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REVIEW: MARSHALL ELECTRONICS CV500 HD-SDI POV VIDEO CAMERA

Compared to the GoPro, this new POV camera from Marshall offers numerous advantages --- not the least of which is its size. It's a 1.5 inch cube.

By Jim Kumorek
January 11, 2016 1:11 pm EST

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It's becoming more common to hear of churches using GoPro-style POV cameras for getting close-up shots of musicians for IMAG and streaming purposes. They are unobtrusive, and can capture angles that a roving camera operator couldn't get without becoming a distraction. While an interesting idea, the GoPro isn't really designed for this purpose. A USB power supply needs to be connected, the

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connection to the power supply is not convenient when the camera is mounted, and the GoPro outputs HDMI—not the greatest signal source for a broadcast situation where the switcher may be hundreds of feet from the camera.

Marshall Electronics also thinks a POV camera can be a great asset, and the company proceeded to design three POV cameras: the CV350, CV342, and CV500. We're taking a look at the CV500.

Overview

The Marshall CV500 is a tiny camera with a fixed lens designed to interface with professional video systems. The camera has two video output BNC connections on the back of the camera: one for HD-SDI, and one for CVBS. What is CVBS, you might ask (so did I)? It stands for color, video, blanking and sync—or, basic composite video.

The camera is 1.5-inches tall and wide, and 1.4-inches deep, making this thing about as unobtrusive as you can get. Like consumer POV cameras, it's designed with essentially an infinite depth of field, so focus isn't something you worry about. I found this camera with its stock 3.7mm lens could focus clearly on anything beyond 14 inches.

All camera controls are via an on-screen display system and a small joystick located at the rear of the camera. There is also an RS-485 connector on the rear of the camera to allow connection to a Marshall remote camera controller.

While the camera has a wide variety of settings to adjust the camera's picture, I expect that most people will prefer to use automatic mode if their environment will allow for it. While the camera settings can be adjusted remotely from as far away as a kilometer using the RS-485 protocol remote-controller, it's still via the on-screen display menu system—it's not as quick or transparent as a camera control unit (CCU) system on standard professional cameras. I'm told that Marshall's new CV502 model releasing later this month will contain a Visca command structure where adjustments can be sent from a CCU controller without having the on-screen menu popping up on video feed.

Camera adjustments via the on-screen display system include shutter speed, exposure, gain control, backlight exposure compensation, white balance, noise reduction, sharpness, and resolution. These are all selected and adjusted using a tiny joystick on the back of the camera, or via an optional Marshall camera controller that connects via the RS-485 connection on the back of the camera.

The camera mounts from underneath with a standard tripod screw, making it compatible with any tripod or clamp system designed for a 1/4-20 screw. Marshall has a variety of spring and C clamps and articulating arms that would work perfectly with

> ## "IN MOST LIGHTING SITUATIONS, THE CAMERA DOES A VERY RESPECTABLE JOB OF GIVING YOU A PROFESSIONAL-QUALITY PICTURE."
>
> **JIM KUMOREK**
> Reviewer

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this camera to attach to mic stands, music stands, and instruments.

Hands-on

The CV500 was easy to set up, and by default came with most of its settings already in auto mode. This worked well for me in my test environment, giving sufficient exposure and picture quality in a less than ideal lighting situation.

Color looked very good; I lit my test scene with a Chroma-Q Studio Force Phosphor fixture, and the camera rendered colors quite naturally and nicely saturated.

In most lighting situations, the camera does a respectable job at giving you a professional-quality picture. With this type of camera, you're not going to get a shallow depth of field like you might from a normal broadcast camera. It is also not going to give you the crisp image of your expensive broadcast or cine cameras. However, it's a reasonable image for the types of shots you'd use this for—the close-up of the instrumentalist or singer. As long as you place the camera further way from the minimum focus distance for the lens, you'll get a nice, clean shot.

The stock lens is wide enough that some shape distortion around the edges is present, just as with most wide-angle lenses.

The HD-SDI output looked very good. I was not able to get a signal out of the CVBS jack that my monitor recognized, and while playing with the menus to see if there was a setting I needed to change, the joystick on the back of the camera snapped off. Not good. That ended my working with the camera settings. After checking with Marshall, secondary CVBS output will not stream video while camera is set to interlaced (1080i) —only when using progressive (1080p/720p) resolutions.

The CV500, at $599 MSRP, fills an interesting niche for churches, providing excellent quality POV shots with HD-SDI output at a small price. Marshall reports that they have never seen the joystick break before, so my review unit may be an anomaly with regards to that problem. Most likely you'll find a setting that works well for your situation and stick with it. And if it does break, the manufacturer offers a one-year limited warranty.

Its lightweight, small size would make it easy to mount anywhere while remaining almost invisible. You'll also probably want to look into a more lightweight cabling option to help with mounting and avoid the stiff co-ax you'd find in most local supply stores. Manufacturers such as Canare make excellent lightweight and flexible coax cable suitable for HD-SDI signals.
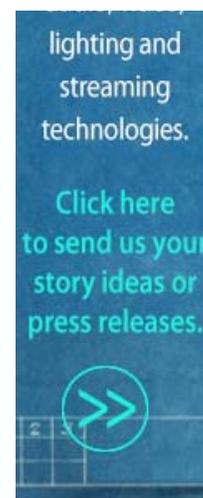
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