STILL RECORDING

Sanyo DSR-C100P Digital Camera

For many years, 35mm cameras have played a significant role in hold-up protection for banks and financial operations. Despite increased performance from CCTV solutions - including advances in digital technology - nothing could get close to the quality and flexibility of photographic images. The financial industry may well be something of a slow-moving dinosaur in the eyes of many. However, its perseverance with 35mm photographic surveillance was not so much an act of clinging to the past, but rather a reluctance to swap a proven and effective technology for a cheaper and more user-friendly one with inferior performance. The object of the exercise is to convict robbers, and if that involves a touch of inconvenience or extra cost, so be it! Bearing this is mind, it is small wonder that few traditional CCTV manufacturers have tried to break into that sector. However, when Sanyo launched their still image surveillance camera, we just had to see if it could compete with good old fashioned film!

When it comes to capturing armed robbers, the financial industry takes things very seriously. It's more than a case of stopping someone walking away with the money. The financial industry feels very strongly about the effects of armed robbery on its staff and customers. The reality is that many robbers are willing to terrify, maim or even kill innocent people - both workers within the financial industry and customers of the banking institutions - in order to get away with their crimes. Robbery is simply not an acceptable crime, and the banks want the best possible evidence to help convict the criminals.

Traditionally there has been a reliance on triggered 35mm cameras. These devices will shoot a whole roll of film (nothing like the rolls we put in our point-and-shoot cameras when on holiday) in response to a pre-determined trigger. The benefits of 35mm film over simple CCTV are plentiful. For starters, the images are sharp and crisp, and there is rarely any real question over positive identification when a photograph accompanies the allegation! Secondly, and probably most importantly, photographic images can take a considerable amount of enlargement before the image significantly degrades.

One famous example, which was told to PSI six years ago, concerned an armed robbery in Central London. The criminal wore a mask, so there was little real chance of identifying the culprit. However, one eagle-eyed detective spotted a small black mark on the robber's wrist. With CCTV images, that would have been pretty much as far as the investigation could have gone. The description would have been based on approximate height and weight, skin colouring, clothing and a black mark on the wrist. However, the photographic image handled a fairly substantial enlargement, and the mark was identified as a tattoo reading 'Celtic'.

The detectives passed the images to Strathclyde police, who immediately recognised the suspect as a local villain who they thought had hung up his shotgun. In reality, he had become so well known in Glasgow that he had taken to having away-days to London in order to commit robberies.

A final reason why 35mm photographic surveillance is so popular with financial institutions is that it has a success rate which is not only very high, but it is known to be very high. Robbers are aware of what a powerful tool it can be or the police, and that is an enormous deterrent effect. To coin a football phrase, that makes things one-nil to 35mm photographic surveillance.

Going digital

Given all these positive points for 35mm photographic surveillance solutions, you have to ask why Sanyo would consider challenging it with a digital alternative. Well, photographic surveillance cameras do have a couple of flaws when compared to the DSR-C100P unit from Sanyo. Firstly, film-based devices can only record images following a trigger. Effectively, until a cashier hits a panic button, presses a distress key on a keyboard, or removes a tagged bunch of decoy notes from their cash draw (or carries out some other form of trigger activation), no footage is captured. However, with the Sanyo solution, there can be a constantly over-written series of images in a buffer. These are recorded in a Suspicion portion of the hard drive, at either I or 3 frames per second. In the event of an alarm, the images are transferred to a pre-alarm portion of the hard drive. Obviously, this works as with most DVR systems!

Another advantage of digital images is that following an event or a system test, there is no need to reload film spools. Also, because of the nature of the system, there is a reduced maintenance schedule. Additionally, in the event of an incident, there is no need for processing of

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Up and running in minutes? You certainly will be!

information at a specialist lab. The images can simply be downloaded to a PC via a USB connection. The Sanyo camera also boasts a video output so images can be viewed on a standard CCTV monitor, and the JPEG images can be transmitted via e-mail.

Whilst we felt that, given the nature of the type of application a still image recording camera would find itself in, the video out connector to a monitor was somewhat superfluous, the other points gave the digital option an equaliser, to return to football parlance!

In reality, the only device to judge the Sanyo DSR-C100P against is a 35mm camera. Given the potential application - banking establishments - and their attitude to crime prevention (or should that read crime solving?), there were a couple of points which were rendered obsolete. Price has little to do with the choice such users would make, and neither does the odd bit of inconvenience surrounding film swaps. The whole decision is based on one thing - performance! So, which technology will get that vital winning goal?

Build quality

The DSR-C100P is a lump of a thing, showing without a doubt that it has some serious processing and storage capabilities hidden within the casing. Before anyone points out that by containing the hard drive, the camera itself could be stolen along with the evidence, the same is true for a 35mm camera so beloved by the banks. What is needed is a seriously heavy duty mounting. The DSR comes with a standard 1/2 inch mounting thread, so choose a bracket very wisely, especially as the unit weighs in at 2.5Kg.

A look at the basic specification does actually imply that this camera is going to be something special. It boasts a 1/2 inch CCD with 1.5 million pixels, giving an effective 1360 x 1024 pixels. It requires 15 lux, is pretty much fully automatic, stores JPEG images and can record up to 90 minutes of footage, recording during an activation at a rate of 3 frames per second. When we say that the camera is pretty much fully automatic, we mean that white balance, exposure, gain control, shutter speed and focus are out of your hands. On paper, the DSR has the potential to be a colossus!

The unit is supplied with a power adaptor and a software CD as standard. Ours came with a camera control unit, but seeing as few still surveillance cameras will be utilised with standard CCTV systems, we decided to omit it, especially as it is an optional extra! In all reality, it is not necessary, because all of the settings can be achieved via a PC with USB connection. A network adapter should be available soon, but it wasn't when we tested the camera, so we can't comment on it.

Camera connections are simple. There are bank of screw terminals for power and for connecting secondary devices and triggers, an RS232 port, a USB connector and a standard BNC socket for video out.

Programming and set-up

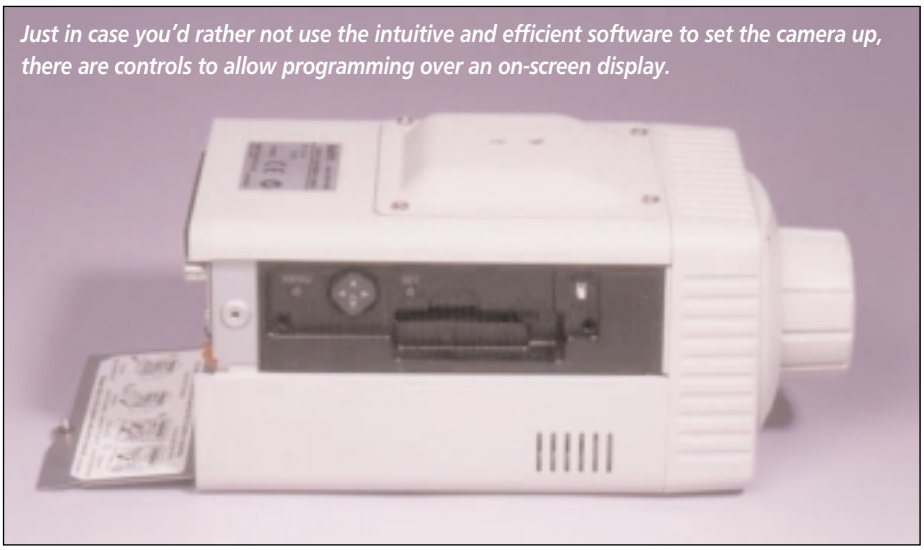
The software for the system is easy to install. The actual set-up procedure is simple, and functionality is good. It would take too long (and mean little) to go through the software and its involvement, and apart from one cock-up regarding passwords, the system seemed extremely intuitive. Passwords must be numeric, and without paying too much attention we decided to go with a password which wasn't. Whilst this didn't really hinder operations, it was only when we tried some of the advanced functions that we realised the error! We'll put that one down to over-exuberance on our part.

A brief glimpse at the accompanying documentation may well give the impression that you are entering a lion's den with regard to programming. However, that isn't the case. If anything, the manuals are confusing because the order which information is presented in is more logical if you are just reading about the system, rather than working with it. Whilst we recommend that anyone considering this system gains a thorough understanding of it before arriving on site, we would expect that understanding to be practical rather than theoretical!

Once the camera is mounted, connections for a trigger made, and setting carried out from a PC via the USB port, the DSR-C100P is ready to go Once images are captured - either as pre-alarm , post-alarm or suspicion mode images - and downloaded to the PC, certain parameters such as brightness and contrast can be adjusted on screen. This is a beneficial function, as images can be optimised for viewing. Navigating images is simple, and the vast majority of features in the software package are self-explanatory. All too often people claim that software is intuitive, but the Sanyo package really does score highly on this count. We had the system up and running correctly within minutes.

The camera does feature a simple joystick control secured under a side panel, and so the system can be set up without requiring the system software. However, we did feel that this option was likely to be ignored by many end users. The Sanyo DSR unit sometimes appears to try and appeal to a wider range of applications than those which are likely to buy it. Admittedly a product this good could well have a wider appeal, in which case some of the basic operating options might make sense, in which case we would stand corrected. This is obviously not a flaw with the product - it gives the user additional choices of how to set the camera up. It is only because the software is so simple to use that we questioned who would program the unit via the OSD.

By its very nature, the DSR-C100P's appeal is



Just in case you'd rather not use the intuitive and efficient software to set the camera up, there are controls to allow programming over an on-screen display.

The hard drive offers 10.8Gb of storage, equating to roughly 90 minutes at 3 frames per second.

limited to certain sectors. We tried to come up with diverse applications where a still image digital camera might be of interest, but all things considered, it was either too complex, too expensive or too limited in that it offers 3 frames per second. There can be no doubt that the DSR camera is firmly aimed at the banking sector, which traditionally uses 35mm cameras, and that might actually be its Achilles' heel! More about that later.

Performance

Image quality from the DSR-C100P is very good. Definition is extremely impressive, and if any complaint is to be levelled against it, it would be that the colours lack the extra level of vibrancy on offer from photographic film. If any one specification needs to met, it is the provision of illumination to a very high lux level. However, because of the previously mentioned ability to manipulate images, the pictures are never unusable.

Zooming in on images has the inevitable effect of softening them, but the level to which they are softened is remarkable. Where other digital images would start to pixelate and break up, these merely soften on hard edges. A digital zoom of up to 10x can be achieved. Obviously, softening increases with each step, and only really becomes a slight irritation at full zoom. Image handling is simple, and overall quality defies the fact that you are looking at a JPEG image. In a nutshell, performance of the DSR is extremely impressive when compared to other digital cameras. Indeed, put together image quality, ease of use and programming, and overall control, and you have one hell of a good camera. So, why do we all feel a 'but' coming on?

Installation is easy; that much is instantly obvious. Set-up and programming is a cakewalk. Even an installer with little or no experience of anti-bandit systems would not be phased by the DSR. Image quality is, quite simply, stunning. The user interface which allows management of the images is very well designede. Build quality is faultless, which bodes well for a long life in the field, and it is something of a struggle to find fault with camera. If you really wanted to be picky, the manuals could do with something or a reorganisation. So, what lets the unit down?

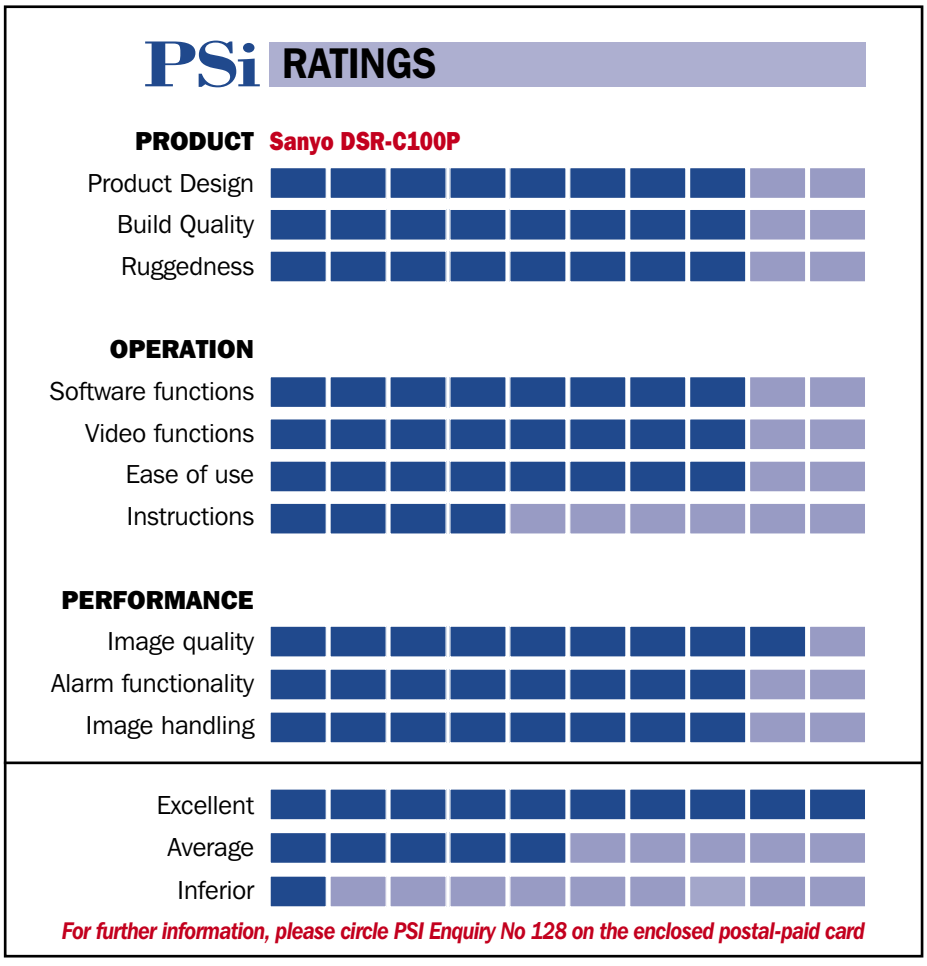
Nothing does, is the short answer. We did say earlier that the Achilles' heel of the unit may well be that it is aimed at the banking sector, and challenges 35mm cameras. We also mentioned that due to the target market of such devices, it was performance that the camera would live and die by. Performance wise the camera is very good. However, the issue has to be whether it is better than photographic surveillance? The decision is marginal, and was made based on past experience rather than a side-by-side comparison, but we feel that photographic surveillance may have the edge, even if it gains it from the historical allegiances which the banking sector has with its suppliers.

However, all is not lost. The DSR-C100P has a few areas where it can show photographic devices a very clean pair of heels. The main weapon in its armoury is pre-alarm recording. That alone will certainly make some in the finance sector sit up and listen. Add this to the ease of use and the benefits offered by integration with a PC (and networking when it is made available), and the Sanyo camera could win more than a few admirers.

In summary

There have been few products we at PSI have tested and impressed by, but have had concerns over their potential in the market, but the DSR-C100P is one. It deserves (and gets) a very high rating on the technical side, and Sanyo deserve a massive pat on the back for putting together such an impressive and user-friendly product. It is an exceptional piece of digital imaging hardware, has been very well designed, and if there were a mainsteam use outside of hold-up security in financial environments, we would recommend that they were purchased by the bucket-load.

Alas, for all its shining capabilities, the DSR has pitted itself against a formidable foe in photographic surveillance, and given the attitude of the potential customer base, it will have a battle on its hands. If you do have a need for still image surveillance, and you have a client in the banking industry who cares more about real-world usability than anything else, then the DSR-C100P comes very highly rated. The pre-alarm function should make this camera win out in the end. However, the battle for supremacy between the DSR-C100P and photographic surveillance has gone into extra time, and the referee is a banker!



For further information, please circle PSI Enquiry No 128 on the enclosed postal-paid card

Sanyo DSR–C100P Digital Camera

The Sanyo DSR-C100 is a digital camera with an integral hard disk drive providing the ability to record and store up to a massive 10.2 Gigabytes of video images without the need for any other external storage device.

- **High Definition SXGA images** – 1360x1024 pixels provide high definition images equivalent to 900TV line horizontal resolution.
- **High Speed Recording** – Sanyo's improved image processing circuit provides recording of SXGA images at three frames per second.
- **10 x Digital Zoom Function** – An original image can be enlarged by up to 1000% making it possible to zoom in on small objects and examine details.
- **Fast Flexible Image Management** – Recorded images can be transferred from the camera directly on to a PC either by flash card or cable. All images are recorded in JPEG format and can be attached to an email for distribution e.g. to the police or security management.
- **Images are "Marked"** – It is easy to identify if the images have been altered or tampered with. The images are further protected by image management software that requires up to an eight-character password.

SANYO CCTV

If you would like more information on any Sanyo product or wish to discuss a particular application please call us on:

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