

NAT-PM-DC780



The **NAT-PM-DC780** is the market's most efficient single-width, full-size MicroTCA™ power module for MicroTCA applications.

The **NAT-PM-DC780** is ideally suited to run latest high availability MicroTCA systems with fast CPUs and large memory arrays where power feeding is crucial and requiring high-performance electrical power modules. It provides payload and management power for up to 12 Advanced Mezzanine Cards (AMCs), 2 Cooling Units (CUs) and 2 MicroTCA carrier Hub (MCH) modules.

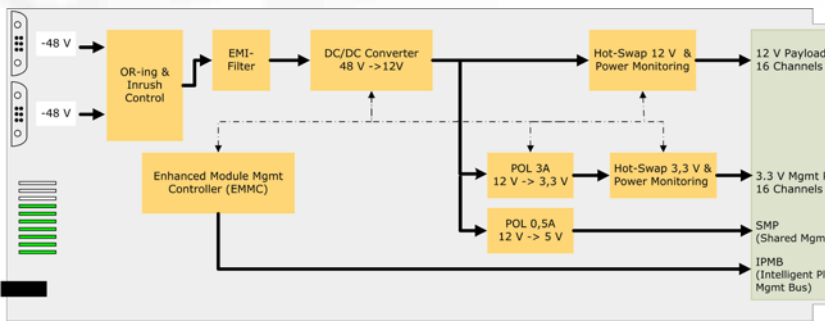
The **NAT-PM-DC780** offers power conversion from two -48VDC input sources to 16 independent 12 V channels for payload power and 3.3 V for management power.

The **NAT-PM-DC780** supplies backup power for other power modules (Shared Management Power, SMP) within the system.

Key features of the NAT-PM-DC780:

- input power protection
- input isolation
- inrush control
- input OR-ing
- EMI input filtering
- holdup circuit
- high efficiency power conversion
- optical load indicator
- power management for 16 power channels
- backup power for other PMs (SMP)
- support for N+1, 2+2 redundancy and load sharing

NAT-PM-DC780



Overview and Purpose

The **NAT-PM-DC780** is a high-density, high-efficiency power module (PM) for MicroTCA applications. Supplying 780W it is the market's most efficient PM to run today's complex communication systems that use latest processor generations of large memory capacity and an increased number of Advanced Mezzanine Cards (AMC). The NAT-PM-DC780 provides electrical support for the maximum expected workload of 12 Advanced Mezzanine Cards (AMCs), 2 Cooling Units (CUs) and 2 MicroTCA Carrier Hub (MCH) modules.

Key features

- input power protection
- input isolation
- inrush control
- input OR-ing
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- power management for 16 power channels
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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-780** 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-DC780** 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-DC780** 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 NAT as a reference tool. It is fully compatible with any cards or modules insertable into a MicroTCA chassis. Application areas are

- commercial-, military-, and telecommunications
- automation test equipment
- medical
- video demand
- security
- industrial machine control and other clustered computing applications

For N.A.T., the **NAT-PM-DC780** is a further and consequent milestone in developing a broad and harmonized MicroTCA ECO system. The PM serves as a centralized power condition, conversion and control block for entire sub-racks. N.A.T. offers sophisticated and standard conform MicroTCA systems consisting of chassis equipped with MCHs, line interface cards, Processor AMCs, I/O cards, CUs and PMs:



Technical Data

Special Features

- 780W output power
- support of N+1 and 2+2 redundancy
- 16 channels of
 - 12 V @ 6.6 A max.
 - 3.3 V @ 150 mA max.
- support of
 - 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 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

3.3 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
- IPMI v1.5 and v2.0

