Technical Overview

Jan Zimmermann

General Manager
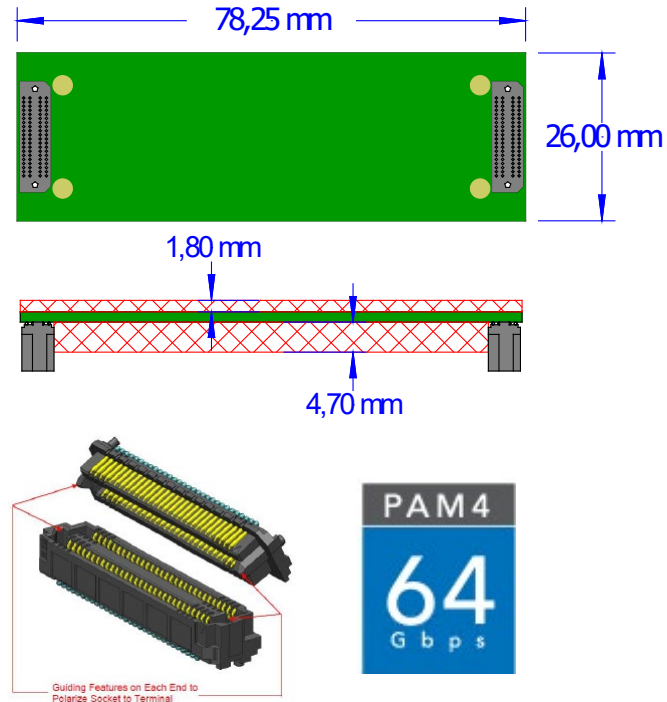TEWS Technologies GmbH

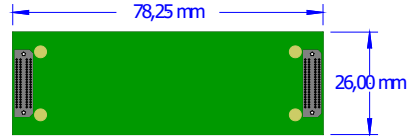# VITA 93.0 QMC Small Form Factor Mezzanine

Physical

- Base Size: 26 mm x 78.25 mm

- 4,7 mm Component height

- PCIe Gen6 Capable, up to x16

- Seamless integration into managed systems (IPMI)

- 40 I/Os

78,25 mm
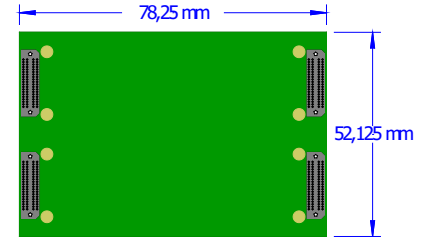
26,00 mm

1,80 mm

4,70 mm

Guiding Features on Each End to
Polarize Socket to Terminal

PAM4
64
Gbps

VITA 93.0 QMC Small Form Factor Mezzanine

Technical Overview

Scalability

- Single QMC
  - PCIe x4
  - 40 I/Os

78,25 mm
26,00 mm

- Double QMC
  - PCIe x8
  - 80 I/Os

78,25 mm
52,125 mm

- Triple QMC
  - PCIe x12
  - 120 I/Os

78,25 mm
78,250 mm
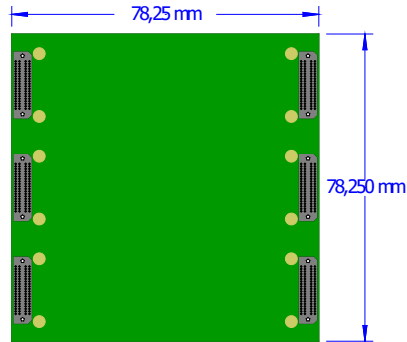
- Quad QMC
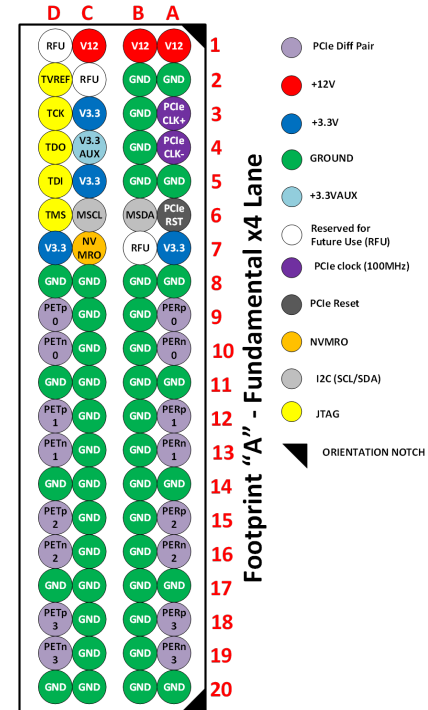 - PCIe x16
  - 160 I/Os

78,25 mm
104,375 mm
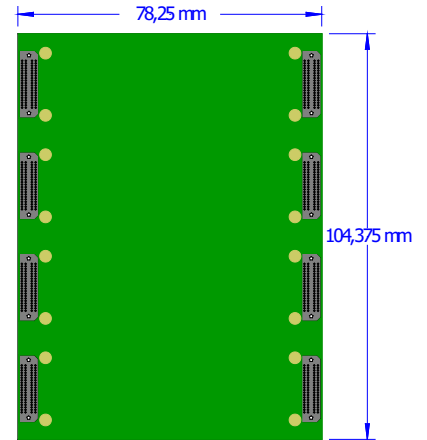
VITA 93.0 QMC Small Form Factor Mezzanine

Technical Overview

Host Interface

- Power Supply
  - 3.3 Volt
  - 12 Volt

- PCI-Express x4
  - Rx / Tx
  - Reference-Clock

- JTAG-Interface
  - Incl. Present Detection

- Management Interface
  - 3.3VAUX
  - I2C

PCIe CONNECTOR

Footprint "A" - Fundamental x4 Lane

Legend:
- PCIe Diff Pair
- +12V
- +3.3V
- GROUND
- +3.3VAUX
- Reserved for Future Use (RFU)
- PCIe clock (100MHz)
- PCIe Reset
- NVMRO
- I2C (SCL/SDA)
- JTAG
- ORIENTATION NOTCH

VITA 93.0 QMC Small Form Factor Mezzanine

I/O Capabilities

- 40 I/Os per single QMC (or 20 pairs)

- Organized as 5 IOPIPEs each offering
  - 8 single-ended / 4 differential I/Os
  - Individual Ground

- Support of isolated interfaces

- 80 I/Os per double QMC
- 120 I/Os per triple QMC
- 160 I/Os per quad QMC
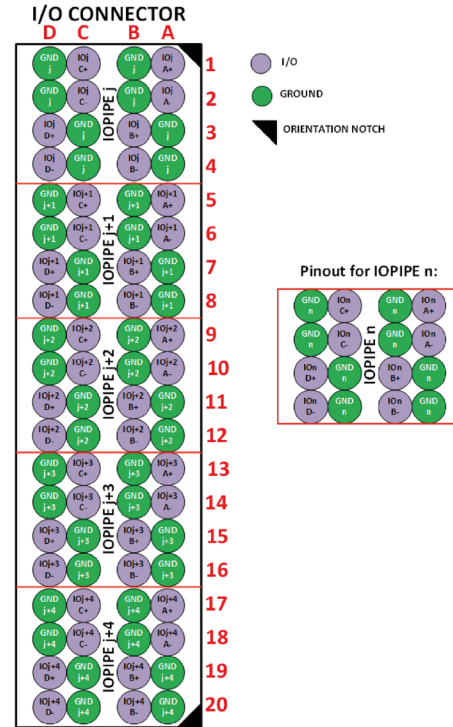
Air Cooled

- Complete Mounting kit provided by the Carrier manufacturer
  - Standoff mounted on Carrier
  - Spacer covering the space for potential heatsink of QMC
  - QMC can use a heatsink
    » Cannot extend beyond defined size envelope

# VITA 93.0 QMC Small Form Factor Mezzanine
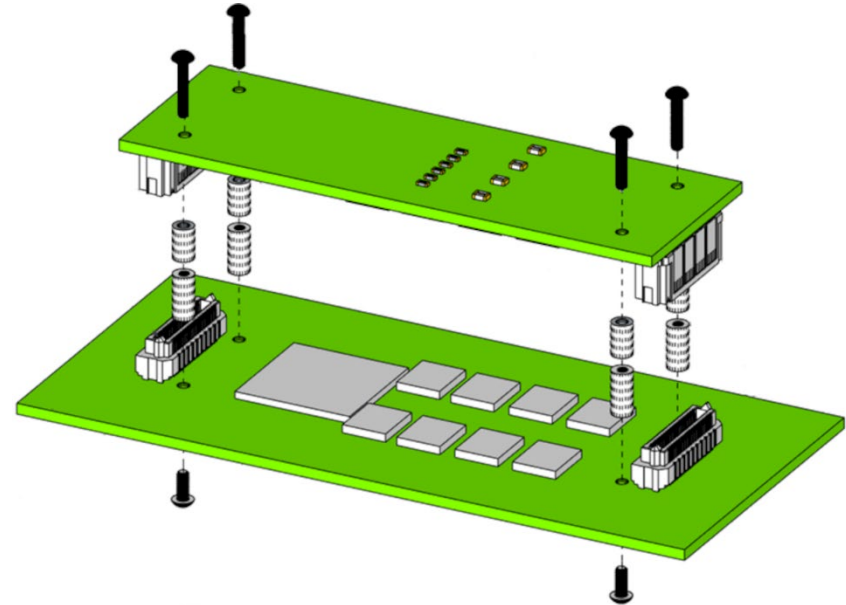
Conduction Cooled

- Skyline Heatsink is part of QMC
    - Already mounted at delivery

- Complete Mounting kit including red TIM (Thermal Interface Material)
    - All provided by carrier manufacturer

- Design of the carrier cooling structure is 100% up to the carrier designer
    - Cannot violate mechanical envelopes
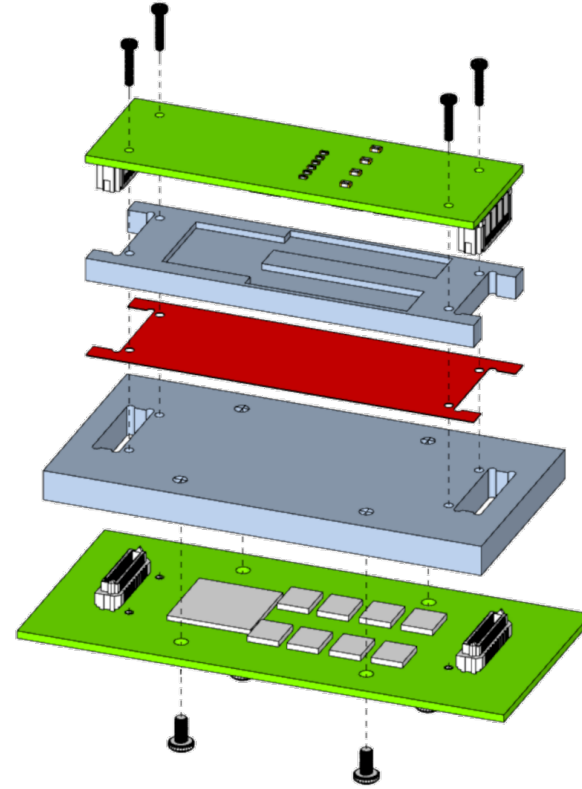
Stacking Heights

- Traditional Mezzanines have fixed Stacking height
  - Limited component height for the carrier

Fixed 10 mm XMC Stacking Height

13,50 mm   5,30 mm
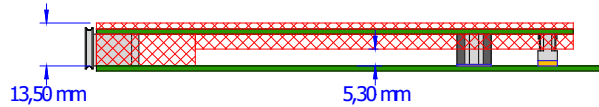
- Variable QMC Stacking Height

- Carrier defines Stacking Height
  - Maximizes component envelope on carrier

Variable QMC Stacking Height

19,40 mm   16 mm
11,30 mm

17,40 mm   14 mm
9,30 mm

14,40 mm   11 mm
6,30 mm

12,40 mm   9 mm
4,30 mm