



# Telum™ NPA-58x4

## Intelligent High-Performance 4-Port Gigabit Ethernet IP Packet Processor AdvancedMC™

### Features

#### Interface Support

- Supports intelligent high-performance Cavium OCTEON™ Plus CN58xx
- Up to 2 Gbyte of high-speed DDR2 packet memory
- 64 Mbyte RLDRAM optional
- Four front panel access ports of Gigabit Ethernet (GbE); copper or fiber SFP ports
- Four ports of GbE to AdvancedMC (AMC) connector Ports 8-11 (AMC.2 Type 4)
- Optional mapping of AMC Port 10 to Port 0 & Port 11 to Port 1
- Two ports of GbE to AMC Ports 0 & 1

#### AdvancedMC Compliance (AMC.2 Type E2)

- AMC.0 R2.0 compliant, single-width, full-size or mid-size module
- AMC.0 Management Module Controller (MMC)
- Module hot swap
- IPMI v1.5

#### Compliance/Form Factor

- Designed for NEBS compliance

#### Software Support Available

- Popular Debian Linux®
- Module Management Controller interface
- Embedded boot loader and diagnostics (POST)

#### Applications

- Session Border Controller (SBC)
- Secure Access Gateway
- Network Address Translation (NAT)
- Traffic Management
- Firewall

#### Product Reliability

- Telco-grade reliability calculated via Telcordia SR 332 Issue 2
- Technical support for OEM customers and resellers

The Telum™ NPA-58x4 is an intelligent high-performance IP Packet Processor AdvancedMC based on the Cavium OCTEON Plus multi-core packet processor. Ideal for applications demanding wire-speed communications such as 3G/4G Wireless and IPTV, this AdvancedMC is designed to enable rapid application development using open, modular, highly available systems based on MicroTCA and AdvancedTCA modular platform architectures.

The Telum NPA-58x4 incorporates an 8- or 12-core Cavium OCTEON Plus multi-core CN58xx-SCP (Secure Communications Processor) @ 600 MHz with 2 Mbyte of shared cache memory, delivering up to 4 Gbit/s line-speed packet processing for Layers 2-7. To avoid potential bottlenecks inherent to technologies requiring bridging, the data path to the Fat Pipes Region is fully optimized by implementing four lanes of Gigabit Ethernet (GbE) to AMC Ports 8-11. Two lanes of GbE to AMC Ports 0 and 1 are provided in the Common Options Region for the control plane. Performance for certain applications can be enhanced by, optionally, by mapping AMC Port 10 to Port 0 and AMC Port 11 to Port 1.

To optimize application performance, the OCTEON Plus multi-core CN58xx supports dual-issue, five-stage pipeline and optimized latencies as well as auto instruction pre-fetching and advanced data pre-fetching features to minimize memory delays. Up to 2 Gbyte of low-power/low-latency high-speed DDR2 memory is available on this AdvancedMC.

The Telum NPA-58x4 is a single-width module available in full-size or mid-size form factor. Other flexible configuration options include:

- 4 front panel GbE ports supporting IEEE1000BaseT or 1000BaseSX via Small Form Factor Pluggable (SFP) transceivers, or
- 4 ports of GbE to the AdvancedMC Extended Options Region for Rear Transition Module use

#### Intelligent Platform Management Interface (IPMI) & Hot Swap Compliance

An AMC.0 Module Management Controller (MMC) subsystem is included with the Telum NPA-58x4. This MMC is IPMI v1.5 compliant and initializes board level parameters, monitors board voltage and temperature conditions, maintains system status, and manages hot swap operation for high availability applications. A microcontroller is used as the IPMI intelligence and connects to the AdvancedMC management bus. This module is hot swap capable and is field replaceable in accordance with AMC.0.

#### Software

The Telum NPA-58x4 software implementation is a comprehensive development package designed to improve time-to-revenue. This software development package is optimized to simplify application integration for multi-core processor development environments.

At its lowest level, the Telum NPA-58x4 software includes Universal Boot loader (U-Boot) and a comprehensive Power On Self Test (POST) embedded in the firmware. U-Boot loads user application code from an external TFTP server or on-board Flash memory.

A Linux Support Package (LSP) and sample application code, designed to exercise the Telum NPA-58x4, is provided to aid in application development. The LSP includes a Linux Operating System, user application diagnostics, and a well-defined Application Program Interface (API) to ease application development. Other operating systems are available upon request.

To further improve customer time to market, optional software modules such as an IPv4/IPv6 stack, IPSec, QoS management, multicast forwarding, IP filtering, VLAN, L2 tunneling and application programming frameworks will be available from GE Fanuc and/or its partners.



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## Specifications

### Processors

- OCTEON Plus CN5850-SCP 12-core, 600 MHz (Telum NPA-5854)
- OCTEON Plus CN5840-SCP 8-core, 600 MHz (Telum NPA-5844)

### Memory

- Up to 2 Gbyte of DDR2 SDRAM packet memory
- Up to 128 Mbyte flash memory

### AdvancedMC Host Interface

- AMC.2 Type 4 compliant
- AMC.2 Type E2 compliant
- Optional mapping of AMC Port 10 to Port 0 & Port 11 to Port 1

### Front Panel Line Interface

- 4x1 Gigabit Ethernet MAC/PHY via SFP connectors

### PICMG Compliance/Dimensions

- AMC.0 R2.0 compliant single, full-size or mid-size module
- Dimensions: 180.6 x 73.5cm
- AMC.0 compliant MMC
- Weight: 0.728 lbs. (0.33 Kg)

### Power Requirements

- +12.0 VDC Payload power
- +3.3 VDC Management power
- Less than 40 watts (configuration dependent)

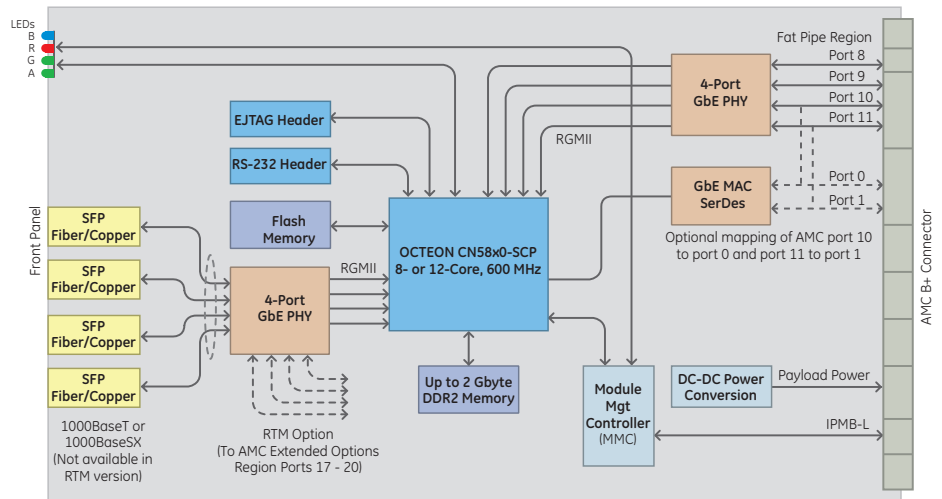
### Environmental

- Temperature
  - Operating: 0° to +55 °C
  - Storage: -40° to +85 °C
- Relative Humidity
  - Operating: 5% to 95%, non-condensing
  - Storage: 5% to 95%, non-condensing

### Regulatory Compliance:

- CE Mark
- Emissions
  - FCC 47CFR Part 15 Class A (USA)
  - EN55022: 1998/A1:2000/A2:2003 Class A ITE (EU)
  - VCCI Class A ITE (Canada)
  - AS/NZ CISPR 22:2002
  - AS/NZ CISPR 22:2002 Class A (Aus. New Zealand)
  - ICES-003 Issue 3 Class A (Canada)
  - VCCI Class A ITE
- Immunity
  - EN55024:1998/A1:2001/A2:2003 (EU)
- Safety
  - UL60950-1 (USA)
  - CSA 22.1 no. 60950-1-03 (Canada)
  - EN 60950-1 (EU)
- RoHS 2002/95/EC compliant
- Designed for NEBS compliance

## Block Diagram



## Ordering Information

- 88050-101** Telum NPA-5854S-1T mid-size AdvancedMC with 12-core CN5850-SCP @ 600 MHz; 1 Gbyte DDR2; 4x1000BaseT SFPs
- 88050-102** Telum NPA-5854S-1SX mid-size AdvancedMC with 12-core CN5850-SCP @ 600 MHz; 1 Gbyte DDR2; 4x1000BaseSX SFPs
- 88050-104** Telum NPA-5854S-1T full-size AdvancedMC with 12-core CN5850-SCP @ 600 MHz; 1 Gbyte DDR2; 4x1000BaseT SFPs
- 88050-105** Telum NPA-5854S-1SX full-size AdvancedMC with 12-core CN5850-SCP @ 600 MHz; 1 Gbyte DDR2; 4x1000BaseSX SFPs
- 88050-130** Telum NPA-5844S-2 Mid-size AdvancedMC with CN5840-SCP @ 600 MHz; 2 Gbyte DDR2; no SFPs
- 88050-131** Telum NPA-5844S-2T Mid-size AdvancedMC with CN5840-SCP @ 600 MHz; 2 Gbyte DDR2; 4x1000BaseT SFPs
- 88050-132** Telum NPA-5844S-2SX Mid-size AdvancedMC with CN5840-SCP @ 600 MHz; 2 Gbyte DDR2; 4x1000BaseSX SFPs
- 88050-134** Telum NPA-5844S-2 Full-size AdvancedMC with CN5840-SCP @ 600 MHz; 2Gbyte DDR2; no SFPs
- 88050-135** Telum NPA-5844S-2T Full-size AdvancedMC with CN5840-SCP @ 600 MHz; 2 Gbyte DDR2; 4x1000BaseT SFPs
- 88050-136** Telum NPA-5844S-2SX Full-size AdvancedMC with CN5840-SCP @ 600 MHz; 2 Gbyte DDR2; 4x1000BaseSX SFPs
- 88020-366** Serial Adapter Cable Kit
- 800406** Telum NPA-58x4 Software and Manual

\* Please contact GE Fanuc and ask for a Defense Applications Expert for specific defense related configurations.

## About GE Fanuc Intelligent Platforms

GE Fanuc Intelligent Platforms is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Intelligent Platforms has the breadth, experience and 24/7 support to deliver what you need. For more information, visit [www.gefanuc.com](http://www.gefanuc.com).

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## Additional Resources

For more information, please visit the GE Fanuc Intelligent Platforms web site at:

[www.gefanuc.com](http://www.gefanuc.com)

