Microsemi.

TimeCreator® 1000

DTI Server

Key Features

- High precision, CableLabs DTI compliant
- High reliability, carrier grade design
- Flexible architecture in a 1RU Chassis
- Root or slave DTI server capable
- 4, 8 or 12 DTI client connections, field upgrade software options
- Scales to 121 ports in root and slave configuration
- SNMP and CLI manageable via dedicated fast Ethernet port
- Automatic client health monitoring and configuration
- NTP server option for BSS/OSS
- GPS and NTP for expanded services
- Fully redundant clock and power cards
- Hitless switching, hot swappable when configured for redundancy
- AC or DC power options
- Software upgradeable for future standards

Key Benefits

- Precise timing for all MSO services
- Enable transition to IP-based networks
- High network availability with carrier grade design
- Scale capacity when you need it

Applications

- DOCSIS 3.0 based high speed data service
- DOCSIS 3.0 based video over IP service
- Business Services over DOCSIS

The Microsemi® TimeCreator®1000 is a DOCSIS Timing Interface (DTI) Server for a cable operator's headend or hub network — designed to deliver the high reliability and the precise time and frequency synchronization needed for advanced cable networks. With a modular architecture and software options to increase capacity, the TimeCreator 1000 enables operators to deploy with flexibility to balance economics, scalability, functionality and resiliency. TimeCreator 1000 is a CableLabs compliant DTI server available with optional GPS traceability, redundant clock cards, redundant power supplies, and an NTP server option. TimeCreator 1000 is a fundamental part of a cable operator's headend or hub network deploying M-CMTS, DOCSIS 3.0 or Business Services over DOCSIS.

The momentum for DOCSIS 3.0 continues with IP-based video services as the main driver. Cable operators have made great strides to upgrade their offerings and converge their services onto a unified network architecture. The drivers behind this movement are clear: lower QAM prices, higher bandwidth, flexible spectrum management and new services. Today, broadband cable operators are in a fierce market battle to innovate their competitive service platform for future success. They are rapidly escalating current services to satisfy hungry consumer demand for

high-speed, high-bandwidth networks. In addition, they are looking to build secure, fast and cost-effective, state-of-the-art network infrastructures to run these new applications.

TimeCreator 1000's integrated DOCSIS Timing Interface Server capabilities ensure that the M-CMTS core, Edge QAM and upstream are synchronized to nanosecond levels to support the existing DOCSIS requirements for frequency and timestamps that existed in the traditional CMTS. With TimeCreator 1000 in an M-CMTS architecture, a cable modem receives its synchronization from the Edge QAM so transmissions by the cable modem to its upstream receiver are properly synchronized. Additionally, the M-CMTS core is synchronized to the Edge QAM to schedule, correct and insert MPEG timestamps for video.

TimeCreator 1000 manages the synchronization quality of the network not only at the server side, but at the client output as well. TimeCreator 1000 continuously monitors each individual client's performance as well as automatically calibrating the client and detecting any timing loops at startup.

Various configurations of TimeCreator 1000 are available. For carrier-class systems supporting voice and other critical

TimeCreator® 1000

applications, high reliability can be achieved by configuring the TimeCreator 1000 with redundant power supplies and clock cards for hitless switching. TimeCreator 1000 supports GPS for applications where either Stratum 1 traceability is needed for interconnecting sites, interfacing with other carriers, Business Services, location management or Time of Day services. TimeCreator 1000 also supports an optional NTP server to increase the reliability and accuracy of NTP used throughout the network including PacketCable and DOCSIS modem requirements.
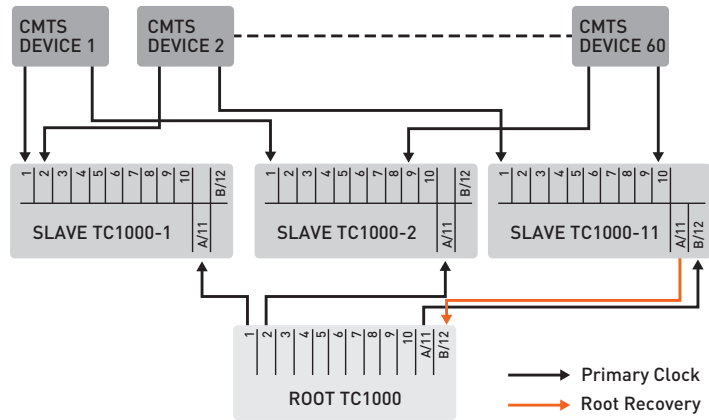
Configuration for a large scale deployment with one root DTI server and multiple slave DTI servers

Specifications

PHYSICAL ARCHITECTURE
- 1RU shelf with plug-in modules
- 3 module types: Input/Output/Clock (IOC), Information Management Card (IMC), Power Supply
- Supports redundant IOC and Power Supply modules

INPUTS
- GPS (two-way timing antenna) enables Stratum 1 traceability and global timestamps
- 2 dual mode DTI client ports to support slave server mode and redundancy
- BITS ports (reserved for future use)

CLOCK
- 24 hour holdover when using GPS

OUTPUTS
- 4, 8 or 12 DTI client ports (2, 6, 10 output ports and 2 dual mode input/output)
- Up to 132 ports unprotected or 60 ports protected in root & slave configuration
- 10.24 MHz master frequency
- 10 KHz frame clock
- NTP server fast Ethernet port, RJ-45

MANAGEMENT FEATURES
- 1 fast Ethernet management port, RJ-45
- SNMP v2c & v3
- Local and remote management
- Consol port for local management
- Telnet & SSH support
- Firmware upgradeable via SFTP
- LED status & alarm indicators
- Event logging
- Radius and TACACS+
- Per port performance monitoring
- Per port delay and path calibration

PHYSICAL SPECIFICATIONS
- 1.75" H x 19" W x 20" D (4.445 cm H x 48.26 cm W x 50.8 cm D)
- Weight: 11 lbs (4.6 Kg)

POWER REQUIREMENTS
- AC Power module 100-240V AC, 50/60Hz
- DC Power module -48V DC
- Optional power supply redundancy

OPERATING ENVIRONMENT
- Temperature: 0°C to 40°C, 32°F to 104°F
- Humidity: 10% to 90% RH non-condensing

STORAGE ENVIRONMENT
- Temperature: -25°C to 70°C, -13°F to 158°F
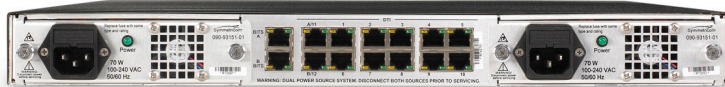- Humidity: 5% to 90% RH non-condensing

SAFETY
- UL/CSA 60950-1
- EN60950-1, IEC60950-1
- CE Mark
- NRTL

EMC
- FCC Part 15, ICES-003 Class B
- EN300-386 v1.3.3
- CE Mark

ROHS
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TimeCreator 1000 back view

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