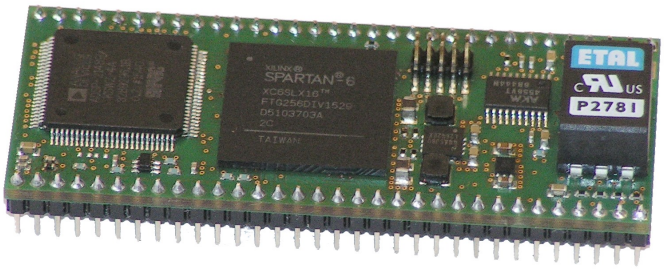
A.R.BAYER
DSP Systeme GmbH

cOSMo C-OFDM-Modem

Universal Socket Modem for Point-to-Point and Point-to-Multipoint Wire Line Voice/Image/Data Transmission



cOSMo is a new socket C-OFDM modem for embedded applications. It features exceptional reliability in problematic environments and very quick synchronisation.

cOSMo enables data rates of up to 1000 kbps across simple twisted-pair, co-ax and power cables that may be several miles long. No matter whether in a Point-to-Point (PtP) or Point-to-Multipoint (PtmP) topology, the modem particularly qualifies for use in existing infrastructure.

cOSMo is based on a proprietary modem technology designed to transparently link any local data source, e.g. a UART, an SPI- or any other type of interface to a remote device.

cOSMo is a universal modem for data transmission near the theoretical limit over channels exposed to linear distortions, impulse noise, sudden phase and amplitude shifts, frequency offsets and line drop-outs.

A companion Spartan-6 FPGA can be used for forward error correction (FEC), encryption, data compression and interfaces such as CAN, digital cameras, or general purpose I/O.

For analog signals a single 24-bit audio codec is available. Sampling rates of up to 100kHz are possible for highest audio quality.

The patented technology behind **cOSMo** is available as a licensable code or hardware for use in home automation, infrastructure, power line, telecom, imaging, speech and security applications.

Features and Technical Specifications

Product Type:	Socket Modem
Technology:	DSP (SHARC) Signal Processing
Suitable Cable:	Coax, Twisted Pair or other 2-Wire Cabling
Transmission Method:	Symmetrical or Asymmetrical, Full Duplex or Half Duplex
Duplexing Schemes:	Frequency Division Duplex (FDD) or Time Division Duplex (TDD)
Topologies:	PtP or multi-drop PtmP (multiple endpoints)
Channel bandwidth:	6.25kHz to 80kHz, software selectable
Center Frequency:	3.5kHz to 87kHz
Channel Efficiency:	up to 10bits/sec/Hz
Highlights:	• Adaptive bandwidth, data rate and waveform • Rapid Synchronization (1 sec typical) • Optimized for Noise and Interference of corrupted Lines • Adaptive detection and suppression of interference and distortions • Adaptive optimal shortening of channel impulse response • Multistage channel estimation and adaptive Maximum Likelihood Decoding • Multiple subcarriers, QAM from 4 to 16384 • 4-dimensional Trellis Coded Modulation with Trellis shaping • Optional Reed-Solomon FEC with redundancy • Fully customizable for higher bandwidths, as required by the application
Interfaces:	2-wire analog (line interface), I²C, SPI, UART, Audio Codec (single channel), up to 35 digital I/O CAN, Bluetooth, USB and Ethernet as options
Channel Monitoring	Signal Level, Distortion, BLER, SNR
Range:	Several km, depending on wire properties
Mechanical:	50-pin DIP module with 2.54mm pin-pitch
Size:	Approx. 64mm x 26mm x 12mm
Ambient Temperature:	-20°C to +50°C
Power Supply:	5VDC, approx. 1A

A.R.Bayer DSP Systeme GmbH
Vohwinkelallee 8
D-40229 Düsseldorf / Germany

Phone: +49(0)211-271-46 30
Fax: +49(0)211-210 81 76

Internet: http://dsp-sys.de
Email: gmbh@dsp-sys.de

Specification subject to change without prior notification