

“i-PRO SmartHD solutions”

Smart investment with more than just video surveillance.....

Better identification with more evidence

Smart investments lower your TCO

More than just video surveillance

Distinctive and versatile industry product solutions

i-PRO
SmartHD Solutions

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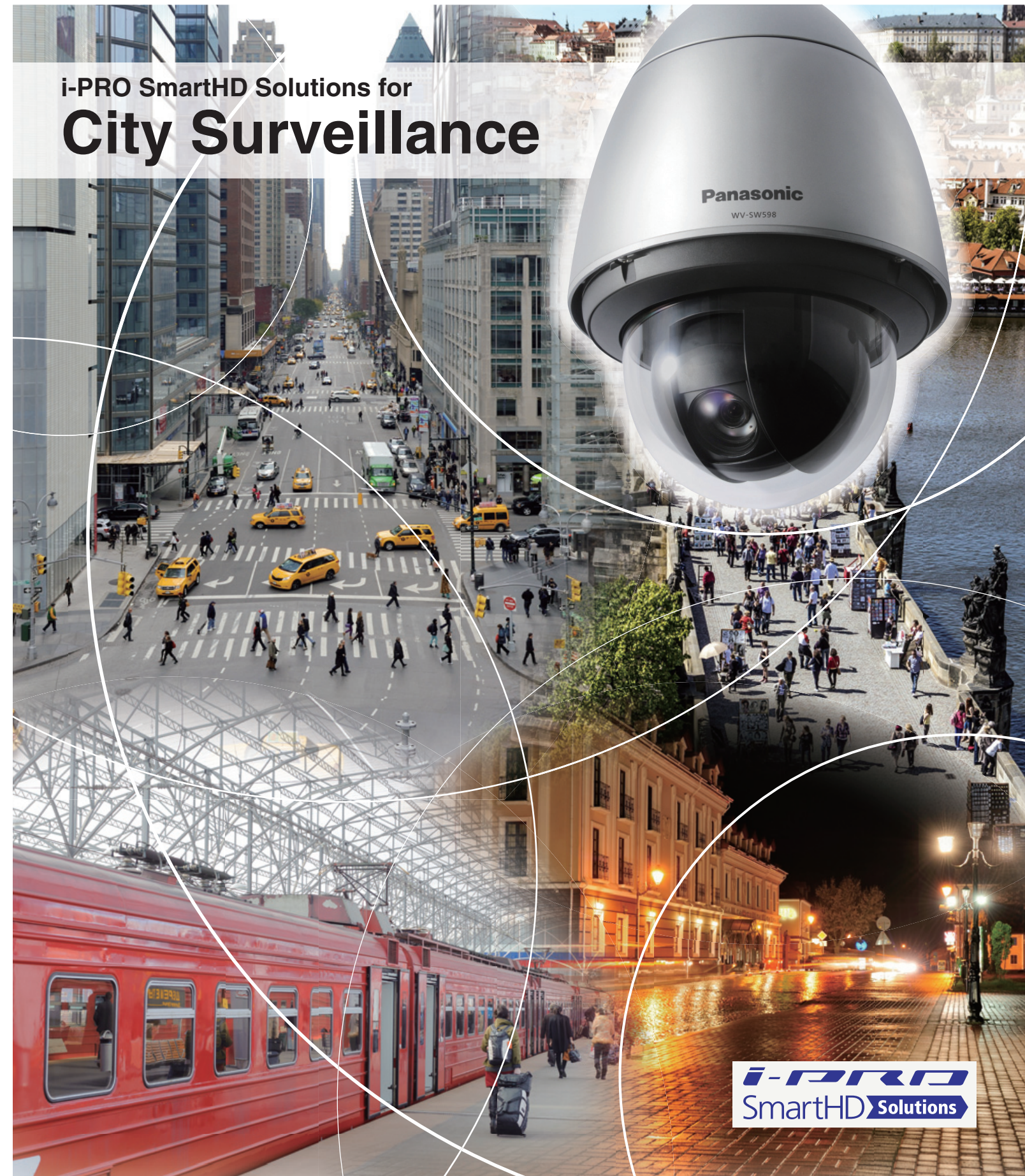
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i-PRO SmartHD Solutions for City Surveillance

i-PRO
SmartHD Solutions

Panasonic Security Systems Support Safe Urban Development for Your Town

Are you thinking about installing a security system to protect your precious town and its citizens from illegal acts such as theft and vandalism? Or, do you have problems with your current security system? Panasonic offers a wide range of security systems that include high performance, high definition, and high quality video technology. Using its many years of experience, Panasonic has created a line-up of security systems that meet customer needs for safe urban development.

Installing a new security system



Solving problems in an existing security system

- Poor resolution means important things and people's faces cannot be seen
- Images cannot be seen at night or in bad weather
- Blind spots need to be eliminated
- Cameras cannot be installed in the required locations due to space problems for power and network cables
- Preventing vandalism and destruction of equipment such as cameras
- Monitoring from outside the office
- High costs and trouble incurred to perform maintenance on cameras installed in remote locations or high places

Solutions

Panasonic security systems offer a wide range of products with various functions to meet diverse customer needs. We provide optimal products for various purposes and applications to help create safe urban environments.

High quality, no blind spots

The desired images can be seen more clearly.
Monitoring available from all directions, without blind spots.

Stable operation all day every day and in any weather

The product lineup supports all kinds of weather conditions, including high temperatures, low temperatures, rain, and fog. High durability to ensure stable system operation.

Reduced TCO

Intelligent functions automatically notify you of status changes and irregular situations. Constant human monitoring is not required. Easy installation to greatly reduce the work required.



View Images Clearly without Blind Spots with Panasonic Video Technology

High Image Quality

Providing Smooth Images with High Image Quality Exceeding 4K

Panasonic network cameras use the newly developed LSI platform and highly sensitive MOS sensors to provide video with high image quality and smooth and natural color tones. Clear and easy to view images of the location you want to monitor can be provided in various locations, both indoors and outdoors. The maximum resolution is 4,000 x 3,000 pixels (WV-SFV781L / WV-SPV781L). A frame rate of 60 fps at 2,048 x 1,536 pixels can be captured to support locations where fast cars and trains pass by. JPEG/H.264 multiple streaming transmission is also supported.

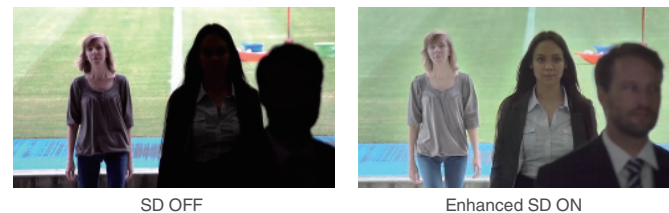
● High-Precision and Wide Range Monitoring

A single 4K resolution camera covers a wide area. High quality images enable far away objects to be checked.



Super Dynamic Technology

Areas subject to city surveillance often include both subjects that are in direct sunlight and those that are in the shade. In images with a large difference in illumination, bright areas become too white and dark areas become hard to see. However, **Super Dynamic** technology adjusts the dark areas and bright areas to enable monitoring with natural images. This can be particularly useful for identifying individuals by brightening human faces in environments where light is shining from behind the subject.



* Filming model: WV-SFV631L

High Light Compensation

If a bright light source such as car headlights points in the direction of a camera, the area around the light source becomes white and cannot be seen. Panasonic cameras correct for strong lights and their surroundings to provide clear images of areas that could not be seen with other cameras.



Fog and Smoke Reduction

Video can be corrected to provide clearer images by removing elements that obstruct the camera's field of vision, such as fog or sandstorms.



Visibility Enhancement

Even in situations where bad weather such as snow or heavy rain means that the video cannot be seen well, i-PRO Management Software (WV-ASM200+WV-ASE205 or WV-ASM970+WV-ASE903) can be used to correct live images and images that have been recorded. It is also possible to brighten dark subjects to make areas that are hard to see more visible.



Monitoring without Blind Spots

Omni Directional Cameras for 360 Degree Monitoring without Blind Spots

An omni directional camera offers monitoring of a 360 degree area below the camera with just a single unit. This enables the area below the camera to be completely monitored without creating blind spots. The maximum resolution is 2,992 x 2,992 pixels in the fish-eye mode (WV-SFV481/WV-SFN480). Movements below the camera are not missed, even in environments where conventional cameras have blind spots. The following five modes can be used for captured images, according to the location of the camera and the desired application.

*WV-SFV481/WV-SW458/WV-SW458MA

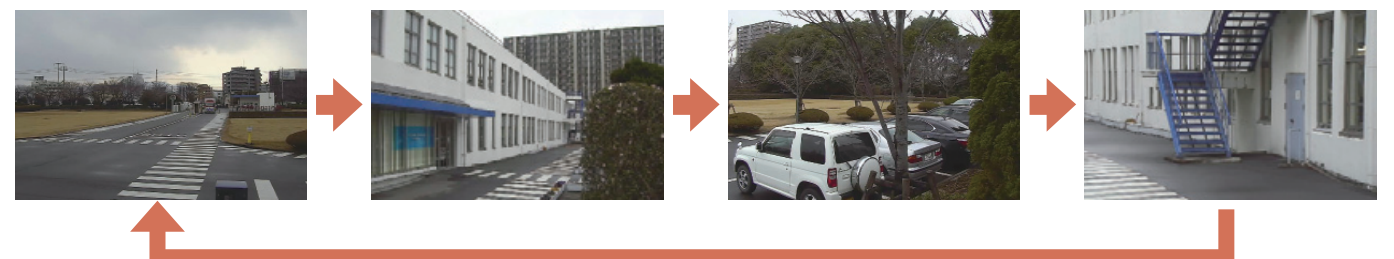


PTZ Camera for Wide Range Monitoring and a High Zoom Ratio

Normal fixed lens cameras can only monitor a certain direction, but the lens of a PTZ camera can be operated remotely to switch to the direction you want to view. Detailed areas can also be zoomed in to a maximum of 90x. Since the cameras can be infinitely rotated 360 degrees at a high speed of 300 degrees/sec, you will not miss the subjects you want to monitor.

● Preset Sequences

If the locations you want to monitor are fixed, you can register them in advance to move to them with a single touch or automatically patrol the registered locations. Data can be saved to a recorder by automatically patrolling the registered locations, without intervention by an operator. Ranges that cannot be covered with a single fixed lens camera can be covered by patrolling.



● Advanced Auto Tracking

When suspicious movements are discovered in the video, the camera can lock on to that person to perform automatic tracking using the pan, tilt, and zoom functions. A wide range can be covered by endless 360 degree horizontal rotation and 210 degree vertical rotation, and situations can be monitored in detail with a maximum of 90x zoom (30x optical zoom and 3x extra zoom). Even if another person passes by the person who is being tracked, tracking can continue.



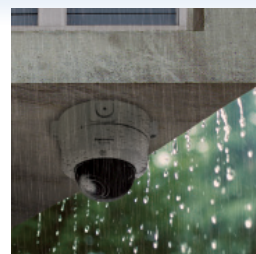
Panasonic Security Systems Can Be Installed in the Locations You Need to View

Support for Various Installation Environments

Even when installed in locations subject to direct rain, the field of vision is secured with measures against water leakage and humidity

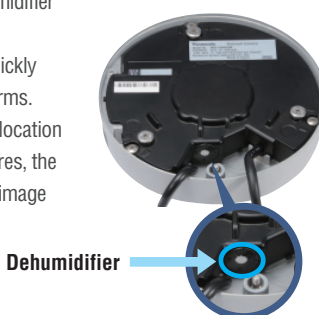
Waterproof and Dustproof

Waterproofing and dustproofing function compliant with IP66.
Can be installed outside in an area that receives direct wind and rain without special housing. Compliant with IP66 (IEC60529)



Dehumidifier

The camera is equipped with a dehumidifier that keeps the internal moisture level low, preventing condensation and quickly dissipating any condensation that forms. Even when a camera is installed in a location subject to greatly varying temperatures, the dome cover prevents the monitored image from being obstructed by fogging.



Rain-wash Coating

The application of rain-wash coating to the dome cover provides clearer visibility, allowing good security to be maintained even when the camera is installed in an environment subject to rain or water splashing.
In addition, the coating resists attachment of dirt to the dome cover, and also allows dirt to be washed off easily during rainfall or other exposure to water.

* WV-SFV781L/WV-SPV781L/WV-SW598/WV-SW397A



Non-coated

Rain-wash coated



Non-coated

Rain-wash coated

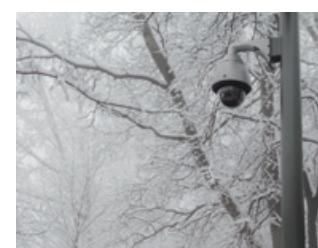
Wide Ambient Operation Temperature

Installation in various places is possible since a wide ambient temperature is supported.

The integrated structure of the camera includes a sun shield and a heater for cold weather regions, allowing it to be used in a variety of locations where the ambient temperature ranges from -50°C^{*1} to 55°C .

Stable camera operation is possible even in extreme environments.

*1 When using a PoE Injector



Vandal Resistant Mechanism

Extremely shock-proof – will not break even under strong impact.
Vandalism-proof cameras can be used without concern, even when they must be installed in locations that can be reached by people.

Compliant with 50J (IEC 60068-2-75) / IK10 (IEC 62262)
WV-SFV311A/WV-SW158/WV-SW155(M)/WV-SW458(M)
Compliant with 20J (IEC 60068-2-75) / IK10 (IEC 62262)
WV-SW598/WV-SW397A

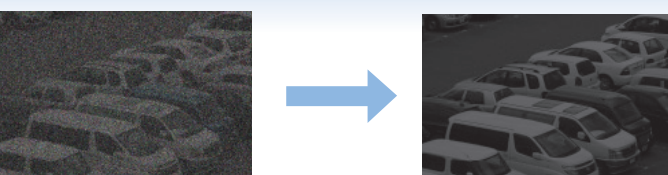


Support for Various Installation Environments

Cameras can also be installed in locations that are normally completely dark

Day/Night Function

The day/night function automatically switches the camera from color to B/W and vice versa depending on the illumination, which is ideal for 24-hour surveillance.
With moving IR cut filter and ABF (Auto Back Focus), both high sensitivity and accurate focus are ensured.



IR LED to Support 0 Lux Environments

Cameras with an IR LED can be used to monitor environments that are completely dark. This enables locations without the level of illumination required to capture images to be monitored to prevent graffiti, illegal dumping, and property destruction. The IR LED can illuminate a wide area so that monitoring is not limited to a specific part of the area.



* Filming model: WV-SFV631L

Install cameras in locations without a power source or that are too far for a power cable

PoE (Power over Ethernet)

The power is supplied through the Ethernet cable, so the network camera can be used in places that would ordinarily be difficult to install it in, like on the ceiling where there is no power outlet.

Coaxial-LAN Converter

A coaxial LAN converter (WJ-PC200, WJ-PR201/WJ-PR204) can be used to extend the network to a maximum of 2 km away, using only a coaxial cable. This enables cameras to be installed in locations that were previously not possible.

● Features

- Cameras supporting PoE can be supplied with both power and network access up to 500 meters away, using only a coaxial cable.
- Cameras can be connected up to 2 km away if a power supply is not required.

Easy Installation, Easy Maintenance, and Stable Operation All Day Every Day

Panasonic security systems have a history and a track record of more than 50 years. Know-how built up over the years is utilized to ensure that devices can be easily installed and used. Panasonic cameras have a well established reputation for stable operation, which is important in security systems that require constant monitoring 24 hours a day, 365 days a year. This saves time and costs when dealing with devices at high altitudes, because cameras are usually not installed in places that people can reach. Easy installation and stable operation mean that TCO can be minimized.



Example of installation in a high location


Cameras Move Automatically and Intelligently and Can Be Centrally Managed

Intelligent Functions

Cameras inform you of changes without constant monitoring

Video Motion Detection

Cameras detect the movement of objects and people in the captured range, and perform various actions such as displaying warnings and sending notification via e-mail.
Even if you do not keep a constant eye on the camera image, the camera notifies you of changes.
Places that do not normally have people moving around, such as areas that are off limits, can be specified as the target for detection.



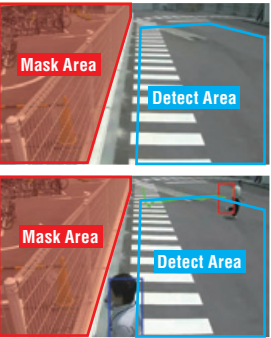
Set the locations where you want to detect movements on the administrator configuration screen in advance.

Detection area configuration screen

Intelligent VMD

Intelligent functions to make your security system operations easier and more secure

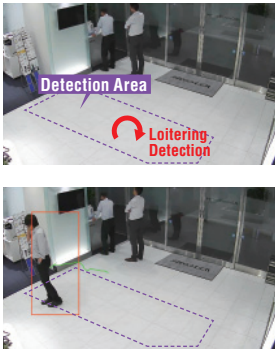
Advanced motion detection



Crossing Over the fence

Detects - the motion of objects in the shooting or detection area. Frames and tracks are displayed around the detected moving object in the live image. Up to 8 objects can be detected simultaneously.



Loitering Detection



Objects staying longer than a specified time

Detects - objects loitering for longer than a specified time from 10 sec to 5 min.

Direction Detection




<http://www.youtube.com/watch?v=nthFcQJftgl&list>

Objects moving in a specified direction

Detects - objects moving in a specified direction. Up to 8 directions can be specified.

Scene Change Detection



Interference such as blockage of the lens with cloth or spray paint

Detects - interference caused by tampering with the camera, such as a manual change in the camera direction or blockage of the lens with cloth or spray paint.

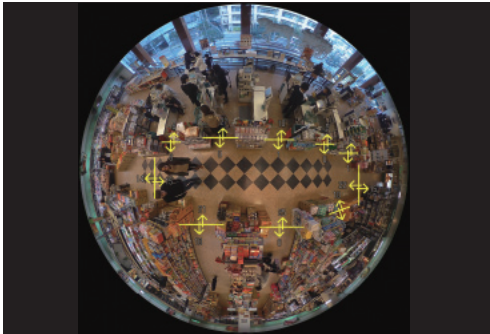
● Complete with powerful intelligent functions (WV-SFV481 Optional)

Heat-map

This provides visualization of the traffic patterns by people and how long they stay in one place. For example, you can place products based on how people tend to flow within the store and arrange objects so that they do not interfere with the movement of people.

People Counting

This counts the number of people passing through a selected preset location. The People Counting function can provide statistics on the number of people entering and leaving a specific zone and other useful data.



Monitoring Environment

Monitor from various devices and various locations

Management Software

Software for performing batch management can also be selected according to the scale of the system.
This software can be used to efficiently and effectively operate systems using the minimum required resources, reducing TCO.

● For small and medium scale systems

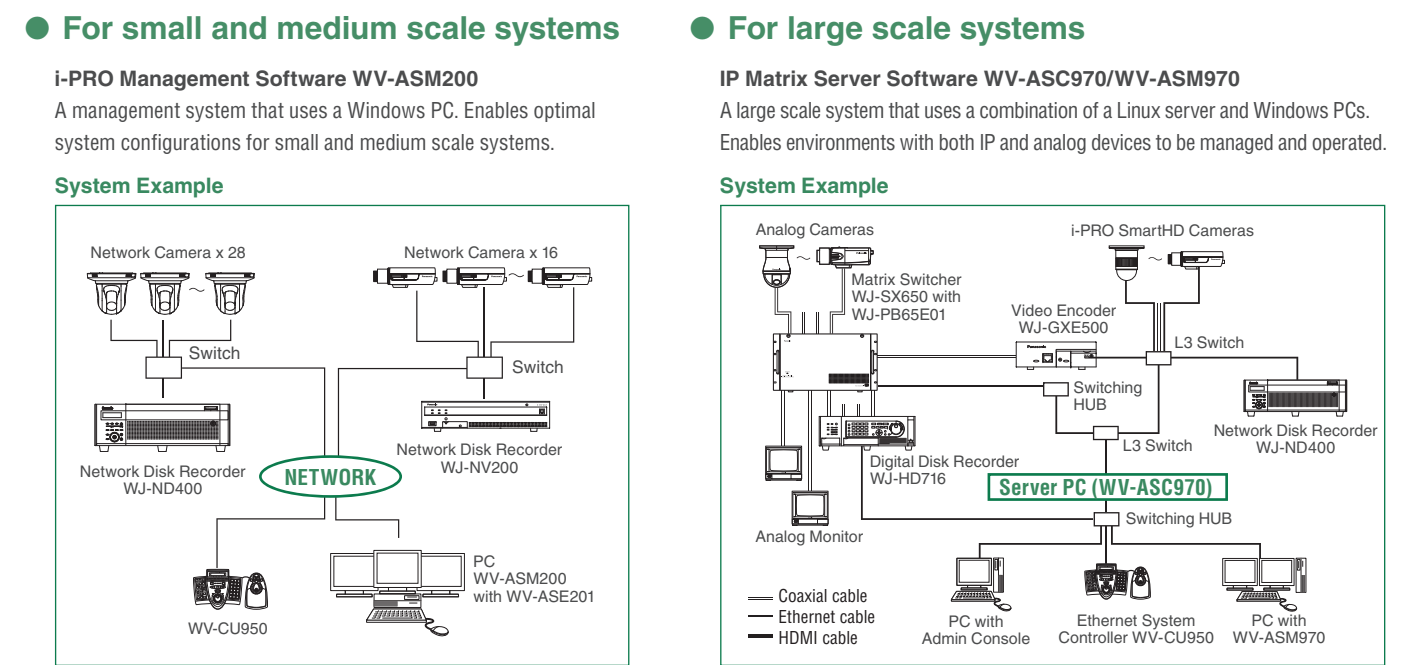
i-PRO Management Software WV-ASM200

A management system that uses a Windows PC. Enables optimal system configurations for small and medium scale systems.

● For large scale systems


IP Matrix Server Software WV-ASC970/WV-ASM970

A large scale system that uses a combination of a Linux server and Windows PCs. Enables environments with both IP and analog devices to be managed and operated.



Recording

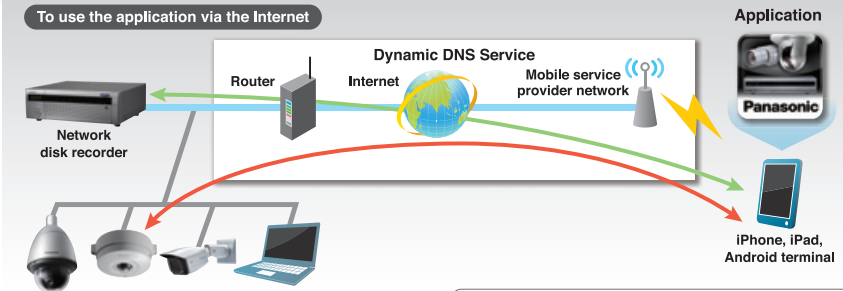
Panasonic offers a lineup of recorders that can record and play high quality images. You can select the required devices such as a dedicated recorder, server PC based recorder, and SD memory card to attach to the camera unit, according to your environment and recording conditions.
You can select different dedicated recorder models according to the number of cameras to connect and recording conditions. The i-PRO SmartHD 6 Series features two SD memory card slots that support SDXC to enable long-term recording and duplication of recorded data with a standalone camera unit.
Combining a camera with a recorder that was developed in the same environment enables the performance of both devices to be maximized.
Various convenient tools such as a calculator are provided to enable suitable systems to be easily constructed.



Mobile Monitoring

Even when you are in a remote location, you can access a camera from a smartphone or tablet to check the status. If you access the recorder, you can play back recorded data in addition to viewing live images. Panasonic provides iOS and Android apps free of charge.

To use the application via the Internet



Download the Panasonic Security Viewer application on the Google play™ store, Apple App Store.

Android™ <http://security.panasonic.com/pss/security/psv/android/index.html>

iPhone/iPad <http://security.panasonic.com/pss/security/psv/ios/index.html>

Legend:

- Direct Camera connection
- Live monitoring
- Via recorder
- Live monitoring
- Playback

City Surveillance Enabled by Panasonic Security Systems

Example Usage

Night

- Graffiti
- Illegal dumping
- Illegal entry (fence jumping, etc.)
- Camera vandalism
- Installation near mercury lamps
- IR-LED illumination (0 lux support)
- Car headlights (HLC)

Rain and snow

Making images clear when rain directly hits the camera

- Rain-wash coating
- IP66 water and dust resistant
- Fog compensation
- Visibility enhancement

Day

- **Super Dynamic**
Areas with a difference in illumination
- **Intelligent functions**
Cars reversing in one-way streets
Loitering and entering prohibited areas

Panasonic Security Systems in Use Around the World

Case Study

Papudo Municipality, Chile

● Background

The municipality was considering adopting a security system to maintain security and safety in remote locations such as beaches and residential areas.

● System adoption method

A security system including cameras was connected to a separately installed optical fiber network. Costs for wiring, etc. were not incurred because the system could be directly connected to the existing network.

● Effects

The status of remote locations can now be immediately checked from a monitoring room. Since images are recorded, the situation can be checked later on if a problem occurs. Long term recording is possible because the capacity of recording devices can be increased. Centralized control is made possible by using i-PRO Management System WV-ASM200 at the center. Since a large-scale system was able to be constructed using only Panasonic products, devices were able to be connected and linked smoothly. If trouble happens to occur, it can be handled with a one-stop solution. The system can be expanded. The cameras have excellent image quality and zoom functions, and the PTZ function enables efficient operation by switching cameras to the required angle.

● Customer comment

“We are very satisfied with the installation of the Panasonic PTZ IP network in our city, which has led to better control especially at night time and summer periods with a high concentration of people. The Optical Fiber Redundant Ring gives us continuity of operation and the 72x optical zoom allows approaches from over 1000 meters at our monitoring center. The entire system having a single brand (cameras, software, monitors and accessories) allows reliability and operational continuity 24/7.”

Wilson Astudillo T
Municipality Administrator
Municipality of Papudo



Jesus Maria Municipality, Lima Peru

● Background

The municipality was considering adopting a security system for monitoring with high definition cameras to maintain safety and security.

● Adoption method and effects

With the previously adopted analog system, the required image quality could not be achieved, and it was sometimes not possible to tell what was going on. The newly adopted Panasonic network cameras provide high quality images, and utilize bidirectional audio functions to monitor local sounds and record audio along with the video. The operation room can also give warnings to the area around the camera via speakers connected to the cameras.

● Customer comment

-Our cameras now have better features: panning range, optical zoom, two way audio, and integrated housing.
-In performance testing, our cameras had the best performance (video quality, approach, patrol functions, etc.)
-In the second installation, our cameras are now equipped with two-way audio.



Panasonic Security Product Lineup for Ensuring Safety

Lineup

PTZ Network Cameras



Dome Network Cameras



Box type Fixed Network Camera



360-degree Dome Network Cameras



Compact Dome Network Cameras



ONVIF All the above models support Onvif.

● Table of supported functions

	WV-SW598	WV-SW397A	WV-SFV781L	WV-SFV631L	WV-SFV311A	WV-SPV781L	WV-SPW631L	WV-SFV481	WV-SW458 (MA)	WV-SW158	WV-SW155 (MA)
Super Dynamic	MEGA SD	MEGA SD	-	Enhanced SD	Enhanced SD	-	Enhanced SD	-	MEGA SD	MEGA SD	MEGA SD
Fog and Smoke Reduction	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
High Light Compensation	✓	✓	✓	✓	✓	✓	✓	-	-	-	-
Pan/Tilt/Zoom (Ratio)	PTZ (30x)	PTZ (30x, Extra Optical 45x)	Zoom (6x)	Zoom (3.6x)	Zoom (3.6x)	Zoom (6x)	Zoom (3.6x)	-	-	-	-
Pan	360° endless	360° endless	-	-	-	-	-	-	-	-	-
Tilt	-15° to 195° (w/Tilt Flip)	-15° to 195° (w/Tilt Flip)	-	-	-	-	-	-	-	-	-
Zoom	30x optical 12x digital	45x optical 12x digital	6x optical 4x digital	3.6x optical 4x digital	3.6x optical 4x digital	6x optical 4x digital	3.6x optical 4x digital	4x digital	4x digital	4x digital	4x digital
Preset Sequence	✓	✓	-	-	-	-	-	-	-	-	-
Auto Tracking	Advanced AutoTracking	Advanced AutoTracking	-	-	-	-	-	-	-	-	-
Dehumidifier	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
Rain-wash Coating	✓	✓	✓	-	-	✓	-	-	-	-	-
Operating Temperature	-50°C to +55°C (24 V AC, PoE) -30°C to +55°C (PoE+)	-50°C to +55°C (24 V AC, PoE) -30°C to +55°C (PoE+)	-45°C to +50°C	-45°C to +50°C	-40°C to +50°C	-45°C to +50°C	-40°C to +50°C	-40°C to +50°C	-40°C to +50°C	-30°C to +50°C	-30°C to +50°C
Day/Night Function	ICR ²	ICR ²	ICR ²	ICR ²	ICR ²	ICR ²	ICR ²	ICR ²	Electrical	Electrical	Electrical
IR LED	-	-	✓	✓	-	✓	✓	-	-	-	-
Video Motion Detection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Intelligent VMD	-	-	-	Optional	Optional	-	Optional	Optional ³	-	-	-

*1 With PoE Injector (60W) *2 ICR: Infrared cut filter equipped *3 Heat-map, People Counting

One-stop System Construction Including Cameras, Recorders, and Integrated Management Software

Lineup

Network Video Recorders

WV-ASR500 Series



Open platform and high performance server based recording and video management platform

- Open platform, support for network cameras from Panasonic and 51 other manufacturers.
- Up to 64 network cameras can be connected and recorded.
- Up to 16 clients can monitor images and control the WV-ASR500 simultaneously. (Depending on the system structure and environment.)

WJ-ND400



High performance network disk recorder for megapixel i-PRO network cameras with 9 serial ATA HDD slots

- Up to 64 network cameras can be connected without an extra license fee and their images can be recorded simultaneously.
- Various recording modes: Manual, Schedule including Event (Pre/Post), Emergency. The schedule mode includes eight recording programs with an individual recording mode for each camera, and 6 time schedules per day

WJ-NV300



32ch network disk recorder with built-in video decoder

- Quick setup with automatic camera detection and a simple setup wizard without the use of a PC
- Supports two full HD outputs (HDMI) that can display recorded images and live images in high definition

WJ-NV200



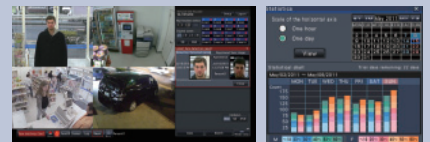
16ch network disk recorder with built-in video decoder

- Quick setup with automatic camera detection and a simple setup wizard without the use of a PC
- "Referenced recording days" automatically calculated by frame rate, image quality and HDD capacity.

WJ-NVF30 / WJ-NVF20

Additional Business Intelligence Kit for WJ-NV300 / WJ-NV200

- New statistical processing functions such as "people counting" and "face matching / age & gender judgment"



Face Recognition System

WV-ASF900 Series

- Add-on face matching function: Simply add the necessary devices and software to enable a face matching function.
- Can be connected up to 20 cameras on a server.

● Face Search

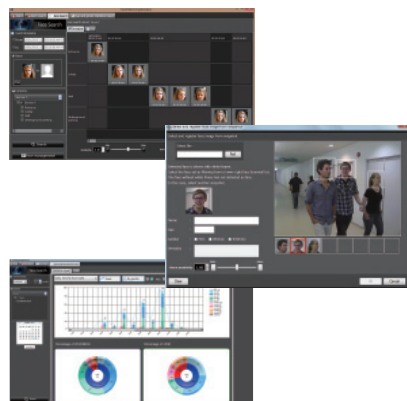
- Face images that the camera has detected are stored and can be searched later.
- By searching the face database, you can display the result of each camera in chronological order and find the movement locus of persons.
- Specify a camera or date for detected face images and display the results in the list in similarity order.

● Face Matching

- When a match is found with a registered person, a real-time alert is output and displayed in the alert history.
- Specified screen images can be played back on a control monitor by double-clicking an alert in the history.

● People Counting, Age and Gender Statistics

- Count detected people and evaluate their age and gender
- Display the results on the screen with a statistical graph
- The statistical data can be saved as a CSV file for analytical use.



Lineup

i-PRO Management Software

WV-ASM200 Series



i-PRO management software for multi-recorder multi-site systems

- Integrated control of multi-recorder, multi-site systems.
- Ideal solution for a wide range of applications to maximize the advantage of an i-PRO SmartHD Network Surveillance System.

Extension Software

WV-ASE201: Supports multi-monitor displays, Ethernet system controller (WV-CU950)
WV-ASE202: Max. 64 split-screen display
WV-ASE203: Expands the number of recorders that can be connected
WV-ASE204: Expands the number of decoders that can be connected
WV-ASE205: Visibility enhancement
WV-ASE231: Link to a face searching server (WV-ASF900)

Ethernet System Controller

WV-CU950 * WV-ASE201 is necessary



WV-ASC970/ASM970 Series



IP Matrix Server Software

- Flexible system design: Analog, IP, and hybrid analog/IP
- Multi-monitor option enables simultaneous use of operation screen and monitor screen (1 / 4 / 7 / 9 / 10 / 13 / 16 split) on a dedicated monitor. Two monitor operation is also available. Support 100 maps.

Extension Software

WV-ASE901*: Link to a fire alarm system
WV-ASE902: Up to 4 live monitors and multi monitor function up to 5PC monitors
WV-ASE903: Visibility Enhancement
WV-ASE231: Link to a face searching server (WV-ASF900)

* WV-ASE901 is only sold in certain areas. Please contact the sales company for details.

Ethernet System Controller

WV-CU950

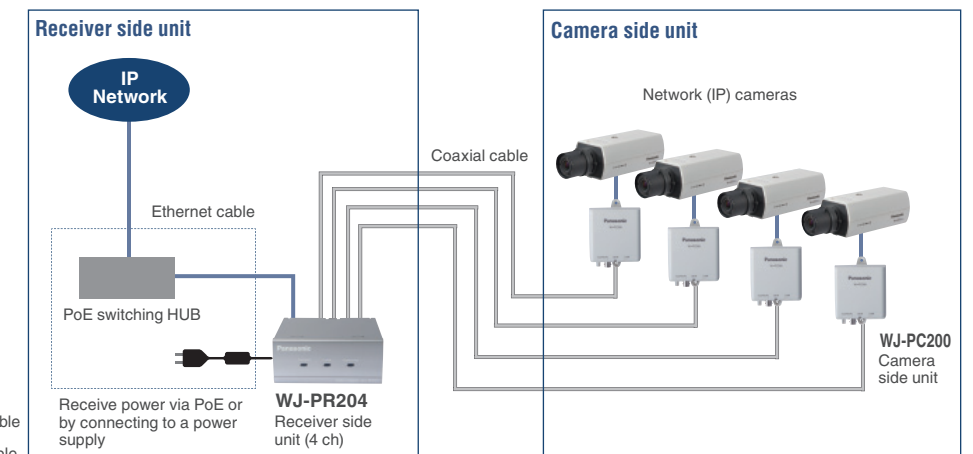


Coaxial-LAN Converter

Receiver side unit



Camera side unit



* With PoE function: 500 m (1,640 feet 5 inches), PoE+ function: 300 m (984 feet 3 inches) / Without PoE function: 2 km (6,561 feet 8 inches)

* Launches in December 2015