

ARCHITECT & ENGINEER SPECIFICATIONS
SECTION 16780
VIDEO SURVEILLANCE SYSTEMS

Model: HSR-1/1
Digital Surveillance Recorder

PART 2 PRODUCTS

2.01 CCTV DIGITAL TIME LAPSE VIDEO RECORDER SPECIFICATIONS

A. VIDEO – GENERAL REQUIREMENTS

1. The Digital Video Recorder (DVR) shall be a hybrid digital recorder employing a hard disk drive (HDD) as a buffer, and Digital Video (DV) tape as the archiving media.
2. The DVR shall feature a menu driven, on screen display for programming system functions and operating parameters.
3. Time/date shall be superimposed into each video input when recorded.
4. The DVR shall have On Screen display of DV mechanism hour usage.
5. The DVR shall have a built-in RS-232C port (DB-9) for control via an external device; i.e. PC.
6. The DVR shall have a freely configurable 37 pin (D-SUB) parallel input/output port for interfacing with external equipment.
7. External DV tape control and status shall be available via the 37 pin I/O connector.
8. The DVR shall be capable of functioning in time lapse mode, event, and event with pre-alarm or Hyper modes.
9. The DVR shall have capabilities for Series Recording. At two (2) minutes prior to tape end of the first unit, a series out signal shall be generated through the 37-pin parallel port connector and sent to the series input of a second DVR to start recording.
10. The DVR shall have the capability to start recording upon power initialization. Power On to Recording shall be no more than seven (7) seconds.
11. To protect against unauthorized use or accidental system changes, the unit shall employ a front panel Function Lock push button switch. This will disable the tape operation keys and the menu button. In this mode, operator shall only have access to screen display options.
12. The DVR shall employ 3 levels of password protection. Functions such as Play, REC, REW/FF, EJECT, Monitor assignment, and access to the Enhanced menu shall each be assigned a level by the user.
13. Only the level 3 password shall be capable of removing the Lock function of the DVR.
14. The DVR shall have a front panel accessible mini-jack to accept control-S signals to remote control the DV tape deck, and control the different multi-screen displays.

B. VIDEO - MULTIPLEXING REQUIREMENTS

1. The DVR shall provide duplex time division multiplex recording for up to 16 monochrome or color cameras.
2. The unit shall have a built-in four (4) camera input card and shall be field upgradeable to accept up to 16 camera inputs, by installing optional HSRA-11 input cards.
3. Each optional HSRA-11 card shall have four (4) camera input capability.
4. The DVR shall have two (2) video outputs, monitor output A and B, plus one (1) Y/C output. The Y/C output shall follow monitor A output.
5. Monitor output B shall be configurable to follow monitor output A, show a specific camera input, or sequence through available camera inputs or as alarming output.
6. Monitor output A shall be configurable to show multi-screen output, multi-screen sequence, or single camera sequence output.
7. The DVR shall provide the following Multi-screen viewing options:
 - a. Full Screen

- b. Quad
 - c. 6 Section Pattern
 - d. 7 Section Pattern
 - e. 8 Section Pattern
 - f. 9 Section Pattern
 - g. 10 Section Pattern
 - h. 13 Section Pattern
 - i. 16 Section Pattern
8. The operator shall be capable of independently selecting monitor and playback screen displays.
 9. The operator shall have the following viewing options:
 - a. Live Mode:
 - i. Any camera or sequence full screen
 - ii. Any camera to any section of multi-screen pattern
 - b. Playback Mode:
 - i. Any camera or sequence full screen
 - ii. Any camera to any section of multi-screen pattern
 - iii. Any live camera to any section of multi-screen pattern

C. DIGITAL RECORDING REQUIREMENTS

1. Data transfer from HDD to the DV shall be accomplished automatically in time-lapse mode without user intervention.
2. The recording system shall be digital component recording (4:1:1).
3. The standard archiving media shall be a 270-minute metal evaporated DV tape.
4. The tape mechanism shall accept both standard and mini DV cassette tapes.
5. The DVR shall have four (4) selectable record/playback quality levels labeled Super, High, Mid and Low.
6. The DVR shall also provide for Hyper Mode which records a full frame video upon trigger.
7. The DVR shall have five (5) independent record modes. Each record mode shall allow the user to freely configure the cameras to be recorded; the record quality, as well as the camera refresh cycle.
8. The DVR shall feature an automatic Record Check function, which automatically checks the integrity of the data transfer from HDD to DV such that if error is detected, unit shall automatically rewrite the data onto the DV media.
9. During record mode, should the DVR detect hard drive failure, it shall have the capability to directly write the data onto the DV media. Conversely, should the DV tape drive fail, recording shall continue on the HDD.
10. Data on the DV shall be watermarked, such that tampering with the data shall cause the DVR to display "Not Original" on screen, superimposed over the image, on still mode.
11. The DVR shall have the option to provide continuous recording to the HDD while the DV tape is being changed or during rewind operation when in auto repeat REC mode.

D. VIDEO – ELECTRICAL REQUIREMENTS

1. The input voltage shall be AC 120 volts, 60 Hz. Power consumption shall be 80 watts with standard factory configuration and 115 watts fully populated with HSRA-11 camera input cards.
2. The DVR shall have 24-hour power protection failure for settings, time/date and record modes.
3. The signal system shall be EIA/NTSC standard for color video signals.
4. The DVR shall produce a minimum of 500 horizontal lines resolution in Super mode, and 360 lines on High mode. Video capture resolutions shall be:
 - a. Super: 720 X 240
 - b. High: 360 X 240
 - c. Mid: 180 X 240
 - d. Low: 180 X 120
5. The maximum video capture speed shall be approximately 10 pictures per second per input card.

6. In the 24-hour record mode using a DV 270 minute tape, a fully configured unit shall have a refresh cycle of 1.46 seconds in Super mode, or 0.73 seconds in High mode .
7. The composite video inputs shall be 1.0-volt peak to peak @ 75 Ohms, unbalanced via BNC connector.
8. The composite video outputs shall be 1.0-volt peak to peak @ 75 Ohms, unbalanced via BNC connector.
9. The S-Video (Y/C) output shall be Y (Luminance) 1.0-volt peak to peak @ 75 Ohms, sync negative and C (Chrominance) 0.286 volt peak to peak @ 75 Ohms. The output connector shall be 4-Pin Mini-Din.
10. 75 Ohm video termination shall be accomplished on a per input basis, via externally accessible dipswitches.
11. The signal to noise ratio shall be more than 48 dB in all recording modes.
12. The fast forward/ rewind time with a DV 270 tape shall be less than three (3) minutes.

E. ALARM REQUIREMENTS

1. Alarm inputs shall be hardwired via the freely configurable 37-pin connector.
2. The alarm record mode shall be activated by external devices by an incoming H (5V) or L (0V) signal.
3. The alarm recording speed and quality shall be user selectable by assigning any one of the five record mode settings.
4. The alarm record duration shall be user selectable from 30 seconds to tape end.
5. Alarm recording shall be either for the alarmed camera(s) only for a specified duration and recording quality, or switch over to a different record mode (1-5) which shall allow for higher refresh, higher quality for all camera inputs.
6. Alarm outputs shall be individually configurable to output +5V, +12V or open collector.
7. The DVR shall have the capability to function as an event recorder, or event recording with pre-alarm. Pre-alarm shall be adjustable from 2 seconds to 10 minutes for each input.
8. The DVR shall have event and time/date search capabilities.

F. MECHANICAL REQUIREMENTS

1. For rack mount accessibility, the DVR shall feature front panel tape loading. The recorder dimensions shall be 14" x 5" x 16-1/4" (355 x 125 x 410mm) and weigh 22 lb. 1 oz. (10 kg).
2. The unit shall be capable of workstation surface mounting or EIA standard 19" rack mounting with optional rack mount assembly.

G. ENVIRONMENTAL REQUIREMENTS

1. The operating temperature shall be 41degrees F to 104 degrees F (5 degrees C to +40 degrees C). Operating humidity shall be less than 80 percent, non-condensing.
2. The recorder shall be suitable for indoor applications. Proper ventilation and filtering shall be required to maintain operating temperature and air quality when mounted in equipment cabinets or other confined areas.

H. ACCESSORIES

1. Supplied:
 - a. DV270MEM2 tape x 1
 - b. AC power cord x 1
 - c. Operation manual x 1
 - d. 37 pin connector x 1
 (For I/O port)
2. Optional
 - a. MB-HSR1 19" Rack Mount Kit – 2 rack units high (5.25")
 - b. MB-LOOP16 16 looping video inputs, 19" rack mounting
 - c. DV-270MEM2 270-min. Standard DV metal evaporated tape
 - d. SVRM-100A Wired Control S Jog/Shuttle remote
 - e. HSRA-11 Input board – 4 camera inputs

