A660

24 + 4 Port 19” Managed Ethernet Switch

- Managed Gigabit Ethernet Switch
- 19” Single Slot (1U) Rack Mount Form Factor
- Layer 2 and Layer 3 Management
- 24 x 1000Base-T Ports
- Four 10-GbE Ports support SFP+ Modules
- Option for Eight 1000Base-X SERDES Ports (Factory Configuration)
- Full Wire-speed Non-blocking Forwarding
- IP Routing Functionality
- Advanced Spanning Tree Algorithms (RSTP, MSTP)
- Access Control List (ACL) Support
- QoS Management
- IPv4/v6 Differentiated Services (DiffServ)/DSCP Traffic Prioritization
- WEB and CLI Configuration and Monitoring
- 802.1Q-based VLAN Support
- Port-level Security via 802.1X Authentication
- SNMP v1, v2c, v3
- Supports OSPF v3, PIM
- 4/8/16 Group LAG Support with Protocol (LACP)
- All types of Storm Control
- Port Mirroring for Noninvasive Monitoring of Switch Traffic
- Jumbo Frame Support (10 kB)
- IPMI Support
- Power Controller
- Elapsed Time Recorder
- Temperature Sensors
- Real Time Clock

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Managed Gigabit Ethernet Switch

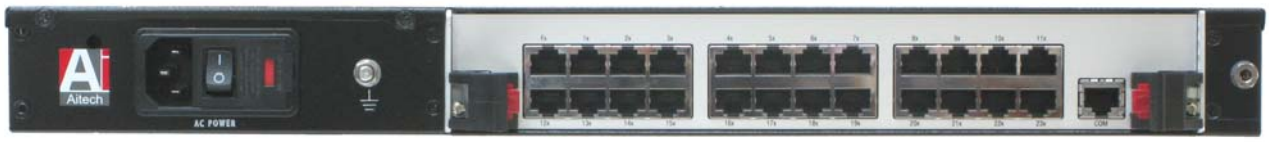
Aitech's A660 is a high-performance Gigabit Ethernet Switch packaged in a 19" single slot (1U) rack mount form factor. The A660 is based on the Marvell® Prestera® 98DX4122 Gigabit Ethernet Switch Controller and Marvell's Routing OS. The A660 includes an embedded web server, providing HTML pages that allow the user to manage the switch. The simplified browser-based user interface is an intuitive management tool, enabling convenient use of the switch's comprehensive feature set for a better-optimized network. Command line administration is also supported over network and RS-232 connections.

A660 Front Panel

Front Panel Connectors and Switches

- Four 10-GbE Ports with support for SFP+ Fiber Modules
- Two Switch Power and System Status bicolor LEDs
- Two Power Supply status LEDs
- One RS-232 Debug Connector
- Reset Pushbutton

Note that the A660 ships with a cage to accommodate the four SFP+ modules, but the SFP+ modules are not included. A list of supported SFP+ modules can be found in the A660 User's Guide.



A660 Back Panel

Back Panel Connectors

- 24 GbE Ports
- One RS-232 Debug Connector
- On/Off Switch

Functional Description

System Architecture

Aitech's A660 is based on the Marvell Prestera 98DX4122 Multi-Layer Gigabit Ethernet Switch packet processor. The Prestera performs Layer 2 and Layer 3 routing and switching for the switch's 24 Gigabit Ethernet ports and four 10-Gigabit Ethernet ports. An integrated high performance, low power ARM compatible Sheeva™ CPU core operating at 800 MHz functions as a Service Processor and interfaces to a high speed DDRII-320 MHz memory controller.

Board management devices include power controller, elapsed time recorder, temperature sensors, and real time clock.

Port Description

All Gigabit Ethernet ports support 10/100/1000 Mbps rates through 10Base-T/100Base-TX/1000Base-T connections. Optionally, eight of the 24 ports can be factory configured as SERDES 1000Base-X ports.

Four 10-Gigabit Ethernet ports using SFP+ connectors are provided on the A660 front panel.

Port Features

- Auto Negotiation Supported
- Auto MDI/MDIX Supported
- Head of Line (HOL) Blocking Prevention Supported
- Flow Control (IEEE 802.3X) Support
- Back Pressure Support
- Jumbo Frames Support
- Cable Analysis
- Manual Port Control and Identification Supported

Mirroring

- Port Mirroring Supported
- VLAN Mirroring Supported

MAC Address Support

- VLAN-Aware MAC-based Switching Supported
- MAC Address Aging Supported
- Up to 16K MAC Entries
- Static MAC Entries Supported

Extended L3 Features

- Dual IP Stack Support
- RIP v6 Support
- OSPF v3 Support
- Routing Table Management and Route Redistribution
- Route Maps Supported
- PIM Support

VLAN Support

- Up to 4094 VLANs Supported
- Predefined Default VLAN
- Protected Ports Supported
- Private VLAN Edge Supported
- GVRP & GARP Supported
- Protocol-based VLANs Supported
- Port-based VLANs Supported
- Subnet-based VLANs Supported
- MAC-based VLANs Supported
- Nested VLANs (QinQ) Supported
- Multicast VLAN Registration (MVR) Support
- Multicast TV VLAN Support
- Auto Voice VLAN Support

Multicast

- Static Multicast Groups (256 Groups Supported)
- IGMP Snooping Supported (IGMP v1, v2, & v3)
- MLD Snooping Supported (MLD v1 & v2)
- Unregistered Multicast Filtering Supported
- IGMP Querier Supported

Spanning Tree

- Per-device Spanning Tree (IEEE 802.1D)
- Rapid Spanning Tree – RSTP (IEEE 802.1W)
- Multiple Spanning Tree – MSTP (IEEE 802.1S)
- Spanning Tree Fast Link Option
- STP Root Guard Supported
- STP BPDU Guard Supported
- BPDU Flooding/Filtering Supported (when STP is disabled on the switch or on the port)
- Loopback Detection Supported

Link Aggregation

- Up to 8 LAGs Supported, each with up to 8 port members
- LACP Support
- LAG Balancing Algorithm Support

Access Control Lists

- Up to 2k ACLs Supported
- MAC ACL Condition Supported
- IP ACL Condition Supported
- Time-based ACL Supported

Supported ACL Actions

- Forward Packet
- Drop Packet
- Drop Packet and Disable Ingress Port

QoS/CoS and Rate Limiting

- QoS Basic Mode Supported
- QoS Advanced Mode Supported
- Trust Configuration in Basic Mode
- Port Based Priority Supported
- Queue Mapping for 8 and 4 Queue Devices
- QoS Policy Customization
- QoS Statistics
- Ingress Rate Limiting Accurate Mechanism
- Egress Rate Limiting (Shaping)
- Rate Limiting Action in ACL
- Packet Storm Control

System IP Address Management

- Static Assignment of up to 32 IP Addresses
- Management VLAN
- DNS Client
- IPv6 Host
- DHCP Server
- DHCP Relay Option 82

IP Routing

- Up to 128 Static Routes
- Up to 1024 ARP Entries
- Proxy ARP Supported
- L3 DHCP Relay Supported
- UDP Relay Supported
- RIP v2 Supported

Security

- MAC-based Port Security Supported
- IEEE 802.1X Support
- Guest VLAN Support
- Unauthenticated VLAN Support
- Dynamic VLAN Assignment Supported
- Dynamic ACL (DACL) for Ingress Supported
- Remote Authorization and Authentication (RADIUS) Support (8 servers)
- Radius Accounting Supported
- TACACS+ Support (8 servers)
- Local Authentication Support
- Authentication Method Configuration & Priority
- DHCP Snooping Supported
- IP Source Guard Supported
- Dynamic ARP Inspection Supported

Graphical Switch Management Interface

- Embedded Web Server provides HTML Pages for Switch Management from Web Browser Interface
- HTTP/HTTPS (SSL v3) Supported

CLI Switch Management

- Multi-Session Telnet Connections Supported
- SSH Connections Supported
- RS-232 Console Port Connection Supported

Management Features

- Inactivity Timer for Management Sessions
- Password Security Supported
- Cryptography Supported
- Certificate Expiration Support
- Event Logging Supported
- Multiple User Support
- Soft Reset Supported
- SNTP (Simple Network Time Protocol) Support
- Ping Facility Supported
- Traceroute Supported
- LLDP (IEEE 802.1AB) + LLDP MED Supported
- Switch Auditing Supported

Configuration Management

- Configuration File Handling
- Clearing and Deleting
- HTTP/S Down/Upload of Configuration Files
- Auto Configuration Backup

SNMP

- SNMP v1, v2c, and v3 Supported
- MIB File Support
- Other MIB Placing
- OID Placing

Monitoring

- CPU Utilization
- Port/Link Utilization
- TCAM Utilization
- RMON Support
- sFlow (flow monitoring) Support
- Power Supply Status
- Temperature Status

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Development Platform for Rugged Switches

Due to design similarity, the A660 can be used as a development platform for Aitech’s line of rugged Ethernet switches.

Configurations can be tested and fine tuned using the A660. When a suitable configuration is found, the system configuration file can be copied from the A660 and deployed on the rugged switches.

Mechanical Features

Dimensions

The A660 is a 19” (482.6 mm) single slot (1U) rack mount unit, with a depth of 300 mm.

Weight

Less than 5 kg

Thermal Management

The A660 is air-cooled, with fan capacity of 21 m³/h, and is also equipped with three temperature sensors, located at temperature-critical locations, to monitor board temperature and provide temperature data to the user.

Power Requirements

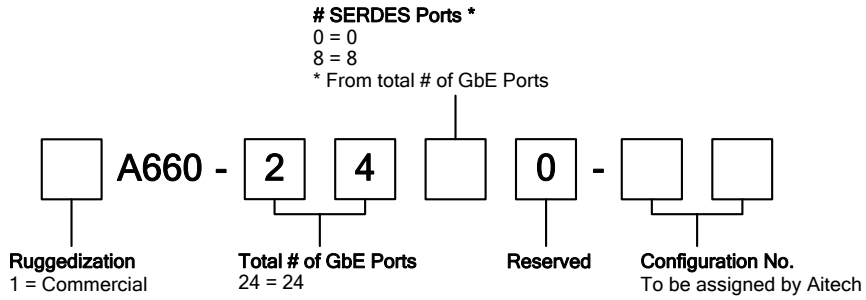
The A660 is AC powered, and is compatible with input voltages of 90 – 264 V, at frequencies of 47 – 63 Hz.

Maximum power consumption is 44 W.

Environmental

Temperature (Operating)	0 to +50 ºC
Temperature (Storage)	–40 to +85 ºC
Maximum Altitude (Operating)	10,000 ft
Relative Humidity (Operating)	0 to 90%, non condensing

A660 Ordering Information



Example: 1A660-2400-00

For more information about the A660 or any Aitech product, please contact Aitech Defense Systems sales department at (888) Aitech-8 (248-3248).

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