

# **Rapid Eye Multi-Media DSP**

**Digital Recorder: Video and Multi-Media**

## **Unit Installation Instructions**

<b>Issue</b>	<b>Date</b>	<b>Revisions</b>
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 System Administrator's Guide 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: Overview, Rear Panel Reference, Camera Sabotage: Detection, Rapid Dome or Rapid Dome Gold Dome Systems, Connecting the USB Keyboard and USB Mouse to a Unit, Naming the Rapid Eye Unit Using LocalView, Beeping on Alarm, at the Unit, Using LocalView to Customize a DHCP Connection, Changing the Language Setting on a Unit, To Name a Site, Connectors for Serial Communications on Ports 3 to 10, ACUIX Camera, Using Media at the Unit, for Clip Distribution and Site Information Checklist and Operator Notes.

### **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.

Rapid Eye Multi-Media  
Rapid Eye Multi-Media DSP  
Rapid Eye Multi-Media LT  
 Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

### **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. 10. 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 unit installation.

## Not New to Multi-Media

Experienced installers can skip to sections:

- Field Work, p. 9 . Shows procedures and reference material for Multi-Media unit installation.
- Other Site Hardware, p. 39. Shows optional hardware that you can add to a Rapid Eye site.

### Software

For the software operations needed to test an installation, see: Quick-pilot: Checking for Video, starting on p. 21.

### LocalView and View software

A Multi-Media unit can be operated:

- Without a computer (PC), using LocalView. Connect a VGA monitor and mouse to the unit.
- With a PC, using View and Admin software.

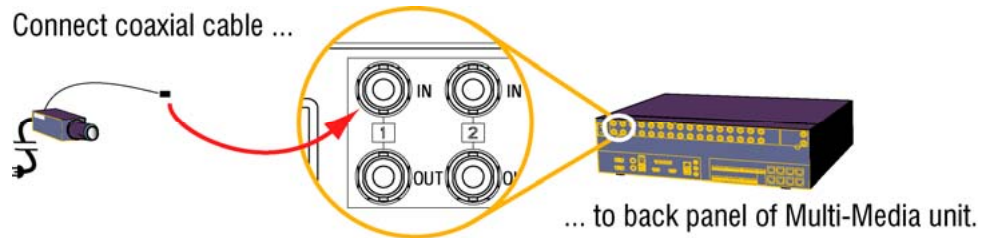
## Overview: Installation

### Cameras

Connect cameras (as many as 16) to the Multi-Media unit

**Figure 1-1. For a Camera, Use the First Available “IN” on the Multi-Media Back-panel.**

Connect coaxial cable ...



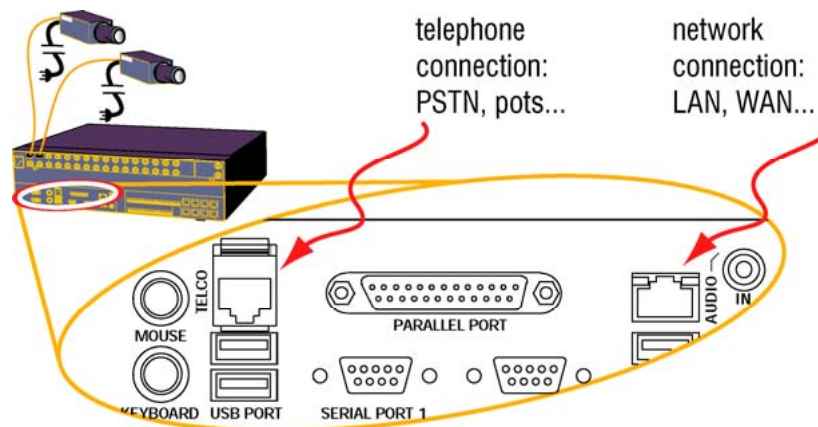
**See also**

Connecting a Camera, p. 14

### Communications

Connect the Multi-Media Unit to a Network or Telephone Line.

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

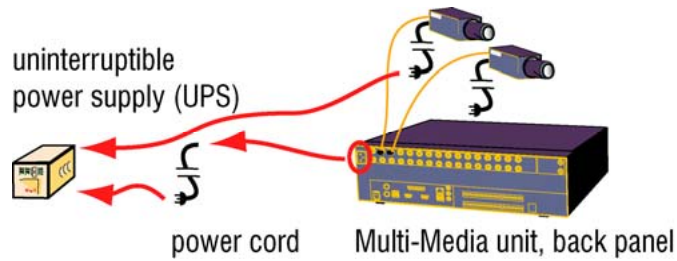


**See also**

Field Testing a Connection, p. 19.

## Power the Multi-Media Unit

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



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

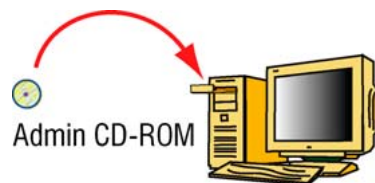
### Power switch

The power switch is located on the front of the unit, behind the locking grille, to the left of the small blue display screen.

## Admin and View Software

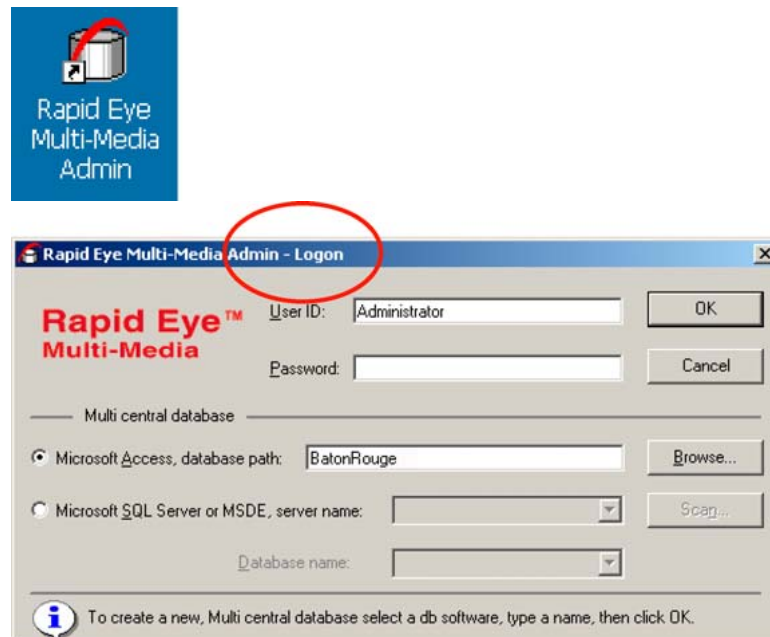
For unit configuration, you can use either LocalView, that runs on the unit, or Rapid Eye software, that runs on a PC connected to the unit. If you are using only LocalView, you do not need to install Admin and View software. See the LocalView context-sensitive Help, and skip to Where To, Next? on p. 8.

**Fig. 1-4. To Install Admin and View Software, Run the Multi-Media Admin CD-ROM.**



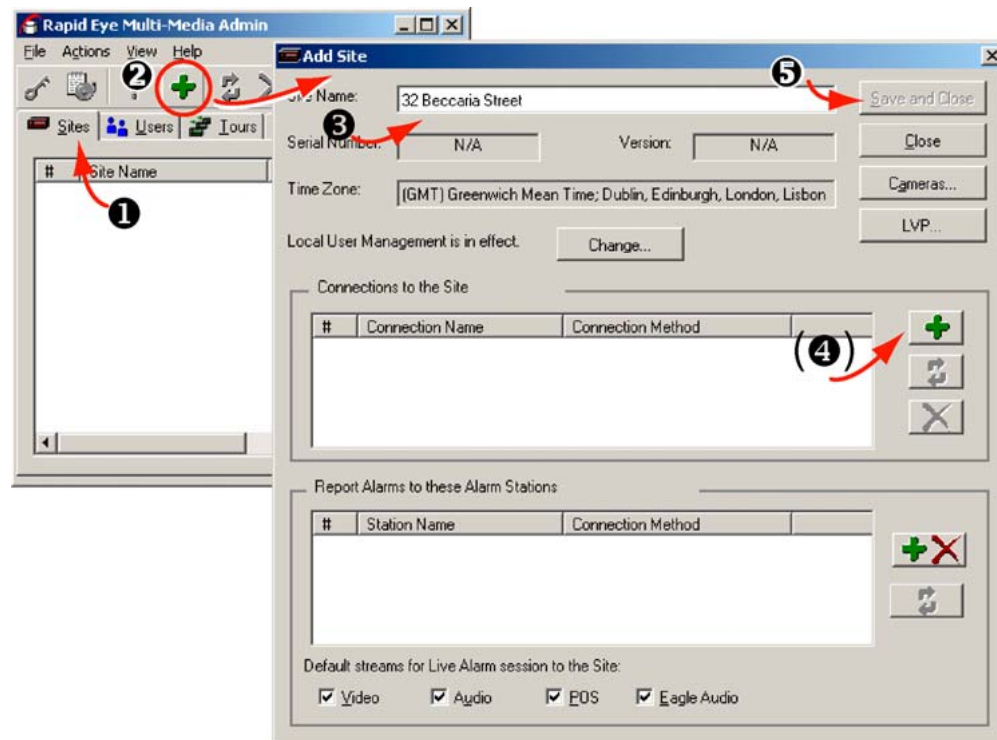
## A Database for Multi

Fig. 1-5. Shortcut for Admin, on the Windows Desktop, and the Logon Window.



## Site Name, Using Admin Software

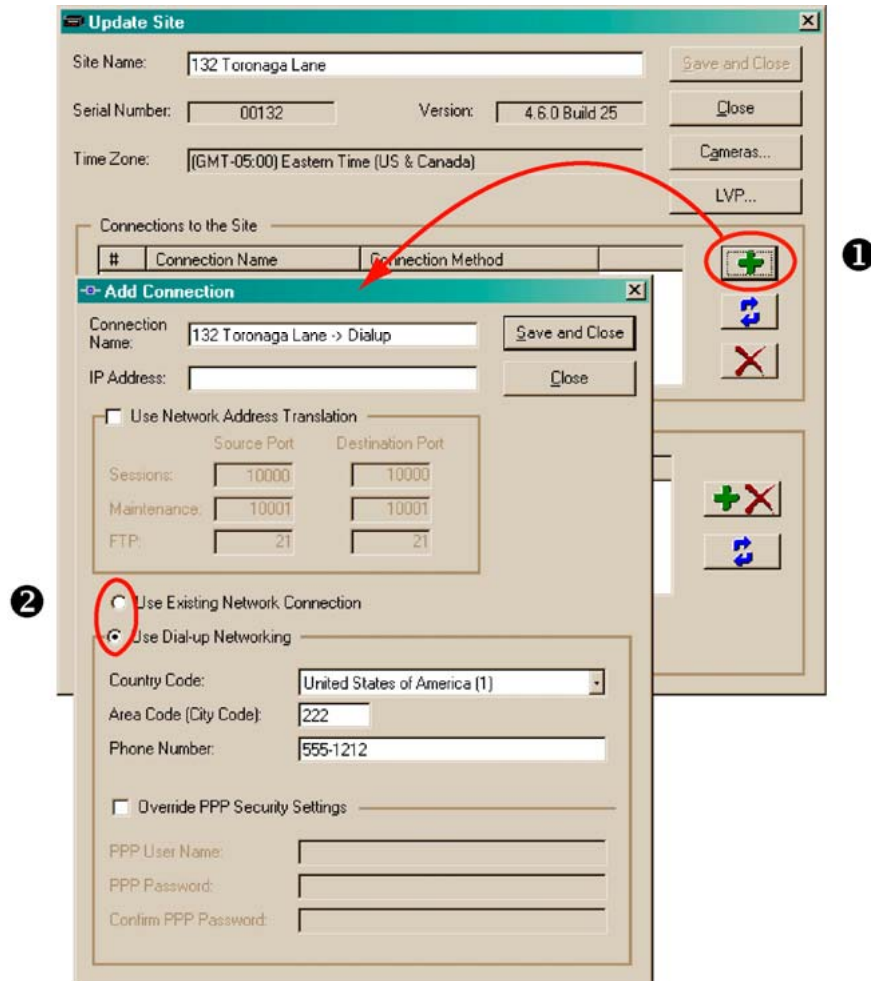
Fig. 1-6. From the Admin “Sites” Tab, Add, Name, Update or Delete a Site.



## Type of Connection

Add information about a connection, then save it

**Fig. 1-7. Using Admin, Select a Network or Dial-up (2) Connection.**



### About connections

LocalView, p. 16.

Network Connection, p. 26.

Firewall Reference, p. 28.

## Running View Software

**Fig. 1-8. Shortcut for View, on the Windows Desktop**

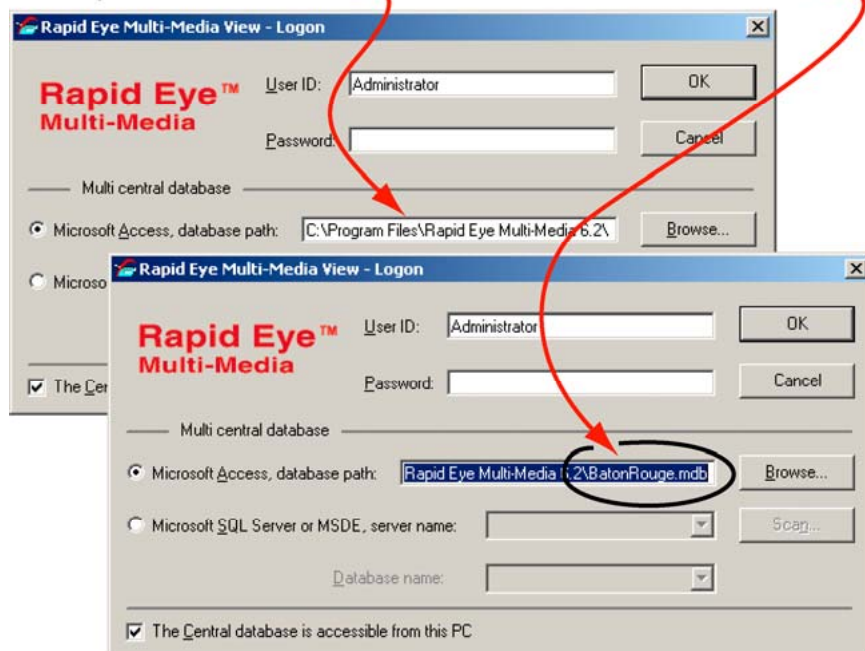


### To use View

From your PC's desktop click the View shortcut icon, then log on.

**Fig. 1-9. Use the Database Created Earlier, Using Admin.**

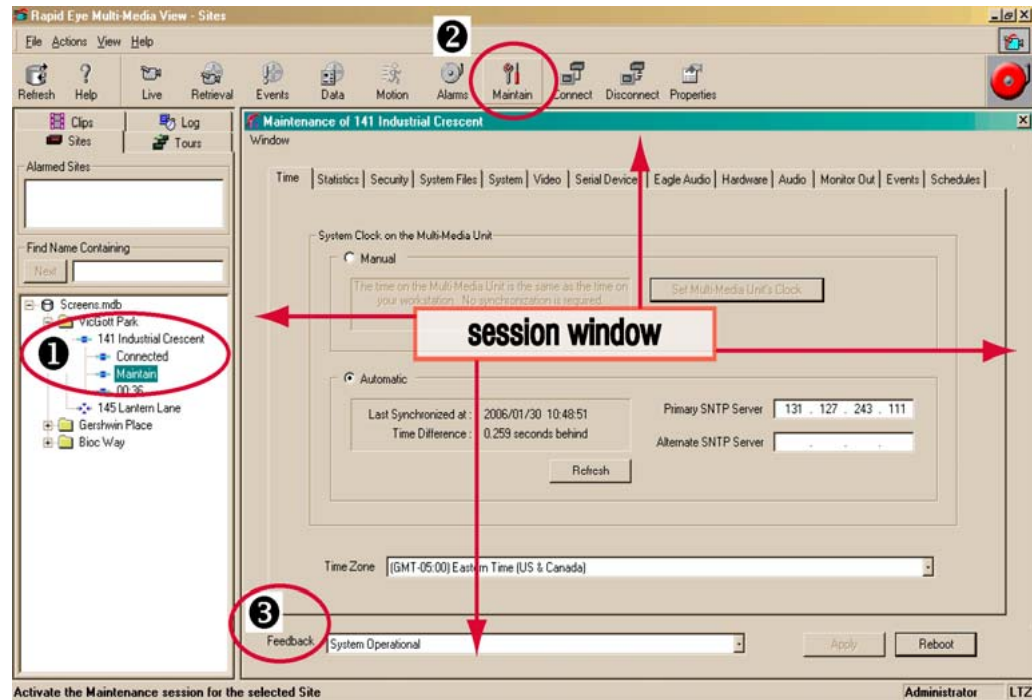
Clicking the database box ... ... shows the name of the Multi db.





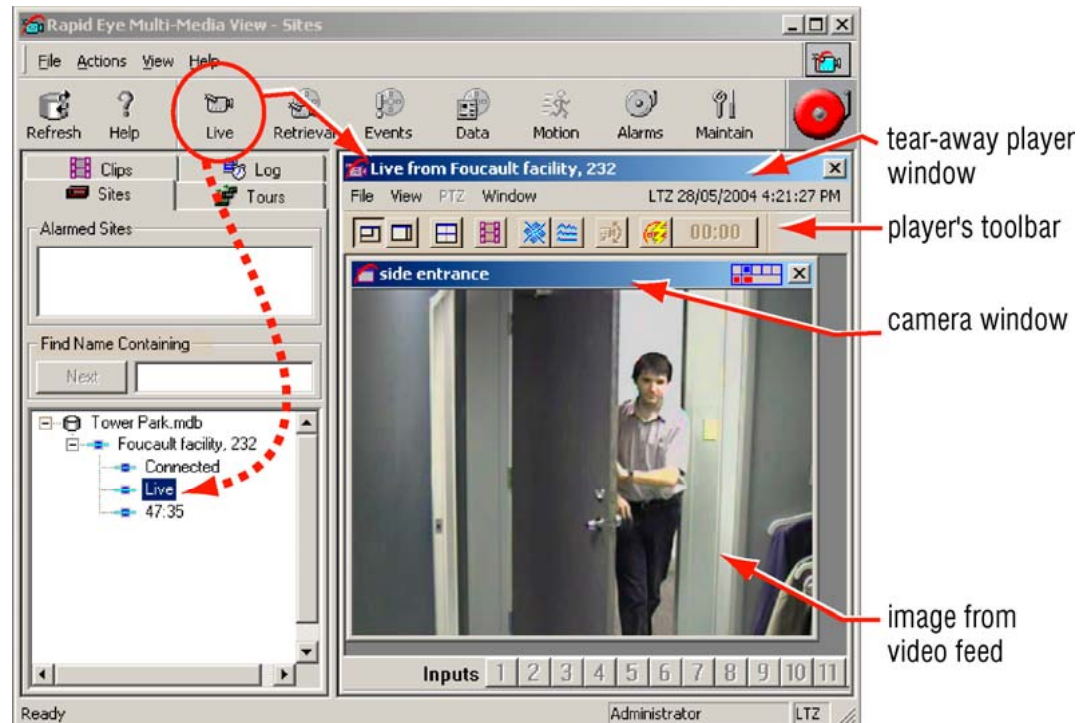
## Testing a Connection Using View Software

Fig. 1-10. Site Maintenance (1) & (2), and the "System operational" Message (3).



## Starting a Live Session

Fig. 1-11. Select a Site on the Sites Tab, then Click Live.



## 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. 9.

## For More Information...

### Other Multi-Media guides

System Administrator's Guide. Multi-Media Admin software is used to enter data for connections to Multi-Media units. It is also used to provide accounts for View operators, setup Multi alarm stations and so on. Maintenance functions are explained, including security and how to configure optional hardware. The part number for the guide is K14392.

View Operator Guide. Describes how to use View software to best obtain video on your PC. Honeywell's part number for the guide is K14391.

### 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 8.0. A menu appears.
4. Click Storage Estimator.

### 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](http://www.honeywellvideo.com)

### Background information

CCTV. For in-depth reference work 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.



### 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 unit. 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 unit.
2. As you start connecting hardware to the Multi-Media unit, use the on p. 57, to take notes.
3. Connect one or more cameras to the unit.
4. According to the communications that you plan to use, connect the unit to: a telephone line, your network or both.
5. Power up the camera(s) and the Multi-Media unit.
6. For network connections, assign a TCP/IP address to the Multi-Media unit using: the LocalView interface, a keyboard (included), a mouse (included) and a monitor (not included).
7. Field-test the connection to the unit.



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

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. 2), will find the steps expanded and explained in more detail, in this section.

## Unpacking the Unit

1. Open the box and remove the Rapid Eye Multi-Media unit, 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 unit.
3. Store the box and packaging materials.

**Table 2–1. Contents of Rapid Eye’s Hardware Kit, WAMULTI7HW**

<b>Item, One of Each, Unless Otherwise Noted</b>	<b>Part #</b>
power cord	P8137
rack ears, brackets and screws, for optional mounting of unit	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
<b>printed matter</b>	
Please Read This First!	K14393
this document: Multi-Media Unit Installation Instructions	K14390

**Table 2–2 Contents of Rapid Eye’s Software Kit, WAMULTI7DC**

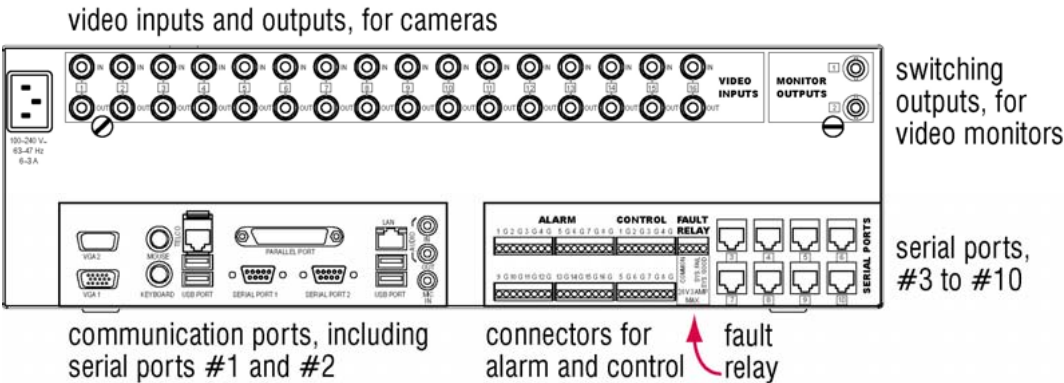
<b>Item, one of each, unless otherwise noted</b>	<b>Part #</b>
mouse, two-button, USB connector	K9258
mouse pad	K0007V1
CD, Rapid Eye Multi-Media software	HRM7ADMIN
<b>printed matter</b>	
System Administrator's Guide—Using Admin and View software to configure Multi-Media Units and manage the accounts of Operators	K14392
View Operator Guide for Rapid Eye Multi-Media Units	K14391

# Rear Panel Reference

**Table 2-3 Panel Connectors**

Connector Label	Description
VIDEO INPUTS – IN	BNC connectors for video signal cable. A Multi-Media unit has 16 video input connections.
VIDEO INPUTS – OUT	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 Multi-Media unit's modem
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 unit's 10/100 BT network card
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 unit. 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 Unit. The Connectors Are Listed in Table 2-3.**



## Reporting the Installation

### Flexibility

As you start connecting hardware to the Multi-Media unit, Honeywell recommends that installers take notes in a form similar to the one provided in , on p. 57. Include a record of the hardware connected to the Multi-Media unit 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 unit's input(s) or output(s).

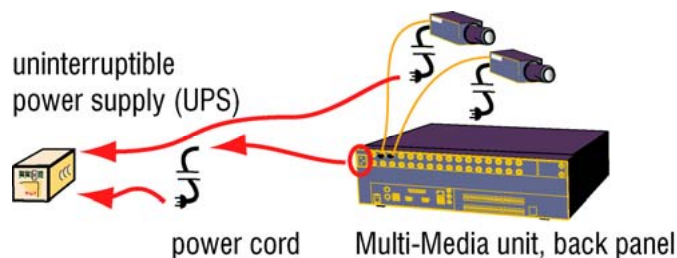
## Powering the Multi-Media Unit

### Power requirement

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

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).

**Fig. 2-2. Plugging-in a Multi-Media Unit.**



### Uninterruptible power supply

To allow time for a safe power-down, a UPS should guarantee 300 watts of power for each Multi-Media unit, for at least 30 minutes. In Europe, a UPS is required to meet EN50130-4.

### UPS: remember the cameras

Powering the cameras (or their power supply) from a UPS ensures that the Multi-Media unit can continue to record video during a power outage, whether the outage is due to your utility or to a criminal act.



**Honeywell recommends that a line conditioning uninterruptible power supply (UPS) be used with the Multi-Media unit and the cameras connected to the unit.**

### Without a UPS?

When a UPS is not used, the Multi-Media unit should be connected to a dedicated ground circuit. The outlet and breaker box should be marked as such. Nothing else should be plugged into this circuit.



**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.**

## Powering Up and Down

### Wait after turning on a unit

During the two minutes a REMM unit needs to initialize, it is good practice to not turn it off. See Unit Recovery, p. 14. The end of the initialization is signaled by a double-beep from the unit.

### The power up sequence recommended by Honeywell

1. Plug the Multi-Media unit and its cameras into a power source, preferably an uninterruptible power supply (UPS).
2. Turn on camera(s) and other hardware, connected to the unit. Honeywell recommends that cameras be powered on before the Multi-Media unit. If not, cameras will not be auto-detected by the unit.
3. Press and hold the power switch on the front of the Multi-Media unit.

### The power down sequence

1. Press and hold the power switch on the front of the Multi-Media unit for up to five seconds.
2. Unplug the Multi-Media unit 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.

## Temperature

Honeywell recommends that a unit be operated in a non-condensing environment, in temperatures ranging from 40° F to 104°F (or 5°C to 40°C).

## Unit Recovery

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

## Connecting a Camera

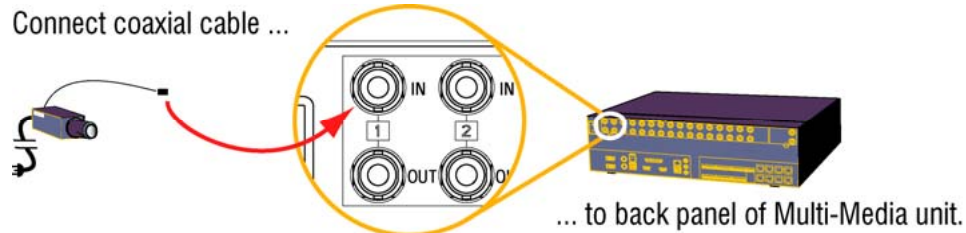


**Honeywell recommends powering down a unit before connecting hardware to it. See Powering Up and Down, p. 13.**

### 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 a unit's performance.

**Fig. 2-3. 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 product such as an ATP652R.



## Securing a Camera

Forethought about poor camera angles and the possibility of tampering with cameras or vandalism can help to assist police if an area becomes a crime scene.

When placing video cameras, consider:

- Dealing with environmental lighting situations that can render a system ineffective: direct sunshine or other strong lighting, darkness and so on. See Camera Sabotage: Detection, below.
- Environmental factors that can hamper cameras or the lens of cameras: dust, condensation, grease (common in food preparation areas), excessive heat or cold.
- Working around camera blind spots due to: architecture, mobile equipment, vehicle docking, construction and so on

### 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

## Camera Sabotage: Detection

If installers are called upon to help test camera sabotage detection (CSD), or to repair cameras if sabotage has occurred. There are three types of CSD:

**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 is designed to calibrate CSD and to reduce the number of false positives. Blinding a camera also triggers the **Blur**-type and **Moved**-type of sabotage. Note that turning lights on/off at the scene can indirectly blind a camera. Panning a PTZ camera from a light colored scene to a darker scene (or vice versa) can also have that effect. Lowering the threshold can compensate.

**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.

**Moved.** After a Multi SA has rearmed an alarm produced by the Moved-type sabotage detection, move the camera back to the scene that the organization needs to monitor.

### Tip



The Blind type of CSD can be used for fixed cameras and for PTZ cameras.

Blur and Moved are CSD types designed for fixed cameras only, not for PTZ use. Using pan, tilt or zoom triggers Blur and Moved.

### Calibrating rows of mobile objects

Moved is sensitive to large scale changes in a scene. For example, using **Moved** for a camera that shows many chairs in a row, close by, such as in an airport or casino, may not be effective. If a

unit "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 unit to trigger a log entry or an alarm. And if the operator makes the unit "learn" when the chairs are empty, then CSD 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.

## LocalView

### Hardware

LocalView is available by connecting a VGA monitor, a mouse and a PC keyboard directly to the REMM unit. LocalView automatically starts when the REMM unit is powered up. An online help facility is included with LocalView.



**Honeywell recommends powering down a unit before connecting hardware to it.**  
**See: Powering Up and Down, p. 13.**

### Functions

Using LocalView, you can:

- Perform extensive system setup functions such as: configuring network settings, including the unit's IP address.
- Perform camera setup: name, type, recording rate, PTZ and so on.
- Configure system clock: date, time and time zone.
- Review and search the system log.
- Record and monitor live video, audio or data.
- Make and view a video-clip that includes audio and data.
- Copy a video-clip to the unit's DVD-RW drive.
- Set up a camera tour, using the Cycle feature.
- Monitor a video feed at high resolution.
- Echo LocalView to a second VGA monitor.

## Monitors



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

**VGA.** For using LocalView, a VGA monitor can be plugged directly into a Multi-Media unit. 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 x 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.

## Connecting the USB Keyboard and USB Mouse to a Unit

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 unit.

### 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 unit.

### USB ports on the keyboard

There are two USB ports on the PC 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 unit. 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.

## Naming the Rapid Eye Unit Using LocalView

You have the option of renaming the Rapid Eye Multi-Media unit, using LocalView. The Rapid Eye unit's serial number is used as the default **Site Name**. For reference, this serial number is printed on a sticker affixed to the Rapid Eye unit.

### Naming the unit, using LocalView

1. Using LocalView, click the Configuration tab.
2. On the General tab, the Rapid Eye unit's serial number is displayed in the **Site Name** box. For example: “**REM-7654321**”.
3. Click the **Site Name** box and type a name for the Rapid Eye unit.



**Using Rapid Eye Admin software to name a site has no effect on LocalView's "Site Name". The Site Name *in use at the unit* can differ from the Site Name input using Admin software. However, the "Site Name" can be changed by using View to run a Maintenance session; see Using View and Admin Software to Customize a DHCP Connection, p. 27.**

### Using View and Admin

The site tree in Rapid Eye View software displays the **Site Name** input using Admin software. In a Maintenance session, the **Site Name** displayed on the System tab matches the **Site Name** shown in LocalView.

## Beeping on Alarm, at the Unit

When using LocalView, the operator has the option of setting a Rapid Eye unit 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**.

## Connections to PCs or Networks

### Using only LocalView

A connection is not needed when using only LocalView to operate a unit. If the unit is connected to a network, you can configure the unit's network connection using either LocalView or Admin software.

### For a network without DHCP

To set a static IP address on a Multi-Media unit, use LocalView.

## Networks with DHCP

You may not need to assign an IP address to a unit if your network is enabled for Dynamic Host Configuration Protocol (DHCP).

Multi-Media units can be enabled as DHCP clients; DHCP is OFF by default. After enabling DHCP, power-down a unit connected to the network and power-up.

## Using LocalView to Customize a DHCP Connection

### Preparation

- Consult your organization's network administrator to find out if the DHCP connection needs to be customized. A Rapid Eye Multi-Media unit uses the **Site Name** *in use at the Rapid Eye unit* for the DHCP **computer name**.
- A network administrator has the option of assigning a reserved IP address to a Multi-Media unit, instead of a "computer name". In that case, the unit's default IP address can be used. You have the option of assigning a static IP address to the unit using the procedures for networks without DHCP, above.



**Within DHCP without DNS, an assigned IP address needs to be reserved or it may change. Plan to let the network's administrator as well as the Multi SA know of the unit's installation; after a unit is rebooted or reset, a new DHCP address is assigned to it and communication to the unit could be hampered if wrongly configured.**

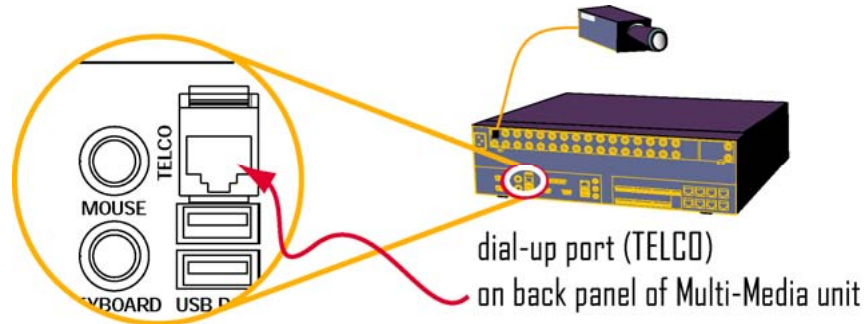
### If customization is needed

- Obtain a **computer name** from your organization's network administrator.
- Using LocalView, type the "[computer name]" in the **Site Name** box. This will also rename your unit when using LocalView. See Naming the Rapid Eye Unit Using LocalView, above.

## Dial-up Connection

1. Using a standard telephone cable with RJ-11 connectors, plug one connector into the unit's TELCO port; see figure 2-4.
2. Plug the other connector in a telephone outlet.  
Note: Connect the unit to a telephone line only if a dial-up connection is used to communicate with the Multi-Media unit.

**Fig. 2-4. Detail of "TELCO" Port, Used for Dial-up Connection.**



**Power down a unit before connecting hardware to it. See Powering Up and Down, p. 13.**

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 to a telephone line used by a Multi-Media unit.

### What next?

You are ready to power-up the camera(s) and unit. See Powering the Multi-Media Unit, on p. 12.

## Modem Reference

**Table 2-4 Default Modem Settings**

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

## Field Testing a Connection

**Dial-up.** Using a standard telephone line, dial the Multi-Media unit's number to hear if you can reach its modem.

**Network.** PING the IP address of the unit.

## Changing the Language Setting on a Unit

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

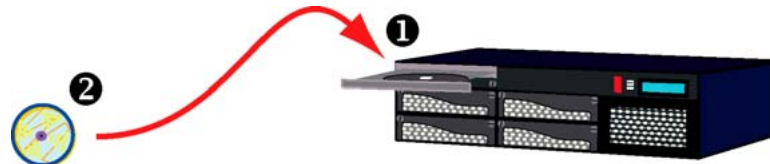
## Damaged Unit or Missing Goods

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

## Upgrading Unit Software Onsite

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

**Fig. 2-5. Upgrading a Unit in the Field.**



1. Remove the front cover of the Multi-Media unit; if the cover is locked, use the key supplied with the unit.
2. Press the button on the DVD drive. A tray slides out.
3. Place the DVD identified as "UPGRADE" into the tray. See figure 2-5.
4. Shut the DVD's tray.
5. While the CD-ROM remains in the unit, turn the unit off, by pressing and holding the red POWER button.
6. Power-up the unit by pressing the red POWER button.
7. Check the unit's blue LCD; as the unit 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 unit's hardware. The unit 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 unit.

## Quick-pilot: Checking for Video

### Audience

The next steps involve working with Multi-Media software from a PC.

### Preparation

After Field Testing a Connection (see p. 19), your organization's Multi SA needs to establish that video can be obtained on an operator's PC.

## Using Multi-Media Software to Obtain Video

1. Use Admin software to:
  - Create and log on to an empty Multi-Media central database (Multi db)
  - Name the Rapid Eye site being tested
  - Add connection information about the Rapid Eye site.
2. Use View software to:
  - Log on to the Multi db
  - Run a "Maintenance" session for the Rapid Eye site, to check the type of camera(s) that were auto-detected by the Multi-Media unit
  - Run a "Live" session to obtain video.

### Why check a connection?

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 establishing a user base (by creating user accounts).

## Using Admin Software

To continue installing a Multi-Media unit and before you can check for video, a record of a Rapid Eye site and connection is made, using Admin. A site is a term used for a unit, along with its cameras or other hardware.

## Creating an Empty Multi db

For installation purposes, you have the option of creating an empty db on the fly, as you log on to Admin. A Microsoft Access software template is used. You do not need a copy of Access installed on the PC to use this feature; everything you need is included with your copy of Rapid Eye Multi - Media software. Only one Multi-Media database (Multi db) is needed for many sites.

**Fig. 3-1. Icon for Admin on the Windows Desktop.**



**Do not create a db each time that you log on.**



**Choose a name for your Multi db that avoids:**

- (a) a name that you will need for a user of that Multi db; or
- (b) "Administrator". It is the name of the default user in any Multi db. A Multi db with the same name as a user account causes an error when View is started.

## Upgrading a Multi-Media Database

You can use a populated SQL or MS-Access db for testing an installation. Microsoft Access-based Multi-Media databases, created using an older version, are upgraded on the fly; one prompt at logon and conversion is automatic. For specifics, see the Multi-Media: Software Installation Instructions and the Multi-Media: System Administrator's Guide.

## Running Admin

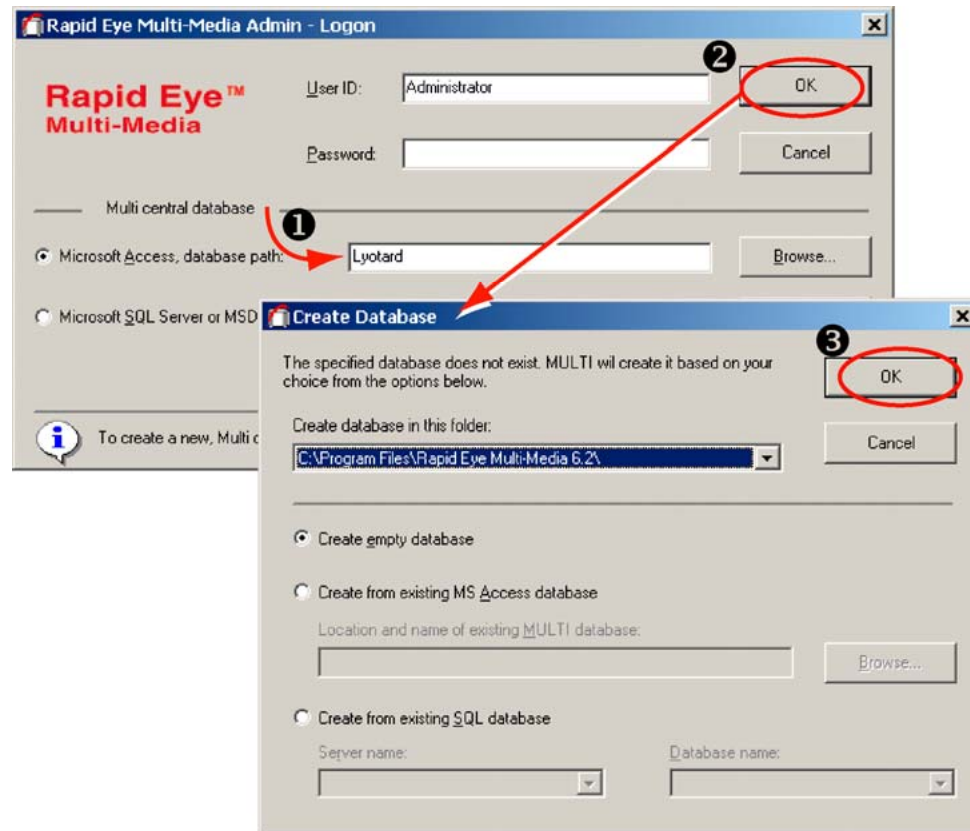
To log on to Admin, three pieces of information are needed:

- **User account.** Use the "Administrator" account. It has the right to use all of the functions in Admin and View. It also has access to every Rapid Eye site in your system.
- **Password.** By default, there is no password for the Administrator account. A password can be added after testing is complete. Account and system passwords are explained in the System Administrator's Guide.  
- and -
- **Database.** For testing, you can obtain an empty database as explained next.



## To Obtain an Empty Multi Database

Fig. 3-2. Creating an Empty Multi Db to Test a Rapid Eye Multi-Media Site.



### Double-duty logon dialog

Besides logging on to Admin, you can use the “Admin Logon” dialog to create an empty Multi-Media database. After creating a database, Admin logs you on automatically.

1. Double-click the Admin icon (fig. 3-1). The Logon dialog appears.
2. Select “Microsoft Access Central database”.
3. Type a name, or a name and a path for the empty Multi db.
4. Click OK. Your logon is deferred, and a “Create database” dialog appears. See figure 3-2.
5. In the Create Database dialog, “Create empty database” is selected by default. Click OK. You are logged on to an empty database, bearing the name that you typed at step 2, and the Admin window appears.



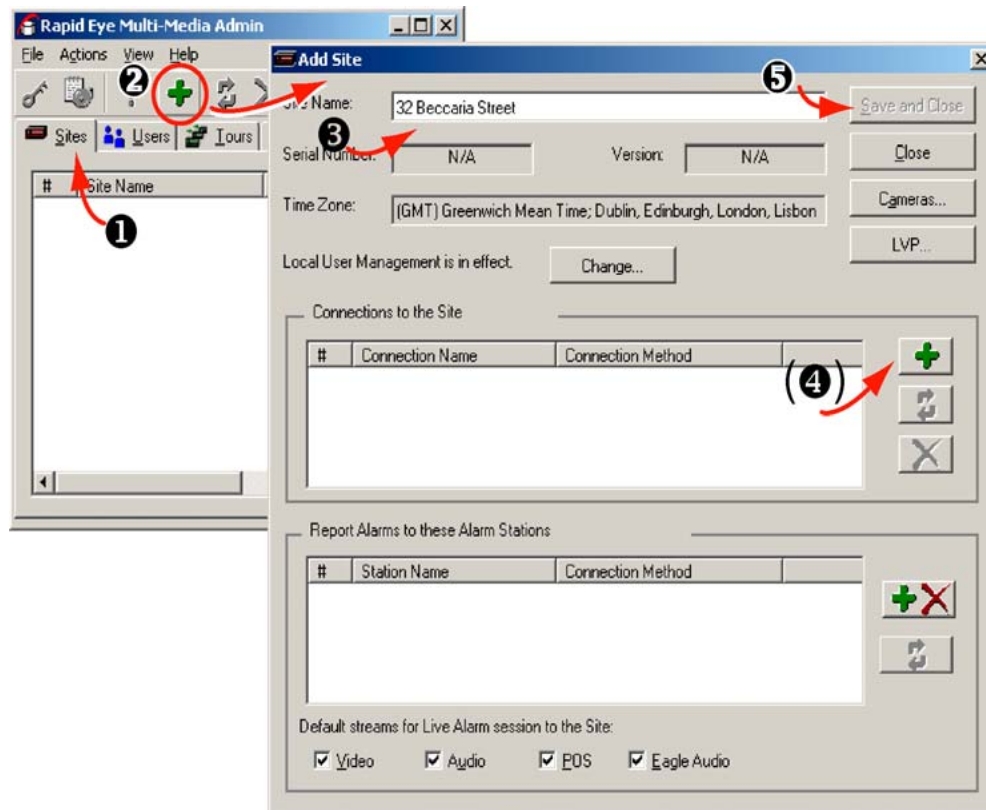
**Do not create a db each time that you log on.**

### What next?

Add site information to the database.

## Adding Site Information


Fig. 3-3. Type the Site Name of Your Choice in the Add Site Dialog.



## Site Identification Checklist

- Name the site.
- Make a record of the type of connection used by the site.
- Click Save and Close.

## To Name a Site

1. Using Admin, click the Sites tab.
2. To display the Add Site dialog box, either:
  - Click  on the toolbar (see figure 3-3).
  - or -
  - Click Add on the Actions menu.
3. Type the name in the Site Name box. You have the option of clicking Save and Close or of setting up a connection. The site tree in Rapid Eye View software displays the **Site Name** input using Admin software. In a Maintenance session, the **Site Name** displayed on the System tab matches the **Site Name** shown in LocalView.



Using Rapid Eye Admin software to name a site has no effect on LocalView's "Site Name". The Site Name *in use at the unit* can differ from the Site Name input using Admin software. See Naming the Rapid Eye Unit Using LocalView, p. 17.

## Dealing with Connections

Indicate which of the two basic connections you will use to test your Multi-Media unit:

- A dial-up connection
- A network connection
- Both.

### Confirmation

Your network administrator can confirm that networked Multi-Media units can be reached by PING. For dial-up, verify that the telephone line and modem are working. See Field Testing a Connection, on p. 19.

## Dial-up Connection

Fig. 3-4. Adding a Dial-up Connection.

**Add Connection**

Connection Name: 132 Toronaga Land -> Dialup 2

IP Address:

☐ Use Network Address Translation

	Source Port	Destination Port
Sessions:	10000	10000
Maintenance:	10001	10001
FTP:	21	21

☐ Use Existing Network Connection

1 ☒ Use Dial-up Networking

Country Code: United States of America (1)

Area Code (City Code): 222

Phone Number: 555-1212

☐ Override PPP Security Settings

PPP User Name:

PPP Password:

Confirm PPP Password:

1. Click  in the “Connections to the Site” pane. The Add Connection dialog appears. The Connection Name box appends a stylized arrow and “Network” to the site’s name.
2. Click Use Dial-up Networking.
3. Admin automatically names the connection in the Connection Name box. The “-> Dialup” in the connection name appears as you click Use Dial-up Networking.



**For a dial-up only connection, leave the IP Address box empty.**

An IP address is typed in a dial-up connection only if a RAS server is part of the connection.

4. Leave the Country Code to “(dialing same country)”, unless the Multi-Media unit is in a different country than the View operator planning to use the site.
5. Type the unit’s Area Code and Telephone Number.

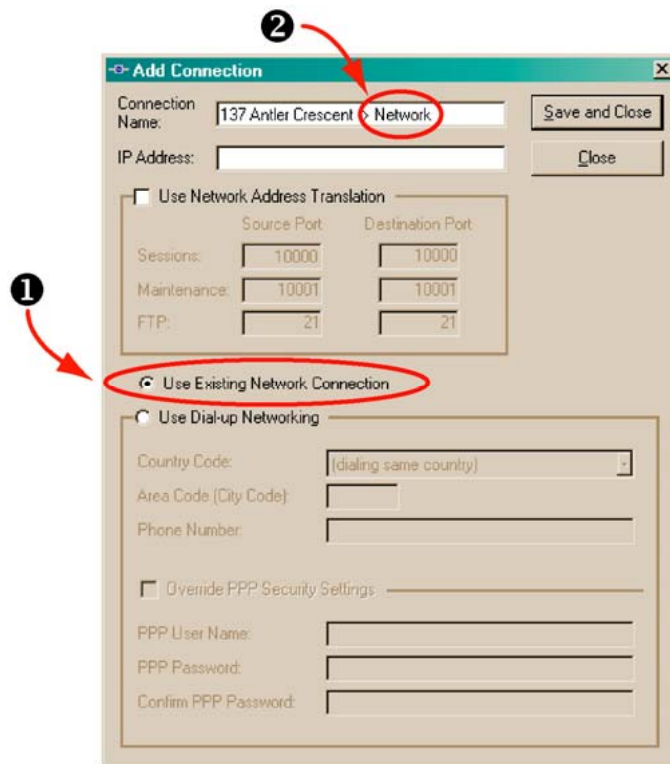


**Access to an outside line. If your telephone exchange needs a prefix (an extra telephone key stroke such as a “9” or an “8”), set it in the Window’s Telephony program used by the PC, not in Admin.**


6. Click Save and Close. The Sites tab appears. In the tab’s Primary Connection column, the first letter of “dial-up” appears in parentheses: (d), followed by the telephone number used to connect to the Multi-Media video unit.

## Network Connection

Fig. 3-5. Adding a Network Connection.



The screenshot shows the 'Add Connection' dialog box. A red circle labeled '2' points to the 'Connection Name' field, which contains '137 Antler Crescent -> Network'. Another red circle labeled '1' points to the 'Use Existing Network Connection' radio button, which is selected. Below this, the 'Use Dial-up Networking' section is visible, containing fields for 'Country Code', 'Area Code (City Code)', 'Phone Number', and 'Override PPP Security Settings'.

1. Using Admin software, in the Add Site/Update Site dialog, click  in the “Connections to the Site” pane. The Add Connection dialog appears. See figure 3–5. Indicate “Use Existing Network Connection” (1). In the Connection Name box, an arrow and “Network” are appended to the Connection Name (2).
2. In the IP Address box, type the Multi-Media unit’s IP address. The IP Address is mandatory for a network connection.
3. Either:
  - Leave the connection name in the Connection Name box, as it was set automatically by Admin software.
  - Type another name in the Connection Name box.
4. Click Save and Close. The Sites tab is displayed. In the tab’s Primary Connection column, the first letter of “network” appears in parentheses: (n), followed by the IP address used to connect to the Multi-Media video unit.

## Using View and Admin Software to Customize a DHCP Connection

### Preparation

- Consult your organization’s network administrator to find out if the DHCP connection needs to be customized. A Rapid Eye Multi-Media unit uses the **Site Name in use at the Rapid Eye unit** for the DHCP **computer name**.

### Procedure

1. Obtain a **computer name** from your organization’s network administrator.
2. Using Rapid Eye *View* software, run a Maintenance session.
3. On the System tab of a Maintenance session, the **Site Name in use at the unit** is displayed. **Note:** the Site Name *in use at the unit* can differ from the **Site Name** that is displayed in the site tree that appears in Rapid Eye *View* software.
4. On the System tab, in the **Site Name** box, type the “[*computer name*]” provided by your organization’s network administrator. The Site name *in use at the unit* is updated automatically.
5. Using Rapid Eye *Admin* software, update the site’s connection: type the “[*computer name*]” in the site connection’s IP Address box, so that it matches the **Site Name** input in step 3 of this procedure. How to update a site’s connection is explained in Network Connection, above, and in the Rapid Eye Software System Administrator’s Guide, K14392.
6. Request that operators running *View* click **Refresh**, to update their local Multi db.

### Using a reserved, static IP address

A network administrator has the option of assigning a reserved IP address to a Multi-Media unit, instead of a “computer name”. In that case, the unit’s default IP address can be used. You have the option of assigning a static IP address to the unit using the procedure for a Network Connection without DHCP, above.



**Within DHCP without DNS, an assigned IP address needs to be reserved or it may change. Plan to let the network’s administrator as well as the Multi SA know of the unit’s installation; after a unit is rebooted or reset, a new DHCP address is assigned to it and communication to the unit could be hampered if wrongly configured.**

## Firewall Reference

Multi-Media sessions (live, retrieval and alarm) are sent to port 10 000, the unit'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.

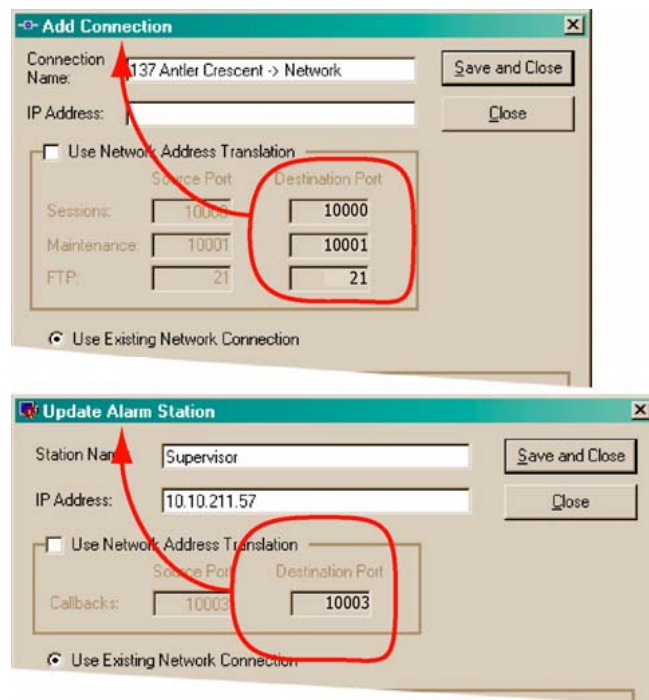
**Table 3–1 Default Transmission Control Protocol (TCP) Ports**

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

\* These port settings are listed in the Add Connection/Update Connection dialogs in Admin software; see figure 3–6, below.

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

**Fig. 3–6. A Unit's Base IP Ports.**



## Using View to Connect

### Checking for video

After an initial maintenance session, View Operators use Live and Retrieval sessions to obtain video from a Rapid Eye site.

Fig. 3-7. View Icon.



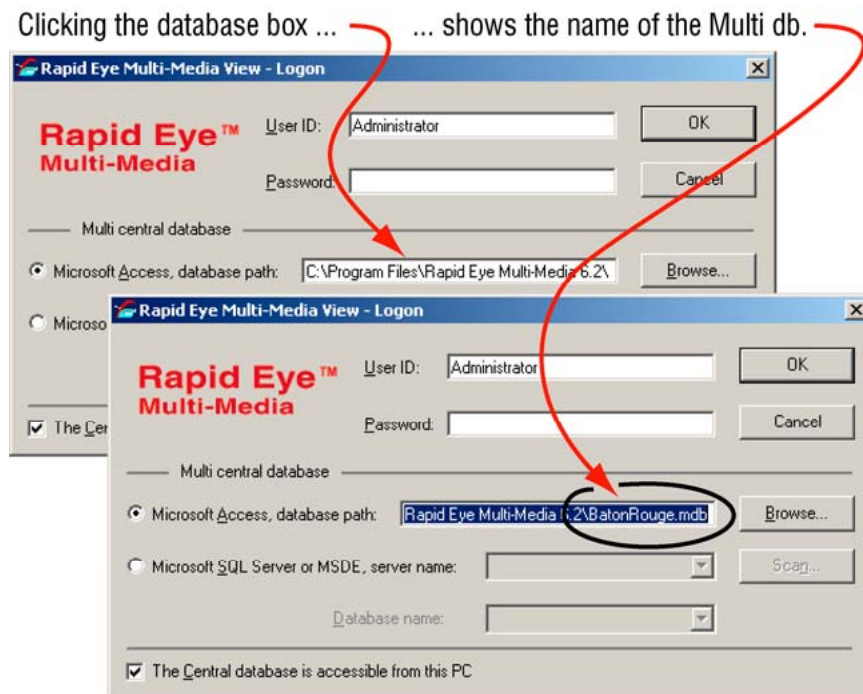
## Running View

### Logging on to View

Three pieces of information are needed:

- **User account.** Use the "Administrator" account. It has the right to use all of the functions in View. It also grants access to every Rapid Eye site in your system.
- **Password.** Account and system passwords are explained and discussed in the System Administrator's Guide.
- **Database.** Use the same database used to log into Admin. See Running Admin, p. 22.

Fig. 3-8. Database Name; see Figure 3-2 on Page 23.



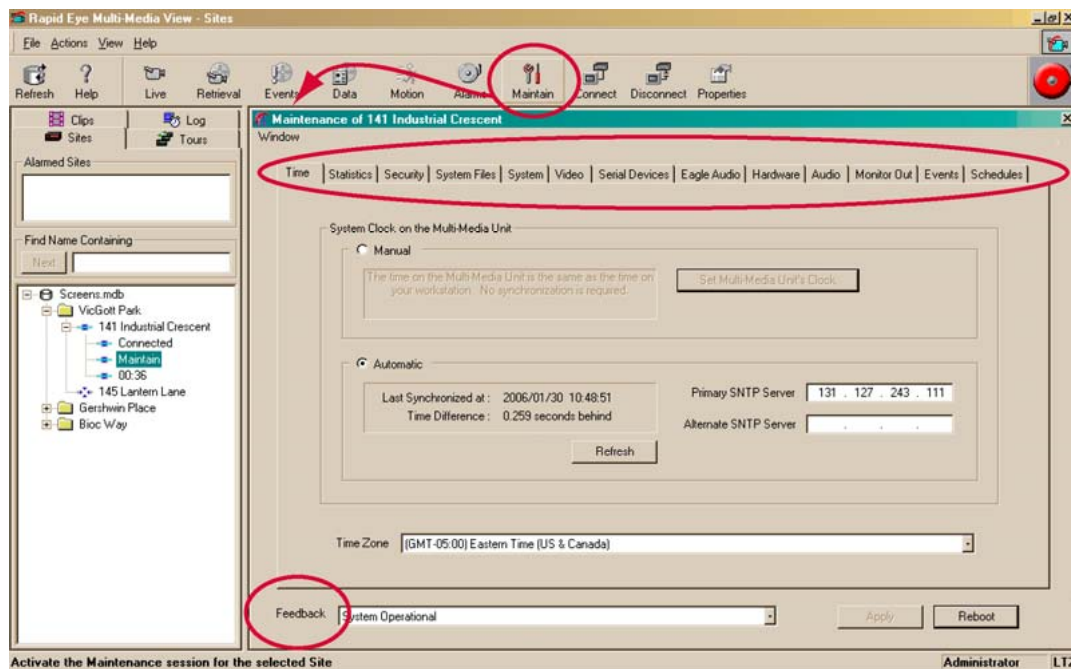


## Testing a Connection: Maintenance

### Using Maintenance

Run a Maintenance session to set the Multi-Media unit's time and configure the site's cameras. A successful maintenance session also indicates that the record of the site in the Multi db is correct.

**Fig. 3-9. Maintenance Tabs and Feedback Box.**



## To Run a Maintenance Session

1. Double-click the View icon (fig. 3-7). The "View Logon" dialog appears.
  2. Log on using the "Administrator" User Id and the Database as for Admin. The Site tab in View should list the site(s) created in Admin.
  3. To start a Maintenance session, either:
    - Right-click on the site name to select Maintain from the shortcut menu.
    - Select the site; then click the Maintain command on the Actions menu.
- or -



- Select the site; then click **Maintain** on the toolbar.



## Setting the Time on a Unit: Automatic

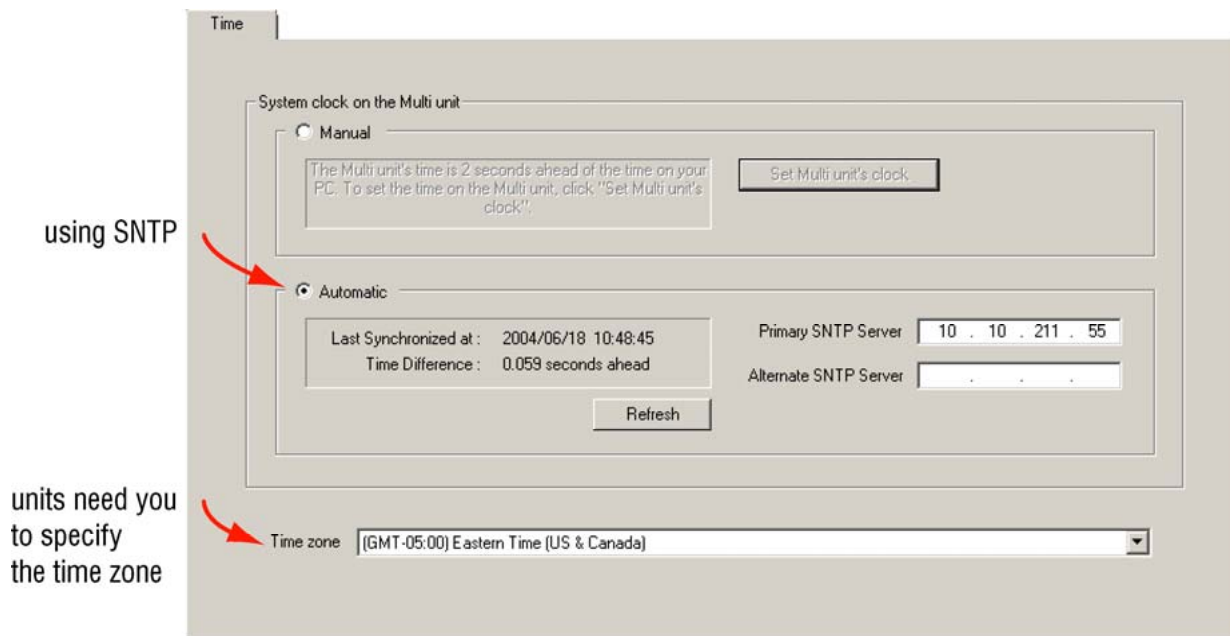
### Crucial settings for reporting on video of events

Setting the Time Zone and System Clock on all Multi-Media units is crucial to the correct identification of video. These two settings also govern the scheduled recording and scheduled alarm features. Please set them with care.

### SNTP requirement for an automatic setting

See your organization's IT Administrator to find out if a Simple Network Time Protocol (SNTP) server is in use. Multi-Media units on a LAN can benefit from an automatic setting that is accurate to within a fraction of a second. There are two SNTP boxes: Primary SNTP Server and Alternate SNTP Server. They hold IP addresses of SNTP servers. Your Multi SA can obtain these values from your network administrator.

**Fig. 3–10. Indicate the Time Zone in which the Multi-Media Unit Has Been Installed.**



## To Set a Unit's Clock, Using SNTP

1. Obtain the IP address of an SNTP server. You have the option of also obtaining the address of an alternate server.
2. Using View, select a unit whose clock needs to be set.
3. Start a maintenance session.
4. Click the Time tab.
5. If Automatic is not selected, click it. The Time tab appears as in figure 3–11.
6. Click the Primary SNTP Server box and type the IP address of an SNTP server obtained in step 1. You have the option of indicating an alternate in the Alternate SNTP Server box.
7. Click Refresh. The Multi-Media unit contacts the SNTP server and synchronizes the Multi-Media clock to the SNTP time.

### Auto-synch statistics

Auto-synch statistics do not apply to a clock set to Manual.

**Last Synchronized at.** Latest time that the SNTP server was used.

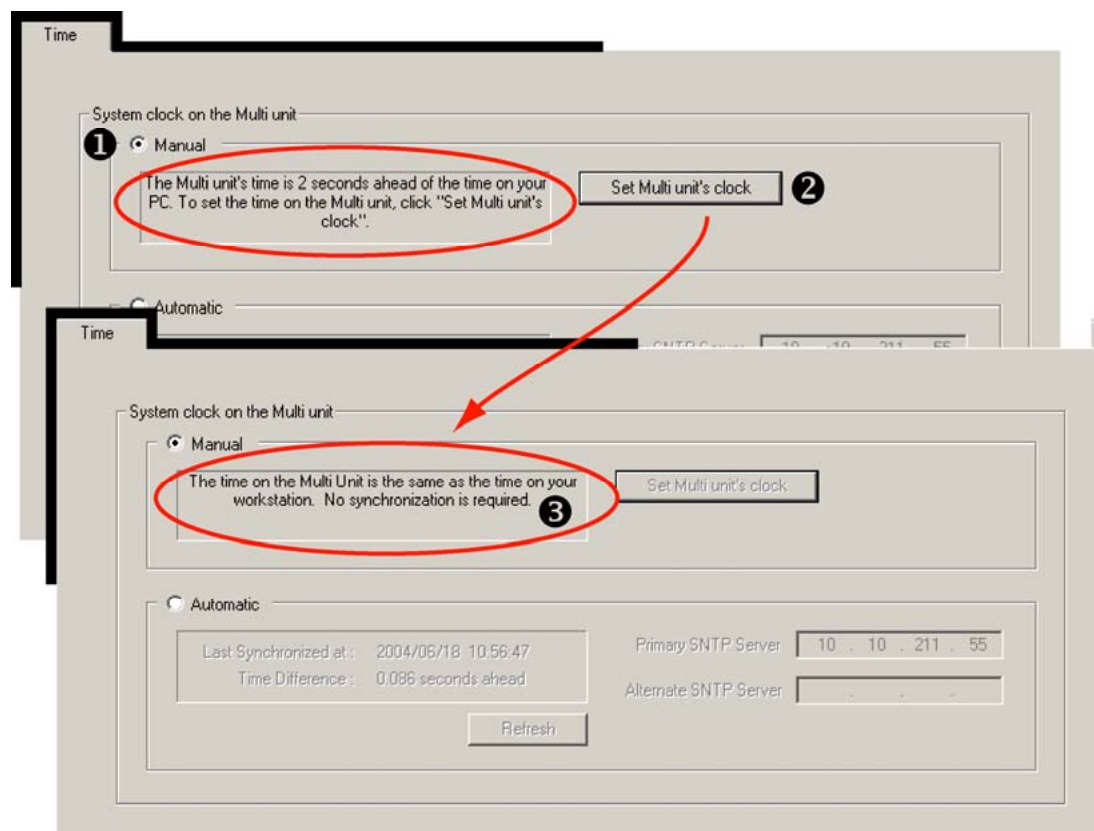
**Period.** Time amount between synchronizations. A dynamic value, that keeps the unit's clock 0.4 to 0.2 seconds of the server's.

**Time Difference.** Accuracy of synchronization.

## Setting the Time on a Unit: Manual

A Multi SA can synchronize the clock of a Rapid Eye Multi-Media unit using a PC's clock as reference. This is more useful for units connected only by dial-up, but can also be used for units on a LAN.

Fig. 3-11. Setting a Unit's System Clock Manually.



## To Set a Unit's Clock Manually, Using a PC's

1. Check the accuracy of the time and the time zone on the PC and adjust it as needed. To adjust a PC's time, date and time zone, click Start followed by Settings, Control Panel and Date/Time.
2. Using View software, select a unit whose clock needs to be set.
3. Start a maintenance session.
4. Click the Time tab. If Manual is not selected, click it.
5. Click Set Multi-Media unit's Clock. Please wait until the "Synchronized Time" message appears.

## Setting the Time Zone on a Unit

1. Using View, select a unit whose time zone needs to be set.
2. Start a maintenance session.
3. Click the Time tab. See figure 3–11.
4. If the zone indicated in the Time Zone box is incorrect, click the arrow in the box. A list of all time zones appears.
5. Scroll the list as needed to find a match for the time zone in which the unit is installed. The time zone is set right away; there is no need to reboot the unit.



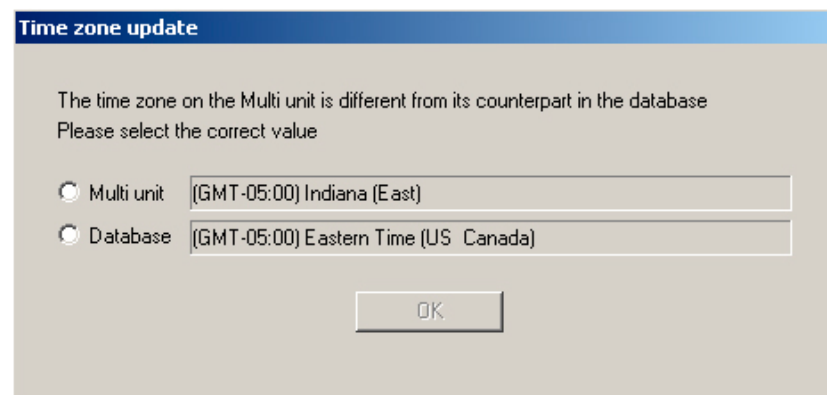
**The time zone is set on a unit-by-unit basis.**

Repeat this procedure for all of the units in your system.

## Conflicting Time Zones

A Multi-Media LT unit's time zone can be changed without the knowledge of a View operator. It can be done at the unit, using LocalView, or through another Multi-Media database (Multi db). The View operator's next attempt to access the site is interrupted by a message, shown in figure 3–12.

**Fig. 3–12. Different Rules for Daylight Savings Time in One Time Zone.**



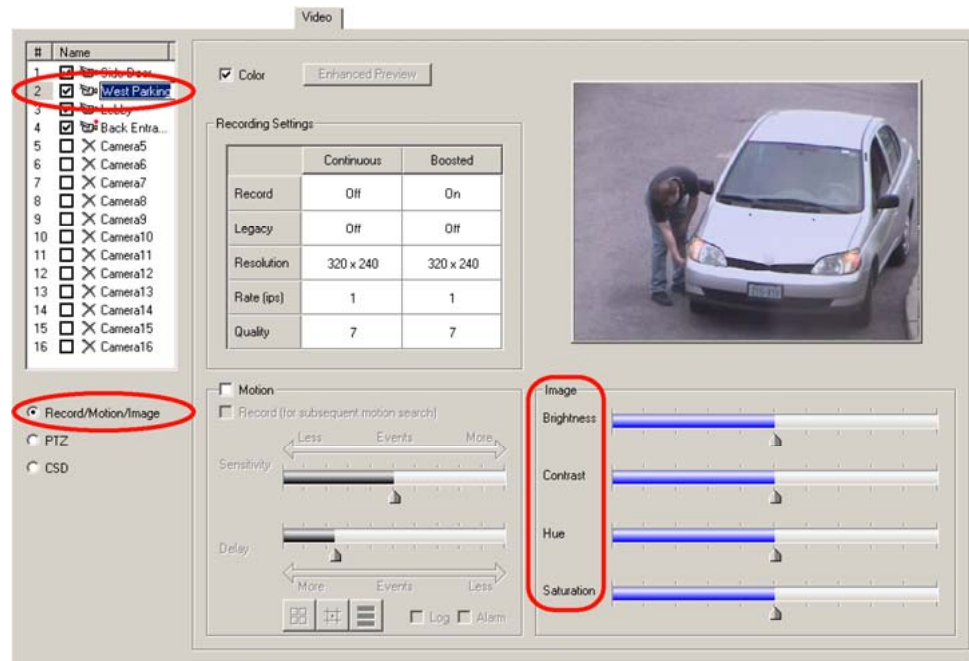
The message also appears if a time zone's area is changed, since some areas within a time zone can have different rules for daylight savings time. For example: "Indiana (East)" in the Eastern time zone (GMT-5:00) differs from "Eastern Time (US Canada)", also in the GMT-5:00.

## Configuring a Camera

The cameras connected to a Multi-Media unit are detected automatically. You can name a camera and adjust a camera's picture settings during a maintenance session.

1. Run a maintenance session at the pilot site.
2. Click the Video tab and adjust Image controls as needed. See figure 3–13. The adjustments are made on the fly.
3. You have the option of ending the Maintenance session for the Multi-Media unit.

**Fig. 3-13. Video Feed Adjustments.**



## To Obtain Video from a “Live Video Session”

1. Start by obtaining the list of cameras at the site. Either:
  - Right-click on the site name to select Live from the shortcut menu.
  - Select the site; then click Live on the Actions menu.



- Selecting the site; then click **Live** on the toolbar.
2. Select cameras as required. Click OK. Video should appear.
3. End the Live session by closing the Live window or View.

## Result Summary

To recap, the connection to the site has been checked and you have:

- Used Admin to create a record for each unit in a Multi-Media database
- Used View to run a maintenance session to adjust the Multi-Media unit's time and camera(s)
- Used View to run a live video session at the site.
- Checked that the video feeds are effective: camera's distance from subject, angle and lighting.

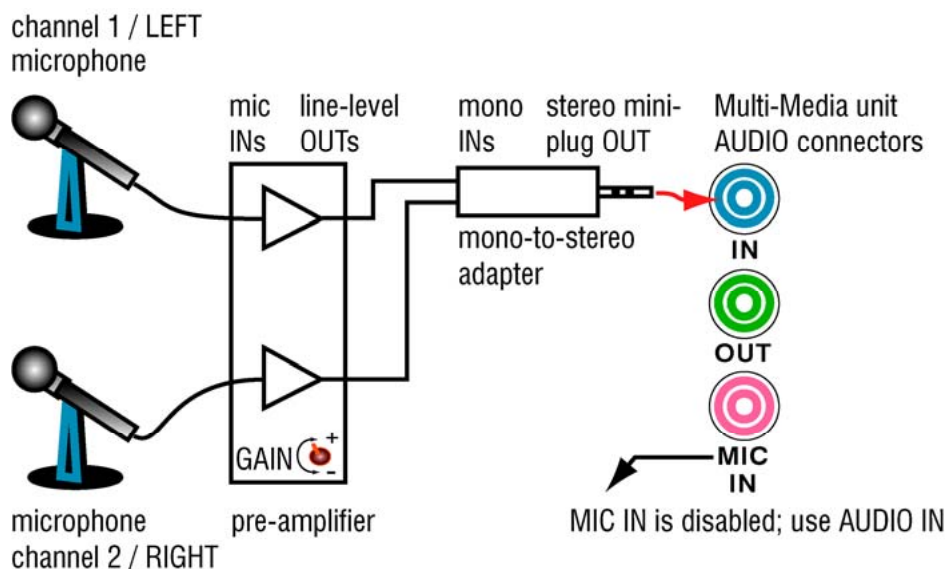
## Audio

### 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 unit; see figure 4–1.

**Fig. 4–1. Audio Input to Multi-Media Unit.**



#### 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.

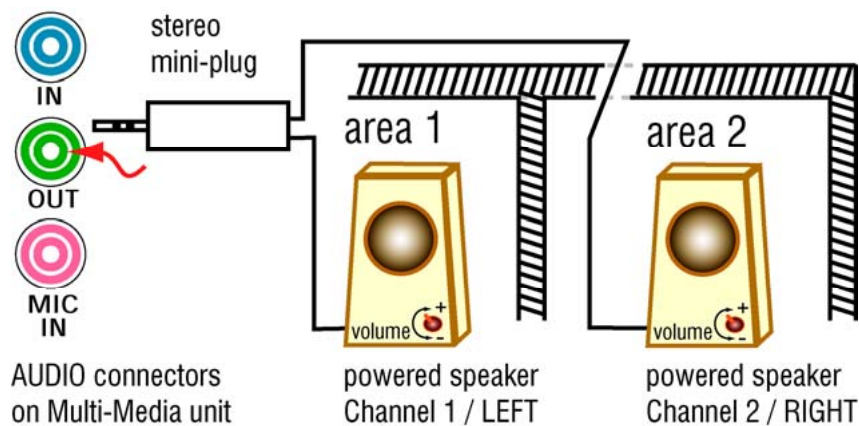
### Speakers

Connect powered speakers to a Multi-Media unit 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

### Preventive measures

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 unit 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.



**Loud alarms should be tested during the installation; they can interfere with Multi-Media audio. If microphones and speakers are used while alarm bells are ringing, Honeywell recommends that Multi-Media audio equipment be sonically insulated from the loudness of the alarms.**

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. Each Rapid Eye site can send two channels of audio to a View operator.

## 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.**

Channel	Name	Function	Enable	Record	Gain	Level
Channel 1 (Left)	Audio1	Talk (Audio Out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[Slider]	[Level Box]
		Listen (Audio In)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[Slider]	[Level Box]
Channel 2 (Right)						
<input type="checkbox"/> Channel 2 (Right) Used By Site Operator for Local Audio Monitoring						
	Audio2	Talk (Audio Out)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[Slider]	[Level Box]
		Listen (Audio In)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	[Slider]	[Level Box]



**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 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

### Audience

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



**Before adding more hardware, Honeywell recommends Testing a Connection Using View Software, as explained on p. 7.**

### Road map for adding hardware

After testing the connection from an operator's PC to Multi-Media unit, you can:

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

Aside from cameras and communications, a Multi-Media unit 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 unit'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 Unit

When planning where to place a unit, Honeywell suggests that your planning authority be made aware of, and consider:

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

**To secure the unit**

1. Select a secure, clean, well-ventilated area for the Rapid Eye Multi-Media unit.
2. You have the option of rack-mounting the unit. 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 unit 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 unit.**

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



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

## Connectors for Serial Communications on Ports 3 to 10

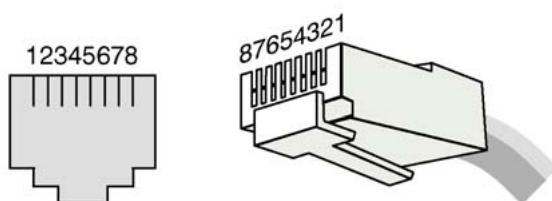
The wiring for the RJ-45 connectors on a Multi-Media unit's PORT 3 to PORT 10 is listed in table 5-1. The Multi-protocol chip is a Maxim MAX3161.

**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

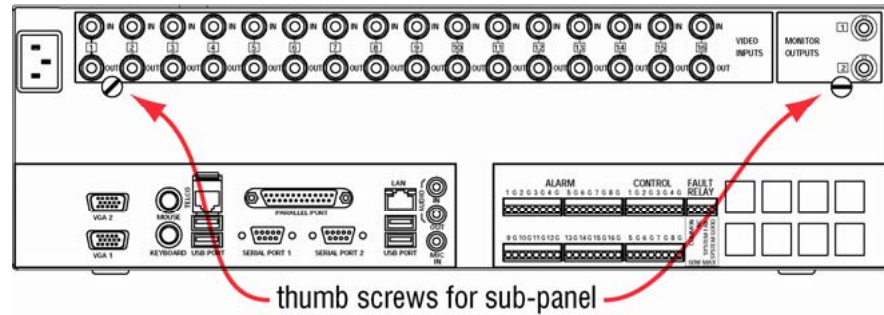
**Fig. 5-1. Pin Order on Serial Ports 3 to 10 of a Multi-Media unit, and RJ-45 Connector.**



## 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 a unit with another without having to disconnect cameras from a unit.

**Fig. 5-2. Removing the Camera Input/output (I/O) Connectors.**



## To Detach the Sub-panel at the Back of the Unit

1. Power down the unit.
2. At the back of the panel, unscrew the two thumbscrews. See fig. 5-2.
3. Pull the panel straight out, to avoid bending pins of the connectors inside.

Detaching the panel can serve to speed-up servicing or replacement of a Multi-Media unit, while preserving camera wiring.

## Unit Hard Disk and S.M.A.R.T.

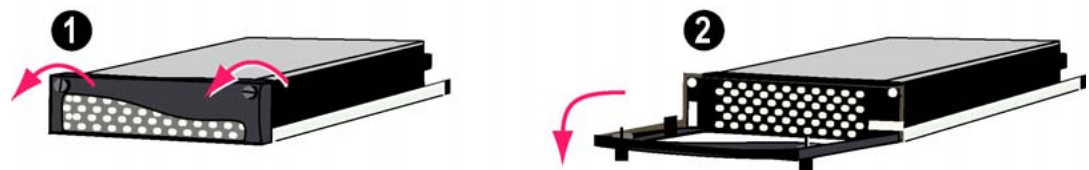
Hard disk use on a unit for storing video, audio and data is monitored for signs of degradation that can lead to failure. Degradation is reported on a Multi-Media unit's blue LCD screen as: "CRITICAL STATE: DISK FAILURE". The pilot light on a disk drive turns red to identify a hard disk that is degrading. 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 unit. See figures 5-3 and 5-4.

## Removing a Drive in a Unit

**Fig. 5-3. Handle on a Drive for a Rapid Eye Unit.**



**Fig. 5-4. Removing a Drive on a Rapid Eye Unit.**



## Hardware Options

A Rapid Eye Multi-Media unit 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 unit'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 unit—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 units. There is no need for converters between the monitor and the Multi-Media unit.

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 unit or Multi-Media LT unit.
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 video unit.**

## Using LocalView for Public Display

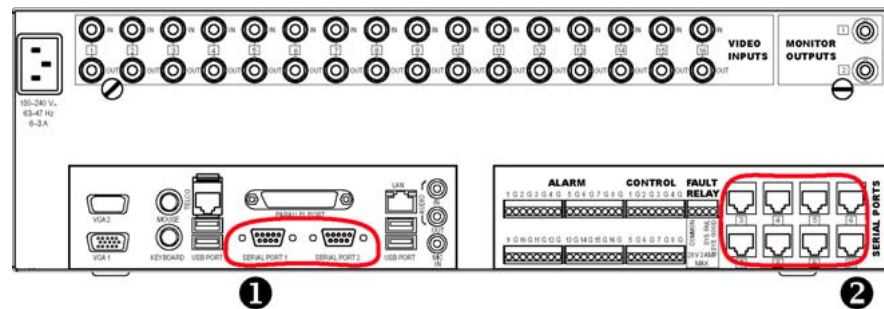
You have the option of using VGA monitor(s) as a public display monitor. Set Local View to display the camera(s) that you need. More than one camera can be displayed simultaneously. For a better public display of video, and if displaying one video feed at a time is satisfactory, Honeywell recommends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

## Connecting a PTZ Dome

### Connection to unit

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

**Fig. 5-5. 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 unit and configured using Rapid Eye View software.

### Installers:

- Set ACUIX cameras to their Intellibus mode (IBus).
- Connect ACUIX camera domes to a port on the Rapid Eye unit.
- Do not use the same **Camera Address** on two or more domes connected to the same bus.
- Report the port number and camera addresses used.

## Converter: Technical Notes

A 232/485 converter interfaces with a PTZ dome/controller to the Multi-Media unit. 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

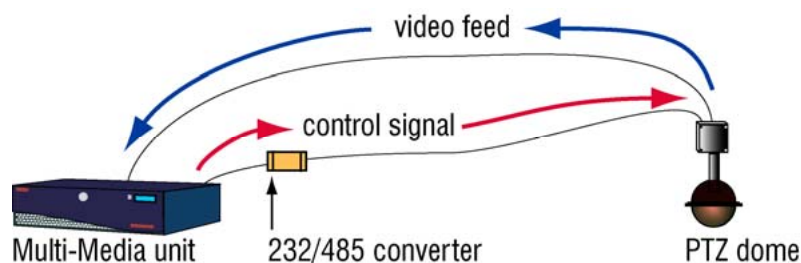
### Serial ports 3 through 10

On a Multi-Media DSP unit, a converter may not be needed: an RS-485 connection is available on ports 3 through 10.

### 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 unit. The converter amplifies PTZ control data for transmission over longer distances for a maximum of 1.2 km (or 4,000 feet).

**Fig. 5-6. PTZ Wiring, Using SERIAL PORT 1 or 2.**



**Table 5-2 Cabling a PTZ dome**

Type	Dome to converter	Converter to Multi-Media unit
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 unit. 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 units 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's 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 unit.**

## Alarm Sensors

To connect alarm-type hardware to a Multi-Media unit, 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.

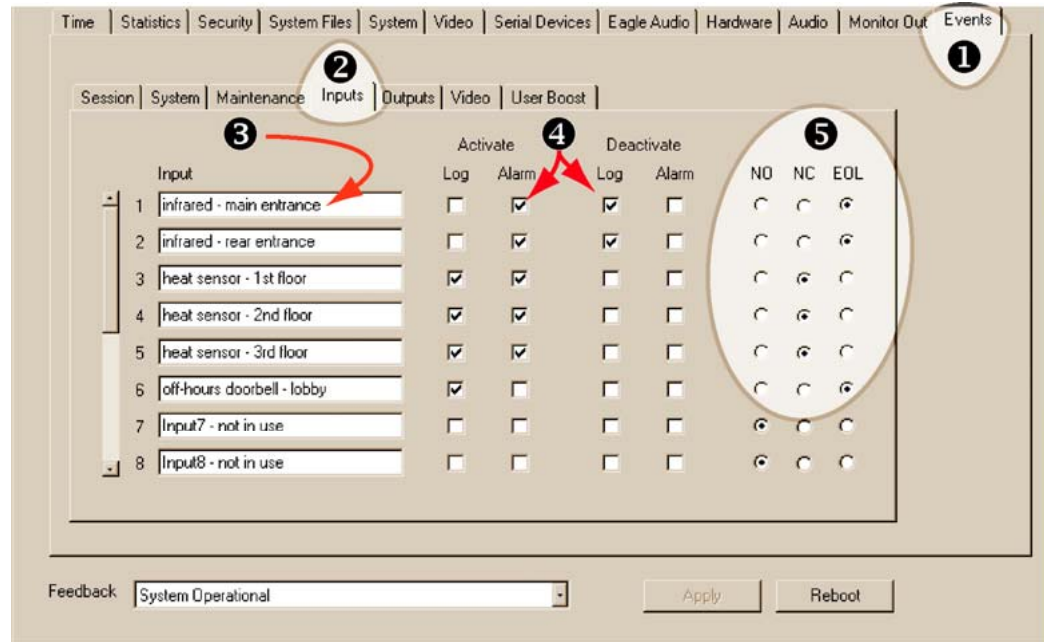


**To avoid short-circuits, ensure that bare wire is not visible at the rear panel.**

## Inputs for Sensors

### Configuration, using View software

Fig. 5–7. 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 5–7, 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 unit, 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 unit 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 $\Omega$ , 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 unit.

### 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 unit can be monitored for failure to:

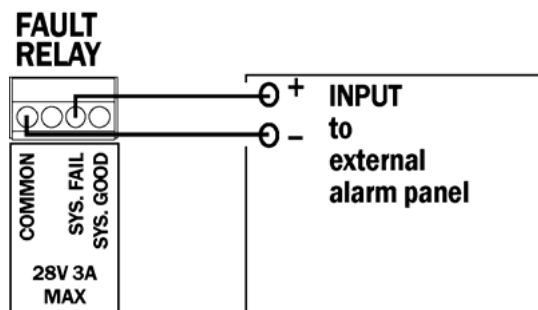
- Function
- Report alarms
- Hardware failure to record video
- Configuration error, to stop the recording of video.

## 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

Fig. 5–8. The Unit's FAULT RELAY Can Be Connected to an External Alarm Panel.



### Nineteen-minute delay

If a unit 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.

## Software Setup

Fig. 5–9. Options for Monitoring a Unit Are on the System Tab.

The screenshot shows the 'System' tab of a software configuration window. It contains several sections: 'Site Info' with fields for 'Serial Number' (00197) and 'Software Version' (8.0 Build 25), an 'Upgrade' button, and 'Network Settings' with a 'Use DHCP' checkbox and fields for 'Network Name' (N/A), 'IP Address' (164 . 178 . 32 . 197), 'Subnet Mask' (255 . 255 . 255 . 0), 'Gateway' (164 . 178 . 32 . 1), and 'MAC Address' (00:02:68:03:82:2E). On the right, there is a 'Signal Format' section with 'NTSC' and 'PAL' radio buttons, and a 'System Monitor' section which is circled in red. The 'System Monitor' section contains two checkboxes: 'Enable Status Pulse' (checked) and 'Monitor Alarm Reporting' (unchecked). Below this is a 'Maximum Network Data Rate' section with a 'Regulate Data Rate' checkbox and a text field showing '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 of that alarm station being unavailable.

1. Using View software, start a maintenance session.
2. On the System tab, set the FAULT RELAY to trigger by selecting either:
  - Enable Status Pulse
  - Monitor Alarm Reporting
  - both. See figure 5–9.
3. On the Events tab, click the Outputs subtab.
4. 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.
5. You have the option of ending the maintenance session.

## 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 unit's performance. Consult the System Administrator's Guide under “Response Schedule”.

## Alarm when Disabling Video Recording

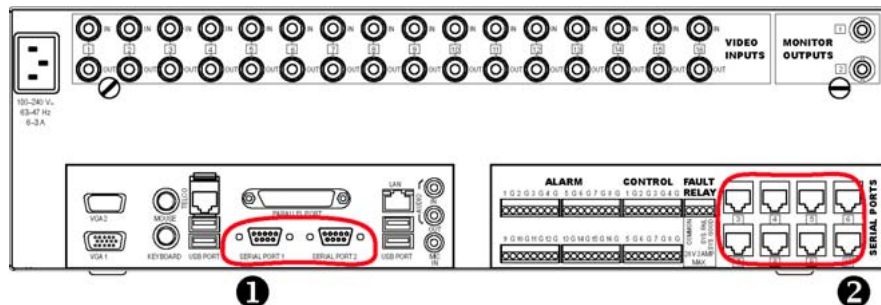
Units can be monitored for operator tampering with recording. Consult the System Administrator's Guide under “tracing”.

## Point of Sale Hardware

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

- **SERIAL PORT 1 or 2.** Use a standard RS-232 cable with a female DB-9 connector. See figure 5–10(1).
- **SERIAL PORTS 3 to 10.** Use RJ-45 connectors. See figure 5–10(2).

**Fig. 5–10. For POS, Use Serial Ports.**



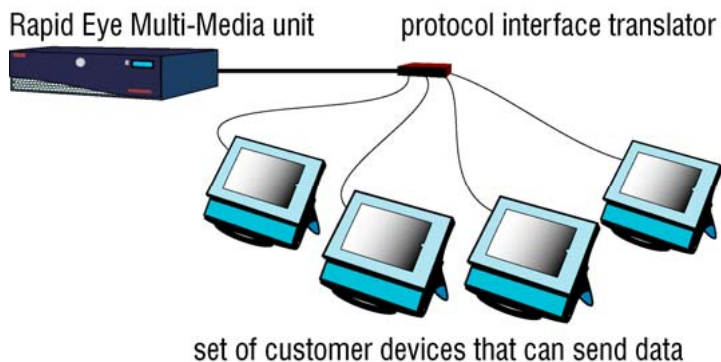
## NetPIT and PIT Devices

### Overview

To connect a Multi-Media unit 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 units support PITs and a NetPIT, for attaching many serial devices to a Multi-Media unit.

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. 5–11. Cash Registers, Connected to a Honeywell PIT.**



PIT and NetPIT devices are connected to the serial ports on the back of Multi-Media units. 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's Guide.

## Using Media at the Unit, 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 unit. 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).

- CD media holds about 0.6 GB
- A single-layer, DVD media holds about 4.7 GB
- A double-layer, DVD media holds about 9.0 GB.
- A USB memory stick can hold from 0.5 GB to 2 GB, or more.

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.

## Port Use: Restrictions

### Parallel port

The parallel port at the back of the REMM unit is for future use.



**Do not connect a device to the parallel port of a REMM unit.**

### Multiple serial switches

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

## 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 unit, connected to a network

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

- 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 unit, 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 unit 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
<b>Cannot install or use Admin</b>		
1	Has the password to the “Administrator” account been changed? Ask your Multi SA to check your user account, using Admin.	22
2	Does your user account have the right to log on to Admin? Ask your Multi SA to check your user account, using Admin.	22
3	How does one know what IP address to use for the site? Have the installers submitted a report of the installation? A can be found starting on p. 57.	12 & 57
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.	12
<b>Cannot connect to Multi-Media unit, using View</b>		
5	Can you log on to View? If not, your user account may not be valid.	29
6	Is the site listed? If not, then information is missing in the database or you are using the wrong database at logon. Quit View and logon again, making sure that the correct database is in use. If it is, ask your Multi SA to check the Multi-Media database.	23 & 30
<b>No video is reaching View</b>		
7	How are the cameras connected?	14
8	Is there a power outage? Has the UPS failed?	12
9	Are the unit, cameras and other hardware powered?	13
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 unit: network or dial-up?	23

## Background

### Planning

Closed circuit television (CCTV) can help assess an area, assist with police work when an area becomes a crime scene, and so on. Some forethought about unit tampering can help provide optimal gathering of evidence, for corporate use, or use of video in a court of law.

When planning where to place the unit and its video cameras, Honeywell suggests that your planning authority be made aware of, and consider:

- Allowing for access to the unit, if maintenance is required, yet preventing easy criminal tampering with the system;
- Working around camera blind spots due to: architecture, mobile equipment, vehicle docking, construction and so on;
- Dealing with environmental lighting situations that can render a system ineffective: direct sunshine or other strong lighting, darkness and so on;
- Dealing with environmental factors that can hamper a unit or its cameras: dust, condensation, excessive heat or cold, and so on;
- Supplying adequate power to the unit; critical sites may benefit from an uninterruptible power supply (UPS);
- Connecting the FAULT RELAY to an alarm panel, to monitor systems status;  
- and -
- The type(s) of communications used to obtain information from the Multi-Media unit: dial-up, network, both, or dial-up to a network.

### Reference

For these and other background questions about the field of closed-circuit television in a security setting, 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

## 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 unit 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.

## 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.

## 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.

## Lighting

A big factor of image quality is the amount of light reaching a camera's lens. You can manage lighting by moving the CCTV cameras in consideration of:

- beam angle from the light source to the camera lens
- intensity of reflection and contrast from objects in a camera's field  
- *and* -
- complexity and motion at the scene.

## 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	

- checklist continues on next page -

**Site Definition**

<b>Rapid Eye site...</b>	<b>Identification</b>
Name	
Serial number	
Time zone	
Street address	
Multi-Media unit location: floor, room, area...	
SNTP servers (optional)	primary:  secondary:
System password	Changed?
FAULT RELAY	Enabled?

- checklist continues on next page -

## Communications to Unit

Connection	Value
( ) network ( ) dial-up ( ) both ( ) 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)?	
Unit telephone number/RAS server telephone number	
Area code	
Area code is used normally (yes/no)?	
Country code	

**Communications from Unit to Alarm Station**

Connection	Value at alarm station
( ) network ( ) dial-up ( ) both ( ) 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)?	
Unit telephone number/RAS server telephone number	
Area code	
Area code is used normally (yes/no)?	
Country code	

- checklist continues on next page -

Audio

#	Microphone type	Speaker type	Comments
1			
2			

- checklist continues on 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			

- checklist continues on 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		

- checklist continues on 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.
------------------	--	------------------

- more serial ports on 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.

- checklist continues on next page -

## Point of Sale Hardware

Type	Name / model #	Data / text of interest

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Honeywell Video Systems (Head Office)  
2700 Blankenbaker Pkwy, Suite 150  
Louisville, KY 40299, USA  
[www.honeywellvideo.com](http://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.ademco.com.au](http://www.ademco.com.au)  
☎ +61.2.8837.9300

Honeywell Security Asia Pacific Ltd.  
33/F, Tower A, City Center, 100 Zun Yi Road  
Shanghai 200051, China  
[www.security.honeywell.com/cn](http://www.security.honeywell.com/cn)  
☎ +86 21.2527.4568

Honeywell Security Asia  
Flat A, 16/F, CDW Building, 388 Castle Peak Road  
Tsuen Wan, N.T., Hong Kong  
[www.security.honeywell.com.hk](http://www.security.honeywell.com.hk)  
☎ +852.2405.2323

Honeywell Security France  
Parc Gutenberg, 8, Voie La Cardon  
91120, Palaiseau, France  
[www.honeywell.com/security/fr](http://www.honeywell.com/security/fr)  
☎ +33.01.64.53.80.40

Honeywell Security Italia SpA  
Via Treviso 2 / 4  
31020 San Vendemiano  
Treviso, Italy  
[www.honeywell.com/security/it](http://www.honeywell.com/security/it)  
☎ +39.04.38.36.51

Honeywell Security España  
Mijancas 1.3a Planta  
P.Ind Las Mercedes  
28022 Madrid, Spain  
[www.security.honeywell.com/es](http://www.security.honeywell.com/es)  
☎ +34.902. 667.800

Honeywell Video Systems Northern Europe  
Network 121  
1446 WV Purmerend, The Netherlands  
[www.SecurityHouse.nl](http://www.SecurityHouse.nl)  
☎ +31.299.410.200

Honeywell Video Systems UK Ltd.  
Aston Fields Road, Whitehouse Ind Est  
Runcorn, Cheshire, WA7 3DL, UK  
[www.honeywellvideo.com](http://www.honeywellvideo.com)  
☎ +0844 8000 235

Honeywell Security South Africa  
Unit 6 Galaxy Park, 17 Galaxy Avenue,  
Linbro Park, P.O. Box 59904  
2100 Kengray, Johannesburg, South Africa  
[www.honeywell.co.za](http://www.honeywell.co.za)  
☎ +27.11.574.2500

Honeywell Security Deutschland  
Johannes-Mauthe-Straße 14  
D-72458 Albstadt, Germany  
[www.honeywell.com/security/de](http://www.honeywell.com/security/de)  
☎ +49.74 31.8 01.0

Honeywell Security Poland  
Chmielewskiego 22a, 70–028  
Szczecin, Polska  
[www.ultrak.pl](http://www.ultrak.pl)  
☎ +48.91.485.40.60

Honeywell Security Czech Republic  
Havráňkova 33, Brno  
Dolní Heršpice, 619 00, Czech Republic  
[www.olympo.cz](http://www.olympo.cz)  
☎ +420.543.558.111

Honeywell Security Slovakia Republic  
Vajnorská 142, 83104 Bratislava  
Slovakia  
[www.olympo.sk](http://www.olympo.sk)  
☎ +421.2.444.54.660

# Honeywell

[www.honeywellvideo.com](http://www.honeywellvideo.com)  
+ 1.800.796.CCTV (North America only)  
[HVSsupport@honeywell.com](mailto:HVSsupport@honeywell.com)

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