HFCL

DCR 1100 Router (56 Gbps)

HFCL DCR 1100 Router (56 Gbps) is 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 the fourth industrial revolution, 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
- Zero-touch Provisioning (ZTP) and Netconf/Yang support for automated operations
- Compliant with OCP (Open Compute Project) standards
- Industrial grade, temperature hardened, and designed for deployment in temperature-challenged and space-constrained locations
- Tested and validated on RFC2544 and ITU-TY.1564
- Robust security features for control, data, and management plane protection
- Advanced timing & synchronization features that include support for 1588v2 (PTP), SyncE, and various clock options like BITS, and GPS (10Mhz, 1pps/ToD)
- Supports both AC and DC power supply
- Hot Swappable and Redundant Fan and Power modules

Applications

Aggregation of traffic at Cell Site

Connectivity to the Edge Network

Bandwidth delivery to CSPs

Key Specifications

Physical Interface

Total Bandwidth	56 Gbps
1G/10G	4x 1G/10G (SFP/SFP+)
1G (optical)	12x 1G (SFP)
1G (electrical)	4x 100 / 1000 Base-T RJ-45 (Auto negotiation)

Power

Power input Option	Dual AC Redundant, Hot Swappable, 1+1 PSU (option -1)
	Dual DC Redundant Hot Swappable, 1+1 PSU (option -2)
	Universal slot for power
Power Consumption	59 Watts (Typical)
	130 Watts (Peak)

Cooling

Number of Fans	3+1
Fans Location and Airflow	Fans at the back
	Front-to-back airflow Dummy plate for fans that are not used.

Environment

Operating Temperature	-40°C to +65°C
Operating Humidity	5% to 95%

Dimensions

Dimensions (W x D x H)	440 x 300 x 44 mm
Size	1RU

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
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

Multicast

PIM-SM, 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

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

Security

Control-plane, data plane and management plane protection
Authentication, Authorization, and Accounting (AAA)
Terminal Access Controller Access-Control System (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

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

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

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)
WEEE 2012/19/EU

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)