Enabling HD-SDI (BNC) Output on the Sony PMW-EX1 and the PMW-EX3

This wiki is designed to help you understand the recording functionality and versatility of the SONY PMW-EX1 and the SONY PMW-EX3.

The Technical Overview: the Sony EX cameras have a high-quality image sensor (3-chip 1/2-inch type Exmor Full HD CMOS) and they are designed to record this image to internal SxS cards (2 card slots) with a frame raster of up to 1920x1080 with the following supported frame rates: 59.94i(29.97i), 50i, 29.97P(30p), 25P, & 23.98P(23.976). When recording to the internal SxS card the video data is compressed using a high-end MPEG-2 HD (Long GOP, variable bit rate) encoder referred to as the XDCAM EX (with an overall data rate of 35Mbps) codec. The chroma subsampling ratio of the XDCAM EX codec is 8-Bit, YUV 4:2:0

The Problem: for general shooting purposes all of the above details are fine...a great image with robust colors and solid playback is achieved. However, for more complicated productions that include fast-moving shots or heavy visual effects postwork (like greenscreen chromakeying or intensive motion tracking) you may desire a less compressed video stream to prevent data loss or artifacting in your video

The Solution: the Sony EX cameras have an HD-SDI (Serial Digital Interface) BNC output to allow for the 10-bit 4:2:2 video stream to be captured as uncompressed (directly from the image sensor rather than compressed to the SxS cards) video

To setup the HD-SDI Output Signal review the following steps:

1. Access the VIDEO SET Icon from the Camera Menu. VIDEO SET options should now be listed on the LCD menu screen

2. Scroll to the option YPbPr/SDI Out Select. Select this option and from the secondary menu select HD. This enables the HD signal to be output of the SDI connector

3. Select EXECUTE to complete the HD selection for the SDI output

4. For educational purposes, instructors may want to send the SDI signal out to a classroom projector. The instructors often desire the menus they interact with in the view finder to be displayed out of the SDI signal as well. This helps demonstrate the menus, displays, and overall camera functionality. To enable this function, scroll down further in the VIDEO SET options and select the YPbPr/SDI Out Display Select option

5. From the secondary menu select the ON option. This will make the menu display (as seen in the view finder) also visible through the SDI connection
6. To record the uncompressed video stream connect the SDI output of the Sony EX camera to the SDI input of your external recording device via a BNC cable.

Currently, our qualified external recording devices include the AJA KiPro, the AJA KiPro Mini, and the Sound Devices PIX 240 series.

(Please refer to their specific documentation to learn more on their operation and setup)

- For more information on types of transportation for uncompressed video streams visit AJA HD-SDI Overview