AT-AR770S

Secure Gigabit VPN Router

AT-AR770S

2 x WAN combo ports (SFP or 10/100/1000TX)
4 x LAN 10/100/1000TX ports
2 x PIC slots
1 x Asynchronous console / modem port

Flexible High Speed WAN Options

The AT-AR770S is the first Allied Telesis router to offer gigabit connectivity for both the LAN switch and WAN Ethernet ports. Eth0 and Eth1 are combo ports. This means that they can make use of an SFP instead of the standard copper RJ-45 connection.

Both the SFP and RJ-45 physical ports are managed by the same interface IC, providing a single 'port' with two connectivity options. When using an SFP port on the AT-AR770S, the corresponding RJ-45 port is disabled. However, when the SFP transceiver is removed, the RJ-45 port becomes operational again.

Secure Modular Routing Solution

The AT-AR770S has been designed to meet the needs of small to medium enterprises/businesses or branch office businesses. The AT-AR770S offers significant advances in processing performance, Quality of Service (QoS), routing, remote connectivity and security.

Extensive VPN Capability

The AT-AR770S provides extensive IPSec-based VPN capability, allowing the interconnection of offices, remote tele-workers, and other users who require secure access to a corporate network. The integrated hardware acceleration, standard on the AT-AR770S, maximizes encryption throughput and removes the need to purchase a hardware upgrade package. The AT-AR770S is compatible with industry standard IPSec VPN clients.

Performance

The AT-AR770S provides superior performance over other secure VPN routers in this market space. While most secure routers have stateful firewalls with NAT, QoS, and IPsec VPN termination capability, very few can perform all three functions and still provide excellent performance with the mixed packed sizes seen in real networks. The AT-AR770S can support up to 1000 concurrent VPN tunnels or up to 500 Mbps AES or 3DES throughput.

This level of performance enables secure site-to-site VPNs over multiple WAN interfaces while still firewalling the local network across multiple LAN ports.

Key Features

Hardware

- 2 x SFP or 10/100/1000TX WAN interfaces
- 2 x Port Interface Card (PIC) slots
- 4 x 10/100/1000TX LAN ports
- 1 x Asynchronous console / modem port
- DMZ port: configurable on any of the WAN/LAN ports
- 128MB RAM
- 32MB Flash
- RoHS compliant

Security

IP Filtering

- Stateful Inspection Firewall
- 802.1x
- NAT-T
- Authentication: RADIUS, TACACS, MD5, PAP, CHAP

VPN/Encryption

- DES, AES[2], 3DES[2] encryption
- 5,000 configured IPsec VPN tunnels
- (1000 active tunnels)
- HW accelerated IPsec performance: Up to 500Mbps[1]
- Supports industry standard VPN clients
- Manageability
- CLI management
- SNMPv3

Manageability

- CLI management
- SNMPv3

Extensive routing support

- WAN load balancer
- Software QoS
- RIPv1 and v2
- OSPFv1 and v2
- GRE
- IPX
- VRRP
- IPv6 – optional
- BGP-4 – optional
- RIPng – optional

Multicast routing protocols

- PIM-DM
- PIM-SM
- DVMRP
- IGMPv2
- IGMP Snooping
- IPv6 Multicast – optional
- PIM6 – optional
- MLD – optional

Support for traditional network protocols

- X.25
- Frame Relay

[1] *Performance figure estimates from pre-production units.*

[2] *AES & 3DES disabled in AR770S-51*

Security

In addition to hardware-based encryption, the AT-AR770S comes with other advanced security features such as traffic filtering with event logging. Traffic filtering uses the source and destination address, port, protocol and TCP packet type to provide control over traffic that passes through the AT-AR770S. A Stateful Inspection Firewall provides an increased level of security and complements the packet filtering function. HTTP and SMTP proxies on the AT-AR770S provide improved control over web and mail communications.

Quality of Service (QoS)

The QoS implementation from Allied Telesis enables the AT-AR770S to dynamically identify high priority voice, video and application traffic, so that appropriate service levels can be maintained in congested networks. Advanced QoS allows voice, video, and data traffic to have QoS applied within individual IPSec tunnels, over GRE, as well as IPv6 to IPv4 tunnels.

Comprehensive Management and Configuration

The AT-AR770S comes with a comprehensive suite of management features and is also compatible with SNMP-based management packages. An extensive command set is available via the Command Line Interface (CLI). SNMP support from Allied Telesis extends to SNMPv3 to provide secure management.

WAN Load Balancer

The WAN Load Balancer on the AT-AR770S enables the router to combine bandwidth from multiple WAN connections for increased throughput, redundancy and reliable WAN connectivity. When a router simultaneously connects to multiple WAN networks, the WAN Load Balancer will distribute the traffic based on any one of a number of selectable balancing algorithms. A typical example would be a router that has two Internet connections each exchanging data to remote sites via different Internet providers. In this case an outage limited to one network will not result in a loss of connectivity to these sites.

Feature Summary

Hardware Features

2 x WAN combo ports (SFP or 10/100/1000TX)
4 x LAN 10/100/1000TX ports
2 x PIC
1 x Asynchronous console / Modem port
DMZ port: Obtained by configuring one of the WAN or LAN ports

Processor

833MHz
Internal security encryption engine

Memory

128MB Ram
32MB Flash

Power Characteristics

Input Voltage: 100-240 VAC, 50-60 Hz
Max Power Consumption: 40W
Internal Battery Backup (1 year)

Physical

Dimensions: 1RU rack mount
Depth 239mm, Width 440 mm
Height 44 mm
Weight: 2.95 kg

Environmental

Operating Temp: 0°C to 50°C
Storage Temp: -25°C to 70°C
Operating relative humidity: 5 to 80% non-condensing
Acoustic: General Office @ 40dB V. Measured in accordance with ANSI S12.10
Operating Altitude: Up to 10,000 feet

Approvals & Certifications

UL
TUV
UL60950-1
CAN/CSA-C22.2 No. 60950-1-03
EN60950-1
AS/NZS 60950
EN60825-1
EN55022 class A
EN55024
FCC class A
VCCI class A
AS/NZS CISPR22 class A
CE

Optional Extras

Port Interface Cards:

AT-AR020	Single configurable E1/T1 interface that supports channelized/unchannelized Primary Rate ISDN/Frame Relay
AT-AR021S (V3)[3]	Single Basic Rate ISDN S/T interface
AT-AR023	Single Synchronous port up to 2Mbps to an external CSU/DSU (AT-V.35-DTE-00 or AT-X.21-DTE-00 cable required)
AT-AR024	Four Asynchronous RS-232 interfaces to 115Kbps

Software Features

Routing and Multicast

PPP and IP Routing
RIP v1 & v2
OSPF v1 & v2
BGP-4 (optional)
IPX
IGMPv2
PIM-SM / DM
DVMRP (including draft_ietf_idmr_dvmrp_v3_10)
DECNet

WAN Protocols

X.25
Frame Relay

Security

IP Filtering
Stateful Inspection Firewall
NAT-T
SMTP & HTTP Proxy
802.1x
Authentication: RADIUS, TACACS, MD5, PAP, CHAP
SSH
SSLv1

VPN

L2TP
GRE
IPSec
IKE
ISAKMP
PKI
Encryption: DES, 3DES, AES
Microsoft Windows XP VPN client interoperability
Hardware acceleration

[3] *AR021S (V3) requires AlliedWare Operating System version 2.9.1-13 or later*

Quality of Service (QoS)

Extensive Traffic classifiers of L2 to L5 traffic to allow appropriate queuing of traffic
IP: IP source / destination address, TOS & DiffServ
Ethernet: MAC source / destination, 802.1q
TCP / UDP: Port numbers
VoIP: RTP source & destination
Queuing:
- Low latency queuing (LLQ)
- Class-based weighted fair queuing (CBWFQ
- Deficit Round Robin (DRR)

Supported tunnel interfaces: PPP, L2TP, IPsec, GRE RSVP

Management

CLI
SNMPv3

IPv6

RIPng
IPv6 RFC 2460
Neighbour discovery RFC 2461
Stateless address auto configuration RFC 2462
ICMPv6 RFC 2463
Transmission of IPv6 packets RFC 2464
Connection of IPv6 domains via IPv4 clouds RFC 3056
DHCPv6

Country of Origin

China

Standards and Protocols

AlliedWare Software Release 2.9.2

BGP-4

RFC 1771 Border Gateway Protocol 4
RFC 1966 BGP Route Reflection
RFC 1997 BGP Communities Attribute
RFC 1998 Multi-home Routing
RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
RFC 2439 BGP Route Flap Damping
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2918 Route Refresh Capability for BGP-4
RFC 3065 Autonomous System Confederations for BGP
RFC 3392 Capabilities Advertisement with BGP-4

Encryption

RFC 1321 MD5
RFC 2104 HMAC
RFC 2451 The ESP CBC-Mode Cipher Algorithms
FIPS 180 SHA-1
FIPS 186 RSA
FIPS 197 AES1
FIPS 46-3 DES
FIPS 46-3 3DES1
FIPS 140-2 Compliant

Ethernet

RFC 894 Ethernet II Encapsulation
IEEE 802.1D MAC Bridges
IEEE 802.1G Remote MAC Bridging
IEEE 802.1Q Virtual LANs
IEEE 802.2 Logical Link Control
IEEE 802.3ac VLAN TAG
IEEE 802.3u 100BASE-T and 802.3u 1000 Base-T
IEEE 802.3x Full Duplex Operation

General Routing

RFC 768 UDP
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 903 Reverse ARP
RFC 925 Multi-LAN ARP
RFC 950 Subnetting, ICMP
RFC 1027 Proxy ARP
RFC 1035 DNS
RFC 1055 SLIP
RFC 1122 Internet Host Requirements
RFC 1142 OSI IS-IS Intra-domain Routing Protocol
RFC 1144 Van Jacobson's Compression
RFC 1256 ICMP Router Discovery Messages
RFC 1288 Finger
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1334 PPP Authentication Protocols
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1378 The PPP AppleTalk Control Protocol (ATCP)
RFC 1518 CIDR
RFC 1519 CIDR
RFC 1542 BootP
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1570 PPP LCP Extensions
RFC 1582 RIP on Demand Circuits
RFC 1598 PPP in X.25
RFC 1618 PPP over ISDN
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1662 PPP in HDLC-like Framing
RFC 1701 GRE
RFC 1702 GRE over IPv4
RFC 1762 The PPP DECnet Phase IV Control Protocol (DNCP)
RFC 1812 Router Requirements
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
RFC 1918 IP Addressing
RFC 1962 The PPP Compression Control Protocol (CCP)
RFC 1968 The PPP Encryption Control Protocol (ECP)
RFC 1974 PPP Stac LZS Compression Protocol
RFC 1978 PPP Predictor Compression Protocol
RFC 1989 PPP Link Quality Monitoring
RFC 1990 The PPP Multilink Protocol (MP)
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2125 The PPP Bandwidth Allocation Protocol (BAP) / The PPP Bandwidth Allocation Control Protocol (BACP)
RFC 2131 DHCP
RFC 2390 Inverse Address Resolution Protocol
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2822 Internet Message Format
RFC 2878 PPP Bridging Control Protocol (BCP)
RFC 2661 L2TP
RFC 3046 DHCP Relay Agent Information Option
RFC 3232 Assigned Numbers
RFC 3993 Subscriber-ID Sub-option for DHCP Relay Agent Option
"IPX Router Specification", v1.2, Novell, Inc., Part Number 107-000029-001
ISO 10589, ISO 10589 Technical Corrigendums 1, 2, 3, ISO Intermediate System-to-Intermediate System
"ISO 8473, relevant parts of ISO 8348(X.213), ISO 8343/Add2, ISO 8648, ISO 8648, ISO TR 9577 Open System Interconnection"
ISO 9542 End System to Intermediate System Protocol
Encapsulation of IPsec Packets
http://www.iana.org/assignments/bootp-dhcp-parameters BootP and DHCP parameters

General Routing and Firewall

RFC 3022 Traditional NAT
draft-ietf-ipsec-nat-t-ike-08.txt Negotiation of NAT-Traversal in the IKE
draft-ietf-ipsec-udp-encaps-08.txt UDP Encapsulation of IPsec Packets

IP Multicasting

RFC 1075 DVMRP
RFC 1112 Host Extensions
RFC 1812 Router Requirements
RFC 2236 IGMPv2
RFC 2362 PIM-SM
RFC 2715 Interoperability Rules for Multicast Routing Protocols

draft-ietf-idmr-dvmrp-v3-9 DVMRP
draft-ietf-pim-dm-new-v2-04 PIM-DM
draft-ietf-pim-sm-v2-new-09 PIM-SM

IPsec

RFC 1829 IPsec algorithm
RFC 3173 IPComp - IPsec compression
RFC 2395 IPsec Compression - LZS
RFC 1828 IP Authentication using Keyed MD5
RFC 2401 Security Architecture for IP
RFC 2402 AH - IP Authentication Header
RFC 2403 IPsec Authentication - MD5
RFC 2404 IPsec Authentication - SHA-1
RFC 2405 IPsec Encryption - DES
RFC 2406 ESP - IPsec encryption
RFC 2407 IPsec DOI
RFC 2408 ISAKMP
RFC 2409 IKE
RFC 2410 IPsec encryption - NULL
RFC 2411 IP Security Document Roadmap
RFC 2412 OAKLEY
RFC 3173 IPComp - IPsec compression

IPv6

RFC 1981 Path MTU Discovery for IPv6
RFC 2080 RIPng for IPv6
RFC 2365 Administratively Scoped IP Multicast
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6
RFC 2461 Neighbour Discovery for IPv6
RFC 2462 IPv6 Stateless Address Autoconfiguration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 Packets over Ethernet Networks
RFC 2465 Allocation Guidelines for Ipv6 Multicast
RFC 2466 Management Information Base for IP Version 6: ICMPv6 Group
RFC 2472 IPv6 over PPP
RFC 2526 Reserved IPv6 Subnet Anycast Addresses
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2711 IPv6 Router Alert Option
RFC 2851 Textual Conventions for Internet Network Addresses
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3307 Allocation Guidelines for IPv6 Multicast Addresses
RFC 3315 DHCPv6
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extensions to support IPv6
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6
Addresses Management Information Base for IP Version 6: Textual Conventions and General Group

Management

RFC 1155 MIB
RFC 1157 SNMP
RFC 1212 Concise MIB definitions
RFC 1213 MIB-II
RFC 1493 Bridge MIB
RFC 1643 Ethernet MIB
RFC 1657 Definitions of Managed Objects for BGP-4 using SMIv2
RFC 2011 SNMPv2 MIB for IP using SMIv2
RFC 2012 SNMPv2 MIB for TCP using SMIv2
RFC 2096 IP Forwarding Table MIB
RFC 2576 Coexistence between V1, V2, and V3 of the Internet-standard Network Management Framework
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2
RFC 2580 Conformance Statements for SMIv2
RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions (VLAN)
RFC 2790 Host MIB
RFC 2819 RMON (groups 1,2,3 and 9)
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2863 The Interfaces Group MIB
RFC 3164 Syslog Protocol
RFC 3289 Management Information Base for the Differentiated Services Architecture
CDP
RFC 3410 Introduction and Applicability Statements for Internet-Standard Management Framework
RFC 3411 An Architecture for Describing SNMP Management Frameworks
RFC 3412 Message Processing and Dispatching for the SNMP
RFC 3413 SNMP Applications
RFC 3414 User-based Security Model (USM) for SNMPv3
RFC 3415 View-based Access Control Model (VACM) for the SNMP
RFC 3416 Version 2 of the Protocol Operations for SNMP
RFC 3417 Transport Mappings for the SNMP
RFC 3418 MIB for SNMP
RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs
RFC 3768 VRRP
draft-ietf-bridge-8021x-00.txt Port Access Control MIB
IEEE 802.1AB LLDP

OSPF

RFC 1245 OSPF protocol analysis
RFC 1246 Experience with the OSPF protocol
RFC 2328 OSPFv2
RFC 1586 OSPF over Frame Relay
RFC 1793 Extending OSPF to Support Demand Circuits
RFC 1587 The OSPF NSSA Option
RFC 3101 The OSPF Not-So-Stubby Area (NSSA) Option

QoS

RFC 2205 Reservation Protocol
RFC 2211 Controlled-Load
RFC 2474 DCSP in the IPv4 and IPv6 Headers
RFC 2475 An Architecture for Differentiated Services
RFC 2597 Assured Forwarding PHB Group
RFC 2697 A Single Rate Three Color Marker
RFC 2698 A Two Rate Three Color Marker
RFC 3246 An Expedited Forwarding PHB (Per-Hop Behavior)
IEEE 802.1p Priority Tagging

RIP

RFC 1058 RIPv1
RFC 2453 RIPv2
RFC 2082 RIP-2 MD5 Authentication

Security

RFC 959 FTP
RFC 1413 IDP
RFC 1492 TACACS
RFC 1779 X.500 String Representation of Distinguished Names.
RFC 1858 Fragmentation
RFC 2284 EAP
RFC 2510 PKI X.509 Certificate Management Protocols
RFC 2511 X.509 Certificate Request Message Format
RFC 2559 PKI X.509 LDAPv2
RFC 2585 PKI X.509 Operational Protocols
RFC 2587 PKI X.509 LDAPv2 Schema
RFC 2865 RADIUS
RFC 2866 RADIUS Accounting
RFC 3280 X.509 Certificate and CRL profile
draft-grant-tacacs-02.txt TACACS+
Draft-IETF-PKIX-CMP-Transport-Protocols-01 Transport Protocols for CMP
draft-ylonen-ssh-protocol-00.txt SSH Remote Login Protocol
IEEE 802.1x Port Based Network Access Control
PKCS #10 Certificate Request Syntax Standard
Diffie-Hellman

Services

RFC 854 Telnet Protocol Specification
RFC 855 Telnet Option Specifications
RFC 856 Telnet Binary Transmission
RFC 857 Telnet Echo Option
RFC 858 Telnet Suppress Go Ahead Option
RFC 932 Subnetwork addressing scheme
RFC 951 BootP
RFC 1091 Telnet terminal-type option
RFC 1305 NTPv3
RFC 1350 TFTP
RFC 1510 Network Authentication
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1985 SMTP Service Extension
RFC 1945 HTTP/1.0
RFC 2049 MIME
RFC 2068 HTTP/1.1
RFC 2156 MIXER
RFC 2217 Telnet Com Port Control Option
RFC 2821 SMTP

SSL

RFC 2246 The TLS Protocol Version 1.0
Draft-freier-ssl-version3-02.txt SSLv3

STP / RSTP

IEEE 802.1t - 2001 802.1D maintenance
IEEE 802.1w - 2001 RSTP

X.25

RFC 1356 Multiprotocol Interconnect on X.25 and ISDN in the Packet Mode
ITU-T Recommendations X.25 (1988), X.121 (1988). X.25

ISDN

ANSI T1.231-1997 Digital Hierarchy - Layer 1 In-Service Digital Transmission Performance Monitoring Standardization
ANSI T1.403-1995 Telecommunications - Network-to-Customer Installation - DS1 Metallic Interface
ANSI T1.408-1990 ISDN Primary Rate - Customer Installation Metallic Interfaces, Layer 1 Specification
AT&T TR 54016-1989 Requirements for Interfacing Digital Terminal Equipment to Services Employing the Extended Superframe Format
Austel TS 013.1:1990 General Requirements for Customer Equipment Connected to ISDN Basic Rate Access - Vol. 1: Customer Equipment Access Interface Specifications
Bellcore SR-3887 1997 National ISDN Primary Rate Interface
ETS 300 012:1992 Integrated Services Digital Network (ISDN); Basic user-network interface; Layer 1 specification and test principles
ETS 300 102-1:1990 Integrated Services Digital Network (ISDN) ;User-network interface layer 3;Specifications for basic call control
ETS 300 102-2:1990 Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control; Specification Description Language (SDL) diagrams
ETS 300 125:1991 Integrated Services Digital Network (ISDN); User-network interface data link layer specification; Application of CCITT Recommendations Q.920/I.440 and Q.921/I.441
ETS 300 153:1992 Integrated Services Digital Network (ISDN);Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access (Candidate NET 3 Part 1)
ETS 300 156:1992 Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN primary rate access (Candidate NET 5)
ETS 300 011:1992 Integrated Services Digital Network (ISDN); Primary rate user-network interface; Layer 1 specification and test principles
G.706 (1988) Frame Alignment and CRC Procedures Relating to Basic Frame Structures Defined in G.704
G.794 (1988) Characteristics of 24-channel transmultiplexing equipments
German Monopol (BAPT 221) Type Approval Specification for Radio Equipment for Tagging and Identification
I.120 (1988) Integrated services digital networks (ISDNs)
I.121 (1988) Broadband aspects of ISDN
I.411 (1988) ISDN user-network interface reference configurations
I.430 (1988) Basic user-network interface - Layer 1 specification
I.431 (1988) Primary rate user-network interface - Physical layer specification
ITU-T G.703 Physical/electrical characteristics of hierarchical digital interfaces
ITU-T G.704 Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels
ITU-T G.706 Frame Alignment and CRC Procedures Relating to Basic Frame Structures Defined in G.704
ITU-T Q.922 ISDN data link layer specification for frame mode bearer services
ITU-T G.703 (1972) Physical/electrical characteristics of hierarchical digital interfaces
Japan NTT I.430-a Leased Line Basic Rate User-Network Interface Layer 1-Specification
New Zealand Telecom TNA 134 Telecom ISDN User-Network Interface: Layer 3: PART B Basic Call Control Procedures
Q.920 (1988) Digital subscriber Signalling System No.1 (DSS1) - ISDN user-network interface data link layer - General aspects
Q.921 (1988) ISDN user-network interface - Data link layer specification
Q.930 (1988) Digital subscriber Signalling System No. 1 (DSS 1) - ISDN user-network interface layer 3 - General aspects
Q.931 (1988) Digital subscriber Signalling System No. 1 (DSS 1) - ISDN user-network interface layer 3 specification for basic call control
Rockwell Bt8370 Fully Intergrated T1/E1 Framer and Line Interface data sheet
Technical Reference of Frame Relay Interface, Ver. 1, November 1993, Nippon Telegraph and Telephone Corporation. Ver. 1, November 1993, Nippon Telegraph and Telephone Corporation.
ACA TS 013.2:1990 General Requirements for Customer Equipment Connected to ISDN Basic Rate Access, Vol 2: Conformance Testing Specifications
ACA TS 014.1:1990 General Requirements for Customer Equipment Connected to ISDN Primary Rate Access, Vol 1: Customer Access Interface Specifications
ACA TS 014.2:1990 General Requirements for Customer Equipment Connected to ISDN Primary Rate Access, Vol 2: Conformance Testing Specifications

Frame Relay

ANSI T1S1 Frame relay
RFC 1490, 2427 Multiprotocol Interconnect over Frame Relay

Ordering Information

AT-AR770S

Includes power cords for US, UK, Australia & Europe.

AT-AR770S-51

No AES & 3DES encryption enabled

Port Interface Card (PIC) Options

AT-AR020

Single software configurable E1/T1 interface that supports channelized/unchannelized Primary Rate ISDN/Frame Relay

AT-AR021S (V3)[3]

(AT-AR021SV1 card is not supported on the AT-AR770S)
Single basic rate ISDN S/T interface

AT-AR023

Single synchronous port up to 2Mbps to an external CSU/DSU (AT-V.35-DTE-00 or AT-X.21-DTE-00 cable required)

AT-AR024

Four Asynchronous RS-232 interfaces to 115Kbps

SFP Options[4]

AT-SPFX/2

100BASE-FX 1310 nm fiber up to 2 km

AT-SPFX/15

100BASE-FX 1310 nm fiber up to 15 km

AT-SPFX/40

100BASE-FX 1310 nm fiber up to 40km

AT-SPTX

1000 BASE-T 100 m Copper

AT-SPSX

1000BASE-SX
GbE multi-mode 850 nm fiber

AT-SPLX10

1000BASE-LX
GbE single-mode 1310 nm fiber up to 10 km

AT-SPLX40

1000BASE-LX
GbE single-mode 1310 nm fiber up to 40 km

AT-SPZX80

1000BASE-ZX
GbE single-mode 1550 nm fiber up to 80 km

Feature License

AT-AR700 – ADVL3UPGRD

AR700 series advanced Layer 3 upgrade – includes:
- IPv6
- BGP-4
- Server Load Balancing

AT-AES/3DES-00

AES/3DES encryption activation key

[3] *AR021S (V3) requires AlliedWare Operating System version 2.9.1-13 or later*

[4] *Please check with your sales representative for ROHS compliance on SFP modules.*

About Allied Telesis

Allied Telesis is part of the Allied Telesis Group. Founded in 1987, the company is a global provider of secure Ethernet/IP access solutions and an industry leader in the deployment of IP Triple Play networks over copper and fiber access infrastructure. Our POTS-to-10G iMAP integrated Multiservice Access Platform and iMG intelligent Multiservice Gateways, in conjunction with advanced switching, routing and WDM-based transport solutions, enable public and private network operators and service providers of all sizes to deploy scalable, carrier-grade networks for the cost-effective delivery of packet-based voice, video and data services.

Service and Support

Allied Telesis provides value-added support services for its customers under its Net.Cover programs. For more information on Net.Cover support programs available in your area, contact your Allied Telesis sales representative or visit our **website: www.alliedtelesis.com.**

RoHS

Allied Telesis RoHS-compliant product conforms to the European Union Restriction of the Use of Certain Hazardous Substances (RoHS) in Electrical and Electronic equipment. Allied Telesis ensures RoHS conformance by requiring supplier Declarations of Conformity, monitoring incoming materials, and maintaining manufacturing process controls.

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