

**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.