

WIRELESS
IP CAMERA
SHOOTOUT

MULTI-TEST

CONSUMER ELECTRONICS



Big Brother Is Watching

FOUR WIRELESS VGA IP CAMERAS COMPARED!

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Design & Setup

AZTECH WIPC401

The WIPC401 sports a 340° pan coverage and a 100° tilt coverage. A single antenna for Wi-Fi is used, and it's affixed between the Fast Ethernet port and power jack at the back. In addition to the status indicator and ambient light sensor, eight infrared LEDs that activate automatically for night vision neatly surround the F2.0-3.6 lens, giving the camera a high-tech look. While there's an I/O port at the back of the circular base for connecting to an external alarm, glaringly missing is a WPS (Wi-Fi Protected Setup) button.

As with most IP cameras, we plugged the WIPC401 to our router using an Ethernet cable and installed the bundled software. The latter is a simple application for finding the camera on the network, and serves as the gateway to the camera's web interface. To rid the Ethernet cable, we first proceeded to the Quick Setup tab to enter our Wi-Fi credentials. You can also configure DDNS settings under the Network tab; either the manufacturer's DDNS or a third-party DDNS service can be used. Expectedly, features like motion detection, email notification, and sending of video snapshots to an FTP server are supported.

RESOLUTION
640X480

WI-FI
802.11b/g/n

PAN/TILT
340°/100°

PRICE
\$199

COMPRESSION
MJPEG



D-LINK DCS-932L

The DCS-932L is small and lightweight, weighing 100g with the stand, and 77g without. A fixed IP camera, you adjust the camera angle using the ball joint of the stand. The four IR LEDs enables night time viewing of up to 5m. If your router supports WPS, you can connect the camera to your encrypted wireless network with just a couple of button-presses. Otherwise, you've to enter the SSID and Wi-Fi password manually in the installation wizard. To access live video feed over the Internet via mydlink.com – be it on your computer or mobile devices – requires a mydlink account. If you don't have one, signup can be done right in the wizard.

After the installation, advanced users might want to seek out the web-based configuration utility. In the Video section, you can configure parameters like JPEG quality, video resolution, and frame rate. Recording can be triggered when motion is detected, with images sent to your e-mail or FTP server. Alternatively, you can use the bundled D-ViewCam software to remotely view and manage up to 32 cameras, as well as to perform advanced tasks such as snapshot taking, record scheduling and storage management.

RESOLUTION
640X480

WI-FI
802.11b/g/n

PAN/TILT
None

PRICE
\$159

COMPRESSION
MJPEG



YOU DON'T NEED TO BE THE SECURITY EXPERT TO KNOW WHAT MAKES A GOOD IP CAMERA. LET US TELL YOU THESE CAMERAS' HITS AND MISSES.

PROLINK PIC1003WP

With its space-helmet-like chassis, the PIC1003WP couldn't look more different than the other IP cameras featured here. It comes with both Fast Ethernet and Wi-Fi support, though the latter is limited to 802.11g. While it lacks IR LEDs for night vision, low-light sensitivity is quoted at an impressive 0.2 lux. We're glad to see a digital I/O port for alarm detection and triggering. The camera has a built-in microphone so that you can hear what's going on around it, but there's no audio-out jack for connecting to an external speaker. Another nice addition is the microSD slot, which allows you to save videos to.

To see the live video feed, simply launch the LiveView software and double-click on the camera's ID. To get to the web configuration page, right click on the ID and select 'Web configure'. Online viewing was a breeze to setup; the player is located at www.fida.com/online.html. iOS and Android users would be better served by using the free mLiveView app available in the respective app stores. Overall, the PIC1003WP has a pretty straightforward setup process; it'd be even better if it supports WPS.

RESOLUTION
640X480

WI-FI
802.11b/g

PAN/TILT
130°/90°

PRICE
\$259

COMPRESSION
MPEG-4



TRENDNET TV-IP422WN

The TV-IP422WN has its lens housing perched on top of a base that houses the motor; this allows the camera to pan side-to-side 360°, and tilt up and down 105°. To make it faster to turn the lens to a desired spot, up to eight position presets can be assigned. Connection-wise, you've the usual suspects: Ethernet, GPIO, antenna, power, and audio-out. Surrounding the F1.8 lens is a light sensor and seven 940nm infrared LEDs, which Trendnet claims work up to a distance of 5m.

Even if you plan on using the camera wirelessly, we found it easier to configure the camera for the first time from a wired connection. You can use the bundled IPSetup utility to find the IP address assigned to the camera, and to launch the browser-based configuration page; the latter is where you'll see the live video feed and gain access to the camera's advanced settings. As the TV-IP422WN supports various network protocols, you can get notifications over HTTP during a motion or GPIO trigger, upload images to an FTP server, send them to an email, or even store them on a network drive or USB device.

RESOLUTION
640X480

WI-FI
802.11b/g/n

PAN/TILT
360°/105°

PRICE
\$249

COMPRESSION
MPEG-4/MJPEG



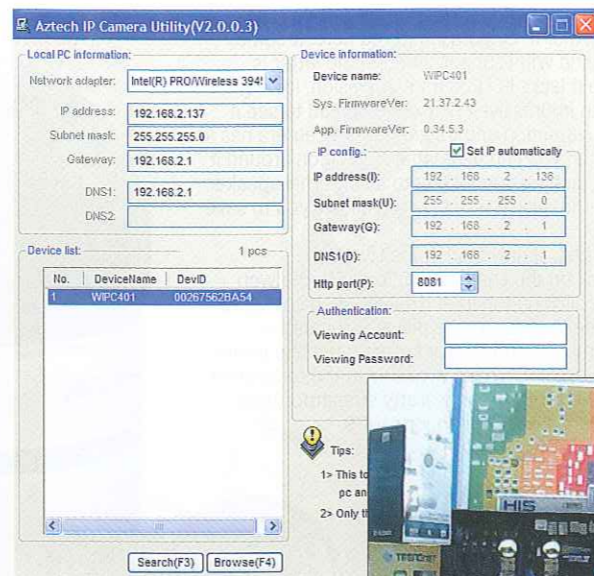
WIRELESS
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Performance

AZTECH WIPC401

Under the tab called 'View' of the web interface is where the action lies. Up to nine cameras can be monitored, and you can arrange them in a 2x2 grid or 3x3 grid. If you do go the multi-cam route, it's best to install the aptly named Multiple Device Monitoring System software. You can also use it to go about configuring your alarm, record, and scheduling settings. To access the camera on a mobile device, all you need is a web browser. But you've to ensure that port forwarding and DDNS settings are properly entered. This may frustrate users who don't have the necessary IT chops.

The WIPC401 has a maximum video resolution of 640x480, and MJPEG is the only compression it allows. Though the camera supports the wireless N standard, with a top bitrate of 5Mbps, there's no hurry to upgrade your 802.11g router. 30fps is the highest frame rate supported, but it can go all the way down to 1 frame per five seconds. We found image quality to be very decent under favorable lighting. What impressed us the most was how smoothly the camera adjusted the gain to bring out the details of a backlit subject.



Use the Aztech IP Camera Utility to find your device and launch the web interface.

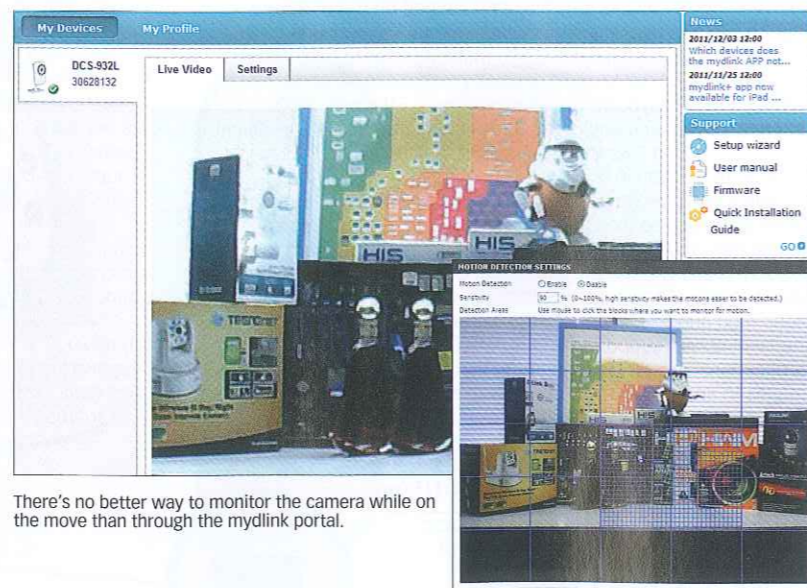
Despite the strong backlight, the camera managed exposure well.



D-LINK DCS-932L

After signing into the mydlink portal, you can see the live image feed under the Live Video tab. If your PC is on the same local network as the camera, the video will be shown at its top VGA (640x480) resolution; otherwise, you'll see a QVGA (320x240) stream. Up to 10 users can connect to the camera simultaneously. But here's a caveat: If your router isn't UPnP-enabled, only three users may view the feed at the same time remotely, and there will be a 60-second limit. If you've an iPhone or Android mobile device, we suggest downloading the free mydlink Lite app for surveillance on the move.

Image quality at 640x480 and 20fps was good, but not spectacular; only 320x240 and 160x120 resolutions allow you to set a 30fps frame rate. For the most part, the automatic white balance worked well. Images turned out evenly exposed most of the time too. Apart from having slightly more flickering, the stream on mydlink didn't look too far off from what we saw over a local network. The camera will switch between day and night modes automatically; when the IR LEDs are activated, you'll get black and white images instead.



There's no better way to monitor the camera while on the move than through the mydlink portal.

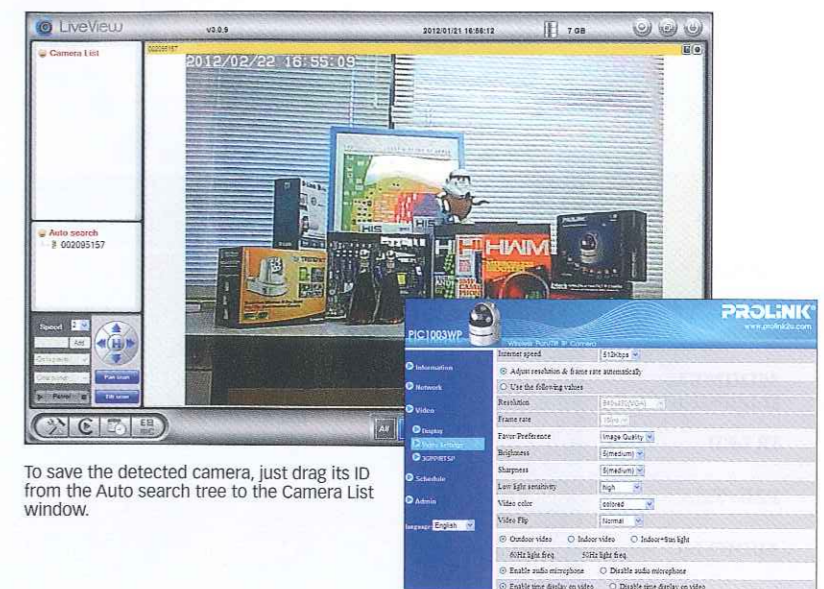
Just click on the blocks to select the areas you'd like to monitor for motion.

AN IP CAMERA CHOKED FULL OF FEATURES ISN'T ANY GOOD IF YOU CAN'T FIND THEM. HERE, WE SHARE WITH YOU OUR EXPERIENCES.

PROLINK PIC1003WP

The PIC1003WP is touted to be a true plug-and-play IP camera; that is, it requires little to no network settings fiddling. For the most part, that is true, as we found that we didn't have to mess around with port forwarding, UPnP or DDNS settings in order to see the camera remotely over the Internet. One gripe we've though is its reliance on ActiveX. In other words, you've no other choice but to use Internet Explorer. Thankfully, there's a workaround, and that's to make use of RTSP streaming.

As with the other cameras here, the maximum resolution it supports is 640x480. The frame rate can be set from 1 to 30fps. The more bandwidth-friendly MPEG-4 compression is used. In addition to the LiveView software that lets you view up to 36 cameras, there's a LivePlay software for playing back your recordings and snapshots. You can even convert the videos to the AVI format. Performance-wise, we especially like the lens' wide viewing angle (60.3°). While the camera doesn't come with IR LEDs for night vision, we found low-light performance to be still good. In the settings, you can adjust the sensitivity in three levels: normal, high, or very high.



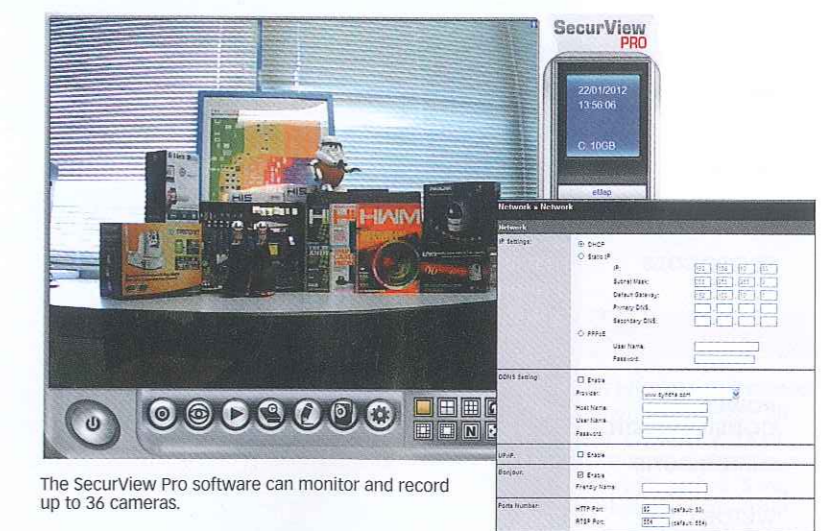
To save the detected camera, just drag its ID from the Auto search tree to the Camera List window.

Overall, Prolink has the least complicated web configuration interface.

TRENDNET TV-IP422WN

While MJPEG gives a higher image quality, MPEG-4 may be a better choice in a wireless deployment since it uses less bandwidth. For surveillance on-the-go, the camera supports 3GPP (with and without audio); in other words, you can see a real-time video stream on if your mobile device also supports 3GPP and RTSP playback. SecurView Pro is another piece of software that comes free in the box, which you can use it to monitor up to 36 cameras. Sporting a prettier interface than the web tool, you can also use it to configure settings like recording schedules and event triggers.

The TV-IP422WN's resolution and frame rate max out at VGA quality and 30fps respectively. Images looked clear most of the time, but if you aren't satisfied, a few image parameters like brightness, contrast, and saturation are in the Video/Audio menu. If the image looked soft, try turning the lens to adjust the focus. While you can zoom in digitally up to 3x, be prepared for pixelation mayhem. For iOS or Android users, there's a free SecurView Mobile app for viewing the video on your mobile device. Don't download the ProViewer app though, that's for Trendnet's ProViewer camera series.



The SecurView Pro software can monitor and record up to 36 cameras.

The camera supports a host of protocols, including DDNS, Samba, UPnP, and Bonjour.

Specifications

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MODEL	Aztech WIPC401	D-Link DCS-932L	ProLink PIC1003WP	Trendnet TV-IP422WN
SENSOR	300K-pixel CMOS	1/5" CMOS	1/4" CMOS	1/4" CMOS
LENS	3.6mm, F2.0	5.01mm, F2.8	3.2mm, F2.0	4.0mm, F1.8
MINIMUM ILLUMINATION	0 lux with IR LED	1 lux at F2.8, 0 lux with IR LED	0.2 lux	0 lux with IR LED
IR LED	Yes (850nm)	Yes	No	Yes (940nm)
PAN/TILT	340° / 100°	N/A	+65 to -65° / +90 to 0°	+165 to -165° / +90 to -15°
AUDIO I/O	Built-in mic, Audio-out	Built-in mic	Built-in mic	Built-in mic, Audio-out
VIDEO COMPRESSION	MJPEG	MJPEG	MPEG-4	MPEG-4 / MJPEG
RESOLUTION	640x480, 320x240, 160x120	640x480, 320x240, 160x120	640x480, 320x240, 160x120	640x480, 320x240, 160x120
FRAME RATE	1fps to 30fps	Up to 30fps (20fps for VGA)	1 to 30fps	1 to 30fps
ETHERNET	10/100Mbps	10/100Mbps	10/100Mbps	10/100Mbps
WIRELESS	802.11b/g/n	802.11b/g/n	802.11b/g	802.11b/g/n
WPS BUTTON	No	Yes	No	Yes
WIRELESS SECURITY	WEP, WPA/WPA2	WEP, WPA/WPA2	WEP, WPA/WPA2-PSK	WEP, WPA/WPA2-PSK
OTHER INTERFACES	I/O port	N/A	Digital I/O, microSD slot	GPIO, USB port
PROTOCOLS	TCP/IP, UDP/IP, HTTP, SMTP, FTP, DHCP, DDNS, UPnP, NTP, PPPoE	IPv4, ARP, TCP, UDP, ICMP, DHCP, NTP, DNS, DDNS, SMTP, FTP, HTTP, PPPoE, UPnP port forwarding, LLTD	IPv4, HTTP, TCP, ICMP, RTSP, RTP, UDP, RTCP, SMTP, SNTP, FTP, DHCP, ARP, DNS, PPPoE	TCP/IP, UDP, ICMP, DHCP, NTP, DNS, DDNS, SMTP, FTP, HTTP, Samba, PPPoE, UPnP, Bonjour, RTP, RTSP, RTCP
POWER CONSUMPTION	<6W	2W (max)	<8W	10W (max)
DIMENSIONS	108x109x131mm	65.8x65x126mm	120x91x84mm	115x110x105mm
WEIGHT	298g	100g	350g	360g
PRICE	\$199	\$159	\$259	\$249



And the Best Wireless IP Camera Is...

With a maximum resolution of 640x480, these cameras are best suited for monitoring an overview of a particular scene. Nevertheless, with all of them costing less than \$300 and packing advanced features like motion detection and alarm notification, they are attractive options if you want to keep an eye on your kids, pets, home, or office.

TRENDNET TV-IP422WN

▶▶▶ Night vision, audio-out, MPEG-4 and MJPEG compression, 802.11n Wi-Fi, WPS button, DDNS support, 3GPP support, GPIO port, a mobile app – anything that you can think of for IP cameras at this price range, the TV-IP422WN probably has it. Trendnet has also done a good job with both the web configuration page and its SecurView Pro surveillance software. Versus the mostly plug-and-play PIC1003WP from ProLink, the TV-IP422WN edges out credit to its slightly better image scores. All things considered, the Trendnet TV-IP422WN gets our Best Performance award.

AZTECH WIPC401

▶▶▶ The WIPC401 gives you a pan and tilt wireless-N IP camera with night vision capabilities, and amenities such as an internal microphone, audio-out and I/O port. Its software's UI may not be the nicest-looking, but at least menus and settings are logically categorized and located at the right places. Sure, its feature-set isn't as comprehensive as what you'd get from Trendnet or ProLink's offerings, but the fact is, most of the important ones are present. If you see yourself as a technical user and wish to save some money, the WIPC401 at \$199 is quite a bargain. As such, we bestow it our Best Value award.