Raptor ATM / IP DSLAM

ZHONE

- ✓ *Flexible ATM or IP Uplinks*
- ✓ *End-to-End Management System*
- ✓ *Environmentally Hardened*
- ✓ *Integrated Access + Transport*
- ✓ *TDM, ATM, or IP / Gigabit-Ethernet*
- ✓ *Resilient Packet Ring (RPR)*
- ✓ *ADSL2+ / VDSL2 / PON / Ethernet*

The DSLAM for the New Era in Broadband

Raptor DSLAM delivers the next generation of high-performance business and residential DSL services. With Raptor, carriers can offer digital video, high bandwidth Internet access and cell relay services from a single platform.

Raptor is the only DSLAM a carrier needs for deployment anywhere in their network. It supports ADSL2 + , VDSL2, and SHDSL loops with ATM, IP and Ethernet uplinks for legacy, overlay and green-field deployments. Raptor allows carriers to deploy the same chassis in CO and Remote Terminal sites in both 3-U and 7-U configurations.

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Deployed in the Central Office, Remote Terminal, outdoor cabinets or basements, the Raptor is offered in a range of compact, hardened chassis supporting densities up to 960 ports per shelf with integrated packet ring transport. With line cards, cabling, provisioning and management common to all chassis, the Raptor minimizes training, stocking, and operating expenses.

The Raptor enables service providers to deploy a wide variety of business and residential services in a single platform. These services are deployed over the MALC large list of access technologies which include fiber (both PON and Active Ethernet), ADSL2 + , ReachDSL, SHDSL, and T1/E1.

In addition Zhone offers a complete line of cabinets to enable service providers to deploy closer to the customers residence.

For more information about Zhone's line of cabinets see OPX Cabinets.

Ordering Information

Raptor Chassis

RAPTOR-CHASSIS-319	3U, 19 Inch, 10 Slot Chassis
RAPTOR-CHASSIS-19	7U, 19 Inch, 17 Slot Chassis
RAPTOR-CHASSIS-23	7U, 23 Inch, 21 Slot Chassis

RAPTOR Uplinks

MALC-UPLINK-2-GE	2 Port GigE Uplink with 8 Port T1/E1 TDM Uplink Ports
MALC-UPLINK-2-GE-ONLY	2 Port GigE Uplink Card
MALC-UPLINK-DS3/E3-ATM/IP	4 Port DS3/E3 Uplink Card
MALC-UPLINK-OC3C/STM1-ATM/IP	2 Port OC3C/STM1 Uplik Card
MALC-UP-T1/E1-ATM/TDM/IP-16	16 Port T1/E1 Uplink Supporting ATM/TDM/IP
MALC-UPLINK-T1/E1-ATM/IP-8	8 Port ATM/IP IMA Uplink Card

RAPTOR ADSL2+, ReachDSL and VDSL2 Line Cards

MALC-ADSL-48A/M	48 Port ADSL2+ Line Card with Annex A, M support
MALC-ADSL-48B	48 Port ADSL2+ Line Card with Annex B support
MALC-ADSL+SPLTR-48A/M-2S	48 Port ADSL2+ Line Card with Integrated Splitters
MALC-VDSL2-24	24 Port VDSL2 Line Card
MALC-REACHDSL-24	24 Port ReachDSL Line Card
MALC-REACHDSL+SPLTR-24	24 Port ReachDSL Line Card with Integrated Splitters

RAPTOR OLT Line Cards

MALC-BPON-SC-1	1 Port BPON OLT supporting 32 Subscribers
MALC-GPON-SC-1	1 Port GPON OLT supporting 64 Subscribers
MALC-ACTIVE-ETH-10	10 Port Active Ethernet Line Card

RAPTOR EFM Line Cards

MALC-EFM-T1/E1-24	24 Port T1/E1 EFM Line Card with Port Bonding
MALC-EFM-SHDSL-24	24 Port SHDSL EFM Line Card with Port Bonding

RAPTOR SHDSL Line Cards (non-EFM)

MALC-G.SHDSL-24	24 Port SHDSL Line Card
MALC-G.SHDSL-4W-12	12 Port 4 Wire SHDSL Line Card
MALC-SHDSL-48	48 Port SHDSL Line Card

RAPTOR T1/E1 Line Cards (non-EFM)

MALC-T1/E1-ATM-32	32 Port T1/E1 ATM/IMA Line Card
MALC-T1/E1-CES-12	12 Port Circuit Emulation Line Card

Technical Specifications

Dimensions

- Raptor 319
  - Slots: 10; front card access
  - Dimensions: (3U) 5.22 in. x 17.40 in. x 11.3 in. / 13.26 cm x 44.20 cm x 28.70 cm (HWD)
- Raptor 719
  - Slots: 17; front card access
  - Dimensions: (7U) 12.22 in. x 17.25 in. x 11.15 in. / 31.04 cm x 43.81 cm x 28.32 cm (HWD)
- Raptor 723
  - Slots: 21; front card access
  - Dimensions: (7U) 12.22 in. x 21.18 in. x 11.15 in. / 31.04 cm x 53.64 cm x 28.32 cm (HWD)

Power

- DC: -43.75V to -62V
- Dual (A / B redundant) power feeds

Interfaces

- ADSL (DMT / G.Lite) Annex A, B, C, M, S=1/2, 2+
- ADSL2+ w/ Integrated Splitters
- ReachDSL
- SHDSL (2w or 4w)
- SHDSL EFM 802.3ah with Bonding
- VDSL2 G.993.2
- T1 / E1 ATM IMA
- T1 / E1 (CES) (structured, unstructured)
- T1 / E1 EFM Including Bonding
- BPON OLT G.983.1 / G.983.3 compliant
- GPON OLT G.984.1-4 compliant

Protocol Support

- RIP v1 (RFC 1058)/RIP v2 (RFC 2453)
- DHCP Server (RFC 2131, 2132)
- DHCP Relay
- Bridging 802.1D
- VLAN 802.1Q with 802.1p Priorities
- Multicast IGMP v1/v2
- IEEE 802.17 RPR

Management

- Terminals
  - ZMS (Zhone Management System) via SNMP v2c for GUI and CORBA IDL machine interface
  - Terminal for Command Line Interface (CLI)
  - Built-in GUI-based Management
- Management Interfaces
  - In-band IP over AAL5
  - Out-band IP over 10 / 100 Base-T Ethernet or V.24 serial for async terminal
  - Up to 12 external alarm closures

Regulatory Compliance

- NEBS level 3 compliant
- RUS listed
- Safety: UL 60950 3rd edition, CSA 950 3rd
- edition, EN 60950, AS / NZS 3260, TS 001
- Emissions: EN 55022A, CFR47 PART 15A (FCC)
- Immunity: NEBS GR-1089-Core level 3,
- EN 55024, EN 55082-1, T1.601-1992
- Environmental: NEBS GR-63-Core level 3,
- GR-487 compliant, ETS 300 019-2-x compliant,
- ISTA transportation and handling
- Network Certification: FCC Part 68, CTR-12,
- CTR-13, DOC CS-03, TSO 16, GR-57
- Telcordia OSMINE certification

Operating Requirements

- Ambient operating temperature: -40° C to +65° C
- Relative operating humidity: up to 85% (non-condensing)
- GR-487 compliant
- Designed for outside plant deployment

For more information about Zhone and its products, please visit the Zhone Web site at www.zhone.com or e-mail info@zhone.com