



# NAT-PM-AC1000

## 1000W MicroTCA AC/DC Power Module



The NAT-PM-AC1000 is a 1000W full-size, double-width MicroTCA ( $\mu$ TCA™) AC/DC power module that provides payload and management power for up to 12 advanced mezzanine cards (AMCs), two cooling units and two MicroTCA carrier hub (MCH) modules.

The NAT-PM-AC1000 provides power conversion from one wide-range 110-240 VAC input source to 16 independent 12 V channels for payload power and 3.3 V for management power. The power module provides backup power for up to three other power modules (shared management power or SMP) in the system. It also includes an enhanced MMC (EMMC) supporting an intelligent platform management bus (IPMB) to enable communication with the carrier manager or MCH. Current sensors on each of the 16 power channels allow you to determine the actual current draw for each channel.

### Key features

- Optical load indicator
- Power factor correction
- Protection circuitry
- AC/DC conversion
- Power management
- Support for 16 power channels
- Support for N+1 redundancy
- Current sensors for each power channel

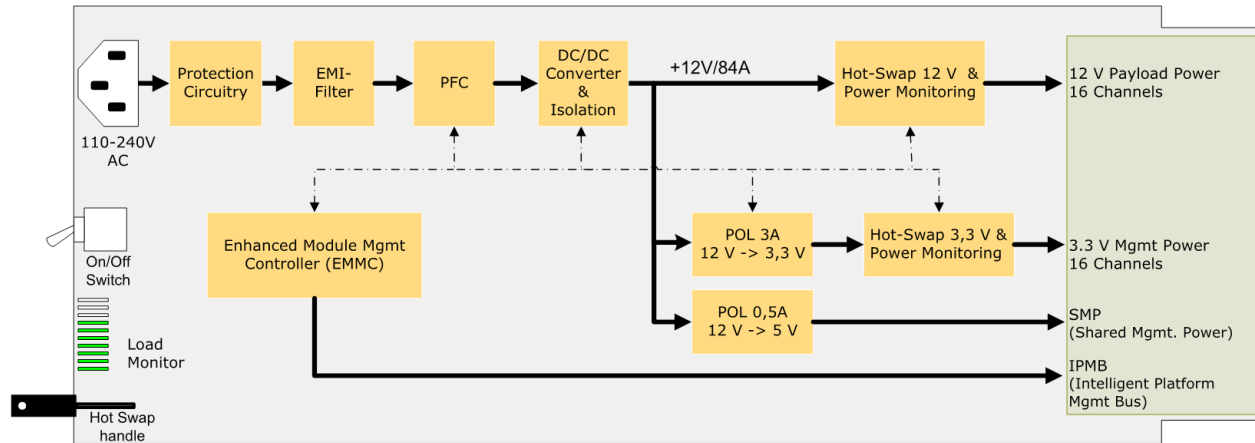
### Applications

- Commercial and military communications
- Industrial machine control and other clustered computing applications
- Automated test equipment
- Video-on-demand
- Security
- Medical



# Technical Data

## NAT-PM-AC1000



## Overview

The NAT-PM-AC1000 is a 1000W full-size, double-width MicroTCA ( $\mu$ TCA™) AC/DC power module that provides payload and management power for up to 12 advanced mezzanine cards (AMCs), two cooling units and two MicroTCA carrier hub (MCH) modules. It is a hot swappable, fully redundant and high efficiency power module ideally suited for all air-cooled systems.

The NAT-PM-AC1000 provides power conversion from one wide-range 110-240 VAC input source to 16 independent 12 V channels for payload power and 3.3 V for management power.

The power module provides backup power for up to three other power modules (shared management power or SMP) in the system.

### EMMC

The NAT-PM-AC1000 power module includes an enhanced MMC (EMMC) supporting an intelligent platform management bus (IPMB) to enable communication with the carrier manager or MCH.

### Redundancy and Load Sharing

The NAT-PM-AC1000 supports redundancy as well as load sharing modes in accordance with the MicroTCA specifications.

In case of an input power supply failure the onboard EMMC can be provided by SMP power from other PMs, so that the MCH is able to analyze root cause failure.

### LED Indicators

Besides the standard indicator LEDs for hot-swap, failure and heartbeat the NAT-PMC-AC1000 has an optical load indicator that continuously displays the level of power utilization of the whole system.

It also contains current sensors for each of the 16 power channels, allowing you to determine the actual current draw for each channel.

### Other Features

The two power inputs offer features such as input protection, power factor correction (PFC), EMI filtering, and holdup circuit.

### N.A.T. MicroTCA Portfolio

The NAT-PM-1000 complements the extensive N.A.T. portfolio of MicroTCA solutions, which includes chassis, management modules, power modules, processors AMCs, IO modules and specialist accessories.

## Specifications

- MTCA V1.0 compliant AC/DC power module
- Full Size (6HP), double width form factor
- 16 channels of payload and management power
- Current sensor for every payload power channel
- Total power distribution: 1000W
- 110-240 VAC input
- 90% conversion efficiency (min)
- Hot swappable
- Fully redundant operation
- Output over voltage protection
- Input under voltage shutdown
- Over temperature protection
- Output short circuit protection
- Build according to IEC/EN/UL60950 safety standard

### 3.3 V Power Supply Sub-system

- Max channel current: 180mA
- Fast trip current limit: 300mA
- Max ripple at 150mA: 5 mV

### 12 V Power Supply Sub-system

- Max power / channel: 80W / 6.6A at 12V
- Fast trip current limit: 8.3A
- Max inrush current: 19.4 A
- Accuracy 12V: 100 mV
- Max ripple at 6.6A: 10 mV

### Environmental

- Normal operating conditions: -5 to 55°C
- Storage temperature: -40 to 85°C
- Extended operating conditions: -40 to 85°C (on demand)
- Min input voltage: 110 V
- Max input voltage: 240 V
- Isolation Voltage: 1500V
- RoHS compliant

### Front Panel

- Optical load indicator
- Status indicator LED
- Power input
- On/off switch
- Hot swap handle