The Ensemble 6000 Series OpenVPX RTM-61P Rear Transition Module from Mercury Systems is designed as a VITA 46 VPX-compliant module in a 6U form factor that is also compatible with OpenVPX™ system architecture design principles. This module is an innovative design intended to support Ensemble 6000 Series 6U VPX payload modules. When integrated with payload modules in the Ensemble 6000 series, such as the HCD6220 or the LDS6521, the RTM-61P brings user I/O from the backplane connectors to industry-standard interfaces.

The RTM-61P utilizes a combination of standard connectors and breakout cables to provide access to serial and Ethernet connections as well as USB, SATA and DVI interfaces. For PMC/XMC user I/O, the RTM-61P implements rear mezzanine sites using standard connectors, providing a flexible interface for any user I/O solution.

**Built-In Standard I/O**

The RTM-61P uses innovative mechanical mounting capabilities to bring backplane I/O from payload processing modules to standard connectors. The RTM-61P provides four RS-232/RS-422 serial interfaces via dual Micro-DB9 connectors and included Y-cables. Two RJ45 Ethernet interfaces are also provided on the RTM-61P. Dual USB 2.0 interfaces and SATA interfaces are brought to standard connectors as well. Finally, a DVI video interface is brought to a standard MicroHDMI connector.

Mercury's commitment to maintaining user I/O pinout across payload processing modules allows the RTM-61P to support all payload processing modules in the Ensemble 6000 series, regardless of processing technology or model.

**PMC/XMC User I/O**

Mercury utilizes standard connectors on the RTM-61P that map to the PMC and XMC user I/O connections from the payload module. Although FMC connectors are utilized, the user I/O connectors on the RTM-60P are not FMC compliant. As a result, they are referred to as Rear Transition Mezzanine Card (RTMC) connectors.

There are two major advantages to this design. First, it enables I/O from the Rear Transition Module based on VITA standard connectors, where past designs in the industry are custom. Second, the implementation of the RTM-61P with these standard connectors provides all the necessary design ingredients to support rear I/O solutions for most industry PMC or XMC modules, including sufficient I/O pins for both PMC and XMC user I/O on the same connector.
Other Capabilities
The RTM-61P contains the necessary interfaces to be managed as an unintelligent Field Replaceable Unit (FRU) by the associated payload module. The RTM-61P can provide FRU information, such as module name, model number and serial number, to the managing 6U OpenVPX payload module.

Open Standards Means Interoperability and Planning for the Future
The OpenVPX Industry Working Group is an industry initiative launched by defense prime contractors and COTS system developers to proactively solve the interoperability issues associated with the VITA 46 (VPX) family of specifications. The group has created an overarching System Specification that defines VPX system architecture through pinout definitions to establish a limited set of application-specific reference solutions. These OpenVPX standard solutions provide clear design guidance to COTS suppliers and the user community, assuring interoperability across multi-vendor implementations.

Specifications
Compliance
Compliant with VITA 46.0, VITA 46.9 and VITA 46.10 standards

Built-In Standard I/O
Four RS-232/RS-422 serial interfaces
Via dual Micro-DB9 connectors and Y-cables (included)
Two 10/100/1000BASE-T RJ45 Ethernet interfaces
Two eSATA interfaces
One DVI interface via MicroHDMI connector
Two USB 2.0 interfaces

PMC/XMC User I/O Via Dual RTMC Sites
Available via dual FMC connectors (not VITA 57 compliant)
Backplane interface designed to comply with VITA 46.9 standard

Environmental
Air-Cooled – Commercial
Temperature
Operating 0°C to 40°C*
Storage 40°C to +85°C
*Customer must maintain required cfm level
Humidity
Operating 10-95%, non-condensing
Vibration 0.003 g^2/Hz; 20-2000 Hz, 1 hr/axis
Shock 20g, z-axis; 32g, x-, y-axes; 11 ms half-sine pulse
Altitude
Operating 0-10,000 ft*
*Customer must maintain required cfm level