



PRODUCTS AND SOLUTIONS

catalog 2026

RAISECOM

**Vision**

To be a world-leading provider of optical networking products and solutions

Mission

Construct open networks; Connect global intelligence; Drive digital prosperity

Values

Innovation; Openness; Responsibility; Co-prosperity

RAISECOM BUILDING

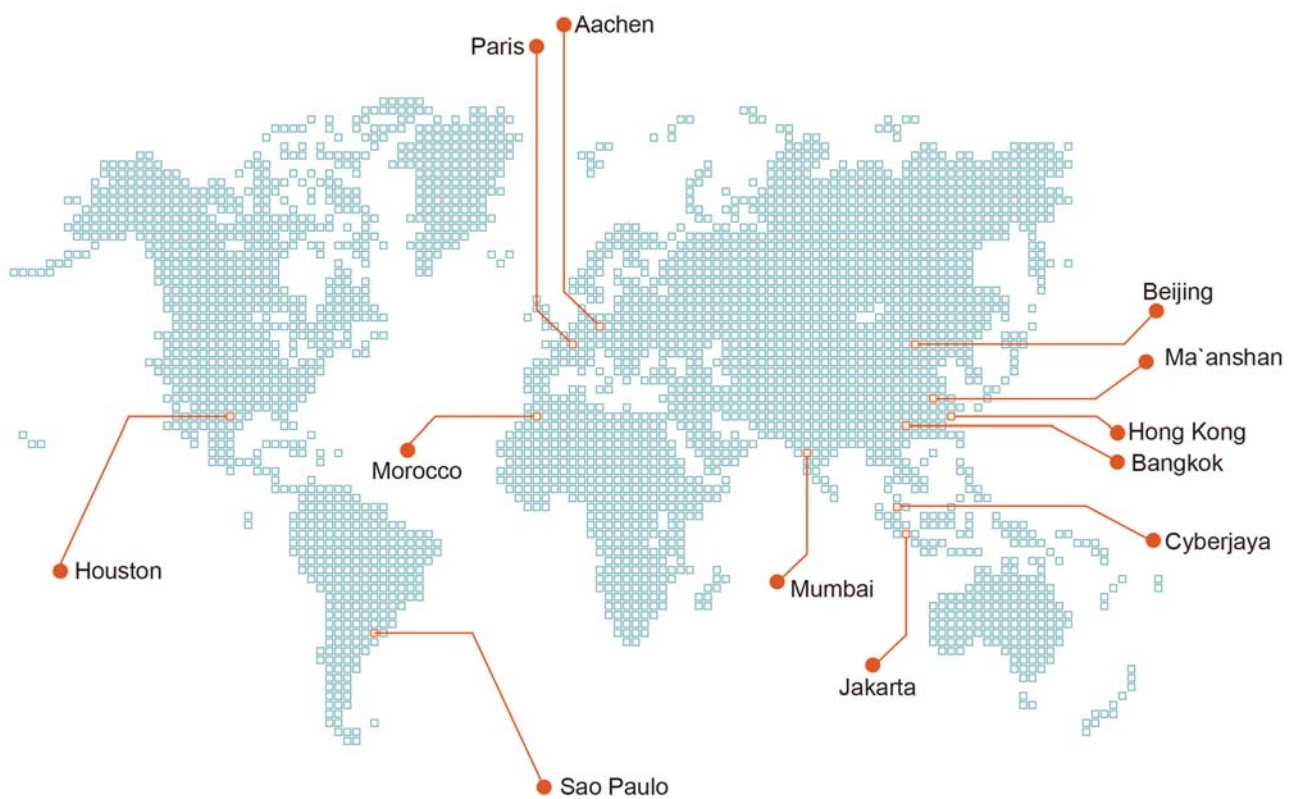


About Raisecom

Raisecom is an industry-leading provider of optical networking products and comprehensive telecommunication solutions. Founded in 1999 and listed on Shanghai Stock Exchange (SHA: 603803), it has been dedicated in Research&Development of telecommunication technologies in the fields of all-optical networking, switching and routing, cloud-network convergence, edge computing and wireless networking, providing information-communication infrastructure as well as intelligent digital transformation solutions and services.

Raisecom's committed to being a reliable partner for our customers in intelligent digital transformation, creating value through technology innovation, servicing communication service providers, vertical industries, government and education institutions, financial and manufacturing companies and mitigate digital divide for human society.

Raisecom Global Presence



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Packet Transport Network

Product Name	Product Type	Description
iTN8800-A	Aggregation	5RU modular IP/MPLS Large capacity, high density aggregation device
iTN8800-E	Pre-Aggregation and Aggregation	3RU modular IP/MPLS Large capacity, high density Pre-aggregation and Aggregation chassis device
RAX721-C-6C48	Pre-Aggregation	100G IP/MPLS Large capacity, high density pre-aggregation Pizza-Box device
RAX721-C-4C24	Pre-Aggregation	100G IP/MPLS Large capacity, high density pre-aggregation Pizza-Box device
RAX721-C-2C24	Pre-Aggregation	100G IP/MPLS Large capacity, high density pre-aggregation Pizza-Box device
RAX721-T-6C48	Pre-Aggregation	100G IP/MPLS Large capacity, high density pre-aggregation Pizza-Box device with GNSS and PTP
RAX721-T-4C24	Pre-Aggregation	100G IP/MPLS Large capacity, high density pre-aggregation Pizza-Box device with GNSS and PTP
RAX721-T-4K24	Access/Pre-Aggregation	25G IP/MPLS high density Access/pre-aggregation Pizza-Box device with PTP
RAX721-T-XF	Access/Pre-Aggregation	10G IP/MPLS high density Access/pre-aggregation Pizza-Box device with PTP
RAX721-A-XF	Access/Pre-Aggregation	10G IP/MPLS high density Access and pre-aggregation Pizza-Box device
RAX721-A	Access/Pre-Aggregation	10G IP/MPLS high density Access and pre-aggregation Pizza-Box device
RAX721-A-T	Access/Pre-Aggregation	10G IP/MPLS high density Access and pre-aggregation Pizza-Box device
RAX721-B	Access/Pre-Aggregation	10G IP/MPLS high density Access and pre-aggregation Pizza-Box device
RAX721-B-T	Access/Pre-Aggregation	10G IP/MPLS high density Access and pre-aggregation Pizza-Box device
RAX711-E	Outdoor Access	10G IP/MPLS Outdoor Access and Carrier Ethernet Demarcation device
RAX711-C-R	Access	10G compact IP/MPLS Access and Carrier Ethernet Demarcation device
RAX711-L-4GC4E1-BL-S	Access	Compact MPLS Access and Carrier Ethernet Demarcation device
RAX711-L-4GC4E1-S	Access	Compact MPLS Access and Carrier Ethernet Demarcation device
RAX711-L-4GC	Access	Compact MPLS Access and Carrier Ethernet Demarcation device
RAX711-L-4GE	Access	Compact MPLS Access and Carrier Ethernet Demarcation device
RAX701-GC	Access	Compact MPLS Access and Carrier Ethernet Demarcation device
RAX721-M-4XF	Multi-Service Access and CE Aggregator	1RU modular next generation multiservice access chassis device with GNSS and PTP
iTN221-4GE	Multi-Service Access and CE Aggregator	1.5RU modular multiservice access chassis device
iTN221-2XG	Multi-Service Access and CE Aggregator	1.5RU modular next generation multiservice access chassis device

OTN/WDM Transport Network

Product Name	Product Type	Description
iTN8600-A	Access/Aggregation/Backbone	5RU modular highly integrated SDH/OTN/PeOTN/WDM/PCM/MPLS-TP/PON all-in-one multi-service access /cross-connection & high-bandwidth transmission platform.
iTN8600-E	Access/Aggregation/OLA stations	3RU modular highly integrated SDH/OTN/PeOTN/WDM/PCM/MPLS-TP/PON all-in-one multi-service access /cross-connection & high-bandwidth transmission platform.
iTN8600-A Pro	Access/Aggregation/Backbone	5RU Metro SDH/OTN/PeOTN/WDM Platform With high-capacity non-blocking OTN/ PKT/VC MPLS-TP switching in Electrical layer and wave switching in optical layer, support flexible grooming/aggregation for all different services.
iTN8600-I-XT4D	Access/Aggregation/Backbone	1RU standalone multi services 100G/200G DWDM/OTN muxponder.
iTN8600-I-TQ5D	DCI/Metro OTN/MOFNs	1RU multi slots 100G/200G DWDM/OTN transponder chassis.
iTN8200-S-TM6S	DCI/Metro OTN/MOFNs	1RU standalone multi services 400G/600G DWDM/OTN muxponder
iTN8200-S-TM6SO	DCI/Metro OTN/MOFNs	1RU standalone all-in-one 400G/600G DWDM/OTN system, with integrated optical amplifiers, Mux/Demux , optical switch.
iTN8200-II	DCI/Metro OTN/MOFNs/Long-Haul backbone WDM	2RU highly integrated 100G/400G/800G DWDM/OTN intelligent transmission platform(8 slots), modular design with optional EDFA, ROADM, FOADM, OCM, OTDR, RAMAN, 100/200/400G/800G transponder and muxponder.
iTN8200-I	DCI/Metro OTN/MOFNs/Long-Haul backbone WDM	1RU highly integrated 100G/400G/800G DWDM/OTN intelligent transmission platform(4 slots), modular design with optional EDFA, ROADM, FOADM, OCM, OTDR, RAMAN, 100/200/400G/800G transponder and muxponder.
iTN8607-OM8S	Access OTN	1RU 19-inch multi-service OTN access devices, providing E1, FE/GE, STM-1/4 access service interface, with 2 x OTU1/STM1/4/16 line interface.
iTN8607-OG6S2S	Access OTN	1RU 19-inch multi-service OTN access devices, providing FE/GE, STM-1/4 access service interface , with 2 x OTU2 line-side uplink.
OPCOM100-SA	4G/5G Fronthaul Device	Semi-Passive WDM Platform (2RU, 3RU and 5RU active chassis in CO) with network management, 1RU passive CWDM Mux/Demux in remote side).

Switch Service Provider and Campus switches

Product Series	Product Models	Position	Description
ISCOM S2600	ISCOM S2600-8S4T4X ISCOM S2600-8T4S/X ISCOM S2600-24S4X ISCOM S2600-24T4S/X	L2+ GE Access	L2+ GE Access Switch for service providers and campus networks
	ISCOM S2600-8T4X-PWR ISCOM S2600-24T4X-PWR ISCOM S2600-24T4X-PWH	L2+ GE Access with POE	L2+ GE POE Access Switch for service providers and campus networks
ISCOM S3600	ISCOM S3600-24T6X ISCOM S3600-24S8T6X ISCOM S3600-48T6X ISCOM S3600-48S6X	L3 GE Aggregation	L3 GE Aggregation/Distribution Switch for service provider and campus network
	ISCOM S3600-24T6X-L ISCOM S3600-48T6X-L	L3 GE Access	L3 GE Access Switch for service provider and campus network
	ISCOM S3600-24T6X-PWH ISCOM S3600-48T6X-PWH	L3 GE Aggregation with POE	L3 GE POE Aggregation/Distribution Switch for service provider and campus network
	ISCOM S3600-24N6X-L-PWH ISCOM S3600-48T6X-L-PWR	L3 GE Access with POE	L3 GE POE Access Switch for service provider and campus network
ISCOM S5600G	ISCOM S5600G-24S4X/24T4X ISCOM S5600G-48S4X/48T4X	L3 GE Acc or Agg DC mgmt.-network	L3 acc. and pre-agg. /Distribution switch for service provider, support IP/MPLS for FTTx backhaul
	ISCOM S5600G-24T8S6X ISCOM S5600G-48T6X	L3 GE Aggregation switch	L3 enhanced 10GE AGG device with sub-card for campus networks
	ISCOM S5600G-24X2C	L3 10GE Aggregation	L3 enhanced 100GE AGG device
ISCOM S6600	ISCOM S6600-48X8C	L3 10GE AGG/Core Pre-AGG 10G Leaf for DC	100G AGG/core pizza-box device for campus networks, 100G IP/MPLS high density pre-aggregation pizza-box device for FTTx backhaul
ISCOM S10600	ISCOM S10603	Core Switch	Chassis based switch for medium campus network
	ISCOM S10608	Core Switch	Chassis based switch for medium campus network

Data Center switches

Product Series	Product Models	Position	Description
ISCOM S5600G	ISCOM S5600G-24S4X/24T4X ISCOM S5600G-48S4X/48T4X	Management Network for AI/DC	Management network for data center. Can be used as leaf/ToR switch for small-size server farm
ISCOM S6600	ISCOM S6600-48X8C	10G Leaf for DC	10G Leaf for data center networks or Acc to Agg
	ISCOM S6600-48K8C	25G Leaf for DC	25G Leaf for data center networks
ISCOM S7600	ISCOM S7600-24C8B	Leaf or Spine for DC	100/200GE leaf/spine for data center networks
	ISCOM S7600-32D	Leaf or Spine for DC	100/200/400GE leaf/spine for data center networks
ISCOM S7610	ISCOM S7610*	Leaf or Spine for DC	Chassis based switch for 100/200/400 GE, for leaf or Spine in data center networks

Industrial Switch

Product Series	Product Models Series	Position	Description
Din-Rail Unmanaged	Gazelle S1020i-UM	Safe Cities, Transport, Industrial	Simple, Reliable and cost-effective
	Gazelle S1020i-P-UM	Safe Cities, Transport, Industrial	Simple, Reliable, cost-effective and support POE
Din-Rail managed	Gazelle S1000i-LI	Safe Cities, Transport, Industrial	Cost-effective for safe cities & backhaul etc
	Gazelle S1010i-GL	Smart Grid, Industrial	Compact, easy to manage for industrial
	Gazelle S1020i-GL	Smart Grid, Industrial	Industrial DIN-rail for ACS, flexible ports
	Gazelle 1020i-LI	Safe Cities, Transport, Industrial	Cost-effective for surveillance & data
	Gazelle S1020i-PWH/PWR-GL	Smart Grid, Industrial, other CCTV and wireless application	PoE (802.3bt/at/af) for end devices
	Gazelle S1020i-CTS/CS	Industrial, Smart Grid, Transport	New generation, support 1588v2 for CTS type
EN50155 Series	Gazelle S1218i-GS	High-Speed Railway, Metro	Meet EN50155 standard
L2/L3 19" Rack-Mounted Industrial switch	Gazelle S3028i-LF	Industrial ACS and others	Cost-effective, flexible port options
	Gazelle S3028i-MGL/MGS	Industrial, Surveillance	High-density, w. PoE & 10G uplink ports
	Gazelle S3028i-CGS	Industrial Automation, ACS	L3 switch, high-density 10G/GE ports
	Gazelle S3028i-CTS/CS	Industrial, Real-time Comms	L3 switch, TSN support, industrial rings

Time Servers

Product Series	Product Models	Position	Description
High-Precision Clock Servers	Gazelle ATS3000i Series	Telecom, Transport, Smart City, Renewable Energy, and Manufacturing	Multi-clock ports, -30~+70°C, 5-year warranty, industrial-grade
	Gazelle T6000i	Power Industry, Industrial Automation	High-precision sync, OCXO, maintenance-free, LCD status display
	Gazelle S3028i-2GNSS*	Telecom, Transport, Smart City, Renewable Energy, and Manufacturing	Multi-clock ports, -30~+70°C, 5-year warranty, industrial-grade

OLT Chassis OLTs

Product Models	Position	Description
ISCOM6800E-2	2U XGS-Combo PON OLT	2U XGS-Combo PON chassis OLT for small/medium-scale broadband access
ISCOM6800E-7	6U XGS-Combo PON OLT	6U XGS-Combo PON chassis OLT for medium/large-scale broadband access
ISCOM6800E-15	11U XGS-Combo PON OLT	11U XGS-Combo PON chassis OLT for large-scale broadband access

Compact OLTs

Product Series	Product Models	Position	Description
ISCOM6810-GP	ISCOM6810-GP01 ISCOM6810-GP02 ISCOM6810-GP04L ISCOM6810-GP8(B) ISCOM6810-GP16	GPON OLT	GPON pizza-box OLT for small-scale broadband access
ISCOM6810-XC	ISCOM6810-XC02 ISCOM6810-XC04 ISCOM6810-XC08 ISCOM6810-XC16*	XGS-Combo PON OLT	XGS-Combo PON pizza-box OLT for small-scale broadband access
ISCOM6810Q-XC	ISCOM6810Q-XC02* ISCOM6810Q-XC04* ISCOM6810Q-XC08*	Outdoor XGS-Combo PON OLT	Outdoor XGS-Combo PON pizza-box OLT for small-scale broadband access

ONU SFU and Sticks

Product Series	Product Models	Position	Description
ISCOM HT801 Sticks	ISCOM HT801-GSFP(Q)	GPON Stick	GPON Stick used in switch as MDU
	ISCOM HT801-XGSFP(Y)	XGS-PON Stick	XGS-PON Stick used in switch as MDU
ISCOM HT803G	ISCOM HT803G-1GE(N) ISCOM HT803G-1N* ISCOM HT803G-1GC(N) ISCOM HT803G(U)	GPON SFU	GPON SFU for FTTx and POL applications
ISCOM HT806G	ISCOM HT806G-XGS-XE (U)	XGS-PON SFU	XGS-PON SFU for FTTx and POL applications

HGU

Product Series	Product Models	Position	Description
ISCOM HT803	ISCOM HT803-GP-N(Z)	GPON HGU	GPON HGU for FTTx
ISCOM HT803G	ISCOM HT803G-WS2(Y.00) ISCOM HT803G-WS2(Y.20) ISCOM HT803G-WX2(Y.00) ISCOM HT803G-WX2(Z.00)	GPON HGU	GPON HGU for FTTx
ISCOM HT806G	HT806G-XGS-VE-WX2(Z.00) ISCOM HT806G-XGS-BE7(Z.00)	XGS-PON HGU	XGS-PON HGU for FTTx

MDU

Product Series	Product Models	Position	Description
ISCOM5100	ISCOM5104G-GP-HB	GPON MDU	GPON MDU for FTTB and access of enterprise
ISCOM5100-PSE	ISCOM5104-GP-PSE	GPON PoE MDU	GPON PoE MDU for FTTB and access of enterprise
ISCOM5100-E	ISCOM5104G-GP-E	Dual GPON MDU	Dual GPON MDU supporting type C Protection
ISCOM6100	ISCOM6104G-XGS ISCOM6108-XGS* ISCOM6124-XGS-AC	XGS-PON MDU	XGS-PON MDU for FTTB and access of enterprise
ISCOM6100-PSE	ISCOM6104G-XGS-PSE* ISCOM6108-XGS-PSE* ISCOM6124-XGS-PSE-AC*	XGS-PON PoE MDU	XGS-PON PoE MDU for FTTB and access of enterprise

MSG Multi-Service Gateway

Product Series	Product Models	Position	Description
Voice MSG	MSG2500E-UP series MSG2600C-XUS-8E8V	SME access with voice	GPON/EPON (-UP) or XGS-PON(-XUS) uplink MSG for enterprise customers with ethernet and voices services
Data MSG	MSG5200-XGE-8E MSG5200-XUS-XE4E	SME access	GE/10GE (-XGE) or XGS-PON(-XUS) uplink MSG for branch and cloud access customers
	MSG5200E-XCS-6E2V*/ MSG5200E-XCS-6E2V-W3-G4*/ MSG5200E-XCS-6E2V-W3-G5*	SME access with WIFI and 4G or 5G WAN interfaces	Ethernet uplink MSG for branch and cloud access customers, support wifi 7 and 4G/5G WAN backup interfaces.

*: Planning products, please contact Raisecom sales team for details

SMALLCELL & REPEATER

Small Cell

Product Category	Product Name	Target Application	Description
Low-Power Home-SmallCell	BLBS3211	Home, Retail Shop, Office, etc.	2*50mW 4G band3, Band 40, etc. Desktop deployment, AC220V power supply.
Low-Power Enterprise-SmallCell	BLBS3211	Home, Retail Shop, Office, etc.	2*125mW 4G band3, Band 40, etc. Desktop/Wall-mounted installation deployment. AC220V/POE power supply.
Low-Power Elevator-SmallCell	BLBS3211-B3-Wx	≤80 Floors Elevator	2*125mW, 4G band3, AC 220V.
Mid-Power-SmallCell	RCNB32303W	≤35 Floors Elevator, Car parking, etc.	2*2W 4G band 3, Wall-mounted/pole mounting. AC220V/-48V power supply.
High-Power-SmallCell 4G/5G	RCNB3xxxx RCNB5xxxx	Rural Area, Road, Large Car Parking, Building etc.	Output power 2*40W/60W;4G: Band 3/5/8/40, 5G:N1/N28/N41/N78; IP65; Wall-mounted/pole mounting installation deployment; AC220V/-48V power supply.
SmallCell Gateway	BLS9200		Smallcell gateway software, Authentication Mode: PSK,EAP-AKA, Digital Certificate. x86 server Deployment.
SmallCell NMS	BLOM6200		Support 20,000+ SmallCells management, support Cloud and x86 server Deployment.

Repeater

Product Category	Product Name	Target Application	Description
Low-power Repeater Mobile-Mate	RCREPM series	Home, Retail Shop, Office, etc.	AU Only. The AU output power 50mW/100mW, Single/Dual/Tri/Quad bands; IP30, AC220V power supply.
Low-power Repeater mDAS		Home, Retail Shop, Office, etc.	Including AU, EU and 1~8*RU. The RU output power 50mW/ 100mW Single/Dual/Tri/Quad bands. IP30, AC220V power supply.
Low-power Repeater Elevator-Mate		≤35 Floors Elevator, Car parking, etc.	Including AU and 1*RU; The RU output power 50mW/100mW. Single/ Dual/Tri/Quad bands; IP30, AC220V power supply.
Mid-power Park-DAS Repeater		≤35 Floors Elevator, Car parking ,etc.	Including AU and 1~8*RU; The RU output power 2W. Single/Dual/Tri/ Quad bands. IP65, AC220V/-48V power supply.
High-power RF-Repeater		Rural Area, Large Car Parking, Building, etc.	AU only, the AU output power 5W/ 10W/20W. Single/Dual/Tri/ Quad bands. IP65, AC220V power supply.
High-power Optical Fiber Repeater		Rural Area, Large Car Parking, Building, etc.	Including AU and 1~24*RU, the RU output power 40W/60W, Single/ Dual/Tri/Quad bands, IP65, AC220V/-48V power supply.
Repeater NMS		NA	Support 20,000+ Repeaters management, support Cloud and x86 server Deployment.

Optical Modules

Product Series Name	Form Factor	Description
RSF	SFP	Transmission rate ranging from 155Mbit/s to 2.5Gbit/s
RSP	SFP+	Transmission rate ranging from 8.5Gbit/s to 14.25Gbit/s
RXF	XFP	Transmission rate ranging from 8.5Gbit/s to 11.3Gbit/s
RS28	SFP28	Transmission rate supports up to 25.78Gbit/s
RQP	QSFP+	Transmission rate supports up to 41.25Gbit/s
RC2	CFP2	Transmission rate supports up to 106Gbit/s
RQ28	QSFP28	Transmission rate supports up to 106Gbit/s
RQ56	QSFP56	Transmission rate supports up to 212.5Gbit/s
RQD	QSFP-DD	Transmission rate supports up to 425Gbit/s
RQC	QSFP112	Transmission rate supports up to 425Gbit/s
RO4	OSFP	Transmission rate supports up to 425Gbit/s
RO8	OSFP	Transmission rate supports up to 850Gbit/s
AOC	Active Optical Cable	10G to 400G
DAC	Direct Attach Cable	10G to 800G

Fixed-Line Operator

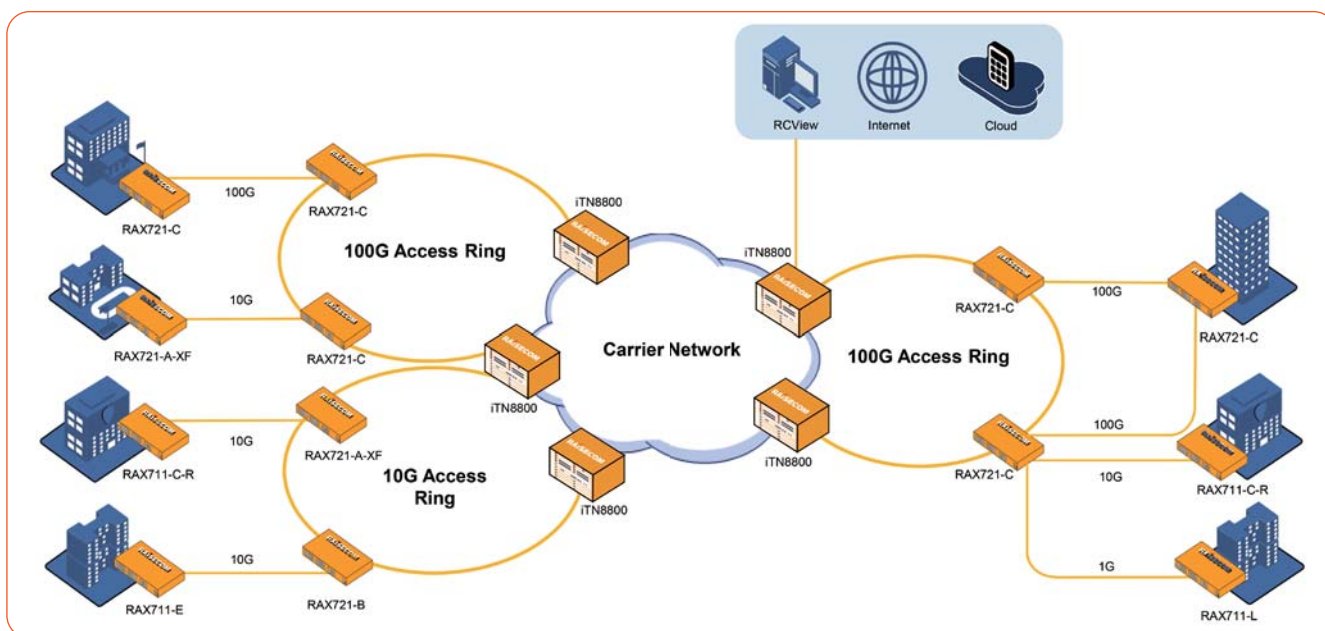
Raisecom telecommunications solutions present a comprehensive range of access and aggregation solutions and technologies, targeting incumbent carriers, telecom service providers, T2/T3 alternative operators as well as private fixed-line operators.

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.



New Generation Metro-E Integrated Carrier Network



SOLUTION

The New Generation Metro-Ethernet Integrated Carrier solution is based on the iTN series and RAX series intelligent packet products and can provide end-to-end integrated leased line access services based on IP-MPLS technology or Segment Routing technology. The iTN8800 has high-capacity switching fabric and can form a high bandwidth access ring network with RAX series devices or serve as an aggregation device for Centre-office or POP site nodes.

On the client side, RAX711 series or RAX721 series products can be used to provide customers with a variety of E1, FE, GE, 10GE, and even 100GE interface types for high bandwidth access. Implementing end-to-end EPL, EVPL, EP-LAN, EVP-LAN, EP-Tree, and EVP-Tree through the standard MEF CE3.0, they ensure maximum connectivity and reliability of metropolitan ethernet services. 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.

PRODUCTS



iTN8800-A



iTN8800-E



RAX721 series



RAX711-L Series

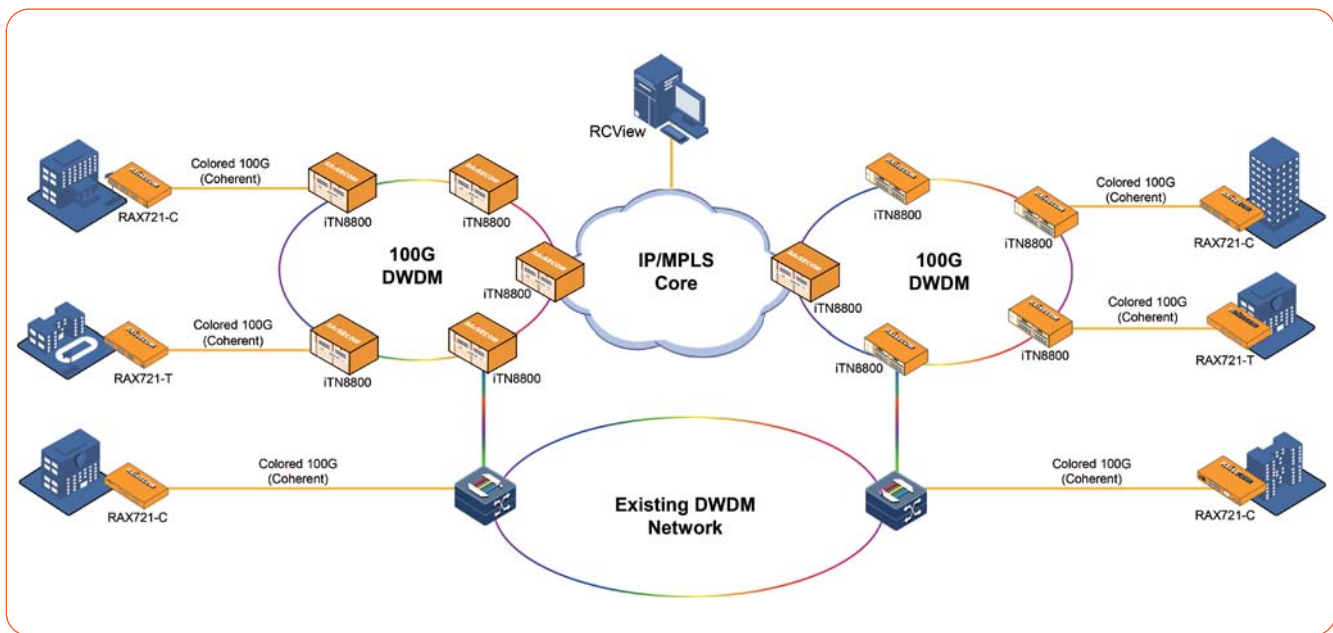


RAX711-C-R

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
- High density 1/10/25GE to 100GE access and aggregation
- Flexible hierarchical bandwidth guarantee based on Port + VLAN + Cos
- 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 can be easily brought online and upgraded without any configuration

IP over DWDM Carrier Ethernet Wholesale with Guaranteed SLA



SOLUTION

Raisecom's IP over DWDM solution integrates the flexibility of IP networking with the ultra-high bandwidth and long-haul capabilities of DWDM technology. This solution addresses the escalating demand for scalable, high-speed, and cost-effective data transport in modern telecommunications, cloud computing, and enterprise networking scenarios.

The IP over DWDM network architecture is built around an intelligent Segment-Routing (SR) Core and layered components for edge connectivity, optical transport, and unified management: The IP/MPLS network can use RAX721-C and RAX721-T to act as access points, connecting user sites (enterprises, data centers, campus networks) to the optical network.

RAX721-C and RAX721-T support 100G QSFP28 coherent module to deliver colored DWDM wavelength direction to DWDM system. This enables long-reach, high-reliability connectivity at 100Gbps speeds.

Platforms such as iTN8800 can support DWDM and EDFA service cards to form redundant DWDM rings with 48 or 96 wavelength channels, each capable of 100Gbps transmission. These rings aggregate traffic from edge devices and transport data across the network with low latency and maximum spectral efficiency. Extending capacity and intelligence in existing DWDM networks by connecting to existing DWDM networks seamlessly. This hybrid design enables smooth migration to advanced architectures without disrupting legacy services as well as preserving investment in existing networks.

HIGHLIGHTS

- Compact-designed QSFP28 100G coherent optical module support
- Support DWDM and EDFA service card in IP/MPLS devices, reduce the cost of standalone optical layer investment
- Long transmission up to 80km-120km per hop and High-Bandwidth Transport
- IP/MPLS network seamlessly connects to existing DWDM networks
- Support EVPN, SR-MPLS and SRv6 End-to-End service delivery and management via RCVIEW

PRODUCTS



iTN8800-A

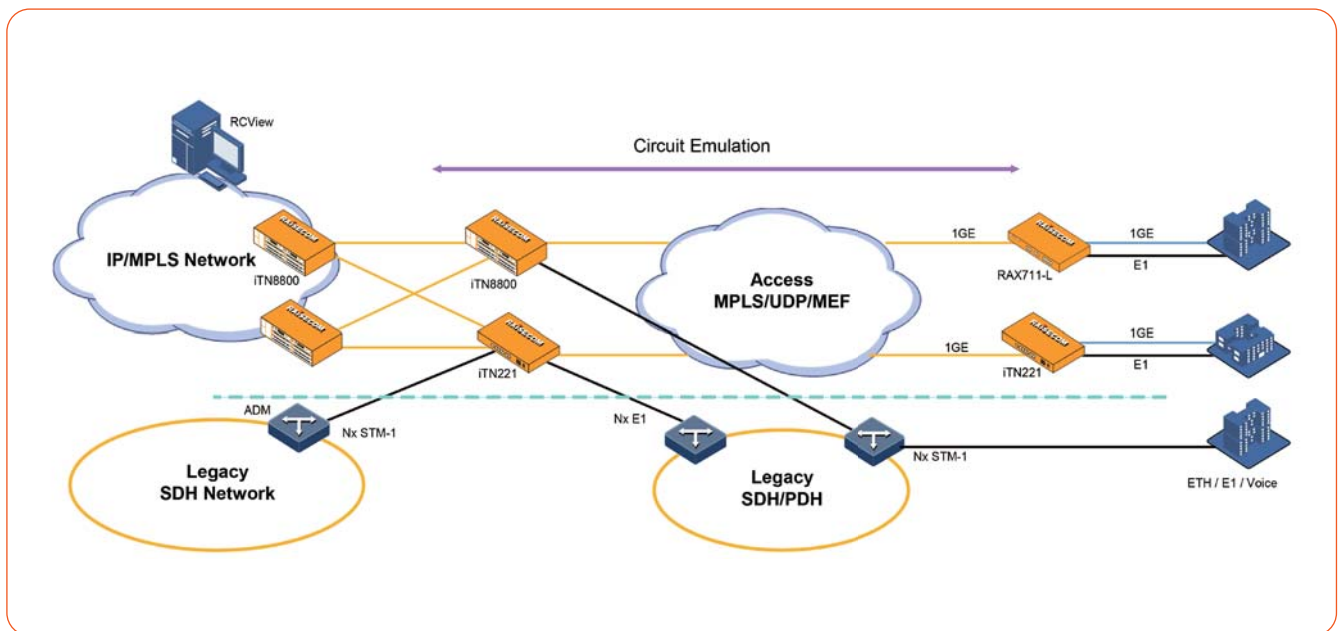


iTN8800-E



RAX721 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, enabling the further utilization of legacy SDH networks.

The iTN221 and RAX711-L series 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 E1 to 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 smooth migration from legacy TDM to packet infrastructure
- Various legacy service access capability addressing
- 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

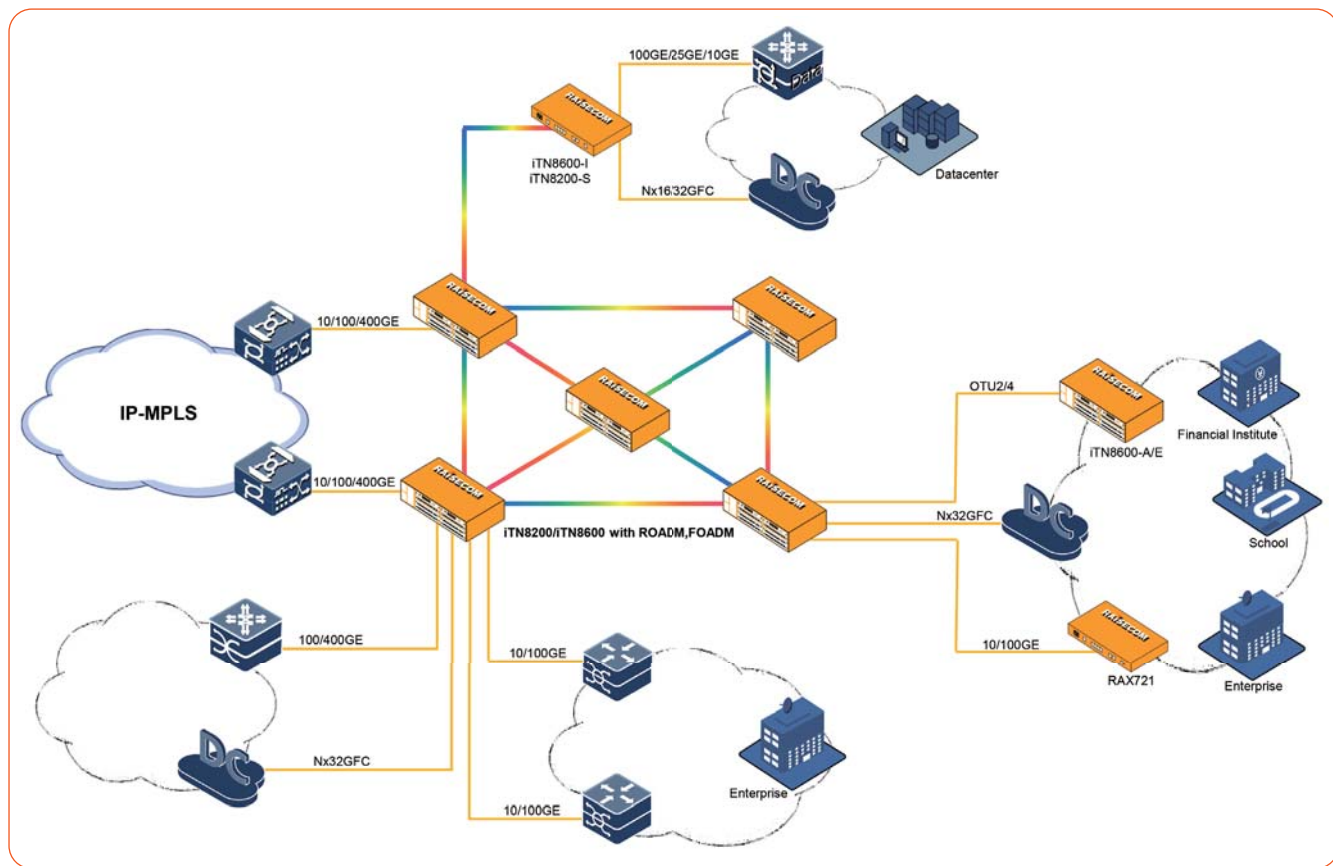


iTN221 Series



RAX711-L series

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/800G 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/ 800G DWDM networks with one chassis, the services such as 100/400GE, 32G Fiber channel, OTU2/OTU4/OTUC4 OTN, etc. Enhanced FOADM/ROADM enables linear add-drop/mesh-type DWDM infrastructure. It's convenient and flexible, high reliability, unified network management, easy to deploy and operate.

HIGHLIGHTS

- Coherent 100G/200G/400G CFP2 based transmission with SD-FEC in line side
- Maximum transmission 120x100/200G, 80x400G or 40 x800G 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 services deployment function

PRODUCTS



iTN8600-A



iTN8600-A Pro



iTN8600-E



iTN8200-I



iTN8600-I-XT4D



iTN8600-I-TQ5D



iTN8200-II



iTN8200-S-TM6S/TM6SO

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, 4G/LTE and 5G SA/NSA) mobile services over packet-based networks. These carefully engineered solutions include some of the following capabilities: auto-provisioning, bandwidth optimization, performance monitoring and time and synchronization delivery, 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.



The diagram illustrates a CWDM Passive Mobile Fronthaul Solution. It shows a central network architecture connecting various components:

- 4G (10G CWDM SFPs):** Represented by a red box labeled "BBU" with ports 1491, 1531, and 1571.
- 5G (25G CWDM SFPs):** Represented by a blue box labeled "DU" with ports 1291, 1331, and 1371.
- OPCOM100-OMUx (X=6,12):** A central optical multiplexer/demultiplexer unit.
- 1-core fiber:** A single fiber line connecting the central unit to the passive modules.
- Passive Modules:** Two yellow boxes that split the signal to the RRU and AAU units.
- 4G (10G color SFPs):** Represented by a red box labeled "RRU" with ports 1471, 1511, and 1551.
- 5G (25G color SFPs):** Represented by a blue box labeled "AAU" with ports 1271, 1311, and 1351.

The diagram also includes a section titled "CWDM Passive Mobile Fronthaul Solution" which shows a "4G+5G Mobile Fronthaul" network. This network is connected to a "Backhaul" network (IP/MPLS Network) via a "Collocation-site Passive/Active" unit. The network is labeled "CPRI+eCPRI" and "1-core 1+1, 10km".

Below this, the "CWDM Semi-Passive Mobile Fronthaul Solution (Protected)" is shown. This solution includes an "Active" module (yellow box) and a "Passive" module (yellow box). The "Active" module is connected to the "4G (10G CWDM SFPs)" and "5G (25G CWDM SFPs)" via "OPCOM100-SAx" and "OPCOM100-OMUx" units. The "Passive" module is connected to the "4G (10G color SFPs)" and "5G (25G color SFPs)" via "OPCOM100-OMUx" units. The network is labeled "1+1 protection" and "1 fiber core".

SOLUTION

Raisecom 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 solutions, 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.

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

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

PRODUCTS



OPCOM100-OMU12-LU-L



OPCOM100-OMU12-LU-R



passive chassis



OPCOM100-SA remote module



OPCOM100-SA

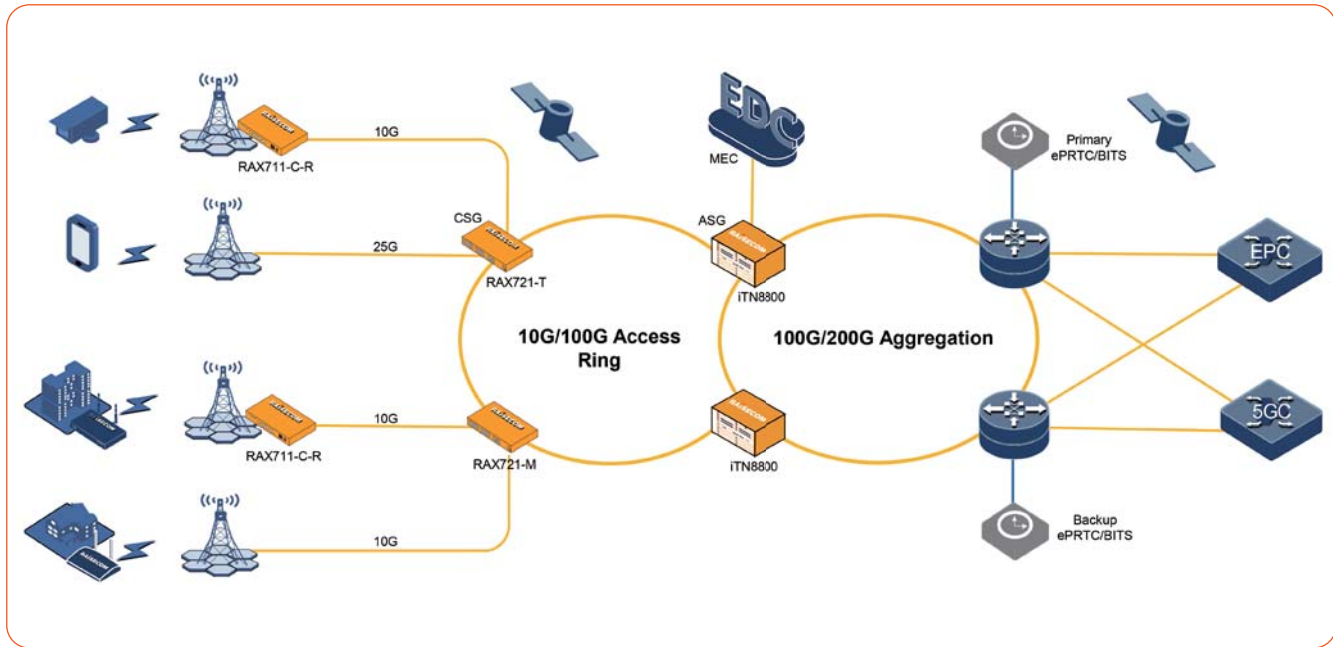


10G CWDM CPRI SFP+



25G CWDM CPRI SFP28

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.

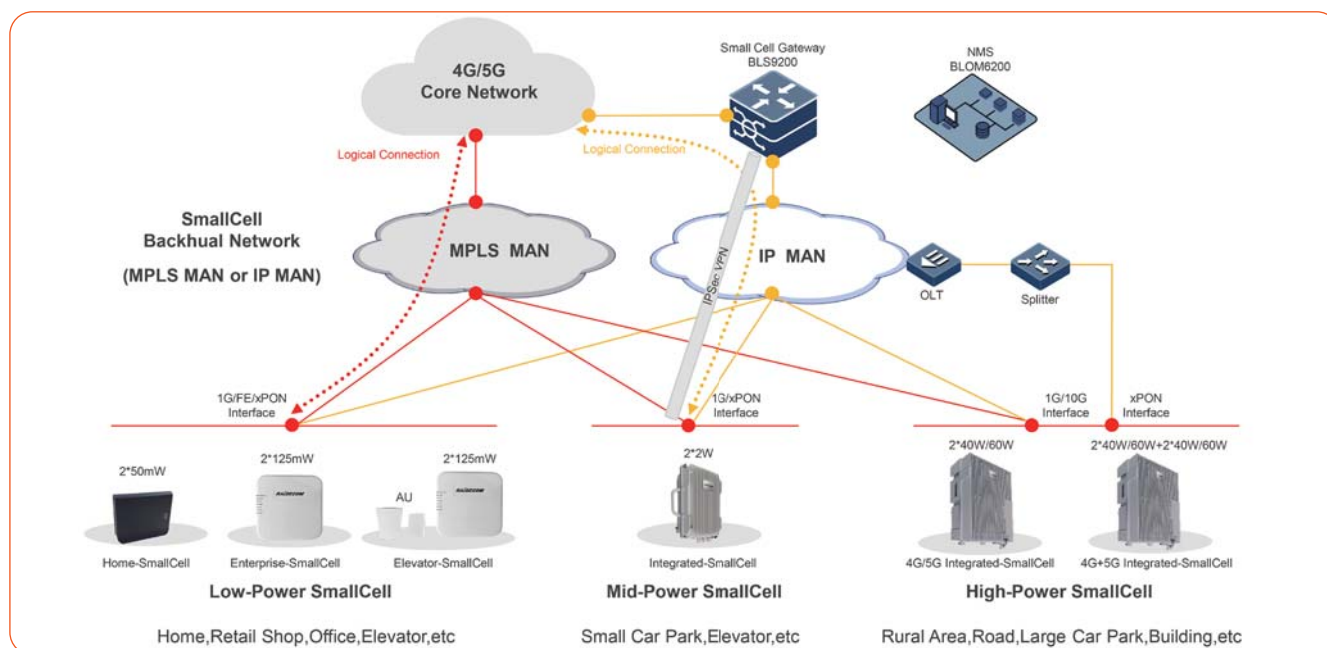
HIGHLIGHTS

- Standard and compact access device networking solution, flexible and low-cost networking
- The temperature-hardened (-40°C to +65°C) design can run 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 (FlexEthernet) to meet the different needs of different industries for network bandwidth, latency, and jitter to support mobile operator for enabling their telecom APIs
- Support IP/MPLS, EVPN, and SR capabilities to ensure refined services and end-to-end services forwarding requirements

PRODUCTS



Small Cells for Improving Mobile Coverage and Throughput



SOLUTION

RAISECOM's SMALLCELL series of products are divided into multiple types based on RF out power, including Low Power SmallCell, Mid Power SmallCell, and High Power SmallCell.

These SmallCell base station products use highly integrated SOC chips to integrate BBU and RRU functions, resulting in powerful functionality, small structure, and low power consumption. Supports 1G or 10G interfaces and can be transmitted back through MPLS MAN or IP MAN. Some devices support PON interfaces and can directly connect to PON ODN networks, with flexible deployment and low transmission costs. Supports a wide range of application scenarios, such as Home, Retail Shop, Office, Elevator, Car Park, Rural Area, Road, Building. etc., providing cost-effective 4G and 5G Mobile signal coverage.

HIGHLIGHTS

- Indoor small cells for mobile operators to effectively improve their mobile coverage and throughput
- Adopt highly integrated chipset solution with high price performance ratio
- Integrate baseband, RF, 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
- Rich product types to meet various application scenarios

PRODUCTS



Home Smallcell



Enterprise Smallcell



Elevator Smallcell



Smallcell Gateway



Mid-Power Smallcell



4G/5G Hi-Power Smallcell

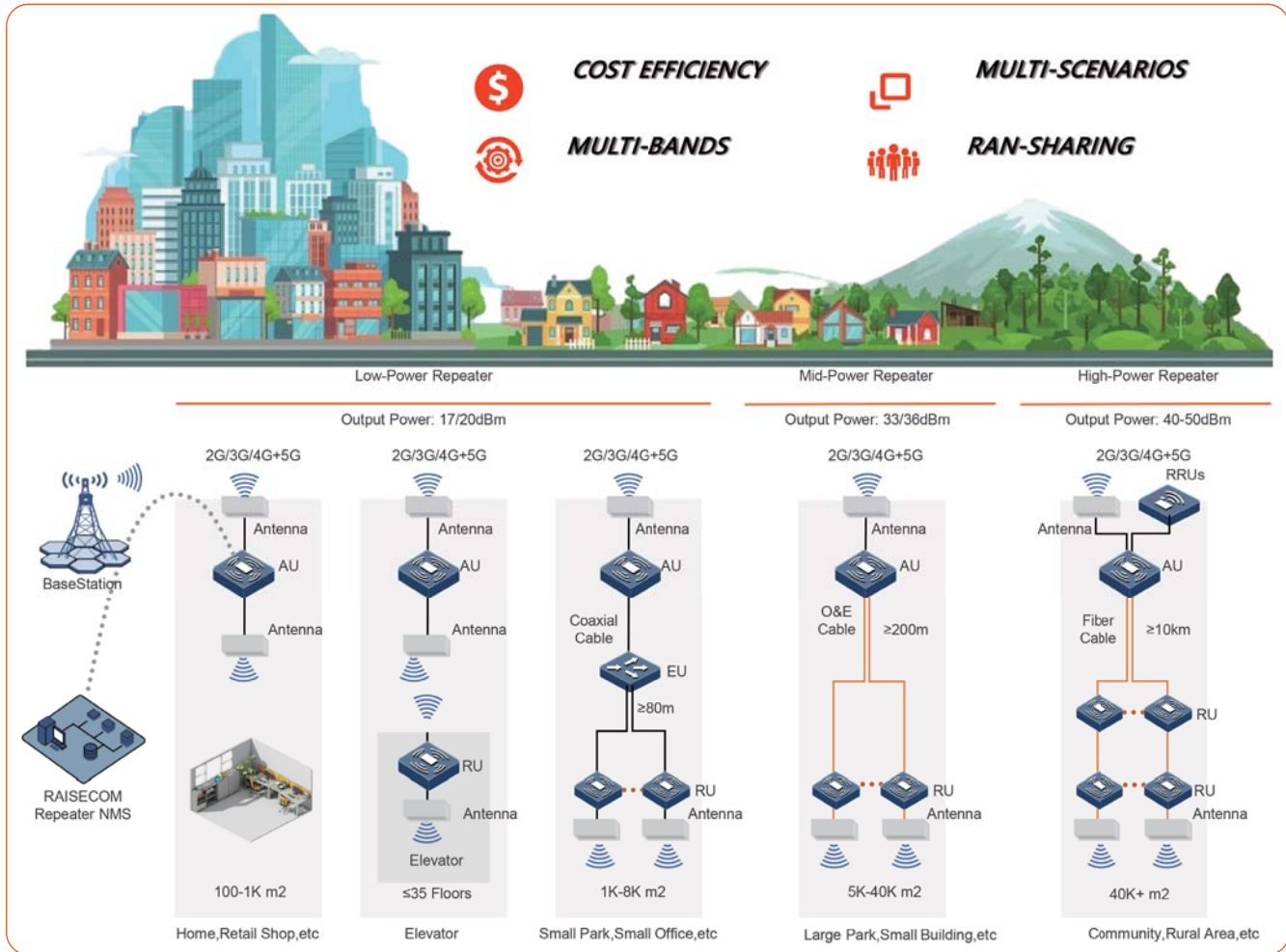


4G+5G Hi-Power Smallcell



Smallcell NMS

Small Cells for Mobile Coverage in Sparsely Populated Area



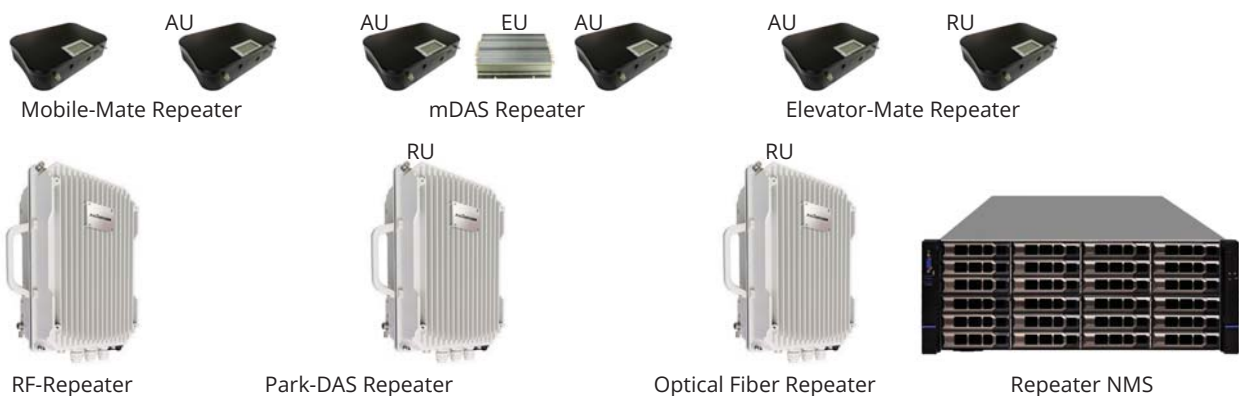
SOLUTION

RAISECOM repeater products are amplification and relay devices designed for mobile communication signals. According to the different output power, it is divided into low-power repeaters, mid-power repeaters, high-power repeaters, etc. By coupling and accessing the mobile wireless signals of macro base stations, amplification and expansion the coverage range, quickly and cost effectively solve wireless coverage problems in various scenarios (such as homes, retail stores, underground parking lots, elevators, offices, buildings, road, tunnel, rural areas, etc.), reduce user complaints, and improve user experience.

HIGHLIGHTS

- Support multiple frequency band combinations of 2G/3G/4G/5G
- Easy installation, flexible deployment
- Integrated wireless modem for remote control and monitoring
- Rich product types to meet various application scenarios

PRODUCTS



ISP and Cable Operator

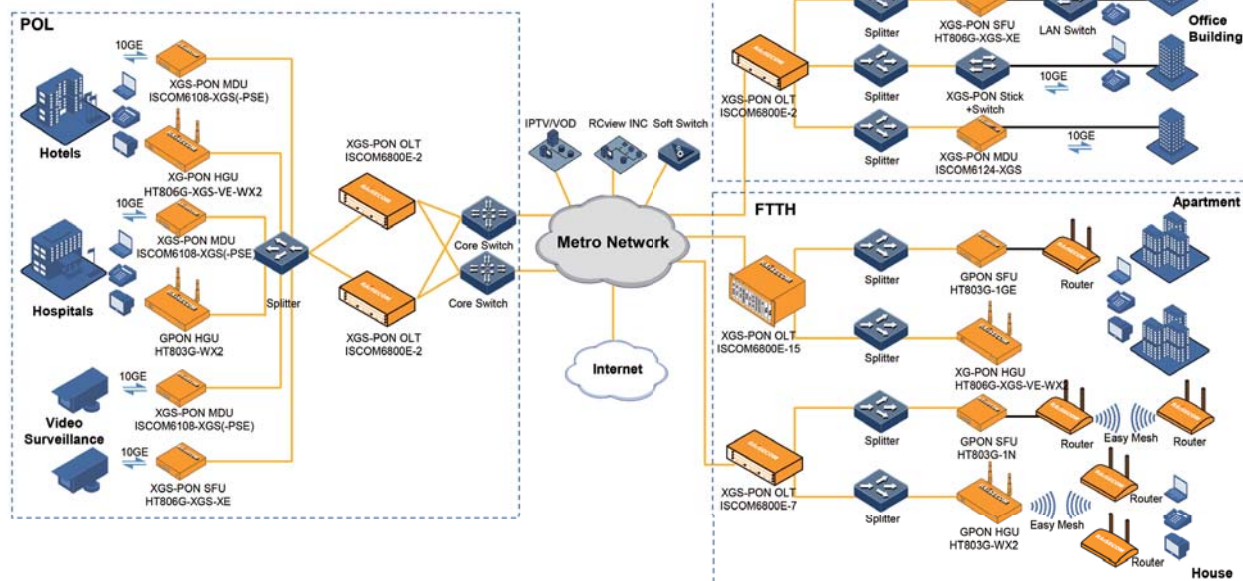
More and more consumers are witnessing the benefits of Fiber to the Home (FTTH) technologies. In addition to the ultra-fast Internet access, these users can also benefit from Triple-Play services (Internet + voice + IPTV/CATV) using the same infrastructure at a reasonable cost. Some broadband service 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. Integrated services including, 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 a 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.

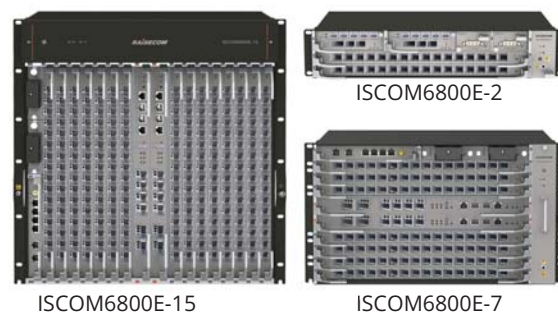
FTTB's demand for high bandwidth is increasing, and through the 10G PON scheme, 10G access is possible. With a variety of terminal forms, different access methods can be provided to different users, such as SFU + switches, or multi-port MDUs, to assist commercial users in providing various services and 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, 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 64 to 20,000 subscribers
- The pay-as-you-grow approach and the 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



ISCOM HT806G-XGE-XE



ISCOM HT803G-WX2

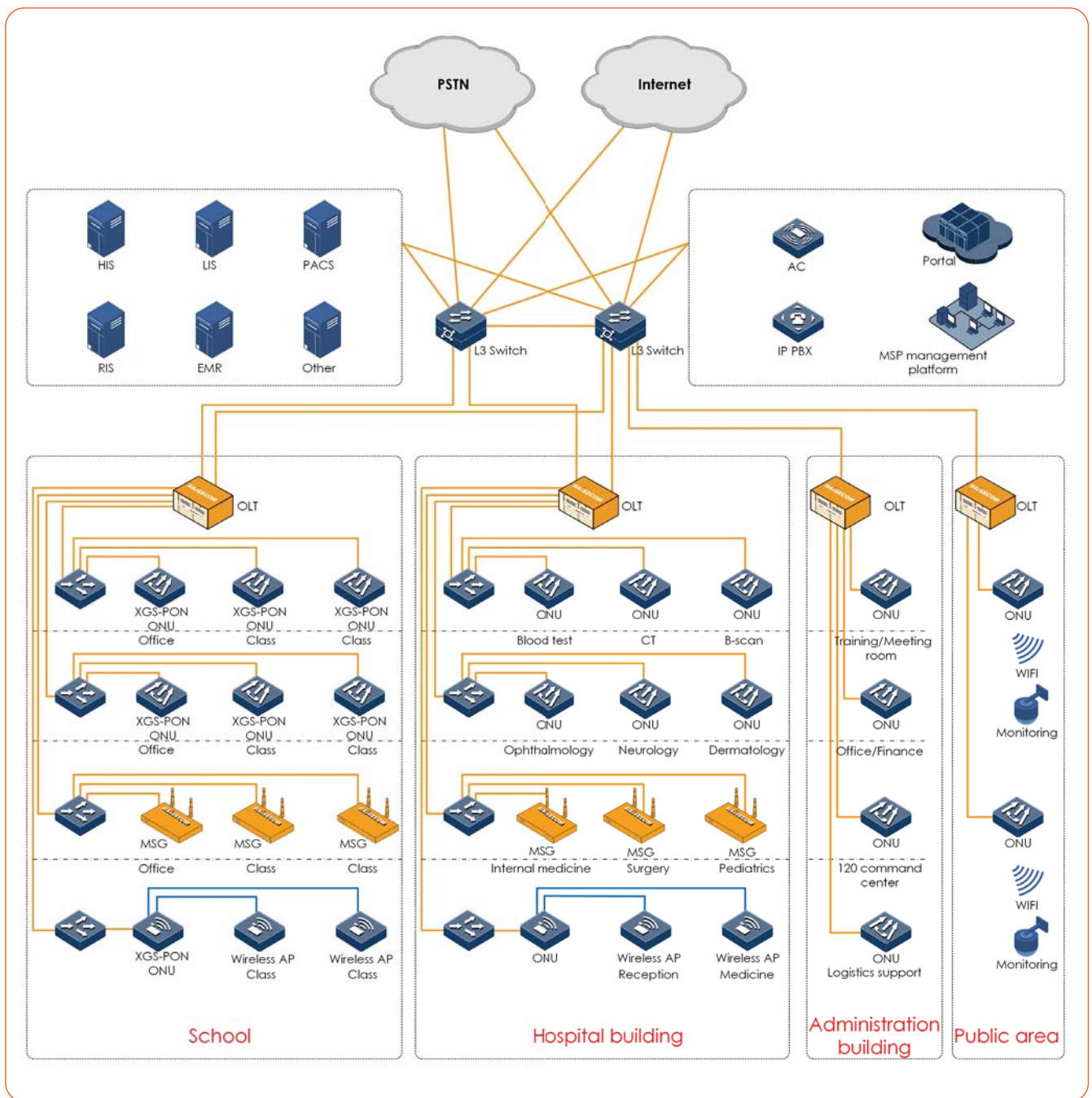


ISCOM6108-XGS(-PSE)



ISCOM6124-XGS(-PSE)

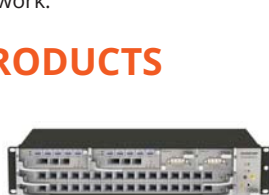
Passive Optical LAN (POL) Network



SOLUTION

Raisecom POL solution consists of 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.

PRODUCTS



ISCOM6800E-2



ISCOM HT803G-WX2



ISCOM6108-XGS(-PSE)



ISCOM6124-XGS(-PSE)

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 services, 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

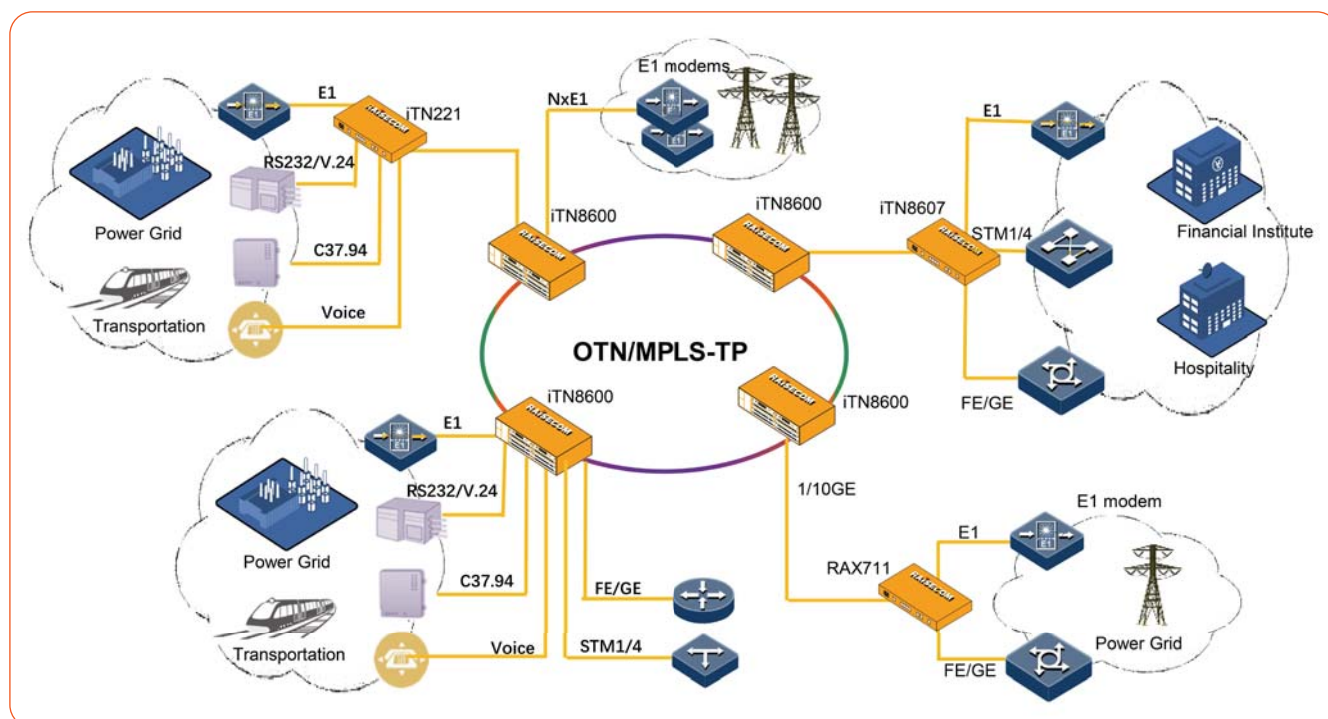
Mission Critical Network

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 series

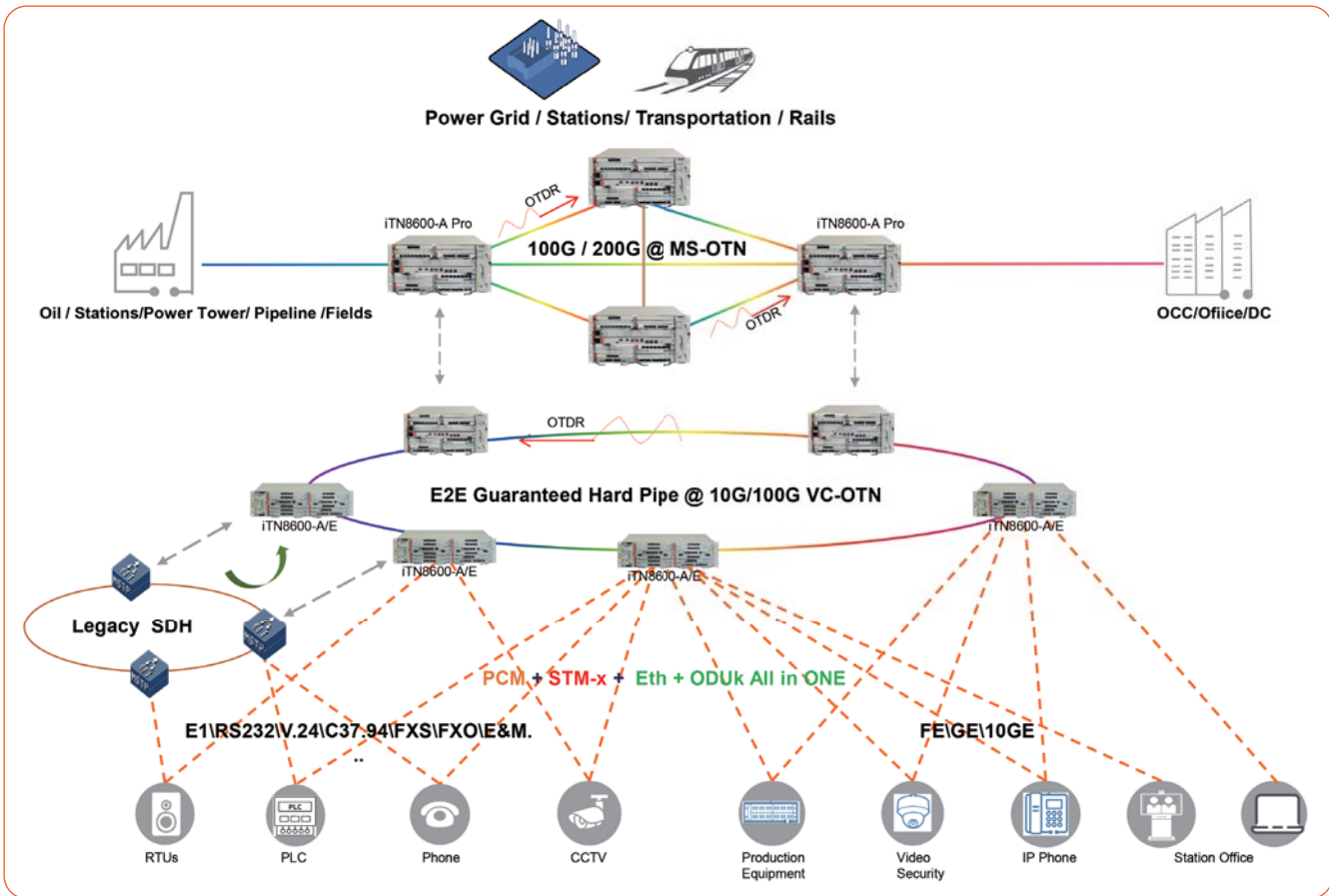


RAX711-L



iTN8607 series

Multi-Service Access over SDH for Mission Critical Networks



SOLUTION

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

Raisecom provides various services convenient access to SDH/OTN 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 series or iTN221 series products, to STM1/4 SDH, OUT-1/2 OTN network transmission. It provides unified network management, convenient and highly reliable solutions for mission critical networks.

Available with 5RU/3RU iTN8600 compact chassis or iTN221 1.5RU chassis for different locations covering applications from legacy production services edge access, IP bandwidth grooming to multi-services XC, converge and backbone long-haul transmission, to help customers like power grid/transport/oil to build a hierarchical network.

PRODUCTS



iTN8600-A Pro



iTN8600-A



iTN8600-E

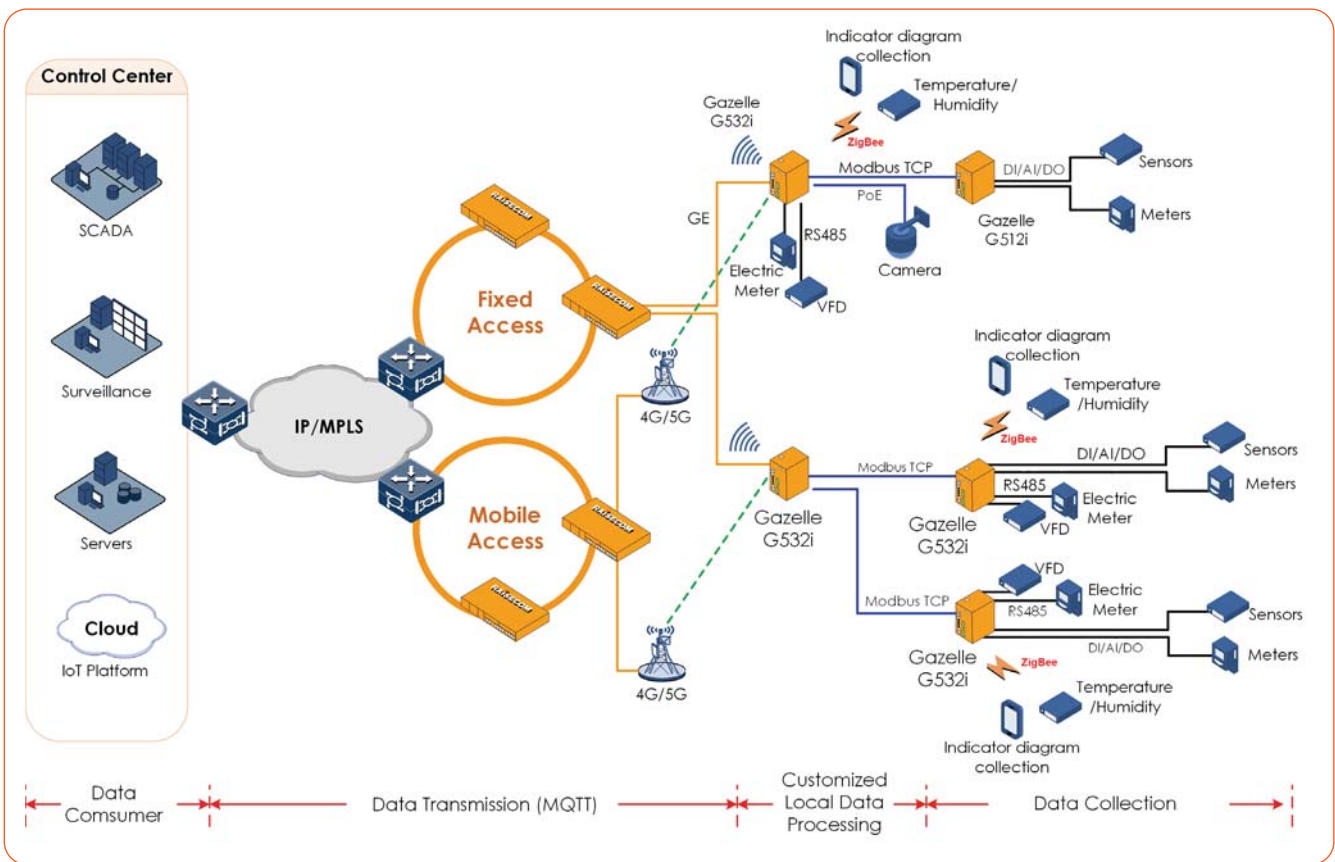


iTN221 series

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
- 120*10G/100G WDM in line provide large OTN pipe for backbone layer networking
- End to end hard pipe/Circuit based network solution as a main option, guarantee best SLA
- Different switching capacity of 64K/VC/ODUK/Eth in available chassis, support flexible scheduling & grooming for different level service granularity
- Support large distance span & ultra long-haul transmission, cover some scenarios like desert / island cross
- 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

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 cabinets 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.

PRODUCTS

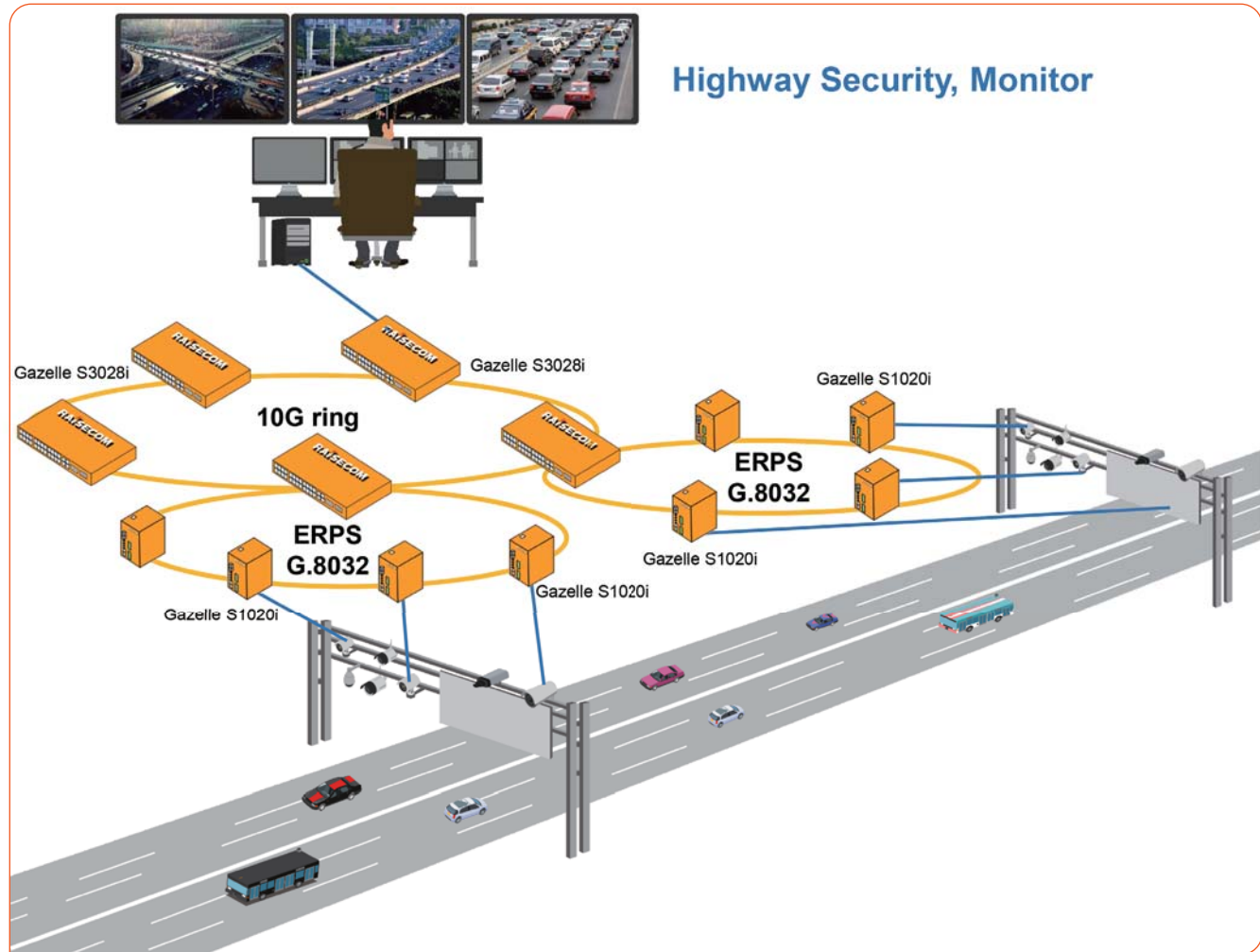


Gazelle G532i

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

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, lightening surge protection, and IP40 protection ensuring reliable operation in outdoor environment.

The typical highway and motorway communication infrastructure consists 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 purposes. The telecom-grade ITU-T G.8032 ERPS protocol is employed as the fastest and most dependable ring protection protocol to ensure the most uptime of the network with the lowest delay.

HIGHLIGHTS

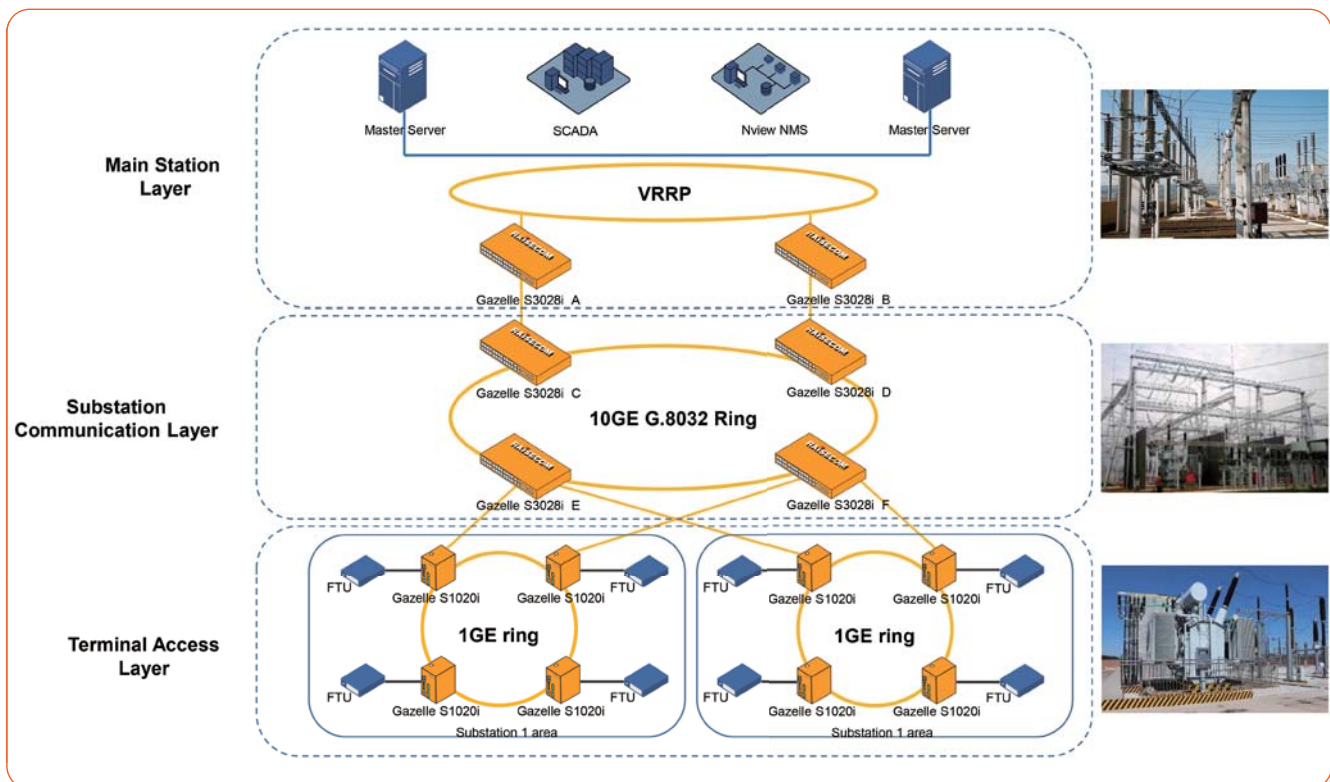
- Comprehensive Industrial Switch product line helps highway operators build up private networks for their surveillance, controlling and toll gate systems
- Complete stand-alone aggregation switches and DIN- rail access switches for different locations and cabinets
- IEEE802.3af/at/bt compliant PoE options for enabling various 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 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 support VRRP to provide the redundancy and resiliency in the L3 structure. In the access side, smaller Gazelle S1020i series also consists of rings with dual homing to provide dependability and resiliency. And at the end access level, S1020i din-rail switches connect 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

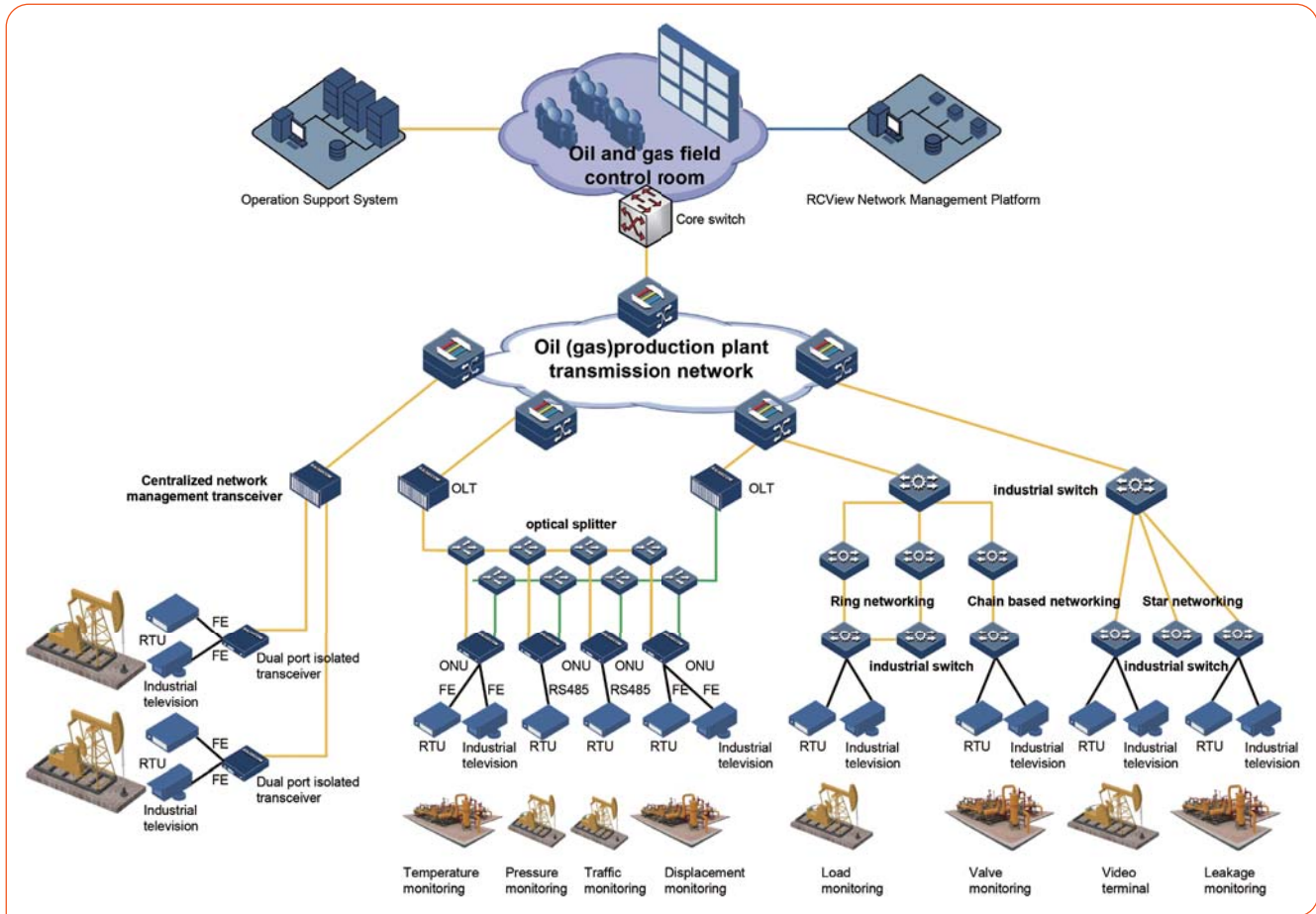


Gazelle S3028i-MGS series



Gazelle S1020i-PWR series

Oil and Gas Production Pipe Access Solution



SOLUTION

For large and medium-sized stations with a certain scale, it is possible to consider following the cable to lay optical fibers near the oil well to achieve wired transmission and access of communication services. Laying optical fibers in oil and gas field metering stations, processing stations, and other stations to form an OTN/MSTP/SDH ring network, deploying xPON equipment or industrial Ethernet switch devices in station areas, responsible for managing fiber access in the area. For manned stations such as fiber optic cables to wells, control rooms, and processing stations, it is recommended to use dual port isolated transceivers xPON, Industrial Ethernet switching unit network fiber optic network, carrying services such as industrial television and SCADA systems.

Deploy dual port isolated transceivers in metering stations, processing stations, wellheads, and other locations, forming a point-to-point networking mode with centralized transceivers at the local end, OLT connects to the oilfield production transmission network, and OLT equipment and ONUs deployed in metering stations, processing stations, wellheads, and other places can form a point-to-point networking mode to achieve business access; Deploy industrial grade Ethernet switches in measurement stations, processing stations, wellheads, and other locations, which can form various networking methods such as ring, chain, and star based on the site and fiber optic conditions.

HIGHLIGHTS

- The product has a variety of forms and can provide various product types such as EPON and GPON. Industrial grade Ethernet products can provide various types of equipment such as card cabinet, rack mounted, layer 2/layer 3, multi ports full gigabit, and 10 gigabit uplinks
- Full range of solutions for oil and gas requirements. IP + DWDM for core network, xPON industrial grade ONU which meets IP40 standards for access network, as well as Industrial grade Ethernet switch equipment. They are designed to meet industrial standards and design to provide safe, reliable, and stable operation in harsh environments
- 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
- -40 to 75°C operating temperature range

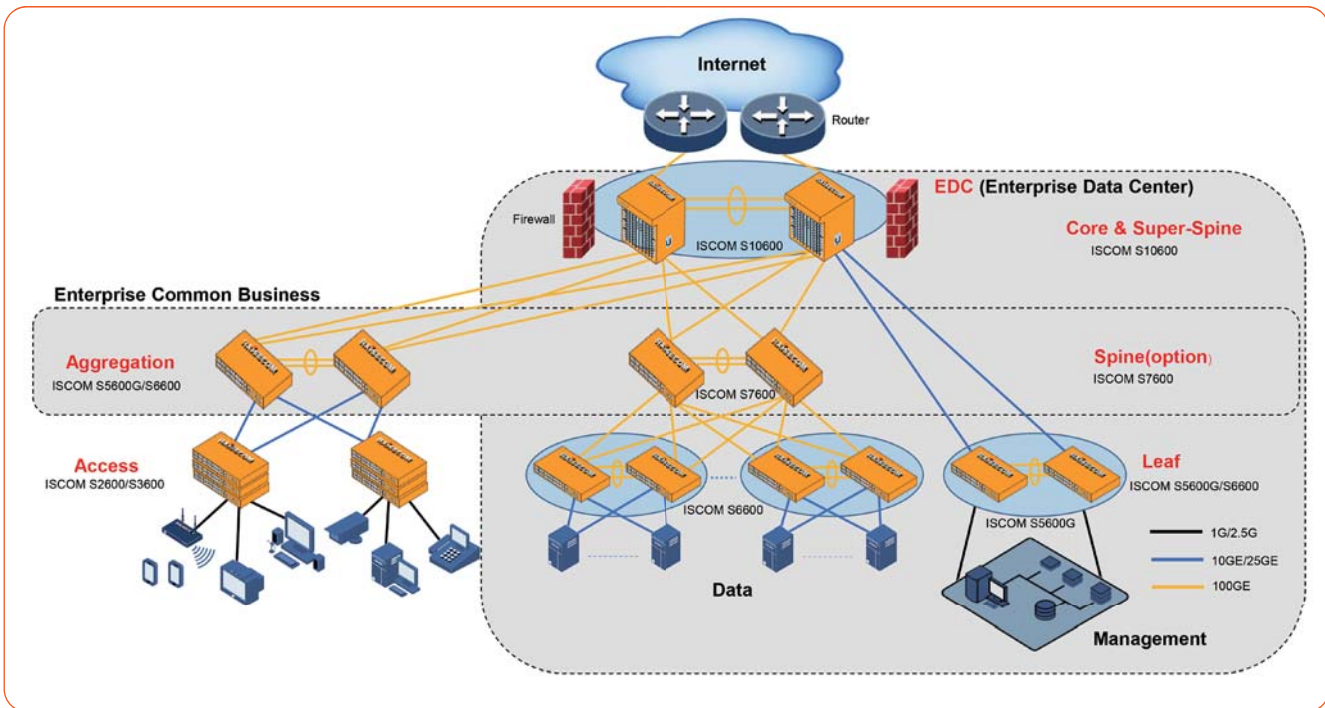
Enterprise and Government

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.



EDC(Enterprise Data Centers) Solution



SOLUTION

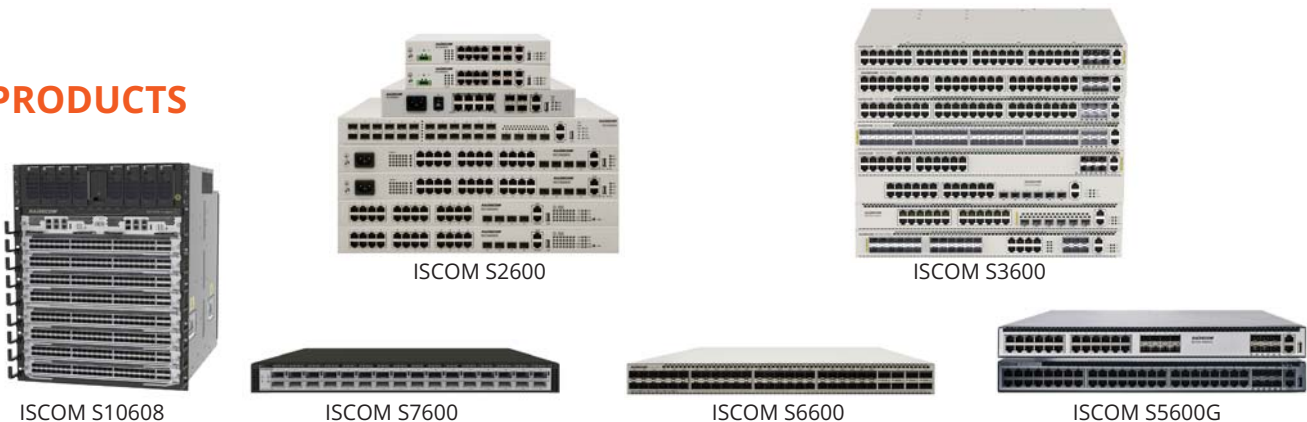
Data Center construction has been increasing exponentially in recent years, due to cloud-based data storage, content distribution and edge computing applications accompanied by data-hunger services such as AR/VR and generative AI. Raisecom's new generation Ethernet switch portfolio hierarchical various 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 support feature low-latency multiple 10G/25G/100G transmission, robustness and open interoperation with small and medium sized data centers and edge clouds.

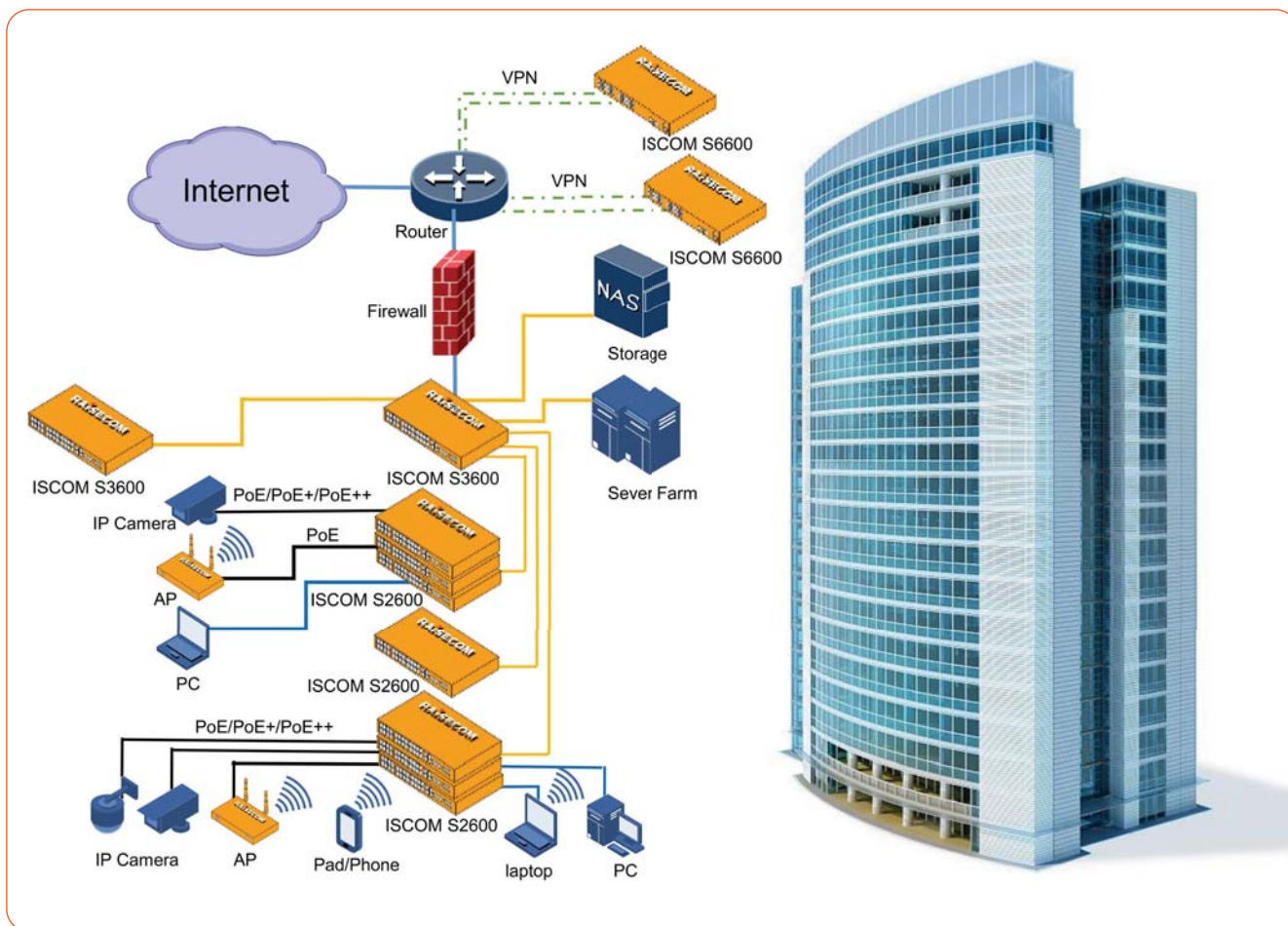
HIGHLIGHTS

- Agile and flexible Nx100G/40G/25G/10G speeds in high port density
- Modern infrastructure with L2 MLAG and L3 ECMP 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



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-users 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 cameras and other PD equipment
- Green and energy-saving design to reduce power consumption
- Various compact and high-density design to tackle different capacity requirements

PRODUCTS



ISCOM S2600

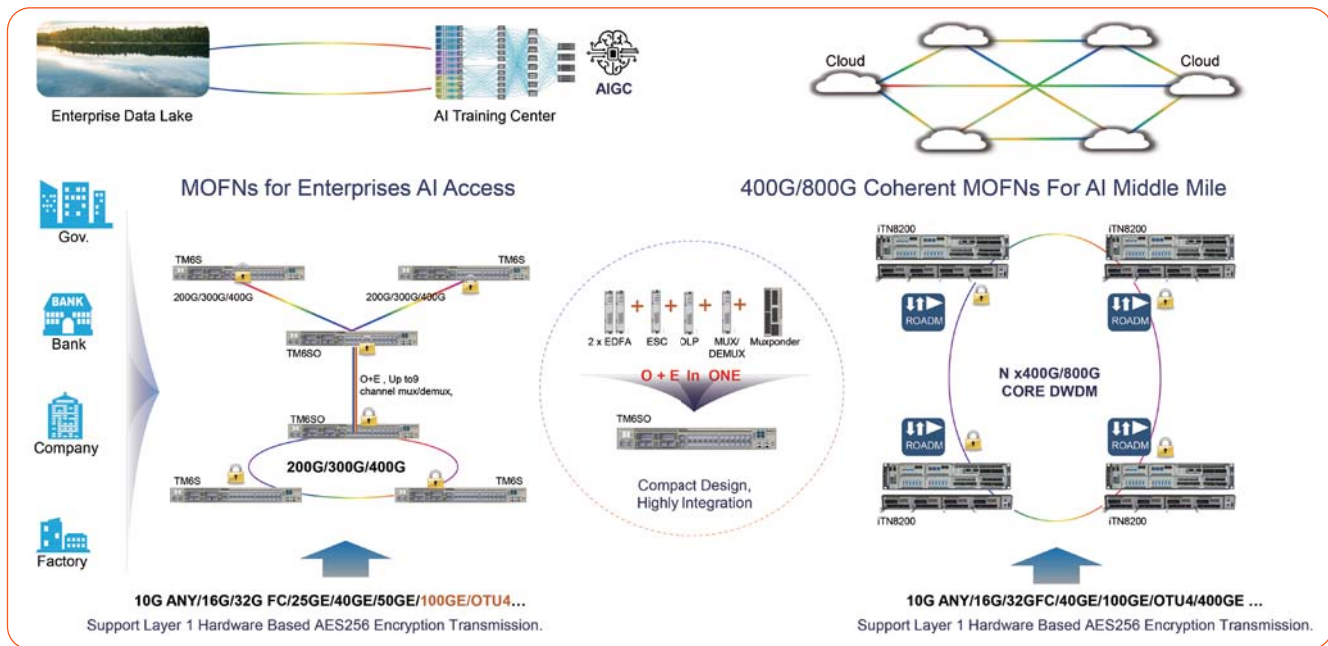


ISCOM S3600



ISCOM S6600

Cloud/AI Optical Connection Solution



SOLUTION

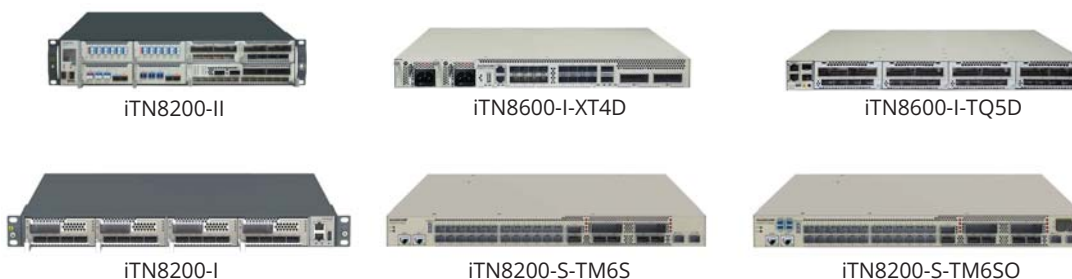
With the exponential growth of the data traffic to access computing DCs and the demand for bandwidth of traffic between DCs is growing rapidly. Raisecom provides dedicated iTN series intelligent Managed optical fiber network solution, that helps different customers to access AI training centers in an agile way. Various services convenient access to 100/200/400G/800G line side by iTN8200-II/iTN8200-S/iTN8600-I-XT4D/iTN8600-I-TQ5D, one pair of optical fibers can achieve up to 32Tbps transmission.

iTN8200-II provides 400G/800G ROADM DWDM networking solutions for AI middle miles, simultaneously transmitting securely and reliably.

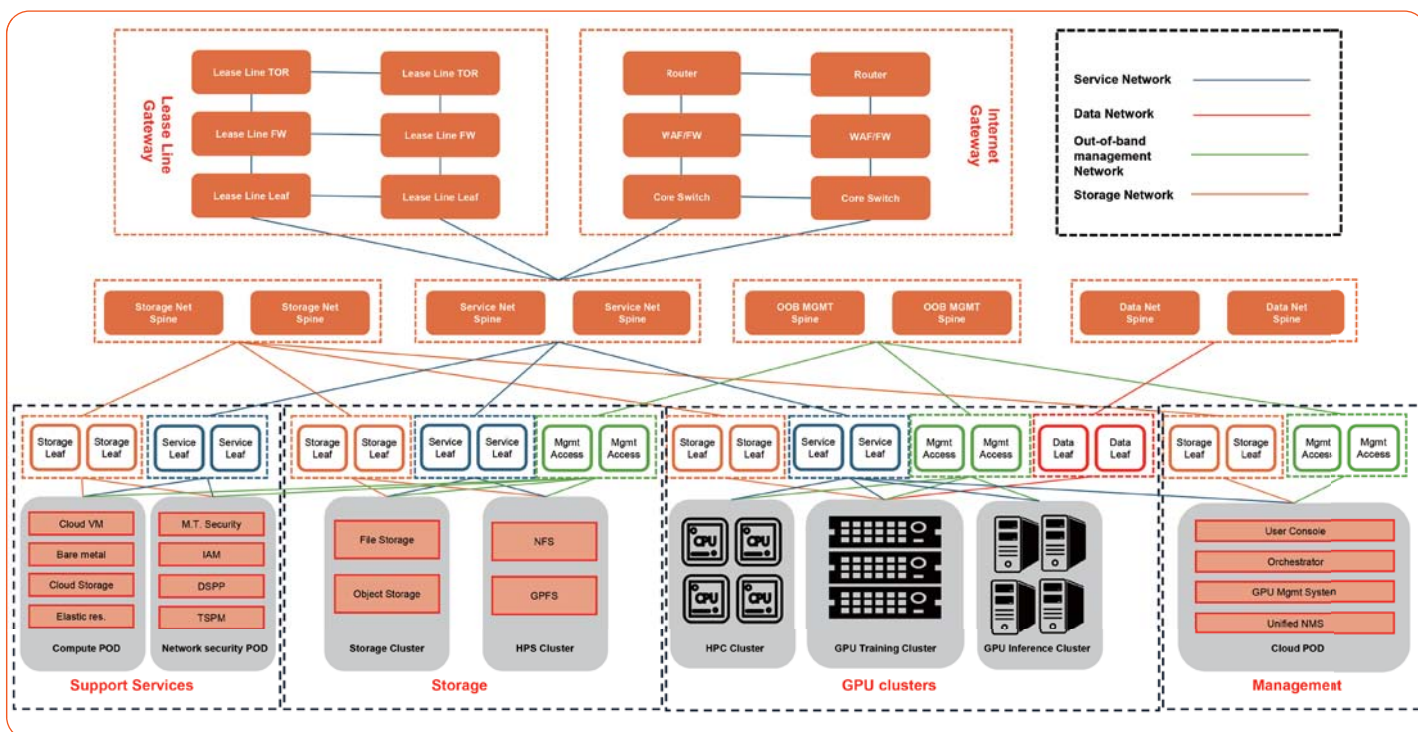
HIGHLIGHTS

- 100G/200G/400G/800G CFP2 based transmission with SD- FEC at line side
- Maximum transmission 120x100G/200G, 80x400G or 40 x400G in a pair of optical fibers
- Flexible wavelength assignment support WSS with Flexgrid. Support ROADM network for Mesh Topology
- Multi-service access for 10G any, 25/100/400G Ethernet, OTU4 OTN, and Nx32G Fiber Channel at client side, and services can be mixed for transmission
- Support Hardware based Layer-1 encryption (AES256) transmission
- Redundant backup for chassis, and protection at different levels

PRODUCTS



AI Data Centers



SOLUTION

AI is showing great potential in all different industries. Network is always playing a key role in AI data centers or AI factory. The management network of AI is very similar to an EDC (enterprise data center) solution, which Raisecom ISCOM S2600/S3600/S6600 product can work well.

For the service network and storage network, or small-scale Data Network, the S7610 series switches based on Raisecom 100GE/200GE/400GE platform can be deployed as the core (Spine nodes) of the data center, while the access layer utilizes S7600 switches as 400GE/200GE/100G TOR switches (Leaf nodes). This setup provides a high-density 400G/200G/100G GPU server access solution, enabling the construction of a highly reliable and redundantly scalable large-scale data center network. It meets the requirements for large-scale data center core networks and ultra-large-scale data center DCI interconnection scenarios. By delivering high-speed transmission, secure and reliable networks with green energy efficiency, it also supports smooth upgrades to 800G, ensuring network needs for the next decade.

HIGHLIGHTS

- High-speed interconnection, cost optimized with improved network efficiency
- Supports 100G/200G/400G full-speed ports to meet the high-density core interconnection needs of large-scale data centers
- Intelligent operation and maintenance, reducing OPEX
- Low latency, lossless

PRODUCTS

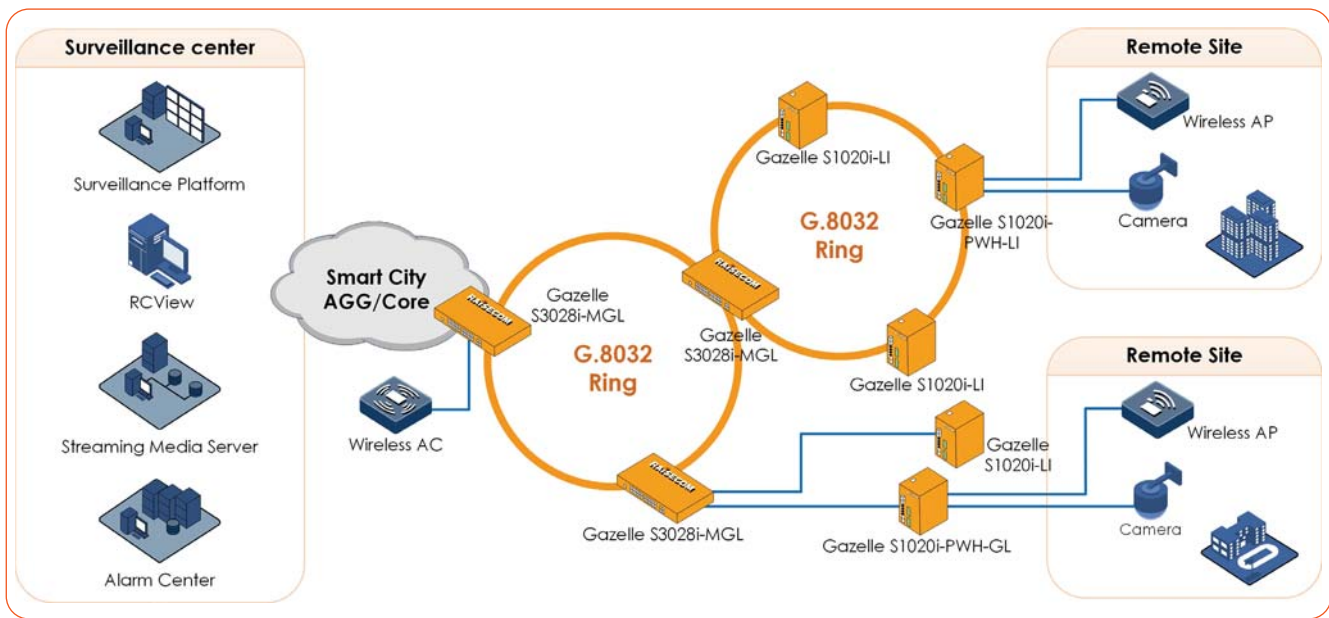


ISCOM S10608



ISCOM S7600

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



Gazelle S3028i-MGS series



Gazelle S1020i-PWR series

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 series

The iTN8800 series is a modular pre-aggregation and aggregation platform. It includes iTN8800-A (5RU chassis) and iTN8800-E (3RU chassis). It provides a comprehensive interface set, supporting E1, STM-1, GE, 10G, 25G, 40G, 50G, 100G. It supports CE3.0 services Layer 2 VPN, Layer 3 VPN and Multicast services, which is ideal 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



iTN8800-E-DC



iTN8800-E-AC

FEATURES

Large capacity, high density, and high service convergence ratio

- 5RU/3RU 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 to the 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 forms including E1, STM1, 1G, 10G, 25G, 40G, 50G, 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

P/N	iTN8800-A	iTN8800-E
Switching Capacity	4.8 Tbps	800Gbps
Slots number	2 for MCC 14 service cards for iTN8800-DC; 12 service cards for iTN8800-AC	2 for MCC 10 service cards for iTN8800-E-DC. 8 service cards for iTN8800-E-AC
Dimension W x D x H (mm)	5RU: 442 x 224 x 221.4	3RU: 444 x 220 x 132.5
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-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-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-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-B	16 x E1
	iTN8800-A-SRU	SRv6 service card
	iTN8800-A-EOA	EDFA card for BA, PA, and LA applications
	iTN8600-DAD4D	4 CH DWDM dual-fiber bidirectional OADM
	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; AC: 110V/220V	
Power consumption	Full load: ≤ 1600W	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	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	
FlexE	Support	NA
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, H-QoS 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 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-LFA 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	

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 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. 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 seamlessly evolve to 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-LFA 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 compliant 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 × 360 × 44	1RU: 442 × 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: ≤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-LFA 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 carrier grade product designed specifically for 4G/5G backhaul networks, providing access and aggregation mobile backhaul transmission 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 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 run stably in harsher environments. The device supports both hard slicing (FlexEthernet) and soft slicing (Segment Routing) features, as well as high-precision clock synchronization (Telecom profile 8275.1). It can meet the different requirements of various industries in the 5G era in network bandwidth, latency, and packet loss rate etc. RAX721-T series is the ideal equipment for 4G/5G backhaul and Fixed-mobile convergence network.



RAX721-T-XF



RAX721-T-4C24



RAX721-T-6C48



RAX721-T-4K24

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	RAX721-T-6C48	RAX721-T-4K24
NNI	4x10GE/1GE SFP+/SFP	4x100GE/40GE QSFP28/QSFP+	6x100GE/40GE QSFP28/QSFP+	4x25GE/10GE SFP28/SFP+
UNI	24 x 10GE/1GE SFP+/SFP	24 x 25GE/10GE/1GE SFP28/SFP+/SFP	24x25G/10G/1G SFP28/SFP+/SFP 24x10G/1G SFP+/SFP	24x10G/1G SFP+/SFP
GNSS antenna	NA	SMA-K	SMA-K	NA
1PPS+TOD(I/O)	NA	RJ45	RJ45	NA
2MHz	NA	RJ45	RJ45	NA
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP	1 x console (USB Type-A) 1 x 100/1000M SNMP	2x console (USB Type-A, RJ45) 1 x 100/1000M SNMP	1 x console (USB Type-A) 1 x 10/100M SNMP
Switching Capacity	800Gbps	4.8Tbps	4.8Tbps	800Gbps
Dimension W x D x H (mm)	1RU: 440 × 360 × 44	1RU: 440 × 248 × 44	1RU: 442 × 360 × 44	1RU: 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: 73W	Full load: 223W	Full load: 339W	Full load: 100W
Operating Temperature	-5~55°C	-40~65°C	-10~55°C	-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	SR BE, SR TE, SRv6 BE, SRv6 TE		SR BE, SR TE, SRv6 BE
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		NA
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-LFA 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			

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

RAX711-C-R RAX711-E

The RAX711 series is designed for 1G/10G leased line service delivery including RAX711-C-R and RAX711-E. They are the most compact and cost-effective MPLS CPE devices, providing customers with affordable MPLS network accessibility. Specifically, the RAX711-E is designed as an outdoor device and can be used in outdoor environments to provide MPLS networking capabilities. 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, and 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



RAX711-E

FEATURES

Multi-service access

- Multi service carrying, providing access to Ethernet/IP/L2VPN/ L3VPN services
- MEF CE3.0 compliant 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
- 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

P/N	RAX711-C-R	RAX711-E
NNI	4 x 10GE/1GE SFP+/SFP	4 x 10GE/1GE optical interfaces
UNI	12 x GE SFP	2 x 1GE electrical interfaces
OOB	1 x console (USB Type-A) 1 x 10/100M SNMP	1 x console (RJ45) 1 x SNMP(RJ45)
Dimension W x D x H (mm)	1RU: 220 x 266 x 44	350 x 134 x 230
Power Supply	2 hot-swappable power supplies provide 1+1 redundancy DC: -48V, -36~-72V; AC: 220V, 100~240V	DC: -48V, -36~-72V
Power consumption	Full load: ≤ 52W	Full load: ≤ 40W
Environment	Operating Temperature: -20~65°C Relevant Humidity: 10%~90% RH (indoor) non-condensing	IP65 Operating Temperature: -40~60°C Relevant Humidity: 5%~95% RH 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-LFA 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 compliant 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 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 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 compliant 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 magneto telephone voice interfaces
	iTN221-SUB-10FXS	3 x RJ45 with 10 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 Codirection interfaces
	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	

Multi-Service access/CE Aggregator

RAX721-M-4XF

The RAX721-M-4XF is a 1RU-sized chassis-based next generation IP/MPLS multiservice access equipment. It provides a comprehensive interface set, supporting GE, 10G in a 1RU-height chassis with 2 slots for various types of service cards. 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. And the support of SyncE and IEEE 1588v2 makes it ready for MBH applications. It also can support more clock synchronization interfaces and GNSS grandmaster retiming the time accuracy. In the future, it will evolve to support the integration of fixed and mobile services as well as quantum decryption, and it will also be compatible with accessing legacy services.



RAX721-M-4XF

FEATURES

Multi-service access

- Multi service carrying, providing access to Ethernet/IP/L2VPN/ L3VPN services
- MEF CE3.0 compliant 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 GNSS receiver, 1588v2 BC/TC/OC 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
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- Based on service performance monitoring, providing SLA reports to assist in quality analysis of service operations, and transforming passive response into active service

SPECIFICATIONS

Slots number	1 for MCC 2 for service cards	
RAX721-M MCC	NNI	4 x 10GE SFP+
	UNI	8x 1GE SFP
	OOB	2 x console (1 Type-C, 1 USB) 1 x 10/100M SNMP
	RAX721-SUB-4GE	4 x 1GE RJ45
	RAX721-SUB-TSSU	1 x GNSS interface (SMA) 2 x 1PPS+TOD (RJ45) 2 x 2MHz (RJ45) 2 x 1PPS/10MHz (SMA)
Dimension W x D x H (mm)	1RU: 440 x 266 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: ≤150W	
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, SRv6 TE Policy	
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 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-LFA 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	

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-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.

iTN8200-S-TM6S, iTN8200-S-TM6SO

iTN8200-S is a standard 19-inch width, 1U height box products of iTN8200 Series normally used in metro DCs interconnections, cloud access, as well work in carriers' long Haul & Metro OTN scenarios, to meet subscriber's high-bandwidth bearing requirements.

The iTN8200-S-TM6S is a 1RU electric device that supports up to 24*10G Any/25GE/FC1600 SFP or 6*100G Any QSFP28 interfaces on the client side connecting to 2*CFP2 on the line side, with a maximum of 600G service conversion. It supports cross-protection based on ODU2/2e/flex service granularities and port-based OCH 1+1 protection. Additionally, it supports client-side and line-side fault transmission, loopback, service alarm performance monitoring, and DCN operation and maintenance management.

The iTN8200-S-TM6SO is a 1RU optoelectronic integrated device. In addition to integrating all electrical layer functions of the TM6S, it features a complete set of optical layer functions, including MUX/DEMUX, optical amplifiers, OSC, and optical switches. It supports 8 wavelength uplinks and downlinks per pcs as well as independent networking. All optical layer function modules support optional configuration, allowing flexible selection according to customer scenarios to meet various optical layer networking applications.



iTN8600-I-XT4D



iTN8600-I-TQ5D



iTN8200-S-TM6S



iTN8200-S-TM6SO

FEATURES

iTN8600-I-XT4D

- 1RU, 19-inch standalone device
- Support OTN Muxponder/Transponder/ADM applications.
- 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 LR4/ER4/ZR4 at line side
- Support GFEC, SD-FEC for line interfaces
- Support GCC in-band DCN management
- Support SNMP for out-of-band DCN management

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 for line interfaces
- 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
- Support OTN L1 encryption for high security

FEATURES

iTN8200-S-TM6S

- 1RU, 19-inch, 360mm depth standalone device
- Dual 110V/220VAC or dual-48VDC redundancy power supplies
- Support SFP+, SFP28, SFP56 or 100G QSFP28 at client side
- Flexible multi-service hybrid access capabilities on the client side, up to 24 x 10G/25G ports and 6 x 100G ports
- Flexible high line capacity with 100G~400G pluggable DCO modules, up to 600G in total
- Support multi-level protection on both optical and electrical layers, SNCP 1+1, OTS 1+1 protection
- Support in-band GCC or out-of-band OSC remote management.
- Opened system with NB & SB interface, compatible with third-party wavelengths
- Support L1 AES-256 OTN encryption for high security
- Stackable and compact design to support pay as you grow

FEATURES

iTN8600-I-TQ5D

- 1RU, 19-inch, 360mm depth standalone device
- Dual 110V/220VAC or dual-48VDC redundancy power supplies
- Integrated optional Amplifiers, Mux/Demux and optical switch within 1U small chassis, easier to build a new network
- Other electrical layer features synchronized with iTN8200-S-TM6S

SPECIFICATIONS

P/N	iTN8600-I-TQ4D	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	
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

P/N	iTN8200-S-TM6S	iTN8200-S-TM6SO
Line interface	2 x CFP2 100G~400G port (coherent CFP2 DCO)	2 x CFP2 100G~400G port (coherent CFP2) 2 x client optical MUX/DEMUX port (MPO) 2 x WDM line port
Client interface	24 x SFP+/SFP28/SFP56 (10G ANY, 25GE etc.) 12 x SFP56 (25GE) 6 x QSFP28(100G ANY)	
Power Supply	AC: Input 110V/220V AC, 100~240VAC, DC: Input -40 to -57V, -48V DC	
Power Consumption	< 350W	
Dimension(mm)	440(L) x 360(W) x 45(H)	
Operation Temperature	General: -5°C ~ 50°C	

2U 100G/200G/400G/800G WDM/OTN Platform

iTN8200-II/iTN8200-I

Raisecom iTN8200 is a new generation 400G/800G DWDM/OTN intelligent transmission network platform, which adopts a standard 19 inch, 2RU chassis, up to 8 service slots. As well as iTN8200-I RU chassis with up-to 4 slots. The compact design improves the equipment integration and reduces the overall space occupied by the equipment.

This new platform integrated with EDFA, ROADM, FOADM, OCM, OTDR, 100/200/400G/800G transponder and muxponder, which meets the application needs of DCI (data center interconnect), cloud business, metro OTN and so on. It provides high-density interface access and up to 800G per lambda uplink bandwidth, meets the growing demand for bandwidth and services of the customers.



iTN8200-II



iTN8200-I

FEATURES

- Small size, large capacity, 2RU, 19-inch for iTN8200-II, 1RU, 19-inch for iTN8200-I
- 8 small service cards, or 4 large service cards, 6.4T per chassis for iTN8200-II, half of capacity for iTN8200-I
- Up to 40/48/80/96 wavelengths DWDM, the transmission capacity up to 32Tbps using dual fibers
- Featured with 2 cores, WDM/OTN, among which services can be scheduled
- LCD displays 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.
- Support up to 120 channels Super C band (C++) and 96 channels C-band systems
- Support ultra long-distance transmission, with RAMAN/high-power output amplifiers
- EDFA, Booster amplifier, line-amplifier, Pre-amplifier, pre-RAMAN, post-RAMAN amplifier
- Support networking with colorless directionless and flexgrid ROADM solution
- Support OCM, OTDR monitoring
- OLP/Och/SNCP multilayer protection
- Support unified network management
- Easy for maintenance and expansion

SPECIFICATIONS

Chassis	2RU, 19", iTN8200-II chassis		1RU, 19", iTN8200-I 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		4 small service cards, or 2 large service cards
DWDM	Up to 40/48/80/96/120 wavelengths DWDM		
Service capacity	6.4T per chassis, the transmission capacity up to 32Tbps using dual fibers		
Line/Client-side interfaces	Line-side: OTU4, OTUC2, OTUC4, OTUC8		
	Client-side: 10GE/OTU2/STM64, 8G/10G/16G/32G FC, 40GE, 100GE, OTU4, and 400GE		
Optical amplifier	EDFA, Booster amplifier, Line amplifier, Pre-amplifier, RAMAN amplifier		
Protection	OLP/OMSP/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		Full load: ≤ 500w
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	2x200G transponder, 4x100G mux into 2x200G/100G
	iTN8200-II-HS6S	400G transponder, 1x400G to 1x400G OTUC4
	iTN8200-II-HD8S	800G transponder, 2x400G mux into 1x800G
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 PA card, with OSC
	iTN8200-II-OA35	8~18dB BA and 25~35dB PA card, 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
	iTN8200-II-EOA-F12/F17/F22	C+ band fixed gain FGA cards, saturated output power is 20dBm
	iTN8200-II-EOA-V18/V25/V35	C+ band variable gain VGA cards, saturated output power is 21dBm
	iTN8200-II-UOA-F22	19~25dB gain, 23dBm saturated output, within bypass VOA, MON and OTDR port, support C++ band. Input power range: -22 to +1.
	iTN8200-II-UOA-V35	22~35dB gain, 24dBm saturated output, within bypass VOA, MON and OTDR port, support C++ band. Input power range: -24 to +2.
	iTN8200-II-UOLA-F22	C++ Bidirections 22 dB LAs with VOA, MON and OTDR port, support bi-directional OSC and EDFA
	iTN8200-II-UOLA-V35	C++ Bidirections 22-35 dB LAs with VOA, MON and OTDR port, support bi-directional OSC and EDFA
	iTN8200-II-RFA	Backward Raman amplifier card, C++ band
	iTN8200-II-FRFA	Forward Raman amplifier card, C+ band
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
	iTN8200-II-TWS09	C++ band 9-degree WSS ROADM card with splitter, support flexgrid
	iTN8200-II-TMD9	9-ports Colorless local add/drop card, supporting C+ band, can be used in conjunction with WSS card to achieve complex networking
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, 2RU, 19-inch, 50GHz, C band
	iTN8200-II-MUX40	40 ch Mux+Demux, 1RU, 19-inch, 150GHz, C++ band
	iTN8200-II-MUX120	120 ch Mux+Demux, 3RU, 19-inch, 50GHz, C++ band

Multi-Service OTN Platform

iTN8600-A Pro

The iTN8600-A Pro is a large capacity device which converged Opto-Electronic layer cross-connection, it support multi-service access of speed ranges from 2M~400G; As a NG 100G|200G|400G per lambda OTN transmission platform, It normally deployed in carriers' Access DWDM | Metro DWDM scenarios, as well in industry users' backbone network such as oil/power/transport regional/country DWDM; iTN8600-A Pro is a card-in type, and integrates multiple technologies: OTN, SDH, packet switching, and DWDM, provide users a flexible, strong, converged network solution.



iTN8600-A PRO

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, OTN, SDH, MPLS-TP, and 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.



iTN8600-A

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-E

FEATURES

- iTN8600-A Pro/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-layer integrated in one platform, provide flexible service access and grooming 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/OTU4, CPRI, OBSAI, FC-1G/2G/4G/8G/10G, etc.
- Maximum DWDM 48/96 x 10G/100G/200G/400G Line capacity
- Support 10G/100G/200G/400G transponder, support 10G/100G/200G/400G Muxponder cards, 800G in Roadmap
- Support 9-degree optical WSS, support ROADM networking with colorless/directionless solution, support flexgrid
- Support RAMAN card, Support ultra long-haul / large single span DWDM solutions with High-output EDFAs & Raman tech
- 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 Pro chassis	5RU, 19", iTN8600-A chassis	3RU, 19", iTN8600-E chassis
Slots number		2 for MCC	2 for MCC	2 for MCC
		DC chassis up to 14 service slots	DC chassis up to 15 service slots	DC chassis up to 10 service slots
Dimension W x D x H (mm)		442 x 220 x 221	444 x 220 x 222.3	444 x 220 x 132.5
WDM	MUX/DEMUX	DWDM 16/40/48/96 wavelengths MUX/DEMUX DWDM 4/8 OADM Mux/DEMUX CWDM: 8 wavelengths MUX/DEMUX		
	Optical Amplifier	EDFA: Booster amplifier / pre-amplifier / OLA Raman Amplifier: Counter-Raman amplifier/ Co-Raman amplifier		
	Protection	OLP 1+1 / OMSP / Och protection		
	ROADM	Up to 9-degree, Supported integrated card with WSS/EDFA and OSC, support Flexgrid		
	Transponder And Muxponders	10G Transponder: 5 x 10G bidirectional wavelength conversion 10G Muxponder: FE/GE/STM-1/4/16/FC100/200/OTU1 to 2 x 10G wavelength conversion 100G Muxponder: 10x10G any +2x100G to 2 x 100G or 1 x 200G wavelength conversion 100G/200G Transponder: 2x100GE/OTU4 to 1 x OTUC2 or OTU4 wavelength conversion 400G Muxponder: 4x100G mux into 1 x OTUC4 wavelength conversion 400G Transponder: 1x400G to 1x400G OTUC4 wavelength conversion		
Cross-connection Capability	OTN	2.4T ODU0/1/2/4/ODUflex	280G ODU0/1/ODUflex	240G ODU0/1/ODUflex
	L2/MPLS-TP	2.4T	280G	240G
	SDH	280G VC-4 high-order, 40G VC-3 or VC12 low-order	640 VC-4 high-order, 384 VC-3 or 8064 VC12 low-order	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/16G/32G		
		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, D-LAG protection		
		OLP 1+1 protection		
		OCP 1+1 protection, OMSP 1+1 protection		
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: ≤2400W	Full load: ≤1070W	Full load: ≤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 Pro-DC	iTN8600-A Pro with dual DC power supplies
	iTN8600-A Pro-AC	iTN8600-A Pro 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-DAD4D: 4 CH DWDM dual-fiber bidirectional OADM
		iTN8600-DAD8: 8 CH dual-fiber unidirectional OADM
	EDFA card	iTN8600-EOA-Fxx: EDFA optical pre-amplifier or booster amplifier card
		iTN8600-OLA20: EDFA optical line amplifier card
	WSS card	iTN8600-A-TWS09: 9-dimension WSS card (Flexgrid) with splitter
	OLP card	iTN8600-OLP: Optical line 1+1 protection card
	VOA card	iTN8600-A-VOA8: 8-ch variable attenuators card
	OSC card	iTN8600-A-FDU: 2-ch OSC multiplexing card
		iTN8600-A-FBU: 2-ch bidi-OSC card, support OTDR and external alarm
OTN sub-cards	OTDR card	iTN8600-A-OTDR: 4-ch OTDR card
	OCM card	iTN8600-A-OCM: 8-ch optical monitoring card
	iTN8600-A-MX4E	4 x OTU2 line card
	iTN8600-A-MA81	8 x OTU1 tributary OTN card
	iTN8600-A-MA10	8* any(FE/GE/STM-1/4/16) tributary OTN card
	iTN8600-A-MT10	10 x OTU1 line card
	iTN8600-A-XT4D	10G and 100G to 200G OTN Muxponder card
	iTN8600-A-MCT1	1 x OTU4 or OTUC2 line card
SDH sub-cards	iTN8600-A-MN10	10 x 10GE/STM64/OTU2 tributary OTN card
	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	SDH mode: 8 x STM-1/4 or 2 x STM-16 SDH tributary card
	iTN8600-A-SE32(-BL)	32 x E1 tributary card
	iTN8600-A-SH8	EOS mode: 8 x GE EOS tributary card
	iTN8600-A-SH10	10 x STM-1/4/16 SDH interface card
PKT sub-cards	iTN8600-A-SX2A	2 x STM-64 SDH interface card
	iTN8600-A-PX4	4 x 10GE service interface card
	iTN8600-A-PX4D	4 x 10GE (EoO/EoOSU) service interface card
	iTN8600-A-PRX4	4 x 10GE (Packet) Layer 3 service interface card
	iTN8600-A-PE16	16 x CES service interface card in iTN8600-E
	iTN8600-A-PC2	2 x 100GE service interface card
	iTN8600-A-PG8	8 x GE service interface card
PCM sub-cards	iTN8600-A-PX8	8 x 10GE service interface card
	iTN8600-AUDIO	16 x FXS/FXO/magneto telephone voice card
	iTN8600-A-TP	4 x C37.94 optical port, tele-protection service card
	iTN8600-A-16C64K	8 x RJ45 port, 64k service card
	iTN8600-8E&M	8 x RJ45 port, 2-wire/4-wire audio card
Transponder cards or Muxponder cards	iTN8600-RS24	16 x RS232, or 8 x RS485, or 8 x V24 card
	iTN8600-OTU5E	5-ch enhanced bidirectional transponder card
	iTN8600-A-XQ2Q	4-ch 10G any to OTU2 transponder card
	iTN8600-AO2DE	8 x any service aggregation OTU2 card
	iTN8600-A-XT4D	10 x 10G ANY +2 x 100G to 2 x OTU4 or 1 x OTUC2 aggregation card
	iTN8600-A-TD5S	2 x 100G to 1x OTUC2 or 2 x OTU4 muxponder card
	iTN8600-A-TQ6S	4 x 100GE/OTU4 to 1x OTUC4 muxponder card
	iTN8600-A-HS6S	1 x 400GE to 1x OTUC4 muxponder card

Compact OTN Pizza Box

iTN8607-OG6S2S, iTN8607-OM8S

iTN8607 series pizza-boxes are 1RU 19-inch multi-service OTN access devices, providing STM-1/4, FE/GE, E1 and other optical access services.

iTN8607 series provide universal multiplexing of E1/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-OG6S2S



iTN8607-OM8S

FEATURES

- iTN8607-OG6S2S: 1RU, 19', compact OTN access device. Client-side interface: 6 x FE/GE + 2 x STM-1/STM-4; Line side interface: 2 x OTU2, supporting 1+1 protection
- iTN8607-OM8S: 1RU, 19', compact OTN access device. Client-side interface: 4 x E1(balanced or unbalanced) + 4 x FE/GE(combo) + 4 x ANY(FE/GE/STM1/4), Line side interface: 2 x OTU1/STM1/4/16, 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 bi-directional 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 MUX/DEMUX 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 front-haul optical fiber capacity expansion, unilateral wavelength conversion, and Semi-Passive CWDM-based business leased line access scenarios.

FEATURES

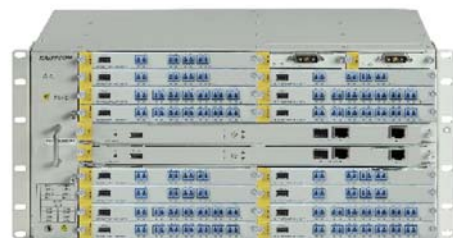
- WDM semi-passive solution includes an active Central Office side and passive remote side
- Manageable and easy-to-maintain remotely
- Single-strand fiber based for bidirectional services
- Line side 1+1 network protection
- Uninterrupted services during power failure
- 4G/5G/mixed access, saving fiber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

GPON/10GPON OLT Platform

ISCOM6800E Series

The ISCOM6800E Series are new-generation products and have three types: ISCOM6800E-15, ISCOM6800E-7, ISCOM6800E-2. They can support GPON, XG(S)-PON, XG(S)-Combo PON, and supports 50G PON smooth evolution.

By adopting a new switching and routing platform and supporting 100GE/25GE/10GE/GE interfaces, they provide users a green, intelligent, and all-optical access network with ultra bandwidth, thus meeting requirements for family access, enterprise access, and other service access scenarios.



ISCOM6800E-15



ISCOM6800E-2



ISCOM6800E-7

FEATURES

High capacity, Ultra bandwidth

- Support ultra-high main control switching capability, shelf slot bandwidth
- Support 16 x GPON, 16 x XG(S)-PON, and 16 x XG(S)-Combo PON cards
- Supports 24 x 10GE/GE and 12 x 100GE cards

Telecom grade reliability

- Support MCC master/slave protection (load balancing and redundancy protection)
- Support 1:1 power supply protection
- Support Type B/C protection
- Support the Ethernet ring network protocols, with the switching time less than or equal to 50ms
- All cards support hot swapping

Rich features

- Support IPv4/IPv6 dual-stack, multiple tunneling technologies, rich IPv4 and IPv6 Layer 3 routing protocols, and rich IPv4-to-IPv6 transition technologies, such as the IPv6 manual tunnel, 6to4 tunnel, ISATAP tunnel, and GRE tunnel
- Complete multicast protocols, supporting IGMP Snooping/Proxy, MVR, and supporting MLD Snooping/Proxy
- Complete QoS functions, including DBA, superior control, multiple traffic classification mechanisms, multi-queue scheduling, and other technologies, thus meeting different QoS requirements for VoIP, video, and Internet access services
- Complete ACL functions, including L2, L3, L4 and user-defined ACLs

Green and Energy-saving design

- The MCC and service cards are designed with low energy consumption
- The fan can be intelligently adjusted according to the temperature, improving the fan life, reducing wind noise, and implementing energy saving

SPECIFICATIONS

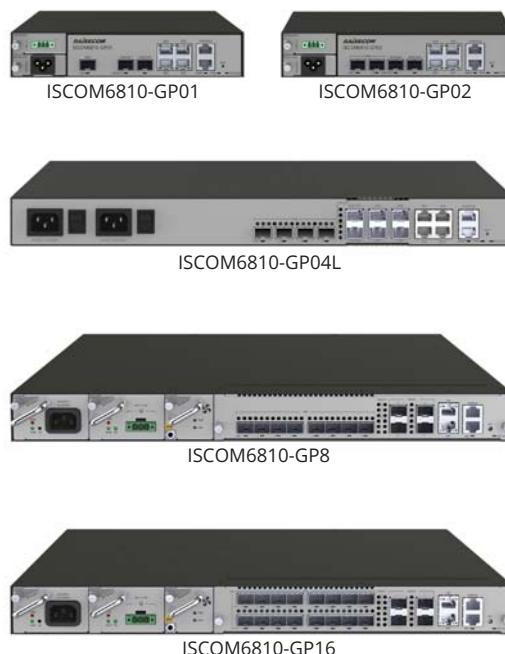
P/N	ISCOM6800E-15	ISCOM6800E-7	ISCOM6800E-2
Switching Capacity	9.6 Tbit/s	9.6Tbit/s	1.76Tbit/s
Slots number	21	13	7
service card number	15	7	2
GPON Port Number	240	112	32
XGS-PON Port Number	240	112	32
XG(S)-Combo Port Number	240	112	32
10GE/GE Port Number	368	176	60
100GE Port Number	184	88	26
power supplies Number	2 hot-swappable DC power supplies provide 1+1 redundancy		
Dimension W x D x H (mm)	482.6 x 266 x 486	442 x 242.7 x 263	442 x 242.7 x 88.1
Power consumption	≤ 2800W	≤ 1600W	≤ 500W
Operating Temperature	-5~45°C	-5~45°C	-5~45°C
VLAN	Support 4K VLANs. Support basic QinQ. Support Selective QinQ. Support VLAN mapping.		
Routing	Support RIP, OSPF, ISIS, BGP, and other IPv4 dynamic routing protocols. Support RIPng, OSPFv3, ISISv6, BGP4+, and other IPv6 dynamic routing protocols.		
Multicast	Support IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, and MLD Snooping. Support MVR (inter-VLAN copy) and MVR Proxy. Support controllable multicast.		
QOS&ACL	Support Ingress/Egress ACL. Support priority mapping. Each interface supports 8 queues. Support combined traffic classification based on L2/L3/L4 protocols and 802.1p priority. Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes. Support traffic shaping.		
Link aggregation	Support six load balancing modes based on MAC address or/and IP address. Support LACP.		
Security	Support TACACS+, 802.1x authentication. Support MAC address authentication. Support SSHv2, SFTP, and HTTPS. Support storm control based on interface and VLAN. Support the whitelist, port security MAC, and MAC address limit. Support IP Source Guard. Support DoS attack prevention, ARP attack prevention.		
Loop guard	Support STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s). Support BPDU guard, Root guard, and loop guard. Support ERPS (G.8032).		
Management and maintenance	Support login from the Console interface. Support SNMP v1/v2c/v3. Support the RCView NMS. Support uniform user management, and group-based, domain-based, and time-based authorization. Support system logs and hierarchical alarms. Support RMON.		

Compact GPON OLT

ISCOM6810-GP

The ISCOM6810-GP is a series of small-capacity enhanced GPON cartridge optical access office device launched by Raisecom Technology Co., Ltd. Its power supply and fan adopt modular design, so they are easy to install and deployed. It has strong GPON access capabilities and carrier-grade reliability, supports strong security functions (such as ACL and DoS attack prevention) and flexible QinQ service capabilities, and provides good management, maintenance and monitoring functions.

The ISCOM6810-GP provides rich service features and flexible networking methods to meet the needs of low-density, long-distance optical access.



FEATURES

Compact size, High integrity

- The 1U height and modular design facilitates the installation and replacement of components
- Support 4/8/16 GPON interfaces. Support 10GE optical interfaces and GE electrical interfaces; Support wire-speed forwarding
- Provide users with access to broadband, voice, IPTV and other services, thus meeting access applications in multiple scenarios for carriers, broadcasting network, CPN, and other industries
- The remote area can be covered by OLT cascading. The OLTs work at the edge to form a chain connection, which is suitable for long-distance broadband access scenarios and saves backbone fiber resources

Telecom grade reliability

- Support 1:1 power supply protection
- Support Type B/C protection
- Support the Ethernet ring network protocols, with the switching time less than or equal to 50ms

Rich features

- Support IPv4/IPv6 dual-stack, multiple tunneling technologies, rich IPv4 and IPv6 Layer 3 routing protocols, and rich IPv4-to-IPv6 transition technologies, such as the IPv6 manual tunnel, 6to4 tunnel, ISATAP tunnel, and GRE tunnel
- Complete multicast protocols, supporting IGMP Snooping/Proxy, MVR, PIMv4, and supporting MLD Snooping/Proxy and PIMv6
- Complete QoS functions, including DBA, superior control, multiple traffic classification mechanisms, multi-queue scheduling, and other technologies, thus meeting different QoS requirements for VoIP, video, and Internet access services
- Complete ACL functions, including L2, L3, L4 and user-defined ACLs

Green and Energy-saving design

- These products are designed with low energy consumption
- The fan can be intelligently adjusted according to the temperature, improving the fan life, reducing wind noise, and implementing energy saving

SPECIFICATIONS

P/N	ISCOM6810-GP01	ISCOM6810-GP02	ISCOM6810-GP04L	ISCOM6810-GP8	ISCOM6810-GP16
Switching Capacity	53 Gbit/s	58 Gbit/s	76 Gbit/s	124 Gbit/s	164 Gbit/s
Slots number	2	2	N/A	4	4
GPON Port Number	1	2	4	8	16
10GE Port Number	2	2	2	4	4
GE Port Number	4(RJ45)		8(4*RJ45+4*SFP)	2(RJ45)	2(RJ45)
power supplies Number	2 hot-swappable AC/DC power supplies provide 1+1 redundancy		2 fixed AC, DC or AC+DC input	2 hot-swappable AC/DC power supplies provide 1+1 redundancy	
Dimension W x D x H (mm)	220 x 180 x 44		440 x 220 x 43.6	440 x 266 x 44.5	
Power consumption	≤ 17W	≤ 20W	≤ 50W	≤ 60W	≤ 70W
Operating Temperature	-10~55°C				
VLAN	Support 4K VLANs. Support basic QinQ. Support Selective QinQ. Support VLAN mapping.				
Routing	ISCOM6810-GP01/GP02: Support static routing ISCOM6810-GP04L/8/16: Support RIP, OSPF, ISIS, BGP, and other IPv4 dynamic routing protocols. Support RIPng, OSPFv3, ISISv6, BGP4+, and other IPv6 dynamic routing protocols.				
Multicast	Support IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, and MLD Snooping. Support MVR (inter-VLAN copy) and MVR Proxy. Support controllable multicast.				
QOS&ACL	Support Ingress/Egress ACL. Support priority mapping. Each interface supports 8 queues. Support combined traffic classification based on L2/L3/L4 protocols and 802.1p priority. Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes. Support traffic shaping.				
Link aggregation	Support six load balancing modes based on MAC address or/and IP address. Support LACP.				
Security	Support TACACS+, 802.1x authentication. Support MAC address authentication. Support SSHv2, SFTP, and HTTPS. Support storm control based on interface and VLAN. Support the whitelist, port security MAC, and MAC address limit. Support IP Source Guard. Support DoS attack prevention, ARP attack prevention.				
Loop guard	Support STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s). Support BPDU guard, Root guard, and loop guard. Support ERPS (G.8032).				
Management and maintenance	Support login from the Console interface. Support SNMP v1/v2c/v3. Support the RView NMS. Support uniform user management, group-based, domain-based, and time-based authorization. Support system logs and hierarchical alarms. Support RMON.				

Compact XGS-Combo PON OLT

ISCOM6810-XC

The ISCOM6810-XC is a series of small-capacity enhanced XGS-Combo PON cartridge optical access office device launched by Raisecom Technology Co., Ltd. Its power supply and fan adopt modular design, so they are easy to install and deploy. It has strong GPON&XGS-PON access capabilities and carrier-grade reliability, supports strong security functions (such as ACL and DoS attack prevention) and flexible QinQ service capabilities, and provides good management, maintenance and monitoring functions.

The ISCOM6810-XC provides rich service features and flexible networking methods to meet the needs of low-density, long-distance optical access.



ISCOM6810-XC02



ISCOM6810-XC04



ISCOM6810-XC08

FEATURES

Compact size, High integrity

- The 1U height and modular design facilitates the installation and replacement of components
- Support 2/4/8 XGS-Combo PON interfaces. ISCOM6810-XC08 Support 100GE optical interfaces and 10GE optical interfaces, and ISCOM6810-XC02/04 support 10GE optical interfaces and GE electrical interfaces; Support wire-speed forwarding
- Provide users with access to broadband, voice, IPTV and other services, thus meeting access applications in multiple scenarios for carriers, broadcasting network, CPN, and other industries
- The remote area can be covered by OLT cascading. The OLTs works at the edge to form a chain connection, which is suitable for long-distance broadband access scenarios and saves backbone fiber resources

Telecom grade reliability

- Support 1:1 power supply protection
- Support Type B/C protection
- Support the Ethernet ring network protocols, with the switching time less than or equal to 50ms

Rich features

- Support IPv4/IPv6 dual-stack, multiple tunneling technologies, rich IPv4 and IPv6 Layer 3 routing protocols, and rich IPv4-to-IPv6 transition technologies, such as the IPv6 manual tunnel, 6to4 tunnel, ISATAP tunnel, and GRE tunnel
- Complete multicast protocols, supporting IGMP Snooping/Proxy, MVR, and supporting MLD Snooping/Proxy
- Complete QoS functions, including DBA, superior control, multiple traffic classification mechanisms, multi-queue scheduling, and other technologies, thus meeting different QoS requirements for VoIP, video, and Internet access services
- Complete ACL functions, including L2, L3, L4 and user-defined ACLs

Green and Energy-saving design

- These products are designed with low energy consumption
- The fan can be intelligently adjusted according to the temperature, improving the fan life, reducing wind noise, and implementing energy saving

SPECIFICATIONS

P/N	ISCOM6810-XC02	ISCOM6810-XC04	ISCOM6810-XC08
Switching Capacity	134 Gbit/s	184 Gbit/s	680 Gbit/s
Slots number	4	4	4
XGS-Combo Port Number	2	4	8
100GE Port Number	N/A	N/A	2
10GE Port Number	4	4	4
GE Port Number	2	2	N/A
power supplies Number	2 hot-swappable AC/DC power supplies provide 1+1 redundancy		
Dimension W x D x H (mm)	440 x 266 x 44.5		
Power consumption	≤ 74W	≤ 89W	≤ 101W
Operating Temperature	-10~55°C		
VLAN	Support 4K VLANs. Support basic QinQ. Support Selective QinQ. Support VLAN mapping.		
Routing	Support RIP, OSPF, ISIS, BGP, and other IPv4 dynamic routing protocols. Support RIPv6, OSPFv3, ISISv6, BGP4+, and other IPv6 dynamic routing protocols.		
Multicast	Support IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, and MLD Snooping. Support MVR (inter-VLAN copy) and MVR Proxy. Support controllable multicast.		
QOS&ACL	Support Ingress/Egress ACL. Support priority mapping. Each interface supports 8 queues. Support combined traffic classification based on L2/L3/L4 protocols and 802.1p priority. Support SP, WRR, DRR, SP+WRR, and SP+DRR queue scheduling modes. Support traffic shaping.		
Link aggregation	Support six load balancing modes based on MAC address or/and IP address. Support LACP.		
Security	Support TACACS+, 802.1x authentication. Support MAC address authentication. Support SSHv2, SFTP, and HTTPS. Support storm control based on interface and VLAN. Support the whitelist, port security MAC, and MAC address limit. Support IP Source Guard. Support DoS attack prevention, ARP attack prevention.		
Loop guard	Support STP (IEEE 802.1d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s). Support BPDU guard, Root guard, and loop guard. Support ERPS (G.8032).		
Management and maintenance	Support login from the Console interface. Support SNMP v1/v2c/v3. Support the RCVIEW NMS. Support uniform user management, and group-based, domain-based, and time-based authorization. Support system logs and hierarchical alarms. Support RMON.		

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 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 operating from -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 match ACL rules Modifying 802.1p CoS, DSCP, and IP precedence based on flow

GPON SFU ONT

ISCOM HT803G Series

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 FTTx ONTs offer advanced end-to-end management and monitoring functionalities, either on Raisecom RCVIEW platform or be integrated/interoperated with other vendor OLT equipment.



FEATURES

Elegant styling

- Small size, attractive appearance, and low weight, thus applicable to home use

Operation and Maintenance

- Support being preconfigured for different groups of users, thus able to plug and play upon home installation and facilitate service activation, operation, and maintenance

Flexible management

- Supports multiple management methods such as OMCI and local command line, facilitating management

SPECIFICATIONS

P/N	ISCOM HT803G-1GE	ISCOM HT803G-1GC	ISCOM HT803G-1N	ISCOM HT803G
WAN Interface	1 x EPON/GPON	1 x EPON/GPON	1 x EPON/GPON	1 x EPON/GPON
LAN Interface	1 x GE	1 x GE	1 x 2.5GE	4 x GE
CATV Interface	NA	1 x RF	NA	NA
USE Interface	NA	NA	NA	NA
Dimension(mm)	90 x 90 x 25	110 x 86 x 30.5	125 x 80 x 30.5	160 x 112 x 28.5
Power Supply	+12V power adapter	+12V power adapter	+12V power adapter	+12V power adapter
Max power consumption	<4W	<5W	<7W	<7W
Operating environment	0~45°C	0~45°C	0~45°C	0~45°C
PON	Support ITU-T G.984.x (1, 2, 3, and 4), G.988/ IEEE802.3ah. Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.			
VLAN	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.			
Loop detection	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.			
Multicast	Support IGMP transparent, Snooping. Support configuring multicast VLANs. Support multicast immediate leave.			
Maintenance and management	Support OMCI/OAM management. Support OLT management and Web management. Support interface Up/Down alarms and Dying Gasp alarm. Support configuring and querying thresholds of optical module parameters.			

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 GE electrical interface and one 10GE electrical interface, compatible with 2.5G/1G in the downlink, so it can access services with rate 10 GE and provides users with high-quality data, high-definition video services, and other services.



ISCOM HT806G-XGS-XE

FEATURES

Elegant styling

- Elegant appearance, perfectly integrated into home decoration

Fiber access and gigabit port provide

- Up to 10Gbps LAN interface for high-bandwidth service with 1 * 10GE Ethernet interface (compatible with 1G/2.5G/5G/10G)

Flexible management

- Supports multiple management methods, such as OMCI and web management, to facilitate easier management

SPECIFICATIONS

P/N	ISCOM HT806G-XGS-XE
WAN Interface	1 x XGS-PON
LAN Interface	1 x 10GE+1 x GE
CATV Interface	N/A
USE Interface	N/A
Dimension(mm)	146 × 115 × 32
Power Supply	+12V power adapter
Max power consumption	<8.3W
Operating environment	0~45°C
PON	Support ITU-T G.987.x Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.
VLAN	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.
Loop detection	Support shutting down an interface and sending a link down trap when a loop occurs on the interface. Support restoring an interface and sending a link up trap when a loop is eliminated on the interface.
Multicast	Support IGMP transparent, Snooping. Support configuring multicast VLANs. Support multicast immediate leave. The capacity of multicast address: 256.
Maintenance and management	Support OMCI management. Support OLT management and Web management. Support interface Up/Down alarms and Dying Gasp alarm. Support configuring and querying thresholds of optical module parameters.

GPON HGU ONT

ISCOM HT803G-series

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-GP-N(Z)



ISCOM HT803G-WS2(Y)



ISCOM HT803G-WX2(Y)



ISCOM HT803G-WX2(Z)

FEATURES

Multiple service access

- Integrating ONU/AP/IAD/Switch, and router into one, providing users with integrated access services of data, voice, and video

overall performance

- Support gigabit interface, and WiFi4/5/6, and has low power consumption

Flexible management

- Supports multiple management methods, such as OMCI and web management, to facilitate easier management

SPECIFICATIONS

P/N	ISCOM HT803-GP-N(Z)	ISCOM HT803G-WS2(Y)	ISCOM HT803G-WX2(Z)	ISCOM HT803G-WX2(Y)
WAN Interface	1 x GPON	1 x GPON	1 x GPON	1 x GPON
LAN Interface	1 x GE+1 x FE	4 x GE	4 x GE	4 x GE
POTS	N/A	1(Optional)	1	1
USB	N/A	1	1	1
WLAN	IEEE 802.11 a/b/g/n MIMO 2 x 2, 2 x external antennas	IEEE 802.11 a/b/g/n/ac MIMO 2 x 2, 2 x external antennas	IEEE 802.11 a/b/g/n/ac/ax MIMO 2 x 2, internal antennas	IEEE 802.11 a/b/g/n/ac/ax MIMO 2 x 2, 4 x external antennas
Mesh	N/A	N/A	Support	N/A
CATV Interface	N/A	N/A	N/A	N/A
Dimension(mm)	163 × 120 × 30	170 × 120 × 32	200 × 150 × 40	164 × 107 × 40
Power Supply	+12V power adapter	+12V power adapter	+12V power adapter	+12V power adapter
Max power consumption	<6W	<12W	<13W	<18W
Operating environment	0~45°C	0~45°C	0~45°C	0~45°C
PON	Support ITU-T G.984.x (1, 2, 3, and 4), G.988/ IEEE802.3ah. Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.			
WAN	Support 4094 Vlan Support Bridge/Router Mode Support DHCP/PPPOE/Static IP Support Service including Internet,VOIP,IPTV and TR069			
Multicast	IGMP v1/v2/v3 Snooping/Proxy MLD v1/v2			
DHCP	DHCP server and DHCP client			
PPPoE	PPPoE client			
IPv4/IPv6	IPv4/IPv6 Dual Stack DS-lite tunnel			
NAT	NAT/NAPT, DMZ, ALG, Port Forwarding			
Maintenance and management	Http/Https, OMCI/TR069 System Log, Diagnosis/Information query of optical modules/Query of memory and CPU utilization rate			

XGS-PON HGU

ISCOM HT806G-series

The ISCOM HT806G 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 6/7 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 6/7 WLAN compliant with IEEE 802.11b/ g/n/ac/ax/be.



ISCOM HT806G-XGS-XE



ISCOM HT806G-XGS-BE7

FEATURES

Multiple service access

- Integrating ONU/AP/IAD/Switch, and router into one, providing users with integrated access services of data, voice, and video

overall performance

- Support GE/2.5GE/10GE interface, and WiFi6/7, and has low power consumption

Flexible management

- Supports multiple management methods such as TR069/OMCI/WEB and RCView NMS

SPECIFICATIONS

P/N	HT806G-XGS-VE-WX2(Z)	ISCOM HT806G-XGS-BE7(Z)
WAN Interface	1 x XGS-PON	1 x XGS-PON
LAN Interface	1x 2.5GE+3 x GE	1 x 10GE+4 x GE
POTS	N/A	2
USB	1	1
WLAN	802.11 b/g/n/ac/ax, MIMO 2 x 2, 4 x external antennas	802.11 b/g/n/ac/ax/be MIMO 4 x 4, internal antennas
Mesh	N/A	Support
CATV Interface	N/A	N/A
Dimension(mm)	187 × 132 × 40	207 × 79 × 242
Power Supply	+12V power adapter	+12V power adapter
Max power consumption	<28W	<24W
Operating environment	0~45°C	0~45°C
PON	Support ITU-T G.987.x. Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.	
WAN	Support 4094 Vlan Support Bridge/Router Mode Support DHCP/PPPOE/Static IP Support Service including Internet, VOIP, IPTV and TR069	
Multicast	IGMP v1/v2/v3 Snooping/Proxy MLD v1/v2	
DHCP	DHCP server and DHCP client	
PPPoE	PPPoE client	
IPv4/IPv6	IPv4/IPv6 Dual Stack DS-lite tunnel	
NAT	NAT/NAPT, DMZ, ALG, Port Forwarding	
Maintenance and management	Http/Https, Telnet/SSH/TR069/ System Log, Diagnosis/Information query of optical modules/Query of memory and CPU utilization rate	
Security	SPI Firewall, MAC/IP/URL Filtering, DoS Attack Protection, ACL	

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.

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 with 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-GSFP



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

SPECIFICATIONS

P/N	ISCOM HT801-GSFP	ISCOM HT801-XGSFP
WAN Interface	1 x GPON	1 x XGS-PON
LAN Interface	1 x GE	1x 10GE
Dimension(mm)	64.5 × 13.4 × 7.45	79 × 13.7 × 14.35
Max power consumption	<2.5W	<2.5W
Operating environment	-40~85°C	-40~85°C
VLAN	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.	
Loop detection	Support shutting down an interface and sending a link down trap when a loop occurs on the interface. Support restoring an interface and sending a link up trap when a loop is eliminated on the interface.	
Multicast	Support IGMP transparent, Snooping. Support configuring multicast VLANs. Support multicast immediate leave.	
Maintenance and management	Support OMCI management. Support OLT management. Support interface Up/Down alarms. Support configuring and querying thresholds of optical module parameters.	

GPON MDU

ISCOM5100 Series

The ISCOM5100 series are MDU product developed by Raisecom for all-optical-fiber parks. It provides GPON access, and provides 4GE electrical interfaces, and can also provide GE interface in the downlink. The Ethernet electrical interface complies with IEEE 802.3af/at(optional), and it can supply up to 30W power. It can access services with rates higher than GE and provide users with high-quality data, high-definition video services, and other services.



ISCOM5104G-GP-HB



ISCOM5104-GP-PSE



ISCOM5104G-GP-E

FEATURES

- Compliance with ITU-T G.984.x
- Fan-less 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 adapting 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

SPECIFICATIONS

P/N	ISCOM5104G-GP-HB	ISCOM5104-GP-PSE	ISCOM5104G-GP-E
WAN Interface	1 x EPON/GPON	1 x EPON/GPON	2 x GPON
LAN Interface	4 x GE	4 x GE	4 x GE
Maximum PoE Capability	N/A	60W	N/A
Dimension(mm)	150 × 115 × 30	150 × 115 × 30	260 × 130 × 43
Power Supply	+12V power adapter	+56V power adapter	AC220V
Max power consumption	<5W	<65W	<10W
Operating environment	-30~55°C	-30~55°C	-40~70°C
PON	Support ITU-T G.984.x (1, 2, 3, and 4), G.988/ IEEE802.3ah. Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.		
VLAN	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.		
Loop detection	Support shutting down an interface and sending a link down trap when a loop occurs on the interface. Support restoring an interface and sending a link up trap when a loop is eliminated on the interface.		
Multicast	Support IGMP transparent, Snooping. Support configuring multicast VLANs. Support multicast immediate leave.		
Maintenance and management	Support OMCI/OAM management. Support OLT management and Web management. Support interface Up/Down alarms and Dying Gasp alarm. Support configuring and querying thresholds of optical module parameters.		

XGS-PON MDU

ISCOM6100 Series

The ISCOM6100 series are XGS-PON MDU products developed by Raisecom for all-optical-fiber parks. It provides XGS-PON access, and provides 4/8/24GE electrical interfaces, and can also provide 2.5GE and 10GE interface in the downlink. The Ethernet electrical interface complies with IEEE 802.3af/at(optional), 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.



ISCOM6104G-XGS



ISCOM6104G-XGS-PSE



ISCOM6108-XGS



ISCOM6108-XGS-PSE



ISCOM6124-XGS



ISCOM6124-XGS-PSE

FEATURES

- Compliance with ITU-T G.987.x
- Fan-less zero-noise design to minimize noise towards residents and m
- 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 adapting 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

SPECIFICATIONS

P/N	ISCOM6104G-XGS	ISCOM6104G-XGS-PSE	ISCOM6108-XGS
WAN Interface	1 x XGS-PON	1 x XGS-PON	1 x XGS-PON
LAN Interface	1 x 2.5GE+3 x GE	1 x 2.5GE+3 x GE	1 x 10GE+1 x 2.5GE+7 x GE
Maximum PoE Capability	N/A	60W	N/A
Dimension(mm)	180 × 120 × 30	180 × 120 × 30	440 × 220 × 43.6
Power Supply	+12V power adapter	+56V power adapter	+12V power adapter
Max power consumption	<12W	<65W	<24W
Operating environment	-20~55°C	-20~55°C	-20~55°C
P/N	ISCOM6108-XGS-PSE	ISCOM6124-XGS	ISCOM6124-XGS-PSE
WAN Interface	1 x XGS-PON	1 x XGS-PON	1 x XGS-PON
LAN Interface	1 x 10GE+1 x 2.5GE+7 x GE	2 x 10GE+24 x GE	2 x 10GE+24 x GE
Maximum PoE Capability	120W	N/A	360W
Dimension(mm)	440 × 220 × 43.6	440 × 220 × 43.6	440 × 220 × 43.6
Power Supply	+56V power adapter	AC220V	AC220V
Max power consumption	<150W	<24W	<495W
Operating environment	-20~55°C	-20~55°C	-20~55°C
PON	Support ITU-T G.987.x Support multiple authentication modes, such as SN, password, and LOID. Support DBA of the OLT. Support silence, with the time of 60s. Support Optical link diagnosis. Support distance measurement. Support display of received and emitted light power.		
VLAN	Support IEEE 802.1Q. Support 4094 VLANs. Support CTC VLAN modes: transparent, translation, Tag, Trunk.		
Loop detection	Support shutting down an interface and sending a link down trap when a loop occurs on the interface. Support restoring an interface and sending a link up trap when a loop is eliminated on the interface.		
Multicast	Support IGMP transparent, Snooping. Support configuring multicast VLANs. Support multicast immediate leave. The capacity of multicast address: 256.		
Maintenance and management	Support OMCI management . Support OLT management and Web management. Support interface Up/Down alarms, and Dying Gasp alarm. Support configuring and querying thresholds of optical module parameters.		

SOHO/Enterprise Gateway

MSG2500E Series, MSG2600C, MSG5200 Series, and MSG5200E Series

These series products are the fourth-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 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.

FEATURES

Performance and reliability

- High performance and low power consumption, dual-core/quad-core dual-core CPU
- Small size and good durability
- Metal shell and fanless design, zero noise, and high reliability

Interface type

- Comprehensive models with different uplink options, such as GE/10GE, 4G/5G WWAN, XGS-PON, EPON/GPON.
- 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

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 (MSG2500E voice MSG 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 experience in voice service.

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



MSG2500E-UP-8E8V



MSG2500E-UP-4E16V



MSG5200-XGE-8E



MSG5200-XUS-XE4E

SPECIFICATIONS

P/N		MSG5200-XGE-8E	MSG5200-XUS-XE4E	MSG2500E-UP-8E8V	MSG2500E-UP-4E16V	MSG2500E-UP-4E32V	MSG2600C-XUS-8E8V
WAN		1xSFP(10G or1G) +1GE combo	XGS-PON	GPON	GPON	GPON	XGS-PON
4G/5G interface		optional USB external 4G NIC					
LAN		8GE	1x 10GE + 4GE	8GE	4GE	4GE	8GE
Voice interface		NA	NA	8	16	32	8
USB interface		USB2.0/3.0 high-speed interface					
WLAN							
Weight		1.7Kg	1.7kg	1kg	2kg	2kg	2.1kg
Dimension(mm) L x W x H		320 x 200 x 43	167 x 105 x 28	320 x 220 x 43/	440 x 220 x 43/	440 x 220 x 43	320 x 200 x 43
Power Supply		+12V power adapter		AC 220V			
Max power consumption		≤36W	≤12W	≤24W	≤30W	≤60W	≤30W
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					
Voice function		NA	NA	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			
L2/3	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					
	Rate limit	Support port-base rate limit, and QoS rate limit					
	IP Routing	Support static routing, policy routing, and route backup					
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					

Standalone CATV EDFA

RC58xxA series

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.

FEATURES

- 1540nm~1565nm operating bandwidth for optical amplifier
- Low Noise Figure: Max. ≤5.5dB, (@Pin=0dBm, λ=1550nm)
- 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 FTTx PON Technology: EPON/GEAPON, GPON and XGS-PON
- Perfect RS232, SNMP
- Efficient space, flexible installation and easy operation



RC5830A-8

Splitter

Passive Optical Splitter

The optical splitter is a passive optical plug-and-play device, which connects OLTs 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



OPCOM100-MA1-M-B



OPCOM100-MA1-T-C



RCGS-08-P-FA-SU

xPON/XGS-PON Combiner

OPCOM100-MA (HOMA)series, RCGS-08-P-FA-SU

To address surging data traffic and social development needs, operators must continuously upgrade network capacity. Traditional network expansion involves lengthy construction, high investment, and heavy maintenance.

HOMA solution based on OPCOM100-MH series products enables flexible evolution and smooth upgrade over existing PON ODN networks. It supports seamless migration from EPON to XG-PON/XGS-PON or combines special picked wavelength to deliver dedicated leased line and access services on the same ODN. With single-fiber transmission and simplified deployment, it greatly reduces fiber resources, costs, and labor while improving efficiency. It can deliver in all different packages, such as standalone box, ABS box, tubes or miniature with pigtail packages.

Chapter 4

Ethernet Switch for Campus and Carrier

Raisecom provides comprehensive switch solutions tailored for three key market segments: campus networks, carrier Metropolitan Area Network(MAN), and data center (DC) networks. In this chapter, we focus on switch for campus and carrier MAN.

For Campus Network

We supply a full range of access-aggregation-core switches with diverse forms and rich features. Specifically:

- Access Layer:** The ISCOM S2600/S3600 series functions as Layer 2/3 access switches, delivering 1G access ports with 10G uplink capabilities. These switches integrate robust security, protection, OAM, QoS, and management features.
- Aggregation Layer:** The ISCOM S3600/S5600G series operates as Layer 3 aggregation switches, supporting advanced routing protocols and traffic optimization.
- Core Layer:** The ISCOM S6600 serves as the core switch for small campuses, whereas the modular ISCOM S10600 chassis system is designed for large to extra-large campus deployments.

For Carrier MAN

We supply a range of access-aggregation switches with diverse forms and rich features. Specifically:

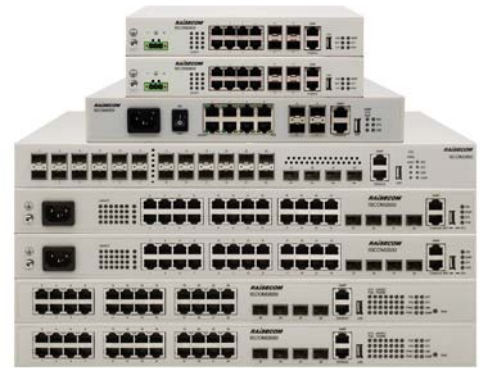
- Access Layer:** The ISCOM S2600/S3600 series provides Layer 2/3 access connectivity with multi-service support.
- Pre-aggregation & Aggregation Layer:** The ISCOM S5600G/S6600 series supports pre-aggregation and aggregation functions with IP/MPLS capabilities, enabling seamless integration into carrier networks. We also support flexible tunneling technologies, including QinQ+L2VPN, L2VPN+L3VPN, and L3VPN+L3VPN combinations, to meet diverse service-level requirements.

L2 Access Switch

ISCOM S2600(-PWR/PWH) Series

The ISCOM S2600 (A) series switches are new-generation green and energy-saving L2+ Gigabit Ethernet switches, providing flexible 1000 Mbit/s access interfaces and four 10 Gbit/s uplink interfaces. The switch is based on high-performance hardware platforms and the new-generation switching software platform of Raisecom.

Featuring high reliability, various security guarantees, fine tunable QoS, mature IPv6 features, and easy administration, it can meet carriers' requirements. In addition, it supports IPv4/v6 static route, intelligent virtualization technologies, smart PoE+/PoE++, and so on. It can be widely used in scenarios: access device for carriers on the MAN, and for campus, such as enterprises, residences, CDN etc.



ISCOM S2600(-PWR/PWH) Series

FEATURES

Intelligent Virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidths by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

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

Various 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
- Various ACL policies to control packet forwarding flexibly
- DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks
- IP Source Guard, DAI and ND Snooping to prevent ARP/ND 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, to protect hardware investment of the customer

OAM and SLA

- End-to-end OAM: IEEE802.1ag
- Rich SLA: ITU-T Y.1731, TWAMP
- MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services

Fine tunable QoS

- Rich scheduling policy such as SP, WRR, 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
- DHCPv6 Snooping, ND Snooping and Option18/37 to ensure network security
- MLD Snooping to ensure the IPv6 multicast monitoring
- IPv6 static routing, and IPv6 Path MTU

Smart PoE

- IEEE802.3af/IEEE802.3at/IEEE802.3bt standard to support max 30/90w power per port
- 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
- Sflow to sample regularly the business to monitor

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
Switching capacity	96Gbit/s	104Gbit/s	128Gbit/s
Packets switch rate	71Mpps	77Mpps	95Mpps
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
Switching capacity	24Gbit/s	56Gbit/s	128Gbit/s
Packets switch rate	18Mpps	42Mpps	95Mpps
Management interface	1 Console interface, 1 SNMP out-of-band interface, and 1 USB interface		
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
Voltage range	AC 220V(100~240V), DC 48V(-36~-72V) PoE: AC 100~240V, DC 45~57V		
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1)		
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)		
OAM&SLA	Support IEEE802.1ag/CFM Support ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support BFD for static routing		
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		
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		
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 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		
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF)		

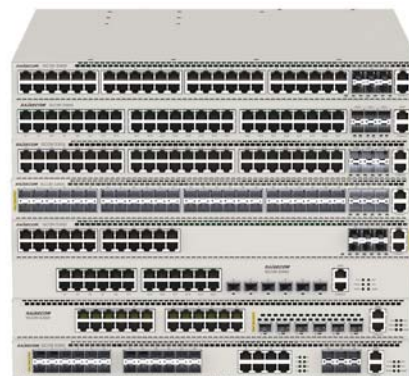
L3 Access/Aggregation Switch

ISCOM S3600(-PWH) Series

The ISCOM S3600 (-PWH) series switches are new-generation green and energy-saving L3 Gigabit Ethernet switches, providing flexible 1000 Mbit/s access interfaces and six 10 Gbit/s uplink interface. The switch is based on high-performance hardware platforms and the new-generation switching software platform of Raisecom.

Featuring intelligent virtualization technologies, high reliability, various security guarantee, fine tunable QoS, mature IPv6 features, and easy administration, it can meet carriers' and campus' requirements. In addition, it supports rich IPv4/IPv6 unicast/multicast routing protocols, flexible PoE, and so on.

It can be widely used in scenarios: access device for carriers on the MAN, and access or aggregation for campus, such as government agencies, and enterprise park.



ISCOM S3600(-PWH) Series

FEATURES

Intelligent Virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidths by adding member devices
- ISF also supports smooth upgrades, so it can achieve continuous service during the upgrade process

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

OAM and SLA

- End-to-end OAM: IEEE802.1ag
- Rich SLA: ITU-T Y.1731, TWAMP
- MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services

Various 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
- Various ACL policies to control packet forwarding flexibly
- DHCPv4/v6 Snooping and Option 82/18/37 to avoid DHCP attacks
- IP Source Guard, DAI and ND Snooping to prevent ARP/ND 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, to 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/SNMP/HTTP management
- DHCPv6 Snooping, ND Snooping and Option18/37 to ensure network security
- MLD Snooping to ensure the IPv6 multicast monitoring
- VRRPv3, IPv6 routing, and IPv6 Path MTU

Powerful and flexible PoE++

- IEEE802.3af/IEEE802.3at/IEEE802.3bt standard to support max 30/90w power per port
- 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
- Sflow to sample regularly the business to monitor

IPv4/v6 Routing

- RIP, RIPv2, OSPFv2/v3, ISISv4/v6, BGPv4/4+

Multicast Routing

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

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
Switching capacity	184Gbit/s	216Gbit/s	168Gbit/s
Packets switch rate	136.9Mpps	160.7Mpps	125Mpps
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
Switching capacity	216Gbit/s	168Gbit/s	216Gbit/s
Packets switch rate	160.7Mpps	125Mpps	160.7Mpps
Management interface	1 RJ45 Console interface, 1 SNMP out-of-band interface		
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	
Voltage range	Voltage range: AC 220V(100~240V), DC 48V(-36~-72V), PoE: AC 180-264V, DC 42-72V		
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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)		
OAM&SLA	Support IEEE802.1ag/CFM Support ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing		
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 prevents and ARP attack prevention: IPv4/v6 Source Guard and IPv6 prefix Snooping; DAI and ND Snooping Support SSHv2.0, CPU protection		
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		
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF)		

Aggregation Switch

ISCOM S5600G Series

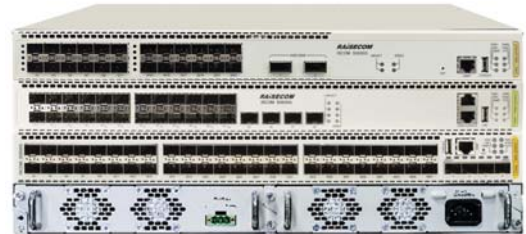
The ISCOM S5600G series switches are the new-generation and high-efficiency Layer L3 Ethernet switches. This series adopts a new-generation switching software platform based on RESP and flexible hardware design. There are two models with sub-cards, such as ISCOM S5600G-24T6X (24x1GE RJ45 + 6x1/10GE SFP+), ISCOM S5600G-48T4X (48x1GE RJ45 + 6x1/10GE SFP+). And there are three optical switches, such as ISCOM S5600G-24S4X (24x1GE SFP + 4x1/10GE SFP+), ISCOM S5600G-48S4X (48x1GE SFP + 4x1/10GE SFP+), and ISCOM S5600G-24X2C (24x1/10G SFP+ + 2x40/100GE QSFP28).

Featuring intelligent virtualization technologies, rich IPv4/IPv6 unicast/multicast routing protocols, high reliability, various security guarantees, fine tunable QoS, mature IPv6 features, and easy administration, it adopts 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. In addition, it can also support VxLAN, EVPN and IP/MPLS tunnel technology.

It can be widely used in scenarios: pre-aggregation or PE devices for carrier on the MAN, and aggregation switches for campus, such as government agencies, and enterprise park.



ISCOM S5600G (with sub-card) Series



ISCOM S5600G (without sub-card) Series

FEATURES

Intelligent Virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidth by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

Inter-device link aggregation(M-LAG)

- Support inter-device link aggregation M-LAG, which can achieve link aggregation among multiple devices, thereby increasing link reliability from the card level to device level, achieving dual active link uplink, and doubling the effective network connection bandwidth
- Each node device of the M-LAG can be independently upgraded. During the upgrade process, other nodes take over service forwarding, avoiding service interruption
- Suitable for Overlay and traditional Underlay scenarios, with flexible networking

IP/MPLS

- LSP: static LSP and dynamic LSP via LDP
- L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP(Kompella)
- L3VPN: MP-BGP for L3VPN
- MPLS OAM: support PW protection for L2VPN and BFD for L3VPN
- MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR

Rich data center characteristics

- VxLAN technology to meet the needs of building new-generation data centers that are flexible, efficient, highly reliable, and scalable
- BGP-EVPN: dynamic VxLAN, simplifying VxLAN deployment and improving the efficiency of constructing great Layer 2 networks

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

OAM and SLA

- End-to-end OAM: hardware IEEE802.1ag to implement 3.3ms CC monitoring
- Rich SLA: ITU-T Y.1731, TWAMP
- MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services
- Hardware BFD, support BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing, and achieve fast fault detection mechanisms for various protocols, and implement the millisecond-level fault detection time

Advanced management system

- Rich management methods such as SNMP, RMON, Telnet, Web, CLI, Raisecom Rview NMS
- Telemetry technology to collect device data in real-time, and accurately present the network status, timely and effectively troubleshooting
- 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-24T8S6X	ISCOM S5600G-24S4X	ISCOM S5600G-48T4X	ISCOM S5600G-48S4X	ISCOM S5600G-24X2C
Port Type	24x10/100/1000 RJ45 + 8 x 1G SFP + 6 x 1G/10G SFP +1 slot (support 4 cards: 2 x 100G QSFP28, 2 x 40G QSFP, 8 x 25G, 8*10G)	24x100/1000 SFP + 4 x 1G/10G SFP+	48x10/100/1000 RJ45 + 6 x 1G/10G SFP+ + 1 slot (support 4 cards: 2 x 100G QSFP28, 2 x 40G QSFP, 8 x 25G, 8*10G)	48x100/1000 SFP + 4 x 1G/10G SFP+	24x1/10G SFP+ + 2x40/100GE QSFP28
Switch Capacity	128Gbit/s	128Gbit/s	176Gbit/s	176Gbit/s	448Gbit/s
Packets Switch Rate	96Mpps	96Mpps	131Mpps	131Mpps	334Mpps
Management interface	SNMP interface (RJ45) console interface: 1 mini-USB Console				
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)				
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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)				
OAM&SLA	Support IEEE802.1ag/CFM Support ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing				
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				
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				
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR				
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				
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG				
DC Feature	Support VxLAN/EVPN				

Aggregation/TOR Switch

ISCOM S6600 Series

The ISCOM S6600 series switch is a high-density 10GE/25GE product. 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 Raisingcom.

Featuring intelligent virtualization technologies, rich IPv4/IPv6 unicast/multicast routing protocols, high reliability, various security guarantee, fine tunable QoS, mature IPv6 features, and easy administration, it adopts advanced OAM protocols, meeting the carrier's requirements for MEF CE2.0 standard. In addition, it can also support VxLAN, EVPN and IP/MPLS tunnel technology. It can be widely used in scenarios: aggregation or PE devices for carrier on the MAN, and aggregation/core switches for campus, such as government agencies, and enterprise park.



ISCOM S6600 Series

FEATURES

Intelligent Virtualization

- Raisingcom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidth by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

Inter-device link aggregation(M-LAG)

- Support inter-device link aggregation M-LAG, which can achieve link aggregation among multiple devices, thereby increasing link reliability from the card level to device level, achieving dual active link uplink, and doubling the effective network connection bandwidth
- Each node device of the M-LAG can be independently upgraded. During the upgrade process, other nodes take over service forwarding, avoiding service interruption
- Suitable for Overlay and traditional Underlay scenarios, with flexible networking

IP/MPLS

- LSP: static LSP and dynamic LSP via LDP
- L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP(Kompella)
- L3VPN: MP-BGP for L3VPN
- MPLS OAM: support PW protection for L2VPN and BFD for L3VPN
- MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR

IPv4/v6 Routing

- RIP, RIPv2, OSPFv2/v3, ISISv4/v6, BGPv4/4+

Multicast Routing

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

OAM and SLA

- End-to-end OAM: hardware IEEE802.1ag to implement 3.3ms CC monitoring
- Rich SLA: ITU-T Y.1731, TWAMP
- MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services
- Hardware BFD, support BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing, and achieve fast fault detection mechanisms for various protocols, and implement the millisecond-level fault detection time

Advanced management system

- Rich management methods such as SNMP, RMON, Telnet, Web, CLI, Raisingcom RCView NMS
- Telemetry technology to collect device data in real-time, and accurately present the network status, timely and effectively troubleshooting
- 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

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	
Management interface	SNMP interface (RJ45) console interface: 1 mini-USB Console	
Power Redundancy	1+1 redundancy power supply	
Voltage Scope	AC 220V(100~240V), DC 48V(-36~-72V)	
Fan Redundancy	1+1 redundancy FAN Support intelligent speed regulation	
Heat dissipation	Front air inlet and rear air outlet	
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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)	
OAM&SLA	Support IEEE802.1ag/CFM Support hardware ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support hardware BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing	
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	
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, RIPvng, OSPFv2/v3, ISISv4/v6, BGPv4/4+ IPv4 multicast route: IGMPv1/v2, PIM-DM/SM/SSMv4 IPv6 multicast route: MLDv1/v2, PIM-DM/SM/SSMv6	
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR	
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	
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG	
DC Feature	Support VxLAN/EVPN Support RoCE: PFC (Priority-based Flow Control), ECN (Explicit Congestion Notification), Elephant Flow, Mice Flow, DCQCN	

Core Switch

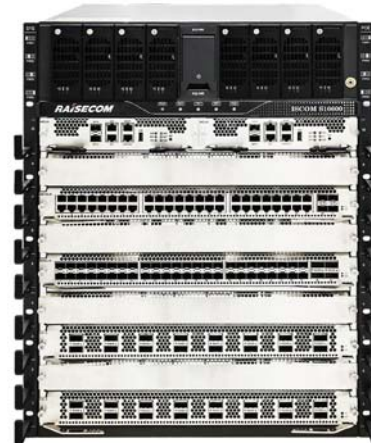
ISCOM S10600 Series

The ISCOM S10600 series switches are new-generation rack-type core switches independently developed by Raisecom for high-end park networks. It has two product forms: ISCOM S10603 with 3 LC slots and ISCOM S10608 with 8 LC slots, which support high-density GE/10GE/25GE/40GE/100GE Ethernet interface, and can adapt to interface density and performance requirements of different network scales.

It can be widely used in scenarios: core switches for campus, such as government agencies, and enterprise park.



ISCOM S10603



ISCOM S10608

FEATURES

High capacity, high density

- Ultra-high density 10GE/40GE/100GE access ports, catering to high bandwidth demands
- Support up to 48*10/25G+4*40/100G or 16*40/100G multi-rate ports on a single card

Redundant design of key components

- MCU redundancy: features 1:1 backup MCUs, ensuring automatic switching of services without interruption in case of MCU failures.
- SFU redundancy: supports up to 6 SFUs, supports N+M redundancy
- Power supply redundancy incorporates N+M power supplies for chassis system or PoE supply

Orthogonal CLOS architecture

- Decoupled Performance Components: Performance components and chassis are completely decoupled, optimizing system efficiency and maintainability
- High Scalability: Designed to evolve towards future 400G interfaces, offering virtually unlimited expansion potential
- Comprehensive Card Combination: Supports a wide range of mixed-rate cards, delivering a highly available and integrated network solution for diverse services

Strict front-to-rear straight air ducts

- Straight Air Duct Design: Features strict front-to-rear straight air ducts, eliminating the need for a middle plate and increasing ventilation area by 50%
- Energy-Efficient & Low-Noise: Low power consumption, low noise levels, and robust heat dissipation capabilities ensure green, energy-saving operation and stable device performance

Power PoE function

- The entire series of the chassis supports PoE, with a maximum power supply capacity of 1500 W per slot and 90 W per interface. It can provide power for APs, IP video phones, and more high-power terminals

Intelligent Virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidth by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

IP/MPLS

- LSP: support static LSP and dynamic LSP via LDP
- L2VPN: support VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP(Kompella)
- L3VPN
- OAM: support PW protection for L2VPN and BFD for L3VPN
- TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR

IPv4/v6 Routing

- RIP, RIPv2, OSPFv2/v3, ISISv4/v6, BGPv4/4+

Multicast Routing

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

SPECIFICATIONS

P/N	ISCOM S10603	ISCOM S10608
LC Number	3	
LC Type	ISCOM S10600-48K4C-A: 48*25G SFP28 +4*100G QSFP28 ISCOM S10600-16C-A: 16*100G QSFP28 ISCOM S10600-32S16X-A: 32*1G SFP+16*10G SFP+ ISCOM S10600-24X-A: 24*10G SFP+ ISCOM S10600-48T4X-A: 48*1G RJ45+4*10G SFP+	
MCU Number	2	
MCU Redundancy	Hot standby (1:1) mode	Hot standby (1:1) mode
SFU Slot Number	N/A	6
Power Module Number	4	8
Power Redundancy	The 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 Module Number	3	3
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	
Heat Dissipation	Front air inlet and rear air outlet; Partition heat dissipation and intelligent speed regulation	
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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)	
OAM&SLA	Support IEEE802.1ag/CFM Support hardware ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support hardware BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing	
Security	cSupport IEEE802.1ag/CFM Support hardware ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support hardware BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing	
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	
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR	
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	
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG	
DC Feature	Support VxLAN/EVPN Support RoCE: PFC (Priority-based Flow Control), ECN (Explicit Congestion Notification), Elephant Mice, DCQCN	

Chapter 5

Switch for DC (Data Center)

The intelligent world of Internet of Everything is accelerating its arrival, and data centers are evolving from the cloud era to the intelligent era, becoming the core of new-type infrastructures such as 5G and artificial intelligence. Raisecom has launched its CloudEngine data center switches tailored for the intelligent era.

For Internet Data Center (IDC)

We supply a full range of leaf-spine switches with rich DC features. Specifically:

- **IDC Leaf:** The ISCOM S6600 series functions as leaf switch for IDC, delivering 10/25G access ports with 100G uplink capabilities. These switches integrate not only carrier features, but also rich DC features, such as MLAG, VxLAN, EVPN and so on.
- **IDC Spine:** The ISCOM S7600 and S7610 series functions as spine switch for IDC, delivering full 100/200/400G ports. These switches have not only bigger bandwidth, but more capacity. ISCOM S7600 is 32 ports box, while S7610 is a chassis with 8 vertical sub-cards.

For AI Data Center (AIDC)

We supply a full range of leaf-spine switches with high bandwidth and rich AIDC features. Specifically:

- **AIDC Leaf:** The ISCOM S7600 series functions as leaf box switch for AIDC, delivering full 100/200/400G access ports. These switches integrate AIDC features: RoCE.
- **AIDC Spine:** The ISCOM S7610 series functions as spine chassis switch for AIDC, delivering full 100/200/400G ports. It is a chassis with 8 vertical sub-cards.

10G Leaf Switch

ISCOM S6600 Series

The ISCOM S6600 series switch is new-generation high-performance, high-density switch designed for internet data center (IDC). It supports pluggable power and fan modules, adopts an advanced hardware architecture design, offering high-density 10/25GE ports and supporting a rich set of data center features.

ISCOM S6600 can be positioned for high-density 10/25GE leaf in internet data centers (IDC), assisting enterprises and operators in constructing data center network platforms. It can work in conjunction with Raisecom's spine switch, ISCOM S7600/S7610 series, to build a resilient, virtual, and high-quality 100GE/200GE/400GE fully connected network for cloud-era data centers, meeting the networking demands of data centers in the cloud era.



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

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidth by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

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

VxLAN/EVPN

- Serving as high-performance hardware gateways for Overlay virtualized networks (VXLAN) and supporting the operation of data centers with up to 16 million multi-tenant users
- The hardware virtualization gateway solution allows for rapid service deployment without requiring modifications to the customer's existing network, while protecting network investments
- It supports BGP EVPN as the control plane for VXLAN, simplifying the configuration of VXLAN both within and between data centers (DCs)

Intelligent Lossless Network

- Support the intelligent lossless algorithm, addressing the issue of congestion-induced packet loss in traditional Ethernet networks. They provide a "lossless, low-latency, high-throughput" network environment for RoCEv2 traffic, meeting the high-performance demands of RoCEv2 applications
- Support PFC (Priority Flow Control) deadlock prevention. By identifying traffic flows prone to causing PFC deadlocks and modifying queue priorities, they prevent the occurrence of PFC deadlocks
- Support the ECN Overlay feature, which applies ECN functionality to VXLAN networks. This allows congestion status in the Overlay network to be promptly perceived by traffic receivers, enabling them to notify traffic senders to reduce speed and alleviate network congestion

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	
Management interface	SNMP interface (RJ45) console interface: 1 mini-USB Console	
Power Redundancy	1+1 redundancy power supply	
Voltage Scope	AC 220V(100~240V), DC 48V(-36~-72V)	
Fan Redundancy	1+1 redundancy FAN Support intelligent speed regulation	
Heat dissipation	Front air inlet and rear air outlet	
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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)	
OAM&SLA	Support IEEE802.1ag/CFM Support hardware ITU-T Y.1731, TWAMP Support MEF CE2.0 certified E-Line, E-LAN, E-TREE and E-Access services Support VRRPv2/v3 Support hardware BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing	
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	
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	
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR	
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 ULD. Support IPv4/v6 ZTP Support system and environment monitoring (CPU/Memory/Flash/Temperature/power/fan)	
Clock-sync	NTPv4/v6, PTP-TC	
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG	
DC Feature	Support VxLAN/EVPN Support RoCE: PFC (Priority-based Flow Control), ECN (Explicit Congestion Notification), Elephant Mice, DCQCN	

100/200/400G Leaf/Spine Switch

ISCOM S7600 Series

The ISCOM S7600 series switch is new-generation high-performance, high-density switch designed for data center. It supports pluggable power and fan modules, adopts an advanced hardware architecture design, offering high-density 100/200/400GE ports and supporting a rich set of data center features.

On one hand, ISCOM S7600 can be positioned for high-density 100/200/400GE leaf in AI data centers (AIDC), assisting enterprises and operators in constructing data center network platforms tailored for the AI era. It can work in conjunction with Raisecom's spine switch, ISCOM S7610 series, to build a resilient, virtual, and high-quality 100GE/200GE/400GE fully connected network for cloud-era data centers, meeting the networking demands of data centers in the cloud era.

On another hand, ISCOM S7600 can be positioned for high-density 100/200/400GE box spine in internet data centers (IDC). It can work in conjunction with Raisecom's leaf switch, ISCOM S6600 series, to build a resilient, virtual, and high-quality 10/25G to 100GE/200GE/400GE fully connected network for cloud-era data centers, meeting the networking demands of data centers in the cloud era.



ISCOM S7600 Series

FEATURES

High capacity, high density

- 32 x 100/200/400GE QSFP112 interface access, L2/L3 line speed forwarding, meeting the network request of high-density servers in next generation data centers
- Each 400G QSFP112 port can be split into four 100G ports

Intelligent virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidths by adding member devices
- ISF also supports smooth upgrades, so it can achieve continuous service during the upgrade process

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

VxLAN/EVPN

- Serving as high-performance hardware gateways for Overlay virtualized networks (VXLAN) and supporting the operation of data centers with up to 16 million multi-tenant users
- The hardware virtualization gateway solution allows for rapid service deployment without requiring modifications to the customer's existing network, while protecting network investments
- It supports BGP EVPN as the control plane for VXLAN, simplifying the configuration of VXLAN both within and between data centers (DCs)

Intelligent Lossless Network

- Support the intelligent lossless algorithm, addressing the issue of congestion-induced packet loss in traditional Ethernet networks. They provide a "lossless, low-latency, high-throughput" network environment for RoCEv2 traffic, meeting the high-performance demands of RoCEv2 applications
- Support PFC (Priority Flow Control) deadlock prevention. By identifying traffic flows prone to causing PFC deadlocks and modifying queue priorities, they prevent the occurrence of PFC deadlocks
- Support the ECN Overlay feature, which applies ECN functionality to VXLAN networks. This allows congestion status in the Overlay network to be promptly perceived by traffic receivers, enabling them to notify traffic senders to reduce speed and alleviate network congestion

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 S7600-32D
Switching Capacity	25.6Tbps
Packet Forwarding Rate	13000Mpps
Power Modules Number	2
Rated Input Voltage	DC Input: -48V DC AC Input: 110V AC/220V AC, 50/60Hz High-Voltage DC Input: 240V DC/336V DC
Maximum Input Voltage	DC Input: -36V DC~ -72V DC AC Input: 100V AC~ 240V AC~47Hz ~ 63Hz High-Voltage DC Input: 180V DC~300V DC
Fan Modules Number	6
Fan Redundancy	Fan modules support hot backup. The system can operate normally for a short period if a single fan module fails, but immediate replacement of the faulty module is recommended.
Heat dissipation	Front-to-back airflow, intelligent speed control
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping(1:1/N:1) 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 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. 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
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR
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
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG
DC Feature	Support VxLAN/EVPN Support RoCE: PFC (Priority-based Flow Control), ECN (Explicit Congestion Notification), Elephant Mice, DCQCN

100/200/400G Spine Switch

ISCOM S7610 Series

The ISCOM S7610 series switch is new-generation high-performance, high-density switch designed for data center. It supports pluggable power and fan modules, adopts an advanced hardware architecture design, offering high-density 100/200/400GE ports and supporting a rich set of data center features.

The ISCOM S7610 can be positioned for high-density 100/200/400GE spine in internet data center (IDC) and AI data centers (AIDC). It can work in conjunction with Raisecom's leaf switch, ISCOM S6600 and S7600 series, to build a resilient, virtual, and high-quality 100GE/200GE/400GE fully connected network for cloud-era data centers, meeting the networking demands of data centers in the cloud era.



ISCOM S7610 Series

FEATURES

High capacity, high density

- 32 ×400GE/64×200GE/128×100GE high-performance QSFP112 interfaces
- Each 400G QSFP112 port can be split into four 100G ports

Intelligent virtualization

- Raisecom Intelligent Stacking Framework (ISF) technology: logically virtualize multiple switches into a single switch, thus simplifying configuration and management
- ISF is an efficient device/link backup solution that improves device-level reliability through redundant backup among member devices. Inter-device link aggregation improves link-level reliability and load balance
- ISF easily expands interfaces and bandwidth by adding member devices
- ISF also supports smooth upgrades, so, it can achieve continuous service during the upgrade process

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
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- Available for Overlay and traditional Underlay scenarios

VxLAN/EVPN

- Serving as high-performance hardware gateways for Overlay virtualized networks (VXLAN) and supporting the operation of data centers with up to 16 million multi-tenant users
- The hardware virtualization gateway solution allows for rapid service deployment without requiring modifications to the customer's existing network, while protecting network investments
- It supports BGP EVPN as the control plane for VXLAN, simplifying the configuration of VXLAN both within and between data centers (DCs)

Intelligent Lossless Network

- Support the intelligent lossless algorithm, addressing the issue of congestion-induced packet loss in traditional Ethernet networks. They provide a "lossless, low-latency, high-throughput" network environment for RoCEv2 traffic, meeting the high-performance demands of RoCEv2 applications
- Support PFC (Priority Flow Control) deadlock prevention. By identifying traffic flows prone to causing PFC deadlocks and modifying queue priorities, they prevent the occurrence of PFC deadlocks
- Support the ECN Overlay feature, which applies ECN functionality to VXLAN networks. This allows congestion status in the Overlay network to be promptly perceived by traffic receivers, enabling them to notify traffic senders to reduce speed and alleviate network congestion

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 S7610
Switching Capacity	25.6Tbps
Packet Forwarding Rate	13000Mpps
MCU Number	1
Management interface	SNMP interface (RJ45) console interface: 1 mini-USB Console
LC Number	8
LC Type	ISCOM S7610-16C: 16*100G QSFP28 ISCOM S7610-8B: 8*100G QSFP28/200G QSFP56 ISCOM S7610-4D: 4*200G QSFP56/400G QSFP112
Power Modules Number	4
Rated Input Voltage	DC Input: -48V DC AC Input: 110V AC/220V AC, 50/60Hz High-Voltage DC Input: 240V DC/336V DC
Maximum Input Voltage	DC Input: -36V DC~ -72V DC AC Input: 100V AC~ 240V AC ~ 47Hz ~ 63Hz High-Voltage DC Input: 180V DC~ 300V DC
Fan Module Number	8
Fan Redundancy	Fan modules support hot backup. The system can operate normally for a short period if a single fan module fails, but immediate replacement of the faulty module is recommended.
Heat dissipation	Front-to-back airflow, intelligent speed control
L2	Support VLAN based on MAC/protocol/IP subnet/interface Support 4K VLANs, QinQ and VLAN mapping (1:1/N:1) 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 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. Support RIP, RIPv2, OSPFv2/v3, ISISv4/v6, BGPv4/4+ IPv4 multicast route: IGMPv1/v2, PIM-DM/SM/SSMv4 IPv6 multicast route: MLDv1/v2, PIM-DM/SM/SSMv6
IP/MPLS	LSP: static LSP and dynamic LSP via LDP L2VPN: VPLS and VPWS; support RAW & TAG mode and can be built via LDP(Martini) and MP-BGP (Kompella) L3VPN: MP-BGP for L3VPN MPLS OAM: support PW protection for L2VPN and BFD for L3VPN MPLS TE: support Static CR-LSP, CR-LDP, RSVP-TE and FRR
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
Virtualization	Support Raisecom Intelligent Stacking Framework (ISF) Support M-LAG
DC Feature	Support VxLAN/EVPN Support RoCE: PFC (Priority-based Flow Control), ECN (Explicit Congestion Notification), Elephant Mice, DCQCN

Chapter 6

Industrial Switch and Timer Servers

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 industry fields, such as smart grids, 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 DIN-Rail Unmanaged Industrial Switch

Gazelle S1020i Series

The Gazelle S1020i Series DIN-Rail switches consist of unmanaged industrial switches with a wide selection of port numbers, speed, and media types. Gazelle S1020i 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 fan-less nature cooling technology with a wide operating temperature ranging from - 40 to 85°C, and ensure up to 35-year Mean Time Between Failures (MTBF).



Gazelle S1020i-SC-FE-UM Series



Gazelle S1020i-SC-GE-UM Series



Gazelle S1020i-GF-GE-UM Series

SPECIFICATIONS

Gazelle S1020i-UM Series Cost-effective SC-FE Unmanaged Switch

P/N	Gazelle S1020i-(XX)SC-FE-(P)-UM-DCW24	Gazelle S1020i-(XX)SC-4FE-(P)-UM-DCW24	Gazelle S1020i-(XX)SC-6FE-UM-DCW24	Gazelle S1020i-5FE-UM-DCW24
Port number & Type	1*100M Fiber Port S1/SS13 SS15,	1*100M Fiber Port S1/SS13/SS15,	2*100M Fiber Port M/S1/S2,	N/A
	1*10/100M Based RJ45 port (POE)	4*10/100M Based RJ45 port(POE)	6*10/100M Based RJ45 port	5*10/100M Based RJ45 port
Dimension (mm)	33.5(W)x118(H)x85.7(D)			
Weight (kg)	0.36	0.37	0.38	0.35
Power Supply	DC: Dual inputs, 12 ~ 52V			
MAX power (W)	3	3	3	3
Jumbo Frame	10K bytes			
Switch Capacity	400Mbps	1000Mbps	1600Mbps	1000Mbps
Environment	Operating Temperature: -40°C to 85°C			
Protection Level	IP40			

Gazelle S1020i-UM Series Cost-effective SC-GE Unmanaged Switch

P/N	Gazelle S1020i-(XX)SC-GE-(P)-UM-DCW24	Gazelle S1020i-(XX)SC-2GE-(P)-UM-DCW24	Gazelle S1020i-(XX)SC-4GE-(P)-UM-DCW24	Gazelle S1020i-5GE-(P)-UM-DCW24	Gazelle S1020i-5GE-(P)-UM-DCW24
Port number & Type	1*100/1000M Fiber Port M/S1/SS13/SS15, 1GE & 4GE: SS23/SS25			N/A	N/A
	1*10/100/1000M RJ45 port (POE)	2*10/100/1000M RJ45 port (POE)	4*10/100/1000M RJ45 port (POE)	5*10/100/1000M RJ45 port(POE)	8*10/100/1000M RJ45 port(POE)
Dimension (mm)	33.5(W)x118(H)x85.8(D)				47.7(W)x143.7(H)x104(D)
Weight (kg)	0.36				
Power Supply	DC: Dual inputs, 12 ~ 52V, for -(P)- POE variant: 48 ~57V				
MAX power (W)	5	5	5	5	5
Jumbo Frame	10K bytes				
Switch Capacity	4,000Mbps	6,000Mbps	10,000Mbps	10,000Mbps	16,000Mbps
Environment	Operating Temperature: -40°C to 85°C				
Protection Level	IP40				

Gazelle S1020i-UM Series Cost-effective LC-GE Unmanaged Switch

P/N	Gazelle S1020i-2GF-4GE-(PWR)-UM-DCW24	Gazelle S1020i-2GF-8GE-(PWR)-UM-DCW24
Port number & Type	2*100/1000M SFP Port	2*100/1000M SFP Port
	4*10/100M Based RJ45 port (POE)	8*10/100M Based RJ45 port(POE)
Dimension (mm)	47.7(W)x104(H)x125(D)	
Weight (kg)	0.39	0.39
Power Supply	DC: Dual inputs, 12 ~ 52V	
MAX power (W)	5	8
Jumbo Frame	10K bytes	
Switch Capacity	400Mbps	1000Mbps
Environment	Operating Temperature: -40°C to 75°C	
Protection Level	IP40	

L2 DIN-Rail Managed Industrial Switch

Gazelle S1000i product family

The Gazelle DIN rail switch has a compact structure and is easy to manage. Industrial switches offer a wide range of port counts, speeds, and media types to choose from. The Gazelle S1010i-GL, Gazelle S1020i-GL, and Gazelle S1020i-CTS/CS series are specifically designed for the automatic control systems (ACS) in the industrial sector, while the Gazelle S1000i-Li and Gazelle S1020i-Li series provide cost-effective solutions aimed at meeting the needs of safe cities, intelligent transportation, and industrial data backhaul. Additionally, the Gazelle S1020i-PWR-GL series and Gazelle S1020i-PWH-GL series offer ports that support standard IEEE802.3bt, IEEE802.3at, and IEEE802.1af, while the Gazelle S1020i-CTS supports TSN. All these DIN-rail switches comply with industrial regulations and standards, enabling long-term stable operation in harsh environments, thus providing reliable, continuous, and manageable services. Network redundancy and reliability are ensured through LACP and G.8032 ERPS (switching time <50 milliseconds). All these DIN-rail switches achieve an IP40 protection level, support dual power input, employ low-power fan-less cooling technology, operate within a wide temperature range (-40 to 75 degrees Celsius), and ensure a mean time between failures (MTBF) of up to 35 years and a 3-year warranty. They support both wall-mounted and rack-mounted installations. The Gazelle S1000i series, Gazelle S1010i-GL series, Gazelle S1020i-PWH-GL series, Gazelle S1020i(-PWR)-GL series, and Gazelle S1020i-CTS/CS are designed to meet the data transmission needs in the smart grid (IEC 61850-3, IEEE 1613), transportation (EN50121-4), energy, and industrial automation sectors.



Gazelle S1000i-LI Series



Gazelle S1020i-GL Series



Gazelle S1020i-PWH-GL Series



Gazelle S1020i-LI Series



Gazelle S1020i-CTS/CS

SPECIFICATIONS

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)		
Weight(kg)	0.7		1.0
Power Supply	AC: single input DCW24: dual input DCW48: dual input		
Voltage Scope	AC: 110V/220VAC (100~240VAC) & 220VDC (170~300VDC) DCW24: 12V/24V(10~36VDC) 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 8 x10/100/1000M 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) × 130(D) × 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		

Gazelle S1020i-CTS/CS Series L3 Gigabit Ethernet DIN-Rail Switches

P/N	Gazelle S1020i-4XF-8GE-CS	Gazelle S1020i-4XF-8GE-PWR-CS	Gazelle S1020i-6XF-16GE-PWR-CTS
Interfaces	4x100/1000M SFP 8x10/100/1000M RJ45	4x100/1000M SFP 8 x10/100/1000M RJ45 PoE	6x1000M SFP 16x10/100/1000M RJ45 PoE
Dimension(mm)	80(W) x 130(D) x 150(H)	80(W) x 130(D) x 150(H)	80(W) x 150(D) x 160(H)
Weight(kg)	0.9	1.5	0.9
Power Supply	DC48: dual input		
Voltage Scope	DCW48: 48V(44~57VDC)		
MAX power(W)	10	15+240	12+480
MAX POE power(W)	—	240	480
Jumbo Frame	10K bytes		
Switch Capacity (Gbps)	24	24	44
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC EN 50121-4		

FEATURES

L2	Jumbo frame up to 10K bytes Support VLAN based on MAC/protocol/IP subnet/interface S 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, ISCOM S3028i-CTS/CS

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



Gazelle S3028i-CTS/CS

SPECIFICATIONS

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 L3 GE Rack-Mounted

P/N	Gazelle S3028i-12XF-24GE-CGS
Interfaces	12x10GE SFP+ 24x10/100/1000M RJ45
Card	N/A
Dimension (mm)	1RU, 19" 440(L) x 320(D) x 44(H)
Weight (kg)	4.1
Power Supply	AC/D or DC/D
MAX power (W)	65
Voltage Scope	AC: 110/220VAC (100~240VAC) & 110/220VDC (88~300VDC) DC: 24/48VDC (20-72VDC)
Jumbo Frame	10K bytes
Switch Capacity (Gbps)	440
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		

Gazelle S3028i-MGL Series L2 GE Rack-Mounted

P/N	Gazelle S3028i-4XF-24GE-CS	Gazelle S3028i-4XF-4GX12GF-CTS	Gazelle S3028i-8XF-4GF24GE-CTS
Interfaces	4x10GE SFP+ 24x10/100/1000M RJ45	4x10GE SFP+4x1GE combo + 12x10/100/1000M RJ45 1 expansion slot	8x10GE SFP+ 4x100/1000M SFP 24 x100/1000M RJ45
Card	Expansion cards: 8GE: 8x10/100/1000M RJ45. 8GF: 8x100/1000M SFP		
Dimension (mm)	1RU, 19" 440(L) x 300(D) x 44(H)		
Weight (kg)	2.1	2.3	2.4
Power Supply	HIP/D, HIP/S, DC/S or DC/D		
MAX power (W)	25W		
Voltage Scope	DC: Rated input: 24/48VDC: voltage range: 20~72V DC. HIP: Rated input: 100-240VAC/DC, voltage range: 85~264VAC, 100~370VDC		
Jumbo Frame	10K bytes		
Switch Capacity (Gbps)	128	112	216
Working Temperature	-40°C to 75°C		
Protection Level	IP40		
Compliance	CE, UL/FCC IEC 61850-3, IEEE 1613, EN50121-4		

Features

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 64K MAC address
Multicast	IGMP snooping, MLD snooping, IGMP MVR, Static multicast group
QoS/ACL	Support Flow-based single-rate dual-color CAR 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 ACL (MAC, IP, MAC+IP, IPv6, and user-defined). Support interface/queue shaping
Reliability	Support manual aggregation and static LACP. Support ERPS (ITU-T G.8032) Support STP/RSTP/MSTP Support Loop Detection Protection (LBD) Support Port Backup
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 prevents 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	DHCP client/server/snooping/relay DHCP option61/82
IPv6	Support IPv6 Ping/Tracert/Telnet/ SSH, IPV6 FTP/TFTP/SFTP. Support IPV6 RADIUS, IPV6 TACACS+, IPV6 NTP, and SNTP. Support IPv6 ACL.
IP Routing	Static route, RIPv1/v2, OSPFv2, ECMP, PIM-SM
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

High precision clock server

Gazelle ATS3000i-2GNSS-4PTP, Gazelle ATS3000i-2GNSS-4NTP-C-ZK, Gazelle ATS3000i-GNSS-2PTP-LI-DC12, Gazelle T6000i

The Gazelle ATS3000i is an industrial grade clock server developed to meet the needs of various industries such as communication operators, intelligent transportation, highways, smart cities, safe cities, new energy, intelligent manufacturing, and low altitude economy. The product has a variety of clock ports that can meet the clock timing requirements in various scenarios. This product has an all aluminum casing, with the ability to adapt to extreme environmental temperatures ranging from -30 °C to +70 °C and good EMC electromagnetic compatibility performance, making it capable of stable and reliable operation in harsh industrial environments. It comes with a 5-year warranty.

Gazelle T6000i is a satellite time synchronization device that meets power requirements. This device has the characteristics of high-precision synchronization, high-performance punctuality, and convenient use. The equipment adopts a high stability constant temperature crystal oscillator, combined with intelligent timing technology and compensation algorithm, to achieve time signal output and self preservation time; Supports configuration free and maintenance free functions, with LCD and indicator light display, which can display UTC time and date, satellite status, number of locked satellites, and device status in real time. The indicator light can intuitively display satellite and device status.



Gazelle ATS3000i-2GNSS-4PTP



Gazelle ATS3000i-2GNSS-4NTP-C-ZK



Gazelle ATS3000i-GNSS-2PTP-LI-DC12



Gazelle S3028i-LF Series

SPECIFICATIONS

Gazelle ATS3000i high-precision clock server

P/N	Gazelle S3028i-4XF-24GE-CS	Gazelle S3028i-4XF-4GX12GF-CTS	Gazelle S3028i-8XF-4GF24GE-CTS
Interfaces	16 BDS RS422 electrical ports, 4 1PPS+TOD ports, 4 NTP time output ports (2 of which support 1588)	2-port Combo port 1588 interface, 2 Gigabit NTP, 16 BDC channels, RS422 level, 2-channel 1PPS+TOD input, RS422 level.	Provide 2 gigabit 1588 electrical ports, 1 NMS port, and 1 1PPS+TOD interface
GNSS receiver	Dual channel independent BDS/GPS/GLONASS dual-mode receiver module	Built in dual BDS/GPS timing receiver	Support BDS/GPS Beidou receiver, dual hot backup
Dimension (mm)	1RU, 19" 482(L) x 240(D) x 44.4(H)	1RU, 19" 482(L) x 350(D) x 44.4(H)	165(L) x 28(D) x 120(H)
Weight (kg)	3.8	3.8	0.5
MAX power (W)	15	≤32	≤10
Power Supply	Supports dual AC220 power input and hot backup	Supports dual AC220 power input and hot backup	Support single channel DC 12V power input Power input range: 9VDC~14VDC
Environmental Parameters	1. Working temperature: -30°C~+70°C (constant temperature crystal oscillator version) 2. Storage temperature: -40°C~+85°C, 10-90% RH 3. Working humidity: 20% to 95%, no condensation		
Protection Level	IP40		

Gazelle T6000i high-precision power industry clock server

P/N	Gazelle T6000i
Interfaces	Backboard: equipped with 18 slot interfaces for data transmission between core boards and output boards. Beidou time source input board: dual Beidou signal input, 2 BD signals, 2 IRIG-B fiber optic signals, 2 IRIG-B RS485 signals
Dimension (mm)	483(L) x 177(D) x 285(H)
Weight (kg)	7
MAX power (W)	60
Power Supply	Dual power supply for input voltage, compatible with both AC and DC, high voltage 88~370VDC/85~264VAC
Environmental Parameters	Working temperature: -5°C~+45°C (optional -20°C~+70°C) Storage temperature: -40°C to +85°C Relative humidity: 5% -95% without condensation
Protection Level	IP40
Expandability	Variant Sub-cards

Chapter 7

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.

Repeater products are amplification and relay devices designed for mobile communication signals. According to the different output power, it is divided into low-power repeaters, mid-power repeaters, high-power repeater, etc. By coupling and accessing the mobile wireless signals of macro base stations, amplification and expansion the coverage range, quickly and cost effectively solve wireless coverage problems in various scenarios (such as homes, retail stores, underground parking lots, elevators, offices, buildings, road, tunnel, rural areas, etc.), reduce user complaints, and improve user experience.

Integrated Low-power Small Cell (4G)

BLBS3211

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



Elevator-SmallCell



Home-SmallCell



Enterprise-SmallCell

SPECIFICATIONS

Type	Home-SmallCell	Enterprise-SmallCell	Elevator-SmallCell
Frequency Band	Band 3	Band 3	Band 3
Max transmit power	2*50mW	2*125mW	2*125mW
Number of carriers	Single carrier		
Number of supported users	16 simultaneous active users	32 simultaneous active users	
Peak throughput	DL 150Mbps, UL 75Mbps		
Backhaul interface	GE/FE		GE/FE/xPON
Protection class	IP30		
Operating Temperature	-10°C to +45°C		
Power supply	PoE or 220V AC		
Synchronization mode	GNSS via GPS, IEEE 1588v2, 1588ACR		
Application scenarios	Home, office	Café, shop, office, car park	Elevator

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

RCNB3xxx/RCNB5xxxx

An out-door 4G&5G small cell series which is targeting out-door rural areas where the residents are unable to make phone calls and access the Internet. In addition, Supports a wide range of application scenarios, such as, Car Park, Office, Elevator, Road, Building. etc., providing cost-effective 4G and 5G Mobile signal coverage.



4G Mid-Power SmallCell



4G/5G Hi-Power SmallCell



4G+5G Hi-Power SmallCell

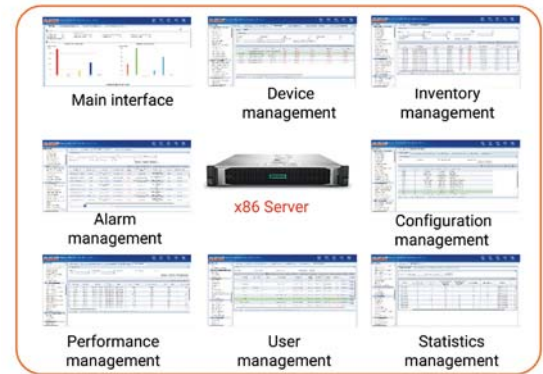
SPECIFICATIONS

Type	4G Mid-Power	4G Hi-Power	5G Hi-Power	5G+4G Hi-Power
Frequency Band	Band 3	Band 3/5/8/40	N1/N28/N41/N78	N1+B3,N28+B8,N41+B3
Max transmit power	2*2W	2*60W	2*40W/60W	2*40W/60W
Number of carriers	4G Single carrier 5G Single carrier			
Number of supported users	4G: 200 simultaneous active users 5G: 200 simultaneous active users			
Backhaul interface	GE/10G/xPON			
Protection class	IP65			
Operating Temperature	-48V DC or 220V AC			
Power supply	PoE or 220V AC			
Synchronization mode	GNSS via GPS/Beidou, IEEE 1588v2, 1588ACR			
Installation mode	Pole-mount and wall-mount			
Application scenarios	Car park, elevator	Rural areas, car park, roads, building		

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 include configuration, fault, security performance, log system, northbound interface, HTTP file server, FTP file server service and MySQL database.



BLOM6200

SPECIFICATIONS

P/N	BLOM6200
Capacity	Support 20,000 Small Cells access
Height	2RU
Power Consumption	850W (x86 server)
Deployment	Cloud and x86 server

Small Cell Gateway

BLS9200

BLS9200 is a small cell gateway provided by Raisecom. It's built on the X86 platform and consists of three subsystems: security gateway (SeGW), signaling gateway (HeNB GW), and data gateway (DGW). For security and confidentiality, SeGW provides IPSec encryption tunnels between small cells and security gateway, ensuring the secure access and reliable data transmission of small cells. HeNB GW serves as a network element for aggregating signaling and DGW works for aggregating user data, providing standard S1/NG interfaces.



BLS9200

SPECIFICATIONS

P/N	BLS9200
Capacity	Support 5,000 4G/5G Small Cells access
Throughput	40Gbps
Authentication Mode	PSK, EAP-AKA ,Digital Certificate
Height	2RU
Power Consumption	850W

Low-power Repeater

RCREPM

Low-power Repeater coupling and accessing the mobile wireless signals of macro base stations, amplification and expansion the coverage range, quickly and cost effectively solve wireless coverage problems in various scenarios such as home, retail stores, underground parking lots, elevators, offices, buildings, etc., reduce user complaints, and improve user experience.



SPECIFICATIONS

Type	Mobile-Mate	mDAS	Elevator-Mate
Frequency Band	Single /Dual/Tri/Quad :800M/900M/1800MHz/2100MHz/2600MHz/3500MHz		
Max transmit power	17/20dBm		
Max System Gain	75dB		
Management	OMT&NMS, Optional modem for remote monitoring		
Protection class	IP30		
Operating Temperature	-5°C~+45°C		
Power supply	220V AC		
Installation mode	desktop and wall-mount		
Application scenarios	Home, office	Café, shop, office, car park	Elevator

Mid/Hi-power Repeater

RCREP

Mid/Hi-power Repeater coupling and accessing the mobile wireless signals of macro base stations, amplification and expansion the coverage range, quickly and cost effectively solve wireless coverage problems in various scenarios such as underground parking lots, elevators, offices, buildings, etc., reduce user complaints, and improve user experience.



SPECIFICATIONS

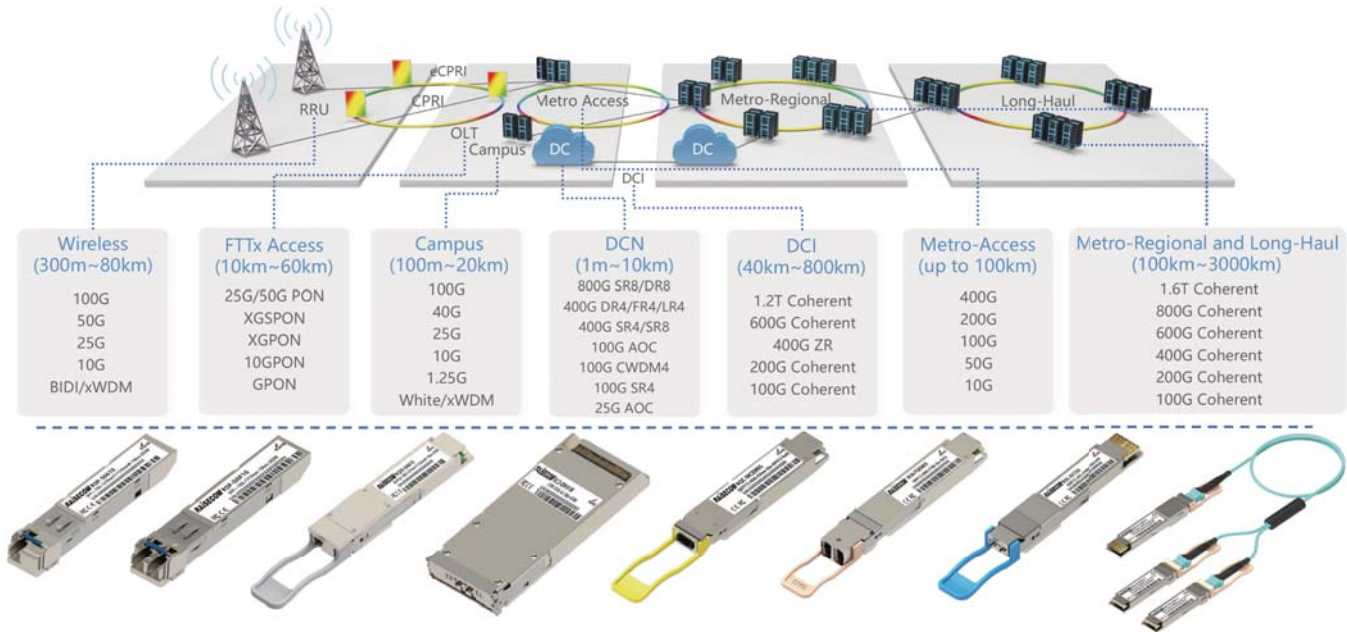
Type	Mobile-Mate	mDAS	Elevator-Mate
Frequency Band	Single /Dual/Tri : 800M/ 900MHz/1800MHz/2100MHz/2600MHz/3500MHz		
Max transmit power	2W/4W	5W/10W/20W	40W/60W
Max System Gain	80dB/90dB		
Management	OMT&NMS, Optional modem for remote monitoring		
Protection class	IP65		
Operating Temperature	-40 to +55°C		
Power supply	-48V DC or 220V AC		
Installation mode	Pole-mount and wall-mount		
Application scenarios	Car park, elevator	Rural areas, car parks, road, building	

Chapter 8

Optical Module

The Raisecom Optical Module is designed for the high-speed and bidirectional communication system, which supports 155Mbit/s~800Gbit/s single transmission to meet IEEE/ITU standards, and satisfy MSA standards. The optical module is a key device that converts electrical signals to optical signals (E/O conversion) and vice versa (O/E conversion) in optical communication systems. It enables long-distance, high-bandwidth, and low-loss data transmission, serving as the "bridge" between electrical and optical networks.

Multi-Speed-Range Covered Optical Module Solutions



The Raisecom Optical Module include RXF, RSP, RSF, RS28, RQP, RC2, RQ28, RQ56, RQC, RQD, RO4, RO8, with the subsequent launch of our new products, the kinds of models will increase, also The Raisecom optical modules support customization.

Series	Form Factor	Description
RSF	SFP	Transmission rate ranging from 155Mbit/s to 2.5Gbit/s
RSP	SFP+	Transmission rate ranging from 8.5Gbit/s to 14.25Gbit/s
RXF	XFP	Transmission rate ranging from 8.5Gbit/s to 11.3Gbit/s
RS28	SFP28	Transmission rate supports up to 25.78Gbit/s
RQP	QSFP+	Transmission rate supports up to 41.25Gbit/s
RC2	CFP2	Transmission rate supports up to 106Gbit/s
RQ28	QSFP28	Transmission rate supports up to 106Gbit/s
RQ56	QSFP56	Transmission rate supports up to 212.5Gbit/s
RQD	QSFP-DD	Transmission rate supports up to 425Gbit/s
RQC	QSFP112	Transmission rate supports up to 425Gbit/s
RO4	OSFP	Transmission rate supports up to 425Gbit/s
RO8	OSFP	Transmission rate supports up to 850Gbit/s
AOC	Active Optical Cable	10G to 400G
DAC	Direct Attach Cable	10G to 800G
Adaptor	QSFP/SFP	/

SFP up to 2.5G and SFP+ up to 14.25G

RSF series & RSP series



Key Features

- Widely applicable to various communications devices
- Transmission rate ranging from 155Mbit/s to 16Gbit/s
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Using standard LC connector
- Single 3.3V power supply
- Excellent operating temperature range

E-Temp (Extended Temperature level) type support operating temperature rang -20-80°C, I-Temp (Industrial Temperature level) operating temperature range: -40-85°C (altitude: 0-1800). When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C

- Metal packaging
- Internal EEPROM using standard serial protocol interface
- Stronger monitoring (SFF-8472 agreement)
- SFF-8431 agreement
- Class 1 laser safety standards
- RoHS compliant

Target Applications

- IP RAN, Datacenter Server, Switch, Router, Support FE&GE Gbit/s services
- IDC, Storage server, Support Fiber channel
- Base stations, Repeaters, and other wireless devices. Support CPRI option 1,2 etc.

Specifications

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
155M	Duplex LC	RSF-D1F02	2km	E	3.3V	FP	PIN	1310nm	155M SFP 2km
		RSF-D1F10	10km	E	3.3V	FP	PIN	1310nm	155M SFP 10km
		RSF-D1F20	20km	E	3.3V	FP	PIN	1310nm	155M SFP 20km
		RSF-D1F40	40km	E	3.3V	FP	PIN	1310nm	155M SFP 40km
		RSF-D1G80	80km	E	3.3V	DFB	PIN	1550nm	155M SFP 80km
	Single LC	RSF-S1020	20km	E	3.3V	FP	PIN	1310nmT/1550nmR	155M SFP BIDI 20km
		RSF-S1120	20km	E	3.3V	DFB	PIN	1550nmT/1310nmR	155M SFP BIDI 20km
		RSF-S1040	40km	E	3.3V	DFB	PIN	1310nmT/1550nmR	155M SFP BIDI 40km
		RSF-S1140	40km	E	3.3V	DFB	PIN	1550nmT/1310nmR	155M SFP BIDI 40km
1.25G	Duplex LC	RSF-D2EM5	550m	E	3.3V	Vcsel	PIN	850nm	1.25G SFP SX
		RSF-D2F10	10km	E	3.3V	FP	PIN	1310nm	1.25G SFP LX
		RSF-D2F20	20km	E	3.3V	FP	PIN	1310nm	1.25G SFP 20km
		RSF-D2F40	40km	E	3.3V	DFB	PIN	1310nm	1.25G SFP LH1
		RSF-D2G40	40km	E	3.3V	DFB	PIN	1550nm	1.25G SFP LH2
		RSF-D2G80	80km	E	3.3V	DFB	PIN	1550nm	1.25G SFP ZX
		RSF-D2GH0	100km	E	3.3V	DFB	PIN	1550nm	1.25G SFP 100km
		RSF-D2GH2	120km	E	3.3V	DFB	APD	1550nm	1.25G SFP EX
	Single SC	RSF-B2020	20km	E	3.3V	FP	PIN	1310nmT/1550nmR	1.25G SFP BIDI SC
		RSF-B2120	20km	E	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI SC
		RSF-B23E5	20km	E	3.3V	DFB	APD	1490nm/1310nmR	1.25G EPON OLT PX20++
		RSF-B23F5	20km	E	3.3V	DFB	APD	1490nm/1310nmR	1.25G EPON OLT PX20+++

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
1.25G	Single LC	RSF-S2020	20km	E	3.3V	FP	PIN	1310nmT/1550nmR	1.25G SFP BIDI 20km
		RSF-S2120	20km	E	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI 20km
		RSF-S2040	40km	E	3.3V	DFB	PIN	1310nmT/1550nmR	1.25G SFP BIDI 40km
		RSF-S2140	40km	E	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI 40km
		RSF-S2480	80km	E	3.3V	DFB	PIN	1490nmT/1550nmR	1.25G SFP BIDI 80km
		RSF-S2580	80km	E	3.3V	DFB	PIN	1550nmT/1490nmR	1.25G SFP BIDI 80km
		RSF-S24H0	100km	E	3.3V	DFB	APD	1490nmT/1550nmR	1.25G SFP BIDI 100km
		RSF-S25H0	100km	E	3.3V	DFB	APD	1550nmT/1490nmR	1.25G SFP BIDI 100km
		RSF-S2010-I	15km	I	3.3V	FP	PIN	1310nmT/1550nmR	1.25G SFP BIDI 15km
		RSF-S2110-I	15km	I	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI 15km
		RSF-S2020-I	20km	I	3.3V	FP	PIN	1310nmT/1550nmR	1.25G SFP BIDI 20km
		RSF-S2120-I	20km	I	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI 20km
		RSF-S2040-I	40km	I	3.3V	DFB	PIN	1310nmT/1550nmR	1.25G SFP BIDI 40km
		RSF-S2140-I	40km	I	3.3V	DFB	PIN	1550nmT/1310nmR	1.25G SFP BIDI 40km
2.5G	Duplex LC	RSF-D3F20	20km	E	3.3V	FP	PIN	1310nm	2.5G SFP 20km
		RSF-D3F40	40km	E	3.3V	DFB	PIN	1310nm	2.5G SFP 40km
		RSF-D3G80	80km	E	3.3V	DFB	PIN	1550nm	2.5G SFP 80km
	Single LC	RSF-S3020	20km	E	3.3V	FP	PIN	1310nmT/1550nmR	2.5G SFP BIDI 20km
		RSF-S3120	20km	E	3.3V	DFB	PIN	1550nmT/1310nmR	2.5G SFP BIDI 20km
		RSF-S3040	40km	E	3.3V	DFB	PIN	1310nmT/1550nmR	2.5G SFP BIDI 40km
		RSF-S3140	40km	E	3.3V	DFB	PIN	1550nmT/1310nmR	2.5G SFP BIDI 40km
		RSF-S3480	80km	E	3.3V	DFB	APD	1490nmT/1550nmR	2.5G SFP BIDI 80km
		RSF-S3580	80km	E	3.3V	DFB	APD	1550nmT/1490nmR	2.5G SFP BIDI 80km
		RSF-B33PE	20km	E	3.3V	DFB	APD	1490nm/1310nmR	2.5G GPON OLT Class C++
		RSF-B33PF	20km	E	3.3V	DFB	APD	1490nm/1310nmR	2.5G GPON OLT Class C+++
10G	Duplex LC	RSP-D0EM3	300m	E	3.3V	VCSEL	PIN	850nm	10G SFP+ SR
		RSP-D0F10	10km	E	3.3V	DFB	PIN	1310nm	10G SFP+ LR
		RSP-D0F20	20km	E	3.3V	DFB	PIN	1310nm	10G SFP+ 20km
		RSP-D0F40	40km	E	3.3V	DFB	PIN	1310nm	10G SFP+ 40km
		RSP-D0G40	40km	E	3.3V	EML	PIN	1550nm	10G SFP+ ER
		RSP-D0G80	80km	E	3.3V	EML	APD	1550nm	10G SFP+ ZR
		RSP-D0GH0	100km	E	3.3V	EML	APD	1550nm	10G SFP+ 100km
		RSP-D0F10-I	10km	I	3.3V	DFB	PIN	1310nm	10G SFP+ LR
		RSP-D0F20-I	20km	I	3.3V	DFB	PIN	1310nm	10G SFP+ 20km
		RSP-D0F40-I	40km	I	3.3V	DFB	PIN	1310nm	10G SFP+ 40km
	Single LC	RSP-S0610	10km	E	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI LR
		RSP-S0710	10km	E	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI LR
		RSP-S0620	20km	E	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI 20km
		RSP-S0720	20km	E	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI 20km
		RSP-S0640	40km	E	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI ER
		RSP-S0740	40km	E	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI ER
		RSP-S0480	80km	E	3.3V	EML	APD	1490nmT/1550nmR	10G SFP+ BIDI ZR
		RSP-S0580	80km	E	3.3V	EML	APD	1550nmT/1490nmR	10G SFP+ BIDI ZR
		RSP-S0610-I	10km	I	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI LR
		RSP-S0710-I	10km	I	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI LR
		RSP-S0620-I	20km	I	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI 20km
		RSP-S0720-I	20km	I	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI 20km
		RSP-S0640-I	40km	I	3.3V	DFB	PIN	1270nmT/1330nmR	10G SFP+ BIDI ER
		RSP-S0740-I	40km	I	3.3V	DFB	PIN	1330nmT/1270nmR	10G SFP+ BIDI ER
		RSP-S0480-I	80km	I	3.3V	EML	APD	1490nmT/1550nmR	10G SFP+ BIDI ZR
		RSP-S0580-I	80km	I	3.3V	EML	APD	1550nmT/1490nmR	10G SFP+ BIDI ZR
14.25G	Duplex LC	RSP-DAF10	10km	E	3.3V	DFB	PIN	1310nm	16G SFP+ FC
100M	RJ45	RSF-T1BM1	100m	E	3.3V	NA	NA	NA	100M SFP RJ45
1000M	RJ45	RSF-T2AM1	100m	E	3.3V	NA	NA	NA	10M/100M/1000M SFP RJ45
10G	RJ45	RSP-T0BMC	30m	E	3.3V	NA	NA	NA	10G SFP+ RJ45

XFP up to 11.3G

RXF series



Duplex LC



Single LC

Key Features

- Widely applicable to various communications devices
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Using standard LC connector
- Single 3.3V power supply
- Excellent operating temperature range

E-Temp (Extended Temperature level) type support operating temperature rang -20-80°C,

I-Temp (Industrial Temperature level) operating temperature range: -40-85°C

(altitude: 0-1800). When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C

- Support CDR internally for better long-distance transmission performance
- Metal packaging
- Internal EEPROM using standard serial protocol interface
- Stronger monitoring (SFF-8472 agreement)
- SFF-8431 agreement
- Class 1 laser safety standards
- RoHS compliant

Target Applications

- IP RAN: applicable to switches and routers in the IP RAN
- Date center: applicable to switches, routers, and storage device in the data center

Specifications

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
10G	Duplex LC	RXF-D0EM3	300m	E	3.3V,5V	VCSEL	PIN	850nm	10G XFP SR
		RXF-D0F10	10km	E	3.3V,5V	DFB	PIN	1310nm	10G XFP LR
		RXF-D0G40	40km	E	3.3V,5V	EML	PIN	1550nm	10G XFP ER
		RXF-D0G80	80km	E	3.3V,5V	EML	APD	1550nm	10G XFP ZR
	Single LC	RXF-S0610	10km	E	3.3V,5V	DFB	PIN	1270nmT/1330nmR	10G XFP BIDI LR
		RXF-S0710	10km	E	3.3V,5V	DFB	PIN	1330nmT/1270nmR	10G XFP BIDI LR
		RXF-S0640	40km	E	3.3V,5V	DFB	PIN	1270nmT/1330nmR	10G XFP BIDI ER
		RXF-S0740	40km	E	3.3V,5V	DFB	PIN	1330nmT/1270nmR	10G XFP BIDI ER
		RXF-S0480	80km	E	3.3V,5V	EML	APD	1490nmT/1550nmR	10G XFP BIDI ZR
		RXF-S0580	80km	E	3.3V,5V	EML	APD	1550nmT/1490nmR	10G XFP BIDI ZR

SFP28 up to 25.78G

RS28 series



Key Features

- Widely applicable to various communications devices
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Using standard LC connector
- Single 3.3V power supply
- Excellent operating temperature range
- E-Temp (Extended Temperature level) type support operating temperature rang -20-80°C, I-Temp (Industrial Temperature level) operating temperature range: -40~85°C (altitude: 0~1800). When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C
- Metal packaging
- Stronger monitoring (SFF-8472 agreement)
- SFF-8402, SFF-8431, SFF-8432 agreement
- Class 1 laser safety standards
- RoHS compliant

Target Applications

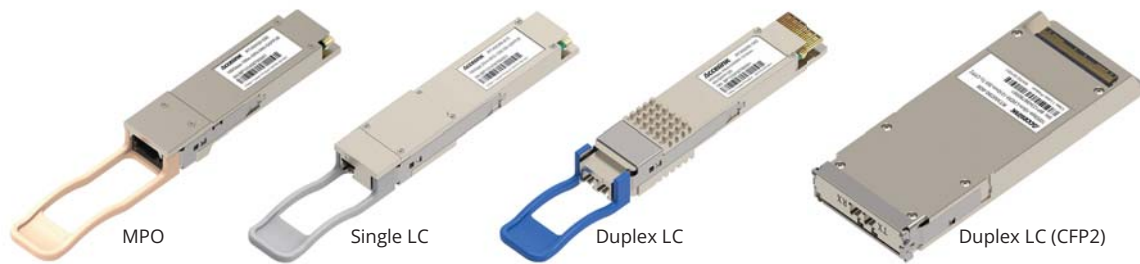
- IP RAN
- Data Center
- Base stations, repeaters, and other wireless devices

Specifications

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
25G	Duplex LC	RS28-DBEM1	100m	E	3.3V	VCSEL	PIN	850nm	25G SFP28 SR
		RS28-DBF10	10km	E	3.3V	DFB	PIN	1310nm	25G SFP28 LR
		RS28-DBF10-I	10km	I	3.3V	DFB	PIN	1310nm	25G SFP28 LR
		RS28-DBF40	40km	E	3.3V	DFB/EML	APD	1310nm	25G SFP28 ER
		RS28-DBF80	80km	E	3.3V	EML	SOA+PIN	1310nm	25G SFP28 ZR
	Single LC	RS28-SB610	10km	E	3.3V	DFB	PIN	1270nmT/1330nmR	25G SFP28 BIDI LR
		RS28-SB710	10km	E	3.3V	DFB	PIN	1330nmT/1270nmR	25G SFP28 BIDI LR
		RS28-SB620	20km	E	3.3V	DFB	PIN	1270nmT/1330nmR	25G SFP28 BIDI 20km
		RS28-SB720	20km	E	3.3V	DFB	PIN	1330nmT/1270nmR	25G SFP28 BIDI 20km
		RS28-SB640	40km	E	3.3V	DFB	APD	1270nmT/1330nmR	25G SFP28 BIDI ER
		RS28-SB740	40km	E	3.3V	DFB	APD	1330nmT/1270nmR	25G SFP28 BIDI ER
		RS28-SBM80	80km	E	3.3V	EML	SOA+PIN	1295nmT/1309nmR	25G SFP28 BIDI ZR
		RS28-SBN80	80km	E	3.3V	EML	SOA+PIN	1309nmT/1295nmR	25G SFP28 BIDI ZR
		RS28-SB610-I	10km	I	3.3V	DFB	PIN	1270nmT/1330nmR	25G SFP28 BIDI LR
		RS28-SB710-I	10km	I	3.3V	DFB	PIN	1330nmT/1270nmR	25G SFP28 BIDI LR
		RS28-SB620-I	20km	I	3.3V	DFB	PIN	1270nmT/1330nmR	25G SFP28 BIDI 20km
		RS28-SB720-I	20km	I	3.3V	DFB	PIN	1330nmT/1270nmR	25G SFP28 BIDI 20km
		RS28-SB640-I	40km	I	3.3V	DFB	APD	1270nmT/1330nmR	25G SFP28 BIDI ER
		RS28-SB740-I	40km	I	3.3V	DFB	APD	1330nmT/1270nmR	25G SFP28 BIDI ER
		RS28-SBM80-I	80km	I	3.3V	EML	SOA+PIN	1295nmT/1309nmR	25G SFP28 BIDI ZR
		RS28-SBN80-I	80km	I	3.3V	EML	SOA+PIN	1309nmT/1295nmR	25G SFP28 BIDI ZR

SQSFP+&CFP2&QSFP28 up to 106G

RQP series, RC2 series and RQ28 series



Key Features

- Widely applicable to various communications devices
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Using standard LC connector or MPO connector
- Single 3.3V power supply.
- Operating temperature range -0-70°C (altitude: 0-1800). When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C
- Metal packaging
- Internal EEPROM using standard serial protocol interface
- Stronger monitoring (Compliant SFF-8636 of QSFP agreement, Compliant MDIO of CFP2 agreement)
- Class 1 laser safety standards
- RoHS compliant

Target Applications

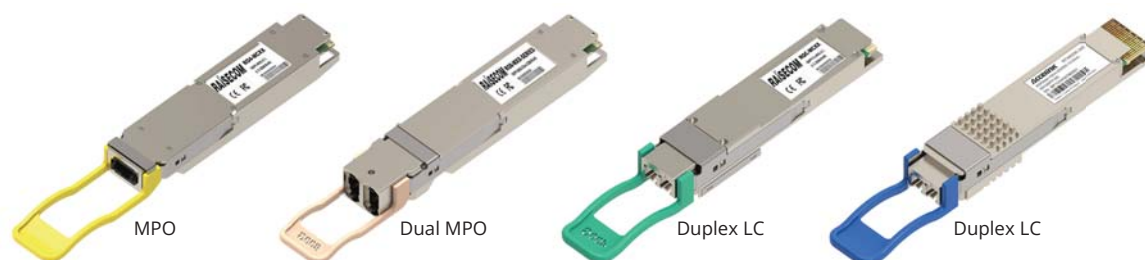
- IP MAN, Data Center Network
- Switch, Router, Other Communication devices
- Base stations, repeaters, and other wireless devices

Specifications

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
40G	MPO12	RQP-MQEM3	300m	C	3.3V	VCSEL	PIN	850nm	40G QSFP+ SR4
	Duplex LC	RQP-DQC10	10km	C	3.3V	DFB	PIN	1271nm/1291nm/1311nm/1331nm	40G QSFP+ LR4
		RQP-DQC40	40km	C	3.3V	DFB	APD	1271nm/1291nm/1311nm/1331nm	40G QSFP+ ER4
100G	Duplex LC	RC2-DHH10	10km	C	3.3V	DFB	PIN	4-LWDM	100G CFP2 LR4
		RC2-DHH40	40km	C	3.3V	EML	APD	4-LWDM	100G CFP2 ER4
		RC2-DHH80	80km	C	3.3V	EML	SOA+PIN	4-LWDM	100G CFP2 ZR4
	MPO12	RQ28-MHEM1	100m	C	3.3V	VCSEL	PIN	850nm	100G QSFP28 SR4
	Duplex LC	RQ28-DHH10	10km	C	3.3V	DFB	PIN	4-LWDM	100G QSFP28 LR4
		RQ28-DHH40	40km	C	3.3V	EML	APD	4-LWDM	100G QSFP28 ER4
		RQ28-DHH80	80km	C	3.3V	EML	SOA+PIN	4-LWDM	100G QSFP28 ZR4
		RQ28-SH610	10km	C	3.3V	EML	PIN	1270nmT/1330nmR	100G QSFP28 BIDI LR1
	Single LC	RQ28-SH710	10km	C	3.3V	EML	PIN	1330nmT/1270nmR	100G QSFP28 BIDI LR1
		RQ28-SHK40	40km	C	3.3V	EML	APD	1304nmT/1309nmR	100G QSFP28 BIDI ER1
		RQ28-SHL40	40km	C	3.3V	EML	APD	1309nmT/1304nmR	100G QSFP28 BIDI ER1

QSFP112&QSFP-DD&OSFP up to 850G

RQ56 series, RQC series, RQD series, RO4 series and RO8 series



Key Features

- Widely applicable to various communications devices
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Using standard LC connector or MPO connector
- Single 3.3V power supply
- Operating temperature range -0-70°C (altitude: 0-1800). When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C
- Metal packaging
- Internal EEPROM using standard serial protocol interface
- Stronger monitoring (Compliant CMIS Rev5.0 or later version)
- Class 1 laser safety standards
- RoHS compliant

Target Applications

- IP MAN, Data Center Network
- Switch, Router, Other Communication devices

Specifications

Speed	Interface	Part Number	Distance	Temp	Supply Voltage	Laser	Photodiode	Wavelength (nm)	Generic Name
200G	MPO12	RQ56-MGEM1	100m	C	3.3V	Vcsel	PIN	850nm	200G QSFP56 SR4
	Duplex LC	RQ56-DGC02	2km	C	3.3V	DFB	PIN	1271nm/1291nm/ 1311nm/1331nm	200G QSFP56 FR4
400G	MPO16	RQD-NCM1	100m	C	3.3V	VCSEL	PIN	850nm	400G QSFP-DD SR8
	MPO12	RQD-MCFM5	500m	C	3.3V	EML or SiPh	PIN	1311nm	400G QSFP-DD DR4
	Duplex LC	RQD-DCC02	2km	C	3.3V	EML	PIN	1271nm/1291nm/ 1311nm/1331nm	400G QSFP-DD FR4
	Duplex LC	RQD-DCC10	10km	C	3.3V	EML	PIN	1271nm/1291nm/ 1311nm/1331nm	400G QSFP-DD LR4
400G	MPO12	RQC-MCEM05	50m	C	3.3V	VCSEL	PIN	850nm	400G QSFP112 VR4
	MPO12	RQC-MCEM1	100m	C	3.3V	VCSEL	PIN	850nm	400G QSFP112 SR4
	MPO12	RQC-MCFM5	500m	C	3.3V	EML or SiPh	PIN	1311nm	400G QSFP112 DR4
	Duplex LC	RQC-DCC02	2km	C	3.3V	EML	PIN	1271nm/1291nm/ 1311nm/1331nm	400G QSFP112 FR4
400G	MPO12	RO4-MCEM05	50m	C	3.3V	VCSEL	PIN	850nm	400G OSFP VR4
	MPO12	RO4-MCEM1	100m	C	3.3V	VCSEL	PIN	850nm	400G OSFP SR4
	MPO12	RO4-MCFM5	500m	C	3.3V	EML or SiPh	PIN	1311nm	400G OSFP DR4
800G	Dual MPO12	RO8-FDEM05	50m	C	3.3V	VCSEL	PIN	850nm	800G OSFP 2*VR4
	Dual MPO12	RO8-FDFM5	500m	C	3.3V	SiPh	PIN	1311nm	800G OSFP DR8

AOC, DAC and Adapters

Besides standard plugs, the AOC and DAC cable is used for all highspeed interface within a rack. As part of Raisecom Optical modules portfolio. AOC cable, DAC cable and special adaptor for converting QSFP+ to SFP+ etc..

Key Features

- Widely applicable to various communications devices
- Low power consumption, stable performance, and energy-saving
- Good EMC and EMI characteristics
- Operating temperature range -0-70°C (altitude: 0-1800).

When the altitude is between 1800m and 5000m, for every 220m increase in altitude, the highest operating temperature decreases by 1°C

- Metal packaging
- AOC: Active Optical Cable
- DAC: Direct Attach Cable
- Adapter: Optical Interface Form Factor Adapter
- RoHS compliant

Target Applications

- IP MAN, Data Center Network
- Switch, Router, Other Communication devices

Adapter Technical specifications

Speed	Form factor	Part Number	Temp	Generic Name
40G to 10G	QSFP+ to SFP+	RQP-ZQ/SP	C	40G to 10G Adapter
100G to 25G	QSFP28 to SFP28	RQ28-ZB/S28	C	100G to 25G Adapter

DAC Technical specifications

Speed	Form factor	Part Number	Distance	Temp	Generic Name
10G	SFP+ to SFP+	RSP-G0/SP-X	1 to 7m	C	10G DAC
25G	SFP28 to SFP28	RS28-GB/S28-X	1 to 5m	C	25G DAC
100G	QSFP28 to QSFP28	RQ28-GH/Q28-X	1 to 5m	C	100G DAC
100 to 4*25G	QSFP28 to 4*SFP28	RQ28-GH/4S28-X	1 to 5m	C	100G to 4*25G DAC
400G	QSFP112 to QSFP112	RQC-GC/QC-X	1 to 3m	C	400G DAC
800G	OSFP112 to OSFP112	RO8-GD/O8-X	0.5 to 2m	C	800G DAC

AOC Technical specifications

Speed	Form factor	Part Number	Distance	Temp	Supply Voltage	Laser	photodiode	Wavelength (nm)	Generic Name
10G to 10G	SFP+ to SFP+	RSP-A0/SP-X	1 to 150m	C	3.3V	VCSEL	PIN	850nm	10G AOC
25G to 25G	SFP28 to SFP28	RS28-AB/S28-X	1 to 100m	C	3.3V	VCSEL	PIN	850nm	25G AOC
40G to 40G	QSFP+ to QSFP+	RQP-AQ/QP-X	1 to 150m	C	3.3V	VCSEL	PIN	850nm	40G AOC
100G to 100G	QSFP28 to QSFP28	RQ28-AH/Q28-X	1 to 100m	C	3.3V	VCSEL	PIN	850nm	100G AOC
100 to 4*25G	QSFP28 to 4*SFP28	RQ28-AH/4S28-X	1 to 50m	C	3.3V	VCSEL	PIN	850nm	100G to 4*25G AOC
400G to 400G	QSFP112 to QSFP112	RQC-AC/QC-X	1 to 60m	C	3.3V	VCSEL	PIN	850nm	400G AOC
400G to 2*200G	QSFP112 to 2*QSFP56	RQC-AC/2Q56-X	1 to 70m	C	3.3V	VCSEL	PIN	850nm	400G to 2*200G AOC



AOC 100G to 100G
QSFP28 to QSFP28



AOC 100G to 4*25G
QSFP28 to 4*SFP28



AOC 400G to 2*200G
QSFP-DD to 2*QSFP56



DAC 800G to 800G
OSFP112 to OSFP112



Adapter 40G to 10G
QSFP+ to SFP+

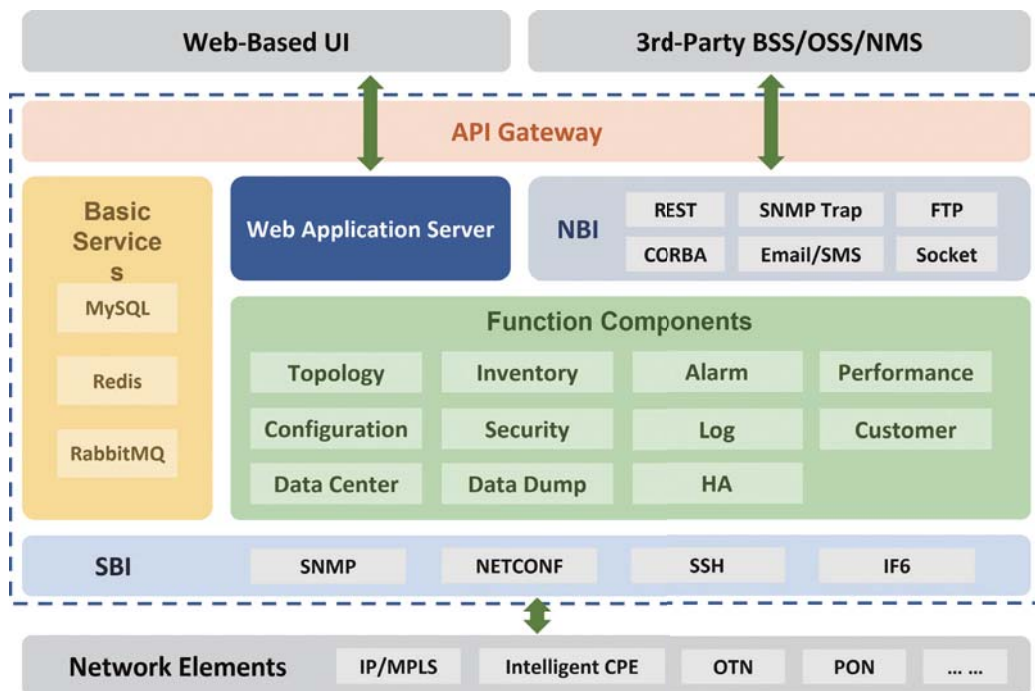
Chapter 9

Network Management System

The 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 customers easily plan element backup/upgrade in batch. It also provides self-management for the server to keep monitoring the system and guarantee healthy 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.



Key Features

- Supports subnet-level business management, with end-to-end one-click activation for SDH, OTN, and MPLS services
- Supports various standard northbound interfaces including CORBA, MTOSI, REST, and SNMP
- Supports southbound interfaces such as SNMP, CLI, and NETCONF, enabling unified management of various types of devices, including transmission, packet, and OSE
- Supports HA and distributed deployment

Installation Environment Requirements

Hardware

Deployment	Devices	Requirements	Servers
Standalone	<50000	8C\16G\1T	1
	<100000	8C\32G\1T	1
HA	<50000	8C\16G\1T	2
	<100000	8C\32G\1T	2

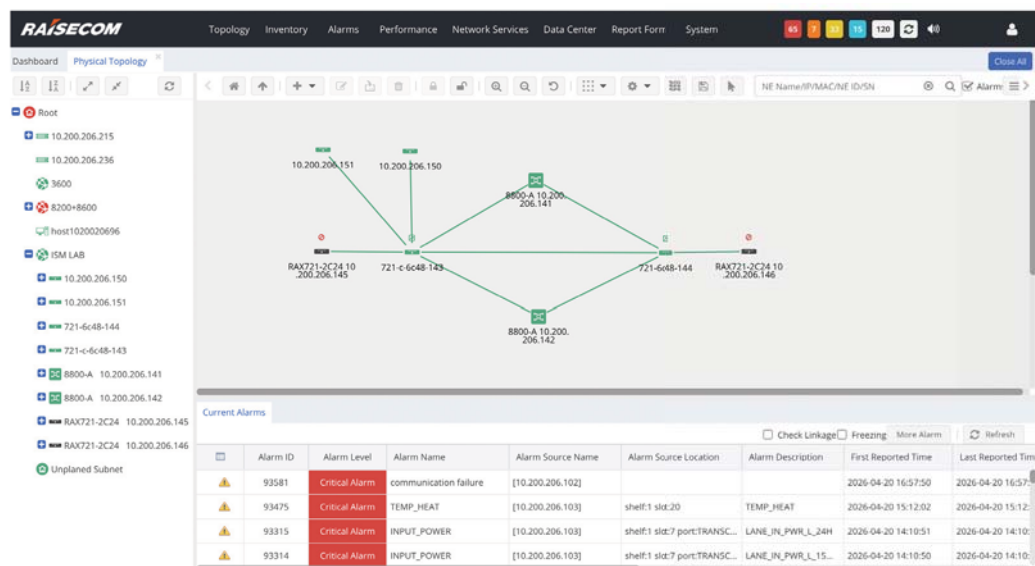
Software

Item	Operating System Requirements
Server Side	- CentOS 7.9 - CentOS Stream 8, 9 - Rocky Linux 8.5, 8.7, 9.1
Client Side	- Windows System - Chrome version 85 and above - Firefox version 64 and above
LCT	- LCT: Windows 11 and above, Home Edition is not supported

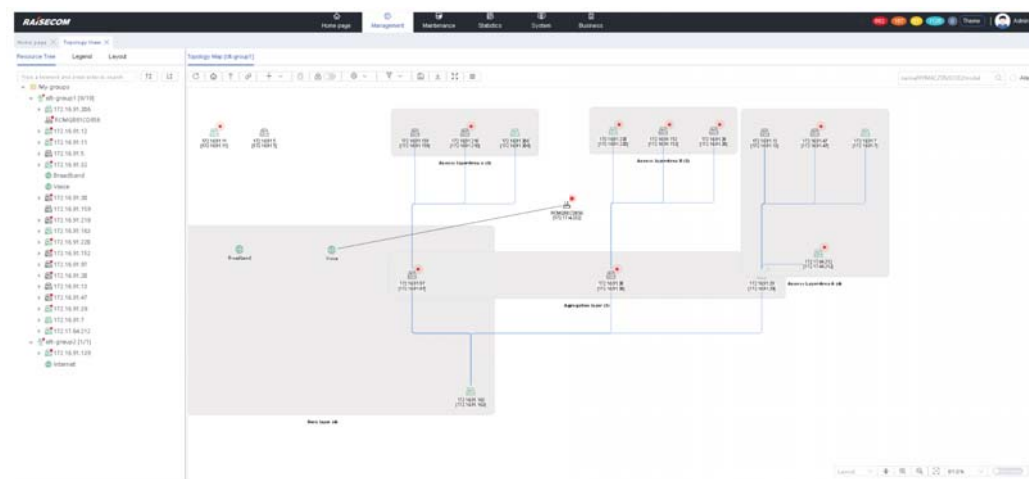
Highlights

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.



For PON & switch networks, the topology management function can provide an overview of OLT and ONT in one screen for easy access the resources and quickly view the networks status.



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

RAISECOM

Topology

Inventory

Alarms

Performance

Network Services

Data Center

Report Form

System

85

85

35

15

120

Dashboard

NE

Close All

NE Management

Rack Management

Chassis Management

Slot Management

Card Management

Remote Device

Port Management

Transceiver Management

Operation

Resources

Import/Export

Upgrade&Backup

Topology Position

ICMP Ping

SNMP Ping

Telnet

SSH

Show Conditions

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1

of 1

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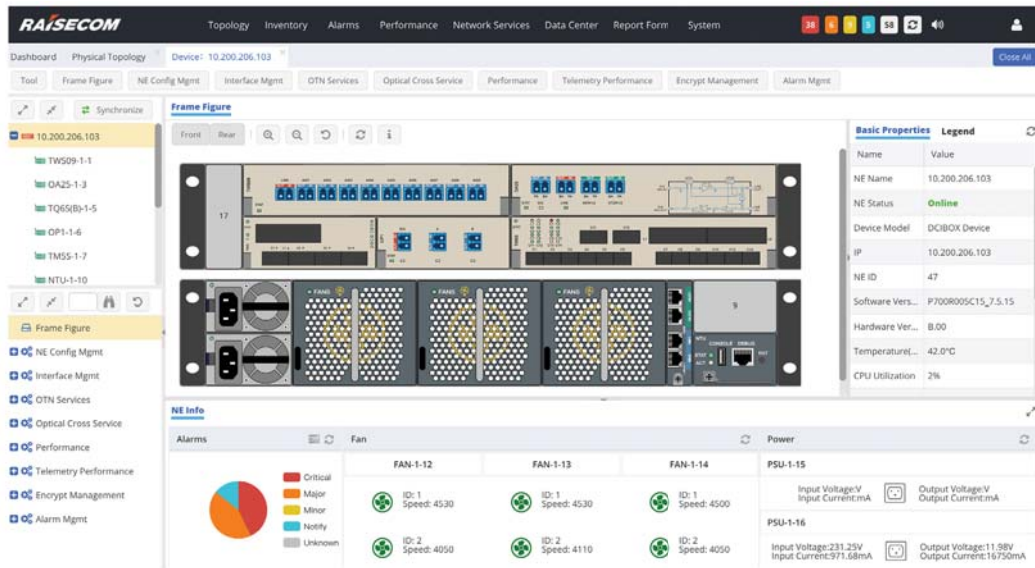
100

Records 1-27, of 27

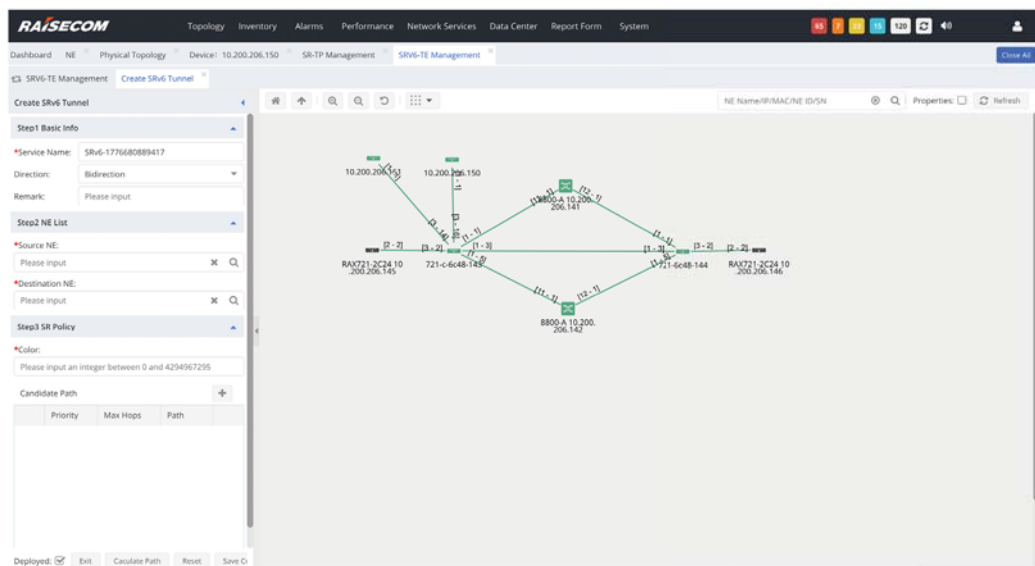
☐	NE ID	Subnet	NE Name	MAC Address	Chassis MAC	NE Type	NE Model	Management IP	Management Port	Online Status
☐	1	2	Root	host1020020696		NMS		10.200.206.96	161	Online
☐	2	5	Root/ISM LAB	721-c-6c48-143	a8:6d:5f:6a:ed:e2	RAX721-C-6C48		10.200.206.143	161	Online
☐	3	9	Root/ISM LAB	8800-A 10.200.206.141	4cb9:11:31:42:00	ITN8800-A		10.200.206.141	161	Online
☐	4	13	Root/ISM LAB	8800-A 10.200.206.142	4cb9:11:31:43:00	ITN8800-A		10.200.206.142	161	Online
☐	5	17	Root/ISM LAB	721-6c48-144	a8:6d:5f:75:4f:71	RAX721-C-6C48		10.200.206.144	161	Online
☐	6	21	Root/ISM LAB	RAX721-2C24 10.200...	a8:6d:5f:72:47:06	RAX721-C-2C24		10.200.206.145	161	Offline
☐	7	25	Root/ISM LAB	RAX721-2C24 10.200...	a8:6d:5f:72:47:23	RAX721-C-2C24		10.200.206.146	161	Offline
☐	8	30	Root/8200+8600	10.200.206.101(ABC)		DCIBOX Device	DCIBOX Device	10.200.206.101	630	Online
☐	9	40	Root/8200+8600	10.200.206.103		DCIBOX Device	DCIBOX Device	10.200.206.103	830	Online
☐	10	43	Root/8200+8600	10.200.206.127	a8:6d:5f:8a:3e:4e	ITN8600-A	ITN8600-A	10.200.206.127	161	Offline
☐	11	46	Root/8200+8600	10.200.206.126	a8:6d:5f:8a:3e:7a	ITN8600-A	ITN8600-A	10.200.206.126	161	Offline
☐	12	52	Root/ISM LAB	10.200.206.151	a8:6d:5f:8a:8e:5d	RAX711-C-R		10.200.206.151	161	Online
☐	13	56	Root/ISM LAB	10.200.206.150	a8:6d:5f:8a:8e:83	RAX711-C-R		10.200.206.150	161	Online
☐	14	60	Root	10.200.206.215	A8:6D:5F:8A:93:D4	ISCOM6810-GP16		10.200.206.215	161	Online
☐	15	108		ONU 1/16/1		GPON_ONU	GPON_ONU	10.200.206.215	161	Offline
☐	16	108		ONU 1/16/2		GPON_ONU	GPON_ONU	10.200.206.215	161	Offline

Device Management and Subnet 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.

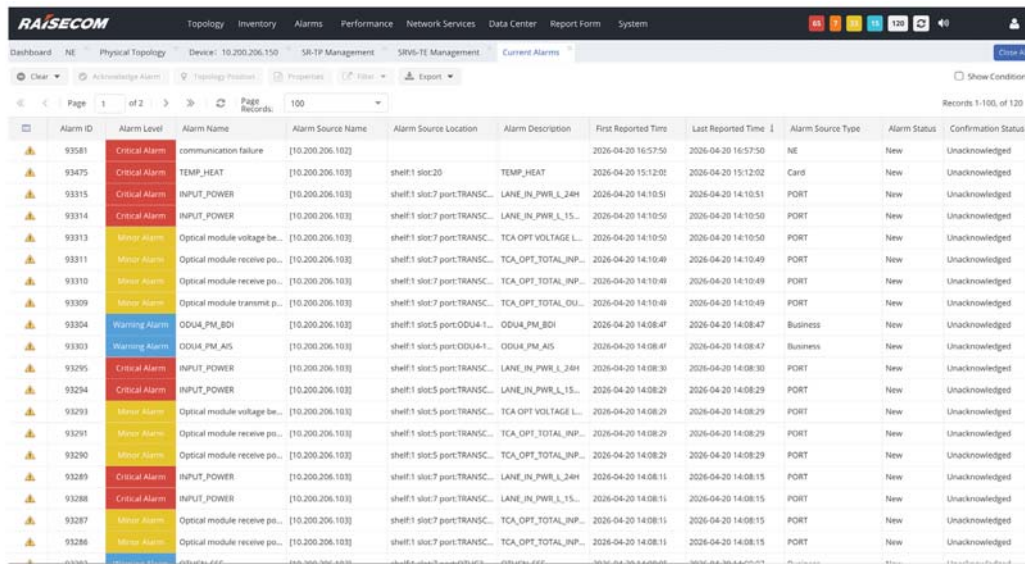


For easy to manage the network, RCView support end to end service provision and management for MEF and MPLS VPN services, end to end OTN service configuration and provision, and for FTTX services, it supports OLT/ONU service templates and pre-deployment.



Fault Management

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

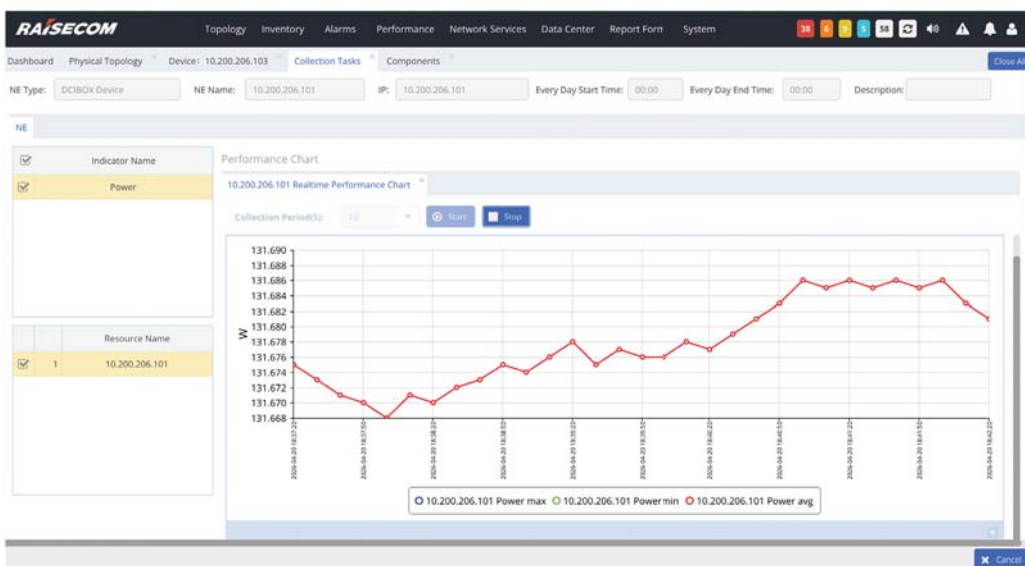


The screenshot shows the RAISECOM Alarms page. The top navigation bar includes links for Topology, Inventory, Alarms, Performance, Network Services, Data Center, Report Form, and System. The current page is 'Alarms', and the device selected is '10.200.206.150'. The table below lists various alarms, including communication failures, temperature warnings, and power input issues, with columns for Alarm ID, Alarm Level, Alarm Name, Alarm Source Name, Alarm Source Location, Alarm Description, First Reported Time, Last Reported Time, Alarm Source Type, Alarm Status, and Confirmation Status.

Alarm ID	Alarm Level	Alarm Name	Alarm Source Name	Alarm Source Location	Alarm Description	First Reported Time	Last Reported Time	Alarm Source Type	Alarm Status	Confirmation Status
93581	Critical Alarm	communication failure	[10.200.206.102]			2026-04-20 16:57:50	2026-04-20 16:57:50	NE	New	Unacknowledged
93475	Critical Alarm	TEMP_HEAT	[10.200.206.103]	shelf1 slot20	TEMP_HEAT	2026-04-20 15:12:02	2026-04-20 15:12:02	Card	New	Unacknowledged
93315	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot7 port:TRANS...	LANE_IN_PWR_L_24H	2026-04-20 14:10:51	2026-04-20 14:10:51	PORT	New	Unacknowledged
93314	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot7 port:TRANS...	LANE_IN_PWR_L_15...	2026-04-20 14:10:50	2026-04-20 14:10:50	PORT	New	Unacknowledged
93313	Minor Alarm	Optical module voltage be...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA OPT VOLTAGE L...	2026-04-20 14:10:50	2026-04-20 14:10:50	PORT	New	Unacknowledged
93311	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:10:49	2026-04-20 14:10:49	PORT	New	Unacknowledged
93310	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:10:48	2026-04-20 14:10:48	PORT	New	Unacknowledged
93309	Minor Alarm	Optical module transmit p...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA_OPT_TOTAL_OU...	2026-04-20 14:10:48	2026-04-20 14:10:48	PORT	New	Unacknowledged
93304	Warning Alarm	ODU4_PM_BDI	[10.200.206.103]	shelf1 slot5 port:ODU4-1...	ODU4_PM_BDI	2026-04-20 14:08:47	2026-04-20 14:08:47	Business	New	Unacknowledged
93303	Warning Alarm	ODU4_PM_AIS	[10.200.206.103]	shelf1 slot5 port:ODU4-1...	ODU4_PM_AIS	2026-04-20 14:08:47	2026-04-20 14:08:47	Business	New	Unacknowledged
93295	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot5 port:TRANS...	LANE_IN_PWR_L_34H	2026-04-20 14:08:30	2026-04-20 14:08:30	PORT	New	Unacknowledged
93294	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot5 port:TRANS...	LANE_IN_PWR_L_15...	2026-04-20 14:08:29	2026-04-20 14:08:29	PORT	New	Unacknowledged
93293	Minor Alarm	Optical module voltage be...	[10.200.206.103]	shelf1 slot5 port:TRANS...	TCA OPT VOLTAGE L...	2026-04-20 14:08:29	2026-04-20 14:08:29	PORT	New	Unacknowledged
93291	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot5 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:08:29	2026-04-20 14:08:29	PORT	New	Unacknowledged
93290	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot5 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:08:29	2026-04-20 14:08:29	PORT	New	Unacknowledged
93289	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot7 port:TRANS...	LANE_IN_PWR_L_24H	2026-04-20 14:08:11	2026-04-20 14:08:11	PORT	New	Unacknowledged
93288	Critical Alarm	INPUT_POWER	[10.200.206.103]	shelf1 slot7 port:TRANS...	LANE_IN_PWR_L_15...	2026-04-20 14:08:11	2026-04-20 14:08:11	PORT	New	Unacknowledged
93287	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:08:11	2026-04-20 14:08:11	PORT	New	Unacknowledged
93286	Minor Alarm	Optical module receive po...	[10.200.206.103]	shelf1 slot7 port:TRANS...	TCA_OPT_TOTAL_INP...	2026-04-20 14:08:11	2026-04-20 14:08:11	PORT	New	Unacknowledged

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, etc. It can also deploy service SLA tests like Y.1564, Y.1731, TWAMP and generate customized service SLA reports.



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.

The screenshot shows the RAISECOM Security Management interface. The top navigation bar includes Home page, Management, Maintenance, Statistics, System, and Business. The left sidebar shows User Management with options for Default User Group, Area-B, Area-A, and Group1. The main area displays a table of users with columns for User Name, Full User Name, Description, User Group Name, User Type, Locking Status, Is Expired, Expires At, Created Time, Last login Time, and Actions. The table lists four users: administrator, area-acc2, area-acc3, and area-acc1. The bottom right corner shows a total of 4 users and a pagination control.

User Name	Full User Name	Description	User Group Name	User Type	Locking Status	Is Expired	Expires At	Created Time	Last login Time	Actions
administrator	Admin	Admin	Default User Group	admin user	Unlocked	Not Expired			2025-04-21 1...	
area-acc2	account 1	monitor and...	Default User Group	common user	Unlocked	Not Expired		2025-11-14 ...		
area-acc3	account 3		Default User Group	common user	Unlocked	Not Expired	2027-01-01 ...	2026-04-21 ...		
area-acc1	account 2	operation m...	Default User Group	common user	Unlocked	Not Expired		2025-11-14 ...		

Business Dashboard

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

The screenshot shows the RAISECOM Business Dashboard. The top navigation bar includes Topology, Inventory, Alarms, Performance, Network Services, Data Center, Report Form, and System. The dashboard is divided into several sections: Quick Navigation (Network Services and Site Services), Resources Synchronization Overview (a pie chart showing 15 total resources, 0 failed, 15 success, 0 working, and 0 asynchronous), Resources State (a table showing the status of various resources), Top 10 Network Element Alerts (a table showing the top 10 alerts), and Equipments Monitoring (a table showing the monitoring of various equipment).

Category	Online	Offline	Total
ISCOM FAX	4	2	6
ITN8000	2	...	2
DCBOX Device	2	1	3
ISCOM7600	1	...	1
OLT	1	...	1
ONU	0	11	11
ITN8000	0	2	2

NE Name	IP	Resource Info	Online Duration	Ne Management Time	CPU	Memory	Temperature
8800-A	10.200.206.141	Online	1326H	4702H	15%	16.4%	51.0°C
10.200.206.141	10.200.206.236	Online	4100H	2502H	12.5%	41.2%	40.0°C
8800-A	10.200.206.142	Online	2707H	4702H	11%	17.1%	51.0°C
721-Ac48-144	10.200.206.144	Online	2101H	4702H	7%	17.8%	75.0°C
10.200.206.150	10.200.206.150	Online	2600H	2600H	7%	50.0%	43.0°C
10.200.206.151	10.200.206.151	Online	2600H	2600H	5%	48.7%	42.0°C
721-a-5c48-143	10.200.206.143	Online	1300H	4702H	4%	17.0%	86.0°C



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