Vi30110

10-Port Gigabit Ethernet L3 Lite Managed PoE Switch

Features

- All 10 Ethernet ports are 1Gbps - 8 PoE and 2 SFP ports
- 8 ports at 802.3af/at up to 36W
- SNMP for communicating error messaging to local computers
- Advanced Layer 2+ performance
- Trace routing for determining connection status
- On board error message server with download reporting
- Download certificate for security link to servers and clients
- Automatic IP and PoE connection and reconnection
- Automatic MAC identification for all connected devices
- Individual IP Source Guard for protecting ports
- Supports Jumbo Frames up to 9600 bytes
- High Bandwidth 20Gbyte switching fabric

Applications

- **Upgrading existing analog CCTV installations to digital**
- **Network switch for any networking application**
- **CCTV system for casinos, airports, school campuses, etc.**

The Vi30110 is a next generation L3 Lite managed network switch designed for high PoE and bandwidth applications. With the unique ability to provide up to 36W, assuring connections are maintained during surges. Individual port connections are monitored as to connection and PoE status. In the event either is lost, the Vi30110 will automatically re-establish a connection and apply PoE without the need of a service call. Up to 32 trace routes can be program to test and view connections to individual ports. A built in error service can record several hundred error messages allowing them to be downloaded in .CSV or .txt formats. With advance security features users can download a certificate tying the Vi30110 to a specific client or server.

The Vi30110 is designed to meet the growing power and bandwidth requirements for IP security cameras by providing both reliability and conductivity with the ability to locate and determine network system problems:

- High PoE budget of 250W providing up to 36W PoE power per port.
- Programmable Video/Data packet transmission up to the Jumbo Frame limit of 9,600 bytes for transmitting the highest mega pixel cameras at 100Mbps and 1Gps port speeds.
- Wide 20Gbps switch fabric assuring all required bandwidth, even with all ports at their maximum bandwidth assuring video and data quality.
- Automatic connection and re-connection with PoE application for more reliable startups reducing down time potentials.
- Programmable multi-casting for compatibility and performance with largest IP video network systems.
- Programmable Rapid Spanning Tree for redundant network configuration assuring maintenance of network communication using multiple paths.
- Ability to download a certificate for secure communications between switch, client and server.
- Layer 3 Lite provides for Trace Route and the ability to monitor 32 paths using fixed IP routing.
- Automatic MAC address detection for connected devices for easy connection verification and security programming.
- Built in error server with ability to download error logs in .CVS or .txt format.

Technical Specification*

Electrical

PoE Standard	IEEE 802.3af (15.4W), IEEE 802.3at (30W) up to 36W
Network Connection	2 x RJ-45 IEC 60603-7
Wiring Support	2 or 4 pair Cat 5/5e/6
Power Consumption	1W (using PoE)
PoE Budget	250W
LED	PoE: Green Link and Traffic: Orange
Data Rate	10/100Base-TX (10/100Mbps), Auto configuring
Data Interfaces and Compliances	RFC 768 UDP, RFC 2068 HTTP RFC 793 TCP, RFC 791 IP RFC 1783 TFTP, RFC 894 IP over Ethernet RFC 2544 TCP/IP Packet Transmission 802.3af, 802.3at, 802.3bt

Regulatory

NEC Code	For 3, 3½, and 4 inch Conduit at 40% Fill
Safety	CE, FCC
Environmental	RoHS, WEEE

Environmental

Humidity	0% to 95%, non-condensing
Temperature	Operating: -20°C to 75°C Storage: -40°C to 85°C

Mechanical

Dimensions	8.7x1.73x9.53 in. ,22x4.4x24.2 cm (WxHxD)
Weight	5.1lbs , 2.3kg
Material	Extruded Aluminum

Accessories

Power Cord
Mounting Kit
Console Cable
CD-ROM includes: Operations Manual, CLI Document, Quick Install Guide, and Quick Set-Up Guide

Minimum Requirements

Web browser: Mozilla Firefox version 2.5 or later, Microsoft Internet Explorer version 6 or later
Category 5 Ethernet network cable
TCP/IP, network adapter, and network operating system (such as Microsoft Windows or Linux) installed on each computer in network.

* Specifications subject to change without notice.

Ordering Information

Part No.	Description
Vi30110	10-Port Gigabit Ethernet L3 Lite Managed PoE Switch

Compatiable ANSI/IEEE Standards

	Compatiable IEEE/ANSI Standard
IEEE 802,3	Ethernet 10baseT UTP
IEEE 802.3u	Fast Ethernet 1000baseTX UTP
IEEE 802.3ab	Ethernet 1000baseTX UTP
IEEE802.3z	Ethernet 1000baseX
IEEE 802.3af	Power over Ethernet
IEEE 802.3at	Power over Ethernet; Type 1 and Type 2
IEEE 802.3x	Flow control Capability
IEEE 802.1q	VLAN
IEEE 802.1p	Class of Service
IEEE 802.1x	Access Control
IEEE 802.1d	Spanning Tree
IEEE 802.1w	Rapid Spanning Tree
IEEE 802.1s	Multiple Spanning Tree
IEEE 802.1ad	Link Aggregation Control Protocol (LACP)
IEEE 802.1AB	Link Layer Discovery Protocol (LLDP)
IEEE 802.3az	Energy Efficient Ethernet Task
IEEE 802.3ad	Trunking
IEEE 802.1Q	Tag Based VLAN
ANSI/IEEE 802.3	Auto – negotiation

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Technical Specifications*

Layer 2

Spanning Tree Protocol (STP)	Standard Spanning Tree 802.1d Rapid Spanning Tree (RSTP) 802.1w Multiple Spanning Tree (MSTP) 802.1s
Trunking	Link Aggregation Control Protocol (LACP) IEEE 802.3ad ● Up to 13 groups ● Up to 16 ports per group
VLAN	Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs) ● Port-based VLAN ● 802.1Q tag-based VLAN ● MAC-based VLAN ● Management VLAN ● Private VLAN Edge (PVE)
Easy Port	Voice or IP video is automatically assigned to specific VLANS with appropriates levels of QoS.
Generic VLAN Registration (GVRP)	Protocol for automatically propagating and configuring VLANs in a bridged domain.
DHCP Relay (Layer 2)	Relay of DHCP traffic to DHCP server in different VLAN. Works with DHCP Option 82.
IGMP v1/v2/v3 Snooping	IGMP limits bandwidth-intensive multicast traffic to only the requesters.
IGMP Querier	IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router.
IGMP Proxy	Supports IGMP Proxy
MLD v1/v2 Snooping	Delivers IPv6 multicast packets only to the required receivers.

Security

Secure Shell (SSH)	SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported.
Secure Sockets Layer (SSL)	SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch.
IEEE 802.1X	IEEE802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN , single/multiple host mode and single/multiple sessions. Supports IGMP-RADIUS based 802.1X Dynamic VLAN assignment
Layer 2 isolation Private VLAN Edge (PVE)	PVE (also knows as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks.
Port Security	Locks MAC Addresses to ports and limits the number of learned MAC addresses.
IP Source Guard	Prevents datagram with spoofed addresses from being in the network.
Radius/ Tacacs+	Supports RADIUS and TACACS+ authentication. Switch as a client.
Storm control	Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port.
ACLs	Drop or rate limitation based on source and destination MAC, VLAN ID or IP address, protocol, port, differentiated services code point (DSCP) / IP precedence, TCP/ UDP source and destination ports, 802.1p priority, Ethernet type, Internet Control Message Protocol (ICMP) packets, IGMP packets, TCP flag. Supports up to 256 entries.

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Technical Specifications*

Quality of Service

Hardware Priority Queue	Supports 8 hardware queues.
Scheduling	Strict priority and weighted round-robin (WRR). Queue assignment based on DSCP and class of service (802.1p/
Classification	Port based; 802.1p VLAN priority based; IPv4/IPv6 precedence/ type of service (ToS) / DSCP based; Differentiated Services (DiffServ); classification and re-marking ACLs, trusted QoS.
Rate Limiting	Ingress policer; egress shaping and rate control; per VLAN, per port and flow based.
IPv6/IPv4	Web/ SSL, Telnet/ SSH, Png, Simple Network Time Protocol (SNTP), Trivial File Transfer Protocol (TFTP), SNMP, RADIUS, Applications Syslog, DNS Client, Protocol-based VLANs.

Management

Web GUI Interface	Built-in switch configuration utility for browser-based device configuration (HTTP/ HTTPs). Supports configuration, system dashboard, maintenance, and monitoring.
Dual Image	Dual image provides independent primary and secondary OS files for backup while upgrading.
SNMP	SNMP version1, 2c, and 3 with support for traps, and SNMP version 3 user-based security model (USM).
(RMON) Remote Monitoring	Embedded RMON software agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis.
IPv4 and IPv6 dual stack	Coexistence of both protocol stacks to migration.
Firmware Upgrade	• Web browser upgrade (HTTP/ HTTPs) and TFTP. • Upgrade through console port as well.
Port mirroring	Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.
Easy Port Configuration	Easily to configure of clients' QoS and security capabilities.
Other	Single IP Management; HTTP/HTTPs; SSH; RADIUS; DHCP Client/ DHCPv6 Client; SNTP; Cable Diagnostics; Ping; Syslog; Telnet Client (SSH secure support).
s-Flow	The industry standard technology for monitoring high speed switched networks. It gives complete visibility into the use of networks enabling performance optimization, accounting/billing for usage, and defense against security threats.
UPnP	The Universal Plug-and-Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug-and-Play.

Green Ethernet

Link	Compliant with IEEE802.3az Energy Efficient Ethernet Task Force. Automatically turns off power on Gigabit Ethernet RJ-45 Detection port when detecting if the link is down or if the client is idle. Active mode is resumed without loss of any packets when the switch detects the link up.

Discovery

Link Layer Discovery Protocol (LLDP)	Used by network devices for advertising their identities, capabilities, and neighbors on a IEEE 802 local area network, principally wired Ethernet.

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Notes

Benefits

The Vi30110 provides security, performance, quality of services, central management, and other network control capabilities. Optimized and customized design, and affordable pricing, it best fit for SMB or entry-level enterprise solution. It provides:

- Excellent performance and reliability: The Vi30110 passed the rigorously testing to deliver excellent performance. As a managed switching solution, it also provides the flexibility to manage and prioritize suitable-bandwidth traffic and PoE for IP Cameras and Voice.

- Easy, simple deployment and configuration: The device manager software provides an intuitive, web-based interface to simplify deployment, advanced security (ACLs, IP Source guard, VLAN…etc), and quality of service (QoS) traffic prioritization. This switch uses IEEE802.1AB LLDP to automatically discover all the devices (those support LLDP) connected to the network. For more advanced capabilities and easy-to-use graphical tools, such as EPC (Easy-Port-Configuration), it provides preset options for easily configuring each port of the switch. It will make setup easy when operating with IP phones, IP cameras or Wifi APs.

- Strong security: The switch provides an advanced security and gives you tight control to safeguard the network from unauthorized users. Advanced security features
  include:
    - Secure remote management by supporting SSH, SSL, and SNMPv3 connection which encrypt the packet content at each session.
    - Extensive access control lists (ACLs) to restrict sensitive portions of the network from unauthorized users or guests.
    - Guest virtual LANs (VLANs) provide Internet connectivity to guests while isolating critical traffic from guest traffic.
    - IP Source Guard to prevent datagrams with spoofed addresses from being in the network.
    - IEEE802.1X port security to tightly limit access to specific segments of network.

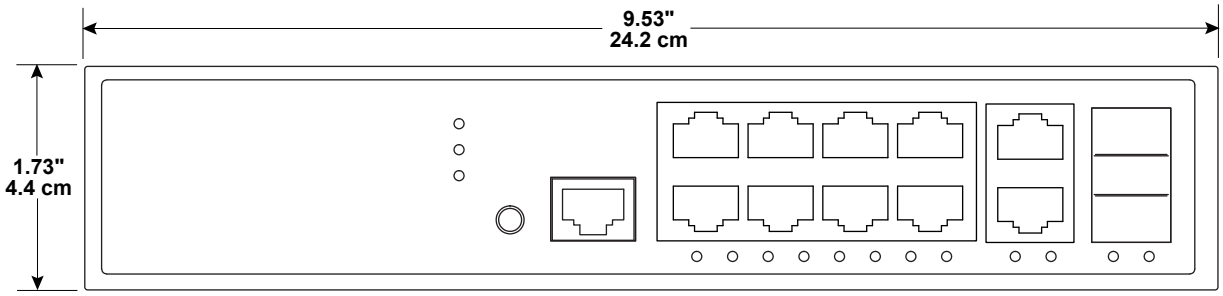
- Video and Voice support: The switch can be easily configured with the specific VLAN and QoS parameters to prioritize IP Cameras and voice traffic whereas ensure consistent network performance for all services.

- Advanced network management capabilities: As a managed switch, it helps you to use a variety of advanced managing features to manage traffic over your network. Features include:
    - Support IPv6: As the IP network addressing scheme evolves to accommodate more devices, Vi30110 supports IPv6, the newest version of the Internet Protocol, as well as the previous IPv4 standard. As the result, you have the ability to move up to the next generation of networking applications without an extensive equipment upgrade.
    - Remote management: Using Simple Network Management Protocol (SNMP) and IEEE802.1AB LLDP, you can configure andmanage Vi30110 and other Vigitron switches in the network remotely, instead of having to directly connect to them.

- Energy efficiency: Vi30110 is designed to comply with IEEE 802.3az, energy efficient Ethernet protocol, reducing energy costs without compromising performance. Power-saving features include:
    - The latest application-specific integrated circuits (ASICs), using low-power technology, allow for lower power consumption and thinner, more efficient designs.
    - Embedded intelligence to adjust signal strength based on cable length.

- Expansion ports: All 10 Ethernet ports on the Vi30110 are 1Gbps. It also offers a RJ-45/SFP combo. 8 ports provide PoE and 2 100/1G SFP ports for uplinks to Fast Ethernet or Gigabit Ethernet fiber optic networks.

Product Drawings



Front View

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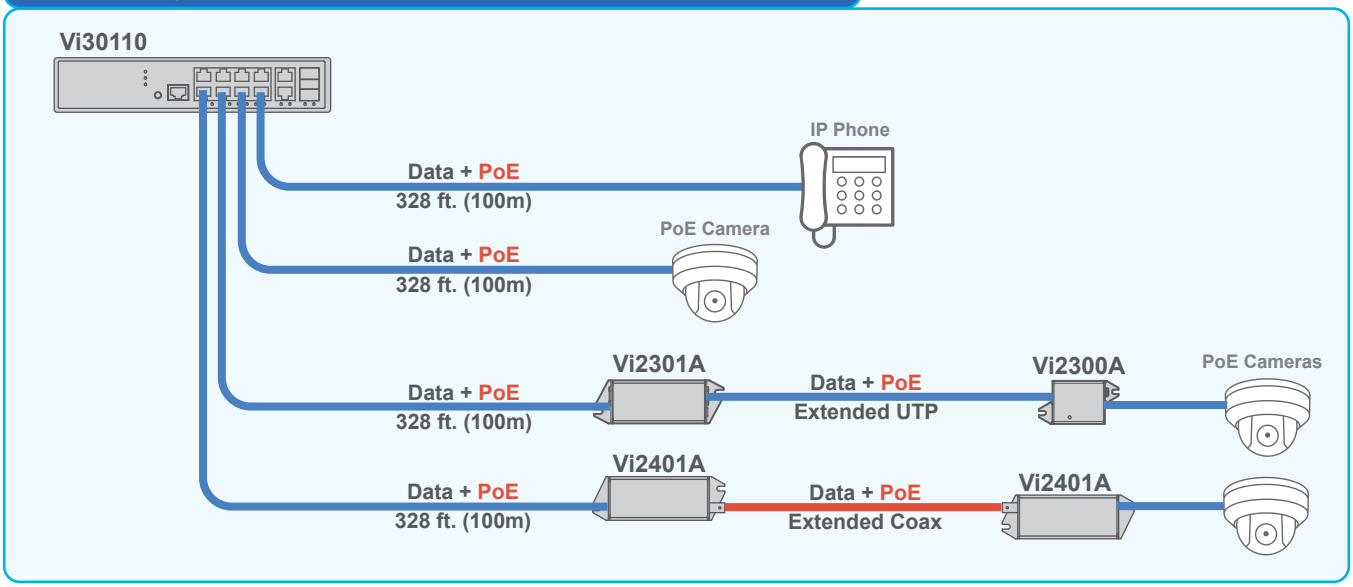
Application Drawings

Connecting PoE cameras over extended Coax and UTP



The Vi30110 can be used with extenders to communicate with IP devices over extended distance UTP or Coax.

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