



**Baxall Vivid Digital Video Recorder
User Manual**



IMPORTANT

The first few pages of these instructions contain important information on safety and product conformity. Please read, and ensure that you understand this information before continuing.



**TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS
APPLIANCE TO RAIN OR MOISTURE**

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The following symbols are used in this manual:



An exclamation mark within a triangle, indicates an important installation, operating or maintenance (service) instruction. Failure to read and adhere to these instructions may:

- Be potentially hazardous or operationally risky
- Result in equipment failure or incorrect operation
- Possibly invalidate the manufacturers warranty



A lightning flash, within a triangle, indicates that there are un-insulated “dangerous voltages” present that may be of sufficient magnitude to constitute a risk of electric shock.



The recycling symbol, indicates that an item may need proper disposal or recycling in accordance with applicable local government, state or federal laws.

IMPORTANT SAFETY NOTICES



Attention: The Vivid DVR is a professional piece of equipment that is designed for use within a commercial environment for general security and surveillance applications. Installation and service should be performed by suitably qualified personnel only in accordance with local government, state or federal laws.



Power disconnect: The Vivid DVR has no “on/off” switch. Power is disconnected by switching off the supply to the Vivid DVR’s external power supply unit (PSU) at the mains electrical supply socket and removing the DC power cord from the back of the Vivid. For this reason, the mains electrical supply socket should be close to, and easily accessible from the Vivid DVR.



Warning: To reduce the risk of fire or shock, do not expose the Vivid DVR or its PSU to rain or moisture.



Vivid DVR instructions: Read and comply with all the safety, installation and operating instructions for the Vivid DVR when installing and operating your new system.

Keep all the safety, installation and operating instructions supplied with the Vivid DVR for future reference.

If you are unsure about any aspect of the instructions supplied with the Vivid DVR, please contact your local Baxall distributor, dealer or installer before proceeding to install, set-up or use the system.



Other equipment instructions: The Vivid DVR cannot be installed and operated without being connected to other equipment within a complete CCTV system, such as cameras and monitors. Read and comply with all the safety, installation and operating instructions for the equipment you intend to connect your Vivid DVR to when installing and operating your system.

If you are unsure about any aspect of the instructions supplied with the equipment you intend to connect to your Vivid DVR, please contact your supplier.



Ventilation: To avoid the risk of overheating and a reduction in the operating life of the Vivid DVR, ensure that no ventilation openings in the system are blocked and that the installation instructions contained in this document are adhered to.

Do not install the Vivid DVR near any heat sources such as radiators or hot air ducts.



Lifting and handling: The Vivid DVR is heavy and may cause injury if incorrectly lifted or handled. Always follow your local Health and Safety or OSHA guidelines when lifting the Vivid DVR from its package or installing the unit.



Rough handling: The Vivid DVR contains hard disk drives. These are sensitive to shock and easily damaged – especially when the system is powered up. Rough handling or sharp shocks to the system, whether during installation or during system use, may damage the hard disk drives and possibly invalidate the system warranty.



Electrostatic-sensitive device: During installation, and especially if working inside the Vivid DVR’s chassis, always use proper antistatic precautions, including correctly fitted wrist straps, to avoid damage to the Vivid DVR or its internal electronics from unintentional electrostatic discharge.

IMPORTANT SAFETY NOTICES

Fast Transients and Surge: regardless of the inbuilt protections of the Vivid DVR, Baxall Ltd recommend that appropriate fast transient and surge protection is fitted to all vulnerable cables, such as video and Ethernet cables and that other cables, such as s-video cables, SCSI cables, etc., are kept to lengths of less than 3m to minimise risk of damage to the Vivid DVR or loss of valuable video data.



All installations: Baxall Ltd strongly recommend that for all installations – especially those that may be security critical, or that are in areas subject to surges, dips, or interruptions in the mains electrical power supply – that a suitable uninterruptible power supply (UPS) is used to condition and protect the Vivid DVR and its peripherals.



Warning: The primary purpose of this product is to digitise, compress, record and playback CCTV video. The other secondary features of this product, such as motion detection, alarm handling and audio recording, are provided for convenience and should not be relied upon as the primary means of meeting requirements for these functions in an installation.



Lithium battery: The Vivid DVR contains a replaceable lithium battery. This battery must only be replaced by a suitably qualified service engineer with the same type as originally fitted to the system.

After removal the original battery must be disposed of or recycled in accordance with local government, state or federal laws.



Warning: Risk of explosion. Do not incinerate the replaceable lithium battery in the Vivid DVR.

REGULATORY NOTICES**FCC (USA Only)**

This device 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.

⚠ WARNING

This 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.

CE Mark (EU Only)

The manufacturer declares that the product supplied is compliant with the provisions of the EMC Directive 89/336 EEC, the Low Voltage Directive 72/23 EEC and the CE marking directive 93/68 EEC and associated amendments. A "Declaration of Conformity" in accordance with the above directives is held on file at Baxall Limited, Stockport SK6 2SU, England. A copy of which is available upon request.

⚠ CAUTION

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

UNPACKING

Check you have the following items included in the Vivid DVR package:

- Vivid DVR
- External power supply unit, with integral 12V power cord
- IEC electrical mains power cord
- 2 rack mounting brackets
- Vivid DVR User manual
- Vivid DVR PC Remote Viewing Software (on CD-ROM)

INTRODUCTION

Welcome to the Vivid DVR User manual. This manual contains all the information you need to install, set up and operate your Vivid DVR.

Read and Retain Safety Notices

Read and retain for future reference the Vivid DVR Safety Notices above. If you are unsure about the meaning of the Safety Notices or any other aspect of the Vivid DVR User manual, please contact your local distributor, dealer installer or Baxall Ltd for guidance before proceeding to install, set-up or use the Vivid DVR.

Gather Equipment and Tools

Ensure you have all the other equipment and tools you require for your Vivid DVR installation. For a minimum installation, you will require:

- At least one PAL or NTSC CCTV surveillance camera and power supply.
- At least one (main) CCTV surveillance monitor and power cord, compatible with the PAL or NTSC surveillance camera above.
- Suitable coaxial cables to connect the camera to the Vivid DVR and either a coaxial or S-Video cable to connect the Vivid DVR to the monitor.
- A standard Ethernet cable if the system is to be connected to a network.

Ensure you are familiar with all of the safety and installation requirements of the other equipment you plan to install with your Vivid DVR before proceeding with the installation process.

Note: Other equipment, typically a TV monitor, may be supported on top of the Vivid DVR – provided the weight of the other equipment does not exceed 16Kg (35 pounds), the ventilation holes and fans in the side of the Vivid DVR are not obstructed, and the equipment placed on top of the system is not outside the operating temperature range of the Vivid DVR.

OVERVIEW

The Vivid DVR is a purpose made embedded digital video recorder designed for closed circuit television (CCTV) security and surveillance applications.

The Vivid DVR combines into a 1½U single 19" rack sized unit the functionality of a:

- Video multiplexer,
- Digital video recorder,
- Network video server.

Key features of all Vivid DVRs include:

- Powerful embedded 32bit RISC for purpose made performance and functionality.
- JPEG2000 image compression for high quality picture recording and advanced image compression features.
- Up to two internal ATA hard disk drives and SCSI-2 i/o for market leading video storage capability.
- USB 2 for convenient connectivity to standard PC USB keyboards, USB CD-RW or DVD-RW devices and USB memory sticks.
- Front key pad (or external USB keyboard or remote keyboard) control of market leading domes for low cost PTZ integration.
- Fast (100bT) Ethernet with TCP/IP support, network viewing software and SNMP network management for advanced network video replay, integration and management capabilities.
- Linux operating system for reliable 24/7 operation and the ability to support 3rd party developed value-added applications.

In addition, all Vivid DVRs feature a comprehensive CCTV specification, including:

- Motion detection.
- 16 alarm inputs and 2 relay outputs.
- Protected event recording and logs.
- E-mail event alerts.
- RS232 text recording.
- Single channel audio recording.
- Remote (PC) viewing software (with suitable PC).
- BaxNet remote keyboard support.

Features

	VIVID Lite	VIVID	VIVID+
Record speed	25pps	50pps	50pps + TURBO*
Mode	Duplex	Triplex	Triplex
Internal Writer	CD	No	DVD
Alarms	Yes	Yes	Yes
SVHS Monitor	No	Yes	Yes
Audio	No	Yes	Yes
SCSII	No	Yes	Yes
Front panel USB	Yes	Yes	Yes
BaxNet	Yes	Yes	Yes
Dome Control	Yes	Yes	Yes
Ethernet	Yes	Yes	Yes

*In TURBO mode the VIVID+ unit will record at a rate of 100pps at half image resolution

Product codes

VIVIDLite 6/80 DVR, Duplex, CD, 6 channel, 80Gb hard drive
 VIVIDLite 6/320 DVR, Duplex, CD, 6 channel, 320Gb hard drive
 VIVIDLite 10/160 DVR, Duplex, CD, 10 channel, 160Gb hard drive
 VIVIDLite 10/320 DVR, Duplex, CD, 10 channel, 320Gb hard drive
 VIVIDLite 16/160 DVR, Duplex, CD, 16 channel, 160Gb hard drive
 VIVIDLite 16/320 DVR, Duplex, CD, 16 channel, 320Gb hard drive
 VIVIDLite 16/600 DVR, Duplex, CD, 16 channel, 600Gb hard drive

VIVID 6/80 DVR, Triplex, 6 channel, 80Gb hard drive
 VIVID 6/320 DVR, Triplex, 6 channel, 320Gb hard drive
 VIVID 10/160 DVR, Triplex, 10 channel, 160Gb hard drive
 VIVID 10/320 DVR, Triplex, 10 channel, 320Gb hard drive
 VIVID 10/500 DVR, Triplex, 10 channel, 50Gb hard drive
 VIVID 16/160 DVR, Triplex, 16 channel, 160Gb hard drive
 VIVID 16/320 DVR, Triplex, 16 channel, 320Gb hard drive
 VIVID 16/600 DVR, Triplex, 16 channel, 600Gb hard drive
 VIVID 16/1000 DVR, Triplex, 16 channel, 1Tb hard drive

VIVID+ 6/80 DVR, Triplex, DVD, 6 channel, 80Gb hard drive
 VIVID+ 6/320 DVR, Triplex, DVD, 6 channel, 320Gb hard drive
 VIVID+ 10/160 DVR, Triplex, DVD, 10 channel, 160Gb hard drive
 VIVID+ 10/320 DVR, Triplex, DVD, 10 channel, 320Gb hard drive
 VIVID+ 10/500 DVR, Triplex, DVD, 10 channel, 500Gb hard drive
 VIVID+ 16/160 DVR, Triplex, DVD, 16 channel, 160Gb hard drive
 VIVID+ 16/320 DVR, Triplex, DVD, 16 channel, 320Gb hard drive
 VIVID+ 16/600 DVR, Triplex, DVD, 16 channel, 600Gb hard drive
 VIVID+ 16/1000 DVR, Triplex, DVD, 16 channel, 1Tb hard drive

SYSTEM LAYOUT

The Vivid DVR consists of a 1 1/2 U 19 inch rack mount unit that is 44cm (17 inches) wide and 37cm (14 inches) deep that weighs approximately 5Kg (11 pounds) with a single disk drive fitted. The system has a robust all-metal enclosure with a plastic moulded front panel which contains a rubber membrane key pad and a USB 2 port – all other I/O and power ports are located on the rear panel of the unit. The sides of the Vivid DVR feature rack ear mounting points on both sides, ventilation input vents on the right and fan exhaust vents on the left:

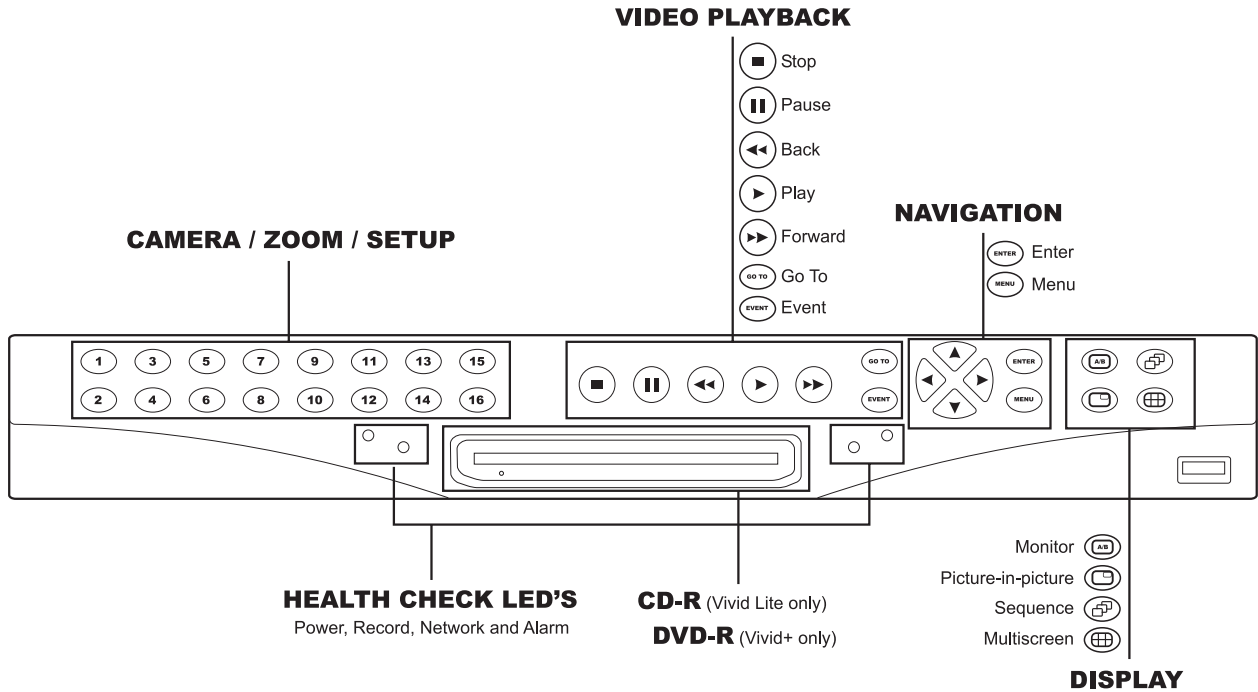
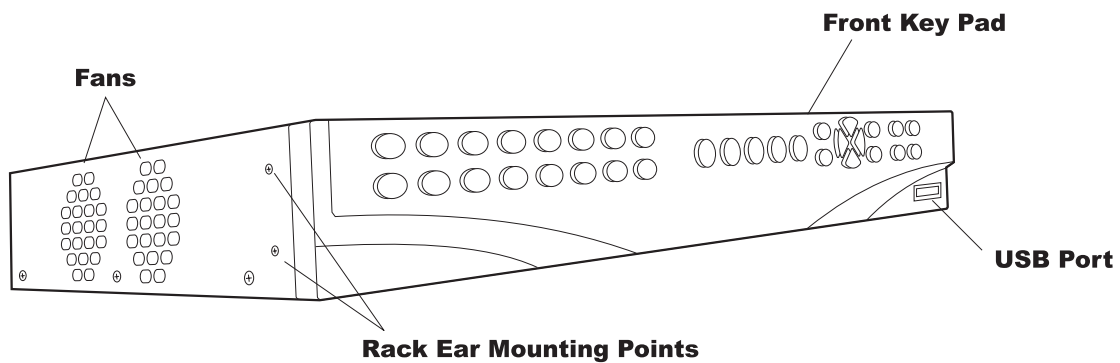


Figure 1 Front Left View Vivid DVR

Optional rack ears are supplied with the unit for rack-mounted installations, and stick on rubber feet are supplied for desktop applications.



The function of these keys is straightforward:

Camera / Zoom / Setup Keys

The camera/zoom/setup keys allow you to:

- Select which camera is displayed on the monitor,
- Digitally zoom a specific camera view, by double pressing the relevant camera key.
- Enter the setup menu for a specific camera, by pressing and holding the relevant camera key.

The camera keys are also used to enter numbers in the menu system and to set and activate PTZ presets, when the Vivid DVR is in PTZ control mode.

Video Playback Keys

The video playback keys allow you to control the replay of recorded video:

- The **GO TO** key calls up a date and time entry screen, which allows you to go to a specified date and time and replay any video recorded.
- The **EVENT** key calls up a list of saved system, motion detection or alarm events (depending on the setup of the unit), which can then be selected and replayed,
- The **Play, Rewind, Fast forward** and **Pause** keys, which function like the keys on a VCR. In particular, the play and rewind and fast forward keys allow you to instantly replay recorded video for whichever camera is currently viewed or selected.
- The **STOP/LIVE** button, which stops the replay of recorded video and returns the display to live video.

The **GO TO** and **ENTER** keys also double up as the zoom in and zoom out keys, when the Vivid DVR is in PTZ control.

Navigation Keys

The navigation keys consist of:

- Four arrow keys, which are used for navigate between camera windows in multi-screen mode and for navigating through the Vivid DVR menu.

When navigating menus:

- The up and down arrow keys are used for moving up and down menu lists to highlight the required item, and also for increasing or decreasing values in text and number input boxes.
- The left and right arrow keys are used for moving up and down between menu levels, and also, in the case of the right arrow key, for selecting highlighted menu options.

The arrow keys also provide tilt up, tilt down, pan left, pan right functions, when the Vivid DVR is in PTZ control mode.

- The **ENTER** key, which is used to select menu options from drop down lists, or to confirm numbers or text entered with the arrow keys. The **ENTER** key is also used to select the active camera in multi-screen mode, or, when followed by a press of the **MON A/B** key, to activate telemetry and control selected PTZ cameras.
- The **MENU** key, which is used to enter or leave the Vivid DVR menu system.

The **ENTER** and **MENU** keys also double up as the focus near, focus far keys, when the Vivid DVR is in PTZ control mode.

Display Keys

The display keys, which control the selection and display of cameras on the monitors and consist of:

- The **MON A/B**, which switches the active display between the MAIN and the SPOT monitor.

This key is also used in combination with the **ENTER** key – see above – to activate PTZ control mode on a selected, active camera

- The **PIP** key, which activates a picture in picture display, and also changes the size of the PIP window. Repeat pressing also changes the position of the PIP display on the monitor.
- The **SEQ** key, which activates the display to sequence between all the cameras enabled on the system.
- The **MULTI** key, which toggles the display through the various multiscreen displays offered by the Vivid DVR.

Other Front Panel Features

Health Check LEDs – The front panel features four LEDs, located below the video playback keys. These LEDs provide a quick overview of the health of your Vivid DVR. They consist of:

- Three blue LEDs, from left to right, indicate that the system is correctly powered, recording video, and connected to a working network.
- One blue LED, which is lit whenever an alarm event is detected or a system malfunction condition exists.

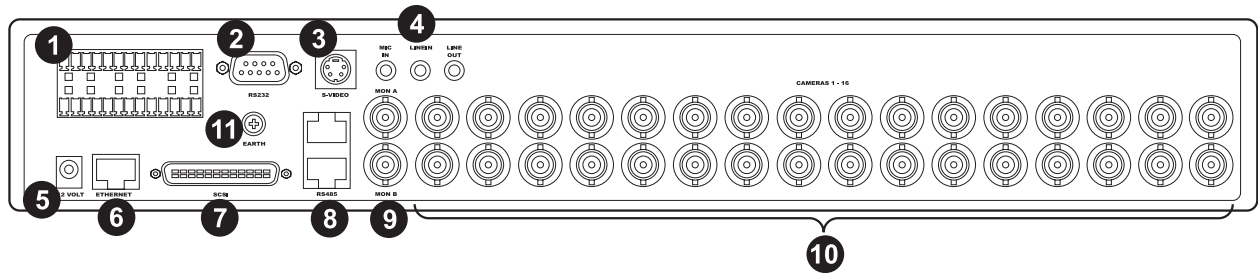
USB 2.0 Port – Mounted in the lower right hand side of the front panel, below the “display” keys, the Vivid DVR features a convenient ‘plug & play’ USB 2.0 port, which can be used for connecting a variety of useful devices, including:

- CD rewriters
- USB memory sticks
- PC keyboards
- DVD-Rom writers/re-writers

REAR PANEL LAYOUT

The back panel of the Vivid DVR provides a wide variety of input and output (I/O) ports to enable you to make the most of your system.

Working from left to right and top to bottom, as you look at the back of the system, the Vivid DVR I/O ports consist of:



1. 26-way terminal block. Used with the screw terminal plugs supplied, this block provides easy and convenient connections for:
 - 16 alarm input terminals
 - 4 relay output terminals
 - 1 two-wire RS485 terminal
 - 4 grounds
2. 9-pin RS232 port, which is fully configurable from the Vivid DVR menu system.
3. S-Video output for the main monitor display (VIVID and VIVID+ only)
4. Three 3.5mm audio connectors for single channel audio recording (VIVID and VIVID+ only), including:
 - MIC In
 - Line In
 - Line Out
5. 12VDC input socket.
6. RJ45 10/100 base T Ethernet connector, for Fast Ethernet communications.
7. A 50 pin high density SCSI connector, for connection to up to 3 daisy-chained RAID devices (VIVID and VIVID+ only).
8. Stacked dual port RJ45 RS485 connector, which can be used, like the two wire connection on the terminal block, for PTZ control, or for daisy-chaining RS485 devices using Baxnet.
Note: This is a single logical RS485 I/O port on to the Vivid DVR.
9. MON A, main monitor, and MON B, SPOT monitor, analogue video output BNC connectors.
10. Analogue video input/output BNC connectors for connecting CCTV surveillance cameras to the Vivid DVR:
 - The top row of connectors is for the camera input connection.
 - The bottom row of connectors is to provide a loop-through output capability so the camera signals can be passed to other possible devices in the installation.

These connectors are software terminated and un-terminated as required from the Vivid DVR menu system.
Camera numbering is in sequence from left to right, as you look at the rear of the Vivid DVR.
11. Earthing point. Use of this Earth point is strongly recommended.

INSTALLATION - STEP 1 CHOOSE A SUITABLE LOCATION

Introduction

The Vivid DVR design is robust, has a wide temperature and humidity operating range, and has been independently tested to comply with the demanding system immunity requirements (ESD, Fast Transients, Surge and Radiated Immunity) of the European standard for Electronic Security Systems, EN50130-4.

Nevertheless, locating the Vivid DVR in a controlled or benign environment, such as in an equipment rack in a server room (ideally) or an air-conditioned office, and paying careful attention to the following issues will minimise the possibility of in-use equipment failures – with the possible consequent loss of important data - and maximise the operating life of your new Vivid DVR.

Moisture

To avoid shock hazards or the risk of fire ensure that the Vivid DVR is not installed anywhere that it will be exposed to rain or moisture.

Temperature

The Vivid DVR has a specified operating temperature range of 0°C to 40°C (32°F to 104°F).

However, like all computer equipment, an ambient temperature range of 21°C to 23°C (70°F to 74°F) is optimal for long-term system reliability. A temperature level near 22°C (72°F) is also desirable because it makes it easier to maintain a safe relative humidity level (see below). This recommended temperature also provides an operational buffer in case the environmental support systems, such as air conditioning, malfunction.

Note: The operating temperature range for the Vivid DVR applies to the air taken in by each Vivid DVR at the point where the air enters the system – and not necessarily the ambient temperature in the room where the system is installed. To check the temperature of the air entering the Vivid, measure the temperature at 5cm (2 inches) from the right side of the equipment.

Caution: For maximum reliability please ensure that the Vivid DVR is not placed next to a source of excessive heat, such as a radiator, hot equipment, or hot air duct or exhaust vent.

Humidity

The Vivid DVR has a specified operating range of 20% to 90%, non-condensing, relative humidity (RH).

However, like all computer equipment, an ambient relative humidity level between 45% and 50% is most suitable for long term system reliability.

The main reason for this is that the amount of moisture that air can hold is temperature dependent. Therefore, if the relative humidity is at either extreme of the safe operating range of the equipment, relatively small changes in ambient temperature can easily result in the relative humidity moving outside the operating limits of the system.

In the case of very high relative humidity, a small reduction in temperature may lead to moisture condensing on the system – possibly causing long term system damage through corrosion.

At the other extreme, low temperatures and low relative humidity, a small temperature increase may result in an unacceptably low relative humidity leading to a greatly increased risk of intermittent interference, and even possible system damage, from electrostatic discharge (ESD). This is especially true for relative humidity levels below 35%.

Operating the equipment in a relative humidity range of 45% to 50% minimises the risk of the above problems and ensures the widest margin of time to fix a problem in the event of an environmental system failure.

Environmental Stability

For maximum long-term system reliability, environmental conditions should not be allowed to change by more than 5.5°C (10°F) or 10% relative humidity in an hour.

Ventilation and Cooling

The Vivid DVR draws in ambient air for cooling from the right and discharges heated exhaust air to the left of the system (when looked at from the front). Ensure that the air vents on either side of the system are not obstructed. In particular, ensure that there are no obstructions within 5cm (2 inches) of either side of the system.

When installing the Vivid DVR in an equipment rack within a server room, take care to ensure that the heat output of the Vivid DVR (listed in the specifications section at the back of this manual) is taken fully into account when calculating the cooling requirements of the server room and that there is an adequate flow of cooled air to the system.

Note: In all installations, ensure that the cool air intake vents on the right side of the system are not close to the hot air exhaust vents of any other system.

Environmental Acclimatisation

Prior to installing and powering up the Vivid DVR you should compare the temperature and humidity of the environment in which the system had been stored to the conditions in the location where the unit is to be eventually installed.

Electronic equipment can be damaged if the *rate* of temperature or humidity change that it is exposed to is too great - especially when power is applied to the system. The maximum positive or negative temperature gradient that is recommended for multilayered printed circuit boards is approximately 2°C (4°F) per hour. The same applies to humidity; it is best for change to occur slowly.

Therefore, if it is necessary to compensate for significant temperature or humidity differences between the system and the installation location, place the Vivid DVR, in its shipping packaging, in a location that has a similar temperature and humidity environment as the eventual location for at least 24 hours before installation to prevent possible damage from thermal shock and condensation.

INSTALLATION - STEP 1 CHOOSE A SUITABLE LOCATION

Vibration and Shock

The Vivid DVR contains up to two internal hard disk drives. These disk drives are susceptible to damage from excessive shock and vibration – especially when powered up and in use.

Ensure that the chosen location for the Vivid DVR protects the system from accidental shocks and vibration whilst in use.

Also, ensure the system is properly powered down, and not subjected to rough handling, before any installation, maintenance or removal activity.

Electrical Power Supply

The effects of power disturbances on sensitive electronic equipment can include data errors, system halts, memory or program loss, or equipment damage. Further, electronic equipment that is subject to repeated power interruptions or fluctuations can experience a higher component failure rate than equipment that has a stable power source.

For security critical installations, the power infrastructure should be properly designed – through the use of UPS, backup generators, and secondary power feeds - to maintain system up time even during disruption of the main power source.

In all installations, using an online uninterruptible power supply (UPS) is a good strategy for obtaining a clean, stable power source. The online UPS filters, conditions, and regulates the power. It protects the systems from fluctuating voltages, surges and spikes, and noise that may be on the power line.

The battery backup for the UPS should be capable of maintaining the critical load of the Vivid DVR for a minimum of 30 minutes during a power failure. After which time, depending on the type of UPS selected, the Vivid DVR can be automatically powered down in a controlled fashion to protect both the system hardware and the data captured on the hard disks.

In a security critical installation that has been properly constructed, 30 minutes should typically provide sufficient time to allow for the transfer of power to an alternate feed or to the backup power generator.

Grounding

A properly installed Vivid DVR is grounded through the power cable. However, additional grounding, using the designated Earth point on the rear of the chassis helps to protect the system from potential immunity problems, such as ESD and high energy radiated RF fields. Baxall Ltd recommends the use of this additional grounding facility in all Vivid DVR installations.

Grounding design in the United States should comply with U.S. National Electrical Code unless superseded by local codes. For international operation, consult the country or local electrical codes.

In all cases, enlist the aid of a qualified electrician to install grounding cables.

Qualified service personnel should always use an antistatic wrist strap when working inside the Vivid DVR chassis.

Physical Security and Fire Protection

Video footage captured by the Vivid DVR may be important evidence. Give consideration when locating the Vivid DVR to its physical protection from unauthorised access and from fire risks. The ideal location for your Vivid DVR is a controlled server room location.

INSTALLATION - STEP 2 INSTALL DVR IN FINAL LOCATION

Introduction

The Vivid DVR is designed to be used in two basic kinds of location:

1. Rack-mounted in a standard 19 inch electronic equipment rack
2. As a desktop unit.

Lifting and Handling

The Vivid DVR is heavy and may cause injury if incorrectly lifted or handled. Always follow your local Health and Safety or OSHA guidelines when lifting the Vivid DVR from its package.

Desktop Location

No special precautions or instructions are required for locating the Vivid DVR on to a desktop location – other than to:

- Install the rubber feet (supplied) on to the base of the Vivid DVR to insulate the unit from vibrations and shock
- Observe proper lifting precautions commensurate with the weight and size of the system.

Rack-mount Location

When rack-mounting a Vivid DVR please follow the following instructions:

- Fit the rack ears (supplied) to the front sides of the Vivid DVR.

Caution: All four rack ear mounting points must be used to attach the rack ears to the Vivid DVR and the connecting screws used to mount the rack ears must be fully tightened into the body of the system.

Warning: Failure to follow this instruction properly may result in possible injury to personnel or damage to the Vivid DVR

INSTALLATION - STEP 2 INSTALL DVR IN FINAL LOCATION

- Consult the appropriate rack-mounting documentation for the rack cabinet being used before attempting to install any Vivid DVR into a rack,
- Before attempting to install a Vivid into a rack make sure the rack is stable by either fully extending its anti-tip legs (if mounting the Vivid on a slide-out shelf) or ensuring the rack cabinet is firmly located or attached to the floor,
- Baxall recommend that in all cases the rear or sides of a rack-mounted Vivid DVR should be supported by suitable rack shelves or supports in addition to the main rack ears at the front of the unit
- In a mixed installation, install the heaviest installation items, such as RAID devices or UPS, in the lowest possible positions in the rack
- If installing additional Vivid DVRs, install the remaining systems from the lowest system upward into the rack.

Note: Baxall Ltd always recommends that a ½U vertical gap is left between rack-mounted equipment.

INSTALLATION - STEP 3 CONNECT UP DVR

Connect Cameras

Connect a coaxial cable to the video output BNC connector of the CCTV camera. Connect the other end of the coaxial cable to the top row camera 1 video input BNC connector on the Vivid DVR. The lower connector is a loop-through connector for connecting the video signal from the camera through to other equipment.

Depending on the model of Vivid DVR ordered, up to 6, 10 or 16 CCTV cameras can be connected to a single Vivid DVR.

Connect Main Monitor

Connect the Vivid DVR to the main monitor. This can be achieved by either using an S-Video cable to connect the Vivid DVR to the S-Video input on the monitor, or by using a coaxial cable to connect the MON A video output BNC connector on the Vivid to a video input BNC connector on the monitor.

The MON B video output connector is used for connecting a second SPOT monitor to the Vivid DVR, if required.

Connect Cameras and Main Monitor to Power Supply

Connect the CCTV cameras and main monitor to the power supply, in accordance with the manufacturers instructions.

Ensure the CCTV cameras and main monitor are powered up before powering up the Vivid DVR.

Connect to Network

Connect one end of the Ethernet cable into the Ethernet port on the Vivid DVR and the other into a local Ethernet network port.

Note: Contact your IT/IS department for advice on which external network port to use and also to ask if the local network will provide an IP address automatically, using DHCP, or whether the IP address of the Vivid needs to be configured manually? In the latter case, ask them to provide you with details of all the IP addresses you will need later on in the installation process. Make a note of the numbers they provide you with here:

- Mandatory information for manual network set up:

IP address:																				
Subnet mask:																				
Default gateway:																				

- Optional information for manual network set up:

DNS server:																				
NTP server:																				
Backup NTP server:																				

Connect DVR to Power Supply

Plug the Vivid DVR external power supply into the 12 Volts socket on the back of the unit. Connect the power cord supplied into the external power supply and plug the power cord into your mains power source or UPS (recommended).

The Vivid DVR will now commence its power up and self-test routines:

- On power up, the Vivid DVR will momentarily sound its alarm buzzer.
- The fans and disk drives will power up and the green power LED on the front panel will light up.
- After about one minute the monitor screen will momentarily display the Vivid DVR welcome screen and, if a camera is connected to the camera 1 video input BNC, the Vivid DVR will then display a full screen live image from camera 1.
- Finally, the blue recording LED on the front panel will light up, to confirm the unit is recording. Also, if DHCP is in use, the blue network LED on the front panel will light up to indicate that the Vivid is connected to the local network.

At this point, the Vivid DVR will be in the following default configuration:

- **All cameras detected at power up will be enabled, viewable and recording** at a default rate picture rate and recorded image size dependant on the the Quick Start menu settings, and an image file size per camera of 24KB,
- **Camera 1 will be displayed** on the main monitor.
- **The system will be available for viewing over the network** using the Vivid DVR remote Viewer software supplied separately with the unit.

MANUALLY SET UP NETWORK CONNECTION (OPTIONAL)

This step only applies if DHCP is not being used and the Vivid DVR network connection needs to be configured manually. Otherwise, skip to Configure Individual Cameras.

1. Press the **menu** key to re-enter the Vivid menu system. The **Hardware setup** option will be highlighted and this should be selected by pressing the enter key.
2. Navigate down to the networking option using the down arrow key, then select the highlighted **Networking** option by pressing the enter key (note that the Ethernet option needs to be enabled before the following options are visible).
3. Navigate down to the **Use DHCP** option using the down arrow key and, once it is highlighted, select this option using the right arrow key. A drop down list will be displayed, use the arrow keys to select the **No** option and press **enter** (No is the default setting).
4. Navigate down the **Networking** menu display using the down arrow key until the **IP addresses** option is highlighted, press the right arrow key to select this option.
5. Using the information you previously recorded in section 3, use the arrow keys to navigate to and select each IP address that needs to be set in turn.
6. When the address you want to enter is highlighted press the right arrow key. This brings up the input box for each address.
7. Use the right arrow to move along the address and the up and down arrow keys to increase or decrease the numbers until the correct address is displayed. Alternatively, the camera number keys (1 to 9) can be used to enter numbers.
8. When you have correctly entered an address press the **enter** key to confirm it. This will close the address input box.
9. Use the up and down arrow keys to highlight the next address and so on until all the required addresses are correctly input.
10. When all the addresses are complete press the **menu** key to exit the Vivid DVR menu system.

CONFIGURE INDIVIDUAL CAMERAS (OPTIONAL)

If required you can alter the picture size (quality) and record rate for each individual camera you have connected to the Vivid DVR.

The easiest way to do this is to press and hold the camera key of the camera you want to configure. After entering the password, this will take you to the camera recording menu for the camera concerned.

Picture Size (Image Quality)

1. To set the picture size, press the down arrow until the **picture size** option is highlighted and press the enter key to enter edit mode.
2. Use the up/down arrow keys to either increase the file size (improve recorded picture quality) or reduce the file size (decrease the recorded picture quality).
3. Press the **enter** key once you have selected the file size required.

Note: Larger image file sizes take up more hard disk space, so your system will record better pictures but for less elapsed time. Smaller image sizes take up less hard disk space, so your system will record reduced quality pictures but for a longer time.

Recording Rate

1. To set the record rate, after you have set the image file size, use the arrow keys to highlight **Normal pics/sec** for Daytime recording.
2. Once highlighted, press the enter key.
3. Press the up/down arrow keys to increase or decrease the record rate and press the **enter** key when the correct rate is selected.

Notes: A higher record rate generates more pictures to save to hard disk. Therefore, a higher record rate will provide pictures at more frequent intervals but reduce the elapsed time for which the system can record.

The Vivid DVR is a multiplexed system. In other words its total maximum record rate of 50pps (PAL) and 60pp (NTSC) for a 720x240 image have to be shared between the various cameras on the system.

Finally

When you have finished setting the image file size and the record rate for the camera selected, select Next page. Repeat for the next camera as required until all the cameras you wish to individually set up have been configured.

Once you have finished adjusting the image file size, the **recording** menu will give you an estimate, based on image size, record rate, hard disk size and other system parameters, of the elapsed time for which your system will record with those settings.

CONFIGURE INDIVIDUAL CAMERAS (OPTIONAL)

Setting image file size and record rate is a practical compromise between picture quality and pictures per second versus available hard disk space and the time for which the system can record.

Experiment with the settings of your Vivid DVR to achieve the best picture quality and recording rate for your application needs. Press the enter key to exit the Vivid DVR menu system.

Congratulations, you have now completed the basic installation and set up of your Vivid DVR. Please take time to get familiar with the basic operation of your new system before accessing and setting up the advanced features of your Vivid DVR. If you need to access, more advanced system functions please see the next sections for details.

For require further detail on any aspect of your Vivid DVR please refer, in this order, to:

- Your local Baxall Ltd distributor, dealer or installer,
- The Baxall on-line support pages at www.baxall.com/vivid, or
- Baxall Ltd technical support on: +44 (0)161 406 6611.

BASIC SYSTEM SET UP AND OPERATION

To complete the setup of a basic system configuration access the Vivid DVR menu system and:

- Select the operating language of the system,
- Choose the preferred time and data format,
- Set the local system time and date.

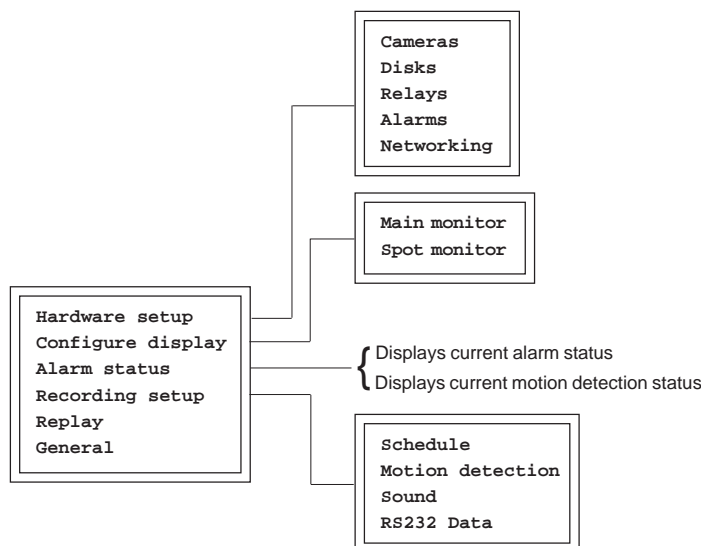
If DHCP is not in use on the local network, it will also be necessary to use the IP addresses you have already obtained from your IT/IS department and recorded in Step 3 to manually set up the Vivid DVR network access.

MENU ACCESS AND NAVIGATION

To access the menu system, press the **menu** button, enter the password and then navigate through the menus displayed on the main monitor using the up, down, left and right navigation keys on the Vivid DVR.

Note: The menu system will time out after a default period of 90 seconds inactivity. This can be altered if required at a later stage through the **General** menu display.

MENU HIERARCHY



SELECT OPERATING LANGUAGE

1. Access the Vivid DVR menu system by pressing the **menu** key and entering the installer password. The top-level menu window is displayed on the main monitor.
2. Press the down arrow key until the **General** option is highlighted.
3. Press the enter key. The **General** menu window is displayed.
4. Press the down arrow key until the **Language** option is highlighted.
5. Press the enter key. A drop down list opens, displaying all the available language options.
6. Press the down arrow key until the required language option is highlighted.
7. Press **enter**. The required language option is selected. The drop down list is closed – the menus are now displayed in the selected language – and you remain in the **General** menu window.

SELECT DATE AND TIME FORMAT

1. Access the Vivid DVR menu system by pressing the **menu** key and entering the installer password. The top-level menu window is displayed on the main monitor.
2. Press the down arrow key until the **General** option is highlighted.
3. Press the enter key. The **Date and Time** menu window is displayed.
4. Press the down arrow key to highlight the **Date format** option.
5. Press the enter key a drop down list appears displaying all the available date format options.
6. Press the down arrow key until the required format is highlighted.
7. Press **enter**. The required date and time format is selected. The drop down list is closed and you are returned to the **Date and Time** menu window.

Note: More advanced time options, such as using an RS485, NTP or GPS time source, along with a discussion of how summer time settings are handled by the Vivid DVR are covered later in this manual.

SET CURRENT DATE AND TIME

1. Access the Vivid DVR menu system by pressing the **menu** key and entering the installer password. The top-level menu window is displayed on the main monitor.
2. Press the down arrow key until the **General** option is highlighted.
3. Press the enter key. The **Date and Time** menu window is displayed.
4. Highlight the **Date and Time** option. Press the right arrow key. The **Date and Time** input box is displayed.
5. Press the right arrow key to move along the **Date and Time** input box, using the up and down arrow keys at each point to increase or decrease the number displayed.
6. When the correct date and time has been entered, press the **enter** key to implement the new date and time. The **Date and Time** input box closes.
Press the **menu** key to exit the Vivid DVR menu system.

BASIC FUNCTIONS

This section covers basic user functions such as selecting cameras, selecting monitors, etc. A quick reference guide is also included with the Vivid DVR detailing common operations and functions.

SELECTING A CAMERA



To select a camera for full screen viewing:

1. Press the camera number button corresponding to the camera you want to view. 

The selected camera will be shown full screen on the main monitor.


DIGITALLY ZOOMING A CAMERA

Cameras connected to the Vivid DVR can be digitally zoomed by a factor of approximately 2:1. To digitally zoom a camera:


1. Press the camera number button twice in quick succession for the camera you want to zoom.  
2. The arrow keys can be used to scroll the image. To return to full screen mode, press the camera number button again.

SELECTING A MONITOR


The Vivid DVR can have two monitors connected to it: a main monitor and a spot monitor. To change the active display:

1. Press the MON A/B key to toggle the active display between the main and spot monitors. 


PLAYBACK

To begin playback, press the Play key. Playback will occur at the rate it was recorded. Playback is indicated by a > after the time display (e.g, 12:00:00>). 


LIVE VIEW

To stop playback, press the Stop key. The unit will go into live view mode. Note: Pressing the Stop button stops playback only - the unit does not stop recording. 

REVERSE PLAYBACK

Press the reverse playback key once for normal speed playback. This will be indicated by a < after the time display (e.g, 12:00:00<). Press reverse play again for higher speed playback. This will be indicated by a << after the time display (e.g, 12:00:00<<). Press reverse play again for higher speed reverse playback (indicated by <<< after the time display). Press reverse play again for high speed reverse playback (indicated by <<<< after the time display). 

FAST FORWARD

Press the fast forward key once for fast forward playback. This will be indicated by > after the time display (e.g, 12:00:00>). Press fast forward again for higher speed fast forward playback (indicated by >> after the time display). Press fast forward again for higher speed fast forward playback (indicated by >>> after the time display). Press fast forward again for higher speed fast forward playback (indicated by >>>> after the time display). 

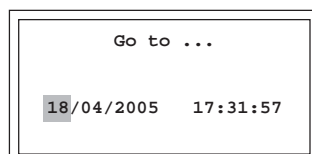
PAUSE PLAYBACK

To pause playback press the pause key.  Pressing the pause key again will resume playback

GO TO

The Go To key allows you to select a date and time and play back recorded video. To replay a recorded video from specific time and date:

1. Press the GO TO key. The Go to... entry window will open.



2. The first field dd (18 in the example above) will be selected. Use the up/down arrow keys (or number keys 1 to 10 where the number 10 key will enter a '0') to enter the number of the day. Press the right arrow key to select the next field and edit as above.
3. Continue until the desired date and time have been entered.
4. Press the enter key. The video will be replayed from the selected time and date.

The event key calls up any saved system, alarm or motion detection events which can then be selected and replayed. To select an event:

1. Press the event key and enter the password. This will open the View events log at the filter page. Use the filter page if required to filter the event log in order to more easily locate the desired event. Events marked with a X will be passed by the filter page. For example, to view only Alarm type events in the log, clear the X from everything in the Filters list except Alarm.

```

View events log

Filters  Alarms          [X]
         Motion         [ ]
         Marked blocks  [ ]
         Video Loss     [ ]
         Shutdown       [ ]
         Config change  [ ]
         Unit password incorrect [ ]
         Remote password incorrect [ ]
         Exported data  [ ]

Cameras  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
[X][X] [X][X][X] [X][X][X][X][X][X][X][X][X][X][X][X][X][X]

Events with no associated camera [X]

Time     After time    [ ]
         Before time   [ ]

         Back to menus      View events
  
```

2. Using the arrow keys, select View events and press the enter key. The View events page will change to show any saved events corresponding to the filter criteria entered.

```

View events log

Alarm    1  18/04/2005  15:57:20  18/02/2005  15:57:49  Play Del Exp
Alarm    1  18/04/2005  16:31:25  18/02/2005  16:40:51  Play Del Exp
Motion   1  18/04/2005  16:52:21  18/02/2005  16:52:51  Del
Motion   1  18/04/2005  16:54:12  18/02/2005  16:54:42  Del
Motion   1  18/04/2005  16:55:01  18/02/2005  16:55:31  Play Del Exp
Motion   1  19/04/2005  10:51:49  19/02/2005  10:52:18  Play Del Exp
Motion   1  19/04/2005  10:53:21  19/02/2005  10:53:43  Del

Showing events 1 - 7 of 7 (Page1/1)

         Clear log      Return to filters      Next page
  
```

3. Events which can be replayed will have **Play** in the description line. To play such an event, use the arrow keys to select play for the event. Press the enter key. The selected event will be played back on the selected monitor.
4. Events can also be deleted by selecting **Del**, or exported to the designated export device e.g. USB memory stick by selecting **Exp** - see **Appendix 6 - Exporting Files to CD and DVD**.

SEQUENCES

The Vivid DVR can display all of the cameras connected to it in sequence. Each camera will be displayed on the active monitor for a period of time set by the **Dwell time** parameter. To start camera sequencing:

1. Select a camera (sequencing can start from any camera) by pressing the corresponding number key. ①
2. Press the sequence key. ⏮

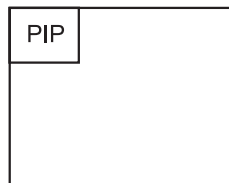
To stop sequencing:

1. Press the sequence button, or select a camera for full screen viewing by pressing a camera number key.

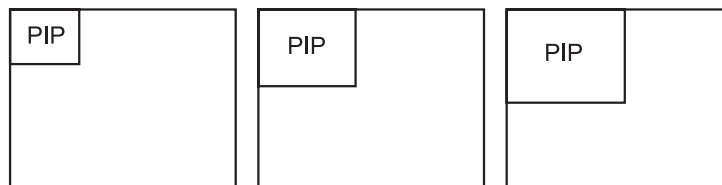
PICTURE IN PICTURE

The Vivid DVR has a picture-in-picture feature. To activate picture-in-picture (PIP) mode:

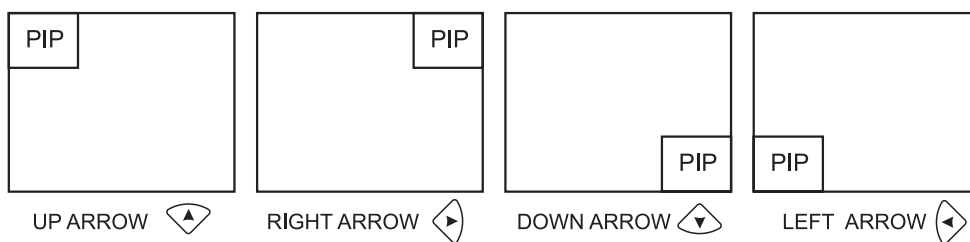
1. Press the PIP key. ⓐ
2. The display will change to the picture-in-picture mode.

**To change the size of the PIP:**

1. Press the PIP key to change the size of the PIP display. Each press of the PIP key changes the PIP display to one of three sizes.

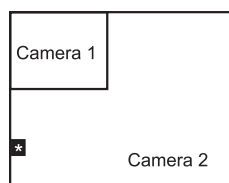
**To change the position of the PIP display:**

1. Use the left/right and up/down arrow keys to move the PIP as shown below.

**To change the camera of the PIP display:**

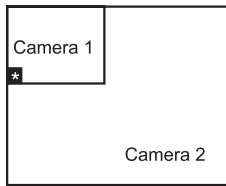
To change the camera which is displayed by the PIP, the PIP area of the display (usually referred to as a cameo) needs to be selected.

1. Press the enter key. This will superimpose a reverse highlighted * on the main camera display (camera 2 in the example below).



PICTURE IN PICTURE

- Use the arrow keys to move the * to select the PIP. This is now the active cameo (camera 1 in the example below).

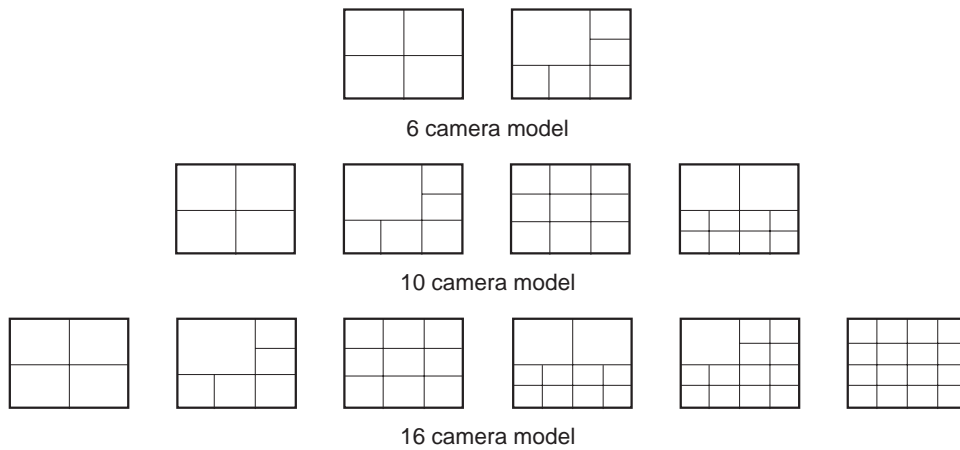


- Press the camera number key for the camera you want to display in the PIP area.
- Press the enter key to exit cameo selection. The * will disappear.

MULTISCREEN

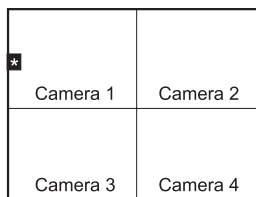
The Vivid DVR can display cameras in multiscreen mode. The individual areas of a multiscreen display are called cameos. To enter multiscreen mode:

- Press the MULTI key.
- The first press will select quad mode. Subsequent presses of the MULTI key will cycle through the multiple displays available for the model of Vivid DVR you are using:

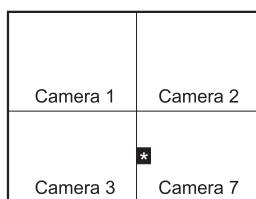


When a multiscreen display is being viewed, it is possible to select which camera is displayed in each cameo of the display. This is done by selecting an active cameo and then selecting which camera is assigned to the cameo.

- Select active cameo mode by pressing the enter key whilst in a multiscreen display. A reverse highlighted * will be displayed in the cameo indicating that it is selected and the active cameo.





- Using the arrow keys, move the * to the cameo you wish to change. This is indicated by the * within the selected cameo.
- Press the desired camera number key. The selected camera will be shown within the selected cameo.



TELEMETRY

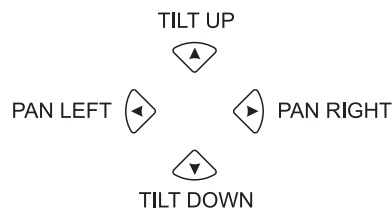
The Baxall Vivid DVR is capable of controlling PTZ and dome cameras which are connected to it. In order to control such cameras, the Vivid DVR is used in telemetry mode.

To enter telemetry mode:

1. Select the PTZ or dome camera connected to the unit by pressing the appropriate camera key. ①
2. Press the **Enter** key then the **MON** key to activate telemetry mode.  FOLLOWED BY 

To pan or tilt the camera:

When in telemetry mode, the arrow keys are used to pan and tilt the selected PTZ camera. A single keypress will pan or tilt the camera at the slowest speed; a double keypress in quick succession will pan or tilt the camera at medium speed; a triple keypress in quick succession will pan or tilt the camera at high speed. Four key presses in quick succession will pan or tilt the camera at full speed.

**To focus the camera:**

When in telemetry mode, the **Enter** and **Menu** keys are used to adjust camera focus.

**To zoom in or out:**

When in telemetry mode, the **Event** and **Go To** keys are used to control the zoom in or zoom out function of the camera lens.

**To program a preset:**

1. Select the camera, enter telemetry mode and move it to the required position.
2. Press and hold a numbered camera key (1 to 6, or 1 to 10, or 1 to 16) to store the preset. The message 'Preset stored' will be displayed when the preset has been programmed.

Note: The number of presets that can be stored for PTZ/Dome cameras is dependent on the Vivid DVR in use. For example, a six way unit can store six presets per camera; a 10 way unit can store 10 presets and a 16 way unit can store 16 presets.

Recalling a preset:

1. Select the camera and enter telemetry mode.
2. Press the appropriately numbered key (1 to 6, or 1 to 10, or 1 to 16) to recall the required preset.

Introduction

This section covers more detailed aspects of the setup and operation of the Vivid DVR. It assumes a familiarity with the basic function of the Vivid DVR, covered in the preceding sections of the manual, along with a familiarity with navigating the Vivid DVR menu system.

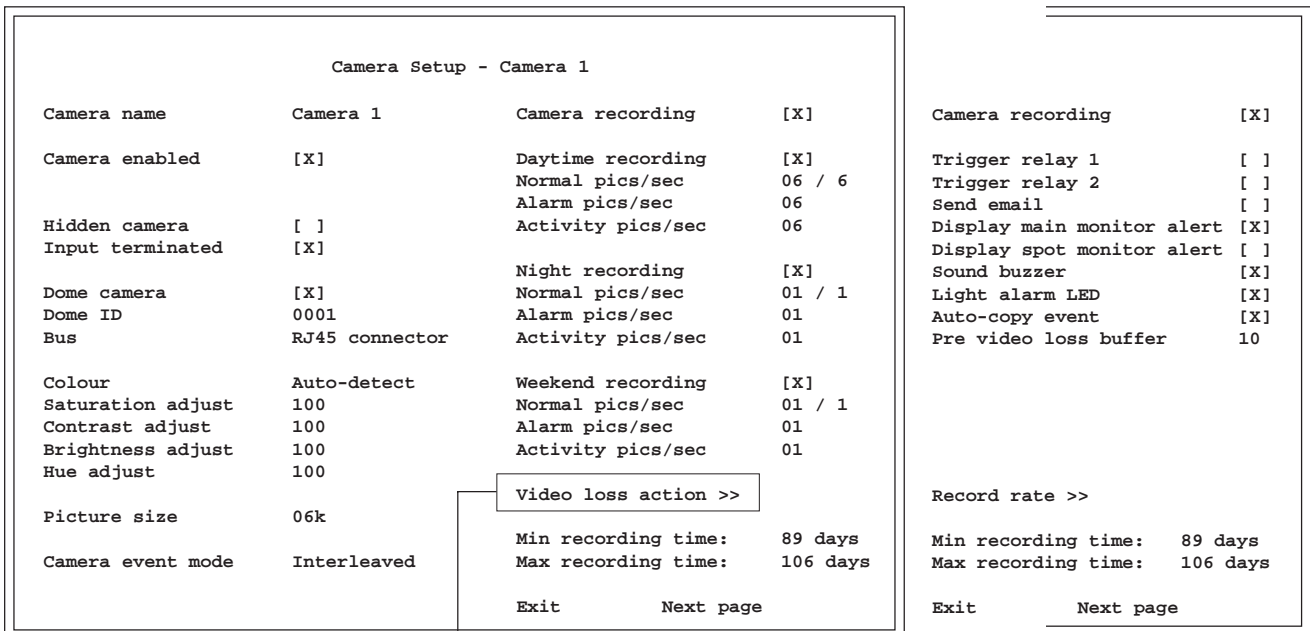
HARDWARE SETUP MENU

This menu configures the Vivid DVR to match the system components connected to it. The top level entries in this menu branch are:

- Cameras
- Disks
- Relays
- Alarms
- Networking

CAMERAS

Selecting the Camera menu will display a page similar to the following (Note this image shows options that might not initially be visible when the page is opened):



Selecting Video loss action will reveal these options:

Camera name

Allows the entry of a unique camera title. Camera names can contain up to nine characters.

To Edit the camera name:

1. With the camera name field selected, press the Enter key. The background colour of the camera number field will change.
2. Using the up or down arrow keys, the first character of the title can be changed. Available options include A to Z in both upper and lower case, 0 to 9, and various ASCII characters. A USB keyboard can also be used for ease of operation.
3. After the first character has been edited, use the right arrow key to move to the next character. Edit the character as in step 2 above.
4. When the name has been edited, press the enter key to exit edit mode. The background colour of the camera number field will change.

Camera enabled

This menu option enables or disabled the selected camera. Default [X] (enabled)

Hidden camera

Allows the selected camera to be hidden from view on the monitor. It will still be recorded. Default is hidden mode disabled.

Input terminated

Selects whether the camera input is terminated [X] or not. Default is terminated. Highlight the field and use the enter key to enable/disable termination.

Dome camera

If the camera connected to the input is a dome camera, selecting this menu option allows you to configure the camera. Selecting [X] (enabled) reveals two further options: Dome ID and Dome bus.

Dome ID allows a number from 1 to 16 to be entered as an ID for the selected camera. To change the ID, highlight the field and press the enter key. The field will change colour. Use the up/down arrow keys to select an ID number. Press the enter key when finished.

Dome bus determines how the camera is connected to the Vivid DVR. Options are **RJ45 connector** or **Screw connector**. Highlight the field and use the enter key to select an option.

Colour

This menu option allows you to select from **Colour**, **Black & white** or **Auto-detect**. Highlight the field and use the enter key to select an option. Auto-detect will automatically detect whether cameras connected are black and white or colour.

Saturation adjust, Contrast adjust, Brightness adjust and Hue adjust

These four menu items allow the cameras saturation, contrast, brightness and hue parameters to be adjusted. To adjust a parameter, highlight the field and press the enter key. The field will change colour. Use the up/down arrow keys to change the selected parameter (001 to 200). Press the enter key when finished. Changes to picture quality will only be visible once the menu has been exited.

Picture size

Sets the target compressed image file size (which determines recorded picture quality). Individually selectable per camera. To adjust picture size, highlight the field and press the enter key. The field will change colour. Use the up/down arrow keys to change the value (03KB to 60KB). Press the enter key when finished.

Camera event mode

Allows you to specify the way in which event cameras are recorded. Camera events are defined as cameras in an alarm condition or where motion detection has been triggered. Use the enter key to select from **Interleaved**, **Normal** or **Exclusive**.

The **Interleaved** setting will record event cameras and non-event cameras. The event cameras will be interleaved between the non-event cameras. For example:

Event cameras	4, 6
Non-event Cameras	1, 2, 3, 5, 7
Resulting Record Sequence	1, 4, 6, 2, 4, 6, 3, 4, 6, 4, 4, 6, 5, 4, 6, 6, 4, 6, 7, 4, 6, 1, 4, 6...etc.

The **Exclusive** setting will only record cameras in an event condition. All other cameras will be omitted from recording while an event is active.

The **Normal** setting will record cameras in order e.g. 1, 2, 3, 4, 5, 6, 7, 8.... etc.

Camera recording

The selected camera will only be recorded if this menu option is set to [X] (enabled). Highlight the field and use the enter key to enable/disable camera recording. Default is enabled.

RECORD RATE SETTINGS

The Daytime recording options are only visible if camera recording is enabled. To change the setting, highlight the field and use the up/down arrow keys to change the value. Settings available are 1 to 25 pictures per second depending on the number of cameras connected.

Daytime recording This option allows you to enable or disable daytime recording (default Enabled).

Normal pics/sec This sets the picture recording rate during normal recording (default 25pps).

Alarm pics/sec This sets the picture recording rate if the camera goes into alarm mode (default 3pps).

Activity pics/sec This sets the picture recording rate if the camera is triggered by motion detection (default 3pps).

The **Night recording** and **Weekend recording** settings are made in exactly the same way as the Daytime recording settings. Note however, that they will only be visible if they have been set to Yes in the **Recording setup > Schedule** menu.

VIDEO LOSS ACTION

The video loss action options are accessed by selecting the Video loss action>> field on the Camera setup page and pressing the enter key.

Trigger relay 1

When an event is detected by the camera, this option allows you to initiate the action set for Relay 1 (see Relays). Options are enabled [X] or disabled (default disabled).

Trigger relay 2

When an event is detected by the camera, this option allows you to initiate the action set for Relay 2 (see Relays). Options are enabled [X] or disabled (default disabled).

Send email

When an event is detected by the camera, this option allows you to send an email. Options are enabled [X] or disabled (default disabled). Email parameters are set up under Hardware setup > Networking > Email setup. Email will only work if the Vivid DVR is connected to a network.

Display main monitor alert

When an event is detected by the camera, this option allows you to display an alert on the main monitor. Options are enabled [X] or disabled (default enabled).

Display spot monitor alert

When an event is detected by the camera, this option allows you to display an alert on the spot monitor. Options are enabled [X] or disabled (default disabled).

Sound buzzer

When an event is detected by the camera, this option allows you to sound an audible warning using the unit's built in buzzer. Options are enabled [X] or disabled (default enabled).

Light alarm LED

When an event is detected by the camera, this option allows you to illuminate the Alarm led on the front panel of the Vivid DVR. Options are enabled [X] or disabled (default enabled).

Auto-copy event

When an event is detected by the camera, this option allows you to automatically copy event data, as it happens, to a predetermined place which is set up within the disk manager menu. Options are enabled [X] or disabled (default enabled).

Other Camera Setup page information

Min recording time provides an estimate of the minimum recording time available with the current record settings.

Max recording time provides an estimate of the maximum recording time available with the current record settings.

Next page opens the camera setup page for the next camera.

Exit closes the camera setup page and returns to the Hardware setup menu.

Selecting **Hardware setup > Disks** will open the Disks menu.

Event partition	10%
Disk record mode	Looping
Timed expiry on	No
Stop USB devices	
Disk Manager	

Event partition

This setting determines the percentage of disk space that will be allocated to event recording. Select between 1 and 50%

Disk record mode

This setting determines the way that data is written to the disk(s). **Looping** will overwrite data when the disk becomes full. **Linear** will fill the disk(s) to capacity without overwriting previously recorded data and a warning will be displayed when the disks are full or nearly full.

Timed expiry on

Ensures data is overwritten after a predetermined period. Selecting **Yes** opens the **Timeout period** option:

Event partition	10%
Disk record mode	Looping
Timed expiry on	Yes
Timeout period	365 days
Stop USB devices	
Disk Manager	

Timeout period

The timeout period can be set by selecting the field and pressing the enter key. Use the up/down keys to select a value for the timeout period in days. Press enter to finish.

Stop USB devices (only visible if a USB device is connected to the front panel's USB port)

Selecting this menu item will stop all USB devices connected to the Vivid DVR.

Disk Manager

Selecting the Disk manager field and pressing the enter key will open the disk manager pages. A sample page is shown below.

Disk Manager			
	Size	Used	Status
1	163.9G	91%	In use Erase
2	163.9G	90%	In use Erase
Showing internal disks 1 - 2 of 2			
Back to Menu		Next page	

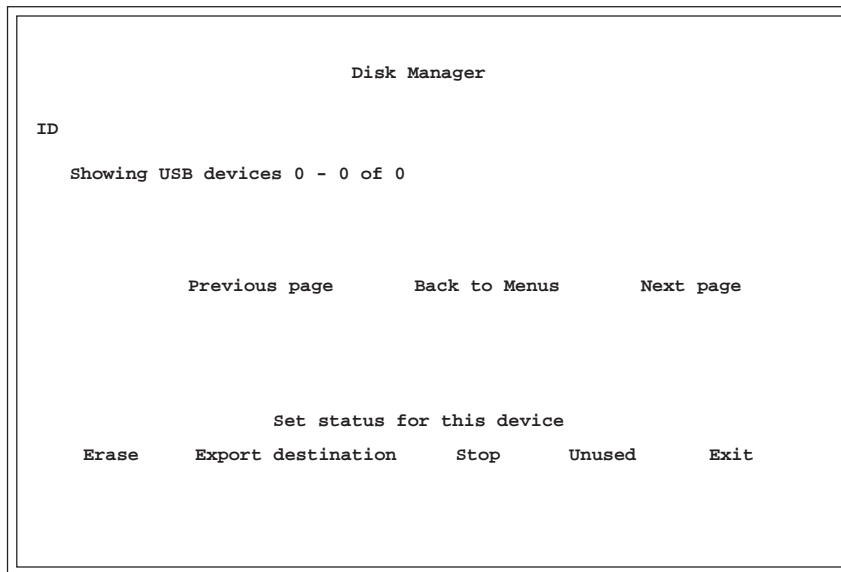
The page shows the size of each installed disk, the percentage of disk space used and the status of each disk. In addition, it is possible to erase the data from each disk. To erase a disk:

1. Highlight the Erase field for the disk you want to erase and press the enter key.
2. The message '**Are you sure? Data will be permanently deleted!**' will be displayed.
3. Use the left/right arrow keys to select **Yes** or **No** and press the enter key.



WARNING: Selecting Yes will permanently erase all recorded data which will no longer be available.

Selecting **Next page** from the first disk manager page will open the USB devices page. This page will display any USB devices connected to the Vivid DVR.



Set status for this device selecting Export destination will reveal the 'Set status for this device' menu options.

Erase erases data from a USB device such as a memory stick

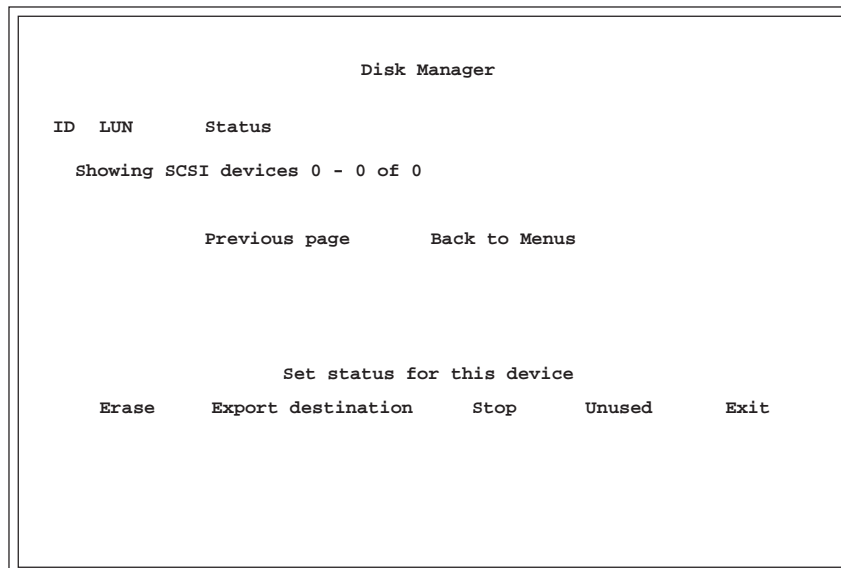
Export destination sets the connected USB device as the export destination for exporting configuration settings etc.

Stop stops the connected USB devices

Unused the device is not used.

Exit closes the Set status for this device menu options.

Selecting **Next page** from the second disk manager page will open the SCSI devices page. This page will display any SCSI devices connected to the Vivid DVR.



Connecting SCSI devices

1. Ensure that the Vivid DVR is disconnected from the power.
2. Connect a supported SCSI device to the 50-pin SCSI connector on the rear panel.
3. Power up the SCSI device
4. Power up the Vivid DVR.

Note: When the internal hard drive(s) are full, data will be written to the connected SCSI device (provided that the Vivid DVR is set to record in linear mode).



WARNING: Do not connect or disconnect SCSI devices while the Vivid DVR is powered up.

RELAYS

This menu allows you to configure the two built in relays.

Relay number allows you to select either relay 1 or relay 2. To change the relay number, highlight the field and press the enter key. Next, use the up/down arrow keys to select 1 or 2. Press enter when selection is complete.

```
Relay number 1
Relay action Open
```

Relay action allows you to select what the relay will do when it is triggered. To change the action, highlight the field and press the enter key.

```
Relay number 1
Relay action Open
Open
Close
Open 1/2s
Close 1/2s
```

Use the up/down arrow keys to select from:

Open an event (alarm, motion detection, etc.) will cause the relay to open

Close an event (alarm, motion detection, etc.) will cause the relay to close

Open 1/2s an event (alarm, motion detection, etc.) will cause the relay to open for a period of 1/2 second

Close 1/2s an event (alarm, motion detection, etc.) will cause the relay to close for a period of 1/2 second

Press the enter key when the selection has been made.

ALARMS

This menu allows you to configure the Baxall Vivid DVR's alarm system.

```
Alarm input 1
Enabled No
```

Alarm input allows you to select alarm 1 to 16. To change the alarm input, highlight the field and press the enter key. Next, use the up/down arrow keys to select 1 to 16 (or camera number keys 1 to 9). Press enter when selection is complete.

Enabled allows you to enable or disable the selected alarm input. If Enabled is set to **Yes**, more options are revealed:

```
Alarm input 1
Enabled Yes
Setup Normally closed
Alarm action
Test alarm
```

Setup allows you to select whether the alarm is either **Normally open** or **Normally closed**. Select the field and press the enter key. Use the up/down arrow keys to select Normally open or Normally closed. Press the enter key when finished.

Alarm action when selected, additional menus allow you to set the properties for the selected alarm.

```
Alarm input 1
Enabled Yes
Setup Normally closed
Alarm action
Test alarm
Trigger relay 1 No
Trigger relay 2 No
Send email No
Display main monitor alert Yes
Display spot monitor alert No
Sound buzzer Yes
Light alarm LED Yes
Auto-copy event No
Linked to camera Yes
Camera number 1
Camera preset 1
Switch main monitor No
Switch spot monitor No
Action length Fixed time
Record time 30s
```

Trigger relay 1

When the selected alarm is triggered, this option allows you to initiate the action set for Relay 1 (see Relays). Options are **Yes** or **No**.

Trigger relay 2

When the selected alarm is triggered, this option allows you to initiate the action set for Relay 2 (see Relays). Options are **Yes** or **No**.

Send email

When the selected alarm is triggered, this option allows you to send an email if email is set up and the unit is connected to a network. Options are **Yes** or **No**.

Display main monitor alert

When the selected alarm is triggered, this option allows you to display an alert on the main monitor. Options are **Yes** or **No**.

Display spot monitor alert

When the selected alarm is triggered, this option allows you to display an alert on the spot monitor. Options are **Yes** or **No**.

Sound buzzer

When the selected alarm is triggered, this option allows you to sound an audible warning using the unit's built in buzzer. Options are **Yes** or **No**.

Light alarm LED

When the alarm is triggered, this option allows you to illuminate the Alarm led on the front panel of the Vivid DVR. Options are **Yes** or **No**.

Auto-copy event

When the selected alarm is triggered, this option allows you to automatically copy event data, as it happens, to a predetermined place which is set up within the disk manager menu. Options are **Yes** or **No**. If the option is set to **Yes**, the **Pre alarm buffer** is displayed. This is a buffer which will record video for up to 10 seconds prior to the alarm, if an alarm is actioned, then this data is available to store onto the disk drive as a pre alarm state. Select **1** to **10s**.

Linked to camera allows you to link the alarm event to a camera. When the alarm is triggered, the selected camera linked to the alarm will be displayed on either the main monitor or spot monitor depending on the settings chosen. Options are **Yes** or **No**. If the option is set to **Yes**, additional menu items will be displayed.

Camera number (only visible if **Linked to camera** is set to **Yes**) allows you to select one of the cameras connected to the unit. Options are cameras **1** to **16**.

Camera preset (only visible if **Linked to camera** is set to **Yes** and connected camera is a PTZ unit) allows you to select a preset number (that has been previously programmed) for a suitable PTZ/dome camera connected to the input. Options are preset **1** to **16**.

Switch main monitor (only visible if **Linked to camera** is set to **Yes**) if set to **Yes**, the camera will be displayed on the main monitor. Options are **Yes** or **No**.

Switch spot monitor (only visible if **Linked to camera** is set to **Yes**) if set to **Yes**, the camera will be displayed on the spot monitor. Options are **Yes** or **No**.

Action length allows you to select how long the alarm event will occur. Choose from:

Fixed time the alarm will continue for a specified time. If this item is selected, the **Record time** menu item will appear allowing you to enter the length of time from 1 to 600 seconds.

Until cleared the alarm will continue until manually reset by the user.

Until alarm stops the alarm will continue until the process causing the alarm stops.

Record time allows you to set a time period during which video will be recorded at the selected alarm rate before returning to normal record speed. Select from 1 to 600 seconds

Test alarm

Allows you to test the alarm action previously set up. Highlight the field and press the enter key. Select **Yes** or **No**.

Selecting **Networking** from the Hardware setup menu will open a menu similar to one of the following:

Ethernet enabled	Yes
Use DHCP	No
IP addresses	
Email setup	
Local domain	baxall.com
Bandwidth limit	50%
Use proxy server	Yes
Proxy server	(not set)
Proxy port	8080
Proxy username	(not set)
Proxy password	(not set)
RS485 usage	Dome control
Dome protocol (RS485)	Baxall Prodome
Dome protocol (Screw)	Baxall Prodome
RS232 setup	
MAC address	

RS485 useage set to Dome control

Ethernet enabled	Yes
Use DHCP	No
IP addresses	
Email setup	
Local domain	baxall.com
Bandwidth limit	50%
Use proxy server	Yes
Proxy server	(not set)
Proxy port	8080
Proxy username	(not set)
Proxy password	(not set)
RS485 usage	External keyboard
RS485 address	1
RS485 baud rate	9600
Dome protocol (Screw)	Baxall Prodome
RS232 setup	
MAC address	

RS485 useage set to External keyboard

Ethernet enabled allows you to enable or disable Ethernet connectivity. Options are **Yes** or **No**. If the option is set to Yes, additional menu items will be displayed.

Use DHCP (only visible if Ethernet enabled is set to Yes) allows dynamic IP addresses to be enabled or disabled. Options are **Yes** or **No**. If yes is selected IP addresses will be obtained automatically; if no, IP addresses must be entered manually.

IP addresses (only visible if Ethernet enabled is set to Yes) allows you to manually set up IP addresses. Selecting this field and pressing the enter key will open the following menu:

IP address	192.168.000.231
Subnet mask	255.255.255.000
Default gateway	192.168.000.250
DNS server	192.168.000.250
NTP servers	130.88.200.98
	xxx.xxx.co.uk
	(Not set)
	(Not set)
	(Not set)

To edit an address, select the field to be edited using the up/down arrow keys and then press the enter key. The selected address will be opened in a sub menu with the first three numbers selected (IP addresses can only be edited manually if Use DHCP is set to no):

192.168.000.231

Use the up/down arrow keys or camera number keys (1 to 9) to change the selected numbers. When finished, use the right arrow key to select the next three numbers in the address. Again, use the up/down arrow keys or camera number keys to change the numbers. Carry on in this manner until the address has been fully entered. Press the enter key to quit editing.

Email setup (only visible if Ethernet enabled is set to Yes) allows you to configure the settings required for the **Send email** action. To edit the properties, highlight the field and press the enter key. A sub menu similar to the following will appear:

SMTP server	207.228.254.011
SMTP port	25
SMTP domain	baxall.com
From address	vivid@baxall.com
Email addresses	vivid@baxall.com
	(Not set)
	(Not set)
	(Not set)
	(Not set)
Send test mail	

NETWORKING

SMTP Server allow you to set up the SMTP properties of the email. Editing is achieved in exactly the same way as editing an IP address above.

SMTP Port allows the SMTP port number to be selected. Select the field and press the enter key. Use the up/down keys to select the port number (1 to 65535)

SMTP Domain allows you to enter the SMTP domain. Select the field and press the enter key. The domain will be opened in a sub menu with the first character selected:

baxall.com

To edit the SMTP Domain:

1. Use the up or down arrow keys to change the selected first character of the domain. Available options include A to Z in both upper and lower case, 0 to 9, and various ASCII characters. A USB keyboard can also be used for convenience.
2. After the first character has been edited, use the right arrow key to move to the next character. Edit the character as in step 1 above.
3. When the domain is complete, press the enter key to exit.

From Address allows you to enter an address that will be included in the email's 'From' line. Selection and editing is done in the same way as the SMTP domain, above.

Email addresses these fields allow you to enter up to five email addresses. Selection and editing is done in the same way as the SMTP domain, above. A maximum of five email addresses can be set up.

Local domain (only visible if Ethernet enabled is set to Yes) allows you to set the local domain name. Selection and editing is done in the same way as the SMTP domain, above.

Bandwidth limit (only visible if Ethernet enabled is set to Yes) allows you to set the maximum network bandwidth used by the Vivid DVR. Values are 5% to 100%.

Use proxy server allows you to enable or disable a proxy server. Options are **Yes** or **No**. If the option is set to Yes, additional menu items will be displayed.

Proxy server (only visible if Use proxy server is set to Yes) allows you to enter the proxy server's name. Editing is done in the same way as the SMTP domain, above.

Proxy port (only visible if Use proxy server is set to Yes) allows you to enter the proxy server's port. Select the field and press the enter key. Use the up/down arrow keys to change the port number. Press the enter key when finished.

Proxy username and **Proxy password** (only visible if Use proxy server is set to Yes) allow the proxy username and password to be entered. Editing is done in the same way as for SMTP Domain above.

RS485 Usage allows you to select what the RS485 port will be used for. Select the field and press the enter key. Use the up/down arrow keys to select either **Dome control** or **External keyboard**. Press the enter key when finished.

RS485 address (only visible if External keyboard is selected in the RS485 usage field) Allows you to enter the address of the external keyboard. Select 1 to 100.

Dome protocol (RJ45) allows you to select the dome protocol for use with the RJ45 connector on your Vivid unit. Select the field and press the enter key. Use the up/down arrow keys to select either **Pelco D** (or any dome that supports Pelco D protocol), **American Dynamics** or **Baxall Prodome**. Press the enter key when finished.

Dome protocol (screw) allows you to select the dome protocol for use with the screw connectors on your Vivid unit. Select the field and press the enter key. Use the up/down arrow keys to select either **Pelco D** (or any dome that supports Pelco D protocol), **American Dynamics** or **Baxall Prodome**. Press the enter key when finished.

RS232 Setup allows you to set the RS232 port options. Select the field and press the enter key to open the RS232 setup menu.

Baud rate	57600
Bits	8
Parity	None
Stop bits	1
Flow control	None

Baud rate select from 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200.

Bits select from 5, 6, 7 or 8.

Parity select from None, Even or Odd.

Stop bits select from 1 or 2.

Flow control select from Hardware, Software or None.

MAC address shows the Vivid unit's MAC address (information only)

CONFIGURE DISPLAY

This menu item allows configuration of the monitors that are connected to the Vivid DVR. The top level menu is divided into **Main monitor** and **Spot monitor**. Selecting **Main monitor** will open a menu similar to the following:

Main Monitor Settings

Full screen interlace	Yes
Multiscreen interlace	Yes
Monitor type	Overscan
Sequenced	Yes
Sequence	
Dwell time	4s
Show on-screen display	Yes
On-screen display setup	
On-screen display offsets	

Full screen interlace interlaced images are made of two fields. In full screen this will give the impression of a higher resolution and sharper image. Select either **Yes** or **No**.

Multiscreen interlace interlaced images are made of two fields. In Multiscreen this will give a sharper image but may appear to shimmer. Select either **Yes** or **No**.

Monitor Type Select from **Overscan** or **Underscan** to suit the type of monitor you are using. The difference between these two options will produce either a stretched or normal size image to suit the type of monitor used.

Sequenced activates the display to sequence between all the cameras that have been enabled within the **Sequence** menu. Select **Yes** or **No**.

Sequence (only visible if Sequenced is set to Yes) allows you to select which of the cameras connected to the Vivid DVR will be included in the sequence when the sequence key is pressed on the front panel. Selecting the field and pressing the enter key will open a menu similar to the following:

Camera1	Yes
Camera2	Yes
Camera3	Yes
Camera4	Yes
Camera5	Yes
Camera6	Yes
Camera7	Yes
Camera8	Yes
Camera9	Yes
Camera10	Yes
Camera11	Yes
Camera12	Yes
Camera13	Yes
Camera14	Yes
Camera15	Yes
Camera16	Yes

1. Select a camera using the up/down arrow keys and press enter. Use the up/down arrow keys to select **Yes** to include the selected camera in the sequence, or **No** to omit it. Press the enter key when finished.
2. Use the up/down arrow keys to select the next camera and follow step 1.
3. When all the cameras required in the sequence (or not) have been edited, press the left arrow key to exit the menu.

Dwell time (only visible if Sequenced is set to Yes) allows you to select the time period that each camera will be displayed until the sequence moves on to the next camera. Select the field and press enter. Use the up/down arrow keys to select from 1 to 60 seconds. Press enter to exit.

Show on-screen display turns the on-screen display (date, time, camera names, etc.) on or off.

On-screen display setup (only visible if Show on-screen display is set to Yes). Selecting the field and pressing the enter key will open a menu similar to the following:

Show date	Yes
Location	Top right
Foreground colour	White
Inverse	No
Show time	Yes
Location	Top right
Foreground colour	White
Inverse	No
Screen window	1
Show camera name	Yes
Show camera number	Yes
Location	Bottom left
Foreground colour	White
Inverse	No
Show extra info	
Location	Bottom left
Foreground colour	Green
Inverse	No

Show date allows you to select whether the date will be displayed or not. Select from **Yes** or **No**.

Location determines the location of the date. Select the field and press the enter key. Use the up/down arrow keys to select from **Top left**, **Top right**, **Bottom left** or **Bottom right**. Press the enter key when selection is complete.

Foreground colour determines the colour of the text (or background colour if **Inverse** is set to Yes). Use the up/down arrow keys to select from **White**, **Blue**, **Green**, **Cyan**, **Red**, **Magenta** or **Yellow**. Press the enter key when selection is complete.

Inverse inverts the text colour with the background e.g. if text is set to white, selecting inverse will display black text on a white background.

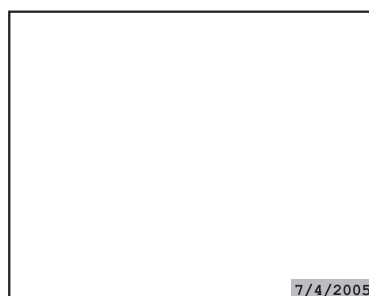
Show time allows you to select whether the time will be displayed or not. Select from **Yes** or **No**. All other editable parameters are the same as for **Show date** above.

Show camera name allows you to select whether the camera name will be displayed or not. Select from **Yes** or **No**. All other editable parameters are the same as for **Show date** above.

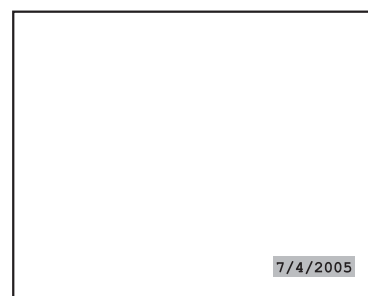
Show extra info allows you to select whether the information such as alarms, video loss, etc. will be displayed or not. Select from **Yes** or **No**. All other editable parameters are the same as for **Show date** above.

On-screen display offsets

Top offset, **Bottom offset**, **Left offset** and **Right offset**. These settings allow the absolute positions of the on-screen captions to be moved by increments of +3 to -3. Negative values move the captions towards the centre of the display. Positive values move the captions away from the centre as shown below.



Bottom offset = 0
Right offset = 0



Bottom offset = -3
Right offset = -3

Spot Monitor Settings

Selecting Spot monitor from the Configure display menu will open a menu similar to the following:

Monitor type	Overscan
Sequenced	Yes
Sequence	
Dwell time	4s
On-screen display setup	
On-screen display offsets	

All settings available within this menu are exactly the same as for the Main Monitor Settings menu.

ALARM STATUS

These pages allow you to manually acknowledge alarm or motion detection events. The default page shows information for Alarm events. Selecting **Motion** on this page opens a similar page detailing motion detection events. A typical alarm status page is shown below.

Alarm Status			
1	Alarming	Timed Out	
2	Alarming	In progress	Clear alarm
3	Disabled	-	
4	Disabled	-	
5	Disabled	-	
6	Disabled	-	
7	Disabled	-	
8	Disabled	-	
9	Disabled	-	
10	Disabled	-	
11	Disabled	-	
12	Disabled	-	
13	Disabled	-	
14	Disabled	-	
15	Disabled	-	
16	Disabled	-	
Back to menus		Motion	

To manually clear an alarm

1. Used the up/down arrow keys to select the alarm or motion event to be cleared (if there is more than one)
2. Press the enter key to clear the selected alarm or motion event.
3. The 'In progress' caption will change to 'Manually cleared'.

The recording setup menu item opens the following menu:

Turbo mode
Schedule
Motion detection
Sound
RS232 Data

TURBO MODE

When selected, Turbo mode permits recording at a rate of up to 100 pics/sec (VIVID+ units only)

SCHEDULE

Selecting schedule opens a sub menu similar to the following:

Set night period	Yes
Night period start	19:30:00
Night period end	08:00:00
Set weekend period	Yes
Weekend period start	Friday 19:30:00
Weekend period end	Monday 08:00:00

Set night period is used to define a time frame during which the Vivid DVR will not record. The time is entered as a start and end time between which recording is disabled. Select **Yes** or **No**. Each camera can be selected individually.

Night period start (only visible if Set night period is set to Yes) allows you to enter the start time for the night period. To set the night period time:

1. Select the field and press the enter key.
2. The time field will be opened with the 'hours' field highlighted.

19:30:00

3. Use the up/down arrow keys (or the camera number keys 1 to 9) to change the hours setting.
4. When finished, press the right arrow key to select the minutes field. Use the up/down arrow keys to change the minutes.
5. Press the right arrow key to select the seconds field (if required). Use the up/down arrow keys or number keys to change.
6. When the required time has been entered, press the enter key to finish.

Night period end (only visible if Set night period is set to Yes) allows you to enter the night period end time. Editing is done in the same way as for Night period start above.

Set weekend period is used to define a time frame during which the Vivid DVR will not record. The time frame is entered as a start and end time between which recording is disabled. Select **Yes** or **No**. Each camera can be selected individually.

Weekend period start (only visible if Set weekend period is set to Yes) allows you to enter the start time for the weekend period. Editing is done in the same way as for Night period start above.

Weekend period end (only visible if Set weekend period is set to Yes) allows you to enter the weekend period end time. Editing is done in the same way as for Night period start above.

MOTION DETECTION

Selecting Motion detection from the recording menu will open the motion detection menu similar to the diagram shown below:

Camera number	1
Active	Yes
Setup grid	
Motion action	
Motion tracking	10s
Status	Not detected
Action status	None

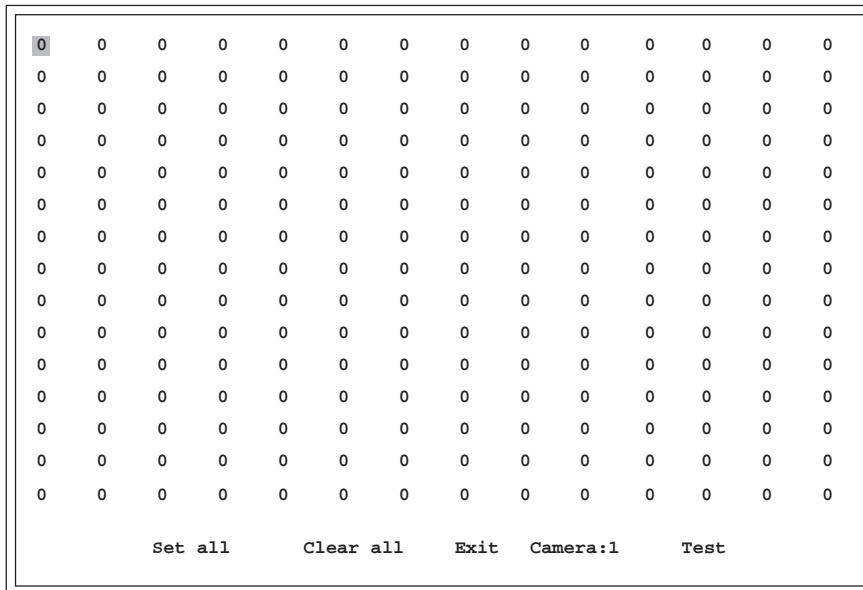
Camera number allows you to select the camera that will have motion detection applied to it. Use the enter key and up/down arrow keys to select the camera.

Active enables or disables motion detection for the selected camera. Select **Yes** or **No**.

Setup grid (only visible if Active is set to Yes) selecting Setup grid will superimpose a grid over the image from the selected camera. The grid allows you to select the areas of the scene where motion detection is to be activated.

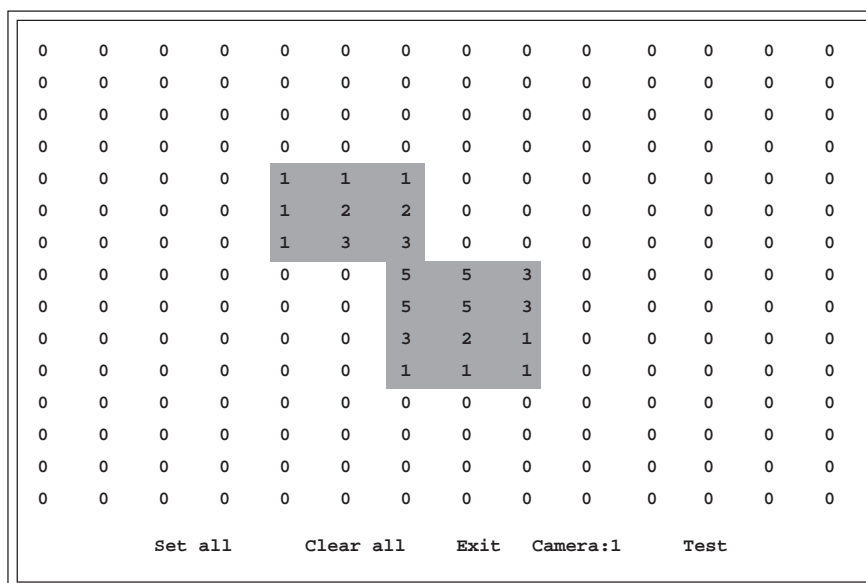
RECORDING SETUP

The default grid is shown below. A '0' shows whether that particular grid location is disabled (motion detection inactive). The default is for all the grid locations to be inactive.



Enabling grid locations

When the motion detection grid is first opened, the top left '0' is selected (indicated by a coloured square). The up/down and left/right arrow keys can be used to move this 'cursor' around the grid. When the desired grid square has been selected, press the enter key. The '0' will turn into a '1' indicating that the area is active. Pressing the enter key again will turn the '1' into a '2'. There are five levels of sensitivity selected by pressing the enter key. A setting of '1' is the least sensitive to motion and '5' is the most sensitive. The example below shows an area that has been set up for motion detection with varying degrees of sensitivity. Activity within this area will activate whatever action has been set in the **Motion action** menu.



Along the bottom edge of the motion detection grid are five menu items: **Set all**, **Clear all**, **Exit**, **Camera:1** and **Test**.

Set all allows all the grid squares to be set to active. Press enter. The first press sets '1', second press '2', etc. up to '5'.

Clear all allows all the grid squares to be set to inactive (0).

Exit exits the motion grid setup page.

Camera:1 by selecting this field and using the enter key, it is possible to set up motion detection for all the cameras connected to the Vivid DVR. Each press of the enter key selects the next camera and superimposes the grid over it.

Test allows you to test motion detection for areas set up on the grid. Selecting Test causes the grid overlay to disappear. If motion is detected within the designated areas of the scene, a ★ will appear at the triggered gridpoints. Select **Stop test** to exit.

Motion action

This menu allows you to set up the event parameters that will be used if motion detection is activated for the selected camera.

Trigger relay 1	No
Trigger relay 2	No
Send email	No
Switch main monitor	No
Switch spot monitor	No
Display main monitor alert	No
Display spot monitor alert	No
Sound buzzer	No
Light alarm LED	Yes
Auto-copy event	No
<hr/>	
Action length	Fixed time
Record time	30s

Trigger relay 1

When motion detection is activated, this option allows you to initiate the action set for Relay 1 (see Relays). Options are **Yes** or **No**.

Trigger relay 2

When motion detection is activated, this option allows you to initiate the action set for Relay 2 (see Relays). Options are **Yes** or **No**.

Send email

When motion detection is activated, this option allows you to send an email if email is set up and the unit is connected to a network. Options are **Yes** or **No**.

Switch main monitor

If set to Yes, the camera will be displayed on the main monitor. Options are **Yes** or **No**.

Switch spot monitor

If set to Yes, the camera will be displayed on the spot monitor. Options are **Yes** or **No**.

Display main monitor alert

When motion detection is activated, this option allows you to display an alert on the main monitor. Options are **Yes** or **No**.

Display spot monitor alert

When motion detection is activated, this option allows you to display an alert on the spot monitor. Options are **Yes** or **No**.

Sound buzzer

When motion detection is activated, this option allows you to sound an audible warning using the built in buzzer. Options are **Yes** or **No**.

Light alarm LED

When motion detection is activated, this option allows you to illuminate the Alarm led on the front panel of the Vivid DVR. Options are enabled **Yes** or **No**.

Auto-copy event

When motion detection is activated, this option allows you to automatically copy event data, as it happens, to a predetermined place which is set up within the disk manager menu. Options are **Yes** or **No**. If the option is set to Yes, the **Pre alarm buffer** is displayed. This is a buffer which will record video for up to 10 seconds prior to the alarm, If an alarm is actioned, then this data is available to store onto the disk drive as a pre alarm state. Select **1** to **10s**.

Action length allows you to select how long the alarm event will occur. Choose from:

Fixed time the alarm will continue for a specified time. If this item is selected, the Record time menu item will appear allowing you to enter the length of time from 1 to 600 seconds.

Until cleared the alarm will continue until manually reset by the user from the Alarm status page.

Until alarm stops the alarm will continue until the process causing the alarm stops.

Record time allows you to set a time period during which video will be recorded at the selected alarm rate before returning to normal record speed. Select from 1 to 600 seconds

Motion tracking

This menu item allows you to select a period of time during which motion in the scene will be ignored. Select from 0 to 5 seconds.

Status and **Action status** are provided for information only. Messages are provided to indicate motion detection status and action status.

SOUND

The Sound menu item allows you set the parameters for the Vivid DVR's sound inputs and outputs.

Sound recording active	Yes
Microphone sensitivity	Medium
Output volume	Medium
Input source	Microphone
Play live sound	

Sound recording active allows you to enable or disable sound recording. Select **Yes** or **No**.

Microphone sensitivity adjusts the sensitivity of the microphone input. Select from **Low**, **Medium** or **High**.

Output volume adjusts the output volume of the audio out connector. Select from **Low**, **Medium** or **High**.

Input source allows you to select the source type of the audio input connector. Select from **Microphone** or **Line in**.

Play live sound allows you to enable or disable live sound playback. Select **Yes** or **No**.

RS232 DATA

This menu item allows you to select whether RS232 data will be recorded or not (from point-of-sale equipment etc.). Select from **Yes** or **No**.

Record RS232 data	Yes
-------------------	-----

REPLAY

This menu allows you to select playback parameters such as sound and on-screen text. In addition, blocks may be marked for playback or converted to events.

Play sounds	Yes
Show RS232 text	Yes
View events log	
Mark block start	7/4/2005 10:34:54
Mark block end	7/4/2005 10:34:54
Length of marked block	0 Mbytes
Export marked block	
Make marked block an event	
Exported files	

Play sounds enables or disables sound on playback. Select **Yes** or **No**.

Show RS232 text enables or disables RS232 text on playback (from point-of-sale equipment etc.). Select **Yes** or **No**.

View events log selecting View events log opens the Event filter page below.

View events log	
Filters	Alarms [X] Motion [X] Marked blocks [X] Video Loss [X] Shutdown [X] Config change [X] Unit password incorrect [X] Remote password incorrect [X] Exported data [X]
Cameras	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X] [X][X]
	Events with no associated camera [X]
Time	After time [X] 07/04/2005 10:34:54 Before time [X] 07/04/2005 10:34:54
	Back to menus View events

This page allows you to select various filtering criteria before viewing the log. Mark the events you wish to view with an **[X]** to include them in the log listing. Select **View events** to view the log

Shown below is a typical event log. Events can be removed from the log by using the up/down arrow keys to select **Del** and pressing the enter key. The message '**Are you sure? Data will be permanently deleted!**' will be displayed. Select **Yes** or **No** to delete the event.

```

View events log

Setup change - 18/02/2005 14:22:21 18/02/2005 14:22:24 Del
Setup change - 18/02/2005 14:22:21 18/02/2005 14:25:06 Del
Setup change - 18/02/2005 14:22:21 22/02/2005 16:53:04 Del
Shutdown - 22/02/2005 16:53:24 22/02/2005 18:16:14 Del
Unit pass - 22/02/2005 18:16:21 22/02/2005 18:18:52 Del
Unit pass - 22/02/2005 18:18:03 22/02/2005 18:18:24 Del
Unit pass - 22/02/2005 18:18:42 22/02/2005 18:19:11 Del
Unit pass - 22/02/2005 14:19:04 22/02/2005 18:19:43 Del
Unit pass - 22/02/2005 18:19:24 22/02/2005 18:19:40 Del
Unit pass - 22/02/2005 18:19:27 22/02/2005 18:19:24 Del
Setup change - 22/02/2005 18:19:34 22/02/2005 18:20:27 Del
Setup change - 23/02/2005 18:51:48 22/02/2005 18:25:22 Del
Setup change - 23/02/2005 17:21:09 22/02/2005 17:30:18 Del
Video Loss 1 23/02/2005 17:05:11 23/02/2005 17:31:44 Play Del
Setup change - 23/02/2005 17:19:42 23/02/2005 17:44:24 Del

Showing events 1 - 15 of 320 (Page1/22)

Clear log Return to filters Next page

```

Mark block start allows you to mark the start point of a recorded data block. Select the field and press the enter key. Use the left/right arrow keys to select the date or time parameters. Use the up/down arrow keys to change the selected parameter.

Mark block end allows you to mark the end point of a recorded data block. Select the field and press the enter key. Use the left/right arrow keys to select the date or time parameters. Use the up/down arrow keys to change the selected parameter.

Export marked block selecting this option exports the marked block to a location on the disk ready to export to an external USB or SCSI device.

Length of marked block selecting this option and pressing the enter key will initiate a process that will calculate the length of the marked block (in Mbytes).

Make marked block an event converts the selected block into an event.

Exported files This page shows the files exported to a location on the disk ready to be exported to external media such as a USB or SCSI device. You can also manage the files e.g. delete individual files, erase the media, or stop the media.

```

Export Disk

Export destination:USB : USB stick

Files:
1 vivid-16.cfg          56K   Del
2 vivid-2-11.download  6.5M  Del

Showing files 1-2 of 2

Capacity: 62.0M Available: 55.0M

Back to menus Erase Stop

```

Selecting **General** opens a menu similar to the following:

Date and Time	
Language	English (UK)
Menu timeout period	240s
Passwords	
Base camera number	1
Unit description	
Download	
Quick start	
Reset defaults	
Shutdown system	

DATE AND TIME

Selecting Date and Time will open a menu similar to the following:

Date and Time	11/04/2005 11:06:18
Date format	dd/mm/yyyy
Show day	No
Time format	hh:mm:ss 24hr clock
Get time from NTP	No
Get time from GPS	Yes
Auto summer time	Yes
Time difference to UTC	+00:00

Date and Time allows you to set the desired date and time for the Vivid DVR. Select the field and press the enter key. Use the left/right arrow keys to select the date or time parameters. Use the up/down arrow keys to change the selected parameter.

Date format allows you to select the format for date display. Choose from **dd/mm/yy**, **dd/mm/yyyy**, **mm/dd/yy** or **mm/dd/yyyy**.

Show day selecting **Yes** will append the day in front of the displayed date e.g. Monday 01/01/2005.

Time format allows you to select the time display format. Choose from **hh:mm:ss 24hr clock**, **hh:mm 24hr clock**, **hh:mm:ss AM/PM** or **hh:mm AM/PM**.

Get time from NTP This will obtain a time stamp using the Network Time Protocol method which is a way of synchronising the clocks on devices connected on a Local Area Network.

Get time from GPS (for future development)

Auto summer time allows the Vivid unit to automatically compensate for daylight saving time changes. Select **Yes** or **No**.

Time difference in UTC allows you to enter a time difference in hours from UTC time (also referred to as Greenwich Mean Time in the UK).

LANGUAGE

Selecting Language allows you to choose the language which will be used within the menu system. Choose from **English (UK)**, **English (US)**, **Francais**, **Deutsch**, **Español**, **Nederlands**, **Italiano**, **Portuguese** or **Russian**.

MENU TIMEOUT PERIOD

Menu timeout period allows you to select the timeout period for the menu system This will close the menu system if no activity is detected during the time period set. Select a value between **5s** to **240s**.

PASSWORDS

Selecting Passwords will open the following menu:

Password levels	All passwords
Set user password	
Set installer password	

Password levels allows you to select whether passwords are required to enter the menu system. Select from the following **All passwords** (password required for both user and installer), **Installer password only** (password required only for the installer) or **No passwords** (no passwords are required).

Set user password allows you to select a new user password. Select the field and press the enter key.

Enter old password
- - - - -

Use the camera number keys (1 to 6) to enter the old user password.

<p>Enter new password</p> <p>- - - - -</p>
--

Enter a new password using the camera number keys (1 to 6).

<p>Enter new password again</p> <p>- - - - -</p>
--

Re-enter the new password.

<p>Password changed</p> <p>OK</p>

The user password has been changed.

Set installer password allows you to select a new installer password. The password setting process is the same as for setting a new user password.

BASE CAMERA NUMBER

Selecting Base camera number allows you to set the base number for camera number 1 on the unit. For example, if you had three Vivid DVR's all with 16 cameras connected to them, then the base camera on the first unit would be set to 1, the second unit to number 17, and the third unit to number 33. Select from **0** to **240**.

UNIT DESCRIPTION

Selecting Unit description opens a menu similar to the following:

Model name	Baxall Vivid 16
Software version	vidid 2 5
Video format	PAL
Unit description	Unit ID 00 15 80 255 255 255
MAC address	00:0F:50:FF:FF:E1
Serial number	443361H

Model name shows the model of the unit and the maximum number of cameras that can be connected to it.

Software version information only - required when contacting technical support.

Video format shows the format of the connected video sources.

Unit description allows you to enter a description for the unit. To enter a description:

1. Select the field and press the enter key.
2. Use the up or down arrow keys to change the selected first character of the description. Available options include A to Z in both upper and lower case, 0 to 9, and various ASCII characters. A USB keyboard can also be used for convenience.
3. After the first character has been edited, use the right arrow key to move to the next character. Edit the character as in step 2 above.
4. When the description is complete, press the enter key to exit.

MAC address shows the MAC address of the unit.

Serial number shows the serial number of the unit.

DOWNLOAD

Download allows you to set the parameters required to download software updates, patches, etc. Selecting download will open a menu similar to the following:

```

Status           Idle
Download server  www.baxall.com/vivid
Download file     /download/vividxx.download
Download new software
  
```

Status information only. Shows the status of the download once it has been initiated.

Download server allows you to enter the URL of the download server. Enter the URL the same way as in **Unit description** above.

Download file allows you to set the path and filename of the file to be downloaded. Enter the path the same way as in **Unit description** above.

Download new software initiates software download. You must answer yes or no to commence software download.

```

Really download new software?
Yes
No
  
```

QUICK START

The Quick start menu option allows you to quickly set up the Vivid DVR by selecting a few simple settings. The Vivid DVR will configure itself automatically to the optimum settings for the choices made. Selecting Quick start and pressing the enter key will open a menu similar to the following:

```

Enter number of days recording required

31

Press enter when finished
  
```

Use the up/down arrow keys or the camera number keys (1 to 9) to enter the number of days recording you require. Press the enter key when finished.

After the enter key has been pressed, the next menu in the quick start set up system will open:

```

Do you require picture quality or update rates?

Update rates
Picture quality
  
```

Update rates selecting this option will optimise the Vivid DVR to obtain the best picture update rates (pictures per second) possible for each camera according to the number of days recording selected.

Picture quality selecting this option will provide the best picture quality for each camera at the expense of update rates according to the number of days recording selected.

Select the option required and press the enter key. The Vivid DVR will automatically configure itself and exit the menu system.

RESET DEFAULTS

This menu option allows you to return the Vivid DVR to its factory default settings. Highlight the field and press the enter key. A message box asking you to confirm the action will be displayed.

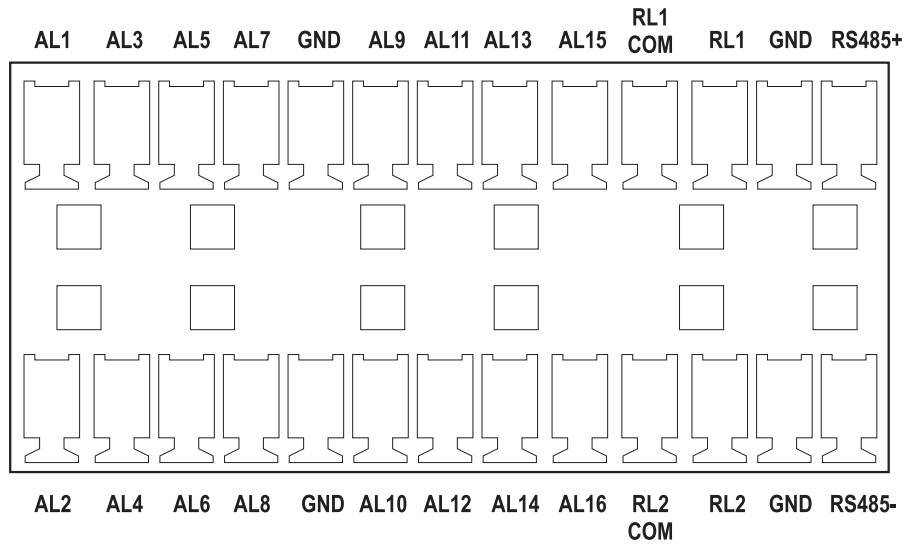
SHUTDOWN SYSTEM

This menu option allows you to shut down the Vivid DVR. Highlight the field and press the enter key. A message box asking you to confirm the action will be displayed.

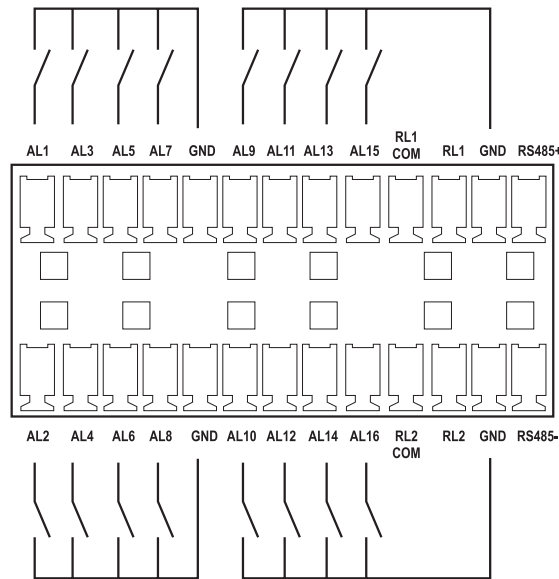
⚠ WARNING Always ensure that the Vivid DVR is shut down using the Shutdown system menu item. This will ensure that the unit is not damaged or any data is lost.

APPENDIX 1 - MAIN I/O CONNECTOR PIN OUT

The 3.5 mm Combicon™ screw connector on the rear of the Vivid DVR provides terminals for alarm inputs, alarm outputs and RS485 (for dome cameras).

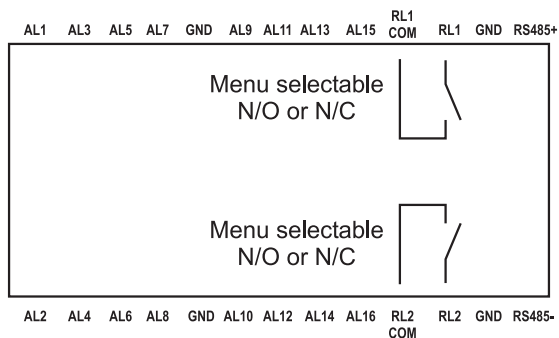


Alarm inputs

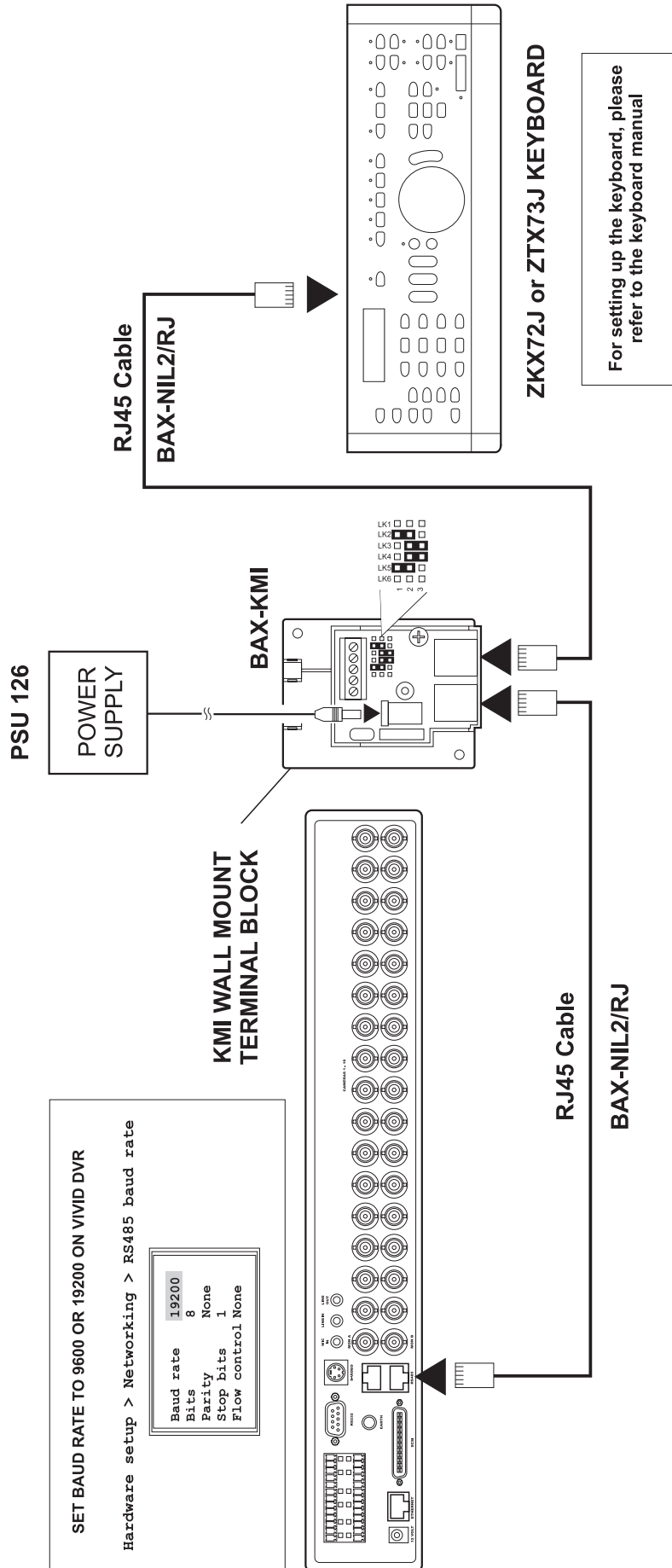


Alarm outputs

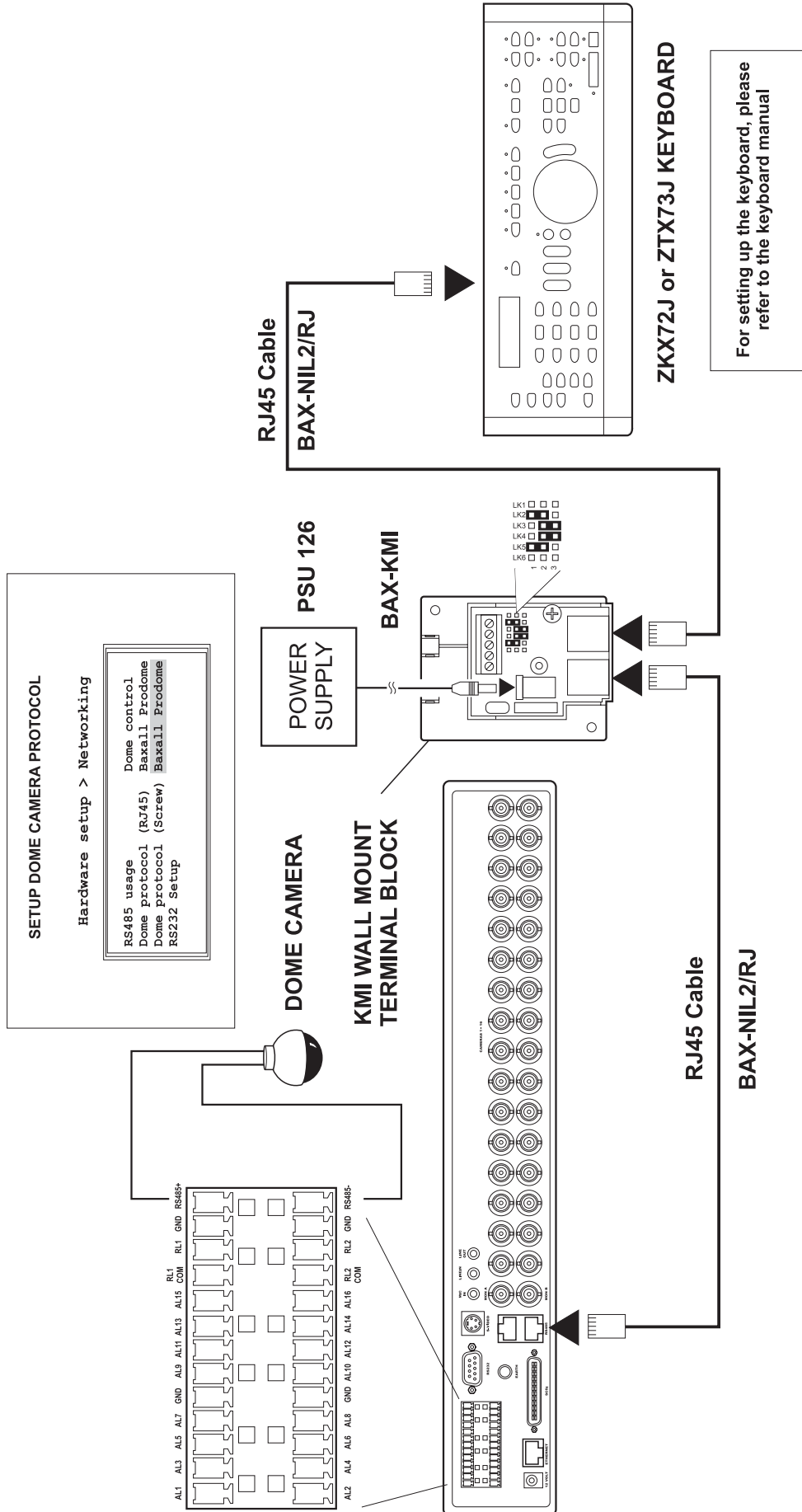
Two relay outputs are provided rated at 0.5A continuous, 1A momentary. Each relay is menu programmable normally open or normally closed.



APPENDIX 2 - BAXNET KEYBOARD CONNECTIONS



APPENDIX 3 - BAXNET KEYBOARD AND DOME CAMERA CONNECTIONS



APPENDIX 4 - ZKX.. KEYBOARD MAPPING

Prerequisites/Constraints

The software has been developed using a ZKX... type keyboard, version V2.05. It cannot be guaranteed to work with other Baxnet keyboard types.

Summary of keys implemented

Function	ZKX.. key	Vivid DVR front panel equivalent
Camera select	<i>nnnn</i> , Camera key	Appropriate Camera key
Monitor select	<i>nnn</i> , Monitor key *2	MON key
Sequence	<i>nnn</i> , Sequence key	SEQ key
Event	Shift + Alarm acknowledge key	EVENT key
Multi-screen	Multiscreen key	MULTI key
Menu enter	Shift + menu key	MENU key
Menu exit	Clear (escape) key	MENU key
Enter	Enter key	ENTER key
Telemetry	Telemetry enable/disable key *3	MON key
Electronic zoom	Search key	Digit key twice
Stop	Stop key	STOP/LIVE key
Play	Start key	PLAY key
Reverse play	Reverse key	N/A
Pause	Pause key	PAUSE key
Rewind	Rewind key	BACK key
Fast forward	Fast forward key	FORWARD key
Camera menu (quick)	<i>nnn</i> , shift + camera key	Digit key held down
Picture in picture	shift + multiscreen key	PIP key
Goto	shift + enter key	GOTO key
Iris open	Iris open key	FORWARD key*
Iris close	Iris close key	BACK key*
Focus far	Focus far key	ENTER key*
Focus near	Focus near key	MENU key*
Goto preset	<i>nn</i> , Preset key	camera keys (short press)*
Store preset	<i>Fn, nnn</i> , preset	camera keys (long press)*
Zoom in	Joystick twist clockwise (*1)/zoom in key	GOTO key
Zoom out	Joystick twist anticlockwise (*1)/zoom out key	EVENT key
Pan left	Joystick left (*1)	Cursor left
Pan right	Joystick right (*1)	Cursor right
Tilt up	Joystick up (*1)	Cursor up
Tilt down	Joystick down (*1)	Cursor down

NOTES:

- *1 Only accessible when the unit is in dome control (telemetry) mode (see *3)
- *2 Where monitor 1 is used to select the main monitor and all other monitors select the spot monitor
- *3 Telemetry mode can only be entered using this key when the cursor is currently shown

KEYBOARD LEDs**Alarm indication LED**

The alarm indication led will light whenever the DVR indicates the presence of an alarm. This is subject to the alarm configuration being setup such that the "Light alarm LED" feature is enabled.

Video control LEDs

The LEDs above the video control buttons reflect the current operation, i.e. playback, reverse play, pause etc, as displayed on the OSD. This will only occur when these operations are requested via the Baxnet keyboard and not the front panel of the Vivid unit.

Note that the record key and LED are not implemented.

Electronic zoom LED

Lit when the unit is performing electronic zoom as requested by the electronic zoom key.

Telemetry LED

Lit whenever the unit is in dome control mode. This occurs when the dome control key is pressed whilst the cursor is displayed on the screen.

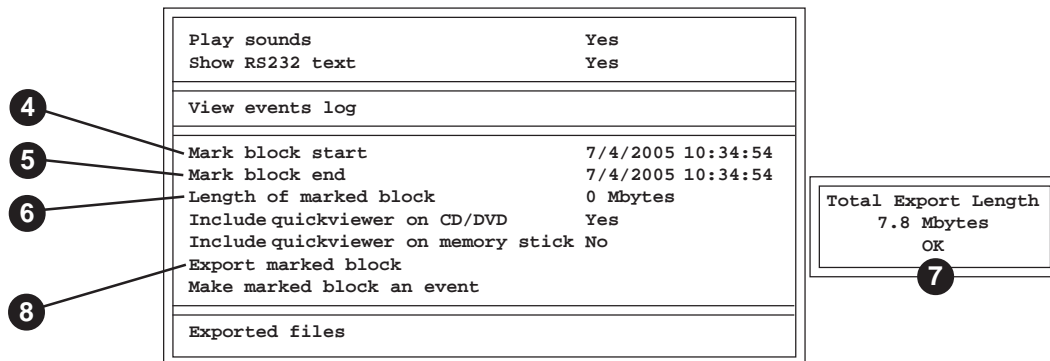
APPENDIX 5 - USB KEYBOARD MAPPING

Vivid Front Key Pad Button	Standard USB PC Keyboard
Menu	Spacebar
Enter	Enter
Camera Key 1	1
Camera Key 2	2
Camera Key 3	3
Camera Key 4	4
Camera Key 5	5
Camera Key 6	6
Camera Key 7	7
Camera Key 8	8
Camera Key 9	9
Camera Key 10	0
Camera Key 11	Qq
Camera Key 12	Ww
Camera Key 13	Ee
Camera Key 14	Rr
Camera Key 15	Tt
Camera Key 16	Yy
Forward	>.
Rewind	<.
Play	Ll
Pause	::
Stop/live	@'
Monitor	Aa
Sequence	Ss
PIP	Zz
Multiscreen	Xx
Goto	Dd
Event	Cc

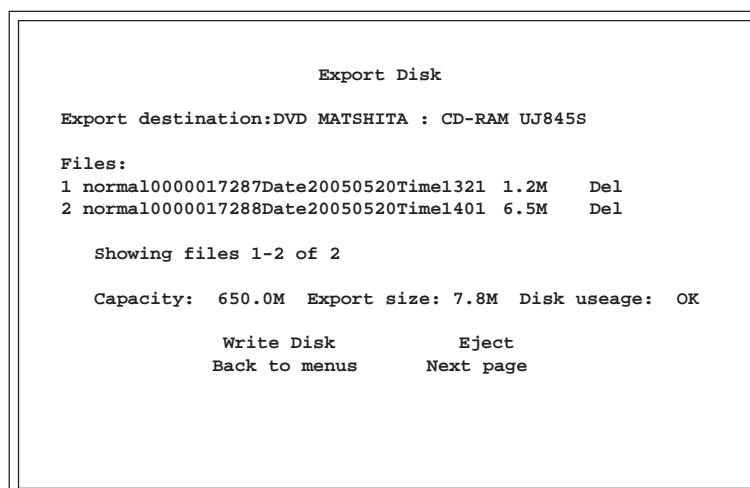
Note: Not all USB PC keyboards are suitable for use on the Vivid DVR. If the keyboards are simple USB devices, they should work fine. However, some keyboards, especially those that support the direct attachment of pointing devices (i.e. mice) and other USB devices, actually consist of a USB hub and a keyboard and therefore may not work.

APPENDIX 6 - EXPORTING FILES TO CD AND DVD

1. Insert a blank CD or DVD into the Vivid unit.
2. Press the Menu key and enter the installer password.
3. Use the up/down arrow keys to select the **Replay** menu and press the enter key.

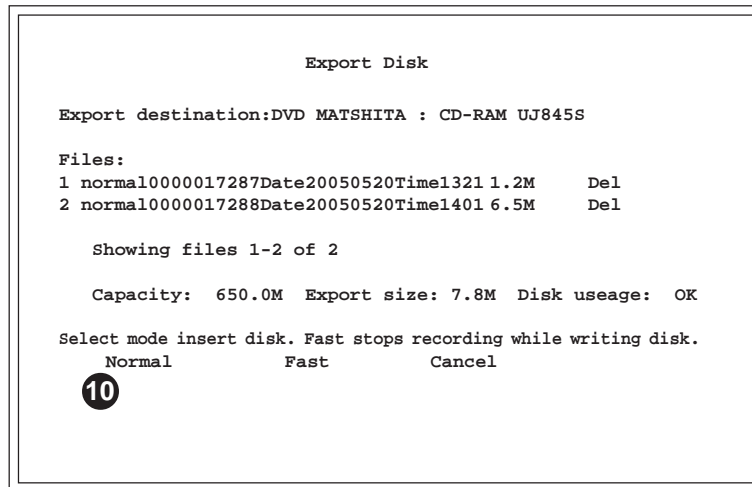


4. **Mark block start** allows you to enter the starting point of the data you want to export. Select the field and press the enter key. Use the left/right arrow keys to select either the date or time parameters. Use the up/down arrow keys to change the selected parameter.
5. **Mark block end** allows you to enter the ending point of the data you want to export. Select the field and press the enter key. Use the left/right arrow keys to select either the date or time parameters. Use the up/down arrow keys to change the selected parameter.
6. Use the down arrow key to select **Length of marked block** and press the enter key. This will initiate a process that will calculate the length of the marked block (in Mbytes) and display the results in a pop-up window.
7. Select **OK** and press the enter key to close the pop-up window.
8. Use the up/down arrow keys to select **Export marked block** and press the enter key. The selected data will then be exported to a temporary location on the Vivid DVR's hard drive. When completed, the data can be copied to the DVD/CD (step 9). NOTE: The QuickViewer program can be copied to the CD/DVD along with the data blocks by setting the appropriate 'Include quickviewer..' option to **Yes** within the menu.
9. The **Export Disk** page shows the file(s) which will be exported to the CD-R or DVD-R. Use the up/down arrow keys to select **Write Disk** and press the enter key.



APPENDIX 6 - EXPORTING FILES TO CD AND DVD

10. Use the left/right arrow keys to select the desired recording mode. **Normal** will write data to the CD/DVD without interrupting the Vivid DVR's normal recording process. The selected data will, however, take longer to write. **Fast** will write data to the CD/DVD faster because it will stop the Vivid DVR from recording whilst the data is written.



11. When the data has been written to the CD/DVD, it will automatically be ejected. Reload the disk, select **OK** and press the enter key.



12. After the disk has been reinserted, the Export disk window will refresh itself showing the file(s) that have been written to the disk. Press the menu key to exit the menu system.

EJECTING MEDIA

To eject media from the Vivid DVR, press and hold the Stop button for approx. 3 seconds.



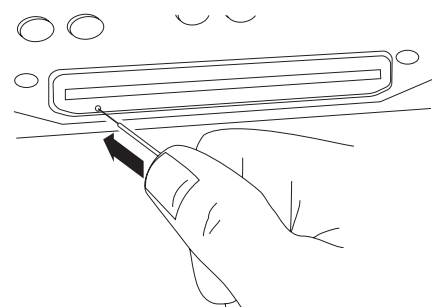
Emergency Media Ejection

△ CAUTION

The following procedure is intended to be used as a last resort when pressing the Stop button has failed to eject the disk.

Insert a length of stiff wire (e.g. a large paper clip) into the emergency eject hole and push as shown in the diagram opposite. The tray will be unlocked and partially ejected.

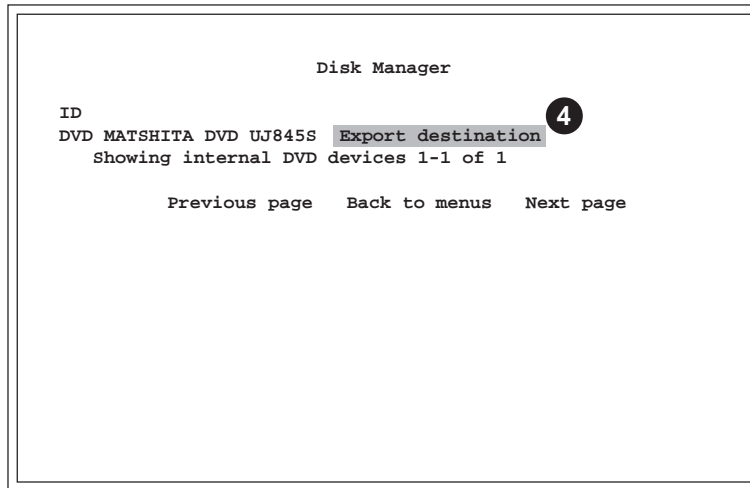
NOTE: Use wire that is less than 1.5 mm in diameter. Do not insert more than 50mm in depth. Inserting more than 50mm may damage the drive.



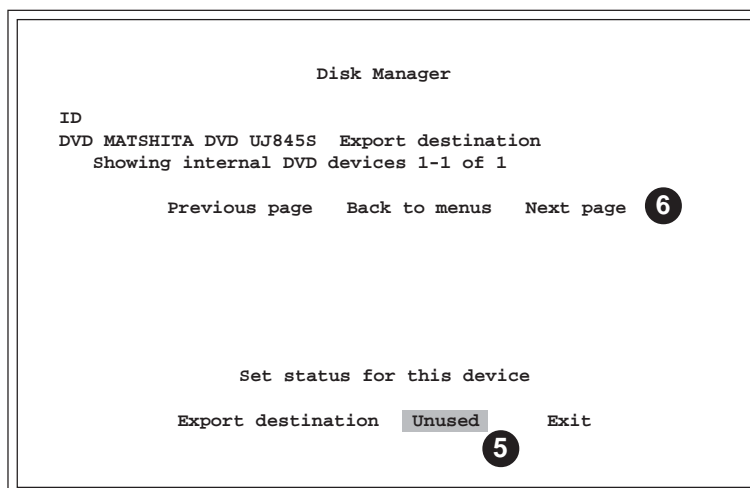
APPENDIX 7 - EXPORTING FILES TO A USB MEMORY STICK

For Vivid units with built in CD or DVD writers (such as VIVIDLite and VIVID+), the CD/DVD unit is by default set as the primary export device. In order to use a USB device to archive files, the CD/DVD writer must first be set to unused (i.e. turned off).

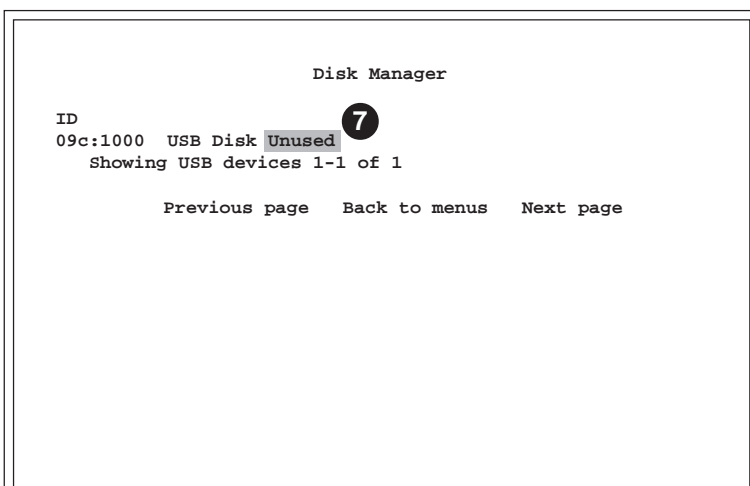
1. Insert a USB memory stick into the Vivid unit.
2. Press the Menu key and enter the installer password.
3. Use the up/down arrow keys to select **Hardware setup > Disks > Disk Manager** and press the enter key. Select **Next page** until the disk manager window opens for any internal CD/DVD device.



4. Select '**Export destination**' using the arrow keys and press the enter key.

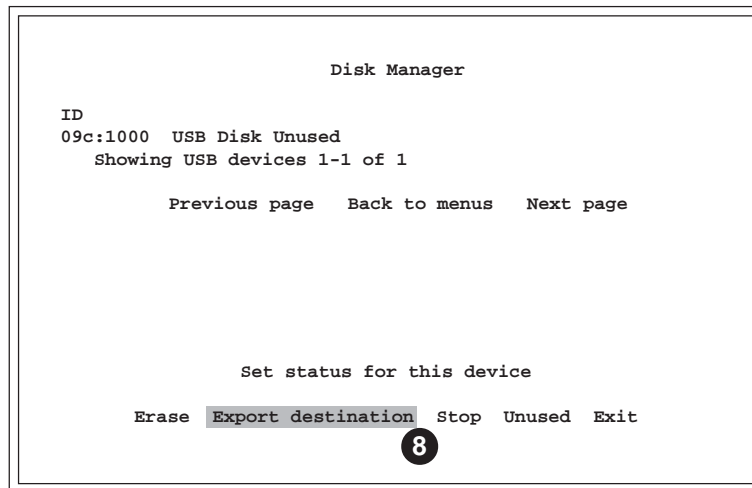


5. Select '**Unused**' using the arrow keys and press the enter key.
6. Select '**Next page**' using the arrow keys and press the enter key.
7. In the USB disk manager menu, select '**Unused**' using the arrow keys and press the enter key.

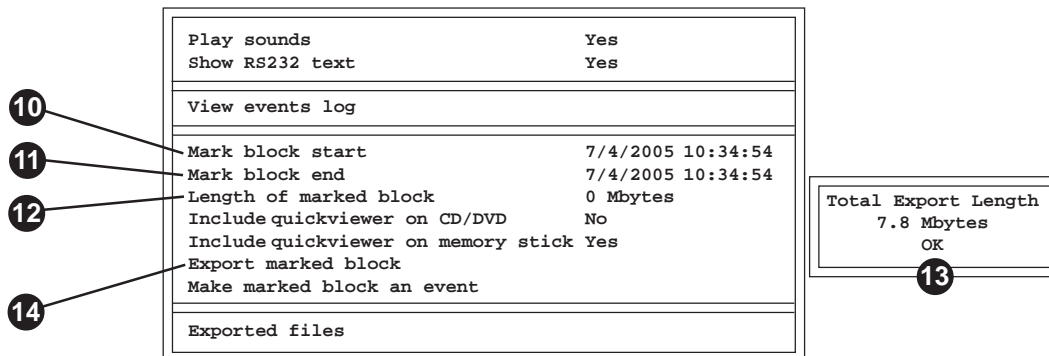


APPENDIX 7 - EXPORTING FILES TO A USB MEMORY STICK

8. Select '**Export destination**' using the arrow keys and press the enter key.



9. Exit the Disk Manger menu and select the **Replay** menu.



10. **Mark block start** allows you to enter the starting point of the data you want to export. Select the field and press the enter key. Use the left/right arrow keys to select either the date or time parameters. Use the up/down arrow keys to change the selected parameter.
11. **Mark block end** allows you to enter the ending point of the data you want to export. Select the field and press the enter key. Use the left/right arrow keys to select either the date or time parameters. Use the up/down arrow keys to change the selected parameter.
12. Use the down arrow key to select **Length of marked block** and press the enter key. This will initiate a process that will calculate the length of the marked block (in Mbytes) and display the result in a pop-up window.
13. Select **OK** and press the enter key to close the pop-up window.
14. Use the up/down arrow keys to select **Export marked block** and press the enter key. The selected data will then be exported to the USB device. NOTE: The QuickViewer program can be copied to the USB device along with the data blocks by setting the appropriate 'Include quickviewer..' option to **Yes** within the menu.
15. The **Export Disk** page shows the file(s) which will be exported to the USB device. Use the up/down arrow keys to select **Write Disk** and press the enter key.

VIDEO

Standard	PAL / NTSC auto-detect.
Inputs	6, 10 or 16 looped composite BNC connectors (1Vpp – 75 ohm) with software termination.
Outputs	Main and spot monitor BNC (1Vpp – 75 ohm) connectors, S-video mini-DIN.
Image Compression	JPEG2000.
Resolution	720(H)x576/480(V) displayed PAL/NTSC. Up to 720(H) x 288/240(V) pixels recorded PAL/NTSC, depending on operating mode.
Recording Modes	Linear or Looping.
Recording Quality	User selectable within a range, depending on operating mode.
Recording Speed	User selectable up to a maximum system rate of 50 pps (PAL) 60pps (NTSC).
Video Replay depending upon operating mode.	Simultaneous video recording, local replay and remote viewing,
Internal Video Storage	Up to two 3 1/2 inch ATA hard disk drives.
External Video Storage	via SCSI-2, e.g. RAID, or USB 2.0, e.g., CD-RW.
Scheduling	Comprehensive scheduling facilities.

AUDIO

Recording	User selectable single channel.
Inputs	3.5mm Microphone or Line-in (1Vpp).
Output	3.5mm Line-out (1Vpp).

ALARM INTEGRATION

Inputs/Relays plus grounds.	16 inputs, 2 relay outputs (0.5A continuous, 1A momentary, NO/NOC)
Connections	3.5mm COMBICON screw terminals.
Alarm Recording	Programmable: duration (2 – 999 seconds) with optional: priority, interleaved, exclusive, no change, pre and post alarm recording.

MOTION DETECTION

Matrix	Selectable 14 x 15 matrix.
Sensitivity Levels	5 levels.
Tracking Delay	Programmable 0–5 seconds.
Target Information	Programmable for size and location.
System Monitoring	
Watchdog	Monitors key system parameters for power up, power down, camera connection, camera loss, user login, user logoff, and set-up changes.

EVENTS (ALARM, MOTION or SYSTEM)

Buzzer	Selectable on/off.
Notification/Action	Programmable Spot monitor activation. Programmable e-mail notification, Programmable relay outputs, and On-screen display warning.
Log	Date, time, camera & event trigger.
Log Protection/Expiry	Separate event partition, programmable storage / archive parameters such as over-write, write protect against time parameters. Timed event log protection and/or expiry.

NETWORKING

Type	Auto-sensing 10/100Base-T Fast Ethernet (RJ45).
Protocols/Network Management	TCP/IP. SNMPv3 with documented MIB (available on request).

Network Set-up	DHCP or manual, user selectable.
----------------	----------------------------------

TELEMETRY

Type	RS485 (RJ45 or two wire) basic functions, subject to protocol.
Functions	Pant, tilt, zoom (PTZ), Focus near/far, Iris open/closed, Presets.

SOFTWARE

Operating System	Linux® 2.4.22
Application Software	Baxall Ltd Bespoke
In-built Firewall	Packet filtering with data logs.

GENERAL

User Interface	Front panel keypad and on-screen menus, PC USB keyboard (not supplied). External keyboard ZKX72J or ZKX73J (not supplied) for easy PTZ control and/or remote PC viewing and control software.
Language Options	English (UK), English (US), French, German, Spanish, Dutch, Italian, Portuguese and Russian.
Set-up Protection	Parameter protection during power outs.
Password Protection.	Programmable password levels, set-up, view, record, playback – and network access.
PC Requirements	Windows® 98 or later, Pentium 4™ 1.8GHz or faster, 128Mb RAM, 2Gb HDD, SVGA Monitor 1024 x 768, 10/100Base-T LAN.
I/O Connectors	1 x Ethernet, RJ45. 1 x SCSI-2, 50 pin. 1 x USB-2.0. 1 x RS-232, DB-9. 1 x RS-485, twin RJ45 looped. 1 x RS-485, 3.5mm COMBICON™ screw terminal.

MECHANICAL

Dimensions	6.5cm (2.625 inches, 1½U)H x 44cm (17½ inches)W x 37cm (14 ½ inches)D.
Weight	7.5kg (16.5 pounds) – four disk configuration.
Colour	Silver
Environmental	Min 0° to 40°C (32° to 104°F). 20% to 90% relative humidity, non-condensing.
Power Supply	12VDC 6.66A max external power supply. PSU input voltage 100-240V, 47-63Hz 1.9A. For indoor use only. Always use the manufacturer's specified power supply to reduce the risk of damage to the unit.

APPROVALS

Unit	CE:(89/336/EEC)EN50130-4, EN55022 Class A.FCC: Part 15 Class A.
External Power Supply	TUV, GS: EN60950. CE: (89/336/EEC), EN55022 Class B, EN6100-3-2, EN6100-3-3, EN55024.UL: USL, CNL Listed 94HJ E183744 Level 3 ITE PSU FCC: Part 15 Class B.

INCLUDED ACCESSORIES

PC remote viewing software, rack mounting ears, and self-adhesive rubber feet.

APPENDIX 9 - PASSWORDS

This page contains the system default user and installer passwords. It is recommended that, for system security, you remove it from the manual and store it in a safe place.

The initial passwords supplied with the unit are:

Installer Password = 2, 2, 2, 2, 2

User Password = 1, 1, 1, 1, 1

You should change the User and Installer passwords for menu system entry and record them below for future reference.

INSTALLER PASSWORD _____

USER PASSWORD _____

Refer to your supplier or agent for assistance in recovering a lost password.

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