



AT-AR410 SERIES

Modular Branch Office Routers

AT-AR410-xx

Modular Branch Office Router

AT-AR410S-xx

Secure Modular Branch Office Router

WIRESPEED EI/TI IPSEC VPN OPERATION

The AT-AR400 Series redefines business-class routing, offering full Layer 3 multi-protocol routing combined with wirespeed VLAN switching in one compact unit. An extensive range of network services is supported via simple, modular, plug-in cards. Offering unprecedented flexibility and performance for Small to Medium Enterprises (SME) or branch offices, AT-AR400 Series routers are designed to connect remote offices and telecommuters across the Internet via high-performance VPN tunnels. Businesses will also enjoy the cost advantages of Frame Relay networking at wirespeed EI/TI rates.

UNIQUE VLAN OPERATION WITH INTEGRAL 4 X 10/100MBPS SWITCH

Unique for products in this price bracket, AT-AR400 routers support port-based and 802.1q tagged VLAN operations across its 4 x 10/100Mbps switch ports. Offering a combination of wirespeed L2 switching and high-performance L3 routing between VLANs, these routers can maintain Layer 3 routing between VLANs at a sustained rate of 8,500pps for 64-byte packets.

SIMPLE PLUG-IN FLEXIBILITY

Any one of six different interface cards can be plugged into the external network slot, including high-speed EI/TI, V35/X21 sync, BRI/PRI ISDN, and Ethernet—functionality that enables simple, affordable connectivity to today's networks, as well as tomorrow's. The plug-and-play interface cards are compatible with the Allied Telesyn AT-AR700 series of Enterprise routers, as well as the Rapiere family of Layer 3 switches. The onboard management/asynch port can be used for local management or for connection to an external modem.

ICSA-CERTIFIED STATEFUL INSPECTION FIREWALL

Allied Telesyn's state-of-the-art ICSA certified Stateful Inspection Firewall is available for AT-AR400 Series routers, protecting private networks by monitoring both packet content and session status. The firewall defends against a wide range of

Denial of Service (DoS) attacks including Ping of Death, SYN/FIN flooding, Smurf attacks, port scans, fragment attacks, and IP spoofing. The firewall also triggers e-mail alerts when such attacks are detected. Providing a solution that is highly secure while offering maximum performance and extensibility, this feature is part of the optional Security Bundle for the AR400 Series or comes standard on the AR410S.

ADVANCED SOFTWARE QOS

Allied Telesyn's AlliedWare software release 2.7.1 provides advanced QoS and shaping features on the AT-AR440S. There are five key new QoS features available in this release—Bandwidth Metering, RED Curves, Mixed Scheduling, Virtual Bandwidth, and DAR. This release also supports eight queues per interface. Dynamic Application Recognition (DAR) is used to snoop for session setup exchanges and dynamically create classifiers that match the voice and video packets in the session. For more information about these advanced QoS features, see the Allied Telesyn Advanced QoS White Paper (November 2004) available on our website.

HARDWARE ACCELERATOR FOR VPN & IPSEC

Allied Telesyn's hardware-based VPN encryption is up to ten times faster than other well-known software algorithms. Because the encryption is performed on dedicated 32-bit encryption and compression processors, routers or Layer 3 switches can maintain maximum DES or 3DES VPN speeds even when the CPUs are under heavy demand from Stateful Inspection and IPsec rule processing. With up to 1,024 encryption channels are supported, the AT-AR400 Series makes a robust addition to any branch office location requiring a secure point-to-point link such as dial-up, broadband, ISDN, and T1. This feature comes standard on the AR410S.

CONFIGURATION AND MANAGEMENT

- Telnet remote management is supported across the LAN and WAN
- The AT-AR410 Series supports the Windows Secure Shell (SSH) package, which provides authenticated and encrypted secure remote management. SSH clients are available from third parties.
- The AT-AR410 Series also supports SNMPv1, SNMPv2, SNMPv3, MIB II and Enterprise MIB

KEY FEATURES

- 1 x Port Interface Card (PIC) bay supporting a range of LAN/WAN interfaces
- High-performance IPsec DES & 3DES VPN
- ICSA-certified Stateful Inspection Firewall
- 10/100Mbps Ethernet LAN/WAN port
Integral 4 x 10/100Mbps full duplex Ethernet switch
- Port-based VLANs
- 8Mb Flash for storage of two software releases
- OSPF protocol support
- Optional BGP4 protocol support
- SNMP & CLI management
- Compact, 1U high, stackable form factor—desktop or rack-mount
- Web GUI

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STANDARDS AND PROTOCOLS

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 2385	Protection of BGP Sessions via the TCP MD5 Signature Option

ENCRYPTION

FIPS 46-3	DES
FIPS 46-3	3DES
FIPS 180	SHA-1
FIPS 186	RSA
FIPS 197	AES
RFC 2104	HMAC

ETHERNET

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

GENERAL ROUTING

RFC 1918	IP Addressing
RFC 791	IP
RFC 950	Subnetting, ICMP
RFC 1812	Router Requirements
RFC 1055	SLIP
RFC 1122	Internet Host Requirements
RFC 1582	RIP on Demand Circuits

"IPX Router Specification", v1.2, Novell, Inc., Part Number 107-000029-001 IPX Router Specification

RFC 792	ICMP
RFC 1288	Finger
RFC 1701	GRE
RFC 1702	GRE over IPv4
RFC 2131	DHCP
RFC 1542	BootP
RFC 826	ARP
RFC 925	Multi-LAN ARP
RFC 3232	Assigned Numbers
RFC 2661	L2TP
RFC 2822	Internet Message Format
RFC 903	Reverse ARP
RFC 1027	Proxy ARP
RFC 793	TCP
RFC 768	UDP
RFC 1144	Van Jacobson's Compression
AppleTalk	
ISO 9542	End System to Intermediate System Protocol
RFC 2390	Inverse Address Resolution Protocol
RFC 1142	OSI IS-IS Intra-domain Routing Protocol

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 TR 9577 Open System Interconnection

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 1762	The PPP DECnet Phase IV Control Protocol (DNCP)
RFC 1962	The PPP Compression Control Protocol (CCP)
RFC 1968	The PPP Encryption Control Protocol (ECP)
RFC 1974	PPP Stac LZS Compression Protocol
RFC 1877	An Architecture for IPv6 Unicast Address Allocation
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 3619	EAPS
RFC 3022	Traditional NAT
RFC 1256	ICMP Router Discovery Messages

IP MULTICASTING

RFC 2236	IGMPv2
RFC 1075	DVMRP
draft-ietf-idmr-dvmrp-v3-9	DVMRP
RFC 1112	Host Extensions
RFC 1812	Router Requirements
RFC 2715	Interoperability Rules for Multicast Routing Protocols
RFC 2362	PIM-SM
draft-ietf-pim-dm-new-v2-04	PIM-DM
draft-ietf-pim-sm-v2-new-09	PIM-SM

IPSEC

RFC 2395	IPsec Compression - LZS
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 1829	IPsec algorithm
RFC 2451	The ESP CBC-Mode Cipher Algorithms
RFC 3173	IPComp
RFC 1828	IP Authentication using Keyed MD5

IPV6

draft-ietf-ngtrans-hometun-01	IPv6 over IPv4 tunnels for home to Internet access
RFC 1981	Path MTU Discovery for IPv6
RFC 2375	IPv6 Multicast Address Assignments
RFC 2460	IPv6
RFC 2080	RIPng for 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 draft-vida-ml-d-v2	Multicast Listener Discovery (MLD) for IPv6
draft-ietf-ngtrans-introduction-to-ipv6-transition-06	An overview of the introduction of IPv6 in the Internet
RFC 2526	Reserved IPv6 Subnet Anycast Addresses
RFC 2711	IPv6 Router Alert Option
RFC 3056	Connection of IPv6 Domains via IPv4 Clouds
RFC 3315	DHCPv6
RFC 3633	IPv6 Prefix Options for Dynamic Host Configuration Protocol
RFC 3596	DNS Extensions to support IP version 6
RFC 3513	Internet Protocol Version 6 (IPv6) Addressing Architecture
RFC 3484	Default Address Selection for Internet Protocol version 6
RFC 2710	Multicast Listener Discovery (MLD) for IPv6
draft-vida-ml-d-v2-08	Multicast Listener Discovery (MLD) for IPv6, Version 2
RFC 2766	NAT-PT
RFC 2529	Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 2893	Transition Mechanisms for IPv6 Hosts and Routers
RFC 3646	DNS Configuration options for Dynamic Host Configuration Protocol for IPv6 (DHCPv6)
RFC 3587	IPv6 Global Unicast Address Format
RFC 2365	Administratively Scoped IP Multicast
RFC 3306	Supported IPv6 standards
RFC 3307	Allocation Guidelines for IPv6 Multicast Addresses
RFC 1155	MIB
RFC 1157	SNMP
RFC 1212	Concise MIB definitions
RFC 1213	MIB-II
RFC 1515	Definitions of Managed Objects for IEEE 802.3 MAUs
RFC 1643	Ethernet MIB

MANAGEMENT

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CLI Call-back
Multilink PPP (MPP)
Bandwidth Allocation Control
Protocol (BAP/BACP)
Always on Dynamic ISDN
(AODI)

LEASED LINE

SYNC up to 2Mbps
E1/T1/G.703 Unchannelized/Channelized

LAN PROTOCOLS

IP
IPX/SPX
AppleTalk
IPX/SPX Spoofing
PPPoE

ROUTING PROTOCOLS

Static Routes
RIP & RIPv2
OSPF
BGP-4

WAN PROTOCOLS

Frame Relay
X.25
DecNetIV

REMOTE ACCESS DIAL-IN SUPPORT

Asynchronous Serial Ports with Routing Support

LAN BRIDGING

Spanning Tree

COMPRESSION

STAC Compression

IP ADDRESS MANAGEMENT

IP Multi-homing
Dynamic IP address assignment
DHCP

AUTHENTICATION

CLI, PAP/CHAP Authentication
RADIUS/TACACS Authentication

VPN AND SECURITY

NAT (Network Address Translation)
PAT (Port address translation)
IP Packet Filtering
Generic Routing Encapsulation (GRE)
L2TP Access Concentrator / Network Server
ICSA-certified Stateful Inspection Firewall
Hardware 56-bit DES Encryption (option)
Triple DES Encryption (option)
ICSA-certified IPsec
IKE
Secure Shell Remote Management (SSH)
Secure Socket Layer (SSL) for secure GUI, or in conjunction
with the load balancer

VLANs

Port-based VLAN operation on 4 switch ports
Up to 4 VLANs
Wirespeed switching between VLANs
Tagging supported in 'upstream' direction only

TRAFFIC SHAPING AND QOS

IP Packet Prioritization
RSVP
DiffServ
Upstream bandwidth limiting
Rapid Spanning Tree Protocol (RSTP)

REDUNDANCY

Virtual Router Redundancy Protocol (VRRP)

CONFIGURATION AND MANAGEMENT

Console port
Command Line Interface
Telnet
SNMP
MIB II & Enterprise MIB
TFTP Client/Server

POWER CHARACTERISTICS

Input Voltage: 100-240vAC, 50-60Hz, 10W
Max Power Consumption: 17.6W (+3V3 @ 2A, +5V @ 1A,
+12V @ 0.5A)

Integral universal power supply
Security clip to retain IEC power cord

PHYSICAL CHARACTERISTICS

IU Rack mount
Depth: 190mm
Width: 305mm
Weight: 1.75kg (3.75lbs)

ENVIRONMENTAL CHARACTERISTICS

Operating temp. range: 0°C – 40°C (32°F – 104°F)
Storage temp. range: -25°C – 70°C (-13°F – 158°F)
Relative humidity range: 5 – 95% non-condensing

ELECTRICAL/MECHANICAL APPROVALS

EMC
Emissions: EN55022 class A, FCC class A,
VCCI class 1, AS/NZS3548 class

A
Immunity: EN55024

SAFETY

Safety: UL60950, CAN/CSA-C22.2 NO.
60950-00, EN60950,
AS/NZS3260
Listing: UL, cUL

NETWORK INTERFACE (WHERE APPLICABLE TO PIC)

ISDN Limited Network Protocol Analysis, FCC
Part 68, Subpart D, IC CS-03 Issue 8 Part I and VI, CTR2,
CTR3/A1, CTR4, ACA TS031

HARDWARE FEATURES

	Fixed Ports/ Base Unit	Optional PIC Module
10/100Mbps F/D Ethernet LAN/WAN	1	4
10/100Mbps F/D Ethernet Switched ports*	4	-
Port Interface Card Slots	1	-
Internal Mini	1	-
Accelerator Card Slot**	1	-
Asynchronous RS232 Interface to 115kbps	1	4
Synchronous Interface to 2Mbps	-	1
ISDN BRI (U & S/T)	-	1
ISDN PRI	-	1
T1/E1/G.703 to 2Mbps	-	1

* An MDI/MDI-X selection switch is provided for port 4. Ports
1 to 3 are hard-wired in MDI-X mode

** used for high performance Encryption and Compression

MEMORY

DRAM: 16Mb
Flash: 8Mb (can store two images)

RELIABILITY

MTBF: 50,000 hours min
MTTR: 0.5 hours max
Warranty: 2 years



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ORDERING INFORMATION

AT-AR410-xx
Modular Branch Office Router

AT-AR410S-xx
Secure Modular Branch Office Router

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 (PIC) OPTIONS

AT-AR020 Single E1/T1 primary rate ISDN
AT-AR021 (U) Single basic rate ISDN
AT-AR021 (S/T) Single basic rate ISDN
AT-AR022 Single 10Mbps Ethernet
AT-AR023 Single Synchronous to 2Mbps
AT-AR024 Four Asynchronous to 115Kbps
AT-AR026 Four 10/100 Fast Ethernet ports
AT-AR027 Two FXS VoIP ports

OPTIONS

AT-AR011 ECMAC
Provides hardware-based DES and 3DES encryption and compression

AT-AR012 CMAC
Provides hardware-based STAC compression

AT-AR013 3DES
Triple DES encryption (software option)

AT-AR014 Firewall
Stateful inspection firewall (software option)

AT-AR400SSECPK
(AT-AR410 only, as these features are included in the Standard AlliedWare of the AT-AR410S)
Provides Firewall, SMTP proxy, HTTP proxy

AT-AR400 - ADVL3UPGRD
AR400 series advanced layer 3 upgrade - includes IPv6, BGP-4, IS-IS, and load balancer

ABOUT ALLIED TELESYN

Allied Telesyn was founded in 1987 with the goal of producing reliable, standards-based networking products. Focused on Ethernet/IP solutions geared to applications, Allied Telesyn offers access-edge products like switches, fiber/copper MAPs, and CPE. We're also a leading global manufacturer of media converters, unmanaged switches, and NICs. Our customer-driven approach has made Allied Telesyn the ideal choice for IT professionals looking for high-quality, feature-rich network solutions at a lower price. Allied Telesyn – It's Our Network, Too.

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