

PATROL CAR VIDEO SYSTEM
VCR Based
Integrated Control Head

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SPECIFICATION FOR PATROL CAR VIDEO SYSTEMS

1.0.0 PURPOSE

The purpose of this specification is to establish a minimum standard of quality evidence verification via the use of in-car audio/video recording equipment for this department's patrol car fleet.

2.0.0 SCOPE

This specification covers a video system designed to record audio and video of traffic stops, pursuits, D.U.I. tests, B.A.C. tests etc.

3.0.0 VIDEO SYSTEM BID REQUIREMENTS

3.1.0 PRODUCTION MODEL

The basic design of all equipment offered shall be in full commercial production. No "brand new" or prototype models will be considered prior to the bid opening.

3.2.0 REFERENCES AND RECORDS OF SALES

Each bidder shall submit with bid a list of references, all located within the contiguous 48 states.

3.2.1 References list shall contain the complete name of agency and department to whom sold.

3.2.2 Reference list shall contain quantities sold, delivery dates, brand and model.

3.2.3 Reference list shall contain full names and titles of responsible persons.

3.2.4 Reference list shall contain complete and accurate mailing address and telephone numbers.

3.2.5 Reference list shall be current sales within the last 24 months. **Bid may be rejected if the aforementioned information on references and record of sales is not provided with the bid.** Also, contract award may be based on a verification of above users.

3.3.0 EVALUATION SAMPLES

Bidder may be required to furnish a complete system for evaluation and testing on or before opening date and time. A system of the exact configuration proposed by the vendor must be provided within two weeks, upon request of the procuring agency.

3.4.0 PERFORMANCE TESTING AND PRODUCT EVALUATION

The patrol car video system may be field and laboratory tested to verify its acceptable level of performance and conformity to specifications. Emphasis will be placed on the video system's

ability to maintain consistent recording quality, while subject to interference from the following sources:

- 3.4.1 High powered television station.
- 3.4.2 Other radio frequency interference sources including UHF, VHF, and HF Transmitters.
- 3.4.3 Automobile alternator, ignition and electrical system.
- 3.4.4 Automobile air conditioner fan motor.
- 3.4.5 High voltage power lines, traffic signals, neon sign, etc.
- 3.4.6 This agency also reserves the right to have video systems examined by any other qualified agency, for acceptable design, construction, fabrication and assembly methods.

3.5.0 BID BOND REQUIREMENTS

A bid bond, bank money order, cashiers checks, certified check, or letter of credit in the amount of 5 % of the total bid shall accompany each proposal. This bond shall be supplied to guarantee that the bid price will be honored by the successful bidder.

3.6.0 PERFORMANCE BOND REQUIREMENTS

Successful bidders shall provide, within 10 calendar days after notice and before final contract award, a performance bond in the amount of 100% of the face contract amount, in order to fully guarantee that all video systems shall be delivered within the stated time by the successful bidder.

3.7.0 PATENT INFRINGEMENT

The seller shall indemnify and save harmless the agency and all persons acting for or on their behalf from all suites and claims against them, or any of them arising from our occasioned by the use of any material, equipment, or apparatus, or any part therefor, which infringes or is alleged to infringe on any patent rights. In case such materials, equipment, or apparatus, or any part thereof, in any such suit is held to constitute infringement, the Seller, within a reasonable time, will at its expense, and as the agencies may elect, replace such material, equipment or apparatus with non-infringing material, equipment, or apparatus, or remove the material, equipment, or apparatus, and refund the sums paid therefor.

3.8.0 FORMAT OF BID RESPONSE

The specifications shall include a space for each paragraph to indicate compliance. This space should be marked "YES" for compliance and "NO" for noncompliance. The bidder shall submit with his response, a copy of the specifications, indicate for each paragraph whether his system complies or not. For those paragraphs of the response marked "NO" for noncompliance, the bidder shall provide a full explanation of the area of noncompliance, and may propose an alternative response, at the option of the bidder. However, if the bidder's equipment exceeds any portion of this specification, he shall also note this and furnish full information. Bidder shall also state manufacture and model number of the recorder, camera, lens, monitor, and wireless microphone.

3.9.0 FAILURE TO COMPLY

Bids not in compliance with the format of bid response, item 3.8.0, will be rejected.

4.0.0 VIDEO SYSTEMS SPECIFICATION

4.1.0 SYSTEM DESCRIPTION

4.1.1 The patrol car video system shall consist of a windshield mounted miniature camera, a trunk mounted vault with recorder, a control console with monitor, and a wireless microphone. The miniature camera shall be CCD type, and shall not obstruct the driver's field of view. The environmentally controlled, secured vault with recorder shall be located in the vehicle's trunk to provide a safe environment to maintain the integrity of the videotape. The vault shall be self contained and able to maintain recorder's operating temperature range without the use of vehicle's climate controls. The control console shall mount within easy reach of the driver's seat and give the officer the ability to rewind and play back recorded segments. The system shall also protect the recorded segments to insure they are not recorded over. The wireless microphone shall allow audio recording of events inside and outside the vehicle. All cables and hardware required for installation shall be supplied.

4.1.2 The patrol car video system must offer direct interface to accommodate the display of PL Data, BAC, GPS, Radar and Laser Speed devices and laptops.

4.2.0 CAMERA

4.2.1 The CCD camera shall not be subject to burn-in, introduction of geometric distortion, not be affected by magnetic fields, and shall be highly resistant to damage from vibration and shock and meeting FCC Regulation Class A.

4.2.2 The camera shall operate over the full range of 10 to 16.5 VDC with 4 watts of power.

4.2.3 The camera shall provide a minimum of 460 lines of horizontal resolution.

4.2.4 The camera shall be capable of a minimum illumination of 1 Lux.

4.2.5 The camera's dimensions (including lens) shall not exceed 2.65" x 2.56" x 4.4" w/h/d.

4.2.6 The camera with lens, enclosure and windshield mount shall weigh no more than 24 oz.

4.2.7 The camera shall have an operating temperature range of -4° F to 140° F (-20° C to 60° C).

4.2.8 The camera optics shall incorporate auto-iris, auto-focus, motorized zoom lens of 16:1 (minimum focal range of 3.9 to 63mm). The camera should also include an 8:1 digital zoom for a combined total of 128:1 zoom.

4.2.9 The camera shall provide a horizontal field of view of at least 25 feet at a distance of 20 feet from camera, or 65 degrees angle of view.

4.2.10 The camera shall have focus options of auto, near, manual and wide.

4.2.11 The camera shall provide auto white balance

4.2.12 The camera shall offer back light compensation.

- 4.2.13 The camera shall offer a S/N ratio of better than 46dB. Yes No
- 4.2.14 The camera's auto-iris lens shall automatically adjust for varying light levels from day to night. The use of electronic shuttering to adjust for varying light levels shall not be acceptable. Yes No
- 4.2.15 The camera shall be mounted with a heavy-duty controlled pivot mount secured to the windshield using a high strength adhesive and shall allow the camera to be easily rotated though 360 degrees of rotation. Yes No
- 4.2.16 The camera mount shall allow the camera to be positioned easily and secured in place without tools. Yes No
- 4.2.17 Camera manufacturer and model number _____.

4.3.0 RECORDER

- 4.3.1. The recorder shall be a high quality industrial grade VHS video recorder housed in an environmentally controlled lock-vault that bolts to the trunk's interior. Yes No
- 4.3.2. The industrial recorder shall be capable of operating in a moving environment. Yes No
- 4.3.3. The industrial recorder shall operate over the full range of 10 to 16.5 VDC with 10 watts of power (without the need for a DC/AC inverter). Yes No
- 4.3.4. The industrial recorder shall provide a minimum of 250 lines of horizontal resolution. Yes No
- 4.3.5. The industrial recorder shall offer a S/N ratio of better than 40 dB linear. Yes No
- 4.3.6. The industrial recorder's dimensions shall not exceed 10.5" x 3.64" x 10.5" w/h/d. Yes No
- 4.3.7. The industrial recorder shall weigh no more than 6.2 lb. Yes No
- 4.3.8. The industrial recorder shall have an operating temperature range of -4° F to 140° F (-20° C to 60° C). Yes No
- 4.3.9. The industrial recorder shall utilize a bent metal chassis. Yes No
- 4.3.10. The industrial recorder shall be capable of recording 8 hours of real-time stereo audio and video with T-160 or equivalent tape. Yes No
- 4.3.11. The industrial recorder shall be capable of operating 24 hours per day, 7 days per week. Yes No
- 4.3.12. The industrial recorder shall have 2 audio tracks to allow a second audio source to be recorded simultaneously with the wireless microphone. Yes No
- 4.3.13. The industrial recorder shall not include a television tuner (common to consumer grade recorders). Yes No
- 4.3.14. The industrial recorder shall maximize the use of gears to minimize the use of belts and pulleys. Yes No
- 4.3.15. The industrial recorder shall offer a bi-directional remote control connection, which will allow an operator to control the recorder from the video system's controller and shall provide positive feedback status of the recorder's operational condition. Yes No
- 4.3.16. The industrial recorder shall provide on-screen displays of time/date, title, indicators, tape time, VCR status, Radar Gun Readout, and programming menu when selected. Yes No

4.3.17. Recorder manufacturer and model number_____

4.4.0 LOCK-VAULT

- 4.4.1. The industrial recorder shall be trunk mounted in an environmentally controlled 14-gauge steel lock vault. The lock vault shall include a recessed key lock to provide controlled access to the recorder and tape. Yes__No__
- 4.4.2. The lock-vault shall include a ½" layer of foam padding to protect the VCR. Yes__No__
- 4.4.3. The lock-vault shall be mounted by using a sliding metal plate that is typically bolted to the trunk floor. A key lock shall be provided to secure the vault to its mounting plate to ensure against unauthorized removal. This plate shall prevent water and road spray from entering the vault through the mounting holes. Yes__No__
- 4.4.4. The lock-vault dimensions shall not exceed 11.25" x 6.5" x 15.5" w/h/d. Yes__No__
- 4.4.5. The lock-vault weight shall not exceed 18 lb. Yes__No__
- 4.4.6. The lock-vault shall maintain the internal temperature at a level as to protect the recorder and electronics over the external environmental temperature range of -20° F to 160° F (-29° C to 71° C). Yes__No__
- 4.4.7. The lock-vault shall have a heating pad that is thermostatically controlled from a sensor circuit that is located on the inside of the recorder and capable of producing over 40 watts of heat. Yes__No__
- 4.4.8. The lock-vault shall have a miniature circulating fan to assist in distributing the conditioned air. This fan shall be capable of producing a minimum airflow of 13 cubic feet per minute. Yes__No__
- 4.4.9. The lock-vault's heating and cooling unit shall be self contained and required no openings to the passenger compartment. The environmental control system shall be activated when the vehicle's ignition switch is turned on. Yes__No__
- 4.4.10. The lock-vault shall have an option for operation in high temperature areas which require additional cooling and no heating capability. Yes__No__
- 4.4.11. The lock-vault shall house the wireless microphone's receiver, the system's control circuitry and provide the interconnection of the cables. Yes__No__
- 4.4.12. The lock-vault shall have the option of connecting to external wireless audio systems such as the 900MHz Spread Spectrum type. Yes__No__
- 4.4.13. The lock-vault shall only use screw type fastener connectors for the connection of components. Yes__No__
- 4.4.14. The lock-vault shall not use more than 6 cable connections for system components including the interface for radar equipment. Yes__No__
- 4.4.15. The lock-vault shall provide the option of a second camera to be used with the system. A switch shall be provided at the control console for camera selection. Yes__No__
- 4.4.16. The lock-vault shall provide a back seat microphone to work in conjunction with the second camera. Yes__No__
- 4.4.17. The use of the wireless microphone shall be indicated on the tape. Yes__No__
- 4.4.18. The lock-vault shall provide an RS232 interface for communicating with most radar and laser speed guns, GPS, BAC, Data radios or laptops without the use of a separate translator device. Yes__No__

- 4.4.19. A key switch located on the rear of the lock-vault shall be available to restrict access to the system's setup menu. The menu key must be turned to the locked position before the key can be removed. Yes__No__
- 4.4.20. The system shall include EMI filters and PCB power planes to protect against Radio Frequency Interference (RFI). Yes__No__
- 4.4.21. All power for each module shall be derived from internally filtered power supplies to minimize any potential of ignition and alternator noise. Yes__No__
- 4.4.22. The lock-vault shall include a 10 Amp fast blow fuse to prevent over-current conditions from damaging the system's components. Yes__No__
- 4.4.23. An external Audio/Video Input and Output must be available. Yes__No__

4.5.0 CONTROL CONSOLE

- 4.5.1. The control console shall be compact to allow mounting overhead in the cab of the vehicle. The control console must fit between the sun-visors to position the monitor just above the rearview mirror so that the driver and front passenger can easily view the monitor. Yes__No__
- 4.5.2. The control console dimensions shall not exceed 6.25" x 2.76" x 11.25" w/h/d. Yes__No__
- 4.5.3. The control console shall have all controls and displays for convenient viewing and operation. It shall not be acceptable to use a separate controller to operate the camera. Yes__No__
- 4.5.4. The control console shall include the monitor (described in separate section). Yes__No__
- 4.5.5. The control console will contain speakers to hear live and play backed recorded audio. Yes__No__
- 4.5.6. The control console shall have indicators for:
 - AUDIO ON Yes__No__
 - LOW TAPE Yes__No__
 - OUT TAPE Yes__No__
 - RECORD Yes__No__
- 4.5.7. The control console shall have camera / VCR controls for:
 - ZOOM IN Yes__No__
 - ZOOM OUT Yes__No__
 - NEAR FOCUS Yes__No__
 - FAR FOCUS Yes__No__
 - STOP Yes__No__
 - REWIND Yes__No__
 - PLAY Yes__No__
 - FAST FORWARD Yes__No__
 - RECORD Yes__No__

- 4.5.8. The control console shall have system controls for:
- POWER Yes No
- IR remote sensor Yes No
- 4.5.9. The control console shall have the monitor brightness control and audio volume control. Yes No
- 4.5.10. The control console shall have all indicators and controls identified with back lighted legends for night operation. Yes No
- 4.5.11. The control console shall have a "Sleep Mode" that can be engaged when needed. This feature will turn off the monitor and backlighted legends for quiet or covert operation. Yes No
- 4.5.12. The control console shall have a separate LED output for indicating both audio and recording are functional. The LEDs shall be easily visible from the front of the vehicle to assure the officer outside the vehicle that the system is working. Yes No
- 4.5.13. The control console shall be constructed of 18-gauge steel. Plastic models are not acceptable. Yes No
- 4.5.14. The control console shall provide audible feedback (beeps) when the system is turned on, when controls are pressed for RECORD, STOP, REWIND, PLAY, FF, when the tape nears its end, when the tape is out and when extreme temperature condition exists in the recorder enclosure. Yes No
- 4.5.15. The control console shall have connections for camera, lock-vault, audio/record LED, A/V I/O and vehicle interface cable. The cable connections shall be located such that the cables can be concealed during installation. The connectors must be screw fastener types to prevent easy disconnection. Yes No
- 4.5.16. An external Audio/Video Input and Output must be available. Yes No
- 4.5.17. The control console shall include a rear-seat camera/microphone switch that is used when the system is equipped with two cameras. This switch shall have no effect on video when the system is equipped with one camera. This shall ensure video from the single camera will be seen, regardless of the camera switch's position. The switch will then be used only to select the audio source. Yes No
- 4.5.18. The control console vehicle interface cable shall consist of interface to ignition switch, siren or speaker, emergency lights, brakes and turn signals. Yes No
- 4.5.19. The control console shall be capable of turning the systems off one hour after ignition key is turned off to prevent discharge of car battery. Yes No
- 4.5.20. The control console shall have the ability to start the recorder by receiving a signal from the wireless microphone. Yes No
- 4.5.21. The control console interface shall include the option to use the speaker signal, the 12 VDC siren switch or direct connect to the AC voltage on the siren to activate the record mode. Yes No
- 4.5.22. The control console interface shall include the option to use the 12 VDC positive side of the emergency light switch to activate the record mode. Yes No
- 4.5.23. The control console shall include the option to use the power-up of the system to activate the record mode. Yes No

4.5.24. The control console shall provide the remote activation feature as a programmable feature that is selected in its record trigger menu. When this feature is disabled, the recorder shall become incapable of being turned on by RF transmission from any source. The trigger must be able to activate the system even if the system is turned off. Yes No

4.5.25. The control console shall provide record-over protection. When this feature is enabled, the system will automatically search for the end of the last recorded segment and start recording from that location whenever a record command is received. The search will be performed in either direction. If the system detects a recorded segment at current location, it will fast forward to the end of the recorded segment; if the system detects no recording present at the current location, it will rewind to the end of the last recording. This will be done to ensure that no recorded evidences are erased either accidentally or intentionally and also that no blank segments of tape are present between recordings, thus preserve the integrity of the tape as evidence. Ejecting and reinserting the recorded tape should have no effect on record-over protection. System, which cannot detect newly installed tape that was previously recorded and does not automatically protect the recorded tape, is not acceptable. Yes No

4.5.26. The control console shall provide an infrared remote interface for accessing a setup menu. Yes No

4.5.27. The control console shall provide a setup menu that will include the following:

 Password Protection for Program Menu Access Yes No

 Set Time and Date Display to ON or OFF. Yes No

 Set Time Format to MM/DD/YY, DD/MM/YY or YY/MM/DD. Yes No

 Set Time Format to 12 Hour or 24 Hour. Yes No

 Set Time and Date. Yes No

 Reset Time and Date. Yes No

 Title Display for entering up to 20 character Title from the remote control. Yes No

 5 Message lines for programming up to 6 characters, triggered by an event (defaults are: "SRN", "LTS", "AUD", "BRK", "TS"). Yes No

 Set (separately) Message lines displays to ON or OFF. Yes No

 Set Record Recycle Rec. to ON or OFF. Yes No

 Set Record Rec.-over Protect to ON or OFF. Yes No

 Set Record Power-up Record to ON or OFF. Yes No

 Set Record Alarm Rec. Dwell from 0 to 180 minutes Yes No

 Set Record Tape to T120 or T160 and set Record Speed to SP or EP. Yes No

 Set Display Format to read from Top or Bottom of screen. Yes No

 Set Horizontal and Vertical Position of the Text on the screen. Yes No

 Set Gray Scale and Background color of the screen. Yes No

 Set VCR Status Display to ON or OFF. Yes No

 Set Input Voltage Display to ON or OFF. Yes No

Yes No

Set Temperature Display to F, C or OFF.

Select Interface Option:

Generic Yes No

Decatur Radar Guns Yes No

Kustom Radar Guns Yes No

Stalker Radar Guns Yes No

MPH Radar Guns Yes No

Municipal TS-4 Yes No

Targetron Radar Guns Yes No

RG2RS Radar Interface Yes No

LTI 20.20 Laser Gun Yes No

Laser Atlantic Yes No

GPS NEMA 0183 Yes No

Intoxilyzer 400, AlcolMeter 400 Yes No

Select Baud rate to 1200, 2400, 4800 or 9600. Yes No

Master Reset to resets all the programming to factory settings. Yes No

4.5.28. Program Lockout – A method shall be available to restrict access to the setup menu. A key will be required to regain access to the set-up menu. The key switch must be located at the vault. Yes No

4.6.0 MONITOR

4.6.1. The monitor display shall be a high quality TFT (Thin Film Transistor), LCD monitor for providing a means of focusing the camera and for continuous viewing whether recording or reviewing. Yes No

4.6.2. The monitor display shall be no smaller than 4". Yes No

4.6.3. The monitor display shall have at least 480 horizontal lines of resolution and 234 vertical lines of resolution. Yes No

4.6.4. The monitor display shall have at least 45 degrees of viewing angle from left to right. Yes No

4.6.5. The monitor shall have a contrast ratio between 60 to 100. Yes No

4.6.6. The monitor display shall provide controls for volume and brightness. Yes No

4.6.7. The monitor display must be an integral part of the control console and mounted flush in the console so as to prevent injury to the officer and damage to the system during an accident. Models with protruding, movable monitors are not acceptable. Yes No

4.6.8. The monitor shall provide a speaker for remote microphone to be heard inside the vehicle's cab. Yes No

4.6.9. The monitor shall provide for audio and video viewing regardless to whether the system is recording or not. Yes No

4.6.10. The monitor shall be capable of displaying:

Time, Date and Day	<input type="checkbox"/> Yes <input type="checkbox"/> No
One line of identifier information	<input type="checkbox"/> Yes <input type="checkbox"/> No
Emergency Lights Indicator (LTS)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Siren Indicator (SRN)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Microphone Reception Indicator (AUD)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Brakes Indicator (BRK)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Turn Signal Indicator (TS)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Low Tape warning (Low Tape)	<input type="checkbox"/> Yes <input type="checkbox"/> No
End-of-tape indicator (Out Tape)	<input type="checkbox"/> Yes <input type="checkbox"/> No
Target and Patrol speeds from Radar Gun equipment	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lock-Vault temperature in F or C	<input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle's power available displayed in DC voltage	<input type="checkbox"/> Yes <input type="checkbox"/> No
Low Voltage indicator	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cassette Out indicator	<input type="checkbox"/> Yes <input type="checkbox"/> No
Time Remaining Counter (must be displayed even in FF. or REW.)	<input type="checkbox"/> Yes <input type="checkbox"/> No

4.6.11. Monitor manufacturer and model number _____

4.7.0 WIRELESS MICROPHONE

- 4.7.1. The wireless microphone system shall be compact and lightweight, and easily attached to the officer's uniform. Yes No
- 4.7.2. The wireless microphone shall include a modular plug that easily detaches from the transmitter. Hard-wired microphones shall not be acceptable. Yes No
- 4.7.3. The wireless microphone shall include a windscreen to reduce the effect of wind noise. Yes No
- 4.7.4. The wireless microphone shall be supplied with a heavy-duty leather or nylon pouch that attaches to the officer's belt. The pouch shall include a strap to hold the transmitter in place but allow the microphone to be disconnected in the event of a confrontation with a perpetrator. Yes No
- 4.7.5. The wireless microphone receiver shall be mounted in the lock-vault for securing and protecting the receiver and for convenient mounting of the antenna. Yes No
- 4.7.6. The wireless microphone dimensions shall not exceed 3.4" x 2.4" x 0.85" w/h/d. Yes No
- 4.7.7. The wireless microphone typical operating range (transmitter to receiver) shall be greater than 300 feet with line-of-sight operating range greater than 1000 feet. Yes No
- 4.7.8. The wireless microphone shall be capable of operating greater than 18 hours on one 9-volt alkaline battery. Yes No
- 4.7.9. The wireless microphone system shall include a hard-wired in-car microphone to be mounted inside the passenger compartment. The in-car microphone must be small enough to be mounted out of sight from the back seat. Yes No

4.7.10. The wireless microphone system shall have the capability of simultaneously recording conversations inside the patrol vehicle and conversations using the wireless microphone. The in-car microphone shall not effect the use of the officer's wireless microphone. Yes No

4.7.11. The wireless microphone system shall include a separate switch that shall be mounted on the control console, allowing discreet turning on of the in-car microphone. Yes No

4.7.12. The wireless microphone system shall include a tone-coded squelch, consisting of a sub-audible encoder and decoder to prevent the receiver's squelch from activating unless the transmitter's encoder sends its matching sub-audible tone within 3 seconds. This feature shall prevent false record activation. Yes No

4.7.13. Microphone system manufacturer and model number _____

4.8.0 OPERATING INSTRUCTIONS AND SPECIFICATIONS MANUAL

4.8.1. A full and complete set of operating and installation instructions shall be furnished to the contractor with each unit in printed and CD-ROM form. Yes No

4.8.2. On-sight training for installation and operation must be made available to the customer by the system manufacture. If any additional costs are to be encountered for training, the cost must be stated in the bid. Yes No

4.9.0 MANUFACTURER'S QUALITY CONTROL AND TESTING

4.9.1. All electrical components utilized, including integrated circuits, shall be high-grade commercial parts. Yes No

4.9.2. Each individual electrical and electronic component shall be subject to a complete quality control inspection. This is required before installation into printed circuit board or other sub-assembly. Yes No

4.9.3. Each sub-assembly shall be inspected and tested mechanically and electrically before final assembly. Yes No

4.9.4. All printed circuit boards shall be glass epoxy, type FR4, or equivalent. High-density circuit boards shall have solder mask. Yes No

4.9.5. All components dissipating power in excess of one watt and mounted directly against a circuit board shall have adequate heat sinks for circuit board and component protection. Yes No

4.9.6. All electronic and electrical components shall only be utilized within their manufacturer's operating specifications, pertaining to voltage, current and heat dissipation characteristics. Yes No

4.9.7. Each complete video system shall be individually benched tested for all functions and test parameters. Yes No

4.9.8. Each system must be operated in normal mode or "burned-in" for a minimum of 24 hours. Yes No

5.0.0 WARRANTY

- 5.0.1. The manufacturer shall fully guarantee his patrol car video system, to be free of defective materials and workmanship, for a period of one year from the date of delivery to the agency. All shipping charges (both ways) shall be at the expense of the manufacturer for the first 90 days after delivery of the systems. Thereafter, shipping charges from the agency to the manufacturer shall be at the expense of the agency. Return shipping charges from the manufacturer to the agency shall be at the sole expense of the manufacturer during the warranty period. Yes__No__
- 5.0.2. This warranty shall not extend to finish, appearance items, or malfunction due to abuse, neglect, misuse, accidents, or operation under other than specified conditions. Yes__No__