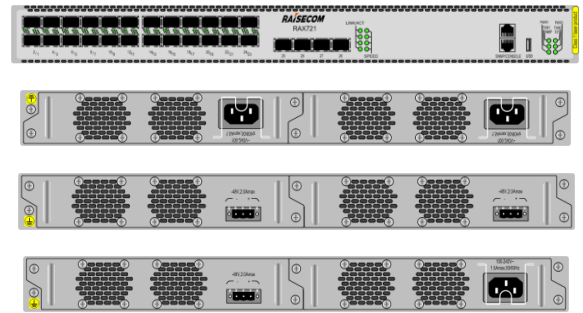# RAISECOM
Raisecom Technology Co., Ltd.

RAX721-A

Raisecom RAX721-A is a compact L2/L3 aggregation device, providing 4 x 10G SFP+ ports and 24 x 1G SFP ports in standard 1U enclosure.

It is optimized for metro access and aggregation scenarios, leased-line service delivery, and multi-service aggregation. Standard E-Line, E-LAN, E-Tree and E-Access models and the support of OAM & SLA features greatly simplify service delivery and monitoring for service providers.

With rich L2/L3 unicast and multicast features, advanced QoS and high reliability on both hardware and software, RAX721-A is a very flexible and reliable service aggregator for enterprise network, campus network, and residential LAN. It is capable to deliver multiple services (Internet, VoIP, IPTV, video surveillance…) and it is capable to fit in various networking structures. The support of IPv4/v6 dual stack and MPLS* makes it a future-proof investment for customers.

RAX721-A

Highlights >>

Power Redundancy	Dual hot-swappable power supply with voltage/temperature monitors
Smart ZTP	Smart ZTP greatly simplifies service turn-up and helps save OPEX
Flexible Service Delivery	Standard CE2.0 service delivery: E-Line, E-LAN, E-Tree, E-Access VPWS, VPLS, L3VPN over MPLS* Flexible traffic classification guarantees customer-defined service SLA Full support of L2/L3 multicast handling ensures multi-service access and aggregation
Committed Network Resiliency	Protection mechanism including STP/RSTP/MSTP, switchport backup, IEEE802.1ax Link Aggregation, ITU-T G.8031 ELPS and ITU-T G.8032 ERPS 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.

* Features that will be available in future release

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Application >>

Business Leased Line Service Delivery

RAX721-A, working with RAX700 Series EDD, can deliver standard Carrier Ethernet E-Line, E-LAN, E-Tree and E-Access services for enterprises, governments, organizations, and other customers with leased line service requirements. With hardware-based CFM and SLA, and flexible service classification and handling, RAX721 provides service providers easier way to deploy and manage the services.
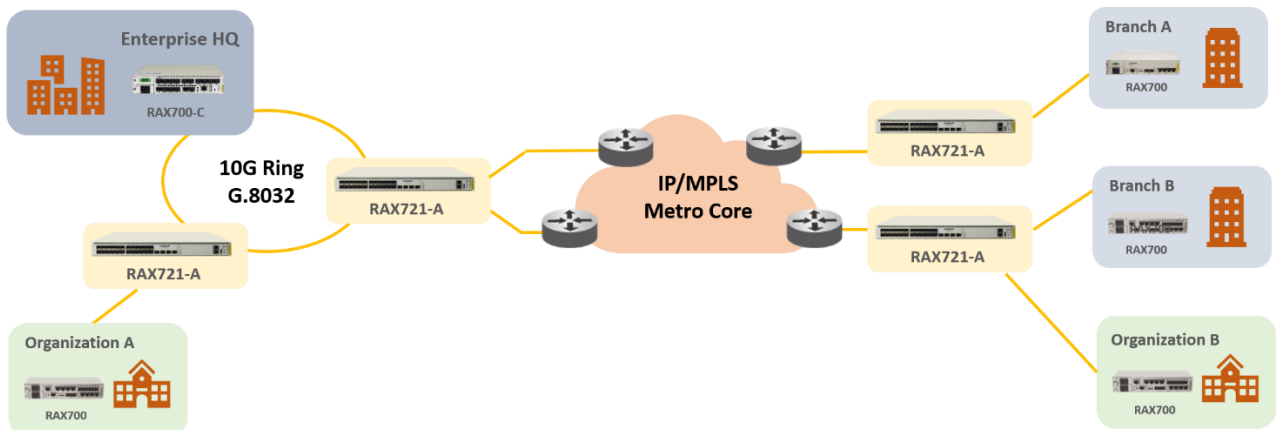
Multi-Service Access and Aggregation

RAX721-A can work as an aggregator of multi-service access network, such as campus network, enterprise network, and residential LAN. Its high port density and rich protection mechanisms allow it to flexibly fit in different network topology. The support of a full set of L2/L3 unicast/multicast protocols guarantees fluent access of multiple services.
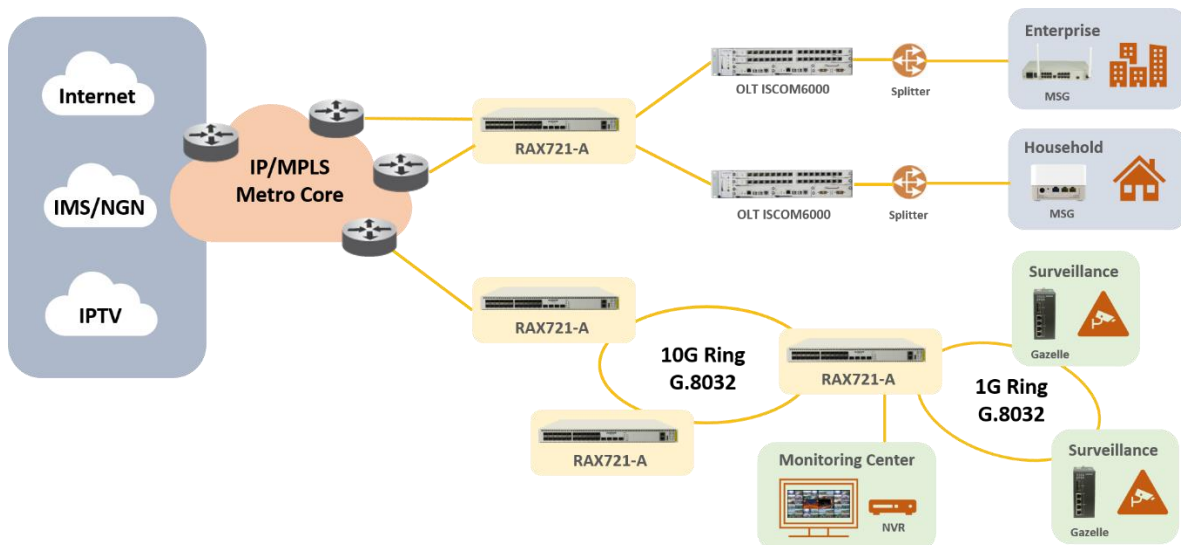
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Key Features >>

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	• IP static routing
	• RIP, OSPFv2, ISISv4 and BGP4
	• PMTU support
	• VRF Lite
	• DHCP server, client, relay, snooping
Multicast	• IGMP v1, v2, v3
	• IGMP Snooping, MVR, VLAN copy, Proxy
	• PIM-SM and PIM-SSM
	• 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
	• 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
	• ULDP
	• IP ECMP
	• IP FRR, static/dynamic
	• VRRP
OAM	• IEEE 802.3ah EFM-OAM
	• IEEE 802.1ag/ITU-T Y.1731 CFM
	• ITU-T Y.1731 performance monitoring (LM, DM)
	• TWAMP-Lite

- Layer 2 loopback with MAC swap
- BFD for IP, static routing, RIP, OSPF, ISIS, BGP/EBGP, VRRP, 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
	• DHCP Snooping
	• ARP filter, DAI
	• 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
	• IEEE1588 v2 TC

Specifications >>

Performance	Switching capacity: 64Gbps
Physical Interface	1 x CONSOLE (USB)
	1 x management port (RJ-45)
	Downlink interfaces: 24 x 100/1000M SFP
	Uplink interfaces: 4 x 10G SFP+
Power Supply	Dual, hot-swappable
	AC: 220V, 100 ~ 240V (50Hz/60Hz)
	DC: -48V, -36 ~ -72V
	Power Consumption: ≤ 44W
Environmental	Operating:
	Temperature: -0 ~ 50˚C
	Humidity: 10~90% non-condensing

Compliances >>

Compliance	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

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	Storage and Transportation:
	Temperature: -25 ~ 60˚C
Dimensions	440(W)mm x 360(D)mm x 43.6(H)mm
Weight	6.5Kg

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

RFC1112, 2236, 3376, 4605, 3618, 2362, 2710, 4541

IEEE1588v2

Ordering Information >>

RAX721-A-AC/D	Standard 1U, 19" standalone L2/L3 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
RAX721-A-DC/D	Standard 1U, 19" standalone L2/L3 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
RAX721-A-AC_DC	Standard 1U, 19" standalone L2/L3 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 hot-swappable DC power supply