

# Dax Managed Layer 2 Gigabit Switches



## Introduction

Intelligent security access switches suitable for aggregation/access networks. Available in 24 and 48 10/100/1000 port models with 4# shared Gigabit SFP ports, these switches are equipped with rich features to provide comprehensive QoS, enhanced VLAN functions, bandwidth control, multi link aggregation, and intelligent security control. Additionally, all features are suitably enabled on the basic switch software and usable right from day one and hence no need to invest on separate software images or additional memory to realize full potential of the switches.

## Key Features

- ✓ IPv6 ready with IPv4/IPv6 Dual Protocol Stack
- ✓ IP static routing
- ✓ Supports Port Configuration, UDLD, LLDP
- ✓ Anti IP packet DOS attack/ packet attack
- ✓ Supports Static MAC Address access limit on port
- ✓ Supports MRPP Ring Redundancy
- ✓ Supports IEEE 802.1x port security function
- ✓ Supports Rate Control on port
- ✓ Multi-rate SFP supporting both 100/1000x transceiver
- ✓ IP Clustering of up to 32 Units for single IP management
- ✓ IGMP V1/V2/V3 Multicast snooping





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## **Multi rate SFP**

The SFP ports of Dax Managed Gigabit Switches support both 100Fx SFP as well as 1000X SFP ports, allowing these switches to be deployed in existing Fast Ethernet fiber networks as well as Gigabit Fiber backbone

## **Enhanced Security**

Access Control Lists (ACLs) and policy settings can be used to restrict access to sensitive network resources by denying and forwarding packets respectively. IEEE 802.1X port-based access control ensures authorization for all users before being granted entry into the network. User authentication can be carried out using any standard-based RADIUS server.

## **Ease of management and network troubleshooting**

These Switches support Simple Network Management Protocol (SNMP) v1, v2, v3, inband and out-of-band management. They also support standard Command Line Interface (CLI) as well as WEB based configuration. The login access as well as rights to access the switch can be restricted to prevent un-authorized users from tampering switch settings/configuration.

For network troubleshooting, the switches are equipped with commands like ping, trace route which are very helpful in isolating network problems. Additional features like UDLD (Uni-directional link detection) and LLDP (Link layer discovery protocol) help in network problem isolation at the link level.

## **High adaptability VLAN Features**

Dax Managed Gigabit Series Switches support 802.1q VLAN, port based VLAN as well as MAC based VLAN. Even when the user moves from one port to another, the switch identifies the MAC address and therefore the user remains in the same VLAN. The advantages include multiple broadcast domains, efficient isolation of users within the same switch along with improved management and operation. Voice VLAN function in Managed Gigabit Series Switches provides efficient QoS for seamless Voice integration.

## **POE support**

DX-5024GS-POE supports 24 POE ports with a maximum power of up to 15.4W per port. The power driven for each individual port can be defined depending upon the power requirement of the connected equipment, resulting in a huge amount of power saving.

## **Integrated authentication**

Dax Managed Gigabit Series Switches support 802.1x authentications by port and MAC address. These Switches support anti spam and user based dynamic VLAN and bandwidth authorization. They can allocate IP address based on group policy without a DHCP server.



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## Technical Specifications

<b>Port Configuration</b>	
DX-5024GS	26 # 10/100/1000T 4 # shared SFP Console port
DX-5048GS	50 # 10/100/1000T 4 # shared SFP Console port
DX-5024GS-POE	26 # 10/100/1000T ( POE support on 24 # 10/100/1000T ports) 4 # shared SFP Console port
<b>Performance</b>	
Switching Technique	Store and forward
Backplane Bandwidth	108 Gbps
Forwarding Rate	41.6 Mpps ( DX-5024GS, DX-5024GS-POE) 77.3 Mpps ( DX-5048GS)
VLAN Table	4K
Stacking	IP Clustering of 32 units with Single IP management Virtual stacking
<b>Physical characteristics</b>	
Dimension (W x H x D)	440 x 415 x 44 mm
Size	1U-19" Rack mountable
Relative Humidity	5%~95%, non-condensing
Operating Temperature	0°C~50°C
Storage Temperature	-40°C~70°C
Power	AC Input 100~240V, 50~60 Hz;



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Power Consumption	DX-5024GS <=60W Max DX-5024GS-POE <=60 ~ 500W Max DX-5048GS <=90W (Max) 15.4W on each port for POE switches
<b>Standards</b>	
Certifications	FCC, CE, RoHS
<b>Software Features</b>	
Standards	IEEE 802.3 (10Base-T) IEEE 802.3u (100Base-TX) IEEE 802.3z (1000Base-X) IEEE 802.3ab (1000Base-T) IEEE 802.3af ( POE switches) IEEE 802.3x flow control Auto MDI/MDIX 9K Jumbo frame Broadcast storm control Granular rate limiting in steps of 64K LLDP ( Link layer discovery protocol) LLDP - MED UDLD
Stackability	Virtual staking or IP clustering 32 units per stack Single IP management
Port Mirroring	One to One port mirroring Many to One port mirroring Port mirroring based on data stream Port mirroring based on Ingress and Egress data flow CPU port mirroring Report port mirroring/ RSPAN Mirror for tagged and untagged ports



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Spanning Tree	IEEE 802.1d Spanning tree IEEE 802.1w Rapid spanning tree IEEE 802.1s Multiple spanning tree BPDU guard Root guard BPDU forwarding
VLAN	IEEE 802.1q VLAN GVRP Port based VLAN Private VLAN Port Isolation IP subnet VLAN Protocol VLAN IEEE 802.1v Voice VLAN MAC VLAN Q-in-Q Broadcast / Multicast / Unicast Storm Control MVR ( Multicast VLAN Registration ) for IPv4 / IPv6
Link Aggregation	Link Aggregation Control Protocol (LACP) IEEE 802.3ad link aggregation Max 32 group trunk with max 8 ports for each trunk
Multicasting Features	IGMP Snooping v1/v2/v3 MLD v1/v2 Snooping Multicast receive control Illegal multicast source detect MVR(Multicast VLAN Register)



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QoS	<p>IEEE 802.1p</p> <p>Strict priority – SP</p> <p>Weighted round robin – WRR</p> <p>SWRR - SP + WRR</p> <p>8 Priority queues</p> <p>Traffic classification based on IEEE 802.1p, Port, COS, TOS.</p> <p>Advanced classification based on VLAN ID, COS, ACL stream, DSCP (IPv4 /IPv6).</p> <p>Diffserv</p>
L3 features	IP static routing
Enhanced security features	<p>Anti illegal multicast and controlled cast</p> <p>Protection for Denial of Service attacks</p> <p>IP Security, Login Security</p> <p>Multiple Ring Redundancy Protocol (MRPP)</p>
ARP	<p>Static ARP</p> <p>Anti ARP Attack</p> <p>ARP Rate Limit</p> <p>ARP Re-authentication</p> <p>ARP Binding with L2 ports</p> <p>ARP Scan</p> <p>ARP Guard</p> <p>Gratuitous ARP</p>
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IPv6	IPv4/IPv6 Dual Protocol Stack (RFC2460) IPv4/IPv6 Dual Protocol Stack Internet Protocol, Version 6 (IPv6) Specification (RFC2460) IPv6 Unicast Address Types IPv6 Multicast Address Types ICMPv6 Redirect IPv6 Stateless Auto Configuration as per RFC2462 IP Version 6 Addressing Architecture (RFC2373) IPv6 Aggregatable Global Unicast Address Format (RFC2374) Reserved IPv6 Subnet Anycast Addresses (RFC2526) Internet Protocol Version 6 (IPv6) Addressing Architecture (RFC3513) Transmission of IPv6 Packets over Ethernet Networks (RFC2464) DHCPv6 Server IPv6 VLAN registration IPv6 Multicast with MLD v1/v2 snooping support SNMP over IPv6 HTTP over IPv6 SSH over IPv6 DNS over IPv6 IPv6 Ping/tracert IPv6 Telnet Support IPv6 DNS Resolver IPv6 RADIUS+ Support IPv6 Syslog Support IPv6 SNTP Support IPv6 NTP IPv6 FTP/TFTP Support IPv6 sFlow
Troubleshooting	Ping, Trace route



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ACL	Standard and extended ACL Time Based ACL ACL on physical port MAC ACL and IP ACL combination
	IP ACL based on: Source/destination IP IP protocol IP priority (DSCP, TOS, Precedence) TCP/UDP source/destination port
	MAC ACL based on: Source / destination MAC Address Class of Service
MAC Operation	Supports port/MAC auto bundle and MAC filter CPU Monitoring
DHCP	DHCP Client / BOOTP & Server DHCP Snooping DHCP Snooping option 82
DNS	DNS Client
Authentication	RADIUS (standard support client, MD5/PEAP/TLS) TACACS+ authentication for secure switch CLI logon IEEE 802.1x Port based and MAC based



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MIB's and RFC's	RFC1215 type definition RFC1271 RMON RFC1354 IP-Forwarding MIB RFC1493 Bridge MIB RFC1643 Ether-like MIB RFC 1907 SNMP v2 RFC2011 IP/ICMP MIB RFC2012 TCP MIB RFC2013 UDP MIB RFC2096 ip forward mib RFC2233 if MIB RFC2452 TCP6 MIB RFC2454 UDP6 MIB RFC2465 IPv6 MIB RFC2466 ICMP6 MIB RFC2573 SnmpV3 notify RFC2574 SNMPV3 vacm RFC2674 Bridge MIB Extensions (IEEE802.1Q MIB) RFC2674 Bridge MIB Extensions (IEEE802.1P MIB)
Configuration & Management	CLI Console(RS-232) & Telnet SNMPv1/v2/v3 Private MIB & Trap Syslog sFlow RMON MIB SSH/http SNTP FTP/TFTP firmware upgrade Dual image



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## Ordering Information:

Model No	Description
<b>DX-5024GS</b>	Layer 2 Managed stackable Switch with 26 fixed 10/100/1000 Base Tx Ethernet ports and 4 (shared) un-populated mini GBIC SFP ports, AC power supply
<b>DX-5024GS-POE</b>	Layer 2 Managed stackable Switch with 24 fixed 10/100/1000 Base Tx POE ports, 2 # 10/100/1000 Base TX Ports and 4 (shared) unpopulated mini GBIC SFP ports, AC power supply
<b>DX-5048GS</b>	Layer 2 Managed stackable Switch with 50 fixed 10/100/1000 Base Tx Ethernet ports and 4 (shared) un-populated mini GBIC SFP ports, AC power supply
<b>Transceivers</b>	
<b>DX-G-SFP-100FX-MM-1310-LC-2</b>	100FX SFP transceiver, Multimode, 1310nm, LC connector, 2Km, Pluggable into the Gigabit SFP slots
<b>DX-G-SFP-100FXSM-1310-LC-10</b>	100FX SFP transceiver, SingleMode, 1310nm, LC connector, 10Km, Pluggable into the Gigabit SFP slots
<b>DX-MGBIC-SX-LC</b>	MiniGBIC 1000SX Transceiver with LC Connector, Multimode (850nm) 550m
<b>DX-MGBIC-LX-LC-10</b>	MiniGBIC 1000LX Transceiver with LC Connector, Single mode (1310nm) 10Km
<b>DX-MGBIC-LHX-LC-40</b>	MiniGBIC 1000LH Transceiver with LC Connector, Single mode (1310nm) 40Km
<b>DX-MGBIC-ZX-LC-80</b>	MiniGBIC 1000ZX Transceiver with LC Connector, Single mode (1550nm) 80Km



# Dax Managed Layer 2 Gigabit Switches

Dax Managed Layer 2 Gigabit Switches are brought to you by Dax (An Apcom Company) one of India's most renowned, technically qualified Data/ Voice Networking vendor. Dax offers an India-Centric, diverse product range which conforms to the highest world standards and meets the "edge to core" networking technology needs of all verticals. Dax is probably the most respected independent OEM supplier in India.

In the last 25 years, Dax has made wide country inroads through its Enterprise networking partners and national ADSPs. Dax is synonymous with high business ethics, consistent quality, optimized performance and support- commitment to Indian customers which supersedes MNC standards. Dax continues to synergistically work with Indian Customers to design products and networking solutions.

Today, Dax is the one of the Top Networking companies in India. We have achieved this status by a combination of relentless single-minded focus on cutting edge Networking technologies and a proud dedication (since 1986), to true professionalism.

## Other Dax Offerings:



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