3204 DVR
Installation Guide
March Networks® (TSX:MN) is a global provider of intelligent IP video solutions. For close to a decade, the company has helped some of the world’s largest commercial and government organizations transition from traditional CCTV to networked video surveillance used for advanced security, loss prevention and risk mitigation. VideoSphere®, the company’s enterprise-class video management portfolio, includes open-platform VMS software complemented by high-definition IP cameras, encoders, video analytics and recording platforms, as well as outstanding professional and managed services. March Networks systems are delivered through an extensive distribution and partner network and currently support over one million channels of video in more than 50 countries.


Our Commitment to a Green Tomorrow

March Networks takes pride in its commitment to social responsibility and environmental sustainability. Our employees, suppliers and valued partners are passionate about designing environmentally friendly solutions for our customers and minimizing the company’s carbon footprint.

We embrace environmental sustainability as part of our overall strategy and business values with multiple initiatives to ensure that we do our part to create a cleaner, healthier environment for future generations. The steps we have taken affect all aspects of our organization and involve our senior management team, employees, suppliers, partners and customers. You can receive further details at:

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Providing Documentation Feedback

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Part Number
14762 5.0 Most Recent Revision: March 22, 2010
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Mandatory Regulations

You must adhere to the following mandatory regulations to ensure you meet regulatory compliance requirements.

Electromagnetic Interference (EMI) Information

Canada - Industry Canada  This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet équipement a été testé et certifié conformément aux limites imposées par la réglementation en vigueur pour un équipement numérique de classe A.

United States - Federal Communications Commission  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 in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the installation guide, is liable to cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

Europe  This equipment complies with the following EU directives: 89/336/EEC, 73/23/EEC, and their amending directives. A Declaration of Conformity is available upon request.

Battery Notices

NiCd Battery Pack

The DVR contains an internal NiCd battery pack. The NiCd battery pack may explode, leak, or get hot, causing personal injury if the following precautions are not followed:

- Do not remove the NiCd battery pack and use it in a device other than the DVR.
- The DVR has a built-in battery charger. Do not attempt to charge the NiCd battery pack using another battery charger.
- Replace only with an approved NiCd battery pack.
- Do not disassemble or open the NiCd battery pack.
- Do not dispose of the NiCd battery pack in fire.
- Do not short circuit the NiCd battery pack terminals.

Dispose of the NiCd battery pack in accordance with all applicable federal, state, provincial, and local regulations. Inquire with your local recycling office for recycling guidelines.

Lithium Battery

The DVR also contains a lithium battery. Ensure you consider the lithium battery when disposing of the DVR. Dispose of the lithium battery in accordance with all applicable federal, state, provincial, and local regulations. Inquire with your local recycling office for recycling guidelines.
Mandatory Regulations

**Power Cord Notice**

A power cord is provided with a grounded attachment plug. To avoid electrical shock, always use the power cord and plug with a properly grounded outlet. To maintain safety compliance, ensure the power cord has the appropriate safety approvals for the country in which the equipment is to be installed.

**Servicing Notice**

The procedures contained in this publication outline how to install or service components located inside the DVR. Installation and maintenance procedures requiring internal unit access are to be performed by qualified service personnel only.

**Shipping Notice**

Shipment of the DVR and components may expose the unit to temperature extremes. We recommend you allow the DVR to return to room temperature prior to operation.

**Environmental Directive Compliance**

March Networks is committed to doing our part to protect the environment. As a result, we have embraced the RoHS and WEEE Directives in the design and manufacture of our products. You can review further details at the following location on our corporate Web site:

3204 DVR Setup

The 3204 DVR is a compact digital video recorder (DVR) that lets you record and monitor continuous or event-driven audio/video from cameras, microphones, and other connected devices.

The DVR incorporates the following features:

- Customized Linux operating system, which boots from a protected flash memory system
- Minimal moving parts (for example, fans are not required in most installations)
- Internal battery backup system that ensures continuous operation through power disturbances and systematic shutdown sequences when power blackouts occur
- Hard drive management system that ensures reliable hard drive operation and early detection of possible hard drive faults. For example, the DVR incorporates automatic hard drive formatting and uses Self-Monitoring Analysis and Reporting Technology (SMART).

This publication provides an overview of the preliminary DVR setup requirements, which include instructions for connecting relevant devices, replacing batteries and hard drives, as well as mounting the unit.

Please note that once the preliminary setup is complete, the DVR’s initial configurations are to be specified using the unit’s provisioning interface. Details for working with the provisioning interface can be found on page 9.

Then, the unit must be fully configured using the administration and configuration software applications included on the provided software CD.
DVR Dimensions, Weight, Power Consumption, and Temperature Ranges

The following table outlines the DVR’s dimensions, weight, power consumption specifications, as well as operating and storage temperature ranges:

Table 1: DVR Dimensions, Weight, Power Consumption, and Temperature Ranges

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (overall unit)</td>
<td>Height: 2.2 inches/5.5 centimeters</td>
</tr>
<tr>
<td></td>
<td>Width: 10.4 inches/26.4 centimeters</td>
</tr>
<tr>
<td></td>
<td>Length: 10.3 inches/26.2 centimeters</td>
</tr>
<tr>
<td>Weight (with hard drive installed)</td>
<td>5.0 pounds/2.3 kilograms</td>
</tr>
<tr>
<td>Power consumption</td>
<td>• DVR (no hard drive): Less than 20 watts</td>
</tr>
<tr>
<td></td>
<td>• DVR (with hard drive): Less than 30 watts</td>
</tr>
<tr>
<td>Operating and storage temperature</td>
<td>• Operating temperature: 50 to 104° Fahrenheit/10 to 40° Celsius (no fan required); an optional fan module is available to support environments where the operating temperature may reach up to 113° Fahrenheit/ 45° Celsius</td>
</tr>
<tr>
<td></td>
<td>• Storage temperature: -40 to 158° Fahrenheit/-40 to 70° Celsius</td>
</tr>
<tr>
<td></td>
<td>• DVR must be mounted in accordance with the mounting guidelines in this publication to ensure it remains within the recommended operating temperature range. For more information, see “DVR Mounting” on page 15.</td>
</tr>
</tbody>
</table>
### DVR LEDs

The following table outlines the DVR’s light emitting diodes (LEDs):

**Table 2: DVR LEDs**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEDs</strong></td>
<td>Indicate the DVR’s status as outlined below:</td>
</tr>
</tbody>
</table>
| **UNIT** | • Green: DVR is operating properly  
| | • Yellow: DVR is powering up, powering down, or operating on internal battery  
| | • Red: DVR detects a hardware problem  |
| **OPERATION** | • Green: DVR is operating properly (solid); DVR is powering up (flashes)  
| | • Yellow: DVR is functional but status information is available for review. This information can be retrieved using the administration and configuration software applications included on the provided software CD. The LED turns off when the status is acknowledged.  
| | • Red: DVR software is not operational  |
| **HD** | • Green: LED flashes while the DVR is accessing the hard drive  |
DVR Connections — Video Input and Alarm/Switch

The following table outlines the video input and alarm/switch connection specifications:

Table 3: DVR Connections — Video Input and Alarm/Switch

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Video input</td>
<td>Connector: Video inputs on BNC coaxial connector</td>
</tr>
<tr>
<td></td>
<td>Details:</td>
</tr>
<tr>
<td></td>
<td>• Video input connections for up to four cameras</td>
</tr>
<tr>
<td></td>
<td>• Terminated to 75 ohms</td>
</tr>
<tr>
<td>2 Alarm/switch</td>
<td>Alarm</td>
</tr>
<tr>
<td></td>
<td>Connector: Four alarm loops on terminal block connection</td>
</tr>
<tr>
<td></td>
<td>Details:</td>
</tr>
<tr>
<td></td>
<td>• Detects open, closed, or cut connections as configured by the administration and configuration software applications</td>
</tr>
<tr>
<td></td>
<td>• Dry contact alarm device is connected between the alarm terminal and the ground terminal</td>
</tr>
<tr>
<td></td>
<td>• Detects cut state when a 200-ohm resistor is installed across the alarm device terminals</td>
</tr>
<tr>
<td></td>
<td>• Low current interface (less than 10 mA)</td>
</tr>
<tr>
<td></td>
<td>Switch</td>
</tr>
<tr>
<td></td>
<td>Connector: Programmable switch relay output on terminal block connection</td>
</tr>
<tr>
<td></td>
<td>Details:</td>
</tr>
<tr>
<td></td>
<td>• Provides a normally open (NO) or normally closed (NC) connection to the common terminal</td>
</tr>
</tbody>
</table>

WARNING: Do not exceed 30 volts DC or a current of 1 A
### DVR Connections — Expansion Port

The following table outlines the connections that can be made using the expansion port and provides specifications for those connections:

**Table 4: DVR Connections — Expansion Port**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 3 Expansion port | Audio<br>Connector: DB-25 connector provides an interface for the connection of an audio device. Or, connect a 3204 DVR I/O Expansion Module Option to the DB-25 connector to provide interfaces for multiple audio and dataport devices.*<br>Details:<br>• Provides connection for an audio input and audio output device<br>• Supports line-level audio<br>• Requires pre-amplified microphone connection and amplified speaker<br>• The pinout for this functionality on the DVR’s DB-25 connector is:<br>  • DB-25 Pin 25 — Audio In<br>  • DB-25 Pin 12 — Audio Out<br>  • DB-25 Pin 24 — Audio GND<br>External RS-232 dataport with full modem signaling support (hardware flow control)<br>Connector: RS-232 dataport on DB-25 connector provides an interface for the connection of a dataport device. Or, connect a 3204 DVR I/O Expansion Module Option to the DB-25 connector to provide interfaces for multiple audio and dataport devices.*<br>Details:<br>• Provides an RS-232 interface for connection of a passthrough device, ATM device, or PTZ camera<br>• The pinout for this functionality on the DVR’s DB-25 connector is:<br>  • DB-25 Pin 2 — TX<br>  • DB-25 Pin 3 — RX<br>  • DB-25 Pin 4 — RTS<br>  • DB-25 Pin 5 — CTS<br>  • DB-25 Pin 6 — DSR<br>  • DB-25 Pin 7 — GND<br>  • DB-25 Pin 8 — DCD<br>  • DB-25 Pin 20 — DTR<br>  • DB-25 Pin 22 — RI<br>WARNING: Ensure that no other pins on this connector are used for this interface — other pins contain signals for other unit functions
<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion port (cont’d)</td>
<td><strong>RS-232 dataport (passthrough and ATM)</strong></td>
</tr>
<tr>
<td>Reference:</td>
<td>Connector: RS-232 dataport on DB-25 connector provides an interface for the connection of a dataport device. Or, connect a 3204 DVR I/O Expansion Module Option to the DB-25 connector to provide interfaces for multiple audio and dataport devices.* Details:</td>
</tr>
<tr>
<td></td>
<td>• Provides an additional RS-232 interface for connection of a passthrough device, ATM device, or PTZ camera</td>
</tr>
<tr>
<td></td>
<td>• The pinout for this functionality on the DVR's DB-25 connector is:</td>
</tr>
<tr>
<td></td>
<td>• DB-25 Pin 23 — TX</td>
</tr>
<tr>
<td></td>
<td>• DB-25 Pin 11 — RX</td>
</tr>
<tr>
<td></td>
<td>• DB-25 Pin 10 — GND</td>
</tr>
</tbody>
</table>

3204 DVR Expansion Module Option

| RS-485 dataport (PTZ)          | Connector: RS-485 dataport on DB-25 connector provides an interface for the connection of a dataport device. Or, connect a 3204 DVR I/O Expansion Module Option to the DB-25 connector to provide interfaces for multiple audio and dataport devices.* Details:  |
|                                | • Provides an RS-485 interface for connection of a passthrough device, ATM device, or PTZ camera  |
|                                | • Supports the daisy chain method, letting you daisy chain and address up to seven devices  |
|                                | • The pinout for this functionality on the DVR's DB-25 connector is:  |
|                                |   • DB-25 Pin 14 — TX-  |
|                                |   • DB-25 Pin 15 — TX+  |
|                                |   • DB-25 Pin 16 — RX-  |
|                                |   • DB-25 Pin 17 — RX+  |

*For details about the 3204 DVR I/O Expansion Module Option, see the **Installing a 3204 DVR Custom Expansion Module Technical Instructions**, accompanying the device.
DVR Connection — Grounding

The following table outlines the ground connection. Details on the other connections available at the rear of the DVR are available on page 8.

Table 5: DVR Connection — Grounding

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground Connection Connector: Grounding stud</td>
<td>Details:</td>
</tr>
<tr>
<td></td>
<td>• Protects the DVR from electrostatic discharge.</td>
</tr>
<tr>
<td></td>
<td>• The preferred grounding method, described here, is to connect a ground wire between the DVR and an earth ground source.</td>
</tr>
<tr>
<td></td>
<td>• Prepare an earth ground wire using a proper ground wire and a solderless ring connector:</td>
</tr>
<tr>
<td></td>
<td>• Strip 1/2 inch of insulation from the end of the wire and then crimp the ring connector onto the wire.</td>
</tr>
<tr>
<td></td>
<td>• Connect the ground wire to the DVR ground stud by applying the parts in the order shown below.</td>
</tr>
<tr>
<td></td>
<td>• Connect the other end of the ground wire to an earth ground source.</td>
</tr>
<tr>
<td></td>
<td>• Note: You can use the grounding stud to ground yourself to the DVR chassis with an anti-static wriststrap (only if the DVR has been properly grounded as outlined above). This is useful when you are working inside the DVR and need to ensure anti-static precautions are taken.</td>
</tr>
</tbody>
</table>

![Diagram of Ground Connection](image)
### DVR Connections — Power, Video Output, and Network

The following table outlines the power, video output, and network connection specifications:

**Table 6: DVR Connections — Power, Video Output, and Network**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 4 12 VDC Input | **Connector:** 12 volts DC input  
Details:  
- Power adapter supplies 12 volts DC at up to 3.3 A maximum  
- Hook prevents unintentional removal of power adapter from the DVR  
- Internal NiCd backup battery provides power during power interruptions and powers down the DVR if 12 volts DC input is not restored within 15 seconds  
- Plug in the 12 volts DC input cord to turn on the DVR  
- Unplug the 12 volts DC input cord from the inlet to turn off the DVR |
| 5 Video output | **Connector:** Video output on BNC coaxial connector  
Details:  
- Directly drives a video monitor  
- Software programmable, using the administration and configuration software applications included on the provided software CD, to cycle between multiple cameras or display video on alarm event  
- Provides NTSC/PAL levels (matches input format) |
| 6 Network      | **Connector:** Network port on RJ-45 connector  
Details:  
- 10/100 BaseT auto-negotiated network connection on a standard network pinout  
- Provides LED indicators (located beside the network port) as follows:  
  - Green: Turns on solid when a link is established with the network point of presence (POP) and flashes to indicate network activity  
  - Yellow: Turns on solid when a 100 BaseT link is negotiated on the network port. Turns off when a 10 BaseT link is negotiated on the network port. |
**DVR Connections — Provisioning Port and USB Port**

The following table outlines the provisioning port and USB port specifications:

*Table 7: DVR Connections — Provisioning Port and USB Port*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Provisioning port</td>
<td>Connector: Provisioning port on DB-9 connector</td>
</tr>
<tr>
<td></td>
<td>Details:</td>
</tr>
<tr>
<td></td>
<td>• Provides an RS-232 interface for connection of a provisioning device, such as a laptop computer or personal digital assistant (PDA)</td>
</tr>
<tr>
<td></td>
<td>• Requires a null modem cable or file transfer cable</td>
</tr>
<tr>
<td></td>
<td>• Use a terminal emulation program, such as HyperTerminal or VT100 to log on to the provisioning interface</td>
</tr>
<tr>
<td></td>
<td>• For more information about working with the provisioning interface, see the <em>Provisioning Interface Technical Instructions</em>, which accompany the unit</td>
</tr>
<tr>
<td></td>
<td>• Interface uses the following port settings:</td>
</tr>
<tr>
<td></td>
<td>• Bits per second: 9600</td>
</tr>
<tr>
<td></td>
<td>• Data bits: 8</td>
</tr>
<tr>
<td></td>
<td>• Parity: None</td>
</tr>
<tr>
<td></td>
<td>• Stop bits: 1</td>
</tr>
<tr>
<td></td>
<td>• Flow control: None</td>
</tr>
<tr>
<td></td>
<td>• The pinout for this functionality on the DVR’s DB-9 connector is:</td>
</tr>
<tr>
<td></td>
<td>• DB-9 pin 2 — RXD</td>
</tr>
<tr>
<td></td>
<td>• DB-9 pin 3 — TXD</td>
</tr>
<tr>
<td></td>
<td>• DB-9 pin 5 — GND</td>
</tr>
</tbody>
</table>

| 8 USB            | Connector: USB port                                                           |
|                  | Details:                                                                      |
|                  | • Provides USB port for connection of external peripherals, such as an external modem, external flash key fob, or CD burner |
|                  | • Provides up to 500 mA to power peripherals using a USB cable                |
|                  | • Supports USB version 1.1                                                    |
**DVR Hard Drive Specifications and Installation**

You can install one 3.5-inch ATA hard drive in the DVR.

Table 8 outlines the hard drive specifications. The steps for installing a hard drive are also outlined in this section.

*Table 8: DVR Hard Drive Specifications*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard drive</td>
<td>• The DVR uses standard parallel ATA hard drive technology</td>
</tr>
<tr>
<td></td>
<td>• Supports large classification hard drives (&gt;133 Mbytes)</td>
</tr>
<tr>
<td></td>
<td>• Utilizes hard drive SMART monitoring for hard drive health status and early detection of possible faults</td>
</tr>
<tr>
<td></td>
<td>• Automatically detects and formats a new hard drive, or automatically reuses a previously formatted hard drive</td>
</tr>
<tr>
<td></td>
<td>• Hard drives should consume less than 10 watts</td>
</tr>
</tbody>
</table>
To install a hard drive

1. Open the DVR’s lid by unscrewing the two screws located at the front left and right of the unit with a Phillips screwdriver and flipping the lid backward.

2. Loosen the nylon thumbscrews from the two hard drive brackets as shown below. A flat-head screwdriver may be required if the nylon thumbscrews are fastened too tightly.

3. Slide each bracket so that the nylon thumbscrews fit through the key slots, freeing the brackets from the lid.
4 Install the hard drive brackets onto the hard drive exactly as shown below, using the provided No. 6-32 x 0.25 inch screws and a Phillips screwdriver. Ensure the edges of the hard drive and the hard drive brackets line up so they are flush.

**NOTE** You will not be able to install the hard drive to the inside of the lid unless this step is done correctly.

5 Re-insert the hard drive with the hard drive brackets attached into the DVR by fitting the hard drive brackets over the nylon thumbscrews and sliding the hard drive back into place. The end of the hard drive with the cable connection should point to the left side of the DVR.

6 Tighten the nylon thumbscrews with a flat-head screwdriver onto the two hard drive brackets.

7 Connect the IDE cable and the power cable to the hard drive. Do not uncrease the folds in the IDE cable as the folds ensure proper placement of the IDE cable when you close the lid.

8 Close the DVR’s lid and replace the screws. Tighten the screws with a Phillips screwdriver. Ensure the IDE cable and power cable are within the unit and do not get caught when you close the DVR’s lid.
DVR NiCd Battery Pack Specifications and Replacement

The NiCd battery pack is used by the DVR’s internal uninterruptible power supply (UPS) during power shortages. If power is not restored within 15 seconds, the DVR powers down. The DVR automatically begins recharging the battery when power is restored.

Table 9 outlines the NiCd battery pack specifications. The steps for replacing the NiCd battery pack are also outlined in this section. Before you replace the NiCd battery pack, read the mandatory regulations outlined in “Battery Notices” on page iii.

Only use an approved NiCd battery pack when replacing the battery.

Table 9: DVR NiCd Battery Pack Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCd battery pack</td>
<td>• Custom NiCd battery pack supplied by March Networks</td>
</tr>
<tr>
<td></td>
<td>• Allows continuous operation through power disturbances (15 seconds)</td>
</tr>
<tr>
<td></td>
<td>• For more information, see “Battery Notices” on page iii</td>
</tr>
</tbody>
</table>
To replace the NiCd battery pack

1. Open the DVR’s lid by unscrewing the two screws located at the front left and right of the unit with a Phillips screwdriver and flipping the lid backward.

2. Disconnect the battery cable.
3. Lift out the original battery pack.
4. Connect the battery cable on the new battery to the DVR.
5. Insert the new battery pack in the same orientation as the original battery pack, as shown below.
6. Close the DVR’s lid and replace the screws. Tighten the screws with a Phillips screwdriver.

**WARNING**

- Before you replace the NiCd battery pack, unplug the 12 volts DC power adapter from the DVR and wait until the LEDs at the front of the DVR turn off.
- Do not operate the DVR with the lid open.
DVR Mounting

The DVR’s compact size lets you install the unit in environments with space limitations. The DVR can be wall-mounted or desk-mounted. The DVR is shipped with a wall-mount bracket, as well as rubber feet for desk-mount applications.

Wall-Mounting the DVR

The DVR is shipped with the rubber feet installed. If you are placing the DVR on a desk, the rubber feet should be left in place. If you are wall-mounting the DVR, you will need to remove the rubber feet and install the wall-mount bracket, as outlined on the following page.

Required Items

The following parts are required to wall-mount the DVR:

- Mounting screws — Pan head, sheet metal screw, #8 x 1 inch, steel, two screws required.
- Drywall anchors — For #8 mounting screws, two required.

WARNING

- Ensure the location where you wall-mount the DVR can fully support the DVR’s weight. For more information, see “DVR Dimensions, Weight, Power Consumption, and Temperature Ranges” on page 2.
- The DVR must be mounted in a location that ensures the ambient temperature remains within the recommended range.
- DVRs with fan modules must be mounted in a location that ensures the vent holes on the top and front of the unit are unobstructed.
To attach the wall-mount bracket

1. Unscrew each of the four rubber feet at the bottom of the DVR.
2. Attach the wall-mount bracket to the DVR using the provided No. 6-32 x 0.25 inch flat head screws and the screw holes from the rubber feet.
   Ensure that the edges of the wall-mount bracket and the DVR are flush.

To wall-mount the DVR

1. Locate a wall stud to which the DVR is to be mounted.
   We recommend that you mount the DVR to at least one wall stud, along with a single drywall anchor. If you cannot locate a wall stud, you can use two drywall anchors to secure the unit.
   If the wall stud is behind drywall, use a stud finder to locate the stud, and then mark the location.
2. Mark the mounting screw locations, using the bracket attached to the DVR as a template. The wall mount holes are located 6 inches (15.24 centimeters) apart.
3. Install the mounting screws at the marked locations.
   • If the mounting location is in a wall stud, thread the screw directly into the wall stud.
   • If the mounting location is in drywall, first install a drywall anchor, and then thread the screw into the drywall anchor.
   Do not thread the mounting screws all the way in. The screw heads should protrude approximately 0.25 inches (0.64 centimeters) from the mounting surface so the DVR can be hung.
4. Lift up the DVR and hang it on the mounting screws, as shown below.
5. Tighten the mounting screws.
**DVR**
Digital Video Recorder. A device that digitally records and stores media and alarm information.

**EMI**
Electromagnetic Interference.

**IDE**
Integrated Drive Electronics. A standard electronic interface used between the DVR and the storage device (hard drive).

**LED**
Light Emitting Diode. Indicates the DVR’s status.

**NiCd battery**
Nickel-Cadmium battery. Provides backup power during power shortages.

**NTSC**
National Television Standards Committee. A video standard typically used in North America.

**PAL**
Phase Alternation Line. The analog television display standard used in Europe and other parts of the world.

**PDA**
Personal Digital Assistant. A compact personal computing device, which you can connect to the DVR to access the unit’s internal software through the provisioning interface.

**PTZ**
Pan Tilt Zoom. A camera that you can remotely control using either a device controller connected to your computer, or using the administration and configuration software applications included on the provided software CD.

**SMART**

**USB**
Universal serial bus. An interface between the DVR and add-on devices.

**UPS**
Uninterruptible power supply. Provides backup battery power to the DVR during power outages.
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