



NAT-PM-DC840/420

840W/420W MicroTCA DC/DC Power Module



The **NAT-PM-DC840** is one of the most efficient single-width, full-size MicroTCA™ power modules, with a maximum output power of 840 watts. A 420W assembly option using a single power brick is also available, the **NAT-PM-DC420**. Ideally suited for the latest high-availability MicroTCA systems with fast CPUs and large memory arrays, the NAT-PM-DC840/420 excels where high-performance electrical power modules are needed. It provides payload and management power for up to 12 Advanced Mezzanine Cards (AdvancedMCs or AMCs), 2 cooling units (CUs) and 2 MicroTCA carrier hub (MCH) modules.

The NAT-PM-DC840/420 offers power conversion from two -48VDC input sources to 16 independent 12 V channels for payload power and 3.3 V for management power. It supplies backup power for up to three other power modules within the system using Shared Management Power (SMP).

Key features

- Input power protection, isolation, inrush control and OR-ing
- EMI input filtering
- Holdup circuit
- High efficiency
- Optical load indicator
- Power management for 16 power channels
- Backup power for up to three other PMs (SMP)
- Support for N+1, 2+2 redundancy and load sharing

Applications

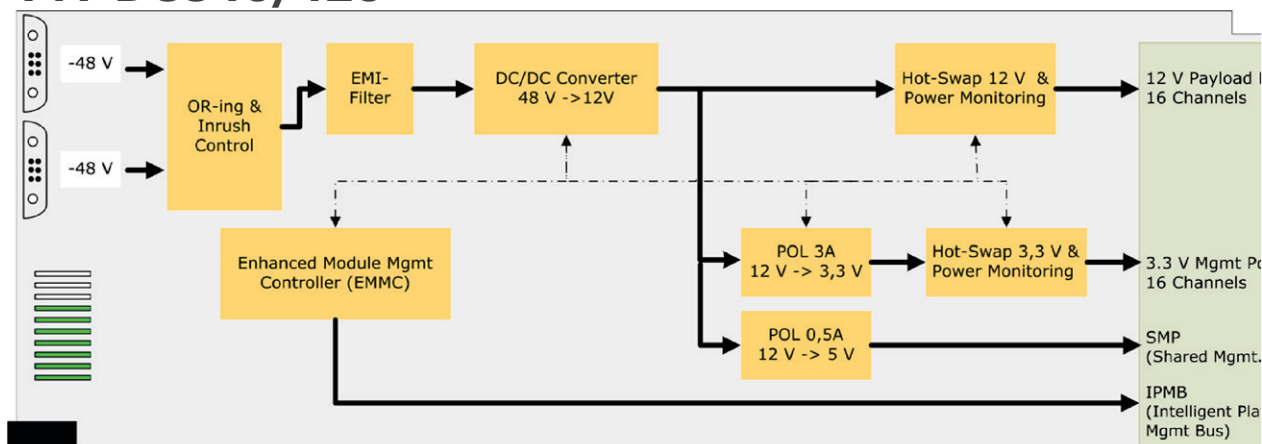
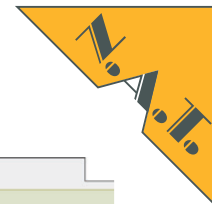
- Commercial and military communications
- Industrial machine control and other clustered computing applications
- Automated test equipment
- Video-on-demand
- Security
- Medical



powerBridge
Computer

Technical Data

NAT-PM-DC840/420



Overview

The NAT-PM-DC840 is a high density, high efficiency power module (PM) for MicroTCA applications. Supplying 840 W it is one of the market's most efficient power modules, designed to run today's complex communication systems that use latest processor generations with large memory capacity and an increased number of Advanced Mezzanine Cards (AMC).

A 420W assembly option using a single power brick is also available, the NAT-PM-DC420.

The NAT-PM-DC840/420 provides electrical support for the maximum expected workload of 12 Advanced Mezzanine Cards (AdvancedmCs or AMCs), 2 cooling units (CUs) and 2 MicroTCA carrier hub (MCH) modules.

EMMC

The PM includes a robust Enhanced Module Management Controller (EMMC) that interfaces the power control functionality via an Intelligent Platform Management Bus (IPMB) to the MicroTCA Carrier Hub (MCH).

Redundancy and Load Sharing

The NAT-PM-DC-840/420 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 the root cause of any failure.

LED Indicators

Besides the standard indicator LEDs for hot-swap, failure and heartbeat, the NAT-PMC-DC840/420 has a unique light bar indicator, showing the total power load of the module on a scale from 0 to 100% in real time.

Applications

The NAT-PM-DC840/420 is a hot swappable, fully redundant and highly efficient PM. The module's single-width design offers perfect thermal performance and is therefore ideally suited for all air cooled MicroTCA solutions. The PM's software has been developed and debugged using the MCH from N.A.T. as a reference tool. It is fully compatible with any cards or modules insertable into a MicroTCA chassis.

For N.A.T., the NAT-PM-DC840/420 is a milestone in developing a broad and harmonized MicroTCA portfolio. The PM serves as a centralized power condition, conversion and control block for entire sub-racks. N.A.T. offers sophisticated and standards-compliant MicroTCA systems, consisting of chassis equipped with MCHs, line interface cards, processor AMCs, I/O cards, CUs and PMs.

Specifications

- 840/420W output power respectively
- supports N+1 and 2+2 redundancy
- 16 channels of
 - 12 V @ 6.6 A max.
 - 3.3 V @ 150 mA max.
- Support for
 - 12 AMCs, 2 CUs, 2 MCHs
 - with individual control management and payload power
- Dual -48V input
- 95.5% conversion efficiency (min)
- Supports field upgrades through HPI protocol

Size

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

Intelligent Security System

- Output over-voltage and overtemperature protection
- Input under-voltage shutdown
- Output short circuit protection
- IEC/EN/UL60950-1 safety standard compliant
- Programmable current limiting threshold per output channel

3.3 V Power Supply Subsystem

- Max. channel current: 150mA
- Fast trip current limit: 300mA
- Accuracy 3.3V: 5%

12 V Power Supply Subsystem

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

Environmental Conditions

- standard operating conditions: -5 to 65°C
- storage temperature: -40 to 85°C
- extended operating conditions: -40 to 85°C (on demand)
- min. input voltage: -40V
- max input voltage: -60V
- isolation voltage: 1500V
- RoHS compliant

Front Panel

- optical load indicator
- power input A and B
- hot swap indicator and handle

Standard Compliance

- PICMG MicroTCA.0 R1.0
- PICMG AMC.0 R2.0