OCP OAI Group Monthly Call

07102019
Agenda

- JDA Group updates
- OAM Spec v1.0 release candidate review
- OAM Reference System Design proposals update
- UBB Status Update
- UBB/Reference system Schedule
- Next Steps
JDA Group Update

• Group members
• UBB Spec lockdown meeting in Beijing
UBB Spec Lock Down Meeting in Beijing
6/26-6/27/2019
OAM Spec v1.0 Candidate Ready to Release

- Pin list
- Pin Map
- OAM specification
Add PWRRDT#[1:0] on Conn1

<table>
<thead>
<tr>
<th>PWRRDT#[1:0]</th>
<th>Input</th>
<th>Power Reduction GPIO to instruct OAM to go certain stage to reduce power</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>11 - default state L0, normal power</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 - L1, 1st level power reduction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>01 - L2, 2nd level power reduction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00 - L3, max power reduction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Details defined by specific OAM product specification.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Connector #1**

| A | B | C | D | E | F | G | H | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |   |   |   |
Change SerDes Numbering

Change SerDesR X20 to SerDes7 X16
Add 8-link HCM Topology to spec
Other Changes

- Restrict OAM Vref range to 1.5V-3.3V
- Add baseboard design recommendation information to pin list
OAM Reference Systems Design Variety

- Different topologies: FC/HCM
- 19”/21” Rack
- Coplanar system vs. Stack System or Others
- Air Cool vs. Liquid Cool
- 12V vs. 54V
- Others
Reference Systems Design Proposal 1

21” Rack, air cool, front I/O, 4*AICs

- Update dimension to height 141mm and depth 800mm
- Hinge in UBB box is under design, will do mating force simulation.
Reference Systems Design Proposal 2
19” Rack, aircool/liquid cool, front I/O, up to 12*AICs, flexible host

- Backplane connection between UBB and PSB
- Total 8RU. If using busbar, and host is in separated system, system will be 6RU
Reference Systems Design Proposal 3

19” Rack, air cool/liquid cool, front/rear I/O, 4/8 AICs, flexible host

- Under evaluation
- Total 5RU
UBB Status Update

• Connectors/Pin list
• UBB Dimension
• PCB material and stack up
• 12V/54V PI on going
Connector List

1. **ExaMax 6x8** *8pcs (PN:10131762-101LF)
2. 1st version of pin list available
3. **Guide pin** 4pcs
4. **54V 2x2 36A/conn**, *4pcs (PN:10061289-001LF)
5. **12V 3x10 150A/conn** *2pcs (PN: C-JX412-50432)
6. **ExaMax 6x8** *8pcs (PN: 10131762-101LF)
7. 1st version of pin list available
UBB Dimension

Size: L x W = 553 x 417 mm

Reserve space for Host interface retimer

Reserve space for scale out interconnect retimer X8*8pcs

Size: L x W = 585 x 417 mm (?)
## PCB Material Study & Stackup

<table>
<thead>
<tr>
<th>Material</th>
<th>EM891K (HVLP)</th>
<th>TU883SP (HVLP)</th>
<th>IT968 (HVLP)</th>
<th>IT968SE (HVLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td></td>
<td>90 ohm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width/Spacing</td>
<td></td>
<td>4.8/6.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>loss/inch @8GHz (&lt; -0.58 dB)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>loss/inch @16GHz (&lt; -0.96dB)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Halogen Free</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Halogen Free Substitution</td>
<td>EM890K</td>
<td>NA</td>
<td>IT988G</td>
<td>IT988SE</td>
</tr>
</tbody>
</table>

**Summary:**
- Board thickness target 128.4 mil, 3.26 mm 22L
- Keep Core and Prepreg (= 4.0 / 5.0 mil) design for better SI performance
UBB/Reference system Schedule

- UBB/system design on going
- System bringup beginning of Oct
- Reference Systems demo in OCP Amsterdam OCP summit
Still Under Discussion

• 54V based to support ~500w OAM TDP, how much we could support for 12V
• Scale out retimer selection
• Host interface retimer
Next Steps

• OAM test vehicle enablement
  • Provide reference systems to OAM suppliers for validation
  • Provide OAM samples to system providers for validation

• Lockdown UBB design spec