During the first round, I tested the camera in my studio, primarily in manual mode, and then shot two concerts, a ballet, and several interviews. In lab resolution tests, using several test charts from DSC Labs, the XH A1 actually outperformed the XL H1 by a hair. Low-light tests were similar, but the XL2 clearly produced less noise than either camera under similar conditions.

One of the concerts was on New Year’s Eve, and it was an absolute contrast ratio torture test with men in black tuxes and white shirts, and the lead singer in black, all against a black background. Still, working in manual mode, the XH A1 produced absolutely stunning images, with good detail retained at both ends of the IRE scale—good color in between and great contrast between the various shades of black.

One major but infrequent caveat was that the camera lost focus for a moment or two, becoming noticeably blurry in the ballet footage. Interestingly, this occurred primarily at the point in the stage shown in Figure 1 on p. 18, both in dim and adequate lighting. Although I shot the ballet and both concerts using normal auto-focus (as opposed to Instant), neither concert revealed similar problems. Some random footage I took of the band during rehearsal did have this problem, however. Scanning the Web, I noticed two other reviewers reported a similar problem with the Instant AF that resolved in normal AF, which was different then my experience.

I sent some test footage to Canon that illustrated the problem, and we swapped camcorders. While I can’t duplicate the same test situation after the swap, some ad hoc testing in the lab with the second camera indicated that in low-light conditions, the XH A1 tends to lose auto-focus faster than other cameras I compared it to, including the XL2.

If you tend not to use auto-focus, this isn’t important, because the Canon XH A1 is otherwise exceptional. On the other hand, if you frequently shoot using auto-focus, particularly in low-light conditions (weddings or other similar events), this is a concern.

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Holophone H4 SuperMini

Easy-to-use mic captures 5.1 surround sound for any recording. REVIEWER: TOM PATRICK MCAULIFFE

Until now, there’s really been no easy way to get professional 5.1-channel audio onto tape as you shoot. For those who want to do high-end audio recording, there’s an alternative to recording six channels of audio as separate tracks on a multichannel disc recorder and then syncing and remixing it all in postproduction with an application such as Digidesign Pro Tools.

Toronto-based Holophone has the solution: the world’s first camera-mountable surround microphone, the H4 SuperMini. We’ve reviewed the Holophone H2-Pro before (see digitalcontentproducer.com/fieldprod/revfeat/video_holophone_h2pro), but that’s a much larger unit with a price tag to match. The H4 is more...
affordable and much smaller, aimed at shooters on the go, such as those doing ENG and documentary work.

At last year's NAB, I learned that the main output of the H4 SuperMini is 5.1-encoded audio, so everything is taken care of within the unit in realtime. My first impression was, "I'm sold." Of course, anything that seems too good to be true usually is. Is this mic the solid and simple answer to 5.1-channel audio capture that so many video pros have been seeking?

The basics

The Holophone H4 SuperMini looks weird—sort of like a box of pop tarts with a baseball on top—but it provides real-time capture and encoding of 5.1 surround sound's six channels: left, right, center, subwoofer, left rear, and right rear. The H4 does all encoding automatically and invisibly to the user. Whatever the unit "hears" in the various mics on its head is sent to the proper corresponding surround channel. Using the Dolby Pro Logic II (DPL II) format, the H4 surround feeds directly into any two-channel device playing back as stereo on non-surround systems. (It's also compatible with all other matrix-decoding formats such as DTS.) The Dolby Pro Logic II format is encoded directly onto the DV tape. In editing programs capable of handling DPL II audio (such as ProTools), the signal is unpacked and the editor can address all six channels individually. On DPL II-capable speaker systems, the listener can hear the surround sound. (I tested this on Logitech's Z-5450 5.1 surround sound speaker system; see p. 32 for my review.)

The mic head attaches to the encoding unit below, which is made out of solid metal, via a serial-like connector. The head has five microphone elements, each with a bandwidth of 20Hz to 20kHz. The mic elements are close together, but the capsules are very focused and have a narrow pickup pattern. This is how the H4 is able to make it seem that a sound is "traveling" from the left channel to the left rear, for instance.

When it comes to ins and outs, the H4 has just enough to make it useful. There's a matrix-encoded stereo L/R analog output and a surround-encoded headphone output with "Virtual Surround Monitoring," both via stereo 3.5mm female jacks. The six surround signals are discretely accessible via six line-level analog outputs—available at one per channel from three 1/8in. outs.

There's also a balanced three-prong out for inputting an external center mic, and the H4 supports 48V phantom power for higher-end mics. The ability to use an external mic combined with the unit's Zoom feature (which increases the forward bias of the microphone pickup pattern) makes the H4 SuperMini perfect for capturing the ambiance of a scene along with the words of your interview subject.

The rear of the unit has small LCD lights to indicate volume levels for all channels as well as for an external mic. Small rubberized knobs control mic gain and the volume for the phones. A handy power light is also there. Four AA batteries or a 6V DC power-supply option provide power.

The H4 comes with a rock-solid, shock-proof Pelican case and a one-year warranty on parts, and tech support is for the life of the product. Weighing in at a little more than 1lb., the H4 SuperMini packs a powerful technology punch but, would it be as easy to use as advertised?

Real-world tests

I used the H4 with Sony DCR-VX2000 and DCR-VX1000 DV cameras, and I also recorded audio only to a CD recorder. The self-contained mic/encoder unit attaches to the hot shoe of a video camera. (It can also sit upright on a flat surface.) Mounting the unit to the Sony cameras made them top-heavy, but not overly so.

I found the H4 SuperMini mic to be super-sensitive and easy to overload, so it was even more important than usual to use headphones to monitor the audio. To adjust the mic gain, I moved the knob so that the LCD would just blink.

The mic elements of the H4 are brutally honest and sensitive enough to pick up an ant walking across the studio floor. And there was no proximity effect with increased bass as you get closer to the mic. To correct this, I used an external mic—a Shure KSM44—and the H4 unit's Zoom feature to add about 6dB to the center channel. This combination provided a perfect balance for doing an interview in a crowded back-
Stage environment with lots of external conversation and noise. The voices of the subject and of the interviewer were set above or in front of the background din, perfectly capturing the environment. The sensitivity of the mic became a bit of a problem when it picked up some unwanted wind or AC noise, but I could deal with that in postproduction.

The H4 SuperMini also came in handy on a narrative project. As an actor walked into the frame from behind the camera, the audio of his footsteps went from the rear channels to the front and center ones. An actress whispered to the main character, and, although we don’t see her in the resulting footage, we know she is standing right behind him because her audio dialog comes through the right-rear channel. I recorded more than 10 hours of video and audio, and the Holophone H4 SuperMini performed flawlessly in all instances.

The H4 uses four AA batteries, which are rated to last up to five hours depending on usage and manufacturer. I got even better results, approaching seven hours. There’s a handy low-battery light that tells you if you are about to run out of power.

As I rolled to tape, the unit encoded 5.1 audio directly to my DV tape in realtime. The same went for my CD recorder. When I pulled the tape or CD out and put it into a surround sound playback system, I immediately enjoyed 5.1 audio. Once I got back to the edit suite, the footage was just like any other. When I made changes to the audio in stereo mode, they applied to the surround mix. If your audio application is surround-ready, you’ll see all six channels—otherwise, only stereo. After a little editing, some titles, and a rudimentary EQ, not only did the end video look good, but the 5.1 audio sounded great.

Holophone has made adding surround sound to your video projects foolproof. The Holophone H4 SuperMini is well-thought-out and solidly built, ready for years of abuse in the field as it easily captures and encodes 5.1 surround sound signals.

Focus Enhancements FS-4Pro HD

Portable direct-to-edit recorder bridges the gap between SD and HD.

REVIEWER: TOM PATRICK MCAULIFFE

Since 1997, Focus Enhancements has racked up a number of technological firsts. The company’s “direct to edit” (DTE) technology allows simultaneous recording to hard drive and tape, and near-instantaneous access to recorded clips once you’re in the edit suite. The company continues to lead the way with the new FS-4Pro HD recorder for tapeless digital recording in both SD and HD—in fact, the FS-4Pro HD could be the perfect bridge between the two. Whether you’re working in standard-def only or you’ve begun producing high-definition video, as long as you have an IEEE 1394 (FireWire) port, you are pretty much good to go.

When I received my review unit, I was immediately struck by two things: the size and

The Focus Enhancements FS-4Pro HD offers tapeless digital recording in both SD and HD.