

LCR

EMBEDDED
SYSTEMS, INC.

Helping our customers achieve their mission.

TM

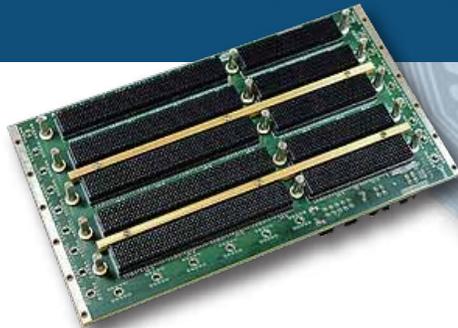


Rugged

VME and VPX

Speed • Cooling • High Performance

Bringing the benefits of switched fabric architectures to military applications through VME while providing a path for upgrade via mixed backplanes



VPX: High Performance in Challenging Environments

In 2003, a VME International Trade Association (VITA) working group was formed, comprised for the most part of embedded computing manufacturers and defense contractors eager to standardize a way to bring the benefits of switched fabrics to defense applications via the VME architecture. As a result of this effort, the newest standard, VITA 46 or VPX, was released in 2007. The standard supports both 3U and 6U cards as well as convection and conduction cooling in addition to liquid and spray cooling, making this the only standard that codifies a cooling technology capable of dealing with ultra-high-performance computing and the power it requires per blade. Unsurprisingly for a standard that was specially designed for defense applications, 80% of its deployments are military.

General Features

- Designed from the ground up for defense applications in harsh environments
- Flexibility in cooling (air, conduction, liquid)
- Vibrant third-party board ecosystem
- Mixed backplanes allow integration with less costly VME boards
- Support for high-speed (Terabit and greater) backplanes using differential pairs
- Significant number of deployments in the aerospace and defense industries means proven technology

LCR Embedded Systems Features

- 3U and 6U rugged designs featuring from 2 slots to 21 slots
- Can quickly customize design to meet the unique deployment environment
- Option for shelf manager or other intelligent management capabilities
- Ability to support customers for a +20 year life cycle

The Future of VPX: A Product Roadmap

With the introduction of VPX in 2007, the previously well-defined VME standardized increased greatly in flexibility -- and systems using the standard also increased in the level of custom engineering required to integrate multiple third-party blades, each of which could be quite different from the others. In addition to the increased flexibility of the standard itself, VPX also provides for mixed backplanes, allowing VME and VPX blades to coexist in the same systems. Further flexibility is provided thanks to the use of differential pairs in the VPX standard, permitting a 10G backplane to split its bandwidth into multiple smaller pathways such as four 2.5G connections. While a typical part of most of the commonly found form factors, this ability is absent in VME.

However, all of this increased flexibility can add to the cost and complexity of VPX system development. The wafer connectors used by VPX boards increase their cost relative to VME, and yet fewer third-party vendors are developing new VME boards, making it difficult for the aerospace and defense market that comprises the core of LCR Embedded Systems' customer base to get the most out of their existing investment in VME products or upgrade entirely to VPX. The defense market is also constrained by tight or slow-moving budgets as a matter of course, and hence must obtain as much value as possible from their existing technology.

Thankfully, the flexibility of the standard and its provision for mixed backplanes make it possible for all of LCR Embedded Systems' customers who are committed to VME for whatever reason to transition smoothly and at their own best pace, thanks to our extensive experience with custom design and system integration. Our familiarity with the aerospace and defense market further adds to our ability to work within the challenging budget cycles within which our customers operate.

3U VPX ATR/ARINC

- Hybrid cooling
- Rugged design, IP67



Communication

- Highly configurable
- Air/Ship/Ground mobile



VPX Development

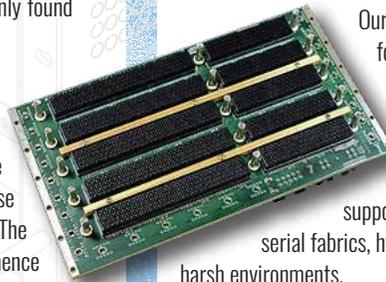
- Unique convection cooling for conduction cooled cards



Custom Backplanes For Your Needs

Our custom backplanes for VME/VPX can be designed, assembled, and tested to your exact specifications, including support for high-speed serial fabrics, hybrid solutions, and harsh environments.

Existing designs can also be supported through assembly and testing.



When you choose LCR Embedded Systems, you're choosing a sustained alliance with industry-leading experts who are committed to helping you achieve your mission.