DCRS-5960F Dual Stack 10G Ethernet Optical Routing Switch

DCRS-5960-28F-DC

DCRS-5960-52F-DC

■ Product Overview

The DCS-5960F Series switches are 10G full optical Ethernet Layer 3 switches for carrier and MAN networks. They support strong IPv4/IPv6 routing, MPLS, comprehensive QoS, enhanced Vlan functions (Multicast Vlan, Voice Vlan, QinQ, etc), classified bandwidth control, multiple link aggregation, intelligent security control. It is ideal for the Metro Ethernet market, using in the aggregation layer of three-tier networks provides long distance fiber connections to aggregate access layer switches or DSLAMs. It is also an excellent choice as a core switch for enterprise customers.

The DCRS-5960F carrier level switches have 2 types: DCS-5960-28F-DC and DCS-5960-52F-DC. The switches support IPv6 with hardware and pass the IPv6 form certification Phase II. With the abundant ipv6 features, the product can still work for next generation network.

■ **Application**

DCRS-5960F Series application
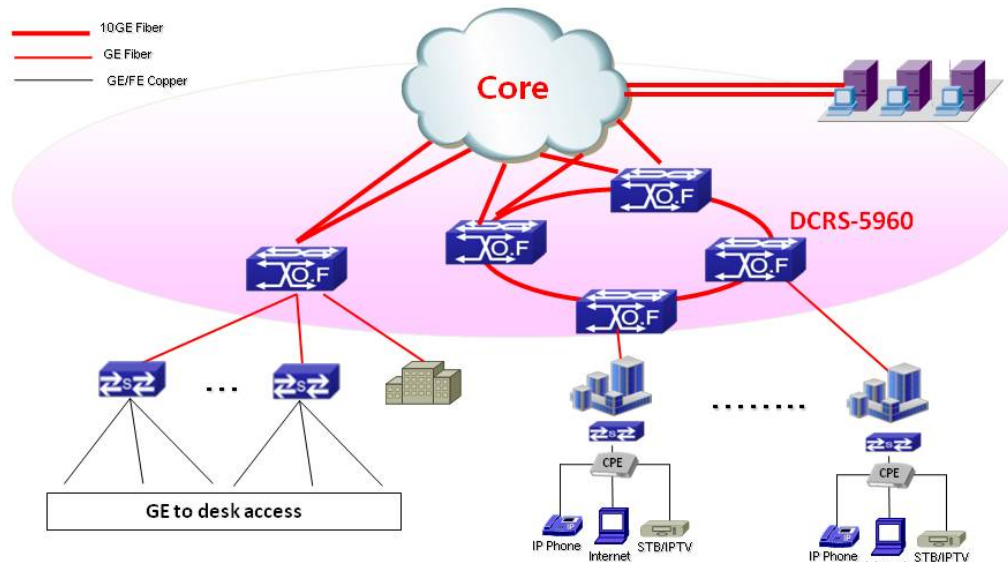
■ **Key Features and Benefits**

➢ **Performance and Scalability**

With high switching capacity, the DCRS-5960F series switches support wire-speed L2/L3 forwarding and high routing performance for IPv4 and IPv6 protocols.

The SFP-based Gigabit ports support various optional Gigabit Ethernet mini GBIC transceivers, for different distance fiber connections.

The 10 Gigabit Ethernet connectivity of DCRS-5960F is accomplished via a hot-pluggable 10 Gigabit XFP/SFP+ transceiver which supports distance up to 300 meters over multimode fiber and 10 to 80km over single-mode fiber(The distance depends the optical module chosen).

The DCRS-5960F-DC series supports redundant AC and DC power supplies for different environment applications.

➢ **Full Optical Port**

The 5960F series supports abundant optical connection ports to construct full optical network and increase the performance of networks.

The DCRS-5960-28F includes 12 GE combo and 12 10/100/1000 Base-T ports with max 4 10GE ports.

The DCRS-5960-52F includes 44 GE SFP and 4 GE combo ports with max 4 10GE ports.

➤ **Rich L3 Features**

The DCRS-5960F series 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.

Policy based Route(PBR) is important for customer when they need multi exit application and DCRS-5960F series can support it.

➤ **Strong Multicast**

The DCRS-5960F series supports abundant multicast features. The product supports rich L2 multicast features such as IGMPv1/v2/v3 and snooping and L3 multicast protocols such as PIM-DM, PIM-SM, PIM-SSM even MSDP. As the rich application experience, the product supports multicast Vlan Register (MVR), multicast receiver/sender control and illegal multicast source detect functions.

➤ **MPLS**

The DCRS-5960F series supports MPLS/MPLS VPN and helps customer to construct more security network. The DCRS-5960F series can support max 255 VRF instance.

➤ **Easy high reliability network**

MRPP is Multi-layer Ring Protection Protocol. It introduces Layer concept for loop at the basis of traditional loop protect protocol. Each loop layer has multiple same-level Ethernet loop networks. With multi-loop layers, it can achieve quick convergence from core to aggregation.

MRPP can get fast recovery for links at different layers. Compared with spanning tree protocol, it has advantages of fast convergence, simple protocol calculation, little system resources cost, clear networking idea and so on, which can improve the reliability of Ethernet network operation.

VRRP is a high reliability protocol for network and the DCRS-5750F series can support also. With the protocol support the product can help customer network increase network reliability and upgrade network more smoothly.

➤ **Comprehensive QoS**

8 queues per port enable differentiated management of up to 8 traffic types.

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.

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

service is 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 Authentication enables centralized control of the switch and restricts unauthorized users from altering the configuration of the switch.

➢ **Abundant IPv6 Support**

The DCRS-5960F series supports IPv6 routing in hardware for maximum performance. As more network devices growing and the need for larger addressing and higher security become critical, the DCRS-5960F series will be a right product to meet the requirement. The DCRS-5960F passed IPv6 form Phase II certificate is the best proof of the application.

■ Specification

Attributes	DCRS-5960-28F-DC	DCRS-5960-52F-DC
Ports	12 GE SFP ports, 12 COMBO (SFP/GT) 2 slots and max 4 10GE,	44 GE SFP ports, 4 COMBO (SFP/GT) 2 slots and max 4 10GE,
Performance		
Switching Capability	128Gbps	176Gbps
Throughput	96Mpps	131Mpps
MAC Address	Max 16K	Max 16K
VLAN Table	Max 4K	Max 4K
ACL TABLE	Max 3k	Max 3k
Routing Table	Max 13k	Max 13k
L3 Interface	Max 1K	Max 1K
VRF interface	Max 255	Max 255
Port Queues	8	8
Physical		
Dimension(WHD)	440mm×44mm×325mm	440mm×44mm×325mm
Relative Humidity	5% ~ 90%, non-condensing	5% ~ 90%, non-condensing
Operating Temperature	0℃ ~ 50℃	0℃ ~ 50℃
Storage Temperature	-40℃ ~ 70℃	-40℃ ~ 70℃
Power	AC: 100- 240V, 50-60Hz DC: -48V	AC: 100- 240V, 50-60Hz DC: -48V

Power Consumption	65W	130W
MTBF	>80,000 hours	>80,000 hours
MEF Comply	Comply MEF 9,14	Comply MEF 9,14
EMC safety	FCC, CE, RoHS,	FCC, CE, RoHS

Features	
Forwarding Mode	■ Storage and forwarding
L2 Features	■ IEEE802.3(10Base-T) ■ IEEE802.3u(100Base-TX) ■ IEEE802.3z(1000BASE-X) ■ IEEE802.3ab(1000Base-T) ■ IEEE802.3ae(10GBase) ■ 9k Jumbo Frame ■ Port loopback detect ■ LLDP and LLDP-MED ■ UDLD ■ DDM ■ VCT ■ Support LACP 802.3ad, max 128 group trunk with max 8 ports for each trunk, ■ Support load balance ■ IEEEE802.1d(STP) ■ IEEEE802.1W(RSTP) ■ IEEEE802.1S(MSTP) Max 48 instance ■ Root Guard ■ BPDU Guard ■ BPDU forwarding ■ Support one to one or any to one port mirror ■ RSPAN ■ IGMP v1/v2/v3 Snooping and L2 query ■ ND snooping ■ MLDv1/v2 snooping ■ QinQ, GVRP, Broadcast / Multicast / Unicast Storm Control ■ Port/ MAC/ IP segment/ Portocol/ Voice/ Private/ Vlan support ■ Multicast Vlan Register/MVR for IPv4 and IPv6 service ■ Support port-based 802.1Q, 4096 VLAN ■ MAC filter, MAC limit
L3 Features	■ IP Protocol(IP support both of IPv4 and IPv6) ■ Support manual configure IPv4/IPv6 tunnel ■ Support 6to4 tunnel ■ Support ISATAP tunnel

	■ Default Routing, Static Routing, Black hole route, VLSM and CIDR,
	■ RIPv1/V2, OSPFv2, BGP4, support MD5 authentication LPM Routing
	■ OSPFv3, BGP4+
	■ Policy based Routing(PBR) for IPv4 and IPv6
	■ VRRP, VRRP v3
	■ PIM-DM, PIM-SM, PIM-SSM, MSDP
	■ Static Multicast route
	■ PIM-SM/DM/SSM for IPv6, 6 to 4 Tunnels, configured Tunnels, ISATAP
	■ Multicast receive control
	■ Illegal multicast source detect
	■ Any cast RP for Ipv4 and Ipv6
	■ Support ECMP(Equal Cost Multi-Path)with maxim 8 groups
	■ URPF for IPv4 and IPv6
	■ Support BFD
	■ ARP guard, Local ARP proxy, Proxy ARP, ARP binding, Gratuitous ARP, ARP limit
QoS	■ 8 queues per port
	■ Support traffic classification based on IEEE 802.1p, ToS, port and DiffServ
	■ Support SP, WRR.SWRR
	■ Support Traffic Shaping
	■ Support PRI Mark/Remark
ACL	■ Support standard and expanded ACL
	■ Support IP ACL and MAC ACL
	■ Support ACL based on source/definition IP, MAC, L3 IP, TCP/UDP port number, IP PRI(DSCP, ToS, Precedence), Time
	■ Support time-based security auto-negotiation
	■ ACL rules can be configured to port, VLAN, VLAN routing interfaces
	■ Can be used for QoS classification
Reliability	■ Support MSTP(802.1s)
	■ Support VRRP, LACP load balance
	■ MRPP - Multi-layer Ring Protection Protocol
	■ Redundant power supply, power load balancing
	■ Support Firmware & Configure dual fault tolerance backup
DHCP	■ DCHP Client, Relay, Snooping, Option 82
	■ DHCP Server for IPv4 and IPv6
	■ DHCP v6 and DHCP snooping V6

Security	■ 802.1X
	■ Support guest Vlan and auto Vlan
	■ MAB
	■ GRE tunnel
	■ BPDU tunnel

Management	■ CLI, Console(RS-232), Telnet (Ipv4/Ipv6), SSH(Ipv4/Ipv6),SSL connection
	■ Support WEB based NMS
	■ Support SNMPv1/v2c/v3 for IPv4, SNMPv1/v2c for IPv6
	■ Strict management hosts by ACL
	■ AAA or Local Authentication
	■ SNTP and NTP, Daylight Saving time
	■ Configuration file backup
	■ Multiple configuration files
	■ Support FTP/TFTP server or client upgrade
	■ Support X-modem protocol upgrade
	■ Support max 24 units cluster with 10GE ports and managed by single IP
	■ Support 802.1 ah OAM

Supervision and Trouble Shooting	■ Supervise abnormity of task, memory, CPU, stack, switch chip, temperature and raise alarm
	■ Mirror based on port and flow, RSPAN
	■ Syslog
	■ Sflow for IPv4 and IPv6
	■ RMON 1, 2, 3, 9
	■ Ping and trace route command

■ Warranty

3 years

■ Order Information

Product	Description
DCRS-5960-52F-DC	10G IPv6 Routing Switch, 44* GE SFP and 4 Gigabit Combo (SFP/GT) ports and 2 slot, AC+DC redundant power supply
DCRS-5960-28F-DC	10G IPv6 Routing Switch, 12* GE SFP and 12 Gigabit Combo (SFP/GT) ports and 2 slot, AC+DC redundant power supply
MRS-2XFP	2* 10G module(XFP interface) for DCRS-5750, DCRS-5960, DCRS-5980 series
MRS-2GB	2 *1G module(SFP interface) for DCRS-5750, DCRS-5960, DCRS-5980 series

MRS-2SFP+	2* 10G module(SFP+ interface) for DCRS-5750, DCRS-5960, DCRS-5980 series

■ Connect us

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