



## AT-AR750S

### Secure VPN Router

#### AT-AR750S

- 2 x WAN 10/100BASE-T ports
- 5 x LAN 10/100BASE-T ports
- 2 x PICs
- 1 x Asynchronous console / Modem port

#### Secure Modular Routing Solution

The AT-AR750S has been designed with the needs of small to medium enterprises/businesses (SME/SMB) or branch office businesses in mind. The AT-AR750S offers significant advances in processing performance, Quality of Service, routing, remote connectivity and security.

#### Extensive VPN Capability

The AT-AR750S 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 AT-AR750S comes complete with integrated hardware acceleration, which maximises encryption throughput and removes the need to purchase a hardware upgrade package. The AT-AR750S is compatible with industry standard IPsec VPN clients.

#### Security

In addition to hardware-based encryption, the AT-AR750S 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-AR750S. A Stateful Inspection firewall provides an increased level of security and complements the packet filtering function. HTTP and SMTP proxies on the AT-AR750S provide improved control over web and mail communications.

#### Quality of Service

Allied Telesyn's QoS implementation enables the AT-AR750S 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.

#### Performance

The AT-AR750S 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 fill the WAN with the small sized packets that occur in real networks. The AT-AR750S has been designed to meet real network needs.

Stateful Firewall inspection, NAT and QoS:  
>50Mbps @ 64 byte packets

Stateful Firewall inspection, NAT, QoS, IPsec VPN (with AES 256 bit encryption):  
>35Mbps @ 72 byte packets

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

#### Comprehensive Management and Configuration

The AT-AR750S 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), and a browser-based Graphical User Interface (GUI) is also provided to simplify the AT-AR750S' configuration and management. The GUI provides access to default set-ups in key management areas and provides access to regional settings. Allied Telesyn's SNMP support extends to SNMPv3 to provide secure management.

#### Key Features

##### Hardware

- 2 x 10/100 WAN interfaces
- 2 x Port Interface Cards (PICs)
- 5 x 10/100BASE-T switched LAN ports
- 1 x Asynchronous port / Modem Port
- DMZ port: configurable on any of the WAN/LAN ports

##### Security

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

##### VPN/Encryption

- AES, DES, 3DES encryption
- 5,000 configured IPsec VPN tunnels (250 active tunnels)
- HW accelerated IPsec VPN >35Mbps@72byte packets (with AES 256 bit encryption)

##### Manageability

- Web based GUI
- CLI management
- SNMPv3
- IP QoS

##### Extensive routing support, including:

- RIPv1 and v2
- OSPFv1 and v2
- GRE
- BGP 4 - optional
- IPX
- VRRP
- Appletalk
- DECNet
- IPv6 - optional
- RIPng

##### Multicast routing protocols, including:

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

##### Support for traditional network protocols, including:

- X.25
- Frame-relay

## WAN Load Balancing

The AT-AR750S' WAN load balancer 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.

## About Allied Telesyn

Allied Telesyn was founded in 1987 and now has offices around the globe, more than 2,800 employees and over \$500M of worldwide annual revenue. The attributes which have led Allied Telesyn to achieve its leading position in the enterprise, operator and connectivity business segments can be summarised by four key elements: its business focus on networking technology for professional markets, where Allied Telesyn has proved to be the only company capable of providing a total end-to-end solution at a high price/performance ratio; the ability to handle every aspect of its own products from design to marketing; the development of components and solutions which accommodate flexible, efficient and reliable network construction; and support from sound warranty terms and quality services. Allied Telesyn connects the IP world efficiently thanks to affordable and highly reliable network solutions. For more information see: [www.alliedtelesyn.com](http://www.alliedtelesyn.com)

## Service and Support

Allied Telesyn provides value-added support services for its customers under its Net.Cover<sup>SM</sup> programs. For more information on Net.Cover<sup>SM</sup> support programs available in your area, contact your Allied Telesyn sales representative or visit our website: [www.alliedtelesyn.com](http://www.alliedtelesyn.com)

## Feature Summary

### Routing and Multicast

PPP and IP Routing  
RIP v1 & v2  
OSPF v1 & v2  
BGP-4 \*  
IPX  
AppleTalk  
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 \*  
MS<sup>TM</sup> XP VPN client interoperability  
Hardware acceleration

### 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

### Management

CLI  
Browser Based GUI  
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

## Reliability

MTBF: >120 000 hrs  
Warranty: 12 months

## Hardware Features

5 x 10/100 Mbps (LAN)  
2 x 10/100 Mbps (WAN)  
2 x Port Interface Cards (PICs)  
1 x Async Console port  
DMZ port: Obtained by configuring one of the WAN or LAN ports

## Processor

533MHz  
Internal security encryption engine

## Memory

64MB Ram  
16MB Flash

## Power Characteristics

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

## Physical Dimensions

Dimensions: 1RU rack mount, Depth 190mm,  
Width 305mm, Height 44mm  
Weight: 1.94 kg

## Environmental

Operating Temp: 0°C to 40°C  
Storage Temp: -25°C to 70°C  
Operating relative humidity:  
5 to 80% non-condensing  
Acoustic: ANSI S12.10 General Office @ 40dB

## Approvals & Certifications

UL  
TUV  
UL60950  
EN60950  
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 supporting channelized / unchannelized Primary Rate ISDN / Frame Relay
AT-AR021S (V2)	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-V.21-DTE-00 cable required)
AT-AR024	Four Asynchronous RS-232 interfaces to 115Kbps

## Country of Origin

China

\* Software Features requiring the purchase of a feature licence

## Standards and Protocols

Software Release 2.7.5

### BGP-4

RFC 1771 Border Gateway Protocol 4  
RFC 3065 Autonomous System Confederations for BGP  
RFC 1997 BGP Communities Attribute  
RFC 1998 Multi-home Routing  
RFC 2842 Capabilities Advertisement with BGP-4  
RFC 2858 Multiprotocol Extensions for BGP-4  
RFC 2918 Route Refresh Capability for BGP-4  
RFC 2439 BGP Route Flap Damping  
RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option

### Encryption

RFC 2104 HMAC  
RFC 2451 The ESP CBC-Mode Cipher Algorithms  
FIPS 180 SHA-1  
FIPS 186 RSA  
FIPS 197 AES  
FIPS 46-3 DES  
FIPS 46-3 3DES

### Ethernet

RFC 894 Ethernet II Encapsulation  
IEEE 802.1D MAC Bridges  
IEEE 802.1G Remote MAC Bridging  
IEEE 802.1Q Virtual LANs  
IEEE 802.1v VLAN Classification by Protocol and Port  
IEEE 802.2 Logical Link Control  
IEEE 802.3ac VLAN TAG  
IEEE 802.3ad (static) Link Aggregation  
IEEE 802.3u 100BASE-T  
IEEE 802.3x Full Duplex Operation

### General Routing

RFC 768 UDP  
RFC 791 IP  
RFC 792 ICMP  
RFC 1256 ICMP Router Discovery Messages  
RFC 793 TCP  
RFC 2822 Internet Message Format  
RFC 826 ARP  
RFC 903 Reverse ARP  
RFC 925 Multi-LAN ARP  
RFC 950 Subnetting, ICMP  
RFC 1812 Router Requirements  
RFC 1027 Proxy ARP  
RFC 1055 SLIP  
RFC 1122 Internet Host Requirements  
RFC 1142 OSI IS-IS Intra-domain Routing Protocol  
RFC 1144 Van Jacobson's Compression  
RFC 1288 Finger  
RFC 2390 Inverse Address Resolution Protocol  
RFC 2131 DHCP  
RFC 1542 BootP  
RFC 1582 RIP on Demand Circuits  
RFC 1918 IP Addressing  
RFC 1701 GRE  
RFC 1702 GRE over IPv4  
RFC 3232 Assigned Numbers  
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  
1570 PPP LCP Extensions  
RFC 1598 PPP in X.25  
RFC 1618 PPP over ISDN

RFC 1661 The Point-to-Point Protocol (PPP)  
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)  
RFC 1762 The PPP DEcnet Phase IV Control Protocol (DNCP)  
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses  
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 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)  
RFC 2878 PPP Bridging Control Protocol (BCP)  
RFC 2661 L2TP  
RFC 3046 DHCP Relay Agent Information Option  
RFC 3993 Subscriber-ID Sub-option for DHCP Relay Agent Option  
"IPX Router Specification", v1.2, Novell, Inc., Part Number 107-000029-001  
AppleTalk  
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

### 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  
RFC 3973 PIM-DM  
draft-ietf-idmr-dvmrp-v3-9 DVMRP

### 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

### IPv6

RFC 3596 DNS Extensions to support IPv6  
RFC 1981 Path MTU Discovery for IPv6  
RFC 2080 RIPv6 for IPv6  
RFC 3513 IPv6 Addressing Architecture  
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 2472 IPv6 over PPP  
RFC 2526 Reserved IPv6 Subnet Anycast Addresses  
RFC 3484 Default Address Selection for IPv6  
RFC 2710 Multicast Listener Discovery (MLD) for IPv6  
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6  
RFC 2711 IPv6 Router Alert Option  
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels  
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers  
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds  
RFC 3315 DHCPv6  
RFC 3587 IPv6 Global Unicast Address Format  
RFC 2365 Administratively Scoped IP Multicast  
RFC 3307 Allocation Guidelines for IPv6 Multicast Addresses  
RFC 2465 Allocation Guidelines for IPv6 Multicast Addresses Management Information Base for IP Version 6: Textual Conventions and General Group  
RFC 2466 Management Information Base for IP Version 6: ICMPv6 Group  
RFC 2851 Textual Conventions for Internet Network Addresses

### Management

RFC 1155 MIB  
RFC 1157 SNMP  
RFC 1212 Concise MIB definitions  
RFC 1213 MIB-II  
RFC 1643 Ethernet MIB  
RFC 1493 Bridge MIB  
RFC 2790 Host MIB  
RFC 1515 Definitions of Managed Objects for IEEE 802.3 MAUs  
RFC 1573 Evolution of the Interfaces Group of MIB-II  
RFC 1657 Definitions of Managed Objects for BGP-4 using SMIv2  
RFC 1757 RMON (groups 1,2,3 and 9)  
RFC 2011 SNMPv2 MIB for IP using SMIv2  
RFC 2012 SNMPv2 MIB for TCP using SMIv2  
RFC 2096 IP Forwarding Table MIB  
RFC 3768 VRRP  
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 2856 Textual Conventions for Additional High Capacity Data Types  
RFC 3164 Syslog Protocol  
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  
draft-ietf-bridge-8021x-00.txt Port Access Control MIB  
RFC 3289 Management Information Base for the Differentiated Services Architecture  
CDP

## 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

## QoS

RFC 1349 Type of Service in the IP Suite  
RFC 2205 Reservation Protocol  
RFC 2211 Controlled-Load  
RFC 2475 An Architecture for Differentiated Services  
IEEE 802.1p Priority Tagging  
RFC 2697 A Single Rate Three Color Marker  
RFC 2698 A Two Rate Three Color Marker  
RFC 2597 Assured Forwarding PHB Group  
RFC 3246 An Expedited Forwarding PHB (Per-Hop Behavior)

## RIP

RFC 1058 RIPv1  
RFC 1723 RIPv2

## Security

RFC 959 FTP  
RFC 1413 IDP  
RFC 1492 TACACS  
RFC 1779 X.500 String Representation of Distinguished Names.  
RFC 1858 Fragmentation  
RFC 2865 RADIUS  
RFC 2866 RADIUS Accounting  
RFC 2868 RADIUS Attributes for Tunnel Protocol Support  
RFC 3580 IEEE 802.1X Remote Authentication Dial In User Service (RADIUS) Usage Guidelines  
RFC 2459 X.509 Certificate and CRL profile  
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  
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

## Services

RFC 2821 SMTP  
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 1305 NTPv3  
RFC 1091 Telnet terminal-type option  
RFC 1350 TFTP  
RFC 1510 Network Authentication  
RFC 2049 MIME  
RFC 1985 SMTP Service Extension  
RFC 2156 MIXER  
RFC 1945 HTTP/1.0  
RFC 2068 HTTP/1.1

## SSL

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

## 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 - DSI 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.920/1.440 and Q.921/1.441  
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 1294  
RFC 1490, 2427 Multiprotocol Interconnect over Frame Relay

## Ordering Information

### AT-AR750-xx

Order Number: 990-12717-xx

Where xx =    10 for U.S. power cord  
                  20 for no power cord  
                  30 for U.K. power cord  
                  40 for Australian power cord  
                  50 for European power cord

## Port Interface Card Options

### AT-AR020

Single configurable E1/T1 interface supporting channelized / unchannelized Primary Rate ISDN / Frame Relay

Order Number: 990-04235-00

### AT-AR021S (V2)

(AT-AR021S V1 card is not supported on the AT-AR750S)

Single Basic Rate ISDN S/T interface

Order Number: 990-04251-00

### AT-AR023

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

Order Number: 990-04230-00

### AT-AR024

Four Asynchronous RS-232 interfaces to 115Kbps

Order Number: 990-04233-00

## Software Upgrade Options

### AT-AR-AES

AES encryption (feature license)

Order Number: 980-10036-00

### AT-AR-3DES

3DES encryption (feature license)

Order Number: 980-10000-00

### AT-AES/3DES

AES and 3DES bundled (feature license)

Order Number: 990-10037-00

### AT-AR700 - ADVL3UPGRD

AR700 series advanced Layer 3 upgrade - includes IPv6,

BGP-4, IS-IS and load balancing

Order Number: 980-10022-00

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