NITRO 1000
Digital Video System

Product Description and Minimum Specifications:

The below specifications are not intended to limit competitiveness in similar products, rather they are intended to establish a standard of quality and desired features in order to ensure that the needs and requirements of the school district are met.

Each system shall consist of a dome style flush mount CCD (specify day/night, color or B/W) camera with the capability of mounting to the ceiling or bulkhead, 12VDC digital video recorder, lockable enclosure, in addition to all wiring harnesses and mounting hardware required for installation. Specified product shall be Nitro-1000 Digital Video System™; the removable hard drive will be referred to as the "COMRAD™", any equivalent product that is proposed must be pin for pin electronically compatible with the Nitro-1000 Digital Video System in order to ensure uniformity within the bus fleet.

Detailed specifications are as follows:

CCD Camera:

The camera head utilized by the system must incorporate Optex™ technology found in The GSX-1000 Digital Smart System™ or equivalent.

- The dome camera must have the capability of mounting flush to header or ceiling of the bus. Systems with space variance between the camera head and mounting surface are not acceptable
- The dome camera must have a hemispherical dome manufactured from optically clear Lexan
- The dome camera must be housed in an enclosure that is fabricated of a high-impact structural Lexan
- The dome camera must have the capability to interchange lenses
- The black and white camera shall include a minimum illumination of 0.1 Lux @ F2 with 420 horizontal lines of resolution
- The color camera shall include a minimum illumination of 0.6 Lux @ F1.2 with 330 horizontal lines of resolution
- The day/night camera shall include a minimum illumination of 0.3 Lux @ F2 with 330 horizontal lines of resolution
- The dimensions of the dome camera shall be no larger than 3 ½" depth x 3 ½" height
- The dome camera shall include a microphone
- The dome camera must have a second video output for easier camera set-up during installation

Stop Arm Camera

- The camera must be IP 67 rated for external use and have a rust-proof powder coated bracket.
- The camera must be capable of being mounted and adjusted in a variety of positions to provide maximum flexibility
- The camera must be capable of accepting multiple lens configurations
- The camera must have built in infrared capability to aid license plate capture in low light conditions
- The camera must have minimum resolution of 600 TV Lines
- The camera must have effective pixels of 768 X 494

Protecting Your Precious Cargo

GATEKEEPER SYSTEMS INC.
USA OPERATIONS
446 HARRISON STREET
SUMAS, WA 98295
USA
CANADA OPERATIONS
#301 31127 WHEEL AVENUE
ABBOTSFORD, B.C. V2T 6H1
CANADA
TEL: 1.604.864.6187
FAX: 1.604.864.8490
GATEKEEPER-SYSTEMS.COM
TOLL FREE: 1.888.666.4833

NITRO 1000
Digital Video System

Digital Video Recorder:

The digital recorder utilized by the system must have the following features as found in the Nitro-1000 Digital Video Systems or equivalent.

The digital video recorder must use a wavelet video compression technology

- The digital video recorder must provide video resolution at 2CIF
- The digital video recorder must provide video data in standard AVI format
- The digital video recorder must allow for recording of up to 4 cameras simultaneously
- The digital video recorder must provide adjustable frame rate from 1 to 30 FPS
- The digital video recorder must be capable of recording 120 FPS at 2 CIF
- The digital video recorder must come enhanced with a thermal management system for reliable and safe startup of the system
- The digital video recorder must ensure that the hard drive (COMRAD™) is isolated from shock and vibration and tested to a provision of MIL-STD 810F (Trucks on Highways)
- The digital video recorder must utilize a 2.5" hard drive with disk capacities from 120 up to 160 Gigabyte
- The digital video recorder must be capable of utilizing 2.5" solid state storage with IDE interface with capacity of 16 or 32 Gigabyte
- The digital video recorder must be equipped with a removable hard drive (COMRAD™) with sealed thermal intelligence system
- The digital video recorders thermal intelligence system must be capable of measuring ambient temperature immediately after power up
- The digital video recorders thermal intelligence system must be capable of heating or cooling the hard drive and digital video recorder simultaneously immediately after power up should the ambient temperature be outside standard operating conditions
- The digital video recorders thermal intelligence system must be capable of constant monitoring of ambient temperature and auto-adjust the heating and cooling system
- The removable hard drive and solid state storage (COMRAD™) must be identical mechanical dimensions
- The Digital Video Recorder must be capable of accepting both removable 2.5" hard drive (COMRAD™) and removable 2.5" solid state storage (COMRAD™)
- The removable hard drives (COMRAD™) and removable solid state storage (COMRAD™) must both be swappable between digital video recorders without losing configuration
- The digital video recorder must allow for the COMRAD™ to interface with a PC without need for a docking station and the hard drive shall connect to a PC with USB 2.0
- The digital video recorder must operate on standard 12 Volts with operating range of 9 to 32 Volts and capable of surviving a 24 Volt jump start
- The digital video recorder must have an optional lockable front end cap for security
- The digital video recorder must have an optional rear end cap for security
- The digital video recorder must have an optional shock and vibration tray capable of upgrading to specific shock loading specifications
- The digital video recorder must be a maximum weight of 5.5 lbs and be capable of horizontal or vertical installation.
- The digital video recorder must begin recording upon activation of 12V trigger (i.e. ignition activation)
- The digital video recorder must be designed for a rugged mobile environment and shock and vibration tested and tested to a provision of MIL-STD 810F (Trucks on Highways)
- The digital video recorder must have the capability to record for up to 70 minutes after the bus has been turned off

Protecting Your Precious Cargo

GATEKEEPER SYSTEMS INC.
USA OPERATIONS
446 HARRISON STREET
SUMAS, WA 98295
USA
CANADA OPERATIONS
#301 31127 WHEEL AVENUE
ABBOTSFORD, B.C. V2T 6H1
CANADA
TEL: 1.604.864.6187
FAX: 1.604.864.8490
GATEKEEPER-SYSTEMS.COM
TOLL FREE: 1.888.666.4833

NiTRO 1000
Digital Video System

- The digital video recorder must provide the option to switch cameras based on an “event” trigger or dwell time adjustable from 5 to 70 seconds or utilize both at the same time
- The digital video recorder must include the capability to record up to eight event triggers that can be analyzed upon playback
- The digital video recorder must have the capability to connect a record indicator LED and a driver alarm push button switch
- The digital video recorder must have the capability to customize file names with a Project ID of up to 21 alpha-numeric characters
- The digital video recorder must have the ability to group video by date/time and driver alarm event triggers
- The digital video recorder must have the capability to record time and date and must incorporate automatic daylight savings adjustment
- The digital recorder must have the capability of recording the speed of the bus and displaying the information in the video subtitles during playback; speed sensor calibration must be capable of being completed by measured mile or manual entry
- The digital video recorder must have the ability to incorporate GPS and display speed, latitude and longitude information in the video subtitles during playback
- The digital video recorder must have include an internal GPS module. No external cards or boxes will be accepted.
- The digital video recorder must record a minimum of two audio channels
- The digital video recorder must have internal sensors. No external cards or boxes will be accepted.
- The digital video recorder must utilize an integrated LCD on the front panel to allow for control of system configuration, record, playback and system shut down
- The digital recorder must utilize USB 2.0 high speed and Ethernet for flexible downloading options
- The digital recorder must have the capability to be connected directly to a Local Area Network (LAN)
- The digital video recorder must have the ability to download video to another COMRAD™, retrieve software upgrades from another COMRAD™ or repair system software from another COMRAD™

Viewing Software

The viewing software shall incorporate the following capabilities as found in The GSX-1000 Digital Smart System™ or equivalent.

- The viewing software shall be included in the system price at no extra charge
- The viewing software shall be included on each individual COMRAD™ for easy administration of viewing video
- The viewing software must be able to playback at full speed up to four channels of video simultaneously
- The viewing software must display Bus ID, time, date, event triggers, GPS information, speed in the subtitles
- The viewing software must display the video file time, date, bus ID, and number of alarms
- The Viewing software must have the capability to save portions of a video file into a clip to be specified by the user
- The viewing software must have the ability to drag and drop video files to anywhere on a PC desktop
- The viewing software must provide the user with a means to fast forward and rewind at different speeds, pause and play all video files
- The viewing software must have the ability to capture still images at any point in the video as specified by user and saved as a JPEG
- The viewing software must allow the user to directly email a still image or video clip
- The viewing software must provide the user a direct link to download free software upgrades

Protecting Your Precious Cargo

GATEKEEPER SYSTEMS INC.
USA OPERATIONS
446 HARRISON STREET
SUMAS, WA 98295
USA
CANADA OPERATIONS
#301 31127 WHEEL AVENUE
ABBOTSFORD, B.C. V2T 6H1
CANADA
TEL: 1.604.864.6187
FAX: 1.604.864.8490
GATEKEEPER-SYSTEMS.COM
TOLL FREE: 1.888.666.4833

NiTRO 1000
Digital Video System

- The viewing software must have the capability to configure the digital recorder settings
- The viewing software must have a means to search video by alarm, or any input signal provided by the bus
- The viewing software must display the date, time, bus ID of each event trigger

System Upgrade:

- The recorder must be based on an embedded operating system with the ability to upgrade software via viewing software
- Software upgrades may include additional features, product enhancements and improvements, user interface etc.

System Warranty:

- Cameras shall include a five-year parts and labor warranty and 30-day advance replacement guarantee
- The Digital Video Recorder shall include a one-year parts and labor warranty and 30-day advance replacement guarantee
- All other system components include a one-year parts and labor warranty and 30-day advance replacement guarantee
- All mounting brackets, hardware and cables must be included with the system

Gatekeeper Systems is dedicated to providing quality solutions for your school bus surveillance needs. If you have any questions about these specifications or any other aspect of school bus surveillance, please contact us.

Protecting Your Precious Cargo

GATEKEEPER SYSTEMS INC.

USA OPERATIONS
446 HARRISON STREET
SUMAS, WA 98295
USA

CANADA OPERATIONS
#301 31127 WHEEL AVENUE
ABBOTSFORD, B.C. V2T 6H1
CANADA

TEL: 1.604.864.6187
FAX: 1.604.864.8490
GATEKEEPER-SYSTEMS.COM

TOLL FREE: 1.888.666.4833