



## RoadRunner Mobile Digital Video Systems A&E Specifications, MR4 Series

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Version 1.92

### **A. Digital Video Recorder (DVR) System:**

1. The system hardware shall support simultaneous recording of a minimum of four (4) cameras.
2. The hardware shall support simultaneous recording of a minimum of two (2) independent audio channels.
3. Audio channels shall be capable of synchronizing to user-selectable cameras.
4. The DVR shall be ruggedized and secure with lockable recording media without the need of an additional enclosure.
5. The digital video recording system shall be capable of simultaneous recording and playback, allowing the user to review pre-recorded video without interruption of recording.
6. The system shall utilize a removable and lockable 3.5" hard disk drive to maximize storage capacity.
7. The system shall have a minimum recording and playback rate of 30 images per second per camera (120 images system-wide) and shall be capable of recording and playback of each individual camera up to 30 images per second without the use of a quad processor or multiplexer.
8. The system shall be made entirely of new materials and shall be engineered and constructed with rugged materials to protect the system from environmental elements including shock, dust and humidity.
9. The Digital Video Recorder shall be Mil-Spec Rated: STD-810F and SAE Rated: J1455 for vibration and shock and include a shock absorbing mounting kit.
10. The DVR shall record 30 images per second of high quality video for a minimum of 475 hours on a single on-board hard disk drive.
11. The system shall record onto a removable hard disk drive equipped with a key lock to prevent tampering, and shall be 'swappable' for use in any same model DVR.
12. The system shall be capable of configuring video quality, resolution and recording speed individually for each camera.
13. The system shall have an optional hard disk player and software to allow for transferring of files directly from the HDD to a PC, where the images can be printed, emailed or saved onto another storage media.
14. The system shall record onto a removable hard disk drive with size options up to 1.5TB.
15. No videotapes or videotape recorders shall be used.
16. The system shall be FCC approved and shall be powered by 12 or 24 VDC vehicle power supply connected by 14 gauge wire and protected from spikes, surges and reverse polarity operating between 9 and 30 VDC.
17. The DVR shall meet the requirements of ISO 7637-2 "Electrical disturbances from conduction and coupling". Power to 12-volt cameras shall be provided directly from the DVR unit.

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18. The DVR shall have the option to remain operating for a pre-determined length of time after the vehicle power is terminated, up to 15 minutes.
  19. The system shall feature pre-event recording that allows the system to record up to 5 minutes of video prior to system activation (manually, motion activation, etc.).
  20. The system shall be capable of streaming live video to first responders through cellular or wireless LAN options.
  21. The system shall be equipped with a USB port to allow for exporting video clips using CDRW, HDD or USB flash memory.
  22. The DVR shall include a functional Ethernet port for system configuration and transmission of video using software over 802.11, LAN/WAN or cellular networks. The system shall be capable of on-board viewing, downloading and control via laptop using the included software.
  23. The DVR shall feature MPEG-4 video compression.
  24. The DVR shall be programmable utilizing a mouse and LCD display.
  25. The system shall be capable of on-board viewing, downloading and control via laptop using the included software.
  26. The DVR shall not exceed the dimensions: 11.8" x 4.8" x 14.6" (WxHxD) and shall not exceed 19lbs in weight.
  27. The DVR shall be compatible with a facility-based DVR system and allow for software interoperability between vehicle and facility recording systems.
  28. Video clips samples shall be provided to display video quality recorded at the maximum recording quality and rate while maintaining on-board video on a single hard disk drive for \_\_\_ days, utilizing the hard disk drive specified in the base bid of this proposal.

## **B. Software:**

1. License-free software that is capable of live viewing, playback, calendar and event searches, and administration shall be provided at no extra cost, and shall be compatible with: Microsoft Windows 98, ME, 2000, and XP.
2. All future software updates shall be included free of charge.
3. The software shall provide access for up to 256 users and 64 different groups. The software shall provide various levels of user access rights that allow and restrict access to various functions.
4. The system shall feature an optional GPS antenna. The GPS antenna shall provide historical and live software mapping display routes of the vehicle location and speed charts.
5. Utilizing the GPS option, the system software shall be capable of connecting to pre-recorded or live video by selecting a point on the map or selecting a point on the speed chart to view live video or pre-recorded at that speed / time.
6. To retrieve recorded video, the software shall also provide searches by: event, time lapse, or time & date.
7. The software shall be capable of displaying the current time and date onto the video.
8. When events are detected, the unit shall display the event information and allow users to access the remote site directly to search the image associated with the event.

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9. The included software shall allow the user to connect to multiple units simultaneously. The included software shall allow for viewing a minimum of 64 camera views at one time from a minimum of 256 different vehicles.
  10. The software shall allow for automated software upgrades and simultaneous updates to multiple sites.
  11. Image adjustments, PTZ control and alarm out controls shall be administered utilizing the software.
  12. The software shall be capable of synchronizing the time of all DVR systems utilizing a 'master DVR' or to GPS time (if applicable). Daylight savings adjustments shall be automatic.
  13. Utilizing the GPS option, searching for video shall be interactive allowing quick location of video by selecting reference a reference point (time, speed or map location).
  14. Software settings shall allow the system (when networked) to send email notification when the recording media reaches a user-defined level, selectable by the percentage of 'full' status.
  15. The system shall feature health-monitoring capabilities that notify the vehicle driver or a central location in the event of a system error or camera obstruction.
  16. Options for archiving/retrieving video shall include: Saving a video clip as a Windows Media Player (.avi) file, saving as an image (.bmp), or saving video as a self-executable format (.exe).
  17. Video clips saved using the self-executable format (.exe) shall be watermarked, encrypted and should be viewed without using any software, to allow for easy transferring of video evidence.
  18. The system shall feature the option to archive video clips requiring a password for reviewing.

### **C. Cameras:**

1. Interior cameras shall be low light, IR Illuminating CCD color camera operating between 10 and 14 Volts. These cameras shall have a lux rating of 0.0, with a built-in high sensitivity microphone.
2. Interior cameras shall feature a minimum standard resolution of 540 TV lines.
3. Exterior camera options shall be impact and tamper-resistant and rated for outdoor use.

### **D. Warranty, Service & Support:**

1. The DVR unit shall include a manufacturer's warranty of a minimum of 3 years parts and labor, all other items including hard disk drives, cameras, etc. shall be covered by a warranty of a minimum of 1 year.
2. Unlimited telephone and email technical support shall be provided at no additional charge for the life of the system.
3. Additional extended warranty and support options shall be available.