HDV: Shoot, Index, Edit.

White Paper

Abstract

This paper introduces the new ASI-Bridge CAM from Miranda, an HDV-to-ASI converter that enables HDV to be transported over coax, fiber optics or transmitted via satellite uplink.

The paper first presents concrete applications of the ASI-Bridge CAM's possible uses. Next, it couples the ASI-Bridge CAM and Miranda's new HD-Bridge Dec+ featuring ASI input with Lanterna Magica's real-time indexing system "Reality" into a new HDV work-flow for the creation of unscripted shows such as news, sports events or reality TV.

Miranda

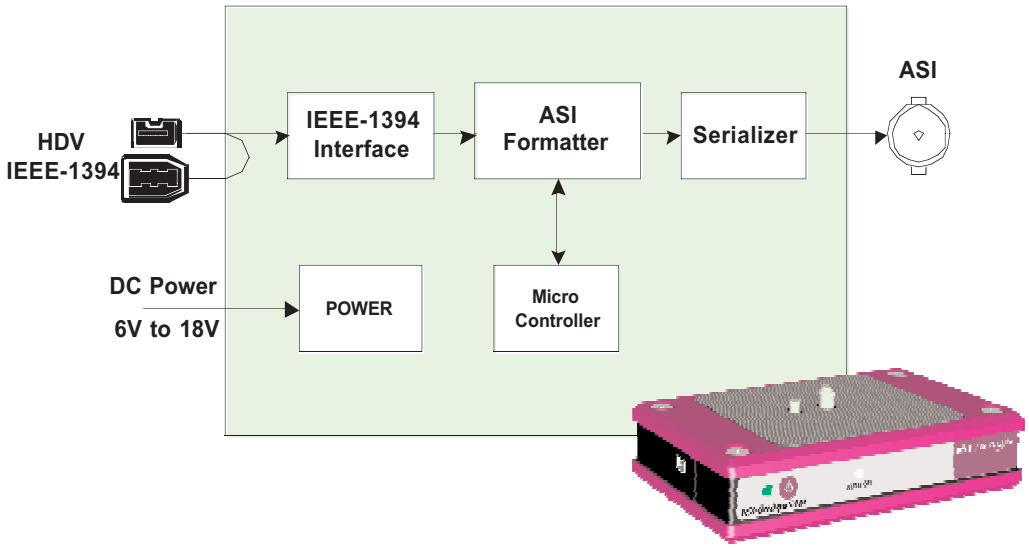
lanternamagica

The indexing and video logging specialist

The ASI-Bridge CAM

The ASI-Bridge CAM is a convenient camera-mounted HDV (MPEG-2 on IEEE-1394) to ASI (MPEG-2 on coax) converter. Given that the reach of cabling on IEEE-1394 is limited, this method of converting the HDV signal makes it possible to transport it over distances of up to 300 meters on coax, a few kilometers on optic fiber and even further via satellite uplink. Because the HDV camera uses a standard MPEG-2 format, the stream is ready for transmission or D-VHS recording. The ASI-Bridge CAM mounts discretely between the HDV camcorder and the tripod and can draw power from an inline power supply or camera batteries.

Camera-mounted ASI-Bridge CAM

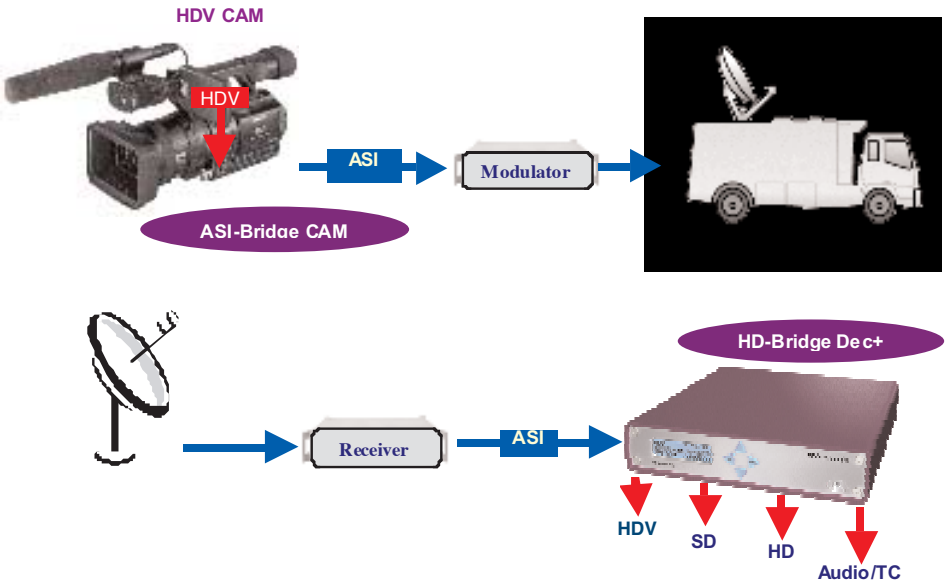


ASI-Bridge CAM block diagram

Typical Applications

HDV News Gathering

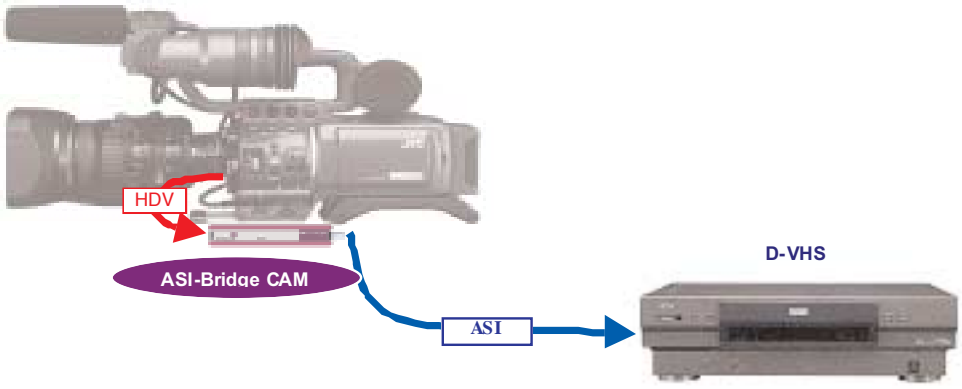
For news gathering, the HDV camera's MPEG-2 stream is passed through the ASI-Bridge CAM and is naturally preformatted for transmission. This is an extremely economical approach to producing HD.



Cost-effective news gathering

On-Set Dailies

Recording HDV directly to D-VHS for on-set review and dailies

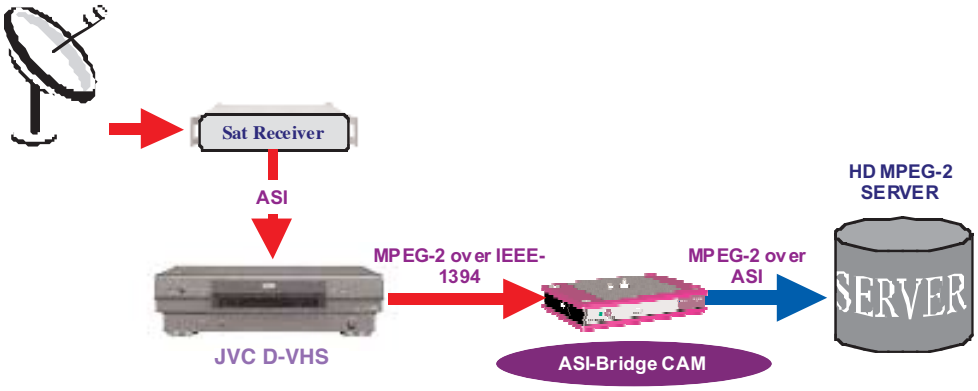


On-set dailies

Typical Applications

D-VHS to On-Air Video Server Transfer

In a broadcast environment, HD satellite feeds can be recorded on D-VHS and then transferred to the MPEG-2 broadcast server. In this scenario, the digital signal is transmitted end to end via ASI with no loss of quality. Note that the JVC D-VHS makes it possible to record directly through its ASI input. However, it does not have an ASI output, so an IEEE-1394 output is used and the signal is passed through the ASI-Bridge CAM to close the loop with the broadcast server. Because of its economical approach, this new workflow is very appealing to broadcasters who offer HD content and who have to balance budget constraints with image quality.



End-to-end signal transmission from HD satellite feed to HD MPEG-2 broadcast server

Real-Time Indexing and Show Building

Unscripted shows are characterized by short time-to-air; they have to be put together in a matter of hours. TV news shows are a good example of this. As news items come in from different sources, they have to be viewed, filtered, have portions of them selected and then be edited as quickly as possible. Reality TV has the same short time-to-air; to give viewers a real-time flavor, action is shot and raw footage has to be viewed, selected and edited in a matter of hours. Sports footage for post-game wrap-ups or for training for players and coaches follows the same short cycle.

Real-time Indexing

In this type of context, a real-time indexing tool coupled with a video search tool makes it possible to search, play, and browse video as soon as it is shot and off-line edit the show to create an edit decision list (EDL) that is ready to use in an on-line editing system. Reality makes this possible. Here's how Reality integrates into an HDV workflow.

Note: Readers who would like more information on real-time indexing for creating shows can refer to the white paper "Web-based Real-time Indexing" at **www.lanternamagica.com**.

Real-Time Indexing and Show Building

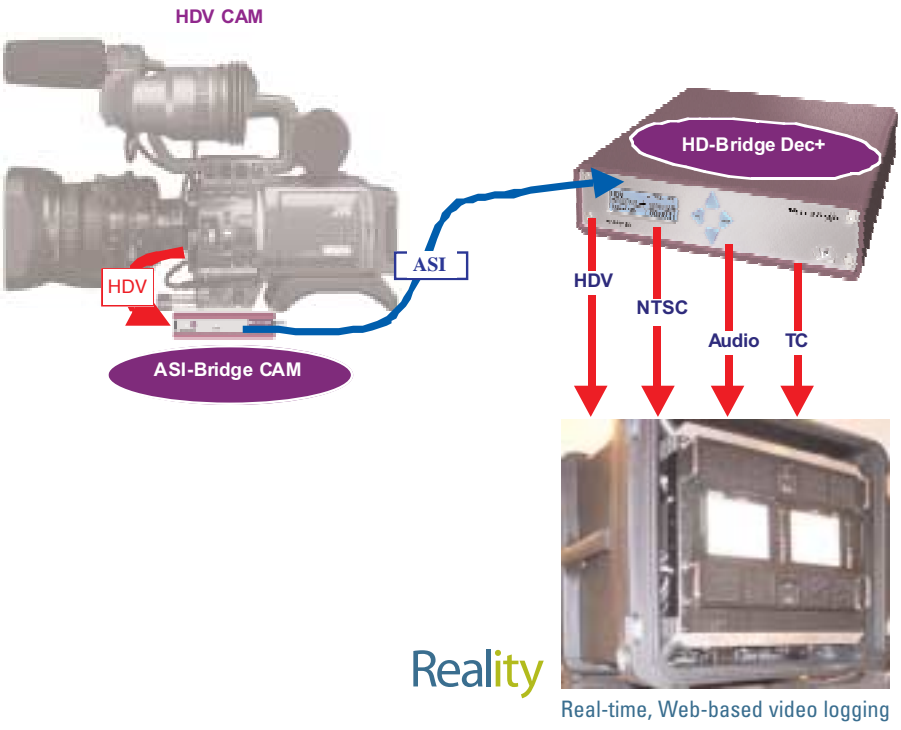
Compressed Video Capture for Off-Line Editing

The ASI-Bridge CAM converts HDV MPEG-2 IEEE-1394 to MPEG-2 ASI for transport over coax over long distances. This signal is converted to NTSC by the HD-Bridge Dec+ and fed to Reality, along with audio and time code signals. Reality's Logger makes it possible to manually enter natural language video content descriptions as the action occurs. All the while, Reality captures video, compresses it and stores the full index, which contains compressed video, time codes, and descriptions, on a video server. The video server is accessible using Reality's Web-based video search engine and story builder. Through this tool, the entire production staff, working remotely from a laptop, can search for specific clips, play, browse and start off-line editing, all with compressed video. The end result is an EDL that is ready to use in a non-linear editing system.

Real-time indexing thus makes it possible to create stories quickly. And compressed video lets staff play, transfer and manipulate video without any special software, simply from a laptop and a regular Web-browser.

Native HDV Storage for Final Editing

Reality is also fed an HDV (MPEG-2 IEEE-1394) signal from the HD-Bridge Dec+, which is stored on a HDV server as MPEG-2 T. The EDL created by Reality's story builder thus refers to video files and time codes directly on the HDV video disks. Editors can simply import HDV video to the NLE, dispensing with the need for capture.



HDV: Shoot, index, edit.

Conclusion

HDV is a cost-efficient way to shoot, transmit and produce quality shows. The ASI-Bridge CAM allows for transport over long distances in a format that is ready for transmission or D-VHS recording. Typical applications include news gathering, on-set dailies and end-to-end HD satellite transport to a broadcast server. Integrated into an HDV unscripted production workflow, where the Reality real-time indexing system and HD-Bridge converter come in to play, the ASI-Bridge CAM makes it possible to create stories quickly and import HDV (MPEG-2 transport) directly to an NLE, with no need for capture.

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Printed in Canada 02/06