ADPRO FastTrace-R by Xtralis

Installation and User Manual

March 16, 2010
Doc. 13972_03

ADPRO® by xtralis™

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General Warning

This product must only be installed, configured and used strictly in accordance with the General Terms and Conditions, User Manual and product documents available from Xtralis. All proper health and safety precautions must be taken during the installation, commissioning and maintenance of the product. The system should not be connected to a power source until all the components have been installed. Proper safety precautions must be taken during tests and maintenance of the products when these are still connected to the power source. Failure to do so or tampering with the electronics inside the products can result in an electric shock causing injury or death and may cause equipment damage. Xtralis is not responsible and cannot be held accountable for any liability that may arise due to improper use of the equipment and/or failure to take proper precautions. Only persons trained through an Xtralis accredited training course can install, test and maintain the system.

Liability

You agree to install, configure and use the products strictly in accordance with the User Manual and product documents available from Xtralis.

Xtralis is not liable to you or any other person for incidental, indirect, or consequential loss, expense or damages of any kind including without limitation, loss of business, loss of profits or loss of data arising out of your use of the products. Without limiting this general disclaimer the following specific warnings and disclaimers also apply:

Fitness for Purpose

You agree that you have been provided with a reasonable opportunity to appraise the products and have made your own independent assessment of the fitness or suitability of the products for your purpose. You acknowledge that you have not relied on any oral or written information, representation or advice given by or on behalf of Xtralis or its representatives.

Total Liability

To the fullest extent permitted by law that any limitation or exclusion cannot apply, the total liability of Xtralis in relation to the products is limited to:

(i) in the case of services, the cost of having the services supplied again; or

(ii) in the case of goods, the lowest cost of replacing the goods, acquiring equivalent goods or having the goods repaired.

Indemnification

You agree to fully indemnify and hold Xtralis harmless for any claim, cost, demand or damage (including legal costs on a full indemnity basis) incurred or which may be incurred arising from your use of the products.

Miscellaneous

If any provision outlined above is found to be invalid or unenforceable by a court of law, such invalidity or unenforceability will not affect the remainder which will continue in full force and effect. All rights not expressly granted are reserved..

FCC Compliance Statement

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 instruction, 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, the user is encouraged to try to correct the interference by one or more of the following measures; re-orientate or relocate the receiving antenna, increase the separation between the equipment and receiver, connect the equipment to a power outlet which is on a different power circuit to the receiver or consult the dealer or an experienced radio/television technician for help.

Document Conventions

The following typographic conventions are used in this document.

Convention	Description
Bold	Used to denote: emphasis Used for names of menus, menu options, toolbar buttons
Italics	Used to denote: references to other parts of this document or other documents. Used for the result of an action

The following icons are used in this document

Convention	Description
	Caution: This icon is used to indicate that there is a danger to equipment. The danger could be loss of data, physical damage, or permanent corruption of configuration details.
	Warning: This icon is used to indicate that there is a danger of electric shock. This may lead to death or permanent injury.
	Warning: This icon is used to indicate that there is a danger of inhaling dangerous substances. This may lead to death or permanent injury.

Tradename statement

ADPRO is a registered trademark of Xtralis AG Pty Ltd.

Lightning or Related Voltage Surges

Damage or malfunction caused by lightning or related voltage surges may be excluded from the manufacturer's warranty at the manufacturer's discretion.

Safety Procedures
Installations in the United States of America and Canada

For systems installed in the United States of America and Canada the following requirement is applicable:

All equipment installations are required to be in accordance with the National Electrical Code (NEC) ANSI/NFPA 70 and the Canadian Electrical Code (CEC) Part 1, CAN/CSA C22.1.

If the power cord is not supplied with the ADPRO ***XXXProduct NameXXX***, select the proper power cord according to your local national electricity code.

USA: use a UL listed type SVT or SJT detachable power cord.
Canada: use a CSA certified detachable power cord.

Radio Interference

The ADPRO FastTrace-R complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The ADPRO FastTrace-R complies with the electromagnetic emission limit requirements of AS/NZS CISPR22 and EN55022 Class A. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Internal Lithium Battery

Caution: The ADPRO FastTrace-R contains an internal lithium battery.
There is danger of explosion if the battery is incorrectly replaced.
The battery is not user replaceable and can only be replaced by Xtralis or their Authorised Service Representative.

Compliance of Power Cord

Caution: If the power cord supplied with the ADPRO FastTrace-R is not suitable for your local power connection, do not modify the cord. Please purchase a power cord that has the safety approvals appropriate for your country.

Connection to Other Equipment

Caution: All interface ports on the ADPRO FastTrace-R must be only connected to other equipment or systems that are Safety Extra Low Voltage (SELV) rated. Failure to do so will invalidate the electrical safety approval and may cause injury or loss of life

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Declaration of Conformity

Manufacturer's Name:	Xtralis AG Pty Ltd
Manufacturer's Address:	4 North Drive, Virginia Park 236-262 East Boundary Road Bentleigh East VIC 3165 Australia.

declares, that the product(s):

Product Name:	ADPRO FastTrace-R Video Security System
Model Number:	AFT-5020-X-Y-D-R AFT-5010-X-Y-D-R X = Number of Hard Disk Drives between 1 - 4. Y = Number of Video Compression Engines between 1 - 4. D = Down-the-Coax Telemetry Module
Product Options:	All

meet the Standards detailed below.

EMC Emissions	EN55022:1998 (CISPR 22:1997) / AS/NZS 3548:1995 + A1, A2 Class A Conducted and radiated emissions. FCC Part 15 Class A Conducted and radiated emissions. EN 61000-3-2:1995 Current harmonic emissions. EN 61000-3-3:1995 Voltage fluctuations and flicker.
EMC Immunity	EN 50130-4:1995 +A1 Alarm systems immunity.
Safety	EN 60950:1992 +A1, A2, A3, A4, + A11 IEC 60950:1991 +A1, A2, A3, + A4

Supplementary Information

The products listed comply with the requirements of the Low Voltage Directive 73/23/EEC (where applicable) and the EMC Directive 89/336/EEC and carries the CE marking accordingly. The products were tested in a typical configuration.

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1 Introduction

ADPRO FastTrace-R by Xtralis is an advanced, high performance digital video and audio recorder optimised for remote search and playback. Available in a number of models with 10 or 20 video inputs, FastTrace-R provides outstanding transmission speed and picture quality for remote security and surveillance applications where secure, event-driven recording from multiple cameras onto digital data storage disks is required. In addition, FastTrace-R can provide multi-user network access or dedicated telephone line connection for searching, retrieval and transmission of stored data from a remote monitoring site.

When compared to a standard ADPRO FastTrace by Xtralis transmitter that can dial-out to a Central Monitoring Site (CMS) on certain alarm or pre-set conditions, a number of differences are apparent due to the FastTrace-R application environment, where dial-out is not a requirement.

Instead, the FastTrace-R will retain (queue) up to 100 system and fault alarms that will be downloaded to VideoCentral when a manual connection is made. These system and fault alarms are reset on a power failure. Other differences are:

- The Arm/Disarm option is not required.
- “Camera view style” is “Live” only (alarm and Presidium inputs).
- The “Call list configuration” is not required.
- The ability to use an “alarm input as an Arm/Disarm Input” is not required.
- The ability to “Activate Control Output while unit is armed” is not required.
- The ability to “Activate Control Output when sensors are active” is not required.
- The option to “Dial Out on event for each camera” is not required.
- The Entry/Exit Path option is not required.
- The SitePulse option is not required.
- There is no requirement for the duress alarm option.
- There are no quad alarms required.

FastTrace-R can be installed to be fully compatible with the British Standard, BS8418. This standard applies to remotely monitored video verification systems, and is mandatory in the UK to receive police response to intrusions. It specifies superior quality equipment, best practice installation and monitoring requirements that will ensure long term, high performance operation for the end user.

Figure 1 shows a typical application using the FastTrace-R system supporting the following equipment:

- 10 camera (Model 5010) or 20 camera models (Model 5020)
- 20 (or 30) external alarm input devices (e.g. panic button, door switch, PIR (passive infra-red) detector or glass break switch)
- 10 (or 20) external output devices (e.g. siren, strobe light, outdoor light or door lock mechanism)
- 10 (or 20) microphones and speakers (via the VM22A Audio Switcher)

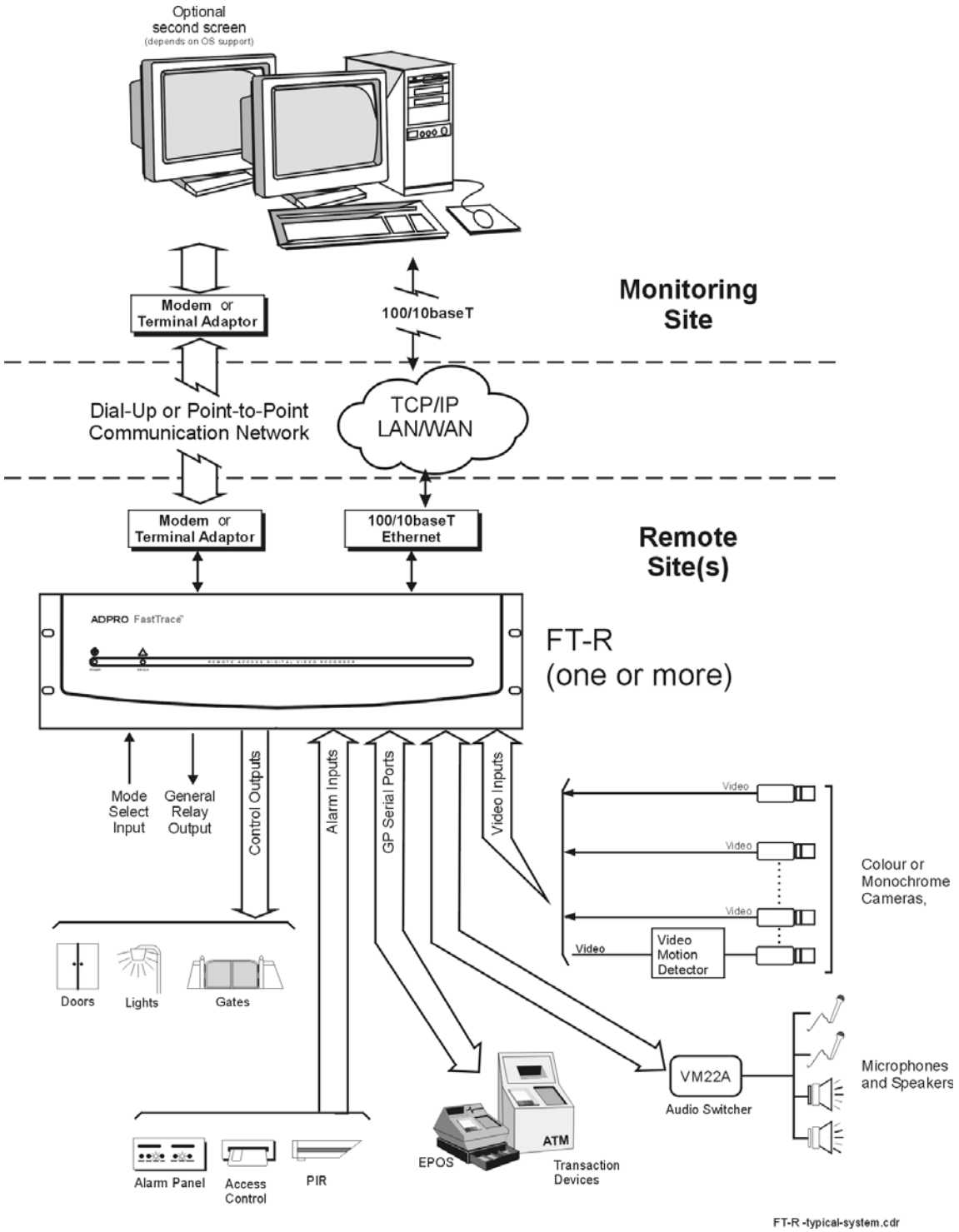

Figure 1: Typical FastTrace-R Application

2 FastTrace-R Setup Instructions

This chapter contains instructions to setup the FastTrace-R.

2.1 Physical Location

The location within the protected premises of the FastTrace-R should be considered carefully and the following notes are provided for guidance.

- **Physical Security** - The FastTrace-R should be located where it will remain secure under all conditions, even when the premises are open or occupied. The safest place would be a room (or cabinet) with a lockable door. It should not be visible from outside the premises and not be accessible to occupant or visitor tampering.

Caution: FastTrace-R equipment must be used only in an INDOOR environment.

- **System Wiring** - Ideally, the FastTrace-R's position will be close to the centre of the site wiring. Excessive cable runs will increase the installation cost, cause voltage drops, degrade signals, and offer greater scope for EMI/RFI (electrical interference) induced faults, tampers, and false alarms. Wiring considerations should include the following:
  - The largest wiring requirement is the coaxial camera cabling and the wiring to the alarm input and output devices
  - Mains power
  - The system requires at least one video camera and associated coaxial cabling for system setup
- **Environment** - Choose an inside location that is cool and dry. Do not mount the FastTrace-R anywhere near machinery that generates heat, toxic fumes and dust. Do not mount the FastTrace-R in close proximity to sources of radio frequency or other electromagnetic radiation. These include radio transmitters (both fixed and portable), electric motors, refrigeration or air conditioning systems and high power or multiphase switching equipment.

Caution: FastTrace-R should be given time to adjust to room temperature before it is turned on. The hard disk storage devices have a defined operational temperature range of 0 to 40 degrees Celsius. It is recommended the FastTrace-R be given a period of 24 hours to acclimatise.

2.2 General Power Requirements

Any AC supply connected to the FastTrace-R should be:

- Provided from a reliable electric supply company - typically this means that the power is not disconnected (or lost) for any more than eight hours at a time in any 36 hour period and infrequently in a single year.
- Provided from a supply bus within the protected premises that is not isolated at night (or out of hours) or time switched. The supply should be free from voltage spikes or current surges (connected to high power switching equipment or electric motors).
- Supplied directly to the FastTrace-R via circuits that cannot be switched off, intentionally or accidentally.

Always consider local regulations, standards, and guidelines for mains power connected systems.

Caution: The FastTrace-R is a Class 1 electrical product and must always be connected to a grounded power outlet. Always ensure that FastTrace-R is installed adjacent to a grounded power outlet.

2.2.1 Power Conditioners and Surge Arresters

The use of an Uninterruptible Power Supply (UPS) should be considered in situations where the mains power is unreliable. A good UPS has the ability to remove interference, sags, and power surges that can cause false alarms, equipment failure or even terminal damage. UPS are used effectively on all major computer installations and the microelectronics used in many video and alarm systems (including FastTrace-R) are similar, both in their functionality, and their susceptibility to 'dirty' mains power.

Power line conditioners or surge arresters can help prevent mains distortion of voltage, current, and frequency caused by load switching, large electric motors, and lightning. These distortions can cause unreliable operation, false alarms, and equipment failure, damage or even total destruction.

2.2.2 Interference Caused by Ground Loops

In some installations, where cameras or monitors are located at a distance from the FastTrace-R rack, considerable ground loop currents can be generated and may cause interference.

Supplying power to different components of the FastTrace-R system may also cause ground loop currents. For example, cameras, monitors and the FastTrace-R chassis may receive power from different phases of a multi-phase supply. Wherever possible, source power to all components of the system from a common phase of the supply.

Where ground loop currents cause a problem in a FastTrace-R installation, the installer may reduce the effect by installing a video isolation transformer on each video channel affected.

2.3 System Wiring Considerations

2.3.1 Electromagnetic Compatibility (EMC) Issues and Instructions

When a FastTrace-R system is installed in accordance with the recommendations and procedures in this manual, it will meet the EMC requirements of:

- EN 55022 / AS3548 Class A, and FCC Part 15 Class A digital devices in respect to emissions, and
- EN 50130-4 Alarm Systems Immunity.

To ensure EMC compliance for your system installation, make sure of the following:

- CAT-5 Unshielded Twisted Pair (UTP) Data Cable is used for the Network port connection,
- RG-59 coaxial 75 ohm Video cable is used for all composite video connections and the cables are terminated with 75 ohm BNC connectors, and
- Where possible, all cables should be shielded (single or dual) twisted pair and the shield itself, along with the associated drain wire, terminated at the FastTrace-R with a connection to the chassis.

Note: The foil used in some shielded cable is only insulated on one side. Always check the foil shield with an ohm-meter and make sure that the conductive side is in contact with shield termination recommendations in this manual.

FCC Advice for Installers and Users in the United States

FastTrace-R equipment has been tested and found to comply with the limits for a Class A 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 installer) or an experienced radio/TV technician for help

Caution: Changes or modifications not expressly approved by Xtralis could void the user's authority to operate this equipment.

2.3.2 Static Discharge

The FastTrace-R system components contain electrical parts that are susceptible to damage from static discharge. Static voltages of one to thirty kilovolts are common in unprotected environments.

When installing or servicing the FastTrace-R equipment, it is advisable to observe the following standard precautions for handling electronic assemblies to reduce the risk of component damage:

- Minimise handling of electronic assemblies and components.
- Transport, temporarily arrange and store electronic components in recognised anti-static containers.
- Discharge any static voltage from your body before handling electronic components or wear a grounded, Safety-Standard Approved, anti-static wrist strap while handling components.

Avoid handling electronic components in areas which have a floor or work-surface capable of generating a static charge.

2.3.3 Grounding Requirements

The product safety standard that FastTrace-R is assessed to (IEC 60950-1) defines metallic video and/or audio cables connected between separate buildings, or between outdoor antennas and buildings, as Cable Distribution Systems and requires that products connected to these cables have a permanent connection to protective earth.

As the typical installations that FastTrace-R is used in has video and / or audio cables connected between separate buildings, it is required to have this permanent connection to protective earth.

FastTrace-R has a permanent earth connection point fitted to the lower right hand side of the rear panel.

This permanent earth connection point is an M4 tapped insert on the metalwork and is supplied with a screw and washer as shown below.

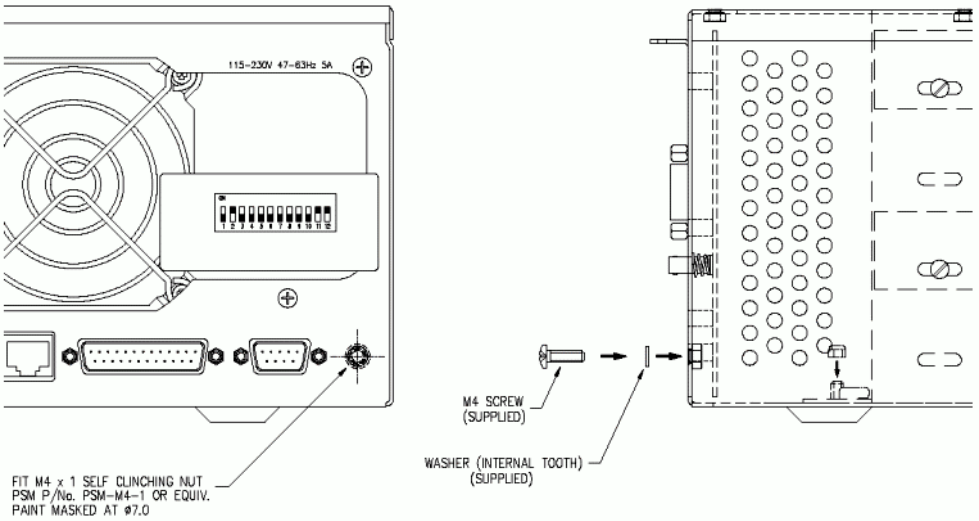

Figure 2: FastTrace-R Grounding Requirements

Connect this earth point to a protective earth point in the system installation using 2.5 mm 2 wire (minimum) and suitable ring terminals.

The installation protective earth point must be installed in accordance with local electrical installation codes and requirements.

2.4 Unpacking the FastTrace-R

When you first receive the FastTrace-R it is important to check that:

- You have received the equipment that you ordered.
- The box contains all the necessary components.

After unpacking the FastTrace-R, carefully check for any sign of damage. Any damage should be reported **before installation** to your supplier or to Xtralis directly. Check that the FastTrace-R packing carton contains the following items:

1	FastTrace-R chassis
1	DVD containing VideoCentral software
1	Installation and User Manual
1	Crossover Ethernet cable
1	9-way screw terminal plug
4 or 6	15-way screw terminal plug (Model 5010=4, Model 5020=6)
1	IEC power cord

The DVD contains software that must be loaded onto a PC or laptop in order to program the system.

Note: The FastTrace-R Installation and User Manual is also available in PDF format on the DVD.

To complete FastTrace-R installation, you may need:

- Null modem cable
- Camera and coax cable
- External alarm switches or other devices
- PC or Laptop running Microsoft® Windows® 2000 Professional or Windows® XP Professional, with an Ethernet Port or a serial port and a DVD drive.

2.5 Mounting the FastTrace-R

2.5.1 Rack Mounting

The FastTrace-R models are housed in a 3 U high chassis for mounting in a 19" rack with a layout as shown in the following figure. To ensure long term electronic equipment reliability, it is advisable to:

- mount the unit clear of other equipment that can dissipate large amounts of heat,
- ensure adequate air flow (either convective or forced) between the unit and its surroundings, and
- ensure that the fan opening on the rear panel is not blocked by other equipment.

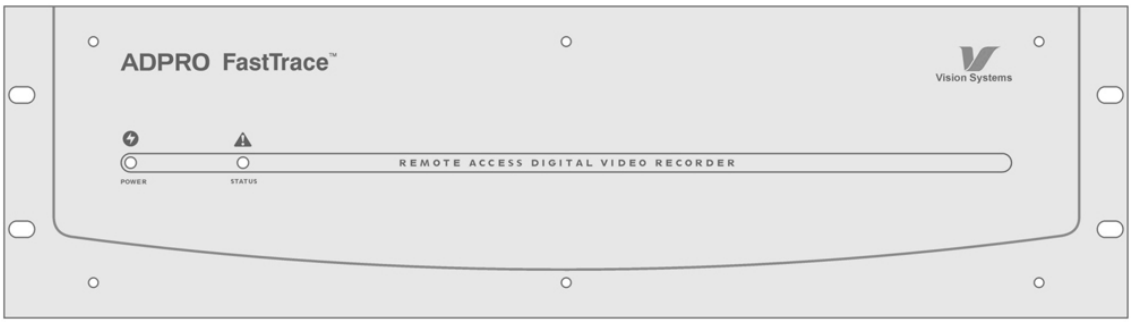

Figure 3: FastTrace-R Front Panel for 19 inch Rack Mount Models

2.6 Setting the Video Standard

FastTrace-R can be set to operate using either PAL (CCIR) or NTSC (RS170) video standards. Once a standard has been selected, all video inputs and the monitor output (composite video) will be configured to use the same standard.

To set the required video standard, use the Configuration DIP switch on the rear panel.

Configuration Switch # 10 ON = NTSC
OFF = PAL

Note: To be configured correctly, this switch must be set **before** power on.

2.7 Setting up the PC

To set up the FastTrace-R for operation, it must be connected to a PC installed with the latest version of VideoCentral Lite or Gold. Contact your ADPRO supplier or sales office for details.

Connection to the FastTrace-R may be via an Ethernet crossover cable (supplied), via the Ethernet port on the rear of the FastTrace-R, or via a null modem cable (not supplied), via the Comms 2 port on the rear of the FastTrace-R.

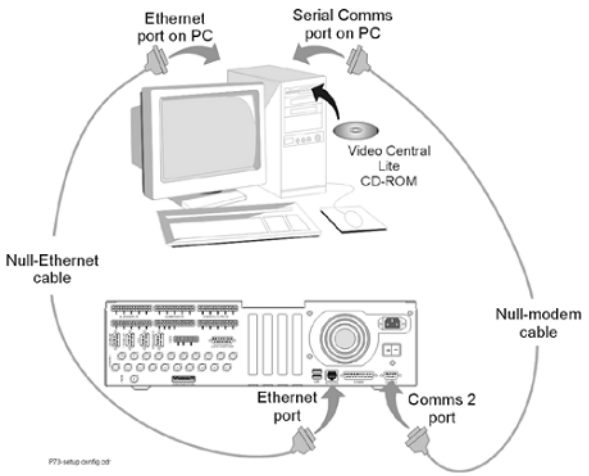

Figure 4: Typical Setup Connections - Ethernet or Serial

The following sequence briefly describes the install/upgrade process for VideoCentral Lite. For detailed instructions of the VideoCentral Upgrade process, please refer to the VideoCentral Administrator Manual (Part No: 201817).

Note: To install or upgrade VideoCentral, Administrator level access will generally be required. Power User level access may be used, but depending on the limitations placed on Windows from a security perspective, this may not be successful.

2.7.1 Logging onto Windows

When using Windows 2000 Professional or Windows XP Professional, log on as a Power User or an Administrator.

2.7.2 Removing Previous Versions of Software

If it is necessary to remove previous versions of ADPRO software installed on your PC, please refer to the VideoCentral Administrator Manual for details.

Note: Please ensure that the database information associated with that installation is not destroyed, if it is important. Refer to the VideoCentral Administrator Manual for details.

2.7.3 Configuring the PC for Ethernet Connection

A crossover Category 5 Ethernet cable is supplied for connection between the PC's network port and the FastTrace-R Ethernet (Network) port. This cable must be connected between the PC and FastTrace-R prior to powering on the FastTrace-R.

The (factory) TCP/IP **network** address for the FastTrace-R is: 192.168.1.1

The (factory) **subnet mask** address is 255.255.255.0

For the PC to be able to successfully connect to the FastTrace-R, the PC IP settings must be modified to a class C address.

1. Click the Windows **Start** button.
2. Select **Control Panel** / **Network Connections**, right click on **Local Area Connection** and select **Properties**.
3. Select **Internet Protocol (TCP/IP)** and click **Properties**.

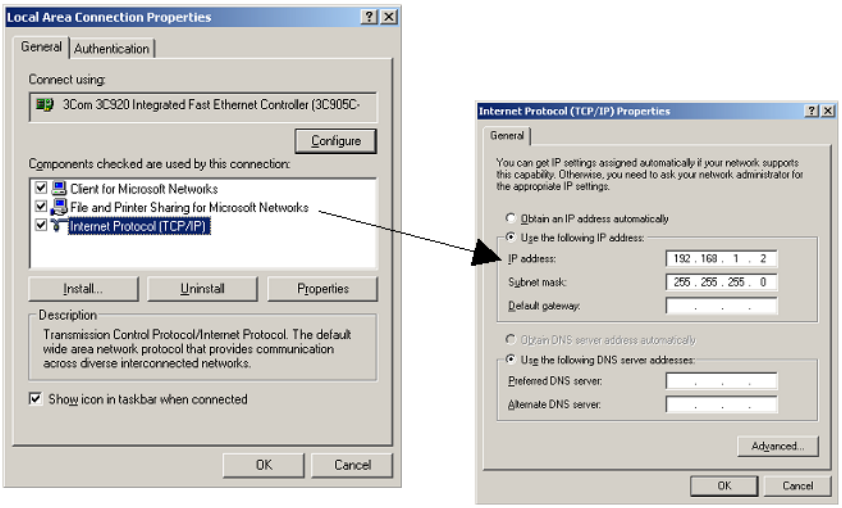

Figure 5: Internet Protocol

4. Change the PC IP settings to the following: **192.168.1.2**
5. Set the subnet mask address to: **255.255.255.0**
6. Click **OK**, and the Local Area Connection Properties box is displayed again. Click **OK** and close the Network and Dial up Connections panel.

2.7.4 Configuring the PC for Serial Connection

Note: The following procedure is only required if you have a null modem cable and do not intend to use the crossover ethernet cable to connect to the FastTrace-R. (Refer to Section 2 - *Null-Modem Cable Wiring* for wiring details for the null modem cable).

The serial comms (COM) port on the PC must be configured for operation as follows:

1. Select **Control Panel** / **System** / **Hardware** tab.

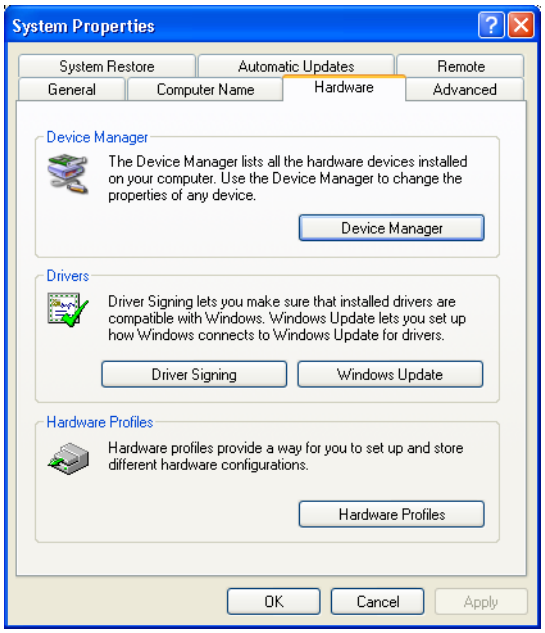

Figure 6: System Properties

2. Select **Device Manager** and expand the **Ports (COM & LPT)** selection.

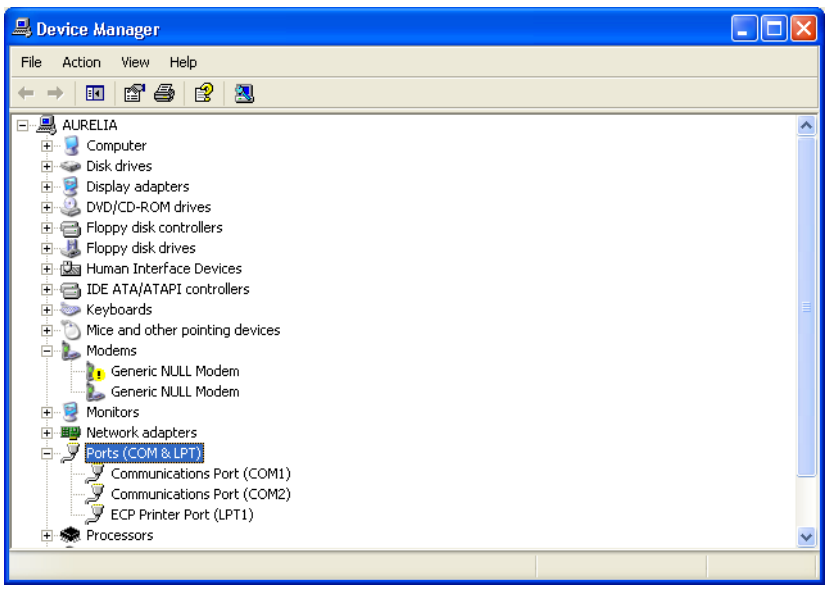

Figure 7: Device Manager

3. Double click on the required communications port (**COM1** or **COM2**).

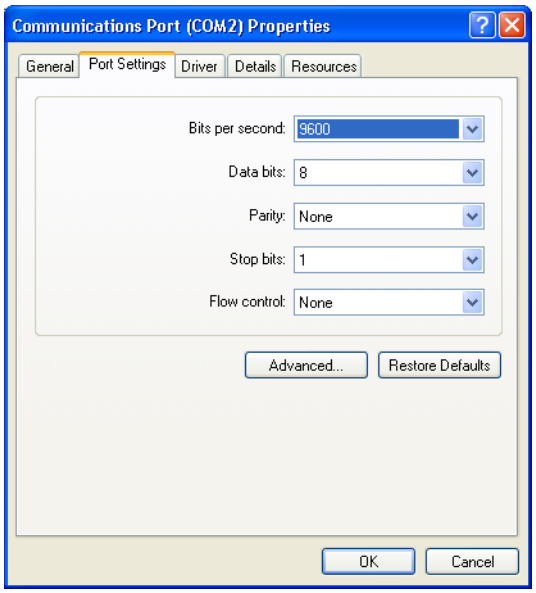

Figure 8: COM Port Settings

4. Select the **Port Settings** tab and enter the following settings:
   - Bits per second = 115,200 bps
   - Data bits = 8
   - Parity = none
   - Stop bits = 1
   - Flow control = hardware
5. Ensure the FastTrace-R is free-standing with no obstruction to airflow (cooling fan at rear).
6. Connect the cable between the FastTrace-R COMMS 2 port and the PC's serial port.

Installing the Null Modem Driver

If you are using the Null-Modem cable connection method to connect to the FastTrace-R, you must install the Null-Modem driver in Windows. This step is NOT necessary if a Null-Modem driver has already been installed on the PC, or if you are using an Ethernet connection to FastTrace-R.

To install this driver:

1. Insert the ADPRO VideoCentral Lite CD in the CDROM Drive.
2. If necessary enter an Area code in the Dialing Rules tab.
3. Click the Windows **Start** button and select: **Control Panel** / **Phone and Modem Options**.

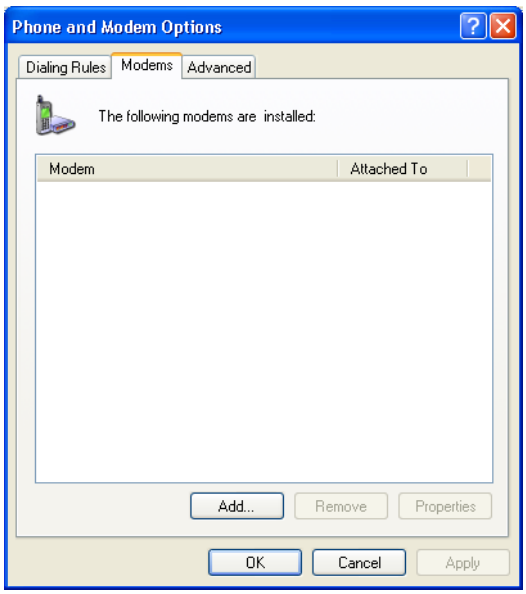

Figure 9: Phone and Modem Options

4. Click on the **Modems** tab and select the **Add** button.

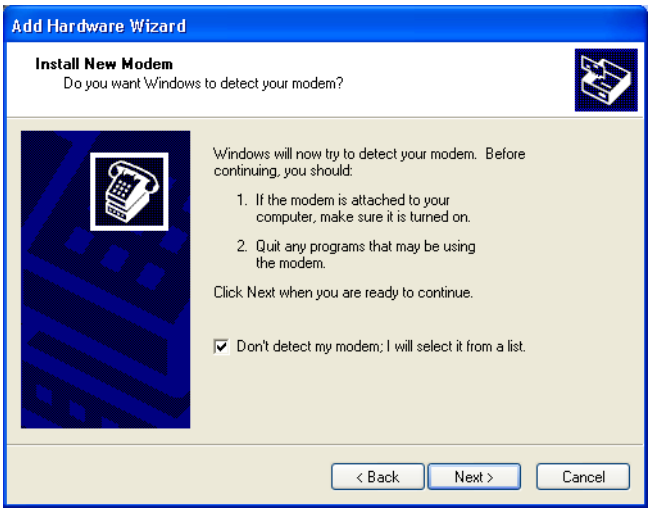

Figure 10: Install New Modem

5. When the Install New Modem dialog box is displayed, click the **Don't detect my modem, I will select it from a list** checkbox, then click **Next**.

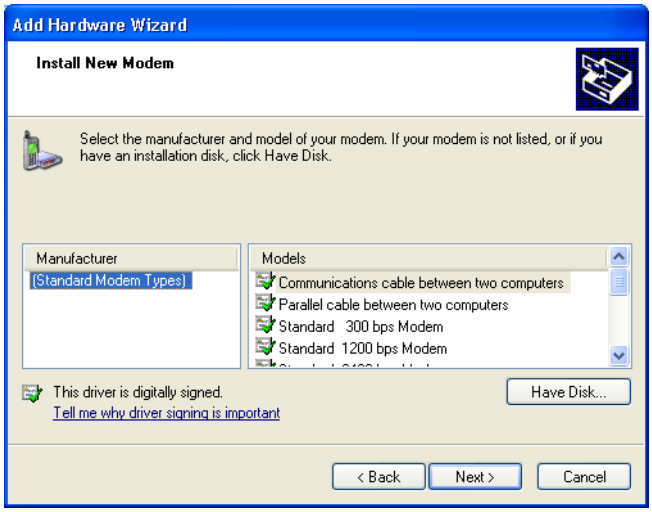

Figure 11: Select Modem Driver from Disk

6. Click the **Have Disk** button. The Install From Disk screen is displayed.

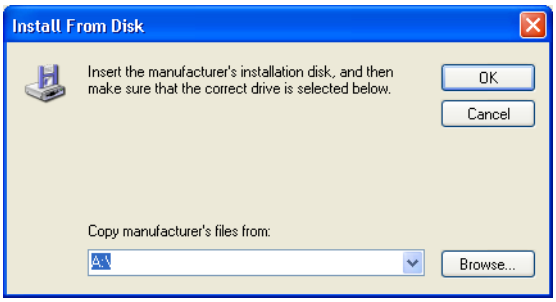

Figure 12: Install from Disk

7. Select the **Browse** button, navigate to the CD drive and select **Drivers and Libraries** / **Null Modem Driver / mdmcisc2.inf** (note that the CDROM should still be in the drive).
8. Select **Open** and click **OK**.

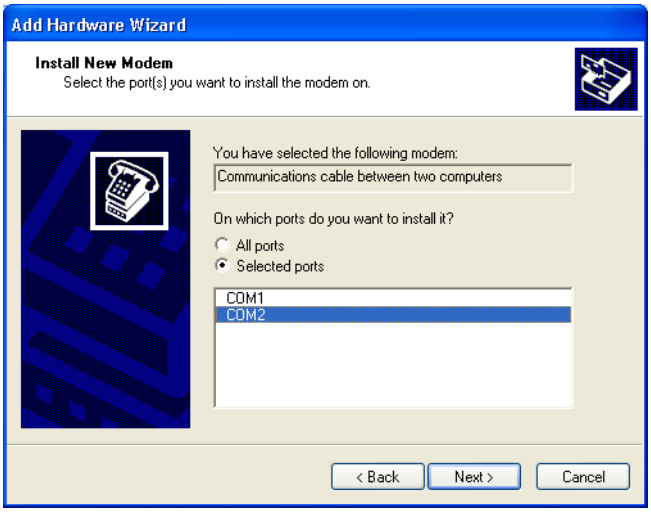

Figure 13: Select Modem COM Port

9. Click **Next** and select either **COM1** or **COM2** (but not both).
10. Click **Next**, the following screen will display.

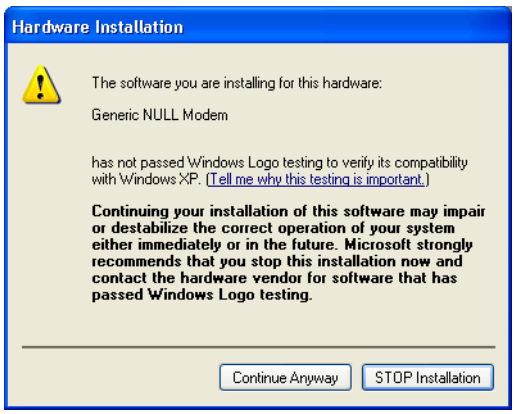

Figure 14: Installation Warning

11. Select **Continue Anyway** and click **Finish** when the software has installed.

Reboot the PC to ensure the serial comms and modem driver changes become active.

Note: The Null Modem driver will only allow outgoing calls from VideoCentral, preventing it from being used to receive events.

Null-modem Cable Wiring

Should it be necessary to use a null-modem cable that is longer than that supplied with the FastTrace-R, use the diagram shown to make a longer cable.

Note: RS232 cables should never extend past 15m (33 feet).

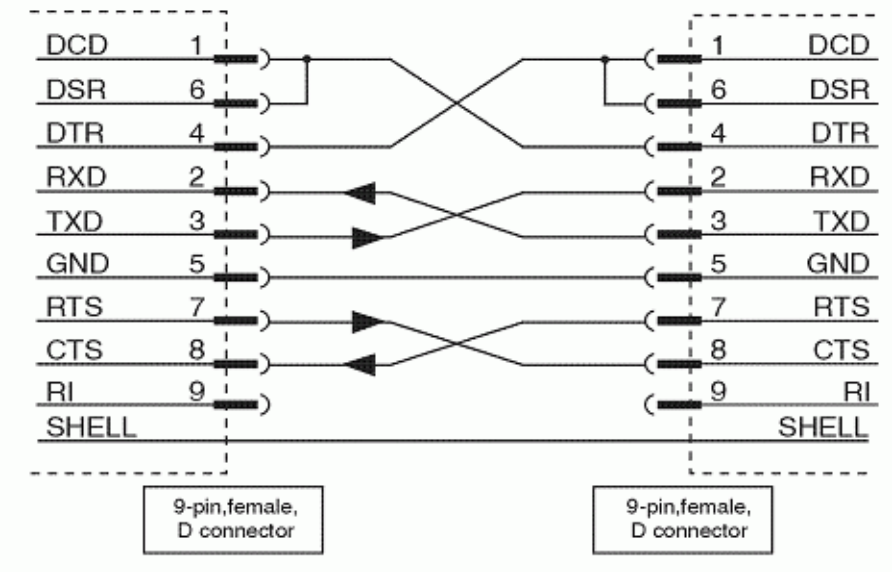

Figure 15: Null-Modem Wiring

2.7.5 Installing VideoCentral Lite Software

1. Start the PC and insert the CD into the appropriate CD drive. If the CD does not autorun, select the **AutorunEx** application from the CD drive from Windows Explorer. The following screen will appear.

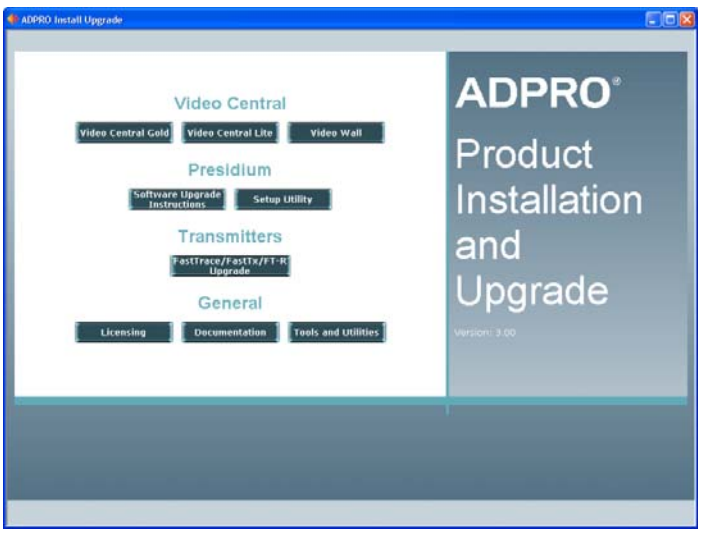

Figure 16: Installation Screen

2. Select **VideoCentral Lite**, the following window is displayed.

Figure 17: Setup Wizard Introduction Screen

3. After checking that the version number that you are upgrading to is correct, click **Next**. At any point during the installation, you can go back any number of steps by clicking **Back**.
4. Check that the location shown is where you wish to install VideoCentral. If it is correct, click **Next**, otherwise browse and select the location.

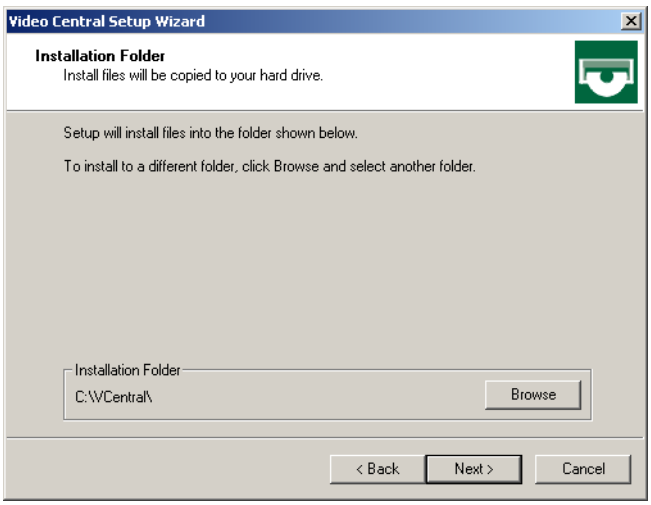

Figure 18: Installation Location

Note: On the next screen you **MUST** select the **Yes** option for receiving alarms otherwise you will not be able to configure the FastTrace-R unit from VideoCentral Lite.

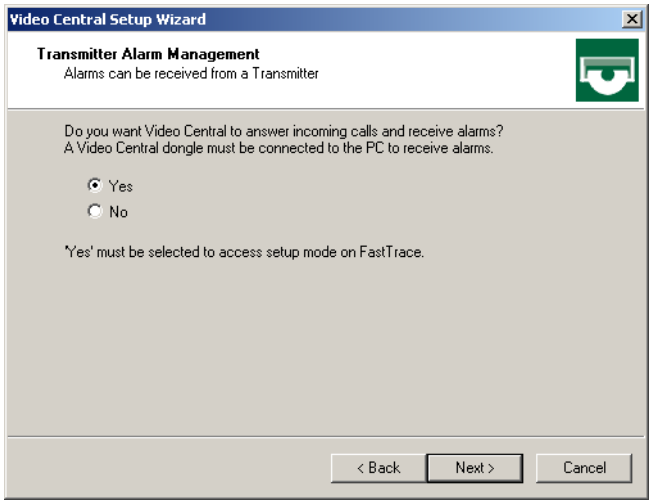

Figure 19: Transmitter Alarm Management

5. Select **Yes** and click **Next**.

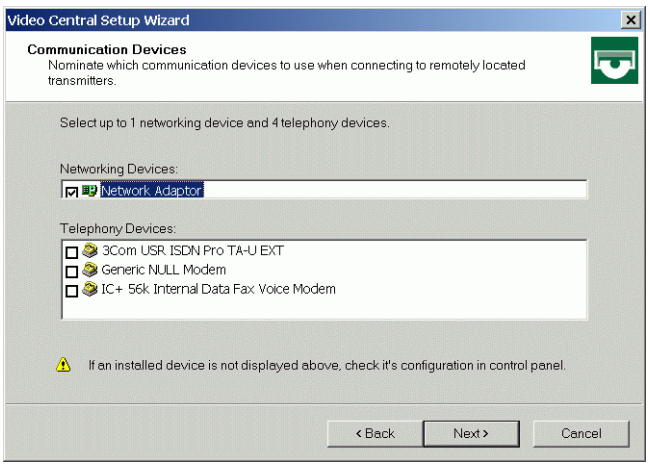

Figure 20: Communication Devices

6. Select the checkbox next to the device you are using to enable VideoCentral Lite to connect to the FastTrace-R unit (**Network Adaptor** for an ethernet connection, **Generic NULL Modem** for a serial connection). Click **Next.**

Note: If you wish to change the option, you must first DESELECT the current device.

7. If Generic NULL Modem was selected in the previous screen, accept the default selection of **PSTN** on the Connection Types screen and the default values on the Phone Line Checking screen.
8. Click **Finish**, then **Exit** and the process is complete.

The screen below is displayed when the installation is complete:

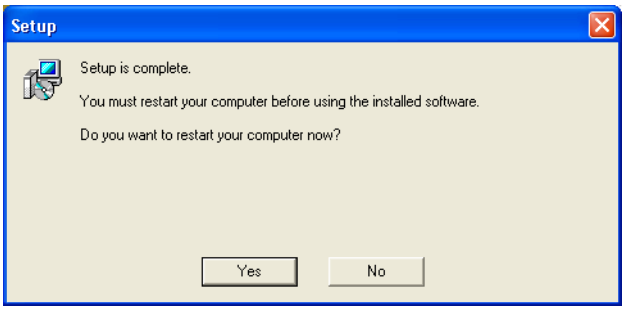

Figure 21: Setup Complete

Note: The PC must be restarted before VideoCentral Lite can be used.

2.7.6 Starting VideoCentral Lite for the First Time

1. Start the VideoCentral Lite program by double-clicking the VideoCentral icon on the Windows desktop.

If you do not have a VideoCentral dongle (Hardware Protection Key) attached to the PC, the following screen will appear.

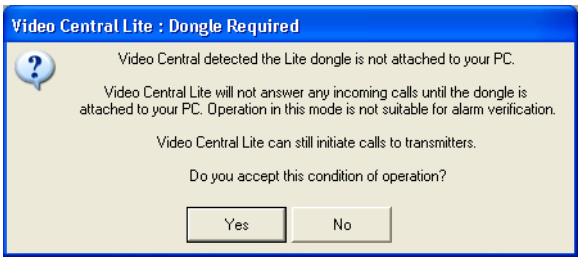

Figure 22: Dongle Required

It is not necessary to have this device attached to perform the setup functions.

2. Click on the **Yes** button to accept this condition and VideoCentral Lite user interface will be displayed.

   To help users with the first time setup of a FastTrace-R, a number of default settings are used in the ADPRO VideoCentral Lite software that must match the default factory settings found in a new FastTrace-R unit. The default settings stored in the VideoCentral Lite can be found by using the following menu:

   Database / **Administration** / **Configure Sites** / **FT-R default site**.

3. To check the defaults, select the **FT-R default site** entry and click **Edit**. The Site Configuration details are shown with the default values, as follows:

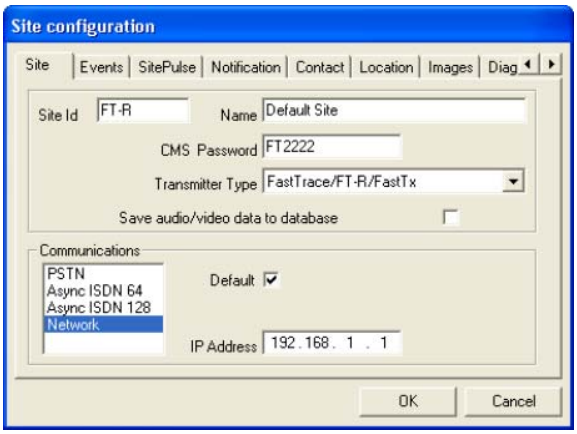

Figure 23: Default Ethernet Site Configuration

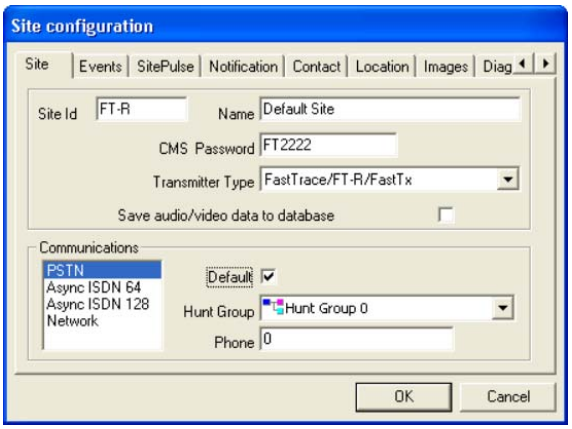

Figure 24: Default Serial Site Configuration

2.8 FastTrace-R Configuration

1. Before powering the FastTrace-R unit on, check that the factory DIP-Switch settings are correct refer to Section 3 for more details.

   The location of the DIP-Switch is on the rear of the FastTrace-R unit at the bottom, underneath the camera connections and next to the monitor connector.

2. Set the DIP-Switch 10 to the appropriate video standard for the region:
   - (ON - NTSC, OFF - PAL).
3. Ensure the airflow vents into the side of the FastTrace-R unit are not blocked.
4. Connect the crossover Ethernet cable between the FastTrace-R Ethernet port and the PC's Ethernet port or the null modem cable between the Comm2 port and the PC's serial comms port.
5. Once DIP-Switch settings are verified and all cables are connected, plug in the mains power cable.

2.8.1 Powering Up the FastTrace-R

The green Power and the red Status LEDs on the front panel are lit as soon as power is applied to the unit.

The FastTrace-R is supplied with a universal input power supply that operates from 100-240V AC, 50-60Hz. There are no switches to change based upon your particular mains power voltage or frequency.

If the green LED fails to illuminate check that there is power available from the socket into which the FastTrace-R is connected.

The FastTrace-R will then automatically perform a series of self-test routines which check the microprocessor circuits. When power is first applied to the FastTrace-R unit, the red LED on the front of the unit will be on. After approximately 60 seconds, the red LED should start switching on, then off, every two seconds. This signifies that the unit has completed its internal checks and is now checking the integrity of the Hard Disk Drive(s) (HDD). Once the unit successfully completes the integrity check, the red LED will switch off, and remain off.

If at any time during operation, the red LED switches on and stays on, this signifies a fault with the unit and technical support is required.

If the red LED does not switch off and remain off, do the following:

1. Unplug all of the connectors except the power and re-power the unit.
2. If the red LED extinguishes, plug each connector back in and check that the red LED remains off.
3. If the red LED does not extinguish after 10 minutes, please contact ADPRO technical support.

If the red LED continues to flash for an extended period, this signifies that corruption has been found with the database and the unit is attempting to correct the fault.

2.9 Connecting to the FastTrace-R for the First Time

1. Connect the PC to the FastTrace-R unit, via the ethernet or serial cable.
2. Power the FastTrace-R up.
3. Wait for the FastTrace-R to complete its start-up checks. The red status light will initially be ON, then will start flashing, then go OFF once the checks are complete. This can take up to two or three minutes from power on.
4. Start VideoCentral Lite from the icon on the desktop, if not already running.

5. From within VideoCentral Lite click the **Connect to Site** button.

6. Select the site named **FT-R default site** and then select the connectors type in the **Connect Via** list. Click **OK**. You should see the Connection Status screen followed by a screen confirming connection.

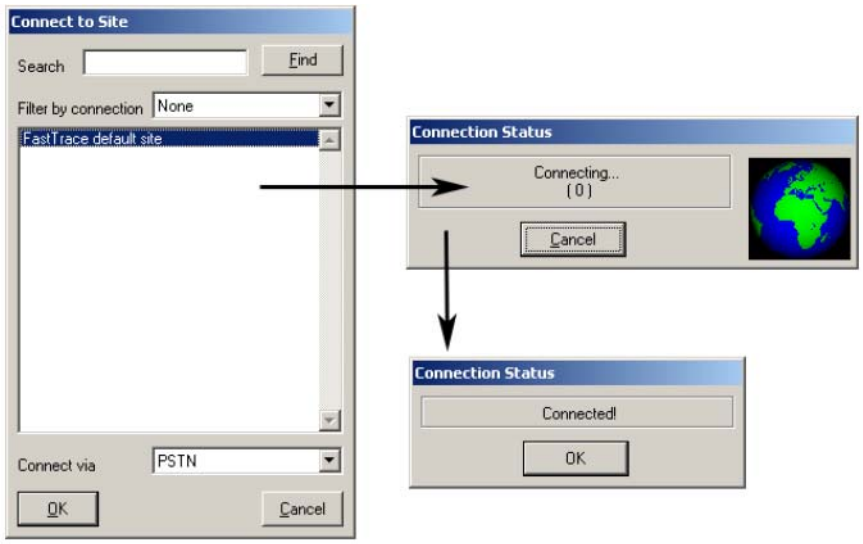

Figure 25: Connect To Site

The VideoCentral User Interface screen will be displayed and if a camera has been connected, there should be video displayed, otherwise a standard blue screen is shown.

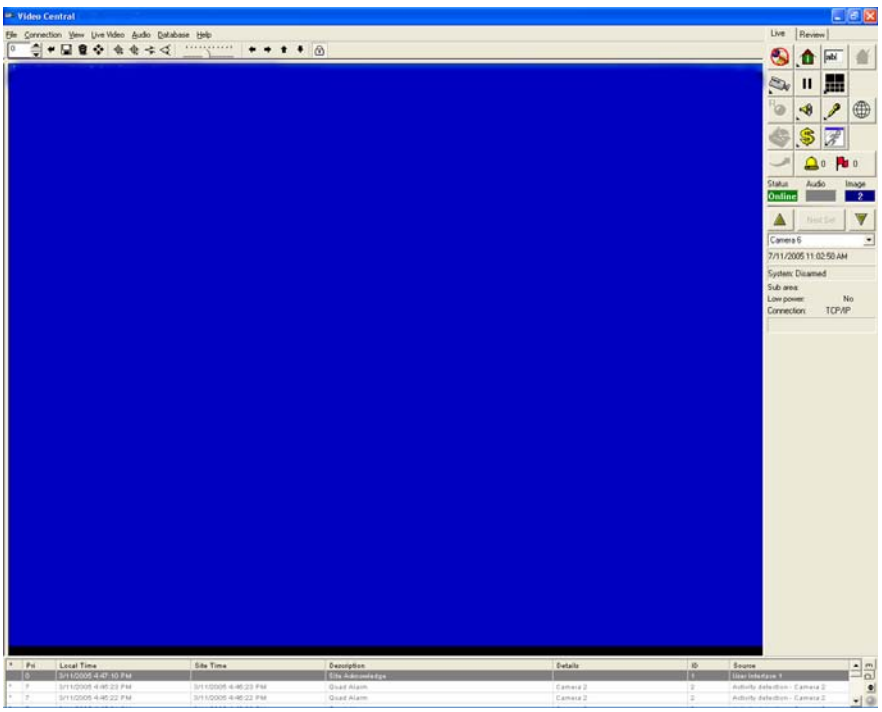

Figure 26: VideoCentral User Interface

7. Go to the **Connection** menu and click the **Installer Menu** option (or click the **Installer Menu** button on the **Site Actions** flyout).

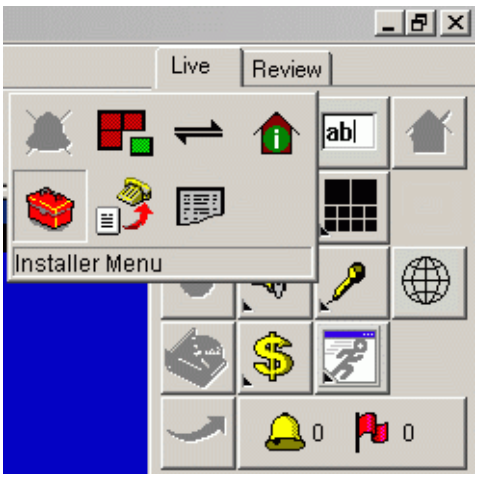

Figure 27: Installer Menu Button

The Setup files will be downloaded from the FastTrace-R unit.

Note: The first time the settings are accessed, it may take some time to download the settings as the setup program is also being downloaded from the FastTrace-R unit.

For a new FastTrace-R, the first time a user accesses the Installer Menu, a message will appear asking the user to accept the Factory Default settings. Click **Yes** to this question.

Once the Factory Default Settings have been accepted, subsequent requests to enter the Installer Menu will not display this message.

The FastTrace-R User Settings screen is displayed.

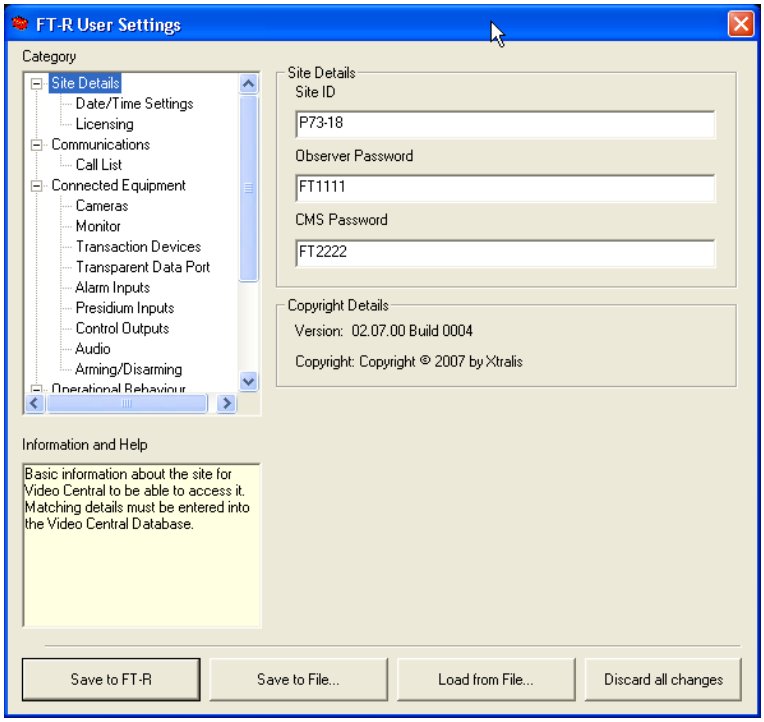

Figure 28: FastTrace-R User Settings

Setup parameters and configuration options for the FastTrace-R can now be modified.

Refer to Section 4 - *Programming FastTrace-R* for details of the settings which must be defined to use the FastTrace-R in an operational environment.

8. Define all required FastTrace-R user settings and select the **Save to FT-R** button.

   The modified files will be uploaded to the FastTrace-R for permanent storage and the site will be disconnected.

Note: The setup program will not allow invalid parameters to be saved. For example, should you receive a message asking for a correct Ethernet Gateway address to be entered, either enter the correct value or delete the invalid entry.

2.10 Adding a New Site

To connect to the site again, VideoCentral must be configured with a new site, which has the Ethernet or Serial Communications properties identical to those entered at the **Site Details** and **Communications** screens of the user settings:

1. Select **Database** / **Administration** / **Configure Sites** and select **New**.

The **Site Configuration** screen is displayed:

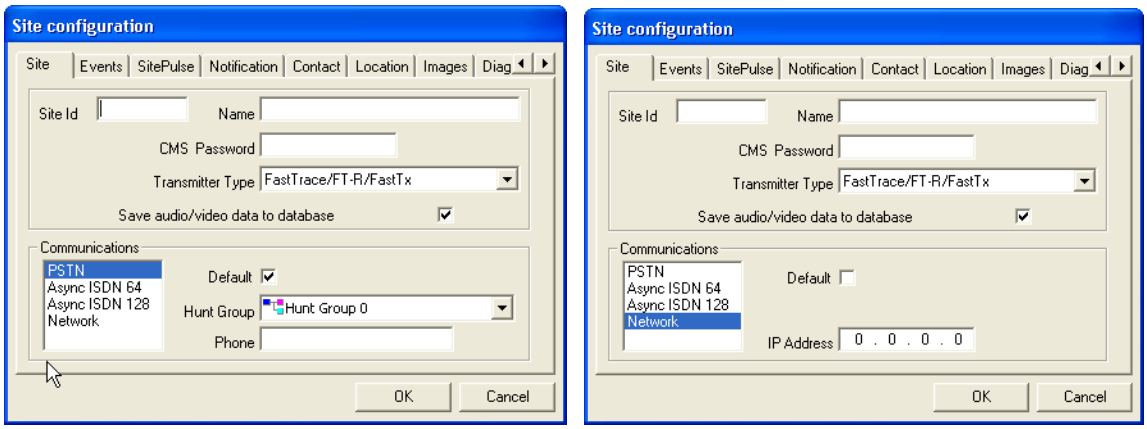

Figure 29: Configure a New Site

2. Enter the following details for the FastTrace-R unit:
   - **Site Id**: 9 characters (max) - this is the name of the FastTrace-R unit
   - **CMS Password**: 8 characters (max)
   - **Communications**: Network
3. For the Network selection, enter a valid IP address for the FastTrace-R
4. Click **OK**. The configure Site dialog box is shown again. Click **Close**. The System Administration options are then shown. Click **Exit**.

For a network connection, the PC must now have its IP Address changed to be on the same subnet mask as the modified IP Address of the FastTrace-R (but with a different IP address). Refer to Section 2 - *Configuring the PC for Ethernet Connection* for details of how to perform this.

2.11 Testing the FastTrace-R Installation

1. Reconnect to the FastTrace-R by selecting the **Connect to site** button, highlighting the new site (unit name) and press **OK**.
2. Test the operation of all connected cameras by selecting each camera in turn from the drop down list on the user interface.

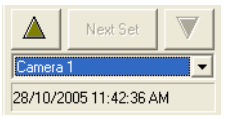

Figure 30: Camera List

2.12 Notes and Troubleshooting Tips

- Ensure that details entered at VideoCentral AND the FastTrace-R are IDENTICAL.
- Ensure the TCP/IP address and subnet mask are correct.

2.12.1 Setting the Date and Time

The FastTrace-R uses a stable internal clock that is based on UTC (Coordinated Universal Time). Date and time settings of the unit operate in a way that is similar to a PC and a 'Time Zone' value is provided in the **Date / Time Settings** option of the **Connection** menu / **Installer Menu** option.

To ensure correct operation, the Time Zone value should be configured prior to any date or time changes being made.

2.12.2 Front Panel LED

When power is first applied to the FastTrace-R unit, the red LED on the front of the unit will be on. After approximately 60 seconds, the red LED should start switching on, then off, every two seconds. This signifies that the unit has completed its internal checks and is now checking the integrity of the database. Once the unit successfully completes the integrity check, the red LED will switch off, and remain off.

If at any time during operation, the red LED switches on and stays on, this signifies a fault with the unit and technical support is required.

2.13 FastTrace-R Connection Details Lost

If for any reason, the operational Site ID, password or network address for a FastTrace-R is lost, use the following procedure to override the communication settings and restore this information.

1. Set the FastTrace-R's DIP Switch 7 (on the rear panel) to the 'ON' position.
2. Power cycle the unit. This will override to the following settings:
   - Site ID: FT-R
   - Password: FT2222
   - Network Address: 192.168.1.1
   - Subnet Mask: 255.255.255.0
3. Connect a crossover network cable or the null modem (serial) cable between the unit and a PC running VideoCentral.
4. There should be a FastTrace-R Default Site in **Database** / **Administration** / **Site Details** with details that match the Site Details as described in point 2 above.
5. Modify the VideoCentral settings (**Database** / **Administration** / **Site Details**) for the connection type as follows:
   - (NETWORK connection) - Set 'Connection Type' = Network and 'IP Address' = 192.168.1.1

OR

   - (SERIAL connection) Set 'Connection Type' = PSTN and 'Phone' = 0
6. Connect to Site using the default Password (FT2222).
7. Go to the **Connection** menu and select the **Installer Menu** option to display the FastTrace-R's User Settings menu.
8. Change Site Details to the new Site ID, Password and Network Address values.

9. Save all changes when exiting the User Settings menu.
10. Reset Switch 7 to the OFF position and power cycle the unit.

The FastTrace-R will now operate with the new Site ID, Password and Network Address.

2.14 Firewall Configuration

If the FastTrace-R unit is connected via a firewall, the following table describes the destination port allocation for the VideoCentral PC and FastTrace-R unit. Source ports are randomly chosen. The control of connections should be done using IP addresses and destination ports.

Table 1: Firewall Ports

Destination Ports on VideoCentral	Destination Ports on FastTrace-R
UDP 15000-15200	UDP 15000-15005
TCP 15001-15007	TCP Any port

3 FastTrace-R Connectors

All external connections to the FastTrace-R chassis are made via the rear panel, refer to the following figure:

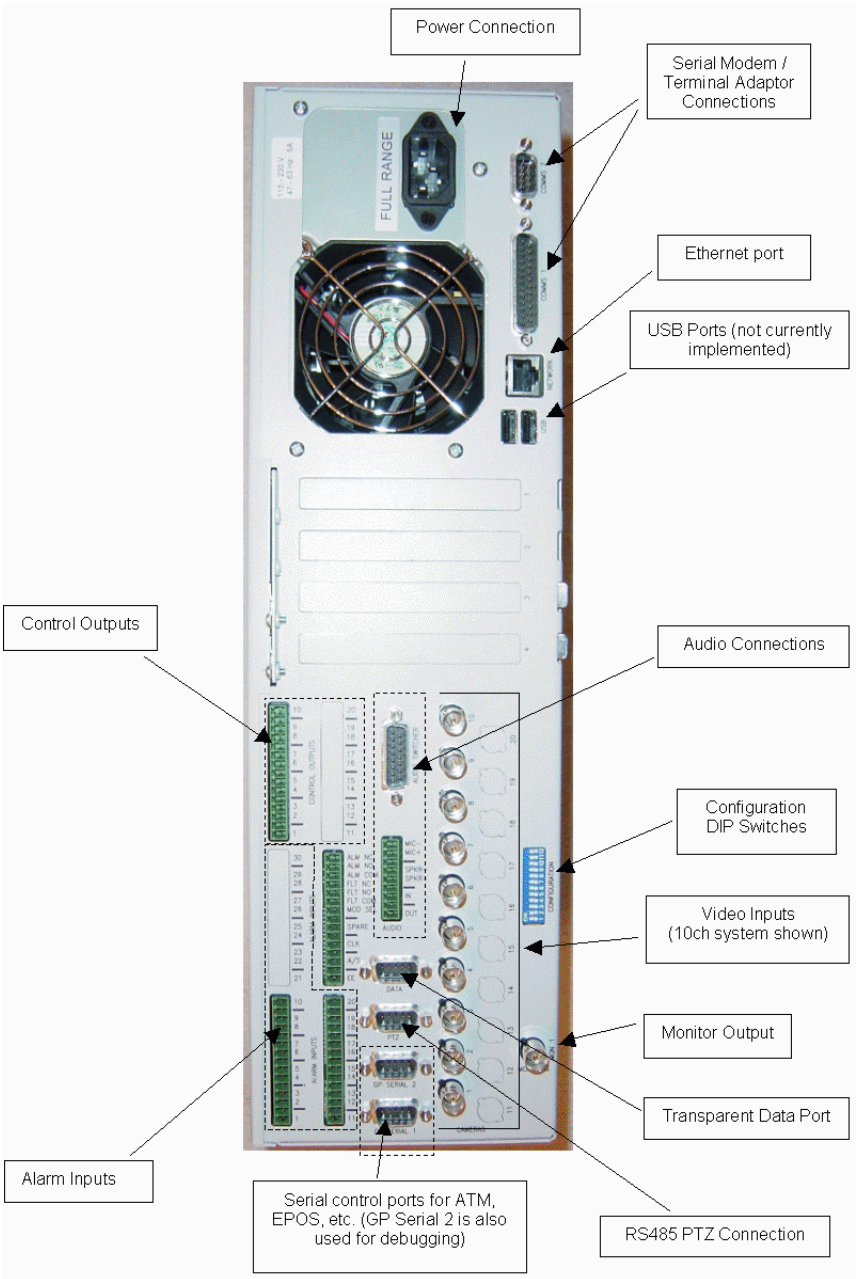

Figure 31: FastTrace-R Connections

3.1 Power Connection

The FastTrace-R is designed for 100-240 VAC 50-60Hz operation. Ensure mains supplies are stable and are not subject to frequency changes, voltage spikes etc. The use of mains suppression units or even UPS (Uninterrupted Power Supply) systems is recommended to ensure stable voltages.

Maximum input current is 5 amps during power up and 1 amp during normal operation. Typical unit power consumption when fully optioned is 100 W.

3.2 Connecting Communication Devices

FastTrace-R provides a number of interfaces for connecting communications devices to allow remote access to the system for setup and review of stored information. These interfaces are available via the **COMMS 1**, **COMMS 2** and **NETWORK** connectors on the rear panel.

In general, there are three primary types of communication links available; dial-up, dedicated or network. Both dial-up and dedicated links can be either analogue (PSTN) or digital (ISDN), depending of the type of connections available at the site.

There are a variety of different networks that are available, and with the appropriate interface the FastTrace-R can work over the majority of them.

3.2.1 COMMS 1

COMMS 1 is a serial communication port and is used to connect to modems and terminal adaptors to support PSTN and ISDN links at data rates up to 230 kps. The 25-pin D connector pins are wired as shown below.

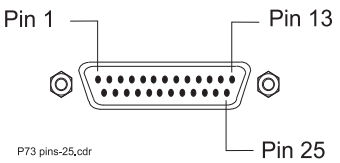

Figure 32: Comm1 Pin Numbers

Table 2: Comm Port 1 Connection

V.24 Name	Pin	Direction	V.24 Description
SGND	1	-	Shield
TXD	2	O	Transmit data
RXD	3	I	Receive data
RTS	4	O	Request to send
CTS	5	I	Clear to send
DSR	6	I	Data Set Ready
GND	7	-	Signal ground
DCD	8	I	Carrier detect
	9	I	

V.24 Name	Pin	Direction	V.24 Description
	10	I	
	11	O	
	12	I	
	13	I	
	14	O	
SCT	15	I	DCE transmit clock
	16	I	
RXC	17	I	DCE receive clock
	18	I	
	19	O	
DTR	20	O	Data terminal ready
RL	21	O	Remote loopback
RI	22	I	Ring Indicator
	23	I	
TXC	24	O	DTE Transmit Clock
	25	|	

3.2.2 COMMS 2

COMMS 2 is used to connect to modems and terminal adaptors to support PSTN and ISDN links at data rates up to 230 kbps. COMMS 2 can also be used to access the FastTrace-R setup menu and to upgrade the software when connected to a PC or laptop computer via a null-modem cable link. The 9-pin D connector pins are shown below.

Table 3: Comm Port 2 Connection

Name	Pin	Direction	Description
DCD	1	|	Carrier Detect
RXD	2	|	Receive Data
TXD	3	O	Transmit Data
DTR	4	O	Data Terminal Ready
GND	5	-	Ground
DSR	6	|	Data Set Ready
RTS	7	O	Request to Send
CTS	8	|	Clear to Send
RI	9	|	Ring Indicator

3.2.3 Connecting to a Modem or TA

Communication devices with a V.24 port are connected to the FastTrace-R using the modem cable supplied with the modem or terminal adaptor. Either Comms 1 or Comms 2 may be used and the FastTrace-R can be set up with two communications devices, allowing simultaneous connections and / or a back-up communications path.

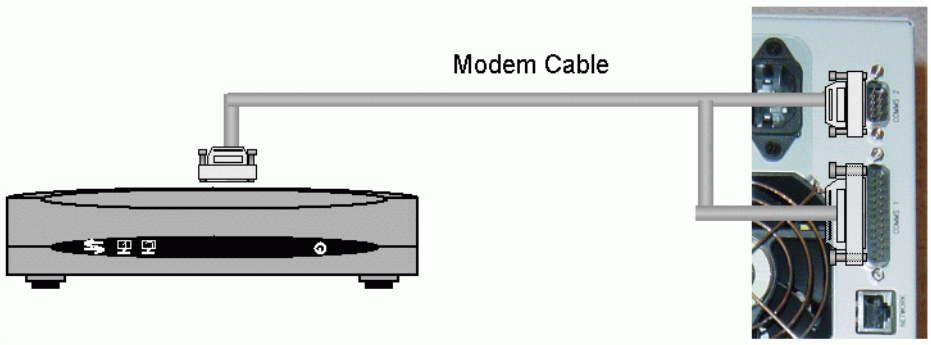

Figure 33: Modem Connection

3.2.4 Network (Ethernet) Connection

FastTrace-R has a built in Ethernet connection port to allow communications via a conventional 'computer' network.

- *NETWORK* - (RJ-45 - Female) - Ethernet 10/100baseT

Caution: To ensure correct network connectivity, please ensure FastTrace-R is connected to the network before being powered on. This enables the FastTrace-R unit to detect the correct network speed (10BaseT or 100BaseT).

The physical connection is a half-duplex, 10/100Base-T (100Mb) port, although the maximum throughput of the FastTrace-R is around 5Mb/sec.

FastTrace-R is designed for use via a Cat5 cable infrastructure. The Cat5 standards define cabling specifications and physical presentations. In short, Cat5 defines the use of 4 pairs (8 wires) presented on an RJ45 connection. Cat 5 cable must be used for operation on a 100baseT wiring system. The physical connections are:

Table 4: Ethernet Connection

Pin No.	Function/Signal
1	Transmit +ve
2	Transmit -ve
3	Receiver +ve
4	Not Used
5	Not Used
6	Receive -ve
7	Not Used
8	Not Used

Note: ALWAYS consult with the IT or Network Manager for the network BEFORE physically connecting FastTrace-R to the network.

A network address is required for correct operation over a network. Both the FastTrace-R and the PC running the VideoCentral software must have a unique TCP/IP address (referred to as the IP address). A number of IP parameters may need to be entered to correctly identify a FastTrace-R on a network.

Refer to Section 4 - *Ethernet Properties* for details to configure the Ethernet Connection.

3.3 Audio

Audio functionality is provided via two connectors on the FastTrace-R. Audio options are only available if the system has a sound card enabled. Audio to/from a remote site using VideoCentral is half-duplex, meaning that audio is only allowable in one direction at a time.

3.3.1 Audio Switch Port

The Audio Switch port provides a number of functions on the FastTrace-R, these are:

- An audio output and an audio input connection
- A general relay
- Serial outputs
- Access Secure input

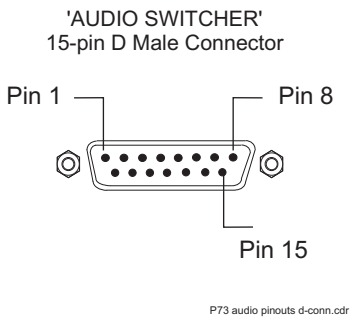

Figure 34: Audio D-Connector Pinouts

Table 5: Audio Switcher Connections

Pin Function	Signal	Pin	Specifications
Serial Link for Channel Number selection	Serial Clock	14	Open drain output 32 V maximum 100 mA maximum On impedance <15 ohm
	Serial Data	7	
	Serial Strobe	15	
	not used	8	
Audio Signals	Audio Out (+)	1	Output impedance >600 ohm Nominal output level = 315 mVrms
	Audio In (+)	2	Input impedance >6K ohm Nominal level = 10 mVrms to 400 mVrms
	Audio Common	9	Audio Signal common
Spare	not used	13	
Access/Secure	Acc/Sec Input	5	
Spare	not used	6	
General Alarm Relay	Common	4	Contact Rating 1 A at 32 VDC
	N/O	12	
	N/C	11	
Ground	Ground	10	
N/C		3	

3.3.2 Audio Screw Terminal Connector

The audio screw terminals may be used for connection of certain audio devices, such as microphones and low power speakers. Connections and ratings of the connector block are:

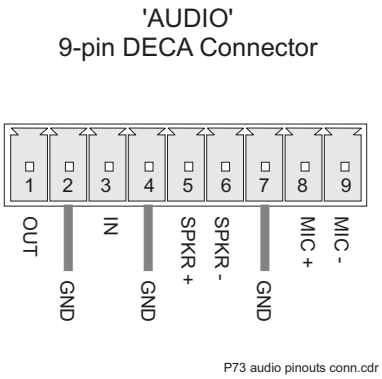

Figure 35: Audio Connector Pinouts

Table 6: Audio Screw Terminal Connector

Pin Function	Signal	Pin	Specifications
Line Level Audio	Output	1	Unbalanced, impedance 600 ohm Nominal voltage level = 315 mVrms
	Ground	2	0 V
	Input	3	Unbalanced, impedance >6 K ohm Nominal level = 10 mVrms to 400 mVrms
	Ground	4	
Local Speaker	Speaker (+) Speaker (-)	5 6	Balanced, impedance = 8 ohm Nominal output power = 1 W Total harmonic distortion < 5%
	Ground	7	
Local Microphone	Microphone (+) Microphone (-)	8 9	Differential impedance > 3 K ohm Single ended impedance > 6 K ohm Nominal signal level is 100 uV rms to 10 mV rms

3.3.3 Audio Configuration

The audio output is normally connected to the input of an amplifier capable of driving a speaker. With a suitable amplifier, multiple speakers may be driven to give a global announcement. The output level is approximately equal to the input level provided at the receiver.

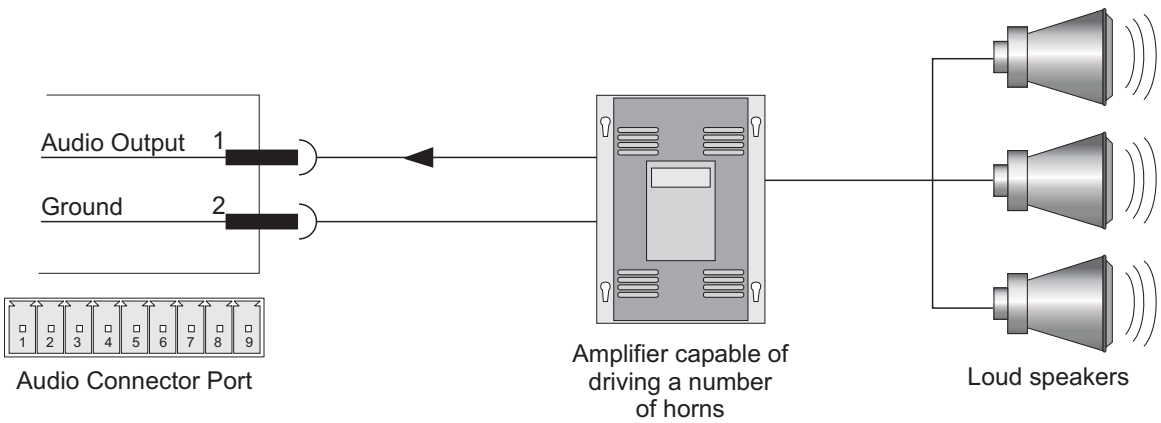

Figure 36: Audio Configuration with Amplifier

The audio input is normally connected to a microphone with a suitable pre-amplifier stage that is capable of providing 1 V peak to peak audio.

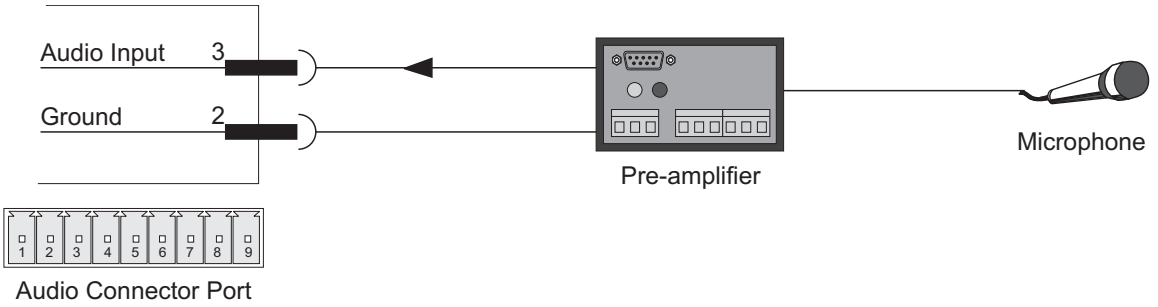

Figure 37: Microphone Connection

By using both the audio input and output, intercom systems and handsets can also be connected to the FastTrace-R. When used in conjunction with the alarm inputs this allows the FastTrace-R to be used for help points and door/gate entry systems.

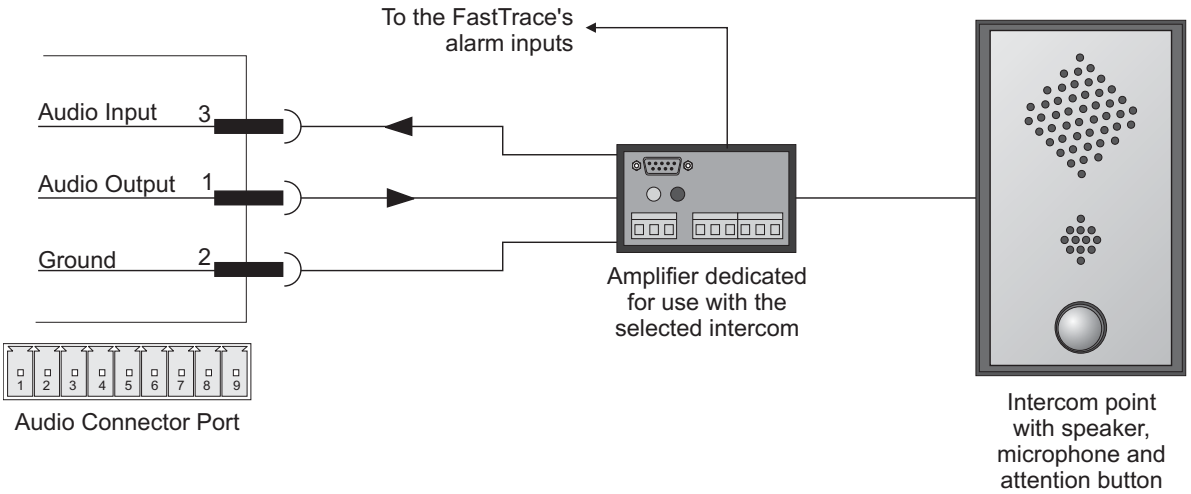

Figure 38: FastTrace-R with Intercom

The FastTrace-R can send audio simultaneously with the video on PSTN, ISDN lines and over Networks. This enables the central station to 'listen and talk' to activities occurring on the monitored site.

3.3.4 Zoned Audio

The FastTrace-R has one audio input and output. If zoned audio is required, that is the ability to talk out of individual speakers rather than making a global announcement, or if it is required to listen to multiple microphones, a VM22A can be used. This also means a mixture of intercoms and loud speakers can be used.

The VM22A audio switcher has ten audio inputs and outputs (one for each video input) and will route the appropriate audio input and output to the FastTrace-R, depending upon which camera the monitoring station is currently viewing.

Additional VM22As can be connected to the first VM22A to expand the audio channels to 20 (the same number as number of cameras on a FastTrace-R 2020).

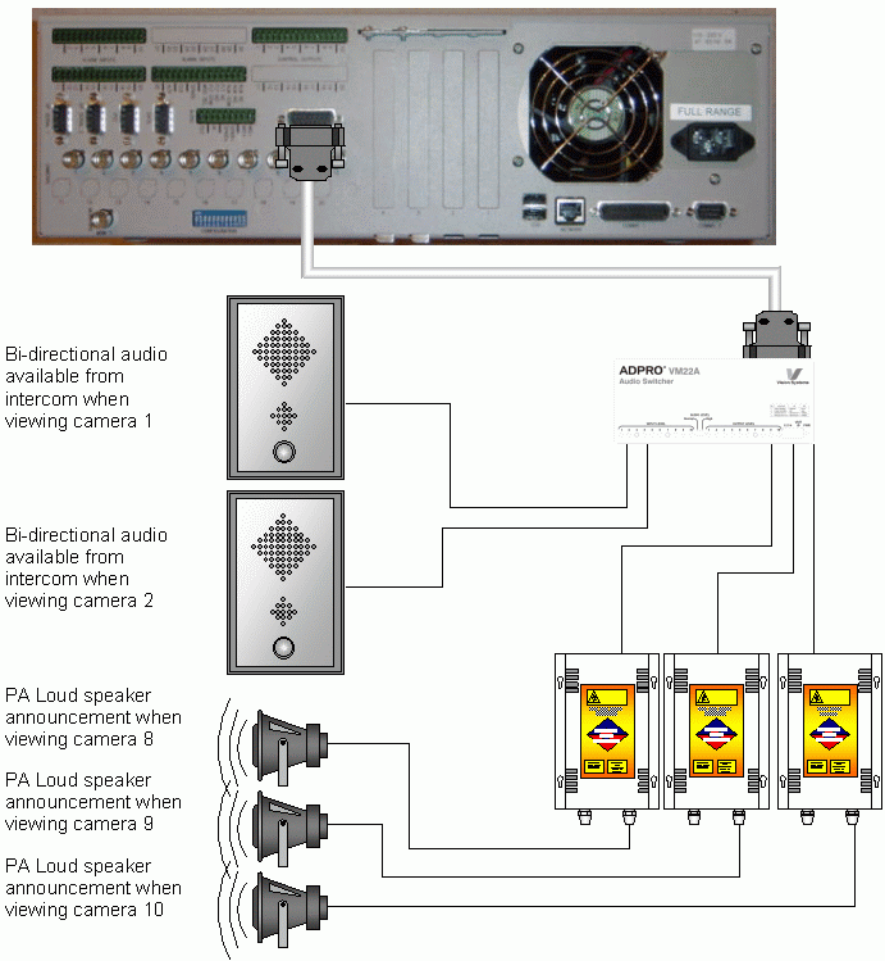

Figure 39: Zoned Audio Configuration

3.4 Video Input Connections

Depending on the model, up to 20 video sources can be connected via the female BNC sockets. The sources should generate a 1.0-volt peak to peak composite colour or black and white video signal when terminated with a 75-ohm load. A combination of colour and black and white cameras can be used.

To ensure high picture quality, each video input must be terminated either at the chassis itself or by other external equipment. The **Camera Terminated** option in the **Connected Equipment** / **Cameras** screen (via the **Connection** menu / **Installer Menu** option) allows individual channels to be terminated with 75-ohm or left un-terminated, for example, when the video signal is looped out to other equipment such as a video monitor or video matrix switcher. The external equipment must provide the channel termination. The default menu option is **Camera Terminated**.

Caution: Video terminations are OFF when power is removed.
The video terminators on the FastTrace-R will disconnect when power to the unit is removed. If the video inputs are also connected to other equipment, the FastTrace-R should NOT be used to provide a 75-ohm termination point.

Caution: Installations in Lightning Prone Areas
In lightning prone areas, in-line coaxial lightning arresters should be used on the video cables. The arresters should be installed at the cable entry of the building that houses the FastTrace-R. Cameras should also have suitable lightning protection rods installed as close to them as possible. The use of fibre optics to provide electrical isolation on the video signals is strongly recommended in high-risk areas.

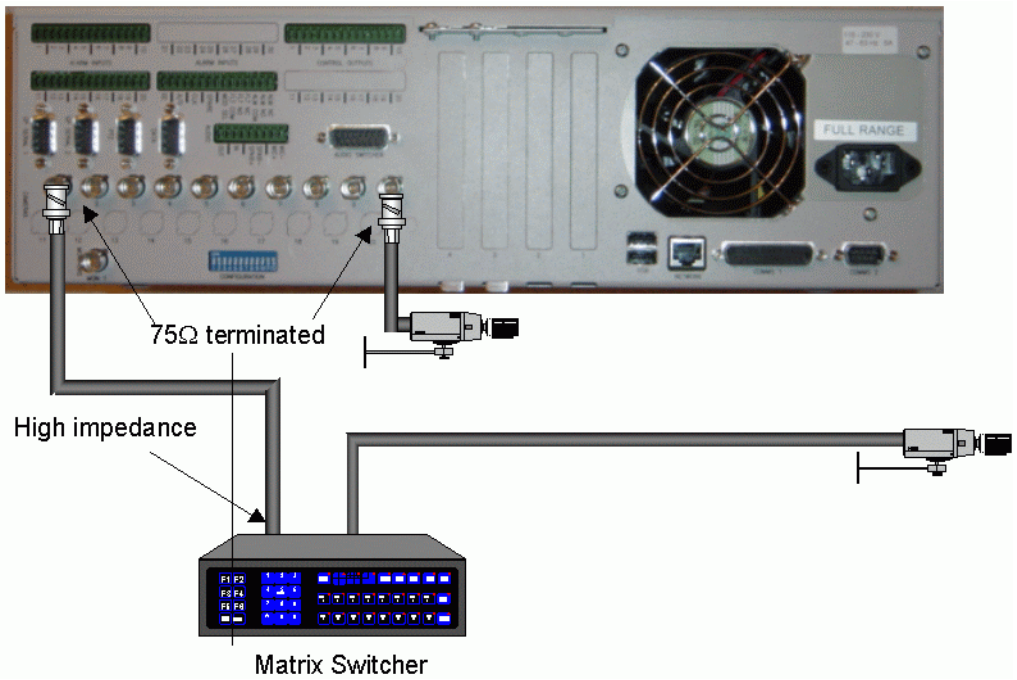

Figure 40: Video Configuration

3.4.1 Video Input Requirements

To ensure high quality images, the FastTrace-R must synchronise correctly to the incoming video signal for the selected video standard. For synchronisation to occur the following conditions must be met:

- the synchronisation pulse amplitude at each video input must be within the range of 0.2 volts to 0.4 volts,
- the peak video amplitude with reference to the black level (ie. not including the synchronisation pulses) at each video input must be within the range of 0.5 volt to 1.0 volt, and
- for colour cameras, the minimum colour burst level at each video input must be at least 100 mV.

If the video level is low, cable compensators or video line drivers should be installed at the video source. They should be adjusted to boost the video signal to within the voltage limits given above.

Maximum Camera Input Cable Length

The maximum cable length that can be used from a camera before cable compensators are required is dictated by the desired quality of the video picture. *Generally, the shorter the cable between the camera and the FastTrace-R the better the video picture quality.*

Use the following information as a guide for RG59 type coaxial cable (75 ohm nominal impedance):

- In a monochrome system, depending on the resolution required, the cable length should be restricted to 500 metres (1600 feet) before cable compensators are installed.

Signal degradation due to the coaxial cables characteristics has a far greater effect on colour video. In a colour system, the coaxial cable length should be limited to 250 metres (800 feet) before cable compensators are installed. Again the length is dependent on the required picture quality.

3.5 Video Output

The video output of the FastTrace-R is normally connected to a colour or monochrome monitor capable of receiving composite video signal to the required TV standard (PAL/CCIR or NTSC/ RS170). The composite video output is designed to drive a 75ohm load.

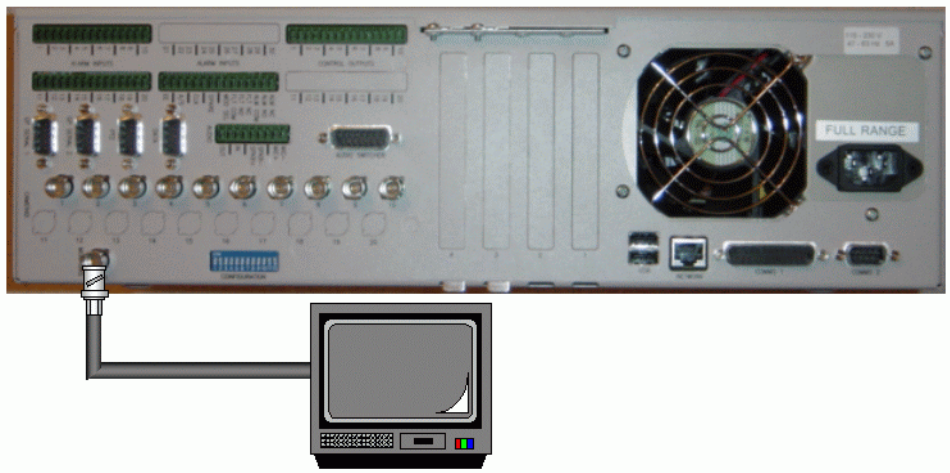

Figure 41: Video Output Configuration

The video output cannot be controlled under normal day to day operation and will provide a sequence of images as defined in **Monitor Settings**. This may be used in environments such as entrances to buildings etc, where CCTV is being used, to act as a deterrent.

3.6 Configuration Switches

Some of the FastTrace-R settings and functions are set by the configuration switches on the rear panel.

Settings shown in bold are the factory default positions.

Table 7: DIP Switch Configuration

Switch		Function
1	On	
	Off	**Factory Set**
2	**On**	**Factory Set**
	Off	
3	On	
	Off	**Factory Set**
4	On	
	Off	**Factory Set**
5	On	RS422 Configuration for PTZ port
	Off	**RS485 Configuration for PTZ port**
6	On	Impounded
	Off	**Normal Operating Position**
7	On	Default override setting for direct connection **Note:** Refer to *FastTrace-R Connection Details Lost* for an explanation of this switch functionality.
	Off	**Normal Operating Position**
8	On	PTZ RS485 Termination On
	Off	**PTZ RS485 Termination Off**
9	On	GP Serial 2 is enabled for EPOS/ATM interfacing
	Off	**Factory Set**
10	On	NTSC Video Standard
	Off	**PAL Video Standard**
11	N/A	Leave both switches 11 and 12 in the **ON** position
12	N/A	

After changing any DIP switches the FastTrace-R must be repowered for the changes to take effect.

The impound switch (DIP switch 6) will stop the system recording or deleting any data on the disks. This can be used where a complete unit is required for evidential purposes (refer to Section 6 - *FastTrace-R Impounding*).

3.7 Alarm Inputs

Unlike other equipment, which typically has statically assigned alarm input to video relationships (i.e. alarm input 1 always related to video channel 1, alarm input 2 always related to video channel 2, etc), FastTrace-R can be programmed so that any one or group of alarm inputs can trigger any one or group of cameras. This allows much more flexibility within system designs and configurations.

The FastTrace-R Model 5020 has thirty external alarm inputs, all with selectable tamper detection configurations (Model 5010 has twenty). The camera setup options can be programmed to trigger an alarm on detection of either a closed contact or an open contact condition on an alarm input. Alarm inputs are normally connected to alarm sensors such as door switches, passive infrared detectors, microwave detectors, vibration sensors, electric field detectors, etc.

In addition to this, alarm inputs can also be programmed as being one of six states to allow for tamper detection on circuits. Alarm types can be:

- **Normally Open -** No End Of Line (NEOL) Resistor
- **Normally Closed -** NEOL
- **Normally Open -** Single End Of Line (SEOL) Resistor
- **Normally Closed -** SEOL
- **Normally Open -** Dual End Of Line (DEOL) Resistor
- **Normally Closed -** Dual End Of Line Resistor

Alarm inputs to the FastTrace-R are presented on screw terminals on the rear of the unit and each circuit can be individually assigned as one of the above six types (i.e. a combination may be used, you do not have to program them all the same way).

Alarm inputs are relative to ground (chassis) of the FastTrace-R.

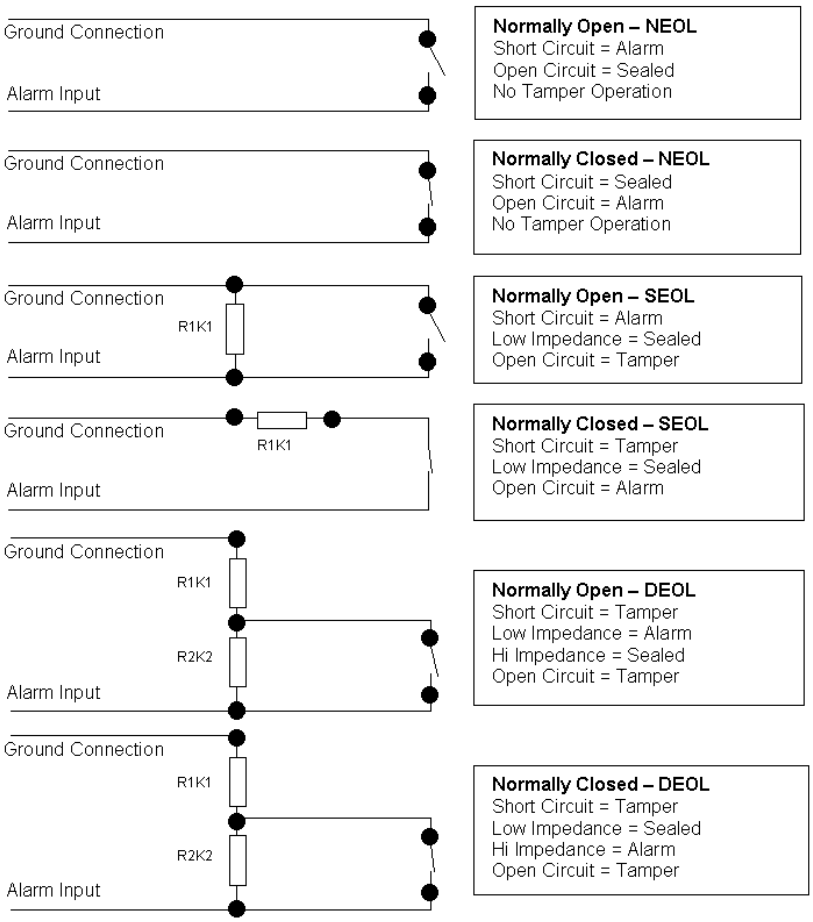

Figure 42: Alarm Input Configuration

3.7.1 Driving the Alarm Inputs

For an alarm input to be recognised, the input device must hold a changed state for a period of 100 ms.

- For a valid closed contact, the total resistance, including wiring resistance, must be below 150 ohms.
- For an open contact to be valid the resistance presented at the alarm input must be above 2,500 ohms.

The alarm inputs and numbering for all channels is shown below. Note that the alarm input ground connections are not isolated from the chassis ground.

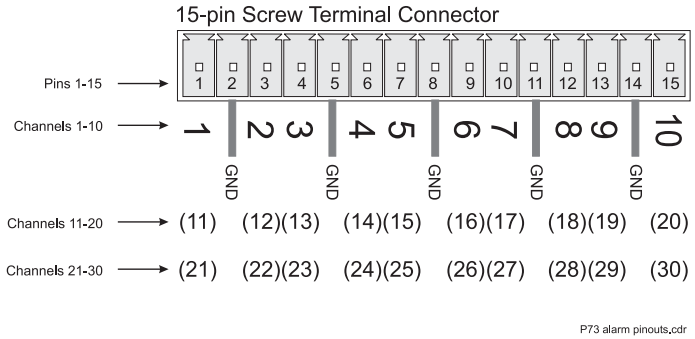

Figure 43: Alarm Connector Pinouts

Wire connections from the alarm switches are made by using the screw terminal contact strips supplied with the FastTrace-R. For ease of installation, the screw terminal blocks slide over the connector pins when the wiring is complete.

Caution: DO NOT attempt to solder directly onto the connector pins, as this may cause heat damage to the connector housing or to the interface PCB.

The setup options for alarm inputs are described with reference to the 'rest' or non-alarm position of a set of switch contacts:

- **Normally Open** - needs a closing alarm contact to activate an alarm
- **Normally Closed** - needs an opening alarm contact to activate an alarm
- **SEOL Normally Open** - Single End of Line termination with N/O contacts
- **SEOL Normally Closed** - Single End of Line termination with N/C contacts
- **DEOL Normally Open** - Dual End of Line termination with N/O contacts
- **DEOL Normally Closed** - Dual End of Line termination with N/C contacts

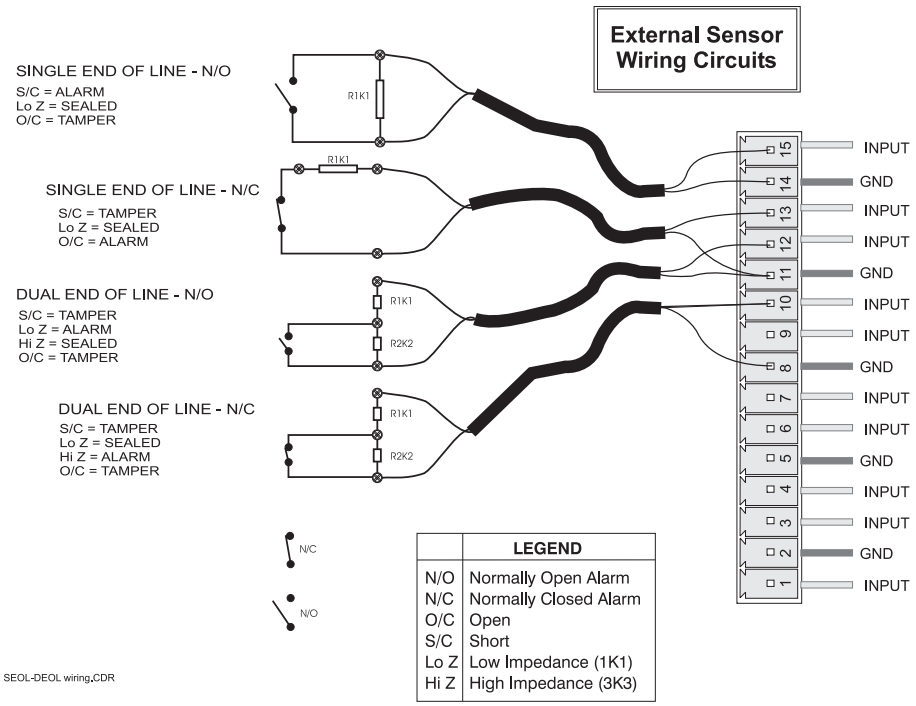

Figure 44: External Sensor Wiring Circuits

Please refer to Specifications for voltage requirements and considerations.

3.8 Control Outputs

FastTrace-R has 10 or 20 Control Outputs that can be controlled by a remote operator using VideoCentral. The devices can be used to control operation of lights, gates / doors and control equipment.

Note: Each Control Output can be set to be active (switch on) when an alarm event is active on the corresponding channel or to respond to remote control via VideoCentral.

The devices should not be used to directly connect to third party equipment. They are primarily designed to drive relay contacts, which in turn control the third party equipment.

3.8.1 Connecting to the Control Outputs

Control Outputs are available via screw connection strips on the rear panel.

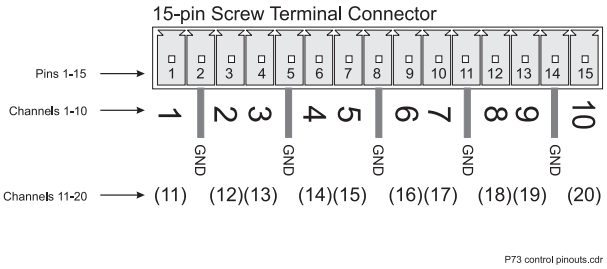

Figure 45: Pinouts for Control Output Connectors

Caution: Exceeding the Control Output's maximum voltage or current rating (12 Vdc, 100 mA) will damage the FastTrace-R and invalidate the product warranty. For high power/voltage equipment, suitable interface circuitry must be used between the Control Outputs and the equipment.

A typical output circuit for an external relay is shown below:

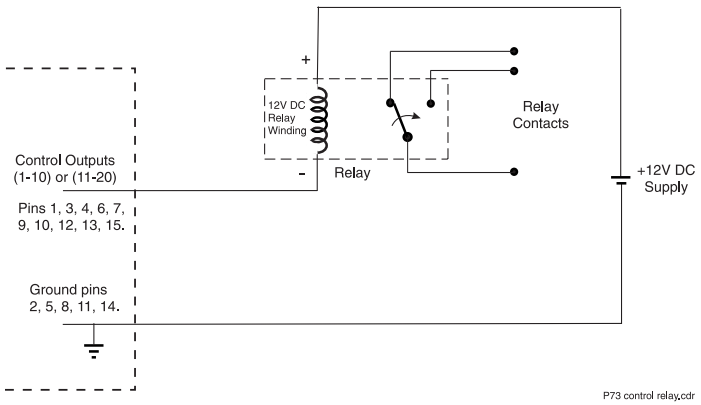

Figure 46: External Relay - Typical Output Circuit

3.9 PTZ Connection

Telemetry stations are used for the control of cameras with Pan/Tilt/Zoom (PTZ) hardware. They are connected to the FastTrace-R and can be controlled by commands issued via the PTZ port connector.

FastTrace-R supports a number of PTZ telemetry station models *provided* all of the PTZ units are the same model. Communications with the telemetry stations utilises RS485 'multi-drop' signalling via the 'PTZ' port on the rear of the chassis.

FastTrace-R supports 'Down the Coax' telemetry. A 'Down the Coax' telemetry module must be installed in the FastTrace-R if this functionality is required. Please contact your service centre if this option is required.

A single 9-way D connector is provided on the unit to support RS422 and RS485 connectivity to PTZ camera stations. The connectivity is shown below. To change between RS422 and RS485, use DIP switch 5 on the rear of the unit. To provide termination of the RS485 line use DIP switch 8 on the rear of the unit.

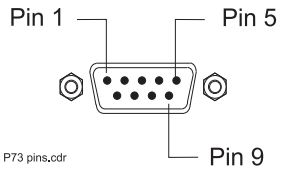

Figure 47: Pin Numbering of the PTZ Port

Table 8: PTZ Port Connections

Name	Pin	Description
TXD+	2	RS422(+) / RS485 (+)
TXD-	3	RS422 (-) / RS485 (-)
GND	5	Signal Ground
RXD+	6	RS422 (+)
RXD-	7	RS422 (-)

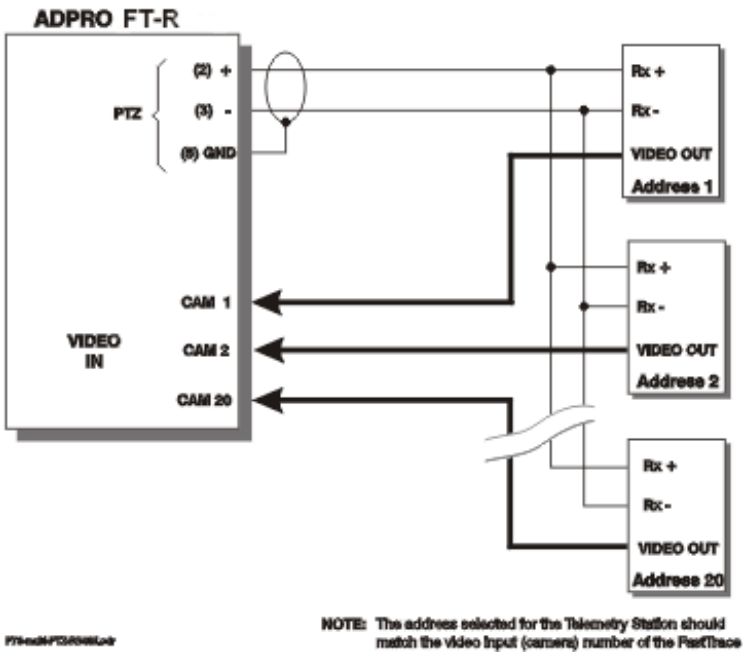

Figure 48: Typical RS485 Connection to Multiple Telemetry Stations

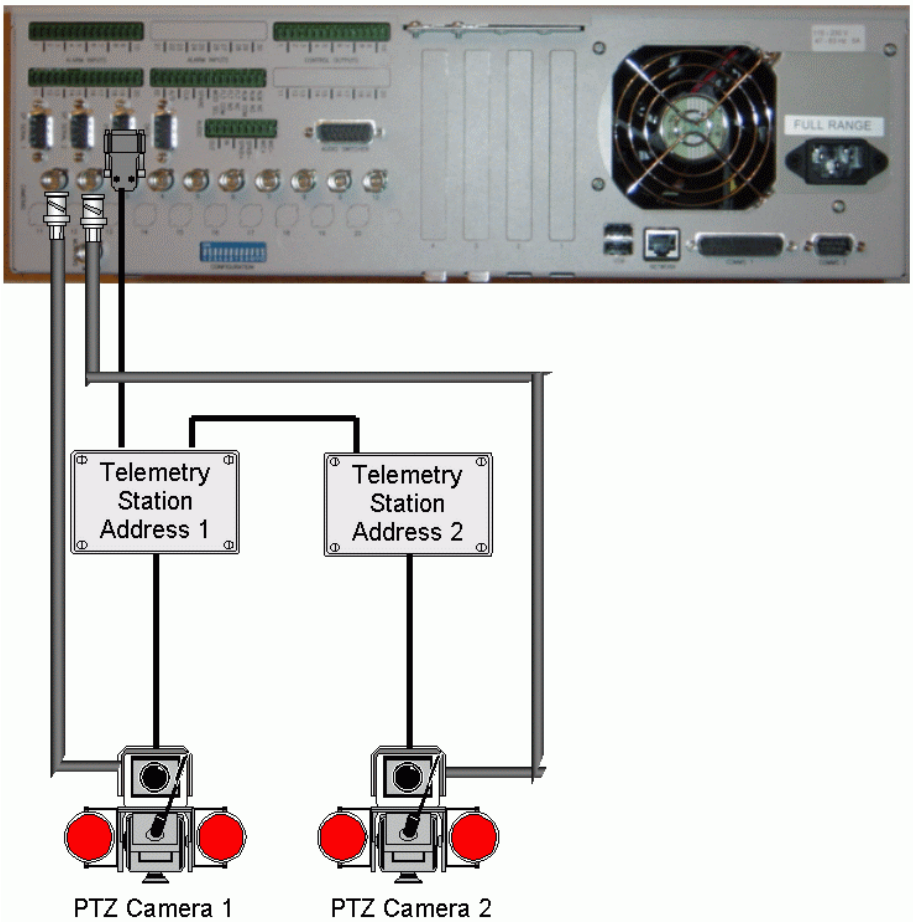

Figure 49: Typical PTZ Configuration

3.9.1 PTZ Port Setup

The following points are applicable to the PTZ port.

- Telemetry stations are connected via a 9-pin D connector, marked 'PTZ'
- RS485 control links allow cable lengths of up to 1000 metres
- Up to 20 (identical) telemetry stations can be connected to one FastTrace-R

Use the following guidelines when connecting and setting up a telemetry station.

- The same brand and model of telemetry station must be used at a site if multiple units are to be used.
- Set the address of the telemetry station to match the camera input to which the PTZ camera is connected.
- Use shielded twisted pair cable for connection to the telemetry stations.
- Connect the Transmit positive (TXD+ pin#2), Transmit negative (TXD- pin#3) and Ground terminal (pin#5) of the FastTrace-R PTZ connector to the respective positive, negative and ground terminals of the telemetry station as shown below.

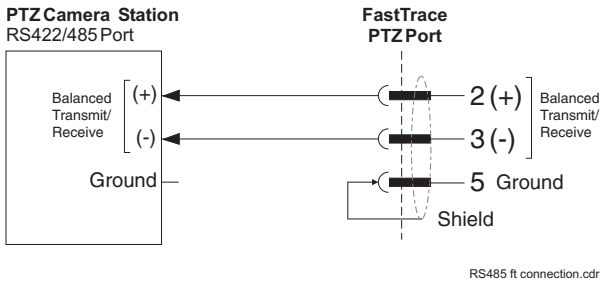

Figure 50: RS485 PTZ Port Connections to a Telemetry Station

- Make sure the last telemetry station connected to the link is terminated by a 120 ohm resistor.
- With reference to the telemetry station manual:
  - connect the pan/tilt head and the zoom lens, focus control and iris control (if applicable),
  - set the lens voltage, high speed PTZ settings, A/D converter for preset systems, homing preset after the last operation plus any other settings in the telemetry station, and
  - make sure the telemetry station data speed is set to the ADPRO recommended or default baud rate.

Telemetry station manufacturers provide a variety of models and features. FastTrace-R provides PTZ control ability for a number of popular models and where possible, supports the features provided by the manufacturer. Due to the number of models available on the commercial market, details of connection and use for individual models have been provided on the website.

For information regarding connection and features of specific telemetry station, please refer to the technical documents section on the website at:

http://www.xtralis.com/adpro

or contact your nearest sales office for a copy.

3.10 General Purpose Serial Ports

Two general purpose serial ports are provided on the unit to support RS232 communication to third party equipment, for example transaction devices such as ATM / EPOS machines. The connectivity is shown below.

If using the GP Serial Port for ATM /EPOS, please ensure that configuration switch 9 is in the correct position prior to boot-up.

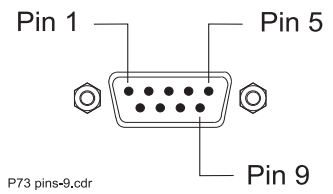

Figure 51: Pin Numbering of the Serial Port

Table 9: General Purpose Serial Port Connections

PIN	Signal	Description
1	DCD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground
6	DSR	Data Set Ready
7	RTS	Request to send
8	CTS	Clear to send
9	RI	Ring Indicator

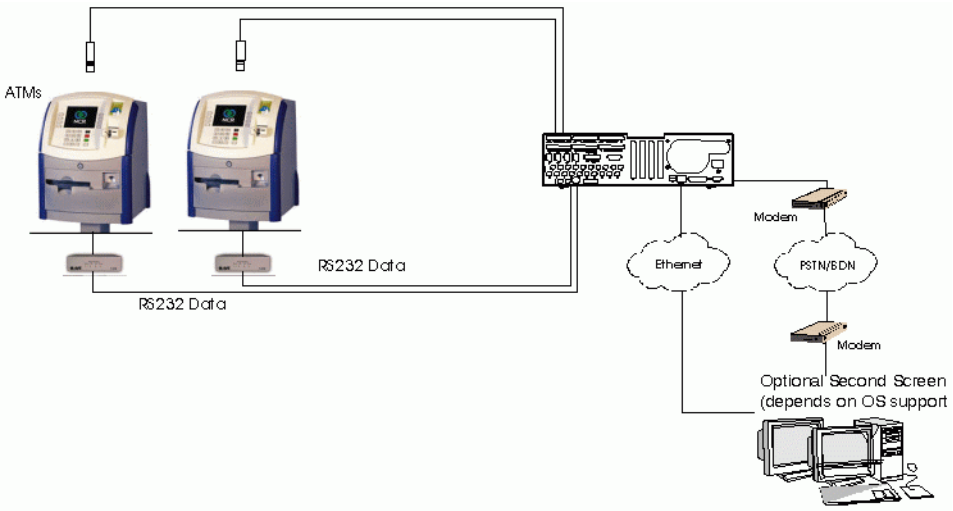

Figure 52: Typical Configuration with ATM/EPOS

3.11 Data Connection

A single 9-way D connector is provided on the unit for data connection, such as Transparent RS232. The transparent data capability provides the ability for the system to transfer data from a device connected to a serial port on the VideoCentral PC to the data port on the FastTrace-R and vice versa. The data connection supports baud rates of 1200, 2400, 4800, 9600, 19200, 38400 and 57600.

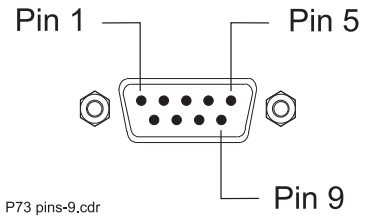

Figure 53: Pin Numbering of the Data Port

Table 10: Data Port Connections

PIN	Signal	Description
1	DCD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request to send
8	CTS	Clear to send
9	+V	Signal High

3.12 Connecting to the General I/O

General Inputs/Outputs are available via screw connection strips on the rear panel.

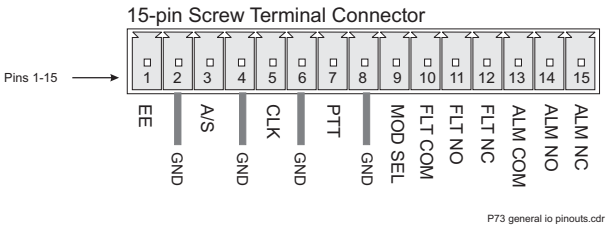

Figure 54: Pinouts for General I/O Connector

3.12.1 Export Evidence - Pin 1

Currently not used.

3.12.2 Access/Secure Input - Pin 3

Not used in FastTrace-R operation.

3.12.3 Clock Synchronise - Pin 5

Currently unused.

3.12.4 Push to Talk - Pin 7

Currently unused.

3.12.5 Mode Select Input - Pin 9

The way a FastTrace-R operates its recording and alarm event recording features can be changed by using up to four different operating 'modes'. The parameters that define a particular mode of operation, such as recording rate and alarm recording responses, are configured by using the FastTrace-R Installer Menu.

From the FastTrace-R Installer Menu, any two (of the four) operating modes can be assigned to activate depending on the open/closed state of the Mode Select input pin.

When the Mode Select pin is 'open' (or 'high'), the FastTrace-R operates by using the mode parameters assigned to that pin state. Placing a 'closed contact' on the pin switches the unit into an alternate mode.

3.12.6 Fault Relay

FastTrace-R has a fault relay, which is a double pole type, i.e. complementary Normally Open/ Normally Closed poles, on pins 13, 14 and 15 of the General Inputs/Outputs connector. The Fault relay activates while the FastTrace-R is in a fault state. The contacts will remain in the changeover condition until reset.

The operation is as follows:

- When the unit is powered off, the relay is Normally Closed.
- When the unit powers up and is booting, i.e. the red light is on or flashing, the fault relay is Normally Closed.
- When the unit is operating normally, the fault relay will be Normally Open.
- In the case of an over-temperature situation, the fault relay will be Normally Closed until the temperature returns to normal.

Ratings:	Switching Voltage	=	30 VDC maximum
	Switching Current	=	1 Amp maximum
	Isolation	=	750 V maximum

3.12.7 General Alarm Relay Output

Pins 10, 11 and 12 contain a Form C single pole changeover contact set. If configured to do so, the General Alarm relay activates while the FastTrace-R has an alarm recording event active. The contacts will remain in the changeover condition until all alarms are reset.

Ratings:	Switching Voltage	=	30 VDC maximum
	Switching Current	=	1 Amp maximum
	Isolation	=	750 V maximum

The relay may also be configured to activate whenever the unit is connected via a network or data link to the Remote Viewing Software (e.g. VideoCentral). This feature may be used (for instance) to notify a third-party alarm system when FastTrace-R activity is taking place.

3.13 Powering Up the FastTrace-R

The FastTrace-R is supplied with a universal input power supply which operates from 100-240 V AC, 50-60 Hz. There are no switches to change based upon your particular mains power voltage or frequency.

When power is applied to the FastTrace-R the green LED located on the front panel of the unit will illuminate.

If the green LED fails to illuminate check that there is power available from the socket into which the FastTrace-R is connected.

The FastTrace-R will then automatically perform a series of self-test routines which check the microprocessor circuits. When power is first applied to the FastTrace-R unit, the red LED on the front of the unit will be on. After approximately 60 seconds, the red LED should start switching on, then off, every two seconds. This signifies that the unit has completed its internal checks and is now checking the integrity of the HDDs. Once the unit successfully completes the integrity check, the red LED will switch off, and remain off.

If at any time during operation, the red LED switches on and stays on, this signifies a fault with the unit and technical support is required.

If the red LED does not switch off and remain off, do the following:

1. Unplug all of the connectors except the power and re-power the unit.
2. If the red LED extinguishes, plug each connector back in and check that the red LED remains off.
3. If the red LED does not extinguish after 10 minutes, please contact ADPRO technical support.

If the red LED continues to flash for an extended period, this signifies that corruption has been found with the database and the unit is attempting to correct the fault.

4 Programming FastTrace-R

4.1 Programming Checklist

The following checklist provides an overview of the main tasks required to program a FastTrace-R and the sequence in which they should be performed:

- Set the unique Site ID and Password for the FastTrace-R and ensure that matching ones are entered in VideoCentral (refer to Site Details).
- Set the time zone on the FastTrace-R to the time zone of the site location (refer to *Date/ Time Settings*).
- Ensure all connected cameras are programmed (refer to *Cameras* and *Camera Behaviour*).

4.2 Setting the Operational Parameters

The FastTrace-R is factory configured with 'typical' operating values, but to use the FastTrace-R in an operational environment, its configuration must be modified to use the site names, phone numbers or network addresses that match the real network.

Once the FastTrace-R settings have been configured, the VideoCentral settings must be updated to match.

4.2.1 Setting the Network Connection

The ADPRO VideoCentral software will require some basic information in order to connect to any FastTrace-R site via a network connection. The minimum information that must be configured in each FastTrace-R is shown below.

To enter the information, go to **Database** / **Administration** / **Configure Sites**, select the **Edit** option, then highlight **Network** in the Communications section.

- **Site ID**: 9 characters (max) - your name for the FastTrace-R unit
- **Password**: 8 characters (max)
- **IP Address**: The TCP/IP network address assigned to each FastTrace-R (this address is normally assigned by the network manager)

Your IT manager should be able to provide the IP address settings. Once the basic connection details have been configured and saved, the FastTrace-R is ready to connect via the operational network.

Note: The default FastTrace-R IP Address is 192.168.1.1.

4.2.2 Setting the Telephone Connection

The basic information needed to use a telephone (dial-up) connection is entered via the **Database** / **Administration** / **Configure Sites** menu. Select the **Edit** option, then highlight **PSTN** or **ISDN** in the Communications section:

- **Site ID**: 9 characters (max) - your name for the FastTrace-R unit
- **Password**: 8 characters (max)
- **Hunt Group**: Select from the list (**Note**: Different modem types must be installed via the Windows Control Panel)
- **Phone Number**: Enter the phone number of the modem connected to the FastTrace-R.

4.3 Entering the FastTrace-R Setup Screen

Note: Always use extreme caution when remotely programming FastTrace-R units. Changing connection parameters or passwords may result in the VideoCentral system not being able to regain access, resulting in the need for engineering attendance at the site to reprogram the system.

Remote programming of FastTrace-R systems is carried out via a screen as shown below. To start the programming operation, click on the **Installer Menu** button behind the **Site Actions** button in the main VideoCentral User Interface GUI:

Figure 55: Installer Menu Icon

Note: Only operators logged on to the system either as Administrators or Installers have access to this icon. Users defined as Operators do not have access to this function. If this icon does not appear or appears greyed out, log out the current operator and log-on a new operator with the correct access rights.

The current settings within the FastTrace-R will be downloaded to the VideoCentral system and the following screen will appear:

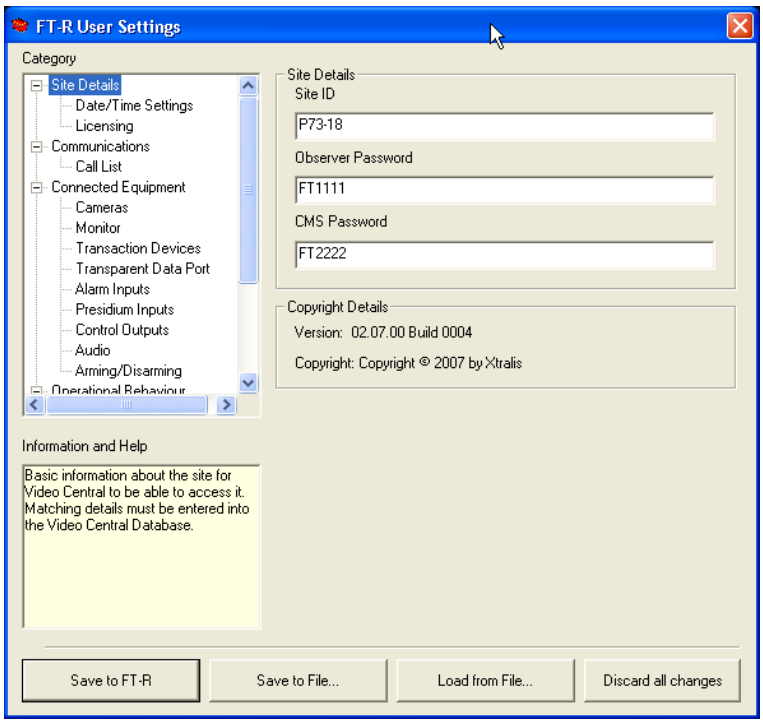

Figure 56: FastTrace-R User Settings

Note: Some options for a category can be affected by the status of other setting(s) and may be unavailable (shown 'ghosted').

The programming GUI is a separate program to VideoCentral and there are numerous different versions (although outwardly all look the same). The precise version used is dependent upon the software installed on the FastTrace-R system being programmed. The programming software is held on the remote FastTrace-R system and downloaded to the VideoCentral PC for use. For this reason the programming screen may sometimes takes a few minutes to appear on the screen (depending upon the speed of the connection to the FastTrace-R system). VideoCentral only needs to download any given version of the programming software once, after this the software is stored on the PC for use at a later time, speeding up the programming operation. Once the settings (and set-up program if necessary) have been downloaded the programming software will start automatically.

Selecting the **Save to FastTrace-R** button at any time will cause all settings currently within the software to be sent to the FastTrace-R system (a confirmation box will be presented to verify the required action). Before sending the new programming to the FastTrace-R, the software will perform a check to make sure all settings are valid and any anomalies will be advised.

Once all settings are valid, they will be downloaded to the FastTrace-R system and the system will be disconnected to allow the settings to take effect.

Selecting the **Discard all changes** button any time will close the Setup without sending any settings to the remote FastTrace-R system (a confirmation box will be presented to verify the required action).

4.3.1 Saving a Configuration to File

Selecting the **Save to File …** button displays the **Save As** dialog box.

- Files are saved in a 'FT-R User Settings (*.fus)' file format.
- Characters such as ':', '*' and '?' in the filename are invalid and will not be accepted.
- If the file already exists, the user shall be asked whether or not they wish to overwrite the existing file.

If an error in saving occurs, such as insufficient storage space, the user will be informed of the error by a dialog box.

4.3.2 Loading a Configuration from File

Selecting the **Load from File …** button displays the **Load Settings** dialog box.

- The 'Files of type' drop down list is displayed as default 'User Settings (*.fus)'.
- Select **Open** to open the file.
- The user is prompted whether or not to use the Ethernet IP settings from the file to be loaded or to retain the current ones. The following dialog is displayed:

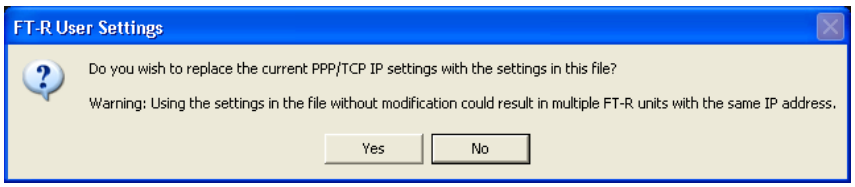

Figure 57: TCP IP Settings

Note: Users are warned to take note of the IP address in the FastTrace-R unit before saving settings to ensure the unit can be contacted once setup is complete and the site is disconnected.

If the selected settings file is incompatible, then the following dialog is displayed:

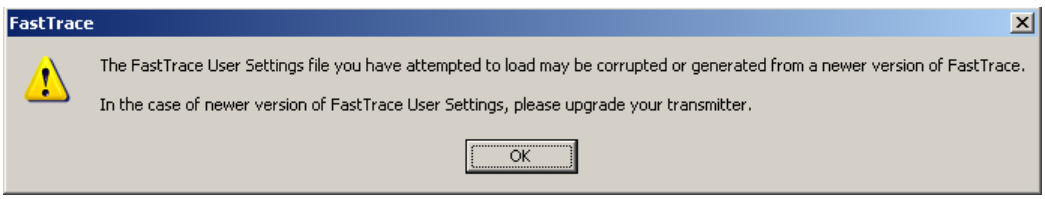

Figure 58: Incompatible User Settings File

The reasons for receiving the above dialog can include:

- Attempting to use a settings file that is newer than the unit's current software version allows.
- Attempting to load settings files using a version of the setup GUI that is newer than the unit's current version of setup GUI.

To rectify this, the user must either use an older setup file, or upgrade the FastTrace-R.

If the saved settings file is corrupted or unsupported, the **Save to FT-R** button is disabled to prevent that file being used by the FastTrace-R. If a valid settings file is selected the **Save to FT-R** button is re-enabled.

4.3.3 Site Details

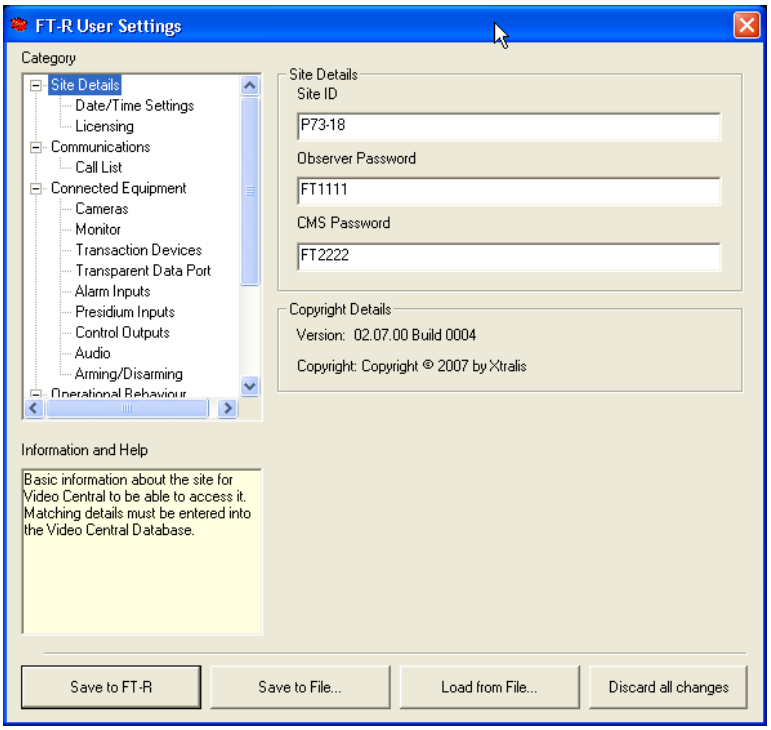

Figure 59: Site Details Menu

Site ID

Each ADPRO FastTrace-R must have a unique site ID. The maximum site ID alpha-numeric length is 9 characters. Note that the 'local' site ID entered here must match a site ID entry in the VideoCentral Site List (**Database** / **Administration** / **Configure Sites**).

The default site ID is **FastTrace-R**.

Passwords

VideoCentral may be installed as a CMS system, which will receive alarms (VC Gold or VC Lite with dongle), or as an Observer, which will not receive alarms (VC Lite without dongle). When configuring sites in VideoCentral (**Database** / **Administration** / **Configure Sites** / **Edit**) either the Observer password or CMS password must be entered, depending on the type of VideoCentral installation.

The default CMS password is FT2222.

The default Observer password is FT1111.

4.3.4 Date/Time Settings

To enable accurate event tracking, the FastTrace-R can be set to accommodate local or regional daylight saving time shifts when they affect the location where the FastTrace-R is installed.

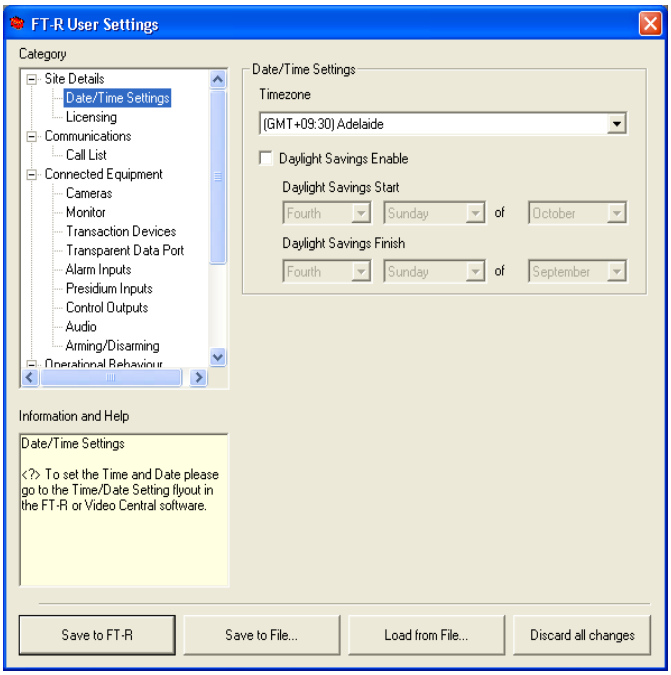

Figure 60: Date/Time Settings Menu

Time Zone

Database records within the FastTrace-R are timestamped using Coordinated Universal Time (abbreviated as UTC). The **Time Zone** field is used to define the number of hours and minutes that the actual site location is ahead (or behind) the UTC reference of 0 degrees of longitude (originally known as Greenwich Mean Time).

Daylight Saving

In regions where daylight saving is implemented over the summer months, users can enter the local start and finish dates to ensure the FastTrace-R clock is automatically corrected. The **Daylight Savings Enable** check box is used to start this feature and allow entry of the start and finish dates.

FastTrace-R implements daylight saving start and finish at 2 am local time (02H00) and will advance or set back the time by 1 hour accordingly.

Caution: When the FastTrace-R unit is shipped from the factory, Universal Time is programmed in the unit and is used as the ‘current’ time. To match the ‘current’ time to the local time at your location, change the time zone setting to the correct zone. Changes to the value of the ‘current’ time (via VideoCentral) should only be used for minor adjustments when absolutely necessary.

This warning only applies to changes to the value for current time and does not apply to Time Zone or Daylight Saving changes.

Adjusting FastTrace-R Time via VideoCentral

If the time zone has been set correctly, as detailed above, but the time at the FastTrace-R is not accurate, the time may be changed via VideoCentral.

This may be performed by double clicking on the time and date displayed at VideoCentral while connected to the FastTrace-R. The following screen is displayed:

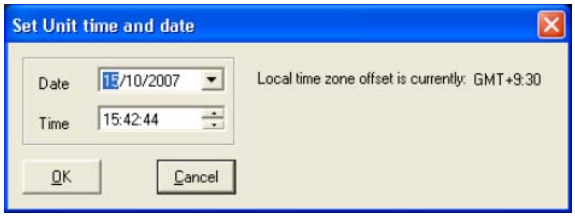

Figure 61: Set FastTrace-R Time and Date

When changing the time via the VideoCentral User Interface (by double clicking on the displayed date and time), the software version installed at the FastTrace-R and VideoCentral will determine the time change behaviour, as per the following table:

Table 11: Time Change Compatibility Matrix

Feature / Scenario	VideoCentral V9.01 or later connecting to FastTrace-R V2.07 or later	VideoCentral V9.00 or later connecting to FastTrace-R V2.07 or later	VideoCentral prior to V9.00 connecting to FastTrace-R V2.07 or later
Large time change allowed	Yes	No	No
Small time change threshold	10 minutes	1 hour	60 seconds/1 hour (see below)
User attempts to make a large forward time change	Message displayed stating that time and date have been successfully changed.	Message displayed to user directing them to the Installer Menu (Setup GUI), and indicating that they may instead wish to change the time zone or daylight savings settings.	If the time change is more than 60 seconds, an urgent warning (red text) is displayed indicating that a gap will exist in the recorded data. If the user proceeds, and the time change is more than 1 hour, FastTrace-R will return an error code and VideoCentral will display an "Unknown error" message. If the time change is less than 1 hour, the time change will be made gradually.

Feature / Scenario	VideoCentral V9.01 or later connecting to FastTrace-R V2.07 or later	VideoCentral V9.00 or later connecting to FastTrace-R V2.07 or later	VideoCentral prior to V9.00 connecting to FastTrace-R V2.07 or later
User attempts to make a large backward time change	Urgent warning indicating that a gap will exist in the recorded data. If the user proceeds, the time will be changed.	Message displayed to user directing them to the Installer Menu (Setup GUI), and indicating that they may instead wish to change the time zone or daylight savings settings.	If the time change is more than 60 seconds, an urgent warning (red text) is displayed indicating that recorded data will be lost. If the user proceeds, and the time change is more than 1 hour, FastTrace-R will return an error code and VideoCentral will display an "Unknown error" message. If the time change is less than 1 hour, the time change will be made gradually.
User attempts to make a small time change.	Message displayed to the user indicating the time change will be made gradually.	Message displayed to the user indicating the time change will be made gradually.	No message displayed.

4.3.5 Licensing

The Licensing option enables users to enable the upgrade to a FastTrace-R and Transaction Device (ATM/EPOS) functionality through a license purchased from your distributor. Once the license details are entered, you can then configure the transaction device function.

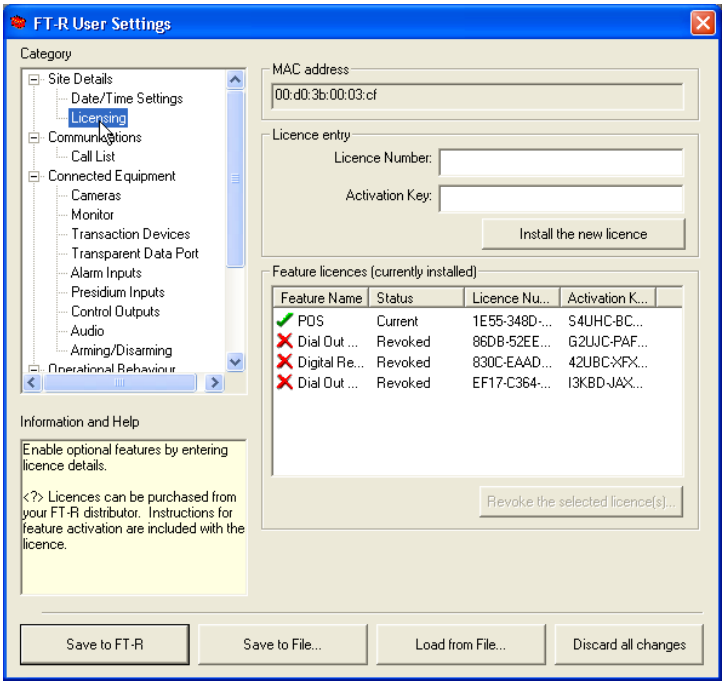

Figure 62: Licensing Settings

A Transaction Device can be connected to the FastTrace-R via one of the GP Serial ports. Up to sixteen transaction devices can be configured.

- **MAC address**: This field is automatically populated.
- **Licence Number**: Enter the Licence Number (supplied on the label of the licensing CD).
- **Activation Key**: The Activation Key is generated from the ADPRO software licensing webpage using the MAC address of the FastTrace-R unit and the License Number supplied on the CD.

Refer to *Transaction Devices* for more information.

4.3.6 Communications

The **Communications** menu provides configuration settings for the Ethernet and two serial communication ports.

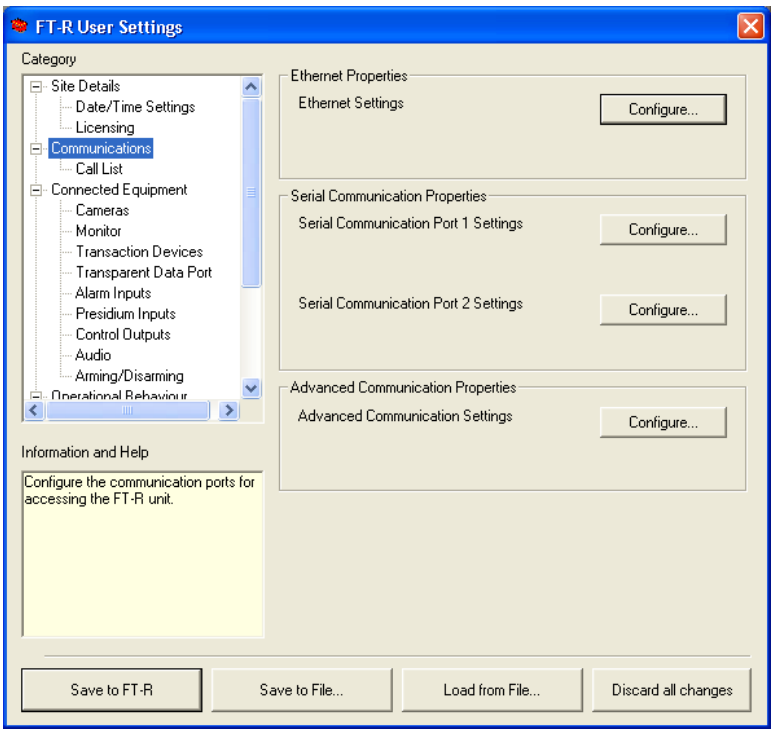

Figure 63: Communications Menu

Ethernet Properties

A direct connection to a 10BaseT or 100BaseTX Ethernet network can be made via the Ethernet Port. To change this address, the Subnet Mask or Default Gateway address, click the **Configure** button. **Ethernet Settings** are used to configure the TCP/IP parameters for a LAN or WAN connection.

Note: Always obtain Ethernet IP Address, Subnet Mask and Gateway details from the IT Manager responsible for the network where the FastTrace-R is installed. DO NOT CONNECT FASTTRACE-R TO THE ETHERNET UNTIL THESE SETTINGS HAVE BEEN MADE AND VERIFIED.

Important: **To ensure correct network connectivity, please ensure FastTrace-R is connected to the network before being powered on. This enables the FastTrace-R unit to detect the correct network speed (10BaseT or 100BaseT).**

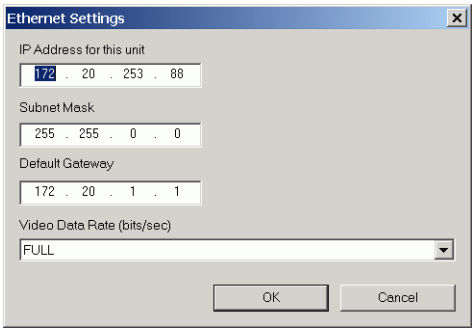

Figure 64: Ethernet Settings

IP Address for this Unit

Factory Default 192.168.1.1

The **IP Address** is used to identify the FastTrace-R device as a TCP/IP network node. Each ADPRO Transmitter monitored from the same installation of VideoCentral requires a **unique IP** (Internet Protocol) address. The address is divided into four parts separated by a (.), each part with a decimal range value from 0 to 255.

The following address ranges are invalid:

- 0.xxx.xxx.xxx
- 127.xxx.xxx
- 224-239.xxx.xxx.xxx
- 240-255.xxx.xxx.xxx
- xxx.xxx.xxx.0
- xxx.xxx.xxx.255
- 192.168.10.xxx

Caution: Changing the IP address may mean you can no longer connect to the FastTrace-R.

Caution: FastTrace-R can use two different types of interfaces, Ethernet and serial RS232, to communicate with VideoCentral via an intermediate network. Each of the communications interfaces on FastTrace-R has an IP address associated with it (FastTrace-R has three IP addresses, one for each of the two serial RS232 interfaces and one for the Ethernet interface).

Each FastTrace-R must have unique IP addresses for each communications interface. This will require management by the Monitoring Stations to ensure all FastTrace-R units that communicate with the Monitoring Station have unique IP addresses.

For more information, please refer to Tech-Tip - Unique IP Address Requirements, available on the website: **www.xtralis.com/adpro**.

Subnet Mask

Factory Default 255.255.255.0

The **Subnet Mask** is used in conjunction with the IP Address to determine whether the destination node is located on a local network segment or on a remote network.

Each logical IP Address has two parts: the NETWORK ID and the HOST ID. The Network ID identifies all hosts that are on the same physical network and the Host ID identifies a specific host on the network.

The subnet mask is used to filter (mask) the portion of the IP Address that is common to the local network and thus allow individual hosts to be accessed.

If the subnet mask is changed for any reason, FastTrace-R will not begin to use the new subnet mask until the unit has been power cycled.

Default Gateway

Factory Default No Gateway

For communication with VideoCentral located on another network, the FastTrace-R must be given the address of the first host device on the route to the destination network (and vice versa). The **Default Gateway** is the address of the host to which the FastTrace-R sends packets that are destined for the remote network.

If a default gateway is not specified, communication is limited to the local network.

Note: It is important that a gateway address is only entered if a gateway is present.

Note: If a Default Gateway is to be used, **Ethernet** must be selected as the **Main** or **Backup Communications Link** (refer to *Call List* for details).

Note: For information regarding IP addressing when connecting through a network router, please refer to Tech-Tips - 'Unique IP Address Requirements' and 'Secured TCP/IP Connectivity for FastTrace-R, FastTx and VideoCentral' on the website at: www.xtralis.com/adpro, or contact your nearest sales office for a copy.

Note: Refer to *Firewall Configuration* for firewall port information.

Video Data Rate

Options: Full, 32 kbps, 64 kbps, 128 kbps, 256 kbps, 384 kbps, 512 kbps, 1 Mbps, 2 Mbps

Factory Default: Full

The **Video Data Rate** option provides the ability to control the amount of bandwidth that is used when transmitting video with VideoCentral. Bandwidth is a limited resource and is shared between all users on a network.

The Video Data Rate acts like a 'throttle' and is useful if the network administrator needs to limit the amount of bandwidth used by certain devices. Refer to your Network / System Administrator for further advice regarding any bandwidth restriction or limitation.

Note: This data rate applies per user: if two users are connected at 32 kbps, the total bandwidth used would be 64 kbps.

Serial Communication Properties

There are two Serial Communication Ports for analogue telephone line or digital line connection for communications with VideoCentral. Modems are used for analogue line (PSTN) connections and terminal adaptors (TA) for digital lines (ISDN). The COMMS 1 port is fitted with a 25-pin D male connector. The COMMS 2 port is a 9-pin D male (refer to *Table 3*).

Note: The COMMS 2 port can be used for direct connections to a PC for local setup and for software upgrades. A Null Modem driver is provided in the VideoCentral installation CD.
Refer to Tech-Tip 11460 – Windows XP SP2 Issues (available on the website: **www.xtralis.com/adpro**) for more information on the use of the Null Modem Cable.

The **Serial Communications Port 1 Settings** and **Serial Communications Port 2 Settings** menus allow the operating parameters of the two serial ports to be configured to match the model of modem or terminal adaptor used.

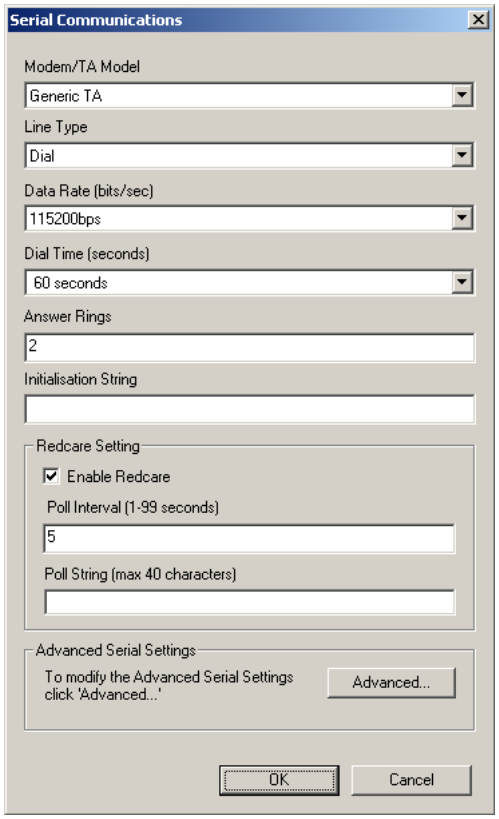

Figure 65: Serial Communication Port Settings Menu

Modem/TA Model

Options: Model List, Direct Connect

Select the model of the modem or terminal adapter (TA) connected to the particular COMMS port. Refer to the device's user manual to assist with setting the correct configuration.

Use the Direct Connect option when the FastTrace-R is connected directly to a PC running the VideoCentral software. In this case, no modem or TA is required and a special ('null-modem') cable is needed for correct operation.

Line Type

Options: Dial, Leased Line

Factory Default: Dial

The **Dial** option is used for analogue (PSTN) or digital (ISDN) networks where the connection is usually made by dialling a particular telephone number. These lines may be routed via a switchboard or PABX system.

Set this option to **Leased Line** if the system is connected via a dedicated (leased) line. Leased lines are not normally routed through telephone switchboards or PABX equipment and no dialling is required for the connection to be made.

Data Rate

Options: 9600 bps, 19200 bps, 38400 bps, 57600 bps, 115200 bps, 230400 bps

Factory Default: 115200 bps

The **Data Rate** setting determines the speed in bits per second (bps) that data will be transferred between the FastTrace-R COMMS port and the interface of the modem or terminal adaptor.

When connected to modems, the FastTrace-R is normally programmed for asynchronous data at a specific data rate and is set for the maximum data rate that the particular modem can support. This is commonly referred as the DTE to DCE baud rate.

Dial Time

Not relevent to FastTrace-R operation.

Answer Rings

Options: 0 to 9, (0 = Don't Answer)

Factory Default: 2 rings

The FastTrace-R can be programmed to either:

a. wait for a programmable number of rings from 1 to 9, in one ring increments, before answering an incoming call, or

b. not answer any incoming calls (when the value is set to 0).

For example, set Answer Rings = 0 when the user does not want VideoCentral accessing this particular site if no alarms are being generated. Generally the **Answer Rings** option would be set to 1-3 rings.

Initialisation String

This option is used to enter additional Hayes AT commands (in ASCII format) that may be required to configure a modem or Hayes compatible RS232 terminal adaptor to initiate (or activate) a particular product feature or setting. Refer to the User Manual of the particular device to obtain the required Hayes AT commands.

Note that the Hayes command prefix ('AT') does NOT have to be entered at the start of an Initialisation String, as it is automatically prefixed to the string contents by the FastTrace-R software.

Redcare Setting

The Redcare setting enables the system (FastTrace-R, Modem and Telephone Exchange) to perform a periodic Security Poll to ensure that the line is still active and the communications equipment is useable.

If the 'Modem/TA Model' drop down list is set to 'Direct Connect', the 'Redcare Setting' box is not available.

Note: Check whether your telecommunications provider offers the Redcare service.

Enable Redcare Check Box

If the operator checks the 'Enable Redcare' checkbox the Security Poll feature is enabled, and the Poll Interval and Poll String edit boxes become available.

Poll Interval

Options: 1 to 99 seconds

Factory Default: 5 seconds

The operator can enter a number of seconds to determine how often the 'Poll String' is sent to the modem.

Poll String Edit Box

The installer can enter a string that is used to send to the modem, indicating that the FastTrace-R is still operating. The maximum number of characters is 40.

Note: Please check with your telecommunications provider as to the availability of this feature.

Advanced Serial Communications Settings

The Advanced Serial Communications Settings are used to configure the Point to Point Protocol (PPP) and Password Authentication Protocol (PAP) parameters to be used by the FastTrace-R.

PPP is the Internet standard for transmission of IP packets over serial lines (asynchronous and synchronous) and PAP provides the security for the serial connection.

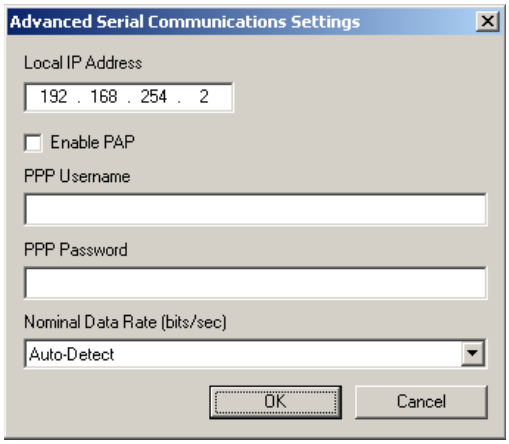

Figure 66: Advanced Serial Communications

Local IP Address

Factory Default: 192.168.254.1

Sets the **Local IP Address** assigned to FastTrace-R's COMMS port. This address is used by the PPP messaging software and is **NOT** the same as the Ethernet Properties setting or of **any other device on the network**.

When multiple FastTrace-R units are to be accessed from a single VideoCentral system, each FastTrace-R unit MUST have a unique Local IP Address (ie. do not leave at the factory default address) for each serial and ethernet connection.

For more information, please refer to:

Tech Tip 10470_00 - Unique IP Address Requirements, available on the website: **www.xtralis.com**.

Caution: Contact Xtralis technical support for advice before entering data into: **Enable PAP**, **PPP Username** or **PPP Password**.

Enable PAP

Factory Default: No

Set this checkbox to enable Password Authentication Protocol. PAP will authenticate the remote system during the PPP negotiations. The valid username and password are defined by the fields of PPP Username and PPP Password.

PPP Username

Option: 20 characters maximum.

The **Username** (or Site Name) that will be provided by PPP when negotiating a serial IP connection. It is only required when PAP is enabled.

Note: The PPP Username is a function of the modem or TA and will also need to be set in the device.

PPP Password

Option: 20 characters maximum.

The **Password** that will be provided by PPP when negotiating a serial IP connection. It is only required when PAP is enabled.

Note: The PPP Password is a function of the modem or TA and will also need to be set in the device.

Nominal Data Rate (bits/sec)

Options: 8 kbps, 16 kbps, 32 kbps, 64 kbps, 128 kbps, Auto Detect.

Factory Default: Auto Detect

The **Nominal Data Rate** option is used by the FastTrace-R to maximise the data rate on the communication link. It is different from the 'Data Rate' setting for the Modem / TA, in that FastTrace-R attempts to send data at the specified *nominal data rate* at all times. This option helps to provide consistency in the image transmission time of the system, especially when the line quality of a communications link is unknown.

The Nominal Data Rate should be set to either **auto detect** or to the known speed of the communications network. For example, use the '128 kbps' option when connected via a Basic Rate ISDN line.

Advanced Communication Properties

The **Advanced Communication Properties** option defines the Base Port Number used for communications with the PC running VideoCentral software.

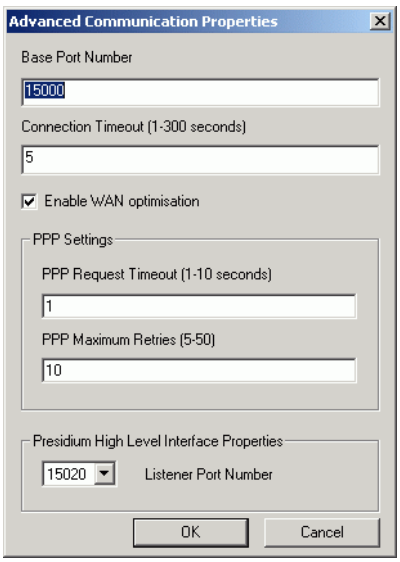

Figure 67: Advanced Communication Properties

Base Port Number

Options: <value> Range is 2049 to 65536

Factory Default 15000

The default value = 15000 and should not be changed unless a conflict occurs due to a network connection of other third-party equipment.

Caution: If the Base Port Number is changed, then all FastTrace-R units and VideoCentral must be changed to the same value. Failure to do this on all communicating systems will result in communications failure.

Connection Timeout

Not relevent to FastTrace-R operation.

Enable WAN Optimisation

Factory Default: Yes

Set this checkbox to optimise communications throughput for audio and video transmission. Only switch this off if advised by Xtralis technical support.

PPP Settings

FastTrace-R uses PPP when communicating over serial devices, such as modems and terminal adaptors. Only change these settings if advised by Xtralis technical support.

PPP Request Timeout

Options: <value> Range is 1 to 10 seconds

Factory Default 1

This setting sets the default timeout for negotiating a PPP connection. In some instances, such as when communicating from GSM to GSM, the time required to negotiate the PPP link can be significant.

PPP Maximum Retries

Options: <value> Range is 5 to 50

Factory Default 10

This setting sets the default retries for negotiating a PPP connection. In some instances, such as when communicating from GSM to GSM, the negotiation can fail and the system must retry the negotiation.

Presidium High Level Interface Properties

Factory Default 15020

If a Presidium is connected to the FastTrace-R, the Listener Port Number defines on which port the Presidium High Level Interface communicates with the FastTrace-R.

This setting must be the same port as that selected in the Presidium Setup Utility, High Level Interface tab.

4.3.7 Connected Equipment

The **Connected Equipment** menu provides a number of sub-menus to configure the settings that the FastTrace-R will use when interacting with external equipment such as video cameras, microphones/speakers, alarm inputs and control output devices as well as the local monitor and alarm relay contacts.

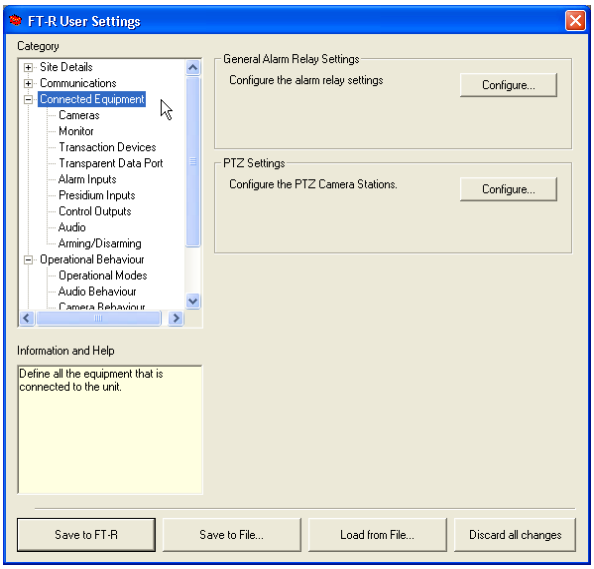

Figure 68: Connected Equipment Menu

General Alarm Relay Settings

The FastTrace-R is equipped with a normally open Form C relay contact for use with external monitoring equipment, for example, a fire or burglar alarm monitoring panel. The General Alarm Relay settings can be used to notify external equipment that the FastTrace-R has changed its operational state.

The **General Alarm Relay** settings specify when the relay activates. The two options available are:

- **On Event (default)** - The relay is active (closed) when there is a event on the FastTrace-R which has not been accepted by a VideoCentral system. Once all alarms have been cleared (downloaded) the relay will revert to its normal (de-energised) state.
- **On Connection to Site** - The relay is active (closed) while there is a valid connection to a VideoCentral system. The operation shall happen regardless of who originated the call (i.e. whether a remote operator has called into the system.

PTZ Settings

Serial Options: 360vision, Amux IEC, Baxall ZMX, Baxall ZTX, Baxall ZTX7, BBV, Burle, COHU, Conway, CS Lilin, Dennard 2050, Diamond, Digital Sprite, Elbex, Ernitec, GPS, Grundig, Harris, JVC, Kalatel CyberDome, Kalatel KTD 12x, Mark Mercer, Molynx, Pacom 2018, Panasonic (Conventional), Panasonic (New), Pelco Coaxitron 4800_8_E_1, Pelco_D_2400_8_N_1, Pelco_D_4800_8_N_1, Pelco P 4800_8_N_1, Pelco P 9600_8_N_1, Philips, Samsung (Lens only), Sensormatic, Sensormatic Controller, Sensormatic SpeedDome VII, Siemens, Synectics, Unidex, VCL, Vantage Juno, Vicon, Video Switch, Video Technical Fastrax-P, Vista PowerDome, Xeno Neodome.

Down the Coax Options:Baxall Coax Alt, Baxall Coax Std, BBV Coax, Pelco Coax Ext.

Factory Default: No PTZ

When using Pan/Tilt/Zoom (PTZ) cameras or telemetry stations, the type of device must be set. Information to control a serial PTZ unit will be sent via the PTZ port connector on the rear panel.

To use a PTZ camera, individual Camera Settings require the **'This Camera has a PTZ station'** checkbox to be set.

FastTrace-R also incorporates the ability to use a 'Down the Coax' module to send control signals to some telemetry camera stations, down the same coaxial cable that is used to transmit video to the FastTrace-R.

This module can only be fitted at the factory or at your service centre.

Notes on PTZ settings:

- Only one PTZ telemetry type can be selected on a FastTrace-R system (i.e. it is not possible to select a combination of telemetry types for different cameras).
- This setting only defines the telemetry protocol to be used by the system. Individual cameras which have PTZ functionality must be set-up accordingly under the individual camera setup.

Note: Please refer to PTZ Tech Tips for connection and setup information on the website - **www.xtralis.com/adpro.**

4.3.8 Cameras

Selecting the **Cameras** option displays a list of available video channels and any camera name assigned to the channel.

The number of available channels will depend on the FastTrace-R Model number. The number list directly relates to the video input number on the back plane of the FastTrace-R.

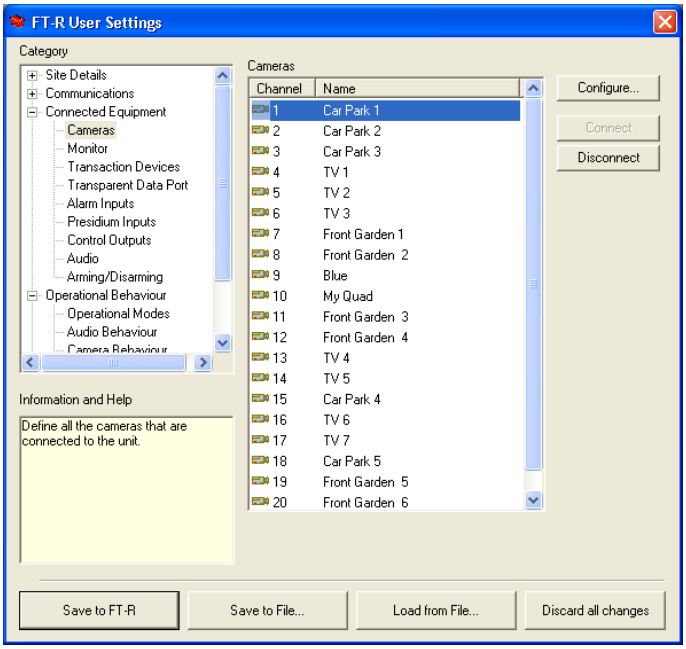

Figure 69: Cameras Menu

The status of a Channel is shown by a small icon to the left of the Channel number.

- A Channel is **free** when the 'empty' icon is shown next to the number.
- The **Connect** button is used to set the status of a channel and enable the video for recording and viewing. When enabled, other details about **this** camera can be modified.
- To temporarily disable the use of a camera and any alarms that may be generated by it, the **Disconnect** button is used. For example, Disconnect can be set if maintenance is being performed on that camera.

Camera Settings

Once a channel has been selected, the **Configure** button is used to access the **Camera Settings** menu. The menu is used to define the behaviour of each individual camera and a number of tabs are available to set various properties.

General Tab

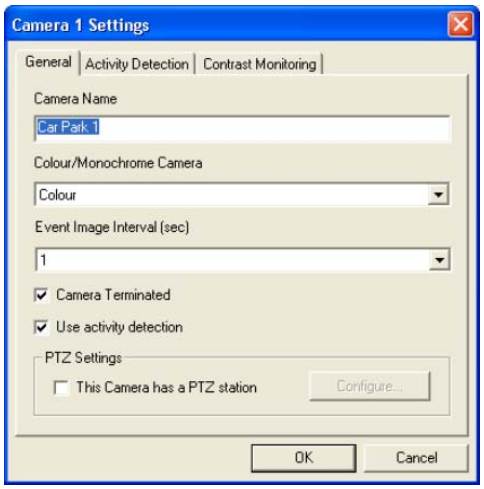

Figure 70: Camera Settings - General Tab

Camera Name

Option: 16 characters maximum.

Type the name to be associated with this camera. Hint: Try to use names that make the camera location and the channel number to which it is connected, easily identifiable. For example, CAM07 LIFT LOBBY, REAR DOOR CH15 or CH09 ATM#3 EAST.

Colour/Monochrome Camera

Options: Colour, Monochrome

Default: Colour

This option is useful if monochrome cameras are being used on the system. When a particular camera is defined as monochrome only (black and white), the processing hardware is able to 'sharpen' the images by bypassing some of the colour filter processing normally performed on the signal.

Camera Terminated

Options: Yes, No

Default: Yes (ticked)

Use the checkbox to define whether the selected channel (camera output) is terminated with a 75 ohm resistance. By default all channels are terminated.

Clear the checkbox when the video cable from the camera is to be connected to the FastTrace-R's video input via a 'T-Connector'. In this case, the video may be fed to another piece of equipment, for example a video switcher or a CCTV monitor.

Caution: Camera termination is only active whilst the FastTrace-R is powered. If, for any reason, the power is removed from a FastTrace-R unit, any connected cameras will become unterminated.

Use Activity Detection

The FastTrace-R can be setup to respond to changes that occur within the field of view of a camera. This feature is used to trigger an alarm if activity is detected by a certain camera in an area not normally expected to have activity.

To help configure the Activity Detection feature, the sensitivity to movement and the amount of time that movement occurs can be programmed. This is done by selecting the **Activity Detection** tab.

PTZ Settings

This Camera has a PTZ station.

Options: Yes, No

Default: No

Set the checkbox when this channel is connected to a camera with PTZ (Pan/Tilt/Zoom). The type of PTZ equipment is set in the **PTZ Settings** option (refer to *PTZ Settings*).

If checked, the **Configure** button will become available. By clicking on the **Configure** button, the Alarm Preset Settings may be modified.

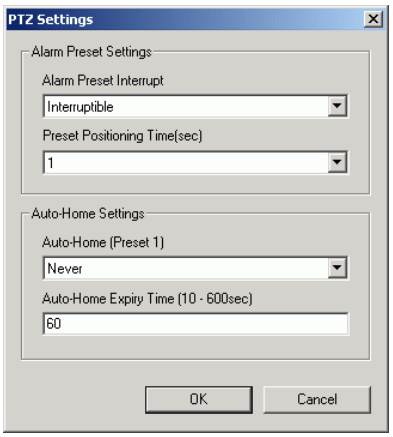

Figure 71: Camera Settings - PTZ

The PTZ Preset on Alarm feature allows the user to associate an alarm input, activity detection on another connected camera or an ATM/EPOS transaction, to a preset camera position, so that, in the event of an alarm, FastTrace-R will send the PTZ camera to a pre-programmed preset position automatically.

The following parameters must be defined to use the PTZ preset on alarm feature:

- Alarm Preset Interrupt
- Time delay between Alarm Presets
- Enable Auto-Home
- Auto-Home expiry time

Alarm Preset Interrupt

Options: Interruptible, Non-Interruptible

Default: Interruptible

This option determines whether a PTZ camera that is currently going to a preset because of an alarm activation, can be directed to another preset when another alarm activation occurs (or be manually moved by an operator connected via a FastTrace-R comms or network port).

If set to Interruptible, when a camera is in the process of going to a preset (say preset 4), and then another alarm occurs with an associated preset (say preset 5), the camera will terminate the movement to preset 4 and go to preset 5. If the setting was Non-Interruptible, then the camera would complete the movement and image acquisition at preset 4, and then go to preset 5.

If the Non-Interruptible option is selected, the following dialog box is displayed to warn the user of the potential to cause events to be queued and add delays in capturing event images.

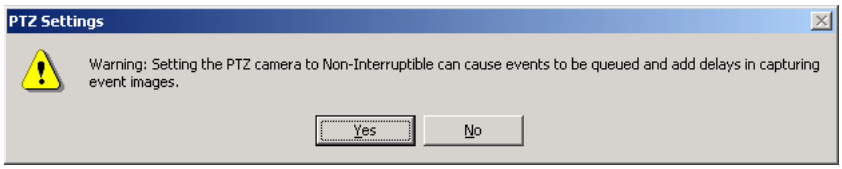

Figure 72: Alarm Preset Warning

Preset Positioning Time

Options: 0, 0.1, 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 5, 10 seconds

Default: 1 second

The Preset Positioning Time is the delay (in seconds) between an alarm input trigger and the first alarm image being captured to send to VideoCentral. This delay will allow a PTZ camera enough time to move to its alarm preset and come to a stop before acquiring the first alarm image, eliminating blurred or unuseable images being recorded.

Auto Home

Options: Always, Never

Default: Never

FastTrace-R can be configured to automatically send a PTZ camera station to pre-position 1 after a period of no PTZ commands being issued to that camera station, or configured to leave the PTZ camera station in its current position. When the **Always** option is selected, a time value is also necessary as explained below.

Auto Home Expiry Time

Options: 10 - 600 seconds

Default: 60 seconds

The Auto Home Expiry Time is the time (in seconds) that the FastTrace-R will wait, after the last PTZ command, before sending the PTZ camera station to pre-position 1.

Note: Any queued preset request occurring during the period the FastTrace-R is in setup mode will be cancelled. An alert will still be sent to VideoCentral, but image information will not be available.

Note: During the Preset on Alarm function, images could appear dark and/or blurry, possibly causing FastTrace-R to interpret this as low contrast, and generating a low contrast alarm.

Activity Detection Tab

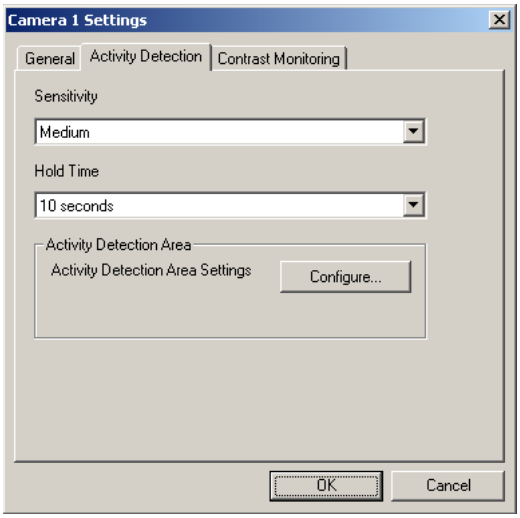

Figure 73: Camera Settings - Activity Detection Tab

Sensitivity

Options: Very Low, Low, Medium, High, Very High

Default: Medium

Set the required sensitivity of the system. The Sensitivity setting defines a cross section of a target objects size and speed required to trigger an Activity event. Settings are Very Low (requires large objects moving extended distances to trigger an event), Low, Medium, High and Very High (Activity events will be triggered by very small objects with limited movement).

Hold Time

Options: None, 2, 5, 10, 30, 60

Default: None

When there is a requirement that two (related) alarm inputs must be active before an alarm event is activated (known as double knock alarm activation), the **Hold Time** option sets the time 'window' for the second alarm input to occur (event combinations are defined in the **Operational Behaviour** section).

If the second alarm input is not activated within the Hold Time period, no alarm event will be generated. Choose the value most suited to the alarm activation requirement.

Activity Detection Area

Use the **Configure** button to set the **Activity Detection Area** used by each configured camera. The detection area is displayed as a 'grid' over the video image, showing exactly where activity detection will happen. More than one activity detection area can be used. An Activity Detection Area is made up of a number of 'detection zones', with each zone representing a screen area of 16 x 16 pixels.

When the option is selected a display of the selected camera's image is shown.

Toggle on or off the individual cells by moving the mouse pointer over the required cells and left-click the mouse. Cells can also be toggled by holding the left mouse button and dragging the mouse over the screen.

Cells are active (i.e. will be able to generate events) when they are highlighted and inactive when the highlight is removed.

Options available are:

- **Set All** - Places the maximum number of detection zones over the video image. All zones are active. The maximum number of zones for PAL systems is 396 zones (22 wide x 18 high), NTSC systems have 330 zones (22 wide by 15 high).
- **Clear All** - Removes all currently assigned zones. No zones are active.
- **Cancel** - Leave the currently assigned mask(s) and exit without changes.

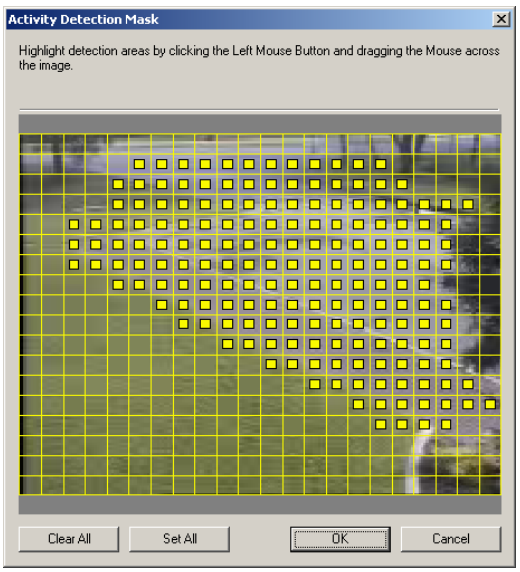

Figure 74: Activity Detection Mask

Contrast Monitoring Tab

The Contrast Monitoring feature is provided as a check that the contrast of the camera image is acceptable. The settings will allow detection of unusually low contrast levels.

The contrast monitoring in FastTrace-R monitors the contrast difference between the brightest part of the camera image and the darkest part of the camera image. If the contrast difference drops below the user defined threshold then an alarm can be generated.

A low contrast alarm will be generated for both the following situations:

- the camera is ‘bagged’ by placing an opaque material over the lens, causing the image to go dark
- the camera has a very bright light shone into the lens, causing the image to flare and ‘whiteout’

If the camera contrast level falls below this limit, then a contrast alarm event is generated. This event is setup via **Operational Behaviour / Camera Behaviour / Event Response / Dial out on invalid contrast.**

Note: During the Preset on Alarm function, images could appear dark and/or blurry, possibly causing FastTrace-R to interpret this as low contrast, and generate a low contrast alarm.

4.3.9 Monitor

A local monitor can be connected to the FastTrace-R and used to display a number of camera views in a sequence.

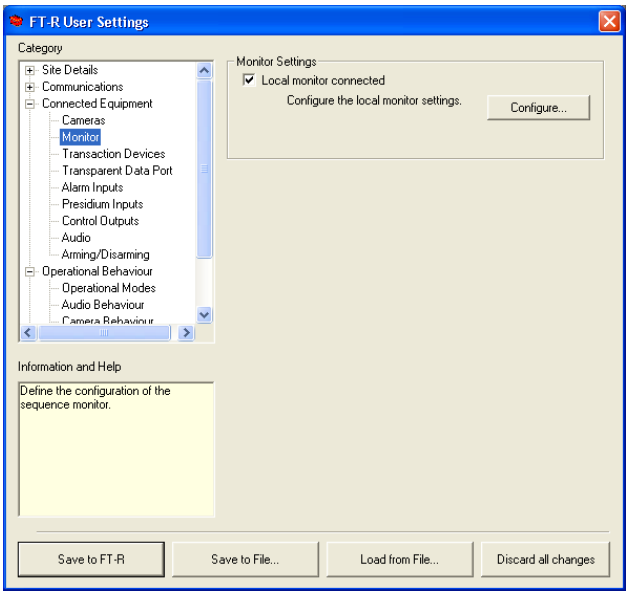

Figure 75: Monitor Menu

Monitor Settings

Set the **Local Monitor Connected** checkbox if a sequence monitor is to be used. Click the **Configure** button to setup the sequence.

Sequence List

The list defines the sequence (order) in which camera images are presented on the monitor. The sequence list can show up to 20 cameras and the checkbox next to the camera number will select that camera for inclusion.

Dwell Time

Options: Range 1 to 99

Factory Default: 2 seconds

Dwell Time is used to control the duration (in seconds) that a camera in the Sequence List is displayed on the monitor. The Sequence Time is common to all active channels and is defined as the duration a channel (camera) is displayed before switching to the next active channel. It can be set from 1 to 99 seconds.

4.3.10 Transaction Devices

The Transaction Interfacing option provides a mechanism to associate video data with EPOS/ ATM transactions. This enables users to historically review data synchronised to video, with the ability to search the data based on keywords and to display corresponding video.

Note: A Transaction Device Software License must be purchased to enable transaction device functionality. Licensing instructions are provided with the purchase of a licence (refer to *Licensing*).

A Transaction Device (for example an ATM or EPOS terminal) can be connected to the FastTrace-R via one of the GP Serial ports or Ethernet port. Up to sixteen transaction devices can be configured.

Note: Please contact your nearest Xtralis office for details of supported equipment.

For information on how to set up a transaction device, please refer to the Transaction Device Software Programmers Manual (document number 11620_01) available on the website - **www.xtralis.com/adpro**.

4.3.11 Transparent Data Port

FastTrace-R supports transparent RS232 data transmission to/from VideoCentral. The port labelled DATA on the rear of the unit is the port used for this connection. This functionality provides the capability to transfer an RS232 data stream from the FastTrace-R unit to VideoCentral, and vice-versa. This type of capability may be useful to support a camera station that is not listed in the supported list for FastTrace-R, or controlling some other industrial equipment at the remote site.

If a VideoCentral user connects to a FastTrace-R with transparent data enabled, the serial port is reserved exclusively for use by that user. Until that user disconnects, no other user can access transparent data.

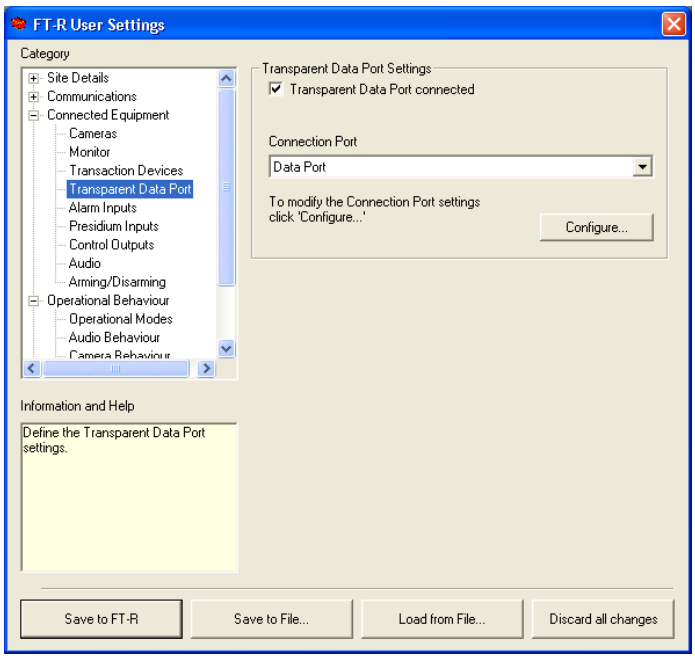

Figure 76: Transparent Data Port Menu

To enable the Transparent Data Port check the Transparent Data Port Connected option.

Note: VideoCentral also requires configuration changes for this functionality (**Database** / **Administration** / **Configure Transparent Data Port**).

The Connection Port drop down list displays the Data Port that is currently allocated in the FastTrace-R system. Select the **Configure ...** button and the following dialog is displayed.

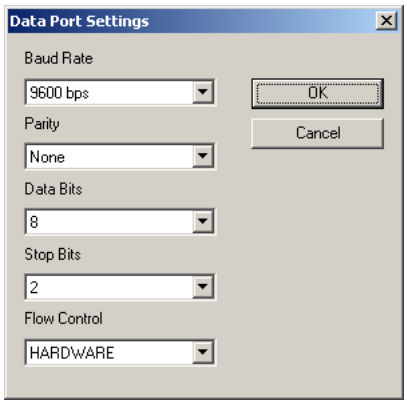

Figure 77: Transparent Data Port Settings

Baud Rate

Options: 1200 bps, 2400 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps

Default: 9600 bps

When configuring the transparent data port, the Baud Rate setting determines the speed that data will be transferred between the FastTrace-R and the RS232 device.

Parity

Options: None, Odd, Even

Default: None

Sets the Parity used when transferring data locally between the transparent data port and the RS232 device.

Data Bits

Options: 5, 6, 7, 8

Default: 8

Sets the number of Data Bits used to transfer data between the transparent data port and the RS232 device.

Stop Bits

Options: 1, 2

Default: 2

Sets the number of Stop Bits used to transfer data between the transparent data port and the RS232 device.

Flow Control

Options: Hardware, None

Default: Hardware

Sets the type of Flow Control used to transfer data between the transparent data port and the RS232 device.

4.3.12 Alarm Inputs

The **Alarm Inputs** option defines a number of parameters about the type and operation of the alarm inputs connected to the FastTrace-R. The number of alarm inputs available will depend on the FastTrace-R Model number.

Select the Alarm Input number from the displayed list. The status of an Alarm Input is shown by a small icon to the left of the channel number.

- An Alarm Input is unallocated when no name is shown next to the number.

Figure 78: Unallocated Icon

- The **Connect** button is used to enable an Alarm Input. A green tick is shown and details can be modified.
- To temporarily disable the use of an Alarm Input, the **Disconnect** button is used and a red cross is shown. For example, set Disconnect if maintenance is being performed in that area or the sensor is being replaced.

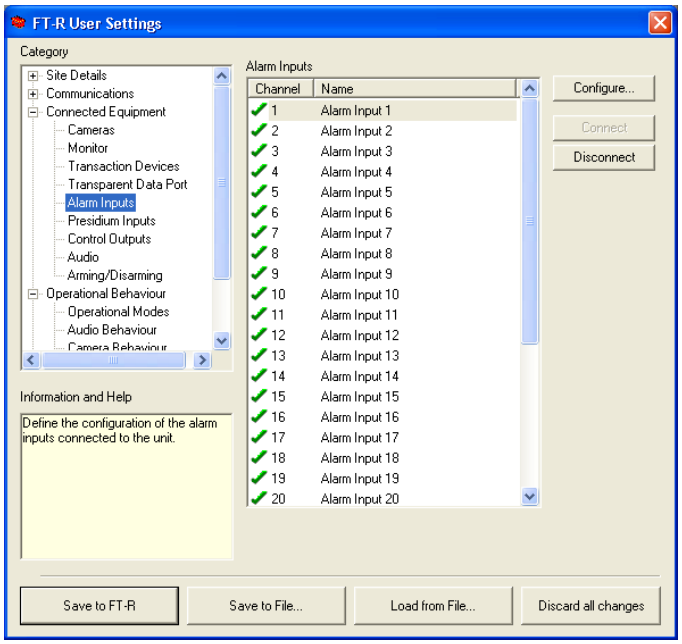

Figure 79: Alarm Contacts List

Alarm Input Settings

When the **Configure** button is used, changes to the **Alarm Input Settings** can be made.

Alarm Input Name

Option: 16 characters maximum.

Enter the name to be associated with this Alarm Input.

Alarm Input Type

Options: Normally Open (N/O), Normally Closed (N/C), N/O SEOL, N/C SEOL, N/O DEOL, N/C DEOL

Default: Normally Open

The FastTrace-R can be programmed to trigger a recording event when the contacts associated with a channel change state. This may be when:

- a normally closed contact changes its state to open, or
- a normally open contact changes to close

The alarm inputs may be supervised to detect tamper (attempting to override the alarm contacts by a cut or short) with either a SEOL (Single End of Line) or a DEOL (Dual End of Line) wiring hierarchy in conjunction with N/O or N/C sensor contacts.

Depending on the alarm wiring strategy, SEOL termination is used to detect either a short circuit on a line or on an open circuit, while DEOL is used to detect both short and open circuit conditions.

Hold Time

Options: When active, 2 sec, 5 sec, 10 sec, 30 sec, 60 sec.

Factory Default: 10 seconds

When there is a requirement that two (related) alarm inputs must be active before a recording event is activated (known as double knock alarm activation), the **Hold Time** option sets the time 'window' for the second alarm input to occur. Event combinations are defined in the **Operational Behaviour** section.

If the second alarm input is not activated within the Hold Time period, no recording event will be generated. Choose the value most suited to the event activation requirement.

Camera View Style for the Triggered Alarm

Factory Default: Live

Cannot be changed for FastTrace-R operation.

4.3.13 Presidium Inputs

The **Presidium Inputs** option enables the configuration of video outputs from a Presidium Intelligent Video System to the FastTrace-R video inputs.

Note: At least one Presidium Input must be configured. If there are no inputs configured, the following Presidium system alarms will not work at the FastTrace-R:

- Presidium Operational
- Tamper alert
- Over Temperature
- Communication to Presidium Lost
- Communication to Presidium Resumed
- Presidium Fault

Note: When connecting a FastTrace-R to a Presidium, each FastTrace-R video input must be directly connected to a Presidium video output. Hence, if the Presidium has 20 channels, a 20 channel FastTrace-R is required to operate all 20 channels.

Select the Presidium Input number from the displayed list. The status of an Presidium Input is shown by a small icon to the left of the channel number.

- A Presidium Input is unallocated when no name is shown next to the number.

Figure 80: Unallocated Icon

- The **Connect** button is used to enable an Alarm Input. A green tick is shown and details can be modified.

To disable the use of an Alarm Input, the **Disconnect** button is used and a red cross is shown. For example, set Disconnect if maintenance is being performed in that area or the sensor is being replaced.

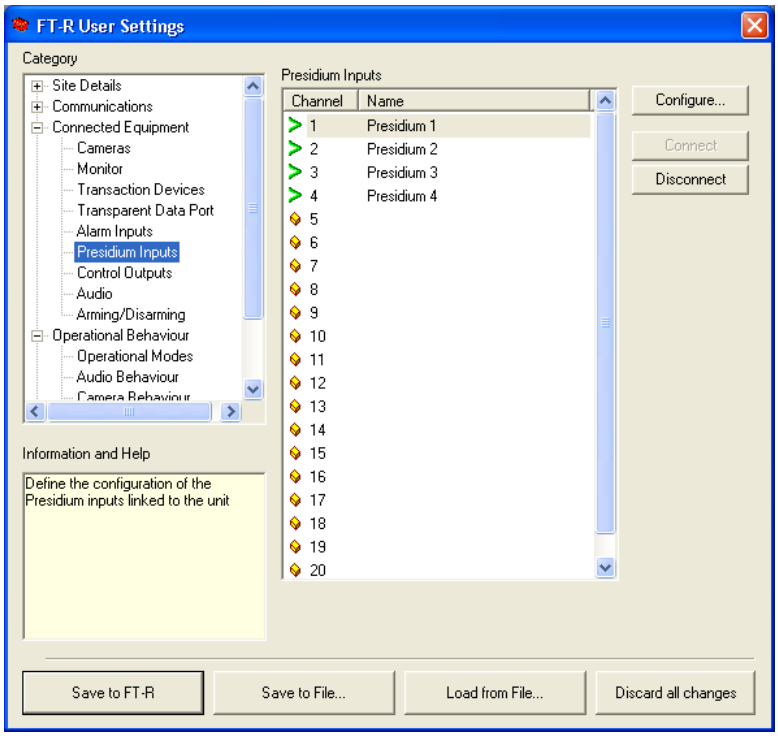

Figure 81: Presidium Inputs List

Presidium Input Settings

Select the **Configure** button to setup the Presidium Inputs.

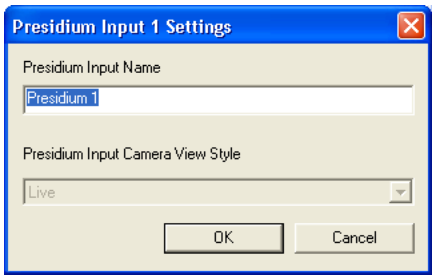

Figure 82: Presidium Input Settings

Presidium Input Name

Option: 16 characters maximum.

Enter the name to be associated with this Presidium Input.

Presidium Input Camera View Style

Factory Default: Live

Cannot be changed for FastTrace-R operation.

4.3.14 Control Outputs

The **Control Outputs** option defines a number of parameters about the type and operation of the output circuits connected to the FastTrace-R. The outputs are 'open collector' transistor circuits used to generate a control signal (upon activation of an alarm) to activate third-party equipment at the remote site, for example a boom gate controller or a floodlight control device.

Select the control output number from the displayed list. The number of control outputs available depends on the FastTrace-R Model number. The status of a control output is shown by a small icon to the left of the channel number.

- A control output is **free** when the 'empty' icon is shown next to the number
- The **Connect** button is used to enable a control output. A green tick is shown and details can be modified
- To temporarily disable the use of a control output, the **Disconnect** button is used and a red cross is shown. For example, set Disconnect if maintenance is being performed on the unit under control.

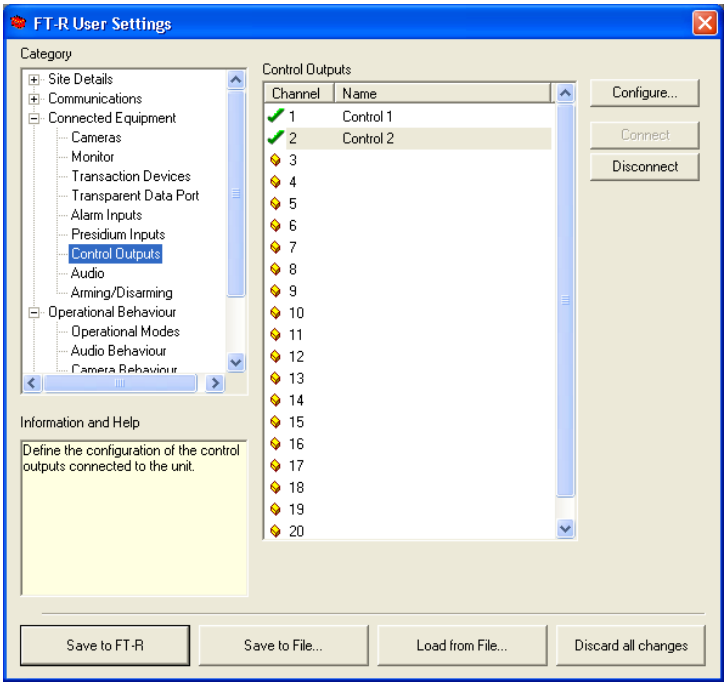

Figure 83: Control Output Settings Menu

Control Output Settings

When the **Configure** button is used, the following settings can be made.

Control Output Name

Option: 16 characters maximum.

Enter the 16 character name to associate with this output. The name can be displayed when viewing video from a camera input associated with this control output.

Default State

Option: Normally Open, Normally Closed

Default: Normally Open

Defines the state of the control output when it is not being driven by an alarm condition or controlled remotely.

When set for ‘normally closed’, the control output is shorted to ground via the output transistor.

Manual Operation

The control outputs can either be operated by an operator at VideoCentral or linked to an alarm condition. Select this box if the VideoCentral operator is to control the output.

Note that this option must be set to allow remote users access to the control output function.

Disconnect Operation

Option: Reset, Latch

Default: Reset

Defines the operational state of the control output after a user has disconnected from the FastTrace-R.

- the **Reset** option returns the output to the condition defined by the *Default State*.
- the **Latch** option causes the control output to remain in its current (operated) condition.

4.3.15 Audio

The **Audio** menu configures the FastTrace-R audio channel features.

FastTrace-R supports combined video and audio operation over communication links that have a minimum data throughput of 14.4 kbps. This provides simultaneous video and audio operation, with an audio bandwidth of 300 Hz-3 kHz, over standard public switched telephone networks (PSTN) as well as high speed digital networks.

Note: Although FastTrace-R always passes audio at the maximum possible bandwidth, the overall audio quality will ultimately depend on the quality of the microphones and speakers connected to the FastTrace-R and the level of background noise in the environment. Tests should always be performed with the desired audio equipment to obtain an understanding of the audio performance.

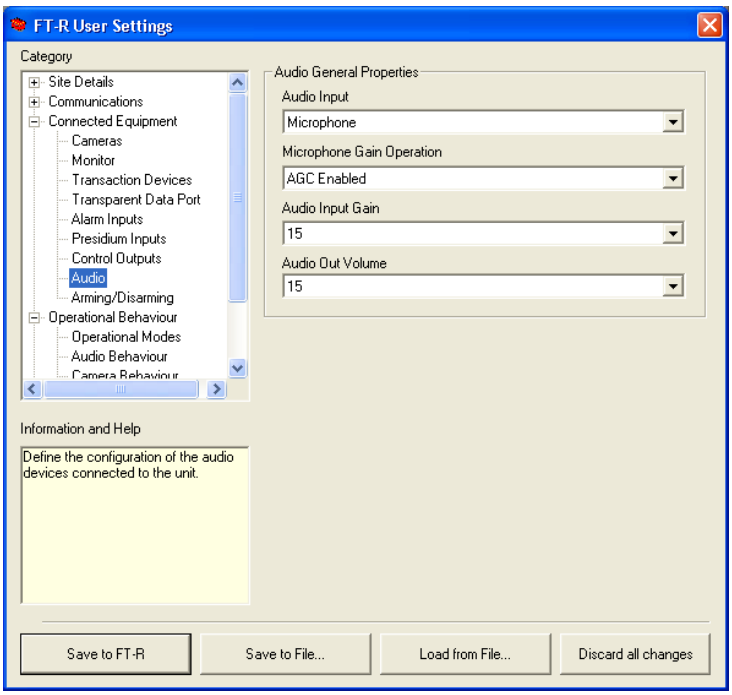

Figure 84: Audio Settings

Audio General Properties

Audio Input

Options: Microphone, Line Input, Switcher

Default: Microphone

Select the type of audio input device connected to the FastTrace-R unit. Refer to *Audio* for details of the hardware connector. Note that only one audio input type can be used, i.e. multiple audio inputs cannot be used simultaneously.

Microphone Gain Operation

Options: AGC Enabled, AGC Disabled

Default: AGC Enabled

Select either AGC Enabled (Automatic Gain Control) or AGC Disabled. This option is only activated when Microphone operation is selected under the Audio Input setting.

AGC is typically used in a more controlled noise environment, such as a Control Room or office, where only a small amount of background noise is present.

Audio Input Gain

Options: Range 0 to 15

Factory Default: 2

Select a Gain level to apply to audio coming into the FastTrace-R unit (from local microphones).

Audio Out Volume

Options: Range 0 to 15

Factory Default: 2

Choose a volume level between 0 (lowest) and 15 (highest) to suit the operational environment.

4.3.16 Arming / Disarming

These option is not used in FastTrace-R.

4.3.17 Operational Behaviour

The Operational Behaviour section and settings defines how the system operates overall and how different elements of the system relate, such as alarm inputs to camera views etc.

In the main Operational Behaviour screen, operators can select how long different types of images are retained for before being erased from the hard-disk storage.

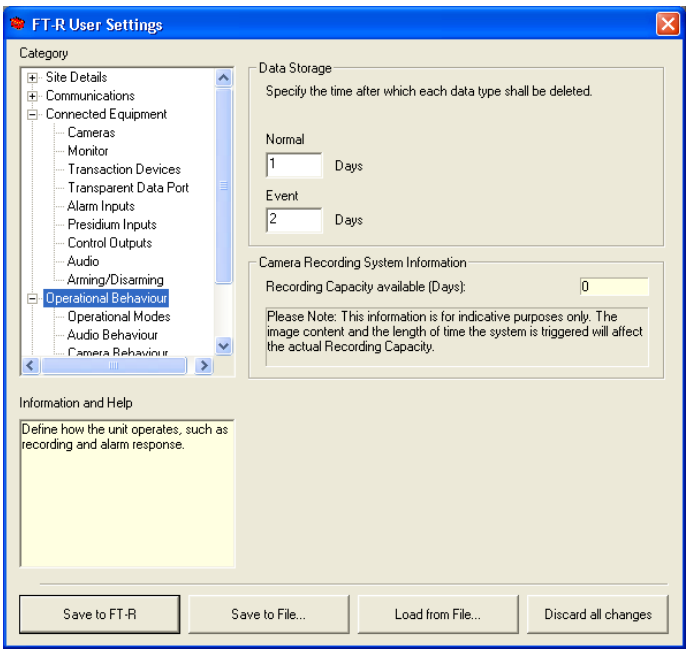

Figure 85: Operational Behaviour Menu

Data Storage

Define the quantity of days that **Normal** (images recorded routinely) and **Event** (images relating to alarms on the system) are to be stored. After this time images **will be deleted** by a data deletion operation, which runs regularly within the system. Note that information cannot be deleted from the FastTrace-R system manually by any means.

Note: **Event** value must always be at least one day more than the value set for **Normal**.

Normal (Recording Retention Time)

Range: 1 to 999

Default: 30 days

The **Normal** Recording Retention Time sets the maximum number of days that the FastTrace-R will attempt to store images in its database. When an image is recorded, the database field is tagged with a retention time value and this value is checked regularly by the unit's database management software. When the field is found to be expired, the disk space will be reallocated for storage of new images.

Caution: Depending on the configuration of the system and the current recording rate at any one time, images may be deleted (over-written) prior to the specified **Normal** retention time, due to the hard disks becoming full.

Event (Recording Retention Time)

Range: 1 day more than the Normal Retention time (mentioned above) up to 1000

Default: 60 days

Event Recording Retention Time sets the maximum number of days that the FastTrace-R will attempt to store images that have been recorded as a result of an (alarm) event. Once the **Event** time has expired, the disk space will be reallocated for new images.

Note: Depending on the configuration of the system and the current recording rate at any one time, images may be deleted (over-written) prior to the specified **Event** retention time, due to the hard disks becoming full.

Camera Recording Information

An indication of how many days of recording is currently available is also provided. This figure is calculated based on a range of variables including:

- Overall hard-disk capacity available.
- Quantity / rate of images being recorded (as defined in *Camera Behaviour)*.
- Quality of the images being recorded (high quality image files are much larger than low quality image files).

Warning: This is for indication only and will be subject to change based on various conditions such as:

- Large amounts of scene change in a camera's field of view (including the use of PTZ cameras).
- High quantities of events and event data being stored.
- Dark, noisy images which can generate large files.

4.3.18 Operational Modes

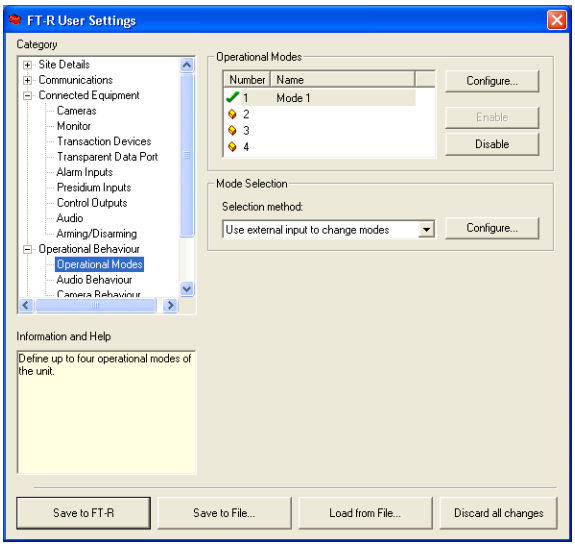

Figure 86: Operational Modes Menu

Up to four different modes can be programmed into the system. Numerous different operational characteristics can be changed within the different modes such as:

- Rate and Quality of images being recorded for individual cameras.
- Event triggers associated with cameras.
- How audio is recorded.

Examples of how operational modes can be used:

Day Mode: Recording is focused primarily on the internal cameras within a building, whilst external cameras have lower recording rates and qualities.

Night Mode: Recording is focused on the external cameras around the site, internal cameras are not recorded until the external system is triggered.

Note: The modes are defined in the following sections (i.e. Audio Behaviour, Camera Behaviour etc).

Any previously entered mode names will appear next to an assigned number. To name a new mode or change the name of a mode, highlight the **Number** and use the **Configure** button to open the **Mode Properties** dialog box.

Recording Mode Name

Options: *<name>* Maximum 16 characters

Enter a descriptive name for this recording mode.

Mode Selection

Options: Use External Input, Use Calendar

Default: Use External Input

Note: The choice of a Mode Selection Method will apply to ALL modes.

Use the **Selection Method** drop-down box to determine how the modes will be changed (either via an input change or by day / time calendar selection) and press the **Configure…** button to define the operation.

The **Use External Input to Change Modes** option is used to configure switching between two modes via the use of the **Mode Select Input** on the rear panel of the unit (Pin 9 of the General I/O connector). Of the four available modes, any two can be assigned. For example, Mode 2 is assigned to an Open input and Mode 3 to a Closed input. When the **Mode Select Input** pin changes state, so does the operational mode of the FastTrace-R between Mode 2 and Mode 3. For example, an alarm panel that latches an output contact state when setting and unsetting the system may provide the contact change. In this instance the operational modes of the FastTrace-R system would follow the status of the Alarm panel.

Use the **Configure** button to open the **Input Mode Selection** dialog box and choose which Mode is to be assigned when the contact is Open and another Mode for assignment to a Closed contact condition.

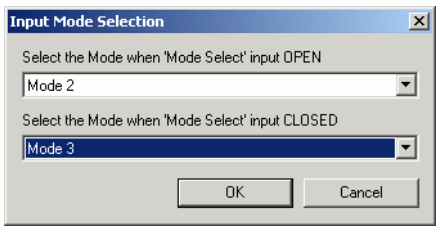

Figure 87: Changing Modes Via an Input

Alternatively, the **Specify Mode Changes in a Calendar** option can be selected when users require access to different modes on a time schedule basis. This option provides a timetable, using time blocks of 15 minutes duration, to assign different modes to individual time blocks, or groups of blocks, to provide the FastTrace-R with a great degree of operational flexibility.

Use the **Configure** button to open the **Mode Calendar Settings** dialog box.

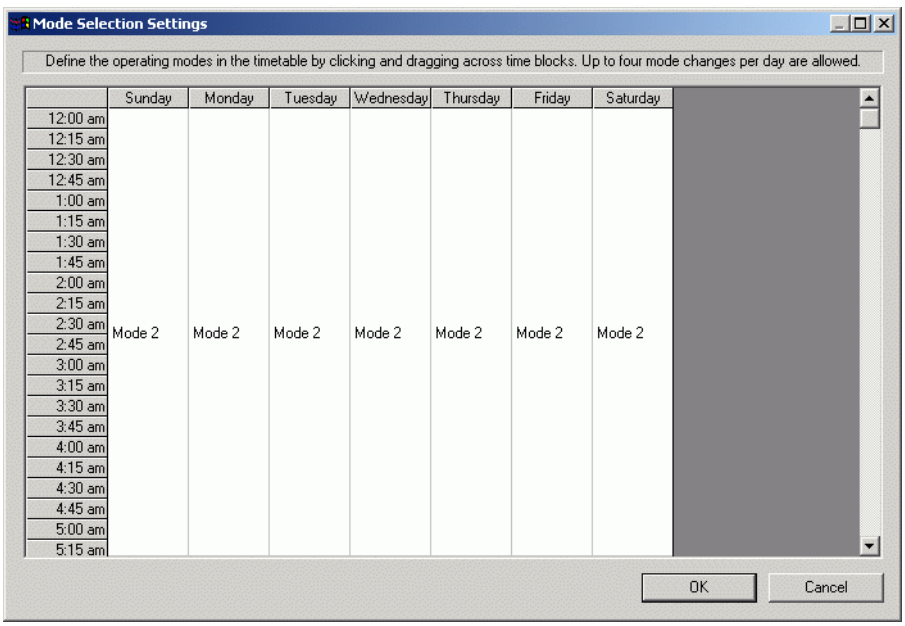

Figure 88: Changing Modes Via Calendar

Note that this calendar uses days and not dates, therefore it is not possible to set specific operations for particular dates such as Christmas or New Year.

Highlight a block within the calendar (this can spread across days as well as times) to be changed by placing the mouse pointer within the calendar, holding down the left mouse button and then dragging the pointer. Upon releasing the mouse button a dialog box is presented with a drop-down selection box providing the options of the various modes (mode names must have been pre-configured).

4.3.19 Audio Behaviour

The Audio Behaviour page determines whether audio information will be recorded to the hard disk(s) during the different modes.

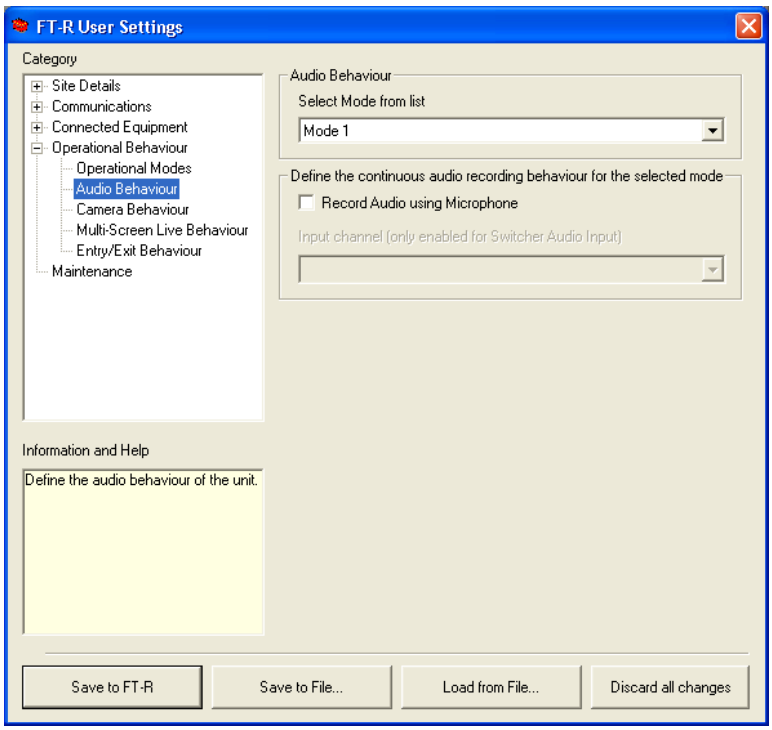

Figure 89: Audio Behaviour Settings

Select the Mode of operation for which the audio is to be configured and then use the check-box to select whether audio is to be continuously recorded throughout this mode.

Enabling the **Record Audio using Microphone** checkbox will cause the FastTrace-R to record information from either a microphone or line input connected via the **Audio Connector** on the rear panel. Recording will occur whenever the unit is using the assigned Mode and will be replayed when any camera is selected.

If the Audio Input device has been configured as **Switcher** in the **Connected Equipment** / **Audio** screen, it is also possible to select which audio channel of the switcher will be recorded (the names presented are the camera names). This allows different audio channels to be recorded throughout the course of the day / week as required.

Note: FastTrace-R is not an audio multiplexer system - i.e. it cannot record multiple channels of audio simultaneously. Only one channel of audio can be recorded at any one time.

4.3.20 Camera Behaviour

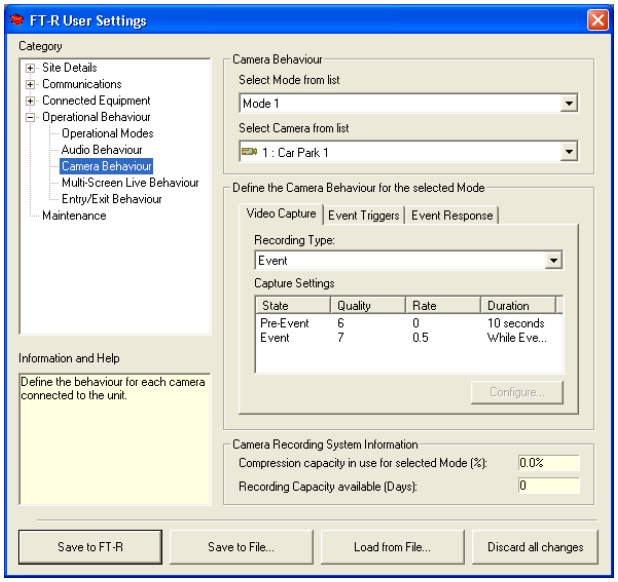

Figure 90: Camera Behaviour Menu

For each camera, the operation for each of the modes needs to be defined (i.e. up to four lots of settings for each camera).

For each Mode / Camera combination, there are three lots of settings that require configuration:

Video Capture: Defines the rules for recording the currently selected camera during the currently selected mode.

Event Triggers: Defines what will trigger this camera channel for the purpose of enhancing and increasing recording.

Event Response: Defines what actions the FastTrace-R system will take if an event is triggered on this camera channel during the currently selected Mode.

The Camera Recording System Information provides some feedback to the installer as to the current capability of the unit.

Compression Capacity: This shows the percentage used of the total recording capacity (images per second) of the unit. i.e. if this is at 50%, then half the total images per second are being used for recording.

Recording Capacity: This provides an estimate of the number of days recording possible based on the normal recording rates configured in the unit. If a great deal of event recording is being used, then this will over-estimate the number of days of recording that can be stored on the unit.

Use the **Select Mode from List** option to choose which Mode is to be configured, then choose the camera to configure from **Select Camera from List**. Cameras that have been previously configured via **Connected Equipment** / **Cameras**, will have their name displayed in this list.

Important: The maximum recording rate of the FastTrace-R is 25 ips (PAL) and 30ips (NTSC) per compression card (at CIF resolution), up to a maximum recording rate of 100 ips (PAL) and 120 ips (NTSC) using four compression cards. The rate is an aggregate of all recording channels and it should be noted that the recording rate of some channels may slow down during alarm conditions to ensure alarm images are recorded.

Video Capture (tab)

The **Video Capture** settings define the conditions that need to be met for video to be recorded. This includes the type of recording, the video quality, recording rate and duration of recording.

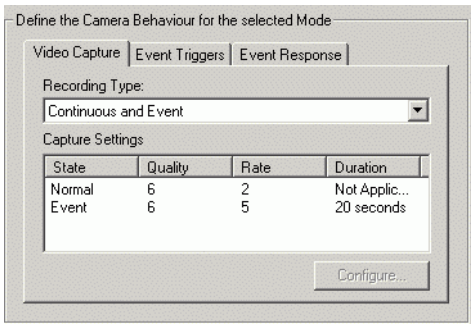

Figure 91: Video Capture Settings

Define the Recording Type to be used on this camera during the currently selected Mode. The options are:

Do Not Record: This camera will not be recorded at all during this mode of operation.

Continuous: The camera will be constantly recorded at the same rate and quality as defined in the **Capture Settings** whilst this Mode is active. No Events (Alarm Inputs or Activity Detection operations) can be applied to the camera.

Event: Images will not be routinely recorded to the hard disk under normal operations. Images will only be recorded when an Event is activated as defined under the **Event Triggers** tab for this particular mode. Within the **Capture Settings** it is possible to define the rate, quality and amount (time) of recording both prior to and after the Event Trigger. The system will also react to an event as defined under the **Event Response** tab.

Continuous and Event: Images will be recorded at all times. When an Event is activated (as defined under the **Event Triggers** tab for this particular mode) the recording rate and quality will be changed as defined in the **Capture Settings** in respect to quality, rate of images and for how long after the event is triggered. The system will also react to an event as defined under the **Event Response** tab.

In the **Capture Settings** box, the quality and amount of images per second can be set. Where Events are being used it is also possible to define for how long before (**Pre-Event**) and after the event trigger (**Event**) the system will continue to record in the defined rate and quality.

To define the **Capture Settings**, highlight the required recording operation (for example Event) and press the **Configure…** button. The following screen is displayed:

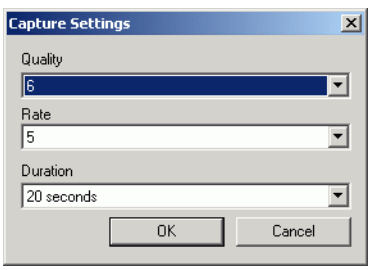

Figure 92: Video Capture Settings

The following table shows the **Capture Settings** defaults:

Table 12: Capture Settings defaults

Capture Setting	Continuous	Event		Continuous & Event	
	Normal	Pre-Event	Event	Normal	Event
Quality (1-7)	4	6	6	4	6
Image Rate (ips)	1	1	5	1	5
Capture Duration (sec)	--	10	30	--	30

Note: It is recommended that the **Quality** and **Image Rate** for **Pre-Event** are set to the same values as **Event**, to ensure that pre-event video quality is satisfactory.

From the drop-down selection boxes, select the:

Image Quality: Range = 1 to 7, where 1 is the lowest quality and 7 is the highest quality. Quality 6 is approximately equal to VHS quality and quality 7 is approximately equal to SVHS.

Table 13: Quality Value versus Resolution

Quality value	PAL Resolution	NTSC Resolution
1	176 x 144 PIXEL	176 x 120 PIXEL
2	176 x 144 PIXEL	176 x 120 PIXEL
3	352 x 288 PIXEL	352 x 240 PIXEL
4	352 x 288 PIXEL	352 x 240 PIXEL
5	352 x 288 PIXEL	352 x 240 PIXEL
6 (>VHS)	352 x 288 PIXEL	352 x 240 PIXEL
7 (>SVHS)	704 x 288 PIXEL	704 x 240 PIXEL

Image Rate: In Images Per Second (ips). Options range from 0.5 (1 image every 2 seconds) to 25ips (real time). At CIF resolution, a value of 25 images per second is used for 'real-time' recording in PAL and 30 ips for real-time recording in NTSC (2CIF = 12PAL / 15NTSC).

Duration: Used with Events, either pre the event trigger or post, depending upon which **Capture Setting** is currently being changed. When setting post trigger event duration, the **While Event Active** option will cause the FastTrace-R to keep recording images until the time the Event is no longer active.

Caution: Use the **While Event Active** option when recording from activity detection triggers to ensure no activity is missed. (If the capture duration option is used with a time setting, the recording only continues for that prescribed time from the start of the activity triggered event which may be less than the total duration of that event.)

Event Triggers

Users can choose from two triggering methods to select how a channel is activated for an alarm event.

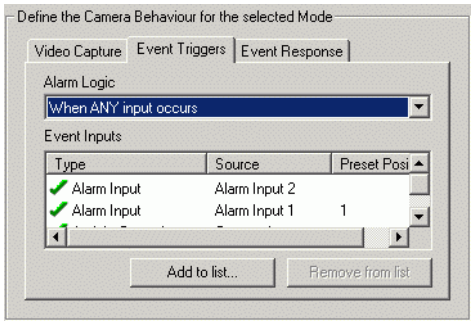

Figure 93: Event Trigger Settings

Alarm Logic

The **Alarm Logic** option is used to set up the logical order in which Alarm Inputs are treated before a recording event is declared to be 'valid'.

Up to ten detectors can be associated with any one camera.

Options: When ANY input occurs, Only when ALL inputs occur

Default: When ANY input occurs

From the drop-down list, select whether this camera will be triggered when ANY of the inputs are triggered (i.e. any one of the events defined in the list below will cause an Event reaction within FastTrace-R) or when ALL inputs are triggered (i.e. when all inputs are triggered simultaneously). When the ALL option is selected, the Hold Time for the various inputs as previously defined (in **Connected Equipment** / **Alarm Inputs**) will also be used.

Event Inputs

For the **Alarm Logic** to operate, one or more Event Inputs must be assigned. Use the **Add to list** button to display the Event Input Settings dialog.

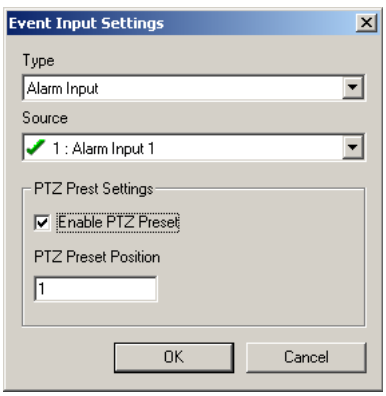

Figure 94: Event Input Settings

Up to 10 different Event Inputs and associated presets can be configured for each camera in the currently selected Mode.

Select the type of Event Input (either Alarm Input, Activity Detection or Transaction Device) and the **Source** (the Alarm Input Channel or Video Channel in the case of Activity Detection). Note that any alarm input or activity detection on any camera channel can be used to trigger any camera on the system.

The **Source** for an Event Input is defined by the settings in **Connected Equipment** / **Alarm Inputs** (refer to *Alarm Inputs*).

Transaction devices are defined in **Connected Equipment / Transaction Devices** (refer to *Transaction Devices*).

Caution: If a camera has an associated Alarm Input and the Alarm Input is triggered whilst the camera is in the no video state, then no alarms are reported via dial out.

PTZ Preset Settings

Options: 1 - 99

Default: 1

If the camera is a PTZ camera, then Presets on Alarm can be used. For each event input, a camera preset can be configured. The event input can be Alarm Input, Activity Detection or Transaction Device, but it is not possible to assign presets on a PTZ camera for activity detection occurring on the same camera.

The PTZ Preset Settings will be unavailable if the Type is set to Activity Detection, and the Source is an associating PTZ camera station. If the user attempts to use Activity Detection on a PTZ camera, the following warning message will be presented.

Figure 95: Event Input Settings - Programming Error

Video Motion Detection (VMD) from a PTZ-equipped camera can specify a preset position when used as an event trigger for another PTZ-equipped camera, however, since this is not normally desired behaviour the following warning message will be displayed.

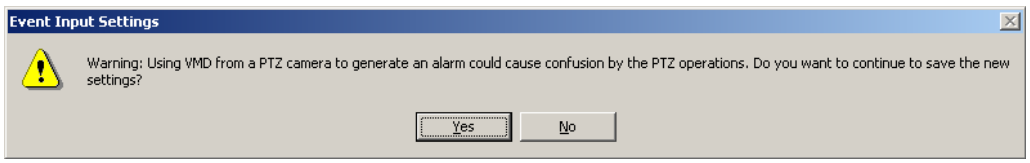

Figure 96: Event Input Settings Warning

VMD from a fixed camera (non PTZ-equipped) can specify a preset position when used as an event trigger for a PTZ-equipped camera.

For a PTZ-equipped camera, the setup interface will not enforce that all triggers specify a preset position; it is acceptable that for some PTZ-equipped cameras the user may wish not to specify any presets. No warnings will be displayed in these configurations.

If using the **Only When ALL Inputs Occur** logic, only the first pre-set on the list will be active. If another Alarm Input is configured for the same PTZ camera, its preset will not be available, and will be displayed with an (N/A) beside the Preset Position.

Note: Please refer to PTZ Tech Tips for connection and setup information on the website - **www.xtralis.com/adpro**.

Editing a Detector's Preset

To edit a detector's preset:

1. Double click the event input to be modified. The Event Input Settings dialog box is displayed.

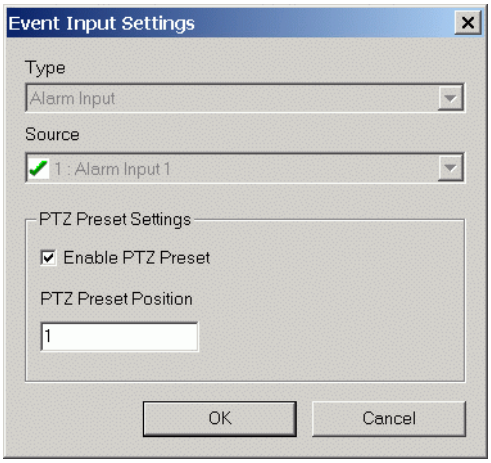

Figure 97: Event Input Settings

The Type and Source selections are greyed out, enabling the operator to only change the PTZ Preset Settings.

2. Enter the appropriate settings and click **OK**.

Event Response

Once an Event has been declared, the **Event Response** settings are used to define the actions that will be taken in response to the Event.

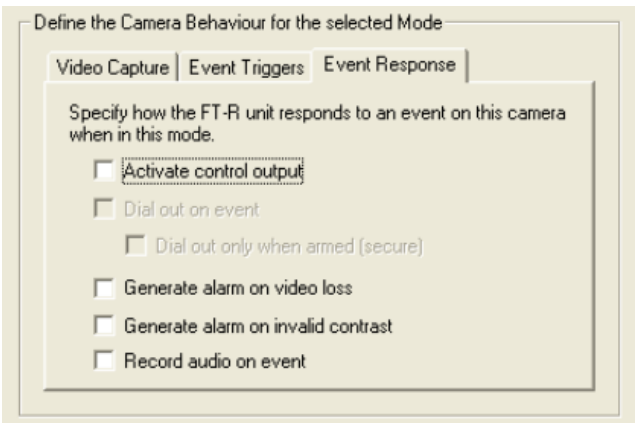

Figure 98: Event Response Tab

Activate Control Output

When checked, the control output correlating to the camera channel number currently being programmed will be activated for a period as defined in the **Alarm Input** / **Hold Time** (refer to *Alarm Input Settings*) upon full activation of an event. Refer to *Control Outputs*.

Note: If the assigned Control Output number has been specified for **Manual Operation**, then an error message will be displayed.

Generate Alarm on Video Loss

Options: Yes, No

Factory Default: Yes

When checked, FastTrace-R will generate and alarm in the event of lost video on this camera channel due to camera disconnection or output failure. Note that this operation is looking for presence of video by the Sync Pulse - this is not a Contrast (or 'Black-bag') alarm.

Important: If the camera Recording Type has been set to 'Do Not Record', then a 'Generate Alarm on Video Loss' will not occur. There must be a Recording Mode selected for an alarm to be generated.

Generate Alarm on Invalid Contrast

Options: Yes, No

Factory Default: No

Select the **Generate Alarm on invalid contrast** checkbox if operators are to be notified if a Contrast Alarm condition occurs on this camera. A contrast alarm will occur if the camera contrast level changes to a level that lies outside of a user definable range.

Important: If the camera Recording Type has been set to 'Do Not Record', then a 'Generate Alarm on Invalid Contrast' will not occur. There must be a Recording Mode selected for alarm generation to occur.

Record Audio on Event

When checked, audio will be automatically recorded when an event is triggered on this channel during the current mode. If the VM22A Audio Switcher is being used, audio relating to this camera channel will be recorded.

Note: As there is only one audio channel, Live Audio has priority over Alarm Audio and Alarm Audio has priority over normal recording.

4.3.21 Multi-Screen Live Behaviour

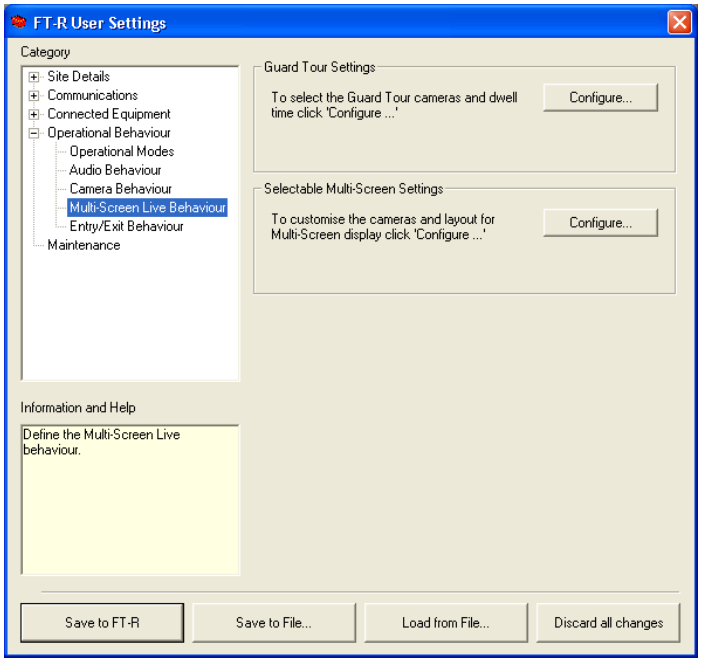

Figure 99: Multi-Screen Live Behaviour Menu

This feature allows the user to view multiple channels in Live Mode simultaneously, in preset configurations.

VideoCentral V8.04 or higher and FastTrace-R system software version 1.00 or higher must be installed on the transmitter for Multi-Screen to be available. The system will not allow any user to access the Multi-Screen functionality if the FastTrace-R transmitter does not support it (due to its hardware or software configuration).

The performance of the Multi-Screen Live feature is dependant on the number of compression cards installed in the FastTrace-R unit. A minimum of two compression cards are required for the Multi-Screen Live feature to operate effectively. For maximum performance, one extra compression card should be fitted over and above the number required to meet the required recording rates.

The FastTrace-R will only allow one connected user to use Multi-Screen functionality at any one time.

All other users (connected currently or in the future) will not be able to access Multi-Screen as long as the functionality is reserved by another user, unless their privilege level is higher than that of the connected user.

For a connected user to release the Multi-Screen functionality, the user has to:

- select any video mode other than Multi-Screen (this includes Pause),
- disconnect, or
- lose it to a more privileged user.

The highest privilege level is CMS Operator. All connected users will receive a notification when the Multi-Screen Status changes.

Guard Tour Settings

Guard Tour operation provides a sequence through cameras programmed on the FastTrace-R unit. Depending on the display configuration (single screen or 4, 7, 9, 10, 13, 16 or 20 way split) the system will display all cameras and sequence through on the screen, or sets of cameras will be displayed. For instance if 16 cameras are configured for Guard Tour operation and a 4 way split is chosen, then the display will sequence through the first four cameras, then swap to the next four cameras.

To select which cameras are included in the Guard Tour click on the **Configure** button.

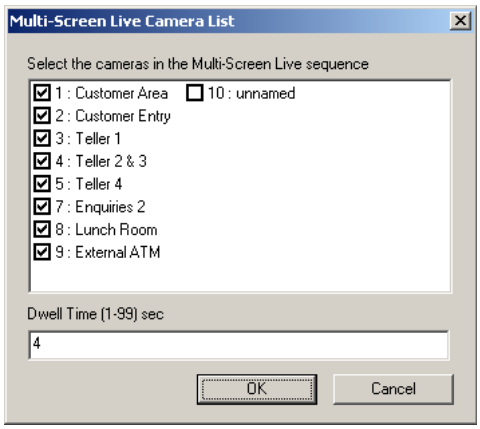

Figure 100: Guard Tour Camera List

Check the cameras needed in the Guard Tour and also enter a Dwell Time.

Selectable Multi-Screen Settings

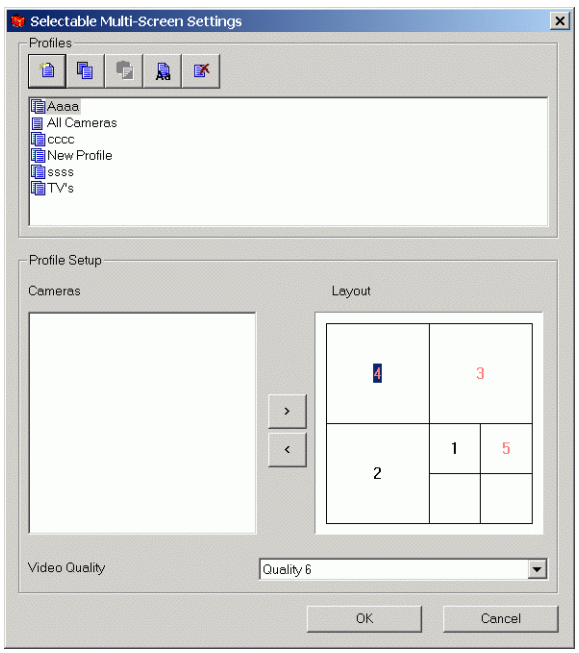

Figure 101: Selectable Multi-Screen Settings

The user can create and configure different Multi-Screen profiles according to their preferences.

The following screen splits are supported: Single Screen, 4-way, 7-way, 9-way, 10-way, 13-way, 16-way and 20-way.

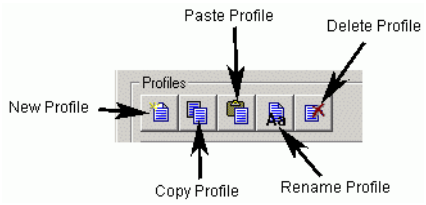

Figure 102: Multi-Screen Settings Buttons

Adding a New Profile

- Click the **New Profile** button.
- A new entry 'New Profile' will be added to the General Profiles listbox. If a profile with this name already exists, the name will be 'New Profile <number>'.
- The cameras list box will show a list of all connected cameras (in numerical order), and Layout control will have the smallest split size. Video Quality value will default to 'Same as Guard Tour'. For best update rates, quality 6 or lower is recommended.

Renaming an Existing Profile

- Select the profile.
- Single click the profile again (or press **F2**) to enable editing of the name.
- Cancel the changes by clicking **Esc** or accept the changes by clicking outside the name.

If the modified name matches an existing profile, a warning will be provided and changes will be discarded.

Renaming a profile is disabled for the default **All Cameras** profile.

Copy and Paste an Existing Profile

- Select the Profile.
- Click the **Copy Profile** button.
- Any time later (as long as nothing was placed in the Clipboard) click the **Paste Profile** button.

The copied entry will default to the name of the source profile and will need to be renamed immediately.

Deleting an Existing Profile

- Select the Profile.
- Click **Delete Profile** button.

Warning messages will popup asking for confirmation. If profile deletion is confirmed, the profile name will be removed from the list. The highlight will be moved to the profile name above. Deletion will be disabled for 'All Cameras' profile.

Adding a Camera from the Cameras Listbox to the Profile Layout Control

- Highlight the camera entry in the Cameras listbox.
- Click on the **[>]** button to add the selected camera to the layout.

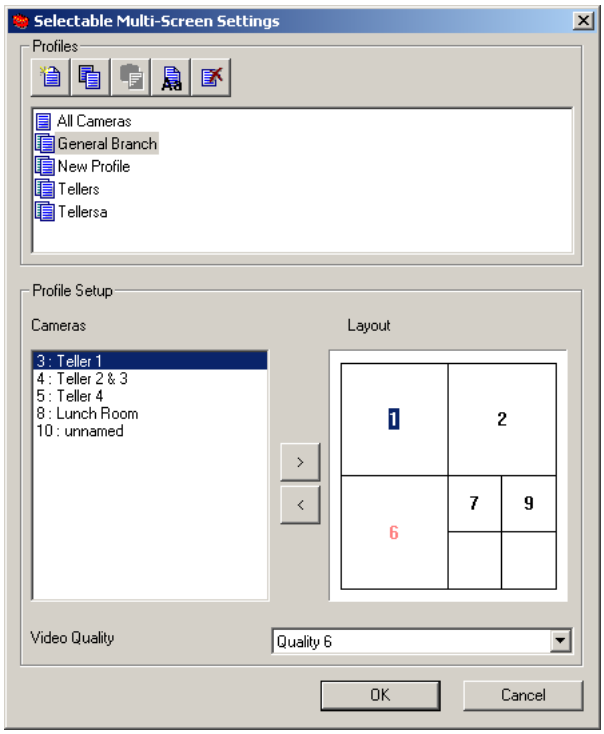

Figure 103: Selectable Multi-Screen Settings

As a result of this:

- The selected camera will be removed from the Cameras listbox
- The selected camera will be added to the Profile Layout.

If there are vacant spaces in the Layout, the camera will be placed in the first available space. Otherwise, the Layout Split Size will be changed to the next higher Split Size.

The order of cameras will be preserved.

Remove a Camera from the Profile Layout Control

- Highlight the camera entry in the Profile Layout control.
- Click on the **[<]** button to remove the selected camera from the layout.

As a result of this:

- The selected camera will be added to the Cameras listbox. The Cameras listbox will maintain numerical order of cameras.
- The selected camera will be removed from the Profile Layout control.

Layout control will shift the remaining cameras to fill the vacant place. If necessary, the Layout Split Size will be changed to the next lower Split Size. The ordering of cameras will be preserved.

Modifying a Profile Layout

The placement of cameras within the layout can be altered at any time using Drag and Drop operations.

This reshuffle will always involve two cameras swapping their placements, as Layout control will not allow a camera and a vacant place to swap locations.

4.3.22 Entry/Exit Behaviour

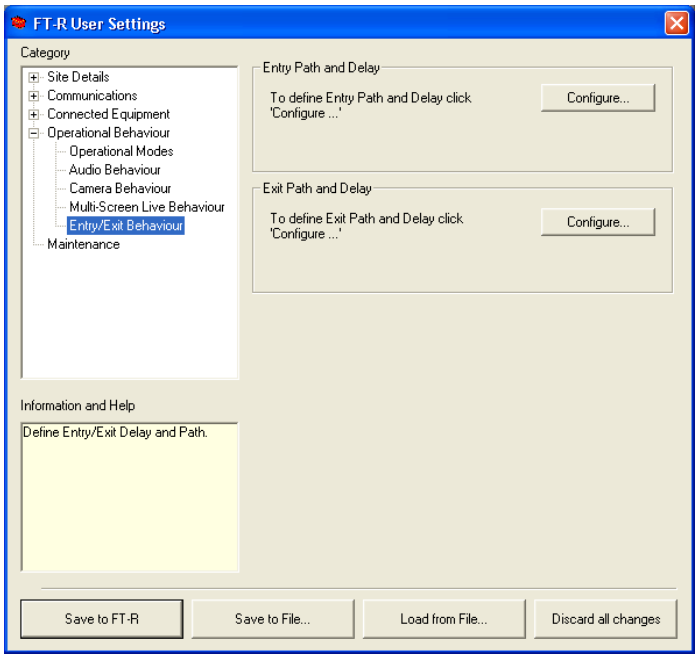

Figure 104: Entry Exit Behaviour

This option is not available in FastTrace-R. Clicking on the Configure button will display the following message.

4.3.23 Maintenance

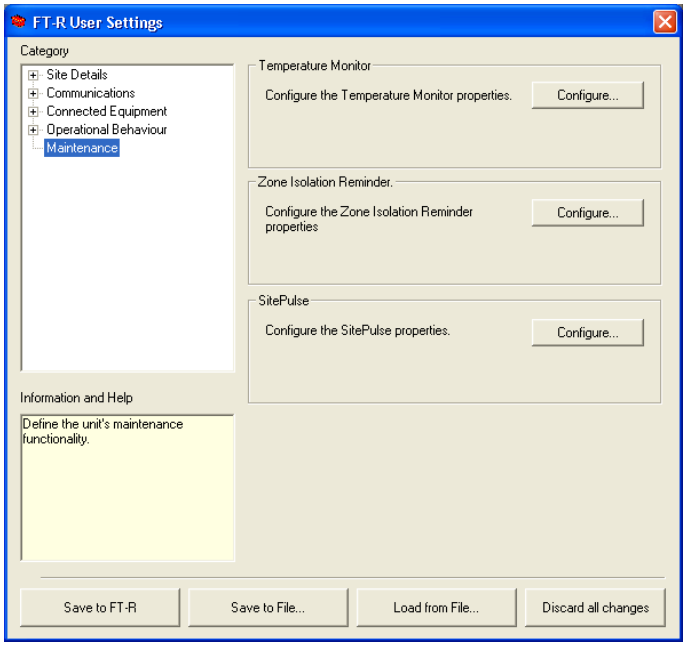

Figure 105: Maintenance Menu

The maintenance options available on FastTrace-R are:

- Temperature Monitor
- Zone Isolate Reminder

Temperature Monitor

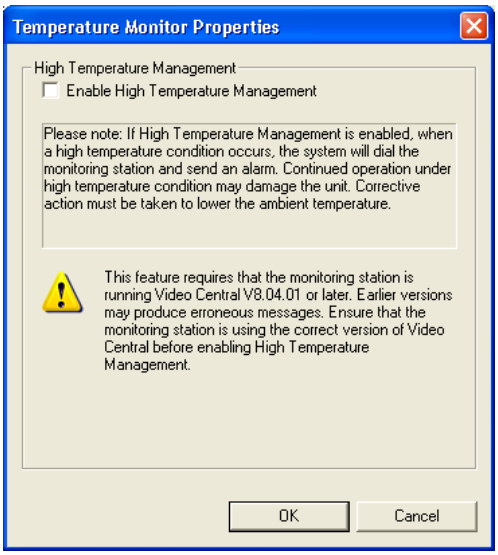

Figure 106: Temperature Management

FastTrace-R monitors the internal temperature of the hard disk drives and has the option of generating an alarm if the temperature exceeds an upper limit of 65°C.

If High Temperature Management is Enabled

When the internal temperature of any disk drive rises above the high temperature threshold, FastTrace-R will initiate an over-temperature condition and generate an alarm. The FastTrace-R fault relay will activate during the over-temperature condition. The FastTrace-R will continue to operate normally after reporting the over temperature condition but urgent action must be taken to ensure that the ambient temperature complies with FastTrace-R's 40°C maximum operating temperature specification. Continued operation at a temperature exceeding the specified maximum may damage or reduce the useable life of FastTrace-R.

When the temperature falls below the low temperature threshold, the over-temperature condition will be cleared and the fault relay will de-activate.

If High Temperature Management is Disabled

No over-temperature alarm will be generated and the fault relay will not activate for an over-temperature condition. The unit will continue normal recording.

Note: It is recommended that only specified hard disk drives recommended by ADPRO personnel be used. If non recommended hard disk drives are installed, temperature information received from the drive used for temperature management may be erroneous, causing damage to the FastTrace-R and/or incorrect reporting of alarms.

Zone Isolate

The Zone Isolate feature allows a central monitoring station operator to prevent an alarm detector from generating alarms. This feature is useful in a number of scenarios:

- Commissioning a FastTrace-R
- Fault finding an installation
- Configuring detectors
- Disabling faulty detectors

Any VideoCentral operator is able to view the current state of detectors on the connected FastTrace-R. However, only CMS operators can modify Zone Isolate status. Observers are locked out from any Zone Isolate capability. The isolation status of a zone will persist after a reboot of the FastTrace-R, allowing the installer to rectify any detector problem before the detector is unisolated.

Zone Isolate Reminder

If zones are isolated on FastTrace-R, then a periodic reminder can be generated by FastTrace-R to highlight upon connection, this fact to an operator.

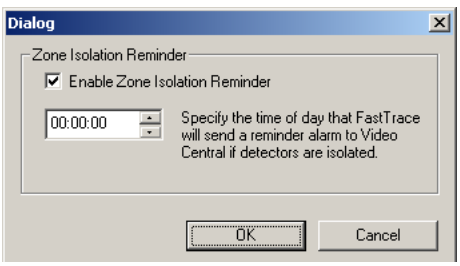

Figure 107: Zone Isolate Reminder Settings

This will remind the operator that zones have been isolated and that they should be unisolated.

To enable this option, tick the check box, then enter an appropriate time to generate the reminder.

SitePulse

This option is not available in FastTrace-R. Clicking on this option will display an information message.

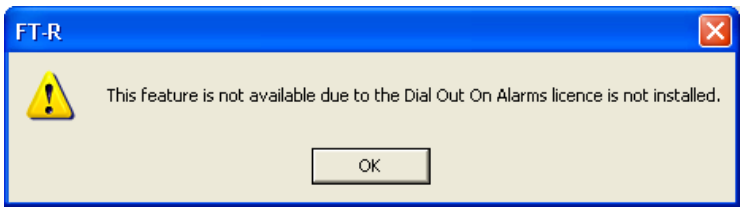

Figure 108: Licence Information Message

5 Event Log

VideoCentral has the capability to download the contents of a remote FastTrace-R 'site event log' for review. This feature is useful when carrying out system diagnostics, or investigating problems associated with events at the site.

The event log may be downloaded from Review mode.

In Review mode, select the **Perform a Search** button.

Figure 109: Perform a Search Button

The **Search** dialog is displayed. Select the **Log** tab.

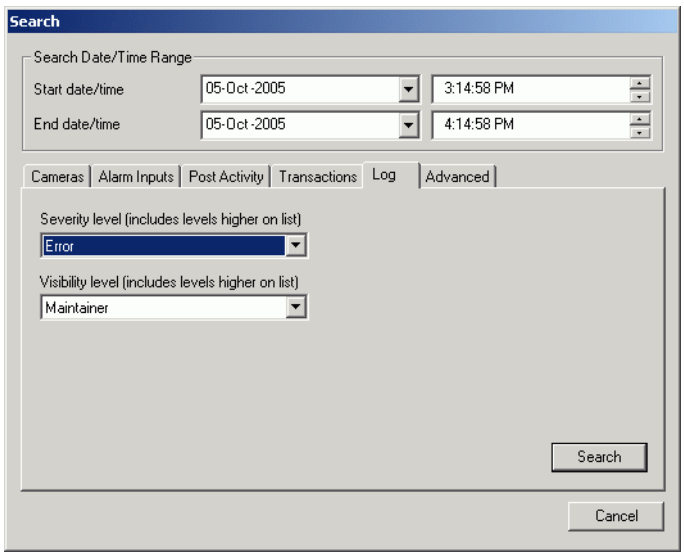

Figure 110: Log Search Dialog

The user is prompted to enter a range of search options to decide the desired severity, visibility and time range.

The minimum time range is 5 minutes, and the maximum time range is 1 month.

The options available for severity are Fatal, Error, Warning, User action and Informative. Each option includes any options higher on the list, i.e. selecting Informative will display all log entries. (Refer to *Table 14* on page 109.)

The options normally available for visibility are Maintainer and User. Each option includes any options higher on the list, i.e. selecting User will also display log entries with Maintainer visibility. (Refer to *Table 15* on page 111.)

When the user presses the **Search** button VideoCentral will download logs according to the selections. Each log is displayed as a summary in the event list at the bottom of the screen, as a line on the timeline, and if a frame is set to display Event Details then the details for the current log are shown there. Log entries are treated the same as review events, with the related camera being set to Event Details.

These details are displayed in the language that VideoCentral was configured to use at the time they were downloaded.

5.1 Save the Event Log

The results of an event log search may be saved as follows:

1. Select the **Save events or logs** button.

Figure 111: Save Event or Logs button

2. Select a location to save the text file, enter a filename and select **Save**.

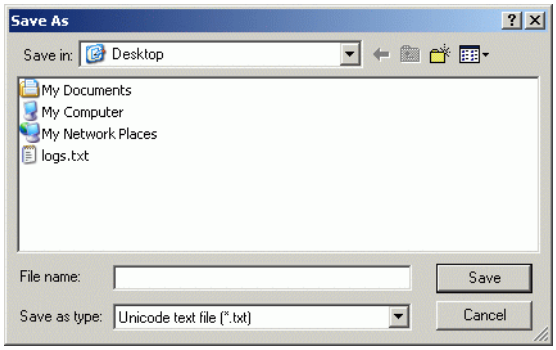

Figure 112: Save As Dialog

Note: If the file is loaded in a standard text-editor such as Notepad, it will not appear correctly in columns. This is because the tabs are the column delimiters, whereas text editors only treat them as indentation. It should be viewed in a program such as Microsoft Excel, which understands this format and can display it appropriately.

A20 = 16/10/2007 10:45:51 AM

	A	B	C	D	E	F
1	Site Time	Details	Event Type	Source	Duration	Visibility
2	15/10/2007 12:28	Log Entry : User action	Communications - 2	Connection established		Maintainer
3	15/10/2007 12:28	Log Entry : User action	Communications - 2	Remote user ID set		Maintainer
4	15/10/2007 13:01	Log Entry : User action	Communications - 2	Remote user ID set		Maintainer
5	16/10/2007 9:43	Log Entry : User action	Communications - 2	Connection terminated		Maintainer
6	16/10/2007 10:28	Log Entry : User action	Communications - 2	Connection established		Maintainer
7	16/10/2007 10:28	Log Entry : User action	Communications - 2	Remote user ID set		Maintainer
8	16/10/2007 10:30	Log Entry : User action	Application system - 2	System shutdown requested by user		Maintainer
9	16/10/2007 10:30	Log Entry : Fatal	Application system	System is shutting down		Maintainer
10	16/10/2007 10:31	Log Entry : Warning	Operating system	FTP services enabled		Maintainer
11	16/10/2007 10:32	Log Entry : Warning	Dial out	Dial out failed		Maintainer
12	16/10/2007 10:33	Log Entry : Warning	HLI	Communication to Presidium Lost		Maintainer
13	16/10/2007 10:34	Log Entry : User action	Communications - 1	Connection established		Maintainer
14	16/10/2007 10:34	Log Entry : User action	Dial out - 1	Alert acknowledged		Maintainer
15	16/10/2007 10:34	Log Entry : User action	Communications - 1	Remote user ID set		Maintainer
16	16/10/2007 10:34	Log Entry : User action	Dial out - 1	Alert acknowledged		Maintainer
17	16/10/2007 10:45	Log Entry : User action	Communications - 2	Connection established		Maintainer
18	16/10/2007 10:45	Log Entry : User action	Communications - 2	Remote user ID set		Maintainer
19	16/10/2007 10:45	Log Entry : User action	Communications - 1	Remote user ID set		Maintainer
20	16/10/2007 10:45	Log Entry : User action	Communications - 1	Connection terminated		Maintainer
21						

Figure 113: Log File Displayed in Excel

5.2 Severity and Visibility Levels

The following table details the Severity assigned to the FastTrace-R event logs.

Table 14: Assigned Severity of FastTrace-R Event Logs

Severity	Functional Area	Title
Detail	Motion Detection	Activity detected
Detail	Motion Detection	Activity stopped
Detail	Control Output	Control Output active
Detail	Control Output	Control Output inactive
Informative	Alarm	Started mode
Informative	Alarm	Finished mode
Informative	Alarm Input	Alarm input active
Informative	Alarm Input	Alarm input clear
Informative	Alarm Input	Tamper active
Informative	Alarm Input	Tamper clear
Informative	Application system	System is starting up
Informative	Application system	System is running
Informative	ATM	ATM transaction
Informative	ATM	ATM transaction started
Informative	ATM	ATM transaction finished
Informative	Database	Data files repaired
Informative	Database	Disk added
Informative	Digital input	Site Secure
Informative	Digital input	Site accessible
Informative	Digital input	Mode select active
Informative	Digital input	Mode select inactive
Informative	Dial out	Entry delay started
Informative	Dial out	Entry delay finished
Informative	Dial out	Exit delay started
Informative	Dial out	Exit delay finished
Informative	Motion detection	No video from camera
Informative	Motion detection	Video restored on camera
Informative	Motion detection	High video contrast on camera

Severity	Functional Area	Title
Informative	Motion detection	Normal video contrast on camera
Informative	Settings	Default settings used
Informative	Settings	Settings changed by the user
Informative	Time	Daylight savings started
Informative	Time	Daylight savings ended
User Action	Application system	System shutdown requested by user
User Action	Application system	Settings changed by the user
User Action	Audio	Override refused
User Action	Audio	Override applied by user
User Action	Audio	Override cancelled by user
User Action	Camera station	PTZ acquired by user
User Action	Camera station	PTZ released
User Action	Communications	Connection established
User Action	Communications	Connection terminated
User Action	Control output	Override released by user
User Action	Digital input	Site disarmed by remote user
User Action	Digital input	Site armed by remote user
User Action	Time	Time changed
User Action	User jobs	File updated by user
Warning	Database	Disk cleared
Warning	Database	High Temperature
Warning	Database	Normal Temperature
Warning	Dial out	Alert discarded
Warning	Settings	Settings restored from backups
Warning	User jobs	Error reading settings
Error	Application System	Settings change failed
Error	Database	Software error
Fatal	Application System	System is shutting down

The following table details the Visibility assigned to the FastTrace-R event logs

Table 15: Assigned Visibility of FastTrace-R Event Logs

Log Title	Visibility	Comments
System shutdown requested by user	Maintainer	
System is shutting down	Maintainer	
System is starting up	Maintainer	
System is running	Maintainer	
Error reading settings	Maintainer	
Default settings used	Maintainer	
Settings restored from backups	Maintainer	
Daylight saving started	User	
Daylight saving ended	User	
Disk cleared	Maintainer	
Disk failed or disk changed	Maintainer	
Disk added	Maintainer	
Persistent data lost	User	
Connection established	Maintainer	
Connection terminated	Maintainer	
Incoming connection from remote host	User	An attempt is made by a remote host to establish socket connections with FastTrace-R. The remote IP address is recorded in the Description field.
Incoming modem connection	User	FastTrace-R received an incoming call on the modem.
Requesting dial out	Maintainer	This message will be seen when an alarm is generated ie. “no video” during normal operation. Only valid when the dial-out license is installed.
Dial out failed	Maintainer	This message will be seen when an alarm is generated ie. “no video” during normal operation. Only valid when the dial-out license is installed.
Time changed	Maintainer	The time was changed.
Remote user ID set	Maintainer	The remote user ID. The description field will contain the user ID.
Override refused	Maintainer	
Override applied by user	Maintainer	
Override released by user	Maintainer	
Override cancelled by user	Maintainer	
Site armed by remote user	Maintainer	

Log Title	Visibility	Comments
Site disarmed by remote user	Maintainer	
Isolation refused	Maintainer	
Isolation applied	Maintainer	
Isolation removed	Maintainer	
Isolation reminder	Maintainer	
PTZ acquired by user	User	
PTZ released	User	
Multi-screen acquired	User	
Multi-screen released	User	
Settings changed by the user	User	
Settings change failed	User	
File updated by user	User	
Data files repaired	User	
Alarm input active	User	
Alarm input clear	User	
Tamper active	User	
Tamper clear	User	
Site secured	Maintainer	
Site accessible	Maintainer	
Mode select active	User	
Mode select inactive	User	
High temperature	Maintainer	
Normal temperature	Maintainer	
Activity detected	User	
Activity stopped	User	
No video from camera	User	
Video restored on camera	User	
Contrast alarm on camera	User	
Normal contrast on camera	User	
ATM transaction	User	
ATM transaction started	User	
ATM transaction finished	User	

Log Title	Visibility	Comments
Started mode	User	
Finished mode	User	
Control output active	User	
Control output inactive	User	
Alert generated	Maintainer	This log is not new, but any alerts that do not produce one of the alert-specific messages will result in this log getting generated. There should be no such alerts, so we should never see this log entry.
Alert sent to user	Maintainer	
Alert acknowledged	Maintainer	
Alert discarded	Maintainer	
Entry delay started	User	
Entry delay finished	User	
Exit delay started	User	
Exit delay finished	User	
No video alert generated	Maintainer	A No-Video alert was generated.
Vmd alert generated	Maintainer	A VMD alert was generated.
Contrast alert generated	Maintainer	A contrast alert was generated.
Alarm input alert generated	Maintainer	An alarm input alert was generated.
Alarm input tamper alert generated	Maintainer	An alarm input tamper alert was generated.
Digital input alert generated	Maintainer	A digital input alert was generated.
POS ATM alert generated	Maintainer	A POS/ATM alert was generated

6 FastTrace-R Impounding

The FastTrace-R Impound feature is used when the FastTrace-R unit contains potential evidence and it is deemed that the storing and/or exporting of FastTrace-R data using VideoCentral is not sufficient.

Installers will normally change the Impound settings of a FastTrace-R at the request of the site owner.

Dip Switch 6 must be enabled on the FastTrace-R unit to enable the Impound feature (refer to *Configuration Switches*). A power cycle is then required to complete the configuration.

While FastTrace-R is in the impound state, no data shall be written to or deleted from the hard disks or flash memory. This has the following implications:

- No video, audio, events, or logs will be written.
- All User Settings, other than those based on hardware switches, cannot be modified.
- Persistence across reboot will be compromised.
- Any system functionality that relies on Persistence across reboot will also be disabled. This includes isolation of detectors, secure override, and time change.
- FastTrace-R logging will be compromised.
- Data (video, audio, events, logs) may be retrieved from FastTrace-R.
- Inconsistencies of data (e.g. due to powering off during a write, hard disk read errors, or exchanging hard drives) WILL CONTINUE TO BE REPAIRED. Normally, this will only occur during the next power-on after impounding, since writes will no longer happen.
- A FastTrace-R unit cannot be upgraded.

VideoCentral can be used to read data from an impounded site at a later point in time. VideoCentral will display a warning if an operator views a connected FastTrace-R site that is impounded. This warning can be acknowledged by clicking on the **OK** button. Both an acknowledgement or non-acknowledgement of this warning will be logged to the VideoCentral database.

When the impounding is removed, significant portions of data may be deleted, depending on how long the site was impounded and the retention policies. If a site must be impounded, the user would be wise to impound the site as soon as possible after the event occurred. The time the data will be kept depends on the number of record jobs, whether an alarm was generated when the event occurred, retention policy, etc.

7 Testing the FastTrace-R System

7.1 Installation and Testing Checklist

There are a few do's and don'ts on top of basic installation practices that should be followed to ensure a good and trouble free FastTrace-R installation.

- Upon unpacking the FastTrace-R ensure that all the required components are there and that you have received the right equipment.
- Remember that the FastTrace-R can only process what it is given. If you provide the FastTrace-R with a bad quality picture you will record bad quality pictures. The FastTrace-R can not in any way improve on the picture quality it receives from the camera.
- Always check the picture quality going into the FastTrace-R, at the FastTrace-R. Just because you have good quality pictures at your video switcher or Multiplexer does not mean that you will get good quality pictures going into the FastTrace-R.
- When the alarm inputs of the FastTrace-R are triggered, it is vitally important that the camera is covering the complete scene protected by the sensor, otherwise it may be easy to interpret a genuine alarm as a false one.
- Make sure that your alarm inputs are programmed correctly for the way that your sensors are operating. If these are incorrect it may appear that the FastTrace-R is working but you will actually find that your alarms are triggering when your intruder leaves the sensors view (when the sensor goes back to its inactive state) rather than when the intruder originally tripped it. This may mean the intruder is not seen and the event may be recorded as a false alarm.
- The FastTrace-R's alarm inputs are available on 15 way screw terminal blocks not a 20 way. This means that you have 10 inputs and 5 commons (all of the commons are commoned together). It is a common mistake to wire your sensors expecting to find that each of the alarm inputs has its own common.
- When testing the FastTrace-R make sure that you walk test all of the sensors and as you trip each one make sure that the FastTrace-R records correctly. When reviewing, ensure you can see who tripped the alarm and that the alarm picture that is brought up is from the correct camera.
- If audio is fitted make sure that you get good quality in both directions.
- If you get bad quality audio:
    - Check the available bandwidth the FastTrace-R has allowed for the audio at VideoCentral.
    - Check that the cabling from the microphone is shielded and is not going near any obvious sources of electrical noise (such as monitors).
    - Check that the audio cable is not running in the same cable as the power for the speakers and microphones.
    - Make sure that the central station is also capable of connecting into your site, as just

because you can dial out does not mean they can dial in.

- Check that all cameras are recording as expected by reviewing stored video.

8 Upgrading the FastTrace-R Software

The FastTrace-R software can be upgraded via VideoCentral or FT-R Viewer software running on a PC or laptop. The software can be upgraded over any communications network, as long as a connection can be established between the FastTrace-R and PC. The time for the upgrade to occur will vary depending on the communication speed of the link.

8.1 Software Upgrade Process

The process to upgrade the FT-R software is as follows:

1. From VideoCentral or the FT-R Viewer, connect to the FastTrace-R to be upgraded. The CMS password must be used to gain access to the upgrade capability, so ensure that in the Site List the CMS password is entered. Also ensure that no alarms are pending.
2. Select the **Remote Upgrade** icon as shown below from the **Site Actions** flyout:

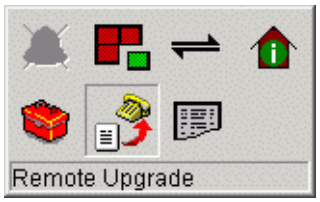

Figure 114: Upgrade Icon

3. The upgrade file selection dialog will appear. Select the file via the **Browse** function and click **OK**.

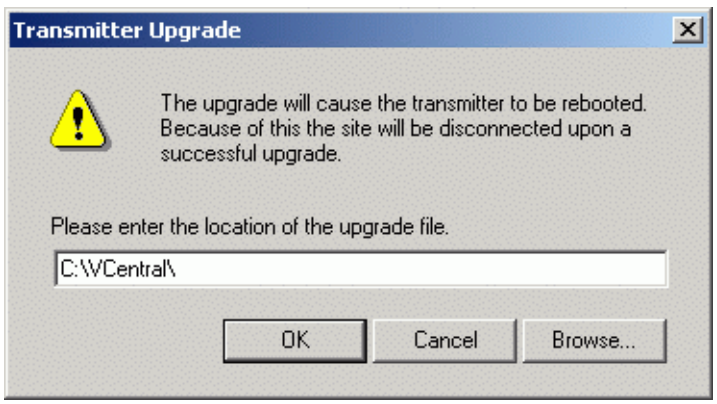

Figure 115: Upgrade Dialog

4. Select **Yes** from the confirmation dialog. The 'flying papers' popup will now appear.

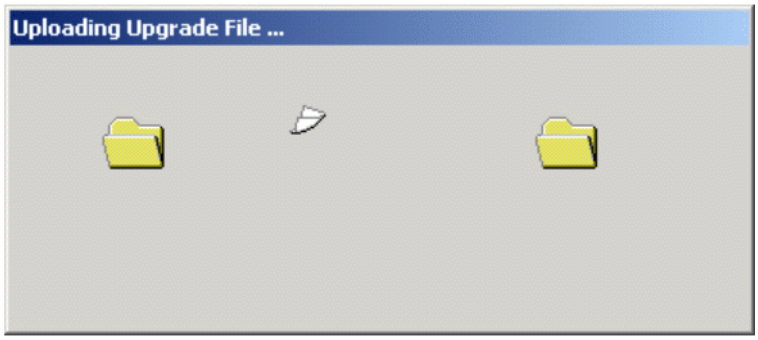

Figure 116: 'Flying Papers' Pop-up

5. Once the upgrade file has completed downloading, which may take from 30 seconds on a network connection up to 10 minutes on a modem connection, the 'flying papers' will disappear, the FastTrace-R will disconnect and then reboot.
6. Please wait a few minutes for the new software to restart the FastTrace-R system and then reconnect to the unit.
7. Check the FT-R software has upgraded successfully by checking the software version. This is done by clicking the **Site Actions** icon and selecting the FT-R tab. The display tab should show the new software version number.

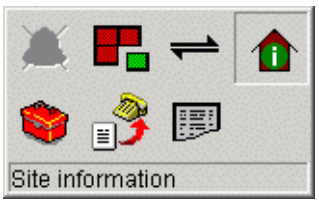

Figure 117: Site Actions Icon

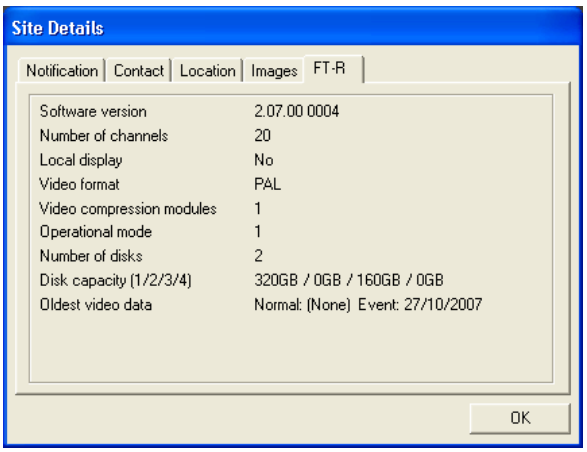

Figure 118: Site Details Tab

9 Specifications

9.1 FastTrace-R

A FastTrace-R system consists of one or more units and a PC running the VideoCentral software. Connection is via a TCP/IP based Ethernet network, dial-up, leased telephone lines or ISDN.

Function	Description
Video inputs	Model 5010 = 10 video inputs, Model 5020 = 20 video inputs, 1 volt p/p video input, 75 ohm or high impedance, selectable via menu.
Colour / Monochrome Operation	Colour or monochrome. Default operation is for colour. Individual channels can be selected as monochrome (B&W).
Video output	1 BNC composite video output designed to drive a 75-ohm load.
Video standard	Either PAL or NTSC (switch selectable).
Colourburst lock range	PAL 4.433619 MHz ± 230 Hz NTSC 3.579545 MHZ ± 179 Hz
Recording image resolution	2CIF, PAL: 704 x 288 pixels 2CIF, NTSC: 704 x 240 pixels CIF, PAL: 352 x 288 pixels CIF, NTSC: 352 x 240 pixels
Grey Scale Resolution	256.
Video Compression Engine (VCE)	Maximum of 4x VCE modules per chassis. Image compression is via customised H.263 compression algorithm resulting in an average of 3 KB per images at CIF resolution picture quality 6 and 6KB per image at 2 CIF resolution picture quality 7.
Recording rate, aggregate across all channels at CIF resolution.	With 1x VCE: PAL: 25 images per second, NTSC: 30 images per second. With 2x VCE: PAL: 50 images per second, NTSC: 60 images per second. With 3x VCE: PAL: 75 images per second, NTSC: 90 images per second. With 4x VCE: PAL: 100 images per second, NTSC: 120 images per second. Note that for 2CIF resolution, these recording rates are halved.
Hard Disk Drive (HDD) capacity	Maximum 4x HDD, IDE interface, internally mounted.
Video Display modes at video output	Full screen spot or sequence monitoring.
Image transmission rate	Typical transmission rates (subject to amount of scene activity): Ethernet: 25 images per second ISDN: 128 kbps = 12.5 images per second PSTN 33.6 kbps = 3 images per second

Function	Description
Alarm inputs	Model 5010: 20 alarm contact sensing or logic level inputs. Model 5020: 30 alarm contact sensing or logic level inputs. Programmable to trigger an alarm on contact opening or closure. All inputs have impedance >1 K ohm and transient protection >20 KV. Single End-of-Line (SEOL) or Dual End-of-Line (DEOL) tamper detection on each input. Screw terminal connectors. Voltage input less than 0.8 V = logic low, 7 mA (maximum). Voltage input between 3.5 V and 5.0 V = logic high. Minimum alarm contact duration = 100 milliseconds
Activity Detect Zones	The maximum activity detection area is defined by the number of available detection zones: 396 zones (22 wide x 18 high) using CIF PAL resolution (352 x 288 pixels) 330 zones (22 wide x 15 high) using CIF NTSC resolution (352 x 240 pixels) A detection zone represents a screen area of 16 x 16 pixels.
Control outputs	Model 5005 and Model 5010: 10 open collector outputs. Model 5020: 20 open collector outputs. Screw terminal connectors. 12 Vdc (maximum), 100mA (maximum) 'On state' output voltage less than 1.1 V @ 100 mA.
General Alarm Relay output	Form C, single pole changeover. Relay contact ratings: 1.0 amp, 32 volts.
Network Port	1x Ethernet 10BaseT / 100BaseT compatible supporting TCP/IP. RJ-45 connector.
Serial Communication Interface	2x V.24 asynchronous interfaces - 8 data bits, 1 stop bit, no parity, programmable data rate steps from 9600 to 230400 bps. 1x 9 pin male D, 1x 25-pin male D. Configured as a DTE device. Supports Hayes (AT) compatible ISDN and PSTN modems in dial or leased line configuration. Support for Multilink PPP or V.120 data protocol over ISDN.
GP Serial Ports	2x General Purpose (GP) serial RS-232 data ports for POS/ATM connection. 9 pin male D connectors. Configured as a DTE device. Maximum baud rate of 38,400 bps. Programmable number of data bits (6, 7 or 8), stop bits (1 or 2), parity (odd, even, none),).
Data (Transparent) Interface	Bi-directional (transparent) RS-232 serial data link between the Transmitter and Receiver. Configured as a DTE device. Programmable baud rate from 1200, 2400, 4800, 9600, 19200, 38400, and 57600 bps. Programmable number of data bits (7 or 8), stop bits (1 or 2), parity (odd, even, none), flow control via handshaking (or Off). 9 pin male D connector.
I/O Interface	1x 'Mode Select' input pin. Programmable control of mode numbers assigned to pin state. Available via 15-pin male D connector.

Function	Description
Audio Switch Interface	Audio In/Out to VM22A or third party Audio Switcher. Bi-directional audio sent simultaneously with the video (full duplex). Bandwidth: 300 Hz to 3.3 kHz. Input impedance: >6 k ohms. Input level: 10 mV to 400 mV RMS (nom) Output impedance: >6 k ohm. Output level: 315 mV (nom)
	Serial Output for Channel Number sequencing. Open drain outputs (binary coded hex) indicating the currently selected channel. 32V maximum, 100 mA maximum, output impedance <0.5 ohm Refer to VM22A Audio Switcher manual for details of serial protocol.
Audio Connector	Direct connection via 9-pin screw connector. Microphone: Differential impedance >3 k ohm Single-ended impedance >6 k ohm Nominal signal level is 100 uV to 10 mV rms. Speaker: 1 Watt (max) into 8 ohm load.
	Line In: Unbalanced input impedance >6 k ohm Nominal signal level is 10 mV to 400 mV rms. Line Out: Unbalanced output impedance = 600 ohm Nominal level is 315 mV rms.
Power requirements	AC Operation 110 - 240 volts, 5A, 50 - 60 Hz
Construction & dimensions	Standard 19” rackmount, 3U high subrack to DIN4194. 482 mm (19”) W x 132 mm (5.25”) H x 280 mm (11”) D
Weight (fully configured condition)	11 Kg (22 lb)
Temperature range	Operating range 0 degC to 40 degC (32 degF to 104 degF) Humidity less than 90% non-condensing.
EMC Compliance	EMC Emission: EN55022:1998 (CISPR 22:1997) / AS/NZS 3548:1995 + A1, A2 Class A Conducted and radiated emissions FCC Part 15 Class A Conducted and radiated emissions EN61000-3-2:1995 Mains harmonic current emissions EN61000-3-3:1995 Voltage fluctuations and flicker EMC Immunity: EN50130-4:1995 +A1 Alarm Systems Immunity EMC Directive 89/336/EEC and carries CE marking
Safety Compliance	EN 60950:1992 +A1, A2, A3, A4, + A11 IEC60950: 1991 +A1, A2, A3 & A4 Low Voltage Directive 73/23/EEC and carries CE marking UL Listed to US and Canadian Safety Standards UL File Number E219750
Warranty	24-months on all components except Hard Disk Drive (HDD) units where manufacturers warranty and conditions apply.

Function	Description
Supported Serial Telemetry Stations	360vision Amux IEC Baxall ZMX, Baxall ZTX BBV Burle COHU Conway CS-LiLin Dennard 2050 Diamond Elbex Ernitec GPS Grundig Harris JVC Kalatel Cyberdome, Kalatel KTD 12x Mark Mercer Molynx Pacom Panasonic (Conventional), Panasonic (New) Pelco, Pelco Coaxitron, Pelco Spectradome Philips Sensormatic, Sensormatic Controller, Sensormatic Speed Dome VII Siemens Synectics Unidex Vantage Juno VCL Vicon Video Switch Vista Powerdome Xeno Neodome
Supported Down the Coax Telemetry Stations	Baxall Coax Alt, Baxall Coax Std BBV Coax Pelco Coax Ext
Supported Transaction Devices	NCR ATM (on Ethernet port) AVE VSSI-PRO (on Serial Port) with NCR protocol. Generic Serial Interface
Supported Modems and Terminal Adaptors	Generic Modem Generic Terminal Adaptor Codex 326X Dynalink 1456VQE DataLink ELSA ISDN Terminal Adaptor EICON Diva ISDN Terminal Adaptor Hayes Accura 28.8 K US Robotics Sportster 28.8 K US Robotics Courier V.90 TA440SP 64K ISDN Terminal Adaptor TA440DP 128K ISDN Terminal Adaptor

9.2 VideoCentral Lite Minimum Specifications

Function	Description
Operating System	Windows XP Service Pack 2 (Professional Edition) or Windows 2000 (Professional Edition) Windows Server 2003
Hardware Requirements	Intel Pentium III or Celeron, processor speed 800MHz minimum
	512 MB memory
	Hard disk capacity > 10 GB
	CD-ROM
	Windows compatible keyboard and mouse
	10BaseT / 100BaseTX compatible LAN card
	Video card / VGA driver, 128-bit recommended, PCI or AGP slot usage / 1024 x 768 pixels resolution, 16 million colours