ALL-S/TAR™ DVR (Digital Video Recorder)

**PRODUCT DESCRIPTION**
Specifically developed for Airborne Surveillance missions, the ALL-S/TAR™ DVR (Digital Video Recorder) supports video recording from a range of digital and analog high-definition and standard-definition input formats. High-resolution recording is achieved through low compression ratio MPEG-2 coding and striping data to up to 4 disks concurrently. Video is recorded on 4 HiPERDisk™/HiPERFlash™ Removable Media Modules (HRMM). The DVR’s simultaneous record and play, slow/still motion playback and JPEG-2000 export features support airborne image analysis and sharing with off-platform assets. Post mission, the HRMMs are removed from the DVR integrated chassis assembly and processed via a standard SATA (Serial ATA) interface at our companion HRMM Media Management Station (HMMS).

- Recording of eight independent video channels
- Superb image quality, 8-bit 4:2:2 sampling
- Industry Standard Interfaces and Protocols
- Low Cost of Ownership, No Preventive Maintenance

**FEATURES**
- **Video Recording**
  - High-Definition Video Inputs
    - Component RGB (SOG)
    - Digital SMPTE 292M/274M
  - Standard Definition Video Inputs
    - Composite SMPTE 170M
- **Simultaneous Record & Play**
  - Records 4 HD and 4 SD Channels
  - Plays 1 HD and 1 SD Channel
- **Flexible MPEG-2 Codecs**
  - Compression Ratios 5.5:1-50:1
- **Synchronized Metadata**
- **Ethernet SNMP Control**
- **Removable Media**
- **1920GB of Storage**
- **Time Stamping of Video**
- **Event Marking (Record/Play)**
- **NSA 9-12 Secure Erase (HiPERFlash™)**
- **Hot Swappable Media**
- **Slow Motion and Still Scan Play**
- **Export Selected Individual Video Frames** (JPEG-2000 via Ethernet)

**APPLICATIONS**
- **High-Resolution Sensor & Weapons Video Recorder**
- **Surveillance**
- **Search & Rescue**
- **Drug Interdiction**
- **Commercial Security Systems**

**PLATFORMS/SYSTEMS**
- **Fixed Wing**
- **Rotary**
- **Surface/Subsurface Vessels**

Broadcast Quality Video Recording for Airborne Sensors I Selected for US Navy P-8A Poseidon

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PHYSICAL CHARACTERISTICS

- **Volume:** 2.3 CuFt (3990 in³)
- **Size:** 10.5" H x 19" W x 20" D
  267 mm H x 483 mm W x 508 mm D
- **Weight:** 108 lbs;
  49.1 kgs (with removable media)
- **Power:** 115VAC; 47-400 Hz, 1 Ph 435 watts
- **Cooling:** Forced Air Convection (External)

PERFORMANCE CHARACTERISTICS

- **Storage Capacity:** 1920 Gbytes
- **Input Channels:**
  - RGB (SOG) Component: Expandable to 5 (2 typ)
  - EIA-170 Composite: Expandable to 20 (4 typ)
  - SMPTE 292 (digital HD): Expandable to 5 (2 typ)
- **Output Channels:**
  - RGB (SOG) Component: Expandable to 5 (1 typ)
  - EIA-170 Composite: Expandable to 5 (1 typ)
- **Total number of mixed input/output channels is design configuration constrained**
- **Control:** SNMP, Gigabit Ethernet
- **Time Reference:** IRIG-B
- **Image Distribution:** JPEG-2000 via Ethernet
- **Time Stamping/Search:** Yes
- **Simultaneous Record/Play:** Yes
- **MTBF (at 35°C):** 3,500 hrs

SPECIAL FEATURES

- **Multiple Frame Rates:** 23.98, 24, 25, 29.97, 30, 50, 59.94, 60, 60.6
- **Frame Sizes:** up to 1920 x 1080p (custom sizes permitted)
- **MPEG2 stream rates:** up to 140 MBits/sec
- **Chroma format:** 4:2:2
- **Group of Pictures (MPEG2):** 1(all I-frame) up to 63
- **Video Frame Format:** Progressive, Interlaced

ACCESSORIES

- HRMM Media Management Station (HMMS)
- Mounting Slides

ENVIRONMENTAL QUALIFICATIONS

<table>
<thead>
<tr>
<th></th>
<th>Operating</th>
<th>Non-operating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td>5°C to +35°C</td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td><strong>Humidity (non-condensing)</strong></td>
<td>6% to 95%</td>
<td>6% to 95%</td>
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<tr>
<td><strong>Shock (half-sine)</strong></td>
<td>10 G, 11 ms</td>
<td>10 G, 11 ms</td>
</tr>
<tr>
<td><strong>Vibration (random)</strong></td>
<td>0.9 Grms, 10 to 2000 Hz</td>
<td>2.1 Grms, 10 to 2000 Hz</td>
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DESIGN COMPLIANCE

- **EMI/EMC:** MIL-STD-461E
- **Power:** MIL-STD-704E
- **Environmental:** MIL-STD-810F
  - Altitude: Meth 500.4 Proc III
  - Rapid Decompression: Meth 500.4 Proc III
  - Random Vibration: Meth 514.5 Proc I
  - Acceleration: Meth 513.5 Proc II
  - Crash Safety: Meth 513.5 Proc III
  - Shock: Meth 516.5 Proc I
  - Bench Handling: Meth 516.5 Proc VI
  - Temperature: Meth 501.4 Proc I & II
  - Temperature Shock: Meth 503.4 Proc I
  - Explosive Atmosphere: Meth 511.4 Proc I
  - Humidity: Meth 507.4 Proc I
  - Fungus: Fungus Inert Material
  - Decontamination: No Damage

OPTIONS

- **Multiple IO Channels Mix:** Consult factory
- **MPEG-2 Compression:** Tailored to sensor video
- **Media:** Rotating Disk/Flash Disk

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