

# Penguin Edge<sup>™</sup> ATCA-F140

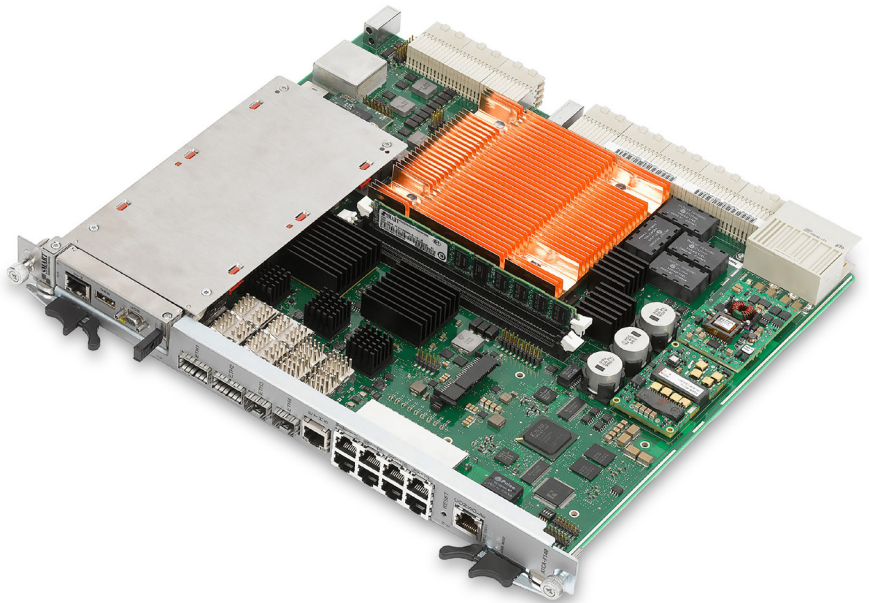
40G AdvancedTCA<sup>®</sup> Switch Blade

- ▶ PICMG 3.0 compliant base interface switch
- ▶ PICMG 3.1 compliant fabric interface supporting 1G, 10G, and 40G
- ▶ Single AMC site
- ▶ Optional SATA HDD or SSD
- ▶ Integrated software package
- ▶ Designed for NEBS/ETSI compliance

The Penguin Edge<sup>™</sup> ATCA-F140 from Penguin Solutions<sup>™</sup> is a high performance, high bandwidth 40G switch blade providing the networking switching infrastructure for ATCA chassis, including the Penguin Edge AXP1440. A powerful on-board service processor executes all L2 and L3 switch functions using the Penguin Edge SRstackware<sup>®</sup> protocol suite.

## Benefits

- ▶ Ethernet connections across the backplane eliminate messy network cabling
- ▶ Front and rear ingress and egress ports provide high bandwidth connections in and out of the system
- ▶ Dual Star network topology support ensures redundancy and high availability



**AdvancedTCA<sup>®</sup>**

DESIGNED & ASSEMBLED IN  
**USA**

**PENGUIN**<sup>™</sup>  
EDGE

# Hardware

## Service Processor

- ▶ NXP® QorIQ® P2020, dual-core processor, 1.0GHz

## Memory

- ▶ Up to 4GB ECC-protected SDRAM, via (2) DDR3 memory DIMMs – Factory default – 2GB
- ▶ 64MB boot flash (NOR), dual-bank architecture
- ▶ 2GB application flash
- ▶ 16MB CPU reset-persistent memory

## Base and Fabric Interfaces

- ▶ PICMG 3.0 base interface switching
  - Gigabit Ethernet (1G)
- ▶ PICMG 3.1 fabric interface switching
  - 1G, 10G, 4 x 10G (KR), and 40G

## AMC Site

- ▶ Single AMC slot
- ▶ Mid-size AMC (AMC.0, AMC.1, AMC.2 and AMC.3 compliant)

## Storage Bay

- ▶ Single HDD or solid state drive (SSD) bay
- ▶ Direct mount installation
- ▶ Standard SATA interface
  - Default configuration – NXP P2020 service processor via SATA bridge
  - Optional configuration – connection to AMC, port 2

## Front Panel Interfaces

- ▶ Service processor
  - 1G Ethernet, RJ-45
  - RS-232 serial, RJ-45
- ▶ Base interface
  - 2x 10G Ethernet, SFP+
- ▶ Fabric interface
  - 2x 40G Ethernet, QSFP+

## Rear Transition Module (RTM)

RTM-ATCA-F140

- ▶ Base interface
  - 2x 10G Ethernet, SFP+
  - 4x 1G Ethernet, SFP+
- ▶ Fabric interface
  - 4x 10G Ethernet, SFP+
  - 1x 40G Ethernet, QSFP+

## Blade Dimensions

- ▶ 8U form factor, 280 mm x 322.5 mm, single slot

## Relevant Standards

- ▶ PICMG 3.0 (form factor, IPMI, base interface, hot swap, RTM)
- ▶ PICMG 3.1

## Operating Environment

- ▶ Operating temperature range:
  - 5°C to +55°C @ 90% non-condensing humidity
- ▶ Storage temperature range:
  - 40°C to +70°C @ 95% relative humidity

## SRstackware Software

- ▶ L2 switch management software based on Linux providing a rich selection of features and protocols
  - STP/RSTP/MSTP
  - VLAN, VLAN stacking (Q-in-Q)
  - LACP
  - Flow Control
  - Class of Service
  - GARP/GMRP/GVRP
  - SNMPv2, SNMPv3
  - ACL
- ▶ L3 switch management (optional ATCA-F140 add-on product) – IGMP v1/v2/v3, IGMP snooping/proxy – RIPv2, RIPng
  - OSPFv2
  - VRRP

## Regulatory Compliance

Item	Description
Designed to comply with NEBS	Telcordia GR-63-CORE, NEBS Physical Protection, Level 3
	Telcordia GR-1089-CORE, Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment. Level 3, Equipment Type 2
Designed to comply with ETSI	ETSI Storage, ETS 300 019-2-1, Class 1.2 equipment, Weather Protected, not Temperature Controlled Storage Locations
	ETSI Transportation, ETS 300 019-1-2, Class 2.3 equipment, Public Transportation
	ETSI Operation, ETS 300 019-1-3, Class 3.1(E) equipment, Partly Temperature Controlled Locations
	ETSI EN 300-132-2 Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)
	ETS-300-753, Equipment Engineering (EE); Acoustic noise emitted by telecommunications equipment
EMC	ETSI EN 300 386 Electromagnetic compatibility and Radio spectrum Matters (ERM); telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements, Telecommunication equipment room (attended)
	FCC 47 CFR Part 15 Subpart B (US), Class A
	ECISPR 22, Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
	AS/NZS CISPR 22 (Australia/New Zealand), Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
	VCCI Class A (Japan), Voluntary Control Council for Interference by Information Technology Equipment
	Industry Canada ICES-003 Class A
Safety	Compliance to UL/CSA 60950-1, EN 60950-1 and IEC 60950-1 CB Scheme. Marked with U.S. NRTL, Canadian Safety and CE Mark.
RoHS/WEEE compliance	Directives 2011/65/EU / 2015/863 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the restriction of the use of certain hazardous substances in electrical and electronic equipment. (RoHS)
	Directives 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste electrical and electronic equipment (WEEE)
CE Conformity	Directive 2004/108/EC, Directive 2006/95/EC

Ordering Information	
Part Number	Description
<b>Switch Blade Products</b>	
ATCA-F140	ATCA system controller & switch blade with 40G fabric
ATCA-F140-L3	Bundle of ATCA-F140 and SL-L3F140-01-001-STD
<b>Optional Switch Blade Products</b>	
RTM-ATCA-F140	RTM for the ATCA-F140 with SFPP & SFP sockets
SFP-MM-SX-LC	1G single form factor (SFP) module - 850 NM, SX, LC connector
SFP-CO-RJ-45	1G copper single form factor (SFP+) module - RJ-45 connector
SFPP-MM-SR-LC	10G single form factor plus (SFP+) module - 850 NM, SR, LC connector
SFPP-SM-LR-LC	10G single form factor plus (SFPP) module - 1310 NM, LR, LC connector
SFPP-CO-RJ-45-3M	10G copper single form factor plus (SFP+) modules with molded cable (3M)
CABLE-OPT-QSFPP-5M	40G QSFP+ optical cable for ATCA-F140 (5M)
CBL-B-OPT-QSFPP-5M	4G QSFP+ optical cable break-out for ATCA-F140 (5M)
SSD-960G-SATA-1	960GB MLC 2.5 inch SSD with mounting kit for ATCA-F140
RJ-45-DSUB-ATCA	Cable RJ-45 to DSUB-9 female for ATCA-F140
SL-L3F140-01-001-STD	L3 protocol support

## Contact Us

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### About Penguin Solutions

Penguin Solutions accelerates customers' digital transformation with the power of emerging technologies in HPC, AI, and IoT with solutions and services that span the continuum of edge, core, and cloud. The company designs highly advanced infrastructure, machines and networked systems that enable the world's most innovative enterprises and government institutions to build the autonomous future, drive discovery and amplify human potential. The Penguin Edge portfolio covers system on modules, single board computers and application-ready platforms that extend insight, intelligence, and analytical capabilities closer to where the data is generated - optimizing a range of use cases across industries and rugged environments.



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