

# SANYO

## Digital Recording Camera with built-in Hard Disk Drive

- 1.5 million pixel digital camera and a hard disk recorder in one
- High-speed recording of SXGA images at three frames/sec.
- Comes with two recording modes
- Video select for NTSC / PAL output

## DSR-C100 Color

# DIGITAL



Built-in  
**HDD**  
Recording



# Digital Recording of High Definition SXGA Images

## Digital camera and a hard disk recorder in one

DSR-C100 combines a 1.5 million pixel digital camera and a 10.2 GB hard disk recorder in one unit. This means that the task of making high quality recordings with digital-to-digital signal processing is completed within the unit without degradation associated with analog conversion.



1.5 million pixel CCD      10.2 GB hard disk drive

## High definition SXGA images

Its 1360 x 1024 pixel high definition images (equivalent to 900 TV line horizontal resolution\*) make it possible to record distinctive features of people's faces.

\*Use a SXGA PC monitor for viewing.



An image taken by DSR-C100

## High-speed recording of three frames per second

Thanks to further improvements in SANYO's high-speed image processing circuit, already highly valued in consumer digital cameras, DSR-C100 is capable of recording SXGA images (JPEG compression) as fast as three frames/sec.

## Up to 10x digital zoom function (with application software)

With SXGA image recording, it is possible to zoom in on small objects and examine details. An original image can be enlarged up to 1000% (10x) in increments of 10% (with application software). In addition, up to 21x digital zoom is available on the video output.

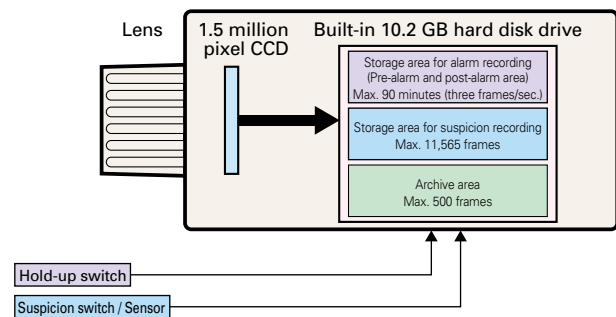
A 10x digital zoom image



Images taken by DSR-C100

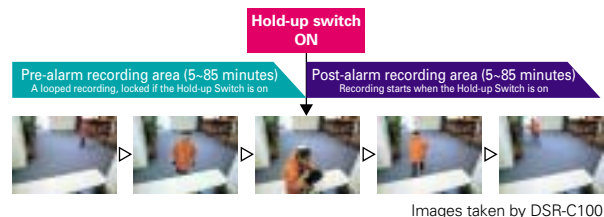
## Two pre-defined recording modes

DSR-C100 comes with two recording modes: alarm recording (pre-alarm / post-alarm) and suspicion recording. An exclusive recording area is created for each recording mode on the hard disk.



## Make a recording of "the past" — Alarm recording

The alarm recording function enables user to have recordings of activity prior to an event as well as after an event. The maximum length of time is 90 minutes (three frames/sec.) for combined pre and post-alarm recording. The camera creates a pre-alarm recording area corresponding to the pre-set duration within the designated storage area for alarm recording and, when the Record Start Switch is turned on, it immediately starts a looped recording. When the Hold-up Switch is turned on, this pre-alarm recording area is locked and successive images are stored in the post-alarm recording area. This mechanism makes it possible to preserve recordings both prior to and after an event.



Images taken by DSR-C100

## More than 11,000 frames of SXGA images — Suspicion recording

The suspicion recording function lets users make recordings as long as a manual switch is pressed. The maximum length is 11,565 frames and users can select between speeds of three frames/sec. and one frame/sec. Looped recording is possible. Also, instead of using the manual switch, suspicion recording can be activated by sensor input.

## Preserving crucial images — Archive function

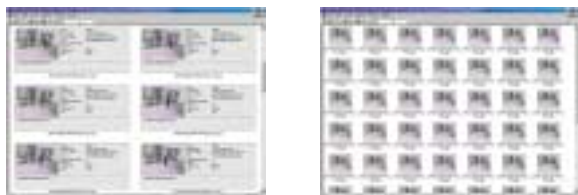
The archive function lets users make copies of crucial images from an alarm recording or suspicion recording and stores up to 500 frames in the archive area. The archive area can not be overwritten during alarm recording or suspicion recording.

# High Degree of Compatibility with PCs

## Direct access to the built-in HDD from a PC

By installing the included application software on a PC, it is possible to directly access the built-in HDD of the DSR-C100. This enables the user to set up the DSR-C100 and look for images, as well as download recorded images. A USB, RS-232C, or Ethernet (10Base-T) connection can be selected.

See [Fig.1](#) [Fig.2](#) [Fig.3](#)



Thumb-nails of recorded images



CD-ROM with software included

### System requirements:

OS: Windows 98 Second Edition (SE), Windows Me, Windows 2000 • CPU: At least a Pentium II 233MHz or compatible CPU • Memory: At least 64MB (128MB or more recommended) • Available space on HDD: At least 100MB (200MB or more recommended) • Monitor: 640 x 480 pixels (1024 x 768 pixels or higher recommended), 256 color or 16-bit color display required • Drive: CD-ROM drive • Communications ports: USB connector, RS-232C connector (transmission speed 9600 bps or more)

USB connections are only possible with computers that have a USB port as standard equipment and which have Windows 98 SE or later pre-installed (correct operation is not guaranteed if the system has been upgraded from Windows 3.1 or Windows 95 to Windows 98 SE or later).

## Print recorded images using an existing printer

Using the included application software, it is easy to print a high quality image on a printer attached to a PC.

See [Fig.1](#) [Fig.2](#)

## Attach images to an E-mail

Because all images are recorded in JPEG format, it is easy to attach images to an electronic document, such as an E-mail or a word-processor document, and to distribute them quickly to multiple numbers of people.

See [Fig.1](#) [Fig.2](#)

Note: Included authentication software lets users verify whether or not any electronic alteration was made to the original image.

## Connection to existing LAN (Ethernet 10Base-T)

It is possible to connect the DSR-C100 to an existing LAN by using an optional CF LAN kit. Users can access any number of DSR-C100s connected to the LAN from a single PC.\* They can set up multiple DSR-C100s and look for images, as well as download recorded images. With a LAN connection, the user can install cameras in remote locations outside the effective limit of a USB or RS-232C connection.

See [Fig.2](#) [Fig.3](#)

\* It is also possible to control DSR-C100s from multiple PCs.

## CF-type extension slot

DSR-C100 comes with a CF-type extension slot. By using a CompactFlash or a Microdrive, it is easy to store and transport recorded images on a portable medium.

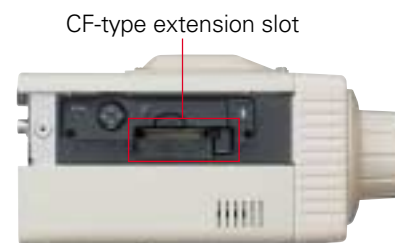
See [Fig.5](#)



CompactFlash



Microdrive



CF-type extension slot

## Built-in VIDEO OUT terminal

With this composite video output, the user can select either NTSC or PAL format. It enables the user to watch the live images (three frames/sec.) using an ordinary video monitor.

See [Fig.3](#) [Fig.4](#)

## Remote control without a PC

By connecting an optional camera control unit and a video monitor to the VIDEO OUT terminal, users can set up the DSR-C100 and look for images, as well as copy recorded images to a portable medium without a PC.

See [Fig.4](#)



The set-up screen



Thumb-nails of recorded images



Camera Control Unit  
**VAC-70** (sold separately)

## Other features

- Multi-spot photometry (64-section) backlight compensation
- Automatic white-balance
- Secure information management with a password of up to eight characters
- Up to five character camera ID display on the screen
- Max. 36 character comment input to any image data
- User can turn off the date & time display for a closer look, even with a recorded image
- 30-day memory backup
- Automatic daylight saving time / Summer time adjustment
- A built-in Ni-Cd battery to protect the HDD against power failure by terminating a write operation before switching off the unit

## Replacing film-based cameras at banks

With its SXGA high definition picture equivalent to that of 35mm film, and the added features that come from digital solution, the DSR-C100 is not a mere replacement for conventional film-based cameras commonly employed in banks. It is the key to incorporating a surveillance system into an IT network.

- Because of its capability to record images prior to an event, more information is obtained for a particular event.
- Recording onto a hard disk drive eliminates the manpower involved in replacing film.
- Repeated recordings on the same hard disk save on maintenance costs.
- Ceiling-mounted cameras can be controlled from a PC with a USB connection.
- Multiple cameras can be controlled from a PC with a LAN connection.
- A built-in VIDEO OUT terminal makes it possible to see images on an ordinary video monitor.
- The JPEG recording format makes it possible to distribute images via E-mail for quick information gathering.
- A pilot lamp near the lens gives a warning that the location is under surveillance. (It is possible to turn off the pilot lamp.)



## The stand-alone camera / recording system offers a new option in surveillance systems

By combining a camera and a hard disk recorder, the DSR-C100 offers a complete package as a surveillance system. To save space and manpower, connect a PC only when it is necessary to review images.

### In conjunction with an ATM

When used in an ATM application, the DSR-C100 can be triggered by a sensor to record images only when someone is standing in front of the ATM. Since the DSR-C100 packages camera and recorder in one unit, it is especially advantageous for off-site ATMs with limited space and no close-by maintenance.



### In conjunction with a cash-register drawer at retail shops

With recording triggered by the cash-register drawer, it is possible to record every transaction. The high definition images allow you to distinguish the types of bills. The suspicion recording function is capable of storing up to 11,565 frames and, in looped recording mode, recording will continue indefinitely without the need to change recording media.



### For access control of various facilities

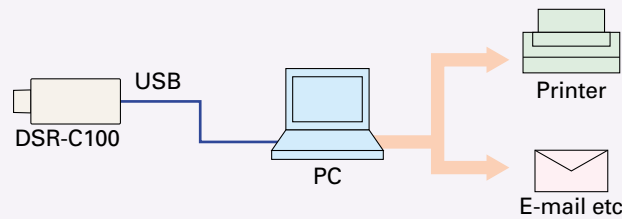
With recording triggered by entrance doors of public facilities, apartment houses, parking spaces, etc., it is possible to record people going in and out of such places. In addition to keeping an eye on unauthorized personnel, the time stamp function can be utilized as a verification tool in an access control system at hospitals and research institutes.



# DSR-C100 in Various System Configurations

## Digital output via USB serial connection

**Fig.1** An example of a USB serial connection with a PC



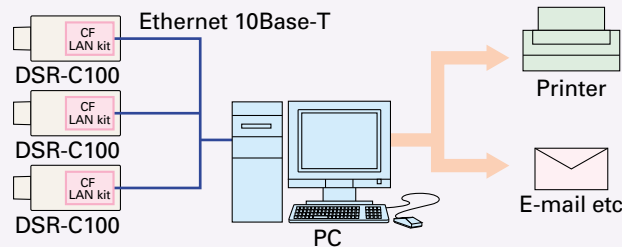
The DSR-C100 can easily be connected to a PC with a USB serial connection. Users can set up the DSR-C100 and look for images, as well as download recorded images.

\*When DSR-C100 is connected with a PC through the USB or RS-232C port, recording is not possible.

\* A serial connection through an RS-232C port is also possible.

## Digital output via Ethernet LAN connection

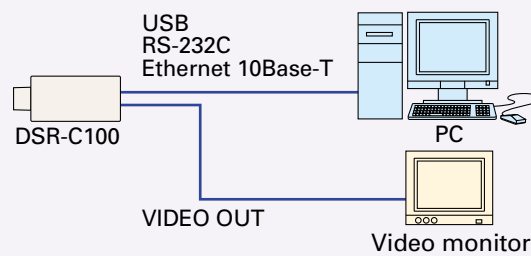
**Fig.2** An example of an Ethernet LAN connection with a PC



With the use of an optional CF LAN kit, the camera can be connected to an existing LAN (Ethernet 10Base-T). Users can set up multiple DSR-C100s and look for images, as well as download recorded images.

## Digital output and Video output

**Fig.3** An example of simultaneous use of a PC and a video monitor

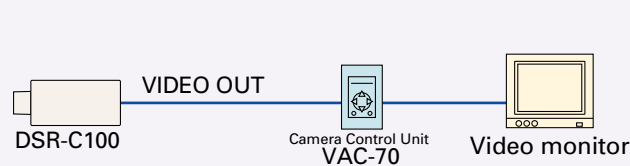


With the VIDEO OUT terminal built-in, users can monitor live images (three frames/sec.) on a video monitor.

\*When DSR-C100 is connected with a PC through the USB or RS-232C port, recording is not possible.

## Video output

**Fig.4** An example of connection with a video monitor via VAC-70

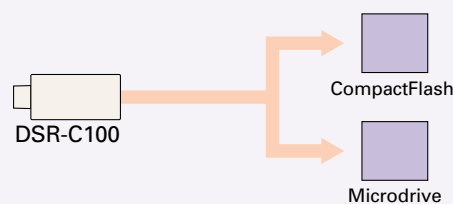


By connecting a camera control unit and a video monitor, users can set up the DSR-C100 and look for images, as well as copy recorded images to a portable medium. All these operations can be performed remotely and without a PC.

\*When a video monitor is connected, users can set up the DSR-C100 and look for images, as well as copy recorded images to a portable medium by operating buttons on the side the unit without the help of a PC or a camera control unit.

## Output to portable media CompactFlash Microdrive

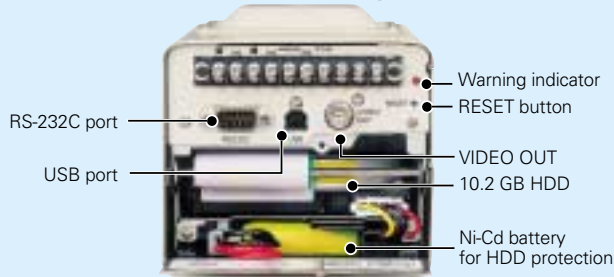
**Fig.5** Copying images from a DSR-C100 to a portable medium



By inserting a CompactFlash or a Microdrive into the built-in CF-type extension slot, it is possible to copy recorded images to a portable medium, making them easy to store and transport.

All equipment and recording media shown above, other than the DSR-C100 unit itself, are sold separately.

## DSR-C100 rear panel (when rear cover is opened)



\* The built-in hard disk drive can easily be taken out, making it possible to access recorded data even if the unit is inoperable.

MODEL	DSR-C100	
<b>Image sensor</b>	1/2" 1.5 million pixel CCD, progressive-scan	
<b>Picture elements</b>	Total: 1434 (H) x 1050 (V), Effective: 1360 (H) x 1024 (V)	
<b>Shooting number</b>	Alarm mode: 3 fps (for both Pre-alarm / Post-alarm) Suspicion mode: 1 or 3 fps (selectable)	
<b>Minimum illumination</b>	Approx. 15 Lux	
<b>Backlight compensation</b>	ON: Multi-spot photometry (64-section) / OFF — (on screen)	
<b>Flicker less</b>	ON / OFF — (on screen)	
<b>White balance</b>	Automatic	
<b>Exposure</b>	Automatic	
<b>Gain control</b>	Automatic (ISO level 100 ~ 800)	
<b>Electronic shutter speed</b>	Automatic (1/50 ~ 1/10000), (1/50, 1/100 fixed in flicker less mode)	
<b>Built-in Lens</b>	<b>Structure</b>	Five elements in five groups
	<b>Focus</b>	Fixed focus
	<b>Focal length</b>	f = 7.0 mm (equivalent to f = 38 mm lens on 35 mm camera)
	<b>Focal range</b>	2.3 m ~ ∞
<b>Recording media</b>	3.5" 10.2 GB HDD (Proprietary format)	
<b>Resolution of digital image</b>	SXGA: 1360 (H) x 1024 (V) pixels	
<b>Image file format</b>	JPEG compliant (Exif Ver. 2.1 compliant)	
<b>Recording capacity</b>	<b>Alarm mode</b>	Alarm recording time: 10 ~ 90 min. (Variable, and allocatable to Pre / Post) Pre-alarm recording time: 5 ~ 85 min. Post-alarm recording time: 5 ~ 85 min.
	<b>Suspicion mode</b>	502 ~ 11,565 frames (variable according to alarm recording time and suspicion recording rate)
	<b>Archive mode</b>	Max. 500 frames
<b>Playback functions</b> (Video output)	<b>Split-screen</b>	Alarm playback: 4 / 9 screen Suspicion playback: 6 / 9 screen Archive / Extension playback: 6 screen
	<b>Normal playback</b>	3 fps
	<b>Searching</b>	Skip search (forward and reverse at 5 / 15 / 30 sec. interval)
	<b>Digital zoom</b>	1x to 20x (7 steps)
<b>Hold-Up input</b>	Low level active (0 V, 1 sec, or more)	
<b>Suspicion input</b>	Low level active (0 V, 100 msec, or more)	
<b>Video output</b>	VBS 1.0 V (p-p) (75 ohms, composite), NTSC / PAL selectable	
<b>Warning output</b>	High level active (DC 3 V, ±0.3 V)	
<b>Interface</b>	<b>USB</b>	Type B connector (rear)
	<b>RS-232C</b>	D-Sub 9-pin (rear)
	<b>Video signal</b>	BNC (rear)
	<b>Power supply</b>	2-pin terminal (rear)
<b>Extension slot</b>	CF type II (side), for a CompactFlash or a Microdrive (3.3V)	
<b>Operating conditions</b>	Temperature: 5°C to 40°C [41°F to 104°F] Humidity: 10% to 80%, no condensation	
<b>Power requirement</b>	12 V ~ 16 V DC, 0.9 A ~ 0.7 A	
<b>Power consumption</b>	Approx. 10.5 W	
<b>Camera mount</b>	1/4" - 20 UNC (top / bottom selectable)	
<b>Dimensions (approx.)</b>	122(W) x 117(H) x 237(D) mm [4.8(W) x 4.61(H) x 9.33(D) in.] (w/o camera mount)	
<b>Weight (approx.)</b>	2,550 g [89.9 oz.]	

## AC Adaptor

<b>Power requirement</b>	100 ~ 240 V AC, 60 / 50 Hz
<b>Input current</b>	1.3 A or less (V <sub>in</sub> = AC 100 V)
<b>Dimensions (approx.)</b>	49.5 (W) x 27 (H) x 114.5 (D) mm [1.95(W) x 1.06(H) x 4.51(D) in.]
<b>Weight (approx.)</b>	270 g [9.5 oz.] (without power cable)

\*Specifications subject to change without notice

\*Windows is a registered trademark of Microsoft inc.

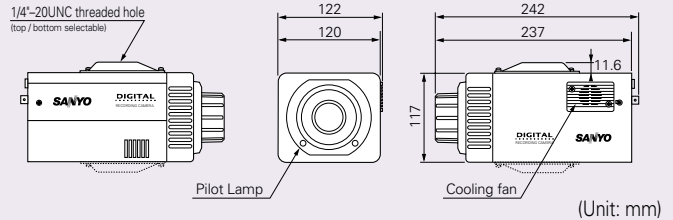
\*All other company and product names are registered trademarks and/or trademarks of their respective owners.

\*Product design, product release date, etc. may change without prior notice.

**\*Caution:** please consult the instruction manual to ensure safe and proper operation of the product.

Distributed by:

## DSR-C100



## Optional accessories

### 0.7x Wide Conversion Lens

#### VCL-W07D (sold separately)

When mounted onto the built-in lens, a wide angle picture is obtained (Horizontal angle of 67.5 degrees)



Standard picture



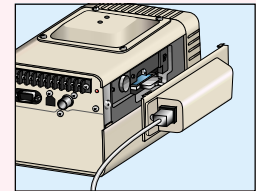
With VCL-W07D

### CF LAN Kit

#### VA-LANC100 (sold separately)

By installing this board into the CF-type extension slot of DSR-C100, the camera can be connected to a LAN (Ethernet 10Base-T). It comes with a side panel with an opening for the LAN cable.

\*Available on Sept. 2001



### Camera Control Unit

#### VAC-70 (sold separately)

When connected to the VIDEO OUT terminal of DSR-C100, it allows users to set up the DSR-C100 and look for images, as well as copy recorded images to a portable medium. Requires two Alkali type AA batteries or DC 3 V power supply.



### Camera Mount Base

#### VA-VCT100 (sold separately)

\*Available soon



# SANYO

SANYO Electric Co., Ltd.  
Video Imaging Systems Division

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