LCR | EMBEDDED SYSTEMS

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HPEC Compute Cluster
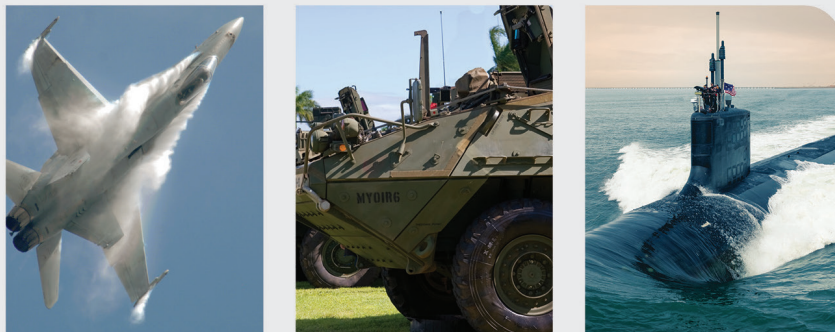
600 Series Systems

OpenVPX ™

SOSA ™
Sensor Open Systems Architecture
MEMBER

This HPEC ATR 3U OpenVPX system is intended for use in addressing demanding compute needs in rugged environments. The integrated board set includes 5 high-performance Intel Xeon processors providing approximately 2.688TFLOPs of computational power to meet the high bandwidth signal I/O requirements in today's mission critical deployments. For applications requiring higher bandwidth, XMC expansion sites can add GPGPU capability to each processor that enable system performance to ramp up to over 5TFOPs of total computational power taking into consideration total heat dissipation. Each SBC sub-system has Data and Control plane Ethernet connections to a 10/40 GigE switch with layer 2 and 3 management. The system maintains SOSA profile alignment for SBC upgrades that address future evolutionary technology requirements. The front panel can be configured to provide an ample I/O complement with Gigabit Ethernet Fiber or copper data interconnect availability via 38999 connectors. The system leverages LCR's 600 Series AoC3U-620 chassis for VITA 48.2 conduction cooled module and supports 6 payload slots and 2 VITA 62 power supplies. It is designed to accommodate best-in-class 3U CMOSS and SOSA aligned payloads to meet mission needs with minimal time to theater.

Contact LCR to discuss your specific configurations requirements.

Payload Options

- The system may be configured with VITA 48.2 SOSA aligned modules in conjunction with the specified backplane profile and in support of the target functional requirements

- Five Intel Xeon E processors with 518GFLOPs performance each

- Scalable GPGPU subsystem via SBC XMC expansion sites

- 40Gigabit layer 2/3 Ethernet Switch for fiber or copper I/O

Standard Features

- Accommodate best-in-class 3U CMOSS and SOSA aligned payloads

- SOSA alignment to the connector level

- Custom I/O panel with MIL-STD 38999 options for high-speed copper and optical I/O

- Cooling for up to 460W of total power

- Conduction cooled VITA 48.2 chassis with air assist

- Designed for SWaP sensitive applications

- Based on LCR's proven 600 Series chassis design

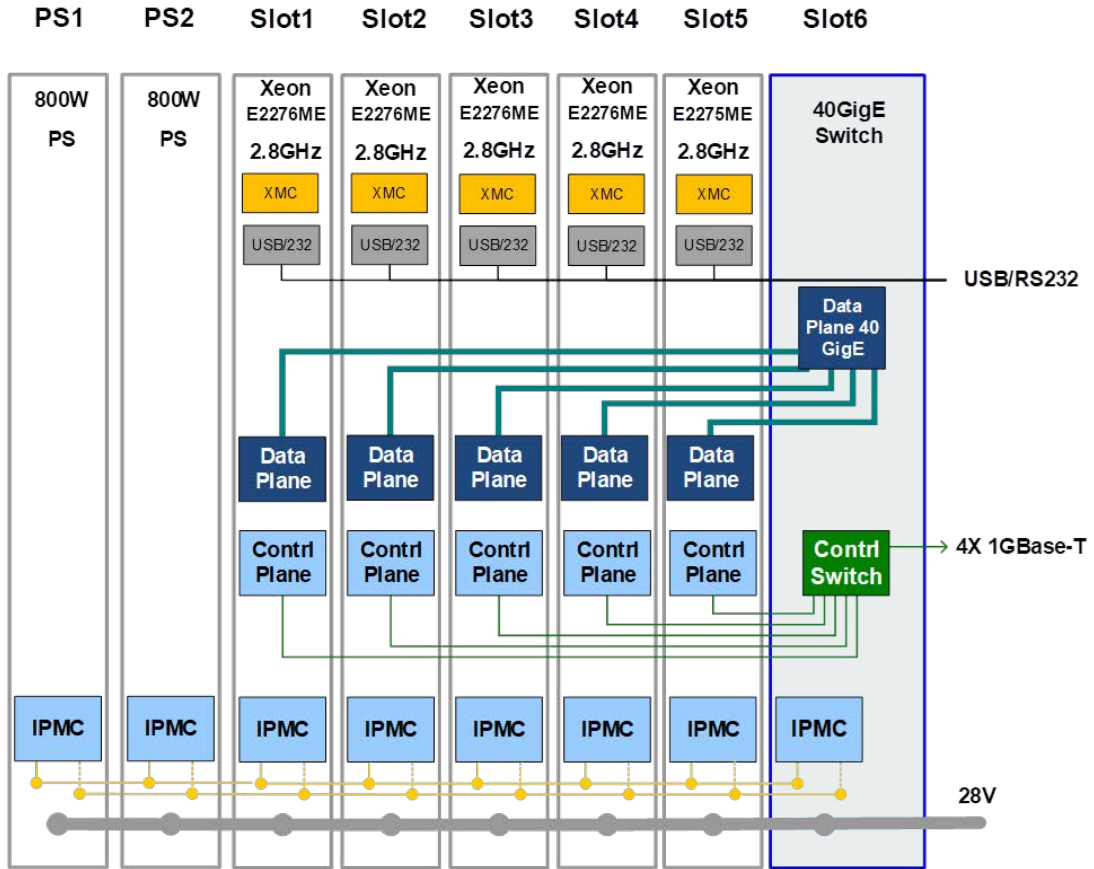- 6 payload and 2 VITA 62 PSU slots

The system **is intended for use in high power, high speed C4ISR** (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) systems operating in mission critical defense applications.

The system backplane supports dataplane and control plane connections to a 40GigE switch and has been optimized to distribute heat load to sensitive up/down converters.
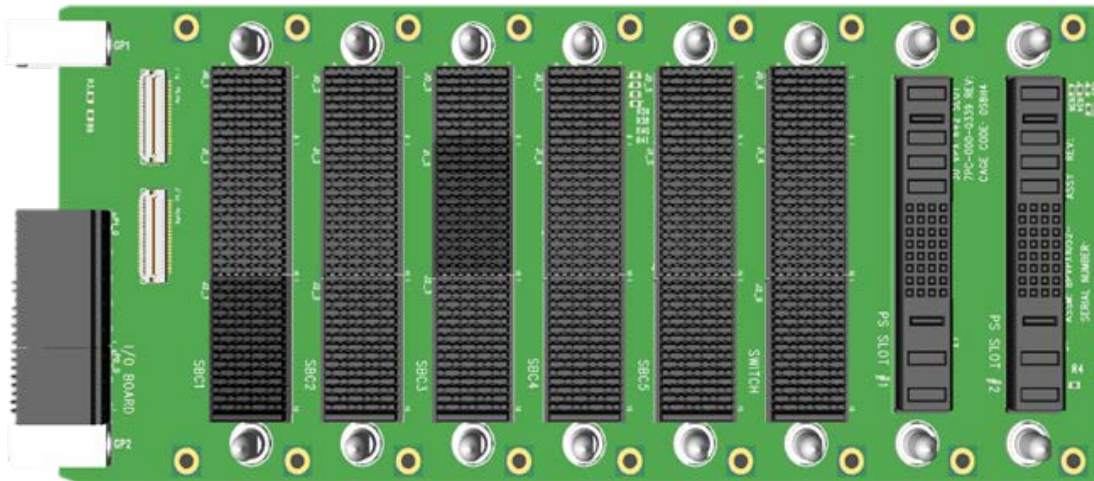
This 600 Series HPEC Compute Cluster backplane support these slot profiles in alignment with the SOSA technical standard.

- Slots 1, 2, 3, 4, 5 - CPU
    - SLT3-PAY-1F1F2U1TU1T1U1T- 14.2.16
- Slot 6 Ethernet Switch
    - SLT3-SWH-6F1U7U-14.14.14

| Processing Boards	Ethernet Switch
Intel 2.8GHz 6 Core Xeon E processor with 518GFLOPs performance with integrated GPGU with 461GFLOPs Integrated 64GB SSD, 64 GB of DDR and 10/40GBaseKR to the switch SLT3-PAY-1F1F2U1TU1T1U1T- 14.2.16	40Gigabit layer 2/3 Ethernet Switch with two SFP connectivity for fiber or copper to I/O panel SLT3-SWH-6F1U7U-14.14.14

Chassis Dimensions
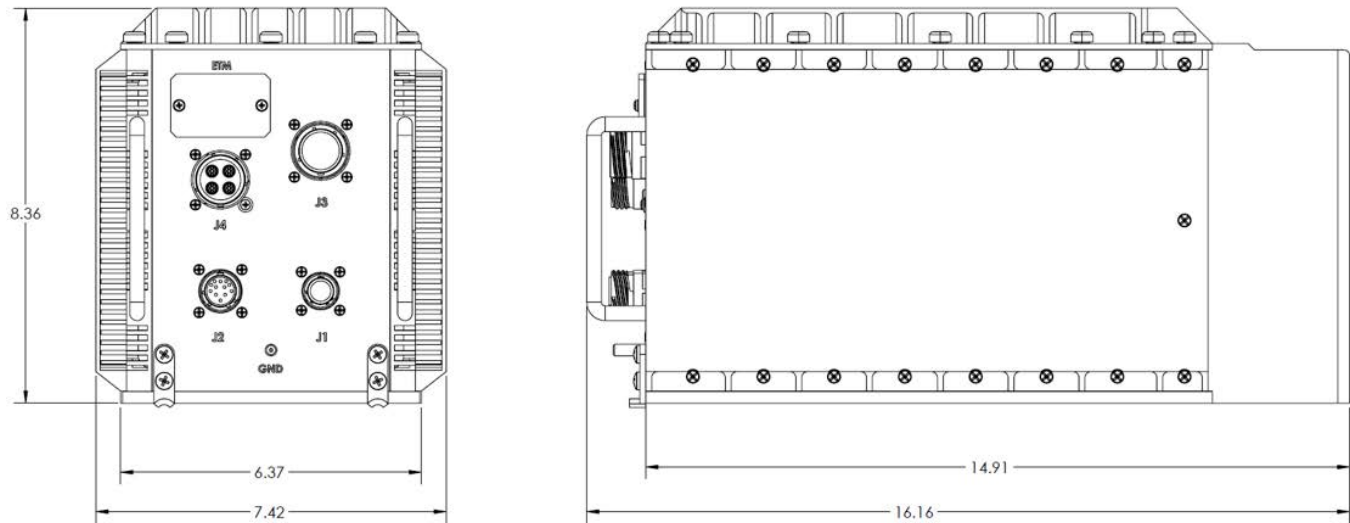
Front panel I/O may be customized to accommodate any signal complement. LCR's engineering team will work to address specific connector types and locations for high speed copper, fiber or RF as required for most applications.

SPECIFICATIONS

Physical	Backplane options
Dimensions: 8.36" (H), 7.42 (W) x 16.16" (D) 212.4mm x 188.5mm x 410.5mm including connectors and mounting plate Machined aluminum alloy 6061-T6, bolt together construction Weight: Approximately 28lbs, no payload boards	Custom 6 +2 payload to power supply slot backplane VPX and SOSA aligned slot profiles 10, 40 and 100GBase KR4 capable

Thermal	I/O Capabilities
Operating: -40°C to 55°C Ram air with high cfm fan compatibility Max altitude 15Kft at 575W and 30Kft for sub 575W payloads	Custom I/O panel supporting high speed connectivity High density MIL-STD 38999 circular connectors High speed 10GbE 38999 Hercules connectors

Environmental	Payload Compatibility
Shock: 30 Gs @ 11ms half sine Vibration: 20 to 2000Hz at 5Gs Designed to meet MIL-STD-810, MIL-STD-461, and MIL-S-901D	3U VPX multi-core single board computers, high speed GPGPU and FPGA modules, video processing and Ethernet switching

Power Supply	Applications
2 VITA 62 pluggable power supply supporting 12 and 5V modules MIL-STD-704E, MIL-STD-1275 Input voltage: 18 to 36 VDC Output: up to 1400W total	Mission computing, systems command and control digital recording systems, digital signal processing, high speed data acquisition, video displays in defense assets operating in demanding environments

ORDER NUMBER	DESCRIPTION
Consult LCR Sales	HPEC ATR 3U OpenVPX system including Intel Xeon E processor and 40Gigabit layer 2/3 Ethernet Switch for fiber or copper I/O and dual VITA 62 PSU's. **Contact LCR to discuss your specific configurations requirements.**

LCR provides a full line of VPX products and services - everything you need from development to deployment including; COTS rugged application ready chassis solutions as well as custom designs, custom 3U VPX backplanes supporting the latest slot profiles plus development tools including load boards and test fixtures.