

DIGITAL VIDEO RECORDING SYSTEM

The BAE Systems Digital Video Recording System (DVR) provides a fully integrated systems approach to multi-channel digital and analog video recording while providing real-time multicast of selected videos over an Ethernet based TSPI Network.

Four channels of digital video recording are provided at frame rates up to 510 fps with over 30 minutes of recording time. This is accomplished via remote or local control providing the ultimate in flexibility, mobility and capability. The DVR provides synchronization for all cameras and each frame is recorded with appropriate time and TSPI related data. The DVR is rack mounted and compatible with any pedestal where rack space is available.

EXAMPLE CAMERA SUITE CONFIGURATION

#	CAMERA INTERFACE	CAMERA COMPATIBILITY	# CAMERAS SUPPORTED	FUNCTIONS SUPPORTED
1	CAMERA LINK	MC1310 (MIKROTRON)	1 CAMERA	1 FUNCTION HIGH SPEED AND METRIC 1280X1000 @ 30-510 FPS MONOCHROME
2	NTSC ANALOG	NTSC/RS-170 (SELECTABLE)	1 CAMERA	1 FUNCTION TRACK @ 60 FIELDS/S MONOCHROME
3	CAMERA LINK	MC1302 (MIDROTRON)	1 CAMERA	1 FUNCTION ADDITIONAL METRIC 1280X1024 @ 30 FPS MONOCHROME
4	LVDS/HOTLINK	NIGHT CONQUEROR II (CMC)	1 CAMERA	1 FUNCTION IR 640 X 512 30 FPS MONOCHROME
5	NTSC	NIGHT CONQUEROR (CMC) VIDEO STREAM ONLY	1 CAMERA	1 FUNCTION 640 X 480 @ FPS AGC VIDEO
6	NTSC	VIDEO TRACKER VIDEO STREAM ONLY NO RECORDING	NO CAMERA VIDEO TRACKER	1 VIDEO WITH TV TRACKER SYNTHETIC DATA

KEY FEATURES

- 6 Channel input with Digital Video Recording of 4 of the 6 channels
- Any 2 of the 6 input channels can be video streamed (multi-cast) over the network
- Greater than thirty minutes of recording on all channels
- Remotely controlled via ethernet
- Flexible export software
- Removable hard drives for exported data
- Synchronization for all cameras
- Additional data recording information embedded in exported image
- Audio Recording
- Event Recording
- IRIG Time Synchronization
- Azimuth, Elevation, Range, Status

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INSPIRED WORK

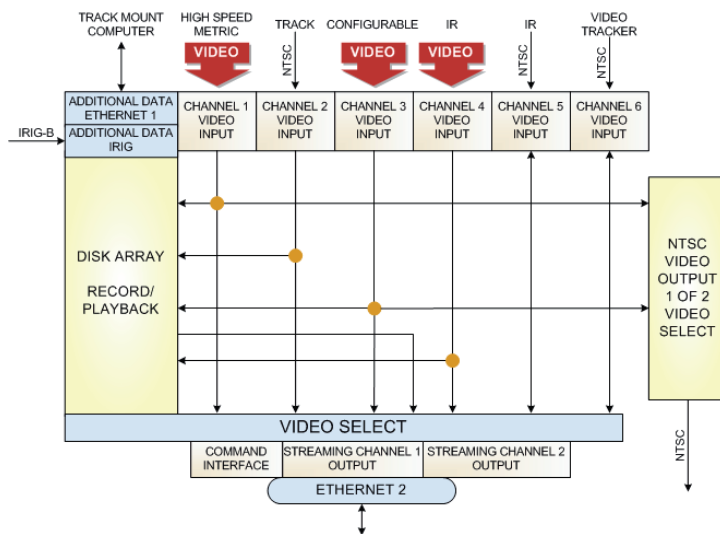
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At BAE Systems, Inc. in the United States, our employees design and deliver advanced defense, aerospace and security solutions that keep the nation at the forefront of modern technology. Our pride and dedication show in everything we do, from innovative electronic systems to intelligence analysis and cyber operations, from combat vehicles and weapons to the maintenance and modernization of ships, aircraft and critical infrastructure.

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TYPICAL SYSTEM CONFIGURATION



VIDEO RECORDING

The DVR records video from multiple cameras as commanded over the network via a remote control workstation. The DVR is capable of simultaneously recording up to four channels of video with the following performance:

CHANNEL	CAMERA	RESOLUTION (PIXELS)	TYPICAL FRAME RATE	SUSTAINED DATA RATE (MB/s) ¹	RECORDING CAPACITY (MINUTES) ²
1	MC1310	1280 X 1000	510	622.56	44
2	HITACHI	640 X 480	30	8.79	260
3	MC1302	1280 X 1000	30	36.62	63
4	I/R	640 X 480	30	18.4	132

¹At typical frame rate ² Estimated

Recording can be initiated or terminated on any channel independent of the current state of the other three channels.

LIVE VIDEO DISPLAY

The DVR also creates two IP multicast channels on the primary network. These channels broadcast live video to remote workstations. Any workstation on the network running appropriate software can receive live video on either or both channels. Each multicast channel broadcasts video from a single camera. Prior to transmission, the video is compressed using a Wavelet-based algorithm to maximize utilization of the available network bandwidth.

ANCILLARY DATA RECORDING

As well as video, the DVR records up to four channels of sound and a single channel of angle range and sensor data that is received on the secondary network interface. The sound data is received on the primary network interface from a remote workstation. All ancillary data is recorded in the Streams video library file and stored on the hard disk.

NETWORK CONTROL

Control of the DVR is via a Streams SDK application that receives commands from remote workstations and broadcasts status information. All control/status traffic uses the primary network interface.

PLAYBACK AND EXPORT

The DVR uses the two IP multicast channels to transmit recorded video on the primary network interface to remote workstations. Playback and record are mutually exclusive operations. Each multicast channel can transmit recorded video from a single camera.

Recorded data is exported to an “archive” video library that resides on a 4-drive SATA disk array designed to be the destination for all archive operations. Once archived, the SATA drives can be relocated to a remote workstation for analysis or further processing.