

Product Description and Minimum Specifications:

4 Channel Mobile Video Recorder

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 day/night 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-404™ Digital Video System; the removable storage device will be solid state SDHC Card (Secure Digital High Capacity). Any equivalent product that is proposed must be pin for pin electronically compatible with the NiTRO-404™ 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 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 provide 3D gimbal functionality allows for bottom of image to be correctly aligned when camera is mounted off horizontal or vertical
- The dome camera must utilize a CCD of 1/3"
- The dome camera must be capable of using 12V nominal 8.0V to 18V
- The dome camera must have an temperature operating range of -10°C to +55°C
- The dome camera must have a signal to noise ratio of 45 dB or more with AGC off
- The dome camera must have a hemispherical dome manufactured from a high-impact structural metal alloy

- The dome camera must be housed in an enclosure that is fabricated of a high-impact structural metal alloy
- The dome camera must be capable of accepting various lens configurations as follows: 2.9mm, 3.6mm, 4.3mm, 6.0mm, 8.0mm, 12mm
- The dome camera must include integral infrared (IR) LED's
- The integral IR must include 24 LED's
- The integral IR must incorporate an IR wavelength of 845nm to 850nm
- The dome camera shall include a minimum illumination of 0 lux with integral IR on
- The dimensions of the dome camera shall be no larger than 3 " depth x 3" height
- The dome camera shall include a microphone and line amplifier
- The dome camera shall be tamperproof utilizing locking hex set screws
- The dome camera must utilize a vibration dampening mounting pad

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 420 TV Lines

Digital Video Recorder:

- The digital video recorder must record a minimum of four video channels
- The digital video recorder must record a minimum of four audio channels (one associated with each video channel)
- The digital video recorder must use H.264 video compression technology
- The digital video recorder must provide video resolution at D1 Resolution while recording at 120 Frames per Second

- The digital video recorder must be able to support the following video resolutions 720x480, 576x384 and 480x320
- The digital video recorder must be able to support a composite recording mode where all four camera will be recorded to a single AVI file in a "quad styled" view
- The digital video recorder must be capable of recording up to 215 hours on a 32GB SDHC memory card
- The digital video recorder must provide video data in AVI format
- The digital video recorder must allow for recording of up to 4 cameras simultaneously at 120 Frames per Second at D 1 resolution
- The digital video recorder must support the following recording frame rates: 30, 15, 10, 7, 5, 4, 2, 1, FPS. It shall be possible to independently set the frame rate on each video channel
- The digital video recorder must provide adjustable frame rate, resolution and video quality setting for each camera independently.
- The digital video recorder must support at least 3 video quality settings
- The digital video recorder must support daylight savings time and automatically change its time on the appropriate day
- The digital video recorder must be capable of powering up at -30°C
- The digital video recorder must be capable of operating up to ambient temp of +60°C
- The digital video recorder must utilize solid state Secure Digital High Capacity (SDHC) card capacities ranging from 16 GB up to 32 GB
- The removable solid state cards must be swappable between digital video recorders without the digital video recorder losing its configuration
- The digital video recorder must allow for the solid state cards to interface with a PC without need for a docking station and the solid state card shall connect to a PC directly (when the PC has an integral SDHC card reader) or via a SDHC card reader with a USB 2.0 interface to a PC
- The digital video recorder must operate on standard 12 Volts with operating range of 8 to 32 Volts
- The digital video recorder must be a maximum weight of 1.2 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 recorder must be configurable to overwrite data or power off when disk is full.
- The digital video recorder must be capable of formatting the SDHC solid state cards for erasing data if required
- The digital video recorder must burn-in on screen GPS data and in mile per hour or kilometers per hour format
- The digital video recorder must be capable of recording and playing back video when connected to a NTSC monitor
- The digital video recorder must have Auto-Record Schedule capability and be able to be programmed on/off up to three times over a 24 hour period
- The digital video recorder must include adjustable record length for each video file from 5 minutes to 1 hour at 5 minute increments
- The digital video recorder must be capable of adjusting the video quality on each camera independently at time of installation
- The digital video recorder must have the capability to record for up to 70 minutes after the bus has been turned off
- The digital video recorder must include the capability to record up to eight three event triggers that can be analyzed upon playback
- The digital video recorder must have the capability to connect to a driver alarm push button switch
- The digital video recorder must have included an internal GPS module. No external cards or boxes will be accepted except for the external GPS antenna.
- The digital video recorder must have motion detection capability
- The digital video recorder must have a boot time of no more than 60 seconds

Viewing Software

- The viewing software shall incorporate the following capabilities as found in The MAXVIEW 400™ Viewer or equivalent.
- The viewing software shall be included in the system price at no extra charge
- The viewing software shall be included free of charge for easy administration of viewing video

- The viewing software must be able to playback up to four channels of video simultaneously
- The viewing software must display Bus ID, time, date, event triggers, GPS information and speed
- 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, 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 display the date, time, bus ID of each event trigger
- The viewing software must operate on the following operating systems: Microsoft Windows XP, Microsoft Vista and Microsoft Windows 7

DVD Recorder System Software Upgrade:

- The recorder must be based on an embedded operating system with the ability to upgrade software in the field without return to the manufacturer
- Software upgrades may include additional features, product enhancements and improvements, user interface etc.

System Warranty:

NiTRO™ 404 3 years; Interior Cameras shall include a five-year parts and labor warranty and 30-day advance replacement guarantee; SD Card Life Time Warranty