CCTV GUIDE

Selecting the right type of CCTV system can seem confusing at first. However, this guide should answer most of your questions.

Remember that our experienced advisors are on hand FREE on 0844 412 4503

1. Decide on the **objective** of your CCTV system

**Monitoring Only**
You just need to monitor one or more cameras on a screen.

- **Mrs Brown** is 68 years old and lives alone. She needs a CCTV system to see who is at the door downstairs.

- **Mr and Mrs Dale** enjoy bird-watching. They set up a bird house at the end of their garden and need CCTV to watch the types of bird that eat from it.

- **Susan** needs a wireless CCTV system to watch her children in the garden. She needs to watch from a portable monitor or her TV.

**Monitoring & Recording**
You need to monitor one or more cameras AND record them.

- **Richard** runs a hardware shop and he needs CCTV to watch customers. He needs to be able to hand over evidence to the police if a crime is committed.

- **Sean and his wife** own a car each. Recently the cars have been vandalised while they have been parked in the driveway. They need CCTV to catch potential thieves and vandals if they are not there.

**Monitoring, Recording & Remote Viewing**
You need to monitor one or more cameras, record them AND access them over the internet remotely.

- **Amy** runs a chain of salons in Leeds & Bradford. She needs CCTV to monitor each site to keep track of how clients are being served while she is away.

- **Mr Kurn** travels to Spain quite often. He wants security for his home so he can be alerted if his house broken into.
2 Select your camera(s)

iViewCameras has an extensive range of cameras for all different requirements. It is important that you select the right camera for it to achieve its individual job. These are the factors you will need to consider to help you choose the right CCTV camera.

a) Purpose
- What will the camera see?
- What do you want it to capture?

b) Performance
- Monitor and control general situation
- Detection of person
- Recognition of person
- Identification of person
- Number Plate Recognition

<table>
<thead>
<tr>
<th>Camera Format</th>
<th>Body Camera</th>
<th>Dome</th>
<th>Pan/Tilt Dome</th>
<th>Pan/Tilt/Zoom Dome</th>
</tr>
</thead>
<tbody>
<tr>
<td>h) Lens Type/Picture View</td>
<td>Fixed Lens</td>
<td>Varifocal Lens</td>
<td>Lens Size needed: Max. width needed (m)</td>
<td>Max. view distance (m)</td>
</tr>
<tr>
<td>i) Camera Visibility</td>
<td>Overt/Deterrent</td>
<td>Covert/Hidden</td>
<td>Small/Discreet</td>
<td></td>
</tr>
<tr>
<td>j) Picture Quality</td>
<td>Standard under 420 TVL</td>
<td>High over 420 TVL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) Cabling</td>
<td>Wireless (2.4 GHz)</td>
<td>Wired: DIY Cabling</td>
<td>RG59</td>
<td>Cat 5 / LAN</td>
</tr>
<tr>
<td>l) Cabling Distance to control equipment? (ie. to TV or DVR)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

m) Environment
- Indoor dry and reasonable temperatures
- External wet and varied temperatures
- Vandal Resistant potential for damage quite high

n) Type
- Analogue
- IP (Internet Protocol)

o) Camera Mount
- Wall
- Ceiling
- Other

p) Camera Format
- Colour
- Black/White
- Day/Night:
  - Max. viewing distance needed in the dark (m)

Now select your control/recording equipment on page 4
3 Select your control/recording equipment

### Single Camera Set-up
You can simply connect your camera (wired or wirelessly) to a video/DVD recorder and/or television. Nothing more required.

### Multiple Camera Set-up
Control equipment is required when you want to monitor more than one camera or record live footage produced by the camera. See the following sections to find out more about recording using:

1. **Video/DVD Recorder**
2. **Digital Video Recorder**
3. **PC Based Software**
4. **IP Camera Software**

#### Using a Video/DVD Recorder set-up

**A Switcher** device will allow you to automatically switch between feeds as each camera can be viewed/recorded for a few seconds. Some models allow you to adjust the dwell time between screen changes and some will even switch to a camera when movement is detected.

Quad processors allow each camera feed to be viewed as single or split screen. Multiplexers allow each camera feed to be recorded as a single camera.

- **Switcher**
- **Quad Processor**
- **Multiplexer**

**Cabling Distance required**

- **Wired set-up**
- **Wireless set-up**

**Cabling**

- **Wired set-up**
- **Wireless set-up**

**Ask yourself?**

Do you need to be able to view all cameras at once?
Do you need to view the images as a full screen?

---

### Using a Digital Video Recorder set-up

**Using a Digital Video Recorder or time lapse video recorder**

As video or DVD recording devices only record one feed, a method of combining the multiple feeds to the recorder is required. A control device such as a switcher, quad processor or multiplexer is required.

**Switcher** allows you to switch between feeds automatically.

- **Switcher**
- **Quad Processor**
- **Multiplexer**

**Cabling**

- **Wired set-up**
- **Wireless set-up**

**Cabling Distance required**

- **Wired set-up**
- **Wireless set-up**

**Ask yourself?**

1. Do you need to view the images as a full screen?
2. Do you need to be able to view all cameras at once?

---

### 3.2 Using a Digital Video Recorder set-up

- **All-in-one solution**
- **Record multiple cameras**
- **Monitor cameras live**
- **Playback footage easily**

**a No. of camera inputs**

- Up to 4
- Maximum for wireless set-up
- Up to 8
- Up to 9
- Up to 12
- Up to 16

**b Recording time required**

- Have you considered:
  - Hard Drive size
  - Number of cameras
  - Frame rate for DVR
  - Resolution
  - Quality of recording
  - Usually 4 levels
  - Compression method used

**c Extra Features**

- **Motion Detection**
- **Footage removal options**
  - Connect DVR to Video
  - USB connection to PC
  - Built-in CD/DVD writer
  - Networkable
  - Removable Pen-drive
  - Remote Viewing
  - Alarm Inputs/Outputs

**Remote Viewing**

View your camera images over the internet or a Local Area Network (LAN) is possible with DVRs which have an internet (SSID) connection. TeleEye units are particularly good for this.

**Recording Time required**

The length of time you can record for is affected by:

- **Hard Drive size**: 120/160GB standard, 250GB, 500GB, and 1000GB options. DVRs store recordings directly onto a Hard Drive. Once storage space has run out, most DVRs can be set to automatically erase old footage as new footage is recorded. Choosing a Hard Drive size can depend on how long you wish to keep footage stored for.

- **Number of cameras**: Most DVR units come in 4, 8/9, and 16 camera varieties.

- **Frame Rate (fps) frames per second**: 25 fps per camera is ‘real time’ as you would normally see on TV. 4-6 fps per camera is suitable for most situations. The fps rate is split between the total number of cameras connected to the DVR unit. So, a 100fps DVR with 4 cameras inputs will record at 25 fps per camera. Reducing the frame rate can save Hard Drive space.

- **Resolution and the Quality of recording**: The better or bigger the image, the larger the size of the recording will be as more ‘image data’ is stored.

- **Compressor methods**: JPEG, MPEG and MPEG4 are all different types of image compression, all giving varying file sizes.

**Ask yourself?**

1. How long do I need to keep footage available for in order to retrieve footage later?
2. Will the DVR be away for long periods of time while my CCTV system will need to be operating?

---

**Footage/Data Retrieval**

Via VCR/Remote Connection and/or built-in CD/DVD writer

**DVR set-up with optional viewing connection to TV and/or Internet/LAN**

**NOTE**: You can actually view up to 4 cameras with this type of wireless set-up shown above. Each camera will have to be manually switched in order to view all four screens.

**Single Camera Set-up**

**Wired set-up**

**Wireless set-up**

**Number of cameras**

- Maximum for wireless set-up
- Up to 4
- Up to 8
- Up to 9
- Up to 12
- Up to 16

**Recording Time required**

**Hard Drive size**: 120/160GB standard, 250GB, 500GB, and 1000GB options. DVRs store recordings directly onto a Hard Drive. Once storage space has run out, most DVRs can be set to automatically erase old footage as new footage is recorded. Choosing a Hard Drive size can depend on how long you wish to keep footage stored for.

**Number of cameras**: Most DVR units come in 4, 8/9, and 16 camera varieties.

**Frame Rate (fps) frames per second**: 25 fps per camera is ‘real time’ as you would normally see on TV. 4-6 fps per camera is suitable for most situations. The fps rate is split between the total number of cameras connected to the DVR unit. So, a 100fps DVR with 4 cameras inputs will record at 25 fps per camera. Reducing the frame rate can save Hard Drive space.

**Resolution and the Quality of recording**: The better or bigger the image, the larger the size of the recording will be as more ‘image data’ is stored.

**Compression methods**: JPEG, MPEG and MPEG4 are all different types of image compression, all giving varying file sizes.

**Ask yourself?**

1. How long do I need to keep footage available for in order to retrieve footage later?
2. Will the DVR be away for long periods of time while my CCTV system will need to be operating?
PC Based Software set-up with optional connection to Internet/LAN
You can view and record your CCTV footage using an existing PC. The PCI Card is slotted inside the 'tower' of your computer and the CD is used to install the CCTV software.

You can then view your images on the screen, record to the hard drive and remote view the footage.

3.3 Using PC Based Software

- All-in-one solution
- Record multiple cameras
- Monitor cameras live
- Playback footage easily
- Use an existing PC or laptop to record footage
- Inexpensive installation
- Powerful functionality

Using a PC Based Software

All-in-one solution
Record multiple cameras
Monitor cameras live
Playback footage easily
Use an existing PC or laptop to record footage
Inexpensive installation
Powerful functionality

3.4 Using IP Software

- All-in-one solution
- Record multiple cameras
- Monitor cameras live
- Playback footage easily
- Use an existing PC or laptop to record footage
- Excellent functionality

Using a Laptop to view/record footage

For laptop viewing and recording, a USB Box is available to connect your cameras without having to install any hardware.

No. of camera inputs
Up to 4
Max. for wireless set-up or Laptop connection
Up to 8
Up to 12
Up to 16

Version required
Have you considered:
- Number of cameras
- Frame rate required
- For more information, see p5
- Audio requirements
- Software features

Additional considerations
Have you checked your PC/Laptop for:
- Minimum system requirements
- Hard Drive Size & Capacity for recording
- CD/DVD writer
- Network capability
- Have you checked your PC/Laptop for the following:
- If the system is design to last longer with reduced boom out.
- Ask yourself:
  - What size screen do you require?
  - What resolution does the screen need to be?
  - What inputs will be required from the recording device or camera(s)? (i.e., BNC, VGA, Scart etc.)
  - Will you require any additional devices/connections for viewing your cameras on the monitor? (i.e., BNC to Scart lead etc.)

4 Select your monitor

No. of cameras in network
No. of cameras to be recorded using software

Options
Television
CCTV Monitor
PC LCD Monitor

PC based software features vary from brand to brand. These are the features available on the AVerMedia PC recording system:
- Hybrid system: Unique feature to support both analogue & IP
- Adjustable frame rate and resolution on each camera
- Motion Detection: Complete control during playback: forward, rewind, speed up, slow down and digital zoom of any area
- Auto Scan: Pan/Tilt/Zoom control
- Intelligent pre-motion recording
- Multiple masking zones
- Auto-recycling of storage space
- Central management controls
- Remote Recording and Playback
- Full control of footage: PDA and mobile device viewing
- Intelligent Search: View Search by the second - not available on any other system
- Visual Search: Not available on any other system
- Till POS integration
- E-Map
- Email and voice call out on alarmed alert
- Easy to use graphical user interface
- Software Update online and more...

If you have an IP Camera, control software needs to be installed onto your PC which allows you to use different cameras.

USB Box: See DVR set-up on page 5 to find out more about the factors which will affect recording times. The same principles of recording CCTV footage will apply when using IP cameras.
5 Select the right accessories

a Cabling for system

Wireless system (2.4 GHz)
Only required power cabling

Wired:
DIY Cabling
18m or 36m lengths available
RG59
Cat 5 / LAN

Cabling Distance
Cameras to control recording equipment
Control/recording equipment to monitor

b Power supplies

Individual
Multiple

Power supplies

Individual power adaptors can be supplied for each camera, where each will plug into the mains power supply. Remember DIY cabling will allow you to power the camera through the length of the cabling rather than powering it locally.

Multiple cameras can be powered from a single power unit (up to 16 cameras) which will plug into just one mains power socket. This will usually need to be fitted by an electrician.

Ask yourself:
Is it possible to run/extend each camera’s power cable back to its own mains power supply?

Note:
Wireless cameras must be powered locally

Warning Signs

Under the Data Protection Act, warning signs should be displayed in public places.

Multiple

Power supplies

c Brackets

Alternative required?
Cameras are supplied with a standard bracket
Housing required?
For outdoor use
General external type
Heated housing

Warning Signs

Quantity required

Dummy Cameras

Standard version
Dome version
External version

18m/36m length

Power supplies

Wireless systems require no cabling to transmit the video signal. (The cameras must be powered)

DIY Cabling is pre-terminated & ready to use. It will feed video, audio (if required) and power back to the monitoring/control point.

RG59 cabling is professional standard cable and can be bought in 100m reels which will need to be ‘crimped’ with BNC connectors. RG59 shotgun cable also includes the power cable.

Cat 5/LAN Cable is used for IP network camera connection.

Note:
Wireless cameras must be powered locally

For more information about selecting the right CCTV system for you.
contact our team at iViewCameras on 0844 412 4503 or visit www.iviewcameras.co.uk