

AlphaCORE™ LR MSS IP 1-112Gbps DSP PHY

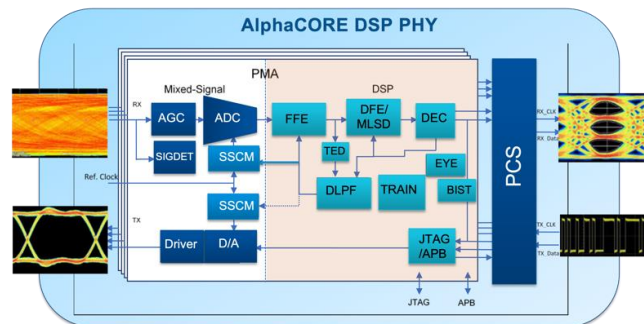
AlphaCORE™ IP, based on register configurable DSP architecture, is a high-performance, low-power and highly configurable SerDes PHY that supports all leading edge NRZ and PAM data center standards from 1Gbps to 112Gbps, such as PCI-express Gen1-6, CXL Ethernet, and OIF

Features

- **High speed A/D**
Configurable for both the A/D sampling rate and the A/D resolution
- **Sub-sampling clock multiplier**
Tracks over 5000ppm error for both scrambled and 8B/10B encoded data
- **Master controller**
Combination of firmware training with hardware accelerators provide full flexibility with minimum power state transition times. Non-destructive, in-service eye monitoring
- **IP subsystem**
Complete Ethernet IP subsystems, including PCS layers and MACs that are architected and validated for lower latency and maximum configurability

Benefits

- **Receive Equalization**
Designed for closed eye, backplane systems up to 36dB of insertion loss at Nyquist for PAM4 and greater than 40dB of loss for NRZ with NEXT. Includes blind adaptive equalizer and channel estimator
- **I/O Density**
Delivers the world's highest I/O density, greater than 25Tb/s I/O capacity for Long Reach SerDes can be packed on a die less than 250mm²s
- **Output Driver Swing**
High-performance PAM4 and NRZ output DAC delivers maximum long-reach performance with IO swings greater than 1.2V
- **Configurability**
Supports 1, 4, 8, 16 lane configurations, different IP options available for north/south vs. east/west orientations. Supports multiple rows of stacking for high density applications and metal options for SOC flexibility



About Alphawave IP Inc.:

We build industry-leading wired connectivity solutions that enable data to travel faster, more reliably, and with higher performance at lower power.

<https://www.awaveip.com/en/home/>