Porrima 100G/400G PAM4 for Optical Module Applications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Porrima</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Type</td>
<td>100G/400G PAM DSP</td>
</tr>
<tr>
<td>Market Segments</td>
<td>Inside Data Centers</td>
</tr>
</tbody>
</table>
| Applications | • Single-Mode Fibre Transceivers  
• Multi-Mode Fibre Transceivers  
• Active Optical Cables |
| Features | • 100G Variant: 4x25G NRZ PCS to 1x100G KP-FEC encoded PAM4  
• 400G Variant: 8x50G PAM4 to 4x100G PAM4  
• All lanes independent to support breakout applications  
• Full data & clock cross-bars on Egress and Ingress for ease of system layout  
• Host interfaces with full 4-tap Tx FIR with eye1/2 control  
• Line interfaces support 3-tap Tx FIR with eye1/2 control  
• Line Tx variants  
  • 1Vp-p differential output  
  • 1.6Vp-p single-ended, single or dual bias-T EML drive  
• Full DSP Line Receiver for maximum performance over complex optical links  
• Hardware supported KP FEC statistics monitor that can be used on Egress or Ingress |

Description

The Marvell Porrima PAM4 DSP is a next generation solution for cloud data center, high-performance computing, and AI optical transceivers. Porrima supports multiple industry standard protocols up to 100Gbs for both single mode and multi-mode applications. It is equipped with an industry leading PAM4 digital core for optimal performance across a range of applications. Porrima includes several performance monitoring features including SNR, histogram, FFE-tap view for line side interface. Both host and side interface support shallow loopback and PRBS generation/checking for diagnostic operations. Additionally, Porrima has a hardware assisted KP FEC statistics monitor that can report counts for correctable code-words uncorrectable code-words and the full FEC 'histogram' for errors from 1/code-word, up to 15/code-word.