QCT Rackgo X Tioga Pass

Product Marketing Specification

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Author:

Glen Lin, Quanta Computer Inc.
## Revision History

<table>
<thead>
<tr>
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<td>1.0</td>
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1. Overview

The product marketing product specification illustrates “QCT Rackgo X Tioga Pass” is next generation OCP general purpose compute server based on the latest Intel® Xeon® Scalable Processor family (aka Skylake-SP) CPU. The baseboard design with single sided SKU, supporting up to 12 DIMMs, which is designed to fit in the OCP Cubby chassis and mounted in ORv2 Rack.

Note: Double sized with 24 DIMMs SKU is not orderable as plan.

2. High Level System Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Processor</td>
<td>(2) Intel®Xeon® Skylake-SP processor family per node, up to 165W</td>
</tr>
<tr>
<td>Chipset</td>
<td>Intel® C621</td>
</tr>
<tr>
<td>Memory</td>
<td>(12) 2666 MHz DDR4 RDIMM per node</td>
</tr>
<tr>
<td>Drive Bay</td>
<td>(1) 3.5” fixed drive bays per node(Ready/Orderable) or (6) 2.5” hot swapped drive bays per node(Planning)</td>
</tr>
<tr>
<td>Network Controller</td>
<td>Support following QCT OCP mezzanine card (PCIe x16) for network option in front I/O per node</td>
</tr>
<tr>
<td></td>
<td>(1) QCT 1/10GbE RJ45 dual port OCP mezzanine card</td>
</tr>
<tr>
<td></td>
<td>(1) QCT 10G/25Gb SFP+/SFP28 OCP dual port mezzanine card</td>
</tr>
<tr>
<td></td>
<td>(1) QCT 40/56G QSFP+ OCP single port mezzanine card</td>
</tr>
<tr>
<td></td>
<td>(1) QCT 100G QSFP28 OCP single port mezzanine card</td>
</tr>
<tr>
<td>Expansion Slot</td>
<td>(2) PCIe gen 3 x16 FHHL PCIe expansion slots per node with 1x LFF drive SKU(Ready/Orderable) or (1) PCIe gen 3 x16 OCP mezzanine V2 slot per node</td>
</tr>
<tr>
<td></td>
<td>(2) PCIe gen 3 x16 HHHL PCIe expansion slots per node with 6x SFF drive SKU(Planning)</td>
</tr>
<tr>
<td></td>
<td>(1) PCIe gen 3 x16 OCP mezzanine V2 slot per node</td>
</tr>
<tr>
<td>Form Factor</td>
<td>(3) nodes in 2U (Open Rack) Rackmount</td>
</tr>
<tr>
<td>Rack Compatible</td>
<td>Open Rack v2</td>
</tr>
<tr>
<td>Onboard Storage</td>
<td>(1) M.2 PCIe/SATA 2280/22110</td>
</tr>
<tr>
<td>Management Port</td>
<td>(1) Share NIC from OCP V2 mezzanine card, driven by BMC through RMII/NCSI</td>
</tr>
<tr>
<td>Integrated BMC chip</td>
<td>Aspeed AST2500/AST2520</td>
</tr>
<tr>
<td>Front I/O</td>
<td>(1) USB 3.0 type A port(debug) or (1) USB 3.0 type C port or (1) VGA port (with AST2500)</td>
</tr>
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</table>

Table 1 High Level System Features
3. Block Diagram

The Figure 1 illustrates the functional block diagram of the QCT Rackgo X Tioga Pass. The dashed lines are for reserved connection, dual layout, and high-speed mid-plane option.

![Block Diagram](image)

*Figure 1 QCT Rackgo X Tioga Pass Block Diagram*

4. Mechanical Dimension

![Mechanical Dimension](image)

*93.2mm (3.67")*  
*853mm (33.58")*  
*537mm (21.14")*
5. Component Placement

The key part placement of QCT Rackgo X Tioga Pass is shown as below:

Top side:

“QCT Rackgo X OCP Tioga Pass” could be operated with

- Rackgo X OCP Debug Card with LCD
- Rackgo X OCP AVA-4 M.2 Carrier Card

7. OCP Tenets/Principles

- Efficiency
o New design to trim the dimension requirement of compute node to achieve the optimization of space use in the chassis
o Selectable riser to support 2x FH slots riser with 1x 3.5” HDD or 2x HH slots riser with 6x 2.5” HDD according to the IO bandwidth requirement
o Utilize efficiently the layout of rack, each chassis is with 2OU height, totally 16x 2OU system in one rack without remaining space

• **Scalability**
  o Comply with current Cubby chassis to extend the various platform use case

• **Openness**
  o Comply with ORv2 standard

• **Impact**
  o New design architecture of placing DIMM on bottom side of baseboard to utilize efficiently the chassis space

8. **Reference**

• Facebook 2S Server Tioga Pass Rev 1.0