Symmetricom

Remote Track and Hold Card For Remote DCD Systems

Preliminary Datasheet

KEY FEATURES

- Stratum 2 Holdover Extends Maintenance Time to 12 Hours
- Card Fits in One CI Input Slot
- Supports Redundancy
- Downloadable Firmware
- Card can be Managed
- Visibility of Timing References
- Stores Over 250 Alarm Events
- Remote Shelf Inventory
- Inventory Information

APPLICATIONS

- DCD Remote Shelves Support Critical Services like SS7, Cross-connects, ATM and SONET
- Provides Holdover Capability to Remote Shelves

INTRODUCTION

Critical network services like SS7, Cross-connects, ATM and SONET require precise phase alignment and high stability during holdover periods in a solid infrastructure to maximize uptime. Symmetricom's Remote Track and Hold Card (RTHC) allows this by incorporating state-of-the-art clock technology combined with Symmetricom's vast synchronization experience.

LEGACY EQUIPMENT SOLUTION

Symmetricom is aware of the importance of the embedded DCD synchronization equipment. To maximize your investment on DCD products, the RTHC card was designed to fit in any DCD-ST2, DCD-400 or DCD-500 series shelf. The RTHC card slides into an input card slot (CI slot). Two RTHC cards are recommended for redundancy purposes.

RTHC CARD DESCRIPTION

Each RTHC card supports two CC inputs. The 4 KHz output bus feeds the output cards on the DCD shelf. There is no requirement for additional clock cards in the shelf, since the RTHC card provides input and high stability holdover capability.

FIG.1 Remote Track and Hold Card

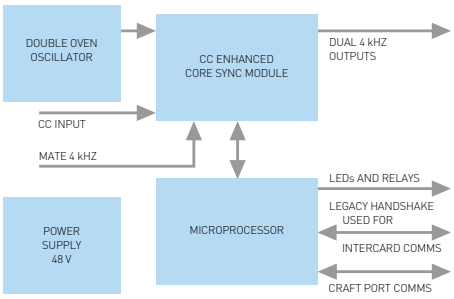

FIG.1 RTHC Block Diagram

RTHC HIGHLIGHTS

The card is divided into three main sections:

CORE SYNC MODULE (CSM) The CSM is the heart of the RTHC card. The module maintains phase alignment with the reference signal and improves the holdover performance of the internal double oven oscillator using the SmartClock™ algorithm. This algorithm "learns" the effect of aging and temperature on the oscillator and stores the information while the engine is locked to the reference signal. When the reference signal is lost or disqualified, the SmartClock algorithm uses the stored data to compensate for frequency changes. This technology provides phase movements of less than 2.5 µs in 12 hours from double oven oscillators.

The CSM also performs monitoring and statistics of signals. MTIE, MDEV and TDEV, together with Wander and Fractional Frequency values can be monitored and stored by the Micro-Controller Unit on board.

DOUBLE OVEN OSCILLATOR (DOO) The DOO provides a highly stable reference signal to the CSM. Combined with the SmartClock technology, the stability of the DOO is dramatically improved.

MICRO-CONTROLLER UNIT (MCU) This unit provides communication interface with a PC (via BT Mon Craft Software). In addition, it provides alarm generation and log of over 250 events.

Feature Specifications

ELECTRICAL

- Input signals

  Composite clock:

  GR-378-CORE

  Line Code RTZ

  133 ohm balanced W-W
- Operating voltage: -42 Vdc to -60 Vdc
- Power consumption: 17 watts warmup, 6 watts operational

MANAGEMENT AND COMMUNICATION

- Communication port: 1 serial RS-232 DCE
- Connector: 1 DB9F on faceplate
- Baud rate: auto to 38.4 kb/s with BT Mon craft software

BT MON CRAFT SCREENS

- Alarm log: 256 event alarm log
- Download: Firmware and FPGA
- Security: 15 users with 4 security levels
- Inventory: Serial number, firmware version
- Input statistics: LOS, LOA, frequency, wander
- Alarm monitor: RTHC input and card alarms
- Provision inputs: Enable CCK2
- Sync monitor: Displays MTIE, TDEV, average frequency, and MDEV
- Holdover information: Daily and monthly holdover information

BT MON COMPUTER REQUIREMENTS

A user-supplied PC computer is required to operate BT Mon Craft software. Minimum requirements are as follows:

- Operating system: Windows 95, 98, Windows NT 4.0, 2000, ME, and XP
- Minimum CPU:

  x486 or equivalent, at 33 MHz

  RAM: 64 MB

  Serial communications port

  3-1/2 inch floppy disk drive

  Recommended: spreadsheet application that can accept comma-delimited (.csv) data files, to process the logged files

GENERAL

- Operating temperature: 0 to 50° C
- Operating humidity: 5% to 95% non-condensing
- Physical: Each RTHC occupies one Clock Input slot of DCD-400, DCD-ST2, DCD-519, or DCD-523 shelves

Symmetricom

SYMMETRICOM, INC.
2300 Orchard Parkway
San Jose, California
95131-1017
tel : 408.433.0910
fax : 408.428.7896
info@symmetricom.com
www.symmetricom.com

SYMMETRICOM EMEA
150 Wharfedale Road
Winnersh Triangle, Nr. Wokingham
Berkshire
RG41 5RB, United Kingdom
tel : 44 (0) 1189 699 799
fax : 44 (0) 1189 277 520
info@symmetricom.com

SYMMETRICOM LATIN AMERICA
1560 Sawgrass Corporate Parkway
4th Floor
Sunrise, Florida
33323
tel : 954.331.4592
fax : 954.331.4601
info@symmetricom.com

SYMMETRICOM ASIA PACIFIC
Unit 1005, Jubilee Centre
42–46 Gloucester Road
Wan Chai
Hong Kong
tel : 852.2529.7180
fax : 852.2529.7190
info@symmetricom.com

DS/RTHC/D/0802/PDF