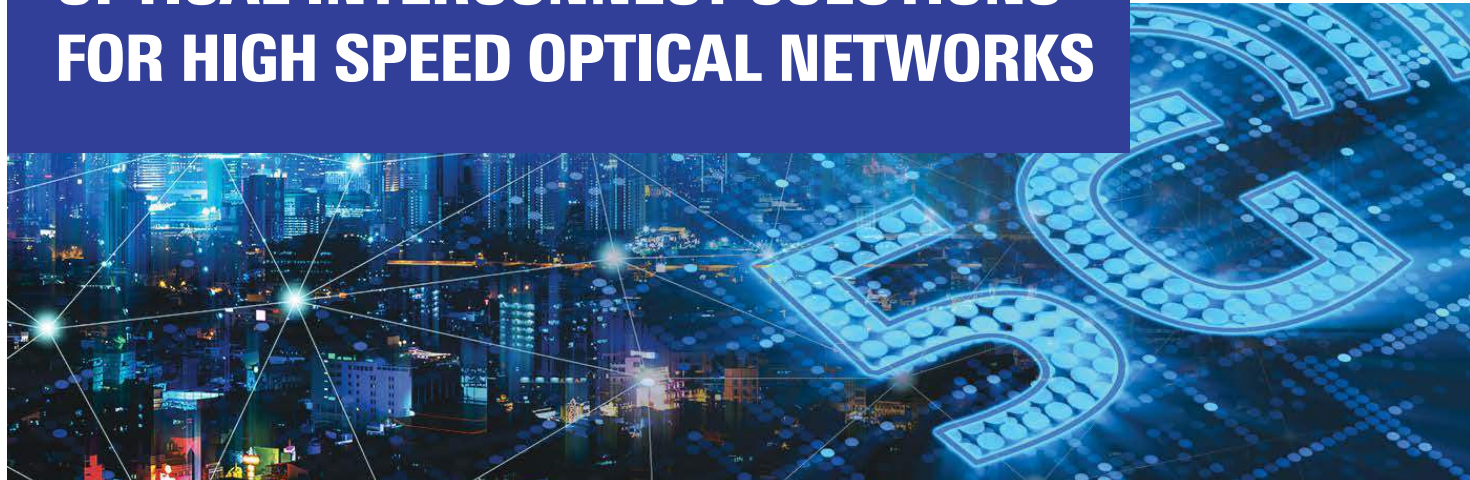# RENESAS
BIG IDEAS FOR EVERY SPACE

OPTICAL INTERCONNECT SOLUTIONS FOR HIGH SPEED OPTICAL NETWORKS

Renesas offers a broad portfolio of Laser Drivers, Transimpedance Amplifiers (TIA) and CDRs for telecom, datacom and 5G applications. Drawing on years of experience deploying SiGe-BiCMOS and CMOS semiconductor solutions, Renesas optical IC products provide high-speed, low-power solutions for a wide range of applications, including coherent transceivers for telecom and DCI, active optical cables, and pluggable modules for datacom and datacenter optical interconnects.

Datacom and 5G products

- HXC44400 – 50G/lane PAM4 CDR/Retimer for 200 Gb/s and 400 Gb/s transceivers
- HXT14450/HXR14450 – 50G/lane PAM4 integrated CDR with VCSEL driver and TIA for 200 Gb/s and 400 Gb/s transceivers and AOCs
  - Low power, low latency and CMOS design
  - Fast and auto-adaptive CTLE and DFE equalization
  - On-chip testability and memory
- HXT45411/HXR45400 – 100G/lane PAM4 EML and silicon photonics driver and TIA for 400 Gb/s and 800 Gb/s transceivers
  - High output swing single-end driver for EML and silicon photonics modulators
  - Low power and high-sensitivity TIA
  - Differential output driver (HXT45430)
- HXT44420/HXR44400– 50G/lane PAM4 DML driver and TIA for 200 Gb/s transceivers
- HXT14100/HXR14100 – 50G/lane PAM4 VCSEL driver and TIA for 50 Gb/s transceivers and AOCs
  - Low power, high bandwidth and industrial temperature support
  - Up to 28.9Gbaud for 64G fiber channel
  - Differential output packaged DML driver (HXT44121-1)

Telecom products

- GX76474 series – 64Gbaud modulator drivers for 400 Gb/s Coherent systems
  - >40 GHz bandwidth with frequency response tunability to optimize the E/O response of optical modules
  - Drivers customized for InP, lithium-niobate and silicon photonics modulators
  - Open-collector driver available for low-power operation
- GX36420 series – 64Gbaud linear TIAs for 400 Gb/s coherent systems
  - 40 GHz trans-impedance bandwidth with less than 3dB peaking variation over the 30dB gain range
  - Low input referred noise, low THD, low crosstalk, and low-power consumption

Next-generation product development targets higher baud-rate applications

For more information, visit: **renesas.com/datacom** and **renesas.com/telecom**

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