

# RI521 MPLS Switch



## RI521

RI521 series are compact IP/MPLS pre-aggregation devices with 10GE uplink interfaces, providing rich port options in a standard 1U 19-inch enclosure. They are optimized for metro access and aggregation, leased-line service delivery, and multi-service aggregation scenarios. Standard Carrier Ethernet service models, L2VPN/L3VPN over MPLS and the support of OAM & SLA greatly simplify service delivery and monitoring. With rich L2/L3 unicast and multicast features, advanced QoS and high reliability on both hardware and software, RI521 series are very flexible and reliable service aggregators for enterprise campus, university/college, government networks and residential LAN.


**RI521-A**

**RI521-A-T**

**RI521-A-XF**

**RI521-B**

**RI521-B-T**

## Highlights>>

|                                     |                                                                                                                                                                                                                                                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power Reliability</b>            | Dual hot-swappable power supply with voltage/temperature monitoring                                                                                                                                                                                                                                      |
| <b>Flexible Service Delivery</b>    | Standard CE2.0 service (E-Line, E-LAN, E-Tree, E-Access) delivery VPWS, VPLS, H-VPLS, MS-PW, L3VPN, 6PE/6VPE over MPLS EVPN over MPLS/SR on roadmap* Flexible traffic classification guarantees customer defined service SLA                                                                             |
| <b>Multicast</b>                    | Full set of multicast routing and control protocols implemented for flexible multiple service access and aggregation                                                                                                                                                                                     |
| <b>Committed Network Resiliency</b> | Protection mechanism including STP/RSTP/MSTP, switchport backup, IEEE802.1ax Link Aggregation, MC-LAG, ITU-T G.8032 ERPS, Static/dynamic IP FRR, TE/LDP/VPN/EVPN* FRR, VRRP, MPLS PW redundancy, MPLS TE hot-standby* guarantee network resiliency in chain, star, mesh, dual-homing and ring topologies |
| <b>OAM &amp; Hardware based SLA</b> | 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 with test result showing on user-friendly GUI BFD helps customer achieve fast fault detection for dynamic IP services and MPLS services                   |
| <b>IPv4/v6 Dual-Stack</b>           | IPv6 for management and services 6PE/6VPE support helps customers plan their future network evolution                                                                                                                                                                                                    |

\* Features that will be available in future release

| Key Features>>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ethernet Service</b> | <ul style="list-style-type: none"> <li>• MAC address table: 32K</li> <li>• Jumbo frame up to 12288 Bytes</li> <li>• 4,094 VLANs, IEEE802.1Q VLAN, IEEE802.1ad QinQ</li> <li>• Layer 2 control protocol (L2CP) handling</li> <li>• Super VLAN</li> <li>• Private VLAN (PVLAN) with primary, community and isolated type</li> </ul>                                                                                                                                                                                                 |
| <b>IP Service</b>       | <ul style="list-style-type: none"> <li>• IPv4/v6 static routing</li> <li>• RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+</li> <li>• PMTU IPv4/v6</li> <li>• VRF Lite IPv4/v6</li> <li>• DHCPv4/v6* server, client, relay, snooping</li> </ul>                                                                                                                                                                                                                                                                                     |
| <b>MPLS Service</b>     | <ul style="list-style-type: none"> <li>• MPLS L2VPN: VPWS, VPLS, H-VPLS, MS-PW</li> <li>• MPLS L3VPN</li> <li>• MPLS EVPN*</li> <li>• 6PE/6PVE</li> <li>• Static CR-LSP, LDP, CSPF, RSVP-TE, tunnel policy</li> <li>• Inter-AS MPLS L2VPN Option A,B, C</li> <li>• Inter-AS MPLS L3VPN Option A,B,C</li> </ul>                                                                                                                                                                                                                    |
| <b>Multicast</b>        | <ul style="list-style-type: none"> <li>• IGMP v1, v2, v3</li> <li>• IGMP Snooping, MVR, VLAN copy, Proxy</li> <li>• MLD V1,V2*</li> <li>• MLD Snooping*</li> <li>• PIM-SM and PIM-SSM IPv4/V6*</li> </ul>                                                                                                                                                                                                                                                                                                                         |
| <b>QoS</b>              | <ul style="list-style-type: none"> <li>• Flexible traffic classification based on MAC, IP, port, VLAN, CoS, DSCP, etc.</li> <li>• Traffic policing</li> <li>• Hierarchical CAR</li> <li>• 8 local priority, 8 queues per port</li> <li>• WRED</li> <li>• Traffic shaping per queue/port</li> <li>• SP/WRR/SP+WRR queue scheduling</li> </ul>                                                                                                                                                                                      |
| <b>Reliability</b>      | <ul style="list-style-type: none"> <li>• IEEE802.1ax Link aggregation group, manual, LACP</li> <li>• MC-LAG</li> <li>• Switchport backup</li> <li>• STP, RSTP, MSTP, MRSTP</li> <li>• ITU-T G.8032 ERPS based on port or CFM, Switch over time less than 50 ms.</li> <li>• Loop detection</li> <li>• Ethernet fault propagation, MPLS PW fault propagation</li> <li>• ULDP</li> <li>• IP ECMP</li> <li>• Static/dynamic IP FRR, TE/LDP/VPN/EVPN FRR</li> <li>• VRRP</li> <li>• MPLS PW redundancy, MPLS TE hot-standby</li> </ul> |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>OAM</b>                        | <ul style="list-style-type: none"> <li>• IEEE 802.3ah EFM-OAM</li> <li>• IEEE 802.1ag/ITU-T Y.1731 CFM</li> <li>• ITU-T Y.1731 performance monitoring (LM, DM) for Ethernet and MPLS L2VPN</li> <li>• TWAMP-Lite for Ethernet, IP, MPLS L3VPN, 6PE/6VPE*</li> <li>• Layer 2 loopback with MAC swap</li> <li>• MPLS Ping and Traceroute</li> <li>• BFD for interface, static routing, RIP, OSPF, ISIS, BGP, LDP, LSP, CR-LSP*, PW,MS-PW*<br/>FRR, PIM*</li> <li>• Dying Gasp in case of power failure</li> </ul> |
| <b>Security</b>                   | <ul style="list-style-type: none"> <li>• CPU CAR</li> <li>• CPU anti-attack</li> <li>• DHCP v4/v6 Snooping</li> <li>• ARP filter, DAI</li> <li>• IPSG* v4/v6</li> <li>• ACL based on VLAN, CoS, MAC, Ethernet Type, IP or user-define</li> <li>• RADIUS, TACACS+</li> <li>• Storm control (broadcast, multicast, DLF)</li> <li>• Port-security MAC</li> </ul>                                                                                                                                                   |
| <b>Maintenance and Management</b> | <ul style="list-style-type: none"> <li>• Zero-touch provisioning based on standard DHCP</li> <li>• SNMP v1/v2/v3</li> <li>• Netconf, Telemetry*</li> <li>• CLI management by local CONSOLE, Telnet and SSHv2</li> <li>• KeepAlive, RMON, LLDP, Syslog</li> <li>• SFP digital diagnostic management (DDM)</li> <li>• CPU, memory monitoring</li> <li>• Voltage and temperature monitoring</li> </ul>                                                                                                             |
| <b>Synchronization</b>            | <ul style="list-style-type: none"> <li>• NTP, SNTP</li> <li>• IEEE1588 v2 TC</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                         |

\* Features that will be available in future release

| Specifications >>         |                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Performance</b>        | Switching capacity: RI521-A(-T): 64Gbps RI521-A-XF: 280Gbps RI521-B(-T): 88Gbps                                                                                                                                                                                                                                                                                                                                |
| <b>Physical Interface</b> | Management Interface:<br>1 x CONSOLE (USB/RJ-45);<br>1 x SNMP management port (RJ-45)Interface:<br>RI521-A: 4 x 10G SFP+ uplink, 24 x 1G SFP downlink<br>RI521-A-T: 4 x 10G SFP+ uplink, 24 x 1000/100M RJ-45 downlink<br>RI521-A-XF: 4 x 10G SFP+ uplink, 24 x 10/1G SFP+/SFP downlink<br>RI521-B: 4 x 10G SFP+ uplink, 48 x 1G SFP downlink<br>RI521-B-T: 4 x 10G SFP+ uplink, 48 x 1000/100M RJ-45 downlink |

|                                |                                                                                                                         |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <b>Power Supply</b>            | Dual, hot-swappable AC, DC, AC_DCAC: 220V, 100~240VAC<br>DC: -48V, -36~-72V<br>Power Consumption: ≤ 75W                 |
| <b>Environmental</b>           | Operating: Temperature: -5~55°C<br>Humidity: 10~90% non-condensing<br>Storage and Transportation: Temperature: -25~60°C |
| <b>Dimensions &amp; Weight</b> | 444(W)mm x 360(D)mm x 44(H)mm<br>Weight 4.42Kg                                                                          |

## Ordering Information >>

| Part No.               | Description                                                                                                                                                                                                                           |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RI521-A-AC/D</b>    | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable AC power supply                                              |
| <b>RI521-A-DC/D</b>    | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable DC power supply                                              |
| <b>RI521-A-AC_DC</b>   | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1G SFP for downlink, CONSOLE and SNMP ports for management, one hot-swappable AC power supply and one hotswappable DC power supply          |
| <b>RI521-A-T-AC/D</b>  | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1000/100M RJ-45 for downlink, CONSOLE and SNMP ports for management, dual hot-swappable AC power supply                                     |
| <b>RI521-A-T-DC/D</b>  | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1000/100M RJ-45 for downlink, CONSOLE and SNMP ports for management, dual hot swappable DC power supply                                     |
| <b>RI521-A-T-AC_DC</b> | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 1000/100M RJ-45 for downlink, CONSOLE and SNMP ports for management, one hot swappable AC power supply and one hotswappable DC power supply |
| <b>RI521-A-XF-AC/D</b> | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 10G/1G SFP+/SFP for downlink, CONSOLE and SNMP ports for management, dual hot swappable AC power supply                                     |



# Data Sheet

|                         |                                                                                                                                                                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RI521-A-XF-DC/D</b>  | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 10G/1G SFP+/SFP for downlink, CONSOLE and SNMP ports for management, dual hot swappable DC power supply                                      |
| <b>RI521-A-XF-AC_DC</b> | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 24 x 10G/1G SFP+/SFP for downlink, CONSOLE and SNMP ports for management, one hot-swappable AC power supply and one hot-swappable DC power supply |
| <b>RI521-B-AC/D</b>     | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 48 x 1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable AC power supply                                               |
| <b>RI521-B-DC/D</b>     | Standard 1U, 19" standalone IP/MPLS pre-aggregation device, 4 x 10G SFP+ for uplink, 48 x 1G SFP for downlink, CONSOLE and SNMP ports for management, dual hot-swappable DC power supply                                               |