DVRS
DIGITAL VIDEO RECORDER SYSTEM

/// OVERVIEW

POC's Digital Video Recorder System (DVRS) is a crash survivable multi-functional unit that supports audio, video, and flight data recording.

POC has worked closely with the FAA to certify DVRS as a means to meet current Flight Data Recorder requirements. The DVRS has been designed and certified to EUROCAE ED-112 and RTCA DO-160E standards for both commercial and military aircraft requirements.

The DVRS can be configured as a stand alone flight recorder that contains a 32GB Crash Survivable Memory Unit (CSMU) or it can be integrated with the Cockpit Control Panel, Cockpit Video Cameras, Video Multiplexer, and Removable Memory Units (RMUs). The DVRS retains the most recent 32 hours of video and up to 100 hours of data and audio.

The DVRS supports a variety of I/O interfaces, including RS232, RS422, and MIL-STD-1553, along with a full range of analog and discrete inputs.

The DVRS is configured with an integral Underwater Locator Beacon (ULB) that is activated when submerged in water. The ULB is mounted to the DVRS to easily locate the CSMU.
The following images show DVRS’s capabilities to capture key instrument readings in cockpits of aircraft and rotorcraft. POC’s DVRS is already flying on platforms such as the CASA-235 and Sikorsky S-76C++.

/// FEATURES

MODES OF OPERATION
• Record audio, video, data, diagnostics, time synchronization
• Download recorded audio, video, data to Removable Memory Unit (RMU)
• Maintenance modes, on aircraft
• Perform bulk erase of recorded memory
• Initiate Built-In-Test (I-BIT)
• Playback of data

VIDEO INTERFACE
• Number of channels: 2 (up to 4 with Video Multiplexer)
• Analog input: 2 (NTSC/RS-170 standards)
• Video input voltage: 0.7 Vp-p
• Analog video sample clock: 13.5 MHz
• Number of pixel per sample: 16 bits (8 bits luminance and 8 bits chrominance)
• Compressed bit rate: 1 Mbps per channel
• Video compression ratio: 250:1 typical
• Number of frames: 5 frames per channel typical

AUDIO INTERFACE
• Number of channels: 4 mono or 2 stereo
• Input bandwidth: 20 Hz – 20 KHz
• Input resistance: 20 KΩ
• Signal-to-noise ratio of input: 74 dB
• Analog audio input level: max 3 Vp-p
• Analog audio sample rate: 16 KHz
• Compressed bit rate: 16 Kbps per channel

MIL-STD-1553A/B BUS
• Number of channels: 1 with redundancy
• Maximum data speed: 1 Mbps

DISCRETE SENSOR INPUT FOR SYSTEM CONTROL
• Number of channels: 4
• Input level: open or ground
• Sensor input interface: single ended

DISCRETE SENSOR OUTPUT FOR STATUS DISPLAY
• Number of channels: 2
• Output level: open or VCC
• Sensor output interface: single ended

POWER
• Input voltage: 20 V – 40 VDC
• Consumption: 36w max

MECHANICAL
• Length: 9.0 in. with ULB and bracket
• Width: 5.0 in.
• Height: 4.45 in.
• Weight: <9.9 lb with ULB and bracket

COMPLIANCE
• EUROCAE ED-112 Amendment 2
• JAR-OPS 3.715 Appendix 1
• FAA TSO-C176 (Recorder only; FAA reference 130L-10-259)
• ARINC 573-7/717
• RTCA DO-160D & E

DATA PLAYBACK SOFTWARE REQUIREMENTS
• PC with Microsoft Windows XP Pro Service Pack 2 or higher
• Hardware minimum specifications: 100 GB hard drive, Intel processor 1.6 GHz, system memory 1024 MB RAM, video memory 128 MB, video monitor 1024 x 768 pixels
• Software minimum specifications: DirectX 7.0, .NET Framework 3.5, Windows Media Player 9, Microsoft MFC Library 1.0
• Software includes MPEG-2 transcoding capability