Clock & Data Recovery Solutions

OVERVIEW
Gennum’s world-class expertise in the design of high-performance clock and data recovery (CDR) ICs offers best-in-class performance in the key areas of power consumption, receiver sensitivity, output jitter and jitter tolerance. Leveraging Gennum’s ClearEdge™ technology, our innovative, low power CDRs provide the industry’s best jitter performance which is a key advantage in designing next-generation optical transceivers, copper cable interconnect and backplane interconnect applications. Additionally, Gennum’s CDRs operate without a reference clock and use a single 3.3V supply, minimizing system and module costs.

KEY BENEFITS
• Only single 3.3V supply needed
• Lowest power CDRs in the industry
• No reference clock required
• Jitter budget reset inside module enables robust interconnect
• Highly integrated IC reduces power consumption and board space requirements
• 4mm x 4mm QFN packages
• Low jitter generation for SONET applications

8.5/10G SFP+ PRODUCTS
GN1114 - 8.5G Equalizer + CDR + VCSEL Driver
GN2014A - 10G Equalizer + CDR + VCSEL Driver
GN2024 - 10G Equalizer + CDR (10GbE only)

GN1113 - 8.5G Limiting Amplifier + CDR
GN2023 - 10G Limiting Amplifier + CDR (10GbE only)

10G XFP PRODUCTS
GN2005 - 10G Equalizer + CDR (SONET, 10GbE, 10GFC)
GN2014A - 10G Equalizer + CDR + VCSEL Driver
GN2024 - 10G Equalizer + CDR (10GbE only)

GN2003S - 10G Equalizer + CDR (SONET, 10GbE, 10GFC)
GN2013A/C - 10G Limiting Amplifier with Slice Level Adjust + CDR
GN2023 - 10G Limiting Amplifier + CDR (10GbE only)

GN204S - 10G Equalizer + CDR (SONET, 10GbE, 10GFC)
GN2014A - 10G Equalizer + CDR + VCSEL Driver
GN2024 - 10G Equalizer + CDR (10GbE only)

LEARN MORE ABOUT CDR SOLUTIONS AT WWW.GENNUM.COM
SOLUTIONS FOR SFP+ AND XFP MODULES

SFP+ is a critical emerging optical module form factor and Gennum’s CDRs offer a “plug and play” experience to speed time to market for next generation designs. Using a CDR to clean the signal within a module improves the robustness of the link and eases the high-speed performance requirements of the host ASIC. The benefits of a dedicated CDR help to deliver unprecedented 10Gbps performance with SFP+ modules.

XFP optical modules are developing strong momentum in the marketplace. Gennum’s second generation CDRs have achieved excellent performance in SONET, Ethernet and Fibre Channel applications through improved jitter generation, jitter transfer and jitter tolerance. All of this has been achieved with expanded data rate coverage to 11.3Gb/s and significantly reduced power consumption.

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>DESCRIPTION</th>
<th>TYPICAL APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN2003S</td>
<td>9.95-11.3 Gb/s CDR with Limiting Amp Input</td>
<td>SONET, Receive</td>
</tr>
<tr>
<td>GN2004S</td>
<td>9.95-11.3 Gb/s CDR with Equalizer Input</td>
<td>SONET, Transmit</td>
</tr>
<tr>
<td>GN2023</td>
<td>9.95-10.52 Gb/s CDR with Limiting Amp Input</td>
<td>Ethernet, Receive</td>
</tr>
<tr>
<td>GN2024</td>
<td>9.95-10.52 Gb/s CDR with Equalizer Input</td>
<td>Ethernet, Transmit</td>
</tr>
<tr>
<td>GN2013A</td>
<td>9.95-11.3 Gb/s CDR with Limiting Amp Input and Slice Level Adjust</td>
<td>SONET, Receive, Long Range</td>
</tr>
<tr>
<td>GN2014A</td>
<td>9.95-11.3 Gb/s CDR with Equalizer Input and VCSEL Driver</td>
<td>Ethernet, Transmit</td>
</tr>
<tr>
<td>GN1113</td>
<td>8.5 Gb/s CDR with Limiting Amp Input*</td>
<td>Fibre Channel, Receive</td>
</tr>
<tr>
<td>GN1114</td>
<td>8.5 Gb/s CDR with Equalizer Input and VCSEL** Driver</td>
<td>Fibre Channel, Transmit</td>
</tr>
</tbody>
</table>

* Pin for pin compatible with GN2023  ** Pin for pin compatible with GN2014A

SUITE OF DATA COMMUNICATION SOLUTIONS

Beyond CDRs, Gennum offers a comprehensive suite of backplane interconnect and optical transceiver ICs including laser drivers, equalizers, SerDes, and transimpedance amplifiers (TIAs) for high speed data communication and telecommunications applications.