



RAX711-C-R

RAX711-C-R is a compact 10G NID providing 4x10G SFP+ network interfaces and 12x1G SFP user interfaces in half 19" space. It can work as a 10G EDD or an MPLS PE device. It is designed for 1G/10G leased-line service delivery and 4G/5G mobile backhaul. The support of standard CE2.0 services (E-Line, E-LAN, E-Tree, E-Access), various service models over MPLS (VPWS, VPLS, H-VPLS, L3VPN), and advanced OAM, SLA, resiliency features, ensures service providers great flexibility and reliability in service design and deployment. Temperature hardened HW design and the support of SyncE make RAX711-C-R ready for mobile backhaul.



RAX711-C-R-AC_DC

Highlights >>

Power Reliability	Dual hot-swappable power supply with voltage/temperature monitoring
Compact HW Design	Half-19" in width help service providers save installation space greatly
Temperature Hardened	Operating temperature range from -20 °C to +65 °C
Flexible Service Delivery	Standard CE2.0 service (E-Line, E-LAN, E-Tree, E-Access) delivery VPWS, VPLS, H-VPLS, L3VPN services over MPLS Flexible traffic classification guarantees customer-defined service SLA
Committed Network Resiliency	Protection mechanism including switchport backup, IEEE802.1ax Link Aggregation, MC-LAG, ITU-T G.8031 ELPS and ITU-T G.8032 ERPS, Static/dynamic IP FRR, TE/LDP/VPN/EVPN FRR, VRRP, MPLS PW redundancy, MPLS TE redundancy, MPLS TE hot-standby guarantee network resiliency in chain, star, mesh, dual-homing and ring topologies
OAM & Hardware-based SLA	Hardware-based IEEE802.1ag/ITU-T Y.1731 end-to-end CFM (CCM interval 3.3ms), hardware-based ITU-T Y.1731 end-to-end SLA performance monitoring (1us measurement resolution) speed up service provisioning and troubleshooting BFD helps customer achieve fast fault detection for dynamic IP services and MPLS services Standard RFC2544, Y.1564 SAT tests for various types of services available
IPv4/v6 Dual-Stack	IPv6 for management/services ready help customers plan their future network evolution
Synchronization	SyncE and IEEE1588v2 ready for mobile backhaul

International Headquarters

Raisecom Building, East-11, No.10 Xibeiwang East Road,
Haidian District, Beijing, P.R.China, 100193
Tel: +86 10 8288 3305
Fax: +86 10 8288 3056
www.raisecom.com

U.S.A. Headquarters

Address: 6380 N Eldridge Pkwy, Houston,
TX 77041, USA
Tel: 1-888-816-4808
Email: sales@raisecominc.com

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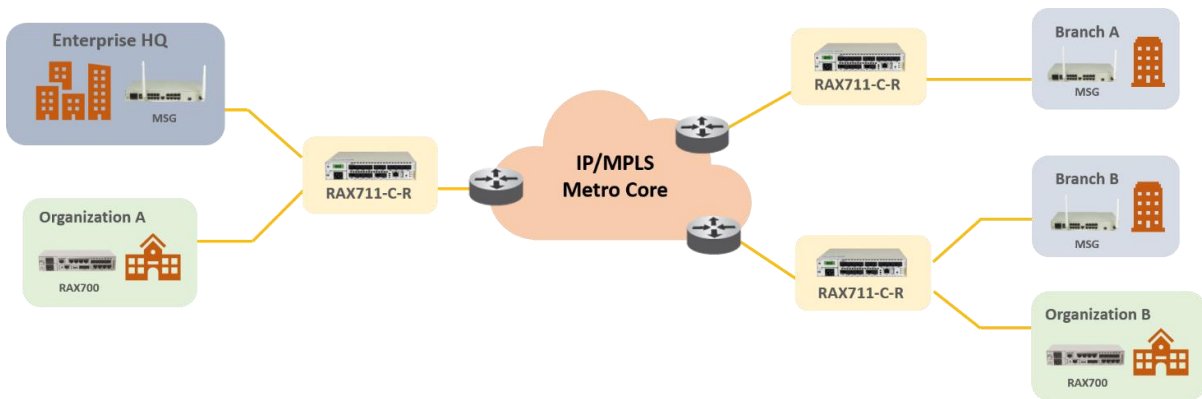
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Application >>

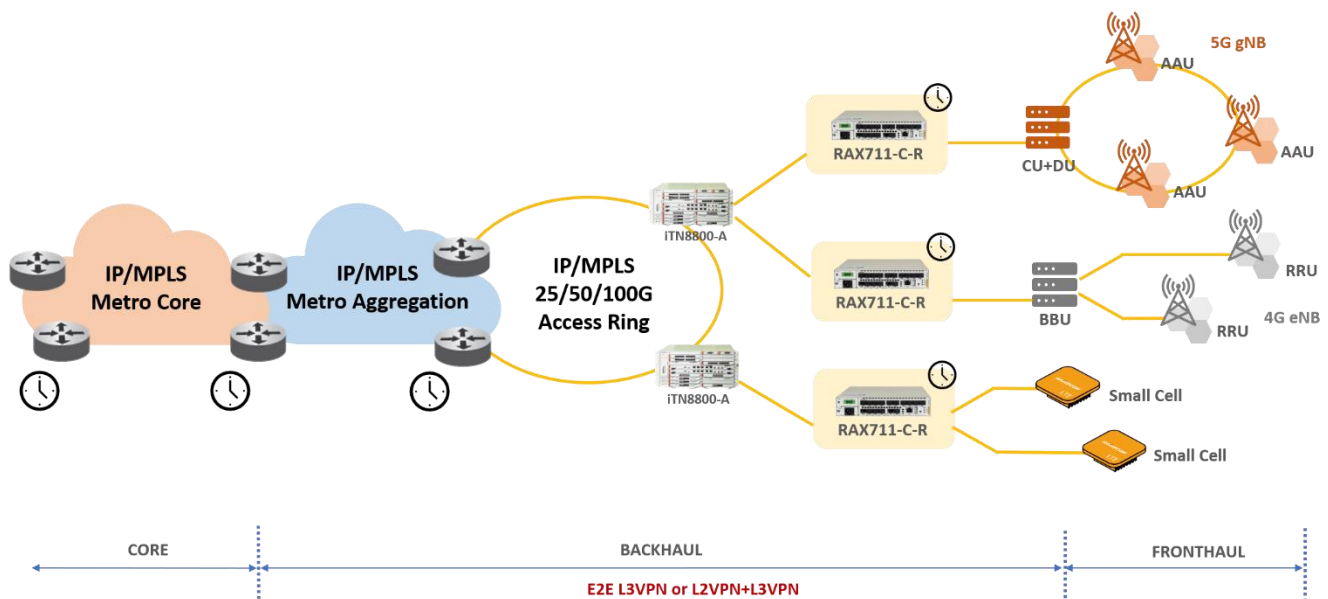
Business Leased Line Service Delivery

RAX711-C-R is able to deliver 1G/10G standard CE2.0 E-Line, E-LAN, E-Tree and E-access services. It is also capable of delivering L2VPN and L3VPN services over MPLS core as a PE device. The service delivery can be very flexible with the support of VPWS, VPLS, H-VPLS, MS-PW, and inter-AS L2VPN/L3VPN. ZTP and hardware-based CFM and SLA ensure service providers easier way to deploy and manage the services. Various fault detection and protection mechanisms guarantee high availability and stability of services.



New Generation Mobile Backhaul

MPLS L2VPN + L3VPN and MPLS E2E L3VPN are the common ways to carry mobile backhaul traffic as the mobile network is evolving to 4G and 5G. RAX711-C-R supports the services with full flexibility and high reliability. In addition, its compact HW design (half 19" wide) helps service providers save installation space, its wide-range operating temperature (-20~65 °C) ensures the device to work stably in harsh environment, and its support of SyncE and IEEE1588 V2 guarantees accurate synchronization along the service delivery.



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Key Features >>

Ethernet Service

- MAC address table: 32k
- Jumbo frame up to 12288 Bytes
- 4,094 VLANs, IEEE802.1Q VLAN, IEEE802.1ad QinQ
- Layer 2 control protocol (L2CP) handling
- Super VLAN
- Private VLAN (PVLAN) with primary, community and isolated type

IP Service

- IPv4/v6 static routing
- RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+
- PMTU IPv4/v6
- VRF Lite IPv4/v6
- DHCPv4/v6 server, client, relay, snooping

MPLS Service

- MPLS L2VPN: VPWS, VPLS, H-VPLS, MS-PW
- MPLS L3VPN
- Static CR-LSP, LDP, CSPF, RSVP-TE, tunnel policy
- Inter-AS MPLS L2VPN Option A, B, C
- Inter-AS MPLS L3VPN Option A, B, C

Multicast

- IGMP v1, v2, v3
- IGMP Snooping, MVR, VLAN copy, Proxy
- MLD v1, v2
- MLD Snooping
- PIM-SM and PIM-SSM IPv4/v6
- MSDP

QoS

- Flexible traffic classification based on MAC, IP, port, VLAN, CoS, DSCP, etc.
- Traffic policing with color-aware and color-blind mode, two-rate three-color marker
- Hierarchical CAR
- 8 local priority, 8 queues per port
- WRED
- Traffic shaping per queue/port
- SP/WRR/SP+WRR queue scheduling

Reliability

- IEEE802.1ax Link aggregation group, manual, LACP
- MC-LAG
- Switchport backup
- STP, RSTP, MSTP, MRSTP
- ITU-T G.8031 ELPS and G.8032 ERPS based on port or CFM, switchover time less than 50ms
- Port/VLAN-based Ethernet loop detection
- Ethernet fault propagation, MPLS PW fault propagation

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- ULDP
- IPv4/v6 ECMP
- Static/dynamic IPv4/v6 FRR, TE/LDP/VPN FRR over IPv4
- VRRP
- MPLS PW redundancy, MPLS TE redundancy, MPLS TE hot-standby

OAM

- IEEE 802.3ah EFM-OAM
- IEEE 802.1ag/ITU-T Y.1731 CFM
- ITU-T Y.1731 performance monitoring (LM, DM) for Ethernet and MPLS L2VPN
- RFC2544 for Ethernet and MPLS L2VPN, Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN
- 10G throughput test
- TWAMP-Lite for Ethernet, IP, MPLS L3VPN
- Layer 2 loopback with MAC swap
- MPLS ping and traceroute
- BFD for interface, static routing, RIP, OSPF, ISIS, BGP, LDP, LSP, CR-LSP, PW, MS-PW, VRRP, FRR, PIM
- L2/L3 Dying Gasp in case of power failure

Security

- CPU CAR
- CPU anti-attack for Land, Ping of death, ICMP unreachable/redirecting/forward, Tear drop, Smurf, Fraggle, WinNuke, TCP malformed
- DHCPv4/v6 Snooping
- ARP filter, DAI
- IPv4/v6 IPSG
- ACL based on VLAN, CoS, MAC, Ethernet Type, IP or user-define
- RADIUS, TACACS+, DOT1X
- Storm control (broadcast, multicast, DLF)
- Port-security MAC

Maintenance and Management

- Zero-touch provisioning based on standard DHCP
- SNMP v1/v2/v3 based GUI management
- CLI management by local CONSOLE, Telnet and SSHv2
- KeepAlive, RMON, LLDP, Syslog
- SFP digital diagnostic management (DDM)
- CPU, memory monitoring
- Voltage and temperature monitoring

Synchronization

- NTP, SNTP
- SyncE
- IEEE1588 v2 TC

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Specifications >>

Performance	Switching capacity: 52Gbps x 2
Physical Interface	1 x CONSOLE (USB); 1 x management port (RJ-45) Client interfaces: 12 x 1G SFP Network interfaces: 4 x 10G SFP+
Power Supply	Dual, hot-swappable version available AC: 220V, 100~240V DC: -48V, -36~-72V Power Consumption: ≤40W
Environmental	Operating: Temperature: -20~65°C Humidity: 10~90% non-condensing Storage and Transportation: Temperature: -25~75°C
Dimensions	220(W)mm x 266(D)mm x 44(H)mm
Weight	2.5Kg

Compliances >>

Standards & protocols	CE, UL, FCC compliance EMC Class A RoHS compliance IEEE802.3, 802.3u, 802.3z, 802.3-2008 IEEE802.1D, 802.1Q, 802.1p, 802.1ad IEEE802.1ax, ITU-T G.8031, G.8032 IEEE802.3ah, 802.1ag, ITU-T Y.1731 RFC5357 IEEE802.1AB MEF6, 9, 10, 11, 13, 14, 16, 17, 20, 31, 36 MEF CE2.0 Compliance RFC826, 768, 793 RFC792, 4443 RFC2131, 2132, 3046, 3315, 4649 RFC2328, 3630, 5187, 3101, 3137, 3623 RFC1195,2966, 3567, 3277, 2763 RFC1771, 1772, 1997, 2439, 3065, 4271, 4273, 4760, 4893, 5575 RFC3031, 3032, 3034, 3035, 3036, 3037, 4182, 5036, 5462 RFC3209, 3473, 6511 RFC4447, 4448, 4761, 4762, 5659 RFC4090, 5286, 5883, 7130 RFC4377, 4378, 4379 RFC1112, 2236, 3376, 4605, 3618, 2362, 2710, 4541 IEEE1588v2 ITU-T G.8261, G.8262, G.8264
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Ordering Information >>

Part No.	Description
RAX711-C-R-AC/S	Compact 10G NID, half-19" wide, 4x10G SFP+ for uplink, 12x1G SFP for downlink, CONSOLE and SNMP ports for management, single hot-swappable AC power supply
RAX711-C-R-DC/S	Compact 10G NID, half-19" wide, 4x10G SFP+ for uplink, 12x1G SFP for downlink, CONSOLE and SNMP ports for management, single hot-swappable DC power supply
RAX711-C-R-AC/D	Compact 10G NID, half-19" wide, 4x10G SFP+ for uplink, 12x1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable AC power supply
RAX711-C-R-DC/D	Compact 10G NID, half-19" wide, 4x10G SFP+ for uplink, 12x1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable DC power supply
RAX711-C-R-AC_DC	Compact 10G NID, half-19" wide, 4x10G SFP+ for uplink, 12x1G SFP for downlink, CONSOLE and SNMP ports for management, one hot-swappable AC power supply and one hot-swappable DC power supply

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