

# DG-CS4554FFv2 Dual Stack 40G Data Center Ethernet Switch



DG-CS4554FFv2



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## ■ Product Overview

DG-CS4554FFv2 next-generation data center 40G switch has advanced hardware and software architecture design, modular 1+1 redundant power supplies, 4+1 redundant fans, cross ventilation and wind direction adjustable. DG-CS4554FFv2 supports data center features such as Data Center Bridging\*, VEPA\* fully applicable to the data center TOR (Top of Rack) application requirements of the switch.

DG-CS4554FFv2 includes 48\*10GE SFP+ ports and 6\*40G QSFP+ ports. DG-CS4554FFv2 supports IPv6 with hardware. With the abundant IPv6 features, the product can also work for next generation network.

DG-CS4554FFv2 is ideal for cloud computing data center server access, core switch of small to medium data center. For campus or other large network, DG-CS4554FFv2 could also be deployed at aggregation or core layer as its high performance and reliability.

## ■ Key Features and Benefits

### ➤ Performance and Scalability

With high switching capacity, DG-CS4554FFv2 supports wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols.

The 10 Gigabit Ethernet connectivity of DG-CS4554FFv2 is accomplished via a hot-pluggable 10 Gigabit SFP+ transceiver.

DG-CS4554FFv2 supports modular redundant AC power supplies for different environment applications.

➤ **Full Data Center Features\***

As new generation data center switch, DG-CS4554FFv2 supports full data center features such as DCB\*(Data Center Bridging), VEPA\*(Virtual Ethernet Port Aggregator), which not only improves the efficiency, guarantees the flexibility, but also enhanced the scalability of datacenter network.

➤ **OpenFlow**

DG-CS4554FFv2 supports OpenFlow 1.0 and 1.3 standard protocol. OpenFlow network is increasingly becoming a trend as the core protocol of SDN network. It makes the network easier programming OpenFlow brings the high performance to datacenter users via self-defined network.

➤ **VSF(Virtual Switch Framework)**

Virtual Switch Framework could virtualize multiple DIGISOL DG-CS4554FFv2 series into one logical device, achieves the sharing of information and data tables between different switches. The performance and ports density of virtualized device are greatly enlarged by times under VSF. VSF also provides simplified management work for network administrator and more reliability.

➤ **Full Optical Port**

DG-CS4554FFv2 supports abundant optical connection ports to construct full optical network and increases the performance of networks.

➤ **Rich L3 Features**

DG-CS4554FFv2 delivers high-performance, hardware based IP routing. RIP, OSPF and BGP provide dynamic routing by exchanging routing information with other Layer 3 switches and routers. With DG-CS4554FFv2, customers could easily achieve Policy based Route(PBR), which is important when they need multiple application.

➤ **Strong Multicast**

DG-CS4554FFv2 supports abundant multicast features such as IGMPv1/v2/v3 snooping and fast leave and IGMPv1/v2/v3, PIM-DM, PIM-SM, PIM-SSM and even MSDP. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detection functions, DG-CS4554FFv2 provides great application experience for customer.

➤ **MPLS/VPLS**

DG-CS4554FFv2 supports MPLS L3 VPN/MPLS L2 VPN(VPLS) and helps customer to construct more secure/extendable network.

➤ **Easy high reliability network**

MRPP is Multi-layer Ring Protection Protocol, which is DIGISOL's private fast Ethernet ring protocol. Comparing to spanning tree protocol, it has advantages of fast convergence, simple protocol calculation, less system resources cost and so on, which can improve the reliability of Ethernet network operation.

➤ **Comprehensive QoS**

With 8 queues per port, DG-CS4554FFv2 enables differentiated management of up to 8 traffic types. The traffic is prioritized according to IEEE802.1p, DSCP, IP precedence and TCP/UDP port number, giving optimal performance to real-time applications such as voice and video. DG-CS4554FFv2 also supports Bi-directional rate-limiting, per port or traffic class, preserves network bandwidth and allows full control of network resources.

➤ **Enhanced Security**

IEEE 802.1X port-based access control and MAC-based access control ensure all users are authorized before being granted access to the network.

Ingress/Egress Access Control Lists (ACLs) can be used to restrict access to sensitive network resources by denying packets based on L2/L3/L4 headers information. And for some services are based on time, the product can support time based ACL to match the requirement.

Secure Shell (SSH) encrypts network management information via Telnet providing secure network management.

RADIUS/TACACS Authentication enables centralized control of the switch and restricts unauthorized users from altering the configuration of the switch.

➤ **Abundant IPv6 Support**

DG-CS4554FFv2 supports IPv6 switching and routing based on hardware for maximum performance. With increased network devices growing and the need for larger addressing and higher security becomes critical, DG-CS4554FFv2 will be a right product to meet the requirement.

■ **Specification**

Item	DG-CS4554FFv2
Physical port	48 * 10G SFP+ and 6 * 40G QSFP+
Management port	10/100/1000Mbps RJ45 Ethernet Management port USB2.0 Management port
<b>Performance</b>	
Switching Capacity	1440Gbps
Throughput	1071Mpps
MAC Address	96K
Routing Table	16K
L3 Table	16K
<b>Physical</b>	
Dimension	W*H*D: 433.8mm*44mm*550mm
Relative Humidity	10%~90% non-condensing
Temperature	Working 0°C~45°C, storage -40°C~75°C
Power Input	AC: 100~240V,50~60 Hz
Power Supply	1+1 Modular Redundant

Power Consumption	305W	
Main Features		
L1, L2 Features	IEEE 802.3(10Base-T), IEEE 802.3u(100Base-TX), IEEE 802.3z(1000BASE-X) IEEE 802.3ab(1000Base-T), IEEE 802.3ae(10GBase), IEEE802.3x IEEE 802.3ak(10GBASE-CX4) IEEE 802.3ba	
	12k Jumbo Frame Port Loopback Detect LLDP and LLDP-MED UDLD 802.3ad LACP, max 128 group trunks with max 8 ports for each trunk LACP Load Balance	
	N:1 Port Mirroring RSPAN ERSPAN	
	IEEE802.1d(STP) IEEE802.1w(RSTP) IEEE802.1s(MSTP) Root Guard BPDU Guard BPDU Tunnel	
	802.1Q, 4096 VLAN MAC VLAN, VOICE VLAN, PVLAN, Protocol VLAN, Multicast VLAN QinQ, Selective QinQ, Flexible QinQ GVRP N:1 VLAN Translation Broadcast / Multicast / Unicast Storm Control	
	IGMP v1/v2/v3 Snooping and L2 Query ND Snooping MLDv1/v2 Snooping	
	Port Security	
	Flow control: HOL, IEEE802.3x Bandwidth Control	
	L3 Features	Static Routing, RIPv1/v2, OSPFv2, BGP4 OSPFv3, BGP4+ OSPF Multiple Process LPM Routing Policy-based Routing(PBR) for IPv4 and IPv6 VRRP URPF, ECMP BFD

	<p>IGMP v1/v2/v3, IGMP Proxy,  DVMRP,PIM-DM,PIM-SM,PIM-SSM, any cast RP, MSDP  Static Multicast Route  Multicast Receive Control  Illegal Multicast Source Detection</p>
	<p>ARP Guard, Local ARP Proxy, Proxy ARP, ARP Binding, Gratuitous ARP, ARP Limit  Anti ARP/NDP Cheat, Anti ARP/NDP Scan</p>
	<p>DNS Client</p>
	<p>GRE Tunnel</p>
IPv6	<p>6to4 Tunnel, Configured Tunnel, ISATAP Tunnel, GRE Tunnel  ICMPv6,ND,DNSv6  IPv6 LPM Routing,IPv6 Policy-Based Routing(PBR)  IPv6 VRRPv3,IPv6 URPF, IPv6 RA  RIPng,OSPFv3,BGP4+  MLD Snooping,IPv6 Multicast VLAN  MLDv1/v2, PIM-SM/DM for IPv6, IPv6 Anycast RP, IPv6 ACL, IPv6 QOS</p>
MPLS	<p>MPLS, VRF, LDP</p>
	<p>MPLS L3 VPN, MPLS L2 VPN(VPLS), VPWS</p>
QoS	<p>8 Queues  SWRR,SP,WRR,DWRR,SDWRR,WRED  Traffic Classification Based on 802.1p CoS, ToS , DiffServ DSCP, ACL, port number  Traffic Shaping  PRI Mark/Remark</p>
ACL	<p>IP ACL ,MAC ACL,IP-MAC ACL  Standard and Expanded ACL Based on source/destination IP or MAC, IP protocol  TCP/UDP port, DSCP, ToS, IP Precedence), VLAN, Tag/Untag,CoS  REDIRECT and accounting based ACL  Rules can be configured to port, VLAN, VLAN routing interfaces  Time ranged ACL</p>
Security	<p>802.1x AAA  Port, MAC based authentication  Accounting based on time length and traffic  Guest VLAN and Auto VLAN</p>
	<p>RADIUS for IPv4 and IPv6</p>
	<p>TACACS+ for IPv4 and IPv6</p>
	<p>MAB</p>
DHCPv4/v6	<p>DHCP Server/Client for IPv4/IPv6  DHCP Relay/Option 82  DHCP Snooping/Option 82</p>
Traffic Monitor	<p>IP FIX* traffic monitor, 1:1  sFlow Traffic Analysis</p>

<p>Security Management</p> <p>Network</p>	<p>CLI, WEB, Telnet, SNMPv1/v2c/v3 through IPv4 and IPv6</p> <p>Syslog and external Syslog server</p> <p>HTTP SSL</p> <p>SNMP MIB, SNMP TRAP</p> <p>FTP/TFTP</p> <p>SNTP/NTP</p> <p>RMON 1,2,3,9</p> <p>Authentication by radius</p> <p>SSH v1/v2</p> <p>Dual firmware images/ Configuration files</p> <p>802.3ah OAM, 802.1ag OAM*</p> <p>OpenFlow 1.0/1.3.</p> <p>(support open controller Opendaylight, Floodlight, Ryu, Pox, etc.)</p>
<p>Data Center Features*</p>	<p>DCB*(Data Center Bridging)</p> <ul style="list-style-type: none"> <li>● 802.1Qbb: Priority-based Flow Control (PFC)</li> <li>● 802.1Qaz: Enhanced Transmission Selection (ETS and DCBX)</li> <li>● 802.1Qau: Congestion Notification (CN/QCN)</li> </ul> <p>IEEE VEPA*(Virtual Ethernet Port Aggregator)</p> <p>VSF(Virtual Switch Framework)</p>

The contents marked with "\*" need future upgrade or are under development

## ■ Order Information

Product	Description
DG-CS4554FFv2-B1	40G Ethernet Optical Routing Switch, 48 * 10G SFP+ and 6 * 40G QSFP+ ports and 5 fan modules (4+1 redundancy). With Single power module.
DG-CS4554FFv2-B2	40G Ethernet Optical Routing Switch, 48 * 10G SFP+ and 6 * 40G QSFP+ ports and 5 fan modules (4+1 redundancy). With 2 power modules (1+1 redundancy).
DG-SA5250-CBL-5M	DAC cable with 2 40G(QSFP) modules, 5m, suitable for QSFP ports on same model of switch, can be used for VSF