



Catalog



PRODUCTS AND SOLUTIONS

mobile backhaul LTE/5G SMALL CELL Clos Architecture Data Center 10G PON
Zero Backplane **SRv6** Flexgrid ROADM **400G** HetNet
Network slicing **SRv6** Mobile backhaul **HetNet** Stacking
ROADM Co/Couter RAMAN Zero Backplane **HetNet** 32GF
Backplane **FlexE** 10G PON **EVPN** Mobile Fronthaul 10G PO
400G Telemetry **MEC** Netconf VxLAN **IoT** Network slicing Mobil
Data Center **MEC** 32GFC **POL** Stacking IoT
Stacking Layer-1 encryption 32GFC **POL** Data Center 32
Telemetry Mobile backhaul Co/Couter RAMAN Co/Couter RAMAN
ROADM 32GFC **HetNet** Clos Architecture 10G PO
EVPN Mobile Fronthaul HetNet Flexgri
10G PON Zero Backplane IoT
SRv6 Co/Couter RAMAN VxLAN 10G
IoT **FlexE** Netce

About Raisecom

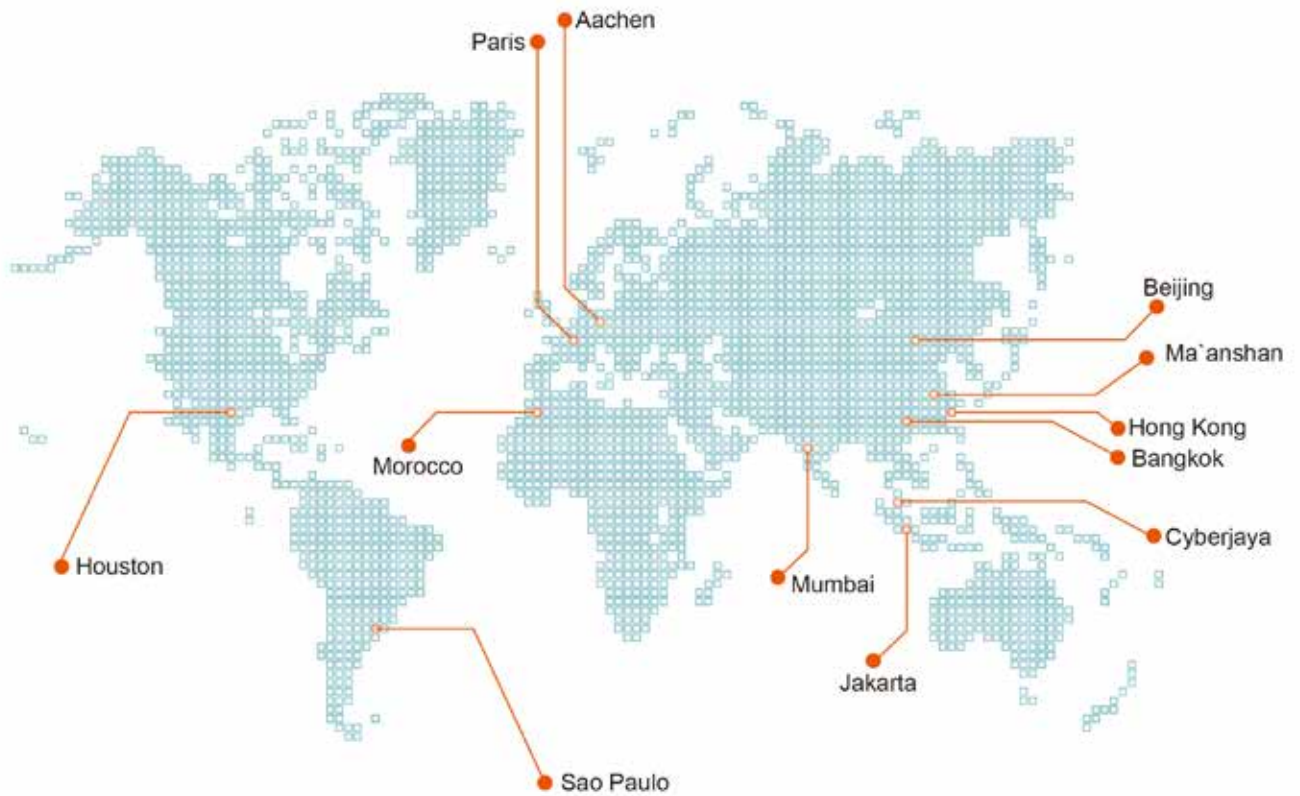
Raisecom is a global leading vendor providing comprehensive telecommunication and networking solutions. Headquartered in Beijing and listed on Shanghai Stock Exchange (SHA: 603803), Raisecom has been growing remarkably in last decade and serving partners and customers over 80 countries worldwide.

Consisted with more than three R&D centers and two manufacturing facilities in China, Raisecom is capable of harnessing local talents and supply chain resource to design, develop and provide best-in-class cost-efficient products. Through well-established local representative offices and branch companies spread in every continent, Raisecom has always been dedicated to providing tailored Packet Transport, Optical Transport, Broadband Access, Industrial and IoT Networking solutions to its service provider and vertical industry customers locally.

Raisecom has been certified and acquired world-recognized quality system standards such as ISO9001:2015, ISO14001:2015 and ISO45001:2018 for product development, manufacturing process, environmental and occupational health & safety. The products have also been designed to comply with CE, UL, RoHS and CSA regulations for different markets.



Raisecom Global Presence





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Fixed-Line Operator

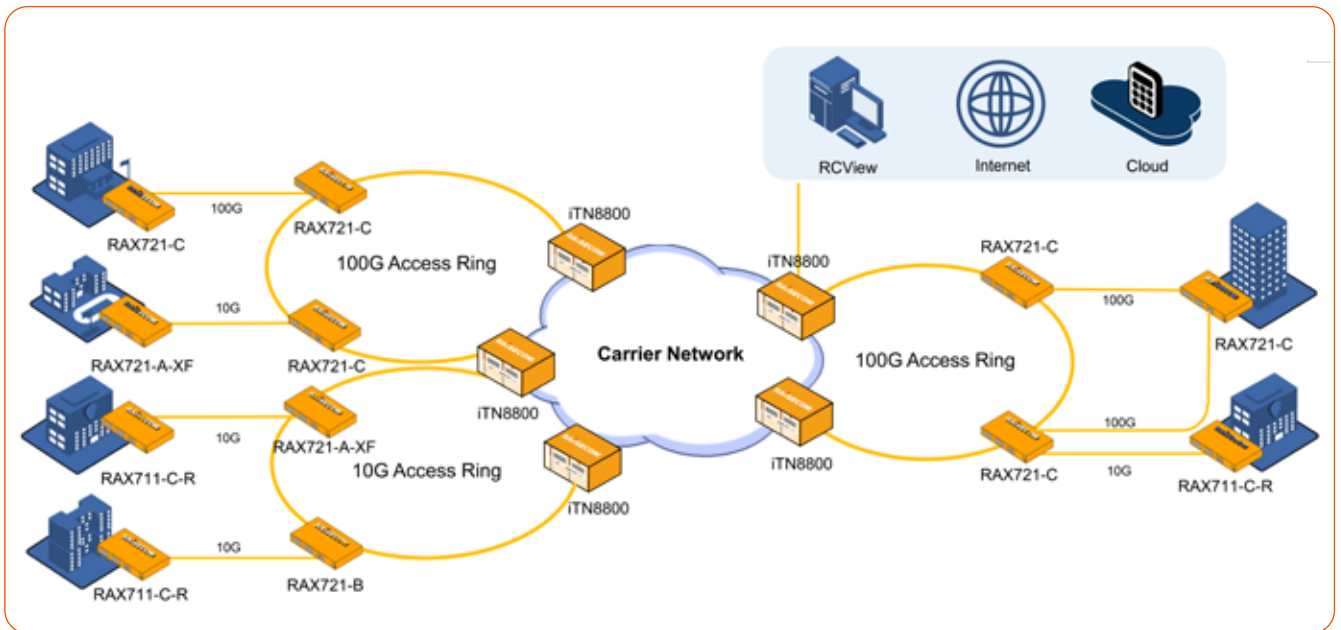
Raisecom telecommunications solutions present a comprehensive range of access and aggregation solutions and technologies, targeting incumbent carriers, telecom service providers, T2/T3 alternative operators as well as private fixed-line operators.

Raisecom solutions deliver services with assured bandwidth, guaranteed data security, minimized network outages, and with the ability to deliver end-to-end carrier-grade services with a reliable and predefined SLA. They are enabled with highly resiliency and intelligent demarcation features in a versatile access infrastructure offering data rates range from 2Mbps to 100Gbps, they are widely accepted and welcomed in sensitive business leased line service markets.

Telecom operators need to offer various services, while attempting to harness and maintain their infrastructure invested in different generations. As a premium partner, Raisecom provides the most flexible combinations of products and solutions which bring advanced networking technologies, end-to-end management, and easy-to-maintain and easy-to-use solutions together.



Business Leased-Line Service by L2/L3VPN over MPLS/SR



SOLUTION

The commercial leased line solution is based on the iTN series and RAX series intelligent packet products, and can provide end-to-end integrated leased line access solutions based on IP-MPLS technology or Segment Routing technology. The iTN8800 has high-capacity switching capability and can form a large bandwidth access ring network with RAX series devices, or serve as a large capacity aggregation device for customer center nodes.

On the client side, RAX711-C-R or RAX721 series products can be used to provide customers with a variety of E1, FE, GE, 10GE, and even 100GE interface types and high bandwidth access.

Through various OAM and testing measurement technologies such as Y.1564, RFC2544, and Y.1731, we provide online testing, measurement, monitoring, and troubleshooting methods for dedicated line services.

HIGHLIGHTS

- Both hard network slicing (FlexEthernet) and soft network slicing (Segment Routing) are supported
- Different services use L2VPN/L3VPN to distinguish the bearer and provide end-to-end tunnel isolation
- Various VPN over MPLS: VPWS, VPLS, H-VPLS, MS-PW, L3VPN and E1 over MPLS/UDP
- Next generation EVPN architecture for the unified control plane
- Various tunnel technology: static LSP, MPLS LDP, MPLS-TE, Segment Routing and SRv6
- Multi layered leased line protection based on links and devices, ensuring lossless switching within 50ms
- With DHCPv4/v6 ZTP, remote sites easy online, easy upgrade software without any configuration

PRODUCTS



iTN8800-A



iTN8800-E

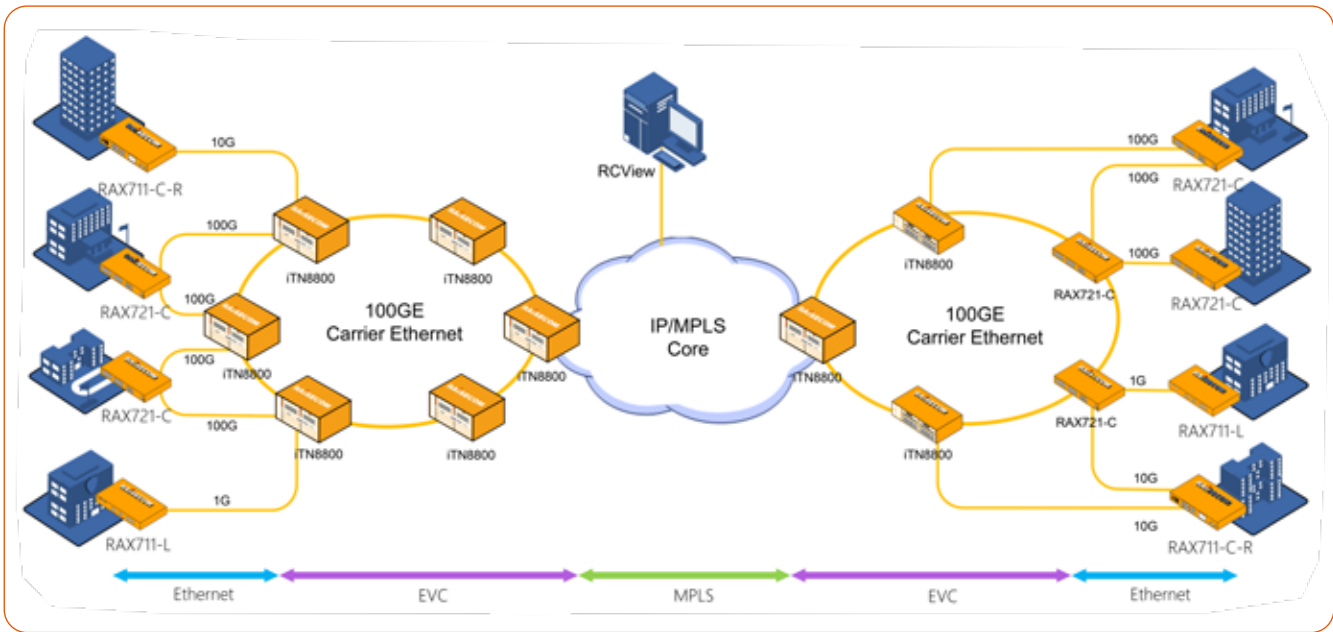


RAX721 series



RAX711-C-R

Carrier Ethernet Leased-Line with Guaranteed SLA



SOLUTION

The Carrier Ethernet solution is based on the iTN series and RAX series intelligent transmission products, which can provide standard services model solutions based on MEF CE3.0. The solution is built by the iTN8800 with high capacity switching capability or the RAX721 series with more dimension advantages to build access rings, providing high bandwidth 10GE/40GE/100GE uplink interfaces to meet today's customer demand for ultra-high bandwidth.

The client-side adopts the RAX711 series and RAX721 series intelligent remote products. On the one hand, it provides customers with high-density FE/GE/10GE/100GE access interfaces. On the other hand, implementing end-to-end EPL, EVPL, EP-LAN, EVP-LAN, EP Tree, and EVP-Tree through the standard MEF CE3.0 ensures maximum connectivity and reliability of metropolitan ethernet services.

HIGHLIGHTS

- Compact-designed intelligent Carrier Ethernet CPE and pre-aggregator, effectively saving installation space
- High density 1/10/25GE to 100GE access and aggregation
- MEF Carrier Ethernet 3.0 compliant EVC/OVC services: E-Line, E-LAN, E-Tree, E-Access, E-transit
- Flexible hierarchical bandwidth guarantee based on Port + VLAN + Cos
- End-to-end SLA measurement and generate network quality reports in real time, effectively avoiding ambiguity of responsibilities between networks
- Y.1564 Service Activation Tests run from UNI to UNI
- With DHCPv4/v6 ZTP, remote sites easy online, easy upgrade software without any configuration

PRODUCTS



iTN8800-A



iTN8800-E



RAX721 series

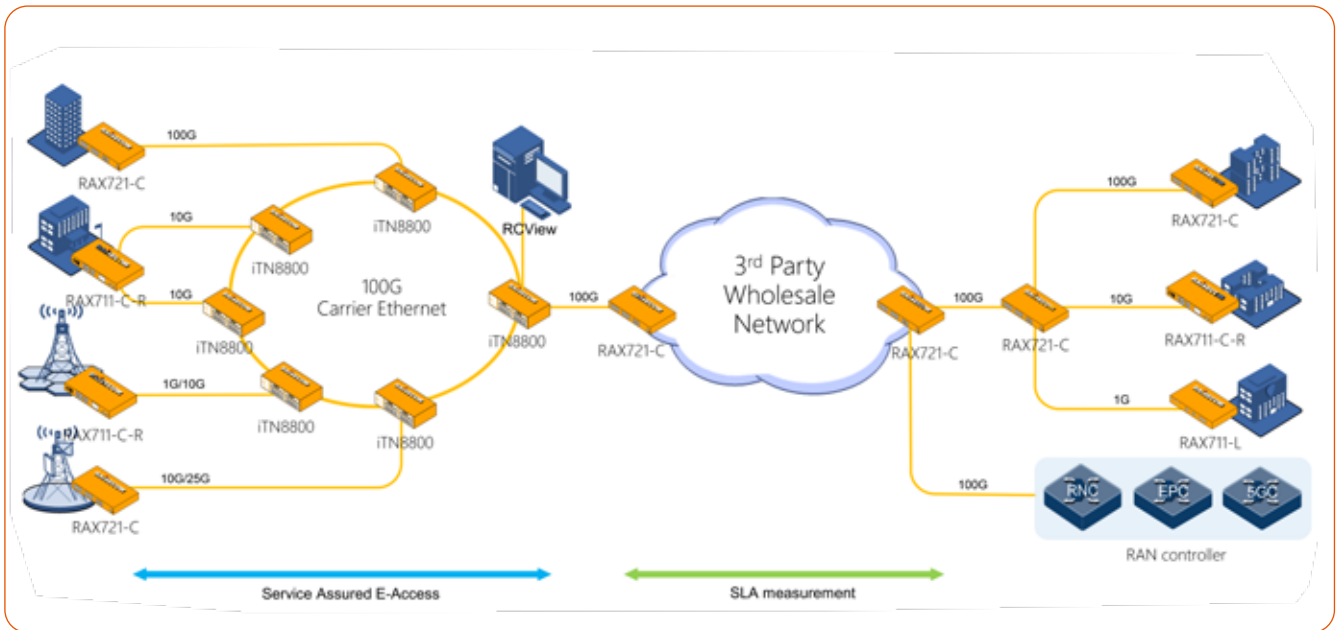


RAX711-C-R



RAX711-L series

Carrier Ethernet Wholesale with Guaranteed SLA



SOLUTION

Raisecom iTN and RAX series products effectively help regional operators or ISPs solve the problem of network infrastructure coverage limitation, and the network can flexibly extend and expand the service coverage radius.

RAX711 and RAX721 series products can be deployed at the edge of 3rd party network and seamless connection between networks with variety of E-NNI interface bandwidth such as 1GE, 10GE, 40GE and 100GE.

Provide efficient, reliable, and high-quality Wholesale network solutions for government agencies, financial institutions, multinational enterprises, mobile communication services, etc., while providing customized services according to customer needs to improve customer satisfaction.

HIGHLIGHTS

- Compact-designed intelligent Carrier Ethernet CPE and pre-aggregator, effectively saving installation space
- Provide multiple bandwidth E-NNI interfaces from 1G, 10G to 100G to connect to 3rd party network
- MEF Carrier Ethernet 3.0 compliant EVC/OVC services: E-Access
- Flexible hierarchical bandwidth guarantee based on Port + VLAN + Cos
- End-to-end SLA measurement and generate network quality reports in real time, effectively avoiding ambiguity of responsibilities between networks
- Support mobile traffic carrier on wholesale services

PRODUCTS



iTN8800-A



iTN8800-E



RAX721 series

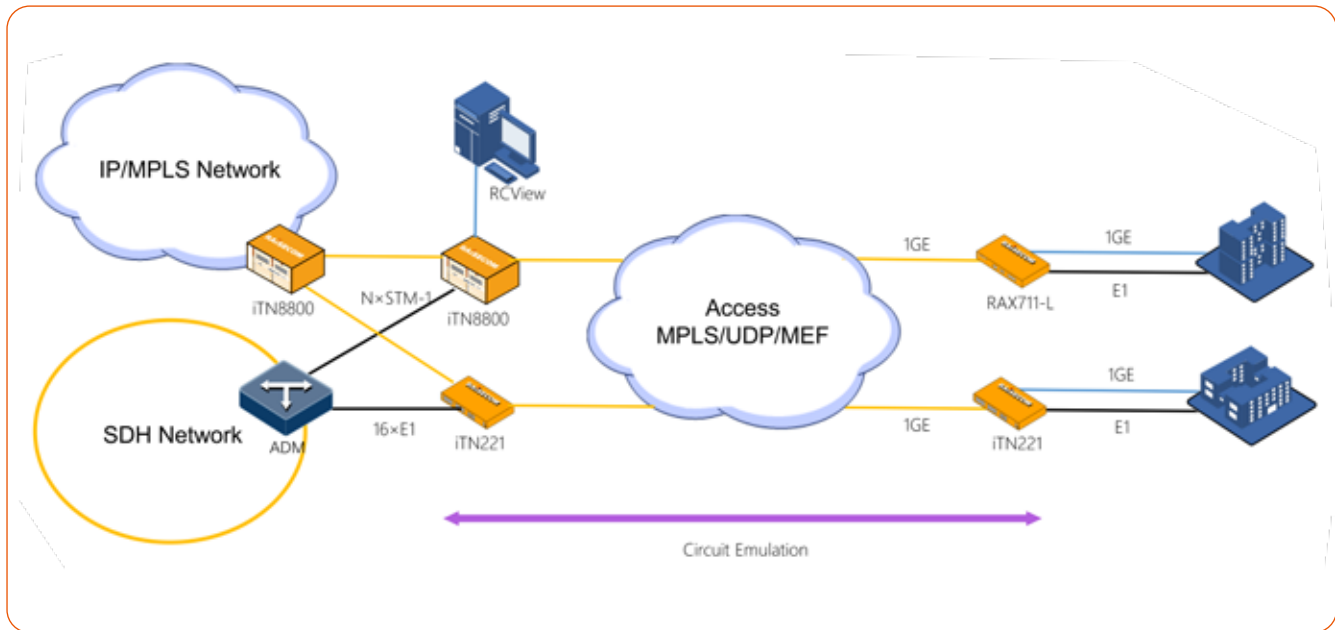


RAX711-C-R



RAX711-L series

TDM Extension over Packet Network



SOLUTION

The Raisecom iTN and RAX series products can effectively help operators or industry customers smoothly migrate from legacy SDH networks to packet networks, solving the trend of legacy SDH networks being unable to create or retire.

The iTN221 and RAX711-L series products can provide multiple E1 interfaces, providing customers with high-speed Ethernet service access while still providing basic low-speed voice services, achieving flexible access to high-speed and low-speed services. The uplink can provide various circuit emulation services based on UDP, MPLS, and MEF formats to meet the diverse needs of different customers. On the aggregation side, both iTN8800 and iTN221 are used to simultaneously aggregate nxSTM-1 to the SDH network and nxGE to the packet network, providing customers with great convenience and reliability in accessing multiple services.

HIGHLIGHTS

- Ensure service providers with a smoothly migration from legacy TDM to packet infrastructure
- Various legacy service access capability addressing different network terminals flexibly
- Pseudo-wire solutions range from CPEs to medium and large sized aggregators
- Flexibility of TDM emulated service granularities from Nx64K, E1 to STM-1 circuits
- Support point-to-point and point-to-multipoint network topologies
- SyncE and PTP clocking guarantee high-quality synchronization for TDM services

PRODUCTS



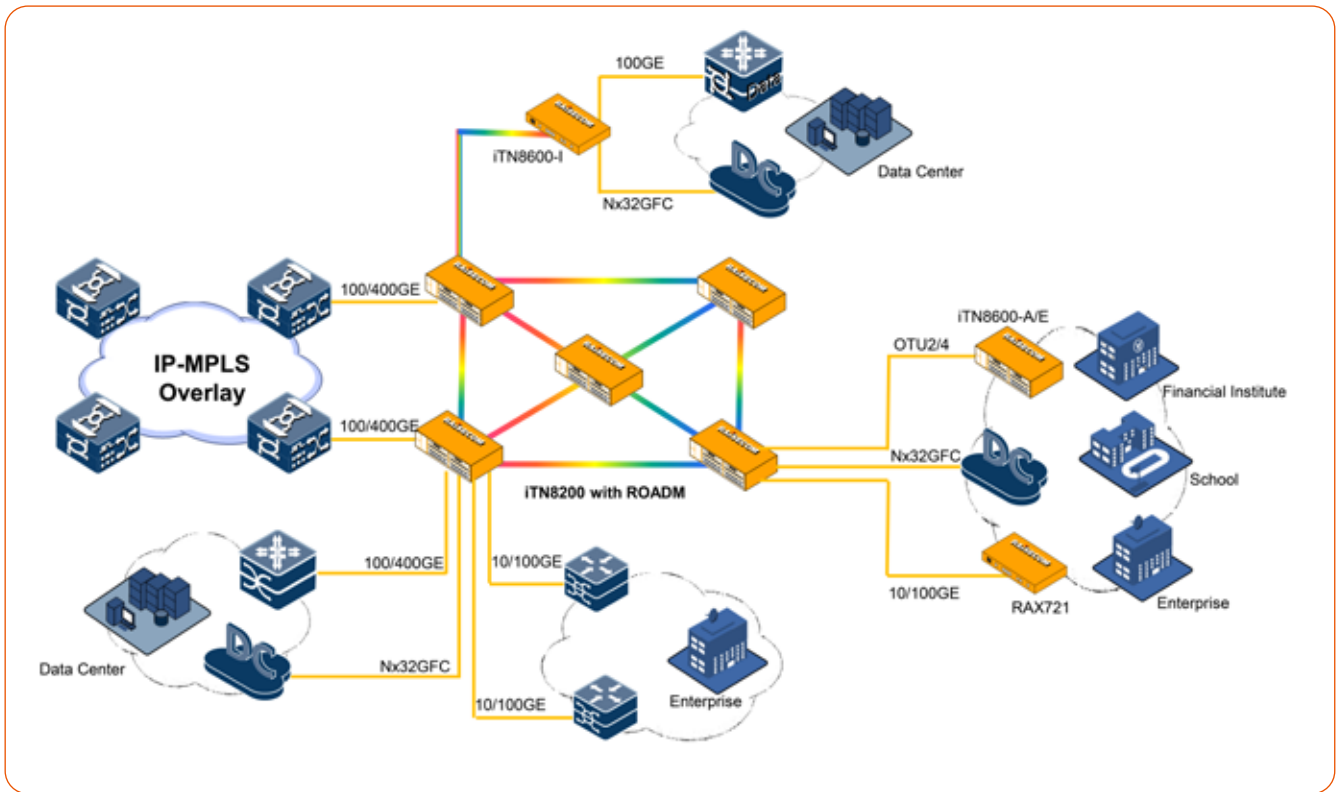
iTN8800-A

iTN8800-E

iTN221-4GE

RAX711-C-R

Enhanced ROADM Core/Metro DWDM Networks



SOLUTION

With the new cloud-based business booming, requires large bandwidth and flexible multi-services access in DWDM Core/Metro networks. Raisecom 400G DWDM/OTN platform solution, is built on iTN series intelligent products, providing an end-to-end integrated solution with DWDM/OTN technologies.

It provides various services convenient access to 100/200/400G DWDM networks with one chassis, the services such as 100/400GE, 32G Fiber channel, OTU2/OTU4 OTN, etc. Enhanced ROADM enables mesh-type DWDM infrastructure. It's convenient and flexible, high reliability, unified network management, easy to deploy and OAM.

HIGHLIGHTS

- Coherent 100G/200G/400G CFP2 based transmission with SD-FEC in line side
- Maximum transmission 96x100/200G, 80x400G in one pair optical fibers
- Flexible wavelength assignment, and 9-dimensional enhanced ROADM
- Multi-service access for 100/400GE, OTU4, 32G Fiber Channel, and mixed transmission
- Redundant backup at the device level and OLP/OCP/OCh/SNC, etc. protection
- OTDR/OCM, and OTN overhead/alarm/performance monitoring
- End-to-end for services deployment

PRODUCTS



iTN8600-A



iTN8600-E



iTN8200



RAX721 series

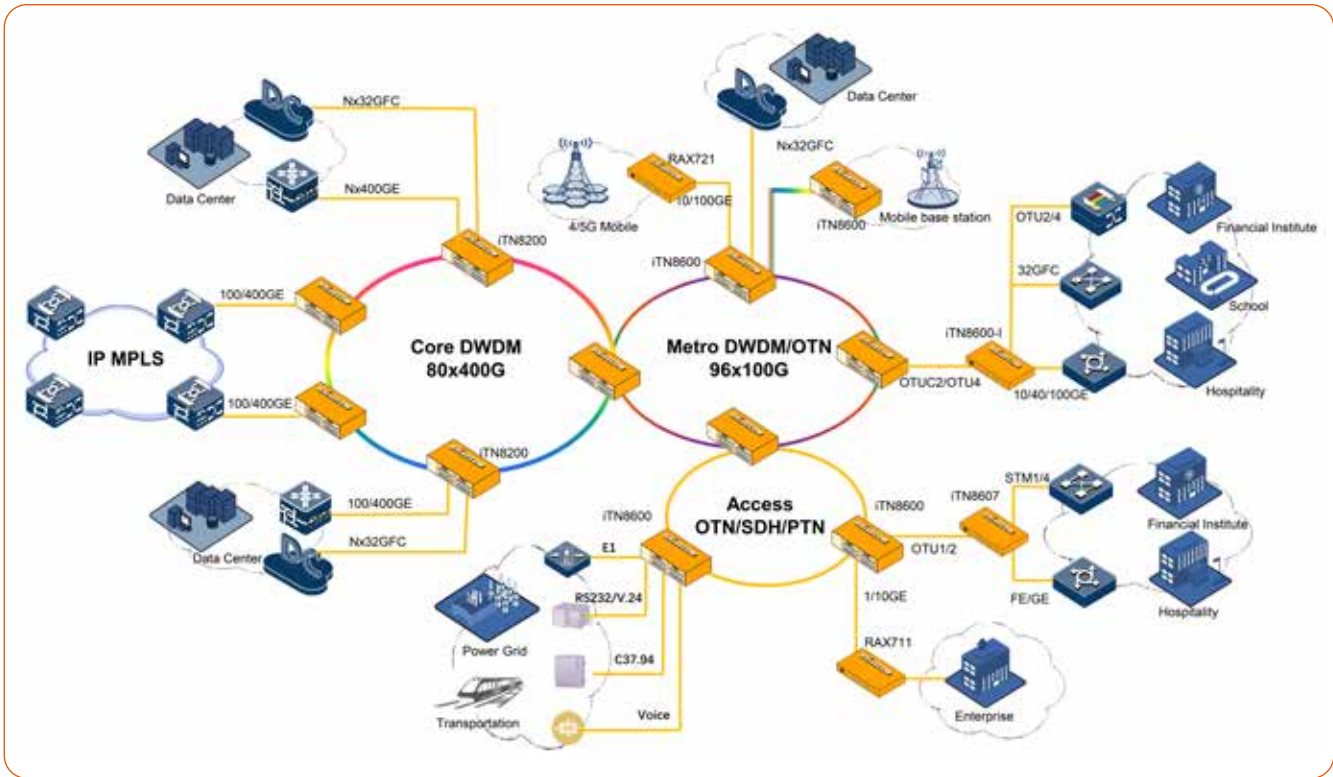


iTN8600-I-XT4D



iTN8600-I-TQ5D

Multi-Service OTN Metro Access/Aggregation Networks



SOLUTION

Multi-services Metro access/aggregation platform solution, is built on iTN series intelligent products, providing an end-to-end integrated leased line solution that integrates WDM/OTN/SDH/PKT/PCM technology.

Raisecom provides various services convenient access to 10G or 100/200/400G DWDM/OTN networks, the services such as Ethernet, Fiber channel, OTN, SDH, E1, and FXS/FXO, etc. It's convenient and flexible access by iTN8600-A/E, iTN8607, iTN221, RAX700 series, unified network management, easy to deploy and OAM. It provides to operators with low latency and high reliability leased line access and aggregation for the Metro networks.

HIGHLIGHTS

- Comprehensive OTN/DWDM based solution for metro access and aggregation DWDM/OTN networks
- Multi-service transport including 1GE/10GE, STM-1/4/16/64, OTU1/OTU2, FC1G/2G/4G/8G/10G, CPRI, and OBSAI, FXS/FXO/E&M/RS232/RS485/V24/TP/C64K/E1, etc
- End-to-end OTN-based business leased line access with iTN8600/iTN8607, iTN221/RAX721/RAX711 CPEs
- Seamless network migration with integrated PTN/OTN/SDH/PCM switching backplane at the same time
- Comprehensive NMS platform enabling automatic deploying, commissioning and monitoring of services

PRODUCTS



ITN8600-A



ITN8600-E



ITN8607 series



iTN221-4GE



ITN8600-I-XT4D



ITN8600-I-TQ5D



RAX721 series



RAX711-C-R

Mobile Operator

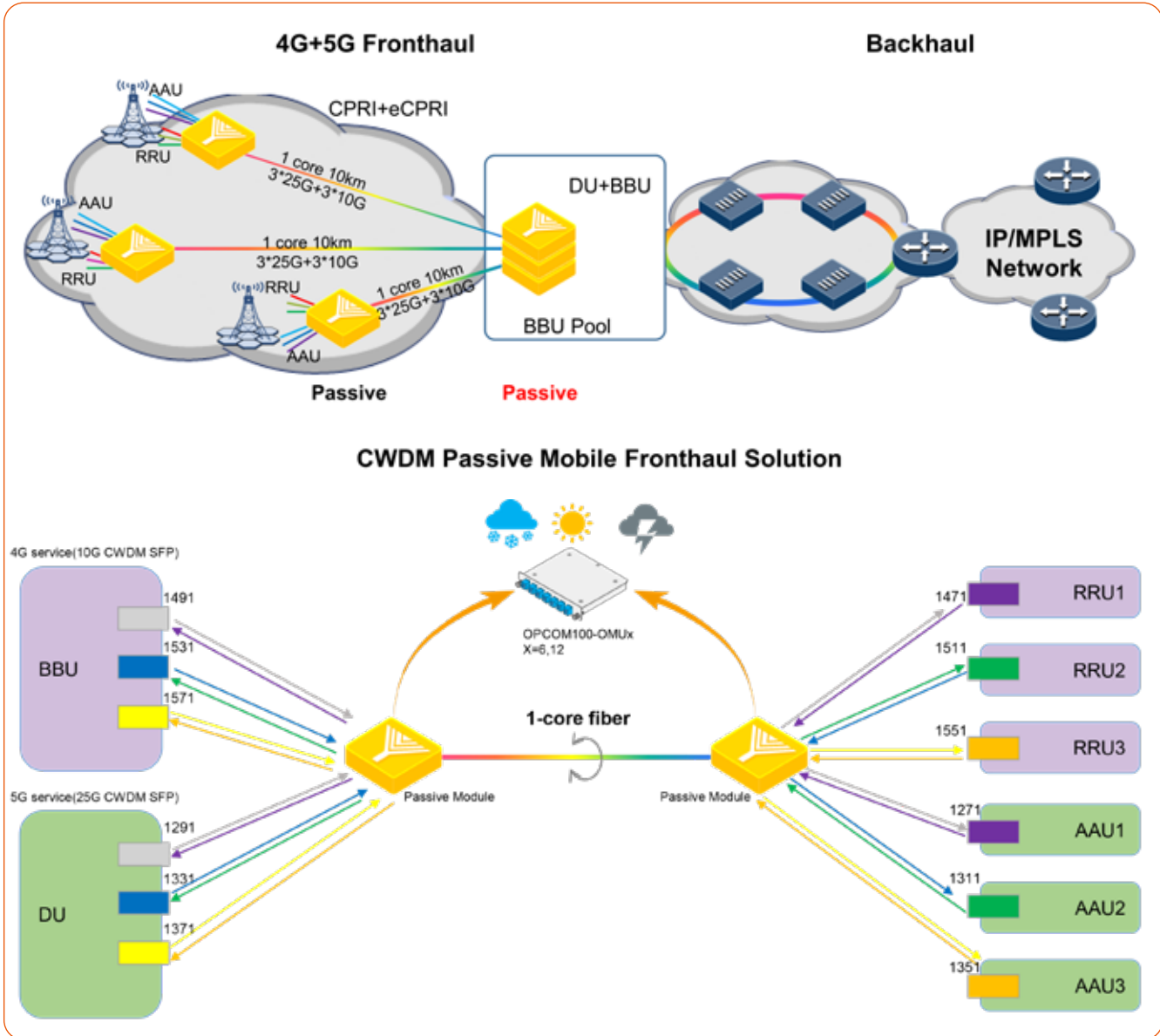
The rapid growing number of bandwidth-savvy smartphones and smart devices continuously drives mobile operators to improve their networks. This includes improved efficiency, increased bandwidth capacity and expanded coverage. The choice of mobile backhaul and mobile fronthaul technologies is becoming critical for operators aiming at delivering guaranteed mobile services and remain profitable in an era of declined ARPU.

Raisecom mobile backhaul solutions provide voice-sensitive and data-intensive traffic at affordable costs. They enable reliable and smooth migrations of different generations (2G, 3G and 4G/LTE) mobile services over legacy SDH to packet-based networks. These carefully engineered solutions include some of the following capabilities: auto-provisioning, bandwidth optimization and performance monitoring, which assist in reducing OpEx and increasing network availability.

The mobile fronthaul solution is widely deployed in C-RAN architecture to optimize fiber utilization. Raisecom provides diversified passive and semi-passive solutions to address cost sensitive scenario and fiber intelligent management scenario respectively.



Passive 4G/5G Mobile Fronthaul



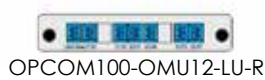
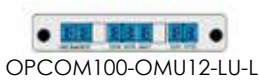
SOLUTION

Passive 4G/5G Mobile Fronthaul solution, is built on OPCOM100 series CWDM products, providing 6/12 wavelength channels, converged into one-core optical fiber for transmission. Raisecom provides cost effective solution, it uses CWDM Muxponder + CWDM SFPs, to complete the multiplexing of optical fibers to save optical resources. It can transmit 5G or 4G services, or 5G + 4G services with low latency and high-capacity.

HIGHLIGHTS

- Compact size, flexible deployment, no power supply
- Cost effective, low latency
- It can transmit 5G or 4G services, or 5G + 4G services in One-core optical fiber to save optical resources

PRODUCTS

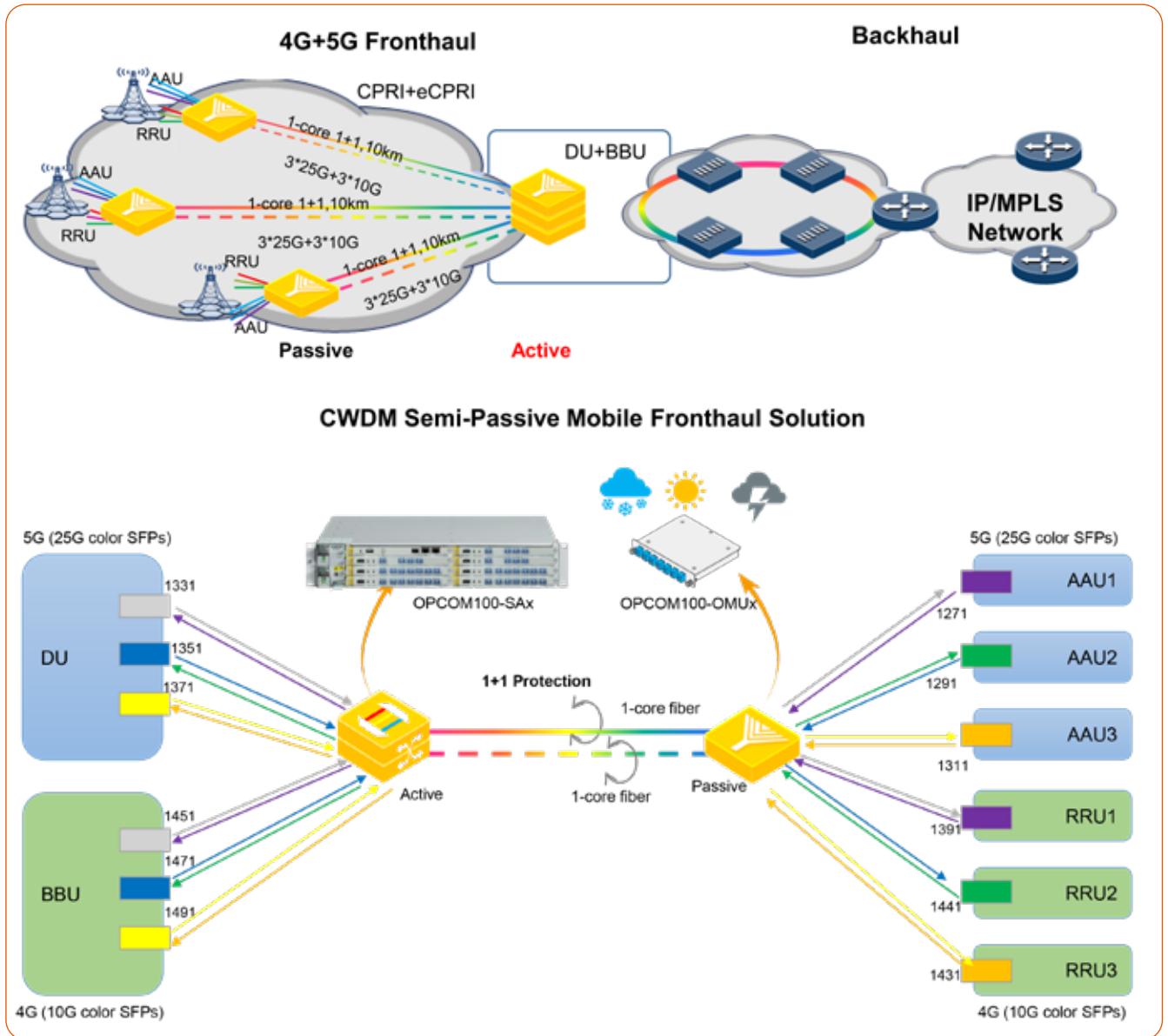


OPCOM100-OMU12-LU-L

OPCOM100-OMU12-LU-R

passive chassis

Semi-Passive 4G/5G Mobile Fronthaul



SOLUTION

Raisecom WDM Semi-Passive 4G/5G mobile fronthaul solution, is built on OPCOM100-SA series CWDM products, providing 6/12 wavelength channels, converged into 1-core or 2-cores optical fiber for transmission.

It includes central office devices and remote devices, central office device is active, and the remote device is passive, low power consumption and high reliability. Mainly used for 4G/5G mobile fronthaul optical fiber capacity expansion, unilateral wavelength conversion, and Semi-Passive CWDM private line access.

HIGHLIGHTS

- Integrated packaging, flexible deployment, low power consumption
- Central office devices can be Manageable, real-time display of channel status
- 1 + 1 line protection, and uninterrupted services during power failure
- 5G or 4G or 5G + 4G services can be transmitted in one-core fiber, saving fiber resources

PRODUCTS



OPCOM100-SA

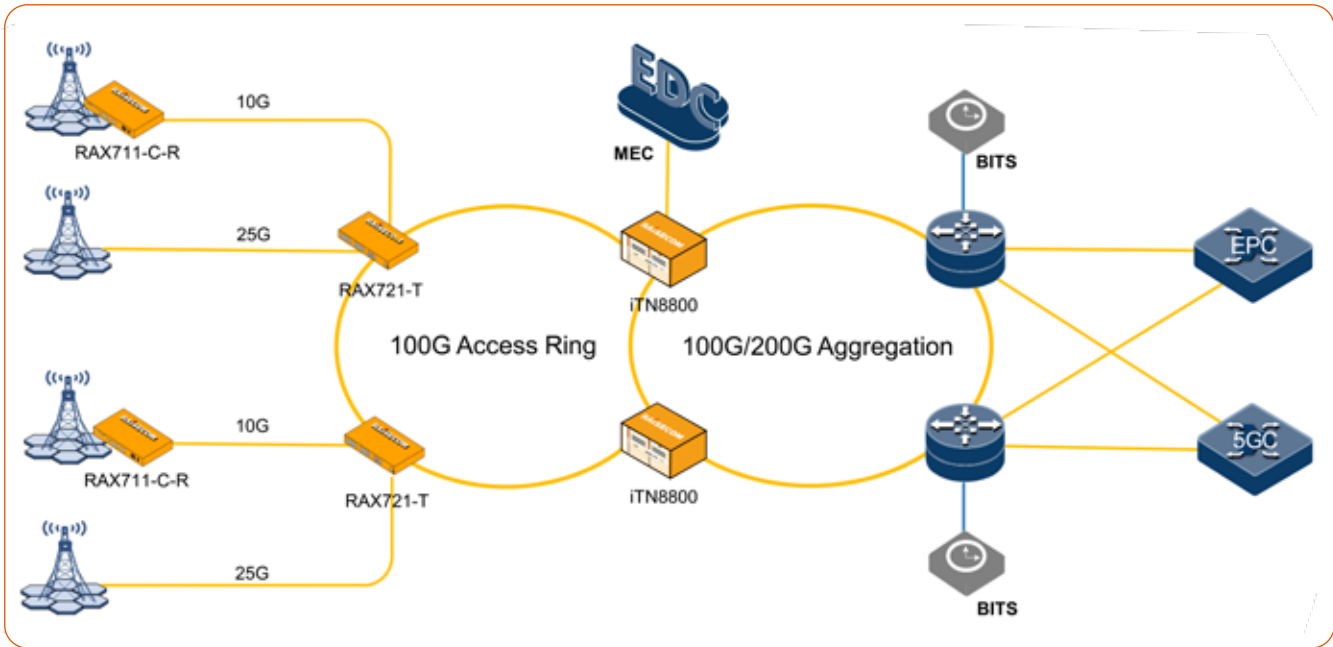


OPCOM100-SA remote module



passive chassis

Transport for 4G/5G Mobile Backhaul



SOLUTION

The 5G RAN network provides the features of eMBB, uRLLC and mMTC, meeting the increasingly diverse multi scenario applications of V2X, telemedicine, cloud AR/VR, and more. The next generation IPRAN bearer network will meet the needs of comprehensive bearer for 5G services and fixed mobile convergence (FMC). The Raisecom 5G IPRAN bearer solution is based on a high-performance router core, using IP/MPLS packet forwarding and further integrating SR/EVPN/IPv6 technology to achieve the goals of simplifying network structure, improving network performance, and low latency transmission network. Targeting 5G services, government enterprise dedicated lines, and cloud integration services, construct a 10G/25G/50G/100G bearer access ring network on demand, with transmission network characteristics such as large bandwidth, low latency, and high-performance clock synchronization.

HIGHLIGHTS

- Standard and compact access device networking solution, flexible and low-cost networking
- The temperature-hardened (-40°C to +65°C) design can running stably in harsher environments
- High density 10GE and 25GE access bandwidth, meeting the requirements for accessing a large number of 4G and 5G base station node interfaces
- Support 50G/100G rate networking to meet high bandwidth carrying requirements. Support high-precision clock synchronization such as Sync-E, IEEE 1588v2, telecom profile, etc
- Network hard slicing to meet the different needs of different industries for network bandwidth, latency, and jitter
- Support IP/MPLS, EVPN, and SR capabilities to ensure refined services and end-to-end services forwarding requirements

PRODUCTS



ITN8800-A



ITN8800-E

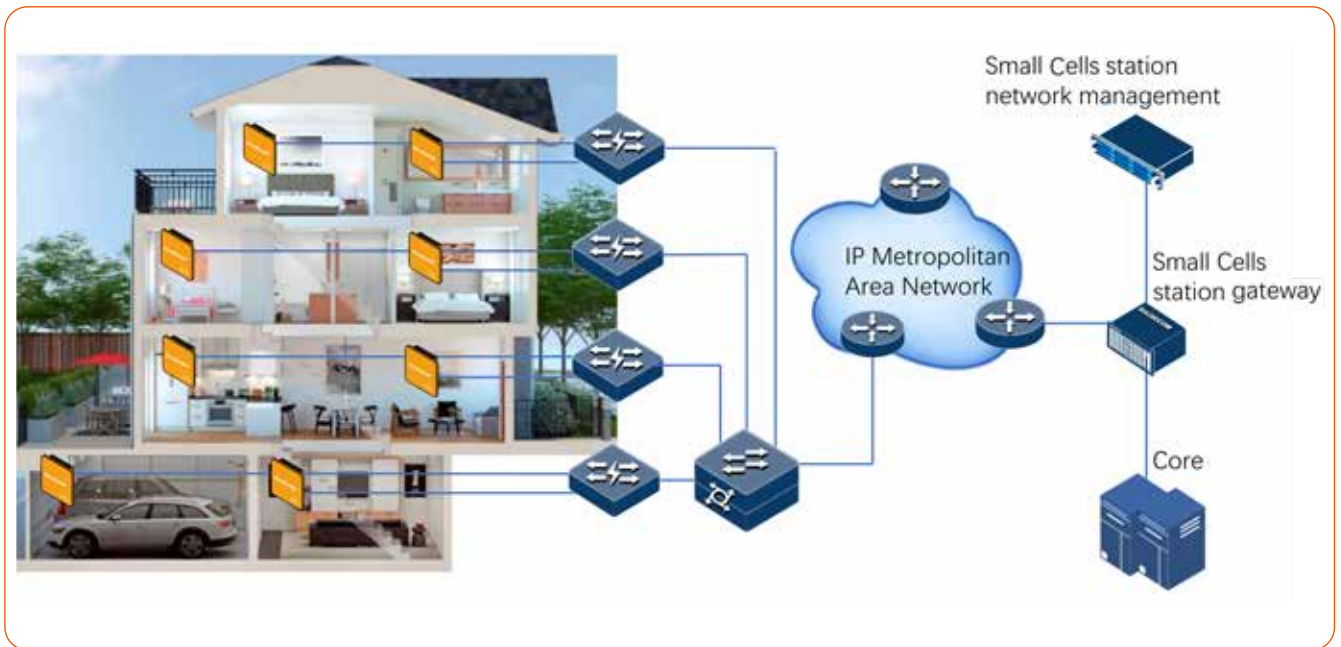


RAX721 series



RAX711-C-R

Small Cells for Improving Mobile Coverage and Throughput



SOLUTION

With the deepening of 4G mobile network construction, indoor scene represented by universities and densely populated office buildings have become the focus of attention for major operators. This type of scenario has a large number of users and is relatively concentrated. In many cases, operators provide exclusive discounted traffic packages, resulting in a large business volume. The capacity of relying solely on outdoor macro base stations for coverage and sharing is limited. Traditional room construction faces problems such as room rental, limited transmission, insufficient capacity, long construction period, and high cost, resulting in poor coverage and economic efficiency in such scenarios. Operators need more cost-effective and convenient Indoor mobile network coverage solutions.

Raisecom's enterprise level small base station solution adopts an IP-based networking architecture, with multiple frequency band options, small size, light weight, flexible deployment, and precise coverage. It has the characteristics of high bandwidth, high performance, and low cost, and can share the original WLAN transmission and power supply network, meeting the challenging needs of business congestion scenarios such as universities and dense office buildings. Fully enhance the high-speed business experience of indoor mobile internet users and share the existing room and macro network load.

Typical scenarios of the same kind: universities, conference centers, shopping malls, sports venues, subway stations, etc. sure business continuity.

HIGHLIGHTS

- Indoor small cells for mobile operators to effectively improve their mobile coverage and throughput
- Integrate baseband, RF and antenna, implement full functions of a base station
- Featuring intelligent SON, self-startup, automatic configuration, and flexible deployment
- Support multiple backhaul modes, such as GPON/ XGS-PON, IPRAN and Internet
- Support MIMO dual-way balancing and end monitoring
- Adopt highly integrated chipset solution with high price performance ratio

PRODUCTS

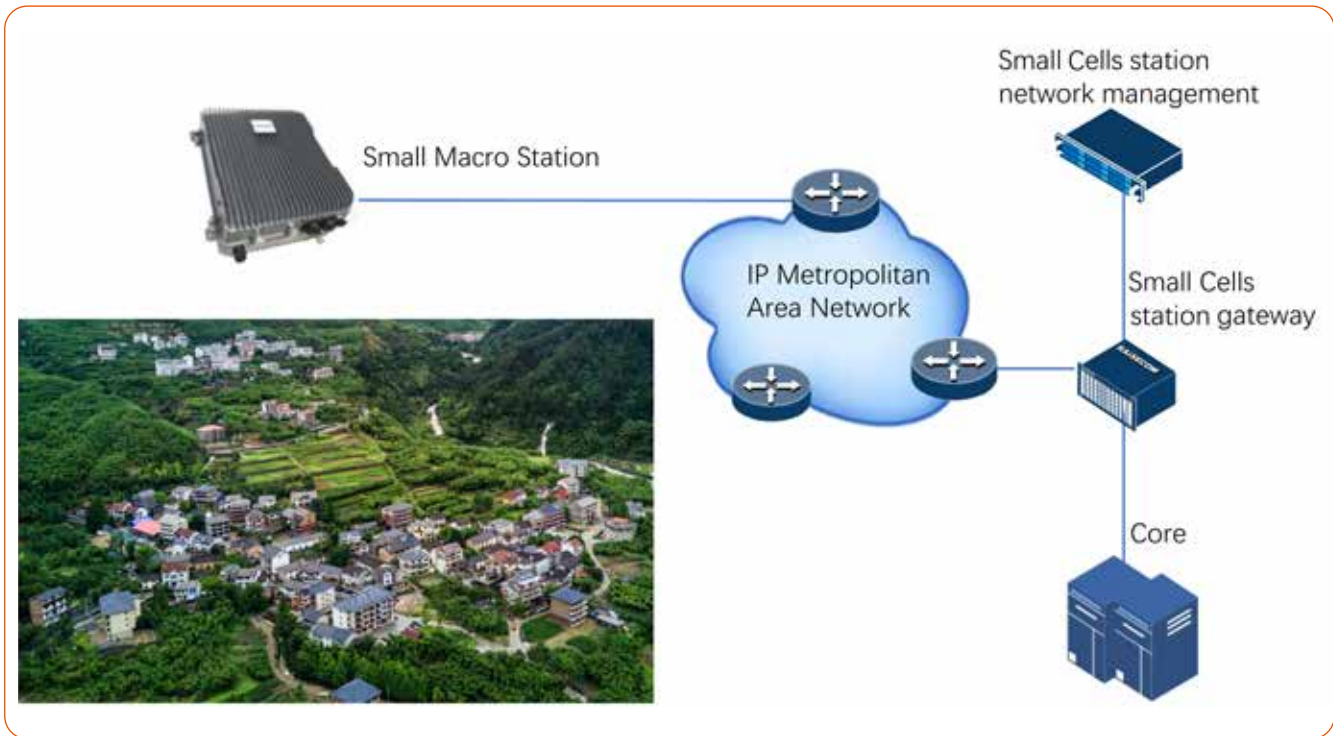


BLBS3211-Bx



BLOM6200

Small Cells for Mobile Coverage in Sparsely Populated Area



SOLUTION

Rural areas in China are very large but few users live in the countryside. The traditional construction of 4G mobile networks in rural areas faces challenges such as large construction volume, insufficient backhaul resources, low return on investment, as well as limited space in some site and limited space in computer rooms. In the construction of mobile networks in rural areas, controlling network construction costs and accelerating project implementation cycles are crucial.

Raisecom Macro Station Solution, targeting the needs of rural mobile network construction, adopts an outdoor integrated base station design, supports pole and wall installation, and adopts an Internet backhaul solution, without the need for computer room construction, greatly saving construction investment and improving network construction efficiency. Assist operators in achieving fast and low-cost mobile network construction, and help them create competitive high-quality rural mobile networks.

HIGHLIGHTS

- Integrate baseband, RF and antenna implement full functions of a base station
- Support mask-mount and building-mount installation
- Feature intelligent SON, self-startup, automatic configuration, and flexible deployment
- Support multiple backhaul modes, such as GPON/XGS-PON, IPRAN and Internet
- Support MIMO dual-antenna Rx and Tx, maximizing downlink rate
- Provide a high output power, applicable for long-distance coverage in rural and mountainous areas

PRODUCTS



BLBS3211-BxP43



BL0M6200

ISP and Cable Operator

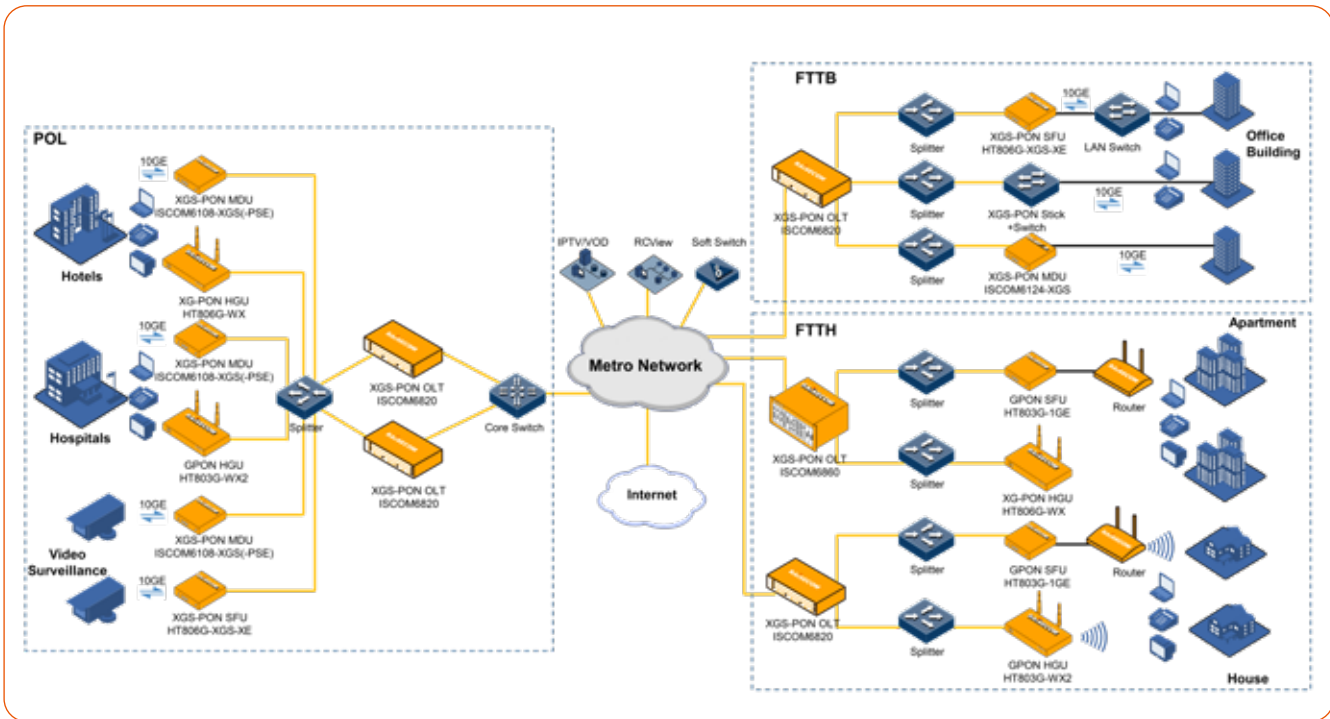
More and more consumers are witnessing the benefits of Fiber to the Home (FTTH) technologies. In addition to the ultra-fast Internet access, these users can also benefit from Triple-Play services (Internet + voice + IPTV/CATV) using the same infrastructure at reasonable cost. Some broadband service providers are now adding a fourth service (Mobile/FMC) which increases the bandwidth usage and the need for QoS.

Raisecom offers both Active Ethernet (AON – Active Optical Networks) and passive optical network (PON – Passive Optical Networks) access and aggregation solutions for high-density metro residential access. Comprehensive streams of Internet, voice, video and sometimes cellular can be delivered to rural and less populated areas with low-cost fiber, copper and wireless connections.

The versatile solutions enable fast deployments and pay-as-you-grow approach.



Comprehensive FTTx Broadband Access



SOLUTION

Raisecom xPON portfolio provides an extensive range of end-to-end solutions, including high, medium-sized, low-capacity chassis-based and compact standalone OLTs, as well as various ONT types including SFU, MDU and HGU for all kinds of application scenarios. In addition to providing triple play services, it also works with RCView platform for NOC centralized management. FTTB's demand for high bandwidth is increasing, and through the 10G PON scheme, 10G access is possible. With a variety of terminal forms, different access methods can be provided to different users, such as SFU + switches, or multi-port MDUs, to assist commercial users in providing various services and achieving revenue growth.

FTTH uses passive optical networks as the access medium, and SFU, HGU and other devices are used in home customer rooms to achieve comprehensive access and wireless coverage of data and voice. This solution has the advantages of low construction cost, low construction cost, and low maintenance cost, and can be widely used for accessing the home market.

Based on PON, POL all fiber technology covers scenarios such as hotels, hospitals, and industrial parks, achieving comprehensive network improvement. According to different business requirements, various forms of ONUs provide traditional telephone POTS ports, Ethernet ports, Wi-Fi ports, and POE output ports, enabling access to multiple services in a POL network.

HIGHLIGHTS

- Various sized xPON OLTs & various capacity demands for ISP's and cable operators' deployment
- Optimized solutions for different scales from 500 to 20,000 subscribers
- The pay-as-you-grow approach and auto-provisioning enable fast deployment and future growth
- Various ONT types enable ISPs and cable operators to offer different service tariffs to subscribers
- Carrier-grade NMS platform helps reduce provisioning cost with "Zero Touch" provisioning tools

PRODUCTS



ISCOM6124-XGS(-PSE)



ISCOM6108-XGS(-PSE)



ISCOM HT803G-WX2



ISCOM6820

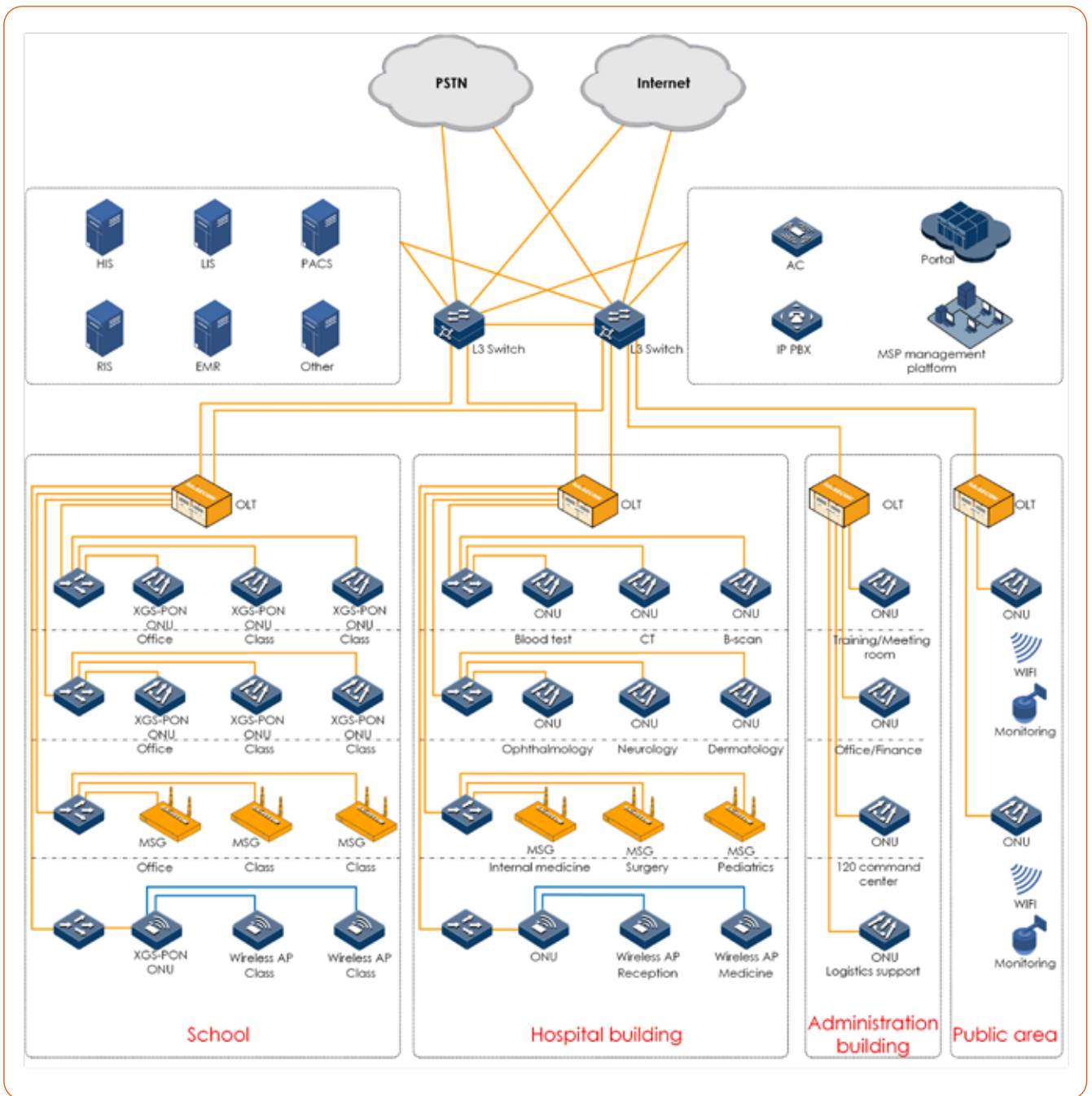


ISCOM6800



ISCOM6860

Passive Optical LAN (POL) Network



SOLUTION

Raisecom POL solution consists with GPON and XG(S)-PON technologies, which offer regular 2.5G GPON and symmetrical/asymmetrical 10G PON broadband access solutions respectively. Based on PON, POL all fiber technology covers scenarios such as hotels, hospitals, and industrial parks, achieving comprehensive network improvement. According to different business requirements, various forms of ONUs provide traditional telephone POTS ports, Ethernet ports, Wi-Fi ports, and POE output ports, enabling access to multiple services in a POL network.

HIGHLIGHTS

- Ideal and cost-efficient hardware design for up to 4,000 subscribers per chassis
- Pay-as-you-grow business model enabled by full modular designed OLT delivering GPON and XGS-PON
- Simple and easy-to-maintain passive optical network to deliver all-types of enterprise networking traffics, including Internet, voice and video with strengthened security, 5G, Wi-Fi 5/6 and IoT cloud
- Carrier-grade NMS for implementing "Zero-Touch" auto-provisioning and reducing deployment hassles

PRODUCTS



ISCOM6820



ISCOM HT803G-WX2



ISCOM6108-XGS(-PSE)



ISCOM6124-XGS(-PSE)

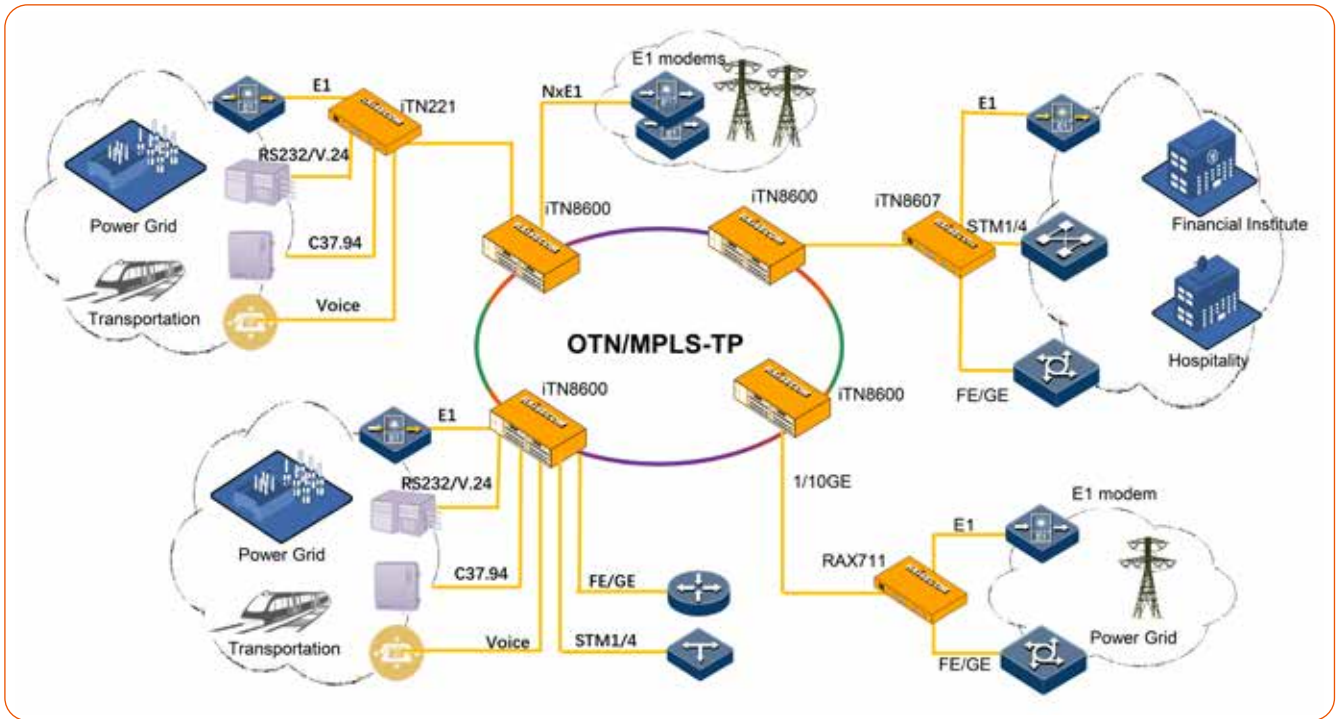
↳ Mission Critical Network

Industrial and utility applications present unique challenges for network planners. First, they involve mission-critical traffic, which may be closely related to public safety and people's daily life that requires high network reliability and resiliency. Typically, it is needed to support various types of traffics, such as low-speed data communication, digital and analog voice, TDM circuits and analog control, mobile traffic, multimedia traffic, integrated surveillance and broadband access and more. In addition, the equipment must survive a wide range of environmental conditions and comply with the stringent industrial conditions.

Raisecom provides PCM connectivity solutions for SCADA traffic as well as Ethernet/PTN based industrial products. This combination serves next-generation bandwidth demands in the fields of energy (power, gas, oil, mining and hydro), transportation, public information and so on.



SDH Migration to Next-Generation OTN/MPLS-TP Networks



SOLUTION

Traditional power and railway industry networks often consider SDH network transmission, but now customer need more business access capacity and larger capacity. Raisecom's iTN8600 series intelligent devices integrates OTN/SDH/PKT/PCM technology. It provides various services convenient access to 10G OTN/MPLS-TP networks, the services such as 100M/1G/10G Ethernet, STM1/4/16 SDH, E1, and FXS/FXO/E&M/C37.94/C64K, etc. It's convenient and flexible access by iTN8600-A/E, iTN221, and RAX711-L series products, and transmit on iTN8600-A/E for 10G OTN/MPLS-TP networks.

HIGHLIGHTS

- Multi-service access including 100M/1G/10G Ethernet, STM1/4/16 SDH, E1, and FXS/FXO/E&M/MT/RS232/RS485/V24/C37.94/C64K, etc
- Integration with OTN/SDH/PKT/PCM at the same time, DWDM can be used for long-distance transmission
- Redundancy in power supply, SDH/OTN cross connect matrix, switching matrix, and uplink builds up a fully redundant system with high-reliability
- Comprehensive NMS platform enabling automatic deploying, commissioning and monitoring of services
- Available with 5RU/3RU chassis, and 1.5RU/1RU compact chassis for different locations

PRODUCTS



iTN8600-A



iTN8600-E



iTN221-4GE

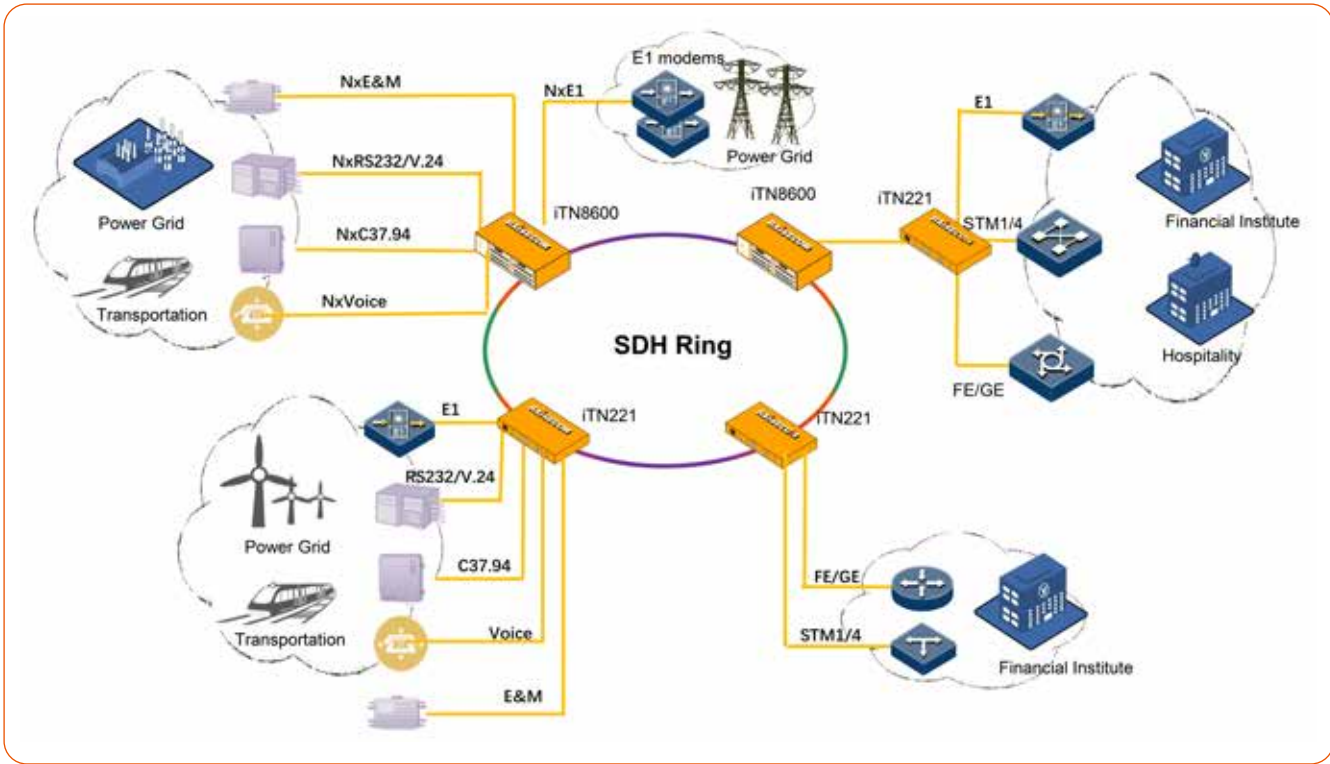


RAX711-L



iTN8607 series

Multi-Service Access over SDH for Mission Critical Networks



SOLUTION

Multi-services access over SDH solution, is built on iTN8600/iTN221 series intelligent products, providing integrate SDH/PCM technology in one chassis.

Raisecom provides various services convenient access to SDH networks, the services such as 100M/1G Ethernet, E1, and FXS/FXO/Magneto/E&M/V.24/RS232/C37.94/C64K, etc. It's convenient and flexible access by iTN8600-A/E or iTN221 series products, to STM1/4 SDH network transmission. It provides unified network management, convenient and highly reliable solutions for mission critical networks.

HIGHLIGHTS

- Access service types include STM-1, E1, Ethernet, FXS/FXO, E&M, Magneto Telephone, V.24, RS232, RS485, G.703 and C37.94, covering most common interface needs in mission critical networks
- Redundancy in power supply, cross connect matrix and uplink builds up a fully redundant system with high-reliability
- Flexible clocking solutions are fit for the actual deployment plans of customers
- Available with 5RU/3RU chassis and 1.5RU compact chassis for different locations

PRODUCTS

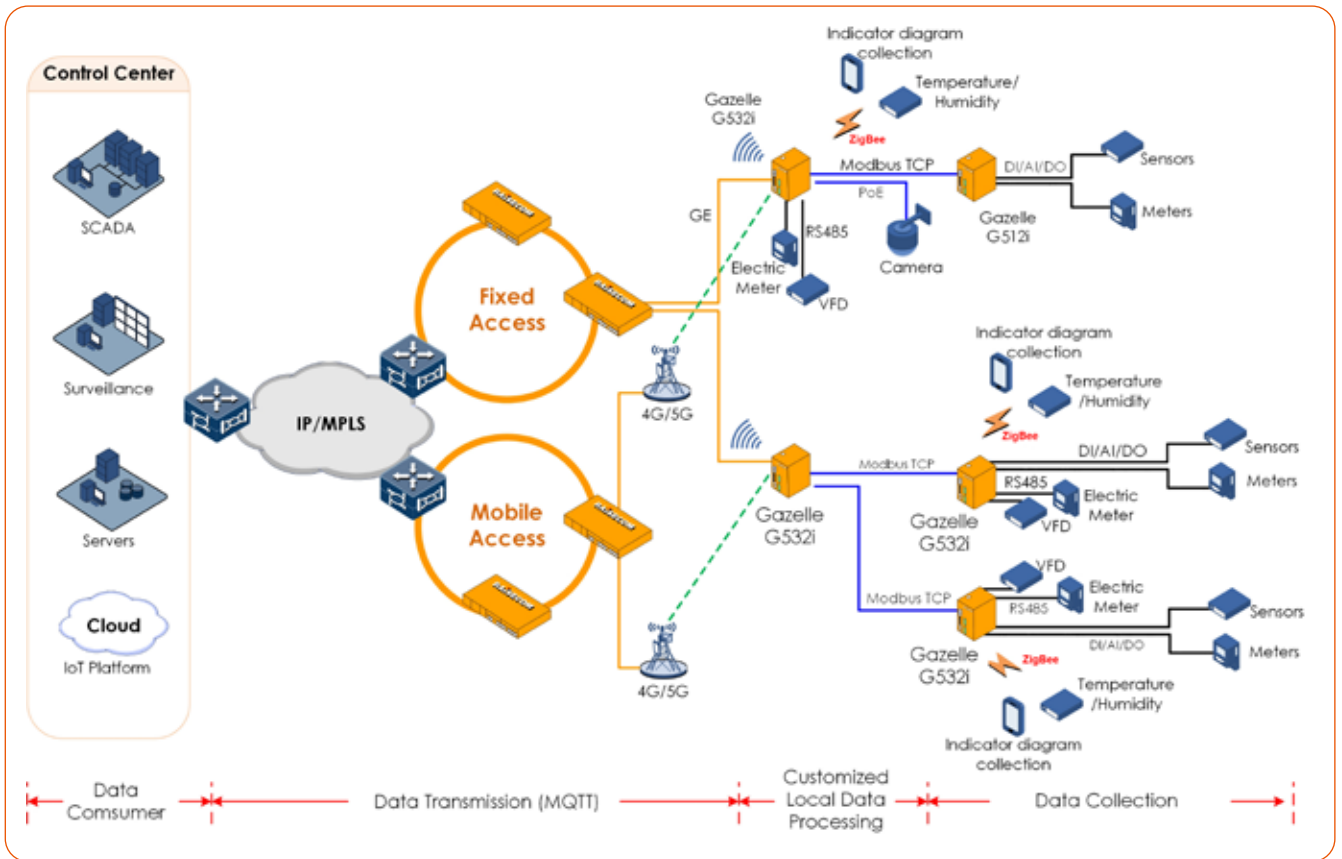


iTN8600-A



iTN221-4GE

Intelligent Environment Monitoring System for Power Substations and Oil Rigs



SOLUTION

Intelligent IoT gateways Gazelle G532i/G512i with POE capabilities are usually placed in Pole-mounted cabinet which feed power to the outdoor industrial AP, sensors, meters, or HD cameras, and at the same time realize data collection, edge computing by connecting various interfaces to transmit data to datacenter of power substations. And usually for Oil field, Oil rigs are installed outdoors, in the middle of nowhere, it is difficult to provide either fiber or copper with cable connection, so providing 4G/5G wireless backhaul network is a very convenient quick way to guarantee high transmission reliability for these customers to monitor and to check their devices and Oil rigs.

HIGHLIGHTS

- Intelligent IoT gateways realize data collection, edge computing and data transmission in compact DIN-rail design
- Various interfaces (Ethernet, PoE, RS232/485, DI/AI/DO and ZigBee) greatly reduce the number of devices and connections
- Real-time local data processing powered by high-performance ARM/x86 processors, significantly increasing network transmission efficiency
- Built-in open platform for developers for customizations with cloud-based industrial applications
- Fixed and 4G/5G uplink working in back-up guarantees high transmission reliability
- Industrial-grade hardware design ensures stable operating in harsh environment

PRODUCTS

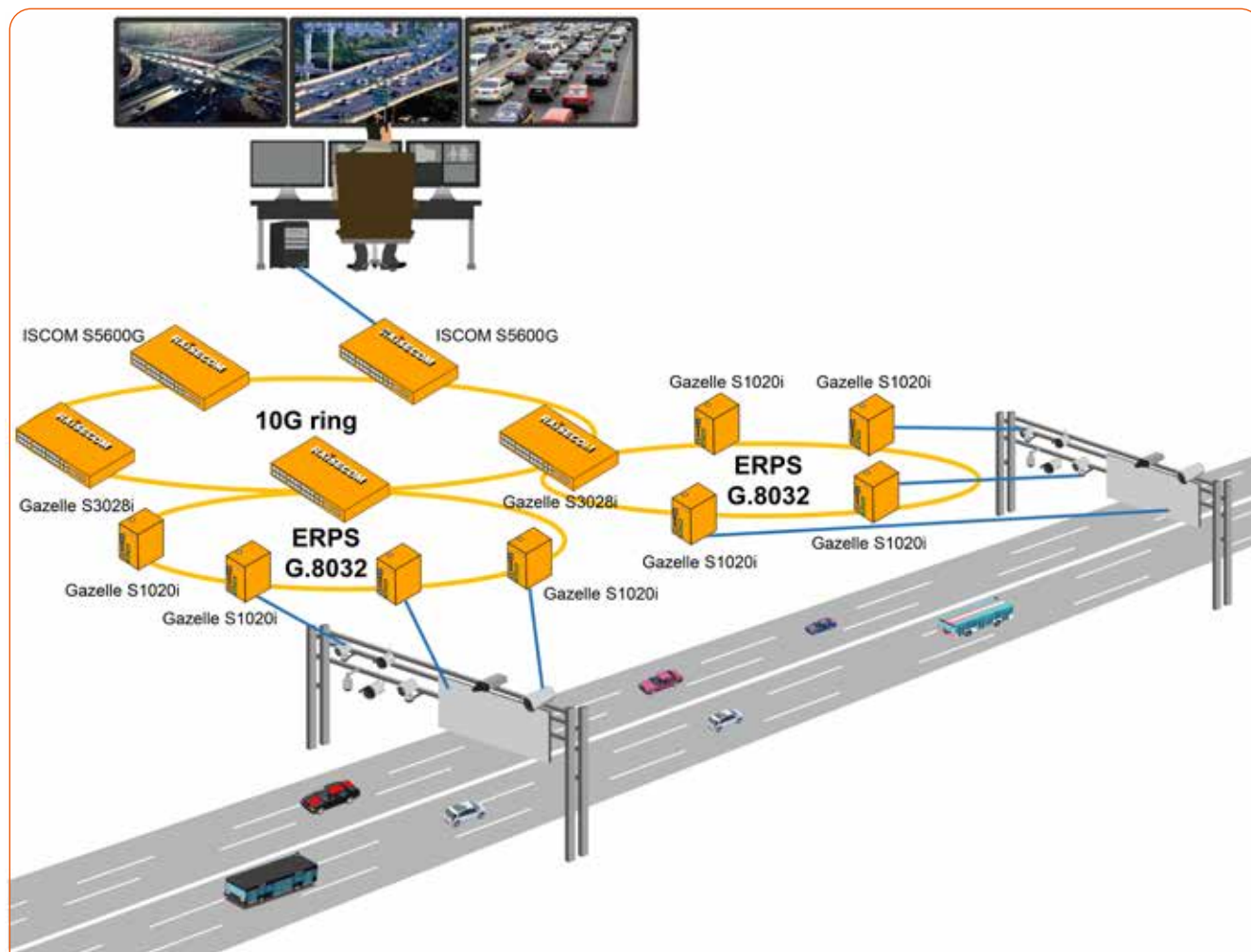


Gazelle G512i



Gazelle G532i

Video Surveillance, Security and Automation for Highway



SOLUTION

Raisecom Ethernet Switch and Industrial Switch portfolio provides comprehensive integrated communication infrastructure for digitalized traffic control, tolling, navigating, video surveillance and security systems for contemporary highways and motorways. Various L3/L2 core switches and temperature-hardened aggregation rack-mounted and PoE Din-rail-mounted switches are available with different power supplies for the most convenience and overvoltage protection, lightning surge protection, and IP40 protection ensuring reliable operation in outdoor environment. The typical highway and motorway communication infrastructure is consisted with central stacked core L3 Ethernet switches for increased capacity, resiliency and redundancy. A few backbone 10G/1GbE rings are constructed between core switches and Gazelle S3028i/ISCOM S5600G rack-mounted aggregation switches alongside the road. A large number of Gazelle S1020i series Din-rail-mounted Industrial PoE Switches are also deployed in G.8032-enabled sub-rings with S3028i aggregation switches to connect and provide power supply for cameras for video surveillance purpose. The telecom-grade ITU-T G.8032 ERPS protocol is employed as the fastest and most dependable ring protection protocol to insure the most uptime of the network with the lowest delay.

HIGHLIGHTS

- Comprehensive Industrial Switch product line helps highway operators build up private networks for their surveillance, controlling and toll gate systems
- Complete stand-alone aggregation switches and DIN-rail access switches for different locations and cabinets
- IEEE802.3af/at/bt compliant PoE options for enabling various different power consumption devices
- Flexible and versatile ring networks based on telecom-grade ITU-T G.8032 ERPS to ensure sub-50ms switchover
- Gigabit network backbone for large volumes of video data
- Network redundancy with secure data encryption capability
- Network traffic management for bandwidth efficiency
- Fiber interface for long distance transmission with high scalability
- Industrial durability to withstand severe outdoor conditions

PRODUCTS



Gazelle S3028i-MGL series

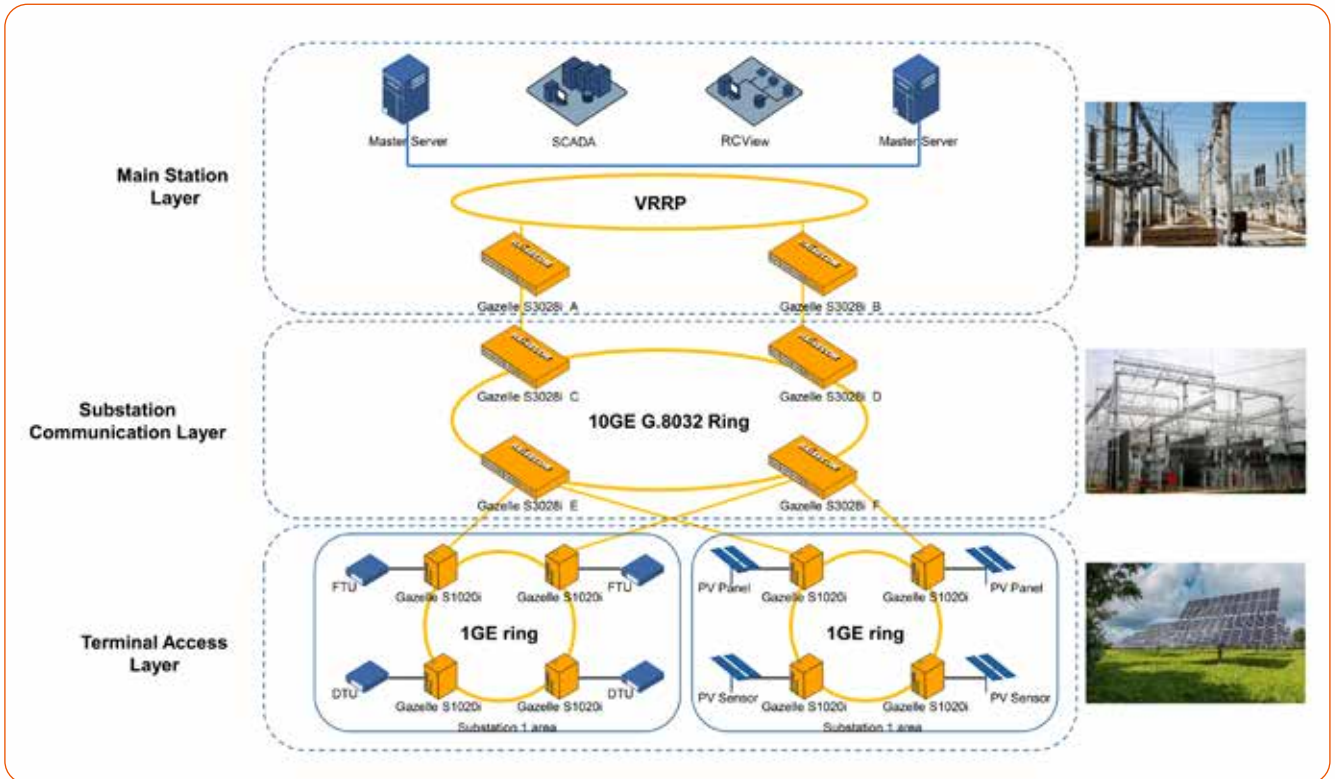


ISCOM S5600G series



Gazelle S1020i-PWR series

Power Grid Automation and Substation Security Monitoring



SOLUTION

The intelligent power distribution network is an IP based real-time communication network, supporting various distribution terminals and systems to "go online", solving communication bottlenecks of distribution network, achieving real-time communication, and bringing revolutionary changes to the protection, monitoring and automation technology of the distribution network. Considering the operating environment of the distribution network is harsh, with a large number of communication nodes and complex network topology, and the continuous expansion in the future, the power distribution communication system network adopts a layered network structure: main station layer, substation communication layer and terminal access layer. Raisecom equipment can meet all the requests of the hierarchical structures, provide a total solution from the core to the aggregation and to the access level. In the application, L3 switches Gazelle S3028i-MGS consists VRRP to provide the redundancy and resiliency in the L3 structure. In the access side, smaller Gazelle S1020i series also consists rings with dual homing to provide dependability and resiliency. And at the end access level, S1020i din-rail switches connects to devices typically in power distribution, like DTUs, RTUs, or FTUs.

HIGHLIGHTS

- Industrial grade chips, industrial grade power modules, low-power design, to ensure high reliability of the system
- IEC61850-3 and IEEE 1613 compliant Industrial Switches for power substation networking
- Complete stand-alone aggregation switches and DIN-rail access switches for different locations and cabinets
- Flexible and versatile ring networks based on telecom-grade ITU-T G.8032 ERPS to ensure sub-50ms switchover
- Low power consumption to maximize the electrical output of a solar power plant
- Reliable operation in wide-temperature outdoor environments
- Wide -40 to 75°C operating temperature range

PRODUCTS



Gazelle S3028i-MGS series



Gazelle S1020i-PWR series

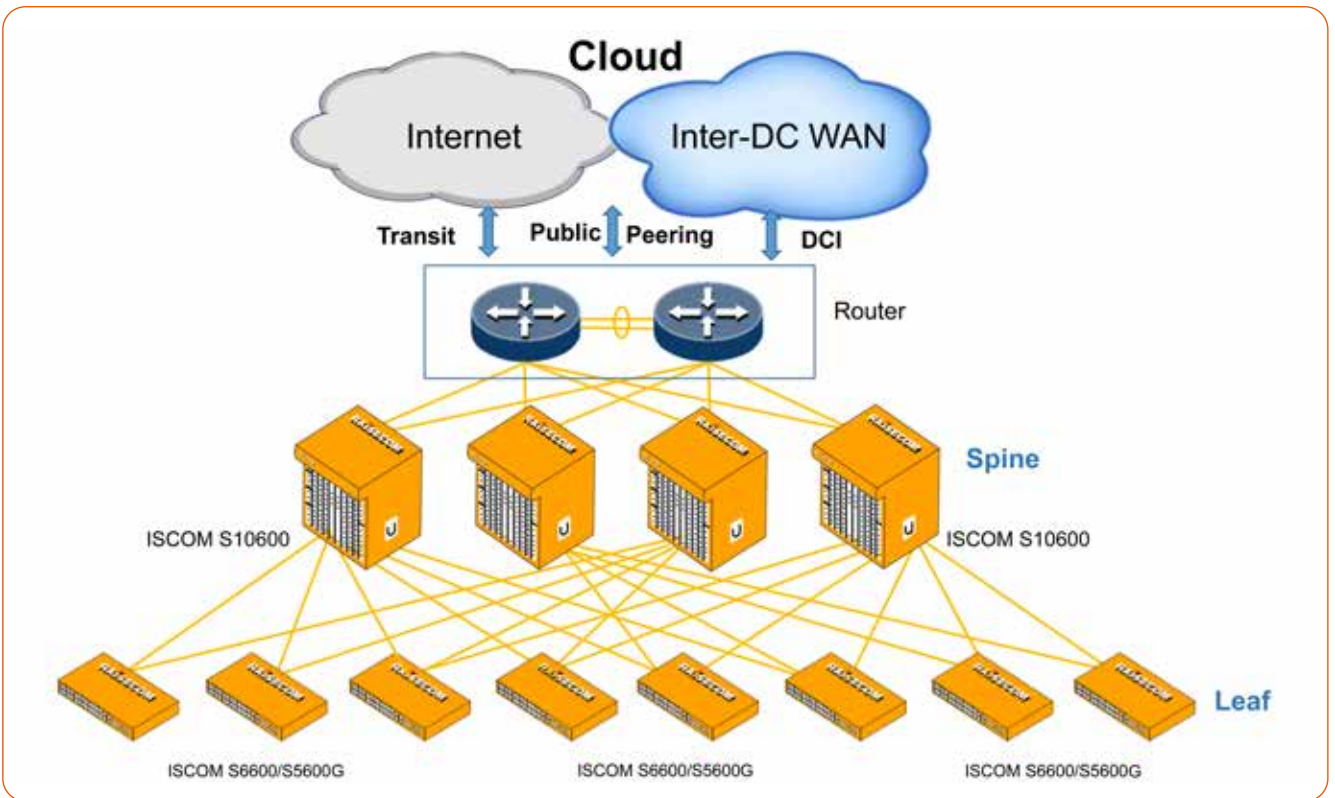
Enterprise and Government

Small-and-medium-sizes enterprises create a vast marketplace for telecommunication service providers and system integrators, offering versatile business solutions with secure LAN networking, high-speed Internet and cloud. The nature of efficient and intelligent information processing is a crucial factor for SME owners to stay in the market, requiring secured, powerful, and cost-effective networking.

Raisecom provides secure and cost-effective VPN access solutions for SME users to overcome the challenges such as lack of competent IT infrastructure, limited budget and cyber security requirement. Raisecom solutions are ideal for LAN networking, service integration and customer benefit maximization. These solutions assist SMEs to fully utilize private and public cloud network by combining routing, Ethernet switching, voice-support, 3G/4G backup, Wi-Fi, VPN, and cyber security features.



Data-Driven Cloud Networking for Data Centers



SOLUTION

Data Center construction has been increasing exponentially in recent years, due to cloud-based data storage, content distribution and edge computing applications accompanied by data-hunger services such as AR/VR and generative AI. Raisecom's new generation Ethernet switch portfolio hierarchical various models, including S10600 series chassis-based Spine switches and S6600/S5600G leaf switches, for typical Spine-and-Leaf data center networks.

By leveraging state-of-the-art L2 MLAG and L3 ECMP redundancy protocols, virtual stacking and VXLAN switching, the new ISCOM Series switches feature with low-latency multiple 10G/25G/100G transmission, robustness and open interoperation with small and medium sized data centers and edge clouds.

HIGHLIGHTS

- Agile and flexible Nx100G/40G/25G/10G speeds in high port density
- Modern infrastructure with L2 MLAG and L3 MECP for better port utilization
- Scalable designs enable data center infrastructure to start small and pay-as-grow
- Open standards without vendor lock-ins, interoperable in multi-vendor deployment

PRODUCTS



ISCOM S10608

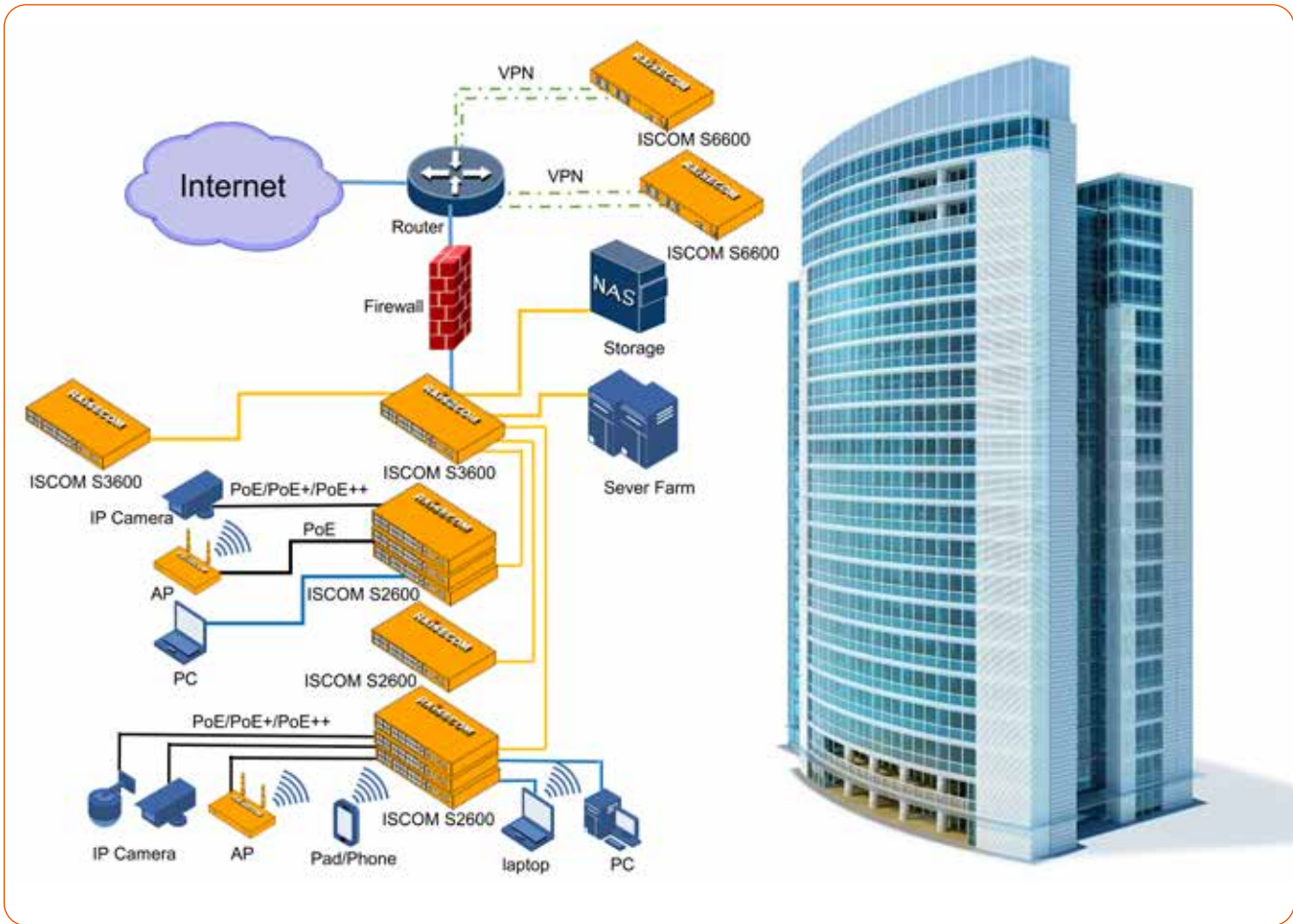


ISCOM S10603



ISCOM S6600

Enterprise Networking Solution



SOLUTION

Raisecom new ISCOM series Ethernet switches provide end-to-end enterprise and campus networking solutions from the core to access. To fulfill the need of increasing trend of higher speed and bandwidth, ISCOM switches offer an extensive range of energy-saving chassis-based core switches, enhanced L3 aggregation switches, standard L3 and L2 access switches with state-of-the-art max 90W Power over Ethernet options. Through introduction of telecom-grade G.8032 ERPS ring protection protocols, various authentication and authorization mechanisms as well as unified network management capability, the ISCOM series can help large enterprises, SMBs, schools and universities, as well as various hospitality end-user build up a secure, green and dependable network easily, minimizing hardware investment, power consumption and operation hassles.

HIGHLIGHTS

- Secure and 100Gb high-speed enterprise/campus networking solution with unified management
- Robust ultra PoE option to connect IP phones, security camaras and other PD equipment
- Green and energy-saving design to reduce power consumption
- Various compact and high-density design to tackle with different capacity requirement

PRODUCTS



ISCOM S2600

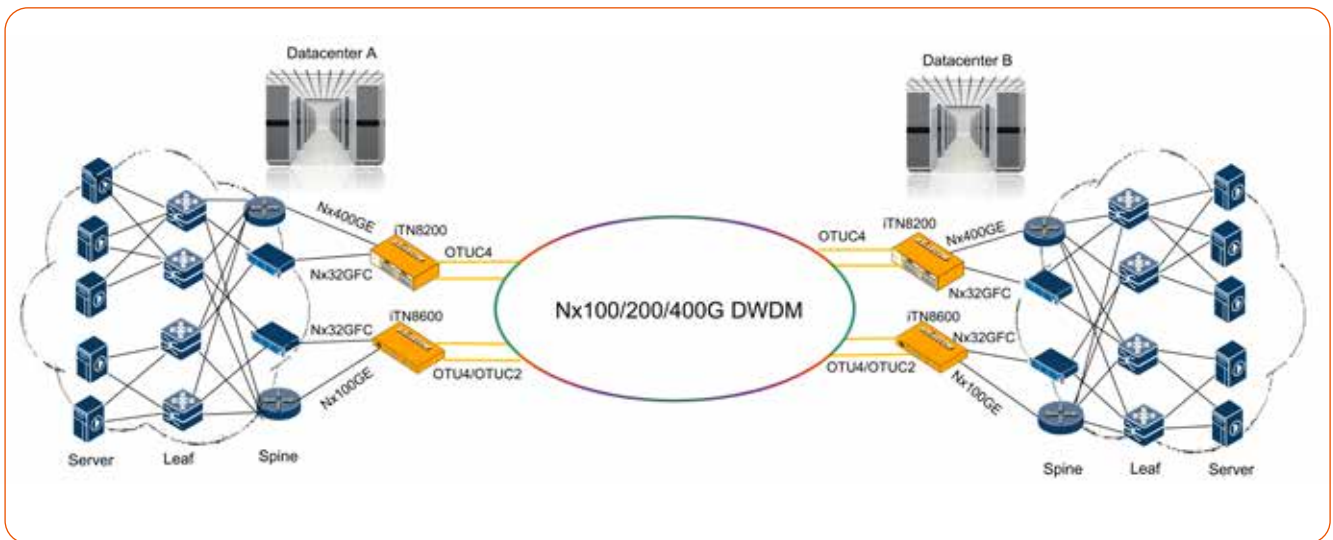


ISCOM S3600



ISCOM S6600

Nx100G/200G/400G Data Center Interconnect



SOLUTION

With the exponential growth of the data traffic, the demand for bandwidth in Data Center is growing rapidly. Raisecom provides iTN series intelligent solution, that help various services convenient access to 100/200/400G line side by iTN8200/iTN8600-I-TQ4D/iTN8600-I-TQ5D, one pair of optical fibers can achieve up to 32Tbps transmission. Simultaneously transmitting securely and reliably.

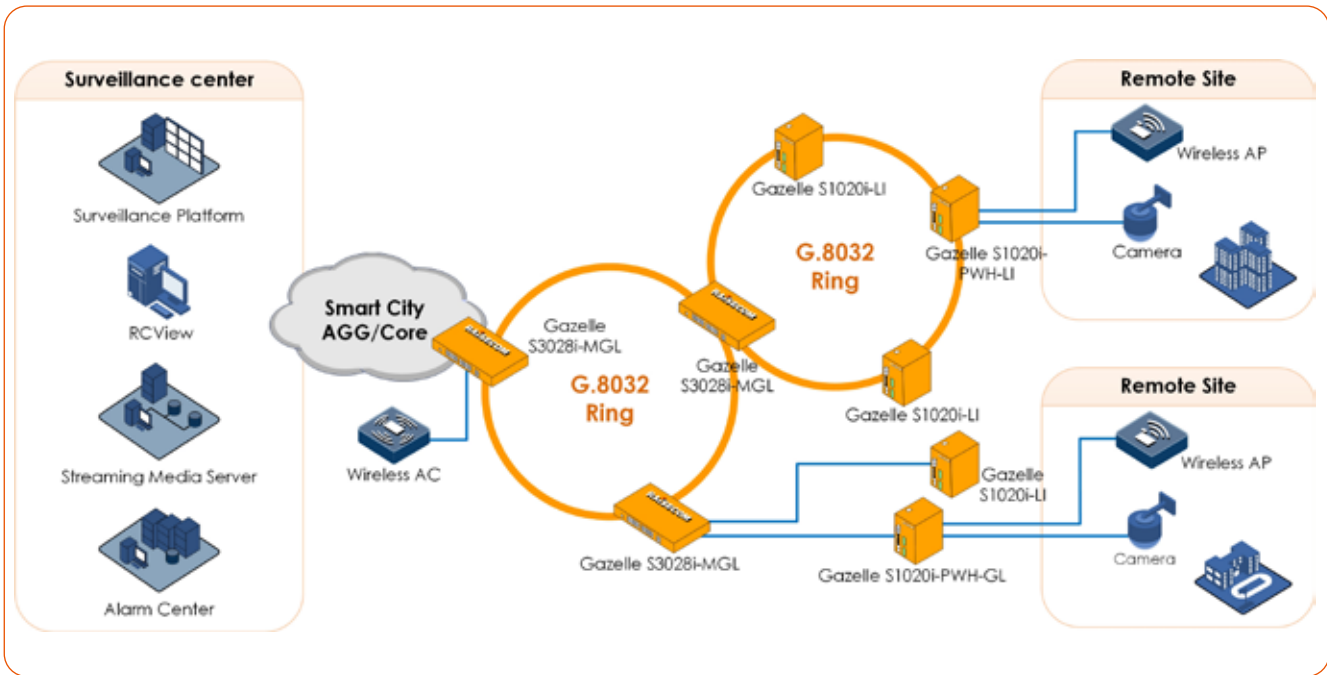
HIGHLIGHTS

- 100G/200G/400G CFP2 based transmission with SD-FEC at line side
- Maximum transmission 96x100G/200G, 80x400G in a pair of optical fibers
- Flexible wavelength assignment
- Multi-service access for 100/400G Ethernet, OTU4 OTN, and Nx32G Fiber Channel at client side, and services can be mixed for transmission
- Hardware based encryption transmission
- Redundant backup for chassis, and protection at different levels

PRODUCTS



Public Video Surveillance and Wi-Fi Hot-Spot



SOLUTION

The smart/safe city system effectively integrates high bandwidth data with video services, laying a solid communication foundation for real-time monitoring of industrial/campus park, various public areas and rapid events handling in these areas. Raisecom PoE industrial switches are compatible with various power supply methods by feeding power to HD IP-cameras and wireless Aps, which also have high and low temperature protection, overvoltage protection and lightning surge protection, ensuring reliable operation in outdoor environments. And Raisecom solution supports various networking such as single ring, tangent ring, and intersecting ring, and supports ITU-T G.8032 protocol with switchover time less than 50ms. In this application, Gazelle S3028i series connects the ring as the core of network, Gazelle S1020i PoE Din-Rail switches connect different devices like PoE security cameras, wireless Aps and information displays.

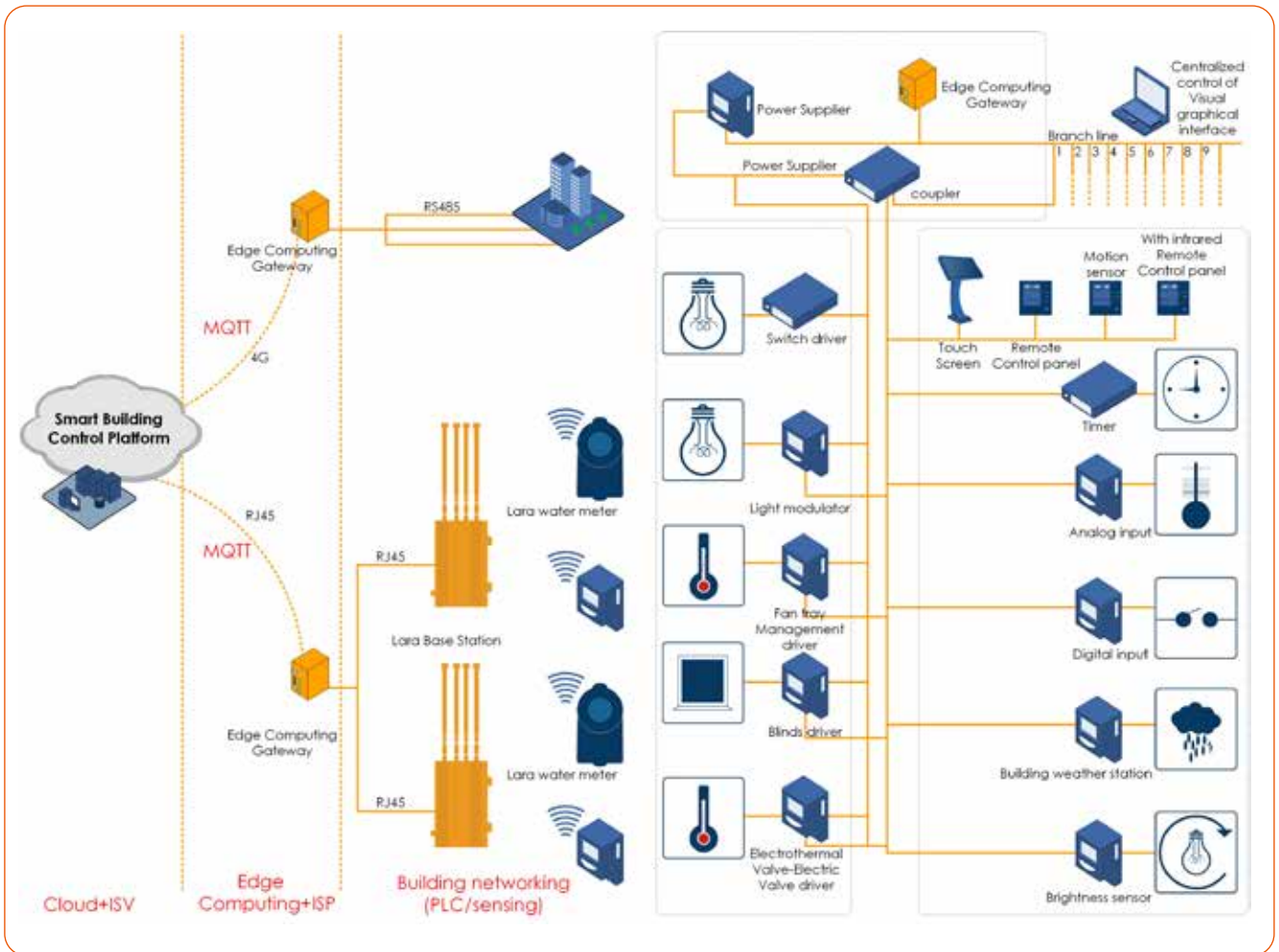
HIGHLIGHTS

- Cost-efficient solution tailored for safe/smart city infrastructure installation
- Standard IEEE802.3 af/at/bt compliant PoE options to feed various purposed cameras and Wireless Aps
- Industrial-grade design and telecom-grade resiliency features guarantee high reliability
- Prioritized traffic forwarding policy and efficient broadcast/multicast traffic handling
- Different rack-mounted and DIN-rail form factors for different indoor and outdoor installation sites

PRODUCTS



Smart Building Automation



SOLUTION

Raisecom smart industrial gateways are ideal for deployment and integration into smart building DCS system through customer dedicated IoT platforms, based on cloud-based platforms, the smart gateways implement various operations such as enabling, monitoring, and managing smart terminals in buildings, and realize energy saving, optimization and intelligent control through edge computing and data analysis.

HIGHLIGHTS

- Multi-protocol collection
- Edge computing and safety protection
- Energy consumption perception, energy-saving
- Linkage between buildings, big data analysis
- Remote processing of faults, saving manpower

PRODUCTS



Gazelle G512i



Gazelle G532i

PRODUCT CATALOG

Chapter 1

Packet Transport Network

IP/MPLS provider edge and customer edge products offer high performance MPLS switching & routing and effortless scalability. Raisecom brings the benefits from an MPLS core all the way to the customer premises with its IP/MPLS portfolio, delivering services with adjustable bandwidth and dedicated SLA, without increasing network complexity and expenses. Raisecom IP/MPLS solutions help service providers flexibly optimize their network loads, improve their service performance, and reduce their total cost of ownership.

MPLS/SR Aggregation and PE Platform

iTN8800-A

The iTN8800-A is a modular pre-aggregation and aggregation platform which supporting up to 200G switching capacity in a single slot. It provides a comprehensive interface set, supporting E1, STM-1, GE, 10G, 25G, 40G, 50G, 100G and 200G interfaces in a 5RU-high chassis. It supports CE3.0 services Layer 2 VPN, Layer 3 VPN and Multicast services, which is perfect for government and enterprise leased-line service delivery, Internet access, Cloud connection, and campus networking. The new techs Segment Routing (SR-MPLS), Segment Routing version 6 (SRv6), Ethernet VPN (EVPN) help customers upgrade the network from network adaptation services to applications driven network, unified control plane, flexible service forwarding paths easy control, easy maintenance. Network slicing and high-precision clock synchronization (PTPv2) ensure that devices can perfectly match the rigorous demanding network requirements of every vertical industry application in the 5G era.



iTN8800-A-DC



iTN8800-A-AC

FEATURES

Large capacity, high density, and high service convergence ratio

- 5RU high standard chassis for easy installation and space saving
- Powerful performance high capacity routing and switching capacity
- High density interface design with greater convergence ratio

Telecom grade product design with high availability

- 1+1 power supply, 1:1 main control card
- Support GR to ensure smooth restart of the control plane
- Support online upgrade of the main control card and hot swapping of service cards

Powerful layer 3 capabilities, telecom grade networking capabilities, perfect for multi-service carrying

- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6 to upgrade next-level of network
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Complete networking capabilities that can form an integrated solution with RAX series products

Rich access types to meet diverse service needs

- Various interface form including E1, STM1, 1G, 10G, 25G, 40G, 50G, 100G to 200G
- Multi service carrying, providing access to TDM/Ethernet/IP /L2VPN/ L3VPN services
- MEF CE3.0 complied E-Line, E-LAN, E-Access service with OAM and hardware-based SLA
- High bandwidth and low latency advantages, while enhancing network flexibility and transmission efficiency

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Ability to evolve new technologies for the future

- Smooth evolution supports SDN

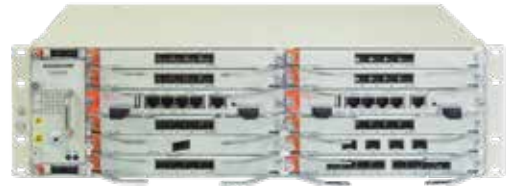
SPECIFICATIONS

Switching Capacity	4.8 Tbps	
Slots number	2 for MCC 14 service cards for iTN8800-DC; 12 service cards for iTN8800-AC	
Dimension W x D x H (mm)	5RU: 442 x 224 x 221.4	
Chassis and sub cards	iTN8800-A-DC	iTN8800-A with DC power supply
	iTN8800-A-AC	iTN8800-A with AC power supply
	iTN8800-A-NXU	Main Control card w/o clock synchronization
	iTN8800-A-NXU-T	Main Control card w/ clock synchronization
	iTN8800-A-RC2	2 x 100GE / 40GE
	iTN8800-A-RC1	1 x 100GE / 40GE
	iTN8800-A-RL2	2 x 50GE
	iTN8800-A-RK8	8 x 25GE / 10GE
	iTN8800-A-RK4	4 x 25GE / 10GE
	iTN8800-A-RX8	8 x 10GE / 1GE
	iTN8800-A-RX4	4 x 10GE / 1GE
	iTN8800-A-RX2	2 x 10GE / 1GE
	iTN8800-A-RG8	8 x 1GE / 100M
	iTN8800-A-RS4	4 x STM-1
	iTN8800-A-RS2	2 x STM-1
iTN8800-E-RE16-B	16 x E1	
iTN8800-A-TAU	PTPv2 clock synchronization card	
OOB	1 x console (USB Type-A) ; 1 x 10/100M SNMP	
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy DC: -48V, -57~-40V; AC: 110V/220V, 90~290V	
Power consumption	Full load: ≤ 1600W	
Environment	Operating Temperature: -5~55°C Relevant Humidity: 10%~90% RH (indoor) non-condensing	
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling	
IP Routing	RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6	
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS	
SR	SR BE, SR TE, SRv6 BE, SRv6 TE	
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)	
FlexE	50GE/100GE ethernet mode & Flex-E mode Slicing to 1/2/3/.../N x 5Gbps Support Ethernet, IP and MPLS service	
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6 NG-MVPN, mLDP In-Band MVPN	
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling 3-level H-QoS	
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN BFD for everything	
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hot standby LSP 1:1; PW 1:1; PW redundancy	
Clock sync	NTP, SNTP IEEE1588v2 OC BC TC, Telecom Profile ITU-T G.8275.1 Sync E	

MPLS/SR Aggregation and PE Platform

iTN8800-E

The iTN8800-E is a series of chassis-based IP/MPLS and MPLS-TP dual service pre-aggregation devices. They provide Fast and Gigabit Ethernet, 10GbE, 25GbE, 40GbE, 50GbE and 100GbE interfaces, as well as legacy E1 and STM-1 circuit emulation interfaces in a 3RU-height chassis with 10 slots for various types of service cards. These various interfaces ensure iTN8800-E chassis work with Raisecom intelligent CPEs to deliver and aggregate services on unified monitoring and management platform. The total access and aggregation solution is perfect for business leased-line service delivery, mobile backhauling, Internet accessing, cloud connection, and campus networking.



iTN8800-E-DC



iTN8800-E-AC

FEATURES

Large capacity, high density, and high service convergence ratio

- 3RU high standard chassis for easy installation and space saving
- High density interface design with greater convergence ratio

Telecom grade product design with high availability

- 1+1 power supply, 1:1 main control card
- Support GR to ensure smooth restart of the control plane
- Support online upgrade of the main control card and hot swapping of service cards

Powerful layer 3 capabilities, telecom grade networking capabilities, perfect for multi-service carrying

- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6 to upgrade next-level of network
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Complete networking capabilities that can form an integrated solution with RAX series products

Rich access types to meet diverse service needs

- Various interface form including E1, STM1, 1G, 10G, 25G, 40G, 50G, and 100G
- Multi service carrying, providing access to TDM/Ethernet/IP /L2VPN/ L3VPN services
- MEF CE3.0 complied E-Line, E-LAN, E-Access service with OAM and hardware-based SLA
- High bandwidth and low latency advantages, while enhancing network flexibility and transmission efficiency

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Ability to evolve new technologies for the future

- Smooth evolution supports SDN

SPECIFICATIONS

Switching Capacity	640Gbps	
Slots number	2 for MCC 10 service cards for iTN8800-DC; 8 service cards for iTN8800-AC	
Dimension W x D x H (mm)	3RU: 444 x 220 x 132.5	
Chassis and sub cards	iTN8800-E-DC	iTN8800-E with DC power supply
	iTN8800-E-AC	iTN8800-E with AC power supply
	iTN8800-E-NXU	Main Control card w/o clock synchronization
	iTN8800-A-RC1	1 x 100GE / 40GE
	iTN8800-A-RC2	2 x 50GE
	iTN8800-A-RK4	4 x 25GE / 10GE
	iTN8800-A-RX4	4 x 10GE / 1GE
	iTN8800-A-RX2	2 x 10GE / 1GE
	iTN8800-A-RG10	10 x 1GE / 100M
	iTN8800-A-RG8	8 x 1GE / 100M
	iTN8800-A-RS4	4 x STM-1
	iTN8800-A-RS2	2 x STM-1
	iTN8800-E-RE16-BL	16 x E1
	iTN8800-A-TAU	PTPV2 clock synchronization card
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP	
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy DC: -48V, -57~-40V; AC: 110V/220V, 100~240V	
Power consumption	Full load: ≤ 438.1W	
Environment	Operating Temperature: -5~55°C Relevant Humidity: 10%~90% RH (indoor) non-condensing	
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling	
IP Routing	IPv4/v6 static routing RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6	
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS	
SR	SR BE, SR TE, SRv6 BE	
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)	
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6* NG-MVPN, mLDP In-Band MVPN	
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling 2-level H-QoS	
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN BFD for everything	
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hotstandby LSP 1:1; PW 1:1; PW redundancy	
Clock sync	NTP, SNTP IEEE1588v2 OC BC TC, Telecom Profile ITU-T G.8275.1 Sync E	

Ethernet/IP-MPLS Pre-Aggregation Pizza-Box

RAX721-A/B series

The RAX721-A/B is a series of compact Ethernet and IP/MPLS pre-aggregation devices. They are optimized for metro access and pre-aggregation, leased-line service delivery and multi-service pre-aggregation. Standard CE2.0 service models, VPN over MPLS, and the support of various OAM and SLA features greatly simplify service delivery and monitoring for service providers. With the support of rich L2/L3 unicast and multicast traffic control protocols, advanced QoS and high reliability technologies based on both hardware and software, RAX721-A/B series are very flexible and reliable service aggregators for enterprise network, campus network, and residential LAN as well. They can deliver multiple services (Internet, VoIP, IPTV, video surveillance...) and be deployed in various networking topologies. And the support of IPv4/v6 makes it a future-proof investment for service providers.



RAX721-A-XF



RAX721-A



RAX721-B



RAX721-A-T



RAX721-B-T

FEATURES

Large capacity, high density, and high service convergence ratio

- 1RU high standard chassis for easy installation and space saving
- High density interface design with greater convergence ratio

Powerful layer 3 capabilities, telecom grade networking capabilities, perfect for multi-service carrying

- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6 to upgrade next-level of network
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Complete networking capabilities that can form an integrated solution with iTN series products

Rich access types to meet diverse service needs

- Multi service carrying, providing access to Ethernet/IP /L2VPN/ L3VPN services
- MEF CE3.0 complied E-Line, E-LAN, E-Access service with OAM and hardware-based SLA
- High bandwidth and low latency advantages, while enhancing network flexibility and transmission efficiency

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Intelligent deployment, intelligent tunnel

- Support zero-touch provisioning, easy plug and play, service provisioning quickly
- Accurate and intelligent testing of service performance indicators to ensure service quality
- Hierarchical CRA, providing differentiated services for each customer and service

SPECIFICATIONS

P/N	RAX721-A-XF	RAX721-A	RAX721-A-T	RAX721-B	RAX721-B-T
NNI	4×10GE SFP+				
UNI	24×10GE SFP+	24×1GE SFP	24×1GE RJ45	48×1GE SFP	48×1GE RJ45
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP				
Switching Capacity	800Gbps				
Dimension W x D x H (mm)	440 × 360 × 44				
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 220V, 100~240V				
Power consumption	Full load: ≤75W	Full load: ≤75W	Full load: ≤52W	Full load: ≤93W	Full load: ≤58W
Environment	Operating Temperature: -5~55°C Relevant Humidity: 10%~90% RH (indoor) non-condensing				
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling				
IP Routing	IPv4/v6 static routing RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6				
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS				
SR	SR BE, SR TE, SRv6 BE				
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)				
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6 NG-MVPN, mLDP In-Band MVPN				
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling 2-level H-QoS				
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN BFD for everything				
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hot standby LSP 1:1; PW 1:1; PW redundancy				
Clock sync	NTP, SNTP 1588v2 TC Sync E		NTP, SNTP 1588v2 TC		

100GE IP-MPLS Pre-Aggregation/CE Demarcation Pizza-Box

RAX721-C series

The RAX721-C is a series of compact MPLS/SR pre-aggregation or CE demarcation devices. They are purpose-built for high-capacity required metro pre-aggregation, leased-line service delivery pre-aggregation and carrier ethernet demarcator. They support standard CE3.0 service models, VPN over MPLS, and the support of various OAM and SLA features greatly simplify service delivery and monitoring for service providers. They support rich Layer 2 and Layer 3 features, with advanced QoS features, customers' services at different levels can be flexibly and finely scheduled, and support various VPN services over IP-MPLS networks, to implement services isolation through network virtualization, greatly improved network capacity and utilization.



RAX721-C-2C24



RAX721-C-4C24



RAX721-C-6C48

FEATURES

Large capacity, high density, and high service convergence ratio

- Multiple 100GE uplinks to meet the requirement of high bandwidth
- 1RU high standard chassis for easy installation and space saving
- High density interface design with greater convergence ratio

Powerful layer 3 capabilities, telecom grade networking capabilities, perfect for multi-service carrying

- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6 to upgrade next-level of network
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Complete networking capabilities that can form an integrated solution with iTN series products

Rich access types to meet diverse service needs

- Multi service carrying, providing access to Ethernet/IP /L2VPN/ L3VPN services
- MEF CE3.0 complied E-Line, E-LAN, E-Access service with OAM and hardware-based SLA
- High bandwidth and low latency advantages, while enhancing network flexibility and transmission efficiency

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Intelligent deployment, intelligent tunnel

- Support zero-touch provisioning, easy plug and play, service provisioning quickly
- Accurate and intelligent testing of service performance indicators to ensure service quality
- Hierarchical CAR, providing differentiated services for each customer and service

SPECIFICATIONS

P/N	RAX721-C-2C24	RAX721-C-4C24	RAX721-C-6C48
NNI	2x100GE/40GE QSFP28/QSFP+	4x100GE/40GE QSFP28/QSFP+	6x100GE/40GE QSFP28/QSFP+
UNI	24 x 10GE/1GE SFP+/SFP	24 x 25GE/10GE/1GE SFP28/SFP+/SFP	24 x 25GE/10GE/1GE SFP28/SFP+/SFP 24 x 10GE/1GE SFP+
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP	1 x console (USB Type-A) 1 x 100M/1000M SNMP	
Switching Capacity	800Gbps	4.8Tbps	
Dimension W x D x H (mm)	1RU: 440 x 360 x 44	1RU: 442 x 360 x 44	
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 220V, 100~240V;		
Power consumption	Full load: ≤73W	Full load: ≤300W	Full load: ≤339W
Operating Temperature	-5~55°C	-10~55°C	
Environment	10%~90% RH (indoor) non-condensing		
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling		
IP Routing	IPv4/v6 static routing RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6		
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS		
SR	SR BE, SR TE, SRv6 BE	SR BE, SR TE, SRv6 BE, SRv6 TE	
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)		
FlexE	NA	100GE ethernet mode & Flex-E mode Slicing to 1/2/3/.../N x 5Gbps Support Ethernet, IP and MPLS service	
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6* NG-MVPN, mLDP In-Band MVPN		
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling H-QoS		
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN BFD for everything		
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hotstandby LSP 1:1; PW 1:1; PW redundancy		
Clock sync	NTP, SNTP 1588v2 TC Sync E		

100GE 4G/5G Cell Site Gateways

RAX721-T series

The RAX721-T series is a high bandwidth, high-performance telecommunications grade product designed specifically for 4G/5G backhaul networks, providing access and aggregation mobile bearer solutions for 4G/5G. The high-density 1GE/10GE/25GE interface is not only suitable for 4G/5G mobile services, but also for integrated services carrying such as access to leased line services etc. The temperature-hardened (-40°C to +65°C) and 1RU compact design perfectly comply with the ETSI 300 standard and can running stably in harsher environments. The device supports both hard slicing (FlexEthernet) and soft slicing (Segment Routing), as well as high-precision clock synchronization (Telecom profile 8275.1), to meet the different requirements of various industries in the 5G era for network bandwidth, latency, and packet loss rate. RAX721-T series is the ideal equipment for 4G/5G backhaul and Fixed-mobile convergence network.



RAX721-T-XF



RAX721-T-4C24

FEATURES

Large capacity, high density, and high service convergence ratio

- Multiple 100GE uplinks to meet the requirement of high bandwidth
- 1RU high standard chassis for easy installation and space saving
- High density interface design with greater convergence ratio

Powerful layer 3 capabilities, telecom grade networking capabilities, perfect for multi-service carrying

- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6 to upgrade next-level of network
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Complete networking capabilities that can form an integrated solution with iTN series products

High-precision clock synchronization

- Support Sync-E and 1588v2 protocol, low cost, high-precision and high-reliability
- Powerful clock sync meets strict industry customers such as power grid and transportation

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Intelligent deployment, intelligent tunnel

- Support zero-touch provisioning, easy plug and play, service provisioning quickly
- Accurate and intelligent testing of service performance indicators to ensure service quality
- Hierarchical QoS, providing differentiated services for each customer and service

SPECIFICATIONS

P/N	RAX721-T-XF	RAX721-T-4C24
NNI	4x10GE/1GE SFP+/SFP	4x100GE/40GE QSFP28/QSFP+
UNI	24 x 10GE/1GE SFP+/SFP	24 x 25GE/10GE/1GE SFP28/SFP+/SFP
GNSS antenna	NA	SMA-K
1PPS+TOD(I/O)	NA	RJ45
2MHz	NA	RJ48
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP	1 x console (USB Type-A) 1 x 100/1000M SNMP
Switching Capacity	800Gbps	4.8Tbps
Dimension W x D x H (mm)	1RU: 440 x 360 x 44	1RU: 440 x 248 x 44
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 220V, 100~240V;	
Power consumption	Full load: ≤73W	Full load: ≤TBD
Operating Temperature	-5~55°C	-40~65°C
Relevant Humidity	10%~90% RH (indoor) non-condensing	
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling	
IP Routing	IPv4/v6 static routing RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6	
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS	
SR	SR BE, SR TE, SRv6 BE	SR BE, SR TE, SRv6 BE, SRv6 TE
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)	
FlexE	NA	100GE ethernet mode & Flex-E mode Slicing to 1/2/3/.../N x 5Gbps Support Ethernet, IP and MPLS service
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6* NG-MVPN, mLDP In-Band MVPN	
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling H-QoS	
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN BFD for everything	
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hotstandby LSP 1:1; PW 1:1; PW redundancy	
Clock sync	NTP, SNTP IEEE1588v2 OC BC TC, Telecom Profile ITU-T G.8275.1 Sync E G.8273.2 clock Class B	NTP, SNTP IEEE1588v2 OC BC TC, Telecom Profile ITU-T G.8275.1 Sync E G.8273.2 clock Class C

1GE/10GE IP-MPLS/CE Demarcation Device

RAX711-C-R

The RAX711-C-R series is designed for 1G/10G leased line service delivery. They are the most compact and cost-effective MPLS CPE devices, providing customers with affordable MPLS network accessibility. The support for 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 ensure service providers great flexibility and reliability in service design and deployment. The devices can operate in extended temperature range. And the support of SyncE and IEEE 1588v2 makes it ready for MBH applications. The IP/MPLS demarcation products are fully compatible with both the Raisecom IP/MPLS aggregation PE router, pre-aggregation pizza-boxes as well as 3rd-party vendor equipment on existing MPLS networks.



RAX711-C-R

FEATURES

Multi-service access

- Multi service carrying, providing access to Ethernet/IP/L2VPN/ L3VPN services
- MEF CE3.0 complied E-Line, E-LAN, E-Access service with OAM and hardware-based SLA
- Providing multiple IP routing features such as RIP, OSPF, IS-IS, BGP, etc
- Providing LDP and RSVP-TE protocols to complete dynamic label distribution
- Providing SR-MPLS and SRv6
- Powerful VPN capabilities, L2VPN and L3VPN can be deployed simultaneously according to network requirements
- EVPN service carry model with unified control plane
- Support 1588v2 TC and SyncE clock features

Rich telecom grade service protection switching, achieving no perception of service systems

- Rich protection solutions for port physical layer, ETH layer, IP layer, and MPLS layer, achieving multiple protections for service/tunnel nodes/links/networks
- Fast fault detection through hardware based and hierarchical OAM, BFD for everything
- 50ms telecom grade protection switching and no perception of service systems

Intelligent deployment, intelligent tunnel

- Support zero-touch provisioning, easy plug and play, service provisioning quickly
- Accurate and intelligent testing of service performance indicators to ensure service quality
- Hierarchical CAR, providing differentiated services for each customer and service

Refined operation and maintenance for customers

- Graphical professional NMS, unified NMS platform for iTN and RAX products
- Rich multi-level and diverse OAM monitoring capabilities, providing real-time online feedback on service and network status
- Quick replacement of faulty equipment, automatic recovery of configuration, reducing fault time
- Based on service performance monitoring, providing SLA reports to assist in quality analysis of service operations, and transforming passive response into active service

SPECIFICATIONS

Switching Capacity	800Gbps	
Dimension W x D x H (mm)	1RU: 220 x 266 x 44	
Interfaces	NNI	4 x 10GE/1GE SFP+/SFP
	UNI	12 x GE SFP
	OOB	1 x console (USB Type-A) 1 x 10/100M SNMP
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 220V, 100~240V	
Power consumption	Full load: ≤ 52W	
Environment	Operating Temperature: -20~65°C Relevant Humidity: 10%~90% RH (indoor) non-condensing	
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling	
IP Routing	IPv4/v6 static routing RIPv1/v2/ng, OSPFv2/v3, ISISv4/v6 and BGP4/4+ VRF Lite IPv4/v6	
MPLS	Static LSP, LDP, RSVP-TE, Seamless MPLS	
SR	SR BE, SR TE, SRv6 BE	
VPN	MPLS L2VPN (VPWS, VPLS) BGP/MPLS IP VPN Ethernet VPN (VPWS, VPLS, L3VPN)	
Multicast	IGMP Snooping, MVR, VLAN copy, Proxy PIM-SM and PIM-SSM IPv4/v6 NG-MVPN, mLDP In-Band MVPN	
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling	
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN Y.1564 for Ethernet, IP, MPLS L2VPN, MPLS L3VPN TWAMP-Light BFD for everything	
HA	G.8031, G.8032, STP, RSTP, MSTP, MRSTP LAG, M-LAG VRRPv2, VRRPv3 IP FRR, TE FRR, LDP FRR, VPN FRR, TI-RLFA FRR TE-Hot standby LSP 1:1; PW 1:1; PW redundancy	
Clock sync	NTP, SNTP IEEE1588v2 TC Sync E	

Carrier Ethernet Demarcation

RAX711-L Series, RAX701-GC

The Carrier Ethernet Demarcation Devices are widely deployed for delivering MEF CE2.0 compliant E-Line, E-LAN, E-Tree, and E-Access services for alternative service providers, enterprises/ institutions, small/ medium businesses, and mobile backhauling scenarios. The very compact design makes it easy for deployment. Both RAX701-GC and RAX711-L series support zero-touch auto-provisioning and standard ITU-T Y.1564 SAT for convenient and assured service commissioning. Customer required end-to-end SLA of classified services is also guaranteed by the support for CFM and ITU-T Y.1731 SLA. All performance data is well presented on GUI web portals. The service-based QoS helps to differentiate traffic flows and commit forwarding priorities within each EVC. And the support of ITU-T G.8031/8032 ELPS/ERPS helps the EDD flexibly fit in different network topologies.



RAX701-GC



RAX711-L-4GC4E1-BL-S



RAX711-L-4GC4E1-S



RAX711-L-4GC



RAX711-L-4GE

FEATURES

Multi-service access

- Support multiple access interfaces such as GE fiber, GE copper, E1 balanced and E1 unbalanced
- Seamless connect with carrier ethernet
- MEF CE2.0 complied E-Line, E-Tree, E-Lan, E-Access service with OAM and hardware-based SLA
- Support various Ethernet G8031, G8032 protection, 50ms telecom grade protection switching and no perception of service systems
- Support MPLS-TP OAM and PW link protection
- Support PWE3 encapsulation for CES service, including SAToP and CESoP
- Small size, fanless, high-level lightning protection, hardened temperature range, suitable for harsh environments on the customer's side
- Support 1588v2 TC and SyncE clock features

Intelligent deployment, intelligent tunnel

- Support zero-touch provisioning, easy plug and play, service provisioning quickly
- Accurate and intelligent testing of service performance indicators to ensure service quality
- Hierarchical CAR, providing differentiated services for each customer and service

Refined operation and maintenance for customers

- Graphical professional NMS, unified NMS platform for iTN and RAX products
- Rich multi-level and diverse OAM monitoring capabilities, providing real-time online feedback on service and network status
- Quick replacement of faulty equipment, automatic recovery of configuration, reducing fault time
- Based on service performance monitoring, providing SLA reports to assist in quality analysis of service operations, and transforming passive response into active service

SPECIFICATIONS

P/N	RAX711-L-4GC4E1-BL-S	RAX711-L-4GC4E1-S	RAX711-L-4GC	RAX711-L-4GE	RAX701-GC
NNI	2 x 1GE SFP				
UNI	4 x 1GE combo			4 x 1GE RJ45	1 x 1GE combo
E1 Circuit Emulation	4 x E1 (RJ-45)	4 x E1 (DB-37)	N/A		
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP				
Switching Capacity	12Gbps				
Dimension W x D x H (mm)	220 x 180 x 43.6				180 x 160 x 43.6
Power Supply	RAX711-L series: • 2 hot-swappable power supplies provide 1+1 redundancy • DC: -48V, -36~-72V; • AC: 220V, 100~240V				
	RAX701-GC: • Fixed single power supply: AC / DC / WP • DC: -48V, -36~-72V; • AC: 220V, 100~240V				
Power consumption	Full load: ≤20W				Full load: ≤15W
Environment	Operating Temperature: -20~65°C Relevant Humidity: 10%~90% RH (indoor) non-condensing				
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling L2-L4 Loopback				
MEF CE 2.0	E-LINE, E-TREE, E-LAN, ACCESS E-LINE				
MPLS	Static LSP				
VPN	MPLS L2VPN (VPWS, PWE3, VPLS)				
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling				
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 for Ethernet Y.1564 for Ethernet, IP, MPLS L2VPN TWAMP-Light MPLS-TP OAM				
HA	G.8031, G.8032 STP, RSTP, MSTP LSP 1:1; PW 1:1; PW redundancy				
Clock sync	NTP, SNTP IEEE1588v2 TC Sync E				NTP, SNTP IEEE1588v2 TC

Multi-Service PTN/CE Aggregator

iTN221

The iTN221 is a "Pizza Box" (full ETSI compliant) 1.5RU-sized next generation multiservice access equipment. It offers a dual-core architecture for both packet and SDH/TDM transmission. The iTN221 supports up to 2x1G and/or 2xSTM-1/4 uplink capacities, and a built-in PDH multiplexing with non-blocking cross connect matrix at 64kbps granularity. Its TDM pseudo-wire functionality enables a smooth TDM to Ethernet/IP/MPLS network migration. The iTN221 supports three service slots for various expansion cards, including voice (FXS/FXO/E&M), Ethernet (GE/FE), C37.94, 64K co-directional, low-speed RS232/RS485 data etc. It provides utilities and transportation companies with reliable connectivity for controlling signals, mission critical data, voice, video monitoring and electrical tele-protection services. It supports the smooth transition from legacy PDH/ SDH to packet transmission networks. For mission critical services, the system maximizes network uptime and provides carrier-class network availability by adopting G.8032/ G.8031 Ethernet and G.8131/Wrapping-Steering MPLS-TP protection that provide sub- 50ms switching over as well as hot-swappable redundant power supplies. Extensive management capabilities are provided for all aspects from equipment installation and service provisioning to real-time system operation and performance monitoring. The iTN221 offers a cost-effective solution for providing MEF-compliant CE2.0 Ethernet services, as well as E1 pseudo-wire connectivity for lease-lined and utility private networking with integrated SyncE and 1588v2 PTP. In all, the iTN221 can be used to reduce customer's CapEx and OpEx, while building a future-proof infrastructure without wasting existing legacy equipment investment.



iTN221

FEATURES

Rich interface forms

- iTN221 has a wide range of access interfaces, including various low-speed audio and data service interfaces, and supports uplink and downlink of trunk packet services, meeting the services networking needs of various industries such as power and transportation
- Available with 2x1G SFP uplinks, 4xGE on the mainboard and 4xGE on expansion card
- Available with 2xSTM-1/4 in SFP
- Available with E1 TDM, E1 PWE3, GE, voice, V.24/RS232, C37.94 tele-protection and co-directional 64k at client side

Flexible dual plane service bearer

- iTN221 has a flexible service scheduling architecture, allowing for flexible selection of uplink bearer modes for services accessed through SDH or Ethernet. It supports SDH and packet modes, providing a flexible transition plan for industry market networks from legacy SDH to packet migration, and reducing the cost of network reconstruction
- Converged dual switching backplanes to deliver Ethernet and TDM traffic in one system
- MEF CE2.0 complied E-Line, E-Tree, E-Lan, E-Access service with OAM and hardware-based SLA
- PWE3 supports SAToP and CESoP modes, MPLS, CESoETH (MEF) and UDP/IP encapsulations
- Compliant with IEEE 1588 TC mode and SyncE
- Support various Ethernet G8031, G8032 protection, 50ms telecom grade protection switching and no perception of service systems

High level security guarantee

- iTN221 supports telecom grade linear and ring protection switching plan, supports end-to-end SLA performance guarantee, ensures user QoE experience, and ensures high reliability of service transmission
- Uplink redundancy and resiliency with ITU-T G.8031 (ELPS), G.8032 (ERPS) on Ethernet side, G.8131 MPLS-TP liner protection and wrapping/steering, MPLS-TP ring protection on PTN side, and 1+1 liner MSP, SNCP, 1+1 LPP on SDH side

SPECIFICATIONS

Slots number	1 for MCC 3 for service cards	
iTN221 MCC	NNI	2 x 1GE SFP 2 x STM1/4 SFP
	UNI	4 x 1GE RJ45 8 x E1 DB37
	OOB	1 x console 1 x 10/100M SNMP
	Alarm I/O	2 x 1GE RJ45 input/output
	2MHz	1 x RJ45
Sub cards	iTN221-SUB-4GE	4 x 1GE RJ45
	iTN221-SUB-4E1	4 x E1 DB37(balanced or unbalanced)
	iTN221-SUB-4E&M	4 x E&M RJ45 voice
	iTN221-SUB-8MT	2 x RJ45 with 8 ways of magneto telephone voice interfaces
	iTN221-SUB-10FXS	3 x RJ45 with 10 ways of FXS voice services
	iTN221-SUB-10FXO	3 x RJ45 with 10 ways of FXO voice services
	iTN221-SUB-C64K	2 x RJ45 with 4 ways of 64K Codir
	iTN221-SUB-TP	2 x optical ST, C37.94 services input/output. Nx64k (N=1~12) per channel
	iTN221-SUB-V35	1 x DB26 interface, V.35/X.21 data services
iTN221-SUB-RS24	4 x RJ45. Each RJ45 interface can be separately configured to one of V.24, and RS485 mode, or two of RS232 (8x RS232 or 4x V24 or 4x RS485)	
Dimension W x D x H (mm)	1.5RU: 440 x 266 x 66	
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 200~240V, 90~264V	
Power consumption	Full load: ≤150W	
Environment	Operating Temperature: -20~65°C Relevant Humidity: 10%~90% RH (indoor) non-condensing	
L2	IEEE802.1Q, IEEE802.1P, IEEE802.1ad VLAN-Stacking Jumbo frame up to 12288 Bytes Layer 2 control protocol (L2CP) handling	
MEF CE 2.0	E-LINE, E-TREE, E-LAN, ACCESS E-LINE	
MPLS	Static LSP	
VPN	MPLS L2VPN (VPWS, PWE3, VPLS)	
QoS	Flexible Traffic classification base on MAC, IP, Port, VLAN, CoS, DSCP, etc. Hierarchical CAR 8 local priority, 8 queues per port SP, DRR, WRR, SP+DRR, SP+WRR queue scheduling	
OAM	IEEE 802.3ah EFM-OAM IEEE 802.1ag/ITU-T Y.1731 CFM RFC2544 Y.1564 MPLS-TP OAM	
HA	G.8031, G.8131, G.8032 LSP 1:1; PW 1:1; PW redundancy	
Clock sync	NTP, SNTP IEEE1588v2 TC Sync E	

Chapter 2

Optical Transport Network

OTN (Optical Transport Network) systems smoothly handle ever-increasing bandwidth demands for data services and for mobile backhaul, fronthaul, and Data Center interconnection, by integrating the functionality of transport, multiplexing, switching, protection, and management of customer traffic in a single chassis. Compact OTN systems easily meet the high bandwidth demands of public and private clouds as well as software-defined networks. The 4G/5G applications can enable carriers to save fiber resources when deploying mobile fronthaul infrastructure.

100G/200G OTN DCI-BOX

iTN8600-I-XT4D, iTN8600-I-TQ5D

iTN8600-I-XT4D is a standalone high density 1RU 19-inch 100G/200G DWDM/OTN Transponder/Muxponder device. By adopting advanced hardware-based encryption technologies and ASIC chipsets, iTN8600-I-XT4D is fully compliant with ITU-T G.709 and G.798 standards to address cyber security needs, thus suitable for datacenter interconnection, native or alien lambda transponder for metro optical transport network. It is convenient to be managed by NMS system via SNMP.



iTN8600-I-XT4D

iTN8600-I-TQ5D (service card, working in iTN8600-I chassis) is a highly integrated OTN/DWDM transponder card, which meets the application requirements of Data Center Interconnect and cloud services, as well as alien lambda insertion in existing DWDM metro and long-haul networks. By adopting coherent optical transceivers, each TQ5D service card can support 2x200G DCO CFP2 at network side and 4x100G QSFP28 at client side. Each iTN8600-I chassis can be deployed with 4xTQ5D service cards, reaching a total capacity up to 1.6Tbps.



iTN8600-I-TQ5D

FEATURES

iTN8600-I-XT4D

- 1RU, 19-inch standalone device
- Dual 110V/220VAC or dual-48VDC redundancy power supplies
- Support SFP+, SFP28, 40G QSFP+ or 100G QSFP28 at client side
- Support 100/200G coherent CFP2 or 100G grey CFP2 ER4/LR4 at line side
- Support GFEC, SD-FEC on line port
- Support GCC in-band DCN management
- Support SNMP for out-of-band DCN management
- Support OTN encryption for high security

FEATURES

iTN8600-I-TQ5D

- 1RU, 19-inch standalone device
- Dual 110V/220VAC or dual-48VDC redundancy power supplies
- Act as alien lambda for 40x100G/200G OTN/DWDM applications
- Support SD-FEC
- Up to 4 x TQ5D in each iTN8600-I chassis, each TQ5D supporting 4 x100GE/OTU4 to 2 x 100G/200G coherent optics
- Up to 1.6Tbps per iTN8600-I chassis

SPECIFICATIONS

P/N	iTN8600-I-XT4D	iTN8600-I-TQ5D
Line interface	2 x CFP2 100G port (coherent CFP2, grey CFP2 ER4/LR4) Or 1 x CFP2 200G port (coherent CFP2)	Each TQ5D card: 2 x CFP2 100G/1 x 200G OTN 8 x CFP2 100G/200G OTN in iTN8600-I (In the iTN8600-I chassis: 4 x TQ5D card)
Client interface	2 x 100G (100GE, OTU4 in QSFP28) 20 x 10G (10GE, STM-64, 8G/10G FC, OTU2(e)) 12 x 10G any (SFP+) + 2 x 40GE (QSFP+) 12 x 16G FC (SFP+) 6 x 32G FC (SFP28)	Each TQ5D card: 4 x 100G 100GE/OTU4 (QSFP28) 16 x 100GE/OTU4 in iTN8600-I (In the iTN8600-I chassis: 4 x TQ5D cards)
Power Supply	AC: Input 100–240V, DC: Input -40 to -57V	AC: Input 100–240V, DC: Input -40 to -57V
Power Consumption	<150W	< 350W
Dimension(mm)	440(L) x 360(W) x 45(H)	442.4(W) x 440(D) x 44(H)
Operation Temperature	General: -5°C ~ 50°C	-5°C ~ 40°C

100G/200G/400G WDM/OTN Platform

iTN8200-II

Raisecom iTN8200 is a new generation 400G DWDM/OTN intelligent transmission network platform, which adopts a standard 19 inch, 2RU chassis, up to 8 service slots. The compact design improves the equipment integration and reduces the overall space occupied by the equipment.

This new 400G platform integrated with EDFA, ROADM, FOADM, OCM, OTDR, 100/200/400G transponder and muxponder, which meets the application needs of DCI (data center interconnect), cloud business and so on. It provides high-density interface access and up to 400G uplink bandwidth, meets the growing demand for bandwidth and services of the customers.



iTN8200-II

FEATURES

- 2RU, 19-inch, small size, large capacity
- 8 small service cards, or 4 large service cards, 3.2T per chassis
- up to 48/80/96 wavelengths DWDM, the transmission capacity up to 32Tbps using dual fibers
- Featured with 2 cores, WDM/OTN, among which services can be scheduled
- LCD display the local IP, alarm, etc
- Support line rate for OTU4, OTUC2, OTUC4 OTN
- Support client rate for 10GE, OTU2, STM64, 40GE, 100GE, OTU4, and 400GE, etc
- EDFA, Booster amplifier, line-amplifier, Pre-amplifier, RAMAN amplifier
- Support OCM, OTDR monitoring
- OLP/Och/SNCP multilayer protection
- Support long-distance service transmission to effectively utilize the fiber resources of the network
- Support unified network management
- Easy for maintenance and expansion

SPECIFICATIONS

Chassis	2RU, 19", iTN8200-II chassis
Dimension W x D x H (mm)	482.6 × 460 × 88.1 (with brackets) 442 × 460 × 88.1 (without brackets)
Slots	2 for MCC (1+1 redundancy)
	8 small service cards, or 4 large service cards
DWDM	Up to 48/80/96 wavelengths DWDM
Service capacity	3.2T per chassis, the transmission capacity up to 32Tbps using dual fibers
Line/Client-side interfaces	Line-side: OTU4, OTUC2, OTUC4
	Client-side: 10GE/OTU2/STM64, 40GE, 100GE, OTU4, and 400GE
Optical amplifier	EDFA, Booster amplifier, Line amplifier, Pre-amplifier, RAMAN amplifier
Protection	OLP/OCh/SNCP
	MCC (1+1 redundancy)
	2 power card slots (1+1 redundancy), 3 FANS card slot (2+1)
OAM	OCM/OTDR OTN alarm and performance monitor LCD display the local IP, sub-rack ID, device name, SN, and alarm, etc
Power consumption	Full load: ≤ 750W
Management	Out-band management
	GCC
	OSC
Power Supply	dual DC or dual AC
	DC: -48V, -40 to -72V; AC: 110V/220V, 100 to 220V
Environment	Operating temperature (°C) (altitude: 0~1800 m): 0~40
	Operating humidity: long term: 5%~85% RH (non-condensing, indoor)

System and Sub-cards

P/N	iTN8200-II	
Chassis and NMS cards	iTN8200-II-DC	2RU chassis, 19", 8 small cards, or 4 large cards, 2 NMS card slots (1+1 redundancy) include 2 DC power cards, 3 FAN cards and 1 iTN8200-II-NMI
	iTN8200-II-NTU	iTN8200 Management card, supports device management, and 1+1 Hardware redundancy
	iTN8200-II-NMI	iTN8200-NTU management interface card, including 2 NM ports, and 2 MUX ports
	iTN8200-II-NUI	iTN8200 LCD monitor car. showing IP, Alarm, etc
200G/400G Transponder cards	iTN8200-II-TQ6S	400G transponder, 4x100G mux into 1x400G
	iTN8200-II-TQ5D	2*200G transponder, 4x100G mux into 2x200G/100G
200G Muxponder card	iTN8200-II-TM5S	12x10G and 1x40/100G on downlink, 1x200G or 2x100G on uplink
	iTN8200-II-XT5S	20x10G on downlink, and 1x200G on uplink
Optical amplifier card	iTN8200-II-OA25	8~18dB BA and 15~25dB PAcard, with OSC
	iTN8200-II-OA35	8~18dB BA and 25~35dB PAcard, with OSC
	iTN8200-II-OLA25	Bi-directions 15~25dB LA card, with OSC
	iTN8200-II-OLA35A	Bi-directions 25~35dB LA card, with OSC
	iTN8200-II-OLA35B	15~25dB and 25~35dB LA card, with OSC
Optical Line Protection card	iTN8200-II-OP1	1-ch Optical Line Protection card
	iTN8200-II-OP2	2-ch Optical Line Protection card
ROADM card	iTN8200-II-TWS09OA25	9 channel WSS ROADM, integrated with BA, 15~25dB PA, VOA, OSC
	iTN8200-II-TWS09OA35	9 channel WSS ROADM, integrated with BA, 25~35dB PA, VOA, OSC
FOADM card	iTN8200-II-TFF	4 channel FOADM, integrated with VOA
Optical channel monitor card	iTN8200-II-OCM	8-ch optical channel monitor card
OTDR card	iTN8200-II-OTDR	8-ch OTDR card
DWDM MUX/DEMUX	iTN8200-II-MUX48	48 ch Mux+Demux, 1RU, 19-inch, 100GHz, C band
	iTN8200-II-MUX96	96 ch Mux+Demux, 1RU, 19-inch, 50GHz, C band

Multi-Service OTN Platform

iTN8600-A/E

The iTN8600-A/E is a new generation of intelligent transmission device developed by Raisecom, which is a all-services access, aggregating and transmission platform dominated by service and high bandwidth integrated services. It integrates WDM, and OTN, SDH, MPLS-TP, PCM cross connection matrix, provides all types of services converged. It can be flexibly deployed by network operators where they need to offer 64kbps to 100G/200G or higher bandwidth services. It will act as an ideal and complete solution for small and medium-sized PoP sites for addressing various customer needs.

Working with Raisecom RAX series devices, iTN8600 can act as an aggregation device, grooming different services and bandwidth from customer premises while constituting ring or meshed network topologies. It is commonly deployed for service provider OTN edge aggregation, mobile backhauling and fronthauling, data center interconnect as well as high-capacity business leased-line connectivity. The product can be managed by a GUI-based RCView system to simplify configuration, service provisioning and performance monitoring in real-time.



iTN8600-A



iTN8600-E

FEATURES

- iTN8600-A/E is a 5/3RU 19" chassis, multi-services convenient access, high convergence, high reliability, easy to deploy and maintain
- WDM, and OTN/SDH/PKT/PCM multi-core matrices, provides flexible access and scheduling capabilities
- All service access capability, from 64kbps to 100Gbps, including FXS/FXO/E&M/TP/C64K/RS232/RS485/V.24/E&M/C64K, E1, STM-1/4/16/64, OC-192, FE/GE, 10GE, 100GE, OTU1/OTU2, CPRI, OBSAI, FC-1G/2G/4G/8G/10G, etc
- Maximum DWDM 48/96 x 10G/100G/200G Line capacity, 400G and 800G in roadmap
- Support all the services over WDM, EOS, ETH over OTN, SDH over OTN, EOS over OTN, MPLS-TP over OTN, and MPLS-TP services, etc
- Multiple levels of protection for high reliability, dual power supplies, MCC HA, WDM, OTN, SDH and PKT protection
- Convenient OAM, and OTN End-to-end, easy to deploy and maintain
- Network management via in-band and out-of-band management network channels

SPECIFICATIONS

Chassis	5RU, 19", iTN8600-A chassis	3RU, 19", iTN8600-E chassis
Slots number	2 for MCC	2 for MCC
	DC chassis up to 15 service slots	DC chassis up to 10 service slots
Dimension W x D x H (mm)	444 x 220 x 222.3	444 x 220 x 132.5
WDM	MUX/DEMUX: CWDM 8 wavelengths MUX+DEMUX DWDM 16/40 wavelengths MUX/DEMUX DWDM 4/8 OADM EDFA:OBA/OPA/OLA 10G Transponder: 5 x 10G bidirectional wavelength conversion OLP: OLP 1+1 protection	
Service capacity	WDM: 8-wavelength CWDM, 48/96-wavelength DWDM	WDM: 8-wavelength CWDM, 48/96-wavelength DWDM
	OTN: 168 x 168 ODU0/ODUflex, 84 x 84 ODU1 cross-connection	OTN: 144 x 144 ODU0/ODUflex, 72 x 72 ODU1 cross-connection
	L2/MPLS-TP: 280G L2/MPLS-TP packet switching capability	L2/MPLS-TP: 240G L2/MPLS-TP packet switching capability
	SDH: 640 VC-4 high-order, 384 VC-3 or 8064 VC12 low-order	SDH: 560 VC-4 high-order, 384 VC-3 or 8064 VC12 low-order

Service interfaces	ETH: 100M, 1GbE, 10GbE, 100GE	
	SDH: STM-1/4/16/64	
	PDH: E1	
	OTN: OTU1/2/OTU4/OTUC2	
	FC: FC-2/4/6/8/10G	
	Mobile: CPRI, OBSAI	
PCM: FXS/FXO/MT/RS232/RS485/V.24/E&M/MT/C64K		
MPLS-TP	Static LSP, L2VPN, and VPLS	
	MPLS-TP OAM	
	MPLS-TP protection	
OAM	OTN: overhead, alarm, performance	
	SDH: overhead, alarm, performance	
	PKT: MPLS-TP OAM, Ethernet CFM, and 802.3ah OAM	
Reliability	1+1 protection of the MCC and dual power supplies	
	OTN 1+1 OCh, ODUk SNC 1+1 protection	
	PTN MPLS-TP LSP/PW 1:1 protection	
	SDH 1+1 MSP and 1+1 SNC protection	
	G.8032 ERPS	
	LAG protection	
	OLP 1+1 protection	
Power Supply	OCP 1+1 protection	
	2 hot-swappable DC power supplies provide 1+1 redundancy	
	DC: -48V, -57~-40V; AC: 110V/220V, 100~240V	
Power consumption	1070W	550W
Environment	Operating Temperature: -5~50°C	
	Relevant Humidity: 10%~90% RH (indoor) non-condensing	

Sub-cards

Chassis and MCC cards	iTN8600-A/E-DC	iTN8600-A/E with dual DC power supplies
	iTN8600-A/E-AC	iTN8600-A/E with dual AC power supplies
	iTN8600-A/E-NXU	iTN8600-A/E Main control card
WDM sub-cards	MUX/DEMUX/OADM card	iTN8600-DM16E/DD16E: 16 CH DWDM MUX/DEMUX card
		iTN8600-DMU40/DDU40: 40 CH DWDM MUX/DEMUX card
		iTN8600-OMD8: 8 CH CWDM MUX + DEMUX
		iTN8600-DAD4D: 4 CH DWDM dual-fiber bidirectional OADM
	EDFA card	iTN8600-DAD8: 8 CH dual-fiber unidirectional OADM
		iTN8600-OPA: EDFA optical pre-amplifier card
		iTN8600-OBA: EDFA optical booster amplifier card
		iTN8600-OBA20: EDFA optical booster amplifier card
	iTN8600-OLA20: EDFA optical line amplifier card	
10G transponder card	iTN8600-OTU5E: 5-ch enhanced bidirectional transponder card	
OLP card	iTN8600-OLP: Optical line 1+1 protection card	
OSC card	iTN8600-A-FDU: 2-ch OSC multiplexing card	
OTN sub-cards	iTN8600-AO2DE	8 x any service aggregation OTU2 card
	iTN8600-A-MX4	4 x OTU2 line card
	iTN8600-A-MA10	8 x OTU1 line card
	iTN8600-A-XT4D	10G and 100G to 200G OTN Muxponder card
	iTN8600-A-TD5S	2 x 100G to 200G Transponder card
SDH sub-cards	iTN8600-A-SH2	2 x STM-16, or 4 x STM-4, or 1 x STM-16 + 2 x STM-4 SDH aggregation card
	iTN8600-A-SH8 (S)	SDH mode: 8 x STM-1/4 or 2 x STM-16 SDH tributary card
	iTN8600-A-SH8 (E)	EOS mode: 8 x GE EOS tributary card
	iTN8600-SE16	16 x E1 tributary card
PKT sub-cards	iTN8600-A-PG8	8 x GE service interface card
	iTN8600-A-PX4	4 x 10GE service interface card
	iTN8600-A-PE16	16 x CES service interface card in iTN8600-E
PCM sub-cards	iTN8600-AUDIO	16 x FXS/FXO/magneto telephone voice card
	iTN8600-RS24	16 x RS232, or 8 x RS485, or 8 x V24 card

Compact WDM Pizza Box

iTN8601-OTM4, iTN8601-OTMx

iTN8600 pizza box is a 1RU, 19-inch multi-service access device, it can access STM-1/4/16/64, FE/GE, 10GE, OTU1/OTU2, CPRI, OBSAI, FC-1G/2G/4G/8G/10G services. iTN8601 can access up to 4 x 10G and 1 x 2.5G services to a single-strand optical fiber, easy to deploy and maintain. It can be used to conveniently expand fiber capacity in the last-mile circuits and efficiently increase existing fiber capacities to solve the problem of scarce channels in cities and suburban areas.



iTN8601-OTM4



iTN8601-OTMx

FEATURES

- iTN8601-OTM4-LL: 1RU, 19", compact WDM device, 60km transmission distance, left-side device. Client-side interface: 4 any interfaces (1.25Gbit/s~11.3Gbit/s), line side with single-strand fiber port. Left and right-side devices must be used in pairs
- iTN8601-OTM4-LR: 1RU, 19", compact WDM device, 60km transmission distance, right-side device. Client-side interface: 4 any interfaces (1.25Gbit/s~11.3Gbit/s), line side with single-strand fiber port. Left and right-side devices must be used in pairs
- iTN8601-OTMx-SL: 1RU, 19", compact WDM device, 30km transmission distance, left-side device. Client-side interface: 4x10G + 1x2.5G interfaces, line side with single-strand fiber-port. Left and right-side devices must be used in pairs
- iTN8601-OTMx-SR: 1RU, 19", compact WDM device, 30km transmission distance, right-side device. Client-side interface: 4x10G + 1x2.5G interfaces, line side with single-strand fiber-port. Left and right-side devices must be used in pairs

Compact OTN Pizza Box

iTN8607-OA8, iTN8607-OA2

iTN8607 series pizza-boxes are 1RU 19-inch multi-service OTN access devices, providing STM-1/4, FE/GE and other optical access services.

iTN8607 series provide universal multiplexing of STM-1/4, FE/GE/10GE and other optical services to OTU1/OTU2 fiber lines, supporting 1+1 protection, easy to deploy and maintain. They are ideal solutions for Data Center Interconnection, OTN-based business leased lines and other fiber-based access application scenarios.



iTN8607-OA8



iTN8607-OA2

FEATURES

- iTN8607-OA8: 1RU, 19", compact OTN access device. Client-side interface: 8 x FE/GE/STM-1/STM-4; Line side interface: 2 x OTU2, supporting 1+1 protection
- iTN8607-OA2: 1RU, 19", compact OTN access device. Client-side interface: 2 x FE/GE/STM-1/STM-4, 2 x FE/GE, or 1 x FE/GE + 1 x STM-1/STM-4; Line side interface: 2 x OTU1, supporting 1+1 protection

Semi-Passive WDM Platform

OPCOM100-SA Series

Raisecom Semi-Passive WDM Platform includes Central Office (CO) devices and remote devices. OPCOM100-SA CO devices include OPCOM100-SA2/3/5 series 2RU, 3RU and 5RU chassis, OPCOM100-SA2/3/5-NMU network management cards, and OPCOM100-CPM active single-strand fiber bidirectional 6/12-wavelength CWDM multiplexing cards with protection. The OPCOM100-OMU remote devices are 1RU-high, passive, single-strand fiber bidirectional 6/12-wavelength CWDM multiplexer/demultiplexer with protection. It can be installed stand alone or in a plug-in encapsulation box, such as the PB3/PB16.

OPCOM100-SA series are widely used for 4G/5G mobile fronthaul optical fiber capacity expansion, unilateral wavelength conversion, and Semi-Passive CWDM-based business leased line access scenarios.

FEATURES

- WDM semi-passive solution includes an active Central Office side and passive remote side
- Manageable and easy-to-maintain remotely
- Single-strand fiber based for bidirectional services
- Line side 1+1 network protection
- Uninterrupted services during power failure
- 4G/5G/mixed access, saving fiber resources



OPCOM100-SA2



OPCOM100-SA3



OPCOM100-SA5

Chapter 3

xPON

xPON networks provide high throughput point-to-multipoint connections from the Point of Presence (POP) to customer premises. It is popularly used in massive deployment for broadband triple-play services, offering a competitive CapEx and OpEx business model for ISPs and cable operators. Raisecom xPON product line provides both GPON and next-generation 10G PON as XG/XGS-PON technologies for different access bandwidth profiles. A variety of symmetric/asymmetric 2.5GE/10GE downstream and 1.25GE/10GE upstream bit rates are available for ISPs and cable operators to choose their most suitable solutions.

Raisecom xPON portfolio offers a handful of selections at central office side, including large-sized, medium-sized, small-sized and compact rack-mounted OLTs to address different scenarios from intensive populated metropolitans to scattered suburban areas. At subscriber side, various ONTs ranging from simple bridge units (SFU), multi-dwelling units (MDU), home gateway units (HGU) to enterprise and industrial hardened models for different network architectures. In addition to product form factors, Raisecom also differentiates one variety from another according to application scenarios. Low density models serve rural and suburban areas, while those with high density are competent to metropolitan service area coverage. A wide selection of automation tools such as TR-069 based auto-provisioning, remote network management and performance monitoring and redundant network topologies are also provided for ISPs and cable operators to achieve a profitable business mode in FTTX deployment rollout.

10GPON/GPON OLT Platform

ISCOM6800

The ISCOM6800 is a 13RU large-sized integrated platform compatible with both ITU-T G.984/G.987/G.9807 GPON/10GPON standards and IEEE802.3ah/802.3av based EPON/10GEPON standards. The system can access up to 28,672 subscribers ONUs/ONTs with a recommended 1:128 fiber split ratio of total 224 PON ports. ISCOM6800 also possesses great switching capacities and can be used to aggregate and transport data, voice and video traffic from other OLTs over Ethernet backplane. Enhanced network manageability, reliability and redundancy are supported with ring and dual-homing protection mechanisms and hot-swappable redundant DC power supplies. The system supports multi-purpose access and aggregation of PON and Active Ethernet traffics at the same time.



ISCOM6800

FEATURES

High capacity, Ultra bandwidth

- 13RU, 2 x SMCA control cards, 14 service cards, 2 uplink cards
- Available with mixed line cards for up to 224 x GE or 72 x 10GE interfaces for uplink and Active Ethernet access
- Up to 224 x GPON/EPON interfaces per chassis
- Up to 112 x 10GEPON interfaces per chassis
- Up to 224 x XGS combo PON interfaces per chassis

Telecom grade reliability

- 2 x SMCA control cards supporting real-time redundancy
- Hot-swappable redundant power supplies
- 1+1 automatic protection and link diagnostic for each PON port

Rich features

- VLAN, including selective QinQ, VLAN mapping and aggregation
- Complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services
- Complete ACL, including L2/L3/L4 and customized policies
- STP/MSTP, link aggregation, DHCP, interface isolation
- Layer 2 multicast, IGMP Snooping, Proxy, MVR, and controllable multicast

Energy-saving design

- With a low power consumption design for all cards, overall power consumption is below 1300W (1G PON)/2400W (10G EPON/10G PON)
- An intelligent fan with automatic speed adjustment according to chassis temperature prolongs its lifespan, reduces noise, and saves energy

SPECIFICATIONS

Switching Capacity	1.28 Tbit/s	
Slots number	2 for SMCA 14 service cards	
Dimension W x D x H (mm)	13RU: 440 x 233 x 578.5	
Chassis and sub cards	ISCOM6800-18-A	ISCOM6800 chassis
	ISCOM6800-SMCA	Switching and control card
	ISCOM6800-EP16	GEAPON line card, 16 x GEAPON SFP ports
	ISCOM6800-GP16	GPON line card, 16 x GPON SFP ports
	ISCOM6800-XEP8	10GEAPON card, 8 x 10GEAPON SFP+ ports
	ISCOM6800-XC8A	XG(S)-PON combo service card, 8 x combo PON SFP+ ports
	ISCOM6800-XC16	XG(S)-PON combo service card, 16 x combo PON SFP+ ports
	ISCOM6800-GE16	GE card, 16 x GE SFP ports
	ISCOM6800-XP2A	10GE card, 2 x 10GE SFP+ ports
	ISCOM6800-XP4A	10GE card, 4 x 10GE SFP+ ports
	ISCOM6800-XP4L	10GE card, 4 x 10GE SFP+ ports
	RPD2151-48S48	DC -48v, 30A power supply card
	RPD2251-48S48	DC -48v, 50A power supply card
	WGF-01	Airflow slot and cable array
ISCOM6800-18-FANS382	Intelligent FAN.	
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy	
Power consumption	≤ 1300W (1G PON) ≤ 2400W(10G EPON/10G PON)	
Environment	Operating Temperature: 0~55°C Relevant Humidity: 10%~90% RH, non-condensing	
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation	
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast	
ACL	ACL based on MAC/VLAN/IP/port Customized ACL	
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP	
IP Routing	Static route	
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control	
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue. CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow	

10GPON/GPON OLT Platform

ISCOM6860

The ISCOM6860 is the medium-sized carrier-grade Optical Line Terminal (OLT) platform. It offers GPON, XG/XGS-PON, EPON, 10GEPON, and Active Ethernet access, for all types of ISPs and cable operators to address medium-size service area coverage. ISCOM6860 is equipped with a high backplane bandwidth of 2.88Tbit/s, high switching capacity of 1.28Tbit/s, and 1:1 backplane redundancy for wirespeed non-blocking forwarding and high reliability services. It provides up to 112 PON ports thus up to 14,336 subscriber ONUs based on a 1:128 fiber split ratio. Raisecom has adopted green concept in line cards and fan units design to save energy by lowering down power consumption and emissions. ISCOM6860 is an ideal solution for FTTx, POL, Triple-Play with CATV overlay, business leased line services and etc.



ISCOM6860

FEATURES

High capacity, Ultra bandwidth

- 6RU, 2 x SMCA control cards, 7 service cards, 2 uplink cards
- Up to 112 x GPON/EPON interfaces per chassis
- Up to 56 x 10GEPON interfaces per chassis
- Up to 112 x XGS combo PON interfaces per chassis

Telecom grade reliability

- 2 x SMCA control cards supporting real-time redundancy
- Hot-swappable redundant power supplies
- 1+1 automatic protection and link diagnostic for each PON port

Rich features

- VLAN, including selective QinQ, VLAN mapping and aggregation
- Complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services
- Complete ACL, including L2/L3/L4 and customized policies
- STP/MSTP, link aggregation, DHCP, interface isolation
- Layer 2 multicast, IGMP Snooping, Proxy, MVR, and controllable multicast

Energy-saving design

- With a low power consumption design for all cards, overall power consumption is below 1000W
- An intelligent fan with automatic speed adjustment according to chassis temperature prolongs its lifespan, reduces noise, and saves energy

SPECIFICATIONS

Switching Capacity	1.28 Tbit/s	
Slots number	2 for SMCA 7 service cards	
Dimension W x D x H (mm)	6RU: 443 x 237 x 266	
Chassis and sub cards	ISCOM6800-10	ISCOM6860 chassis
	ISCOM6800-SMCA	Switching and control card
	ISCOM6800-EP16	GEPON line card, 16 x GEPON SFP ports
	ISCOM6800-GP16	GPON line card, 16 x GPON SFP ports
	ISCOM6800-XEP8	10GEPON card, 8 x 10GEPON SFP+ ports
	ISCOM6800-XG16	XG(S)-PON service card, 16 x PON SFP+ ports
	ISCOM6800-XC8A	XG(S)-PON combo service card, 8 x combo PON SFP+ ports
	ISCOM6800-XC16	XG(S)-PON combo service card, 16 x combo PON SFP+ ports
	ISCOM6800-GE16	GE card, 16 x GE SFP ports
	ISCOM6800-XP2A	10GE card, 2 x 10GE SFP+ ports
	ISCOM6800-XP4A	10GE card, 4 x 10GE SFP+ ports
	ISCOM6800-XP4L	10GE card, 4 x 10GE SFP+ ports
	RPD2151-48S48	DC -48v, 30A power supply card
	ISCOM6860-10-FANS381	Intelligent FAN
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy	
Power consumption	≤ 1000W	
Environment	Operating Temperature: 0~55°C Relevant Humidity: 10%~90% RH, non-condensing	
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation	
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast	
ACL	ACL based on MAC/VLAN/IP/port Customized ACL	
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP	
IP Routing	Static route	
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control	
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow	

Small-Sized 10G Combo PON OLT

ISCOM6820

The ISCOM6820 is a new-generation compact small-capacity 2RU-plug-in Optical Line Terminal (OLT) platform developed by Raisecom. It supports mixed insertion of GPON and XG(S)-PON cards, and provides rich features and flexible deployment modes for networking, thus meeting requirements for low-density and long-distance fiber access. It can be deployed in such scenarios as non-dense coverage areas, outdoor areas, limited-space areas, and areas with prolonged-distance coverage.

The ISCOM6820 is equipped with high backplane bandwidth and high switching capacity, and non-blocking forwarding and high reliability for all services. Cards and fans adopt green energy-saving design to lower power consumption and emissions.



ISCOM6820

FEATURES

Small size, Ultra bandwidth

- 2RU, 2 x SMUA control cards, 2 service cards
- Up to 32 x GPON interfaces per chassis
- Up to 32 x XGS combo PON interfaces per chassis, allowing GPON/XG-PON/XGS-PON ONUs to coexist under the same PON interface
- Up to 12 x 10GE uplink interfaces

Telecom grade reliability

- 2 x SMUA control cards supporting real-time redundancy
- Hot-swappable redundant power supplies
- 1+1 automatic protection and link diagnostic for each PON port

Rich features

- VLAN, including selective QinQ, VLAN mapping and aggregation
- Complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services
- Complete ACL, including L2/L3/L4 and customized policies
- Link aggregation, DHCP, interface isolation
- Layer 2 multicast, IGMP Snooping, Proxy, MVR, and controllable multicast

Energy-saving design

- With a low power consumption design for all cards, overall power consumption is below 500W
- An intelligent fan with automatic speed adjustment according to chassis temperature prolongs its lifespan, reduces noise, and saves energy

SPECIFICATIONS

Switching Capacity	1.04 Tbit/s	
Slots number	2 for SMCA 2 service cards	
Dimension W x D x H (mm)	2RU: 442 x 250 x 88.1	
Chassis and sub cards	ISCOM6820-DC/D	ISCOM6820 chassis
	ISCOM6820-SMUA	Switching and control card
	ISCOM6800-XCOA	XG(S)-PON combo service card, 8 x combo PON SFP+ ports
	ISCOM6800-XCHA	XG(S)-PON combo service card, 16 x combo PON SFP+ ports
	ISCOM6800-GPHA	GPON line card, 16 x GPON SFP ports
	RPD1601-48S48	DC -48v, 600W power supply card
	FANS385	Intelligent FAN.
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy	
Power consumption	≤ 500W	
Environment	Operating Temperature: -5~60°C Relevant Humidity: 10%~90% RH, non-condensing	
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation	
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast	
ACL	ACL based on MAC/VLAN/IP/port Customized ACL	
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP	
IP Routing	Static route	
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control	
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow	

Small-Sized GPON OLT

ISCOM6820-GP

ISCOM6820-GP is a 2RU small-sized OLT that complies with the GPON's ITU-T G.984 standard. The device can support up to 32 x GPON ports and 4 x 10GbE uplink ports. The ISCOM6820-GP can aggregate a maximum of 4,096 subscribers ONUs/ONTs in a max fiber split ratio of 1:128.

The complete modular design of the ISCOM6820-GP enables excessive flexibility in deploying, maintaining and expanding services at reduced CapEx and OpEx. Designed for large enterprises, SME and residential fiber access, the ISCOM6820-GP offers a broad range of features delivering triple-play services, simplifying management, and providing high network reliability. The security is assured by implementations of RADIUS and/or TACACS+ authentications, while maximum network uptime is guaranteed by ring protection architecture, real-time monitoring and hot-swappable redundant power supplies.



FEATURES

Small size, Ultra bandwidth

- 2RU, 2 x MCUA uplink cards
- Up to 32 x GPON interfaces per chassis
- Up to 4 x 10GE uplink interfaces

Telecom grade reliability

- 2 x MCUA uplink cards 1+1 protection
- Hot-swappable redundant power supplies
- Type B PON protection and link diagnostic for each PON port

Rich features

- VLAN, including selective Q-in-Q, VLAN mapping and aggregation
- Complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services
- Complete ACL, including L2/L3/L4 and customized policies
- Link aggregation, DHCP, interface isolation
- Layer 2 multicast, IGMP Snooping, Proxy, MVR, and controllable multicast

Energy-saving design

- With a low power consumption design for all cards, overall power consumption is below 200W
- An intelligent fan with automatic speed adjustment according to chassis temperature prolongs its lifespan, reduces noise, and saves energy

SPECIFICATIONS

Switching Capacity	200Gbit/s	
Slots number	2 for MCUA 1 service card with switching fabric 1 service card	
Dimension W x D x H (mm)	2RU: 442 x 236 x 88	
Chassis and sub cards	ISCOM6820-GP-DC/D	ISCOM6820-GP dual DC chassis
	ISCOM6820-GP-AC	ISCOM6820-GP single AC chassis
	ISCOM6820-MCUA	Uplink and control card
	ISCOM6820-GPSC	Basic service card, 16 x GPON SFP ports
	ISCOM6800-GP16	Extension service card, 16 x GPON SFP ports
	RPD1303-48D4805	DC -48v, 300W power supply card
	RPA1302-220D4805	AC 220V, 300W power supply card
	ISCOM6820-3-FANS380	Intelligent FAN
Power Supply	2 hot-swappable DC power supplies provide 1+1 redundancy Single AC power supply	
Power consumption	≤ 200W	
Environment	Operating Temperature: -5~60°C Relevant Humidity: 10%~90% RH, non-condensing	
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation	
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast	
ACL	ACL based on MAC/VLAN/IP/port Customized ACL	
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP	
IP Routing	Static route	
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control	
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port. Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow	

Compact GPON OLT

ISCOM5508-GP

The ISCOM5508-GP is a compact GPON OLT with enhanced functionality that complies with ITU-T G.984 GPON standard. The device can provide up to 8 GPON ports, 10 x 1GbE and 2 x 10GbE uplink interfaces. The full modular design of the ISCOM5508-GP enables maximum flexibility in deploying, maintaining and expanding services while maintaining a low total cost of ownership. Designed for small ISPs and cable operators for residential fiber broadband access, ISCOM5508-GP offers a broad range of features delivering triple-play services, simplifying network management, and providing a high network reliability. The security is assured by implementations of RADIUS and/or TACACS+ authentications, while maximum network uptime is guaranteed by ring architecture, real-time monitoring and hot-swappable redundant power supplies.



ISCOM5508-GP

FEATURES

Compact size, High integrity

- 1RU, single MCU, 2 GPON sub-cards, Layer 2 wirespeed forwarding
- Up to 8 x GPON interfaces
- Up to 12 x 1GE and 2 x 10GE Ethernet interfaces

Telecom grade reliability

- Hot-swappable redundant power supplies
- Type B PON protection and link diagnostic for each PON port

Rich features

- VLAN, including selective Q-in-Q, VLAN mapping and aggregation
- Complete QoS, including dynamic assignment of bandwidth, priority control, multiple traffic classification modes, multiple queue scheduling modes, etc. to meet different QoS requirements for VoIP, video, and Internet access services
- Complete ACL, including L2/L3/L4 and customized policies
- Link aggregation, DHCP, interface isolation
- Layer 2 multicast, IGMP Snooping, Proxy, MVR, and controllable multicast

Energy-saving design

- With a low power consumption design for all cards, overall power consumption is below 70W
- An intelligent fan with automatic speed adjustment according to chassis temperature prolongs its lifespan, reduces noise, and saves energy

SPECIFICATIONS

Switching Capacity	96Gbit/s	
Slots number	1 for MCU 2 service cards	
Dimension W x D x H (mm)	1RU: 440 x 266 x 44.5	
Chassis and sub cards	ISCOM5508-GP-DC/D	ISCOM5508-GP dual DC chassis
	ISCOM5508-GP-AC/D	ISCOM5508-GP dual AC chassis
	ISCOM5508-GPSC	MCU card with 4 x GPON SFP ports + 2 x 10GE SFP ports + 2 x 1GE SFP ports + 2 x 1GE RJ45 ports
	ISCOM5508-GP4A	GPON line card, 4 x GPON SFP ports
	ISCOM5508-GE4B	Ethernet line card, 4 x 1GE SFP ports
	RPD1101-48S12	DC -48V, power supply card
	RPA1101-SI-220S12	AC 110/220V, power supply card
	FANS306	Intelligent FAN
Power Supply	2 hot-swappable DC or AC power supplies provide 1+1 redundancy	
Power consumption	≤ 70W	
Environment	Operating Temperature: -5~60°C Relevant Humidity: 10%~90% RH, non-condensing	
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation	
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast	
ACL	ACL based on MAC/VLAN/IP/port Customized ACL	
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP	
IP Routing	Static route	
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control	
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority. Support flexible mapping from CoS to queue and DSCP to queue CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow	

Outdoor GPON OLT

ISCOM5508Q-GP

ISCOM5508Q-GP is an outdoor hardened GPON OLT with cast aluminum casing targeted for outdoor installation. It supports 2 x GE ports, 2 x GE SFP ports, 2 x 10GE SFP+ ports, and 8 x GPON ports. The cast aluminum chassis supports extended operating temperature range and lightning/dust/water proof. The module is also equipped with Bluetooth connection as a convenient way for the console maintenance without connecting a serial cable. It supports max 1:128 fiber split ratio, thus very suitable for deployment in low population density areas.



ISCOM5508Q-GP

FEATURES

High integrity, Flexible networking

- Adopt cast aluminum shell, and provide 1 GPON OLT card and power supply
- Modular design facilitated installation and maintenance
- Up to 8 x GPON interfaces
- Up to 2 x 10GE, 2 x 1GE SFP and 2 x 1GE RJ45 Ethernet interfaces

Telecom grade reliability

- Embedded dual power supply redundancy for improving device reliability
- Wide-temperature design for adopting to the -20 to 65°C environment
- IP67 protection level, thus meeting dustproof and waterproof requirements in the outdoor environment
- Low power consumption of the MCC card, with overall power consumption less than 85 W, energy saving

Convenient maintenance

- Debugging through the Console interface via Bluetooth, thus facilitating maintenance after installation
- Multiple maintenance and management interfaces, supporting in-band and out-of-band management
- Rich alarms, such as door alarms, abnormal optical power alarms, and ONU offline alarms

SPECIFICATIONS

Switching Capacity	92Gbit/s
Dimension W x D x H (mm)	458 x 285 x 174
Power consumption	≤ 85W
Environment	Operating Temperature: -20~65°C Relevant Humidity: 5%~95% RH, non-condensing IP67 compliance
VLAN	4k VLAN Basic QinQ, Selective QinQ VLAN translation
Multicast	Static multicast IGMP snooping v1/v2/v3 MLD snooping v1/v2 IGMP/MLD proxy v1/v2/v3 MVR Dynamic controllable multicast
ACL	ACL based on MAC/VLAN/IP/port Customized ACL
Link aggregation	Support 6 load balancing modes based on MAC and IP Support LACP
IP Routing	Static route
Security	IP Source guard ARP inspection Anti-DoS attack PPPoE+ Multicast, broadcast and DLF storm control
QoS	Port-based queue scheduling and rate limiting, 8 priority queues per port Support SP, WRR, WDRR, and SP+WRR queue scheduling Trust CoS and DSCP priority, Support flexible mapping from CoS to queue and DSCP to queue CoS (802.1p) priority remark Support configuring CoS or DSCP priority for packets that matching ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow

GPON SFU ONT

ISCOM HT803G-1GE, ISCOM HT803G-1GC, ISCOM5104G-GP-HB

The ISCOM HT803G series SFU type bridge optical network terminal (ONT) devices provide a dependable transparent connection to deliver residential broadband access including high speed data and IPTV/CATV services. They provide a simple and straightforward way for ISPs and cable operators to terminate their fiber connections to curb, basements, rooms and enterprise equipment rooms to deliver residential triple-play services as well as business L2 connections. End subscribers will have full freedom to choose any type and generation home gateways or enterprise gateways that fulfill their needs for indoor networking. All GPON FTTH ONTs offer advanced end-to-end management and monitoring functionalities, either on Raisecom RCView platform or be integrated/ interoperated with other vendor OLT equipment.



ISCOM HT803G-1GC



ISCOM HT803G-1GE



ISCOM5104G-GP-HB

The ISCOM5104G-GP-HB is a GPON bridge ONT with 4 x GbE LAN ports, targeted for small and medium sized enterprises in multi-LAN equipment interconnect, video monitoring, and other indoor networking applications. It is designed with a metal enclosure, dependable and durable, featuring high protection level, high lightning proof level, thus suitable for various indoor and outdoor cabinet deployment environment.

P/N	ISCOM HT803G-1GE	ISCOM HT803G-1GC	ISCOM5104G-GP-HB
WAN Interface	1 x GPON port, Class B+		
LAN Interface	1 x GE interface		4 x GE interface
CATV Interface	NA	1 x RF	NA
VLAN, QinQ	Support VLAN, QinQ, QoS, DBA		
Dimension(mm)	80(L) × 80(W) × 26(H)	140(L) × 105(W) × 39(H)	150(L) × 115(W) × 30(H)
Consumption	< 5W		
Management	CLI, SNMP and OMCI via OLT		

GPON HGU ONT

ISCOM HT803G-WS2, ISCOM HT803G-WX2

The ISCOM HT803G series optical network terminal (ONT) gateways provide a flexible mix of residential services including high speed Internet, IPTV, and voice services. They also provide state-of-the-art Wi-Fi 5/6 connections with MIMO antennas for better indoor coverage for residential and small-and-medium enterprise business subscribers. They offer flexible choices in terms of LAN interfaces such as Gigabit Ethernet ports, POTS (FXS) ports and Wi-Fi 5/6 WLAN compliant with IEEE 802.11b/g/n/ac/ax.



ISCOM HT803G-WS2



ISCOM HT803G-WX2

All GPON FTTH ONUs offer advanced end-to-end management and monitoring functionality, based on TR-069 based auto provisioning and SNMP monitoring. With latest Wi-Fi 6 technology, wireless data rates can reach 3000Mbps to offer better and faster user experience in home networking.

P/N	ISCOM HT803G-WS2(M)	ISCOM HT803G-WS2(N)	ISCOM HT803G-WX2
WAN Interface	1 x GPON Class B+		
LAN Interface	4 x GbE		
POTS	2 x FXS	NA	2 x FXS
USB	1 x USB2.0		1 x USB3.0
WLAN	802.11 b/g/n/ac, 2.4GHz & 5GHz, up to 4 SSIDs, MIMO 2 x 2, 2 x external antennas		802.11 b/g/n/ac/ax, 2.4GHz & 5GHz, up to 4 SSIDs, MIMO 2 x 2, 6 x external antennas
Dimension(mm)	184(L) × 129(W) × 38(H)		217(L) × 142(W) × 40(H)
Consumption	<18W		<24W
TCP/IP	Support PPPoE Client, DHCP Server/Client, NAT, Static Route, ALG and Wi-Fi Bridge		
Mesh	NA		Easy Mesh
Management	Web management, Telnet, CLI and OMCI, TR-069		

10GPON/GPON Stick ONT

ISCOM HT801-GSFP, ISCOM HT801-XGSFP

The ISCOM HT801-GSFP is a GPON ONT stick with MAC. It is in the SFP form and can be inserted into MSA-compliant SFP cages on switches, IP cameras, Small Cells, routers, DSLAMs, or other devices to implement various networking application requirements. In this way, GPON network provides an infrastructure with less complexity in communication and connectivity, lower power consumption and cost, as well as improved network reliability.



ISCOM HT801-GSFP

The ISCOM HT801-XGSFP is a symmetrical XGS-PON ONT Stick with XGS-PON MAC. Encapsulated in SFP+ form factor, it can act as a miniature XGS-PON SFU ONT bridge independently and work against an XGS-PON OLT device. It can be flexibly inserted and deployed in any hosting devices that provide an open and standard SFP+ cage with adequate power consumption support.



ISCOM HT801-XGSFP

FEATURES

- SFP/SFP+ form factor, small size, elegant appearance, and light weight
- Compliance with ITU-T G.984/G.988/G.9807
- Cost-effective and suitable for large-scale applications
- Fully compatible with OLTs of other vendors

XGS-PON SFU

ISCOM HT806G-XGS-XE

The ISCOM HT806G-XGS-XE is an XGS-PON SFU product developed by Raisecom. It provides XGS-PON access for uplink and downlink 10G bandwidth, and provides one 10GE electrical interface, compatible with 2.5G/1G in the downlink, so it can access services with rate 10 GE and provide users with high-quality data, high-definition video services, and other services.



ISCOM HT806G-XGS-XE

FEATURES

- Small size, elegant appearance, and light weight
- Compliance with ITU-T G.9807
- Cost-effective and suitable for large-scale applications

XGS-PON MDU

ISCOM6108-XGS, ISCOM6108-XGS-PSE

The ISCOM6108-XGS is an XGS-PON MDU product developed by Raisecom for all-optical-fiber parks. It provides XGS-PON access for uplink and downlink 10G bandwidth, and provides one 2.5GE electrical interface, 7GE electrical interfaces, and one 10GE optical interface in the downlink, so it can access services with rate higher than GE and provide users with high-quality data, high-definition video services, and other services.



ISCOM6108-XGS

The ISCOM6108-XGS-PSE is an XGS-PON MDU product developed by Raisecom for all-optical-fiber parks. It provides XGS-PON access for uplink and downlink 10G bandwidth, and provides one 2.5GE electrical interface, 7GE electrical interfaces, and one 10GE optical interface in the downlink. The Ethernet electrical interface complies with IEEE 802.3af/at, and it can supply up to 30W power. It can access services with rate higher than GE and provide users with high-quality data, high-definition video services, and other services.

ISCOM6124-XGS, ISCOM6124-XGS -PSE

The ISCOM6124-XGS is an XGS-PON MDU product developed by Raisecom for all-optical-fiber parks. It provides XGS-PON access for uplink and downlink 10G bandwidth, and provides 24GE electrical interfaces, and two 10GE optical interface in the downlink, so it can access services with rate higher than GE and provide users with high-quality data, high-definition video services, and other services.



ISCOM6124-XGS

The ISCOM6124-XGS is an XGS-PON MDU product developed by Raisecom for all-optical-fiber parks. It provides XGS-PON access for uplink and downlink 10G bandwidth, and provides 24GE electrical interfaces, and two 10GE optical interface in the downlink, The Ethernet electrical interface complies with IEEE 802.3af/at, and it can supply up to 30W power. It can access services with rate higher than GE and provide users with high-quality data, high-definition video services, and other services.

FEATURES

- Compliance with ITU-T G.987.x
- Adopt fanless zero-noise design to minimize noise towards residents
- Iron-shell MDU, strong and durable, high safety protection class, high lightning protection indicators, high product quality
- Working at -20 to 55°C and with lightning protection level of ± 6 kV in common mode, thus adaptive to various areas
- 2.5GE electrical interfaces or 10GE optical interfaces, able to access services with rate higher than GE
- Support optional PoE type. The entire device supports up to 120W or 360W power

SOHO/Enterprise Gateway

MSG2200 Series, MSG2100E Series

Raisecom PON/Ethernet gateway family consists of data-access gateway like MSG2200 series and converged gateway like MSG2100E series. MSG2200/MSG2100E series products are the third-generation gateway launched by Raisecom, which meet the needs of SMEs, schools, industry branches, micro enterprises and street shops for bandwidth acceleration and performance improvement, and have SD-WAN access and VPN tunnel capabilities. The products adopt dual-core/quad-core CPU technology, integrating data, voice, security, wireless and other functions to provide users with integrated network access solutions of gigabit broadband and smart government & enterprises.

The MSG2200/MSG2100E series products have cloud platform access capabilities, establish a VxLAN tunnel as the cloud access terminal for SDN controller and vCPEs.

Users can flexibly deploy multiple services on the same platform to reduce the network operation and maintenance costs.

FEATURES

Performance and reliability

- High performance and low power consumption, dual-core/quad-core CPU, 900MHz/1.2GHz
- Small size and good durability
- No fan, no noise, and high reliability

Interface type

- Provide EPON/GPON self-adaptive uplink mode, and optional USB external 4G uplink link backup in WAN side
- Provide GE ports in LAN side, and one of them can be configured as the uplink port

Routing access

- Support IPV4/IPV6 dual stack, DS-lite tunnel
- Support routing, bridging, NAT, port mapping, DHCP, UPNP and other functions to meet users' basic access requirements
- Support VLAN management and MAC management to facilitate equipment service and port planning
- Support static routing and policy routing protocols
- Support routing backup
- Support multicast IGMP Snooping and IGMP Proxy
- Support rich and flexible QoS scheduling mechanisms: PQ, WRR, etc

VPN function

- Support multiple VPNs such as IPsec, L2TP, and GRE
- Support VxLAN, which can uplink to SDN controller and vCPE

Security function

- Support firewall and access control policies
- Support DDoS, anti-ARP attack, and port scanning defense
- Support MAC, IP and URL filtering
- Support various user authentication modes, such as Radius/LDAP/IP/MAC, support web page push, and various Portal protocols

Voice function (except MSG2100-UPON-AC, MSG2200 series)

- Support SIP, H.248 and IMS-SIP voice protocols at the same time
- Support G.711a/u, G.723, G.726, G.729 voice codec auto-negotiation
- In terms of voice service, the PSTN supplementary services such as holding, waiting, forwarding calls, three-way calling, hotline service, and Centrex can be implemented to form a rich and powerful overall IP voice solution, providing customers with more voice service experiences

Management function

- Support multiple management modes, such as TR-069, Web, and SNMP to facilitate service provisioning and operation & maintenance management
- Support zero-configuration for plug and play
- Support NAT-traversal to solve the problem of network management connection between public network and private network



MSG2100E-UPON-4V



MSG2100E-UPON-16V-AC



MSG2200-T4



MSG2200-UP

Software Features		
L2/3 function	Access function	Support routing, bridging, NAT, port mapping, DHCP, UPNP and other functions to meet users' basic access requirements Support IEEE 802.11, MAC management, and VLAN management Support 4G uplink link backup
	Multicast function	Support multicast IGMP Snooping, and IGMP Proxy
	Speed limit function	Support port speed limit, and QoS speed limit
	IP Routing	Support static routing, policy routing, and route backup
Voice function (except MSG2100/MSG2200 series)		Support SIP, H.248 and IMS-SIP voice protocols Support G.711a/u, G.723, G.726, G.729 voice codec Support T.30/T.38 fax, three-way calling, DND, and call accounting functions
IPv4/IPv6		Support IPv4/IPv6 dual stack, Routing & data forwarding, DS-lite tunnel
Advanced features	VPN	Support IPSec VPN, L2TP VPN, GRE VPN, VxLAN VPN, and PKI management
	QoS	Support priority mapping, traffic monitoring (CAR), traffic shaping, congestion management, and priority management
	Security	Support basic firewall, website filtering, MAC address filtering, and access control Anti ARP and DDoS attacks Support Web authentication, RADIUS authentication, and illegal IP detection

P/N	MSG2200-UP	MSG2100E-UPON-4V	MSG2100E-UPON-16V-AC	MSG2200-T4
WAN	1 x EPON/GPON self-adaptive interface			
4G interface	optional USB external 4G NIC			
LAN	4GE			8GE
Voice interface	NA	4 x FXS voice interfaces	16 x FXS voice interfaces	8 x FXS voice interfaces
USB interface	USB2.0/3.0 high-speed interface			
WLAN	IEEE 802.11b/g/n/ac (4x4 MIMO), 4 external 5dBi antennas	IEEE 802.11b/g/n (2 x 2 MIMO), single-frequency 2.4G Hz, 2 external 5dBi antennas		
Weight	1.2Kg	0.9Kg	2.1Kg	1.7Kg
Dimension(mm)	260(L) x 130(W) x 43(H) (metal shell)		440(L) x 220(W) x 43(H) (metal shell)	320(L) x 200(W) x 43(H) (metal shell)
Power Supply	+12V power adapter		AC 220V power supply	
Max power consumption	≤21W	≤12W	≤27W	≤22W
Operating environment	Operating humidity: 10% ~ 90%, non-condensing Operating temperature: -5°C ~ 55°C;			
Storage environment	Environment temperature: -25°C ~ 70°C; Environment humidity: 10% ~ 90%, non-condensing			
Dust level	IP20			

Standalone CATV EDFA

RC5827A-4, RC5830A-8, RC5833A-16, RC5836A-32X-WS

Raisecom standalone CATV EDFA includes models of RC5827A-4, RC5830A-8, RC5833A-16, RC5836A-32X-WS. All models are 19-inch standalone product, integrated by splitter, optical amplifier, and 1270 & 1310/1490 & 1571/1550nm wavelength multiplexer, supports 1 or 2 CATV input port, up to 32 PON input ports and 32 COM (CATV+PON) ports. It is optical switch integrated for models with 2 CATV input port. Output power for each EDFA output port is 19dBm. All models support dual AC/DC power supplies and redundant backup.

RC5830A-PWR-D is a pluggable power supply module for RC5827A-4, RC5830A-8, and RC5833A-16. The output power is -48V DC. RC5830A-FAN is a pluggable Fan module for RC5827A-4, RC5830A-8, and RC5833A-16.



RC5830A-8

FEATURES

- 1540nm~1565nm operating bandwidth for optical amplifier
- Low Noise Figure: Max. ≤ 5.5 dB, (@Pin=0dBm, $\lambda=1550$ nm)
- High performance, high reliability
- Polarization dependent gain: Max. 0.4dBm
- Polarization mode dispersion: Max. 0.5ps
- Input and output pump leakage: -30dBm
- 1550nm output optical port, multiplex 1310nm/1490nm or 1270nm/1571nm data stream
- Be compatible with any FTx PON Technology: EPON/GEAPON, GPON and XGS-PON
- Perfect RS232, SNMP
- Efficient space, flexible installation and easy operation

Splitter

Passive Optical Splitter

The optical splitter is a passive optical plug-and-play device, which connects OLT and ONUs with multiple fiber ends. A splitter is generally deployed in an optical distribution network, allowing carriers to split optical signals to numerous customer premises. Raisecom provides various optical splitters with the following split ratios: 1:2, 1:4, 1:8, 1:16, 1:32, 1:64 to 1:128. The series is classified as indoor, indoor/outdoor and outdoor optical splitters.



Outdoor Optical Splitter



Indoor/Outdoor Optical Splitter

Chapter 4

Ethernet Switch and Industrial Switch

Raisecom offers a complete product line of Carrier Ethernet (CE) switches, aggregation and demarcation devices. The MEF-certified Carrier Ethernet 2.0 product line can be used to deliver E-Line, E-LAN, E-Tree, and E-Access services. These services can provide end-to-end SLA and QoS monitoring and full-service performance visibility as well as OAM, CFM, multi-CoS and other carrier-grade Ethernet protocols. Typically used to provide SLAs and service assurance for business services, CE2.0 products are vital for demarcation between service providers.

Based on mature Ethernet technologies, Industrial Ethernet products and solutions are gaining popularity in many vertical industries, utilities, transportation and public market sectors for their enhanced manageability, network redundancy, scalability, and comprehensive performance monitoring. In addition, the managed Industrial Ethernet technologies also assist with the integration of many systems over a scalable network across wired and wireless LANs and WANs.

Gazelle series products are mainly designed for complicated application scenarios in the industry fields, such as smart grid, traffic control and surveillance systems. The selected models are specially adapted with advanced performance on QoS, network security, resiliency and reliability for a wide range of industrial applications. In addition, this series, complying with IEC 61580-3 and IEEE 1613, can ensure high standards of EMI immunity and error-free communication that is significant in power plants, substations, transmission lines and ammeter readings. Their hardened hardware design supports effective and efficient protection mechanism with sub 50ms switchover protection by ITU-T G.8032 ERPS, increasing network reliability and reducing the cabling and wiring complexity.

L2 Access Switch

ISCOM S2600(-PWR/PWH) Series

The ISCOM S2600(-PWR/PWH) series switches are the new-generation green and cost-effective Layer 2 Gigabit Ethernet switches, providing flexible 1000Mbps access interfaces and 10Gbps uplink interface. It is developed based on a high-performance hardware platform and the new-generation switching software platform of Raisecom.

Featuring high reliability, high access security guarantee, easy administration, and simple management, it can meet carriers' requirements. In addition, it supports IPv4/v6 static route, mature IPv6 features, intelligent virtualization technologies, flexible PoE, and so on. It can be widely used in scenarios such as access device of enterprises, campuses, residences, and CDN.



ISCOM S2600(-PWR/PWH) Series

FEATURES

High capacity, high density

High reliability and protection

- STP, RSTP, MSTP
- Manual and static LACP
- ITU-T G.8031 line protection and G.8032 ring protection
- Dual-system and dual-configuration-file redundancy backup

ISF Stacking

- Up to 4 devices
- Linear and ring stacking
- Uplink connect

Complete security guarantees

- Various AAA mode such as RADIUS and TACACS+
- IEEE 802.1x authentication, MAC authentication, and bypass authentication
- Port secure MAC and limits on the MAC addresses to stop attacks from illegal users
- Dynamic ARP inspection, ARP rate limit
- Various ACL policies to control packet forwarding flexibly
- DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks
- DAI and IP Source Guard based on the DHCP binding table to prevent ARP flooding attacks and IP attacks
- Broadcast storm and loop detection to ensure the stability of the network
- Lightning protection for the power supply and all the Ethernet electric interfaces and protect hardware investment of the customer

Fine tunable QoS

- Rich scheduling policy such as SP, WRR, or SP+WRR, DRR, or SP+DRR
- Dual-bucket three-color CAR based on the traffic and H-CAR
- Statistics based on traffic

Mature IPv6 technology

- IPv6 PING/TELNET/SSH/FTP/SNMP/HTTP management
- IPv6 Source Guard, IPv6 prefix Snooping
- VRRPv3, IPv6 routing, and IPv6 Path MTU

Smart PoE

- IEEE802.3af/IEEE802.3at/IEEE802.3bt standard
- PD alive-check
- Configuring reboot the PD at a specific time
- Supplying power during specified time interval

Advanced management system

- SNMP, RMON, Telnet, SSH and provide friendly WEB management interface to increase the usability of the device
- Automatic configuration and loading. The administrator can put the configuration file set in advance to the TFTP server for the automatic loading of the switch while it is booting, thus simplifying the management and maintenance
- Raisecom USB automatic deployment. Simply insert the USB flash disk to easily upgrade, configure, and deploy the device

SPECIFICATIONS

P/N	ISCOM S2600-8T4X(-PWR)	ISCOM S2600-8S4T4X	ISCOM S2600-24T4X(-PWR/PWH)
Port type	Uplink: 4 x GE/10G SFP+ Downlink: 8 x GE RJ45	Uplink: 4 x GE RJ45 + 4 x GE/10G SFP+ Downlink: 8 x GE SFP	Uplink: 4 x GE/10G SFP+ Downlink: 24 x GE RJ45
Management interface	1 Console interface, 1 SNMP out-of-band interface, and 1 USB interface (except the S2600-8S4T4X)		
Switching capacity	96Gbit/s	104Gbit/s	128Gbit/s
Packets switch rate	71Mpps	77Mpps	95Mpps
Dimension(mm)	260(L) × 130(W) × 43.6(H) PoE: 300(L) × 220(W) × 43.6(H)	220(L) × 230(W) × 43.6(H)	440(L) × 220(W) × 43.6(H) PoE: 440(L) × 300(W) × 43.6(H)
Max Power consumption	13w PoE: 150w(AC), 260w(DC)	35w	24w PoE: 575w(AC), 840w(DC)
Power supply	Embedded with single power supply: AC, DC (for ISCOM S2600-24T4X-PWR/PWH, single/dual power supplies: AC/S, AC/D, DC/D, and AC_DC)		
P/N	ISCOM S2600-8T4S	ISCOM S2600-24T4S	ISCOM S2600-24S4X
Port type	Uplink: 4 x GE SFP Downlink: 8 x GE RJ45	Uplink: 4 x GE SFP Downlink: 24 x GE RJ45	Uplink: 4 x GE/10G SFP+ Downlink: 24 x GE SFP
Management interface	1 Console interface, 1 SNMP out-of-band interface, and 1 USB interface		
Switching capacity	24Gbit/s	56Gbit/s	128Gbit/s
Packets switch rate	18Mpps	42Mpps	95Mpps
Dimension(mm)	260(L) × 130(W) × 43.6(H)	440(L) × 220(W) × 43.6(H)	440(L) × 300(W) × 43.6(H)
Max Power consumption	13w	24w	43w
Power Supply	Embedded with single power supply: AC, DC		Embedded with single/dual power supplies: AC/S, DC/S, AC/D, DC/D, and AC_DC
Hardware	Working temperature: -10 to 55°C Relevant humidity: 5%~90% RH (non-condensing) Voltage range: AC 220V(100~240V), DC 48V(-36~-72V) PoE: AC 100~240 V, DC 45~57 V Note: 45~57 VDC IEEE802.3af 51~57 VDC IEEE802.3at 53~57 VDC IEEE802.3bt anti-thunder (cable port): CM 4kV		
L2	Jumbo frame up to 12K bytes Support VLAN based on MAC/protocol/IP subnet/interface. Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support 16K MAC address		
Multicast	IGMP snooping, MLD snooping, IGMP MVR, IGMP/MLD filter, IGMP/MLD proxy		
QoS/ACL	Support rate limiting based on the ingress direction and egress direction of interfaces. Support HCAR Each interface supports 8 queues and priority mapping Support traffic classification and traffic policy Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes Support congestion control WRED Support interface/queue shaping		
Reliability	Support manual aggregation and static LACP Support ERPS (ITU-T G.8032) Support STP/RSTP/MSTP and spanning tree protection functions: BPDU Guard, root Guard, loop protection, TC protection/suppression Support Loop Detection Protection (LBD)		
Security	Support AAA mode such as Tacacs+, radius; 802.1x authentication, MAC address authentication, and bypass authentication. Support Guest VLAN and Voice VLAN Support the whitelist, port security MAC, and MAC address limit Support IP attack prevent and ARP attack prevention: IPv4/v6 Source Guard and IPv6 prefix Snooping; DAI and ND Snooping Support SSHv2.0, CPU protection		
DHCP	DHCPv4/v6 client/server/snooping/relay DHCPv4 option61/82 DHCPv6 option18/37		
IPv6	Support dual stacks Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP Support ND, IPv6 Path MTU, VRRPv3		
IP Routing	IPv4 and IPv6 static route Support ECMP and policy routing		
Management and maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system Support local and remote port mirroring, traffic mirroring Support system logs and hierarchical alarms. Support power Dying Gasp. Support optical module DDM, Virtual Cable Test (VCT) and UDLT. Support IPv4/v6 ZTP Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)		
Clock-sync	NTPv4/v6, PTP-TC		
POE (for PoE switches only)	Support mandatory power supply mode for non-standard PDs Support PoE power management, including enabling/disabling interface power supply, interface output power configuration, power supply priority configuration, power overload protection, and overtemperature protection Support timed power supply for POE, timed restarting PDs, monitoring PD connectivity status, and restarting PD upon loss of connection		

L3 Access/Aggregation Switch

ISCOM S3600(-PWH) Series

The ISCOM S3600 (-PWH) series switches are new-generation 1000 Mbit/s green and energy-saving Ethernet switches independently developed by Raisecom, providing flexible 1000 Mbit/s access interfaces and 10 Gbit/s uplink interface. The switch is based on high-performance hardware platforms and the new-generation switching software platform of Raisecom, featuring flexible Ethernet networking, diverse security controls, and easy management. It also supports IPv4/v6 dynamic route, mature IPv6 features, intelligent virtualization technologies, flexible PoE management, and can be used to build a new intelligent access network with high reliability, easy expansion, and easy management. It can be widely used in scenarios, such as government agencies, enterprise park, and campus network.



ISCOM S3600(-PWH) Series

FEATURES

High capacity, high density

High reliability and protection

- STP, RSTP, MSTP
- LACP
- ITU-T G.8031 line protection and G.8032 ring protection
- Dual-system and dual-configuration-file redundancy backup

ISF Stacking

- Up to 4 devices
- Linear and ring stacking
- Uplink connect

Various security guarantees

- Various AAA mode such as RADIUS and TACACS+
- IEEE 802.1x authentication
- Port secure MAC and limits on the MAC addresses to stop attacks from illegal users
- Various ACL policies to control packet forwarding flexibly
- DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks
- DAI and IP Source Guard based on the DHCP binding table to prevent ARP flooding attacks and IP attacks
- Broadcast storm and loop detection to ensure the stability of the network
- Lightning protection for the power supply and all the Ethernet electric interfaces and protect hardware investment of the customer

Fine tunable QoS

- Rich scheduling policies such as SP, WRR, or SP + WRR, DRR, or SP+DRR
- Dual-bucket three-color CAR based on the traffic and H-CAR
- Statistics based on traffic

Mature IPv6

- IPv6 PING/telnet/SSH/FTP and IPv6 SNMP and HTTP management
- DHCPv6 Snooping, ND Snooping and Option18/37 to ensure the network security
- MLD Snooping to ensure the IPv6 multicast monitoring

Advanced management system

- SNMP, RMON, Telnet, SSH management interface to increase the usability of the device
- Automatic configuration and loading. The administrator can put the configuration file set in advance to the TFTP server for the automatic loading of the switch while it is booting, thus simplifying the management and maintenance
- White list, NetConf, DNS

Powerful and flexible PoE++

- IEEE802.3af/IEEE802.3at/IEEE802.3bt standard
- PD alive-check
- Configuring reboot the PD at a specific time
- Supplying power during specified time interval

IPv4/v6 Routing

- RIP, RIPng, OSPFv2/v3, ISISv4/v6, BGPv4/4+

Multicast Routing

- IGMPv1/v2, PIM-DM/SM/SSMv4
- MLDv1/v2, PIM-DM/SM/SSMv6

VRF Lite

SPECIFICATIONS

P/N	ISCOM S3600-24S8T6X	ISCOM S3600-48S6X	ISCOM S3600-24T6X(-PWH)
Port type	Uplink: 8 x GE RJ45 + 6 x GE/10G SFP+ Downlink: 24 x GE SFP	Uplink: 6 x GE/10G SFP+ Downlink: 48 x GE SFP	Uplink: 6 x GE/10G SFP+ Downlink: 24 x GE RJ45
Management interface	1 RJ45 Console interface, 1 SNMP out-of-band interface		
Switching capacity	184Gbit/s	216Gbit/s	168Gbit/s
Packets switch rate	136.9Mpps	160.7Mpps	125Mpps
Dimension(mm)	440(L) × 360 (W) × 43.6(H)	440(L) × 360(W) × 43.6(H)	440(L) × 360(W) × 43.6(H) PoE: 442(L) × 360(W) × 43.6(H)
Max Power consumption	61w	77w	49w PoE: 2200w
Power supply	Pluggable single/dual power supplies: AC/S, DC/S, AC/D, DC/D, and AC_DC		
P/N	ISCOM S3600-48T6X(-PWH)	ISCOM S3600-24T6X-L	ISCOM S3600-48T6X-L
Port type	Uplink: 6 x GE/10G SFP+ Downlink: 48 x GE RJ45	Uplink: 6 x GE/10G SFP+ Downlink: 24 x GE RJ45	Uplink: 6 x GE/10G SFP+ Downlink: 48 x GE RJ45
Management interface	1 RJ45 Console interface, 1 SNMP out-of-band interface		
Switching capacity	216Gbit/s	168Gbit/s	216Gbit/s
Packets switch rate	160.7Mpps	125Mpps	160.7Mpps
Dimension(mm)	440(L) × 360(W) × 43.6(H) PoE: 442(L) × 360(W) × 43.6(H)	440(L) × 300(W) × 43.6(H)	440(L) × 300(W) × 43.6(H)
Max Power consumption	60w PoE: 2920w	37w	58w
Power supply	Pluggable single/dual power supplies: AC/S, DC/S, AC/D, DC/D, and AC_DC	Embedded with single/dual power supplies: AC/S, DC/S, AC/D, DC/D, and AC_DC	
Hardware	Working temperature: -10 to 50°C Relevant humidity: 5%~90% RH (non-condensing) Voltage range: AC 220V(100~240V), DC 48V(-36~-72V) anti-thunder (cable port): CM 4kV PoE: AC 180-264V, DC 42-72V, anti-thunder (cable port): CM 6kV		
L2	Jumbo frame up to 12K bytes Support VLAN based on MAC/protocol/IP subnet/interface. Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support 32K MAC address MVRP, VTP, super vlan		
Multicast	IGMP snooping, MLD snooping, IGMP MVR, IGMP/MLD filter, IGMP/MLD proxy		
QoS/ACL	Support rate limiting based on the ingress direction and egress direction of interfaces. Support HCAR Each interface supports 8 queues and priority mapping Support traffic classification and traffic policy Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes Support congestion control WRED Support interface/queue shaping		
Reliability	Support manual aggregation and static LACP Support ELPS (ITU-T G.8031), ERPS (ITU-T G.8032) Support STP/RSTP/MSTP and spanning tree protection functions: BPDU Guard, root Guard, loop protection, TC protection/suppression Support Loop Detection Protection (LBD)		
Security	Support AAA mode such as Tacacs+, radius; 802.1x authentication, MAC address authentication, and bypass authentication. Support Guest VLAN and Voice VLAN. Support the whitelist, port security MAC, and MAC address limit. Support IP attack prevent and ARP attack prevention: IPv4/v6 Source Guard and IPv6 prefix Snooping; DAI and ND Snooping Support SSHv2.0, SFTP, HTTPS, CPU protection Support DOS attack prevention, ICMP attack prevention		
DHCP	DHCPv4/v6 client/server/snooping/relay DHCPv4 option61/82 DHCPv6 option18/37		
IPv6	Support dual stacks Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP Support ND, IPv6 Path MTU, VRRPv3		
IP Routing	IPv4 and IPv6 static route. Support ECMP and policy routing. Support RIP, RIPng, OSPFv2/v3, ISISv4/v6, BGPv4/4+ IPv4 multicast route: IGMPv1/v2, PIM-DM/SM/SSMv4 IPv6 multicast route: MLDv1/v2, PIM-DM/SM/SSMv6		
Management and maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system. Support local and remote port mirroring, traffic mirroring. Support system logs and hierarchical alarms. Support power Dying Gasp. Support optical module DDM, Virtual Cable Test (VCT) and UDLD. Support IPv4/v6 ZTP Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)		
Clock-sync	NTPv4/v6, PTP-TC		
POE (for PoE switches only)	Support mandatory power supply mode for non-standard PDs Support PoE power management, including enabling/disabling interface power supply, interface output power configuration, power supply priority configuration, power overload protection, and overtemperature protection Support timed power supply for POE, timed restarting PDs, monitoring PD connectivity status, and restarting PD upon loss of connection		

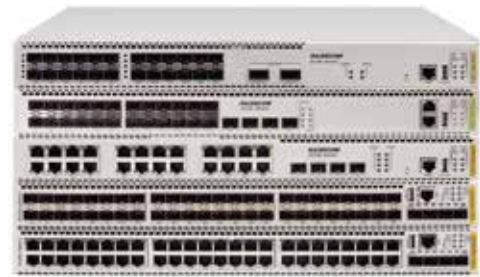
L2/L3 Aggregation Switch

ISCOM S5600G Series

The ISCOM S5600G series switches are the new-generation and high-efficiency Layer 2/3 Gigabit Ethernet switches. This series adopt a new-generation switching software platform based on RESP and flexible hardware design, such as ISCOM S5600G-24T4X (24x1GE RJ45 + 4x1/10GE SFP+), ISCOM S5600G-24S4X (24x1GE SFP + 4x1/10GE SFP+), ISCOM S5600G-48T4X (48x1GE RJ45 + 4x1/10GE SFP+), ISCOM S5600G-48S4X (48x1GE SFP + 4x1/10GE SFP+), and ISCOM S5600G-24X2C (24x1/10G SFP+ + 2x40/100GE QSFP28).

The ISCOM S5600G series feature high reliability, high security, easy maintenance, simple management. They adopt advanced OAM protocols, meeting the carrier's requirements for MEF CE2.0 standards to deliver EPL, EVPL, EP-LAN, EVP-LAN and E-Access services. The ISCOM S5600G series also support state-of-the-art IPv4/IPv6 unicast/multicast protocols and Intelligent Stacking Framework (ISF) technology.

With these features, they can be widely applied to various networking scenarios. For example, they can function as edge devices on the MAN, aggregation switches on a campus or enterprise network, or gigabit access in the Internet/Enterprise Data Center (IDC/EDC).



ISCOM S5600G Series

FEATURES

High capacity, high density

High reliability and protection

- STP, RSTP, MSTP
- LACP
- ITU-T G.8032 with fault switching time less than 50ms (the fault detection can be based on physical interface and CFM CC)
- Dual-system and dual-configuration-file redundancy backup

ISF Stacking

- Up to 4 devices
- Liner connection and ring connection
- Uplink connect

OAM and SLA

- Point-to-point: IEEE802.3ah
- End-to-end: hardware IEEE802.1ag to implement 3.3ms CC monitoring
- Rich SLA, ITU-T Y.1731
- MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services
- Hardware BFD

Various security guarantees

- Various AAA mode such as RADIUS and TACACS+
- IEEE 802.1x authentication
- Port secure MAC and limits on the MAC addresses to stop attacks from illegal users
- Various ACL policies to control packet forwarding flexibly
- DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks
- DAI and IP Source Guard based on the DHCP binding table to prevent ARP flooding attacks and IP attacks
- Broadcast storm and loop detection to ensure the stability of the network
- Lightning protection for the power supply and all the Ethernet electric interfaces and protect hardware investment of the customer

Fine tunable QoS

- Rich scheduling policies such as SP, WRR, or SP + WRR, DRR, or SP+DRR
- Dual-bucket three-color CAR based on the traffic and H-CAR
- Statistics based on traffic

IPv6 Ready

- IPv6 ping/telnet/SSH/FTP/SNMP/HTTP
- VRRPv3
- IPv6 routing, IPv6 Path MTU, IPv6 ACL
- IPv6 Source Guard, IPv6 prefix Snooping, ND Snooping
- DHCPv6 Client/Server/Relay/Snooping, RA Snooping and Option18/37 to ensure the network security
- MLD Snooping to ensure the IPv6 multicast monitoring

Advanced management system

- SNMP, RMON, Telnet, SSH, Web management interface to increase the usability of the device
- Support Raisecom Review NMS
- Automatic configuration and loading. The administrator can put the configuration file set in advance to the TFTP server for the automatic loading of the switch while it is booting, thus simplifying the management and maintenance

SPECIFICATIONS

P/N	ISCOM S5600G-24T4X	ISCOM S5600G-24S4X	ISCOM S5600G-48T4X	ISCOM S5600G-48S4X	ISCOM S5600G-24X2C
Port Number & Type	24x10/100/1000 RJ45 + 4 x 1G/10G SFP+	24x100/1000 SFP + 4 x 1G/10G SFP+	8x10/100/1000 RJ45 + 4 x 1G/10G SFP+	48x100/1000 SFP + 4 x 1G/10G SFP+	24x1/10G SFP+ + 2x40/100GE QSFP28
Management interface	SNMP interface (RJ45) console interface: 1 mini-USB Console				
Dimension(mm) (L) x (W) x (H)	1RU, 19" (440 x 360 x 44)				
Device Weight (kg)	4.42kg	4.50kg	6.22kg	6.77kg	4.52kg
Power Supply	hot-swappable power supplies: AC/S, DC/S, AC/D, DC/D, AC				
Voltage Scope	AC 220V(100~240V), DC 48V(-36~-72V)				
MAX Device Power (W)	52	75	58	93	88
FAN Noise	< 60 dBA				
Energy saving	Support 802.3az Ethernet EEE energy-saving Support intelligent Fan speed regulation-based temperature				
Working Temperature	-10-50°C				
Relevant Humidity	5%~90% RH (non-condensing)				
Anti-thunder	cable port anti-thunder CM 6kv power anti-thunder AC: DM 6kv / CM 6kv DC: DM 1kv / DM 2kv				
Jumbo Frame	9600B				
Buffer	4.5MB				
Memory (SRAM)	2GB				
Flash	32MB NOR FLASH + 4GB EMMC FLASH				
Switch Capacity (Gbps)	128	128	176	176	448
Packets Switch Rate (Mpps)	96	96	131	131	334
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support 12K MAC address MVRP, VTP, super vlan				
Multicast	IGMP snooping, MLD snooping, IGMP MVR, IGMP/MLD filter, IGMP/MLD proxy, PIM DM, PIM SM, PIM SSM				
QoS/ACL	Support rate limiting based on the ingress direction and egress direction of interfaces. Support HCAR Each interface supports 8 queues and priority mapping Support traffic classification and traffic policy Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes Support congestion control WRED Support interface/queue shaping				
Reliability	Support manual aggregation and static LACP Support ELPS (ITU-T G.8031), ERPS (ITU-T G.8032) Support STP/RSTP/MSTP and spanning tree protection functions: BPDU Guard, root Guard loop protection, TC protection/suppression Support Loop Detection Protection (LBD) Support Port Backup, Port Isolation Support ISF Stacking				
Security	Support AAA mode such as Tacacs+, radius Support 802.1x authentication, MAC address authentication Support the whitelist, port security MAC, and MAC address limit Support SSHv2.0, SFTP, HTTPS, CPU protection Support IP source guard, support prevention for DOS attack, ARP attack, SYN Flood of TCP attack, UDP Flood attack broadcast storm attack, and large traffic attack				
DHCP	DHCPv4/v6 client/server/snooping/relay DHCPv4 option61/82 DHCPv6 option18/37				
IPv6	Support dual stacks Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP Support ND, IPV6 Path MTU, VRRPv3 Support IPV6 NMS for Raisecom RCView system				
IP Routing	IPV4 and IPV6 static route Support ECMP and policy routing Support RIP, RIPng, OSPFv2/v3, ISISv4/v6, BGPv4/4+ IPV4 multicast route: IGMPv1/v2, PIM-DM/SM/SSMv4 IPV6 multicast route: MLDv1/v2, PIM-DM/SM/SSMv6				
Clock-sync	NTPv4/v6, PTP-TC				
Management and Maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system. Support local and remote port mirroring, traffic mirroring. Support system logs and hierarchical alarms. Support power Dying Gasp. Support optical module DDM, Virtual Cable Test (VCT) and ULDL. Support IPV4/v6 ZTP Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)				

L3 Aggregation/TOR Switch

ISCOM S6600 Series

The ISCOM S6600 series switch is a high-density 10GE/25GE product specifically designed and developed for cloud computing data centers and cloud computing networks. It supports pluggable power and fan modules, adopts advanced hardware architecture design, supports 100GE uplink ports, and provides flexible port combinations of 10GE, 25GE, and 100GE. The software platform adopts a new generation operating system independently developed by Raisecom, supporting rich data center features. ISCOM S6600 can be combined with the core switch ISCOM S10600 to build an elastic and high-quality 100GE data center network, meeting the network requirements of data centers in the cloud era. The S6600 series switches are positioned for high-density 10GE/25GE access, helping enterprises and operators build data center network platforms for the cloud computing era, and can also be used for the core or aggregation of campus networks.



ISCOM S6600 Series

FEATURES

High capacity, high density

- 48 x 10GE/25GE interface access, L2/L3 line speed forwarding, meeting the network request of high-density servers in next generation data centers
- 8 x 100G high-performance QSFP28 interfaces, which can be split into 4 x 10GE/25GE interfaces, making networking more flexible

Intelligent virtualization

- Support Intelligent HVS virtualization technology, which can virtualize multiple core switches into one logical device, unify operation and management, increase network reliability, achieve ms level link fault switching, and ensure uninterrupted critical services
- Redundant backup of control plane and data plane, avoiding the risk of single point failure, greatly enhancing the reliability of the system
- Support stacking with service interfaces, support stacking within and across racks, and long-distance stacking across regions

M-LAG

- Support M-LAG, which can achieve link aggregation between multiple devices, increase the link reliability from single slot level to device level, and achieve dual active link uplink and double the effective network connection bandwidth
- Each node device of M-LAG can be upgraded independently, without any service interruption
- Available for Overlay and traditional Underlay scenarios

Rich Datacenter features

- VxLAN, BGP-EVPN
- DCB, RoCEv2

Carrier-grade reliability

- Redundancy design for key components such as power supply and fan, all modules support hot-pluggable
- Hardware status visualization, achieving real-time monitoring for system temperature, power modules, fan, etc
- Hardware BFD, BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static route with fault detection time in ms level

Various security guarantees

- High-capacity ingress/egress ACL
- IEEE 802.1x authentication, AAA authentication
- CPU hardware protection, separation of data and control processing, preventing DOS attacks, illegal access and control plane overload

Complete IPv6 solution

- IPv4/IPv6 dual stack
- IPv6 static route, RIPng, OSPFv3, BGP4+, ISISv6

Advanced management system

- Rich management methods such as SNMP, RMON, Telnet, Web, CLI
- Telemetry technology to collect device data in real-time, and accurately present the network status, timely and effectively troubleshooting
- Automatic provisioning ZTP via USB or TFTP server
- Complete interface status indication with innovative 100GE port split indicator light, clearly displaying the status of all sub interfaces

Green and Energy-saving hardware design

- Strict front and rear straight air ducts, completely isolating hot and cold air ducts, improving heat dissipation efficiency, and meeting the design requirement of data center equipment room
- Intelligent speed regulation, effectively reducing device power consumption and noise
- Real-time power consumption monitoring, can turn off the optical modules of idle ports, establish green data center

SPECIFICATIONS

P/N	ISCOM S6600-48X8C	ISCOM S6600-48K8C
Port type	Uplink: 8 x 100GE QSFP28 Downlink: 48 x 10GE SFP+	Uplink: 8 x 100GE QSFP28 Downlink: 48 x 25GE SFP28
Switching capacity	4.8Tbit/s	
Packets switch rate	2000Mpps	
Dimension(mm)	442(L) × 360(W) × 44(H)	
Fan and Power supply	1+1 redundancy FAN 1+1 redundancy power supply	
Hardware	Working temperature: 0 to 45°C (altitude 0~1800m), maximum working temperature decrease 1 °C for each 220m increase in altitude 1800 to 5000m Relevant humidity: 5%~95% RH (non-condensing) Voltage range: AC 110V/220V(90~264V, 47Hz~63Hz), DC -48V(-36~-72V)	
Heat dissipation	Front air inlet and rear air outlet	
Virtualization	Support HVS, local and remote stacking, M-LAG Support VxLAN, BGP-EVPN, QinQ in VxLAN	
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support 32K MAC address Support MVRP	
Multicast	IGMPv1/v2/v3, IGMPv1/v2/v3 snooping, MLD snooping PIM-DM, PIM-SM, PIM-SSM Multicast policy and multicast QoS	
QoS/ACL	Support rate limiting based on the ingress direction and egress direction of interfaces Each interface supports 8 queues and priority mapping Support traffic classification and traffic policy Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes Support congestion control WRED, tail drop Support interface/queue shaping	
Reliability	Support ERPS (ITU-T G.8032) Support STP/RSTP/MSTP and spanning tree protection functions: BPDU Guard, root Guard, loop protection Support VRRP Support ethernet OAM (802.1ag and 802.3ah), ISSU, hot-patching Support hardware BFD, BFD for VRRP/BGP/ISIS/OSPF/static route	
Security	Support AAA mode such as Tacacs+, radius Support 802.1x authentication, MAC address authentication Support the whitelist, port security MAC, and MAC address limit Support SSHv2.0, SFTP, HTTPS, CPU protection Support IP source guard, support prevention for DOS attack, ARP attack, SYN Flood of TCP attack, UDP Flood attack, broadcast storm attack, and large traffic attack	
IP Routing	Support RIP, RIPng, OSPFv2/v3, ISISv4/v6, BGPv4/4+	
Management and maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system Support system logs and hierarchical alarms Support gRPC, Telemetry stream visualization Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)	

L3 Core Switch

ISCOM S10600 Series

The ISCOM S10600 series core switches are designed and developed by Raisecom specifically for cloud computing data center cores and next-generation smart park cores. This series provides two product forms: 6RU 3-slot chassis ISCOM S10603 and 13RU 8-slot chassis ISCOM S10608, which support ultra-high-density GE/10GE/25GE/40GE/100GE Ethernet ports. This series core switches can adapt to port density and performance requirements of different network scales and can be deployed in metropolitan area networks, and other areas according to services requirements scenarios where the park network or aggregation point in the Internet/Enterprise Data Center (IDC/EDC).



ISCOM S10608



ISCOM S10603

FEATURES

High capacity, high density

- Ultra-high density 10GE/40GE/100GE access ports
- Support up to 48+4 multi rate ports on a single card

High reliability and protection

- Support hardware BFD, support BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing, and achieve fast fault detection mechanisms for various protocols, with fault detection time reaching ms level
- Support hardware health status visualization, achieve real-time monitoring of key components, system temperature, power module, fan module, etc
- Main control card, power supply, and fan are designed with redundancy, and all modules support hot swapping to maximize the reliability and availability of the entire chassis

Flexible network expansion

- Good scalability and capacity for smoothly upgrade to 400G port in the future
- Equipped with ultra-high gigabit, ten gigabits, and multi rate port densities, adopting a new routing and switching platform to meet the requirements of enterprise access, aggregation, and core business carrying
- Support wireless, voice, video, and data applications, providing enterprises with highly available, low latency, and full service integrated network solutions
- Equipped with comprehensive Layer 2 and Layer 3 multicast protocols, supporting PIM SM, PIM DM, PIMSSM, and IGMP Snooping, support multi terminal high-definition video monitoring and video conference access

Network virtualization technology

- Support intelligent HVS virtualization technology, which can virtualize multiple core switches into a single logical device for unified operation and management
- Support cross device M-LAG, which can achieve link aggregation between multiple devices
- Each node device of M-LAG can be independently upgraded, and during the upgrade process, other nodes undertake services forwarding to achieve zero interruption of business
- Support ISF Stacking

Various security guarantees

- Various AAA mode such as RADIUS and TACACS+
- IEEE 802.1x authentication
- Support full port hardware level encryption technology MACsec, providing secure data transmission for hop-by-hop devices
- DAI and IP Source Guard based on the DHCP binding table to prevent ARP flooding attacks and IP attacks
- Support Cloud-sec encryption technology to ensure the security of VXLAN based business traffic
- Support CPU hardware protection queues, which can achieve separation of data and control processing, and prevent security threats such as DOS attacks, illegal access, and control plane overload

POE

- All series of chassis support PoE/PoE+/PoE++
- Maximum power supply capacity of single slot: 1500W
- Maximum power supply for a single port is 90W, which can provide power for AP, IP video phones, and more high-power terminals

IPv6 Ready

- IPv4/IPv6 dual stack
- IPv6 static routing, RIPng, OSPFv3, BGP+, IS-ISv6
- Support rich IPv4 and IPv6 transition technologies, ensure smooth transition from IPv4 to IPv6
- IPv6 independent networking and IPv4/IPv6 mixed networking

Advanced management system

- CLI, Web, RMON, Telnet, SSH management interface to increase the usability of the device
- Support Telemetry technology, collect device data in real-time

Lower power design

- Strict front and rear straight air ducts are adopted, with no middle plate design and low chassis wind resistance
- Support partitioned heat dissipation and intelligent speed regulation, achieving a reduction in overall power consumption
- Optical interface card adopts a PHY free design to reduce the power consumption of the optical port. The electrical interface card supports the IEEE 802.3az energy efficiency Ethernet standard, has a low-power idle mode, supports fast conversion between normal operation and low-power status, and achieves low flow and low power consumption

SPECIFICATIONS

P/N	ISCOM S10603	ISCOM S10608
Dimension(mm) (L) x (W) x (H)	444x460x280.9	444x640x597
Slots of Main Control Card	2	2
Slots of Switching Card	N/A	6
Slots of Service Card	3	8
Slots of FAN	3	3
Slots of Power Supply Module	4	8
Main Control Card Redundancy	Hot standby (1:1) mode	Hot standby (1:1) mode
Maximum Power Supply Capacity of the entire Chassis	Configure 4*3000W power modules: 12000W (including system and PoE parts)	Configure 4*3000W power modules (system part): 12000W Configure 4*3000W power modules (PoE part): 12000W
Power Redundancy	System power and PoE power are shared, supporting N+0, N+1, N+N modes	The system power supply and PoE power supply are independent, supporting N+0, N+1, and N+N modes respectively
Voltage Scope	AC 110V/220V(90~290V), DC -48V/-60V(-38.4~-72V)	
Fan Redundancy	The fan module supports hot backup. After a single fan module fails, the system supports normal operation in the short term, but it is recommended to replace the faulty module immediately	
Working Temperature	0-45°C	
Relevant Humidity	10%~90% RH (non-condensing)	
Heat Dissipation	Front air inlet and rear air outlet; Partition heat dissipation and intelligent speed regulation	
Virtualization	Support HVS, local and remote stacking, M-LAG Support VxLAN, BGP-EVPN, QinQ in VxLAN	
L2	Support VLAN based on MAC/protocol/IP subnet/interface. Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support GVRP Support MVRP	
Multicast	IGMPv1/v2/v3, IGMPv1/v2/v3 snooping, MLD snooping PIM-DM, PIM-SM, PIM-SSM Multicast policy and multicast QoS	
QoS/ACL	Support Ingress/Egress ACL. Support ACL, CAR, Remark, Schedule Each interface supports 8 queues and priority mapping. Support traffic classification and traffic policy. Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes. Support congestion control WRED, tail drop Support interface/queue shaping. Support composite stream classification based on Layer2 protocol header, Layer3 protocol, Layer4 protocol, 802.1p priority.	
Reliability	Support ERPS (ITU-T G.8032). Support STP/RSTP/MSTP and spanning tree protection functions: BPDU Guard, root Guard, loop protection Support VRRP Support ethernet OAM (802.1ag and 802.3ah), ISSU, hot-patching Support hardware BFD, BFD for VRRP/BGP/ISIS/OSPF/static route Support M-LAG Support ISF cross chassis E-Trunk	
Security	Support AAA mode such as Tacacs+, radius; Support 802.1x authentication, MAC address authentication Support the whitelist, port security MAC, and MAC address limit. Support SSHv2.0, SFTP, HTTPS, CPU protection Support IP source guard, support prevention for DOS attack, ARP attack, SYN Flood of TCP attack, UDP Flood attack, broadcast storm attack, and large traffic attack	
IP Routing	Support RIP, RIPng, OSPFv2/v3, ISISv4/v6, BGPv4/4+	
Management and maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system. Support system logs and hierarchical alarms. Support gRPC, Telemetry stream visualization Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)	

L2 DIN-Rail Unmanaged Industrial Switch

ISCOM1000-I Series

The ISCOM1000-I DIN-Rail switches consist of unmanaged industrial switches with a wide selection of port numbers, speed, and media types. ISCOM1000-I series are designed for industrial automation and control in industrial field. This DIN-Rail switches series can operate stably for a long time in harsh environments which are IP40 rated, support dual power supplies input, adopt low-power fanless cooling technology with a wide operating temperature ranging from - 40 to 75°C, and ensure up to 35-year Mean Time Between Failures (MTBF) and a 3-year warranty.



ISCOM1000-I Series Unmanaged L2 DIN-Rail

P/N	ISCOM 1000-I-FX-FE-x-DCW24	ISCOM 1000-I-FX-4FE-x-DCW24	ISCOM 1000-I-5FE-DCW24	ISCOM 1000-I-FX-7FE-x-DCW24	ISCOM 1000-I-8FE-DCW24
Port number & Type	1x100M M/S1/S2 fiber 1x10/100M RJ45	1x100M M/S1/S2 fiber 4x10/100M RJ45	5x10/100M RJ45	1x100M M/S1/S2 fiber 7x10/100M RJ45	8x10/100M RJ45
Dimension (mm)	32(W)x100(D)x120(H)	32(W)x100(D)x120(H)	32(W)x100(D)x120(H)	56(W)x105(D)x135(H)	56(W)x105(D)x135(H)
Weight (kg)	0.43	0.56	0.56	0.68	0.68
Power Supply	DC: Dual inputs				
Voltage Scope	DC: 12V/24VDC (9~36VDC)				
MAX power (W)	2.5	4	4	5.5	5.5
Jumbo Frame	10K bytes				
Switch Capacity (Mbps)	400	1000	1000	1600	1600
Working Temperature	-40°C to 75°C				
Protection Level	IP40				

L2 DIN-Rail Managed Industrial Switch

Gazelle S1000i-LI Series, Gazelle S1010i-GL Series, Gazelle S1020i-GL Series, Gazelle 1020i-LI Series, Gazelle S1020i-PWH/PWR-GL Series

The Gazelle DIN-Rail switches consist of compact and manageable industrial switches with a wide selection of port numbers, speed and media types. Gazelle S1010i-GL and Gazelle S1020i-GL series are designed for Automatic Control System (ACS) in industrial field, while Gazelle S1000i-Li and Gazelle S1020i-Li series are cost-efficient solutions designed to meet the requirements of safe city, smart transportation, and industrial data backhaul. In addition, the Gazelle S1020i-PWR-GL series and the Gazelle S1020i-PWH-GL Series provide port with standard IEEE802.3bt, IEEE802.3at, and IEEE802.1af support. All these DIN-Rail switches enable delivery of reliable, continuous, and manageable services by complying with some industrial regulations and standards, which can operate stably for a long time in harsh environments. Network redundancy and reliability are guaranteed with LACP, G.8032 ERPS (<50ms switch-over time). All these DIN-Rail switches are IP40 rated, support dual power supplies input, adopt low-power fanless cooling technology with a wide operating temperature ranging from - 40 to 75°C, and ensure up to 35-year Mean Time Between Failures (MTBF) and a 3-year warranty. They can support wall mounting and also rack mounting. Additionally, the Gazelle S1000i series, the Gazelle S1010i-GL Series, Gazelle S1020i-PWH-GL Series and the Gazelle S1020i(-PWR)-GL Series are designed to satisfy the requirements of data transmission in areas of smart grid (IEC 61850-3, IEEE 1613), transportation (EN50121-4), energy and industrial automation.



Gazelle S1000i-LI Series



Gazelle S1020i-GL Series



Gazelle S1020i-PWH-GL Series



Gazelle S1020i-LI Series

Gazelle S1000i-LI Series Cost-effective L2 GE DIN-Rail

P/N	Gazelle S 1000i-2GF-8GE-LI	Gazelle S 1000i-2GF-4GE-LI	Gazelle S 1000i-4GF-8GE-LI
Interfaces	2x100/1000M SFP 8x10/100/1000M RJ45	2x100/1000M SFP 4x10/100/1000M RJ45	4x100/1000M SFP 8x10/100/1000M RJ45
Dimension(mm)	80(W) × 121(D) × 150(H)	56(W) × 105(D) × 135(H)	80(W) × 121(D) × 150(H)
Weight(kg)	1	1	1
Power Supply	AC: single input		
Voltage Scope	AC: 110V/220VAC (100~240VAC)		
MAX power(W)	7		11
Jumbo Frame	10K bytes		
Switch Capacity	20	12	24
Working Temperature	-40°C to 75°C		
Protection Level	IP40		

Gazelle S1010i-GL/S1020i-GL Series L2 GE DIN-Rail

P/N	Gazelle S1010i-GF-2GE-GL	Gazelle S1020i-2GF-4GE--GL	Gazelle S1020i-4GF-8GE-GL
Interfaces	1x100/1000M SFP 2x10/100/1000M RJ45	2x100/1000M SFP 4x10/100/1000M RJ45	4x100/1000M SFP 8x10/100/1000M RJ45
Dimension(mm)	56(W) × 105(D) × 135(H)		80(W) × 130(D) × 150(H)
Weight(kg)	0.7		1.0
Power Supply	AC: single input DCW24: dual input DCW48: dual input	AC: single input DCW48: dual input	
Voltage Scope	AC: 110V/220VAC (100~240VAC) & 220VDC (170~300VDC) DCW24: 12V/24V(10~36VDC) DCW48: 24V/48V(20~72VDC)	AC: 110V/220VAC (100~240VAC) 220VDC (170~300VDC) DCW48: 24V/48V(20~72VDC)	
MAX power(W)	4	7	12
Jumbo Frame	10K bytes		
Switch Capacity	6	12	24
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC IEC 61850-3, IEEE 1613, EN50121-4		

Gazelle S1020i-LI Series L2 GE DIN-Rail

P/N	Gazelle S1020i-2GF-4GE-LI	Gazelle S1020i-2GF-8GE-LI	Gazelle S1020i-4GF-8GE-LI
Interfaces	2x1000M SFP 4x10/100/1000M RJ45	2x1000M SFP 8x10/100/1000M RJ45	4x1000M SFP 8x10/100/1000M RJ45
Dimension(mm)	56(W) × 105(D) × 135(H)		80(W) × 130(D) × 150(H)
Weight(kg)	0.7	1.0	1.1
Power Supply	DCW24: dual input		
Voltage Scope	DCW24: 12/24V(9~36VDC)		
MAX power(W)	7	8	12
Jumbo Frame	10K bytes		
Switch Capacity (Gbps)	12	20	24
Working Temperature	-40°C to 75°C		
Protection Level	IP40		

Gazelle S1020i-LI Series L2 GE DIN-Rail with Serial Ports

P/N	Gazelle S1020i-2GF-4GE-2R-LI	Gazelle S1020i-8GF-8GE-2R-LI
Interfaces	2x1000M SFP 4x10/100/1000M RJ45 2x RS232/485 serial ports	8x1000M SFP 8x10/100/1000M RJ45 2x RS232/485 serial ports
Dimension(mm)	56(W) × 105(D) × 135(H)	80(W) × 130(D) × 150(H)
Weight(kg)	0.7	1.2
Power Supply	DCW24: dual input	
Voltage Scope	DCW24: 12/24V(9~36VDC)	
MAX power(W)	8	16
Jumbo Frame	10K bytes	
Switch Capacity (Gbps)	12	32
Working Temperature	-40°C to 75°C	
Protection Level	IP40	

Gazelle S1020i-PWH-GL/PWR-GL Series L2 GE PoE DIN-Rail

P/N	Gazelle S1020i-2GF-4GE-PWH-GL	Gazelle S1020i-4GF-8GE-PWH-GL	Gazelle S1020i-2GF-8GE-PWR-GL
Interfaces	2x100/1000M SFP 4x10/100/1000M RJ45 PoE	4x100/1000M SFP 8x10/100/1000M RJ45 PoE	2x1000M SFP 8x10/100/1000M RJ45 PoE
Dimension(mm)	80(W) x 130(D) x 150(H)	98(W) x 155(D) x 177(H)	80(W) x 130(D) x 150(H)
Weight(kg)	0.9	1.5	0.9
Power Supply	DC48: dual input		
Voltage Scope	DCW48: 48V(44~57VDC)		
MAX power(W)	10+180	15+360	12+240
MAX POE power(W)	180	360	240
Jumbo Frame	9K bytes		10K bytes
Switch Capacity (Gbps)	12	24	20
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC EN 50121-4		

SPECIFICATIONS of Din-Rail Series

L2	Jumbo frame up to 10K bytes Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) Support 8K MAC address
Multicast	IGMP snooping, MLD snooping, Static multicast group
QoS/ACL	Support rate limiting based on the ingress direction and egress direction of interfaces. Support HCAR Each interface supports 8 queues and priority mapping Support traffic classification and traffic policy Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes Support congestion control WRED Support interface/queue shaping
Reliability	Support manual aggregation and static LACP Support ERPS (ITU-T G.8032) Support Interface Backup Support Loop Detection Protection (LBD)
Security	Support AAA mode such as Tacacs+, radius; 802.1x authentication, MAC address authentication, and bypass authentication. Support Guest VLAN and Voice VLAN Support port security MAC, and MAC address limit Support IP attack prevent and ARP attack prevention: IPv4/v6 Source Guard and IPv6 prefix Snooping; DAI and ND Snooping Support SSHv2.0, CPU protection
DHCP	DHCP client/server/snooping/relay DHCP option61/82/43
IPv6	Support dual stacks Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP Support IPv6 ACL
Management and maintenance	Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0) Support the Raisecom RCView system Support local and remote port mirroring, traffic mirroring Support system logs and hierarchical alarms. Support power Dying Gasp Support optical module DDM, Virtual Cable Test (VCT) and UDLD Support IPv4/v6 ZTP Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)
POE (for PoE switches only)	Support mandatory power supply mode for non-standard PDs Support PoE power management, including enabling/disabling interface power supply, interface output power configuration, power supply priority configuration, power overload protection, and overtemperature protection Support timed power supply for POE, timed restarting PDs, monitoring PD connectivity status, and restarting PD upon loss of connection

L2/L3 19" Rack-Mounted Industrial Switch

Gazelle S3028i-LF Series, Gazelle S3028i-MGL Series, Gazelle S3028i-CGS, ISCOM3052G(K)

The Gazelle 19" rack-mounted switches are designed to satisfy the broadband backbone transportation and aggregation requirements under rigorous industrial and business conditions. The products support a flexible electrical and SFP optical interface with combinations of up to 4 x 10GE/GE uplinks and 48 x GE downlinks. The Gazelle S3028i-LF series are cost-effective 1RU rack-mount industrial switches with cost efficiency. This series switches are specially designed to meet requirements for industrial automation control systems, and have a very flexible port portfolio. The Gazelle S3028i-PWH-MGL adopts a standard 1RU chassis and offers high-density interfaces, including four 1/10Gbit/s uplink optical interfaces, max twenty-four 100/1000Mbit/s auto-negotiation downlink optical interfaces, and Max sixteen 1000Mbit/s PoE interfaces. The Gazelle S3028i-MGL enables maximum flexibility when configured, in rings (intersect ring and tangent ring topologies), ensuring sub-50ms switchover time. Enhanced security is provided by supporting IEEE802.1x, RADIUS and other authentication methods. The ISCOM3052G GE modular NMS- managed Layer 3 industrial switch is specially designed for the Automatic Control System (ACS) in the industrial field, which can operate stably for a long time in harsh environments. The ISCOM3052G adopts a fully modular design, provides high-density interfaces, and is configurable and scalable. It supports complete Layer 3 routing protocols, delivers industry-leading ring network technologies, supports multiple industrial redundant ring network protocols. The Gazelle S3028i-CGS GE NMS-managed Layer 3 industrial switch has 1RU rack-mount design and is also specially designed for the Automatic Control System (ACS) in the industrial field, which can operate stably for a long time in harsh environments. The S3028i-CGS provides high-density interfaces, including twelve 1/10Gbit/s uplink optical interfaces, max twenty-four 10/100/1000Mbit/s auto-negotiation electrical downlink interfaces. It supports complete Layer 3 routing protocols, delivers industry-leading ring network technologies, supports multiple industrial redundant ring network protocols. All these Rack- Mountable series Switches can sustain high performance in extreme environments. They also claim a fanless design, as well as IP40 dust protection housing, a redundant power supply, and are compliant with IEC 61850-3, IEEE 1613, and EN50121-4. All these switches adopt low-power fanless cooling technology with a wide operating temperature ranging from - 40 to 85°C, and ensure up to 35-year Mean Time Between Failures (MTBF) and a 3-year warranty.



Gazelle S3028i-MGL



Gazelle S3028i-CGS



Gazelle S3028i-LF Series



ISCOM3052G(K)

Gazelle S3028i-LF Series Cost-Effective L2 GE Rack-Mounted

P/N	Gazelle S3028i-4GF-24GE-LF	Gazelle S3028i-4GX-16GE8GF-LF	Gazelle S3028i-4X-24FE-LF
Interfaces	4x1GE SFP 24x10/100/1000M RJ45	4x1G Combo 16x10/100/1000M RJ45 + 8x1GE SFP	4x100M fixed fiber ports 24x10/100M RJ45
Dimension (mm)	1RU, 19" 440(L) x 300(D) x 43.6(H)		
Weight (kg)	2		
Power Supply	HIP/D, HIP/S, DC/S or DC/D		
MAX power (W)	30		
Voltage Scope	HIP: 110/220VAC (100~240VAC) 110/220VDC (88~300VDC) DC: 24/48VDC (20~72VDC)		
Jumbo Frame	10K bytes		
Switch Capacity (Gbps)	56	5.6	
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC		

Gazelle S3028i-CGS & ISCOM3052G(K) L3 GE Rack-Mounted

P/N	Gazelle S3028i-12XF-24GE-CGS	ISCOM3052G(K)
Interfaces	12x10GE SFP+ 24x10/100/1000M RJ45	4x10GE SFP+ 12x1GE combo + 12x10/100/1000M RJ45 3 expansion slots
Card	N/A	Expansion cards: 8GE: 8x10/100/1000M RJ45 8GF: 8x100/1000M SFP
Dimension (mm)	1RU, 19" 440(L) x 320(D) x 44(H)	2RU, 19" 440(L) x 320(D) x 88(H)
Weight (kg)	4.1	9.1
Power Supply	AC/D or DC/D	AC/D or AC/S
MAX power (W)	65	49
Voltage Scope	AC: 110/220VAC (100~240VAC) & 110/220VDC (88~300VDC) DC: 24/48VDC (20~72VDC)	AC: 110/220VAC (100~240VAC) & 110/220VDC (88~300VDC)
Jumbo Frame	10K bytes	
Switch Capacity (Gbps)	440	176
Working Temperature	-40°C to 75°C	
Protection Level	IP40	
Compliance	CE, UL/FCC IEC 61850-3, IEEE 1613, EN50121-4	

Gazelle S3028i-MGL Series L2 GE Rack-Mounted

P/N	Gazelle S3028i-4XF-16GE-PWH-MGL	Gazelle S3028i-4XF-16GE-MGL	Gazelle S3028i-4XF-16GF-MGL
Interfaces	4x10GE SFP+ 4x1GE combo + 12x10/100/1000M RJ45 (POE+/POE++) 1 expansion slot	4x10GE SFP+ 4x1GE combo + 12x10/100/1000M RJ45 1 expansion slot	4x10GE SFP+ 4x1GE combo + 12x100/1000M SFP 1 expansion slot
Card	Expansion cards: 8GE: 8x10/100/1000M RJ45; 8GF: 8x100/1000M SFP		
Dimension (mm)	1RU, 19" 440(L) x 320(D) x 44(H)		
Weight (kg)	2.1		
Power Supply	HIP/D, HIP/S, DC/S or DC/D		
MAX power (W)	50+480	50	
MAX POE power (W)	480	N/A	
Voltage Scope	HIP: 110/220VAC (100~240VAC) & 110/220VDC (88~300VDC) DC: 24/48VDC (20~72VDC)		
Jumbo Frame	10K bytes		
Switch Capacity (Gbps)	128		
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC IEC 61850-3, IEEE 1613, EN50121-4		

SPECIFICATIONS of Din-Rail Series

L2	<p>Jumbo frame up to 10K bytes</p> <p>Support VLAN based on MAC/protocol/IP subnet/interface.</p> <p>Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1)</p> <p>Support 64K MAC address</p>
Multicast	<p>IGMP snooping, MLD snooping, IGMP MVR, Static multicast group</p>
QoS/ACL	<p>Support Flow-based single-rate dual-color CAR</p> <p>Each interface supports 8 queues and priority mapping.</p> <p>Support traffic classification and traffic policy.</p> <p>Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes.</p> <p>Support ACL (MAC, IP, MAC+IP, IPv6, and user-defined).</p> <p>Support interface/queue shaping</p>
Reliability	<p>Support manual aggregation and static LACP.</p> <p>Support ERPS (ITU-T G.8032).</p> <p>Support STP/RSTP/MSTP</p> <p>Support Loop Detection Protection (LBD).</p> <p>Support Port Backup</p>
Security	<p>Support AAA mode such as Tacacs+, radius; 802.1x authentication, MAC address authentication, and bypass authentication. Support Guest VLAN and Voice VLAN.</p> <p>Support the whitelist, port security MAC, and MAC address limit.</p> <p>Support IP attack prevent and ARP attack prevention: IPv4/v6 Source Guard and IPv6 prefix Snooping; DAI and ND Snooping.</p> <p>Support SSHv2.0, SFTP, HTTPS, CPU protection</p> <p>Support DOS attack prevention, ICMP attack prevention</p>
DHCP	<p>DHCP client/server/snooping/relay</p> <p>DHCP option61/82</p>
IPv6	<p>Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP.</p> <p>Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP.</p> <p>Support IPv6 ACL.</p>
IP Routing	<p>Static route, RIPv1/v2, OSPFv2, ECMP, PIM-SM</p>
Management and maintenance	<p>Support diversified management methods (CLI, SNMPv1/v2c/v3, Web network management, Telnet, and SSHv2.0)</p> <p>Support the Raisecom RCView system.</p> <p>Support local and remote port mirroring, traffic mirroring.</p> <p>Support system logs and hierarchical alarms. Support power Dying Gasp.</p> <p>Support optical module DDM, Virtual Cable Test (VCT) and UDLD.</p> <p>Support IPv4/v6 ZTP</p> <p>Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)</p>
POE (for PoE switches only)	<p>Support mandatory power supply mode for non-standard PDs.</p> <p>Support PoE power management, including enabling/disabling interface power supply, interface output power configuration, power supply priority configuration, power overload protection, and overtemperature protection.</p> <p>Support timed power supply for POE, timed restarting PDs, monitoring PD connectivity status, and restarting PD upon loss of connection</p>

IoT Industrial Gateway

Gazelle G512i, Gazelle G532i

The Gazelle G series industrial IoT gateway transmits data from many industrial devices in different areas to the remote cloud center for device monitoring, device diagnosis, program maintenance, and fault alarm, providing users with a simple and reliable remote transmission solution of industrial Internet data for industrial mutual control, device diagnosis, program maintenance and fault alarm.



Gazelle G512i



Gazelle G532i

FEATURES

- High industrial protection level, ensuring long-term and stable operation of the device
- Offline cache of data, up to 1-month data
- Multiple network modes, supporting 2G/3G/4G networks of carriers and self-built Lora networks
- Multiple pre-configured cloud access capabilities, supporting PaaS networking
- Optional CAN expansion module, easily expanding various interfaces
- Container technology, facilitating secondary development for customers

SPECIFICATIONS

Feature	Sub-feature	Gazelle G512i	Gazelle G532i
Hardware performance	CPU	ARM Cortex-A7 single-core 528Mhz-696Mhz	ARM Cortex-A53 dual-core 1.2Ghz
	Memory	512MB DDR3L	1GB DDR3L
	FLASH	1GB Nand flash	8GB eMMC
Interfaces	Serial interface	2*4-pin RS485	3*4-pin RS485 1*4-pin RS232
	Ethernet interface	2 x 100 Mbit/s RJ45	WAN/LAN: 4x10/100/1000M RJ45 LAN: 4x10/100/1000M RJ45 + 2x100/1000M SFP
	PoE	N/A	802.3af/at/bt, up to 120W
	Wireless	802.11n 1x1 150Mbps	5G: supports 5G NR NR/LTE-TDD/LTE-FDD/WCDMA systems. Zigbee
	CPU	ARM Cortex-A7 single-core 528Mhz-696Mhz	ARM Cortex-A53 dual-core 1.2Ghz
	4G/5G	LTE-FDD Band 1/3/5/7/8/20/28, LTE-TDD Band 38/40, UMTS Band 1/5/8	5G Band: N1/N2/N3/N5/N7/N8/N12/N20/N25/N28/N40/N41/N66/N71/N77/N78/N79 LTE-FDD Band: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71 LTE-TDD Band: B34/B38/B39/B40/B41/B42/B43/B48 LTE DL 4x4 MIMO: B1/B2/B3/B4/B7/B25/B30/B38/B40/B41/B42/B43/B48/B66 UMTS Band: B1/B2/B3/B4/B5/B8
	SIM card	Mirco SIM card	Dual Mirco SIM card
TF card	Up to 128 GB	N/A	
Power Supply	Power interface	24VDC	24VDC
	Power Consumption	7W	30W+PoE 120W
Dimension	Dimension(mm)	56(W) × 105(D) × 135(H)	80(W) × 130(W) × 150(H)
	Antenna	2 X SMA; 1 X RSMA	6 X SMA; 1 X RSMA
Working Environment	Protection Level	IP40	IP40
	Working Temperature	-40°C to 70°C	-25°C to 70°C
	Storage temperature	-40°C to 85°C	-40°C to 85°C
	Working humidity	5-95% RH (non-condensing)	5-95% RH (non-condensing)
Compliance	CE, UL/FCC		

Chapter 5

Small Cell

Small Cell base stations are critical supplementary pieces for mobile networks. They are always considered and deployed to eliminate network blind spots. While high-power large-capacity macro cell base stations provide major network coverage over open areas and long ranges, small cell base stations can be flexibly deployed to strengthen mobile signal quality in either dense population hot-spots such as shopping malls, cinemas, theatres and so on, or cover difficult terrains and rural areas where the population is not much worthy building macro cell stations.

Small cell base station installation can also help to improve the user experience of mobile subscribers. In hot-spot areas, the deployment of small cells can effectively balance wireless channels bandwidth, so that data transfer speeds can be efficiently improved. Small cells can also help to extend handset battery life by reducing transmission power draw, so they won't always work in high power mode to connect macro stations.

Integrated Low-power Small Cell (4G)

BLBS3111/BLBS3211

An in-door 4G/LTE small cell --- BLBS3211-Bx series, which aims to strengthen wireless signal in-door coverage in office buildings, shopping malls, factories, and other in-door business environment, such as underground parking lots and elevators.



BLBS3211-Bx

FEATURES

- Small size and light weight
- Simplest deployment, good concealment
- Cost-effective

SPECIFICATIONS

P/N	BLBS3111/BLBS3211
Frequency Band	FDD LTE: Band1, Band3 TDD LTE: Band 40
Bandwidth	5M/10M/15M/20MHz, single carrier
Max transmit power	2*125mW
MIMO	2*2 MIMO
Number of supported users	32 simultaneous active subscribers, 96 RRC-connected subscribers
Weight	≤0.8KG
Power supply	PoE or 220V AC
Interfaces	1*WAN, 1*LAN, 1*SFP, 1*GPS
Installation	Ceiling/Wall mountable
Operating temperature	-10°C to +45°C
Protection class	IP30

Integrated High-power Small Cell (4G/5G)

BLBS3211-BxP43

An out-door 4G/LTE&5G small cell series which is targeting out-door rural areas where the residents are unable to make phone calls and access the Internet.



BLBS3211-BxP43

FEATURES

- High-integration, all-in-one design
- Flexible backhaul, MPLS MAN/xPON/Internet
- Simple deployment, pole/wall/ceiling mounted

SPECIFICATIONS

P/N		RCNB32303	RCNB323T5	RCNB32308	RCNB32340
Tx	Frequency Band	Band 3	Band 5	Band 8	Band 40
	Bandwidth	5M/10M/15M/20M	5M/10M	5M/10M	5M/10M/15M/20M
	Frequency	1805-1830MHz 1830-1880MHz	869-880MHz	934-960MHz	2320-2370MHz
	Max transmit power	2*40W/2*60W	2*40W/2*60W	2*40W/2*60W	2*40W
Rx	Frequency	1710-1735MHz 1735-1785MHz	824-835MHz	889-915MHz	2320MHz-2370MHz
	Sensitivity	Better than -101.5dBm	Better than -101.5dBm	Better than -101.5dBm	Better than -101.5dBm
Number of carrier		Single carrier			
Number of supported users		128 simultaneous active users, 384 RRC-connected users			
Peak throughput		DL 200Mbps, UL 75Mbps			
Weight		≤ 13kg			
Protection class		IP65			
Operating Temperature		-40 to +55°C			
Power supply		-48V DC or 220V AC			
Synchronization mode		GNSS via GPS/Beidou, IEEE 1588v2, 1588ACR			

P/N		RCNB51328	RCNB51301	RCNB51341	RCNB51378
Tx and Rx	Frequency band	N28	N1	N41	N78
	Carrier bandwidth	10/20/30/40MHz	20/40MHz	100MHz	100MHz
	Frequency	DL: 758-803MHz UL: 703-748MHz	DL: 2110-2165MHz UL: 1920-1975MHz	2515-2675MHz	3300-3600MHz
	Channels	2T2R, support 2*2 MIMO			
	Max transmit power	2*40W			
	Rx sensitivity	Better than -103 dBm			
	Modulation mode	QPSK, 16QAM, 64QAM, 256QAM			
	Carriers	Single carrier			
Number of supported users		200 activated users and 1200 RRC-connected users			
Peak throughput		DL: 440Mbps UL: 220Mbps (40MHz BW)	DL: 440Mbps UL: 220Mbps (40MHz BW)	DL: 760Mbps UL: 230Mbps (100MHz BW, 5ms single)	DL: 700Mbps UL: 320Mbps (100MHz BW, 2.5ms dual)
	Volume	≤ 21 L	≤ 21 L	≤ 16 L	≤ 16 L
	Weight	≤ 18 kg	≤ 18 kg	≤ 14 kg	≤ 14 kg
Protection class		IP65			
Installation mode		Pole-mount and wall-mount			
Operating temperature		-40°C to 55°C			
Power supply		-48V DC or 220V AC			
Synchronization mode		GPS, BDS, and IEEE 1588v2			

Small Cell Network Management System

BLOM6200

BLOM6200 as a comprehensive network management system for small cell series is in conjunction with backhaul network application scenarios to implement centralized and unified management. The system adopts a Microsoft architecture mode with service-oriented functional modules and UI and services separated design can achieve the centralized and distributed deployment based on different network scenarios. The system supports a maximum of 1000 clients comprises ACS service, STUN service and diversified management modules which includes configuration, fault, security performance, log system, northbound interface, HTTP file server, FTP file server service and MySql database.



BLOM6200

FEATURES

- Unified NMS platform to provide end-to-end management for Small Cells
- Support all standard functions of network management system, support MR and CDL data collection and analysis, support extended SON function
- High reliability, friendly interface
- Configurable capacity, support 3,000 to 100,000 base stations management

SPECIFICATIONS

P/N	BLOM6200
Capacity	Support 20,000 Small Cells access
Throughput	20Gbps
IPsec tunnel number	≥ 10,000
Height	2RU
Weight	18kg
Power Consumption	750W
Interfaces	2*GE RJ45,4*10GE RJ45/SFP+
Encryption Algorithm	DES, 3DES, AES
Checksum	MD5, SHA
Security Mode	AH, ESP, AH+ESP
Authentication Mode	PSK, EAP-AKA and Digital Certificate

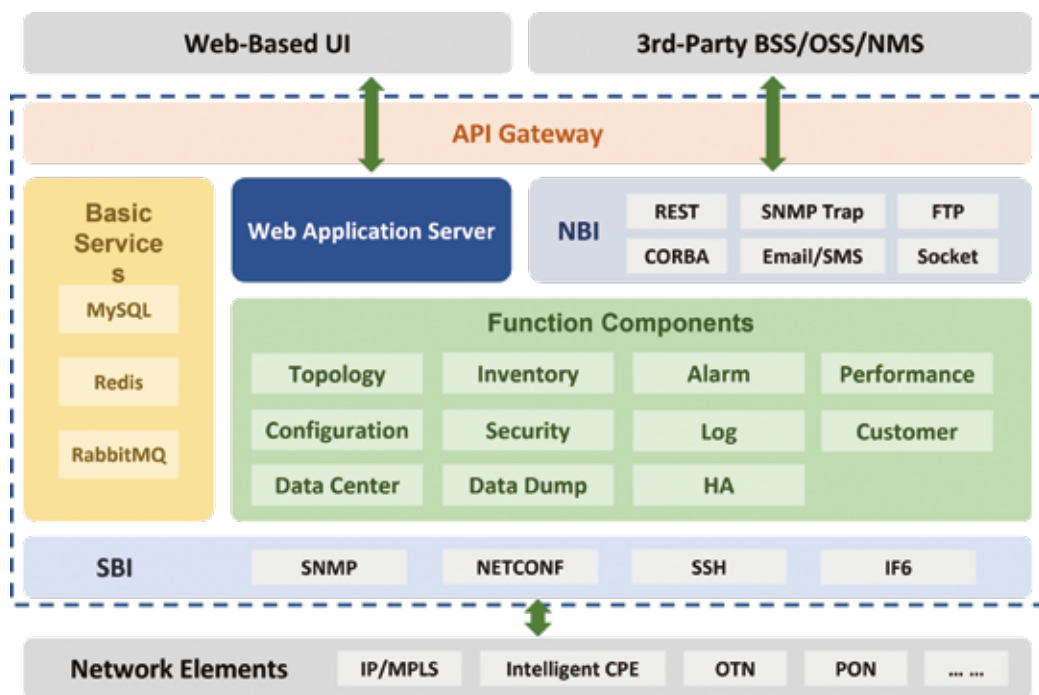
Chapter 6

Network Management System

The ultimate goal of developing a network management system is to maximize the network efficiency and minimize the operation costs. Raisecom RCView is designed with FCAPS management and referring to TMN architecture. It supports various northbound interfaces for interfacing with Upper-Level NMS/OSS/BSS. Raisecom RCView runs on Linux OS and adopts Browser/Server structure.

Raisecom RCView is composed by different function components and different EMS for different Raisecom product families. It supports topology management, inventory management, configuration management, alarm management, performance management, security management, log management and customer management. It provides a data center function to help customer easily plan element backup/upgrade in batch. It also provides self-management for the server to keep monitoring the system and guarantee a health running.

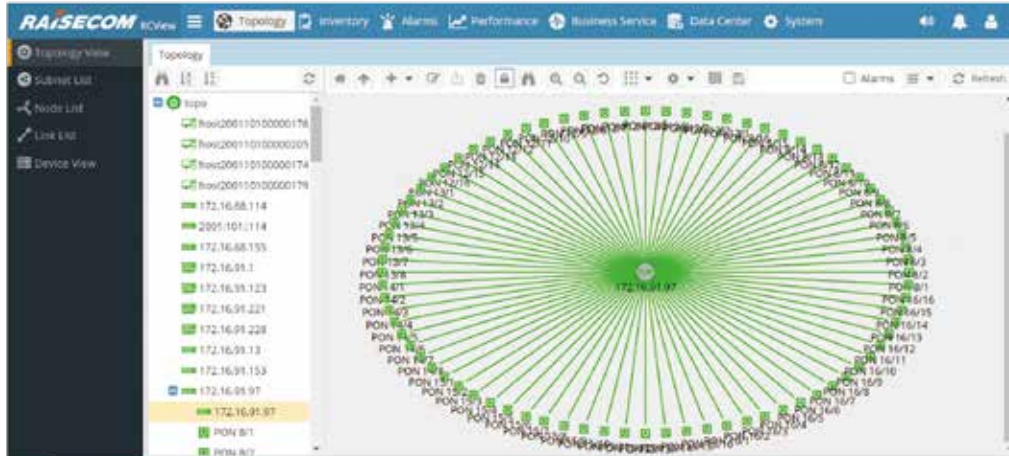
The deployment of Raisecom RCView can be very flexible. It can be deployed in stand-alone, HA, cluster, and HA + cluster mode. The deployed system can be easily adjusted and upgraded to support an ever-growing large-scale network.



Topology Management

The topology management of RCView displays the managed network on a user-friendly GUI. Network elements are organized by subnets and the network layout can be easily customized. The GUI shows real-time alarm status of subnets, network elements and links.

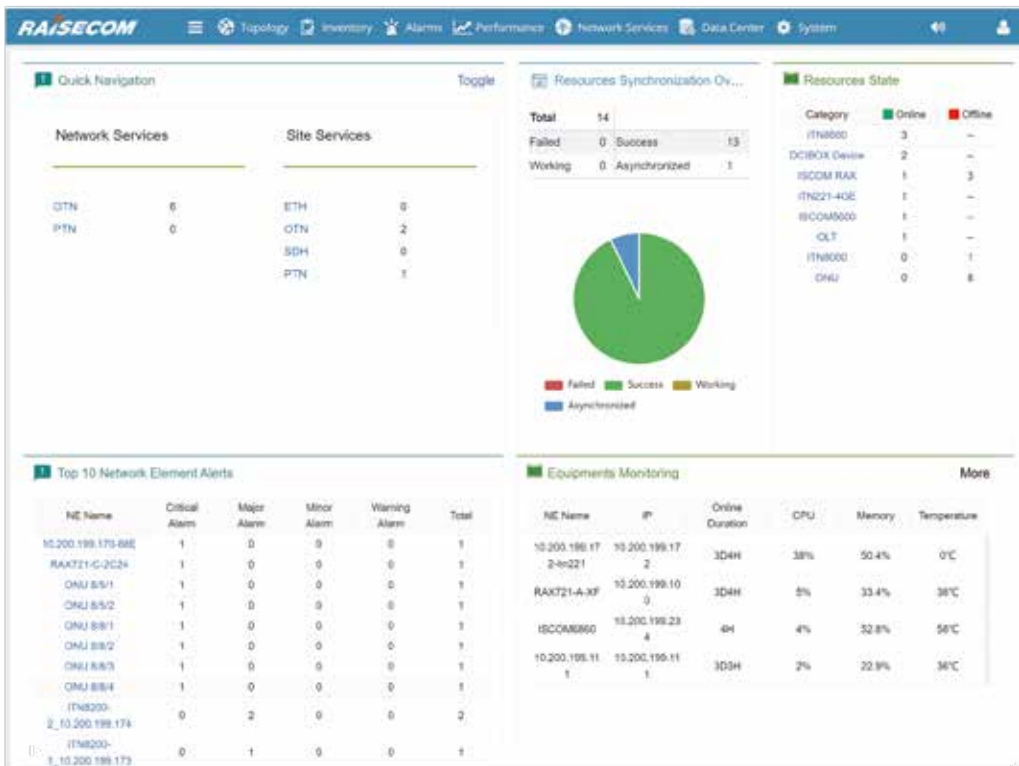
- Multi-level topology displaying
- Manual or automatic topology layout
- Devices auto-discovery
- Current alarm status on NEs and links
- Quick location of failure in the network



Inventory Management and Resource Visualization

All inventory related information is well-organized and displayed in RCView inventory management by categories of network element, rack, chassis, slot, card, remote, and port.

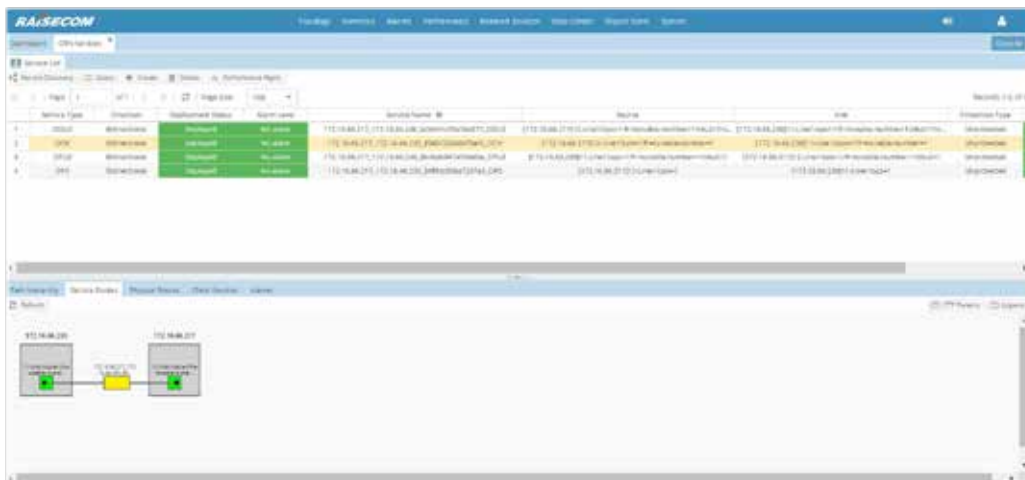
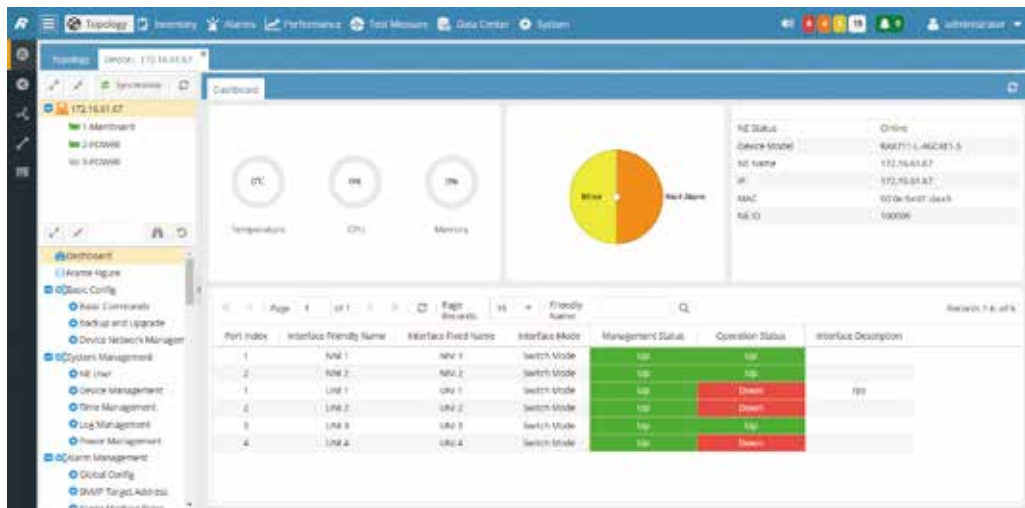
- Comprehensive inventory description with customer and fault information
- Unified query platform for rapid search of inventories
- Synchronization mechanism guarantees RCView showing real-time status of network resources
- RCView resource visualization management provides quick view for the NEs' type and status, alarms, and devices' monitoring status



Configuration Management

RCView configuration management provides a user-friendly interface for device configuration and service provision. RCView always shows real-time configuration and status of the network elements which is guaranteed by synchronization mechanism.

- Uniform platform for EMS for different product families
- User-friendly device configuration/status displaying
- Batch configuration for same device types
- End to end service provision and management for MEF and MPLS VPN services*
- End to end OTN service configuration and provision
- OLT/ONU service templates and pre-deployment



Fault Management

RCView fault management receives and analyzes alarms from managed network elements. Alarms are organized in current alarm list and history alarm list.

- Standard five-level alarm display with different colors showing different severity
- Alarm filter tools available to show only selected alarms on the list
- Alarm troubleshooting library recording troubleshooting experiences
- Received alarms can be forwarded to 3rd-party system by SNMP trap, Socket(xml), Email and SMS

Alarm ID	Alarm Level	Alarm Name	Alarm Desc	First Reported Time	Last Reported Time	Alarm Source	Alarm Source	Alarm Source Type	Alarm
179	Major Alarm	power module output fault		1991-02-05 16:16:58	1991-02-05 16:16:58	172.16.1.100	Power2	NE	None
172	Major Alarm	Reverse Defect Indication		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	SW1 VLAN1000	NE	None
178	Major Alarm	Mac Status		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	SW1 VLAN1000	NE	None
536	Critical Alarm	communication failure		2021-11-11 16:58:15	2021-11-11 16:58:15	192.168.15.203		NE	None
3727	Critical Alarm	optical module 4,335		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	portLAN1	Port	None
3728	Critical Alarm	optical performance para...		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	portLAN1	Port	None
3723	Critical Alarm	port link down		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	portLAN1	Port	None
3713	Critical Alarm	device power off		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	NE	NE	None
3721	Critical Alarm	communication failure		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	NE	NE	None
3718	Critical Alarm	device power off		2021-10-28 17:27:57	2021-10-28 17:27:57	192.168.15.203	NE	NE	None
167	Major Alarm	power module output fault		2021-10-27 10:50:26	2021-10-27 10:50:26	192.168.15.203	Power2	NE	None
167	Major Alarm	Reverse Defect Indication...		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	SW1 VLAN1000	NE	None
164	Major Alarm	Mac Status		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	SW1 VLAN1000	NE	None
168	Major Alarm	port link down the upper L...		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	NE	NE	None
170	Major Alarm	power module output fault		1970-01-01 00:00:00	1970-01-01 00:00:00	172.16.1.100	Power2	NE	None

Performance Management

The performance management of RCView collects and displays (in table or graph) real-time and history performance data on device CPU utilization, port statistics, DDM statistics, and etc. It can also deploy service SLA tests like Y.1564, Y.1731, TWAMP and generate customized service SLA reports.

- Uniform performance management interface for all managed devices
- Real-time and history performance data collection and displaying
- Schedule and perform service SAT and SLA tests (like Y.1564, Y.1731, TWAMP)
- Generate, customize and export performance report

Y.1564 Service

Basic Parameters

*Task Name: Y.1564_3 Associated Customer: [Dropdown]

*Source IP: 192.168.15.108 Source UDP: [Dropdown] *Source Port: [Dropdown]

*Destination IP: 192.168.15.199 Destination UDP: [Dropdown] Destination Port: [Dropdown]

Task Info

*Test Type: All *Test Mode: [Dropdown] *Test Frame Type: ETH *Loopback Mode: Auto

*CR Steps: 4 *CR Percentage(%): 25,50,75,100 *Test Mode: [Dropdown]

*Test Duration per Step(s): 10 *Performance Test CR Ratio: 100 *Performance Test Duration(min): 15 *Service Identification Type: [Dropdown]

Config Info

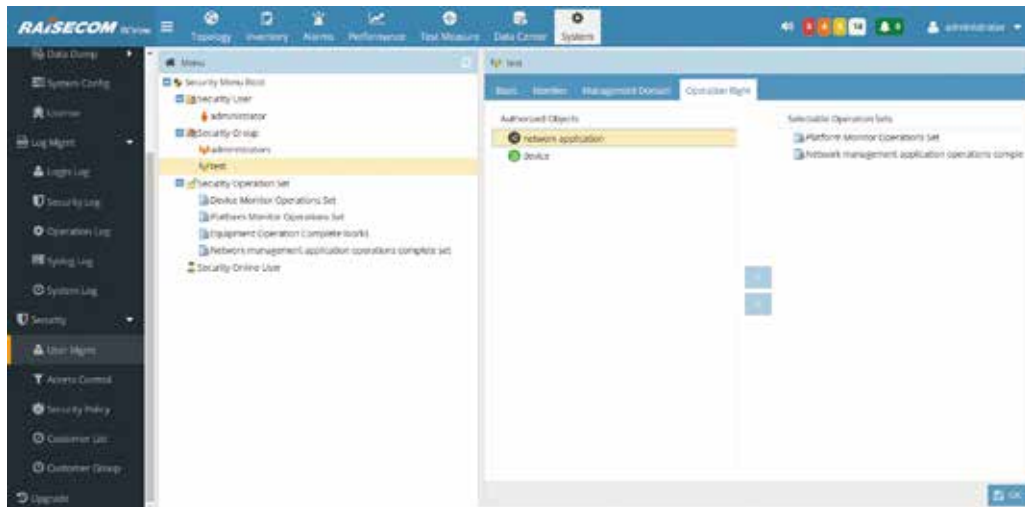
*Outer VLAN: [Dropdown] Inner VLAN: [Dropdown]

[View] [Save and Start] [Add]

Security Management

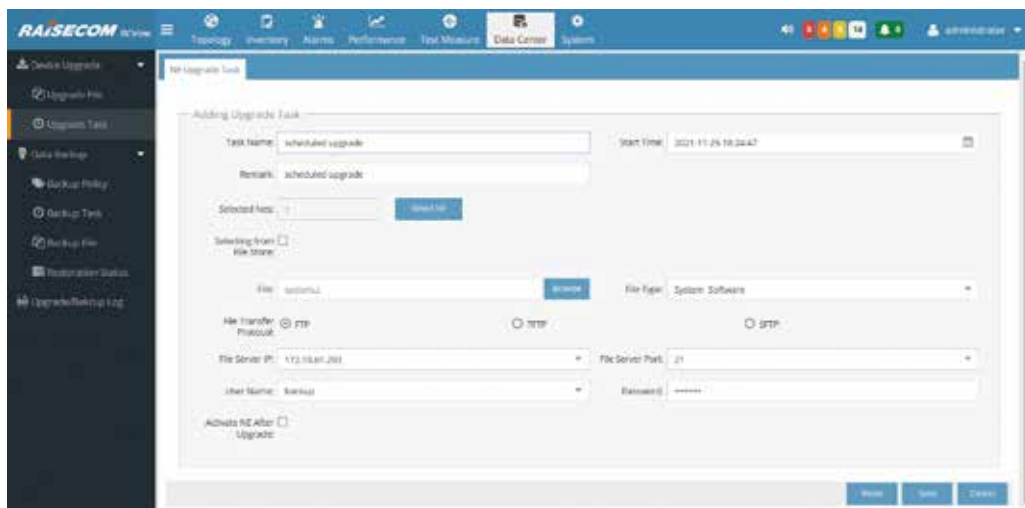
User groups with different authorities over different network domains can be created on RCView. Only authorized users are allowed to log in the system and operate. The security mechanism protects the system from illegal access, unauthorized use and other hazards.

- Multi-domain multi-authority management
- Different user profiles have different read and/or write authorities over different subnets
- Client access control mechanism
- Unauthorized login deny mechanism
- System and device operation logs available for online check and export



Data Center

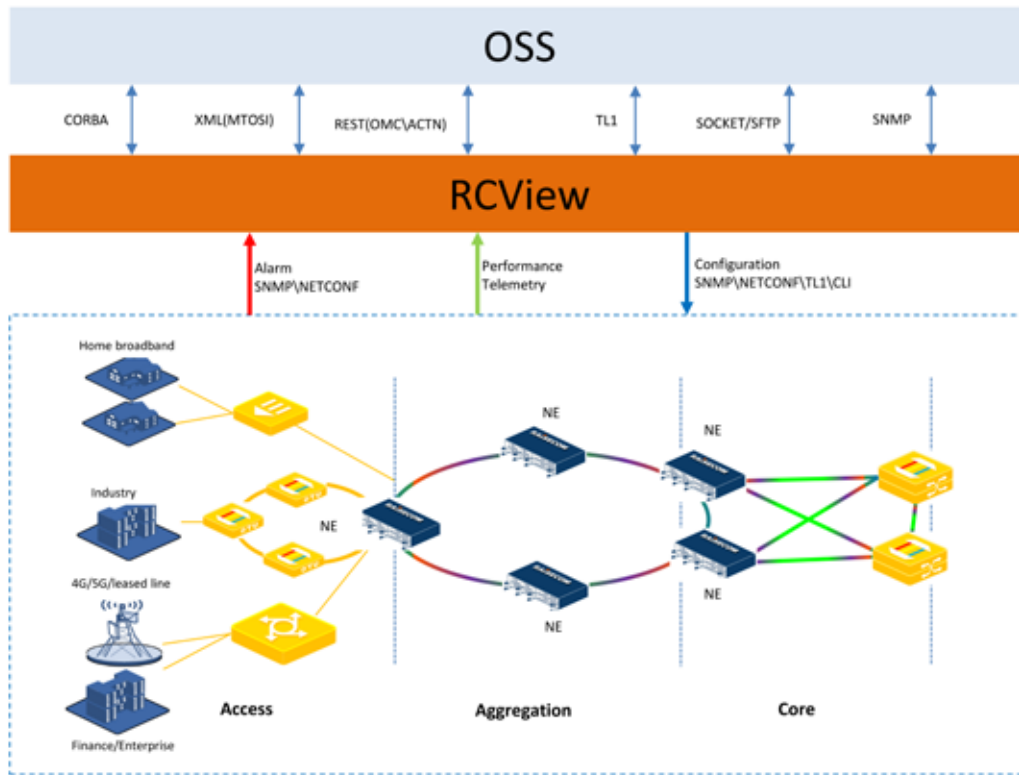
RCView data center provides a unified interface for device software management, scheduled batch software upgrade and configuration backup. It helps network administrator to easily plan upgrades and backups of the network and save maintenance costs.



Third-party NMS Compatibility

RCView supports various northbound/southbound interfaces, and can be integrated into customer management system.

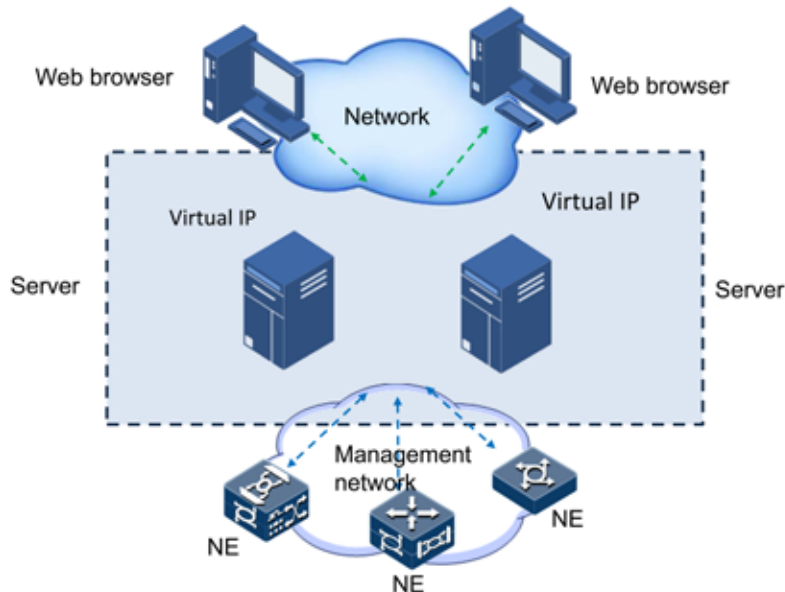
- Support multiple authentication protocols
- Northbound supports REST, OMC, TL1, CORBA, etc
- Southbound supports multiple interfaces such as NETCONF, RCIF, MQTT, etc



RCView System Reliability

RCView system supports independently developed HA, provided high reliability for network management.

- RCView HA supports various fault scenarios such as high CPU usage, high disk usage, and L2 network failures, meeting the daily network maintenance requirements of customers





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