Symmetricom

TimeCesium 4400

Cesium Primary Reference Source

KEY FEATURES

- Latest Cesium III Technology
- Autonomous Primary Reference Source
- No Antenna Installation Required
- Maintenance-Free (12-year Warranty on Cesium Tube)
- Plug &Play in < 45 Minutes
- DS1, E1, 2048 kHz G.703/13, 10 MHz, 5 MHz, 1.544 MHz and Composite Clock Outputs

INTRODUCTION

The TimeCesium™ 4400 is an autonomous Primary Reference Source based on the latest Cesium III technology from Symmetricom. It is designed for telecom network operators to generate superior and highly reliable G.811 synchronization signals for advanced network services.

PLUG & PLAY IN < 45 MINUTES

The 4400's architecture uses the latest digital technology to provide superior performance and maintenance-free operation. The 4400 is easy to install and is fully operational in less than 45 minutes. Its plug & play architecture provides highly reliable operation over the lifetime of the system.

NETWORK APPLICATIONS

The 4400 is used to synchronize core network offices, which are equipped with TSG/SSU recovery clocks – also known as BITS concept clocks.

The deployment of TimeCesium 4400 sources across the network provides the following benefits:

- Flattens the sync distribution hierarchy
- Lowers the overall OAM&P (Operation, Administration, Maintenance & Provisioning) costs
- Reduces the number of network recovery clocks (TSG/SSU) operating in tandem
- Minimizes pointer adjustments caused by "frequency errors" in the SONET/SDH payload
- Prevents up-stream network clock errors to propagate across the network
- Enhances overall network performance as TSG/SSU's sync rearrangements due to clock failures are minimized through sync status messaging (SSM)
- Provides total control of your network synchronization source

TimeCesium 4400

STANDARDS COMPLIANCE

The TimeCesium 4400 meets industry standards, including ITU-T, ETSI, ANSI, Telcordia, NEBS and CE/AS.

SYMMETRICOM GLOBAL SERVICES

For services on your Symmetricom products including extended warranty, spares suppport, technical support, training, etc., please contact Symmetricom Global Services (SGS) at 1-888-367-7966 (USA toll-free) or 1-408-428-7907 (worldwide).

TimeCesium 4400 Specifications

PERFORMANCE

- Accuracy (over environment): ≤ ± 1 x 10^{-12}

STABILITY

- Averaging time:

1 s	1.2 x 10^{-11}
10 s	8.5 x 10^{-12}
100 s	2.7 x 10^{-12}
1,000 s	8.5 x 10^{-13}
10,000 s	2.7 x 10^{-13}

- Warm-up time (typical): 30 minutes

OUTPUTS

- Telecom signals: Two framed or unframed
- Framed (AMI)

1544 kbps:	ANSI T1.102 DS1 selectable framing: SF(D4) or ESF, with Stratum 1 Sync Status Message (SSM)
Format:	Framed all ones, B8ZS
2048 kbps	ITU-T Rec.G.703/9 (E1) with G.704 framing and with Stratum 1 Sync Status Message (SSM)
Format:	Framed all ones, HDB3

- Unframed:

1544 kHz	G.703/13
2048 kHz	G.703/13
Composite Clock	G.703/4

- Connectors: DB9 for balanced signal
  CC, 133Ω
  T1, 100Ω
  E1, 120Ω
  BNC for unbalanced signals, 75Ω
- Sinusoidal signals: 1 at 5 MHz, 10 MHz, 0.5 V rms/50Ω, BNC

GENERAL

- Power requirements: Dual redundant dc inputs
- Operating voltage: -48 V DC nominal (-36 to -62 V DC)
- Power

operating:	40 W
warm-up:	55 W

- Interface connections

External DC inputs, A and B:	#6 screw terminal block
RS232:	9 pin male D-connector
Chassis ground, A and B:	#6 screw terminal block
Alarm – Critical and Minor:	#6 screw terminal block

- Fuses: External DC Input
  2 A, 250 V, slow acting
- Dimensions

Width:	46.2 cm
Depth:	25.7 cm
Height:	26.67 cm
Weight:	16.6 kg
Mounting:	Mounting ears provided for 19 ″or 23 ″racks

ENVIRONMENT

- Temperature

Operating:	0°C to 50°C
Non-operating:	-40°C to +75°C

- Humidity: 95%, non-condensing

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