

**CONFIDENTIAL****CY7C9537B**

OC-48/STM-16 Framer-POSIC2G™

Features

- **OC-48/STS-48/STM-16, OC-12/STS-12/STM-4, OC-3/STS3/STM-1 rates, concatenated and non-concatenated**
 - Complies with ITU-Standards G.707/Y.1322 and G.783^[1,2]
 - Complies with Bellcore GR253 rev.1, 1997^[3]
 - Channelized operation: supports 16xSTS-3c/VC4, 4xSTS-12c/VC4-4c, 2xSTS-24c/VC4-8c, and 1xSTS-48c/VC4-16c within OC-48 stream
 - Supports TUG3 mapping in SDH mode
- **Full duplex mapping of ATM cells over SONET/SDH**
 - Complies with ITU-Standards I.432.2^[4,5,6]
- **Full duplex mapping of packet over SONET/SDH: IETF RFC 1619/1662/2615 (HDLC/PPP)^[7,8,9]**
- **Generic Protocol Encapsulator/Decapsulator delineates packets/frames with length-CRC frame construct**
 - Generic Framing Procedure (GFP) per ANSI T1X1.5^[10,11,12]
 - GFP 268r1
 - Simple Data Link (SDL) - IETF RFC2823^[13]
 - Cypress Hybrid Data Transport (HDT)^[14]
- **User-programmable encapsulation**
- **User-programmable clear channel transport**
- **User-programmable SONET/SDH bypass**
- **Programmable frame tagging engine for packet preclassification enables such features as**
 - MPLS label lookup and tagging
 - PPP: LCP and NCP tagging

- PPP control packets optionally sent to host CPU interface
- MAC/layer 3 address look up and tagging
- **Programmable A1A2 processing bypass in Rx direction with frame sync input**
- **Complete section overhead (SOH), line overhead (LOH), and path overhead (POH) processing**
- **APS extraction, CPU interrupt generation, and programmable insertion of APS byte**
- **Line side APS port interface**
- **Provision for protection switching on SONET/SDH port**
- **Programmable PRBS generator and receiver**
- **Serial port to access line/section data communication channel (DCC) and voice communication channel (VCC)**
- **Full duplex UTOPIA/OIF-SPI (POS-PHY) level 3 interface^[15,16]**
- **16-bit/32-bit host CPU interface bus**
- **JTAG and boundary scan**
- **Glue-less interface with Cypress CYS25G0101DX OC-48 PHY**
- **0.18-um CMOS, 504-pin BGA package**
- **+1.8V for core, +3.3V for LVTTTL I/O, +1.5V/+3.3V for HSTL/LVPECL I/O supply, and +0.75V/2.0V reference**

Applications

- Multiservice nodes
- ATM switches and routers
- Packet routers
- Multi-service routers
- SONET/SDH add-drop mux for packet/data applications
- SONET/SDH/ATM/POS test equipment

Notes:

1. ITU-T Recommendation G.707. "Network Node Interface for the Synchronous Digital Hierarchy." 1996.
2. ITU-T Recommendation G.783. "Characteristics of Synchronous Digital Hierarchy (SDH) Equipment Functional Blocks." 2000.
3. Bellcore Publication GR-253-Core. "Synchronous Optical Network (SONET) Transport Systems: Common Generic Criteria." 1997.
4. ITU-T Recommendation I.432.3. "B-ISDN User-Network Interface—Physical Layer Specification: 1544 kbit/s and 2048 kbit/s operation." 1999.
5. American National Standards Institute. "Synchronous Optical Network (SONET)—Basic Description including Multiplex Structure, Rates and Formats." ANSI T1.105-1995.
6. American National Standards Institute. "Synchronous Optical Network (SONET)—Payload Mappings." ANSI T1.105.02-1998.
7. Simpson, W. "PPP Over SONET/SDH." RFC 1619. May 1994.
8. Simpson, W., ed. "PPP in HDLC-like Framing." RFC 1662. *Daydreamer*. July 1994.
9. Malis, A. and Simpson, W. "PPP Over SONET/SDH." RFC 2615. June 1999.
10. Hernandez-Valencia, E. Lucent Technologies. "A Generic Frame Format for Data Over SONET (DoS)." March 2000.
11. Gorshe, C. and Steven. T1X1.5/99-204, T1 105.02. Draft Text for Mapping IEEE 802.3 Ethernet MAC Frames to SONET Payload. July 1999.
12. Hernandez-Valencia, E. Lucent Technologies. T1X1.5/2000-209. "Generic Framing Procedure (GFP) Specification." October 9-13, 2000.
13. Carlson, J., P. Langner, E.J. Hernandez-Valencia, and J. Manchester. "PPP over Simple Data Link (SDL) using SONET/SDH with ATM-like Framing." rfc2823.txt, May 2000.
14. Pankaj, K. "A Hybrid Data Transport Protocol for Optical Networks." RFC draft-jha-optical-hdt-00.txt. November 2000.
15. ATM Forum. Technical Committee. "UTOPIA 3 Physical Layer Interface." AF-phy-0136.000. November 1999.
16. Can, R., R. Tuck. "System Packet Interface Level 3 (SPI-3): OC48 System Interface for Physical and Link Layer Devices." OIF-SPI3-01.0. June 2000.