

HD-SDI – a new opportunity for CCTV installers

If you install CCTV, then HD-SDI is an opportunity you can't afford to ignore. Many customers will have High Definition TV in their homes, and will come to expect the same level of picture quality from a CCTV system. You can now bring that to them easily and cost effectively thanks to Arcvisions line of HD-SDI Products. Briefly, the benefits of HD-SDI CCTV are:

- High Definition images, making it easier to identify individuals.
- Simple installation using standard co-ax cable.
- No need to involve IT Managers as part of the installation.

Megapixel CCTV

A frame of CCTV footage is made up of pixels. Any picture with over 1 million pixels is classed as a Megapixel image and can be referred to as High Definition (HD). HD Equipment typically has one of two resolutions:

- **720P** 1280 pixels (horizontal) x 720 pixels (vertical)
- **1080P** 1920 pixels (horizontal) x 1080 pixels (vertical)

720 or 1080 refers to the number of pixels in a vertical line that make up the picture. The 'P' stands for 'progressive' – the way in which an image is scanned, compared with the conventional interlaced scan. The full Arcvision range offers 1080p resolution and can be switched to 720p to allow longer recording times. Megapixel CCTV has been possible for some time over IP CCTV networks. So HD-SDI is not the only way to achieve it, but its arrival makes Megapixel CCTV simple and affordable for your customers, and easier for you to install. That's why it's predicted to grow significantly in the coming years.

Let's consider why IP CCTV has yet to become mainstream:

- To get the full benefits of IP you need Cat 5 cable rather than co-ax. This makes replacing an existing system costly.
- Installing IP systems can require in-depth knowledge of network infrastructures.
- Smaller businesses in particular may be reluctant to add more devices to their networks.
- Dealing with IT managers can cause delays and complications.

For those reasons, IP CCTV is more prevalent in new builds (where there is no issue of replacing co-ax) and large installations where budget is less of an issue. HD-SDI on the other hand is well-placed for rapid growth, so as an installer, it is well worth getting to grips with this technology now.

What is HD-SDI CCTV?

HD stands for High Definition, and SDI stands for Serial Digital Interface – a family of standardized, broadcast quality digital interfaces using BNC connectors. The standard was adopted by the SMPTE (Society of Motion Picture and Television Engineers). Because of its origins in broadcast, the definition and picture quality of HD-SDI footage is noticeably higher than a standard analogue signal. The technology has now been adopted by the CCTV sector. Because it has been designed with the sole purpose of providing Megapixel, High Definition footage over standard co-ax cable, it is perfectly suited to CCTV, where the majority of existing systems use co-ax. HD-SDI is significantly easier for experienced CCTV installers to get to grips with and can easily be used in tandem with existing analogue cameras. Compared with IP, installers can install HD-SDI straight away with next to no training. There is also very little risk of getting in to complications when installing it, as long as they are experienced in installing analogue CCTV.

FULL HD-SDI INSTALLATION

Typical applications:

- Premises with no existing CCTV system
- Premises with an existing system but with a budget to upgrade
- Premises that require high definition for identification throughout

Pros:

- High Definition allows you to identify individuals throughout the premises.
- Can be easily installed on co-ax cable.
- No need to involve IT managers to install on an IT network.

Cons:

- Having HD-SDI cameras throughout will be more expensive but results in better picture quality than a hybrid system.

DVR'S

To use any HD-SDI cameras, you will need a DVR with HD-SDI inputs, as they will not work with an analog DVR. An HD-SDI DVR which only has HD-SDI inputs, is better for new installations, or for end users who want High Definition throughout the premises.

MONITORS

To fully appreciate HD-SDI CCTV, you will need a High Definition monitor, and these are available in 720P or 1080P definition

ACCESSORIES

One of the few significant differences between analog and HD-SDI is the length of cable the signal can be carried over. We recommend that the co-ax cable between the camera and DVR should not exceed 100m or 300ft. It can be extended beyond this by using a signal repeater. This accessory will give you a further 100m (300ft) and in theory there is no limit on how many of these can be used. It is very important not to use too long a cable run for HD-SDI equipment. Because the signal is digital, rather than gradually degrading, the picture will simply disappear altogether if the cable is too long.

HD-SDI, ANALOG, OR MEGAPIXEL IP

	HD-SDI	ANALOG	IP
Uses co-ax cable?	Yes	Yes	No
Near-zero latency?	Yes	Yes	No
Guaranteed 100% plug-and-play?	Yes	Yes	No
Comprehensive, global interface standard?	Yes	Yes	No
100% digital technology	Uncompressed	No	Compressed
Delivers full 1080P and 720P video?	Uncompressed	No	Compressed
Compatible with 2 Megapixel cameras?	Uncompressed	No	Compressed

As this table demonstrates, HD-SDI is the best way to get full HD CCTV footage over standard co-ax cable without any issues of latency or compressed images.