ARRIS BSR 64000 (Broadband Services Router)

Carrier CMTS/Edge Router Platform

Das BSR 64000 ist ein groß skaliertes, komplett redundantes CMTS (Cable Modem Termination System) sowie ein intelligenter Edge-Router, der umfangreiche Möglichkeiten hinsichtlich modularer Erweiterung und Routing-Protokollen bietet. Für das I-CMTS-Konzept vom BSR64000 sind Docsis3.0-Module (TX/RX32) für Downstream und Upstream erhältlich.

High-density, fully redundant Cable Modem Termination System (CMTS)/intelligent edge router that allows broadband operators to rapidly introduce differentiated data, voice, and multimedia services for both corporate and residential subscribers. It also offers the robust routing, flexibility, and scalability required to support the emerging generation of revenue-generating services, such as Voice over IP (VoIP) and Virtual Private Networks (VPNs). For the BSR64k concept downstream and upstream modules (TX/RX32) are available.

Features

- **Komplett redundantes Carrier-Class-System, das für eine Verfügbarkeit von 99.999% ausgelegt ist**
- **Der BSR 64000 basiert auf offenen System-Standards und ist qualifiziert für Docsis 3.0 Bronze, PacketCable 1.0, EuroDocsis 2.0, PacketCable 1.1 und PacketCable Multimedia (PCMM)**
- **Erweitertes Spektrum-Management mit integriertem, intelligenten Spektrum-Analyzer gewährleistet Zuverlässigkeit, hochqualitative Dienste und eine effiziente Migration zu Docsis 2.0**
- **Intradomain-, Interdomain- und Multicast-Routing der Carrier-Klasse mit OSPF v2, RIP v1 und v2, BGP4, IS-IS, VRRP, IGMP, IP Tunneling, DVMRP und PIM-SM**
- **SmartFlow QoS Klassifikation für tausend gleichzeitig ablaufende Datenströme mit garantierten Service Level Agreements (SLA)**
- **Virtual Private Networking und Open-Access-Support mit Policy-Based Routing, MPLS Verlässlichkeit der Carrier-Klasse und robuster QoS-Steuerung ermöglichen die Unterstützung von VoIP-Echtzeitservices**

Features

- *Fully redundant, carrier-class system architected for "five-nines" (99.999 percent) availability*
- *Based on open system standards, the BSR 64000 is Docsis 3.0 Bronze Qualified and EuroDocsis 2.0 qualified, PacketCable 1.1 qualified and PacketCable Multimedia (PCMM) qualified*
- *Advanced Spectrum Management featuring an integrated, intelligent spectrum analyzer ensures reliable and high-quality service delivery, and enables efficient migration to DocsisS 2.0*
- *Carrier-class intradomain, interdomain, and multicast routing with OSPF v2, RIP v1 and v2, BGP4, IS-IS, VRRP, IGMP, IP Tunneling, DVMRP, and PIM-SM.*
- *SmartFlow QoS classification for thousands of flows at wire-speed with guaranteed SLAs*
- *Virtual Private Networking and open access support with policy-based routing and full-featured MPLSCarrier-class reliability and robust QoS control enables support for real-time VoIP services*

Spezifikationen / *Specifications*

Carrier-Class Chassis
Hot-swappable modules with redundancy High availability architecture: 1:1 SRM redundancy, 1:N 2:8 Euro/DOCSIS Module redundancy, 1:2 TX32 Euro/DOCSIS, 1:1 High-Speed Interface Module redundancy, Redundant power and fan units, Integrated RF switch Advanced real-time operating systems such as VxWorks and INTEGRITY provide high levels of reliability, availability, and security for the BSR 64000
Standards-Based Interoperability
DOCSIS 2.0 and EuroDOCSIS 2.0 qualified DOCSIS 3.0 and EuroDOCSIS 3.0 bronze qualified PacketCable 1.1 and EuroPacket Cable 1.0 qualified PacketCable Multimedia 1.0 and EuroPacket Cable 1.0 qualified
Flexible Capacity Configurations
Flexible downstream capacity expansion with the TX32 Decoupled Downstream I-CMTS Module Ether-Flex Card offers two ports of Gigabit Ethernet with SFP optics or eight ports of 10/100 Fast Ethernet

Routing
Internet Protocol version 4 and version 6 (IPv4 and IPv6) Open Shortest Path First Version 2 (OSPFv2) Border Gateway Protocol version 4 (BGPv4) Multiprotocol Label Switching (MPLS) Routing Information Protocol (RIP) version 1 and 2 Static Routes Intermediate System-to-Intermediate System (IS-IS) BGP/MPLS VPNs Virtual Router Redundancy Protocol (VRRP)
Multicast
Internet Group Management Protocol (IGMP) version 1, 2, and 3 Protocol Independent Multicast-Sparse Mode (PIM-SM) Protocol Independent Multicast-Source Specific Multicast (PIM-SSM)
IP Address Management
DHCP Relay
Traffic Management
Markinq, policinq and shapinq Two-level class-based scheduling SmartFlow™ per-flow queuing Longest Queue Pushout (LQP) conqestion manaqement
Security Management
IPSec Tunnels MD5 Authentication BPI+ Cable and Lawful Intercept
High-Performance IP Routing
Hardware-based forwarding and flow classification Routing policy support More than 3 million PPS for each High-Speed Interface Module More than 42 million PPS for each chassis
Advanced QOS
Hardware-based wire-speed QoS IP DiffServ, standards-based MPLS, BGP/MPLS VPNs (RFC 2547), per-SID queuing
Packetizedvoice Service Support
Dynamic QoS (DQoS) Common Open Policy Service (COPS) IPSec
Logging And Monitoring
Sysloq Traceroute and Ping (IPv4 and IPv6)

System-Management and Provisioning
Management and diagnostic capabilities: SSH, TACACS/TACACS+, and RADIUS 10/100BASE-T port for management SNMP v1/v2/v3 Telnet with security extensions DOCSIS, IETF and Arris MIBs Multiple levels of account/password authentication Open interfaces for provisioning, accounting and billing applications

Physical	
Form:	16-slot, 17 RU, NEBS-compliant chassis
Dimensions:	29.75 in H x 19.75 in W x19.75 in D (75.56 cm x 48.26 cm x 50.17 cm)
Fully configured weight:	140 lbs (63.5 kgs)
Power	
Input power:	-48 VDC
OptionalTyco NP1200 AC to DC Carrier-Class Power Converter	

Standards-based Interoperability	
DOCSIS 3.0 Downstream channel bonding capable	
DOCSIS 2.0 A-TDMA, S-CDMA and LOGICAL CHANNEL QUALIFIED	
Integrated downstream RF upconverters	
2:8 Advanced Spectrum Management	
Downstream RF	
Downstream modulation:	64 and 256 QAM
Downstream frequency range (fc):	
DOCSIS	91-870(999*)MHz
EuroDOCSIS	112-869 (998*)MHz
Frequency step:	32.0 kHz
Downstream per-channel bit rates:	
DOCSIS	27-38Mbps
EuroDOCSIS	36-56Mbps
RF output level:	44-60 dBmV
Bandwidth:	
DOCSIS	6 MHz
EuroDOCSIS	Up to 8 MHz
Modulation Error Rate (MER):	47 Typical
Output load impedance:	75 Ω
Upstream RF	
Upstream frequency range:	
DOCSIS	5-42 MHz
J-DOCSIS	5-55 MHz
EuroDOCSIS	5-65 MHz
Upstream modulation:	QPSK, 16, 32, 64, 128, and 256 QAM
Upstream per-channel bit rate:	0.320 - 40.96 Mbps
Input load impedance:	75 Ω

Available RF Modules
2:8 Line Card, 2.0 (Euro)Docsis, 2 Downstreams/8 Upstreams
TX32 (Euro)Docsis Downstream 3.0 Card – 32 Downstreams (8 RF Ports) – active/redundant Version
TXPLUS (Euro)Docsis 3.0 Card – 48 Downstreams (8 RF Ports) – active/redundant Version
RX48 (Euro)Docsis Upstream 3.0 Card – 48 Upstreams/QAM Receivers (8 RF Ports) – active/redundant Version
SRM4 – System Resource Module - active/redundant Version
ETHERFLEX – Network Interface Module (2x GbE und 8x 10/100 Base-T)
SRM10 – System Resource Module & Network Interface - active/redundant Version