

Rapid Eye™
Multi-Media Digital Video Recorder

Installation Guide

Issue	Date	Revisions
K9696 V2 Rev A	July 2004	Honeywell template.
V2.B	December 2004	Formatting: pagination, minor edits.
V2.C	August 2005	Minor edits: more serial ports, updated illustrations.
V3 Rev A	January 2006	Update to illustrations, site information checklist, references to <i>System Administrator Guide</i> for configuration of external hardware, specification summary, support for PIT and NetPIT devices, and port restrictions.
K14390	September 2006	Publication number changed. Added: notes from previous release. Re-formatting (pagination, figure captions).
K14390 V1 Rev A	July 2007	Updates: <i>Overview</i> , <i>Rear Panel Reference</i> , Camera Sabotage Detection, <i>Rapid Dome or Rapid Dome Gold Dome Systems</i> , <i>Connecting the USB Keyboard and USB Mouse to the DVR</i> , <i>Beeping from the DVR when an Alarm is Triggered</i> , DHCP Connection, Changing the Language Setting on the DVR, <i>Connectors for Serial Communications on Ports 3 to 10</i> , <i>ACUIX Camera</i> , <i>Use of Media by the DVR</i> , <i>for Clip Distribution</i> and <i>Site Information Checklist and Operator Notes</i> .
K14390 V1 Rev B	December 2007	Pagination. Minor edits.
800-02323 Rev A	March, July 2008	Updates: <i>Setting-up LocalView</i> . <i>Using LocalView to Modify the IP Address of the DVR</i> . <i>Quick-pilot Checklist for Remote Video</i> . <i>Avoiding Installation Problems for Video</i> . CSD renamed to Tamper Detection; see <i>Tamper Detection for Cameras: Calibration</i> . Style of hypertext links and back cover.

Declaration of Conformity

Honeywell Video declares that HRMxxxxxyzzzz Rapid Eye Multi-Media remote units are in conformity with Council Directives 89/336/EEC (EMC), 73/23/EEC (Product safety), and 95/5/EC (R&TTE).

These EuroNorms and harmonized standards were applied:

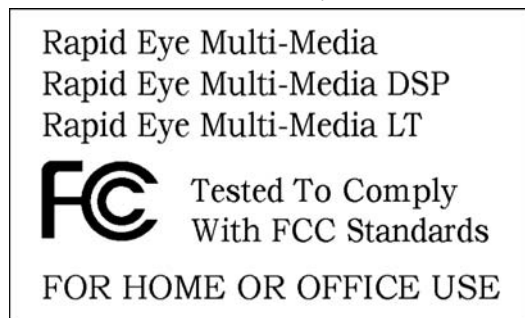
- EN 61000-6-3: 2001 Emission standard for residential environments (EN55022 Class B);
- EN50130-4: 1996 + A1: 1998 Alarm/security immunity requirements;
- EN60950: 2000, Safety of ITE;
- EN61000-3-2: 1995 Harmonics;
- EN61000-3-3: 1995, Flicker;
- TBR-21 (CTR-21) for PSTN and PBX.

FCC CFR 47, Part 15, Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or a radio/TV technician for help.



FCC Part 68

This equipment complies with Part 68 of the FCC rules. On the front cover of this equipment is a label that contains the FCC registration number and Ringer Equivalence Number (REN). You must provide this information to the telephone company when requested.

This equipment uses a USOC jack: RJ11.

This equipment may not be used on telephone-company-provided coin service. Connection to party lines is subject to state tariffs. This equipment is hearing aid compatible.

Ringer Equivalence Number

A Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

Industry Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

NOTICE: This equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). This is confirmed by marking the equipment with the Industry Canada certification number. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Repair or alteration made by the user to this equipment, or equipment malfunctions, may make the telecommunications company request the user disconnect the equipment.

Users should ensure for their protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Table 0–1. Specification summary

Operating environment

temperature	0° - 45°C. EN 50130-5 Environmental Class I.
power	100 - 240 V~, 60 - 50 Hz; auto-ranging.
heat dissipation	470 BTU/hr

Interface

cable requirement	Cables included with the unit are listed in table 2–1, on p. 16. Other connectors: DB9 (serial ports), BNC (video IN/OUT, public display), PC mouse, PC keyboard, RJ-11 (dial-up), RJ-45 (LAN), audio card (OUT/MIC IN), screw terminal connectors (ALARM & CONTROL), and custom RJ-45 (serial ports).
network access	Auto-sensing for 100BaseT or 10BaseT. LAN/WAN use through DSL or cable.
modem	Internal. Available on some models. Programmable. Complies with FCC (ACTA) Part 68, Industry Canada, TBR-21 - Public Switched Telephone Network (PSTN) and Private Branch Exchange (PBX).
local video output	Television monitor, for public display. VGA monitor, for operation and/or public display.
DVD-RW drive	For unit upgrade and/or duplicating and distributing video clips.

Approvals

UL 60950	Underwriters Laboratory listed for US and Canada (UL, cUL)
IEC 60950	CB certificate
EN 50130-4	Security system immunity requirements (UPS required)
EN 61000-6-3	RF emissions, residential environments (EN 55022 Class B)



The socket outlet shall be installed near the equipment and be easily accessible. This equipment shall be connected to an earthed mains outlet.



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Overview

New to Multi-Media?

Installers who are new to Multi-Media can benefit most from this section: a walk-through of the key steps of a Rapid Eye Multi-Media Digital Video Recorder (DVR) installation.

Not New to Multi-Media

Experienced installers can skip to sections:

- *Field Work*, p. 15 . Shows procedures and reference material for DVR installation.
- *Other Site Hardware*, p. 39. Shows optional hardware that you can add to a Rapid Eye site.

LocalView and View software

A Multi-Media DVR can be operated:

- Without a personal computer (PC). Use LocalView, onsite. Connect a VGA monitor and mouse to the DVR.
- With a PC, remotely, using View and Admin software. Installers need to use LocalView briefly, to change the IP Address of the DVR. For a checklist of the steps needed to operate a DVR from a remote PC, see: *Quick-pilot Checklist for Remote Video*, starting on p. 29.

Availability of LocalView on DVRs offering HVA

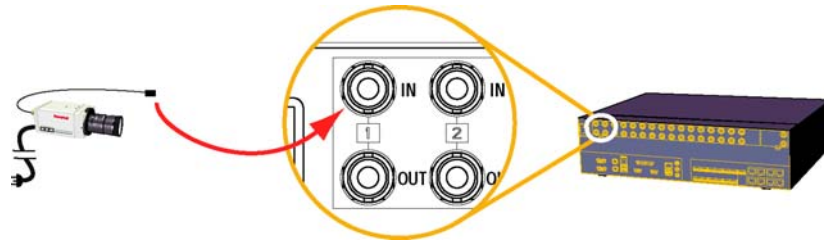
For Rapid Eye DVRs offering Honeywell Video Analytics (HVA), LocalView cannot be used to monitor video, or operate the DVR. On DVRs offering HVA, only the **Network Settings** can be edited in LocalView. To monitor video using DVRs offering HVA, use Rapid Eye View software, on a remote PC.

Overview: Installation

Cameras

Connect a coaxial cable of cameras (as many as 16) to the Multi-Media DVR.

Fig. 1-1. Use the First Available VIDEO INPUT “IN” on the Multi-Media Back-panel.



See also

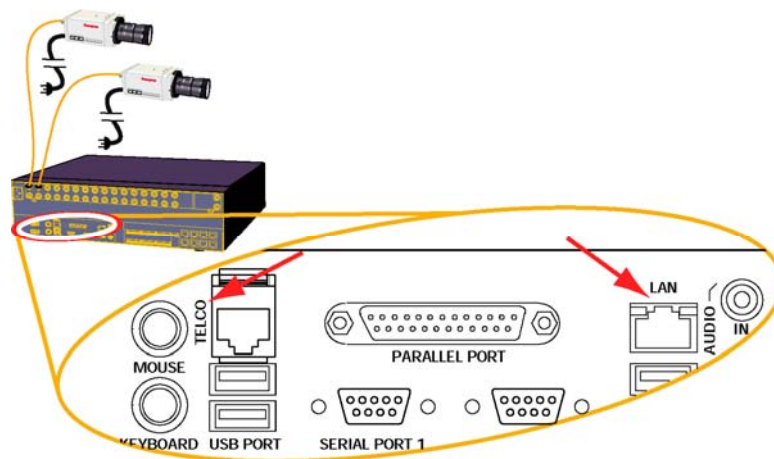
Connecting a Camera, p. 19

Coaxial Cable, p. 54

Communications

Connect the Multi-Media DVR to a network, to a telephone line, or both.

Fig. 1-2. Standard Connectors for Telephone Line (TELCO) or Network (LAN).

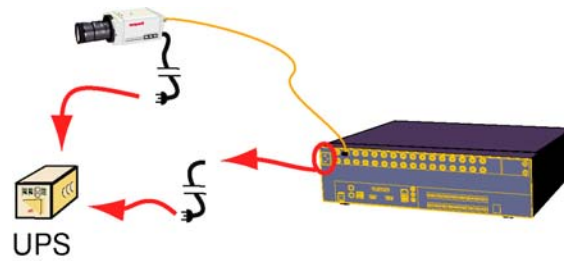


See also

Testing a Dial-up Connection in the Field, p. 27.

Power the Multi-Media DVR

Fig. 1-3. An Uninterruptible Power Supply (UPS) Benefits the DVR and the Cameras.



In Europe, a UPS is required to meet EN50130-4 Euro Norm.

See also

Powering the Multi-Media DVR, p. 20.

Configure the Multi-Media DVR

Whether you plan to operate the DVR:

- onsite, using LocalView, or
- remotely, using a network connection to View software,

you need to setup LocalView.

Dial-up only. For remote operation using only dial-up, Setting-up LocalView is not needed.

See also

Setting-up LocalView, p.22.

Where To, Next?

In these installation instructions

Detailed procedures and reference material, for each step of the walk-through, are in *Field Work*, starting on p. 15.

Operating the DVR remotely

If you plan to perform a quick-pilot after the *Field Work*, to connect remotely to Rapid Eye DVRs, you will also need to consult the *System Administrator Guide*, K14392, and the *Common Operator Guide*, K14976. Note that, after installing Rapid Eye software, documentation about Rapid Eye Multi-Media (REM) is available at the operator's PC. Click:

Start / All Programs / Rapid Eye Multi-Media 8.1/ Documentation / [REM publication title].

You can also consult the *Remote View Operator Guide*, K14391, which offers more procedures and reference material.

Web site

To see more Honeywell products that can be used with Multi-Media or to consult user guides of previous versions of this product, see: www.honeywellvideo.com

Storage Estimator

The Storage Estimator is installed along with Rapid Eye Software. To run the storage estimator, install Rapid Eye software, and then:

1. Click Start.
2. Point to (or click) All Programs.
3. Point to Rapid Eye Multi-Media 8.1. A menu appears.
4. Click Storage Estimator.

Background information

CCTV. For in-depth reference work about closed-circuit television in a security setting, see:

- Kruegle, Herman, *CCTV Surveillance: Video practices and technology*, Butterworth–Heinemann, Newton (MA), 1995, ISBN 0-7506-9028-3, TK6680.K78.



Effective video feeds are a major component of any CCTV system.

Planning for camera position, distance from subject, angle and lighting can be as critical as operating your Multi-Media DVR. For audio: planning microphone position, distance from subject and alarm bells can also be critical. Consult your camera and audio suppliers for optimal hardware setup.

Security. For ideas on how a defensible space can be enhanced by CCTV:

- Newman, Oscar, *Defensible Space: Crime Prevention through Urban Design*, Macmillan, New York, 1973, ASIN: 0020007507.

Field Work

Audience

Field technicians, tasked with the initial steps of an installation (see previous section), will find the steps expanded and explained in more detail, in this section.

Road Map to Field Work

1. Unpack the DVR.
2. As you start connecting hardware to the Multi-Media DVR, use the *Site Information Checklist and Operator Notes* on p. 56, to take notes.
3. Connect one or more cameras to the DVR.
4. According to the communications that you plan to use, connect the DVR to: a telephone line, your network or both.
5. Power up the camera(s) and the Multi-Media DVR.
6. For network connections, assign a TCP/IP address to the Multi-Media DVR, using: the LocalView interface, a keyboard (included), a mouse (included) and a monitor (not included).
7. Field-test the connection to the DVR.



Please do not remove factory seals on a Rapid Eye Multi-Media DVR.

Breaking them voids your warranty. There are no user-serviceable parts inside.

Field technicians, tasked with the initial steps of an installation (see sections *Cameras* and *Communications*, on p. 12), will find the steps expanded and explained in more detail, in this section.

Unpacking the DVR

1. Open the box and remove the Rapid Eye Multi-Media DVR, the power cord and other items from the box. The contents are listed in table 2-1.
2. Remove the plastic bag that surrounds the DVR.
3. Store the box and packaging materials.

Table 2–1. Contents of Rapid Eye’s Hardware Kit, WAMULTI8HW

Item, One of Each, Unless Otherwise Noted	Part #
power cord	P8137
rack ears, brackets and screws, for optional mounting of the DVR	SARE2EARS
network cable (CAT-5), RJ45 connectors, 2m length	K9530
straight through cable, DB9-pin, male connector, to DB9-pin, female connector	K0304
terminal block plug for FAULT RELAY, 4 positions, 3.5mm	K9531-4
terminal, block plugs (six), for ALARM inputs and CONTROL outputs, 8 positions, 3.5mm	K9531-8
keyboard, USB connector	n/a
screwdriver, slim, for terminal blocks	K9536
printed matter	
<i>Multi-Media DSP Unit: Quick Install</i> broadsheet	K14355
this document: <i>Rapid Eye Multi-Media Digital Video Recorder Installation Guide</i>	K14390

Table 2–2 Contents of Rapid Eye’s Software Kit, WAMULTI8DC

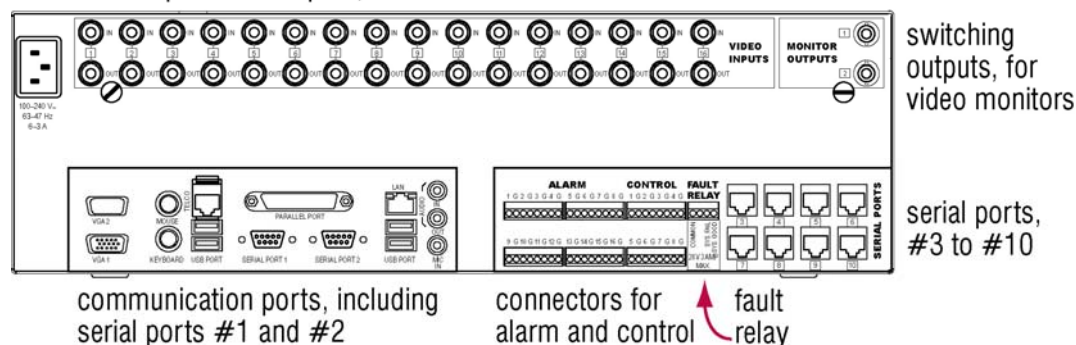
Item, one of each, unless otherwise noted	Part #
mouse, two-button, USB connector	K9258
mouse pad	K0007V1
CD, Rapid Eye Multi-Media software	HRM8ADMIN
printed matter	
<i>System Administrator Guide</i> —Using Admin and View software to configure Multi-Media DVRs and manage the accounts of Operators.	K14392
<i>Common Operator Guide</i> —An overview about performing the most common actions, in best-case situations.	K14976
<i>Remote View Operator Guide</i> for Rapid Eye Multi-Media DVRs.	K14391

Rear Panel Reference

Table 2-3 Panel Connectors

Connector Label	Description
VIDEO INPUTS	BNC connectors for video signal cable. A Multi-Media DVR has 16 video input connections.
VIDEO OUTPUTS	BNC connectors to relay a video feed to either a CCTV, NTSC or PAL monitor, VCR, or other device. The outs are capped for delivery.
MONITOR OUTPUT 1	BNC connector; can be set to produce test pattern or a camera tour.
MONITOR OUTPUT 2	BNC connector; inoperative for this release.
VGA 1	For an optional VGA monitor (not supplied).
VGA 2	For an optional VGA monitor (not supplied).
MOUSE	For a standard mouse (not supplied). Use the USB port on the KEYBOARD for the USB mouse (supplied).
KEYBOARD	For a standard keyboard (not supplied). Use a USB port for the USB KEYBOARD (supplied).
TELCO	RJ-11 connector to the modem of the Multi-Media DVR.
USB PORT	Can be used for the two USB connectors on the keyboard.
PARALLEL PORT	Inoperative. Do not connect a device to the PARALLEL PORT.
SERIAL PORT 1	DB9 connectors.
SERIAL PORT 2	
LAN	RJ-45 connector to 10/100 BT network card in the DVR.
AUDIO IN/OUT	Soundcard connectors.
MIC IN	DISABLED; use AUDIO IN.
ALARM INPUTS	Screw terminal connectors for input and ground* connection. Interface with devices such as alarms. TTL type: minimum high level of +2.4 volts; maximum low level of +0.4 volts.
CONTROL OUTPUTS	Screw terminal connectors for output and ground* connection. Control I/O must be referenced to the ground of the Multi-Media DVR. Interface with devices such as: lights, sirens, locks, and so on. TTL type. The outputs do not directly drive devices; they control relays that do so.
SERIAL PORT 3 to SERIAL PORT 10	RJ-45 connectors on port 3 to 10. Each port includes a built-in converter for RS-485 and RS-422 communication.

Fig. 2-1. Rear Panel of a Multi-Media DVR. The Connectors Are Listed in Table 2-3.
video inputs and outputs, for cameras



Damaged Unit or Missing Goods

1. Inspect the DVR for any other damage or missing parts. See table 2-1, *above*, for a checklist of the contents.
2. Make a note of the DVR's serial number, located on a sticker on the side of the DVR.
3. Call your Rapid Eye supplier to describe the problem and to tell them the DVR's serial number. The supplier assigns a Return Authorization (RA) number to the DVR.
4. Make a note of the RA.
5. Re-pack the DVR, along with the other contents.
6. Prominently display the RA on the shipping container.
7. Return the packaged DVR to the location specified by your supplier.

Reporting the Installation

Flexibility

As you start connecting hardware to the Multi-Media DVR, Honeywell recommends that installers take notes in a form similar to the one provided in *Site Information Checklist and Operator Notes*, on p. 56. Include a record of the hardware connected to the Multi-Media DVR, and of use of LocalView to make changes to the Rapid Eye site's configuration.

To whom...

Direct the report to the:

- Multi SA. An organization's Multi-Media system administrator (Multi SA), responsible for use of the Admin software.
- and/or -
- Network administrator. The installer may need to contact the organization's network administrator, depending on a Multi-Media system's sensitivity, complexity, size, and the Multi SA's knowledge of computers and networks.

Content of installation report

The report contains information needed for configuring the site(s) using Admin and View software.

The installation report can list:

- Telephone number or IP addresses assigned to Rapid Eye sites
- Information about the cameras (color, PTZ, and so on)
- Use of other hardware (gates, alarms and so on) connected to the Multi-Media DVR's input(s) or output(s).

Connecting a Camera

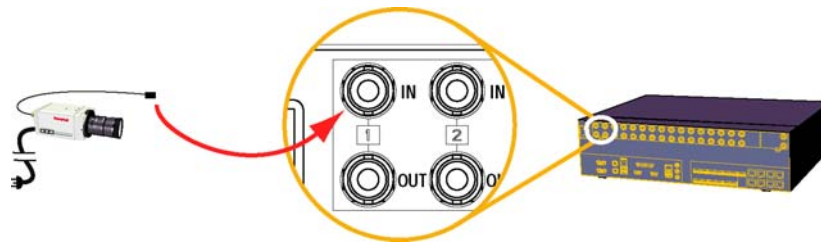


Power down the DVR before connecting hardware to it. See **Powering Up**, p. 21.

Connector

The BNC connector's low signal loss, ease of twist-on installation, and small size, make it a common connector for CCTV connections. Honeywell recommends using a solder- or crimp-type connector. Video is quite sensitive to bad connectors; do not use screw-type connectors. These can seriously compromise the DVR's performance.

Fig. 2-2. Connect Cameras Sequentially: 1, 2, 3 ... and So On.



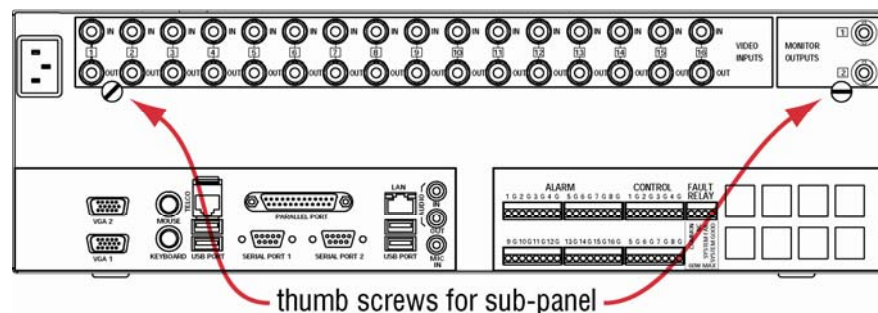
Rapid Dome or Rapid Dome Gold Dome Systems

With Rapid Dome or Rapid Dome Gold dome systems, using twisted pair transmission, Honeywell recommends that passive-to-passive transmission distances be no more than 500 feet (154 meters). For greater distance, please use an active receiver such as an ATP652R.

Detachable Camera I/O

A detachable sub-panel is used for mounting the camera input/output (I/O) connectors and monitor outputs. This is convenient for swapping the DVR with another without having to disconnect cameras.

Fig. 2-3. Removing the Camera Input/output (I/O) Connectors.



1. Power down the DVR.
2. At the back of the panel, unscrew the two thumbscrews. See fig. 2-3.
3. Pull the panel straight out, to avoid bending pins of the connectors inside.

Securing a Camera

Forethought about poor camera angles and the possibility of tampering with cameras or vandalism can help provide optimal gathering of evidence, for corporate use, or use of video in a court of law. See *Avoiding Installation Problems for Video*, p. 31.

Reference

The details of camera lens selection, camera angle, maintenance and so on, are beyond the scope of this guide. For an in-depth reference about the field of closed-circuit television in a security setting, see:

- Kruegle, Herman, *CCTV Surveillance: Video practices and technology*, Butterworth-Heinemann, Newton (MA), 1995, ISBN 0-7506-9028-3, TK6680.K78

Powering the Multi-Media DVR

Power requirement

Multi-Media DVRs can auto-range: 100–240 V~, 63–47 Hz, 6–3 A.



Do not remove the third wire of the three-prong electrical plug (aka “lifting” the ground). This may be a violation of local electrical codes, and goes against the recommendations of the Underwriters Laboratory.

For many cameras in a permanent installation, you can use a power supply such as an APS 2404UL (4 cameras) or APS 2416UL (16 cameras).

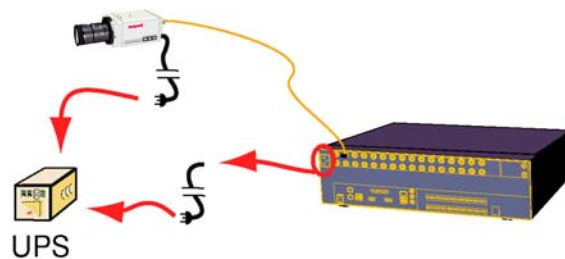
Clean power

A Multi-Media DVR should be connected to a dedicated ground circuit. The outlet and breaker box should be marked as such. With the exception of an optional line-conditioner and an uninterruptible power supply (UPS), nothing else should be plugged into this circuit.



Brownouts and voltage spikes can cause the DVR to reboot or malfunction. Please consider using a line-conditioner, and for short power failures, a UPS.

Fig. 2-4. Plugging-in a Multi-Media DVR.



Uninterruptible power supply: remember the cameras

To allow time for a safe, manual power-down, a line-conditioning UPS is recommended for a Multi-Media DVR and the cameras connected to the DVR. The UPS should guarantee 300 watts of

power for each Multi-Media DVR, for at least 30 minutes. In Europe, a UPS is required to meet EN50130-4.

Powering the cameras from a UPS ensures that the Multi-Media DVR can continue to record video during a power outage, whether the outage is due to your utility or to a security violation.

Powering Up

Wait after turning on the DVR

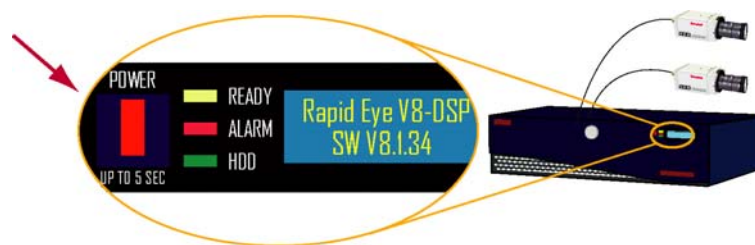
During the two minutes that the DVR needs to initialize, it is good practice to not turn it off. See *Unit Recovery*, p. 21. The end of the initialization is signaled by a double-beep from the DVR.

The recommended power up sequence

1. Plug the Multi-Media DVR and its cameras into a power source, preferably an uninterruptible power supply (UPS).
2. Turn on camera(s) and other hardware, connected to the DVR.
3. Press the power switch on the front of the Multi-Media DVR.

Note Power the cameras before the Multi-Media DVR. If not, cameras will not be auto-detected by the DVR.

Fig. 2-5. Powering a Multi-Media DVR.



Powering Down

1. Press and hold the power switch on the front of the Multi-Media DVR for up to five seconds.
2. Unplug the Multi-Media DVR from the uninterruptible power supply (UPS) or wall outlet.
3. Power down the camera(s) and/or other hardware.
4. Power down the UPS, if in use.

Unit Recovery

Unit recovery is an internal diagnostic that seldom occurs and cannot be interrupted, even by powering down the DVR. A unit recovery can take many hours, even dozens of hours on DVRs with a large storage capacity. If unit recovery occurs repeatedly, contact Honeywell technical support.

Setting-up LocalView

Availability on Multi-Media DSP

A PC keyboard (included), PC mouse (included) and PC monitor (not included) are needed when using LocalView to operate a Rapid Eye Multi-Media DSP DVR. LocalView is available while the DVR is running.

LocalView on DVRs Offering Honeywell Video Analytics

For Rapid Eye DVRs offering Honeywell Video Analytics (HVA), LocalView shows only the DVR's **Network Settings**.

Monitor

VGA. For using LocalView, a VGA monitor can be plugged directly to a Multi-Media DVR. The software is designed for a resolution of 800 x 600. Select a VGA monitor to run LocalView only if the monitor supports a resolution of at least 800 × 600.

NTSC. To use LocalView on an NTSC television set or monitor, you need a VGA- to-NTSC converter. Text labels on such equipment may be harder to read than on a VGA monitor.

PAL. To use LocalView on a PAL television set or monitor, you need a VGA- to-PAL converter. Text labels on such equipment may be harder to read than on a VGA monitor.



Do not place a monitor or other equipment directly on top of the Multi-Media DVR.

Connecting the USB Keyboard and USB Mouse to the DVR

A PC keyboard (included), PC mouse (included) and PC monitor (not included) are needed when using LocalView to operate a Rapid Eye Multi-Media DSP DVR.

USB connectors on the keyboard

The keyboard which is included has two USB connectors. Connect each one to a free USB port at the back of the DVR.

USB ports on the keyboard

- Connect the mouse to the USB port at the rear *of the keyboard*.
- The USB port on the top of the keyboard is an extension of a USB port on the DVR. This extension can be used to connect a USB flash drive (which is also commonly called a “memory stick”). The drive can be used for the storage of video clips.



In LocalView, if the language settings are changed more than fifty (50) times, Honeywell recommends rebooting the Rapid Eye DVR.

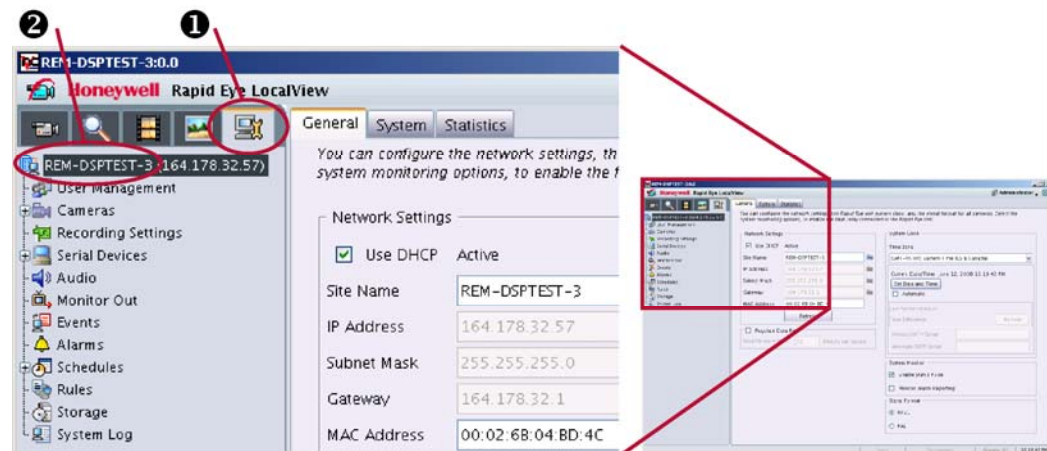
Using LocalView to Modify the IP Address of the DVR

IP address of a DVR

If a remote network connection is needed, configure the DVR's **IP Address**, using LocalView, before setting-up a connection using Admin software. Do so by using LocalView, to either:

- Access the network settings of the DVR.
- Use the Quick Setup Wizard.

Fig. 2-6. Accessing the Network Settings, using LocalView.



Quick Setup Wizard

For a common network connection, changes to the IP address can be made using the Quick Setup Wizard; see the *Multi-Media DSP Unit: Quick Install* broadsheet, K14355.

For Rapid Eye DVRs offering HVA, or to setup a different type of network connection, see the procedures on the next few pages; the Quick Setup Wizard and Help are not needed.

Remote connection

After an IP address has been assigned to the DVR, a remote connection can be setup using Admin software. See the *System Administrator Guide*, K14392.

Note For dial-up connections, *LocalView* is not needed to help setup a remote connection.

Common Network

Fig. 2-7. LocalView Panel for Network Settings.

Network Settings

Use DHCP Inactive

Site Name: REM-00000008516826

IP Address: 164.178.32.184

Subnet Mask: 255.255.255.0

Gateway: 164.178.32.1

MAC Address: N/A

Refresh

1. Using LocalView, type the **IP Address** of the DVR. See figure 2-7.
2. Press the Enter key on the keyboard.

Dynamic Host Configuration Protocol Using DNS

Fig. 2-8. LocalView Network Settings: DHCP.

Network Settings

Use DHCP Active

Site Name: REM-00000008516826

IP Address: 164.178.32.43

Subnet Mask: 255.255.255.0

Gateway: 164.178.32.1

MAC Address: 00:02:6B:04:8D:4C

Refresh

1. In Network Settings, enable **DHCP** on the Rapid Eye DVR. See figure 2-8.

By default, the **Site Name** in *LocalView* shows “REM[hyphen][DVR serial number]” and includes the leading zeroes. The DVR's serial number is also printed on a sticker affixed to the DVR.

You have the option changing the **Site Name**; if you do so, make a note of what was typed, for setting up a remote connection, using Admin software.

2. Click **Refresh**.

Note In *LocalView*, **Site Name** shows what can also be called the DVR's "computer name" or "network name"; in *Admin* software, **Site Name** is not the same: it is a label to identify the DVR, when using *View* software.

Timeout on network without DHCP

If DHCP is unavailable on your network, the DVR's request for DHCP services times-out after two minutes.

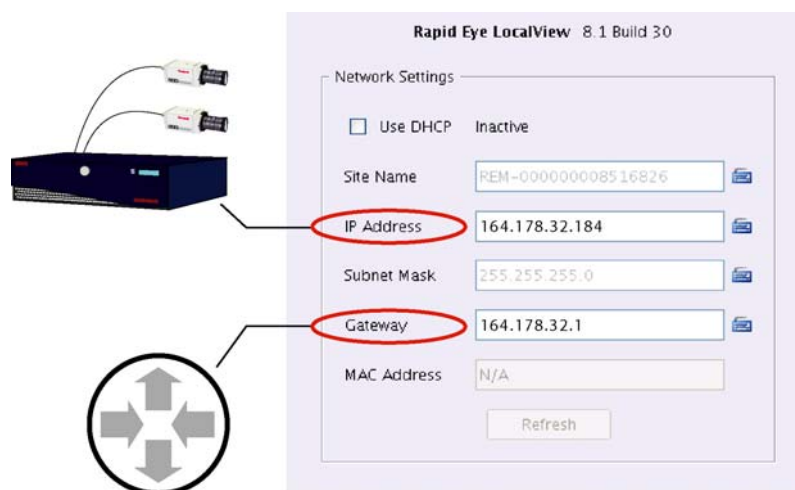
Dynamic Host Configuration Protocol, without DNS

1. In the DVR's Network Settings, enable **DHCP** on the Rapid Eye DVR. See figure 2–8, p. 24. The **Site Name** is not used in this type of connection.
2. Click **Refresh**. Make a note of the IP Address assigned by DHCP.
3. Contact the administrator of your network, to *reserve the IP address*, obtained in the previous step.

Note DHCP can change an address if it is not reserved, compromising future attempts to connect to the DVR.

Network Address Translation, Using an Internet Router

Fig. 2–9. LocalView Panel for Network Settings.



Match the DVR's Gateway to the Internet Router's Inside IP

1. In Network Settings, type the DVR's **IP Address**, as given out by the Network Administrator of the remote LAN.
2. In **Gateway**, type the internet router's *inside* IP.
3. Press the Enter key on the keyboard.

Router: source and destination ports

For the **destination ports** on the internet router, use the values in table 3–1, on p. 33. The source ports depends on how the remote connection is configured. See your internet router's

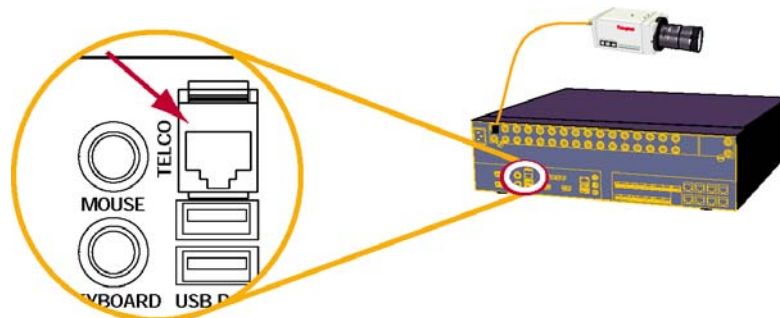
documentation and the NAT setup under "Network Address Translation, Using an Internet Router " in the *System Administrator Guide*, K14392.

Testing a Network Connection in the Field

PING the DVR.

Dial-up Connection

Fig. 2-10. Detail of "TELCO" Port, Used for Dial-up Connection.



1. Using a standard telephone cable with RJ-11 connectors, plug one connector into the DVR's TELCO port; see figure 2-10.
2. Plug the other connector in a telephone outlet.

Note Connect the DVR to a telephone line only if a dial-up connection is planned.



Power down the DVR before connecting hardware to it. See *Powering Up*, p. 21.

For Telco communication, a data-grade (fax) telephone line is preferable to a standard line. Special features, such as call waiting, should not be available on a telephone line used by a Multi-Media DVR.

Note For dial-up connections, *LocalView* is not needed to help setup a *remote* connection.

What next?

You are ready to power-up the camera(s) and the DVR. See *Powering the Multi-Media DVR*, on p. 20.

DVR's Internal Modem - Reference

Table 2-4 Default Settings of the Internal Modem on a Rapid Eye DVR

Field Name	Value
TELCO Port	Internal or Port 1
Baud	115,200
Wait	60
Prefix	AT
Initialization	Z
Dialing	D

Testing a Dial-up Connection in the Field

Using a standard telephone line, dial the number used to reach the DVR's modem, to listen for an answer tone.

Beeping from the DVR when an Alarm is Triggered

When using LocalView on a DVR without HVA, the operator has the option of setting the DVR to produce a beeping noise when alarms are triggered.

1. Using LocalView, on the user menu, click **Preferences**.
2. On the **Unit** tab, select **Beep on Alarms**.
3. Click **OK**.

Upgrading the Software of a DVR, Onsite

Onsite, you can upgrade a Multi-Media DVR equipped with a DVD drive, using the "Upgrade" DVD.

Fig. 2-11. Upgrading the DVR in the Field.



1. Remove the front cover of the Multi-Media DVR; if the cover is locked, use the key supplied with the DVR.
2. Press the button on the DVD drive. A tray slides out.
3. Place the DVD identified as "UPGRADE" into the tray. See figure 2-11.

4. Shut the DVD's tray.
5. While the CD-ROM remains in the DVR, power-down the DVR.
6. Power-up the DVR.
7. Check the blue LCD; as the DVR starts up, a set of messages appear: "Honeywell Startup Shell", "*Do Not Restart* Upgrading Unit", "Upgrade Complete. Restarting Unit", "Honeywell Startup Shell".
8. The final message that appears depends on the upgrade and the DVR's hardware. When the software version is shown on the second line, the DVR is operational. Press the button on the DVD drive and remove the DVD from the tray.
9. Shut the DVD drive's tray.
10. Replace the front cover on the DVR.

Use of Media by the DVR, for Clip Distribution

Using LocalView

After making a clip of video onsite, you have the option of distribution the clip using either:

- Copying the clip to a USB memory stick.
- Burning the clip to disc media, using the DVD drive on the Rapid Eye DVR. See table 2-5.

Table 2-5 Media for Video Clips

Media	Supported (yes / no)
CD-R	yes
CD-RW	yes
DVD -R	yes
DVD +R	yes
DVD -RW	no
DVD +RW	yes
DVD -RAM	no

Clip size

The file of a video clip (including audio and data) can be as big as two gigabytes (2 GB). See the media documentation for the capacity of that media to hold a clip.

If the size of a clip exceeds the space available on the media, a warning message appears. You can reduce the size of a clip by removing video feeds, or by shortening the clip.

Making and copying clip from a PC running View

Operators who make video clips offsite, using a PC running View software, can copy one clip or many, using the hardware on the PC.

Availability of LocalView on DVRs offering HVA

For Rapid Eye DVRs offering HVA, LocalView cannot be used to make clips. To make clips using DVRs offering HVA, use Rapid Eye View software.

Quick-pilot Checklist for Remote Video

Preparation

Your organization's Multi SA may need to establish that video can be obtained on an operator's PC, after *Testing a Network Connection in the Field*, p. 26, or *Testing a Dial-up Connection in the Field* p. 27.

Why a quick-pilot?

It is useful to establish that the hardware and software installations are in good working order *before* securing the system with passwords, user profiles, and so on, and before creating user accounts.

Software for the Remote Operation of Rapid Eye DVRs

Checklist for Admin Software

Fig. 3-1. Desktop Icon for Admin Software.



See the *System Administrator Guide*, K14392, about using *Admin* software to:

- Open the ports in your organization's firewall, that are needed by Rapid Eye. See *Firewall Reference*, p. 33.
- Install Rapid Eye Multi-Media (REM) software. How to install and use REM software by Honeywell is explained in the *System Administrator Guide*, K14392. After installing Rapid Eye software, documentation about Rapid Eye Multi-Media (REM) is available at the operator's PC. Click:
Start / All Programs / Rapid Eye Multi-Media 8.1/ Documentation / [REM publication title].

- While installing Rapid Eye software, users of Rapid Eye DVRs offering HVA have the option of installing Honeywell Video Analytics (HVA) software, to use ActivEye (AE) tools. After installing HVA software, documentation about AE is available at the operator's PC.
Click:
Start / All Programs / Honeywell Video Analytics - Client / Documentation / [AE publication title].
- Create and log on to an empty Multi-Media central database (Multi db).
- Name the Rapid Eye site.
- Add connection information about the Rapid Eye site.

Checklist for View Software

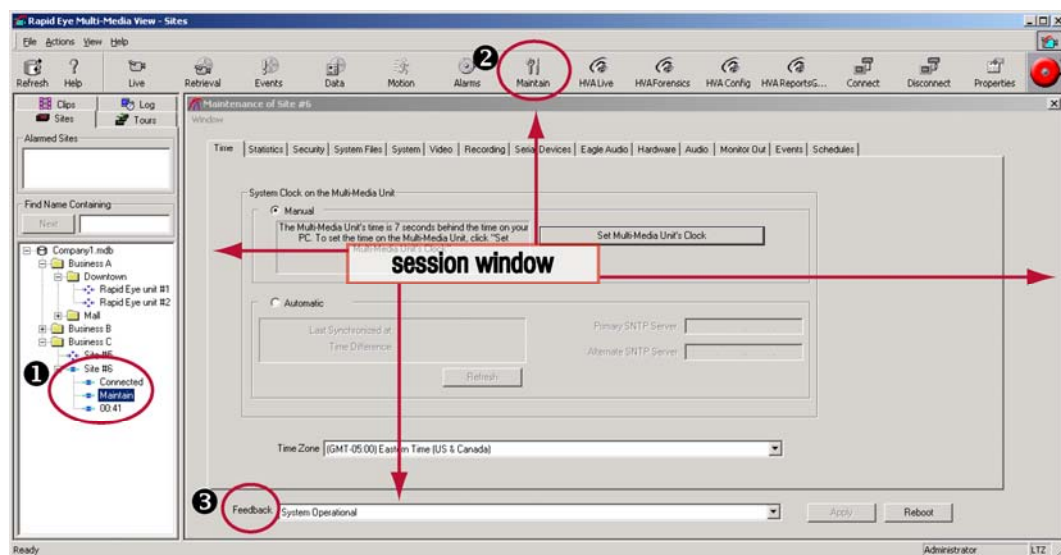
Fig. 3-2. Desktop Icon for View Software and button for a Maintenance Session.



See the *System Administrator Guide*, K14392, about using *View* software to:

- Run View software.
- Log on to the Multi db.
- Using View software, run a “Maintenance” session at the Rapid Eye site, to check if the connection is setup. After one Maintenance Session runs, the site is ready for further configuration and operation.
- Check if the camera(s) that were auto-detected by the Multi-Media DVR.
- Set the time of the Rapid Eye DVR.

Fig. 3-3. A Maintenance Session Needs to Run Once Before a Site Can Be Used.

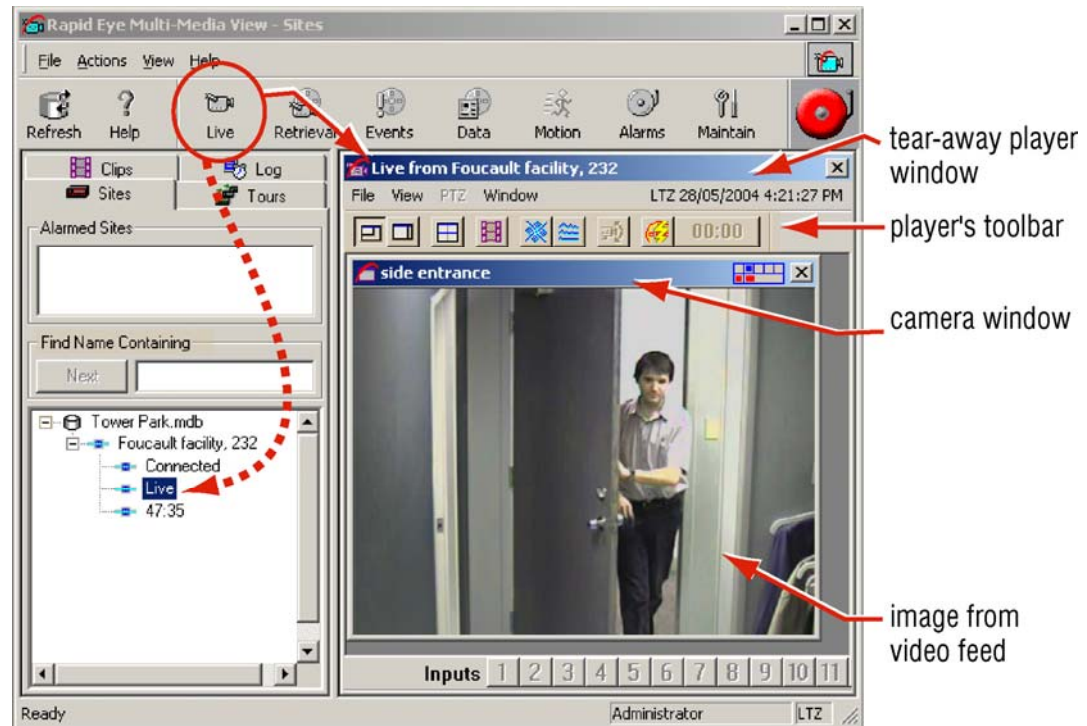


Obtaining Live Video

See the *Common Operator Guide*, K14976, about using View software to:

- Run a “Live” session, to obtain video.

Fig. 3–4. Select a Site on the Sites Tab, then Click Live.



Avoiding Installation Problems for Video

After a successful quick-pilot, check the recorded video for hard-to-predict situations. Changing environmental factors can compromise video at the source.

Spot-checking recorded video

After a day or two, run a retrieval session to look for artifacts in recorded video, at every half-hour or so, over a 24 hour period.

- **Sun.** The darkness of night or bright sunlight may indicate the need for changes in camera position or lighting. For outdoor cameras, it can be worthwhile to run such spot checks seasonally. Direct sunlight at short times during the day, such as daybreak, can interfere with recording for cameras aimed East, as can sundown for cameras pointing West.
- **After use of PTZ.** A camera with the ability to pan-tilt and zoom can be set to respond in a variety of ways after use and should be spot-checked. Run a Retrieval session to do so.
- **Scheduling.** The video archive can be spot-checked for recorded video when cameras are scheduled to record it. See "scheduling" in the *System Administrator Guide*.

- **Vandalism.** Tampering with cameras, the DVR or other hardware. This can be done by damaging hardware directly or indirectly interfering (by spraying paint, fog or moving objects in the way), or even through reconfiguration, using View software. Allow for access to the DVR, if maintenance is required, yet prevent easy criminal tampering with the system.
- **Dew, frost or kitchen grease.** Check camera lenses, or windows between the camera and the subject for transparency and cleanliness.
- **Darkness.** Without lighting or infrared cameras, indoor rooms and nighttime can make cameras ineffective.
- **Cameras at an outside window.** In a room that remains lit during evenings, reflection from the window can hamper or block visibility outside.
- **Opaque objects.** Even small objects can obstruct a camera when near, hampering an operator's view of a site. Large mobile objects, such as a truck also can be used to compromise video of an event. Work around camera blind spots due to: architecture, mobile equipment, vehicle docking, construction and so on.
- **Power outage.** Even when plugged into a UPS, a prolonged power outage compromises the recording of video.

Tamper Detection for Cameras: Calibration

Calibration of tamper detection requires that a Multi SA has set up tamper detection on a camera to trigger an alarm or to be logged, and that an operator use LocalView or a remote operator use View.

Blind. A camera can be blinded by too much light or too little. To calibrate, cover the camera with an opaque cloth or box, or prop a strong light in front of the camera for more than 48 seconds. Less time than this does not trigger an alarm or log entry. This amount of time is designed to reduce the number of false positives. Check with the operator if an alarm or log entry has occurred. Remove the opaque cloth. Turning the lights off at the scene can also trigger tamper detection, as can panning a PTZ camera from a light colored scene to a darker scene (or the opposite). Lowering the threshold can compensate. Blinding a camera also triggers the **Blur**-type and **Scene Change**-type of tamper detection.

Blur. It is not recommended to alter a camera's focus, once set. To simulate sabotage of focus, use a lens-like sheet of glass or plastic, or a transparent container of water, and prop it in front of the camera, during calibration.

Scene Change. After a Multi SA has rearmed an alarm produced by the Scene Change-type of tamper detection, move the camera back to the scene that the organization needs to monitor.

Tip



The **Blind** type of tamper detection can be used for fixed cameras and for PTZ cameras.

Blur and **Scene Change** tamper detection are designed for fixed cameras only, not for PTZ use. Using pan, tilt or zoom triggers **Blur** and **Scene Change**.

Calibrating Rows of Mobile Objects

Scene Change is sensitive to large scale changes in a scene. For example, using **Scene Change** for a camera that shows many chairs in a row, close by, such as in an airport or casino, may not be effective. If the DVR "learns" while people are sitting, that sitting persons are not to be considered as sabotage, when the chairs empty, the scene may have changed enough for the DVR to trigger a log entry or an alarm. And if the operator makes the DVR "learn" when the chairs are empty, then tamper detection may be triggered when people sit in the chairs. The same can be said for a row of vehicles that are frequently moved, such as in a taxi stand or truck depot.

Firewall Reference

Multi-Media sessions (live, retrieval and alarm) are sent to port 10 000, the DVR's base IP port. The value of the base port can be changed by a Multi SA. For port functions, see table 3-1.



The TCP ports should be left open in your organization's firewall.

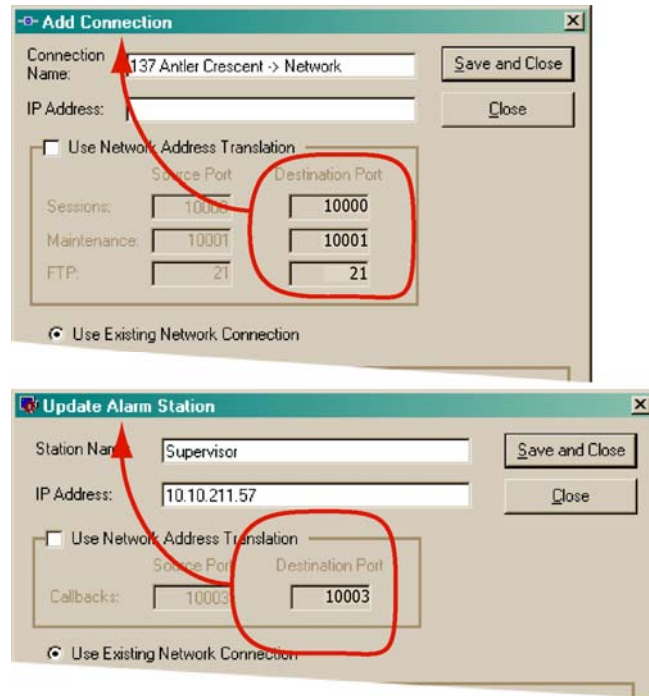
Table 3-1 Default Transmission Control Protocol (TCP) Ports

Port*	Name	Use	Needed at ...
10 000†	Base	live, retrieval and alarm sessions	Multi-Media DVR operator station
10 001	Maintenance	maintenance session for configuration, security, and sending/receiving system files	Multi-Media DVR administrator's station
21	FTP	file transfer during upgrades and to obtain the DVR's log	Multi-Media DVR administrator's station
10 003	Alarm	alarm server for callbacks	alarm station for Multi-Media DVRs

* These port settings are reported in Admin software, in the Add Connection/Update Connection dialogs and for alarms, when adding/updating an Alarm Station; see figure 3-5.

† The base port can be changed by using Admin software.

Fig. 3-5. A DVR's Base IP Ports: Remote Connection and Alarm Station.



Audio

Availability of LocalView on DVRs offering HVA

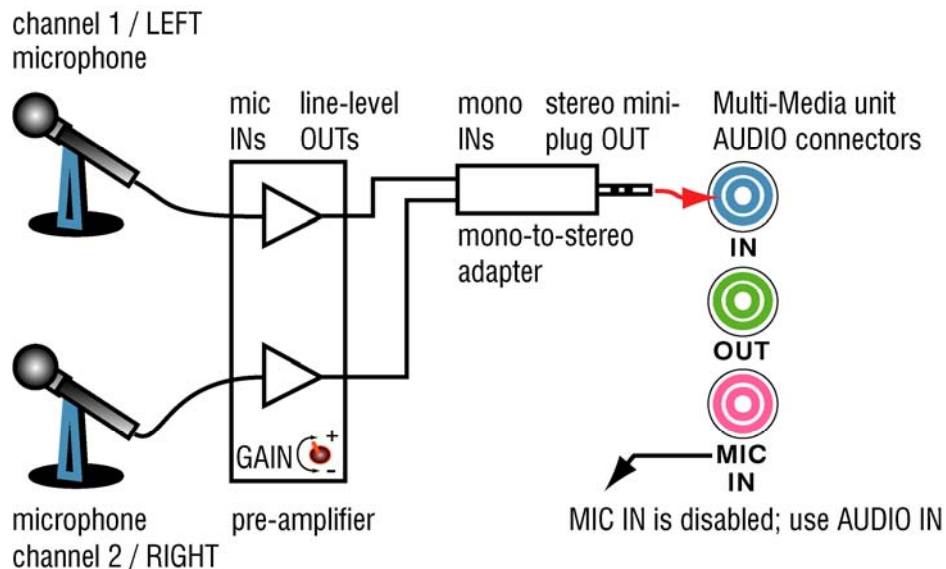
For Rapid Eye DVRs offering HVA, LocalView cannot be used to monitor audio. Only the Network Settings are shown in LocalView, on DVRs offering HVA. To monitor audio using DVRs offering HVA, use Rapid Eye View software.

Audio at a Multi-Media Site

Microphones

If security procedures call for viewing the person that is speaking, plan to place microphones in camera range. However, microphones can be placed independently of cameras; they have their own cabling. Microphones require amplification to provide line-level input to a Multi-Media DVR; see figure 4-1.

Fig. 4-1. Audio Input to Multi-Media DVR.



Selecting a microphone

Choosing a microphone type (condenser, canon, Lavalier, and so on), pickup pattern (cardioid, omni-directional, and so on), sensitivity, whether one needs phantom power, and other considerations, are beyond the scope of these installation instructions. Unlike camera domes, you can mix different models of microphone at a site. Please see your microphone supplier.

Placing a microphone

Microphone placement requires experience with noise sources, sound absorption and reflections; these topics are beyond the scope of these instructions. Please see your microphone supplier. See also *Checking for Audio Interference*, next.

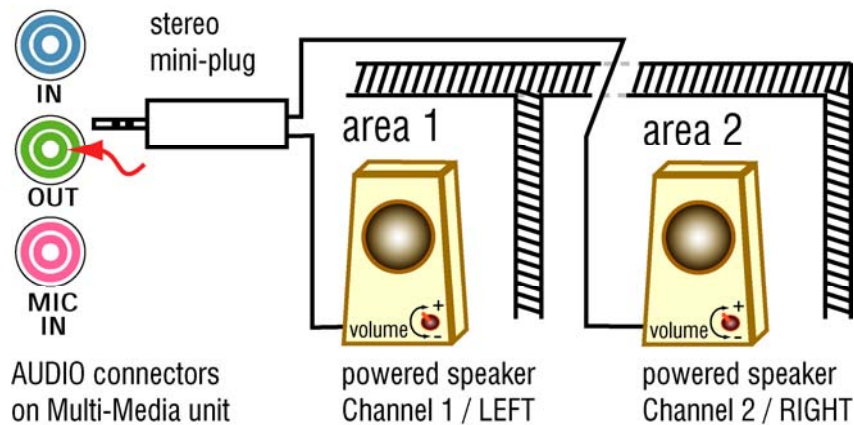
Speakers

Connect powered speakers to a Multi-Media DVR so that people at the site can hear an operator. See figure 4-2.



Place speakers away from microphones, to avoid audio feedback.

Fig. 4-2. Connecting Speakers.



Use the “[Audio] In” connector. The “Mic In” connector is disabled.

Checking for Audio Interference

Checking one’s installation for hard-to-predict situations includes spot-checking for:

- **Live audio.** Coordinate the testing of audio with fire alarm and security alarm testing. Using View, connect to that Multi-Media DVR and check audio for feedback and interference, before and during alarms.

- **Recorded audio.** After a day or two, check for background noise in recordings, using a retrieval session to spot-check each microphone for a few seconds at every half-hour or so, during a 24 hour period. This can reveal if microphones are placed too near sources of background noise such as a vent. Noise is amplified to a point where it interferes with audio. Hard to predict noise from the area's soundscape—rush-hour traffic, passing trains and planes, crowds in a stadium, and so on—may not have been present during the installation of microphones and speakers.



Test loud alarms during the installation; they can interfere with Multi-Media audio.

Placing a microphone or speaker close to a ringing alarm bell can render either ineffective: the bell noise can mask the voice of an operator attempting to use the microphone. The bell could also mask a voice coming from a speaker. Loud alarms can interfere with microphones or a speaker when they could be needed most.

Audio for Operators

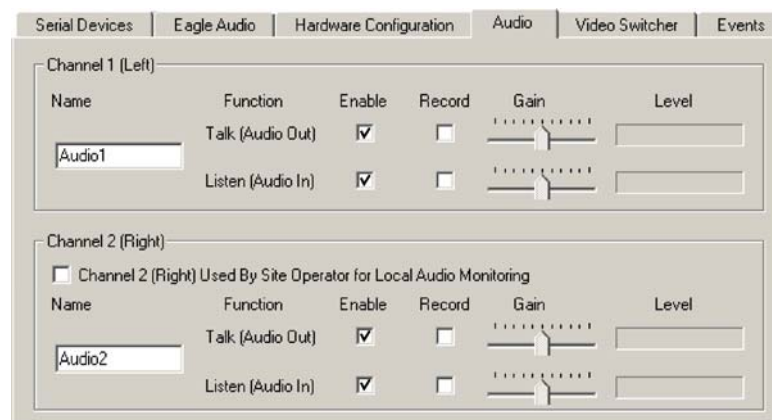
At View Operator's PC

When listening, sound sources are mixed at a View operator's station, regardless of the number of sites being monitored at once.

To Send and Receive Audio Offsite

1. Install a sound card on the View operator's PC.
2. Connect a microphone to the PC's sound card.
3. Connect a powered speaker to the PC's sound card.

Fig. 4-3. Audio Tab.



The Audio tab is unavailable on PCs without a soundcard.

To Monitor and Record Audio

You can monitor, record or do both, for each channel.

1. Click the **Enable** boxes to enable transmission of sound from point to point and to monitor it.
2. Click the **Record** box to record sound along with the video from the site.

To Enable “Talking to” a Site

Click the monitor Talk boxes, as needed for each channel; see fig. 4-3. An operator can broadcast on either or both channels, and to as many sites at once as can be opened, that have audio.



Loud alarms can interfere with microphones or a speaker at times when they could be needed most.

Onsite Audio, Using LocalView

Local View can be used to test or permanently monitor audio onsite.

1. Using LocalView, on the Audio Setup tab, add a checkmark to the box for Channel 2 (Right) Used by Site Operator for Local Audio Monitoring. The "channel 2" Enable, Record and name are not needed for monitoring audio by a LocalView operator and are removed from view. The Gain controls remain available for both audio channels.
2. In the Channel 1 controls, add checkmarks to the Enable boxes for Talk, Listen or both, as needed.
3. You have the option of adding checkmarks to Record boxes for Talk, Listen or both, as needed. The Enabled box needs to be checked before its Record box can be.

To Disable Audio for LocalView

On the Audio Setup tab, remove the checkmark in the box for **Channel 2 (Right) Used by**.

Other Site Hardware

You can add hardware to a Multi-Media DVR at any time. Multi-Media software is then used to make Multi-Media DVRs “aware” of the hardware. The steps to do so are outlined in the road map, below.

Road map for adding hardware

After testing the connection from an operator's PC to a Multi-Media DVR, power-down the DVR, then:

- Place the DVR and its camera(s) in their operational locations, and power-up the DVR.
- Use View software to run a Maintenance session at the site to specify other (optional) hardware connected to the Multi-Media DVR: extra cameras, gates controlled by a Multi-Media operator, heat sensors.

Aside from cameras and communications, a Multi-Media DVR can interface with many different types of hardware, such as:

- Sensors: motion, heat, alarm and so on.
- Relay triggered devices: locks, gates, warning sirens, and so on.
- Alarm panel: a fault relay offers a means to monitor the DVR's operational status, using an external device.
- Point of sale (POS) hardware, using text messaging over serial communications, or other device.

Securing a Multi-Media DVR

When planning where to place the DVR, inform your planning authority about:

- Allowing for access to the DVR, if maintenance is required, yet preventing easy criminal tampering with the system
- and -
- Environmental factors that can hamper the DVR: lack of ventilation, dust, condensation, excessive heat or cold.

To secure the DVR

1. Select a secure, clean, well-ventilated area for the Rapid Eye Multi-Media DVR.
2. You have the option of rack-mounting the DVR. Leave a one-inch space on the sides of the rack for ventilation.
3. Plug the supplied power cord from the rear of the Multi-Media DVR to a grounded power supply, preferably through an uninterruptible power supply (UPS).



Do not block the air intakes on the side of a Multi-Media DVR.

A warning sticker indicates this on the right-hand side of the DVR.



Do not place equipment, such as a monitor, directly on top of the Multi-Media DVR.

Connectors for Serial Communications on Ports 3 to 10

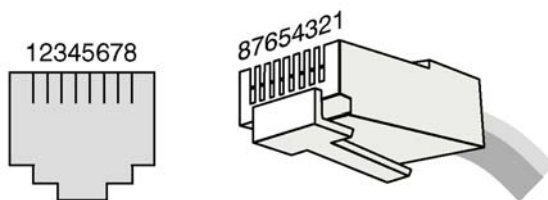
The wiring for the RJ-45 connectors on a Multi-Media DVR's PORT 3 to PORT 10 is listed in table 5-1. The Multi-protocol chip is a Maxim MAX3161.

Table 5-1 Wiring an RJ-45 cable for Serial Use.

RS-232	RS-422 (full duplex)	RS485 (half duplex)
GND – 4	GND – 4	GND – 4
RXD – 5	+TXD – 1	+DX – 1
TXD – 6	-TXD – 2	-DX – 2
CTS – 7	+RXD – 7	
RTS – 8	-RXD – 3	

* Rx = Rapid Eye input; Tx = Rapid Eye output

Fig. 5-1. Pin Order on Serial Ports 3 to 10 of a Multi-Media DVR, and RJ-45 Connector.



DVR Hard Disk and S.M.A.R.T.

Hard disk use on the DVR for storing video, audio and data is monitored for signs of degradation that can lead to failure. Degradation is reported on a Multi-Media DVR's blue LCD screen as: "CRITICAL STATE: DISK FAILURE". The pilot light on a disk drive turns red to identify a hard disk that is degrading. This degradation report is also a Multi-Media event: S.M.A.R.T. (Self Monitoring Analysis and Recording Technology).

Hard Disk Report

The SMART report is not a cause for alarm. It is a suggestion that the hard disk should be replaced. Contact an authorized Honeywell dealer to obtain a mounted hard disk for your Multi-Media DVR. See figures 5-2 and 5-3.

Removing a Drive in the DVR

Fig. 5-2. Handle on a Drive for a Rapid Eye DVR.

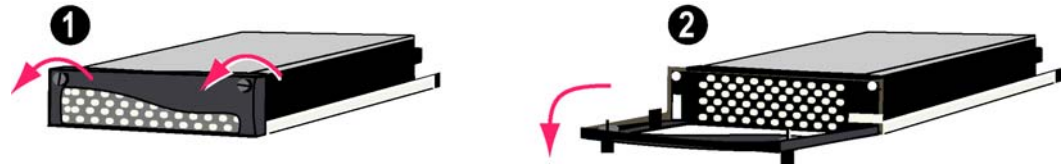


Fig. 5-3. Removing a Drive on a Rapid Eye DVR.



Hardware Options

A Rapid Eye Multi-Media DVR interfaces with hardware such as:

- Public display monitor, p. 42.
- Cameras, domes that pan-tilt-zoom (PTZ)—*Connecting a PTZ Dome*, p. 43;
- Alarm sensors, connected to a Multi-Media DVR's inputs—*Inputs for Sensors*, p. 46;
- Relay triggered devices, including locks, gates, warning sirens, and so on, that connect to the outputs of a Multi-Media DVR—*Control Outputs*, p. 47;
- Relay triggered device for system monitoring—*System Monitoring*, p. 48;
- Point of sale hardware, with text messaging over serial communications, or any other device with serial communication capability—*Point of Sale Hardware*, p. 50;
- Secondary communications (network or dial-up), including an external modem—*External Modems*, p. 52.

Public Display Monitor

A public display monitor can be set up independently of LocalView, on Multi-Media and Multi-Media LT DVRs. There is no need for converters between the monitor and the Multi-Media DVR.

1. Mount a monitor where you plan to have it display a video feed. For NTSC cameras, use an NTSC video monitor; for PAL cameras, use a PAL monitor.
2. Connect a coaxial cable to the INPUT of the video monitor.
3. Connect the other end of the coaxial cable to MONITOR OUTPUT 1, at the back of the Multi-Media DVR or Multi-Media LT DVR.
4. Using View software, run a maintenance session.
5. Click the Monitor Out tab.
6. Select a camera that will feed the monitor in the Cameras to Choose from box.
7. Type a number in the Duration box; the number sets the amount of time (in seconds) that the video feed is displayed on the monitor. If you select only one camera, the duration is ignored and the feed is displayed without interruption.
8. Click Add. You have the option of adding more video feeds to the public monitor; to do so, repeat steps 6, 7 and 8.



Do not “T-tap” cable; this can introduce unwanted distortion into the video signal. To obtain a video feed, use an output port on the Multi-Media DVR.

Using LocalView for Public Display

You have the option of using VGA monitor(s) as a public display monitor. Set Local View to display the camera(s) that you need. More than one camera can be displayed simultaneously. For a better public display of video, and if displaying one video feed at a time is satisfactory, Honeywell recommends using a dedicated NTSC (or PAL) monitor, rather than the VGA output used for LocalView.

Availability of LocalView on DVRs offering HVA

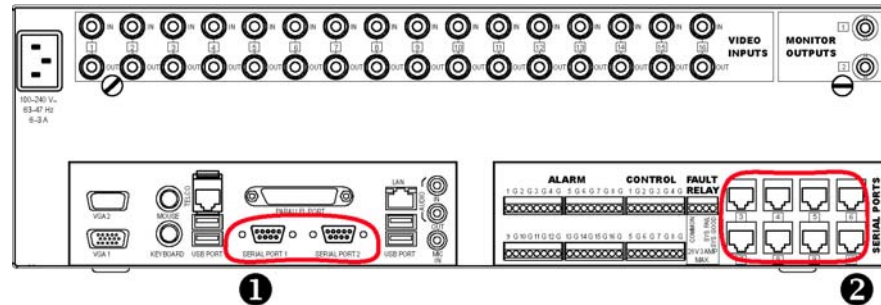
For Rapid Eye DVRs offering HVA, LocalView cannot be used to monitor video. To monitor video on DVRs offering HVA, use Rapid Eye View software.

Connecting a PTZ Dome

Connection to the DVR

Connect the Data In port of a PTZ dome (an RS-485 connector) to one of the ports on a Multi-Media DVR. Serial ports 3 to 10 do not need a 232/485 converter.

Fig. 5-4. Serial Ports 3 to 10 (2) Have Built-in RS-232/485 Converters.



ACUIX Camera

An ACUIX™ PTZ camera dome with Intellibus™ can be connected to a Rapid Eye Multi-Media DVR and configured using Rapid Eye View software.

Installers:

- Set ACUIX cameras to their Intellibus mode (IBus).
- Set DIP switch 5–8 to ON, on each ACUIX camera. The **Camera Address** can then be set using rotary switches (SW1 to SW4) on the PCB at the base of the dome. Do not use the same **Camera Address** on two or more domes connected to the same bus.
- Connected the ACUIX cameras to a port on the Rapid Eye DVR.
- Notified the Multi SA of the number of the port used on the Rapid Eye DVR and the **Camera Address** used for each ACUIX camera.

Converter: Technical Notes

A 232/485 converter interfaces with a PTZ dome/controller to the Multi-Media DVR. The converter amplifies PTZ control data for transmission over longer distances for a maximum of 1.2 km (or 4,000 feet).

Using a Converter

Serial Ports 3 through 10

On a Multi-Media DSP DVR, a converter may not be needed on ports 3 through 10; they have an RS-485 connection available.

Serial Ports 1 and 2

Supply an 'RS-485 to RS-232', bi-directional converter (not supplied). A 232/485 converter interfaces with a PTZ dome/controller to the Multi-Media DVR. The converter amplifies PTZ control data for transmission over longer distances for a maximum of 1.2 km (or 4,000 feet).

Fig. 5-5. PTZ Wiring, Using SERIAL PORT 1 or 2.

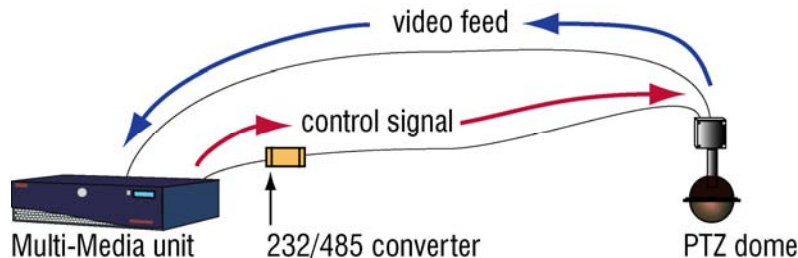


Table 5-2 Cabling a PTZ dome

Type	Dome to converter	Converter to Multi-Media DVR
Javelin / Pelco	RS-485 cable	25-pin male to 9-pin female to RS-232 port - not included
Kalatel	RS-485 cable	9-pin female to RS-232 port - included with KTD-312 computer interface

Many PTZ Domes on One Serial Communications Line

You can connect up to 16 domes on one communication line connected to the Multi-Media DVR. Terminate the communication input(s) of the last dome in the chain. Leave other domes un-terminated.

HD6/KD6/KD6i Domes

The HD6 / KD6 / KD6i domes cannot share the same serial communications line with other makes and models of domes.

Consistent port attributes

Honeywell recommends that if domes are to share a serial communications line, installers should select domes that:

- function at the same settings for: Baud Rate, Data Bits, Parity, and Stop Bits
- use the same PTZ drivers.



Domes that require different PTZ drivers may not function as expected if they are installed on the same port/serial communications line.

Configuring PTZ

Use View software to run a maintenance session; use the Video tab to configure PTZ. Multi-Media DVRs supports the PTZ domes listed in table 5-3. A Multi-Media site can support many types of PTZ software drivers at the same time. See the *System Administrator Guide* for procedures to enable a PTZ dome.

Table 5-3 PTZ Drivers for Controllers and Domes.

Driver (name)*	Baud (rate)	Support for (dome/controller/PIT device)
Bossware	19200	PIT device, to which domes are connected.
Honeywell Fixed Camera	9600	Honeywell HCU484
Intellibus	38400	ACUIX camera
Javelin 308	9600	Javelin 308 Controller
Kalatel	9600 or 2400	Kalatel KTD 312 Cyberdome
Pelco D	4800, 9600, or 2400	Pelco D
Pelco P	2400	Pelco P
Rapid Dome/Orbiter	9600	RapidDome or Orbiter
SensorMatic RS422	4800	SensorMatic RS422: Delta and Speed
Ultrak (using VCL)	2400	Ultrak (configured as VCL)
Ultrak KD6	9600	KD6, HD6, HD6i

* The drivers are not listed alphabetically in View software. A driver can be used with domes other than those listed. For other domes, controllers or PIT devices, consult their documentation.



After the installation, installers should communicate to the Multi SA: each address used by the PTZ domes and the number of the port used for PTZ on the Rapid Eye DVR.

Alarm Sensors

To connect alarm-type hardware to a Multi-Media DVR, use hookup wire in the 20-gauge range.

Tools

You may need:

- A slot screwdriver—supplied. The screws are smaller than those for a 1/8" screwdriver.
- A wire stripper.

To Connect an Alarm Sensor

1. From the alarm wires' tips, strip approximately 0.6 cm (1/4 inch) of insulation.
2. Insert each alarm wire into the screw-type, terminal connector on the ALARM terminal strip: one wire to the numbered terminal connection and the other wire to ground.

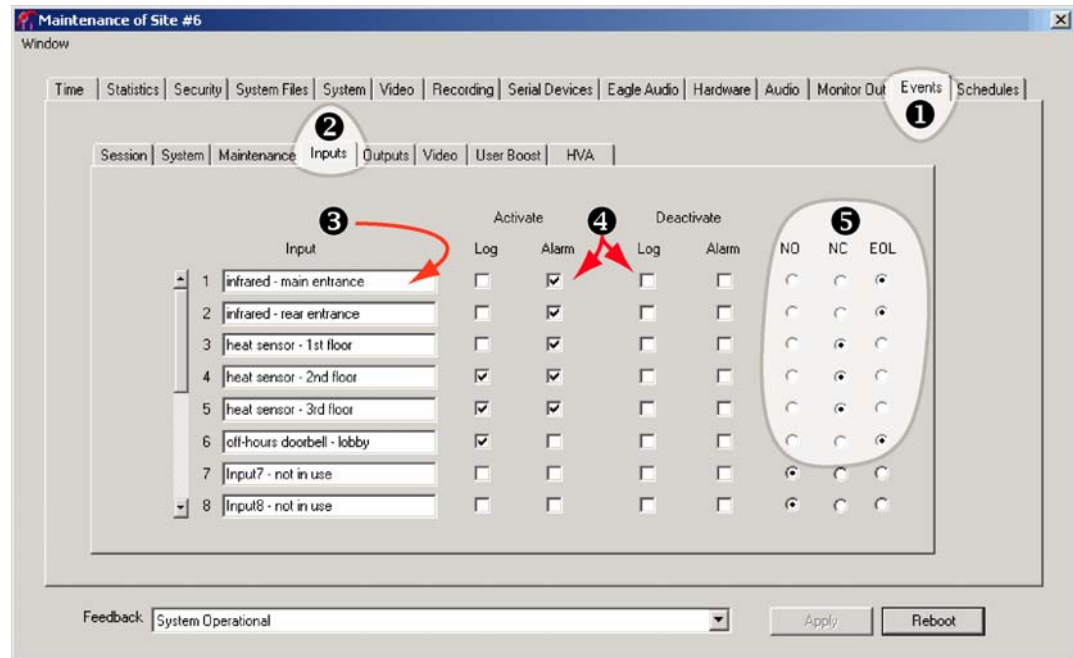


To avoid short-circuits, ensure that bare wire is not visible at the rear panel.

Inputs for Sensors

Configuration, using View software

Fig. 5–6. Input Configuration During a Maintenance Session.



1. Using View, start a maintenance session for the Rapid Eye site. Please wait until the “System Operational” message appears. Click the Events tab. More tabs are displayed.
2. Click the Inputs tab.
3. Type the name of an input in its Input box. You have the option of identifying inputs that are not in use; see figure 5–6, input 7 and input 8.
4. You have the option of monitoring the activation of inputs and their deactivation by selecting Log and Alarm as needed, for each. .
5. By default, alarm/control inputs are configured as "NO". Click "NC" or "EOL", as needed.

Technical Notes

Inputs to a Multi-Media DVR, used by hardware devices

Honeywell recommends that installers report the connection of input devices to the organization’s Multi-Media System Administrator (Multi SA), indicating if the devices are using connections that are: normally open, normally closed or end-of-line.

Alarm sensors

Most alarm sensor units have a dry contact for outputs, usually providing normally open (NO) contacts or normally closed (NC) contacts. The sensor inputs to a Multi-Media video DVR are configured for normally open (NO) devices.

End-of-line

A sensor input can also be configured as EOL (end-of-line or protected). The load for an EOL connection is 2 k Ω , nominal

Table 5–4 Sensor hardware

Acronym	Sensor Input	Implication
NO	Normally Open	input is active when switch goes ON
NC	Normally Closed	input is active when switch goes OFF
EOL	End of Line	input is active when switch goes ON, or if wires to the alarm sensor are cut

Control Outputs

Power rating

Up to 24 mA can be drawn at each output. Use hookup wire in the 20-gauge range to connect the outputs to relay triggered devices (locks, gates, warning sirens and so on) to a Multi-Media DVR.

Tools

You may need:

- A slot screwdriver—supplied. The screws are slightly smaller than those for a 1/8" screwdriver.
- A wire stripper.

Connector

1. From the hookup wires' tips, strip approximately 0.6 cm (1/4 inch) of insulation.
2. Insert each relay control wire to the screw-type, terminal connector on the CONTROL OUTPUTS terminal strip: one wire to ground and the other wire to the numbered connection you choose.



To avoid short-circuits, ensure that bare wire is not visible at the rear panel.

Purpose

Outputs can be activated by:

- A View operator
- Automatically, by response rules, set by a Multi SA. See *System Monitoring*, next.

System Monitoring

Overview

A Multi-Media DVR can be monitored for failure to:

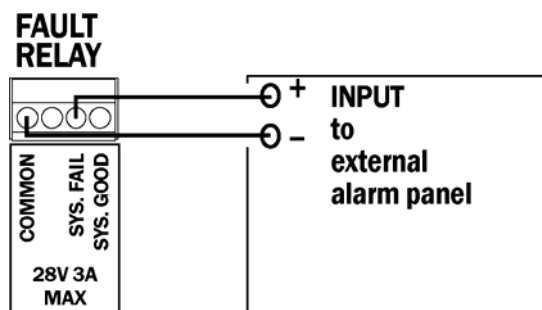
- Function
- Report alarms
- Hardware failure to record video
- Configuration error, to stop the recording of video.

Connection to an Alarm Panel

Connect a combination of Fault Relay circuitry and outputs to an alarm panel, preset to warn your organization, if failure occurs. An output can be configured to respond to a Response Schedule.

Fault Relay Hardware

Fig. 5-7. The DVR's FAULT RELAY Can Be Connected to an External Alarm Panel.



Nineteen-minute delay

If the DVR fails to function, report alarms or record video due to hardware failure, for more than 19 minutes, the FAULT RELAY is triggered.

Immediate trigger

A power outage triggers the relay immediately.



Do not connect a device to CONTROL output 6 after enabling the FAULT RELAY.

Enabling the FAULT RELAY provides a status pulse at CONTROL 6, disabling it as a general-purpose output. Connecting a device to CONTROL 6 could interfere with the relay's performance.

Fault Relay Setup

Fig. 5-8. Options for Monitoring the DVR Are on the System Tab.

The screenshot shows the 'System' configuration tab. It is divided into several sections:

- Site Info:** Serial Number (00197), Software Version (8.0 Build 25), and an Upgrade button.
- Signal Format:** Radio buttons for NTSC (selected) and PAL.
- System Monitor:** A red circle highlights this section, containing:
 - Enable Status Pulse
 - Monitor Alarm Reporting
- Network Settings:**
 - Use DHCP
 - Network Name: N/A
 - IP Address: 164 . 178 . 32 . 197
 - Subnet Mask: 255 . 255 . 255 . 0
 - Gateway: 164 . 178 . 32 . 1
 - MAC Address: 00:02:68:03:82:2E
- Maximum Network Data Rate:**
 - Regulate Data Rate
 - Send no more than 32 kilobits per second

Enable Status Pulse. Enables the FAULT RELAY to trigger.

Monitor Alarm Reporting. Interruptions in reporting of alarms, greater than 19 minutes, trigger the fault relay. The monitoring is designed to report alarms that have not reached their designated alarm station, because that alarm station was unavailable.

- Using View software, start a maintenance session.
- On the System tab, set the FAULT RELAY to trigger by selecting either:
 - Enable Status Pulse
 - Monitor Alarm Reporting
 - both. See figure 5-8.
- On the Events tab, click the Outputs subtab.
- The name of Output 6 has changed to “System Status Pulse”. You have the option of changing the name of the output by typing in the box.
- You have the option of ending the maintenance session.

Alarm when Disabling Video Recording

A Rapid Eye DVR can be monitored for operator tampering with recording. Consult the *System Administrator Guide* under “tracing”.

Temperature

A Rapid Eye DVR can be operated in a non-condensing environment, in temperatures ranging from 40° F to 104° F (or 5°C to 40°C).



Excessive heat will shut down the DVR.

Response Schedule

Vandalism

One can add rules to trigger an output if video recording fails—due to a cut cable, dead camera or other failure that is not related to the DVR's performance. Consult the *System Administrator Guide* under “Response Schedule”.

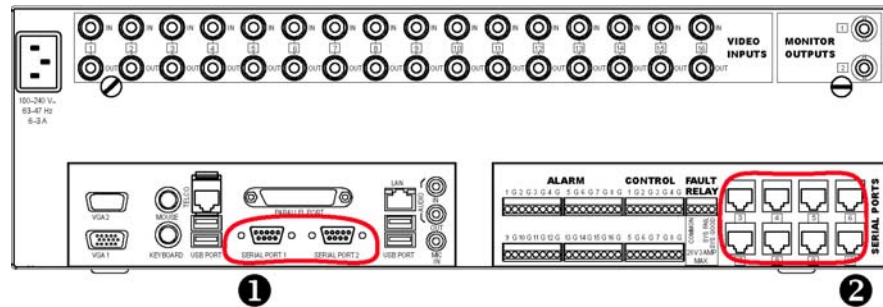
Point of Sale Hardware

Connect a point-of-sale (POS) device or other data communication equipment (DCE) to any of:

SERIAL PORTS 1 or 2. Use a standard RS-232 cable with a female DB-9 connector. See figure 5-9(1).

SERIAL PORTS 3 to 10. Use RJ-45 connectors. See figure 5-9(2).

Fig. 5-9. For POS, Use Serial Ports.

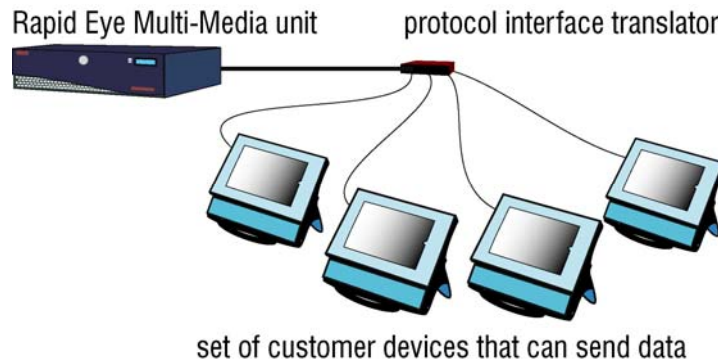


NetPIT and PIT Devices

Overview

To connect a Multi-Media DVR to a point of sale (POS) device—a cash register, automatic teller machine (ATM), and so on—a device is needed for Protocol Interface Translation (PIT) or Network Protocol Interface Translation (NetPIT). Rapid Eye Multi-Media DSP DVRs support PITs and a NetPIT, for attaching many serial devices to a Multi-Media DVR.

A PIT can provide communications for one device (AVBPIT1) or up to four devices (AVBPIT4POS). A NETPIT device provides communications for up to 16 POS devices from one serial port.

Fig. 5–10. Cash Registers, Connected to a Honeywell PIT.

PIT and NetPIT devices are connected to the serial ports on the back of Multi-Media DVRs. Your installer configures the PIT/NetPIT device for use with the make and model of POS device. NetPIT supports applications by Retailix (RetPIT), Micros (MicPIT) and AtmPIT.

Port restrictions

- Only one NetPIT device can be supported; only one can be assigned to a Multi-Media port. Up to 16 POS devices can be assigned to a NetPIT device.
- A PIT device cannot be assigned to a NetPIT port.

Assignment limits

- Up to four PIT serial devices can be supported. Four POS devices can be assigned to each PIT device.

Configuring POS, PIT and NetPIT Devices for Rapid Eye

For procedures to configure POS devices, using the Serial Devices tab in the Maintenance dialog, consult the *System Administrator Guide*.

Port Use: Restrictions

Parallel port

The parallel port at the back of the Rapid Eye DVR is for future use.



Do not connect a device to the parallel port of a Rapid Eye DVR.

Multiple serial switches

Nested serial switches are not supported in Multi-Media software; please do not connect more than one to a Multi-Media DVR.

Internal Port: Internal Modem

During a maintenance session, the Serial Devices tab shows an Internal Port that lists a modem or nothing at all. If the Internal Port holds a modem, the modem cannot be deleted. The internal port cannot receive devices from the “New devices” or the “Unassigned devices” groups.

External Modems

At the DVR, connected to a network

You can connect an external modem to a LAN-based Multi-Media DVR.

- For POTS. Honeywell recommends a U.S. Robotics Sportster, transmitting at a least 33.6Kps, for POTS connections.
- For ISDN. A U.S. Robotics Courier I-Modem is recommended for ISDN connections. Please refer to your modem manufacturer's documentation for the modem's configuration.



For use of an external modem with a POTS-based Multi-Media DVR, contact Honeywell Video Systems technical support, at: 1 (800) 796-2288; i.e., 1 (800) 796-CCTV.

Frequent Questions

Supporting an Installation

If you are installing a Multi-Media DVR and having trouble, see the frequently asked questions (FAQs) listed in table 6-1. Similar questions are used by Honeywell technical support, when customers call.

Table 6-1 Installation FAQ

#	Frequently asked question	Page
Cannot use Admin		
1	Has the password to the "Administrator" account been changed? Ask your Multi SA to check your user account, using Admin.	
2	Does your user account have the right to log on to Admin? Ask your Multi SA to check your user account, using Admin.	
3	How does one know what IP address to use for the site? Have the installers submitted a report of the installation? A table can be found starting on p. 56.	18 & 56
4	Is the Multi-Media database accessible from the PC? Your network administrator can help with rogue paths to a destination, mapped drives, a missing IP address, and so on.	18
Cannot connect from a remote PC running View, to a Multi-Media DVR		
5	Can you log on to View? If not, your user account may not be valid.	
6	Is the site listed? If not, then information is missing in the database or you are using the wrong database at log on. Quit View and log on again, making sure that the correct database is in use. If it is, ask your Multi SA to check the Multi-Media database.	
No video is reaching View		
7	How are the cameras connected?	19
8	Is there a power outage? Has the UPS failed?	20
9	Are the DVR, cameras and other hardware powered?	21
10	Does the site connection information, in the Multi-Media database that you are using to log on, reflect the type of connection used by the PC and the Multi-Media DVR: network or dial-up?	

Cabling

Coaxial Cable

Cabling to camera

For short camera-to-monitor distances (several hundred feet), use pre-assembled or field-connected lengths of RG59/U coaxial cable, with continuous shielding, using a BNC connector at each end.

Length limit

The cable length between a camera and the Multi-Media DVR should be limited to 230 meters/750 feet. When installing coaxial cable, avoid loops, kinks, or wraparounds.

Table 6–2 Recommended Maximum Length of Coaxial Cable.

Requirement	Length (feet)	Length (meters)
not amplified	750	230
amplified	3,400	1,035

Amplifier

As needed, optional video signal amplifiers can be used where longer distances separate cameras and monitors. Amplifiers at the camera output or along the coaxial cable run increase camera-to-monitor distance to a maximum length of 3,400 feet for RG59/U cable.

Coaxial cable checklist

- Terminate all unused inputs and unused outputs in their correct impedance.
- In long cable runs, use the minimum possible number of connectors. Each connector causes attenuation.
- In long transmission systems, use balanced coaxial cable.
- Splicing coaxial cables can cause reflection of the signal, resulting in distortion, when improper connectors are used.
- For outdoor applications, use weatherproof connectors.

Triaxial Cable

Use triaxial cable instead of coaxial cable when the cable must be routed through an area having EMI caused by:

- large machinery
- high voltage power lines
- refrigerator units
- microwaves
- and so on -

Triaxial cable has a center conductor, insulator, and shield, followed by a second insulator and shield. The double shielding significantly reduces the amount of EMI radiation that is exposed to the center conductor.

Grounding

Consult a certified electrician to avoid ground loops—video and audio—in your Multi-Media system. Unbalanced coaxial cable runs between low power sources can create ground loop problems.



Do not remove the third wire of the three-prong electrical plug (aka “lifting the ground”). This may be a violation of local electrical codes, and goes against the recommendations of the Underwriters Laboratory.

Electrical Interference

To manage electrical interference (also called electro-magnetic interference or EMI), you can survey the facility for electronics that generate EMI “noise”—fluorescent lights, radio frequency (RF) receivers or transmitters, power lines or elevator shafts—before installing equipment. Cables can be routed around or away from sources of noise so that there is no interference with the CCTV signal.

Hum bar

Hum bars appear as horizontal distortion across the monitor. The hum bar is caused by the effect of high voltage on the horizontal synchronization signal.

Reference

For background questions about cabling closed-circuit television, a standard, reliable, in-depth reference is:

- Kruegle, Herman, *CCTV Surveillance: Video practices and technology*, Butterworth–Heinemann, Newton (MA), 1995, ISBN 0-7506-9028-3, TK6680.K78

Site Information Checklist and Operator Notes

Organization

Personnel	Name, telephone #, email
Installer	
Multi-Media System Administrator (Multi SA)	
Security personnel	
Network Administrator	
Onsite personnel	
Emergency / after hours	

- The checklist continues on the next page. -

Site Definition

Rapid Eye site...	Identification
LocalView Site Name*	
Admin Site Name	
Serial number	
Time zone	
Street address	
Multi-Media DVR location: floor, room, area...	
SNTIP servers (optional)	primary: secondary:
System password	Changed?
FAULT RELAY	Enabled?

* In *LocalView*, **Site Name** shows "REM[hyphen][unit serial number]" and includes the leading zeroes. This is called the DVR's "computer name" or "network name"; in *Admin* software, **Site Name** is not the same: it is a label to identify the DVR, when using *View* software. See *Dynamic Host Configuration Protocol Using DNS*, p. 24.

- The checklist continues on the next page. -

Communications to DVR

Connection	Value
<input type="checkbox"/> network <input type="checkbox"/> dial-up <input type="checkbox"/> both <input type="checkbox"/> NAT	
Network IP address	
Network Address Translation (NAT) for Internet Router	Router at Multi-Media LT site Inside IP Outside IP
Dial-up remote access service (RAS) server (yes/no)?	
DVR's telephone number/RAS server telephone number	
Area code	
Is the area code (a) used normally, or (b) an extra connection is needed?	
Country code	

- The checklist continues on the next page. -

Communications from DVR to Alarm Station

Connection	Value at alarm station
<input type="checkbox"/> network <input type="checkbox"/> dial-up <input type="checkbox"/> both <input type="checkbox"/> NAT	
Network IP address	
Network Address Translation (NAT) for Internet Router	Router at alarm station Inside IP Outside IP
Dial-up remote access service (RAS) server (yes/no)?	
Alarm station's telephone number / RAS server telephone number	
Area code	
Is the area code (a) used normally, or (b) an extra connection is needed?	
Country code	

- The checklist continues on the next page. -

Audio

#	Microphone type	Speaker type	Comments
1			
2			

- The checklist continues on the next page. -

Video Camera Configuration

#	Color / B&W / none	Camera model, location, PTZ (yes/no)	PTZ address
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

- The checklist continues on the next page. -

Sensor Hardware

Input	Type (NO, NC, EOL)	Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

- The checklist continues on the next page. -

Control Outputs

Output	Description
1	
2	
3	
4	
5	
6	
7	
8	

Serial Ports

Port	Use: modem, PTZ, POS...	Comment / parameters
SERIAL PORT 1		DB-9 connector.
SERIAL PORT 2		DB-9 connector.

Serial ports 3 through 10 have a built-in converter for RS-485 and RS-422 communication.

SERIAL PORT 3		RJ-45 connector.
---------------	--	------------------

- The checklist continues on the next page. -

Serial Ports (continued)

SERIAL PORT 4		RJ-45 connector.
SERIAL PORT 5		RJ-45 connector.
SERIAL PORT 6		RJ-45 connector.
SERIAL PORT 7		RJ-45 connector.
SERIAL PORT 8		RJ-45 connector.
SERIAL PORT 9		RJ-45 connector.
SERIAL PORT 10		RJ-45 connector.

- The checklist continues on the next page. -

Point of Sale Hardware

Type	Name / model #	Data / text of interest

-End of checklist. -

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Honeywell Video Systems (Head Office)

2700 Blankenbaker Pkwy, Suite 150
Louisville, KY 40299, USA
www.honeywellvideo.com
☎ +1.800.796.2288

Honeywell Security Australia Pty Ltd.

Unit 5, Riverside Centre, 24–28 River Road West
Parramatta, NSW 2150, Australia
www.honeywellsecurity.com.au
☎ +61.2.8837.9300

Honeywell Security Asia Pacific

33/F Tower A, City Center, 100 Zun Yi Road
Shanghai 200051, China
www.asia.security.honeywell.com
☎ +86 21.5257.4568

Honeywell Security Asia

Flat A, 16/F, CDW Building, 388 Castle Peak Road
Tsuen Wan, N.T., Hong Kong
www.asia.security.honeywell.com
☎ +852.2405.2323

Honeywell Security South Africa

Honeywell House, Bekker Street
Truer Close, Waterfall Park
Midrand 1685, South Africa
www.honeywell.com/security/za
☎ +27.11.695.8000

Honeywell Security Middle East

Honeywell Middle East FZE
Post Office Box 18530
LOB Building 08, Office 199
Jebel Ali, Dubai U.A.E.
www.honeywell.com/security/me
☎ +971.04.881.5506

Honeywell Security UK

Aston Fields Road, Whitehouse Ind Est
Runcorn, Cheshire, WA7 3DL, UK
www.honeywell.com/security/uk
☎ +44.1928.756.999

Honeywell Video Systems Northern Europe

Netwerk 121
1446 WV Purmerend, The Netherlands
www.honeywell.com/security/nl
☎ +31.299.410.200

Honeywell Security Deutschland

Johannes-Mauthe-Straße 14
D-72458 Albstadt, Germany
www.honeywell.com/security/de
☎ +49.74 31.8 01.0

Honeywell Security France

Parc Gutenberg, 8, Voie La Cardon
91120, Palaiseau, France
www.honeywell.com/security/fr
☎ +33.01.64.53.80.40

Honeywell Security Italia SpA

Via della Resistenza 53/59
20090 Buccinasco
Milan, Italy
www.honeywell.com/security/it
☎ +39.02.4888.051

Honeywell Security España

Mijancas 1. 3a Planta
P.Ind. Las Mercedes
28022 Madrid, Spain
www.honeywell.com/security/es
☎ +34.902.667.800

Honeywell

www.honeywellvideo.com
+1.800.796.CCTV (North America only)
HVSsupport@honeywell.com

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Document 800-02323 Rev A – 07/08