

HONEYWELL VIDEO SYSTEMS HTRD400 SERIES, MOBILE DIGITAL RECORDING SYSTEM

PART 1 – GENERAL

The intent of this document is to specify the minimum criteria for the design, supply, installation, and commissioning of this Mobile Digital Recording System.

1.01 SUMMARY

- A. The Mobile Digital Recording System shall provide a powerful, intelligent fully integrated digital IP network device that combines capabilities for Video, Audio, and Data gathering in a single mobile Digital Recorder Unit designed for harsh mobile environments. The system shall include a digital video recorder (Unit), Configuration (Toolbox) and Viewer (Player) software, and one to four mobile digital cameras. The System may also include a GPS module for GPS data gathering.

1.02 REFERENCES

- A. Canadian Standards Association (CSA)
- B. Conformity for Europe (CE)
- C. Consultative Committee for International Radio (CCIR)
- D. Electronic Industry Association (EIA)
- E. Federal Communications Commission (FCC))
- F. Underwriters Laboratories Inc. (UL)

1.03 DEFINITIONS

- A. No Substitutes: The exact make and model number identified in this specification shall be provided without exception.
- B. Or Equal: Any item may be substituted for the specified item provided that in every technical sense, the substituted item provides the same or better capability and functionality.
- C. Or Approved Equal: A substitute for the specified item may be offered for approval by the Owner. The proposed substitution must provide the same or better capability and functionality, in every technical sense, as the specified item. Such requests for approval shall be submitted in accordance with the provisions of PART 1.05 – SUBMITTALS, and must be obtained within the time frames outlined.

1.04 SYSTEM DESCRIPTION

- A. The Mobile Digital Recording System Digital Recorder Unit (Unit) shall be a powerful, intelligent IP networked video, audio and data recording device designed for harsh mobile environments. The system shall be designed at a minimum to support IP digital progressive scan cameras, user definable event (video and audio) recording, user selectable record rates, image resolutions, and image quality, as well as serial data capture from external devices. The Mobile Digital Recording System must be available in a minimum of three (3) different digital video recorder configurations, thirty-two (32) digital mobile camera configurations and one (1) GPS module configuration, allowing the operator to select the right digital recorder for every application.

1.05 SUBMITTALS

- A. General: Submittals shall be made in accordance with the Conditions of the Contract and Submittal Procedures Section.
- B. Shop Drawings and Schematics: Shall depict the Mobile Digital Recording System in final proposed “as built” configuration. The following must be provided:
1. Connection diagrams for interfacing equipment
 2. List of connected equipment
 3. Locations for all major equipment components to be installed under this specification.
- C. Product Data: The following shall be provided:
1. Technical data sheets
 2. A complete set of instruction manuals
- D. Quality Assurance Submittals: The following shall be submitted:
1. Checkout Report: The Contractor shall provide the Owner with a checkout report for each Mobile Digital Recording System. The report shall include:
 - a. A complete list of every device
 - b. The date at which every device was tested, and by whom
 - c. If device are retested, the date at which each device was retested, and by whom
 - d. A final report indicating that every device was tested successfully
 2. Manufacturer’s Instructions: The Contractor shall deliver **TBD** sets of System Operation and Maintenance Manuals (if available) to the Owner.

3. Notice of Completion: When the final acceptance has been satisfactorily completed, the Owner shall issue a notice of completion to the Contractor.

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The Mobile Digital Recording System manufacturer shall be the world's largest and most experienced manufacturer of electronic security systems, with over seventy years of experience in the security industry. The Mobile Digital Recording System must be assembled in the U.S.A., and the manufacturer shall provide technical assistance 24/7 and supported via a toll-free telephone number, at no extra charge.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. General: Delivery, storage, and handling of the Mobile Digital Recording System shall be in accordance with the manufacturer's recommendations.
- B. Ordering: The manufacturer's ordering instructions and lead-time requirements must be followed in order to avoid installation delays.
- C. Delivery: The Mobile Digital Recording System shall be delivered in the manufacturer's original, unopened, undamaged container with identification labels intact.
- D. Storage and Protection: The Mobile Digital Recording System shall be stored and protected from exposure to harmful weather conditions and at the environmental conditions recommended by the manufacturer.

1.08 PROJECT CONDITIONS

1.09 SEQUENCING

1.10 SCHEDULING

1.11 WARRANTY

- A. General: The warranty period for the Mobile Digital Recording System, including hard drives, shall be a minimum of twelve (12) months from the manufacture date code under normal use and service. The warranty period for the Mobile Digital Recording System digital cameras shall be a minimum of thirty-six (36) months from date of manufacture.

1.12 MAINTENANCE

- A. Preventative Maintenance Agreement during Warranty: As a separate price item, the Contractor shall provide preventative maintenance during the warranty period. Maintenance shall include, but not be limited to:
1. Labor and materials, at no additional cost, to repair the Mobile Digital Recording System unit
 2. Labor and materials, at no additional cost, to provide test and adjustments to the Mobile Digital Recording System unit
 3. Regular inspections
- B. Preventative Maintenance Agreement: As a separate price item, the Contractor shall provide a complete Maintenance Agreement for a period of **TBD** months after the conclusion of the warranty period. The Maintenance Agreement shall include, but not be limited to:
1. Labor and materials, at no additional cost, to repair the Mobile Digital Recording System unit
 2. Labor and materials, at no additional cost, to provide test and adjustments to the Mobile Digital Recording System unit
 3. Regular inspections

1.13 TRAINING

- A. Operator training shall be conducted for a minimum session length of **TBD** hours at the customer's site.
- B. Training shall include, but not be limited to Mobile Digital Recording System operation and diagnostics.

PART 2 – PRODUCTS

2.01 MANUFACTURED RECORDER UNITS

A. Model Number/Descriptions Table

HTRD400 Series Unit Model Numbers

HTRD440	DIGITAL RECORDER, 4CHANNEL, 40GB HARD DRIVE
HTRD460	DIGITAL RECORDER, 4CHANNEL, 60GB HARD DRIVE
HTRD480	DIGITAL RECORDER, 4CHANNEL, 80GB HARD DRIVE

Cable Kit Model Nos.

HTRD4NIK	NEW INSTALL KIT
HTRD4IF20	MAIN CABLE, 20', DB25 CONNECTOR
HTRD4IF60	MAIN CABLE, 60', DB25 CONNECTOR
HTRD4PS	AC POWER SUPPLY, DESKTOP

Software Model Numbers

HTRD4SWK	BUSVIEW SOFTWARE KIT
HTRD4DPK	ADMINISTRATOR AND VIEWER SOFTWARE

HTCD50 and HTCD52 Mobile Digital Camera Model Numbers

HTCD50MB036	HTCD50 SERIES: B&W, 3.6MM LENS, AUDIO
HTCD50MB060	HTCD50 SERIES: B&W, 6MM LENS, AUDIO
HTCD50MB080	HTCD50 SERIES: B&W, 8MM LENS, AUDIO
HTCD50MB120	HTCD50 SERIES: B&W, 12MM LENS, AUDIO
HTCD50MC036	HTCD50 SERIES: COLOR, 3.6MM LENS, AUDIO
HTCD50MC060	HTCD50 SERIES: COLOR, 6MM LENS, AUDIO
HTCD50MC080	HTCD50 SERIES: COLOR, 8MM LENS, AUDIO
HTCD50MC120	HTCD50 SERIES: COLOR, 12MM LENS, AUDIO
HTCD50BB036	HTCD50 SERIES: B&W, 3.6MM LENS
HTCD50BB060	HTCD50 SERIES: B&W, 6MM LENS
HTCD50BB080	HTCD50 SERIES: B&W, 8MM LENS
HTCD50BB120	HTCD50 SERIES: B&W, 12MM LENS
HTCD50BC036	HTCD50 SERIES: COLOR, 3.6MM LENS
HTCD50BC060	HTCD50 SERIES: COLOR, 6MM LENS
HTCD50BC080	HTCD50 SERIES: COLOR, 8MM LENS
HTCD50BC120	HTCD50 SERIES: COLOR, 12MM LENS
HTCD52MB036	HTCD52 SERIES: B&W, 3.6MM LENS, DUAL ANGLE, AUDIO
HTCD52MB060	HTCD52 SERIES: B&W, 6MM LENS, DUAL ANGLE, AUDIO
HTCD52MB080	HTCD52 SERIES: B&W, 8MM LENS, DUAL ANGLE, AUDIO

HTCD52MB120	HTCD52 SERIES: B&W, 12MM LENS, DUAL ANGLE, AUDIO
HTCD52MC036	HTCD52 SERIES: COLOR, 3.6MM LENS, DUAL ANGLE, AUDIO
HTCD52MC060	HTCD52 SERIES: COLOR, 6MM LENS, DUAL ANGLE, AUDIO
HTCD52MC080	HTCD52 SERIES: COLOR, 8MM LENS, DUAL ANGLE, AUDIO
HTCD52MC120	HTCD52 SERIES: COLOR, 12MM LENS, DUAL ANGLE, AUDIO
HTCD52BB036	HTCD52 SERIES: B&W, 3.6MM LENS, DUAL ANGLE
HTCD52BB060	HTCD52 SERIES: B&W, 6MM LENS, DUAL ANGLE
HTCD52BB080	HTCD52 SERIES: B&W, 8MM LENS, DUAL ANGLE
HTCD52BB120	HTCD52 SERIES: B&W, 12MM LENS, DUAL ANGLE
HTCD52BC036	HTCD52 SERIES: COLOR, 3.6MM LENS, DUAL ANGLE
HTCD52BC060	HTCD52 SERIES: COLOR, 6MM LENS, DUAL ANGLE
HTCD52BC080	HTCD52 SERIES: COLOR, 8MM LENS, DUAL ANGLE
HTCD52BC120	HTCD52 SERIES: COLOR, 12MM LENS, DUAL ANGLE
HTCD52LID	HTCD52 SERIES: DUAL WINDOW HOUSING TO CONVERT HTCD50 TO HTCD52

Retro-fit Kit Model Numbers

HTRD4CVR	CABLE COVER
HTRD4RFK	RETROFIT INSTALLATION KIT

Accessory Model Numbers

HTRD4GPS	GPS RECEIVER FOR HTRD400 SERIES
----------	---------------------------------

2.02 SYSTEM PERFORMANCE

A. The Mobile Digital Recording System unit shall include, as a minimum, the following features/functions/specifications:

1. The Mobile Digital Recording System unit must be protected by the most extensive support services in the industry, including Customer Service, Pre-Sales Applications Assistance, After-Sales Technical Assistance, access to Technical Online Support, and Online Training using web conferencing.
2. The Mobile Digital Recording System unit shall provide a powerful, intelligent fully integrated digital network device that combines Video, Audio, and Data capabilities in one digital recorder unit. The system shall be designed to record, search, and transmit Video, Audio, and Data transactions, providing operators with post-event video, audio, and data retrieval and viewing.
3. The Mobile Digital Recording System unit's default priority shall be to capture and store video, audio, data, and trigger events.

4. The Mobile Digital Recording System unit shall support wireless (WiFi) Ethernet network communication with additional, commercially available, hardware. The Mobile Digital Recording System unit shall have the capability to communicate, via manufacturer's host software, to a PC using Microsoft® Windows® 2000 and XP® Professional or Home.
 5. The Mobile Digital Recording System unit shall utilize an authenticated proprietary file format for integrity of evidence.
 6. The Mobile Digital Recording System unit and its components shall be thoroughly tested before shipping from the manufacturer's facility.
 7. The Mobile Digital Recording System shall consist of the following components:
 - a. Digital Recorder Unit
 - b. Software for configuration (Toolbox)
 - c. Software to view video (Player) from a Digital Recorder Unit
 - d. Up to four (4) mobile digital cameras
- B. The Mobile Digital Recording System Unit (Unit) shall include, as a minimum, the following features/functions/specifications:
1. The Unit's operating system shall be designed as an embedded RTOS for a real-time, distributed environment that is: secure, reliable, networked, and multi-tasking.
 2. The Unit supports a single shock mounted 2.5 inch mobile hard drive. The Unit shall be offered in a minimum of three (3) configurations, allowing the Owner a choice of: size of hard drive (HD) for the storage of video, audio and data. The unit can be configured to operate on 12 VDC (negative ground).
 3. The Unit shall be engineered for durability and expandability, and be of a rugged, modular design, suited for harsh mobile installations.
 4. The Unit shall have one DB25 Interface Port for:
 - Eight (8) programmable trigger (alarm) inputs
 - GPS power and GPS data signaling
 - Power in for the HTRD400 Unit
 5. The Unit shall have four RJ45 connections for up to four digital mobile cameras (HTCD50 and HTCD52 models).
 6. The Unit shall support a single 10/100 Base-T Ethernet computer port and be IP addressable via automatic IP address assignment.
 7. The Unit shall support programmable operating parameters using redundant non-volatile memory not subject to corruption based on power failures, sags, surges, or other irregularities.

8. The Unit shall record in a continuous loop mode (recycle) or single pass mode (stop). Video resolution options are QVGA (320 x 240) or VGA (640 x 480) per image.
9. The Unit shall offer proprietary, long-term, digital storage for recorded Video, Audio, and Data. The unit must be available in 40 GB, 60 GB, and 80 GB single IDE hard drive storage capacities. The actual duration of the video archive will depend on unit settings. The Toolbox software shall report an estimate of the length of the estimated recording time.
10. The Unit shall have adjustable record speeds from 1 QVGA image every 10 seconds to 30 QVGA images per second and 1 VGA image every 10 seconds to 15 VGA images per second. The unit shall have a maximum 40 frames per second (fps) aggregate record rate.
11. A minimum of four video quality settings shall be available (Extended, Good, Better, Best), with Best being the highest (duration of video archive is shorter) and Extended being the lowest quality (duration of video archive is longer). The quality settings shall be operator-defined.
12. For data handling, the Unit shall have the capability to monitor, record, retrieve, search, and filter data obtained from connected devices (cameras, trigger inputs, GPS module). A search engine for data shall be standard, allowing operators to search and review recorded data and video streams associated with the time at which the data is obtained.
13. The Unit shall provide an RJ45 10/100 Base-T Ethernet computer port for remote configuration and viewing. The functions shall include, but not necessarily be limited to, the following:
 - a. Basic system set-up functions such as configuring global system settings such as the recorder date and time and automatic Daylight Saving Time and automatic leap year adjustment.
 - b. Camera set-up, including: name, type, aim, focus, audio and coverage.
 - c. Trigger input (alarm) set-up, including name, specify the polarity, enable, wake-up, and test status.
 - d. Record schedules: name, define schedules, set camera image quality, resolution, and bandwidth usage, assign rule priority.
 - e. Enable/disable password protection.
 - f. View recorded video, audio, and GPS data.
 - g. Archive video clip(s) and images to a connected PC.
14. The Toolbox software, shall feature four (4) levels of password protected security:
 - a. Administrator
 - b. Viewer
 - c. Configurator

- d. Viewer/Configurator
15. The Front Panel Control shall include the following:
 - a. A Record LED with three modes: solid green to indicate the Unit is recording, blinking green to indicate the hard drive is full, and rapid blinking green to indicate a full erasure of the hard drive is underway.
 - b. A Thermal LED which turns solid orange to indicate the hard drive temperature is outside recorder operating temperature range.
 - c. A Service LED which turns solid red to indicate the recording system is not operating properly.
 - d. A Power LED with three modes: slow blinking green to indicate the Unit is in Sleep mode (waiting for a wakeup trigger to occur), solid green to indicate the Unit is operating, and Off to indicate there is no power to the Unit.
 16. All physical connections shall be made directly to the Unit, without the need for additional hardware.
 17. The Unit shall provide four (4) RJ45 video inputs for cameras. These connections support proprietary Power Over Ethernet (POE). The video images are progressive scan, color or black/white. Maximum horizontal video resolution is 640 pixels and maximum vertical video resolution is 480 pixels.
 18. The Unit shall support four (4) simultaneous channels of synchronized audio, as provided by the cameras. The audio shall be recorded at 8 bit, 8 kbs, mono.
 19. The Unit shall provide one (1) DB25 power, signaling, GPS connector.
 20. The Unit shall automatically adjust for Daylight Savings Time, with no loss of video.

C. The Mobile Digital Recording System configuration software (Toolbox) and viewing software (Player) shall be included with the Mobile Digital Recording System Unit and shall include, as a minimum, the following features/functions/specifications.

1. The Toolbox and Player software shall be Windows based, and must be compatible with Microsoft Windows 2000, or XP Professional or Home, and must provide a user-friendly Graphical User Interface (GUI).
2. A Pentium IV, 1.2 GHz class PC, its equivalent or better shall be required to properly operate the software (Toolbox and Player).
3. The Toolbox and Player software shall support the automatic discovery of system components.
4. The Toolbox and Player software shall support an embedded, full featured, online Help system.
5. The Mobile Digital Recording System software shall allow for creation of self-contained archives for distribution to 3rd parties for review on any PC without the need for any additional hardware or software.

D. The Mobile Digital Recording System configuration software (Toolbox) shall include, as a minimum, the following features/functions/specifications.

1. The Toolbox software shall allow configuration, and administration updates to any discoverable system components.
2. The Toolbox software shall allow firmware update to any discoverable system components.
2. The Toolbox software shall be Windows based, and must be compatible with Microsoft Windows 2000, or XP.
3. Upon connection and user authentication, all appropriate functions, features, and controls shall be available to the operator.
4. The Toolbox software shall provide an intuitive Wizard style interface to guide the operator through common tasks, including, but not limited to, system setup, camera setup, trigger input setup, recording schedules, and GPS setup.
5. The Toolbox software shall allow an operator to create and maintain custom configurations.
6. The Toolbox software shall allow a configuration to be downloaded from a connected Mobile Digital Recording System Unit to a connected PC.

7. The Toolbox software shall allow configurations to be saved to a PC for later retrieval.
 8. The Toolbox software shall allow a configuration to be uploaded from a PC to a connected Mobile Digital Recording System Unit.
 9. The Toolbox software shall allow an operator to confirm camera operations such as aim/focus, audio, and field of view coverage.
 10. The Toolbox configurations shall encompass device-specific information such as time/date, password protection, user accounts, user identifiable Mobile Digital Recording System Units, and trigger names.
 11. The Toolbox configurations shall define multiple event and/or schedule-based record rules.
 12. The Toolbox record rules shall obey a priority system. Rules with a higher priority take precedence over rules with a lower priority.
 13. The Toolbox software shall allow an operator to individually set frame rate, image quality, resolution, and audio settings of each camera in a rule.
 14. Each record rule shall be able to be activated on one or more events or record rule schedules.
 15. Each event shall be usable in multiple record rules.
- E. The Viewing software (Player) shall include, as a minimum, the following features/functions/specifications:
1. The Player software shall be a feature rich, workstation based operator program that provides a user friendly Graphical User Interface (GUI) for complete operation of a connected Mobile Digital Recording System Unit. The user must have the ability to observe and monitor recorded video, audio and data from any connected Mobile Digital Recording System Unit or from video, audio, and data previously archived to a PC hard drive.
 2. The Player software shall be Windows based, and must be compatible with Microsoft Windows 2000, or XP.
 3. The Player shall provide intuitive VCR-like playback controls, including:
 - a. Clip Start
 - b. Fast Reverse, Selectable Rate
 - c. Single Frame Reverse
 - d. Reverse at Normal Speed
 - e. Forward at Normal Speed
 - f. Pause
 - g. Stop

- h. Single Frame Forward
 - i. Fast Forward, Selectable Rate
 - j. Clip End
 - k. Enable/disable Audio
 - l. Control Audio Volume
 - m. Load Previous Clip
 - n. Load Next Clip
 - o. Advanced Views: Time, Triggers, Cameras, Rules
 - p. Previous Event
 - q. Next Event
4. The Player shall provide an interactive recording timeline that allows the user to navigate directly to a specific time in a clip.
 5. The Player shall allow for creation of self-contained archives for distribution to 3rd parties for review on any PC without the need for additional hardware or software.
 6. The Player shall allow the user to search and retrieve video clips based on user specified parameters. Supported search parameters include:
 - a. Time
 - b. Date
 - c. Day of Week
 - d. Camera Name(s)
 - e. Trigger Name(s)
 - f. Rule Name(s)
 - g. GPS Data
 7. The Player shall employ user-friendly natural language for search descriptions.
 8. The Player shall support searching for data stored on a Mobile Digital Recording System Unit and for data stored on a PC hard drive.
 9. The Player shall provide an automatic image authentication mechanism, regardless of the physical location of the clip. The authentication process shall verify that the video clip has not been altered or changed.
 10. The Player shall provide graphical representation of events, which occurred during a recording.
 11. Simply by “double-clicking” on a camera window, the operator shall have the ability to quadruple the size of the video displayed (full screen).

12. The Player shall provide the ability to copy recorded video and audio into a “clip” for storage on a PC hard drive. Clips shall allow the user to view portions of video without having to connect to a Mobile Digital Recording System Unit, retrieve video for review at a later time, and store and/or copy video on other computers. The software shall allow the operator to specify folders for storage of clips. Archive download rates shall be in the range of two to five times faster than record times.
13. The Player shall allow individual images to be saved in JPEG format. The user must also be able to copy/paste or import images directly into e-mail, word processing, or presentation applications.
14. The Player shall allow for printing of individual images from a connected Mobile Digital Recording System Unit or from previously archived images, as a single or quad image. The image prints with the name of the clip, the name of the camera(s) and any status information.

2.03 MECHANICAL SPECIFICATIONS

A. The Mobile Digital Recording System Unit must have the following mechanical specifications:

1. Dimensions (H x W x D).....3.64” × 7.5” × 9.2”
(92 mm × 19 mm × 233 mm)
2. Weight:.....4.8 lbs. (2.2 kg)

2.04 ELECTRICAL POWER REQUIREMENTS

B. The Mobile Digital Recording System Unit must have the following electrical specifications:

1. Power Requirement Input.....10 to 18 VDC, 1.6 to 2.1 Amps, 50 mA in standby power mode
2. Power Requirement Output.....12 VDC, 350 mA supplied to cameras
3. Protection.....Reverse battery, short circuit, over/under voltage

2.05 ENVIRONMENTAL CONDITIONS

A. The Mobile Digital Recording System Unit shall be designed to meet the following environmental conditions:

1. Operating Temperature.....-40° to 149°F (-40° to 65°C) non-condensing

2. Recording Temperature.....41° to 131°F (5° to 55°C)

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Submission of a proposal confirms that the contract documents and site conditions are accepted without qualifications unless exceptions are specifically noted.
- B. The site shall be visited on a regular basis to appraise ongoing progress of other trades and contractors, make allowances for all ongoing work, and coordinate the requirements of this contract in a timely manner.
- C. The Mobile Digital Recording System must be inspected before installation, and shall be free of any cosmetic defects or damage.

3.02 PREPARATION

- A. Prior to installation, the Mobile Digital Recording System shall be configured and tested in accordance with the manufacturer’s instructions.

3.03 INSTALLATION

- A. The Mobile Digital Recording System must be installed, programmed, and tested in accordance with the manufacturer’s instructions.
 - 1. In order to ensure a complete, functional Mobile Digital Recording System, for bidding purposes, where information is not available from the Owner upon request, the worst-case condition shall be assumed.
 - 2. Interfaces shall be coordinated with the Owner’s representative, where appropriate.
 - 3. All necessary black boxes, racks, connectors, supports, conduit, cable, and wire must be furnished and installed to provide a complete and reliable Mobile Digital Recording System installation. Exact location of all boxes, conduit, and wiring runs shall be presented to the Owner for approval in advance of any installation.

3.04 TESTING AND CERTIFICATION

- A. The Contractor shall demonstrate the functionality of the Mobile Digital Recording System upon completion of installation, documenting the result of all tests and providing these results to the Owner. The Mobile Digital Recording System shall be tested in accordance with the following:
1. The Contractor shall conduct a complete inspection and test of all installed Mobile Digital Recording System equipment. This includes testing and verifying operation with connected equipment.
 2. The Contractor shall provide staff to test all devices and all operational features of the system for witness by the Owner's representative and the Authority Having Jurisdiction. All testing must be witnessed by the Owner's representative, prior to acceptance.
 3. The testing and certification shall take place as follows:
 - a. The Mobile Digital Recording System shall be tested in conjunction with the manufacturer's representative.
 - b. All deficiencies noted in the above test shall be corrected.
 - c. Test results shall be submitted to the consultant or Owner's representative.
 - d. The test and correction of any deficiencies shall be witnessed by the owner's representative, and note.
 - e. The Owner's representative shall accept the system.
 - f. The system test shall be witnessed by the Authority Having Jurisdiction. Any deficiencies noted during the testing must be corrected.
 4. A letter of certification shall be provided to indicate that the tests have been performed, and all devices are operational.

END OF SECTION

Brief Specification

The Mobile Digital Recording System shall be a powerful, intelligent, fully integrated, digital IP network solution that combines capabilities for Video, Audio, and Data gathering in a single mobile Digital Recorder Unit designed for harsh mobile environments. The Mobile Digital Recording System shall consist of the following components: Digital Recorder Unit, software for configuration (Toolbox), software to review video (Player), and up to four (4) mobile digital cameras. The Mobile Digital Recording System shall also be capable of recording vehicle speed, direction, and location from an optional GPS module. The Mobile Digital Recording System shall support four (4) channels of video in and four (4) simultaneous channels of synchronized audio, as provided by the digital cameras. The Mobile Digital Recording System shall support user definable event recording, user selectable record rates, image resolutions, and image quality, as well as serial data capture from external devices. The Mobile Digital Recording Unit shall support a single shock mounted 2.5" mobile IDE hard drive for storage of data in drive capacities from 40 GB to 80 GB. The Mobile Digital Recording Unit shall have the capability to perform a quick-erase of the data stored on the hard drive. Recording time shall be dependent on hard drive capacity, number of cameras, and record rule settings. The Mobile Digital Recording Unit shall have the following record speeds: adjustable from 1 QVGA image every 10 seconds to 30 QVGA images per second and 1 VGA image every 10 seconds to 15 VGA images per second. Video capture resolution shall be 320x240 per QVGA image and 640x480 per VGA image. The Mobile Digital Recording Unit shall have a maximum 40 fps aggregate record rate. The Mobile Digital Recording Unit shall support single pass (Stop) and loop (Recycle) record modes. Recording events shall be triggered by external devices. The Mobile Digital Recording Unit shall support up to eight event trigger inputs. Multiple events shall be able to be combined to define a record rule. Events shall have the ability to be assigned to multiple rules. The duration of event recording shall be configurable by pre-set record delay (up to 240 minutes). At least one trigger must be defined as a wake-up event. The Mobile Digital Recording Unit shall be configured to remain awake for up to 240 minutes after all wake-up events have ended. The Mobile Digital Recording Unit shall capture date/time, camera names, trigger names, rule names and descriptions and GPS position, direction, speed and status. Captured data shall be searchable by content. The Mobile Digital Recording Unit shall operate on a robust embedded RTOS, not a Windows-based operating system. The Mobile Digital Recording Unit supports a single 10/100 Base-T Ethernet computer port, and is IP addressable via automatic IP address assignment. The Mobile Digital Recording Unit shall have the capability to communicate, via manufacturer's host software, to a PC using Windows 2000 and XP Professional or Home. The Mobile Digital Recording Unit shall support programmable operating parameters using redundant non-volatile memory not subject to corruption based on power failures, sags, surges, or other irregularities. The Mobile Digital Recording Unit shall support automatic Daylight Saving Time and leap year adjustment. The Mobile Digital Recording Unit shall support operation across wireless (WiFi) Ethernet networks. The Mobile Digital Recording Unit shall have the following connections: Camera In (Video/Audio): 4 RJ-45 10/100 Base-T Ethernet connections, supporting proprietary Power Over Ethernet (POE); Interface connector: 1 DB25 power, signaling, GPS connector; Remote Access: 1 RJ-45 10/100 Base-T Ethernet computer port. Serial Port: 1 DB9 connector for optional peripheral devices. The Mobile Digital Recording Unit shall have a single front panel button capable of bringing the recorder out of a low power state into an active state for communication with the host software. All the Mobile Digital Recording System configuration,

administration, review, archive, and search functions are available to the user via the manufactured supplied host software applications. The host software applications shall consist of Configuration (Toolbox) and Viewer (Player) software. The Toolbox and Player software shall contain a detailed on-line help system. The Toolbox and Player software shall support the automatic discovery of system components. The Toolbox software shall support configuration, administration and firmware update to any discoverable system components. The Toolbox software shall support an intuitive Wizard style interface to guide the user through common tasks. The Toolbox software shall allow an operator to create, maintain, download and retrieve and Mobile Digital Recorder Unit configurations. The Player software shall support playback of data stored on the Unit and archived data from a PC. The Player software shall support intuitive VCR-like playback controls, such as pause stop, fast-forward and rewind. The Player software shall provide an interactive recording timeline, for navigation directly to a specific time within a clip and shall support a graphical representation of events, which occurred during a recorded clip. The Player software shall support creation of self-contained archives for distribution to 3rd parties for review. The Player software shall allow the user to search and retrieve video clips based on user specified parameters such as time, date, and day of week, camera names, trigger names, rule names and GPS data. Search descriptions shall use natural language. The Player software shall support printing and saving still images with supporting data such as time/date, active triggers and current GPS data. The Mobile Digital Recording System shall support video capture from digital mobile cameras (Cameras). The Cameras shall support JPEG compression of video images. The video images shall be progressive scan, colour or black/white. Maximum horizontal video resolution shall be 640 pixels and maximum vertical video resolution shall be 480 pixels. Image resolution of each camera shall be user selectable: QVGA (320x240) and VGA (640x480). Image compression level of each camera shall be user selectable as Extended, Good, Better, Best. The Cameras shall support a synchronized audio stream, recorded at 8 bit, 8 kbs, mono format. The Cameras shall connect via a 10/100 Base-T Ethernet interface to the Mobile Digital Recording Unit. The Camera enclosure shall support a tamper resistant, low profile wedge style with single or dual viewing windows. The Mobile Digital Recording System components must be installed, programmed and tested as per the manufacturer supplied instructions. The Mobile Digital Recording System manufacturer must be the world's largest and most experienced manufacturer of electronic security systems, with over seventy years of experience in the security industry, and the Mobile Digital Recording System must be protected by the most extensive support services in the industry, including Customer Service, Pre-Sales Applications Assistance, After-Sales Technical Assistance, access to Technical Online Support, and Online Training using web conferencing. The Mobile Digital Recording System must be assembled in the U.S.A., and the manufacturer shall provide 24/7 technical assistance via a toll-free telephone number at no extra charge. The system must be a Honeywell Video Systems HTRD400 Series, Mobile Digital Data Recording System.
