



VITA 93.0: QMC

Small Form Factor Modules

The Next Generation Flexible Mezzanine Concept

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Introduction

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Introduction



What is QMC?

- Small form factor I/O mezzanine
- Modular, flexible and scalable Design
- Rugged and reliable mechanical concept
- Air- and conduction-cooled
- Suitable for Front- and Rear-I/O systems
- Based on a high-performance connector











Introduction



The Inspiration for QMC: VNX+



VITA 90 VNX+ 19mm Module















How Did QMC Come to Be?

- Started as a study group (VITA 85.109) in July 2022
 - Produced a detailed report in early 2023
- Kicked off as a working group in March 2023
- Objectives:
 - Mezzanine I/O expansion small enough to fit inside a 19mm VNX+ module
 - Host side (PCIe) and I/O side defined connectivity
 - At least PCIe Gen5 performance
 - Air- and Conduction-cooled
 - Support for rugged environments (shock and vibration)
- Secondary (but still important) goals:
 - Support by VPX, VME, Compact-PCI and Compact-PCIe, and PCIe edge finger modules









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VITA 93.0 QMC Small Form Factor Mezzanine

Benefits and what role it will play in the market

- QMC is all about one thing: Expansion
 - Adding I/O ports to boards and systems
 - Adding computation, like FPGAs or GPUs
 - Storage
- Plays the same role that PMC/XMC does, but in a much smaller package
- Particularly well suited for rugged platforms















Introduction



Looking forward

- Broad ecosystem of I/O modules and carrier cards
 - Many applications
 - Many industries
- Interoperability between modules and carriers from different suppliers
- Rugged with high-performance
 - Convection or conduction-cooling
 - Lab, factory, or field deployment
- SWAP-C challenges
 - Autonomous vehicles
 - Edge computing
 - Artificial intelligence









