Broadband Wireless Transmission SoC

Provigent announces the PVG310, a single-chip modem that uses cross-polarization interface cancellation (XPIC) technology to double wireless channel capacity. XPIC technology supports the co-channel dual-polarization (CCDP) operation, which allows the simultaneous transmission of two separate data streams on two polarizations of a single channel. By transmitting on orthogonal antenna polarizations and using advanced digital signal processing techniques to cancel interference, net channel capacity is doubled.

Optimized Technology

Advanced digital XPIC incorporates all of the PHY (physical layer) baseband functionality. This achieves a high level of integration and performance for the broadband wireless transmission industry. This single-chip modem was specifically optimized for point-to-point radio systems and incorporates state-of-the-art modulation, demodulation, and FEC (forward error correction) functions.

Advanced Features, Advanced Solution

The PVG310’s advanced features enable wireless system vendors to develop improved performance solutions with overall system cost savings. Features include: &#149 Net payload up to 311 Mb/s (2xSTM-1) and 622 Mb/s (STM-4) using XPIC &#149 Rich modulation schemes (QPSK, 16, 32, 64, 128, and 256 QAM) &#149 Maximum bandwidth of 56 MHz &#149 Powerful error correction (programmable Reed-Solomon block code, trellis, or block convolutional code and interleaver) &#149 IF or baseband sampling &#149 Adaptive decision-feedback equalizer &#149 I/Q imbalance correction &#149 Distortion compensation

Functional and Versatile

All functions are implemented digitally and eliminate the need for external VCO (variable crystal oscillators) and loop filters. Modem parameters &#151 including data rates, modulation schemes and bandwidth &#151 are all software programmable, making this device the modem core of the IDU (indoor unit) or ODU (outdoor unit) for a broad variety of SDH, PDH, and IP traffic systems.

The introduction of CCDP operation mode using XPIC technology allows vendors to expand product offerings into the ultra-high-capacity market. Operators can build networks that transmit up to 311 Mbps over 28 MHz channels and up to 622 Mb/s

over 50/56 MHz channels, achieving a spectral efficiency of 13.5 b/Hz, thereby offering an wireless alternative to the deployment of expensive fiber optic links.

Provigent, Inc.
The PVG310 broadband wireless transmission chip doubles capacity of frequency channels by introducing XPIC technology.

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