

A & E Mobile DVR Specifications

DVR SYSTEMS Mobile Digital Video Recording System

The Mobile Digital Video System is a video and audio capture/ storage/ transmission system. This unit shall be referred to as the DVR (Digital Video Recorder).

1. Description of the Mobile DVR

- 1.1. The system shall be designed to specification in; digital video image capture, storage, retrieval, and transmission.
 - 1.1.1. It shall operate at 12V DC with 2 amp (can range from 7v-28v DC).
 - 1.1.2. It shall be protected inside a rugged outer housing providing both shock and vibration protection.
 - 1.1.3. It shall have a 2.5 inch hard drive with a minimum of 20 GB but up to 100 GB of fixed disk storage.
 - 1.1.4. It shall have a compact flash slot for the use of software upgrade, settings download, and video off load.
 - 1.1.5. It shall have MPEG 4 compression.
 - 1.1.6. The DVR shall have 2 video outputs; one for security viewing the other for advertising.
 - 1.1.7. A series of events shall cause the advertisement to change, not limited to the following:
 - 1.1.7.1.1. Time
 - 1.1.7.1.2. Global position
 - 1.1.8. It shall be fully programmable by control panel or IR remote
 - 1.1.9. A docking station shall be used to add or remove data.
 - 1.1.10. It shall provide viewable live video and audio.
 - 1.1.11. It shall have wireless cellular compatibility via an optional cellular link.
 - 1.2. The DVR is FCC and CE certified.
 - 1.2.1. It shall have a MIL-SPEC rating of MIL-STD 810F 1.3.
It shall run on an Embedded Linux operating system.
 - 1.3.1. It shall have an on board, real time clock that adjusts for daylight savings time
 - 1.3.2. It shall have NTP and GPS time sync.
 - 1.3.3. The DVR shall have a battery-backup memory that stores the time, date, and all internal programming functions.
 - 1.3.4. It shall prevent unauthorized program tampering through the use of a programming lockout feature.
- 1.4. The DVR design with mounting brackets shall weigh no more than 6 lbs.
 - 1.4.1. The outer dimensions shall be 7.1" (W) x 1.8" (H) x 6.9" (d).
 - 1.5. The DVR shall support any combination of up to 4 video inputs in monochrome or color.
 - 1.5.1. The DVR shall support audio recording with the following capabilities:

- 1.5.1.1. Audio recording is up to four- channel.
- 1.5.1.2. Audio shall be synchronized with the video.
- 1.5.1.3. The DVR shall record each camera as an individual file and not record the quad screen.
- 1.5.1.4. A 12v DC connection on the audio connector shall support the use of powered microphones.
- 1.6. The DVR shall be GPS compatible.
 - 1.6.1. The DVR shall be able to show time and global position in live view and/or review of data.
 - 1.6.2. The DVR shall save GPS data in metadata (MXF) format.
- 1.7. The DVR shall be compatible with a variety of cameras.
 - 1.7.1. The cameras shall be contained within a tamper-resistant housing and screws of the following types:
 - 1.7.1.1. Surface mounted or flush mounted
 - 1.7.1.2. Angled or square flush- mounted
 - 1.7.1.3. Die-cast aluminum (interior/ exterior)
 - 1.7.2. The cameras shall be available in monochrome or color.
 - 1.7.3. The cameras shall be available with the following lens options:
 - 1.7.3.1. 2.9mm
 - 1.7.3.2. 4.0mm
 - 1.7.3.3. 6.0mm
 - 1.7.3.4. Vari Focal Auto Iris 4mm to 9mm
 - 1.7.3.5. The DVR shall accept any cameras 1- volt peak to peak signal.
- 1.8. The DVR shall have an available optional impact sensor, specifically designed for the system, and will include:
 - 1.8.1. The impact sensor shall responds to changes in acceleration on both its X and Y axes.
 - 1.8.2. The impact sensor shall provide a cable adapted for the DVR.
 - 1.8.3. The impact sensor shall adapt to a flat-surface mounting (best if on the frame of the vehicle), in order to minimize vibration.
 - 1.8.4. The impact sensor is calibrated to close a circuit at approximately 4 g's.
- 1.9. The DVR shall have an available option of remote video transmission system which will support:
 - 1.9.1. A cellular telephone transmission system consisting of:
 - 1.9.1.1. Integrated CDMA/ GPRS / EDGE connectivity.
 - 1.9.2. Integrated WiFi (802.11x)
 - 1.9.3. Transmission of images from the DVR to a central monitoring station upon alarm condition.
 - 1.9.4. Bi-directional transmission shall be supported, meaning:
 - 1.9.4.1. The central station operator (or authorized remote user) may call up a DVR and request images at any time.
- 1.10. The DVR has an available keypad, to be used in configuration of the unit.
- 2. The DVR has the following operational features:**
 - 2.1. The DVR shall support the following recording characteristics:
 - 2.1.1. The DVR shall begin image capture at the start-up of the vehicle.

- 2.1.2. The DVR shall continue to function for up to 12 hours 59 minutes after the ignition has been turned off. This shall be user-selectable.
- 2.1.3. The DVR shall record video on an internal hard disk drive. No videotape or videotape recorder shall be used. At a minimum, the DVR shall support a hard disk size of 20 GB.
- 2.1.4. The DVR shall be able to use a compact flash card for optional back-up purposes.
- 2.1.5. The DVR shall digitally capture and store images and corresponding vehicle information.
 - 2.1.5.1. Time and date stamp
 - 2.1.5.2. All alarm or external data shall be recorded in metadata (MXF) format.
 - 2.1.5.3. Vehicle identification number
- 2.1.6. Recording rate shall be user-selectable
- 2.1.7. The DVR shall have various user-selectable image quality (resolution) settings, to include the following:
 - 2.1.7.1. Level 1-8
 - 2.1.7.2. Super 1 and Super 2
- 2.1.8. The DVR shall recognize when the available storage capacity is full and it will automatically begin to purge the oldest data in sequential fashion, making room for additional images without operator intervention.
- 2.1.9. The DVR shall support tagging of images or events on metadata (MXF) format.
 - 2.1.9.1. An image or series of images shall be created as an event file when images are recorded due to alarm activation.
 - 2.1.9.2. It shall be possible to permanently protect images so they will never be erased.
- 2.2. The DVR shall have optional transmission capabilities:
 - 2.2.1. The DVR shall support transmissions being activated by any one of the following occurrences:
 - 2.2.1.1. The central station or other authorized remote user initiating a call to the DVR on a specific vehicle and requesting current images, previously recorded images, or specific DVR system log information.
 - 2.2.2. The DVR shall support a user-programmable pre-alarm recording buffer of up to 15 seconds and does append this buffer at the beginning of all recorded events.
 - 2.2.3. The user shall be able to play back images smoothly at normal or fast speeds, and in forward or reverse modes, without distortion.
 - 2.2.4. The unit shall provide full media search capabilities for archiving, restoring and playback operations, including but not limited to:
 - 2.2.4.1. Start/stop time filters
 - 2.2.4.2. Start/ stop date filters
 - 2.2.4.3. Alarm occurrences
 - 2.2.4.4. Camera number
- 2.3. The DVR shall support the following central station capabilities:

- 2.3.1. The DVR shall support an optional cellular modem link to a central station.
- 2.3.2. At a minimum, the operator shall be able to do the following with the images transmitted to the central station for viewing:
 - 2.3.2.1. View the images
 - 2.3.2.2. Manipulate (enhance) the images
 - 2.3.2.3. Store the images
 - 2.3.2.4. Cause the DVR to continue recording images.
- 2.3.3. The captured digital images shall be stored as color or monochrome files with a resolution of up to HD1= 352x480 pixels or CIF= 352x288.
- 2.3.4. Captured images can be downloaded from the DVR onto a computer with compatible software.
 - 2.3.4.1. Images from the DVR can be viewed on a monitor and/or transferred to long-term storage, including but not limited to the following:
 - 2.3.4.1.1. Recordable CD's and/or DVD's
 - 2.3.4.1.2. Jump Drives
 - 2.3.4.1.3. Floppy disks
 - 2.3.4.1.4. Email
- 2.4. The DVR shall support the following programming capabilities:
 - 2.4.1. Display options
 - 2.4.1.1. Camera titling of up to 8 characters
 - 2.4.1.2. Time/date formatting
 - 2.4.2. The DVR shall provide image update rates for live and record modes of up to thirty pictures per second.
 - 2.4.3. The DVR shall have an optional built in heater that has a programmable start time.
- 2.5. The DVR shall support the following alarming capabilities:
 - 2.5.1. The DVR allows for eight 5v inputs, which can be defined as either triggers or alarms.
- 2.6. The DVR shall support the following Ethernet communications:
 - 2.6.1. The DVR does not stop recording during any Ethernet access.
 - 2.6.2. The DVR allows the user full programming of 100 base T Ethernet parameters, including:
 - 2.6.2.1. IP address
 - 2.6.2.2. Default gateway
 - 2.6.2.3. Sub-net mask
 - 2.6.2.4. NTP server
 - 2.6.3. The DVR shall provide optional remote playback and viewing software which shall support Windows 2000/ XP operating systems and full searching capabilities.
- 3. The DVR shall have the following additional specifications:**
 - 3.1. The DVR shall support audio recording with the following capabilities:
 - 3.1.1. Audio recording up to four- channel.
 - 3.1.2. Audio synchronized with the video.
 - 3.1.3. A 12v DC connection on the audio connector shall support the use of powered microphones.

- 3.2. The DVR shall support the following connections:
 - 3.2.1. The DVR shall have USB 2.0 for File transformation.
 - 3.2.2. The DVR shall have 10/100 RJ45 Ethernet
 - 3.2.3. The DVR shall have 4-RS232 for other sensor connections.
- 3.3. The DVR shall incorporate the following electrical specifications:
 - 3.3.1. Input voltage: 12v DC 2amp (can range from 7v- 28v DC)
 - 3.3.2. Output voltage: 12v DC
 - 3.3.3. It shall be self-regulating and internally protected from power surges and spikes.
- 3.4. The DVR shall incorporate the following mechanical specifications:
 - 3.4.1. Size: Height 1.8", Width 7.1", and Diameter 6.9"
 - 3.4.2. Weight: 6 LB (with mounting brackets)
- 3.5. The DVR shall incorporate the following environmental specifications:
 - 3.5.1. Operating temperature: -20F to 140F
 - 3.5.2. Relative humidity: 85%