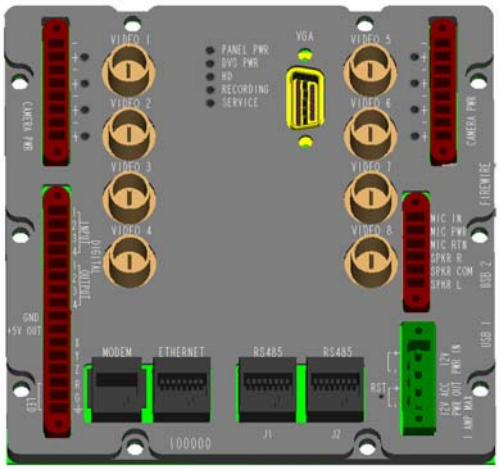
Appendix D

Security Camera Interface

DVS-2 Overview



Transit Surveillance Systems is pleased to introduce its latest digital video recording system for the transit industry. The DVS-2 Transit video surveillance system was developed through the ongoing experience gained in working with top transit authorities throughout the United States. We have continued to listen to our customers for the past four years. We have incorporated many new features customers have requested. Customer feedback has been a large component of our new product development. The DVS-2 is similar in appearance to the DVS-1 but has the following upgrades in hardware and software technology.

The front interface panel has been redesigned with following new hardware and software features.

Hardware: EMI Shielding

The DVS-2 has been redesigned in order to be in compliance with FCC class B certification.

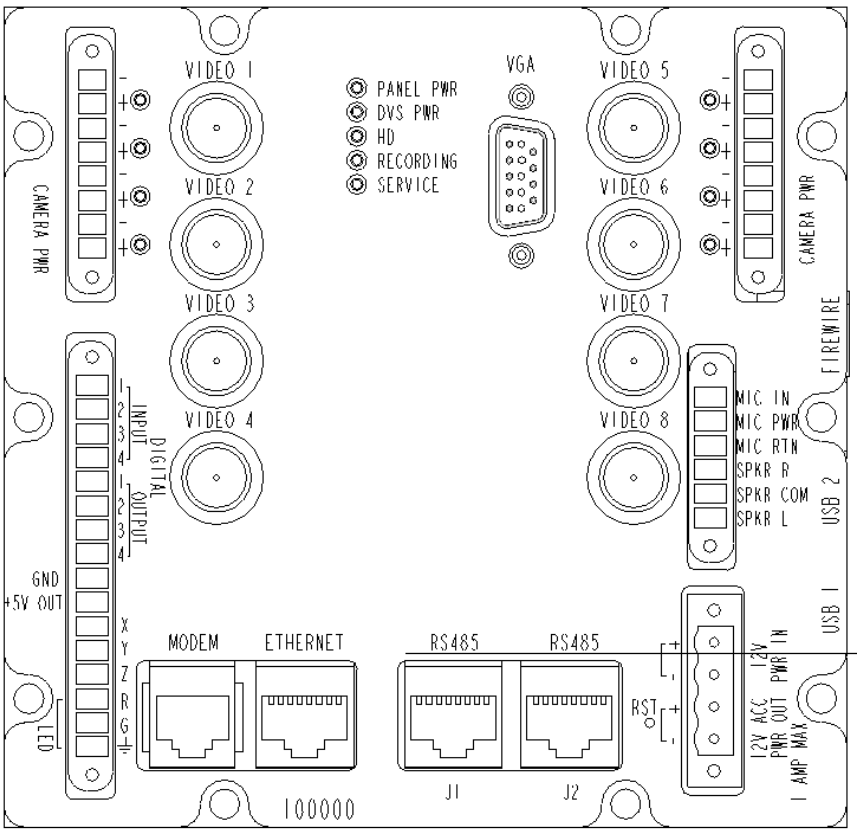
New Front Interface I/O Panel Key Features

NEW 1.1. The new front interface I/O panel is constructed of 4-layer PCB, with internal power and ground planes. There are metal slugs on the perimeter of the PCB to facilitate metal-to-metal contact between the main housing and the internal ground plane.

NEW 1.2 The BNC video connectors have been changed to units with all metal-body. These new BNC connectors are superior for EMI shielding and allow stronger mounting to the PCB board

NEW 1.3 The video I/O lines are filtered with ferrite for EMI suppression.

NEW 1.4 The power input/output lines a filtered with an EMI filter for conductive emission.



2 programmable microprocessors

Enhanced features are supported by two in-system programmable microprocessors. These two processors cooperate with the DC-DC converter's processor and the monitoring program running on the PC

USB Ports- Two available. Universal Serial Bus is an external bus standard that supports data transfer rates of 11 Mbps (11 million bits per second). A single USB port can be used to connect up to 127 peripheral devices, such as mice, keyboards, printers, modems and other peripherals such as handheld backup video data storage devices. USB also supports plug-and-play installations and hot plugging.

FireWire- The new DVS-2 front interface panel incorporates the use of FireWire connector. The standard configuration for DVS-2 system gives the customer the FireWire connector on the front interface panel but does not include the needed PCI FireWire card. This additional FireWire PCI card can be included at additional expense.

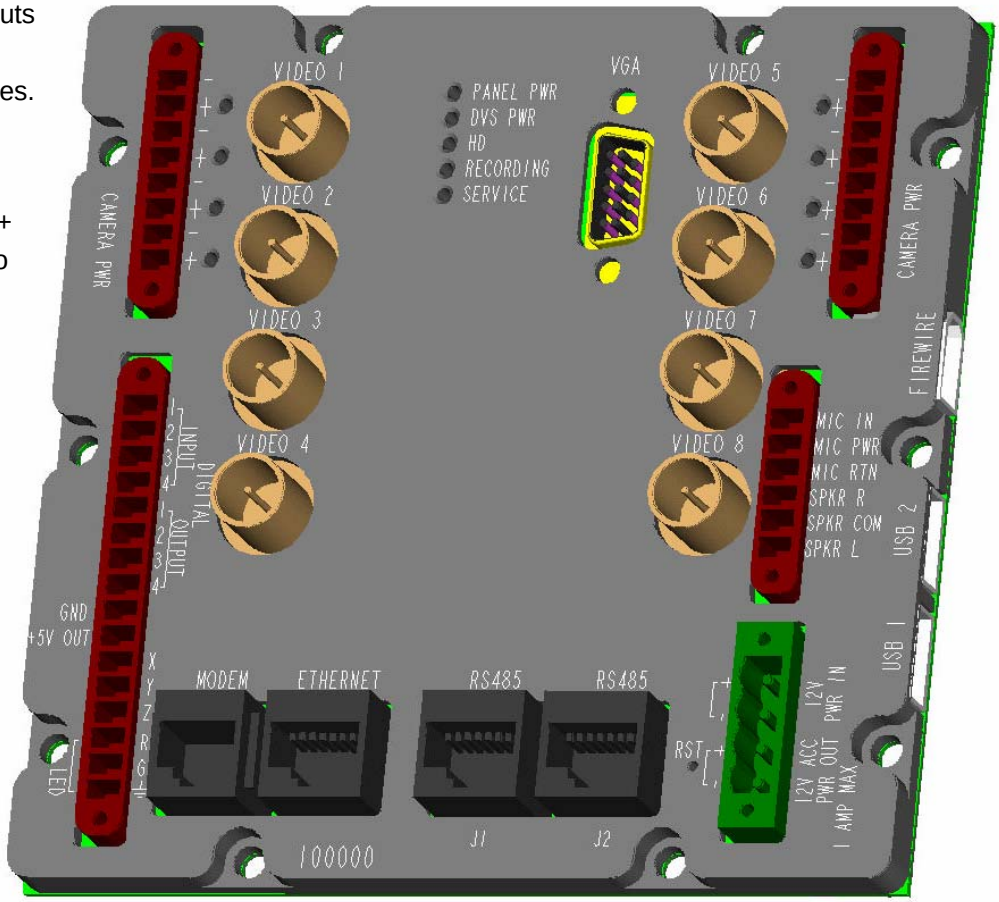
Many believe FireWire will become the standard for future video/high speed I/O.

Loss Video Detection- All eight (8) camera inputs have video sync loss detection, which will result in a logged alarm message. If the optional e-mail notification program is installed the loss of a camera will trigger an e-mail message to the designated department or person that has access to the Internet (see software below).

Temperature Sensor- the internal temperature sensor is programmable, allowing for system start up and shut down if the programmed temperature thresholds are exceeded.

Digital I/O Inputs and Outputs- The system has four digital inputs and four digital outputs. The inputs can detect switch closures.

3 Axis Accelerometer- The system has an optional accelerometer with a range of + or – 30G's. This can be used to monitor the severity of a turn that the bus is making or possibly the force of an impact from an accident. The accelerometer input lines can also be used as analog inputs when accelerometer is not installed.



Watch Dog Timer- Advanced hardware and software monitoring system.

System Status LED- Green LED light for visible system operational status.

Hard Drive LED- Green LED light indicating hard drive activity.

Reset Switch- A hard reset switch is located on the front interface panel.

2 RS485 Port- The system has two-multidrop RS485 ports available for the power controller and other peripherals such as J1708 monitoring.

Ethernet Port- The system has one 10/100 Ethernet port available for high-speed network communication.

Improved Power input

Improved input power wiring to 0.200 spacing screw terminals to accommodate larger power wires

Improved connector plug secured

Updated screw down terminal plugs with locking screw mount for secured connection.

Software

Logging Software- The DVS-2 system has software that records for a predetermine time (normally thirty (30) days) the system will log operating conditions such as battery voltage input and system temperature. This information can be used for remote performance monitoring of the DVS-2 unit or fleet.

As an option the DVS-2 system has as an e-mail software program that can be used to notify the user when one or more of the DVS-2 digital I/O inputs have been triggered. The input trigger indicating that a threshold has been exceeded can be from either the DVS-2 system hardware or the bus's J1708 communication port. Examples of the DVS-2 inputs are alarm/event switch, system temperature, and accelerometer. A few examples of the bus's J1708 communication port are engine transmission temperature, brake pressure, and turn signal indicator. By monitoring the bus's J1708 communications parameters, the e-mail logging software would then notify the maintenance department when the bus returns to the yard area. The software would identify this particular bus has been exceeding a predetermined parameter, such as the transmission temperature tolerance. The e-mail program can notify any number of people or departments on site or off site day or night anywhere in the country.