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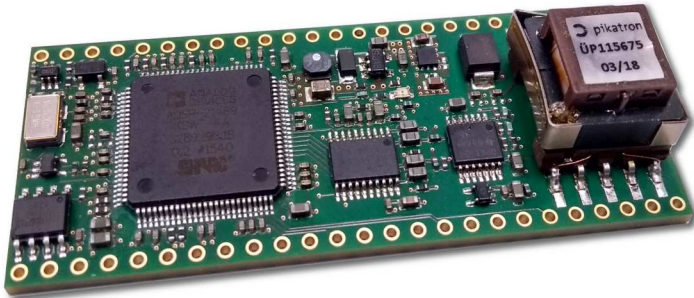
Universal Socket Modem for Point-to-Point and Point-to-Multipoint Wire Line Voice / Image / Data Transmission

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

cOSMo Lite 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 Lite 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 Lite 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.

For analog signals a single-channel 24-bit audio codec is available. Sampling rates of up to 96kHz are possible for highest audio quality.

The patented technology behind **cOSMo Lite** 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:	adjustable
Channel Efficiency:	up to 10.7bits/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 x2, UART, Audio Codec (single channel), 13 programmable I/O
Channel Monitoring:	Signal Level, Distortion, BLER, SNR
Range:	Several miles, depending on wire properties
Mechanical:	50-pin DIP / SMT module with 2.54mm pitch
Size:	Approx. 64mm x 26mm x 5mm (excluding pins)
Ambient Temperature:	-20°C to +50°C
Power Supply:	5VDC, 500mA

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

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

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

Specification subject to change without prior notification