Viasat DSP cores increase optical channel throughput for 400G optical communications and beyond.

For over two decades, Viasat has excelled at overcoming complex channel impairments for satellite and terrestrial wireless communication systems, for both commercial and defense applications. Applying this experience to optical networks helps you achieve your best network performance.

As data rates increase to 400G and beyond, optical links suffer from impairments in the optical channel, such as chromatic dispersion (CD), polarization-mode dispersion (PMD), and self-phase modulation (SPM). Traditional optical compensation techniques are expensive and complex. Electronic compensation is a lower cost and less complex approach to restoring eye diagrams.

We offer 100G/200G/400G/1T DSP IP cores for coherent, differential, burst and continuous, high data rate networks. Additional services include engineering, consulting, and trade studies that define and create a communication system that meets your requirements.

Our ASIC DSP cores are proven in 28nm CMOS process. We are equipped with Synopsys, Cadence, and Mentor Graphics tools that support each ASIC design value chain segment, and Linux-based servers for our ASIC simulation environment.

Viasat design architects and engineers are ready to provide you with exceptional customer service for design, verification, and back-end support.

DSP IP CORES AT-A-GLANCE
DEMODULATOR MODULES
» Quadrature impairment removal
» Variable rate decimator with matched filter
» Adaptive equalizer
» Block phase estimator
» Carrier estimator

Modulator Modules
» Bit scrambler
» Symbol mapper
» Pulse shaping filter
» Variable rate interpolator
» Quadrature signal tuning

Building Blocks
» Coordinate Rotation Digital Computer (CORDIC) function
» Proportional-Integral (PI) controller
» Finite Impulse Response (FIR) filter
» Infinite Impulse Response (IIR) filter
» Numerically Controlled Oscillator (NCO)
» Fast Fourier Transform (FFT)
» Pseudo Random Bit Sequence (PRBS) generator
» Power estimator

Other Custom Products
» Forward error correction for 100G and beyond
» Modulators and demodulators (DQPSK, n-QAM, OFDM, QPSK, 8PSK)

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