**AT-AR750S-DP**
Secure VPN Router

**Key Features**

**Hardware**
- 2 x 10/100Base-T 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
- Dual hot-swappable AC or DC redundant power supplies
- RoHS compliant

**Performance**
The AT-AR750S-DP 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-AR750S-DP 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

The AT-AR750S-DP can achieve up to 195 Mbps IPsec throughput with bidirectional traffic.

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

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

**Reliability**
Dual hot-swappable AC or -48V DC redundant power supplies packaged in the 1RU rack mount chassis, provide the ultimate in space saving, reliability and resiliency. The AR750-DP can operate on just one PSU if required. These features, combined with front-to-back cooling make the AT-AR750S-DP perfect for the high-density rack environment where space is at a premium.

**Extensive Routing Support**, including:
- RIPv1 and v2
- OSPFv1 and v2
- GRE, L2TP
- IPX
- VRRP
- BGP-4 – optional
- IPv6 – optional
- RIPng – optional

**Multicast routing protocols**, including:
- PIM-DM, PIM-SM
- DVMRP
- IGMPv2
- IGMP Snooping
- PIM6
- MLD
- IPv6 Multicast – optional

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Support for traditional network protocols, including:
- X.25
- Frame Relay

**Comprehensive Management and Configuration**
The AT-AR750S-DP comes with a comprehensive suite of management features and is also compatible with SNMP-based management packages. Allied Telesis' SNMP support extends 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.

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

**Quality of Service**
Allied Telesis' QoS implementation enables the AT-AR750S-DP to dynamically identify high priority voice, video and application traffic, so that appropriate service levels can be

**Secure Modular Routing Solution**
Designed with the needs of medium enterprises and Telco customers in mind, the AT-AR750S-DP offers significant advances in processing performance, Quality of Service, routing, remote connectivity and security.

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

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to SNMPv3 to provide secure management.
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 configuration and management of the routers. The GUI provides access to default set-ups in key management areas and provides access to regional settings.

**WAN Load Balancing**
The AT-AR750S-DP 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.

**Feature Summary**

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

**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
MSn XP VPN client interoperability
Hardware acceleration

**QoS**
Extensive Traffic classifiers of L2 to L5 traffic to allow appropriate queuing of traffic.

**Management**
- Web based GUI
- 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
- DHCMPv6

**Reliability**
- MTBF: >120,000 hrs

**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
- Dual hot-swappable AC or DC redundant power supplies

**Processor**
- 533MHz
- Internal security encryption engine

**Memory**
- 64MB Ram
- 16MB Flash

**Power Characteristics**
- Input Voltage: 100-240 VAC, 50-60 Hz
- Max Power Consumption: 30W
- Internal Battery Backup (1 year)

**Physical Dimensions**
- Dimensions: 1RU rack mount, Depth 356mm, Width 440mm, Height 44mm
- Weight (AT-AR750S-DP and one PSU): 5.38Kg
- Weight (AT-AR750S-DP and two PSUs): 6Kg

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

**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 Single Basic Rate ISDN (S/T) interface(S3)
- 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 1.5Kbps

**Country of Origin**
- China

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1 Performance figure estimate from pre-production units.
2 AT-AR021S (V3) requires AlliedWare® Operating System version 2.9.1-13 or later
Standards and Protocols
Software Release 2.9.1

**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 MDS Signature Option
RFC 2439 BGP Route Flap Damping
RFC 2850 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 46-3 DES
FIPS 46-3 DES
FIPS 180 SHA-1
FIPS 186 X9A
FIPS 197 AES
FIPS 140-2 Compliant

**Ethernet**
RFC 894 Ethernet II Encapsulation
IEEE 802.1 MAC Bridges
IEEE 802.1 Remote MAC Bridging
IEEE 802.1Q Virtual LAN
IEEE 802.2 Logical Link Control
IEEE 802.3a VLAN TAG
IEEE 802.3u 100BASE-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 Mult-LAN ARP
RFC 950 Subnetting, Ipv6
RFC 1027 Proxy ARP
RFC 1055 DNS
RFC 1122 UDP
RFC 1144 IPv6 Router Requirements
RFC 1256 ICMP Router Discovery Messages
RFC 1288 Finger
RFC 1322 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1334 PPP Authentication Protocols
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
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 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 L2S 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 2131 DHCP
RFC 2125 The PPP Bandwidth Allocation Protocol (BAP) / The PPP Bandwidth Allocation Control Protocol (BACP)
RFC 2390 Inverse Address Resolution Protocol
RFC 2514 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2561 L2TP
RFC 2592 Internet Message Format
RFC 2878 PPP Bridging Control Protocol (BCP)
RFC 3046 DHCP Relay Agent Information Option
RFC 3122 Assigned Numbers
RFC 3193 Subscriber-ID Suboption for DHCP Relay Agent Option
"IPX Route Specification", v1.2, Novell, Inc., Part Number 107-000009-001
ISO 10589, Technical Corrigendum 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 IPv6 Packets
http://www.isan.org/assignments/bootp-dhcp-parameters
BootP and DHCP parameters

**General Routing and Firewall**
RFC 3022 Traditional NAT
draft-ietf-ipv6-nat-translation-08.txt Negotiation of NAT-Traversal in the IKE
draft-ietf-ipv6-udp-encaps-08.txt UDP Encapsulation of IPv6 Packets

**IP Multicasting**
RFC 1075 DVMRP
RFC 1112 Host Extensions
RFC 2236 IGMPv2
RFC 2362 PIM-DM
RFC 2715 Interoperability Rules for Multicast Routing
RFC 3973 PIM-DM
draft-ietf-ipv6-dvmr-v3-9 DVMRP

**IPsec**
RFC 1828 IP Authentication using Keyed MD5
RFC 1829 IPsec algorithm
RFC 2295 IPsec Compression - LZO
RFC 2401 Security Architecture for IP
RFC 2402 AH - IP Authentication Header
RFC 2403 IPsec Authentication - MD5

**IPv6**
RFC 1981 Path MTU Discovery for IPv6
RFC 2030 RIPng for IPv6
RFC 2365 Administratively Scoped IPv6 Multicast
RFC 2375 IPv6 Multicast Address Assignments
RFC 2446 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 Addresses Management Information Base for IP Version 6
RFC 2466 Management Information Base for IPv6
RFC 2467 IPv6
RFC 2472 IPv6 over PPP
RFC 2473 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 3087 Allocation Guidelines for IPv6 Multicast Addresses
RFC 3135 DHCPv6
RFC 3484 Default Address Selection for IPv6
RFC 3517 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

**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
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
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 T1SI Frame relay
RFC 1490, 2427 Multiservice Interconnect over Frame Relay

Ordering Information
AT AR750S-DP
Order number: 990-001357-00
Router with no PSU modules
AT- PWR03-00 (AC PSU)
Order number: 990-001455-00
Includes power cords for the US, UK, Australia & Europe
AT- PWR03-80 (DC PSU)
Order number: 990-001455-80
Includes DC power card

Port Interface Card Options
AT-AR020
Single configurable E1/T1 interface supporting channelized / unchannelized Primary Rate ISDN / Frame Relay
Order Number: 990-001304-00

AT-AR021S (V3)²
AT-AR021S V1 card is not supported on the AT-AR750S-DP Single Basic Rate ISDN S/T interface
Order Number: 990-002153-00

AT-AR023
Single Synchronous port up to 2Mbps to an external CSU/DSU (AT-X.25-DTE-00 or AT-X.21-DTE-00 cable required)
Order number: 990-001104-00

AT-AR024
Four Asynchronous RS-232 interfaces to 115Kbps
Order number: 990-001105-00

Software Upgrade Options
AT-AR700 - ADVL3UPGRD
AR700 series advanced Layer 3 upgrade:
• IPv6
• BGP-4
• Server Load Balancing
Order Number: 980-10022-00
²AT-AR021S (V3) requires AlliedWare® Operating System version 2.9.1-13 or later

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. Visit us online at www.alliedtelesis.com.

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