

PERSONAL COMPUTER WORLD

Reviewed VOICE OVER IP ROUTERS

Six devices on test that let you use
VoIP with your phone handset



Intertex Data AB
Rissneleden 45
SE-174 44 Sundbyberg
Sweden
Phone: +46 8 6282828
Email: info@intertex.se
www.intertex.se

The Americas:
Intertex
12 Federal
Dennis, Massachusetts 02638
United States
Phone: (508) 385-6335
www.intertexdata.com

intertex

NOT THE ORIGINAL COVER

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This subscription lets you locate and call other SIP users as well as make and receive calls via the public phone network, with a choice of 0870 or 0845 numbers for incoming PSTN calls, if required. Registration via the Internet is straightforward and you get £2 of calling credit to get you started.

We were able to get both routers up and running and making VoIP calls in a matter of minutes, both to other SIP users and out to the public phone network. Call quality in both instances was excellent using the default codecs. The 2600VG supports more options here, allowing further scope for fine-tuning. For cable users there's the Vigor 2100V, which is much like the 2500V but with a second Ethernet port for connection to a cable modem rather than the built-in ADSL interface.

Both Vigor routers have features to recommend them and with good support from manufacturer and distributor they're well worth looking at.

Intertex IX66+ ADSL Airlip GW

The smallest of all the routers here, the IX66 from Intertex, is one of the longest established and is big on functionality. When it comes to VoIP, the IX66+ has more to offer than most of its rivals.

To start with you can attach an ordinary phone or headset to make and receive SIP calls, just as with the others. In addition the IX66+ has a built-in SIP server, making it possible to host your own domain and employ custom SIP addresses rather than subscribe to a public service.

The SIP server can also be used by other VoIP users with the hardware and is able to handle up to 15 simultaneous calls from a mix of softphones and IP phone hardware. By installing optional SIP Switch software (£330 ex VAT), the router can act as a small-business PBX (private branch exchange), to route outbound calls to the PSTN, forward incoming calls to local extension numbers, provide voicemail services and so on; a remarkable option on a device of this type and price.

One downside to all this functionality is a more complex management interface. However, Intertex has made its web GUI understandable and initial deployment was no harder than any of the others. All the cables and adapters needed to get started are inside the box, including a useful headset.

The router specification is pretty good too, with a built-in firewall, Nat, UPnP and Dynamic DNS support. A VPN server upgrade is another optional extra, plus you can add wireless connectivity by plugging a suitable adapter into the SD slot.

We used the IX66+ to make and receive calls with both the built-in SIP server and via Freeworld Dialup with impressive results. However, the IX66+ doesn't come with a

subscription to any particular SIP service, although resellers do provide such bundles along with help on setup and other support services.

Zoom Zoomtel X5v

The Zoomtel X5v is a complete package for consumers and teleworkers looking for single-line VoIP capabilities. The Zoom router can be connected to either a single PC using the built-in USB port or to a network via the integrated four-port 10/100 Ethernet switch. Cables for both are supplied along with an RJ-11 lead for an ADSL connection, plus a converter to attach an ordinary telephone handset to the second RJ-11 port. This port also features passive pass-through to the phone line involved, allowing emergency calls in the event of a power failure.

Setup was no problem at all. Point a browser at the default IP address and all you need is a username and password to connect to your ISP and, in our case, the static IP address assigned to the broadband link. Some users may then have to tweak the firewall to, for example, support a local mail server, but for most everything is taken care of, including the SIP phone service.

This is all thanks to Zoom's own SIP service Global Village (www.globalvillage.com), which the X5v is preconfigured to use. All a new user has to do is create an account to match the pre-assigned SIP phone number by clicking a link in the management GUI and filling in the on-screen forms.

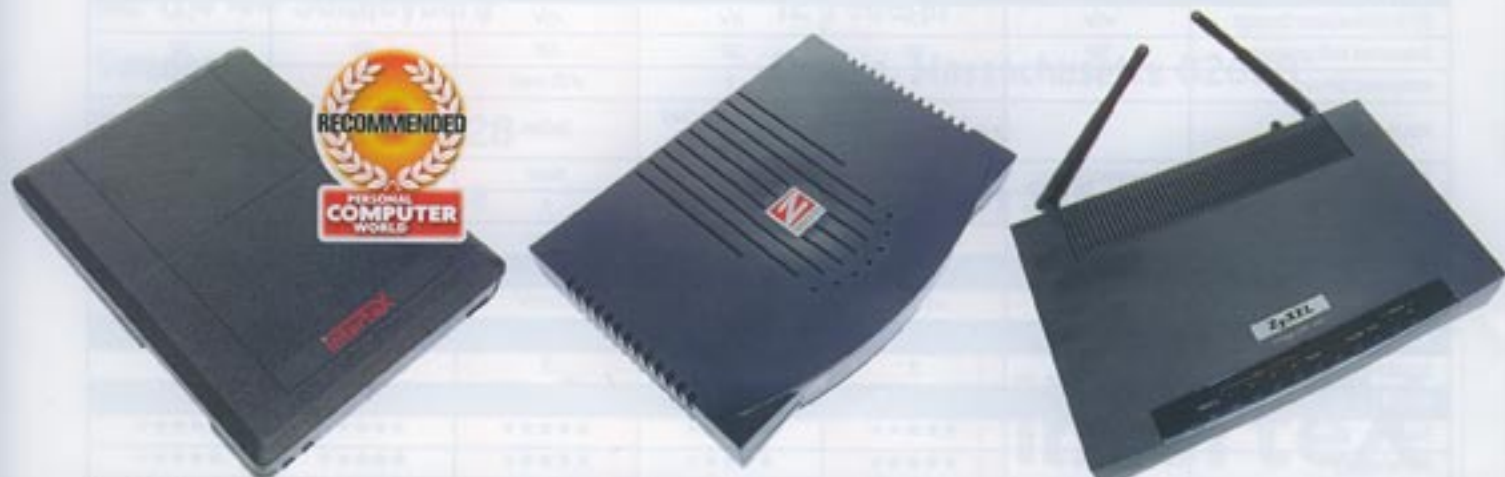
Calls to other SIP subscribers are then free (even those subscribing to other SIP services) with 10 minutes of credit for PSTN calls included as part of the package. Voice quality is on a par with ordinary phone calls with support for both G.711 and G.729 codecs.

Compared to some other services, however, functionality is a little disappointing, as is the lack of support for either UPnP or Dynamic DNS services. Configuring the router to work with other VoIP services could be a problem, but overall the Zoom X5v impressed as a good solution for the home user looking for no-fuss VoIP connectivity.

Zyxel Prestige 2602HWL

Like other members of its popular Prestige ADSL router family, Zyxel's 2602HWL is a robust device with both an integrated four-port Ethernet switch and a 54Mbps/sec wireless interface as standard. The Zyxel router also has a VPN server capable of handling up to 20 simultaneous IPsec (IP security protocol) remote access tunnels and, on the VoIP front, a pair of ports into which ordinary telephone handsets can be plugged to make and receive SIP calls.

As well as direct dialling of IP addresses, each port can be assigned its own SIP number or a single number used on both. You also get emergency lifeline facilities plus the ability to choose between IP calls and dialling over the PSTN connection. However, there's no built-in SIP server and no PBX



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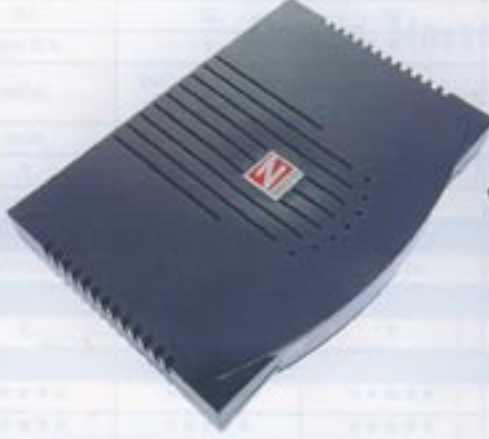
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facilities like those available on the Intertex IX66+.

The management GUI employed by Zyxel isn't as intuitive as some, but it gets the job done and is easy to navigate once you get used to it. There's also a wizard to take you through the initial setup of both the router and the SIP functionality. On the downside there's no bundled subscription to a public SIP service, as with the Draytek and Zoom products, although such services can be subscribed to independently. Indeed we used Freeworld Dialup (www.freeworlddialup.com) for our tests and were able to configure the Prestige 2602HWL for use with this with very little difficulty.

Neither did we have any qualms about call quality with a

choice of G.711 and G.729 codecs, both of which gave excellent results. The necessary adapters to allow phones to plug into the RJ-11 ports are also included in the box along with an ADSL microfilter and a cable for use with the local management port.

Prestige routers are popular with service providers that may well bundle a SIP service with the product and Zyxel too is looking to add this option.

Our verdict

Although a well-established technology in the world of big business, VoIP, and SIP in particular, are recent innovations for home and small-business use. Despite this, there are already several VoIP-enabled routers available to

address this market, with more expected in the next few months from the likes of D-Link and Netgear.

Of the six we looked at for this round-up the Draytek and Zoom products were the easiest to configure and use, largely because the vendors included a subscription to their own public gateway service as part of the deal. This is all most home users need and, of the two, the Draytek Vigor 2500V is the one we'd recommend since, although slightly more expensive than the Zoomtel X5v, the latter lacks Dynamic DNS and UPnP support; important for broadband services with dynamically assigned IP addresses.

On the downside you only get basic firewall facilities with these consumer-oriented

products and, for a small business needing VPN support, the Draytek Vigor 2600VG or Zyxel Prestige 2602HWL are better choices. Both also have wireless facilities and support for two SIP users although the Vigor once again has the edge in terms of its bundled Draytel subscription.

For the ultimate in small-business routers, however, the Intertex IX66+ is hard to beat. It may not come with a bundled gateway but it does have its own SIP server and optional software to create your own mini switchboard using VoIP technology. We've given a Recommended award to the Intertex IX66+ router, for small businesses looking for multi-user VoIP support.

Alan Stevens

MANUFACTURER	BILLION	DRAYTEK	DRAYTEK	INTERTEX	ZOOM	ZYXEL
MODEL NAME	7100SV	VIGOR 2500V	VIGOR 2600VG	IX66+ ADSL AIRSIP GW	ZOOMTEL X5V	PRESTIGE 2602HWL
Price inc VAT (ex VAT)	£94.99 (£80.50)	£139.83 (£119)	£290.33 (£179)	£269.08 (£229)	£99.99 (£85.09)	£217.38 (£185)
Supplier	Solwise	SEG Communications	SEG Communications	Intertex	Zoom	Zyxel UK
Telephone	0845 458 4558	020 8381 5500	020 8381 5500	+46 8 628 28 28	01276 704 400	08702 909 090
URL	www.solwise.co.uk	www.draytek.co.uk	www.draytek.co.uk	www.intertexdata.com	www.zoom.com	www.zyxel.co.uk
PHYSICAL SPECIFICATIONS						
Integrated ADSL modem	✓	✓	✓	✓	✓	✓
Ethernet ports	1 x 10/100	4 x 10/100	4 x 10/100	1 x 10/100	4 x 10/100	4 x 10/100
Wireless Ethernet support	✗	✗	Integrated 802.11g	Optional (CF card)	✗	Integrated 802.11g
FXS (phone) ports	1	1	2	1	1	2
Phone adapter included	✓	✓	✓	✓	✓	✗
Other	N/A	N/A	USB port	USB port	USB port	Console port
ROUTER OPTIONS						
Nat/Firewall/Port forwarding	✓/✓/✓	✓/✓/✓	✓/✓/✓	✓/✓/✓	✓/✓/✓	✓/✓/✓
DHCP/VPN (number of tunnels)/Print server	✓/✗/✗	✓/✗/✗	✓/✓(16)/✓	✓/optional/✗	✓/✗/✗	✓/✓(20)/✗
UPnP compliance/Dynamic DNS support	✓/✓	✓/✓	✓/✓	✓/✓	✗/✗	✓/✓
VOIP OPTIONS						
PSTN lifeline/pass-through	✓/✓	✓/✓	✗/✓	✓/✓	✓/✓	✓/✓
Supported VoIP protocol	SIP	SIP	SIP	SIP	SIP	SIP
Integrated SIP server	✗	✗	✗	✓ (5 user)	✗	✗
PBX facilities	✗	✗	Between attached phones	Option	✗	✗
Default SIP registrar	Freeworld Dialup	Draytel	Draytel	None	Globalvillage	None
Preconfigured PSTN gateway	✗	✓	✓	✗	✓	✗
PSTN credit included	None	£2	£2	None	10 mins	None
CODECS SUPPORTED						
G.711/G.723/G.726/G.729	✓/✗/✗/✓	✓/✗/✗/✓	✓/✓/✓/✓	✓/✗/✗/✓	✓/✗/✗/✓	✓/option/option/✓
SERVICE AND SUPPORT						
Standard warranty (years)	1	3	3	2	2	2
SCORES						
Features	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Performance	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Value for money	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
Overall	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★