



# NAT-PM-AC600



## Overview

The NAT-PM-AC600 is the market's most efficient single-width, full-size MicroTCA™ power module for MicroTCA applications. The NAT-PM-AC600 is ideally suited to run latest high-availability MicroTCA™ systems with fast CPUs and their large memory arrays where power feeding is crucial and requires high-performance electrical power modules. It provides payload and management power for up to 12 Advanced Mezzanine Cards (AMC™), 2 Cooling Units (CUs) and 2 MicroTCA™ Carrier Hub (MCH) modules.

The NAT-PM-AC600 offers power conversion from an 110-265VAC (auto-range) input to 16 independent 12V channels for payload power and 3.3V for management power. The NAT-PM-AC600 supplies backup power for other power modules (Shared Management Power, SMP) inside the system.

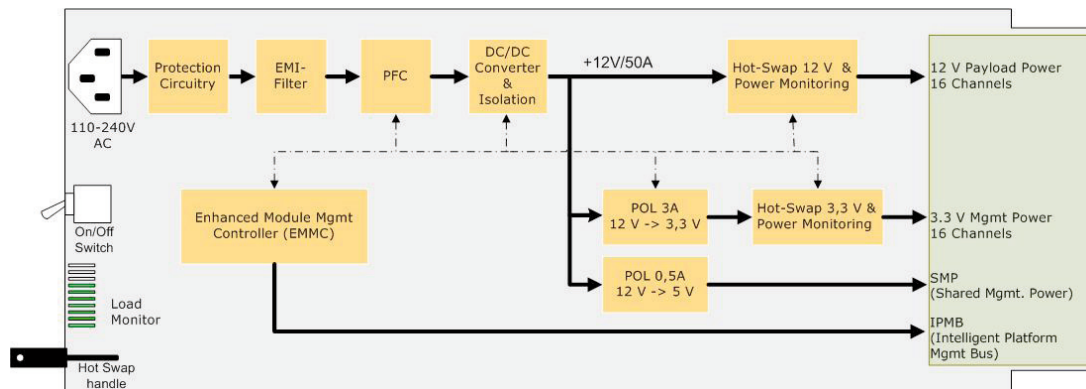
## Key features

- 110-265VAC input (auto-range)
- protection circuit
- power factor correction
- on/off switch
- hold-up circuit
- high-efficiency AC/DC power conversion
- optical load indicator
- power management for 16 power channels
- backup power for other PMs (SMP)
- support for N+1 and 2+2 redundancy and load sharing



# Technical Data

## NAT-PM-AC600



## Overview

### Overview and Purpose

The NAT-PM-AC600 is a high-density and high-efficiency power module (PM) for MicroTCA™ applications. Supplying 600W it is the market's most efficient PM in its single-width full-size form-factor to run today's complex communication systems made of latest processor generations and an increased number of Advanced Mezzanine Cards (AMC™). The NAT-PM-AC600 provides electrical support for the expected workload of 12 AMCs, 2 Cooling Units (CUs) and 2 MicroTCA™ Carrier Hubs (MCH).

### Key features

- 110-265VAC input (auto-range), self-locking power cord
- protection circuit
- power factor correction
- on/off switch
- hold-up circuit
- high-efficiency AC/DC power conversion
- optical load indicator
- power management for 16 power channels
- backup power for other PMs (SMP)
- support for N+1 and 2+2 redundancy and load sharing
- full HPM support

### EMMC

The NAT-PM-AC600 includes a robust Enhanced Module Management Controller (EMMC) that interfaces the power control functionality via the Intelligent Platform Management Bus (IPMB) to the MCH.

### Redundancy and Load Sharing

The NAT-PM-AC600 supports redundancy as well as load sharing modes in accordance with the MicroTCA™ specifications. In case of an input power supply failure the power for the onboard EMMC can be provided by SMP power from other PMs, so that the MCH is able to analyse root cause failure.

### LED indicators

Besides the standard indicator LEDs for hot-swap, failure and heart-beat, at its front panel the NAT-PM-AC600 provides a unique light bar indicator, showing the PM's total power load on a 0-100% scale in steps of 10% in real-time.

### Applications

The NAT-PM-AC600 is a hot-swappable, fully redundant and highly efficient AC/DC power module.

The module's single-width design offers perfect thermal performance and therefore is ideally suited for all air-cooled MicroTCA™ solutions. The NAT-PM-AC600 is fully compatible with any standard compliant FRU being insertable into a MicroTCA™ chassis. The NAT-PM-AC600 could easily serve applications like

- commercial and military (tele-) communications
- automated test equipment
- medical
- video
- security
- industrial machine control
- clustered computing architectures

For N.A.T., the NAT-PM-AC600 is a further and consequent milestone in developing a broad and harmonized MicroTCA™ eco system. The PM serves as a central power converting and conditioning control block for entire sub-racks. N.A.T. offers sophisticated and standard compliant MicroTCA™ systems, either as turn-key solutions or building blocks. This offer is complemented by a large variety of own MCHs, telecom line interface and network processor cards, PrAMCs, I/O cards, chassis, CUs and PMs.

## Technical Data

### Special Features

- 110-265VAC (auto-range) input with self-locking power cord
- 600W output power
- support of N+1 and 2+2 redundancy
- 16 power channels
  - 12V @ 6.6A max.
  - 3.3V @ 150 mA max.
- support of
  - 12 AMCs, 2 CUs, 2 MCHs
  - individual control of management and payload power
  - individual current sensors
- 92% conversion efficiency (TBC)
- full HPM support for field upgrades of firmware

### Size

- single-width, full-size (6HP)

### Intelligent Security System

- output over-voltage and over-temperature protection
- input under-voltage shutdown

- output short circuit protection
- IEC/EN/UL60950-1 safety standard compliant
- programmable current limiting threshold per output channel

### 3.3V output power subsystem

- max. channel current: 150mA
- fast trip current limit: 300mA
- accuracy 3.3V: 5%

### 12V output power subsystem

- max. channel current: 6.6A (80W)
- fast trip current limit: 8.3A
- max. inrush current: 19.4A
- accuracy 12V: 10%

### Front panel elements

- IEC AC power connector for self-locking cord
- on/off switch
- LED load indicator
- hot-swap and fault LED
- hot-swap handle

### Environmental Conditions

- standard operating temperature: -5°C to 55°C
- extended operating temperature: -40°C to 85°C (on request only!)
- storing temperature: -40°C to 85°C
- min. input voltage: 110VAC
- max. input voltage: 265VAC
- isolation voltage: 3.7kV
- RoHS compliant

### Standard compliance

- PICMG MicroTCA.0 and AMC.0
- IPMI v1.5 and v2.0
- HPM.0
- IEC/EN/UL60950-1 class A
- RoHS
- MicroTCA.1 (FP0S, FP1D)