



20-Port L3 Managed Gigabit Switch, 12 x 10GbE SFP+, 8 x Gigabit RJ45, Redundant power supply

The GTL-2091 is LevelOne latest generation of 20-Port L3 Managed Gigabit Switch, 8 x Gigabit RJ45, with 12 10G SFP+ port connectivity. High-density SFP ports built into allow users to insert different SFP transceivers providing the necessary fiber connections for creating Area Networks infrastructure. also offers AC dual power failover, allowing for continued operation regardless of a single power source failure. The GTL-2091 offers powerful L3 features(IPv4/v6 static route, RIP v1/v2, OSPF v2/v3, BGP, PIM-DM, PIM-SM), The switch also supports the most advanced IPv6 management,IPv6 security, and IPv6 multicast control in accordance with the growth of IPv6 deployment. ISPs can expand their services for home to business users by providing a more reliable and resilient network , and advanced OAM (Operations, Administration, and Maintenance) functions to ensure service-level agreements. enabling you to scale your operations to meet business growth, operational cost savings, and ease of management.

Key Features

- 8 Gigabit Ethernet ports and 12 10-Gigabit SFP+ slots
- Supports power redundancy with dual AC power inputs
- Comprehensive Layer 3 features such as IPv4/v6 static route, RIP v1/v2, OSPF v2/v3 and BGP
- Virtual stacking supports up to 4 switches in a single logical stack for unified management, monitoring and configuration
- Access Control: Access Control List (ACL) / RADIUS
- Supports VLAN (tag-based, Q-in-Q)
- IEEE 802.1d/w/s Spanning Tree Protocol (STP) and port mirroring
- IP Multicast Filtering through IGMP Snooping V1 / V2 / V3
- Supports unknown unicast / broadcast / multicast storm control
- Supports IPv4/IPv6 network operation
- DHCP Client/Server
- Provides QoS control based on IP DSCP for advanced traffic prioritization and bandwidth management
- MLD, Telnet, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management

Specifications

System Specifications

Standards:

IEEE 802.3 100BASE-FX
 IEEE 802.3z (1000BASE-SX/LX/TX)SFP Transceivers
 IEEE 802.3ae (10GBase-SR/LX)SFP+ Transceivers
 IEEE 802.3x for full-duplex mode
 IEEE 802.1D Spanning Tree Protocol (STP)
 IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
 IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
 IEEE 802.1Q VLAN
 IEEE 802.1ad QinQ and Selective QinQ



IEEE 802.3ad Link Aggregation Control Protocol
IEEE 802.1p CoS
IEEE 802.1x port based and MAC based authentication
IEEE 802.3az Energy-Efficient Ethernet (EEE)
IEEE 802.3ah Ethernet Link OAM

Memory:

DRAM: 512MB
Flash: 16MB

Buffer Memory:

3MB

Port:

8 x 10/100/1000Mbps Auto-Negotiation ports
12 x 1000/10000Mbps SFP+ port
1 x RJ45 Console Port

Button/Knob:

1 x Reset Button

Indicator:

Power, Sys, Link/ACT

Transmission Method:

Store-and-Forward

Power Input:

100-240V AC, 50/60 Hz, Maximum 7.8A@100V or 0.36A@220V

Power Consumption:

Standby Power Consumption: 35W
Maximum Power Consumption: 50W

Backplane (Gbps):

176

MAC Address Table:

32K

Data Rate:

10/100/1000/10000 Mbps

Heat Dissipation:

170.65 BTU/hr (1000BTU/H =293W)

Operating Temperature (°C):

0°C to 50°C

Operating Humidity (Non-condensing):

10% to 90%

Storage Temperature (°C):

-40°C to 70°C

Storage Humidity (Non-condensing):

5% to 95%

Features

General:

L2 Features

- Spanning Tree Protocol
- 802.1D Spanning Tree Protocol (STP)
- 802.1w Rapid Spanning Tree Protocol (RSTP)
- 802.1s Multiple Spanning Tree Protocol (MSTP), 32 instances
- MAC Address Table
- Up to 32K entries
- Flow Control
- 802.3x Flow Control when using Full Duplex
- Back Pressure when using Half Duplex

- HOL Blocking Prevention
- Root Guard
- Loop Guard
- Jumbo Frame
- Up to 9KB
- 802.1AX Link Aggregation
- ERPS (Ethernet Ring Protection Switching)
- Port Mirroring
- Supports One-to-One, Many-to-One
- Supports Mirroring for Tx/Rx/Both
- Supports 4 mirroring groups
- Supports Mirroring for Rx
- VLAN Mirroring

L2 Multicast Features

- MLD Snooping
- MLD v1/v2 Snooping
- Supports 256 groups
- Host-based MLD Snooping Fast Leave
- Supports 64 static MLD groups
- MLD Snooping Querier
- Per VLAN MLD Snooping
- MLD Proxy Reporting • IGMP Snooping
- IGMP v1/v2/v3 Snooping
- Supports 256 IGMP groups
- Supports 64 static IGMP groups
- IGMP per VLAN
- IGMP Snooping Querier
- Host-based IGMP Snooping Fast Leave

VLAN

- 802.1Q
- Double VLAN (Q-in-Q)
- Port-based Q-in-Q
- Selective Q-in-Q
- Port-based VLAN
- MAC-based VLAN
- Subnet-based VLAN
- Private VLAN
- VLAN Group
- Max. 4K static VLAN groups
- Max. 4094 VIDs
- ISM VLAN (Multicast VLAN)—BDCOM named it as MVC
- Voice VLAN
- VLAN Trunking
- GVRP
- Up to 255 dynamic VLANs

AAA

- 802.1X Authentication
- Dynamic VLAN Assignment
- RADIUS and TACACS+ Authentication
- Guest VLAN

Access Control List (ACL)

- ACL based on:
 - VLAN
 - MAC address
 - EtherType
 - IP address
 - Protocol type
 - TCP/UDP port number



- IPv6 Traffic Class
- Time-based ACL

Quality of Service (QoS)

- 802.1p Quality of Service
- 8 queues per port
- Queue Handling
- Strict
- Weighted Round Robin (WRR)
- Strict + WRR
- Deficit Round Robin (DRR)
- Bandwidth Control
- Port-based (Ingress/Egress, min. granularity 64 Kb/s)
- Flow-based (Ingress/Egress, min. granularity 64 Kb/s)
- Per queue bandwidth control (min. granularity 64 Kb/s)
- Support for following actions:
- Remark 802.1p priority tag
- Remark TOS/DSCP tag
- Bandwidth Control
- Committed Information Rate (CIR)
- QoS based on
- 802.1p Priority Queues
- DSCP
- IP address
- MAC address
- VLAN
- IPv6 Traffic Class
- TCP/UDP port
- Switch Port
- Ether Type
- ToS/IP Preference
- Protocol Type

IPv6 Features:

- Native IPv6
- IPv4/IPv6 Dual Protocol stack
- IPv6 Address Types Stack: Unicast
- IPv6 Neighbor Discovery:
- Duplicate address
- Address resolution
- Unreachable neighbor detection
- Stateless auto-configuration Manual configuration Remote IPv6 ping
- IPv6 Telnet support
- HTTP over IPv6
- SNMP over IPv6
- IPv6 Syslog support
- IPv6 TFTP support
- MLD Snooping v1
- IP source guard
- IPv6 source guard

Operations, Administration, and Maintenance

- Cable Diagnostics
- 802.3ah Ethernet Link OAM
- Dying Gasp
- 802.1ag Connectivity Fault Management (CFM)
- Optical Transceiver Digital Diagnostic Monitoring (DDM)

Security:

- Port Security (MAC Flooding Attack / MAC Spoofing Attack Prevention)
- Broadcast/Multicast/Unicast Storm Control
- IP-MAC-Port Binding
- Dynamic ARP Inspection
- IP Source Guard
- DHCP Snooping
- IPv6 Snooping
- DHCPv6 Guard
- IPv6 Route Advertisement (RA) Guard
- IPv6 ND Inspection
- ARP Spoofing Prevention
- Duplicate Address Detection (DAD)
- Unicast Reverse Path Forwarding (URPF)
- Traffic Segmentation
- SSL
- Supports IPv4/v6 access
- SSH
- Supports SSH v2
- Supports IPv4/v6 access
- BPDU Attack Prevention
- DOS Attack Prevention

Management:

- Web-based GUI
- CLI
- Telnet
- TFTP Server
- TFTP Client
- FTP Client
- Secure FTP (SFTP) Server
- Traffic Monitoring
- SNMP
- Supports v1/v2c/v3
- SNMP Trap
- System Log
- DHCP Client
- DHCP Server
- DHCP Relay options 60, 61, 82
- Multiple Image
- Multiple Configuration
- Flash File System
- CPU Monitoring
- MTU Setting
- ICMP Tools
- Ping
- Traceroute
- LLDP
- NTP
- RMONv1
- RMONv2
- Trusted Host
- Password Encryption
- Debug Command
- sFlow

L3:**L3 Features**

- ARP
- 512 Static ARP
- Supports Gratuitous ARP
- IP Interface
- Supports 256 interfaces

- Loopback Interface
- IPv6 Tunneling
- IGMP Proxy Reporting
- VRRP
- OSPF v2/v3
- BGP
- PIM-DM (Protocol Independent Multicast - Dense Mode)
- PIM-SM (Protocol Independent Multicast - Sparse Mode)

L3 Routing

- IPv4/v6 Static Routing
- Supports route redistribution
- Supports secondary route
- Default Routing
- Policy-based Route (PBR)
- Route Redistribution
- Supports 32K hardware L3 forwarding entries shared by IPv4/IPv6
- Max. 32K IPv4 entries
- RIP v1/v2
- RIPvng 2

Performance

Packet Forwarding Rate:

10000Mbps port - 136,904,740pps

1000Mbps port - 13,690,474pps

100Mbps port - 1,369,047pps

10Mbps port - 136,904pps

Jumbo Frame (K):

9

Switching Capacity:

256Gbps

Physical Specifications

Dimensions (W x D x H mm):

440 x 315 x 44

Weight (g):

3600

Reliability

MTBF:

25°C: 185,680(hr)

Approval and Compliance

EMI/EMS:

CE

Safety:

FCC Part 15 Subpart B

Environmental Test:

RoHS

Order Information

GTL-2091

Package Contents

GTL-2091

Power Cord

Console Cable

19" Rack Mount Kit

Rubber Feet

Quick Installation Guide

Resource CD (User Manual, QIG)