



OC-48/STM-16 Framer with VC-POSIC2GVC™

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 16xOC-3 and 4xOC-12 within OC-48 stream
- Supports TUG3 mapping in SDH mode
- Virtual concatenation enables secure and dedicated bandwidth provisioning^[4]
- Up to 16 channels
- From 50-Mbps to 1.2-Gbps bandwidth per channel
- STS-1 and STS-3c granularity
- Full duplex mapping of ATM cells over SONET/SDH
- Complies with ITU-Standards I.432.2^[5,6,7]
- Full duplex mapping of packet-over-SONET/SDH: IETF RFC 1619/1662/2615 (HDLC/PPP)^[8,9,10]
- Generic Protocol Encapsulator/Decapsulator delineates packets/frames with length-CRC frame construct
- Generic Framing Procedure (GFP) per ANSI T1X1.5^[11,12,13]
- GFP 268r1
- Simple Data Link (SDL)—IETF RFC2823^[14]
- Cypress Hybrid Data Transport (HDT)^[15]
- 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^[16,17]
- 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

- Multi-service nodes
- ATM switches and routers
- Packet routers and multiservice 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. Jones, N., Lucent Microelectronics, and C. Murton, Nortel Networks. "Extending PPP over SONET/DSH with Virtual Concatenation, High-Order and Low-Order payloads." Internet Draft. June 2000.
5. ITU-T Recommendation I.432.3. "B-ISDN User-Network Interface—Physical Layer Specification: 1544 kbit/s and 2048 kbit/s Operation." 1999.
6. American National Standards Institute. "Synchronous Optical Network (SONET)—Basic Description Including Multiplex Structure, Rates and Formats." ANSI T1.105-1995.
7. American National Standards Institute. "Synchronous Optical Network (SONET)—Payload Mappings." ANSI T1.105.02—1998.
8. Simpson, W. "PPP over SONET/SDH." RFC 1619. May 1994.
9. Simpson, W., ed. "PPP in HDLC-like Framing." RFC 1662. *Daydreamer*. July 1994.
10. Malis, A. and W. Simpson. "PPP over SONET/SDH." RFC 2615. June 1999.
11. Hernandez-Valencia, E., Lucent Technologies. "A Generic Frame Format for Data over SONET (DoS)." March 2000.
12. 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.
13. Hernandez-Valencia, E., Lucent Technologies. T1X1.5/2000-209. "Generic Framing Procedure (GFP) Specification." October 9–13, 2000.
14. Carlson, J., P. Langner, E.J. Hernandez-Valencia, and J. Manchester. "PPP over Simple Data Link (SDL) Using SONET/SDH with ATM-like Framing." RFC 2823.txt. May 2000.
15. Pankaj, K. "A Hybrid Data Transport Protocol for Optical Networks." RFC Draft-jha-optical-hdt-00.txt. November 2000.
16. ATM Forum, Technical Committee. UTOPIA 3 Physical Layer Interface." Af-phy-0136.000. November 1999.
17. Can, R. and R. Tuck. "System Packet Interface Level 3 (SPI-3): OC-48 System Interface for Physical and Link-Layer Devices." OIF-SPI3-01.0. June 2000.