## Description

The **IC-INT-VPX3l** is able to manage and process a significant number of  I/O throughput for graphics, networking and storage owing to the Intel® Xeon® W 8 cores, the advanced Intel® Xe graphics engine, the large number of Ethernet ports and the DDR4 memory with ECC.

The XMC slot provides the capability to report IOs (compliant with the P1w9-X12d+P2w9-X16s+X8d mapping) on the rear connector to extend IO system-specific interface requirements.

The **IC-INT-VPX3l** can be seamlessly coupled with additional Interface Concept 3U VPX Intel or ARM-based SBCs, FPGA boards and Ethernet switches to obtain a complete 3U VPX High-Performance Embedded Computing (HPEC) system.

As a compute-intensive 3U VPX board, the **IC-INT-VPX3l** can act as a System or non-System Controller module in a VPX platform.

The **IC-INT-VPX3l** complies with VITA 65.0 SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16 I/O intensive Slot Profile.

The **IC-INT-VPX3l** features:
- 1 * 100G Ethernet port (*)
- 1 * PCIe x4 (*)
- 10GBASE-KR Ethernet ports
- 1000BASE-KX Ethernet ports
- 1000BASE-T Ethernet ports (*)
- 1 * Maintenance serial port
- 4 * GPIOs
- 1 * Video Display Port
- 2 * USB Ports (USB3.0 & UBS2.0)
- 1 * SATA Port
- 1 or 2 * Serial ports (232/422)
- 1 * XMC slot with rear IO report
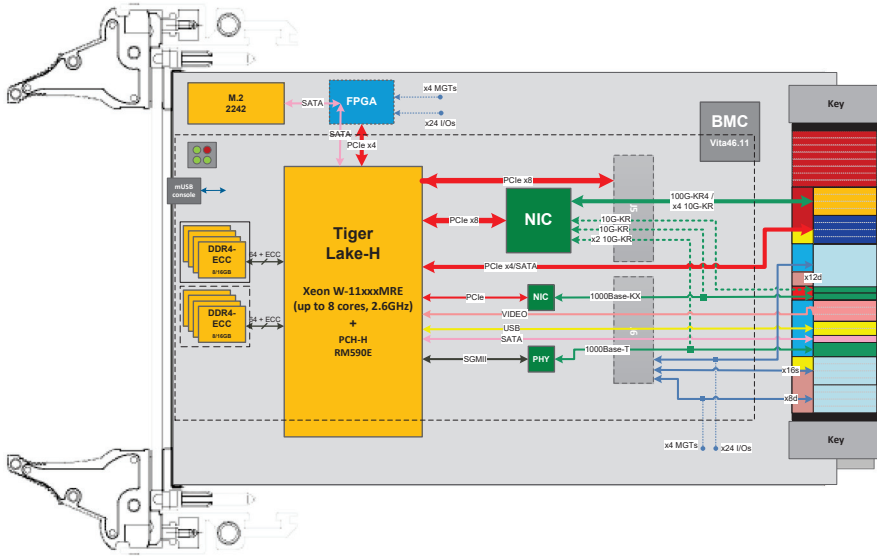- 1 * M2 socket (on board)

(*) see detailed configurations in page 2

The **IC-INT-VPX3l** is available in air-cooled and conduction cooled versions (-40°C to +85°C according to Thermal Design Power (TDP) configuration).
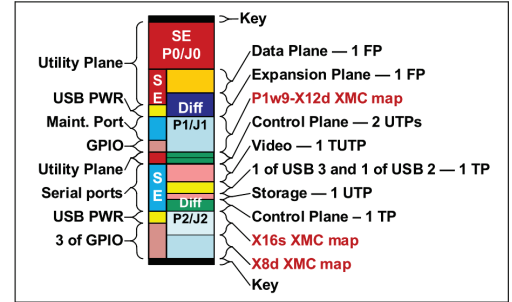
## Block Diagram



The **IC-INT-VPX3l** is compliant with VITA 65.0 SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16 Slot Profile.



SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16

## Main features

### Processing Unit
- 1 * Intel® Xeon® (Tiger Lake-H)
  - W-11555MRE (6 Cores, 2.60 GHz) or
  - W-11865MRE (8 Cores, 2.60 GHz)
  - 2 * banks of DDR4 with ECC (up to 8/16 GB/bank)
  - Boot flash memory

- 1 * XMC slot
- 1 * M. 2242 slot for SATA SSD
- 1 * FPGA

- 1 * Board Management Controller
  - Thermal/voltage monitoring sensors

### Front connectors
- mini USB console port

### P1 connector
- 1 * 100G Ethernet port
  or 4 * 10GBASE-KR ports
- 1 * PCIe x4 or 4 * SATA ports
- 1 * 10GBASE-KR Ethernet port
- 1 * 10GBASE-KR Ethernet port
  or 1 * 1000BASE-KX Ethernet port (*)
- 1 * Maintenance serial port
- 1 * GPIO
- XMC IOs report (x12d)

### P2 connector
- 1 * Video Display port
- 1 * USB3.0 port
- 2 * USB2.0 ports
- 1 * SATA port
- 2 * 10GBASE-KR Ethernet ports
  or 1 * 1000BASE-T Ethernet port (*)
- 1 or 2 * Serial ports (232/422)
- 3 * GPIOs
- XMC IOs report (X16s+X8d)

(*) factory configuration

### Miscellaneous
- Status LEDs

### Accessories
- 3U Rear Transition Module

The **IC-INT-VPX3l** is a 3U VPX board compliant with VITA 46.0 standard.

# Software Features

### BMC

- VITA46.11 IPMC
  - TIER-2 IPMI
  - Redundant IPMB

- Power-on Built-In Test
  - On-board hardware components
  - Add-on cards (XMC, FMC)
  - Accessible from the OS

- Human Machine Interface
  - Devices management
  - Health management
  - Password
  - Log

- Over-temperature board protection

### OS Support

- Supported Linux distributions
  - Red Hat Enterprise Linux
  - Ubuntu
  - Yocto

- BSP Features
  - Standard or Preemp-RT kernel (Yocto only)
  - BMC drivers
  - IC Control Node driver
  - Board information (P/N, S/N, PBIT results...)
  - IBIT/CBIT (Integrated/Continuous)
  - Other utilities

Please consult us for other Linux distributions (Debian, Fedora, etc), VxWorks® and Windows.

### Firmware

- UEFI-compliant Boot Firmware
  - Based on InsydeH2O® UEFI BIOS
  - Integrated and tested by IC R&D team

- Boot options
  - UEFI shell
  - Storage devices (HDD, USB, CD, DVD)
  - Network

- Power-on Built-In Tests (PBIT)
  - On-board hardware components
  - Add-on connectivities (VPX PCIe, XMC PCIe, SATA disks, USB devices...)
  - Results accessible from the OS

# Grades

| Criterion | Coating | Operation Temperature | Rec. Airflow | Oper. HR% no cond. | Storage Temperature | Sinusoidal Vibration | Random Vibration | Shock 1/2 Sin. 11ms |
|---|---|---|---|---|---|---|---|---|
| Standard | Optional | 0 to 55°C | 1 .. 2 m/s | 5 to 90% | -45 to 85°C | 2G [20..2000]Hz | 0.002g2 /Hz [10..2000]Hz | 20G |
| Extended | Yes | -20 to 65°C | 2 .. 3 m/s | 5 to 95% | -45 to 85°C | 2G [20..2000]Hz | 0.002g2 /Hz [10..2000]Hz | 20G |
| Rugged | Yes | -40 to 75°C or 85° C (*) | 2 .. 5 m/s | 5 to 95% | -45 to 100°C | 5G [20..2000]Hz | 0.05g2 /Hz [10..2000]Hz | 40G |
| Conduction-Cooled 71°C | Yes | -40 to 71°C at the thermal interface (*) | - | 5 to 95% | -45 to 100°C | 5G [20..2000]Hz | 0.05g2 /Hz [10..2000]Hz | 40G |
| Conduction-Cooled 85°C | Yes | -40 to 85° C at the thermal interface (*) | - | 5 to 95% | -45 to 100°C | 5G [20..2000]Hz | 0.1g2 /Hz [10..2000]Hz | 40G |

(*) : Temperature grades are subject to availability according to IC products. Please consult us.

All information contained herein is subject to change without notice.

For more information, please contact:

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