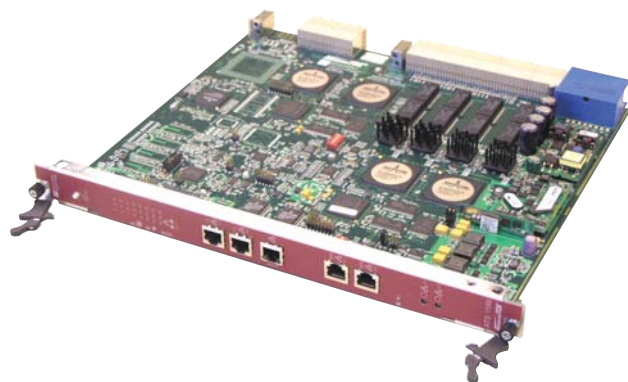




AdvancedTCA Hub Board



The ATS1160 brings integration to a new level with support for the control plane and the data plane, on a single board. The ATS1160 provides separate switching for PICMG 3.0 10/100/1000-Mbps Ethernet Base Fabric, and PICMG 3.1 1000-Mbps Ethernet Expansion Fabric.

Ports

PICMG 3.0 Gigabit Ethernet Base Fabric

- 14 10/100/1000-Mbps ports for node slots
- 1 10/100/1000-Mbps port for redundant switch
- 7 10/100/1000-Mbps rear uplink ports (RJ45s with the TM1460A RTM)

Configurable (ShMC Cross Connect):

- 1 10/100/1000-Mbps port for shelf manager
- 1 10/100/1000-Mbps front uplink port

Or

- 2 10/100-Mbps ports for redundant shelf managers

PICMG 3.1 Gigabit Ethernet Expansion Fabric

- 14 1000-Mbps ports for node slots
- 1 1000-Mbps port for redundant switch
- 1 10/100/1000-Mbps front uplink port
- 8 10/100/1000-Mbps rear uplink ports (RJ45s with the TM1460A RTM)

Ethernet Hardware

- Broadcom BCM5695 based
- 400MHz Freescale MPC8247 CPU with 128MB SDRAM and 32MB Flash for control and user applications

Product Features

AdvancedTCA PICMG 3.0/3.1 Option 1 Hub Board

2 Switches On One Board

Fully Managed Solution with SNMP, CLI, Web Interface, and Telnet/SSH

24 Port Gigabit Ethernet Base Fabric L2/L3 Switch

24 Port Gigabit Ethernet Expansion Fabric L2/L3 Switch

Wire Speed Non-blocking Performance on Both Switches

Supports Up to the Full 16 Slot Shelf

High Availability Through Redundant Hub Board Support

Dual Redundant Shelf Management Controller Support (Cross Connect)

8 GbE Base Fabric Uplink Ports

9 GbE Expansion Fabric Uplink Ports

Full Support for AdvancedTCA IPMI with Dual Redundant Buses

Supported Ethernet Protocols & RFCs

Switching

- IEEE 802.3ac - VLAN Tagging
- IEEE 802.3ad - Link Aggregation
- IEEE 802.1S - Multiple Spanning Tree
- IEEE 802.1W - Rapid Spanning Tree
- IEEE 802.1D - Spanning Tree
- GARP - Generic Attribute Registration Protocol
- GMRP - Dynamic L2 Multicast Registration
- GVRP - Dynamic VLAN Registration
- IEEE 802.1Q - Virtual LANs with Port based VLANs
- IEEE 802.1v - Protocol-based VLANs
- IEEE 802.1p - Ethernet Priority with User Provisioning & Mapping
- IEEE 802.1X - Port Based Authentication
- IEEE 802.3x - Flow Control

Advanced Layer 2 Functionality

- Broadcast Storm Recovery
- Double VLAN/vMAN Tagging (Q-in-Q)
- IGMP Snooping
- Independent VLAN Learning (IVL) support
- IPv6 Classification APIs
- Jumbo Ethernet Frames
- Port Mirroring
- Static MAC Filtering

Switching MIBs

- RFC 1213 - MIB-II
- RFC 1493 - Bridge MIB
- RFC 1643 - Ethernet-like MIB
- RFC 2674 - VLAN MIB
- RFC 2618 - RADIUS Authentication Client

Routing

- RFC 826 - Ethernet ARP
- RFC 894 - Transmission of IP Datagrams over Ethernet Networks
- RFC 896 - Congestion Control in IP/TCP Networks
- RFC 1058 - RIP v1
- RFC 1256 - ICMP Router Discovery Messages
- RFC 1321 - Message Digest Algorithm
- RFC 1519 - CIDR
- RFC 1583 - OSPF v2
- RFC 1723 - RIP v2
- RFC 1765 - OSPF Database Overview
- RFC 1812 - Requirements for IP Version 4 Routers
- RFC 2082 - RIP-2 MD5 Authentication
- RFC 2328 - OSPF v2 w/ Equal Cost Multipath
- RFC 2338 - VRRP
- RFC 2453 - RIP v2
- RFC 3046 - DHCP/BootP Relay
- RFC 3101 - OSPF "Not So Stubby Area" (NSSA) Option Route Redistribution across RIP, OSPF, and BGP

Routing MIBs

- RFC 1724 - RIP v2 MIB Extension
- RFC 1850 - OSPF MIB
- RFC 2233 - The Interfaces Group MIN using SMI v2
- RFC 2787 - VRRP MIB

Quality of Service (QoS) - DiffServ

- RFC 2474 - Definition of Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
- RFC 2475 - An Architecture for Differentiated Services
- RFC 2597 - Assured Forwarding PHB Group
- RFC 3246 - An Expedited Forwarding PHB (Per-Hop Behavior)
- RFC 3260 - New Terminology and Clarifications for DiffServ

Access Control List (ACLs)

- Permit/Deny actions for Inbound or Outbound traffic classification based on:
 - Type of Service (ToS) or Differentiated Services DSCP
 - Source IP Address
 - Destination IP Address
 - TCP/UDP Source Port
 - TCP/UDP Destination Port
 - IP Protocol Number

QoS MIBs

- RFC 3289 - Management Information MIB
- RFC 2620 - RADIUS Accounting MIB
- RFC 2737 - Entity MIB version 2
- RFC 2819 - RMON Groups 1,2,3, & 9
- IEEE 802.1X (IEEE 802.1-PAE-MIB)
- Enterprise MIB

System Facilities

- Event and Error Logging Facility
- Run-time and Configuration Download Capability
- PING Utility
- XMODEM
- RFC 768 - UDP
- RFC 783 - TFTP
- RFC 791 - IP
- RFC 792 - ICMP
- RFC 793 - TCP
- RFC 826 - ARP
- RFC 951 - BootP
- RFC 1321 - Message Digest Algorithm
- RFC 1534 - Interoperation between BootP & DHCP
- RFC 2131 - DHCP Client/Server
- RFC 2132 - DHCP Options and BootP Vendor Ext
- RFC 2865 - RADIUS Client
- RFC 2866 - RADIUS Accounting
- RFC 2868 - RADIUS Attributes for Tunnel Protocol
- RFC 2869 - RADIUS Extensions
- rfc2869bis- RADIUS Support for Extensible Authentication Protocol (EAP)
- RFC 3580 - 802.1X RADIUS Usage Guidelines

Management

- RFC 854 - Telnet
- RFC 855 - Telnet Option
- RFC 1155 - SMI v1
- RFC 1157 - SNMP
- RFC 1212 - Concise MIB Definitions
- RFC 1867 - HTML/2.0 Forms with file upload extensions
- RFC 1901 - Community based SNMP v2
- RFC 1905 - Protocol Operations for SNMP v2
- RFC 1906 - Transport Mappings for SNMP v2
- RFC 1907 - Management Information Base for SNMP v2
- RFC 1908 - Coexistence between SNMP v1 and SNMP v2
- RFC 2068 - HTTP/1.1 protocol as updated by draft-ietf-http-v11-rev-03
- RFC 2271 - SNMP Framework MIB
- RFC 2295 - Transparent Content Negotiation
- RFC 2296 - Remote Variant Selection; RSVA/1.0 State Management "cookies" - draft-ietf-http-state-mgmt-05
- RFC 2570 - Introduction to SNMP v3
- RFC 2571 - Architecture for Describing SNMP Management Frameworks
- RFC 2572 - Message Processing and Dispatching for SNMP
- RFC 2573 - SNMP v3 Applications
- RFC 2574 - User Based Security Model for SNMP v3
- RFC 2575 - View based Access Control Model for SNMP

- RFC 2576 0 Coexistence between SNMP v1, v2, and v3
- RFC 2578 - SMI v2
- RFC 2579 - Textual Conventions for SMI v2
- RFC 2580 - Conformance statements for SMI v2 Configurable Management VLAN
- SSL 3.0 and TLS 1.0
- -RFC 2246 - The TLS Protocol, Version 1.0
- -RFC 2818 - HTTP over TLS
- RFC 2346 - AES Ciphersuites for Transport Layer Security
- SSH 1.5 and 2.0
- -Draft-ietf-secsh-transport-16 - SSH Transport Layer Protocol
- -Draft-ietf-secsh-userauth-17 - SSH Authentication Protocol
- -Draft-ietf-secsh-connect-14 - SSH Protocol Architecture
- -Draft-ietf-secsh-publickeyfile-03 - SECSH Public Key File Format
- -Draft-ietf-secsh-dh-group-exchange-04 - Diffie-Hellman Group Exchange for the SSH Transport Layer Protocol
- HTML 4.0 Specification - December, 1997
- Java and Jave Script 1.3

Mechanical

- Conforms to PICMG 3.0 R1.0 (Core) & ECN001

Power Requirements

Max Power Dissipation: 100W
 ICC typical on 48V: 2.1A

Typical Power Dissipation
 Idle with out RTM: 56W
 Idle with RTM: 62W
 Heavy Load with out RTM: 76W
 Heavy Load with RTM: 98W
*RTM = TM1460A

Environmental

Operating

- Temperature: -5° to 55°C
- Humidity (RNC): < 95%
- Altitude: 4,000m / 13,000 ft @40°C
- Shock: 10g 11ms half-sine
- Vibration: 5-100Hz @ 1g sine sweep

Storage and Transit

- Temperature: -40° to 70°C
- Humidity (RNC): 10% to 90% non-condensing
- Altitude: 12,192m / 40,000 ft
- Shock: 40g 6ms half-sine, 500/axis
- Vibration: 5-50Hz @ 0.5g 50-60Hz 3g sine sweep
 Random 5-20Hz @ 0.01g2/Hz ; 20-500 -3dB slope

Reliability and Serviceability

- MTBF: 186,392 hours
Reliability prediction was done using Issue 6, Method 1, Case 3 of the Bellcore Industrial Reliability program. The prediction assumed an operating temperature of 25°C with a 100% duty cycle, in a ground benign, controlled environment.
- 2 year limited warranty

Regulatory Compliance

- Designed for NEBS/ETSI Compliance
- CE Certification with national deviations
- Safety: UL/cUL 60950-1:2003; EN/IEC 60950-1:2001
- EMI/EMC: FCC 47 CFR Part 15 Class B; EN 55022:1998; CSRP22:2003; EN 50024:1998; GR-1089:2002

Ordering Information

ATS1160 - AdvancedTCA Hub Board
TM1160A - ATS1160 RJ45 RTM with 8 Fabric uplink ports & 7 Base uplink ports

All products are shipped FOB factory (MS). Specifications subject to change without notice. Trademarks are the property of their respective owners. (C) Copyright 2006 by Diversified Technology, Inc. All rights reserved.



www.diversifiedtechnology.com

1.800.443.2667

476 Highland Colony Parkway • Ridgeland, MS 39157

