

RAX711-L Series

Multi-Service PTN Network Terminal

Raisecom RAX711-L series, as a new generation PTN network terminal, is used in multi-service PSN (packet switch network) network for business leased line and mobile backhaul. It provides a legacy service over Ethernet/IP solution, which can support transmission of E1 streams over Packet Switching Networks. RAX711-L-4GC4E1-S is defined as a multi-Service PTN network terminal. It not only guarantees intercommunity across PTN/ETH/IP/MPLS network, but also supports clock and time synchronizations, which provides a cost-effective option in mobile backhaul deployment. Moreover, Zero-touch provisioning makes service activation much more efficient. RAX711-L-4GC4E1-S has a variety of port morphology, such as 4x E1 ports, 4 x GE combo ports, clock signal input/output ports at client side and 2 x GE SFP ports at line side. Besides, the device is able to delivery hardware-based SLA service through end-to-end or end-to-core thanks to its compliance with the latest OAM standards including IEEE 802.3ah, IEEE 802.1ag and ITU-T Y.1731. In addition, the KPIs including jitter, delay, and packet loss can be performed, reported and visualized on a per service based on layer2 and layer3 via RAX711-L-4GC4E1-S. RAX711-L series is using the state-of-the-art and cost effective RAISECOM switch chipset



RAX711-L-4GC4E1-BL-S

Highlights >>

Network Security	Upgraded security with port-isolation, basic ACL, broadcast/multicast/DLF storm control, unique port loopback detection, and DHCP Client/Option82 functionality
Resiliency & Protection	ITU-T G.8031 linear and ITU-T G.8032 ring protection with switching time less than 50ms IEEE 802.1ax Link Aggregation G.8131 linear protection for MPLS-TP in LSP layer and PW layer
MPLS-TP	MPLS-TP compliant to G.8113.1, providing both scalability and service security
MEF Carrier Ethernet	IEEE 802.3ah Link OAM, IEEE 802.1ag end-to-end connectivity OAM and ITU-T Y.1731 end-to-end service and performance, SLA reporting
Management (IPv4 & IPv6)	Auto provisioning based on standard DHCPv4/v6 server and FTP/TFTP server, plug & play, single IP for all the connected remote devices, end to end configuration, Auto-provisioning IPv4/IPv6 are both available, and license control, IPv6 Upload\Download (TFTP) , IPv6 Telnet, IPv6 Snmp, IPv6 SSHv2 Device management and VPN service management in Nview management platform
SAT	Service activation test using Y.1564 up to 8 stream, act as a generator or a reflector Service activation test using RFC2544, act as a generator or a reflector Bidirectional asymmetric bandwidth measurement based Nview management platform IPv4 & IPv6 Y.1564 SAT
QoS	Advanced QoS technology allows stream-marking based on CoS, DSCP, IP precedence and priority; scheduling modes including SP, WRR, SP+WRR; WRED, flow-based mirroring/rate-limit/redirection/VLAN swapping and

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rewriting; automatic calculation of CBS,PBS base on CIR,PIR under CBS、PBS not configured

Clock Carrier-class EDD with support of SyncE for mobile backhaul applications

IEEE1588 V2 TC

Power Reliability Dual hot-swappable power supply, with voltage/temperature alarms

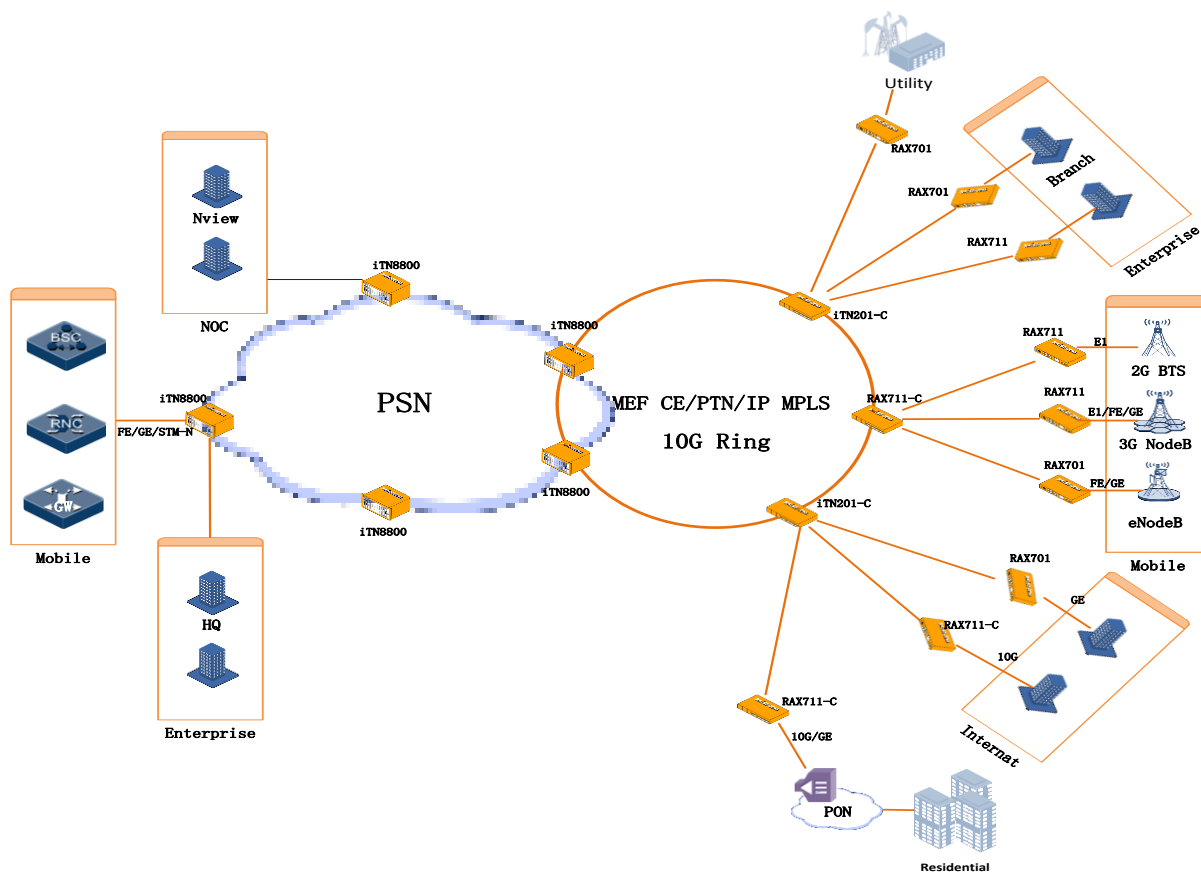
PWE3 Encapsulation protocols: SAToP and CESoPSN

TWAMP-Light Standard IP SLA measurement, include generator and reflector

SLA Portal B/S architecture, SLA TWAMP KPIs monitor(include FD, FDV, FLR, availability, bandwidth, bandwidth utilization)
1s performance KPIs CSV format file saving

E2E Provisioning Standard MEF40 architecture, include bandwidth/performance/cos-label profile GUI, standard service modules(ELINE, ELAN, ETREE), and End-to-End configuration based on service

Application >>



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Large Enterprise, Small/Medium Business services Application

RAX711-L can work against iTN8000/iTN201-C/*RAX711-C for Large Enterprise, Small/Medium Business services. Its huge capacity, service-based QoS and protection mechanism allow “cloud computing” applications, Imaging/video distributions, business data storage/recovery, Layer2-VPNs, etc. Meanwhile, such solution can guarantees Carrier-grade end-to-end SLA (hardware-based) performance monitoring for Ethernet jitter, frame delay and packet loss. Layer2/3 loopback will help for service throughput testing and troubleshooting. RAX711-L can supply the MEF CE, MPLS L2VPN service.

New Generation Mobile Backhaul Application

RAX711-L is also a significant demarcation device for LTE Mobile Backhaul Networks with cost effective solution. It is easily deployed to transmit GE bandwidth to LTE eNodeB with sync Ethernet frame to guarantee the huge mobility data application as well as voice. Its ring/linear protection complied with G.8032/1 commits to switch over within 50ms and maximum uptime for eNodeB. CFM, Y.1731 will help to report the quality of service for each EVC and interoperate with other vendor’s aggregation devices.

Key Features >>

Switching Mode	Store and forward mode; Supports jumbo frame
Ethernet	MTU:12,288 byte Up to 8k MAC Support 4,094VLANs (C-tag), stacked VLANs (QinQ, S-tag) Layer 2 loopback on single and multiple flows Layer 2 control protocol (L2CP) handling IGMP Snooping, MLD Snooping MAC Security Protection Loop detection based on port or port and vlan or IP DHCP v4&v6 snooping MLD snooping
Synchronization	ITU-T G.8262 Synchronous Ethernet
IP Services	DHCP client, option 17,61,66,67,82,150 IPv4&IPv6, Static management routing IPv4&IPv6 IP Address Configuration and Management IPv4&IPv6 Ping, Telnet, NDP IPv4&IPv6 Upload\Donwload IPv4&IPv6 Snmp, IPv6 SSHv2 IPv4&IPv6 Y.1564 IPv4&IPv6 Tacacs+\Radius IPv4&IPv6 Syslog\Trap IPv4&IPv6 NTP\SNTP IPv4&IPv6 Dying Gasp IPv4&IPv6 ND (host side) IPv4&IPv6 Loopback

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Traffic Management	Service classification per port/VLAN/CoS(DSCP)/IP Precedence Support SP, WRR and SP+WRR scheduling modes, and up to 8 queues per port MEF-compliant 3-color policing with color-aware and color-blind mode Bandwidth throttling per port/VLAN/CoS(DSCP), CIR/EIR per flow, automatic calculation of CBS,PBS base on CIR,PIR under CBS、PBS not configured
Security	ACL based on VLAN, CoS, MAC, EtherType, IPv4, IPv6, or user-define RADIUS, TACACS+ Storm control (broadcast, multicast, DLF)
Reliability	Link aggregation group (LAG) Interface backup ITU-T G.8031 Ethernet link protection switching (ELPS) and G.8032 Ethernet ring protection switching (ERPS) with the automatic protection switchover time less than 50ms Port/VLAN-based Ethernet local loop detection Fault propagation AC&DC dual-feed power supplies
Ethernet OAM	IEEE 802.3ah EFM-OAM link management IEEE 802.1ag connectivity fault management (CFM) with 3.3ms CCM resolution ITU-T Y.1731 performance monitoring (PM) Hardware-based frame delay (FD) measurement Y.1564 include bidirectional mode measurement TWAMP-Light (based on hardware ICMP ECHO Relay Timestamp) Hardware-based SLA KPIs per port or EVC, which include throughput, delay, jitter, packet loss and availability Dying gasp message in case of power failure
Auto-Provisioning	Auto-establishment of management tunnels across L2/L3 networks Easy generation and distribution of massive configuration files using GUI-based toolkit
System Management	Remote management via SNMP v1/v2/v3, Telnet and SSH v1/v2 Local management via console interface MEF 36 compliant MIB KeepAlive, RMON, LLDP, Syslog Port/VLAN/CoS-based statistics SFP digital diagnostic management (DDM) temperature and CPU monitoring Voltage and temperature monitoring Dual system
Fault Propagation	From line to client interface fault propagation (user configurable);

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Client interface fault propagation(MEF CE, MPLS TP network)

MPLS-TP MPLS OAM and APS MPLS L2VPN VPLS

CLOCK syncE IEEE1588 v2 TC

Specifications >>

Performance	Switching fabric: 8Gbps;
Physical Interface	Management port: 1 console (USB); 1 out band SNMP(RJ45) Client interfaces:4 x GE combo 1 x 2Mbit/2MHz clock interface (RJ45) 4 x E1 interfaces (RJ45/DB37); Network interfaces:2 x GE SFP
Power Specs	100/240V AC, -36 to -72V DC 24V DC Full load: ≤25W
User Conditions	Operating temperature: -10~50°C ; Storage temperature: -25~70°C ; Humidity: 10~90% non-condensing
Dimensions	220(W)mm x 180(D)mm x 43.6(H)mm
Weight	≤ 2.5Kg

Compliances >>

Standards & Protocols	IEEE802.3,802.3u IEEE802.3ad Link Aggregation IEEE802.1p,802.1Q VLAN IEEE802.1ad QinQ IEEE802.3ah OAM IEEE802.1ag CFM ITU-T Y.1731 Services OAM ITU-T G.8031 ELPS ITU-T G.8032 ERPS IGMP v1/v2/v3 SNMPv1/v2c/v3 CE certified ,UL RoHS compliance EMI Class A MEF6,8,9,10,11,13,14,16,17,20,31,36 CE2.0- compliance ITU-T G.8262 RFC3985(PWE3) 4664(L2vpn)
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Ordering Information >>

RAX711-L-4GC-X	4GC combo interface, X = Pluggable 1:1 Hot-swappable dual redundant power - AC and/ or DC
RAX711-L-4GC4E1-S-X	4GC combo interface, 4E1 interface(DB37), X = Pluggable 1:1 Hot-swappable dual redundant power - AC and/ or DC
RAX711-L-4GC4E1-BL-S-X	4GC combo interface, 4E1 interface(RJ45), X = Pluggable 1:1 Hot-swappable dual redundant power - AC and/ or DC

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