MobileView® Network Switch Quick Reference

Introduction

The MobileView Network Switch (MVNS) 3200 is a cost-effective, unmanaged network switch optimized for use with IP based video recording systems. The switch is available in 8 or 16 port models each having two Gigabit uplink ports and 48VDC PoE fast Ethernet downlink ports. The construction is rugged and features a simplified status interface, integrated cable management, passive cooling, and maximized functions necessary for remote installation in challenging vehicular environments.

Features

- 8 and 16 port models
- Support for 16 IP cameras at 1080p resolution, 30fps
- 7.2 Gbps switching capacity
- Available upgrades:
    - Hardware: expands 8 ports to 16 ports
    - Firmware: updates using web interface
- Simplified LED status indicators
- Fault relay for remote monitoring
- Available 51/102 Watts for PoE (8/16 Channel)
- Cable management bars and clips included
- Integrated mounting flange
- Standardized connection harness
- SAE-J1455 Compliance Tested

MVNS-3200 Functionality

The MVNS-3200 provides connectivity for up to 8 or 16 IP cameras with compatible MobileView network video recorders.

Ports

The MVNS-3200 has uplink and downlink ports providing connectivity between the recorder and other network devices.

1. Uplink Port: Dual 1GB Ethernet ports are provided. While both ports are general purpose, the one labeled NVR is intended for connection to the network video recorder and the other for connection to a second switch or other network device.

2. Downlink Port: Depending on model, up to 8 or 16 Fast Ethernet downlink ports are available. While available for connection to any network device, these ports are optimized for connection to MobileView IP cameras. Ports include PoE capability.

Power over Ethernet (PoE)

Downlink ports include PoE for connection to powered IP devices. Available power is optimized for MobileView IP cameras. Each set of 8 downlink ports has a maximum of 51 watts available to split across all ports (target = 6.375W) with each individually limited to 25.5 watts. If either limit is exceeded, the switch will trigger a fault and ports may not function properly. The switch automatically reverts to normal operation once power levels come within the specified limits.

Camera IP Auto-Assignment

The MVNS-3200 is optimized for connection to MobileView IP cameras with an expected uplink connection to MobileView network video recorders. By default, the switch detects compatible IP cameras and automatically assigns each a unique IP addresses according to the downlink port ID. Address assignment follows this scheme:

Port 1 = 192.168.1.101
Port 2 = 192.168.1.102
Port 3 = 192.168.1.103
Port XX = 192.168.1.1XX

The auto assignment function is enabled by default. It can be disabled in the switch configuration.

Configuration

The MVNS-3200 implements limited configuration using a built-in web server at the fixed IP address 192.168.1.64. Available options include firmware update, camera IP auto-assignment, and logout user. Future firmware may enable new or expanded features and controls.

Caution: Configuration changes are effective immediately.

Firmware Update

To update the MVNS-3200 firmware:

1. Open the configuration page.
2. Press **Browse**.
3. Select the firmware filename.
4. Press **OK** to load the text box with the firmware filename and location.

5. Press **Upgrade** to start the process and follow the on screen prompts to complete. The switch will reboot upon completion of the upgrade process.

Reboot & Factory Default

The MVNS-3200 includes a special purpose button used to manually reset the switch if it becomes unresponsive. To reset, insert a blunt tipped, non-metal object like a toothpick into the hole above the word **reboot** on the front of the switch until the recessed button is activated. After 1 second, remove the object and the switch will reboot.

To restore the device to factory defaults, hold the button pressed for 10 seconds. Upon object removal the switch will reboot and be configured to factory default settings.

Status Indicators

The MVNS-3200 displays the system status with two LED and one relay output.

Feature	Type	Use/Comment
Main Power	LED	Indicates power state Red = Power Available Red Blink = Booting Green = Device ON
Fault	LED	Indicates fault state Off = Normal Amber = Fault
Fault	Relay	Indicates fault state Active = Normal Inactive = Fault

The fault relay is active under normal conditions. This ensures that remote systems monitoring the switch observe a fault condition when the switch is OFF.

During the start up process the relay may change several times. Once the relay is in operational state, it will become stable.

Installation

The MVNS-3200 incorporates an integral mounting flange with four (4) precut bolt holes. To mount the switch:

1. Use the switch base as a template to mark and drill four (4) holes in the mounting surface.
2. Using bolts, locking washers, and nuts, mount the switch to the vehicle surface.

Note: If necessary, precut bolt holes may be widened to support up to ¼" diameter bolts.

Mounting

The MVNS-3200 is optimally designed for horizontal mounting to a flat and vibration resistant surface. Since it is a solid state device with no moving parts, the switch may be mounted in any orientation without effect on operational capabilities.

Caution: The switch utilizes passive cooling through a network of fins along the bottom of the device. These fins rely on air movement to function. Do not mount the switch to surfaces that restrict air movement such as carpet.

Harness & Connections

The MVNS-3200 has a single harness with two connectors to attach field wires. The connector and pin schedule are as shown.
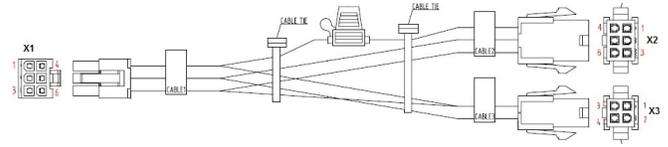
Switch	Color	Use	Field
X1.1	Red	Main PWR (+) Fused 7.5A	X2.1 & X2.4
X1.2	Black	GND	X2.2 & X2.5
X1.3	White	PWR Control (+)	X2.3 & X2.6
X1.4	Brown	Fault Relay (NC)	X3.1
X1.5	Blue	Fault Relay (C)	X3.2
X1.6	White	Fault Relay (NO)	X3.3

Caution: When making connections to the switch or harness, ensure the vehicle power is off or disconnected.

Caution: Power connections from the vehicle to the harness must use 16AWG capable of carrying up to a 7.5 amp load.

Caution: Use 7.5A ATO replace fuse only.

The switch is designed to have main power and ground applied all the time without starting. The device will initiate startup only when the power control input is present and will shut down when the control signal is absent.

Note: Connect the switch power control input to a 12V output from the recorder that is ON when the recorder is running. This will ensure the switch is ON when the recorder is ON.

Note: Refer to Electrical Specifications for acceptable power control input voltage values.

Input Voltage

The MVNS-3200 works within the following voltage ranges.

Model	Input Voltage	Supported Range	Power Out
8-Port	12V/24V	Low = 9VDC, High = 32VDC	51W
16-Port	24V Only	Low = 16VDC, High = 32VDC	102W

Note: Always use the correct input voltage range to avoid exceeding power out limits. Installing a 16 port model onto a 12 volt system will blow the fuse when output power causes the device to draw more than 7.5 amps of input power.

Note: The 8-port switch requires a minimum 10.8VDC to start. Once running, the device operate down to 9VDC.

Cable Management Bar

The MVNS-3200 includes cable management bars for cable routing, strain relief, and clean installation. The longer bar attaches to the front of the switch assembly and is used with an 8 port model. The second bar is shorter and attaches over ports 9-16 of the 16 port model. Use of the management bars is optional.

8-Port Expander Module

The MVNS-3200 8 port switch can be expanded to 16 ports by installing an 8 port expander module. Follow these steps to install the expander.

1. Remove the power from the switch.
2. Remove the cover plate on right side of the switch.
3. Locate the slide rails in the expansion slot.
4. Align the expander module base plate with slide rails.
5. Slide the entire expander into switch body.
6. Screw the expander in place.
7. Ensure the expander trim ring is flush with switch front.
8. Inspect the expander before applying power.

Once installed, the switch automatically recognizes the expander and starts working without any special programming or configuration. If the switch fault light illuminates, remove power and try resetting the expander.

Specifications

Physical

Indicators	Power (Bi color LED, Red/Green) Fault (LED, Amber)
Connectors	6-Pin Molex Plug Housing
Harness	15" Quick Connect Type

Switching

Ethernet Standards	IEEE802.3i (10BASE-T) IEEE802.3u (100BASE-TX) IEEE802.3ab (1000BASE-T)
Uplink Ports	2x Gigabit Ethernet
Downlink Ports	8x Fast Ethernet (8 Port Model) 16x Fast Ethernet (16 Port Model)
Switch Technology	Store and Forward
Protocol	CSMA/CD

MAC Table Size	8KB
RAM Buffer	1MB
Switching Capacity	7.2 Gbps
IP Camera Capacity	16 IP Cameras @ 1080p, 30fps

Electrical

Input Voltage	9 to 32 VDC (8 Port Model) 16 to 32 VDC (16 Port Model)
Input Current	7.5 Amp
Power Control	0-1VDC = OFF 5-32VDC = ON
Output Power	51 Watts Max (8 Port Model) 102 Watts Max (16 Port Model)
PoE Output	802.3at 48VDC @ 25.5A max per port
Output Relay	DPST, Form C, Dry Contact

Technical Support

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