Appendix A - Technical Specifications

Hardware Specifications

Key Components / Performance
- ➢ Switching Capacity:
  - DGS-1500-20: 40Gbps
  - DGS-1500-28: 56Gbps
  - DGS-1500-52: 104Gbps
- ➢ Max. Forwarding Rate
  - DGS-1500-20: 29.8Mpps
  - DGS-1500-28: 41.7Mpps
  - DGS-1500-52: 77.4Mpps
- ➢ Forwarding Mode: Store and   Forward
- ➢ Packet Buffer memory:
  - DGS-1500-20: 1MBytes
  - DGS-1500-28: 1Mbytes
  - DGS-1500-52: 1MBytes
- ➢ DDRII for CPU: 128M Bytes
- ➢ Flash Memory: 16M Bytes

Port Functions
- ➢ 1000Base-T ports compliant with the following standards:
  - IEEE 802.3
  - IEEE 802.3u
  - IEEE 802.3ab
  - Supports Half/Full-Duplex operations
  - IEEE 802.3x Flow Control support for Full-Duplex mode
  - Auto MDI/MDIX
- ➢ SFP ports compliant with the following standards:
  - IEEE 802.3z
  - Supports Full-Duplex operations
- ➢ SFP transceivers supported
  - DGS-712 1000BASE-T Copper SFP Transceiver
  - DEM-310GT (1000BASE-LX, 10km)
  - DEM-311GT (1000BASE-SX, 550m)
  - DEM-314GT (1000BASE-LH, 50km)
  - DEM-315GT (1000BASE-ZX, 80km)
  - DEM-312GT2 (1000BASE-SX, 2km)
  - WDM Transceivers Supported:
  - DEM-330T/R (Gigabit WDM transceiver, Single-Mode 10km)
  - DEM-331T/R (Gigabit WDM transceiver, Single-Mode 40km
  - DEM-211 (100Base-FX, Multi-mode, 2km)
  - DEM-210(100Base-FX, Single-mode, 15km)
  - DEM-220T (100Base-FX WDM transceiver, Single-mode, 20km)
  - DEM-220R (100Base-FX WDM transceiver, Single-mode, 20km)

(Noted: DEM-210/211/220T/220R only supported on DGS-1500-52)

Physical & Environment
- ➢ AC input, 100~240 VAC, 50/60Hz, internal universal power supply
- ➢ Acoustic Value:
  - DGS-1500-20: 0dB (Fan-less)
  - DGS-1500-28: 0dB (Fan-less)
  - DGS-1500-52: 47.1dB (Smart Fan)
- ➢ Operation Temperature 0~50°C
- ➢ Storage Temperature -20~70°C
- ➢ Operation Humidity: 0%~95% RH
- ➢ Storage Humidity: 0%~95% RH

Emission (EMI) Certifications
- ➢ FCC class A
- ➢ CE Class A
- ➢ VCCI Class A
- ➢ IC Class A

Safety Certifications
- ➢ cUL, LVD, CE

Features

L2 Features
- ➢ Supports up to 16K MAC address
- ➢ Jumbo frame: Supports up to 10,000 bytes
- ➢ IGMP snooping: Supports 256 multicast group
- ➢ 802.1D Spanning Tree
- ➢ 802.1w Rapid Spanning Tree
- ➢ Loopback Detection
- ➢ 802.3ad Link Aggregation:
  - DGS-1500-20: up to 10 groups per device and 8 ports per group
  - DGS-1500-28: up to 14 groups per device and 8 ports per group
  - DGS-1500-52: up to 26 groups per device and 8 ports per group
- ➢ Port mirroring

L3 Features
- ➢ ARP:
  - Max 1K ARP entries
  - Support 64 static ARP
  - Support Gratuitous ARP
- ➢ Support 4 IP interfaces

- Support IPv4 address 0.0.0.0 to prevent occupied IP address in the network
- Max. 32 IPv4 static route entries
- Support secondary route
- Max. 128 host route
- Stackability:
  - Support D-Link Single IP Management
  - Use single IP to manage the virtual stack with up to 32 D-Link switches

D-Link Green Technology

- Power Saving: Enabled by default, save energy in 6 ways:

  - Power Saving by Link Status: Drastically save power when the switch port link is down. For example, no PC connection or the connected PC is powered off.

  - Power Saving by Cable Length: Detects the length of connected RJ-45 cables and adjusts power usage accordingly without affecting performance. Once the RJ-45 connection is less than 20 meters, the switch will reduce the power instead of full power, which is only needed for 100 meters cables.

  - Power Saving by LED Shut-Off: Posered LEDs can be turned on/off by port or system through schedule.

  - Power Saving by Port Shut-Off: Each port on the system can be turned on/off by schedule.

  - Power Saving by Port Standby: Each port on the system enters sleep state by schedule.

  - Power Saving by System Hibernation: System enters hibernation by schedule. In this mode, switches get most power-saving fingures since main chipsets (both MAC and PHY) are disabled for all ports, and energy required to power the CPU is minimal.

VLAN

- 802.1Q VLAN standard (VLAN Tagging)
- Up to 256 dynamic VLAN groups
- Asymmetric VLAN
- Auto-Voice VLAN
- Auto Surveillance VLAN

QoS (Quality of Service)

- 802.1p priority, DSCP priority queue mapping
- Up to 4 queues per port
- Supports Strict / WRR mode in queue handling

- Bandwidth Control

AAA

- 802.1X Local/RADIUS database
- 802.1X port-based access control
- Support EAP, OTP, TLS, TTLS and PEAP
- Support MD5 authentication
- Support 802.1X session timeout attribute

ACL

- Max 50 ingress ACL profile, 200 ingress ACL rules(DGS-1500-20/28), 450 ingress ACL rules(DGS-1500-52)
- Each rule can be associated to a single port, multiple ports (Only for DGS-1500-20/28)
- Support different ACL policy packet contents:
  - MAC address
  - Ethernet Type
  - IPv4 address
  - ICMP
  - IGMP
  - TCP/UDP port number

Security

- Port Security: Support 64 MACs per port
- IP and MAC ACL
- Broadcast Storm Control
- D-Link Safeguard Engine
- ARP Spoofing Prevention: Maximum 64 entries
- DHCP Server Screening : Maximum 5 entries
- SSL: Support v1/v2/v3
- Support DHCP Snooping

Management

- Web-based GUI or SmartConsole Utility
- D-Link proprietary CLI
- Telnet Server: Max. 4 connections
- SNMP support
- SNMP Trap, Trap to SmartConsole Utility
- DHCP client
- Trap setting for destination IP, system events, fiber port events, twisted-pair port events
- Web-based configuration backup / restoration
- Web-based firmware backup/restore
- Firmware upgrade using SmartConsole Utility & Web-based management
- Reset, Reboot