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Datasheet

iTN8800 – Intelligent Service Aggregation Device

Raisecom iTN8800 service aggregation device is optimized for multiservice adaption, aggregation and routing, especially onto a modern Ethernet and IP/MPLS infrastructure. It is well suited for the cost-effective delivery of residential, business and mobile services. The iTN8800 features industry-leading switching capacity and port density in a compact 2RU form factor. It supports up to 12x10GbE, 40xGbE, 96xE1 ports with dual control and dual power modules. The iTN8800 provides a comprehensive and scalable feature set of Layer 2 VPN (L2VPN), Layer 3 VPN (L3VPN) and PWE3 services with routing technologies, MPLS technologies, TDMoP technologies and clock synchronization technologies optimized for service providers. The iTN8800 also supports both MPLS-TP and IP MPLS stacks, provides comprehensive end-to-end OAM/SLA/Protection features.

iTN8800

Highlights >>

IP MPLS	Supports multiple routing functions, such as OSPF, BGP, and MP-BGP, and support LDP and *RSVP-TE to dynamically establish MPLS tunnels and PW services.
Multiservice	Supports multiple service type, including L2VPN, L3VPN, PWE3 service. Up to 96xE1 interfaces for connecting legacy TDM network.
Committed resiliency & Protection	Supports link-based, protocol-based, and service-based multi-layer protection functions, such as LAG/LACP, primary/secondary link aggregation, G.8031, G.8032, G.8131, *TE Hot-standby, *TE FRR, PW protection, and LSP protection with sub 50ms switching time.
Hardware-based SLA	Hardware-based BFD, MPLS-TP OAM and Y.1731 features supply multi-layer continuity check, frame delay, frame jitter and packet loss measurement mechanism. Includes on-board, line-rate RFC2544 testing capabilities for end-to-end SLA verification.
Automated Provisioning	Supports auto-discover remote CPE devices to minimize OpEx and accelerate service turn-up with activation testing.
Synchronization for MBH	Compliant with ITU-T G.8261/G.8262 (*SyncE) for network-based synchronization.
High Availability	Supports graceful restart for routing protocol. Dual main control card and dual power module redundancy design.

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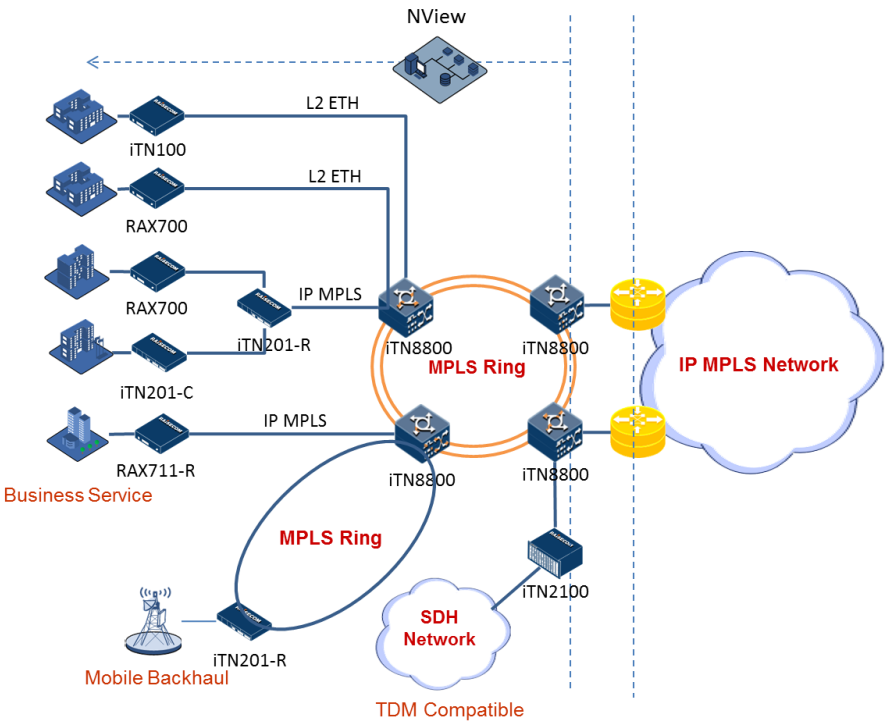
Application >>



Products involved

- Aggregation Unit:
  iTN8800
- Remote Unit:
  RAX700 series
  iTN100 series
  iTN200 series
  iTN2100

Figure.1 Converged fixed and mobile networks offer a wider range of services

Large Enterprise, Small/Medium Business services Application

The iTN8800 can work with iTN200/RAX700/iTN100 series together for Large Enterprise, Small/Medium Business services. Its MPLS features allow creating a scalable network with huge capacity and protection mechanism. It is flexible with various different CPEs for Imaging/video distributions, business data, L2VPN, L3VPN, TDM services etc. Meanwhile, such solution can guarantees Carrier-grade end-to-end SLA (hardware-based) performance monitoring for frame delay, jitter and packet loss.

New Generation Mobile Backhaul Application

The iTN8800 is easy to create multiple GE or 10GE MPLS rings with iTN201-R to transmit LTE eNodeB service with sync Ethernet frame. To guarantee the huge mobility data application as well as voice, its LSP protection/*TE Hot-standby/*TE FRR features conform to switch over within 50ms. Its huge switch capability and routing table will help to converge and schedule largely mobility data to the core IP MPLS network.

Legacy TDM Network Compatible Application

The Ethernet service carried in the legacy TDM network can access into the packet switch network cooperate with iTN2100 EOS feature. The iTN2100 can extract the original Ethernet packets form SDH and then ingress into iTN8800. Or the iTN8800 can encapsulate the E1 service into MPLS frames with TDMoP and PWE3 features.

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Key Features >>

Ethernet service	IEEE 802.1Q VLAN: 4K active VLANs; QinQ
MPLS Service	MPLS VPWS,VPLS, HVPLS, L3VPN, Multi-Segment PW LDP for LSP/PW, MPLS-TP, *RSVP-TE
PWE3	PW payload type: SAToP, CESoPSN PSN type: MPLS Configurable Jitter buffer RTP configuration
Layer 3 Service	IPv4 Stack IPv4 hardware forwarding OSPF for IPv4, BGP for IPv4, MP-BGP, VRRP, Multi-VRF
Switching mode	Store and Forward mode 32Mbit switching buffer Supports Jumbo frames
MAC Address Table	MAC address learning/add/remove/searching Up to 128K MAC addresses(16K default)
Route Table	Up to 128K FIB table
Packet forwarding	MTU: 9600 byte (default: 1500 byte) Storm control on DLF, Multicast and Broadcast packets
Link Aggregation	Up to 64 link aggregation groups, with up to 8 ports in each group Load balance based on MAC, MPLS label and IP address
Link Resilience	PW redundancy PW 1:1 and LSP 1:1 based on ITU-T G.8131 PW dual-home protection *RSVP-TE Hot-standby & *RSVP-TE FRR LAG (static/IEEE 802.3ad LACP) and MC-LAG(Multi-chassis LAG) ITU-T G.8031 ELPS & ITU-T G.8032 ERPS Port based Ethernet local loop detection
IP and MPLS OAM	IPv4 Ping, IPv4 Traceroute LSP Ping/PW Ping/Tunnel Ping/L3VPN Ping LSP Traceroute/PW Traceroute/Tunnel Traceroute/L3VPN Traceroute Supports BFD message is sent per 3.3ms BFD for OSPF/VRRP BFD for PW/Static LSP/LDP LSP/CR-LSP/Tunnel/IP
MPLS-TP OAM	Supports MPLS-TP OAM on PW/LSP/Section based on ITU-T G.8113.1 Supports Check message is sent per 3.3ms Supports Hardware-based Frame Delay and Packet Loss Measurement

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	Connectivity Check, Non-intrusive Loopback, Link-Trace, Performance Monitor; AIS/RDI/APS/LM/DM/CSF
Carrier Ethernet OAM	IEEE802.3ah OAM including discovery, link performance, remote loopback, fault detection & performance stats per OAM standards OAM Active/Passive mode OAM Dying Gasp OAM MIB Variable Get function OAM Event function
Carrier Ethernet CFM	Supports IEEE 802.1ag CFM and ITU-T Y.1731 SLA Supports Check message is sent per 3.3ms Supports Hardware-based Frame Delay and Packet Loss Measurement Connectivity Check, Non-intrusive Loopback, Link-Trace, Performance Monitor; ETH-AIS/RDI/LCK/APS/LM/DM/LCK Supports IEEE 802.1ag CFM and ITU-T Y.1731 SLA over MPLS PW EFP
SAT	Supports RFC2544 over MPLS PW EFP
ACL	Supports MAC/IP/MPLS based ACL and L2~L4 based ACL MAP Supports user defined ACL MAC based ACL combination with VLAN/CoS/MAC/EtherType IP based ACL combination IP/L4 protocol/DSCP/VRF MPLS based ACL combination with MPLS Label/MPLS EXP
QoS	Supports Port/Trunk/VlanIf/Sub-interface mapping Supports CoS/DSCP/MPLS EXP mapping Supports SP, WRR, DRR, SP+WRR, and SP+DRR scheduling Supports port-based/flow-based shaping Up to 8 queues per port Flow-based statistics/mirroring/rate-limiting/redirecting/VLAN-rewriting Rewriting of 802.1p CoS/DSCP/IP Precedence per EVC Supports Weighted Random Early Detection, weight 0-15
MPLS QoS	Supports MPLS Pipe and Uniform mode Bandwidth configuration check between PW/LSP/Port H-CAR(Hierarchical bandwidth rate-limit) between PW/LSP/Port H-QoS(Hierarchical QoS) between PW/LSP/Port
Rate-Limit	Supports ingress rate-limit and egress rate-limit Based on Flow/RFC2697/RFC2698/RFC4115/MEF modes
LLDP	Discovery remote base on link layer Get remote basic information

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Mirror	Mirroring per port Separate mirroring configurations for ingress port & egress port & CPU port
Synchronization	*SyncE according to ITU-T G.8261/G.8262, supports SSM-QL
DHCP	Supports DHCP Server with option 60 Supports DHCP Relay with option 82
High Available	Supports system hot standby based on dual main control Supports graceful restart on OSPF and BGP
Statistics	Ingress and egress statistics based on Port/Interface/Rate-Limit/VPWS/VPLS/VRF In-profile and out-profile statistics based on ACL
Auto-Provisioning	Discover and manage remote CPEs as RAX700/iTN100/iTN200 series
Management	CLI/ARP/Telnet/Console/SNMP/SSH/SysLog/Trap/NAT Raisecom NMS FAN/Power/Temperature/CPU/Memory/Card/Module management
Safety Features	Client classification and password protection RADIUS TACACS+ CPU protection based on rate-limit Port Isolation
Time management	Timezone, Time modification Supports SNTP & NTP
DDM	SFP digital diagnostic function

*Roadmap in 2015 Q3

Specifications >>

Performance	Switching fabric: 120Gbps
Main Control Card	iTN8800-NXU: Management port: 1 Console (USB) 1 NEG (RJ45) 1 Debug (Reserve) EXT1 (Reserve) EXT2 (Reserve) Clock port: 1 Bits (2MHz/2Mbits) Support in slot1~slot2.
Port Expansion Card	iTN8800-RG8: 8 x GE SFP Support in slot3~slot8, slot7/slot8 only supply 4xGE access. iTN8800-RG2: 2 x 10GE XFP

Compliances >>

Standards & protocols	IEEE802.3 IEEE802.3z IEEE802.3x Flow Control IEEE802.3ad Link Aggregation IEEE802.1p IEEE802.1Q VLAN IEEE802.1ad QinQ IEEE802.3ah OAM IEEE802.1ag CFM *ITU-T G.8261/G.8262 SyncE ITU-T Y.1731 Services OAM ITU-T G.8031 ELPS ITU-T G.8032 ERPS ITU-T G.8131 MPLS Linear Protection ITU-T G.8113.1 MPLS-TP OAM RFC2544 RFC2328 OSPFv2 RFC4271 BGPv4 RFC4760 MP-BGP

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	Support in slot3~slot8, all supply 2x10GE access.
PWE3 Expansion Card	iTN8800-RE16: 16 x E1 SCSI100 Female
Power Specs	Dual DC: -48V(-40~-57V)
	Full load: ≤350W
Us Conditions	Operating temp: 0~45˚C (32~113˚F)
	Storage temp: -25~65˚C (-13~149˚F)
	Humidity: 10~90% non-condensing
Lightning Proof	1kV
Dimensions	440(W) x 220(D) x 88.1(H) mm^3
Weight	≤ 9.42Kg

RFC3031 MPLS Architecture
RFC3985 PWE3
RFC4664 L2VPN RFC4762 VPLS
RFC2547 BGP/MPLS VPN
RFC5036 LDP RFC4447 LDP for PW
*RFC3209 RSVP-TE
RFC5659 Multi-Segment PWE3
RFC5880 BFD
RFC5086 CESoPSN RFC4553 SAToP
RADIUS TACACS+
SNMPv1/v2c/v3
EMC Class A
RoHS compliance
MEF 9 & MEF 14

Ordering Information >>

iTN8800-II-DC	2RU chassis, with 2 DC power and 1 Intelligent FAN. The chassis has 2 slots for main control card and 6 slots for interface sub card.
iTN8800-II-NXU	Main control card, providing Console interface and SNMP interface. Dual main control card redundancy design, supporting 1:1 hot backup.
iTN8800-RG8	GE Interface card, providing 8 SFP Ethernet optical/electrical interfaces, and supporting GE, FE.
iTN8800-RX2	10GE interface card, providing 2 10GE XFP Ethernet optical interfaces.
iTN8800-RE16	TDMoP interface card, providing 16 E1 SCSI100 female electrical interfaces.
RPD1351-S-48S48	Power module, providing -48V DC power.
FANS331	Replacement Intelligent FAN.

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