PRODUCTS

Hikvision Budget PTZ Delivers on Value Promise *By T. Riley Pierce*

BENCH TEST When I look around today's CCTV market I'm always amazed and amused by the number of manufacturers with IP-based cameras in their portfolio. As I've said before, the IP market has exploded the past decade and the growth is welcome. Most of these IP cameras are from well-established manufacturers with proven product track records. Others, well, let's just say we're sometimes not too sure who's making what and whether the quality will last long-term. Hikvision is one of the big market players with a wide variety of cameras and one day I was browsing its product line looking for an inexpensive pan/tilt/zoom (p/t/z) for a current project. Lo and behold, I found the DS-2DE4220W-AE; this camera fit the niche so we decided to get one for testing.

The Hikvision DS-2DE4220W-AE is a p/t/z camera in the company's Value Line. There are three variations; one for in-ceiling mounting, one for surface mounting and one for outdoor pendant/wall mounting. The p/t/z we received was the outdoor pendant model and, upon unpacking the unit, we were pleasantly surprised with its overall size. The assembly is a 4-inch dome and it ships in a sturdy box with foam inserts to protect it from the bouncers in the shipping department! Upon uncrating the unit, we found the usual quick start guide, software disc and a smaller quick user guide. The quick-start guide provides you with detailed setup and connection information for all three models, including wiring and network tips. The quick user guide is, well, to be honest, not much help. In fact, if you do decide to read it make sure you have a magnifying glass handy the print is as small as you'd find in a disclaimer! We also discovered the p/t/z ships with an inline PoE injector along with a specially designed installation collar. It's always nice to have a standalone PoE injector as you can use this for troubleshooting, but most of today's installations generally have a multiport PoE switch to provide both power and network connectivity, so this item could become a dust collector on a parts shelf.

Construction

The external housing is metal with a powder-coat cream finish and a heavy-duty polycarbonate clear dome. The unit is impact-rated IK8 on the international scale, giving it a respectable assurance against damage and vandalism. The housing is also rated IP66 for its resistance to moisture, dust and debris, which will provide great protection from the weather and elements. The unit, as previously noted, has a special collar that mates to the p/t/z assembly. This collar is threaded, but be advised it is made to European standards, so it will not be an easy fit to an old 1½-inch NPT threaded pipe if you are doing a retrofit. It takes a bit of doing but it can be done with the right adapter.

The umbilical cable for the p/t/z assembly is sealed through the top of the dome to prevent any water/dust from gaining access. This umbilical cord has five cables for making connections to the dome assembly: 24VAC power in, RJ45 network socket, analog BNC adapter, RS485 and alarm in/out connectors. Generally speaking, most installations will only need the RJ45 connection to get the p/t/z operational. If this is a retrofit and you are using an Ethernet-to-coax media converter then you may need to use the 24VAC connection as well. The other cables can present a problem and this will be addressed in the Setup and Testing section.

Features

The DS-2DE4220W-AE has a 1/2.8-inch progressive scan CMOS 2MP imager coupled to a 4.7mm to 94mm power zoom lens. The

Hikvision DS-2DE4220W-AE PTZ Network Camera

For testing purposes, the Hikvision camera was set up to cover a rural area. The images were sharp and the p/t/z functions smooth. The unit also performed well at night with only two low-voltage landscape lights.

optical range on the lens is from 1x to 20x and the unit will also go out 16x digitally for an overall rating of 320x. The p/t/z is a true 360° unit with a variable pan rate of 1° to 160° per second and variable tilt rate of 1° to 120°. The assembly has the standard accoutrement of dome actions, including 256 presets, eight patterns with embedded presets and preset freezing. We always like to see a p/t/z with this feature if the end user tends to use a bunch of presets in the dome. This helps eliminate extraneous images being recorded from one scene change to another.

The camera is equipped with a micro-SD slot that will accept up to 128GB card size to allow for file backups on the camera should there be a network hiccup or if there is a need for local storage as a precaution. The unit also comes with a flying lead attachment to let an installer use a handheld monitor to set up the general field of view during installation. This is nice and saves from trying to balance a laptop on top of that 24-foot ladder in the wind again.

The camera's system menu is quite extensive and is broken down into eight separate groups. The primary areas for most users (Network, Video/Audio and Image) are easy to work through and allow the user to set up the camera with relative ease. The sub-menus can get a bit more detailed but don't let these areas worry you — each section and subsection have help topics easily accessible on each page and the help topics can guide you through any questions.

As mentioned, the camera has an extensive menu and there are settings in the Event section and the Basic and Smart menus that could come in handy for those locations that require some video analytics from a camera. The Basic Event menu has settings for motion detection, video tampering and such while the Smart Event tab gives you options of audio exception, intrusion detection and line-crossing detection. As always these will be useful if a p/t/z is usually monitoring an overall shot of an area or if the camera is set to monitor presets over a long period of time.

Setup and Testing

Out of the box and connected to the camera to perform the initial setup for the unit took about 30 seconds — just long enough for

the PoE switch to power the camera up, spin around and allow me to log in to 192.168.1.64, Hikvision's default IP address on all its cameras. If you are bringing a large group of cameras online you can use the SADP software to facilitate assigning static IPs to the cameras in the field without having to assign IPs ahead of time.

We decided to mount the camera in an existing outdoor p/t/z location to mimic what any installer would go through when performing a camera installation. As noted we had to get an adapter to use our existing 1½-inch setup but this wasn't difficult. Once the adapter was in place installing the p/t/z assembly was a breeze; you just pop it in, give it a twist and then

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fix two set screws to secure the housing. The p/t/z also has a security cable included to provide that extra measure of protection should the housing accidently come loose. For the network connection, we only had to use the RJ45 socket for the installation as we had a PoE switch with sufficient power driving the Cat-5e cable to the camera.

It was during this part of the installation that we ran into a bit of a problem — the existing pipe connection really didn't have the space inside the LB box to comfortably house the camera's umbilical cord. We had to (gently) force the umbilical cord inside the 1½-inch pipe to get all of the wiring properly protected. Once we had done this we were able to secure the cover on the LB box, but we were worried that we might have damaged some of the wires during my tuck process. Luckily, we found out everything worked just fine so we dodged a bullet on that aspect of

the installation.

We proceeded to set the camera up in my test server's VMS to test its image quality. With the DS-2DE4220W-AE set up to cover a rural setting, the images were sharp and the p/t/z functions were smooth through the process. During the testing we noticed the assembly didn't seem to tilt up as far as our old IP p/t/z so we decided to dig around in the camera menu to see if there was some setting blocking its movement. We discovered the factory setting has the dome limited to +5° to 90° on the tilt function. We changed it to 0° to 90° and were able to get the dome to move upward a bit more, but we noticed there was some distortion around the top edge of the dome.

Further research revealed the dome has a bit of a distortion area at the very top edge of the polycarbonate bubble; this is why the dome is limited to +5° tilt at the factory. While you can zoom out past the distortion it is inevitably noticeable in the viewing. We realize this p/t/z is a lower-cost model, but think the area of distortion in the bubble should be addressed down the road. You never know when that extra 5° of viewing will be critical.

Our nighttime experience with the DS-2DE4220W-AE was pretty good for a camera set up in a rural area — the only ambient light available in the field of view was from two low-voltage landscape lights. The nighttime photo on the previous page shows how the camera fared in the low light conditions, which considering the lighting available, was pretty good. We played with the camera's settings a bit to see what, if any, changes would improve the camera's low light image. After making changes and goofing up some of the settings we went back to the original configuration for the purposes of testing.

Conclusions

The DS-2DE4220W-AE is an exceptional camera with a wide array of menu options and functions quite well. The p/t/z is the perfect unit for those clients that want to upgrade their existing IP or analog p/t/z cameras and save money in the process.

VERDICT
FEATURES ★★★★★
CONSTRUCTION ★★★★★
SETUP ★★★★★
PERFORMANCE ★★★★★
OVERALL ★★★★★