HFCL

DCR 1100 Series IP/MPLS Router

DCR 1100-X800 Models

HFCL DCR 1100-X800 Routers are a pivotal enabler for digital transformation across industries. With the surge in user base and diverse consumption methods, it addresses the need for higher bandwidths in mobile communication networks. As enterprises embrace Industry 4.0, relying on technologies like IoT, AI, and automation, the DCR 1100 ensures ultra-low latency and high bandwidth, catering to the demands of mission-critical applications and the evolving landscape of end-to-end operations.

Salient Features

- Rich suite of L2/L3 features including Carrier Ethernet, MPLS, Segment Routing and advanced QOS features
- Compliant with OCP (Open Compute Project) standards
- Tested and validated on RFC2544 and ITU-TY.1564
- Advanced timing & synchronization features that include support for 1588v2 (PTP), SyncE and various clock options like BITS and GPS (10Mhz, 1pps/ToD)
- Supports Fan Redundancy, with 96 hours of uninterrupted operations with single fan failure.
- Zero-touch Provisioning (ZTP) and Netconf/Yang support for automated operations
- Extended temperature range support and designed for deployment in temperature-challenged and space-constrained locations
- Robust security features for control, data, and management plane protection
- Supports both AC and DC, Hot Swappable and Redundant Power Supply Units

DCR 1100-X800 Technical Specification

Features	DCR 1100-008A	DCR 1100-008E
Total Bandwidth (Half Duplex/ Full Duplex)	1600 Gbps / 800 Gbps	1600 Gbps / 800 Gbps
Interfaces	6 x 40G/100G (QSFP+/QSFP28) 2 x 40G/50G (QSFP+/QSFP28) 20 x 1G/10G/25G (SFP/SFP+/SFP28)	4 x 40G/100G (QSFP+/QSFP28) 16 x 1G/10G/25G (SFP/SFP+/SFP28)
Packet Processor Performance	Up to 600 Mpps	Up to 600 Mpps
Timing and Synchronization	BITS (E1/T1), 1pps (Input & output), 10MHz (input & output), ToD (in/out), GPS antenna termination for GNSS support Line Timing : PTP and SyncE	BITS (E1/T1), 1pps (Input & output), 10MHz (input & output), ToD (in/out) Line Timing : PTP and SyncE
Airflow	Front to Back	Front to Back
Power Consumption	197 Watts (Typical) 360 Watts (Peak)	197 Watts (Typical) 360 Watts (Peak)
Power Rating	AC : 100-240V, 6-3A, 50/60Hz DC : -36V to -75V, 16-8A	AC : 100-240V, 6-3A, 50/60Hz DC : -36V to -75V, 16-8A
Operating Temperature	-5 ºC to +65 ºC	-5 ºC to +65 ºC
Storage Temperature	-40 ºC to +70 ºC	-40 ºC to +70 ºC
Operating Humidity (RH)	5% to 95%	5% to 95%
Dimension (WxDxH)	440 x 300 x 44 mm	440 x 300 x 44 mm
Weight	7.2 Kg	7.2 Kg

*Note: To ensure proper functioning of the product, only HFCL approved pluggable modules must be used.

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth,
Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32,
Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com

Software Features

L2 Features
Layer 2 forwarding and bridging (802.3 Bridging), BVI/BDI
EVC/EFP
802.1Q virtual LAN (VLAN), QinQ (802.1ad)
Ethernet Link Aggregation Group (LAG) Link Aggregation Control Protocol (LACP) 802.3ad, MC-LAG
ERPS : G.8032 , G.8032v1, 8032v2
Rapid Spanning Tree Protocol (RSTP) / VLAN Spanning Tree Protocol (VSTP) / Multiple Spanning Tree Protocol (MSTP)
Y.1731, 802.1ag, ERPS-G.8032
Carrier Ethernet features (E-LAN, E-LINE, E-TREE and E-ACCESS)
Storm Control
802.1p
Jumbo Frame up to 9600 bytes (10k)
Port Mirroring
L3 Features
L3 interface : Physical interfaces and sub-interfaces
Integrated Routing Bridging (IRB) with Bridge Virtual Interface (BVI)
Dual Stack IPv4/IPv6
VRRP
IPV4 Routing
Static Routing
Intermediate System to Intermediate System (ISIS)
Open Short Path First (OSPFv2)
Border Gateway Protocol (BGP)
Multiprotocol Border Gateway Protocol (MP-BGP)
Prefix Independent Convergence-BGP, OSPF
Equal-Cost Multipath (ECMP)
Bidirectional Forwarding Detection (BFD) single hop & Multi-hop
Virtual Routing and Forwarding (VRF)
IP FRR (LFA, RLFA for IS-IS, OSPF, BGP)
Policy Based Routing
IPV6 Routing
Static Routing
Intermediate System to Intermediate System (ISIS)
Open Short Path First (OSPFv3)
Border Gateway Protocol (BGP)
Multiprotocol Border Gateway Protocol (MP-BGP)
Prefix Independent Convergence-BGP, OSPF
Equal-Cost Multipath (ECMP)
Bidirectional Forwarding Detection (BFD) single hop & Multi-hop
Virtual Routing and Forwarding (VRF)
IP FRR (LFA, RLFA for IS-IS, OSPF, BGP)
Policy Based Routing
QoS
Hierarchical QoS with ingress shaping and congestion management, Packet based Differentiated services
Virtual Output Queueing (VOQ)
Policing, Shaping, Marking and Remarking
Multi-level priority queuing Classification based on L2/L3/L4 fields
802.1Q, Source and Destination IP address/subnet mask, DSCP value, IP precedence classification, Protocol type (TCP, UDP, etc.), Default markings per port (ingress), 802.1p/DSCP (ingress), Per port and per queue shaping, At least 8 hardware queues per port for flow treatment of traffic, WRED or equivalent.
Strict priority, weighted fair queuing schedulers Weighted Random Early Detection (WRED), Strict-queuing, weighted fair queuing, priority-weighted fair queuing,
Deep packet buffer
Multicast
PIM-SM/DM, PIM-SSM
PIM-SSM2
IGMP v1 / v2 / v3
MLD v2
mVPN
Advance Services (MPLS)
MPLS (LER, LSR), MPLS Ping /Traceroute, LSP Ping, MPLS EXP bits
MPLS Label Distribution Protocol (LDP), LDP LFA
BGP Labeled Unicast (BGP-LU)
MPLS Traffic Engineering with RSVP-TE
Point-to-point L2VPN – Static, T-LDP, EVPN-VPWS
Point to Multipoint L2VPN – VPLS, EVPN
L3VPN
L2/L3 EVPN with Anycast IRB
VRF Route leaking
6PE, 6VPE
Seamless MPLS
MPLS TE Fast Reroute (FRR), RSVP TE FRR
Segment Routing
ISIS, OSPF, BGP extensions to segment routing
Segment Routing with MPLS data plane (SR-MPLS)
Segment Routing Traffic Engineering (SRTE) & SRBE
Segment Routing Path Computation Element protocol (SR-PCEP)
Topology Independent Loop-Free Alternate (TI-LFA) Segment (IS-IS, OSPF, BGP)
MPLS LDP and SR (IS-IS, OSPF) interworking

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth, Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32, Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com

Security
Control-plane, data plane and management plane protection
Authentication, Authorization, and Accounting (AAA), Terminal Access Controller Access-Control System (TACACS and TACACS+)
Secure Shell (SSH)
Secure File Transfer Protocol (SFTP)
Layer 3 ingress and egress ACLs for IPv4 and IPv6
Layer 2 ingress ACLs and egress ACLs
802.1x port-based network access control
Unicast Reverse Path Forwarding (Unicast RPF)
Secure Boot and Storage (Trusted Platform Module-TPM)
DoS Prevention
DHCP Snooping

Management Features

LLDP, ICMP, DHCP Sever / Relay / Client
IP SLA for IPv4 & IPv6
SR-OAM
IEEE 802.3ah: Ethernet in the First Mile (EFM)
TWAMP
S-flow
Network Time Protocol (NTP) as per RFC 1305
Telnet
Ping, Traceroute
SPAN / RSPAN / ERSPAN
CLI
SNMP v1/v2/v3
Yang Modelling language with NETCONF
Configuration Rollback
Syslog
Role based privileges for the system access
Watch Dog implementation between Baseboard management and x86CPU
ZTP

Timing & Synchronization Feature

Stratum 3E Internal Oscillator
SyncE with ESMC (G.8264); Ethernet equipment Clock (EEC) G.8262 and Enhanced EEC G.8262.1
Internal GNSS receiver support
External timing ports to allow the connection of separate GNSS receivers as PRTC
IEEE 1588-2008 PTP (Class B & C) T-GM, T-BC, T-TSC (Profiles : G.8265.1, G.8275.1, G.8275.2 , G.8273.2 Class B&C)
NTP
Clock Interfaces: BITS (E1/T1), 1pps (Input & output), 10MHz (input & output), ToD (in/out), GPS antenna termination for GNSS support

Other Features

VXLAN
DAC Cable

Standards Compliances

Safety
IEC 62368-1:2020+A11:2020
IEC 62368-1:2018
Environmental
GR-3108 Class 2
IEC 60068-2-64
IEC 60068-2-27
RoHS2 Directive (2011/65/EU)
QM-333
Emissions and Immunity
CISPR 32/ EN55032 Class A
EN/IEC 61000-4-11
EN/IEC 61000-4-29
EN/IEC 61000-4-2
EN/IEC 61000-4-4
EN/IEC 61000-4-3
EN/IEC 61000-4-6
EN/IEC 61000-4-5
EN/IEC 61000-3-2
EN/IEC 61000-3-3
FCC 47 CFR Part 15, Subpart B , Class A
ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-17 V3.2.4 (2020-09)

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth,
Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32,
Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com

Applications

Aggregation of traffic at Cell Site

5G mobile services have gained momentum and are projected to handle up to 80% of mobile traffic by 2030. By offering faster speeds, 5G enables never seen before consumption pattern by subscribers like video streaming, real-time mobile conferencing, VR/AR and many more. The DCR 1100 router, in a compact 1RU design, offers a variety of interface speeds and efficiently aggregates mobile traffic at cell sites with minimal space and power needs. Supporting diverse services like L3VPN, VPWS, and VPLS, it converges mobile and enterprise solutions. Equipped with robust IP/MPLS, Segment Routing, and Class-C Timing and Synchronization, DCR routers help providers meet today's 5G demands while being prepared for future growth.

Connectivity to the Edge Network

As 5G transforms connectivity, subscribers and the expanding AI-driven applications demand ultra-fast response times, making low-latency networks essential. Simultaneously, the need for high bandwidth continues to surge. To address this, servers once centralized at the network core are now positioned closer to users at the edge. The DCR 1100 router is ideal for providing connectivity to these server and storage resources located at the edge, as the router supports low-latency performance by design. With deep buffers to manage traffic spikes, it ensures a superior user experience, meeting the demands of today's converged networks.

Bandwidth delivery to CSPs

Cloud-based services dominate modern business landscapes. This shift poses challenges that traditional, static networks struggle to address. Cloud data centers require massive aggregate bandwidth pipes. Yet, these large pipes must also carry varying user streams with diverse QoS demands, tailored to specific applications and business priorities. The DCR 1100 series routers deliver switching capacities from 40 Gbps to 800 Gbps, with interface speeds reaching 100 Gbps. Advanced packet-switching silicon powers a robust QoS feature set, enabling precise service differentiation and queuing. This ensures high-bandwidth connectivity for cloud technologies while meeting the unique QoS needs of each application.

Built for Harsh Environments

Connecting remote and underserved areas presents tough challenges. Harsh environments—extreme temperatures, humidity, and dust—test equipment durability. Skilled technicians are often scarce, and there can be delays in reaching the site with replacements in case of fan or power supply failure. Yet network uptime remains critical regardless of conditions. The DCR 1100 router is built for resilience in these scenarios. It features redundant fans and power supplies, tolerating single-unit failures. Swapping failed units is tool-free and can be completed in a matter of seconds. The DCR 1100 is designed for temperature challenged conditions and is a dependable solution for remote connectivity demands.

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth,
Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32,
Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com

DCR 1100-X800 Ordering Information

Part Number	Description
System Parts	
DCR 1100-008A	DCR 1100-008A System with 6x40/100G, 2x40/50G, 20x1/10/25G Ports, GPS
DCR 1100-008E	DCR 1100-008E System with 4x40/100G, 16x1/10/25G Ports
Power Supply Units	
DCR 1100-APU01	DCR 1100 AC PSU (for DCR 1100-X800)
DCR 1100-DPU01	DCR 1100 DC PSU (for DCR 1100 Series)
Fan Units	
DCR 1100-FAN01	DCR 1100 Fan Unit FAN01 (for DCR 1100-008A and DCR 1100-008E)
Cables	
CAB-AC-D-2m	AC Power Cord - Type-D 3Pin, India, 2m
CAB-AC-G-2m	AC Power Cord - Type-G 3Pin, UK, 2m
CAB-Grnd-p5m	0.5 meter 18 AWG Grounding Green Cable
System Ordering Kits – Router with Dual AC PSU, 2m India Power Cord with Type-D Plug, 19” Rack mount kit	
DCR 1100-008A-AC2-D-R19	DCR 1100-008A AC Kit w. 2xAPU01, 5xFAN01, Type-D AC Cable, Grounding & Management Cable, 19" Rack Mount Kit
DCR 1100-008E-AC2-D-R19	DCR 1100-008E AC Kit w. 2xAPU01, 5xFAN01, Type-D AC Cable, Grounding & Management Cable, 19" Rack Mount Kit
System Ordering Kits – Router with Dual AC PSU, 2m UK Power Cord with Type-G Plug, 19” Rack mount kit	
DCR 1100-008A-AC2-G-R19	DCR 1100-008A AC Kit w. 2xAPU01, 5xFAN01, Type-G AC Cable, Grounding & Management Cable, 19" Rack Mount Kit
DCR 1100-008E-AC2-G-R19	DCR 1100-008E AC Kit w. 2xAPU01, 5xFAN01, Type-G AC Cable, Grounding & Management Cable, 19" Rack Mount Kit
System Ordering Kits – Router with Dual DC PSU, 19” Rack mount kit	
DCR 1100-008A-DC2-R19	DCR 1100-008A DC Kit w. 2xDPU01, 5xFAN01, Grounding & Management Cable, 19" Rack Mount Kit
DCR 1100-008E-DC2-R19	DCR 1100-008E DC Kit w. 2xDPU01, 5xFAN01, Grounding & Management Cable, 19" Rack Mount Kit

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth,
Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32,
Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com

DCR 1100-X800 Ordering Information

Part Number	Description
System Ordering Kits – Router with Dual AC PSU, 2m India Power Cord with Type-D Plug, 23” Rack mount kit	
DCR 1100-008A-AC2-D-R23	DCR 1100-008A AC Kit w. 2xAPU01, 5xFAN01, Type-D AC Cable, Grounding & Management Cable, 23" Rack Mount Kit
DCR 1100-008E-AC2-D-R23	DCR 1100-008E AC Kit w. 2xAPU01, 5xFAN01, Type-D AC Cable, Grounding & Management Cable, 23" Rack Mount Kit
System Ordering Kits – Router with Dual AC PSU, 2m UK Power Cord with Type-G Plug, 23” Rack mount kit	
DCR 1100-008A-AC2-G-R23	DCR 1100-008A AC Kit w. 2xAPU01, 5xFAN01, Type-G AC Cable, Grounding & Management Cable, 23" Rack Mount Kit
DCR 1100-008E-AC2-G-R23	DCR 1100-008E AC Kit w. 2xAPU01, 5xFAN01, Type-G AC Cable, Grounding & Management Cable, 23" Rack Mount Kit
System Ordering Kits – Router with Dual DC PSU, , 23” Rack mount kit	
DCR 1100-008A-DC2-R23	DCR 1100-008A DC Kit w. 2xDPU01, 5xFAN01, Grounding & Management Cable, 23" Rack Mount Kit
DCR 1100-008E-DC2-R23	DCR 1100-008E DC Kit w. 2xDPU01, 5xFAN01, Grounding & Management Cable, 23" Rack Mount Kit

HFCL

CORPORATE OFFICE :
8, Commercial Complex, Masjid Moth,
Greater Kailash 2, New Delhi 110048

GURGURAM OFFICE :
Plot No. 38, Institutional Area, Sector 32,
Gurugram, Haryana-122001, India
0124-4310000

sales.corp@hfcl.com
www.hfcl.com