Penguin Edge™ AXP1440

Bladed Server Platform

- Architected for high availability applications
- PICMG 3.7 Release 1.0 compliant thermal performance
- Up to 350W per blade power distribution
- Redundant shelf management and alarms
- 12 payload & 2 switching slots with rear transition module capability for each slot
- PICMG 3.0 ATCA mechanical formfactor and power/cooling design
- PICMG 3.1 ATCA high performance switch fabric capable of 1, 10, and 40Gbps operation

The Penguin Edge™ AXP1440 is a rugged high-availability ATCA chassis with a multi-vendor ecosystem of blades and software suited to defense, security and networking applications. The chassis is available configured with redundant 40G switch blades.

Benefits

- Bladed architecture for scalability, minimized cabling and ease of maintenance
- Ecosystem of off-the-shelf or custom blades allows the platform to be easily configured for a range of applications & upgraded as new technologies become available

Advanced TCA®

DESIGNED & ASSEMBLED IN USA

PENGUIN™ EDGE

Content Ecosystem

▸ Intel® Xeon® based server blades with storage options
▸ Third party processing and storage blades
▸ 40G switching blades with system control functionality

Enclosure

▸ 14 blade slots each with rear transition module (RTM) slots
  – Two switch/system manager slots
  – 12 8U payload slots for application blades
▸ 40/10/1G-capable backplane delivering up to 80G fabric bandwidth to each slot
▸ Dual shelf managers and alarm modules
▸ Front Alarm Display Panel (ADP)
  – Two COM ports (one for each shelf manager)
  – Telco alarm indicators (PWR, Minor, Major, Critical)
  – Alarm reset
  – Telco Alarm interface (dry relay contact, DB-15)
▸ Front-to-rear cooling
  – Redundant fan trays – one bottom fan tray, one top fan tray
▸ PICMG 3.7 Release 1.0 compliant thermal performance
▸ Cable Management System
▸ Enclosure Dimensions & Weight
  – 573 mm high x 449 mm wide (not including mounting ears) x 544 mm deep
  – Weight: 39.7 kg / 87.5 Lbs.
▸ Operating Environment
  – Operating temperature range (DC):
    -5°C to 55°C @ 90% non-condensing humidity
  – Storage temperature range:
    -40°C to 70°C @ 95% noncondensing humidity

Fabric Switch

AXP1440 includes redundant 40G Ethernet ATCA-F140 switch blades providing the communications fabric. The switch blades also include optional system management functionality.

▸ ATCA 1G, 10G, 40G fabric switch interface in dual star topology
▸ Integrated Linux-based software package for system & switch management
▸ Face plate interfaces
  – Service processor interface via 1G Ethernet (RJ-45) and RS-232 serial
  – Base interface via 1G/10G Ethernet (SFP+) ports
  – Fabric interface via 1G/10G and 40G Ethernet ports (SFP+ and QSFP+)
▸ Blade Services Software
  – Linux OS
  – Firmware Upgrade Facility
  – Hardware Platform Interface (HPI) to manage platform elements configured for multi-shelf management support
  – SRstackware® switching software including switch chip initialization, configuration, management as well as a full suite of L2 and L3 protocols

Regulatory Compliance

Item	Description
Designed to comply with NEBS	GR-63-CORE, NEBS Physical Protection, Level 3
	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, Not Temperature Controlled Storage Locations
	ETSI Transportation, ETS 300 019-2-2, Class 2.3 equipment, Public Transportation
	ETS 300-132-2 Environmental Engineering (EE); Power supply interface at the input to telecommunications equipment; Part 2: Operated by direct current (dc)
	ETSI Operation, ETS 300 019-2-3, Class 3.1 equipment, Partly Temperature Controlled Locations
Designed to comply with Acoustic	ETS-300-753, Equipment Engineering (EE); Acoustic noise emitted by telecommunications equipment
EMC	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
	EMC Directive 89/336/EEC (EU)
	AS/NZS 3548 (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)
	Directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on waste electrical and electronic equipment (WEEE)

Ordering Information

Item	Description
AXP1440	ATCA SHELF - 14 SLOT, 19", 13U, 40G, PP SHMM

Optional Platform Products

RTM-ATCA-F140	RTM for the ATCA-F140 with SFP/SFP+/QSFP sockets
SFP-CO-RJ-45	1G Small Form-factor Pluggable (SFP) - copper - RJ-45 connector
SFP-MM-SX-LC	1G Small Form-factor Pluggable (SFP) module - 850NM, SX, LC connector
SFPP-MM-SR-LC	10G Small Form-factor Pluggable Plus (SFPP) module - 850NM, SR, LC connector
SFPP-SM-LR-LC	10G Small Form-factor Pluggable Plus (SFPP) module - 1310NM, LR, LC connector
SFPP-MM-SR-LC-DR	10G Small Form-factor Pluggable Plus (SFPP) module - dual rate, 850NM, SR, LC connector
SFPP-CO-RJ-45-3M	10G Small Form-factor Pluggable Plus (SFPP) Direct Attached Copper (DAC) cable - 3 meters
CABLE-OPT-F102-5M	Optical cable for multi-mode, SFP and SFPP connections (5M)
QSFPP-40G-SR4-MODULE	40G QSFP+ Module - 40GBASE-SR4 - 850NM - for multimode fiber - MTP (MPO) connector
CABLE-COP-QSFPP-3M	40G QSFP+ Direct Attached Copper (DAC) cable - 3 meters
CABLE-OPT-QSFPP-5M	Optical cable for multimode, QSFP+ connections, 2x MTP (MPO) connectors - 5 meters
CABLE-B-OPT-QSFPP-5M	Optical break-out cable for multimode, 1x MTP (MPO) connector, 8x LC connectors - 5 meters
SFP-FILLER	Optical break-out cable for multimode, 1x MTP (MPO) connector, 8x LC connectors - 5 meters
AXP-F-FILL-PANEL	Blank filler panel, AXP1620, Penguin Edge AXP1440, AXP1410 – Front
AXP-R-FILL-PANEL	Blank filler panel, AXP1620, Penguin Edge AXP1440, AXP1410 – Rear
ACC/CABLE/SER/DTE/6E	MicroDSUB-9 to DSUB-9 serial adapter cable for shelf manager front access ALREADY INCLUDED IN PLATFORM CORE PRODUCTS
CABLE/RJ-45/DSUB/6E	RJ-45 to DSUB-9 serial adapter and cable for shelf manager rear access
RJ-45-DSUB-ATCA	RJ-45 to DSUB-9 serial adapter cable for ATCA-F140 serial console

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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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SOLUTIONS