

## Hardware Specifications

Copper Ports	20 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X port
PoE Injector Port	16 ports with 802.3at/af/802.3bt PoE++ injector function with port-1 to port-16
SFP/mini-GBIC Port	4 x 100/1000BASE-X SFP interface shared with port-17 to port-20 Supports 100/1000Mbps dual mode and DDM
Console	1 x RS-232-to-RJ45 serial port (115200, 8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Fan	3 x smart fan
Dimensions (W x D x H)	440 x 300 x 44.5 mm, 1U height
Weight	4.4kg
Enclosure	Metal
Power Requirements	100~240V AC, 50/60Hz, auto-sensing
Power Consumption/Dissipation	520 watts (max.)/1774BTU

### System:

PWR x1 (**Green**)

SYS x1 (**Green**)

### Per PoE Port (Port 1 to Port 16):

10/100/1000 LNK/ACT x1 (10/100:**Amer**.1000:**Green**)

IEEE 802.3af/at/bt PoE-in-use x1 (802.3af/at: **Amer**. 802.3bt: **Green**)

### Per Gigabit TP Port (Port 17 to Port 20):

10/100 LNK/ACT x1 (**Amer**)

1000 LNK/ACT x1 (**Green**)

### Per Gigabit SFP Port (Port 17 to Port 20):

100 LNK/ACT x1 (**Amer**)

1000 LNK/ACT x1 (**Green**)

### Alert:

PoE PWR x1 (**Red**)

FAN1 x1 (**Red**)

FAN2 x1 (**Red**)

FAN3 x1 (**Red**)

LED

## Switch Specifications

Switch Architecture	Store-and-Forward
Switch Fabric	40Gbps/non-blocking
Switch Throughput@64Bytes	29.7Mpps
Address Table	8K entries
Shared Data Buffer	4.1 megabits
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
Jumbo Frame	10K bytes

## Power over Ethernet

PoE Standard	IEEE 802.3bt PoE++ PSE Backward compatible with IEEE 802.3at/af PoE PSE
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## Hardware Specifications

PoE Power Supply Type	802.3BT End-span Mid-span Per port 54V DC
PoE Power Output	802.3bt mode, Ports 1 to 16: maximum 95 watts End-span mode: maximum 36 watts Mid-span mode: maximum 36 watts
Power Pin Assignment	802.3bt: 1/2(-), 3/6(+), 4/5(+), 7/8(-) End-span: 1/2(-), 3/6(+) Mid-span: 4/5(+), 7/8(-)
PoE Power Budget	400 watts (max)
Number of 95W 802.3bt Type-4 PDs	4
Number of 60W 802.3bt Type-3 PDs	6
Number of 802.3at PDs	16

## PoE Management Functions

Enhanced PoE Mode	Standard/Legacy/Force
Active PoE Device Detection	Yes
PoE Power Recycle	Yes, daily or predefined schedule
PoE Schedule	4 schedule profiles
PoE Extend Mode	Yes, max. up to 250 meters Port Enable/Disable/Schedule PoE mode control
PoE Port Management	802.3BT 802.3at End-span 802.3at Mid-span Port Priority

## Layer 2 Functions

Port Mirroring	TX/RX/both Many-to-1 monitor Up to 4 sessions
VLAN	802.1Q tagged VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP
Link Aggregation	IEEE 802.3ad LACP and static trunk Spanning Tree Protocol IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) STP BPDU Guard, BPDU Filtering and BPDU Forwarding

## Hardware Specifications

IGMP Snooping	IPv4 IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
MLD Snooping	IPv6MLD (v1/v2) snooping Up to 256 multicast groups
QoS	8 mapping IDs to 8 level priority queues Port number 802.1p priority DSCP/IP precedence of IPv4/IPv6 packets Traffic classification based, strict priority and WRR Ingress/Egress Rate Limit per port bandwidth control
Ring	Supports ERPS, and complies with ITU-T G.8032 Recovery time < 450ms

## Security Functions

Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL IPv4/IPv6 IP-based ACE/MAC-based ACE Max. 256 ACL entries
Port Security	IEEE 802.1X – Port-based authentication Built-in RADIUS client to co-operate with RADIUS server RADIUS/TACACS+ user access authentication
MAC Security	IP-MAC port binding MAC filter Static MAC address , max. 256 static MAC entries
Enhanced Security	DHCP Snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard

## Management Functions

Basic Management Interfaces	RS232 to RJ45 Console Web browser Telnet SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network LLDP protocol SNTP PLANET Smart Discovery Utility PLANET NMS System/CloudViewer
Event Management	Remote/Local Syslog System log
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (v2) RFC 2819 RMON (1, 2, 3, 9)

## Hardware Specifications

RFC 2863 Interface Group MIB  
RFC 3635 Ethernet-like MIB  
RFC 3621 Power Ethernet MIB  
LLDP MIB

## Standards Conformance

Regulatory Compliance FCC Part 15 Class A, CE  
IEEE 802.3 10BASE-T  
IEEE 802.3u 100BASE-TX/100BASE-FX  
IEEE 802.3z Gigabit SX/LX  
IEEE 802.3ab Gigabit 1000T  
IEEE 802.3x flow control and back pressure  
IEEE 802.3ad port trunk with LACP  
IEEE 802.1D Spanning Tree protocol  
IEEE 802.1w Rapid Spanning Tree protocol  
IEEE 802.1s Multiple Spanning Tree protocol  
IEEE 802.1p Class of Service  
IEEE 802.1Q VLAN tagging  
IEEE 802.1x Port Authentication Network Control  
IEEE 802.1ab LLDP  
IEEE 802.3af Power over Ethernet  
IEEE 802.3at Power over Ethernet Plus  
IEEE 802.3bt Power over Ethernet Plus Plus  
IEEE 802.3az Energy Efficient Ethernet (EEE)  
RFC 768 UDP  
RFC 793 TCP  
RFC 791 IP  
RFC 792 ICMP  
RFC 2068 HTTP  
RFC 1112 IGMP version 1  
RFC 2236 IGMP version 2  
RFC 3376 IGMP version 3  
RFC 2710 MLD version 1  
RFC 3810 MLD version 2  
ITU G.8032 ERPS Ring

Standards Compliance

## Environment

Operating Temperature: 0 ~ 50 degrees C  
Relative Humidity: 5 ~ 95% (non-condensing)

Storage Temperature: -10 ~ 70 degrees C  
Relative Humidity: 5 ~ 95% (non-condensing)

## Ordering Information

**GS-4210-16UP4C** 16-Port 10/100/1000T 802.3bt PoE++ plus 4-Port Gigabit TP/SFP Combo  
Managed Switch

# DIREKTRONIK