



## Bintec R232aw

The R232aw router is a fully equipped, flexible IP router with an integrated ADSL modem, a wireless interface, a 4-port switch and automated ISDN backup. It is especially designed for high-speed Internet access and can also be used for remote access in small companies, remote offices or home offices. The device supports the ADSL2 and ADSL2+ standards, which are able to deliver download rates of up to 12 or 24Mbps.

In addition to the integrated ADSL modem (Annex A), the routers are equipped with a WLAN interface supporting the 802.11g standard (max. 54 Mbps) and is compatible with the slower 802.11b variant in the same frequency range (max. 11 Mbps).

Remote offices easily and reliably integrated into the enterprise-wide network via a VPN connection and have access to the Internet as well as to the company LAN.

In factory set mode, the router is equipped with two active IPSec tunnels to provide for secure connections. An automated ISDN backup can be configured to further increase connection Stability. The additional WAN port can be used for a second provider connection and operated in load-balancing mode. With the help of the PPPoE client/server function, individual profiles can be created for each user group joining through the device. Internet access can be regulated by a stateful inspection firewall and Content Filtering\*. WPA encryption and port-based authentication according to 802.1x enhances wireless access

The device can be configured using either the HTTP Configuration Wizard (recommended for inexperienced users) or via the HTML interface. SSH-encrypted communication to the device allows absolutely secure configuration.

\* Content Filtering is subject to payment and is available as a 30-day trial version.

**Highlights**

Feature	Description
Integrated ADSL modem	ADSL2 / ADSL2+ with downloads up to 12 / 24 Mbps
ISDN port	Additional ISDN port for backup of ADSL connection, remote administration
4 + 1 Port Ethernet Switch 10/100	Separate Ethernet Port for configuring a DMZ network segment or Load Balancing scenarios
Application Level Gateway	SIP proxy
Multi-SSID	Virtual WLAN interfaces for individual access
IPSec	With AES, certificates, IPComp, NAT Traversal, RADIUS
DynDNS	Router can still be reached over the Internet in spite of dyn. IP address
RADIUS, TACACS+	Secure authentication
VLAN	Secure separation of network segments
Event Scheduler	Time-based execution of commands
Stateful Inspection Firewall	connection based firewall
Content filtering	30 days test license
PPPoE Server	Different rights for LAN user adjustable
SSH login	Encrypted configuration session
Configuration Wizard	Configuration assistant for HTTP

**Wireless LAN**

Feature	Description
Standards	IEEE802.11b resp. IEEE802.11g
802.11i	802.1x/EAP-MD5, 802.1x/EAP-TLS, 802.1x/EAP-TTLS, 802.1x/EAP-PEAP
Multi SSID	Several service sets per radio in AP mode.
WEP 64/128	WEP 64 (40 Bit), WEP 128 (104 Bit)
WPA / WPA2	WPA Enterprise Mode; WPA PSK Mode; WPA2 Enterprise Mode; WPA2 PSK Mode
Channels	13 channels (Europe) / 11 channels (USA)
Transmission Capacity	max. 100 mW (20 dBm) eirp.
Receiver Sensitivity IEEE802.11b	11 Mbps:-82 dBm; 5,5 Mbps: -87 dBm; 2 Mbps: -91 dBm; 1 Mbps: -94 dBm
Receiver Sensitivity IEEE802.11g	54 Mbps:-65 dBm; 48 Mbps:-66 dBm; 36 Mbps:-70 dBm; 24 Mbps:-74 dBm; 18 Mbps:-77 dBm; 12 Mbps:-79 dBm; 9 Mbps:-81 dBm; 11 Mbps:-80 dBm; 5,5 Mbps: -83 dBm; 2 Mbps: -84 dBm; 1 Mbps: -87 dBm

**DSL Interface**

Feature	Description
ADSL	G.dmt over analog lines (ITU G.992.1 Annex A, POTS), G.Lite (ITU G.922.2)
ADSL2 / ADSL2+	with downloads up to 12 / 24 Mbps
High-speed Internet	PPPoA (RFC 2364) and PPPoE (RFC 2516)
ATM	AAL5 as Layer 1 protocol, PVCs, RFC 1483 encapsulation (LLC- or VC-multiplexed), support for at least two simultaneous services, 5 or more simultaneous VC connections
ATM	Support of several VPI/VCI, line monitoring facilities through OAM F4/F5 protocol elements
ATM - VBR3	available

**ISDN Interface**

Feature	Description
ISDN protocols	Euro-ISDN and other national ISDN protocols
B-channel protocols	Excellent interoperability with other manufacturers (Raw HDLC, CISCO HDLC, X.75)
PPP, ML-PPP	(See Software)
CAPI	CAPI 2.0 with CAPI user concept (password requested for CAPI use) permits direct access to services such as fax and e-mail
Bit rate adaptation	V.110 (1,200 up to 38,400 bps), V.120 up to 57,600 kbps (HSCSD) for connection to GSM subscribers
Automatic backup	Backup of the connection in case of failure of the ADSL line, including re-establishment of the VPN tunnels

**Maintenance and Service**

Feature	Description
SNMP	Complete management with MIB-II, Enterprise MIB, inclusive SNMP management software for Windows (DIME Tools and Browser)
SSH login	Secure connections for terminal applications
Trace / debugging / monitoring	Ethernet traces
DHCP	Server and client for simplified configuration for TCP/IP
Setup Tool	Integrated, menu-based, intuitive setup program, standard for the whole bintec product portfolio
HTML Setup Tool	HTML interface accessible through a Java Script enabled browser
HTML Wizard	Browser-based configuration assistant
XADMIN	Roll out tool for larger router installations (IP+ISDN)
Documentation	Complete toolset and documentation on CD
Guarantee	2-year manufacturer's guarantee

**Security**

<b>Feature</b>	<b>Description</b>
NAT/PAT	Network & Port Address Translation / Stateful Packet Inspection: Isolation of complete network from public access
Access lists	Filtering of IP packets according to different criteria (source, destination, port and interface)
Stateful Inspection Firewall	filtering with monitoring and interpretation of the status of the individual connections
RADIUS	Central check of access authorization at a RADIUS server (PPP and Login Authentication)
TACACS+	Support of TACACS a security application that provides centralized validation of users
Content filtering	30 day evaluation licence
VLAN	Network nodes in different network segments behave like a arbitrary group connected to the same network segment
VPN - IPSec	Inclusive, with a max. of 2 simultaneous tunnels
VPN - IPSec	Powerful encryption up to 256 bits (AES, 3DES, DES, CAST, Blowfish, Twofish)
VPN - IPSec	Callback: Transmission of dynamic IP address in D or B channel; free-of-charge licence necessary
VPN-IPSec DPD	Dead Peer Detection for IPSec tunnel
DynDNS / DynVPN	Router can still be reached over the Internet in spite of dyn. IP address
IKE for IPSec	Pre-Shared Keys and X.509 certificate support
X.509	X.509 v1/v3 certificates (PKCS#7/8/10, 12, CLRs, SCEP)
QoS for IPSec	Available
PKI Support for IPSec	Available
NAT Traversal for IPSec	Available
IPCOMP	IP Compression
IPSec / RADIUS	Available
IPSec Redesign	Policy manager and interface concept
L2TP	layer 2 tunneling protocol for ATM, Ethernet, PPP; user authenticatio

## Software Features

Feature	Description
TCP/IP routing	Routing information updating and distribution, static or dynamic (RIP v1/v2/triggered, RFC 2091), selectable for each interface, ProxyARP, BOOTP/DHCP forwarding
Extended IP routing	Dependent on source/destination port, source IP address, TOS ..., i.e. policy-based routing
Application Level Gateway	configurable as SIP and MGCP proxy
IP load balancing	Bandwidth management
PPP	Authentication mechanisms (PAP, CHAP, MS-CHAP, MS-CHAP v2), standard PPP, dynamic IP address assignment (server and client mode)
PPPoE	Point-to-Point Protocol over Ethernet (Client and Server) for high-speed Internet access over ADSL (RFC 2516)
LAN user - ISDN WAN partner	Max. 5 WAN and 10 LAN partners (recommended)
Dyn. IP addresses	Simple Internet access without fixed IP addresses
DynDNS	Router can still be reached over the Internet in spite of dyn. IP address
Artem Access Point Discovery	detection of configured and unconfigured Artem Access Points in the LAN
IP accounting	Source, destination, port, interface, packets/bytes counter
Event Scheduler	Budgets based on data volume or based on time
Connection time out	Short hold enables automatic call clearing

## Hardware Features

Feature	Description
Processor / memory	TI Processor, 4 MB Flash, 16 MB RAM
ADSL	RJ11 port for connections to splitter
ADSL chipset	Texas Instruments chipset for ADSL modulation
LAN	Autosensing 10/100 Mbps Ethernet twisted pair
4-port switch	4-port autosensing 10/100 Mbps Ethernet switch
WLAN	Internal radio modul, 2,4 GHz Band, 2 external antennas (Antenna Diversity for 802.11b)
ISDN	1 x BRI, 2 B-channels
Console	Serial console port
Power supply	External AC/DC converter 12 V 800 mA
Status LEDs	Power, Status, 4 x 10/100 BT, WAN
Housing	Metal housing
Fanless design	Long lifetime
Dimensions	189,2 mm x 27 mm x 123,1 mm (W x H x D)
Weight	Approx. 550 g