

Implementation

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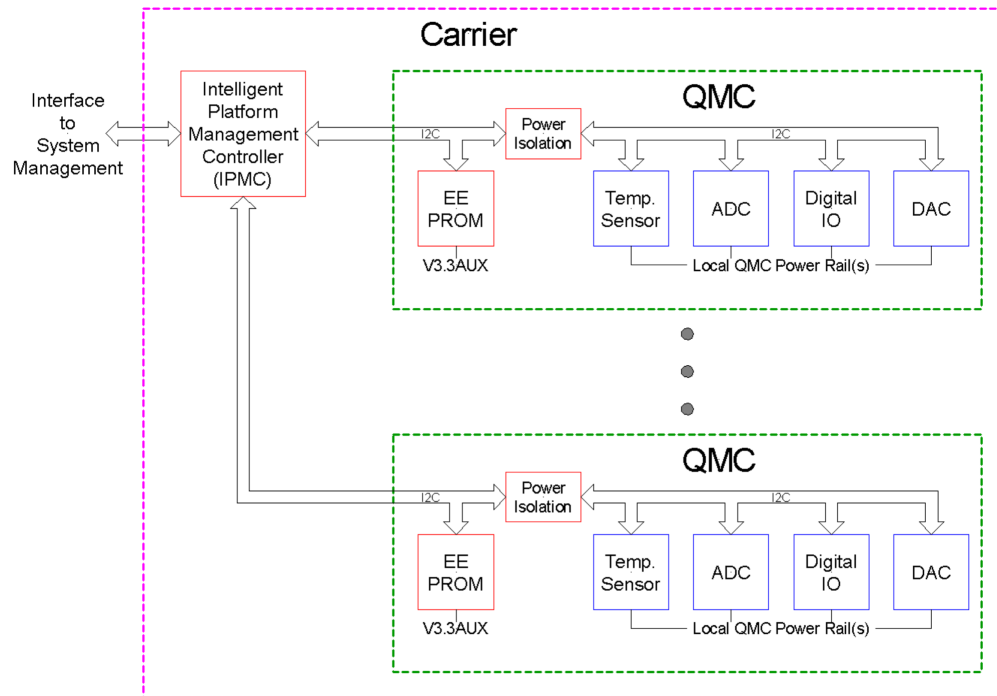
Power Budget

- per single QMC:
 - 4x 3.3V and 3x 12V power pins
 - Each pin is rated to 0.6 A
 - max 7.92 W for the 3.3V power supply plus
max. 21.6 W for the 12V power supply = 29.52 Watt TDP
- For a double, triple, or quad QMC multiply by 2, 3 or 4
- Carrier and system designers will need to carefully manage power and cooling



IPMI-Ready

- Intelligent Platform Management Interface
 - IPMI used to identify, supervise, and manage electronic add-in cards (FRU Field Replacable Unit) in a system.
 - Used on VPX, AdvancedTCA, and µTCA
- Intelligent Platform Management Controller
 - IPMC on Carrier with I2C interface to QMC
 - Supervises QMC Sensors
 - Connection to system manager
- EEPROM and Sensors on QMC
 - No IPMC development for QMCs
 - EEPROM contains sensor information and module data
 - Monitor health status (temp, voltage, etc.).



Use Cases / Possible Applications

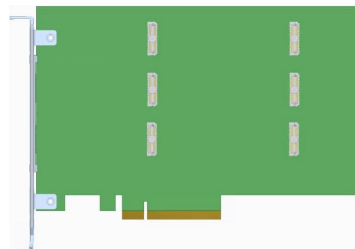
- Almost any sort of I/O
 - Ethernet, EIA-232/422/485, MIL-STD-1553, CAN bus, USB, etc.
 - FPGAs and front-end signal processing
 - (Small) GPUs and video interfaces
- Applications
 - Monitoring and control
 - Test, measurement, and simulation
 - Signal/protocol conversion
 - Image/video processing
 - Adaptive filtering and sensor fusion
 - AI/ML
- Industries
 - Defense and aerospace
 - Manufacturing and transportation
 - Energy, medical and scientific research



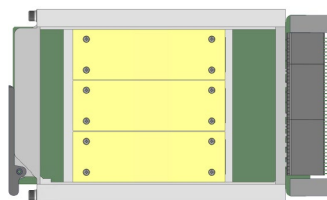
Carrier Card Platforms

- VNX+ Small Form Factor
- 3U/6U Eurocard (VPX, CompactPCI-Serial, etc.)
- PCIe edge-finger card
- Custom
- Mounts horizontal, vertical or both

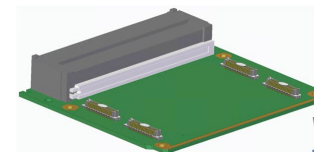
Host Platform	Horiz. QMCs	Vert. QMCs
VNX+	2	n/a
sVPX (100 x 100mm)	3	3
3U VPX/cPCI-S (100 x 160mm)	3	5
6U VPX/cPCI-S 6U (200 x 160mm)	8	10
PCIe low-profile	2	n/a
PCIe half-length (167mm)	3	6
PCIe full-length (254mm)	3	9
Custom (79 x 79mm)	3	3



*PCIe half-length Carrier
with three QMC sites*



*3U Eurocard Carrier
with three QMC sites*



*VNX+ Carrier Card
with two QMC sites*

VITA 93.0 QMC Small Form Factor Mezzanine

Implementation

Size Comparisons: Modules & Carriers



QMC Module



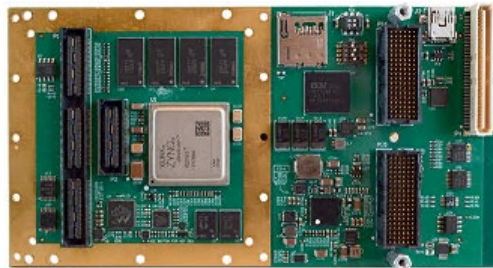
M.2 Module



AcroPack Module



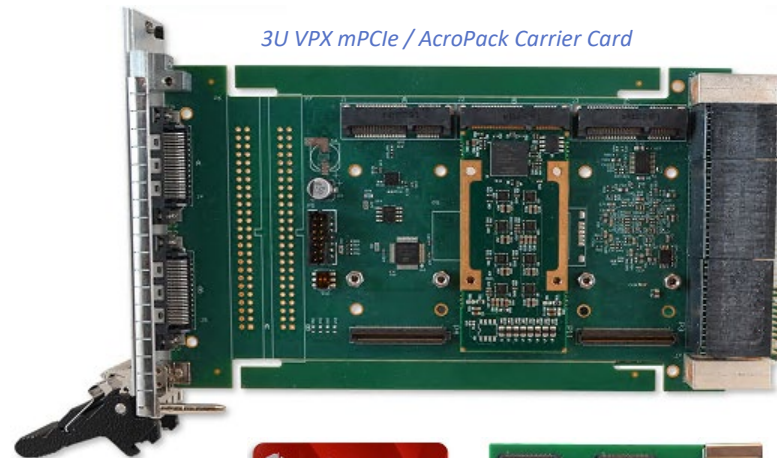
Mini PCIe Module



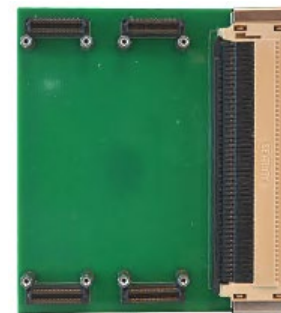
PMC/XMC module



IP module



3U VPX mPCIe / AcroPack Carrier Card



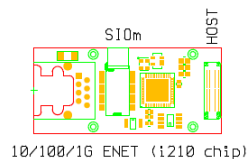
VNX+ Carrier Card

VITA 93.0 QMC Small Form Factor Mezzanine

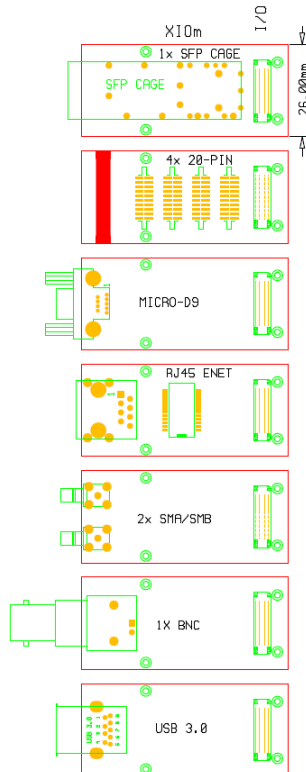
Future

XIOm and SIOm

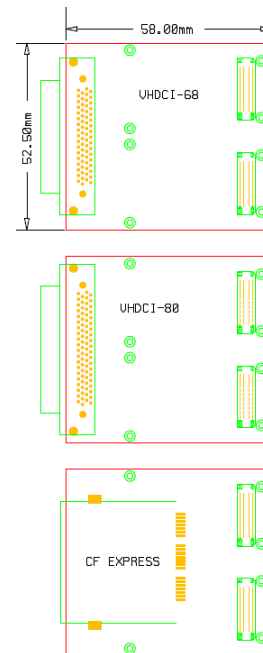
- VITA 93.1 Extension I/O micro modules
- VITA 93.2 Smart I/O micro modules
- Standardized front-panel or RTM I/O
- Industry-standard connectors
- Analogous to FMC modules



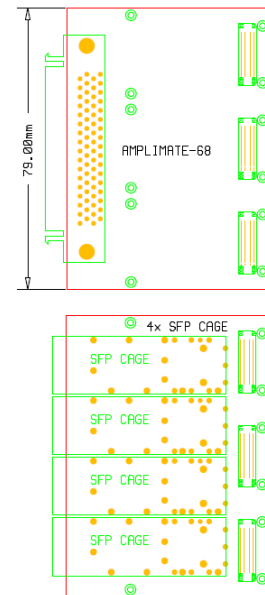
*Single-width
SIOm module*



*Single-width
XIOm modules*



*Dual-width
XIOm modules*



*Triple-width
XIOm modules*