Symmetricom

# TSC 3000 Series

## Hot-swap Chassis

### KEY BENEFITS

- Hot Swapping of All Modules, Chassis CPU, and Power Supplies
- Auto-switching for 5/10 MHz, 1PPS and IRIG-B (Modulated and DC)
- Low Noise Amplifiers for Signal Distribution
- Status and Alarm Collection for All Input and Output Signals
- Alarm Reporting over Ethernet Interface
- Dual Redundant Fans and Power Supplies for High Reliability

Symmetricom's TSC 3000 series chassis uses the Univeral Serial Bus (USB) to enable the removal and insertion of modules without removing power or affecting other operating modules. The TSC 3000 Series Hot-swap chassis provides the perfect vehicle for fault switching and signal distribution to any number of users. Large systems can be constructed at once or can evolve with the addition of distribution modules over time. A controlling computer packaged in the 3000 chassis collects status and alarm information from each module and provides summary information for remote collection over an Ethernet connection. Hot-swapping is extended to the power supplies (and controlling computer) so that the chassis can be serviced without affecting users.

The Hot-swap Chassis can be configured to custom requirements.

Please contact Symmetricom with any specific requirements.

3000 Series Hot-swap Chassis

# TSC 3000 Series Specifications

## SWITCHING MODULES

The TSC 3000 Series hot-swap chassis offers a full set of plug-in modules for switching between redundant inputs and for large-scale signal distribution. Switches for 5 MHz, 10 MHz, 1PPS and IRIG-B switch between two inputs. The switches can be operated manually or in auto-switch mode where the selection of input is changed based on a loss-of-signal detection.

### COMMON CHARACTERISTICS

- Width: 1 Slot
- Computer: Control via internal USB bus
- Local control: Locking toggle
- Input/output Impedance: 50Ω

### TSC 3091 RF FAULT SENSE SWITCH

- Connectors
  - Input: 2 SMA female
  - Output: 1 SMA female
- Input level: RF: 1 V RMS nominal (13 dBm)
- Input frequency: 5 or 10 MHz
- Output level: 1 V RMS nominal (13 dBm ±1dB) into 50Ω

### TSC 3092 IRIG FAULT SENSE SWITCH

- Connectors
  - Input: 2 SMA female
  - Output: 4 SMA female
- Input level: <6 V P-P
- Output level: Unity gain

### TSC 3093 TLL FAULT SENSE SWITCH

- Connectors
  - Input: 2 SMA female
  - Output: 4 SMA female
- Input level
  - 1PPS: 2.4-5 V Peak
  - DC IRIG: 2.4-5 V Peak
- Output level: TTL: 3 V Peak into 50Ω

### TSC 3094 TLL PPS to ECL PPS SWITCH

- Connectors
  - Input: 2 SMA female
  - Output: 4 Differential LEMO (NIMCAMAC)
- Input level: 1PPS: 2.4-5 V Peak
- Output level: 4 each Differential IOOK ECL Outputs
- Common mode voltage: -1.3 ± .2 V
- Differential voltage: 1.5 Vpp min. 28 Vpp max.
- Skew: <200 ps
- Jitter: <100 ps

## OUTPUT MODULES

The TSC 3000's signal amplifiers provide high quality copies of an input signal for time, frequency and timecode signals. Each amplifier can be inserted into the chassis and put into service without affecting other modules in the chassis. Similarly, modules can be removed from the chassis without affecting users connected to other modules. Symmetricom TSC amplifiers are manufactured to the highest specifications: low additive phase noise, high output isolation, low jitter and fast rise time.

### TSC 3032D / 3032E PULSE DISTRIBUTION AMPLIFIERS

- Width: 1 Slot
- Connectors
  - Input: 1 SMA female
  - Output: 8 SMA female
- Input level: TTL
- Input repetition rate: 1PPS – 1 MPPS (3V)<br>1PPS – 1 kPPS (5V)
- Output level: 3 or 5 V ± .5 V
- Duty cycle limit: 0 – 50%
- Skew: <1 ns
- Jitter: <100 ps
- Input/output impedance: 50Ω

### TSC 3036C RF DISTRIBUTION AMPLIFIER

- Width: 1 Slot
- Connectors
  - Input: 1 SMA female
  - Output: 6 SMA female
- Outputs: 1 – 20 MHz
- Inputs: 1 – 20 MHz
- Input level: 0 – 1 V RMS (13 dBm)
- Gain: 1.0 ± 10%
- SSB Additive phase noise
  - 1Hz -135 dBc
  - 10Hz -145 dBc
  - 100Hz -155 dBc
  - 1kHz -163 dBc
  - 10kHz+ -163 dBc
- Output isolation: >100 dB
- Harmonic distortion: <-40 dBc
- Input/output impedance: 50Ω

### TSC 3059B LOW FREQUENCY DISTRIBUTION AMPLIFIER

- Width: 1 Slot
- Connectors
  - Input: 1 SMA female
  - Output: 8 SMA female
- Input/output level: <6 V P-P
- Code format: Any modulated
- Modulation frequency: 1 – 100 kHz
- Modulation ratio: Any
- Gain: 1.0
- Input/output impedance: 50Ω

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