SEMTECH
Today's Results...Tomorrow's Vision

4 x E1/T1 Fiber Mux/De-mux over One Fiber Optic Cable

DESCRIPTION

The ACS406CS comprises a chip set of two highly integrated devices, the ACS9010 and ACS4060. The ACS9010 is an analog transceiver device and the ACS4060 is a mixed signal device.

The ACS406CS supports full duplex serial data of up to 8.448Mbps over one fiber with link lengths up to 25km. The available bandwidth can be shared over 1 to 8 channels of 1 x E2/T2, 4 x E1/T1, 8 x 1.024Mbps plus separate maintenance channel(s). The ACS406CS provides five transmit/receive clock domains enabling four independent E1/T1 channels and a maintenance channel to be supported at one time.
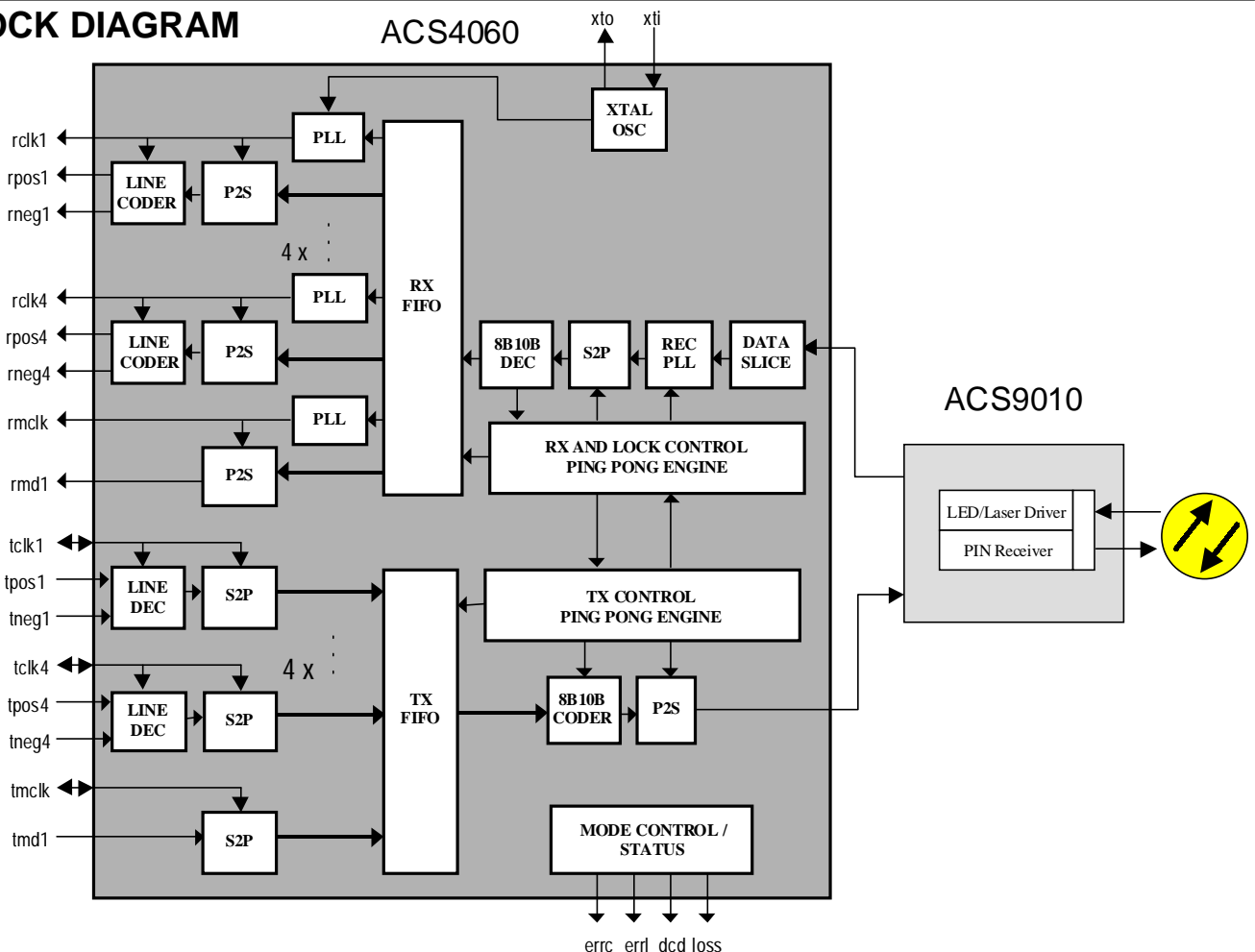
The ACS9010 is a transceiver which integrates the Laser/LED driver as well as the PIN receiver circuitry including the TIA and post amplifier.

The ACS4060 integrates the multi-channel mux/de-mux logic with de-jittering circuits for each channel, plus the clock and data recovery. Communicating modems automatically maintain synchronisation with each other even when no data is being transmitted/received. Link lengths from zero to maximum distance are catered for automatically during system synchronisation.

FEATURES

- Two chip set supporting full duplex serial data transmission up to 8.448Mbps over one fiber
- Multi-channel operation with full loopback diagnostics per channel
- Up to 8 independent synchronous data channels:
  1 x E2/T2
  4 x E1/T1
  8 x 1.024Mbps
- Additional 64kbps maintenance channel with option of 4 x 16kbps multi-channel operation and framing signal for main channels
- Standard interfaces for Line Interface Units (LIU) or Framers
- Select between NRZ and pseudo-bipolar HDB3/AMI/B8ZS input data coding types
- Support for Bi-Directional, single wavelength duplexers and LED/Laser + PIN
- Link lengths up to 25km on single mode fiber
- Typical latency of 0.75ms
- Bit Error Rate (BER) of 10^{-10}
- Low power, single 5V supply
- Operating temperature (ambient) of -40 to 85°C
- ACS9010 available in TQFP44 package, ACS4060 available in TQFP100 package.
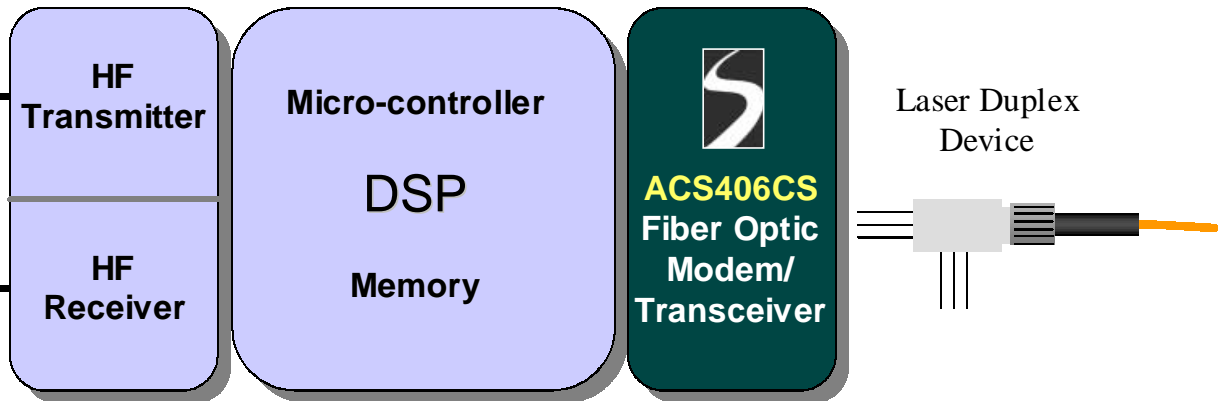
BLOCK DIAGRAM

PRODUCT BRIEF   ACS406CS
4 x E1/T1 Fiber Mux
Advanced Communications   **Revision 1.3 March 2000**

APPLICATIONS

• Add/Drop Multiplexers
• Point to point FOM
• ISDN fiber extender
• N x E1/T1 Fiber Mux/Demux - 2G+ and 3G Base Station interconnect.

ACS406CS   **ACS406CS**

Single Fiber Link

Radio Base Station

ACS406CS		ACS406CS
TPOS1/TNEG1		RPOS1/RNEG1
TPOS2/TNEG2		RPOS2/RNEG2
TPOS3/TNEG3		RPOS3/RNEG3
TPOS4/TNEG4		RPOS4/RNEG4
RPOS1/RNEG1	*4 transmit data channels*	TPOS1/TNEG1
RPOS2/RNEG2	*4 receive data channels*	TPOS2/TNEG2
RPOS3/RNEG3		TPOS3/TNEG3
RPOS4/RNEG4		TPOS4TNEG4
TCLK1/RCLK1		RCLK1/TCLK1
TCLK2/RCLK2	*4 transmit data clocks*	RCLK2/TCLK2
TCLK3/RCLK3	*4 receive data clocks*	RCLK3/TCLK3
TCLK4/RCLK4		RCLK4/TCLK4
TmD1/RmD1		RmD1/TmD1
TmD2/RmD2	*4 transmit maint. channels*	RmD2/TmD2
TmD3/RmD3	*4 receive maint. channels*	RmD3/TmD3
TmD4/RmD4		RmD4/TmD4
	1 transmit maint. clock	
TmCLK/RmCLK	*1 receive maint. clock*	RmCLK/TmCLK

LIU/Framer   LIU/Framer

HF Transmitter

Micro-controller

DSP

Memory

HF Receiver

ACS406CS Fiber Optic Modem/ Transceiver

Laser Duplex Device

Up to 4 x E1/T1 + maintenance
Single fiber link up to 25km

For additional information, contact the following:

Semtech Corporation Advanced Communications Products

E-Mail: **AdvCom@semtech.com**

Internet: **http://www.semtech.com**

USA: 652 Mitchell Road, Newbury Park, CA 91320-2289

       Tel: +1 805 498 2111, Fax: +1 805 498 3804

FAR EAST: 11F, No. 46, Lane 11, Kuang Fu North Road, Taipei, Taiwan, R.O.C.

       Tel: +886 2 2748 3380, Fax: +886 2 2748 3390

EUROPE: Delta House, Chilworth Research Centre, Southampton, Hants, SO16 7NS, UK

       Tel: +44 23 80 769008, Fax: +44 23 80 768612

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